

PROJECT ID: 1166-06-64
WITH: N/A

COUNTY: WAUSHARA

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 = 308



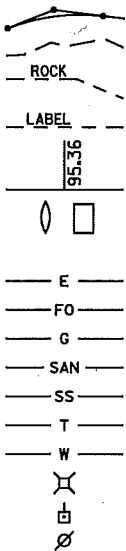
DESIGN DESIGNATION

A.A.D.T.	2018	=	15,200
A.A.D.T.	2037	=	20,400
D.H.V.		=	
D.D.		=	67/33
T.		=	16%
DESIGN SPEED		=	70 MPH
ESALS		=	

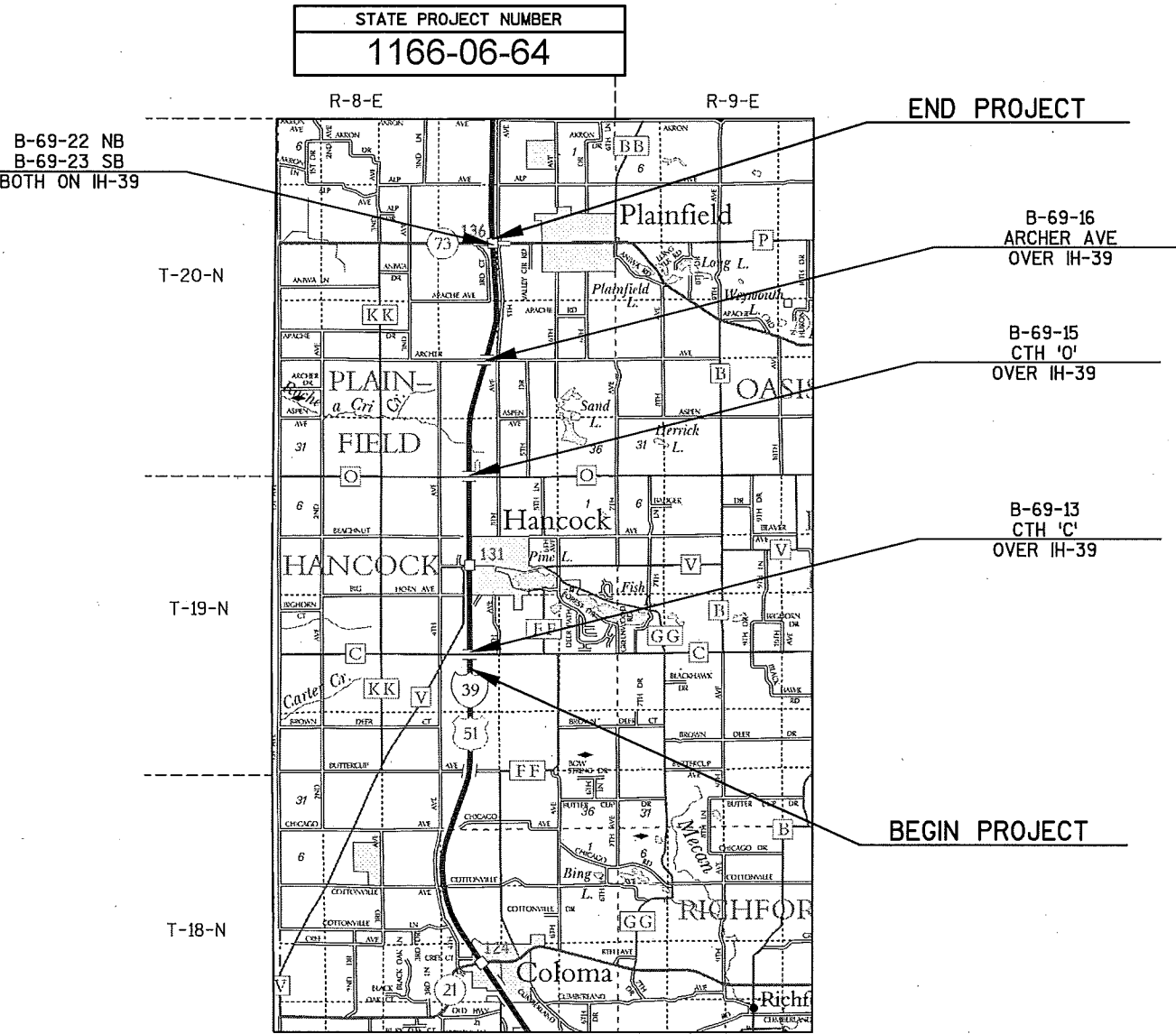
CONVENTIONAL SYMBOLS

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

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



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
COLOMA - PLAINFIELD
B-69-13, 15, 16, 22, 23
IH 39
WAUSHARA



LAYOUT
SCALE 0 10 MILES
TOTAL NET LENGTH OF CENTERLINE = 0.718 MI

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS) WAUSHARA COUNTY, NAD 1983 (2007)

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 NAVD 88 (2012)

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1166-06-64	WISC 2016442	1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	NC REGION
Designer	BRYCE SCHLIECHER
Project Manager	TIM HANLEY
Regional Examiner	CHERYL SIMON
Regional Supervisor	MICHAEL KRETSCHMER

APPROVED FOR THE DEPARTMENT
DATE: 4-27-16

GENERAL NOTES

WHEREVER ASPHALTIC CONCRETE PAVEMENT ABUTS OR OVERLAPS ONTO PORTLAND CEMENT CONCRETE, THE EXISTING PAVEMENT SHALL RECEIVE A TACK COAT OF RS-1 OR RS-2 EMULSIFIED ASPHALT.

LAYERS SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

SECTIONS AS SHOWN ON THE CROSS SECTION SHEETS INCLUDE THE THICKNESS OF TOPSOIL.

INLET GRATE ELEVATIONS REFERRED TO ON INLET NOTES ARE GRATE FLOW LINE ELEVATIONS.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

PURSUANT TO CHAPTER 59 OF THE WISCONSIN STATUTES, THE CONTRACTOR SHALL CAREFULLY MAKE A SEARCH FOR EVIDENCE OF A LANDMARK IN ALL AREAS WHERE SUCH A LANDMARK MAY EXIST.

THE CONTRACTOR IS TO WORK WITH UTMOST CARE AND PROTECT ALL SURVEY MARKERS. REMOVAL OF ANY SURVEY MARKER IS TO BE WITH THE APPROVAL OF THE ENGINEER.

UTILITIES

ADAMS-COLUMBIA ELECTRIC COOPERATIVE-ELECTRICITY
ATTN: MARK LAMORE
401 EAST LAKE STREET
PO BOX 70
FRIENDSHIP, WI 53934
1-800-831-8629
mlamore@acecwi.com

Send all WE Energies Correspondence to:
WE ENERGIES - GAS
ATTN: LATROY BRUMFIELD
333 W EVERETT ST, A299
MILWAUKEE, WI 53203
(414) 221-5617
latroy.brumfield@we-energies.com

WE ENERGIES CONSTRUCTION FIELD CONTACT:

WE ENERGIES - GAS
ATTN: TRAVIS KAHL
1921 8TH STREET SOUTH
WISCONSIN RAPIDS, WI 54494
(715) 421-7256
MOBILE: (715) 498-6180
travis.kahl@we-energies.com

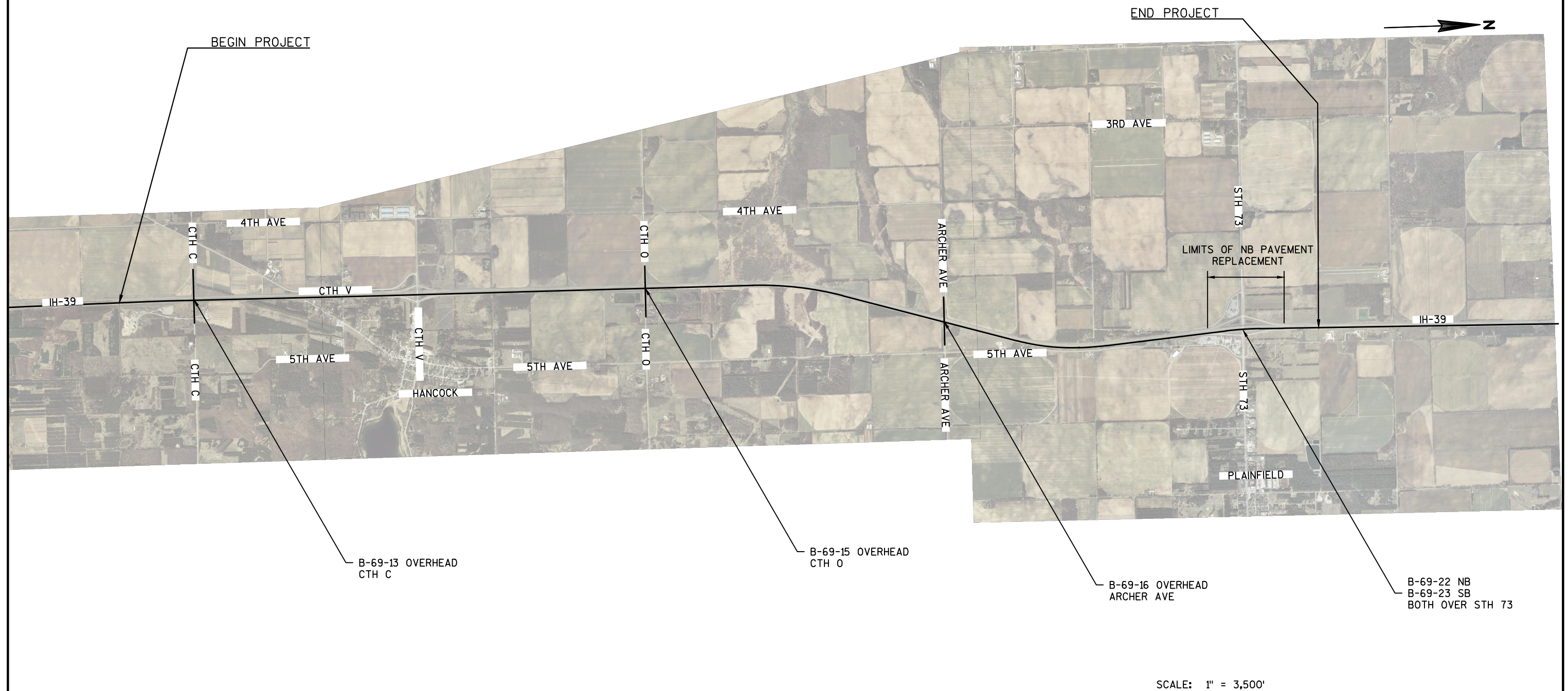
ALLIANT ENERGY - ELECTRIC
ATTN: JASON HOGAN
SUITE 1000
4902 N. BILTMORE LANE
MADISON, WI 53718
1-608-458-4871 desk
1-608-395-7395 cell
jasonhogan@alliantenergy.com

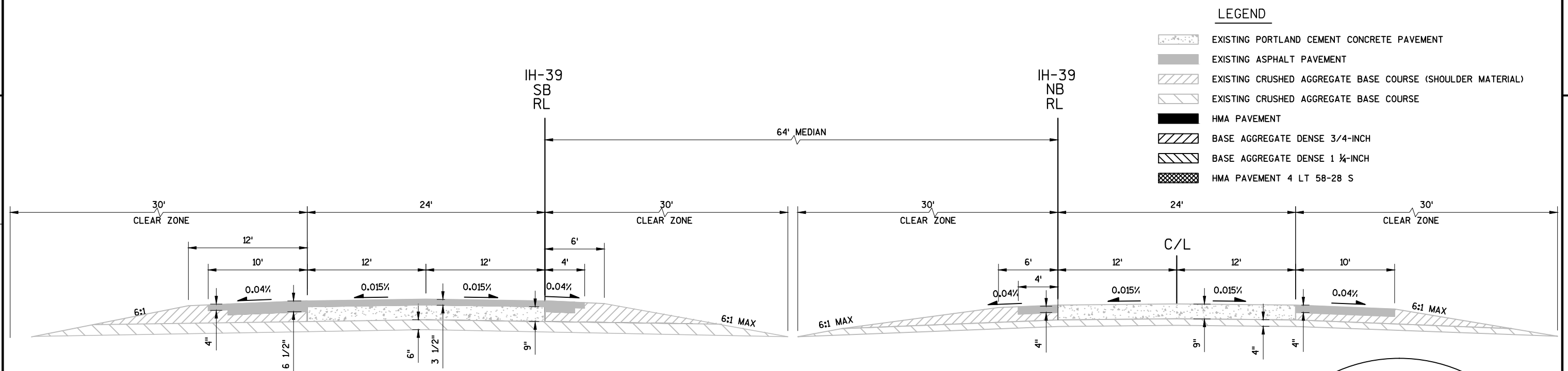
DNR CONTACT

BOBBI JO FISCHER
427 EAST TOWER DRIVE, SUITE 100
WAUTOMA, WI 54982
(820) 787-3015
bobbifischer@wisconsin.gov



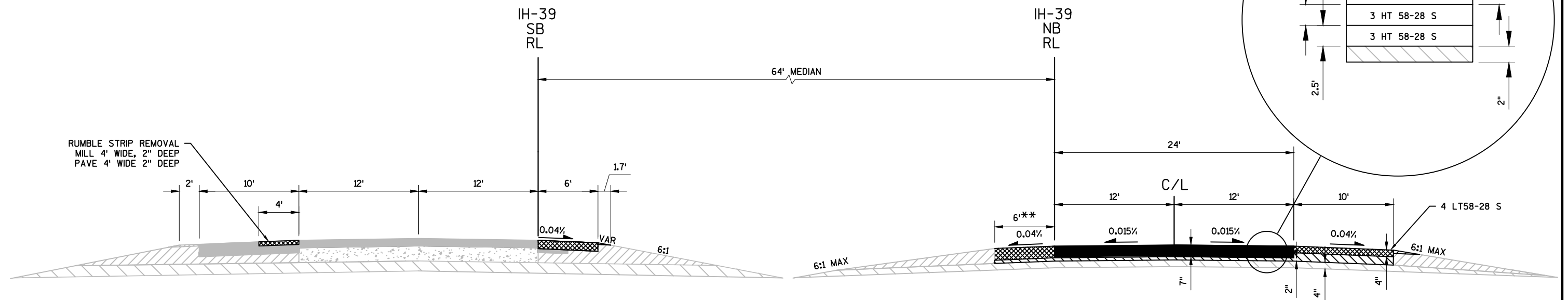
Dial 811 or (800)242-8511
www.DiggersHotline.com





EXISTING TYPICAL SECTION ON TANGENT

IH-39 NB STA 874 'NB'+88 - STA 878 'NB'+55
 IH-39 NB STA 890 'NB'+57 - STA 896 'NB'+00
 IH-39 SB STA 875 'SB'+50 - STA 877 'SB'+57
 IH-39 SB STA 889 'SB'+65 - STA 897 'SB'+50

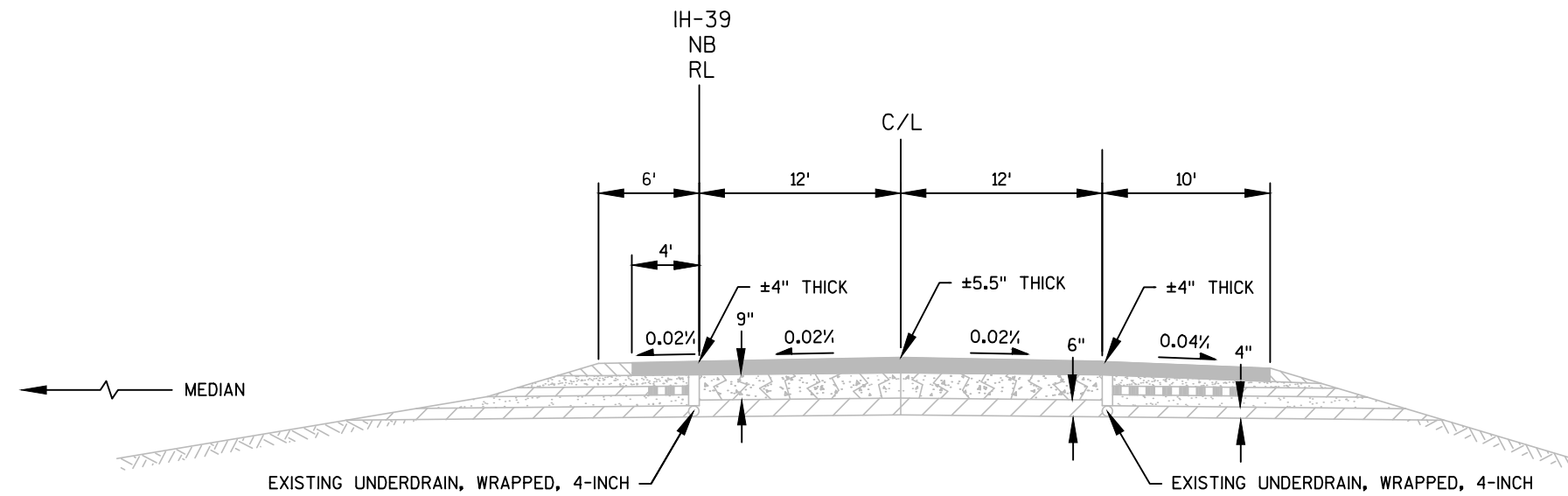


PROPOSED TYPICAL SECTION ON TANGENT

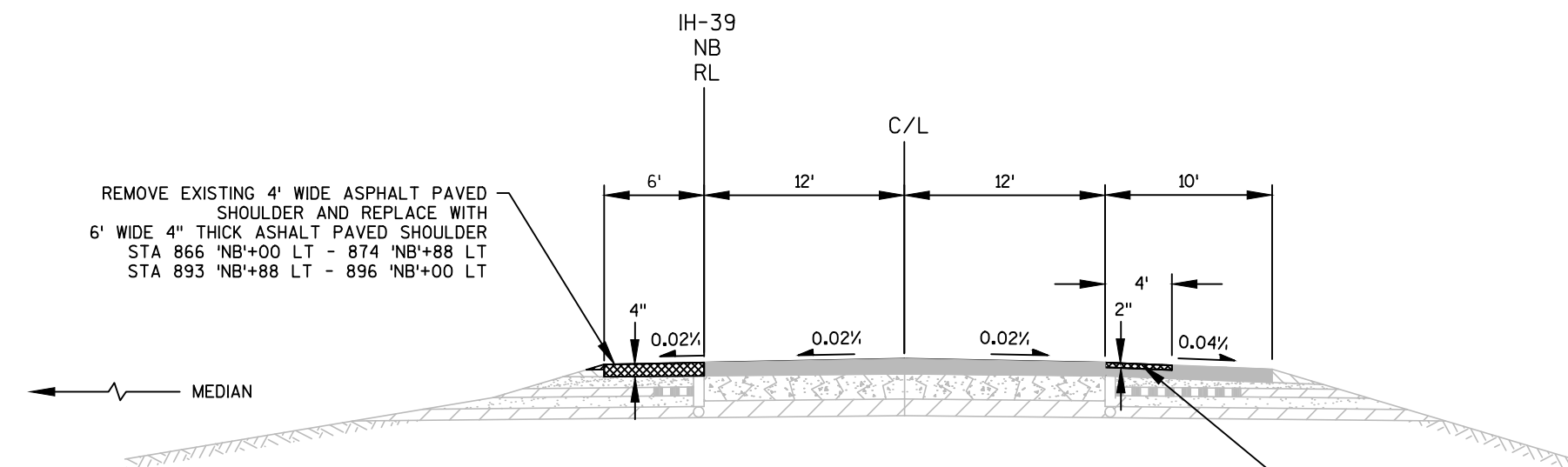
IH-39 NB STA 874 'NB'+91 - STA 878 'NB'+55
 IH-39 NB STA 890 'NB'+57 - STA 896 'NB'+00
 IH-39 SB STA 875 'SB'+50 - STA 877 'SB'+57

****NOTE:**

REPLACE EXISTING 6' WIDE (4' PAVED) SHOULDER WITH 6' WIDE PAVED SHOULDER 4" 4 LT 58-28 S FROM STA 893 'NB'+88 - 896 'NB'+00, 7" 4 LT 58-28 S FROM STA 874 'NB'+91 - STA 878 'NB'+55 & STA 890 'NB'+52 - STA 878 'NB'+55



EXISTING TYPICAL NB SECTION
 STA 860 'NB'+50 TO STA 874 'NB'+88
 STA 893 'NB'+88 TO STA 896 'NB'+00

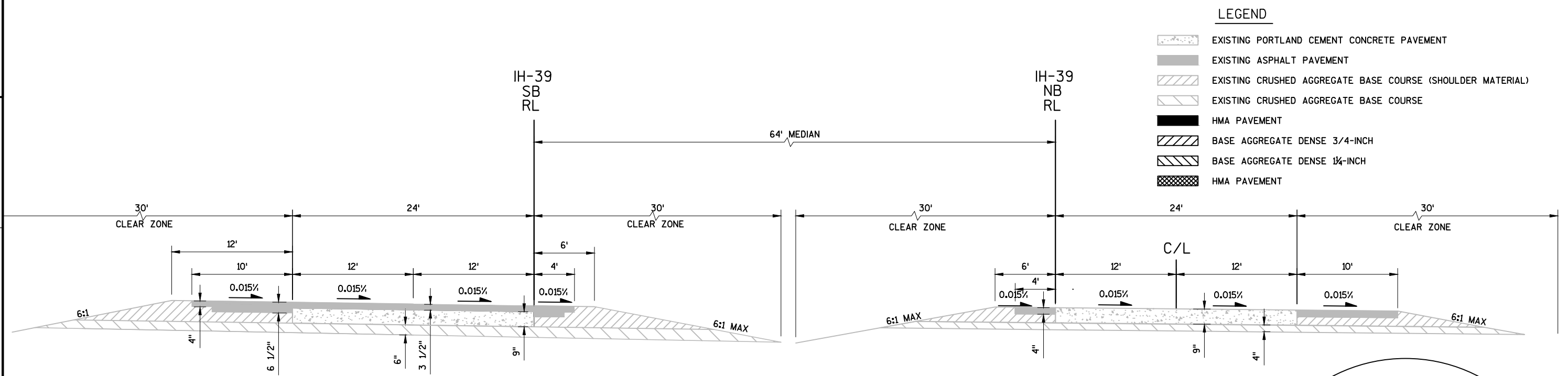


PROPOSED TYPICAL NB SECTION
 STA 860 'NB'+50 TO STA 874 'NB'+88
 STA 893 'NB'+88 TO STA 896 'NB'+00

REMOVE EXISTING RUMBLE STRIPS
 MILL 2" DEEP AND 4' WIDE
 PAVE 2" DEEP AND 4' WIDE
 STA 860 'NB'+50 RT - 868 'NB'+00 RT
 STA 874 'NB'+00 RT - 874 'NB'+88 RT
 STA 893 'NB'+88 RT - 895 'NB'+40 RT

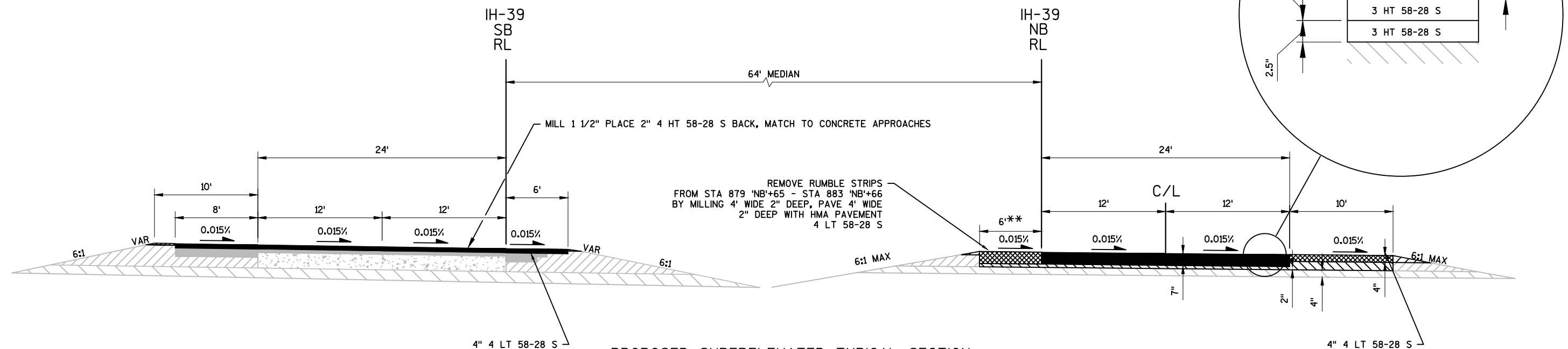
LEGEND

- HMA PAVEMENT 4 LT 58-28 S
- SHAPING SHOULDERS
- EXISTING HMA PAVEMENT
- EXISTING BASE AGGREGATE DENSE 3/4-INCH
- EXISTING BASE AGGREGATE DENSE 1 1/4-INCH
- EXISTING PULVERIZED ASPHALTIC PAVEMENT AND CRUSHED AGGREGATE BASE COURSE
- EXISTING RUBBLIZED CONCRETE PAVEMENT
- EXISTING SELECT BORROW
- EXISTING ASPHALTIC STABILIZED SELECT BORROW
- ORIGINAL GROUND



EXISTING SUPERELEVATED TYPICAL SECTION

IH-39 NB STA 878 'NB'+55 - STA 883 'NB'+66
 IH-39 NB STA 885 'NB'+41 - STA 890 'NB'+57
 IH-39 SB STA 877 'SB'+57 - STA 882 'SB'+74
 IH-39 SB STA 884 'SB'+49 - STA 889 'SB'+65



PROPOSED SUPERELEVATED TYPICAL SECTION

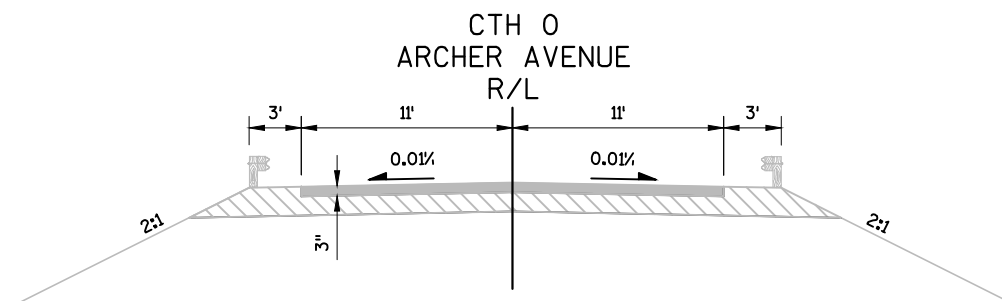
IH-39 NB STA 878 'NB'+55 - STA 883 'NB'+66
 IH-39 NB STA 885 'NB'+41 - STA 890 'NB'+57
 IH-39 SB STA 880 'SB'+62 - STA 882 'SB'+74
 IH-39 SB STA 884 'SB'+49 - STA 889 'SB'+65

**NOTE:

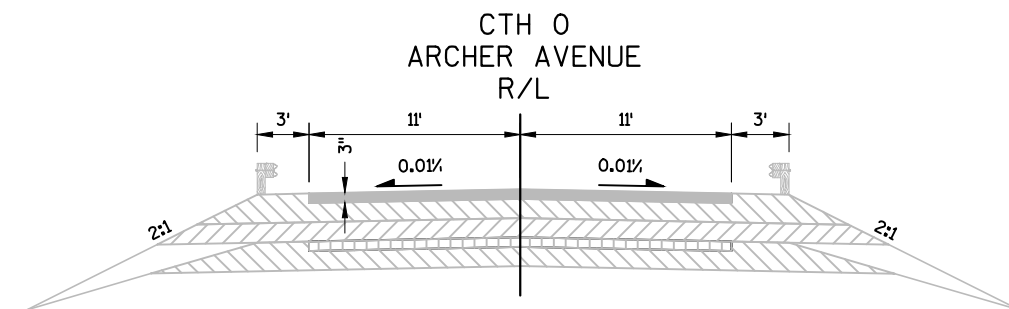
REPLACE EXISTING 6' WIDE (4' PAVED) SHOULDER WITH 6' WIDE PAVED SHOULDER 4" THICK AND 7" 4 LT 58-28 S FROM STA 878 'NB'+55 - STA 879 'NB'+65 & STA 885 'NB'+53 - STA 890 'NB'+57

LEGEND

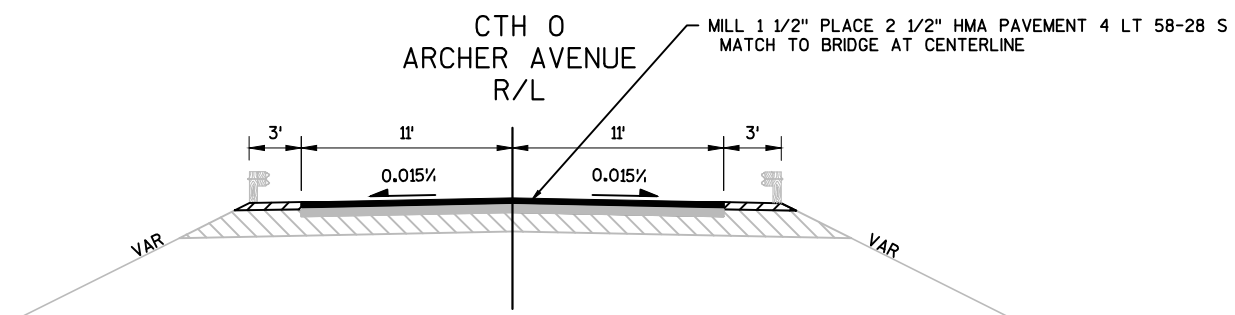
	EXISTING ASPHALT PAVEMENT
	EXISTING FILL (BORROW)
	EXISTING CRUSHED AGGREGATE BASE COURSE
	EXISTING ASPHALTIC PAVEMENT
	HMA PAVEMENT 4 LT 58-28 S
	BASE AGGREGATE DENSE 3/4-INCH



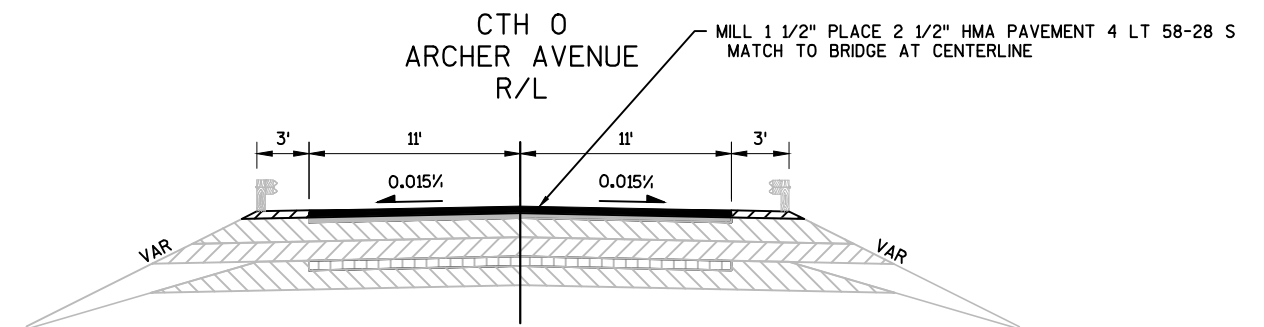
EXISTING TYPICAL SECTION
WEST APPROACH TO ARCHER AVE
EAST APPROACH TO CTH 0



EXISTING TYPICAL SECTION
EAST APPROACH TO ARCHER AVE
WEST APPROACH TO CTH 0

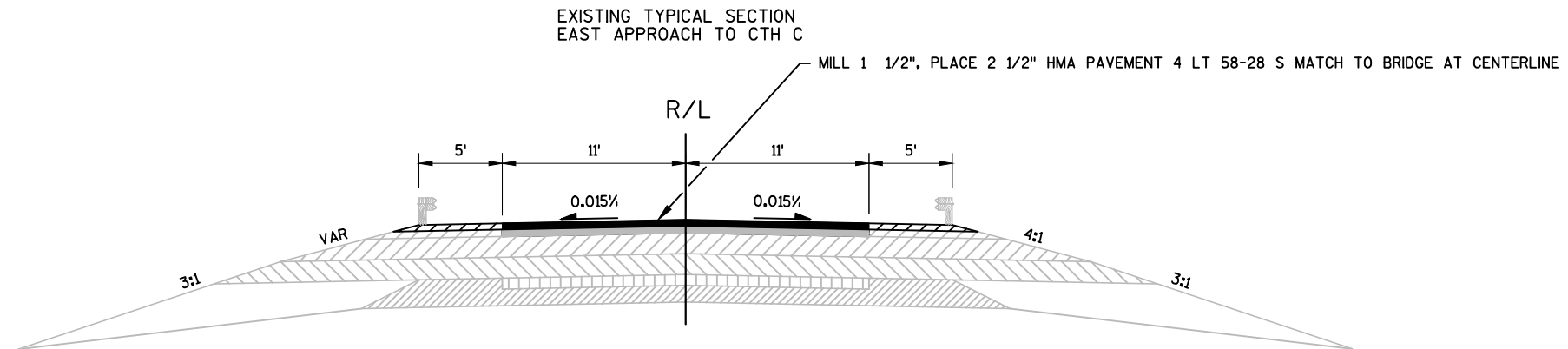


PROPOSED TYPICAL SECTION
WEST APPROACH TO ARCHER AVE STA 54'A'+00 - STA 57'A'+50
EAST APPROACH TO CTH 0 STA 38'0'+00 - STA 42'0'+25

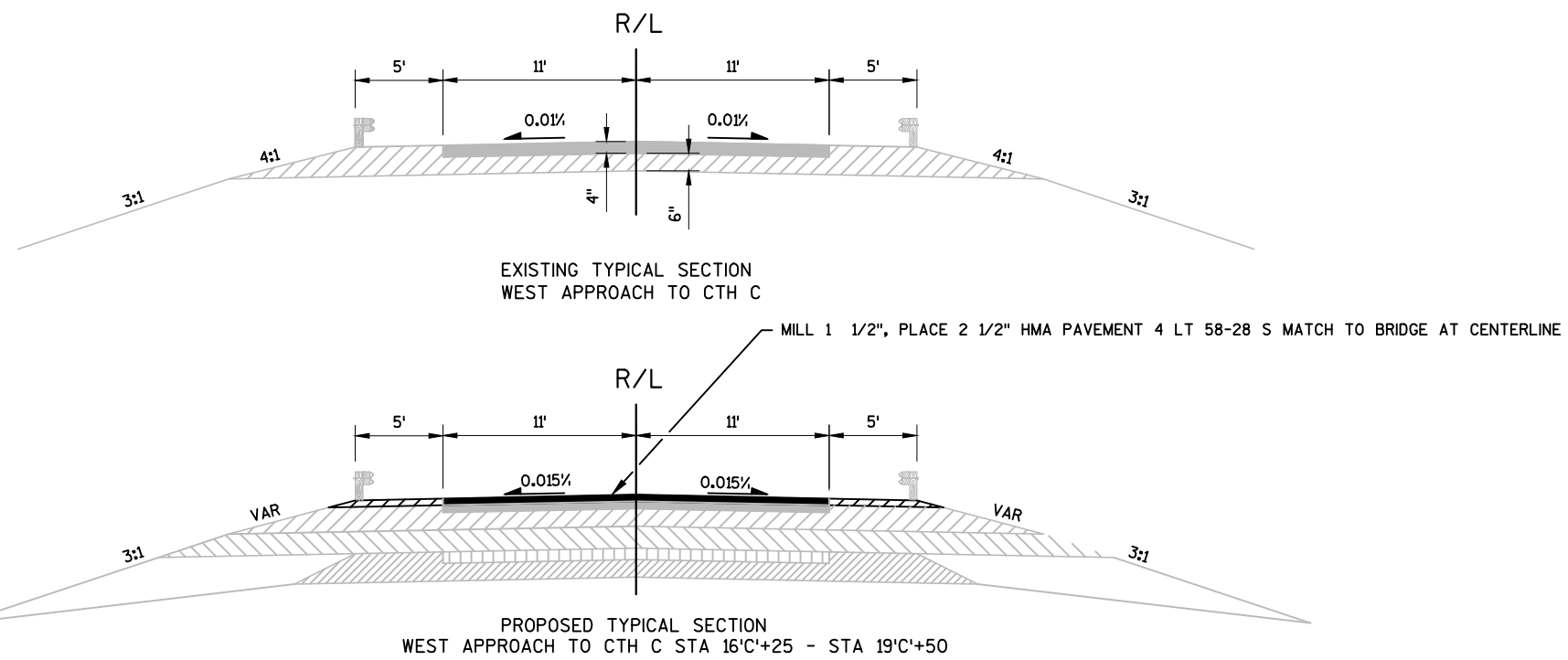


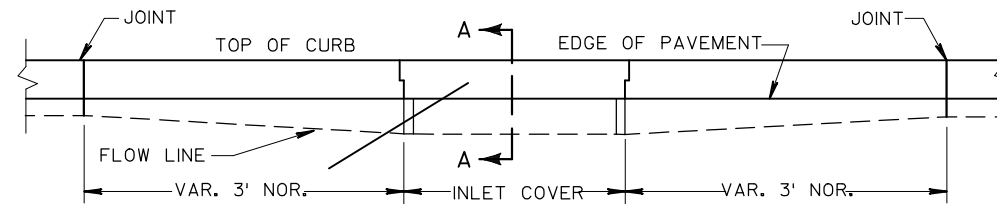
PROPOSED TYPICAL SECTION
EAST APPROACH TO ARCHER AVE STA 59'A'+50 - 63'A'+00
WEST APPROACH TO CTH 0 STA 32'0'+50 - STA 36'0'+00

2

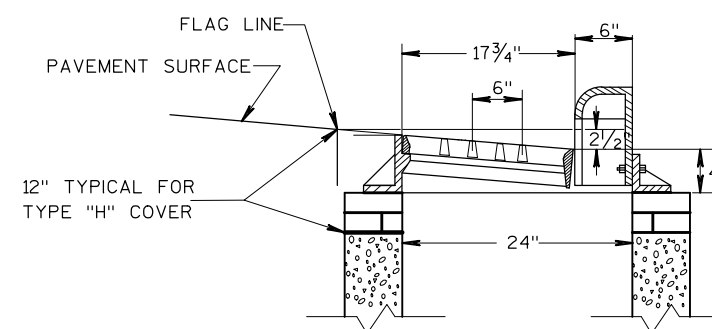
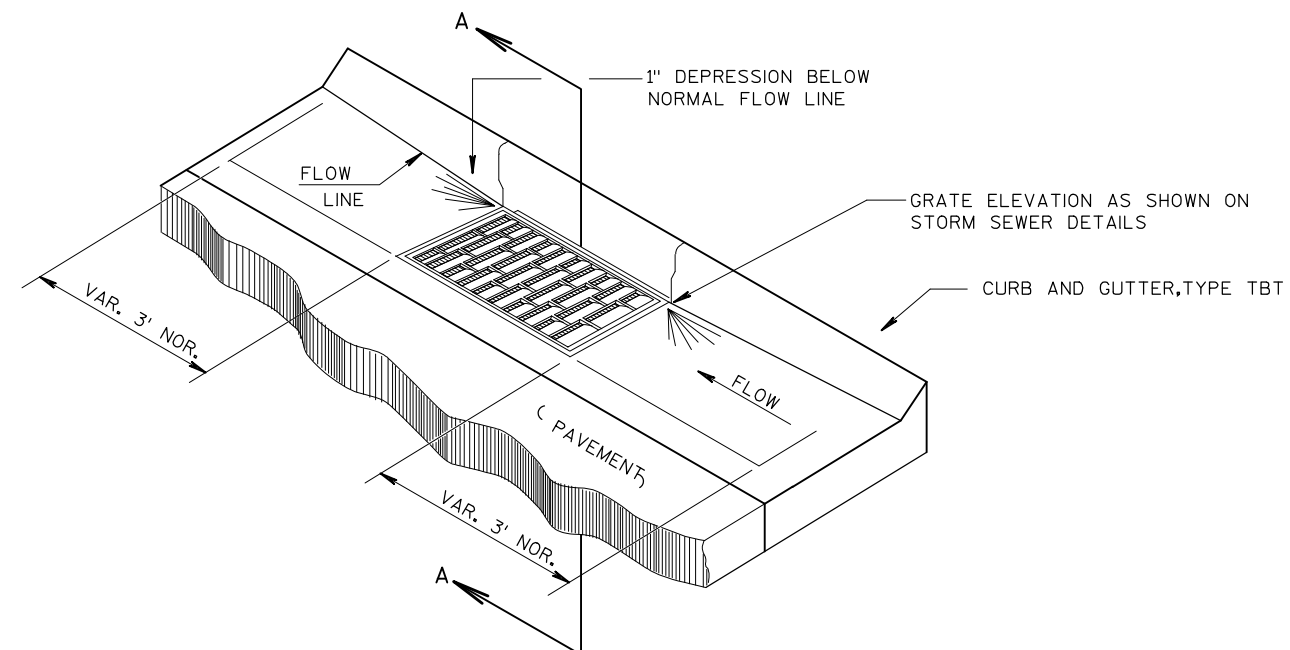


PROPOSED TYPICAL SECTION
EAST APPROACH TO CTH C STA 21'C'+50 - STA 25'C'+25



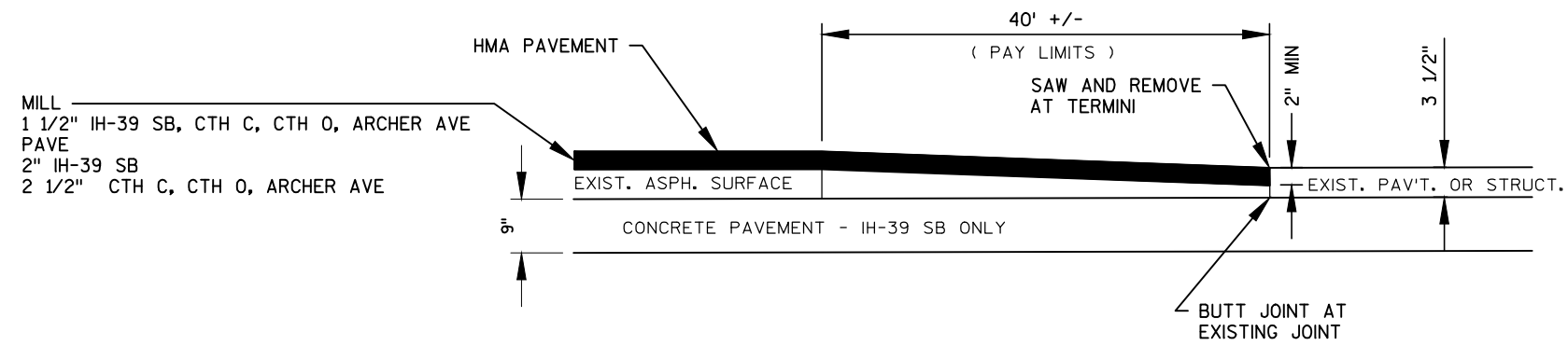


ELEVATION

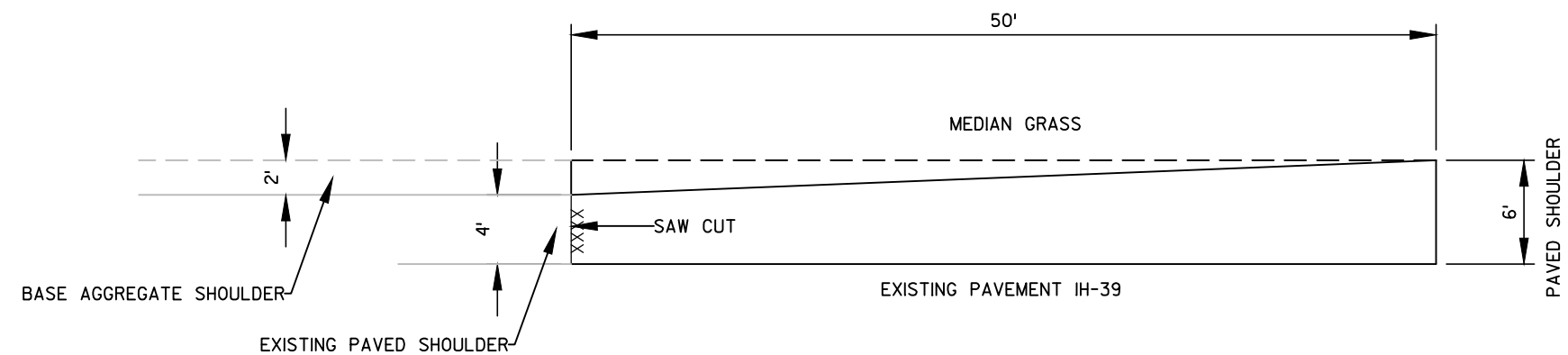


SECTION A-A

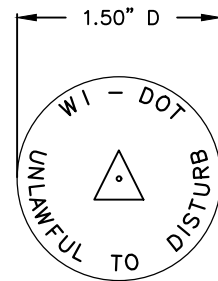
DETAIL OF CURB AND GUTTER AT INLETS
(TYPE 3-H INLET SHOWN)



REMOVING ASPHALTIC SURFACE BUTT JOINTS
IH-39 SB, CTH C, CTH O, ARCHER AVENUE

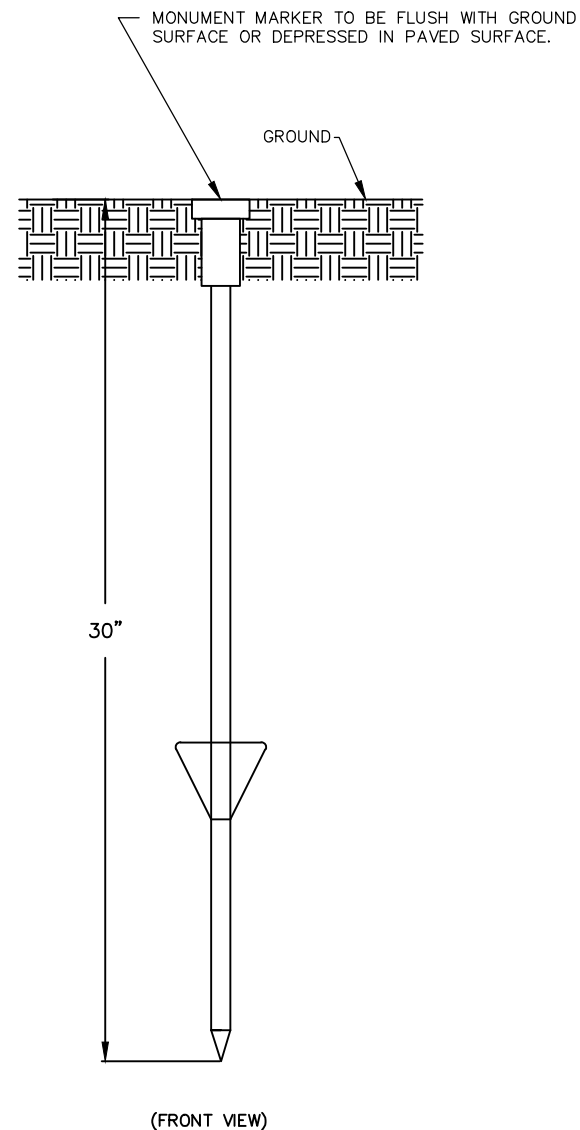


MEDIAN SHOULDER WIDENING TAPER
(PLAN VIEW)



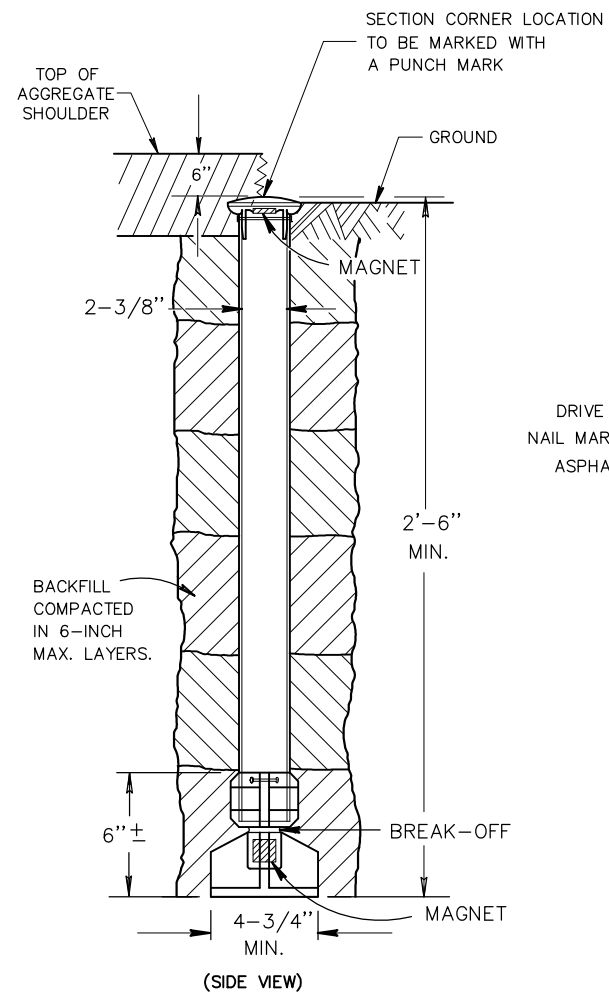
WIS DOT MONUMENT CAP MARKER LOGO (SSDR130)

CONTRACTOR TO ORDER LANDMARK REFERENCE MONUMENTS WITH THE ABOVE STAMPING



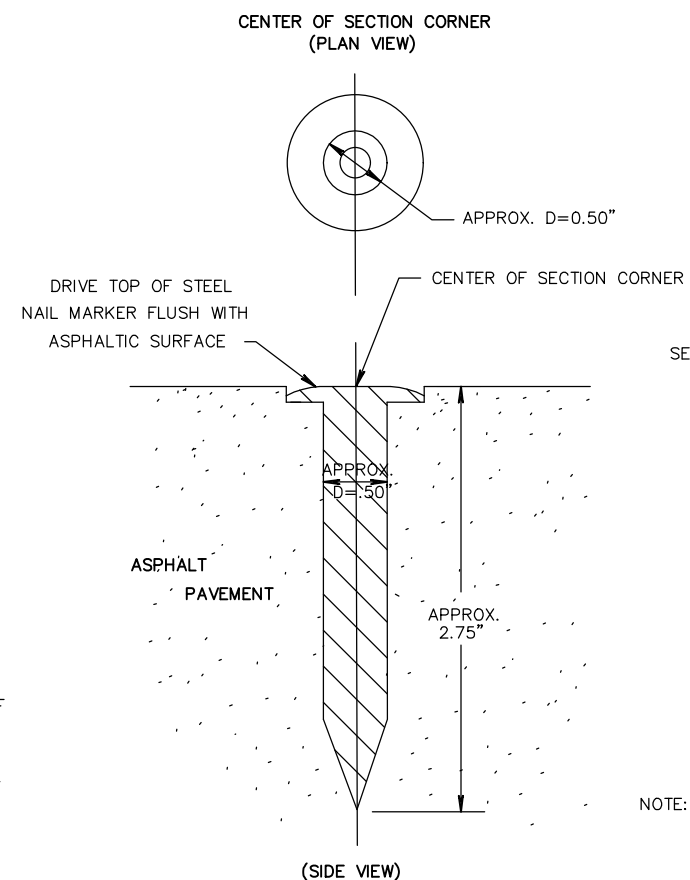
BERNSTEN DRIVABLE MONUMENT SSDR130

LANDMARK REFERENCE MONUMENT (TIES ONLY)



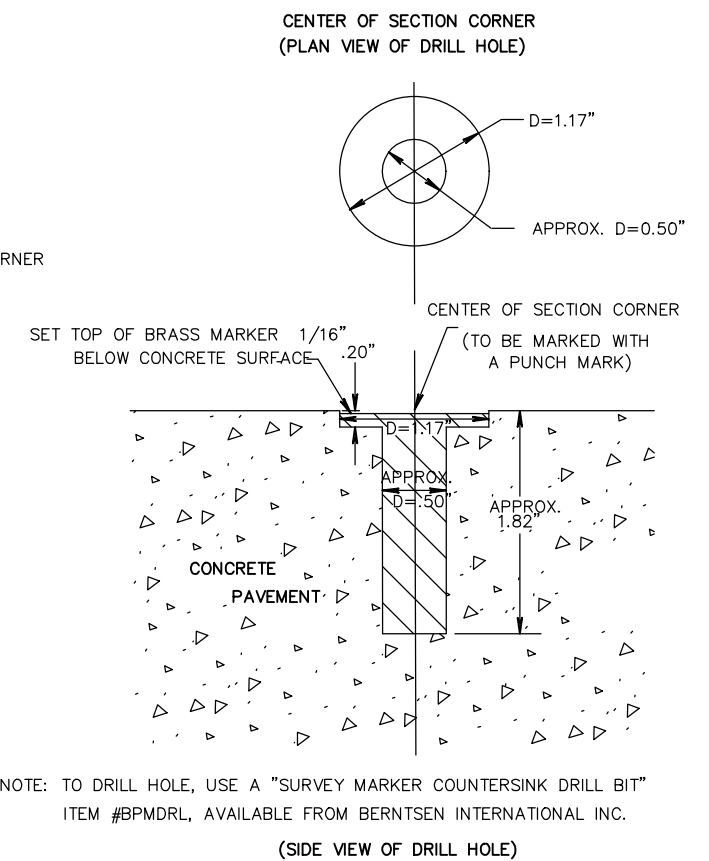
OUTSIDE OF PAVEMENT

BERNTSEN A1BR30 ALUMINUM BREAK-OFF MONUMENT



IN ASPHALTIC PAVEMENT

BERNTSEN SNM1 STEEL NAIL MARKER



IN CONCRETE PAVEMENT

BERNTSEN BP - 1 BRASS MARKER WITH ANCHOR PLUG

NOTE: TO DRILL HOLE, USE A "SURVEY MARKER COUNTERSINK DRILL BIT" ITEM #BPMRDL, AVAILABLE FROM BERNTSEN INTERNATIONAL INC.

SECTION CORNER MONUMENTS

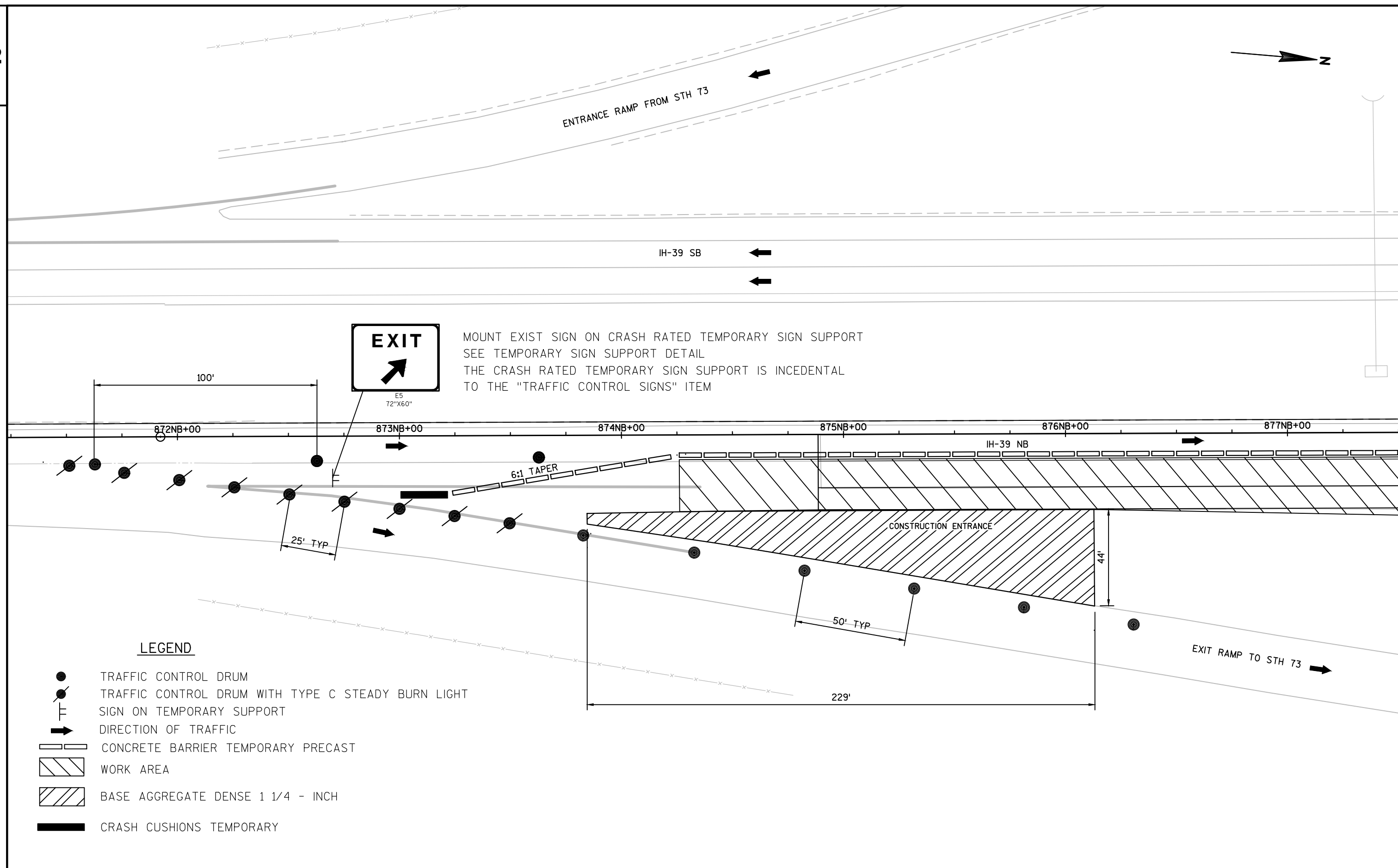
GENERAL NOTES

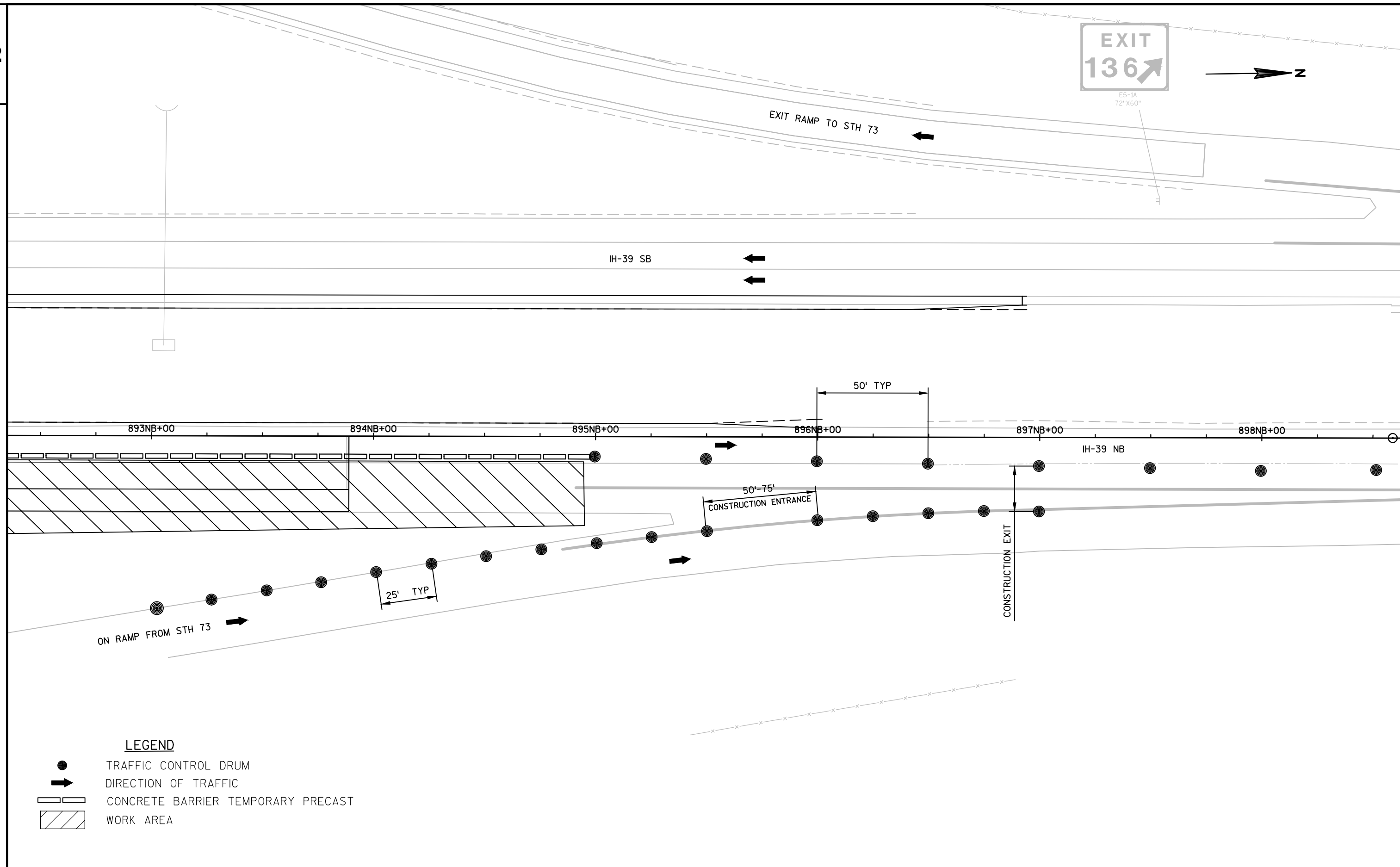
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

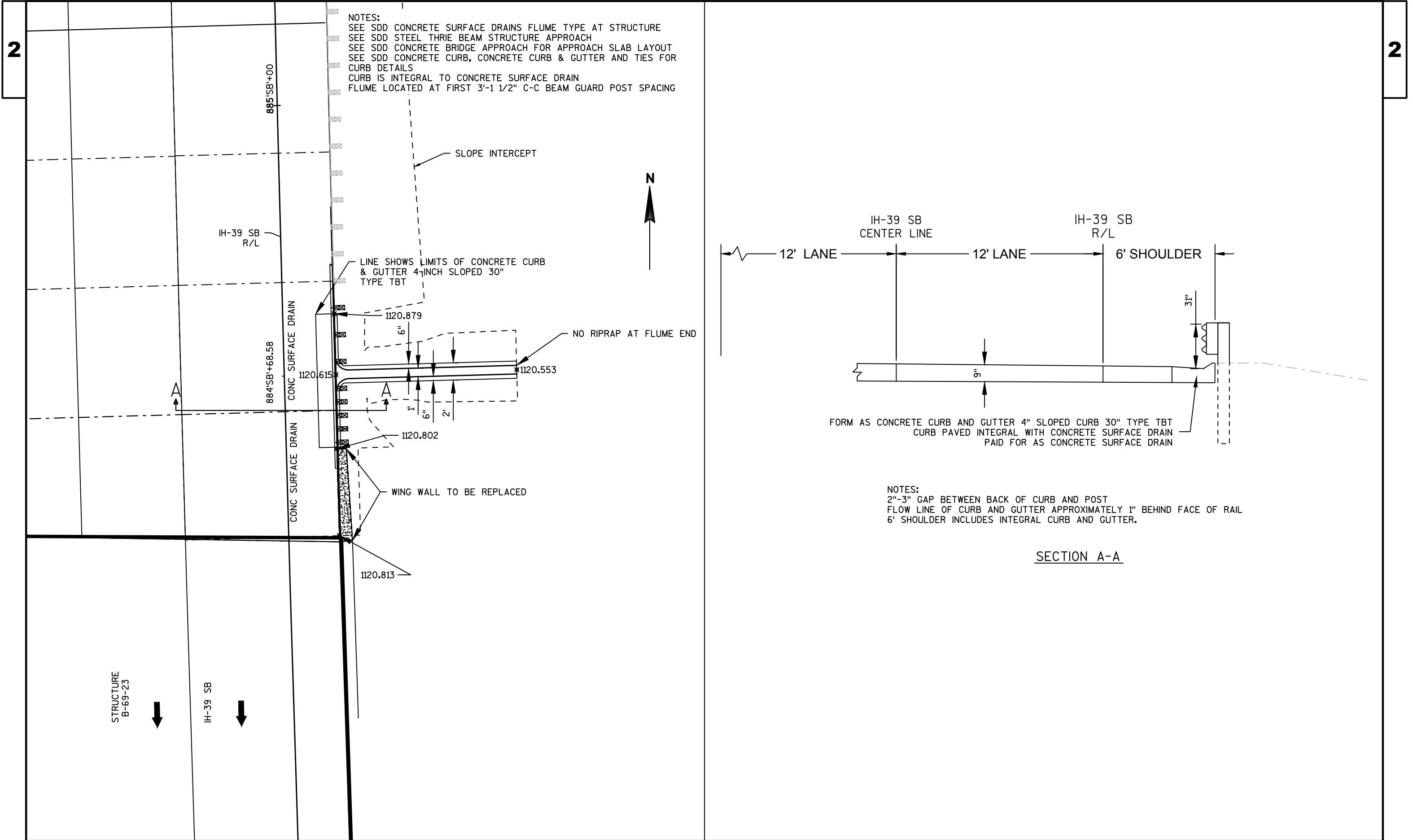
LOCATE LANDMARK REFERENCE MONUMENTS OUTSIDE THE CONSTRUCTION LIMITS AND WITHIN WISDOT RIGHT OF WAY. LOCATION TO BE APPROVED BY THE ENGINEER.

CONTRACTOR WILL SUPPLY ALL REQUIRED SURVEY MONUMENTS.

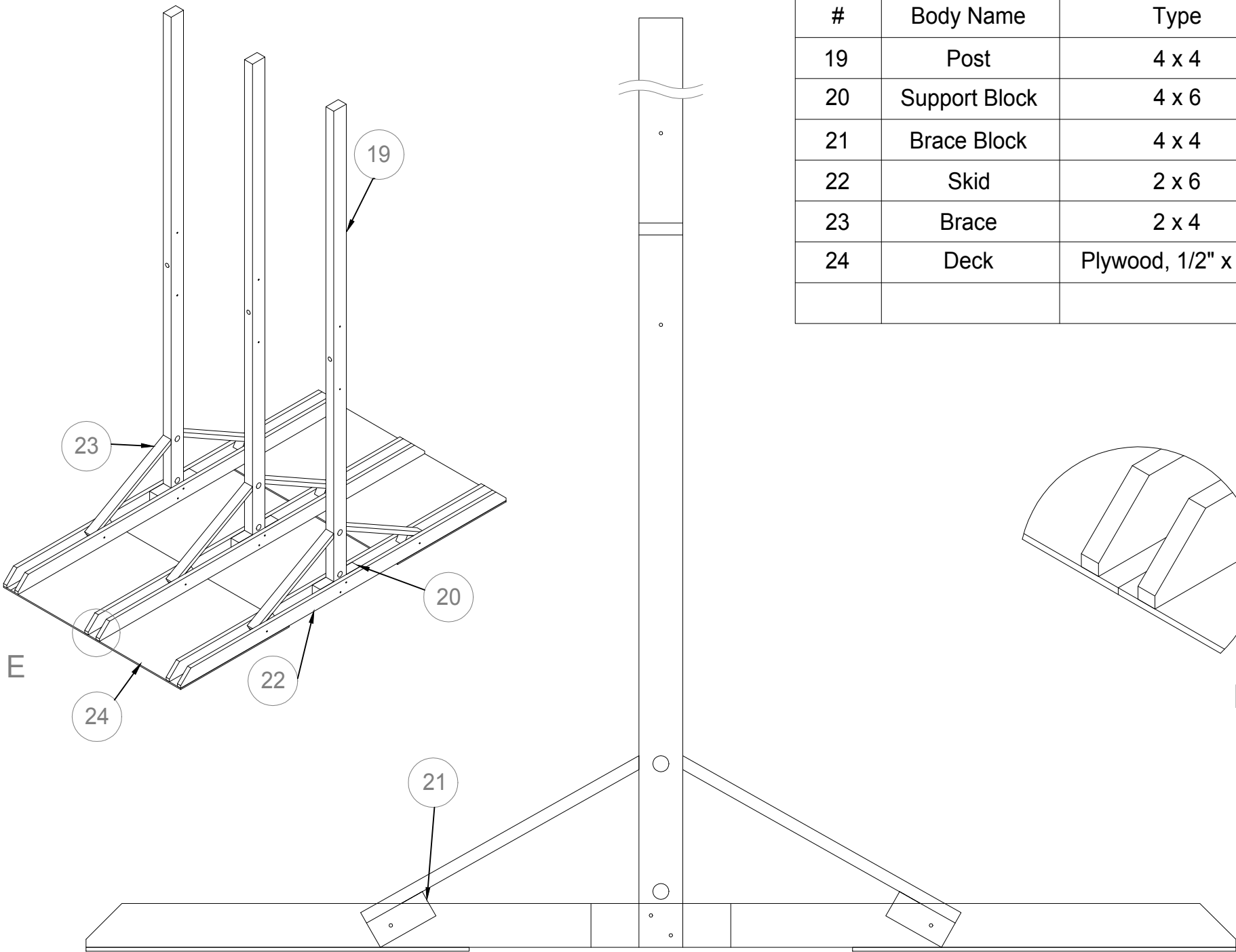
SECTION CORNER MONUMENT AND LANDMARK REFERENCE MONUMENT DETAIL







Wood Frame



Wood Frame Cut List				
#	Body Name	Type	Length	QTY.
19	Post	4 x 4	186"	3
20	Support Block	4 x 6	6"	6
21	Brace Block	4 x 4	8"	6
22	Skid	2 x 6	144"	6
23	Brace	2 x 4	40"	6
24	Deck	Plywood, 1/2" x 48"	75 1/4"	2

6a. All lumber is #2 yellow pine, and lumber and plywood shall be pressure treated for weather and insect resistance (Wolmanized or comparable treatment).

