

ORDER OF SHEETS

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

TOTAL SHEETS = 186



DESIGN DESIGNATION

A.A.D.T. (2015)	=	50,200
A.A.D.T. (2025)	=	54,600
D.H.V. (2025)	=	5,570
D.D.	=	59/41
T.	=	5.2%
DESIGN SPEED	=	55 MPH
ESALS	=	3,050,000

CONVENTIONAL SYMBOLS

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

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

ROCK	
LABEL	
95.36	
E	
FO	
G	
SAN	
SS	
T	
W	

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT
MADISON - DEFOREST
BROADWAY STREET TO MILWAUKEE STREET NORTHBOUND
USH 51
DANE COUNTY



TOTAL NET LENGTH OF CENTERLINE = 2.481

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

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5410-01-72	WISC 2015281	1

ORIGINAL PLANS PREPARED BY

MSA

PROFESSIONAL SERVICES
TRANSPORTATION • MUNICIPAL • RECREATION
DEVELOPMENT • ENVIRONMENTAL

2901 International Lane, Suite 300 Madison, WI 53704
608-242-7779 1-800-446-0679 Fax: 608-242-5664



DATE: 1-27-15 *J.T.D. Pmg*
(Professional Engineer)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	N/A
Designer	MSA PROFESSIONAL SERVICES
Project Manager	DAVID PILON
Regional Examiner	
Regional Supervisor	KARLA KNORR

APPROVED FOR THE DEPARTMENT
DATE: 1/28/15 *David Pilon*
(Signature)

GENERAL NOTES

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 lb/sy/in.

12.5mm NOMINAL MAXIMUM SIZE HMA MIXTURES ARE ALLOWED IN THE LOWER LAYER.

THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE HIS CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.

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

SECTIONS AS SHOWN ON THE CROSS-SECTIONS INCLUDE THE THICKNESS OF TOPSOIL. TOPSOIL SHALL BE AT A 4-INCH MINIMUM DEPTH.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE SEEDED AND COVERED WITH EROSION MAT AS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR WILL BE RESPONSIBLE FOR RESTORING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATIONS OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS, INCLUDING GRADING, TOPSOILING, SEEDING AND INSTALLING EROSION MAT.

ESTIMATED QUANTITIES OF SALVAGED TOPSOIL, SEEDING, MULCHING AND FERTILIZER HAVE BEEN COMPUTED BY A DIRECT MEASUREMENT ON THE CROSS-SECTIONS.

THE EROSION CONTROL ITEMS SHOWN ON THE PLANS, ARE AT SUGGESTED LOCATIONS. THE ENGINEER SHALL DETERMINE THE EXACT LOCATIONS OF EROSION CONTROL ITEMS. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY. THE CONTRACTOR WILL REMOVE ITEMS AT THE ENGINEER'S DIRECTION.

PRIOR TO THE PLACEMENT OF GUARDRAIL, THE SHOULDERS SHALL BE PLACED, SHAPED AND COMPACTED.

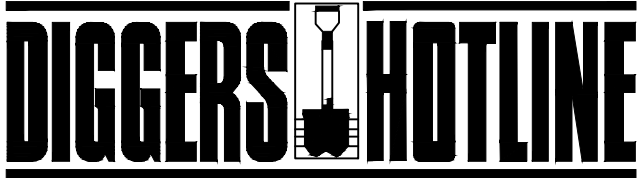
THE STRUCTURE ATTACHMENT AT EXISTING STRUCTURES SHALL BE CONSIDERED INCIDENTAL TO THE ITEM OF MGS THRIE BEAM TRANSITION.

NUMBER, LOCATION, AND SPACING OF TRAFFIC CONTROL SIGNS AND DEVICES, AS SHOWN IN THE PLANS, SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING OR TURNING LANE.

INDEX OF TYPICAL SECTIONS & DETAIL SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- EROSION CONTROL
- PERMANENT SIGNING AND PAVEMENT MARKINGS
- TRAFFIC CONTROL



Dial 811 or (800) 242-8511

www.DiggersHotline.com

MADISON GAS & ELECTRIC COMPANY EMERGENCY CONTACT NUMBERS:
ELECTRIC 24-HOUR EMERGENCY SERVICE: (608) 252-7111
GAS 24-HOUR EMERGENCY SERVICE: (608) 252-1111

DNR LIAISON

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
ATTN: ERIC HEGGELUND
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711-5397
PHONE: (608) 275-3301
EMAIL: Eric.Heggelund@Wisconsin.gov

DESIGN CONTACTS

MSA PROFESSIONAL SERVICES
ATTN: JASON DIPIAZZA
2901 INTERNATIONAL LANE, SUITE 300
MADISON, WI 53704-3133
PHONE: (608) 242-7779
E-MAIL: jdipiazza@msa-ps.com

WISCONSIN DEPARTMENT OF TRANSPORTATION
SOUTHWEST REGION
ATTN: DAVID PILON
2101 WRIGHT STREET
MADISON, WI 53704
PHONE: (608) 245-2622
E-MAIL: David.Pilon@dot.wi.gov

UTILITIES

COMMUNICATIONS
AT&T WISCONSIN
ATTN: CAROL ANASON
316 WEST WASHINGTON AVENUE
MADISON, WI 53703
PHONE: (608) 252-2385
MOBILE: (920) 475-2799
E-MAIL: cd2624@att.com

COMMUNICATIONS
CHARTER COMMUNICATIONS
ATTN: JON MARSCHKE
2701 DANIELS STREET
MADISON, WI 53718
PHONE: (608) 274-3822 EXT. 6734
MOBILE: (608) 225-2479
E-MAIL: jon.marschke@charter.com

COMMUNICATIONS AND STREET LIGHTING
CITY OF MADISON TRAFFIC ENGINEERING
ATTN: MIKE CHRISTOPH
1120 SAYLE STREET
MADISON, WI 53715
PHONE: (608) 266-9031
MOBILE: (608) 395-1975
E-MAIL: mchristoph@cityofmadison.com

COMMUNICATIONS
McLEOD USA TELECOMMUNICATIONS SERVICES, INC.
ATTN: JIM KOSTUCH
13935 BISHOPS DRIVE
BROOKFIELD, WI 53005
PHONE: (262) 792-7938
E-MAIL: james.kostuch@windstream.com

COMMUNICATIONS
WISCONSIN INDEPENDANT NETWORK, LLC
ATTN: DICK HAMMETTER
800 WISCONSIN AVENUE, SUITE 219
EAU CLAIRE, WI 53086
PHONE: (715) 838-4406
E-MAIL: Hammetter@WINS.net

ELECTRIC
ATC MANAGEMENT, INC.
ATTN: TONY MARCINIAK
P.O. BOX 47
WAUKESHA, WI 53187
PHONE: (262) 506-6814
E-MAIL: tmarciniak@atcllc.com

ELECTRIC
MADISON GAS & ELECTRIC COMPANY
ATTN: RICH PARKER
133 S. BLAIR STREET
MADISON, WI 53788
PHONE: (608) 252-7379
MOBILE: (608) 444-9619
E-MAIL: rparker@mge.com

FIBER OPTIC
WISCONSIN INDEPENDENT NETWORK, LLC (WIN)
ATTN: JIM BIRKENHEIER
W207 S8222 HILLEDALE DRIVE
MUSKEGO, WI 53150
PHONE: (715) 832-6041
MOBILE: (715) 838-4007
E-MAIL: jbirkenheier@wins.net

GAS/PETROLEUM
ANR PIPELINE (TRANSCANADA)
ATTN: ERIC WILLE
6827 CONSOLIDATED ROAD
JANESVILLE, WI 53545
PHONE: (608) 373-6941
MOBILE: (920) 375-0485
E-MAIL: eric_wille@transcanada.com

GAS/PETROLEUM
MADISON GAS & ELECTRIC COMPANY
ATTN: JOHN WICHERN
133 S. BLAIR STREET
MADISON, WI 53788
PHONE: (608) 252-1563
E-MAIL: jwichern@mge.com

SEWER
CITY OF MADISON ENGINEERING
ATTN: JIM MARTINSON
1600 EMIL STREET
MADISON, WI 53713
PHONE: (608) 267-1973
MOBILE: (608) 843-7177
E-MAIL: jmartinson@cityofmadison.com

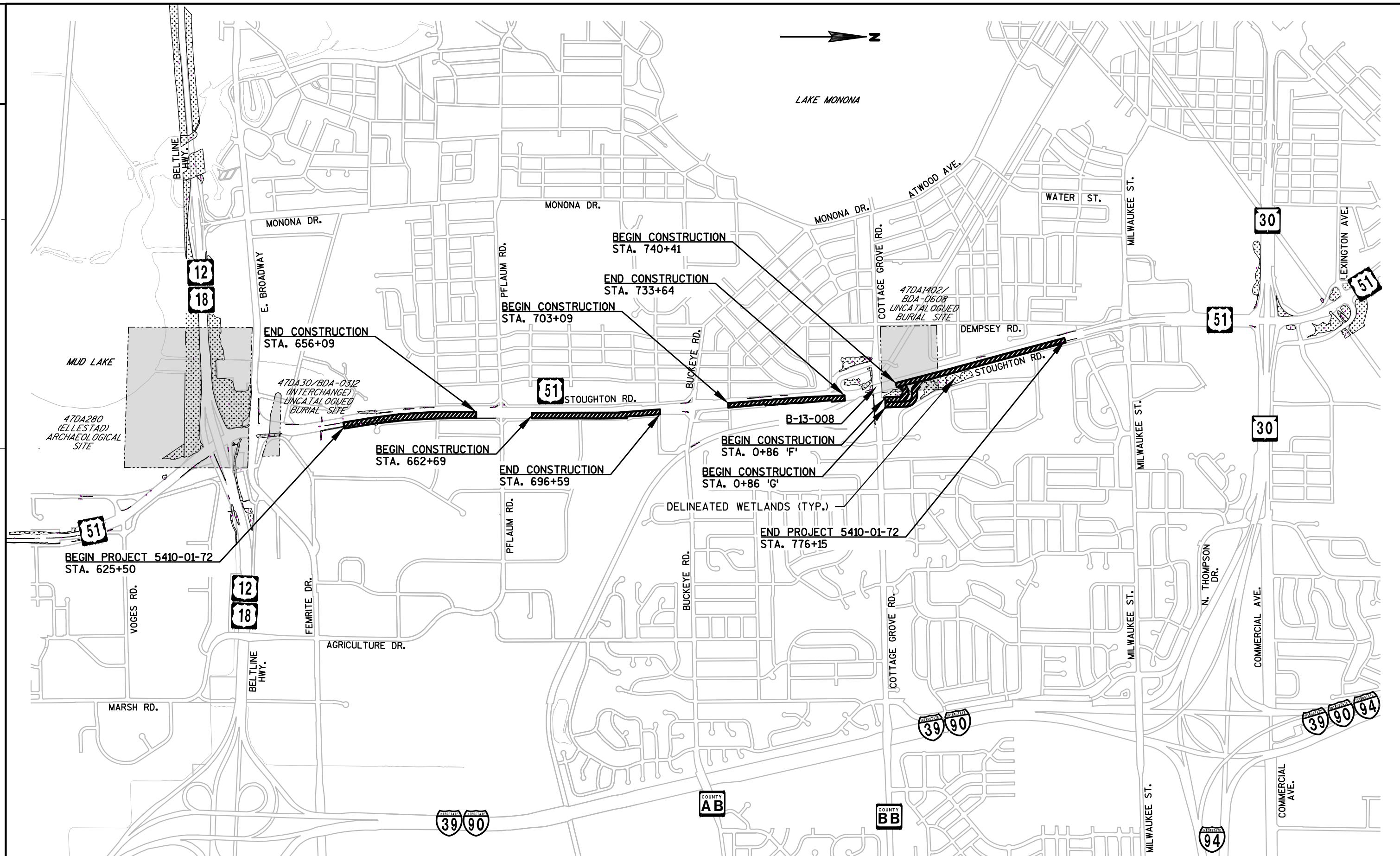
SEWER
MADISON METROPOLITAN SEWERAGE DISTRICT
ATTN: ERIC HUELLEN
1610 MOORLAND ROAD
MADISON, WI 53713
PHONE: (608) 222-1205
E-MAIL: erich@madsewer.org

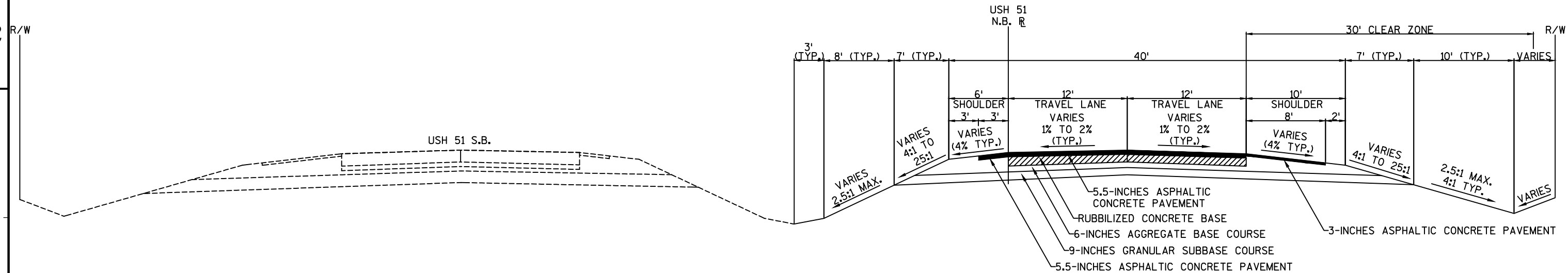
WATER
MADISON WATER UTILITY
ATTN: TOM ROSEMEYER
110 S. PATERSON STREET
MADISON, WI 53703
PHONE: (608) 266-5985
MOBILE: (608) 206-3643
E-MAIL: trosemeyer@madisonwater.org

**DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS

STANDARD ABBREVIATIONS

AC	ACRES
AEW	APRON ENDWALL
AH	AHEAD
ALUM.	ALUMINUM
A.P.	ACCESS POINT
ASPH	ASPHALT
AVE	AVENUE
BAD	BASE AGGREGATE DENSE
BK	BACK
BLK	BLOCK
BOC	BACK OF CURB
BOW	BACK OF SIDEWALK
BM	BENCHMARK
CABC	CRUSHED AGGREGATE BASE COURSE
CL or C	CENTERLINE
Δ	CENTRAL ANGLE or DELTA
CONC	CONCRETE
CP	CONTROL POINT
CSM	CERTIFIED SURVEY MAP
CTH	COUNTY TRUNK HIGHWAY
D	DEGREE OF CURVE
E	EAST
EB	EASTBOUND
EBS	EXCAVATION BELOW SUBGRADE
EOP	EDGE OF PAVEMENT
ET AL	AND OTHERS
EW	ENDWALL
EXIST	EXISTING
FT	FOOT
FT2	SQUARE FEET
GN	GRID NORTH
GV	GAS VALVE
HERCP	HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE
HYD	HYDRANT
IN	INCH
INL	INLET
INV	INVERT
IP	IRON PIPE
L	LENGTH
L	LENGTH OF CURVE
LC	LONG CHORD
LCB	LONG CHORD BEARING
LF	LINEAR FEET
LT	LEFT
MH	MANHOLE
MI	MILE
MON	MONUMENT
N	NORTH
NB	NORTHBOUND
N.C.	NORMAL CROWN
NO	NUMBER
PB	PULLBOX
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PLE	PERMANENT LIMITED EASEMENT
POB	POINT OF BEGINNING
PT	POINT OF TANGENCY
R	RADIUS
R	RANGE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
REQ'D	REQUIRED
RL or R/L	REFERENCE LINE
RP	RADIUS POINT
RT	RIGHT
R/W	RIGHT-OF-WAY
S	SOUTH
SAN	SANITARY SEWER
SB	SOUTHBOUND
S.E.	SUPERELEVATION
SEC	SECTION
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
SSPRCHE	STORM SEWER PIPE REINFORCED CONCRETE
	HORIZONTAL ELLIPTICAL
SQ	SQUARE
ST	STREET
STA	STATION
STD	STANDARD
STH	STATE TRUNK HIGHWAY
STM	STORM SEWER
STR	STRUCTURE
T	TANGENT
TAN	TANGENT
TEMP	TEMPORARY
TLE	TEMPORARY LIMITED EASEMENT
T or TN	TOWN
TYP.	TYPICAL
WM	WATERMAIN
WV	WATER VALVE
W	WEST
WB	WESTBOUND
X	EAST GRID COORDINATE
Y	NORTH GRID COORDINATE



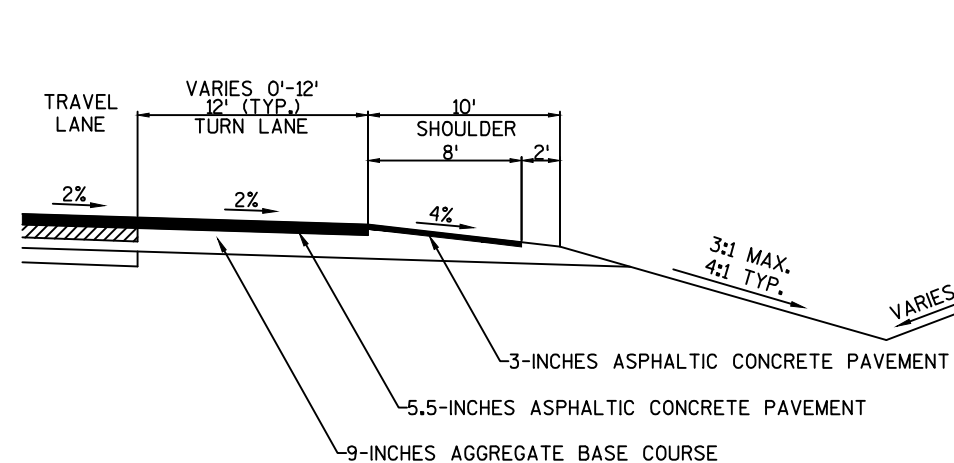


EXISTING TYPICAL SECTION - USH 51 N.B.

* STA. 625+90 TO STA. 655+69
 * STA. 663+09 TO STA. 696+19
 * STA. 703+49 TO STA. 729+41
 ** STA. 740+44 TO STA. 775+75

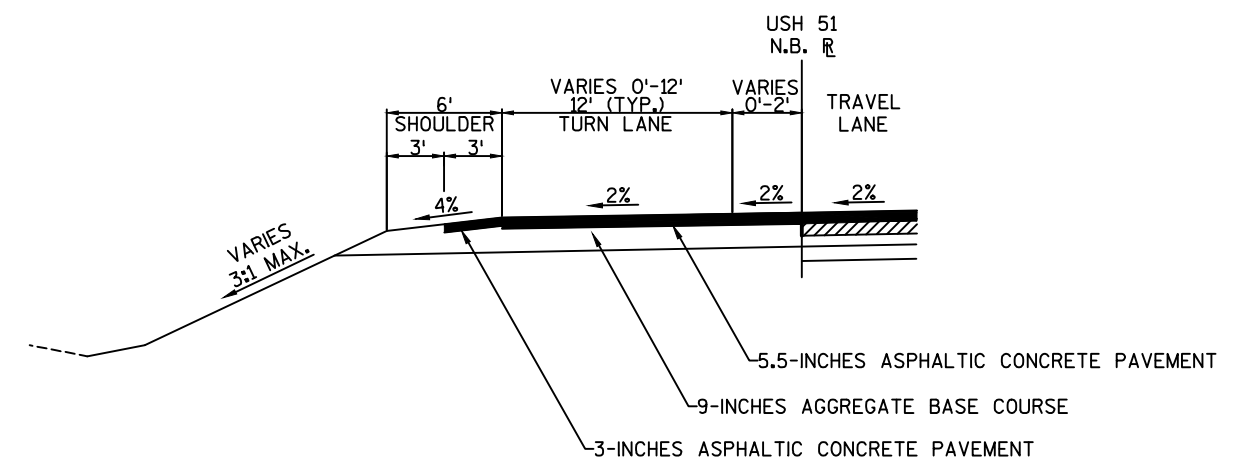
* SEE EXISTING SUPERELEVATION TYPICAL SECTIONS FOR AREAS OF ROADWAY SUPERELEVATION.

** SEE EXISTING RAMP TYPICAL SECTIONS FOR RAMP TAPER AND PAVEMENT WIDTH VARIATIONS.



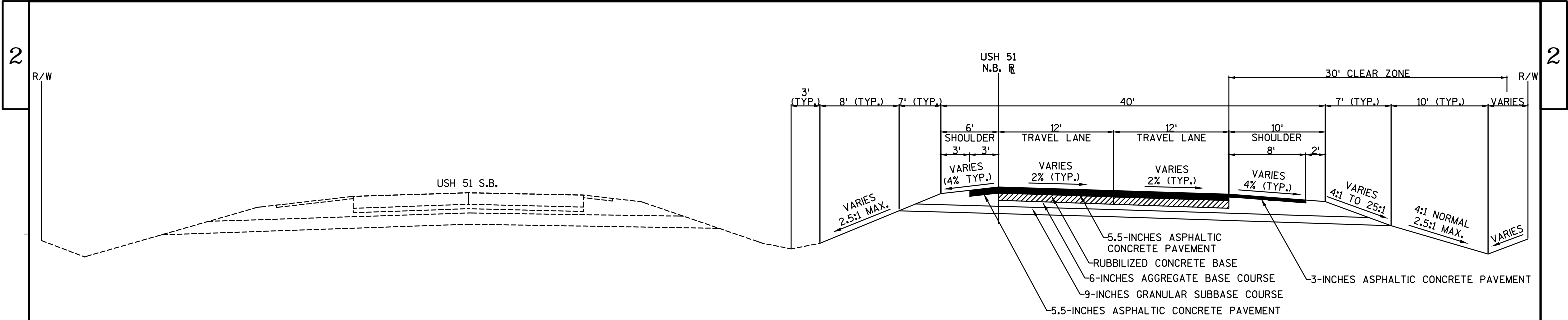
EXISTING TYPICAL SECTION - USH 51 N.B. RIGHT TURN LANE EXTENSIONS

STA. 651+22 TO STA. 655+69
 STA. 691+52 TO STA. 696+19

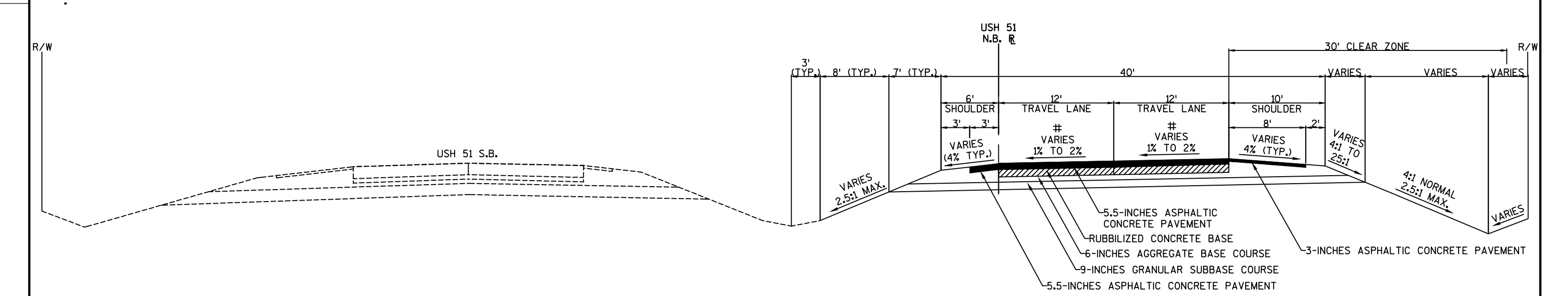


EXISTING TYPICAL SECTION - USH 51 N.B. LEFT TURN LANE EXTENSIONS

STA. 651+28 TO STA. 655+69
 STA. 691+63 TO STA. 696+19

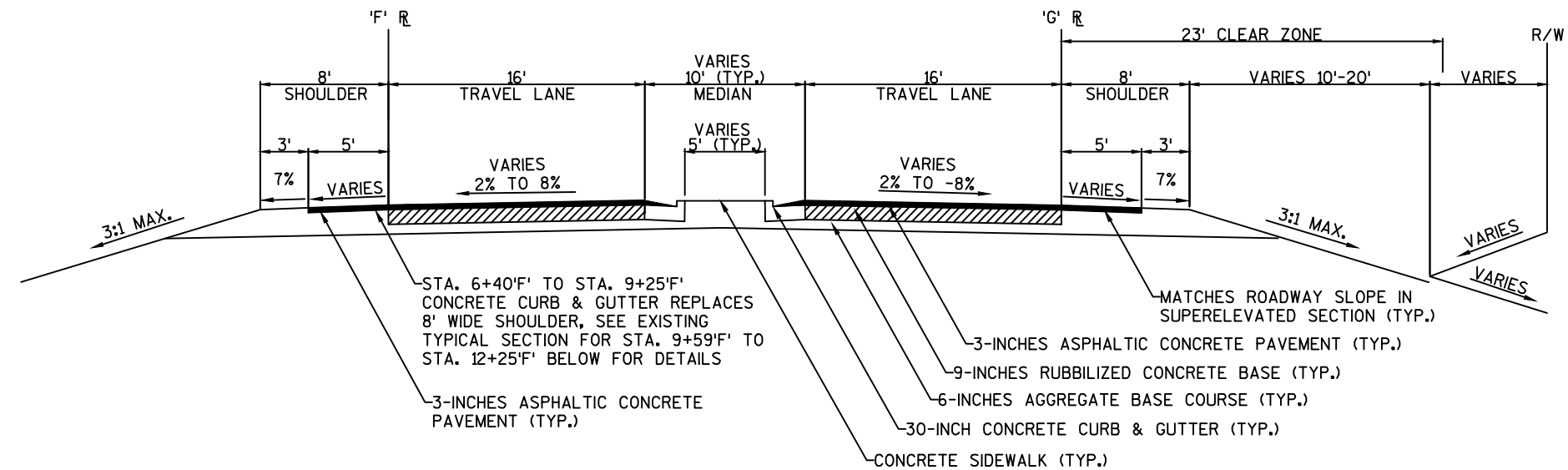


EXISTING SUPERELEVATION TYPICAL SECTION - USH 51 N.B.
STA. 634+00 TO STA. 645+00



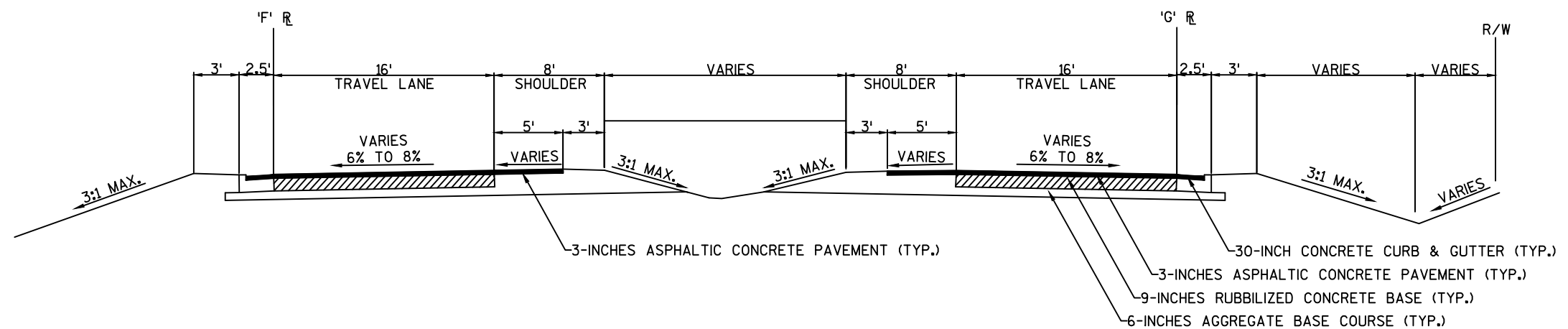
1% SUPERELEVATION: STA. 682+11 TO STA. 690+90
2% SUPERELEVATION: STA. 731+00 TO STA. 733+46

EXISTING SUPERELEVATION TYPICAL SECTION - USH 51 N.B.
STA. 682+11 TO STA. 690+90
STA. 731+00 TO STA. 733+46



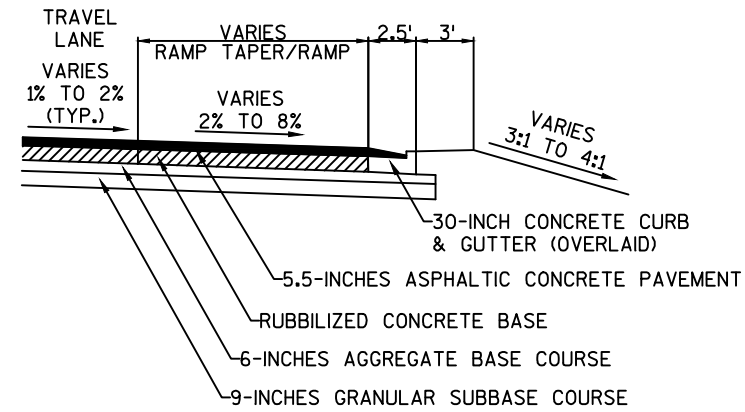
EXISTING TYPICAL SECTION - USH 51 N.B. & COTTAGE GROVE ROAD ENTRANCE/EXIT RAMP

STA. 1+75'F' TO STA. 9+59'F'
STA. 1+75'G' TO STA. 10+30'G'

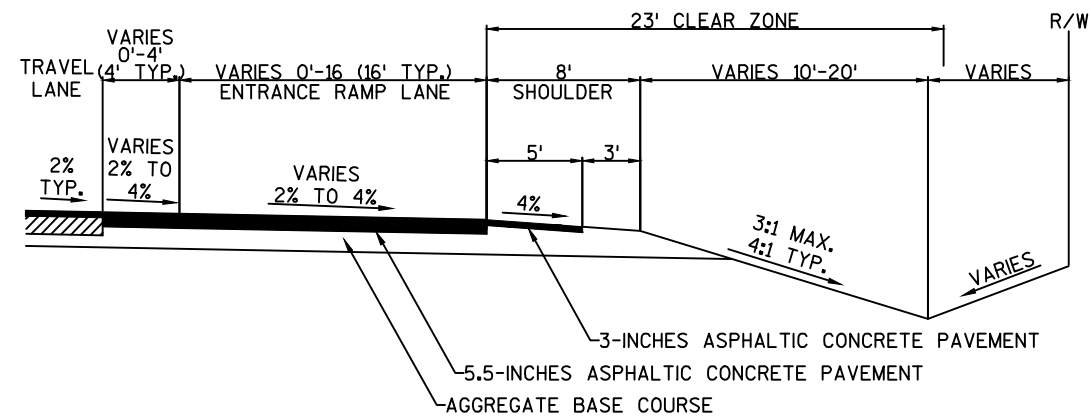


EXISTING TYPICAL SECTION - USH 51 N.B. & COTTAGE GROVE ROAD ENTRANCE/EXIT RAMP

STA. 9+59'F' TO STA. 12+25'F'
STA. 10+30'G' TO STA. 12+88'G'



EXISTING TYPICAL SECTION - USH 51 N.B. &
COTTAGE GROVE ROAD EXIT RAMP
STA. 740+62 TO STA. 744+15, RT



EXISTING TYPICAL SECTION - USH 51 N.B. &
COTTAGE GROVE ROAD ENTRANCE RAMP
STA. 750+00 TO STA. 757+63, RT

FINISHED TYPICAL SECTION LEGEND

- ① Grading may be required outside of the original subgrade shoulder point and is shown in the cross sections where required. Place Salvaged Topsoil, Seeding Mixture No. 30, Fertilizer Type B, and Erosion Mat Class I Type A on all disturbed areas within the grading limits.
- ② Construct 3.5-Inch HMA pavement in two layers (1.75-Inch minimum lower and 1.75-Inch minimum upper). Construct 4.5-Inch HMA pavement in two layers (2.75-Inch lower and 1.75-Inch upper). Correct pavement cross slopes with wedge thickness lower layers. If the wedge layer will exceed the maximum layer thickness of 3-inches, construct an additional lower wedge layer. The approximate locations of pavement cross slope correction are below. Verify other locations as indicated in note 3:

- STA. 629+73 to STA. 634+00: Existing normal crown - correct median lane to finish super elevation.

- STA. 634+00 to STA. 645+00: Existing median shoulder at normal crown slope. Correct shoulder slope to match super elevation.

- STA. 645+00 to STA. 651+09: Existing normal crown - correct median lane to finish super elevation.

- STA. 680+50 to STA. 691+25: Existing outside travel lane super elevated cross slope is less than 2% and outside shoulder is at normal crown slope. Do not remove the existing outside paved shoulder. Pave a wedge layer over the existing paved shoulder prior to paving the lower shoulder layer.

- STA. 730+50 to STA. 733+00: Existing outside shoulder is at normal crown. Place Base Aggregate Dense 1 1/4-Inch after removing the existing shoulder to achieve the finish grade.

- STA. Varies: Existing normal crown cross slope greater than 2%.
- ③ Measure the pavement cross slope ahead of the milling operation. Set the mill reference depth of 2.0-Inches at the lane line (12' RT) and mill at the finish surface cross slope, except as follows:

- Correct normal crown cross slope (median lane) to super elevation. Mill at the finish cross slope and daylight the mill across the lane to be corrected. The shoulder pavement will not be milled in these approximate locations:

STA. 629+73 to STA. 634+00

STA. 645+00 to STA. 651+09

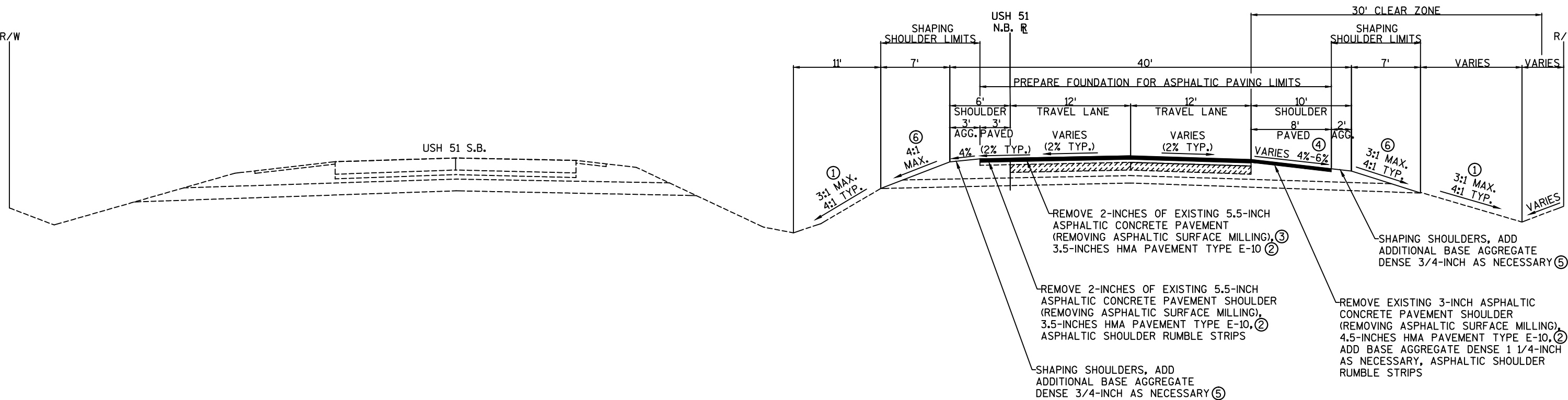
- For existing normal crown cross slopes greater than 2% from the center line, increase the mill slope to match the existing cross slope, up to 2.5% and wedge the lower layer thickness to achieve the finish cross slope.

- For existing normal crown cross slopes less than 2% from the centerline, mill at 2% normal crown.

- For existing superelevation cross slopes less than 2%, mill at the existing cross slope and wedge the lower paving layer thickness to achieve the finish cross slope.
- ④ 4% typical from Pflaum Road intersection to Buckeye Road intersection. 6% typical elsewhere.
- ⑤ Shape shoulders out to the existing subgrade shoulder point by pulling existing material up to the shoulder edge or by adding new shoulder material if sufficient existing material is not available. Haul Excess Shoulder Material (existing) and place within the project limits as directed by the engineer.
- ⑥ Install Seeding Mixture No. 30 and Fertilizer Type B on base aggregate shoulder foreslope.

2

R/W

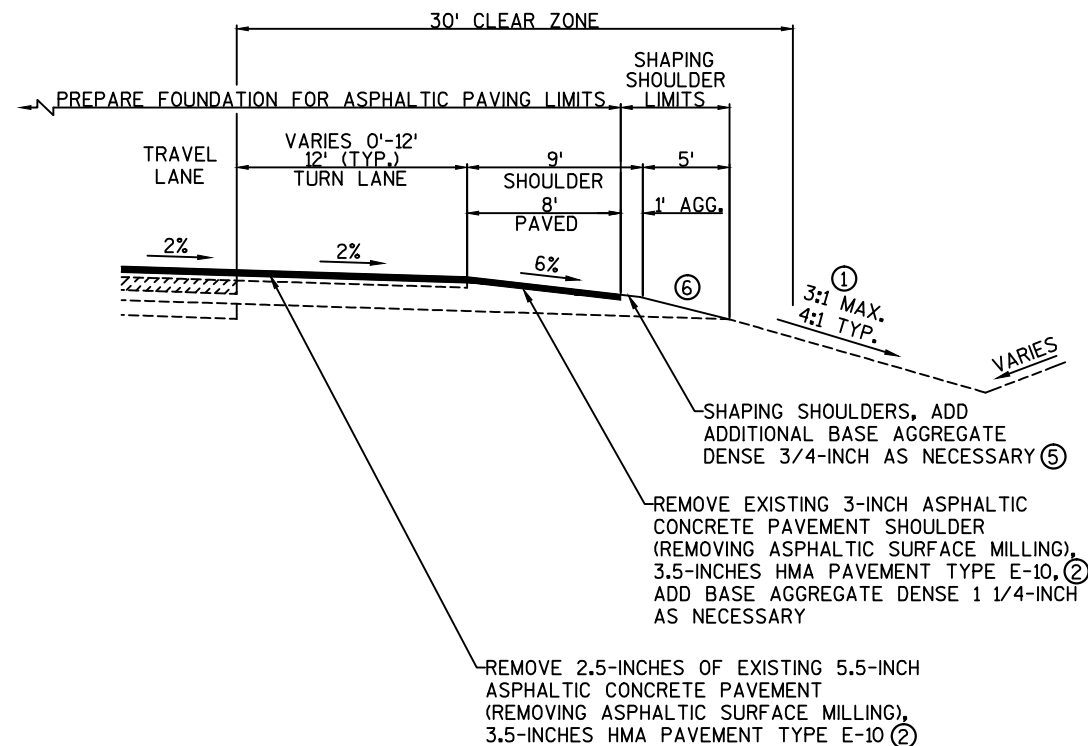


FINISHED TYPICAL SECTION - USH 51 N.B.

* STA. 625+90 TO STA. 655+69
 * STA. 663+09 TO STA. 696+19
 STA. 703+49 TO STA. 729+41
 ** STA. 740+44 TO STA. 775+75

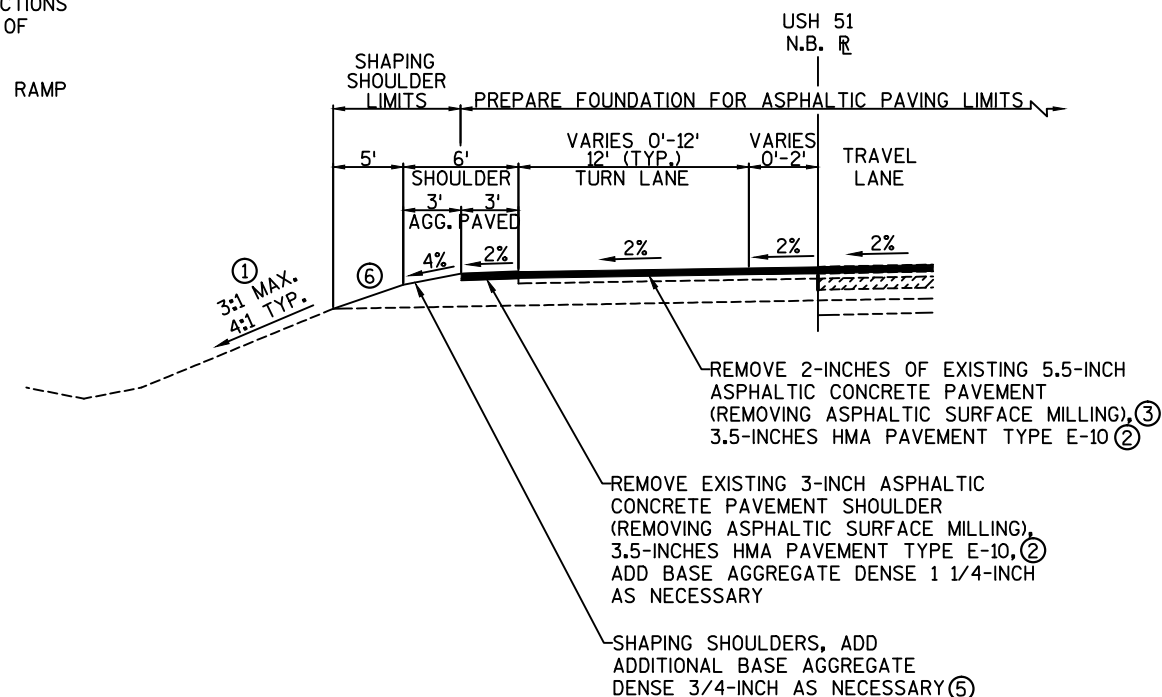
* SEE FINISHED SUPERELEVATION TYPICAL SECTIONS AND PLAN & PROFILE SHEETS FOR AREAS OF ROADWAY SUPERELEVATION.

** SEE FINISHED RAMP TYPICAL SECTIONS FOR RAMP TAPER AND PAVEMENT WIDTH VARIATIONS.



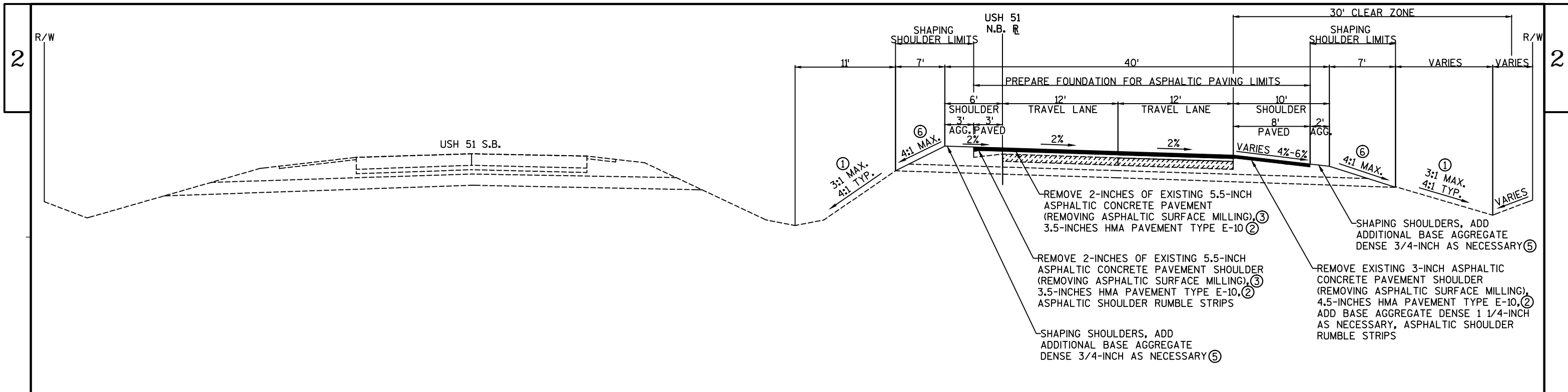
FINISHED TYPICAL SECTION - USH 51 N.B. RIGHT TURN LANE EXTENSIONS

STA. 651+22 TO STA. 655+69
 STA. 691+52 TO STA. 696+19

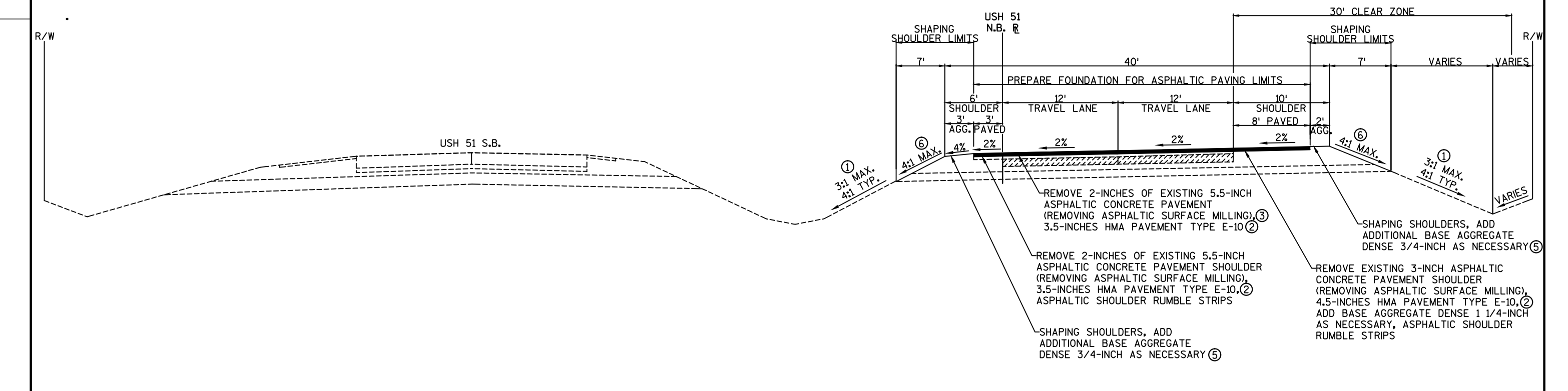


FINISHED TYPICAL SECTION - USH 51 N.B. LEFT TURN LANE EXTENSIONS

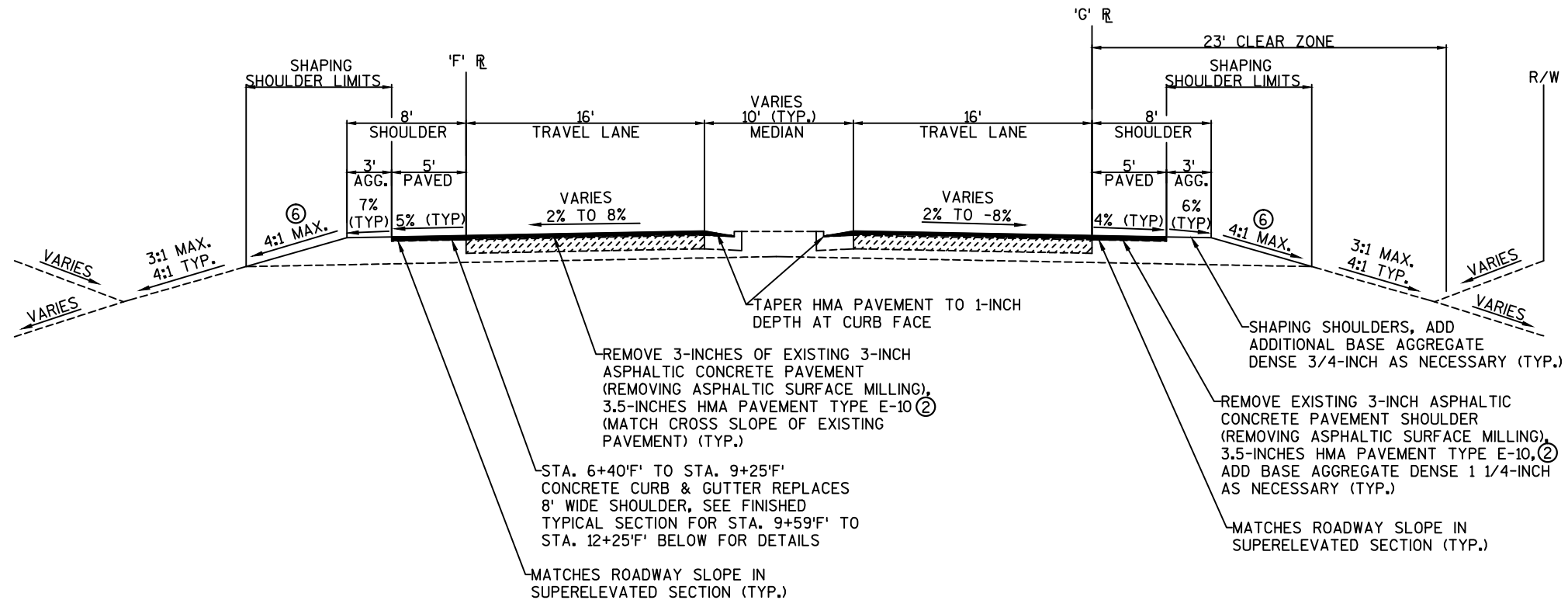
STA. 651+28 TO STA. 655+69
 STA. 691+63 TO STA. 696+19



FINISHED SUPERELEVATION TYPICAL SECTION - USH 51 N.B.
STA. 631+33 TO STA. 649+50

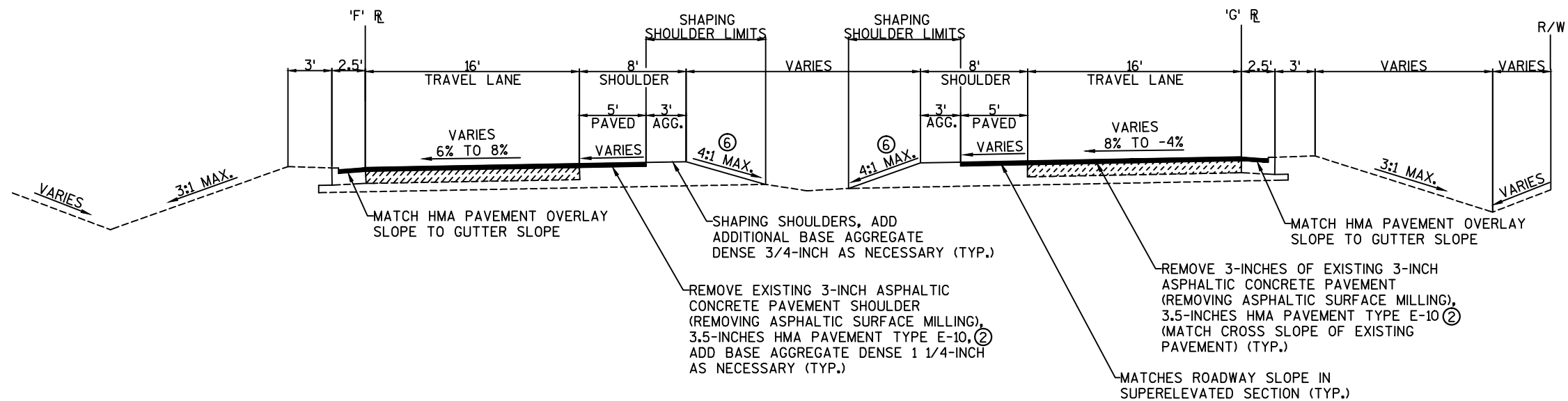


FINISHED SUPERELEVATION TYPICAL SECTION - USH 51 N.B.
STA. 682+11 TO STA. 690+90
STA. 731+00 TO STA. 733+46



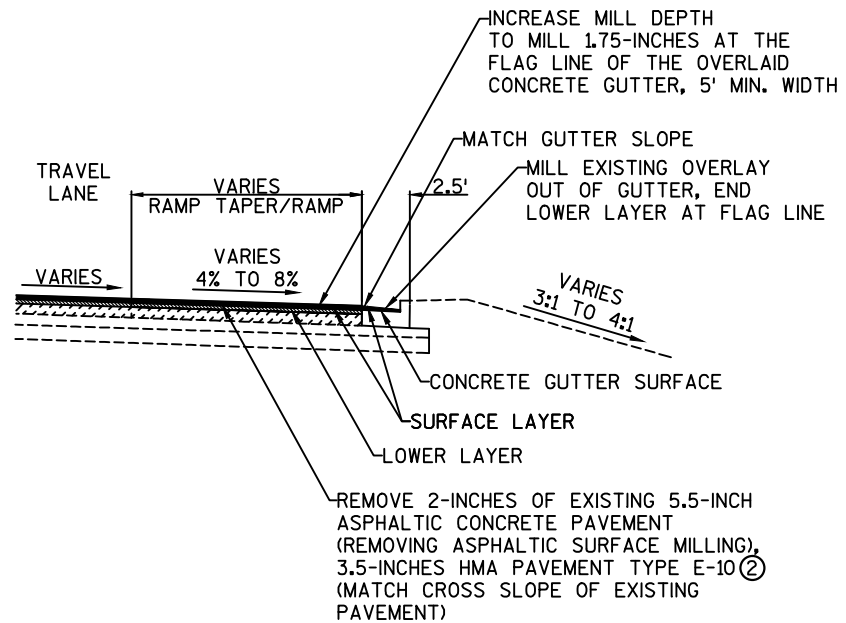
FINISHED TYPICAL SECTION - USH 51 N.B. & COTTAGE GROVE ROAD ENTRANCE/EXIT RAMP

STA. 1+75'F' TO STA. 9+59'F'
STA. 1+75'G' TO STA. 10+30'G'

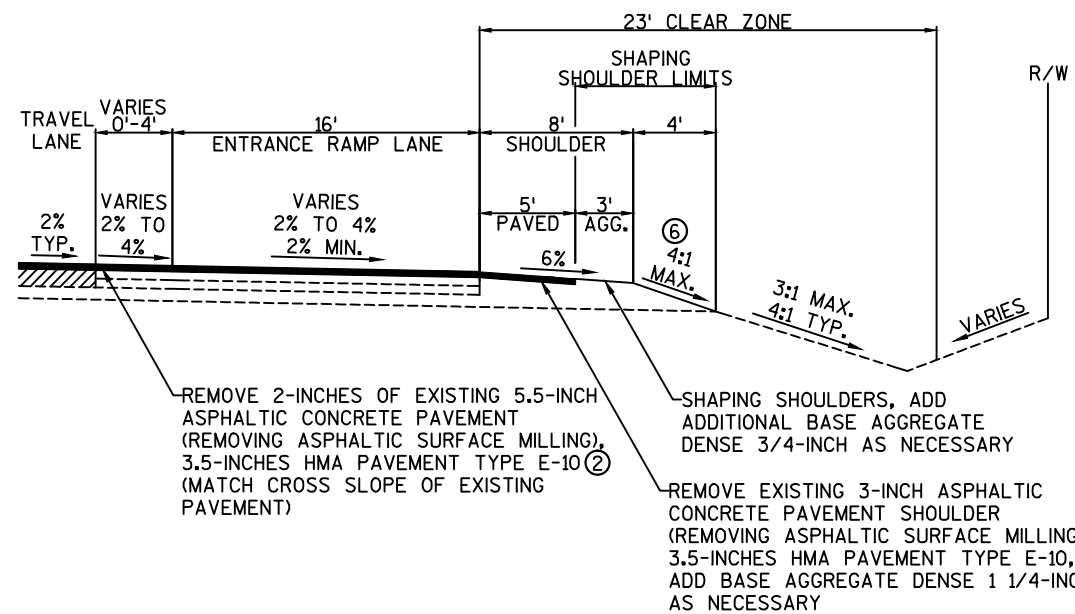


FINISHED TYPICAL SECTION - USH 51 N.B. & COTTAGE GROVE ROAD ENTRANCE/EXIT RAMP

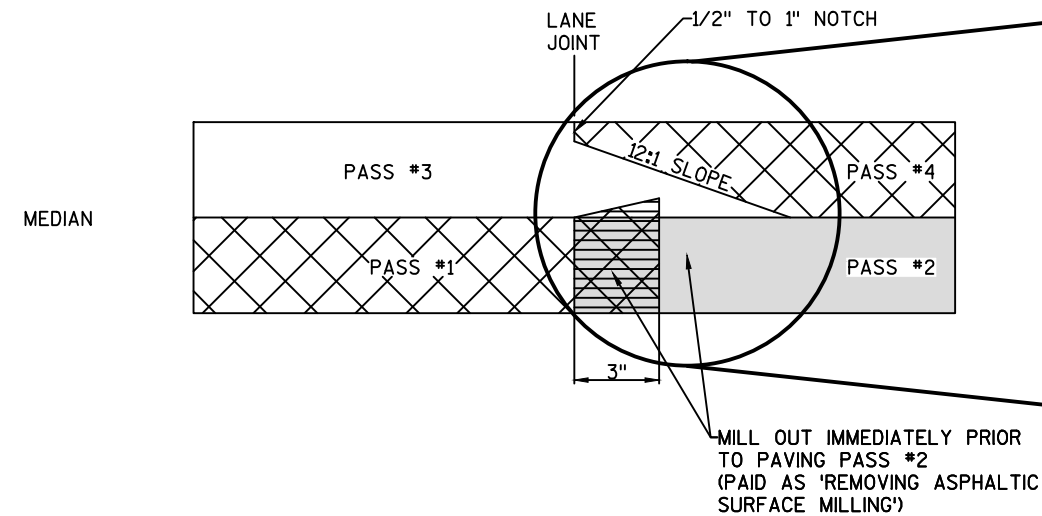
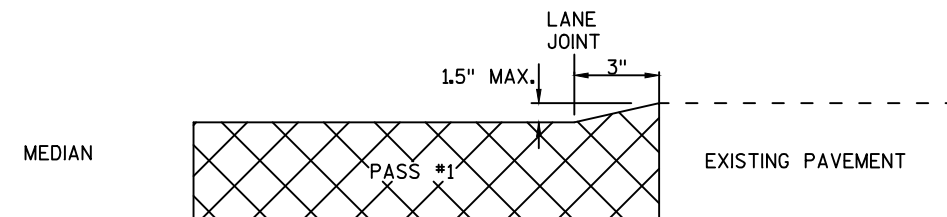
STA. 9+59'F' TO STA. 12+25'F'
STA. 10+30'G' TO STA. 12+88'G'



FINISHED TYPICAL SECTION - USH 51 N.B. &
COTTAGE GROVE ROAD EXIT RAMP
STA. 740+62 TO STA. 744+15, RT



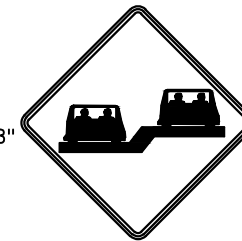
FINISHED TYPICAL SECTION - USH 51 N.B. &
COTTAGE GROVE ROAD ENTRANCE RAMP
STA. 750+00 TO STA. 757+63, RT



TYPICAL PAVEMENT CROSS SECTIONS OF
TAPERED & NOTCHED LONGITUDINAL JOINTS

SCALE: NONE

W8-20
48" X 48"

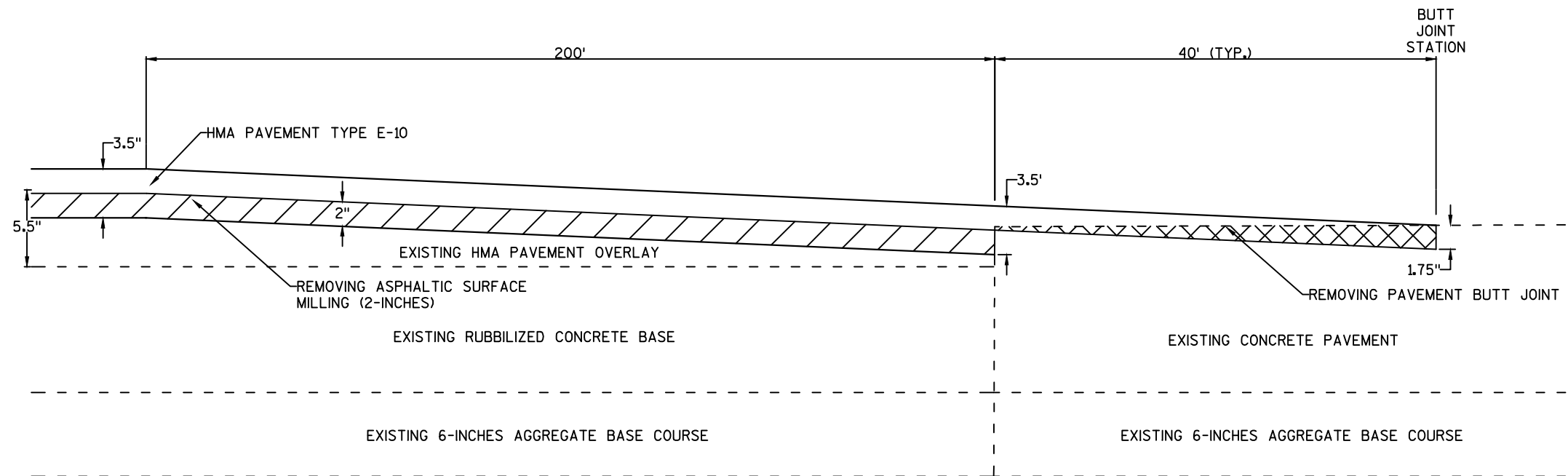


UNEVEN
LANES

W8-20P
36" X 24"

NOTES:

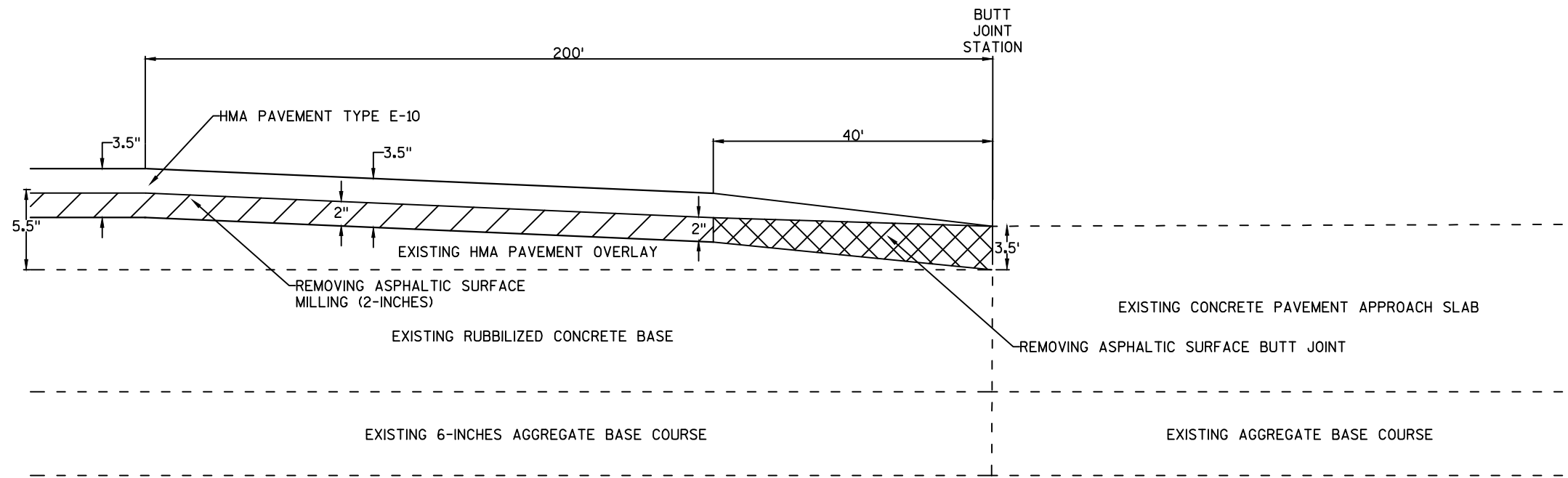
1. TO BE UTILIZED FOR TEMPORARY INSTALLATIONS IN WORK AREAS INVOLVING PAVING LONGITUDINAL JOINTS (SEE W8-20).
2. UNEVEN LANE SIGNS SHALL BE PLACED AT THE BEGINNING OF JOINT AND AT 1/2 MILE INCREMENTS.
3. SIGNS WILL BE PAID AS TRAFFIC CONTROL SIGNS.



BUTT JOINT DETAIL

SCALE: NONE

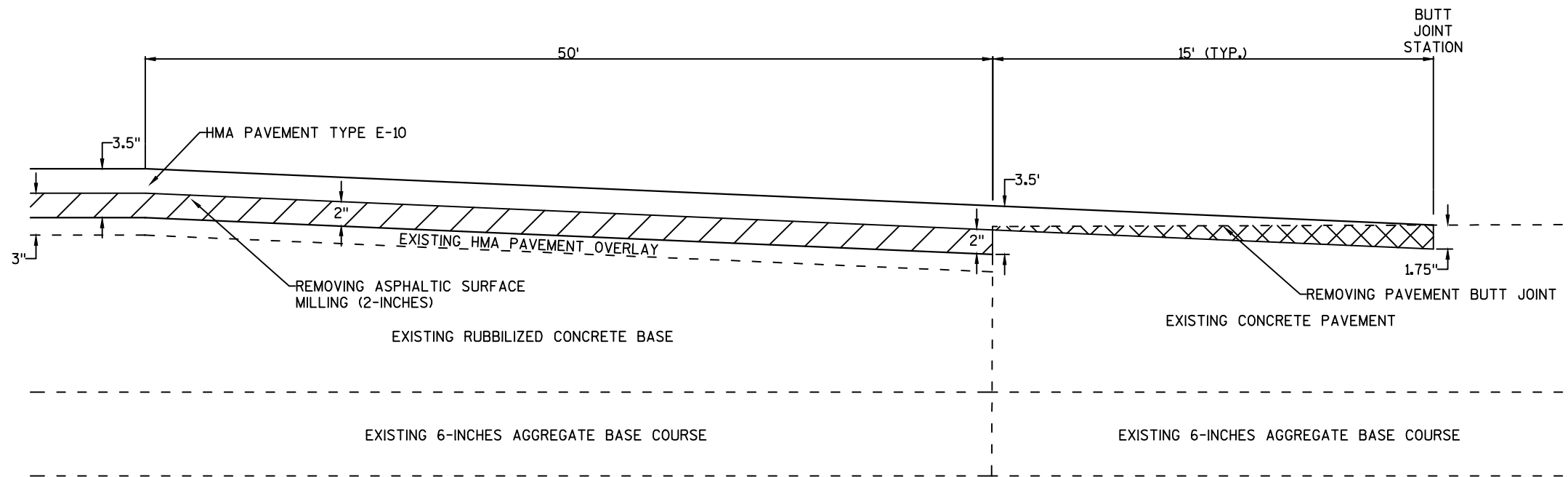
STA. 625+50
STA. 656+09
STA. 662+69
STA. 696+59
STA. 703+09
STA. 776+15



BUTT JOINT DETAIL

SCALE: NONE

STA. 733+46 (MATCH END OF CONCRETE APPROACH SLAB)
STA. 740+62 (MATCH END OF CONCRETE APPROACH SLAB)



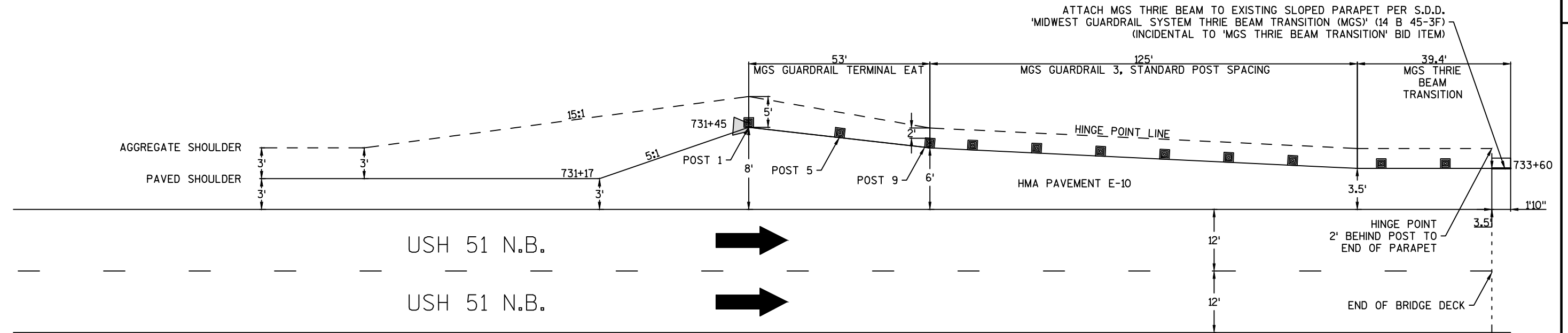
BUTT JOINT DETAIL

SCALE: NONE

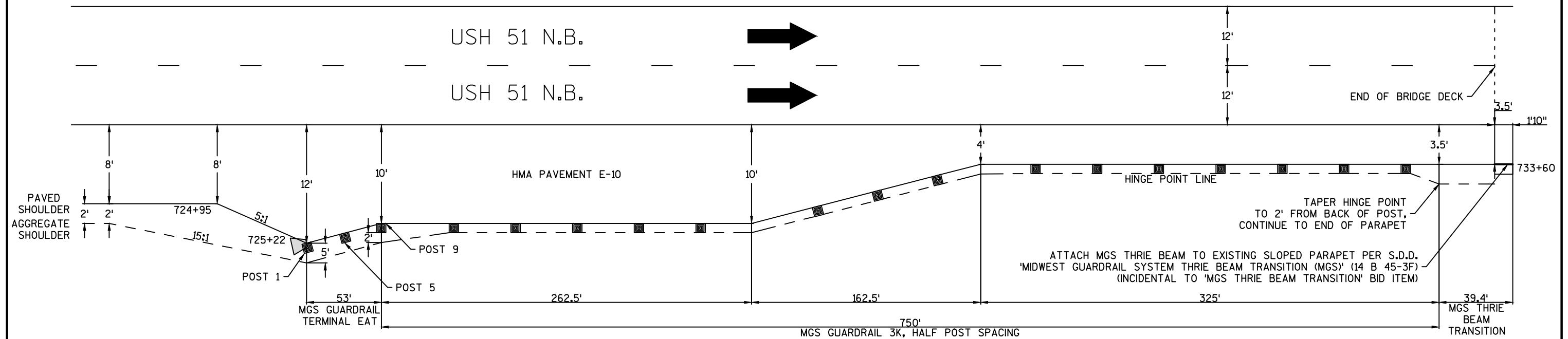
STA. 0+86'F'/0+86'G'

2

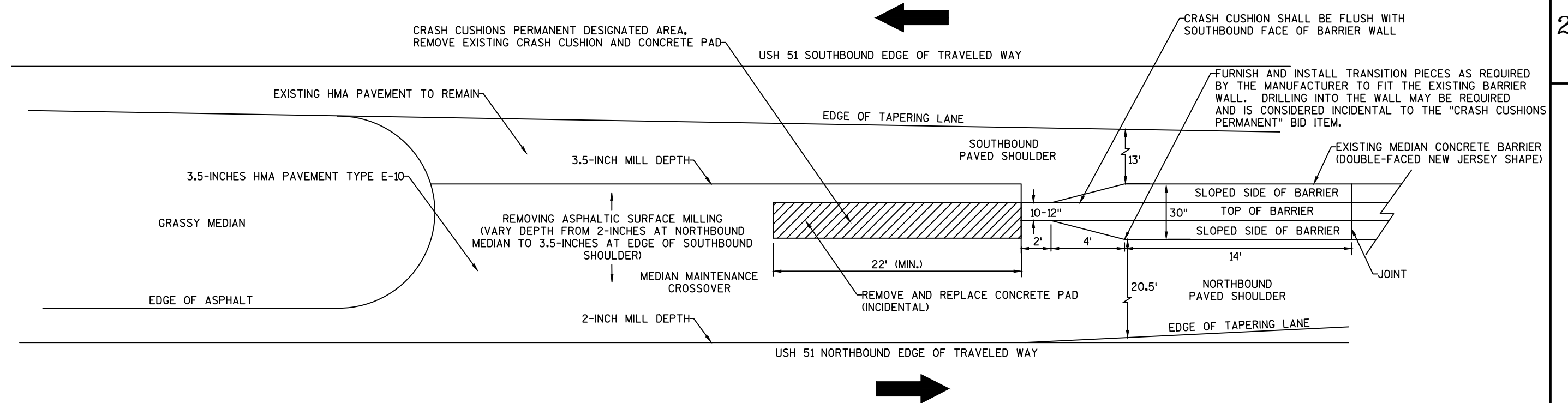
2



SHOULDER PAVING DETAIL, GUARDRAIL (LT)
SCALE: NONE

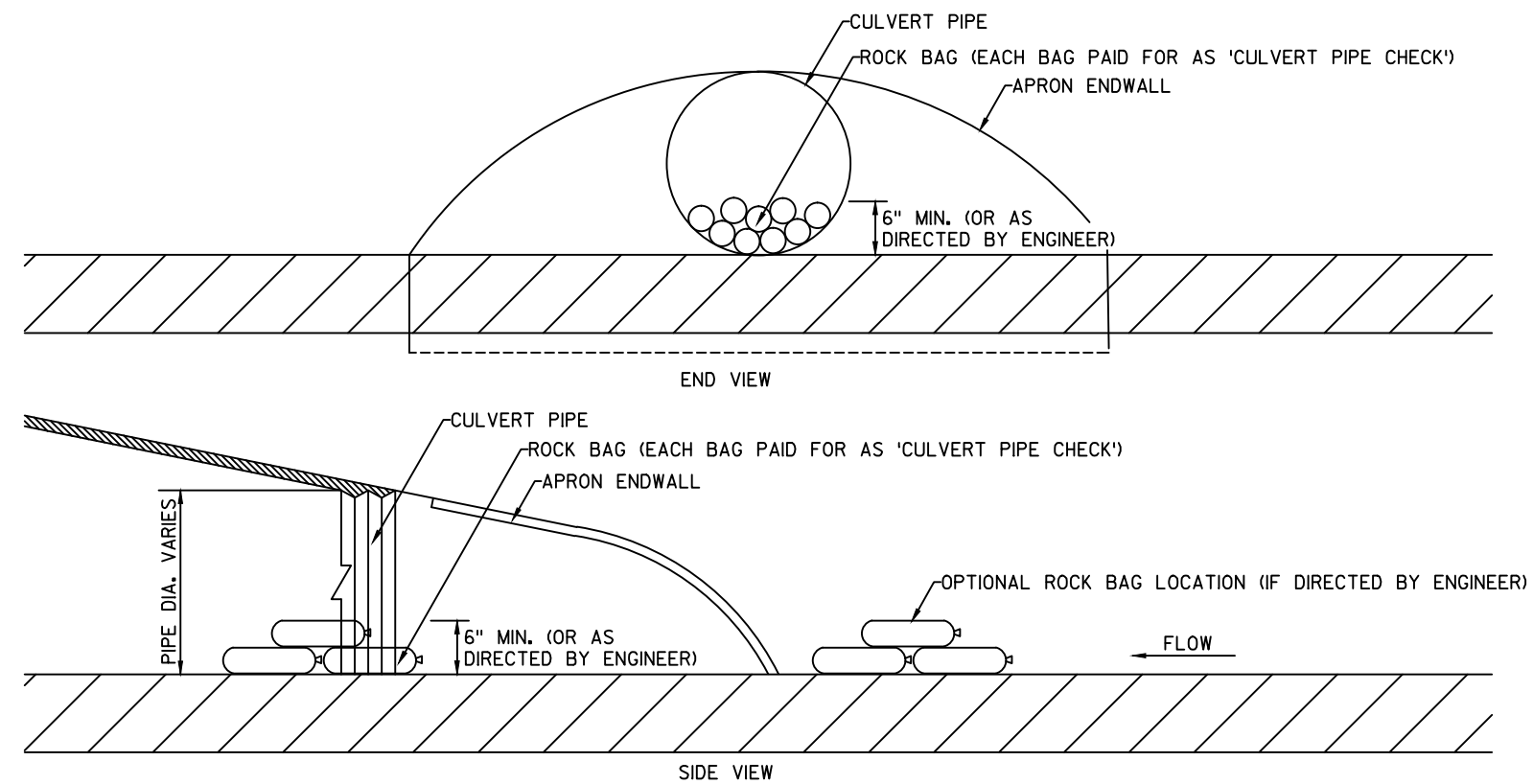


SHOULDER PAVING DETAIL, GUARDRAIL (RT)
SCALE: NONE



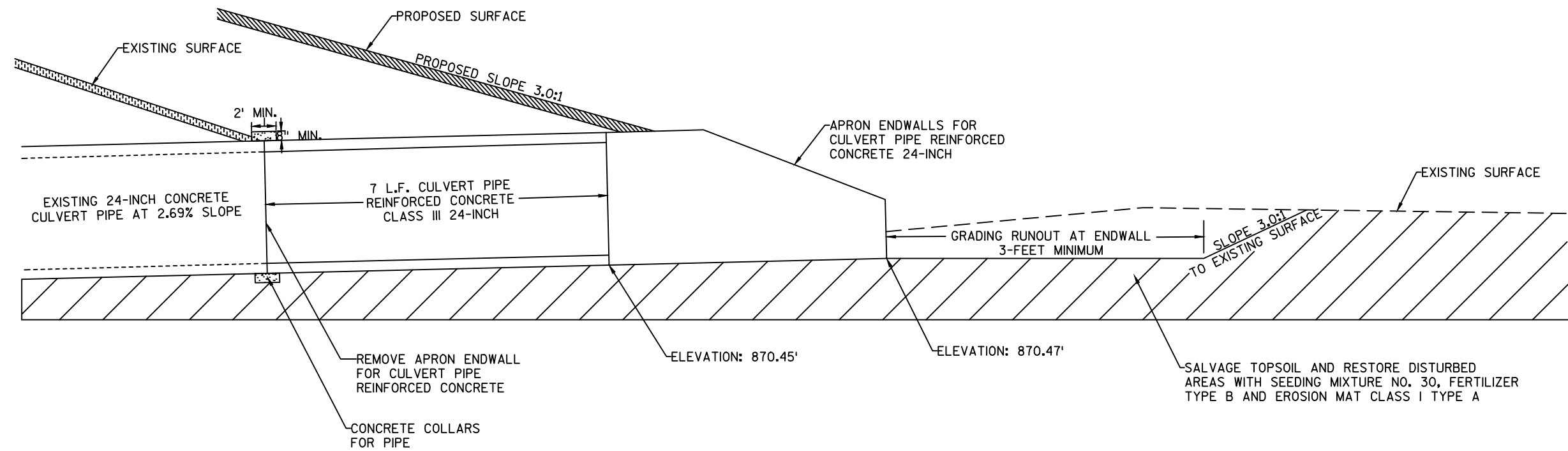
CRASH CUSHIONS PERMANENT DETAIL

SCALE: NONE



CULVERT PIPE CHECK DETAIL

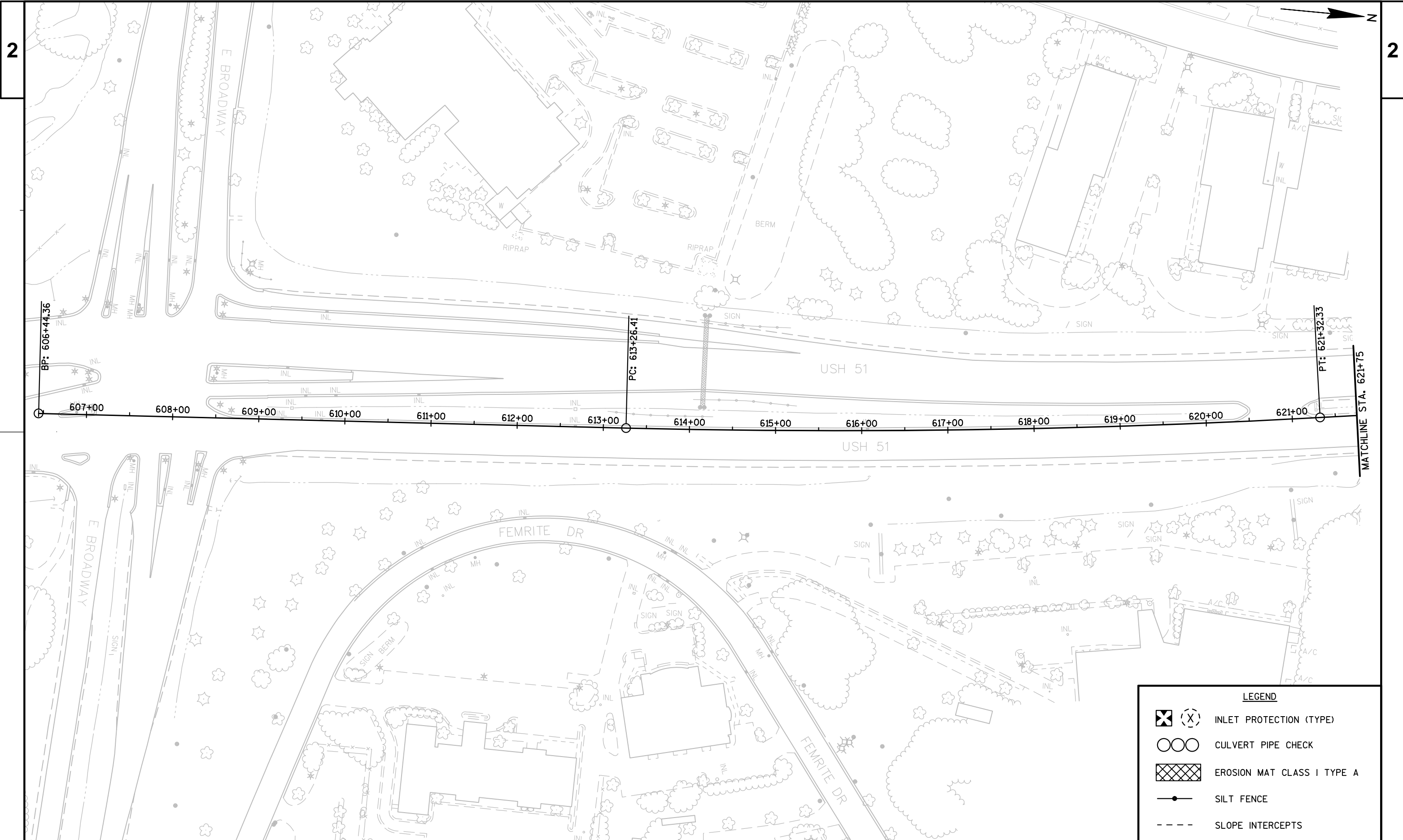
SCALE: NONE



CULVERT PIPE EXTENSION DETAIL

SCALE: NONE

STATION 645+79



PROJECT NO:5410-01-72

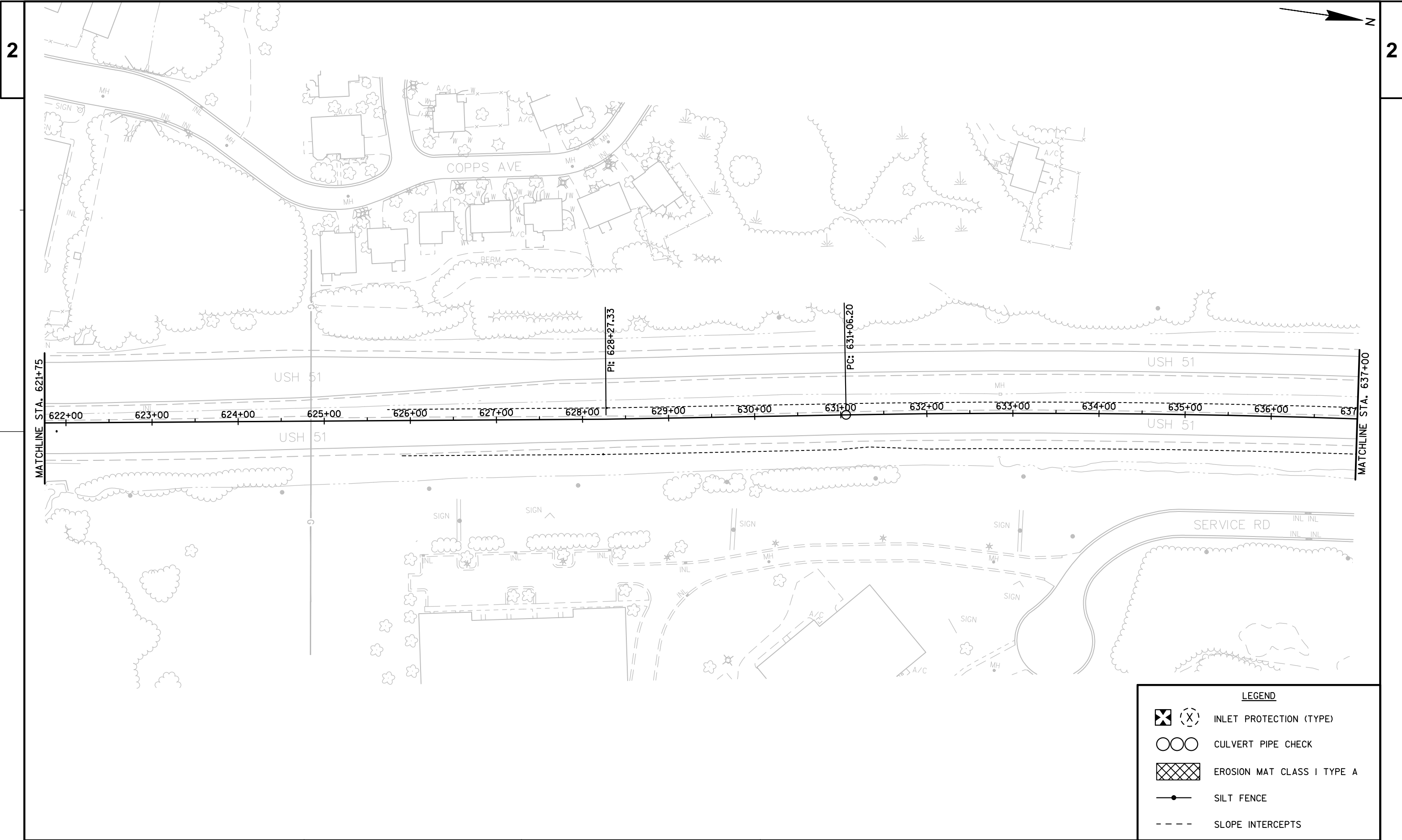
HWY:USH 51

COUNTY:DANE

EROSION CONTROL

SHEET

E



PROJECT NO:5410-01-72

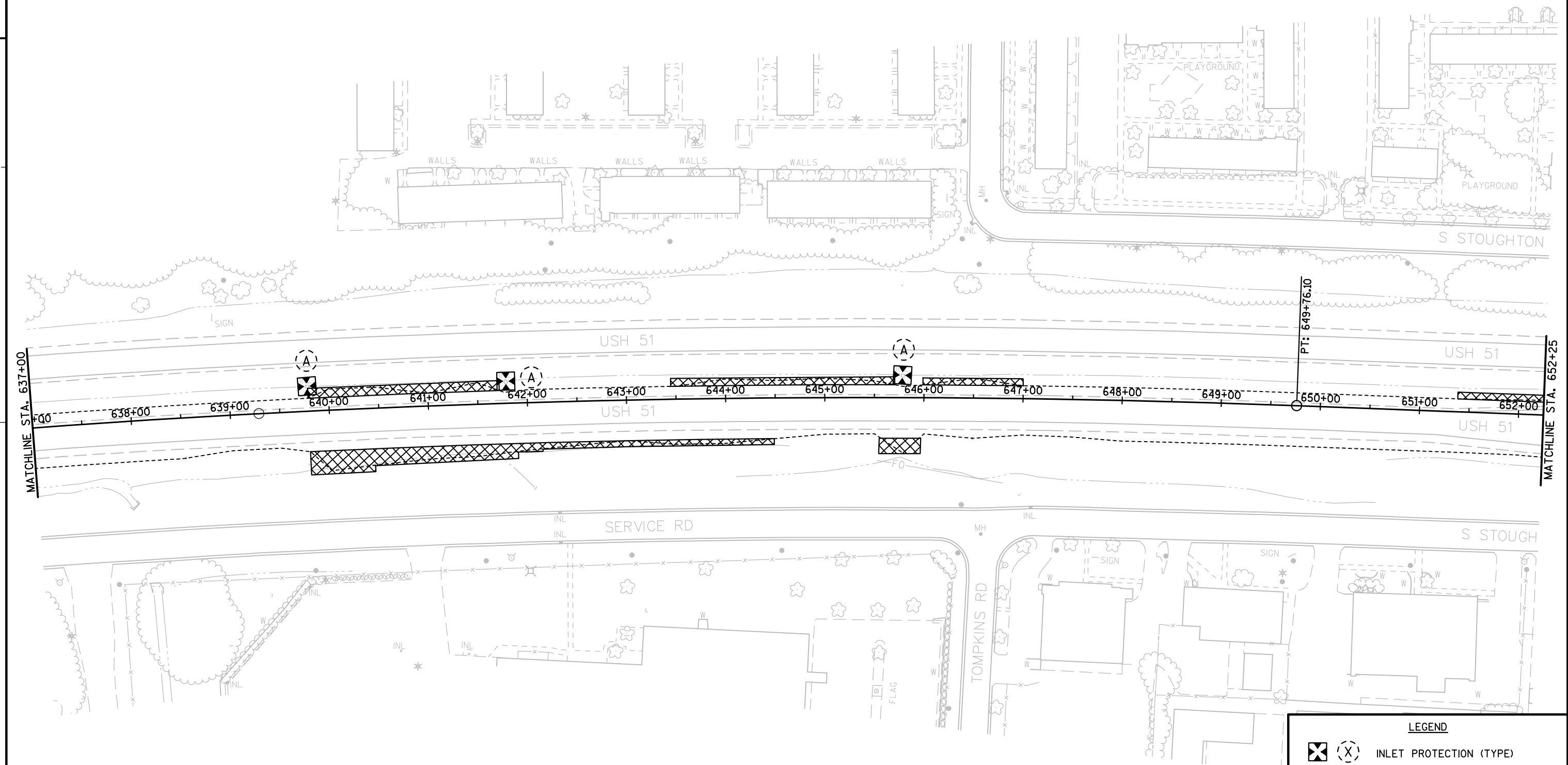
HWY:USH 51

COUNTY:DANE

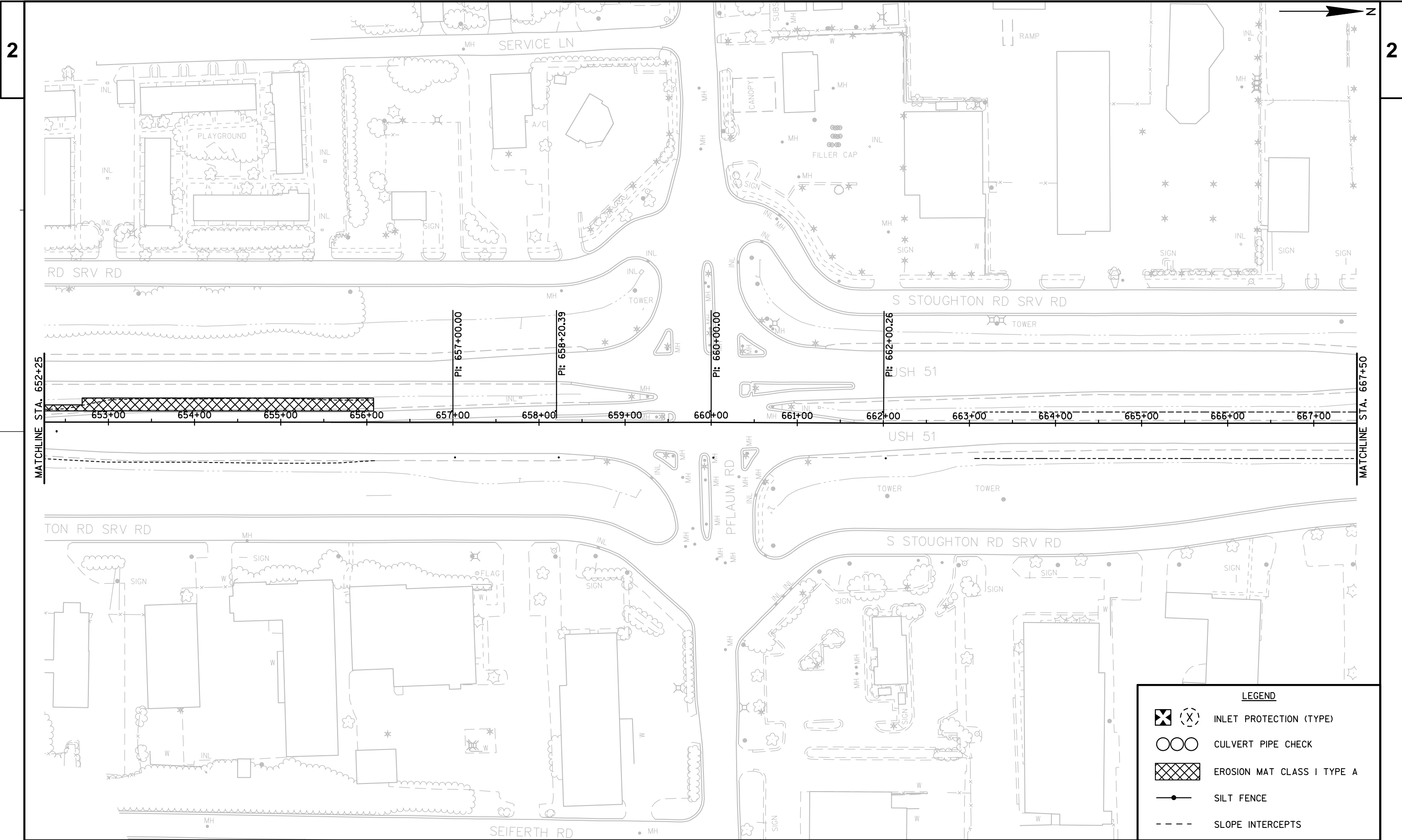
EROSION CONTROL

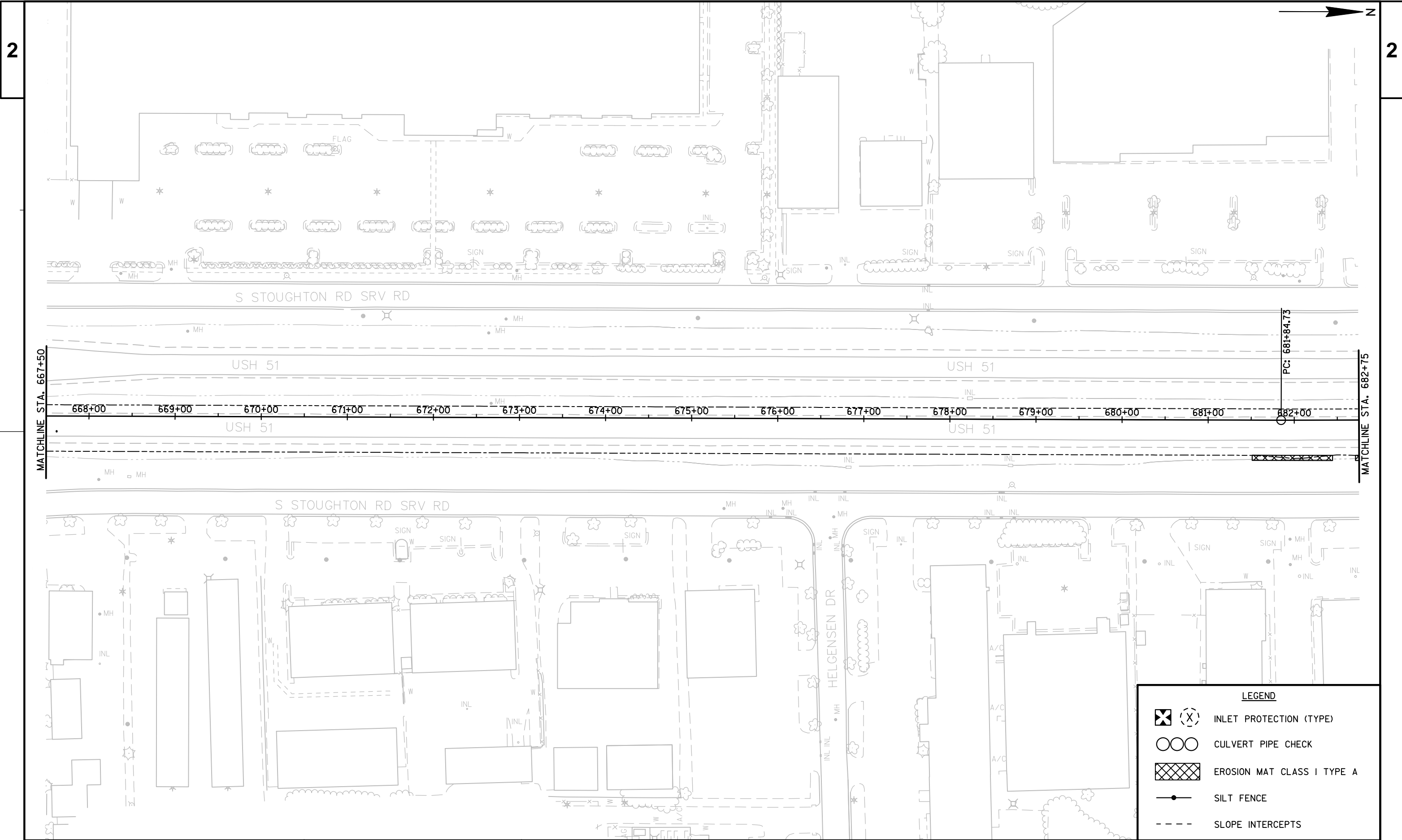
SHEET

E

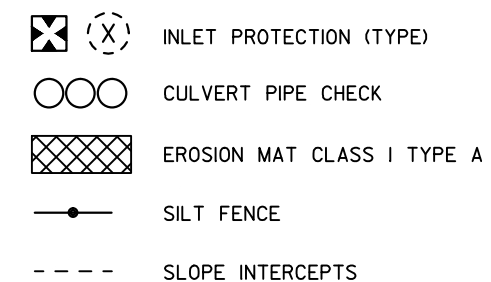


LEGEND	
	INLET PROTECTION (TYPE)
	CULVERT PIPE CHECK
	EROSION MAT CLASS I TYPE A
	SILT FENCE
	SLOPE INTERCEPTS



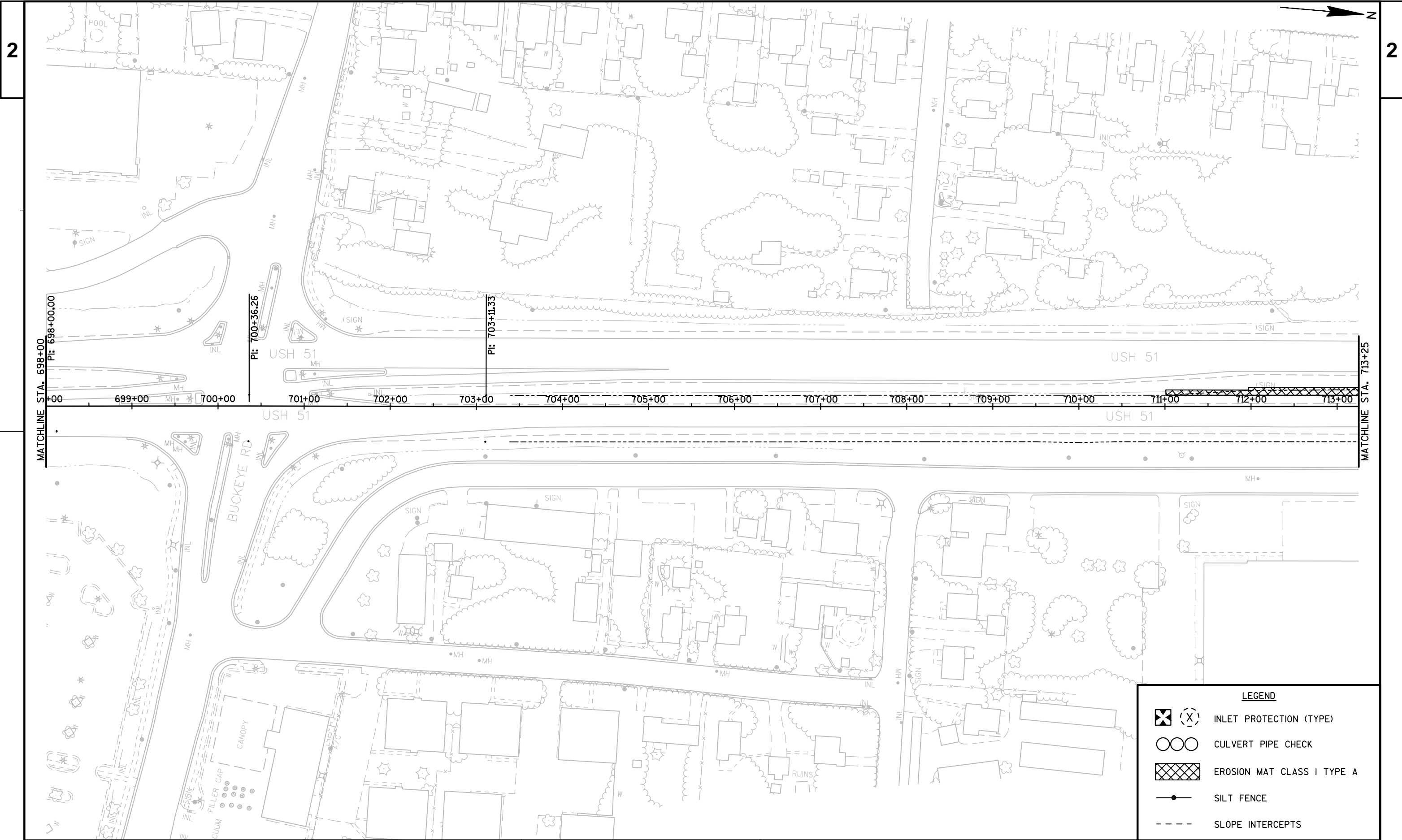


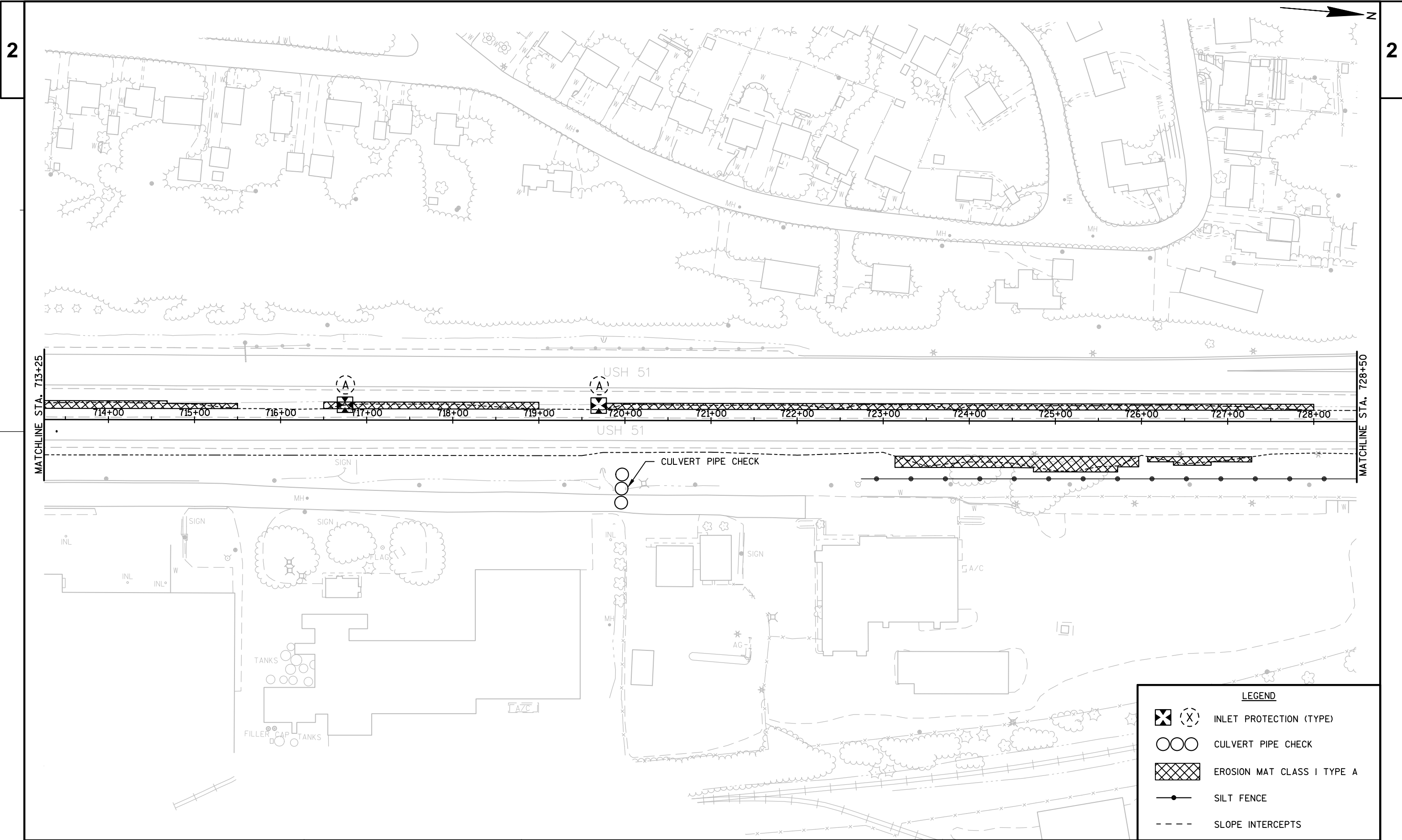
2

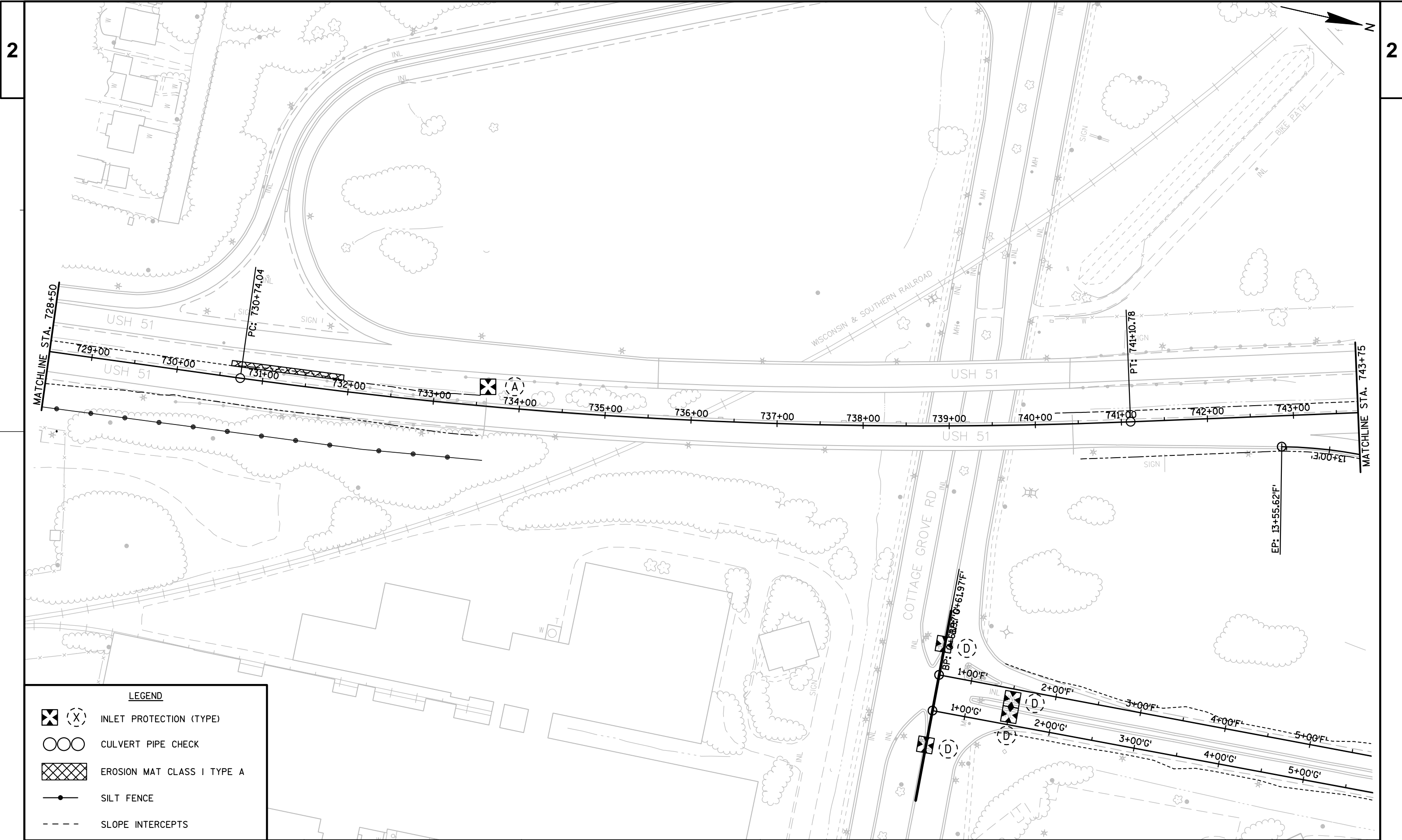


E	
---	--

WISDOT/CADDS SHEET 42







LEGEND

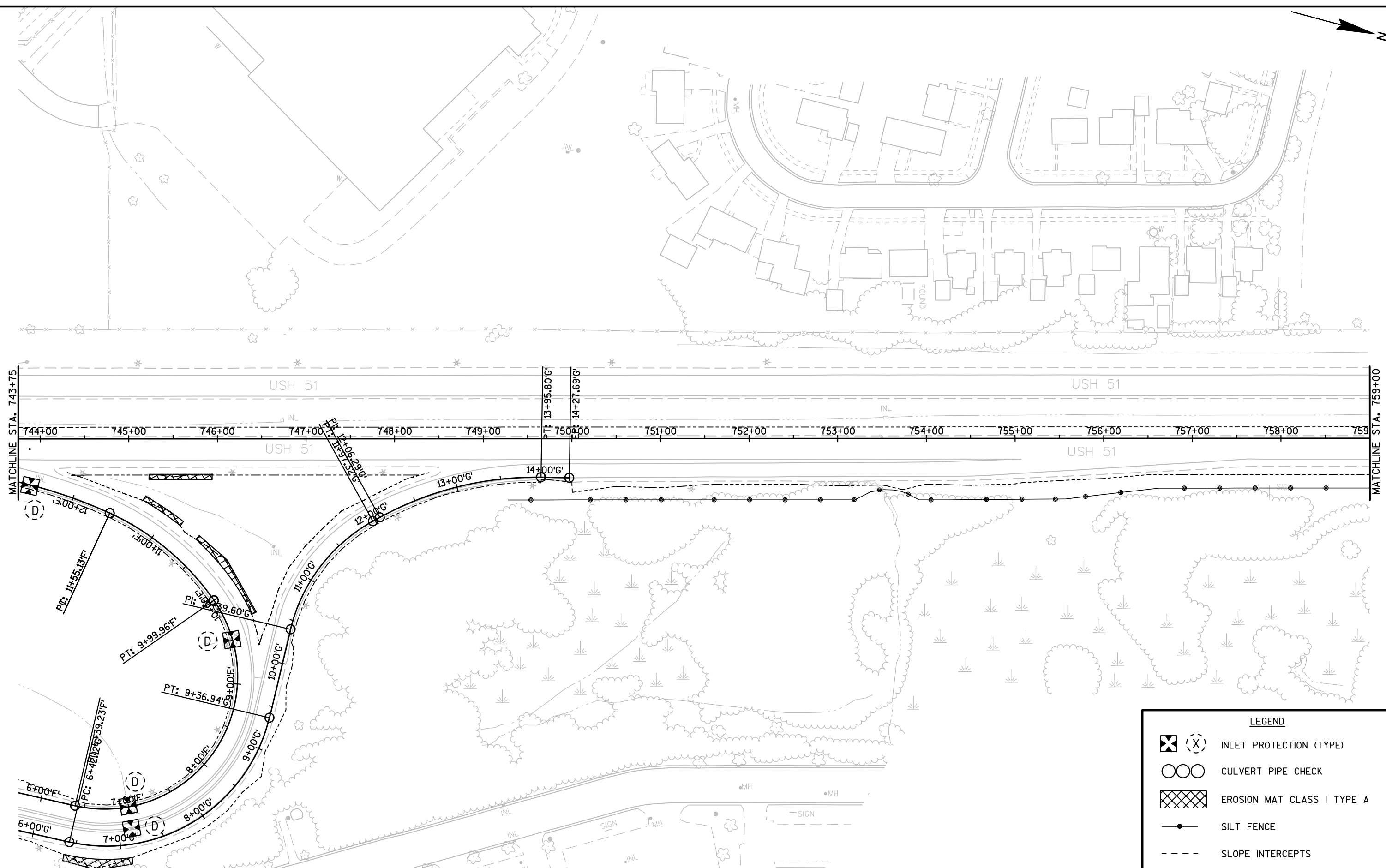
INLET PROTECTION (TYPE)

