

NCL

DECEMBER 2017

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 (Includes Erosion Control Plan)
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 = 122

PROJECT LOCATION



BEGIN PROJECT
STA. 100+88.80
Y=123925.327
X=395887.001

DESIGN DESIGNATION

A.A.D.T. 2018 = 2000
A.A.D.T. 2038 = 2500
D.H.V. 2038 = 305
D.D. = 60/40
T. = 6%
DESIGN SPEED = 60 MPH
ESALS = 370,000

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)

HIGH VOLTAGE

COMBUSTIBLE FLUIDS

MARSH AREA

WOODED OR SHRUB AREA

PROFILE
GRADE LINE
ORIGINAL GROUND
MARSH OR ROCK PROFILE
(To be noted as such)
SPECIAL DITCH

GRADE ELEVATION

CULVERT (Profile View)

UTILITIES

ELECTRIC

FIBER OPTIC

GAS

SANITARY SEWER

STORM SEWER

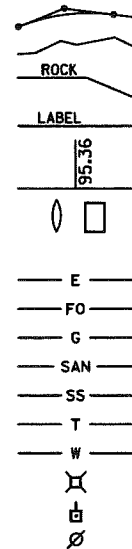
TELEPHONE

WATER

UTILITY PEDESTAL

POWER POLE

TELEPHONE POLE



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STH 73 - SPRING LAKE

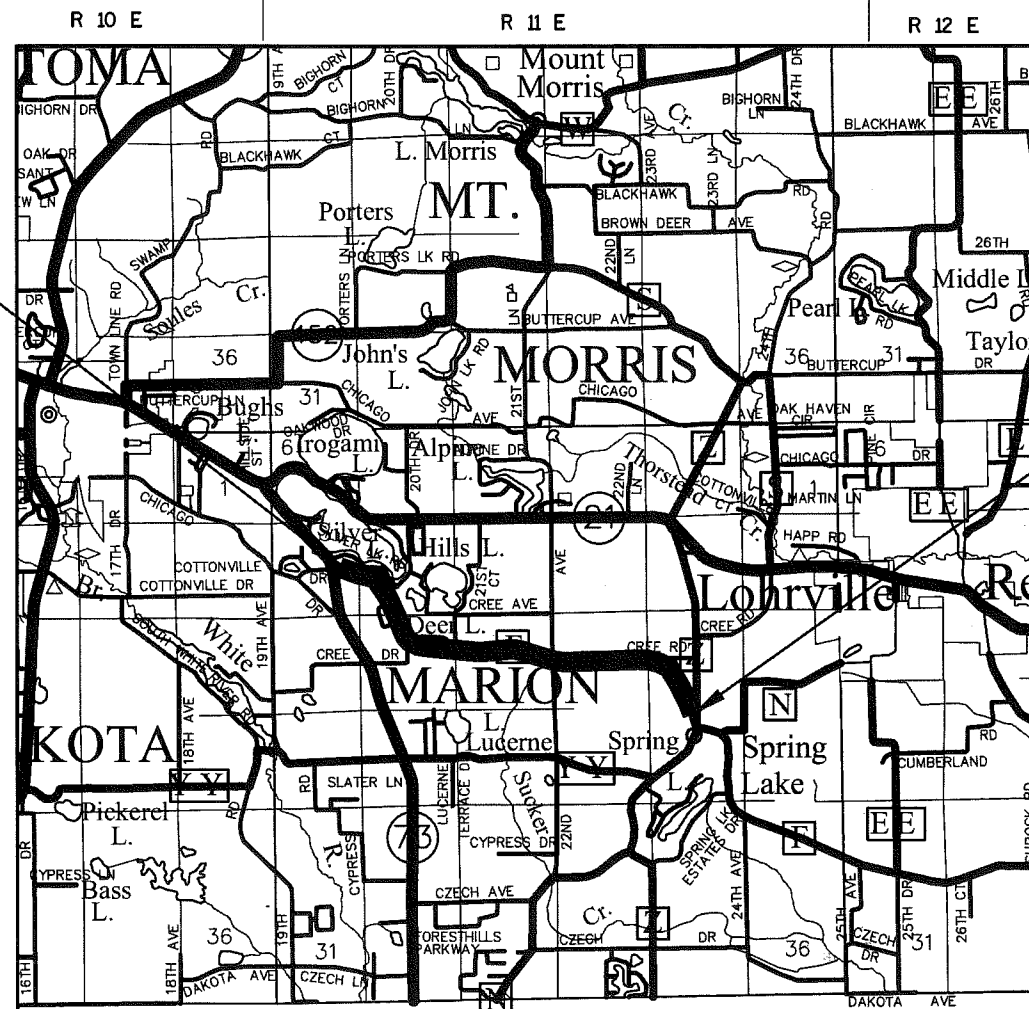
STH 73 TO CTH Z

CTH F

WAUSHARA COUNTY

STATE PROJECT NUMBER

6986-01-70



LAYOUT
SCALE 0 2 MI.

TOTAL NET LENGTH OF CENTERLINE = 4.472 MI. (RURAL)

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, WAUSHARA 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

6986-01-70

FEDERAL PROJECT

PROJECT

WISC 2018021

CONTRACT

1

ACCEPTED FOR
WAUSHARA COUNTY

7-17-17
DATE

[Signature]
COUNTY HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY

AYRES
ASSOCIATES



7-13-17
(Date)

[Signature]
(Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor AYRES ASSOCIATES

Designer AYRES ASSOCIATES

Management Consultant CEDAR CORPORATION

APPROVED FOR THE DEPARTMENT

DATE: 7-28-2017
(Management Consultant Signature)

E

GENERAL NOTES

DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, WILL BE FERTILIZED, SEEDED AND EROSION MAT OR MULCH.

THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

EROSION CONTROL MEASURES WILL BE PLACED AS SHOWN ON THE CONSTRUCTION DETAILS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.

MEETING EXISTING PAVEMENT WITH NEW PAVEMENT WILL BE PREFORMED WITH A BUTT JOINT. ALL BUTT JOINTS ARE TO BE SAW CUT.

SAW CUT LOCATIONS SHOWN ON THE PLAN ARE SUBJECTED TO ADJUSTMENT BY THE ENGINEER IN FIELD. THE LINE OF SUCH SAW CUTS WILL BE NEATLY DELINEATED THRU THE ASPHALT WITHOUT ANY DAMAGE TO THE REMAINING PORTION OF THE EXISTING PAVEMENT.

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

CURVE DATA IS BASED ON ARC DEFINITION.

2-INCH HMA PAVEMENT WILL BE CONSTRUCTED WITH ONE LAYER. USE ASPHALT MATERIAL 4 LT 58-28 S.

4 1/2-INCH HMA PAVEMENT WILL BE CONSTRUCTED WITH THE TWO LAYERS CONSISTING OF ONE 2 1/2-INCH LOWER LAYER AND ONE 2-INCH UPPER LAYER. USE ASPHALT MATERIAL 3 LT 58-28 S FOR LOWER LAYER AND 4 LT 58-28 S UPPER LAYER.

ACCESS TO ALL RESIDENCES AND BUSINESSES WILL BE MAINTAINED DURING CONSTRUCTION.

EXACT LOCATION OF ENTRANCES WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

WHEN THE QUANTITY OF THE ITEM OF BASE AGGREGATE DENSE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

FILL EXPANSION FACTOR IS 30%.

EXCAVATION BELOW SUBGRADE (EBS) WILL BE MEASURED AND PAID FOR AS EXCAVATION COMMON. THE LOCATION FOR EBS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE PIPES SHOWN ON THE PLAN SHEETS ARE APPROXIMATE AND WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

PRIOR TO ORDERING DRAINAGE PIPES, THE CONTRACTOR WILL VERIFY RELATED DRAINAGE INFORMATION IN THE PLAN WITH THE ENGINEER IN THE FIELD.

ALL NEW CULVERT PIPES WILL REQUIRE ENDWALLS.

REFERENCE LINE REFERS TO ALIGNMENT AND STATIONING. CENTERLINE REFERS TO EXISTING ROADWAY CENTERLINE. REFERENCE LINE AND CENTERLINE ARE NOT COINCIDENTAL.

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

STANDARD ABBREVIATIONS

| | | | |
|-------|------------------------------|-----------|--------------------------------------|
| ADT | AVERAGE DAILY TRAFFIC | NC | NORMAL CROWN |
| AC | ASPHALT CEMENT | PT | POINT OF TANGENCY |
| AGG | AGGREGATE | PC | POINT OF CURVATURE |
| ASPH | ASPHALT | PI | POINT OF INTERSECTION |
| BM | BENCH MARK | PE | PRIVATE ENTRANCE |
| C/L | CENTERLINE | R | RADIUS |
| CONC | CONCRETE | REM | REMOVE |
| CMP | CORRUGATED METAL PIPE | R/L OR RL | REFERENCE LINE |
| CR. | CREEK | RCCP | REINFORCED CONCRETE CULVERT PIPE |
| D | DEGREE OF CURVE | RCPSS | REINFORCED CONCRETE PIPE STORM SEWER |
| DHV | DESIGN HOUR VOLUME | R.O. | RUNOUT |
| ESALS | EQUIVALENT SINGLE AXIS LOADS | R/W | RIGHT-OF-WAY |
| EXIST | EXISTING | STA | STATION |
| FE | FIELD ENTRANCE | SE | SUPER ELEVATION |
| HYD | HYDRANT | SS | STORM SEWER |
| IP | IRON PIPE OR PIN | T | TANGENT |
| L | LENGTH OF CURVE | TEL | TELEPHONE |
| LC | LONG CHORD OF CURVE | TLE | TEMPORARY LIMITED EASEMENT |
| LR | LENGTH OF RUNOFF | T | TRUCKS |
| MH | MANHOLE | VC | VERTICAL CURVE |
| | | W | WELL |

WDNR

WISCONSIN RAPIDS SATELLITE CENTER
473 GRIFFITH STREET
WISCONSIN RAPIDS, WI 54494
ATTENTION: BOBBI JOE FISCHER
E-MAIL: bobbi.fischer@wisconsin.gov

DEPARTMENT OF NATURAL RESOURCES

TELEPHONE 715-421-7845

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

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 20.1 ACRES
SOIL GROUP A & B

UTILITIES

*ALLIANT ENERGY
880 N. WISCONSIN STREET
BERLIN, WI 54923
ATTN: MR. MARK VILLARS
E-MAIL: markvillars@alliantenergy.com
TELEPHONE 920-361-5652
MOBILE 920-290-0827

*WE ENERGIES-GAS
1921 8TH STREET
WISCONSIN RAPIDS, WI 54494
ATTN: MR. JACOB HULBERT
E-MAIL: jacob.hulbert@we-energies.com
TELEPHONE 715-421-7277

*CENTURYLINK
19 W. FOND DU LAC STREET
RIPON, WI 54971
ATTN: MR. TIM KROEZE
E-MAIL: tim.kroeze@centurylink.com
TELEPHONE 920-748-8491
MOBILE 920-219-0112

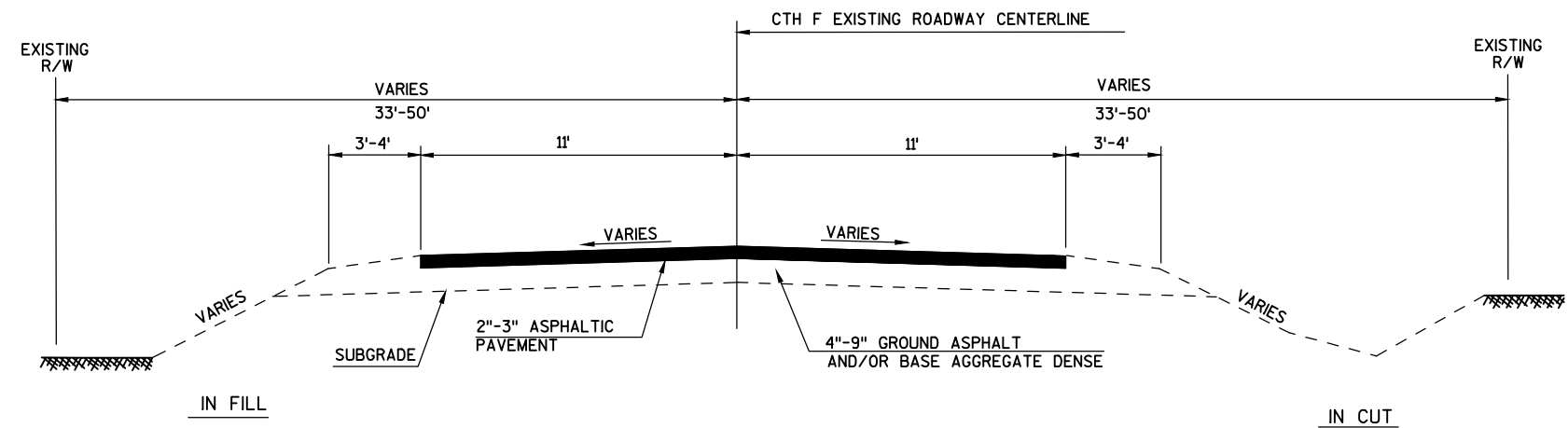
*CHARTER COMMUNICATIONS
N3760 CTH DJ
JUNEAU, WI 53039
ATTN: MR. NICK FRASE
E-MAIL: nick.frasel@transcharter.com
TELEPHONE 920-304-6797

*ANR PIPELINE
2629 SUNSET DRIVE
STEVENS POINT, WI 54482
ATTN: MR. DUANE PRONDZINSKI
E-MAIL: duane.prondzinski@transcanada.com
TELEPHONE 715-295-3143
MOBILE 715-460-4322

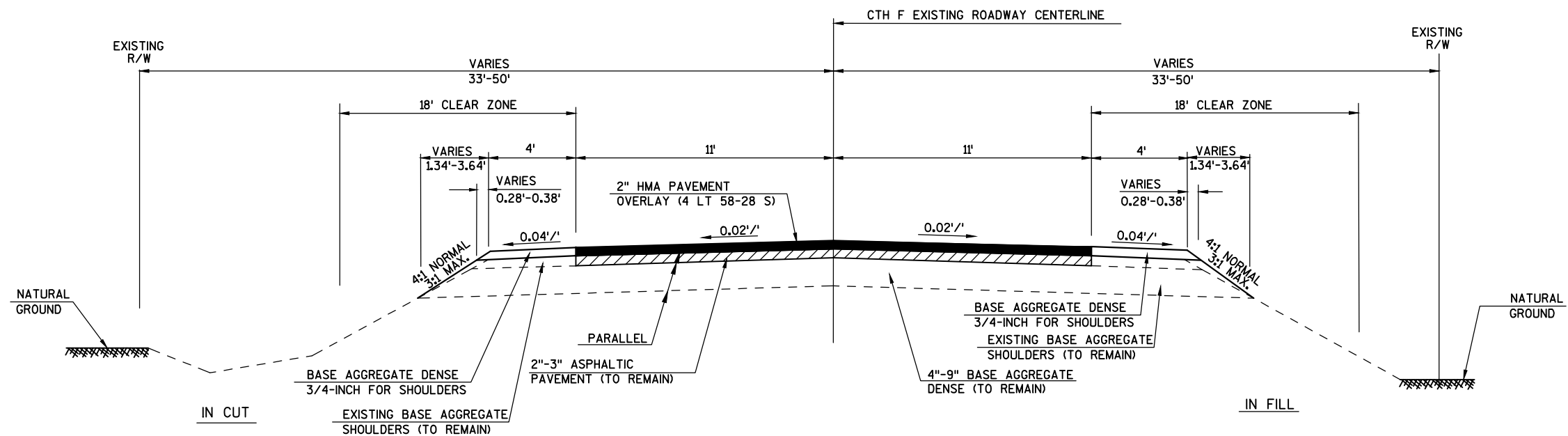
*SILVER LAKE SANITARY DISTRICT
N1702 19TH AVENUE
WAUTOMA, WI 54982
ATTN: MR. JUEGEN STUEBS
TELEPHONE 920-787-7622



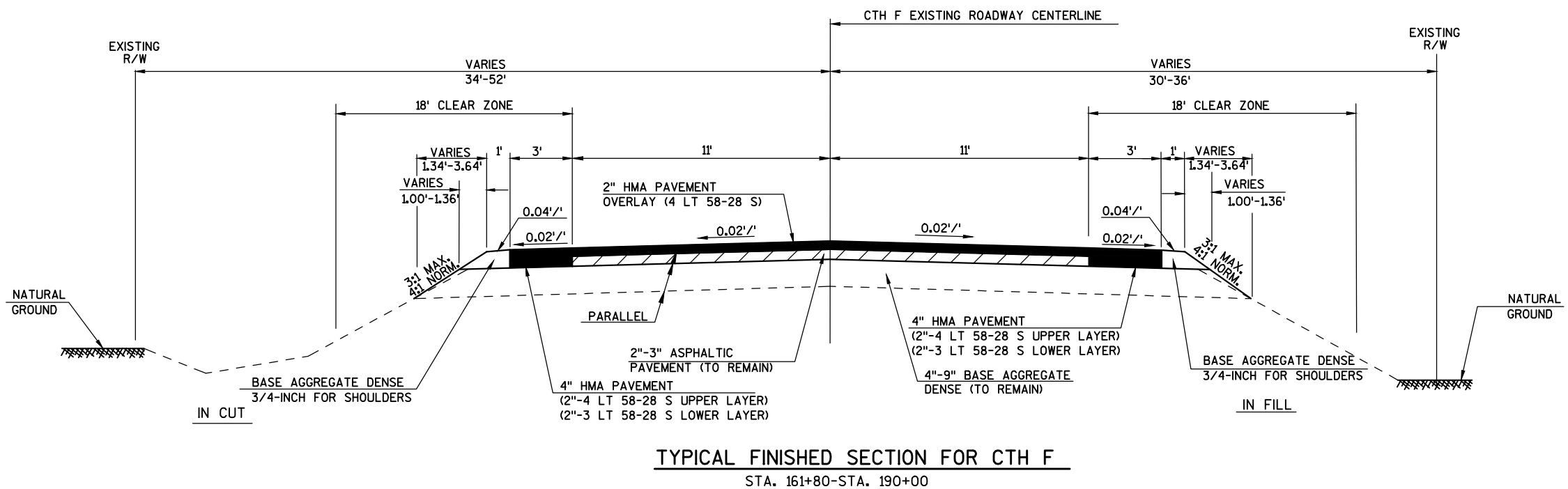
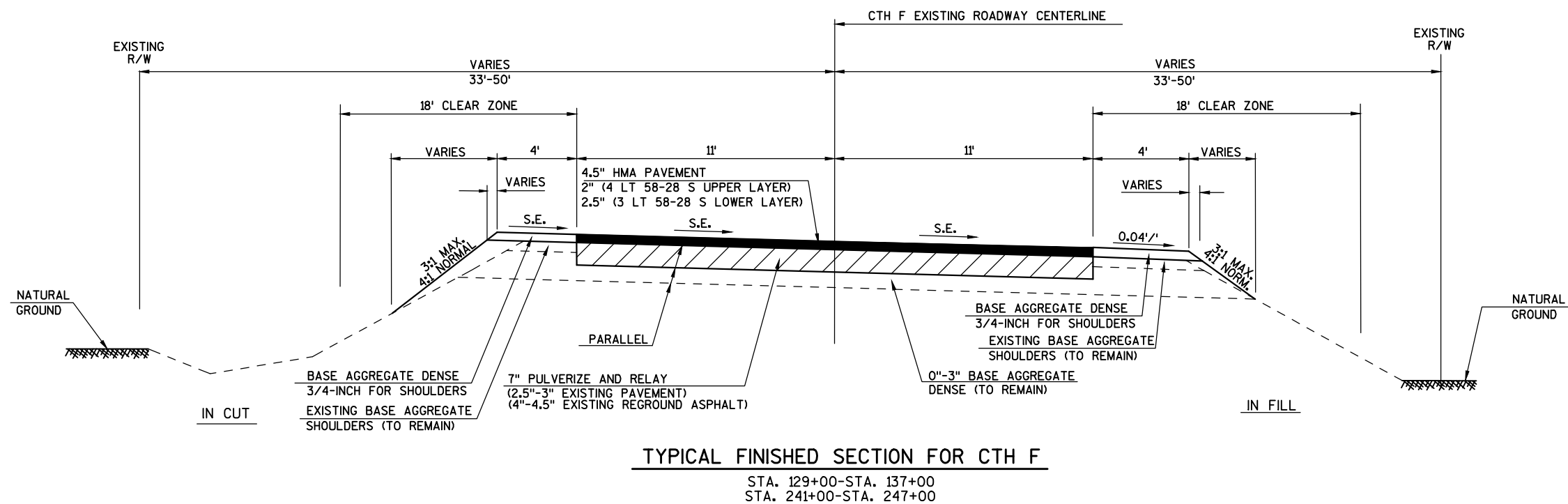
Dial 811 or (800)242-8511
www.DiggersHotline.com

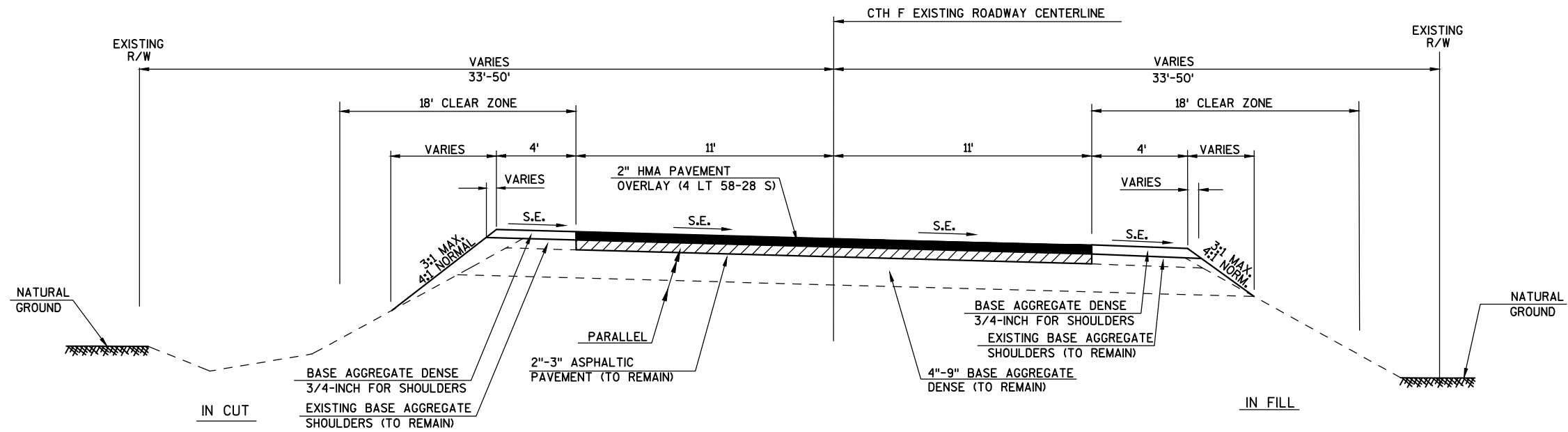


TYPICAL EXISTING SECTION FOR CTH F
STA. 100+88.80-STA. 337+00

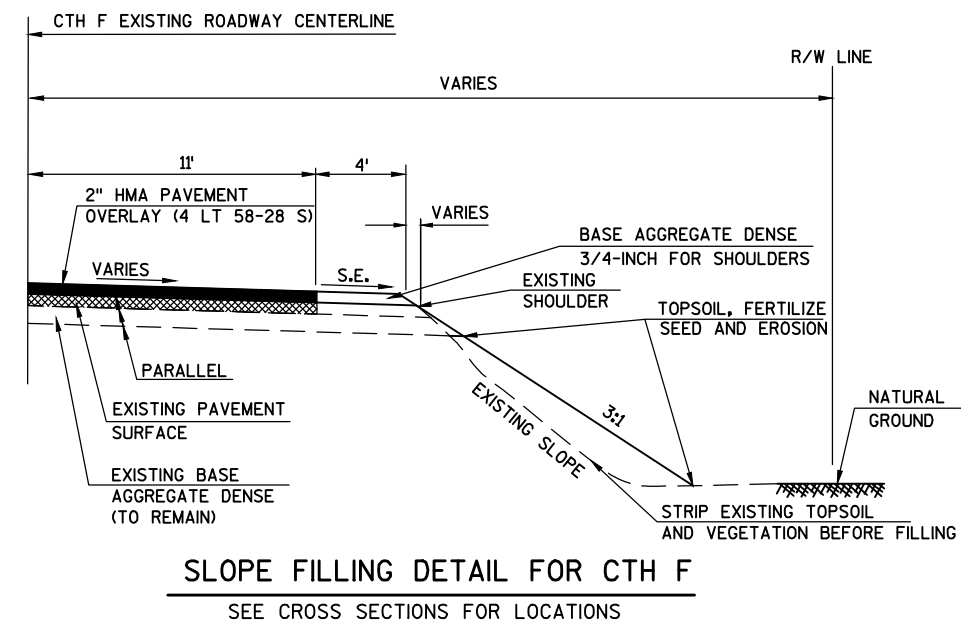
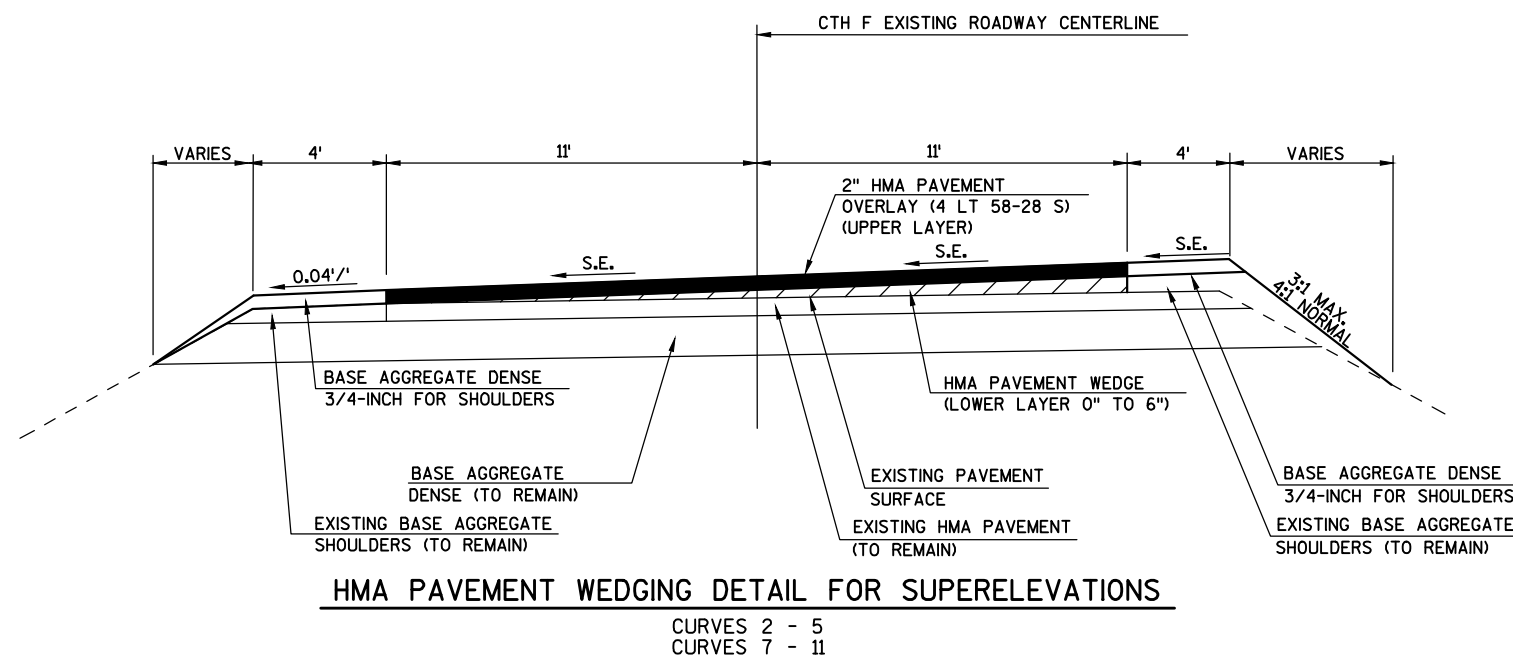


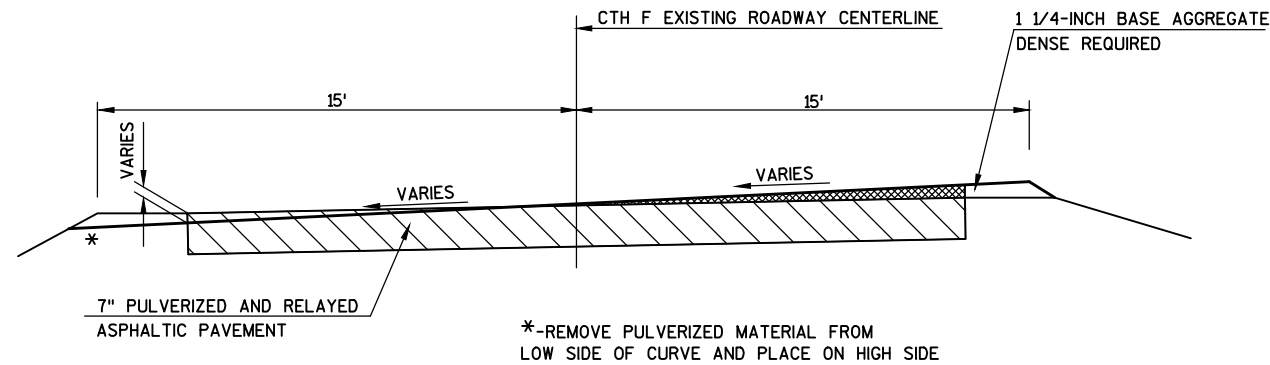
TYPICAL FINISHED SECTION FOR CTH F
STA. 100+88.80-STA. 129+00
STA. 137+00-STA. 161+80
STA. 190+00-STA. 241+00
STA. 247+00-STA. 337+00





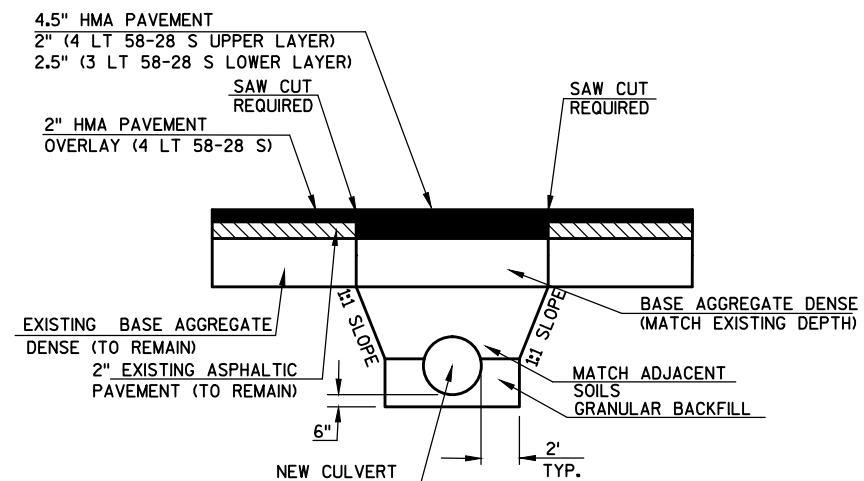
TYPICAL FINISHED SECTION FOR CTH F
(SEE PLAN SHEETS FOR LOCATIONS AND MAXIMUM SUPER ELEVATION)



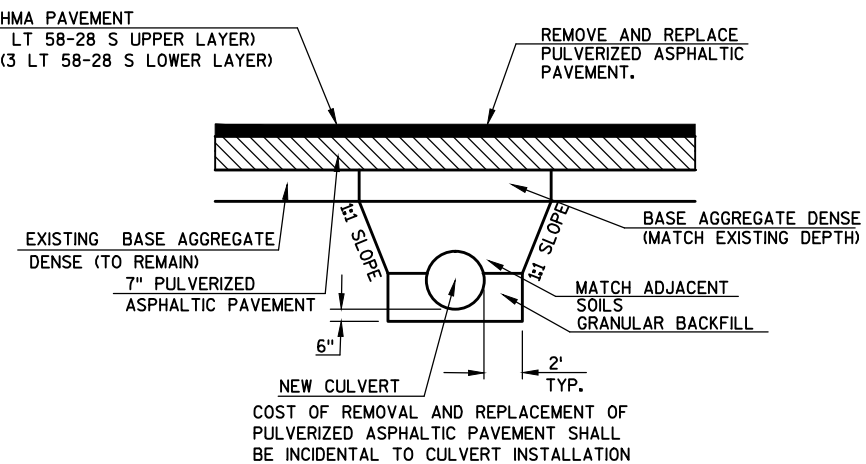


1 1/4-INCH BASE AGGREGATE DENSE WEDGING DETAIL FOR SUPERELEVATION

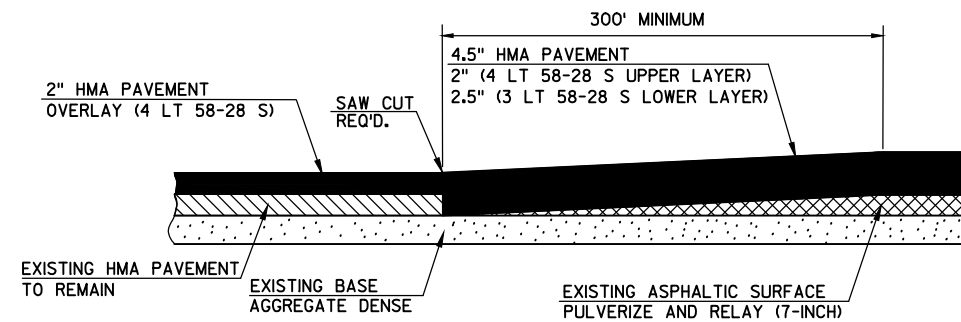
STA. 129+00 - STA. 137+00
STA. 241+00 - STA. 247+00



DETAIL FOR CULVERT REPLACEMENT IN RESURFACE AREAS

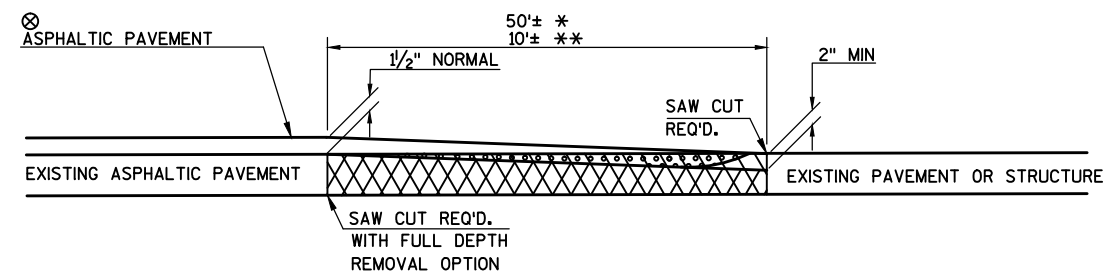


DETAIL FOR CULVERT REPLACEMENT IN PULVERIZE AREAS



JOINT DETAIL FOR PULVERIZE AND RELAY AREAS

STA. 129+00
STA. 137+00
COST OF REMOVAL OF EXCESS MATERIAL IN TAPER
AREAS SHALL BE INCIDENTAL TO PULVERIZE AND RELAY

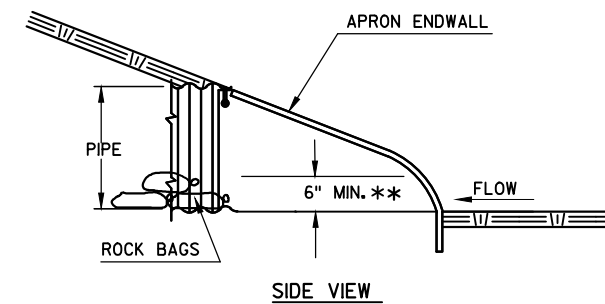
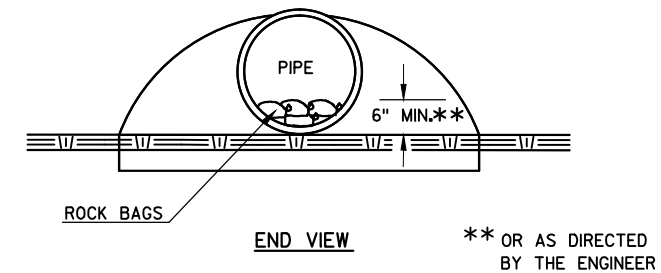


⊗ SEE TYPICAL CROSS SECTION FOR
PAVEMENT TYPE AND THICKNESS
OF INDIVIDUAL COURSES

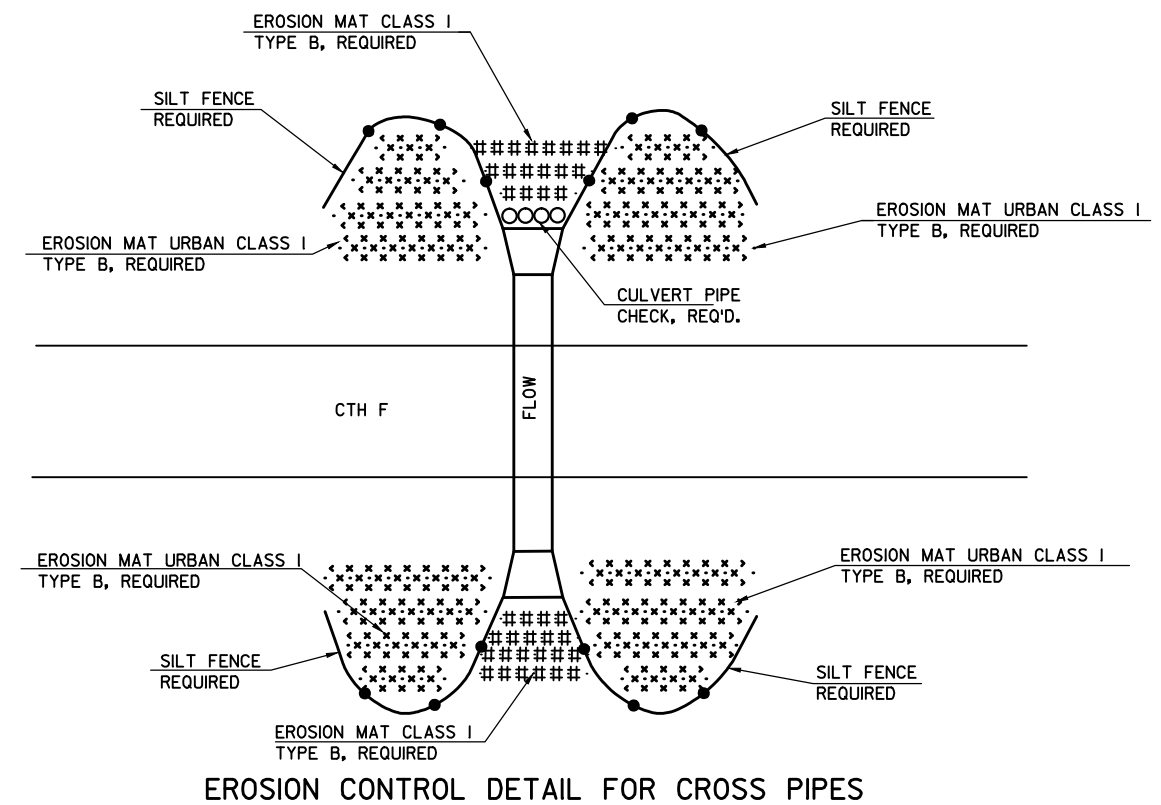
- REMOVING ASPHALTIC SURFACE, BUTT JOINTS (FULL DEPTH REMOVAL OPTIONAL)
- ASPHALTIC WEDGING (FULL DEPTH REMOVAL OPTION)
- REMOVING ASPHALTIC SURFACE, BUTT JOINTS (MILLING OPTION)

BUTT JOINT DETAIL FOR NON-MILLED ASPHALTIC PAVEMENTS

* MAINLINE
** SIDEROADS



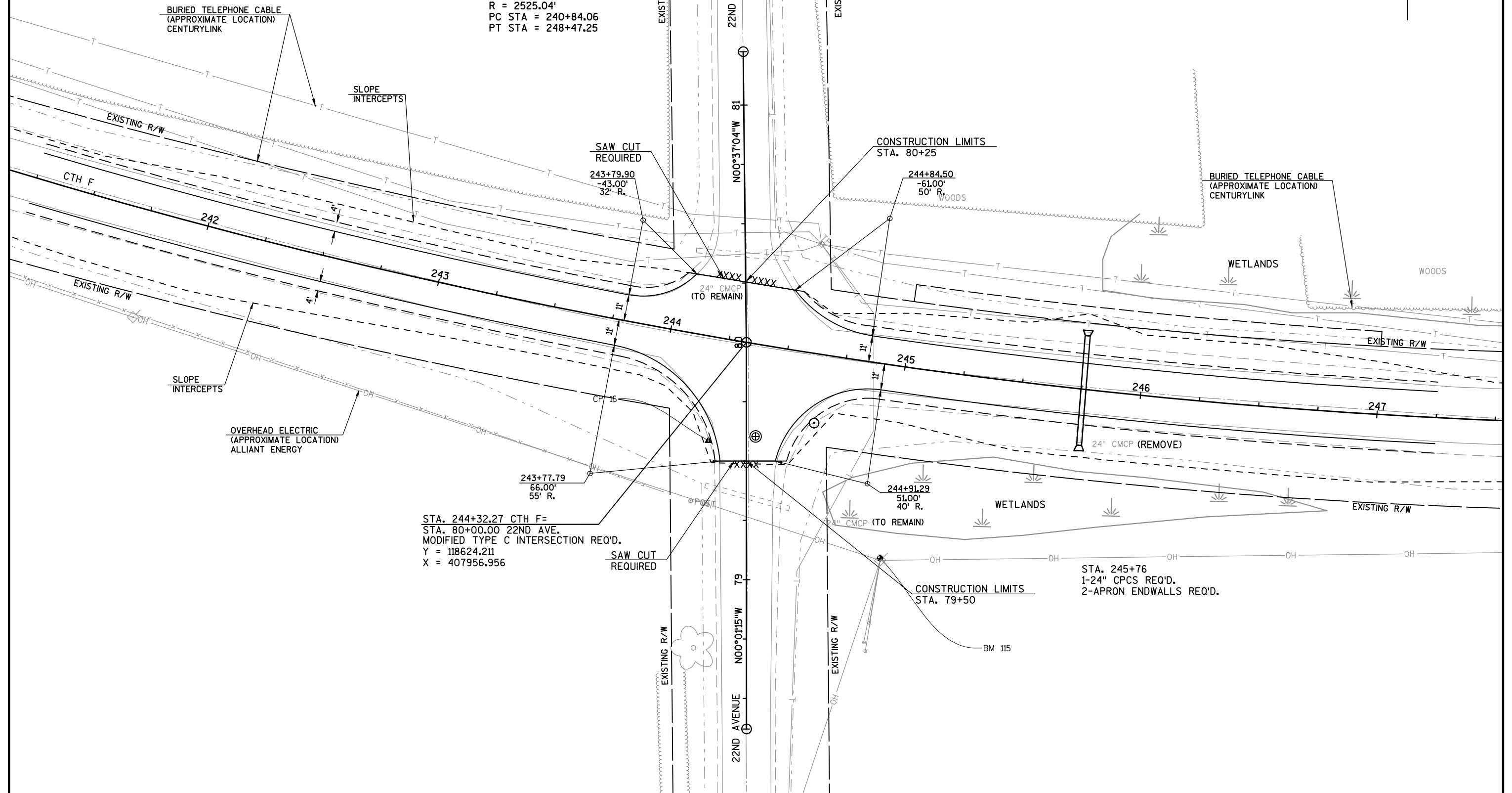
DETAIL FOR CULVERT PIPE CHECK

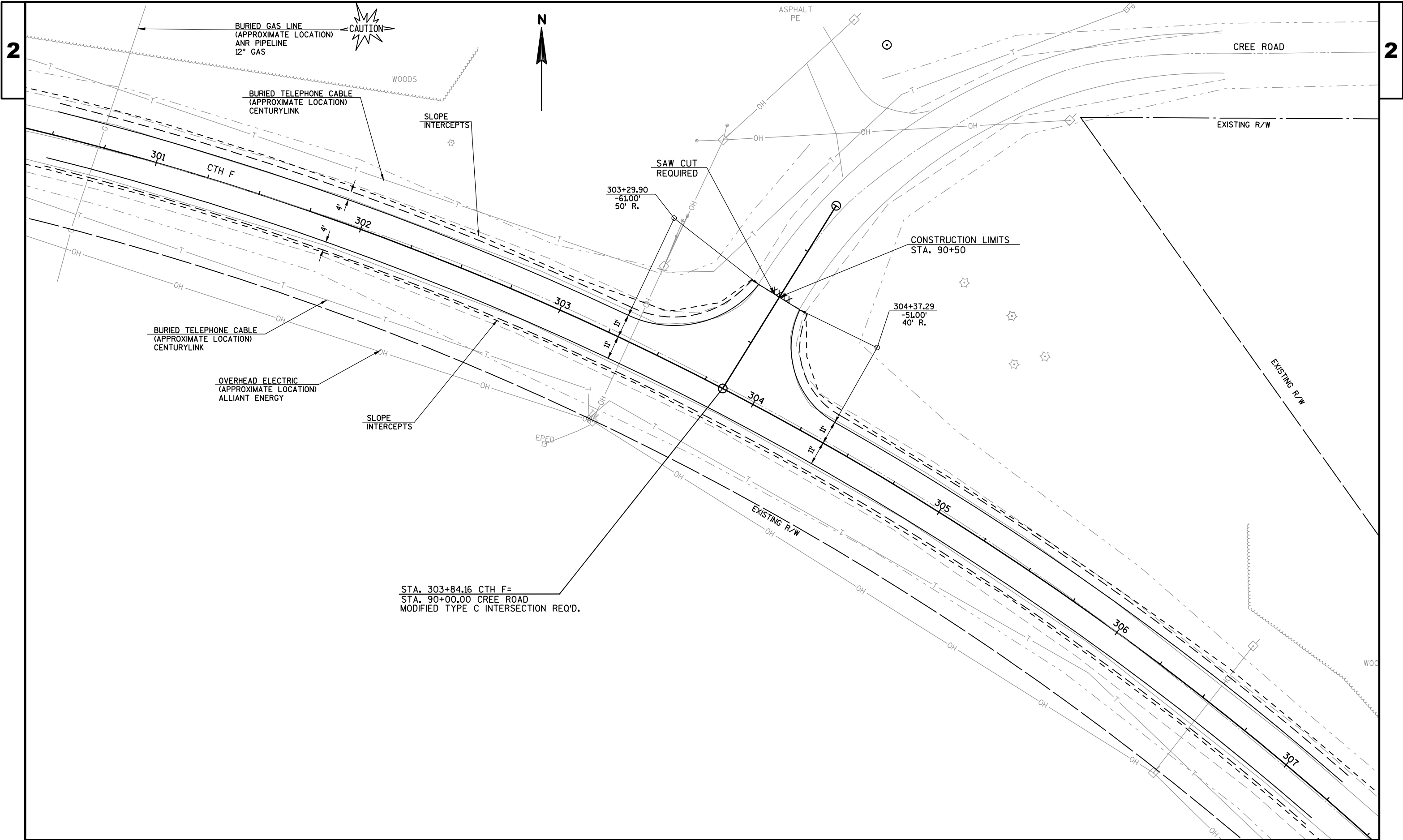


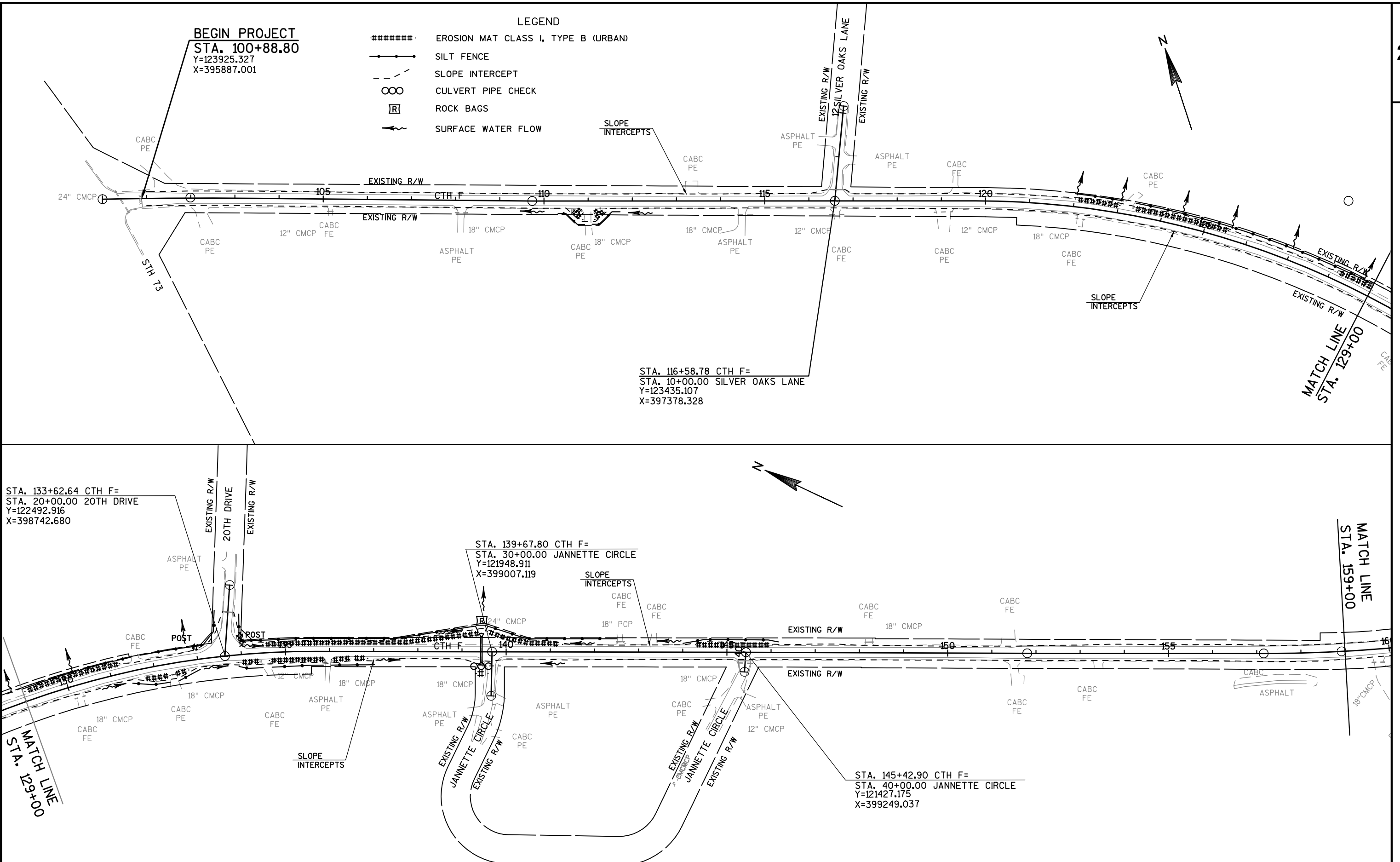
EROSION CONTROL DETAIL FOR CROSS PIPES

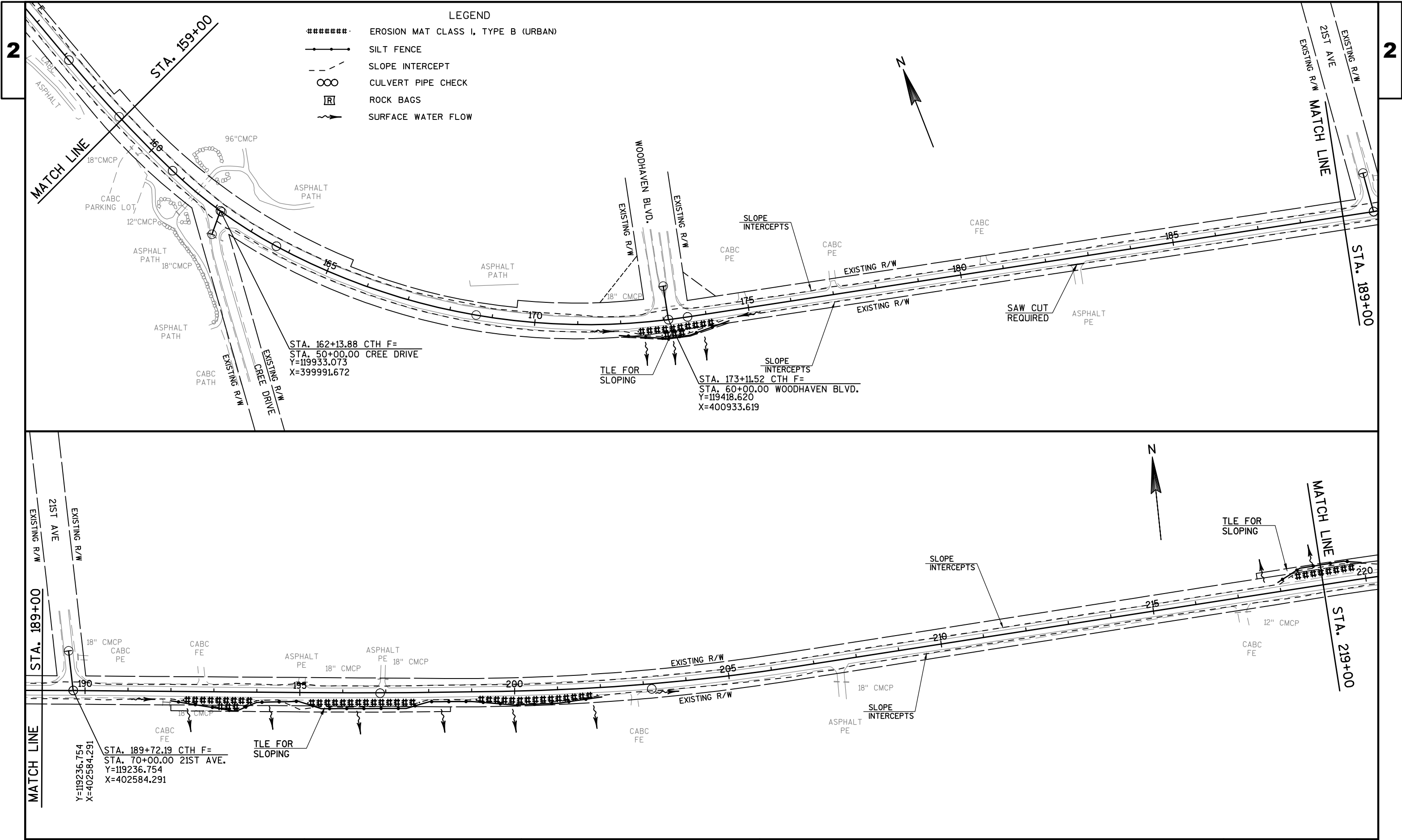


PI STA = 244+68.59
Y = 118590.127
X = 407985.457
DELTA = 17°19'04"
D = 2°16'09"
T = 384.53'
L = 763.19'
R = 2525.04'
PC STA = 240+84.06
PT STA = 248+47.25









PROJECT NO:6986-01-70

HWY:CTH F

COUNTY:WAUSHARA

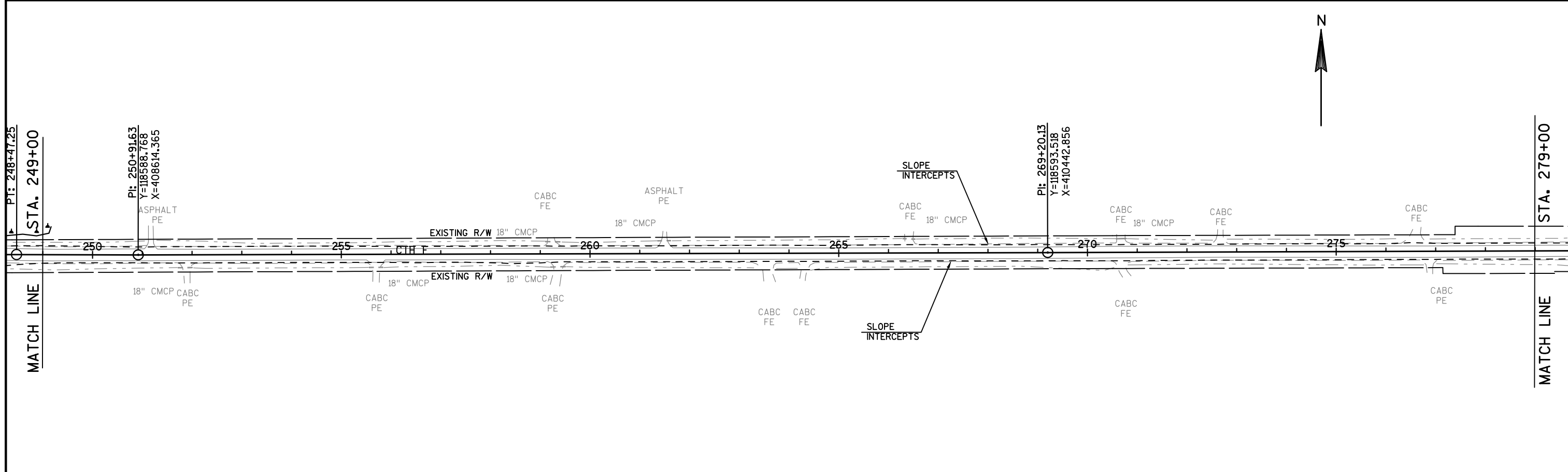
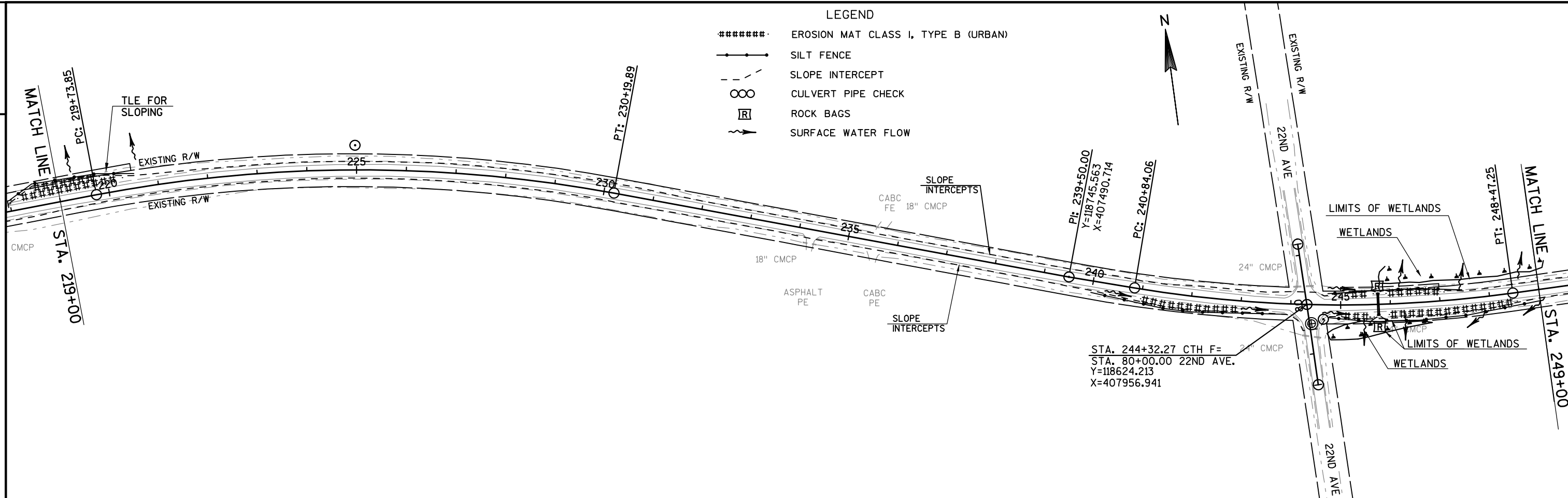
EROSION CONTROL

SHEET

E

2

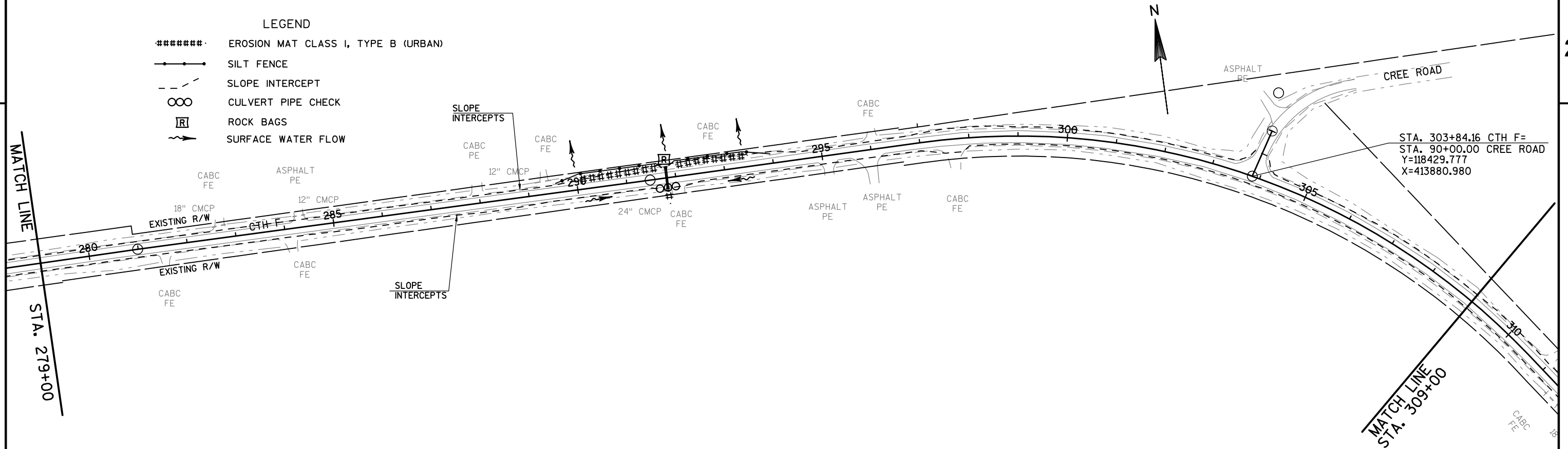
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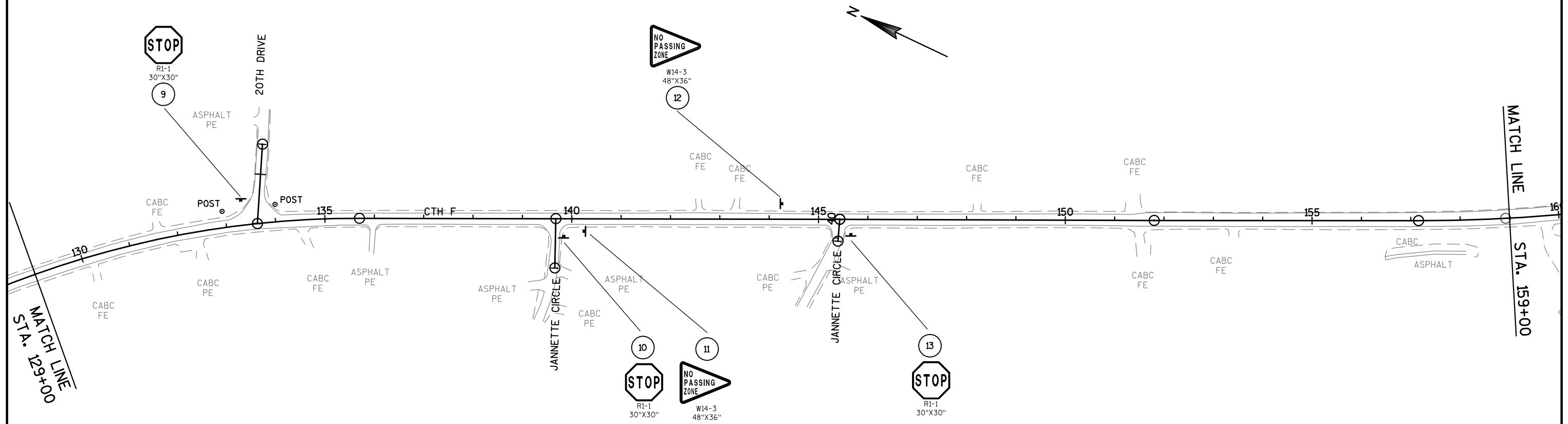
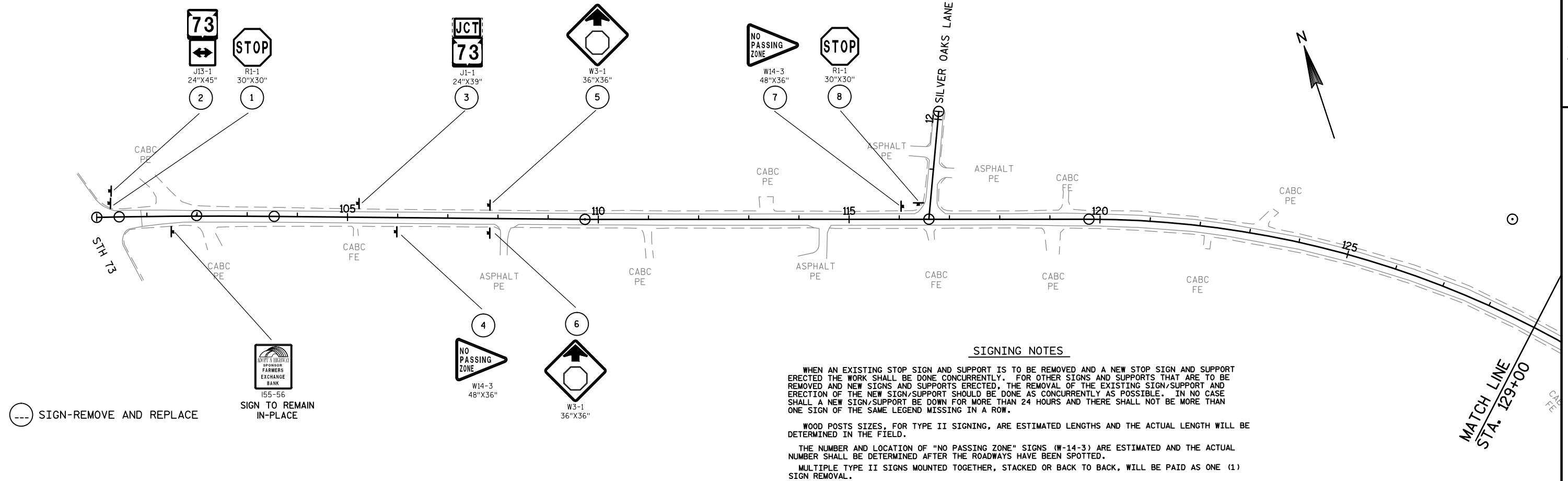


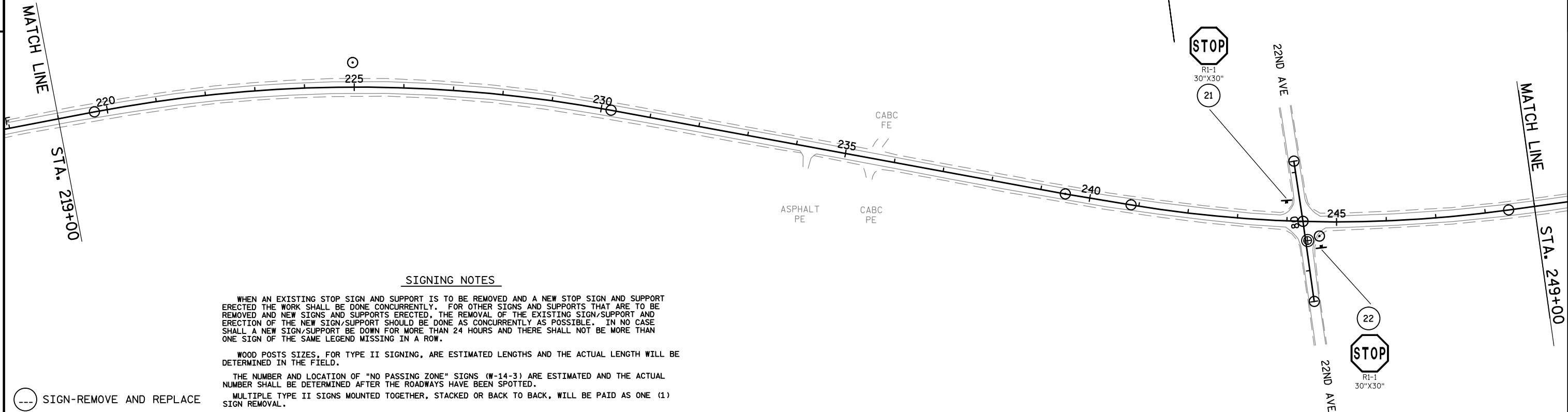
| | | | | | |
|-----------------------|-----------|-----------------|-----------------|-------|---|
| PROJECT NO:6986-01-70 | HWY:CTH F | COUNTY:WAUSHARA | EROSION CONTROL | SHEET | E |
|-----------------------|-----------|-----------------|-----------------|-------|---|

2

2







SIGNING NOTES

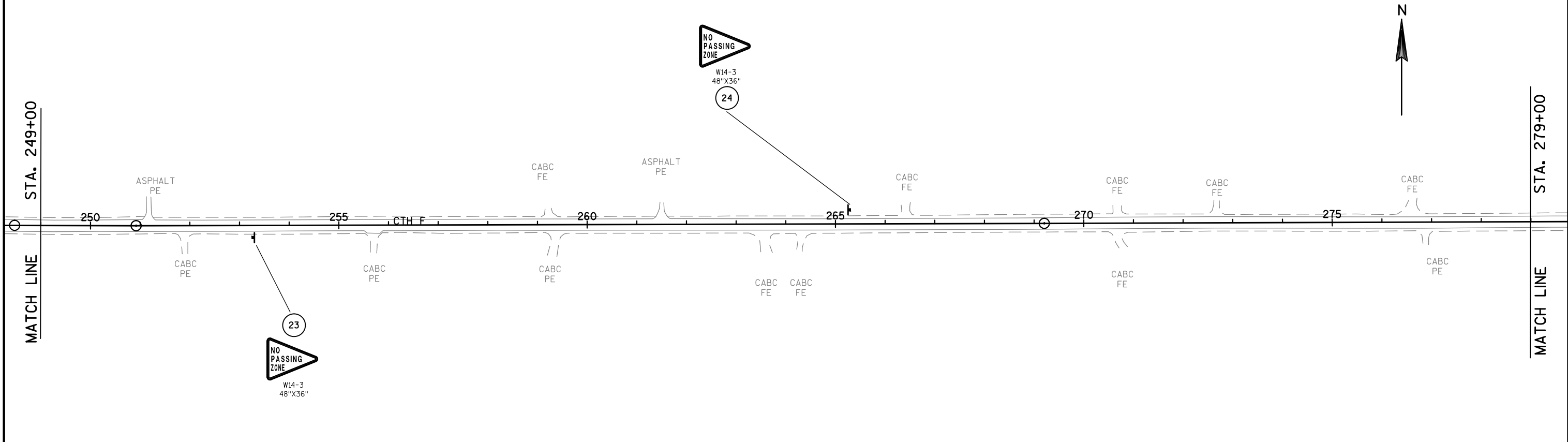
WHEN AN EXISTING STOP SIGN AND SUPPORT IS TO BE REMOVED AND A NEW STOP SIGN AND SUPPORT ERECTED THE WORK SHALL BE DONE CONCURRENTLY. FOR OTHER SIGNS AND SUPPORTS THAT ARE TO BE REMOVED AND NEW SIGNS AND SUPPORTS ERECTED, THE REMOVAL OF THE EXISTING SIGN/SUPPORT AND ERECTION OF THE NEW SIGN/SUPPORT SHOULD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

WOOD POSTS SIZES, FOR TYPE II SIGNING, ARE ESTIMATED LENGTHS AND THE ACTUAL LENGTH WILL BE DETERMINED IN THE FIELD.