Frame Assembly

Three 3" screws
Brace to Post
TYP

Detail D
TYP x 3

Four 3" screws
Brace to Brace Block

15 14 14 16 17
TYP front and back

2" screws at 8" maximum
Plywood to each Skid
TYP

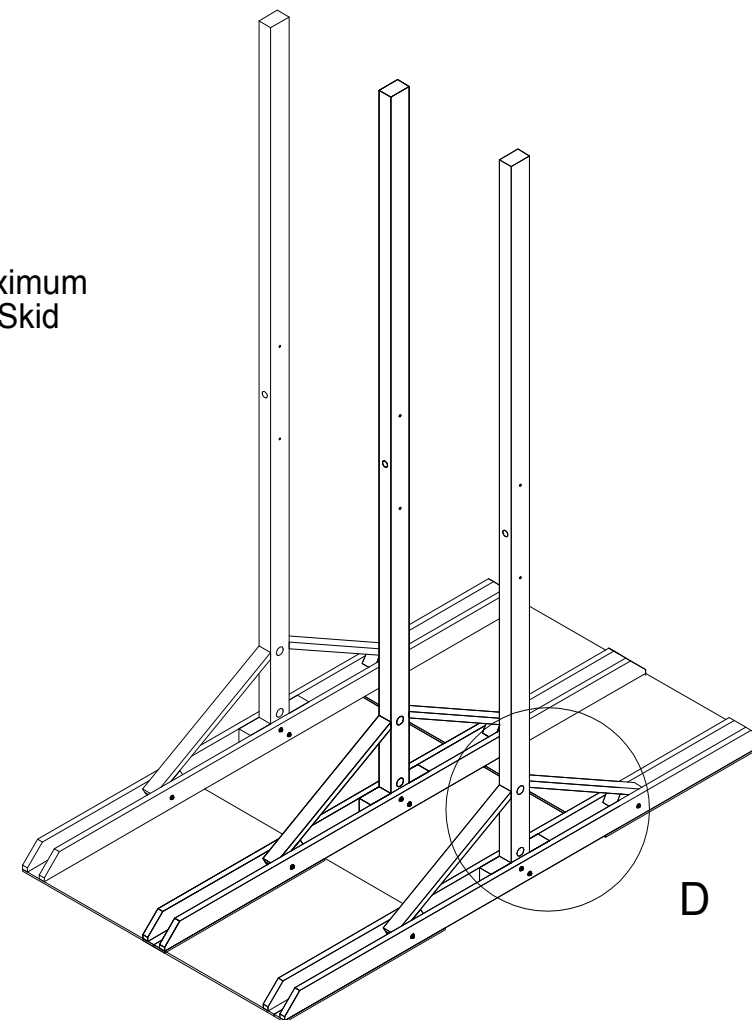
15 14 14 16 17

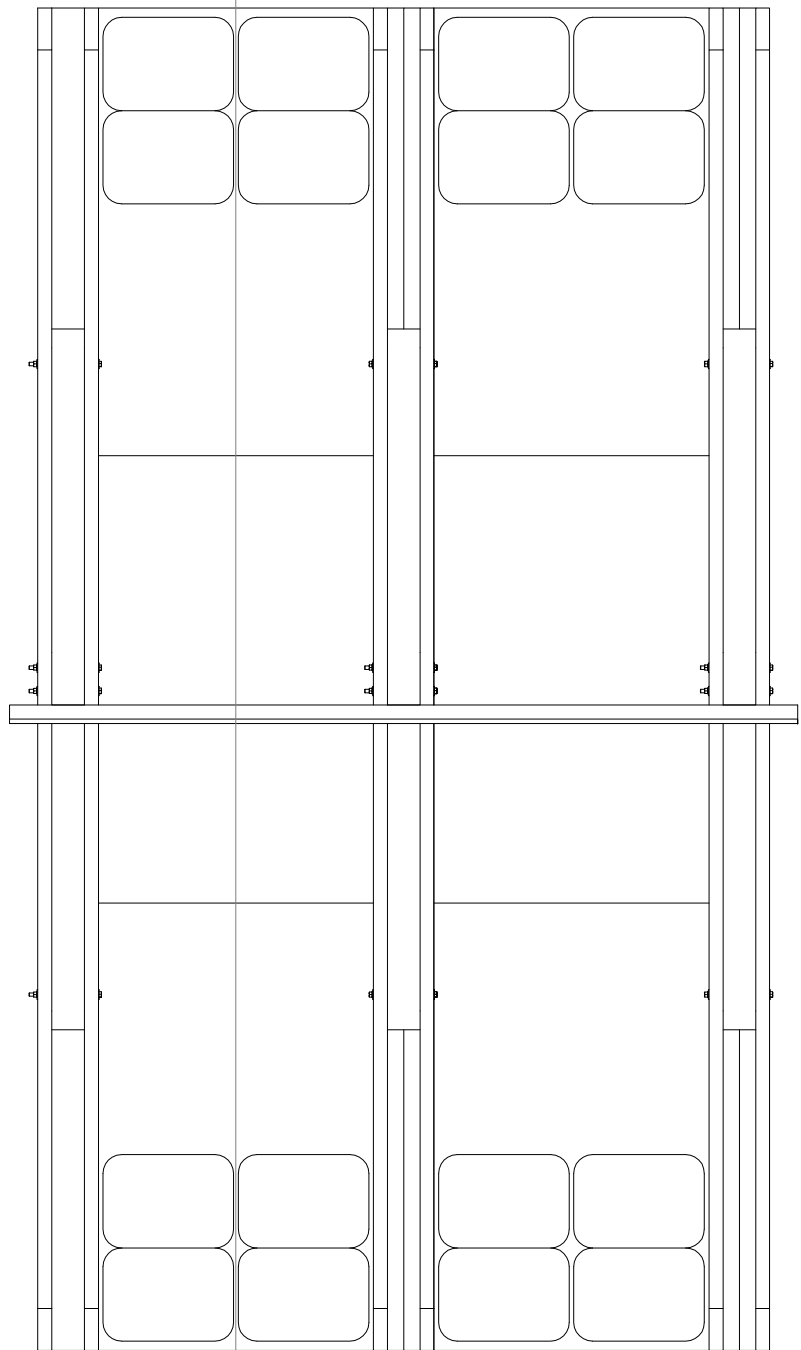
Four 3" screws
Skid to Support Block
TYP

Frame Assembly Parts

#	Part Name	QTY.
13	Wood Frame	1
14	Washer, 3/8 flat	24
15	Bolt, 3/8 x 7-1/2 hex	12
16	Washer, 3/8 lock	12
17	Nut, 3/8 hex	12
18	Deck Screws as needed*	

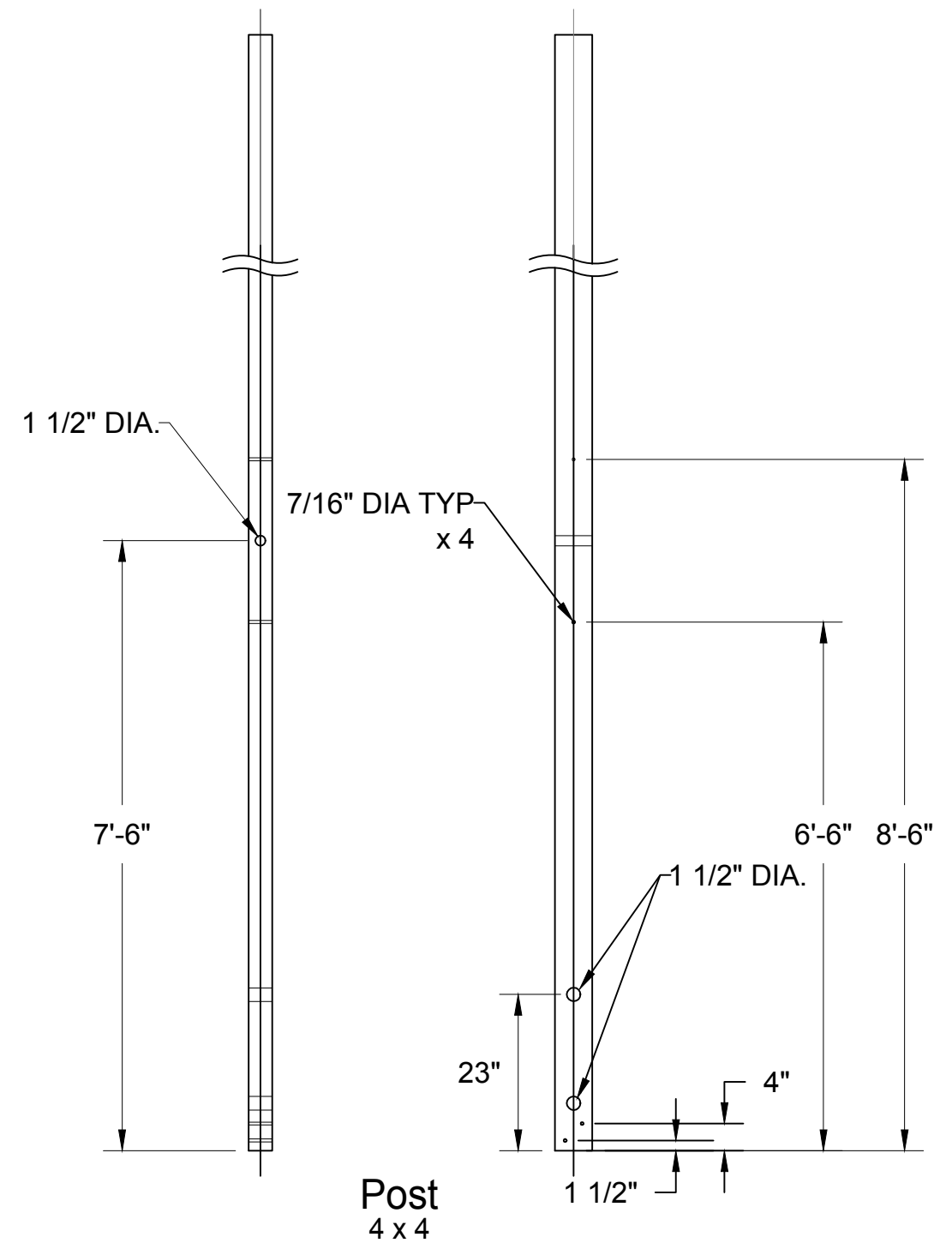
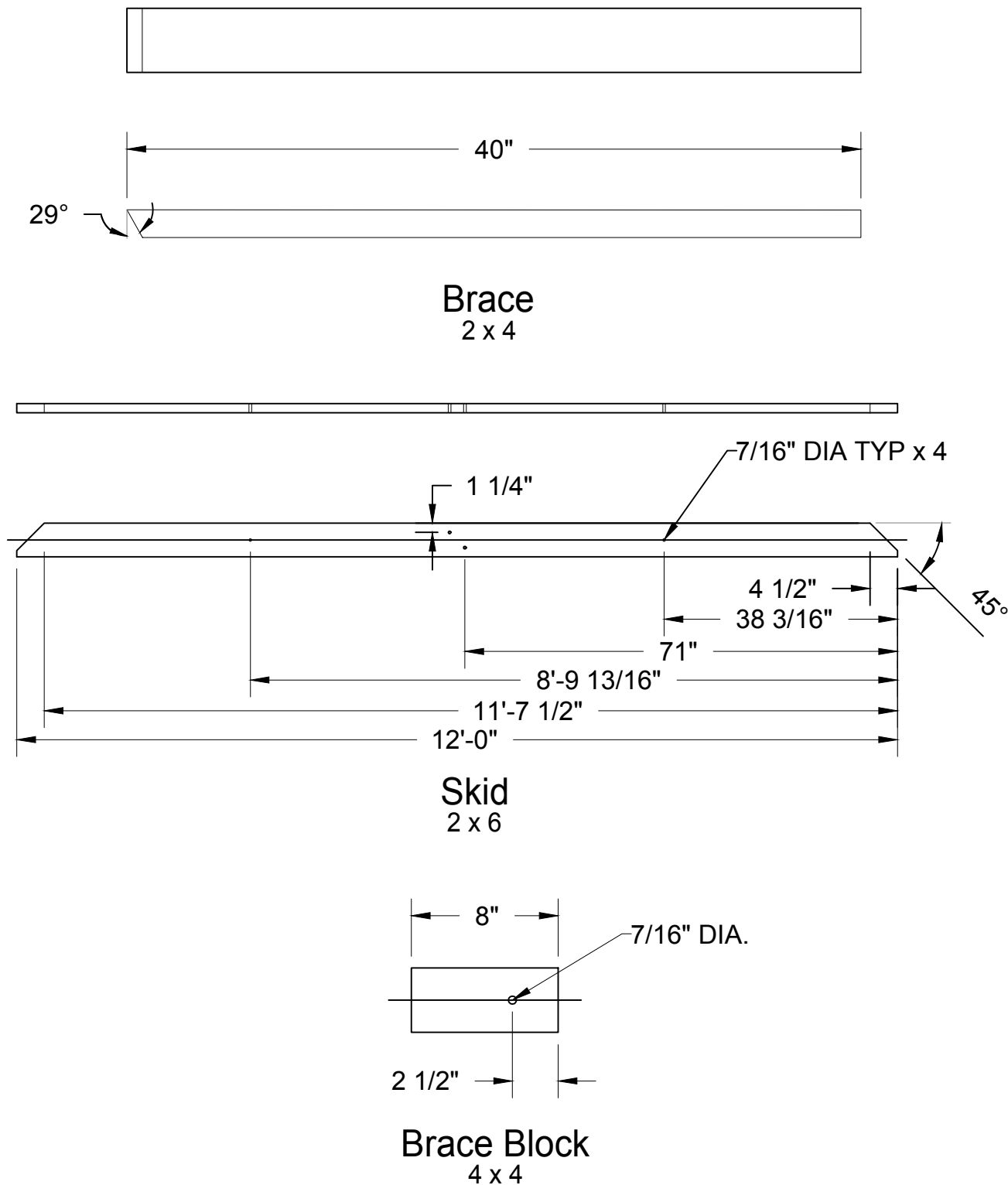
*Use Deck Screws or other screws designed for outdoor use. Minimum size #8 for 2" screws and #9 for 3" screws. Drywall screws are not acceptable.





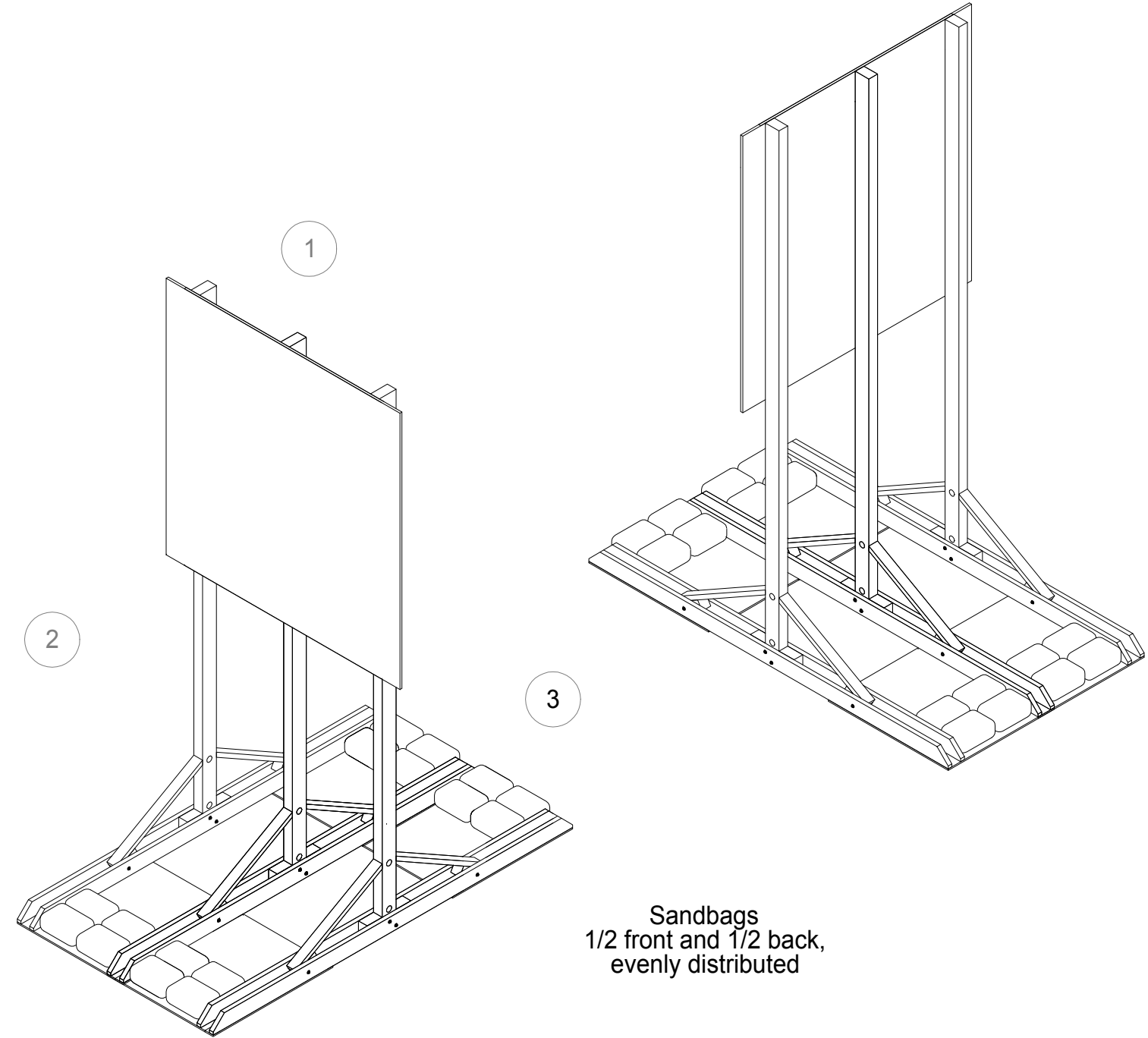
Impact Path
(Vehicle $\varnothing$ midpoint between Posts 1 and 2)

Wood Frame Parts



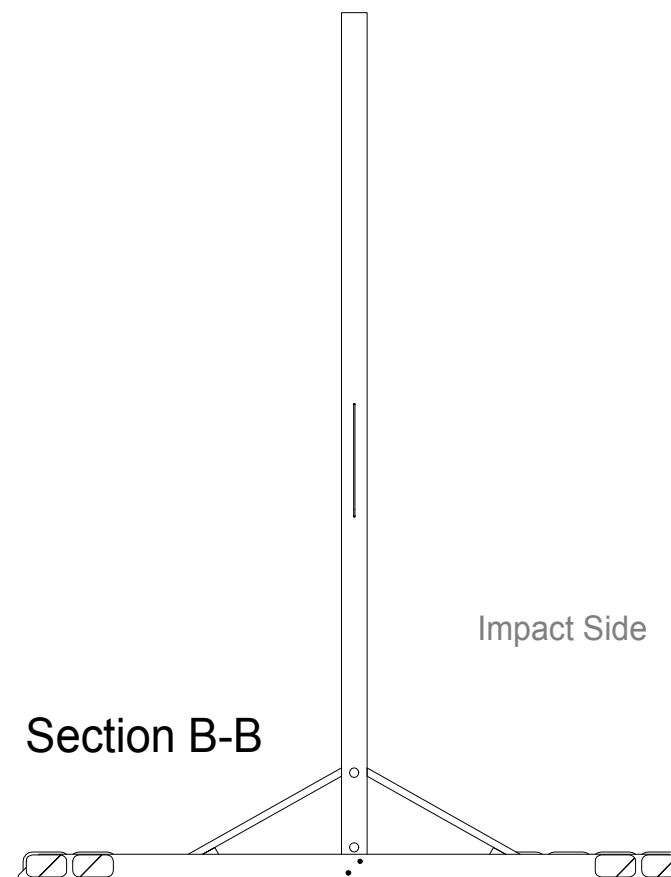
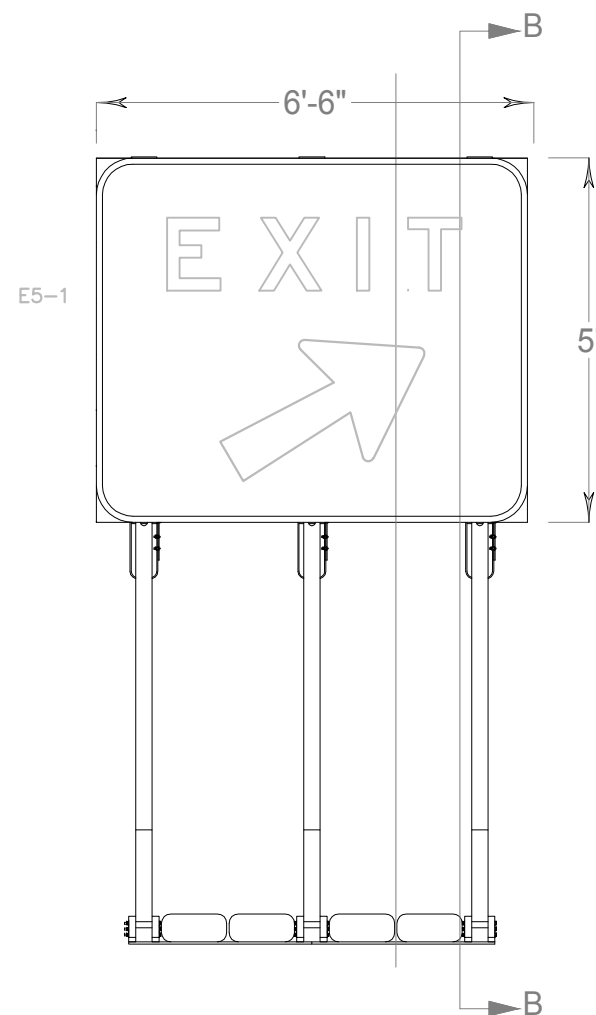
Assembly Parts		
#	Part Name	QTY.
1	Panel	1
2	Frame	1
3	40lb Sandbag	16

Isometric Views



Sandbags
1/2 front and 1/2 back,
evenly distributed

Elevation View

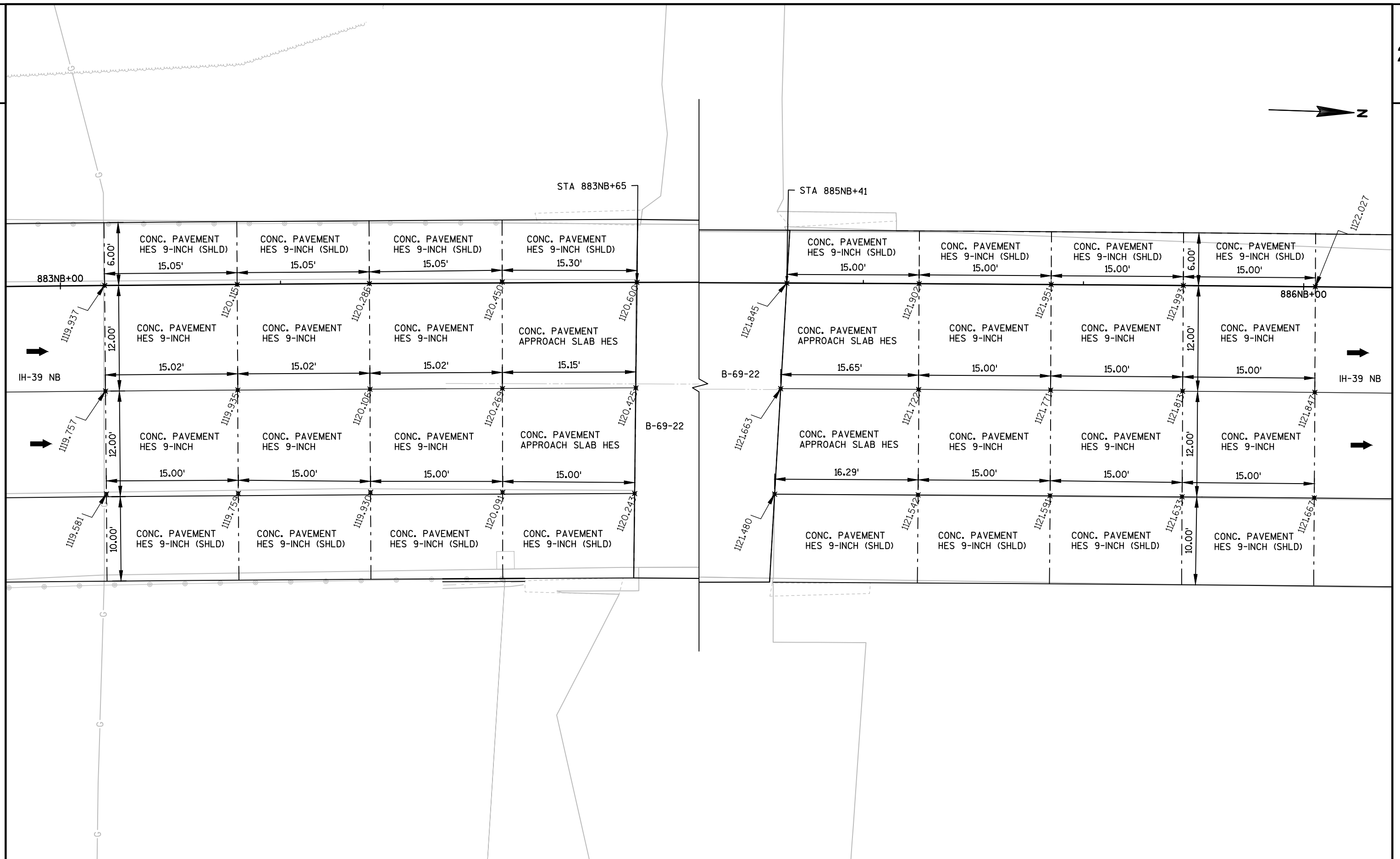


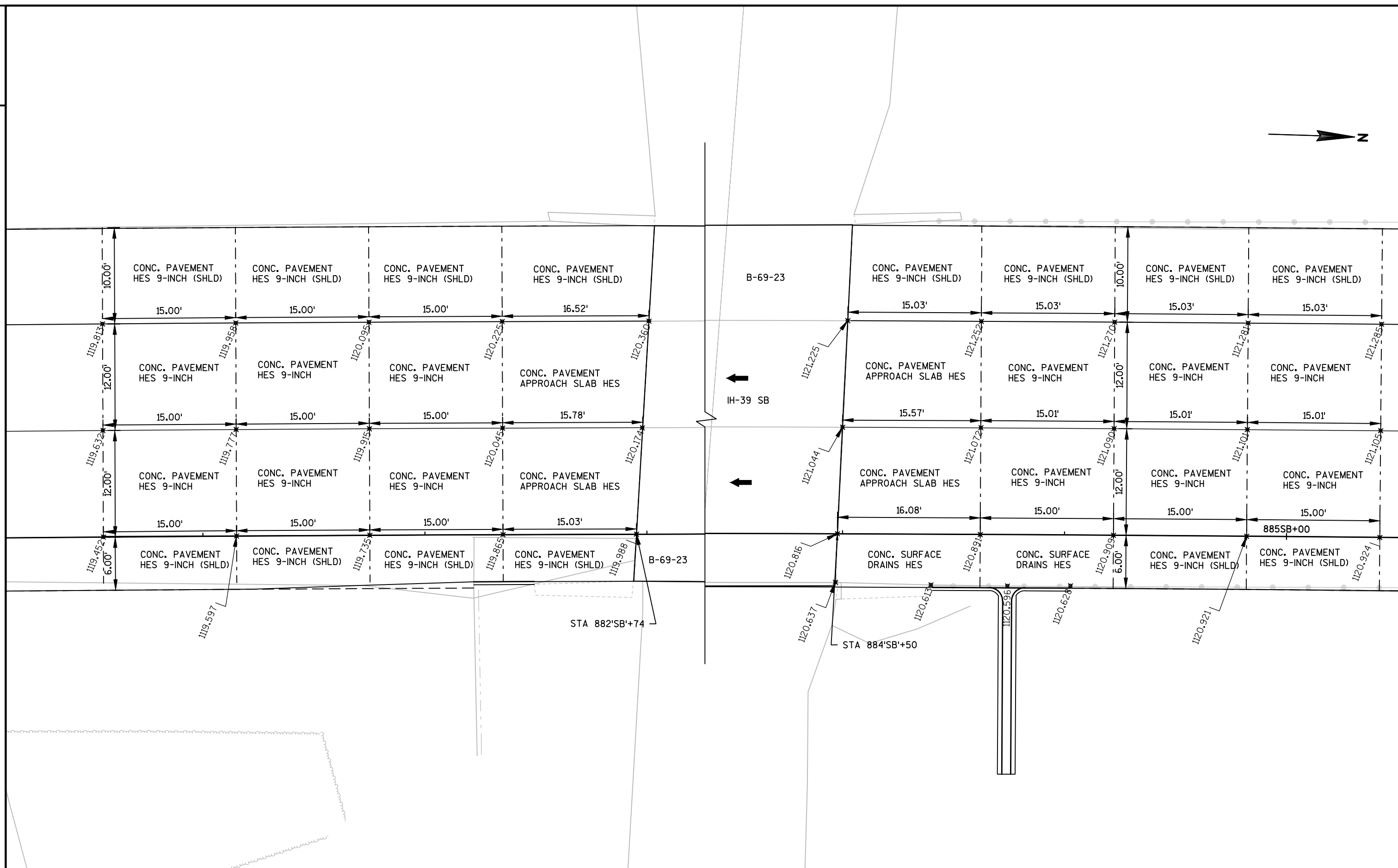
Forged Wire Rope Clip
for 1/4" Wire Rope
(see 3a)

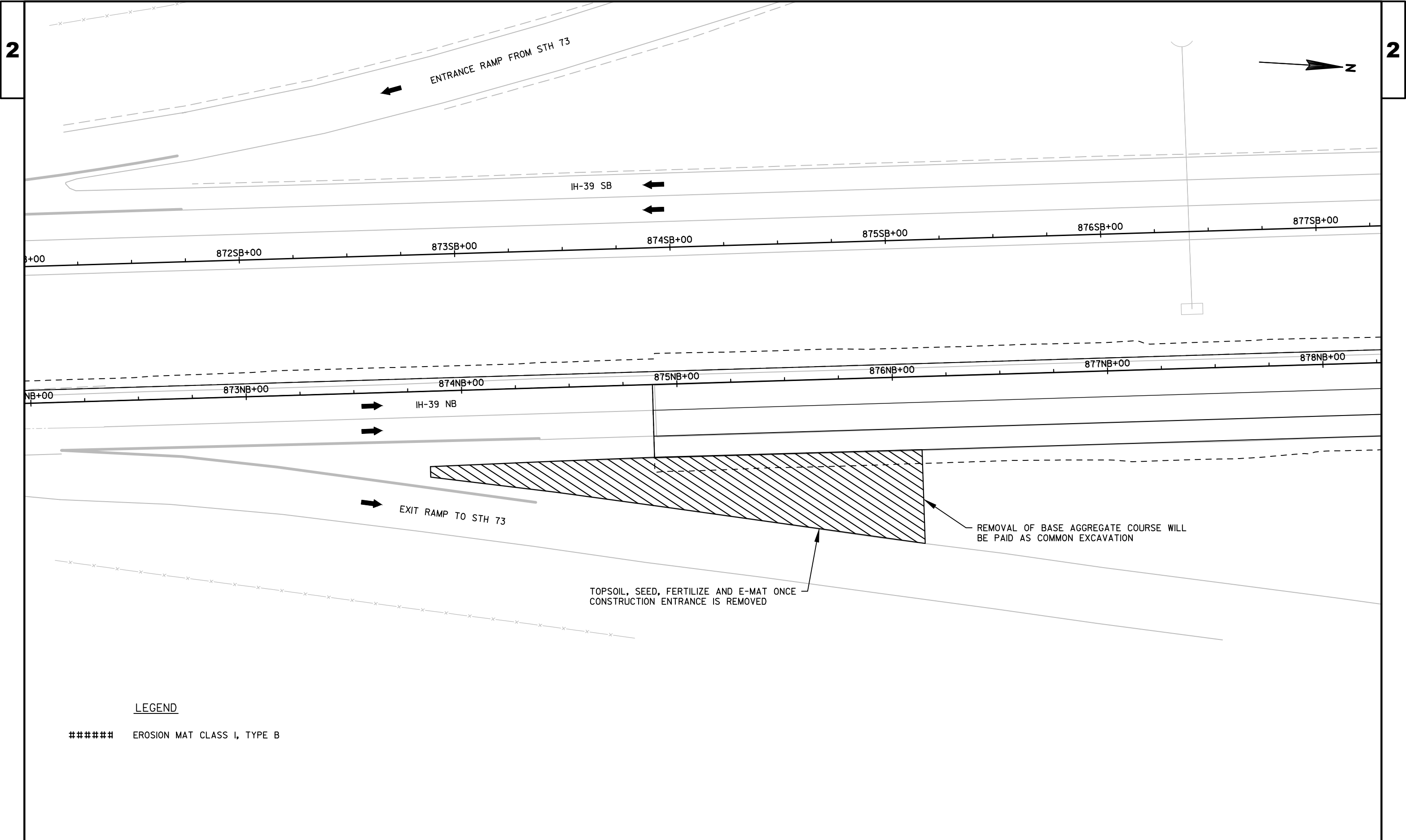
1/4" Wire Rope
70" long

Wire Rope
(from back side)
Assembly

3a. Place Wire Rope Clips as shown, 4 at each Post, with the U-bolt portions on the dead end of the cable and the saddle portions on the live end. Follow manufacturer's instructions.

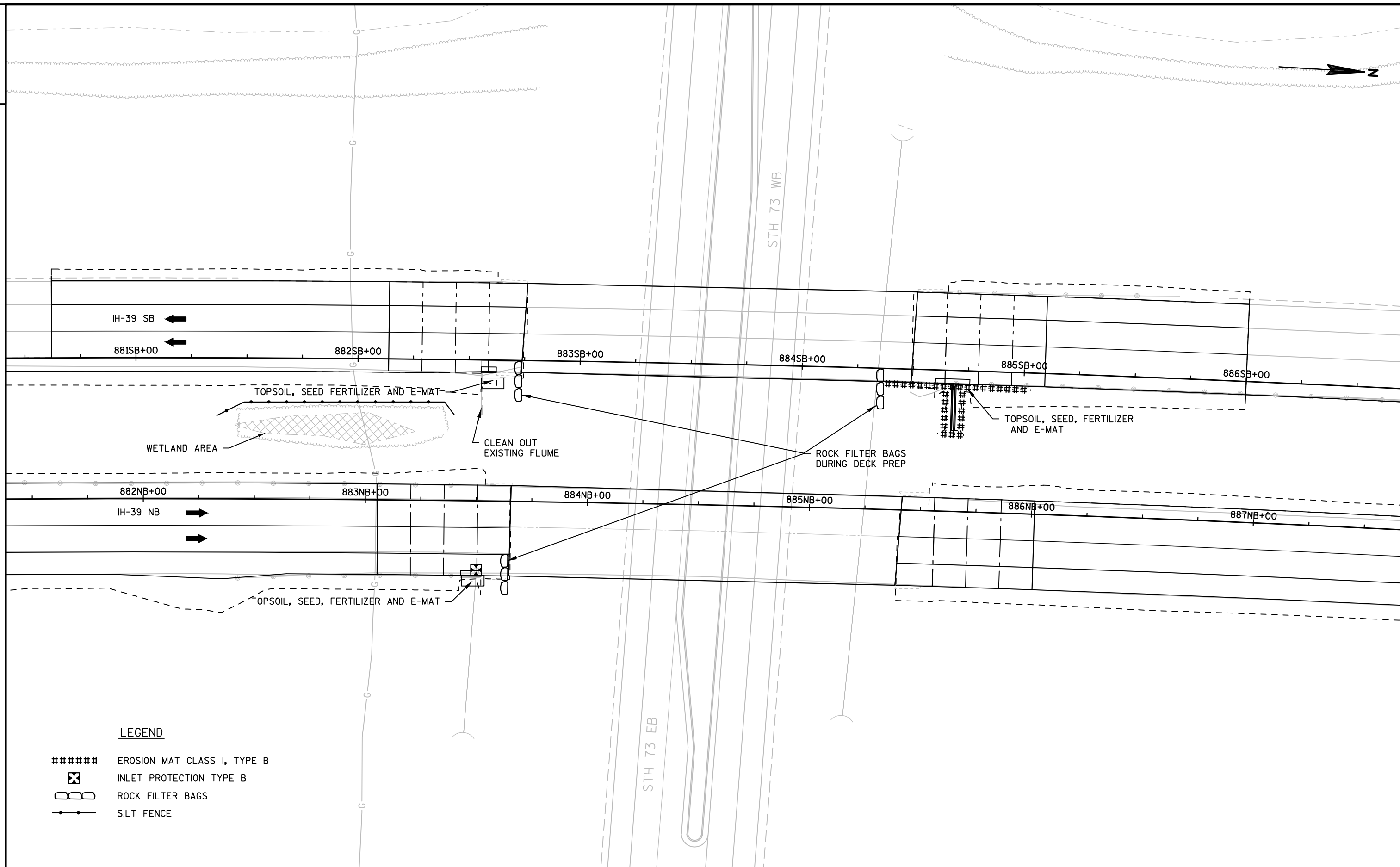






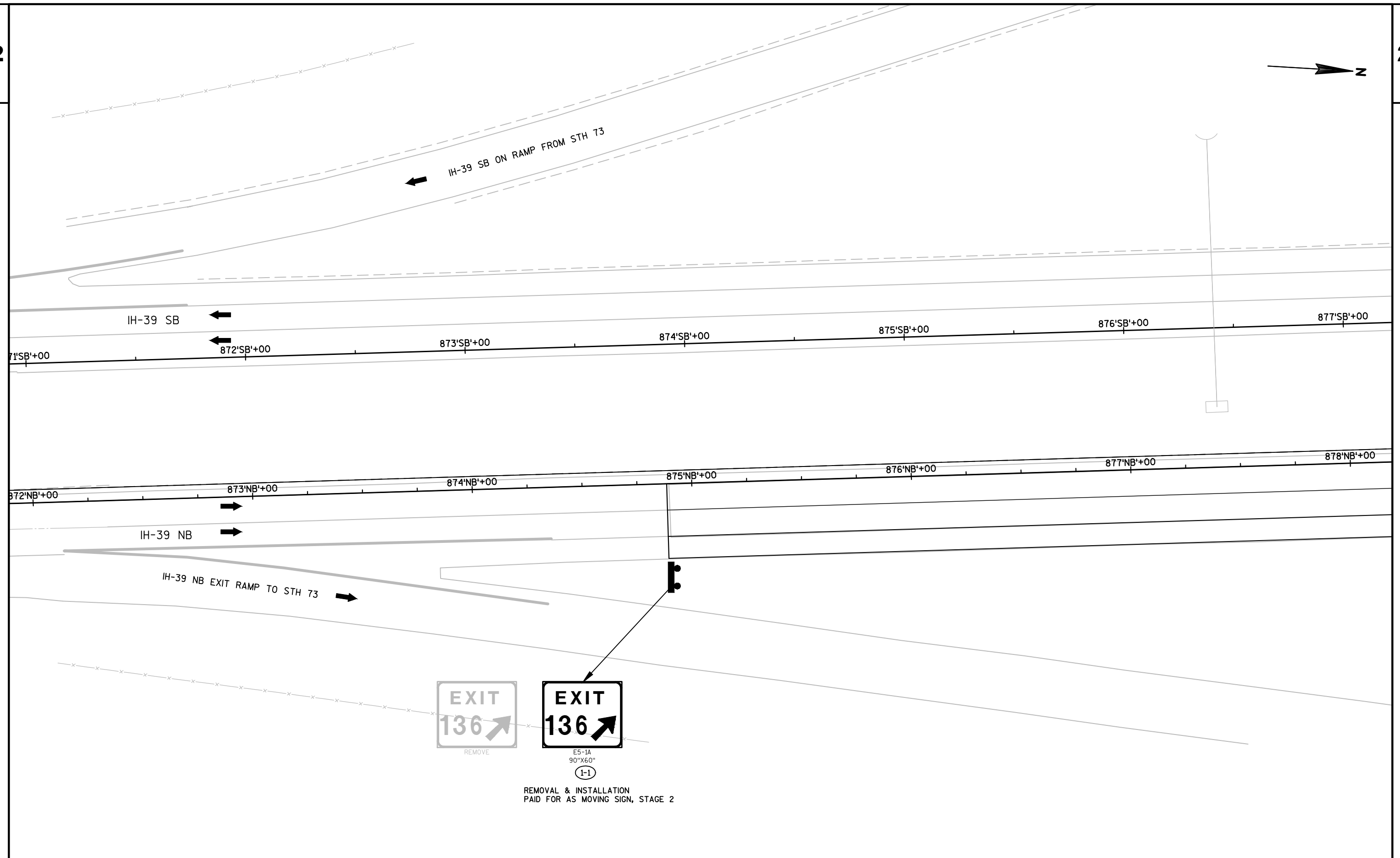
LEGEND

EROSION MAT CLASS I, TYPE B



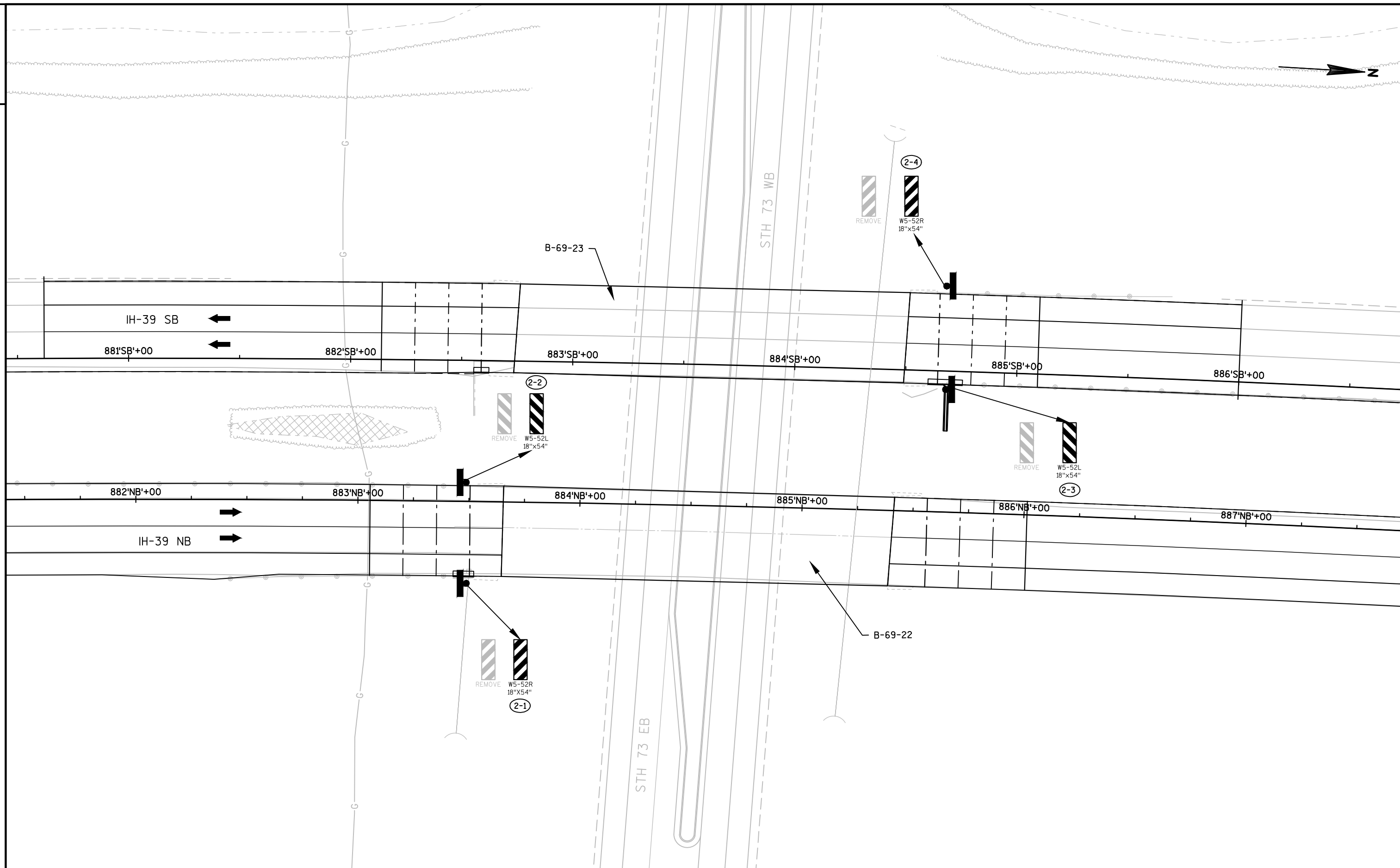
LEGEND

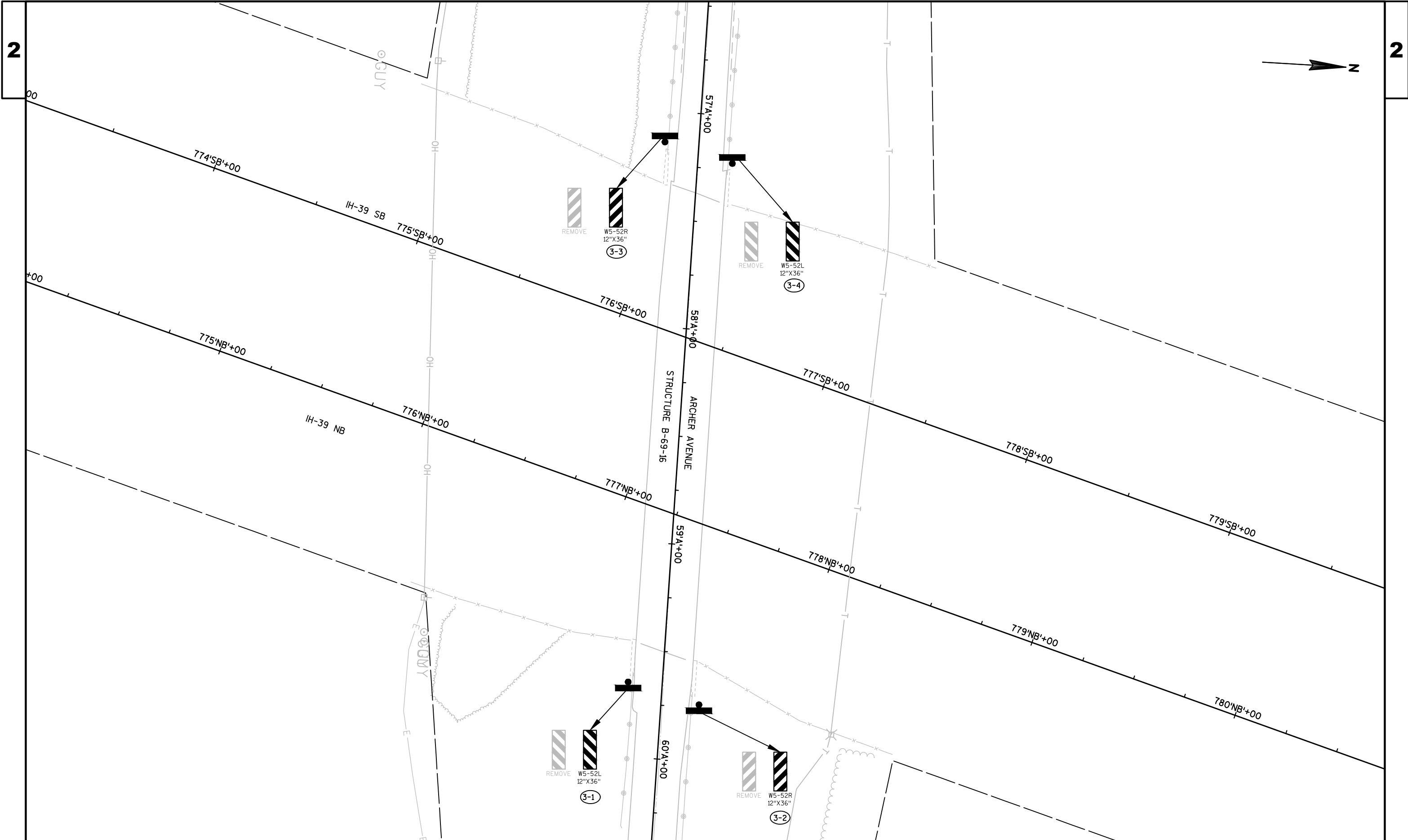
- ##### EROSION MAT CLASS I, TYPE B
- ⊗ INLET PROTECTION TYPE B
- ⊖ ROCK FILTER BAGS
- SILT FENCE

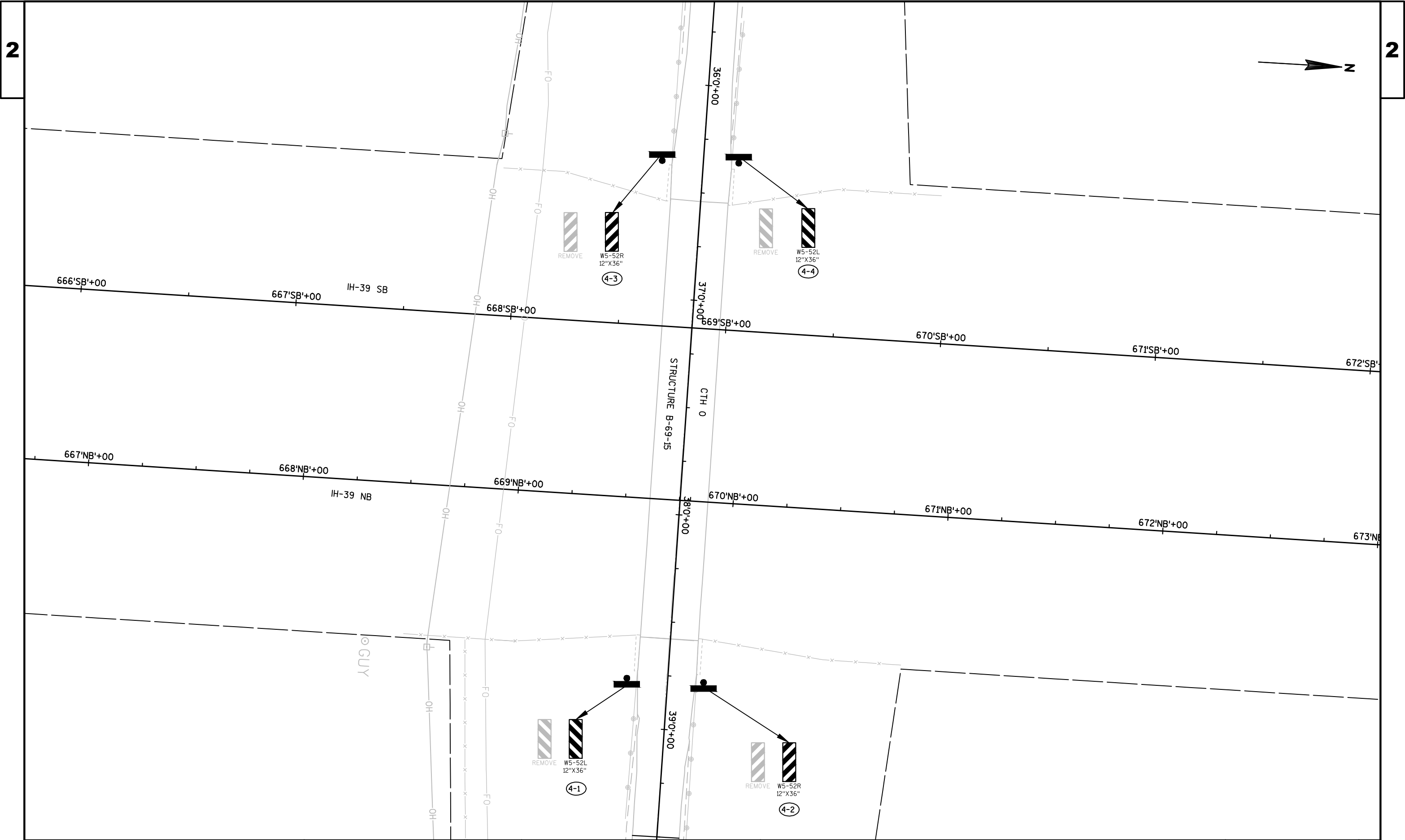


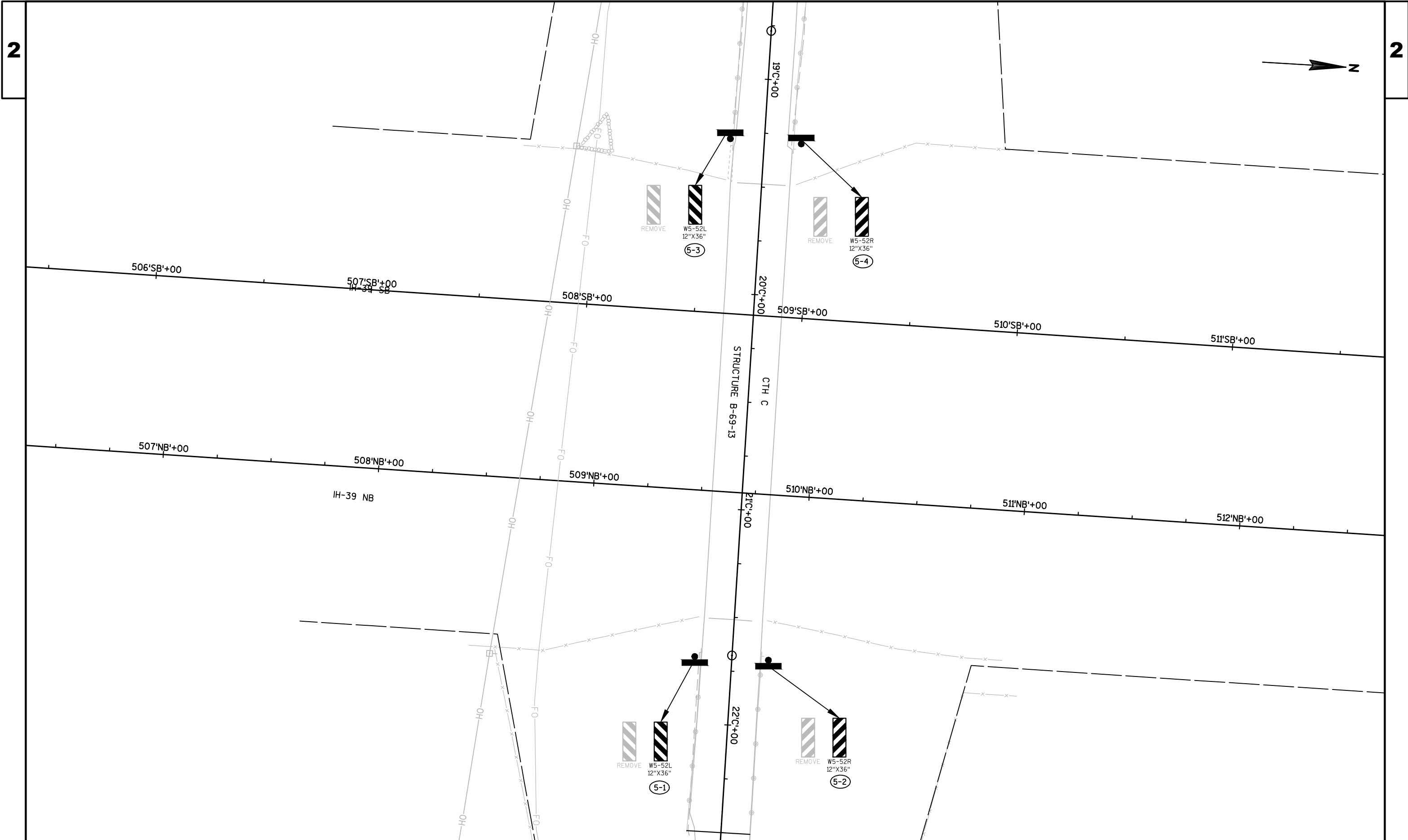
2

2



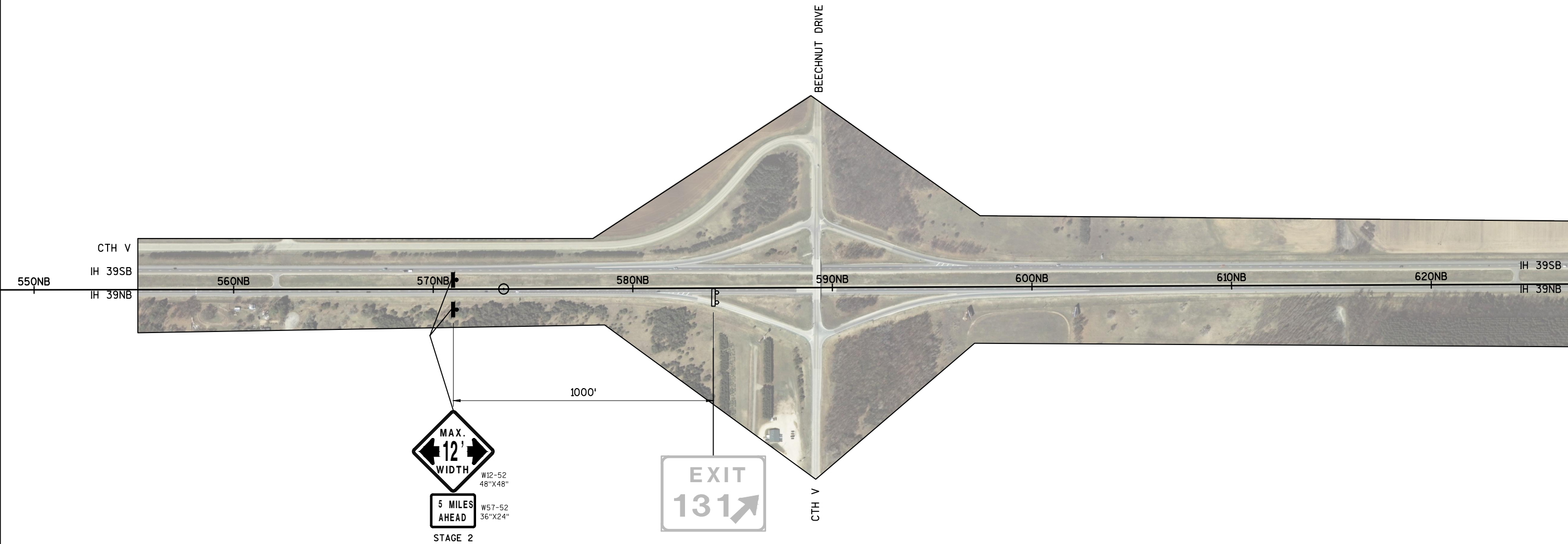




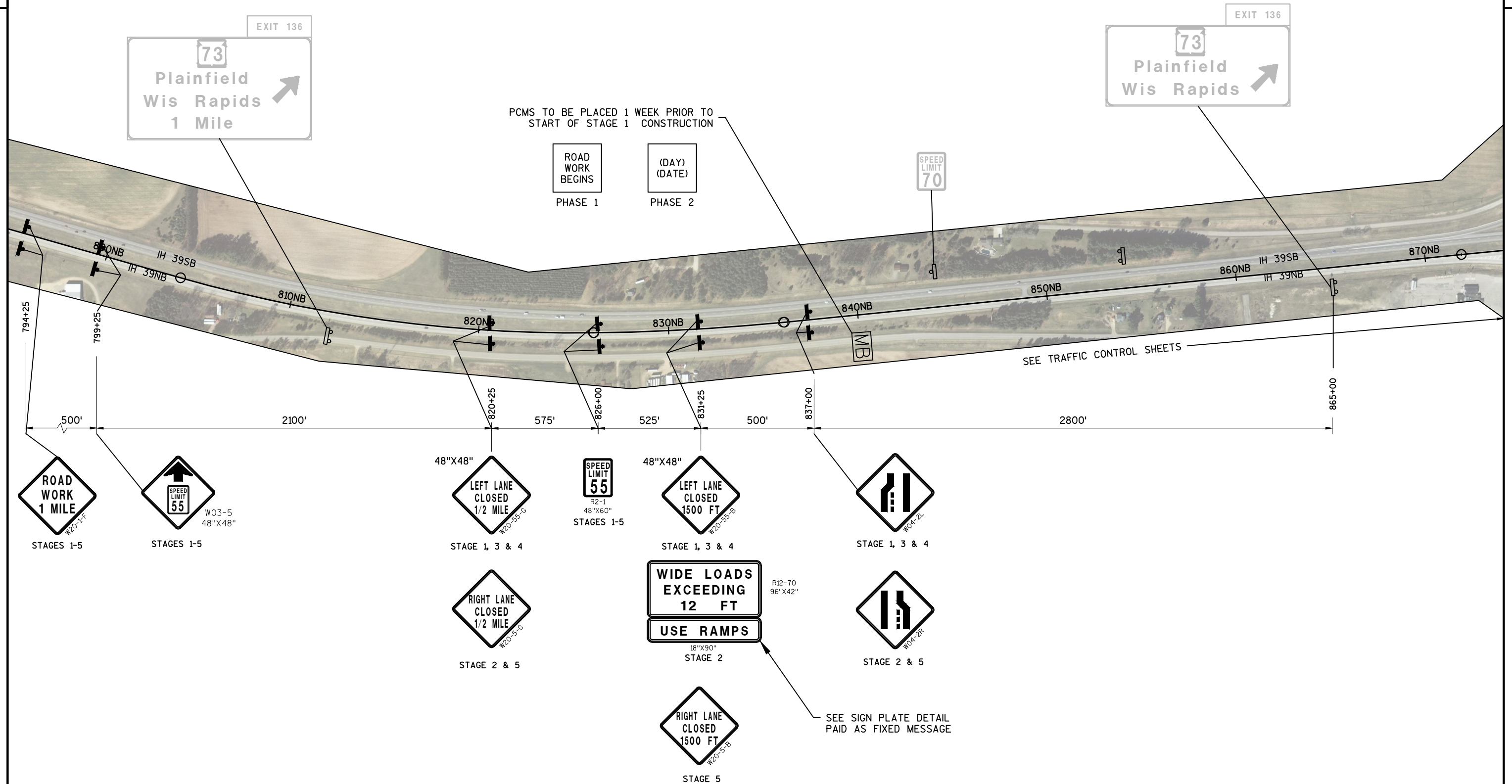


NOTE:
SEE SDD (15D12) TRAFFIC CONTROL LANE CLOSURE & TRAFFIC CONTROL,
LANE CLOSURE, SPEED REDUCTION (STAGE 1 & 5)

SEE SDD (15D3) TRAFFIC CONTROL, LANE CLOSURE, SPEED GREATER THAN
40 MPH WITH BARRIER (STAGE 2 & 3)



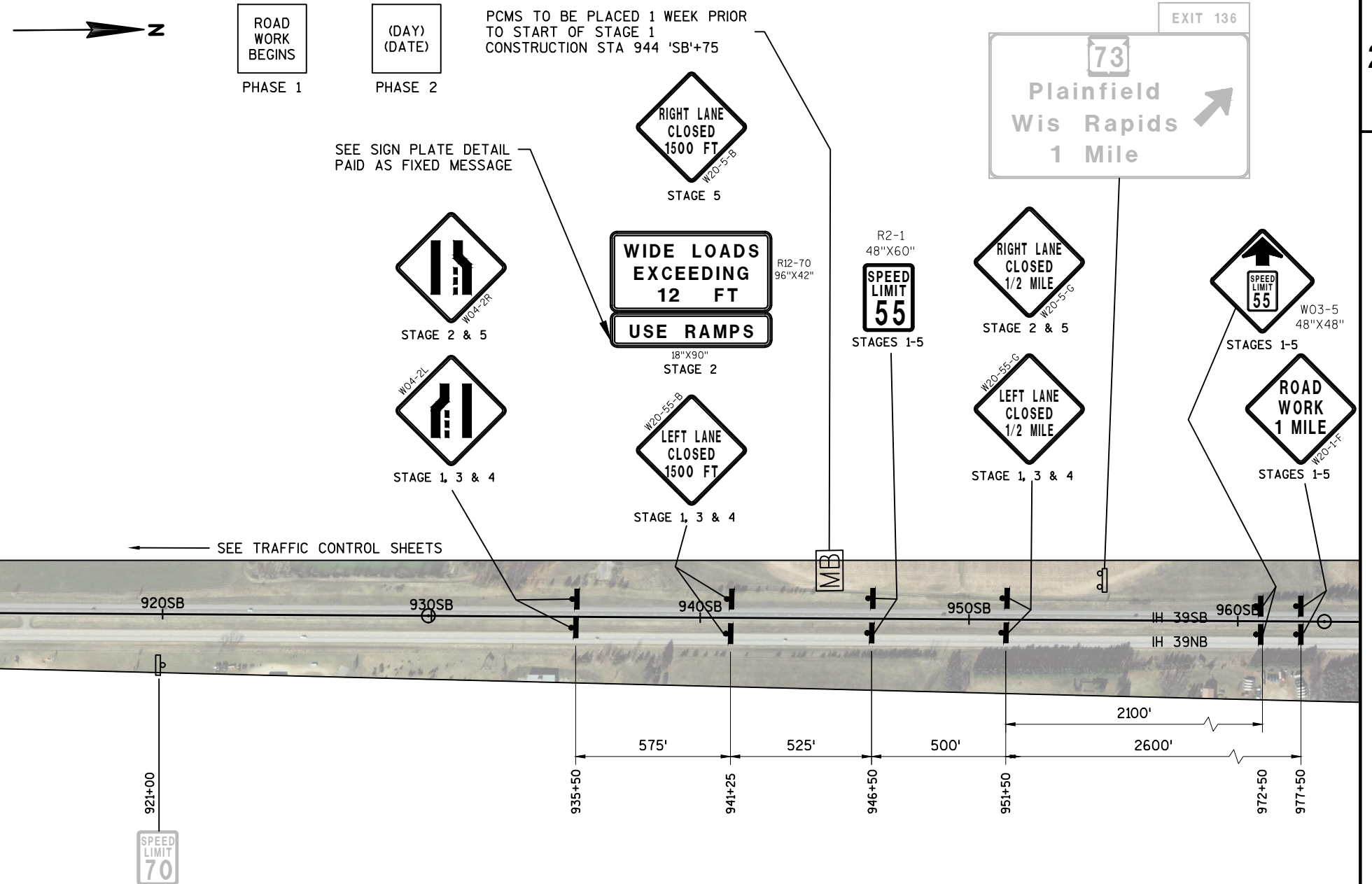
NOTE:
SEE SDD (15D12) TRAFFIC CONTROL LANE CLOSURE & TRAFFIC CONTROL,
LANE CLOSURE, SPEED REDUCTION (STAGES 1, 4 & 5)
SEE SDD (15D3) TRAFFIC CONTROL, LANE CLOSURE, SPEED GREATER THAN
40 MPH WITH BARRIER (STAGES 2 & 3)



2

NOTE:
SEE SDD (15D12) TRAFFIC CONTROL LANE CLOSURE & TRAFFIC CONTROL,
LANE CLOSURE, SPEED REDUCTION (STAGES 1, 4 & 5)

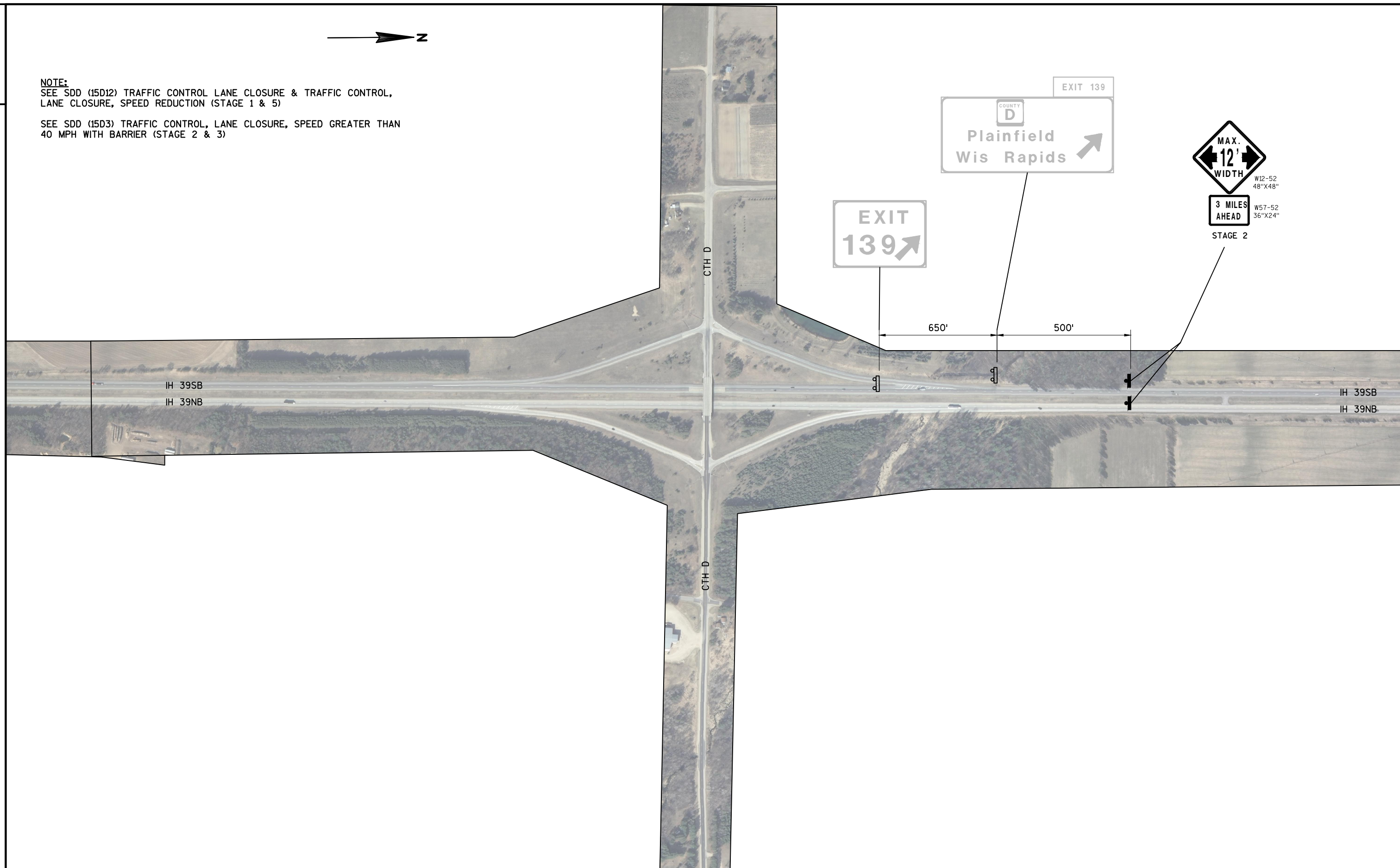
SEE SDD (15D3) TRAFFIC CONTROL, LANE CLOSURE, SPEED GREATER THAN
40 MPH WITH BARRIER (STAGES 2 & 3)

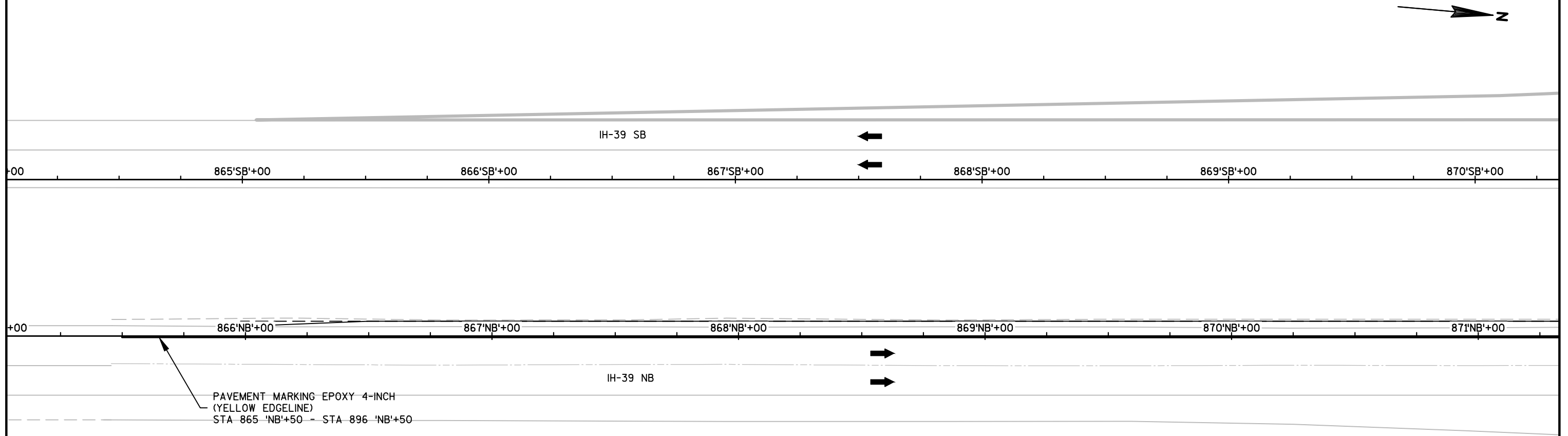


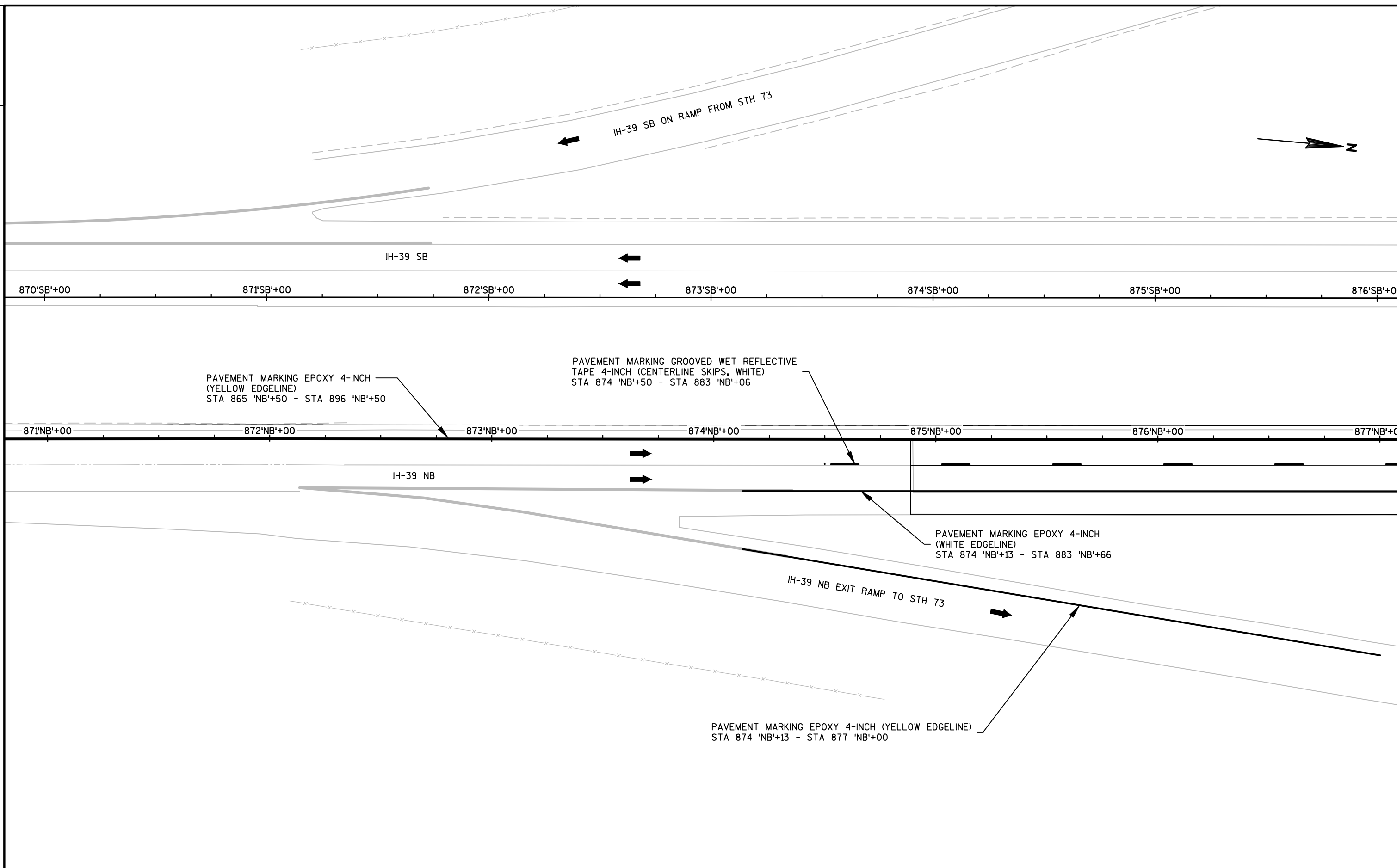
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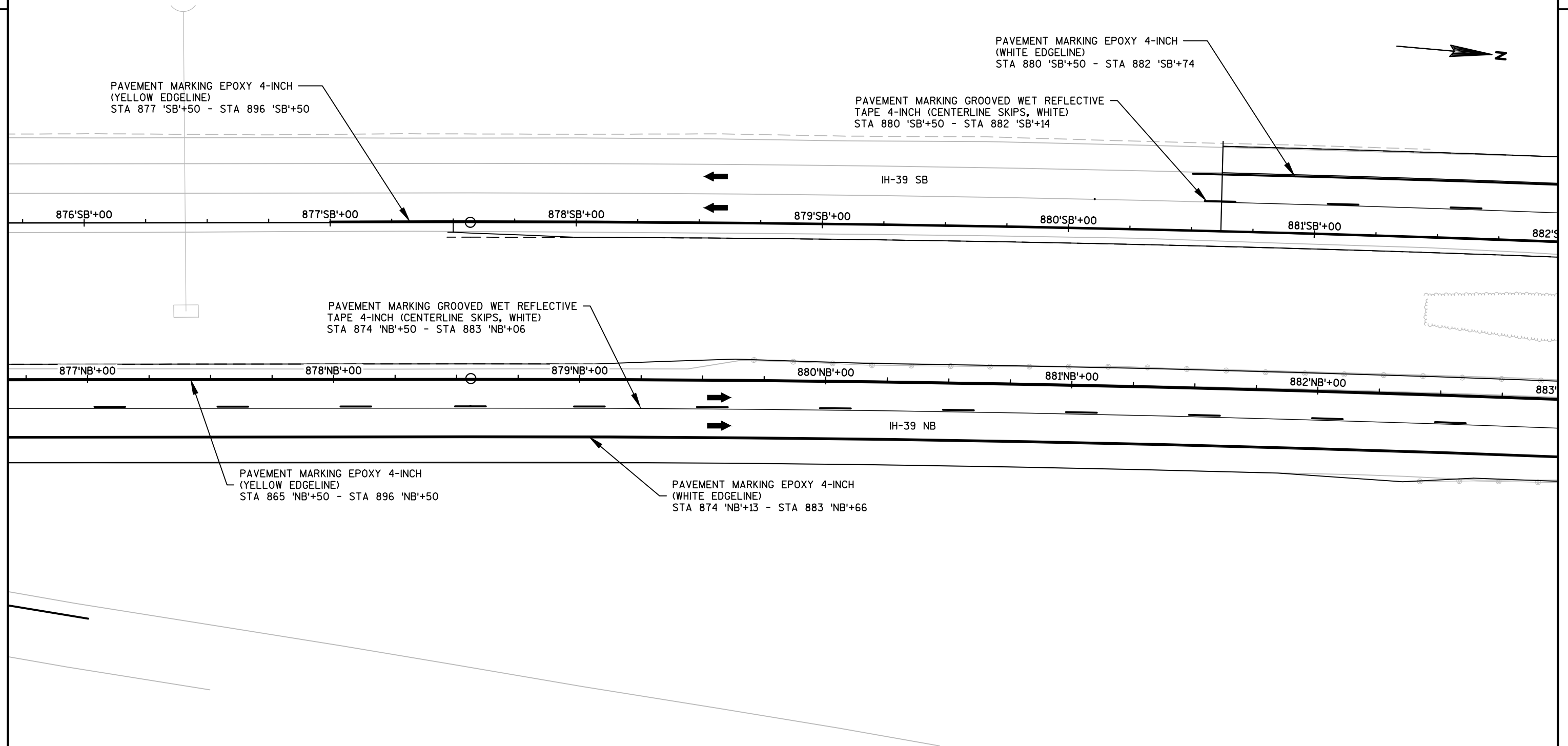
NOTE:
SEE SDD (15D12) TRAFFIC CONTROL LANE CLOSURE & TRAFFIC CONTROL,
LANE CLOSURE, SPEED REDUCTION (STAGE 1 & 5)