CULVERT PIPE CHECK

EROSION MAT CLASS I TYPE A

SILT FENCE

SLOPE INTERCEPTS



LEGEND

- INLET PROTECTION (TYPE)
- CULVERT PIPE CHECK
- EROSION MAT CLASS I TYPE A
- SILT FENCE
- SLOPE INTERCEPTS

PROJECT NO: 5410-01-72

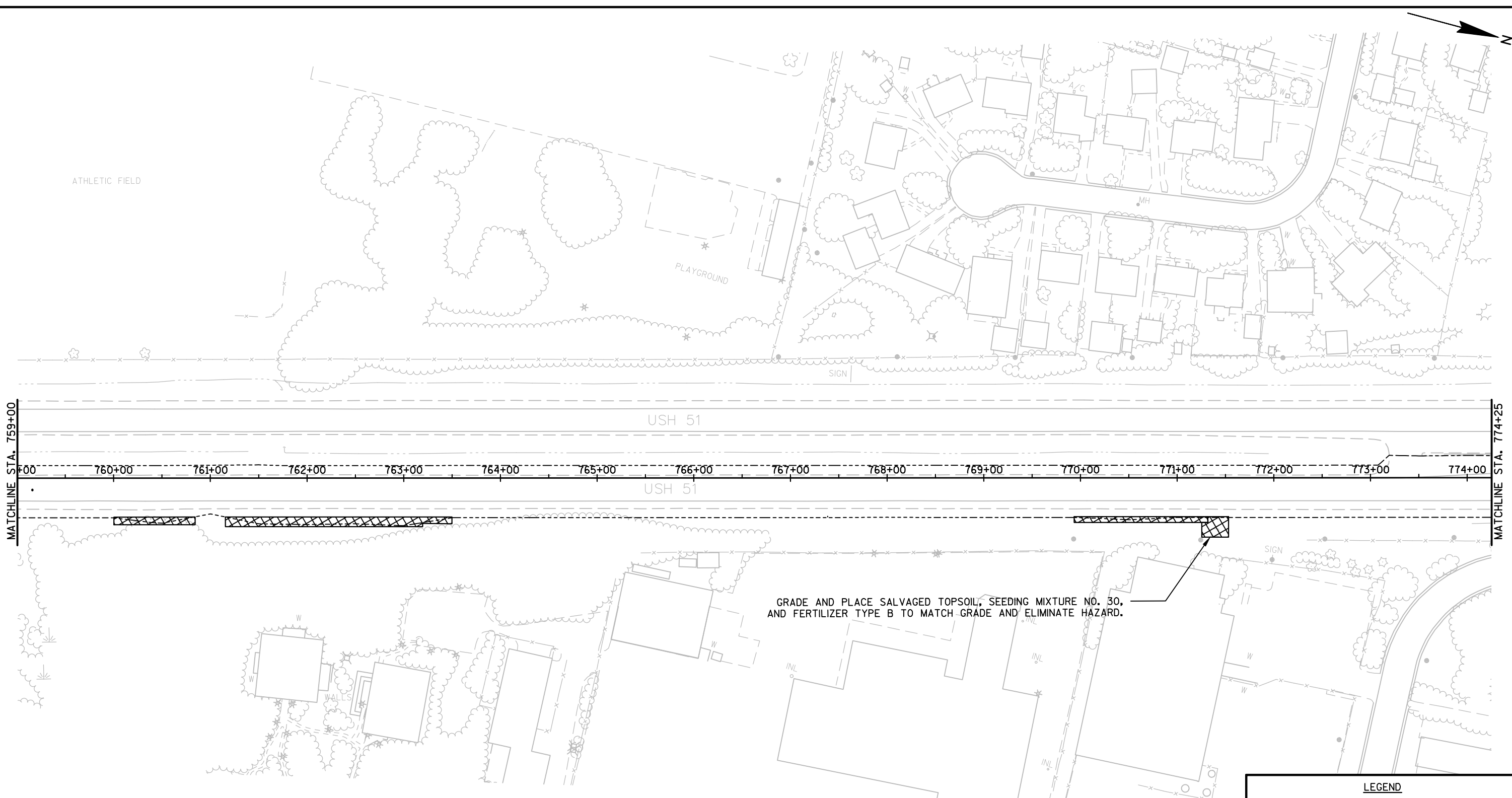
HWY: USH 51

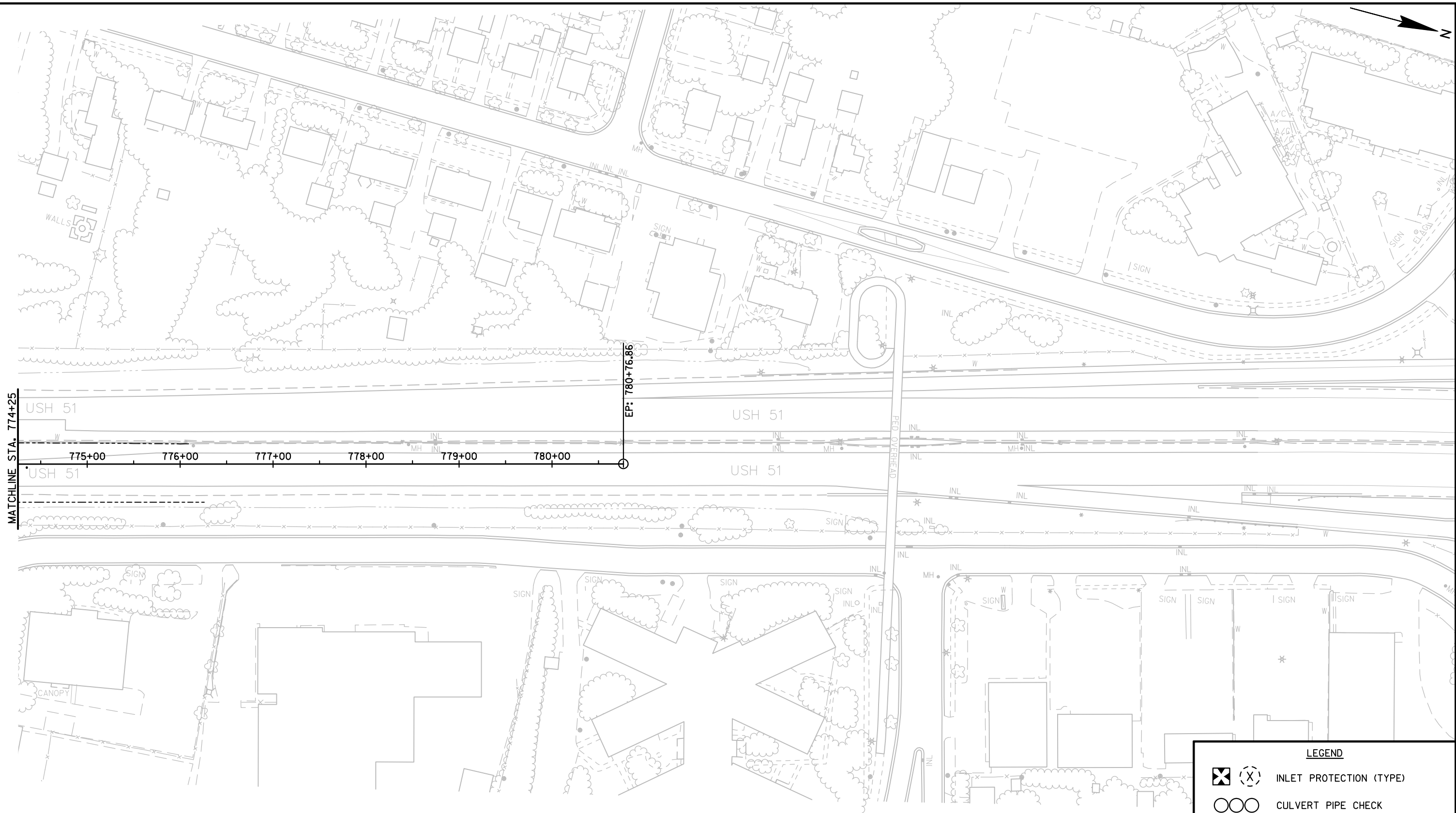
COUNTY: DANE

EROSION CONTROL

SHEET

E



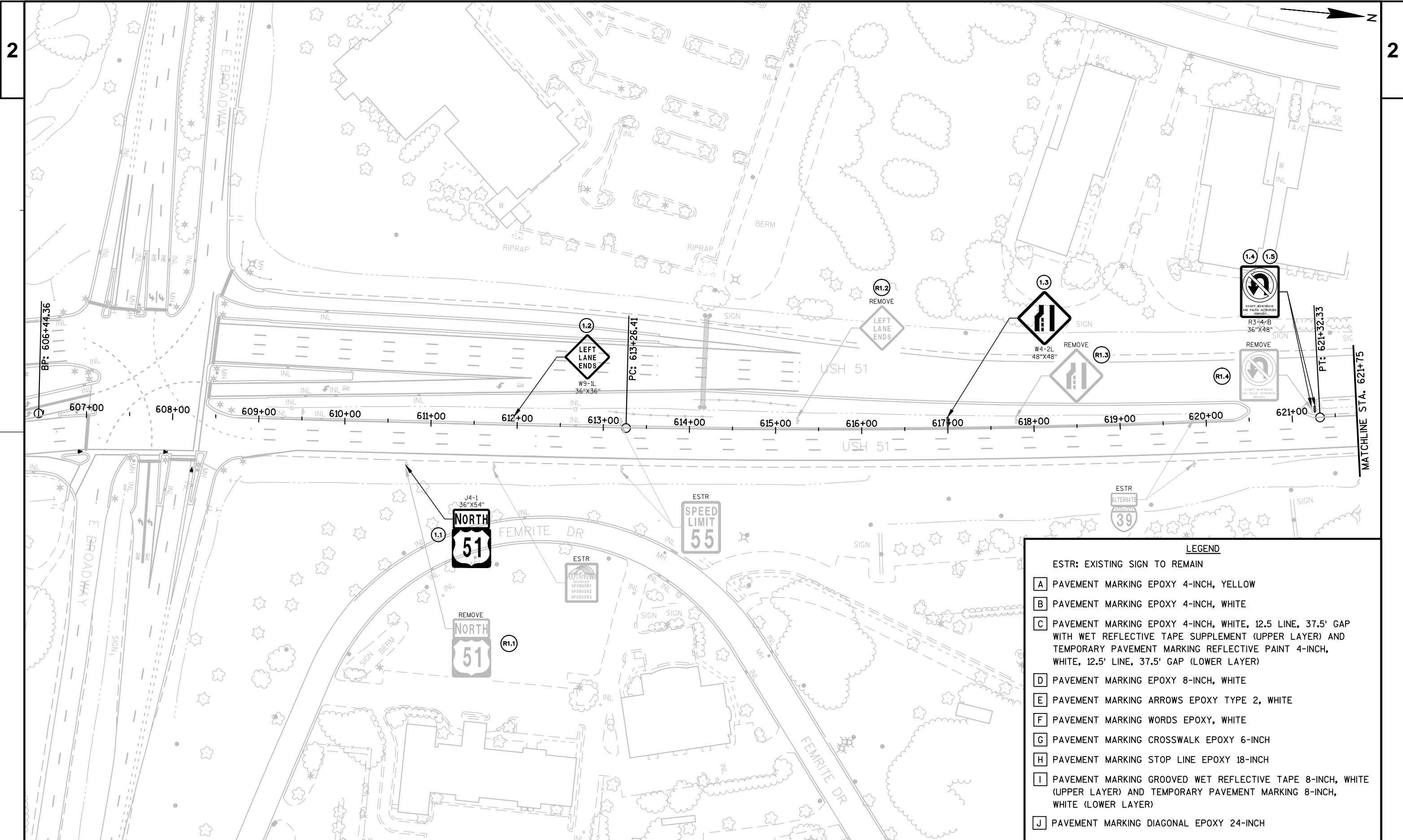


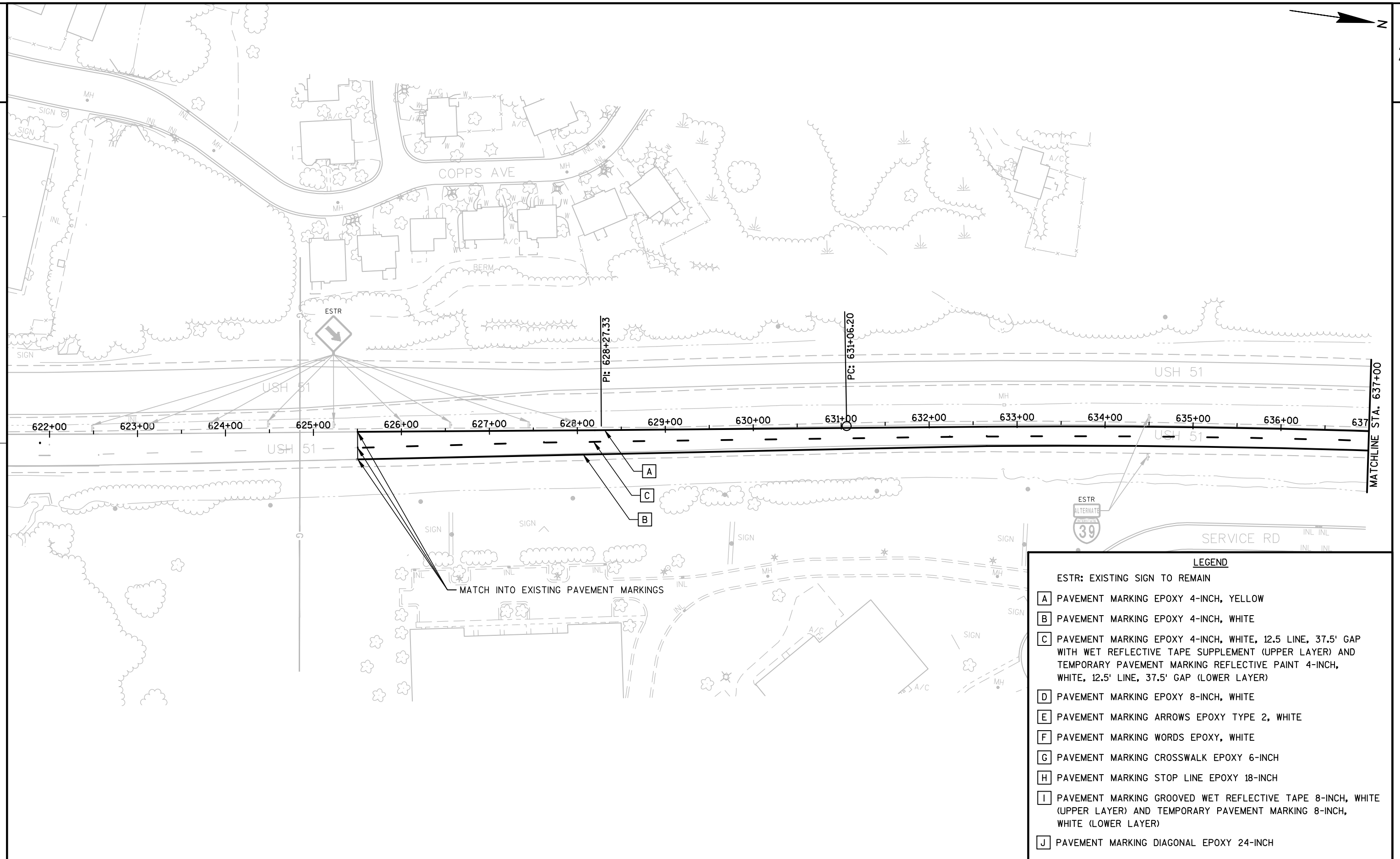
MATCHLINE STA. 774+25

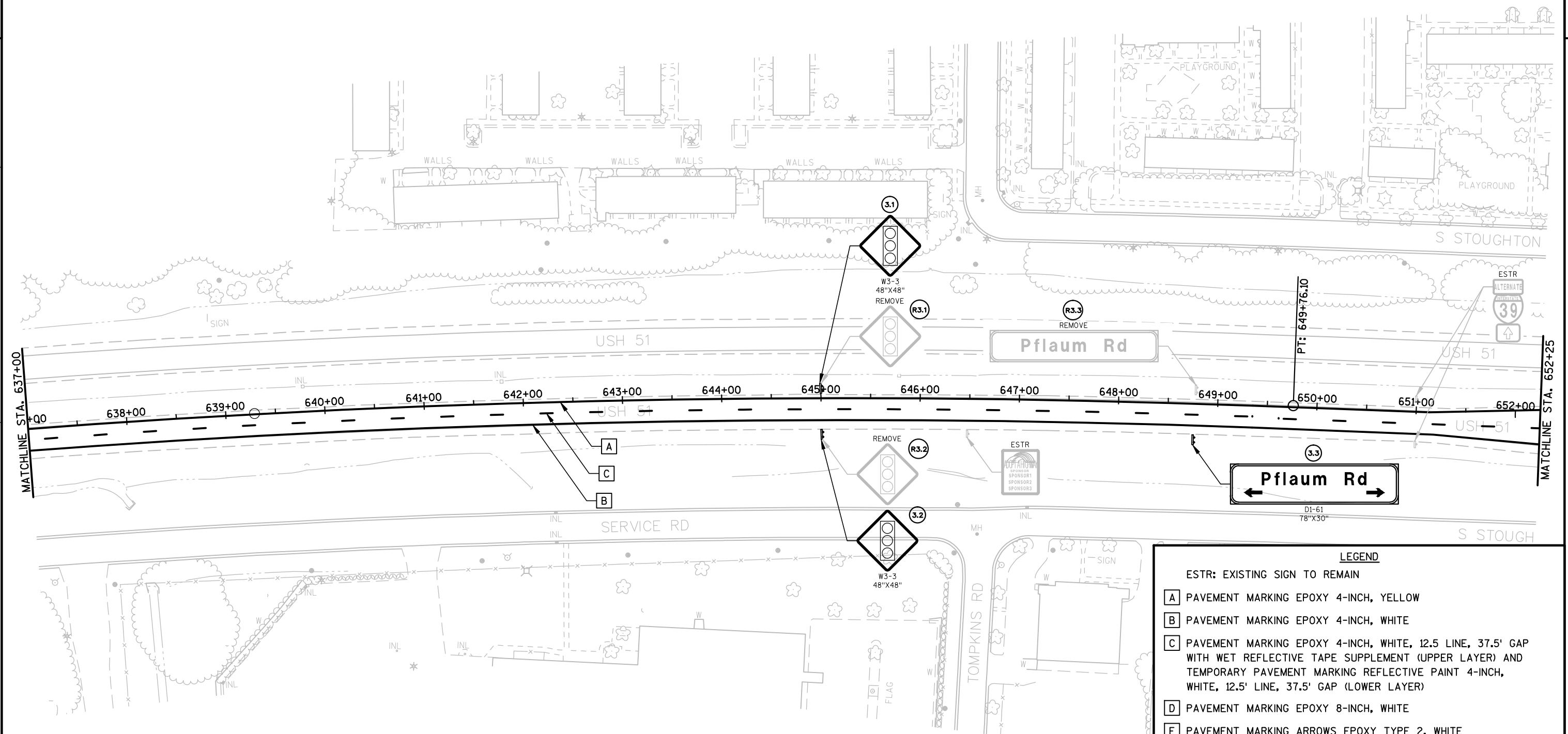
EP: 780+76.85

LEGEND

	INLET PROTECTION (TYPE)
	CULVERT PIPE CHECK
	EROSION MAT CLASS I TYPE A
	SILT FENCE
	SLOPE INTERCEPTS



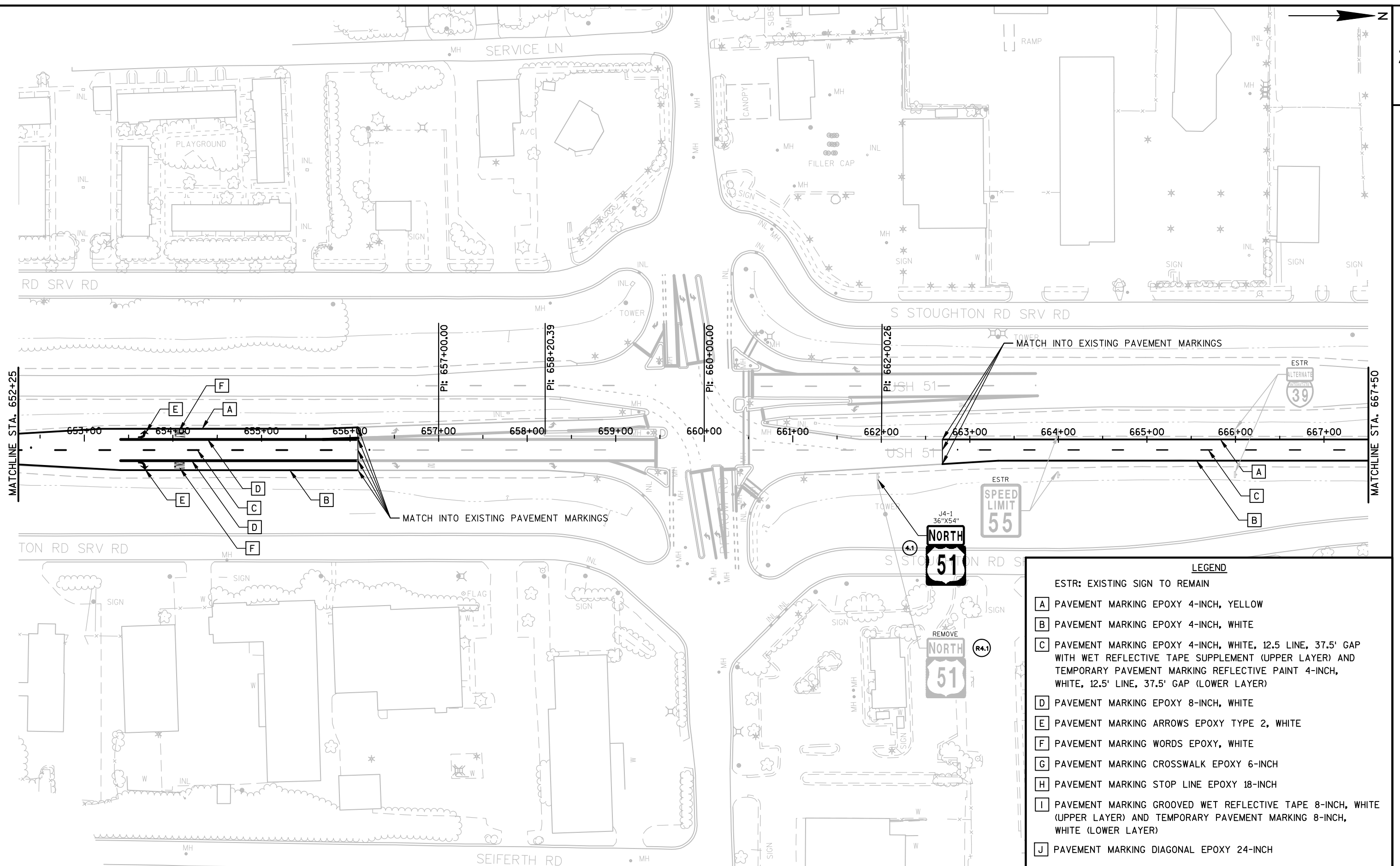




LEGEND

ESTR: EXISTING SIGN TO REMAIN

- A** PAVEMENT MARKING EPOXY 4-INCH, YELLOW
- B** PAVEMENT MARKING EPOXY 4-INCH, WHITE
- C** PAVEMENT MARKING EPOXY 4-INCH, WHITE, 12.5 LINE, 37.5' GAP WITH WET REFLECTIVE TAPE SUPPLEMENT (UPPER LAYER) AND TEMPORARY PAVEMENT MARKING REFLECTIVE PAINT 4-INCH, WHITE, 12.5' LINE, 37.5' GAP (LOWER LAYER)
- D** PAVEMENT MARKING EPOXY 8-INCH, WHITE
- E** PAVEMENT MARKING ARROWS EPOXY TYPE 2, WHITE
- F** PAVEMENT MARKING WORDS EPOXY, WHITE
- G** PAVEMENT MARKING CROSSWALK EPOXY 6-INCH
- H** PAVEMENT MARKING STOP LINE EPOXY 18-INCH
- I** PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH, WHITE (UPPER LAYER) AND TEMPORARY PAVEMENT MARKING 8-INCH, WHITE (LOWER LAYER)
- J** PAVEMENT MARKING DIAGONAL EPOXY 24-INCH



PROJECT NO: 5410-01-72

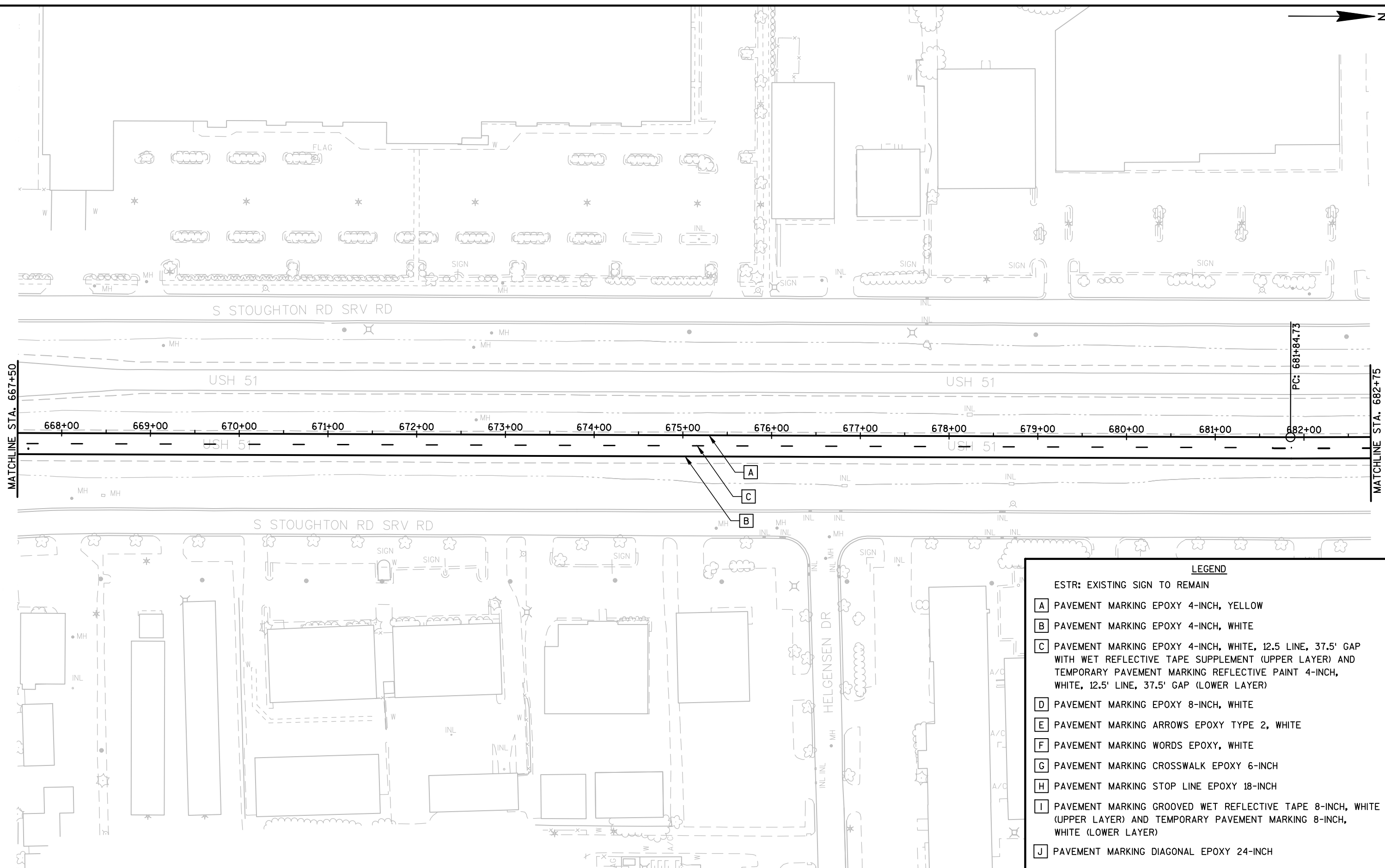
HWY: USH 51

COUNTY: DANE

PERMANENT SIGNING AND PAVEMENT MARKINGS

SHEET

E

**LEGEND**

ESTR: EXISTING SIGN TO REMAIN

- A** PAVEMENT MARKING EPOXY 4-INCH, YELLOW
- B** PAVEMENT MARKING EPOXY 4-INCH, WHITE
- C** PAVEMENT MARKING EPOXY 4-INCH, WHITE, 12.5' LINE, 37.5' GAP WITH WET REFLECTIVE TAPE SUPPLEMENT (UPPER LAYER) AND TEMPORARY PAVEMENT MARKING REFLECTIVE PAINT 4-INCH, WHITE, 12.5' LINE, 37.5' GAP (LOWER LAYER)
- D** PAVEMENT MARKING EPOXY 8-INCH, WHITE
- E** PAVEMENT MARKING ARROWS EPOXY TYPE 2, WHITE
- F** PAVEMENT MARKING WORDS EPOXY, WHITE
- G** PAVEMENT MARKING CROSSWALK EPOXY 6-INCH
- H** PAVEMENT MARKING STOP LINE EPOXY 18-INCH
- I** PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH, WHITE (UPPER LAYER) AND TEMPORARY PAVEMENT MARKING 8-INCH, WHITE (LOWER LAYER)
- J** PAVEMENT MARKING DIAGONAL EPOXY 24-INCH

PROJECT NO: 5410-01-72

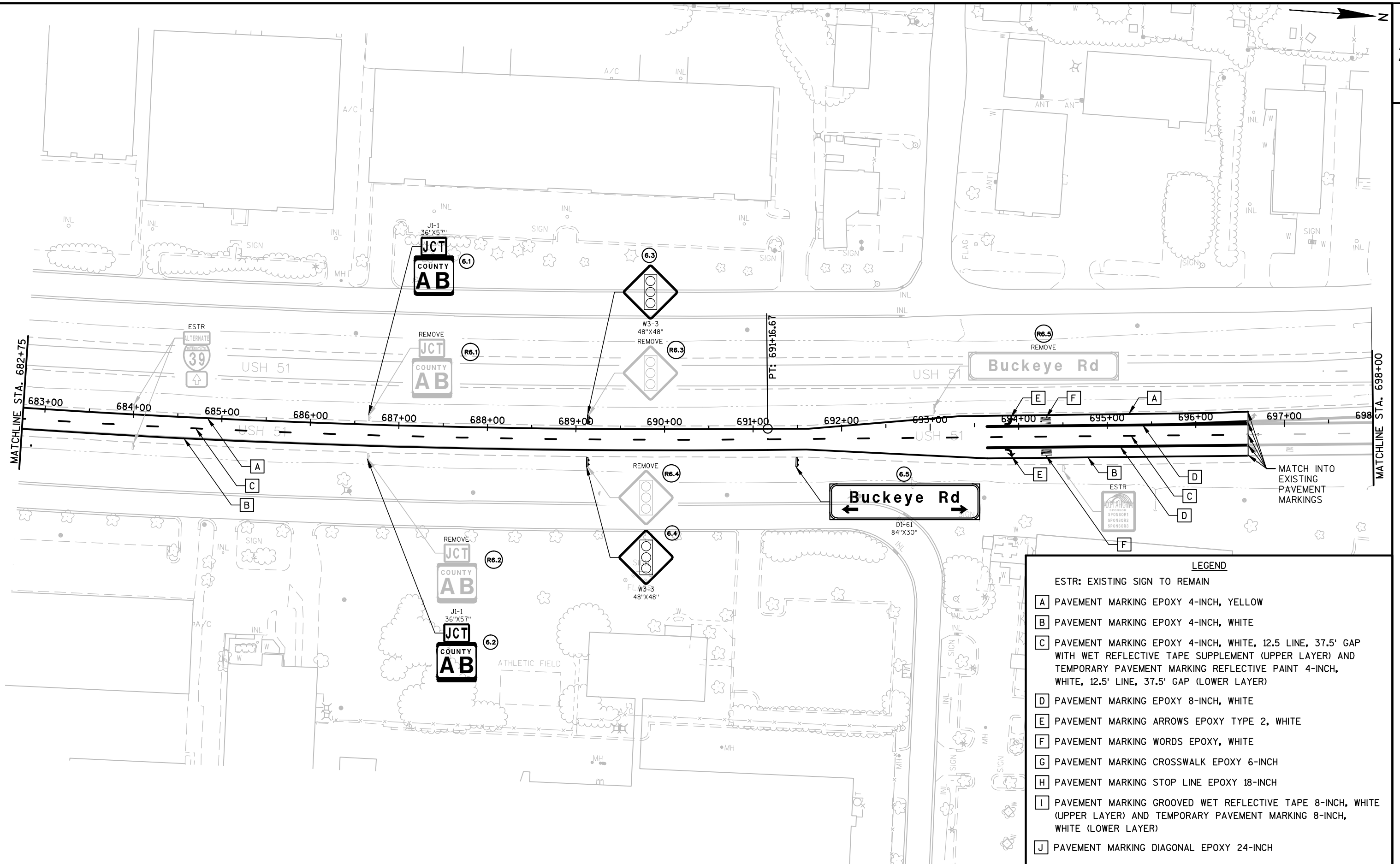
HWY: USH 51

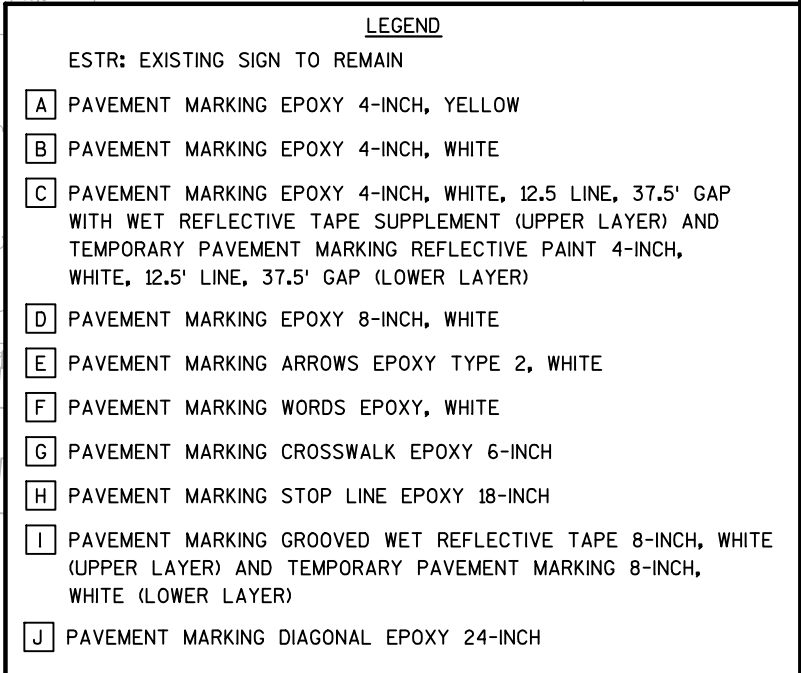
COUNTY: DANE

PERMANENT SIGNING AND PAVEMENT MARKINGS

SHEET

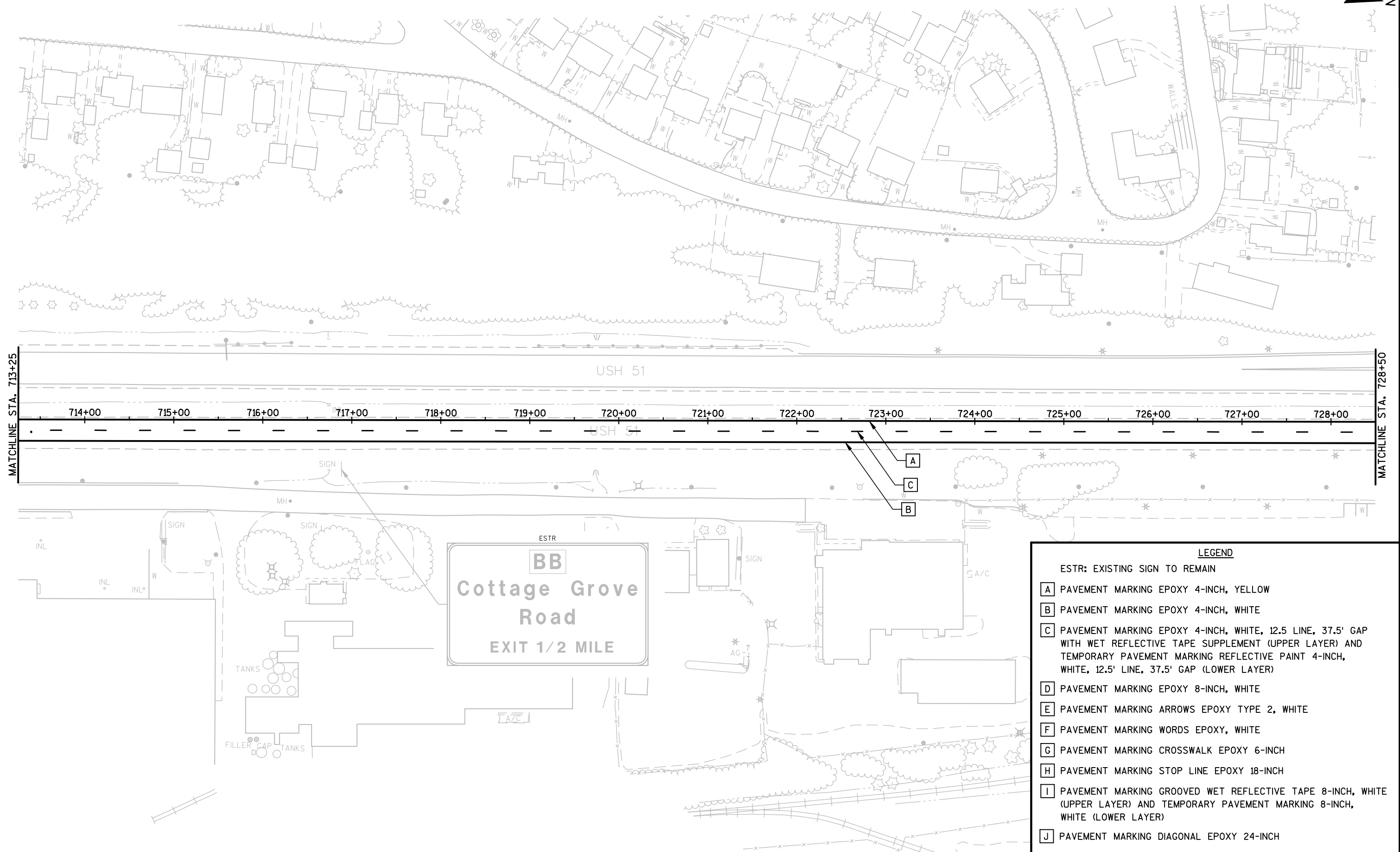
E





MATCHLINE STA. 713+25

MATCHLINE STA. 728+50



PROJECT NO: 5410-01-72

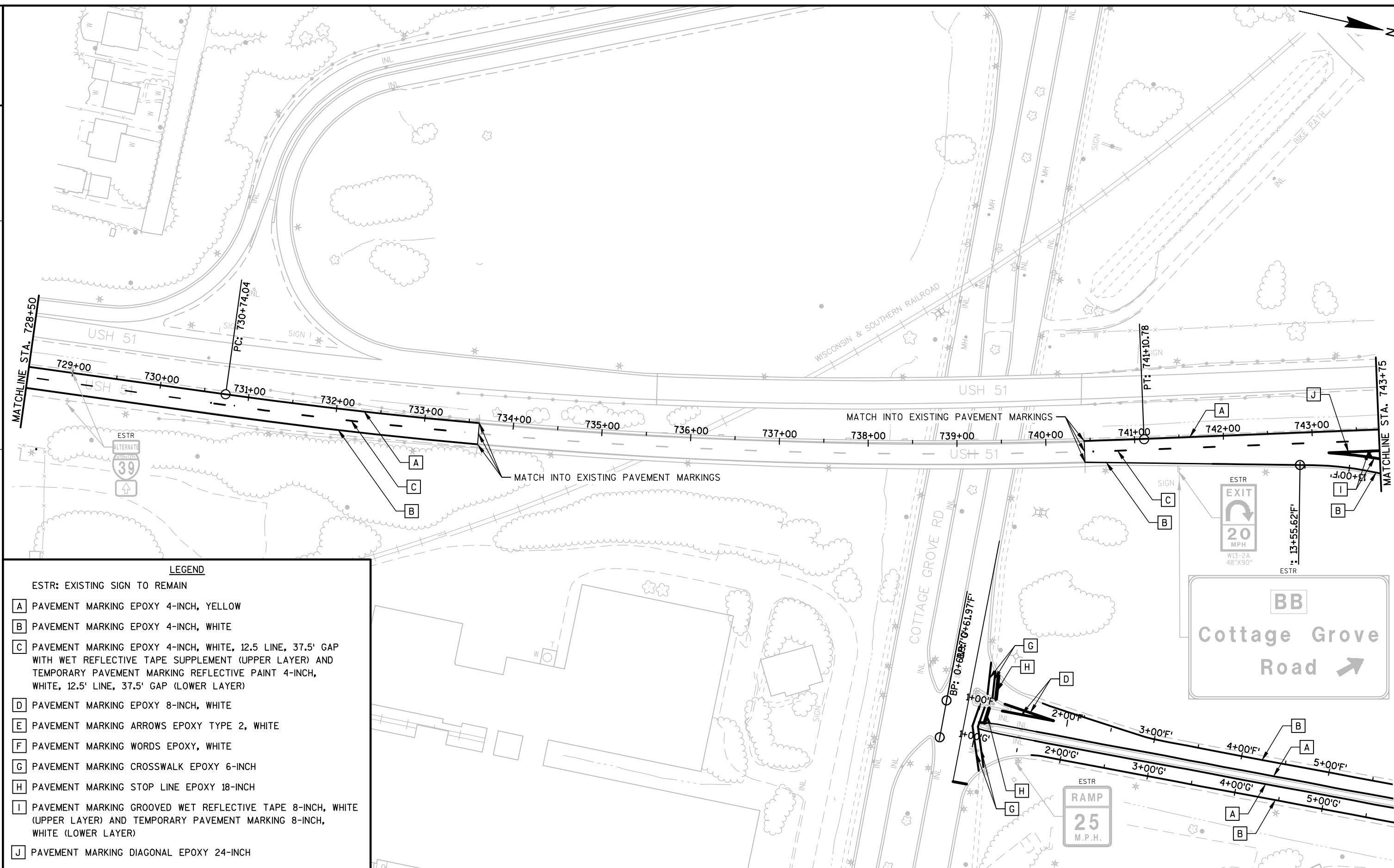
HWY: USH 51

COUNTY: DANE

PERMANENT SIGNING AND PAVEMENT MARKINGS

SHEET

E



PROJECT NO: 5410-01-72

HWY: USH 51

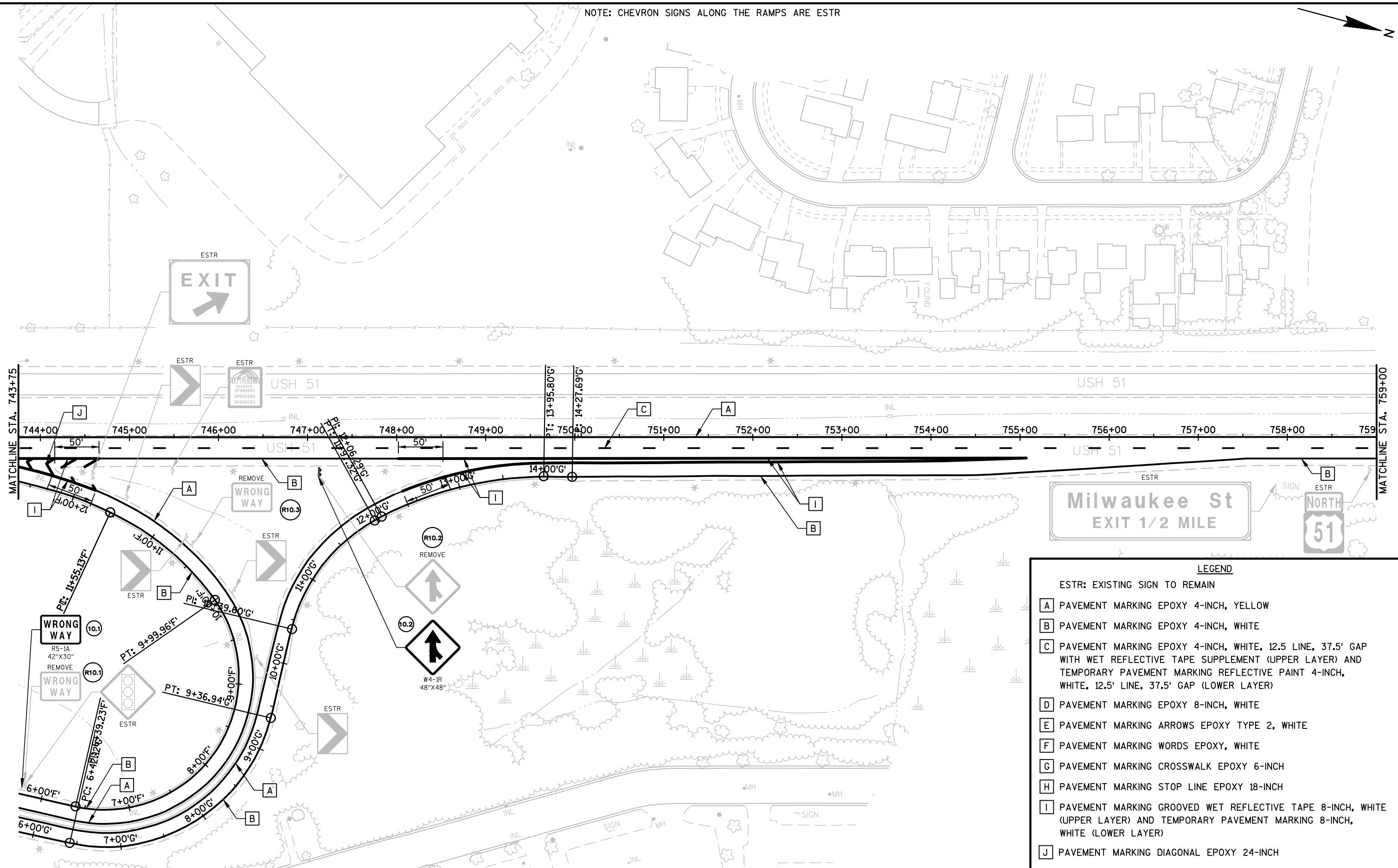
COUNTY: DANE

PERMANENT SIGNING AND PAVEMENT MARKINGS

SHEET

E

NOTE: CHEVRON SIGNS ALONG THE RAMPS ARE ESTR



PROJECT NO: 5410-01-72

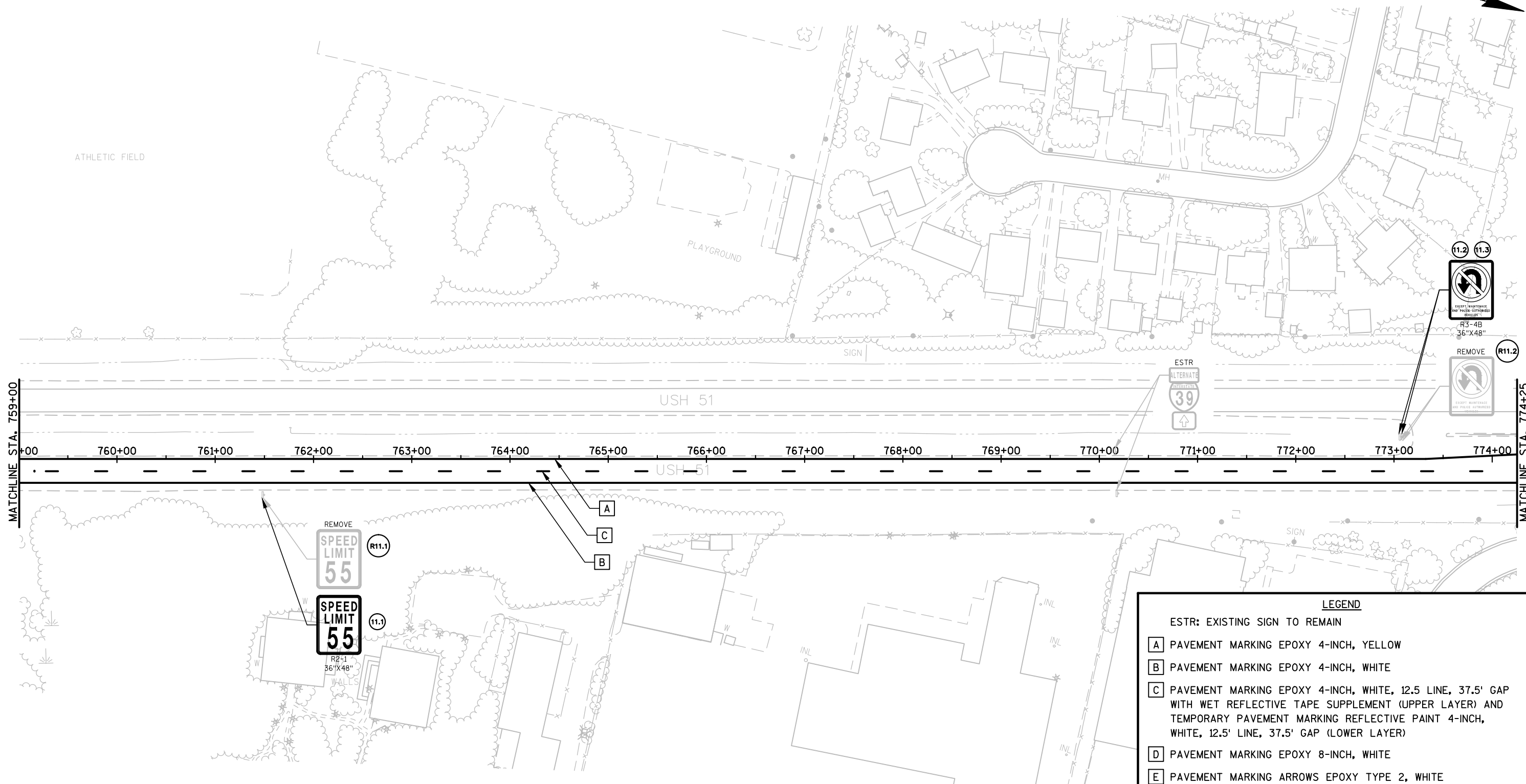
HWY: USH 51

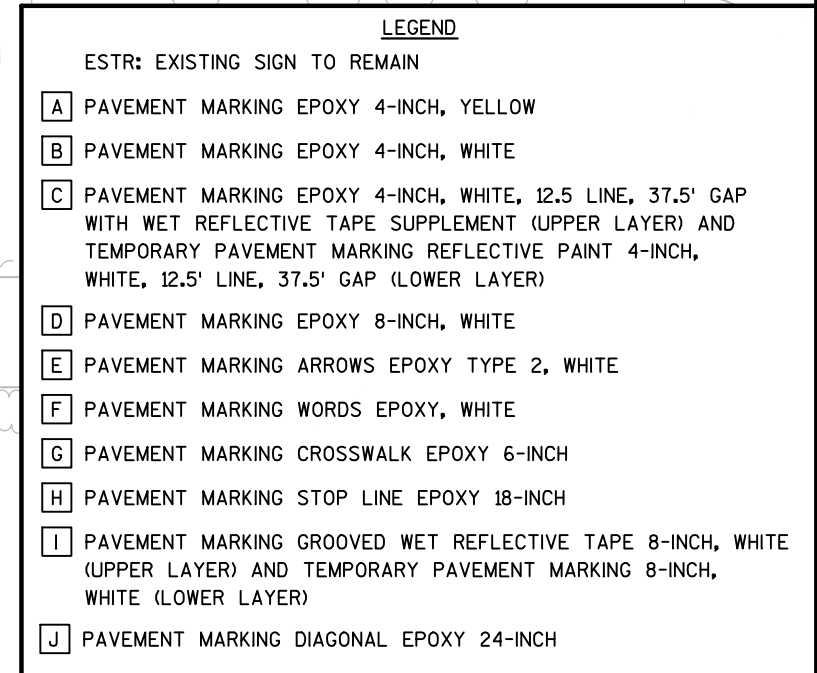
COUNTY: DANE

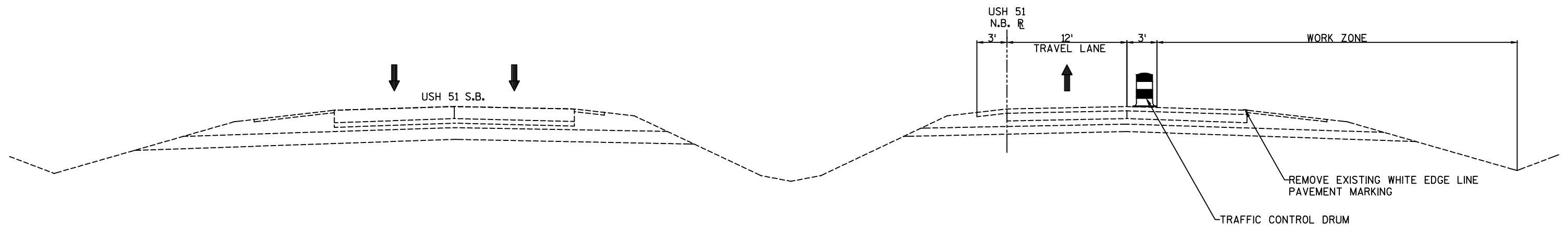
PERMANENT SIGNING AND PAVEMENT MARKINGS

SHEET

E

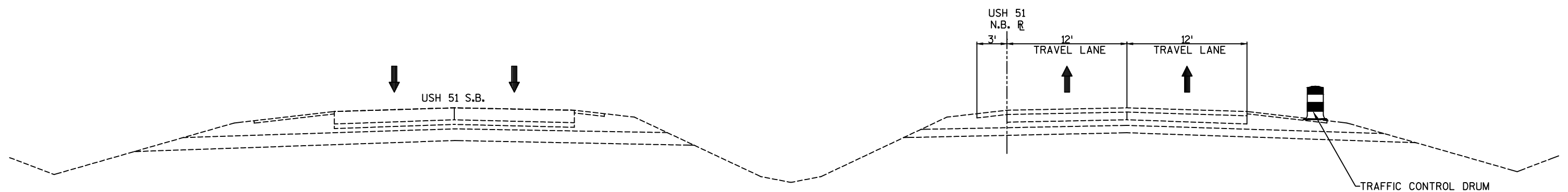




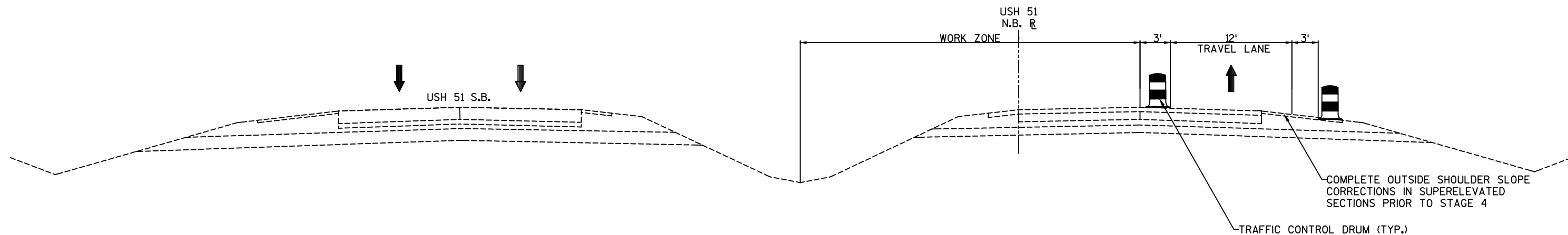


TRAFFIC CONTROL STAGE 1 TYPICAL SECTION - USH 51 N.B. (LANE CLOSURES, NIGHTTIME TRAVEL HOURS ONLY)

NOTE: SEE S.D.D. 15D12-4. SOME TRAFFIC CONTROL SIGNS, SPECIFICALLY, REVERSE CURVE (W01-4), ADVISORY SPEED PLAQUE (W13-1), AND XX MPH SPEED ZONE AHEAD (W3-5a) ARE NOT REQUIRED BECAUSE NO SPEED REDUCTION OCCURS.

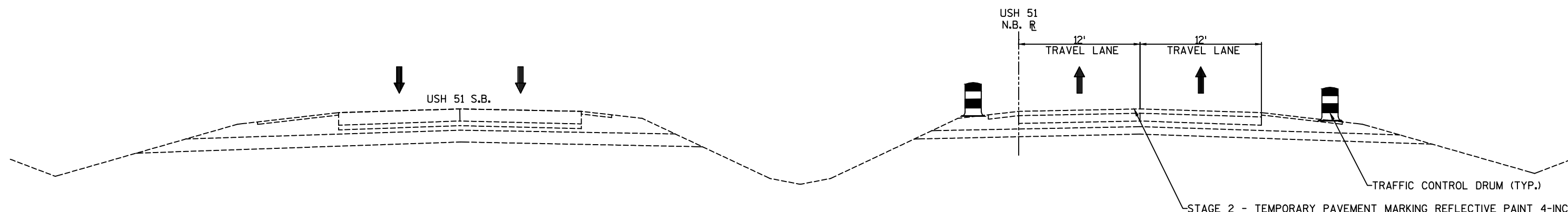


TRAFFIC CONTROL STAGE 1 TYPICAL SECTION - USH 51 N.B. (PEAK TRAVEL HOURS)



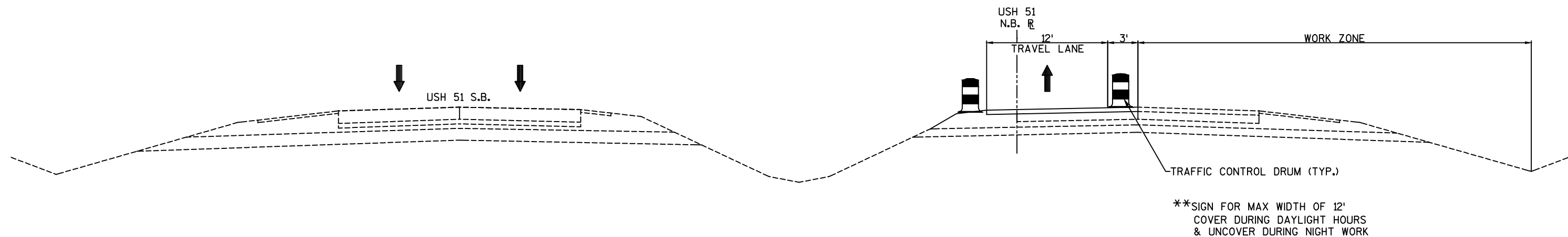
TRAFFIC CONTROL STAGE 2 & 4 TYPICAL SECTIONS - USH 51 N.B. (LANE CLOSURES, NIGHTTIME TRAVEL HOURS ONLY)

NOTE: SEE S.D.D. 15D12-4. SOME TRAFFIC CONTROL SIGNS, SPECIFICALLY, REVERSE CURVE (W01-4), ADVISORY SPEED PLAQUE (W13-1), AND XX MPH SPEED ZONE AHEAD (W3-5a) ARE NOT REQUIRED BECAUSE NO SPEED REDUCTION OCCURS.



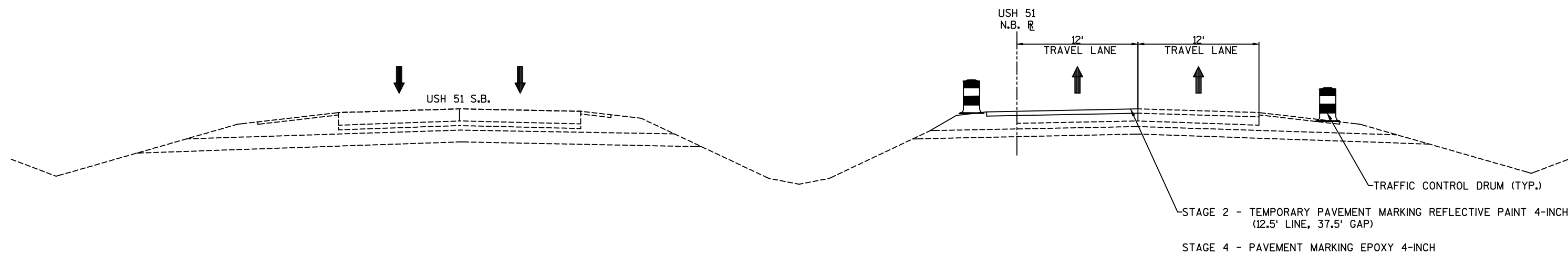
TRAFFIC CONTROL STAGE 2 & 4 TYPICAL SECTIONS - USH 51 N.B. (PEAK TRAVEL HOURS)

APPLY EPOXY LANE LINE MARKINGS THE SAME DAY AS SURFACE PAVING OR PLACE TEMPORARY REFLECTIVE PAINT 4-INCH AT THE LOCATIONS WHERE GROOVED WET REFLECTIVE TAPE WILL BE PLACED



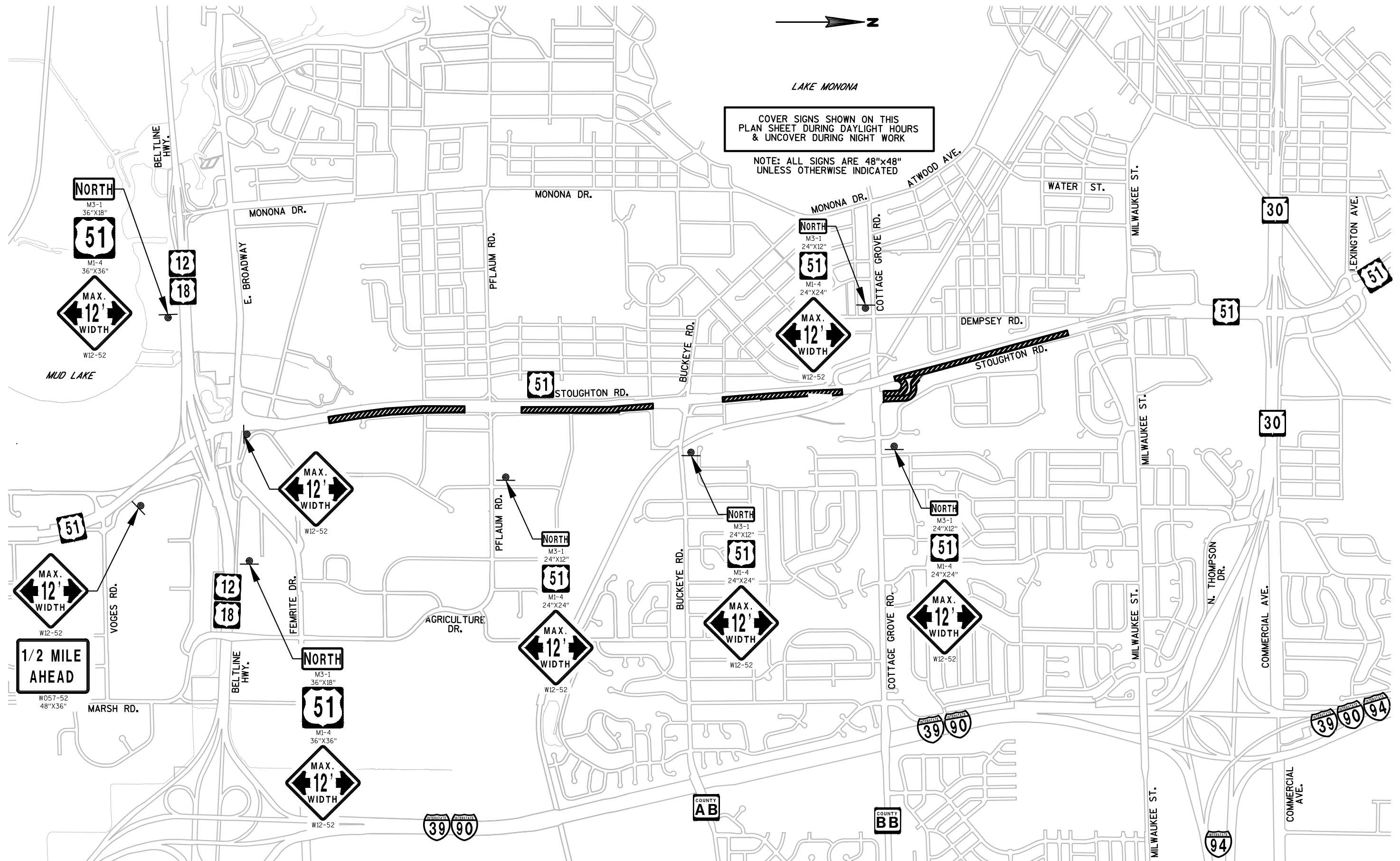
TRAFFIC CONTROL STAGE 3 & 5 TYPICAL SECTIONS - USH 51 N.B. (LANE CLOSURES, NIGHTTIME TRAVEL HOURS ONLY)

NOTE: SEE S.D.D. 15D12-4. SOME TRAFFIC CONTROL SIGNS, SPECIFICALLY, REVERSE CURVE (W01-4), ADVISORY SPEED PLAQUE (W13-1), AND XX MPH SPEED ZONE AHEAD (W3-5a) ARE NOT REQUIRED BECAUSE NO SPEED REDUCTION OCCURS.



TRAFFIC CONTROL STAGE 3 & 5 TYPICAL SECTIONS - USH 51 N.B. (PEAK TRAVEL HOURS)

APPLY EPOXY LANE LINE MARKINGS THE SAME DAY AS SURFACE PAVING OR PLACE TEMPORARY REFLECTIVE PAINT 4-INCH AT THE LOCATIONS WHERE GROOVED WET REFLECTIVE TAPE WILL BE PLACED



PROJECT NO: 5410-01-72

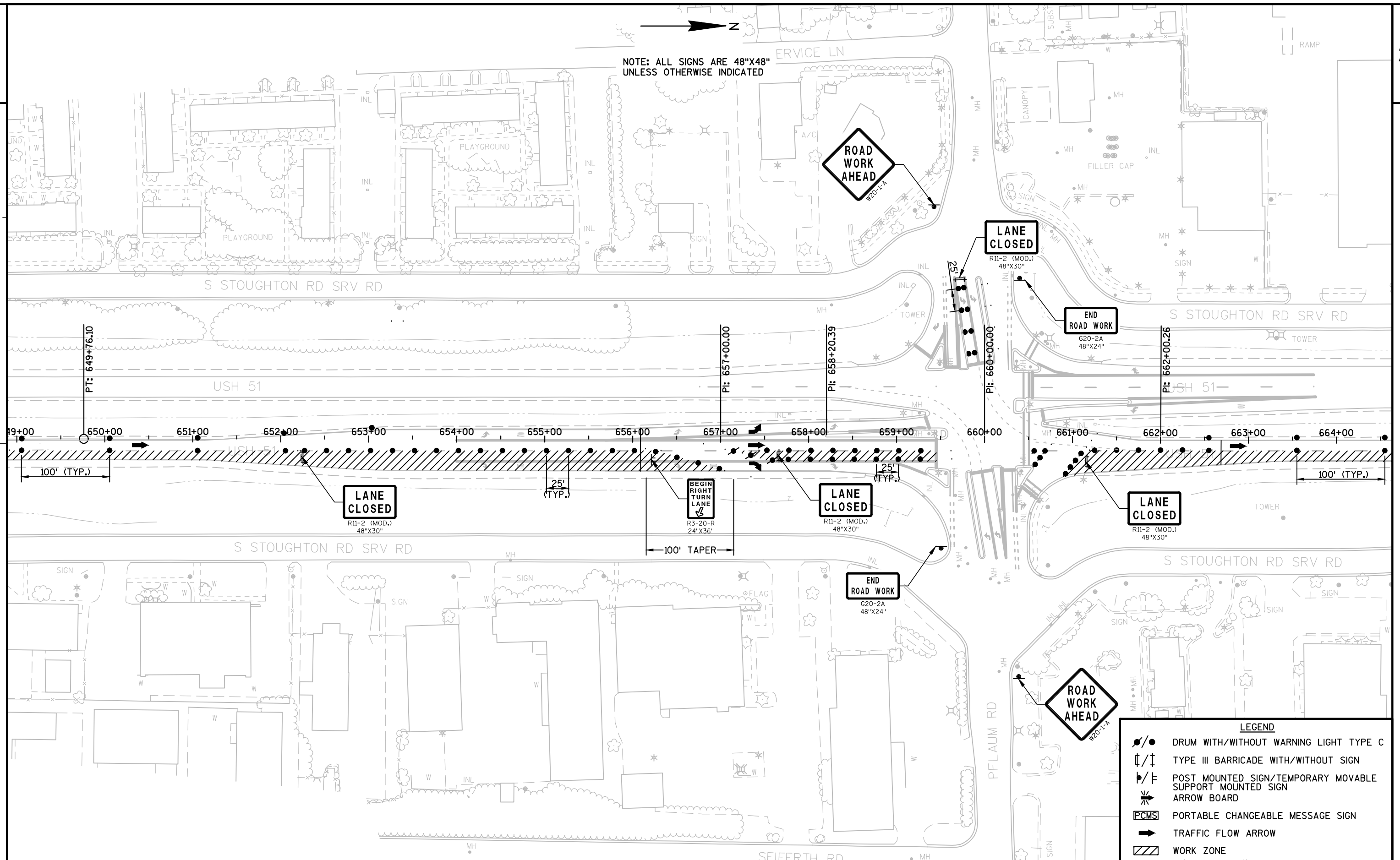
HWY: USH 51

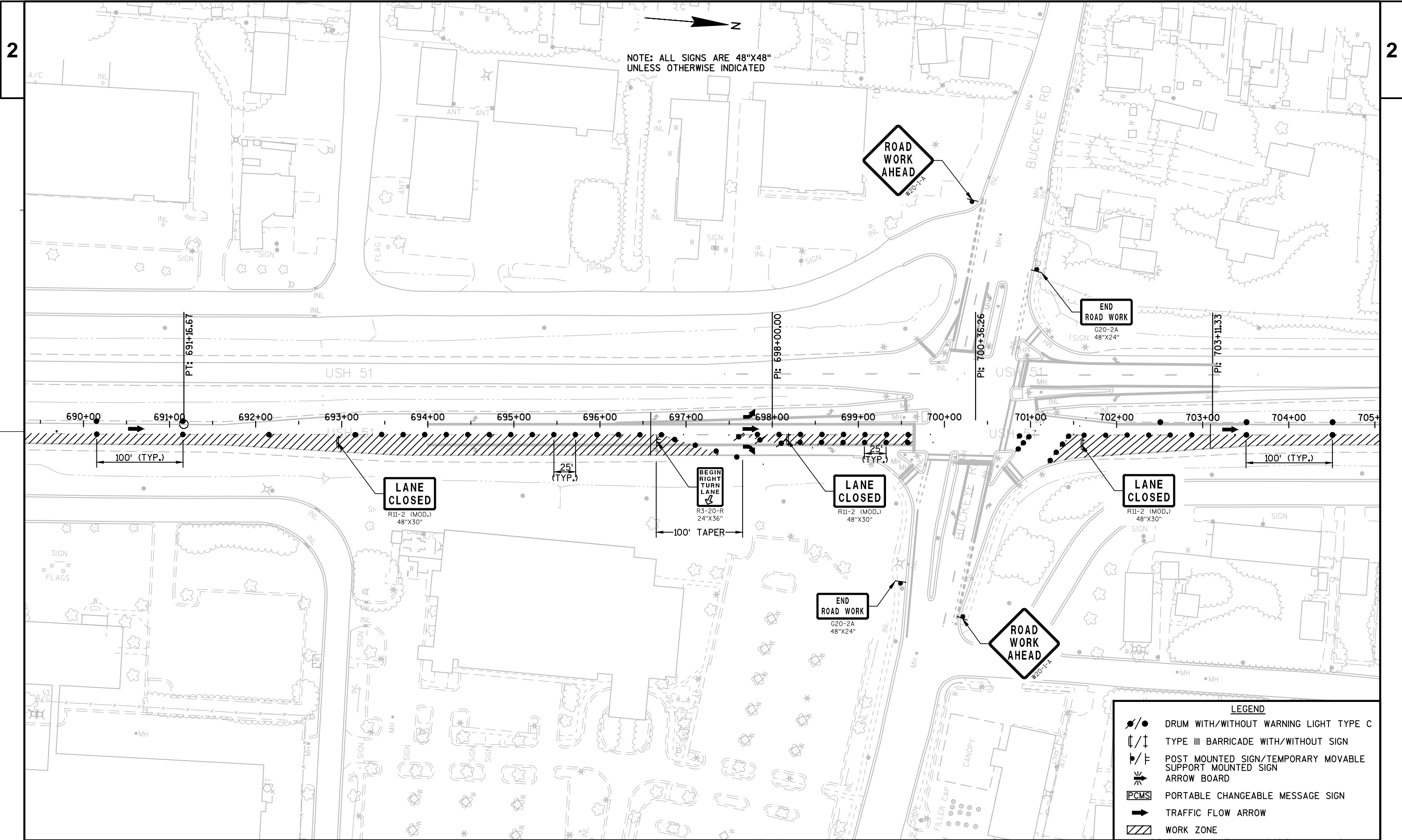
COUNTY: DANE

MAXIMUM WIDTH SIGNING PLAN

SHEET

E





PROJECT NO:5410-01-72

HWY:USH 51

COUNTY:DANE

TRAFFIC CONTROL - STAGES 1, 3 & 5

SHEET

E

FILE NAME : P:\90S\93\00093253\CADD\SHEETPLAN\TRAFFIC CONTROL - STAGE 1.DWG
54100172 - TRAFFIC CONTROL - STAGE 1 - STAGE 1.02

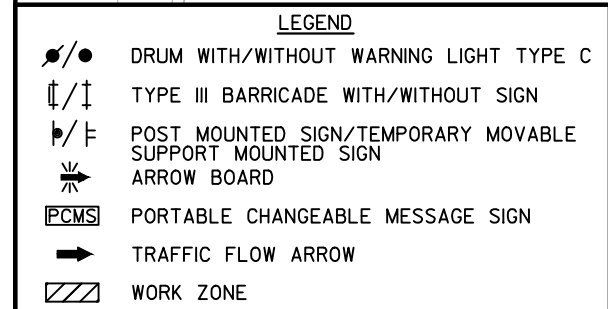
PLOT DATE : 12/22/2014 6:48 AM

PLOT BY : JASON DOLENS

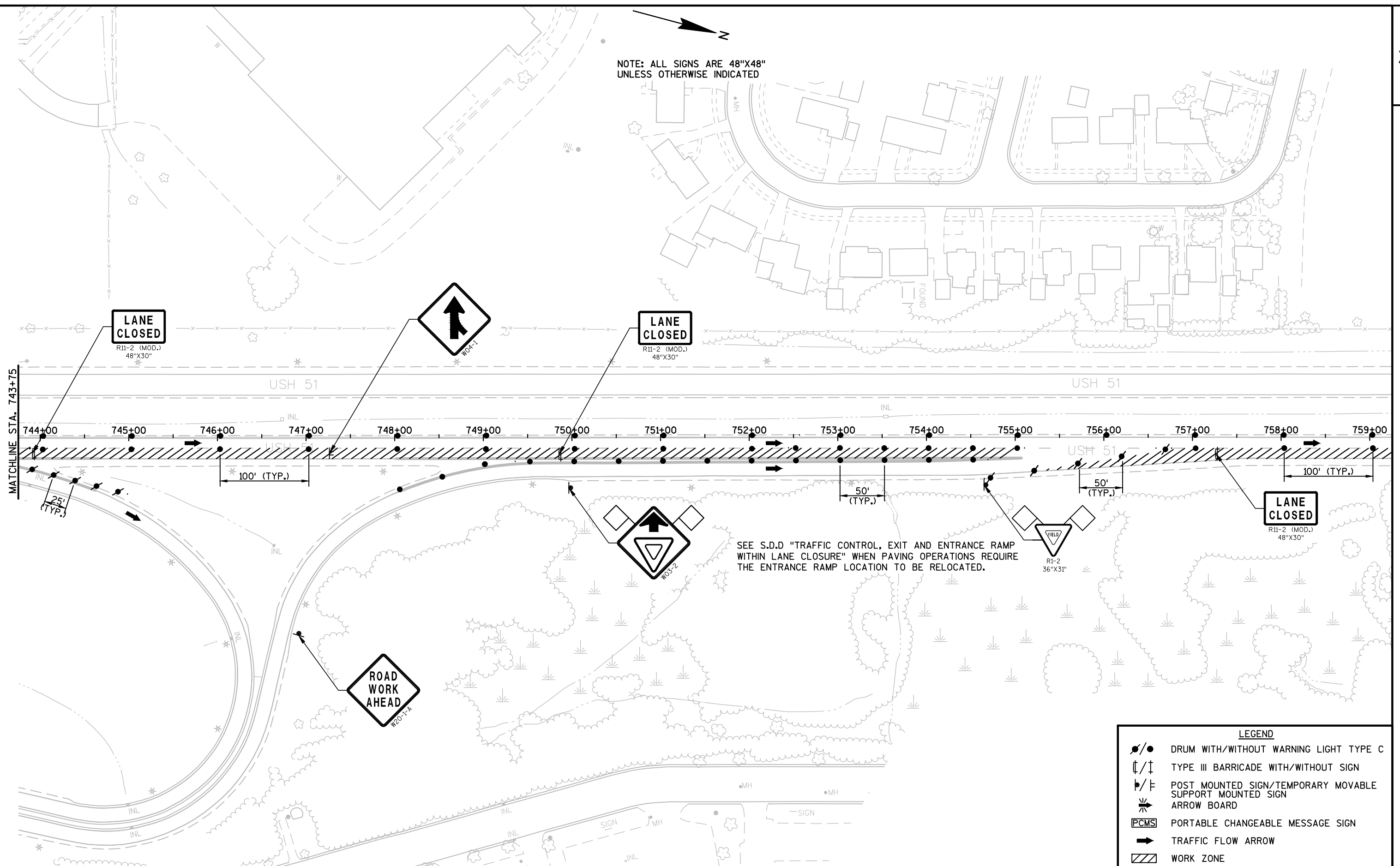
PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDs SHEET 42



NOTE: ALL SIGNS ARE 48"X48"
UNLESS OTHERWISE INDICATED



PROJECT NO: 5410-01-72

HWY: USH 51

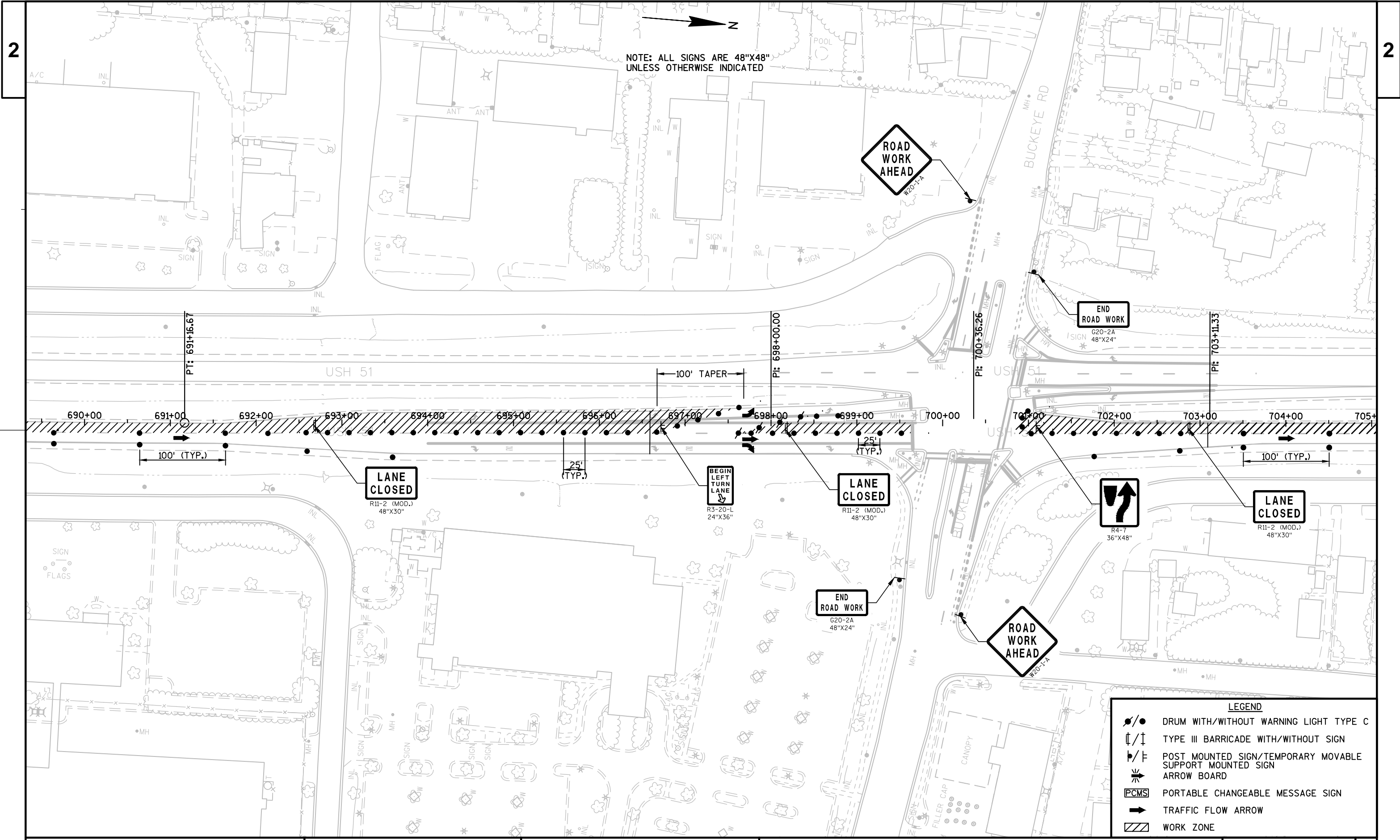
COUNTY: DANE

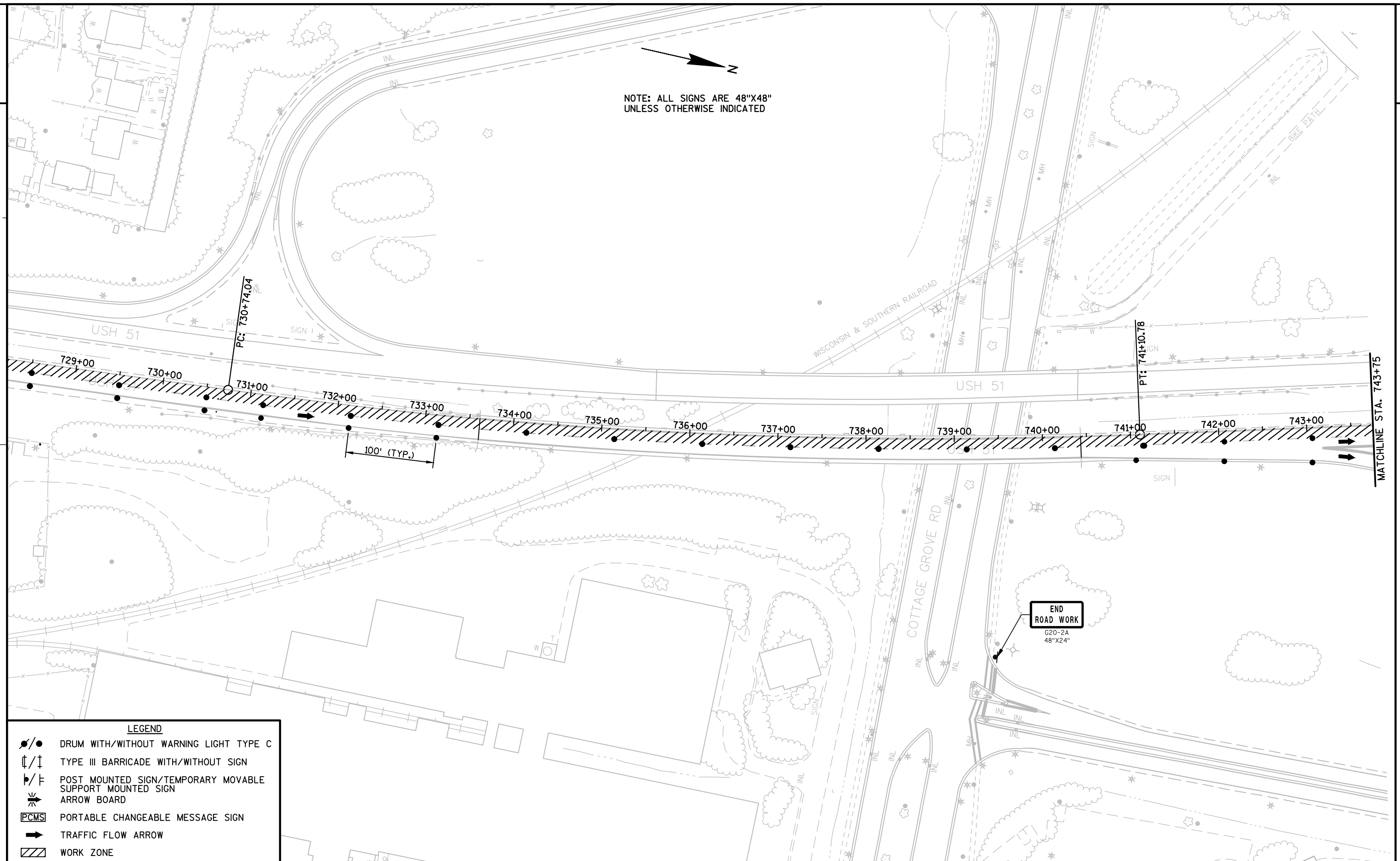
TRAFFIC CONTROL - STAGES 1, 3 & 5

SHEET

E







PROJECT NO:5410-01-72

HWY:USH 51

COUNTY:DANE

TRAFFIC CONTROL - STAGES 2 & 4

SHEET

E

FILE NAME : P:\905\93\00093253\CADD\SHEETSP\PLAN\TRAFFIC CONTROL - STAGE 2.DWG
54100172 - TRAFFIC CONTROL - STAGE 2 - STAGE 2.03

PLOT DATE : 12/22/2014 6:52 AM

PLOT BY : JASON DOLENS

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

NOTE: ALL SIGNS ARE 48"X48"
UNLESS OTHERWISE INDICATED

MATCHLINE STA. 743+75

USH 51

USH 51

744+00 745+00 746+00 747+00 748+00 749+00 750+00 751+00 752+00 753+00 754+00 755+00 756+00 757+00 758+00 759+00

100' (TYP.)