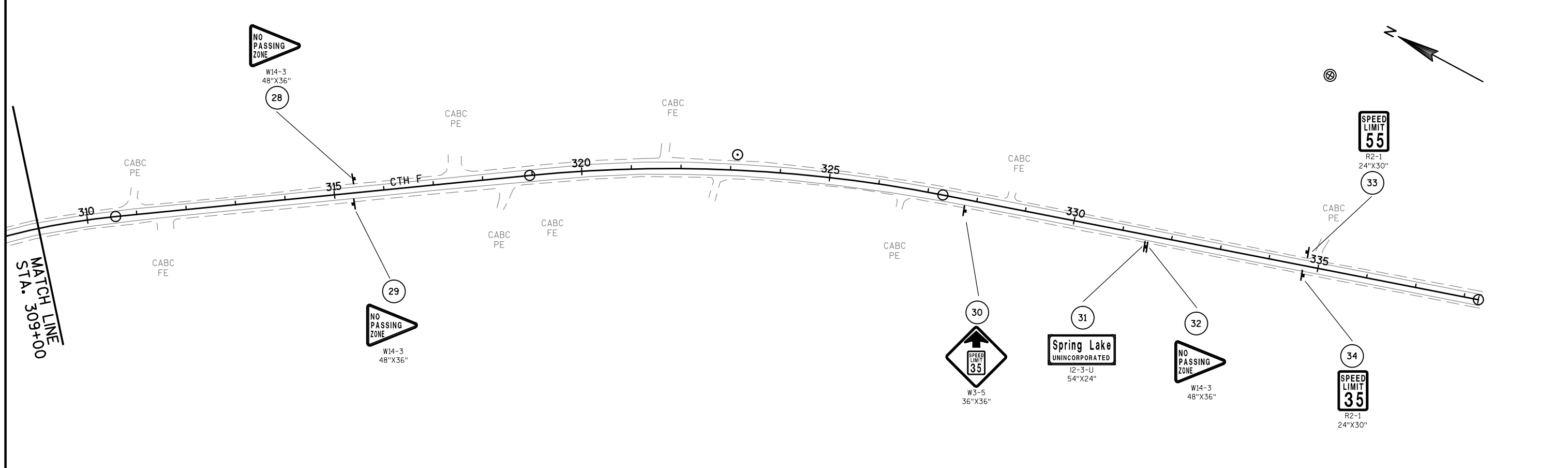
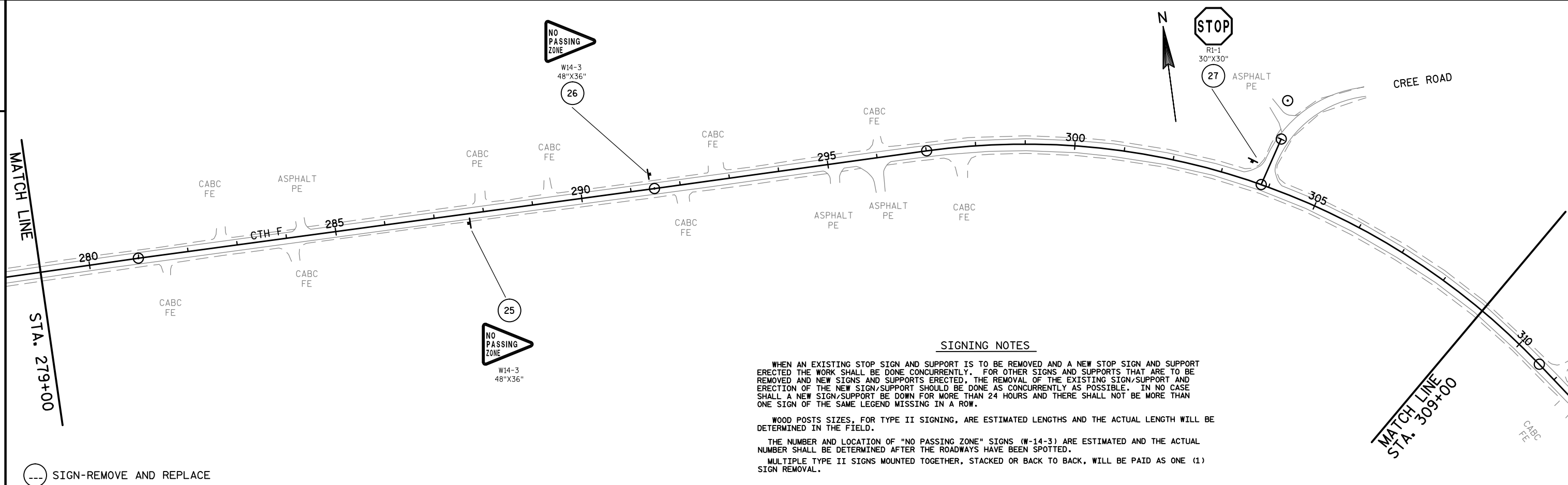
THE NUMBER AND LOCATION OF "NO PASSING ZONE" SIGNS (W-14-3) ARE ESTIMATED AND THE ACTUAL NUMBER SHALL BE DETERMINED AFTER THE ROADWAYS HAVE BEEN SPOTTED.

MULTIPLE TYPE II SIGNS MOUNTED TOGETHER, STACKED OR BACK TO BACK, WILL BE PAID AS ONE (1) SIGN REMOVAL.

--- SIGN-REMOVE AND REPLACE



| | | | | | |
|-----------------------|-----------|-----------------|-------------------|-------|---|
| PROJECT NO:6986-01-70 | HWY:CTH F | COUNTY:WAUSHARA | PERMANENT SIGNING | SHEET | E |
|-----------------------|-----------|-----------------|-------------------|-------|---|



| | | | | | |
|-----------------------|-----------|-----------------|-------------------|-------|---|
| PROJECT NO:6986-01-70 | HWY:CTH F | COUNTY:WAUSHARA | PERMANENT SIGNING | SHEET | E |
|-----------------------|-----------|-----------------|-------------------|-------|---|

Estimate Of Quantities

6986-01-70

| Line | Item | Item Description | Unit | Total | Qty |
|------|------------|---|------|------------|------------|
| 0002 | 201.0105 | Clearing | STA | 15.000 | 15.000 |
| 0004 | 201.0205 | Grubbing | STA | 15.000 | 15.000 |
| 0006 | 203.0100 | Removing Small Pipe Culverts | EACH | 6.000 | 6.000 |
| 0008 | 204.0115 | Removing Asphaltic Surface Butt Joints | SY | 690.000 | 690.000 |
| 0010 | 205.0100 | Excavation Common | CY | 446.000 | 446.000 |
| 0012 | 205.9015.S | Grading Shaping and Finishing Intersection (location) 01. 20th Avenue | LS | 1.000 | 1.000 |
| 0014 | 205.9015.S | Grading Shaping and Finishing Intersection (location) 02. 22nd Avenue | LS | 1.000 | 1.000 |
| 0016 | 205.9015.S | Grading Shaping and Finishing Intersection (location) 03. Cree Road | LS | 1.000 | 1.000 |
| 0018 | 208.0100 | Borrow | CY | 2,500.000 | 2,500.000 |
| 0020 | 211.0400 | Prepare Foundation for Asphaltic Shoulders | STA | 28.000 | 28.000 |
| 0022 | 213.0100 | Finishing Roadway (project) 01. 6986-01-79 | EACH | 1.000 | 1.000 |
| 0024 | 305.0110 | Base Aggregate Dense 3/4-Inch | TON | 2,900.000 | 2,900.000 |
| 0026 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 2,400.000 | 2,400.000 |
| 0028 | 325.0100 | Pulverize and Relay | SY | 3,430.000 | 3,430.000 |
| 0030 | 440.4410 | Incentive IRI Ride | DOL | 18,000.000 | 18,000.000 |
| 0032 | 455.0605 | Tack Coat | GAL | 4,288.000 | 4,288.000 |
| 0034 | 460.2000 | Incentive Density HMA Pavement | DOL | 4,850.000 | 4,850.000 |
| 0036 | 460.5223 | HMA Pavement 3 LT 58-28 S | TON | 865.000 | 865.000 |
| 0038 | 460.5224 | HMA Pavement 4 LT 58-28 S | TON | 7,420.000 | 7,420.000 |
| 0040 | 465.0120 | Asphaltic Surface Driveways and Field Entrances | TON | 20.000 | 20.000 |
| 0042 | 520.1024 | Apron Endwalls for Culvert Pipe 24-Inch | EACH | 12.000 | 12.000 |
| 0044 | 521.3124 | Culvert Pipe Corrugated Steel 24-Inch | LF | 288.000 | 288.000 |
| 0046 | 618.0100 | Maintenance And Repair of Haul Roads (project) 01. 6986-01-70 | EACH | 1.000 | 1.000 |
| 0048 | 619.1000 | Mobilization | EACH | 1.000 | 1.000 |
| 0050 | 624.0100 | Water | MGAL | 71.000 | 71.000 |
| 0052 | 625.0100 | Topsoil | SY | 12,760.000 | 12,760.000 |
| 0054 | 627.0200 | Mulching | SY | 13,677.000 | 13,677.000 |
| 0056 | 628.1504 | Silt Fence | LF | 7,750.000 | 7,750.000 |
| 0058 | 628.1520 | Silt Fence Maintenance | LF | 15,500.000 | 15,500.000 |
| 0060 | 628.1905 | Mobilizations Erosion Control | EACH | 3.000 | 3.000 |
| 0062 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 4.000 | 4.000 |
| 0064 | 628.2004 | Erosion Mat Class I Type B | SY | 100.000 | 100.000 |
| 0066 | 628.2008 | Erosion Mat Urban Class I Type B | SY | 7,450.000 | 7,450.000 |
| 0068 | 628.7555 | Culvert Pipe Checks | EACH | 28.000 | 28.000 |
| 0070 | 628.7570 | Rock Bags | EACH | 42.000 | 42.000 |
| 0072 | 629.0210 | Fertilizer Type B | CWT | 9.000 | 9.000 |
| 0074 | 630.0120 | Seeding Mixture No. 20 | LB | 341.000 | 341.000 |

Estimate Of Quantities

6986-01-70

| Line | Item | Item Description | Unit | Total | Qty |
|------|----------|---|------|------------|------------|
| 0076 | 630.0200 | Seeding Temporary | LB | 13.000 | 13.000 |
| 0078 | 630.0300 | Seeding Borrow Pit | LB | 13.000 | 13.000 |
| 0080 | 633.5200 | Markers Culvert End | EACH | 12.000 | 12.000 |
| 0082 | 634.0614 | Posts Wood 4x6-Inch X 14-FT | EACH | 30.000 | 30.000 |
| 0084 | 634.0616 | Posts Wood 4x6-Inch X 16-FT | EACH | 4.000 | 4.000 |
| 0086 | 637.2210 | Signs Type II Reflective H | SF | 89.980 | 89.980 |
| 0088 | 637.2230 | Signs Type II Reflective F | SF | 117.000 | 117.000 |
| 0090 | 638.2602 | Removing Signs Type II | EACH | 33.000 | 33.000 |
| 0092 | 638.3000 | Removing Small Sign Supports | EACH | 33.000 | 33.000 |
| 0094 | 642.5001 | Field Office Type B | EACH | 1.000 | 1.000 |
| 0096 | 643.0420 | Traffic Control Barricades Type III | DAY | 225.000 | 225.000 |
| 0098 | 643.0900 | Traffic Control Signs | DAY | 2,115.000 | 2,115.000 |
| 0100 | 643.5000 | Traffic Control | EACH | 1.000 | 1.000 |
| 0102 | 646.1020 | Marking Line Epoxy 4-Inch | LF | 46,600.000 | 46,600.000 |
| 0104 | 646.4520 | Marking Line Same Day Epoxy 4-Inch | LF | 30,100.000 | 30,100.000 |
| 0106 | 648.0100 | Locating No-Passing Zones | MI | 4.500 | 4.500 |
| 0108 | 649.0120 | Temporary Marking Line Epoxy 4-Inch | LF | 600.000 | 600.000 |
| 0110 | 650.4500 | Construction Staking Subgrade | LF | 181.000 | 181.000 |
| 0112 | 650.5000 | Construction Staking Base | LF | 181.000 | 181.000 |
| 0114 | 650.6000 | Construction Staking Pipe Culverts | EACH | 6.000 | 6.000 |
| 0116 | 650.8000 | Construction Staking Resurfacing Reference | LF | 23,612.000 | 23,612.000 |
| 0118 | 650.9910 | Construction Staking Supplemental Control (project) 01. 6986-01-70 | LS | 1.000 | 1.000 |
| 0120 | 650.9920 | Construction Staking Slope Stakes | LF | 7,200.000 | 7,200.000 |
| 0122 | 690.0150 | Sawing Asphalt | LF | 944.000 | 944.000 |
| 0124 | ASP.1T0A | On-the-Job Training Apprentice at \$5.00/HR | HRS | 300.000 | 300.000 |
| 0126 | ASP.1T0G | On-the-Job Training Graduate at \$5.00/HR | HRS | 600.000 | 600.000 |
| 0128 | SPV.0060 | Special 01. Grading, Shaping, and Topsoiling for Cross Drain Restoration | EACH | 6.000 | 6.000 |

CLEARING AND GRUBBING

| STATION | TO | STATION | LOCATION | 201.0105 CLEARING STA | 201.0205 GRUBBING STA | COMMENT |
|---------------|----|---------|-----------|-----------------------------|-----------------------------|--------------------------------------|
| 128+00 | - | 131+00 | CTH F, LT | 3 | 3 | SLOPE FILLING |
| 137+00 | - | 141+00 | CTH F, LT | 4 | 4 | SLOPE FILLING / CULVERT INSTALLATION |
| 310+00 | - | 311+00 | CTH F, LT | 1 | 1 | SLOPE FILLING |
| 312+00 | - | 314+00 | CTH F, LT | 2 | 2 | SLOPE FILLING / CULVERT INSTALLATION |
| 325+00 | - | 327+00 | CTH F, LT | 2 | 2 | SLOPE FILLING |
| UNDISTRIBUTED | | | | 3 | 3 | |
| TOTALS | | | | 15 | 15 | |

REMOVING SMALL PIPE CULVERTS

| STATION | LOCATION | TYPE | DIAMETER INCH | LENGTH FEET | 203.0100 EACH |
|---------|----------|------|------------------|----------------|------------------|
| 139+43 | CTH F | CMP | 24 | 50 | 1 |
| 245+77 | CTH F | CMP | 24 | 45 | 1 |
| 291+82 | CTH F | CMP | 24 | 45 | 1 |
| 313+30 | CTH F | CMP | 24 | 55 | 1 |
| 331+38 | CTH F | CMP | 24 | 44 | 1 |
| 332+28 | CTH F | CMP | 24 | 50 | 1 |
| TOTAL | | | | | 6 |

EARTHWORK SUMMARY

| Division | From/To Station | Location | Common Excavation (1) (Item # 205.0100) | Unexpanded Fill | Expanded Fill (2) | Mass Ordinate +/- (3) | Waste | Borrow (item #208.0100) | Comment: |
|------------------|-----------------|----------|--|-----------------|-------------------|--------------------------|-------|--------------------------------|----------|
| | | | Cut (2) | | Factor 1.30 | | | | |
| 1 | 100+88 - 141+00 | CTH F | 50 | 812 | 1,056 | -1,006 | 0 | 1,006 | |
| | 141+00 - 167+00 | CTH F | 54 | 124 | 161 | -107 | 0 | 107 | |
| | 167+00 - 174+00 | CTH F | 17 | 81 | 105 | -88 | 0 | 88 | |
| | 171+00 - 207+00 | CTH F | 13 | 320 | 416 | -403 | 0 | 403 | |
| | 207+00 - 221+50 | CTH F | 0 | 136 | 177 | -177 | 0 | 177 | |
| | 221+50 - 248+50 | CTH F | 61 | 305 | 397 | -336 | 0 | 336 | |
| | 248+50 - 294+00 | CTH F | 76 | 131 | 170 | -94 | 0 | 94 | |
| | 294+00 - 306+00 | CTH F | 20 | 49 | 64 | -44 | 0 | 44 | |
| | 306+00 - 314+50 | CTH F | 6 | 193 | 251 | -245 | 0 | 245 | |
| | 314+50 - 337+00 | CTH F | 149 | 115 | 150 | -1 | 0 | 1 | |
| Division 1 Total | | | 446 | 2,266 | 2,946 | -2,500 | 0 | 2,500 | |
| Total Common Exc | | | | | | | | | |

1) Common Excavation includes existing asphalt and concrete. Item number 205.0100
2) Expanded Fill Factor = 1.30, Expanded Fill = Unexpanded Fill * Fill Factor
3) The Mass Ordinate + or - Qty calculated for the section. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the section.

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

REMOVING ASPHALTIC SURFACE BUTT JOINTS

| STATION | TO | STATION | LOCATION | 204.0115 SY |
|---------|----|---------|---------------------|----------------|
| 100+88 | - | 101+23 | CTH F | 180 |
| 336+65 | - | 337+00 | CTH F | 122 |
| | | | SILVER OAKS LANE | 42 |
| | | | JANNETTE CIRCLE (N) | 33 |
| | | | JANNETTE CIRCLE (S) | 31 |
| | | | CREE DRIVE | 67 |
| | | | WOODHAVEN BLVD | 89 |
| | | | 21ST AVENUE | 76 |
| | | | CREE ROAD | 50 |
| TOTAL | | | | 690 |

GRADING & SHAPING INTERSECTION

| LOCATION | 205.9015.S.01 LS | 205.9015.S.02 LS | 205.9015.S.03 LS |
|-------------|---------------------|---------------------|---------------------|
| 20TH DRIVE | 1 | - | - |
| 22ND AVENUE | - | 1 | - |
| CREE ROAD | - | - | 1 |
| TOTAL | 1 | 1 | 1 |

BASE AGGREGATE DENSE AND WATER

| STATION | TO | STATION | LOCATION | 305.0110 3/4-INCH TON | 305.0120 1 1/4-INCH TON | 624.0100 WATER MGAL | |
|---------|----|---------|---------------------|-----------------------------|-------------------------------|---------------------------|-----------|
| 100+88 | - | 161+80 | CTH F | 700 | - | 7 | PULVERIZE |
| 161+80 | | 190+00 | CTH F | 400 | - | 20 | |
| 190+00 | | 337+00 | CTH F | 1,600 | - | 16 | |
| | | | CTH F WEDGING AREAS | - | 1,700 | 17 | |
| | | | CULVERT PIPES | - | 700 | 7 | |
| | | | DRIVEWAYS | 200 | - | 4 | |
| TOTALS | | | | 2,900 | 2,400 | 71 | |

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

| STATION | TO | STATION | LOCATION | 211.0400 STA |
|---------|----|---------|----------------|-----------------|
| 161+80 | - | 190+00 | CTH F, LT & RT | 28 |
| TOTAL | | | | 28 |

PULVERIZE AND RELAY

| STATION | TO | STATION | LOCATION | 325.0100 S.Y. |
|---------|----|---------|----------|------------------|
| 129+00 | - | 137+00 | CTH F | 1,960 |
| 241+00 | - | 247+00 | CTH F | 1,470 |
| TOTAL | | | | 3,430 |

INCENTIVE IRI RIDE

| STATION | TO | STATION | LOCATION | 460.2000 DOL |
|---------|----|---------|----------|-----------------|
| 100+88 | - | 337+00 | CTH F | 18,000 |
| TOTAL | | | | 18,000 |

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

HMA PAVEMENT ITEMS

| STATION | TO | STATION | LOCATION | 460.2000 INCENTIVE DENSITY HMA PAVEMENT DOL | 460.5223 HMA PAVEMENT PAVEMENT 3 LT 58-28 S TON | 460.5224 HMA PAVEMENT PAVEMENT 4 LT 58-28 S TON | 455.0605 TACK COAT GAL | 465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON | REMARKS |
|---------|----|---------|---------------------|---|---|---|---------------------------------|--|----------------------|
| 100+88 | - | 129+00 | CTH F | 510 | - | 790 | 412 | - | 2" HMA OVERLAY |
| 129+00 | - | 137+00 | CTH F | 330 | 280 | 225 | 117 | - | 4.5" HMA PAVEMENT |
| 137+00 | - | 241+00 | CTH F | 1,870 | - | 2,920 | 1,525 | - | 2" HMA OVERLAY |
| 241+00 | - | 247+00 | CTH F | 240 | 210 | 170 | 88 | - | 4.5" HMA PAVEMENT |
| 247+00 | - | 337+00 | CTH F | 1,620 | - | 2,530 | 1,320 | - | 2" HMA OVERLAY |
| 161+80 | - | 190+00 | CTH F | 280 | 240 | 200 | 113 | - | 4" HMA SHOULDER |
| 120+50 | - | 129+00 | CTH F, CURVE 2 | - | - | 120 | 125 | - | PAVEMENT WEDGING |
| 158+00 | - | 162+50 | CTH F, CURVE 3 | - | - | 90 | 66 | - | PAVEMENT WEDGING |
| 162+50 | - | 174+00 | CTH F, CURVES 4 & 5 | - | - | 80 | 169 | - | PAVEMENT WEDGING |
| 199+50 | - | 207+50 | CTH F, CURVE 7 | - | - | 60 | 117 | - | PAVEMENT WEDGING |
| 219+00 | - | 221+50 | CTH F, CURVE 8 | - | - | 20 | 37 | - | PAVEMENT WEDGING |
| 240+50 | - | 241+00 | CTH F, CURVE 9 | - | - | 10 | 9 | - | PAVEMENT WEDGING |
| 297+50 | - | 303+00 | CTH F, CURVE 10 | - | - | 40 | 81 | - | PAVEMENT WEDGING |
| 325+00 | - | 327+50 | CTH F, CURVE 11 | - | - | 20 | 37 | - | PAVEMENT WEDGING |
| | | | SILVER OAKS LANE | - | - | 10 | 5 | - | 2" HMA PAVEMENT |
| | | | 20TH DRIVE | - | 50 | 40 | 20 | - | 4.5" HMA PAVEMENT |
| | | | JANNETTE CIRCLE (N) | - | - | 10 | 3 | - | 2" HMA PAVEMENT |
| | | | JANNETTE CIRCLE (S) | - | - | 0 | 1 | - | 2" HMA PAVEMENT |
| | | | CREE DRIVE | - | - | 10 | 6 | - | 2" HMA PAVEMENT |
| | | | WOODHAVEN BLVD | - | - | 10 | 5 | - | 2" HMA PAVEMENT |
| | | | 21ST AVENUE | - | - | 10 | 5 | - | 2" HMA PAVEMENT |
| | | | 22ND AVENUE (S) | - | 30 | 25 | 11 | - | 4.5" HMA PAVEMENT |
| | | | 22ND AVENUE (N) | - | 15 | 10 | 5 | - | 4.5" HMA PAVEMENT |
| | | | CREE ROAD | - | 25 | 20 | 11 | - | 4.5" HMA PAVEMENT |
| | | | CTH F DRIVEWAYS | - | - | - | - | 20 | |
| | | | CULVERTS | - | 15 | - | - | - | HMA 2.5" LOWER LAYER |
| TOTALS | | | | 4,850 | 865 | 7,420 | 4,288 | 20 | |

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

CULVERT PIPE

| STATION | LOCATION | 520.1024 | 521.3124 | 633.5200 | THICKNESS | EXISTING | | PROPOSED | | FLOWS | OFFSETS | |
|---------|----------|--|--|-----------------------------------|-----------|----------|--------|----------|--------|---------|---------|-------|
| | | APRON ENDWALLS CULVERT PIPE 24-INCH EACH | CULVERT PIPE CORRUGATED STEEL 24-INCH LF | MARKERS CULVERT END EACH | | INLET | OUTLET | INLET | OUTLET | | LEFT | RIGHT |
| 139+43 | CTH F | 2 | 68 | 2 | 0.064 | 899.10 | 893.06 | 899.90 | 897.60 | RT - LT | 46.1' | 27.2' |
| 245+76 | CTH F | 2 | 46 | 2 | 0.064 | 841.49 | 841.11 | 841.40 | 841.30 | LT - RT | 25.8' | 26.2' |
| 291+82 | CTH F | 2 | 38 | 2 | 0.064 | 851.81 | 849.72 | 852.60 | 851.00 | RT - LT | 24.0' | 20.8' |
| 313+30 | CTH F | 2 | 42 | 2 | 0.064 | 832.10 | 831.11 | 832.10 | 830.70 | RT - LT | 26.6' | 22.3' |
| 331+38 | CTH F | 2 | 44 | 2 | 0.064 | 822.08 | 821.82 | 822.35 | 821.70 | RT - LT | 24.0' | 20.0' |
| 332+28 | CTH F | 2 | 50 | 2 | 0.064 | 821.32 | 820.96 | 821.29 | 820.97 | LT - RT | 24.0' | 26.0' |
| TOTALS | | 12 | 288 | 12 | | | | | | | | |

REMARKS:
-FINAL LOCATION TO BE DETERMINED BY THE ENGINEER.
-OFFSETS ARE FROM REFERENCE LINE TO END OF ENDWALLS.
-CULVERT PIPE LENGTHS = DISTANCE BETWEEN OFFSETS - APRON ENDWALL LENGTH

MOBILIZATIONS EROSION CONTROL

| LOCATION | 628.1905 | 628.1910 |
|----------|---|--|
| | MOBILIZATIONS EROSION CONTROL EACH | MOBILIZATIONS EMERGENCY EROSION CONTROL EACH |
| PROJECT | 3 | 4 |
| TOTALS | 3 | 4 |

TOPSOIL, MULCHING, FERTILIZER, AND SEED

| STATION | TO | STATION | LOCATION | 625.0100 | 627.0200 | 629.0210 | 630.0120 | 630.0200 | 630.0300 |
|---------------|----|---------|----------|----------|----------|---------------|---------------------|-----------------|------------------|
| | | | | TOPSOIL | MULCHING | FERTILIZER | SEEDING | SEEDING | SEEDING |
| | | | | SY | SY | TYPE B CWT | MIXTURE NO 20 LB | TEMPORARY LB | BORROW PIT LB |
| 100+88 | - | 337+00 | CTH F | 11,600 | 11,600 | 7.5 | 310 | - | - |
| BORROW SITE | | | | - | 833 | 0.5 | - | 11 | 11 |
| UNDISTRIBUTED | | | | 1,160 | 1,244 | 1 | 31 | 2 | 2 |
| TOTALS | | | | 12,760 | 13,677 | 9.0 | 341 | 13 | 13 |

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

| SILT FENCE | | | | | |
|---------------|----|---------|-----------|------------------------------|-------------------------------|
| STATION | TO | STATION | LOCATION | 628.1504 SILT FENCE LF | 628.1520 MAINTENANCE LF |
| 110+50 | - | 111+50 | CTH F, RT | 145 | 290 |
| 122+00 | - | 133+50 | CTH F, LT | 1,220 | 2,440 |
| 131+50 | - | 133+00 | CTH F, RT | 165 | 330 |
| 134+00 | - | 137+00 | CTH F, RT | 310 | 620 |
| 134+00 | - | 142+50 | CTH F, LT | 935 | 1,870 |
| 144+00 | - | 146+00 | CTH F, LT | 220 | 440 |
| 172+00 | - | 174+50 | CTH F, RT | 265 | 530 |
| 192+00 | - | 202+00 | CTH F, RT | 1,030 | 2,060 |
| 218+00 | - | 220+50 | CTH F, LT | 260 | 520 |
| 240+00 | - | 244+00 | CTH F, RT | 400 | 800 |
| 245+00 | - | 247+50 | CTH F, LT | 270 | 540 |
| 245+00 | - | 248+50 | CTH F, RT | 435 | 870 |
| 289+50 | - | 294+00 | CTH F, LT | 430 | 860 |
| 311+00 | - | 314+50 | CTH F, LT | 365 | 730 |
| 324+50 | - | 328+00 | CTH F, LT | 345 | 690 |
| 326+00 | - | 328+50 | CTH F, RT | 245 | 490 |
| UNDISTRIBUTED | | | | 710 | 1,420 |
| TOTALS | | | | 7,750 | 15,500 |

| CULVERT PIPE CHECKS | | |
|---------------------|-----------|------------------|
| STATION | LOCATION | 628.7555 EACH |
| 139+43 | CTH F, RT | 4 |
| 245+76 | CTH F, LT | 4 |
| 291+82 | CTH F, RT | 4 |
| 313+30 | CTH F, RT | 4 |
| 331+38 | CTH F, RT | 4 |
| 332+28 | CTH F, LT | 4 |
| UNDISTRIBUTED | | 4 |
| TOTAL | | 28 |

| EROSION MAT | | | | | | |
|-------------|----|---------------|----------------|-------------------------------------|--|---------------|
| STATION | TO | STATION | LOCATION | 628.2004 CLASS I TYPE B SY | 628.2008 URBAN CLASS I TYPE B SY | REMARKS |
| 110+50 | - | 111+50 | CTH F, RT | --- | 145 | |
| 122+00 | - | 130+50 | CTH F, LT | --- | 720 | |
| 131+50 | - | 133+00 | CTH F, RT | --- | 110 | |
| 134+00 | - | 137+00 | CTH F, RT | --- | 235 | |
| 133+00 | - | 142+50 | CTH F, LT | --- | 1,155 | |
| 144+00 | - | 147+00 | CTH F, LT | --- | 165 | |
| 172+00 | - | 174+50 | CTH F, RT | --- | 355 | |
| 192+00 | - | 202+00 | CTH F, RT | --- | 1,020 | |
| 218+00 | - | 220+50 | CTH F, LT | --- | 620 | |
| 240+00 | - | 244+00 | CTH F, RT | --- | 355 | |
| 245+00 | - | 247+50 | CTH F, LT | --- | 145 | |
| 245+00 | - | 248+50 | CTH F, RT | --- | 465 | |
| 289+50 | - | 294+00 | CTH F, LT | --- | 365 | |
| 311+00 | - | 314+50 | CTH F, LT | --- | 455 | |
| 324+50 | - | 328+00 | CTH F, LT | --- | 220 | |
| 326+00 | - | 328+50 | CTH F, RT | --- | 145 | |
| | | 139+43 | CTH F, RT & LT | 10 | --- | APRON ENDWALL |
| | | 245+76 | CTH F, RT & LT | 30 | --- | APRON ENDWALL |
| | | 291+82 | CTH F, RT & LT | 10 | --- | APRON ENDWALL |
| | | 313+30 | CTH F, RT & LT | 10 | --- | APRON ENDWALL |
| | | 331+38 | CTH F, RT & LT | 10 | --- | APRON ENDWALL |
| | | 332+28 | CTH F, RT & LT | 10 | --- | APRON ENDWALL |
| | | UNDISTRIBUTED | | 20 | 775 | |
| TOTAL | | | | 100 | 7,450 | |

| ROCK BAGS | | |
|---------------|-----------|------------------|
| STATION | LOCATION | 628.7570 EACH |
| 139+43 | CTH F, LT | 6 |
| 245+76 | CTH F, RT | 6 |
| 291+82 | CTH F, LT | 6 |
| 313+30 | CTH F, LT | 6 |
| 331+38 | CTH F, LT | 6 |
| 332+28 | CTH F, RT | 6 |
| UNDISTRIBUTED | | 6 |
| TOTAL | | 42 |

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

ERECTION & REMOVAL OF PERMANENT SIGNING, TYPE II

| SIGN NO. | LOCATION | SIGN CODE | W X H | | 637.221 | 637.223 | 634.0614 | 634.0616 | 638.2602 | 638.3000 | REMARKS |
|----------------|--|-----------|-------|-------|-------------------|-------------------|----------|----------|----------|---------------|---------------------------|
| | | | | | SIGNS | SIGNS | POSTS | POSTS | REMOVING | REMOVING | |
| | | | | | TYPE II | TYPE II | WOOD | WOOD | SIGNS | SMALL | |
| | | | | | REFLECTIVE TYPE H | REFLECTIVE TYPE F | 4x6x14 | 4x6x16 | TYPE II | SIGN SUPPORTS | |
| | | | | | SF | SF | EACH | EACH | EACH | EACH | |
| 1 | STH 73 | R1-1 | 30" | X 30" | 5.18 | - | 1 | - | 1 | 1 | |
| 2 | " | J13-1 | 24" | X 45" | 7.50 | - | 1 | - | 1 | 1 | SEE PLAN SHEET |
| 3 | S. OF STH 73 | J1-1 | 24" | X 39" | 6.50 | - | 1 | - | 1 | 1 | SEE PLAN SHEET |
| 4 | " | W14-3 | 48" | X 36" | - | 6.00 | 1 | - | 1 | 1 | |
| 5 | " | W3-1 | 36" | X 36" | - | 9.00 | - | 1 | 1 | 1 | |
| 6 | " | W3-1 | 36" | X 36" | - | 9.00 | - | 1 | 1 | 1 | |
| 7 | S. OF SILVER OAKS LANE | W14-3 | 48" | X 36" | - | 6.00 | 1 | - | 1 | 1 | |
| 8 | SILVER OAKS LANE | R1-1 | 30" | X 30" | 5.18 | - | 1 | - | 1 | 1 | |
| 9 | 20TH DRIVE | R1-1 | 30" | X 30" | 5.18 | - | 1 | - | 1 | 1 | |
| 10 | JANNETE CIRCLE (N. INTERSECTION) | R1-1 | 30" | X 30" | 5.18 | - | 1 | - | 1 | 1 | |
| 11 | S. OF JANNETE CIRCLE (N. INTERSECTION) | W14-3 | 48" | X 36" | - | 6.00 | 1 | - | 1 | 1 | |
| 12 | N. OF JANNETE CIRCLE (S. INTERSECTION) | W14-3 | 48" | X 36" | - | 6.00 | 1 | - | 1 | 1 | |
| 13 | JANNETE CIRCLE (S. INTERSECTION) | R1-1 | 30" | X 30" | 5.18 | - | 1 | - | 1 | 1 | |
| 14 | CREE DRIVE | R1-1 | 30" | X 30" | 5.18 | - | 1 | - | 1 | 1 | |
| 15 | WOODHAVEN BOULEVARD | R1-1 | 30" | X 30" | 5.18 | - | 1 | - | 1 | 1 | |
| 16 | S. OF WOODHAVEN BOULEVARD | W14-3 | 48" | X 36" | - | 6.00 | 1 | - | 1 | 1 | |
| 17 | S. OF 21ST AVENUE | W14-3 | 48" | X 36" | - | 6.00 | 1 | - | 1 | 1 | |
| 18 | 21ST AVENUE | R1-1 | 30" | X 30" | 5.18 | - | 1 | - | 1 | 1 | |
| 19 | N. OF 21ST AVENUE | W14-3 | 48" | X 36" | - | 6.00 | 1 | - | 1 | 1 | |
| 20 | S. OF 22ND AVENUE | W14-3 | 48" | X 36" | - | 6.00 | 1 | - | 1 | 1 | |
| 21 | 22ND AVENUE | R1-1 | 30" | X 30" | 5.18 | - | 1 | - | 1 | 1 | |
| 22 | " | R1-1 | 30" | X 30" | 5.18 | - | 1 | - | 1 | 1 | |
| 23 | N. OF 22ND AVENUE | W14-3 | 48" | X 36" | - | 6.00 | 1 | - | 1 | 1 | |
| 24 | " | W14-3 | 48" | X 36" | - | 6.00 | 1 | - | 1 | 1 | |
| 25 | S. OF CREE ROAD | W14-3 | 48" | X 36" | - | 6.00 | 1 | - | 1 | 1 | |
| 26 | " | W14-3 | 48" | X 36" | - | 6.00 | 1 | - | 1 | 1 | |
| 27 | CREE ROAD | R1-1 | 30" | X 30" | 5.18 | - | 1 | - | 1 | 1 | |
| 28 | S. OF CREE ROAD | W14-3 | 48" | X 36" | - | 6.00 | 1 | - | 1 | 1 | |
| 29 | " | W14-3 | 48" | X 36" | - | 6.00 | 1 | - | 1 | 1 | |
| 30 | N. OF CTH Z AND CTH N INTERSECTION | W3-5 | 36" | X 36" | - | 9.00 | - | 1 | 1 | 1 | |
| 31 | " | I2-3-U | 54" | X 24" | 9.00 | - | 1 | 1 | 1 | 1 | SEE PLAN SHEET |
| 32 | " | W14-3 | 48" | X 36" | - | 6.00 | - | - | - | - | MOUNT ON BACK OF SIGN #31 |
| 33 | " | R2-1 | 24" | X 30" | 5.00 | - | 1 | - | 1 | 1 | 55 MPH |
| 34 | " | R2-1 | 24" | X 30" | 5.00 | - | 1 | - | 1 | 1 | 35 MPH |
| PROJECT TOTALS | | | | | 89.98 | 117.00 | 30 | 4 | 33 | 33 | |

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

TRAFFIC CONTROL SUMMARY

| LOCATION | APPROXIMATE SERVICE DAYS | 643.0420 BARRICADES TYPE III | | 643.0900 SIGNS | | REMARKS |
|-----------------------------|--------------------------------|------------------------------------|------|-------------------|-------|--|
| | | NO. IN SERVICE | DAYS | NO. IN SERVICE | DAYS | |
| CTH F / STH 73 | 60 | - | - | 5 | 300 | START OF PROJECT - TYPICAL ADVANCE WARNING SIGNING WITH END ROAD WORK AND ROAD WORK NEXT 5 MILES |
| CTH F / SILVER OAKS LANE | 60 | - | - | 1 | 60 | |
| CTH F / 20TH DRIVE | 60 | - | - | 1 | 60 | |
| CTH F / JANNETTE CIRCLE (N) | 60 | - | - | 1 | 60 | |
| CTH F / JANNETTE CIRCLE (S) | 60 | - | - | 1 | 60 | |
| CTH F / CREE DRIVE | 60 | - | - | 1 | 60 | ROAD WORK AHEAD |
| CTH F / WOODHAVEN BLVD | 60 | - | - | 1 | 60 | ROAD WORK AHEAD |
| CTH F / 21ST AVENUE | 60 | - | - | 1 | 60 | ROAD WORK AHEAD |
| CTH F / 22ND AVENUE | 60 | - | - | 1 | 60 | ROAD WORK AHEAD |
| CTH F / CREE ROAD | 60 | - | - | 1 | 60 | ROAD WORK AHEAD |
| CTH C / N OF CTH Z | 60 | - | - | 5 | 300 | END OF PROJECT - TYPICAL ADVANCE WARNING SIGNING WITH END ROAD WORK AND ROAD WORK NEXT 5 MILES SEE STANDARD DETIAL FOR BARRICADES AND SIGNS FOR SIDEROAD CLOSURES WEST APPROACH - SEE STANDARD DETIAL FOR BARRICADES AND SIGNS FOR MAINLINE CLOSURE, DETAILS C & D EAST APPROACH - SEE STANDARD DETIAL FOR BARRICADES AND SIGNS FOR MAINLINE CLOSURES, DETAILS C & D LOW SHOULDER AND UNEVEN LANES SIGNING |
| 20TH DRIVE / CTH F | 15 | 5 | 75 | 3 | 45 | |
| 20TH DRIVE / N OF CTH F | 15 | 6 | 90 | 7 | 105 | |
| 20TH DRIVE / CREE AVE | 15 | 6 | 90 | 7 | 105 | |
| CTH F | 20 | - | - | 12 | 240 | |
| CTH F | 30 | - | - | 12 | 360 | NO PASSING ZONE SIGNING |
| CTH F | 15 | - | - | 8 | 120 | NO CENTER STRIPE (PULVERIZING SECTION) |
| TOTALS | | | 255 | | 2,115 | |

MARKING LINE

| STATION | TO | STATION | LOCATION | 646.1020 | 646.4520 | 649.0120 |
|---------|----|---------|----------|--------------------------------|---|--|
| | | | | EPOXY 4-INCH WHITE LF | SAME DAY EPOXY 4-INCH YELLOW LF | TEMPORARY EPOXY 4-INCH YELLOW LF |
| 100+88 | - | 337+00 | CTH F | 46,600 | 30,100 | 600 |
| TOTAL | | | | 46,600 | 30,100 | 600 |

LOCATING NO-PASSING ZONES

| STATION | TO | STATION | LOCATION | 648.0100 MI |
|---------|----|---------|----------|----------------|
| 100+88 | - | 337+00 | CTH F | 4.5 |
| TOTAL | | | | 4.5 |

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

CONSTRUCTION STAKING

| STATION | TO | STATION | LOCATION | 650.4500 SUBGRADE LF | 650.5000 BASE LF | 650.6000 PIPE CULVERTS EACH | 650.8000 RESURFACING REFERENCE LF | 650.9910 SUPPLEMENTAL CONTROL LS | 650.9920 SLOPE STAKES LF |
|---------|----|---------|-------------|----------------------------|------------------------|--------------------------------------|--|---|-----------------------------------|
| 100+88 | - | 337+00 | CTH F | - | - | 6 | 23,612 | 1 | 7,200 |
| 20+11 | - | 21+00 | 20TH DRIVE | 89 | 89 | - | - | - | - |
| 79+50 | - | 79+89 | 22ND AVENUE | 39 | 39 | - | - | - | - |
| 80+11 | - | 80+25 | 22ND AVENUE | 14 | 14 | - | - | - | - |
| 90+11 | - | 90+50 | CREE ROAD | 39 | 39 | - | - | - | - |
| TOTALS | | | | 181 | 181 | 6 | 23,612 | 1 | 7,200 |

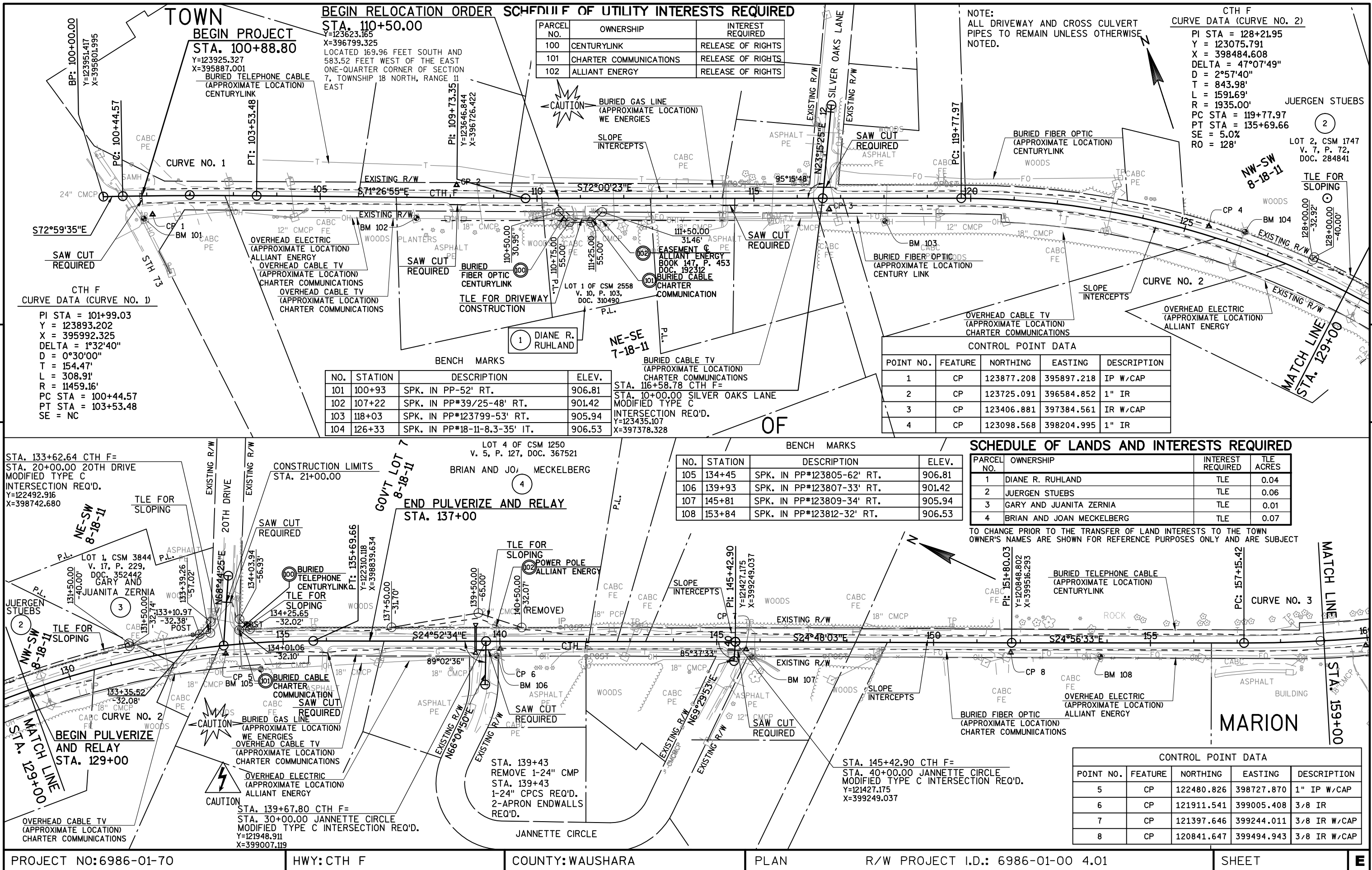
SAWING ASPHALT

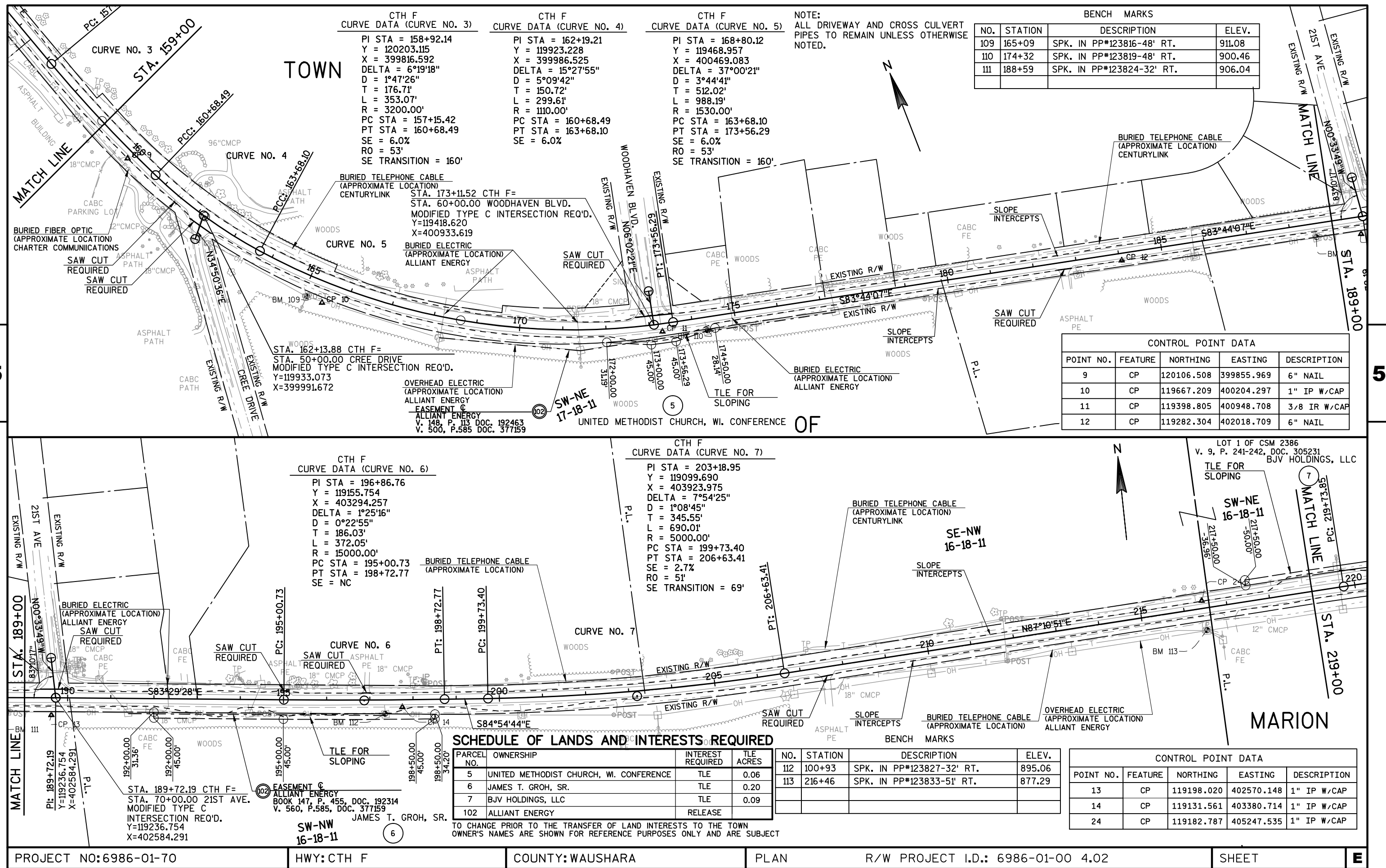
| STATION | LOCATION | 690.0150 LF | REMARKS |
|-----------------|---------------------|----------------|----------------|
| 100+88 | CTH F | 32 | PROJECT LIMITS |
| 337+00 | CTH F | 22 | PROJECT LIMITS |
| - | SILVER OAKS LANE | 38 | PROJECT LIMITS |
| - | 20TH DRIVE | 22 | PROJECT LIMITS |
| - | JANNETTE CIRCLE (N) | 30 | PROJECT LIMITS |
| - | JANNETTE CIRCLE (S) | 28 | PROJECT LIMITS |
| - | CREE DRIVE | 60 | PROJECT LIMITS |
| - | WOODHAVEN BLVD | 80 | PROJECT LIMITS |
| - | 21ST AVENUE | 68 | PROJECT LIMITS |
| - | 22ND AVENUE (S) | 26 | PROJECT LIMITS |
| - | 22ND AVENUE (N) | 40 | PROJECT LIMITS |
| - | CREE ROAD | 22 | PROJECT LIMITS |
| - | CULVERT PIPES | 176 | PROJECT LIMITS |
| 100+88 - 337+00 | CTH F DRIVEWAYS | 300 | PROJECT LIMITS |
| TOTAL | | 944 | |

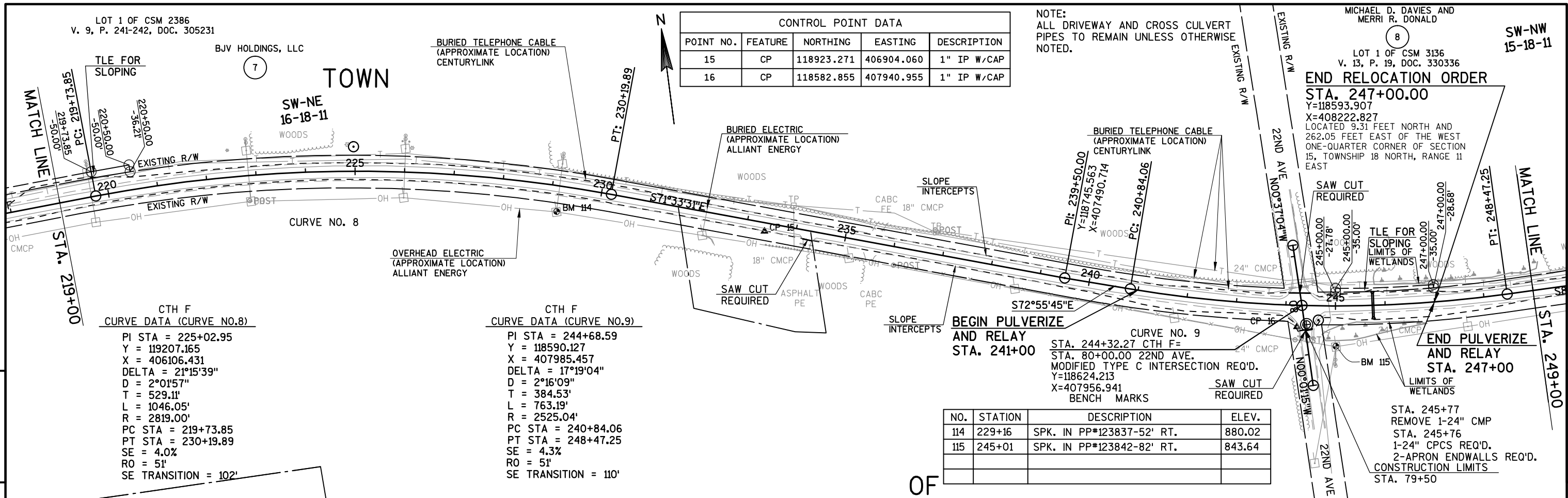
GRADING SHAPING AND TOPSOILING FOR CULVERT RESTORATION

| STATION | LOCATION | SPV.0060.01 EACH |
|---------|----------|---------------------|
| 139+43 | CTH F | 1 |
| 245+76 | CTH F | 1 |
| 291+82 | CTH F | 1 |
| 313+30 | CTH F | 1 |
| 331+38 | CTH F | 1 |
| 332+28 | CTH F | 1 |
| TOTAL | | 6 |

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

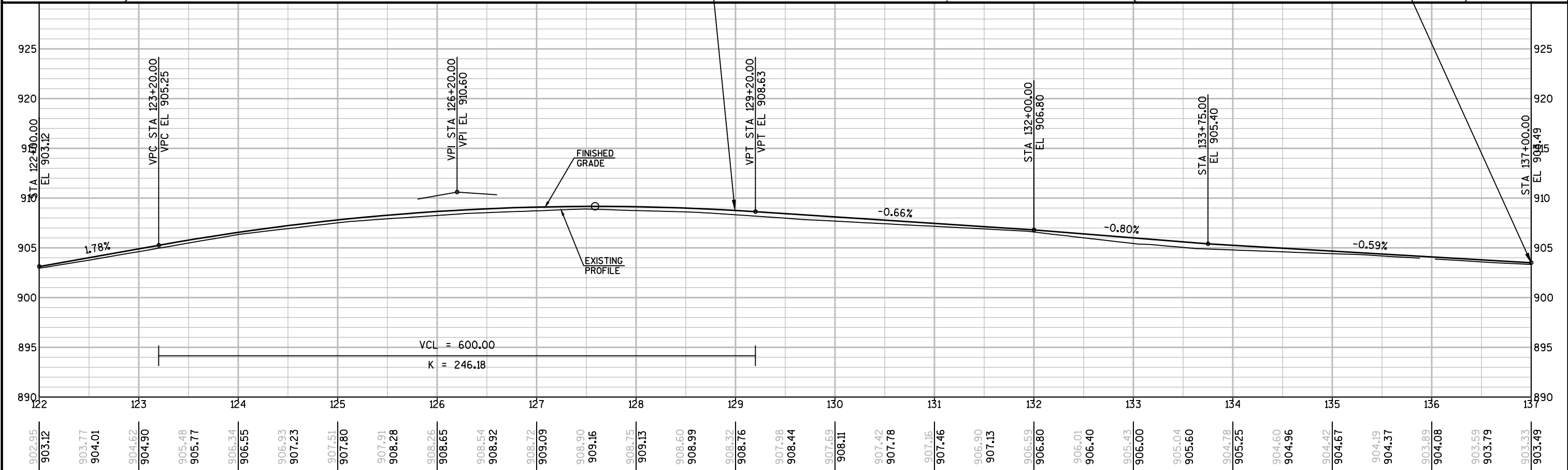
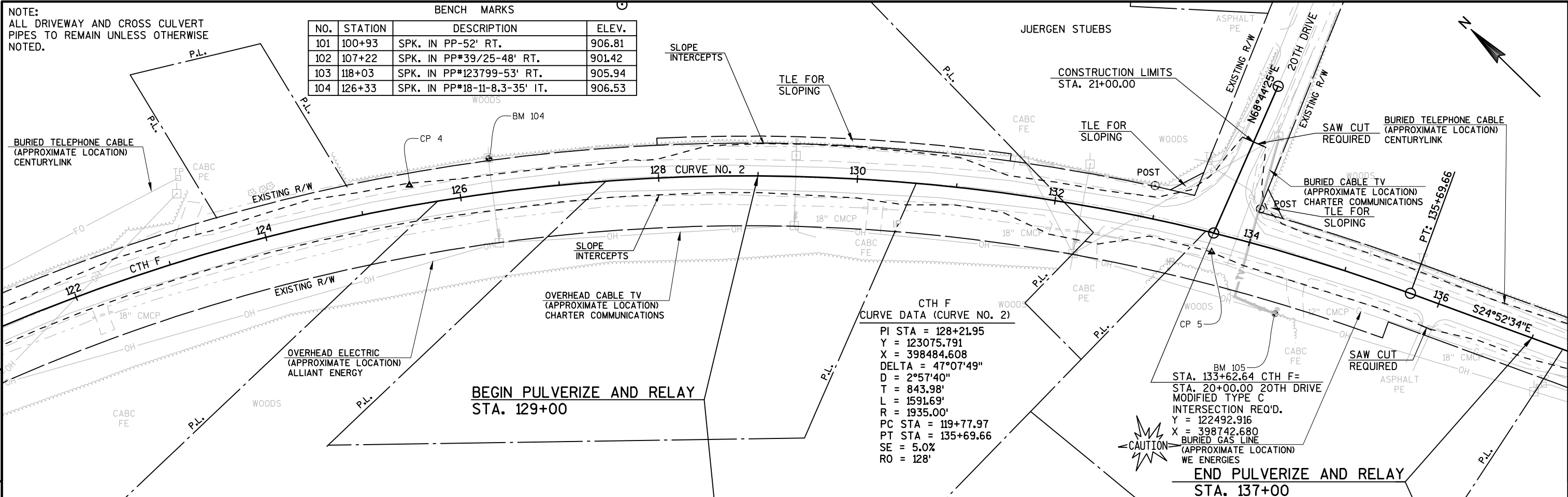




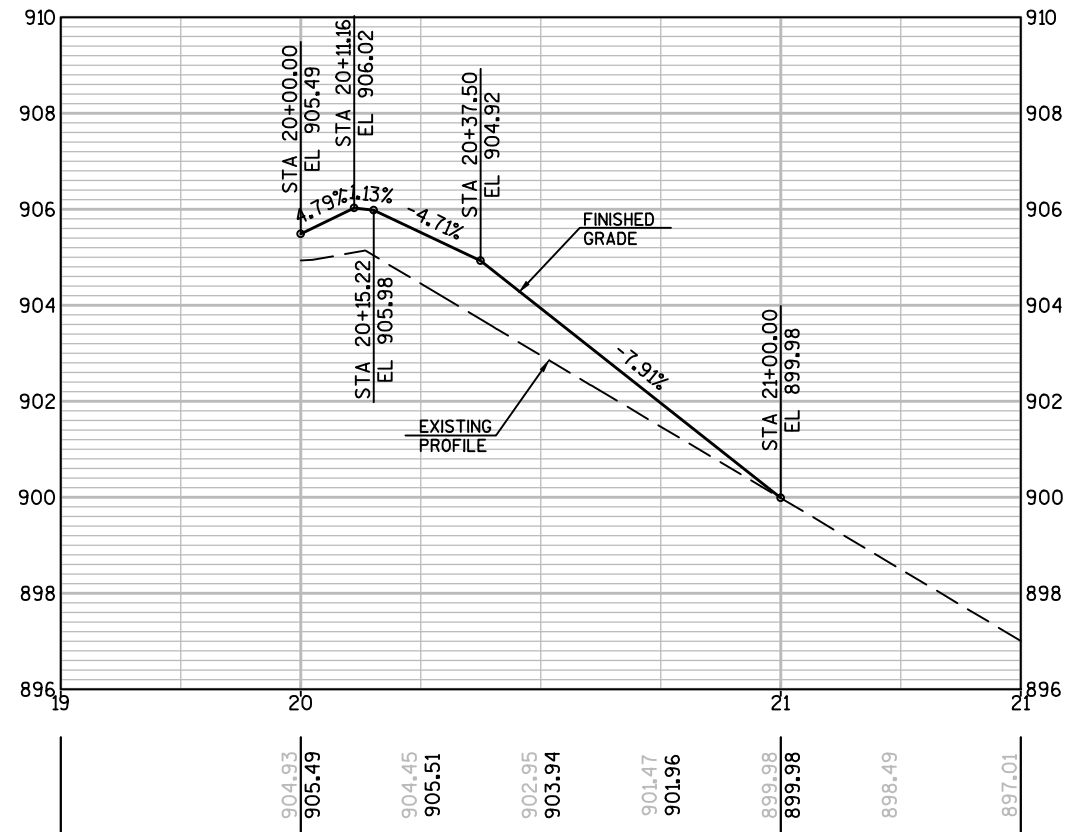


NOTE:
ALL DRIVEWAY AND CROSS CULVERT
PIPES TO REMAIN UNLESS OTHERWISE
NOTED.