SEE SDD (15D3) TRAFFIC CONTROL, LANE CLOSURE, SPEED GREATER THAN
40 MPH WITH BARRIER (STAGE 2 & 3)



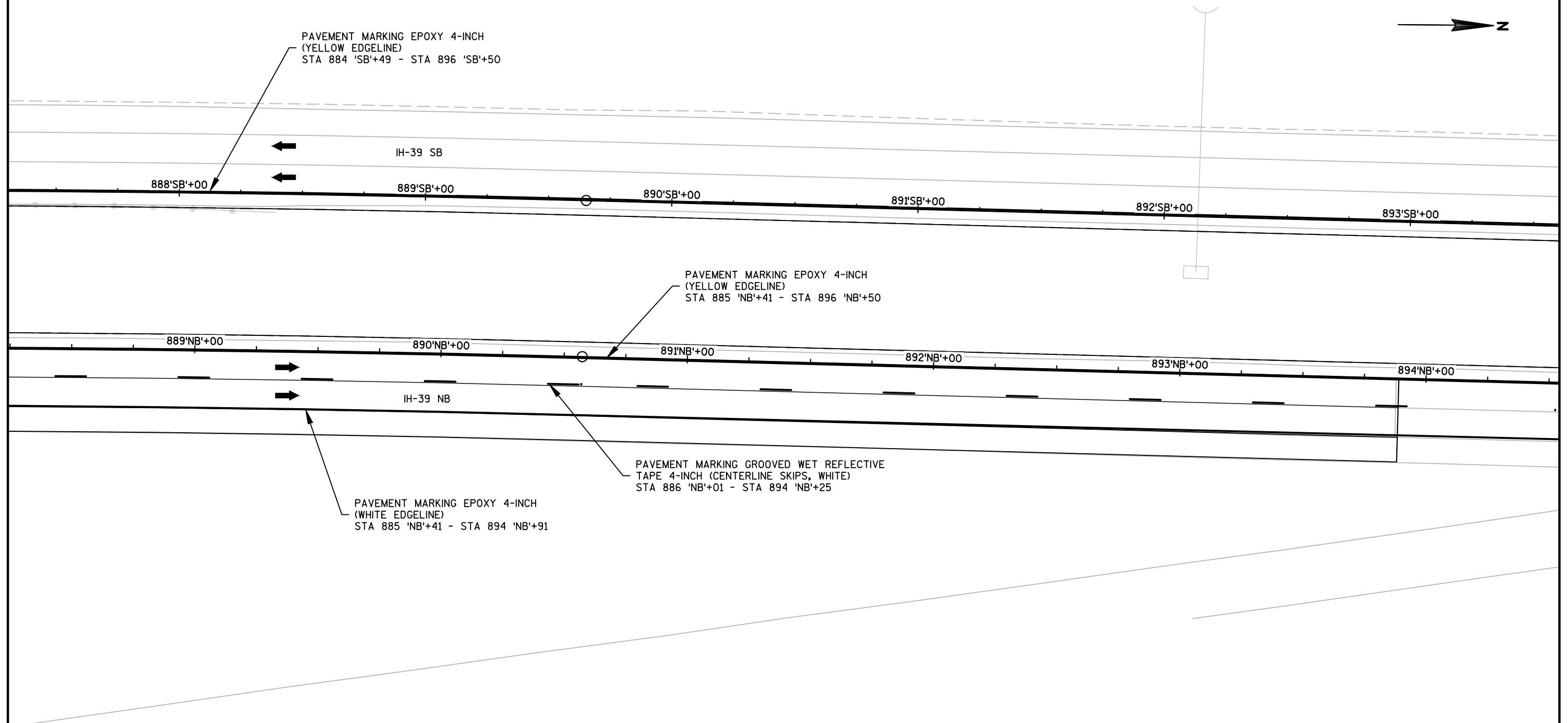


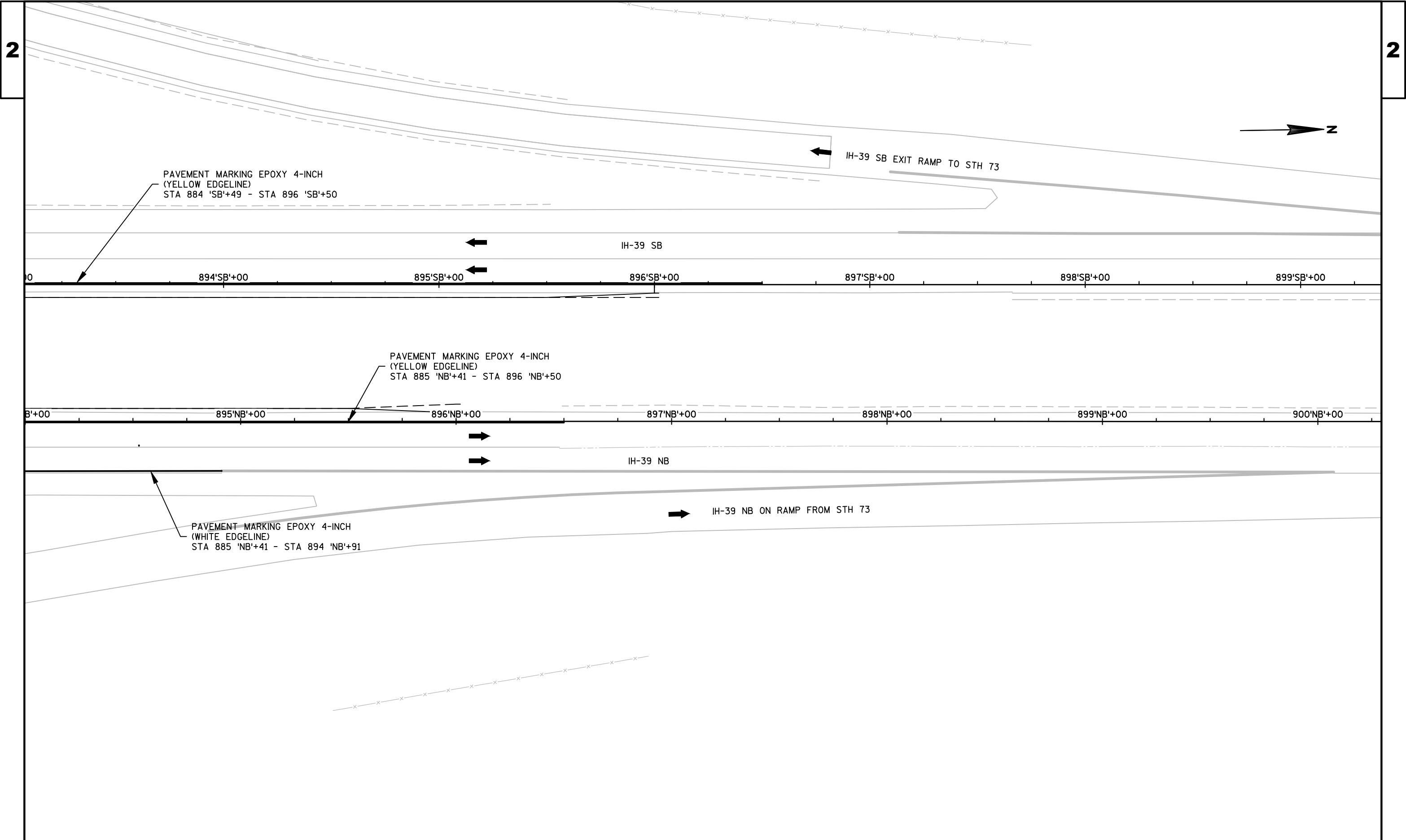


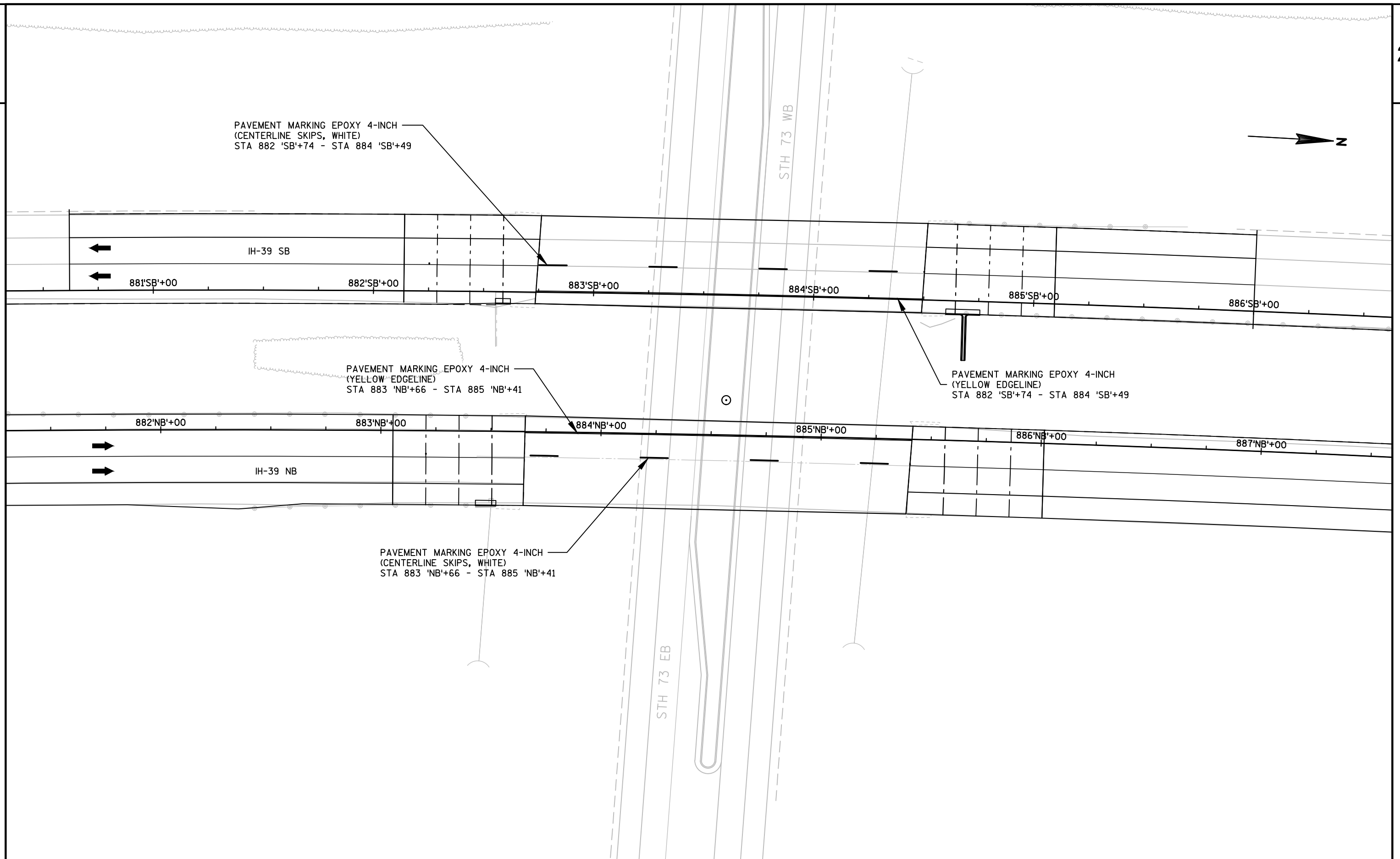


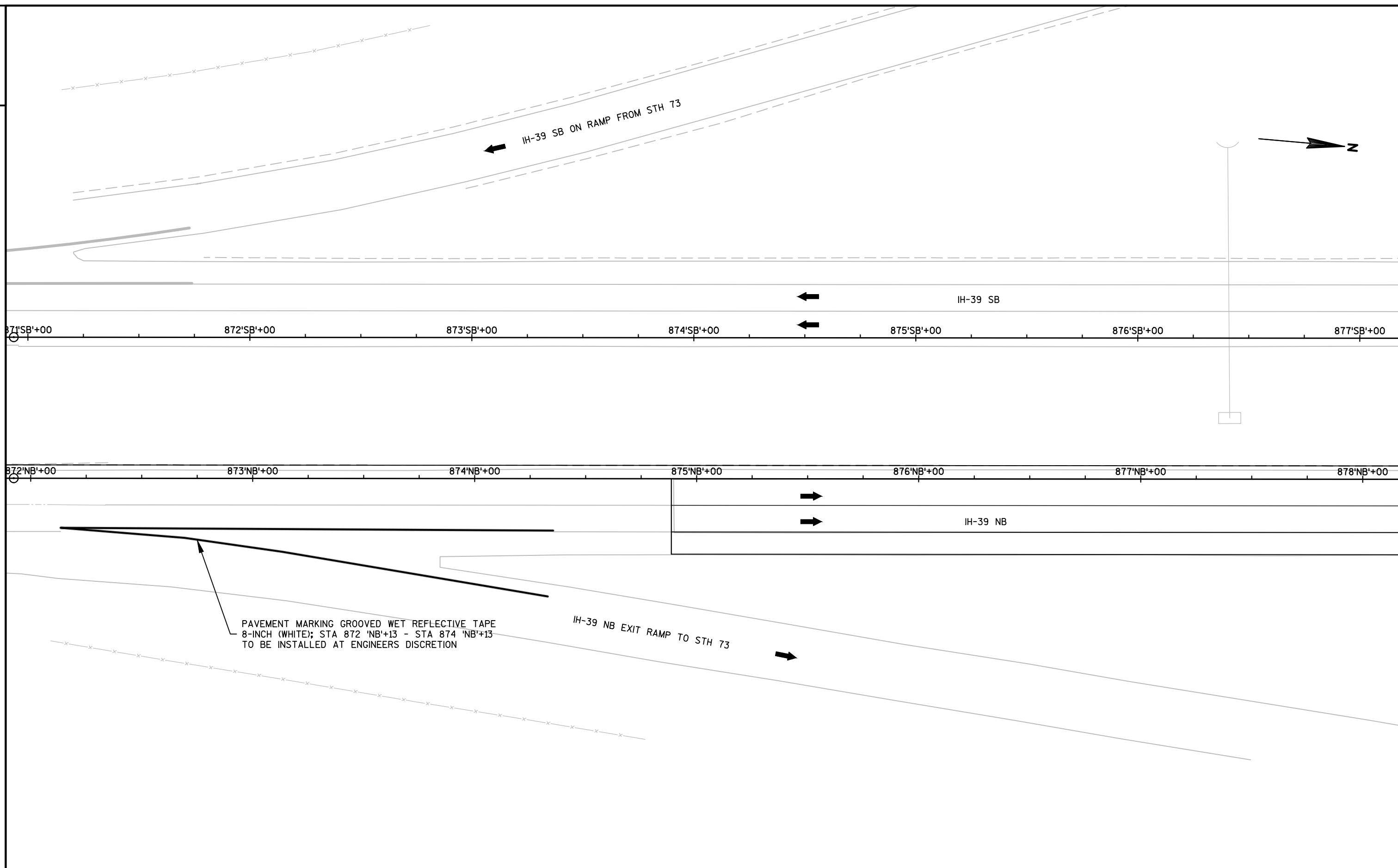
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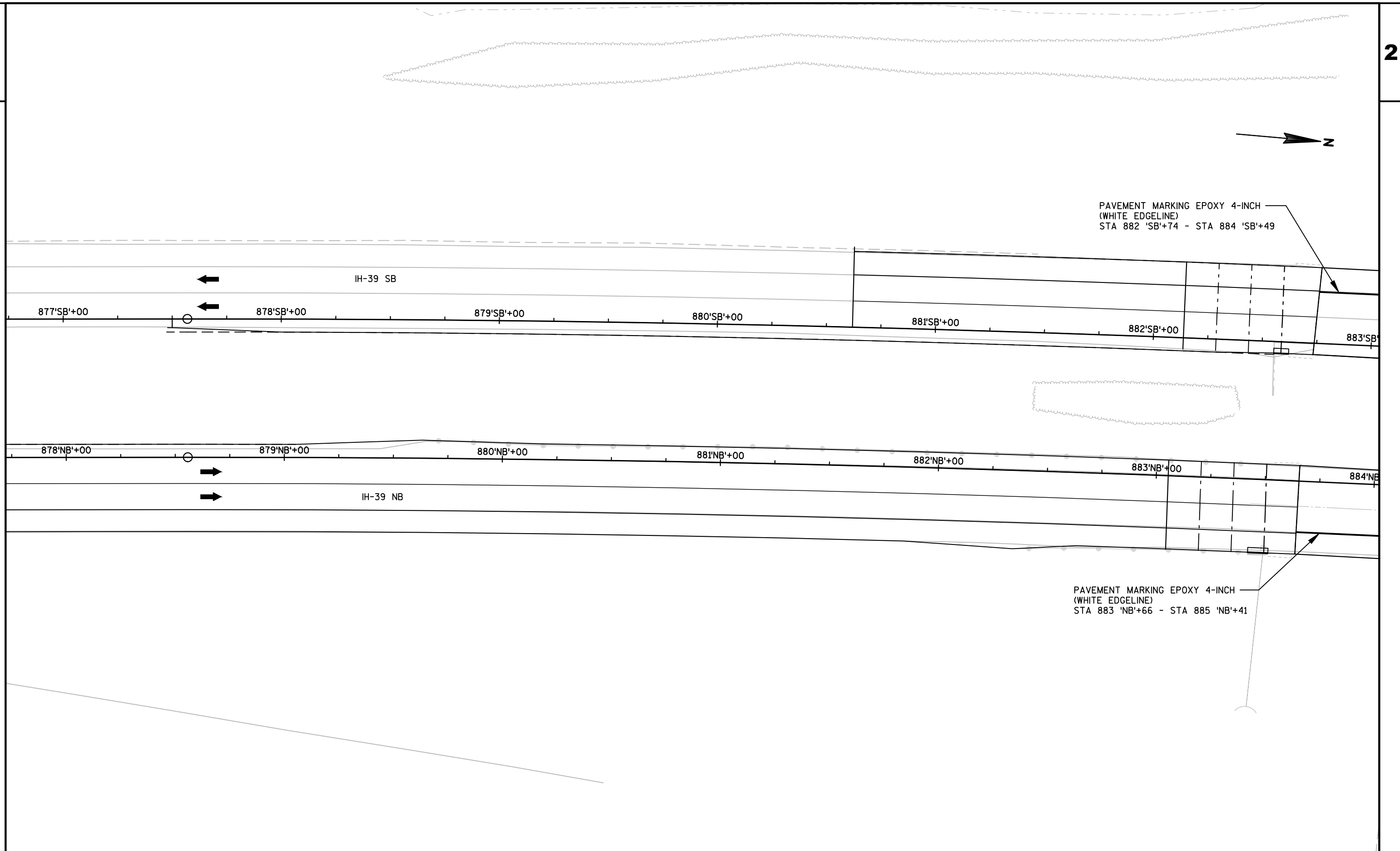


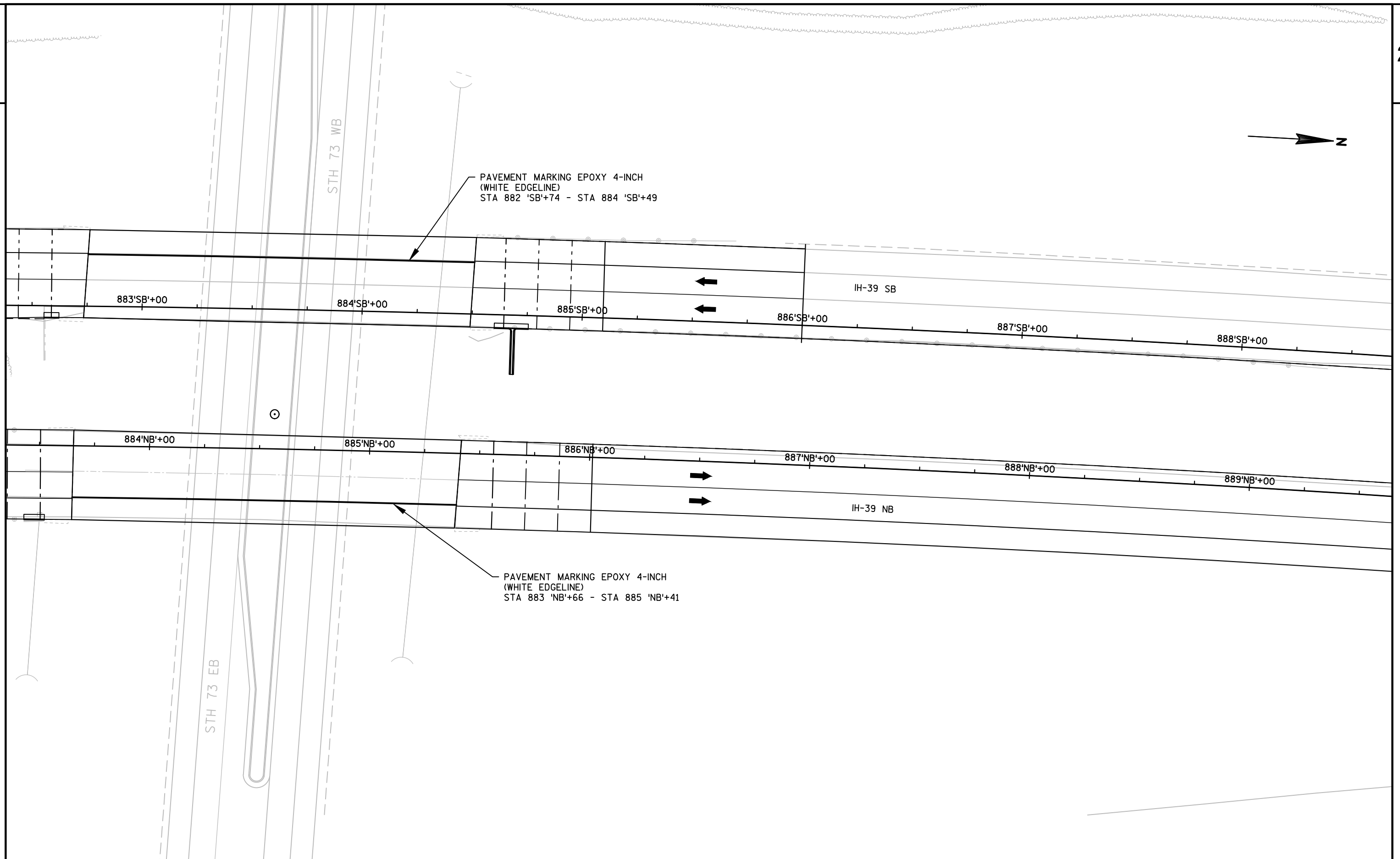


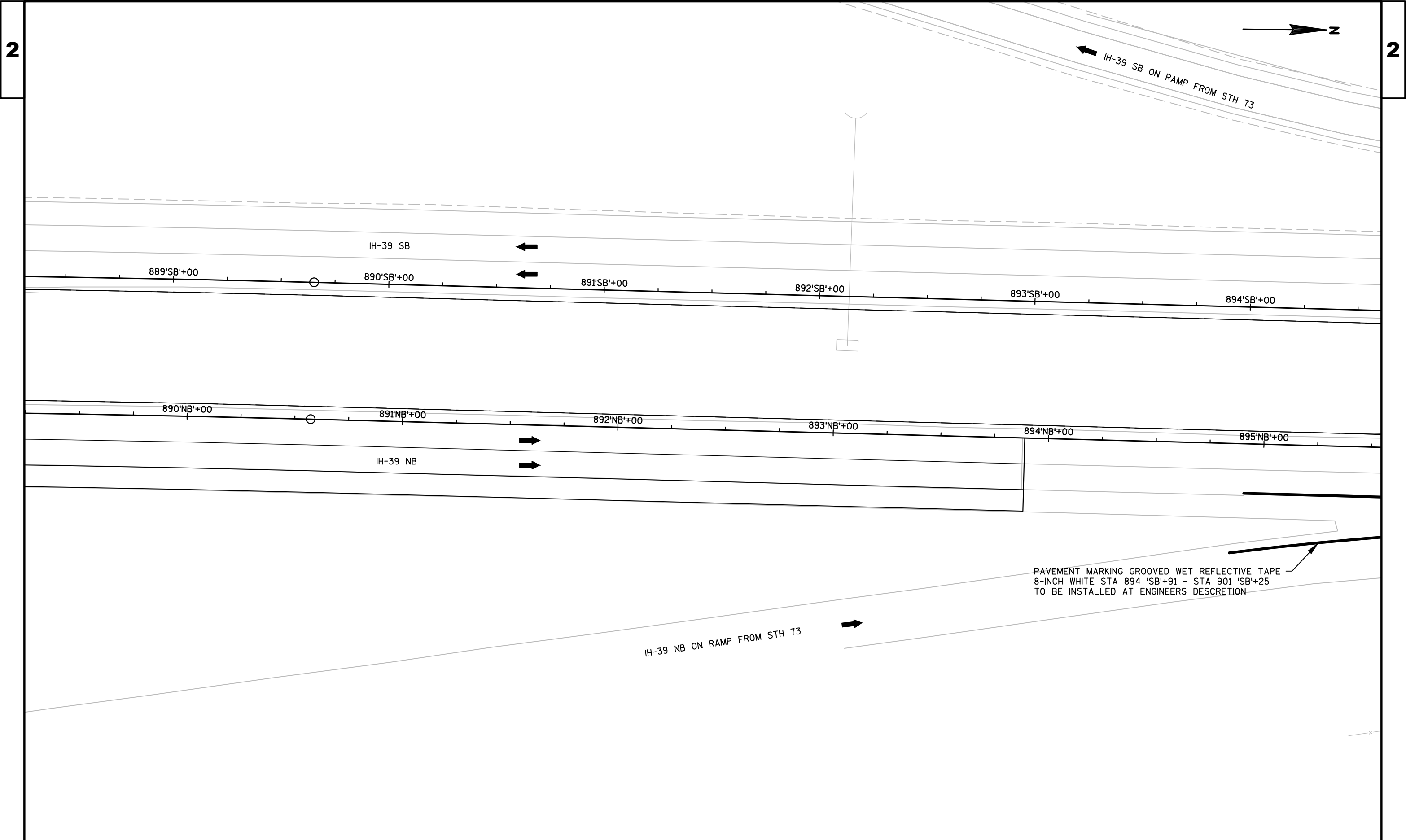


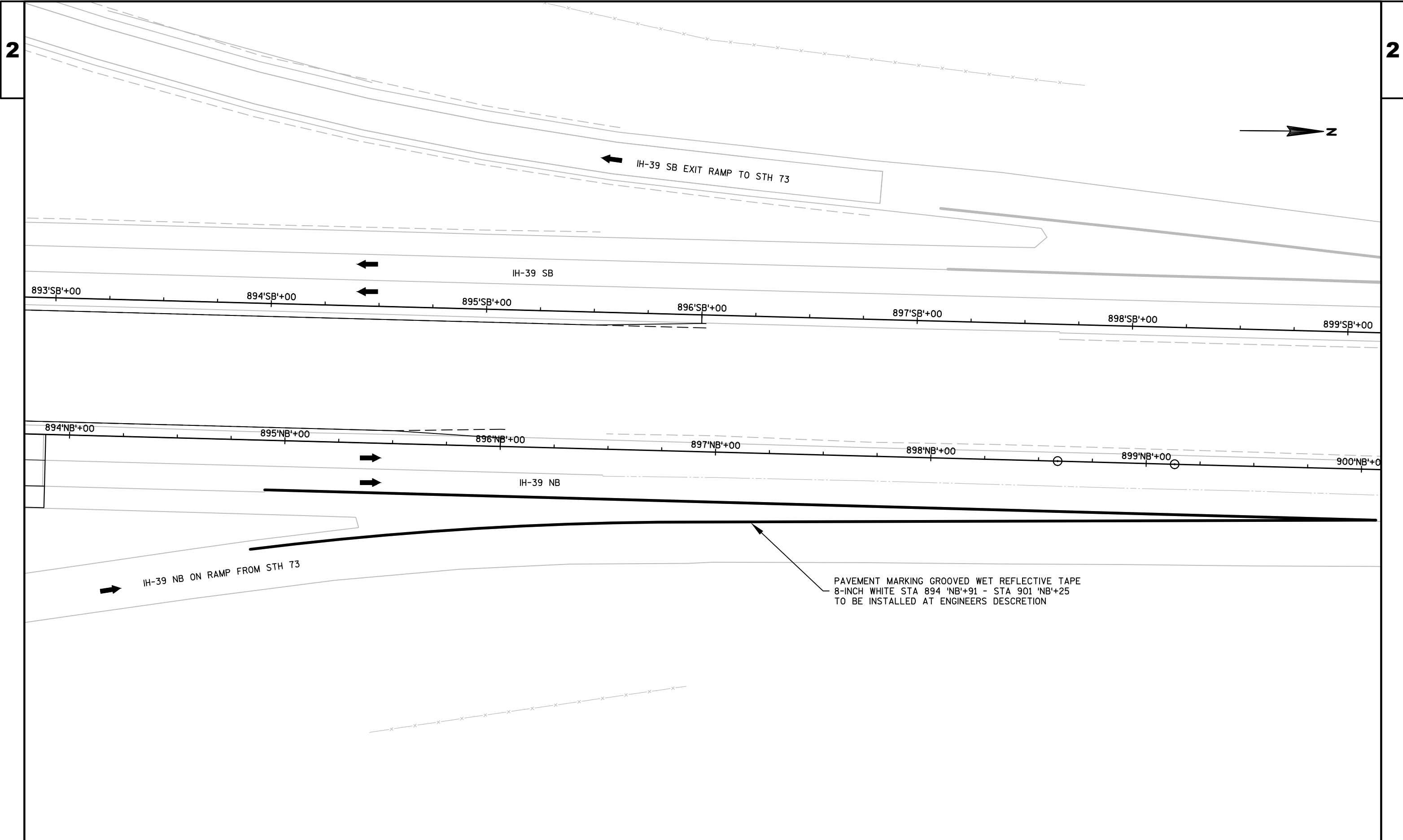


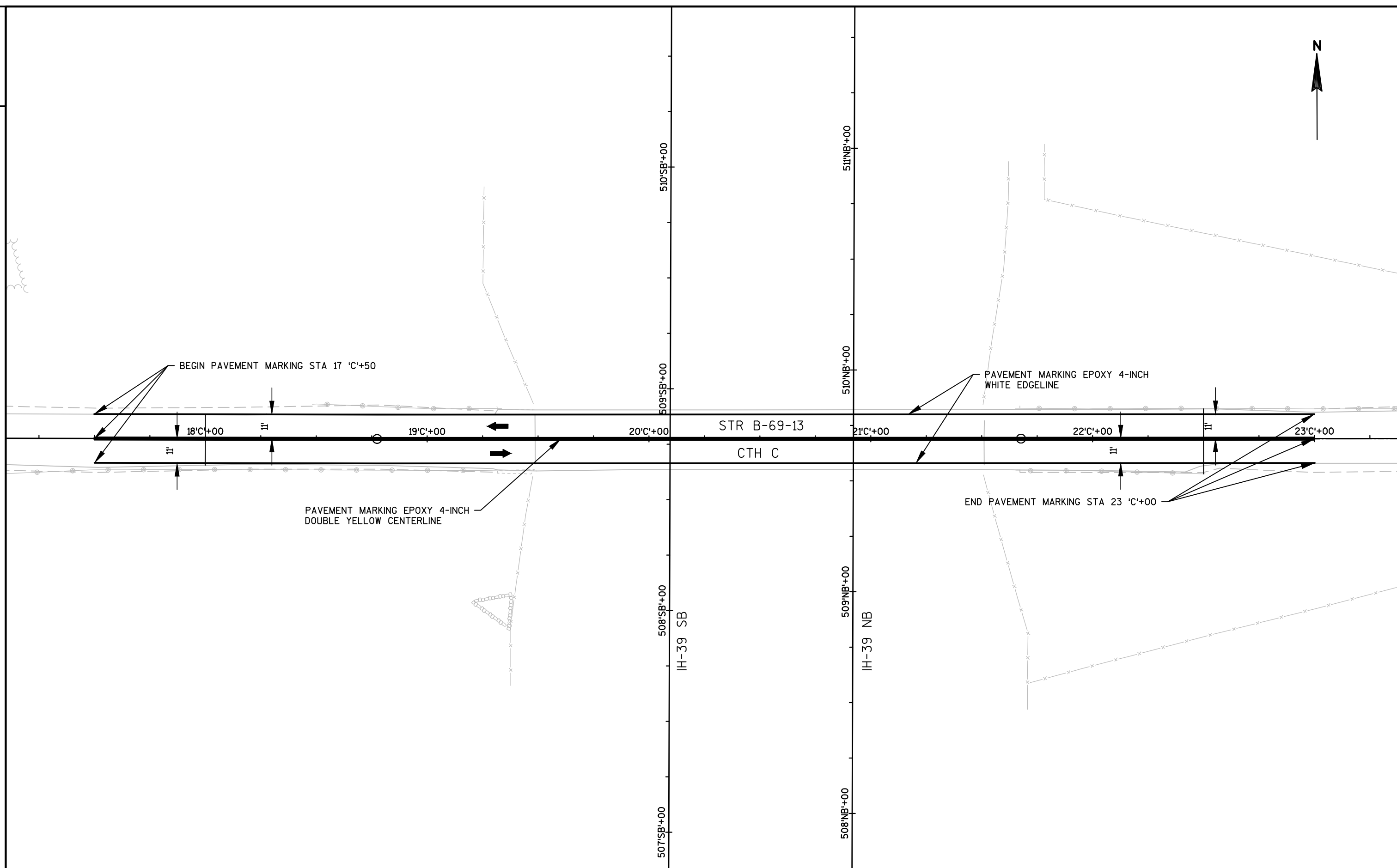


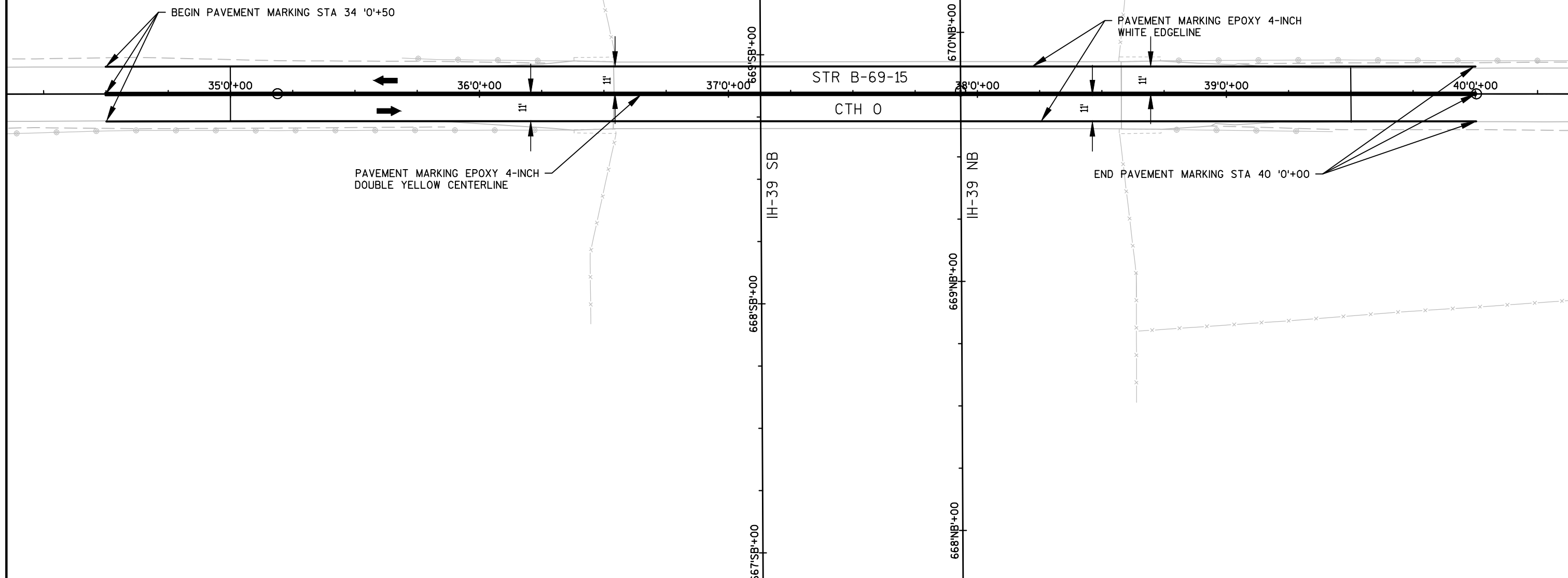


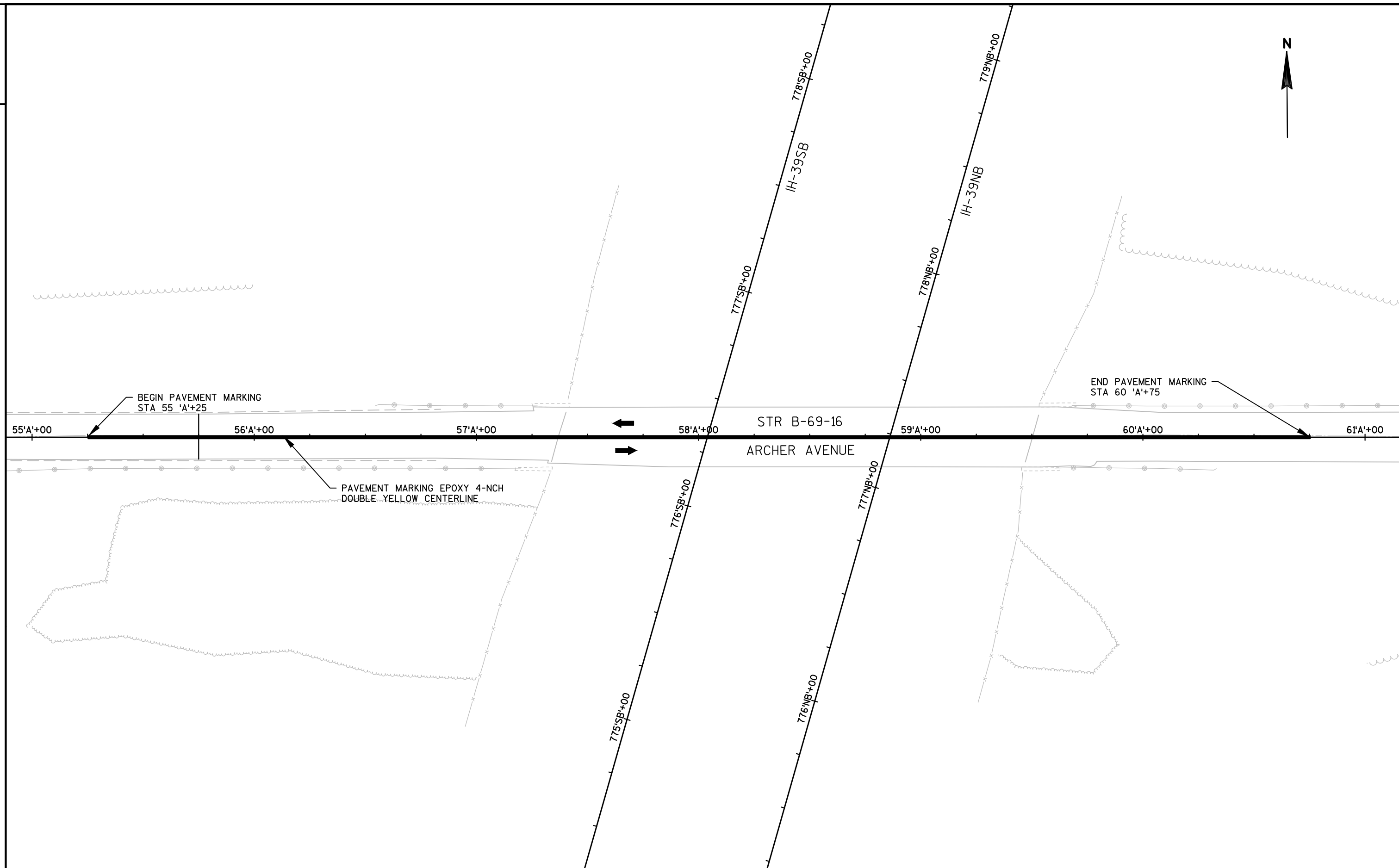








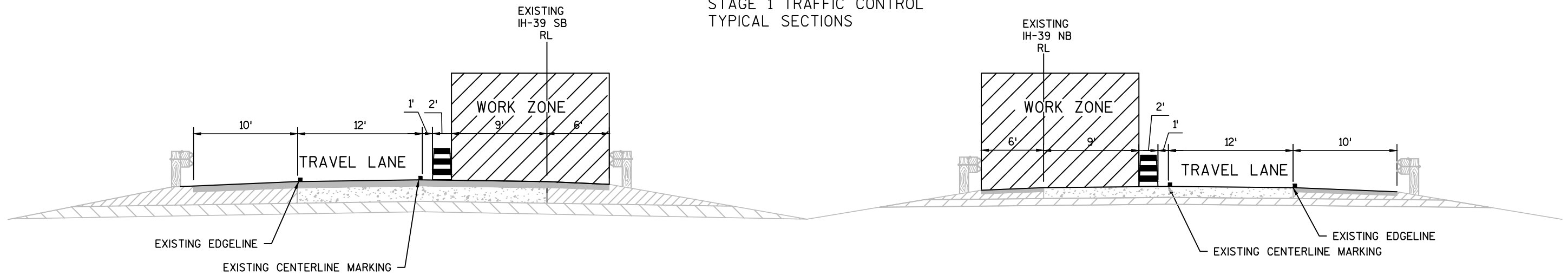


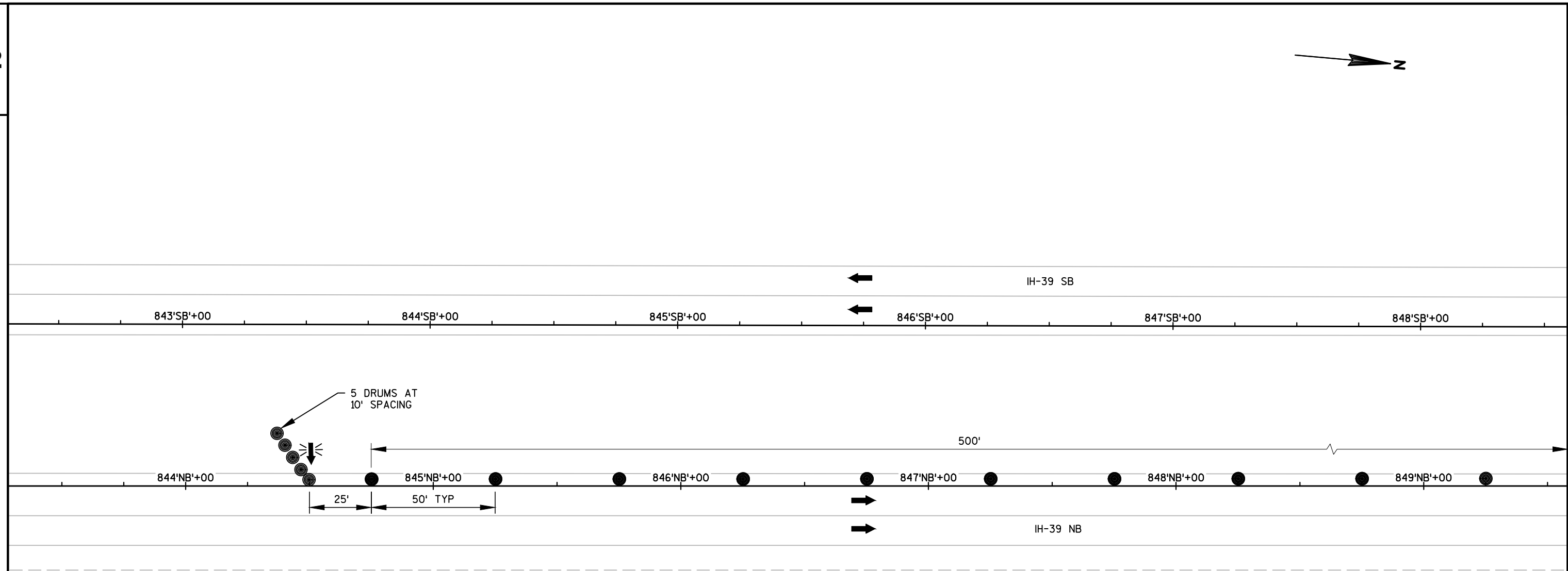


LEGEND



TRAFFIC CONTROL DRUMS

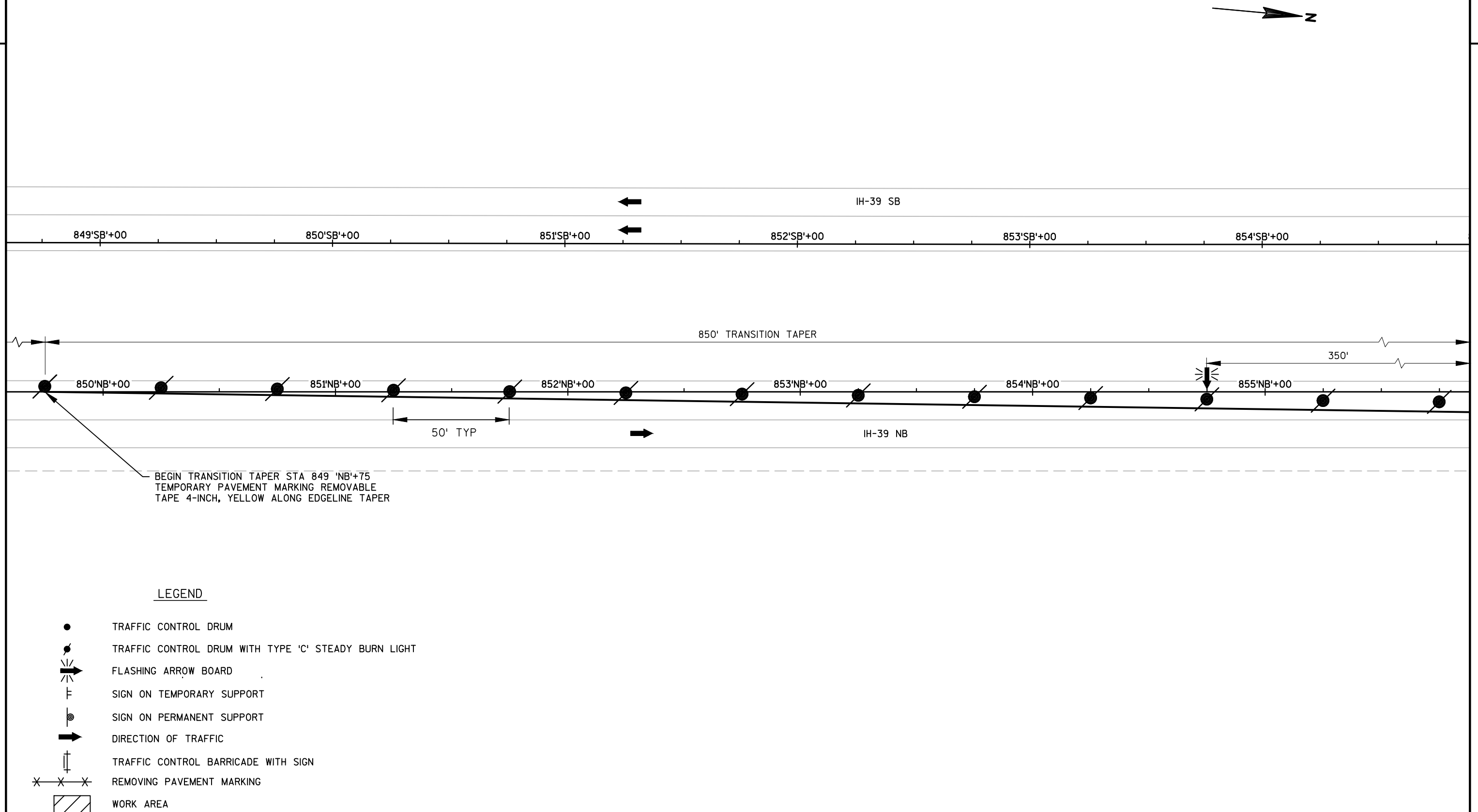
STAGE 1 TRAFFIC CONTROL
TYPICAL SECTIONS

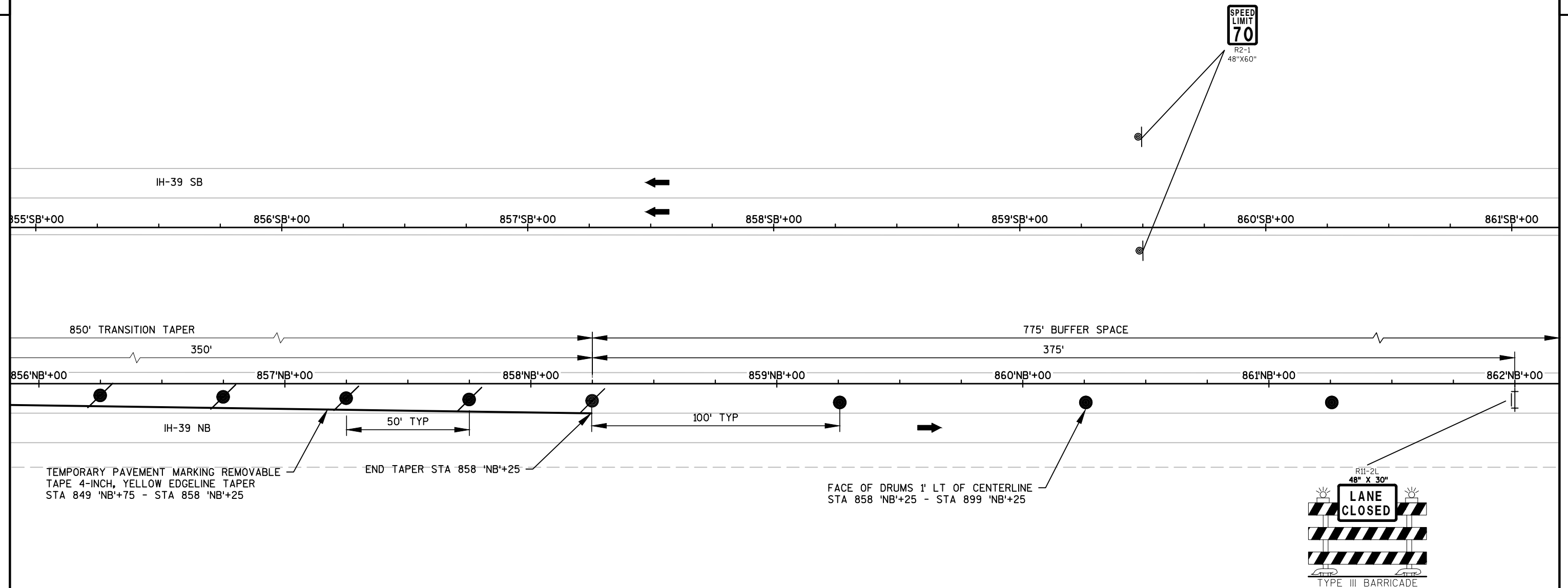


SEE ADVANCED WARNING PLAN SHEETS
FOR ADVANCED WARNING LAYOUT

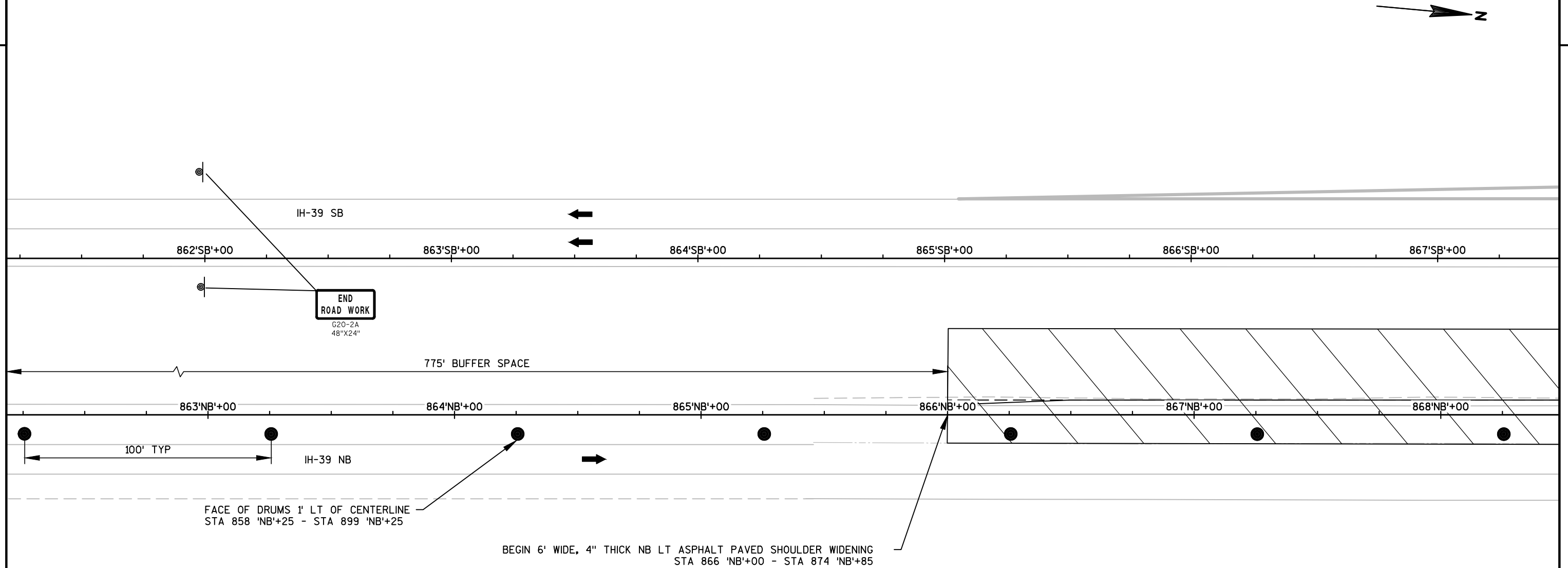
LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ➡ FLASHING ARROW BOARD
- ├ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⊥ TRAFFIC CONTROL BARRICADE WITH SIGN
- ✕ REMOVING PAVEMENT MARKING
- ▨ WORK AREA



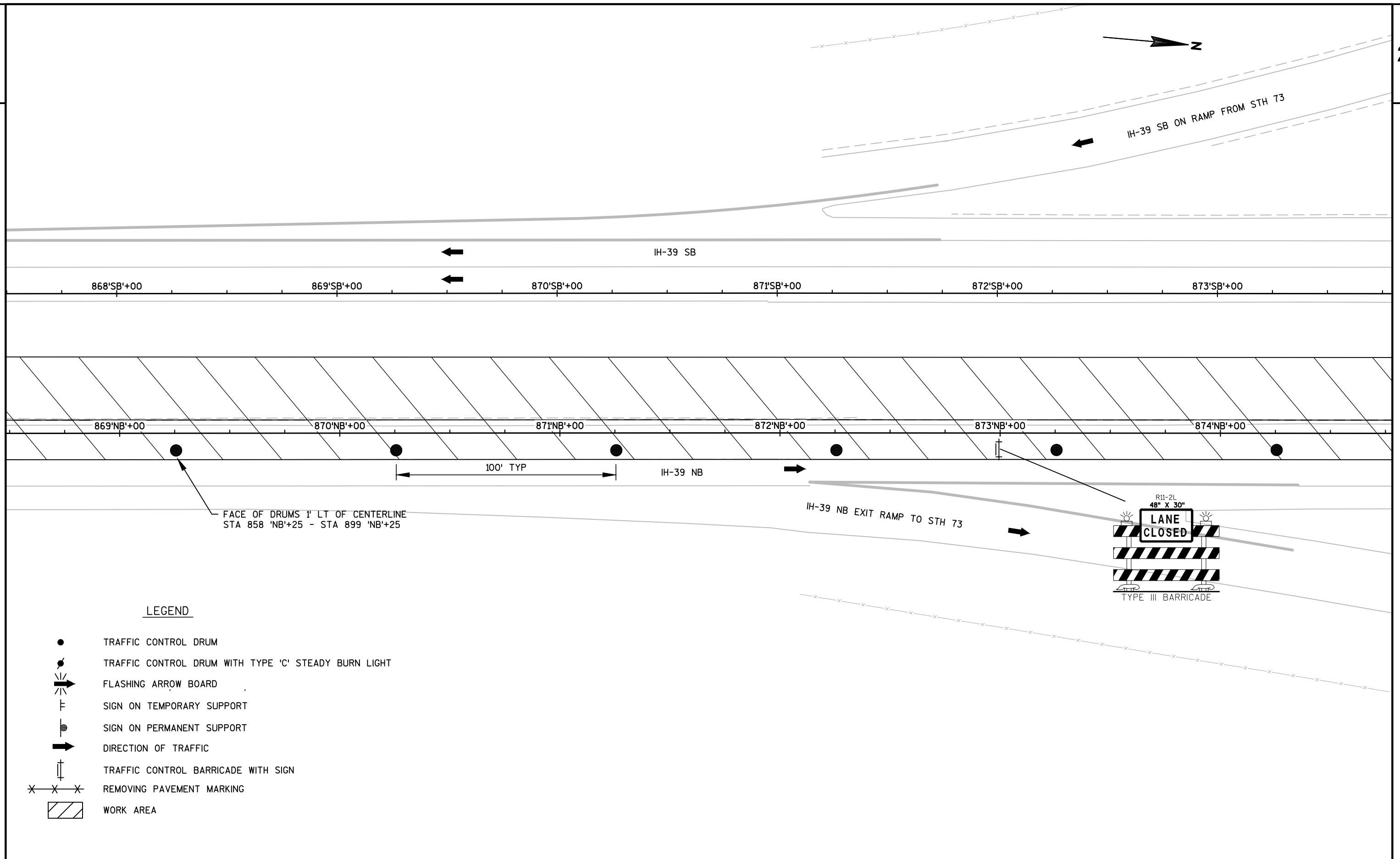
LEGEND

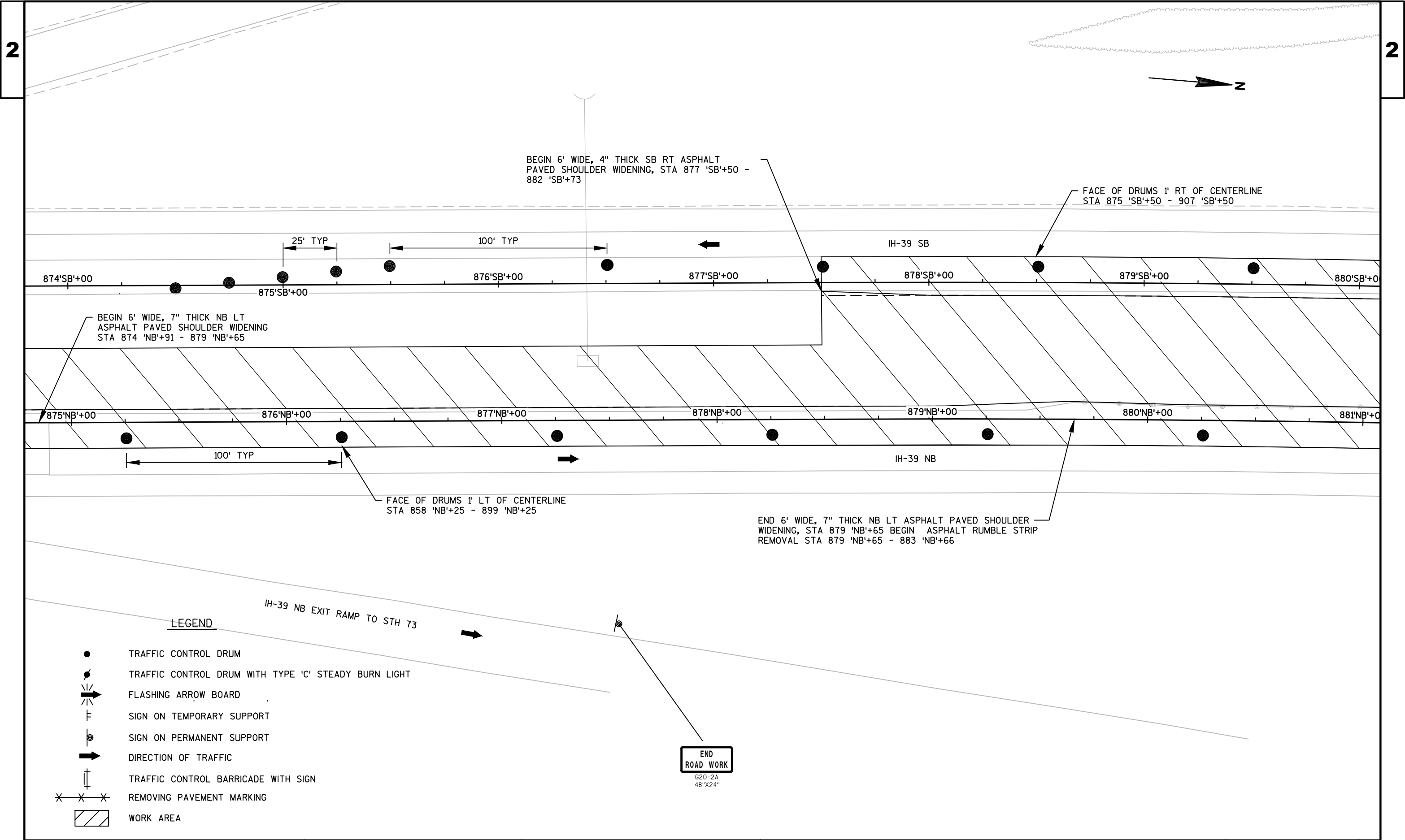
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ➡ FLASHING ARROW BOARD
- ├ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ├ TRAFFIC CONTROL BARRICADE WITH SIGN
- ✕ REMOVING PAVEMENT MARKING
- ▨ WORK AREA

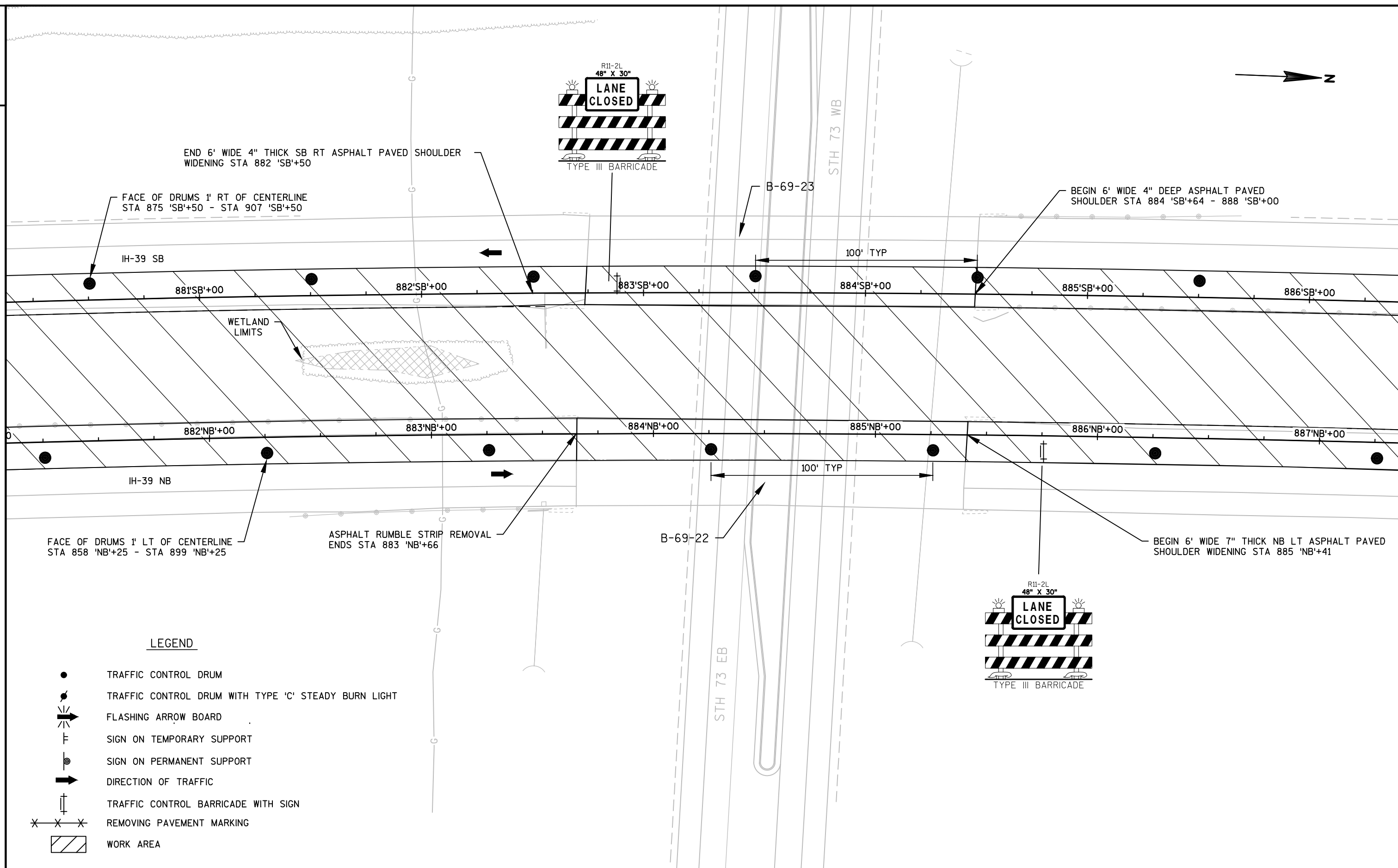


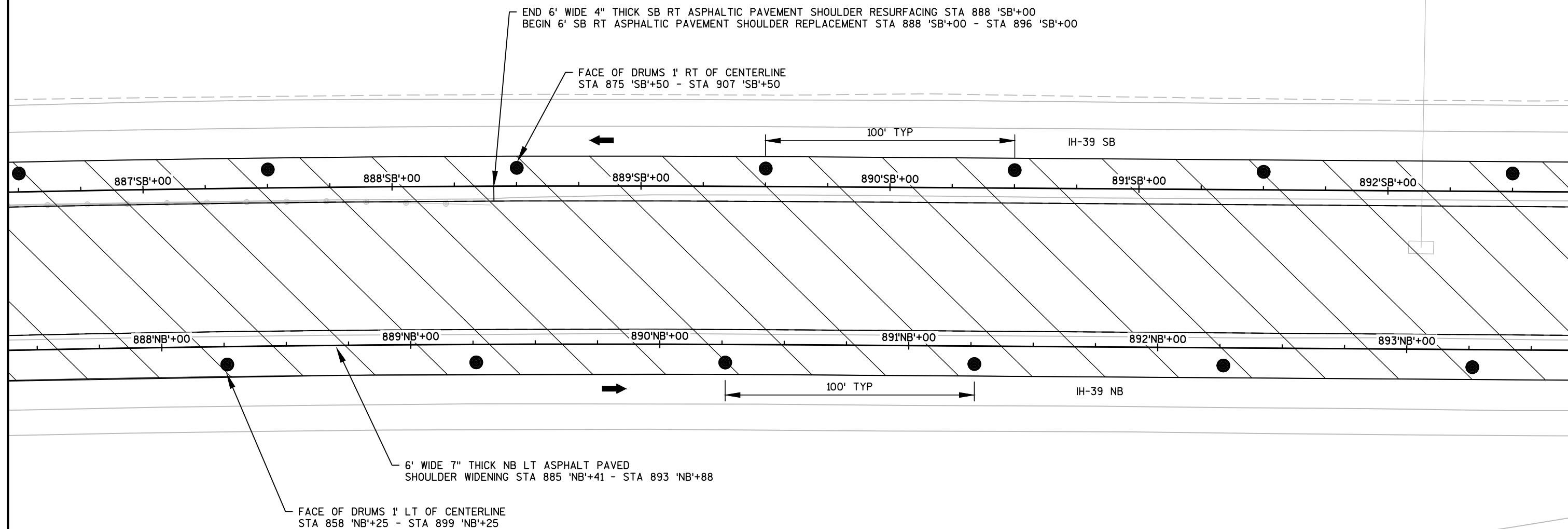
LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ⚡➡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⊥ TRAFFIC CONTROL BARRICADE WITH SIGN
- X-X-X REMOVING PAVEMENT MARKING
- ▨ WORK AREA