ROAD
WORK
AHEAD

W20-1-A

W03-2

YIELD
R1-2
36"X31"

LANE
CLOSED

R11-2 (MOD.)
48"X30"

LEGEND

- /● DRUM WITH/WITHOUT WARNING LIGHT TYPE C
- ||/|| TYPE III BARRICADE WITH/WITHOUT SIGN
- ||/|| POST MOUNTED SIGN/TEMPORARY MOVABLE SUPPORT MOUNTED SIGN
- ➔ ARROW BOARD
- PCMS PORTABLE CHANGEABLE MESSAGE SIGN
- ➔ TRAFFIC FLOW ARROW
- ▨ WORK ZONE

PROJECT NO: 5410-01-72

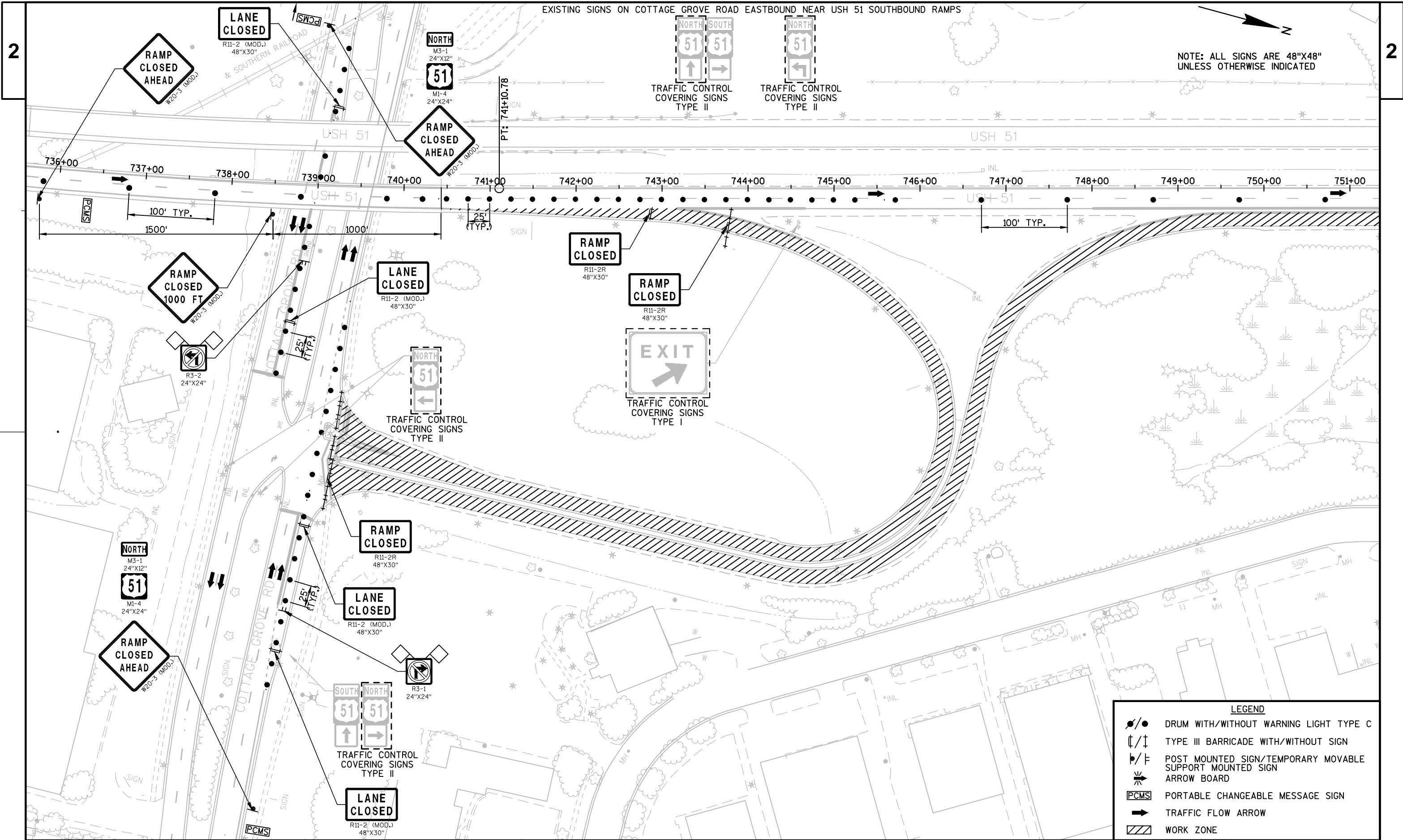
HWY: USH 51

COUNTY: DANE

TRAFFIC CONTROL - STAGES 2 & 4

SHEET

E



DATE 27FEB15		E S T I M A T E O F Q U A N T I T I E S			
LINE					5410-01-72
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	204.0105	Removing Pavement Butt Joints	SY	1,520.000	1,520.000
0020	204.0115	Removing Asphaltic Surface Butt Joints	SY	440.000	440.000
0030	204.0120	Removing Asphaltic Surface Milling	SY	58,700.000	58,700.000
0040	204.0165	Removing Guardrail	LF	615.000	615.000
0050	204.9060.S	Removing (item description) 01. Apron Endwall for Culvert Pipe Reinforced Concrete	EACH	1.000	1.000
0060	204.9105.S	Removing (item description) 01. Crash Cushion	LS	1.000	1.000
0070	208.0100	Borrow *P*	CY	484.000	484.000
0080	213.0100	Finishing Roadway (project) 01. 5410-01-72	EACH	1.000	1.000
0090	305.0110	Base Aggregate Dense 3/4-Inch	TON	3,590.000	3,590.000
0100	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,631.000	1,631.000
0110	305.0500	Shaping Shoulders	STA	283.000	283.000
0120	305.0504.S	Hauling Excess Shoulder Material	CY	149.000	149.000
0130	440.4410.S	Incentive IRI Ride	DOL	9,924.000	9,924.000
0140	455.0105	Asphaltic Material PG58-28	TON	757.000	757.000
0150	455.0605	Tack Coat	GAL	4,443.000	4,443.000
0160	460.1110	HMA Pavement Type E-10	TON	13,770.000	13,770.000
0170	460.2000	Incentive Density HMA Pavement	DOL	8,820.000	8,820.000
0180	465.0110	Asphaltic Surface Patching	TON	400.000	400.000
0190	465.0400	Asphaltic Shoulder Rumble Strips	LF	25,620.000	25,620.000
0200	520.8000	Concrete Collars for Pipe	EACH	1.000	1.000
0210	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	7.000	7.000
0220	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	1.000	1.000
0230	614.0800	Crash Cushions Permanent	EACH	1.000	1.000
0240	614.2300	MGS Guardrail 3	LF	125.000	125.000
0250	614.2330	MGS Guardrail 3 K	LF	750.000	750.000
0260	614.2500	MGS Thrie Beam Transition	LF	78.800	78.800
0270	614.2610	MGS Guardrail Terminal EAT	EACH	2.000	2.000
0280	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5410-01-72	EACH	1.000	1.000
0290	619.1000	Mobilization	EACH	1.000	1.000
0300	624.0100	Water	MGAL	61.000	61.000
0310	625.0500	Salvaged Topsoil	SY	6,040.000	6,040.000
0320	628.1504	Silt Fence	LF	2,425.000	2,425.000
0330	628.1520	Silt Fence Maintenance	LF	2,425.000	2,425.000
0340	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0350	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0360	628.2002	Erosion Mat Class I Type A	SY	6,040.000	6,040.000
0370	628.7005	Inlet Protection Type A	EACH	8.000	8.000
0380	628.7010	Inlet Protection Type B	EACH	2.000	2.000
0390	628.7020	Inlet Protection Type D	EACH	10.000	10.000
0400	628.7555	Culvert Pipe Checks	EACH	12.000	12.000
0410	629.0210	Fertilizer Type B	CWT	10.330	10.330
0420	630.0130	Seeding Mixture No. 30	LB	294.000	294.000
0430	630.0200	Seeding Temporary	LB	161.000	161.000
0440	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	4.000	4.000
0450	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	22.000	22.000
0460	637.2210	Signs Type II Reflective H	SF	171.500	171.500
0470	637.2230	Signs Type II Reflective F	SF	105.000	105.000
0480	638.2602	Removing Signs Type II	EACH	19.000	19.000

DATE 27FEB15			E S T I M A T E O F Q U A N T I T I E S			
LINE					5410-01-72	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY	
0490	638.3000	Removing Small Sign Supports	EACH	21.000	21.000	
0500	642.5201	Field Office Type C	EACH	1.000	1.000	
0510	643.0100	Traffic Control (project) 01. 5410-01-72	EACH	1.000	1.000	
0520	643.0300	Traffic Control Drums	DAY	15,990.000	15,990.000	
0530	643.0420	Traffic Control Barricades Type III	DAY	967.000	967.000	
0540	643.0705	Traffic Control Warning Lights Type A	DAY	1,918.000	1,918.000	
0550	643.0715	Traffic Control Warning Lights Type C	DAY	952.000	952.000	
0560	643.0800	Traffic Control Arrow Boards	DAY	68.000	68.000	
0570	643.0900	Traffic Control Signs	DAY	2,371.000	2,371.000	
0580	643.0910	Traffic Control Covering Signs Type I	EACH	1.000	1.000	
0590	643.0920	Traffic Control Covering Signs Type II	EACH	5.000	5.000	
0600	643.1050	Traffic Control Signs PCMS	DAY	70.000	70.000	
0610	646.0106	Pavement Marking Epoxy 4-Inch	LF	32,875.000	32,875.000	
0620	646.0126	Pavement Marking Epoxy 8-Inch	LF	1,380.000	1,380.000	
0630	646.0600	Removing Pavement Markings	LF	12,204.000	12,204.000	
0640	646.0881.S	Pavement Marking Grooved Wet Reflective Tape 4-Inch	LF	300.000	300.000	
0650	646.0883.S	Pavement Marking Grooved Wet Reflective Tape 8-Inch	LF	1,820.000	1,820.000	
0660	647.0166	Pavement Marking Arrows Epoxy Type 2	EACH	4.000	4.000	
0670	647.0356	Pavement Marking Words Epoxy	EACH	4.000	4.000	
0680	647.0566	Pavement Marking Stop Line Epoxy 18-Inch	LF	45.000	45.000	
0690	647.0746	Pavement Marking Diagonal Epoxy 24-Inch	LF	115.000	115.000	
0700	647.0766	Pavement Marking Crosswalk Epoxy 6-Inch	LF	215.000	215.000	
0710	649.0200	Temporary Pavement Marking Reflective Paint 4-Inch	LF	1,380.000	1,380.000	
0720	649.0701	Temporary Pavement Marking 8-Inch	LF	1,820.000	1,820.000	
0730	650.6000	Construction Staking Pipe Culverts	EACH	1.000	1.000	
0740	650.8000	Construction Staking Resurfacing Reference	LF	15,512.000	15,512.000	
0750	650.9910	Construction Staking Supplemental Control (project) 01. 5410-01-72	LS	1.000	1.000	
0760	650.9920	Construction Staking Slope Stakes	LF	15,512.000	15,512.000	
0770	SPV.0090	Special 01. Removing HMA Pavement Notched Wedge Longitudinal Joint Milling	LF	12,799.000	12,799.000	

3

3

BUTT JOINTS				
			(204.0105)	(204.0115)
			REMOVING PAVEMENT	REMOVING ASPHALTIC
			BUTT JOINTS	SURFACE BUTT JOINTS
CATEGORY	BUTT JOINT STATION	LOCATION	SY	SY
0010	625+50	BEGIN PROJECT	140	50
	656+09	@ PFLAUM ROAD	220	50
	662+69	@ PFLAUM ROAD	130	50
	696+59	@ BUCKEYE ROAD	230	50
	703+09	@ BUCKEYE ROAD	130	50
	733+46	B-13-008 - SOUTH APPROACH	150	50
	740+44	B-13-008 - NORTH APPROACH	150	60
	1+01'F'	NB EXIT RAMP	90	-
	1+01'G'	NB ENTRANCE RAMP	110	-
	776+15	END PROJECT	170	80
PROJECT TOTALS			1,520	440

REMOVING ASPHALTIC SURFACE MILLING						
			(204.0120)		(SPV.0090.01)	
			REMOVING		REMOVING HMA	
			ASPHALTIC		PAVEMENT	
			SURFACE		NOTCHED WEDGE	
			MILLING		LONGITUDINAL JOINT	
CATEGORY	STATION	TO	STATION	SY	NOTES	LF
0010	625+90		629+28	1,440		338
	629+28		651+22	7,450	1	2,194
	651+22		653+56	1,230		234
	653+56		655+69	1,410		213
	663+09		691+52	10,660	2	2,843
	691+52		693+38	980		186
	693+38		696+19	1,850		281
	703+49		724+95	8,410		2,146
	724+95		733+46	3,340		851
	740+62		743+19	1,090		257
	743+19		748+52	2,090		533
	748+52		749+78	770		126
	749+78		753+67	2,140		389
	753+67		757+63	1,930		396
	757+63		773+00	6,020		1,537
	773+00		775+75	1,750		275
	1+01'F'		13+21'F'	3,120		-
	1+01'G'		12+81'G'	3,020		-
PROJECT TOTALS				58,700		12,799

- NOTES:
- 1

PAVEMENT CROSS SLOPE CORRECTION, APPROX STA. 629+73 TO 634+00 AND 645+00 TO 651+09 - FULL PAVEMENT WIDTH WILL NOT BE MILLED
- 2

PAVEMENT CROSS SLOPE CORRECTION, APPROX STA. 680+50 TO 691+25 - FULL OUTSIDE PAVED SHOULDER WIDTH WILL NOT BE REMOVED

REMOVING GUARDRAIL					
				(204.0165)	
CATEGORY	STATION	TO	STATION	LOCATION	LF
0010	731+17		733+62	NB BRIDGE APPROACH (B-13-008) - LT	245
	729+98		733+62	NB BRIDGE APPROACH (B-13-008) - RT	370
PROJECT TOTAL					615

BASE AGGREGATE DENSE								
				(305.0110)	(305.0120)	(305.0500)	(305.0504.S)	(624.0100)
				BASE AGGREGATE DENSE	BASE AGGREGATE DENSE	SHAPING	HAULING EXCESS	WATER
				3/4-INCH	1 1/4 -INCH	SHOULDERS	SHOULDER MATERIAL	
CATEGORY	STATION	TO	STATION	TON	TON	STA	CY	MGAL
0010	625+50		656+09	810	406	64	8.6	12
	662+69		696+59	760	339	70	69.7	11
	703+09		733+46	720	726	62	43.3	11
	740+44		744+16	60	0	4	-	1
	744+16		748+53	120	0	8	-	2
	748+53		757+63	220	8	17	-	4
	757+63		773+15	380	52	30	17.8	6
	773+15		776+15	30	0	5	-	1
	1+50'F'		12+00'F'	140	0	11	-	2
	1+75'G'		12+88'G'	150	0	12	-	3
UNDISTRIBUTED				200	100	-	10	8
PROJECT TOTALS				3,590	1,631	283	149	61

ASPHALTIC SURFACE PATCHING		
		(465.0110)
CATEGORY	DESCRIPTION	TON
0010	UNDISTRIBUTED	400
PROJECT TOTAL		400

PROJECT 5410-01-72 EARTHWORK

Division	From/To Station	Location	Common Excavation (1)	Available Material (5)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	Borrow	Comment:
			Cut (2)			Factor 1.25				
1	625+50 to 656+09	Broadway to Pflaum Rd	0	0	184	230	-230		230	
	662+69 to 696+59	Pflaum Rd to Buckeye Rd	0	0	33	41	-41		41	
	703+09 to 733+46	Buckeye Rd to Cottage Grove Rd	0	0	150	187	-187		187	
	740+41 to 776+15	Cottage Grove Rd to Milwaukee St	0	0	21	26	-26		26	
PROJECT TOTALS			0	0	387	484	-484	0	484	

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
13) Expanded Fill Factor = 1.25
14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

3

HMA PAVEMENT						
CATEGORY	STATION	TO STATION	(455.0105) ASPHALTIC MATERIAL PG58-28	(455.0605) TACK COAT	(460.1110) HMA PAVEMENT TYPE E-10	(465.0400) ASPHALTIC SHOULDER RUMBLE STRIPS
			TON	GAL	TON	LF
0010	625+50	629+28	19.8	113	360	756
	629+28	651+22	114.4	691	2,080	4,388
	651+22	653+56	14.9	86	270	468
	653+56	656+09	19.8	117	360	506
	662+69	691+52	146.9	883	2,670	5,766
	691+52	693+86	14.9	86	270	468
	693+86	696+59	21.5	126	390	546
	703+09	724+95	104.0	600	1,890	4,372
	724+95	733+46	40.2	251	730	1,702
	740+41	743+19	13.2	78	240	278
	743+19	748+52	25.3	147	460	970
	748+52	749+78	8.8	54	160	126
	749+78	753+67	30.3	149	550	778
	753+67	757+63	22.6	130	410	792
	757+63	773+00	73.2	422	1,330	3,074
	773+00	776+15	19.8	116	360	630
	0+99'F'	13+24'F'	34.7	201	630	-
	0+99'G'	12+88'G'	33.6	193	610	-
PROJECT TOTALS			757	4,443	13,770	25,620

3

CULVERT PIPE						
CATEGORY	STATION	LOCATION	(204.9060.S.01) REMOVING APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE	(520.8000) CONCRETE COLLARS FOR FOR PIPE	(522.0124) CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH	(522.1024) APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH
			EACH	EACH	LF	EACH
0010	645+79	RT	1	1	7	1
PROJECT TOTALS			1	1	7	1

CRASH CUSHIONS PERMANENT								
CATEGORY	LOCATION	(614.0800)	BACK	OBJECT	CRASH	TRAFFIC DIRECTION	TRAFFIC LOCATION	CRASH CUSHION SHIELDS
		EACH	WIDTH	MARKING PATTERN	TEST LEVEL			
0010	MEDIAN BARRIER WALL	1	2	OM-3C	TL-3	UNIDIRECTIONAL	R	PERMANENT CONCRETE BARRIER IN MEDIAN
PROJECT TOTAL		1						

MGS GUARDRAIL							
CATEGORY	STATION	TO STATION	LOCATION	(614.2300) MGS GUARDRAIL 3	(614.2330) MGS GUARDRAIL 3 K	(614.2500) MGS THRIE BEAM TRANSITION	(614.2610) MGS GUARDRAIL TERMINAL EAT
				LF	LF	LF	EACH
0010	731+45	733+60	LT	125.0	-	39.4	1
	725+22	733+60	RT	-	750.0	39.4	1
PROJECT TOTALS				125.0	750.0	78.8	2

* ATTACH TO EXISTING SLOPED END BRIDGE PARAPET PER SDD 14B45-3F

REMOVING CRASH CUSHION					
CATEGORY	STATION	TO	STATION	LOCATION	(204.9105.S.01) LS
0010	773+00		774+00	LT	1
PROJECT TOTAL					1

3

FINISHING ITEMS								
CATEGORY	STATION	TO STATION	LOCATION	(625.0500)	(628.2002)	(629.0210)	(630.0130)	(630.0200)
				SALVAGED TOPSOIL	EROSION MAT CLASS I TYPE A	FERTILIZER TYPE B	SEEDING MIXTURE NO. 30	SEEDING TEMPORARY
				SY	SY	CWT	LB	LB
0010	625+50	656+09	LT&RT SHOULDER	-	-	1.54	44	-
	639+79	641+72	LT	220	220	0.14	4	6
	639+79	644+49	RT	640	640	0.40	11	17
	643+45	645+71	LT	200	200	0.12	4	5
	645+55	646+00	RT	80	80	0.05	1	2
	646+00	647+00	LT	90	90	0.05	1	2
	651+38	656+08	LT	690	690	0.43	12	18
	662+69	696+59	LT&RT SHOULDER	-	-	1.71	49	-
	681+50	682+44	RT	70	70	0.04	1	2
	682+71	684+67	RT	130	130	0.08	2	3
	686+79	692+50	RT	440	440	0.28	8	12
	691+17	693+50	LT	230	230	0.14	4	6
	703+09	733+46	LT&RT SHOULDER	-	-	1.53	44	-
	711+00	715+50	LT	410	410	0.25	7	11
	716+50	719+00	LT	230	230	0.14	4	6
	719+77	728+00	LT	660	660	0.42	12	18
	723+14	726+00	RT	480	480	0.30	9	13
	726+07	727+28	RT	110	110	0.06	2	3
	730+62	731+93	LT	100	100	0.06	2	3
	740+44	776+15	LT&RT SHOULDER	-	-	1.80	51	-
	745+23	745+94	RT	50	50	0.03	1	1
	760+00	760+84	RT	80	80	0.05	1	2
	761+16	763+50	RT	260	260	0.16	5	7
	769+93	771+32	RT	100	100	0.06	2	3
	771+25	771+54	RT	70	70	0.04	1	2
	6+39'G'	7+11'G'	RT	80	80	0.05	1	2
	9+68'F'	10+64'F'	RT	80	80	0.05	1	2
	10+84'F'	11+29'F'	RT	40	40	0.02	1	1
		UNDISTRIBUTED		500	500	0.32	9	14
PROJECT TOTALS				6,040	6,040	10.33	294	161

SILT FENCE					
CATEGORY	STATION	TO STATION	LOCATION	(628.1504)	(628.1520)
				LF	MAINTENANCE LF
0010	722+75	733+75	RT	1,100	1,100
	749+25	759+00	RT	975	975
		UNDISTRIBUTED		350	350
PROJECT TOTALS				2,425	2,425

MOBILIZATIONS EROSION CONTROL			
CATEGORY	DESCRIPTION	(628.1905)	(628.1910)
		EACH	EROSION CONTROL EMERGENCY EACH
0010	PROJECT 5410-01-72	4	2
PROJECT TOTALS		4	2

INLET PROTECTION					
CATEGORY	STATION	LOCATION	(628.7005)	(628.7010)	(628.7020)
			TYPE A EACH	TYPE B EACH	TYPE D EACH
0010	639+79	LT	1	-	-
	641+79	LT	1	-	-
	645+78	LT	1	-	-
	716+75	LT	1	-	-
	719+70	LT	1	-	-
	733+49	LT	1	-	-
	12+52'F'	LT	-	-	1
	9+52'F'	LT	-	-	1
	7+01'F'	LT	-	-	1
	1+49'F'	RT	-	-	1
	0+62'F'	LT	-	-	1
	0+62'G'	RT	-	-	1
	1+49'G'	LT	-	-	1
	7+15'G'	LT	-	-	1
	UNDISTRIBUTED		2	2	2
PROJECT TOTALS			8	2	10

CULVERT PIPE CHECKS				
CATEGORY	STATION	LOCATION	PIPE SIZE (IN.)	(628.7555)
				EACH
0010	692+78	LT	24	3
	720+00	RT	24	3
		UNDISTRIBUTED		6
PROJECT TOTAL				12

3

PERMANENT SIGNING											
CATEGORY	SIGN NO.	STATION	LOCATION	SIGN CODE	SIGN MESSAGE	WIDTH (IN.)	HT. (IN.)	(637.2210)	(637.2230)	(634.0616)	(634.0618)
								SIGNS TYPE II REFLECTIVE H SF	SIGNS TYPE II REFLECTIVE F SF	POSTS WOOD 4x6-INCH x 16 FT EACH	POSTS WOOD 4x6-INCH x 18 FT EACH
0010	1.1	610+75	USH 51 RT	J4-1	"NORTH" DIRECTION MARKER/USH 51 ROUTE MARKER	36	54	13.50	-	-	1
	1.2	612+00	USH 51 LT	W9-1L	LEFT LANE ENDS	36	36	-	9.00	1	-
	1.3	617+00	USH 51 LT	W4-2L	LEFT LANE ENDS SYMBOL	48	48	-	16.00	-	2
	1.4	621+25	USH 51 LT	R3-4B	NO U-TURN SYM + MESSAGE	36	48	12.00	-	-	1
	1.5	621+25	USH 51 LT	R3-4B	NO U-TURN SYM + MESSAGE	36	48	12.00	-	-	-
	3.1	645+00	USH 51 LT	W3-3	TRAFFIC SIGNALS AHEAD	48	48	-	16.00	-	2
	3.2	645+00	USH 51 RT	W3-3	TRAFFIC SIGNALS AHEAD	48	48	-	16.00	-	2
	3.3	648+80	USH 51 RT	D1-61	PFLAUM RD W/ ARROWS	78	30	16.25	-	1 (LT)	1 (RT)
	4.1	662+00	USH 51 RT	J4-1	"NORTH" DIRECTION MARKER/USH 51 ROUTE MARKER	36	54	13.50	-	-	1
	6.1	686+70	USH 51 LT	J1-1	JCT/CTH ROUTE MARKER	36	57	14.25	-	-	1
	6.2	686+70	USH 51 LT	J1-1	JCT/CTH ROUTE MARKER	36	57	14.25	-	-	1
	6.3	689+15	USH 51 LT	W3-3	TRAFFIC SIGNALS AHEAD	48	48	-	16.00	-	2
	6.4	689+15	USH 51 RT	W3-3	TRAFFIC SIGNALS AHEAD	48	48	-	16.00	-	2
	6.5	691+50	USH 51 RT	D1-61	BUCKEYE RD W/ ARROWS	84	30	17.50	-	1 (LT)	1 (RT)
	7.1	703+65	USH 51 RT	J4-1	"NORTH" DIRECTION MARKER/USH 51 ROUTE MARKER	36	54	13.50	-	-	1
	10.1	5+75'F'	EXIT RAMP LT	R5-1A	WRONG WAY	42	30	8.75	-	1	-
	10.2	747+15	USH 51 RT	W4-1	MERGE LEFT SYMBOL	48	48	-	16.00	-	2
	11.1	761+50	USH 51 RT	R2-1	SPEED LIMIT 55	36	48	12.00	-	-	1
	11.2	773+05	USH 51 LT	R3-4B	NO U-TURN SYM + MESSAGE	36	48	12.00	-	-	1
	11.3	773+05	USH 51 LT	R3-4B	NO U-TURN SYM + MESSAGE	36	48	12.00	-	-	-
PROJECT TOTALS								171.50	105.00	4	22

REMOVING SIGNS TYPE II						
CATEGORY	SIGN NO.	STATION	LOCATION	SIGN MESSAGE	(638.2602)	(638.3000)
					REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH
0010	R1.1	610+75	USH 51 RT	"NORTH" DIRECTION MARKER/USH 51 ROUTE MARKER	1	1
	R1.2	615+25	USH 51 LT	LEFT LANE ENDS	1	1
	R1.3	617+80	USH 51 LT	LEFT LANE ENDS SYMBOL	1	1
	R1.4	621+25	USH 51 LT	NO U-TURN SYM + MESSAGE	1*	1
	R3.1	645+00	USH 51 LT	TRAFFIC SIGNALS AHEAD	1	1
	R3.2	645+00	USH 51 RT	TRAFFIC SIGNALS AHEAD	1	1
	R3.3	648+80	USH 51 LT	PFLAUM RD	1	2
	R4.1	662+00	USH 51 RT	"NORTH" DIRECTION MARKER/USH 51 ROUTE MARKER	1	1
	R6.1	686+68	USH 51 LT	JCT/CTH ROUTE MARKER	1	1
	R6.2	686+68	USH 51 RT	JCT/CTH ROUTE MARKER	1	1
	R6.3	689+15	USH 51 LT	TRAFFIC SIGNALS AHEAD	1	1
	R6.4	689+15	USH 51 RT	TRAFFIC SIGNALS AHEAD	1	1
	R6.5	693+00	USH 51 LT	BUCKEYE RD	1	2
	R7.1	703+63	USH 51 RT	"NORTH" DIRECTION MARKER/USH 51 ROUTE MARKER	1	1
	R10.1	5+78'F'	EXIT RAMP LT	WRONG WAY	1	-
	R10.2	747+15	USH 51 RT	MERGE LEFT SYMBOL	1	2
	R10.3	10+63'F'	EXIT RAMP RT	WRONG WAY	1	1
	R11.1	761+50	USH 51 RT	SPEED LIMIT 55	1	1
	R11.2	773+07	USH 51 LT	NO U-TURN SYM + MESSAGE	1*	1
PROJECT TOTALS					19	21

* 2 SIGNS AT 1 LOCATION

TRAFFIC CONTROL SIGNS PCMS			
CATEGORY	LOCATION	STAGE	(643.1050)
			DAYS
0010	USH 51 NB - SOUTH PROJECT LIMITS	BEFORE PROJECT START	14
	COTTAGE GROVE ROAD, EASTBOUND	BEFORE RAMP CLOSURE	7
	COTTAGE GROVE ROAD, WESTBOUND	BEFORE RAMP CLOSURE	7
	USH 51 NB - SOUTH OF COTTAGE GROVE ROAD RAMPS	BEFORE RAMP CLOSURE	7
	UNDISTRIBUTED		35
PROJECT TOTAL			70

CONSTRUCTION STAKING						
CATEGORY	STATION	TO STATION	(650.6000)	(650.8000)	(650.9910)	(650.9920)
			PIPE CULVERTS EACH	RESURFACING REFERENCE LF	SUPPLEMENTAL CONTROL LS	SLOPE STAKES LF
0010	625+50	656+09	-	3,059	-	3,059
	662+69	696+59	-	3,390	-	3,390
	703+09	733+64	-	3,055	-	3,055
	645+79	645+79	1	-	-	-
	740+41	776+15	-	3,574	-	3,574
	0+86'F'	13+23'F'	-	1,237	-	1,237
	0+86'G'	12+83'G'	-	1,197	-	1,197
PROJECT 5410-01-72			-	-	1	-
PROJECT TOTALS			1	15,512	1	15,512

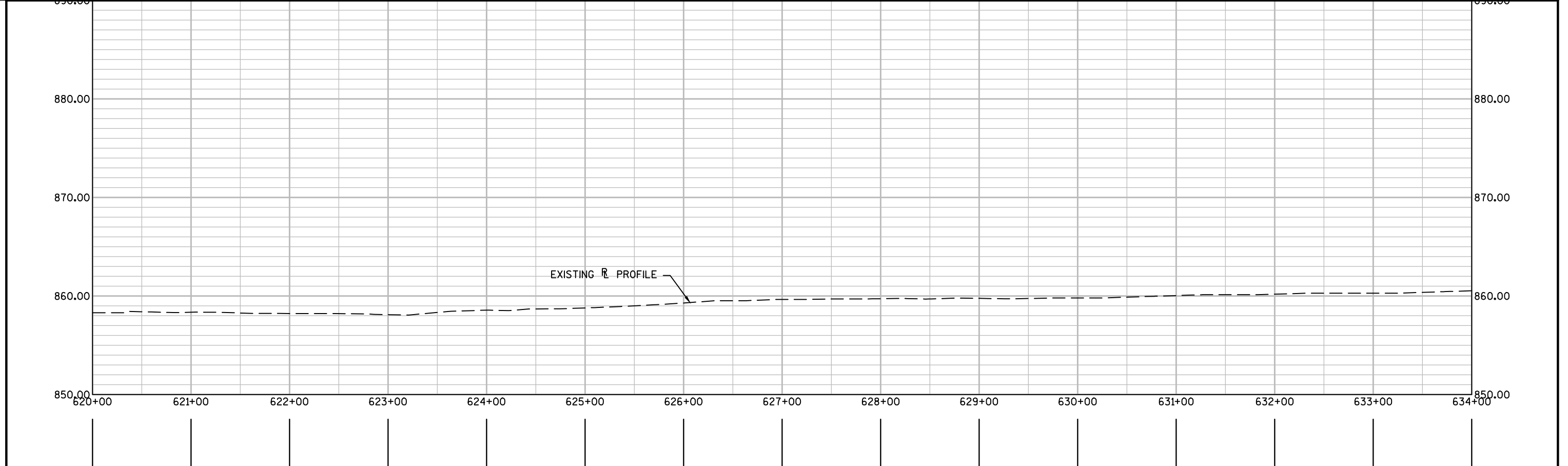
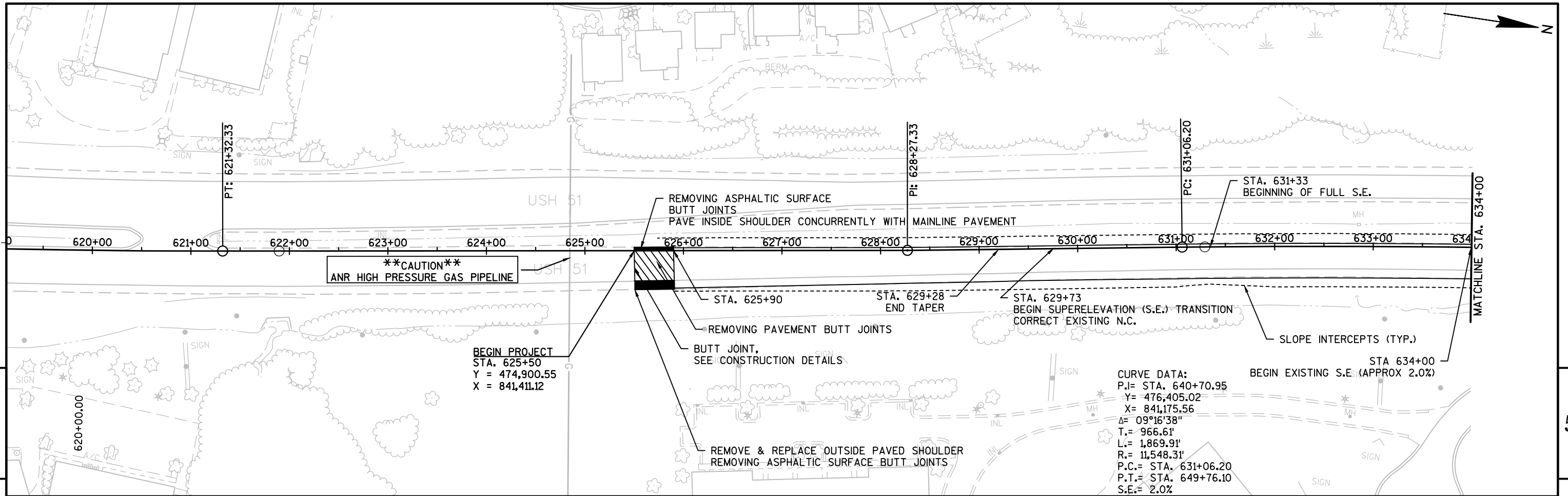
TRAFFIC CONTROL COVERING SIGNS				
CATEGORY	LOCATION	STAGE	(643.0910)	(643.0920)
			TYPE I EACH	TYPE II EACH
0010	COTTAGE GROVE ROAD, EASTBOUND, WEST OF USH 51 SOUTHBOUND RAMPS	RAMP CLOSURE	-	1
	COTTAGE GROVE ROAD, EASTBOUND, EAST OF USH 51 SOUTHBOUND RAMPS	RAMP CLOSURE	-	1
	COTTAGE GROVE ROAD, EASTBOUND, AT USH 51 NORTHBOUND RAMPS, IN TERRACE	RAMP CLOSURE	-	1
	COTTAGE GROVE ROAD, EASTBOUND, AT USH 51 NORTHBOUND RAMPS, IN MEDIAN	RAMP CLOSURE	-	1
	COTTAGE GROVE ROAD, WESTBOUND, EAST OF USH 51 NORTHBOUND RAMPDS	RAMP CLOSURE	-	1
	USH 51 NORTHBOUND EXIT RAMP, STA. 744+55 RT	RAMP CLOSURE	1	-
PROJECT TOTALS			1	5

3

3

PAVEMENT MARKING																
				(646.0106) PAVEMENT MARKING EPOXY 4-INCH (YELLOW) (WHITE)		(646.0126) EPOXY 8-INCH (WHITE)	(646.0600) REMOVING PAVEMENT MARKINGS	(646.0881.S) GROOVED WET REFLECTIVE TAPE 4-INCH (WHITE)	(646.0883.S) GROOVED WET REFLECTIVE TAPE 8-INCH (WHITE)	(647.0166) ARROWS EPOXY TYPE 2 (WHITE)	(647.0356) WORDS EPOXY (WHITE)	(647.0566) STOP LINE EPOXY 18-INCH	(647.0746) PAVEMENT MARKING DIAGONAL EPOXY 24-INCH	(647.0766) CROSSWALK EPOXY 6-INCH	(649.0200) TEMPORARY PAVEMENT MARKING REFLECTIVE PAINT 4-INCH (WHITE)	(649.0701) TEMPORARY PAVEMENT MARKING 8-INCH (WHITE)
CATEGORY	STATION	TO	STATION	LF	LF	LF	LF	LF	LF	EACH	EACH	LF	LF	LF	LF	LF
0010	625+50		653+10	2,760	3,450	-	2,760	60	-	-	-	-	-	-	290	-
	653+10		656+09	300	380	580	299	10	-	2	2	-	-	-	40	-
	662+69		693+70	3,110	3,880	-	3,101	70	-	-	-	-	-	-	320	-
	693+70		696+59	290	370	680	289	10	-	2	2	-	-	-	40	-
	703+09		733+46	3,040	3,800	-	3,037	70	-	-	-	-	-	-	320	-
	740+44		776+15	3,580	3,375	-	2,718	80	1,510	-	-	-	115	-	370	1,510
	1+01'F'		13+21'F'	1,190	1,110	120	-	-	270	-	-	45	-	115	-	270
	1+01'G'		12+81'G'	1,130	1,110	-	-	-	40	-	-	-	-	100	-	40
PROJECT TOTALS				15,400	17,475	1,380	12,204	300	1,820	4	4	45	115	215	1,380	1,820
			32,875													

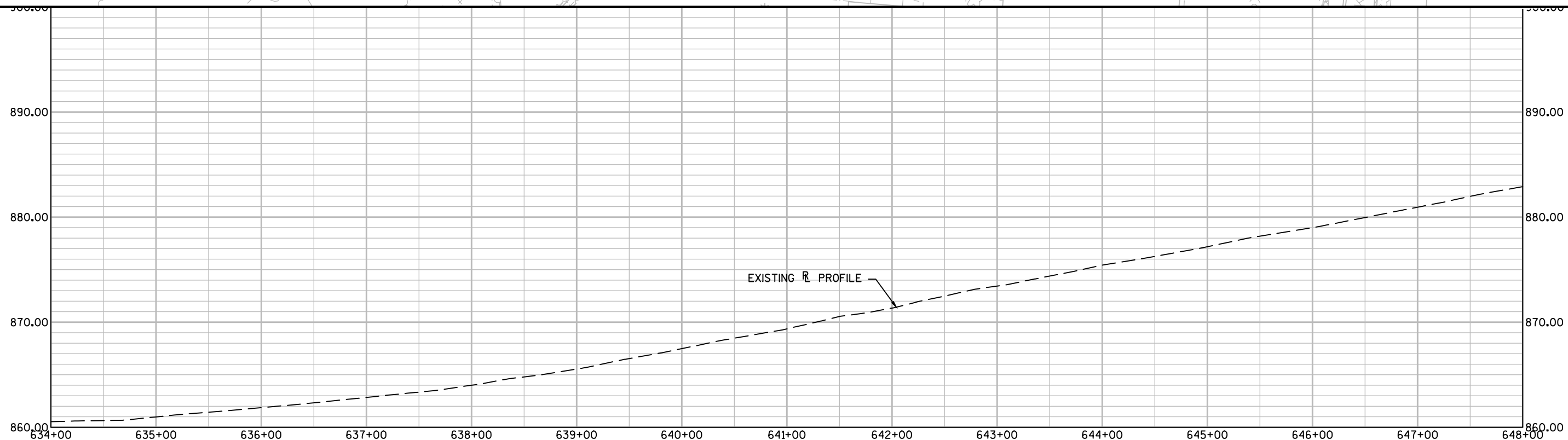
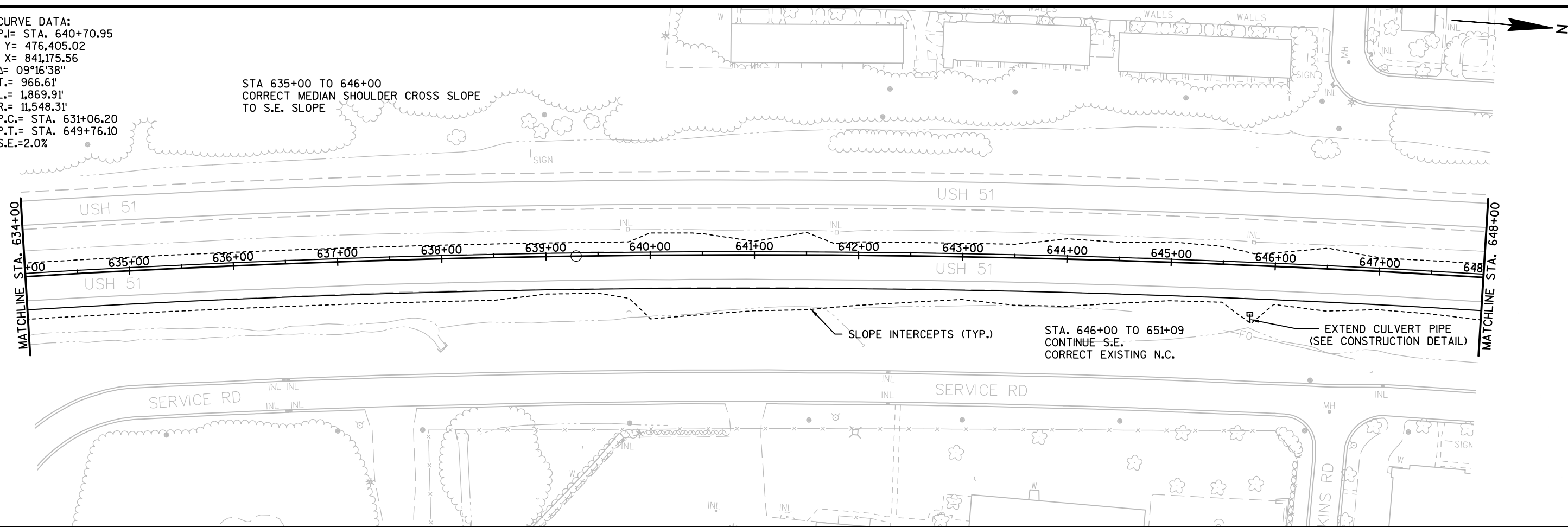
TRAFFIC CONTROL																
CATEGORY	LOCATION	STAGE	(643.0300)		(643.0420)		(643.0705)		(643.0715)		(643.0800)		(643.0900)			
		DURATION	NUMBER OF	DRUMS	NUMBER OF	BARRICADES	NUMBER OF	WARNING LIGHTS TYPE A	NUMBER OF	WARNING LIGHTS TYPE C	NUMBER OF	ARROW BOARDS	NUMBER OF	SIGNS		
		DAYS	DRUMS	DAYS	DAYS	DAYS	DAYS	DAYS	DAYS	DAYS	DAYS	DAYS	DAYS	DAYS		
0010	STAGE 1															
		LANE CLOSURE	5	40	200	1	5	2	10	15	75	2	10	9	45	
	BEGIN PROJECT	TO PFLAUM ROAD	5	90	450	6	30	12	60	4	20	0	0	7	35	
		PFLAUM ROAD	5	10	50	1	5	2	10	0	0	0	0	5	25	
	PFLAUM ROAD	TO BUCKEYE ROAD	5	90	450	6	30	12	60	4	20	0	0	7	35	
		BUCKEYE ROAD	5	0	0	0	0	0	0	0	0	0	0	4	20	
	BUCKEYE ROAD	TO COTTAGE GROVE ROAD	5	60	300	5	25	10	50	0	0	0	0	3	15	
		COTTAGE GROVE ROAD N.B. EXIT RAMP	5	10	50	1	5	2	10	0	0	0	0	2	10	
	COTTAGE GROVE ROAD	TO END PROJECT	5	40	200	6	30	12	60	13	65	0	0	5	25	
		COTTAGE GROVE ROAD N.B. ENTRANCE RAMP	5	30	150	1	5	2	10	0	0	0	0	4	20	
		UNDISTRIBUTED	5	20	100	1	5	2	10	0	0	0	0	10	50	
	STAGE 1 SUBTOTALS			1,950		140		280		180		10		280		
	0010	STAGES 2 & 4														
			LANE CLOSURE	16	40	640	1	16	2	32	15	240	2	32	9	144
		BEGIN PROJECT	TO PFLAUM ROAD	16	110	1,760	6	96	12	192	4	64	0	0	10	160
			PFLAUM ROAD	16	10	160	1	16	2	32	0	0	0	0	5	80
		PFLAUM ROAD	TO BUCKEYE ROAD	16	120	1,920	5	80	10	160	0	0	0	0	10	160
		BUCKEYE ROAD	16	0	0	0	0	0	0	0	0	0	0	4	64	
BUCKEYE ROAD		TO COTTAGE GROVE ROAD	16	70	1,120	4	64	8	128	0	0	0	0	5	80	
		COTTAGE GROVE ROAD N.B. EXIT RAMP	16	0	0	1	16	2	32	0	0	0	0	1	16	
COTTAGE GROVE ROAD		TO END PROJECT	16	70	1,120	6	96	12	192	0	0	0	0	8	128	
		COTTAGE GROVE ROAD N.B. ENTRANCE RAMP	16	0	0	1	16	2	32	0	0	0	0	4	64	
		UNDISTRIBUTED	16	20	320	1	16	2	32	0	0	0	0	10	160	
STAGE 2 SUBTOTALS			7,040		416		832		304		32		1,056			
0010		STAGES 3 & 5														
			LANE CLOSURE	13	40	520	1	13	2	26	15	195	2	26	9	117
		BEGIN PROJECT	TO PFLAUM ROAD	13	120	1,560	6	78	12	156	4	52	0	0	7	91
			PFLAUM ROAD	13	10	130	1	13	2	26	0	0	0	0	5	65
		PFLAUM ROAD	TO BUCKEYE ROAD	13	120	1,560	6	78	12	156	4	52	0	0	7	91
		BUCKEYE ROAD	13	20	260	0	0	0	0	0	0	0	0	4	52	
	BUCKEYE ROAD	TO COTTAGE GROVE ROAD	13	100	1,300	5	65	10	130	0	0	0	0	3	39	
		COTTAGE GROVE ROAD N.B. EXIT RAMP	13	10	130	1	13	2	26	0	0	0	0	2	26	
	COTTAGE GROVE ROAD	TO END PROJECT	13	70	910	6	78	12	156	13	169	0	0	5	65	
		COTTAGE GROVE ROAD N.B. ENTRANCE RAMP	13	30	390	1	13	2	26	0	0	0	0	4	52	
		MAX WIDTH SIGNS	13	0	0	0	0	0	0	0	0	0	0	21	273	
	COTTAGE GROVE ROAD N.B. RAMP CLOSURE		2	55	110	17	34	26	52	0	0	0	0	17	34	
		UNDISTRIBUTED	13	10	130	2	26	4	52	0	0	0	0	10	130	
	STAGES 3 & 5 SUBTOTALS			7,000		411		806		468		26		1,035		
	PROJECT TOTALS			15,990		967		1,918		952		68		2,371		



PROJECT NO: 5410-01-72	HWY: USH 51	COUNTY: DANE	PLAN AND PROFILE: USH 51 NORTHBOUND	SHEET	E
------------------------	-------------	--------------	-------------------------------------	-------	---

CURVE DATA:
P.I.= STA. 640+70.95
Y= 476,405.02
X= 841,175.56
Δ= 09°16'38"
T.= 966.61'
L.= 1,869.91'
R.= 11,548.31'
P.C.= STA. 631+06.20
P.T.= STA. 649+76.10
S.E.=2.0%

STA 635+00 TO 646+00
CORRECT MEDIAN SHOULDER CROSS SLOPE
TO S.E. SLOPE



PROJECT NO: 5410-01-72

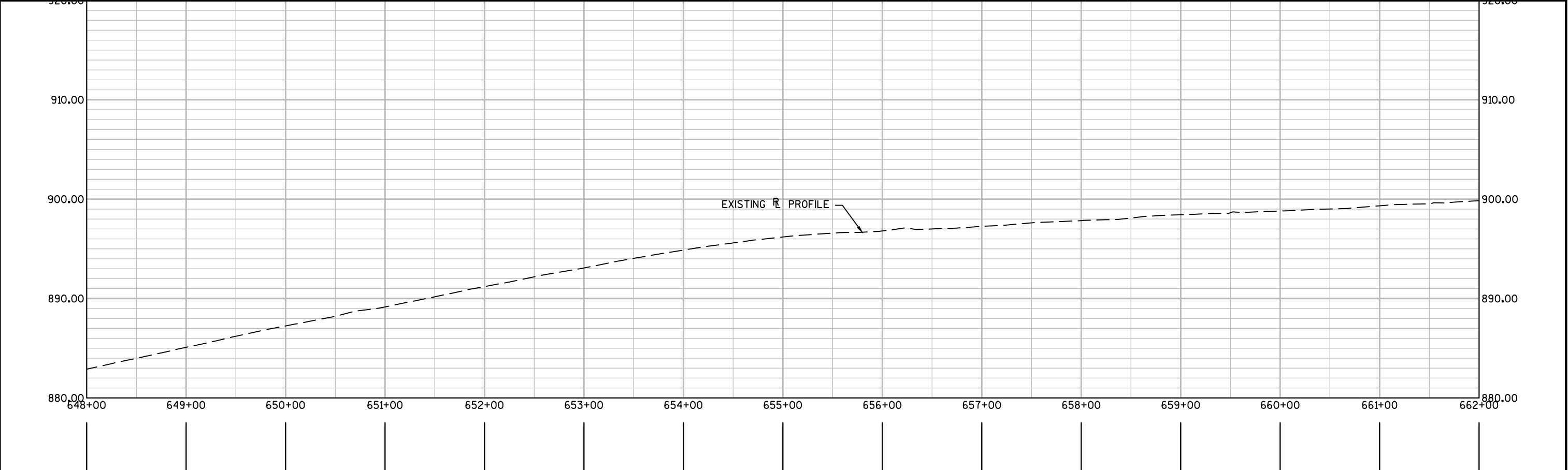
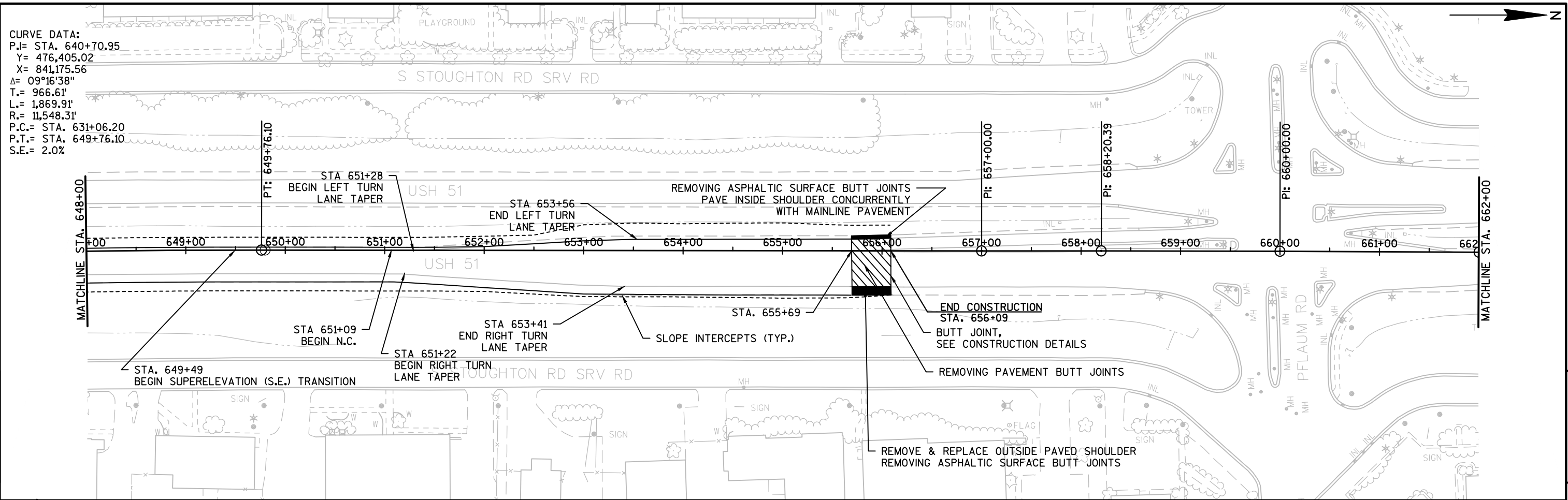
HWY: USH 51

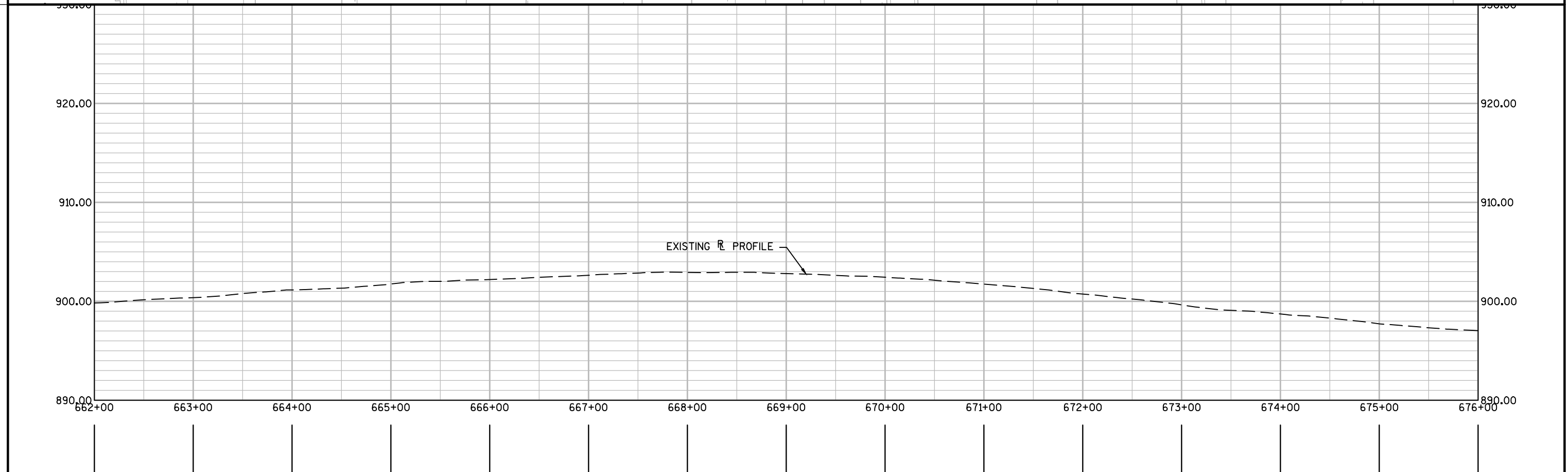
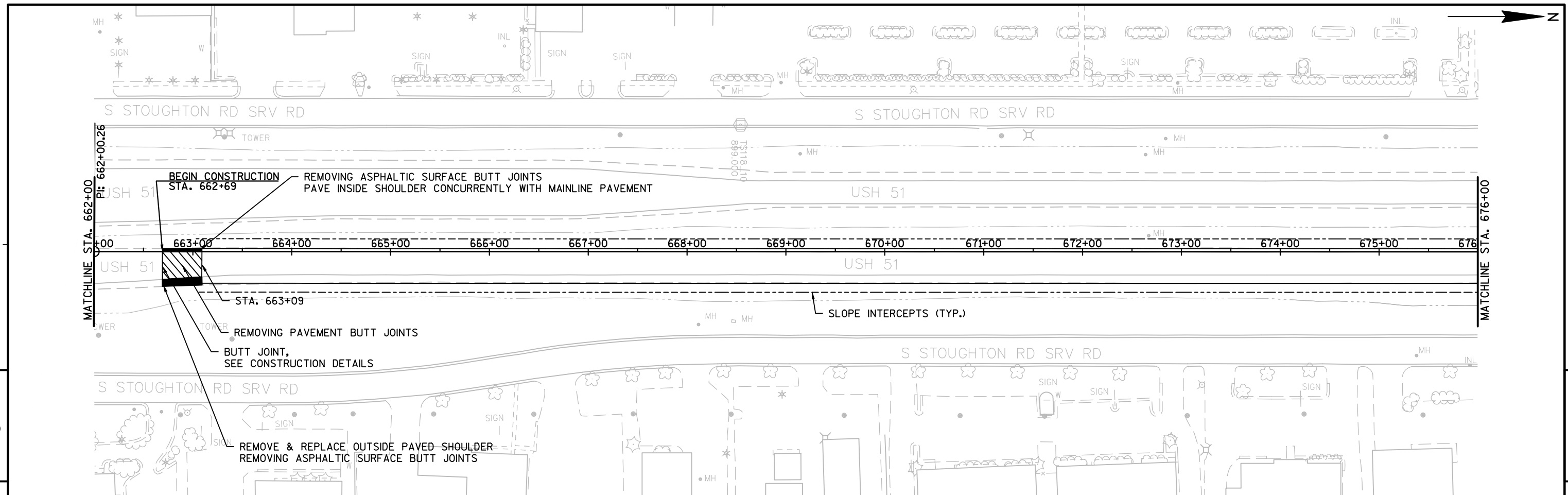
COUNTY: DANE

PLAN AND PROFILE: USH 51 NORTHBOUND

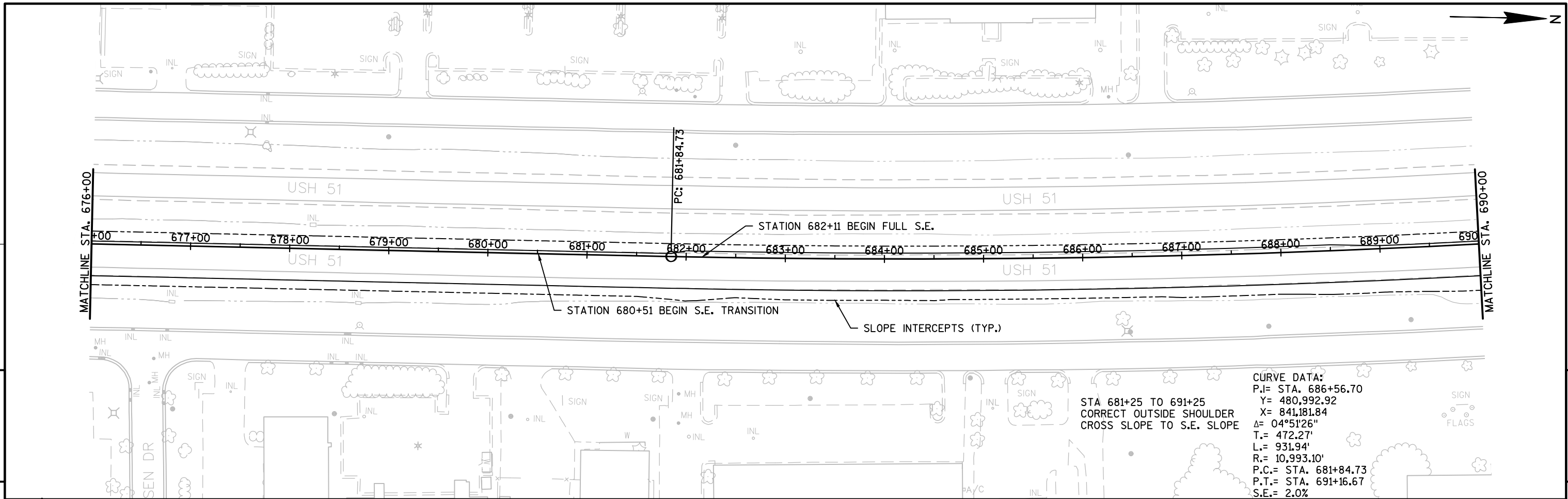
SHEET

E



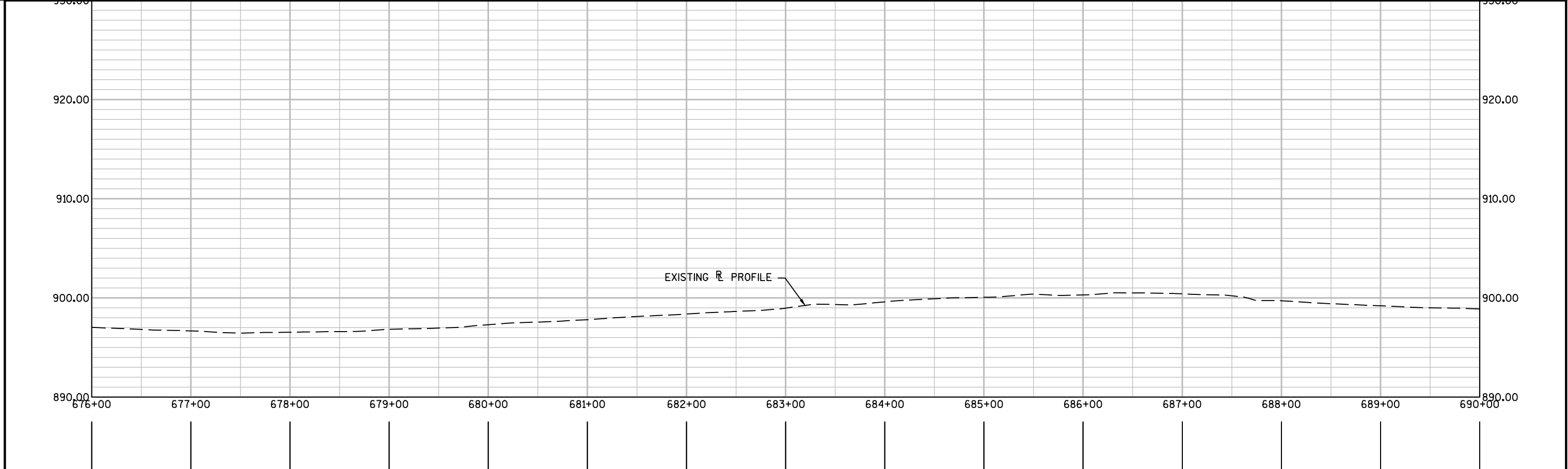


PROJECT NO: 5410-01-72	HWY: USH 51	COUNTY: DANE	PLAN AND PROFILE: USH 51 NORTHBOUND	SHEET	E
------------------------	-------------	--------------	-------------------------------------	-------	---

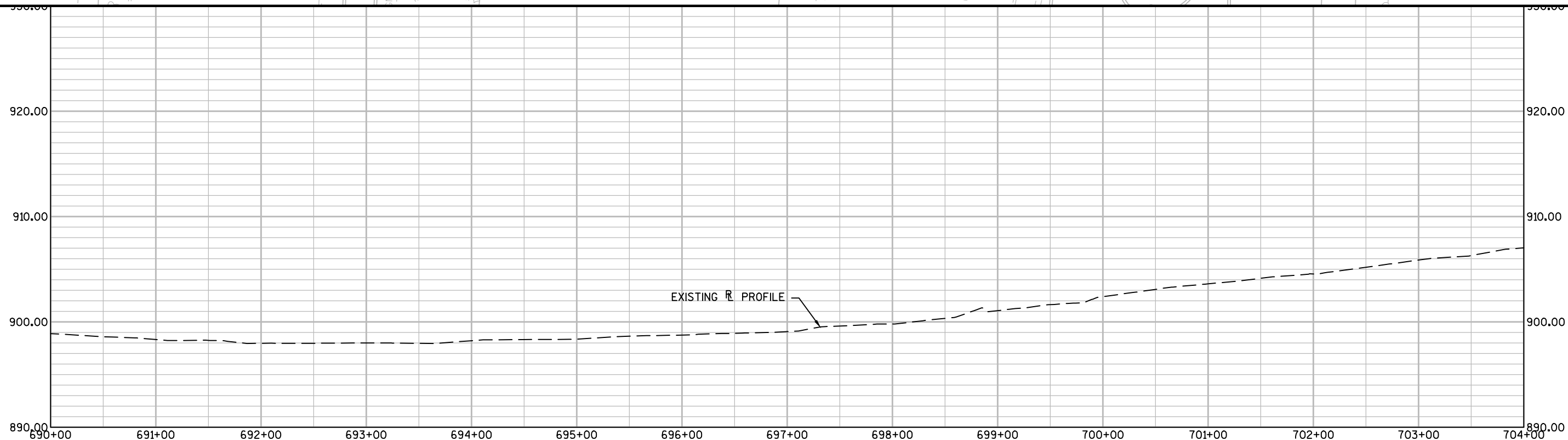
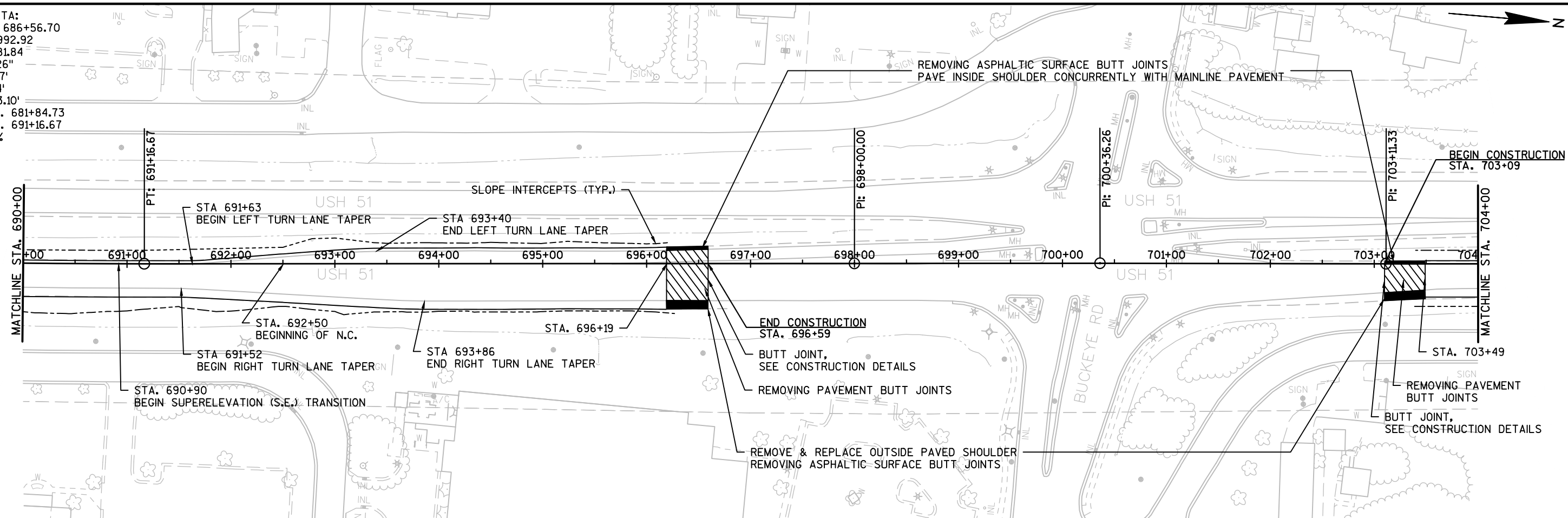


CURVE DATA:
P.I.= STA. 686+56.70
Y= 480,992.92
X= 841,181.84
 Δ = 04°51'26"
T.= 472.27'
L.= 931.94'
R.= 10,993.10'
P.C.= STA. 681+84.73
P.T.= STA. 691+16.67
S.E.= 2.0%

STA 681+25 TO 691+25
CORRECT OUTSIDE SHOULDER
CROSS SLOPE TO S.E. SLOPE



CURVE DATA:
P.I.= STA. 686+56.70
Y= 480,992.92
X= 841,181.84
Δ= 04°51'26"
T.= 472.27'
L.= 931.94'
R.= 10,993.10'
P.C.= STA. 681+84.73
P.T.= STA. 691+16.67
S.E.= 2.0%



PROJECT NO: 5410-01-72

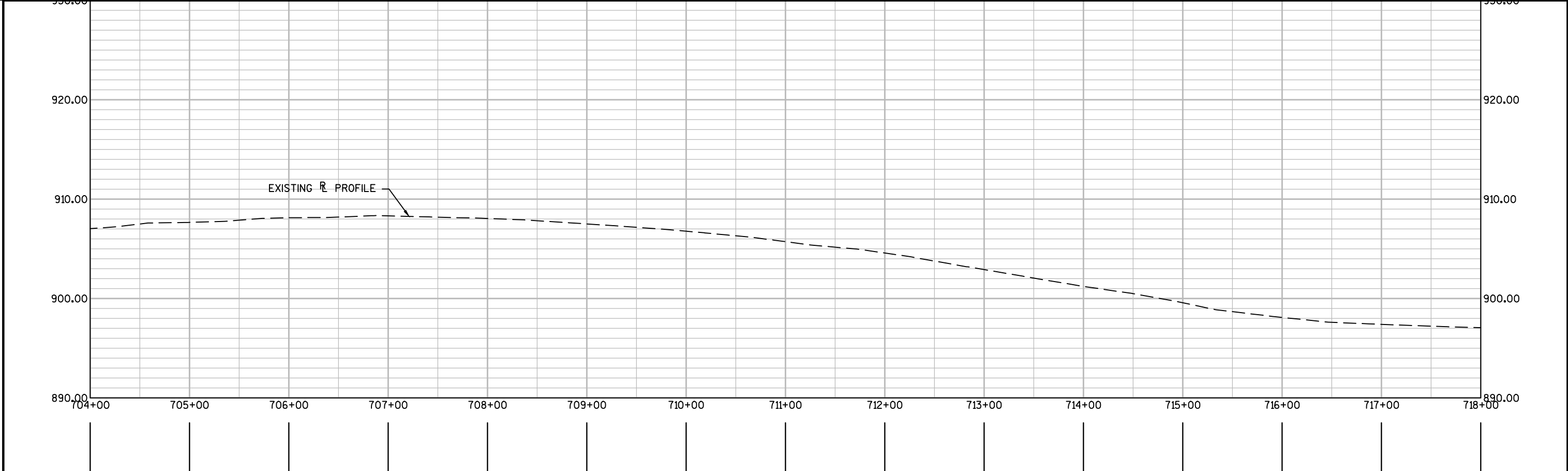
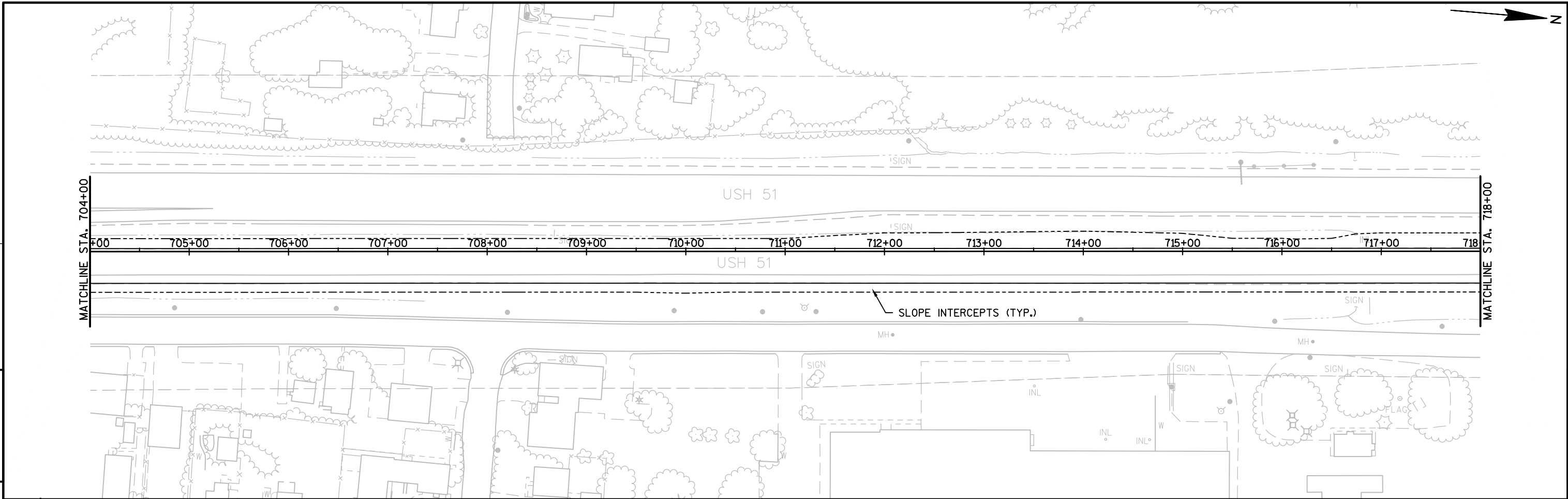
HWY: USH 51

COUNTY: DANE

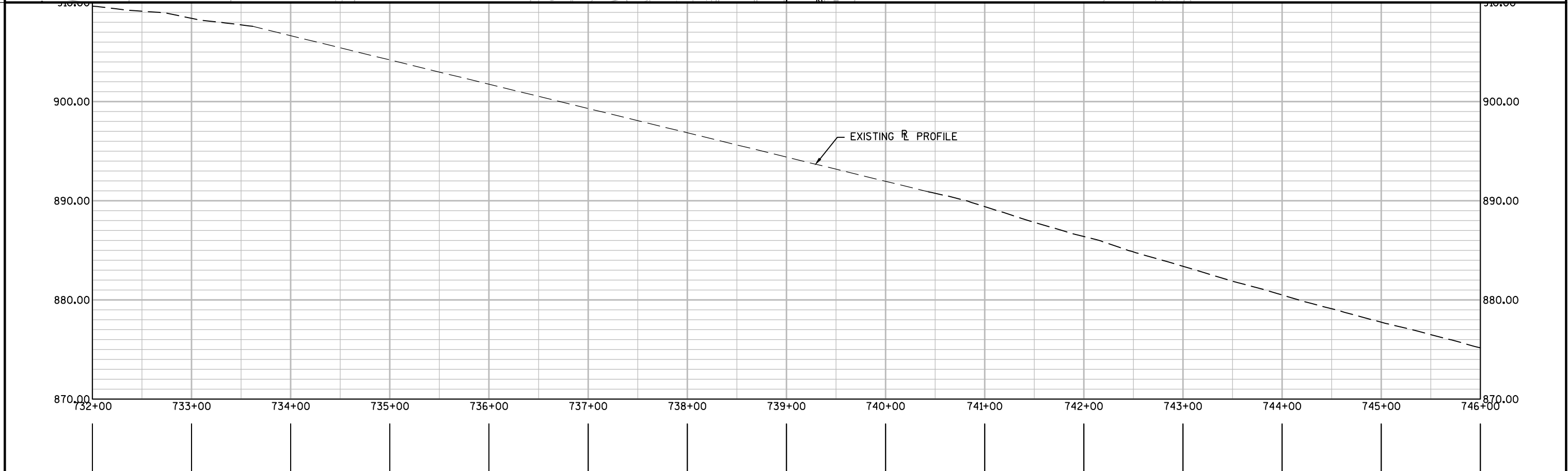
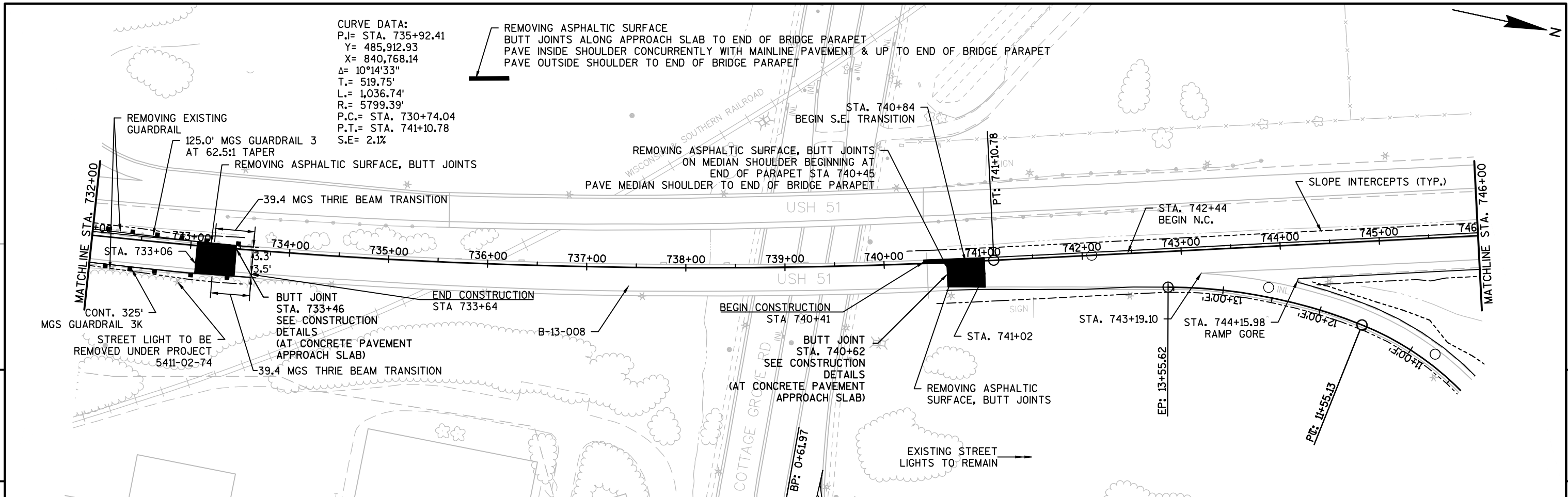
PLAN AND PROFILE: USH 51 NORTHBOUND

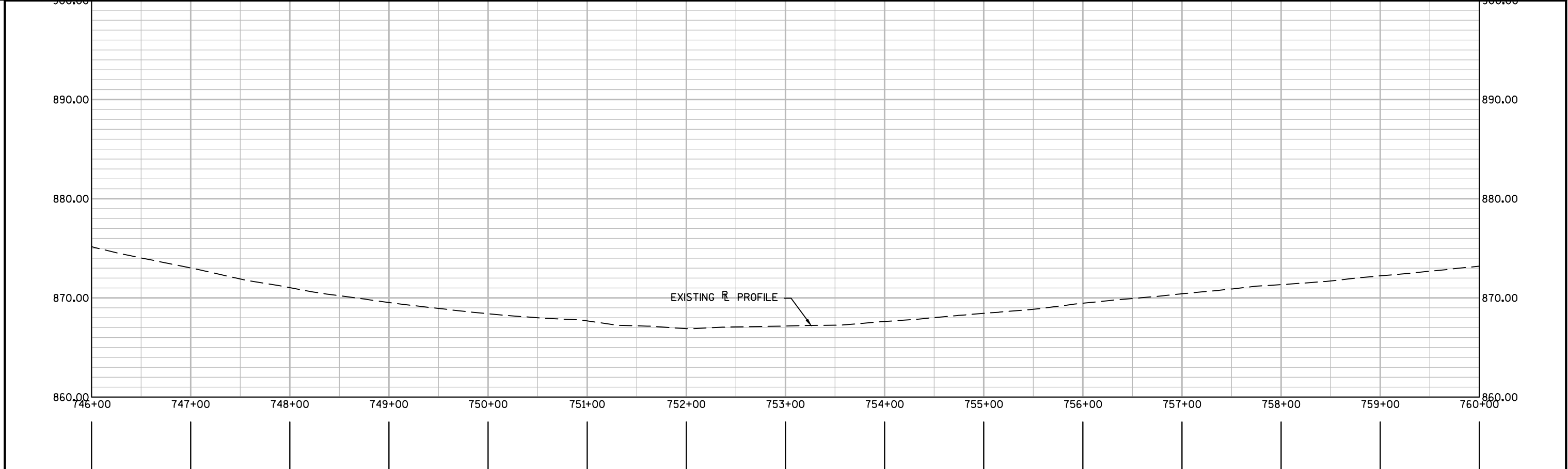
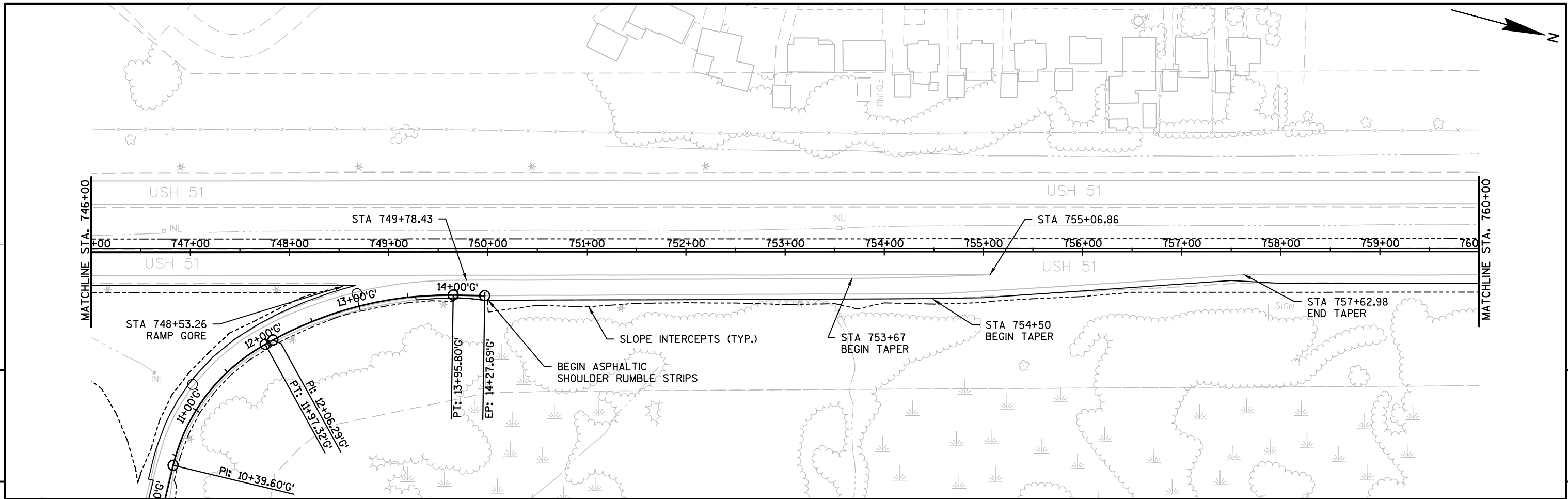
SHEET

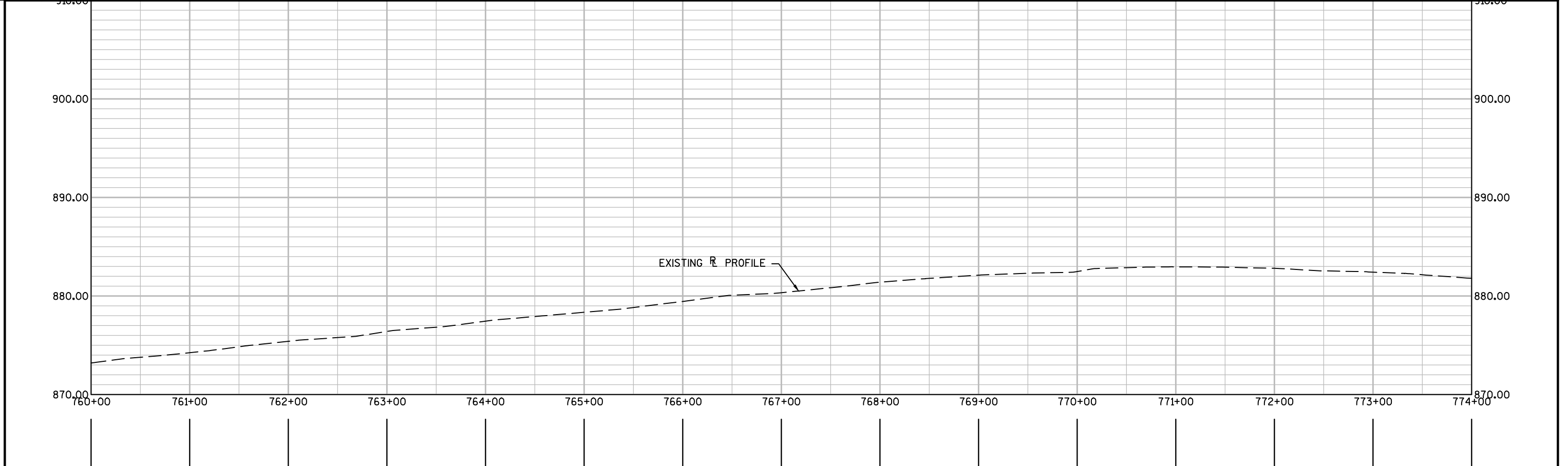
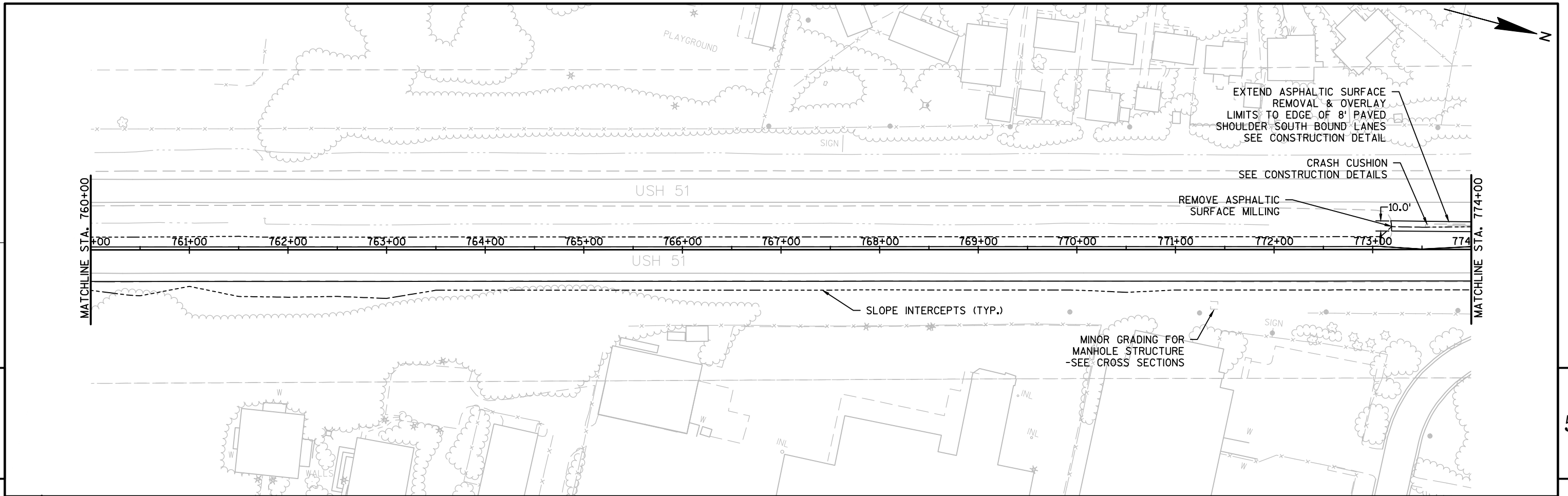
E



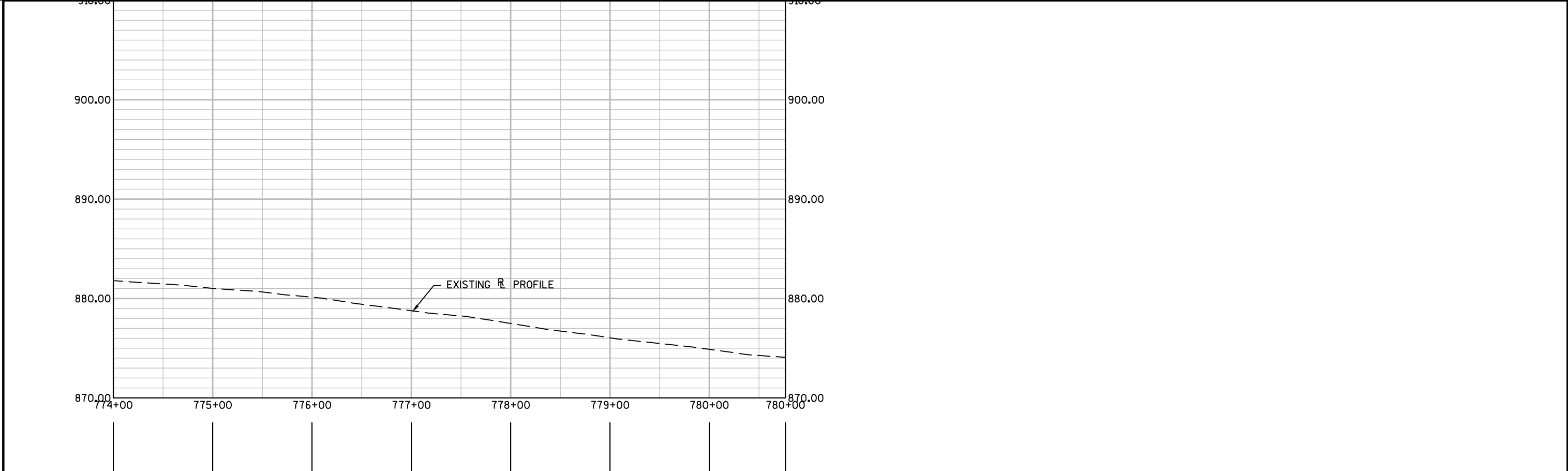
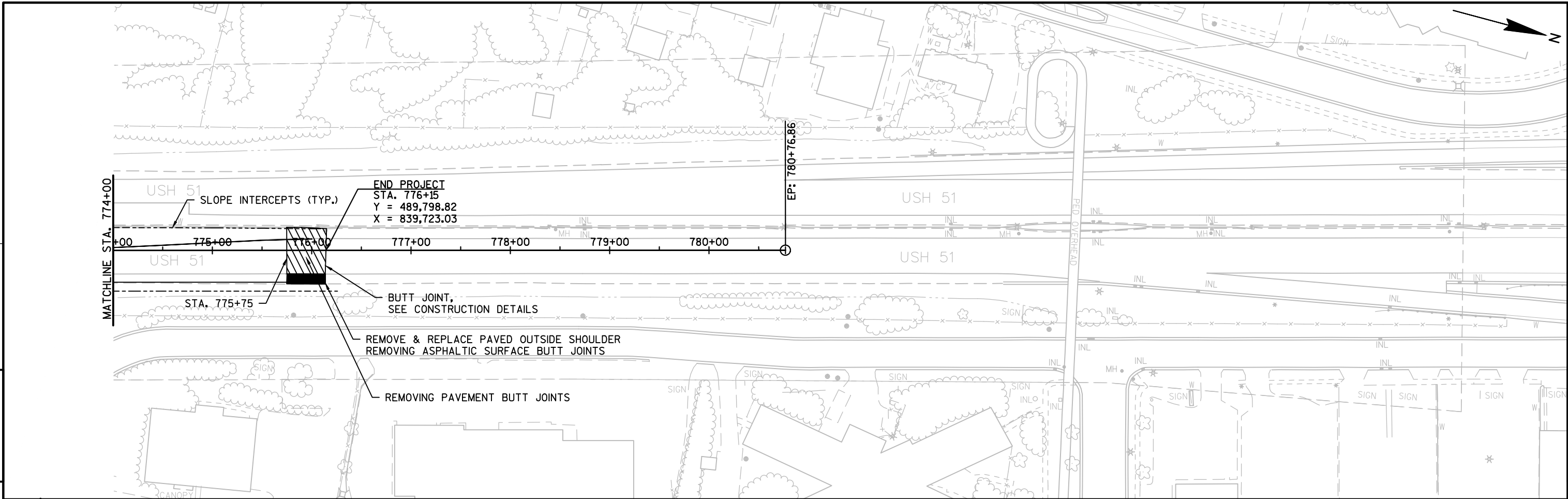
PROJECT NO:5410-01-72	HWY:USH 51	COUNTY:DANE	PLAN AND PROFILE: USH 51 NORTHBOUND	SHEET	E
-----------------------	------------	-------------	-------------------------------------	-------	---



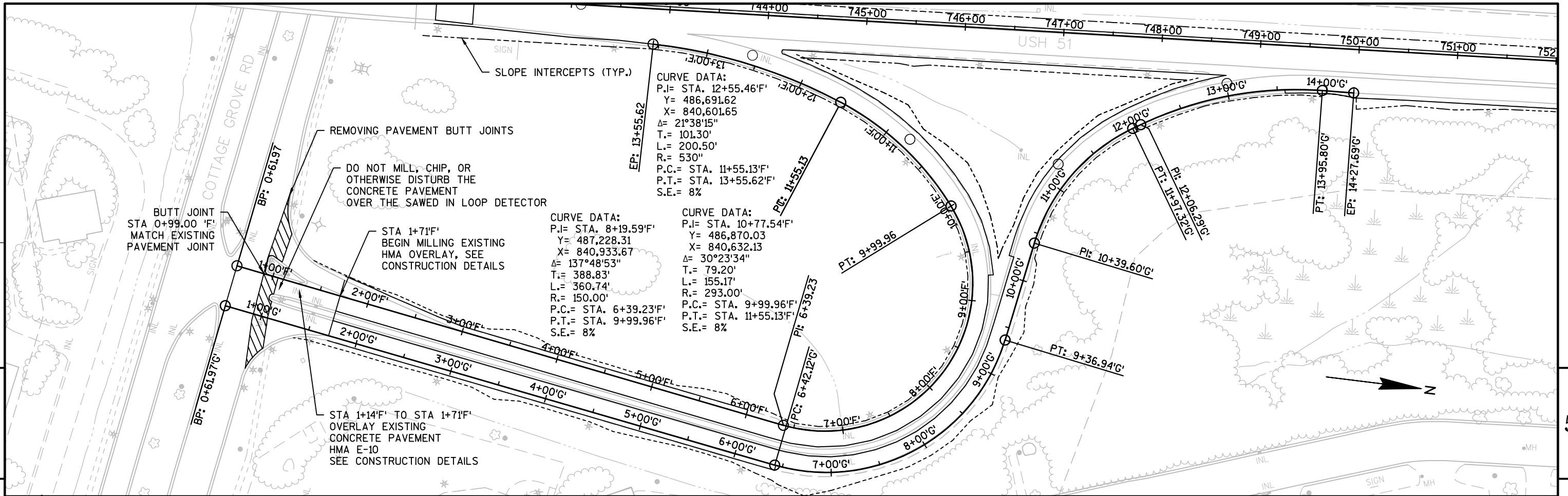


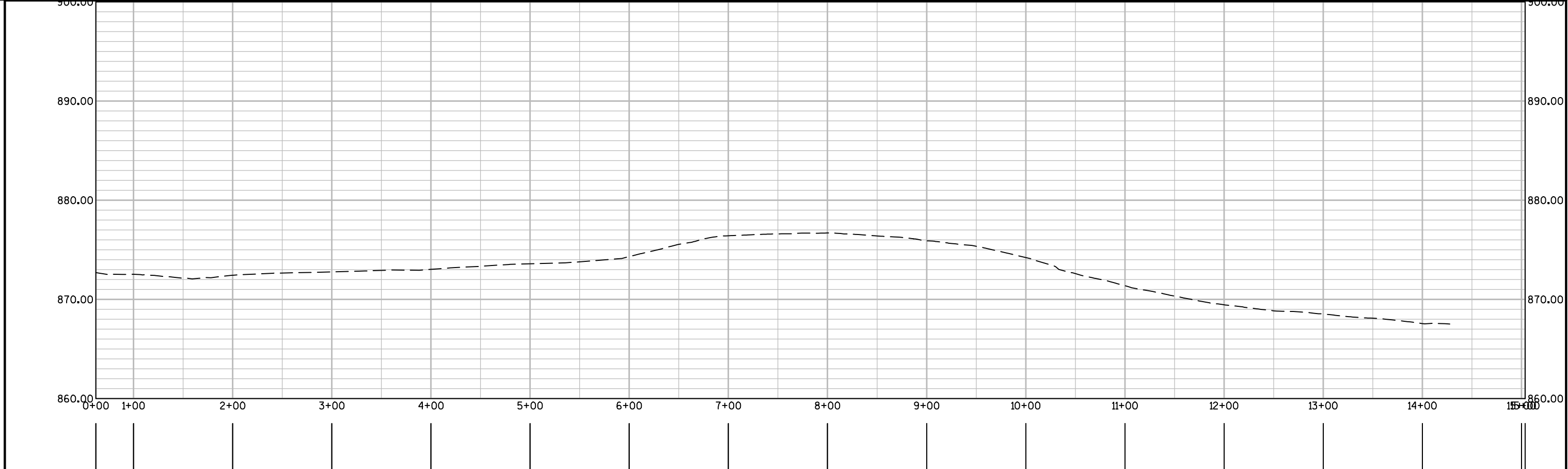
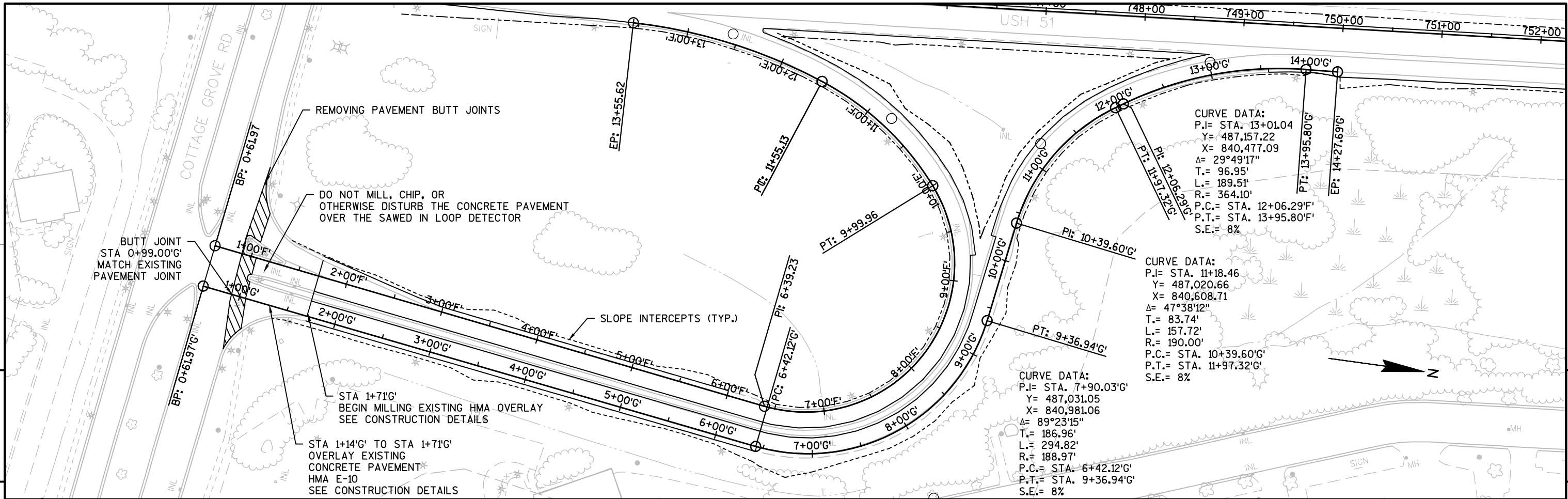


PROJECT NO:5410-01-72	HWY:USH 51	COUNTY:DANE	PLAN AND PROFILE: USH 51 NORTHBOUND	SHEET	E
-----------------------	------------	-------------	-------------------------------------	-------	---



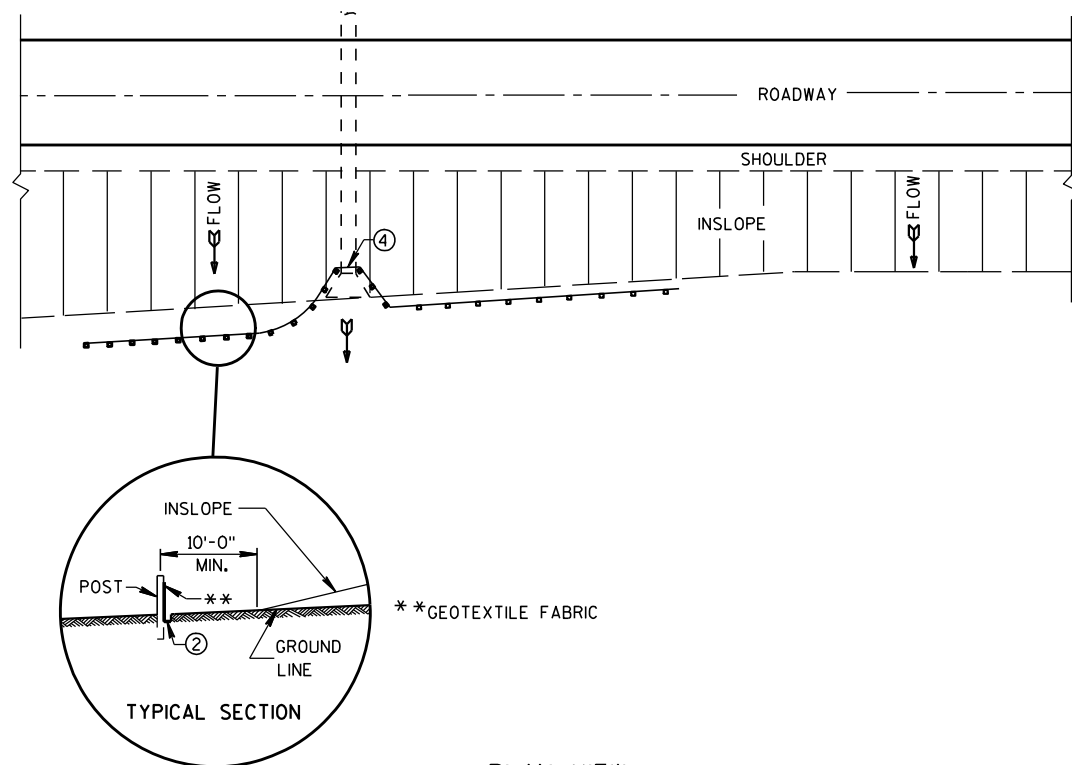
PROJECT NO: 5410-01-72	HWY: USH 51	COUNTY: DANE	PLAN AND PROFILE: USH 51 NORTHBOUND	SHEET	E
------------------------	-------------	--------------	-------------------------------------	-------	---





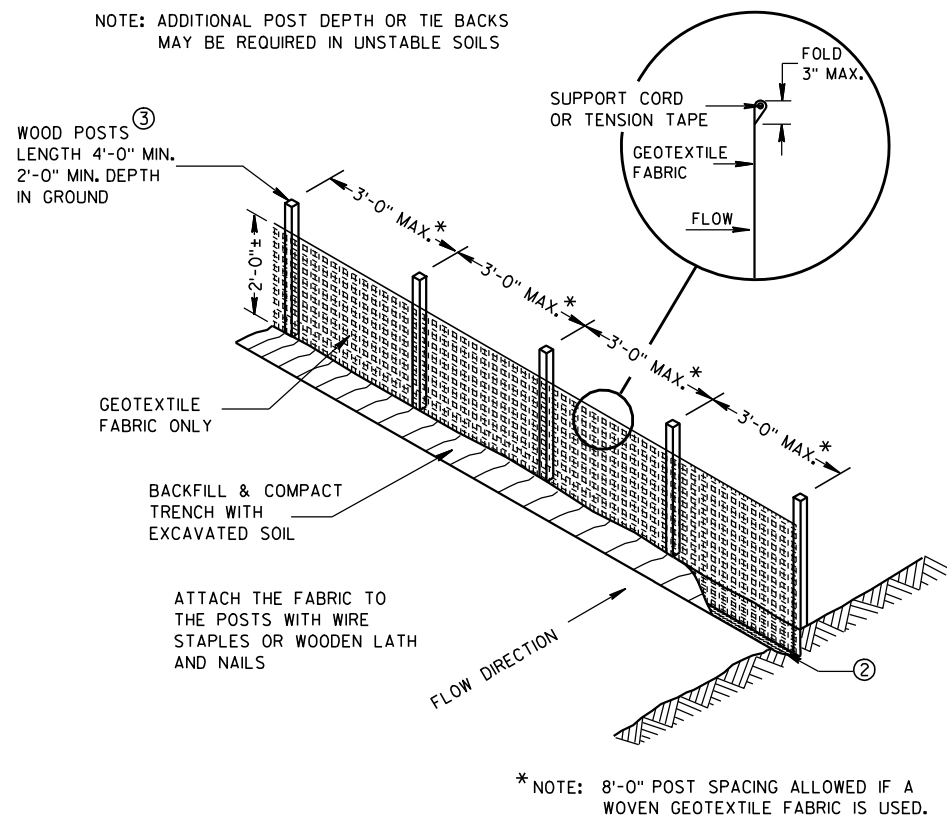
Standard Detail Drawing List

08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C07-12B	PAVEMENT MARKING WORDS
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16E	PAVEMENT MARKING (LEFT TURN LANE)
15C19-02C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C31-01A	PAVEMENT MARKING (RAMPS AND GORES)
15C31-01D	PAVEMENT MARKING FOR PARALLEL ON-RAMP AND PARALLEL OFF-RAMP
15C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D12-04	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D15-01	TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE
15D16-02	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D27-02	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
16A01-06	LANDMARK REFERENCE MONUMENTS AND COVERS

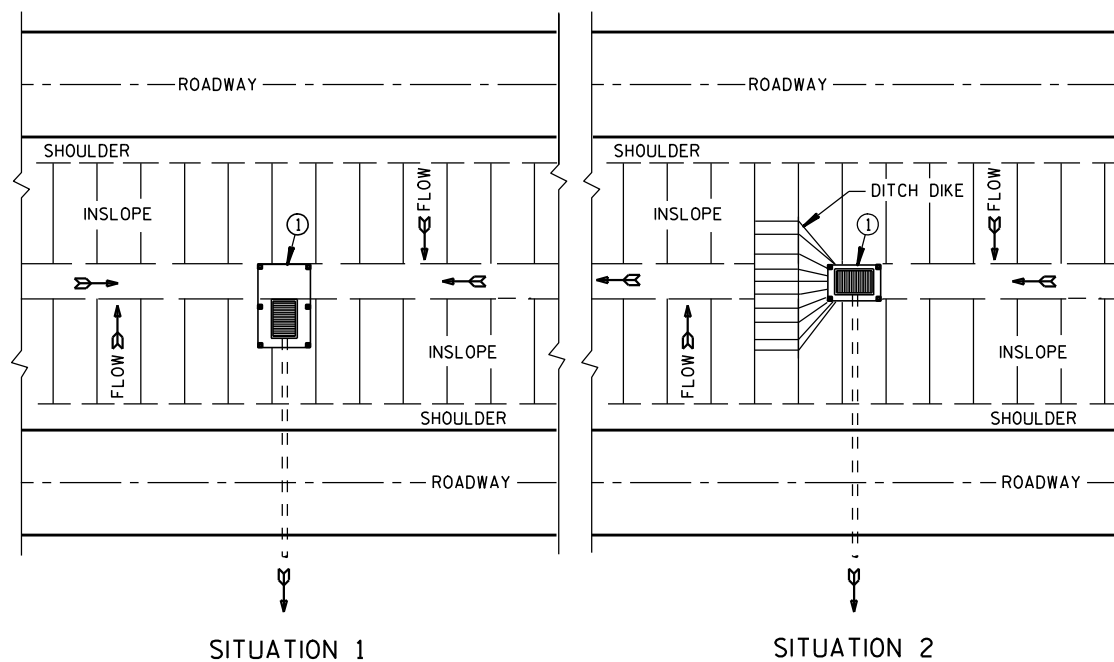


PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

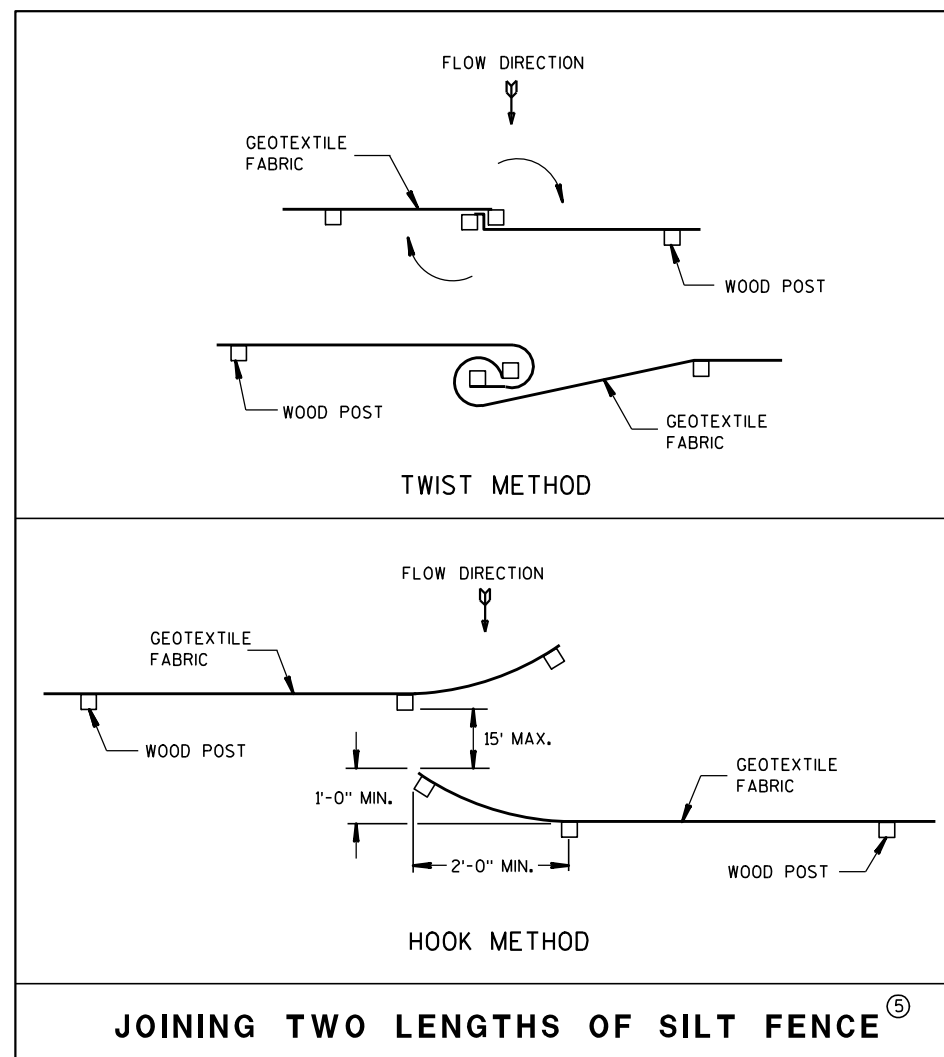
NOTE: ADDITIONAL POST DEPTH OR TIE BACKS
MAY BE REQUIRED IN UNSTABLE SOILS



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

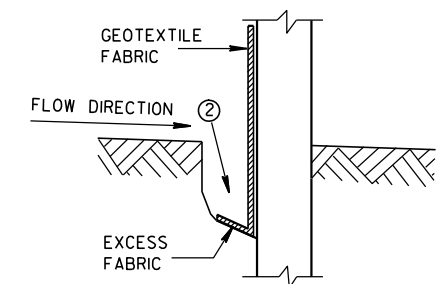


JOINING TWO LENGTHS OF SILT FENCE^⑤

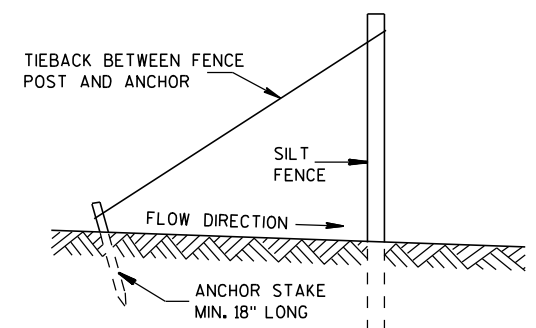
GENERAL NOTES

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

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



TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

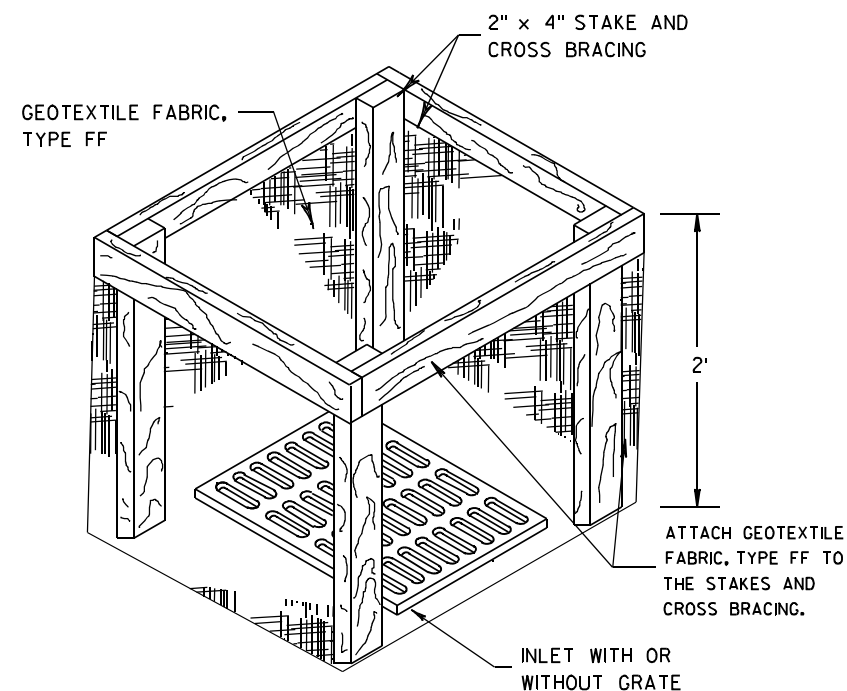
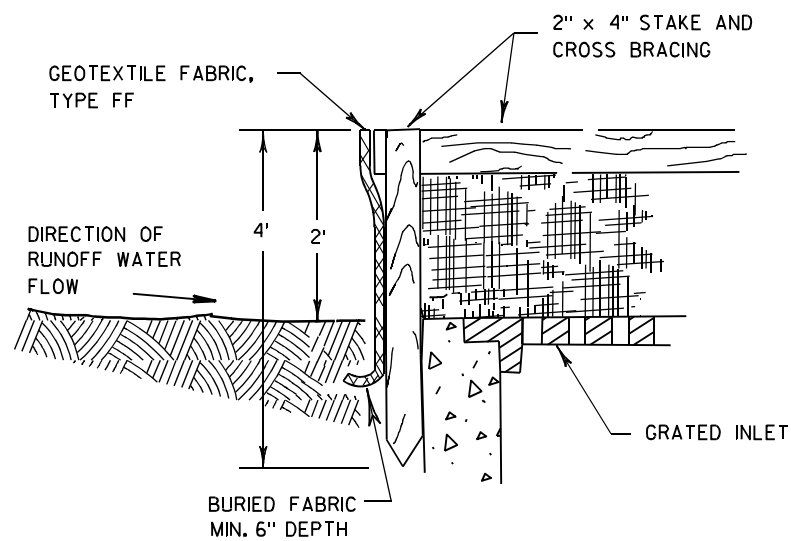
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-29-05
DATE

FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



INLET PROTECTION, TYPE A

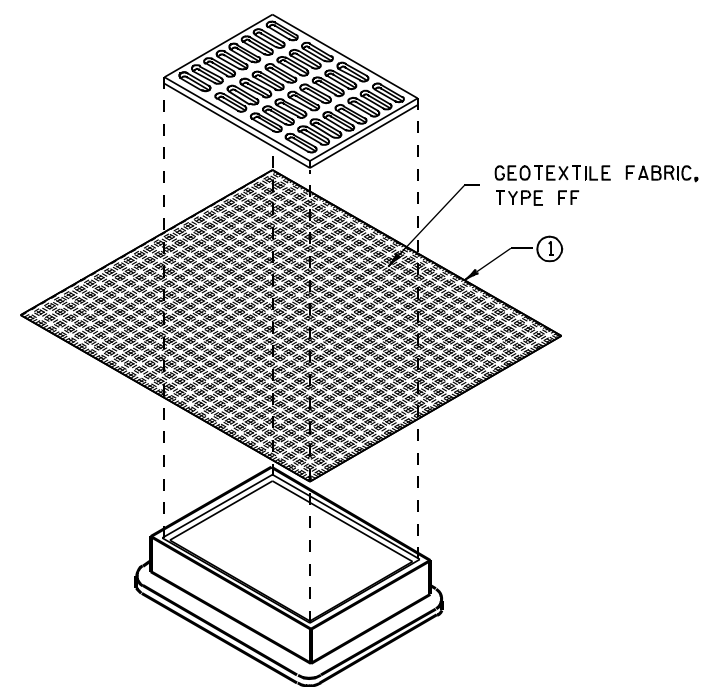
GENERAL NOTES

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

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

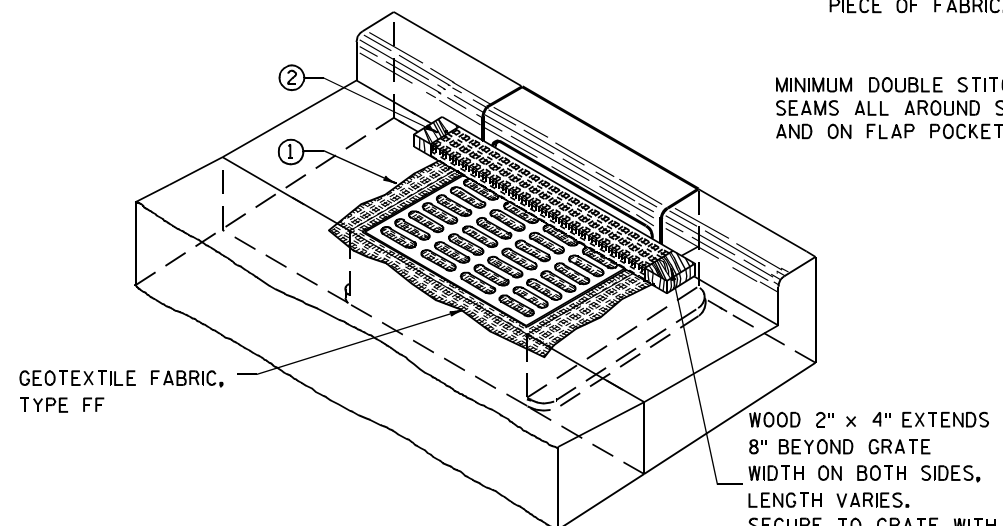
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