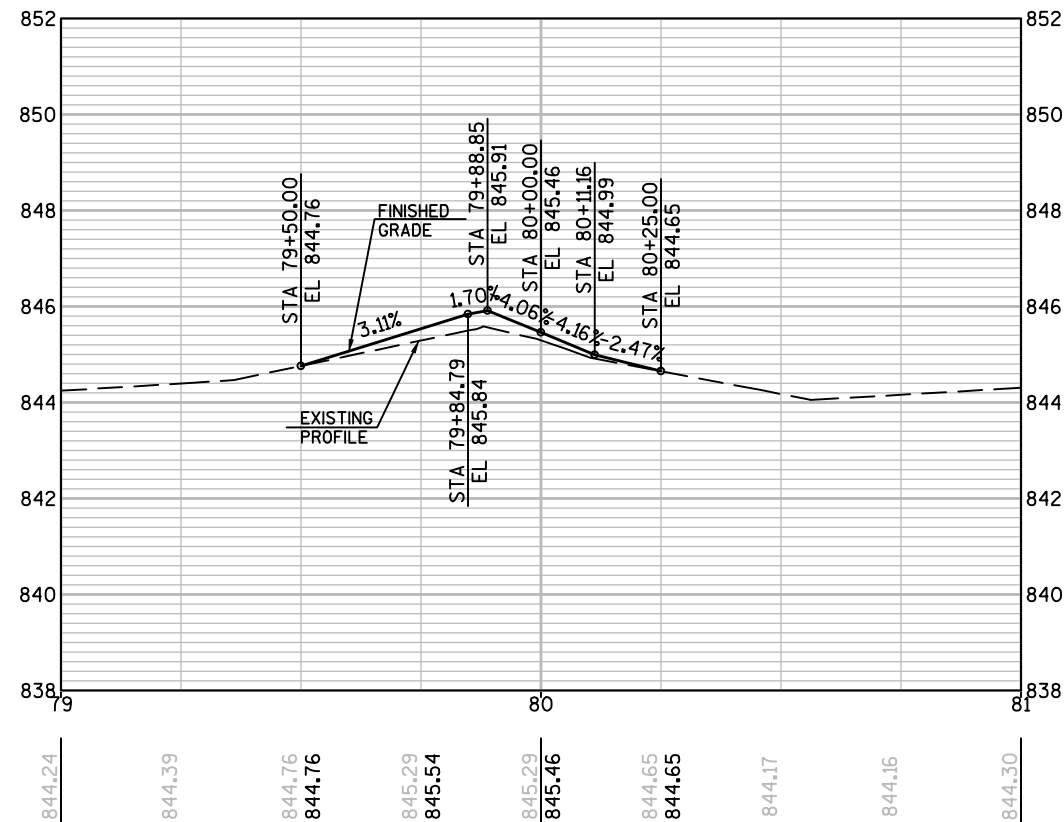
| BENCH MARKS | | | |
|-------------|---------|------------------------------|--------|
| NO. | STATION | DESCRIPTION | ELEV. |
| 101 | 100+93 | SPK. IN PP*52' RT. | 906.81 |
| 102 | 107+22 | SPK. IN PP*39/25-48' RT. | 901.42 |
| 103 | 118+03 | SPK. IN PP*123799-53' RT. | 905.94 |
| 104 | 126+33 | SPK. IN PP*18-11-8.3-35' IT. | 906.53 |



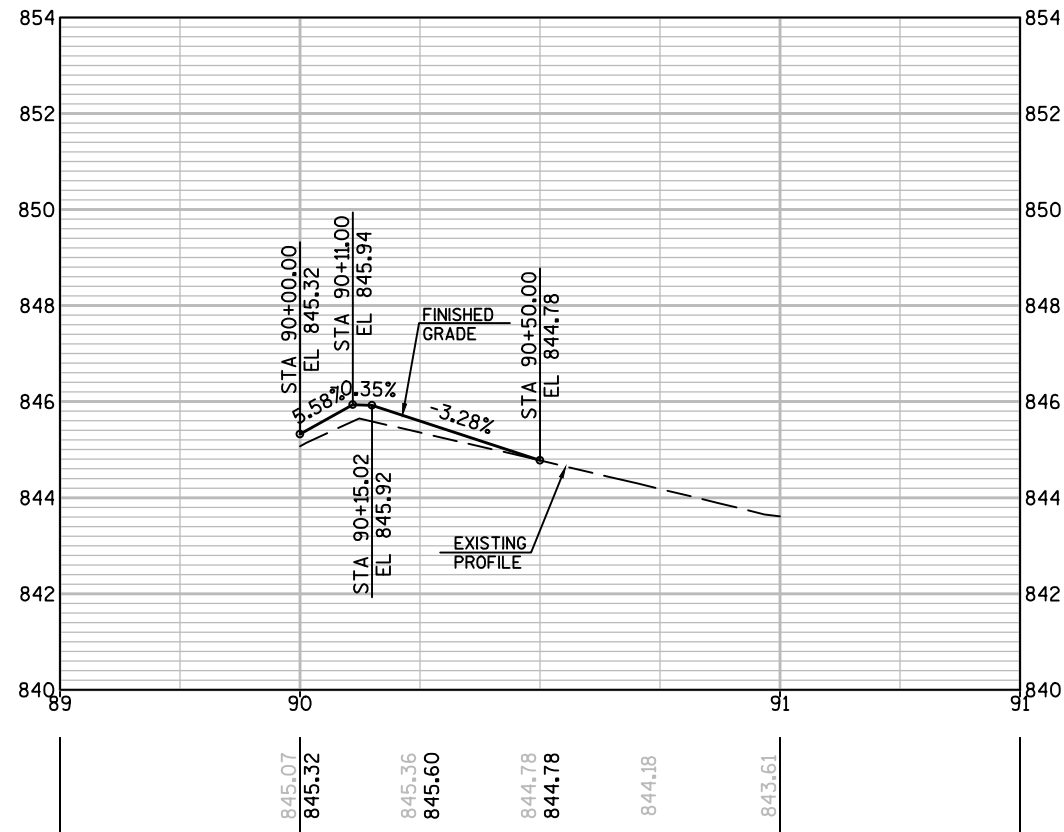
20TH AVENUE PROFILE



22ND AVENUE PROFILE

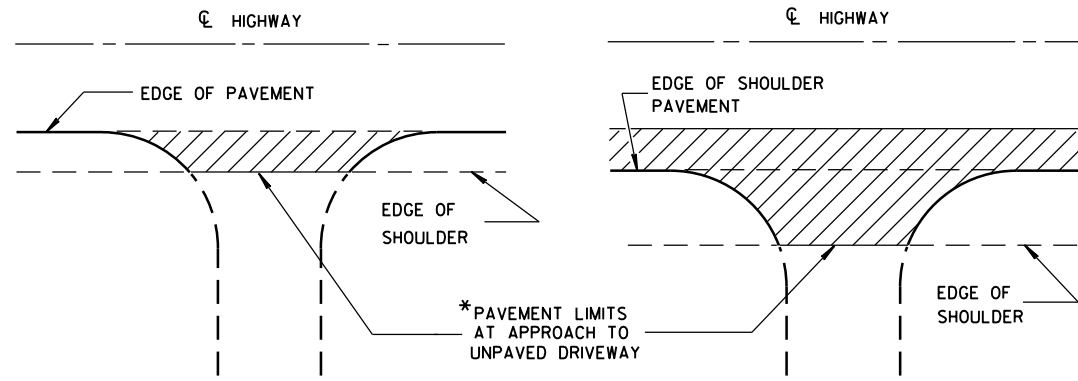


CREE ROAD PROFILE



Standard Detail Drawing List

| | |
|-----------|--|
| 08D21-01 | DRIVEWAYS WITHOUT CURB & GUTTER |
| 08D22-01 | DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL |
| 08E08-03 | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS |
| 08E09-06 | SILT FENCE |
| 08F01-11 | APRON ENDWALLS FOR CULVERT PIPE |
| 09A01-13A | AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE |
| 15A03-02A | FLEXIBLE MARKER POST FOR CULVERT END |
| 15A03-02B | FLEXIBLE MARKER POST FOR CULVERT END |
| 15C03-03 | BARRICADES AND SIGNS FOR SIDEROAD CLOSURES |
| 15C04-03 | TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M. P. H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC |
| 15C08-17A | LONGITUDINAL MARKING (MAINLINE) |
| 15C12-06 | TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION |
| 15C19-04A | MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY |
| 15C33-02 | STOP LINE AND CROSSWALK PAVEMENT MARKING |
| 15C35-01A | PAVEMENT MARKING (INTERSECTIONS) |
| 15D28-03 | TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY |
| 15D39-01 | TRAFFIC CONTROL, DROP-OFF SIGNING |

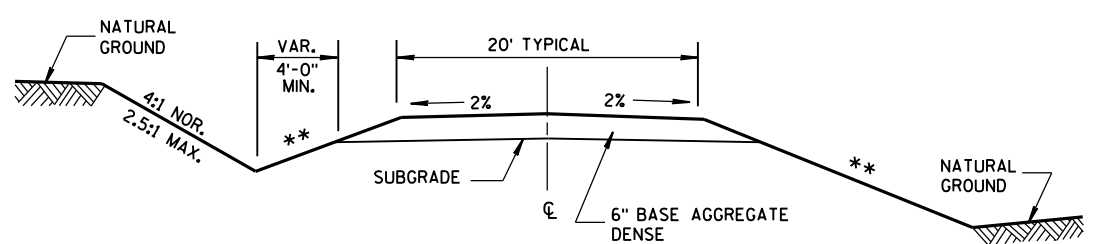


*WHERE DRIVEWAY IS PAVED, APPROACH PAVEMENT SHOULD BE EXTENDED TO MATCH DRIVEWAY PAVEMENT.

PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

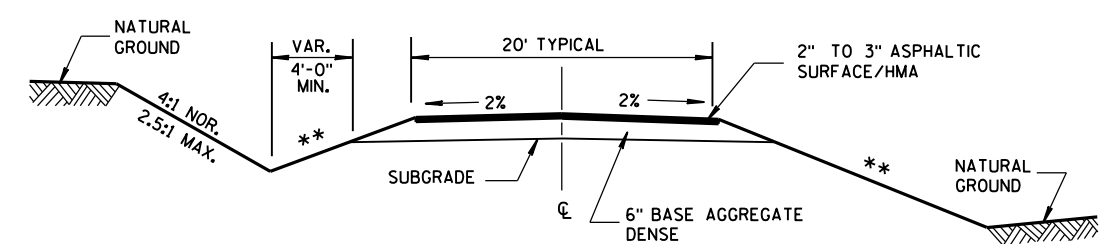
RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB & GUTTER OR SIDEWALK)



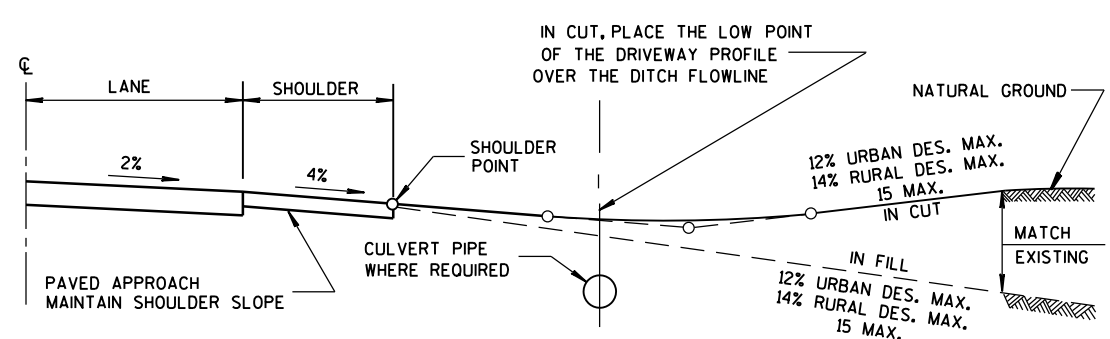
TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE
AGGREGATE SURFACE

** SLOPE CAN VARY WITH SPEED. SEE 11-45-2.6.2.

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

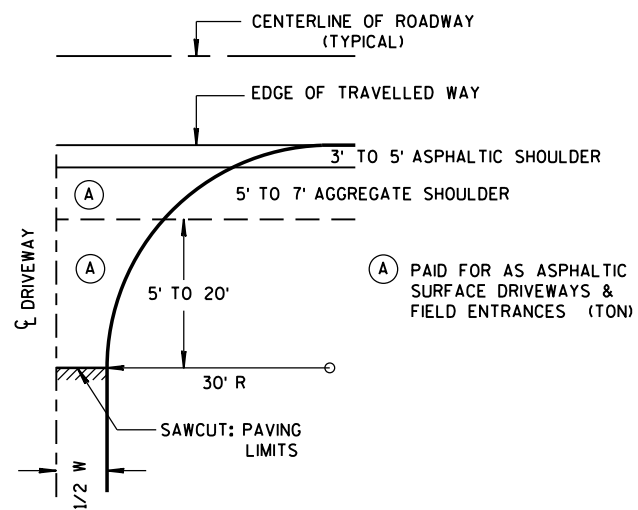


TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE
ASPHALTIC SURFACE



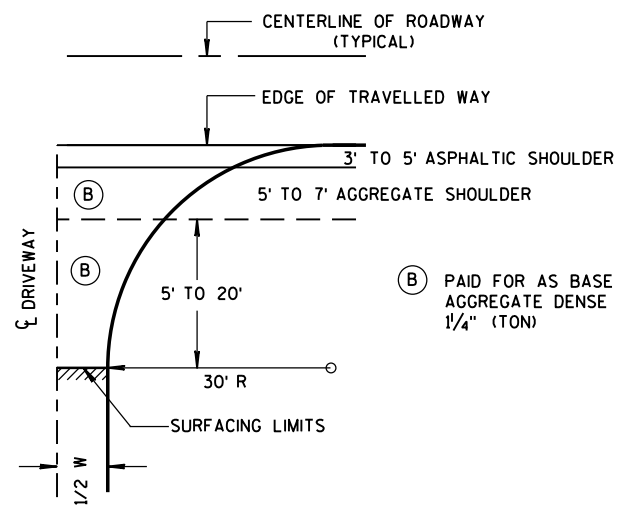
TYPICAL DRIVEWAY PROFILES

| | |
|--|---|
| DRIVEWAYS WITHOUT CURB & GUTTER | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED December, 2016 DATE | /S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR |
| FHWA | |

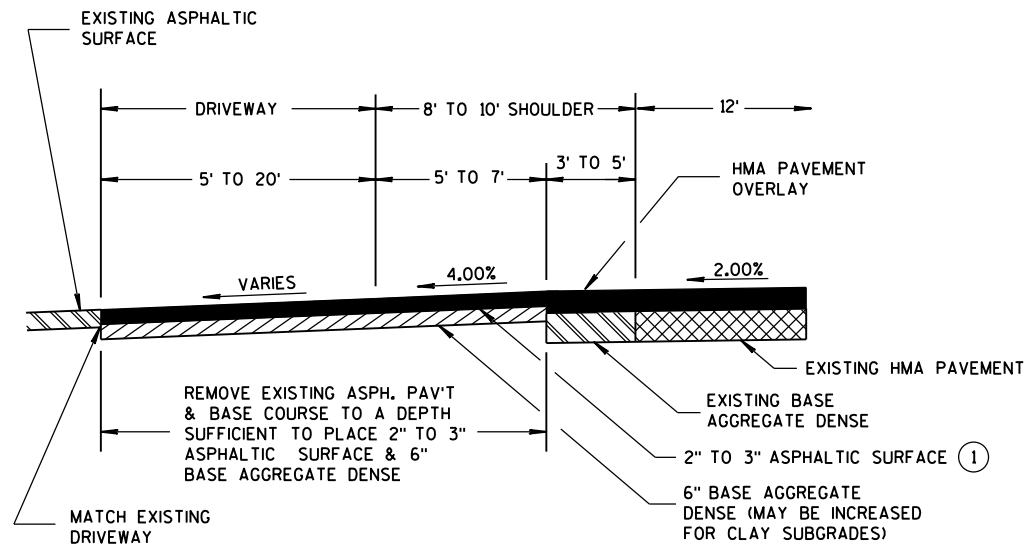


PLAN VIEW
HALF SECTION

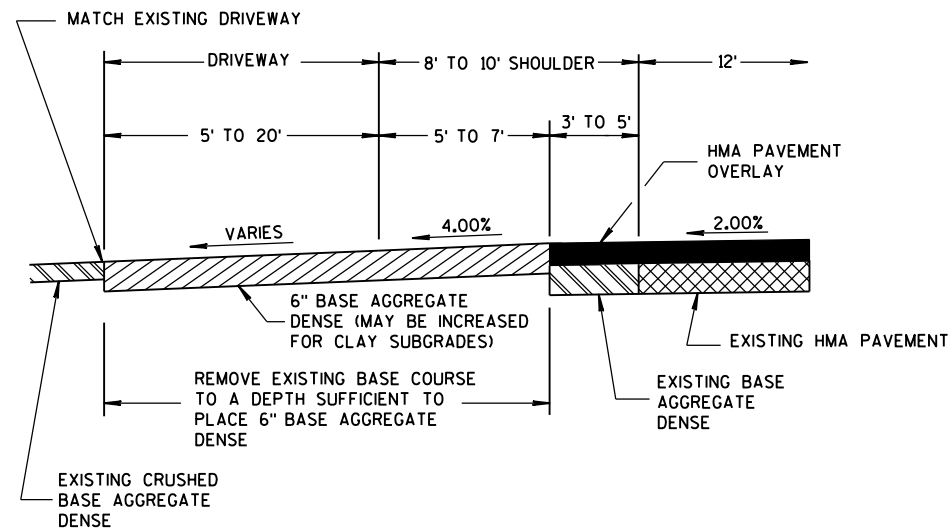
W MIN. = 16'
W MAX. = 24'



PLAN VIEW
HALF SECTION



PROFILE VIEW
RURAL ENTRANCE
WITH ASPHALTIC SURFACE
RESURFACING PROJECTS



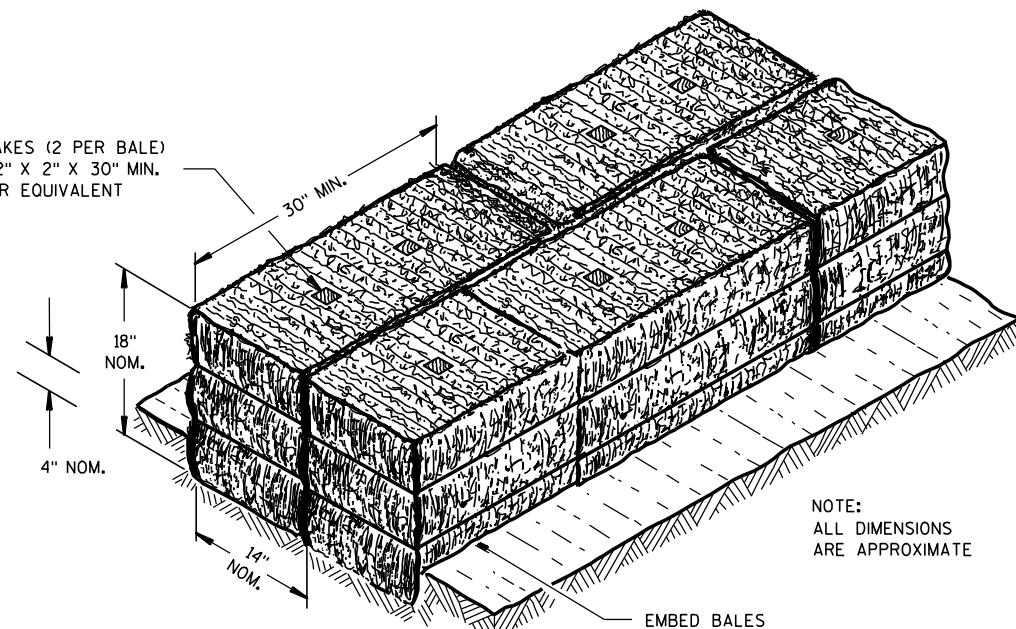
PROFILE VIEW
RURAL ENTRANCE
WITH AGGREGATE SURFACE
6" BASE AGGREGATE DENSE
RESURFACING PROJECTS

GENERAL NOTES

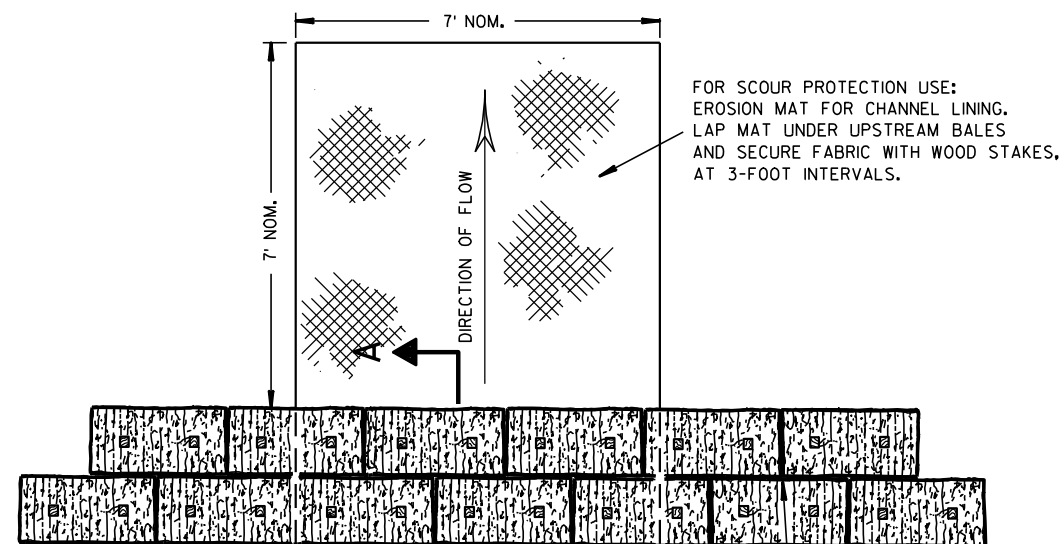
- ① DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.

| DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL | |
|--|---|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED December, 2016 DATE | /S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR FHWA |

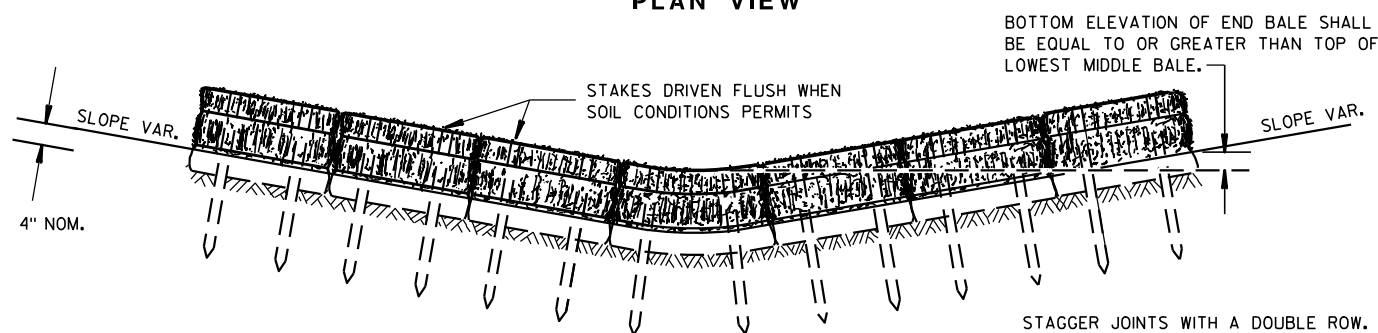
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



SECTION A-A



PLAN VIEW



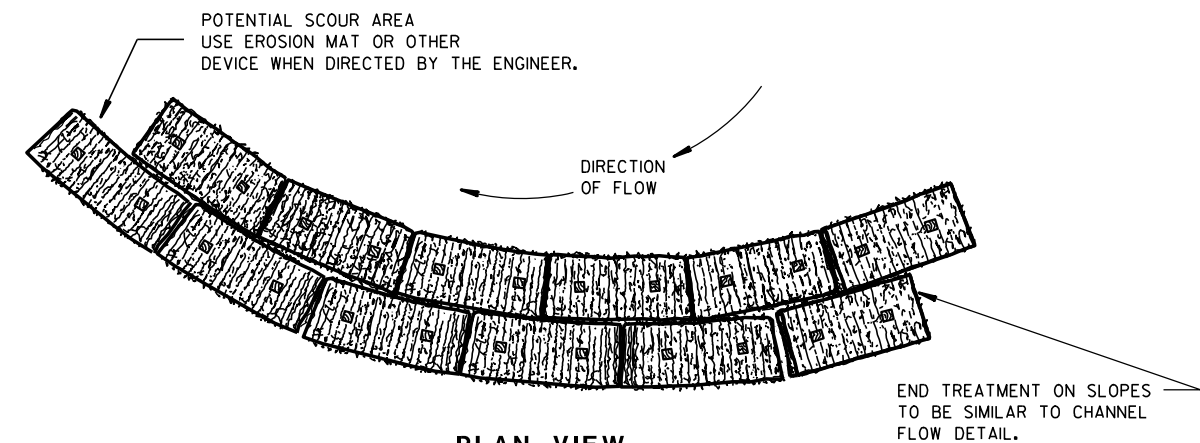
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

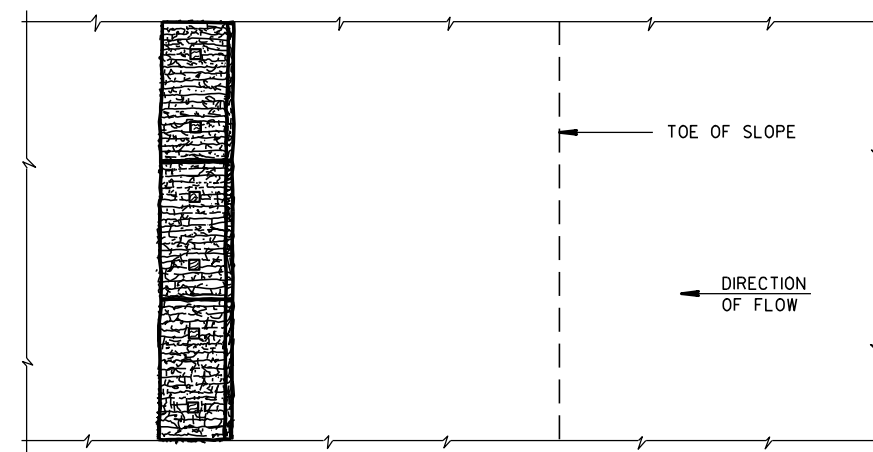
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

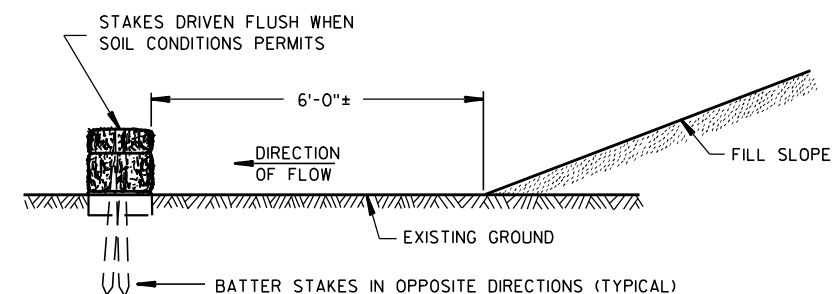


PLAN VIEW

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

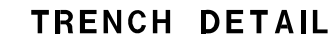
6/04/02
DATE

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA



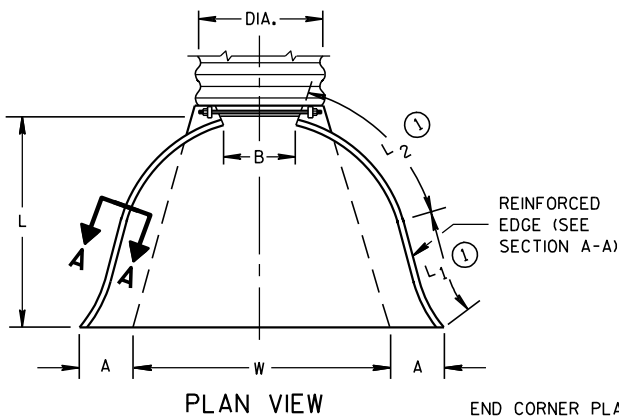
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



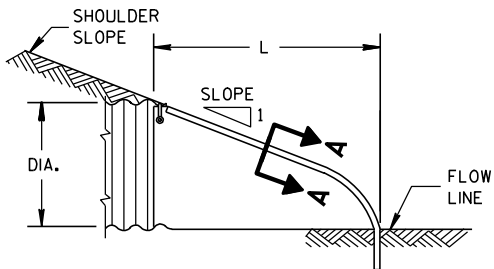
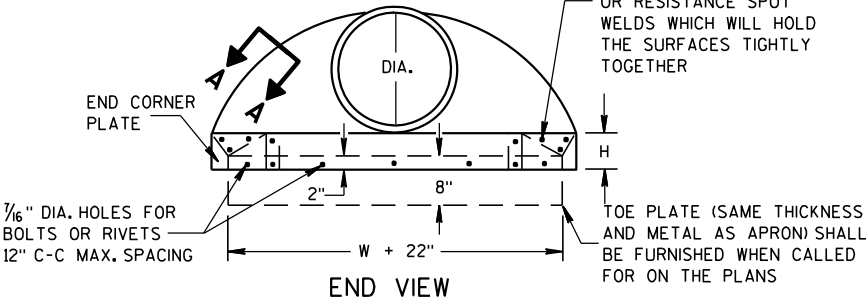
| | |
|--|---|
| SILT FENCE | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED <u>4-29-05</u> DATE | <u>/S/ Beth Cannestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER |

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

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



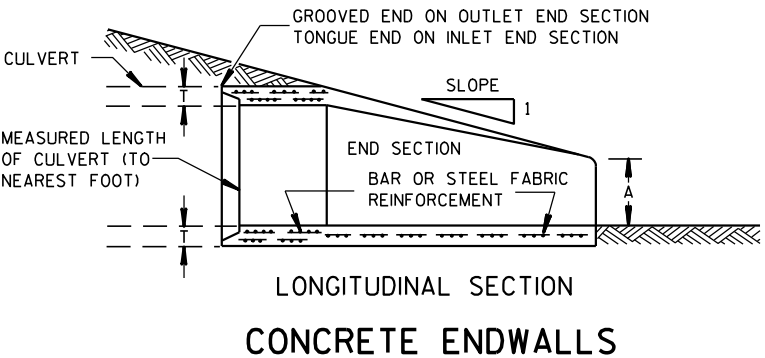
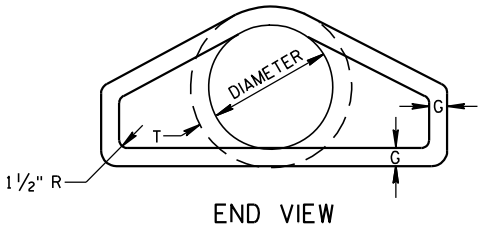
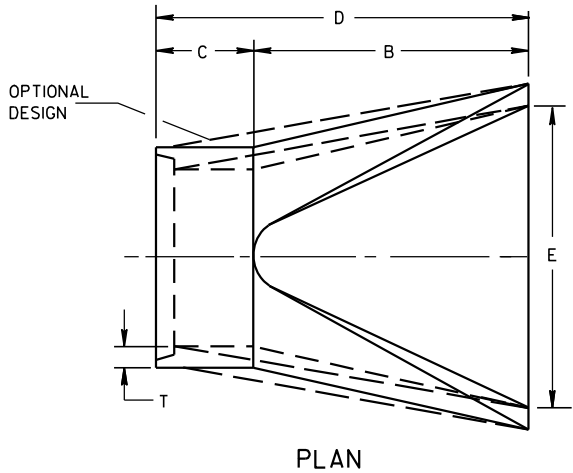
END CORNER PLATES MAY
BE FASTENED TO APRON
PROPER BY BOLTS, RIVETS,
OR RESISTANCE SPOT
WELDS WHICH WILL HOLD
THE SURFACES TIGHTLY
TOGETHER



SIDE ELEVATION
METAL ENDWALLS

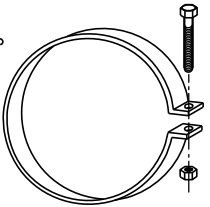
| REINFORCED CONCRETE APRON ENDWALLS | | | | | | | | | | | | |
|------------------------------------|---------------------|--------|--------|-----------|------------|-----|-------|------------------|--|--|--|--|
| PIPE DIA. (IN.) | DIMENSIONS (Inches) | | | | | | | APPROX. SLOPE | | | | |
| | T | A |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

* MINIMUM
** MAXIMUM

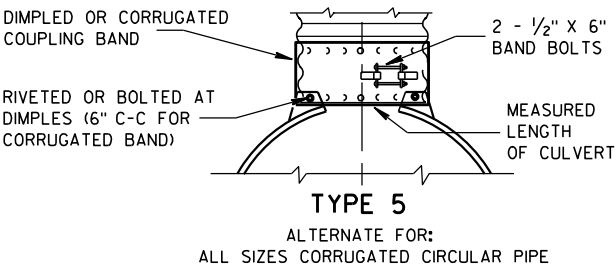
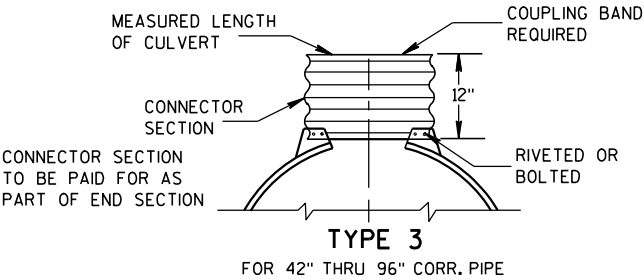
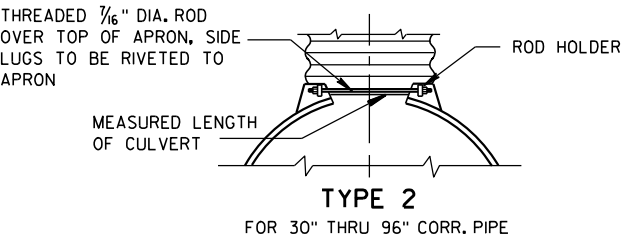
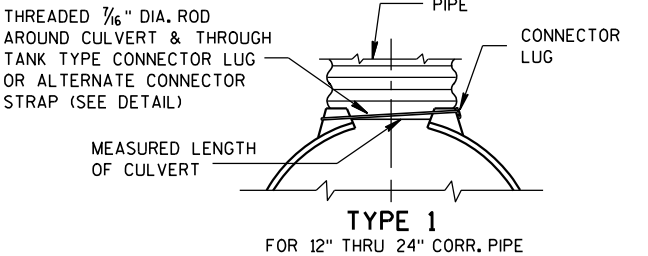


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



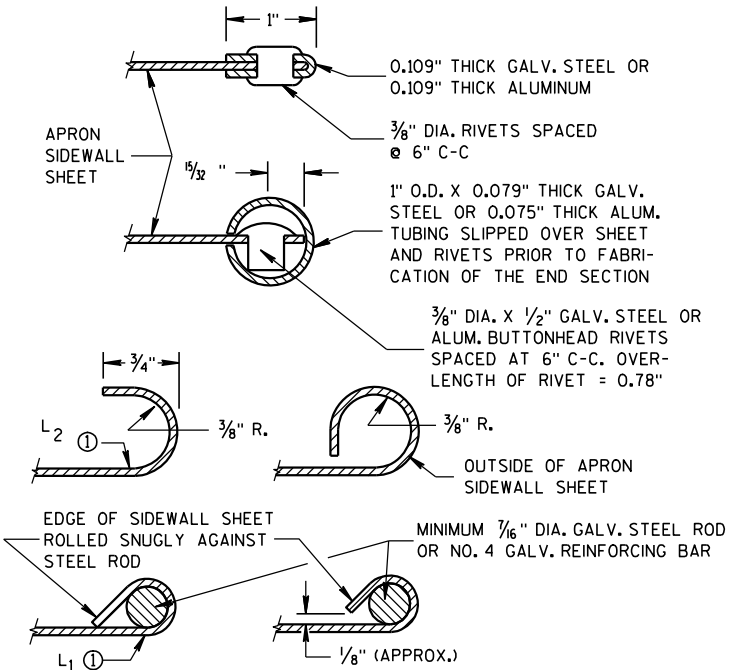
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.
DIMPLED BAND MAY BE USED WITH HELICALLY
CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

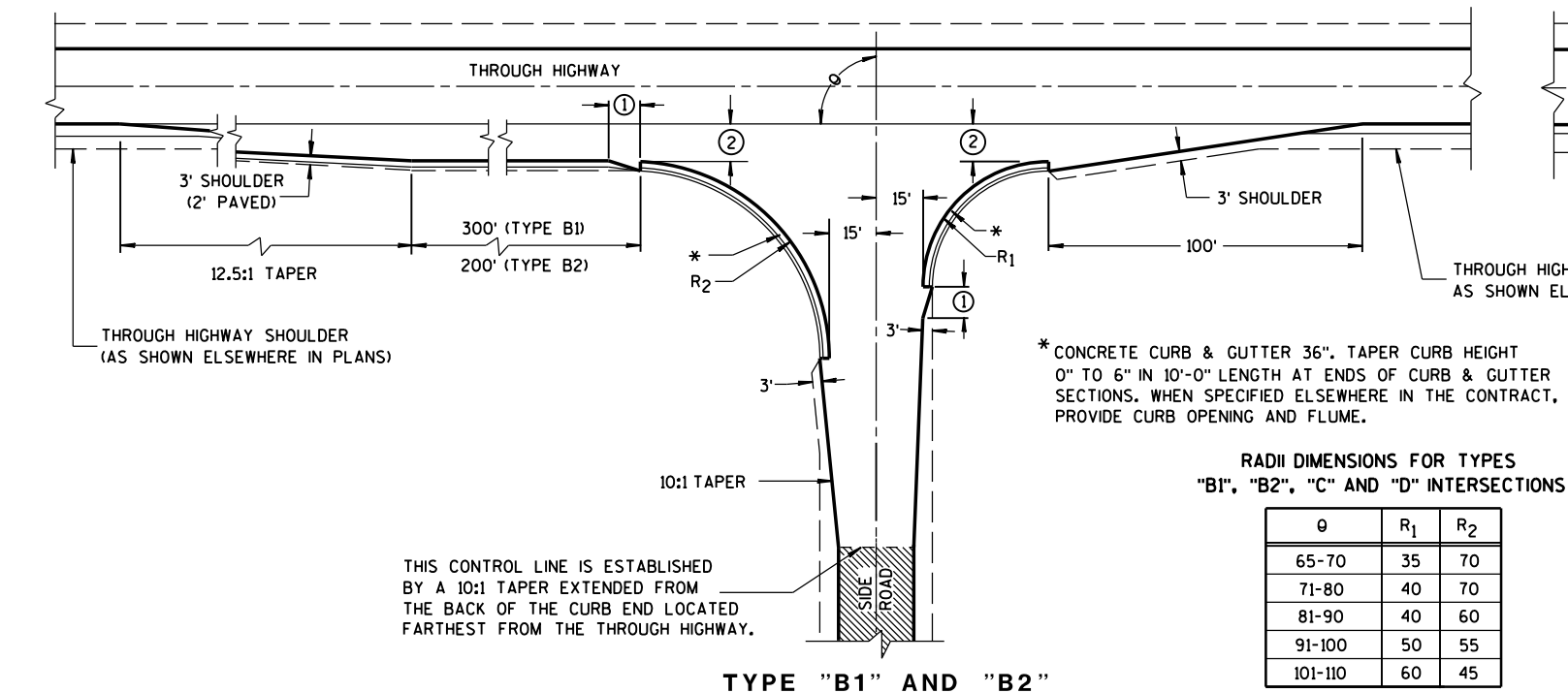
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT
TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT
TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



GENERAL NOTES

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

SIDE ROAD SURFACING NOTE

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

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

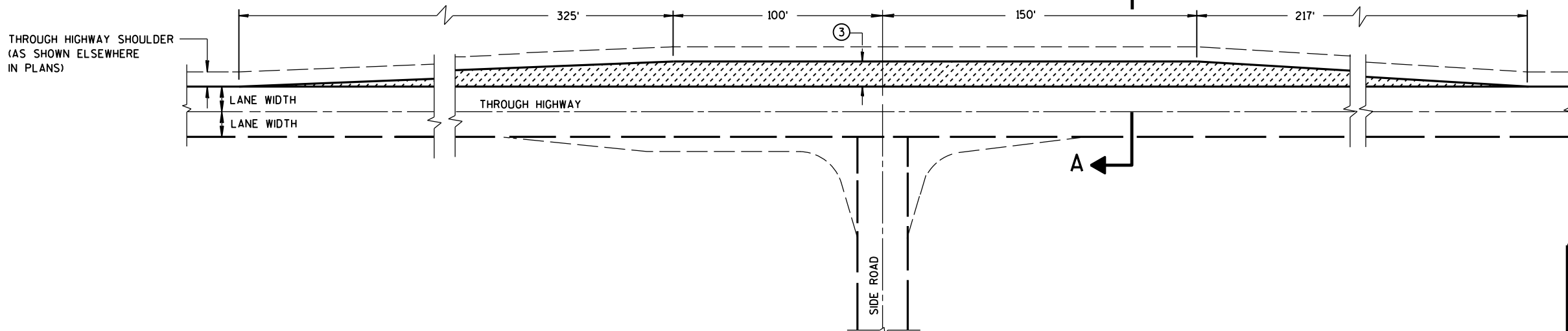
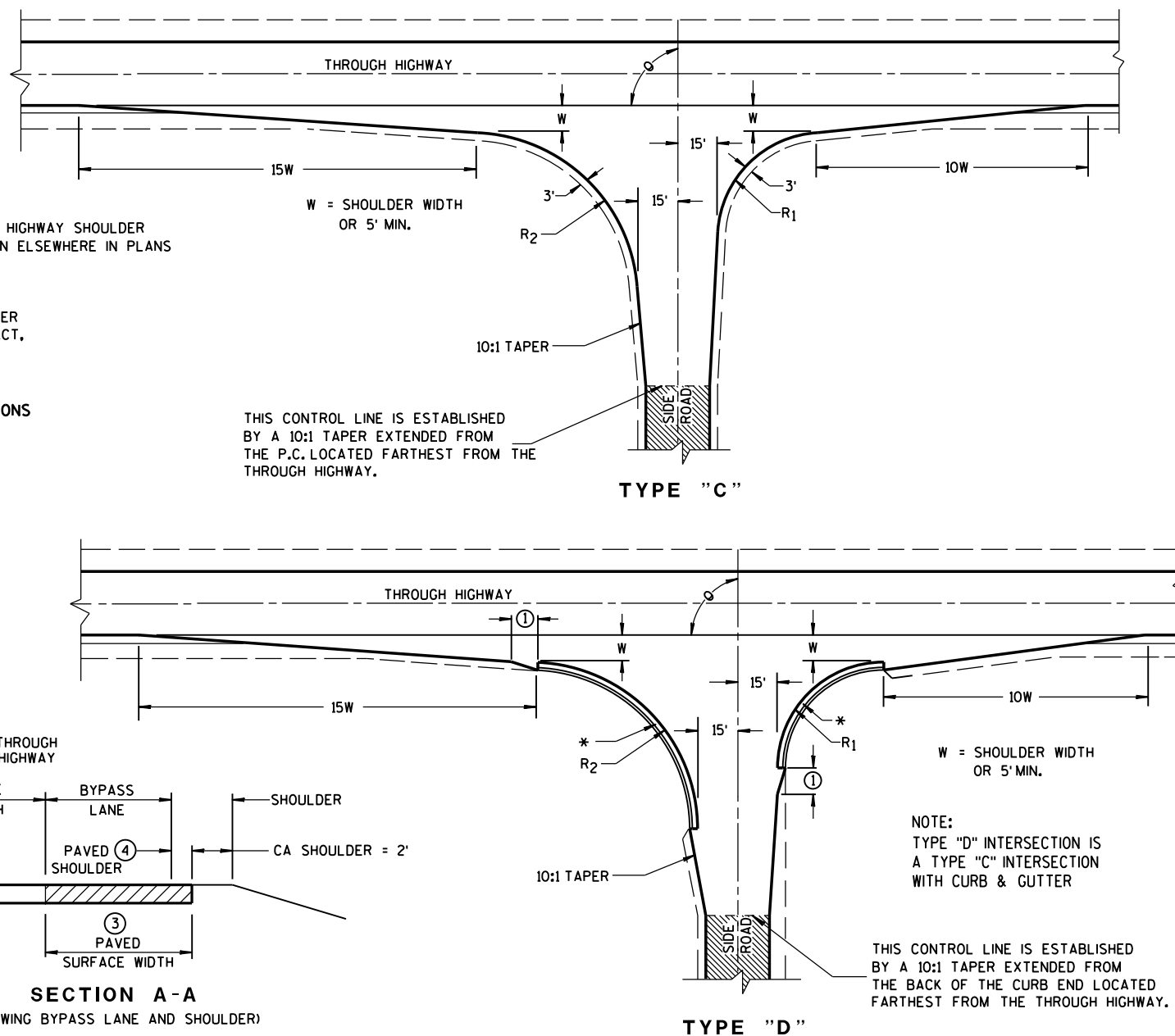
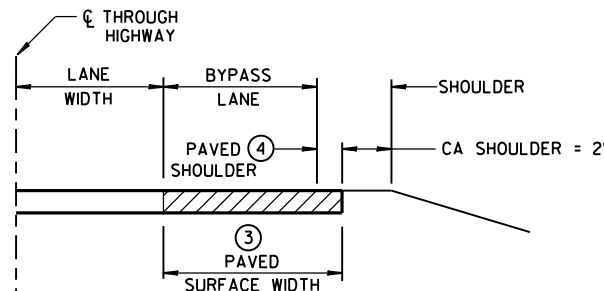
WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

BYPASS LANE

- ① 10-FT TYPICAL.
- ② 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

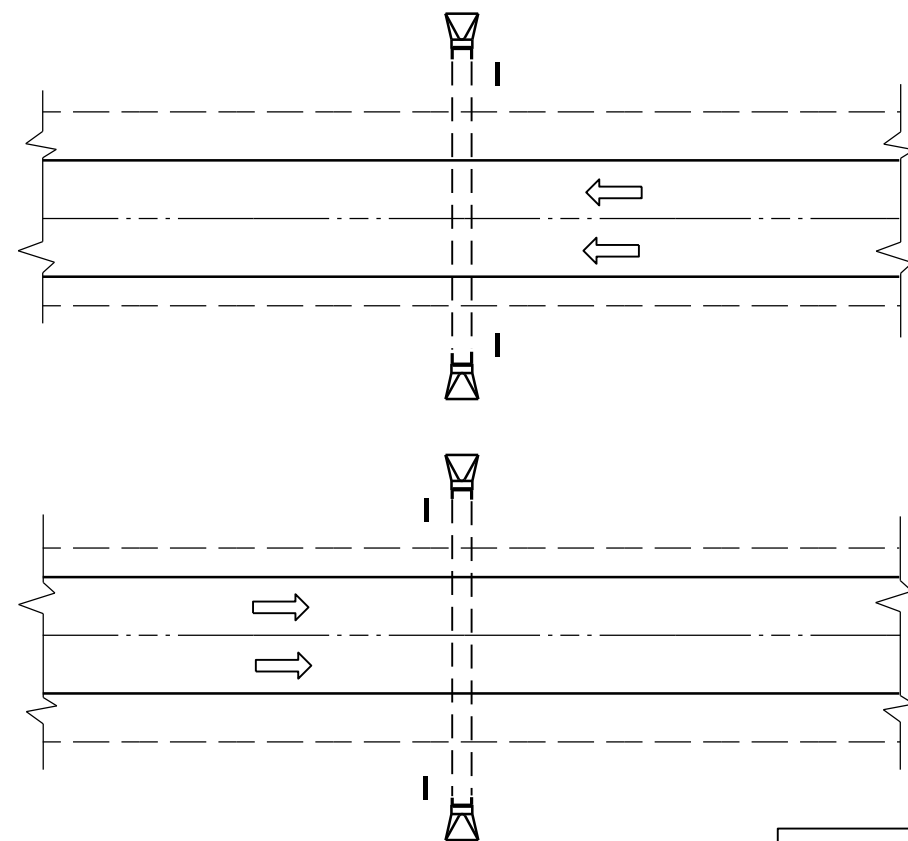
**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.
- ③ BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.
- ④ BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



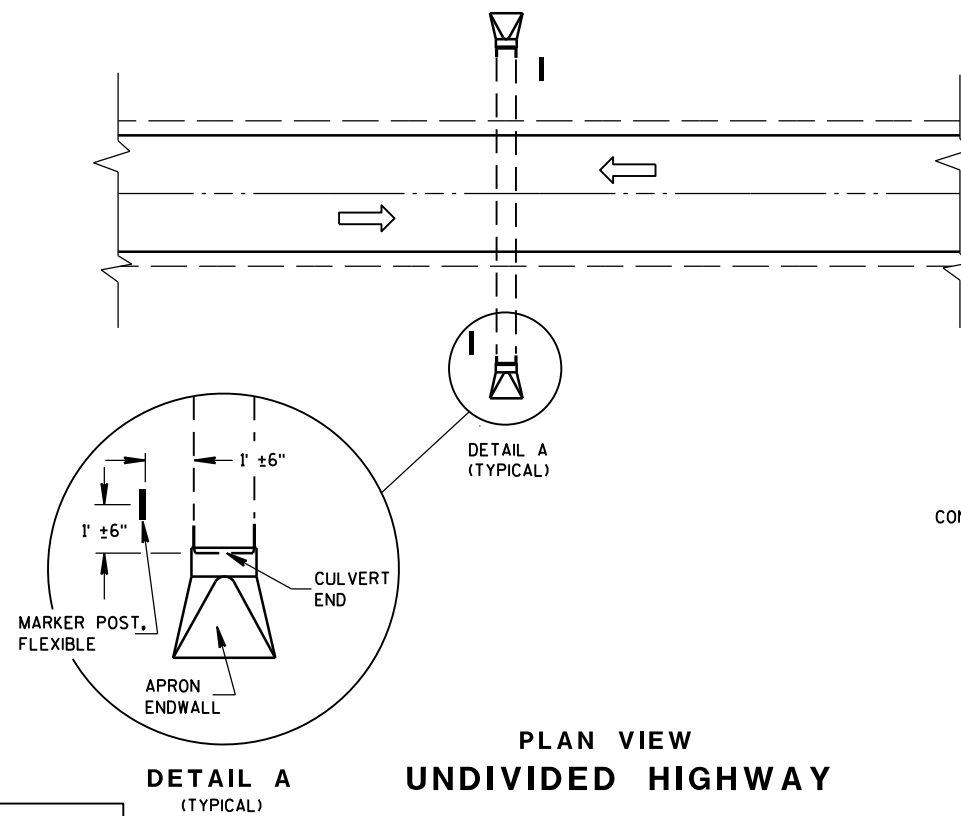
TEE INTERSECTION BYPASS LANE DETAIL

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

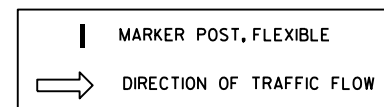
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



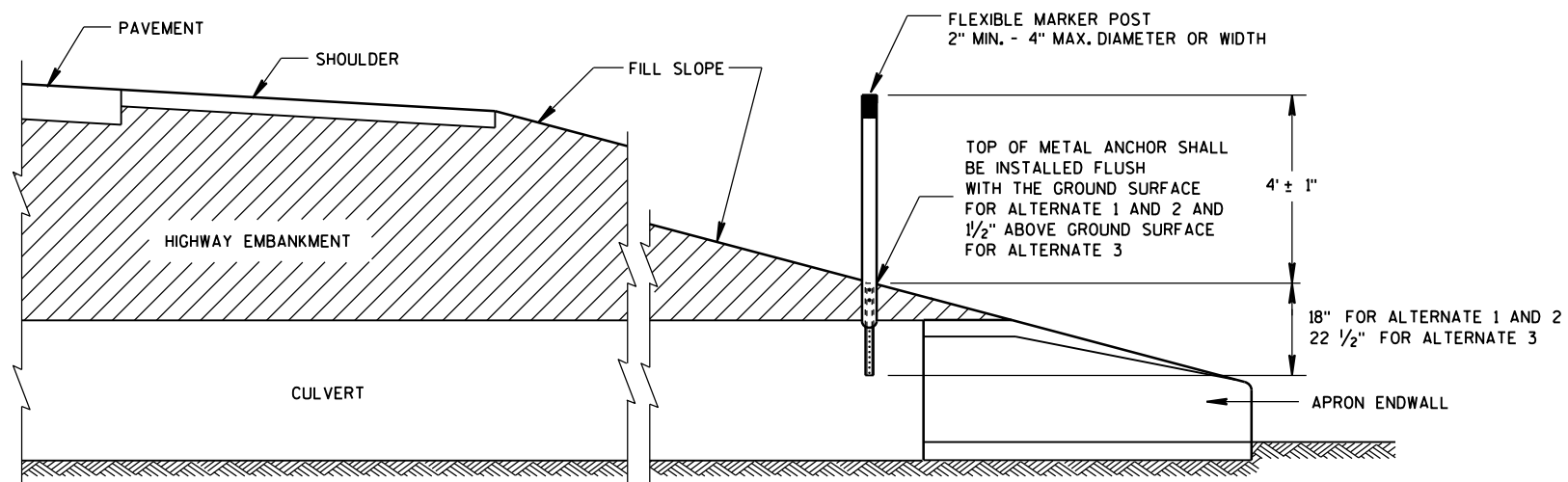
PLAN VIEW
DIVIDED HIGHWAY



PLAN VIEW
UNDIVIDED HIGHWAY



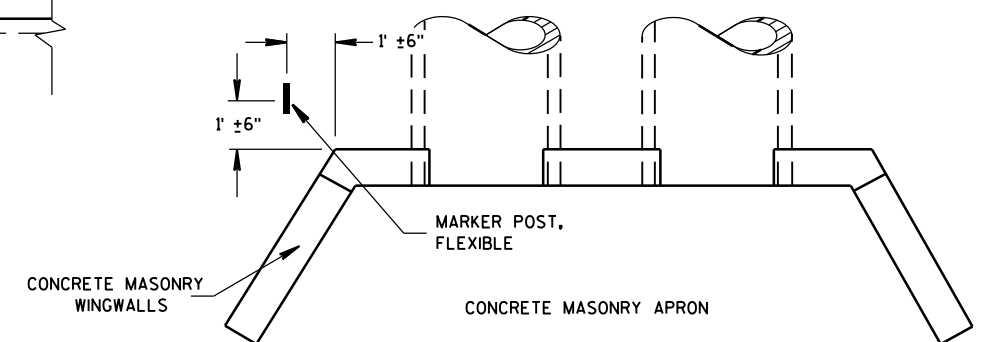
FLEXIBLE MARKER POST LOCATION



CROSS SECTION
FLEXIBLE MARKER POST

GENERAL NOTES

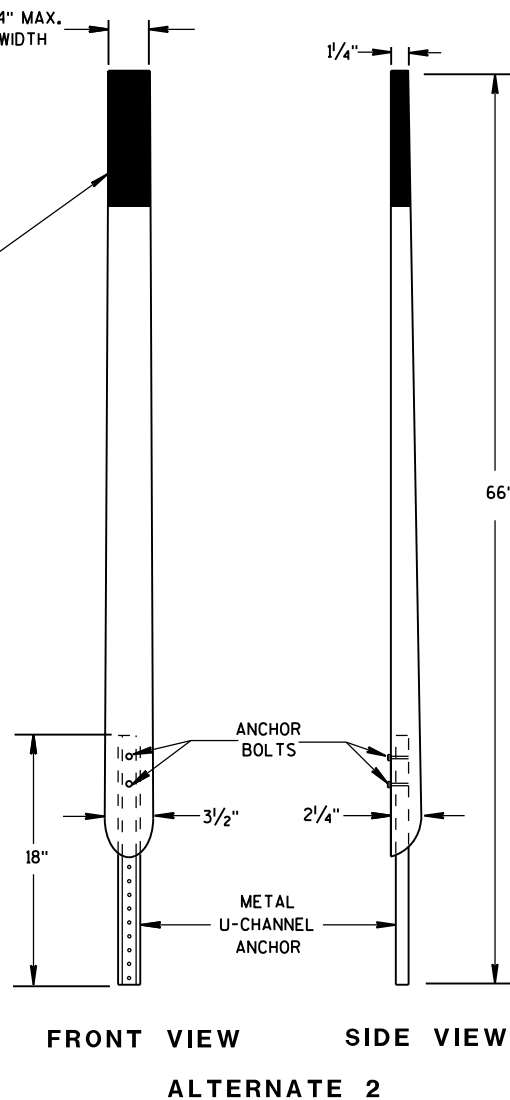
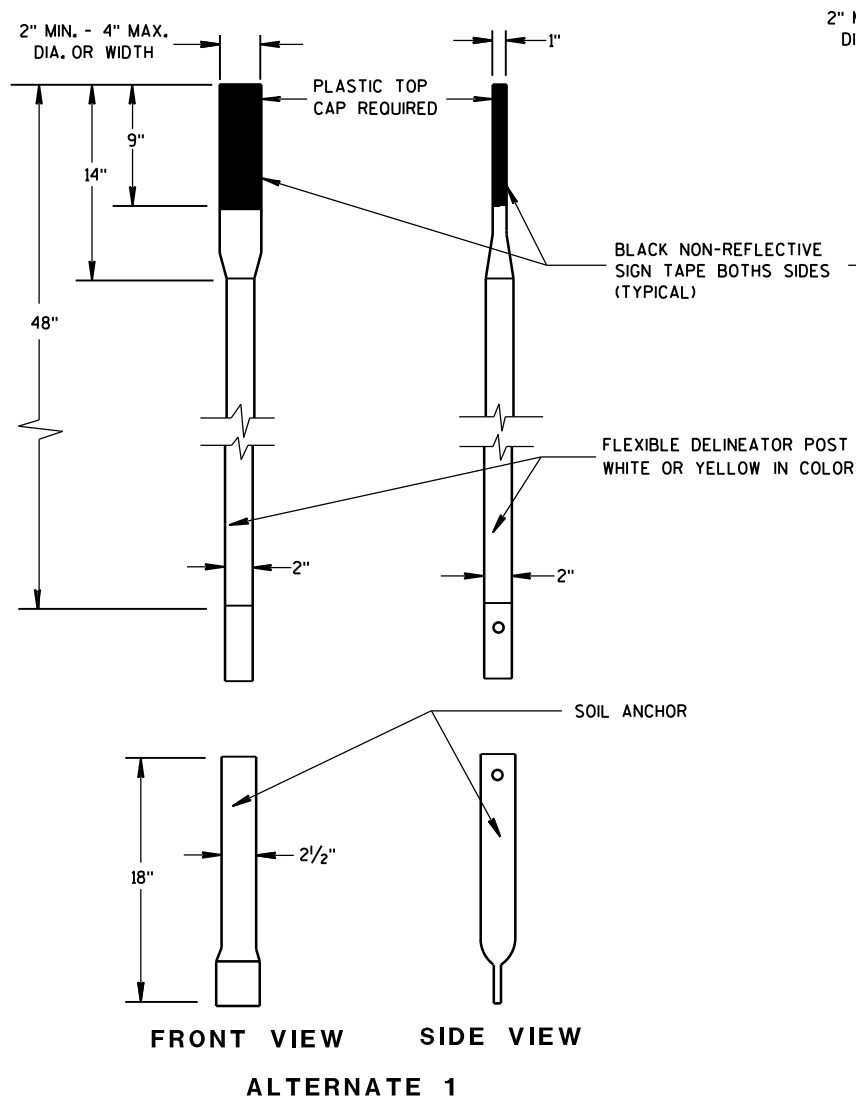
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



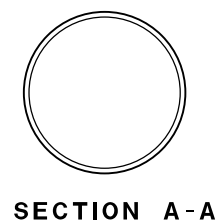
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST
FOR CULVERT END

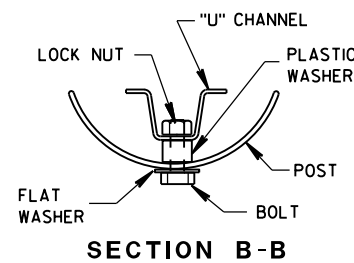
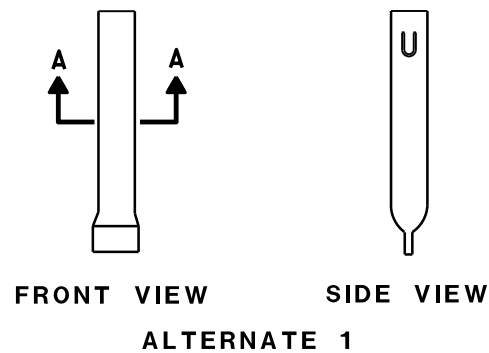
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



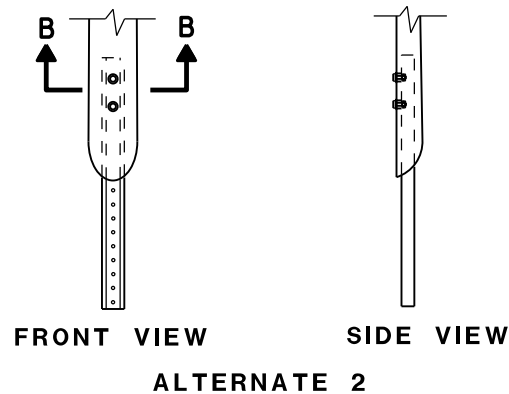
FLEXIBLE MARKER POSTS



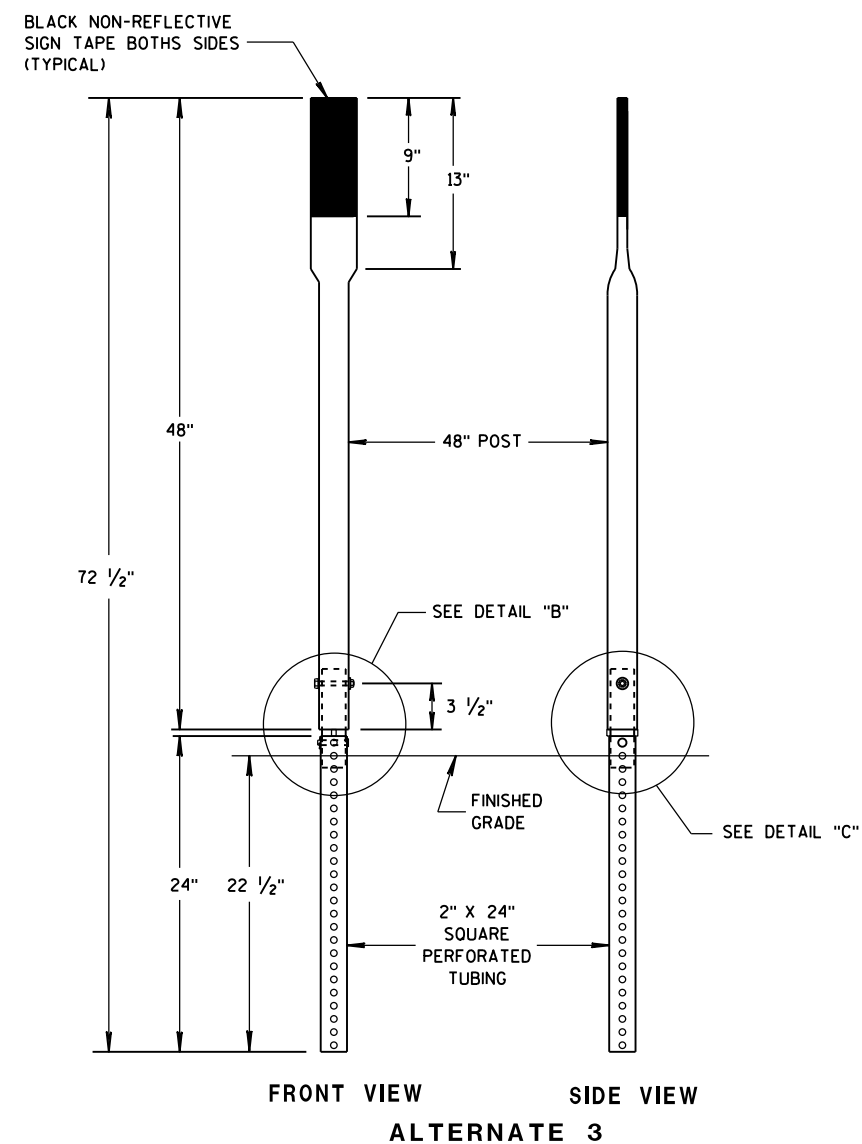
SECTION A-A



SECTION B-B

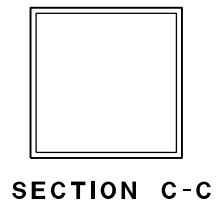


FLEXIBLE MARKER POST ANCHORS

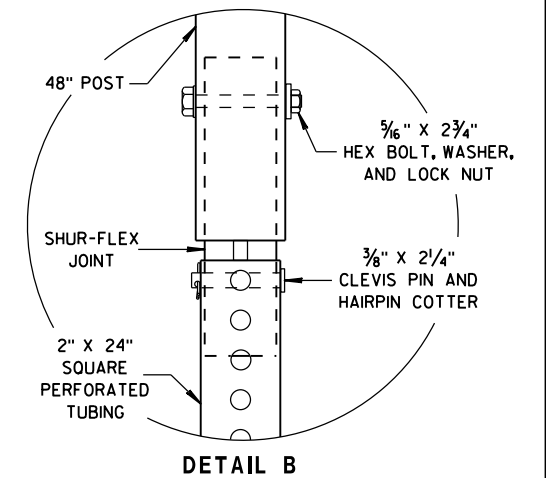
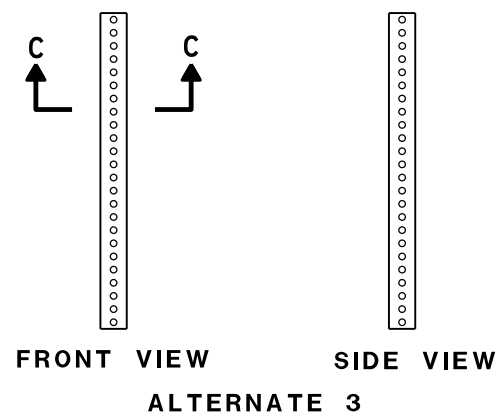