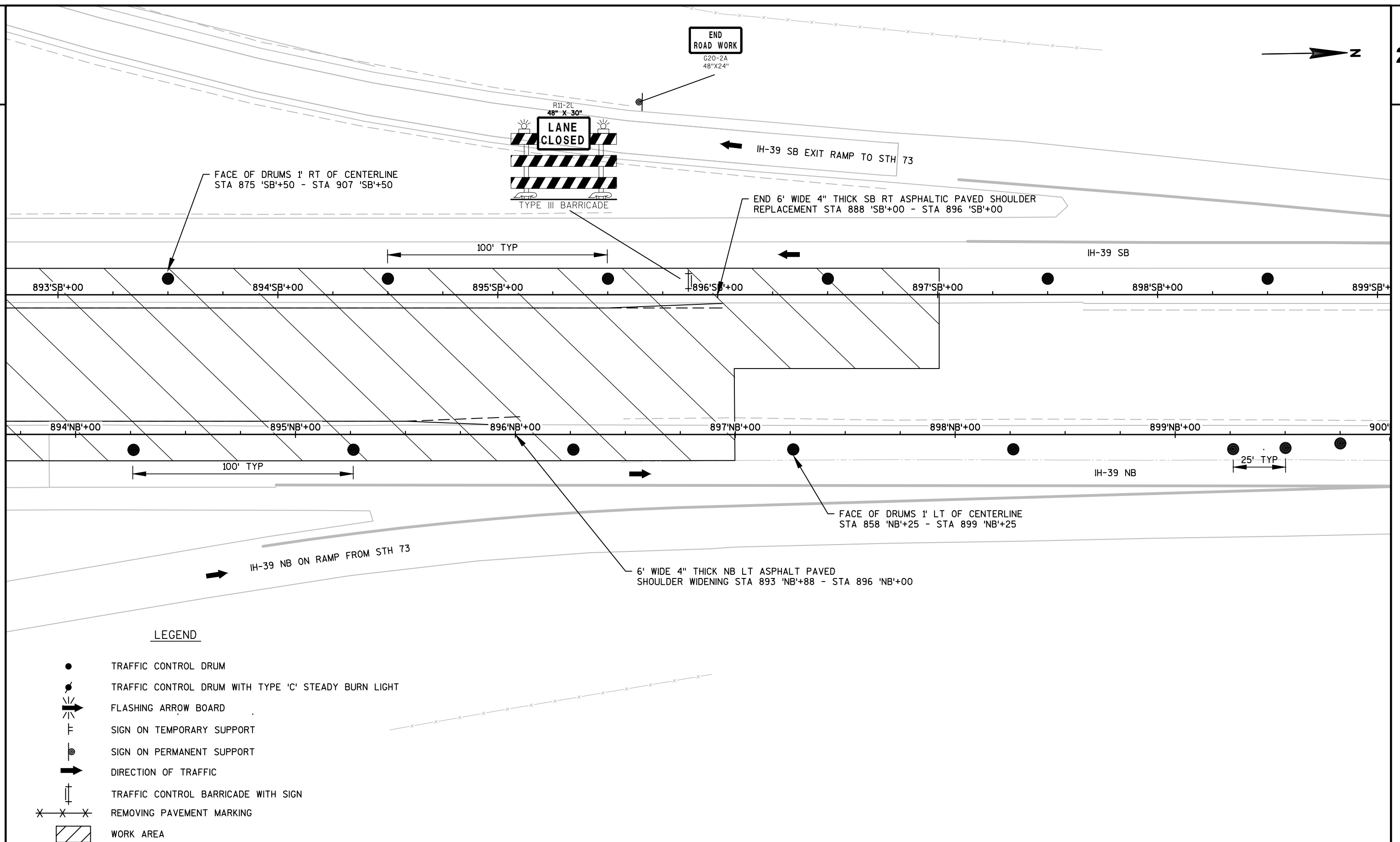


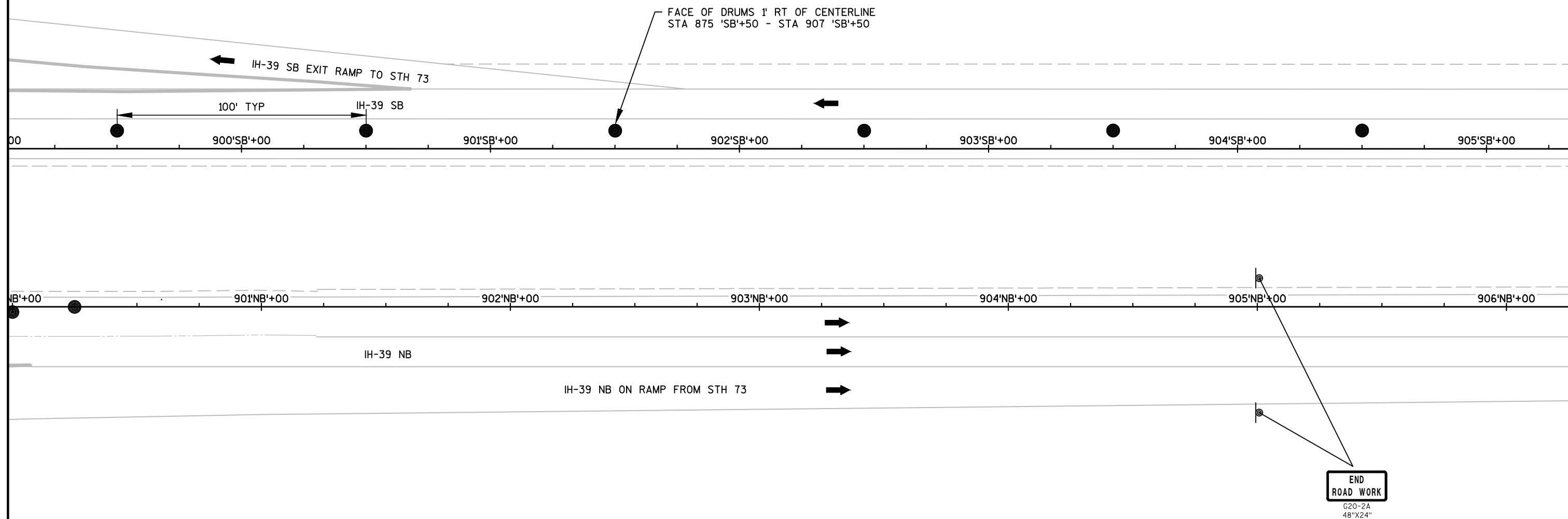


LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- FLASHING ARROW BOARD
- ├ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- ⊥ TRAFFIC CONTROL BARRICADE WITH SIGN
- × × × REMOVING PAVEMENT MARKING
- ▨ WORK AREA

IH-39 NB ON RAMP FROM STH 73



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ⚡➡ FLASHING ARROW BOARD
- ⌌ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⌌ TRAFFIC CONTROL BARRICADE WITH SIGN
- ×—×—× REMOVING PAVEMENT MARKING
- ▨ WORK AREA

PROJECT NO:1166-06-64

HWY:IH-39

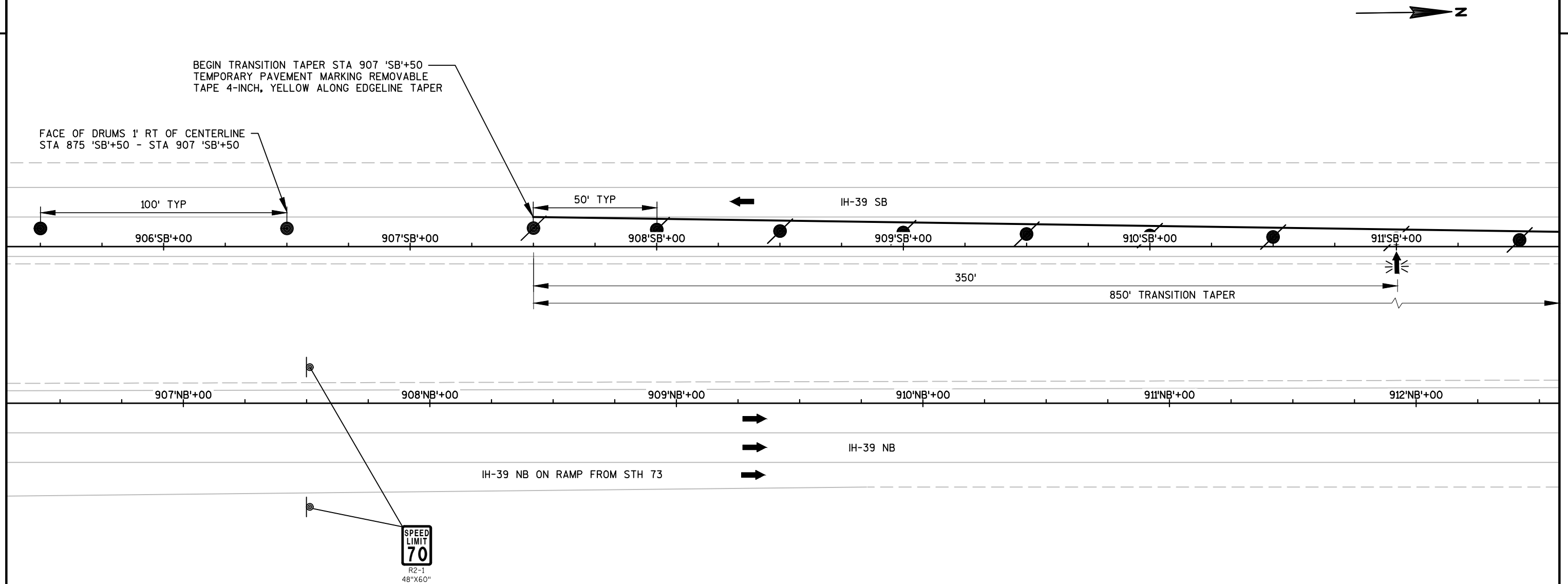
COUNTY:WAUSHARA

TRAFFIC CONTROL IH-39 STAGE 1

SHEET

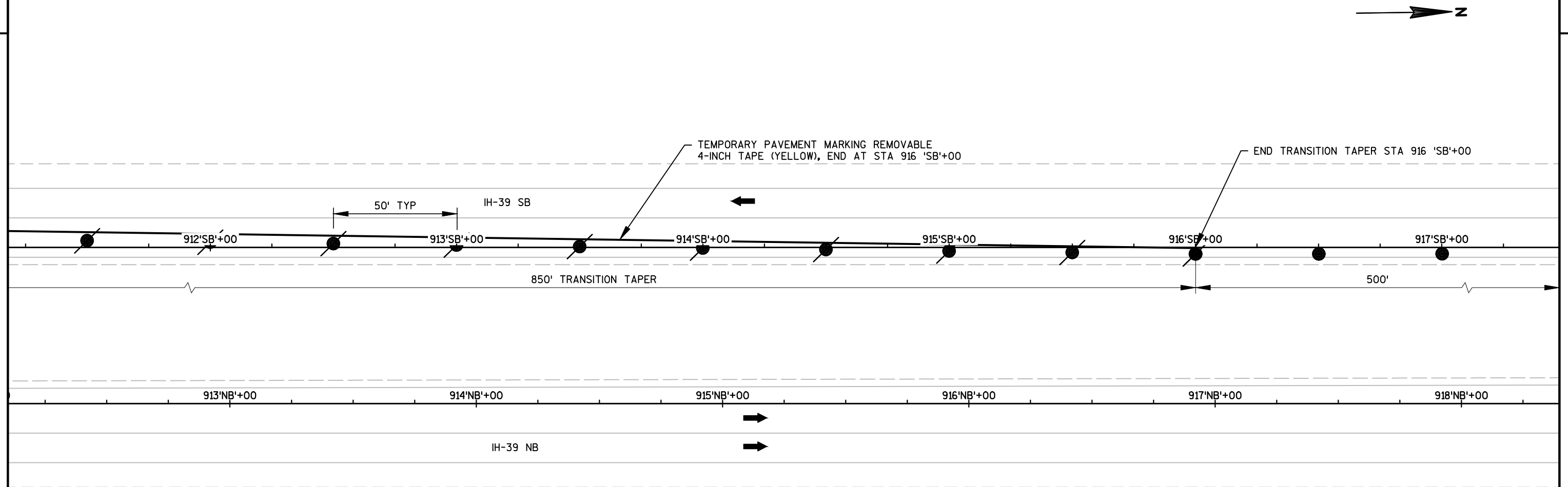
59

E



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ➡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⊥ TRAFFIC CONTROL BARRICADE WITH SIGN
- ✕✕✕ REMOVING PAVEMENT MARKING
- ▨ WORK AREA

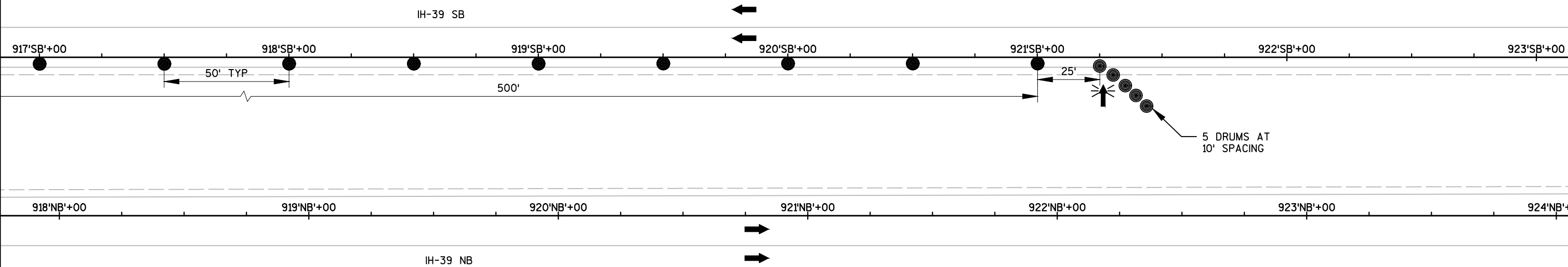


LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ➡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⊥ TRAFFIC CONTROL BARRICADE WITH SIGN
- ✕✕✕ REMOVING PAVEMENT MARKING
- ▨ WORK AREA



SEE ADVANCED WARNING PLAN SHEETS
FOR ADVANCED WARNING LAYOUT



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ⚡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⊥ TRAFFIC CONTROL BARRICADE WITH SIGN
- ✕✕✕ REMOVING PAVEMENT MARKING
- ▨ WORK AREA

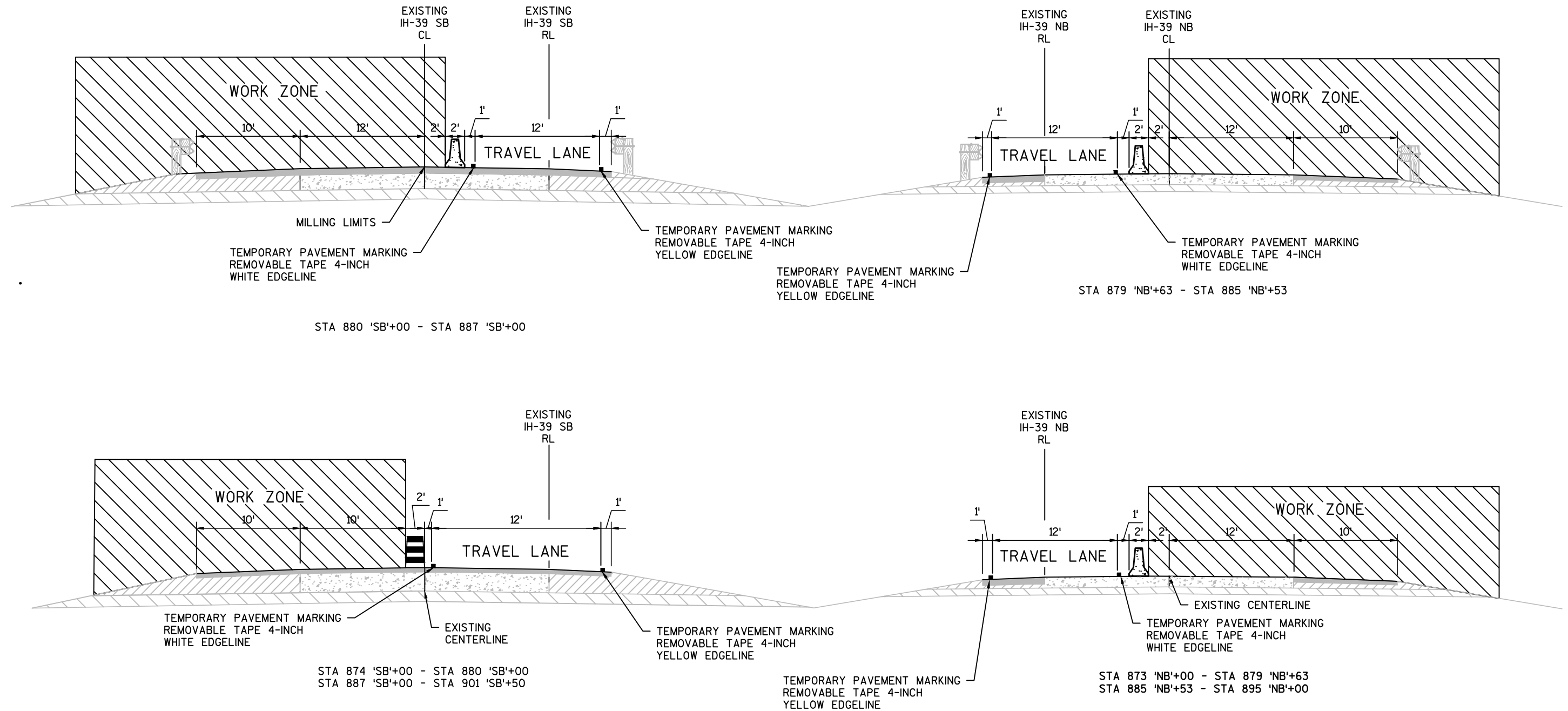
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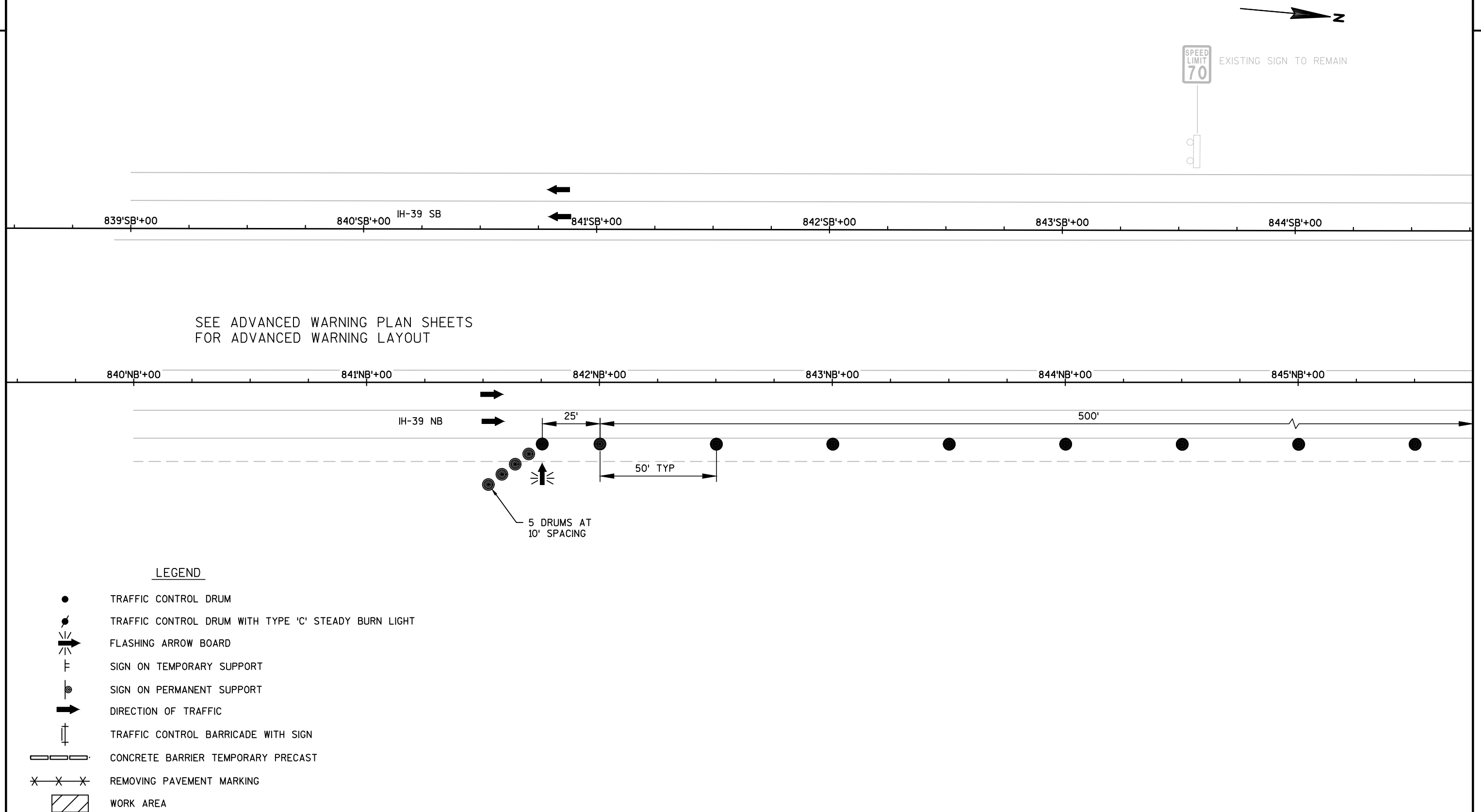


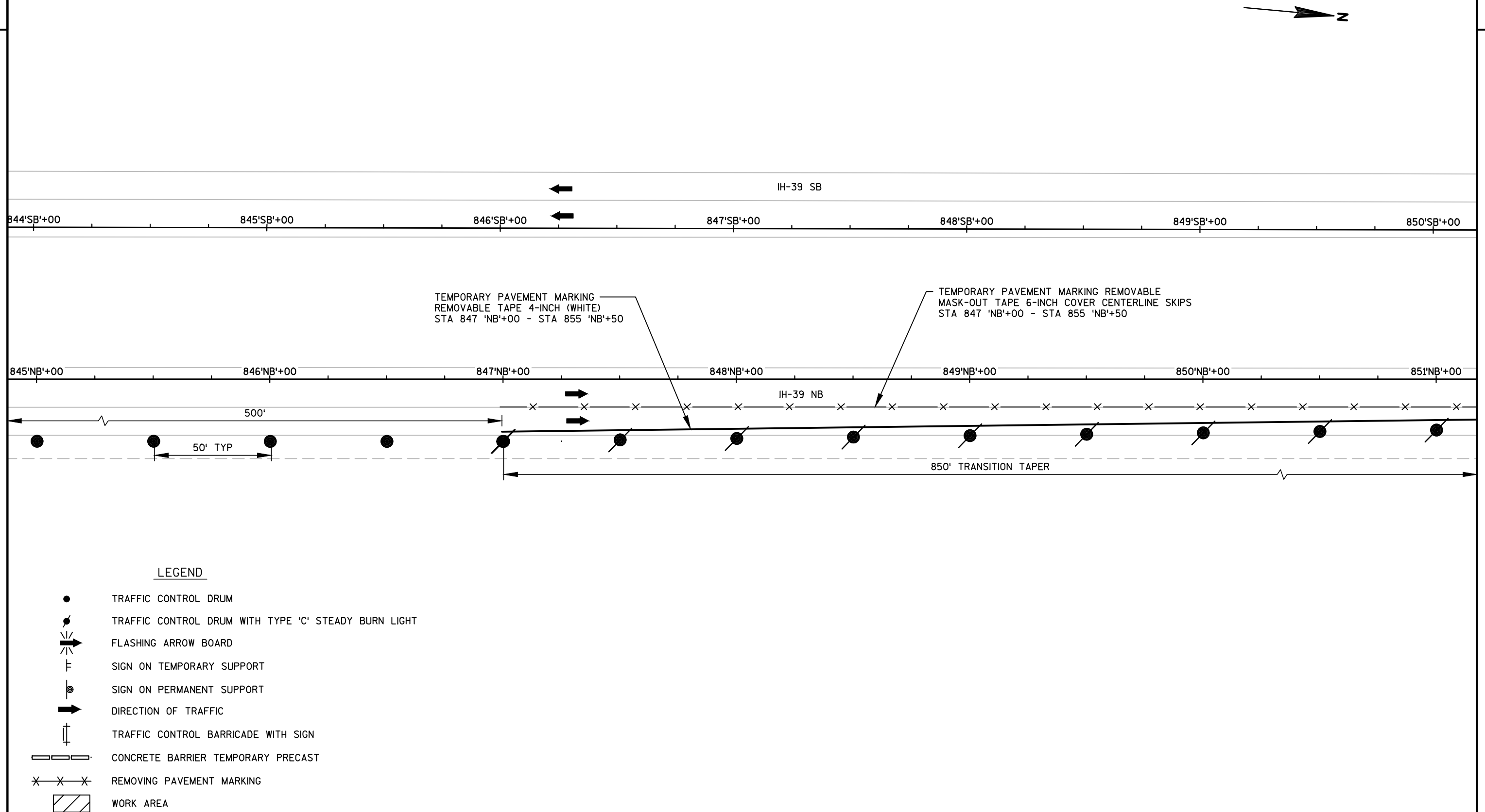
TEMPORARY CONCRETE
BARRIER

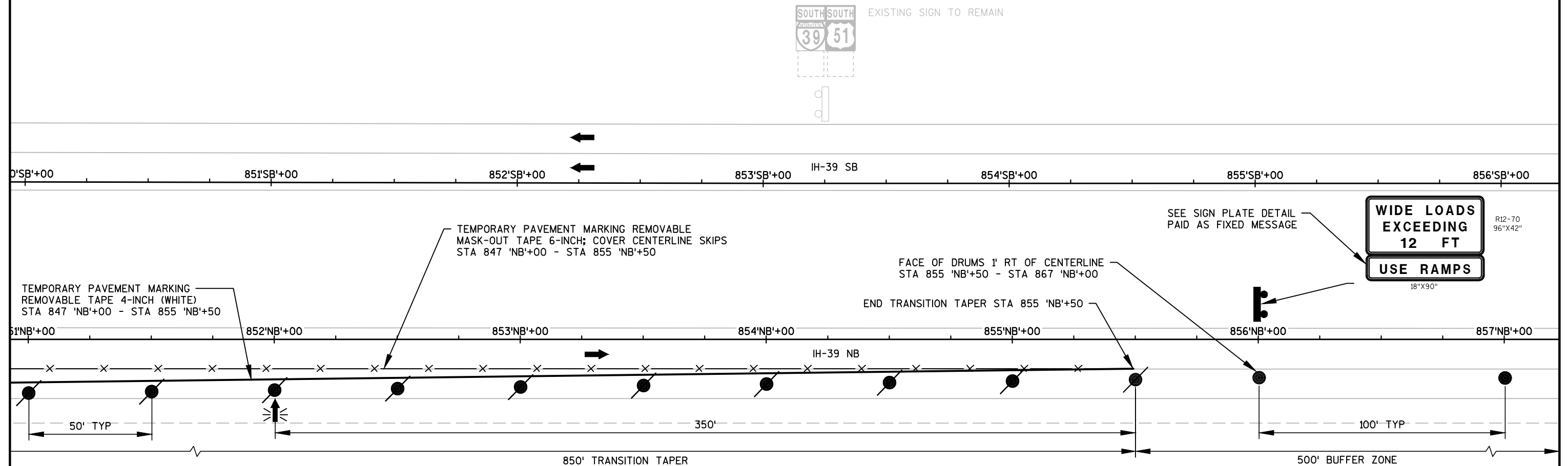
TRAFFIC CONTROL DRUMS

STAGE 2 TRAFFIC CONTROL TYPICAL SECTIONS



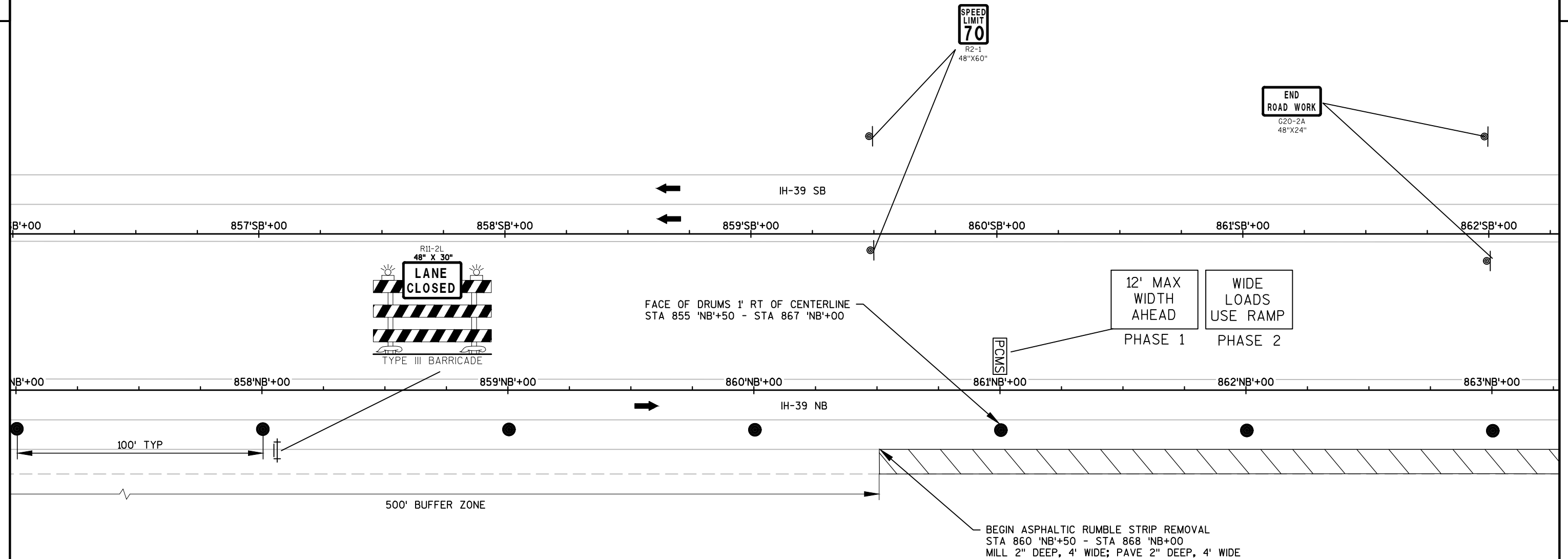






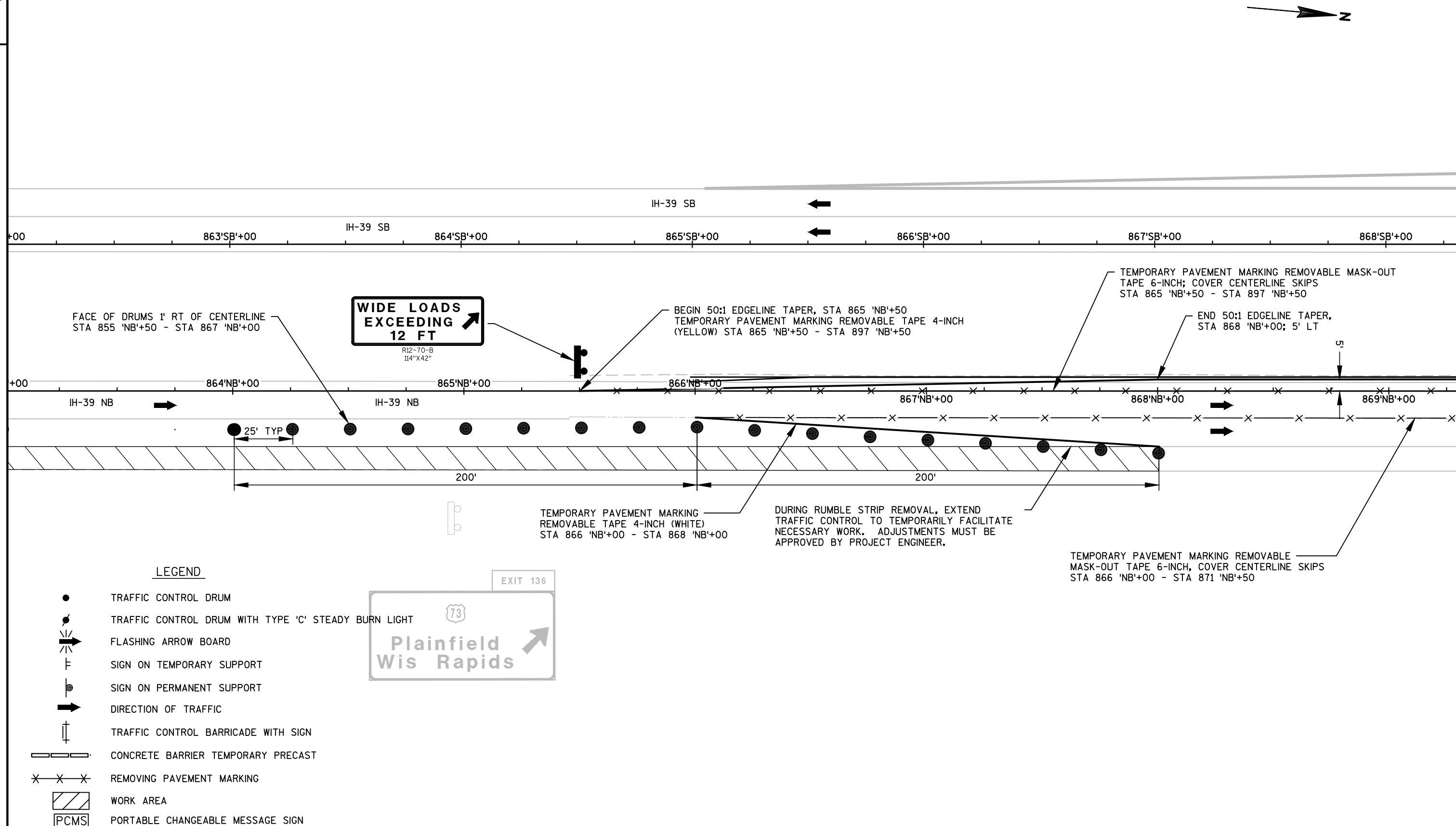
LEGEND

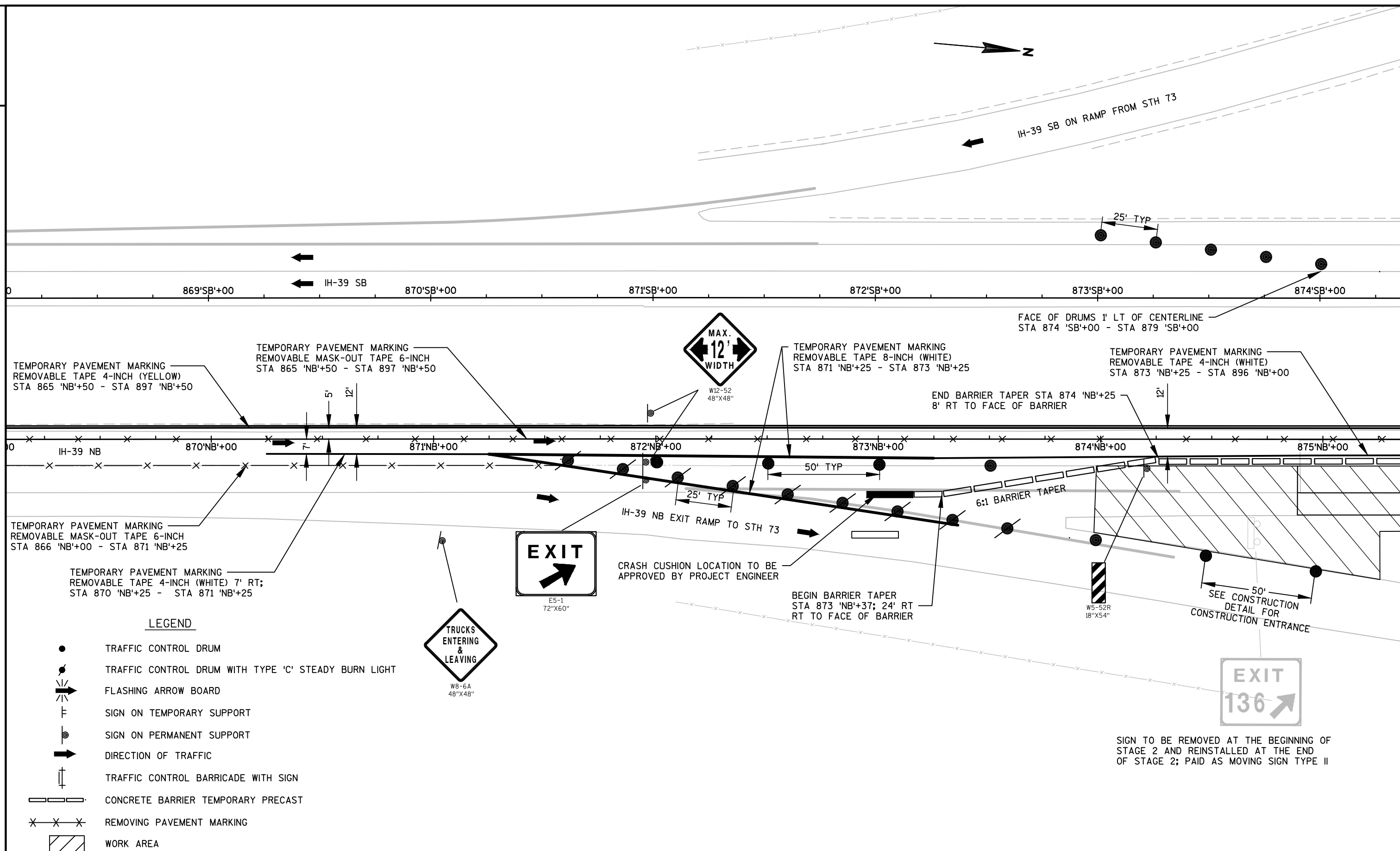
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ⚡ FLASHING ARROW BOARD
- ┌ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡ TRAFFIC CONTROL BARRICADE WITH SIGN
- ▬ CONCRETE BARRIER TEMPORARY PRECAST
- × × × REMOVING PAVEMENT MARKING
- ▨ WORK AREA



LEGEND

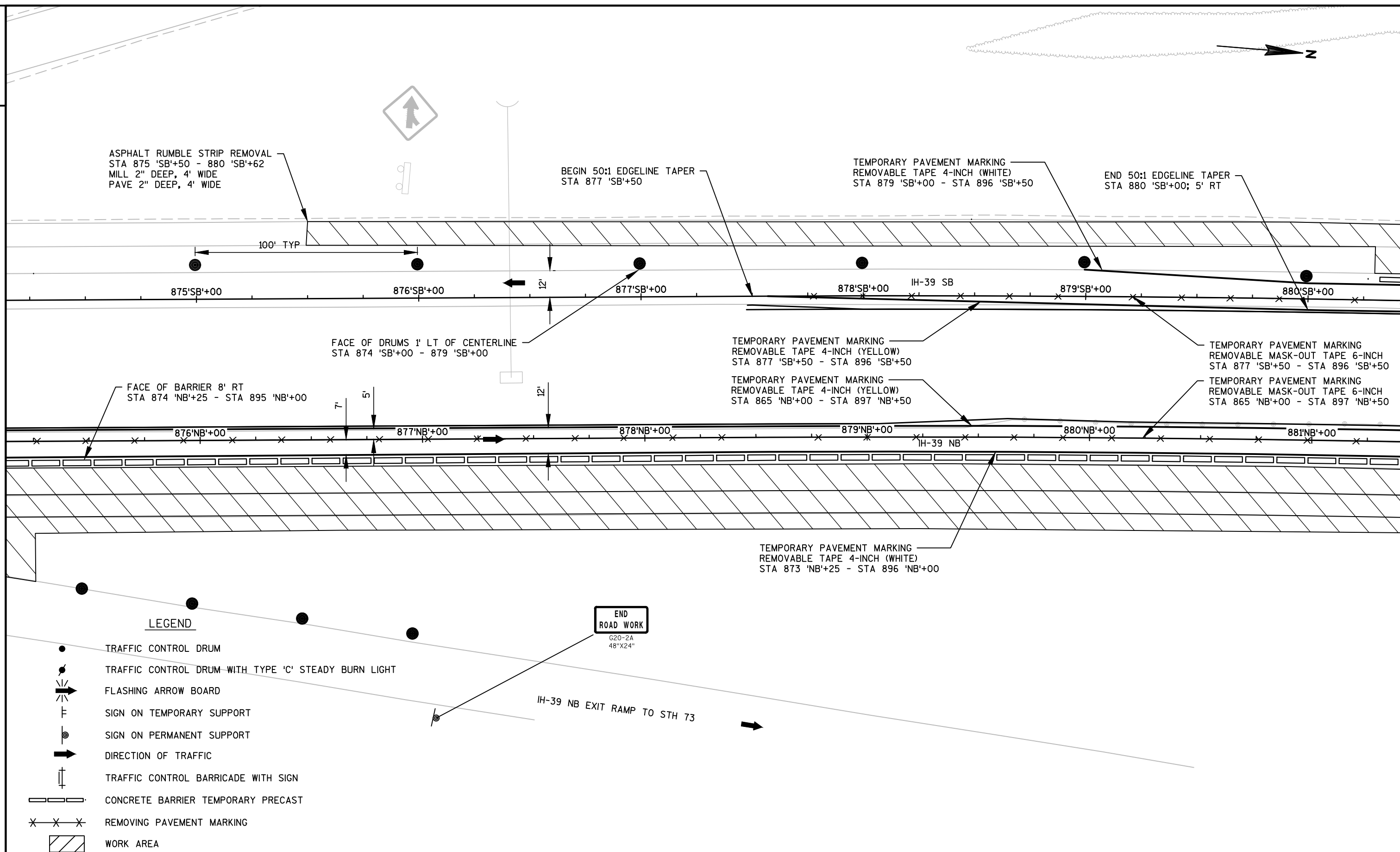
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ⚡ FLASHING ARROW BOARD
- ┌ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡ TRAFFIC CONTROL BARRICADE WITH SIGN
- ▬ CONCRETE BARRIER TEMPORARY PRECAST
- × × × REMOVING PAVEMENT MARKING
- ▨ WORK AREA





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2



PROJECT NO:1166-06-64

HWY:IH-39

COUNTY:WAUSHARA

TRAFFIC CONTROL IH-39 STAGE 2

SHEET

70

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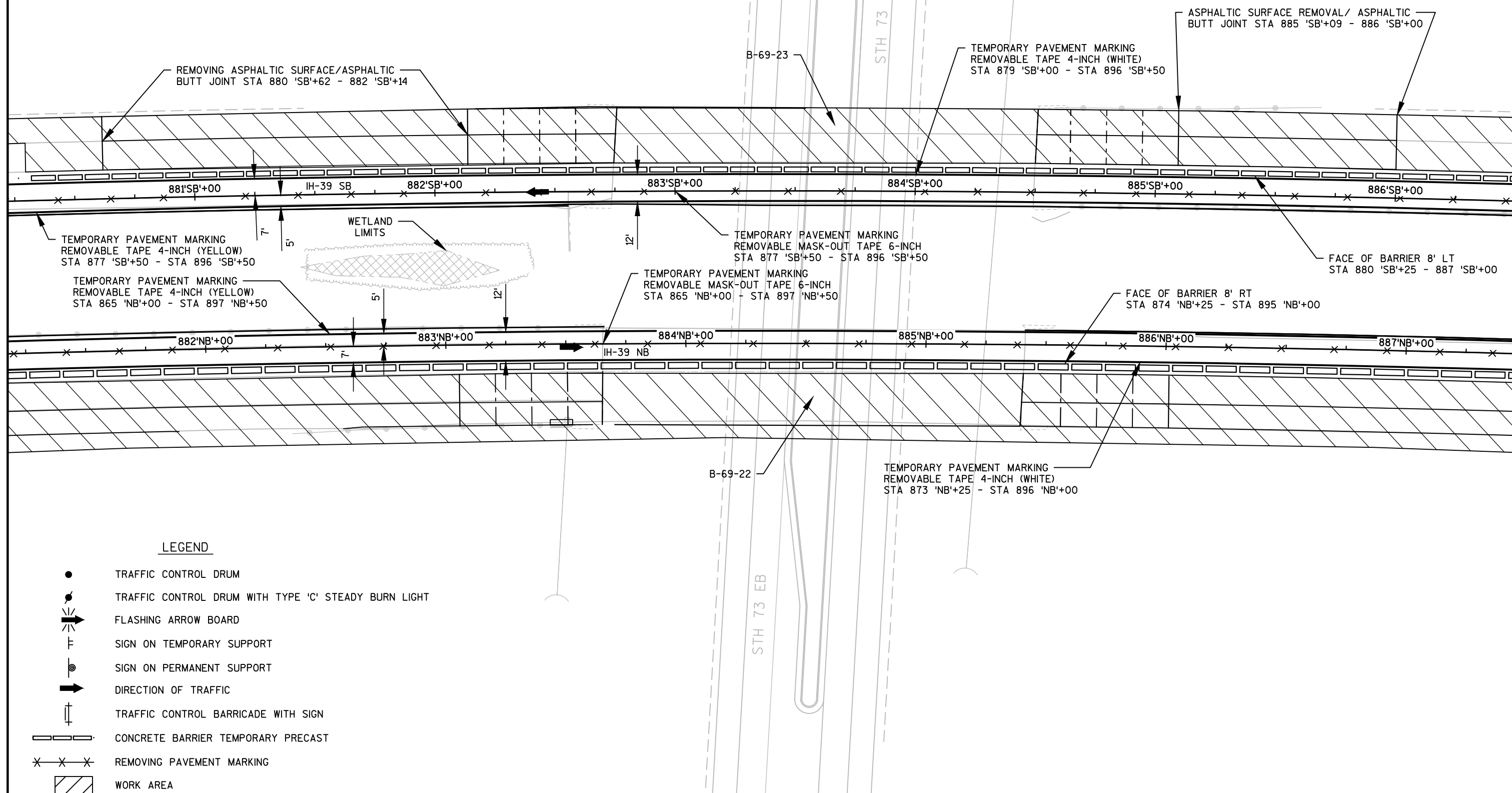
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LAYOUT NAME - 07

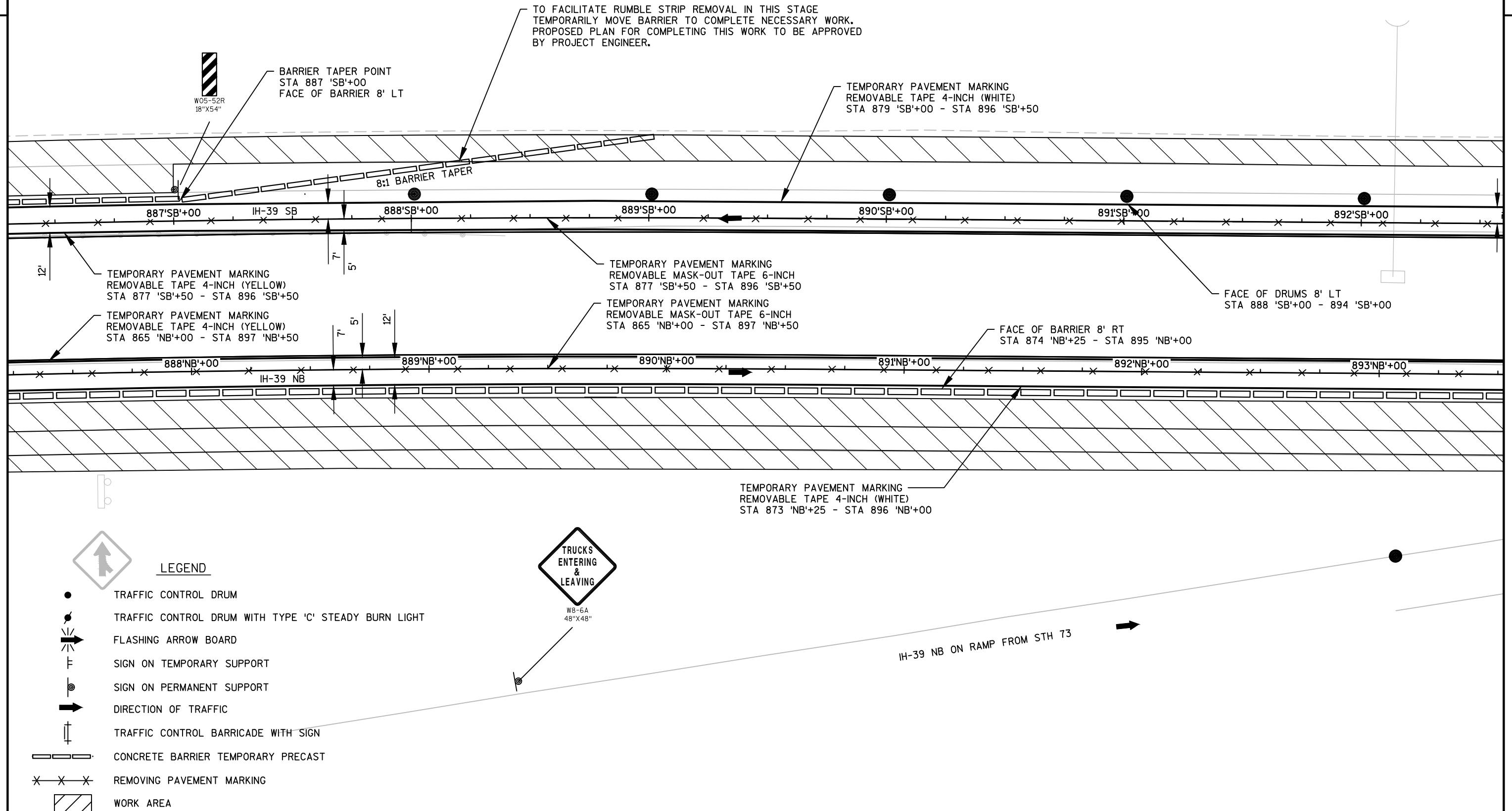
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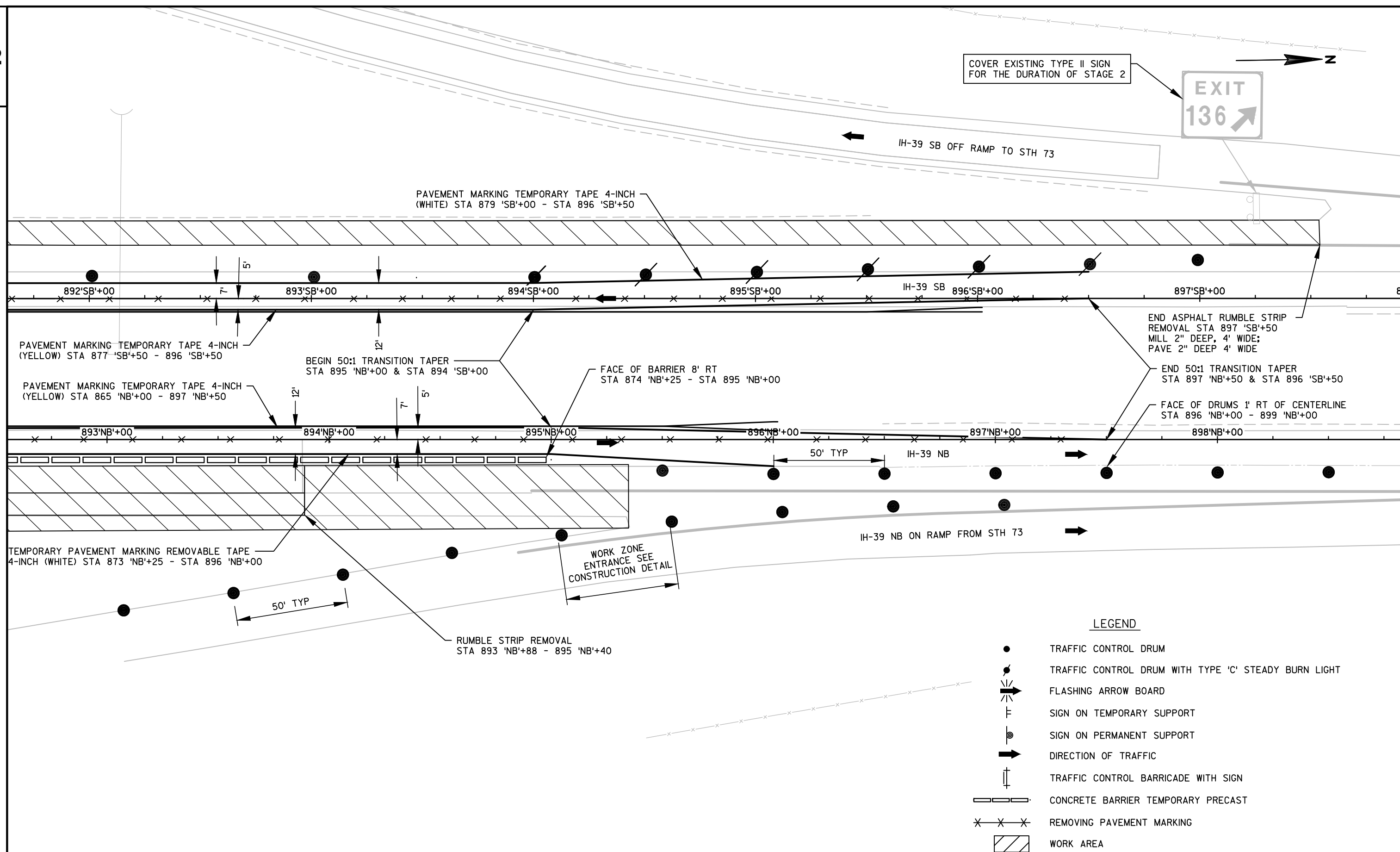
PLOT BY : SCHLEICHER, BRYCE B PLOT NAME :

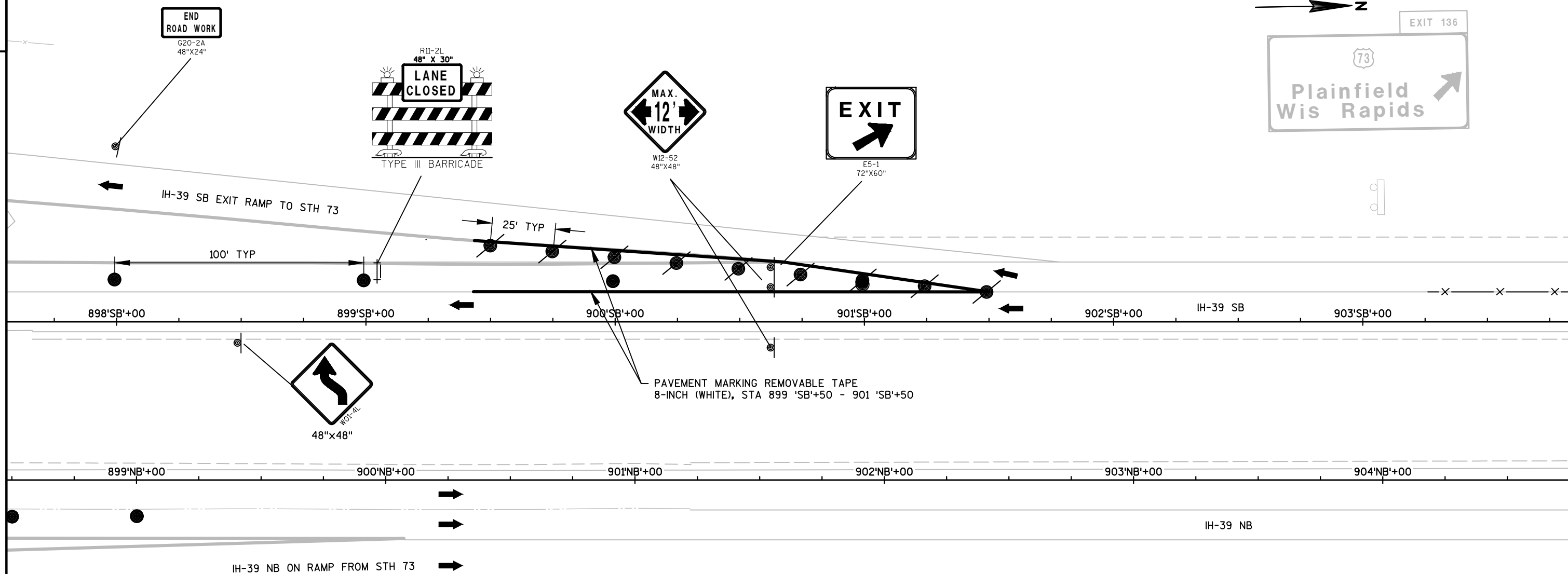
PLOT SCALE : 1 IN:40 FT

WISDOT/CADDs SHEET 42







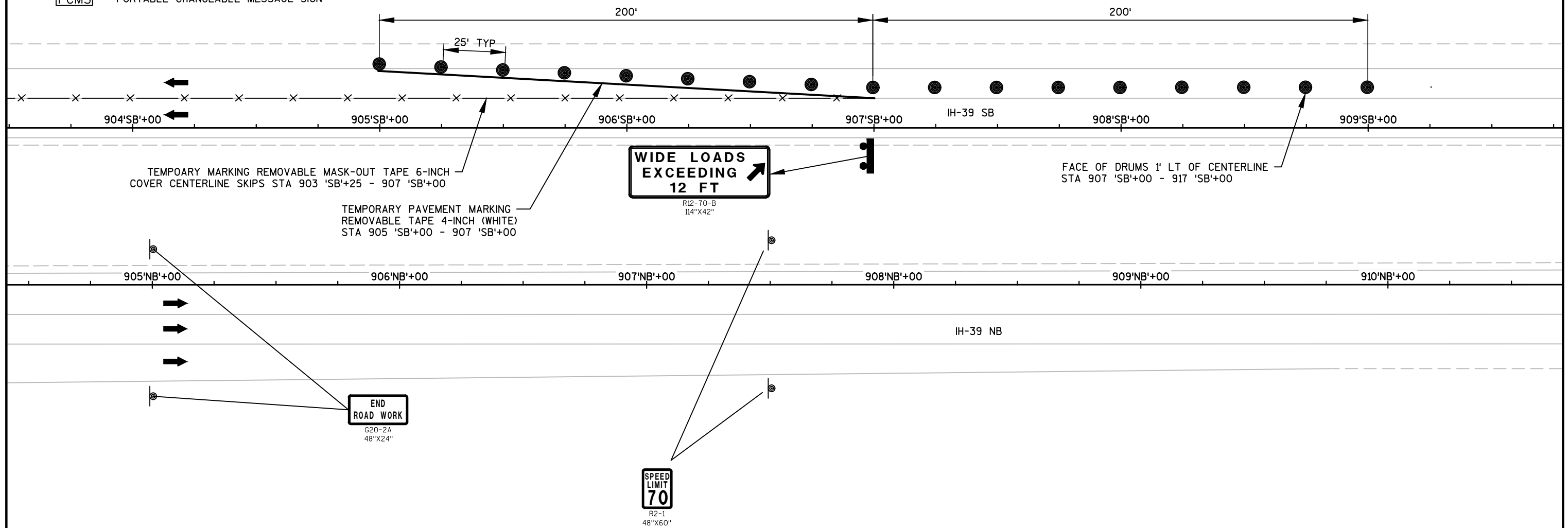
**LEGEND**

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ⚡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⊥ TRAFFIC CONTROL BARRICADE WITH SIGN
- ▬ CONCRETE BARRIER TEMPORARY PRECAST
- × × × REMOVING PAVEMENT MARKING
- ▨ WORK AREA

2

LEGEND

- | | |
|---|--|
|  | TRAFFIC CONTROL DRUM |
|  | TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT |
|  | FLASHING ARROW BOARD |
|  | SIGN ON TEMPORARY SUPPORT |
|  | SIGN ON PERMANENT SUPPORT |
|  | DIRECTION OF TRAFFIC |
|  | TRAFFIC CONTROL BARRICADE WITH SIGN |
|  | CONCRETE BARRIER TEMPORARY PRECAST |
|  | REMOVING PAVEMENT MARKING |
|  | WORK AREA |
|  | PORTABLE CHANGEABLE MESSAGE SIGN |



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TRAFFIC CONTROL DRUM

TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT

FLASHING ARROW BOARD

SIGN ON TEMPORARY SUPPORT

SIGN ON PERMANENT SUPPORT

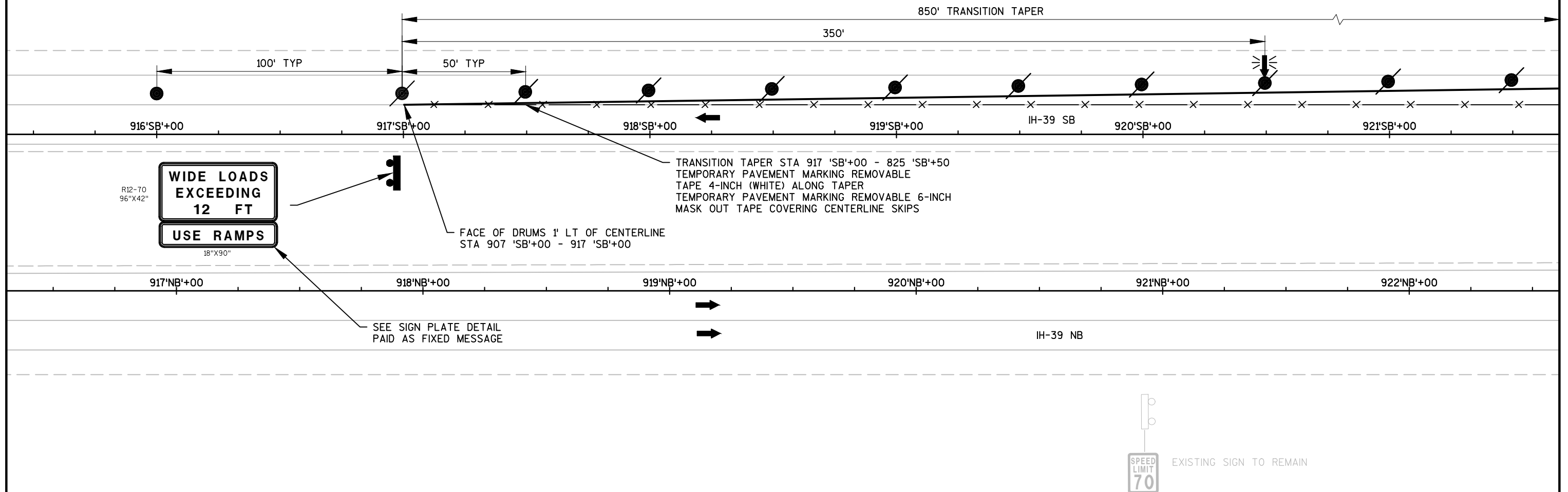
DIRECTION OF TRAFFIC

TRAFFIC CONTROL BARRICADE WITH SIGN

CONCRETE BARRIER TEMPORARY PRECAST

REMOVING PAVEMENT MARKING

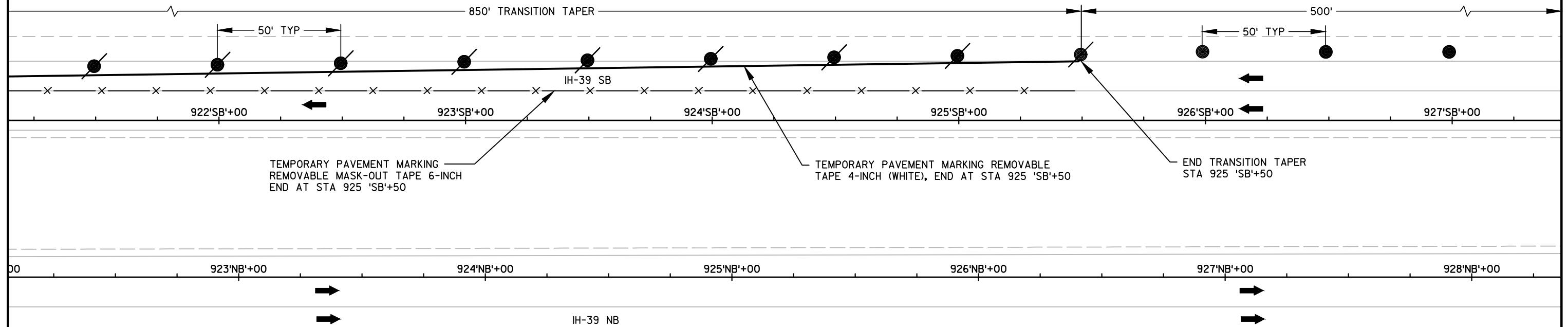
WORK AREA



LEGEND

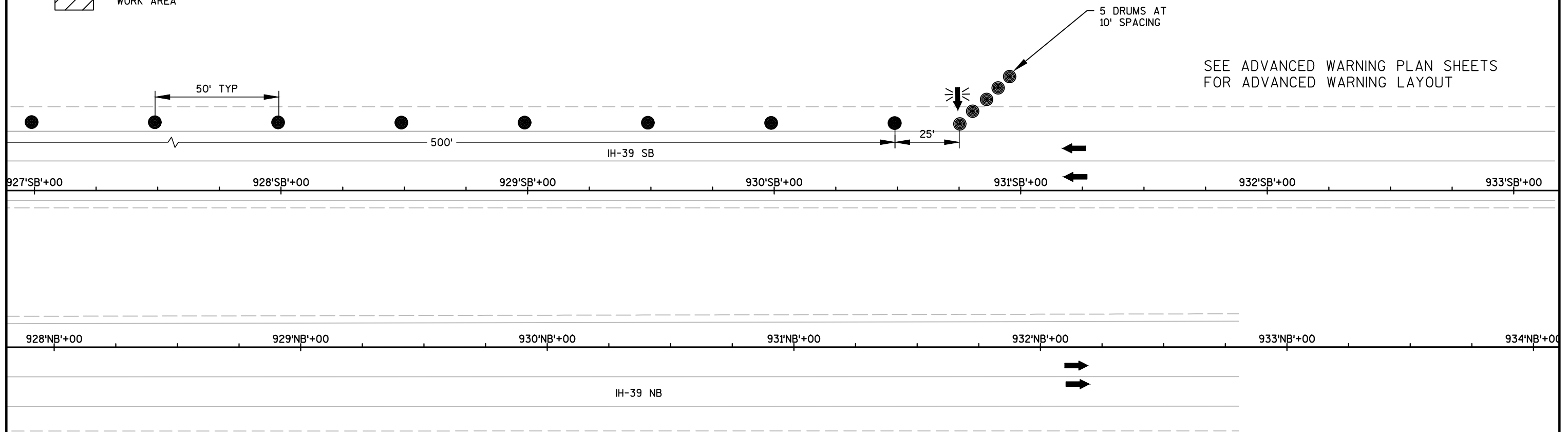
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ⚡→ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡ TRAFFIC CONTROL BARRICADE WITH SIGN
- ▬ CONCRETE BARRIER TEMPORARY PRECAST
- ×-×-× REMOVING PAVEMENT MARKING
- ▨ WORK AREA

→ Z



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ↗ FLASHING ARROW BOARD
- ├ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⊞ TRAFFIC CONTROL BARRICADE WITH SIGN
- ▬ CONCRETE BARRIER TEMPORARY PRECAST
- ✕✕✕ REMOVING PAVEMENT MARKING
- ▨ WORK AREA

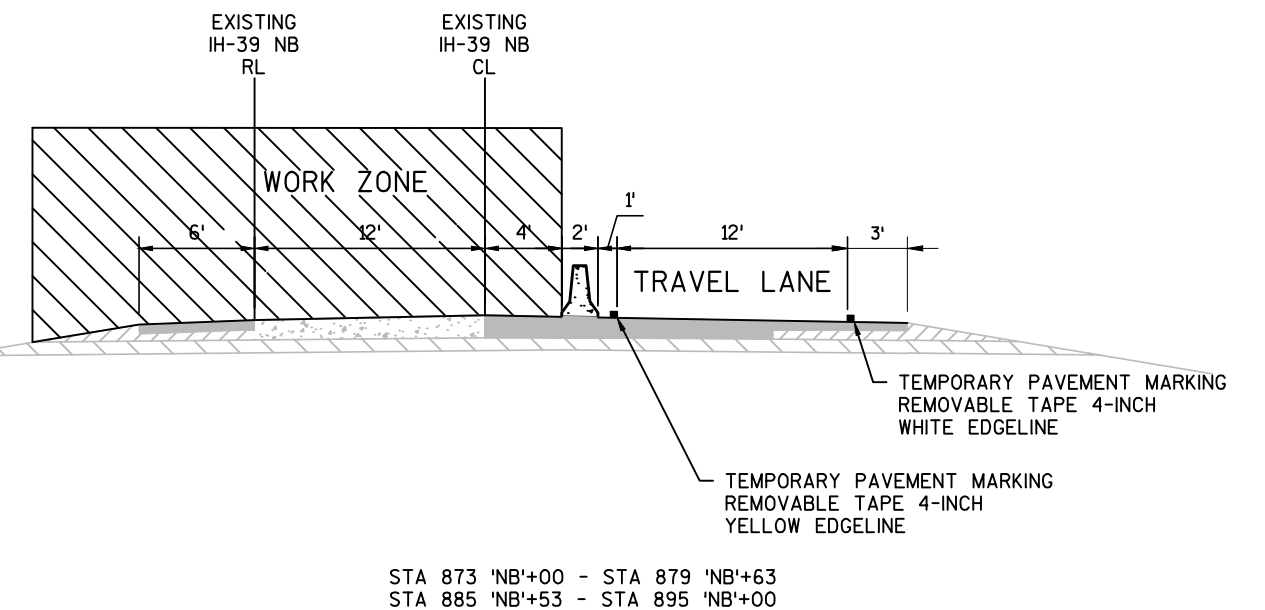
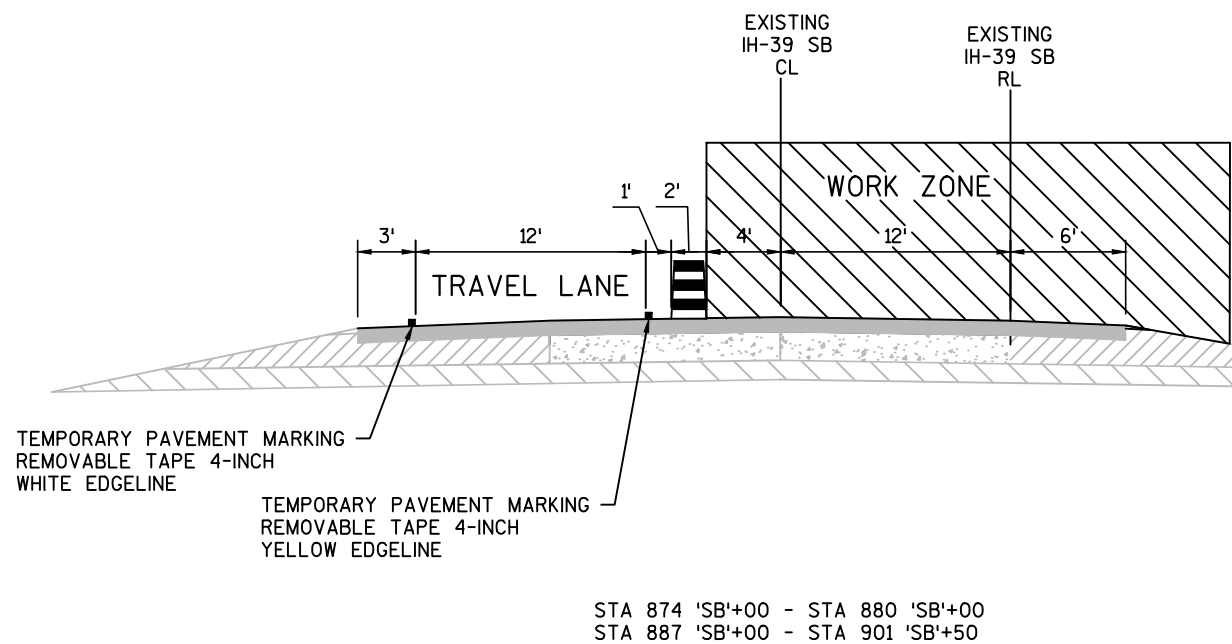
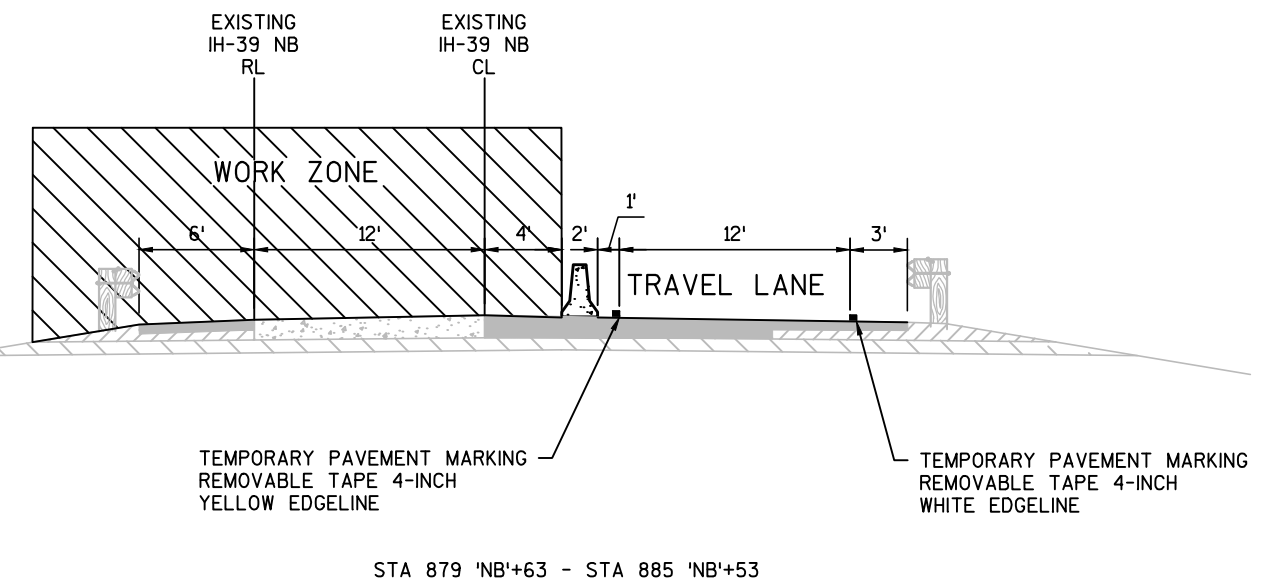
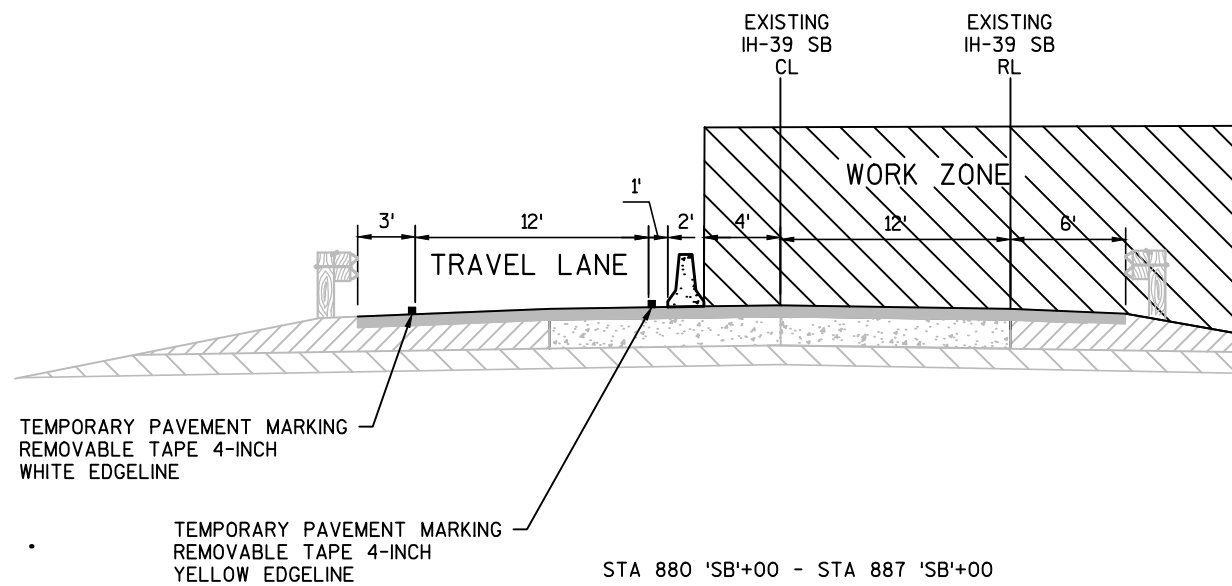