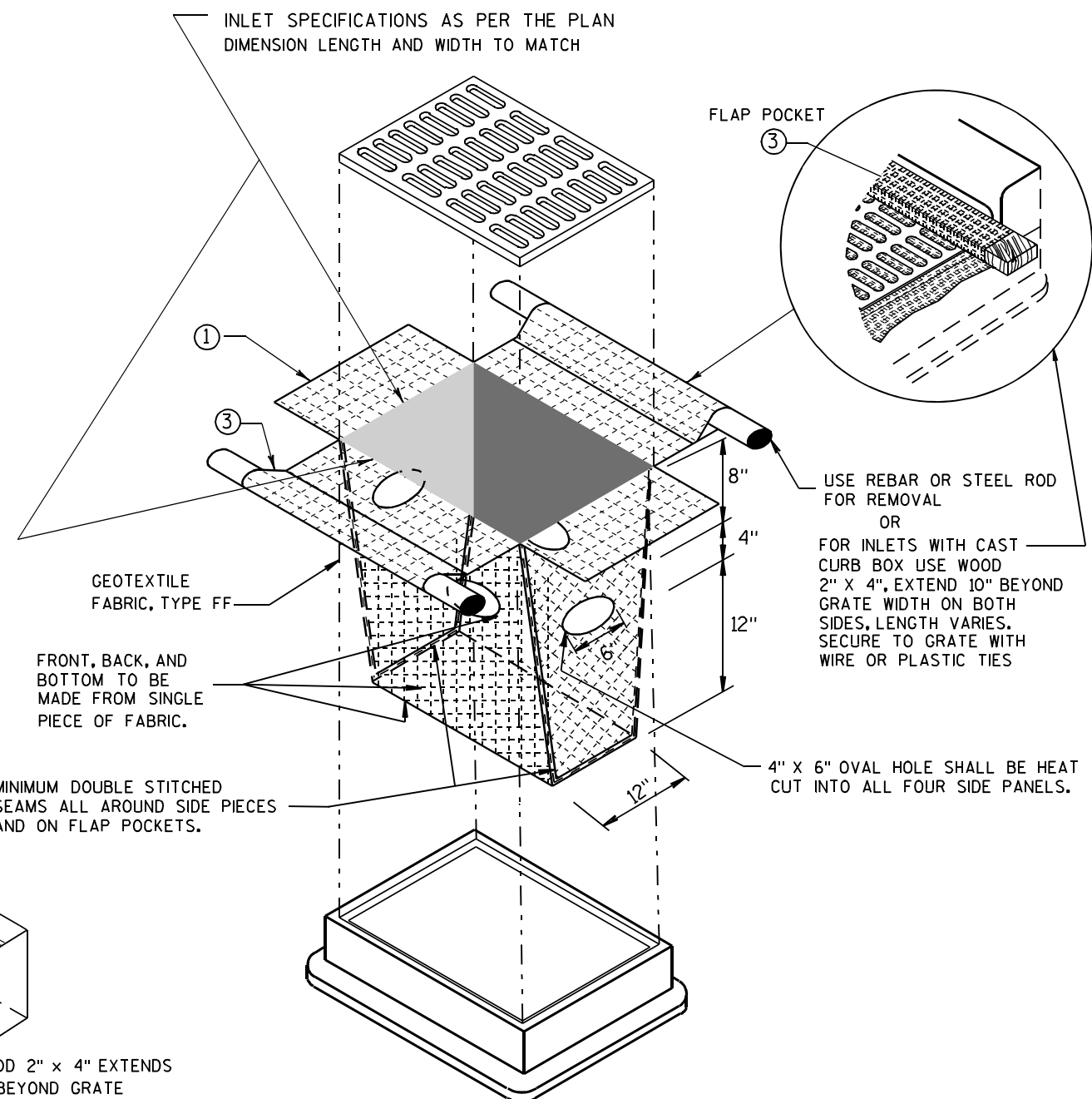
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



INLET PROTECTION, TYPE D

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

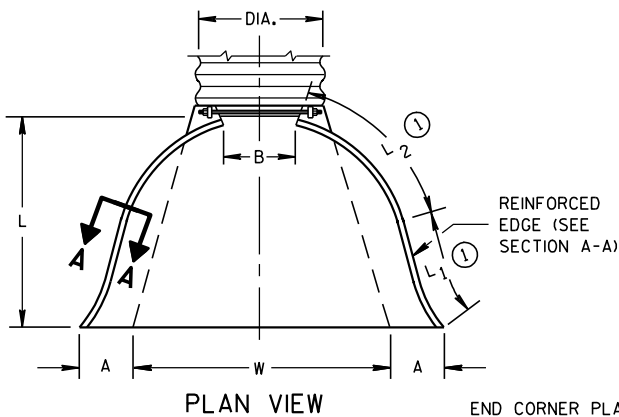
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

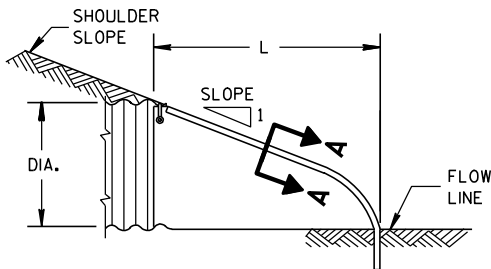
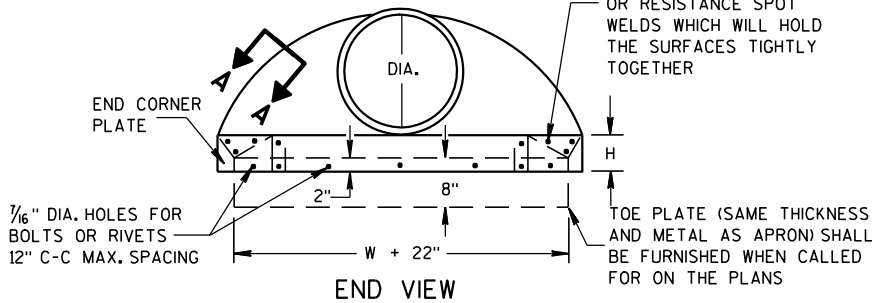
METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	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

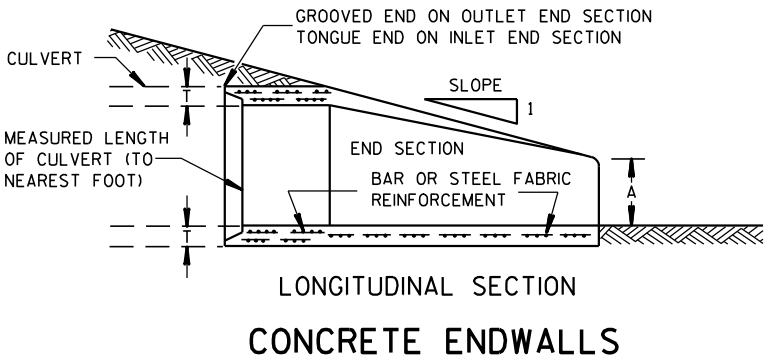
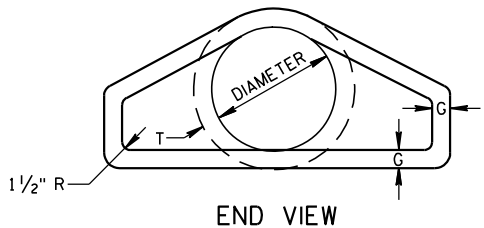
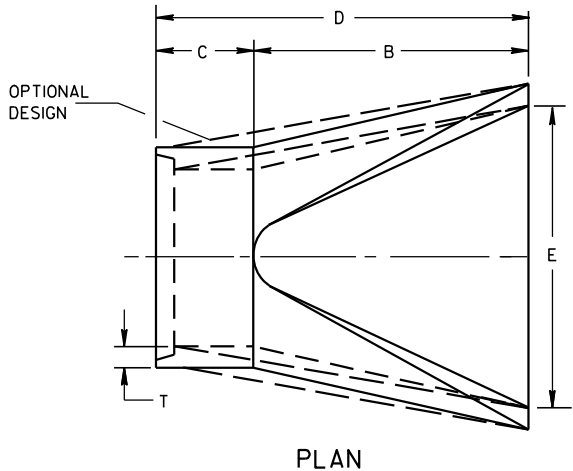
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



SIDE ELEVATION
METAL ENDWALLS

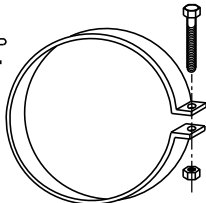
REINFORCED CONCRETE APRON ENDWALLS											
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE			
	T	A	B	C	D	E	G				
12	2	4	24	48 7/8	72 7/8	24	2	3 to 1			
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1			
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1			
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1			
24	3	9 1/2	43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

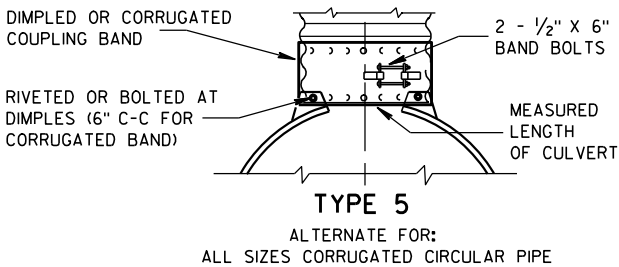
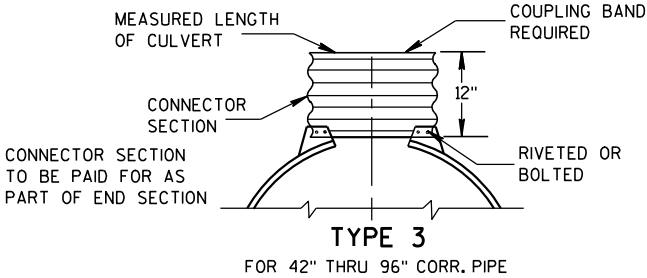
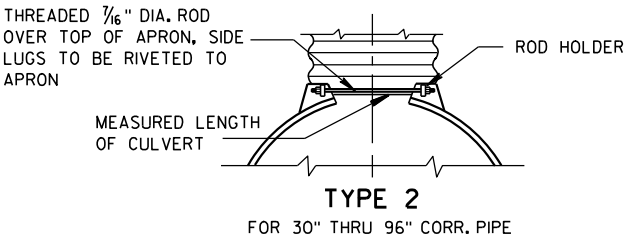
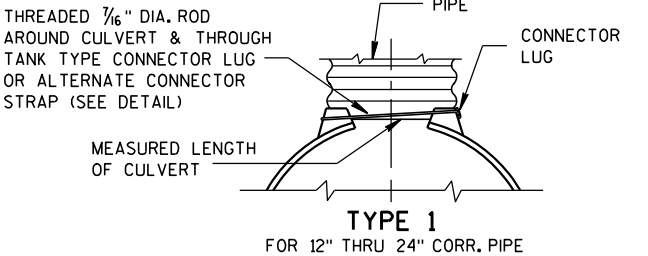


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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



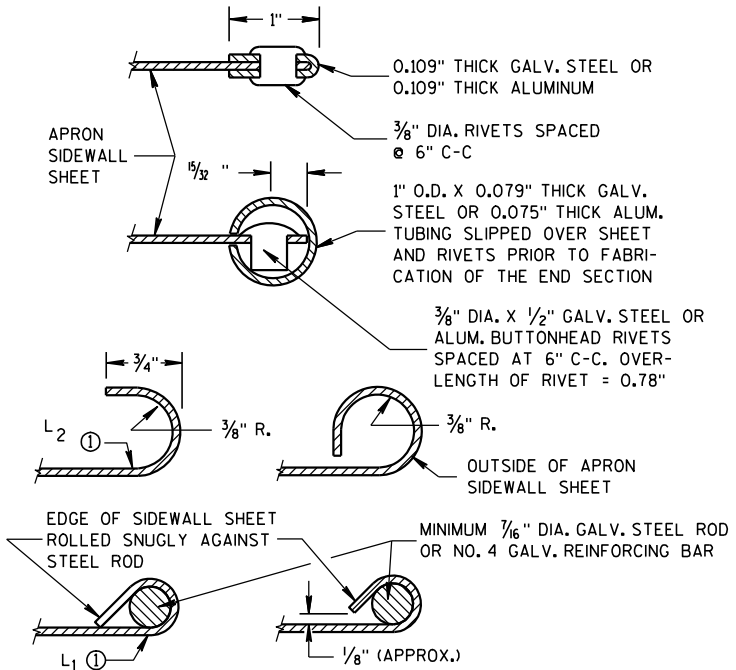
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

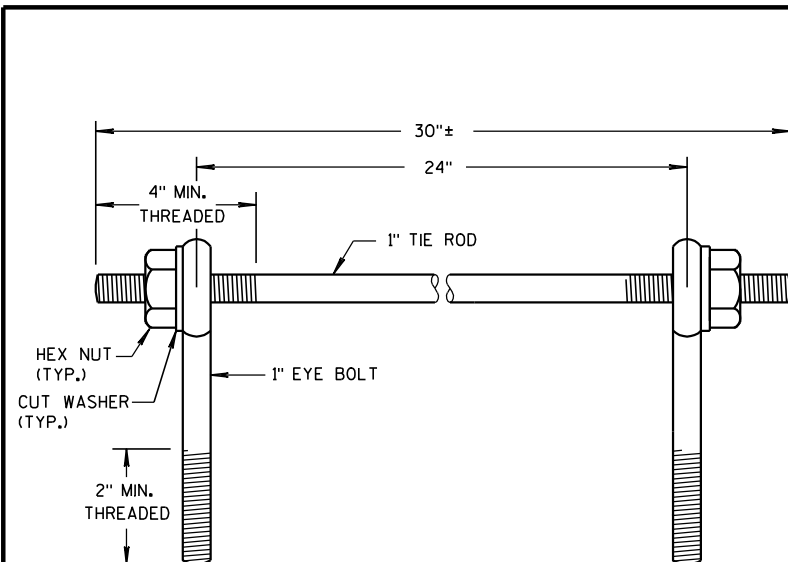
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

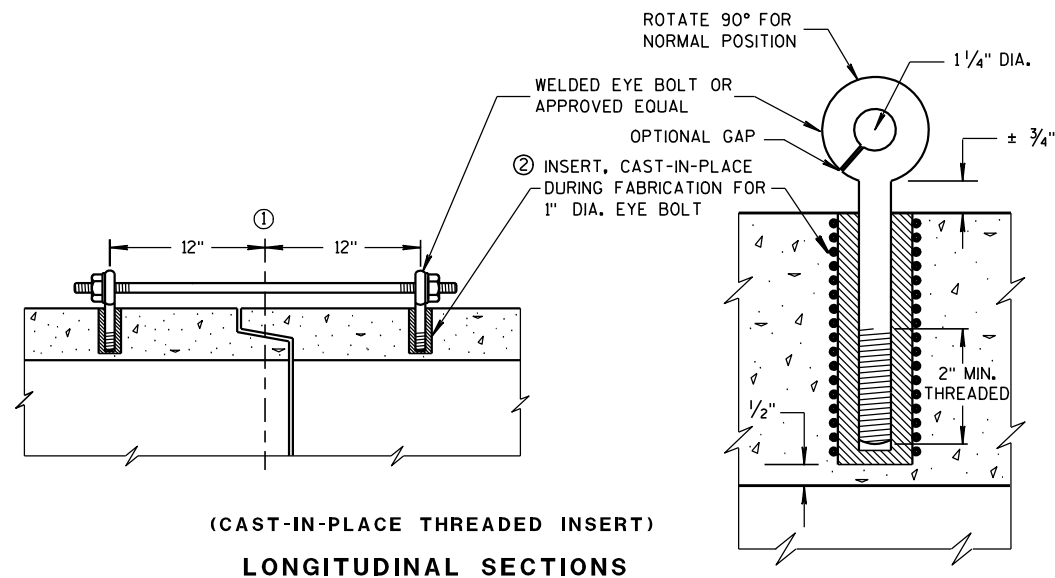
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



EYE BOLTS AND TIE ROD

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

(CAST-IN-PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

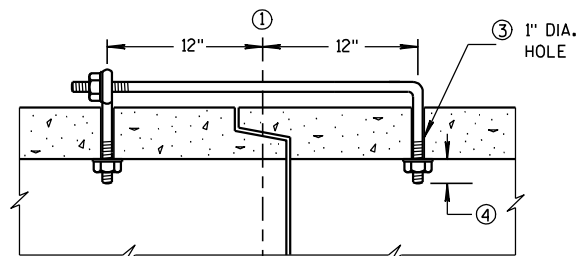
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

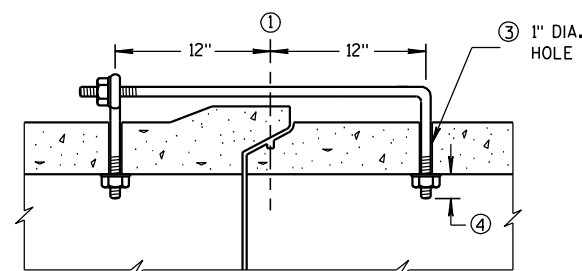
DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

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

- ① ϕ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ϕ OF TONGUE AND GROOVE.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- ⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN $\frac{1}{2}$ INCH OF THE INNER SURFACE OF THE PIPE.

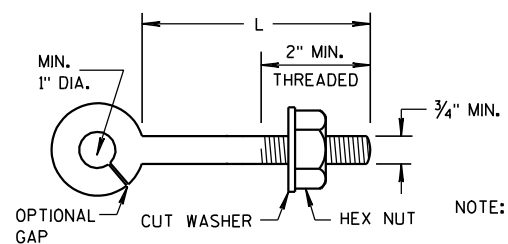


(TONGUE & GROOVE PIPE)

(MODIFIED BELL PIPE)
LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	

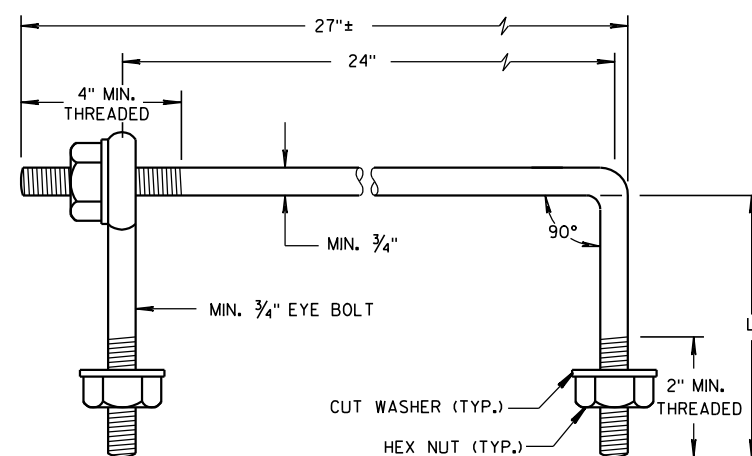


EYE BOLT

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

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

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

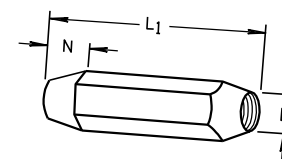


EYE BOLT AND TIE ROD

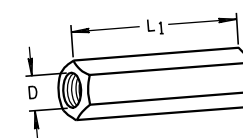
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

DIMENSIONS SHOWN ARE IN INCHES



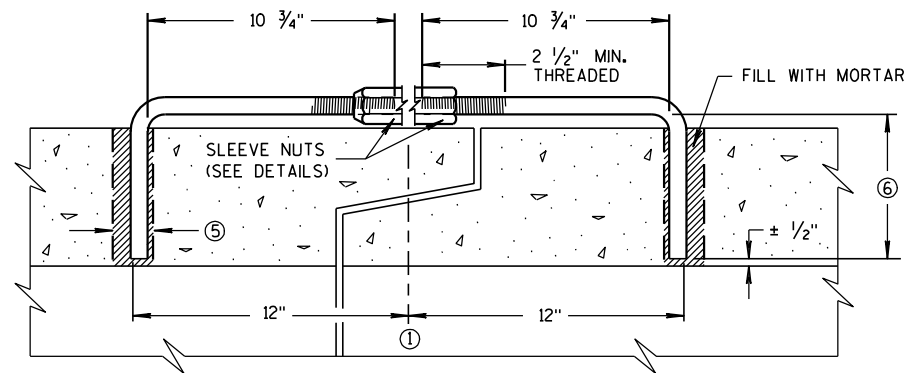
TAPERED



PLAIN

RIGHT AND LEFT THREADS

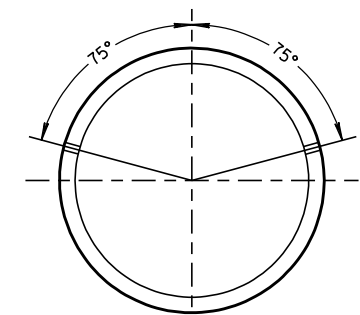
SLEEVE NUTS



LONGITUDINAL SECTION

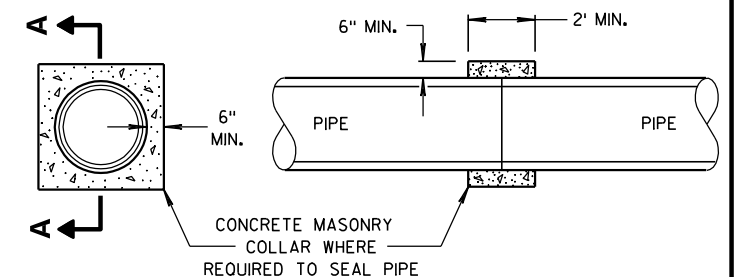
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE
PIPE AND CONCRETE
COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

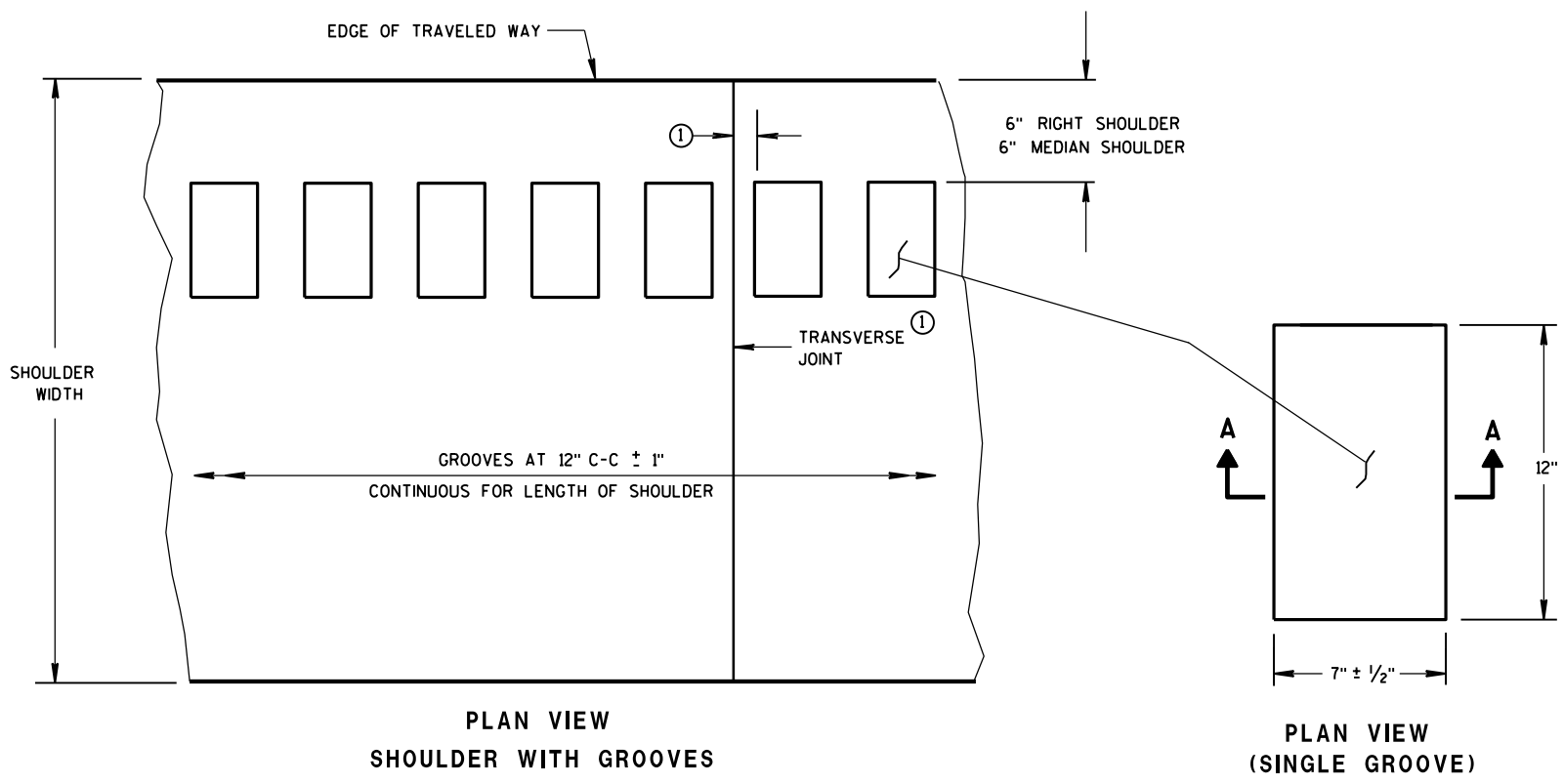
APPROVED

6/5/2012

DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

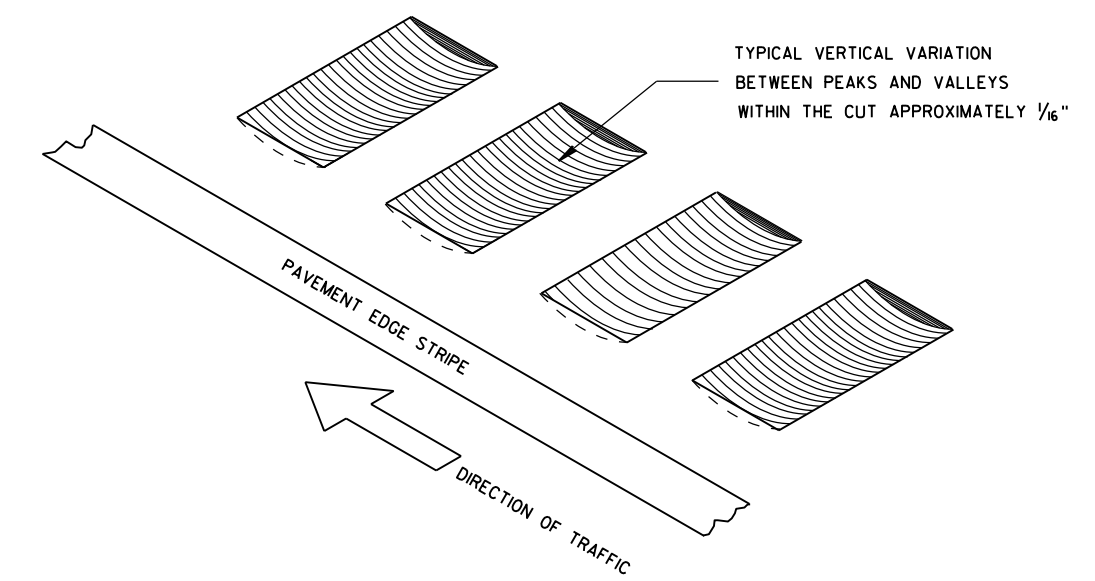
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

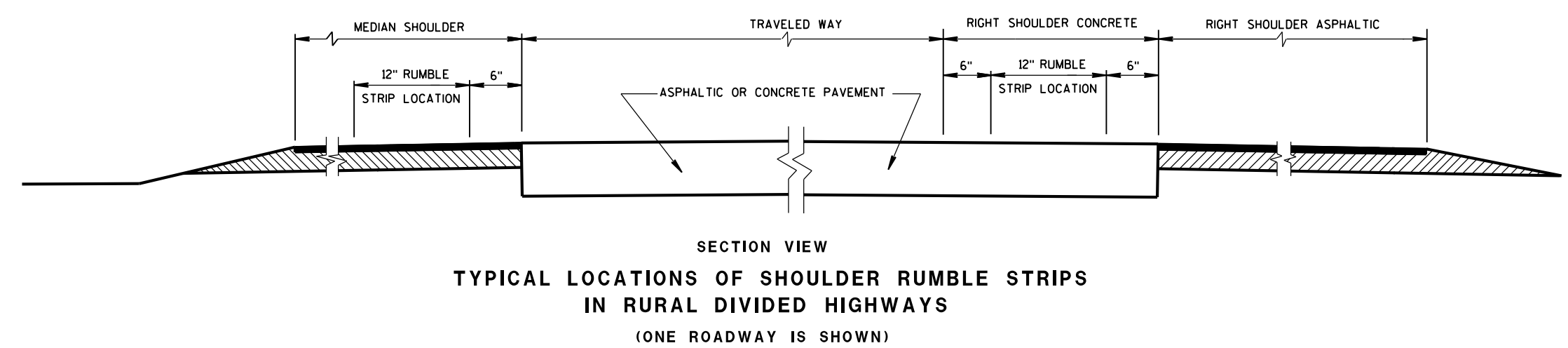
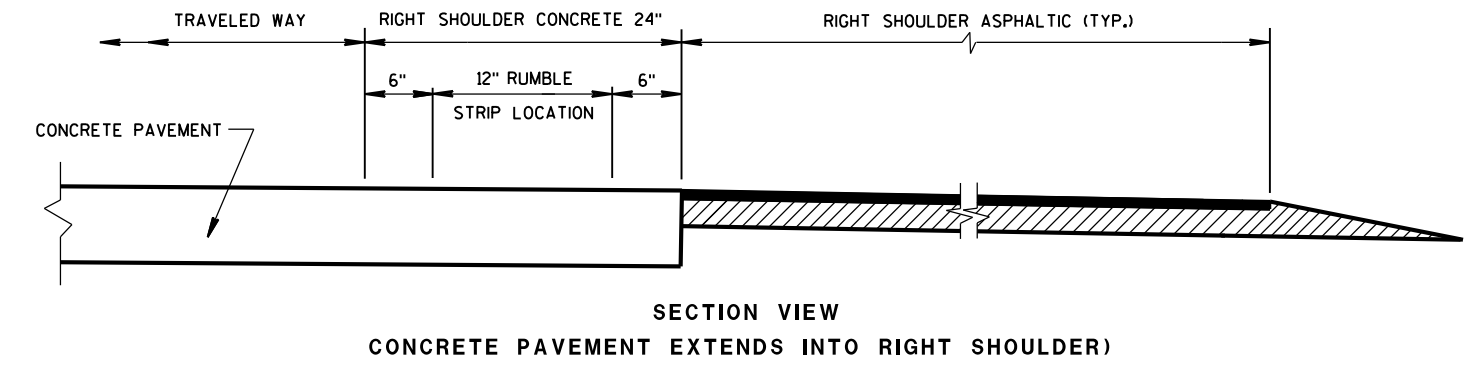
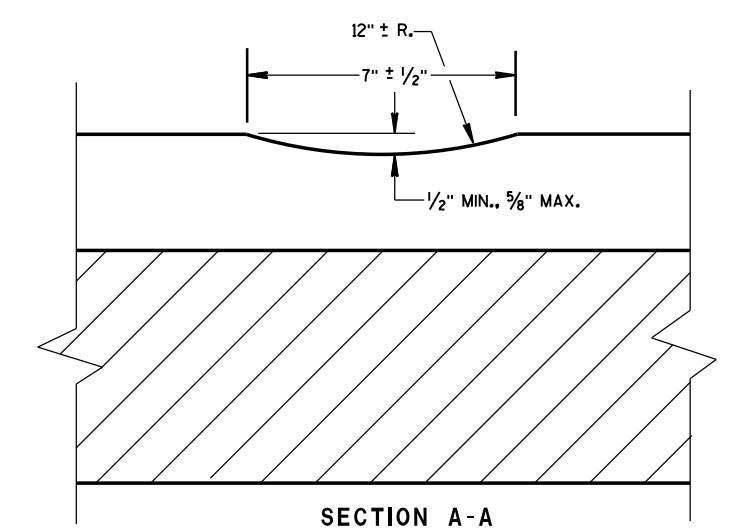
RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

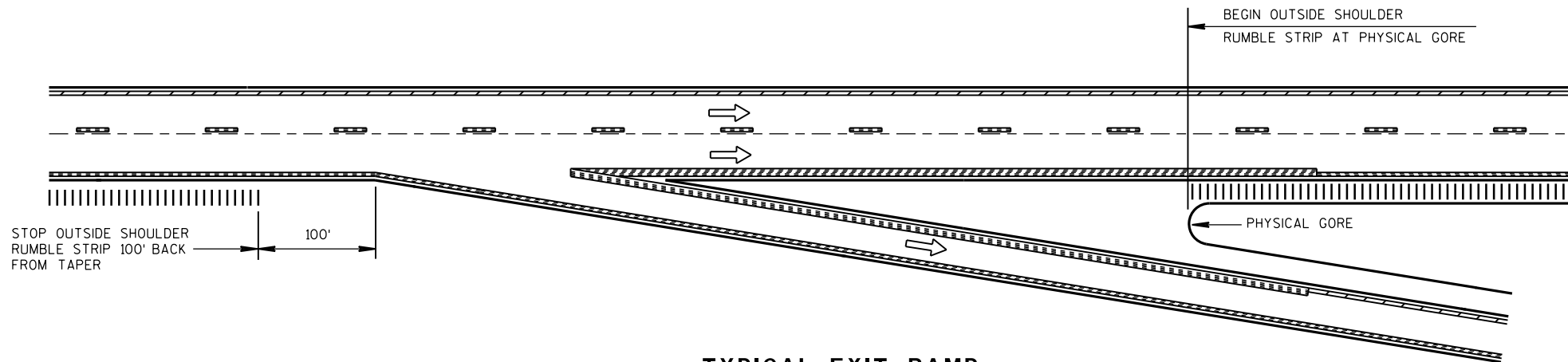
① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



ISOMETRIC



SHOULDER RUMBLE STRIP, MILLING
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



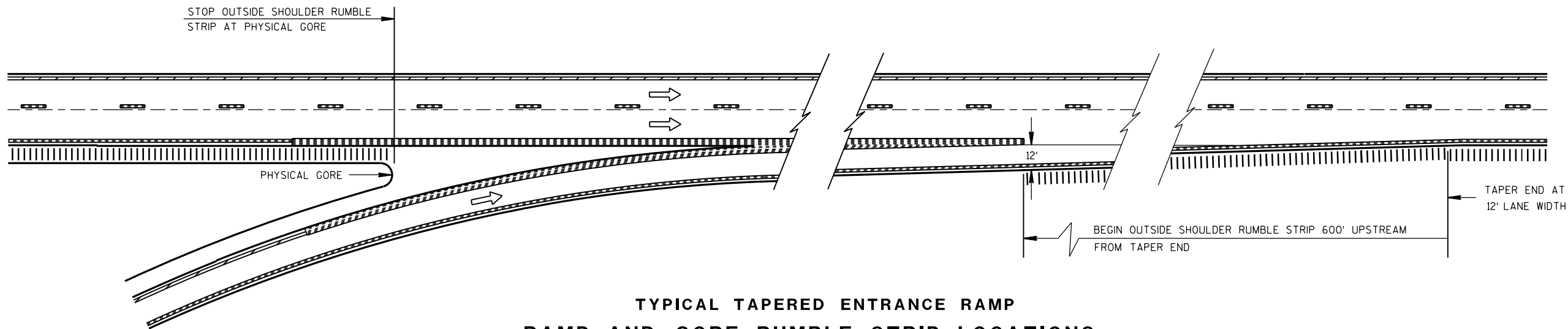
TYPICAL EXIT RAMP

NOTES:

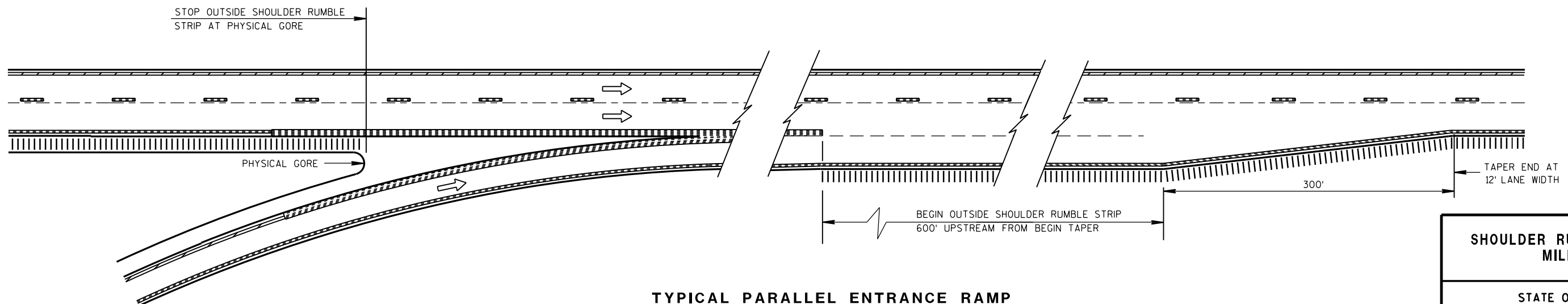
NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS

SHOULDER RUMBLE STRIP,
MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/17/2012
DATE
FHWA

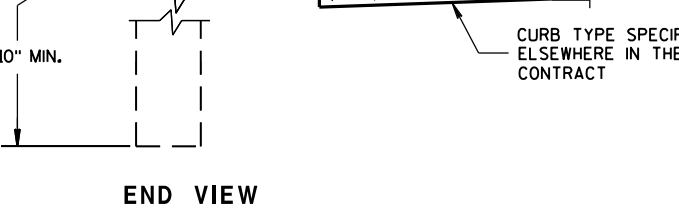
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

6

- S.D.D. 14 B 42-3a**



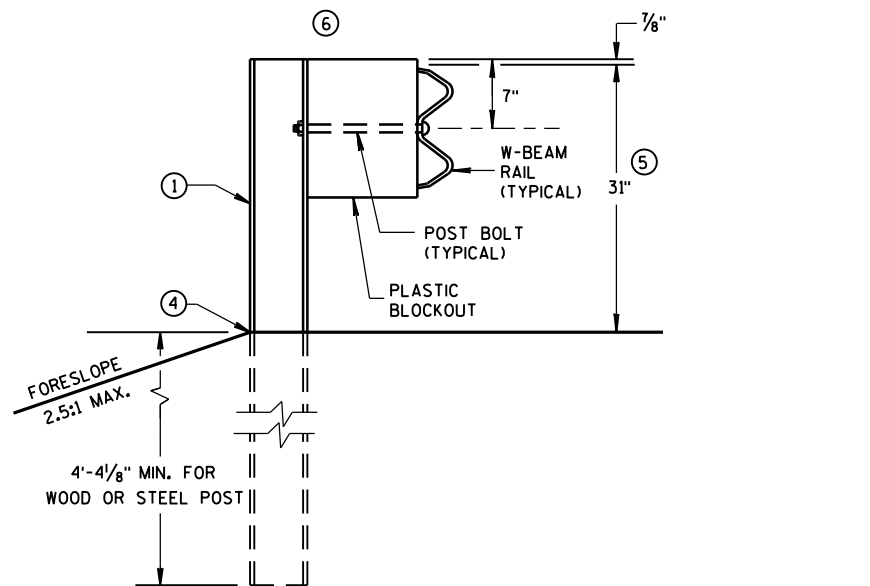
S.D.D. 14 B 42-3a



10" MIN.

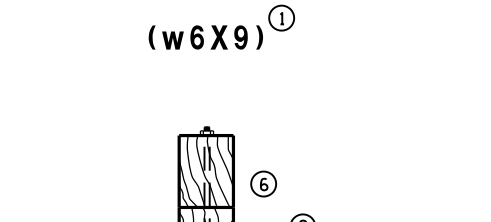
CURB TYPE SPECIFIED ELSEWHERE IN THE CONTRACT

END VIEW




Technical drawing showing a cross-section of a post-and-rail fence assembly. The drawing includes the following components and dimensions:

- Callouts:**
 - ①: Points to the vertical post.
 - ④: Points to the base of the post where it meets the ground.
 - ⑥: Points to the top of the post.
 - ⑤: Points to the vertical dimension of the rail assembly.
- Dimensions:**
 - Top rail thickness: $\frac{7}{8}"$
 - Distance from top of post to top of rail: 7"
 - Overall height of the rail assembly from the ground line: 31"
 - Minimum depth of post in ground: 4'-4 $\frac{1}{8}"$ MIN. FOR WOOD OR STEEL POST
 - Ground slope: FORESLOPE 2.5:1 MAX.
- Labels:**
 - W-BEAM RAIL (TYPICAL)
 - POST BOLT (TYPICAL)
 - PLASTIC BLOCKOUT



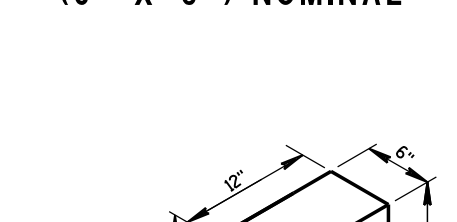
(w6X9) ①



⑥



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM



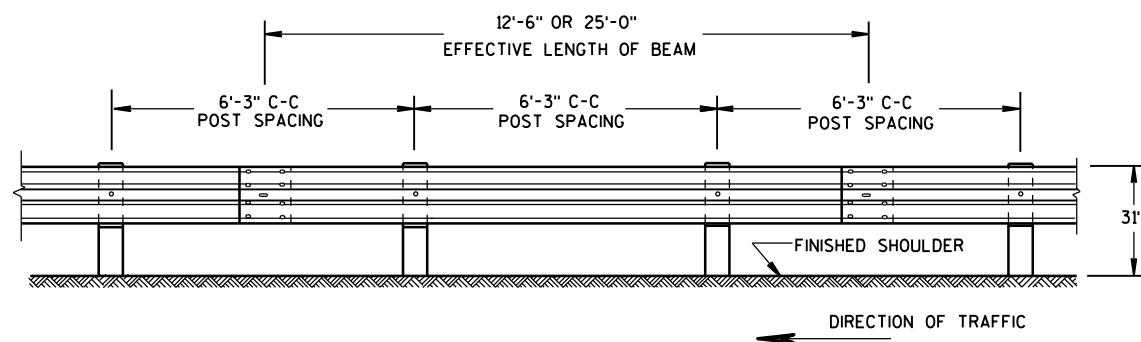
A diagram of a rectangular prism. The length of the front edge is labeled as 12". The width of the side edge is labeled as 6".



**WOOD OR
PLASTIC BLOCKOUT** ⁽²⁾

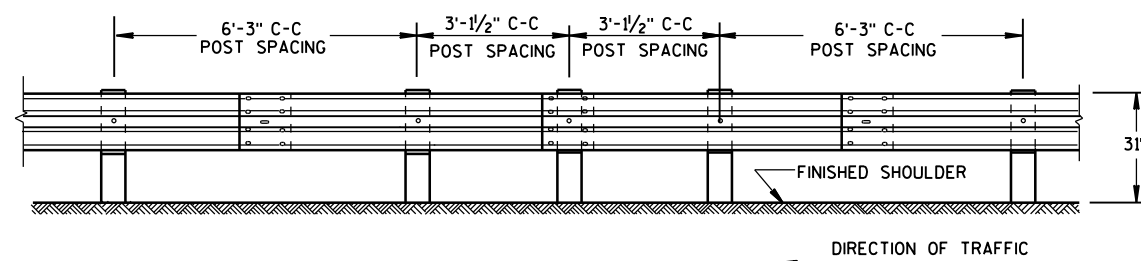
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



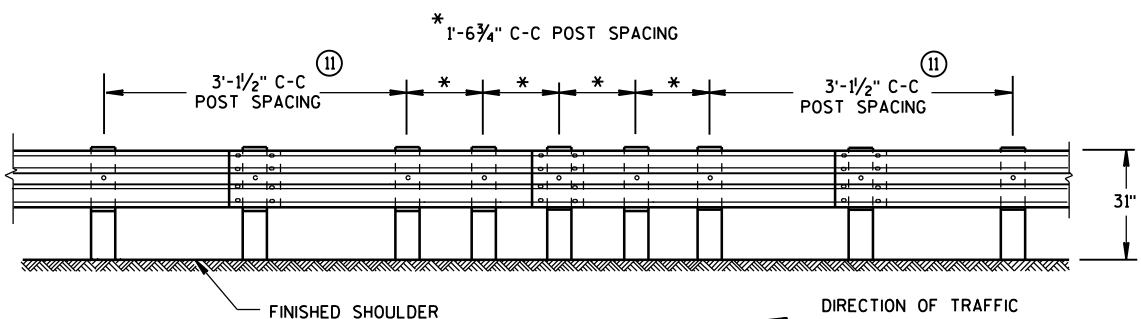
FRONT VIEW

POST SPACING STANDARD INSTALLATION



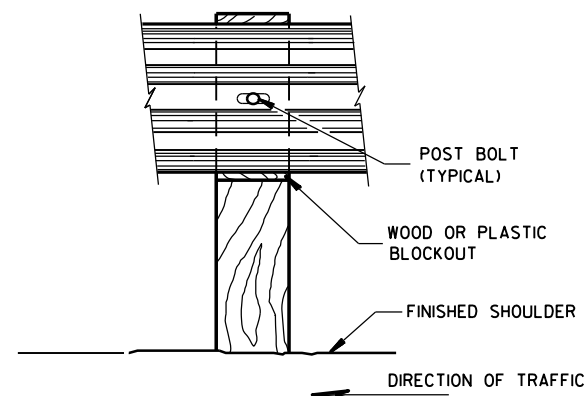
FRONT VIEW

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

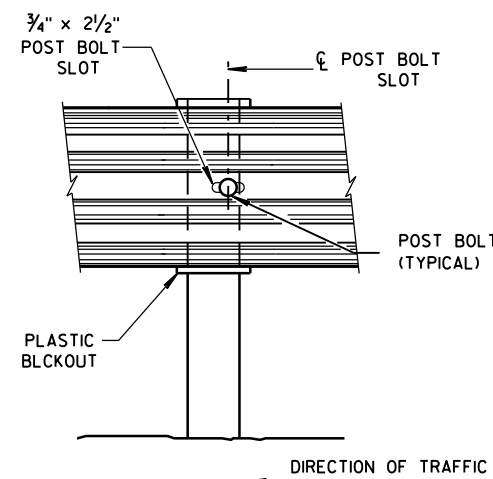


FRONT VIEW

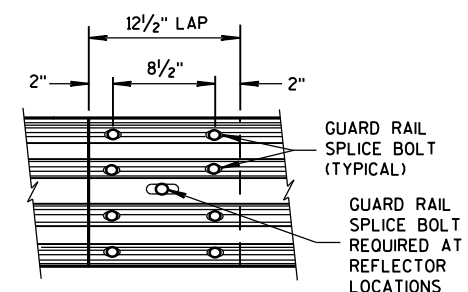
QUARTER POST SPACING (QS)



FRONT VIEW AT WOOD POST

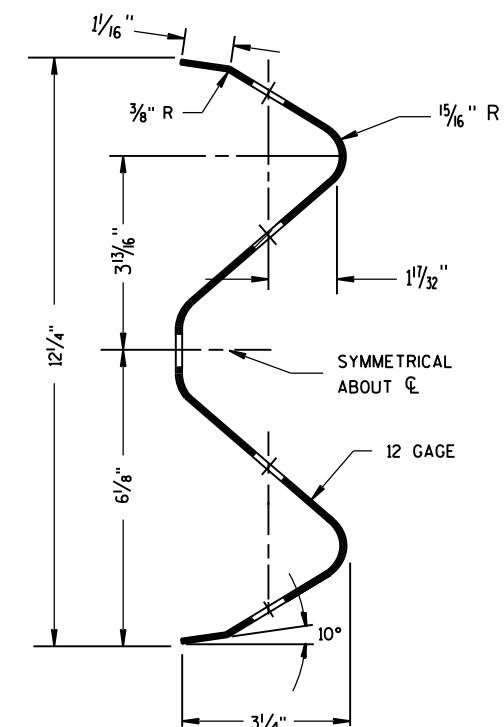


FRONT VIEW AT STEEL POST



FRONT VIEW

MID-SPAN BEAM SPLICE



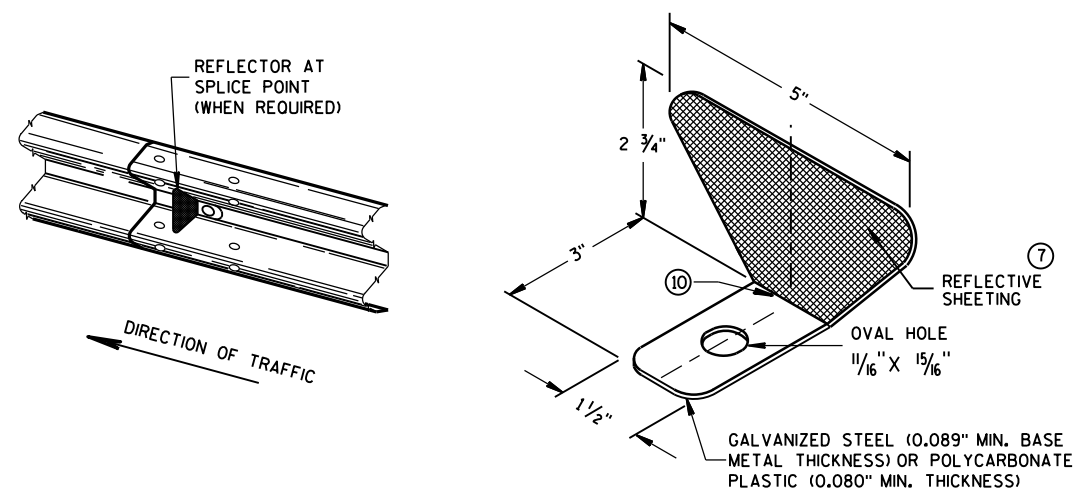
SECTION THRU W-BEAM RAIL

REFLECTOR SPACING^⑧

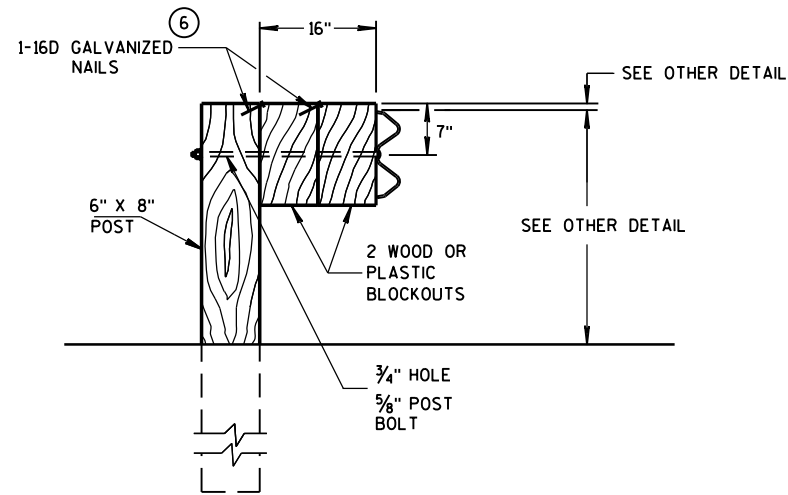
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTOR
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 ⑨ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 ⑩ 2	3

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

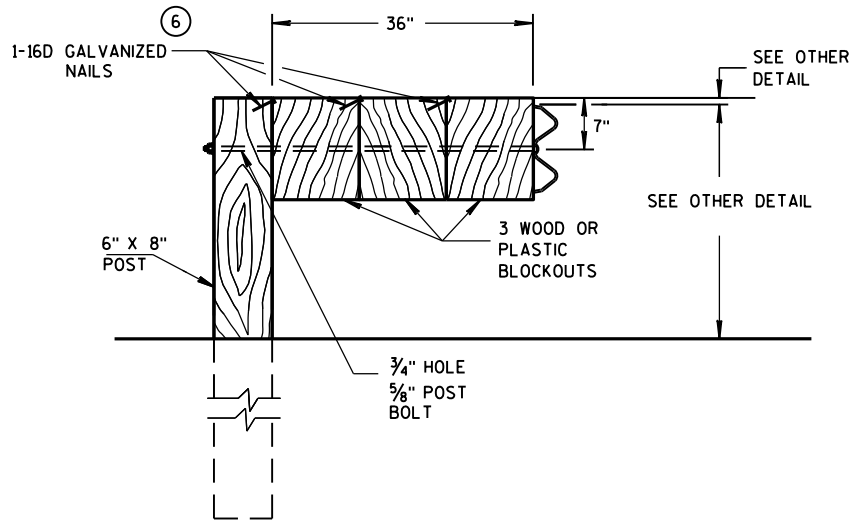


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION



DETAIL FOR 16" BLOCKOUT DEPTH

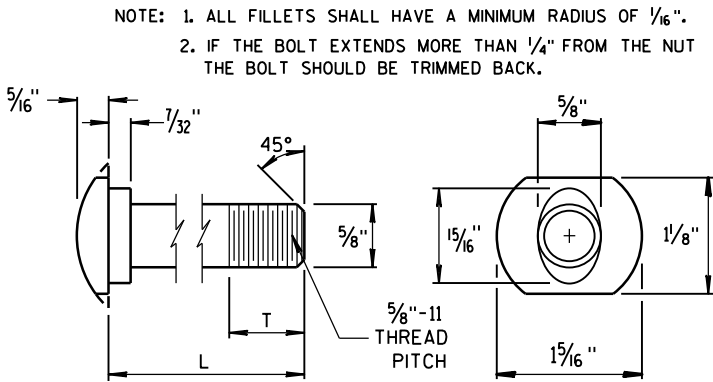
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

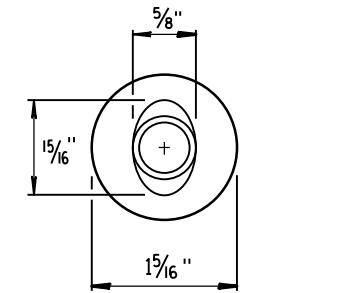
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

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

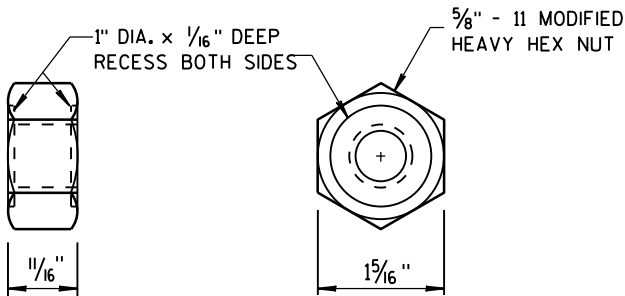


POST BOLT TABLE

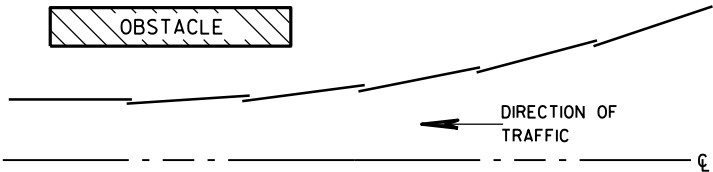
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



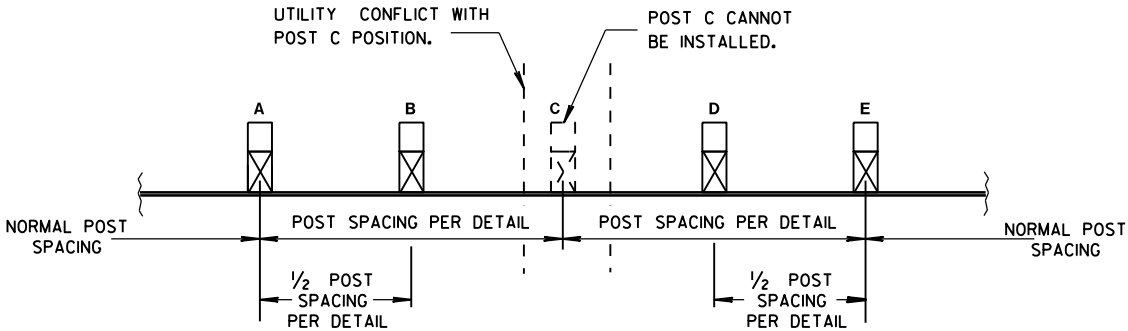
ALTERNATE BOLT HEAD



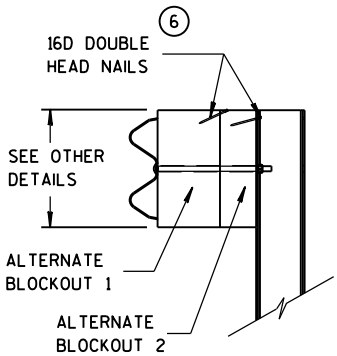
POST BOLT
AND RECESS NUT



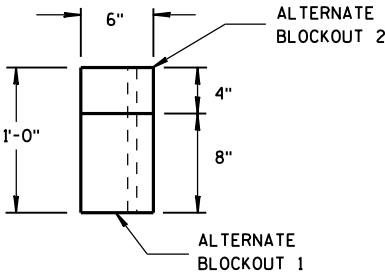
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2014 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.
- (G) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

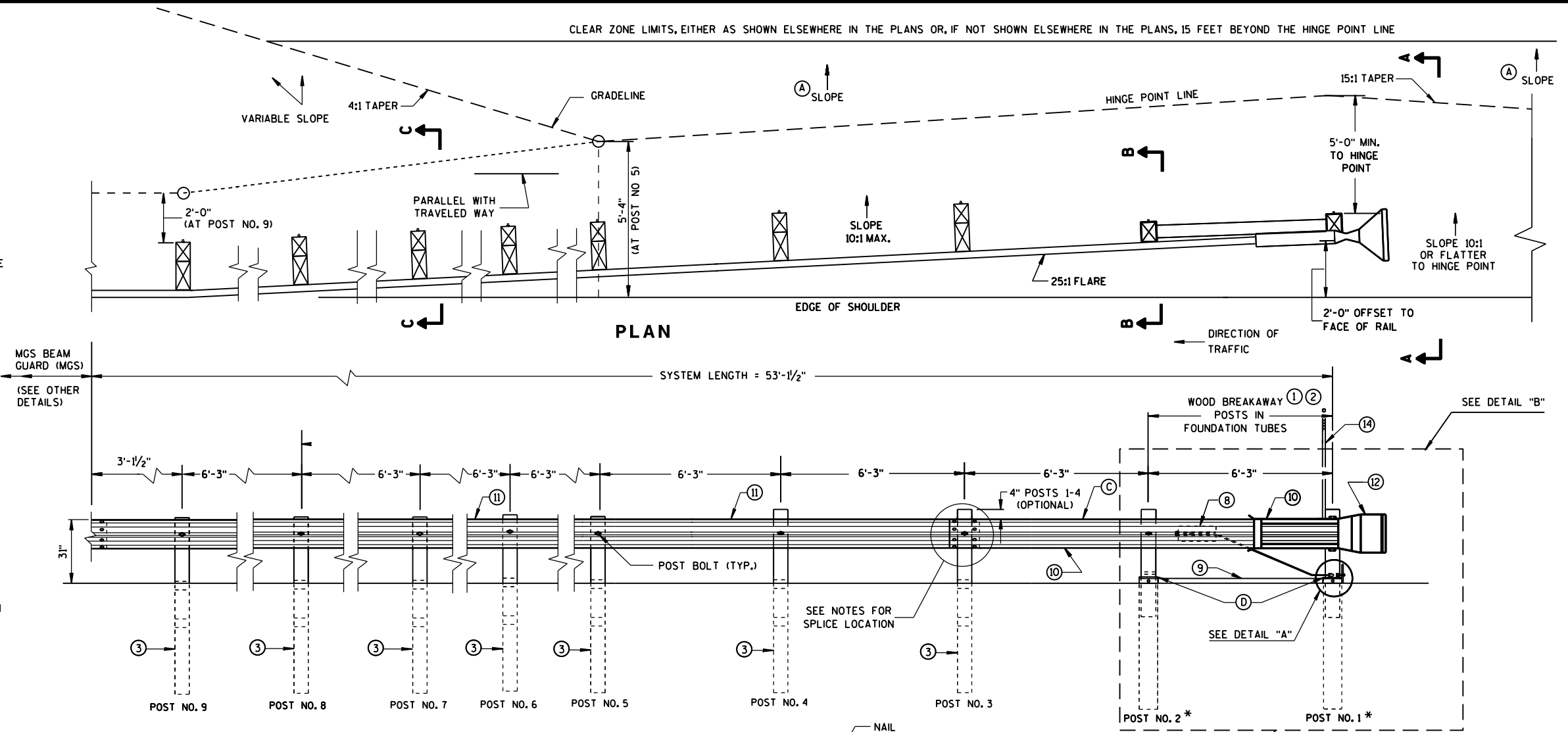
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

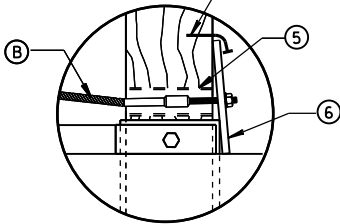
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

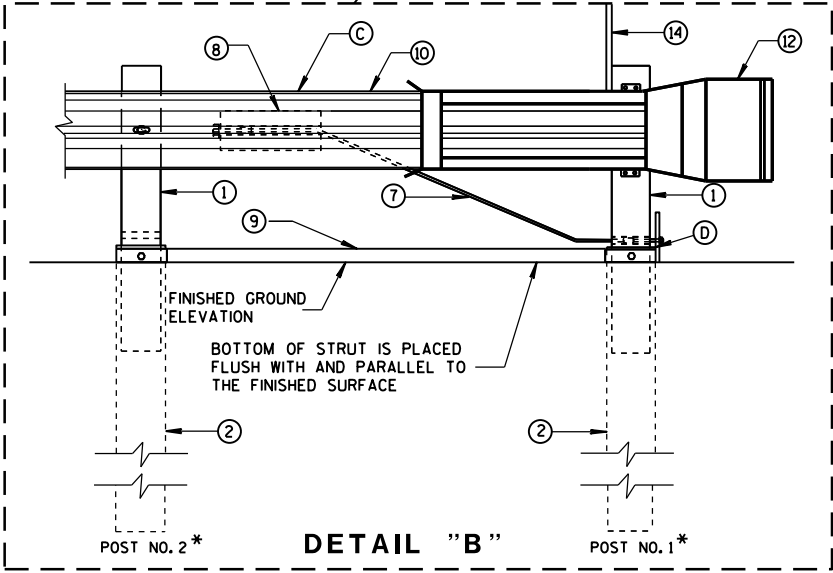
THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



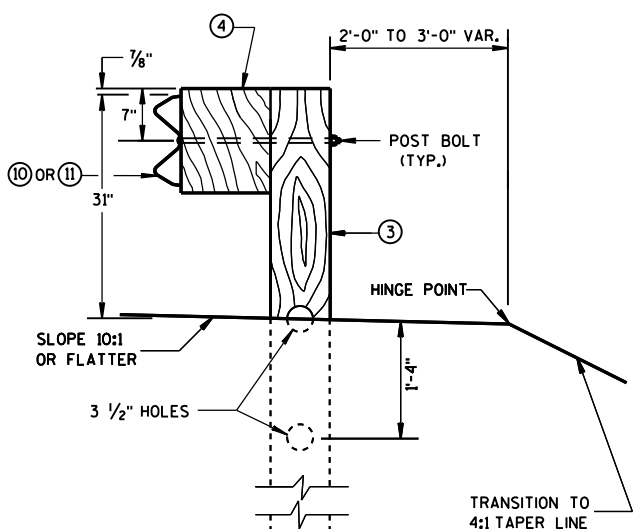
ELEVATION



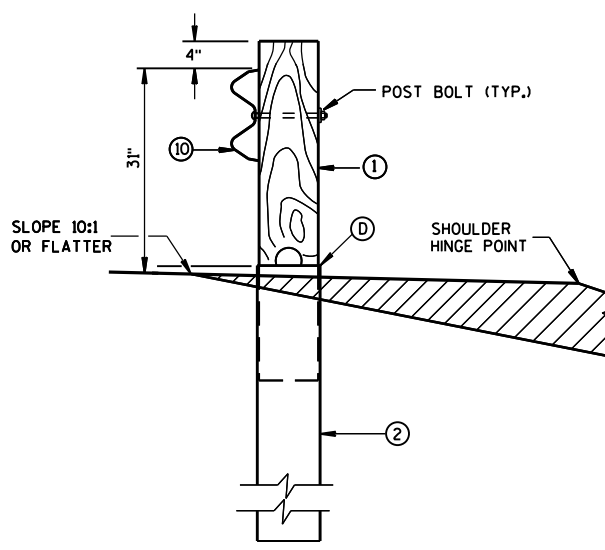
DETAIL "A"



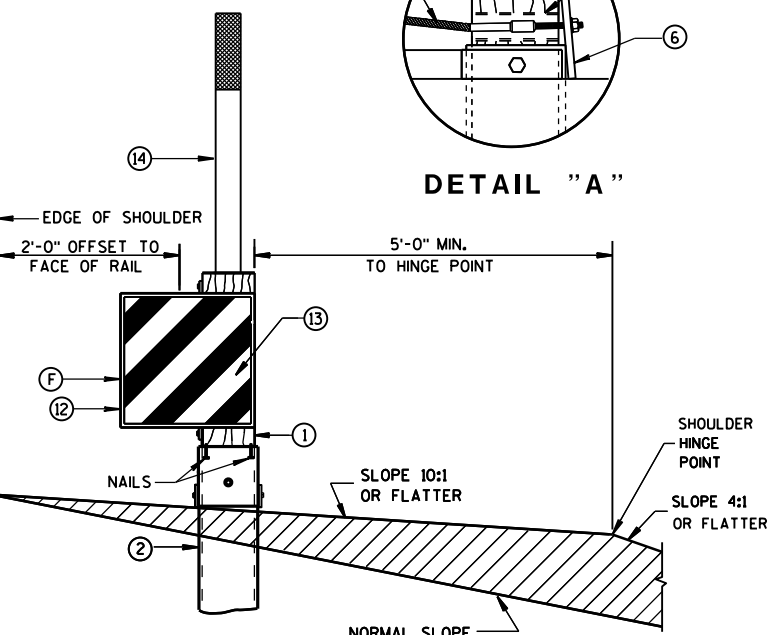
DETAIL "B"



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



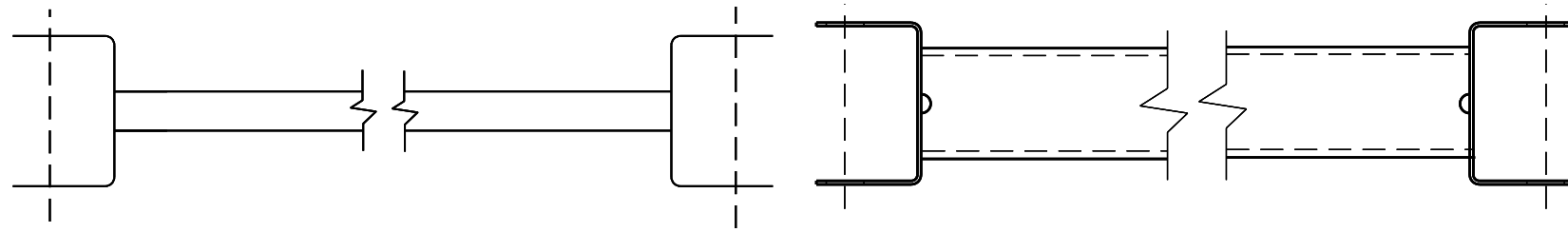
SECTION B-B
TYPICAL AT POST NO. 2*



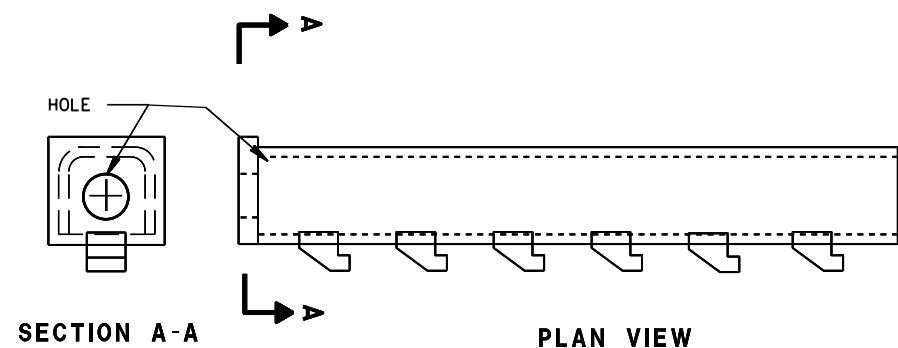
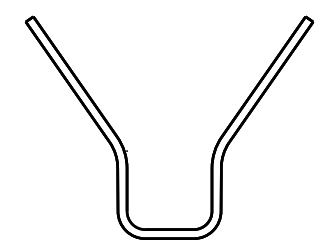
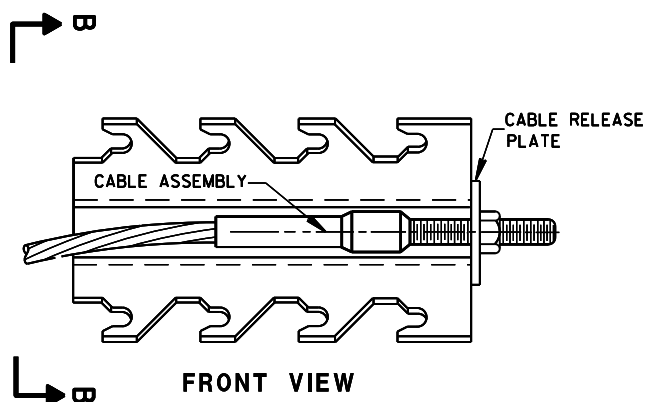
SECTION A-A
TYPICAL AT POST NO. 1*

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



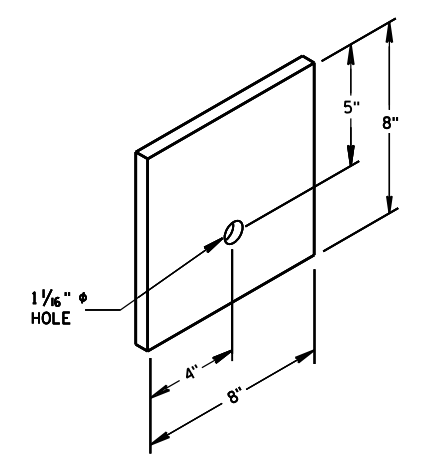
9 H
GENERIC GROUND STRUT



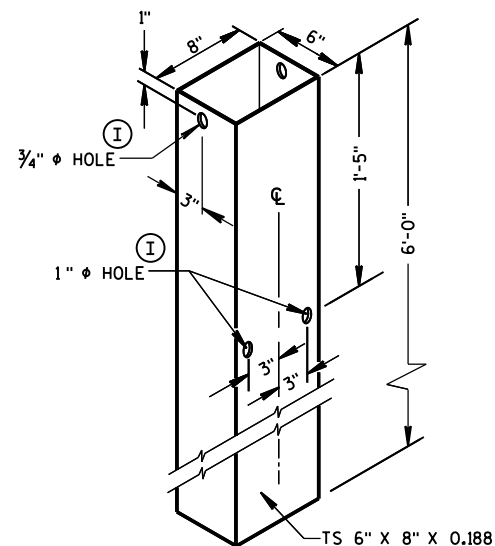
8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

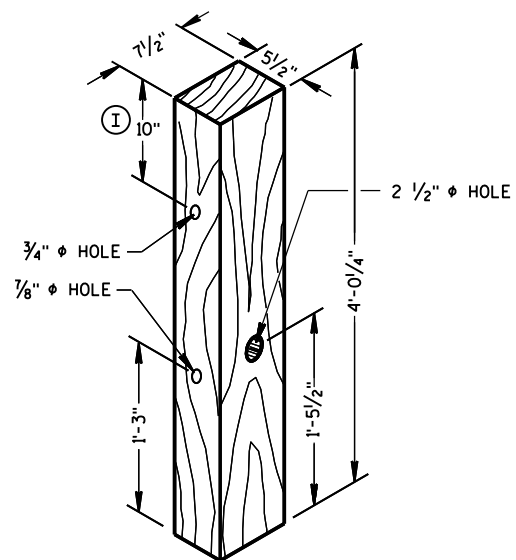
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	END SECTION EAT
⑬	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
⑭	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



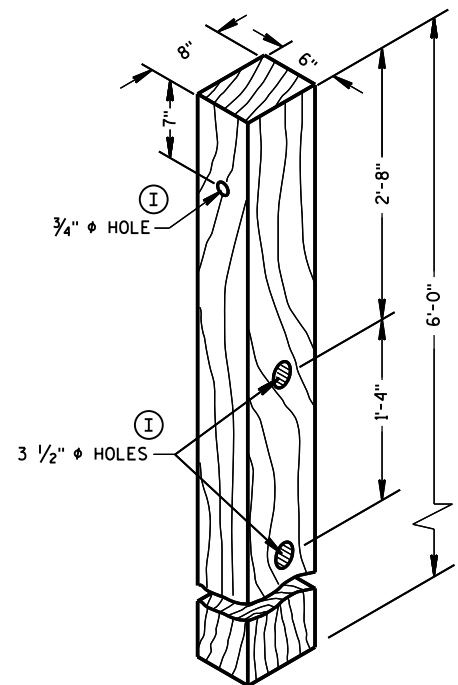
⑥
BEARING PLATE



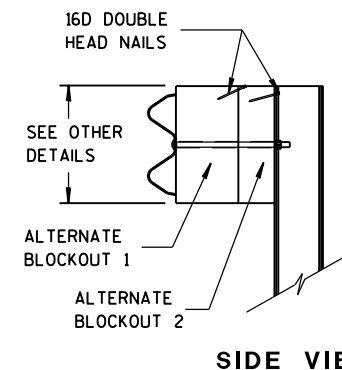
FOUNDATION TUBE ②



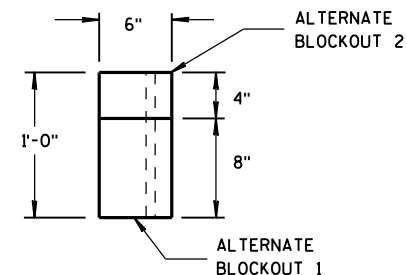
POSTS NUMBER 1 AND 2
WOOD BREAKAWAY POST ①



POSTS NUMBER 3-9
WOOD CRT POST ③

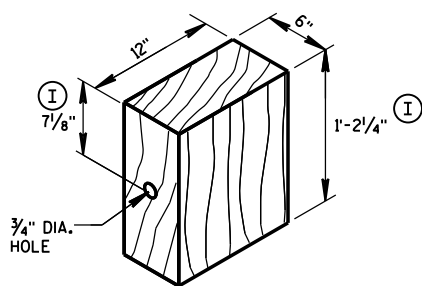


SIDE VIEW



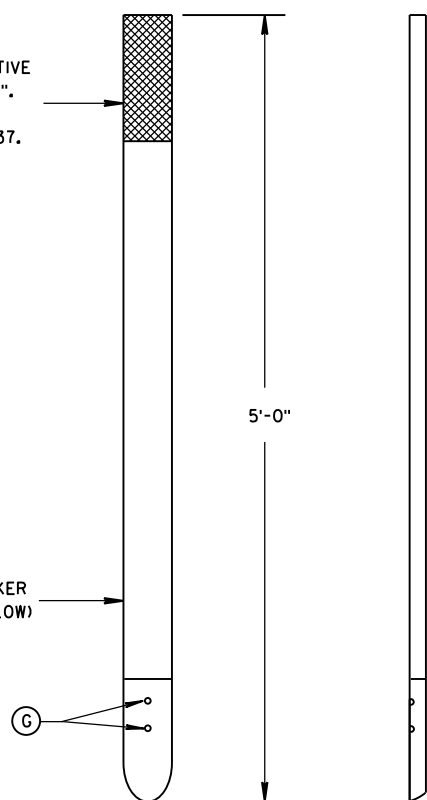
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL



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

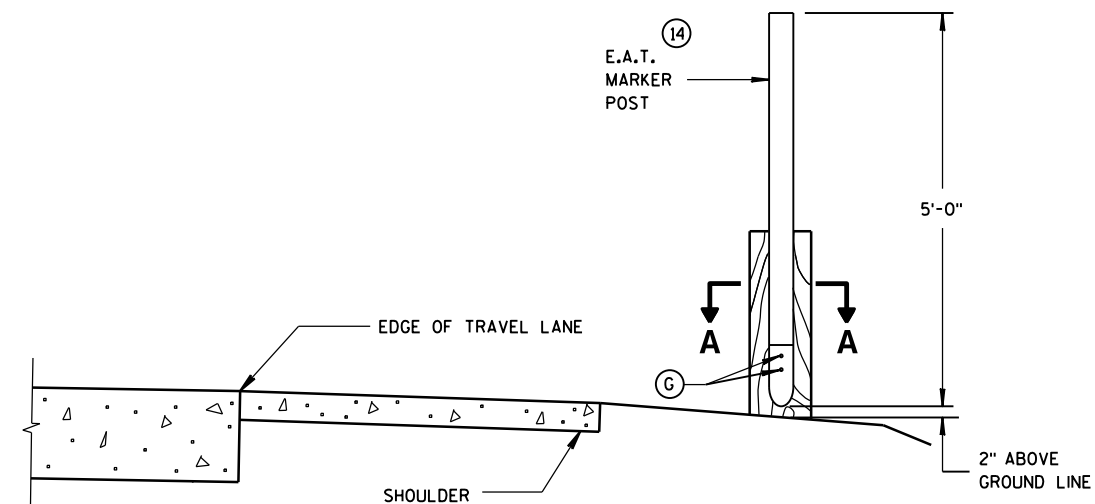
TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.



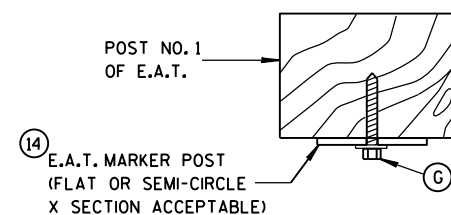
FRONT VIEW

SIDE VIEW

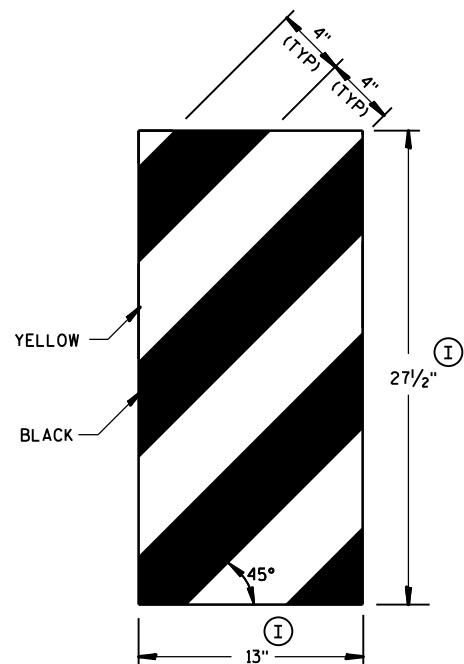
E.A.T. MARKER POST ⑭



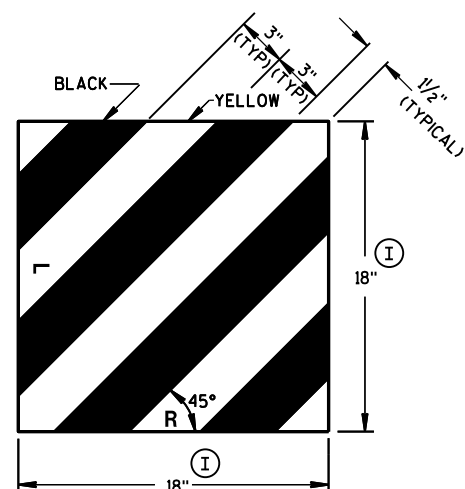
TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A



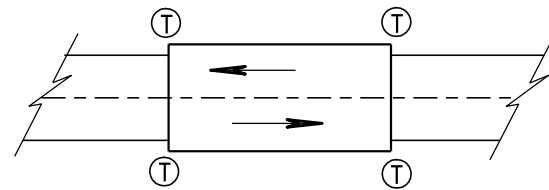
GENERIC REFLECTIVE SHEETING ⑬ ①



MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

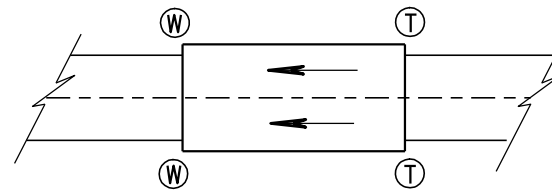
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

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

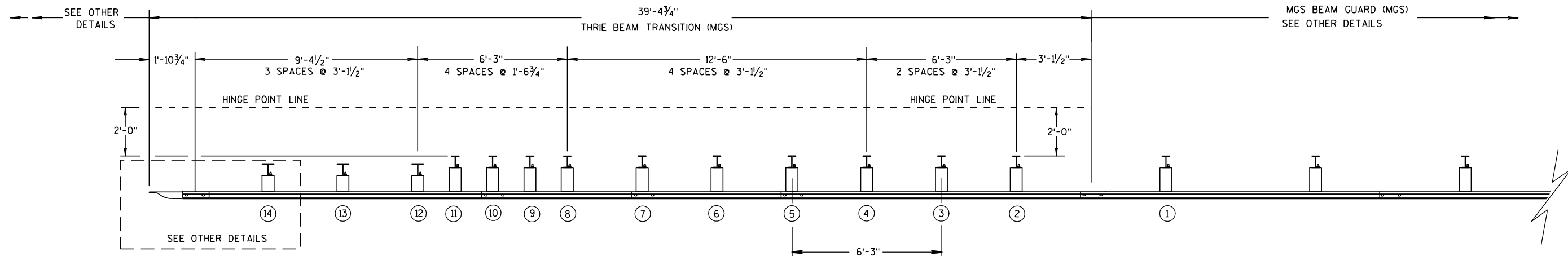
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

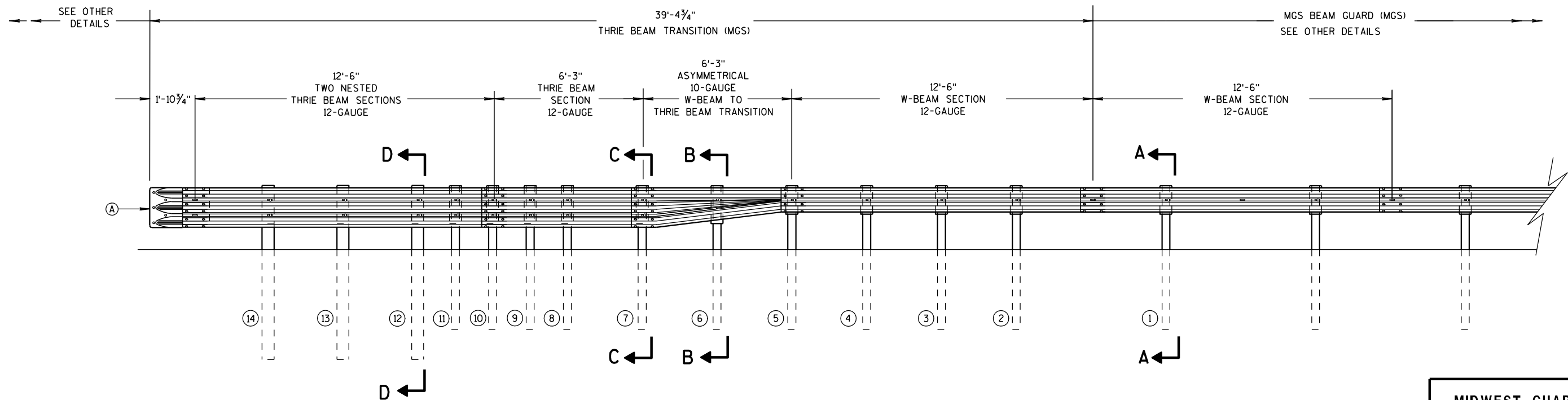
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

Ⓐ BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

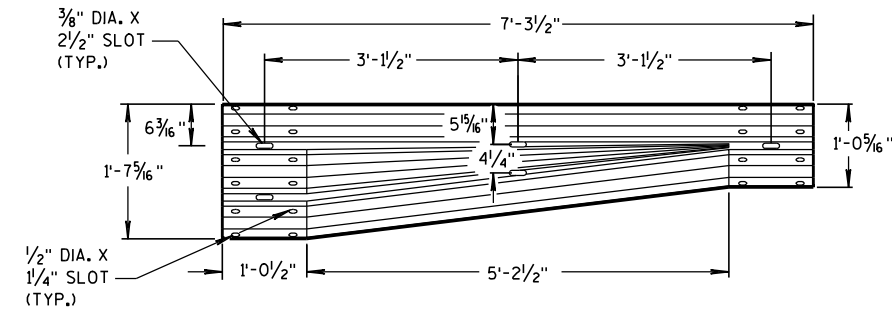
6

S.D.D. 14 B 45-3b

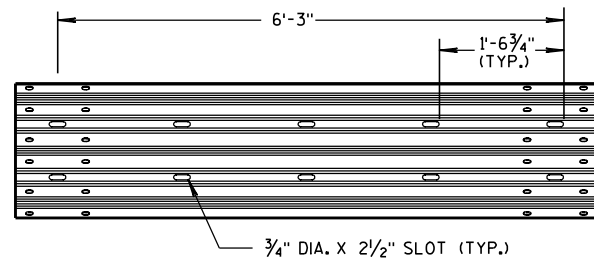


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

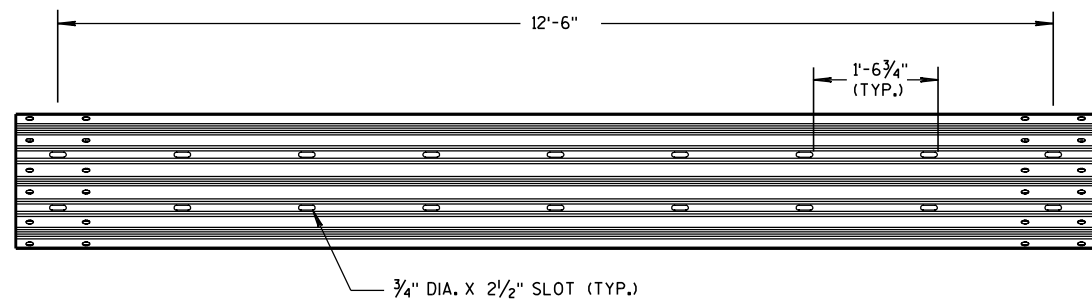
S.D.D. 14 B 45-3b



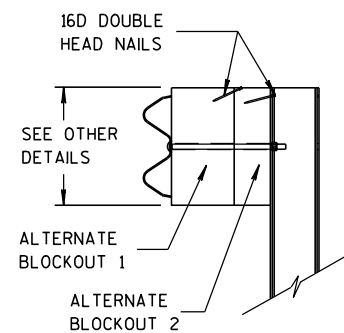
W-BEAM TO THRIE BEAM TRANSITION SECTION



6'-3" THRIE BEAM SECTION

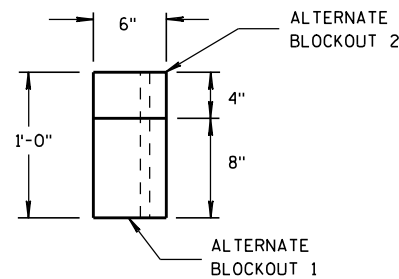


12'-6" THRIE BEAM SECTION

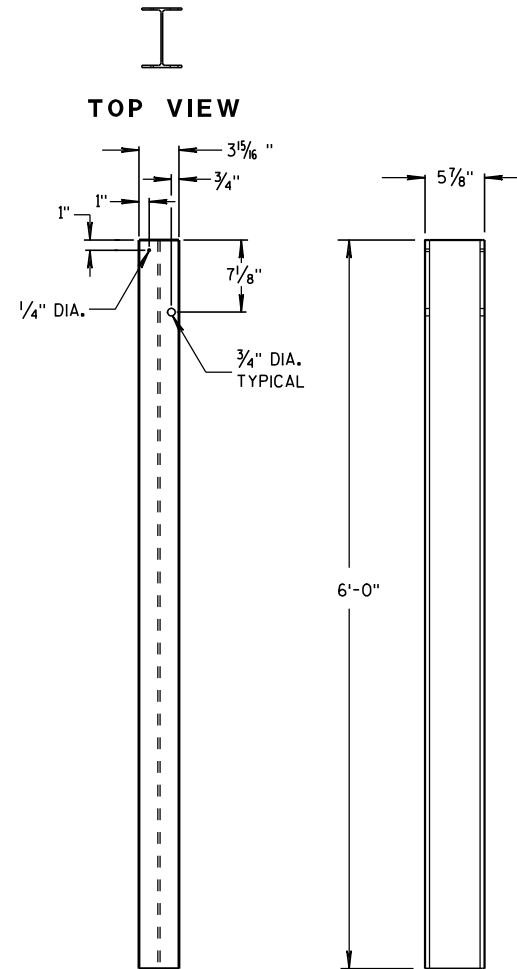


SIDE VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



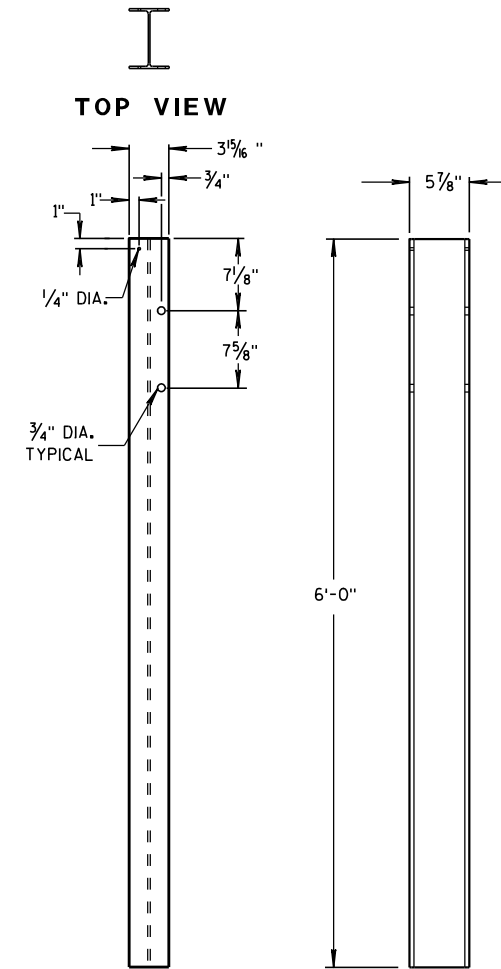
TOP VIEW



FRONT VIEW

SIDE VIEW

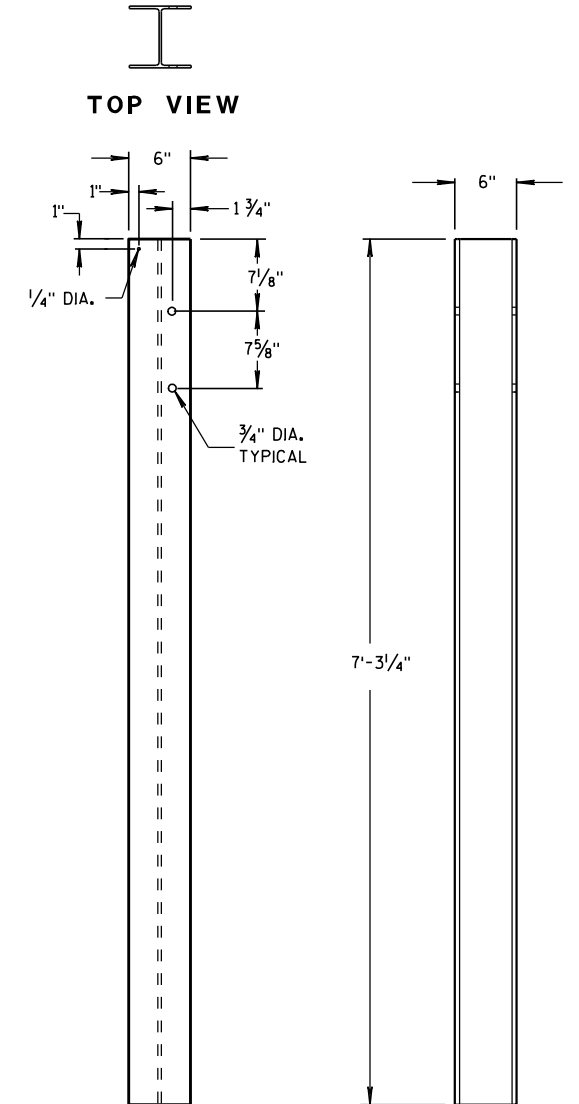
STEEL POSTS 1-5



FRONT VIEW

SIDE VIEW

STEEL POSTS 6-11



FRONT VIEW

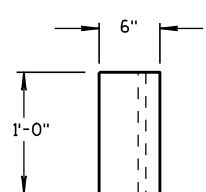
SIDE VIEW

STEEL POSTS 12-14

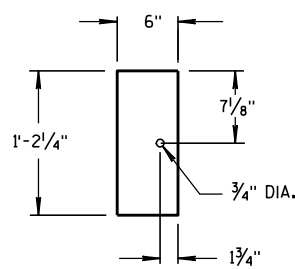
STEEL POST SIZES

POST NUMBER	SECTION TYPE	LENGTH
①	W6x9	72"
②	W6x9	72"
③	W6x9	72"
④	W6x9	72"
⑤	W6x9	72"
⑥	W6x9	72"
⑦	W6x9	72"
⑧	W6x9	72"
⑨	W6x9	72"
⑩	W6x9	72"
⑪	W6x9	72"
⑫	W6x15	87 1/8"
⑬	W6x15	87 1/8"
⑭	W6x15	87 1/8"

① WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

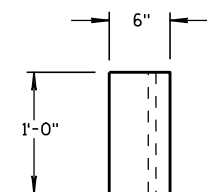


TOP VIEW

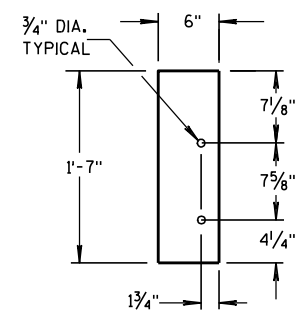


FRONT VIEW

BLOCKOUT POSTS 1-5

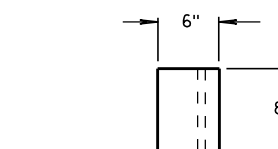


TOP VIEW

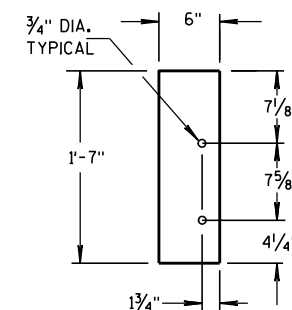


FRONT VIEW

BLOCKOUT POSTS 6-11



TOP VIEW

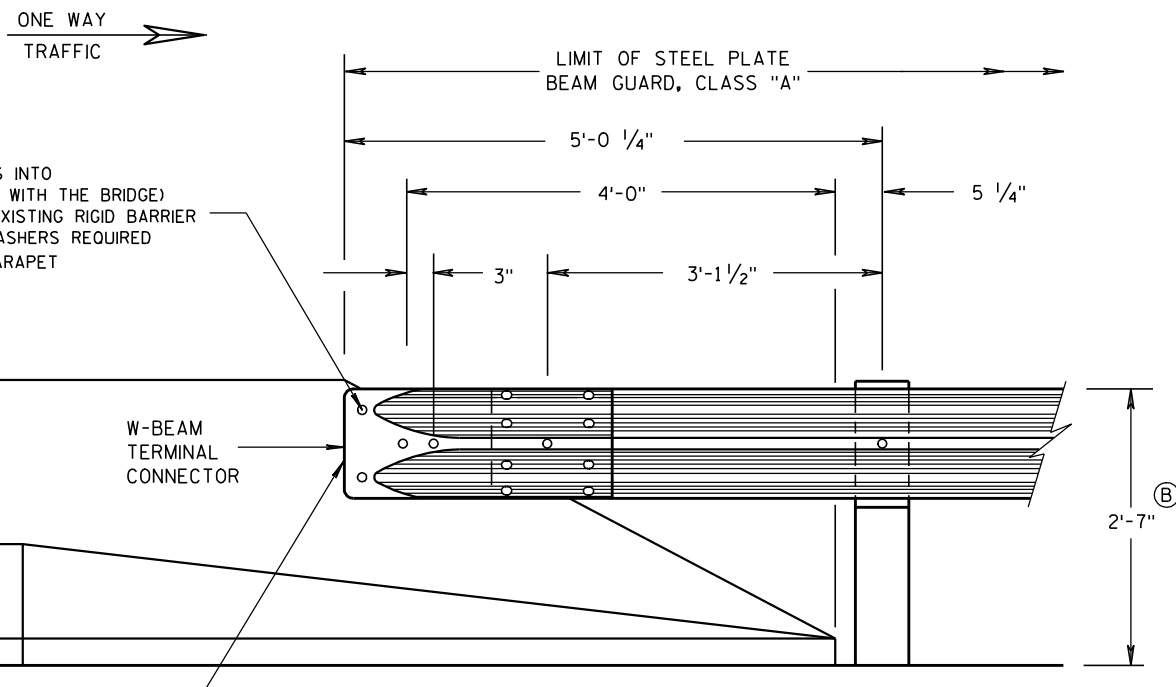


FRONT VIEW

BLOCKOUT POSTS 12-14

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



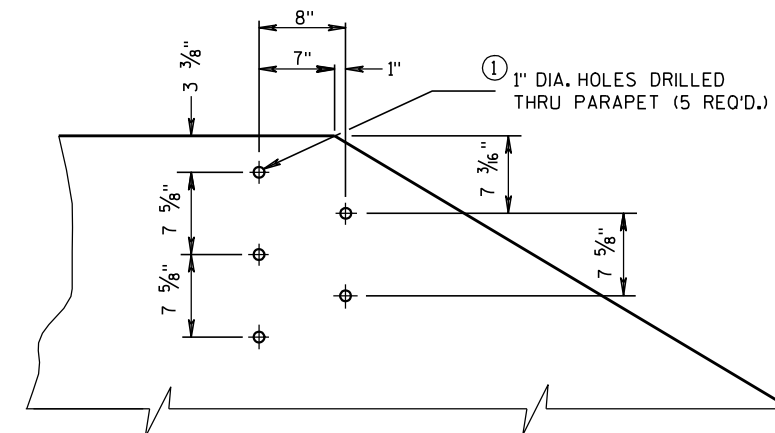
FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

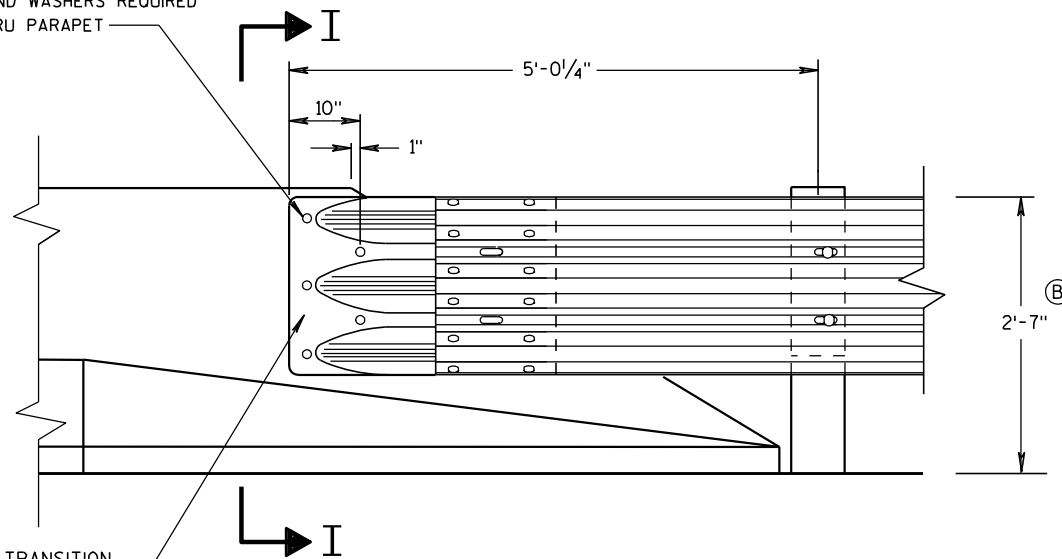
GENERAL NOTES

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ③ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.



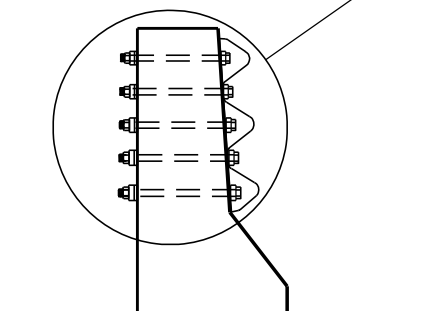
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION

- ① ② 1/8" DIA. HEX HEAD CAP SCREWS INTO
THREADED INSERTS (FURNISHED WITH THE BRIDGE)
WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER
1/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED
1" DIA. HOLES DRILLED THRU PARAPET
(5 REQ'D.)