FRONT VIEW SIDE VIEW

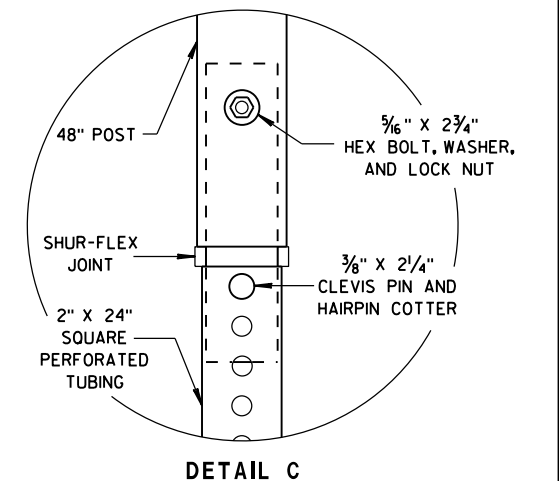
ALTERNATE 3



SECTION C-C



DETAIL B

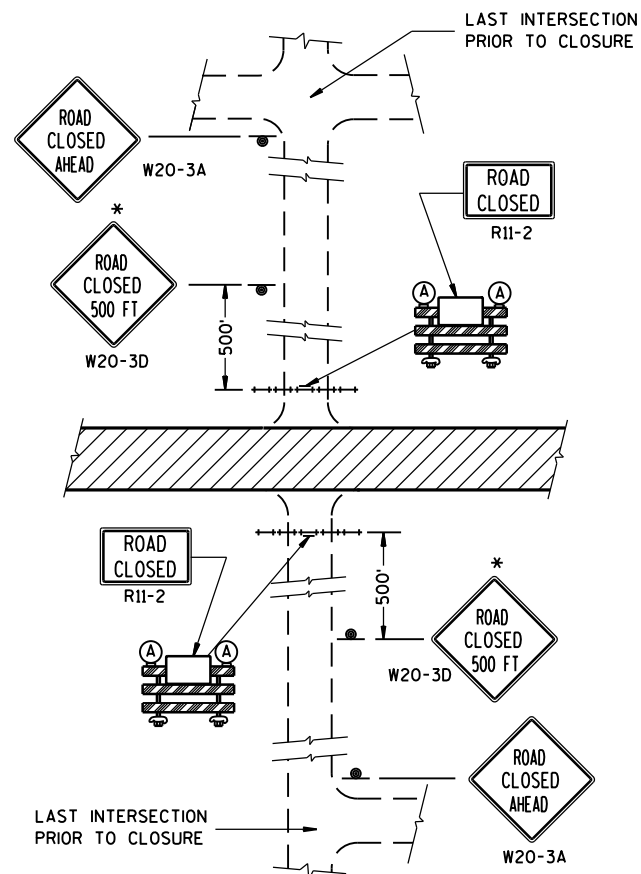


DETAIL C

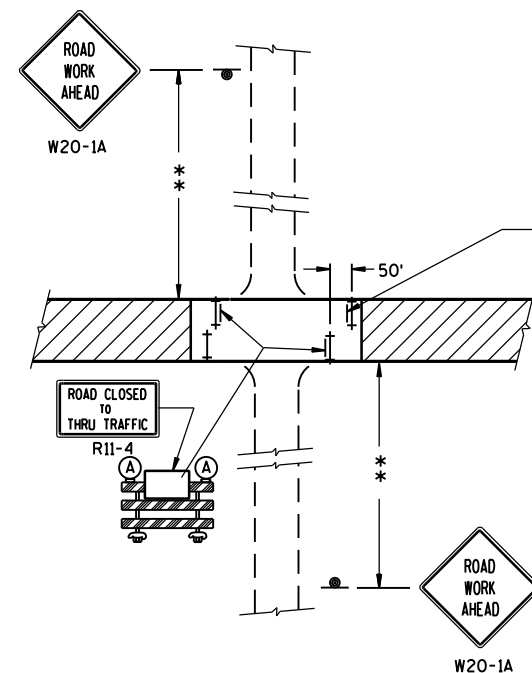
FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

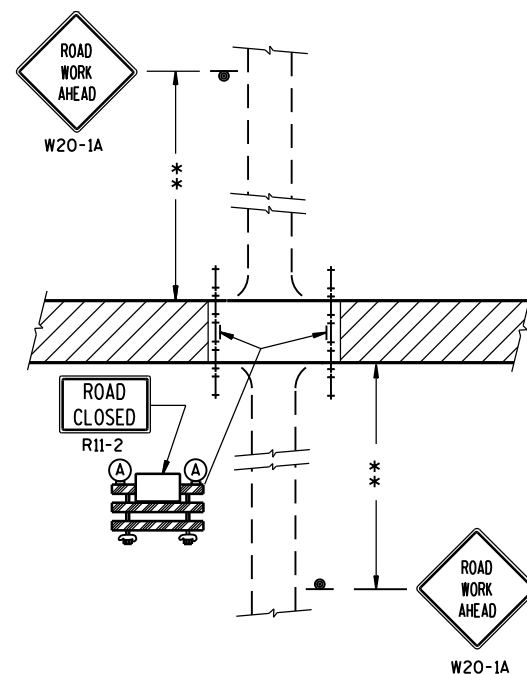
APPROVED
10/1/2012 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



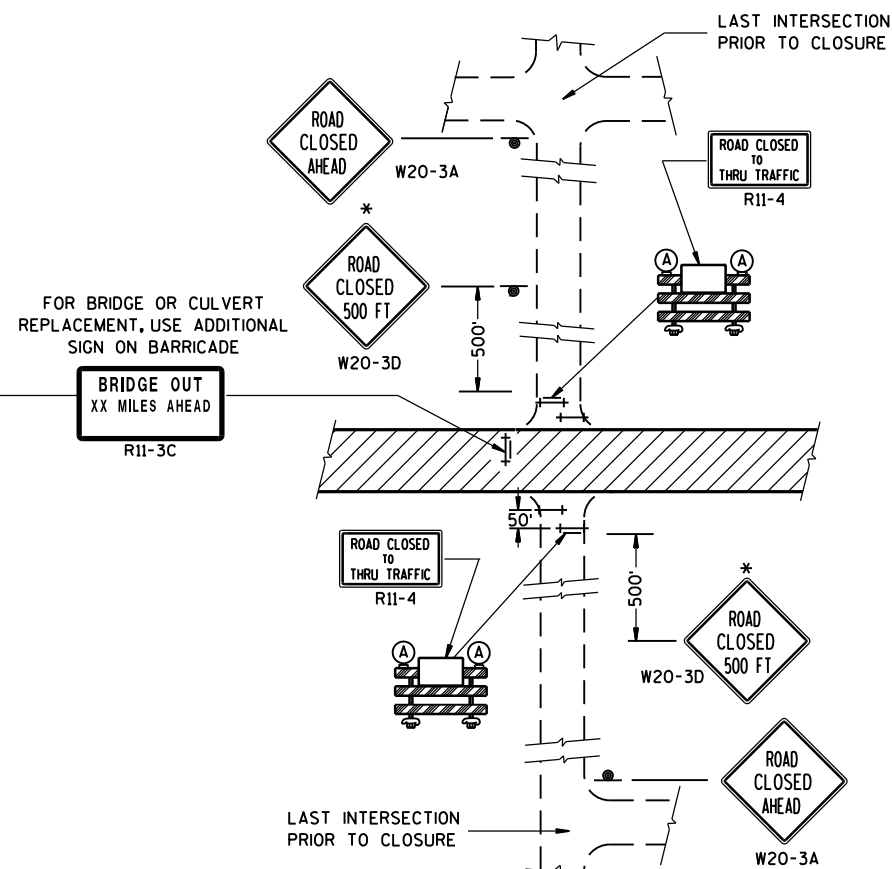
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

R11-2 SHALL BE 48" X 30".

R11-4 AND R11-3 SHALL BE 60" X 30".

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

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2015

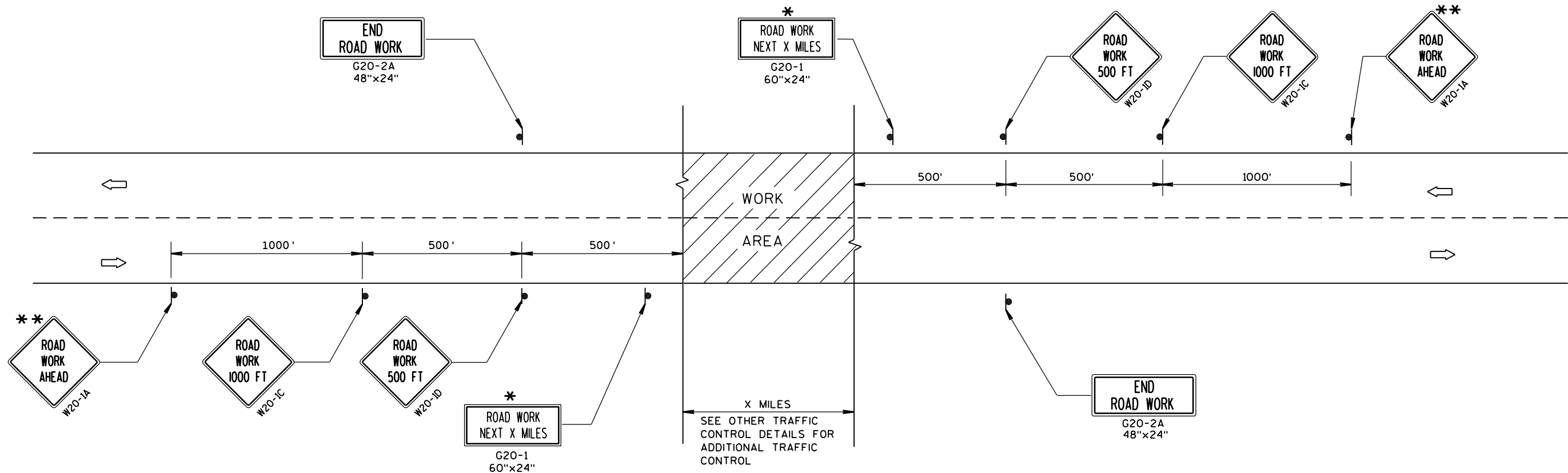
DATE

FHWA

/S/ Peter Amakobe Atepe

STATEWIDE WORK ZONE TRAFFIC

SAFETY ENGINEER



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

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.

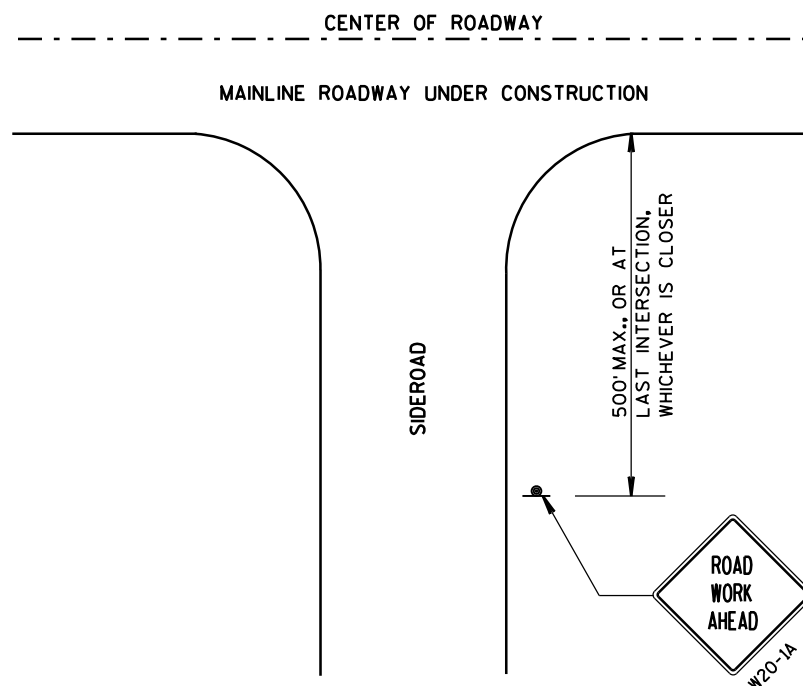
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 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 RE-ESTABLISHED.

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

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



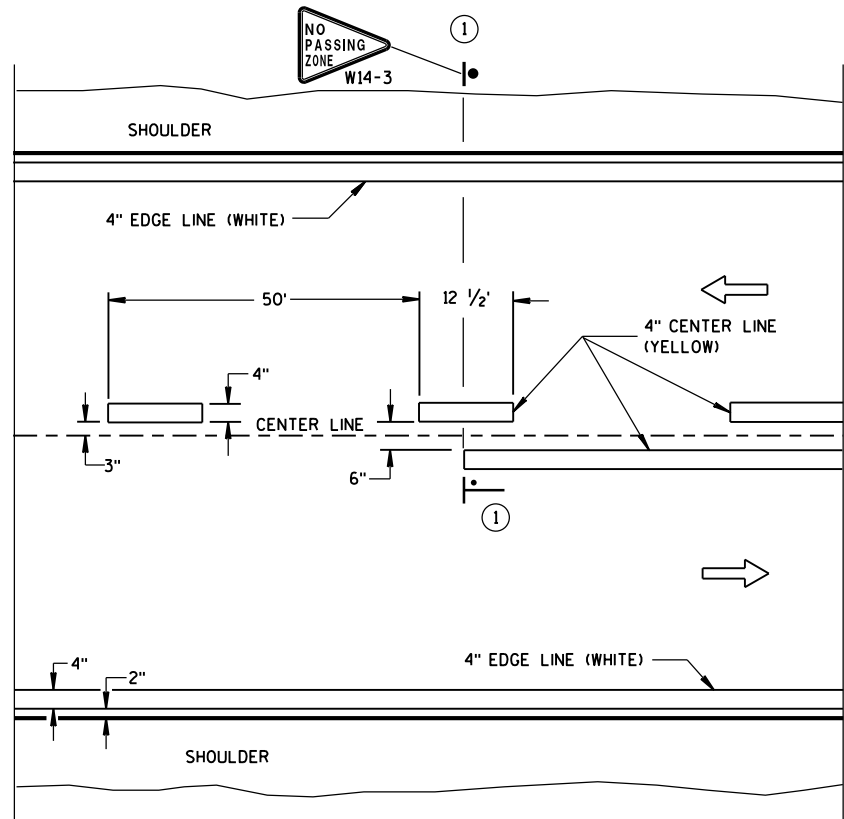
LEGEND

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

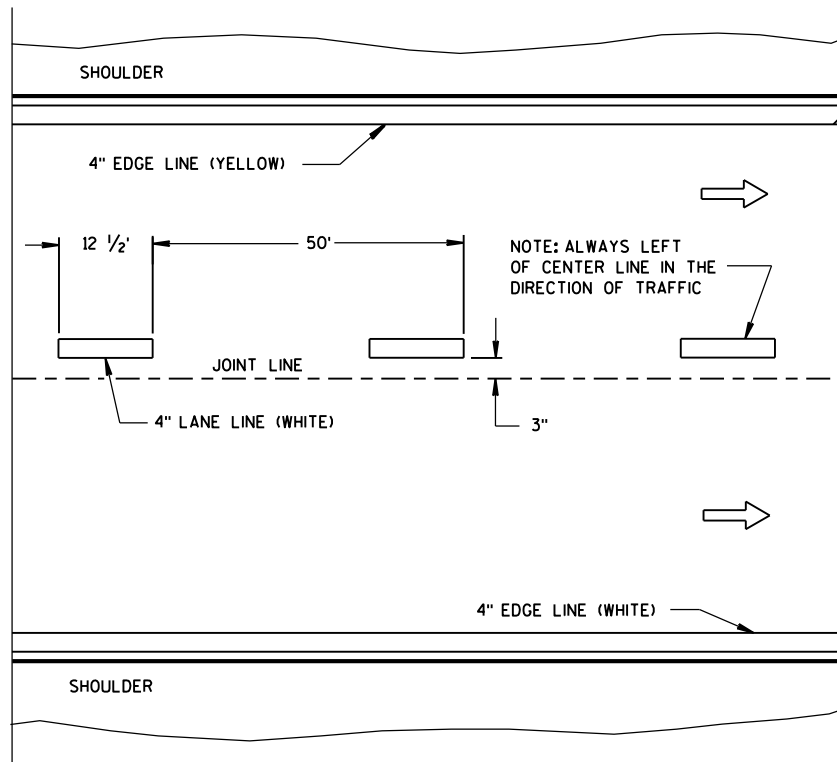
TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 /S/ Peter Amokobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER

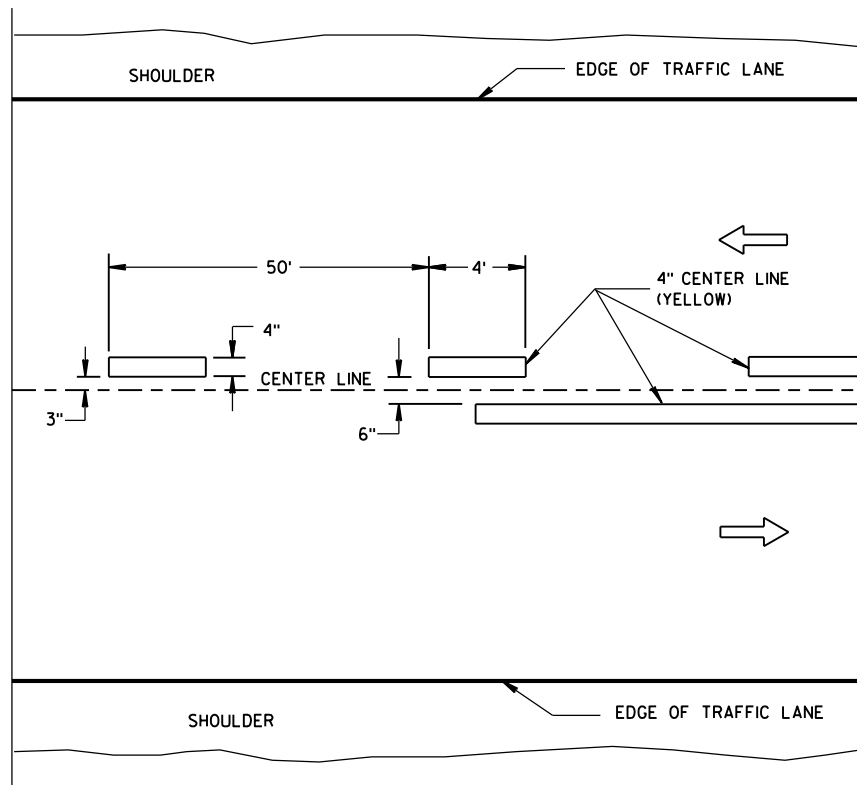


TWO WAY TRAFFIC

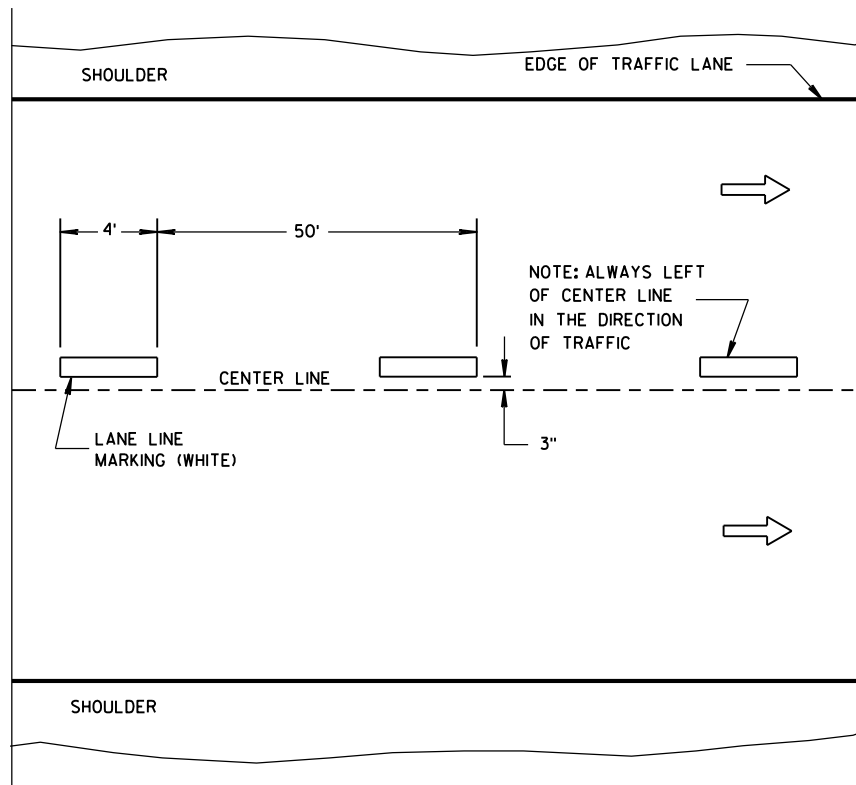


ONE WAY TRAFFIC

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 NO PASSING ZONE W14-3 SIGN SHALL BE LOCATED 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
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

LEGEND

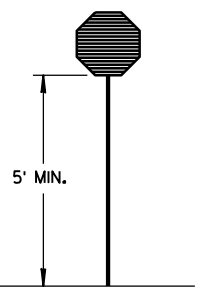
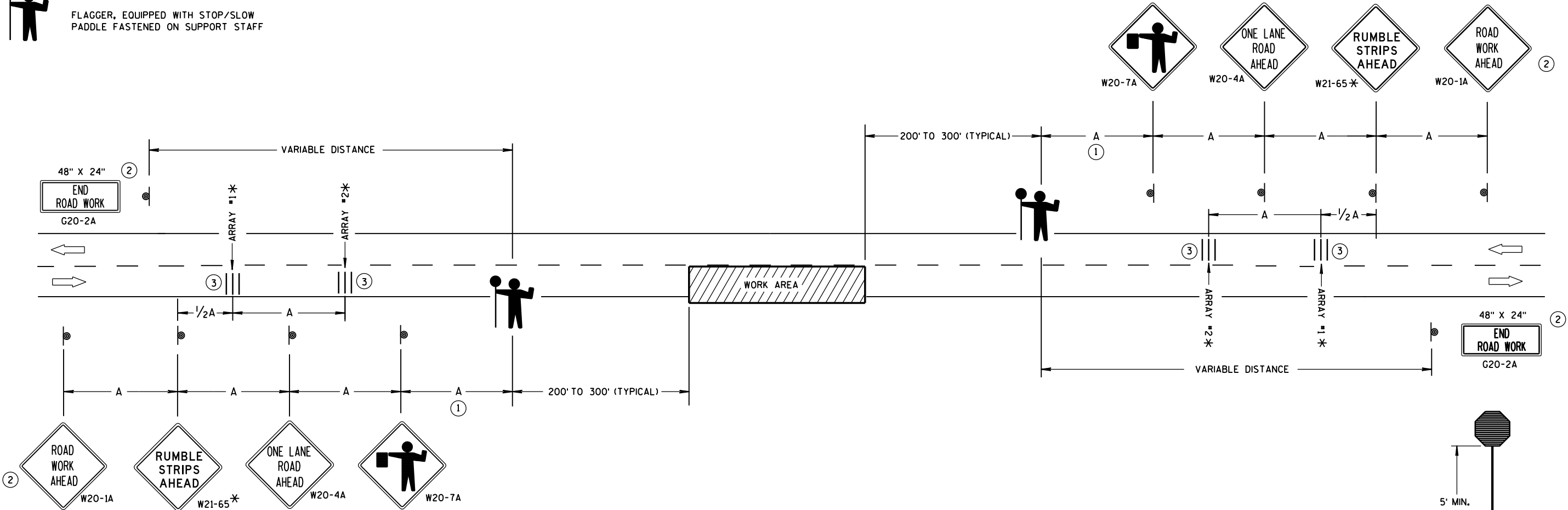
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



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



STOP/SLOW PADDLE ON SUPPORT STAFF

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

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.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES (AND THE 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.

"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

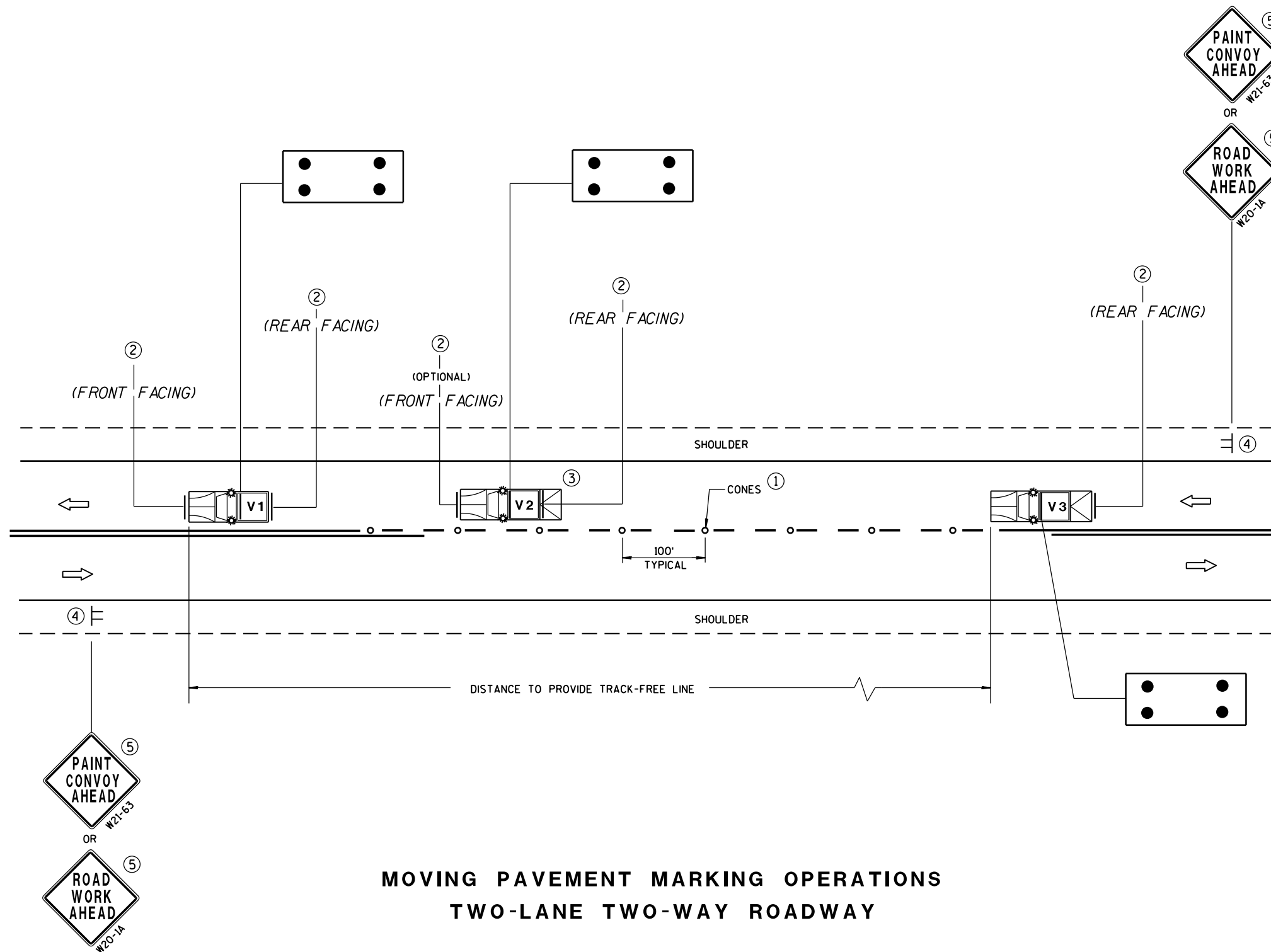
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, REMOVE TEMPORARY RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- * UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.
- ① FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- ③ EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Andrew Heldtke
DATE WORK ZONE ENGINEER
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.

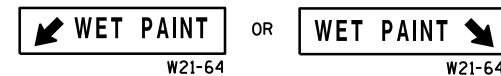
THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

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

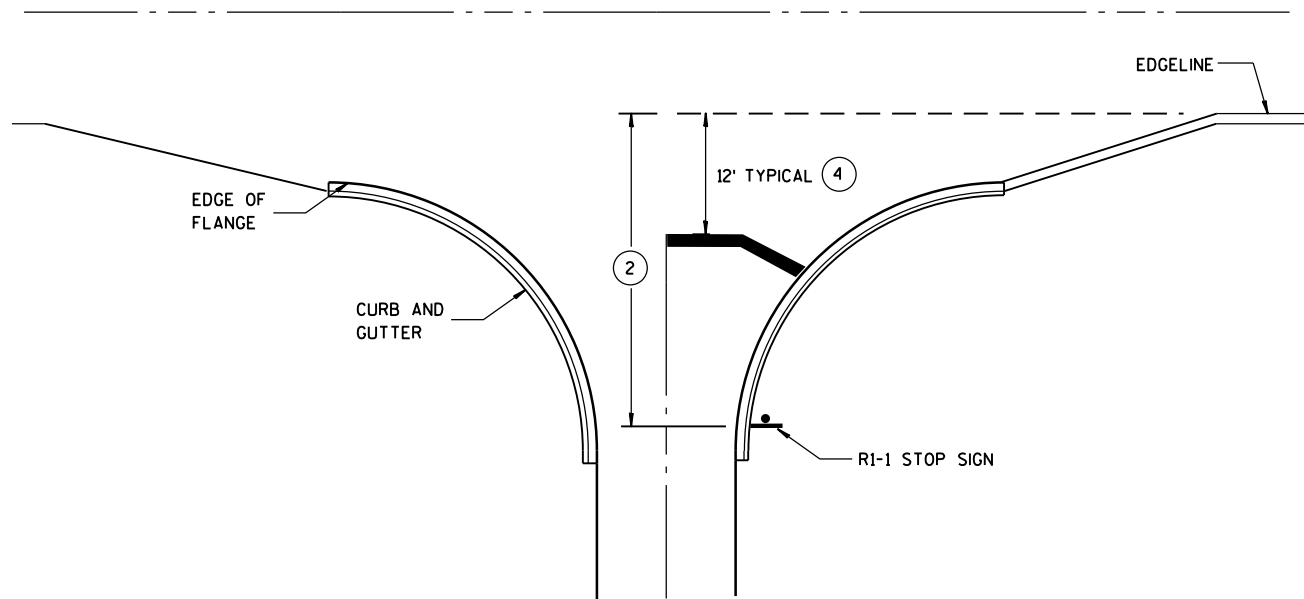
 FLASHING ARROW PANEL (CAUTION)

MOVING PAVEMENT MARKING
OPERATION
TWO-LANE TWO-WAY ROADWAY

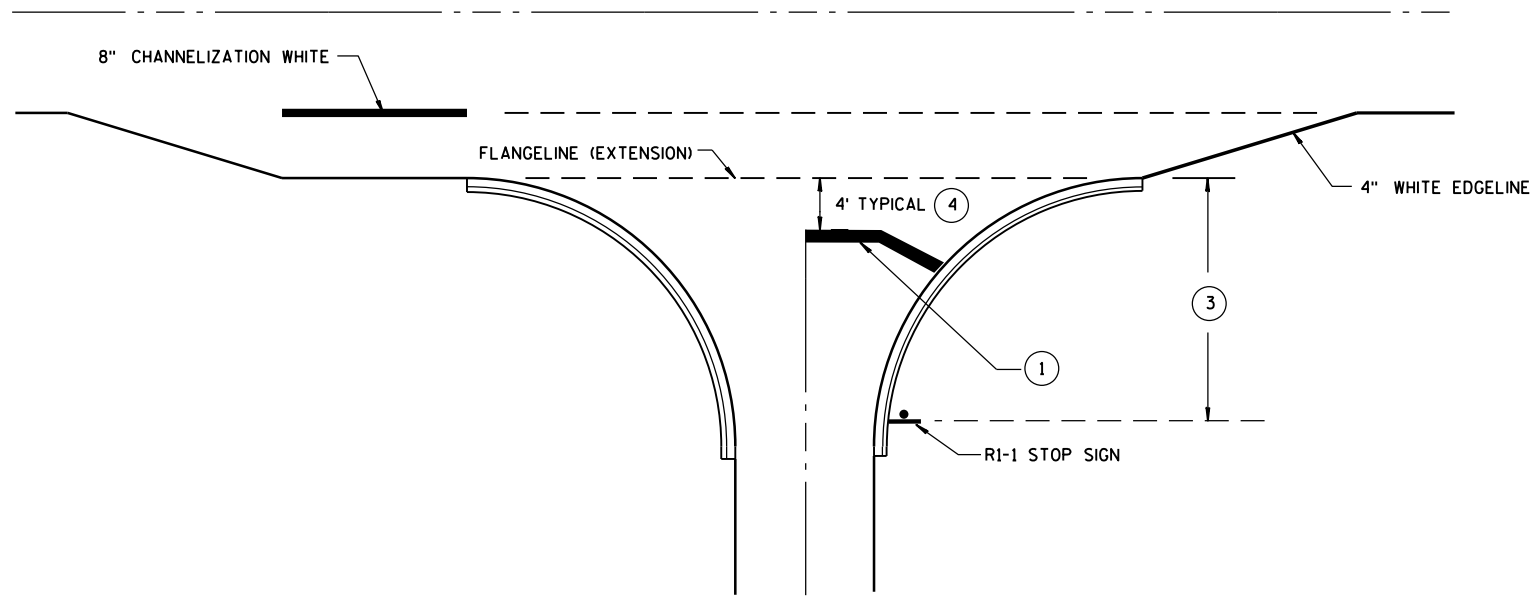
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016
DATE
FHWA

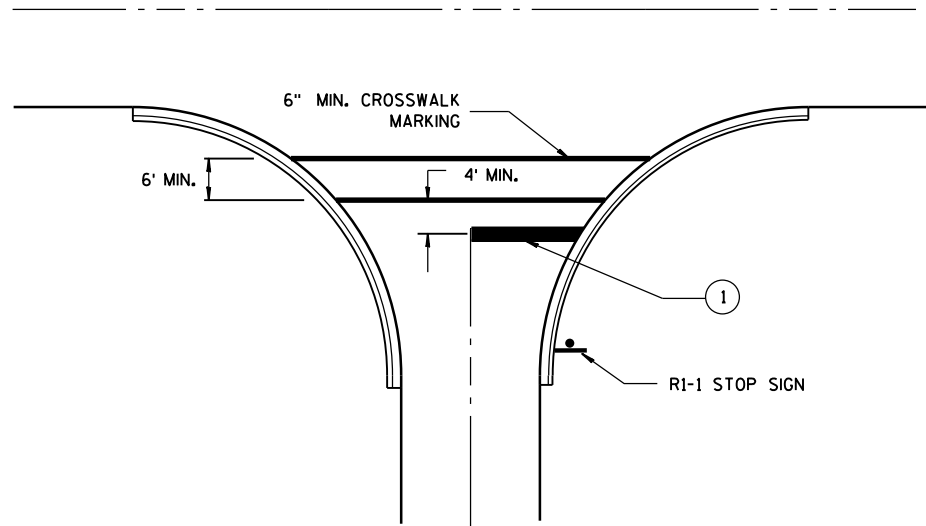
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER



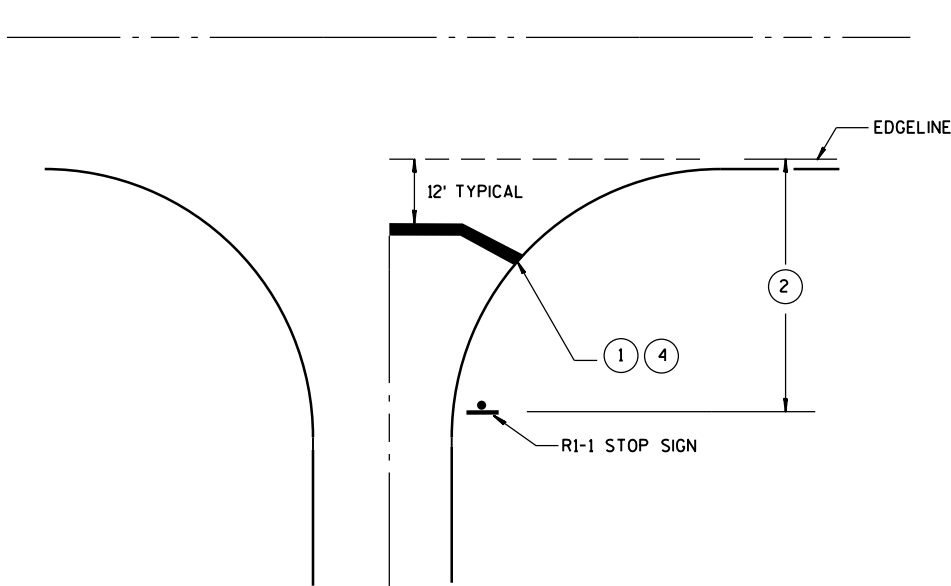
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

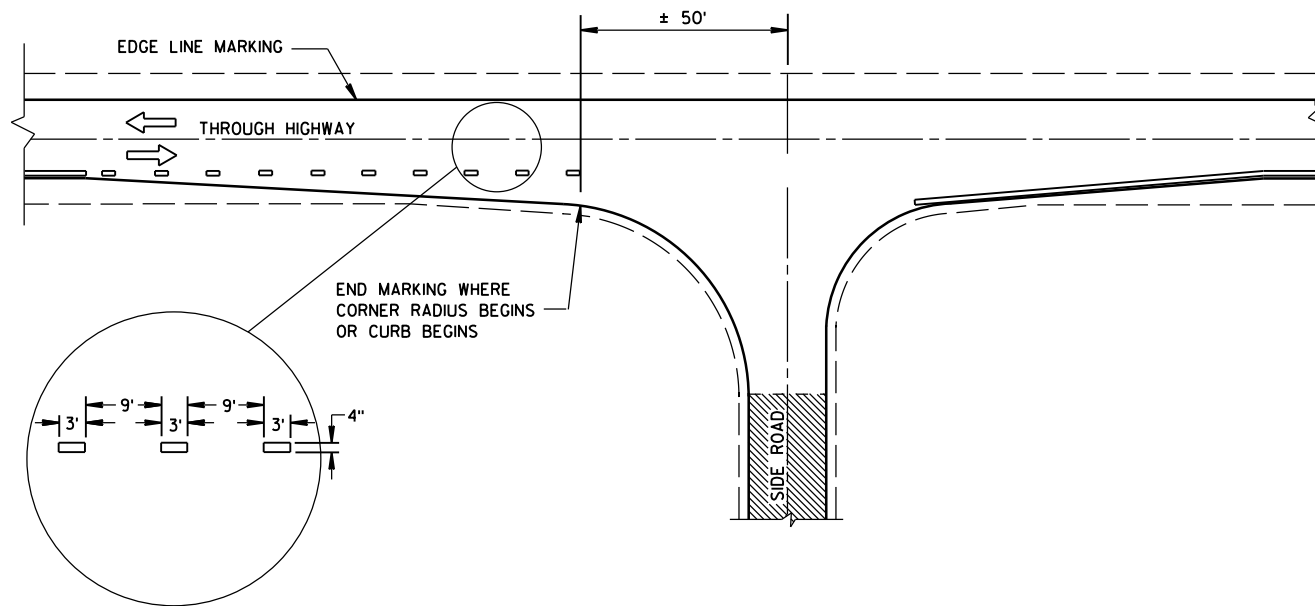
GENERAL NOTES

- 1 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- 2 IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGE LINE THAN NO STOP LINE IS REQUIRED.
- 3 IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
- 4 MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES. (NO CLOSER THAN 4 FEET).

STOP LINE AND CROSSWALK
PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-18-2016 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA




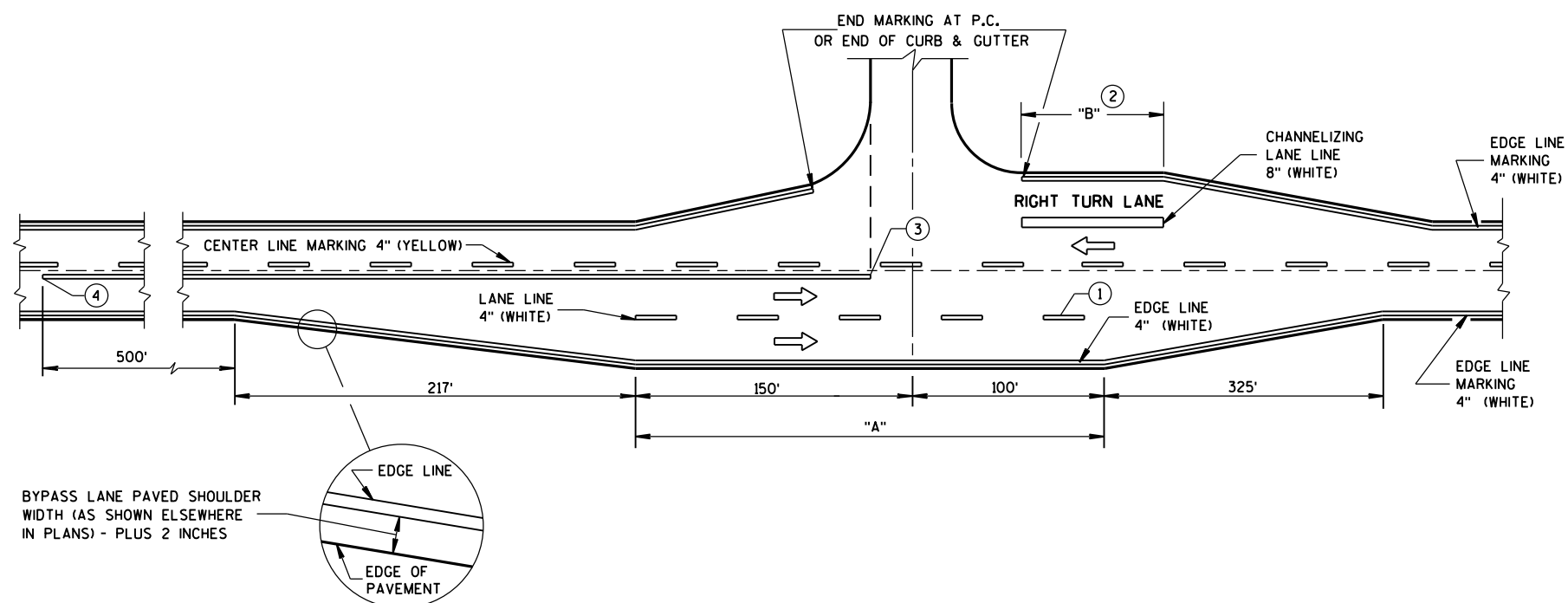
MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

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

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL



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

**PAVEMENT MARKING
(INTERSECTIONS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

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

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

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

TABLE A

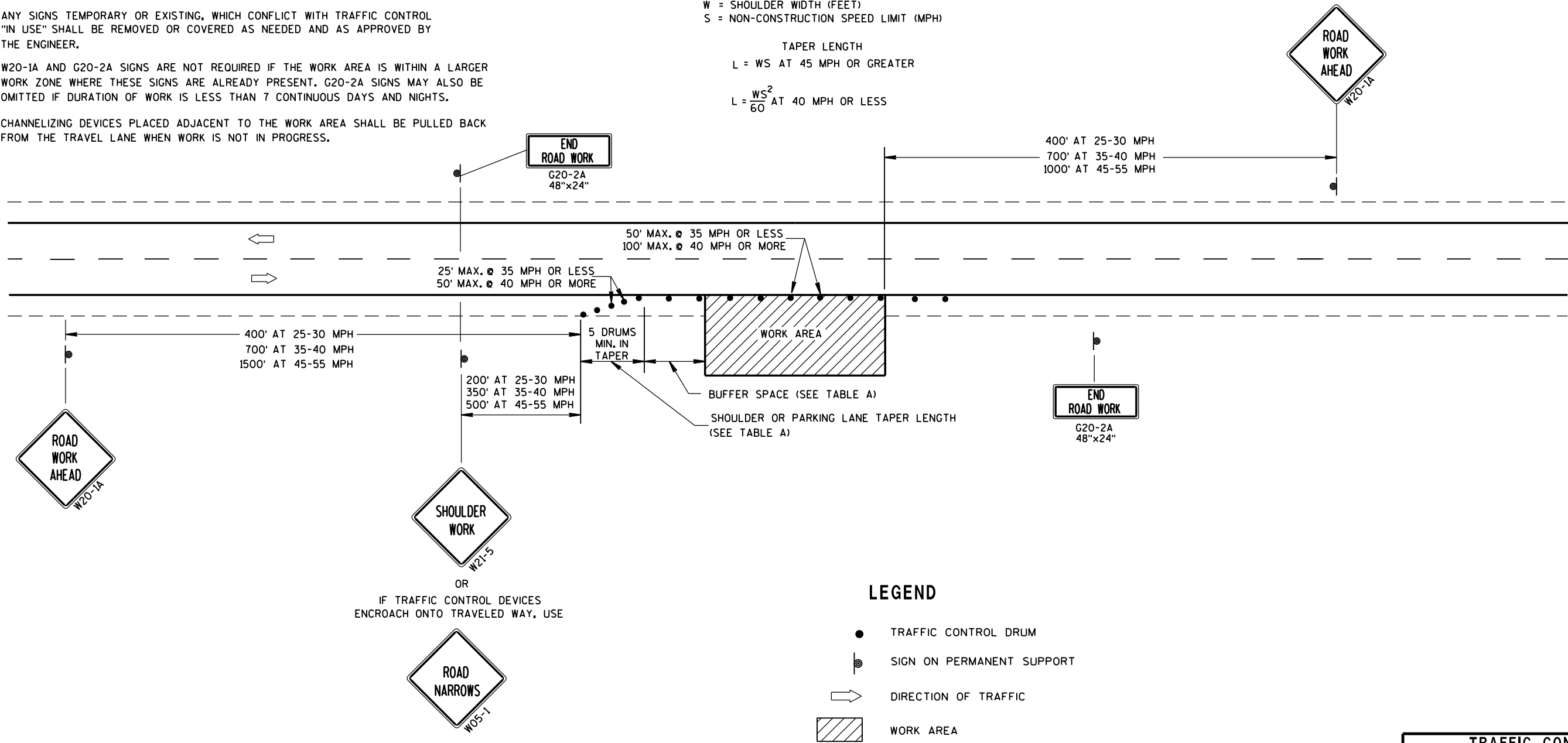
| SHOULDER TAPER LENGTH (FEET) | | | | | BUFFER SPACE (FEET) |
|------------------------------|----|-----|-----|-----|---------------------|
| S \ W | 4 | 6 | 8 | 10 | |
| 30 | 20 | 30 | 40 | 50 | 200 |
| 35 | 30 | 45 | 55 | 70 | 250 |
| 40 | 40 | 55 | 75 | 90 | 305 |
| 45 | 60 | 90 | 120 | 150 | 360 |
| 50 | 70 | 100 | 135 | 170 | 425 |
| 55 | 75 | 110 | 150 | 185 | 495 |

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH
L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

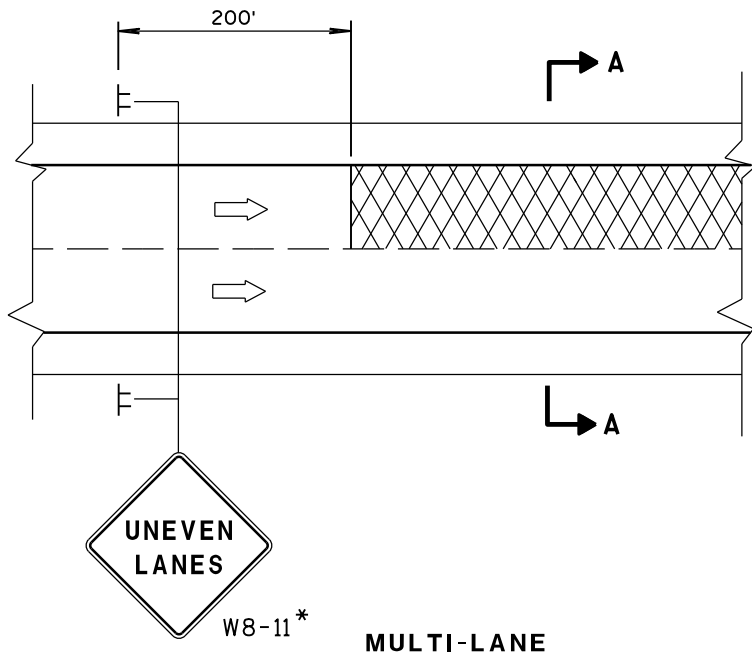
SHOULDER TAPER LENGTH = $\frac{1}{3}L$



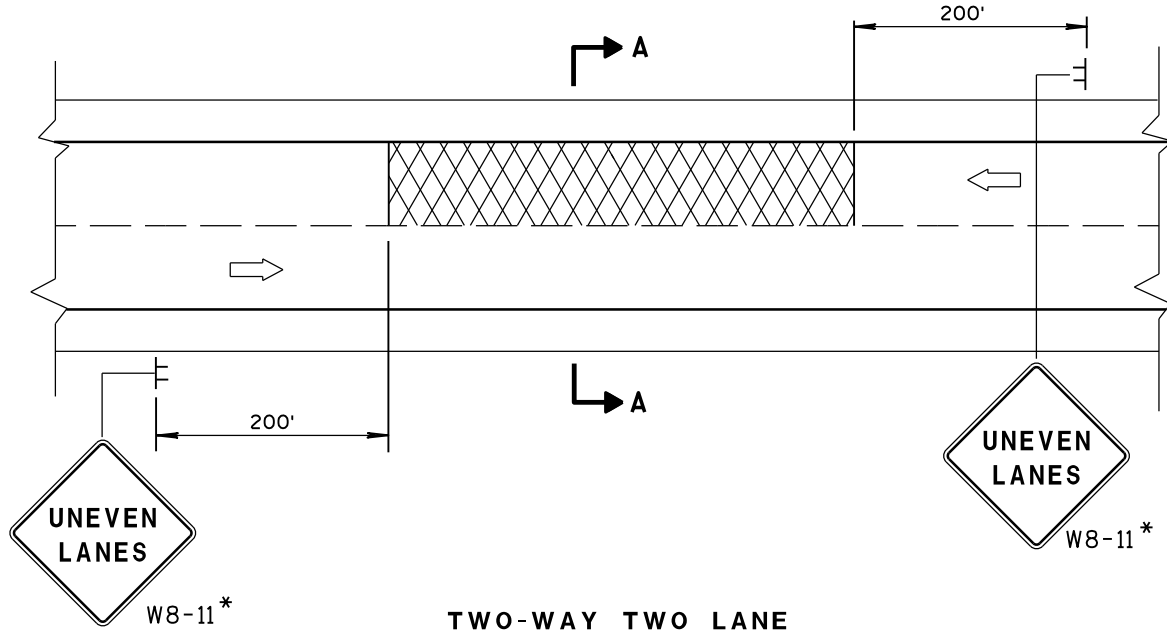
LEGEND

- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

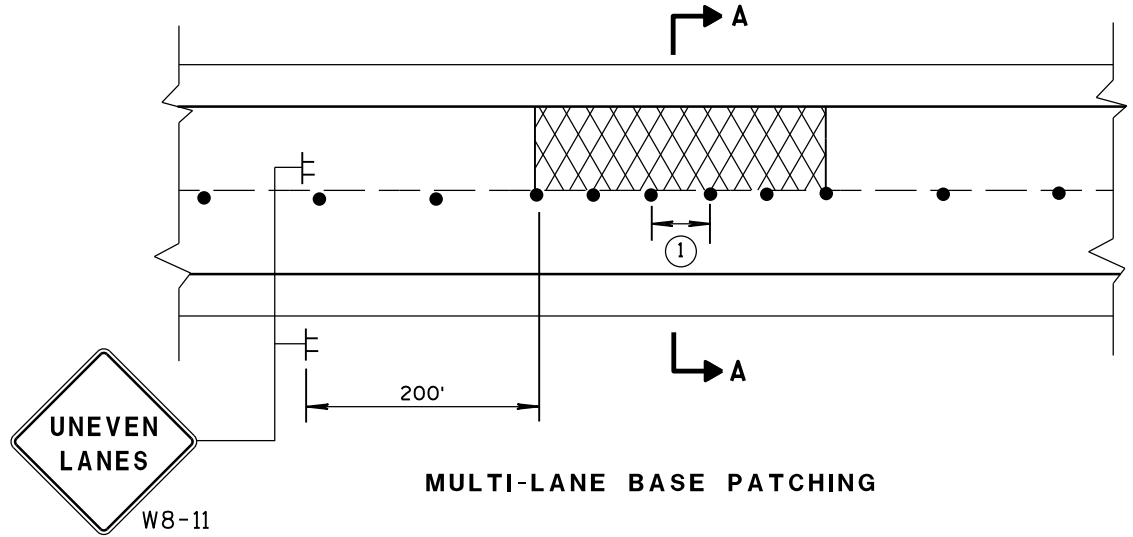
| | |
|---|---|
| TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED July 14, 2015 DATE | /S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER |
| FHWA | |



MULTI-LANE

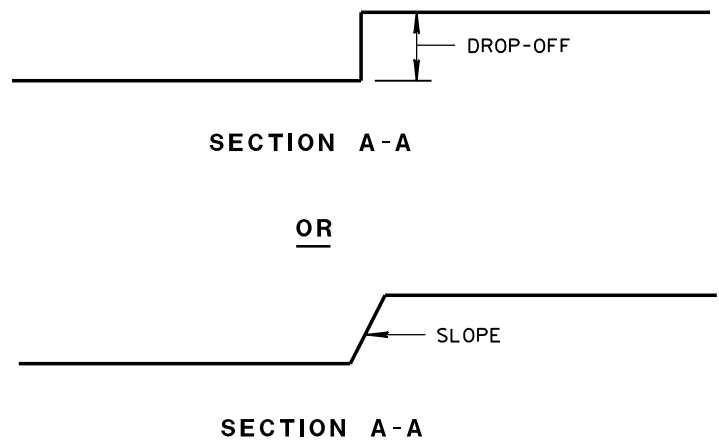


TWO-WAY TWO LANE



MULTI-LANE BASE PATCHING

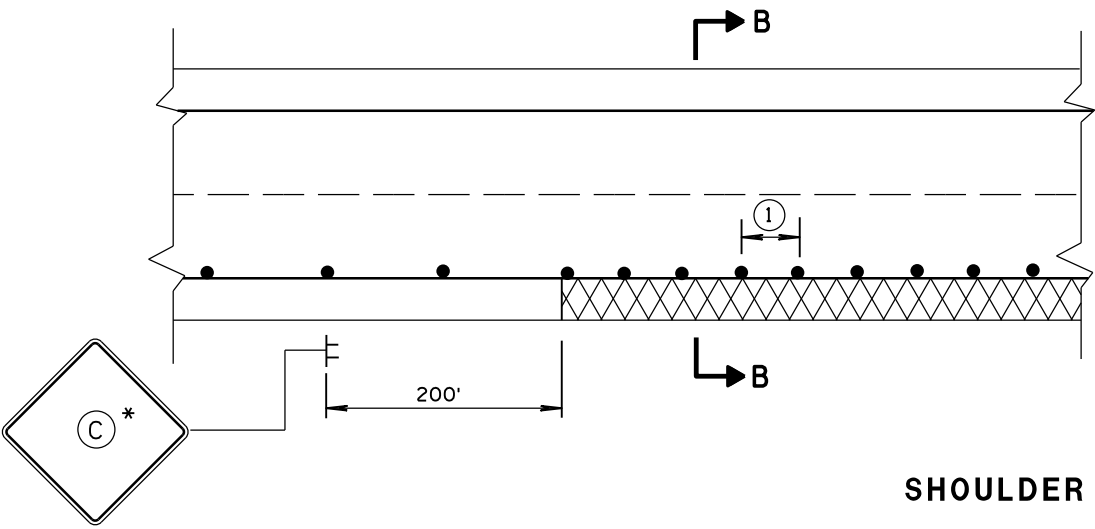
ADJACENT LANE DROP-OFFS



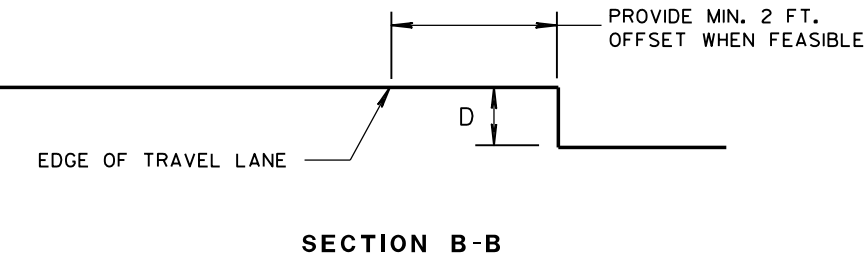
SECTION A-A

OR

SECTION A-A



SHOULDER DROP-OFFS



SECTION B-B

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1/2 MILE.