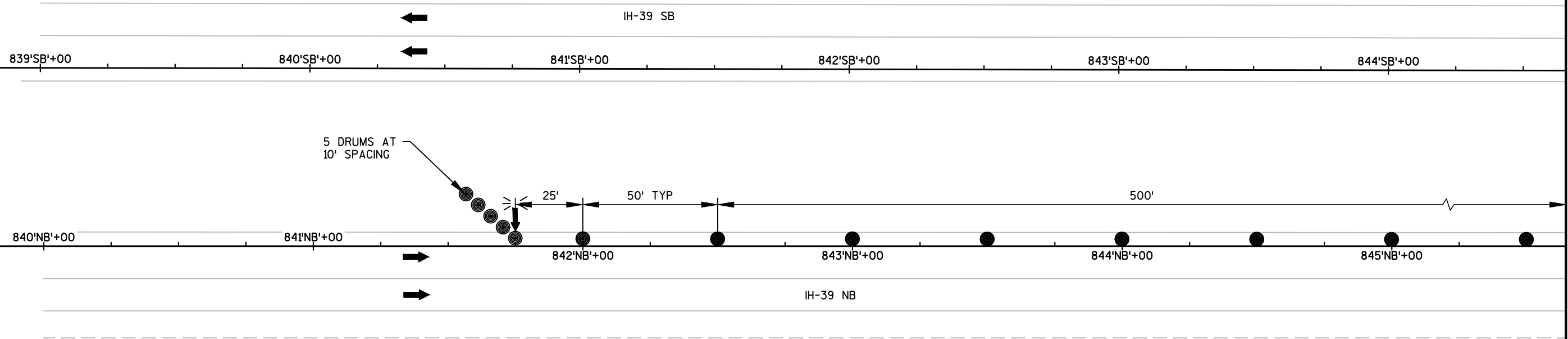
LEGEND



TEMPORARY CONCRETE
BARRIER

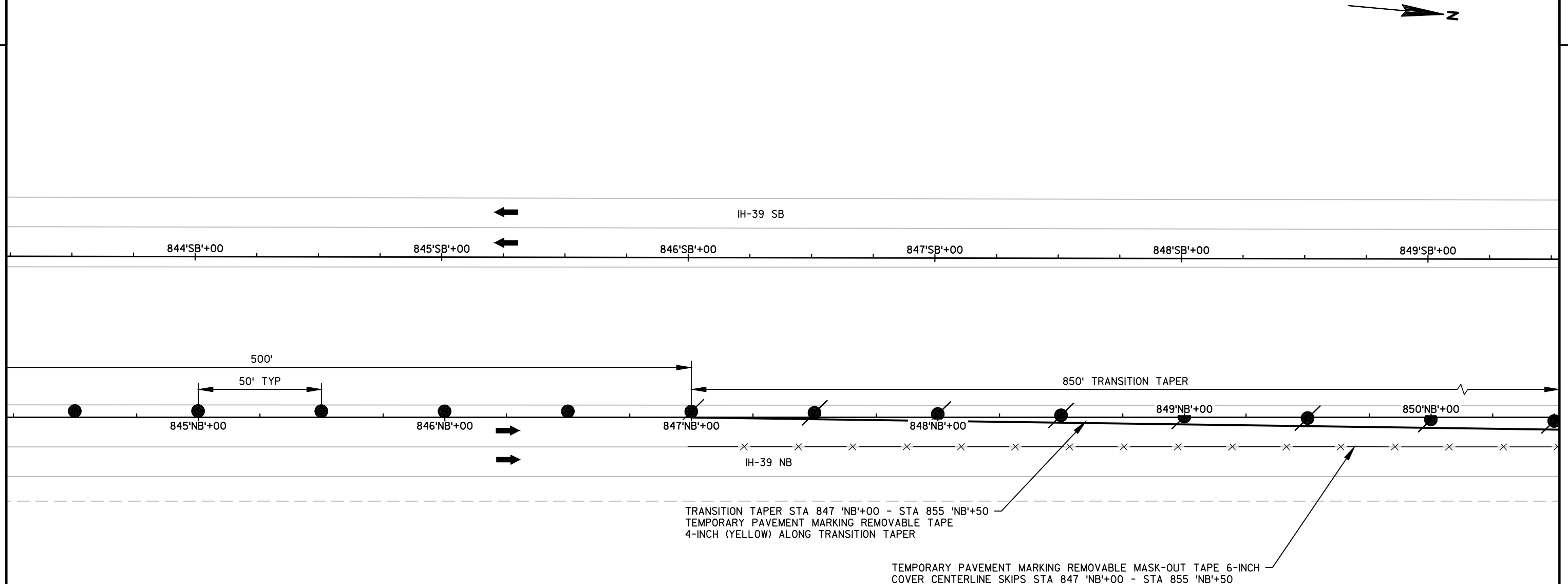
TRAFFIC CONTROL DRUMS

STAGE 3 TRAFFIC CONTROL
TYPICAL SECTIONS



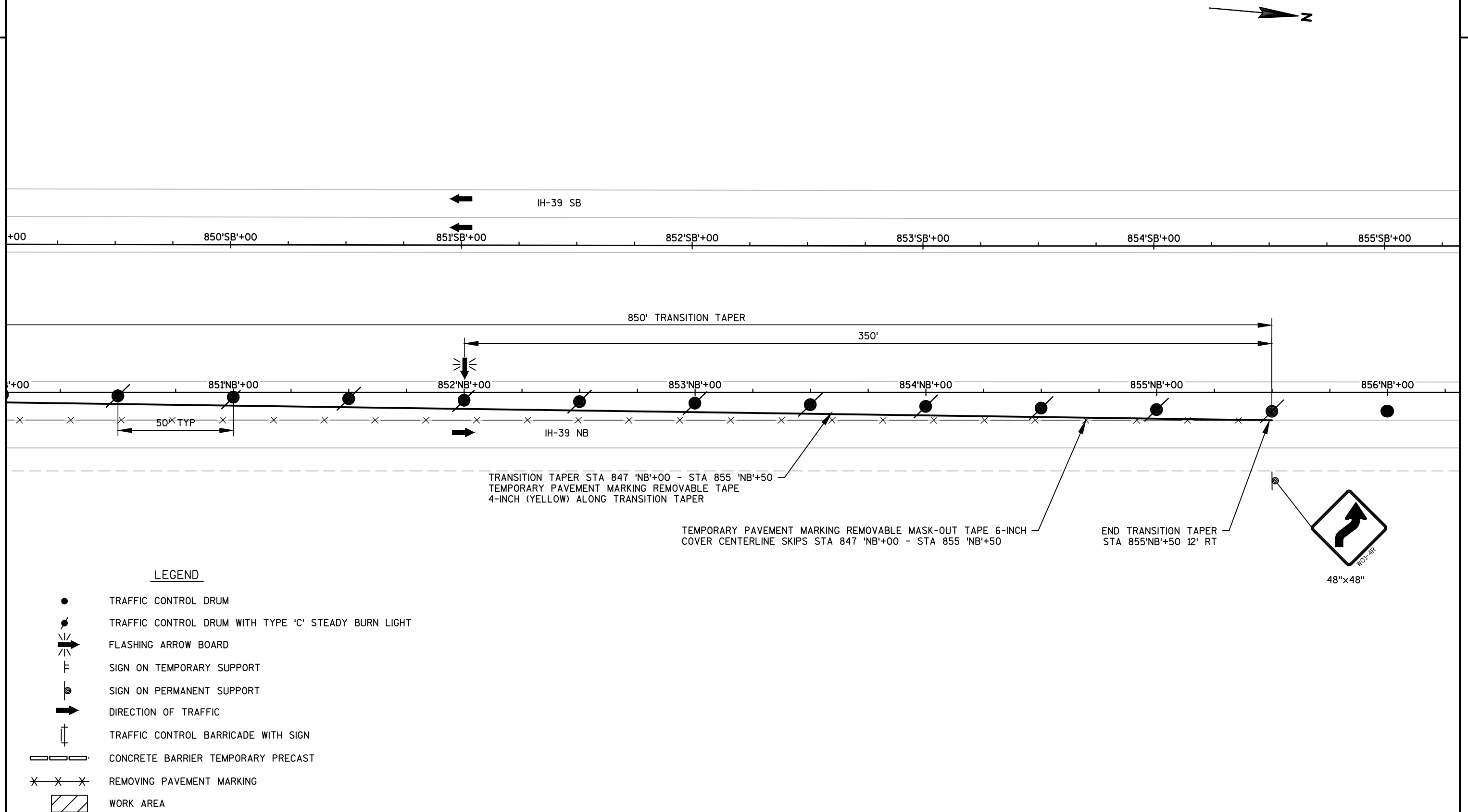
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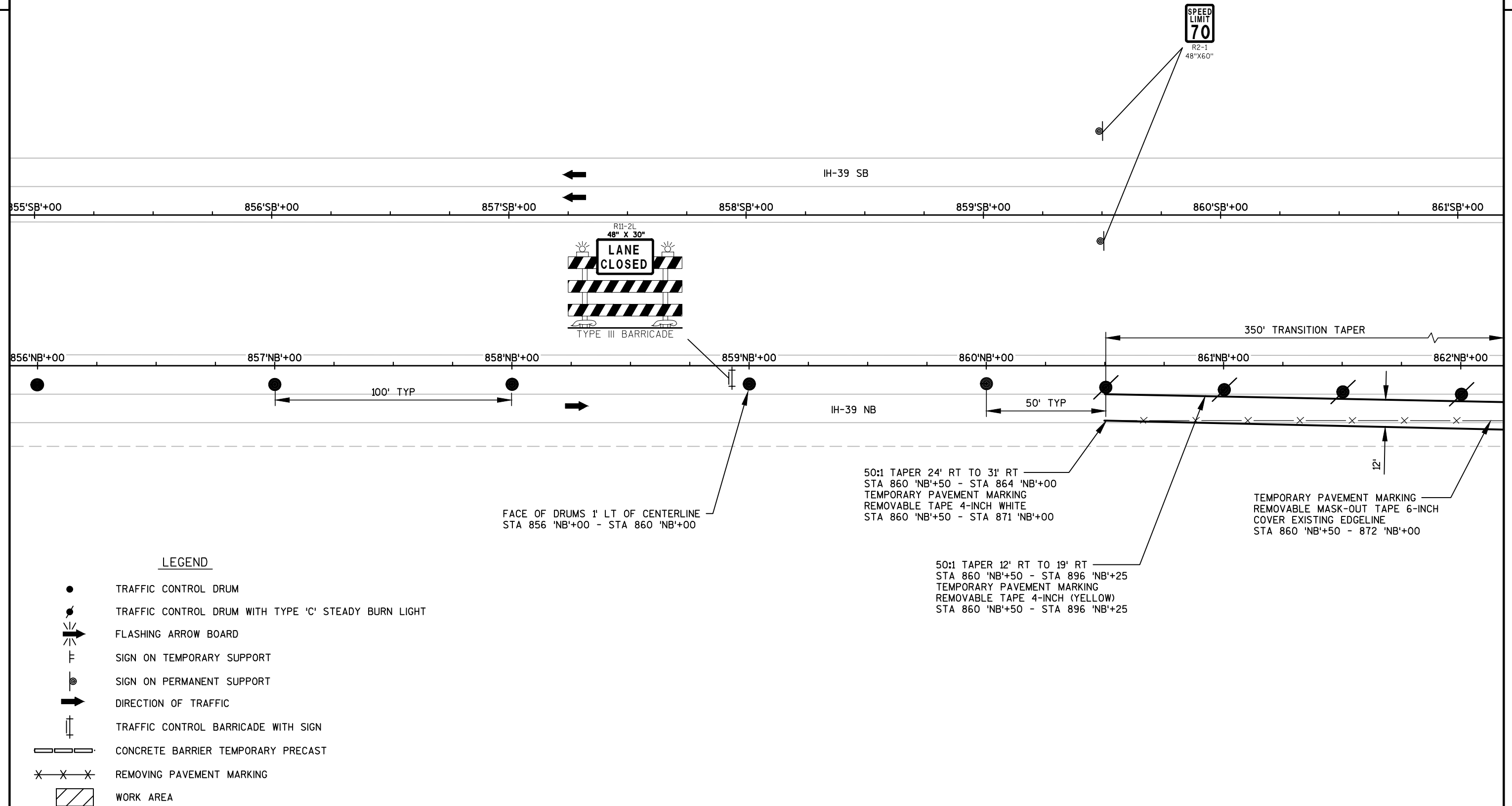
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ⚡➡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⊥ TRAFFIC CONTROL BARRICADE WITH SIGN
- ▬ CONCRETE BARRIER TEMPORARY PRECAST
- ×-×-× REMOVING PAVEMENT MARKING
- ▨ WORK AREA

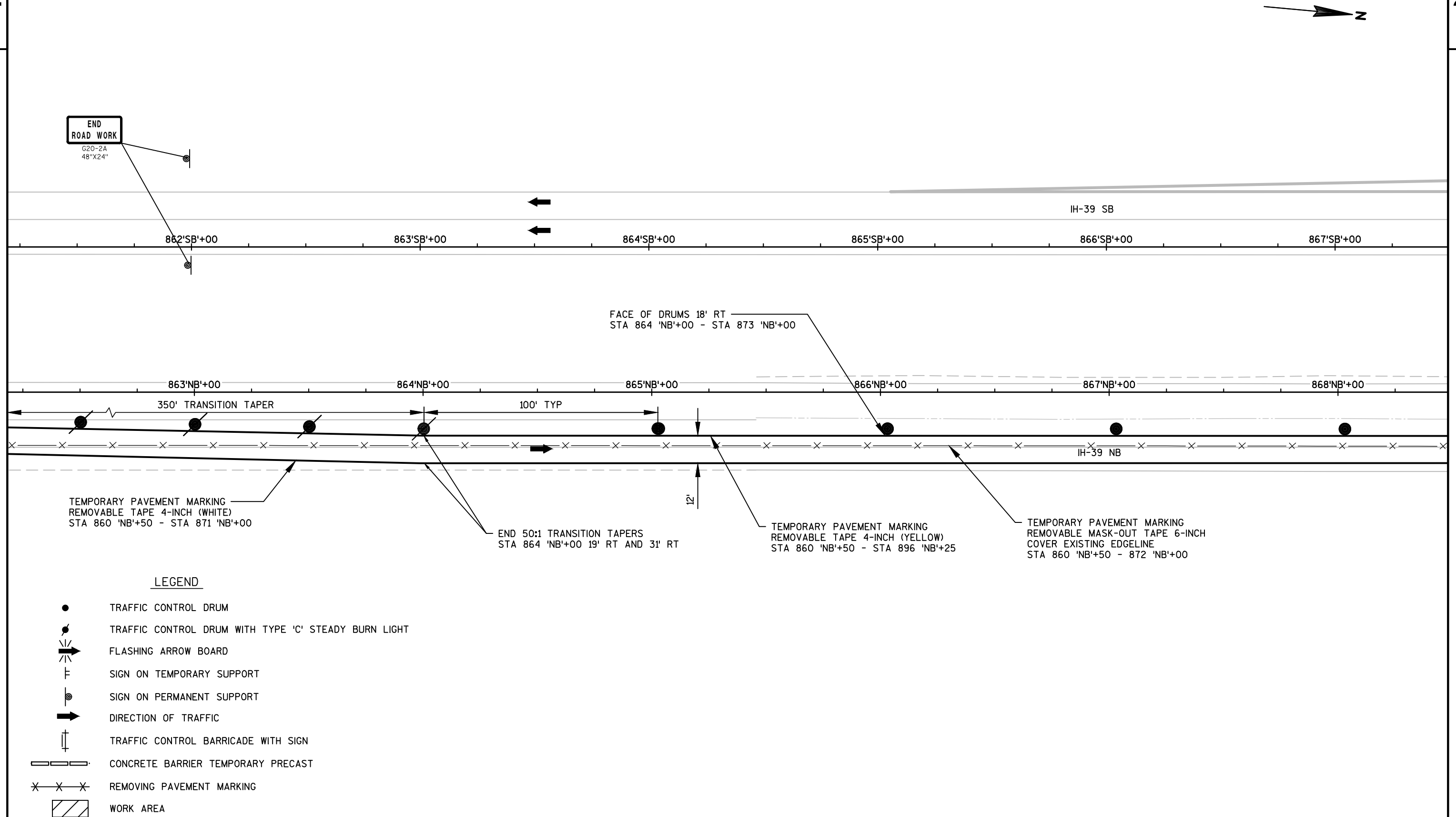


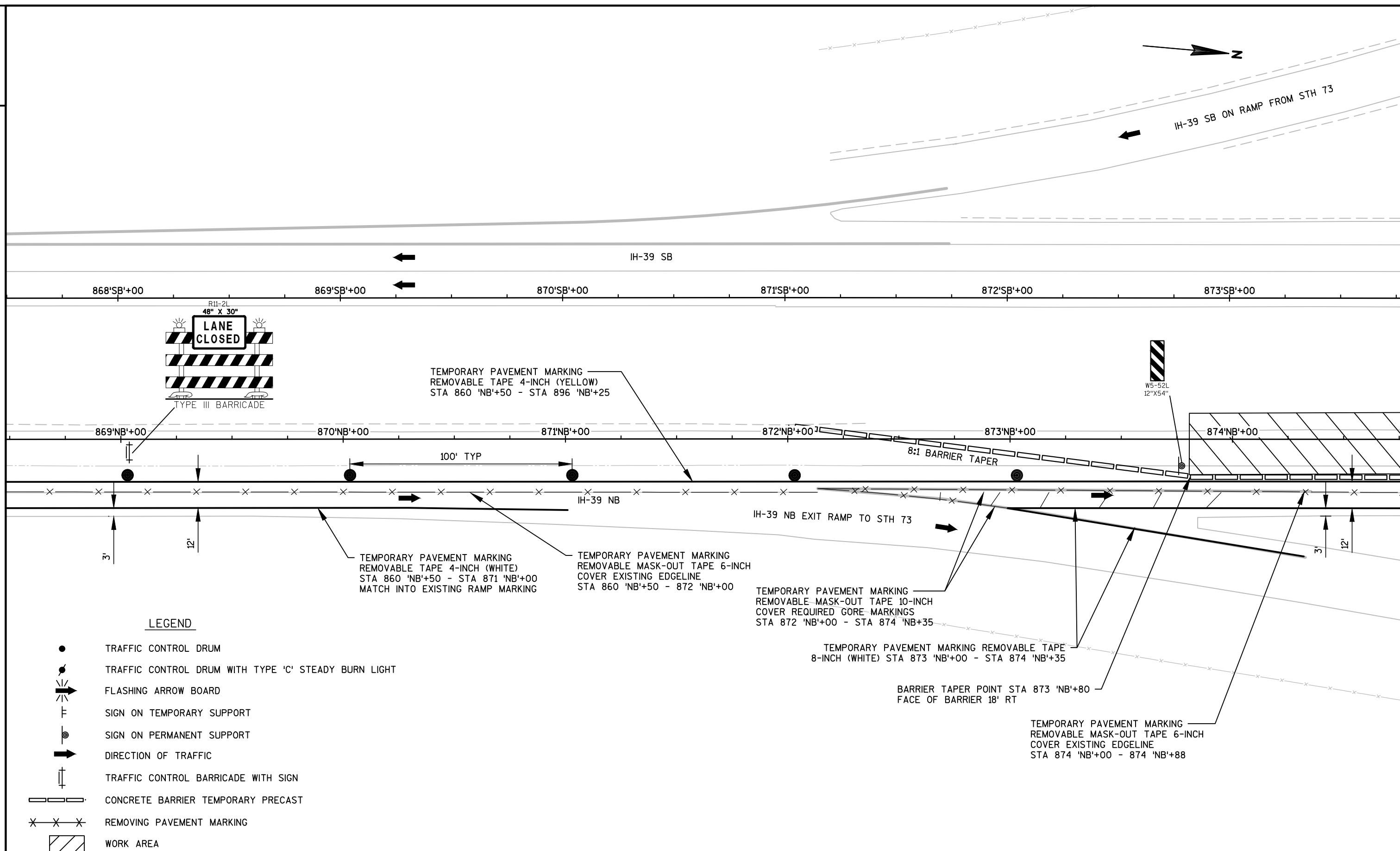
LEGEND

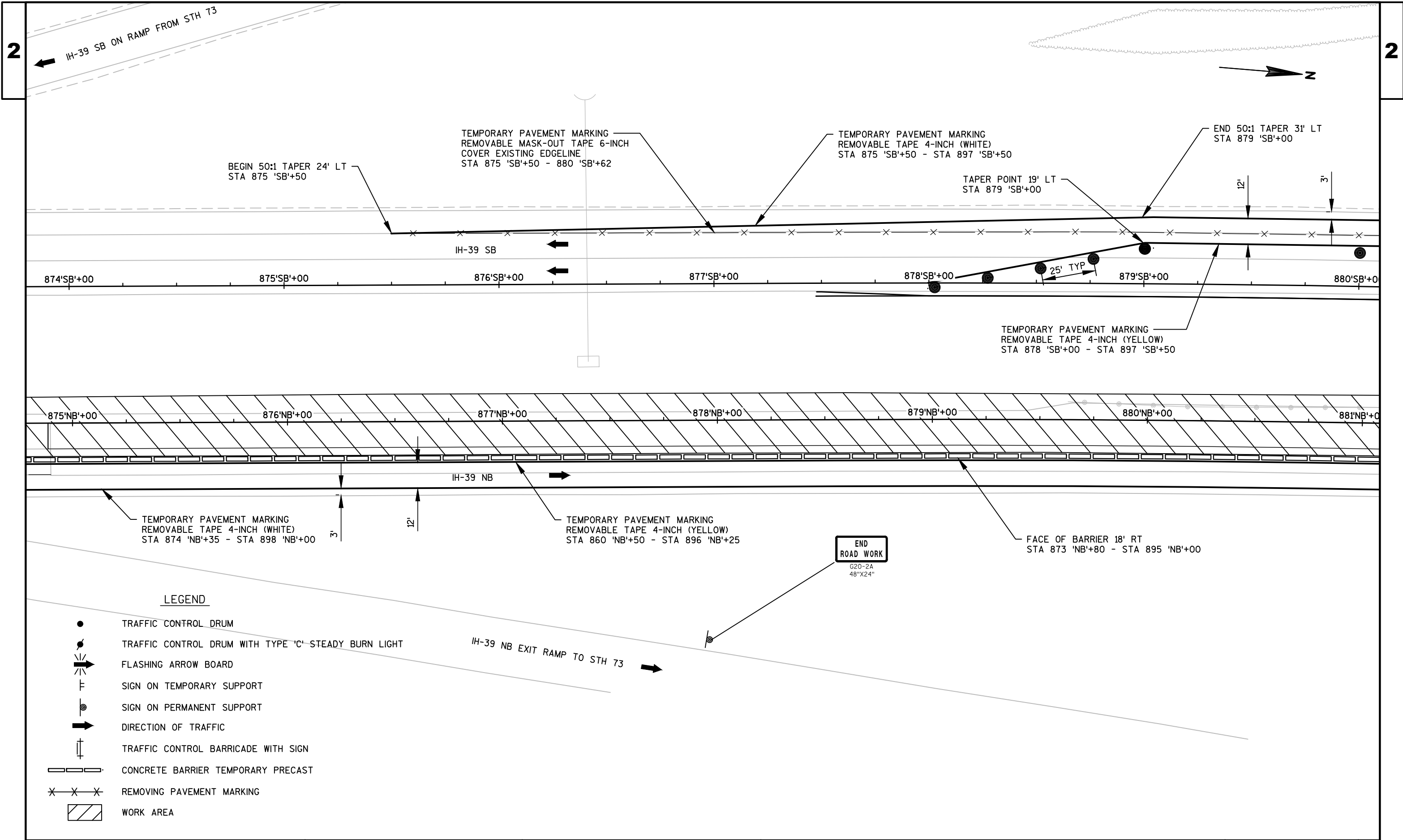
- TRAFFIC CONTROL DRUM
- ⦿ TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ↔ FLASHING ARROW BOARD
- ⌄ SIGN ON TEMPORARY SUPPORT
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⌄ TRAFFIC CONTROL BARRICADE WITH SIGN
- ▬ CONCRETE BARRIER TEMPORARY PRECAST
- ×-×-× REMOVING PAVEMENT MARKING
- ▨ WORK AREA

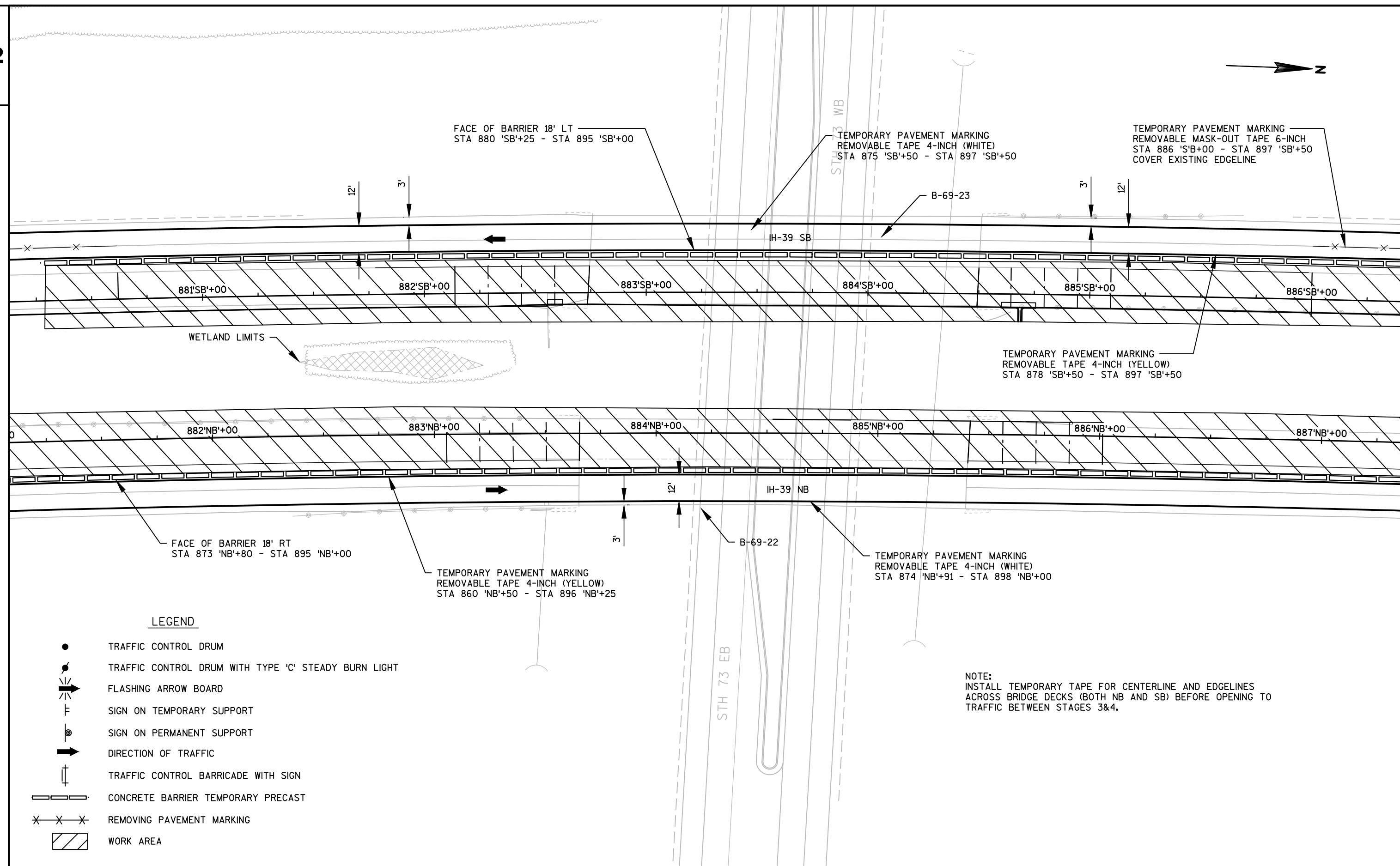


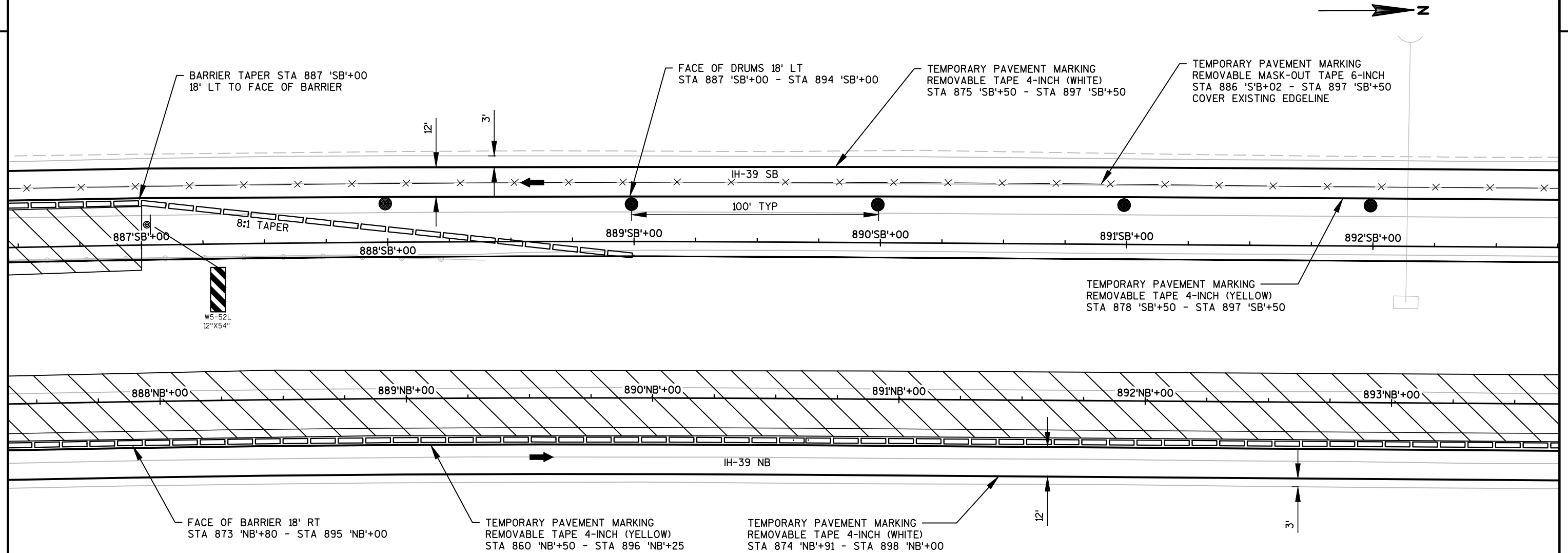






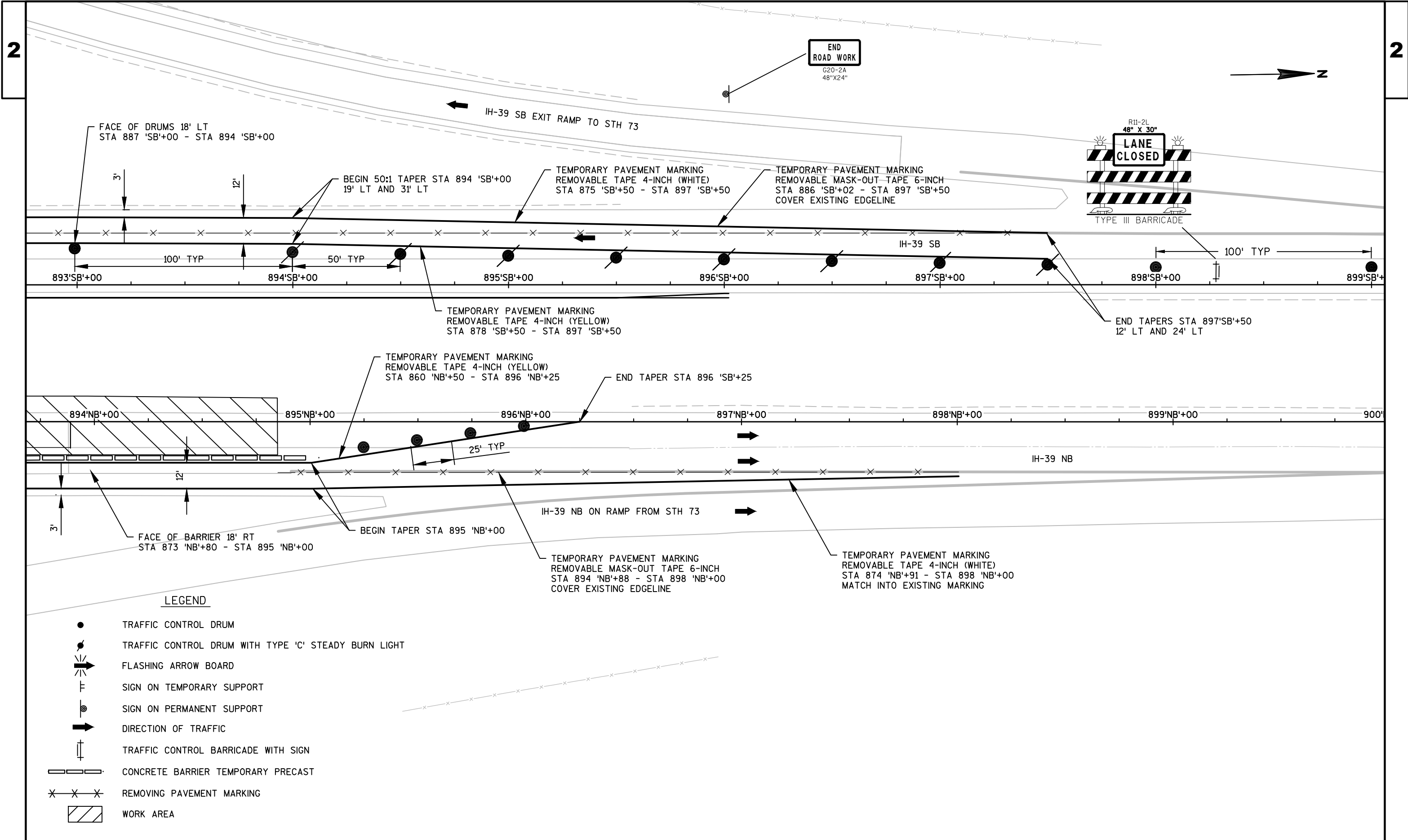


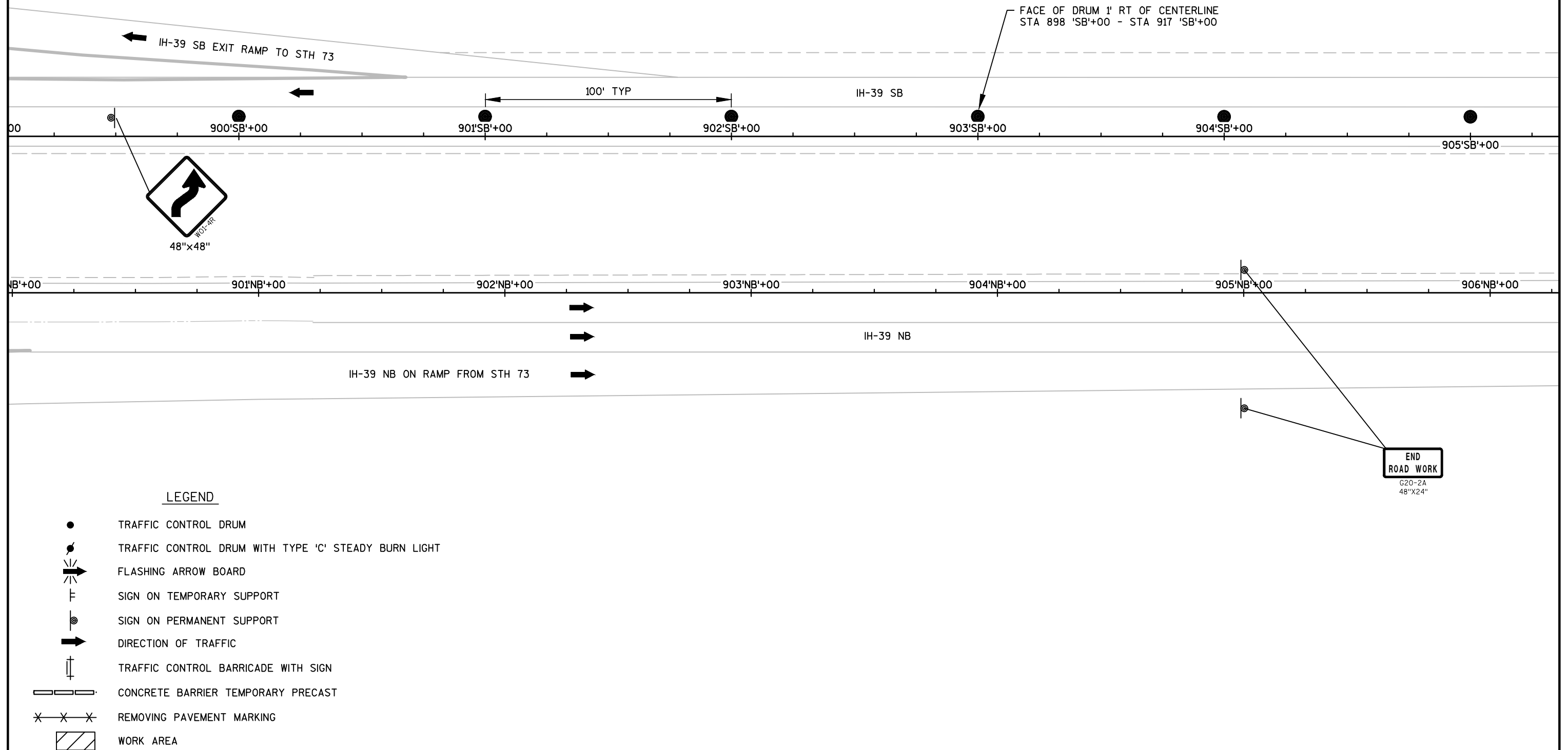


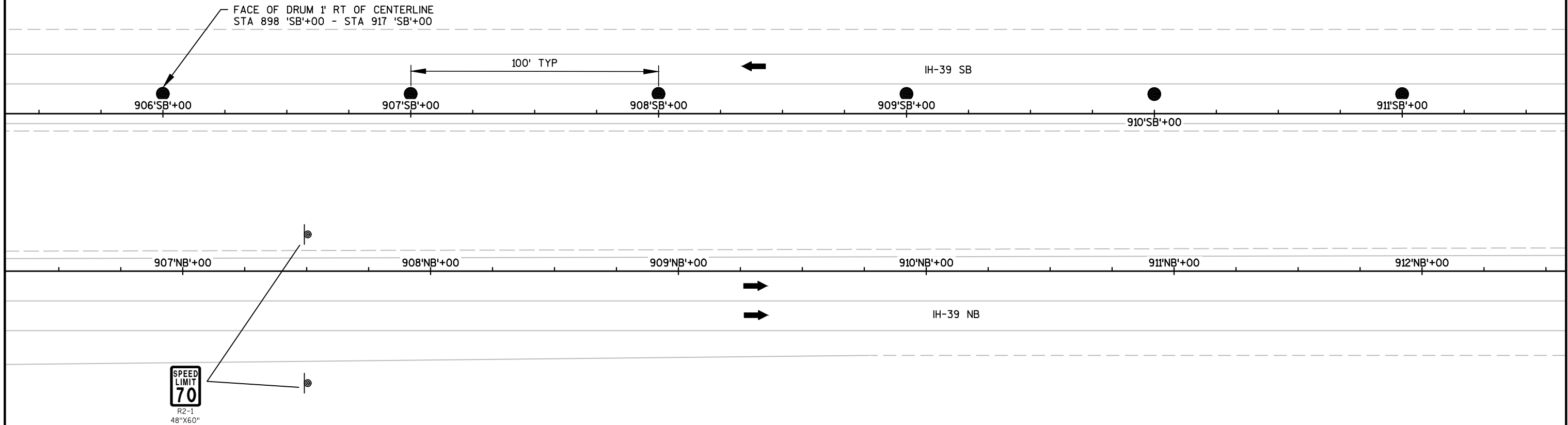


LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ⚡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡ TRAFFIC CONTROL BARRICADE WITH SIGN
- ▬ CONCRETE BARRIER TEMPORARY PRECAST
- × × × REMOVING PAVEMENT MARKING
- ▨ WORK AREA

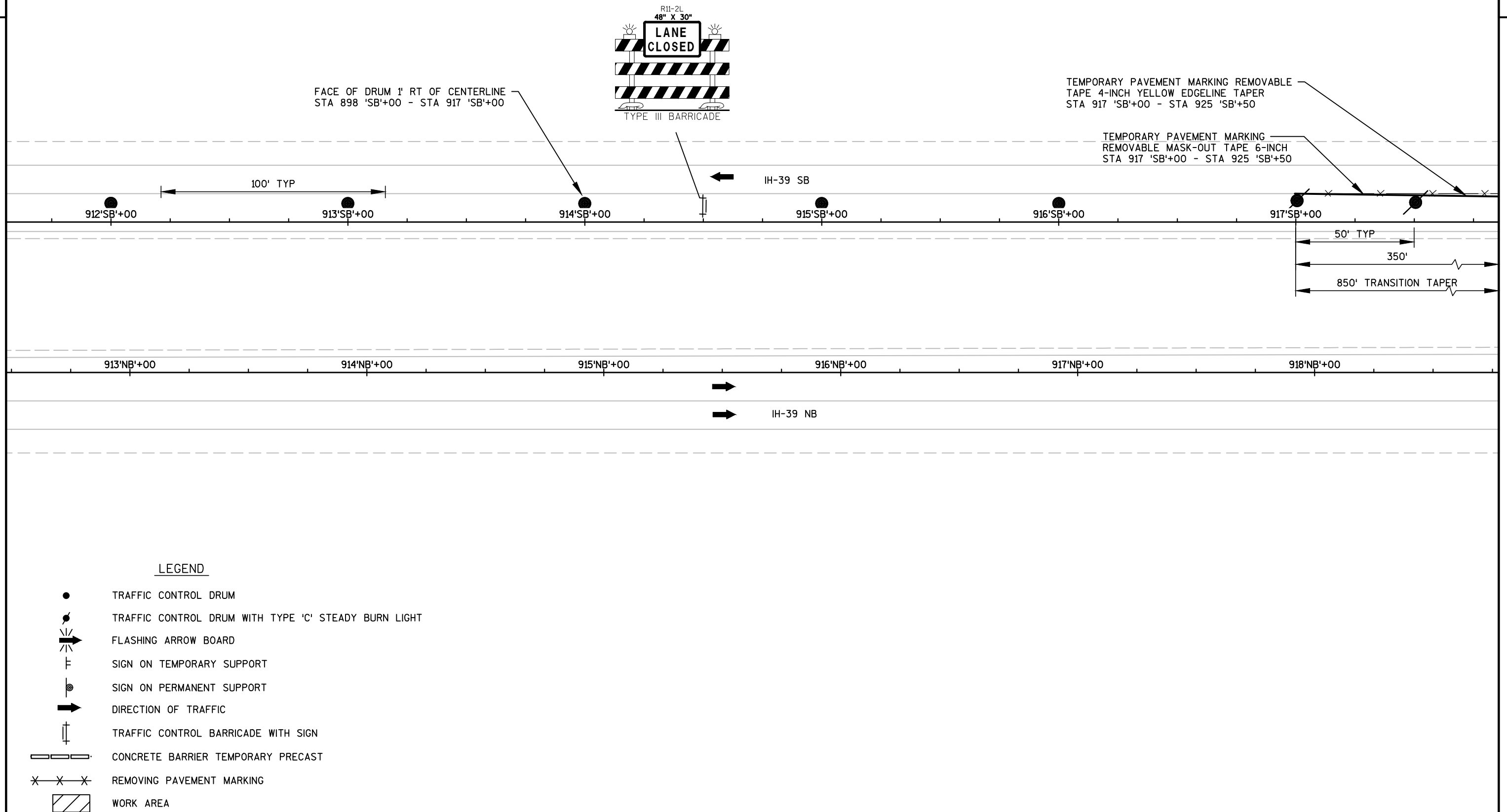


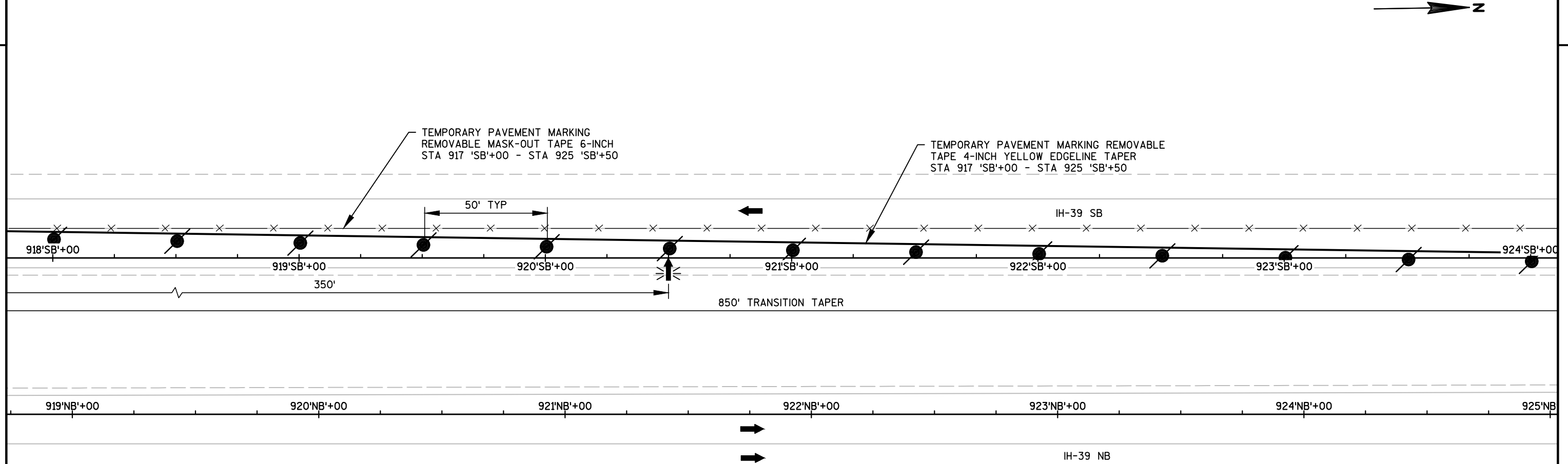


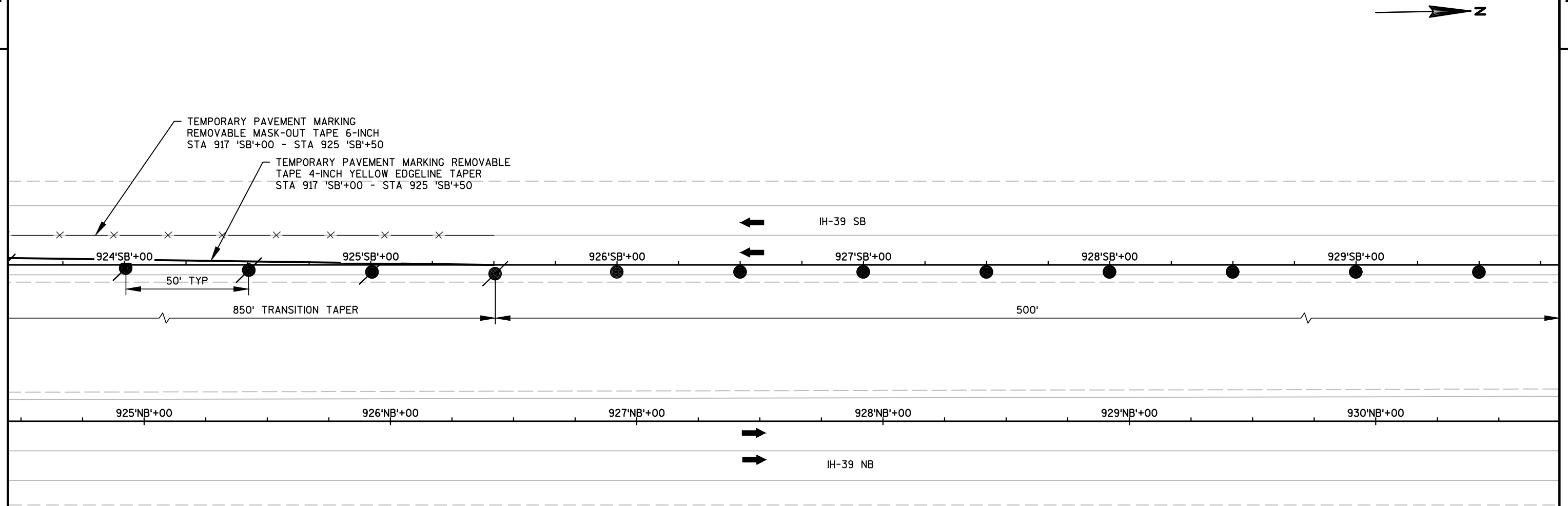


LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ⚡ FLASHING ARROW BOARD
- ├ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡ TRAFFIC CONTROL BARRICADE WITH SIGN
- ▬ CONCRETE BARRIER TEMPORARY PRECAST
- ✕✕✕ REMOVING PAVEMENT MARKING
- ▨ WORK AREA





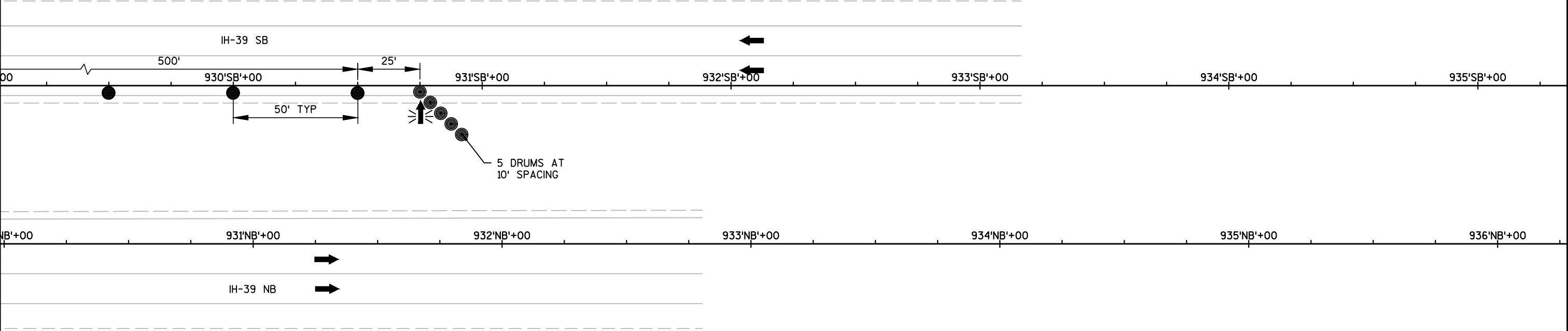


LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ➡ FLASHING ARROW BOARD
- ┌ SIGN ON TEMPORARY SUPPORT
- ➡ DIRECTION OF TRAFFIC
- Ⓐ TYPE 'A' WARNING LIGHT (FLASHING)
- ✕-✕-✕ REMOVING PAVEMENT MARKING
- ▨ WORK AREA



SEE ADVANCED WARNING PLAN SHEETS
FOR ADVANCED WARNING LAYOUT



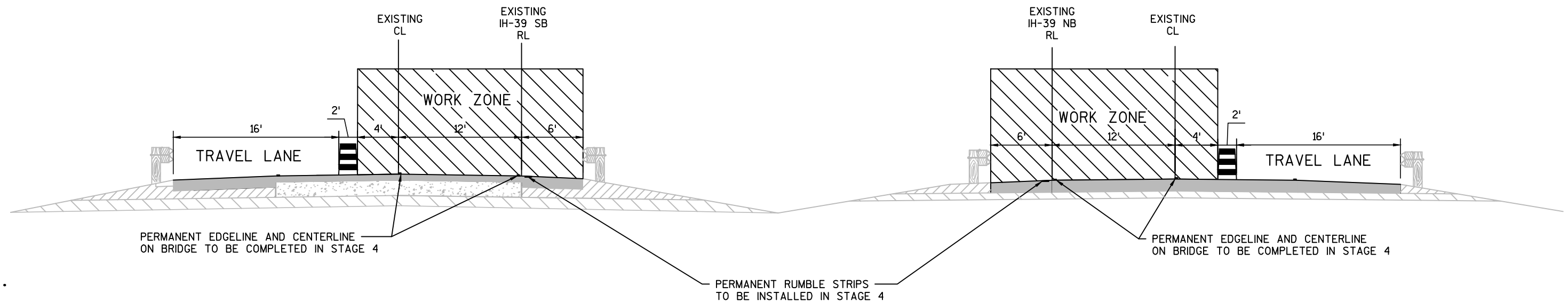
LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ➡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ➡ DIRECTION OF TRAFFIC
- Ⓐ TYPE 'A' WARNING LIGHT (FLASHING)
- X-X-X REMOVING PAVEMENT MARKING
- ▨ WORK AREA

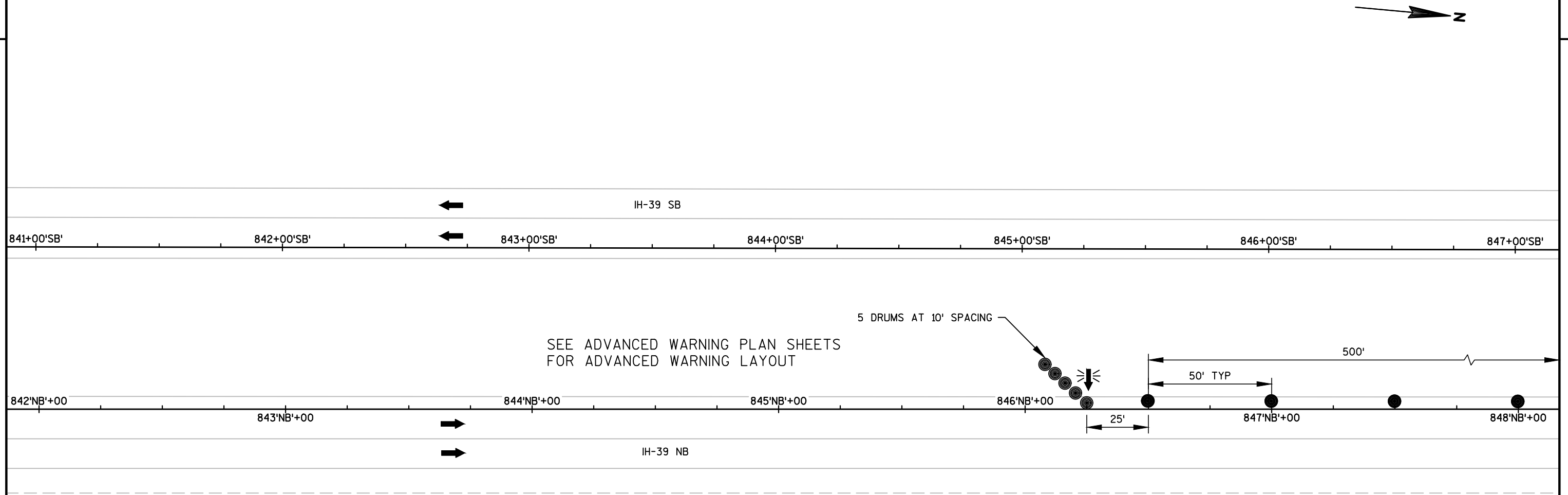
LEGEND

TEMPORARY CONCRETE
BARRIER

TRAFFIC CONTROL DRUMS

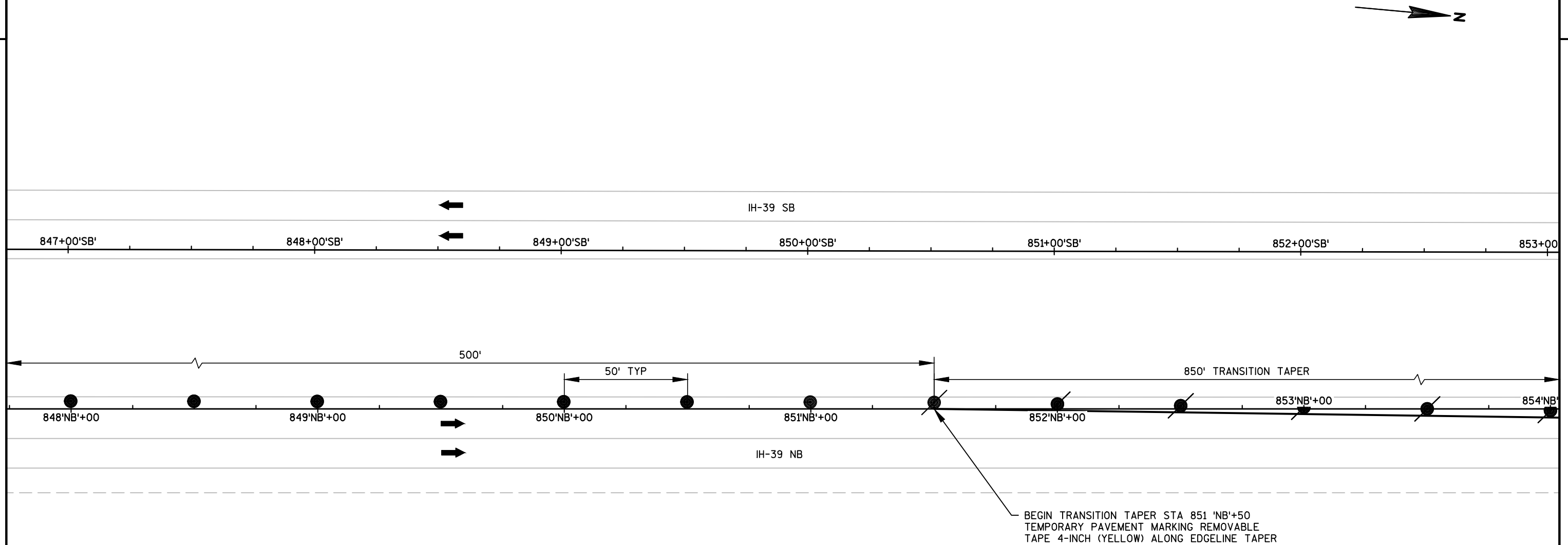
STAGE 4 TRAFFIC CONTROL
TYPICAL SECTIONS

* DURING STAGE 4, INSTALL POLYMER
OVERLAY 3' PAST CENTERLINE ON
STRUCTURE B-69-22 & 23



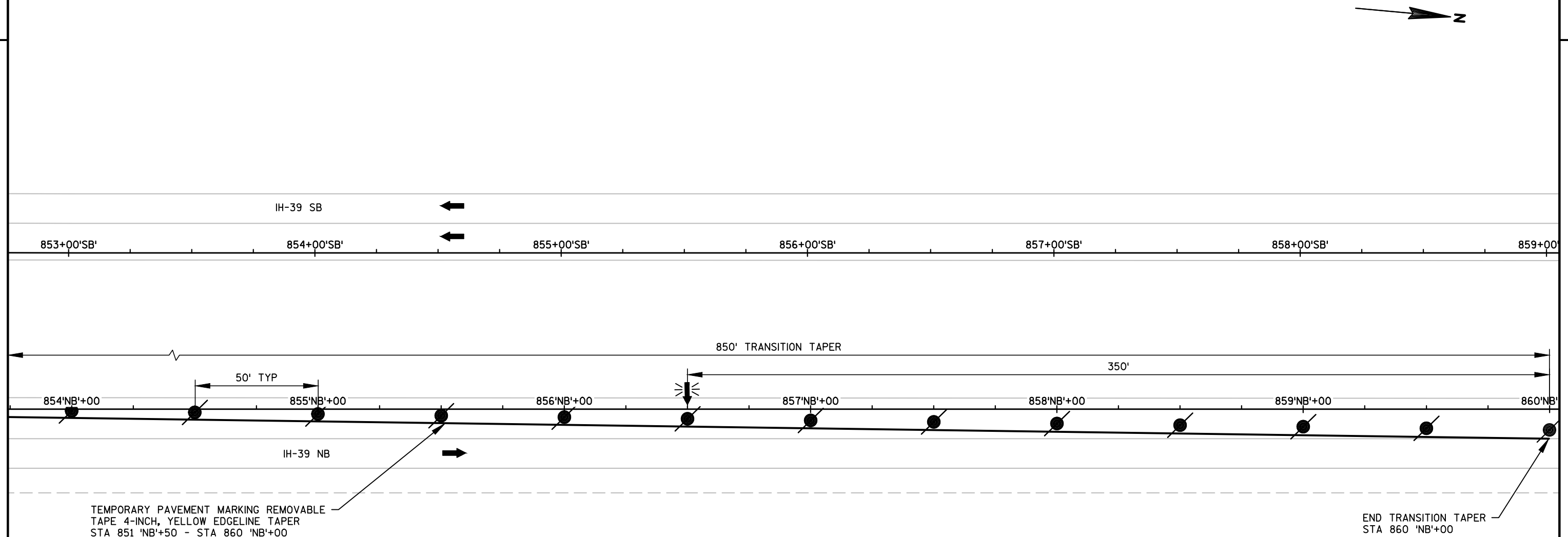
LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ➡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA



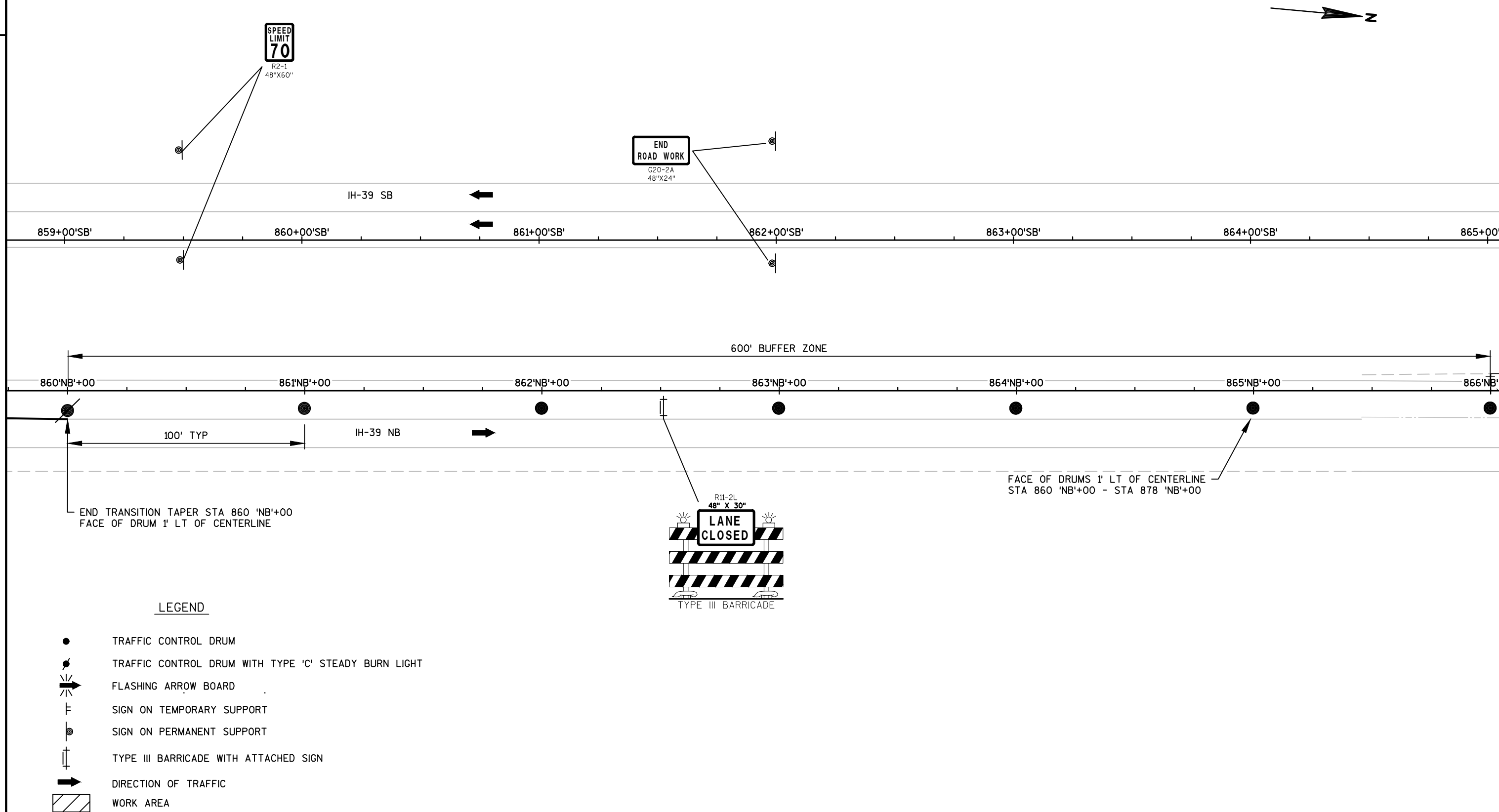
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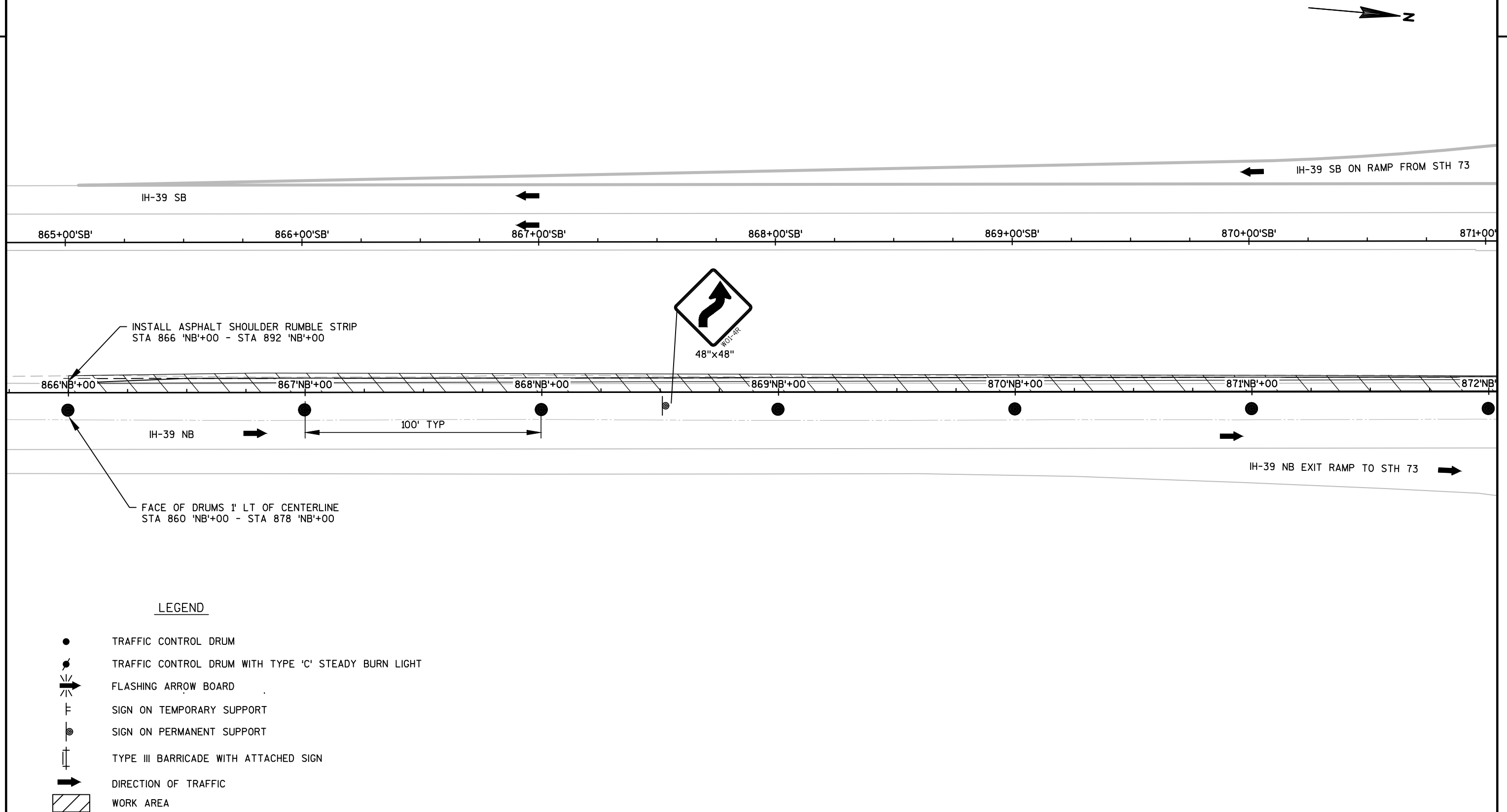
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ⚡➡ FLASHING ARROW BOARD
- ⌚ SIGN ON TEMPORARY SUPPORT
- ⦿ SIGN ON PERMANENT SUPPORT
- ⌚ TYPE III BARRICADE WITH ATTACHED SIGN
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