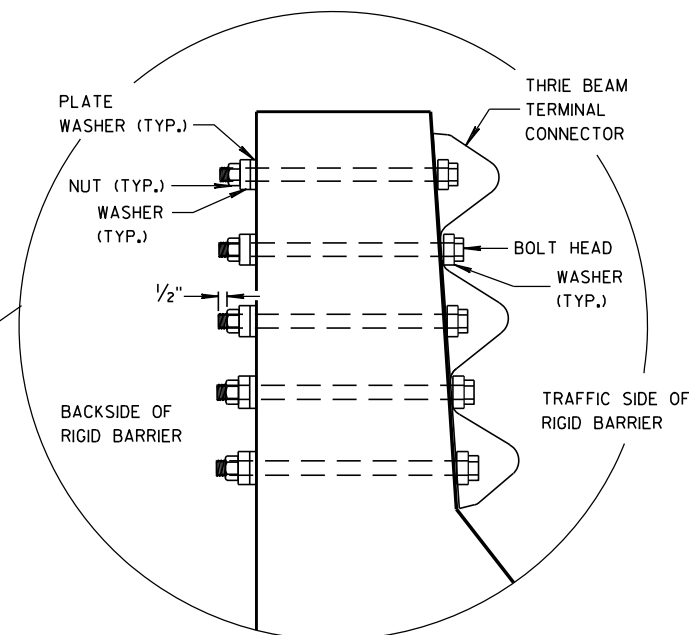


FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS



SECTION I-I



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

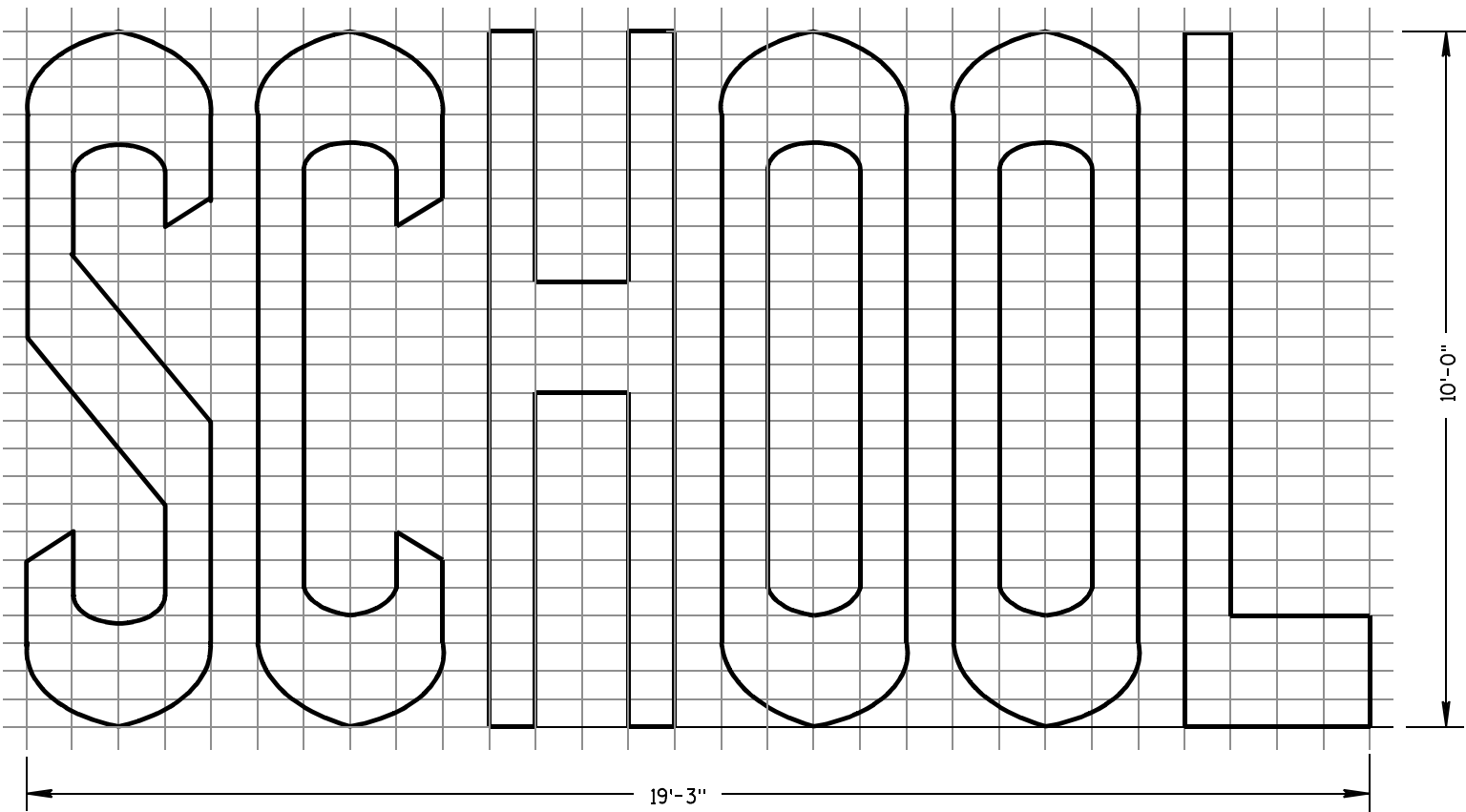
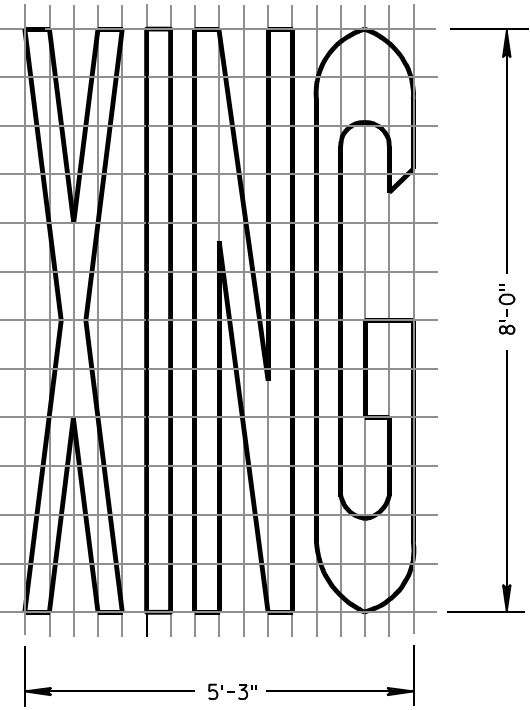
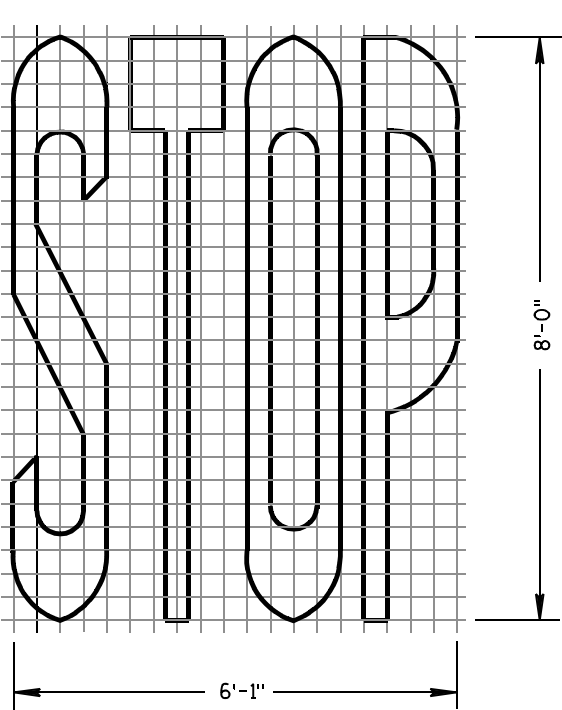
APPROVED
8/31/2012
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

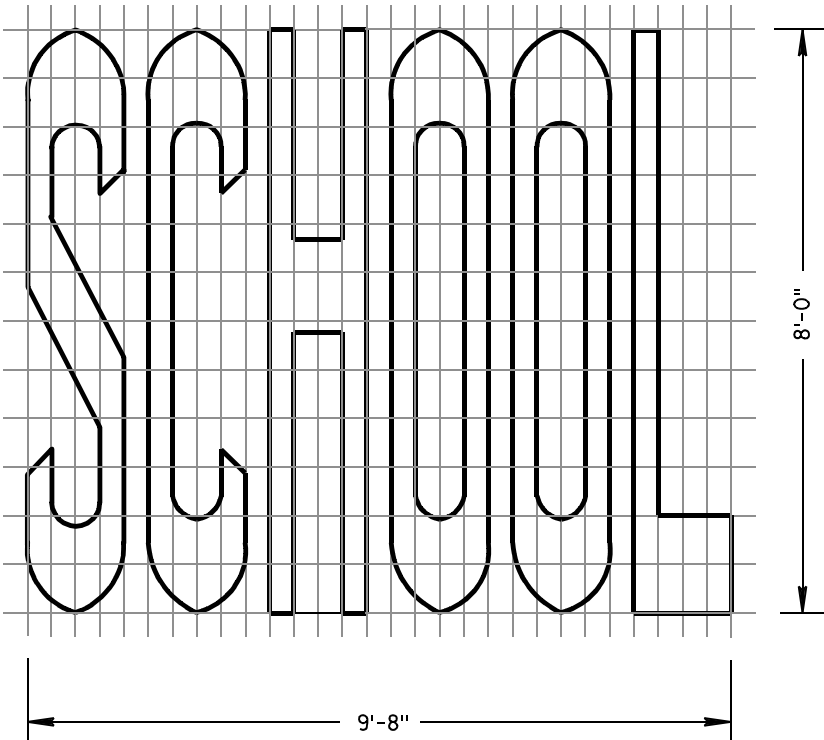
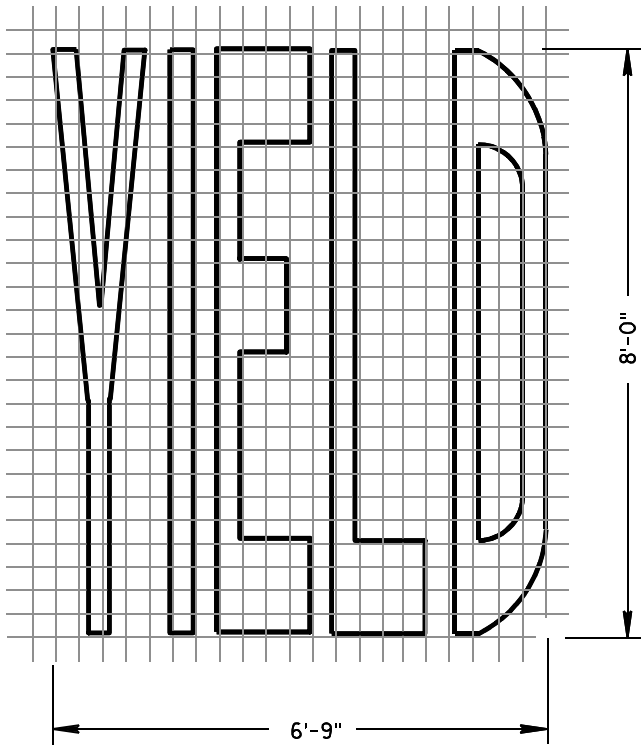
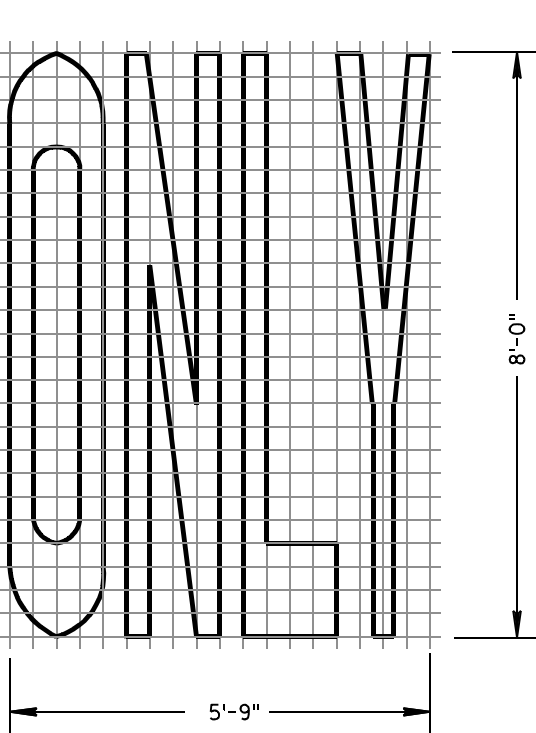
GENERAL NOTES

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

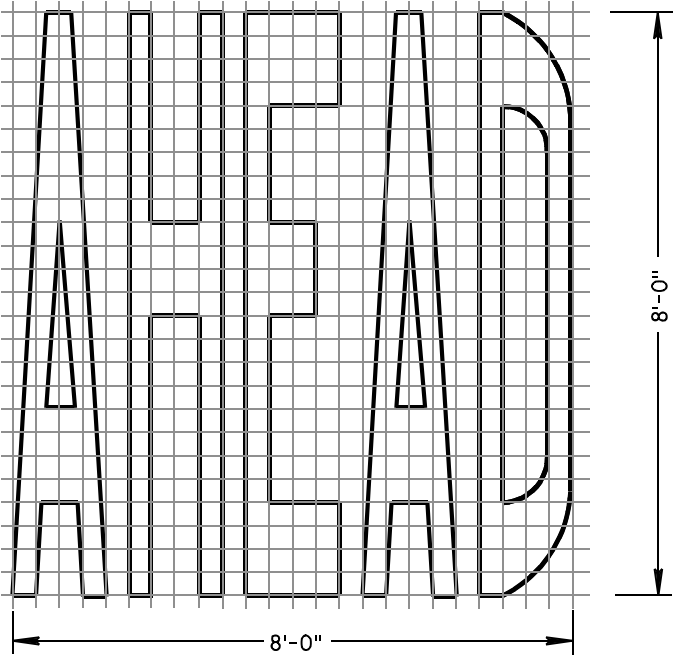
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.



TWO-LANE



SINGLE-LANE



PAVEMENT MARKING WORDS

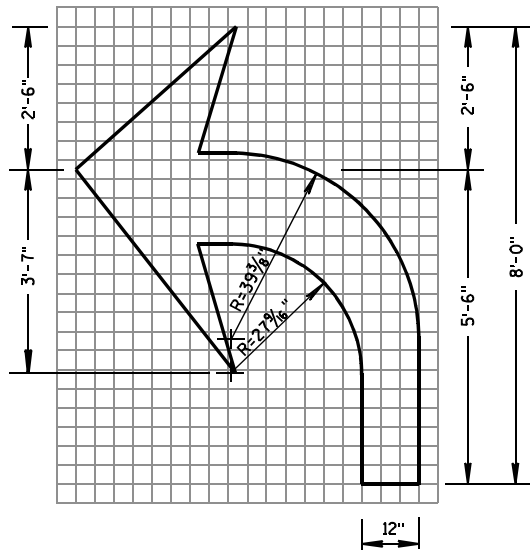
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

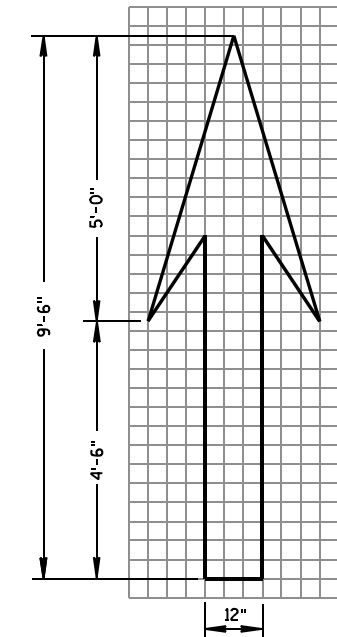
7-1-11
DATE

/S/ Thomas N. Notbohm
STATE TRAFFIC ENGINEER OF DESIGN

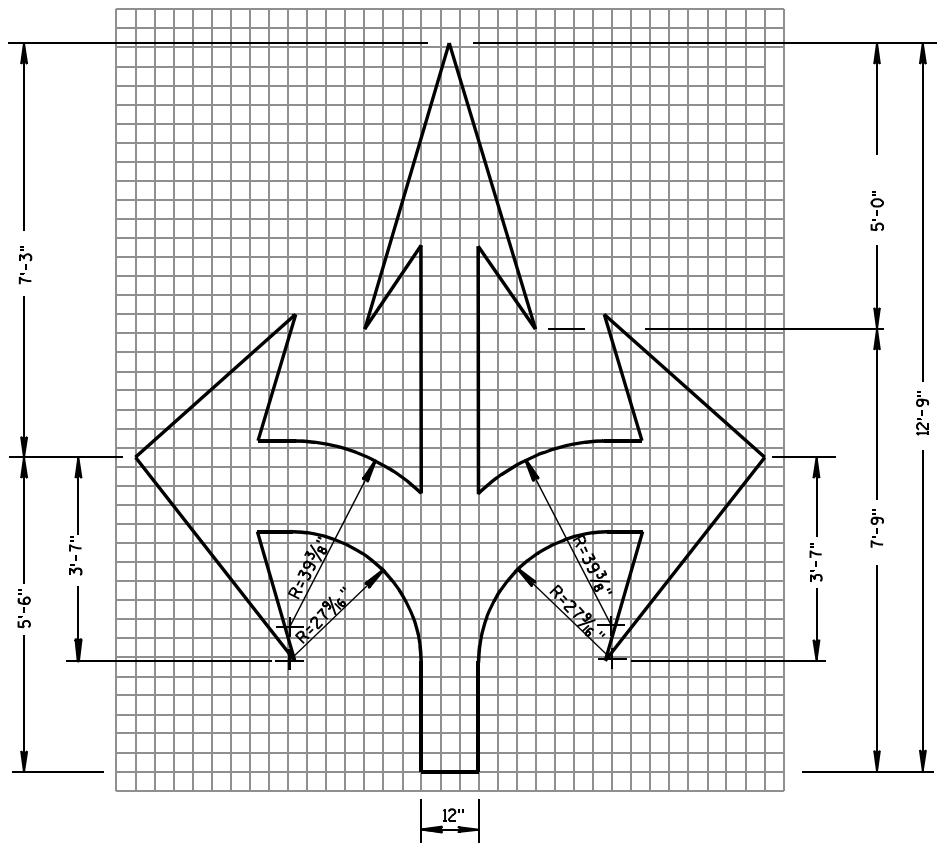
FHWA



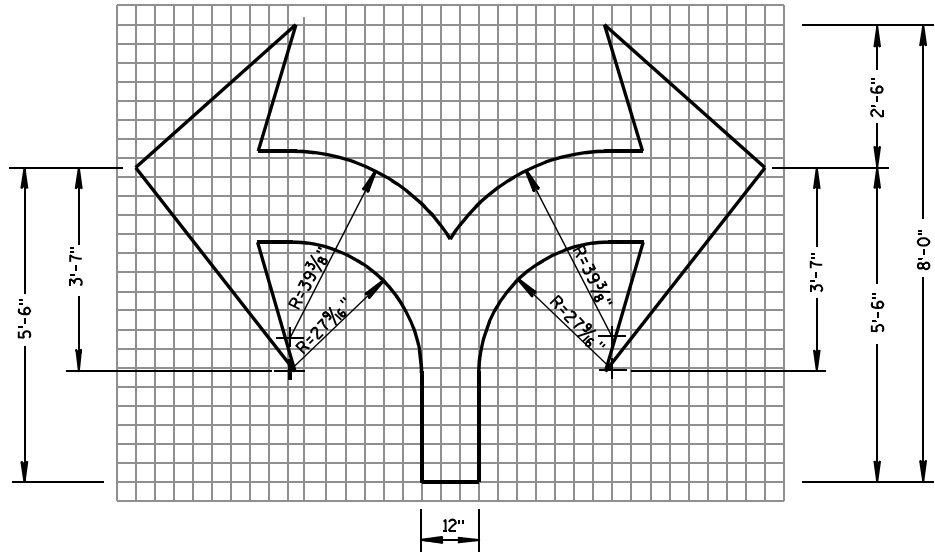
TYPE 2



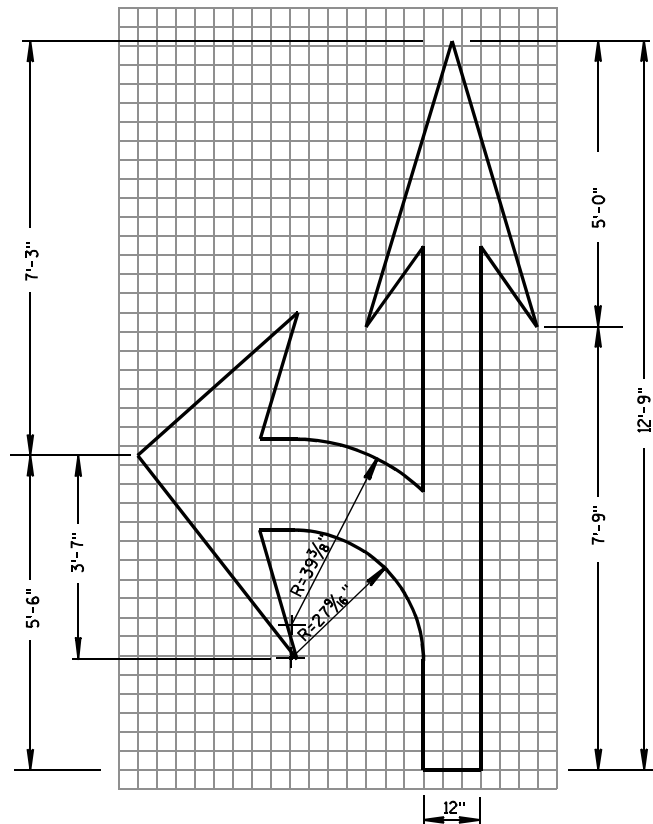
TYPE 1



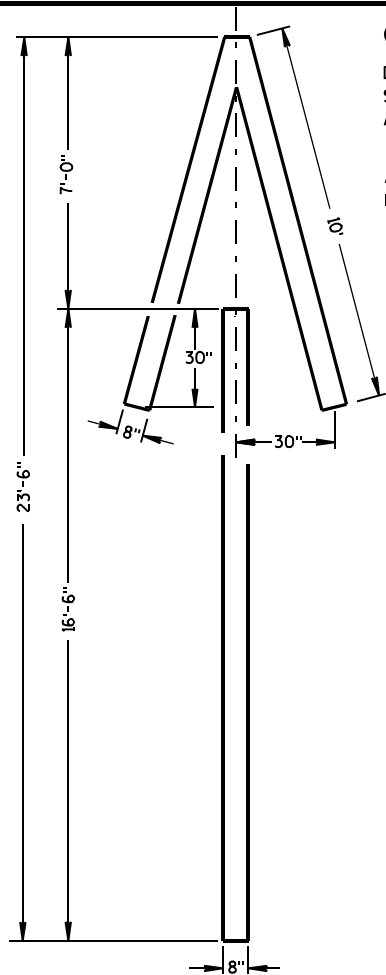
TYPE 6



TYPE 7



TYPE 3

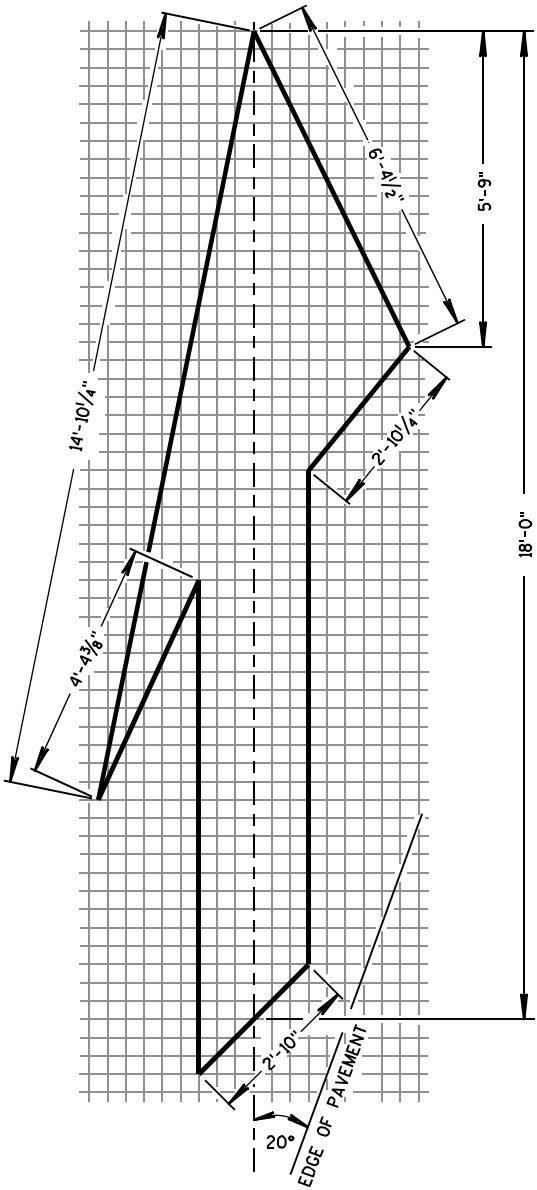


TYPE 4

GENERAL NOTES

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

ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.



TYPE 5 LANE DROP ARROW

PAVEMENT MARKING ARROWS

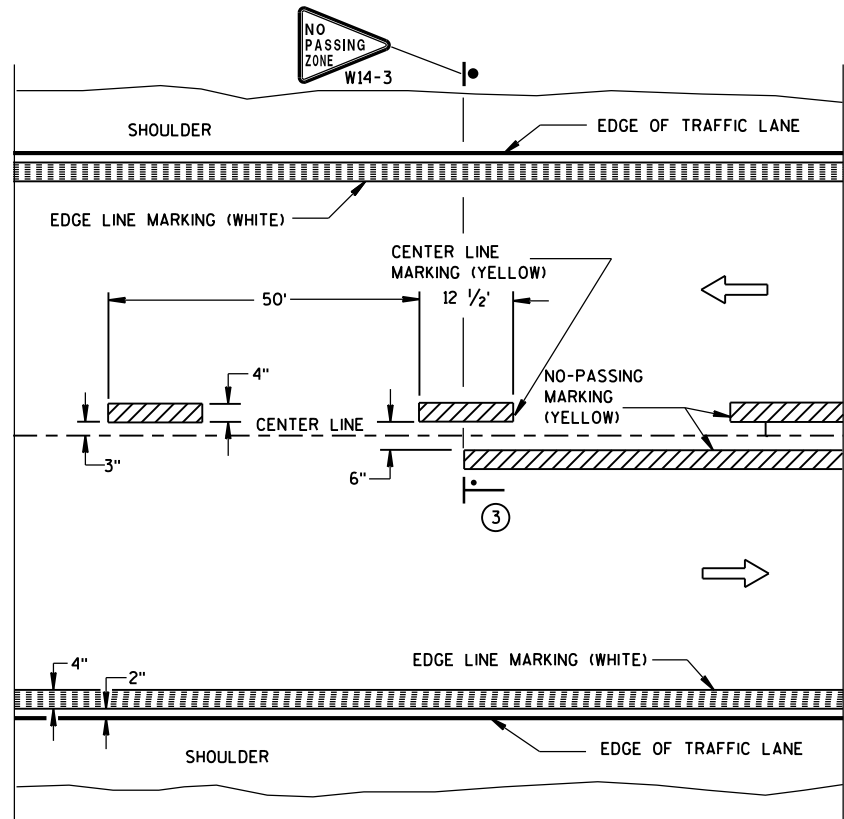
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

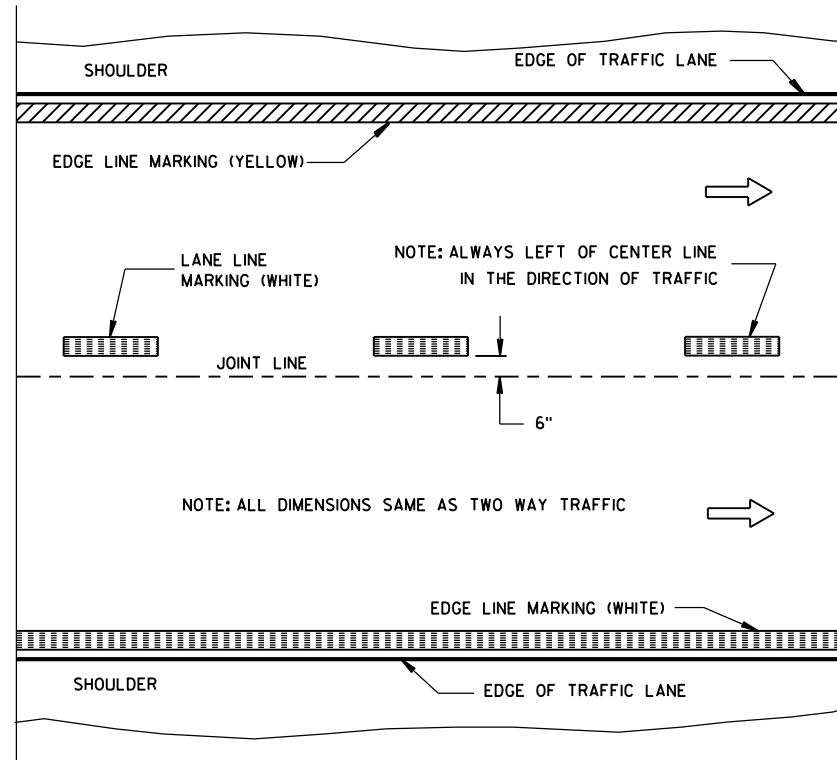
7/1/11
DATE

/S/ Thomas N. Notbohm
STATE TRAFFIC ENGINEER OF DESIGN

FHWA

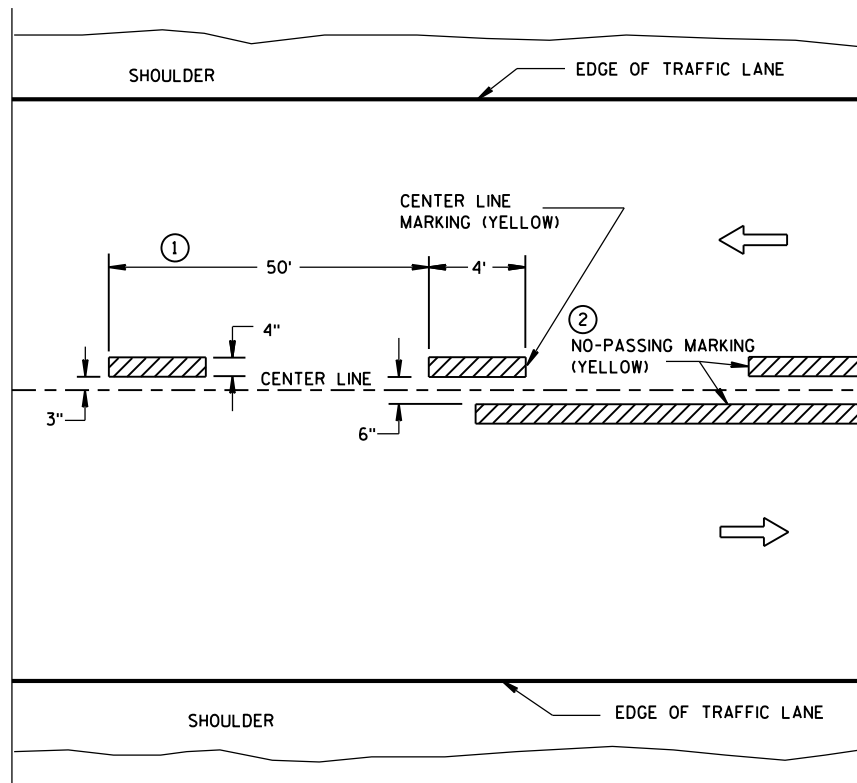


TWO WAY TRAFFIC

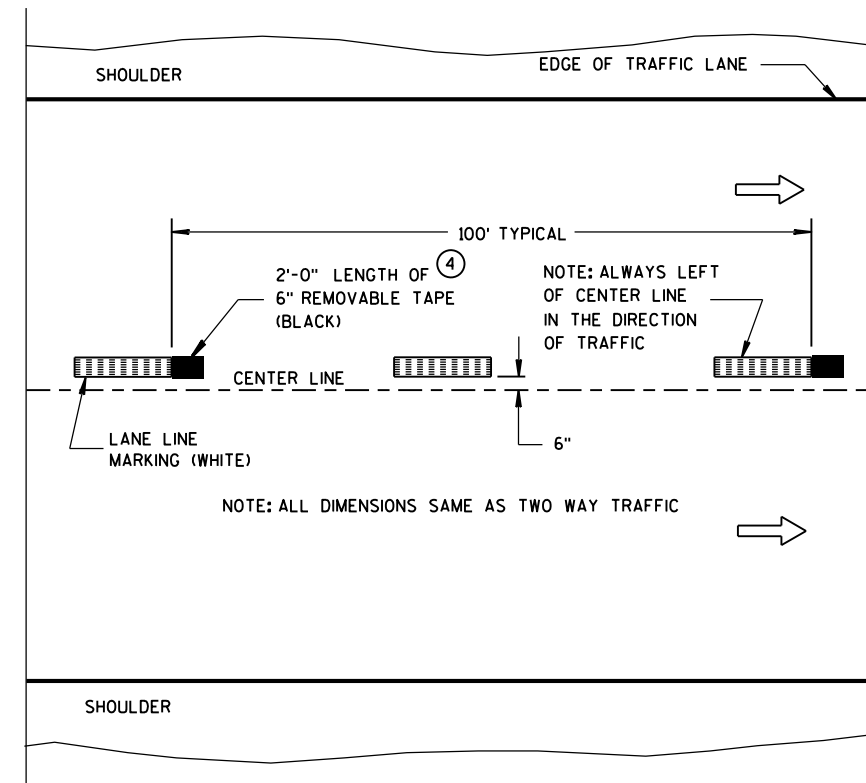


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING
(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

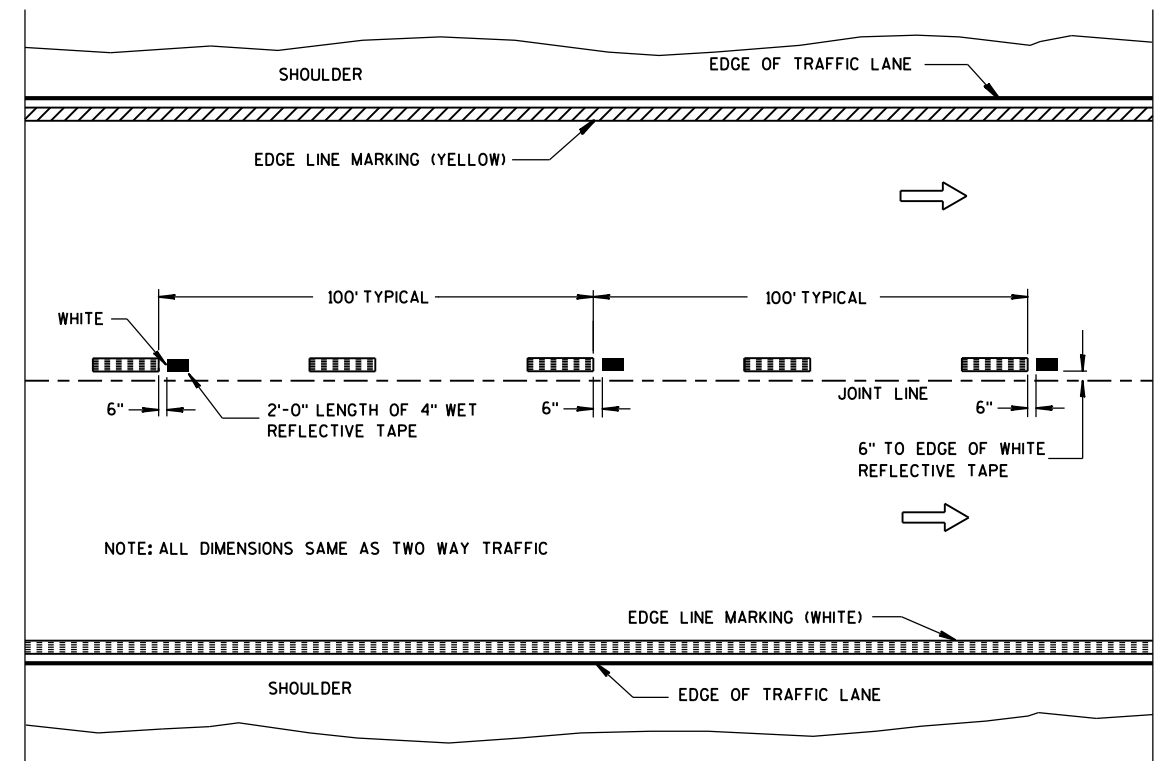
GENERAL NOTES

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

- 1 HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
- 2 NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
- 3 NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
- 4 CONCRETE ONLY.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

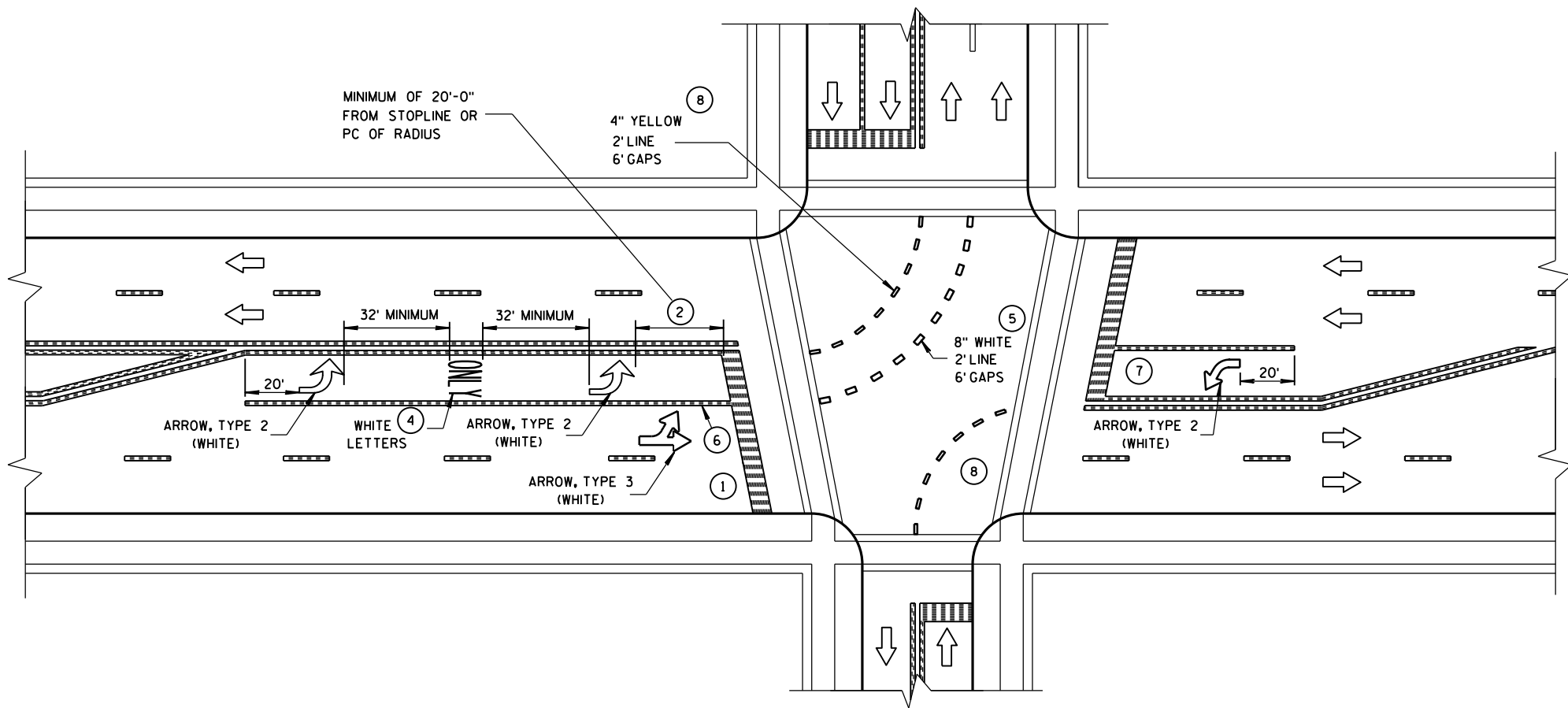
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

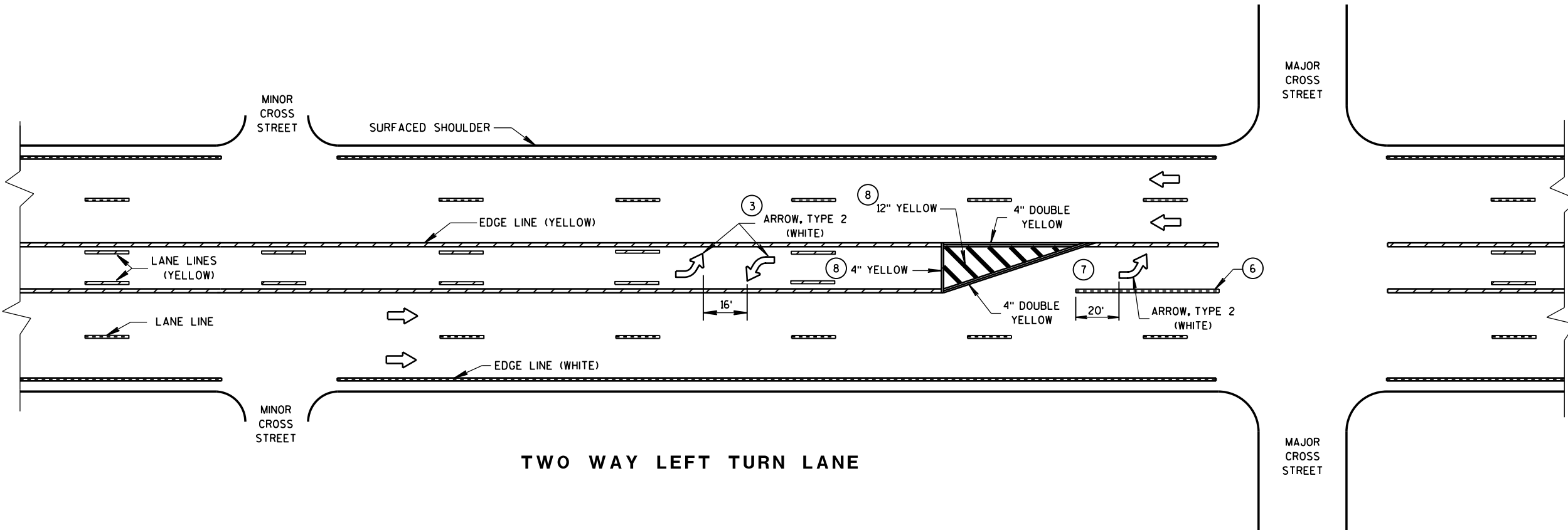
APPROVED
5-13-2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER
FHWA



GENERAL NOTES

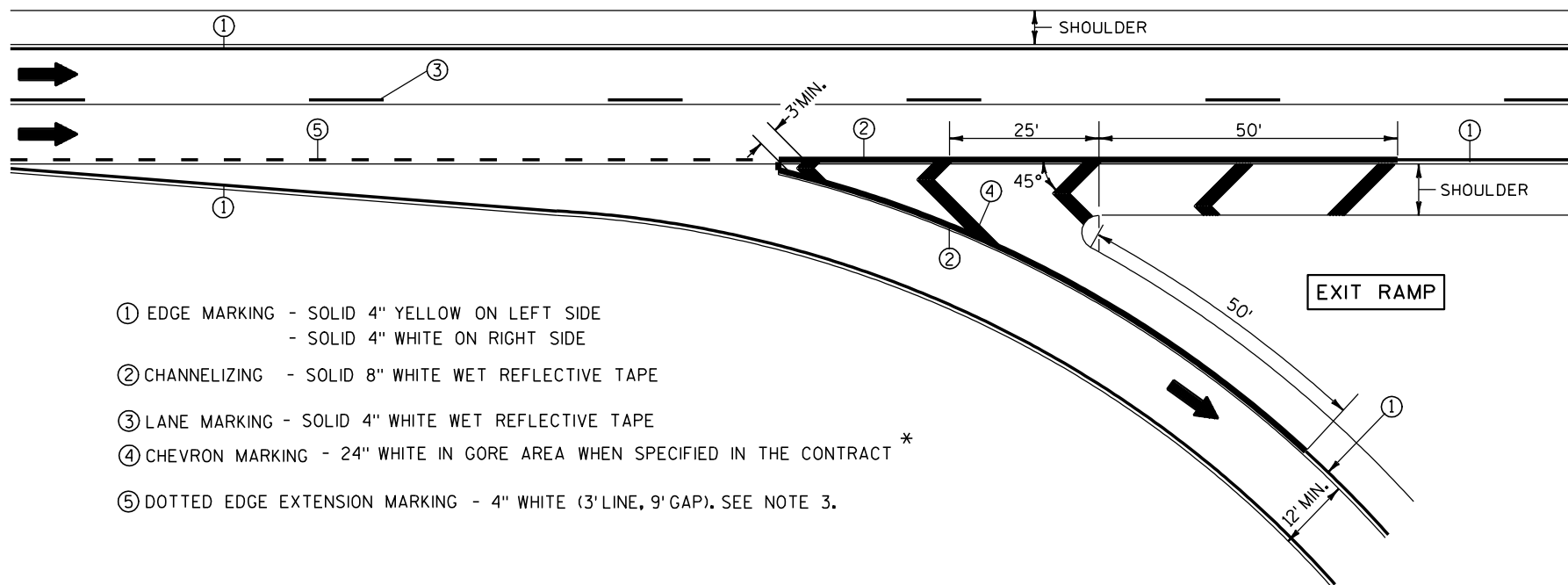
- 1 STOP BAR IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
- 2 DISTANCE MAY BE ADJUSTED TO ACCOMODATE SHORT LEFT TURN LANES. AS APPROVED BY THE ENGINEER.
- 3 A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- 4 ADD EXTRA SETS OF ONE ARROW AND ONE ONLY PER 160 FEET OR WHEN ON A CURVE.
- 5 8" WHITE WITH 2' LINE 6' GAPS FOR DUAL TURN LANE.
- 6 8" WHITE
- 7 ADD SECOND ARROW WHEN TURN BAY IS GREATER THAN OR EQUAL TO 108 FEET.
- 8 REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.

NOTE:
ARROW SYMBOL (➡)
SHOWS DIRECTION OF TRAVEL



PAVEMENT MARKING
(LEFT TURN LANE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

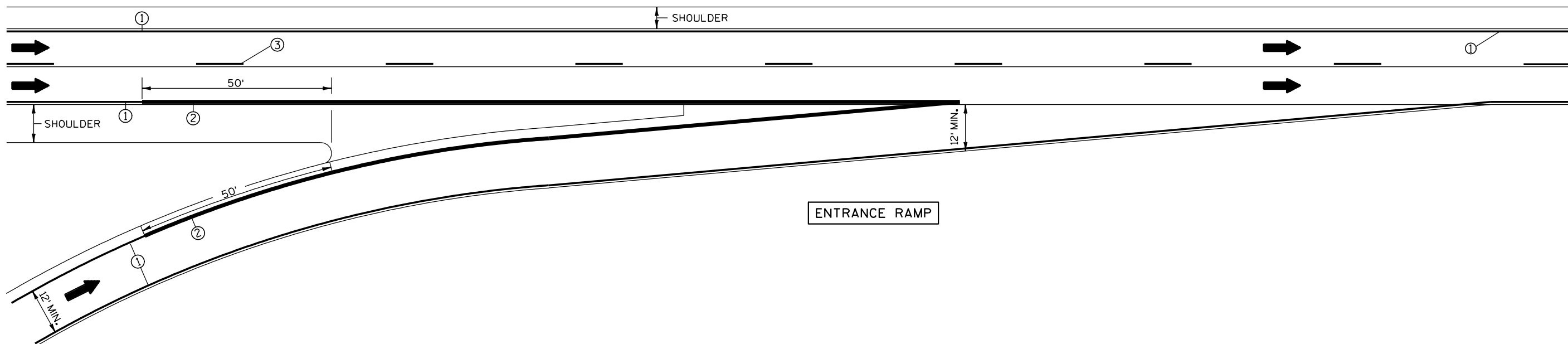


- ① EDGE MARKING - SOLID 4" YELLOW ON LEFT SIDE
- SOLID 4" WHITE ON RIGHT SIDE
- ② CHANNELIZING - SOLID 8" WHITE WET REFLECTIVE TAPE
- ③ LANE MARKING - SOLID 4" WHITE WET REFLECTIVE TAPE
- ④ CHEVRON MARKING - 24" WHITE IN GORE AREA WHEN SPECIFIED IN THE CONTRACT *
- ⑤ DOTTED EDGE EXTENSION MARKING - 4" WHITE (3' LINE, 9' GAP). SEE NOTE 3.

NOTES:

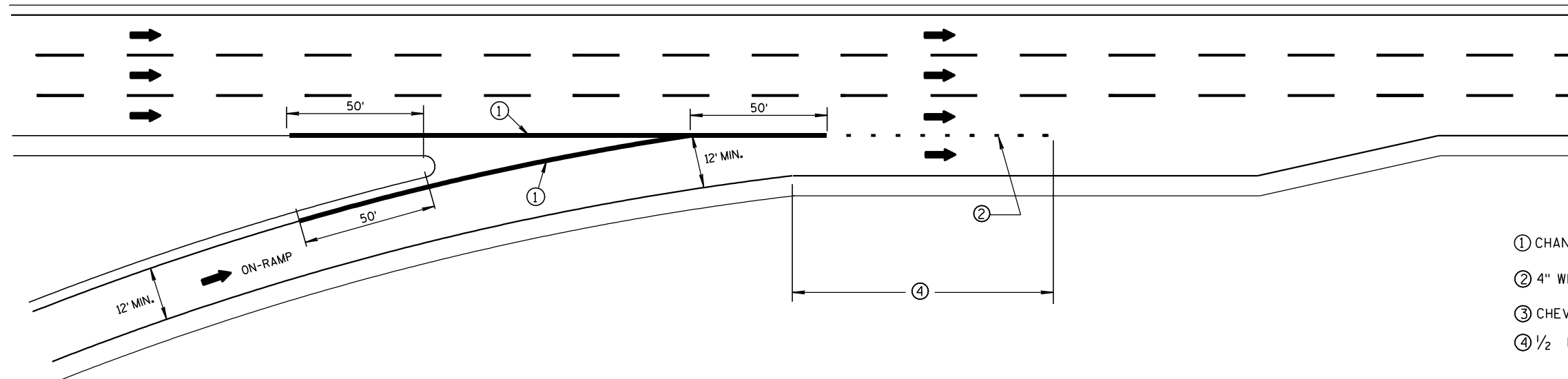
- 1. ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.
- 2. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.
- 3. 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE-GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- 4. RETRACE EXISTING DIAGONAL MARKINGS.

* REFER TO DESIGN NOTES.



PAVEMENT MARKING
(RAMPS AND GORES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

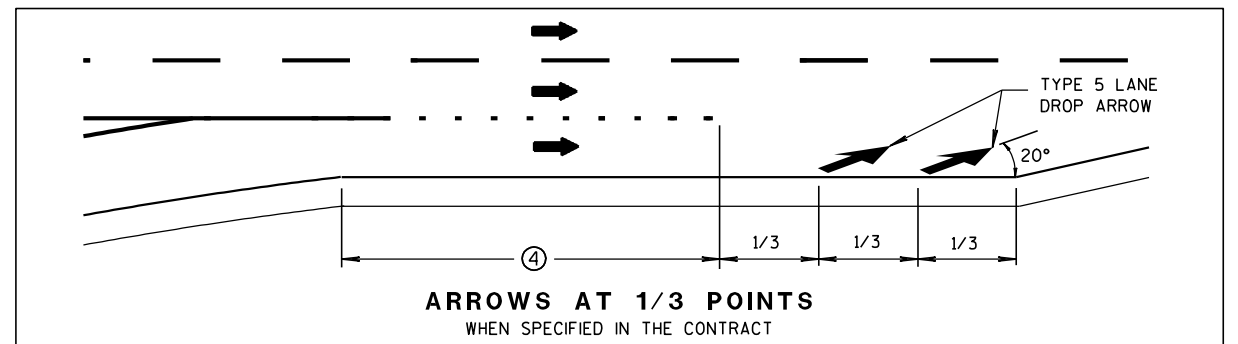
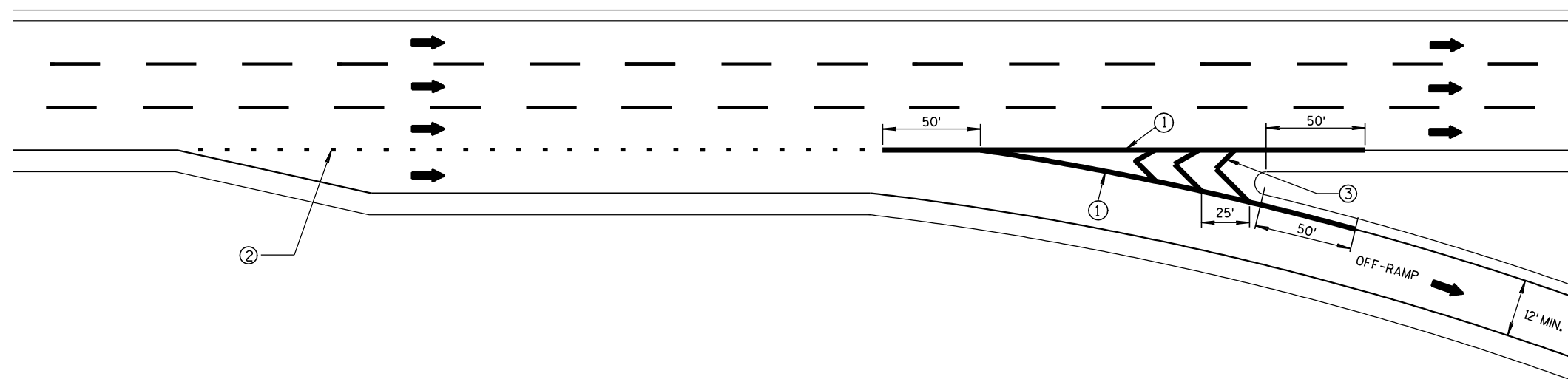


SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL ENTRANCE-RAMP

NOTES:

1. AHEAD ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.
2. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.
3. RETRACE EXISTING DIAGONAL MARKINGS.

- ① CHANNELIZING - SOLID 8" WHITE WET REFLECTIVE TAPE IN GORE AREA.
- ② 4" WHITE (3' LINE, 9' GAP).
- ③ CHEVRON MARKING - 24" WHITE WHEN SPECIFIED IN THE CONTRACT.
- ④ ½ LENGTH OF FULL WIDTH ACCELERATION LANE.

ARROWS AT 1/3 POINTS
WHEN SPECIFIED IN THE CONTRACT

SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL EXIT-RAMP

PAVEMENT MARKING FOR
PARALLEL ON-RAMP AND
PARALLEL OFF-RAMPSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

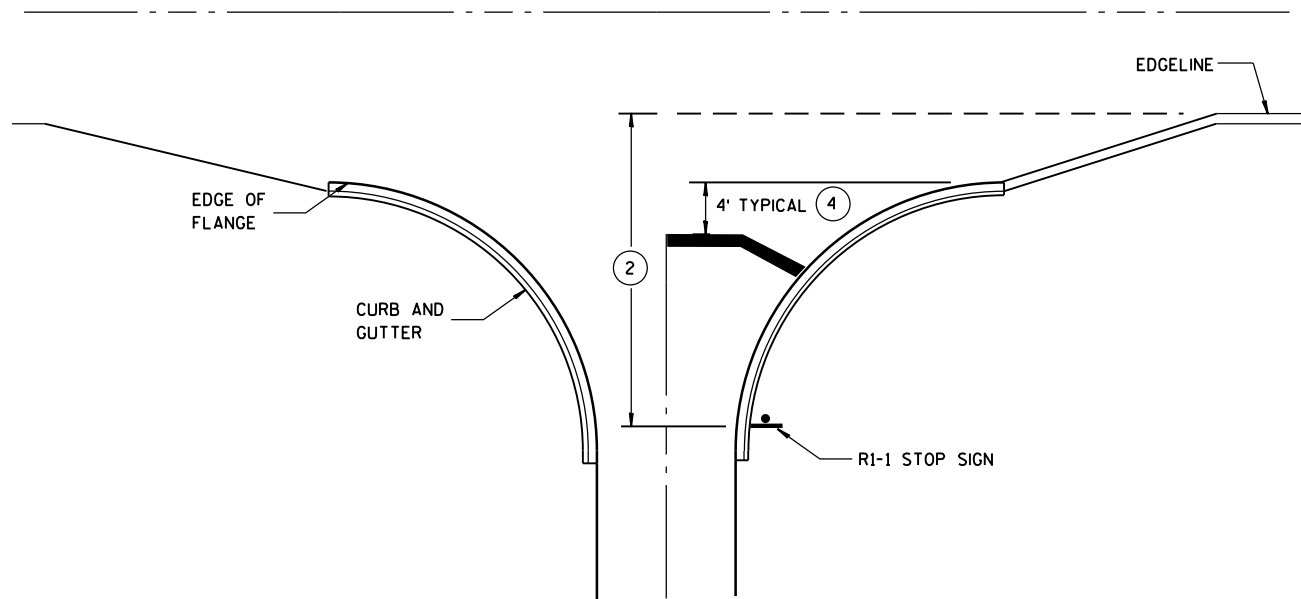
6/23/2011

DATE

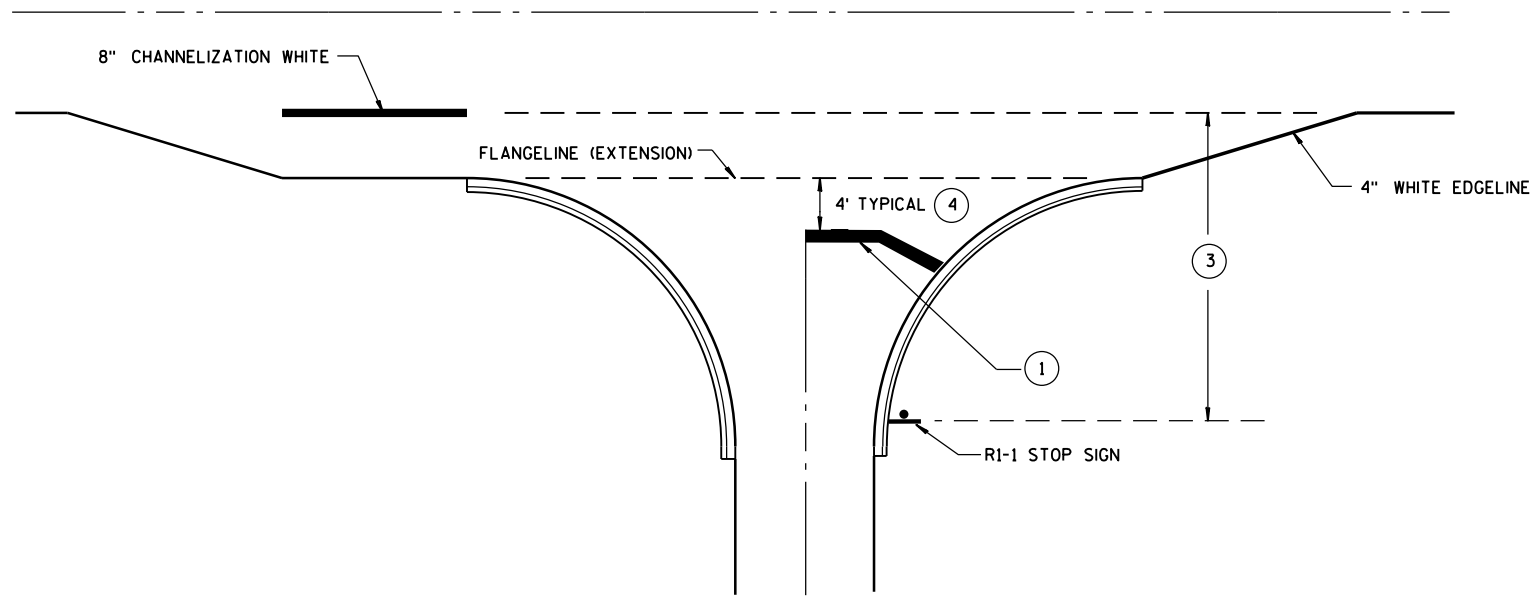
FHWA

/S/ Thomas N. Notbohm

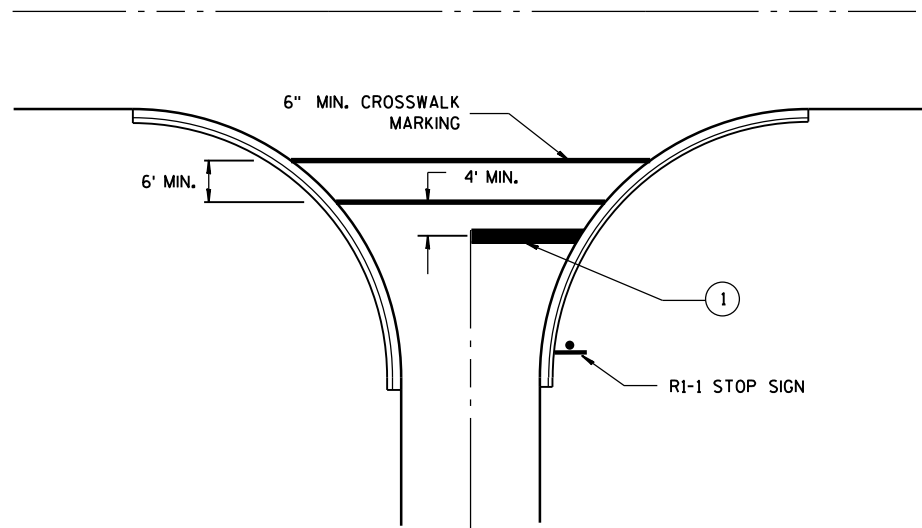
STATE TRAFFIC ENGINEER OF DESIGN



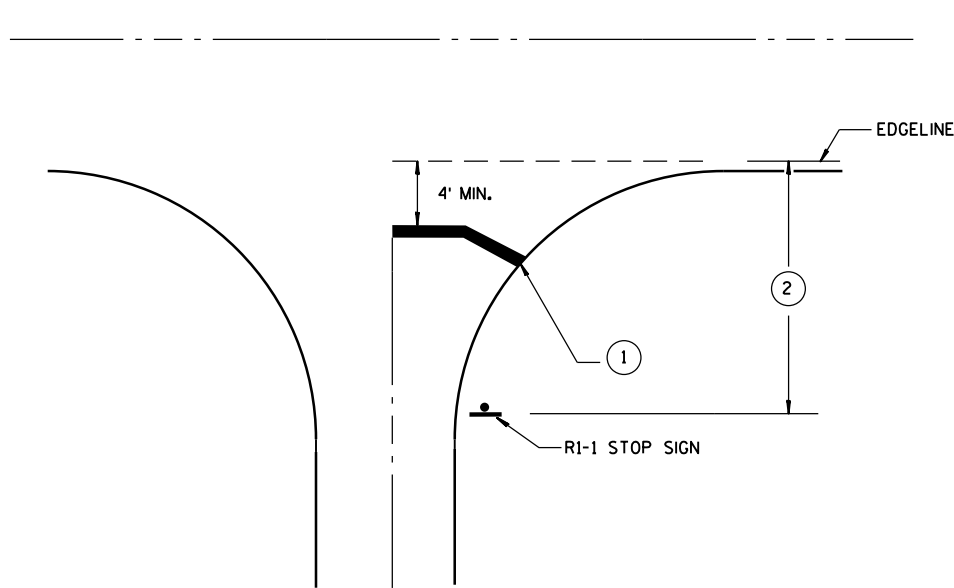
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



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.

STOP LINE AND CROSSWALK
PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/30/2013 DATE /S/ Travis Feltz
STATE TRAFFIC ENGINEER
FHWA

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMENENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

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

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

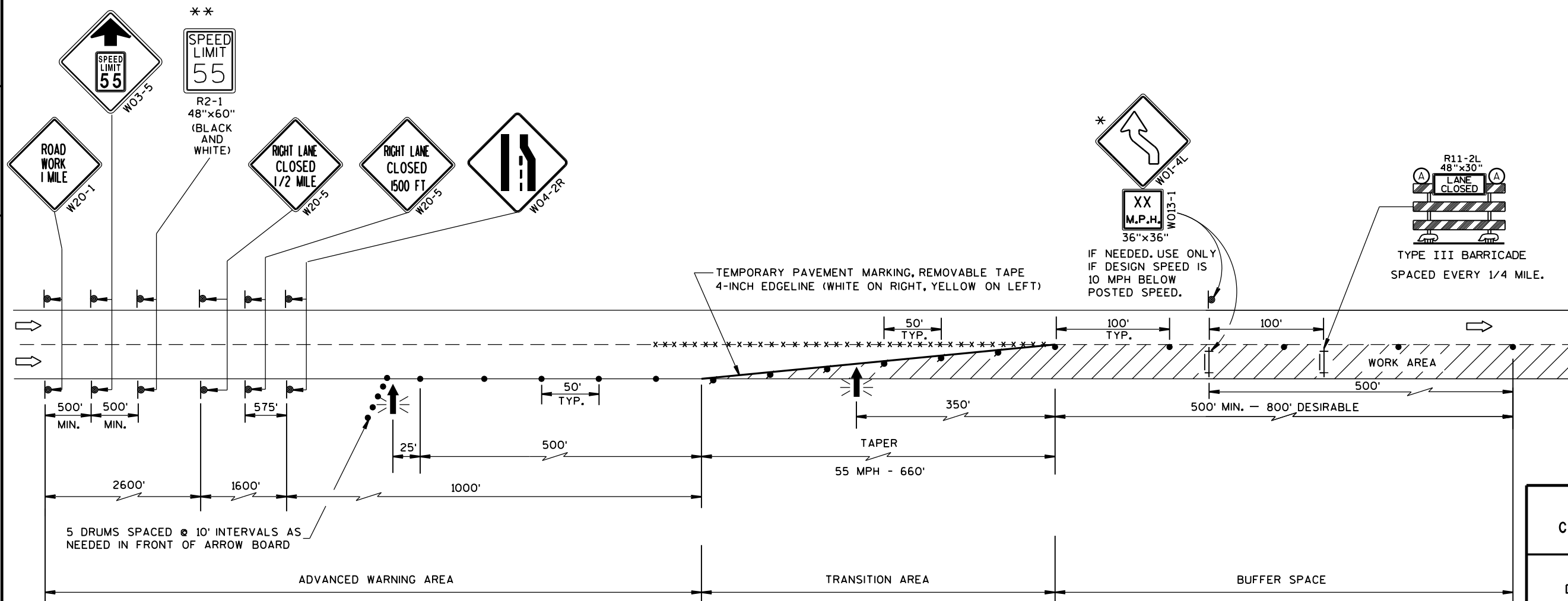
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

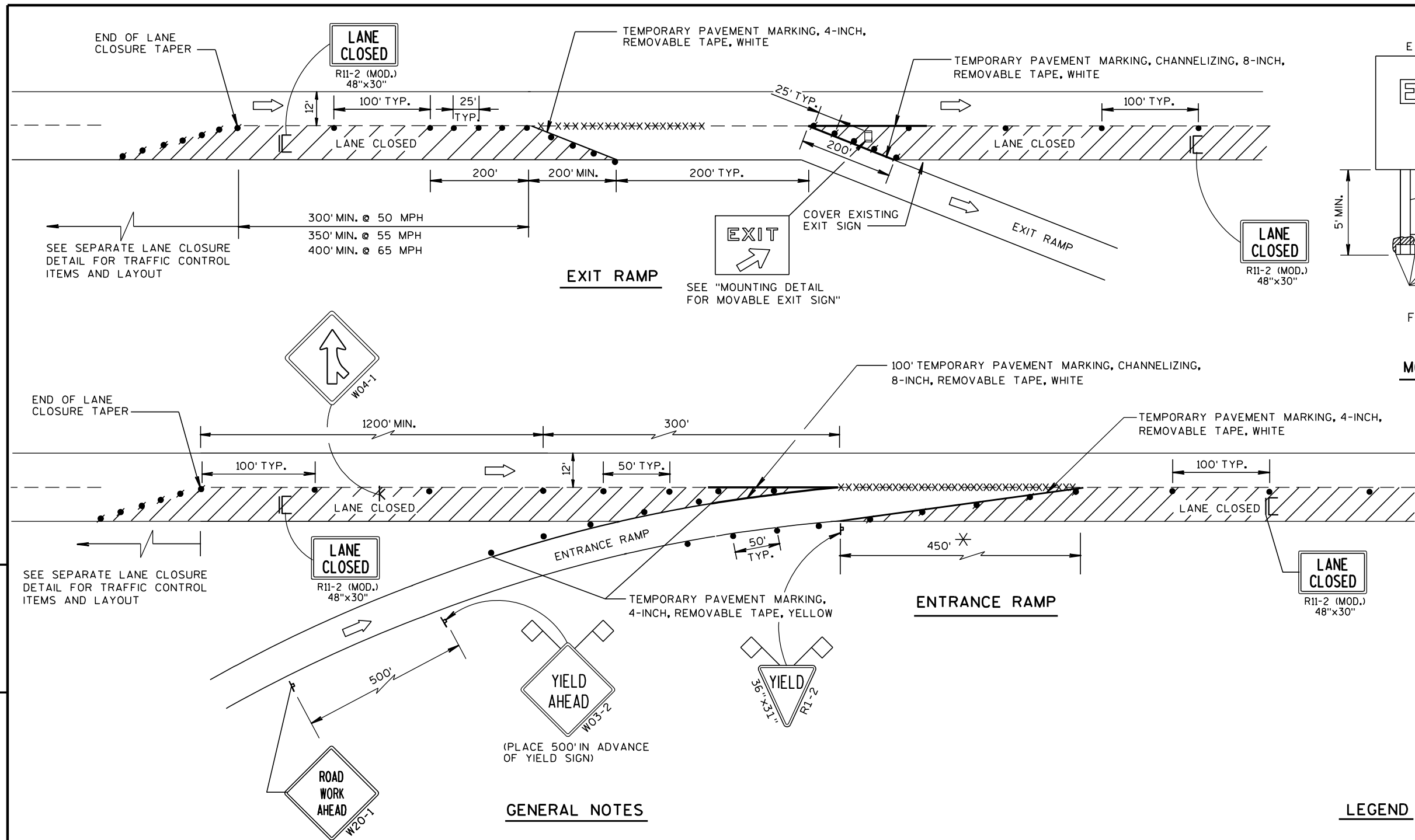
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

** A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES. INCLUDE A 65 MPH RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIREABLE) BEYOND THE "END OF ROADWORK" SIGN.



TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3-2014 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

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.

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2 (MOD.) "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

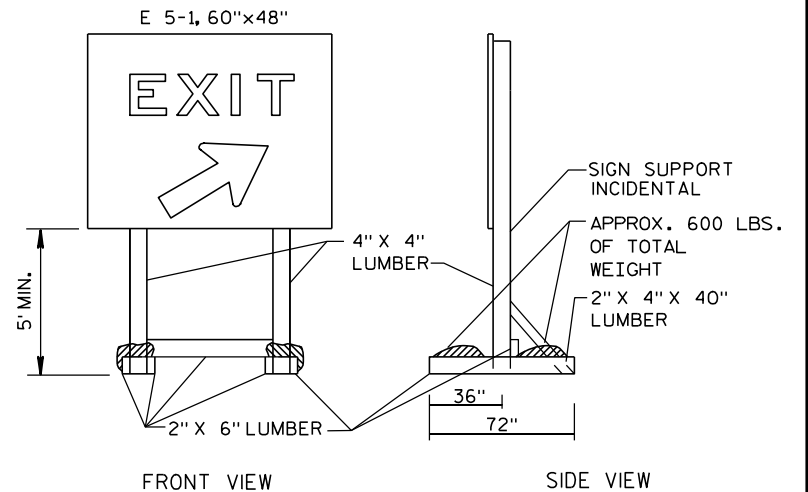
IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

* LENGTH OF OPENING MAY BE REDUCED TO 150 FEET DURING STAGING OF WORK IN IMMEDIATE AREA OF RAMP TAPER.



FRONT VIEW SIDE VIEW

NOTE: ALL LUMBER DIMENSIONS ARE NOMINAL
MOUNTING DETAIL FOR MOVABLE EXIT SIGN

LEGEND







- POST MOUNTED SIGN
- SIGN ON PORTABLE SUPPORT
- TRAFFIC CONTROL, DRUM
- TRAFFIC CONTROL, DRUM WITH WARNING LIGHT, TYPE C (STEADY-BURN)
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE (8' EQUIVALENT) WITH SIGN
- FLAGS, 16"x16" MIN., ORANGE
- DIRECTION OF TRAFFIC FLOW

TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/24/2000 DATE /S/ Chester J. Spang
CHIEF SIGNS AND MARKING ENGINEER
FHWA

LEGEND

-  TYPE III BARRICADE
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  SIGN ON PERMANENT SUPPORT
-  TYPE "A" WARNING LIGHT (FLASHING)
-  DIRECTION OF TRAFFIC

GENERAL NOTES

THIS RAMP CLOSURE DETAIL IS TYPICAL FOR CLOSING A RIGHT SIDE EXIT RAMP. FOR A LEFT SIDE EXIT RAMP, REVERSE THE TRAFFIC CONTROL.

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

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

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

SIGNS THAT WILL BE IN PLACE LESS THAN 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.

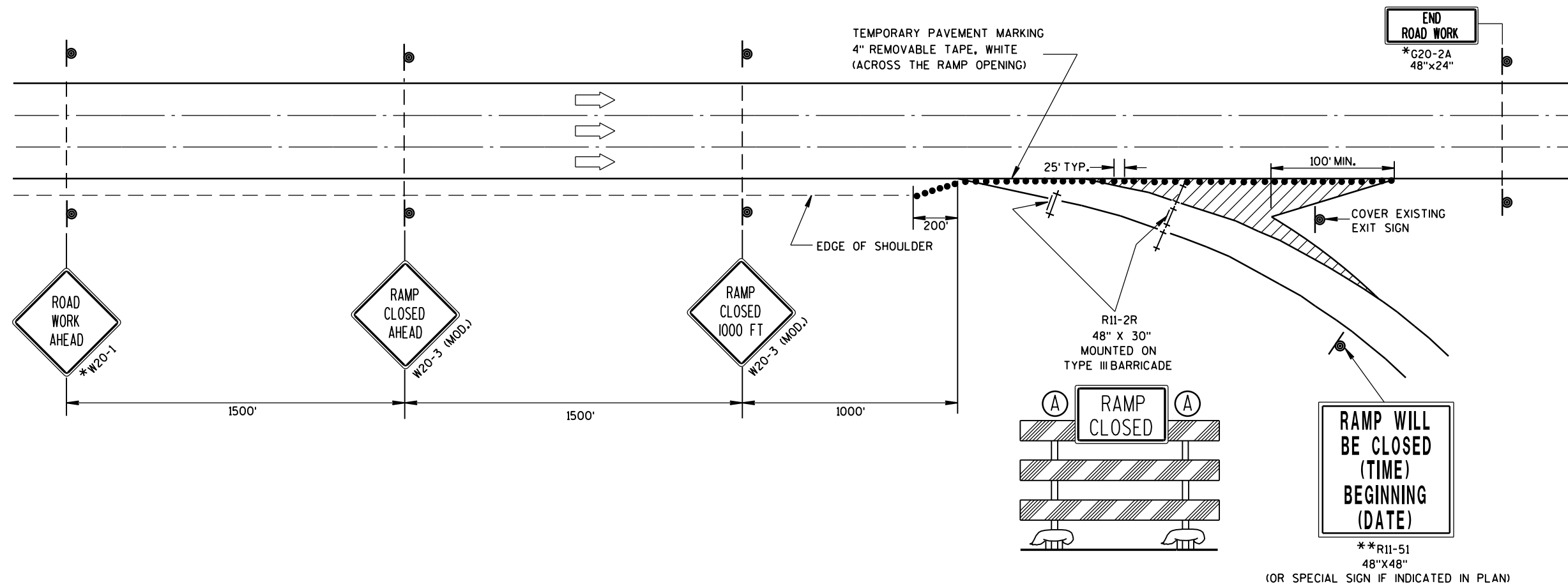
PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WORK AREAS WITH A DROPOFF ALONG THE EDGE OF AN OPEN TRAVEL LANE SHALL BE LEVELED WITH TEMPORARY FILL WHEN THE CONTRACTOR IS NOT WORKING ADJACENT TO THE TRAVEL LANE. DRUMS SHALL BE PLACED ENTIRELY OUTSIDE THE TRAVEL LANE, ALLOWING THE FULL UNOBSTRUCTED LANE WIDTH, WHEN THE WORK IS NOT IN PROGRESS.

WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12-HOUR DURATION.

*W20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE RAMP CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

** PLACE "RAMP WILL BE CLOSED" SIGN 10 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.



TRAFFIC CONTROL,
EXIT RAMP CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013

DATE

FHWA

/S/ Travis Feltes

STATE TRAFFIC ENGINEER OF DESIGN

LEGEND

- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡➡ FLASHING ARROW BOARD
- ▨ WORK AREA

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

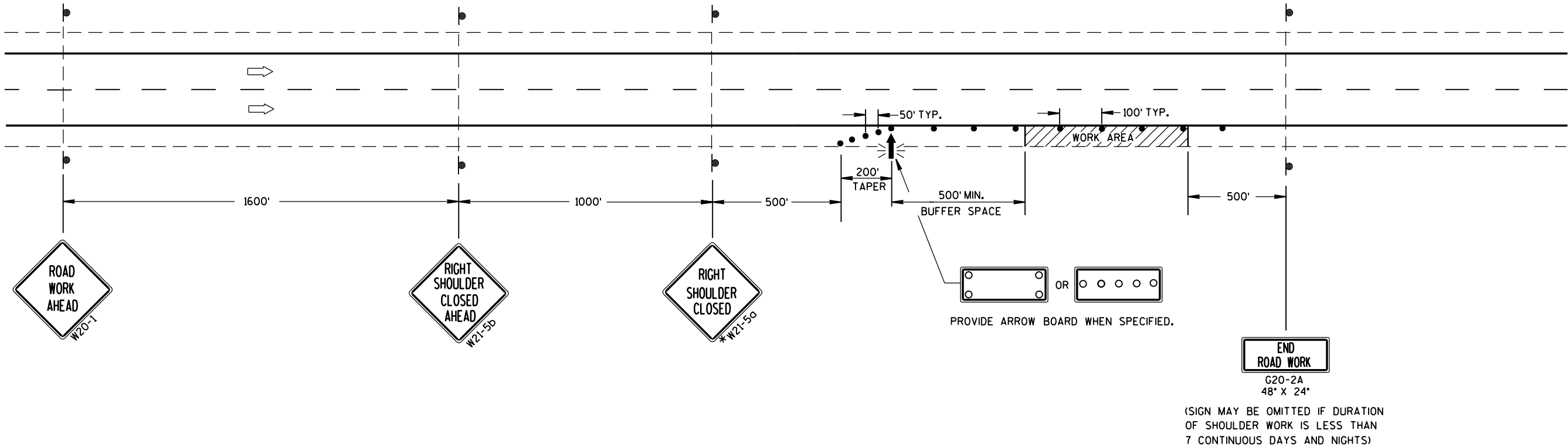
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

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

WHEN A 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.

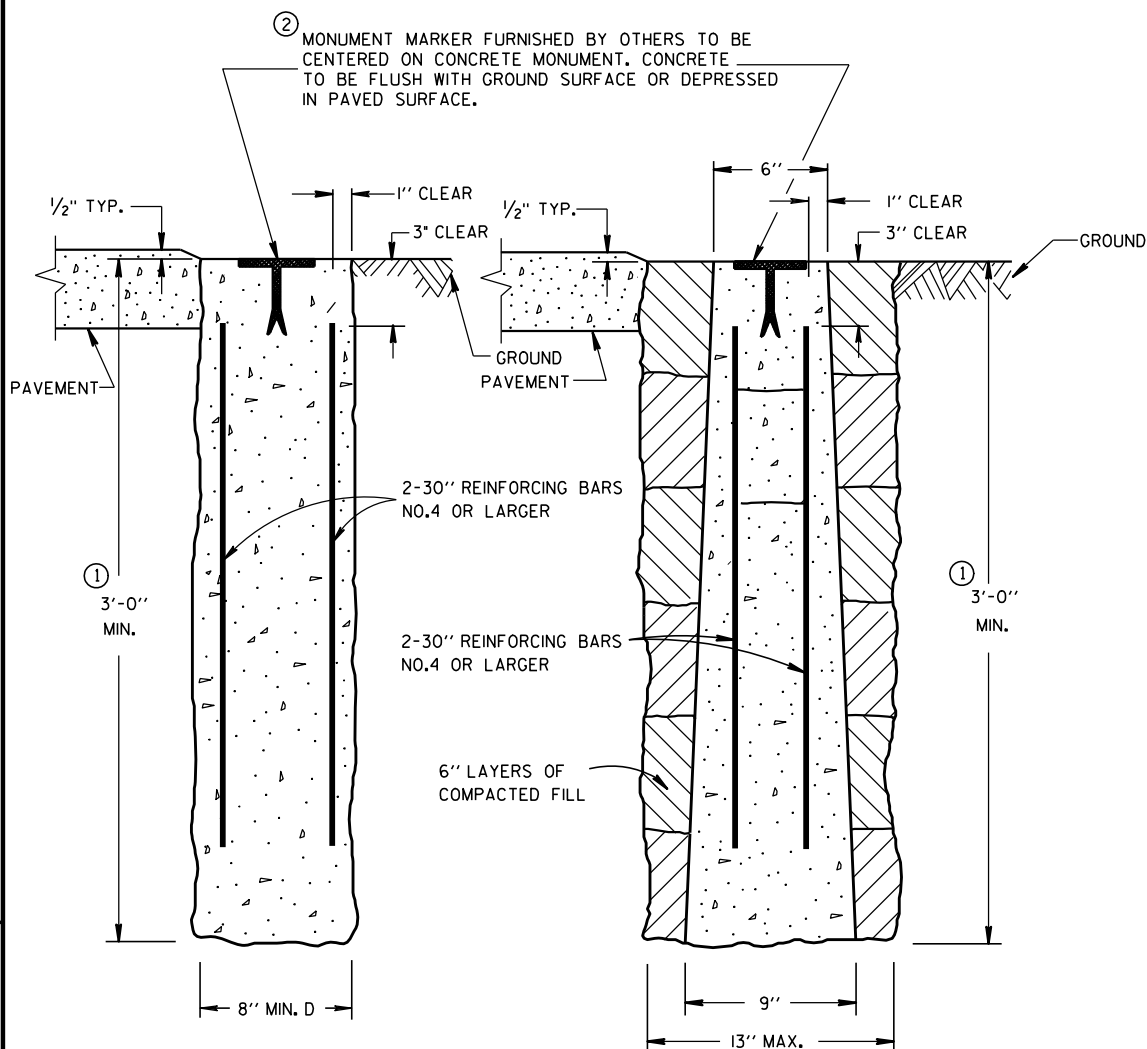
*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



TRAFFIC CONTROL
SHOULDER CLOSURE ON DIVIDED
ROADWAY, SPEEDS GREATER
THAN 40 MPH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltz
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA

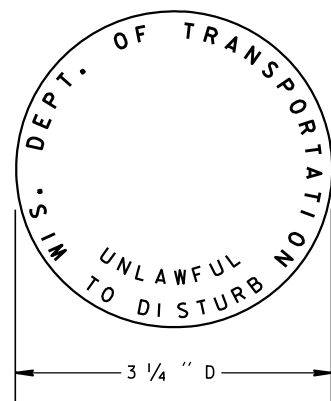


CAST-IN-PLACE

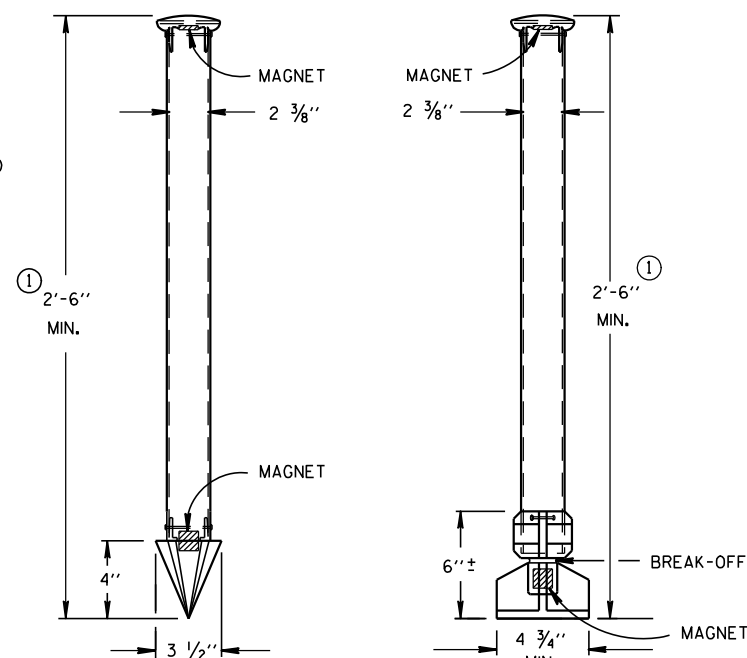
PRECAST

CONCRETE MONUMENTS

TYPE A



② WIS DOT MONUMENT MARKER LOGO
FOR TYPES "A", "C" & "D"

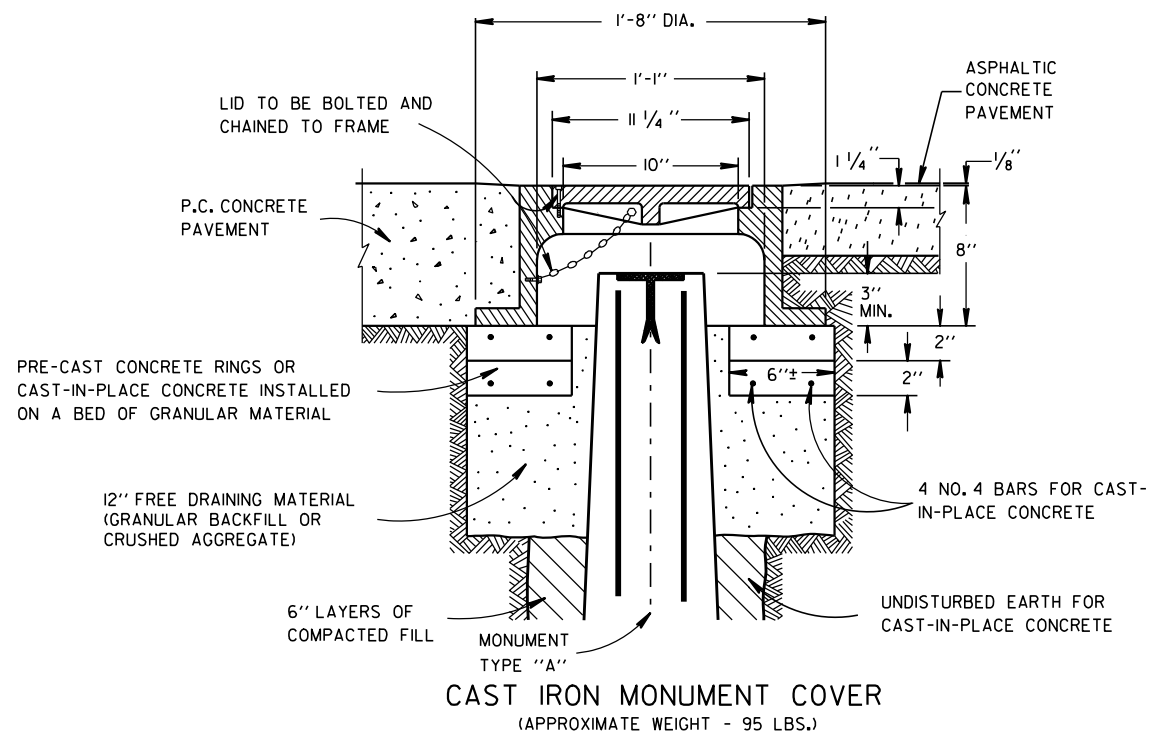


TYPE C

TYPE D

DRIVE-IN MONUMENT

BREAK-OFF MONUMENT

ALUMINUM MONUMENTS
(INCLUDES MARKER)CAST IRON MONUMENT COVER
(APPROXIMATE WEIGHT - 95 LBS.)

GENERAL NOTES

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

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

INSTALLED METAL MONUMENTS MUST BE EASILY DETECTED WITH A DIP NEEDLE. INSERT PERMANENT MAGNETS SHALL BE ATTACHED NEAR THE TOP AND BOTTOM OF THOSE MONUMENTS CONSTRUCTED OF A METAL ALLOY WHICH IS NOT ATTRACTIVE TO A DIP NEEDLE.

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

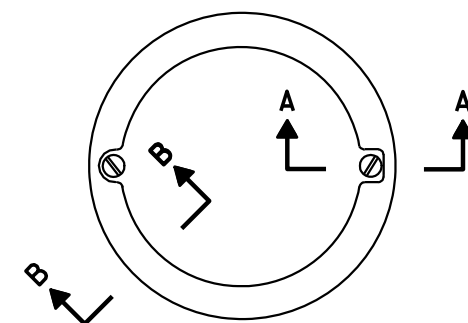
MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE ENGINEER.

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

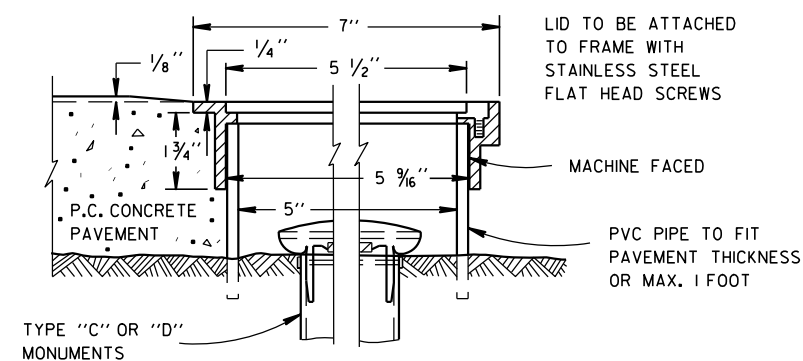
THE MONUMENT COVERS DETAILED ON THIS DRAWING ARE NOT EQUAL ALTERNATES. MONUMENT COVERS SHALL BE CAST IRON UNLESS ALUMINUM IS SPECIFIED ELSEWHERE IN THE CONTRACT.

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

- ① MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.
② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.



TOP VIEW

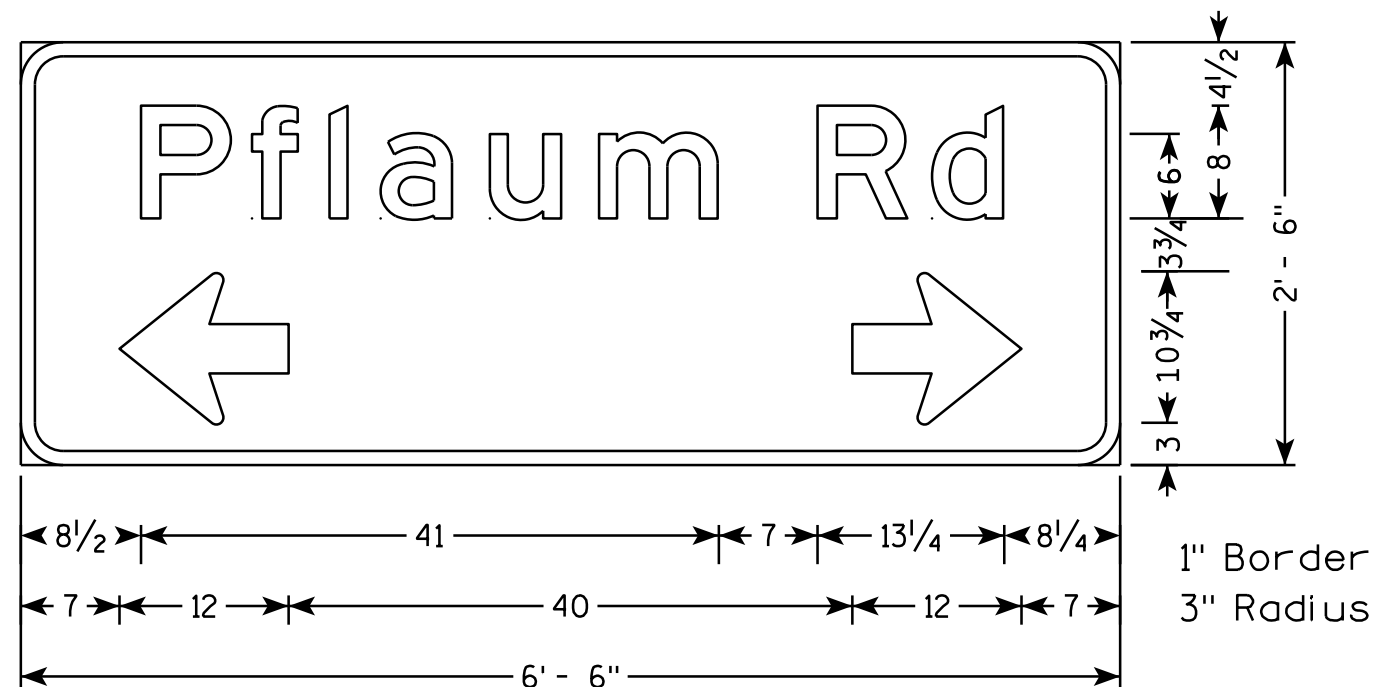
TYPE "C" OR "D"
MONUMENTSSECTION B-B SECTION A-A
ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)
(FOR CONCRETE PAVEMENT ONLY)

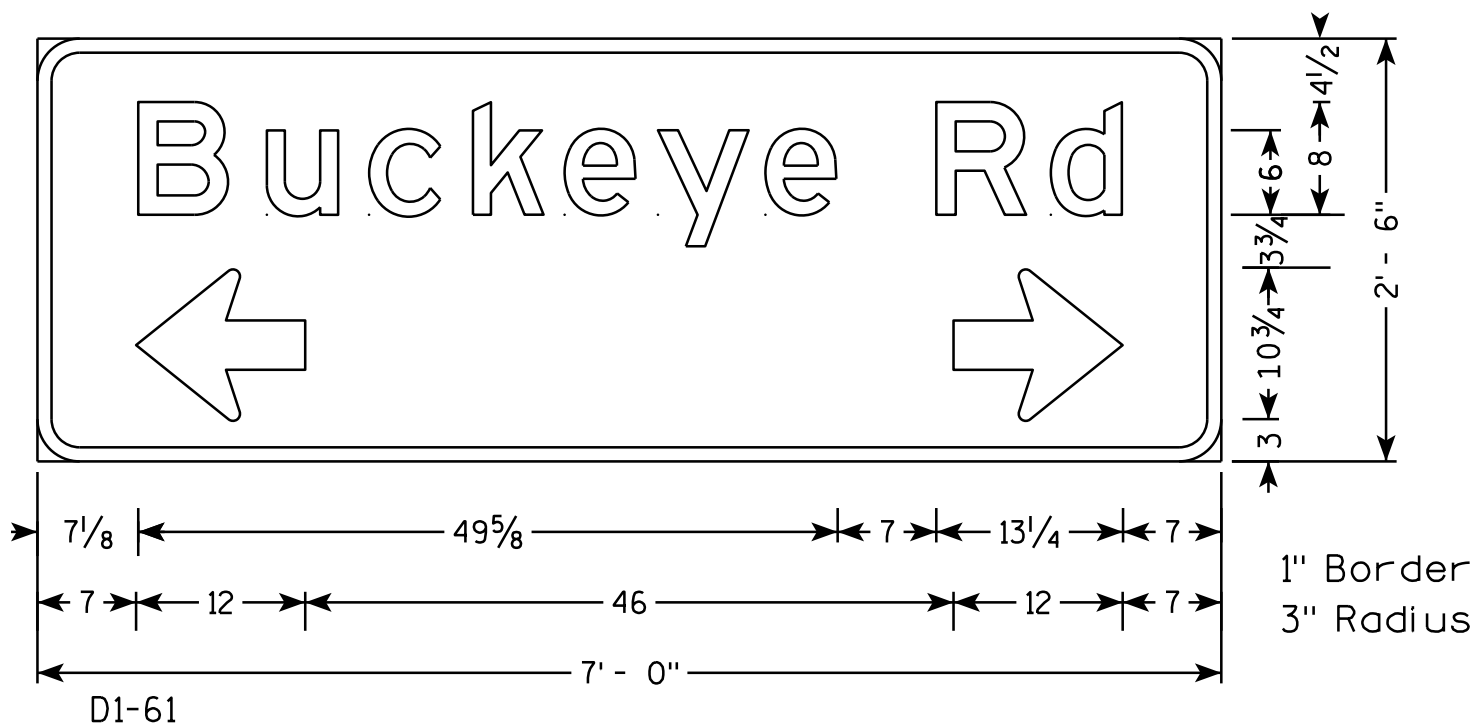
LANDMARK REFERENCE
MONUMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

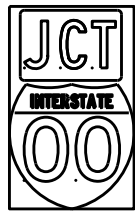
APPROVED
9/22/1999 /S/ Rory L. Rhinesmith
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



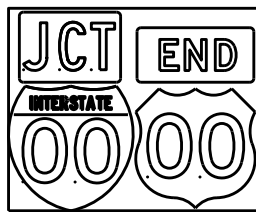
- NOTES
1. All Signs Type II - Type H Reflective
 2. Color:
Background - GREEN
Message - WHITE
 3. Message Series - E



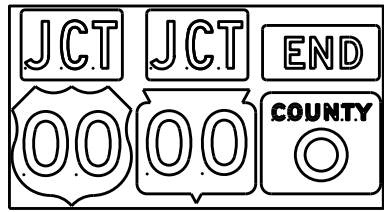
TYPICAL ASSEMBLIES



J1-1



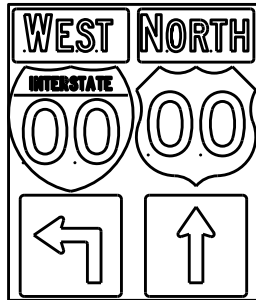
J1-2



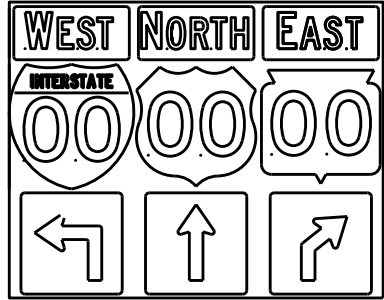
J1-3



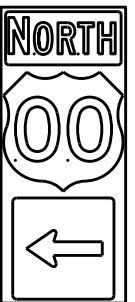
J2-1



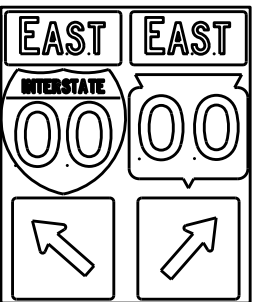
J2-2



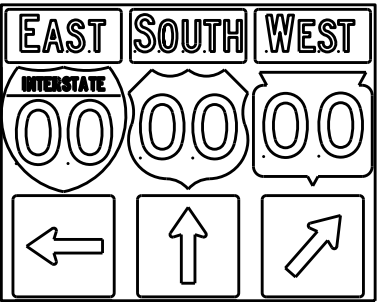
J2-3



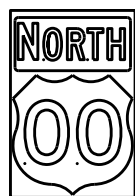
J3-1



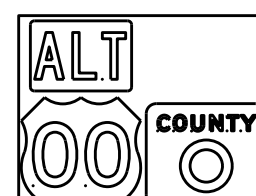
J3-2



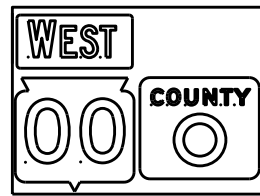
J3-3



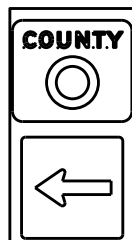
J4-1



J4-2



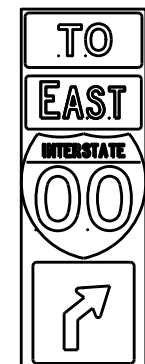
J4-2



J13-1



J12-1



J32-1



J33-1



J23-1

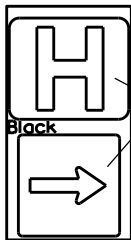


J22-1



JV

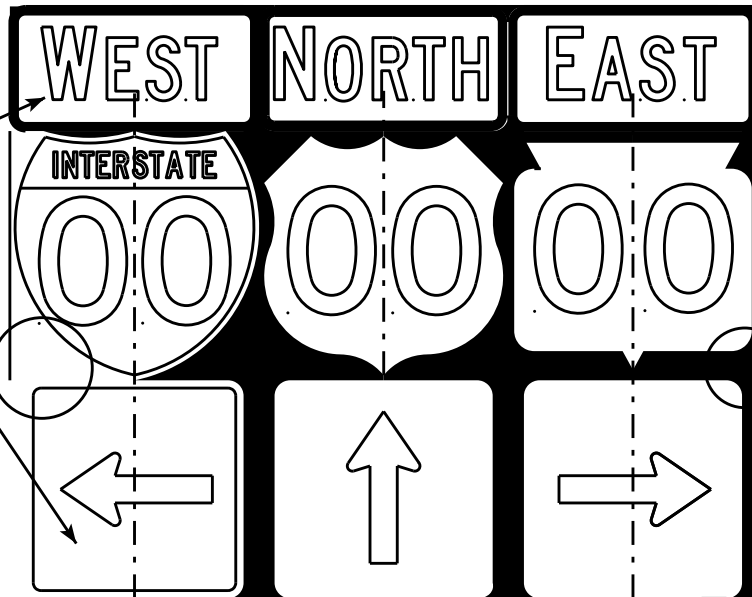
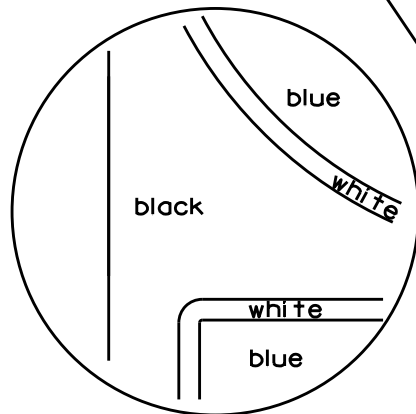
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

Blue Background

[blue background
with interstate]



[black background]

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

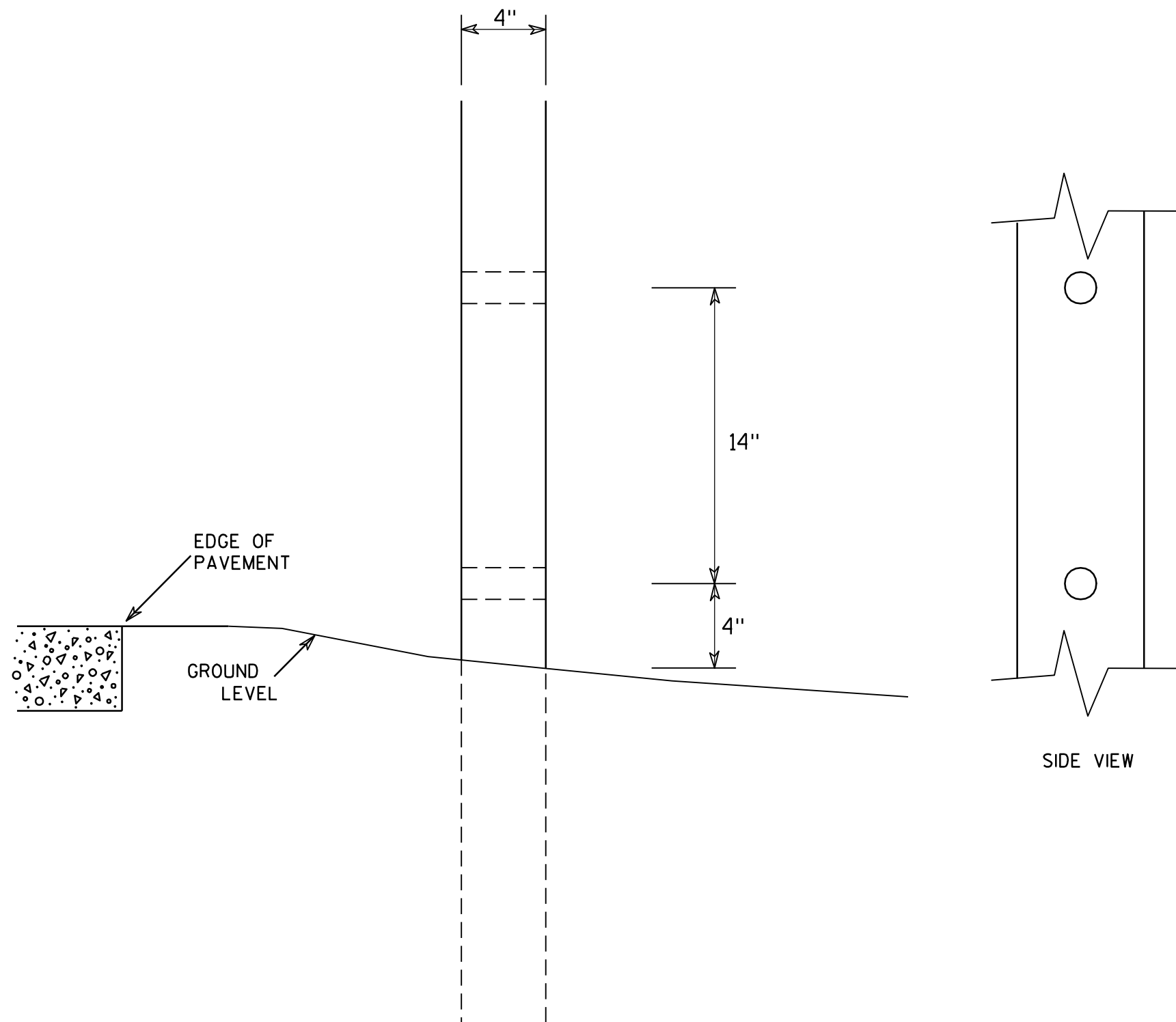
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/06/14 PLATE NO. A2-1S.8

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Black Non-reflective
Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

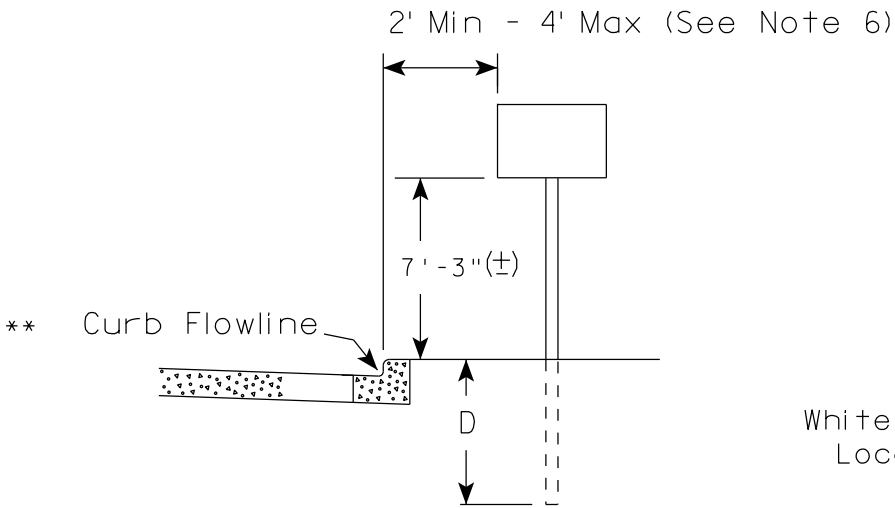
HWY:

COUNTY:

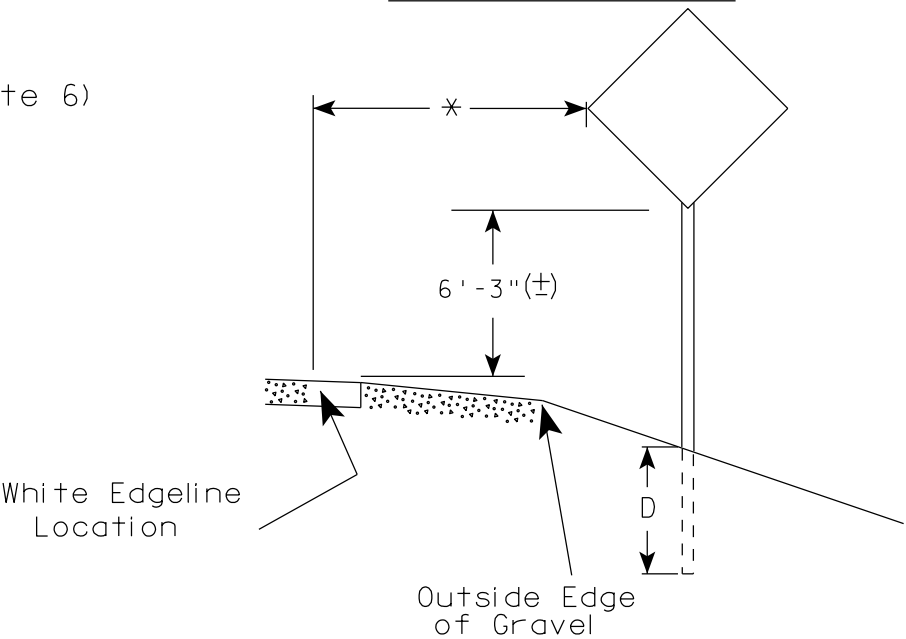
SHEET NO:

E

URBAN AREA



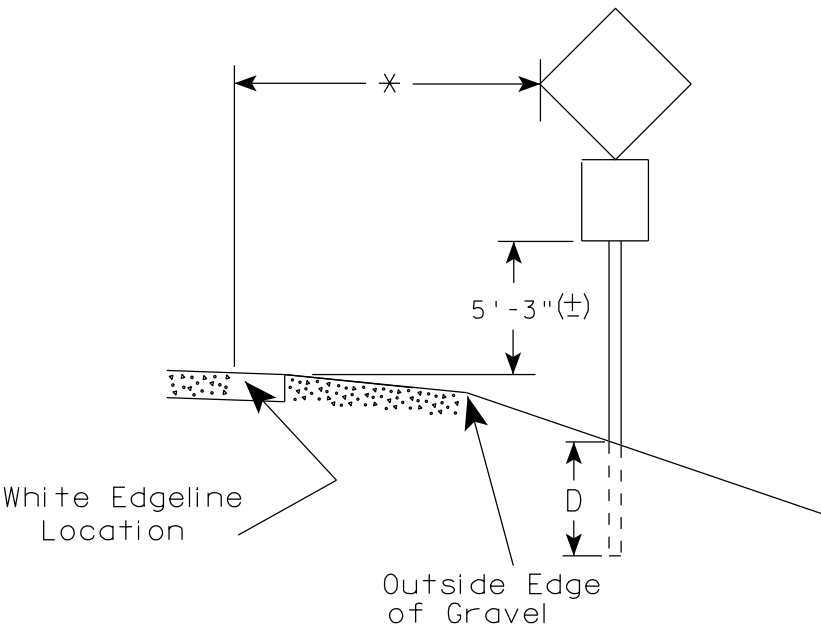
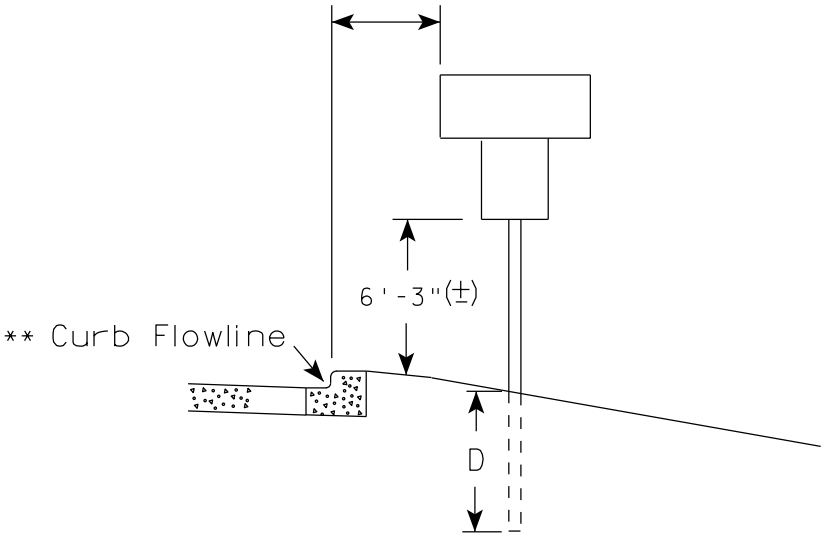
RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

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



POST EMBEDMENT DEPTH

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

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

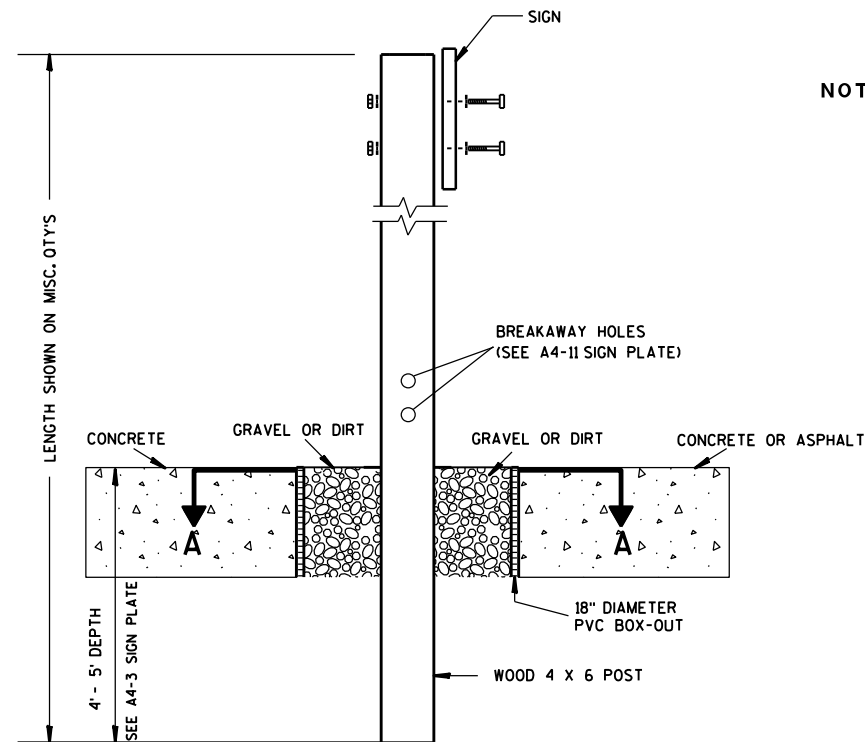
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

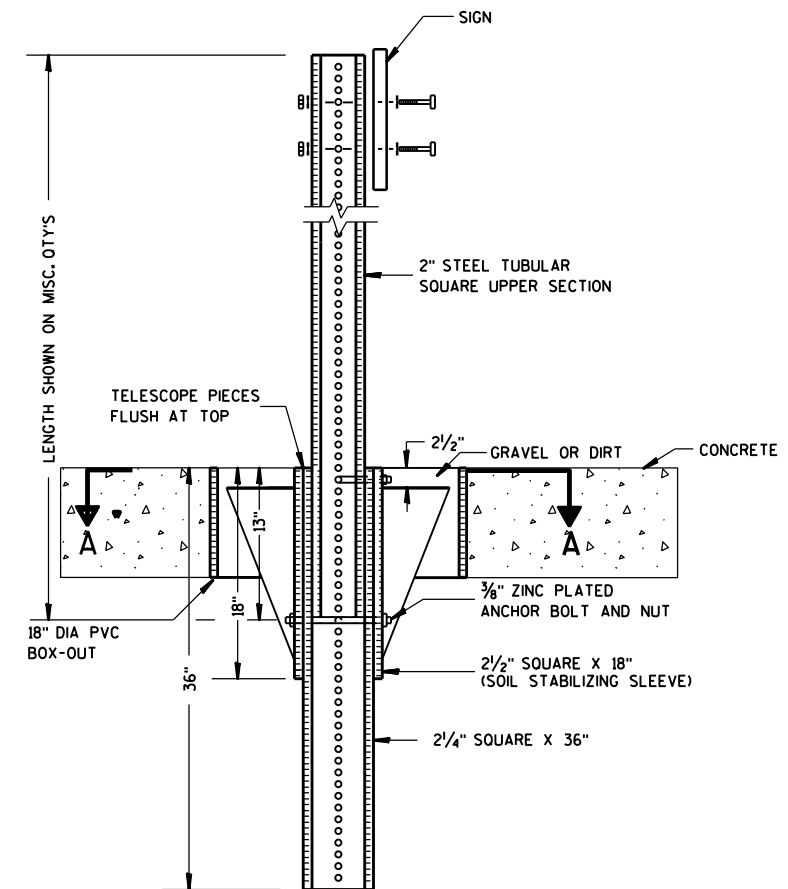
DATE 11/12/14 PLATE NO. A4-3.19



ELEVATION VIEW

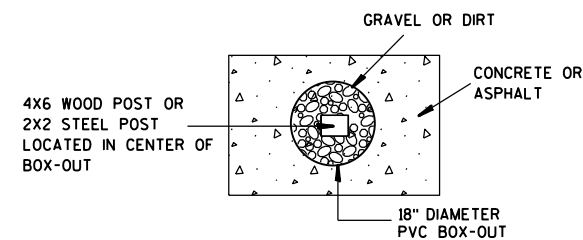
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

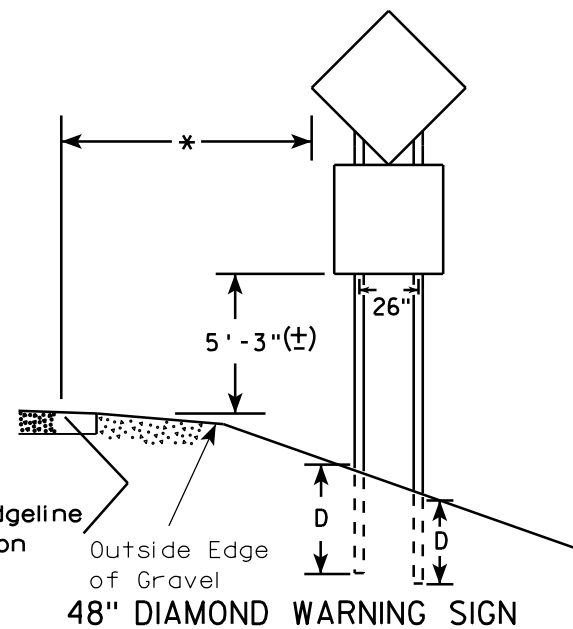
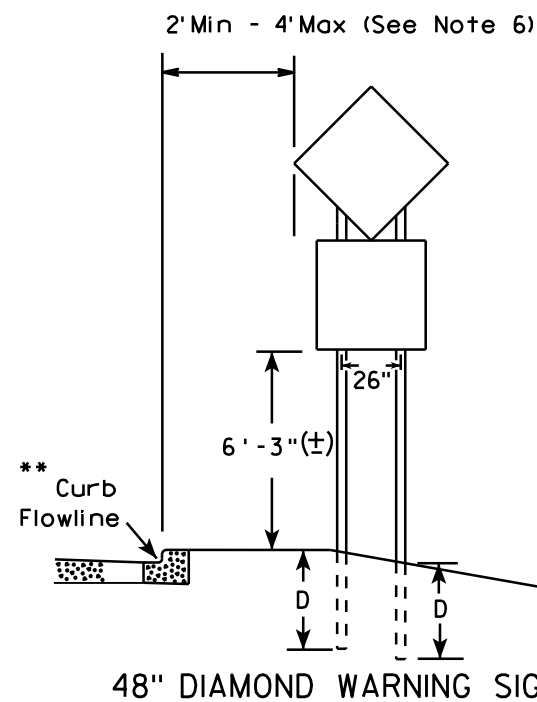
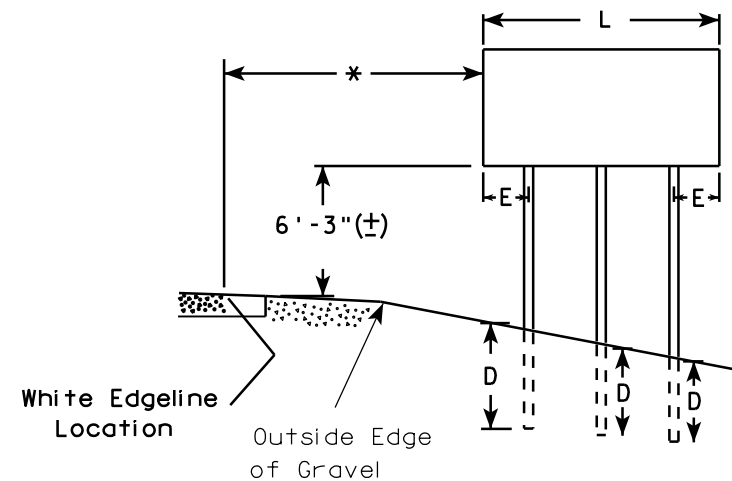
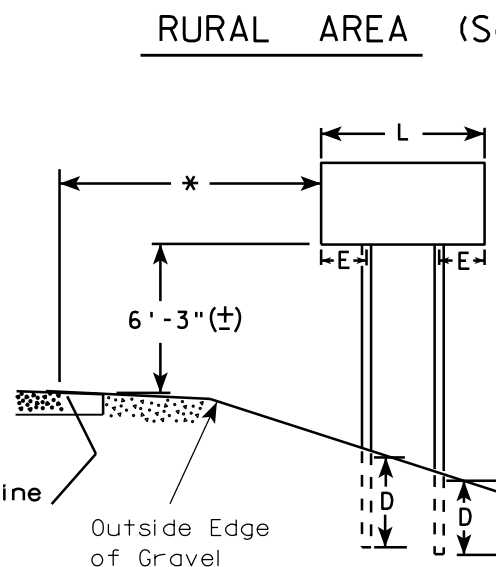
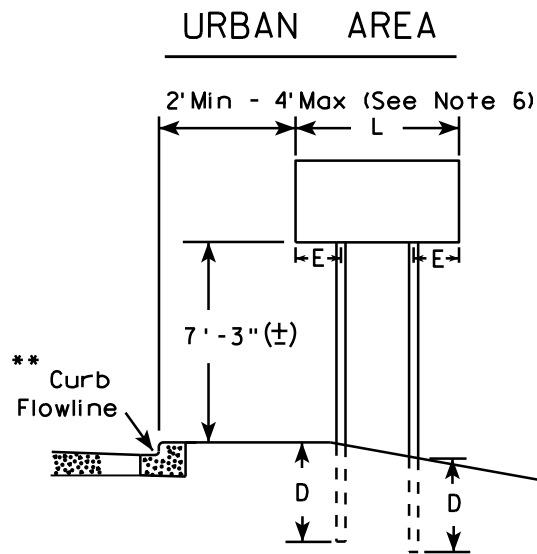
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

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

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

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

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

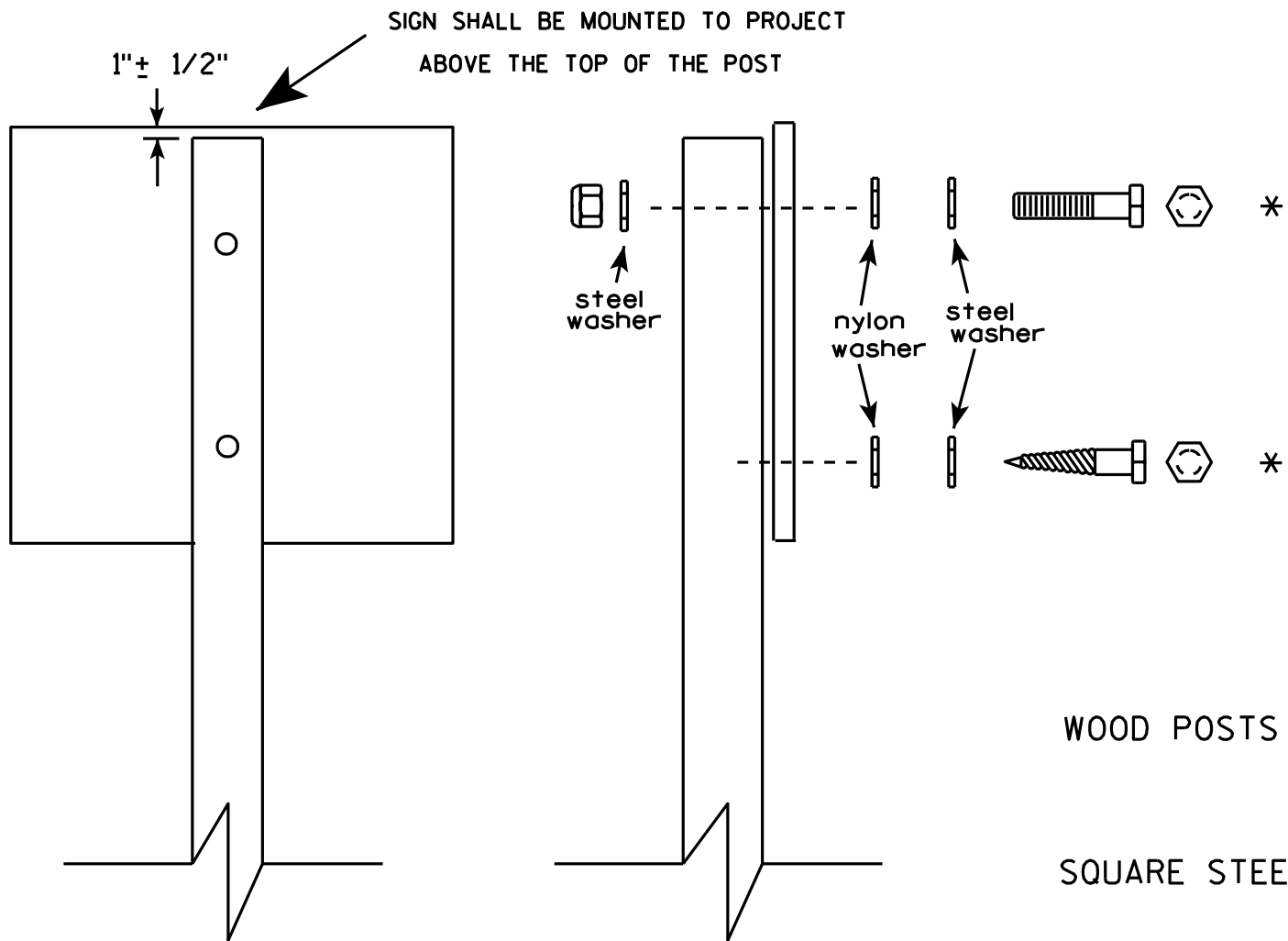
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/14 PLATE NO. A4-4.13

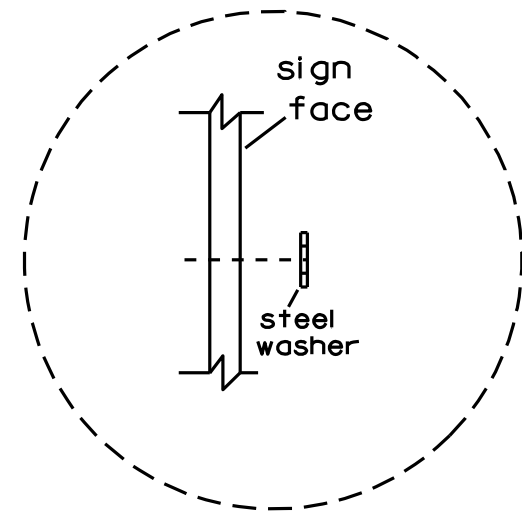


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

- WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.

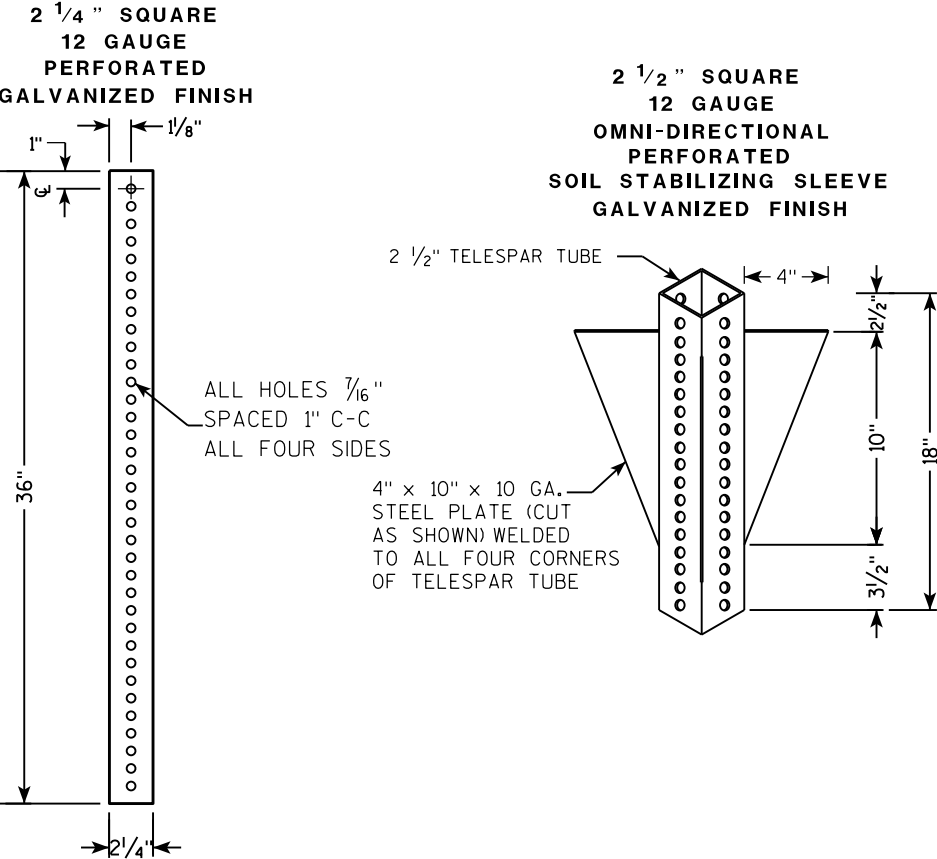


Washer Placement when Sign Has Other Than Type H or Type F Face

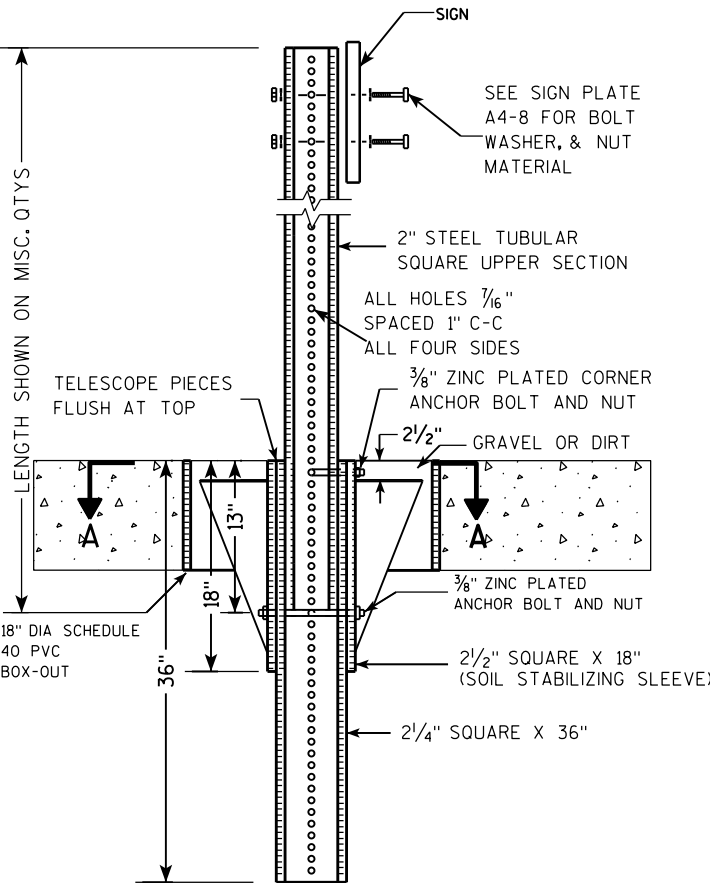
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/23/10	PLATE NO. A4-8.7

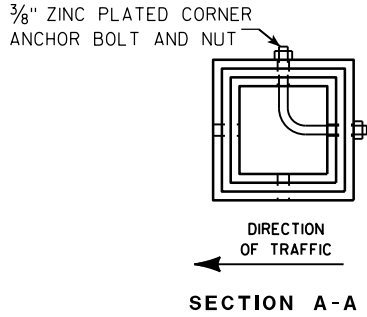
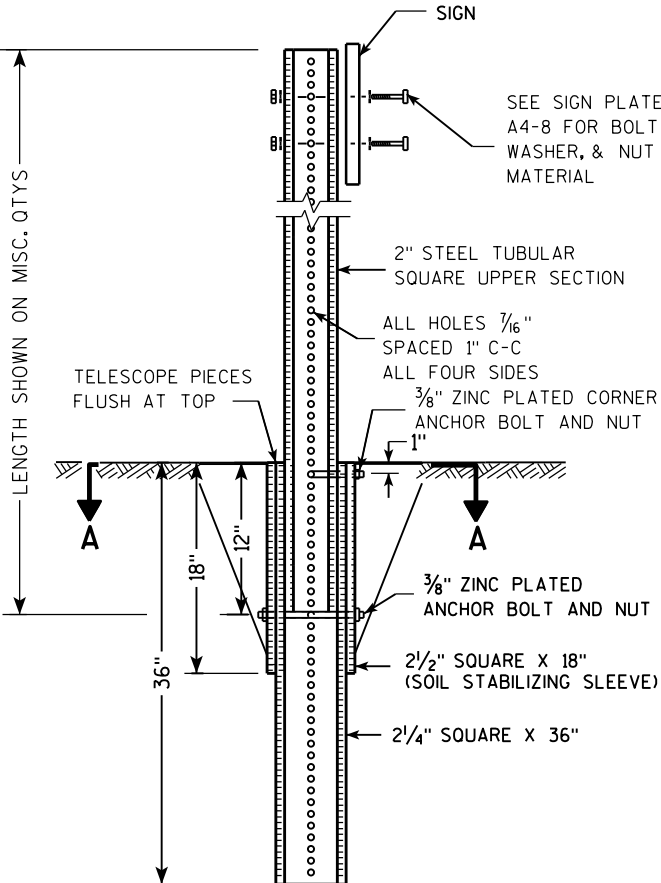
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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



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



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

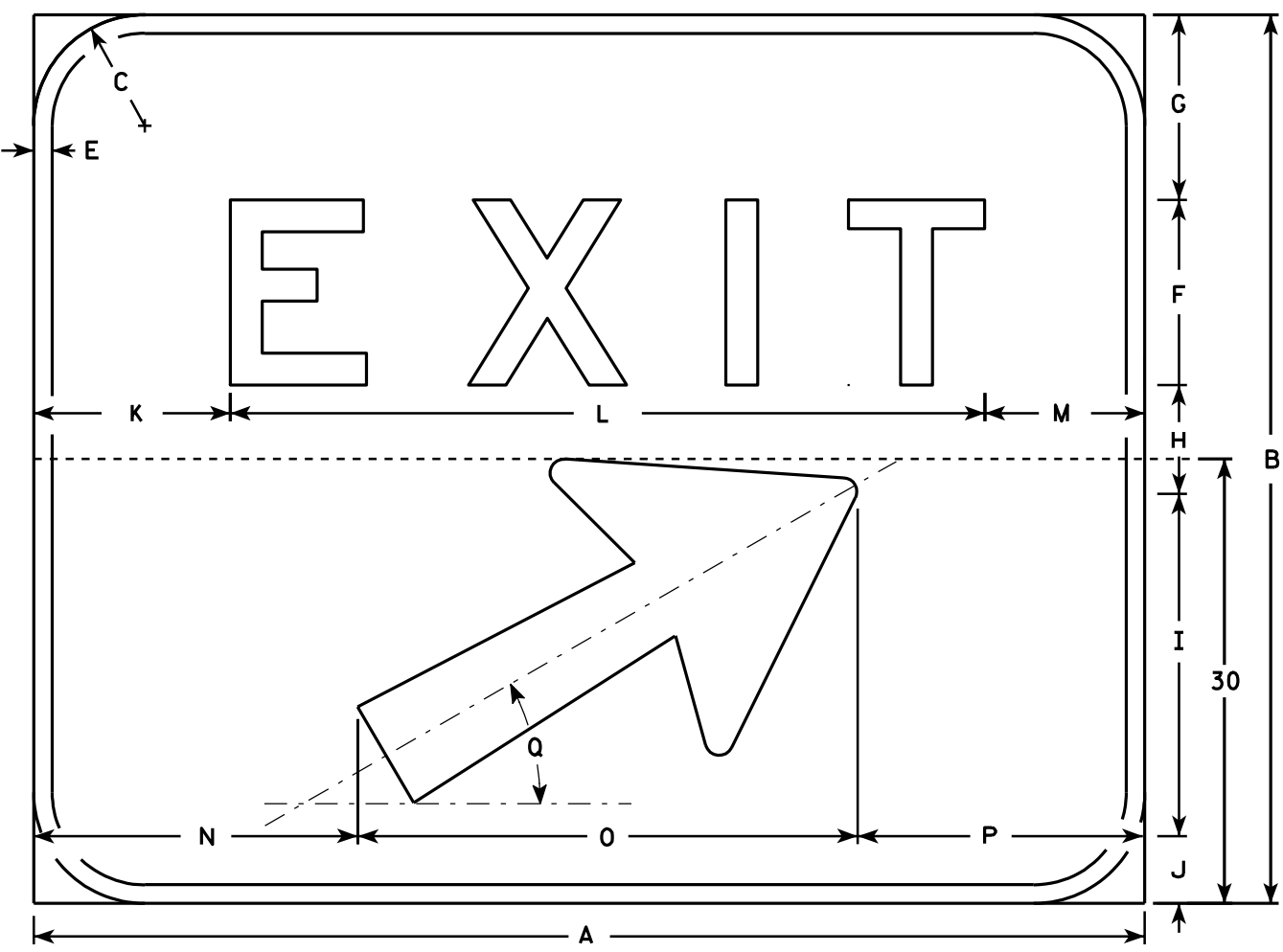
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9



E5-1

NOTES

- 1. Sign is Type II - Type H reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Green
Message - White (Type H reflective)
- 3. Message Series - E
- 4. Corners may be square or rounded but borders shall be rounded as shown.
- 5. Base material for this sign shall be plywood and shall be split into two seperate pieces for the 72 x 60 size as shown on the detail by the dashed line (-----).
- 6. Arrow is Type "A" from sign plate A1-1.
- 7. As per the Standard Spec's, this sign shall not have a vertical joint.

Metric equivalent for this sign is:

SIZE	
1	
2	
3	
4	1500 mm X 1200 mm
5	1800 mm X 1500 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																												
3																												
4	60	48	6		1	10	10	5 7/8	18 1/2	3 5/8	10 5/8	40 3/4	8 5/8	17 1/2	27	15 1/2	30°										20.0	1.80
5	72	60	6		1	12	12	10	18 1/2	7 1/2	13 1/4	48 1/2	10 1/4	23 1/2	27	21 1/2	30°										30.0	2.70

STANDARD SIGN
E5 - 1

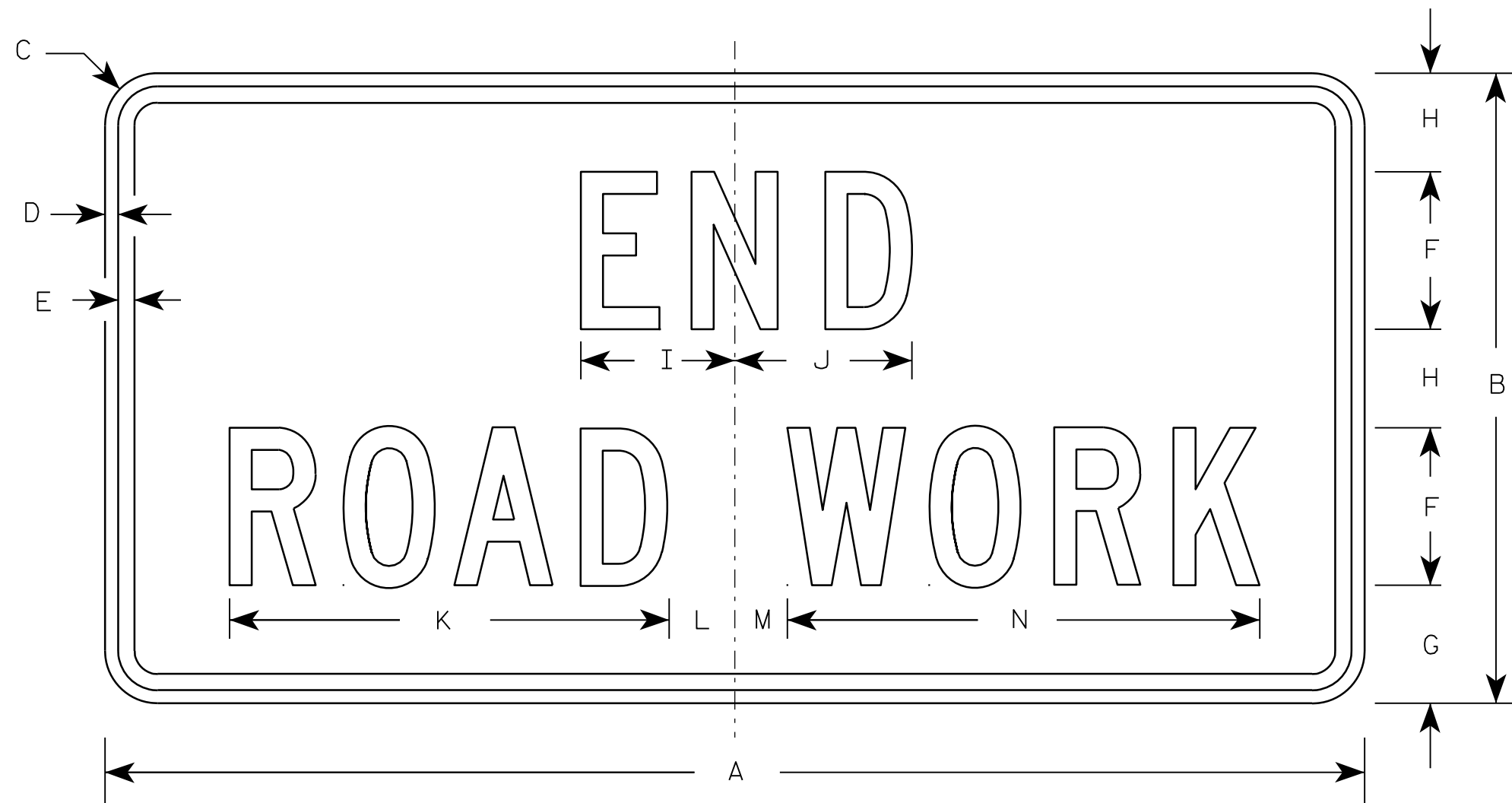
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Christa J. Spang
for State Traffic Engineer

DATE 6/22/00 PLATE NO. E5-1.8

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

7



G20-2A

Metric equivalent
for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 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	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Orange
Message - Black
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

7

PROJECT NO:

HWY:

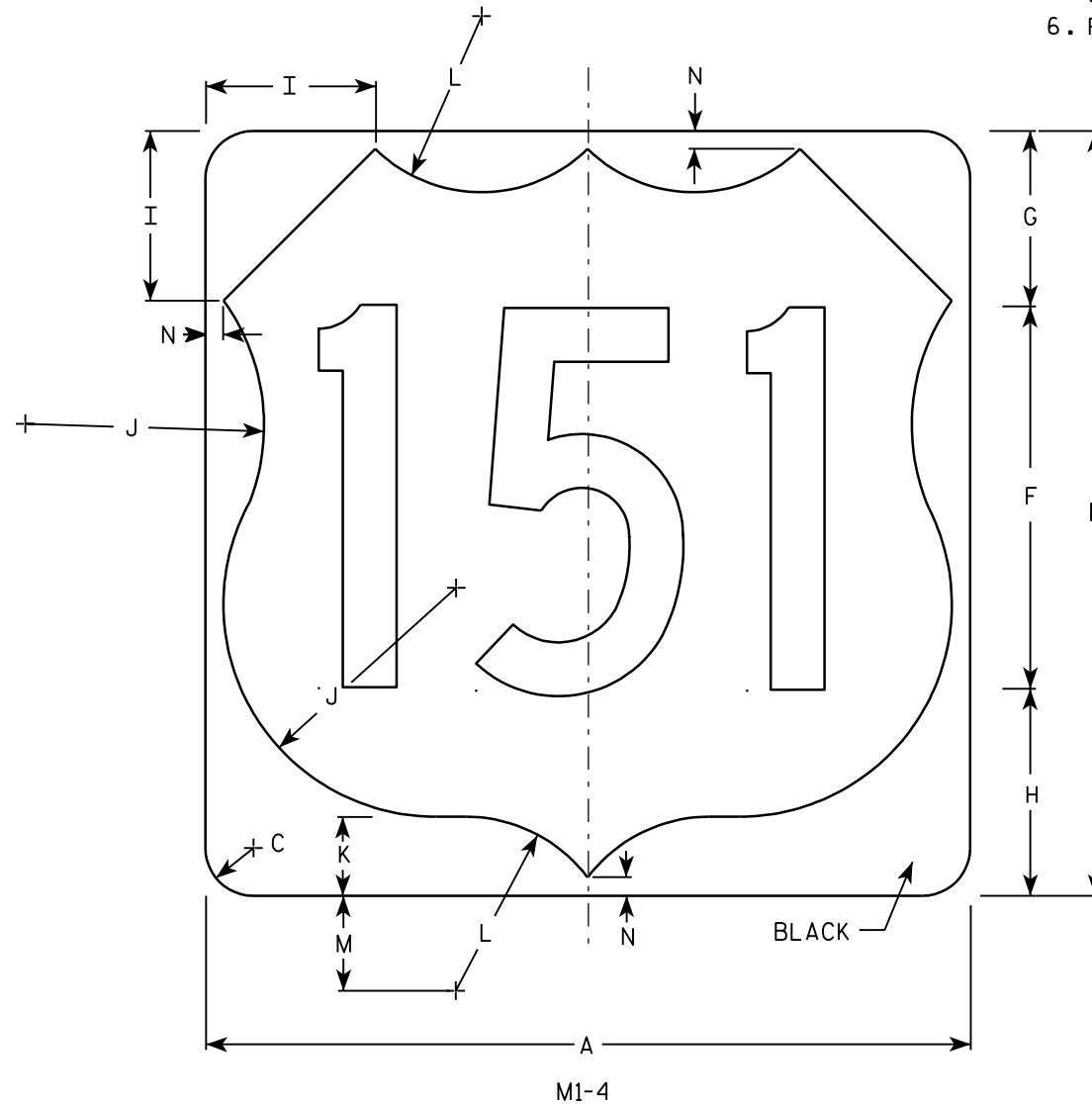
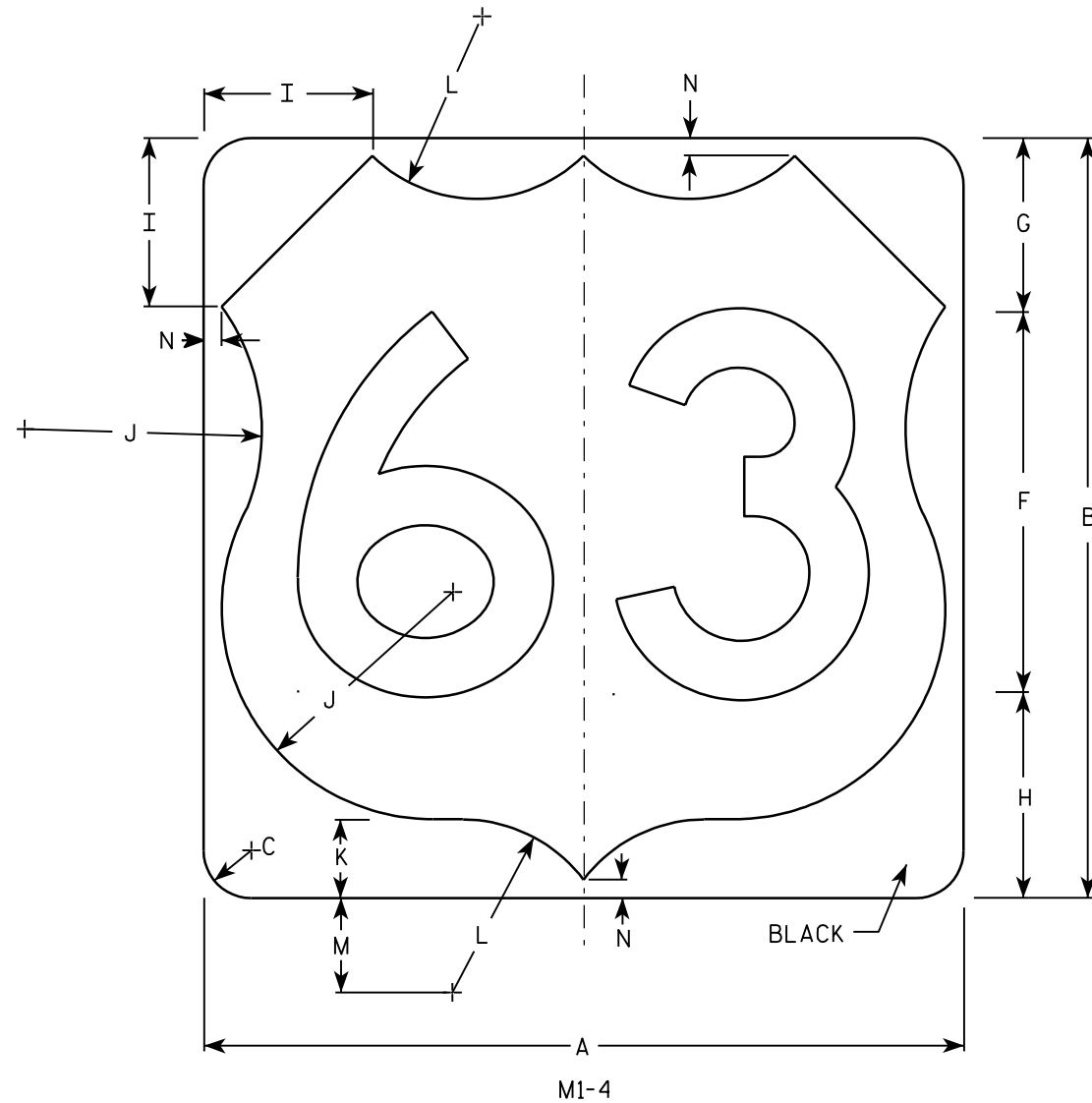
COUNTY:

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 numerals and adjust
spacing as per Plate A10-1.
6. Permanent Signs
Background - Type H Reflective
Detour or other temporary signs
Background - Reflective



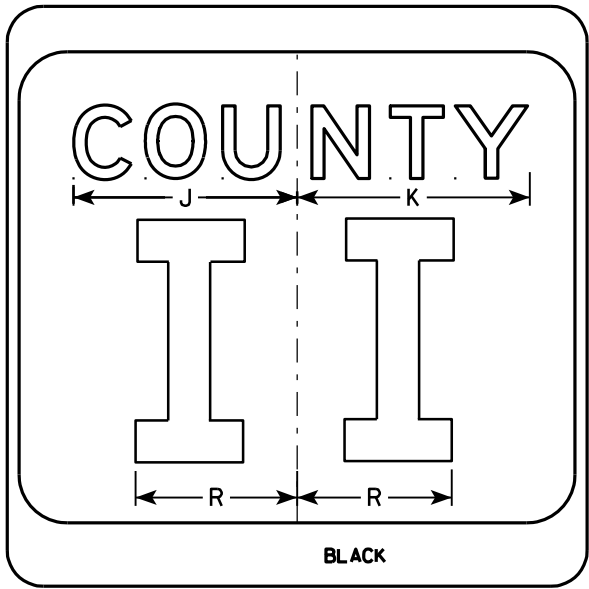
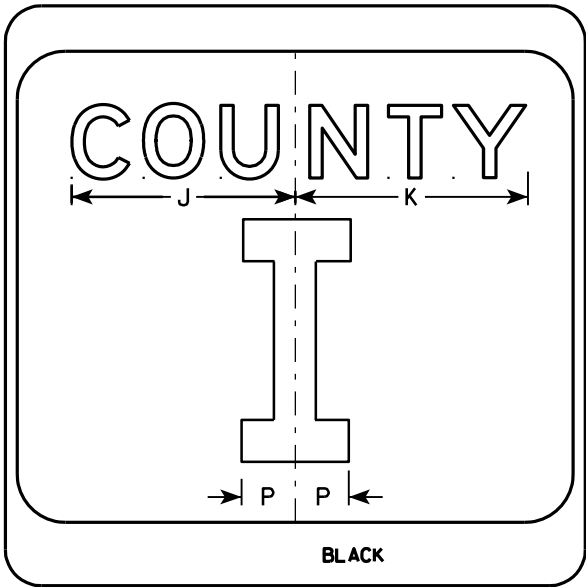
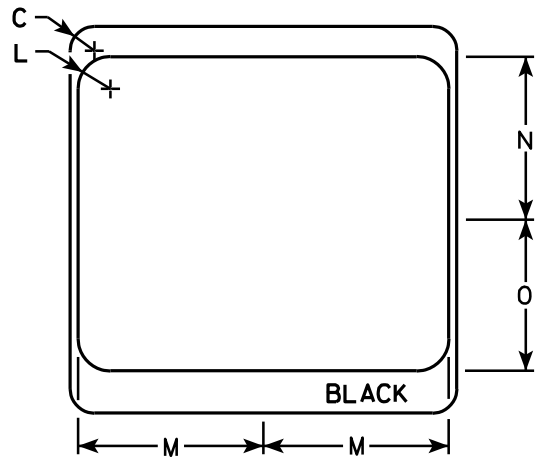
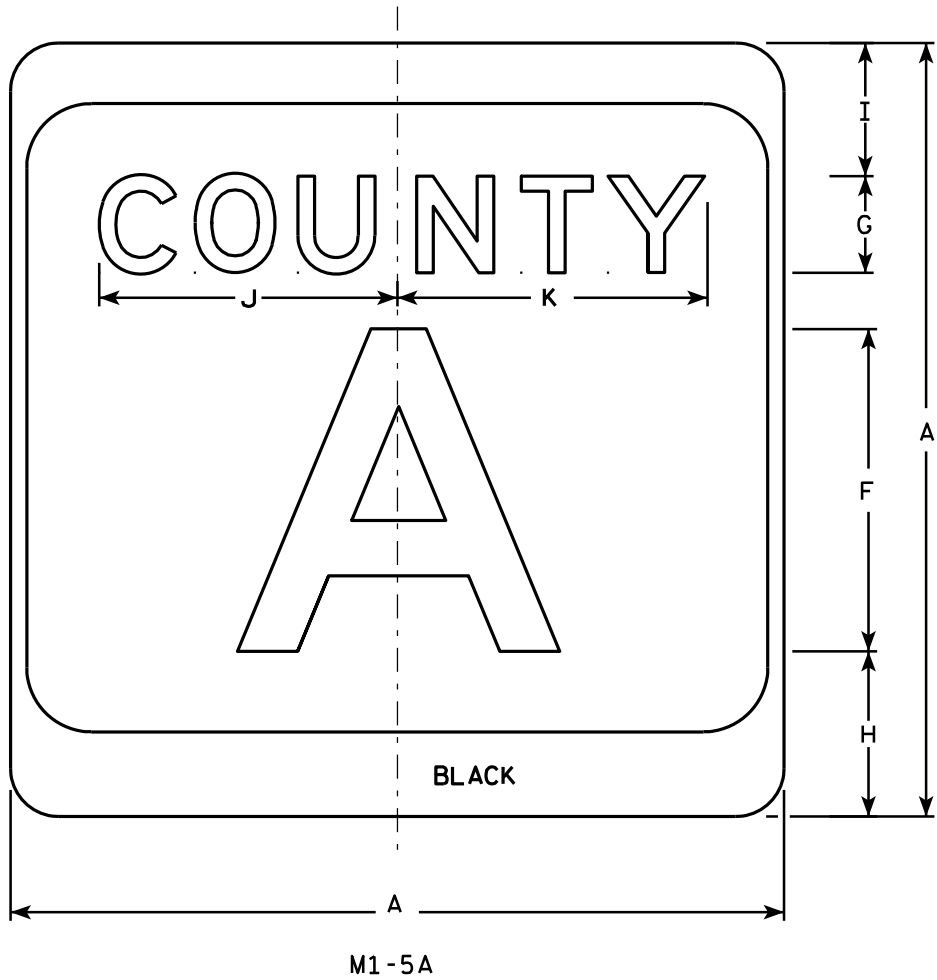
Metric equivalent
for this sign is:

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	Areq sq. ft.	Areq m ²
1																												
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0	.36
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81

PROJECT NO: HWY: COUNTY: SHEET NO: E

7



NOTES

- 1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - White & Black - See Note 7
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. Message Series E for 1 letter.
Message Series D for 2 letters unless message is too big then Series C.
Message Series C for 3 letters unless message is too big then Series B.
- 6. Substitute appropriate letters & optically center to achieve proper balance.
- 7. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

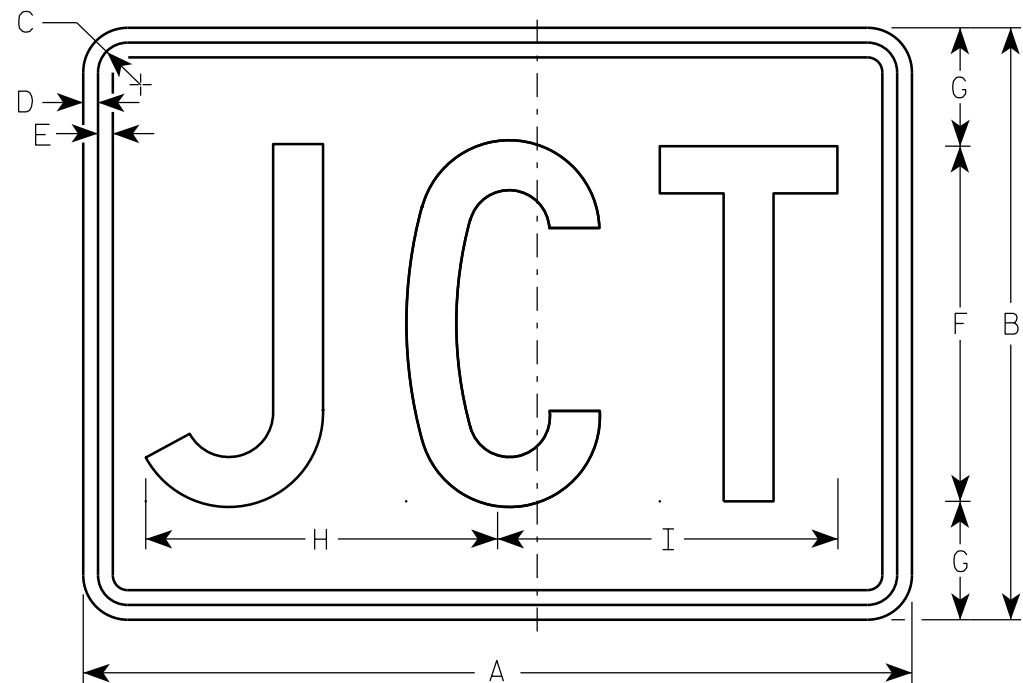
E

CTH MARKER
M1-5A FOR ASSEMBLIES

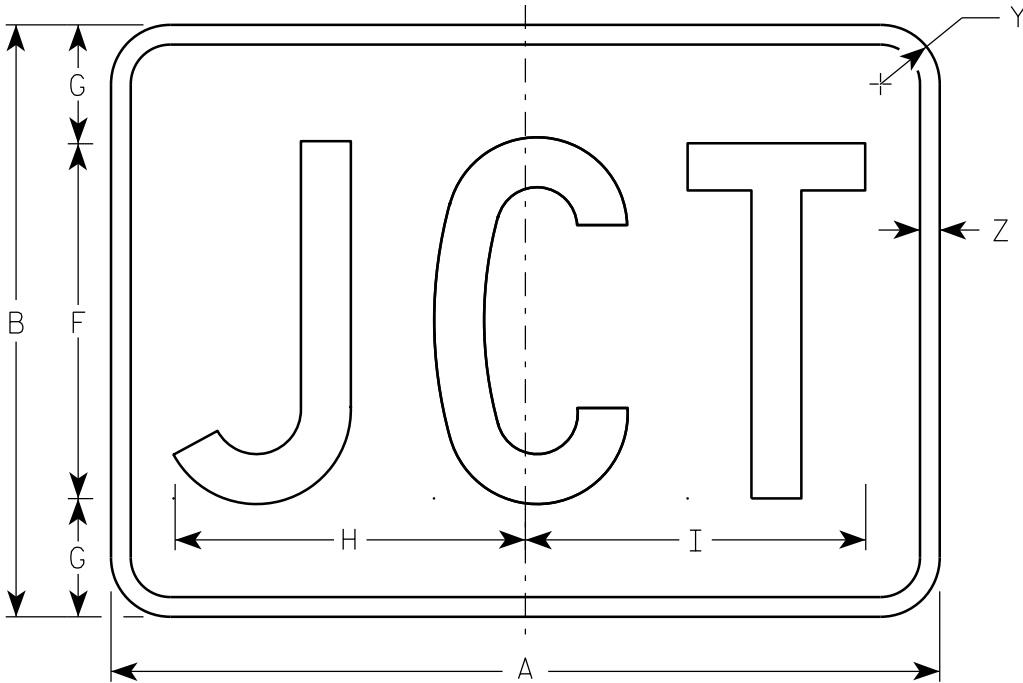
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
For State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8



M2-1
MK2-1
MM2-1
MN2-1
MR2-1



MB2-1

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
 MR2-1 Background - Brown
 Message - Yellow

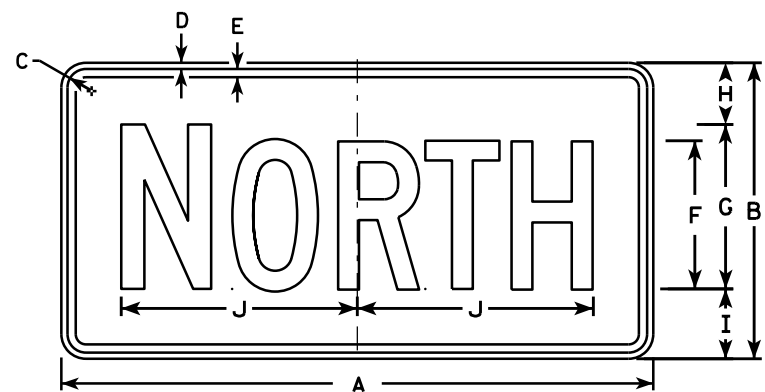
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2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

STANDARD SIGN
M2 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
For State Traffic Engineer

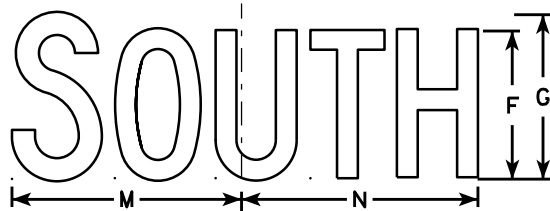
DATE 6/30/14 PLATE NO. M2-1.11



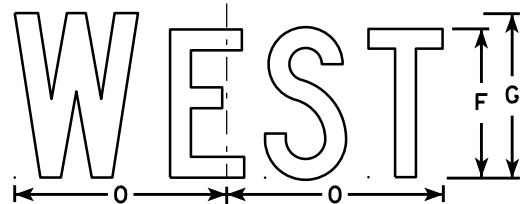
M3-1
MK3-1
MM3-1
MN3-1



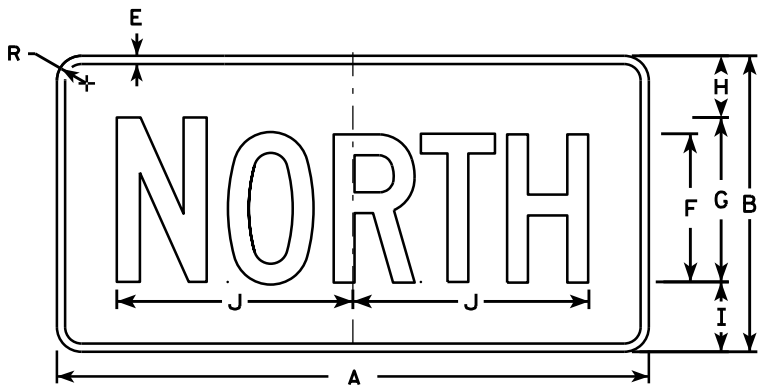
M3-2
MK3-2
MM3-2
MN3-2



M3-3
MK3-3
MM3-3
MN3-3



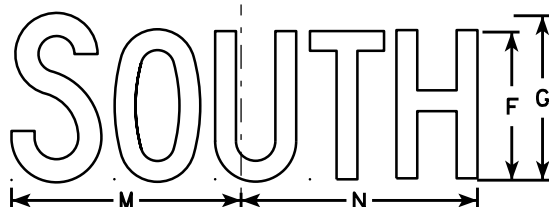
M3-4
MK3-4
MM3-4
MN3-4



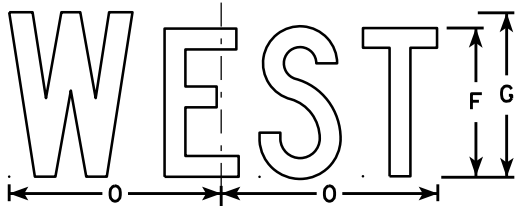
MB3-1



MB3-2



MB3-3



MB3-4

NOTES

1. All Signs 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. M3-1 thru M3-4 Background - White
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White
MK3-1 thru MK3-4 Background - Green
Message - White
MM3-1 thru MM3-4 Background - White
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White
6. Note the first letter of each direction is larger than the remainder of the message.

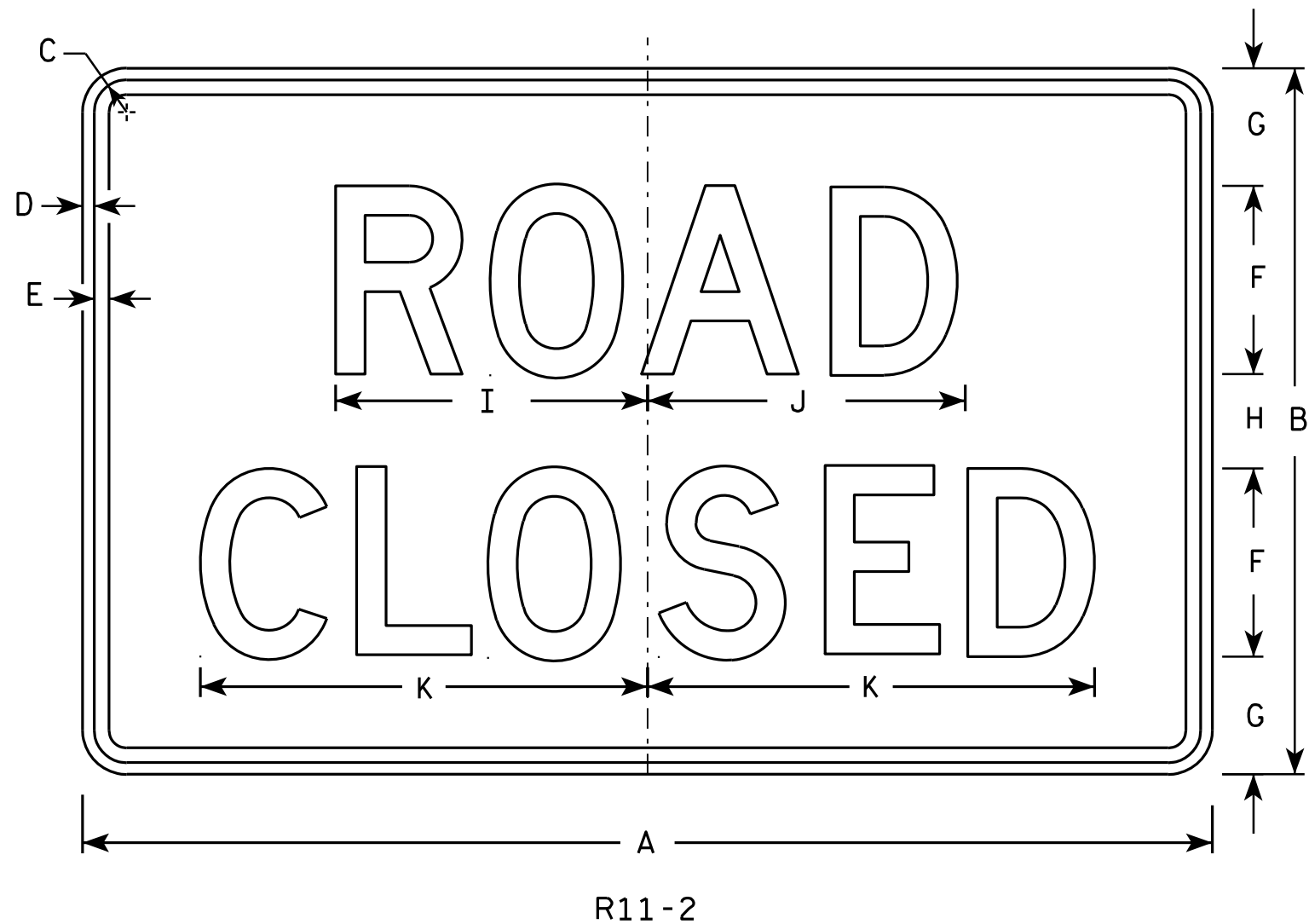
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8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

STANDARD SIGNS
M3-1 thru M3-4
SERIES

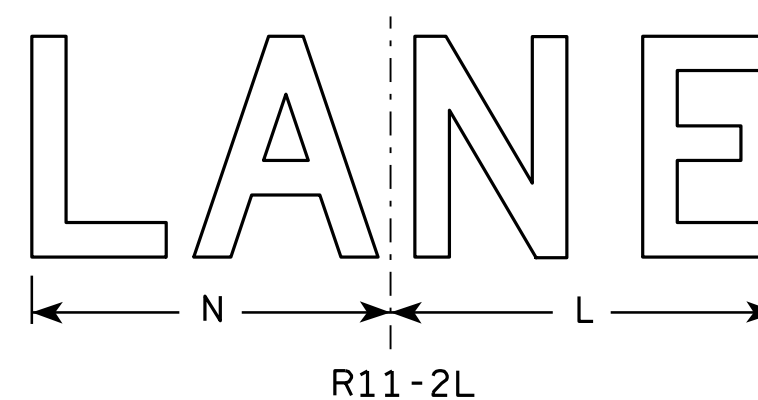
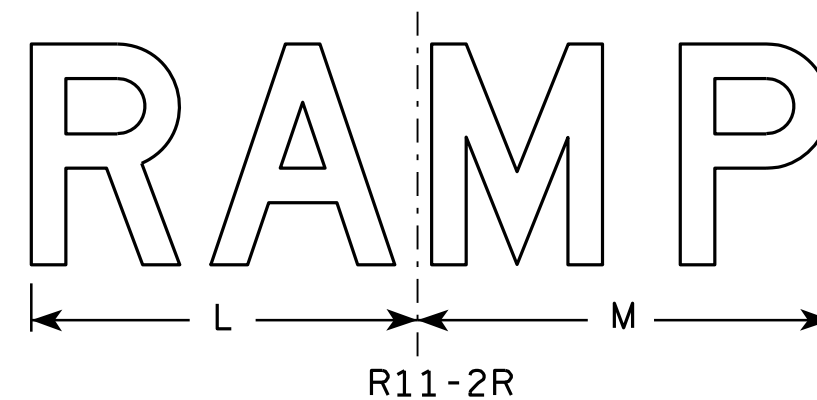
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 6/30/14 PLATE NO. M3-1.13

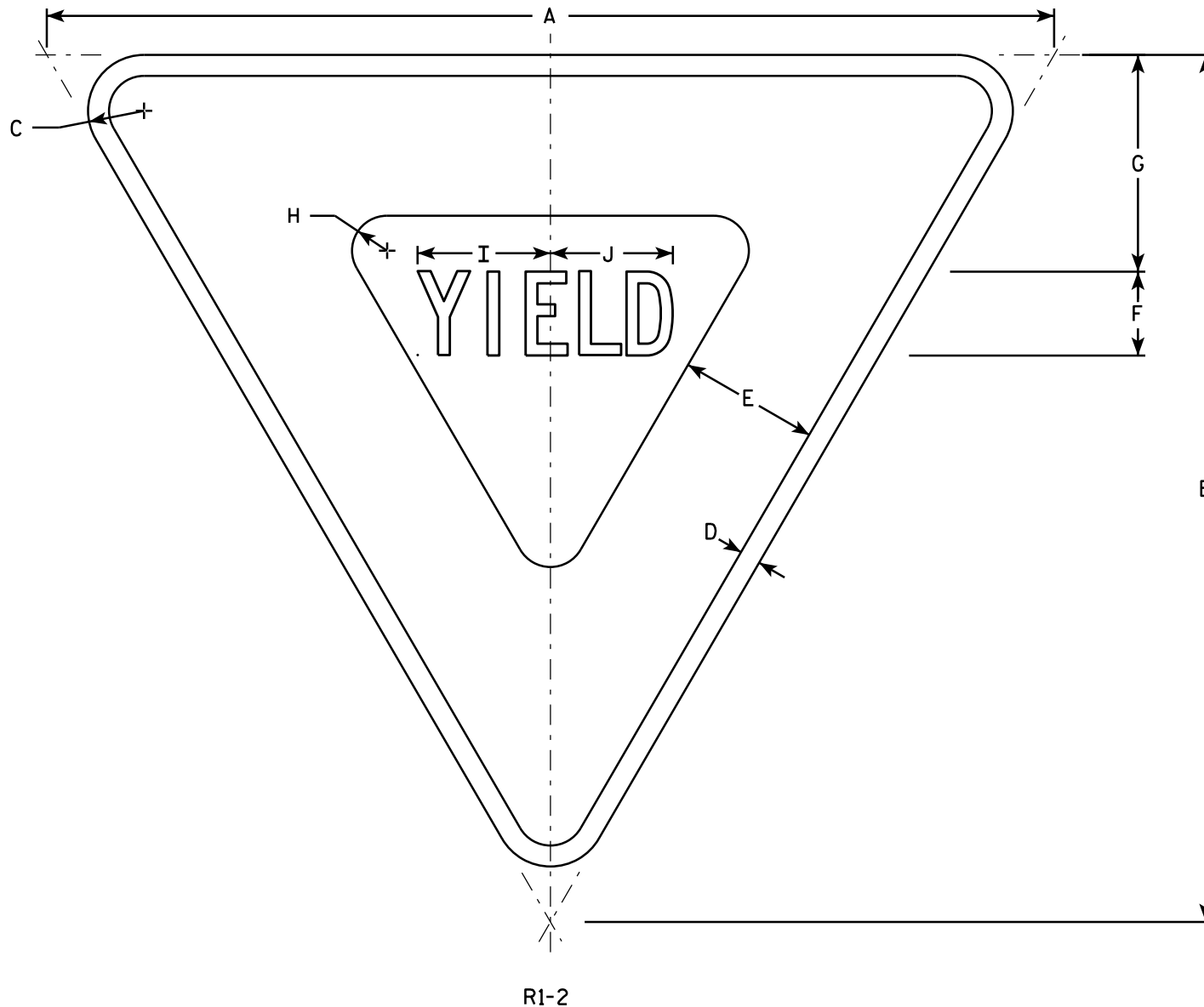


- NOTES
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
 2. Color:
Background - White
Message - Black
 3. Message Series - D
 4. Corners may be square or rounded when base material is plywood but borders shall be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



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

STANDARD SIGN	
R11-2	
<small>WISCONSIN DEPT OF TRANSPORTATION</small>	
<small>APPROVED</small>	<i>Matthew R. Rauch</i> <small>for State Traffic Engineer</small>
<small>DATE</small> 4/1/11	<small>PLATE NO.</small> R11-2.10



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 - 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. The border strip and word message are reflectorized red.

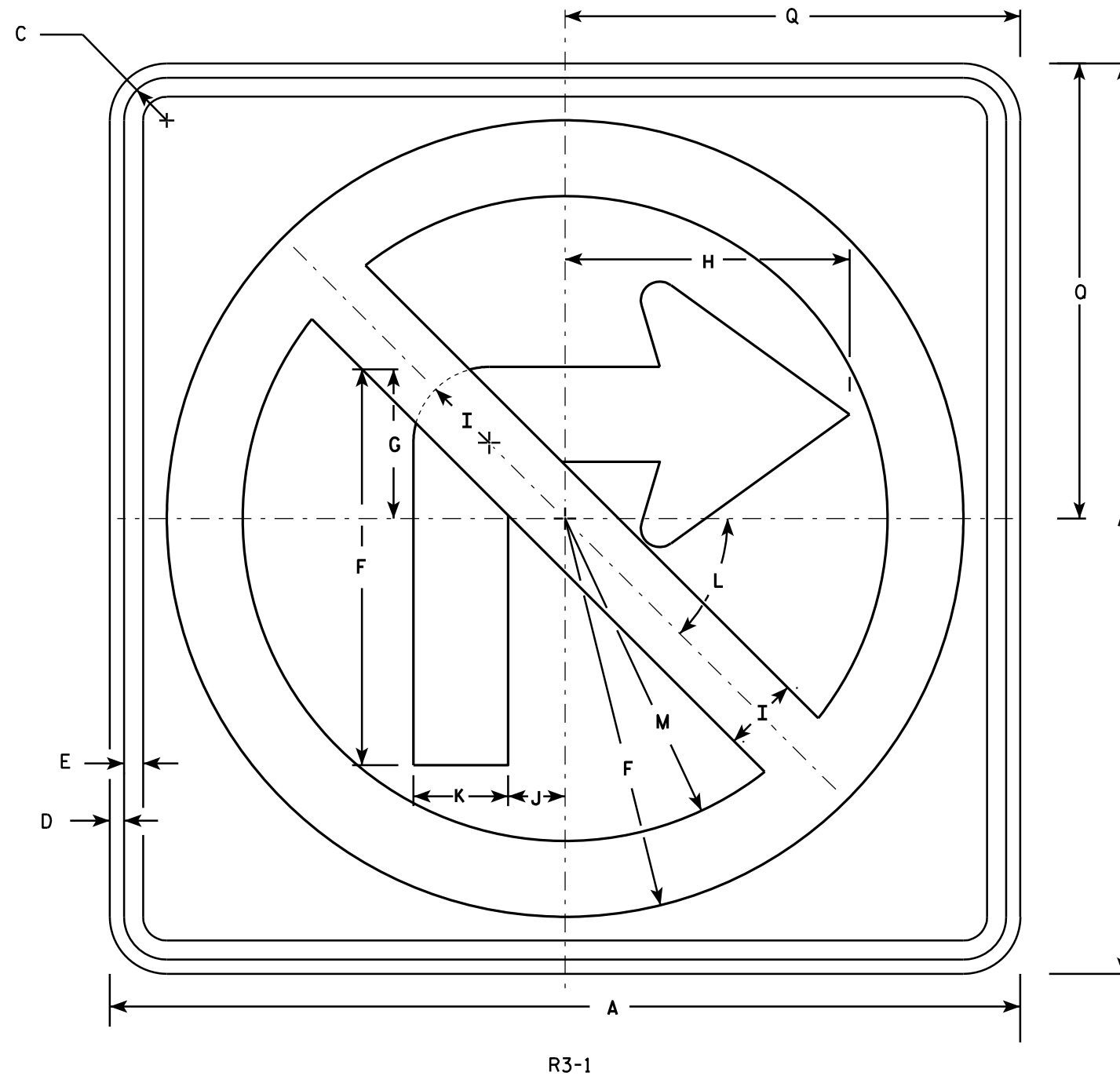
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	26	1 1/2	5/8	4	2 1/2	6 3/8	7/8	4	3 5/8																	2.71
2S	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
2M	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
3	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8								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

STANDARD SIGN
R1-2

WISCONSIN DEPT OF TRANSPORTATION

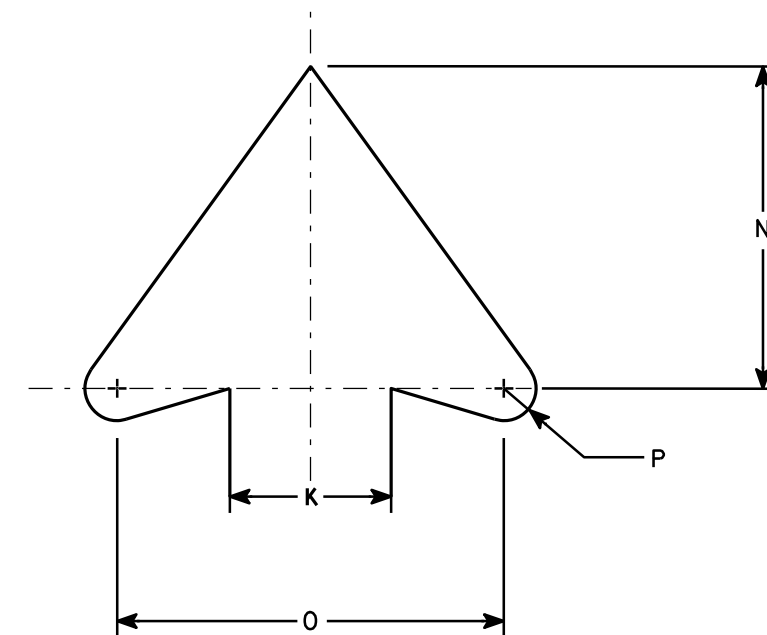
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/13/14 PLATE NO. R1-2.12



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

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

STANDARD SIGN

R3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-1.5

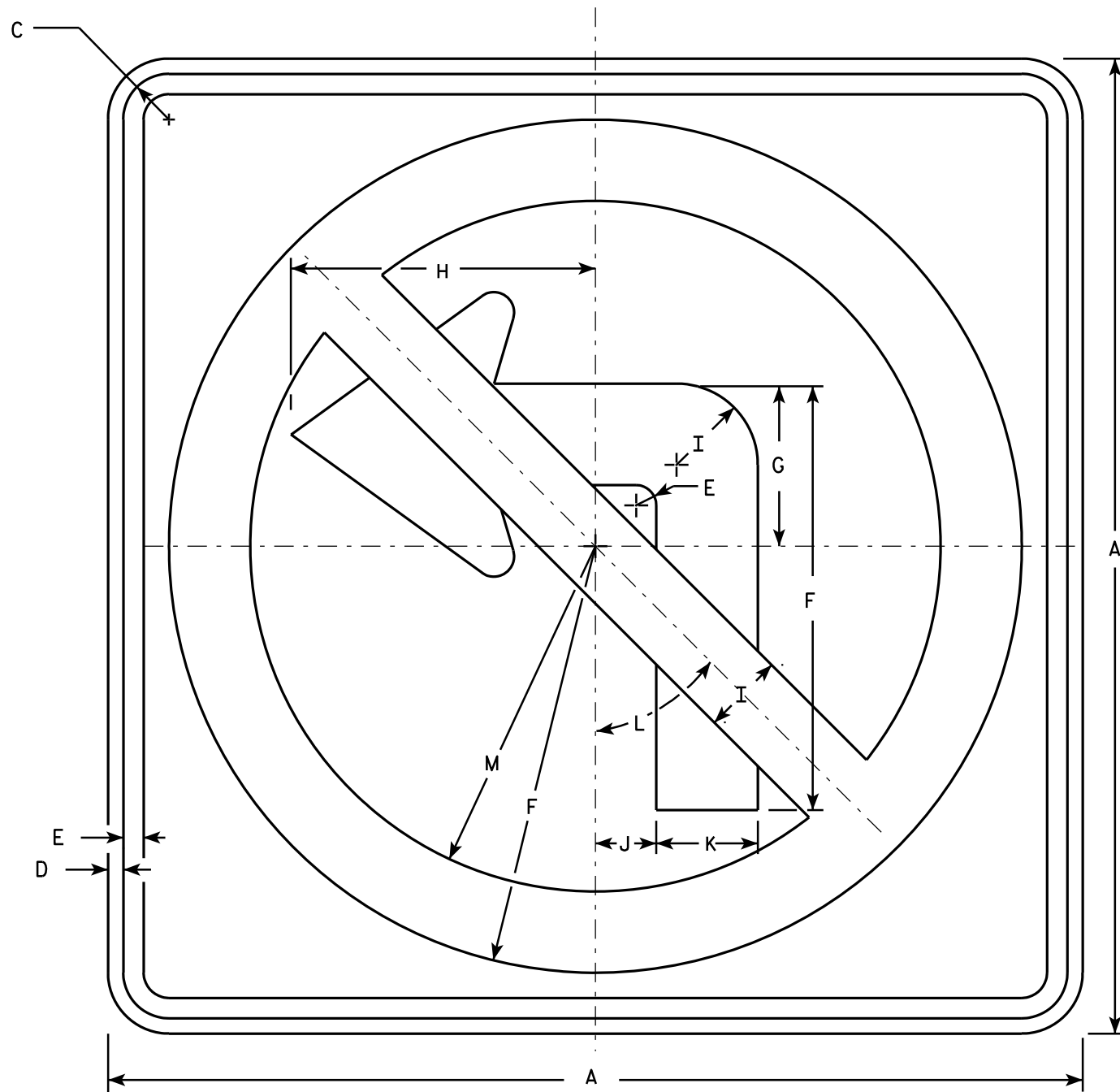
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

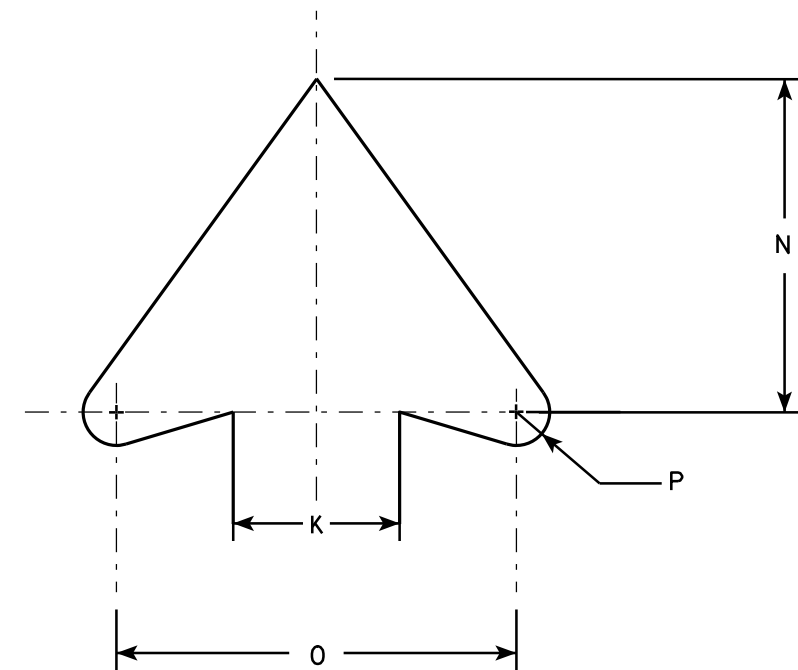
E



R3-2

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 - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

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

STANDARD SIGN R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

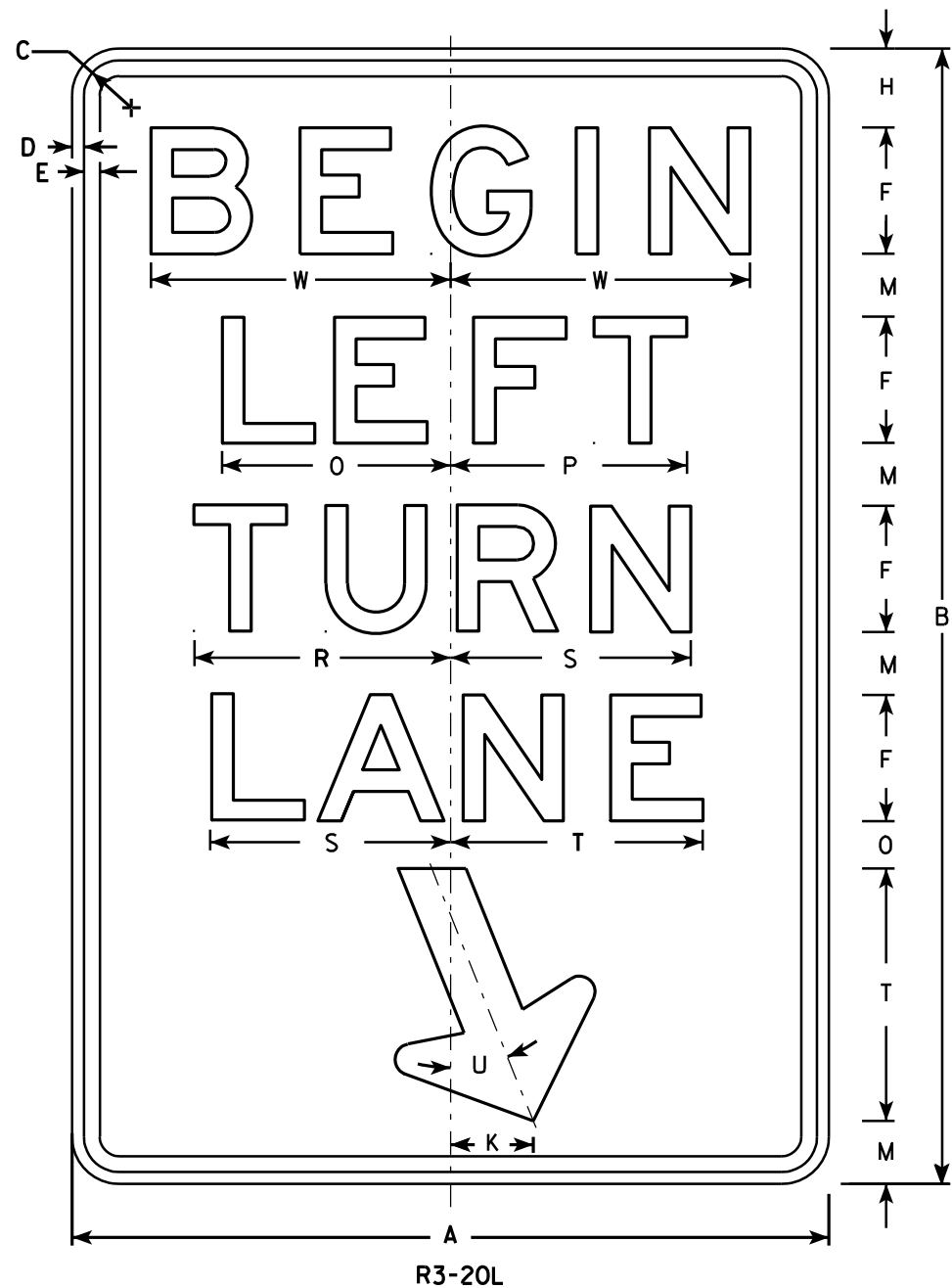
PROJECT NO:

HWY:

COUNTY:

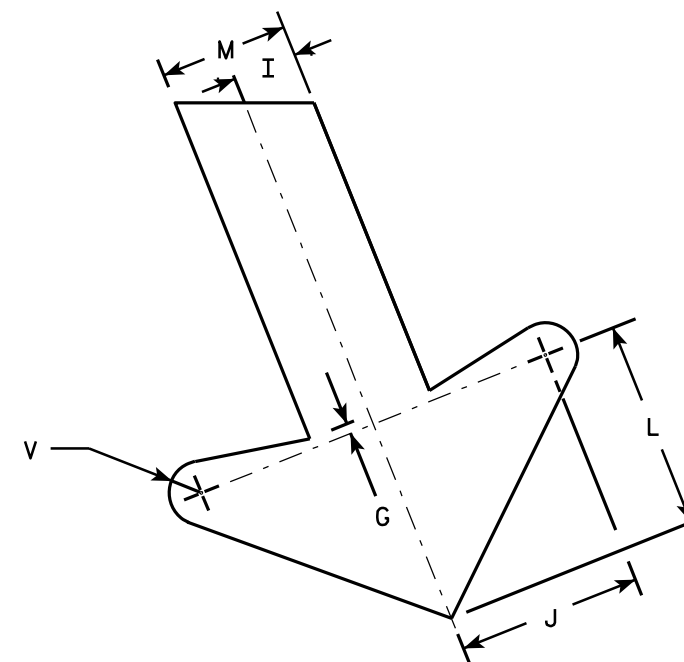
SHEET NO:

E



NOTES

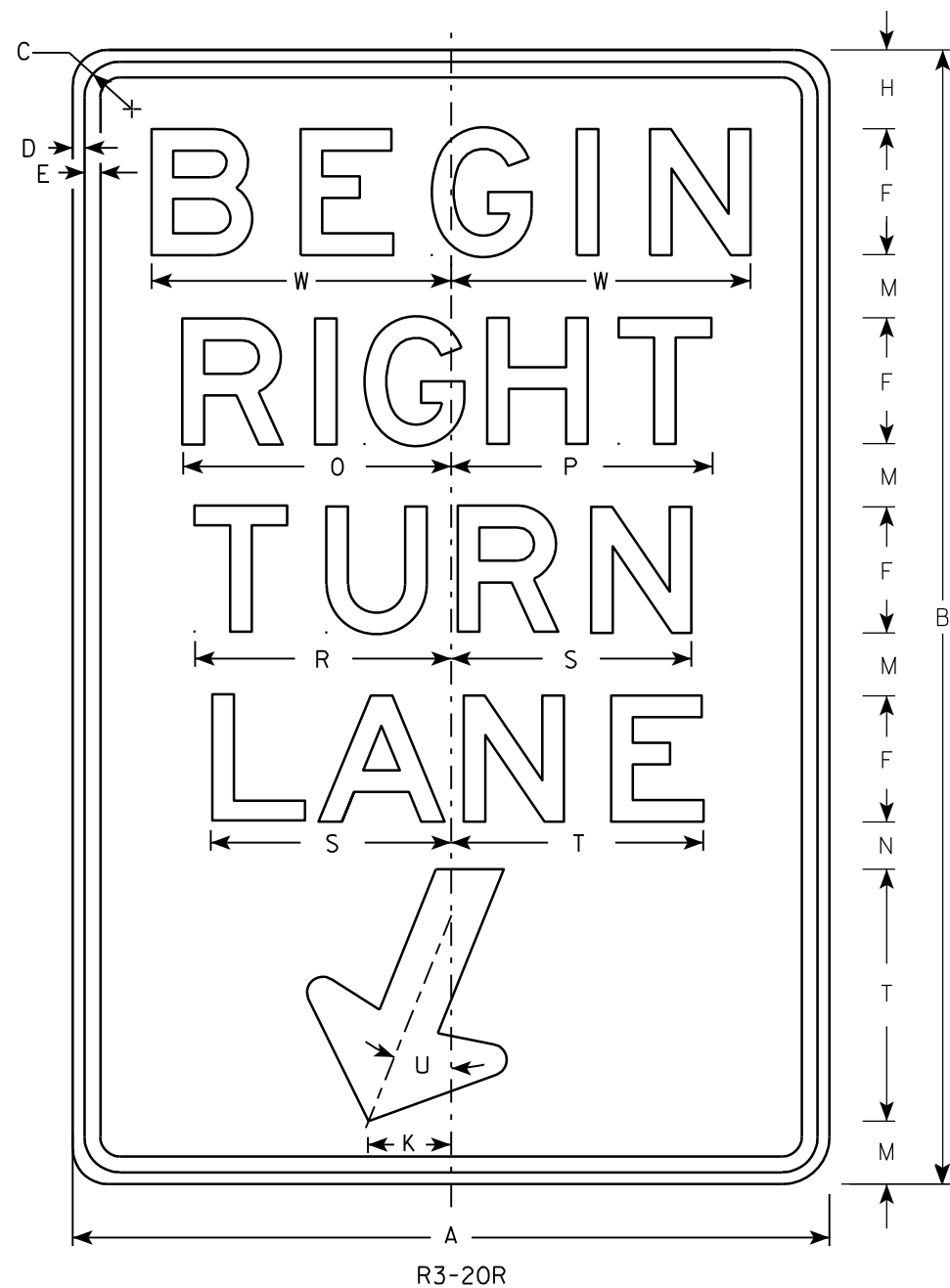
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as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



ARROW DETAIL

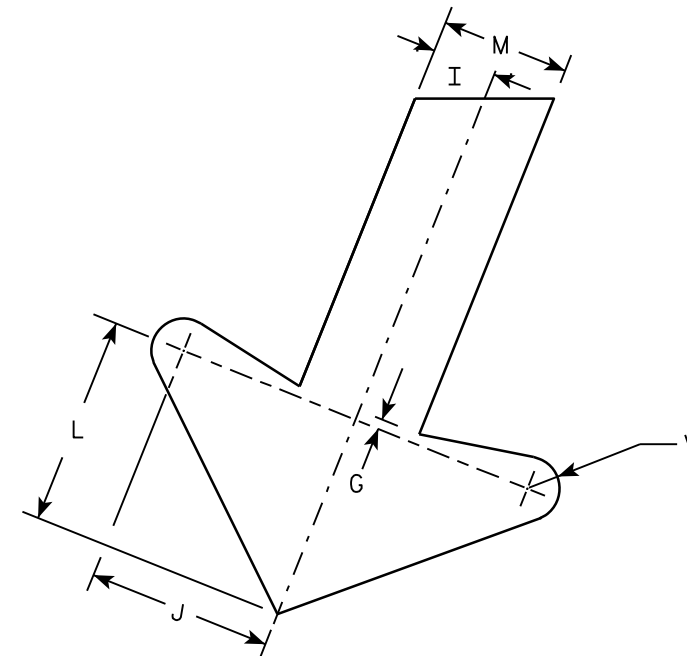
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	10 7/8	11 1/4		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

STANDARD SIGN R3-20L	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 10/18/10	PLATE NO. R3-20L.7



NOTES

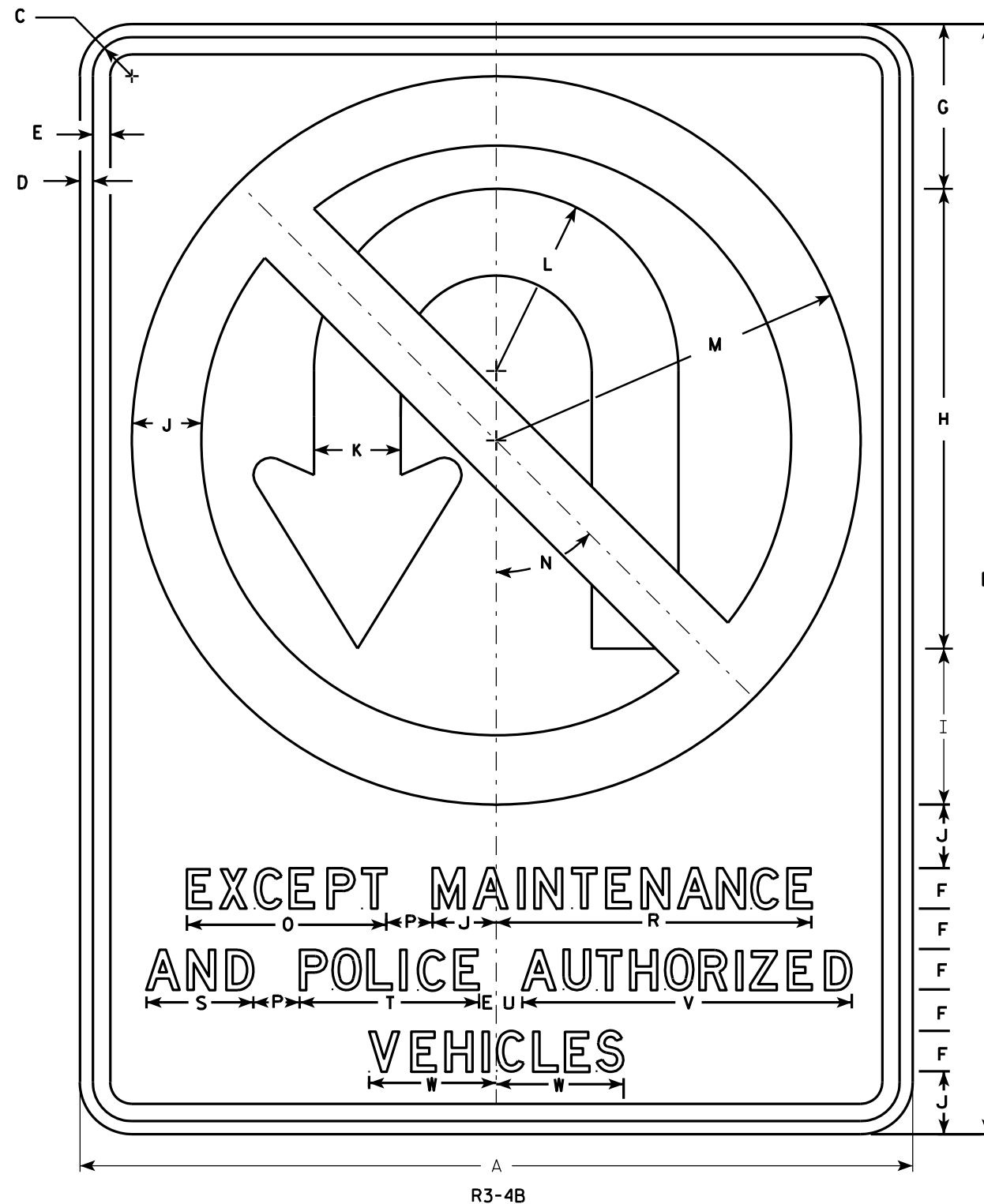
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as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



ARROW DETAIL

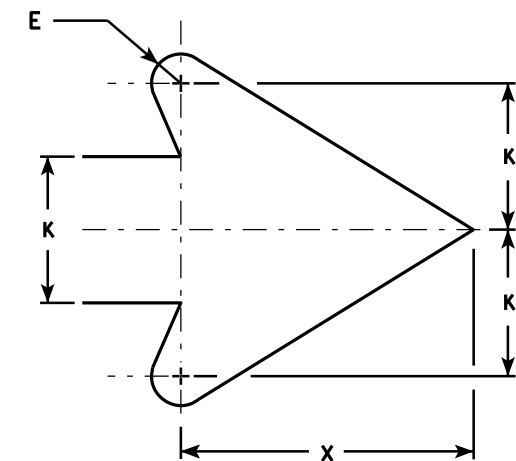
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	12 3/4	12 1/2		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

STANDARD SIGN R3-20R	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 10/18/10	PLATE NO. R3-20R.6



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 - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S																											
2M																											
3																											
4	36	48	1 5⁄8	5⁄8	¾	1 ¾	7 1⁄8	19 7⁄8	6 ¾	2 ¾	3 ¾	7 7⁄8	15 ¾	45°	8 5⁄8	2		13 5⁄8	4 5⁄8	7 ¾	1 1⁄8	14 1⁄4	5 1⁄2	7 5⁄8			12.0
5	36	48	1 5⁄8	5⁄8	¾	1 ¾	7 1⁄8	19 7⁄8	6 ¾	2 ¾	3 ¾	7 7⁄8	15 ¾	45°	8 5⁄8	2		13 5⁄8	4 5⁄8	7 ¾	1 1⁄8	14 1⁄4	5 1⁄2	7 5⁄8			12.0

STANDARD SIGN R3-4B

WISCONSIN DEPT OF TRANSPORTATION

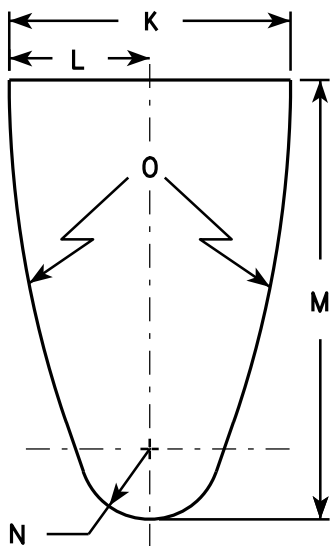
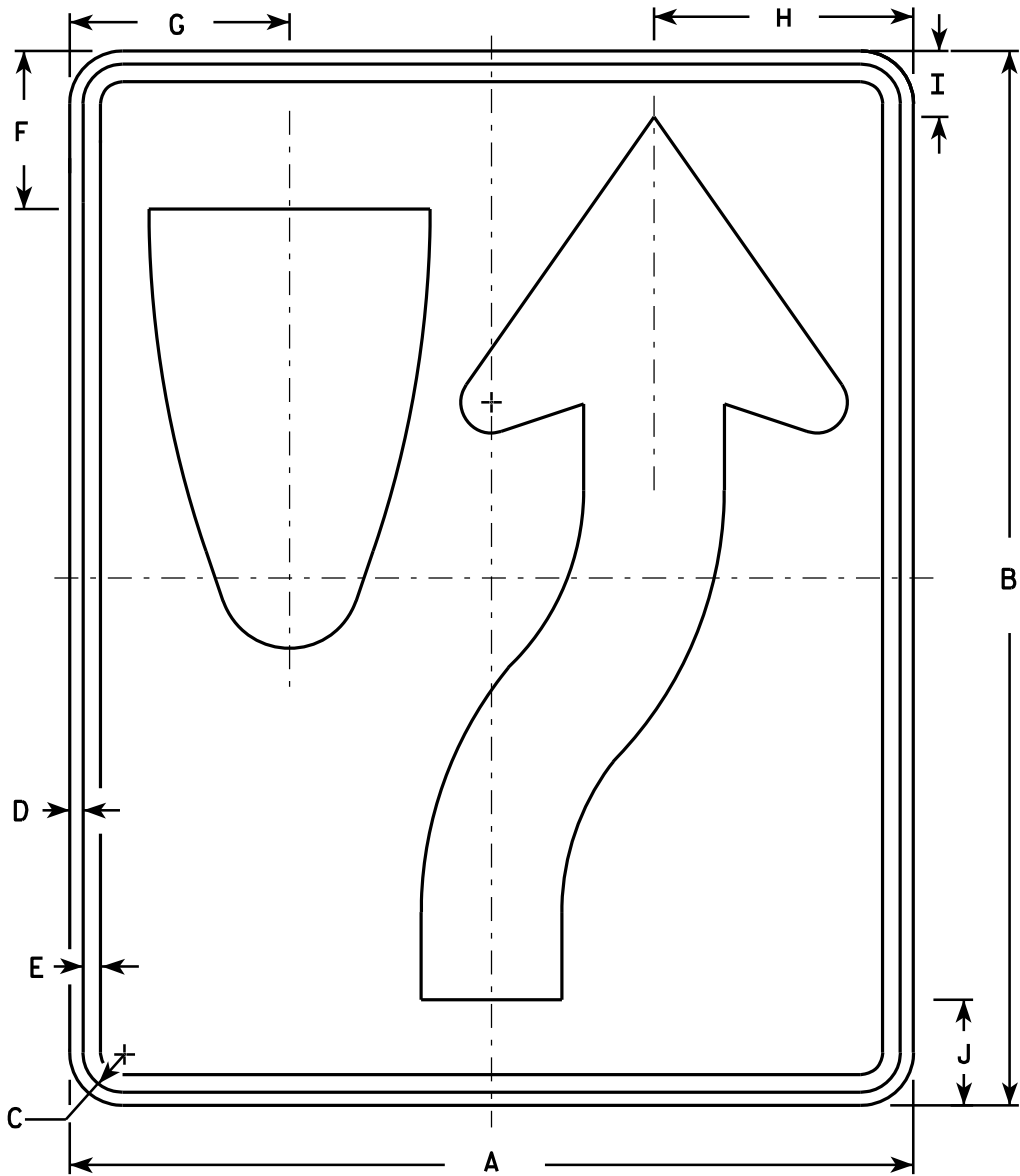
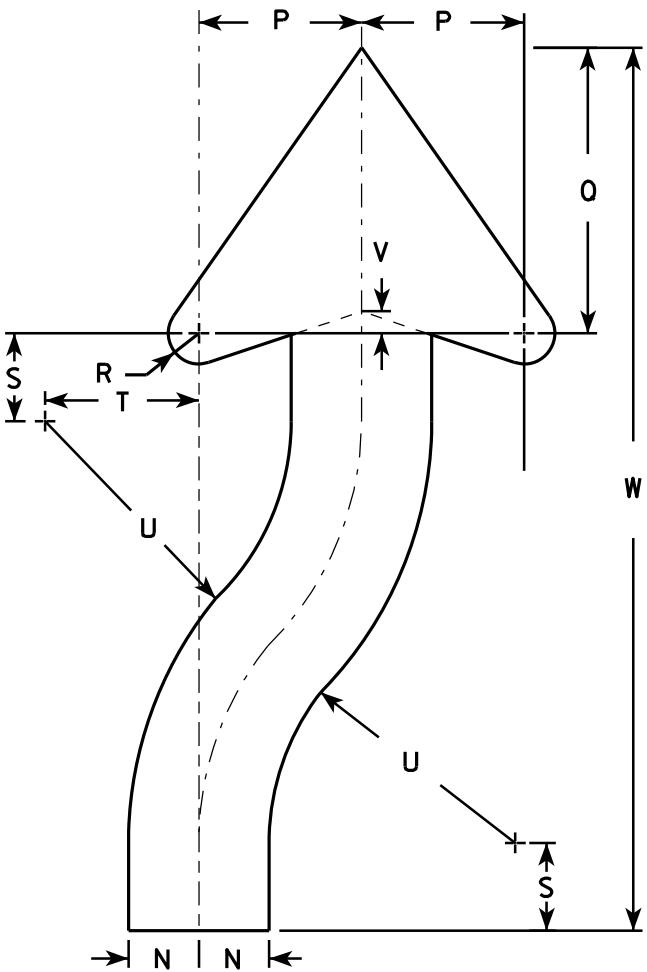
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/17/2011 PLATE NO. R3-4B.2

PROJECT NO: HWY: COUNTY: SHEET NO: E

NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
- 2. Color:
Background - White
Message - Black
- 3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
- 4. R4-8 is the same as R4-7 except Legend is reversed.