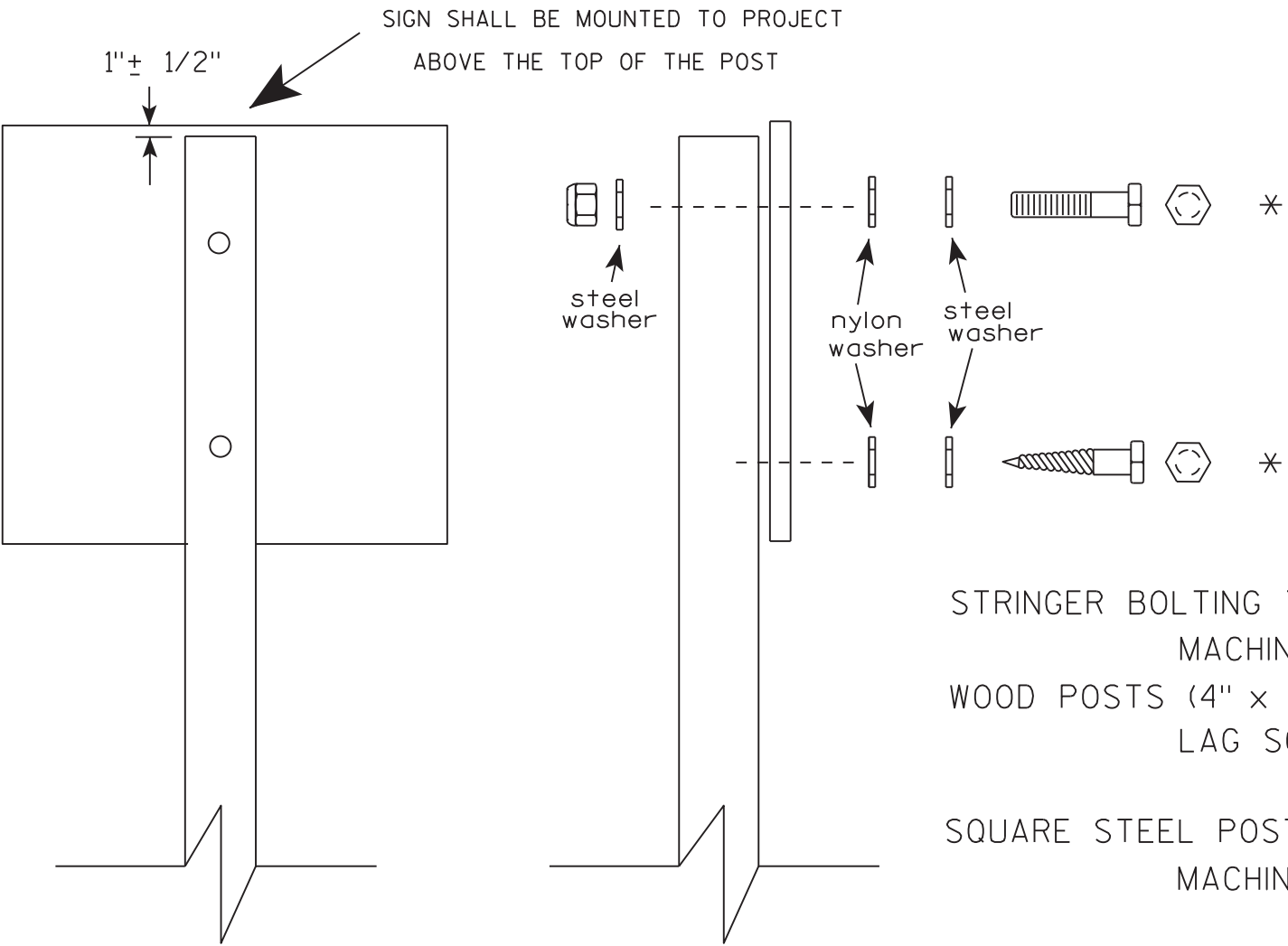
① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

- Sign on temporary support
- Traffic control drum
- Direction of traffic
- Work area with drop-off

| D | SIGN ① |
|---------------------------------------|--|
| < 2" WITH A SLOPE STEEPER THAN 3:1 | <div>LOW SHOULDER</div> <div>W08-9</div> |
| 2" < 6" WITH A SLOPE STEEPER THAN 3:1 | <div>SHOULDER DROP-OFF</div> <div>W8-9A</div> <div>PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT</div> |

| TRAFFIC CONTROL, DROP-OFF SIGNING | |
|--|--|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED March, 2017 DATE | /S/ Andrew Heldtke WORK ZONE ENGINEER |
| FHWA | |



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

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

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

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

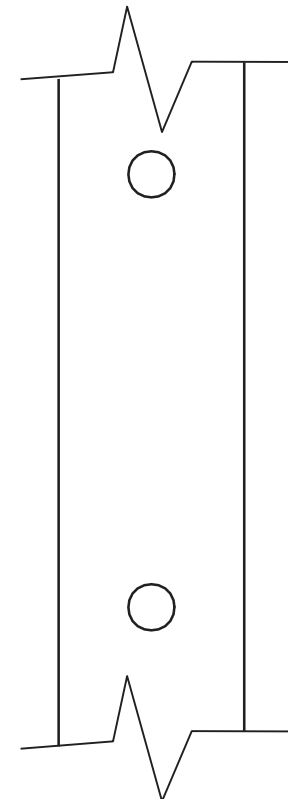
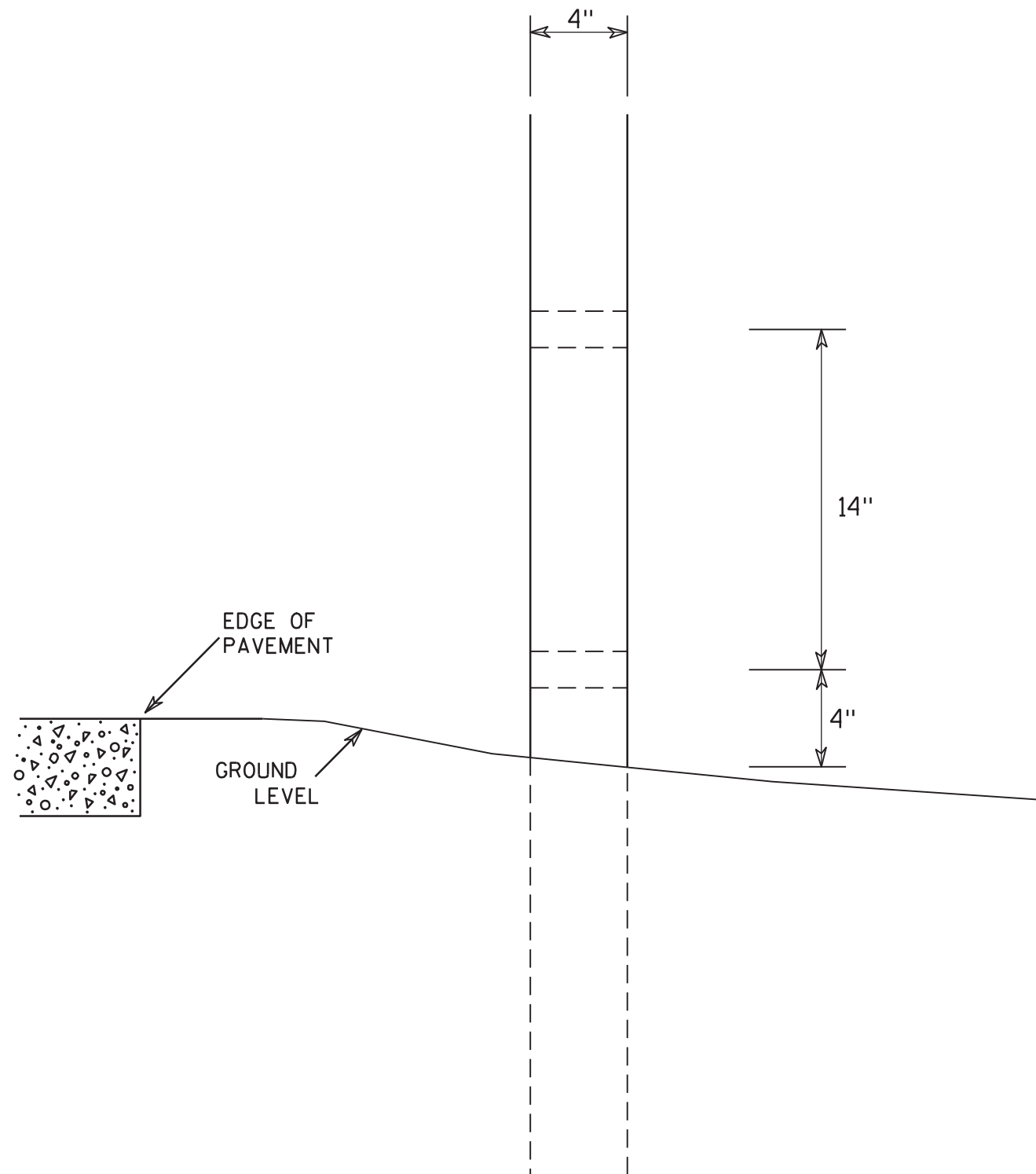
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS
TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

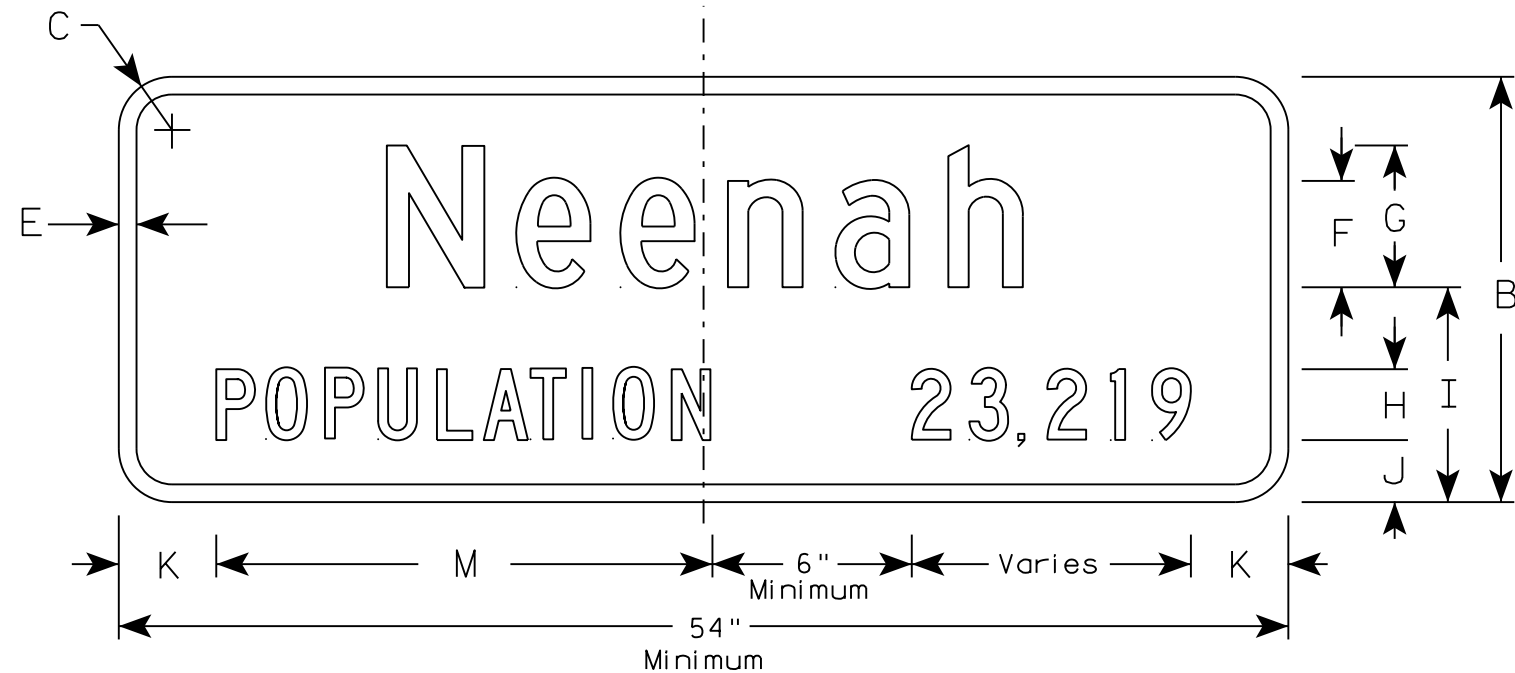
PROJECT NO:

HWY:

COUNTY:

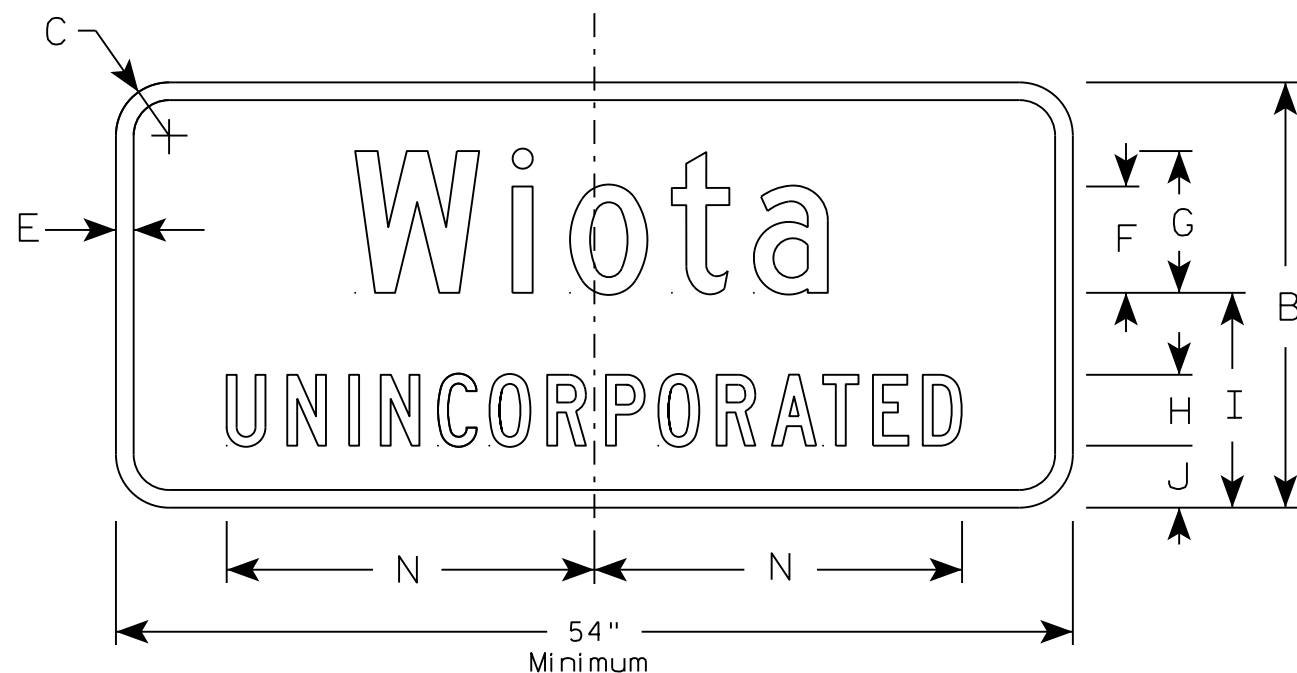
SHEET NO:

E



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - Green
Message - White
3. Message Series - See Note 4
4. First line is Series D, and the second line is series C.
5. Horizontal board length will be in 6 inch increments to accomodate variable messages. Minimum dimensions are noted. Substitute appropriate population figure but note the minimum 6 inch spacing between the word and the numerals. Optically balance the Community name around the centerline of the sign.



| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|--------|----|---|---|---|---|---|---|--------|-------|-------|---|----|--------|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Varies | 24 | 3 | | 1 | 6 | 8 | 4 | 12 1/8 | 3 1/2 | 5 1/2 | | 28 | 20 3/4 | | | | | | | | | | | | | Varies |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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

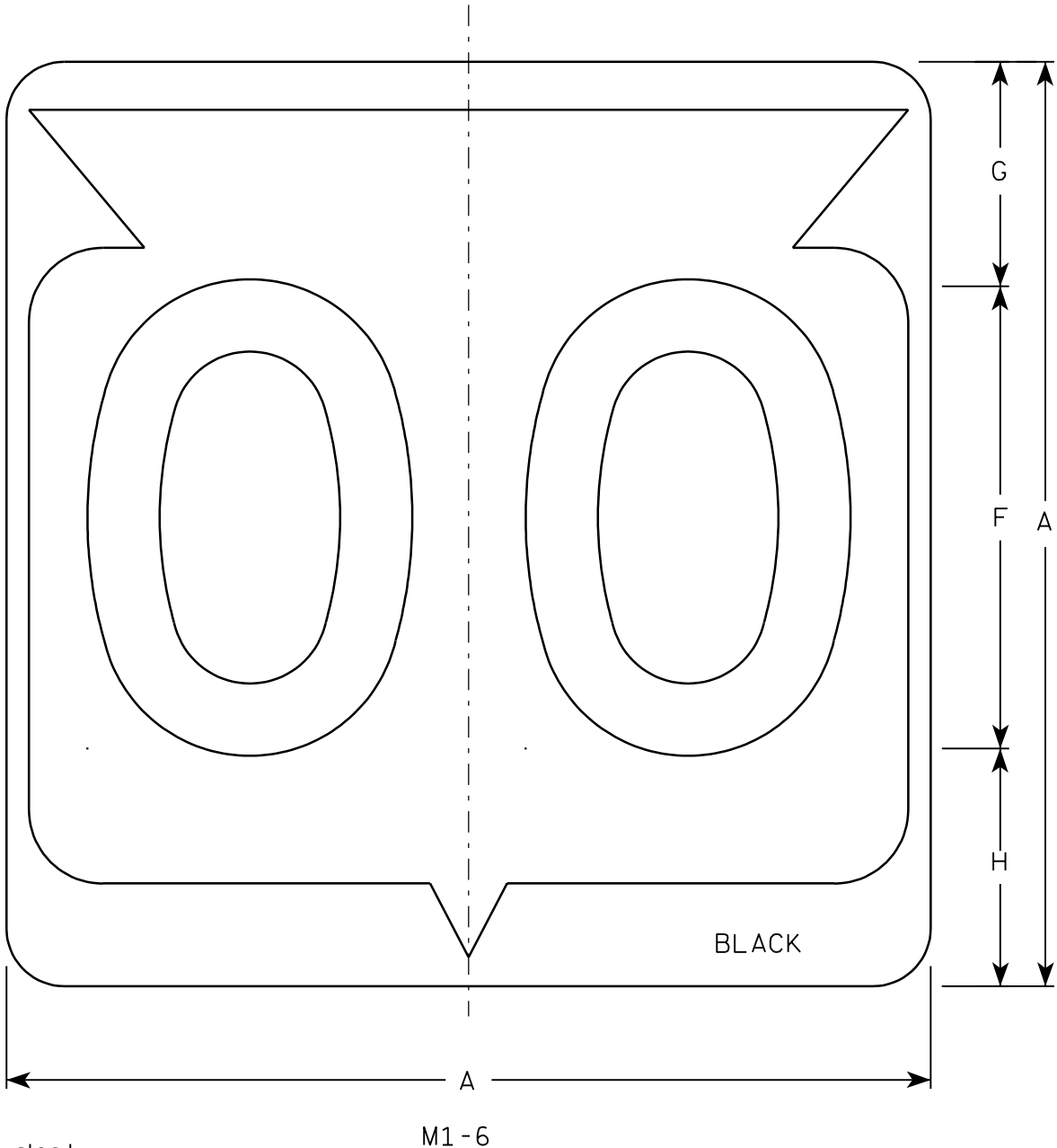
TYPICAL SIGN
I2-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 3/20/17 PLATE NO. I2-3.6

7



Metric equivalent
for this sign is:

| SIZE | |
|------|-----------------|
| 1 | |
| 2 | 600 mm X 600 mm |
| 3 | 900 mm X 900 mm |
| 4 | 900 mm X 900 mm |
| 5 | 900 mm X 900 mm |

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. | Area m ² |
|------|----|---|-------|---|---|----|-------|-------|--------|-------|--------|--------|-------|-------|--------|--------|---|---|---|---|---|---|---|---|---|---|-----------------|------------------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | | 1 1/2 | | | 12 | 5 1/2 | 6 1/2 | 10 1/4 | 2 1/2 | 8 7/8 | 11 1/2 | 1 | 1 7/8 | 11 1/4 | 21 7/8 | | | | | | | | | | | 4.0 | .36 |
| 3 | 36 | | 2 1/4 | | | 18 | 8 3/4 | 9 1/4 | 15 3/8 | 5 3/8 | 12 5/8 | 17 1/8 | 1 1/2 | 2 7/8 | 16 7/8 | 33 | | | | | | | | | | | 9.0 | .81 |
| 4 | 36 | | 2 1/4 | | | 18 | 8 3/4 | 9 1/4 | 15 3/8 | 5 3/8 | 12 5/8 | 17 1/8 | 1 1/2 | 2 7/8 | 16 7/8 | 33 | | | | | | | | | | | 9.0 | .81 |
| 5 | 36 | | 2 1/4 | | | 18 | 8 3/4 | 9 1/4 | 15 3/8 | 5 3/8 | 12 5/8 | 17 1/8 | 1 1/2 | 2 7/8 | 16 7/8 | 33 | | | | | | | | | | | 9.0 | .81 |

PROJECT NO:

HWY:

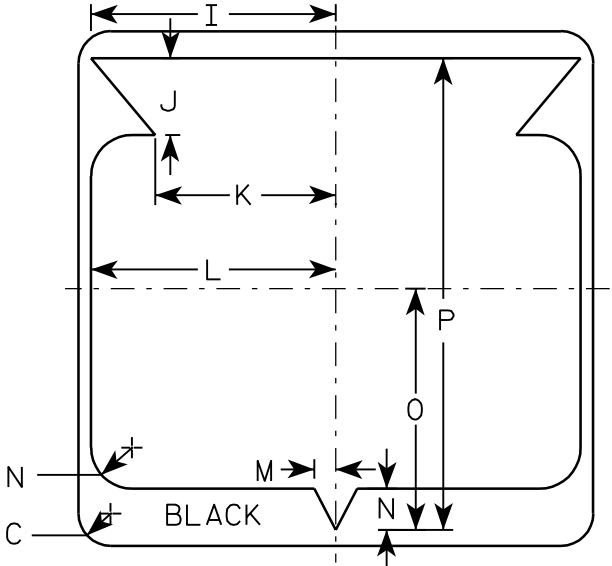
COUNTY:

SHEET NO:

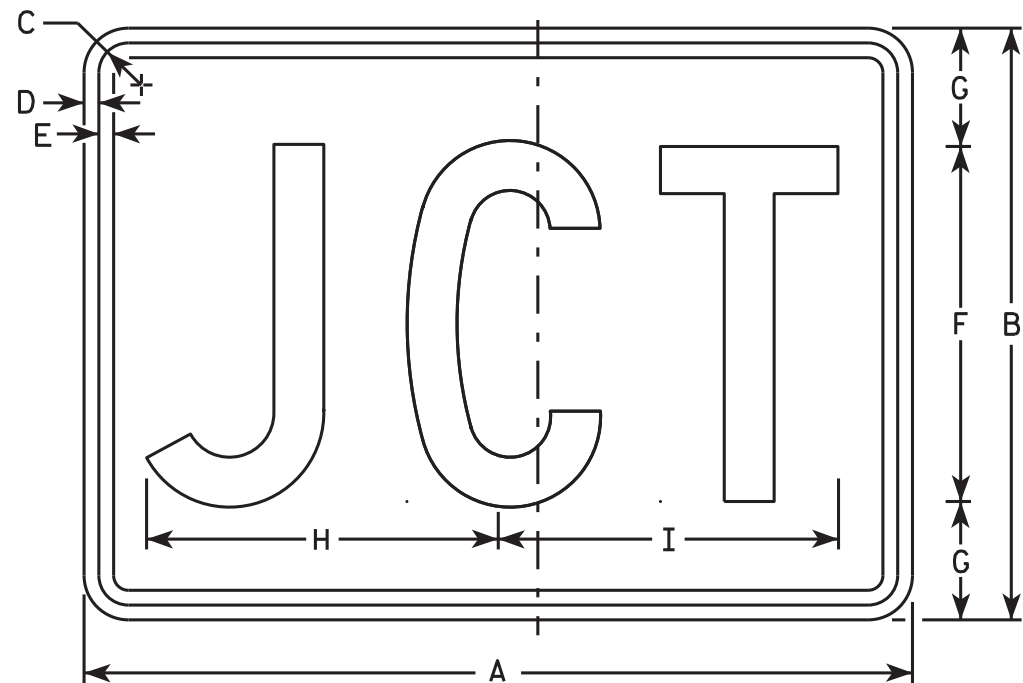
E

NOTES

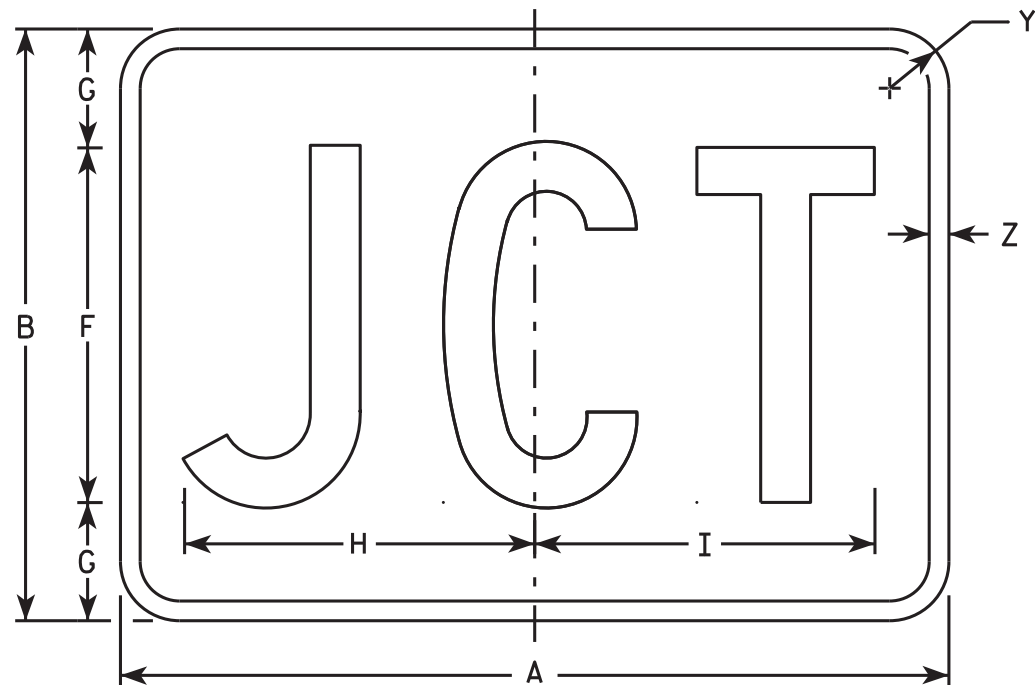
1. Sign is Type II - See Note 6 - reference
WIS DOT Standard Specification for HIGHWAY
and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 6
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base
material is plywood but borders shall be rounded
as shown. When base material is metal, the
corners and borders shall be rounded.
5. Substitute appropriate Series numerals and
adjust spacing as per plate A10-1.
6. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective



7



M2-1
MM2-1
MP2-1



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

NOTES

1. Sign is Type II - Type H
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M2-1 Background - White
Message - Black
MB2-1 Background - Blue
Message - White
MK2-1 Background - Green
Message - White
MM2-1 Background - White
Message - Green
MN2-1 Background - Brown
Message - White
MP2-1 Background - White
Message - Blue
MR2-1 Background - Brown
Message - Yellow

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | O | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|----|---|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-------|-----|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 21 | 15 | 1 1/8 | 3/8 | 3/8 | 9 | 3 | 8 7/8 | 8 5/8 | | | | | | | | | | | | | | | | 1 1/2 | 1/2 | 2.20 |
| 3 | 30 | 21 | 1 1/8 | 3/8 | 3/8 | 13 | 4 | 12 7/8 | 12 3/8 | | | | | | | | | | | | | | | | 1 1/2 | 1/2 | 4.40 |
| 4 | 30 | 21 | 1 1/8 | 3/8 | 3/8 | 13 | 4 | 12 7/8 | 12 3/8 | | | | | | | | | | | | | | | | 1 1/2 | 1/2 | 4.40 |
| 5 | 30 | 21 | 1 1/8 | 3/8 | 3/8 | 13 | 4 | 12 7/8 | 12 3/8 | | | | | | | | | | | | | | | | 1 1/2 | 1/2 | 4.40 |

PROJECT NO:

HWY:

COUNTY:

SHEET NO: E

STANDARD SIGN

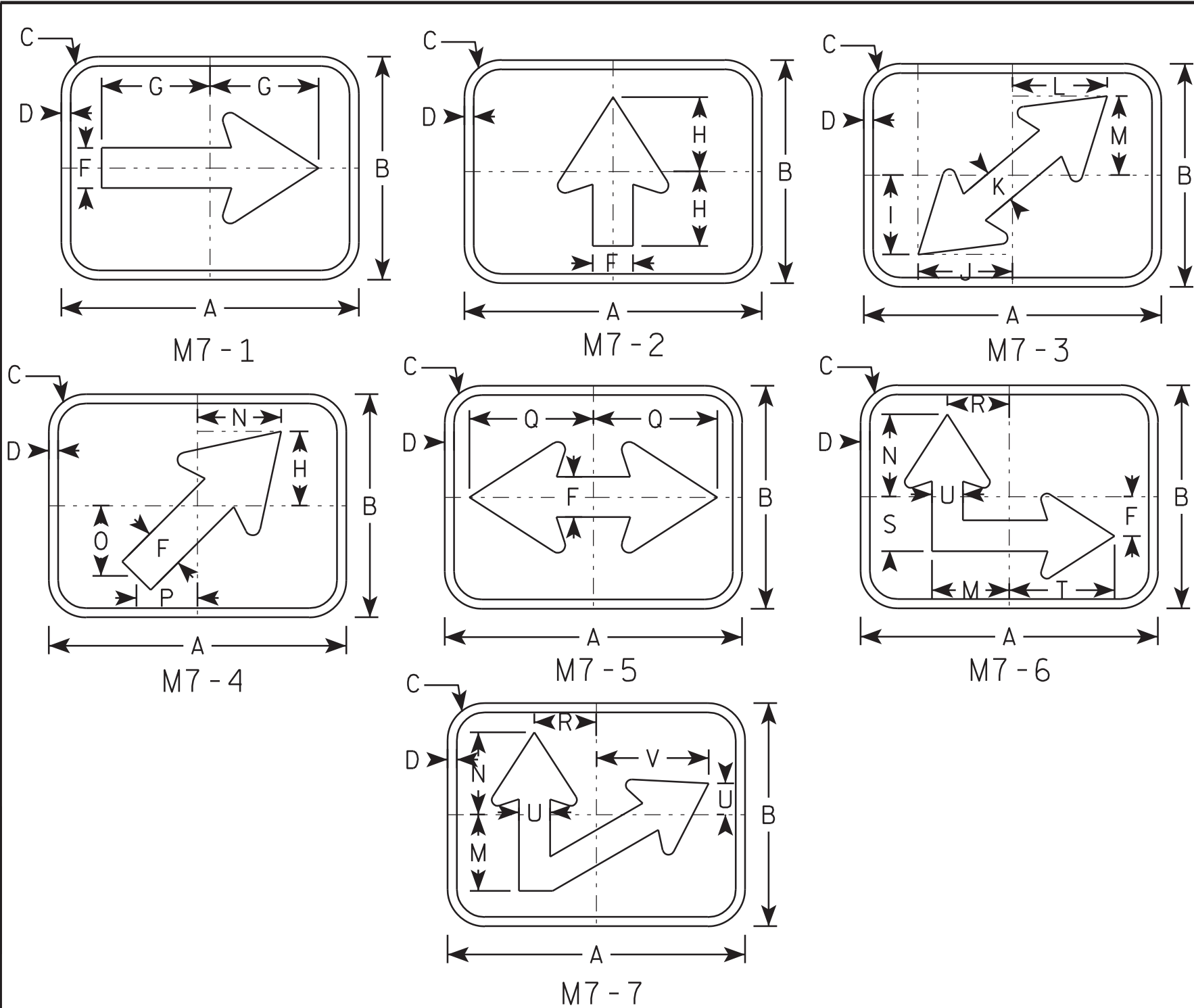
M2 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Raush*
for State Traffic Engineer

DATE 10/15/15

PLATE NO. M2-1.12



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Green
Message -White
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|----|---|---|-----|-----|---|-----|-----|-----|-----|-----|-----|-----|-----|---|-----|-----|-----|-----|-----|---|---|---|---|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 12 | 9 | 1½ | ¾ | | 1 ⅝ | 4 ⅜ | 3 | 3 ¼ | 3 ¾ | 1 ⅜ | 3 ⅞ | 3 ⅛ | 3 ⅜ | 2 ⅞ | 2 ½ | 5 | 2 ½ | 2 ¼ | 4 ¼ | 1 ¼ | 4 ½ | | | | | .75 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
M7 SERIES

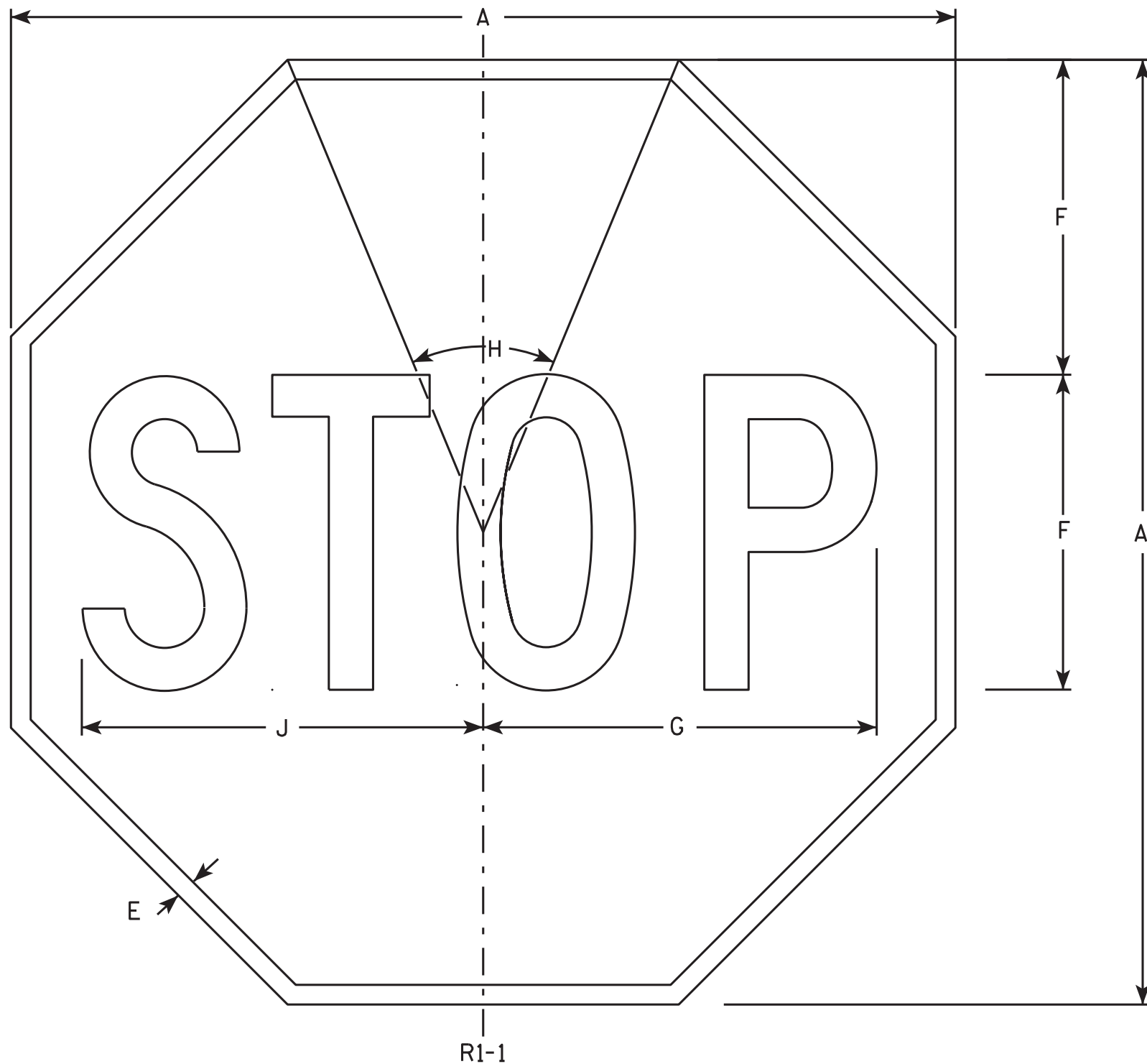
WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 05/04/10

PLATE NO. M7-1.1



NOTES

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

R1-1

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

STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.12

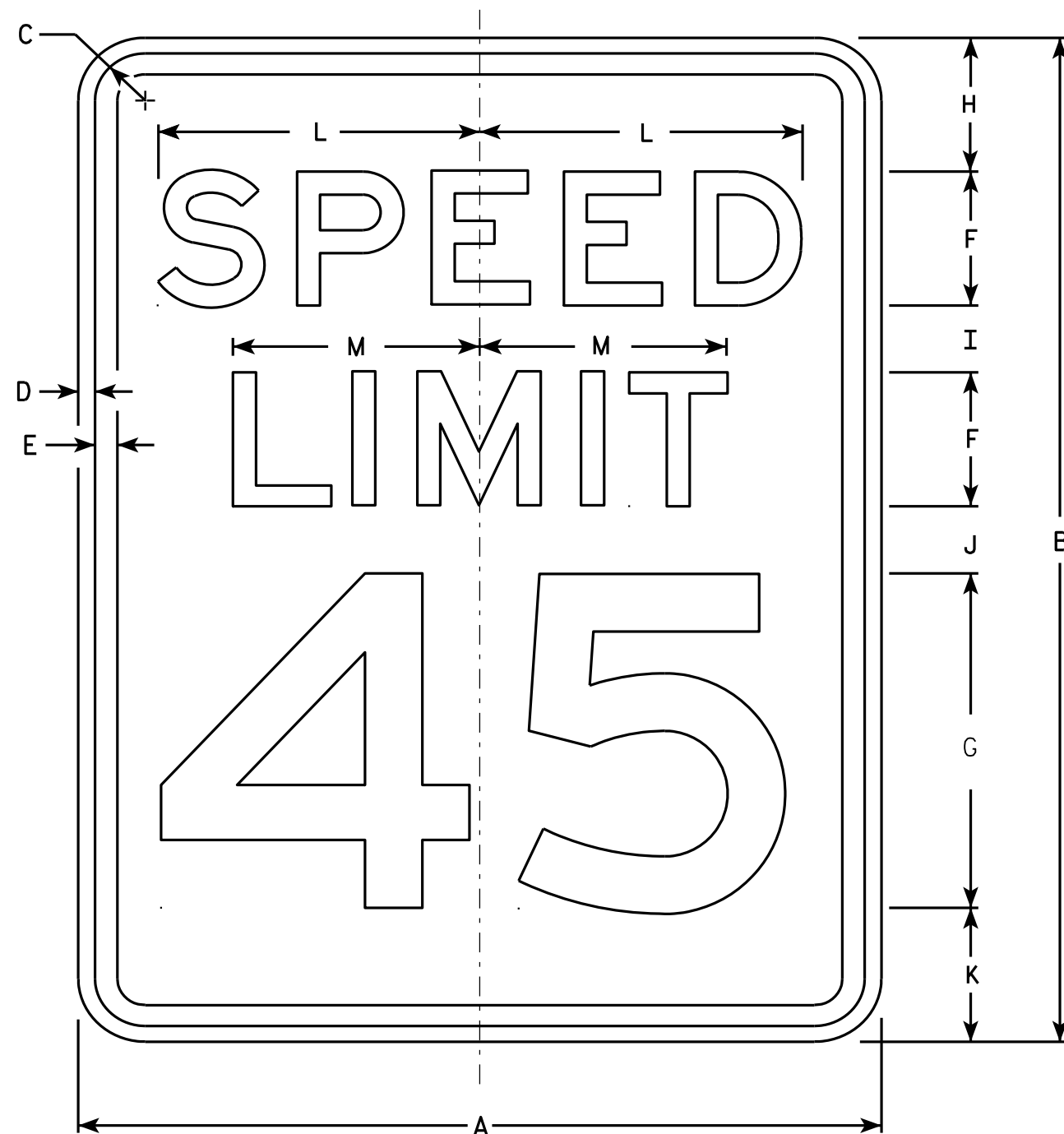
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



R2-1

NOTES

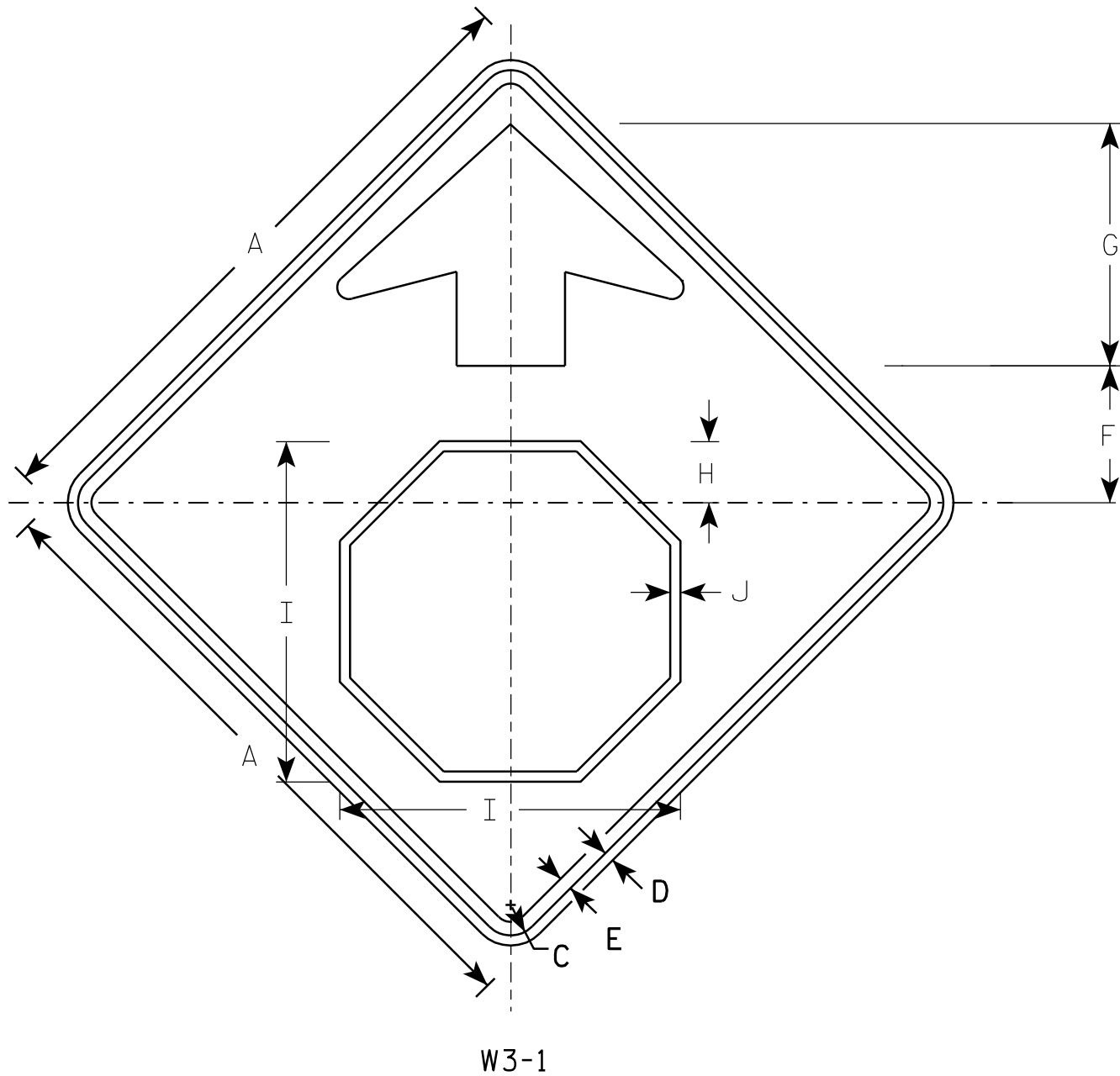
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|----|---|-------|-------|-------|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | 18 | 24 | 1 1/8 | 3/8 | 1/2 | 3 | 8 | 3 | 2 | 2 | 3 | 7 1/4 | 5 1/2 | | | | | | | | | | | | | | 3.0 |
| 2S | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 4 | 10 | 3 | 2 1/4 | 3 3/8 | 3 3/8 | 9 5/8 | 7 3/8 | | | | | | | | | | | | | | 5.0 |
| 2M | 30 | 36 | 1 3/8 | 1/2 | 5/8 | 5 | 12 | 5 | 2 1/2 | 2 1/2 | 4 | 12 | 9 1/4 | | | | | | | | | | | | | | 7.5 |
| 3 | 36 | 48 | 1 3/8 | 1/2 | 5/8 | 6 | 14 | 6 | 5 | 5 | 6 | 14 3/8 | 11 | | | | | | | | | | | | | | 12.0 |
| 4 | 36 | 48 | 1 3/8 | 1/2 | 5/8 | 6 | 14 | 6 | 5 | 5 | 6 | 14 3/8 | 11 | | | | | | | | | | | | | | 12.0 |
| 5 | 48 | 60 | 2 1/4 | 3/4 | 1 | 8 | 20 | 6 | 4 1/2 | 6 3/4 | 6 3/4 | 19 1/4 | 14 5/8 | | | | | | | | | | | | | | 20.0 |

STANDARD SIGN R2-1

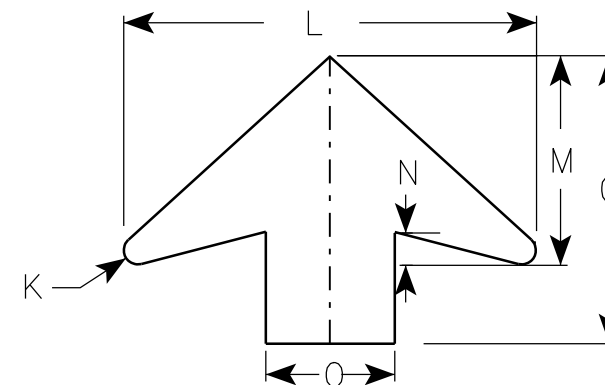
WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
For State Traffic Engineer
DATE 5/26/10 PLATE NO. R2-1.13

PROJECT NO: HWY: COUNTY: SHEET NO: E



NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - YELLOW
Arrow & Border - BLACK
Stop Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|-------|--------|-------|--------|-----|-----|--------|-------|-------|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | 30 | | 1 3/8 | 1/2 | 5/8 | 6 1/4 | 11 1/4 | 2 7/8 | 15 3/4 | 1/2 | 1/2 | 16 | 8 | 1 1/4 | 5 | | | | | | | | | | | | 6.25 |
| 2S | 36 | | 1 5/8 | 5/8 | 3/4 | 7 1/2 | 13 1/2 | 3 1/2 | 19 | 5/8 | 5/8 | 19 1/4 | 9 3/4 | 1 5/8 | 6 | | | | | | | | | | | | 9.0 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | 7 1/2 | 13 1/2 | 3 1/2 | 19 | 5/8 | 5/8 | 19 1/4 | 9 3/4 | 1 5/8 | 6 | | | | | | | | | | | | 9.0 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | 7 1/2 | 13 1/2 | 3 1/2 | 19 | 5/8 | 5/8 | 19 1/4 | 9 3/4 | 1 5/8 | 6 | | | | | | | | | | | | 9.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 10 | 17 7/8 | 4 1/2 | 25 1/8 | 3/4 | 7/8 | 25 5/8 | 13 | 2 | 8 | | | | | | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 10 | 17 7/8 | 4 1/2 | 25 1/8 | 3/4 | 7/8 | 25 5/8 | 13 | 2 | 8 | | | | | | | | | | | | 16.0 |

PROJECT NO:

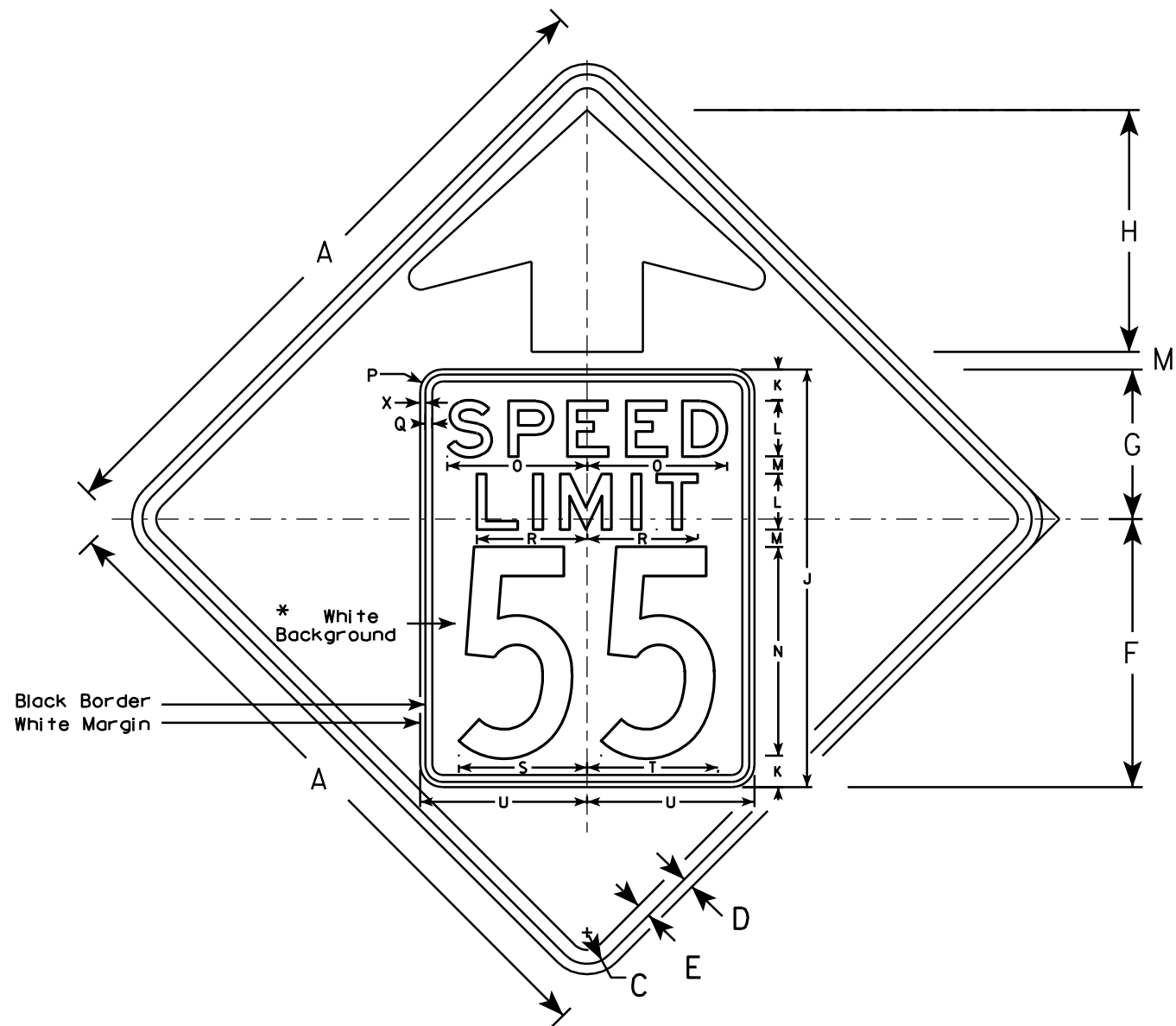
STANDARD SIGN
W3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/7/10 PLATE NO. W3-1.12

SHEET NO:

E

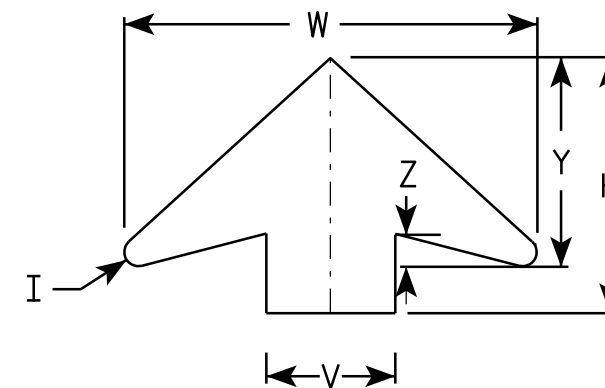


W3-5

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color: *
Background - YELLOW*
Message - BLACK
3. Message Series - C for numbers Series E for wording
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White Background



ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|--------|--------|--------|-----|----|-------|---|-------|----|-------|-------|-----|-------|-------|-------|----|---|--------|-----|-------|-------|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 36 | | 1 5⁄8 | 5⁄8 | 3⁄4 | 14 1⁄2 | 9 1⁄2 | 11 1⁄2 | 5⁄8 | 24 | 2 | 3 | 1 | 12 | 7 1⁄8 | 1 1⁄2 | 3⁄8 | 5 3⁄4 | 7 1⁄4 | 7 1⁄8 | 9 | 6 | 19 1⁄4 | 3⁄8 | 9 3⁄4 | 1 5⁄8 | 9.0 |
| 2M | 36 | | 1 5⁄8 | 5⁄8 | 3⁄4 | 14 1⁄2 | 9 1⁄2 | 11 1⁄2 | 5⁄8 | 24 | 2 | 3 | 1 | 12 | 7 1⁄8 | 1 1⁄2 | 3⁄8 | 5 3⁄4 | 7 1⁄4 | 7 1⁄8 | 9 | 6 | 19 1⁄4 | 3⁄8 | 9 3⁄4 | 1 5⁄8 | 9.0 |
| 3 | 36 | | 1 5⁄8 | 5⁄8 | 3⁄4 | 14 1⁄2 | 9 1⁄2 | 11 1⁄2 | 5⁄8 | 24 | 2 | 3 | 1 | 12 | 7 1⁄8 | 1 1⁄2 | 3⁄8 | 5 3⁄4 | 7 1⁄4 | 7 1⁄8 | 9 | 6 | 19 1⁄4 | 3⁄8 | 9 3⁄4 | 1 5⁄8 | 9.0 |
| 4 | 48 | | 2 1⁄4 | 3⁄4 | 1 | 19 1⁄4 | 10 3⁄4 | 17 3⁄8 | 7⁄8 | 30 | 2 1⁄4 | 4 | 1 1⁄4 | 15 | 10 | 1 5⁄8 | 1⁄2 | 8 | 9 1⁄4 | 9 3⁄8 | 12 | 8 | 25 5⁄8 | 3⁄8 | 13 | 2 | 16.0 |
| 5 | 48 | | 2 1⁄4 | 3⁄4 | 1 | 19 1⁄4 | 10 3⁄4 | 17 3⁄8 | 7⁄8 | 30 | 2 1⁄4 | 4 | 1 1⁄4 | 15 | 10 | 1 5⁄8 | 1⁄2 | 8 | 9 1⁄4 | 9 3⁄8 | 12 | 8 | 25 5⁄8 | 3⁄8 | 13 | 2 | 16.0 |

STANDARD SIGN

W3-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W3-5.5

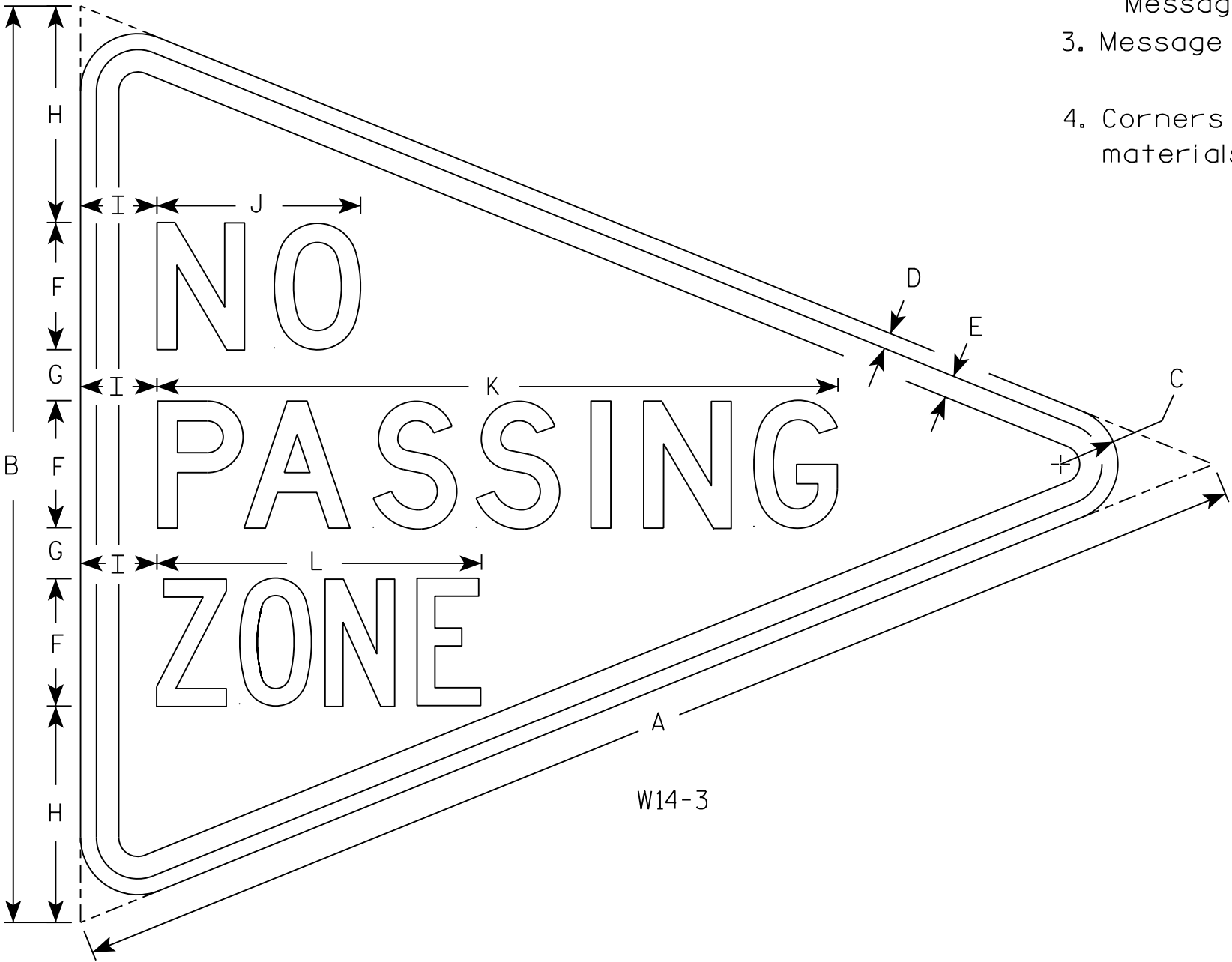
PROJECT NO:

SHEET NO:

E

NOTES

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



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

STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

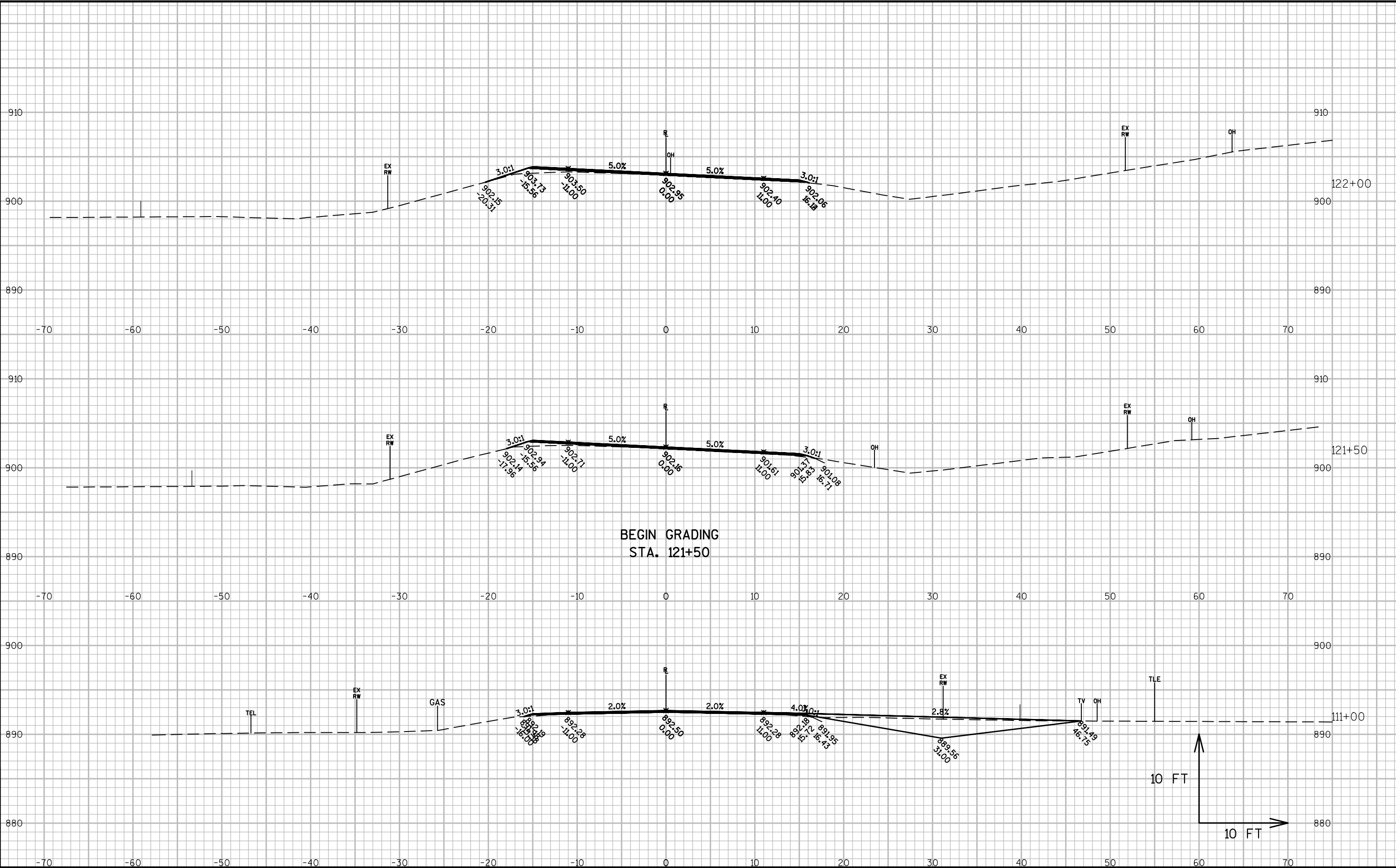
DATE 3/21/17 PLATE NO. W14-3.10

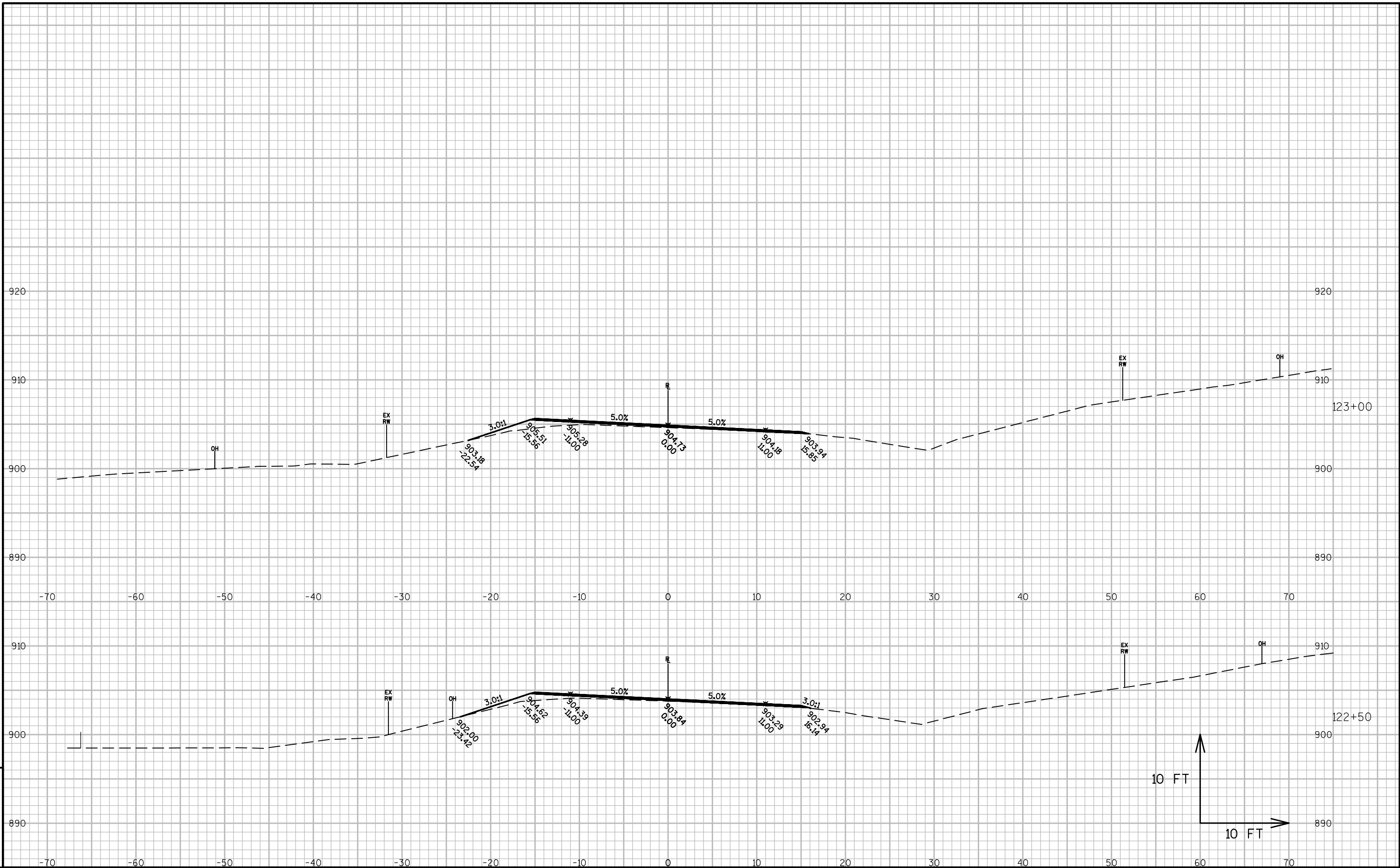
EARTHWORK - CTH F

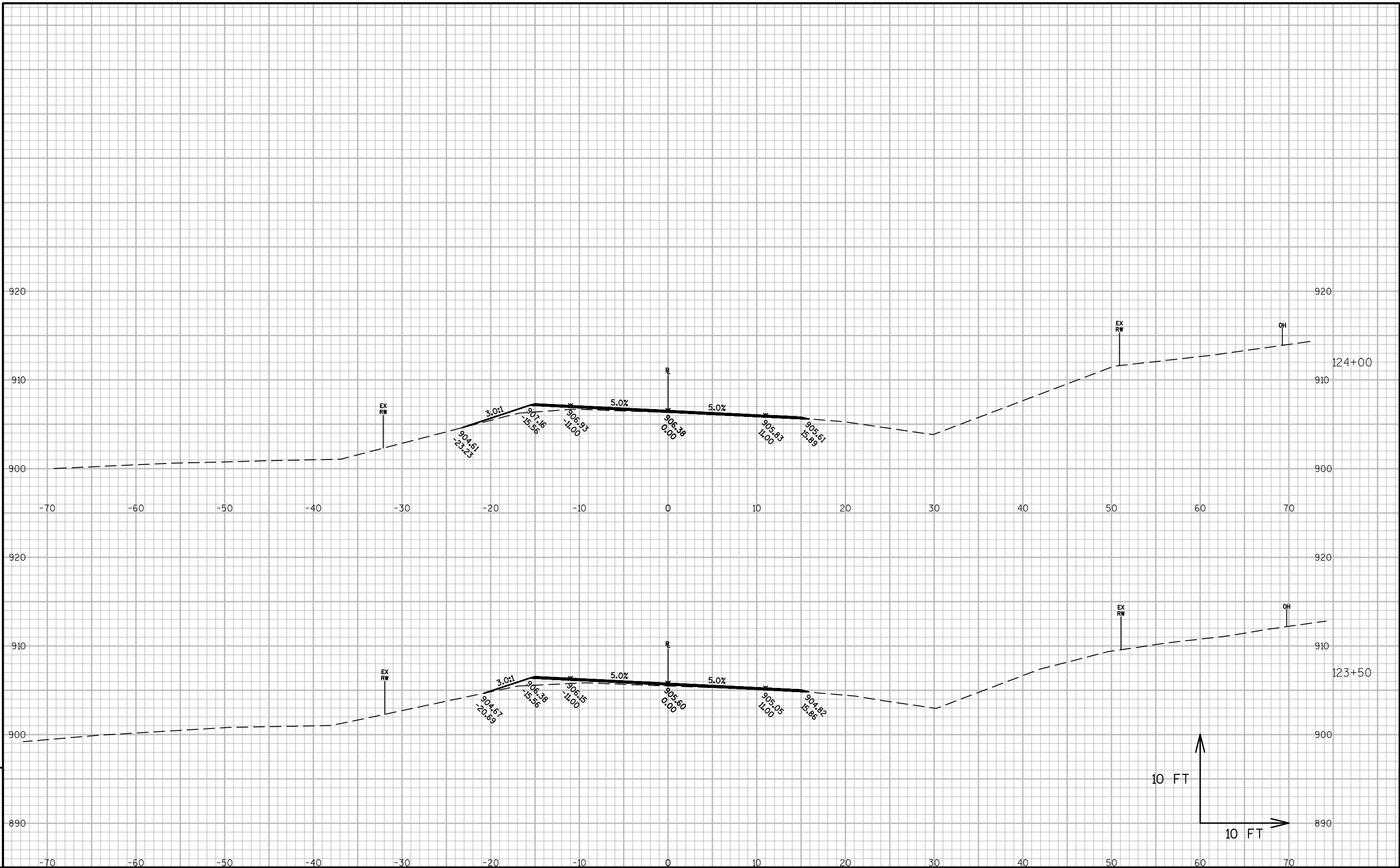
| STATION | AREA (SF) | | Incremental Vol (CY) (Unadjusted) | | Cumulative Vol (CY) | | Mass Ordinate |
|---------------|-----------|------|-----------------------------------|----------------|-----------------------|-----------------------|---------------|
| | Cut | Fill | Cut Note 1 | Fill Note 3 | Cut 1.00 Note 1 | Expanded Fill 1.30 | |
| | | | | | | | |
| 100+88.00 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| 121+50.00 | 0.0 | 1.0 | 0 | 38 | 0 | 49 | -49 |
| 122+00.00 | 0.0 | 1.2 | 0 | 2 | 0 | 52 | -52 |
| 123+00.00 | 0.0 | 3.6 | 0 | 9 | 0 | 64 | -63 |
| 124+00.00 | 0.0 | 2.4 | 0 | 11 | 0 | 78 | -78 |
| 125+00.00 | 0.0 | 2.7 | 0 | 9 | 0 | 90 | -89 |
| 126+00.00 | 0.0 | 2.2 | 0 | 9 | 0 | 101 | -101 |
| 127+00.00 | 0.0 | 1.5 | 0 | 7 | 0 | 111 | -110 |
| 128+00.00 | 0.0 | 1.4 | 0 | 5 | 0 | 117 | -117 |
| 129+00.00 | 0.0 | 10.4 | 0 | 22 | 0 | 146 | -145 |
| 130+00.00 | 0.6 | 11.5 | 1 | 41 | 1 | 199 | -197 |
| 131+00.00 | 0.3 | 5.4 | 2 | 31 | 3 | 239 | -236 |
| 132+00.00 | 3.0 | 1.2 | 6 | 12 | 9 | 255 | -246 |
| 133+00.00 | 0.2 | 2.0 | 6 | 6 | 15 | 263 | -247 |
| 134+00.00 | 1.9 | 3.7 | 4 | 11 | 19 | 277 | -258 |
| 135+00.00 | 4.6 | 6.5 | 12 | 19 | 31 | 302 | -270 |
| 136+00.00 | 1.7 | 6.0 | 12 | 23 | 43 | 332 | -289 |
| 137+00.00 | 0.5 | 2.1 | 4 | 15 | 47 | 351 | -304 |
| 138+00.00 | 0.0 | 17.0 | 1 | 35 | 48 | 397 | -349 |
| 139+00.00 | 0.3 | 46.9 | 1 | 118 | 49 | 550 | -502 |
| 140+00.00 | 0.2 | 80.0 | 1 | 235 | 50 | 855 | -806 |
| 141+00.00 | 0.0 | 3.0 | 0 | 154 | 50 | 1,056 | -1,006 |
| 162+00.00 | 1.1 | 0.0 | 43 | 117 | 93 | 1,208 | -1,115 |
| 163+00.00 | 0.0 | 0.8 | 2 | 1 | 95 | 1,209 | -1,115 |
| 164+00.00 | 0.5 | 0.6 | 1 | 3 | 96 | 1,213 | -1,118 |
| 165+00.00 | 0.8 | 0.2 | 2 | 1 | 98 | 1,214 | -1,116 |
| 166+00.00 | 0.6 | 0.2 | 3 | 1 | 101 | 1,216 | -1,115 |
| 167+00.00 | 0.9 | 0.1 | 3 | 1 | 104 | 1,217 | -1,114 |
| 171+50.00 | 0.2 | 0.0 | 9 | 1 | 113 | 1,218 | -1,106 |
| 172+00.00 | 0.1 | 0.2 | 0 | 0 | 113 | 1,218 | -1,105 |
| 173+00.00 | 1.9 | 20.0 | 4 | 37 | 117 | 1,266 | -1,150 |
| 174+00.00 | 0.0 | 3.2 | 4 | 43 | 121 | 1,322 | -1,202 |
| 190+00.00 | 0.4 | 1.0 | 12 | 124 | 133 | 1,483 | -1,352 |
| 191+00.00 | 0.0 | 1.0 | 1 | 4 | 134 | 1,489 | -1,356 |
| 192+00.00 | 0.0 | 0.7 | 0 | 3 | 134 | 1,492 | -1,360 |
| 193+00.00 | 0.0 | 4.9 | 0 | 10 | 134 | 1,505 | -1,373 |
| 194+00.00 | 0.0 | 1.7 | 0 | 12 | 134 | 1,521 | -1,389 |
| 195+00.00 | 0.0 | 12.5 | 0 | 26 | 134 | 1,555 | -1,422 |
| 196+00.00 | 0.0 | 5.1 | 0 | 33 | 134 | 1,598 | -1,465 |
| 197+00.00 | 0.0 | 4.7 | 0 | 18 | 134 | 1,621 | -1,489 |
| 198+00.00 | 0.0 | 0.6 | 0 | 10 | 134 | 1,634 | -1,502 |
| 199+00.00 | 0.0 | 0.9 | 0 | 3 | 134 | 1,638 | -1,506 |
| 200+00.00 | 0.0 | 7.1 | 0 | 15 | 134 | 1,658 | -1,525 |
| 201+00.00 | 0.0 | 5.4 | 0 | 23 | 134 | 1,687 | -1,555 |
| 202+00.00 | 0.0 | 1.0 | 0 | 12 | 134 | 1,703 | -1,571 |
| PAGE SUBTOTAL | | | | | | | |
| | | | 134 | 1310 | | | |