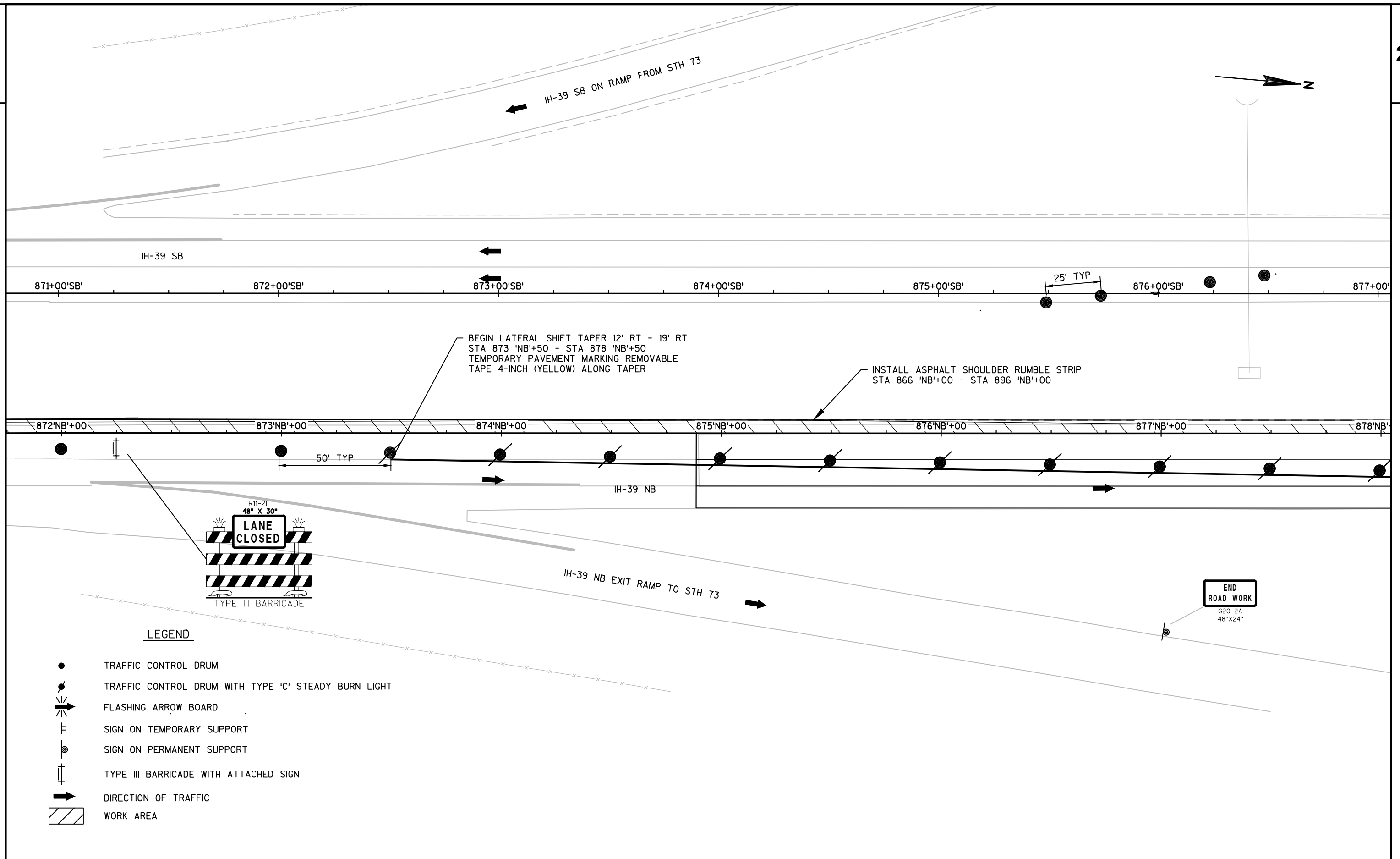


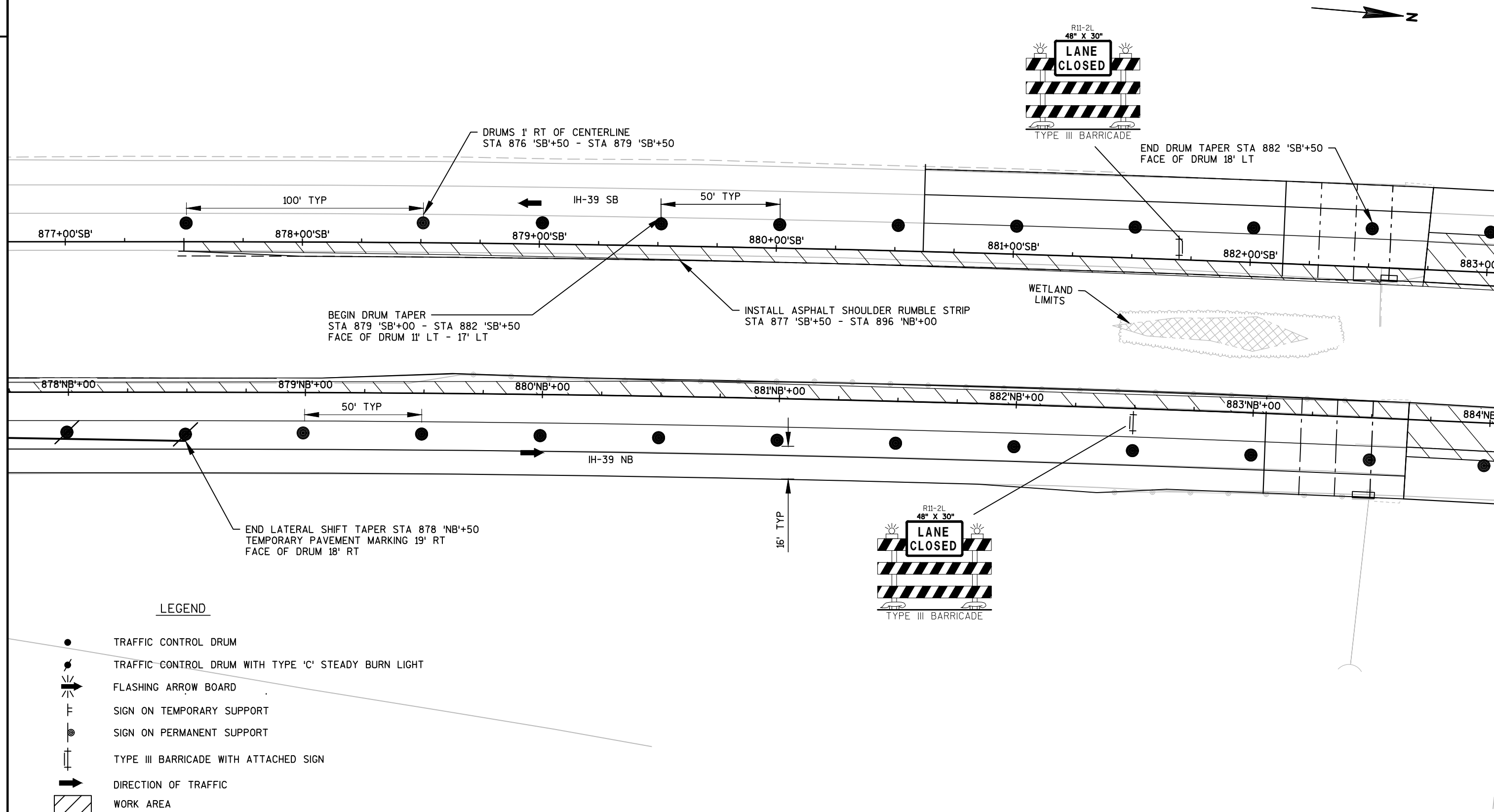
LEGEND

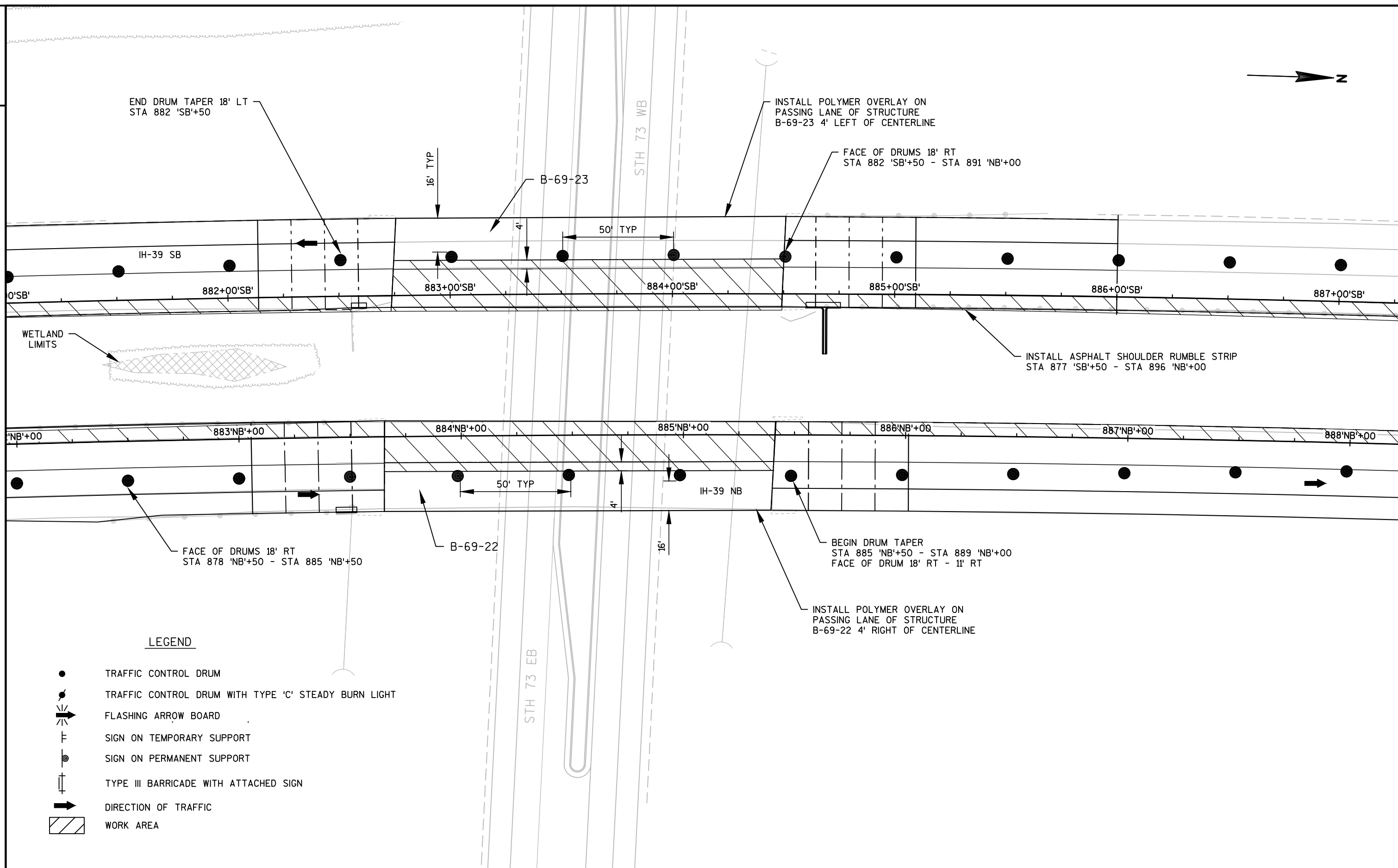
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ➡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

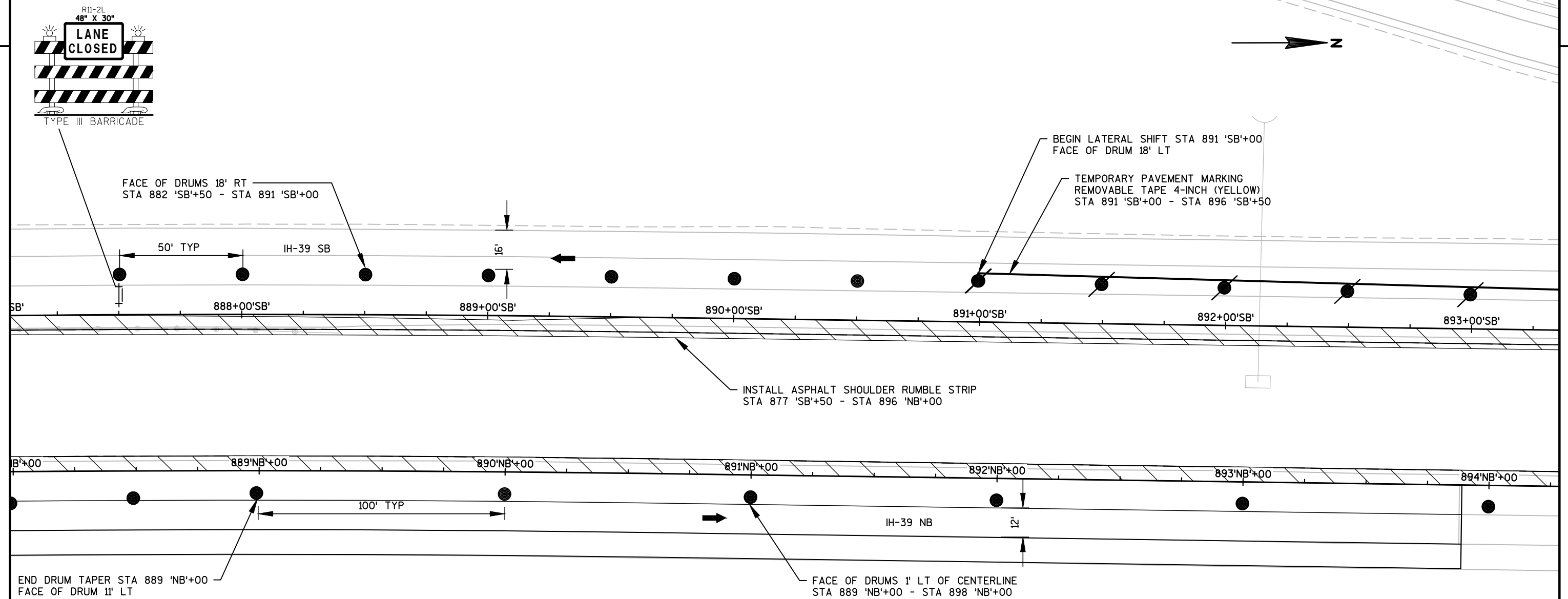










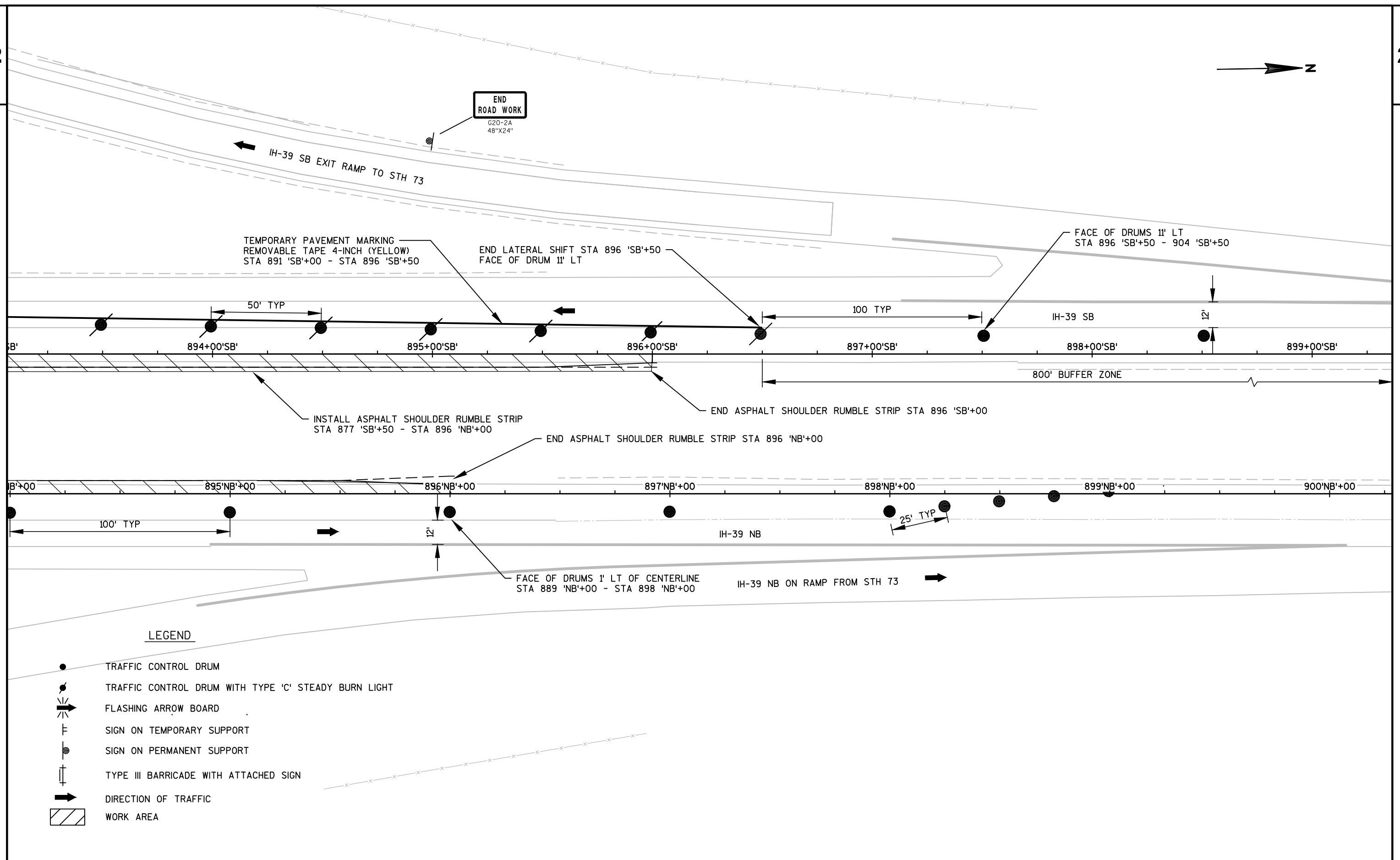


LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ➡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

2

2



PROJECT NO:1166-06-64

HWY:IH-39

COUNTY:WAUSHARA

TRAFFIC CONTROL IH-39 STAGE 4

SHEET 107

E

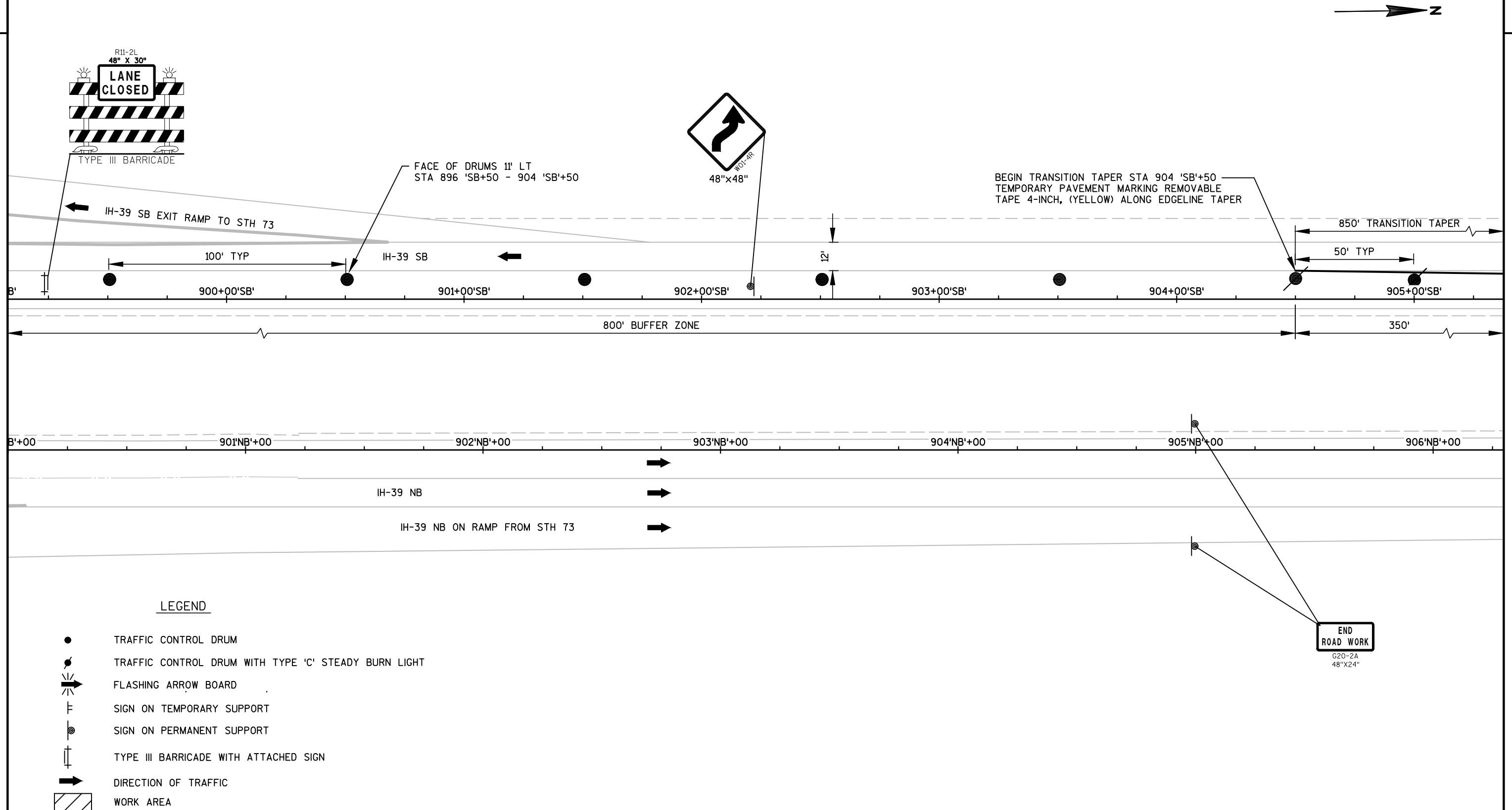
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LAYOUT NAME - 10

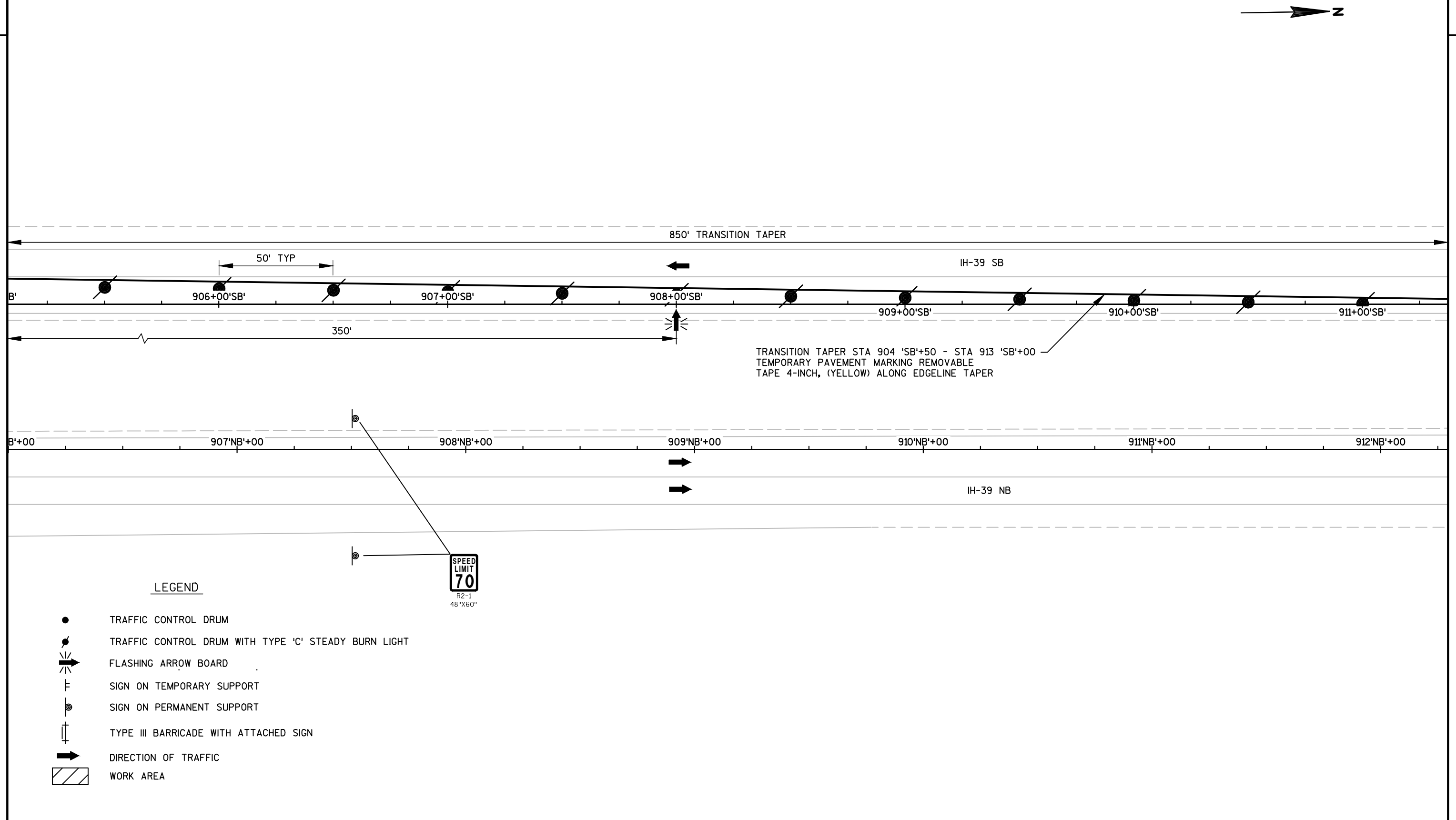
PLOT DATE : 8/15/2016 9:03 AM

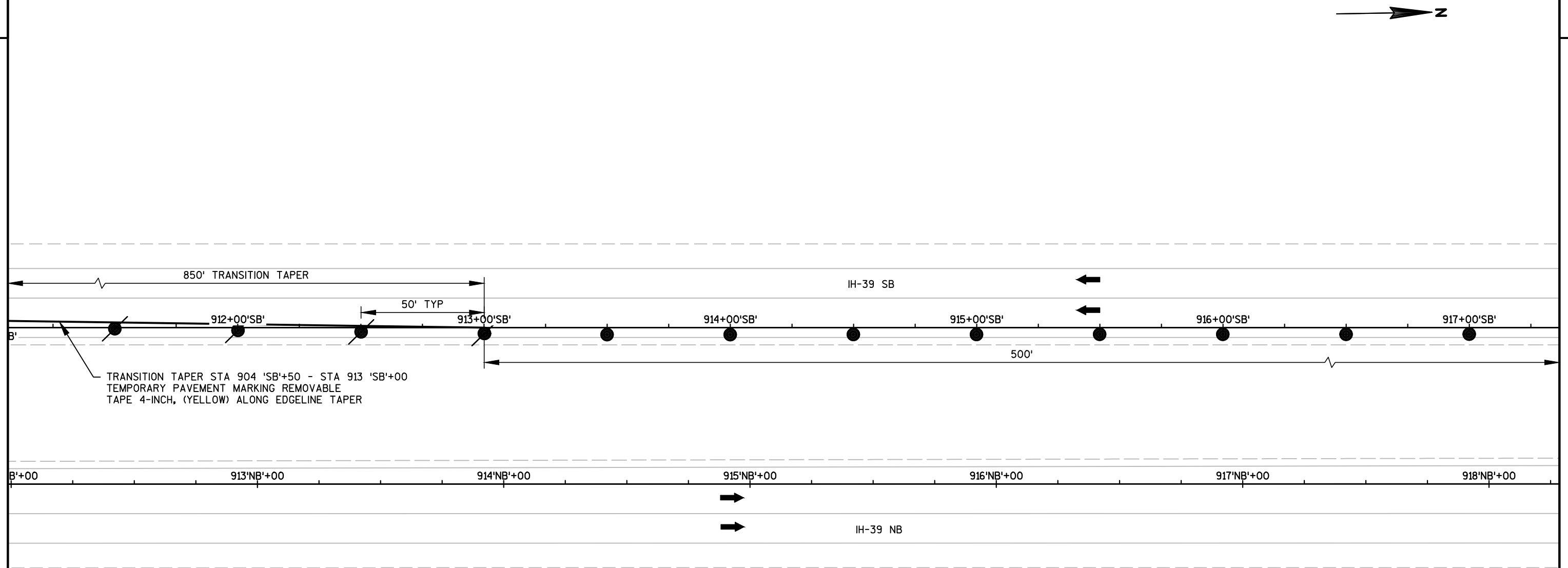
PLOT BY : SCHLEICHER, BRYCE B PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADDs SHEET 42







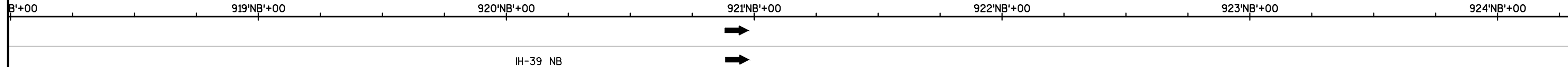
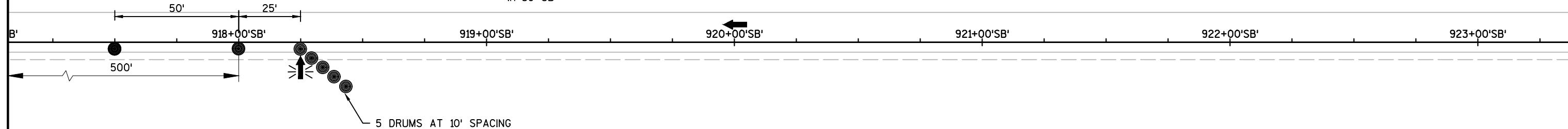
LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- FLASHING ARROW BOARD
- ├ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ├ TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- ▨ WORK AREA



SEE ADVANCED WARNING PLAN SHEETS
FOR ADVANCED WARNING LAYOUT

IH-39 SB



IH-39 NB

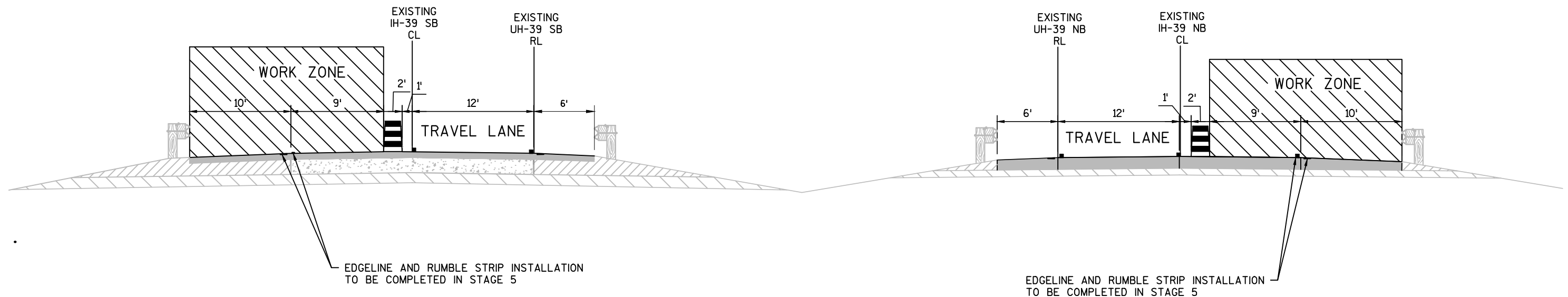
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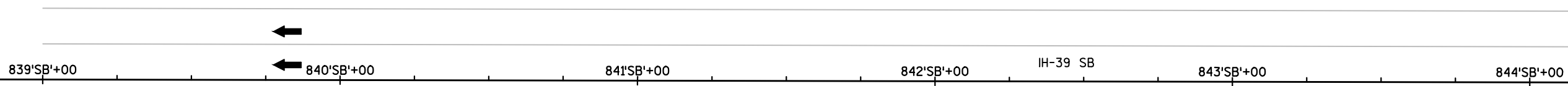
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ➡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

LEGEND

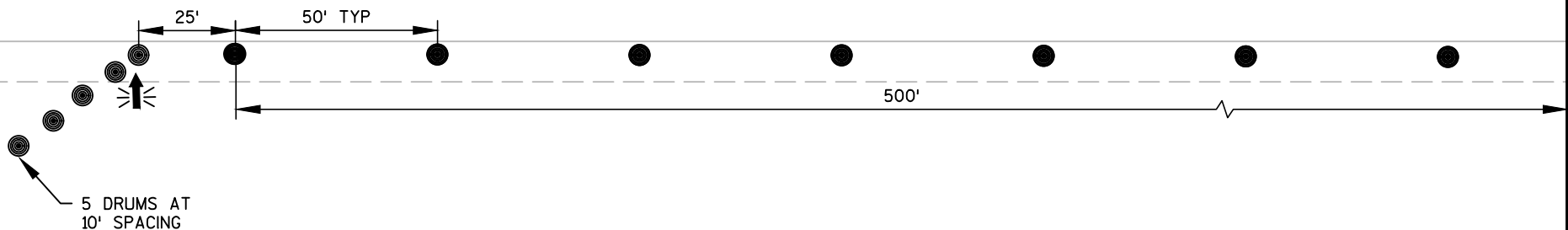
TEMPORARY CONCRETE
BARRIER

TRAFFIC CONTROL DRUMS

STAGE 5 TRAFFIC CONTROL
TYPICAL SECTIONS

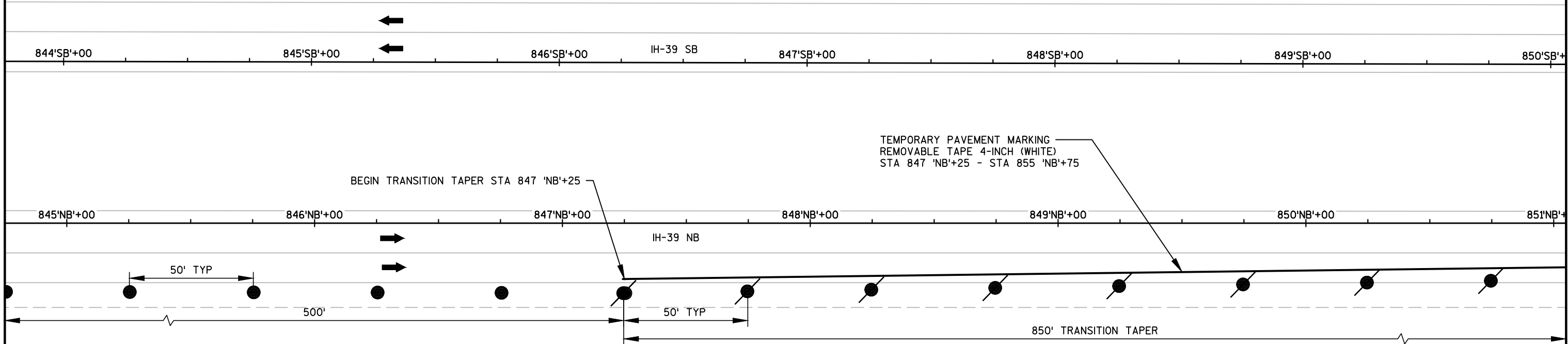


SEE ADVANCED WARNING PLAN SHEETS
FOR ADVANCED WARNING LAYOUT



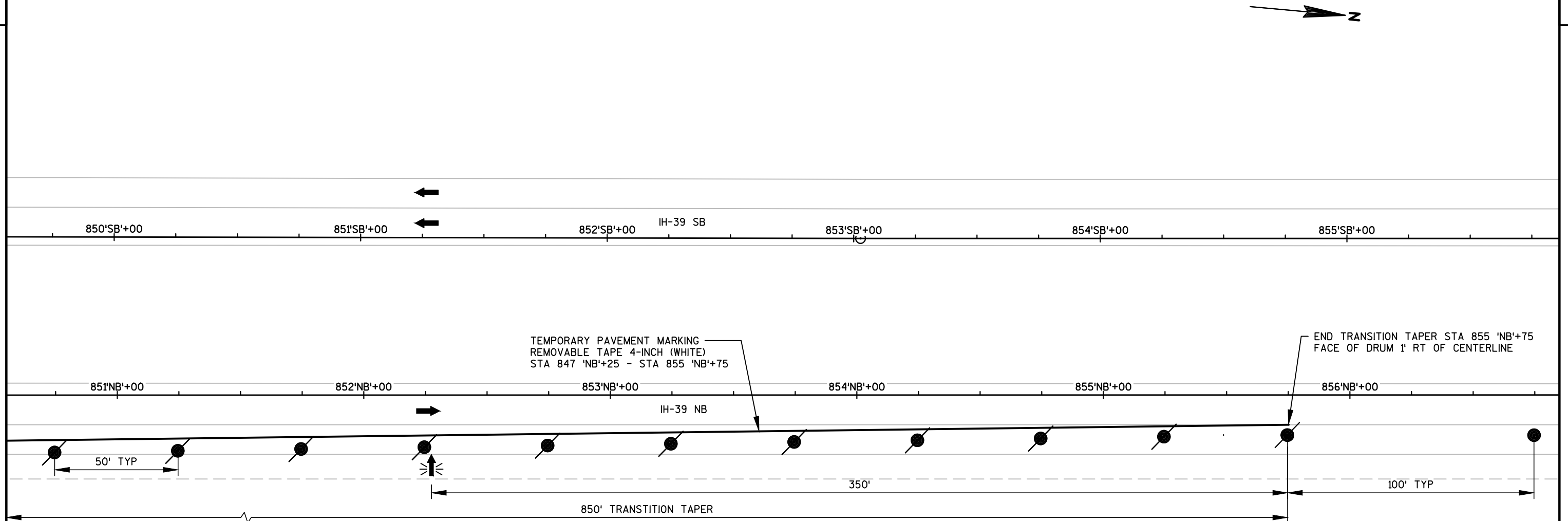
LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ➡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

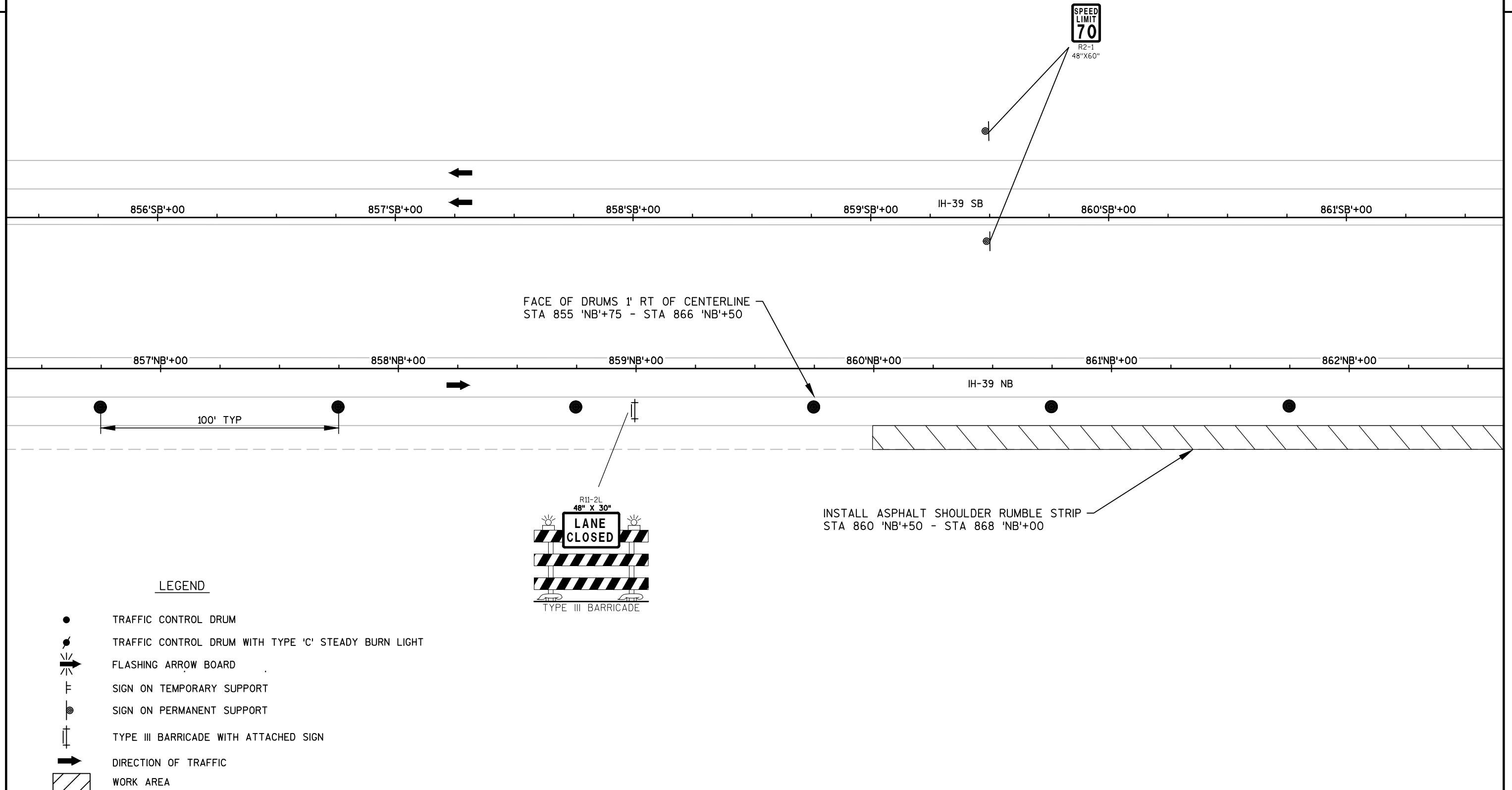


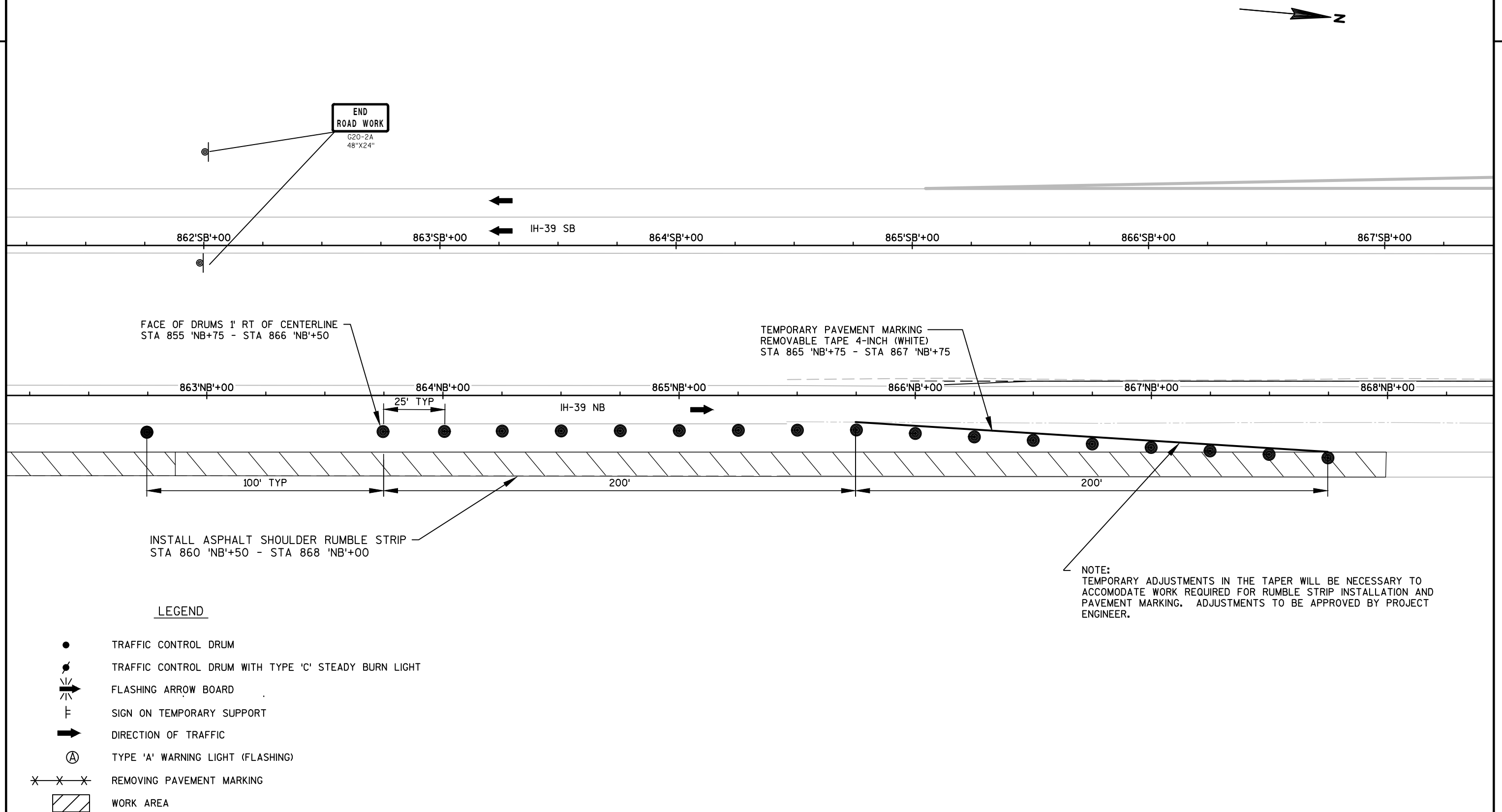
LEGEND

- TRAFFIC CONTROL DRUM
- / TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- FLASHING ARROW BOARD
- ├ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ├ TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- ▨ WORK AREA

LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ⚡→ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- ▨ WORK AREA





SB'+00 868'SB'+00 IH-39 SB 869'SB'+00 870'SB'+00 871'SB'+00 872'SB'+00 873'SB'+00

'NB'+00 869'NB'+00 870'NB'+00 871'NB'+00 872'NB'+00 873'NB'+00 874'NB'+00

IH-39 NB

TEMPORARY PAVEMENT MARKING
REMOVABLE TAPE 8-INCH (WHITE)
STA 871 'NB'+00 - 873 'NB'+00

FACE OF DRUMS 1' RT OF CENTERLINE
STA 871 'NB'+00 - STA 896 'NB'+00

100' TYP

25' TYP

IH-39 NB EXIT RAMP TO STH 73



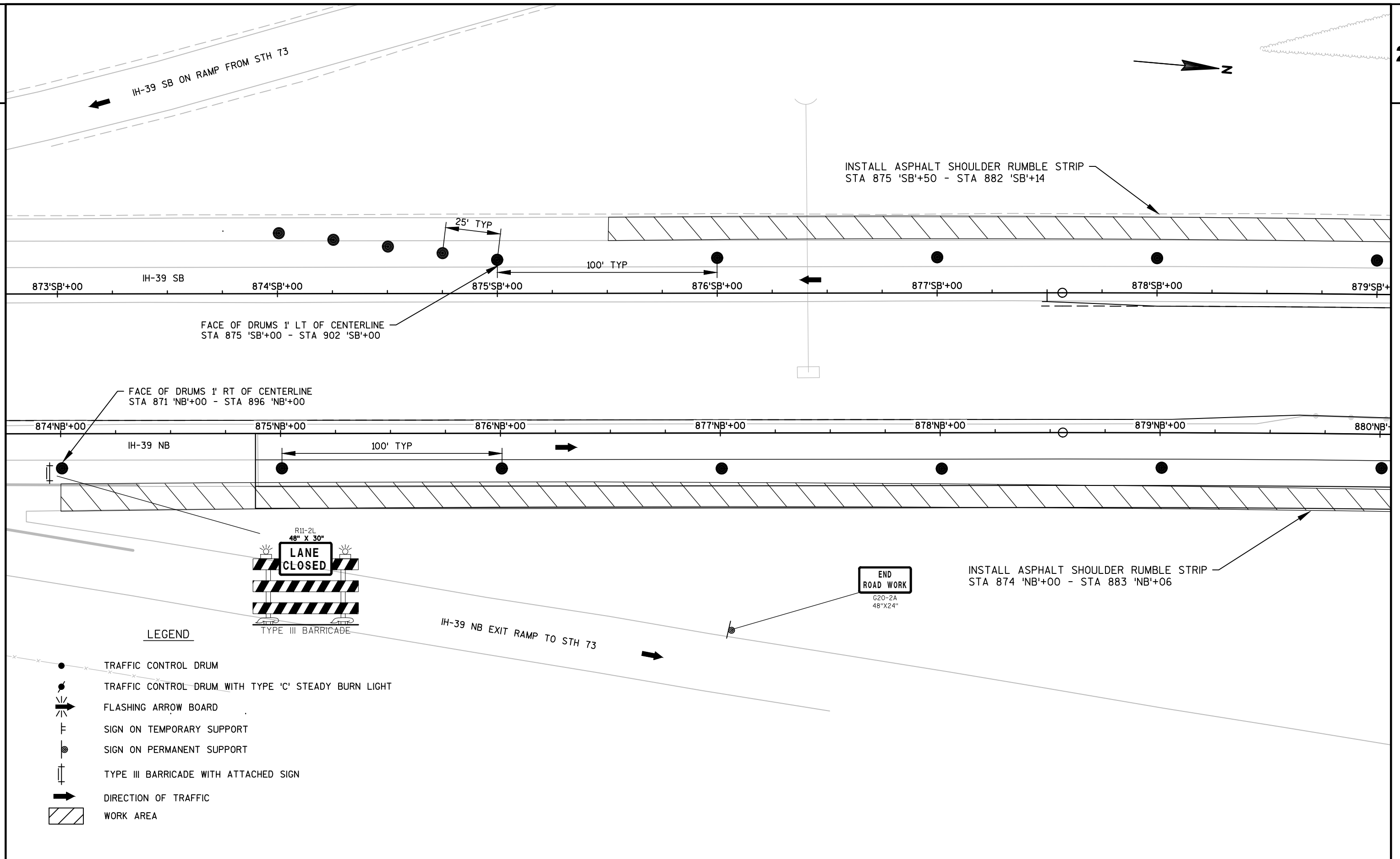
E5-1
72"x60"

LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ➡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

2

2



PROJECT NO:1166-06-64

HWY:IH-39

COUNTY:WAUSHARA

TRAFFIC CONTROL IH-39 STAGE 5

SHEET

119

E

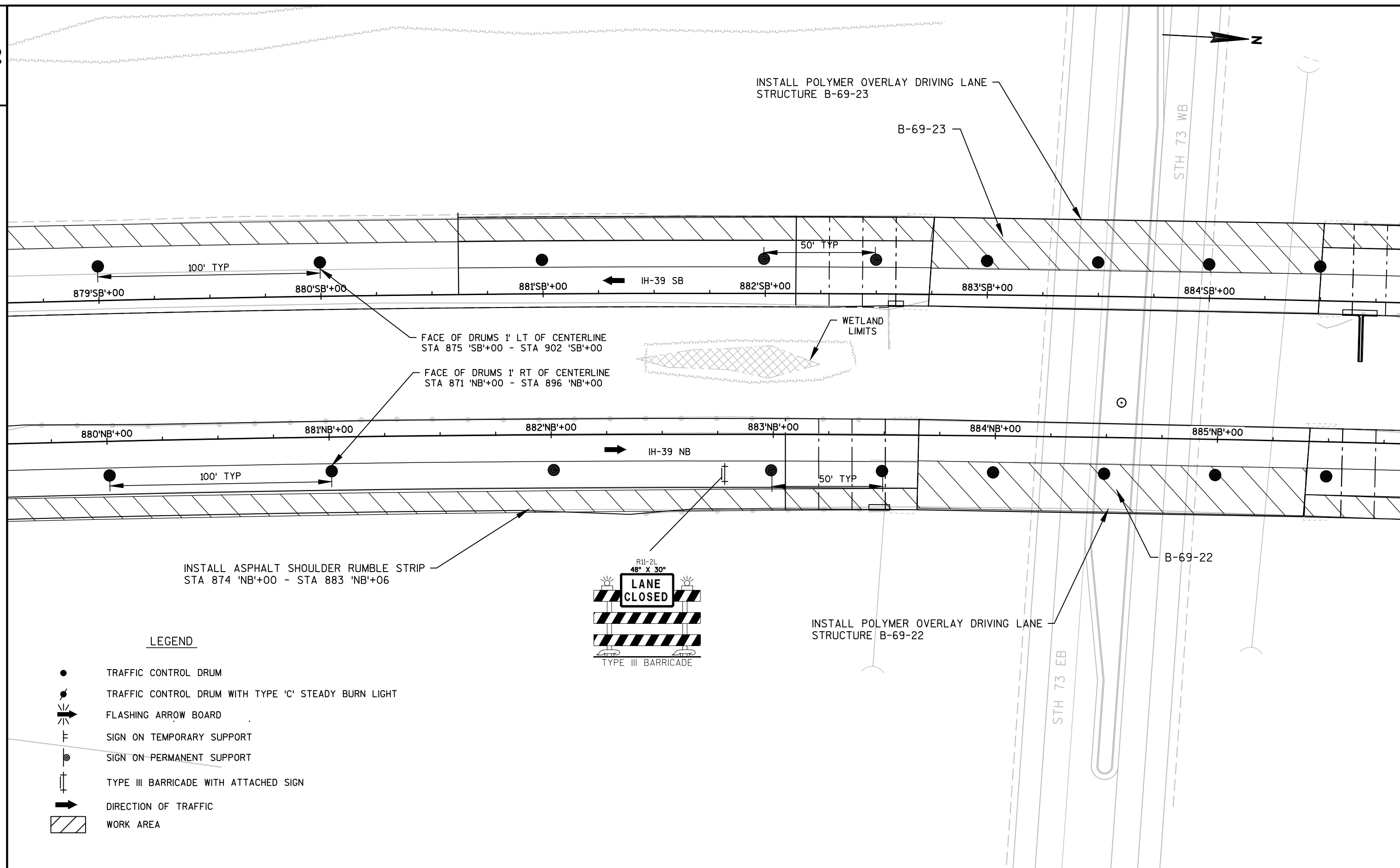
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LAYOUT NAME - 07

PLOT DATE : 8/15/2016 9:04 AM

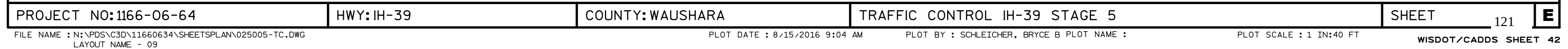
PLOT BY : SCHLEICHER, BRYCE B PLOT NAME :

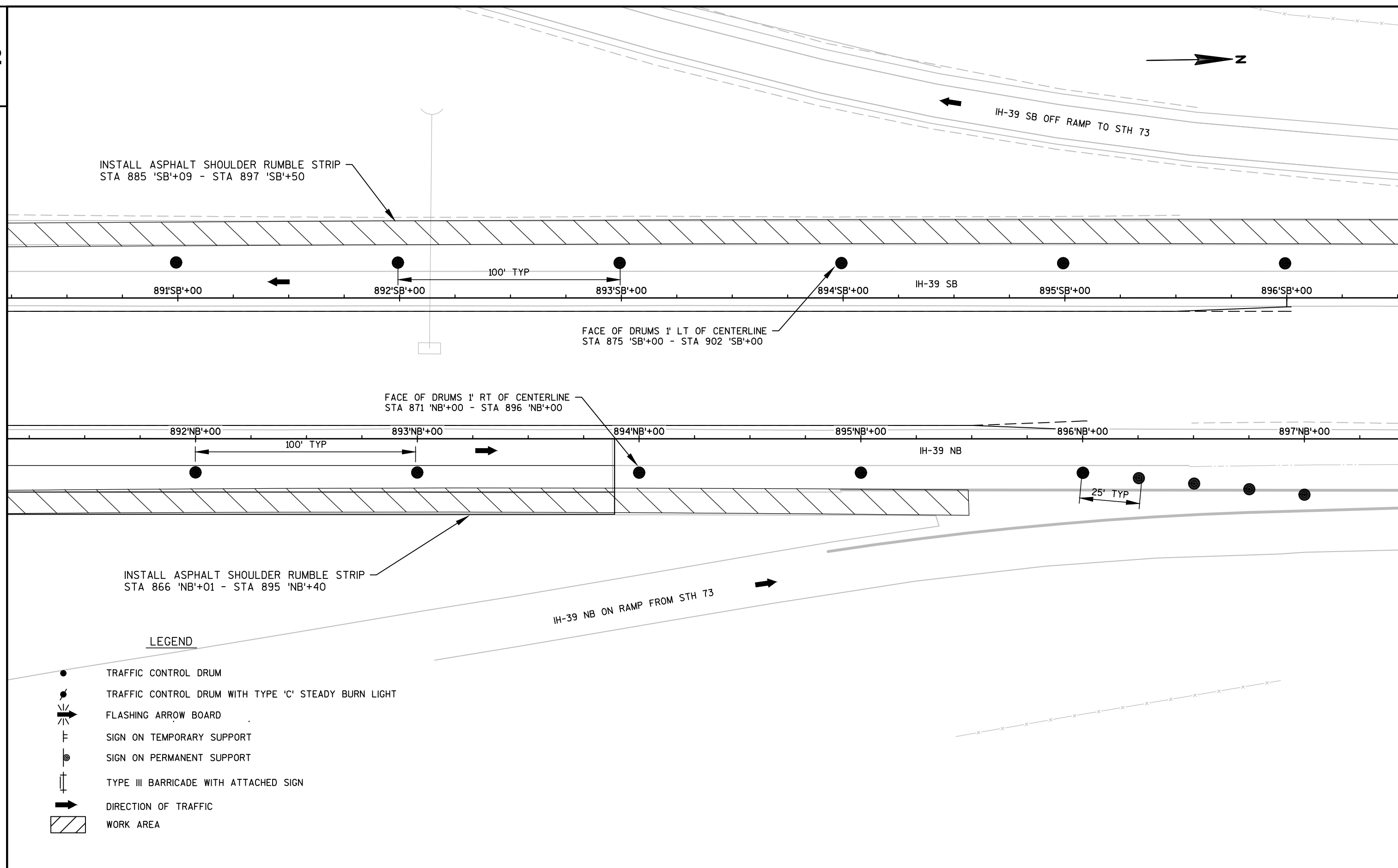
PLOT SCALE : 1 IN:40 FT

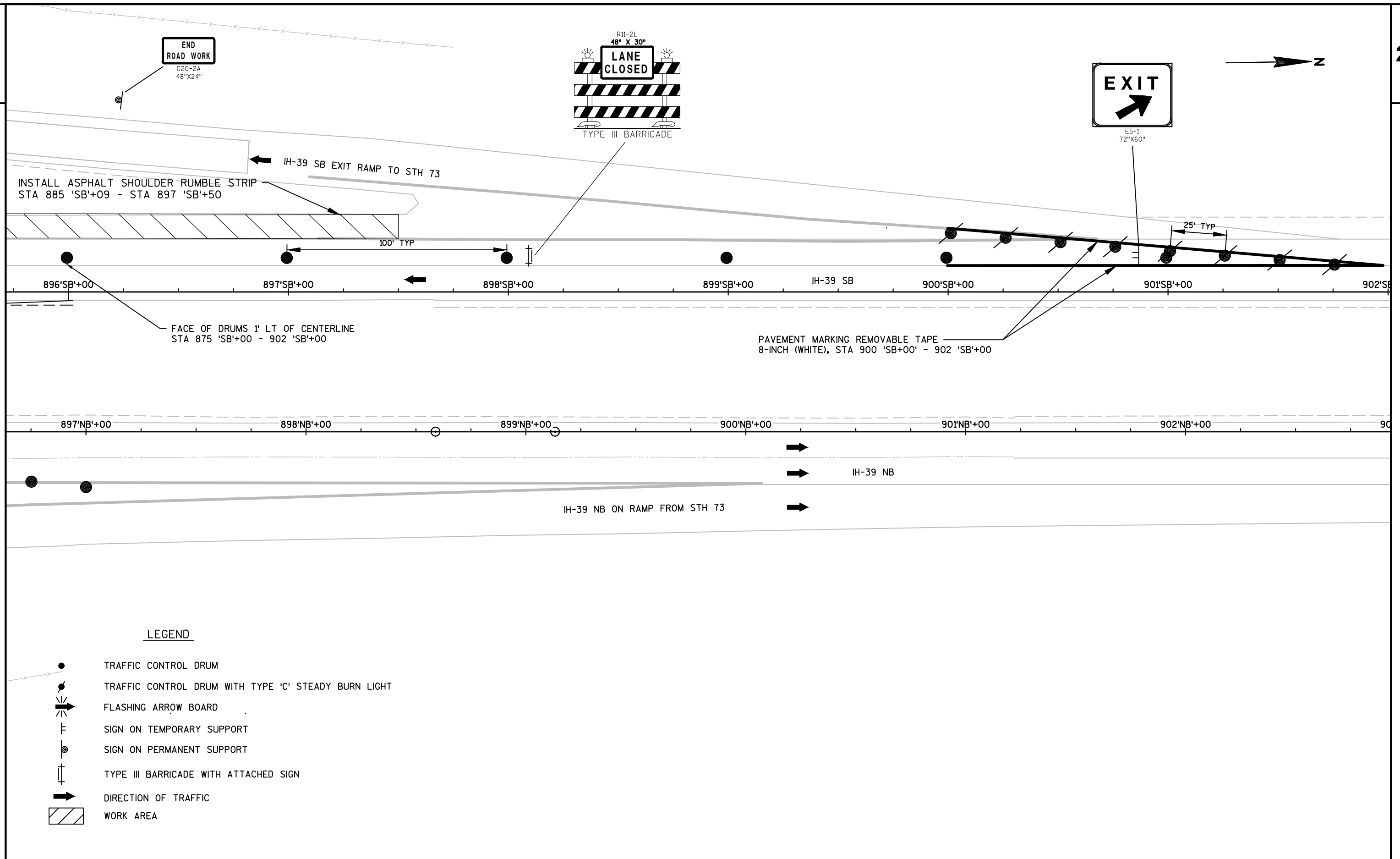
WISDOT/CADDs SHEET 42



2 |

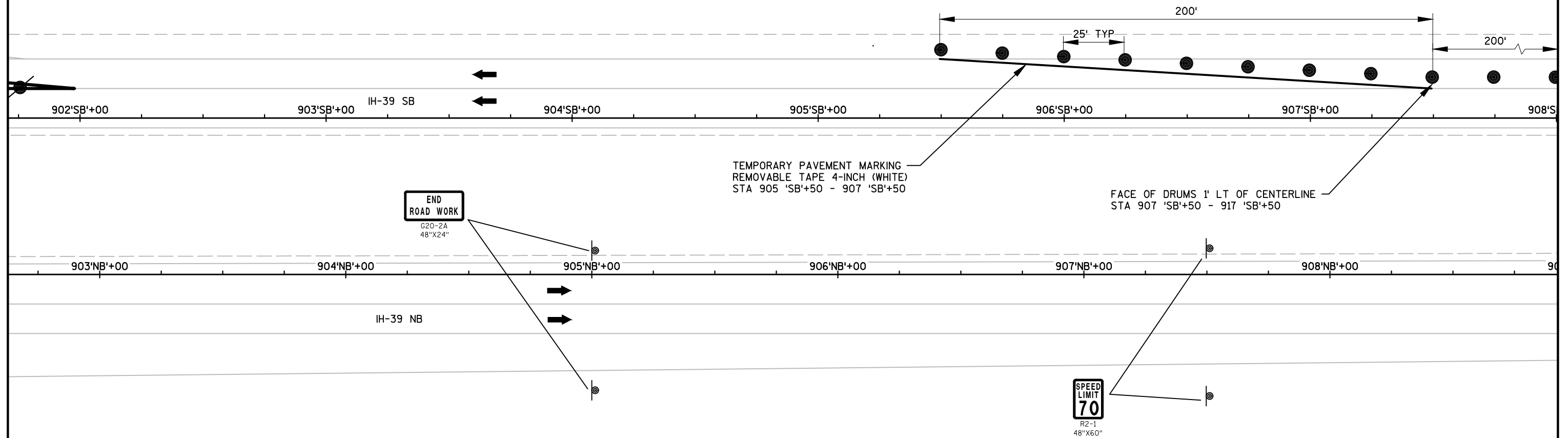






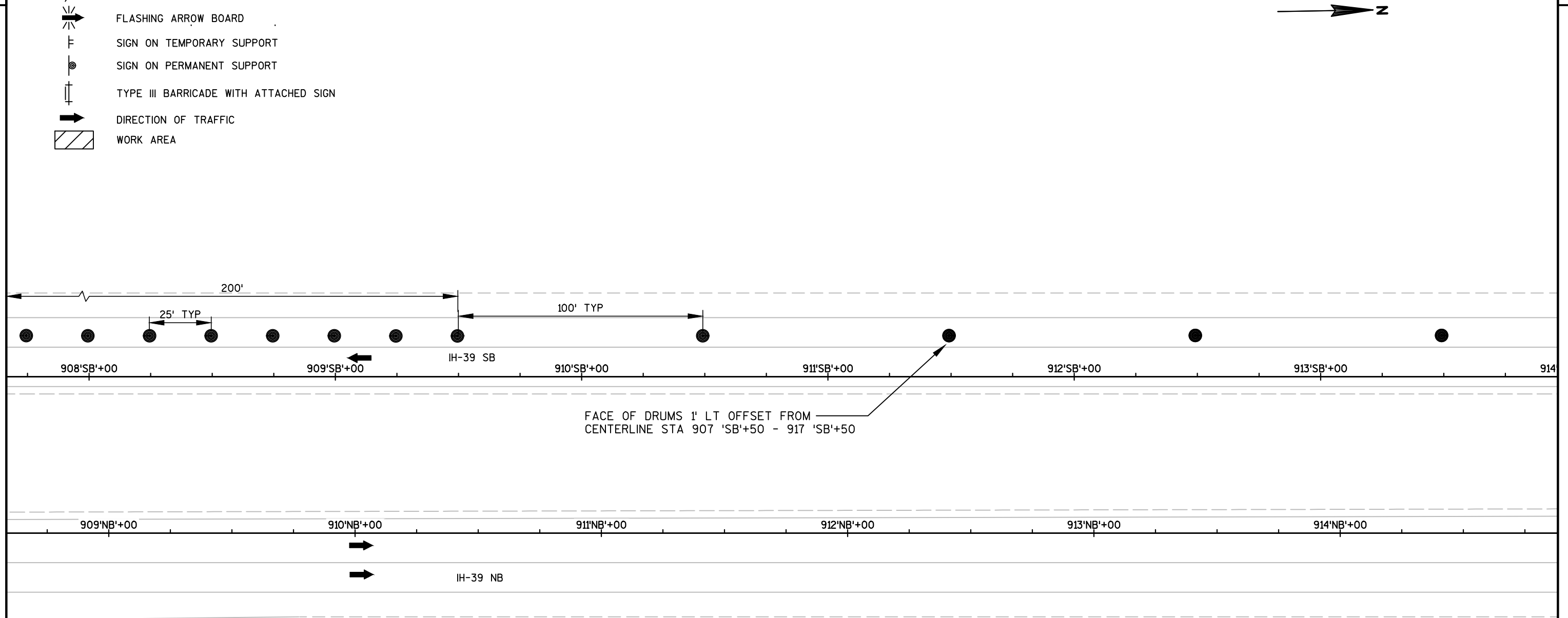
LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ⚡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA



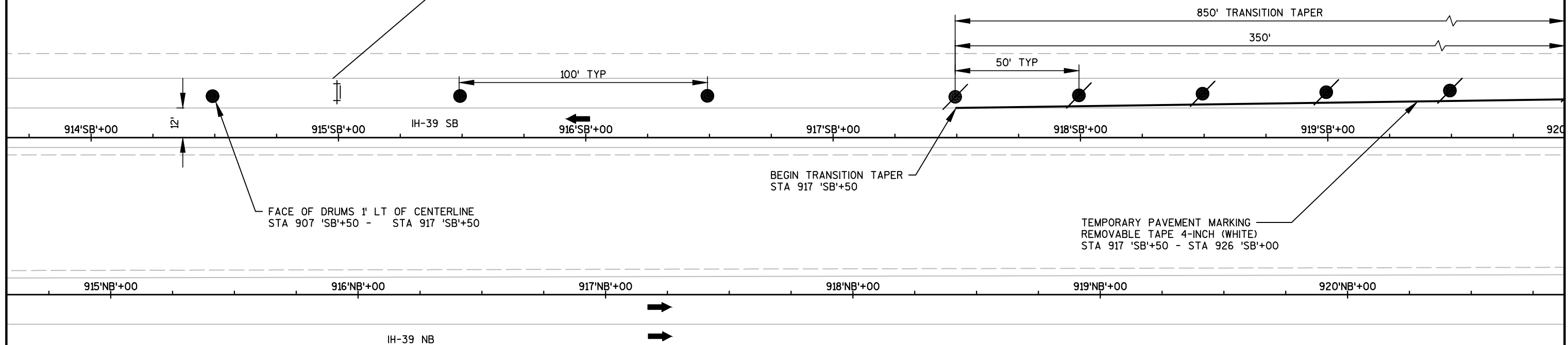
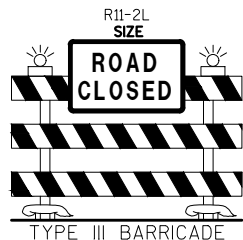
LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ⚡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA



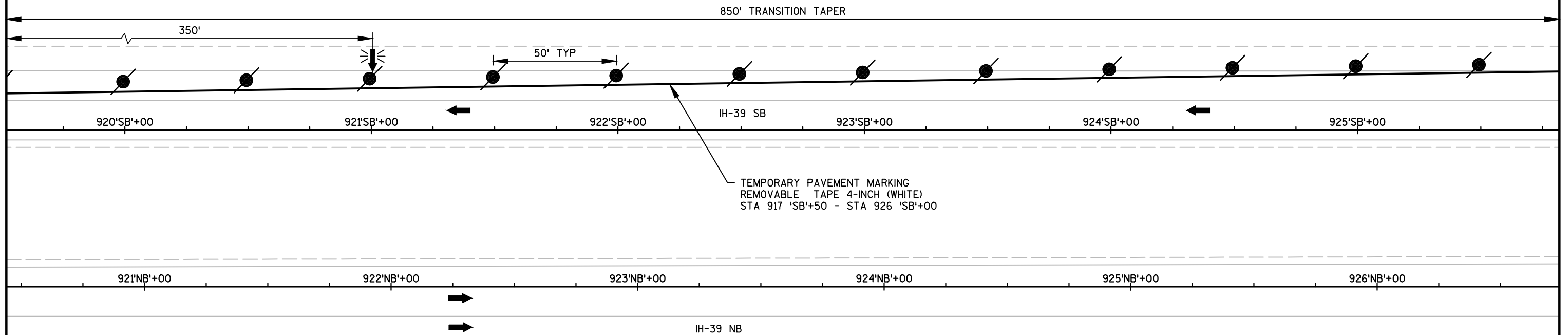
LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ⚡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ⚡ FLASHING ARROW BOARD
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

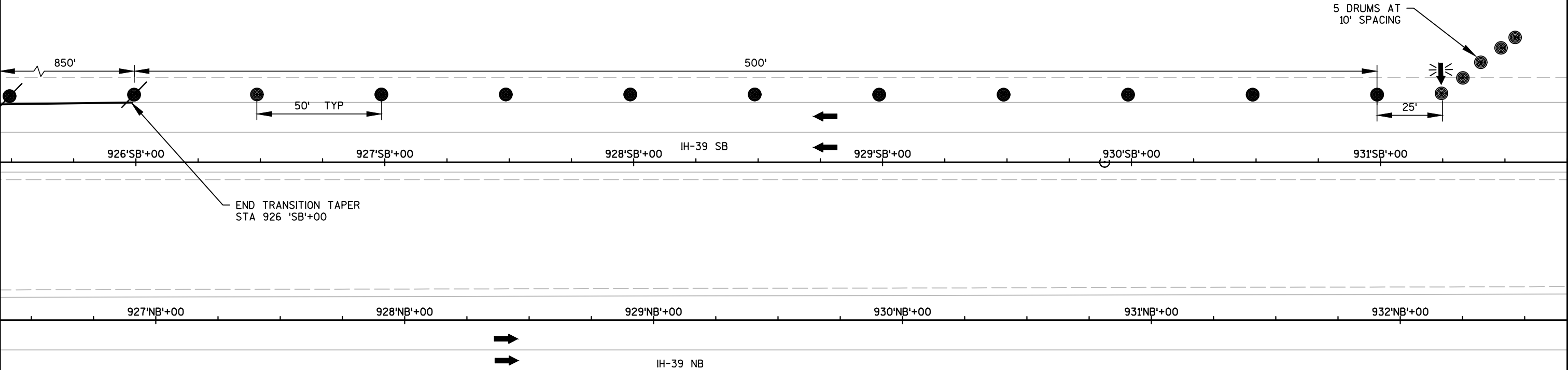


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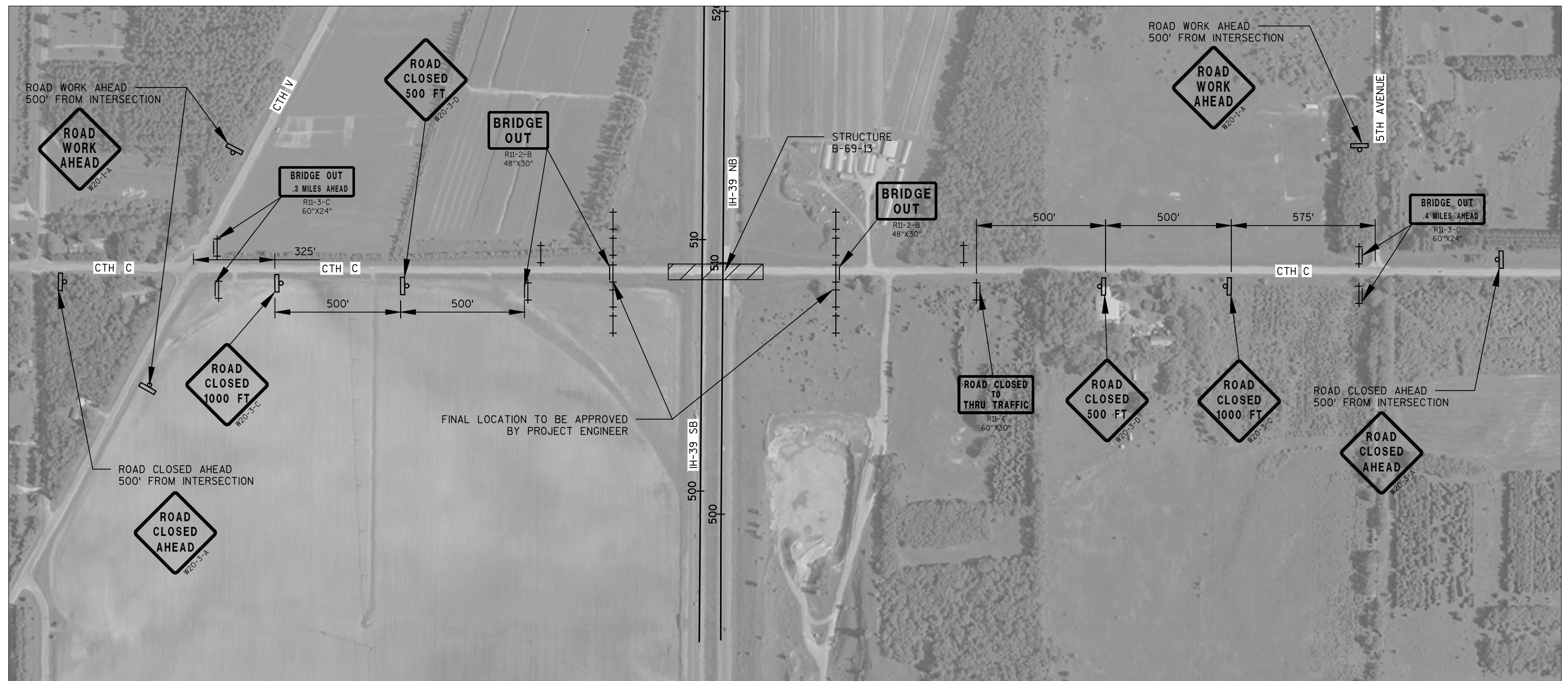
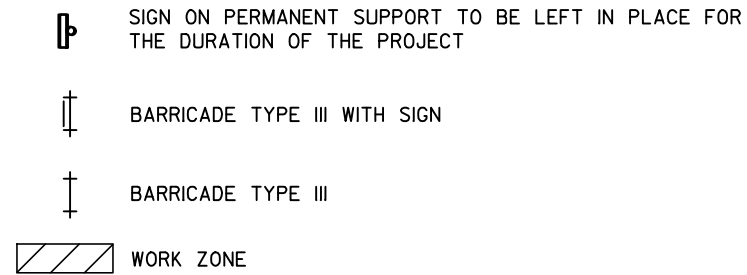
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE 'C' STEADY BURN LIGHT
- ↗ FLASHING ARROW BOARD
- ├ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊞ TYPE III BARRICADE WITH ATTACHED SIGN
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA