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 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	2 1/4	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

STANDARD SIGN

R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

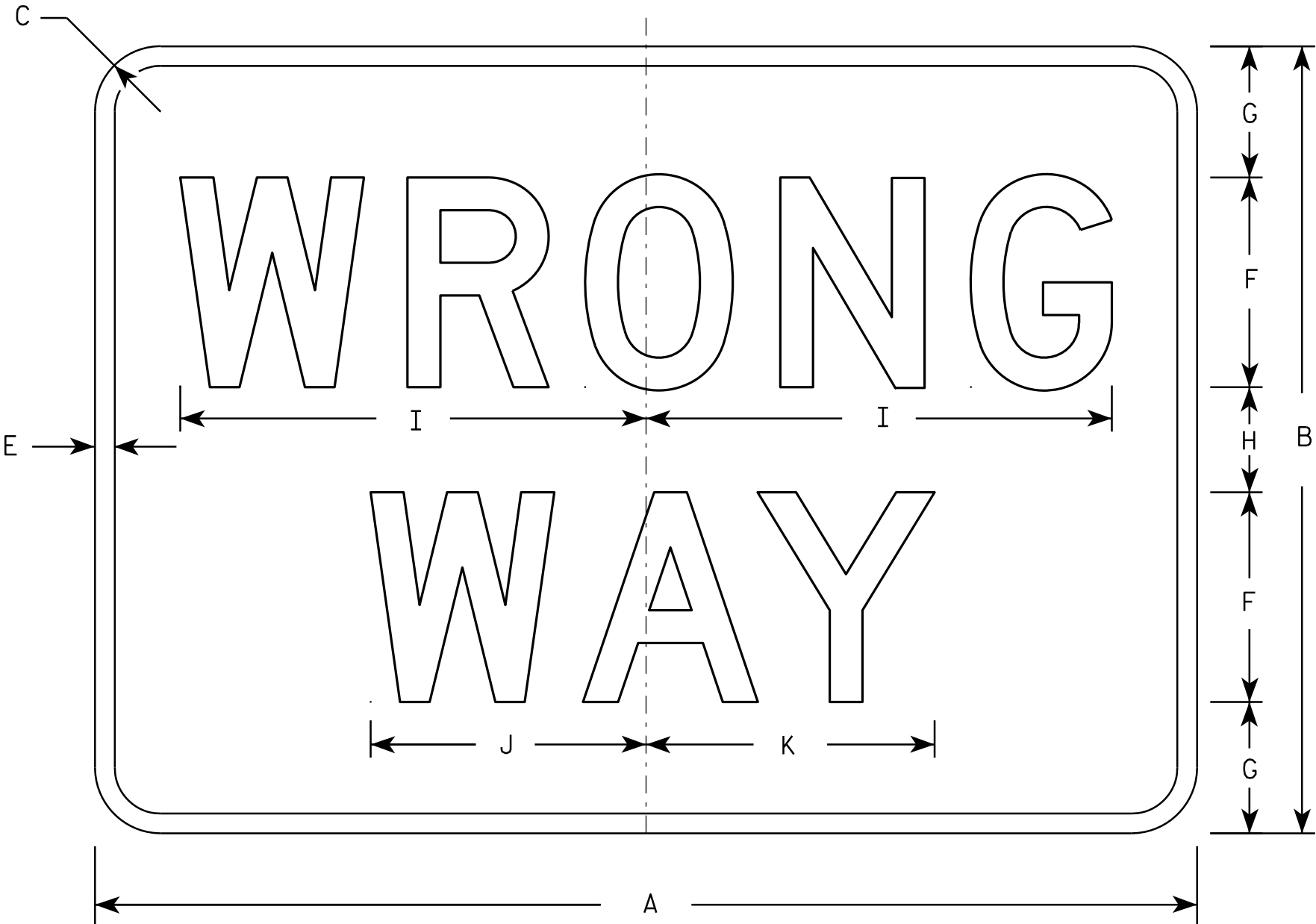
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



R5-1A

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 - D
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

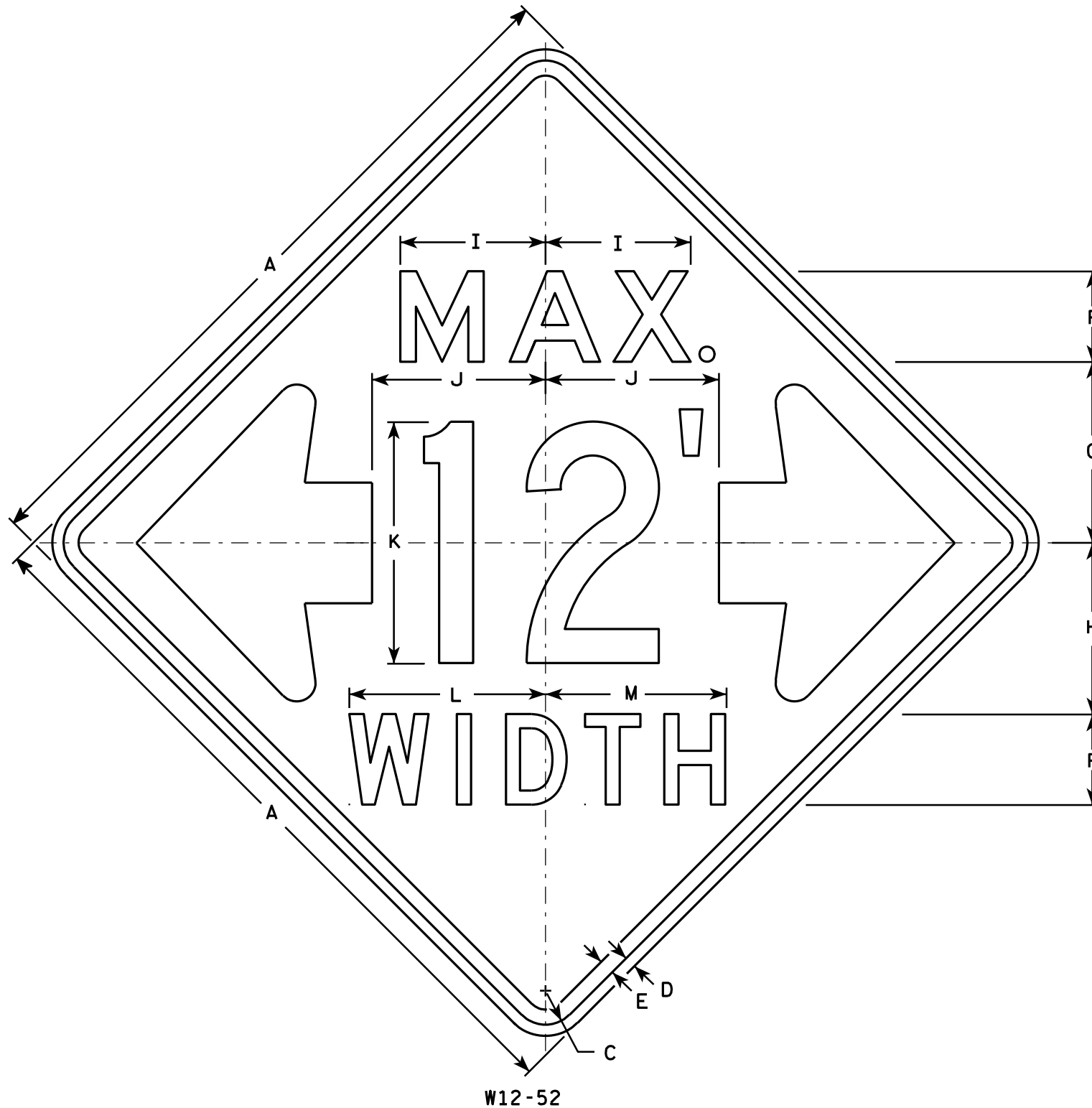
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8																3.75
2S	36	24	2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4																6.00
2M	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
3	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11	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

STANDARD SIGN
R5-1A

WISCONSIN DEPT OF TRANSPORTATION

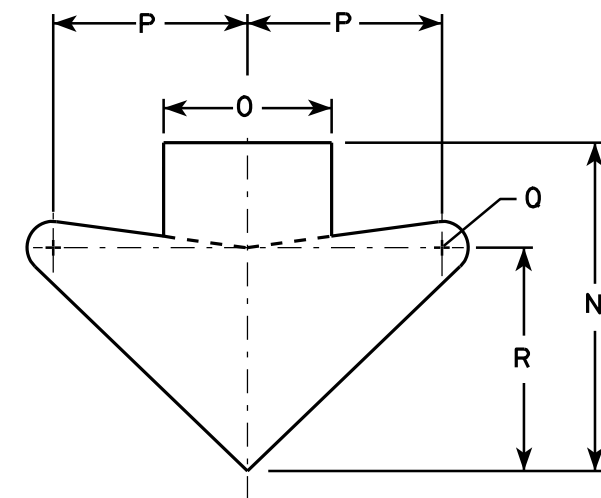
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1A.2



NOTES

1. Sign Is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. The top line is series E, the numerals are series C, and the bottom line is series D.
6. Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

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

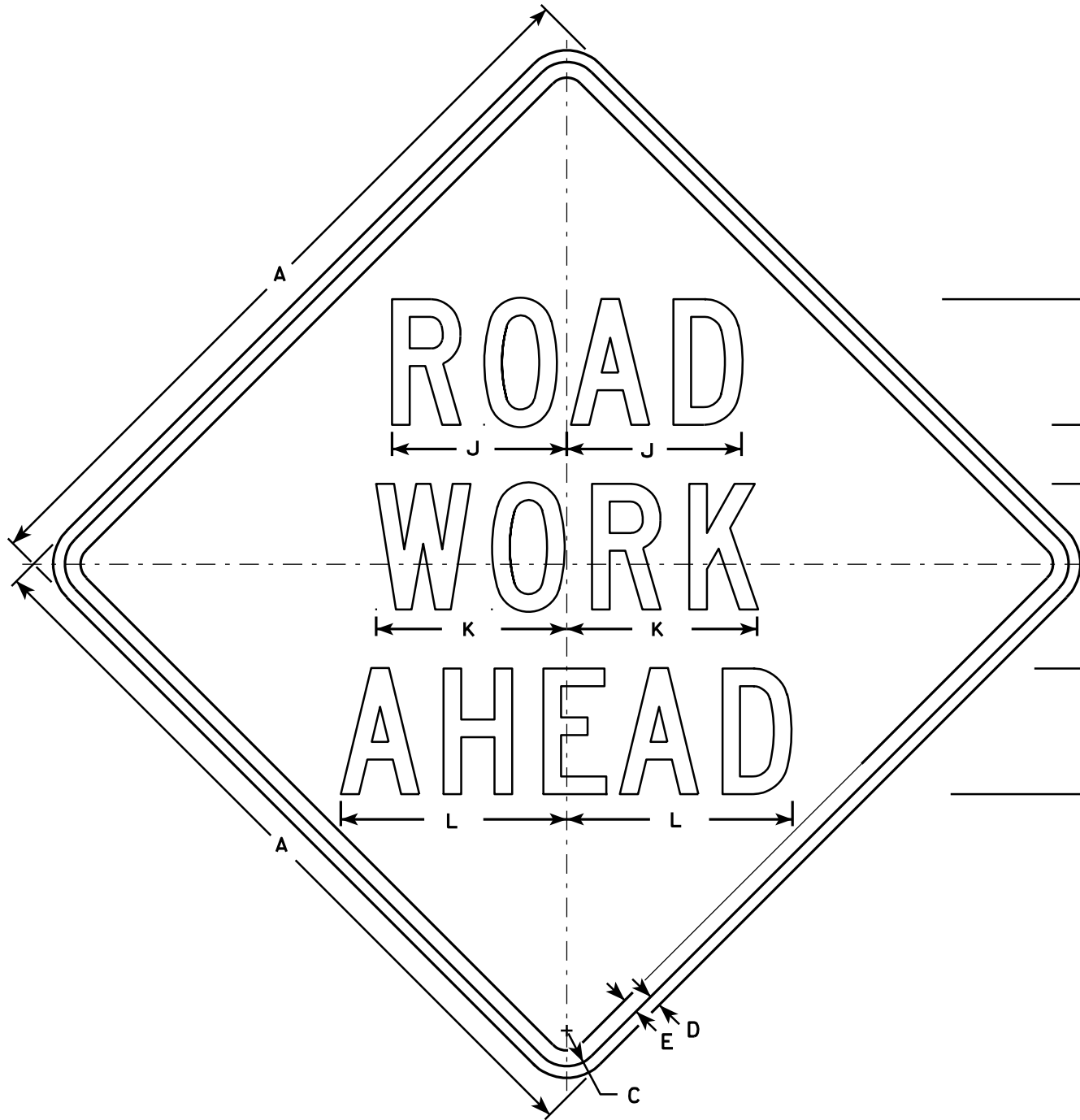
STANDARD SIGN W12-52

WISCONSIN DEPT OF TRANSPORTATION

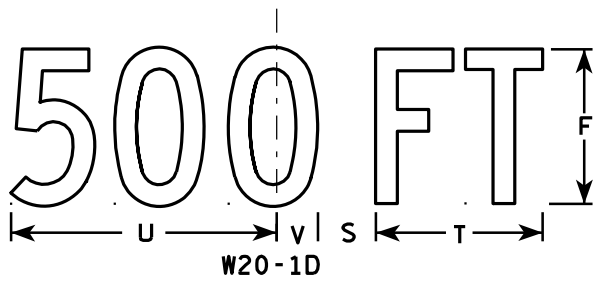
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

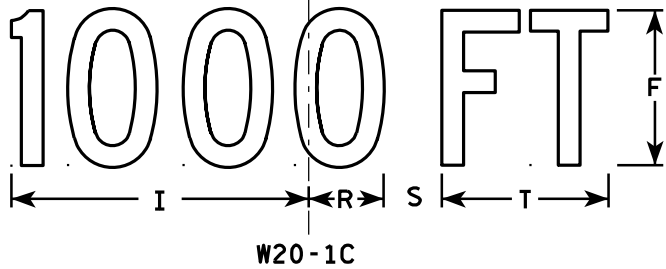
PROJECT NO: HWY: COUNTY: SHEET NO: E



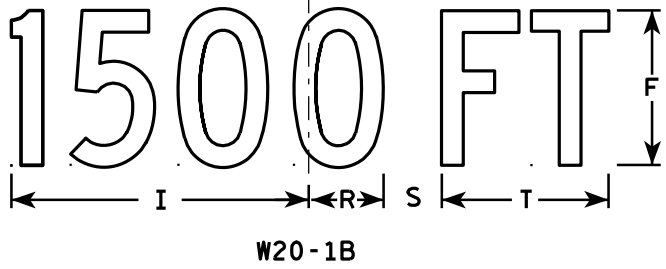
W20-1A



W20-1D



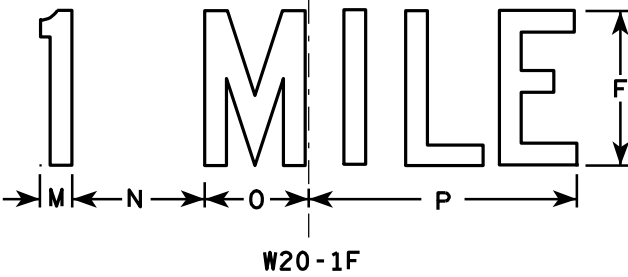
W20-1C



W20-1B



W20-1G



W20-1F

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	1 7/8	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

PROJECT NO:

SHEET NO:

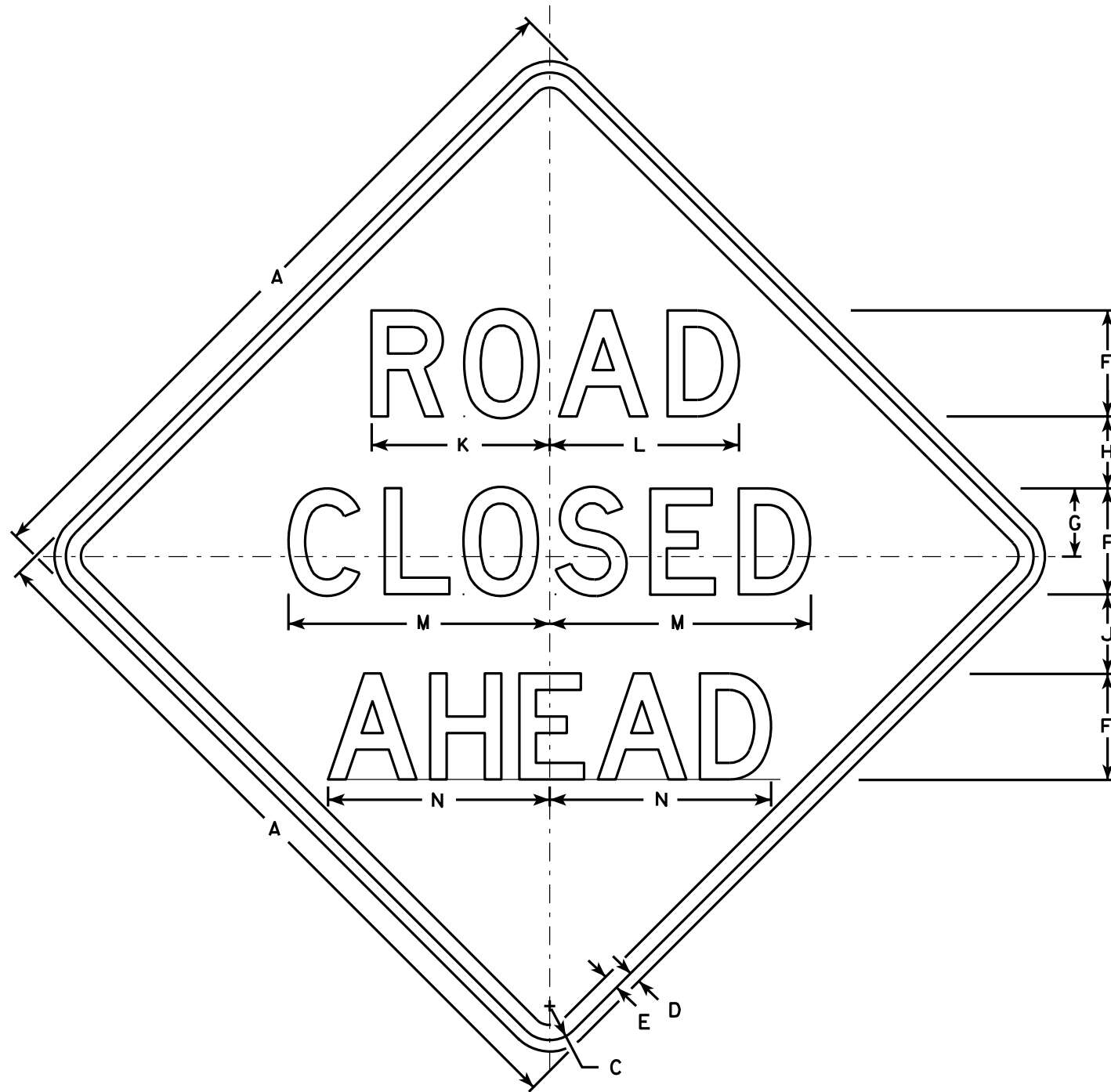
E

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
For State Traffic Engineer

DATE 3/18/11
PLATE NO. W20-1.9



W20-3A

500 FT

W20-3D

1000 FT

W20-3C

1500 FT

W20-3B

1/2 MILE

W20-3G

1 MILE

W20-3F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

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

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

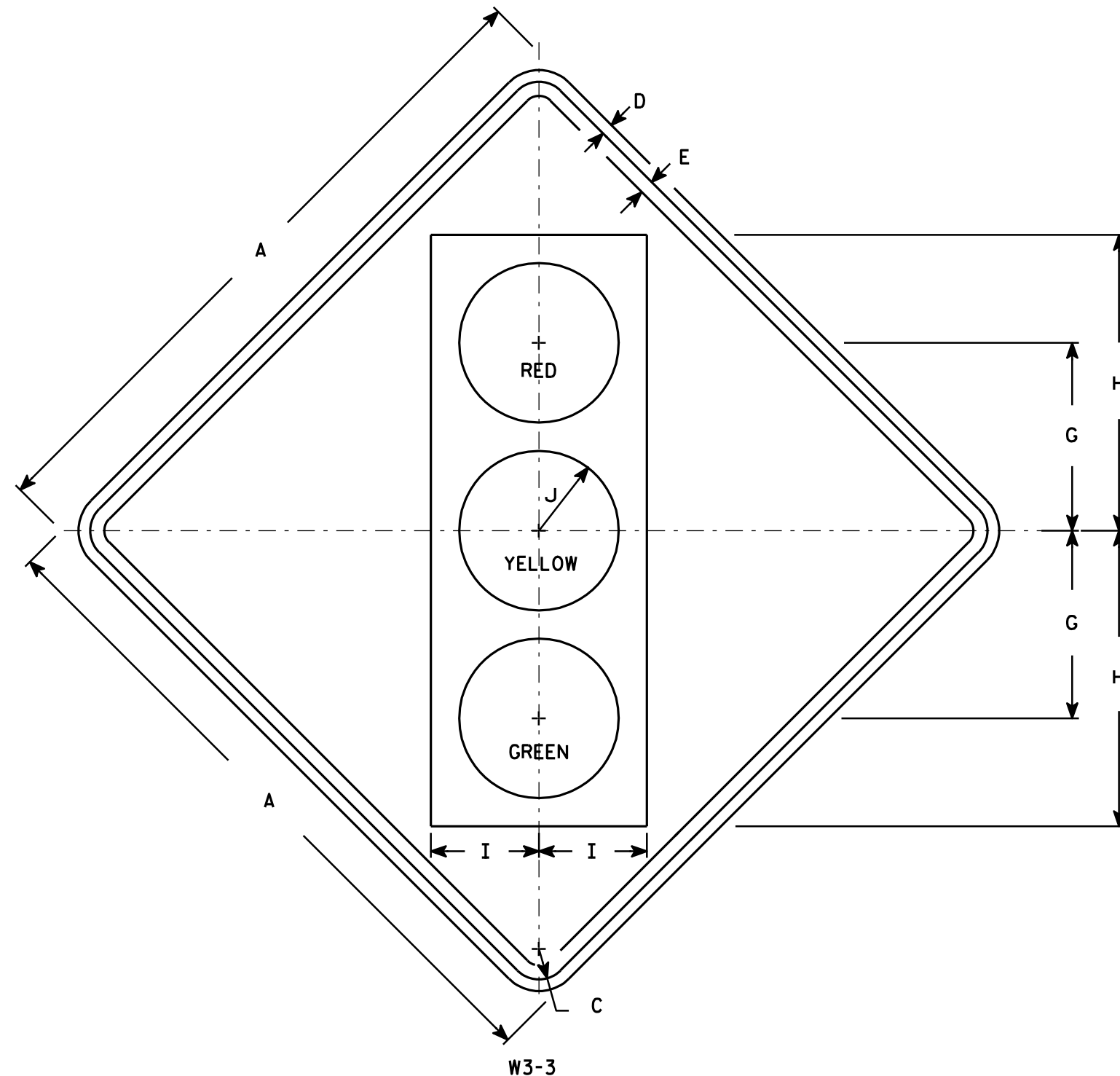
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Yellow
Message - See Note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- Symbol and border are non-reflective black.
Top circle - Type H Reflectorized Red
Center circle - Same as background
Bottom circle - Type H Reflectorized Green

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		8 3/4	13 3/4	5	3 3/4																	6.25
2S	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
2M	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
3	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
4	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
5	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0

STANDARD SIGN W3-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 6/7/10

PLATE NO. W3-3.11

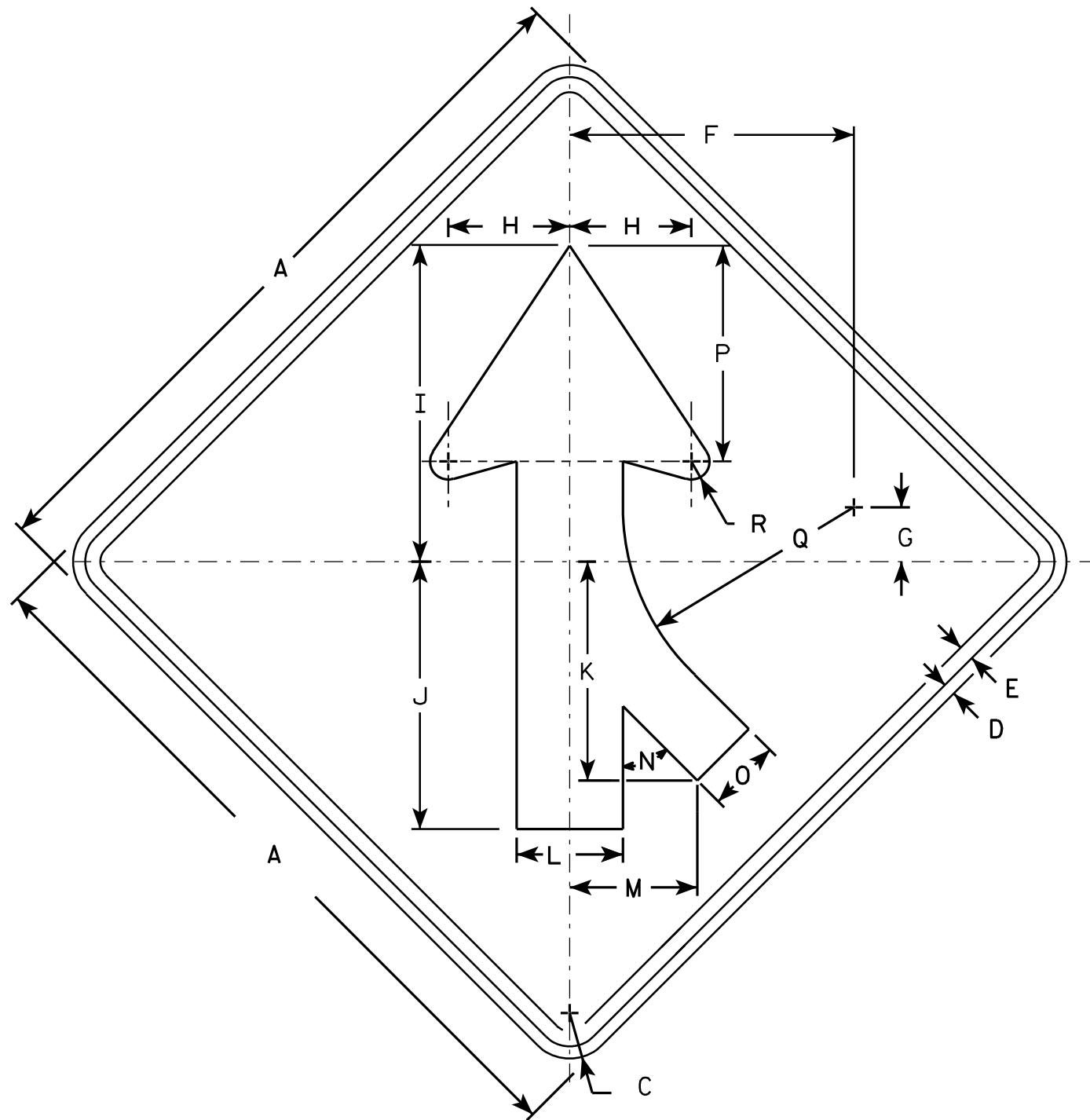
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



W4-1 R

NOTES

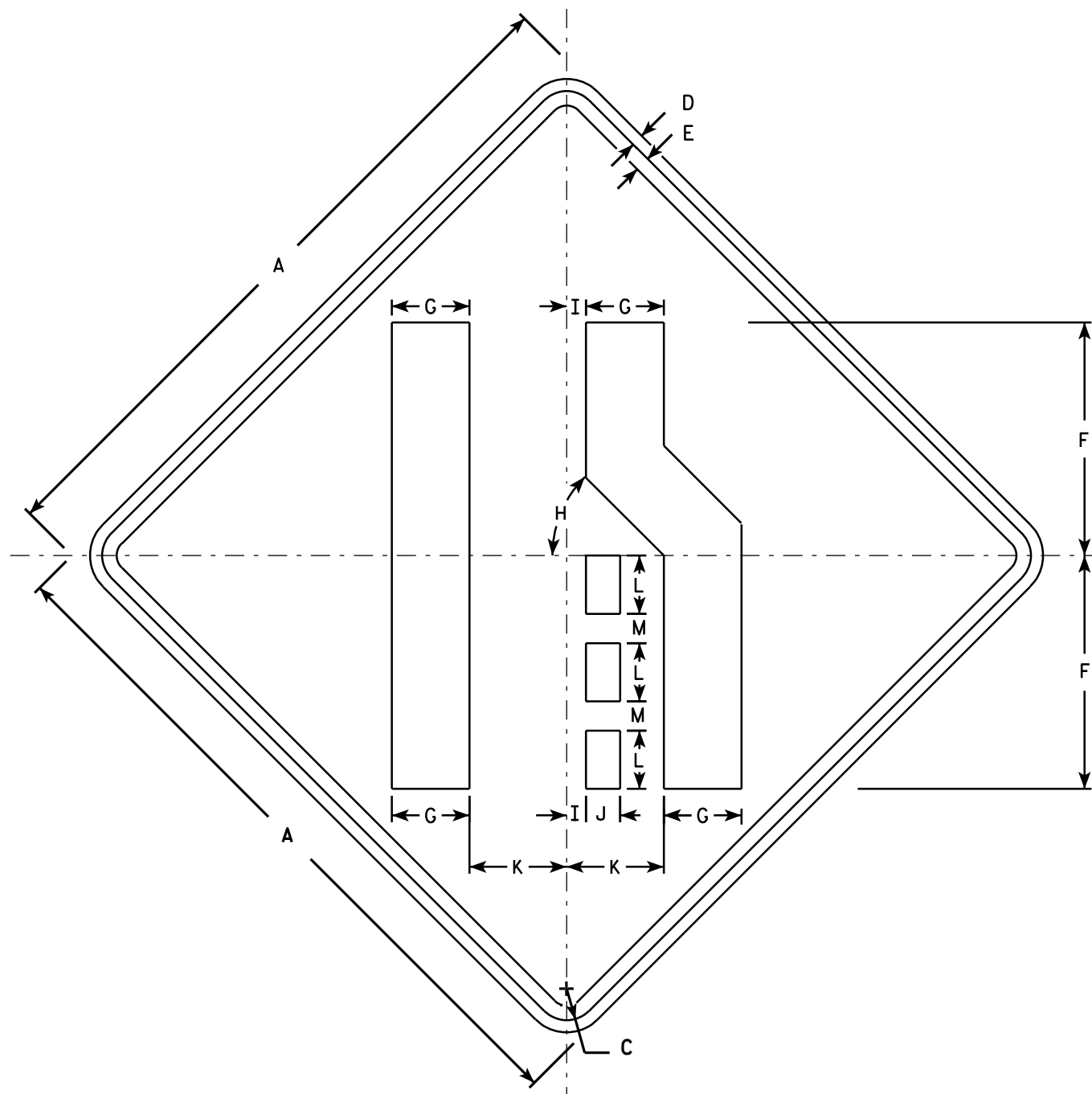
1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W4-1L is the same as W4-1R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	11 5/8	2 1/2	5	13	11	9	4 3/8	5 1/4	45°	3	8 7/8	9 1/2	3/4									6.25
2S	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
2M	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
3	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
4	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
5	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0

STANDARD SIGN W4-1

WISCONSIN DEPT OF TRANSPORTATION
 APPROVED *Matthew R. Rauch*
 for State Traffic Engineer
 DATE 03/12/13 PLATE NO. W4-1.14

PROJECT NO: HWY: COUNTY: SHEET NO: E



W4-2R

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. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W4-2L is the same as W4-2R except the symbols is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	10	3 3/8	45°	7/8	1 1/2	4 1/4	2 1/2	1 1/4														6.25
2S	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2M	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
3	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

STANDARD SIGN W4-2

WISCONSIN DEPT OF TRANSPORTATION

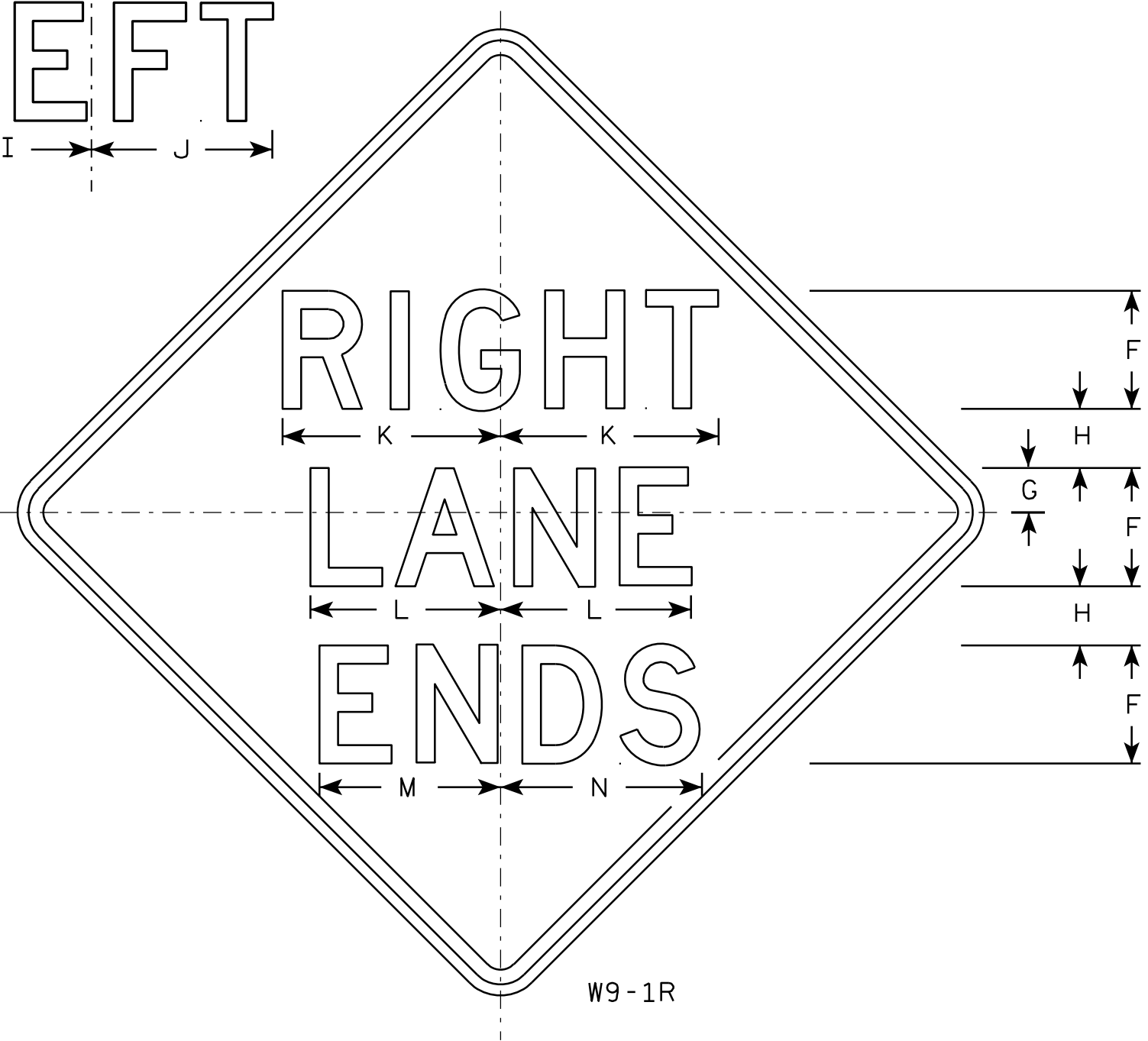
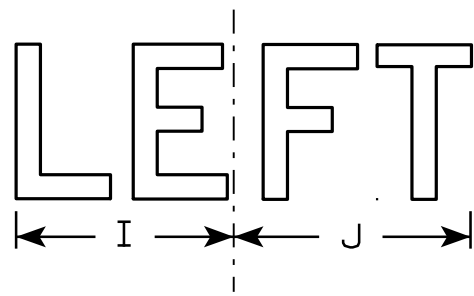
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/12/13 PLATE NO. W4-2.14

PROJECT NO:

SHEET NO:

E



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 - D
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. W9-1L same as W9-1R except the word Left replaces Right.

7

7

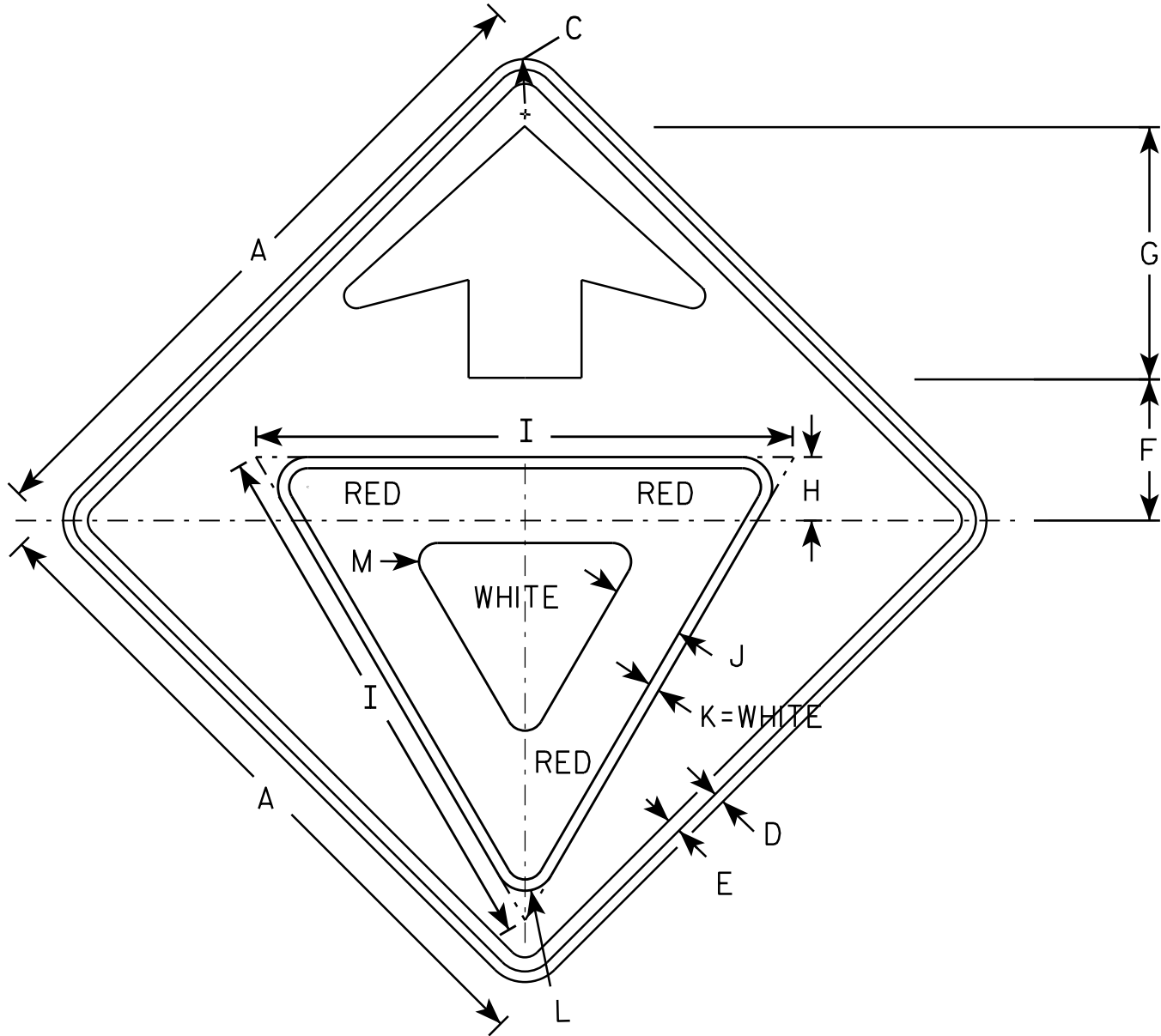
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3⁄8	1⁄2	5⁄8	5	1 1⁄2	2 1⁄2	7 1⁄8	7 5⁄8	9 1⁄4	8 1⁄8	7 5⁄8	8 5⁄8													6.25
2S	36		1 5⁄8	5⁄8	3⁄4	6	2	3	8 1⁄2	9 1⁄8	11	9 3⁄4	9	10 3⁄8													9.0
2M	36		1 5⁄8	5⁄8	3⁄4	6	2	3	8 1⁄2	9 1⁄8	11	9 3⁄4	9	10 3⁄8													9.0
3	36		1 5⁄8	5⁄8	3⁄4	6	2	3	8 1⁄2	9 1⁄8	11	9 3⁄4	9	10 3⁄8													9.0
4	36		1 5⁄8	5⁄8	3⁄4	6	2	3	8 1⁄2	9 1⁄8	11	9 3⁄4	9	10 3⁄8													9.0
5	48		2 1⁄4	3⁄4	1	8	3	4	11 1⁄4	12 1⁄4	14 3⁄4	12 7⁄8	12 1⁄4	13 5⁄8													16.0

STANDARD SIGN
W9-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

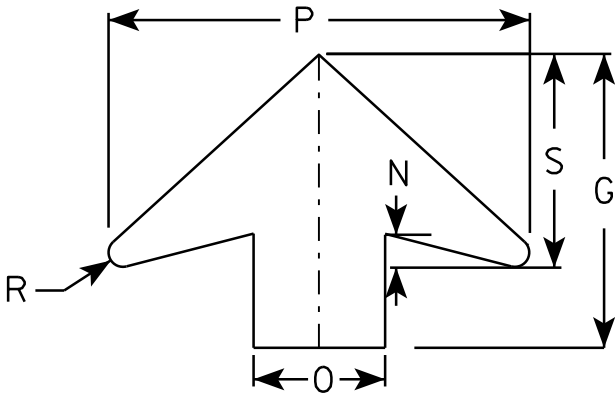
DATE 03/18/13 PLATE NO. W9-1.8



W03-2

NOTES

- 1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
 - Background - ORANGE
 - Arrow & Border - BLACK
 - Yield 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	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 3/8	28	3 3/4	5/8	1 1/2	1	1 5/8	6	19 1/4		5/8	9 3/4								9.0
2S	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
2M	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
3	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0

STANDARD SIGN

W03-2

WISCONSIN DEPT OF TRANSPORTATION

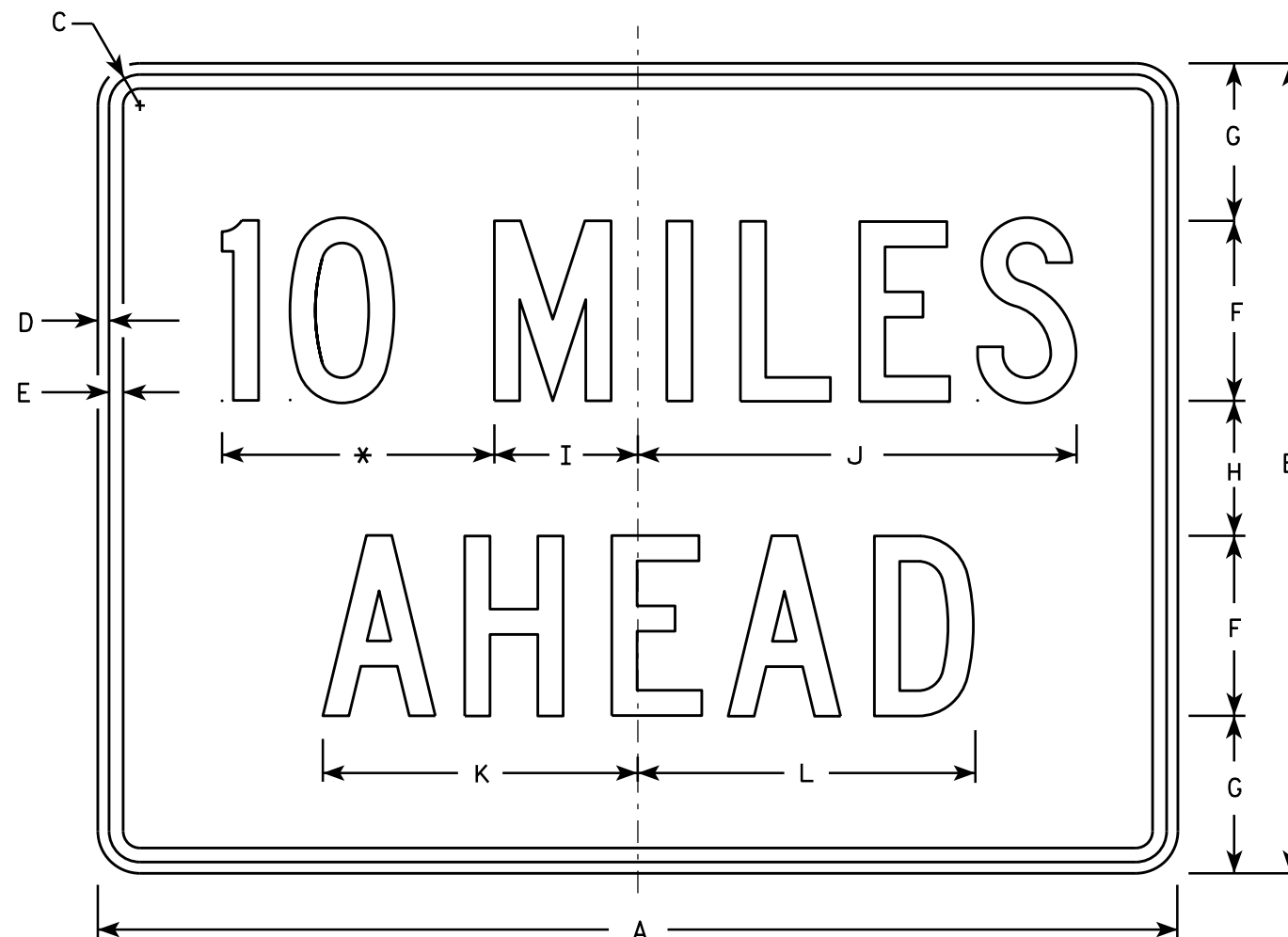
APPROVED

Matthew R. Rauch

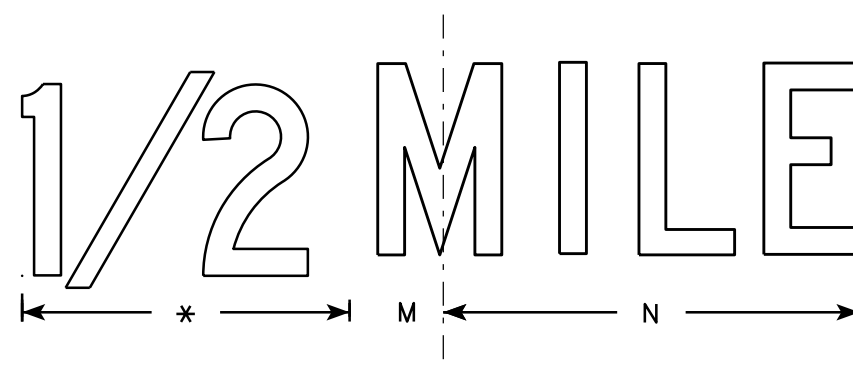
for State Traffic Engineer

DATE 11/20/13

PLATE NO. W03-2.1



W057-52



* See note 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 - Orange
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
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	36	24	1 1/8	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	13													6.0
2S	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0
2M	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0
3	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0
4	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0
5	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0

STANDARD SIGN W057-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 11/20/13

PLATE NO. W057-52.1

PROJECT NO:

HWY:

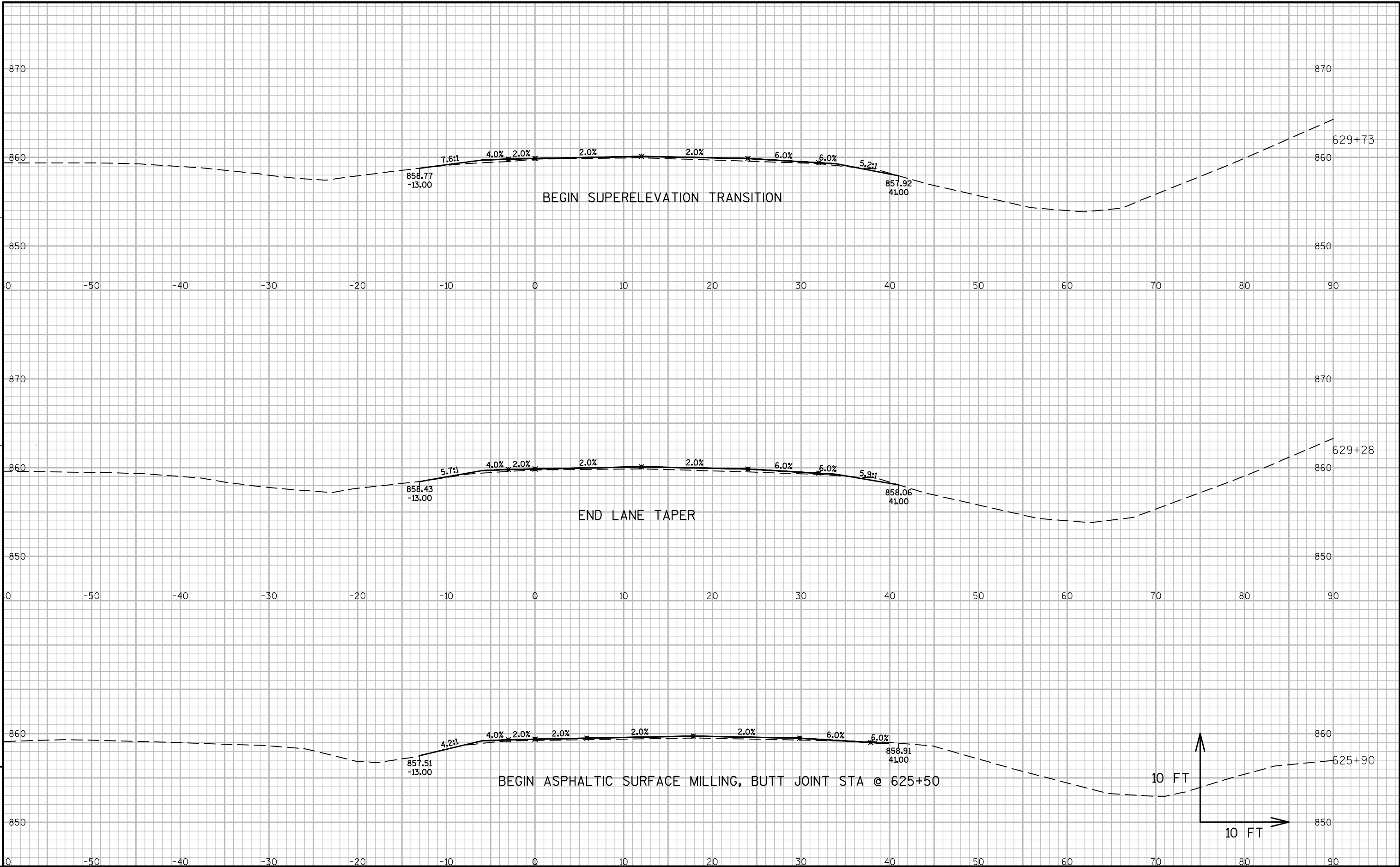
COUNTY:

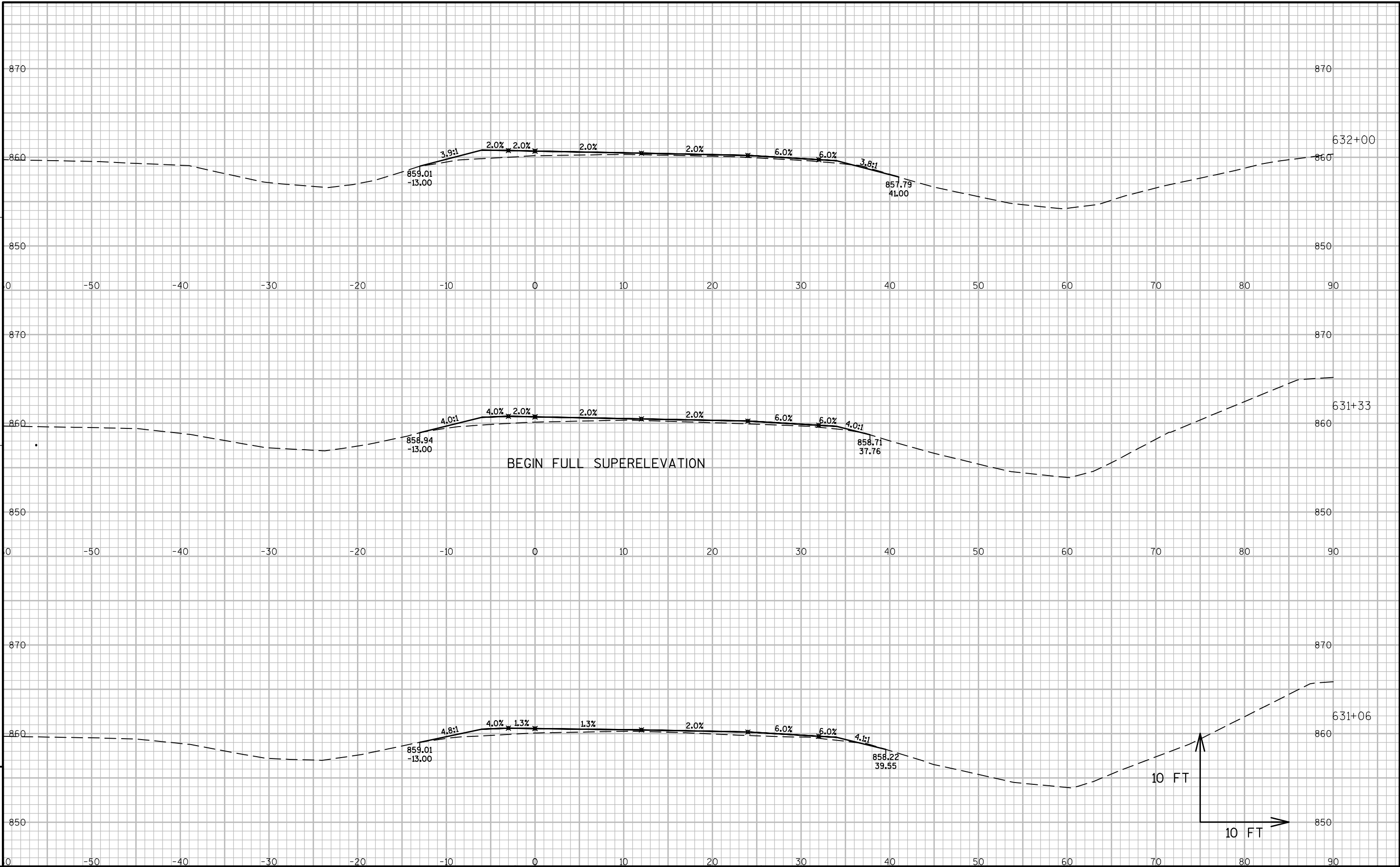
SHEET NO:

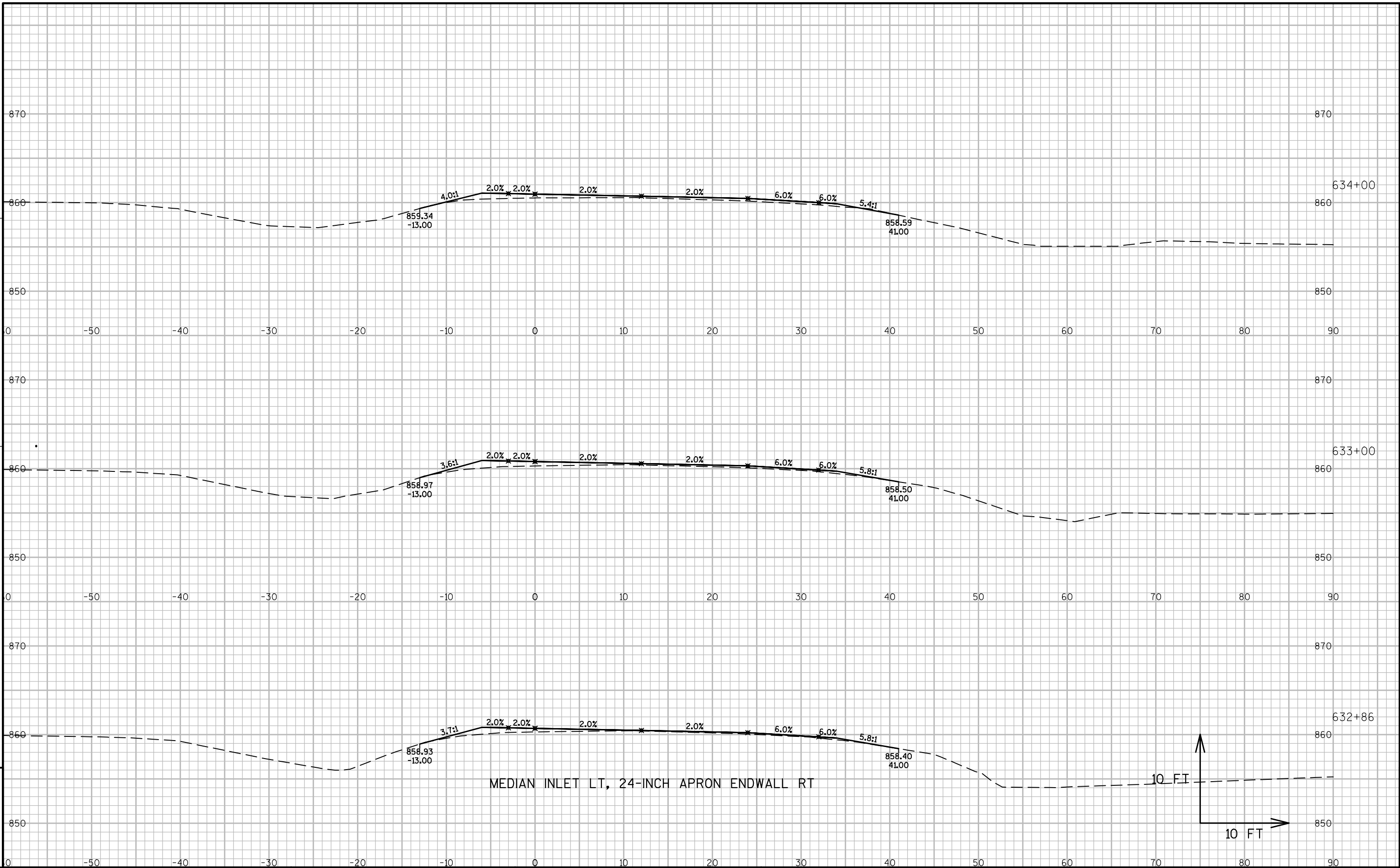
E

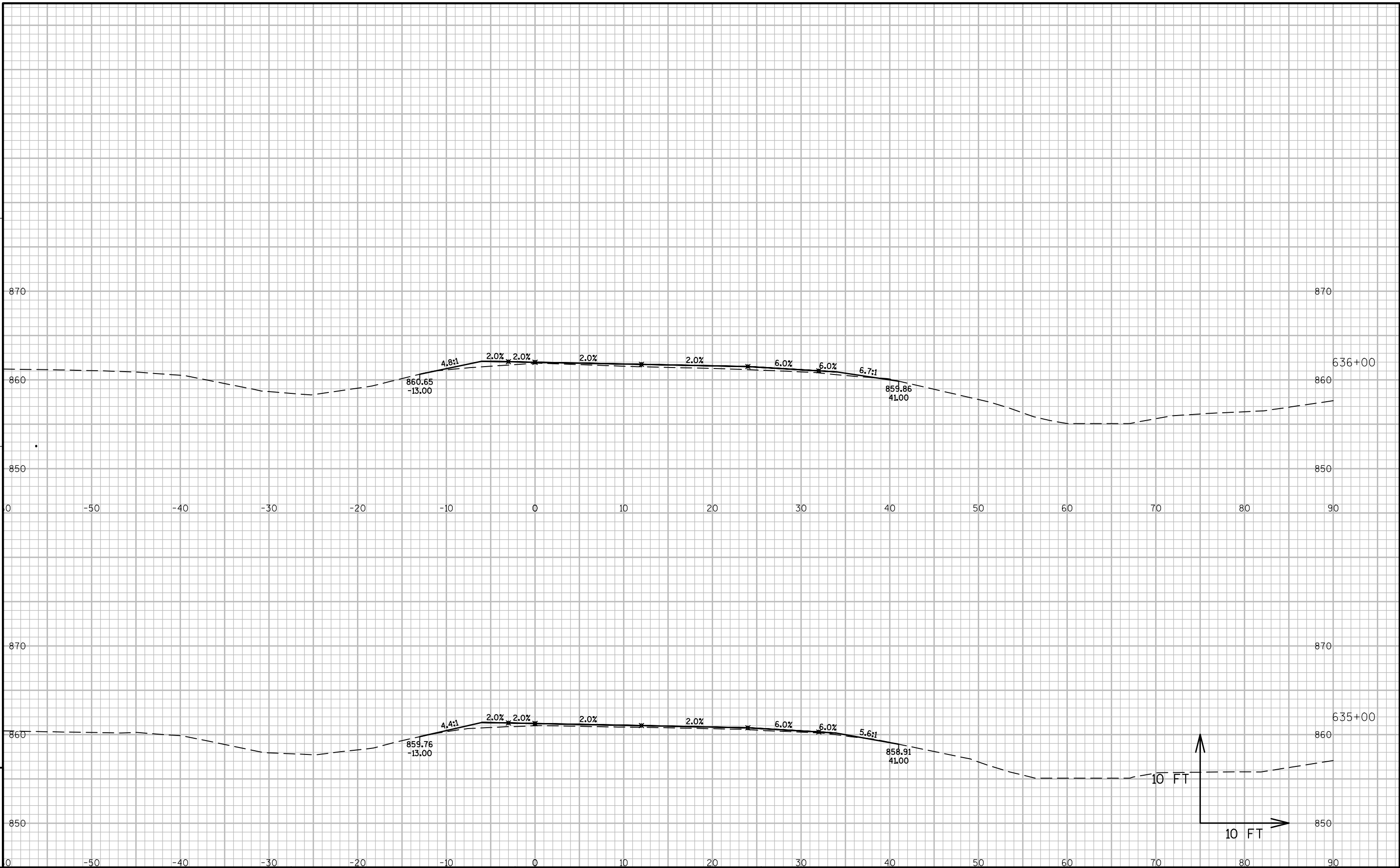
STATION	Distance	AREA (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)	Mass Ordinate
		Cut	Fill	Cut	Fill	Expanded Fill	
						1.25	
Note 1							
639+00	0	0.0	0.0	0	0.0	0.0	0
640+00	100	0.0	21.4	0	39.6	49.5	-50
641+00	100	0.0	13.0	0	63.7	129.2	-129
642+00	100	0.0	2.0	0	27.8	163.9	-164
643+00	100	0.0	0.0	0	3.7	168.5	-169
644+00	100	0.0	3.8	0	7.0	177.3	-177
645+00	100	0.0	2.8	0	12.2	192.6	-193
646+00	100	0.0	0.0	0	5.2	199.1	-199
652+00	600	0.0	0.0	0	0.0	199.1	-199
653+00	100	0.0	2.7	0	5.0	205.3	-205
654+00	100	0.0	1.0	0	6.9	213.9	-214
655+00	100	0.0	2.3	0	6.1	221.5	-222
656+09	109	0.0	1.1	0	6.9	230.1	-230
686+00	0	0.0	0.0	0	0.0	230.1	-230
687+00	100	0.0	1.3	0	2.4	233.1	-233
688+00	100	0.0	0.0	0	2.4	236.1	-236
689+00	100	0.0	2.1	0	3.9	241.0	-241
690+00	100	0.0	3.5	0	10.4	253.9	-254
691+00	100	0.0	2.0	0	10.2	266.7	-267
692+00	100	0.0	0.0	0	3.7	271.3	-271
693+00	100	0.0	0.0	0	0.0	271.3	-271
711+00	0	0.0	0.0	0	0.0	271.3	-271
712+00	100	0.0	1.0	0	1.9	273.6	-274
713+00	100	0.0	1.5	0	4.6	279.4	-279
714+00	100	0.0	3.3	0	8.9	290.5	-291
715+00	100	0.0	2.6	0	10.9	304.2	-304
716+00	100	0.0	0.0	0	4.8	310.2	-310
717+00	100	0.0	0.0	0	0.0	310.2	-310
718+00	100	0.0	1.8	0	3.3	314.4	-314
719+00	100	0.0	0.0	0	3.3	318.5	-319
720+00	100	0.0	0.5	0	0.9	319.7	-320
721+00	100	0.0	1.0	0	2.8	323.2	-323
722+00	100	0.0	2.9	0	7.2	332.2	-332
723+00	100	0.0	2.7	0	10.4	345.2	-345
724+00	100	0.0	3.6	0	11.7	359.7	-360
725+00	100	0.0	10.3	0	25.7	391.9	-392
726+00	100	0.0	3.5	0	25.6	423.9	-424
727+00	100	0.0	1.8	0	9.8	436.1	-436
728+00	100	0.0	0.0	0	3.3	440.3	-440
729+00	100	0.0	0.0	0	0.0	440.3	-440
730+00	100	0.0	0.0	0	0.0	440.3	-440
731+00	100	0.0	1.7	0	3.1	444.2	-444
732+00	100	0.0	1.0	0	5.0	450.5	-450
733+00	100	0.0	0.0	0	1.9	452.8	-453
733+46	46	0.0	5.2	0	4.4	458.3	-458
758+00	0	0.0	0.0	0	0.0	458.3	-458
759+00	100	0.0	0.0	0	0.0	458.3	-458
760+00	100	0.0	0.0	0	0.0	458.3	-458
761+00	100	0.0	0.0	0	0.0	458.3	-458
762+00	100	0.0	2.1	0	3.9	463.2	-463
763+00	100	0.0	3.5	0	10.4	476.2	-476
764+00	100	0.0	0.0	0	6.5	484.3	-484

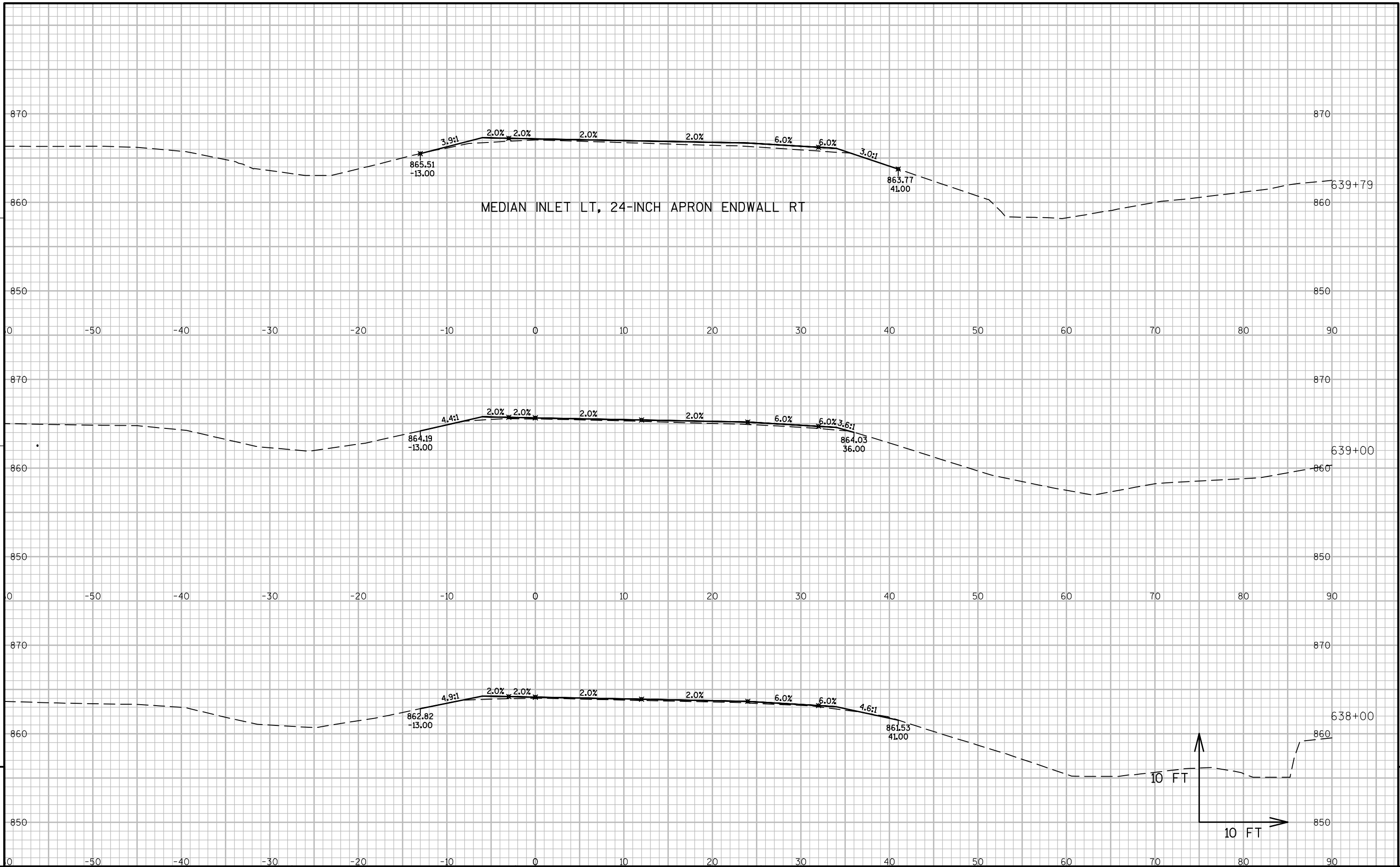
****NOTE**** Only stations with proposed earthwork are included in this table.