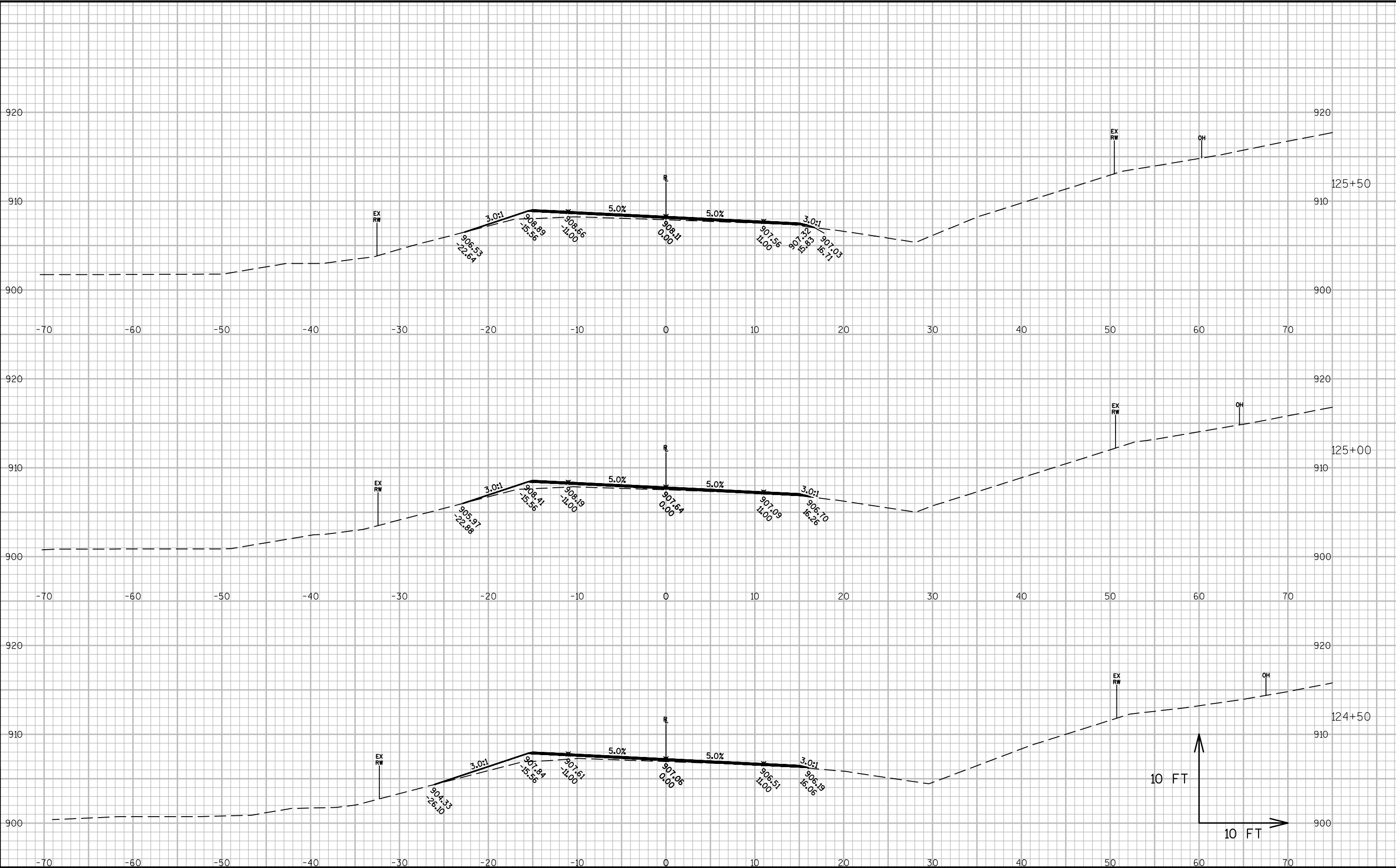
| | | | | | | | |
|---------------|-----|------|-----|-------|-----|-------|--------|
| 203+00.00 | 0.0 | 0.6 | 0 | 3 | 134 | 1,707 | -1,574 |
| 204+00.00 | 0.0 | 1.8 | 0 | 4 | 134 | 1,712 | -1,580 |
| 205+00.00 | 0.0 | 1.5 | 0 | 6 | 134 | 1,720 | -1,587 |
| 206+00.00 | 0.0 | 2.2 | 0 | 7 | 134 | 1,729 | -1,597 |
| 207+00.00 | 0.0 | 1.4 | 0 | 7 | 134 | 1,738 | -1,606 |
| 218+00.00 | 0.0 | 1.2 | 0 | 53 | 134 | 1,807 | -1,675 |
| 219+00.00 | 0.0 | 7.4 | 0 | 16 | 134 | 1,828 | -1,695 |
| 220+00.00 | 0.0 | 11.7 | 0 | 35 | 134 | 1,873 | -1,741 |
| 221+00.00 | 0.0 | 2.9 | 0 | 27 | 134 | 1,908 | -1,776 |
| 221+50.00 | 0.0 | 2.0 | 0 | 5 | 134 | 1,915 | -1,782 |
| 240+50.00 | 0.0 | 2.1 | 0 | 144 | 134 | 2,102 | -1,970 |
| 241+00.00 | 0.0 | 4.9 | 0 | 6 | 134 | 2,110 | -1,977 |
| 242+00.00 | 1.3 | 7.4 | 2 | 23 | 136 | 2,140 | -2,005 |
| 243+00.00 | 0.8 | 2.9 | 4 | 19 | 140 | 2,165 | -2,026 |
| 244+00.00 | 9.7 | 3.1 | 19 | 11 | 159 | 2,179 | -2,021 |
| 245+00.00 | 0.4 | 1.6 | 19 | 9 | 178 | 2,191 | -2,014 |
| 246+00.00 | 3.2 | 12.7 | 7 | 26 | 185 | 2,224 | -2,041 |
| 247+00.00 | 1.2 | 8.2 | 8 | 39 | 193 | 2,275 | -2,083 |
| 248+00.00 | 0.0 | 4.1 | 2 | 23 | 195 | 2,305 | -2,111 |
| 248+50.00 | 0.0 | 1.0 | 0 | 5 | 195 | 2,311 | -2,117 |
| 290+50.00 | 0.9 | 0.2 | 70 | 93 | 265 | 2,432 | -2,168 |
| 291+00.00 | 0.7 | 2.6 | 1 | 3 | 266 | 2,436 | -2,171 |
| 292+00.00 | 0.0 | 5.3 | 1 | 15 | 267 | 2,456 | -2,189 |
| 293+00.00 | 0.3 | 2.6 | 1 | 15 | 268 | 2,475 | -2,208 |
| 294+00.00 | 1.5 | 0.1 | 3 | 5 | 271 | 2,482 | -2,211 |
| 297+50.00 | 0.4 | 2.7 | 12 | 18 | 283 | 2,505 | -2,222 |
| 298+00.00 | 0.2 | 2.4 | 1 | 5 | 284 | 2,512 | -2,228 |
| 299+00.00 | 0.1 | 1.0 | 1 | 6 | 285 | 2,519 | -2,235 |
| 300+00.00 | 0.1 | 1.2 | 0 | 4 | 285 | 2,525 | -2,240 |
| 301+00.00 | 0.1 | 1.5 | 0 | 5 | 285 | 2,531 | -2,246 |
| 302+00.00 | 0.0 | 0.8 | 0 | 4 | 285 | 2,536 | -2,251 |
| 303+00.00 | 0.0 | 0.3 | 0 | 2 | 285 | 2,539 | -2,254 |
| 304+00.00 | 1.7 | 0.9 | 3 | 2 | 288 | 2,542 | -2,253 |
| 305+00.00 | 0.0 | 0.3 | 3 | 2 | 291 | 2,544 | -2,253 |
| 306+00.00 | 0.0 | 0.1 | 0 | 1 | 291 | 2,545 | -2,254 |
| 312+00.00 | 0.0 | 2.8 | 0 | 32 | 291 | 2,587 | -2,296 |
| 313+00.00 | 0.0 | 23.6 | 0 | 49 | 291 | 2,651 | -2,359 |
| 314+00.00 | 0.2 | 24.3 | 0 | 89 | 291 | 2,766 | -2,475 |
| 314+50.00 | 6.2 | 0.8 | 6 | 23 | 297 | 2,796 | -2,499 |
| 325+00.00 | 0.0 | 1.2 | 121 | 39 | 418 | 2,847 | -2,429 |
| 326+00.00 | 0.0 | 6.2 | 0 | 14 | 418 | 2,865 | -2,447 |
| 327+00.00 | 3.4 | 3.5 | 6 | 18 | 424 | 2,889 | -2,464 |
| 327+50.00 | 1.0 | 2.2 | 4 | 5 | 428 | 2,895 | -2,467 |
| 337+00.00 | 0 | 0 | 18 | 39 | 446 | 2,946 | -2,500 |
| PAGE SUBTOTAL | | | 312 | 956 | | | |
| PROJECT TOTAL | | | 446 | 2,266 | | | |

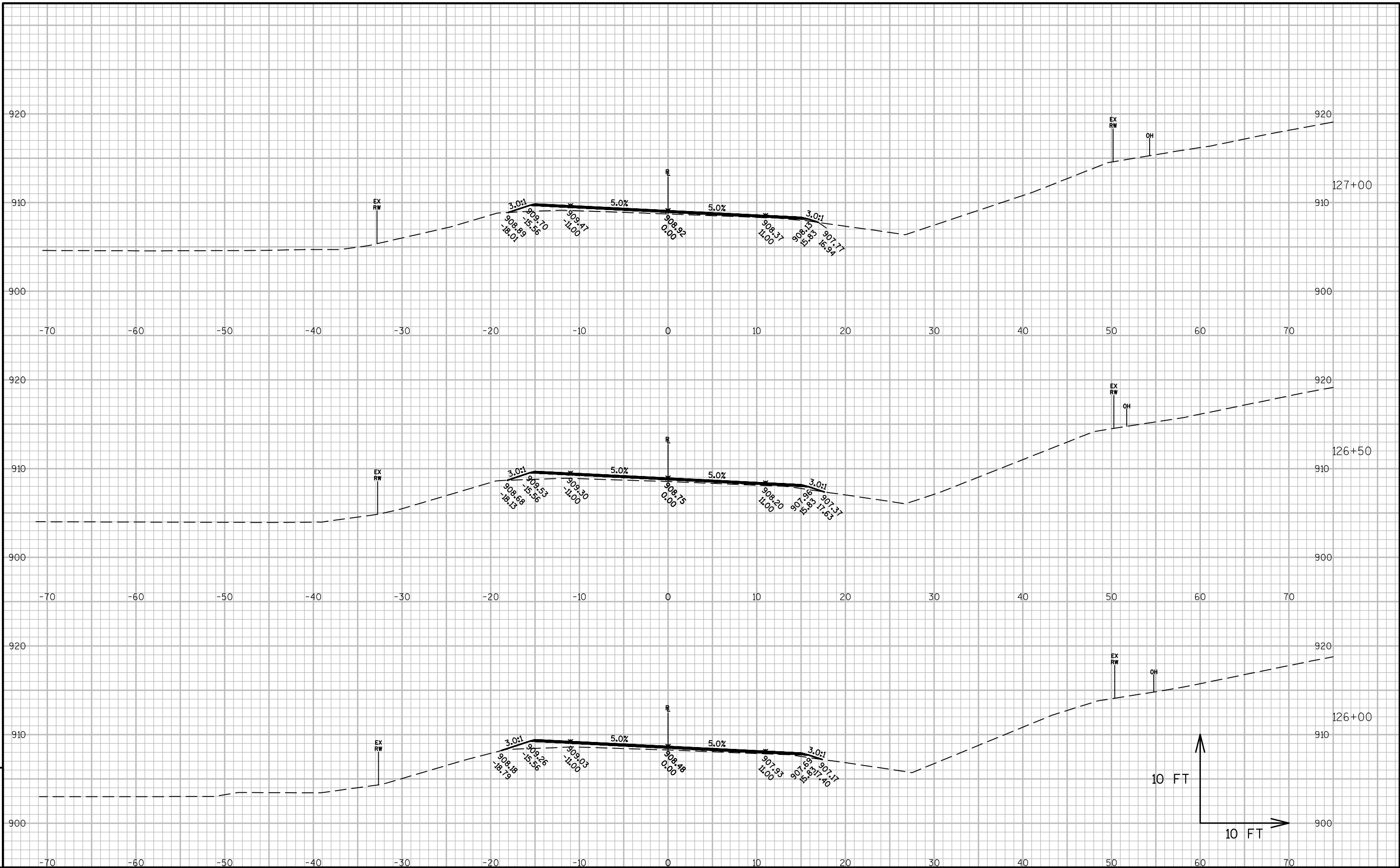
| | |
|-------------------|--|
| Notes: | |
| 1 - Cut | Cut includes existing asphalt and base material |
| 3 - Fill | Does not include Unusable Pavement Material Volume |
| 8 - Mass Ordinate | Cut - (Fill * Fill Factor) |
| 8 - Mass Ordinate | Mass Ordinate does |