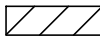
SEE ADVANCED WARNING PLAN SHEETS
FOR ADVANCED WARNING LAYOUT

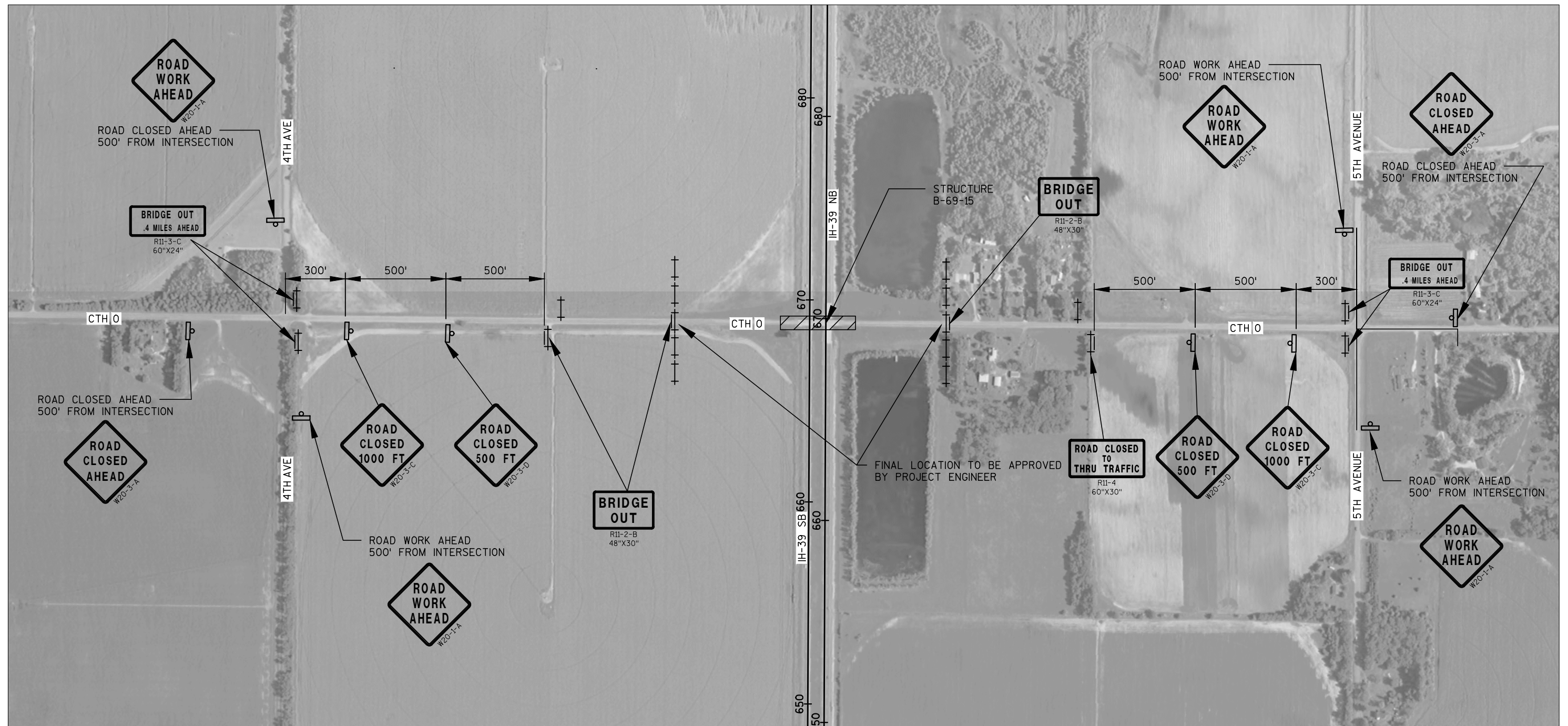


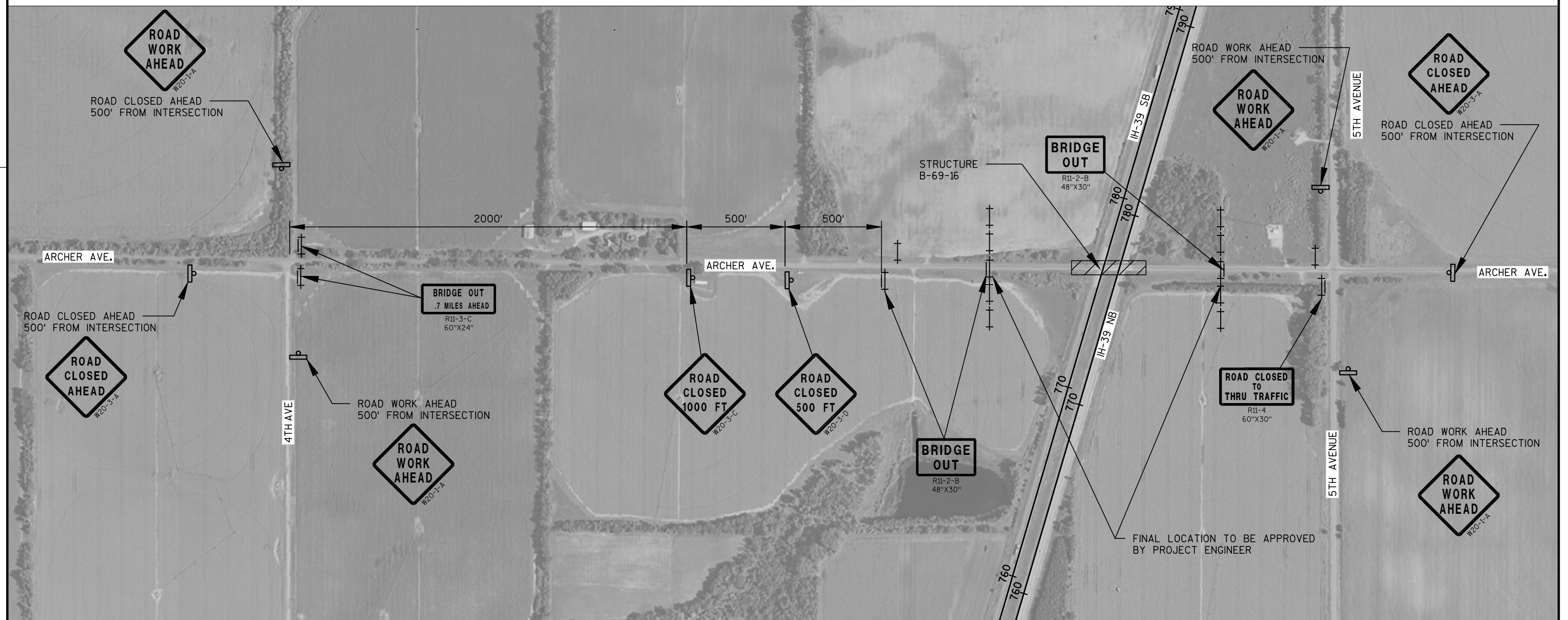
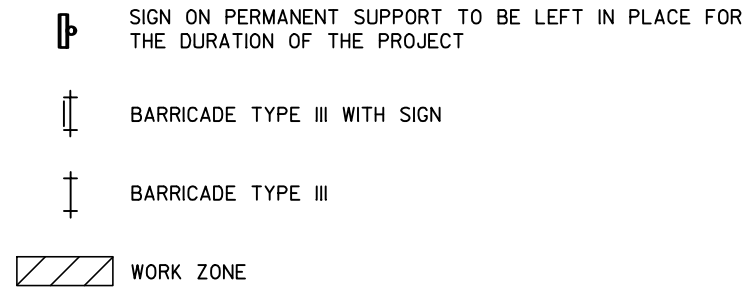
LEGEND



LEGEND

-  SIGN ON PERMANENT SUPPORT TO BE LEFT IN PLACE FOR THE DURATION OF THE PROJECT
-  BARRICADE TYPE III WITH SIGN
-  BARRICADE TYPE III
-  WORK ZONE





DATE 29AUG16		E S T I M A T E O F Q U A N T I T I E S			
LINE					1166-06-64
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	203.0200	Removing Old Structure (station) 01. 884'SB'+60.54	LS	1.000	1.000
0020	204.0100	Removing Pavement	SY	4,974.000	4,974.000
0030	204.0110	Removing Asphaltic Surface	SY	4,178.000	4,178.000
0040	204.0115	Removing Asphaltic Surface Butt Joints	SY	920.000	920.000
0050	204.0120	Removing Asphaltic Surface Milling	SY	3,773.000	3,773.000
0060	204.0165	Removing Guardrail	LF	25.000	25.000
0070	204.0180	Removing Delineators and Markers	EACH	5.000	5.000
0080	205.0100	Excavation Common	CY	105.000	105.000
0090	206.1000	Excavation for Structures Bridges (structure) 01. B-69-23	LS	1.000	1.000
0100	210.0100	Backfill Structure	CY	22.000	22.000
0110	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	37.300	37.300
0120	213.0100	Finishing Roadway (project) 01. 1166-06-64	EACH	1.000	1.000
0130	305.0110	Base Aggregate Dense 3/4-Inch	TON	70.000	70.000
0140	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,380.000	1,380.000
0150	415.1090	Concrete Pavement HES 9-Inch	SY	887.000	887.000
0160	415.1410	Concrete Pavement Approach Slab HES	SY	165.600	165.600
0170	416.1015	Concrete Surface Drains HES	CY	5.700	5.700
0180	450.4000	HMA Cold Weather Paving	TON	1,697.000	1,697.000
0190	455.0605	Tack Coat	GAL	1,369.000	1,369.000
0200	460.2000	Incentive Density HMA Pavement	DOL	2,190.000	2,190.000
0210	460.4110.S	Reheating HMA Pavement Longitudinal Joints	LF	1,845.000	1,845.000
0220	460.5224	HMA Pavement 4 LT 58-28 S	TON	1,553.000	1,553.000
0230	460.7223	HMA Pavement 3 HT 58-28 S	TON	1,242.000	1,242.000
0240	460.7224	HMA Pavement 4 HT 58-28 S	TON	598.000	598.000
0250	465.0400	Asphaltic Shoulder Rumble Strips	LF	8,760.000	8,760.000
0260	502.0100	Concrete Masonry Bridges	CY	11.000	11.000
0270	502.3100	Expansion Device (structure) 01. B-69-13	LS	1.000	1.000
0280	502.3100	Expansion Device (structure) 01. B-69-15	LS	1.000	1.000
0290	502.3100	Expansion Device (structure) 01. B-69-16	LS	1.000	1.000
0300	502.3200	Protective Surface Treatment	SY	1,864.000	1,864.000
0310	502.3210	Pigmented Surface Sealer	SY	1,075.000	1,075.000
0320	502.5005	Masonry Anchors Type L No. 5 Bars	EACH	180.000	180.000
0330	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	7,640.000	7,640.000
0340	509.0301	Preparation Decks Type 1	SY	330.000	330.000
0350	509.0302	Preparation Decks Type 2	SY	165.000	165.000
0360	509.0500	Cleaning Decks	SY	3,428.000	3,428.000
0370	509.1000	Joint Repair	SY	81.000	81.000
0380	509.1200	Curb Repair	LF	15.000	15.000
0390	509.1500	Concrete Surface Repair	SF	25.000	25.000
0400	509.2000	Full-Depth Deck Repair	SY	5.000	5.000
0410	509.2500	Concrete Masonry Overlay Decks	CY	271.000	271.000
0420	509.5100.S	Polymer Overlay	SY	1,564.000	1,564.000
0430	509.9050.S	Cleaning Parapets	LF	2,204.000	2,204.000
0440	516.0500	Rubberized Membrane Waterproofing	SY	3.000	3.000
0450	601.0584	Concrete Curb & Gutter 4-Inch Sloped 30-Inch Type TBT	LF	16.000	16.000
0460	603.8000	Concrete Barrier Temporary Precast Delivered	LF	3,200.000	3,200.000

3

DATE 29AUG16		E S T I M A T E O F Q U A N T I T I E S			
LINE					1166-06-64
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0470	603.8125	Concrete Barrier Temporary Precast Installed	LF	6,312.500	6,312.500
0480	611.8115	Adjusting Inlet Covers	EACH	1.000	1.000
0490	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	1.000	1.000
0500	614.0230	Steel Thrie Beam	LF	25.000	25.000
0510	614.0400	Adjusting Steel Plate Beam Guard	LF	2,960.000	2,960.000
0520	614.0905	Crash Cushions Temporary	EACH	1.000	1.000
0530	614.0950	Replacing Guardrail Posts and Blocks	EACH	14.000	14.000
0540	614.0951	Replacing Guardrail Rail and Hardware	LF	162.500	162.500
0550	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1166-06-64	EACH	1.000	1.000
0560	619.1000	Mobilization	EACH	1.000	1.000
0570	621.0100	Landmark Reference Monuments	EACH	8.000	8.000
0580	624.0100	Water	MGAL	15.000	15.000
0590	625.0100	Topsoil	SY	640.000	640.000
0600	628.1504	Silt Fence	LF	150.000	150.000
0610	628.1520	Silt Fence Maintenance	LF	150.000	150.000
0620	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0630	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0640	628.2004	Erosion Mat Class I Type B	SY	640.000	640.000
0650	628.7010	Inlet Protection Type B	EACH	1.000	1.000
0660	628.7570	Rock Bags	EACH	35.000	35.000
0670	629.0210	Fertilizer Type B	CWT	0.400	0.400
0680	630.0130	Seeding Mixture No. 30	LB	12.000	12.000
0690	631.0300	Sod Water	MGAL	4.000	4.000
0700	633.0100	Delineator Posts Steel	EACH	9.000	9.000
0710	633.0500	Delineator Reflectors	EACH	9.000	9.000
0720	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	12.000	12.000
0730	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0740	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	2.000	2.000
0750	637.2230	Signs Type II Reflective F	SF	63.000	63.000
0760	638.2102	Moving Signs Type II	EACH	1.000	1.000
0770	638.2602	Removing Signs Type II	EACH	16.000	16.000
0780	638.3000	Removing Small Sign Supports	EACH	18.000	18.000
0790	642.5201	Field Office Type C	EACH	1.000	1.000
0800	643.0200	Traffic Control Surveillance and Maintenance (project) 01. 1166-06-64	DAY	135.000	135.000
0810	643.0300	Traffic Control Drums	DAY	11,224.000	11,224.000
0820	643.0420	Traffic Control Barricades Type III	DAY	1,824.000	1,824.000
0830	643.0705	Traffic Control Warning Lights Type A	DAY	2,928.000	2,928.000
0840	643.0715	Traffic Control Warning Lights Type C	DAY	3,726.000	3,726.000
0850	643.0800	Traffic Control Arrow Boards	DAY	276.000	276.000
0860	643.0900	Traffic Control Signs	DAY	4,924.000	4,924.000
0870	643.0920	Traffic Control Covering Signs Type II	EACH	1.000	1.000
0880	643.1000	Traffic Control Signs Fixed Message	SF	97.500	97.500
0890	643.1050	Traffic Control Signs PCMS	DAY	72.000	72.000
0900	646.0106	Pavement Marking Epoxy 4-Inch	LF	13,665.000	13,665.000
0910	646.0881.S	Pavement Marking Grooved Wet Reflective Tape 4-Inch	LF	525.000	525.000
0920	646.0883.S	Pavement Marking Grooved Wet Reflective Tape 8-Inch	LF	800.000	800.000
0930	647.0746	Pavement Marking Diagonal Epoxy 24-Inch	LF	60.000	60.000
0940	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	31,505.000	31,505.000

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DATE 29AUG16		E S T I M A T E O F Q U A N T I T I E S			
LINE					1166-06-64
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0950	649.0506	Temporary Pavement Marking Removable Mask-Out Tape 6-Inch	LF	9,358.000	9,358.000
0960	649.0510	Temporary Pavement Marking Removable Mask-Out Tape 10-Inch	LF	310.000	310.000
0970	649.0801	Temporary Pavement Marking Removable Tape 8-Inch	LF	1,870.000	1,870.000
0980	650.5000	Construction Staking Base	LF	1,725.000	1,725.000
0990	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	16.000	16.000
1000	650.7000	Construction Staking Concrete Pavement	LF	240.000	240.000
1010	650.8000	Construction Staking Resurfacing Reference	LF	7,550.000	7,550.000
1020	650.9910	Construction Staking Supplemental Control (project) 01. 1166-06-64	LS	1.000	1.000
1030	690.0150	Sawing Asphalt	LF	4,130.000	4,130.000
1040	690.0250	Sawing Concrete	LF	1,893.000	1,893.000
1050	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
1060	715.0502	Incentive Strength Concrete Structures	DOL	2,500.000	2,500.000
1070	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
1080	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000
1090	SPV.0045	Special 01. PCMS Cellular Communications	DAY	72.000	72.000
1100	SPV.0060	Special 01. Reestablish Section Corner Monuments	EACH	2.000	2.000
1110	SPV.0090	Special 01. Remove and Reinstall Guardrail	LF	25.000	25.000
1120	SPV.0090	Special 02. Paving Notch Repair	LF	80.000	80.000

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REMOVING PAVEMENT

STATION - STATION	LENGTH FEET	WIDTH FEET	204.0100 SY	REMARKS
STAGE 2				
STA 874'NB'+88 - STA 883'NB'+66	878	12	1,171	NB IH-39 DRIVING LANE
STA 883'NB'+38 - STA 883'NB'+66	28	10	31	NB IH-39 DRIVING LANE SHLD.
STA 885'NB'+40 - STA 893'NB'+88	848	12	1,131	NB IH-39 DRIVING LANE
STA 882'SB'+14 - STA 882'SB'+74	60	12	80	SB IH-39 DRIVING LANE
STA 884'SB'+49 - STA 885'SB'+09	60	12	80	SB IH-39 DRIVING LANE
STAGE 2 SUBTOTAL			2,492	
STAGE 3				
STA 874'NB'+88 - STA 883'NB'+66	878	12	1,171	NB IH-39 PASSING LANE
STA 885'NB'+41 - STA 893'NB'+88	847	12	1,129	NB IH-39 PASSING LANE
STA 882'SB'+14 - STA 882'SB'+74	60	12	80	SB IH-39 PASSING LANE
STA 882'SB'+55 - STA 882'SB'+74	19	10	21	SB IH-39 PASSING LANE SHLD.
STA 884'SB'+49 - STA 885'SB'+09	60	12	80	SB IH-39 PASSING LANE
STAGE 3 SUBTOTAL			2,481	
TOTAL			4,974	

REMOVING ASPHALTIC SURFACE BUTT JOINTS

STATION - STATION	ROADWAY	STAGE	204.0115 SY	REMARKS
STA 880'SB'+62 - STA 881'SB'+02	IH-39 SB	2	98	DRIVING LANE + LT SHOULDER
STA 885'SB'+60 - STA 886'SB'+00	IH-39 SB	2	98	DRIVING LANE + LT SHOULDER
STA 880'SB'+62 - STA 881'SB'+02	IH-39 SB	3	53	PASSING LANE
STA 885'SB'+60 - STA 886'SB'+00	IH-39 SB	3	53	PASSING LANE
STA 18'C'+00 - STA 18'C'+40	CTH C		102	
STA 22'C'+10 - STA 22'C'+50	CTH C		120	
STA 35'O'+00 - STA 35'O'+40	CTH O		102	
STA 39'O'+10 - STA 39'O'+50	CTH O		98	
STA 55'A'+75 - STA 56'A'+15	ARCHER AVE.		98	
STA 60'A'+85 - STA 61'A'+25	ARCHER AVE.		98	
TOTAL			920	

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REMOVING ASPHALTIC SURFACE MILLING

STATION - STATION	ROADWAY	STAGE	204.0120 SY	REMARKS
STAGE 1				
STA 879'NB'+65 - STA 883'NB'+66	IH-39 NB	1	178	LT SHOULDER RUMBLE STRIPS
STA 884'SB'+49 - STA 888'SB'+00	IH-39 SB	1	234	RT SHOULDER
STAGE 1 SUBTOTAL			412	
STAGE 2				
STA 860'NB'+50 - STA 868'NB'+00	IH-39 NB	2	334	RT SHOULDER RUMBLE STRIPS
STA 874'NB'+00 - STA 874'NB'+88	IH-39 NB	2	40	RT SHOULDER RUMBLE STRIPS
STA 893'NB'+88 - STA 895'NB'+40	IH-39 NB	2	68	RT SHOULDER RUMBLE STRIPS
STA 875'SB'+50 - STA 880'SB'+62	IH-39 SB	2	228	LT SHOULDER RUMBLE STRIPS
STA 881'SB'+02 - STA 882'SB'+14	IH-39 SB	2	274	DRIVING LANE + LT SHOULDER
STA 885'SB'+09 - STA 885'SB'+60	IH-39 SB	2	125	DRIVING LANE + LT SHOULDER
STA 886'SB'+00 - STA 897'SB'+50	IH-39 SB	2	512	LT SHOULDER RUMBLE STRIPS
STAGE 2 SUBTOTAL			1,581	
STAGE 3				
STA 881'SB'+02 - STA 882'SB'+14	IH-39 SB	3	150	PASSING LANE
STA 885'SB'+09 - STA 885'SB'+60	IH-39 SB	3	68	PASSING LANE
STAGE 3 SUBTOTAL			218	
STA 18'C'+40 - STA 19'C'+48	CTH C		290	
STA 21'C'+ 52 - STA 22'C'+10	CTH C		175	
STA 35'O'+40 - STA 36'O'+49	CTH O		290	
STA 38'O'+53 - STA 39'O'+10	CTH O		165	
STA 56'A'+15 - STA 57'A'+37	ARCHER AVE.		300	
STA 59'A'+51 - STA 60'A'+85	ARCHER AVE.		342	
TOTAL			3,773	

REMOVING ASPHALTIC SURFACE

STATION - STATION	LOCATION	204.0110 SY	REMARKS
STAGE 1			
STA 866'NB'+00 - STA 879'NB'+65	NB IH-39	610	LT SHOULDER.
STA 885'NB'+41 - STA 896'NB'+00	NB IH-39	471	LT SHOULDER.
STA 877'SB'+50 - STA 882'SB'+55	SB IH-39	337	RT SHOULDER
STA 888'SB'+00 - STA 896'SB'+00	SB IH-39	360	RT SHOULDER
STAGE 1 SUBTOTAL		1,778	
STAGE 2			
STA 874'NB'+88 - STA 883'NB'+38	NB IH-39	944	RT SHOULDER
STA 885'NB'+39 - STA 893'NB'+88	NB IH-39	947	RT SHOULDER
STA 882'SB'+14 - STA 882'SB'+74	SB IH-39	67	LT SHOULDER
STA 884'SB'+49 - STA 885'SB'+09	SB IH-39	67	LT SHOULDER
STAGE 2 SUBTOTAL		2,025	
STAGE 3			
STA 879'NB'+65 - STA 883'NB'+66	NB IH-39	269	LT SHOULDER
STA 885'NB'+41 - STA 886'NB'+01	NB IH-39	40	LT SHOULDER
STA 882'SB'+14 - STA 882'SB'+55	SB IH-39	27	RT SHOULDER
STA 884'SB'+49 - STA 885'SB'+09	SB IH-39	40	RT SHOULDER
STAGE 3 SUBTOTAL		376	
TOTAL		4,178	

REMOVING DELINEATORS AND MARKERS

STATION - STATION	LOCATION	204.0180 EACH
STA 874'NB'+00 - STA 895'NB'+00	NB IH-39 RT	5
TOTAL		5

EXCAVATION COMMON

LOCATION	205.0100 CY	REMARKS
STA 873'NB'+80 - STA 876'NB'+10 RT	105	REMOVAL OF CONSTRUCTION ENTRANCE
TOTAL		105

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

STATION - STATION	LOCATION	211.0400 STA	REMARKS
STA 866'NB'+00 - STA 879'NB'+65	IH-39 NB	13.7	STAGE 1 LT SHOULDER WIDENING
STA 885'NB'+41 - STA 896'NB'+00	IH-39 NB	10.6	STAGE 1 LT SHOULDER WIDENING
STA 877'SB'+50 - STA 882'SB'+50	IH-39 SB	5.0	STAGE 1 RT SHOULDER WIDENING
STA 888'SB'+00 - STA 896'SB'+00	IH-39 SB	8.0	STAGE 1 RT SHOULDER WIDENING
TOTAL		37.3	

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	REMARKS
STAGE 1				
STA 866'NB'+00 - STA 879'NB'+65	NB IH-39	17	30	SHOULDER WIDENING (LT)
STA 886'NB'+01 - STA 896'NB'+00	NB IH-39	12	30	SHOULDER WIDENING (LT)
STA 877'SB'+50 - STA 882'SB'+50	SB IH-39	6	28	SHOULDER WIDENING (RT)
STA 888'SB'+00 - STA 896'SB'+00	SB IH-39	10	44	SHOULDER WIDENING (RT)
STAGE 1 SUBTOTAL		45	132	
STAGE 2				
STA 873'NB'+84 - STA 876'NB'+13	NB IH-39	-	206	SOUTH CONSTRUCTION ENTRANCE
STA 874'NB'+75 - STA 883'NB'+06	NB IH-39	10	77	SHOULDER REPLACEMENT (RT)
STA 874'NB'+88 - STA 883'NB'+06	NB IH-39	-	211	PAVEMENT REPLACEMENT (RT)
STA 886'NB'+01 - STA 893'NB'+88	NB IH-39	-	204	PAVEMENT REPLACEMENT (RT)
STA 886'NB'+01 - STA 893'NB'+88	NB IH-39	10	73	SHOULDER REPLACEMENT (RT)
STAGE 2 SUBTOTAL		20	771	
STAGE 3				
STA 874'NB'+91 - STA 883'NB'+06	NB IH-39	-	211	PAVEMENT REPLACEMENT (LT)
STA 885'NB'+41 - STA 893'NB'+88	NB IH-39	-	228	PAVEMENT REPLACEMENT (LT)
STAGE 3 SUBTOTAL		0	439	
UNDISTRIBUTED QUANTITY		5	38	MISCELLANEOUS LOCATIONS
PROJECT TOTALS		70	1,380	

CONCRETE PAVEMENT HES 9-INCH				CONCRETE PAVEMENT APPROCH SLAB HES					
STATION - STATION		LOCATION	415.1090 SY	REMARKS	STATION - STATION		LOCATION	415.1410 SY	REMARKS
STAGE 2					STAGE 2				
STA 883'NB'+06 - STA 883'NB'+51		IH-39 NB	60.0	DRIVING LANE	STA 883'NB'+51 - STA 883'NB'+66		B-69-22	20.1	DRIVING LANE
STA 883'NB'+06 - STA 883'NB'+66		IH-39 NB	66.1	RT SHOULDER	STA 885'NB'+41 - STA 885'NB'+56		B-69-22	21.3	DRIVING LANE
STA 885'NB'+56 - STA 886'NB'+01		IH-39 NB	60.0	DRIVING LANE	STA 882'SB'+59 - STA 882'SB'+74		B-69-23	21.5	DRIVING LANE
STA 885'NB'+40 - STA 886'NB'+01		IH-39 NB	68.3	RT SHOULDER	STA 884'SB'+50 - STA 884'SB'+66		B-69-23	20.4	DRIVING LANE
STA 882'SB'+14 - STA 882'SB'+59		IH-39 SB	60.0	DRIVING LANE	STAGE 2 SUBTOTAL			83.3	
STA 882'SB'+14 - STA 882'SB'+74		IH-39 SB	67.1	LT SHOULDER	STAGE 3				
STA 884'SB'+66 - STA 885'SB'+11		IH-39 SB	60.0	DRIVING LANE	STA 883'NB'+51 - STA 883'NB'+66		B-69-22	20.3	PASSING LANE
STA 884'SB'+51 - STA 885'SB'+11		IH-39 SB	66.7	LT SHOULDER	STA 885'NB'+41 - STA 885'NB'+56		B-69-22	20.4	PASSING LANE
STAGE 2 SUBTOTAL			508.2		STA 882'SB'+59 - STA 882'SB'+74		B-69-23	20.5	PASSING LANE
STAGE 3					STA 884'SB'+49 - STA 884'SB'+65		B-69-23	21.1	PASSING LANE
STA 883'NB'+06 - STA 883'NB'+51		IH-39 NB	60.0	PASSING LANE	STAGE 3 SUBTOTAL			82.3	
STA 883'NB'+06 - STA 883'NB'+66		IH-39 NB	40.3	LT SHOULDER	TOTAL				
STA 885'NB'+56 - STA 886'NB'+01		IH-39 NB	60.0	PASSING LANE				165.6	
STA 885'NB'+41 - STA 886'NB'+01		IH-39 NB	40.0	LT SHOULDER	CONCRETE SURFACE DRAIN HES				
STA 882'SB'+14 - STA 882'SB'+59		IH-39 SB	60.0	PASSING LANE	STATION - STATION		416.1015 CY		REMARKS
STA 882'SB'+14 - STA 882'SB'+74		IH-39 SB	38.5	RT SHOULDER	STA 884'SB'+49 - STA 884'SB'+81		5.7		STAGE 3, RT SHOULDER
STA 884'SB'+66 - STA 885'SB'+11		IH-39 SB	60.0	PASSING LANE	TOTAL		5.7		
STA 884'SB'+81 - STA 885'SB'+11		IH-39 NB	20.0	RT SHOULDER					
STAGE 3 SUBTOTAL			378.8						
TOTAL			887.0						

HMA PAVEMENT & TACK COAT									
				450.4000 HMA COLD WEATHER PAVING TONS	455.0605 TACK COAT GAL	460.4110.S REHEATING HMA PAVEMENT LONGITUDINAL JOINTS LF	460.5224 HMA PAVEMENT 4 LT 58-28 S TON	460.7223 HMA PAVEMENT 3 HT 58-28 S TON	460.7224 HMA PAVEMENT 4 HT 58-28 S TON
STATION - STATION		LOCATION	STAGE						
STA 866'NB'+00 - STA 896'NB'+00		NB IH-39 LT SHLD	1	-	168	-	502	-	-
STA 877'SB'+50 - STA 896'SB'+00		SB IH-39 RT SHLD	1	-	83	-	216	-	-
STA 860'NB'+50 - STA 895'NB'+40		NB IH-39 RT SHLD	2	-	167	-	440	-	-
STA 874'NB'+88 - STA 893'NB'+88		NB IH-39 DRIVING LN	2	-	321	-	-	590	236
STA 875'SB'+50 - STA 880'SB'+62		SB IH-39 LT SHLD RUMBLE STRIP	2	-	17	-	25	-	-
STA 880'SB'+62 - STA 886'SB'+00		SB IH-39 DRIVING LN+SHLD	2	-	45	-	-	-	65
STA 886'SB'+00 - STA 897'SB'+50		SB IH-39 LT SHLD RUMBLE STRIP	2	-	38	-	56	-	-
STA 879'NB'+65 - STA 883'NB'+06		NB IH-39 LT SHLD	3	-	34	-	-	63	25
STA 874'NB'+88 - STA 893'NB'+93		NB IH-39 DRIVING LN	3	-	320	1,602	-	589	236
STA 880'SB'+62 - STA 886'SB'+00		SB IH-39 DRIVING LN+SHLD	3	-	24	243	-	-	36
STA 35'O'+00 - STA 39'O'+50		CTH O	-	-	46	-	95	-	-
STA 18'C'+00 - STA 22'C'+50		CTH C	-	-	46	-	95	-	-
STA 55'A'+75 - STA 60'A'+25		ARCHER AVE.	-	-	60	-	124	-	-
PROJECT		NB--SB I39	-	1697	-	-	-	-	-
TOTALS				1,697	1,369	1,845	1,553	1,242	598

PROJECT NO: 1166-06-64	HWY: IH-39	COUNTY: WAUSHARA	MISCELLANEOUS QUANTITIES 3	SHEET: 137	E
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ASPHALTIC SHOULDER RUMBLE STRIP

STATION - STATION	LOCATION	465.0400 LF
STA 866'NB'+00 - STA 883'NB'+06	NB IH-39 LT	1,706
STA 860'NB'+50 - STA 868'NB'+00	NB IH-39 RT	750
STA 874'NB'+00 - STA 883'NB'+06	NB IH-39 RT	906
STA 886'NB'+01 - STA 896'NB'+00	NB IH-39 LT	999
STA 886'NB'+01 - STA 895'NB'+40	NB IH-39 RT	939
STA 875'SB'+50 - STA 882'SB'+14	SB IH-39 LT	664
STA 877'SB'+50 - STA 882'SB'+14	SB IH-39 RT	464
STA 885'SB'+09 - STA 897'SB'+50	SB IH-39 LT	1,241
STA 885'SB'+09 - STA 896'SB'+00	SB IH-39 RT	1,091
TOTAL		8,760

BEAM GUARD & GUARDRAIL

LOCATION	204.0165 REMOVING GUARDRAIL LF	614.0230 STEEL THRIE BEAM LF	614.0400 ADJUSTING STEEL PLATE BEAM GUARD LF	614.0950 REPLACING GUARDRAIL POSTS AND BLOCKS EACH	614.0951 REPLACING GUARDRAIL RAIL AND HARDWARE LF	SPV.0090.01 REMOVE AND REINSTALL GUARDRAIL LF
NB IH-39	-	-	532	2	-	-
SB IH-39	-	-	495	2	-	25
CTH O	-	-	626	3	62.5	-
CTH C	25	25	691	5	50	-
ARCHER AVE.	-	-	616	2	50	-
TOTALS	25	25	2,960	14	162.5	25

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ADJUSTING INLET COVERS

STATION	LOCATION	611.8115 ADJUSTING INLET COVERS EACH	REMARKS
STA 883'NB'+51, 33' RT	NB IH-39	1	STAGE 2
TOTAL		1	

CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE TBT

STATION - STATION	LOCATION	601.0584 LF	REMARKS
STA 883'NB'+51 - STA 883'NB'+59	NB IH-39	8	STAGE 2, INLET ADJUSTMENT
STA 882'SB'+56 - STA 882'SB'+64	SB IH-39	8	STAGE 3, FLUME REPAIR
TOTAL		16	

CONCRETE BARRIER TEMPORARY PRECAST

STATION - STATION	LOCATION	603.8000 DELIVERED LF	603.8125 INSTALLED LF	614.0905 CRASH CUSHIONS TEMPORARY EACH	BACK WIDTH FT	OBJECT MARKING PATTERN	CRASH TEST LEVEL	TRAFFIC DIRECTION	TRAFFIC LOCATION	CRASH CUSHION SHIELDS
STAGE 2										
STA 873'NB'+00 - STA 895'NB'+00	NB IH-39	2,237.5	2,237.5	1	2	OM3-L	TL-3	UNIDIRECTIONAL	R	END OF TEMP CONC BARRIER BTWN NB LN AND EXIT RAMP LN SINGLE TEMP BARRIER
STA 880'SB'+25 - STA 889'SB'+00	SB IH-39	875	875	-	-	-	-	-	-	-
STAGE 2 SUBTOTALS		3,112.5	3,112.5	1	-	-	-	-	-	-
STAGE 3										
STA 871'NB'+75 - STA 895'NB'+00	NB IH-39	87.5	2,325	-	-	-	-	-	-	-
STA 880'SB'+25 - STA 889'SB'+00	SB IH-39	-	875	-	-	-	-	-	-	-
STAGE 3 SUBTOTALS		87.5	3,200	0	-	-	-	-	-	-
TOTALS		3,200	6,312.5	1						

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LANDMARK REFERENCE MONUMENTS

STATION	LOCATION	621.0100	*SPV.0060.01	REMARKS
		LANDMARK REFERENCE MONUMENTS EACH	REESTABLISH SECTION CORNER MONUMENTS EACH	
20"C"+41	CTH 'C' C/L	4	1	N1/4 COR. SECTION 22, T19N R8E
37"O"+69	CTH 'O' C/L	4	1	N1/4 COR. SECTION 3, T19N R8E
TOTALS		8	2	

* BERNSTEN BP BRASS MARKER WITH ANCHOR PLUG

MOBILIZATIONS EROSION CONTROL

LOCATION	628.1905	628.1910
	MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
IH-39 STAGE 2	1	1
IH-39 STAGE 3	1	1
UNDISTRIBUTED	1	1
TOTALS	3	3

3

WATER

LOCATION	624.0100 WATER MGAL	631.0300 SOD WATER MGAL	REMARKS
BASE AGGREGATE DENSE AREAS	15	-	FOR BASE AGGREGATE COMPACTION
SEEDED AREAS	-	4	
TOTALS	15	4	

INLET PROTECTION

STATION	LOCATION	628.7010	REMARKS
		TYPE B EACH	
STA 883'NB'+51, 33'RT	IH-39 NB	1	SE QUAD, B-69-22
TOTAL		1	

SILT FENCE

STATION	LOCATION	628.1504	628.1520	REMARKS
		SILT FENCE LF	MAINTENANCE LF	
UNDISTRIBUTED	PROJECT	150	150	AS DIRECTED BY THE ENGINEER
TOTALS		150	150	

3

TOPSOIL, MULCHING, FERTILIZER, AND SEEDING						
STATION - STATION	LOCATION	625.0100	628.2004	629.0210	630.0130	REMARKS
		TOPSOIL	EROSION	FERTILIZER	SEEDING	
		SY	MAT CLASS	TYPE B	MIXTURE	
			1 TYPE B	CWT	NO. 30	
STA 884'SB'+25 - STA 885'SB'+00	B-69-23	70	70	0.04	1.2	WING WALL RECONSTRUCT
STA 873'NB'+85 - STA 876'NB'+15	NB IH-39	550	550	0	10	CONSTRUCTION ENTRANCE
UNDISTRIBUTED	PROJECT	20	20	0.01	0.8	AREAS AROUND FLUMES
						AND CURB AND GUTTER
TOTALS		640	640	0.40	12	

DELINEATORS AND DELINEATOR POSTS				
STATION-STATION	LOCATION	633.0100	633.0500	REMARKS
		DELINEATOR	DELINEATOR	
		POSTS	REFLECTORS	
		STEEL	EACH	
		EACH		
STA 876'NB'+00 - STA 894'NB'+00	NB IH-39 RT	9	9	STAGE 2, 200' SPACING
TOTALS		9	9	

ROCK BAGS			
STATION	LOCATION	628.7570	REMARKS
		ROCK BAGS	
		EACH	
STA 883'NB'+65	NB IH-39	5	INSTALL IN SE CORNER OF BRIDGE
STA 882'SB'+74	SB IH-39	5	DURING STAGE 2 BRIDGE MILLING
STA 884'SB'+25	SB IH-39	15	INSTALL IN SE CORNER OF BRIDGE
UNDISTRIBUTED		10	DURING STAGE 3 BRIDGE MILLING
			WING WALL REPLACEMENT
			INSTALL AROUND INLET CASTING
			AFTER CONCRETE REMOVAL
TOTAL		35	

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SIGN LISTING											
SIGN NO.	SIGN CODE	MESSAGE	SIZE	POSTS WOOD			637.2230	638.2102	638.2602	638.3000	REMARKS
				4" X 6"			SIGNS	MOVING SIGNS	REMOVING	REMOVING	
				634.0612	634.0614	634.0618	TYPE II	TYPE II	SIGNS	SMALL	
				12-FT	14-FT	18-FT	REFLECTIVE F	TYPE II	TYPE II	SIGN	
				EACH	EACH	EACH	SF	EACH	EA	SUPPORTS	
1-01	E5-1A	EXIT 136	90"x60"	---	---	2	---	1	-	2	IH-39 NB SOUTH GORE
2-01	W5-52R	OBJECT MARKER	18"x54"	---	1	---	6.75	---	1	1	IH-39 NB SE QUAD
2-02	W5-52L	OBJECT MARKER	18"x54"	---	1	---	6.75	---	1	1	IH-39 NB SW QUAD
2-03	W5-52L	OBJECT MARKER	18"x54"	---	1	---	6.75	---	1	1	IH-39 SB NE QUAD
2-04	W5-52R	OBJECT MARKER	18"x54"	---	1	---	6.75	---	1	1	IH-39 SB NW QUAD
3-01	W5-52L	OBJECT MARKER	12"X36"	1	---	---	3.00	---	1	1	ARCHER AVE SE QUAD
3-02	W5-52R	OBJECT MARKER	12"X36"	1	---	---	3.00	---	1	1	ARCHER AVE NE QUAD
3-03	W5-52R	OBJECT MARKER	12"X36"	1	---	---	3.00	---	1	1	ARCHER AVE SW QUAD
3-04	W5-52L	OBJECT MARKER	12"X36"	1	---	---	3.00	---	1	1	ARCHER AVE NW QUAD
4-01	W5-52L	OBJECT MARKER	12"X36"	1	---	---	3.00	---	1	1	CTH O SE QUAD
4-02	W5-52R	OBJECT MARKER	12"X36"	1	---	---	3.00	---	1	1	CTH O NE QUAD
4-03	W5-52R	OBJECT MARKER	12"X36"	1	---	---	3.00	---	1	1	CTH O SW QUAD
4-04	W5-52L	OBJECT MARKER	12"X36"	1	---	---	3.00	---	1	1	CTH O NW QUAD
5-01	W5-52L	OBJECT MARKER	12"X36"	1	---	---	3.00	---	1	1	CTH C SE QUAD
5-02	W5-52R	OBJECT MARKER	12"X36"	1	---	---	3.00	---	1	1	CTH C NE QUAD
5-03	W5-52R	OBJECT MARKER	12"X36"	1	---	---	3.00	---	1	1	CTH C SW QUAD
5-04	W5-52L	OBJECT MARKER	12"X36"	1	---	---	3.00	---	1	1	CTH C NW QUAD
TOTALS				12	4	2	63.00	1	16	18	

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TRAFFIC CONTROL														
	DURATION	NO.	643.0300 DRUMS DAYS	NO.	643.0420 BARRICADES TYPE III DAYS	NO.	643.0705 WARNING LIGHTS TYPE A DAYS	NO.	643.0715 WARNING LIGHTS TYPE C DAYS	NO.	643.0800 ARROW BOARDS DAYS	NO.	643.1050 SIGNS PCMS DAYS	REMARKS
IH-39 STAGE 1														FALL 2017
NB	7	78	546	3	21	6	42	18	126	2	14	-	-	
SB	7	69	483	2	14	4	28	18	126	2	14	-	-	
ADVANCED WARNING	7	10	70	-	-	-	-	-	-	-	-	2	14	SPRING 2018, INSTALLED PRIOR TO START OF STAGE 2 CONSTRUCTION
IH-39 STAGE 2														
NB	29	95	2,755	1	29	2	58	27	783	2	58	1	29	
SB	29	94	2,726	2	58	4	116	33	957	2	58	1	29	
IH-39 STAGE 3														
NB	29	60	1,740	2	58	4	116	26	754	2	58	-	-	
SB	29	72	2,088	2	58	4	116	26	754	2	58	-	-	
IH-39 STAGE 4														
NB	2	91	182	3	6	6	12	29	58	2	4	-	-	
SB	2	83	166	3	6	6	12	30	60	2	4	-	-	
IH-39 STAGE 5														
NB	2	98	196	4	8	8	16	27	54	2	4	-	-	
SB	2	103	206	3	6	6	12	27	54	2	4	-	-	
CTH O	30	-	-	18	540	28	840	-	-	-	-	-	-	
CTH C	30	-	-	18	540	28	840	-	-	-	-	-	-	
ARCHER AVE.	30	-	-	16	480	24	720	-	-	-	-	-	-	
UNDISTRIBUTED QUANTITY	2	33	66	-	-	-	-	-	-	-	-	-	-	FOR USE WHEN MOVING BARRIER BETWEEN STAGES 2 AND 3
TOTALS			11,224		1,824		2,928		3,726		276		72	

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TRAFFIC CONTROL				TRAFFIC CONTROL SIGNS FIXED MESSAGE								
		643.0200 TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE (1166-06-64) DAYS		SPV.0045.01 PCMS CELLULAR COMMUNICATIONS DAYS		643.1000 SIGNS FIXED MESSAGE MESSAGE SF						
LOCATION						STATION	LOCATION	MESSAGE	SIZE	QTY	REMARKS	
IH-39 NB & SB, STAGES 1-5 + 3 LOCAL BRIDGES		135		72		STA 831'NB'+25 LT	IH-39 NB	USE RAMPS	18"x90"	2	22.5	FOR THE DURATION OF STAGE 2
						STA 856'NB'+00 LT	IH-39 NB	USE RAMPS	18"x90"	1	11.25	FOR THE DURATION OF STAGE 3
						STA 917'SB'+00 RT	IH-39 SB	USE RAMPS	18"x90"	1	11.25	FOR THE DURATION OF STAGE 4
						STA 941'SB'+25 RT	IH-39 SB	USE RAMPS	18"x90"	2	22.5	FOR THE DURATION OF STAGE 2
							CTH C	ROAD CLOSED STARTING XX-XX	36"x60"	2	30	TO BE INSTALLED 3 WEEKS BEFORE CLOSING CTH C
TOTALS		135		72						TOTAL	97.5	

TRAFFIC CONTROL COVERING SIGNS TYPE II			
		643.0920 COVERING SIGNS TYPE II	
STATION	LOCATION	EACH	REMARKS
897'SB'+25	IH-39 SB	1	COVER EXISTING IH-39 SB "EXIT 136" SIGN FOR THE DURATION OF STAGE 2
TOTAL		1	

PROJECT NO: 1166-06-64	HWY: IH-39	COUNTY: WAUSHARA	MISCELLANEOUS QUANTITIES 7	SHEET: 141	E
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TRAFFIC CONTROL SIGNS							643.3000
STAGE	LOCATION	STATION	SIGN CODE	MESSAGE	NUMBER REQUIRED	DAYS NEEDED	TOTAL DAYS
1	IH-39	794'NB'+25	W20-1-F	ROAD WORK 1 MILE	2	7	14
1	IH-39	799'NB'+25	W03-5	SPEED LIMIT 55 AHEAD	2	7	14
1	IH-39	820'NB'+25	W20-55-G	LEFT LANE CLOSED 1/2 MILE	2	7	14
1	IH-39	826'NB'+00	R2-1	SPEED LIMIT 55	2	7	14
1	IH-39	831'NB'+25	W20-55-B	LEFT LANE CLOSED 1500 FT	2	7	14
1	IH-39	837'NB'+00	W04-2L	LEFT LANE ENDS	2	7	14
1	IH-39	862'NB'+00	R11-2	LANE CLOSED	1	7	7
1	IH-39	873'NB'+00	R11-2	LANE CLOSED	1	7	7
1	RAMP	877'NB'+50	G20-2A	END ROAD WORK	1	7	7
1	IH-39	885'NB'+75	R11-2	LANE CLOSED	1	7	7
1	IH-39	905'NB'+00	G20-2A	END ROAD WORK	2	7	14
1	IH-39	907'NB'+50	R2-1	SPEED LIMIT 70 MPH	2	7	14
1	IH-39	859'SB'+50	R2-1	SPEED LIMIT 70 MPH	2	7	14
1	IH-39	862'SB'+00	G20-2A	END ROAD WORK	1	7	7
1	IH-39	882'SB'+80	R11-2	LANE CLOSED	1	7	7
1	RAMP	895'SB'+60	G20-2A	END ROAD WORK	1	7	7
1	IH-39	895'SB'+80	R11-2	LANE CLOSED	1	7	7
1	IH-39	935'SB'+50	W04-2L	LEFT LANE ENDS	2	7	14
1	IH-39	941'SB'+25	W20-55-B	LEFT LANE CLOSED 1500 FT	2	7	14
1	IH-39	946'SB'+50	R2-1	SPEED LIMIT 55	2	7	14
1	IH-39	951'SB'+50	W20-55-G	LEFT LANE CLOSED 1/2 MILE	2	7	14
1	IH-39	972'SB'+50	W03-5	SPEED LIMIT 55 AHEAD	2	7	14
1	IH-39	977'SB'+50	W20-1-F	ROAD WORK 1 MILE	2	7	14
2	IH-39	571'NB'+50	W12-52	MAX 12' WIDTH	2	29	58
2	IH-39	571'NB'+50	W57-52	5 MILES AHEAD	2	29	58
2	IH-39	794'NB'+25	W20-1-F	ROAD WORK 1 MILE	2	29	58
2	IH-39	799'NB'+25	W03-5	SPEED LIMIT 55 AHEAD	2	29	58
2	IH-39	820'NB'+25	W20-5-6	RIGHT LANE CLOSED 1/2 MILE	2	29	58
2	IH-39	826'NB'+00	R2-1	SPEED LIMIT 55	2	29	58
2	IH-39	831'NB'+25	R12-70	WIDE LOADS EXCEEDING 12 FT	2	29	58
2	IH-39	837'NB'+00	W04-2R	RIGHT LAND ENDS	2	29	58
2	IH-39	856'NB'+00	R12-70	WIDE LOADS	1	29	29
2	IH-39	858'NB'+00	R11-2	LANE CLOSED	1	29	29
2	IH-39	865'NB'+50	R12-70-B	WIDE LOADS	1	29	29
2	RAMP	871'NB'+00	W8-6A	TRUCKS ENTERING & LEAVING	1	29	29
2	RAMP	871'NB'+80	E5-1	EXIT WITH ARROW	1	29	29
2	IH-39	871'NB'+80	W12-52	MAX 12' WIDTH	2	29	58
2	IH-39	874'NB'+25	W5-52R	TIGER BOARD	1	29	29
2	RAMP	877'NB'+00	G20-2A	END ROAD WORK	1	29	29
2	RAMP	889'NB'+25	W8-6A	TRUCKS ENTERING & LEAVING	1	29	29
2	IH-39	905'NB'+00	G20-2A	END ROAD WORK	2	29	58
2	IH-39	907'NB'+50	R2-1	SPEED LIMIT 70	2	29	58
2	IH-39	859'SB'+50	R2-1	SPEED LIMIT 70	2	29	58
2	IH-39	862'SB'+00	G20-2A	END ROAD WORK	2	29	58
2	IH-39	887'SB'+00	W5-52R	TIGER BOARD	1	29	29
2	IH-39	898'SB'+50	W1-4L	LANE SHIFT LEFT	1	29	29
2	RAMP	898'SB'+00	G20-2A	END ROAD WORK	1	29	29
2	IH-39	899'SB'+00	R11-2	LANE CLOSED	1	29	29
2	IH-39	900'SB'+65	W12-52	MAX 12' WIDTH	2	29	58
2	RAMP	900'SB'+65	E5-1	EXIT WITH ARROW	1	29	29
2	IH-39	907'SB'+00	R12-70-B	WIDE LOADS	1	29	29
2	IH-39	915'SB'+00	R11-2	LANE CLOSED	1	29	29
2	IH-39	917'SB'+00	R12-70	WIDE LOADS	1	29	29
2	IH-39	935'SB'+50	W04-2R	RIGHT LANE ENDS	2	29	58
2	IH-39	941'SB'+25	R12-70	WIDE LOADS EXCEEDING 12 FT	2	29	58
2	IH-39	946'SB'+50	R2-1	SPEED LIMIT 55	2	29	58
2	IH-39	951'SB'+50	W20-5-G	RIGHT LANE CLOSED 1/2 MILE	2	29	58
2	IH-39	972'SB'+50	W03-5	SPEED LIMIT 55 AHEAD	2	29	58
2	IH-39	977'SB'+50	W20-1-F	ROAD WORK 1 MILE	2	29	58
2	IH-39	EXT 139	W12-52	MAX 12' WIDTH	2	29	58
2	IH-39	EXT 139	W57-52	3 MILES AHEAD	2	29	58

CONTINUED

TRAFFIC CONTROL SIGNS							643.3000
STAGE	LOCATION	STATION	SIGN CODE	MESSAGE	NUMBER REQUIRED	DAYS NEEDED	TOTAL DAYS
3	IH-39	794'NB'+25	W20-1-F	ROAD WORK 1 MILE	2	29	58
3	IH-39	799'NB'+25	W03-5	SPEED LIMIT 55 AHEAD	2	29	58
3	IH-39	820'NB'+25	W20-55-G	LEFT LANE CLOSED 1/2 MILE	2	29	58
3	IH-39	826'NB'+00	R2-1	SPEED LIMIT 55	2	29	58
3	IH-39	831'NB'+25	W20-55-B	LEFT LANE CLOSED 1500 FT	2	29	58
3	IH-39	837'NB'+00	W04-2L	LEFT LANE ENDS	2	29	58
3	IH-39	855'NB'+50	W1-4R	LANE SHIFT RIGHT	1	29	29
3	IH-39	858'NB'+80	R11-2	LANE CLOSED	1	29	29
3	IH-39	869'NB'+00	R11-2	LANE CLOSED	1	29	29
3	IH-39	873'NB'+75	W5-52L	TIGER BOARD	1	29	29
3	RAMP	878'NB'+00	G20-2A	END ROAD WORK	1	29	29
3	IH-39	905'NB'+00	G20-2A	END ROAD WORK	2	29	58
3	IH-39	907'NB'+50	R2-1	SPEED LIMIT 70 MPH	2	29	58
3	IH-39	859'SB'+50	R2-1	SPEED LIMIT 70 MPH	2	29	58
3	IH-39	862'SB'+00	G20-2A	END ROAD WORK	2	29	58
3	IH-39	887'SB'+00	W5-52L	TIGER BOARD	1	29	29
3	RAMP	896'SB'+00	G20-2A	END ROAD WORK	1	29	29
3	IH-39	898'SB'+25	R11-2	LANE CLOSED	1	29	29
3	IH-39	899'SB'+50	W1-4R	RIGHT LANE SHIFT	1	29	29
3	IH-39	914'SB'+50	R11-2	LANE CLOSED	1	29	29
3	IH-39	935'SB'+50	W04-2L	LEFT LANE ENDS	2	29	58
3	IH-39	941'SB'+25	W20-55-B	LEFT LANE CLOSED 1500 FT	2	29	58
3	IH-39	946'SB'+50	R2-1	SPEED LIMIT 55	2	29	58
3	IH-39	951'SB'+50	W20-55-G	LEFT LANE CLOSED 1/2 MILE	2	29	58
3	IH-39	972'SB'+50	W03-5	SPEED LIMIT 55 AHEAD	2	29	58
3	IH-39	977'SB'+50	W20-1-F	ROAD WORK 1 MILE	2	29	58
4	IH-39	794'NB'+25	W20-1-F	ROAD WORK 1 MILE	2	2	4
4	IH-39	799'NB'+25	W03-5	SPEED LIMIT 55 AHEAD	2	2	4
4	IH-39	820'NB'+25	W20-55-G	LEFT LANE CLOSED 1/2 MILE	2	2	4
4	IH-39	826'NB'+00	R2-1	SPEED LIMIT 55	2	2	4
4	IH-39	831'NB'+25	W20-55-B	LEFT LANE CLOSED 1500 FT	2	2	4
4	IH-39	837'NB'+00	W04-2L	LEFT LANE ENDS	2	2	4
4	IH-39	862'NB'+50	R11-2	LANE CLOSED	1	2	2
4	IH-39	868'NB'+50	W1-4R	RIGHT LANE SHIFT	1	2	2
4	IH-39	872'NB'+25	R11-2	LANE CLOSED	1	2	2
4	RAMP	877'NB'+00	G20-2A	END ROAD WORK	1	2	2
4	IH-39	882'NB'+50	R11-2	LANE CLOSED	1	2	2
4	IH-39	905'NB'+00	G20-2A	END ROAD WORK	2	2	4
4	IH-39	907'NB'+50	R2-1	SPEED LIMIT 70 MPH	2	2	4
4	IH-39	859'SB'+50	R2-1	SPEED LIMIT 70 MPH	2	2	4
4	IH-39	882'SB'+00	G20-2A	END ROAD WORK	2	2	4
4	IH-39	881'SB'+70	R11-2	LANE CLOSED	1	2	2
4	IH-39	887'SB'+50	R11-2	LANE CLOSED	1	2	2
4	RAMP	895'SB'+00	G20-2A	END ROAD WORK	1	2	2
4	IH-39	899'SB'+25	R11-2	LANE CLOSED	1	2	2
4	IH-39	902'SB'+25	W1-4R	LANE SHIFT RIGHT	1	2	2
4	IH-39	935'SB'+50	W04-2L	LEFT LANE ENDS	2	2	4
4	IH-39	941'SB'+25	W20-55-B	LEFT LANE CLOSED 1500 FT	2	2	4
4	IH-39	946'SB'+50	R2-1	SPEED LIMIT 55	2	2	4
4	IH-39	951'SB'+50	W20-55-G	LEFT LANE CLOSED 1/2 MILE	2	2	4
4	IH-39	972'SB'+50	W03-5	SPEED LIMIT 55 AHEAD	2	2	4
4	IH-39	977'SB'+50	W20-1-F	ROAD WORK 1 MILE	2	2	4

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TRAFFIC CONTROL SIGNS

					NUMBER	DAYS	643.3000
STAGE	LOCATION	STATION	SIGN CODE	MESSAGE	REQUIRED	NEEDED	TOTAL DAYS
5	IH-39	794'NB'+25	W20-1-F	ROAD WORK 1 MILE	2	2	4
5	IH-39	799'NB'+25	W03-5	SPEED LIMIT 55 AHEAD	2	2	4
5	IH-39	820'NB'+25	W20-5-G	RIGHT LANE CLOSED 1/2 MILE	2	2	4
5	IH-39	826'NB'+00	R2-1	SPEED LIMIT 55	2	2	4
5	IH-39	831'NB'+25	W20-5-B	RIGHT LANE CLOSED 1500 FT	2	2	4
5	IH-39	837'NB'+00	W04-2R	RIGHT LAND ENDS	2	2	4
5	IH-39	859'NB'+00	R11-2	LANE CLOSED	1	2	2
5	RAMP	872'NB'+20	E5-1	EXIT	1	2	2
5	IH-39	874'NB'+00	R11-2	LANE CLOSED	1	2	2
5	RAMP	877'NB'+00	G20-2A	END ROAD WORK	1	2	2
5	IH-39	882'NB'+75	R11-2	LANE CLOSED	1	2	2
5	IH-39	888'NB'+90	R11-2	LANE CLOSED	1	2	2
5	IH-39	905'NB'+00	G20-2A	END ROAD WORK	2	2	4
5	IH-39	907'NB'+50	R2-1	SPEED LIMIT 70 MPH	2	2	4
5	IH-39	859'SB'+50	R2-1	SPEED LIMIT 70 MPH	2	2	4
5	IH-39	862'SB'+00	G20-2A	END ROAD WORK	2	2	4
5	IH-39	888'SB'+00	R11-2	LANE CLOSED	1	2	2
5	RAMP	896'SB'+00	G20-2A	END ROAD WORK	1	2	2
5	IH-39	898'SB'+15	R11-2	LANE CLOSED	1	2	2
5	RAMP	900'SB'+80	E5-1	EXIT	1	2	2
5	IH-39	915'SB'+00	R11-2	LANE CLOSED	1	2	2
5	IH-39	935'SB'+50	W04-2R	RIGHT LANE ENDS	2	2	4
5	IH-39	941'SB'+25	W20-5-B	RIGHT LANE CLOSED 1500 FT	2	2	4
5	IH-39	946'SB'+50	R2-1	SPEED LIMIT 55	2	2	4
5	IH-39	951'SB'+50	W20-5-G	RIGHT LANE CLOSED 1/2 MILE	2	2	4
5	IH-39	972'SB'+50	W03-5	SPEED LIMIT 55 AHEAD	2	2	4
5	IH-39	977'SB'+50	W20-1-F	ROAD WORK 1 MILE	2	2	4
CTH C	ADVANCED WARNING	W20-1-A	ROAD WORK AHEAD	3	30	90	
		R11-3-C	BRIDGE OUT .3 MILES AHEAD	2	30	60	
		W20-3-A	ROAD CLOSED AHEAD	2	30	60	
		W20-3-C	ROAD CLOSED 1000 FT	2	30	60	
		W20-3-D	ROAD CLOSED 500 FT	2	30	60	
		R11-2-B	BRIDGE OUT	3	30	90	
		R11-4	ROAD CLOSED TO THRU TRAFFIC	1	30	30	
		R11-3-C	BRIDGE OUT .4 MILES AHEAD	2	30	60	
		R11-2	ROAD CLOSED	2	30	60	
CTH O	ADVANCED WARNING	W20-1-A	ROAD WORK AHEAD	4	30	120	
		W20-3-A	ROAD CLOSED AHEAD	2	30	60	
		W20-3-C	ROAD CLOSED 1000 FT	2	30	60	
		W20-3-D	ROAD CLOSED 500 FT	2	30	60	
		R11-2-B	BRIDGE OUT	3	30	90	
		R11-4	ROAD CLOSED TO THRU TRAFFIC	1	30	30	
		R11-3-C	BRIDGE OUT .4 MILES AHEAD	4	30	120	
ARCHER AVE	ADVANCED WARNING	W20-1-A	ROAD WORK AHEAD	4	30	120	
		R11-3-C	BRIDGE OUT .7 MILES AHEAD	2	30	60	
		W20-3-A	ROAD CLOSED AHEAD	2	30	60	
		W20-3-C	ROAD CLOSED 1000 FT	1	30	30	
		W20-3-D	ROAD CLOSED 500 FT	1	30	30	
		R11-4	ROAD CLOSED TO THRU TRAFFIC	1	30	30	
		R11-2-B	BRIDGE OUT	3	30	90	
TOTAL						4,924	

PAVEMENT MARKING EPOXY

ROADWAY	STATION - STATION	LOCATION	646.0106 4-INCH		
			(EDGE LINE YELLOW)	(NO PASSING YELLOW)	(EDGE LINE WHITE)
			LF	LF	LF
NB IH-39	STA 865'NB'+50 - STA 896'NB'+50	LT EDGE LINE	3,100	-	-
	STA 874'NB'+13 - STA 877'NB'+00	NB EXIT 136 RAMP	287	-	-
	STA 883'NB'+06 - STA 886'NB'+01	CL SKIPS	-	-	75
	STA 874'NB'+13 - STA 894'NB'+91	RT EDGE LINE	-	-	2,078
SB IH-39	STA 877'SB'+00 - STA 896'SB'+50	RT EDGE LINE	1,950	-	-
	STA 882'SB'+14 - STA 885'SB'+09	CL SKIPS	-	-	75
	STA 880'SB'+50 - STA 886'SB'+50	LT EDGE LINE	-	-	600
CTH C	STA 17'C'+50 - STA 23'C'+00	LT/RT EDGE LINE	-	-	1,100
	STA 17'C'+50 - STA 23'C'+00	CENTERLINE	-	1,100	-
CTH O	STA 34'O'+50 - STA 40'O'+00	LT/RT EDGE LINE	-	-	1,100
	STA 34'O'+50 - STA 40'O'+00	CENTERLINE	-	1,100	-
ARCHER AVE.	STA 55'A'+25 - STA 60'A'+75	CENTERLINE	-	1,100	-
SUB TOTALS			5,337	3,300	5,028
TOTAL			13,665		

PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE

STATION - STATION	LOCATION	646.0881.S	646.0883.S	REMARKS
		4-INCH WHITE	8-INCH (WHITE)	
		LF	LF	
STA 874'NB'+00 - STA 883'NB'+06	NB IH-39 CENTERLINE SKIPS	225	-	
STA 886'NB'+01 - STA 894'NB'+25	NB IH-39 CENTERLINE SKIPS	212.5	-	
STA 880'SB'+50 - STA 882'SB'+14	SB IH-39 CENTERLINE SKIPS	50	-	
STA 885'SB'+09 - STA 886'SB'+50	SB IH-39 CENTERLINE SKIPS	37.5	-	
STA 872'NB'+13 - STA 874'NB'+13	NB IH-39 GORE	-	400	TO BE USED AT PROJECT
STA 894'NB'+91 - STA 901'NB'+25	NB IH-39 GORE	-	400	ENGINEER'S DISCRETION
TOTAL		525	800	

PAVEMENT MARKING DIAGONAL EPOXY 24-INCH

STATION - STATION	LOCATION	647.0746 (WHITE)	REMARKS
		LF	
STA 872'NB'+13 - STA 874'NB'+13	NB IH-39 GORE	60	TO BE USED AT PROJECT ENGINEER'S DISCRETION
TOTAL		60	

		TEMPORARY PAVEMENT MARKING REMOVABLE TAPE					REMARKS
		649.0400	649.0400	649.0506	649.0510	649.0801	
		4-INCH (WHITE)	4-INCH (YELLOW)	6-INCH MASK-OUT	10-INCH MASK-OUT	8-INCH (WHITE)	
STATION - STATION	LOCATION	LF	LF	LF	LF	LF	
STAGE 1							
STA 849'NB'+75 - STA 858'NB'+25	TRANSITION TAPER	-	850	-	-	-	4 INCH YELLOW
STA 911'SB'+50 - STA 920'SB'+00	TRANSITION TAPER	-	850	-	-	-	4 INCH YELLOW
STAGE 1 SUBTOTALS:		0	1,700	0	0	0	
STAGE 2							
STA 847'NB'+00 - STA 855'NB'+50	CENTERLINE SKIPS	-	-	213	-	-	COVER EXISTING MARKINGS WITH BLACKOUT TAPE
STA 847'NB'+00 - STA 855'NB'+50	TRANSITION TAPER	850	-	-	-	-	4 INCH WHITE
STA 866'NB'+00 - STA 868'NB'+00	RIGHT EDGELINE	200	-	-	-	-	4 INCH WHITE
STA 865'NB'+50 - STA 897'NB'+50	LEFT EDGELINE	-	3,200	-	-	-	4 INCH YELLOW
STA 865'NB'+50 - STA 897'NB'+50	LEFT EDGELINE	-	-	3,200	-	-	COVER EXISTING EDGELINE MARKING
STA 866'NB'+00 - STA 871'NB'+50	CENTERLINE SKIPS	-	-	138	-	-	COVER EXISTING MARKINGS WITH BLACKOUT TAPE
STA 870'NB'+25 - STA 871'NB'+25	RIGHT EDGELINE	100	-	-	-	-	LINE COMING OFF TEMP GORE TAPE
STA 871'NB'+37 - STA 873'NB'+37	RAMP GORE	-	-	-	-	200	RIGHT HALF OF RAMP GORE
STA 871'NB'+37 - STA 873'NB'+37	RAMP GORE	-	-	-	-	200	LEFT HALF OF RAMP GORE
STA 873'NB'+25 - STA 896'NB'+00	RIGHT EDGELINE	2,275	-	-	-	-	4 INCH WHITE
STA 877'SB'+50 - STA 896'SB'+50	RIGHT EDGELINE	-	1,900	-	-	-	4 INCH YELLOW
STA 877'SB'+50 - STA 896'SB'+50	RIGHT EDGELINE	-	-	1,900	-	-	COVER EXISTING EDGELINE MARKING
STA 879'SB'+00 - STA 896'SB'+50	LEFT EDGELINE	1,750	-	-	-	-	4 INCH WHITE
STA 899'SB'+43 - STA 901'SB'+43	RAMP GORE	-	-	-	-	200	LEFT HALF OF RAMP GORE
STA 899'SB'+43 - STA 901'SB'+43	RAMP GORE	-	-	-	-	200	RIGHT HALF OF RAMP GORE
STA 905'SB'+00 - STA 907'SB'+00	LEFT EDGELINE	200	-	-	-	-	4 INCH WHITE
STA 903'SB'+25 - STA 907'SB'+00	CENTERLINE SKIPS	-	-	94	-	-	COVER EXISTING MARKINGS WITH BLACKOUT TAPE
STA 917'SB'+00 - STA 925'SB'+50	CENTERLINE SKIPS	-	-	213	-	-	COVER EXISTING MARKINGS WITH BLACKOUT TAPE
STA 917'SB'+00 - STA 925'SB'+50	TRANSITION TAPER	850	-	-	-	-	4 INCH WHITE
STAGE 2 SUBTOTALS:		6,225	5,100	5,756	0	800	
STAGE 3							
STA 847'NB'+00 - STA 855'NB'+50	CENTERLINE SKIPS	-	-	213	-	-	COVER EXISTING MARKINGS WITH BLACKOUT TAPE
STA 847'NB'+00 - STA 855'NB'+50	LEFT EDGELINE	-	850	-	-	-	4-INCH YELLOW
STA 860'NB'+50 - STA 896'NB'+25	LEFT EDGELINE	-	3,575	-	-	-	4 INCH YELLOW
STA 860'NB'+50 - STA 871'NB'+00	RIGHT EDGELINE	1,050	-	-	-	-	4-INCH WHITE
STA 860'NB'+50 - STA 872'NB'+00	RIGHT EDGELINE	-	-	1,150	-	-	COVER EXISTING EDGELINE MARKINGS
STA 872'NB'+00 - STA 874'NB'+35	GORE MARKINGS	-	-	-	310	-	COVER EXISTING GORE MARKINGS
STA 873'NB'+00 - STA 874'NB'+35	NEW GORE MARKINGS	-	-	-	-	270	TEMPORARY 8" GORE MARKING
STA 874'NB'+35 - STA 874'NB'+88	RIGHT EDGELINE	-	-	53	-	-	COVER EXISTING EDGELINE MARKINGS
STA 874'NB'+35 - STA 898'NB'+00	RIGHT EDGELINE	2,365	-	-	-	-	4 INCH WHITE
STA 883'NB'+66 - STA 885'NB'+41	EDGELINES & CENTERLINE	220	175	-	-	-	INSTALLED BEFORE OPENING TO TRAFFIC FOR STAGE 4
STA 894'NB'+88 - STA 898'NB'+00	RIGHT EDGELINE	-	-	312	-	-	
STA 875'SB'+50 - STA 897'SB'+50	LEFT EDGELINE	2,200	-	-	-	-	4 INCH WHITE
STA 878'SB'+00 - STA 897'SB'+50	RIGHT EDGELINE	-	1,950	-	-	-	4 INCH YELLOW
STA 875'SB'+50 - STA 880'SB'+62	LEFT EDGELINE	-	-	512	-	-	COVER EXISTING EDGELINE MARKINGS
STA 882'SB'+74 - STA 884'SB'+49	EDGELINES & CENTERLINE	220	175	-	-	-	INSTALLED BEFORE OPENING TO TRAFFIC FOR STAGE 4
STA 886'SB'+00 - STA 897'SB'+50	LEFT EDGELINE	-	-	1,150	-	-	COVER EXISTING EDGELINE MARKINGS
STA 917'SB'+00 - STA 925'SB'+50	TRANSITION TAPER	-	850	-	-	-	4-INCH YELLOW
STA 917'SB'+00 - STA 925'SB'+50	CENTERLINE SKIPS	-	-	213	-	-	COVER EXISTING MARKINGS WITH BLACKOUT TAPE
STAGE 3 SUBTOTALS:		6,055	7,575	3,602	310	270	
STAGE 4							
STA 851'NB'+50 - STA 860'NB'+00	TRANSITION TAPER	-	850	-	-	-	4 INCH YELLOW
STA 873'NB'+50 - STA 878'NB'+50	SHIFTING TAPER	-	500	-	-	-	4 INCH YELLOW
STA 891'SB'+00 - STA 896'SB'+50	SHIFTING TAPER	-	550	-	-	-	4 INCH YELLOW
STA 904'SB'+50 - STA 913'SB'+00	TRANSITION TAPER	-	850	-	-	-	4 INCH YELLOW
STAGE 4 SUBTOTALS:		0	2,750	0	0	0	
STAGE 5							
STA 847'NB'+25 - STA 855'NB'+75	TRANSITION TAPER	850	-	-	-	-	4 INCH WHITE
STA 871'NB'+32 - STA 873'NB'+32	RAMP GORE	-	-	-	-	200	RIGHT HALF OF RAMP GORE
STA 871'NB'+32 - STA 873'NB'+32	RAMP GORE	-	-	-	-	200	LEFT HALF OF RAMP GORE
STA 865'NB'+75 - STA 867'NB'+75	RIGHT EDGELINE	200	-	-	-	-	4 INCH WHITE (NO TAPE OVER BRIDGE)
STA 900'SB'+00 - STA 902'SB'+00	RAMP GORE	-	-	-	-	200	LEFT HALF OF RAMP GORE
STA 900'SB'+00 - STA 902'SB'+00	RAMP GORE	-	-	-	-	200	RIGHT HALF OF RAMP GORE
STA 905'SB'+50 - STA 907'SB'+50	LEFT EDGELINE	200	-	-	-	-	4 INCH WHITE
STA 917'SB'+50 - STA 926'SB'+00	TRANSITION TAPER	850	-	-	-	-	COVER EXISTING MARKINGS WITH BLACKOUT TAPE
STAGE 5 SUBTOTALS:		2,100	0	0	0	800	
PROJECT SUB TOTALS		14,380	17,125	9,358	310	1,870	
TOTALS			31,505	9,358	310	1,870	