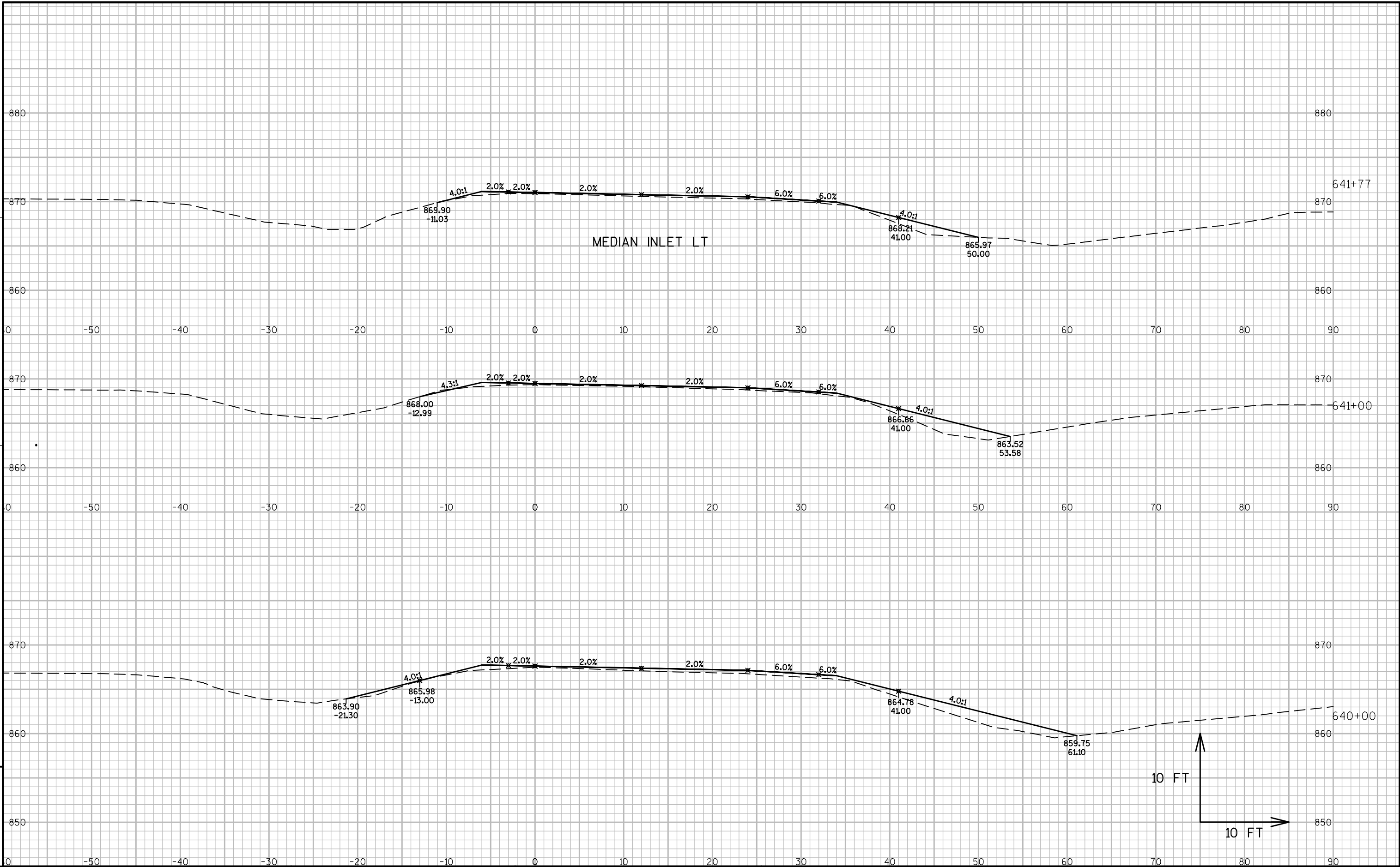


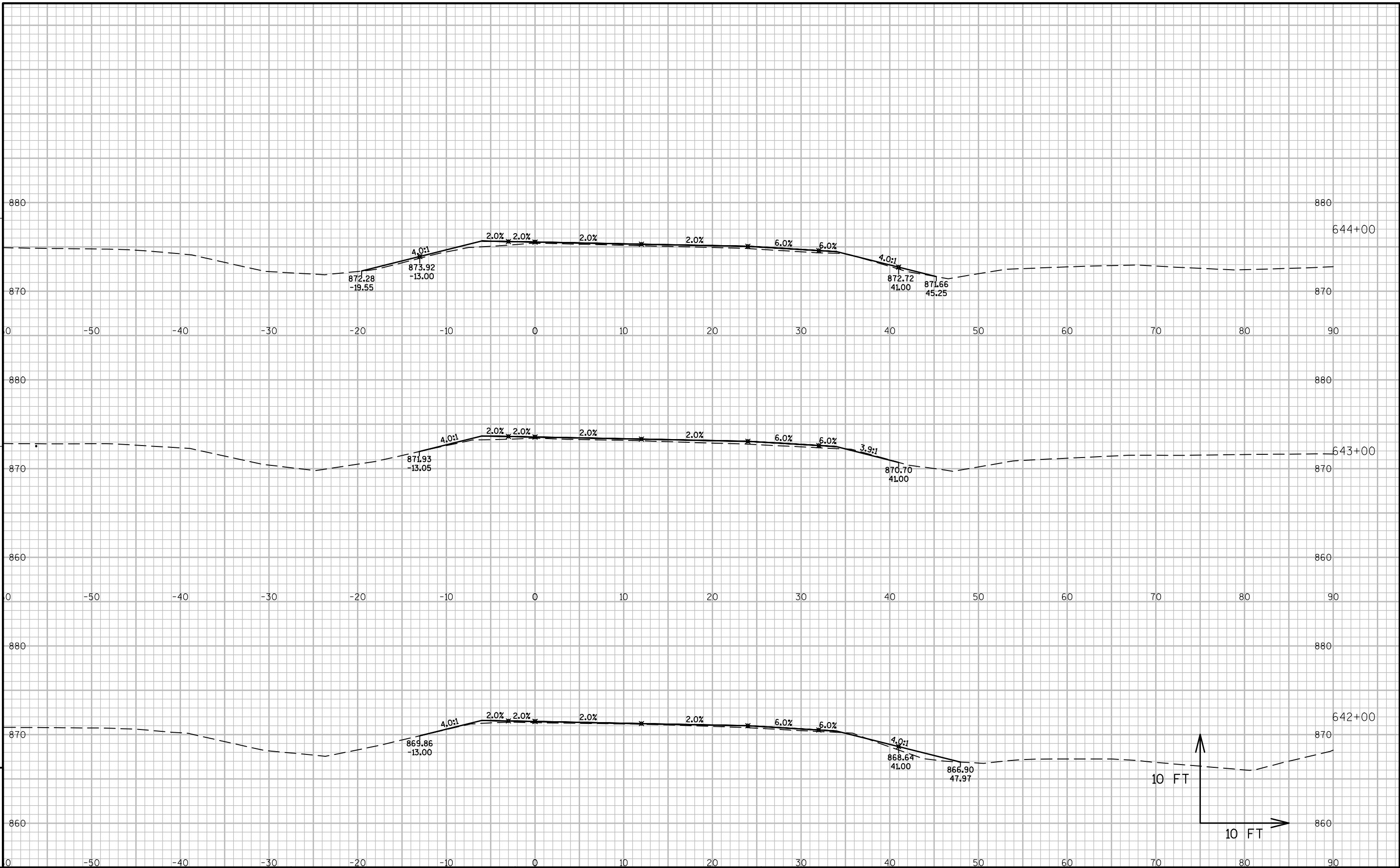


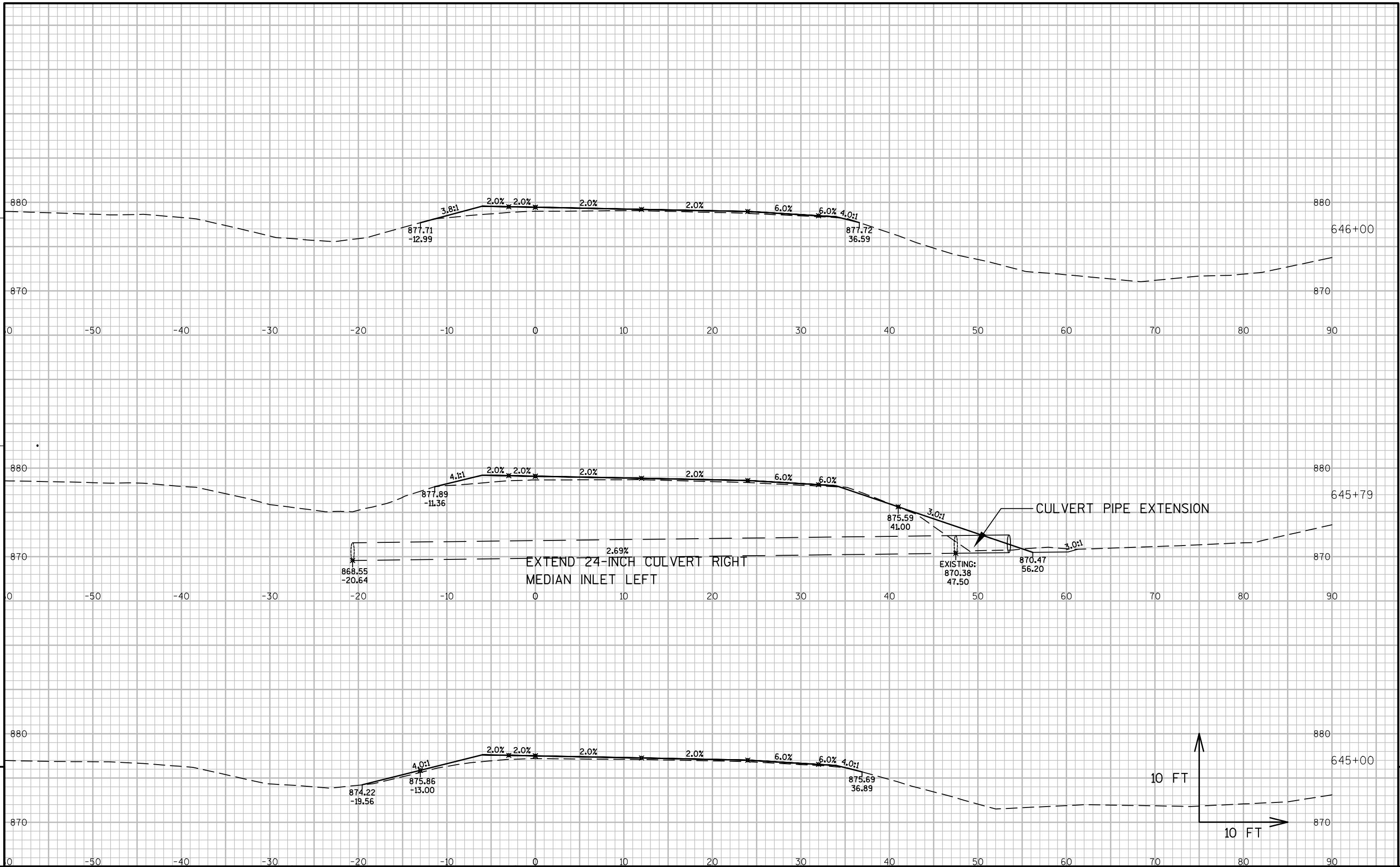


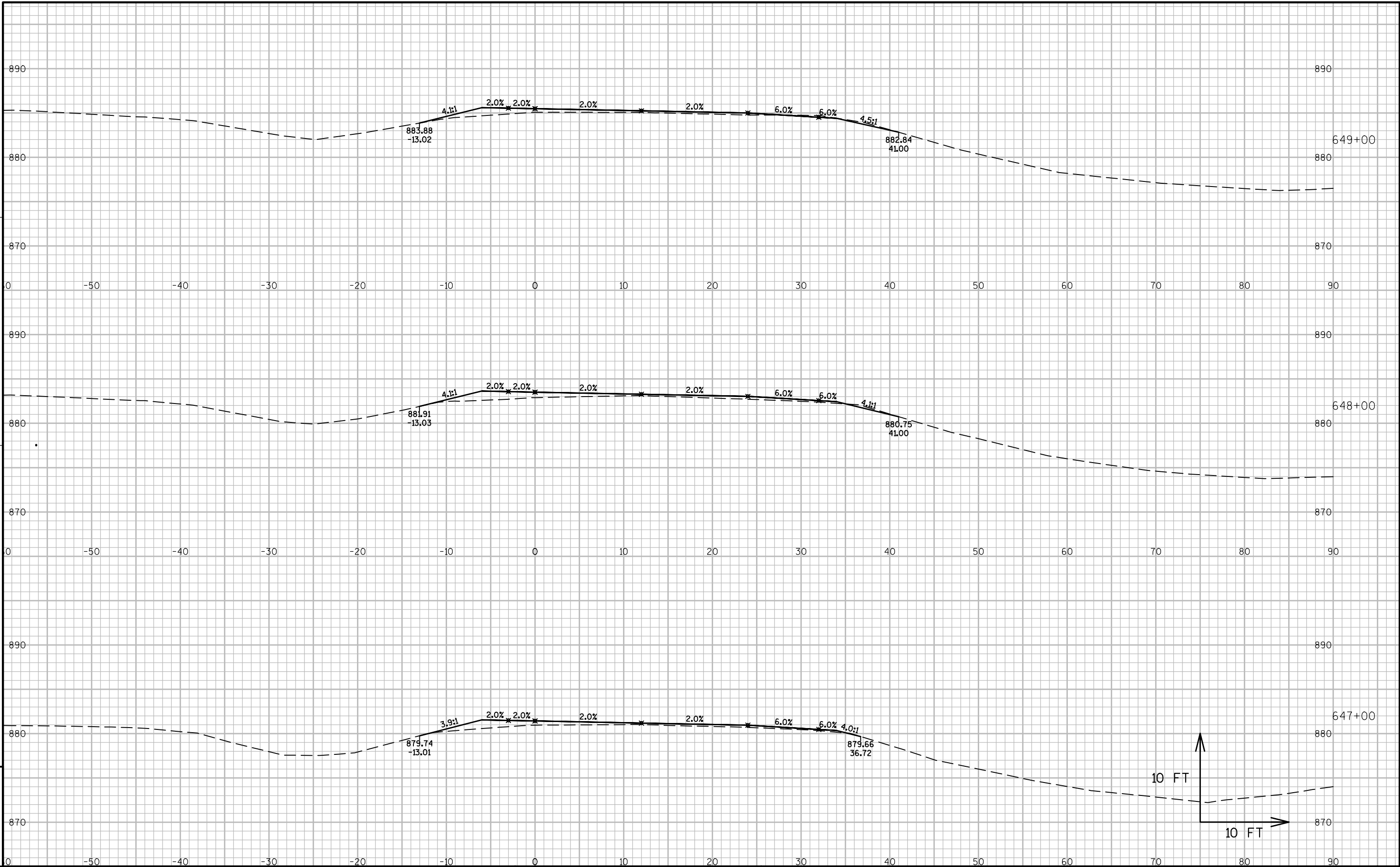


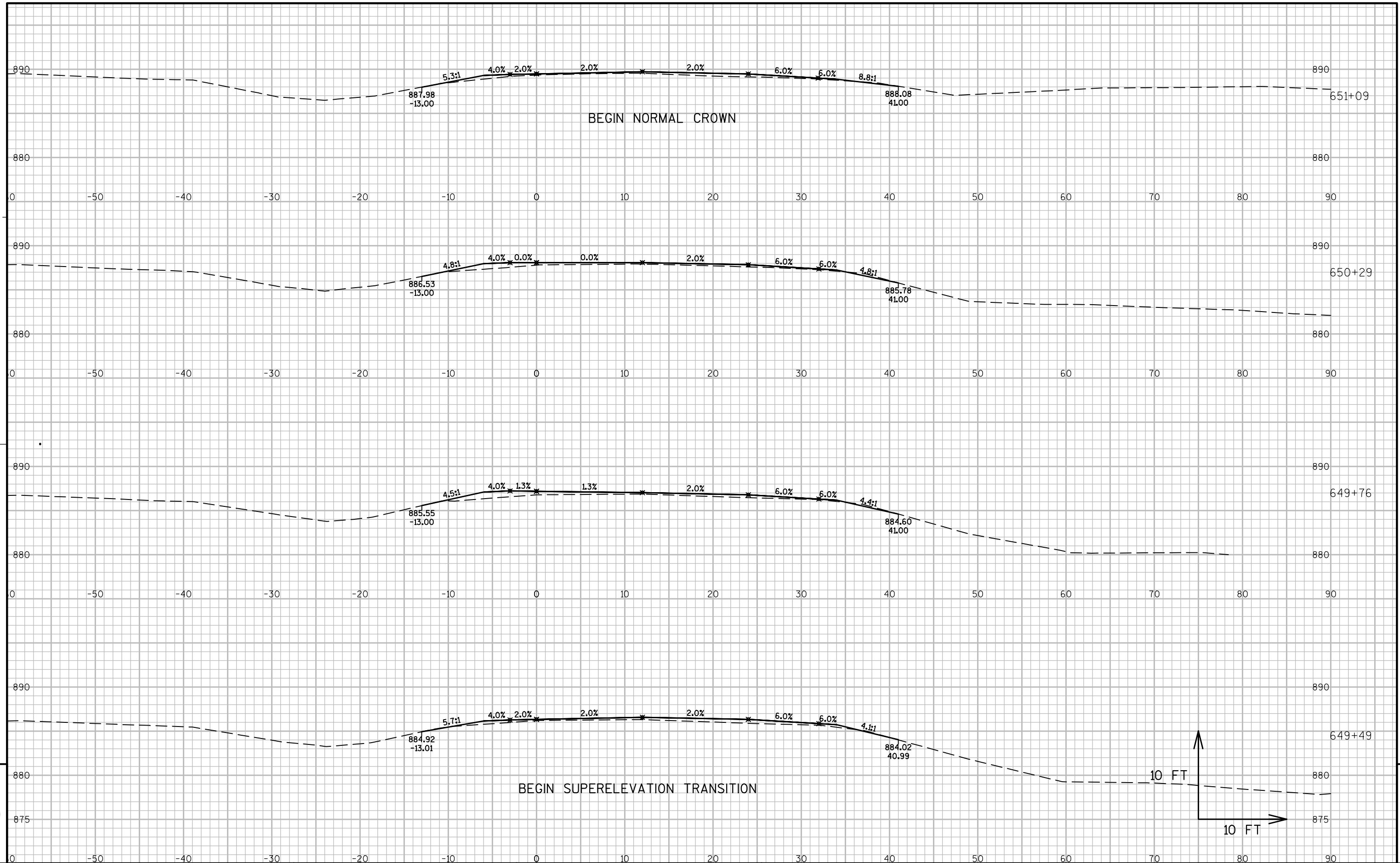


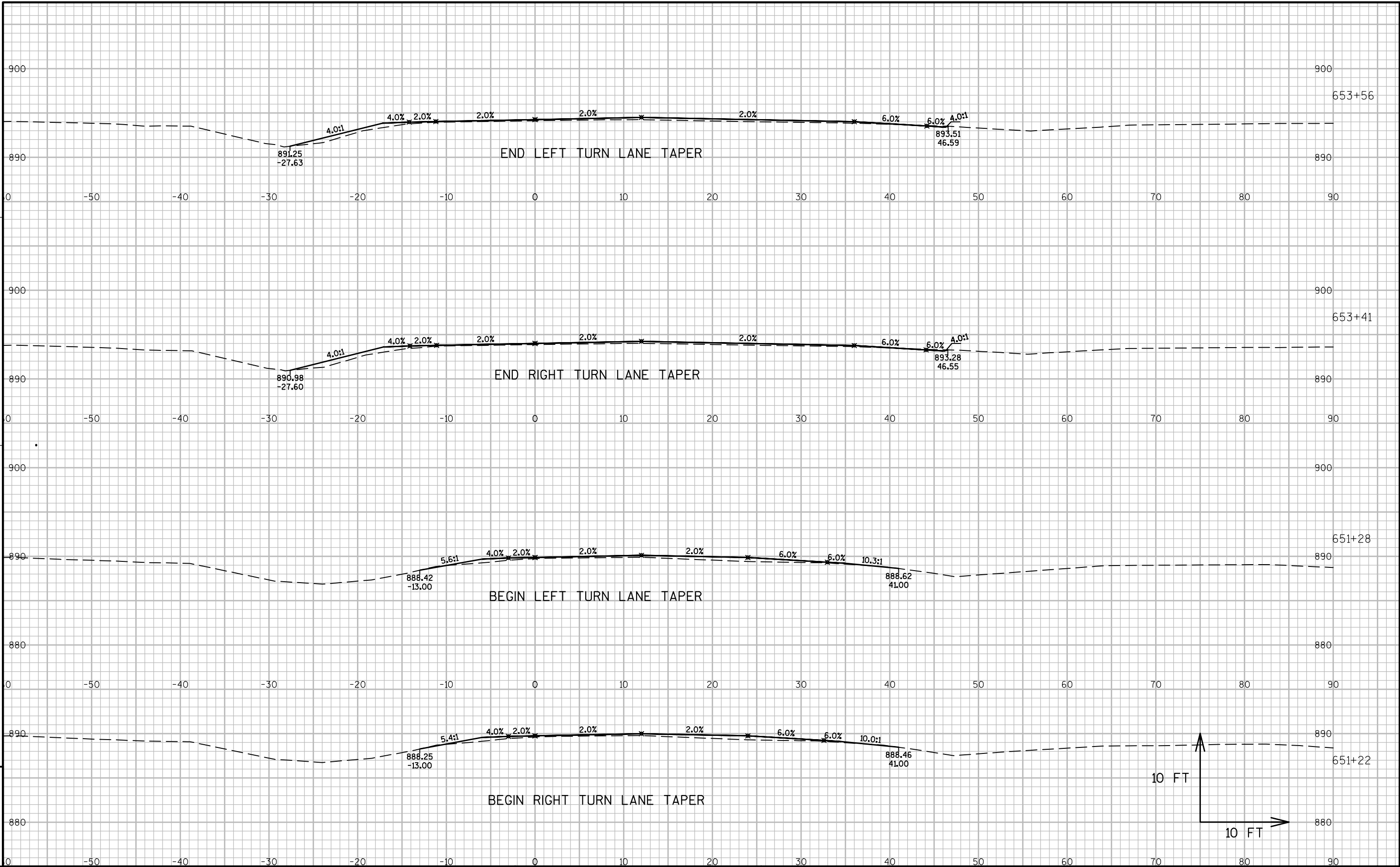


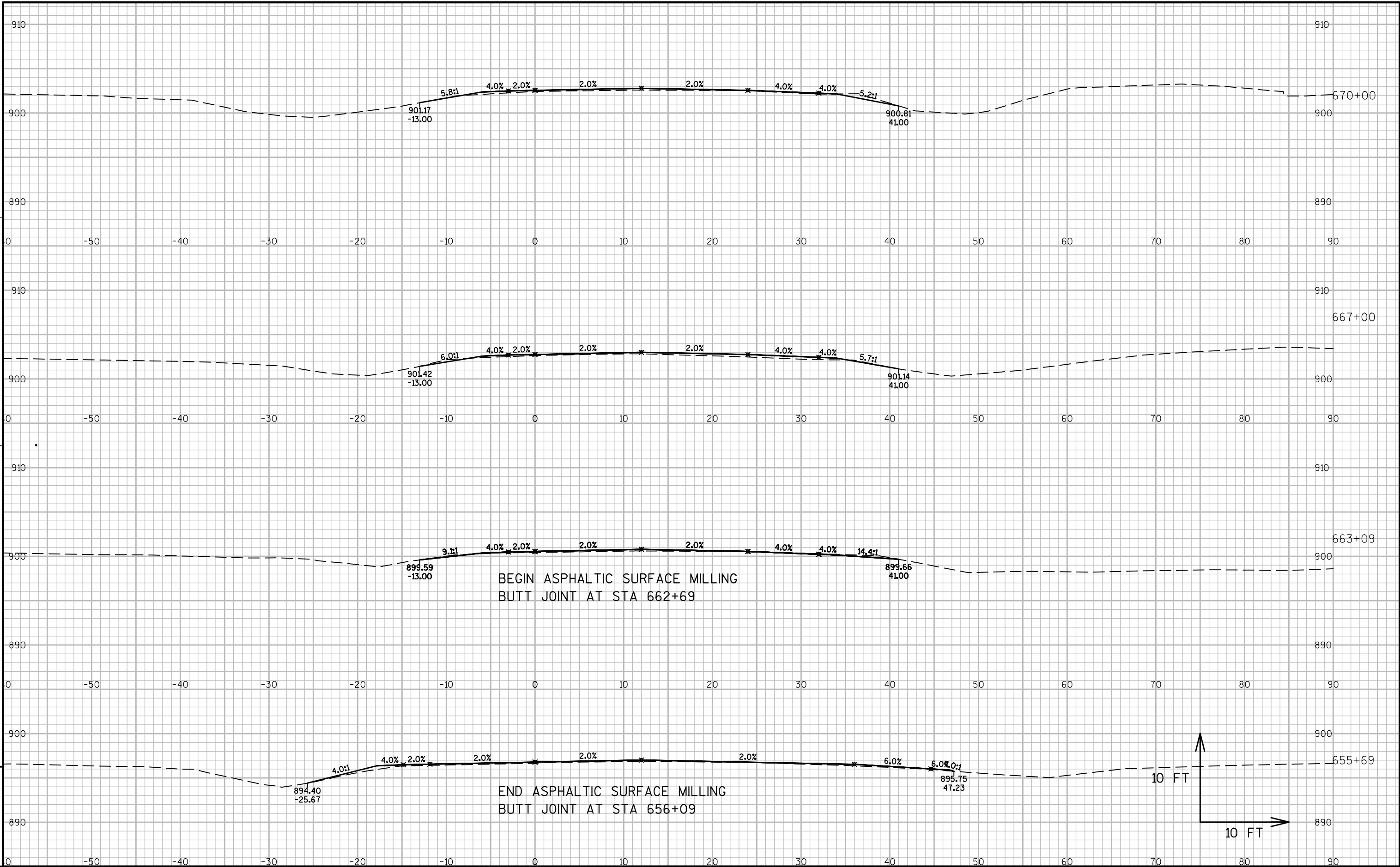


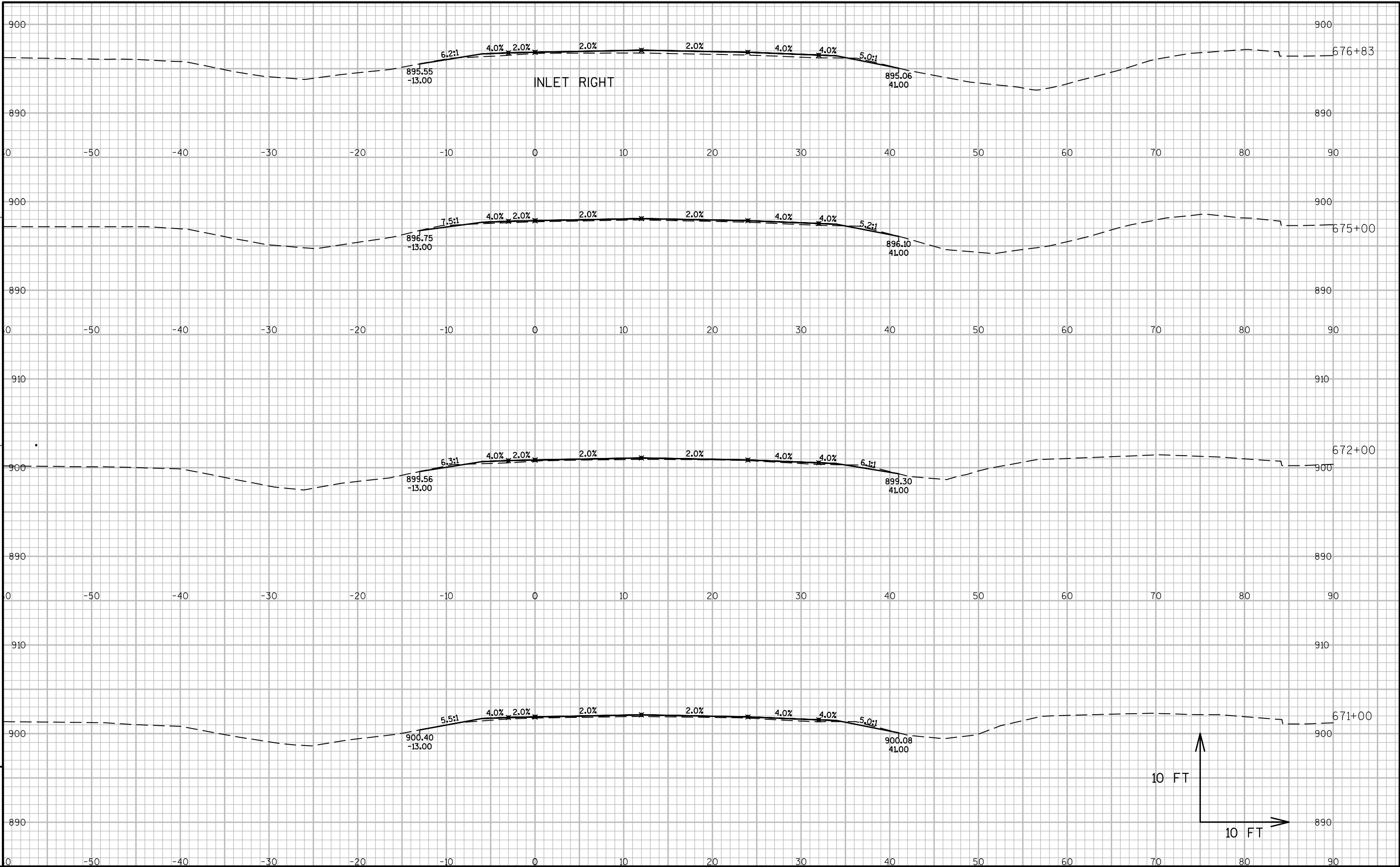


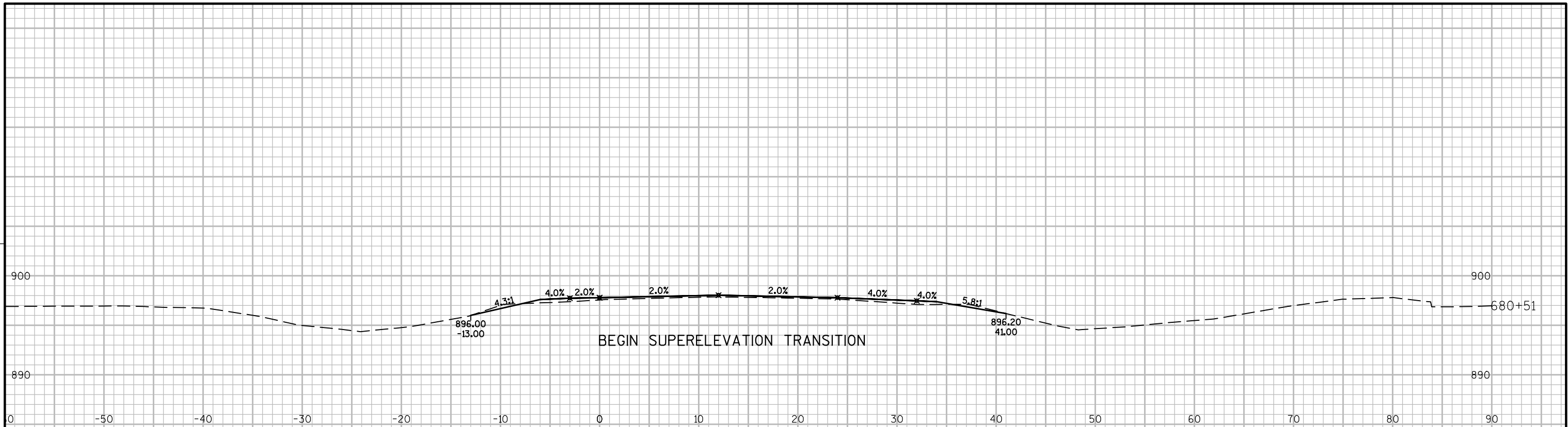


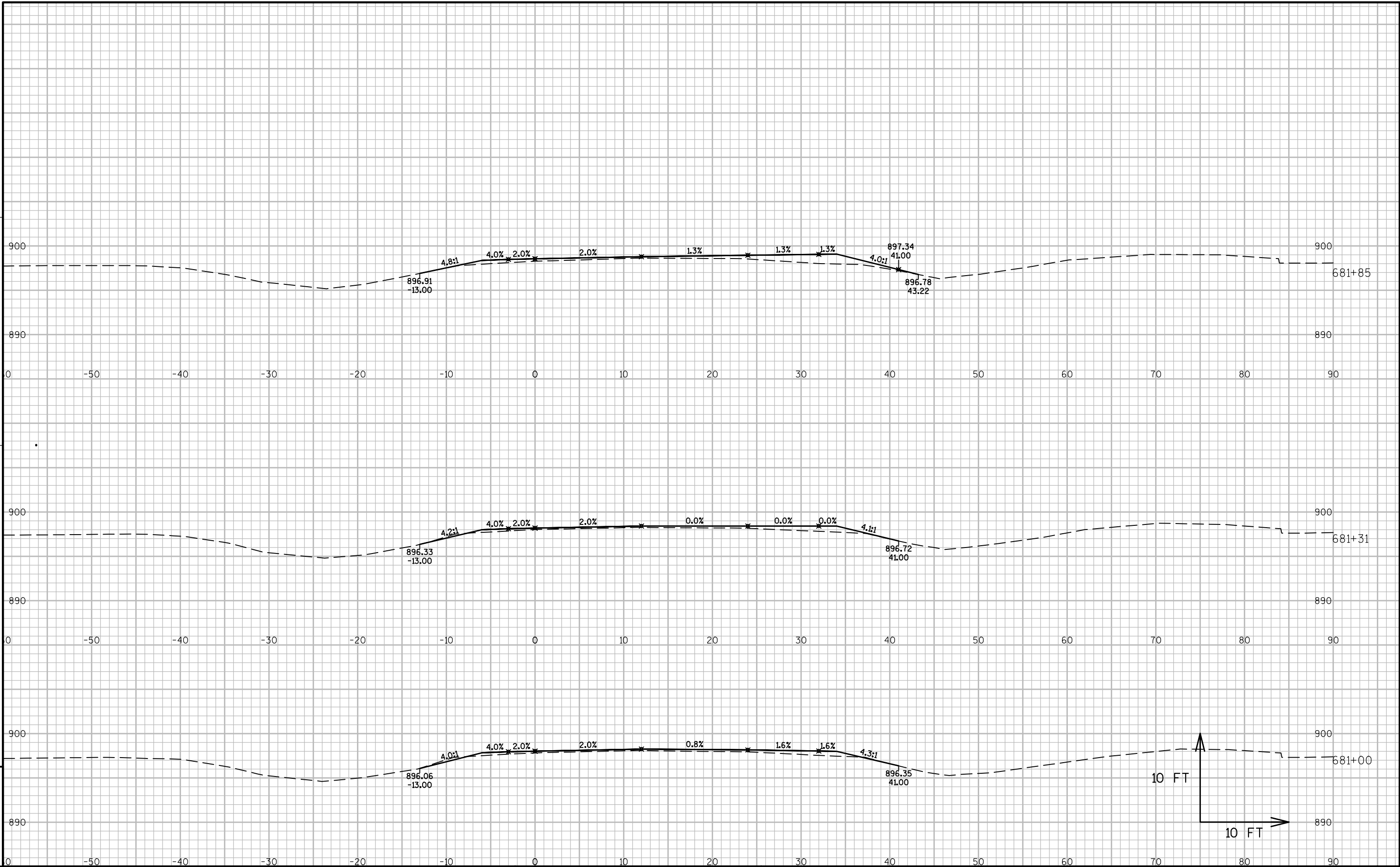


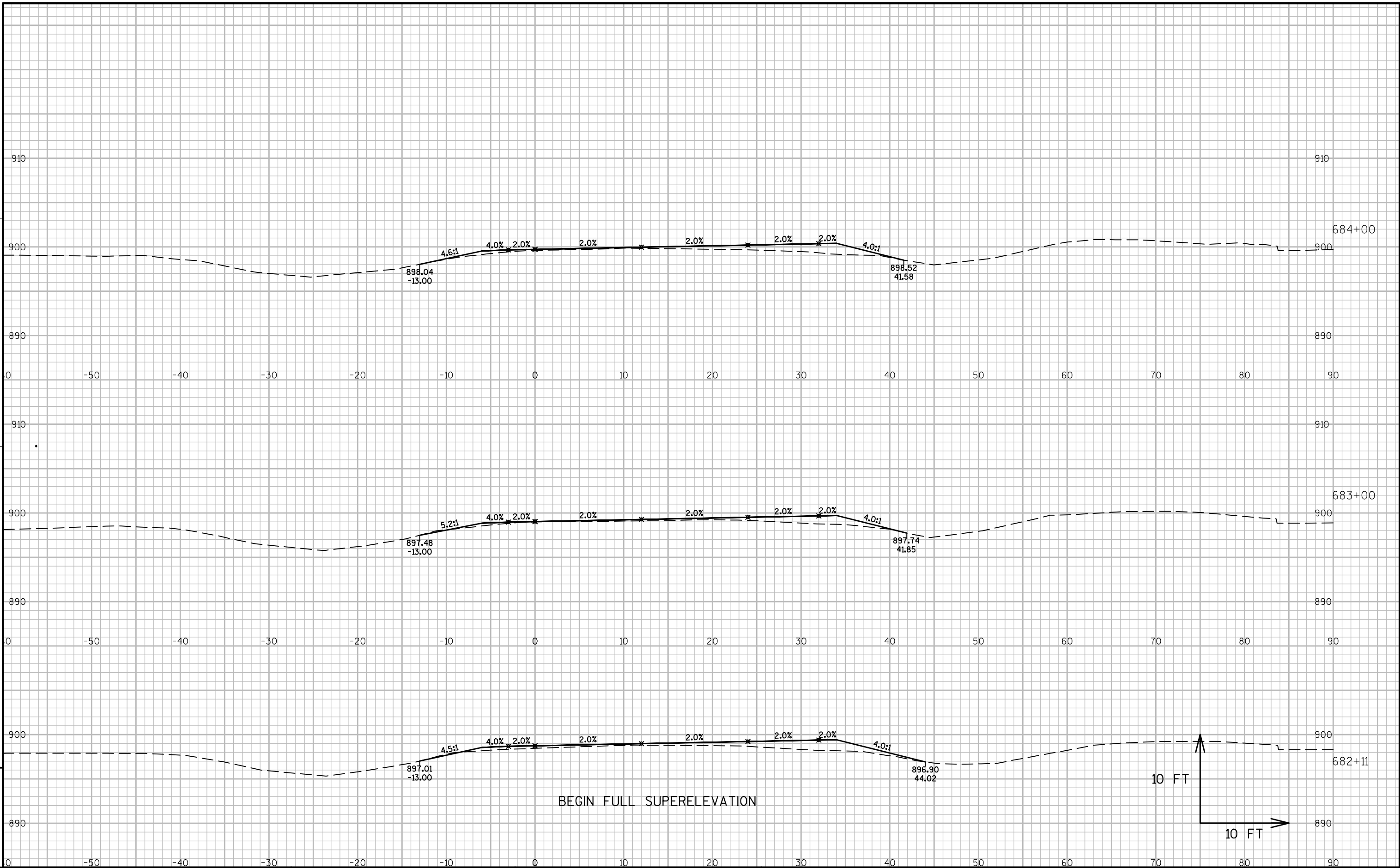


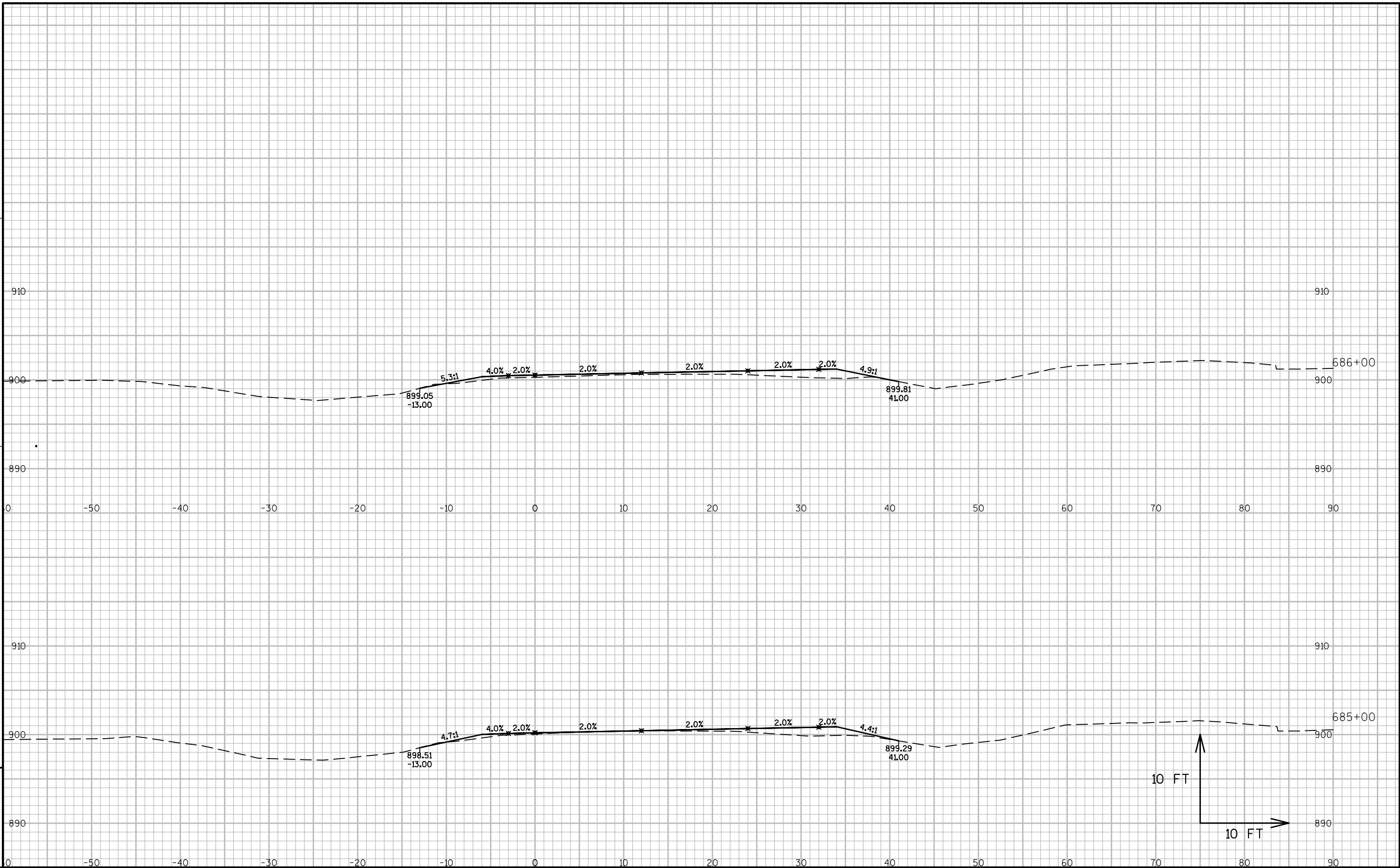


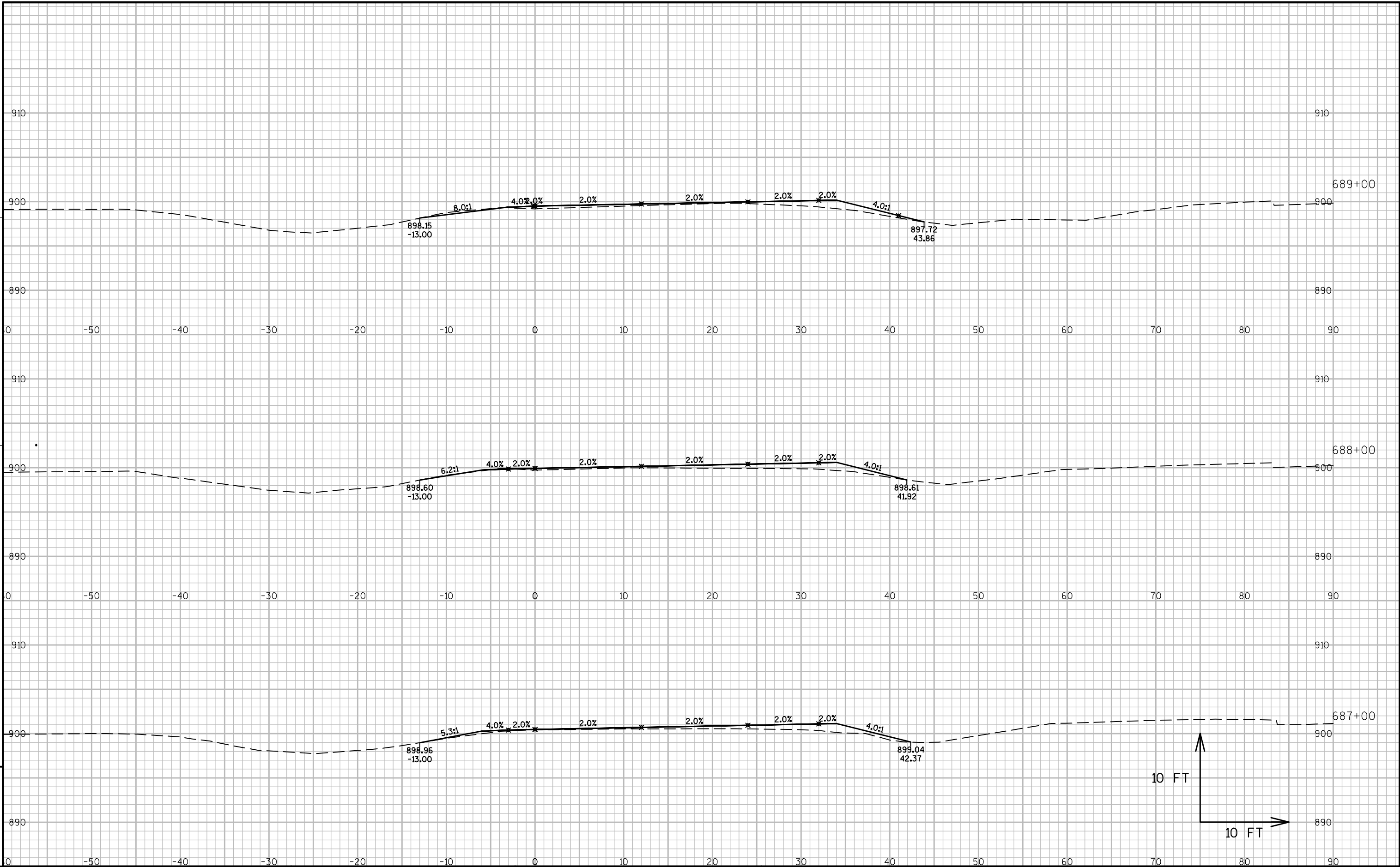


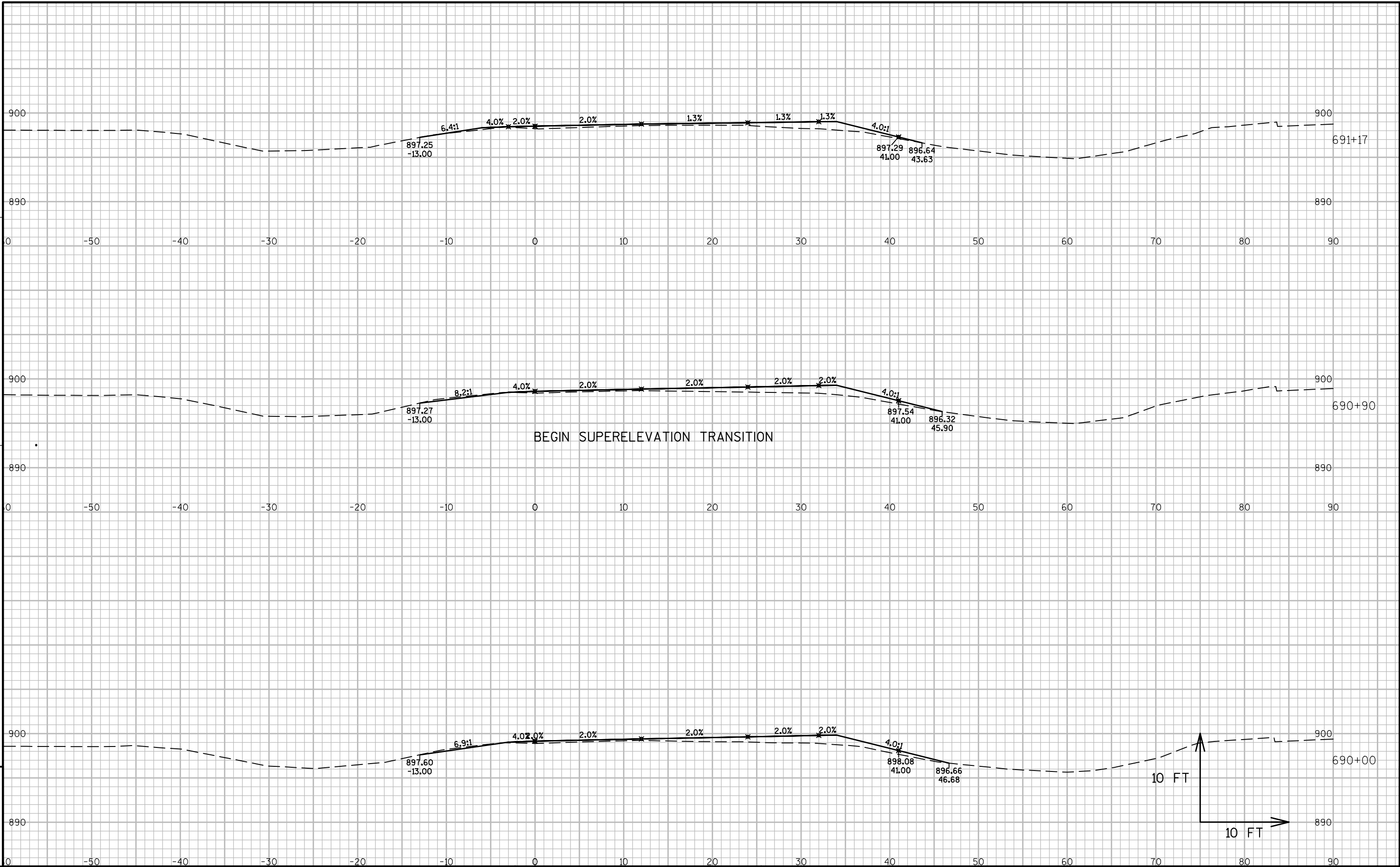


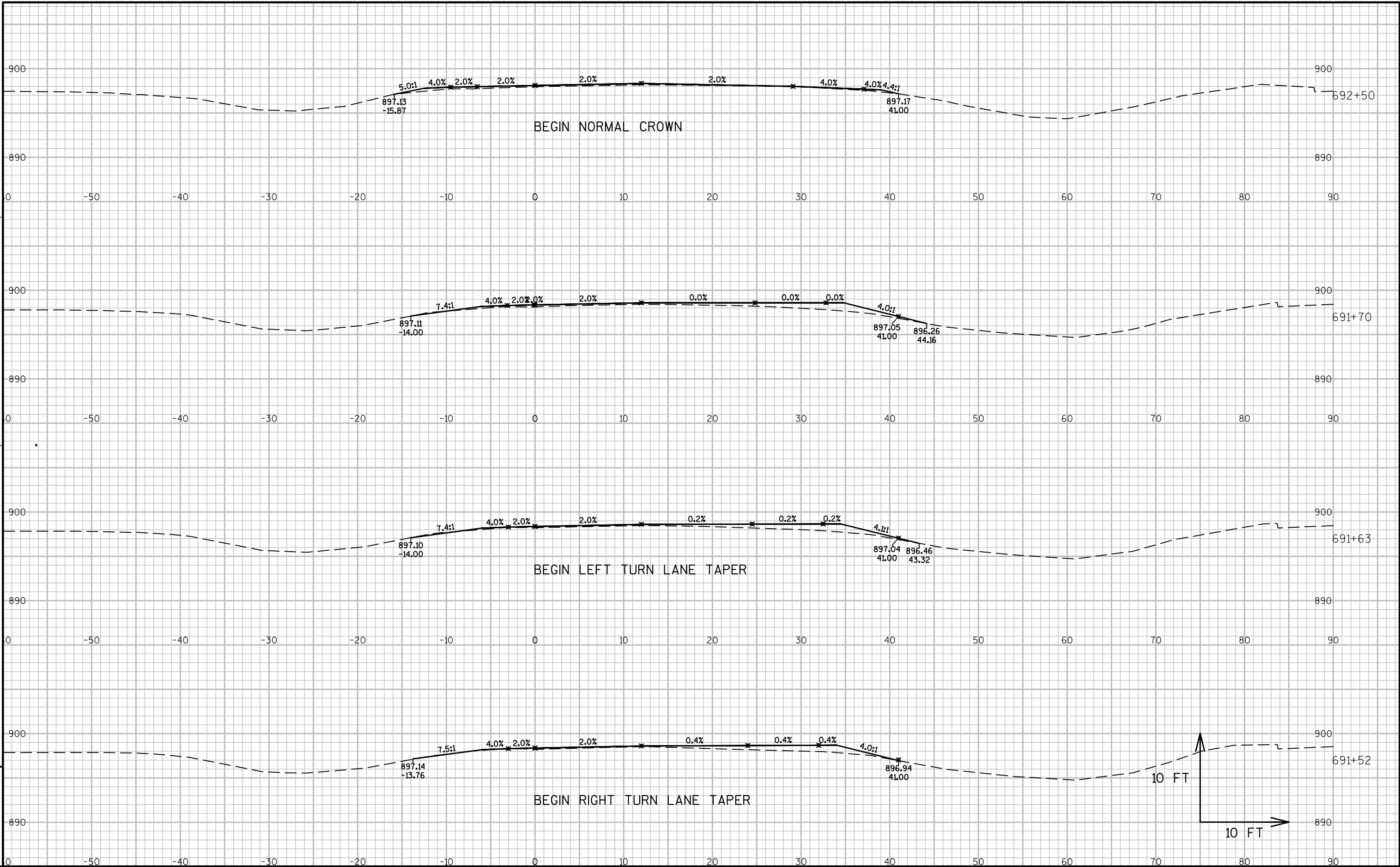


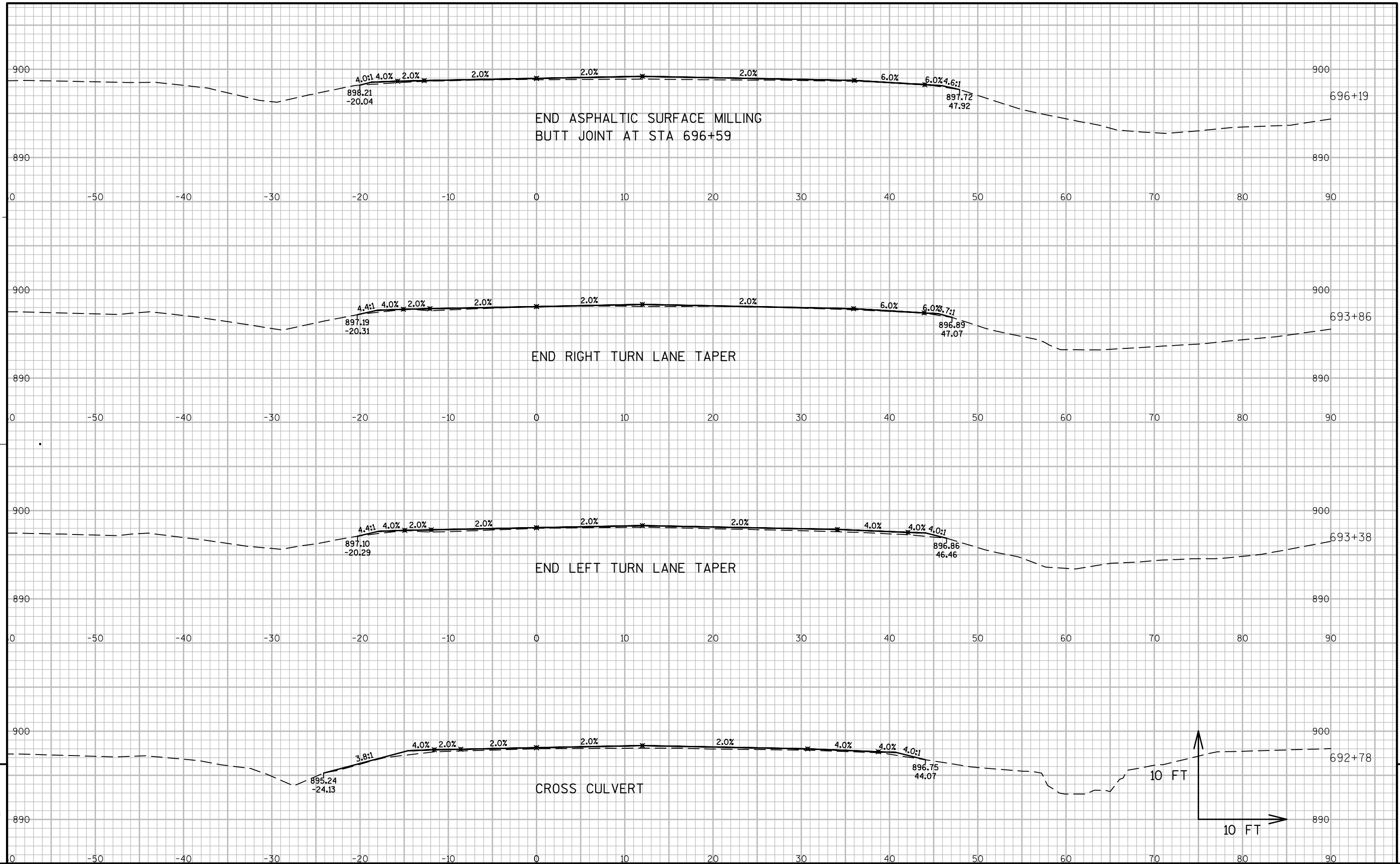


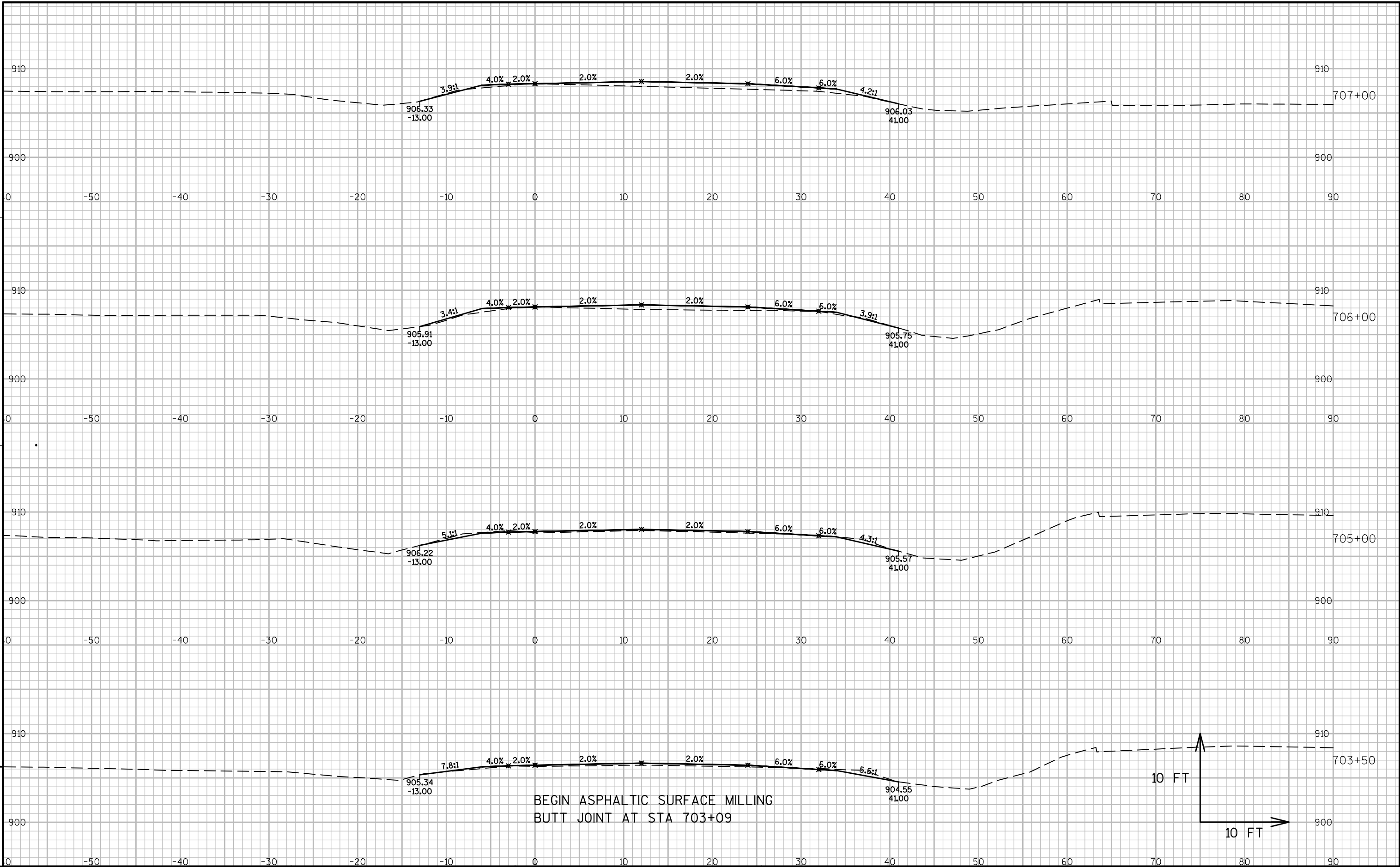


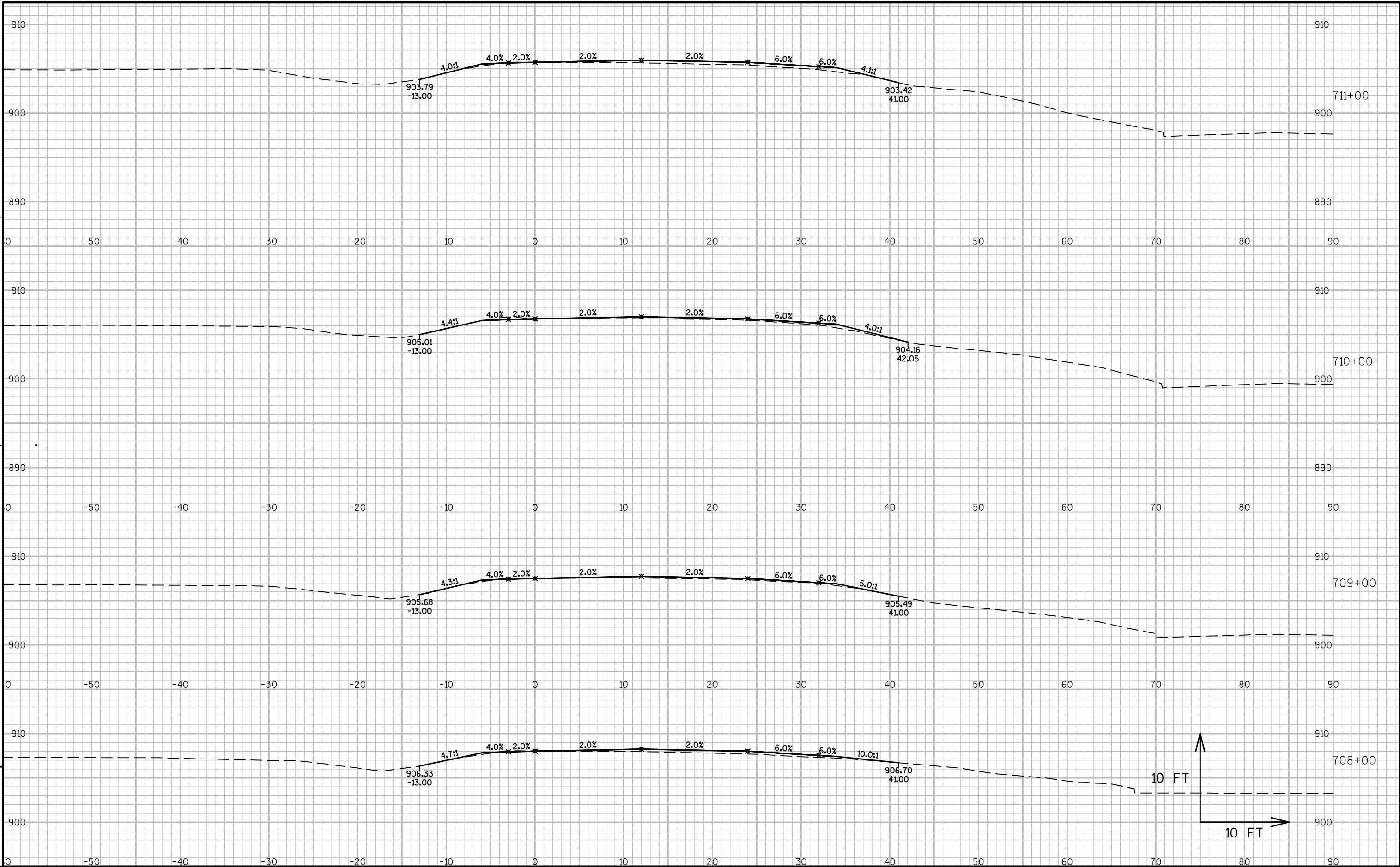


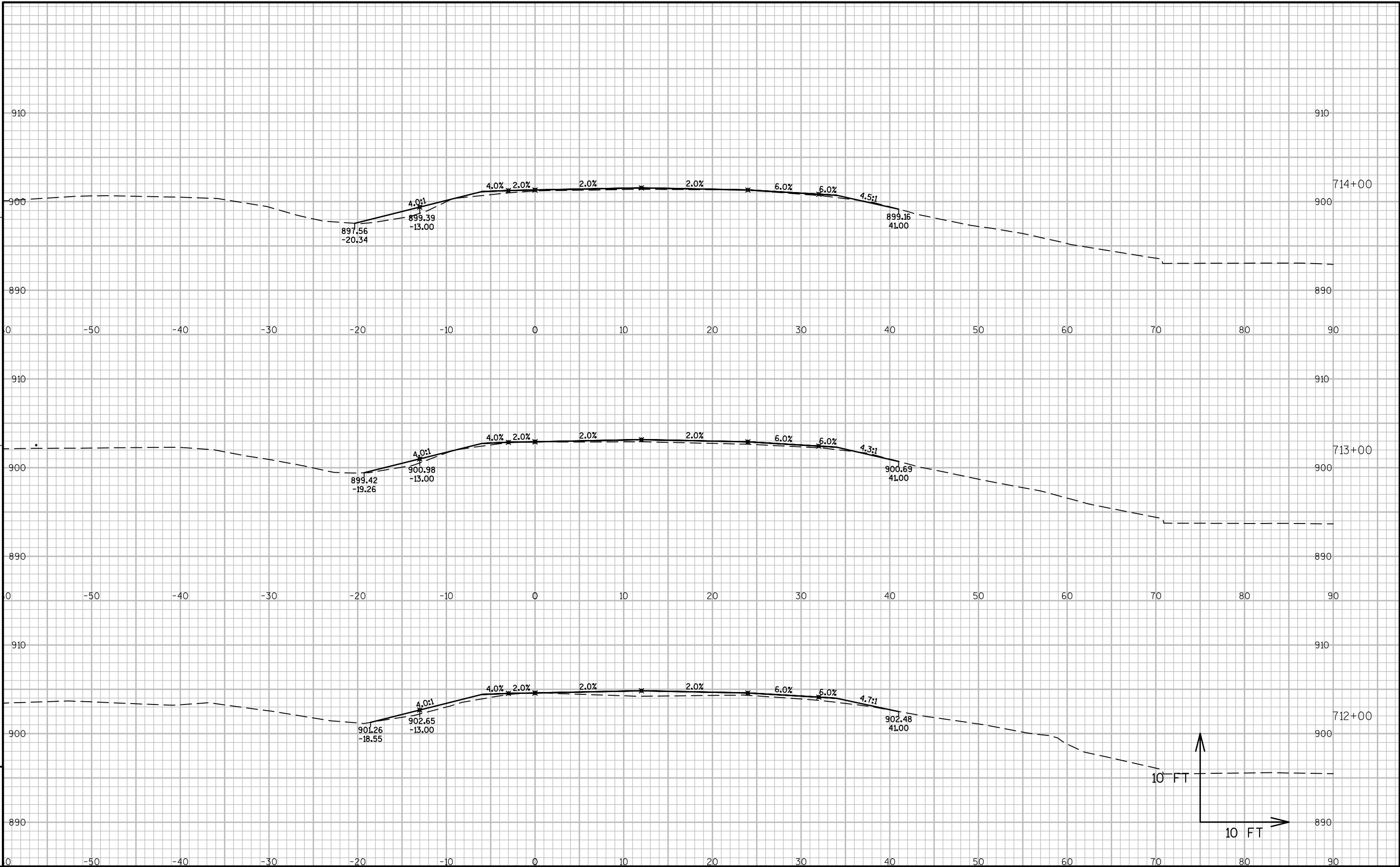


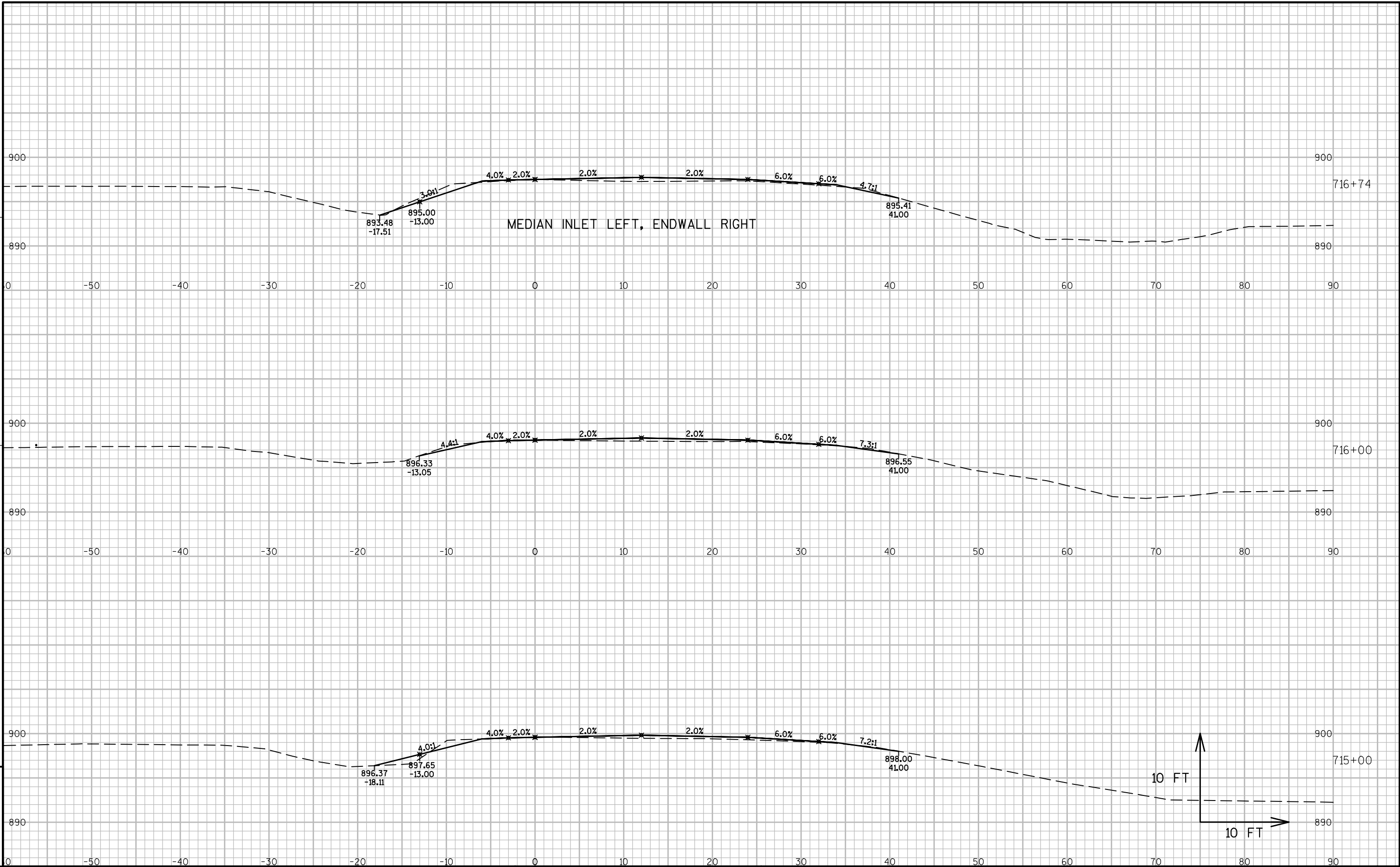


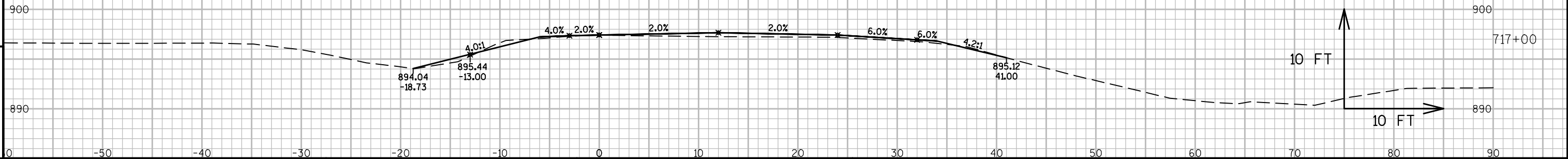
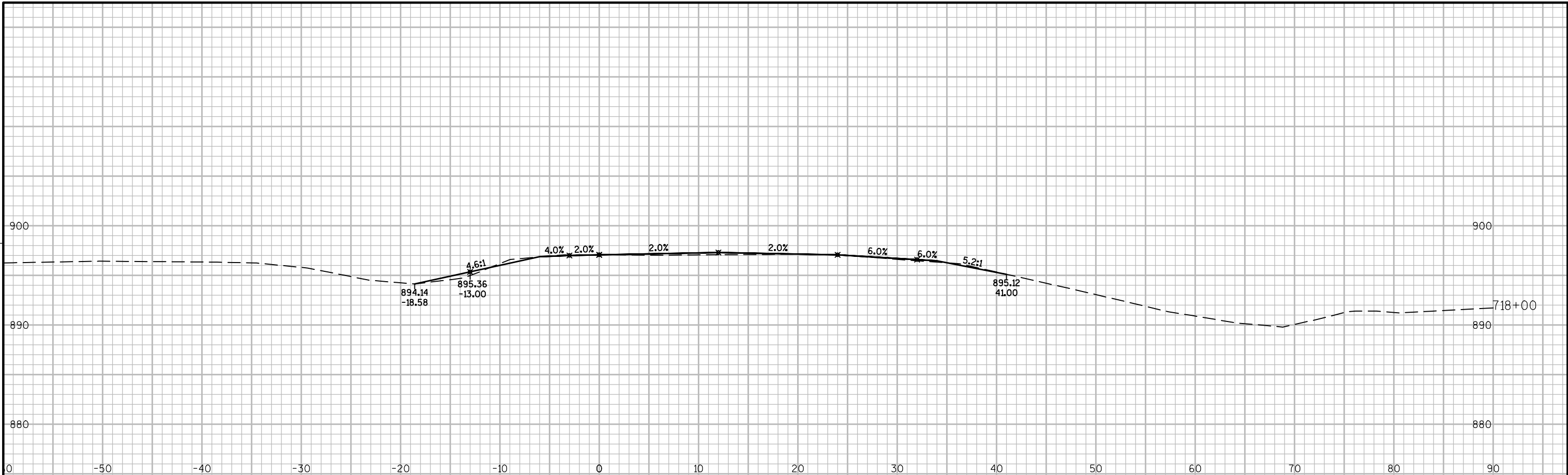


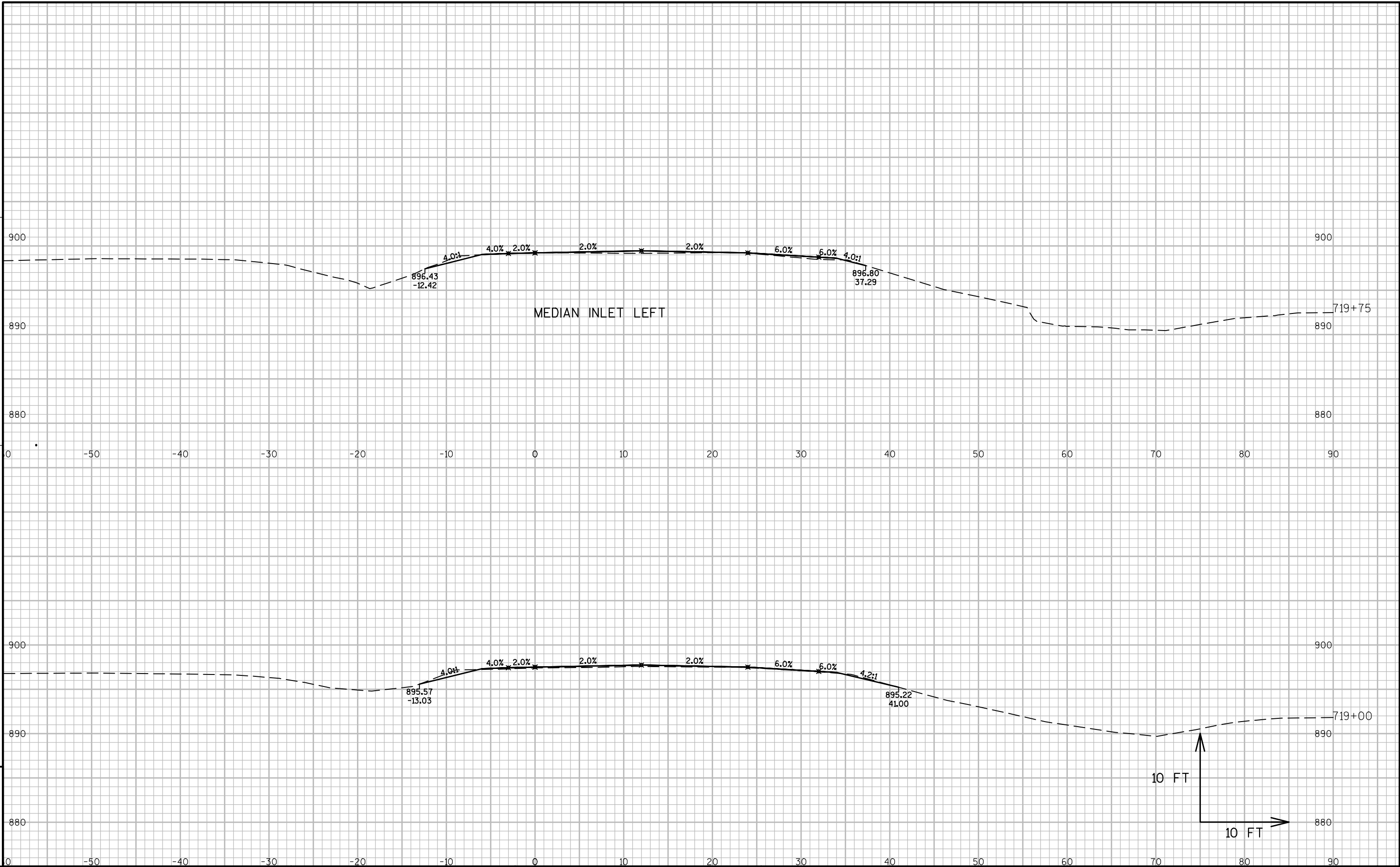


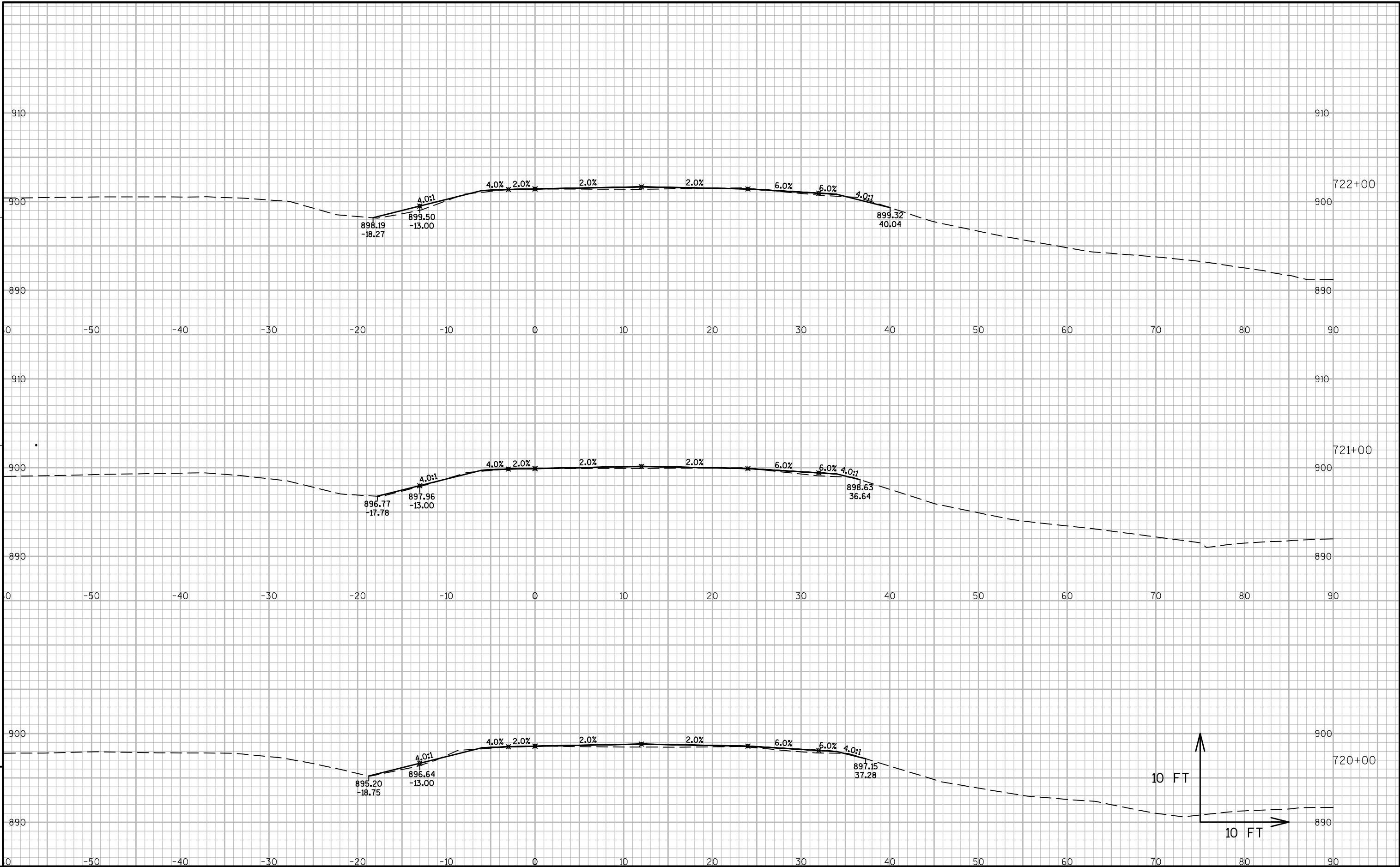


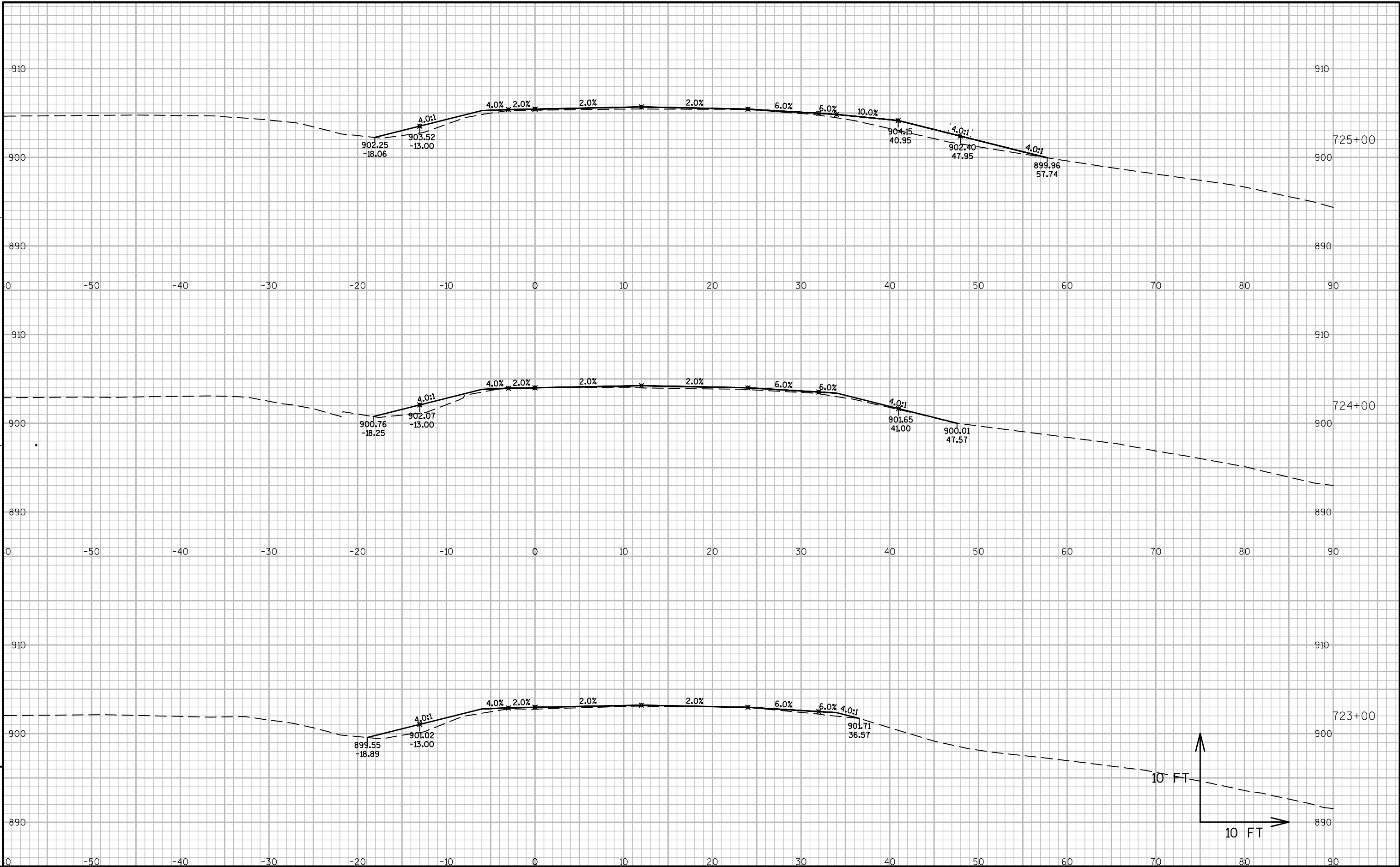


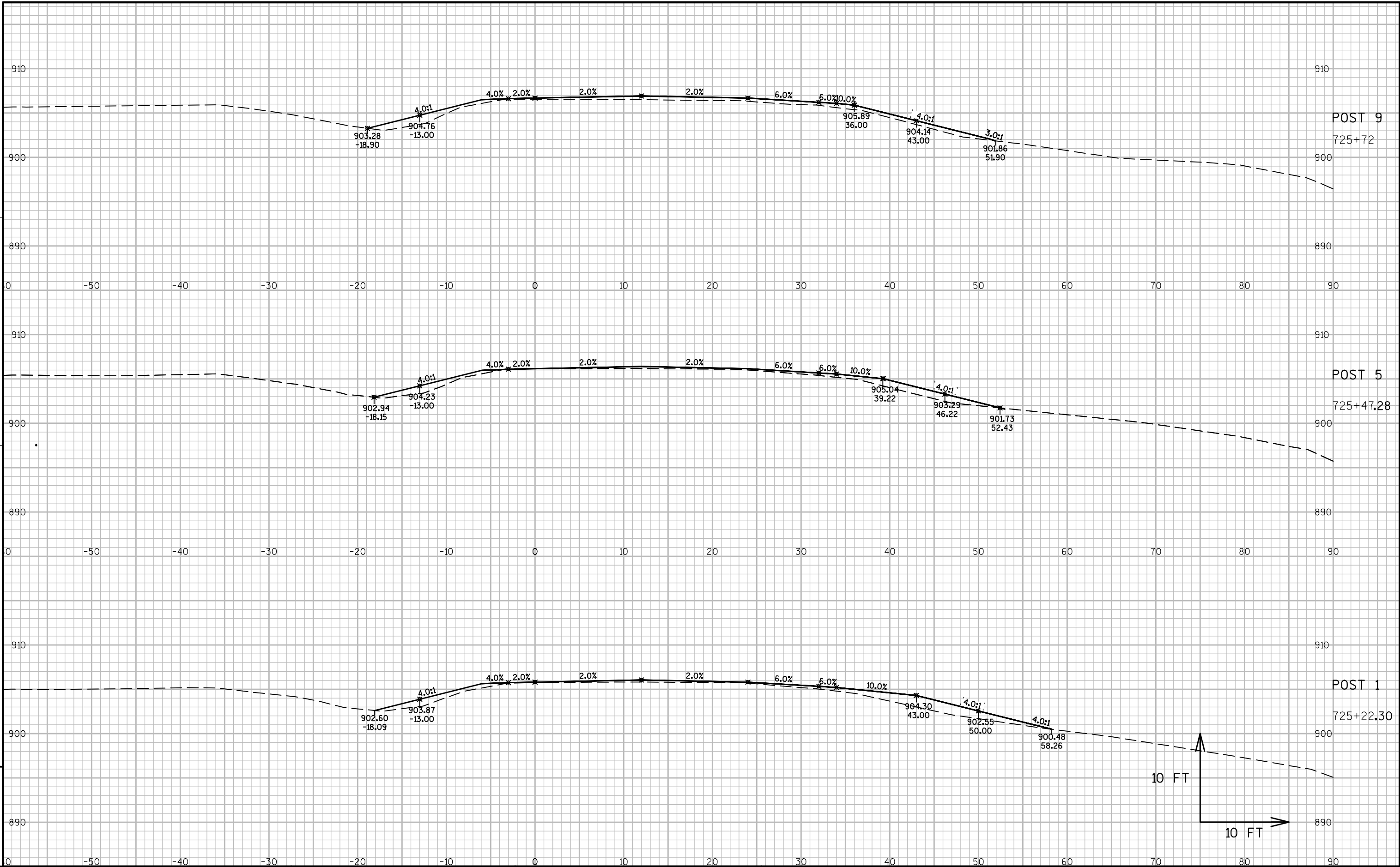


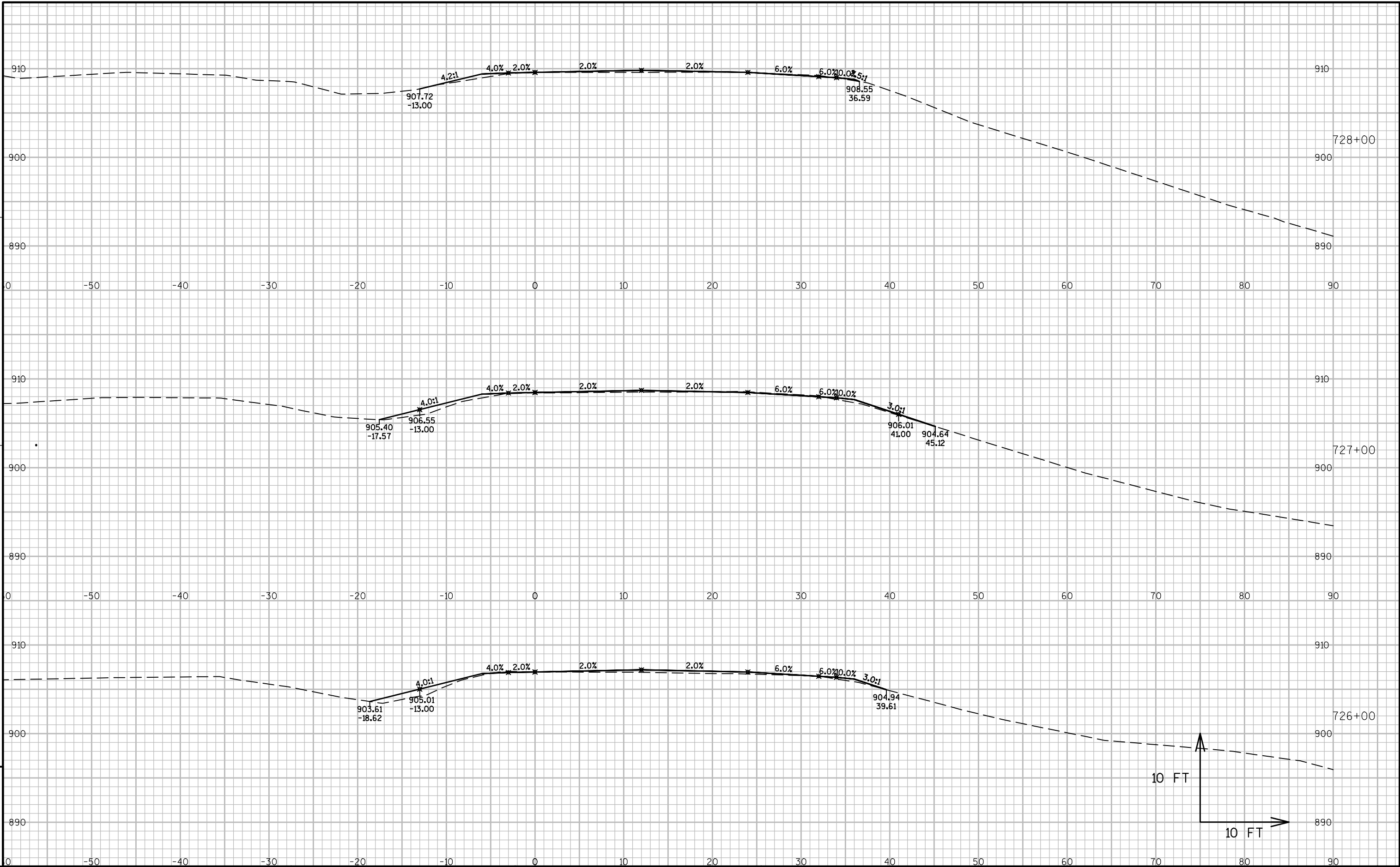


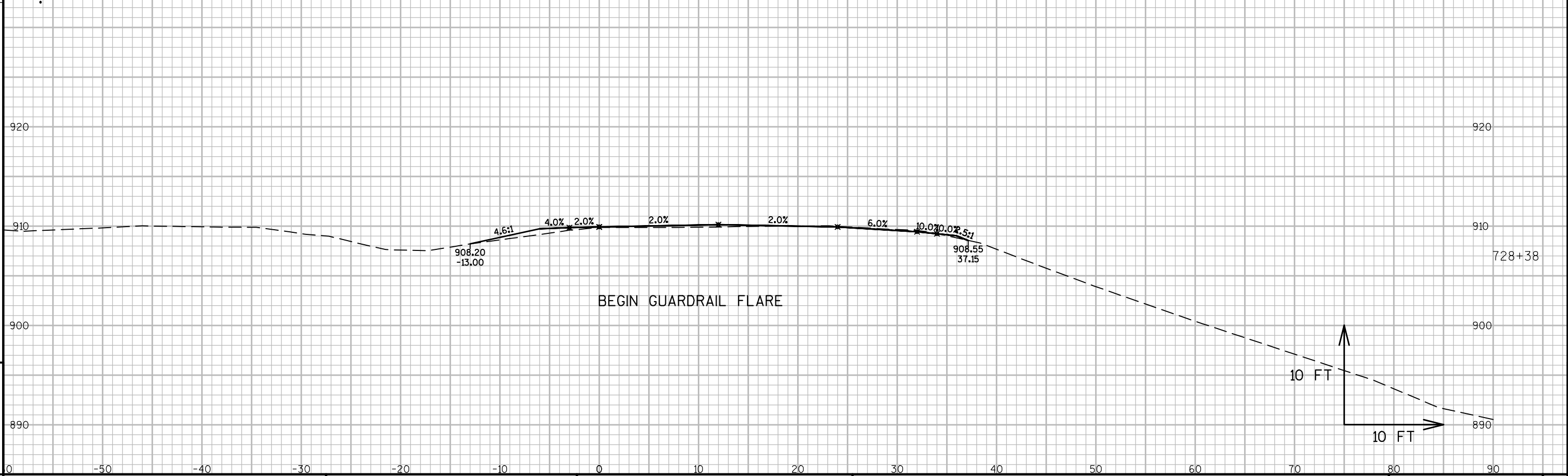
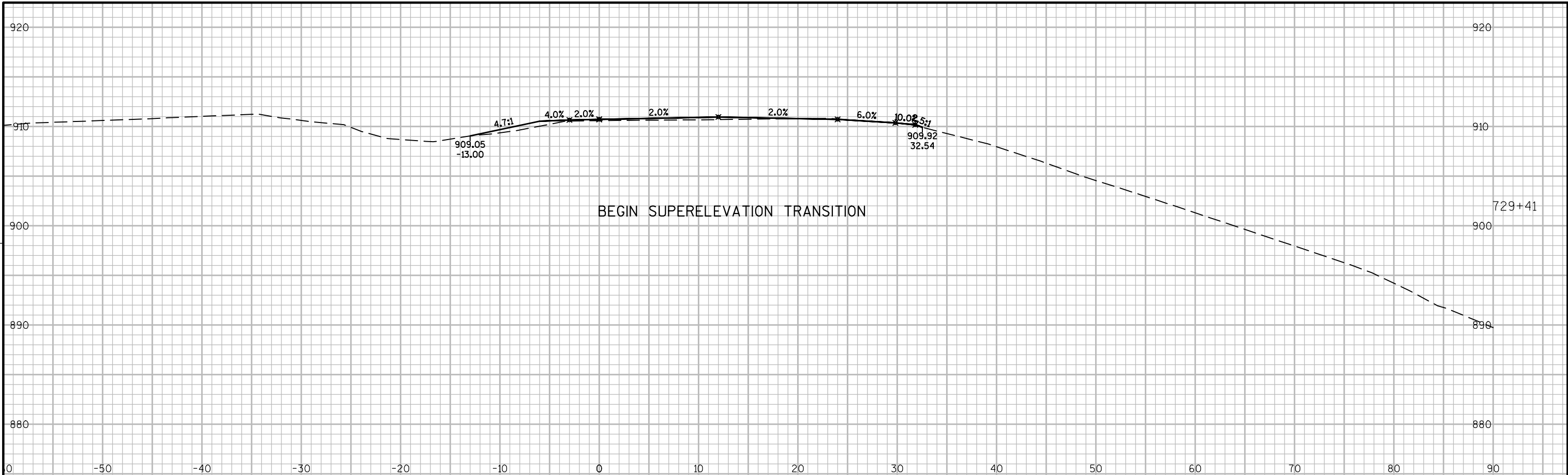


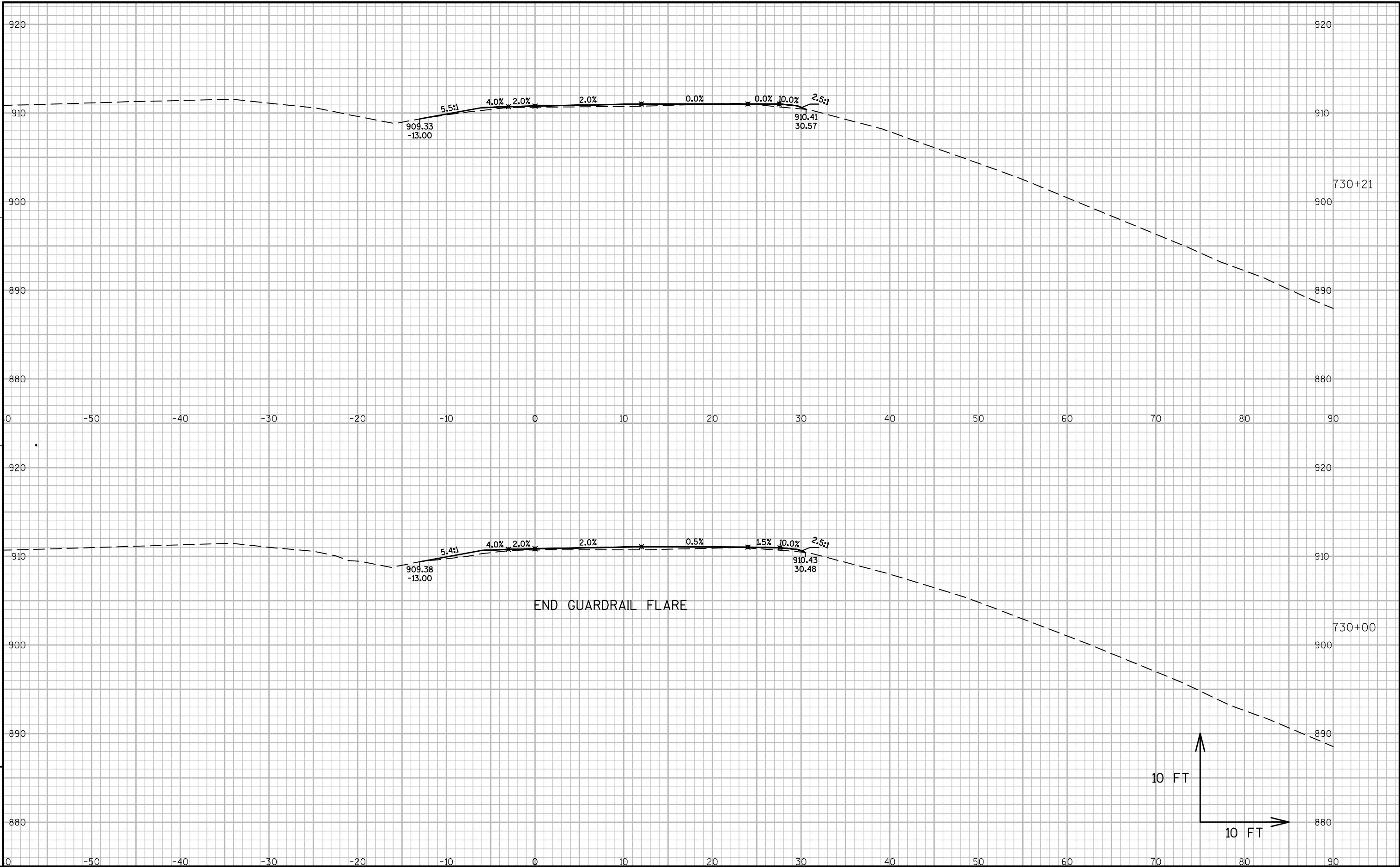


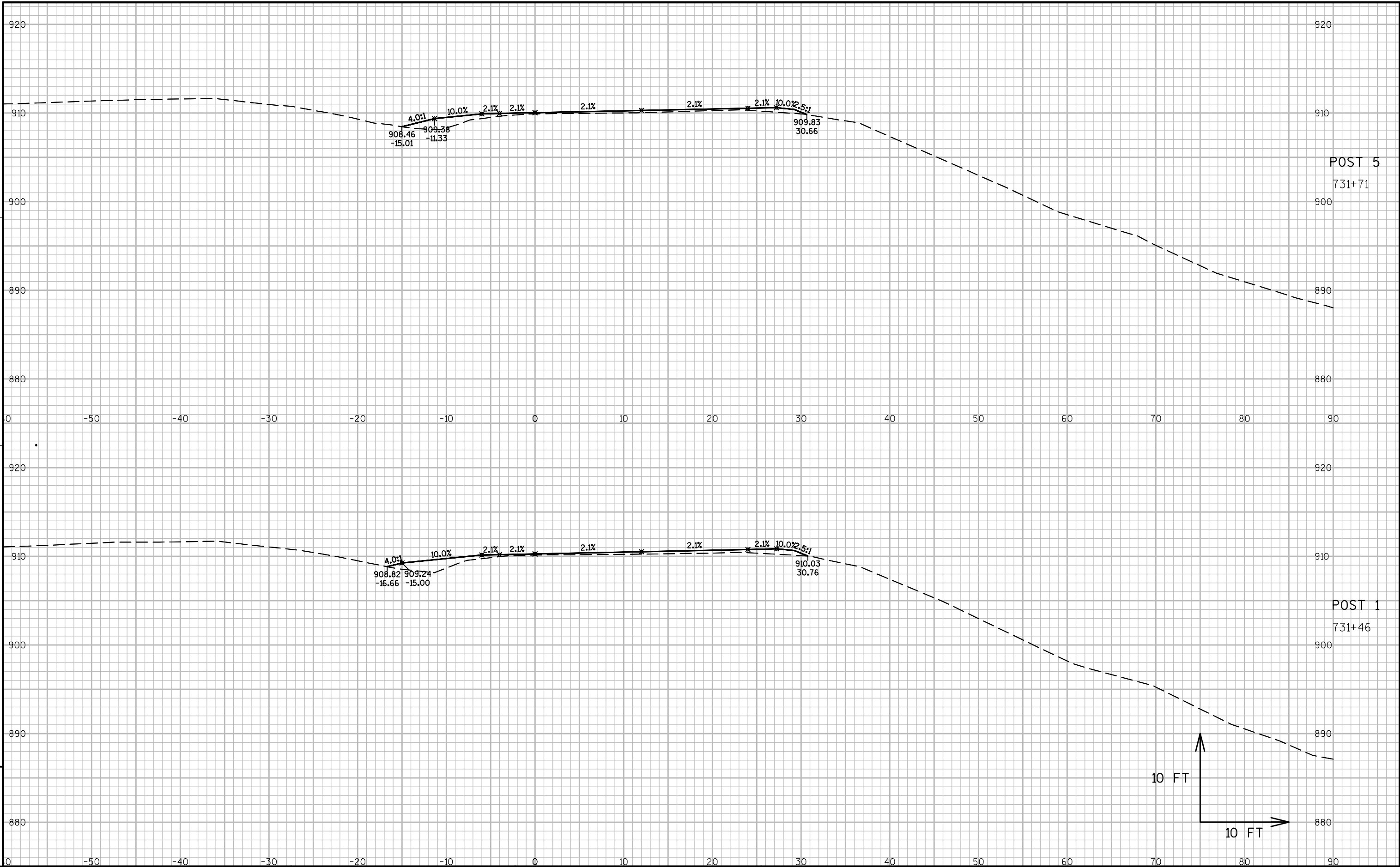


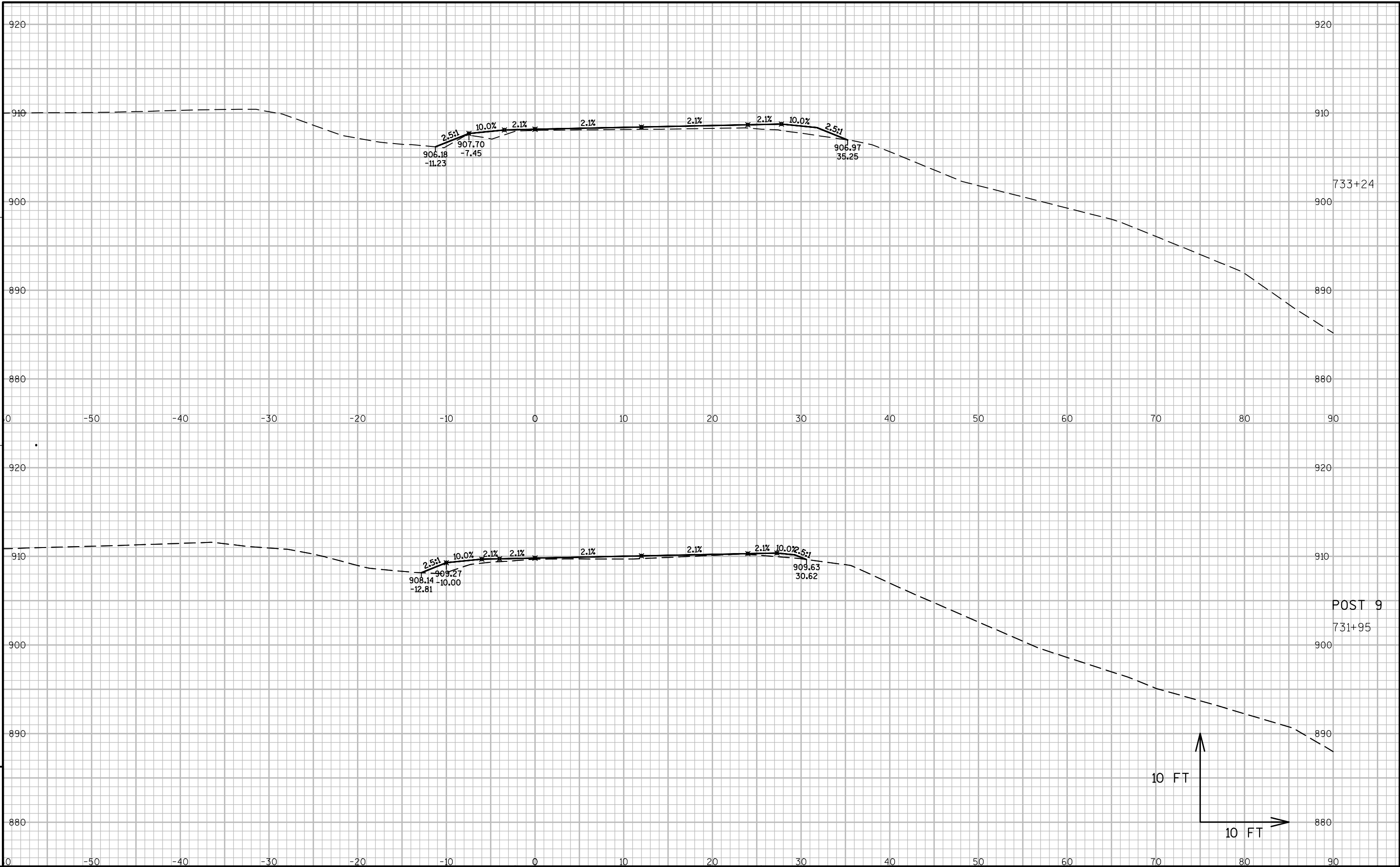


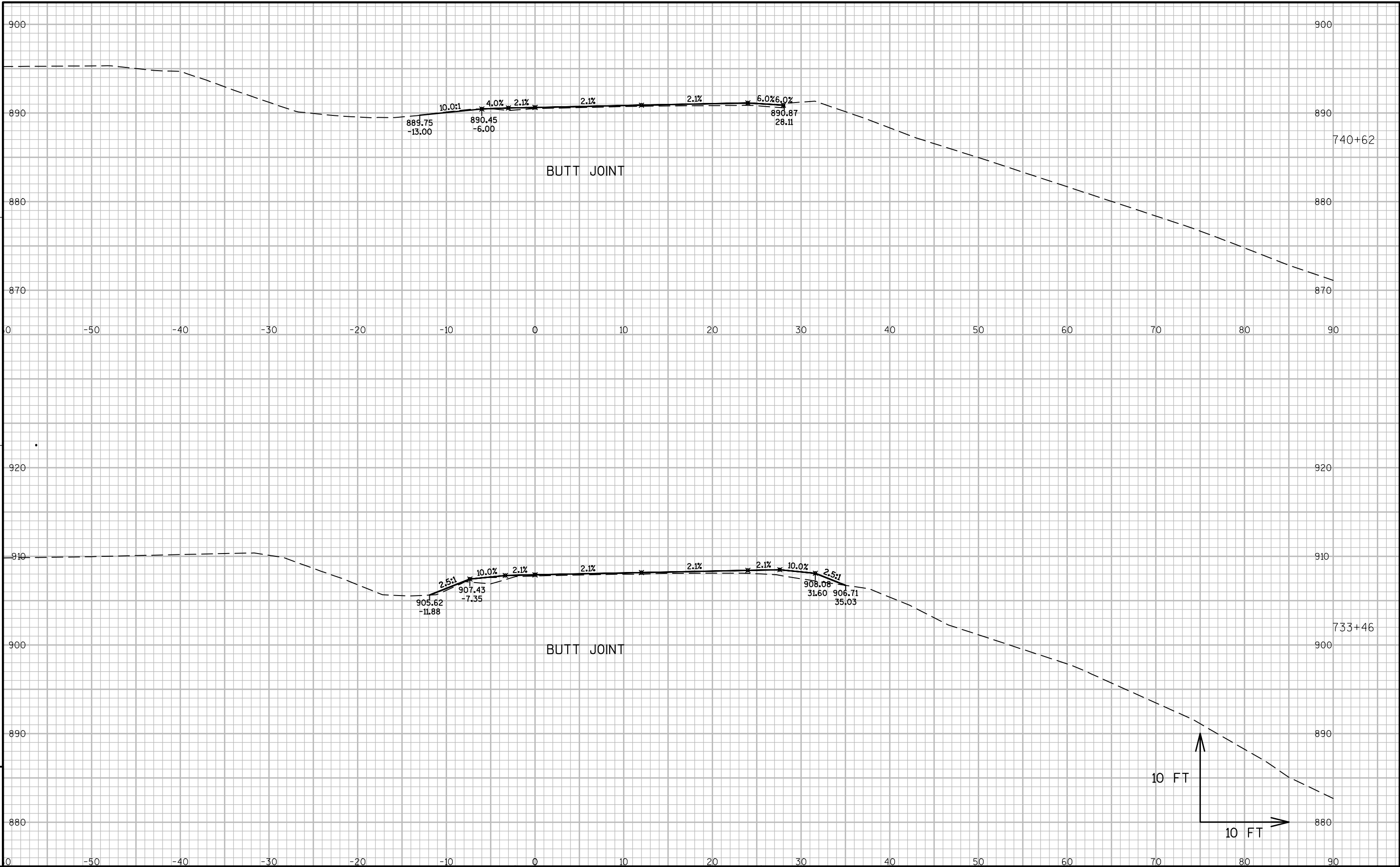


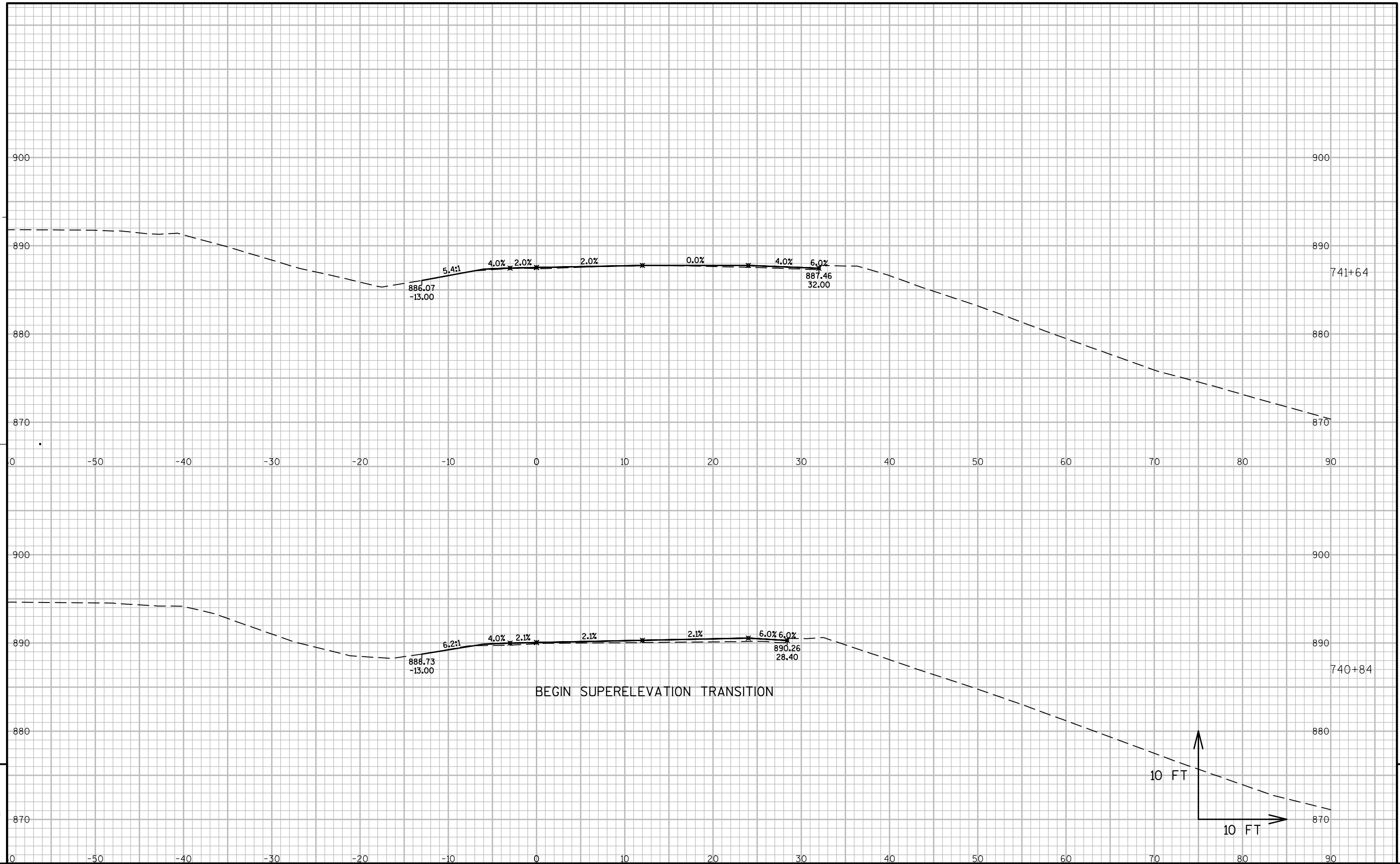


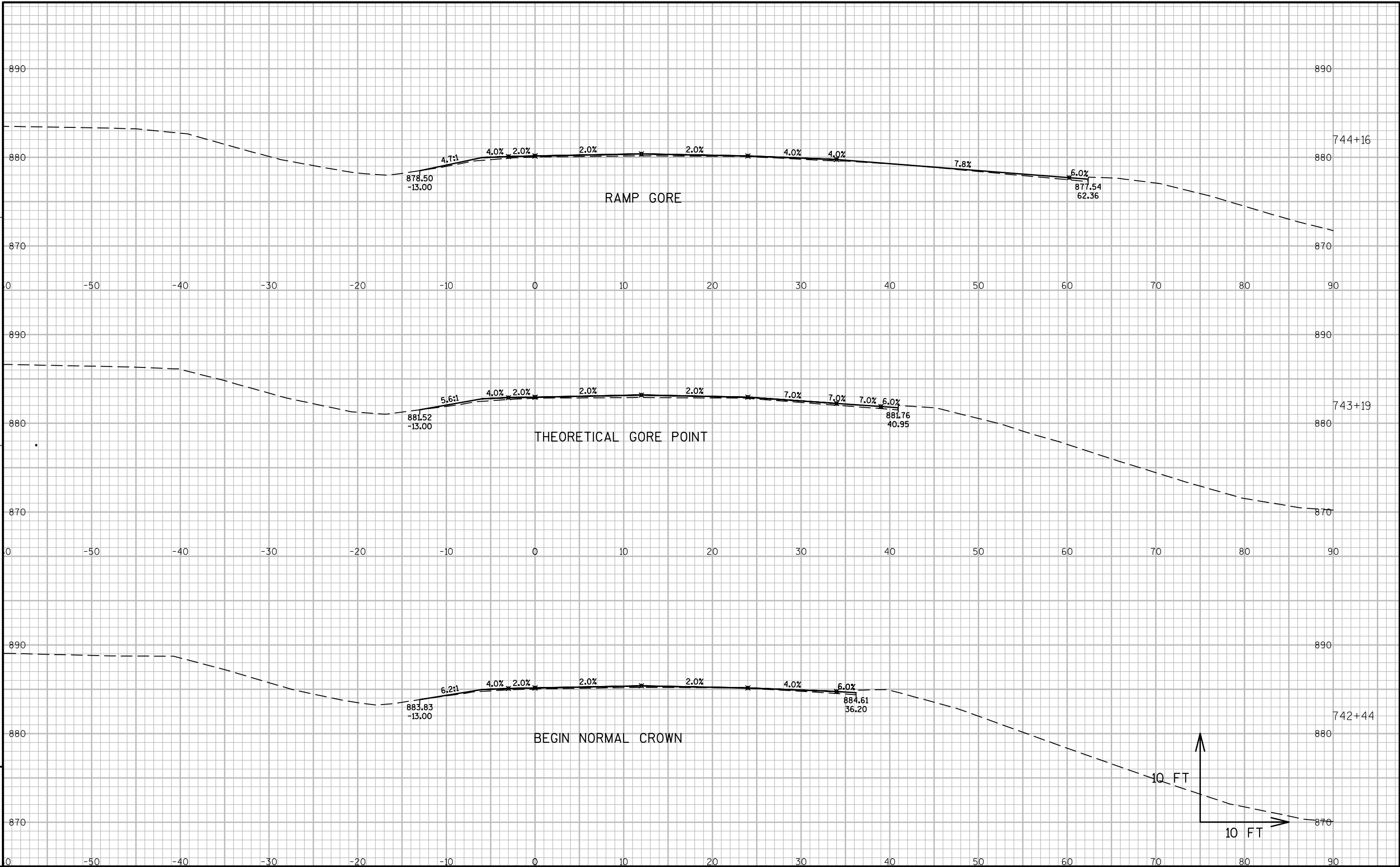


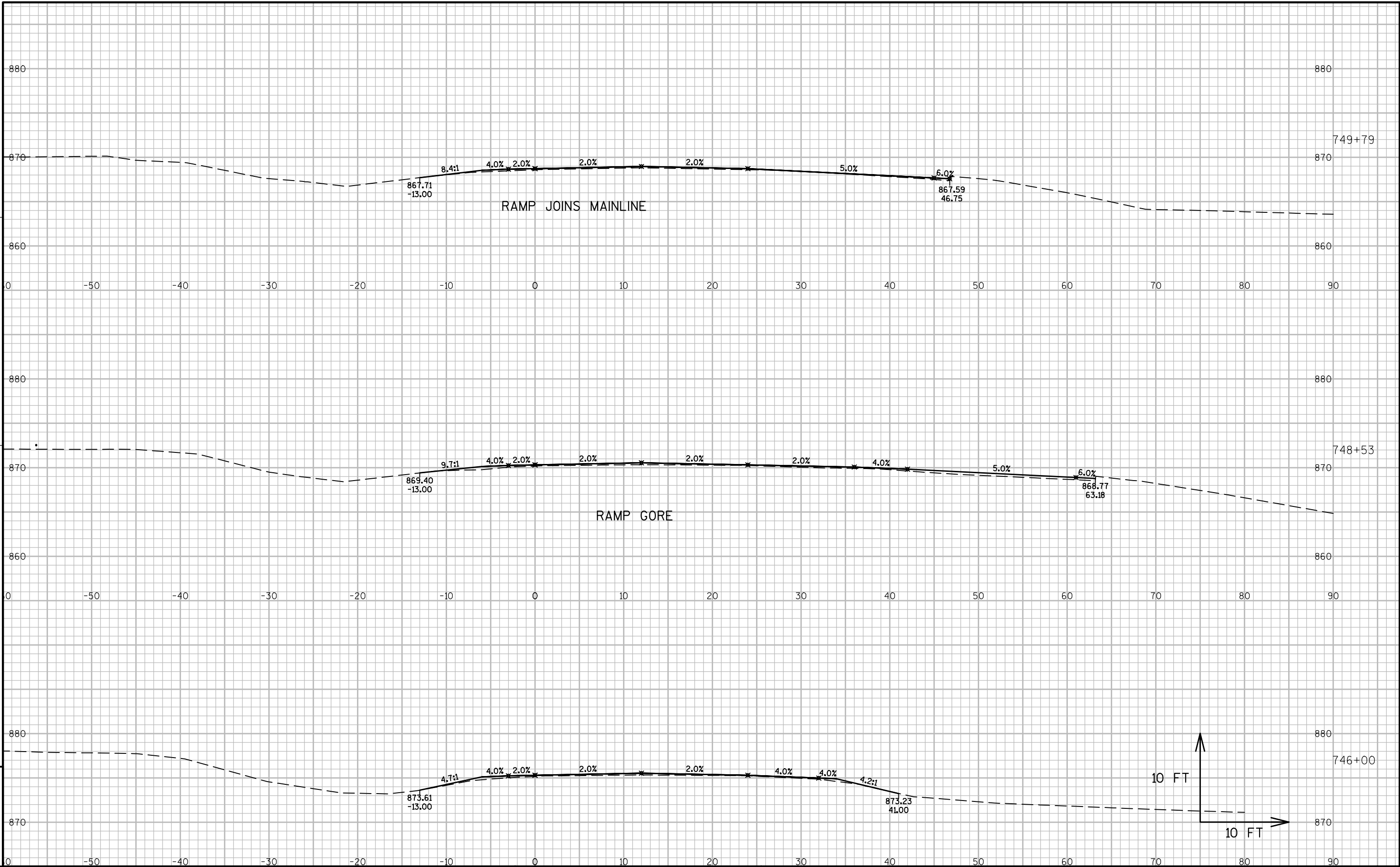


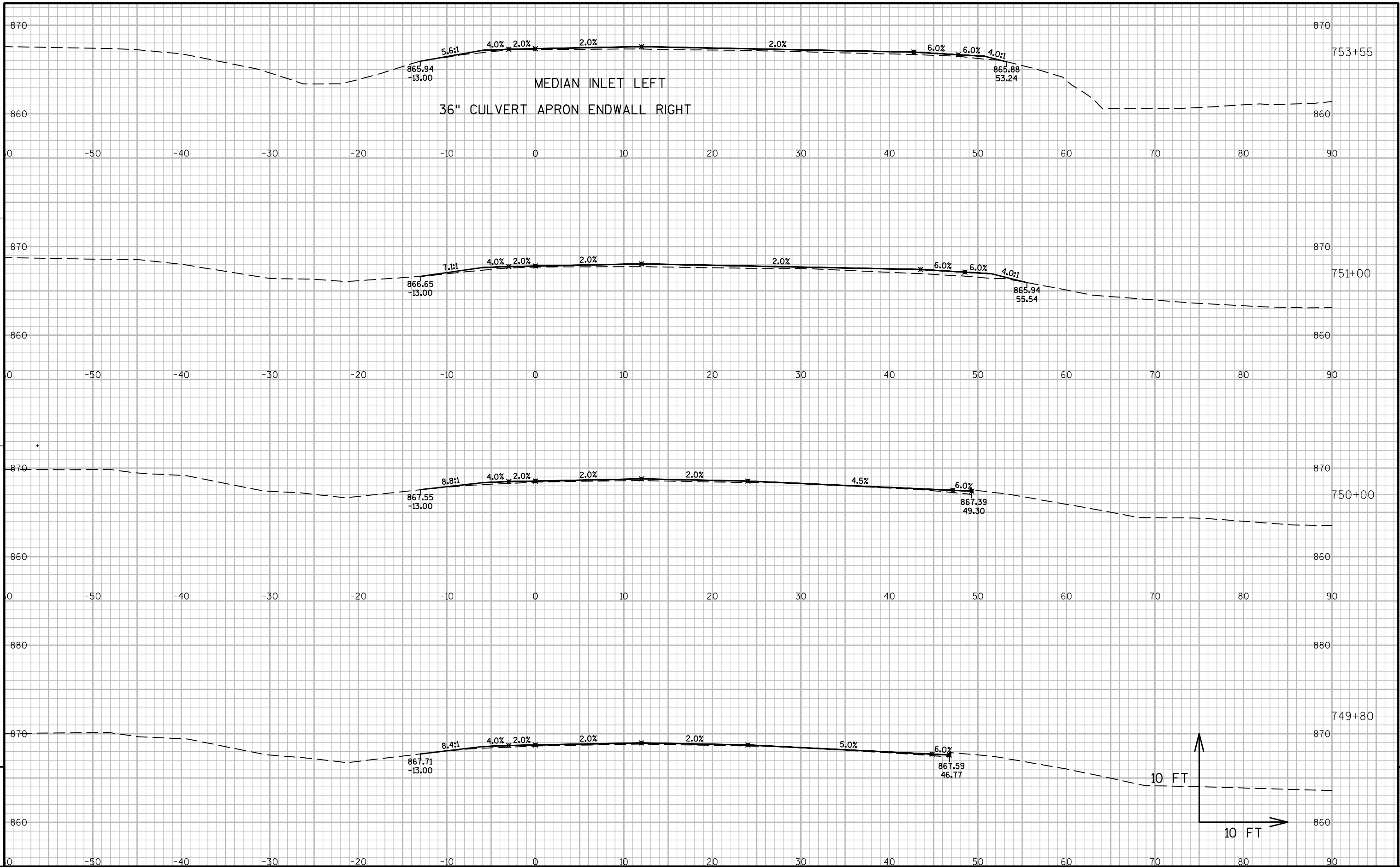


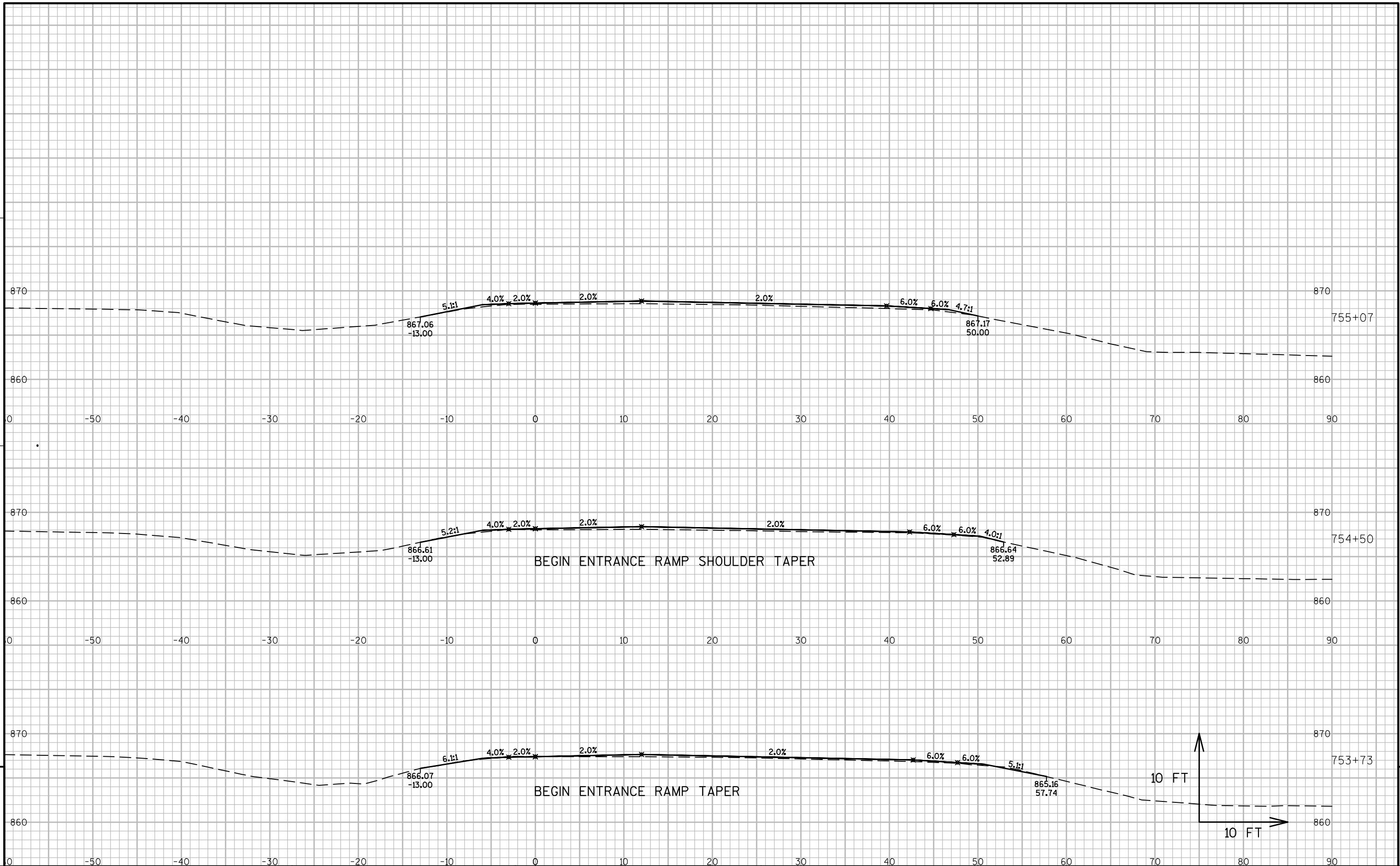


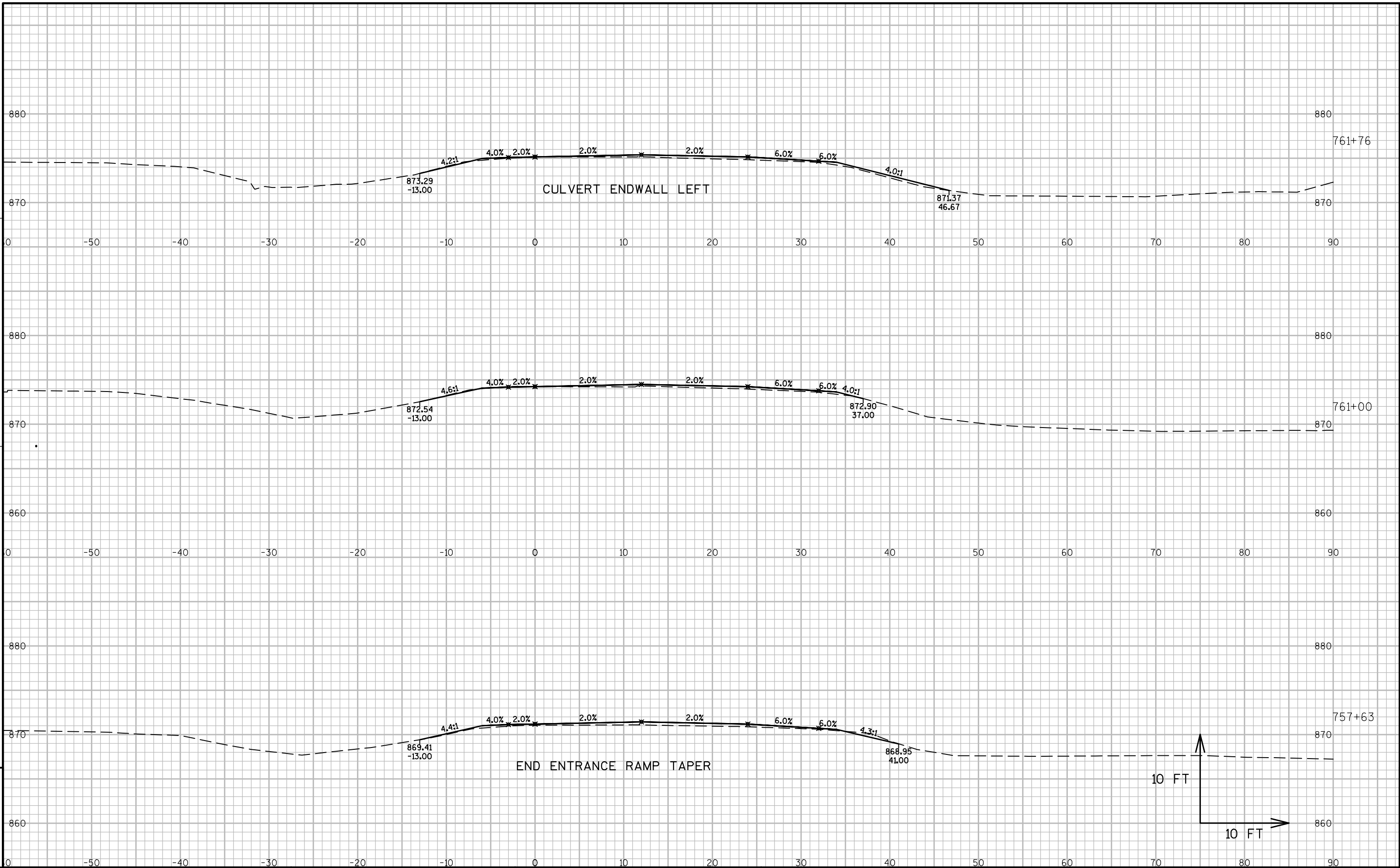


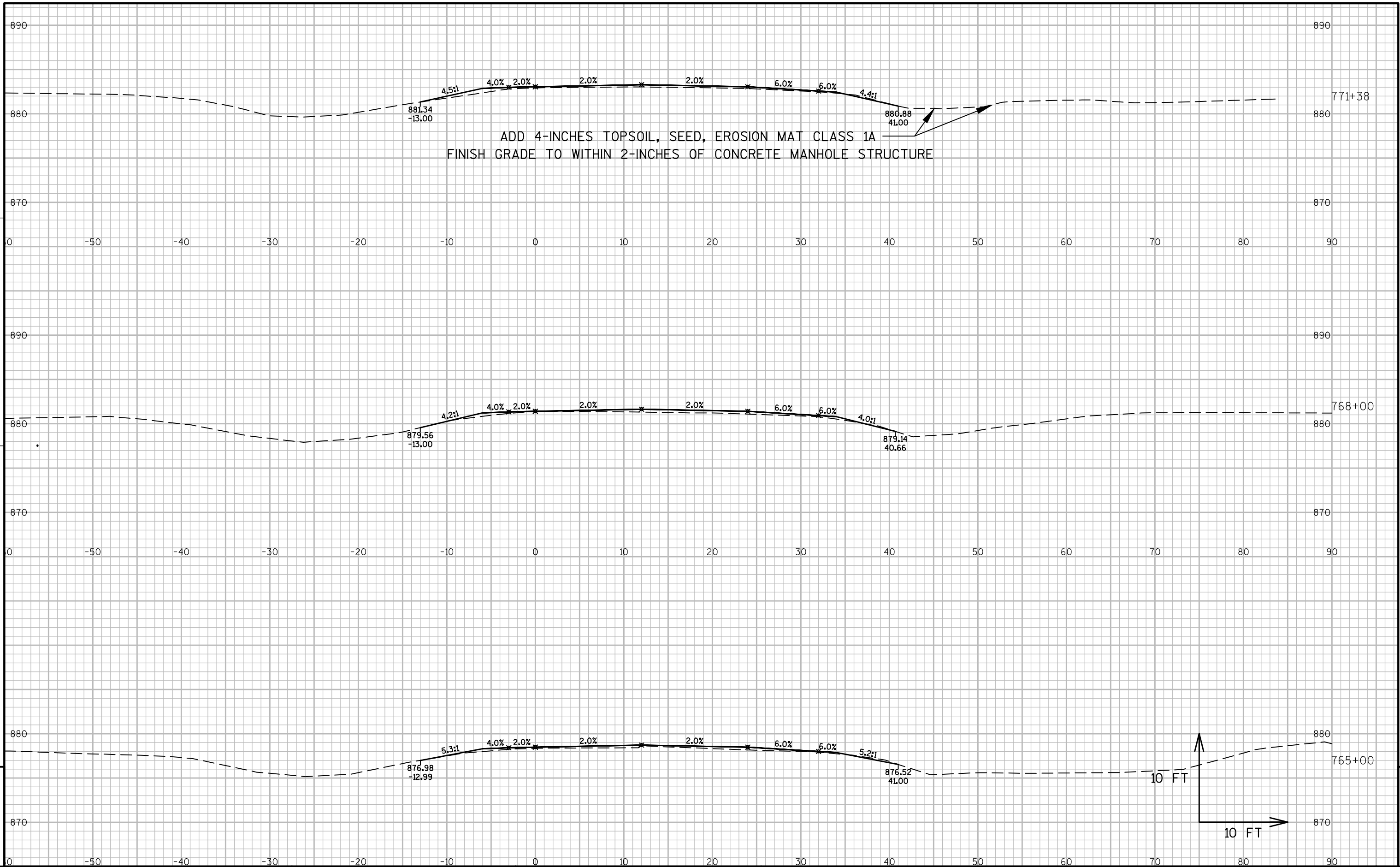


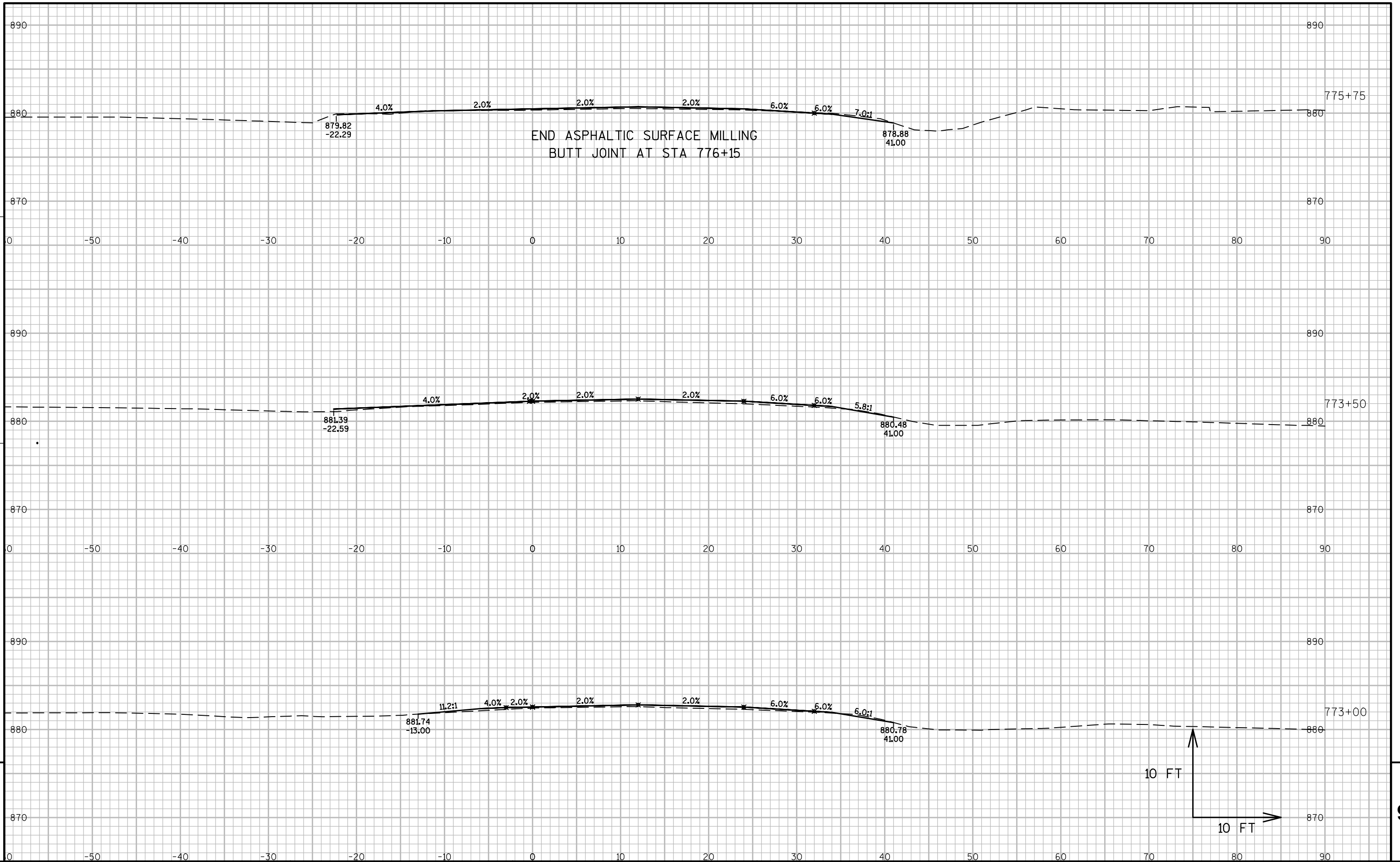












Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

<http://www.dot.wisconsin.gov>