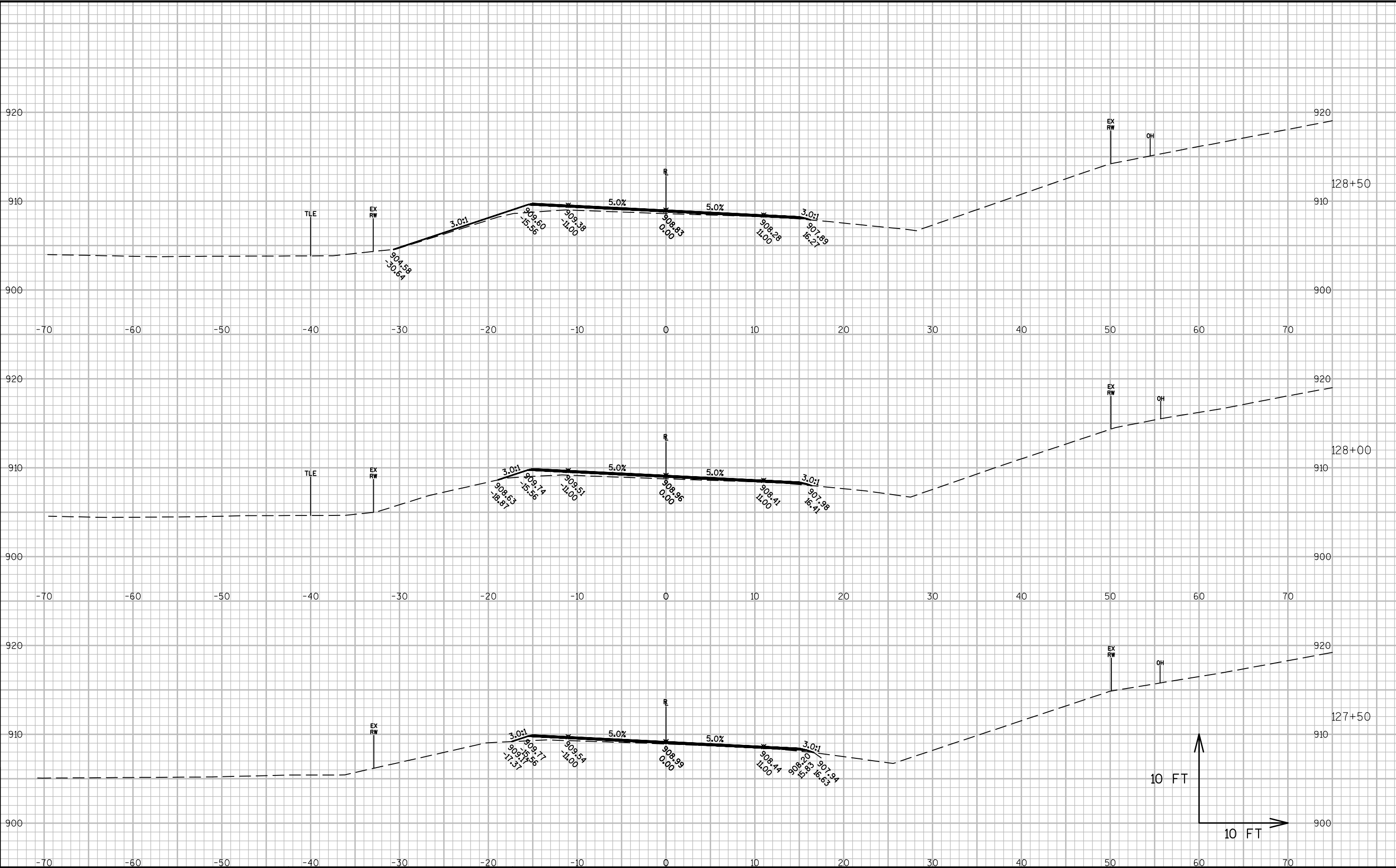


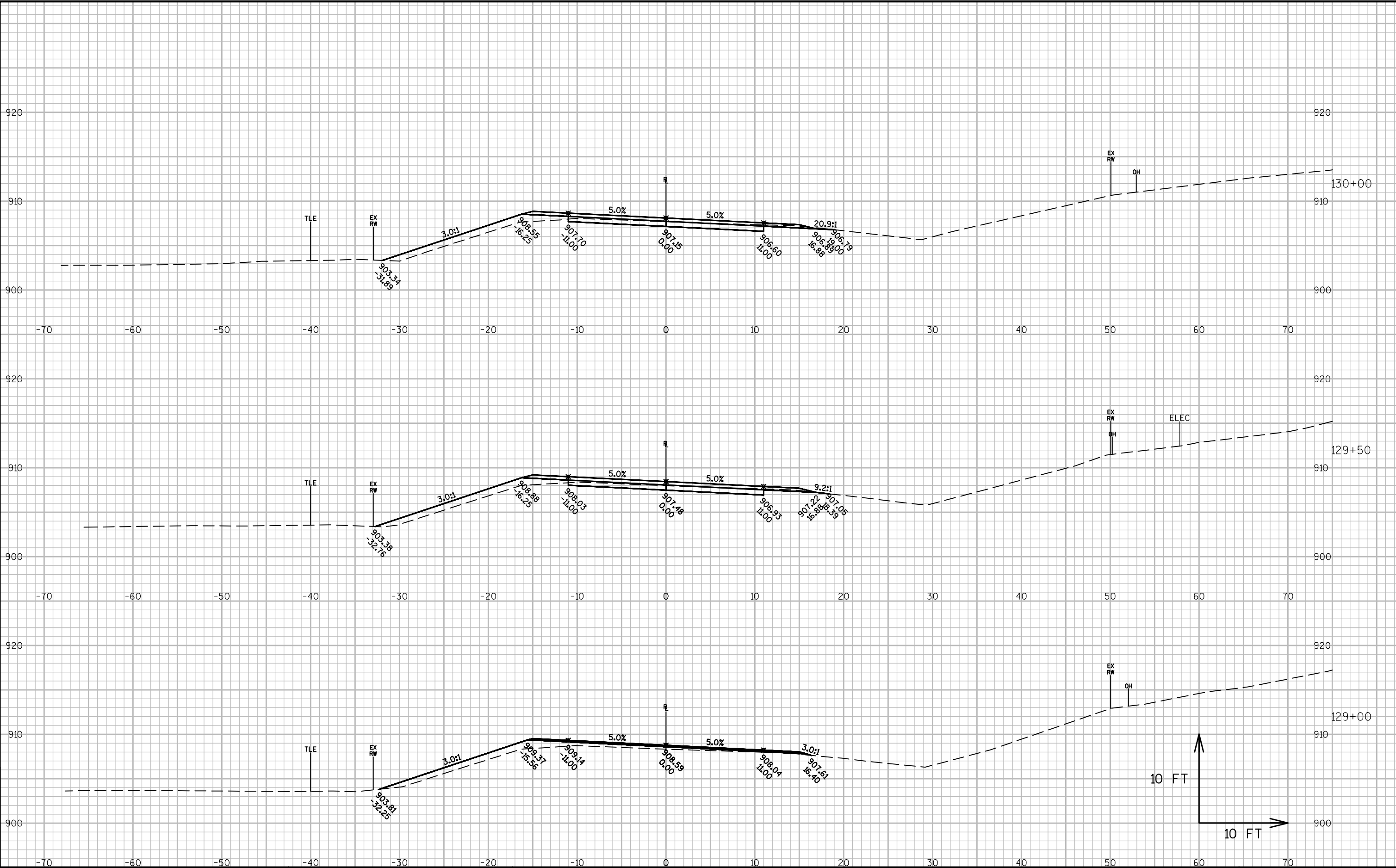


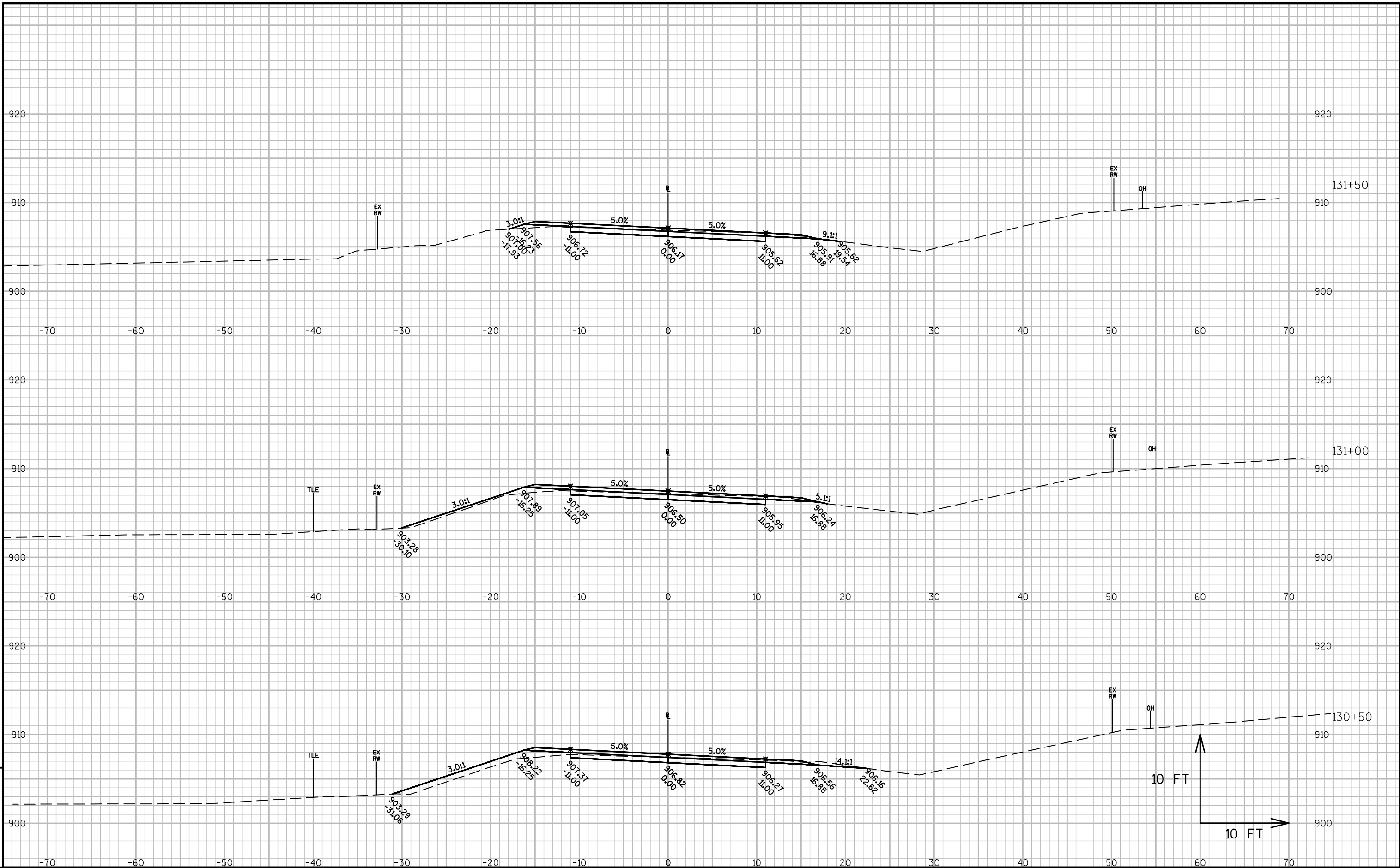


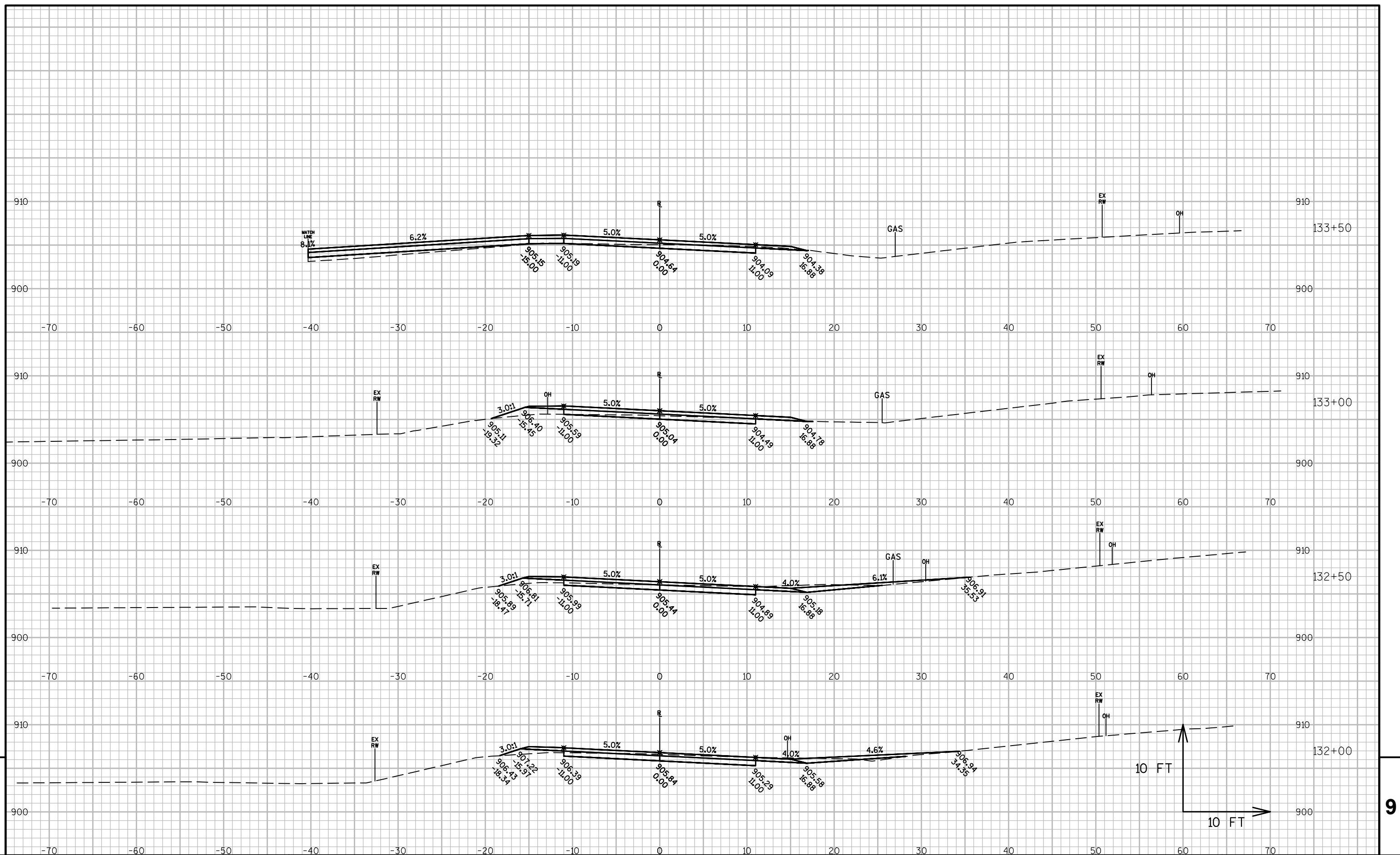


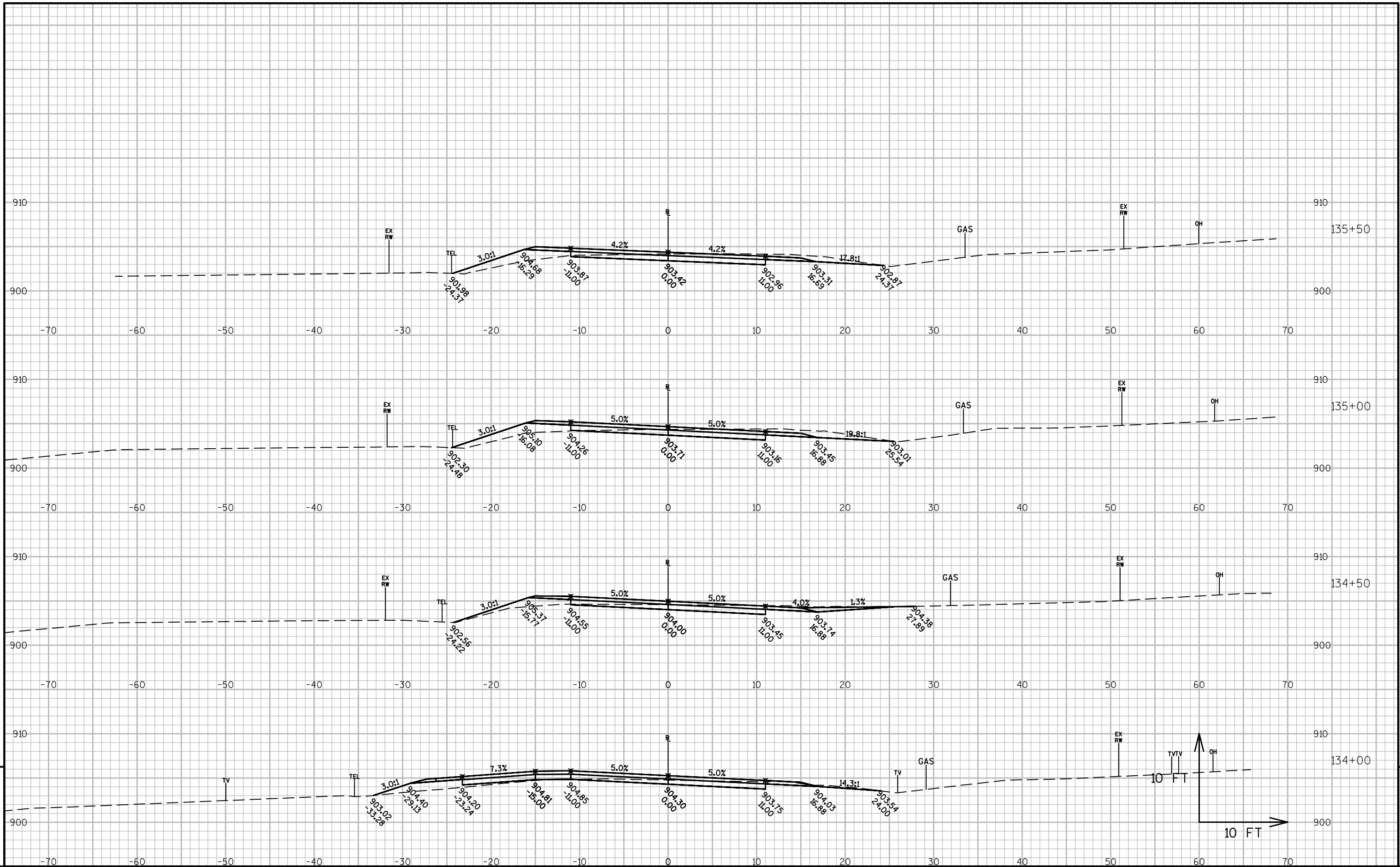


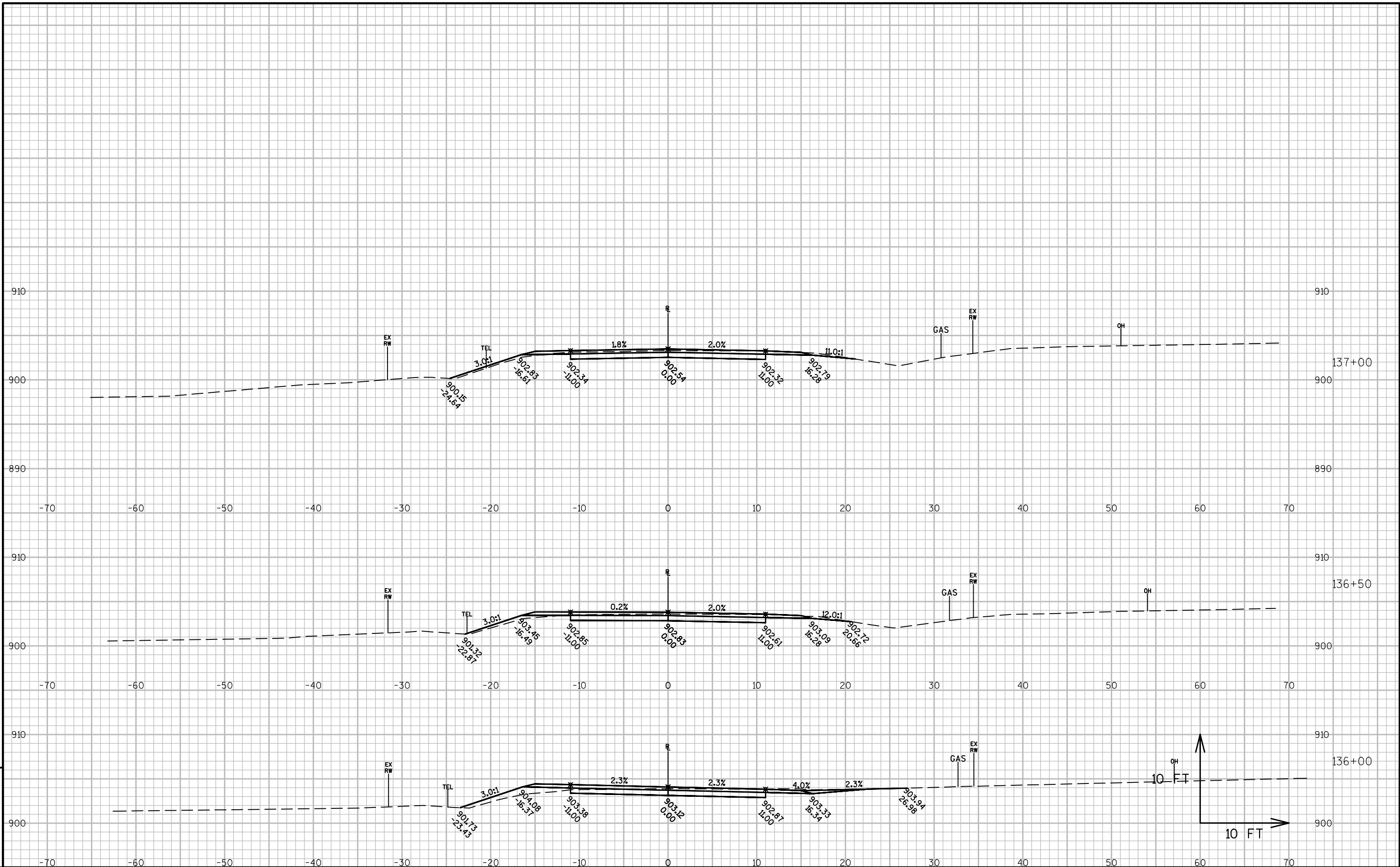


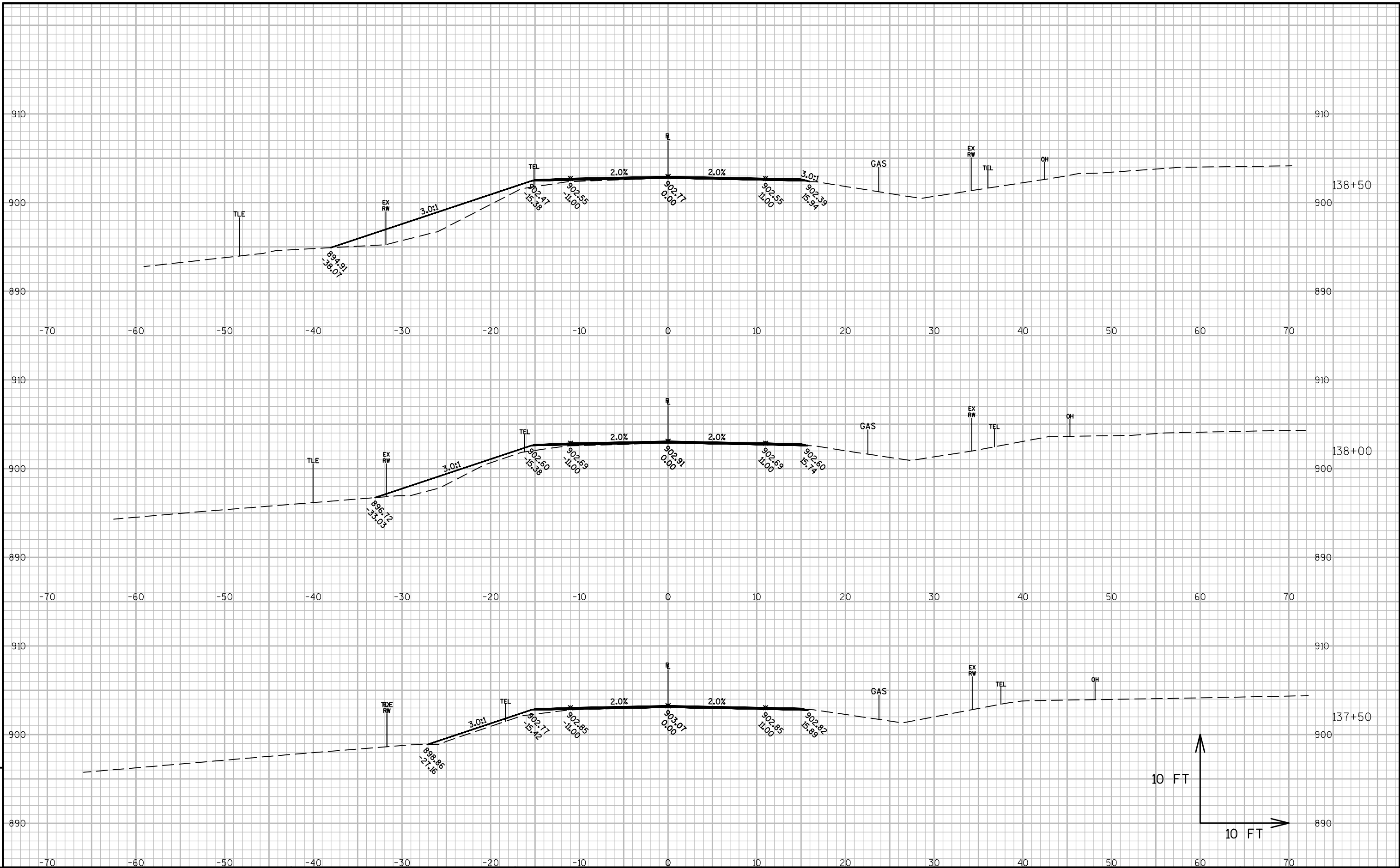


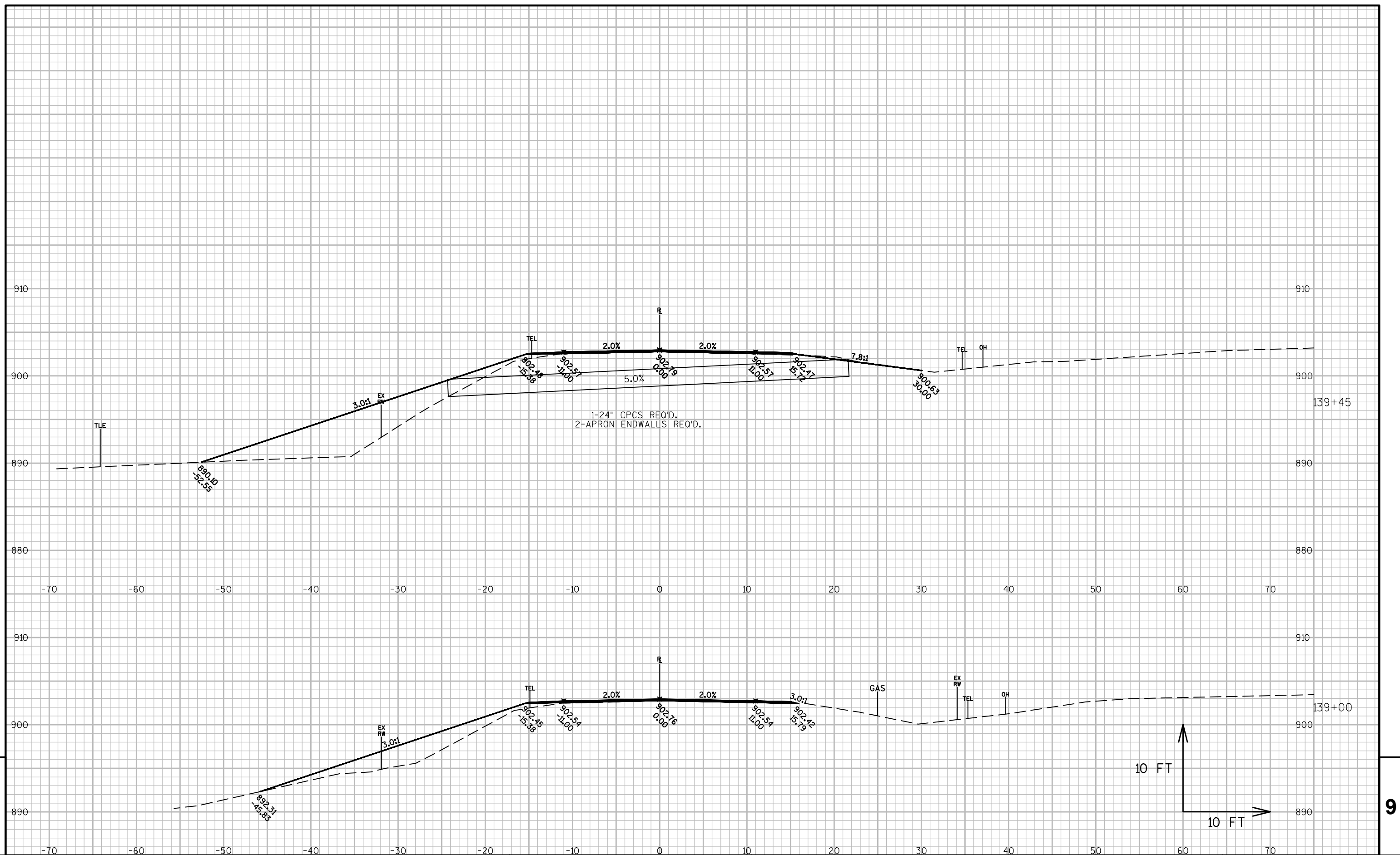


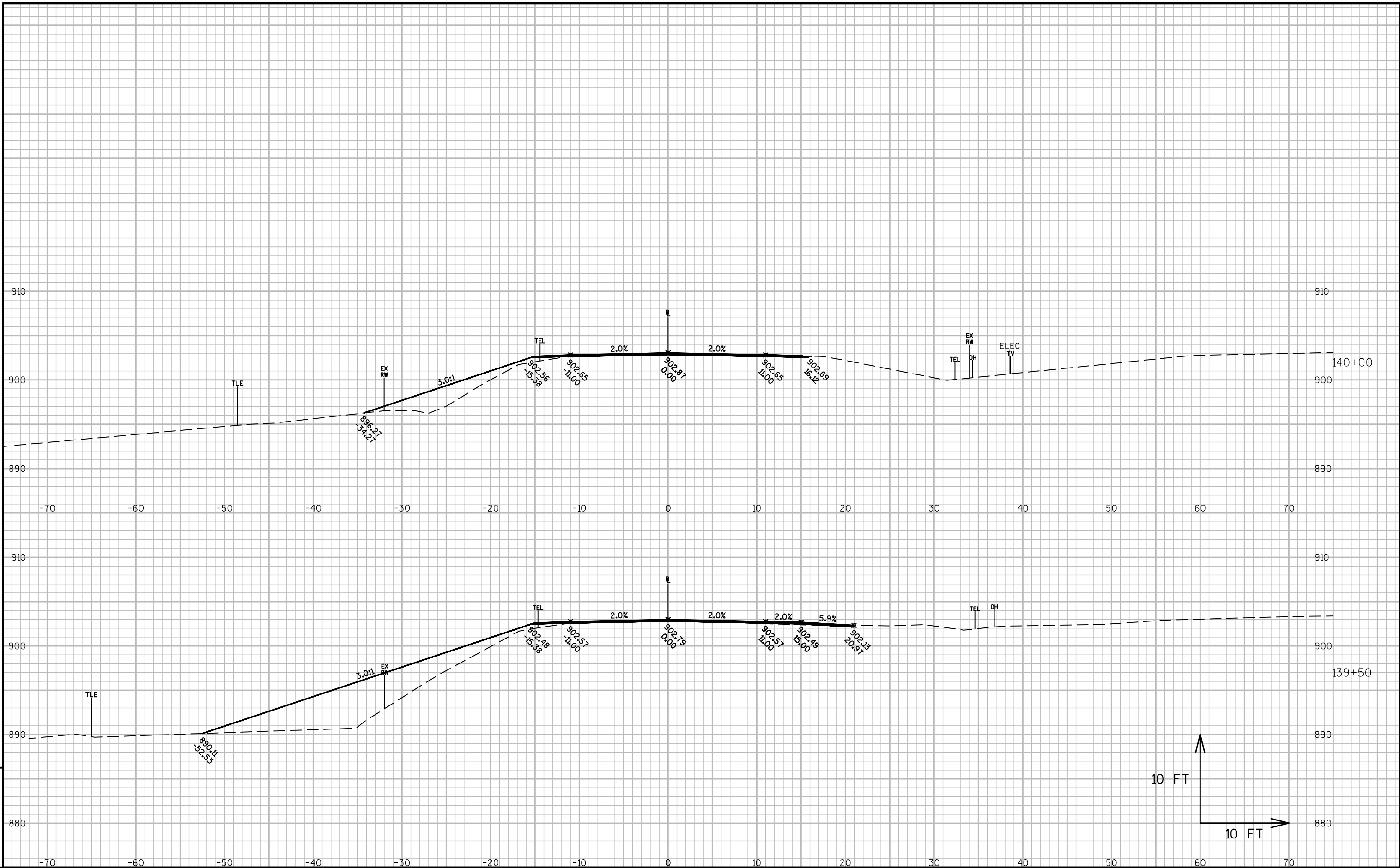


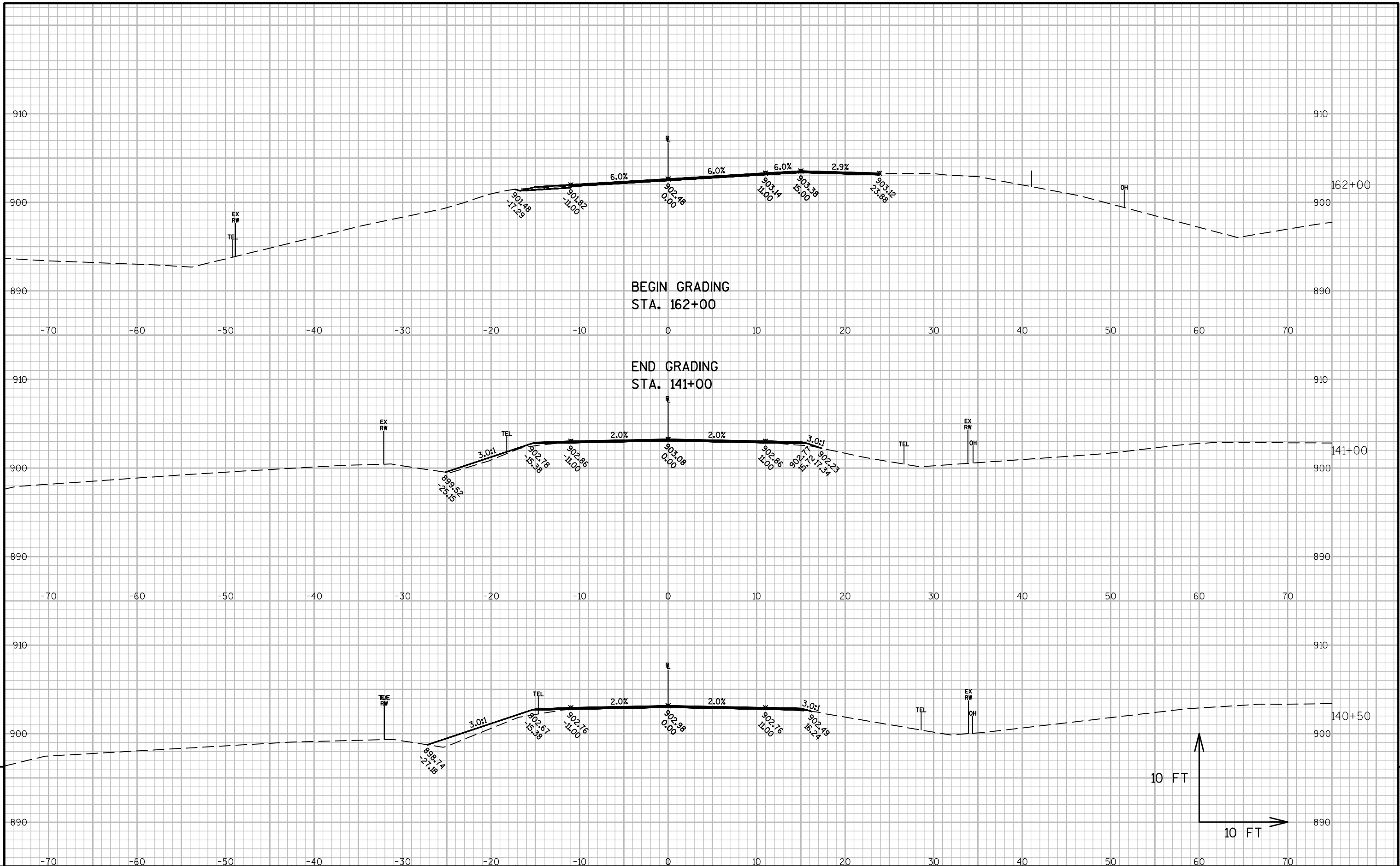


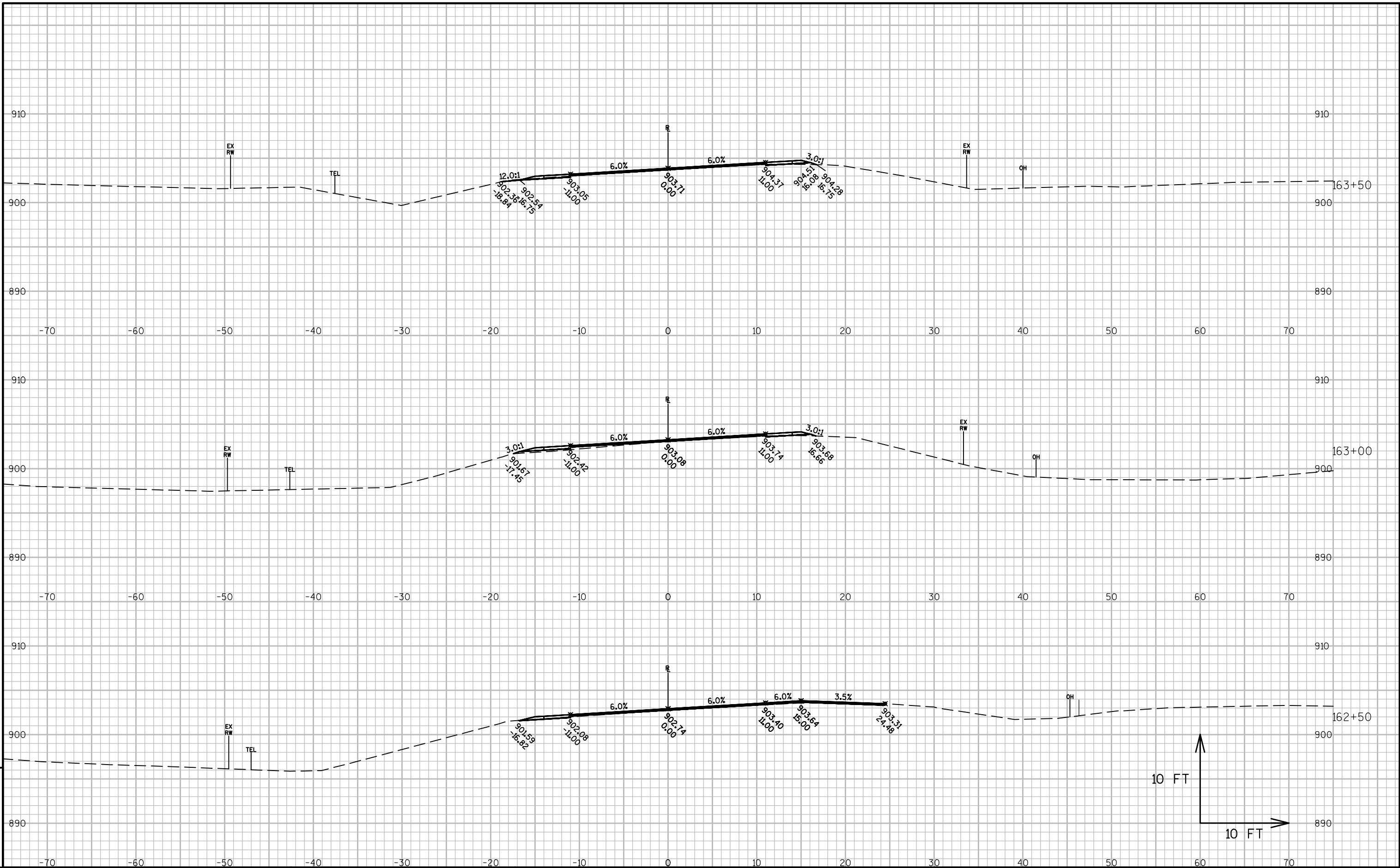


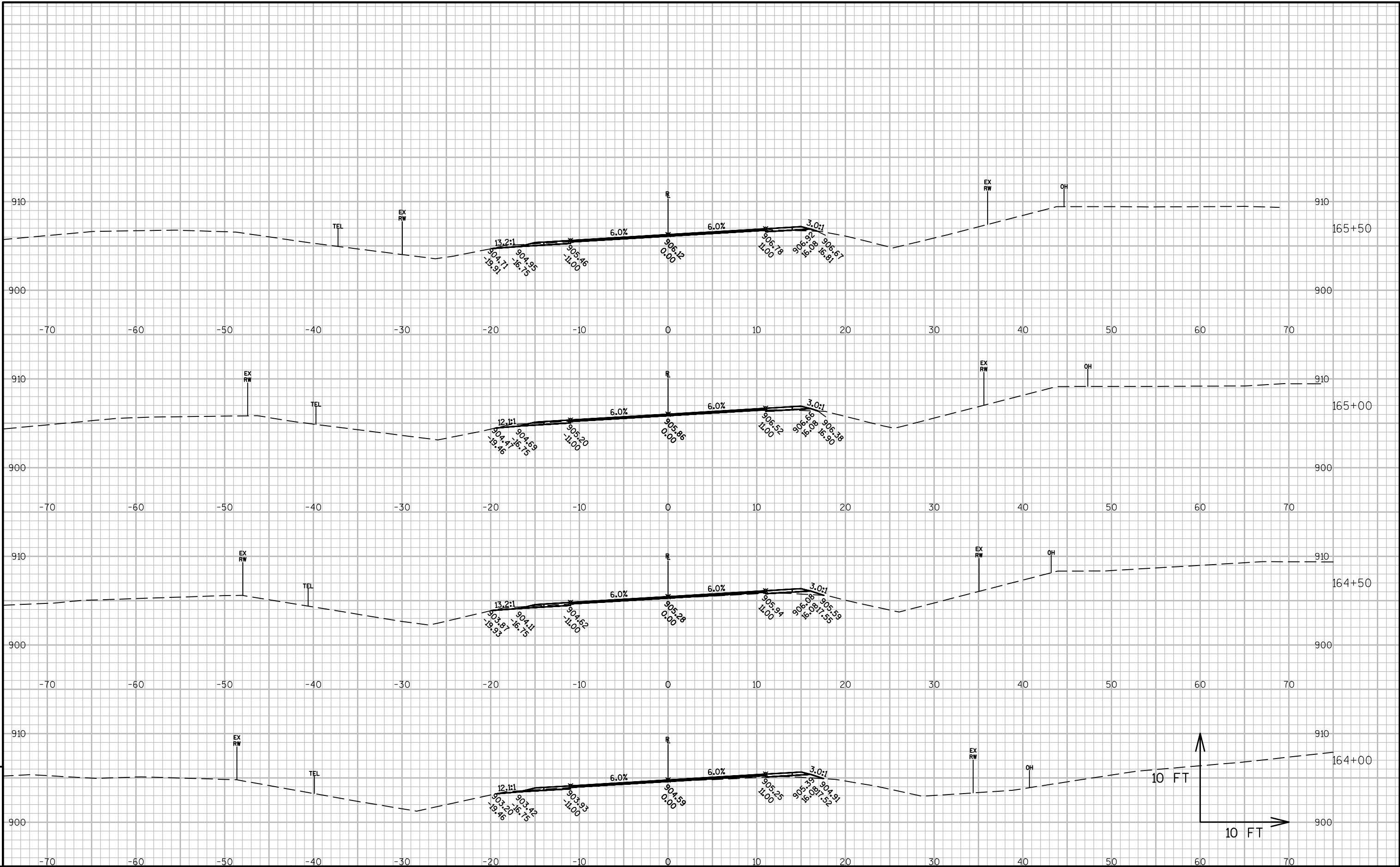


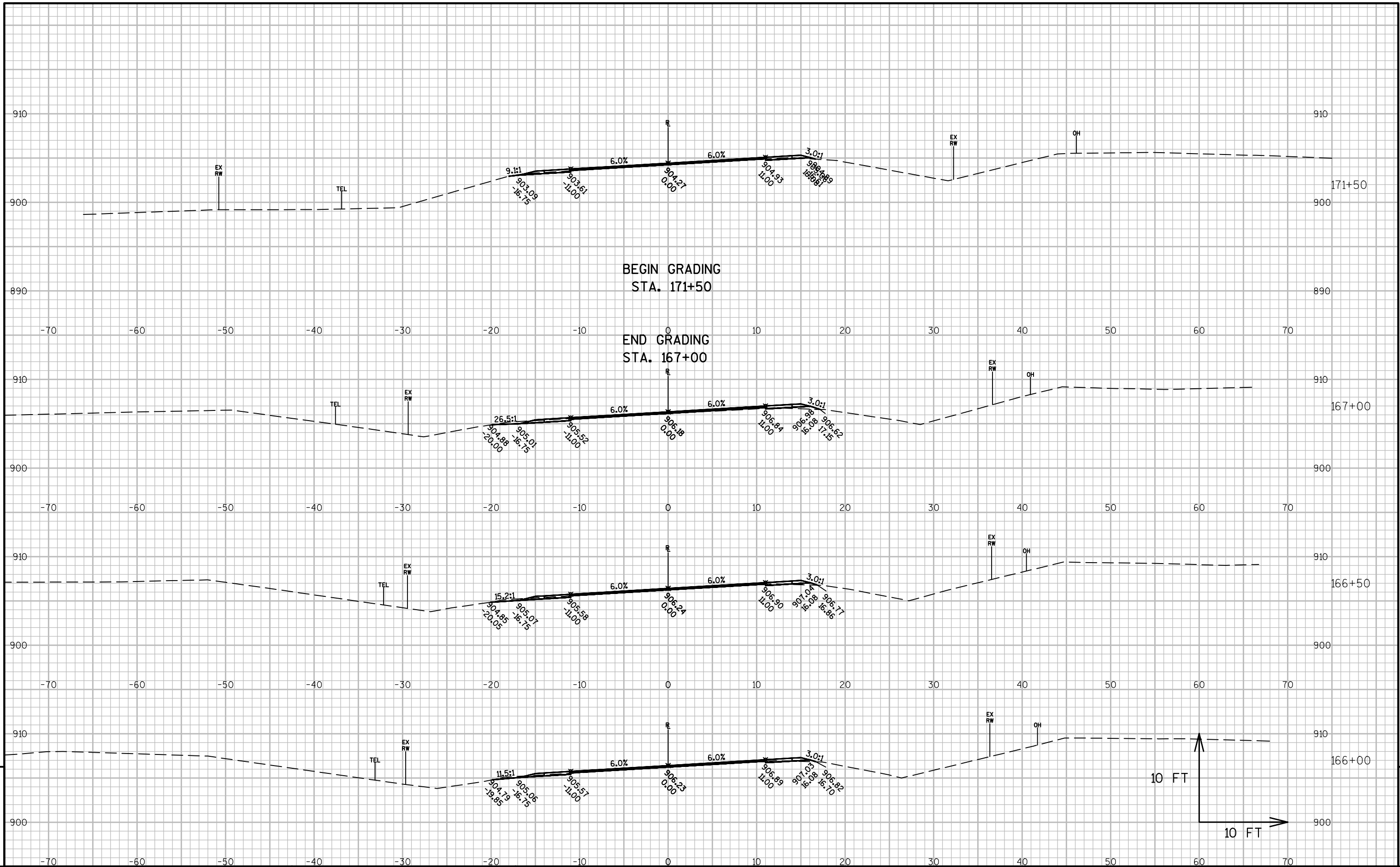


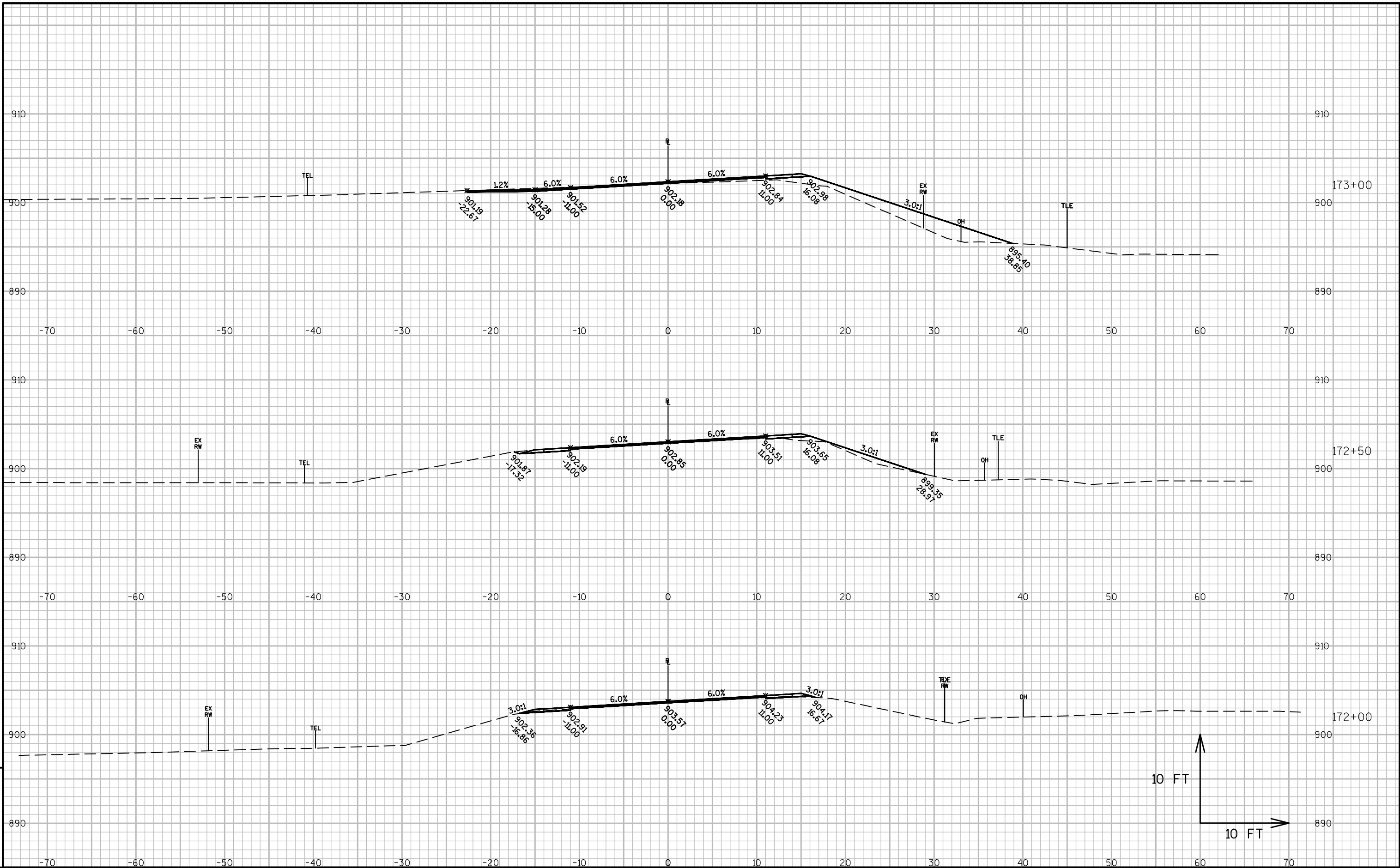


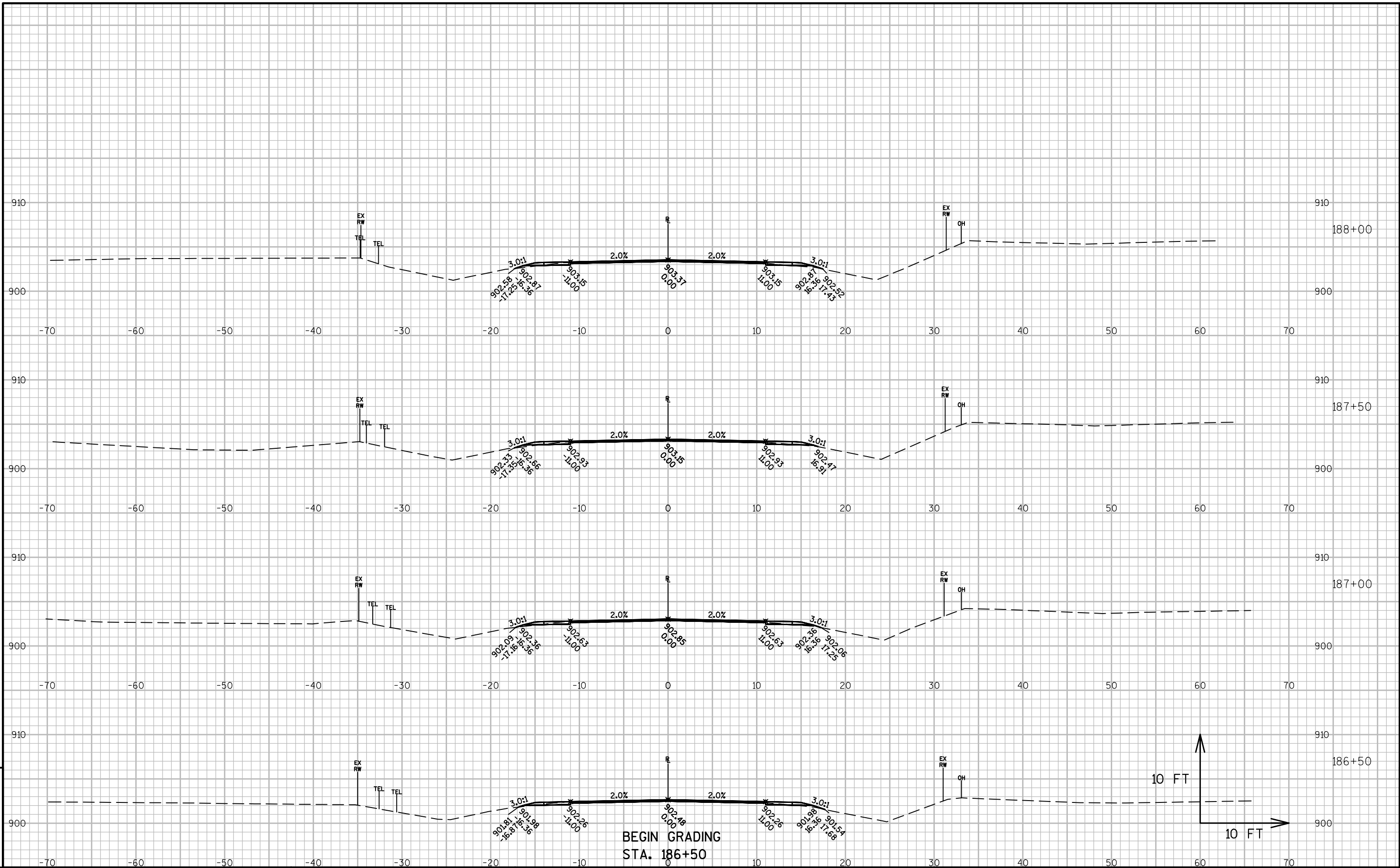


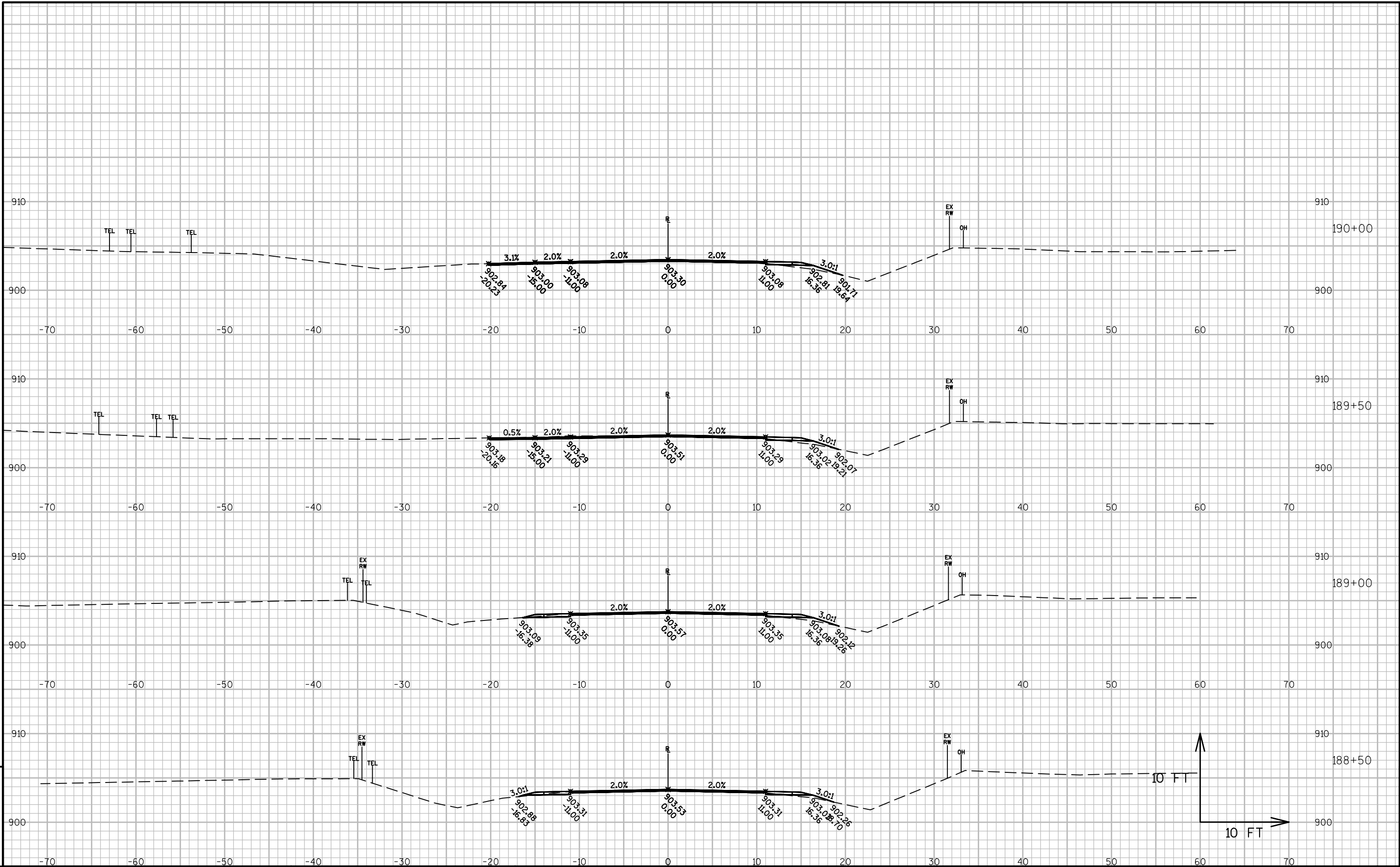


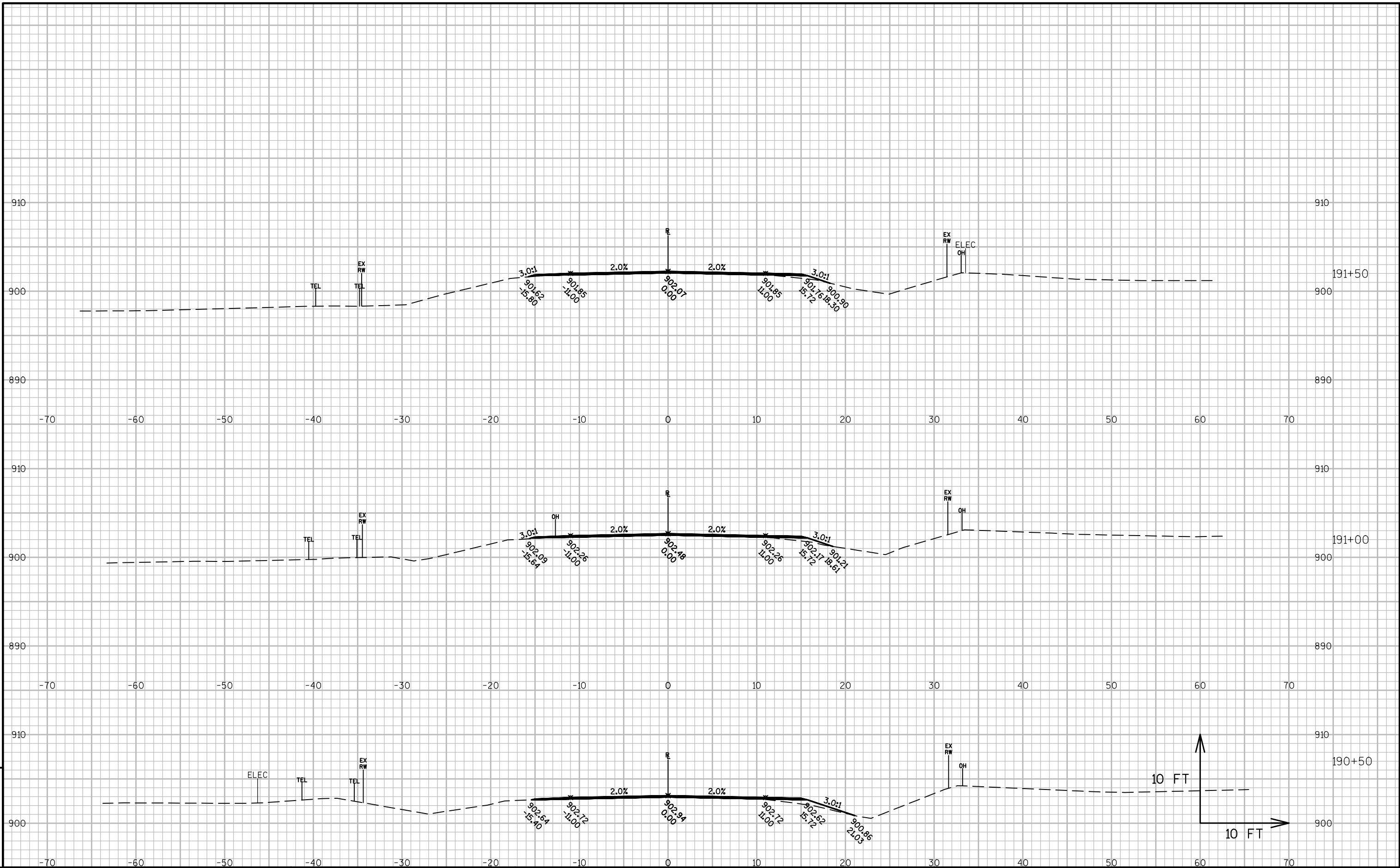


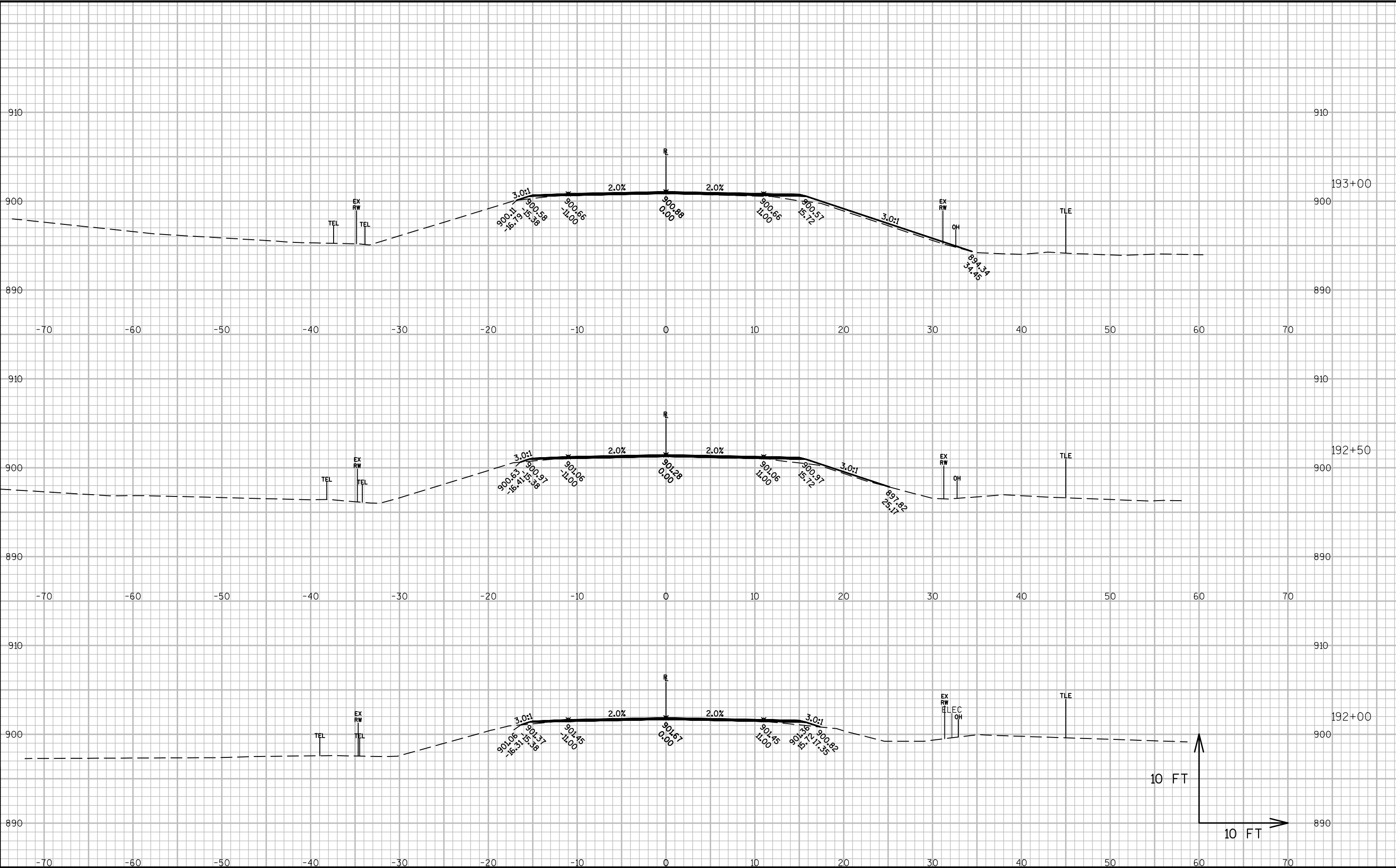


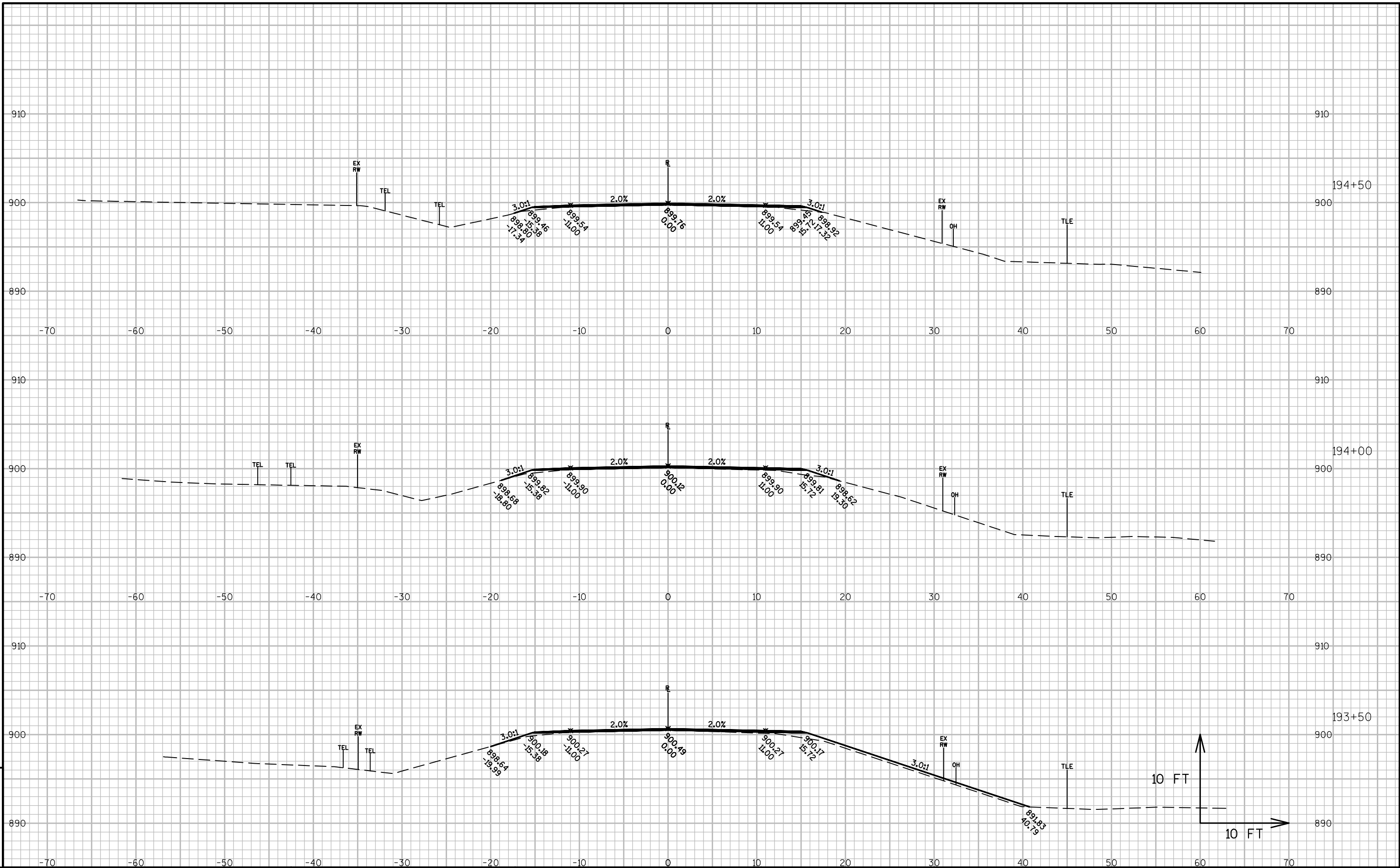


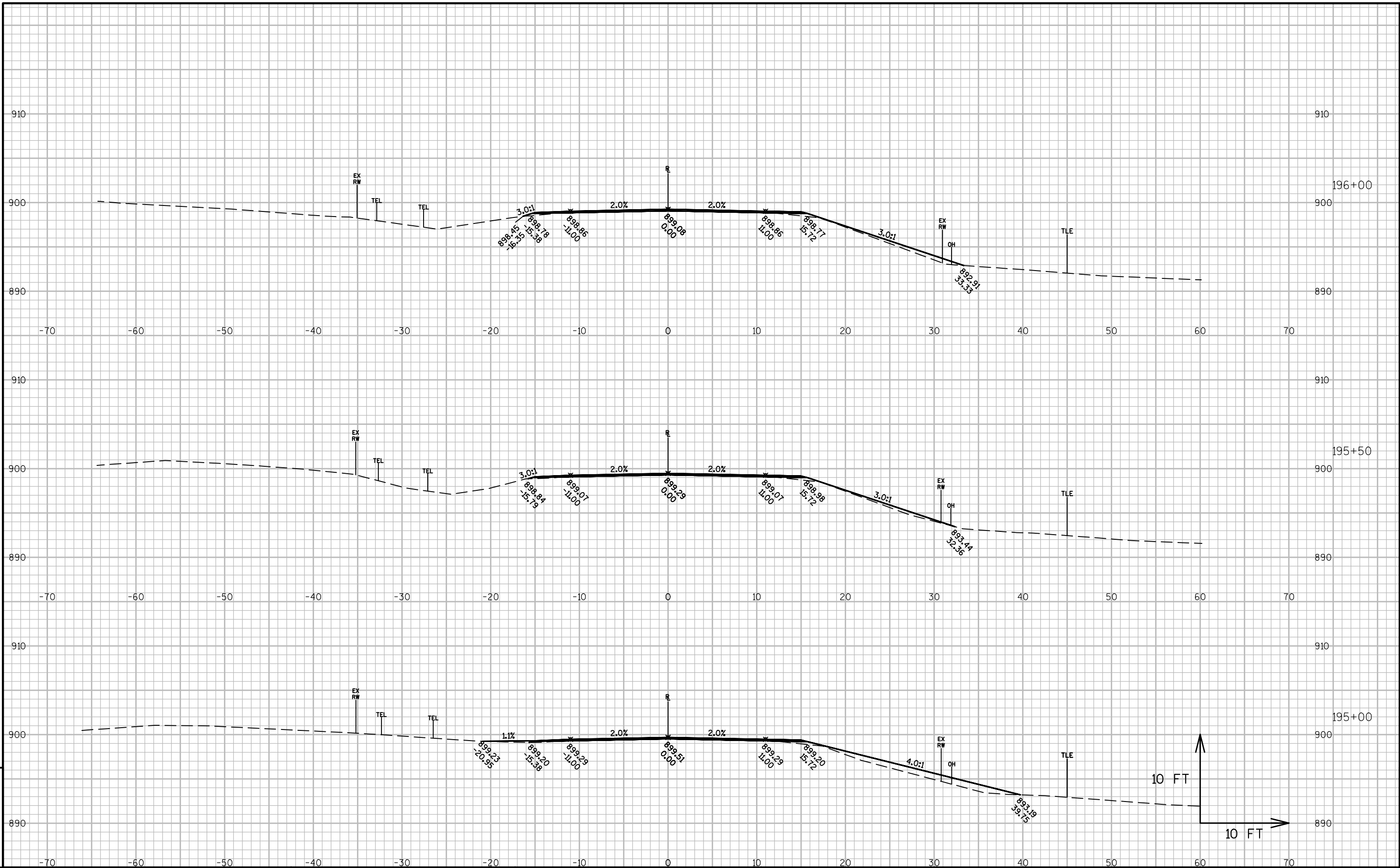


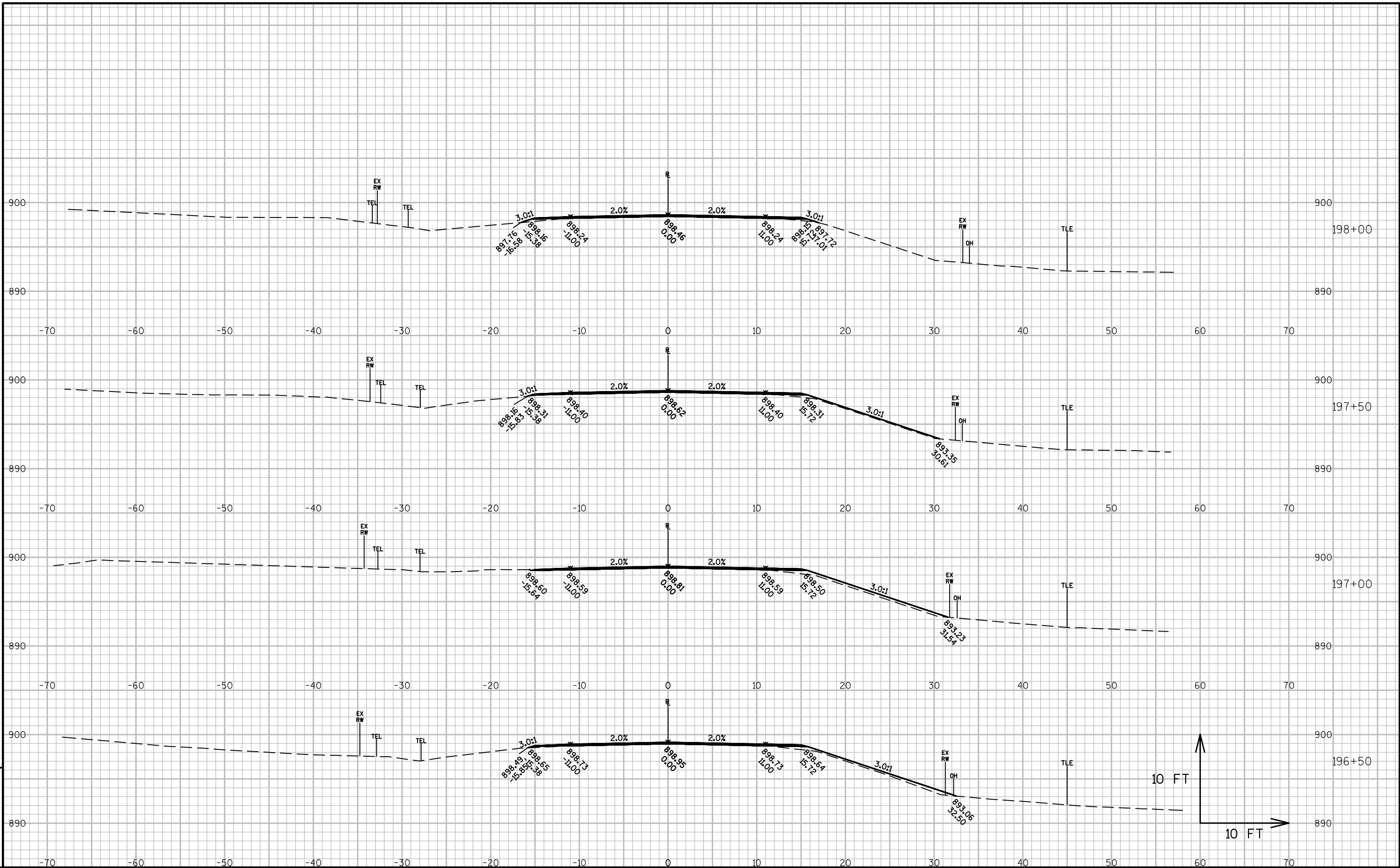


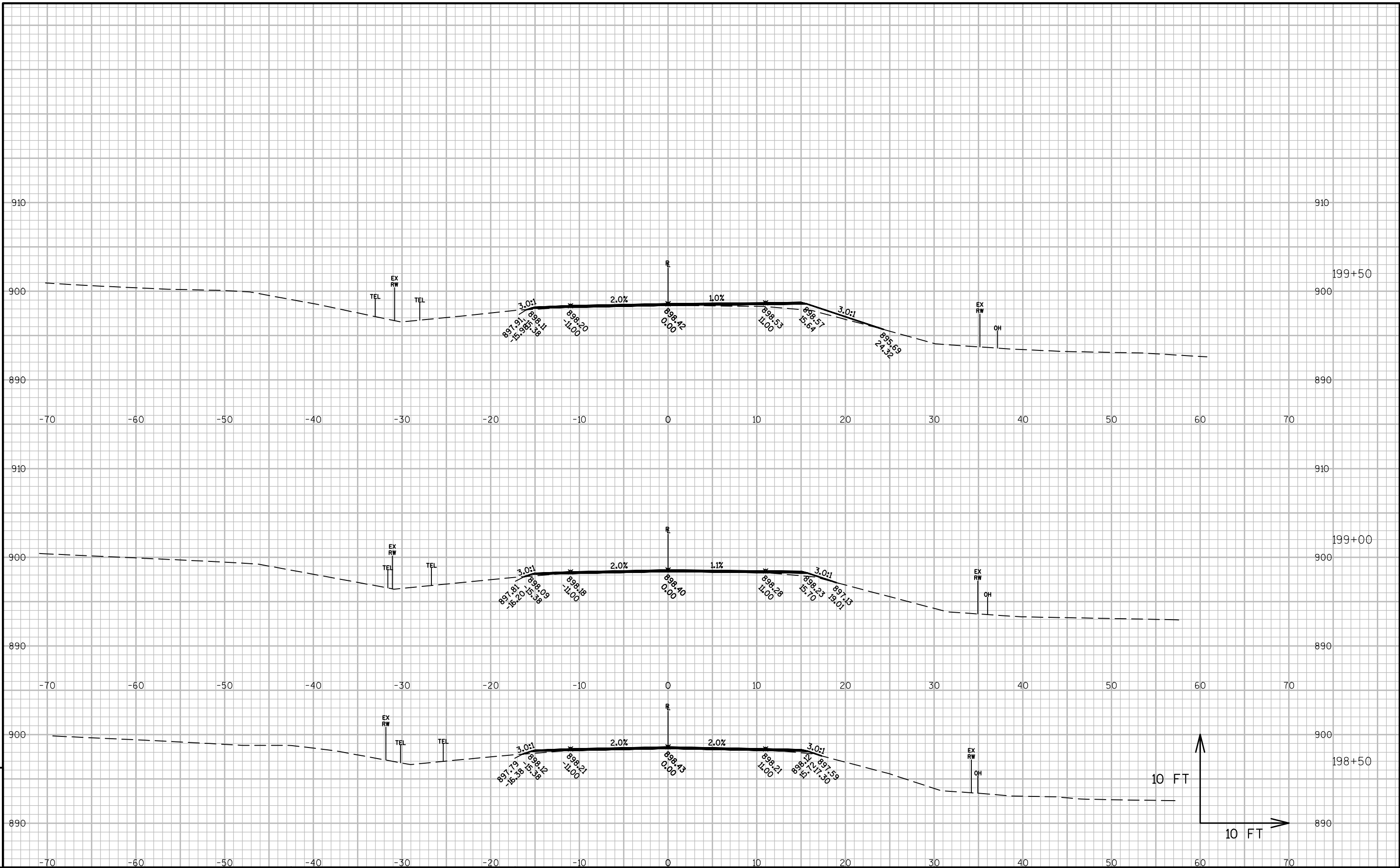


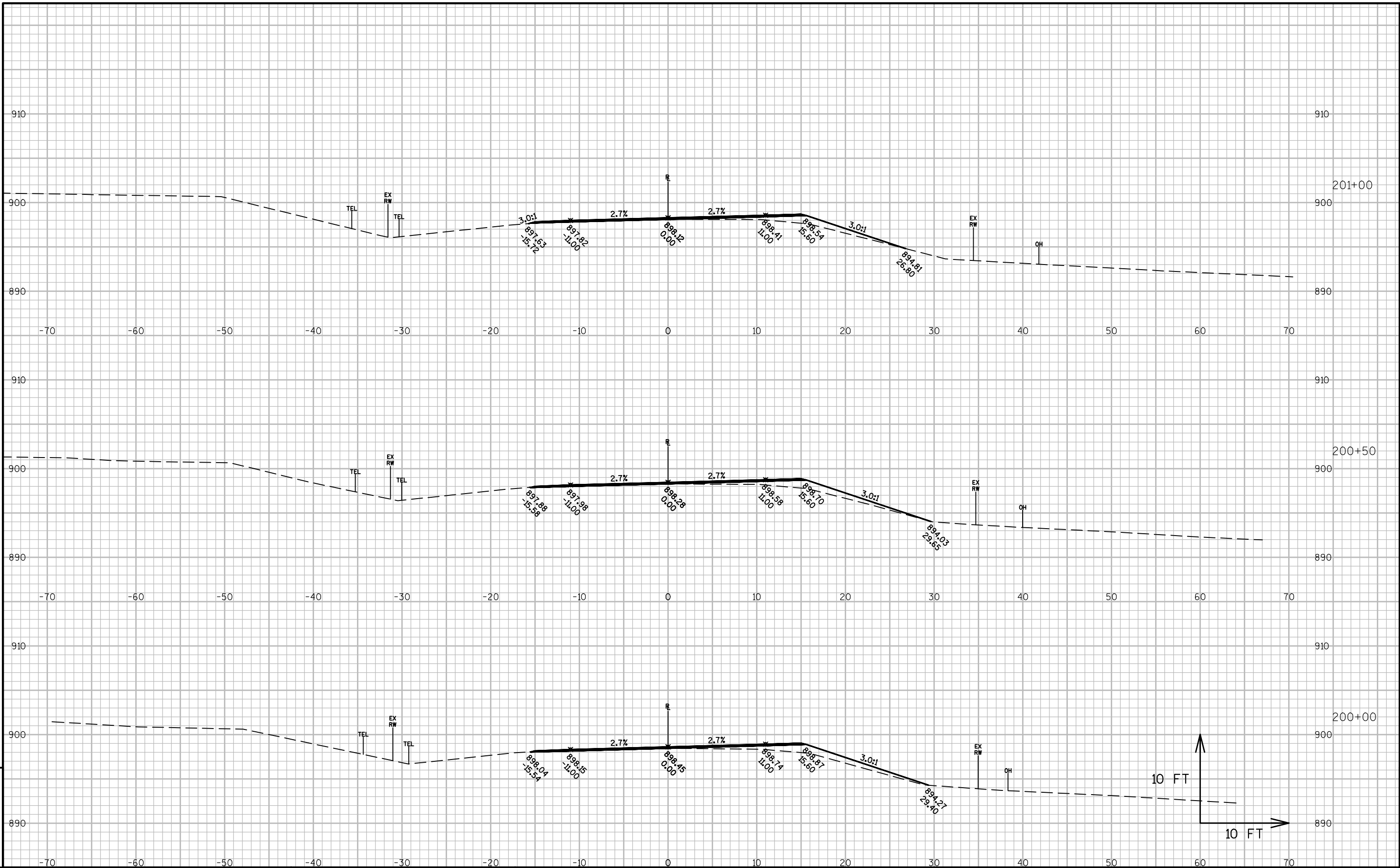


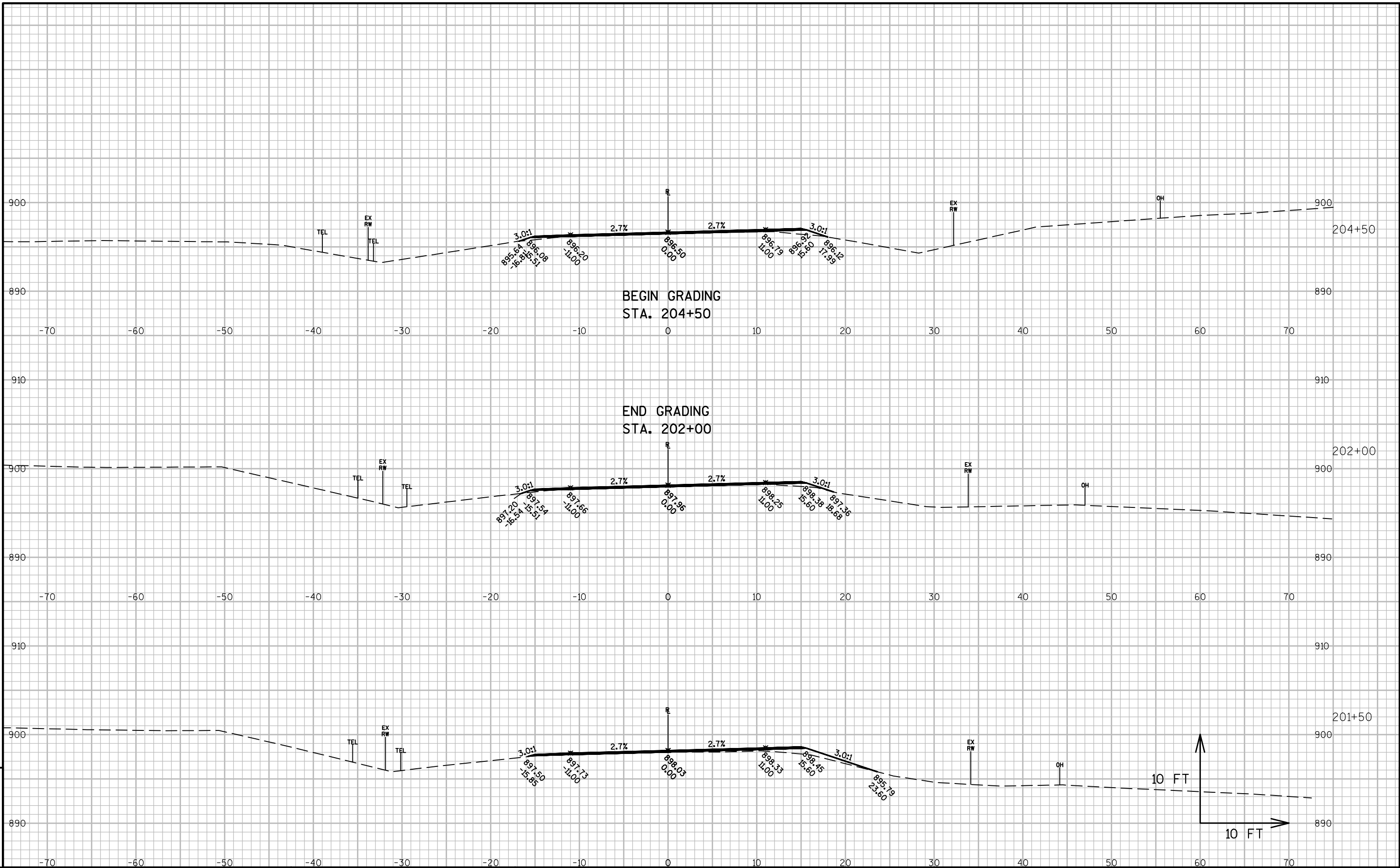


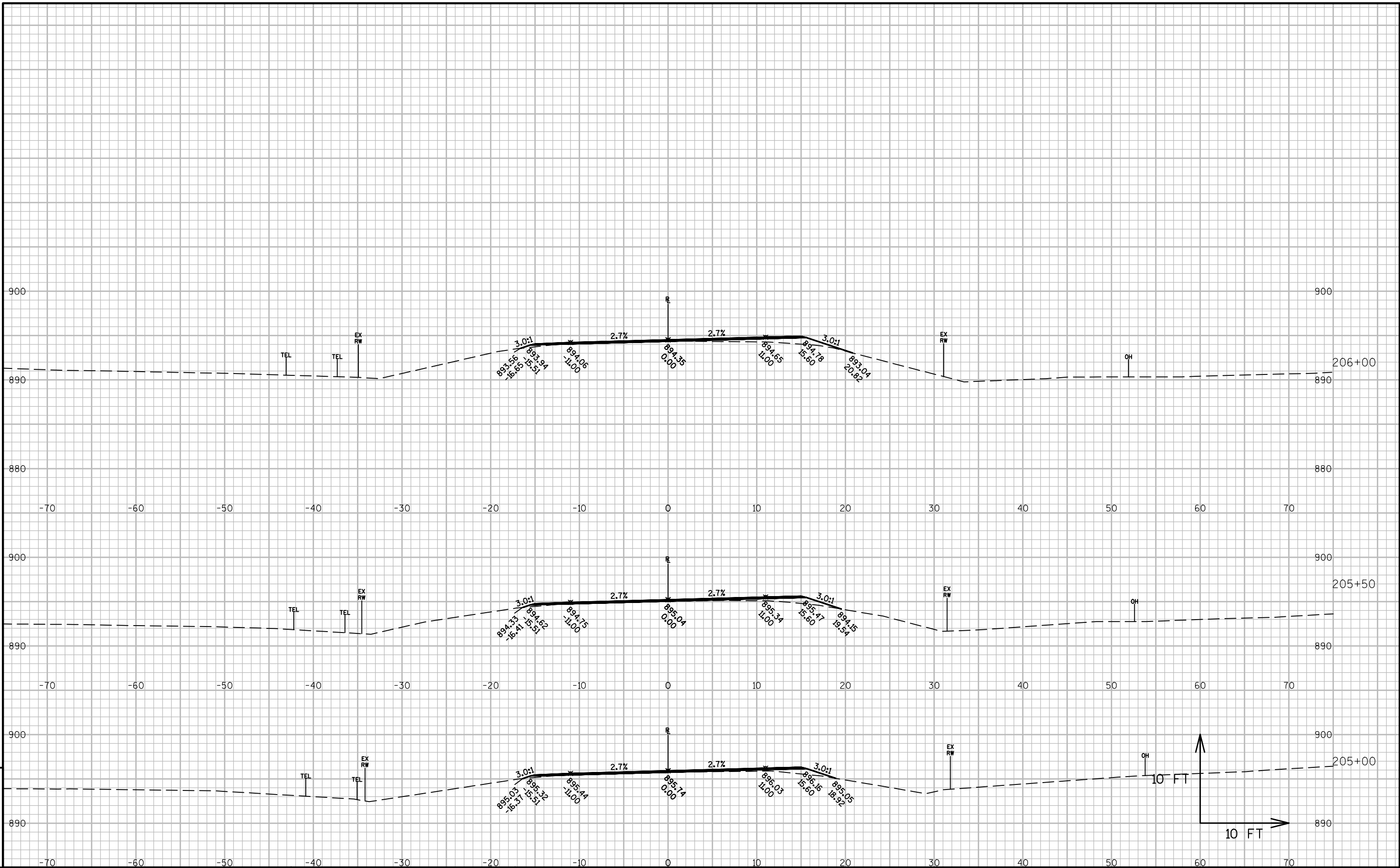


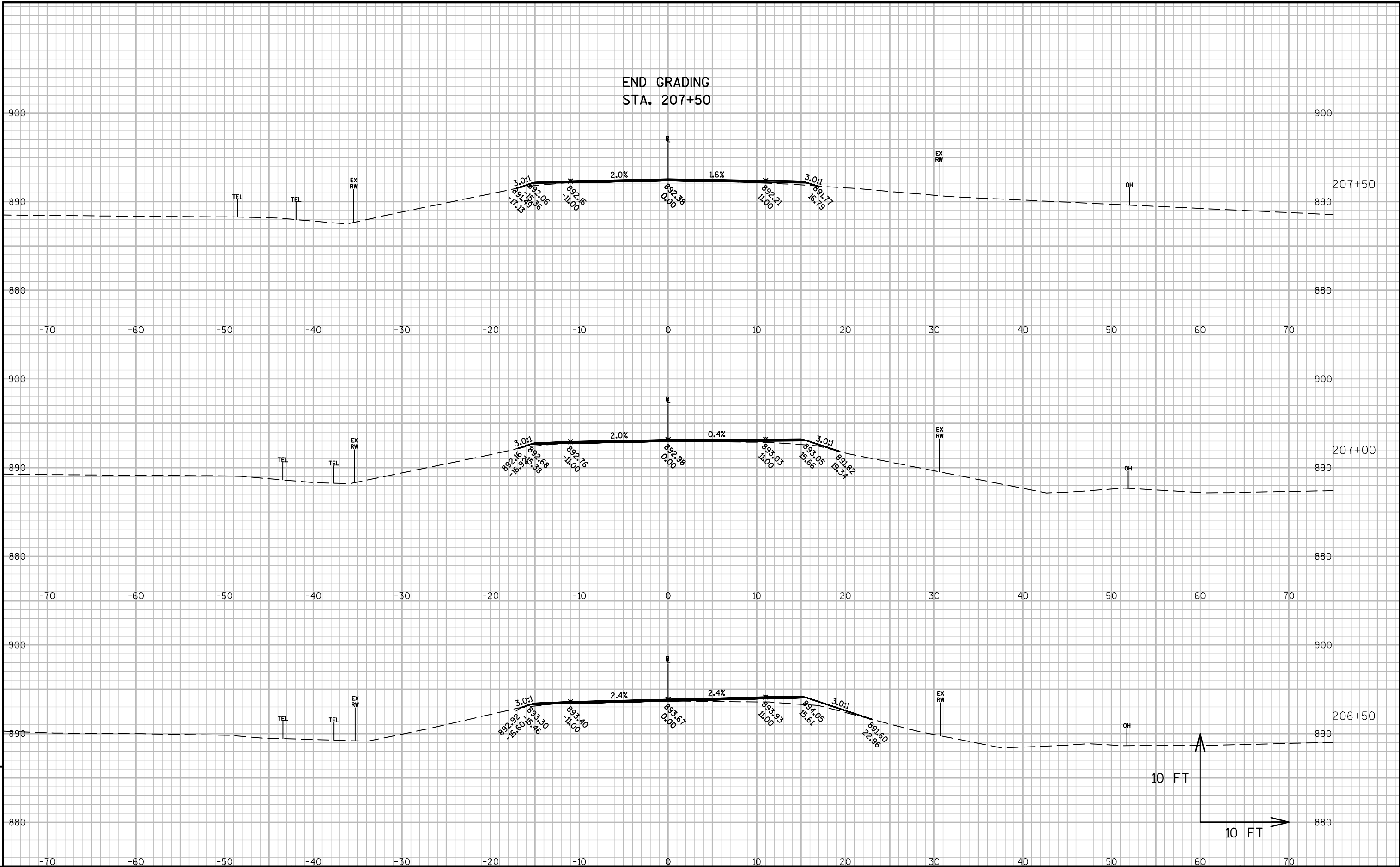


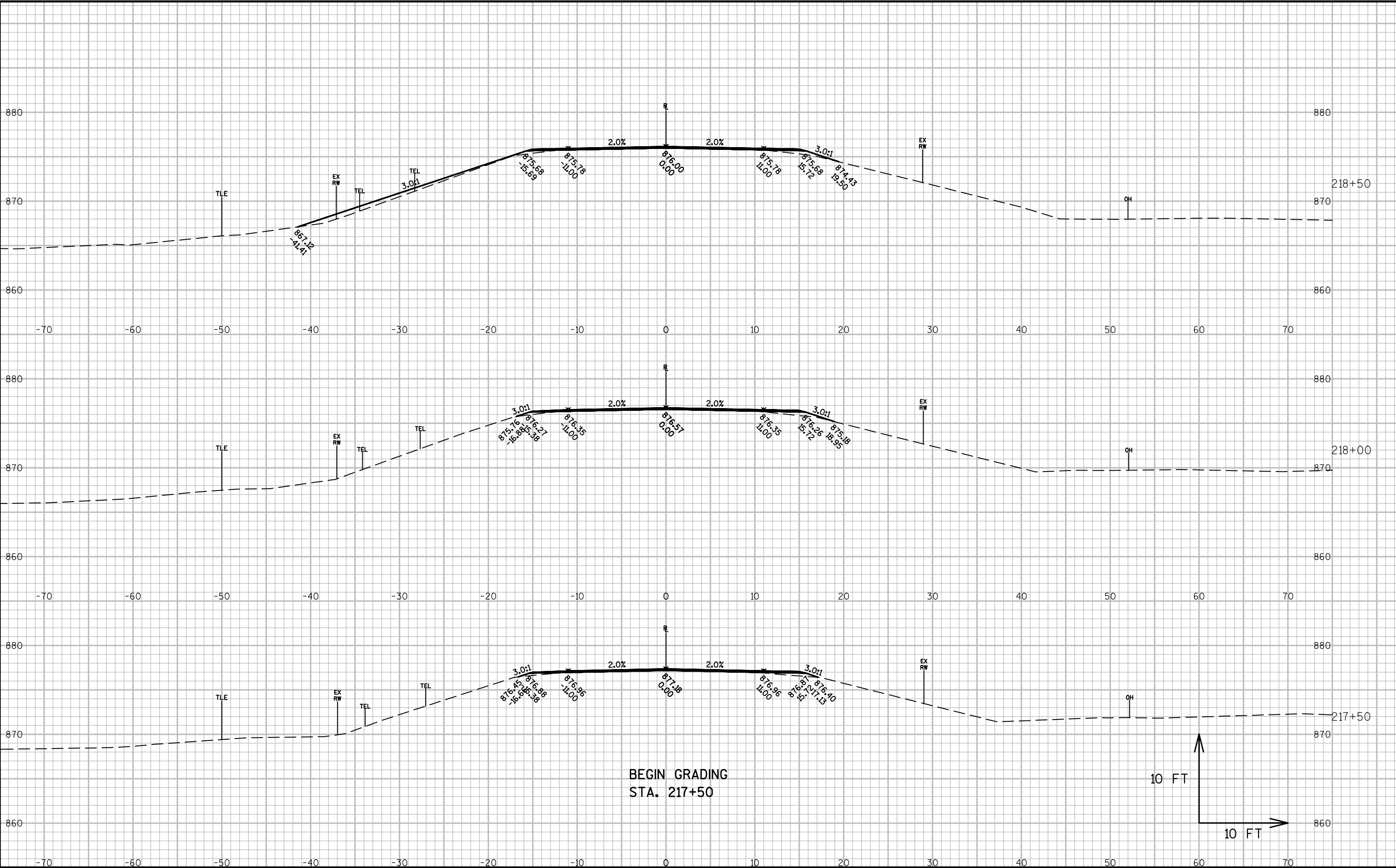


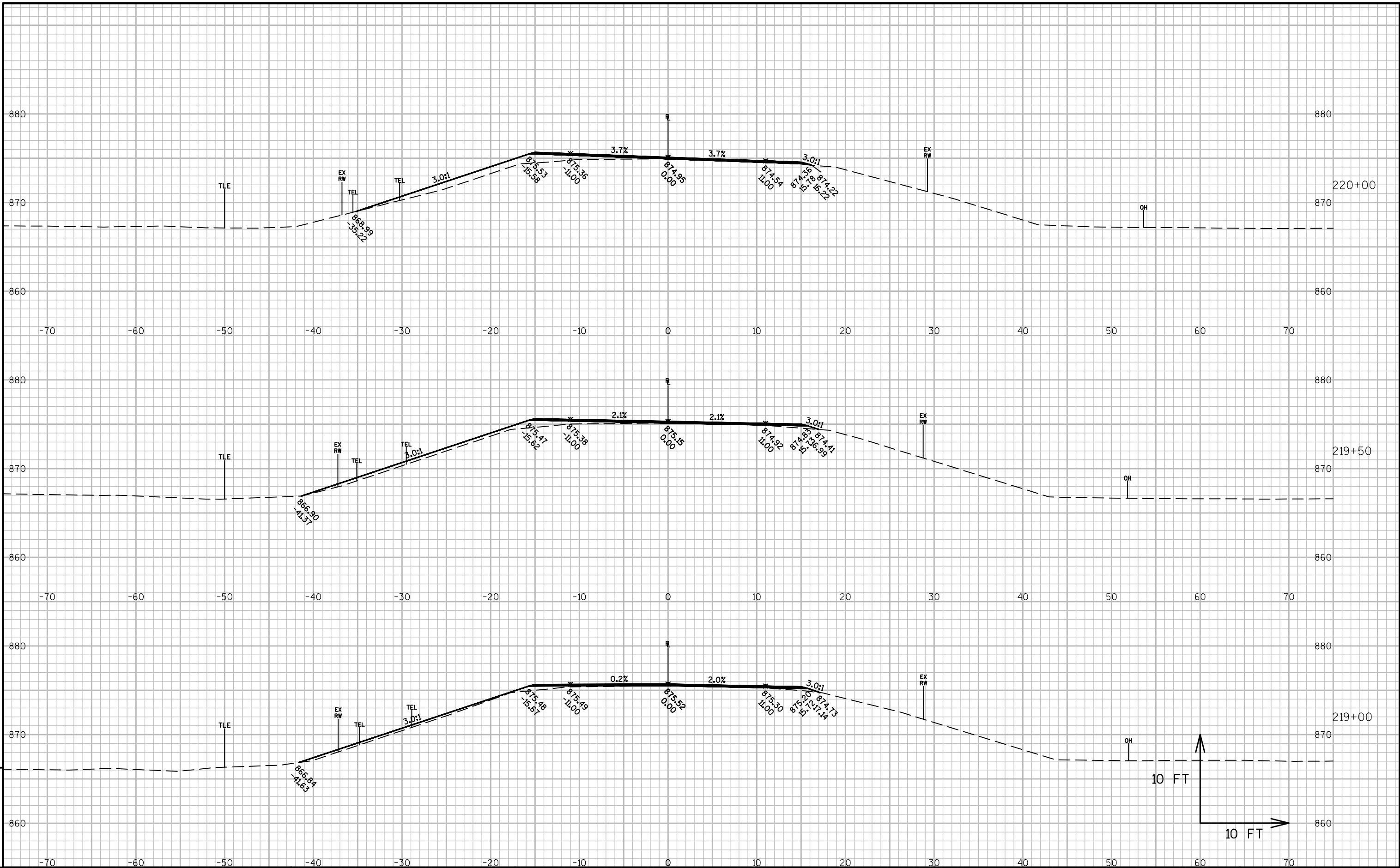


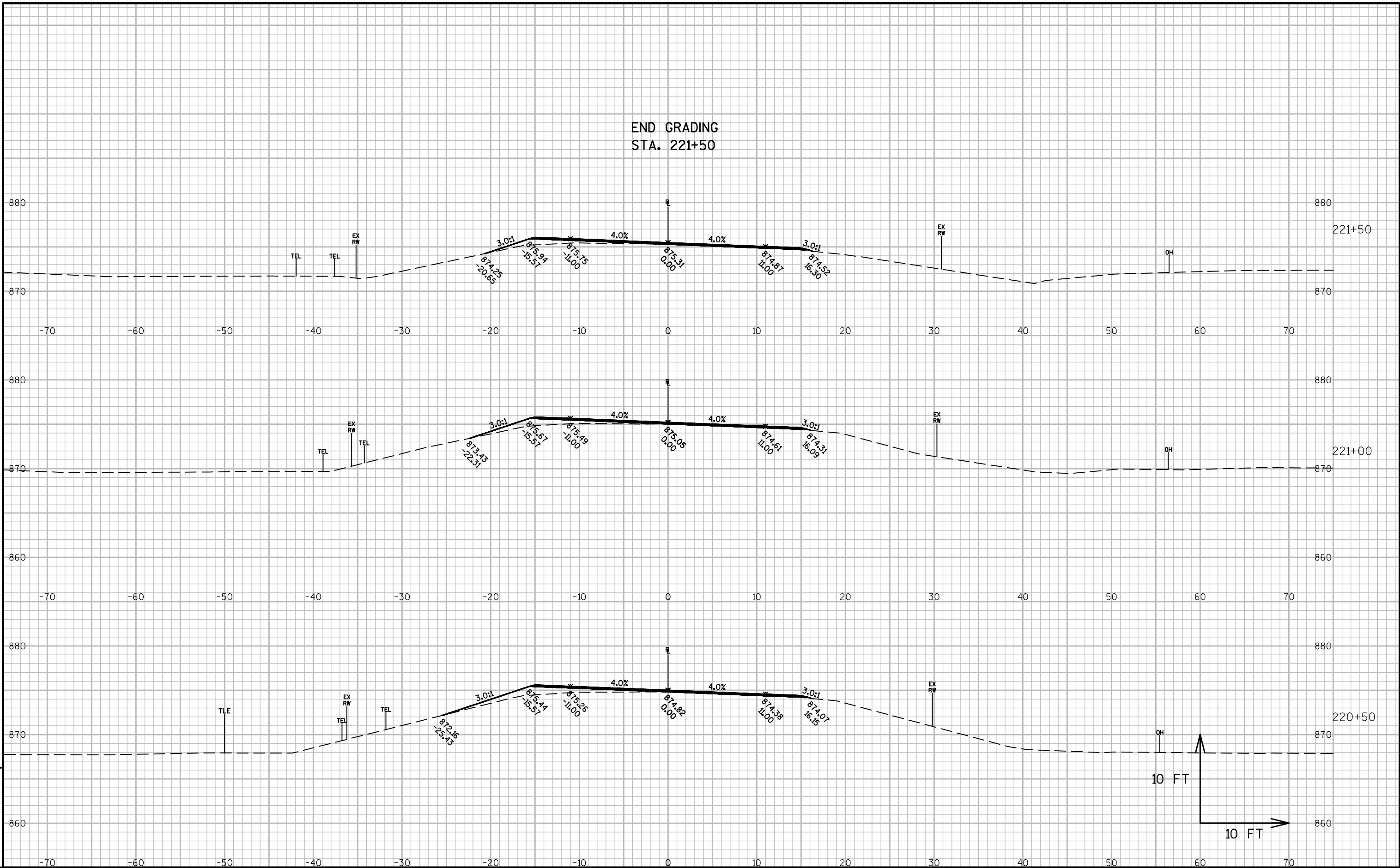


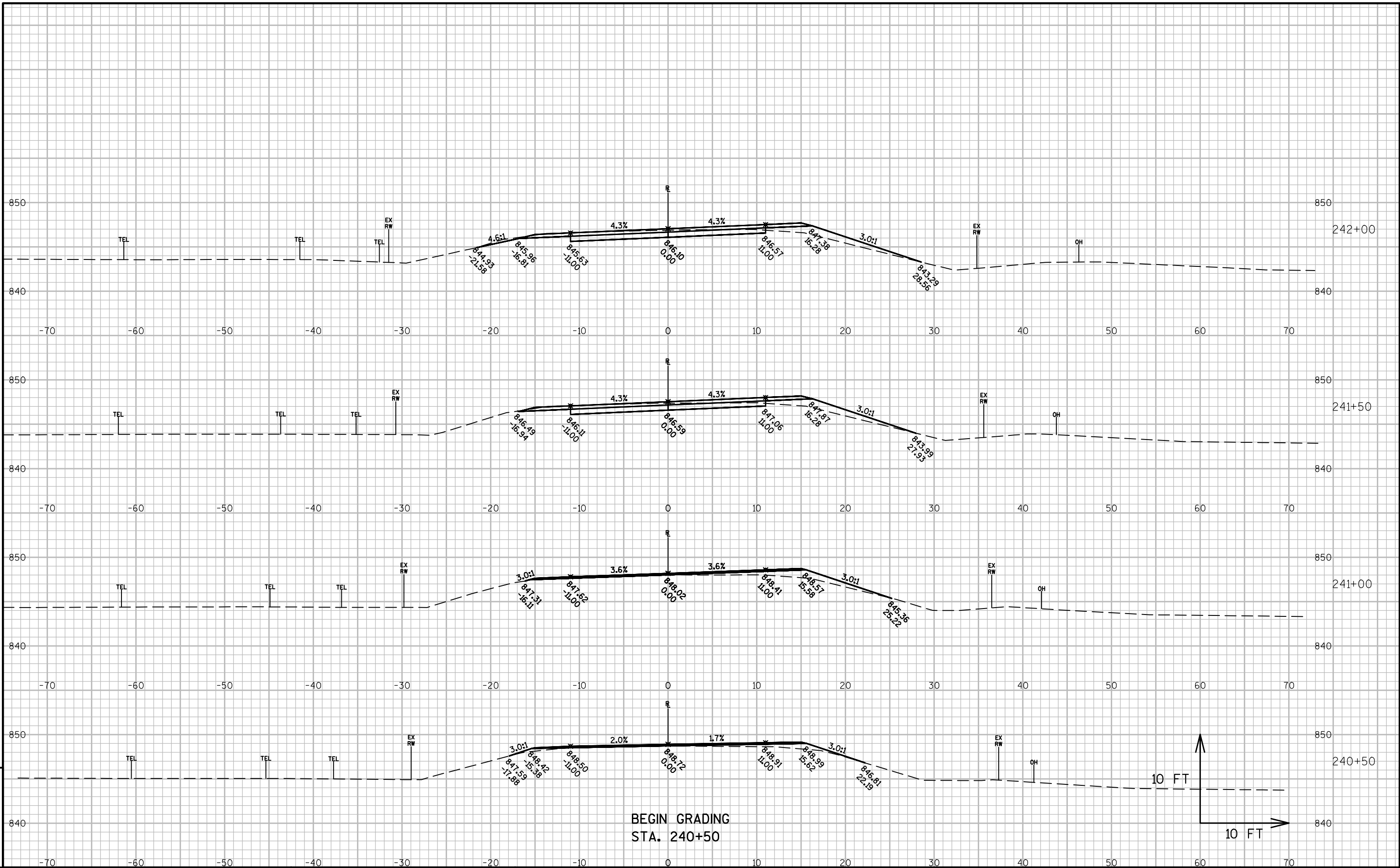


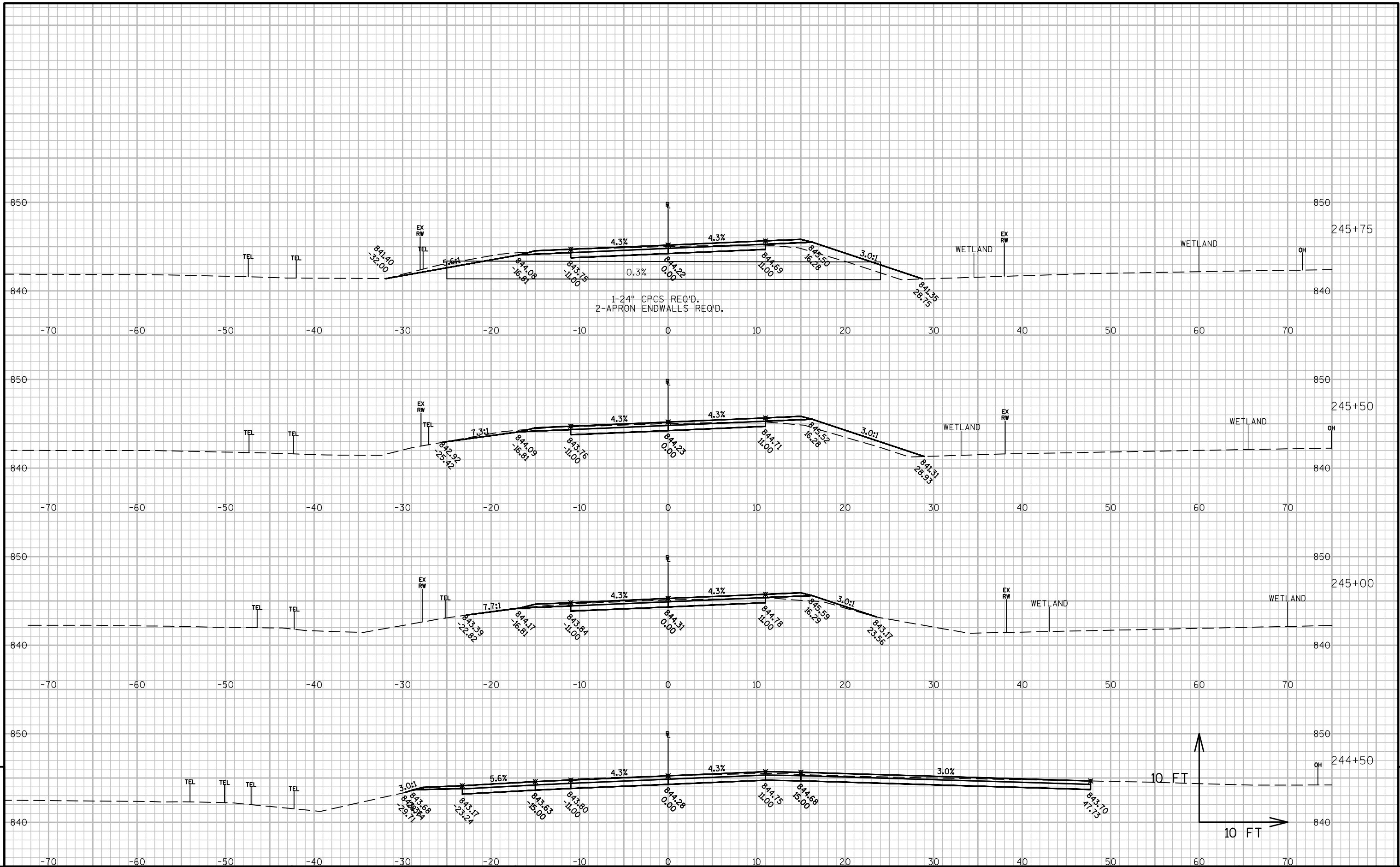


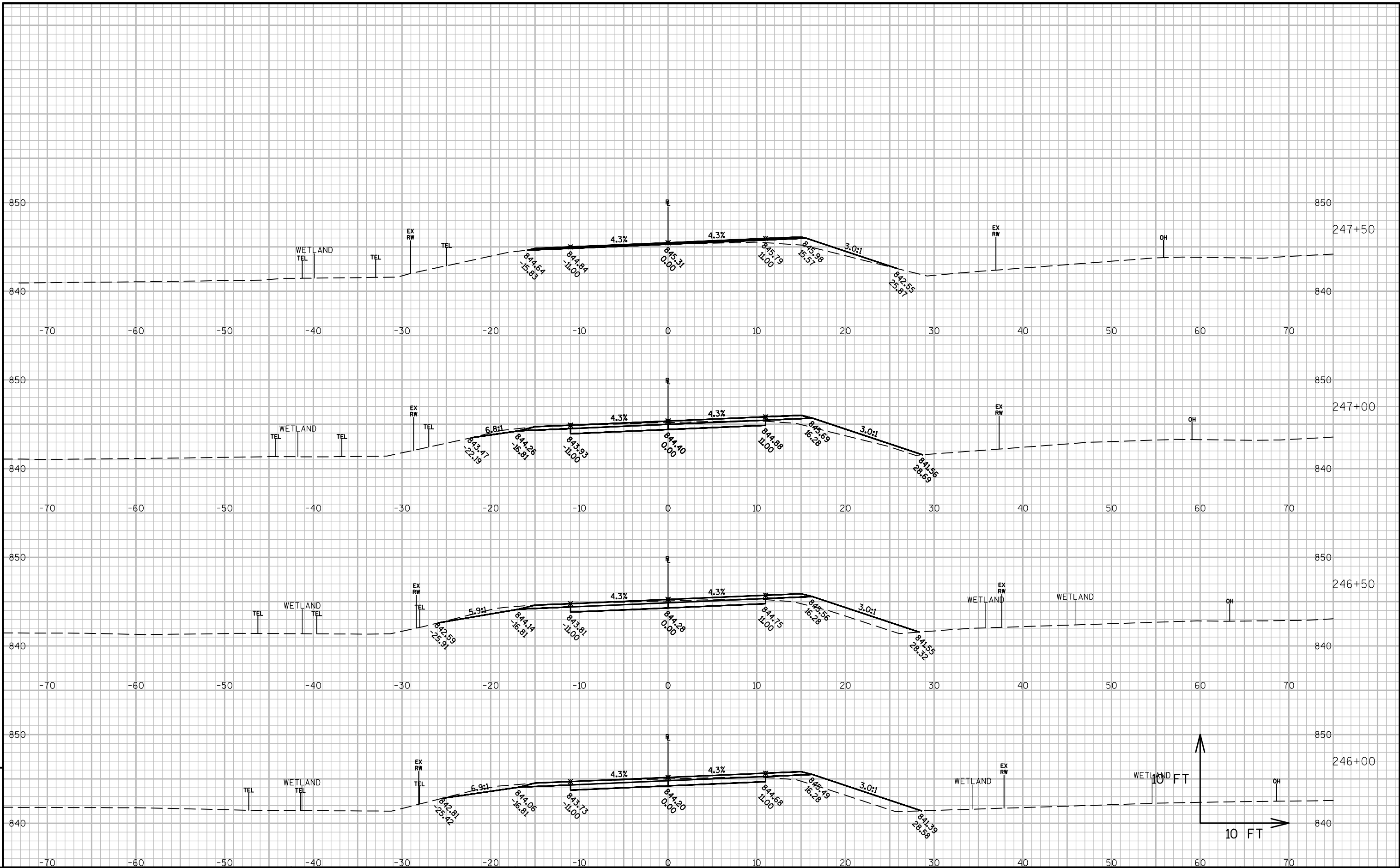


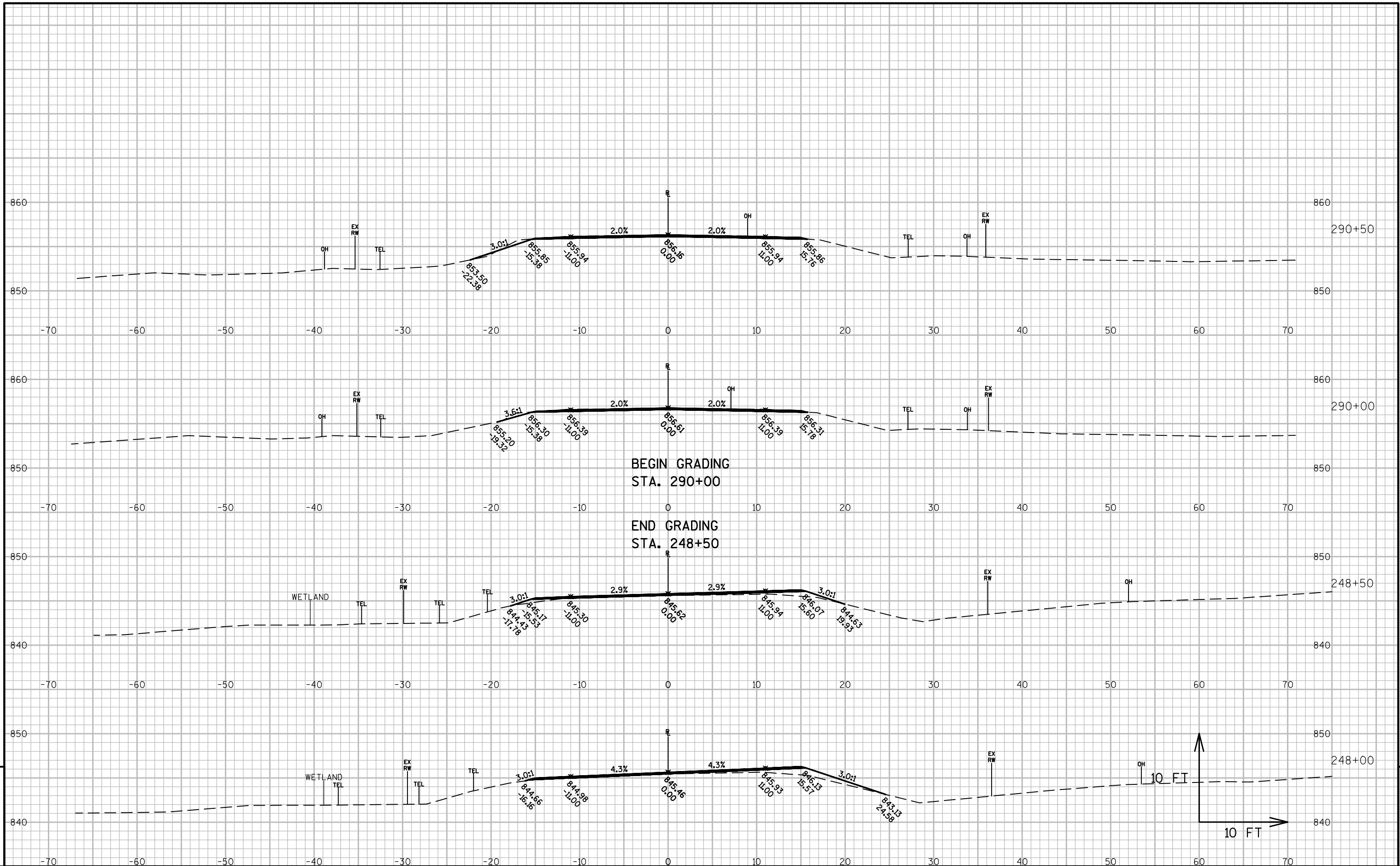


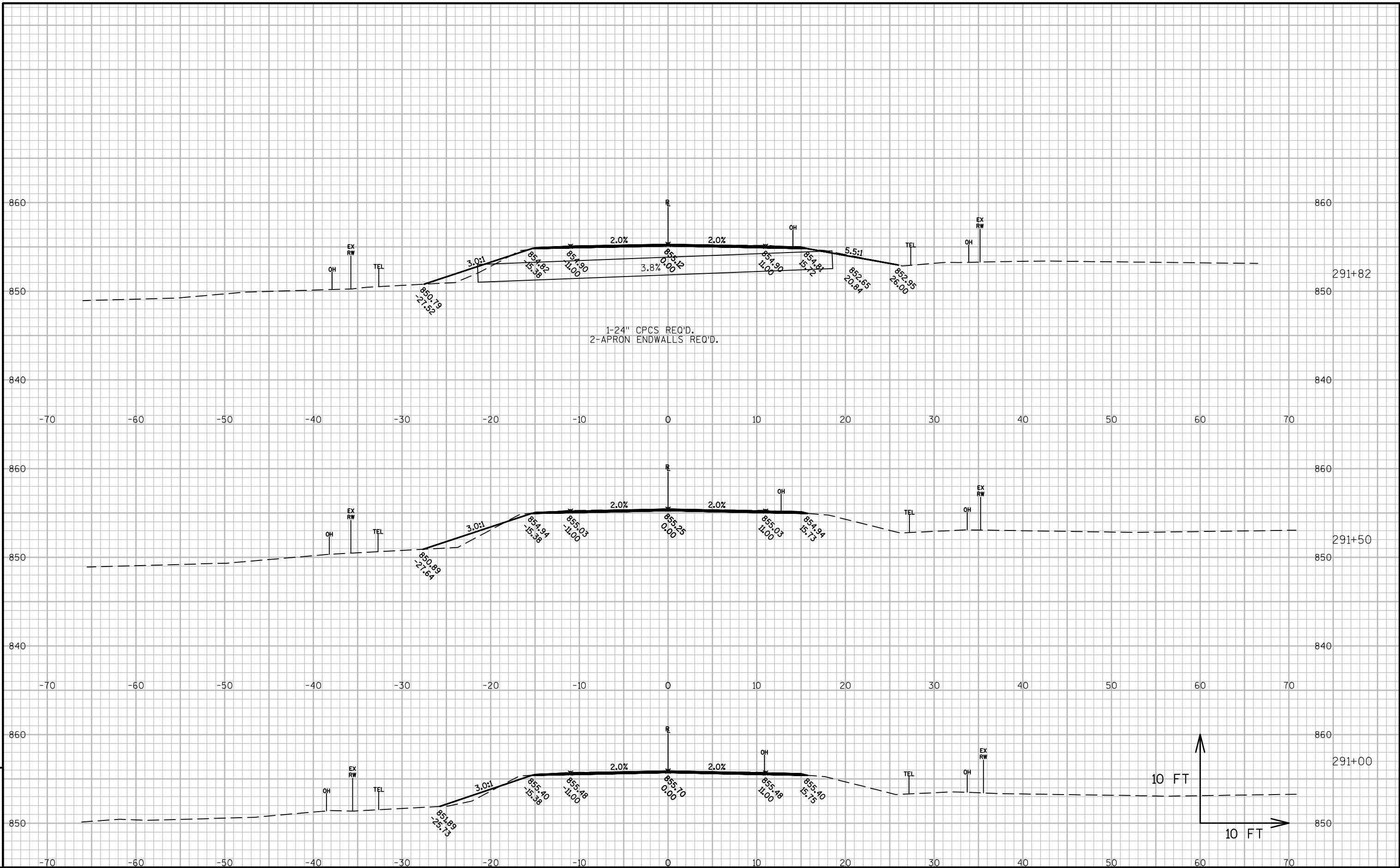


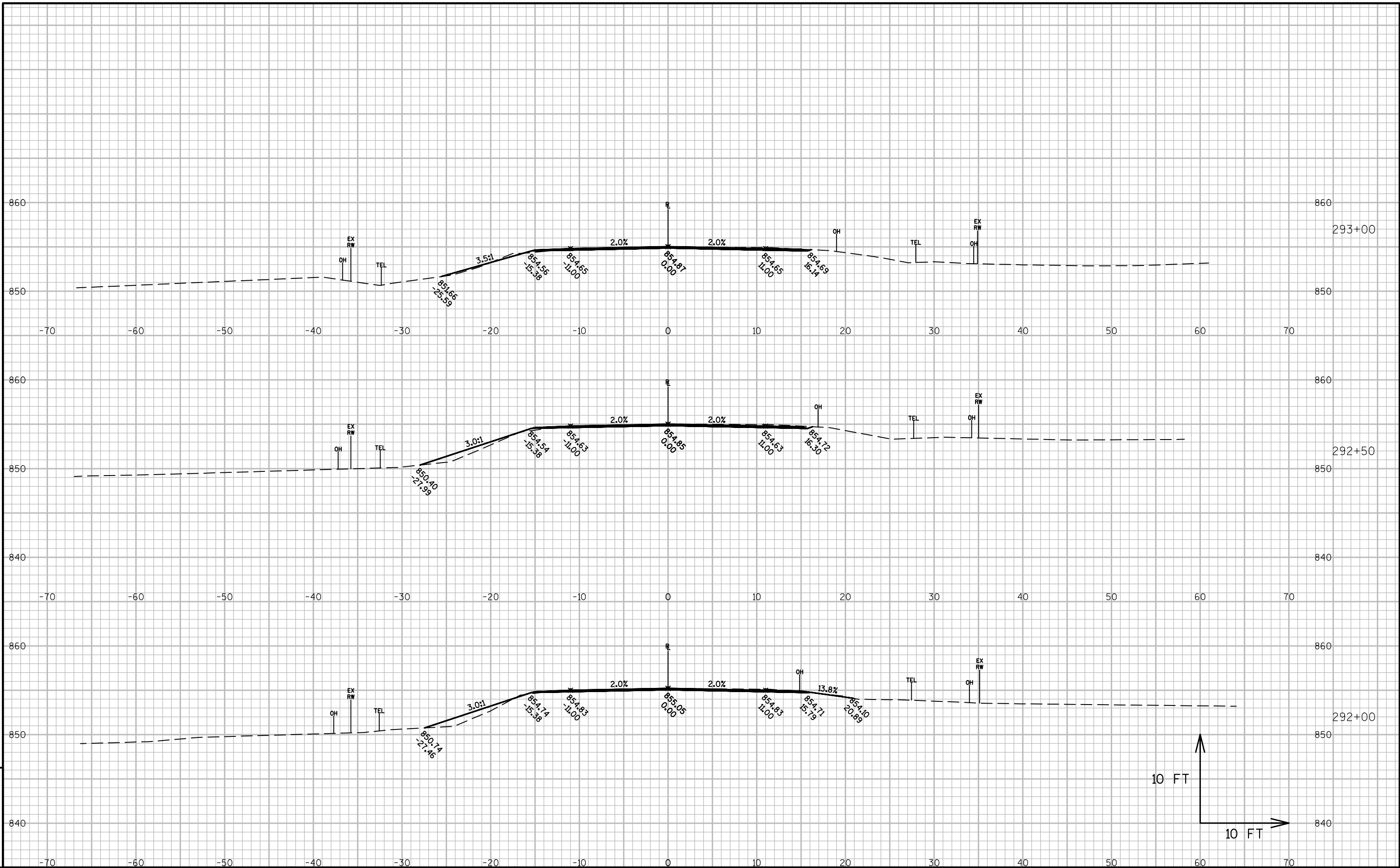


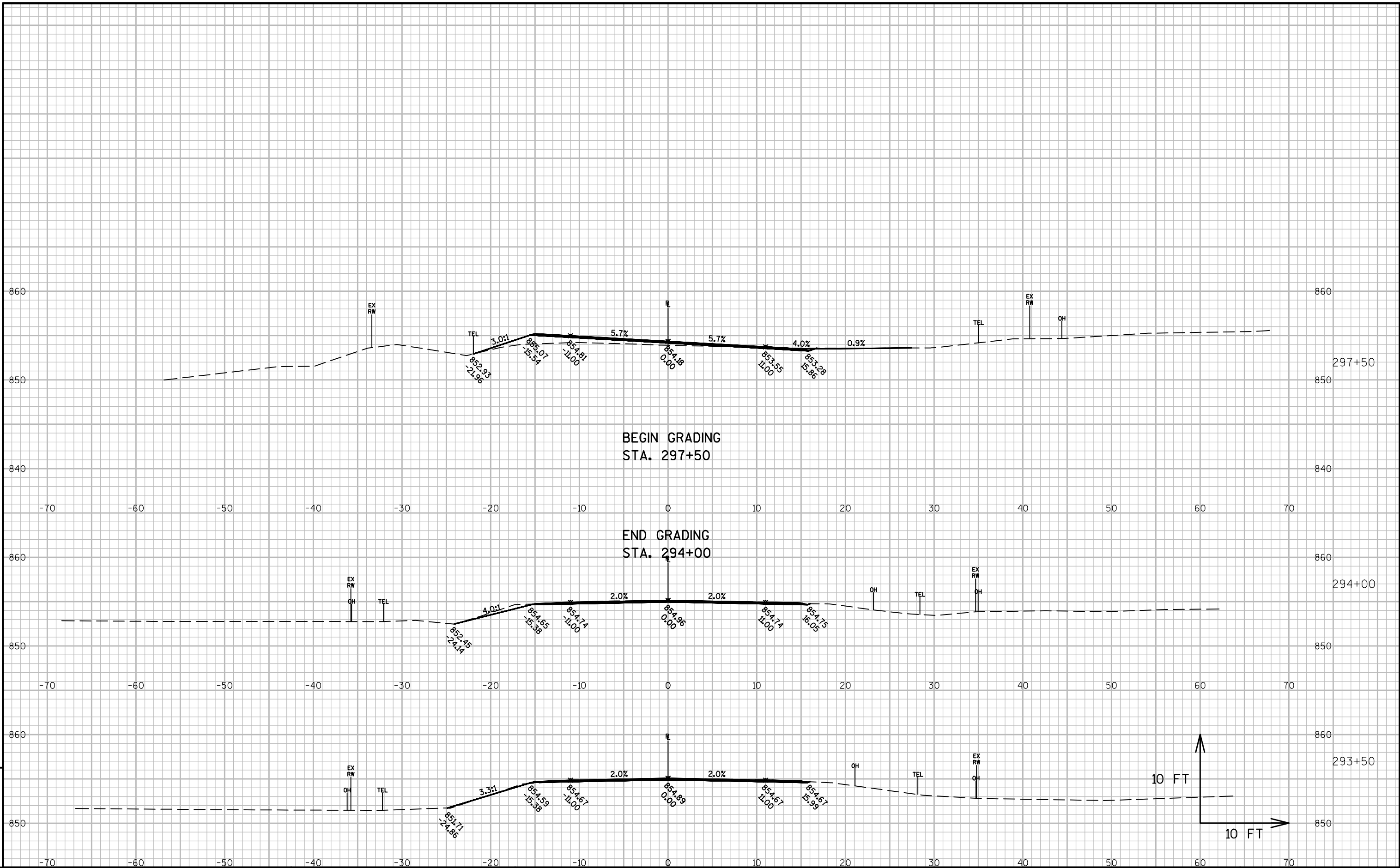


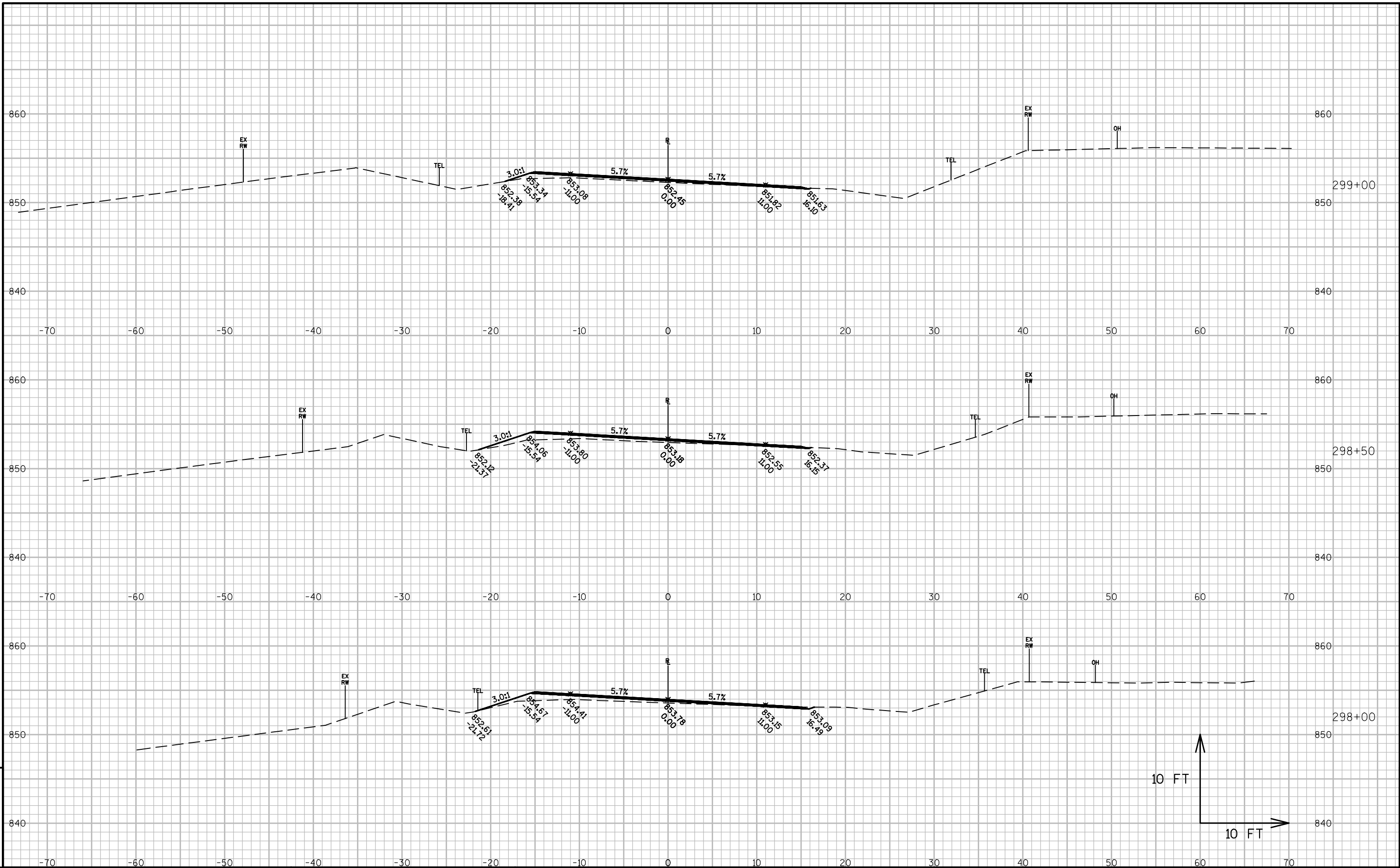


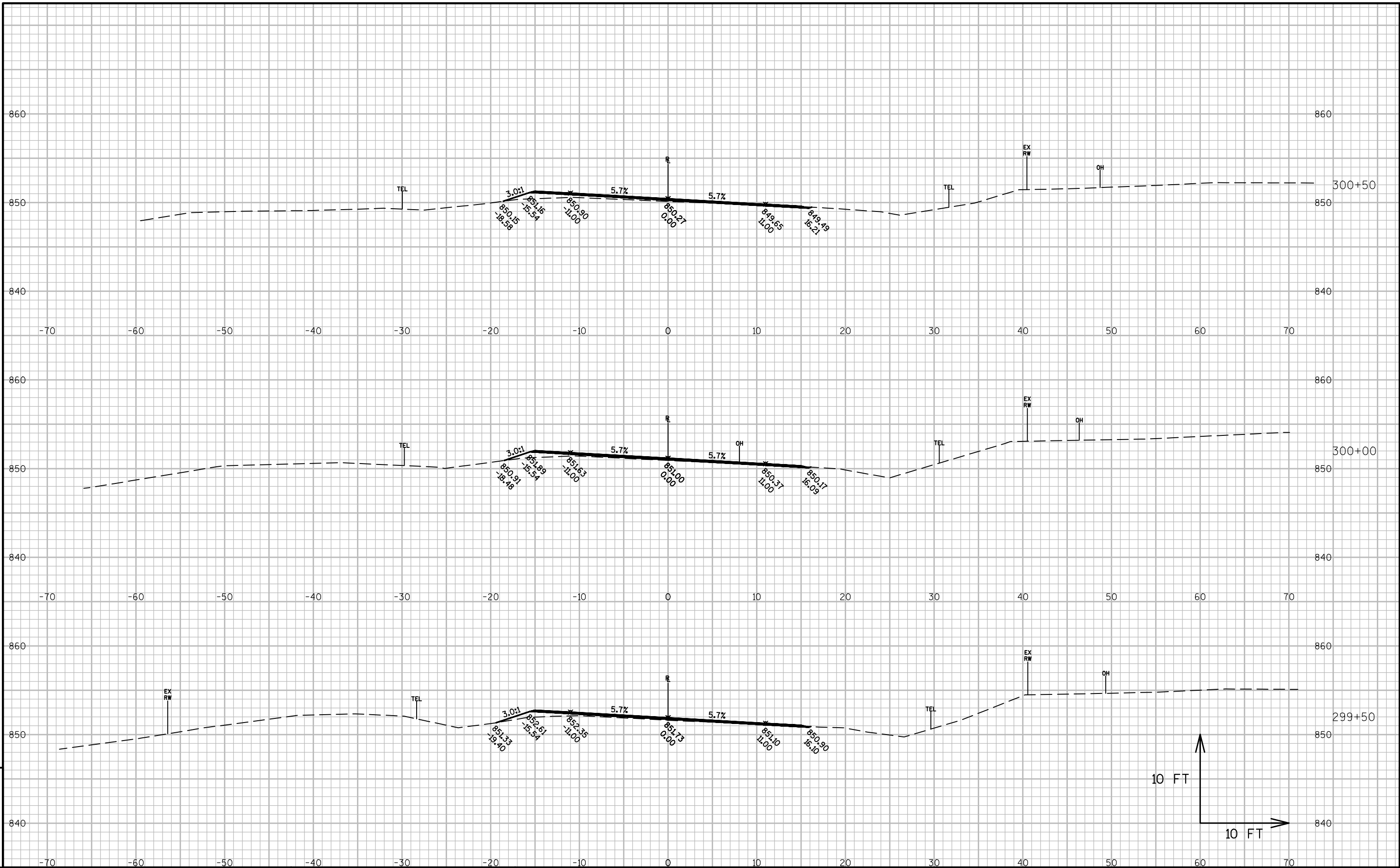


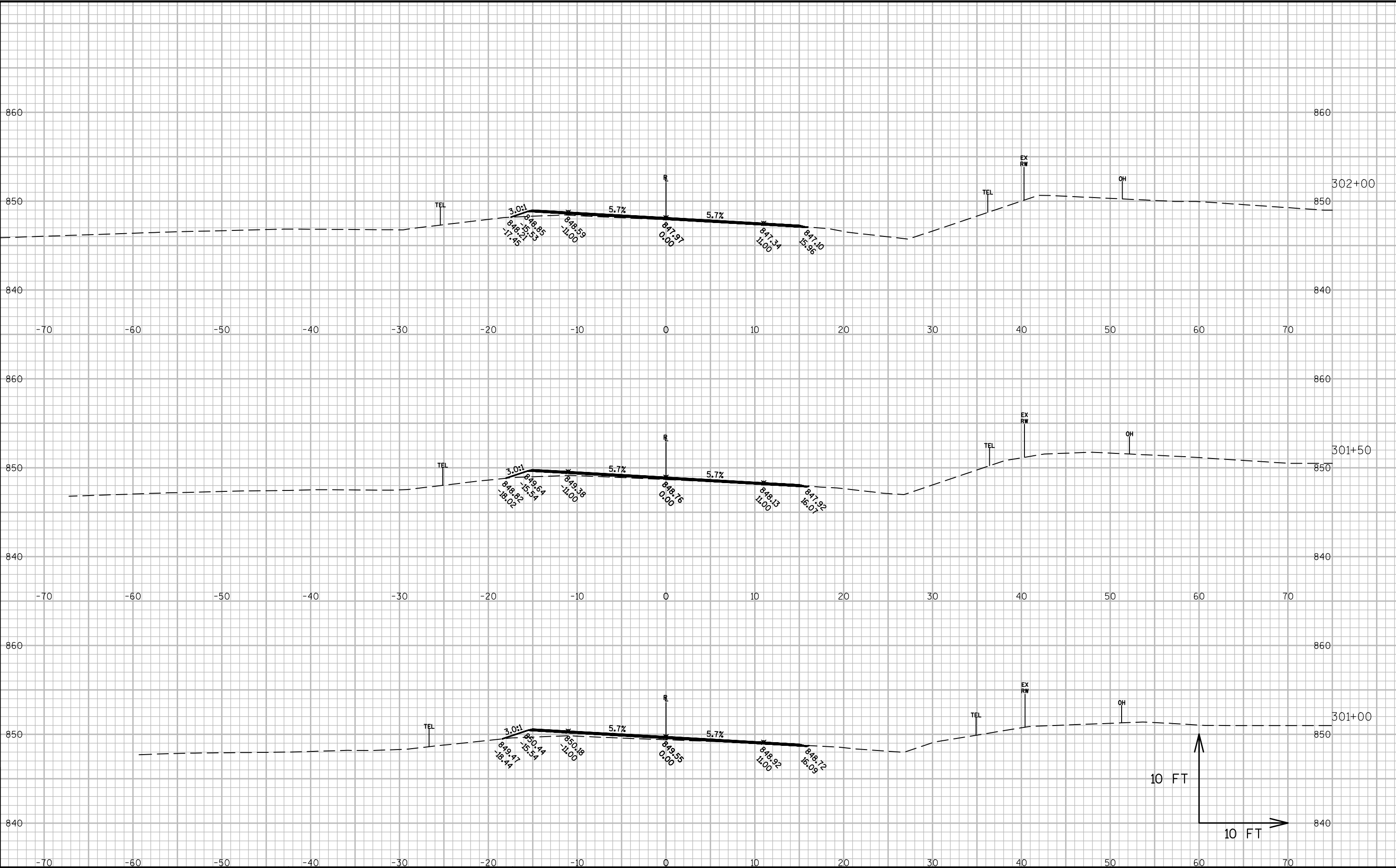


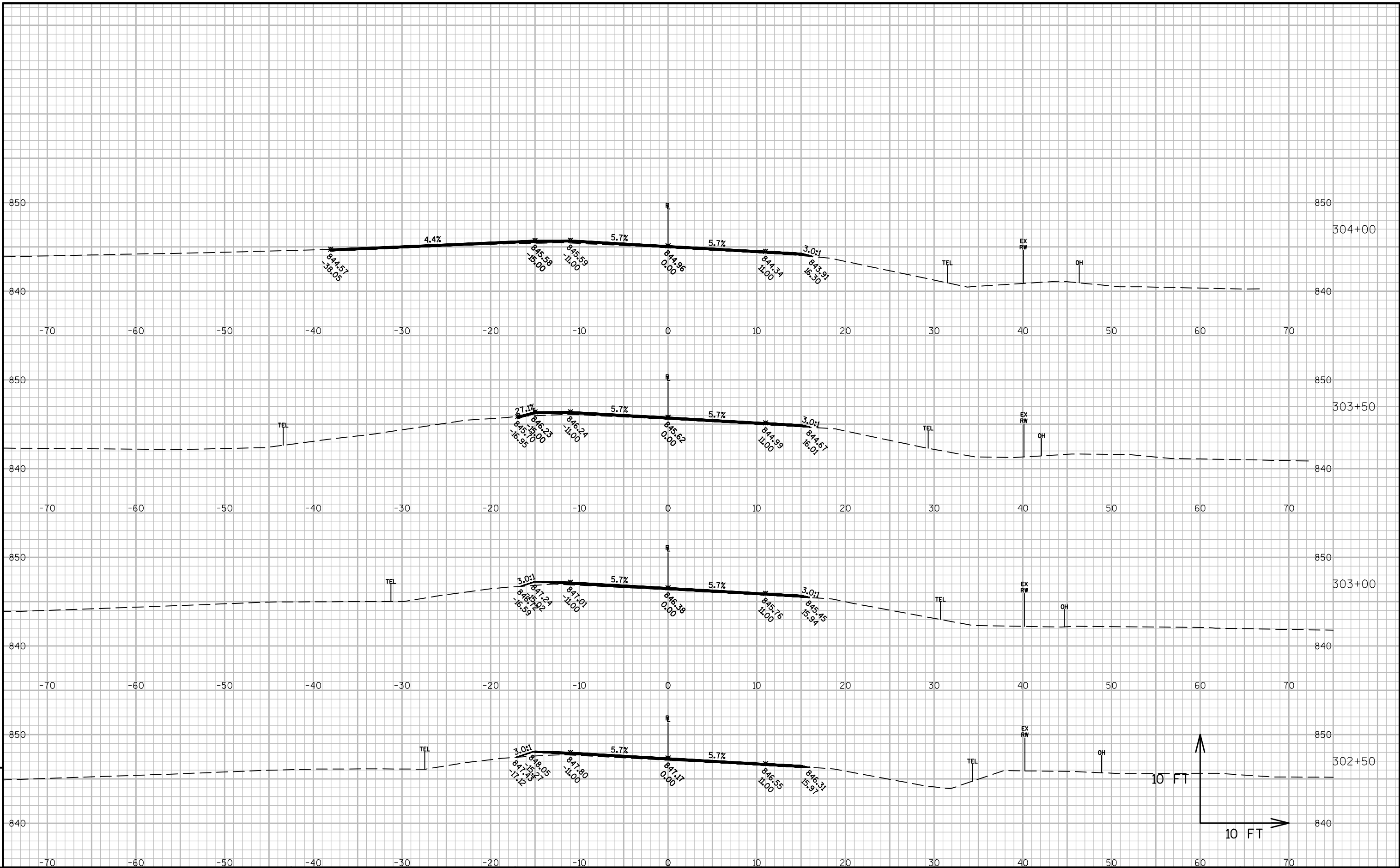


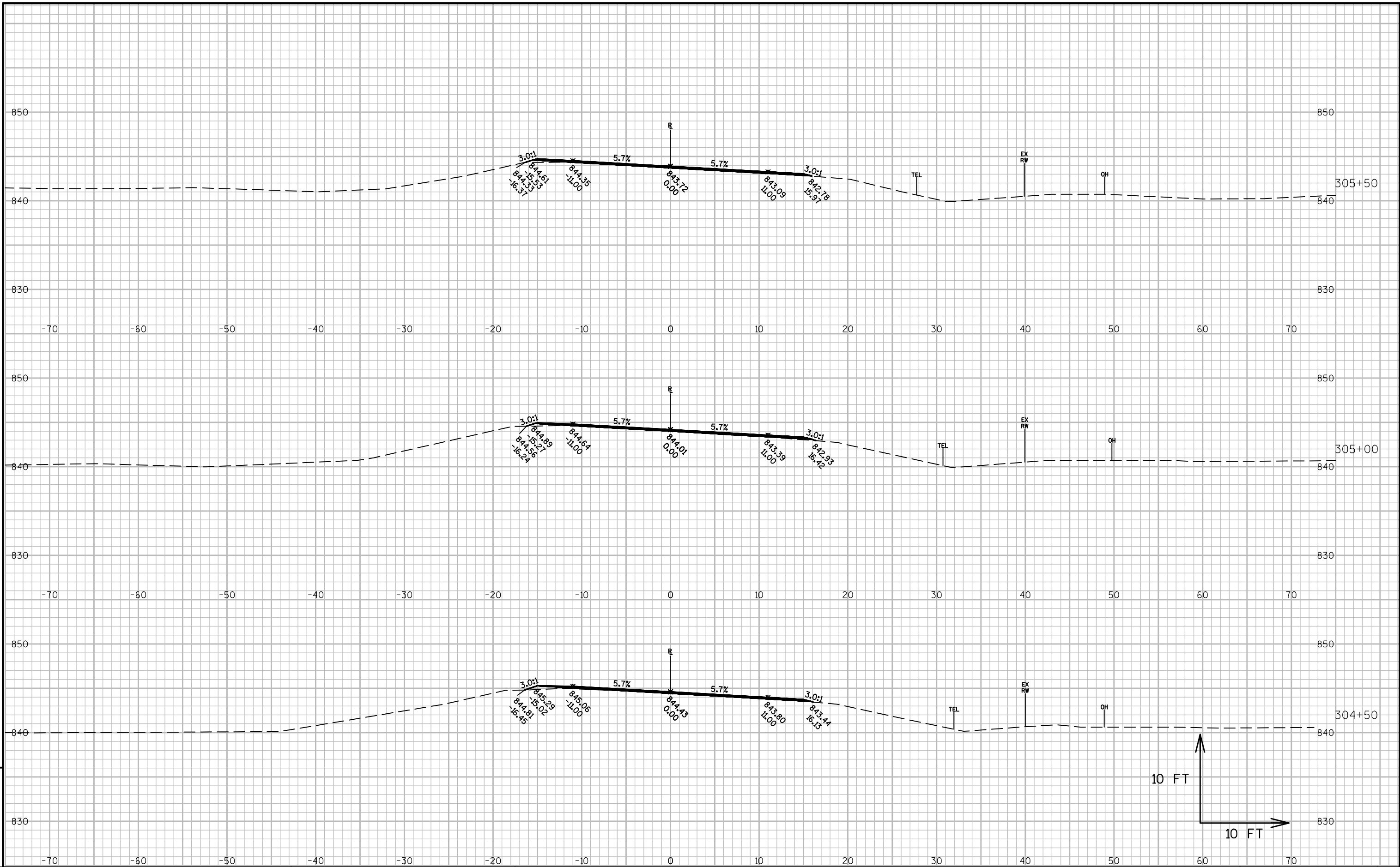


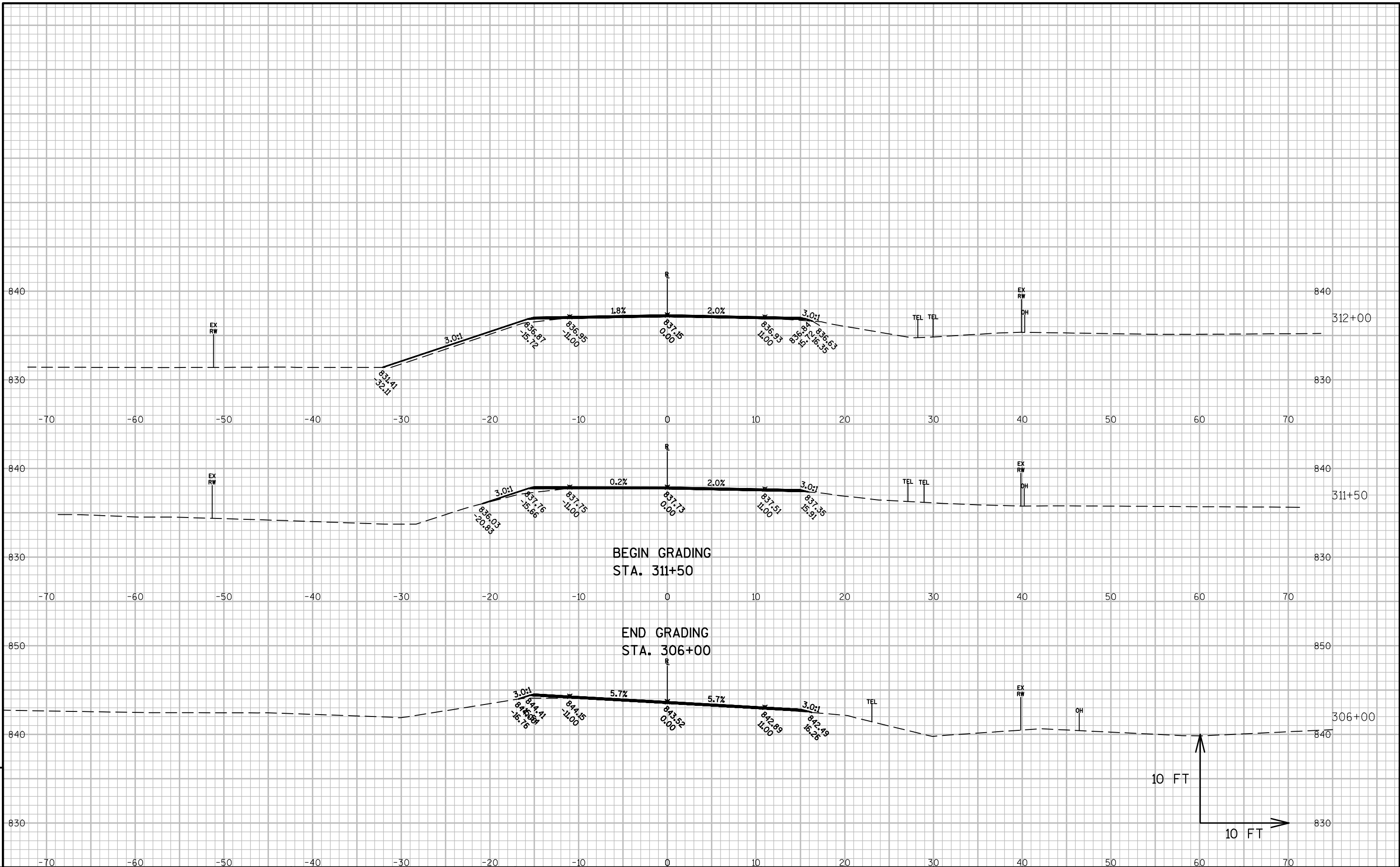


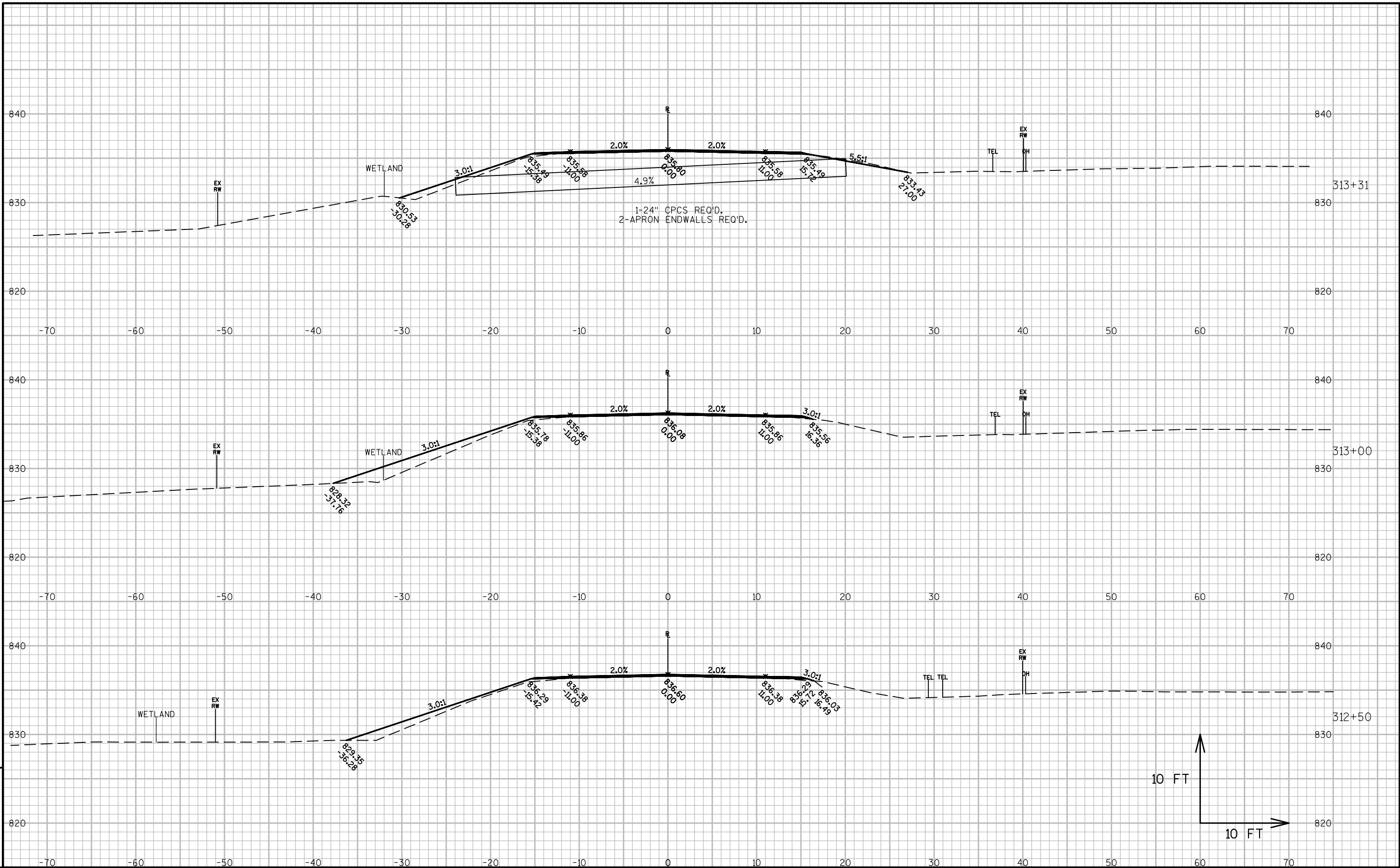


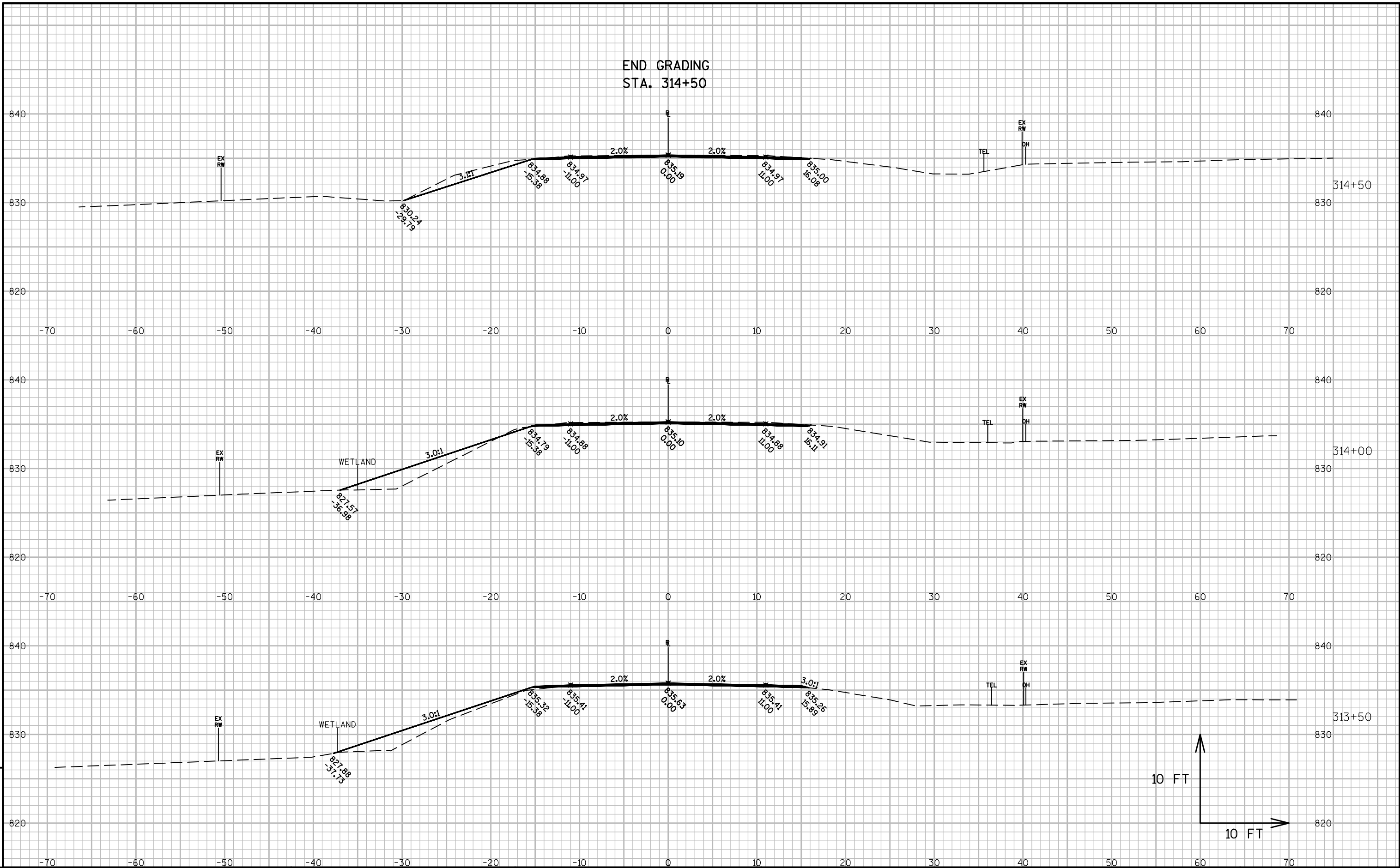


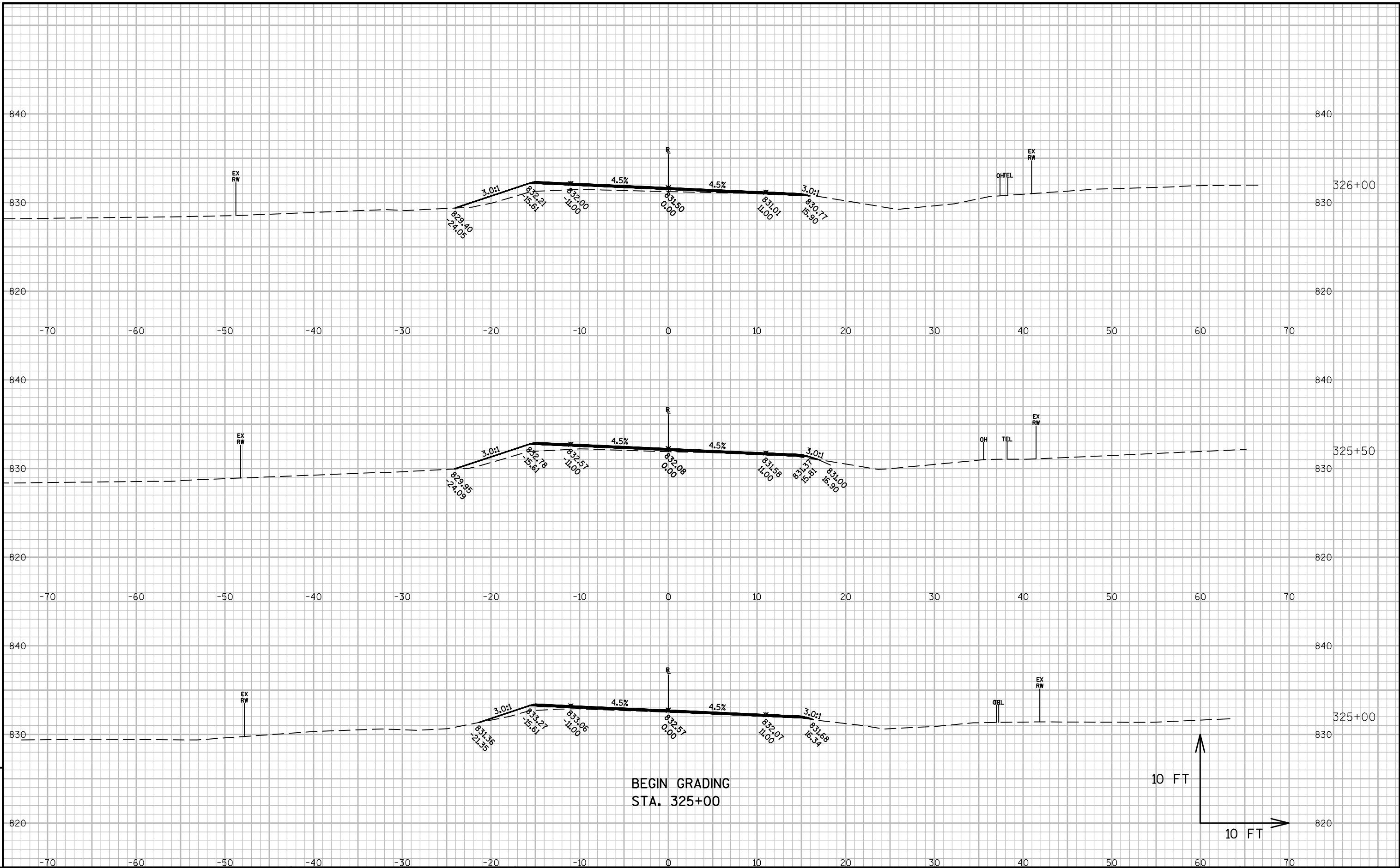


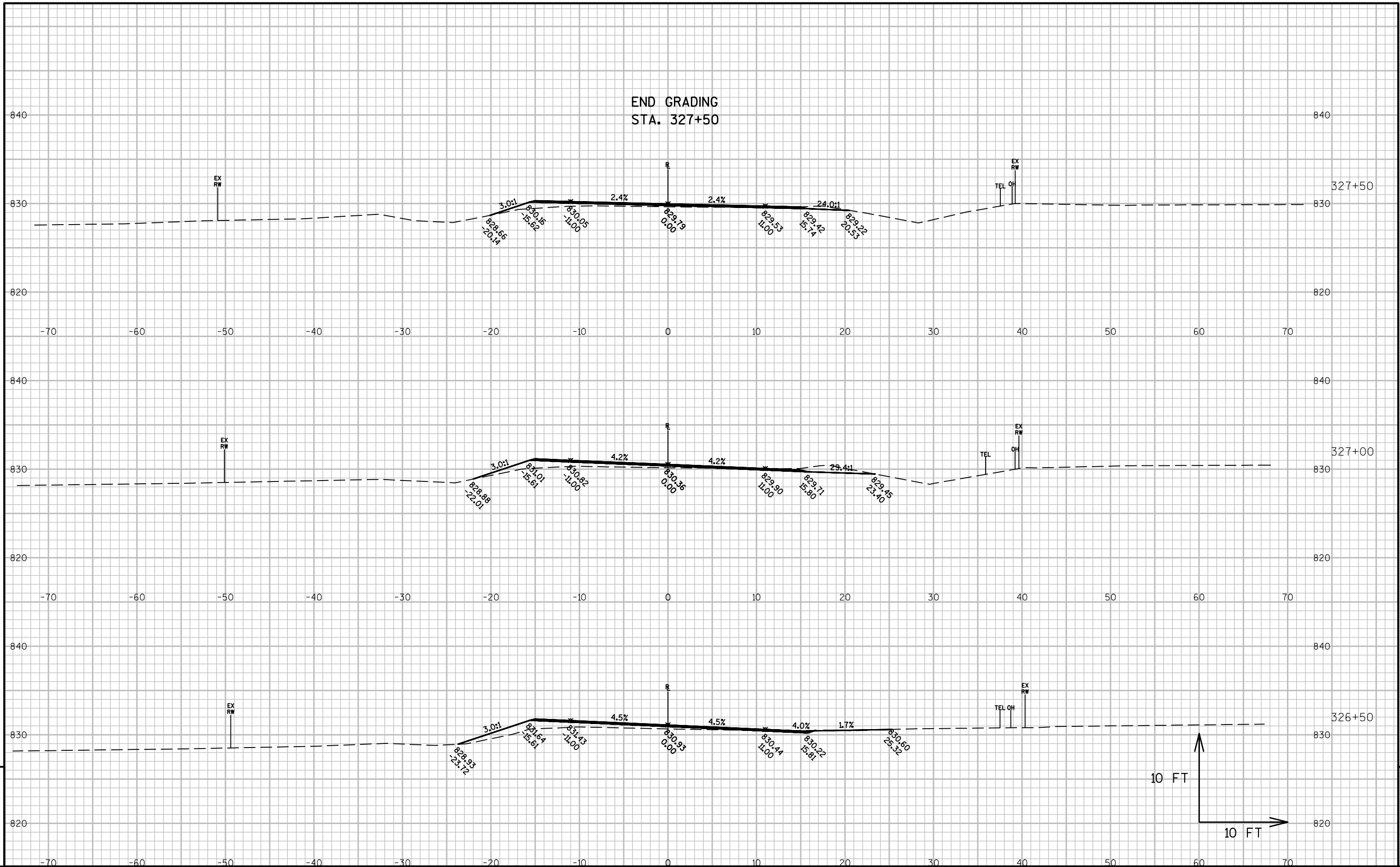


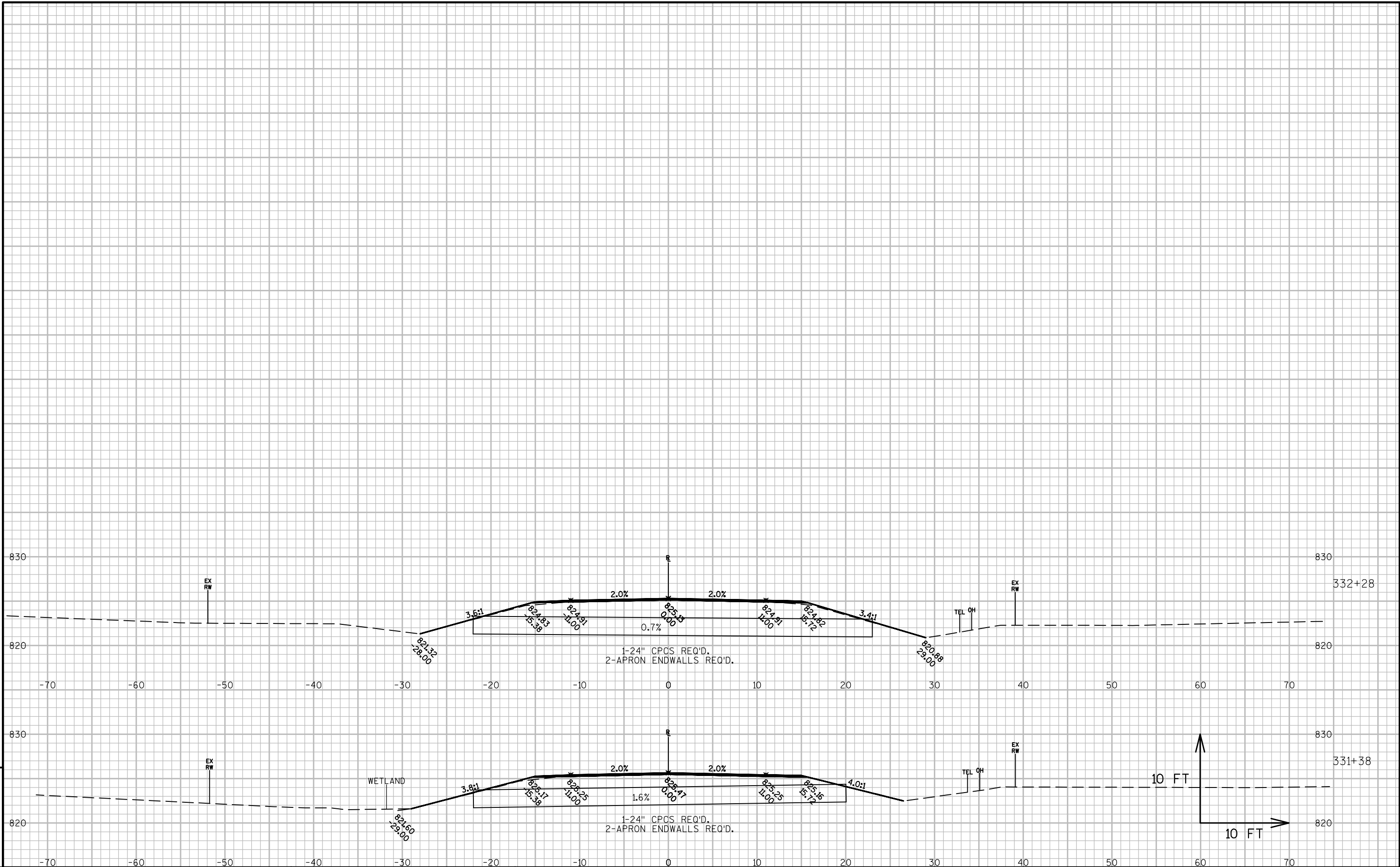


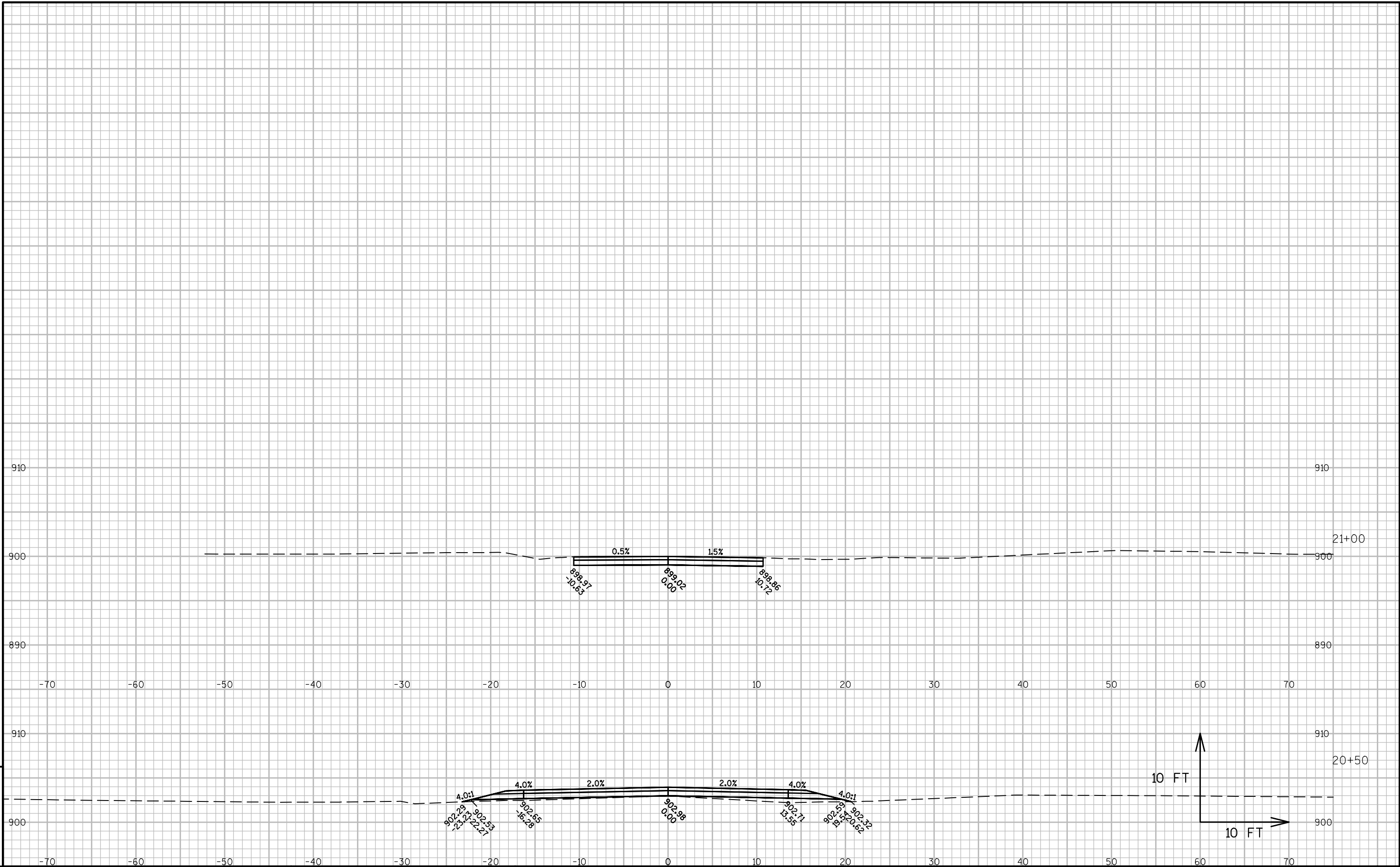












Notes



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