3

CONSTRUCTION STAKING

STATION - STATION	650.0500	650.5500	650.7000	650.8000	650.9910	REMARKS
	BASE LF	CURB, GUTTER AND CURB & GUTTER LF	CONCRETE PAVEMENT LF	RESURFACING REFERENCE LF	SUPPLEMENTAL CONTROL 1166-06-64 LS	
STA 860'NB'+00 - STA 898'NB'+00	1,725	8	120	3,800	-	NB IH-39 PROJECT LIMITS
STA 875'SB'+00 - STA 898'SB'+00	-	8	120	2,300	-	SB IH-39 PROJECT LIMITS
STA 18'C'+00 - STA 22'C'+50	-	-	-	450	-	CTH C
STA 35'O'+00 - STA 39'O'+50	-	-	-	450	-	CTH O
STA 55'A'+75 - STA 61'A'+25	-	-	-	550	-	ARCHER AVE
PROJECT	-	-	-	-	1	
TOTALS	1,725	16	240	7,550	1	

3

SAWING ASPHALT

LOCATION	STATION - STATION	STAGE	690.0150	REMARKS
			LF	
IH-39 NB	STA 866'NB'+00	1	4	CUT ACROSS LT SHOULDER
IH-39 NB	STA 866'NB'+00 - STA 874'NB'+88	1	888	CUT PASSING LANE/LT SHOULDER JOINT
IH-39 NB	STA 879'NB'+65	1	6	CUT ACROSS LT SHOULDER
IH-39 NB	STA 893'NB'+88 - STA 896'NB'+00	1	212	CUT PASSING LANE/LT SHOULDER JOINT
IH-39 NB	STA 896'NB'+00	1	4	CUT ACROSS LT SHOULDER
IH-39 SB	STA 877'SB'+50	1	4	CUT ACROSS RT SHOULDER
IH-39 SB	STA 877'SB'+50 - STA 882'SB'+50	1	500	CUT PASSING LANE/RT SHOULDER JOINT
IH-39 SB	STA 888'SB'+00	1	6	CUT ACROSS RT SHOULDER
IH-39 SB	STA 888'SB'+00 - STA 896'SB'+00	1	800	CUT PASSING LANE/RT SHOULDER JOINT
IH-39 SB	STA 896'SB'+00	1	4	CUT ACROSS RT SHOULDER
IH-39 NB	STA 874'NB'+88	2	22	CUT ACROSS DRIVING LANE & RT SHOULDER
IH-39 NB	STA 893'NB'+88	2	22	CUT ACROSS DRIVING LANE & RT SHOULDER
IH-39 SB	STA 882'SB'+14	2	10	CUT ACROSS LT SHOULDER
IH-39 SB	STA 885'SB'+09	2	10	CUT ACROSS LT SHOULDER
IH-39 NB	STA 874'NB'+88	3	12	CUT ACROSS PASSING LANE
IH-39 NB	STA 874'NB'+88 - STA 883'NB'+05	3	815	CUT ALONG CENTERLINE JOINT IF NEEDED
IH-39 NB	STA 886'NB'+01 - STA 893'NB'+88	3	787	CUT ALONG CENTERLINE JOINT IF NEEDED
IH-39 NB	STA 893'NB'+88	3	12	CUT ACROSS PASSING LANE
IH-39 SB	STA 882'SB'+14	3	6	CUT ACROSS RT SHOULDER
IH-39 SB	STA 885'SB'+09	3	6	CUT ACROSS RT SHOUDLER
TOTAL			4,130	

SAWING CONCRETE

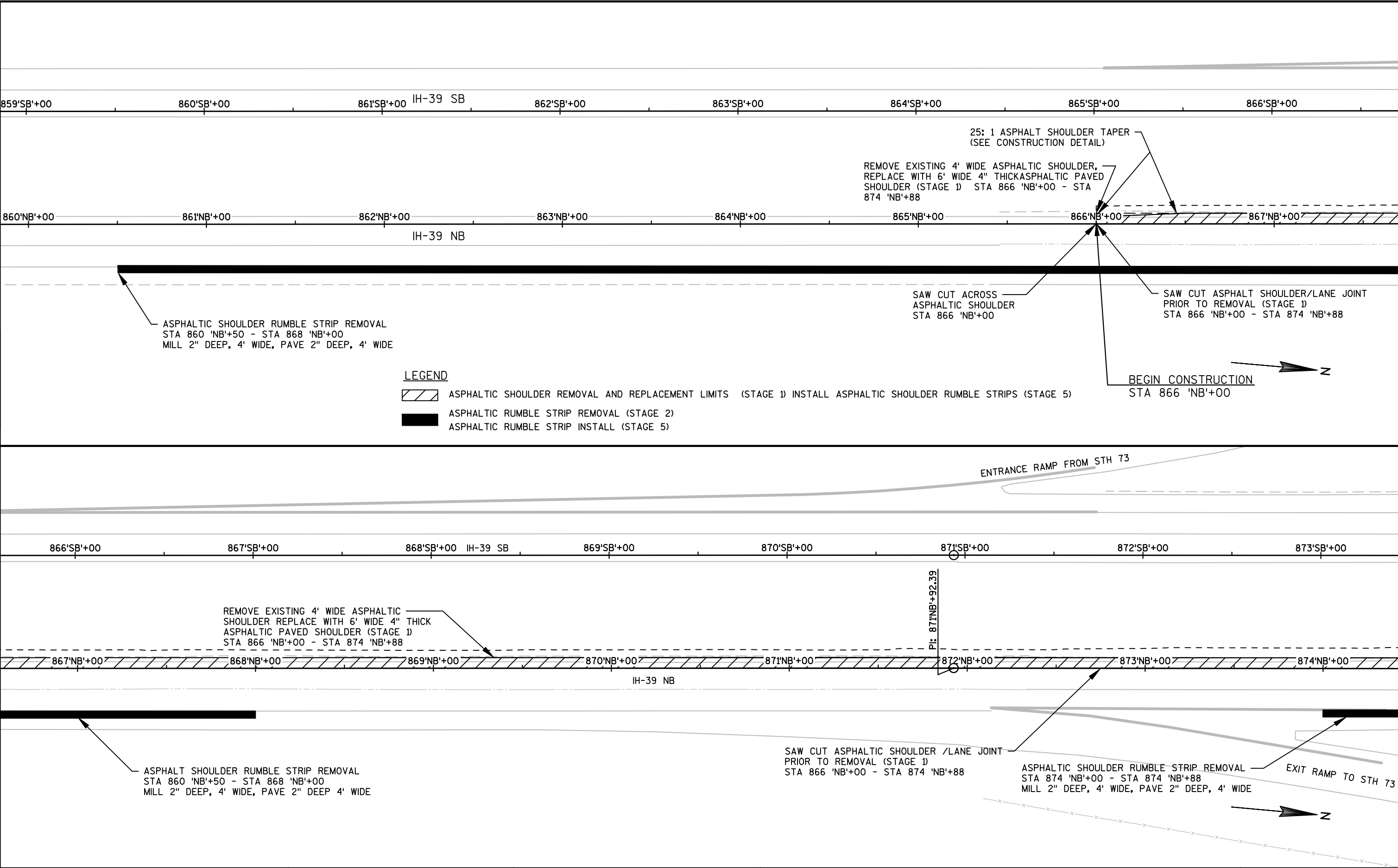
LOCATION	STATION - STATION	STAGE	690.0250	REMARKS
			LF	
IH-39 NB	STA 874'NB'+88 - STA 883'NB'+66	2	878	SAW NB CENTERLINE (SEE PLAN DETAIL)
IH-39 NB	STA 885'NB'+41 - STA 893'NB'+88	2	847	SAW NB CENTERLINE (SEE PLAN DETAIL)
IH-39 SB	STA 882'SB'+14	2	12	CUT ACROSS DRIVING LANE
IH-39 SB	STA 882'SB'+14 - STA 882'SB'+74	2	60	CUT ALONG CENTERLINE
IH-39 SB	STA 884'SB'+49 - STA 885'SB'+09	2	60	CUT ALONG CENTERLINE
IH-39 SB	STA 885'SB'+09	2	12	CUT ACROSS DRIVING LANE
IH-39 SB	STA 882'SB'+14	3	12	CUT ACROSS PASSING LANE
IH-39 SB	STA 885'SB'+09	3	12	CUT ACROSS PASSING LANE
TOTAL			1,893	

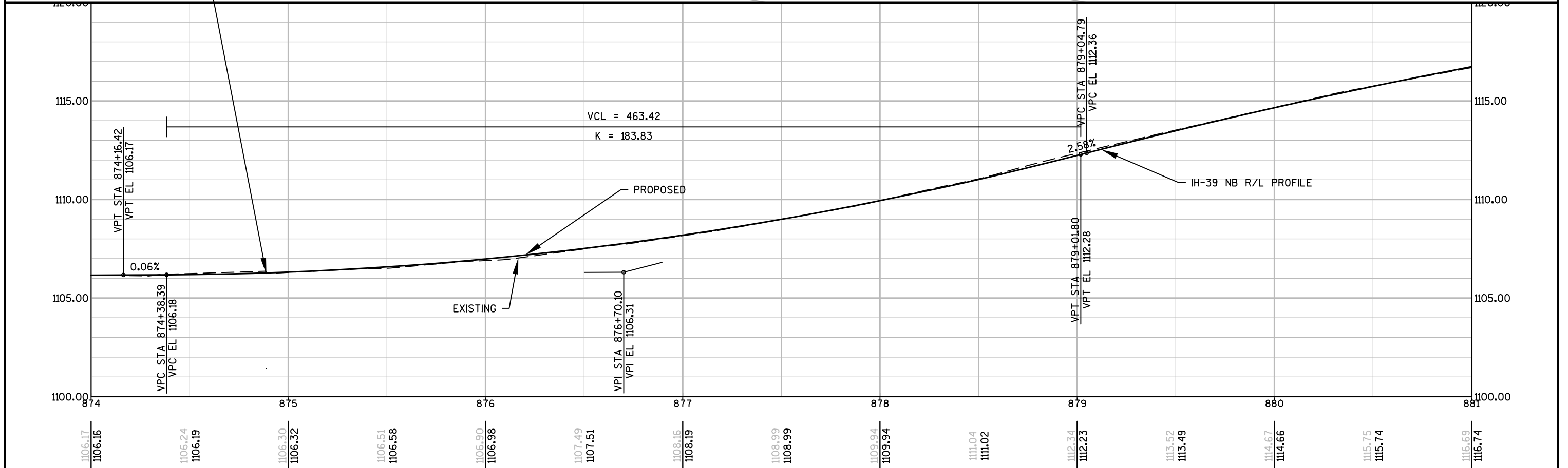
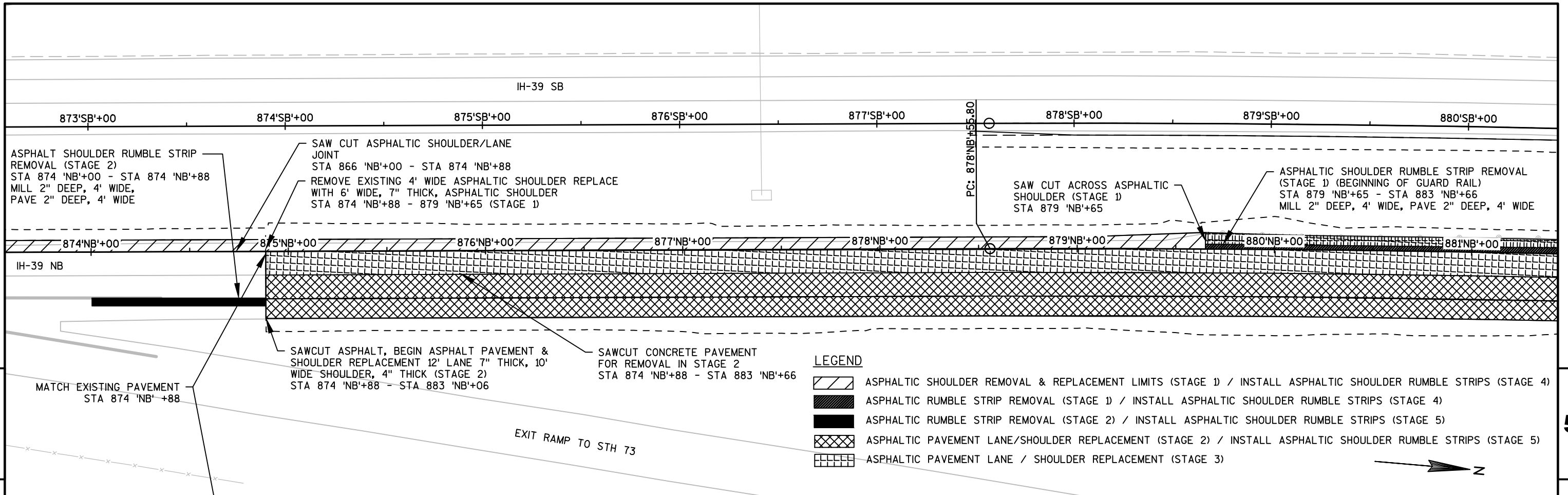
NORTHBOUND IH-39 SUPERELEVATION TRANSITION TABLE

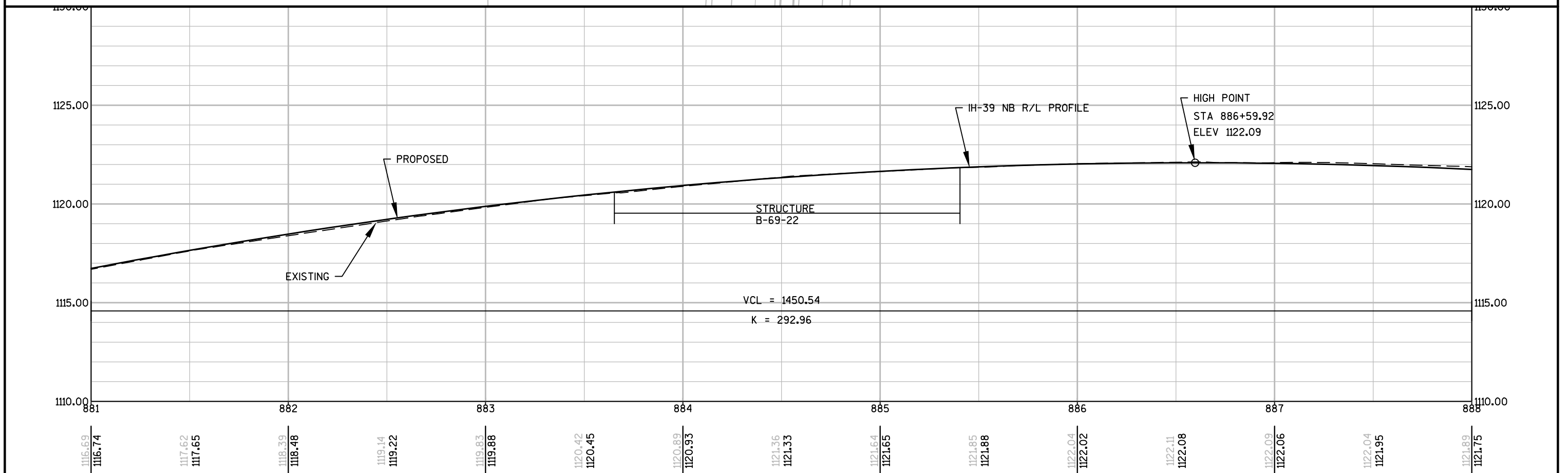
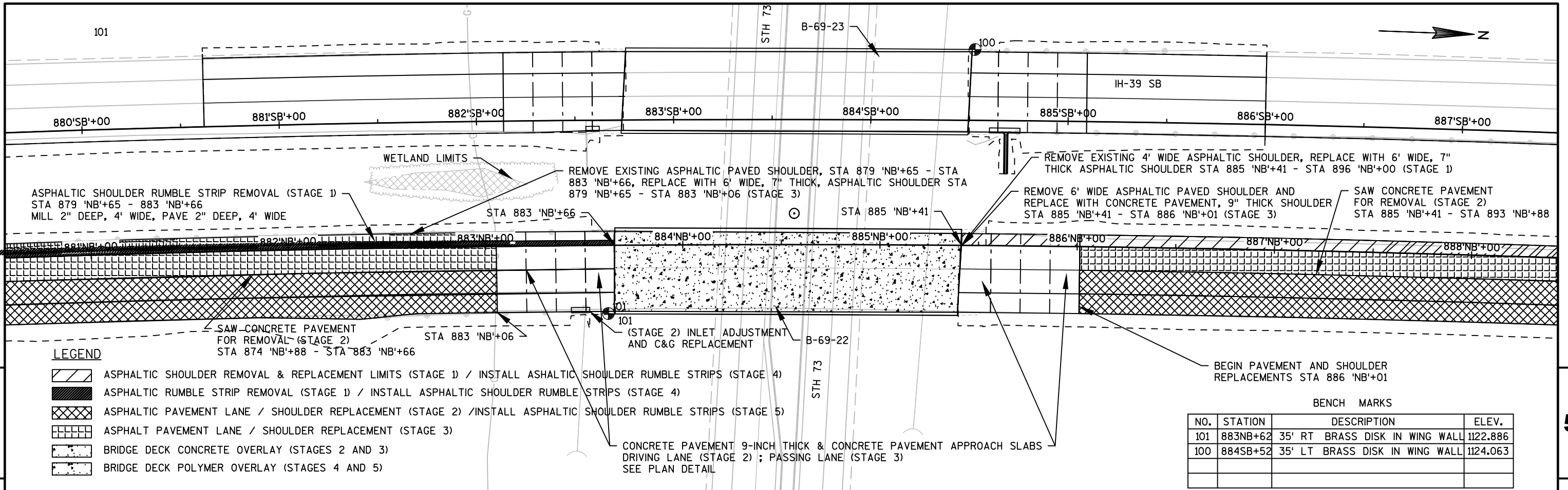
		MEDIAN SHOULDER	PASSING LANE	DRIVING LANE	OUTSIDE SHOULDER
Superelevation Curve	Start Station	Left Outside Shoulder	Left Outside Lane	Right Outside Lane	Right Outside Shoulder
End Normal Shoulder	877+68.80'	-2.00%	-1.50%	-1.50%	-2.00%
End Normal Crown	877+68.80'	-2.00%	-1.50%	-1.50%	-2.00%
Level Crown	878+13.80'	0.00%	0.00%	-1.50%	-2.00%
Reverse Crown	878+58.80'	1.50%	1.50%	-1.50%	-2.00%
Low Shoulder Match	878+73.80'	1.50%	1.50%	-1.50%	-1.50%
Begin Full Super	878+76.80'	1.50%	1.50%	-1.50%	-1.50%
End Full Super	890+36.40'	1.50%	1.50%	-1.50%	-1.50%
Low Shoulder Match	890+39.40'	1.50%	1.50%	-1.50%	-1.50%
Reverse Crown	890+54.40'	1.50%	1.50%	-1.50%	-2.00%
Level Crown	890+99.40'	0.00%	0.00%	-1.50%	-2.00%
Begin Normal Crown	891+44.40'	-2.00%	-1.50%	-1.50%	-2.00%
Begin Normal Shoulder	891+44.40'	-2.00%	-1.50%	-1.50%	-2.00%

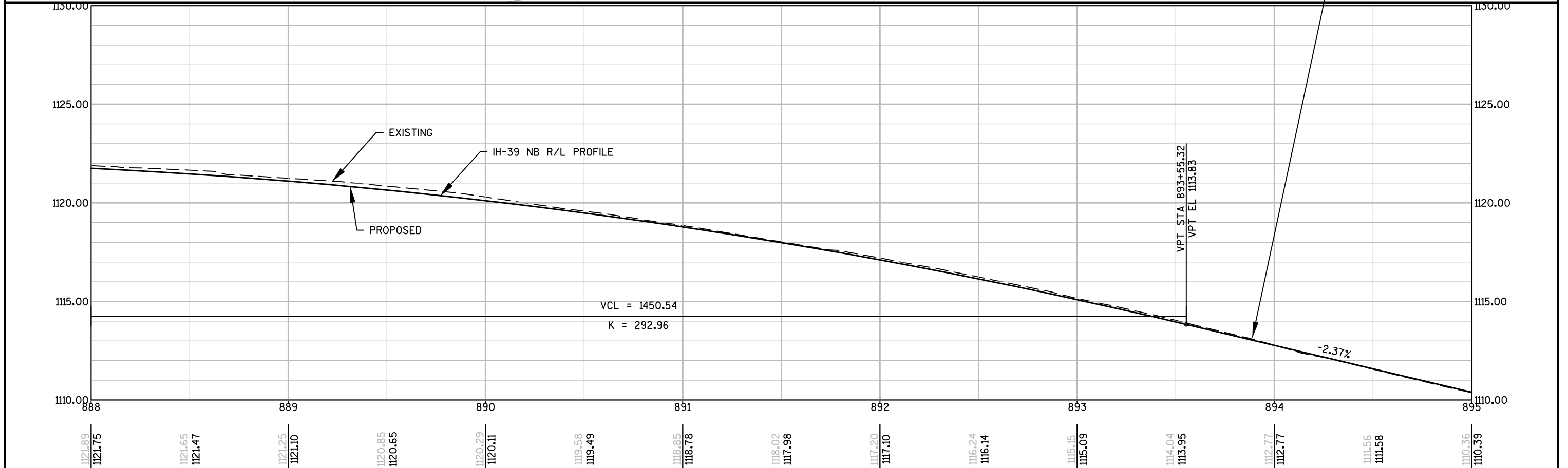
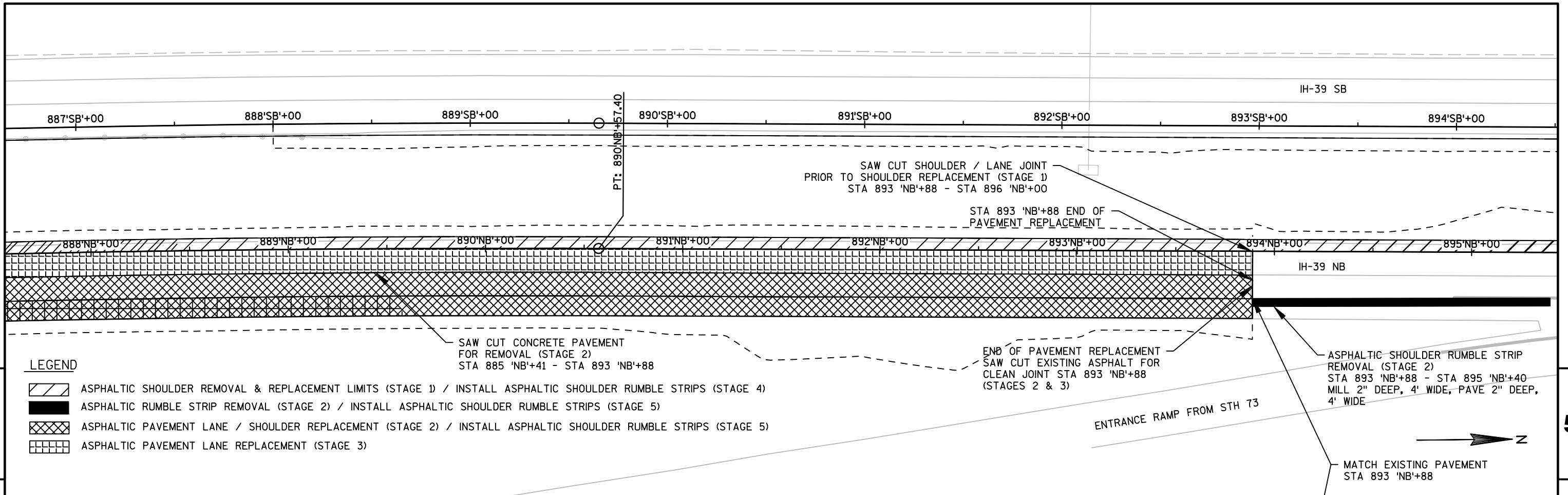
SOUTHBOUND IH-39 SUPERELEVATION TRANSITION TABLE

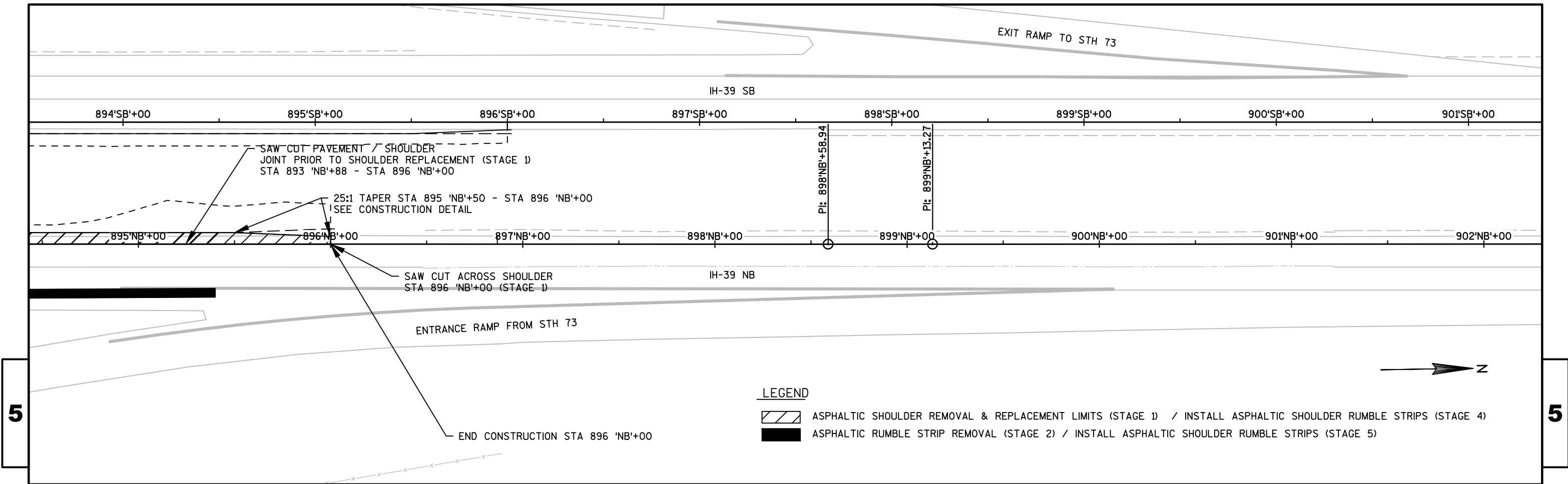
		OUTSIDE SHOULDER	DRIVING LANE	PASSING LANE	MEDIAN SHOULDER
Superelevation Curve	Start Station	Left Outside Shoulder	Left Outside Lane	Right Outside Lane	Right Outside Shoulder
End Normal Shoulder	876+69.99'	-2.00%	-1.50%	-1.50%	-2.00%
End Normal Crown	876+69.99'	-1.50%	-1.50%	-1.50%	-2.00%
Level Crown	877+14.99'	0.00%	0.00%	-1.50%	-2.00%
Reverse Crown	877+59.99'	1.50%	1.50%	-1.50%	-2.00%
Low Shoulder Match	877+74.99'	1.50%	1.50%	-1.50%	-1.50%
Begin Full Super	877+77.99'	1.50%	1.50%	-1.50%	-1.50%
End Full Super	889+44.29'	1.50%	1.50%	-1.50%	-1.50%
Low Shoulder Match	889+47.29'	1.50%	1.50%	-1.50%	-2.00%
Reverse Crown	889+62.29'	1.50%	1.50%	-1.50%	-2.00%
Level Crown	890+07.29'	0.00%	0.00%	-1.50%	-2.00%
Begin Normal Crown	890+52.29'	-1.50%	-1.50%	-1.50%	-2.00%
Begin Normal Shoulder	890+52.29'	-2.00%	-1.50%	-1.50%	-2.00%











LEGEND

- ASPHALTIC SHOULDER WIDENING/RESURFACING (STAGE 1)
- ASPHALTIC SHOULDER INSTALL (STAGE 5)
- ASPHALT RUMBLE STRIP REMOVAL (STAGE 2)
- REMOVING ASPHALTIC SURFACE/BUTT JOINTS (STAGE 2)
- REMOVING ASPHALTIC SURFACE/BUTT JOINTS (STAGE 3)
- CONCRETE BRIDGE DECK OVERLAY (STAGES 2 AND 3)
- POLYMER BRIDGE DECK OVERLAY (STAGES 4 AND 5)

ASPHALTIC SHOULDER RUMBLE STRIP REMOVAL
STA 875 'SB'+50 - 880 'SB'+62
MILL 2" DEEP, 4' WIDE, PAVE 2" DEEP, 4' WIDE

BEGIN ASPHALTIC SHOULDER WIDENING 6'
WIDE, 4" THICK STA 877 'SB'+50 - 882
'SB'+55

SAW CUT ACROSS
ASPHALTIC SHOULDER

25: 1 ASPHALTIC TAPER STA
877 'SB'+50 - 878 'SB'+00
(SEE CONSTRUCTION DETAIL)

SAW CUT ASPHALTIC SHOULDER/LANE JOINT
STA 877 'SB'+50 - STA 882 'SB'+50

SEE DETAIL FOR LIMITS OF REMOVING
ASPHALTIC SURFACE BUTT JOINTS

MATCH EXISTING PAVEMENT
STA 880 'SB'+62

CONCRETE PAVEMENT 9-INCH AND CONCRETE APPROACH SLABS
DRIVING LANE (STAGE 2); PASSING LANE (STAGE 3)
STA 882 'SB'+14 - 882 'SB'+74 SAW CUT CENTERLINE

SAW CUT ACROSS SHOULDER
AND TRAVEL LANES STA 882 'SB'+14

WETLAND LIMITS

CURB & GUTTER REPLACEMENT
(STAGE 3)

STA 882 'SB'+74

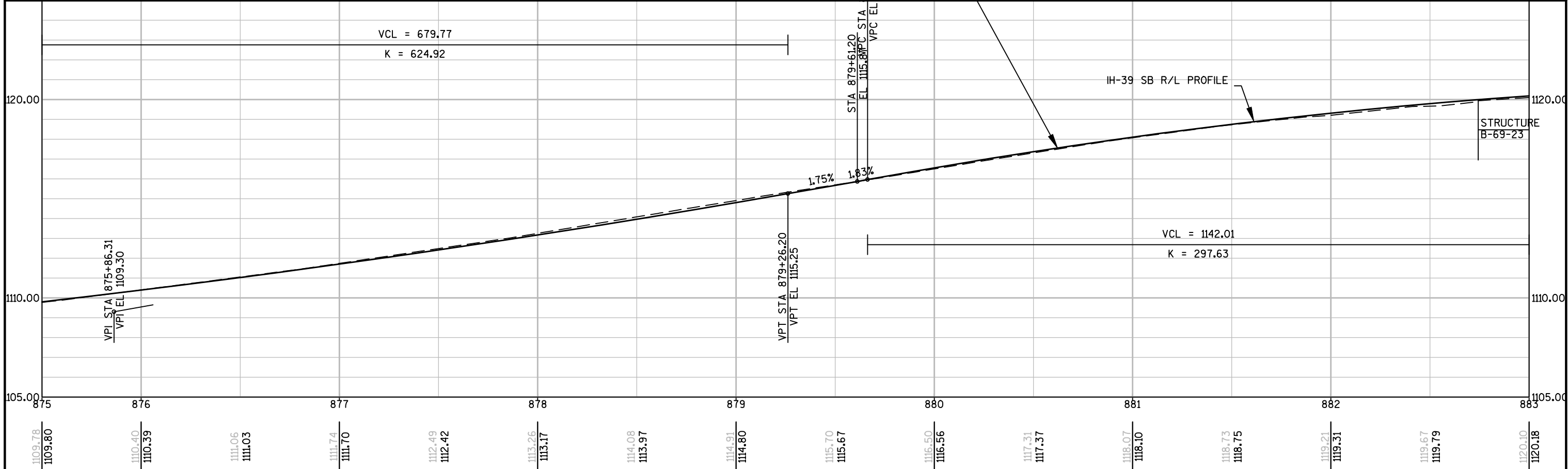
MATCH EXISTING STA 880 'SB'+62

IH-39 SB R/L PROFILE

STRUCTURE
B-69-23

VCL = 679.77
K = 624.92

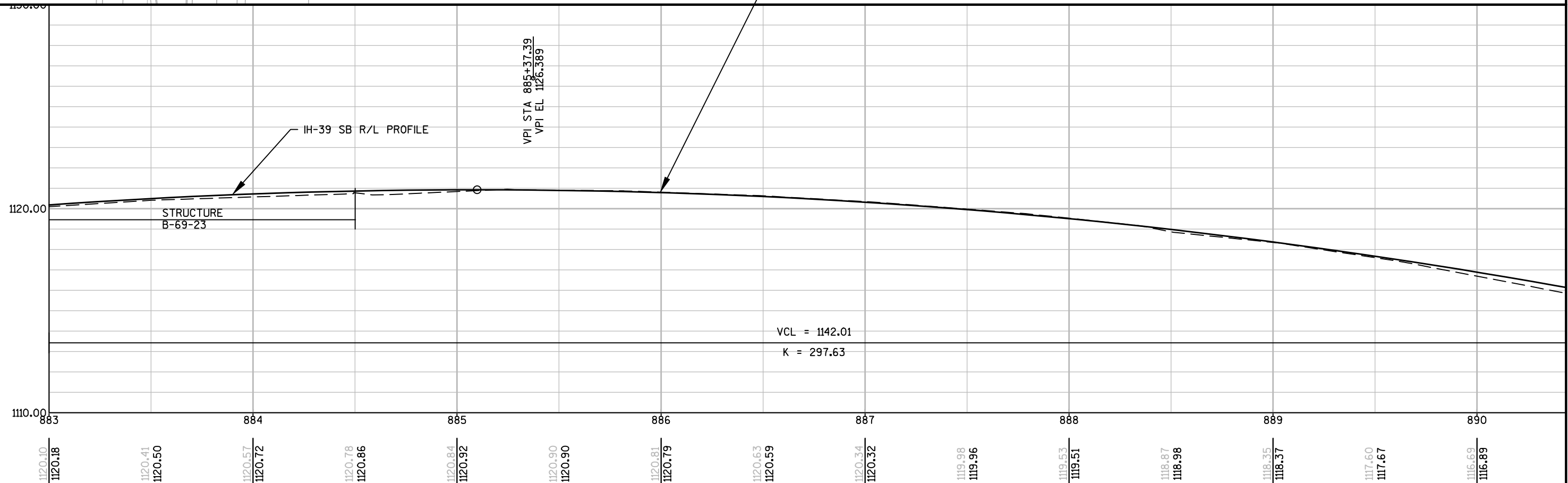
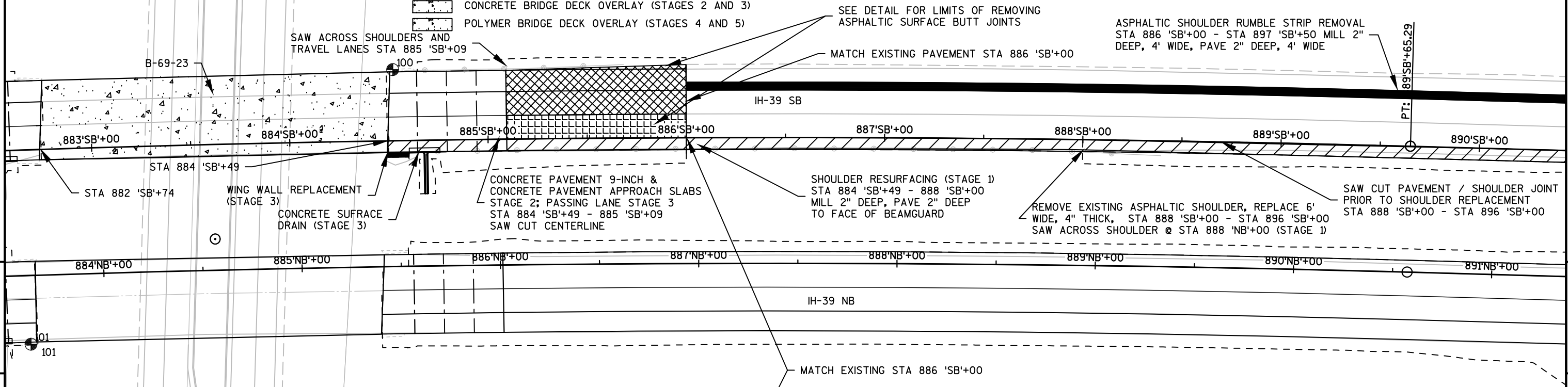
VCL = 1142.01
K = 297.63



BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
100	884SB+52	BRASS DISK IN WING WALL	1124.063

LEGEND

- ASPHALTIC SHOULDER WIDENING/RESURFACING (STAGE 1) / ASPHALTIC SHOULDER RUMBLE STRIP INSTALL (STAGE 5)
- ASPHALTIC SHOULDER RUMBLE STRIP REMOVAL (STAGE 2) / ASPHALTIC SHOULDER RUMBLE STRIP INSTALL (STAGE 4)
- REMOVING ASPHALTIC SURFACE/BUTT JOINTS (STAGE 2)
- REMOVING ASPHALTIC SURFACE/BUTT JOINTS (STAGE 3)
- CONCRETE BRIDGE DECK OVERLAY (STAGES 2 AND 3)
- POLYMER BRIDGE DECK OVERLAY (STAGES 4 AND 5)



PROJECT NO: 1166-06-64

HWY: IH-39

COUNTY: WAUSHARA

PLAN AND PROFILE: IH-39 SB

SHEET

154

E

LEGEND

- ASPHALTIC SHOULDER WIDENING/RESURFACING (STAGE 1)
- ASPHALTIC SHOULDER RUMBLE STRIP INSTALL (STAGE 5)
- ASPHALTIC SHOULDER RUMBLE STRIP REMOVAL (STAGE 2)
- ASPHALTIC SHOULDER RUMBLE STRIP INSTALL (STAGE 4)

ASPHALTIC SHOULDER RUMBLE STRIP REMOVAL (STAGE 2)
STA 886 'SB'+00 - STA 897 'SB'+50 MILL 2" DEEP, 4'
WIDE, PAVE 2" DEEP, 4' WIDE

EXIT RAMP TO STH 73



IH-39 SB

890'SB'+00 891'SB'+00 892'SB'+00 893'SB'+00 894'SB'+00 895'SB'+00 896'SB'+00 897'SB'+00

REMOVE EXISTING ASPHALTIC SHOULDER REPLACE
WITH 6' WIDE, 4" THICK ASPHALTIC SHOULDER
STA 888 'SB'+00 - STA 896 'SB'+00 (STAGE 1)

SAW CUT PAVEMENT / SHOULDER JOINT
PRIOR TO SHOULDER REPLACEMENT
STA 888 'SB'+00 - STA 896 'SB'+00

25: 1 ASPHALTIC TAPER
STA 895 'SB'+50 - STA 896 'SB'+00
(SEE CONSTRUCTION DETAIL)

SAW CUT ACROSS
ASPHALT SHOULDER

891'NB'+00 892'NB'+00 893'NB'+00 894'NB'+00 895'NB'+00 896'NB'+00 897'NB'+00 898'NB'+00

IH-39 NB

ENTRANCE RAMP FROM STH 73

PROJECT NO:1166-06-64

HWY:IH-39

COUNTY:WAUSHARA

PLAN AND PROFILE: IH-39 SB

SHEET 155

E

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
		CHISELED X ON WING CURB NW	1122.14

* ASBESTOS CONTAINING MATERIAL PRESENT

CONCRETE MASONRY OVERLAY DECKS,
SEE STRUCTURE PLANS
STA 19 'C'+48 - STA 21'C'+52

ADJUST BEAMGUARD
REPLACE HARDWARE AND POSTS

REMOVE AND REPLACE 25'
OF STEEL THRIE BEAM

ADJUST BEAMGUARD
REPLACE HARDWARE AND POSTS

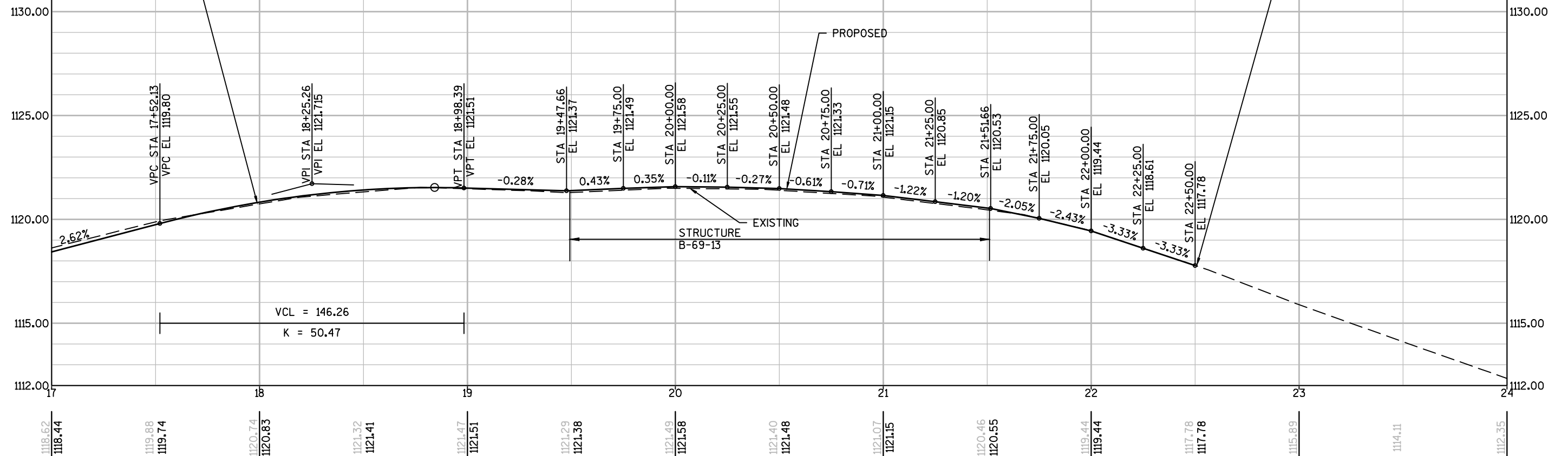
MILL 1 1/2 INCHES
PAVE 2 1/2 INCHES HMA
STA 18 'C'+00 - STA 19'C'+48

B-69-13
CTH 'C'
OVER IH 39

MILL 1 1/2 INCHES
PAVE 2 1/2 INCHES HMA
STA 21 'C'+52 - STA 22'C'+50

BEGIN CONSTRUCTION
MATCH EXISTING PAVEMENT
STA 18 'C'+00
CTH C
BUTT JOINT REQUIRED

END CONSTRUCTION
MATCH EXISTING PAVEMENT
STA 22 'C'+50
CTH C
BUTT JOINT REQUIRED



PROJECT NO: 1166-06-64

HWY: IH-39

COUNTY: WAUSHARA

PLAN AND PROFILE: CTH 'C'

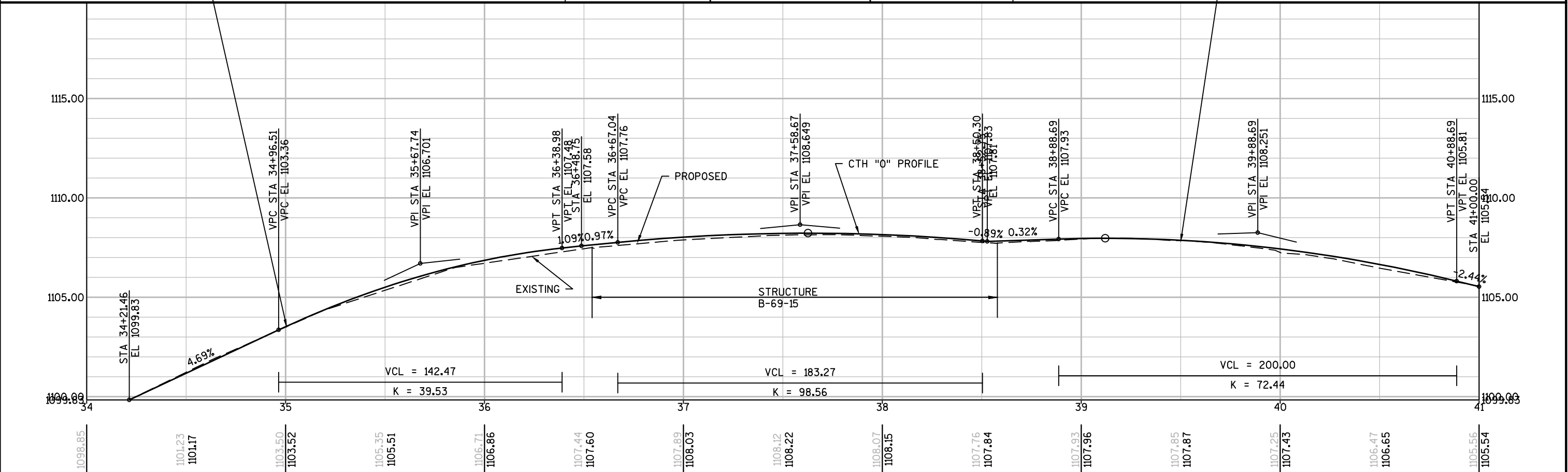
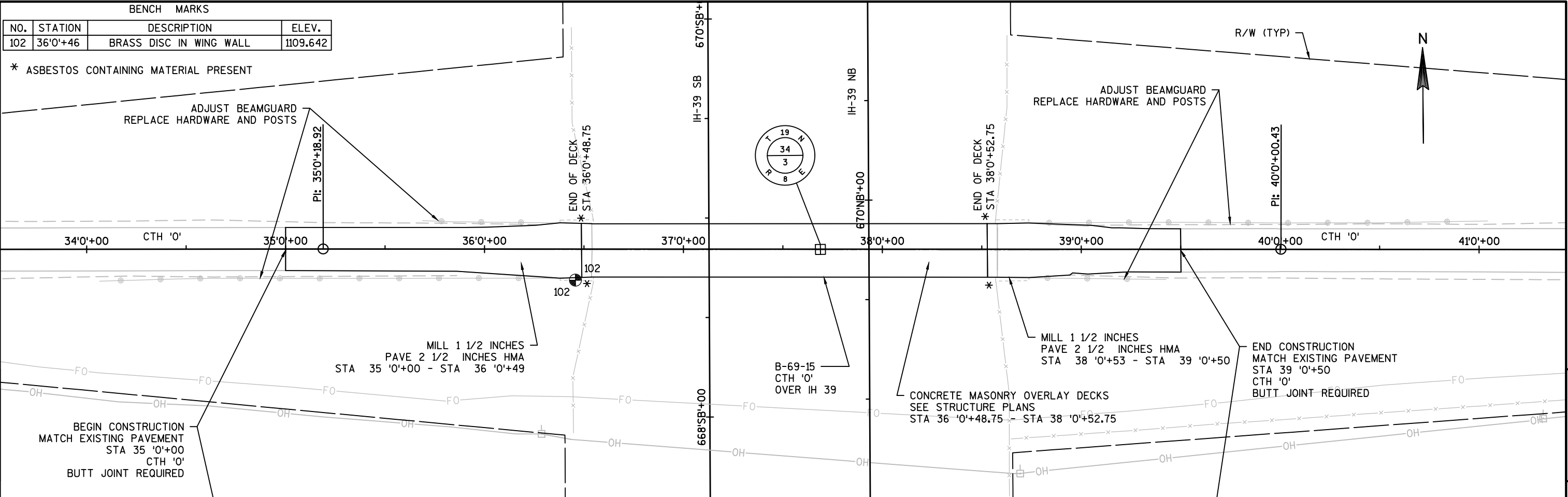
SHEET

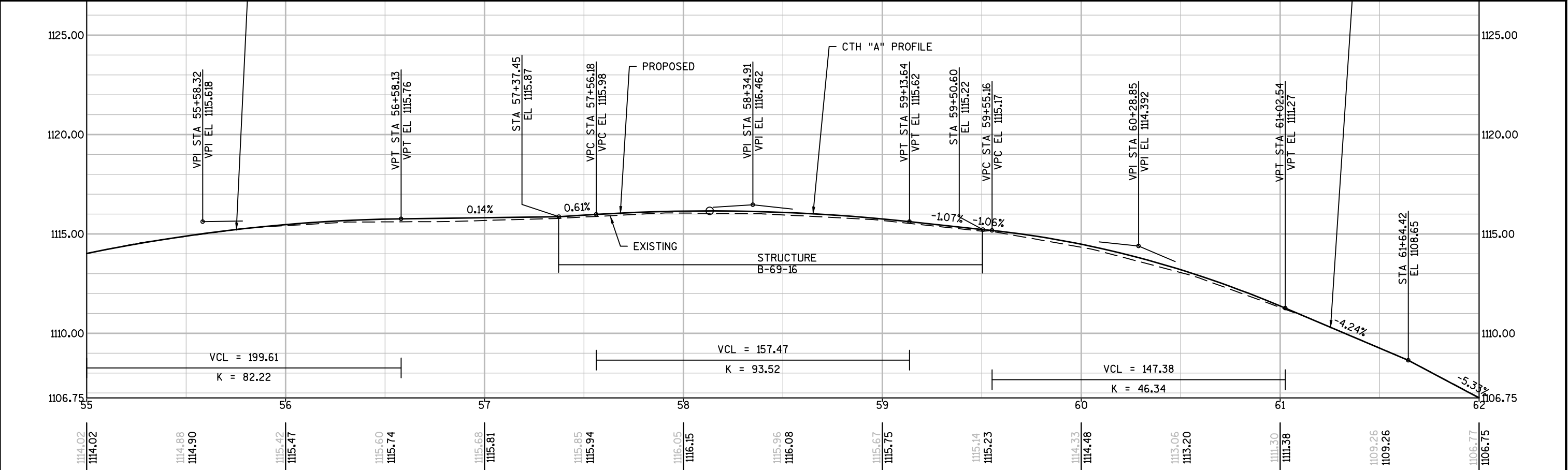
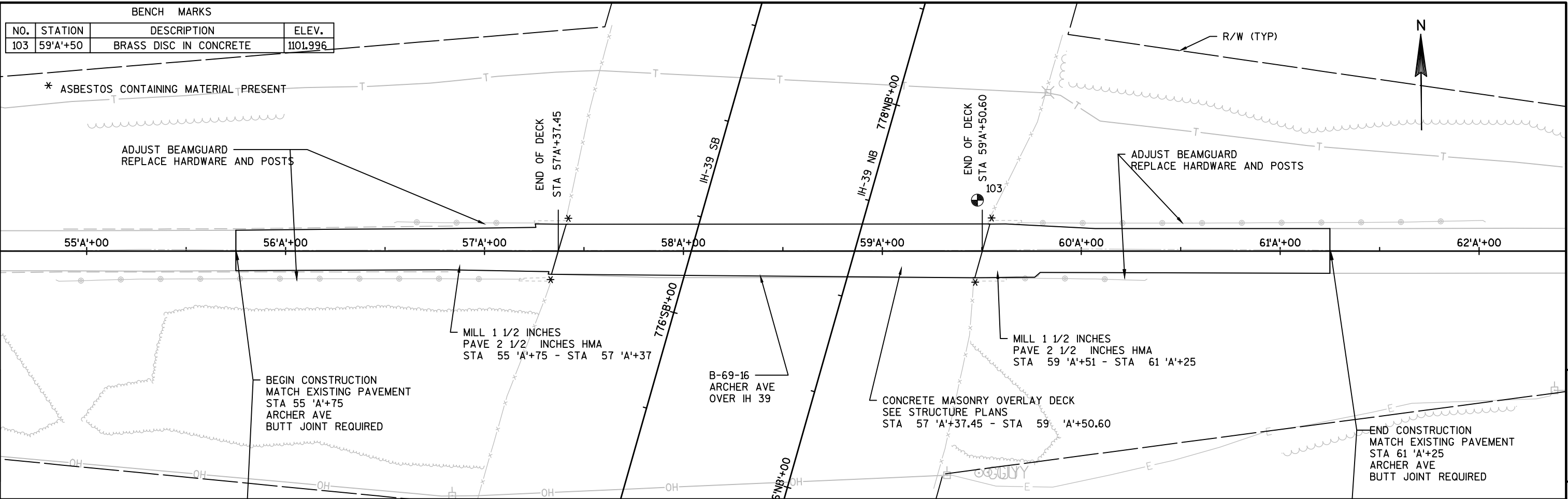
156

E

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
102	36'0'+46	BRASS DISC IN WING WALL	1109.642

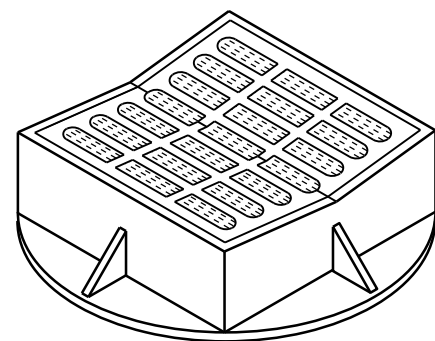
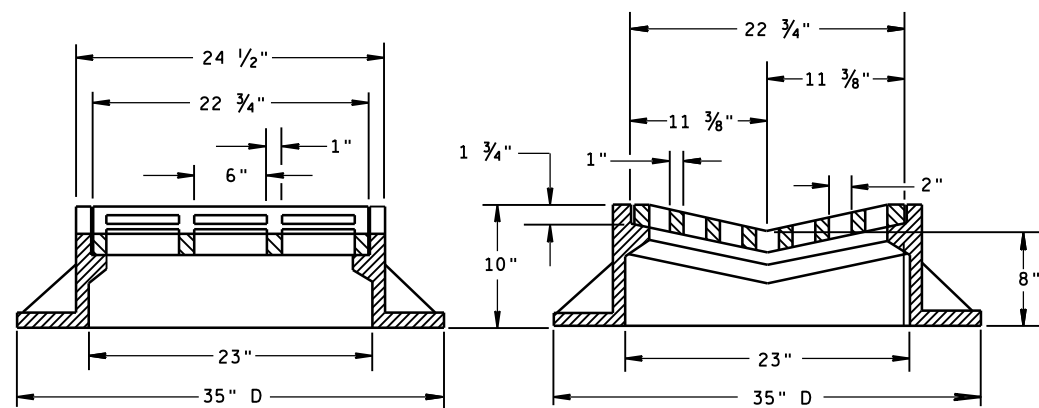
* ASBESTOS CONTAINING MATERIAL PRESENT



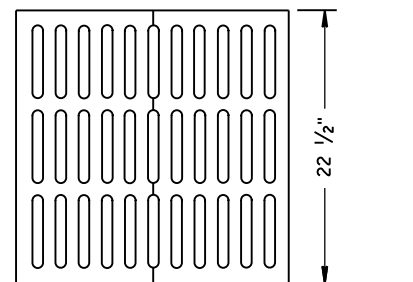


Standard Detail Drawing List

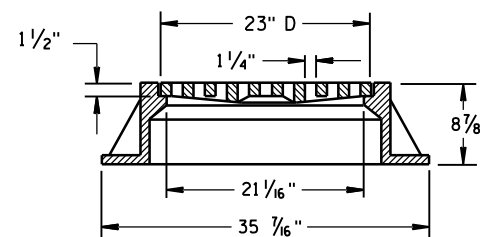
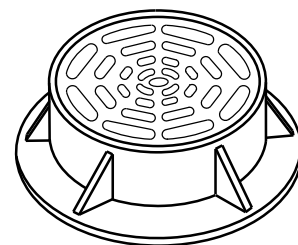
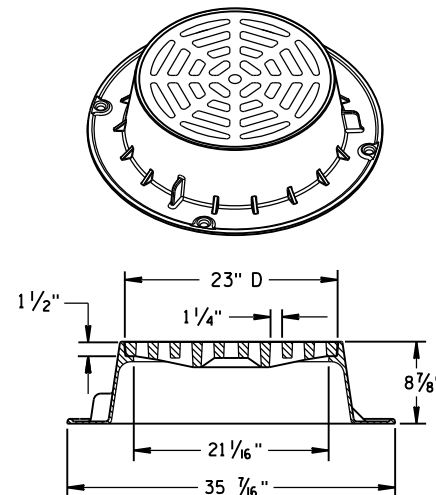
08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08D01-18	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D02-06	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
13A03-06	CONCRETE PAVEMENT SHOULDERS
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
13C01-18	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B15-08A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-08B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-08C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B18-06B	STEEL PLATE BEAM GUARD, CLASS "A" AT MEDIAN APPROACH TO BRIDGES
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11B	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS
14B24-08A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-08B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-08C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B29-01	SAFETY EDGE
15A02-08	DELINEATOR POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING
15A06-02	DELINEATOR LAYOUT
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C04-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C19-03C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C31-01A	PAVEMENT MARKING (RAMPS AND GORES)
15D03-02	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER
15D12-05B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D15-02	TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE



TYPE "B"


 ALTERNATIVE GRATE FOR
TYPE "B" COVER

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.
NOTED AS TYPE B-A ON THE DRAINAGE TABLE



TYPE "C"

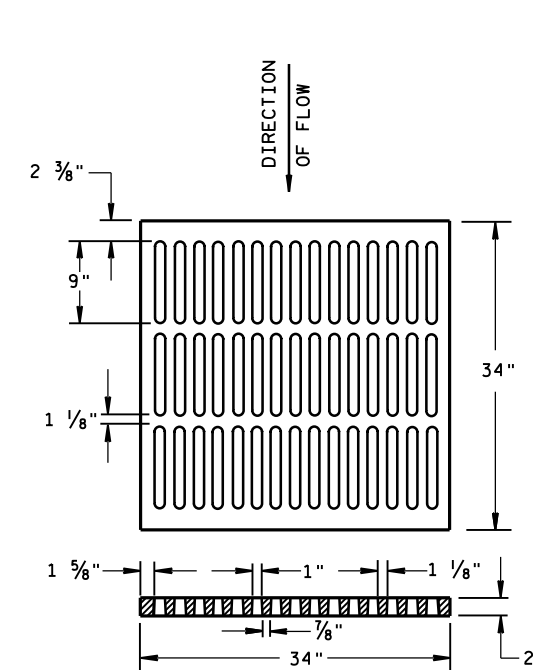
NOTE: EITHER CASTING IS ACCEPTABLE

GENERAL NOTES

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

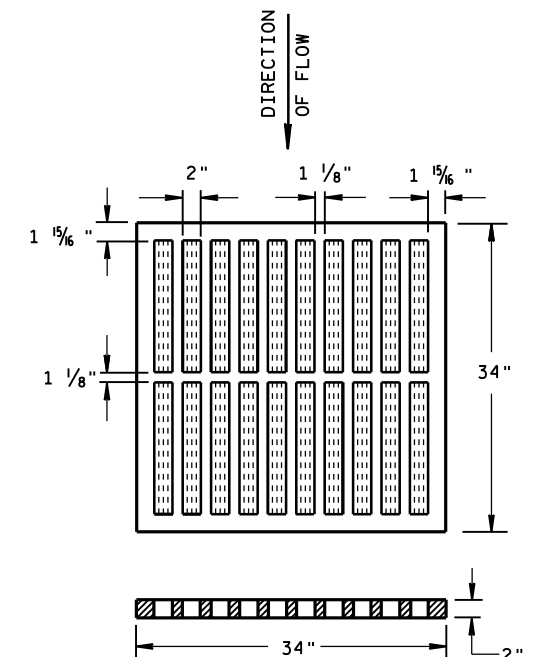
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



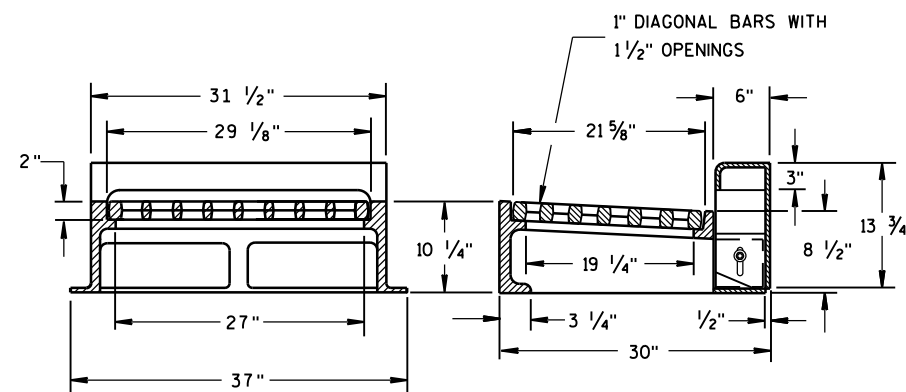
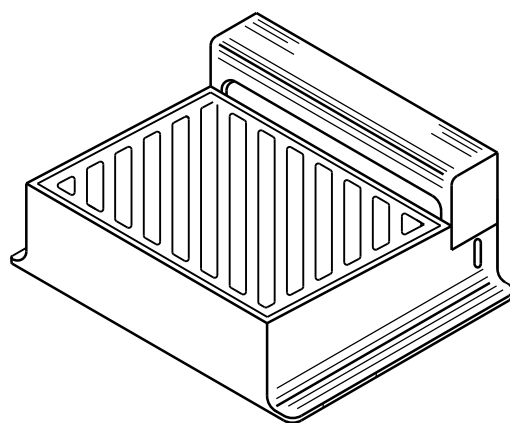
ALTERNATIVE TYPE "MS"

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



TYPE "MS"

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



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

DIAGONAL SLOTS, SHALL BE ORIENTED
TO THE DIRECTION OF FLOW AS ILLUSTRATED.
GRATES ARE MANUFACTURED TO BE REVERSIBLE.

DIRECTION
OF FLOW

INLET COVERS
TYPE B, B-A, C,
MS, MS-A, & WM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/27/2013

DATE

FHWA

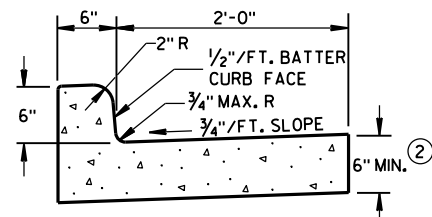
/S/ Jerry H. Zogg

ROADWAY STANDARDS

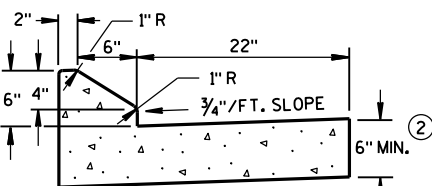
ENGINEER

160

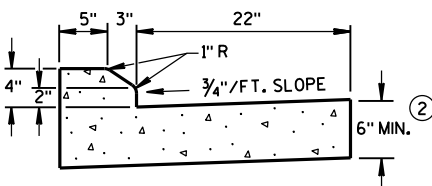
NT



TYPES A & D ①

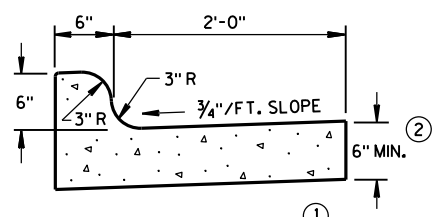


6" SLOPED CURB TYPES G & J ①



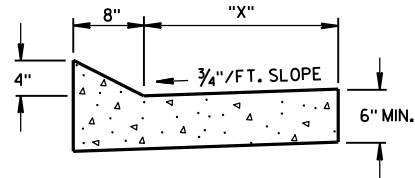
4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"



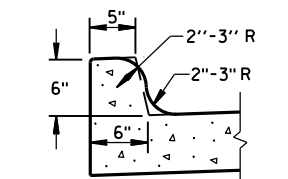
TYPES K & L ①

CONCRETE CURB & GUTTER 30"

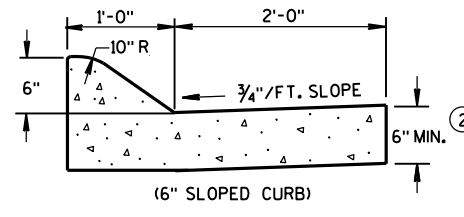


TYPES TBT & TBT ①
CONCRETE CURB & GUTTER

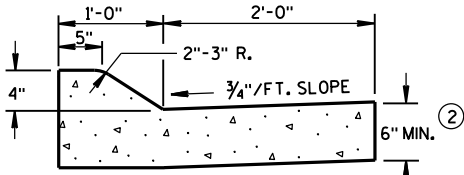
TBT & TBT	"X"
30"	22"
36"	28"



OPTIONAL CURB SHAPE
FOR TYPES K & L ①

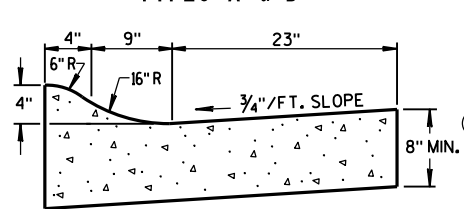


(6" SLOPED CURB)



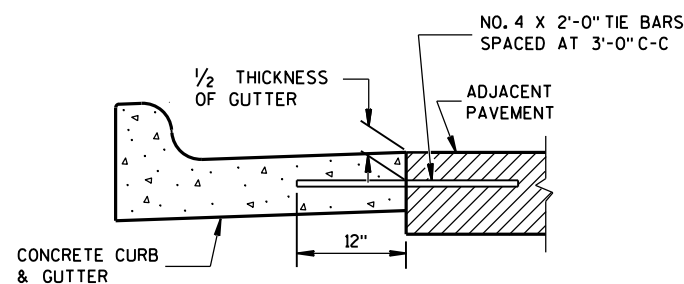
(4" SLOPED CURB)

TYPES A & D ①

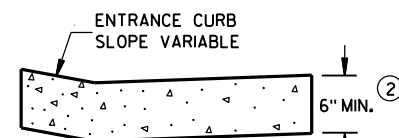


4" SLOPED CURB TYPES R & T ① ④

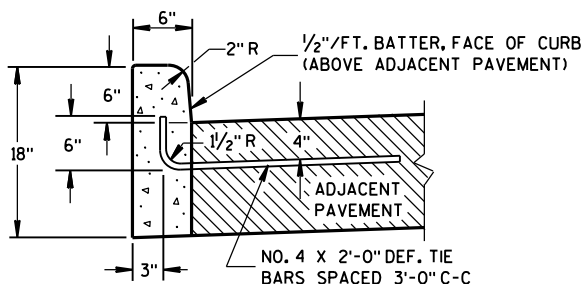
CONCRETE CURB & GUTTER 36"



TYPICAL TIE BAR LOCATION ①

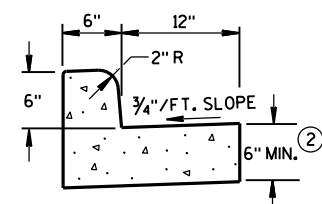


DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

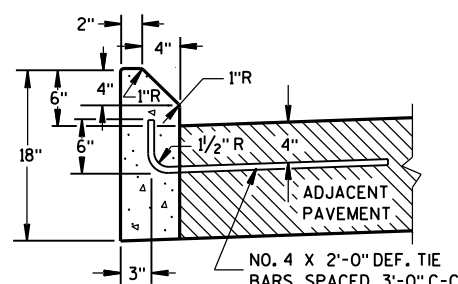


TYPES A & D ①

CONCRETE CURB



TYPES A & D
CONCRETE CURB & GUTTER 18"



TYPES G & J ①

GENERAL NOTES

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

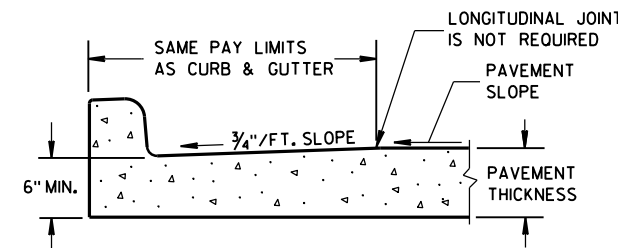
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

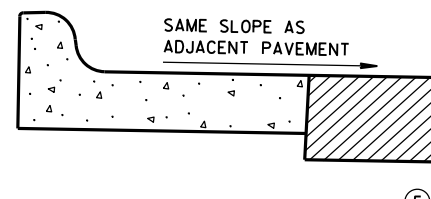
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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

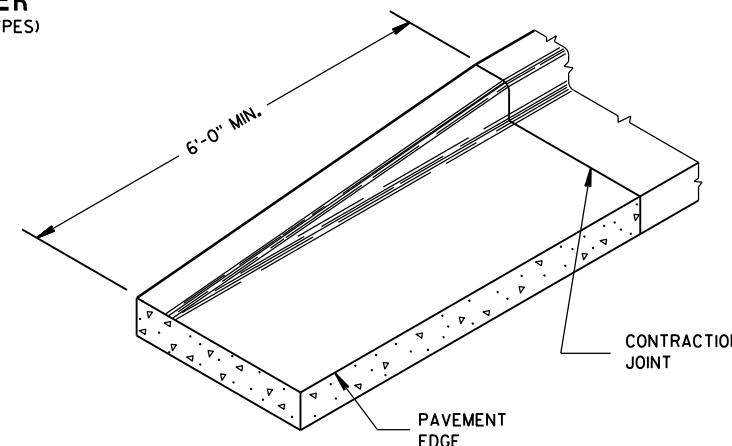
- TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBT.
- THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



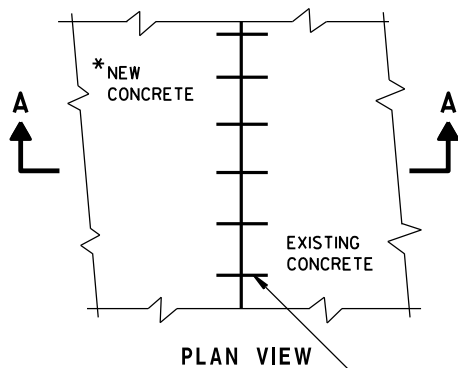
PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



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



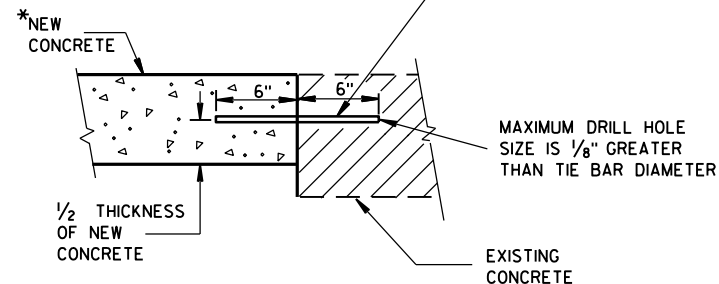
END SECTION CURB & GUTTER



PLAN VIEW

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

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

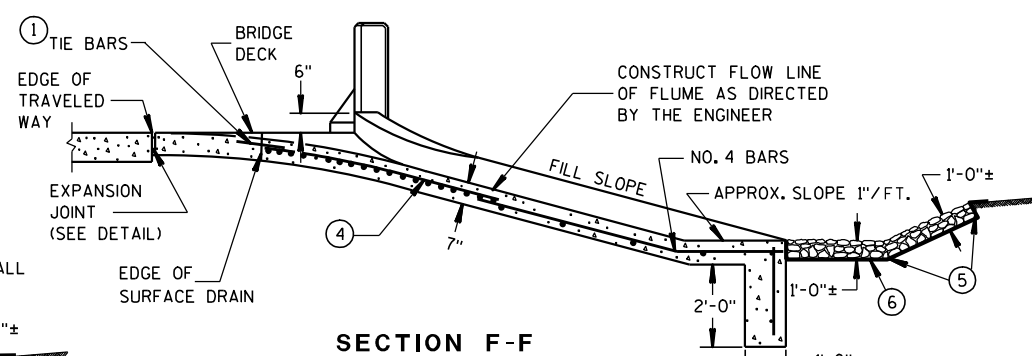


SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT

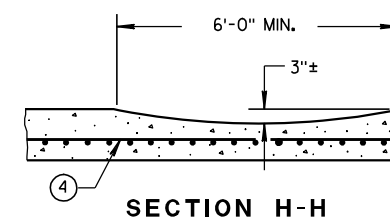
CONCRETE CURB, CONCRETE
CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

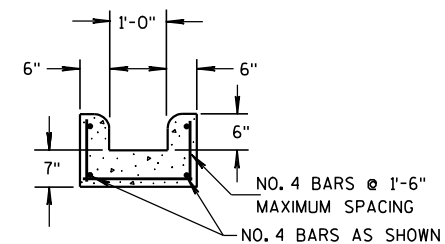
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER 161
FHWA



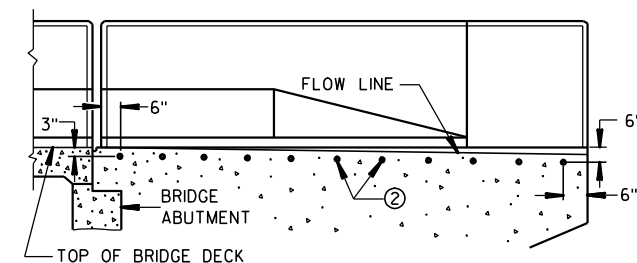
SECTION F-F



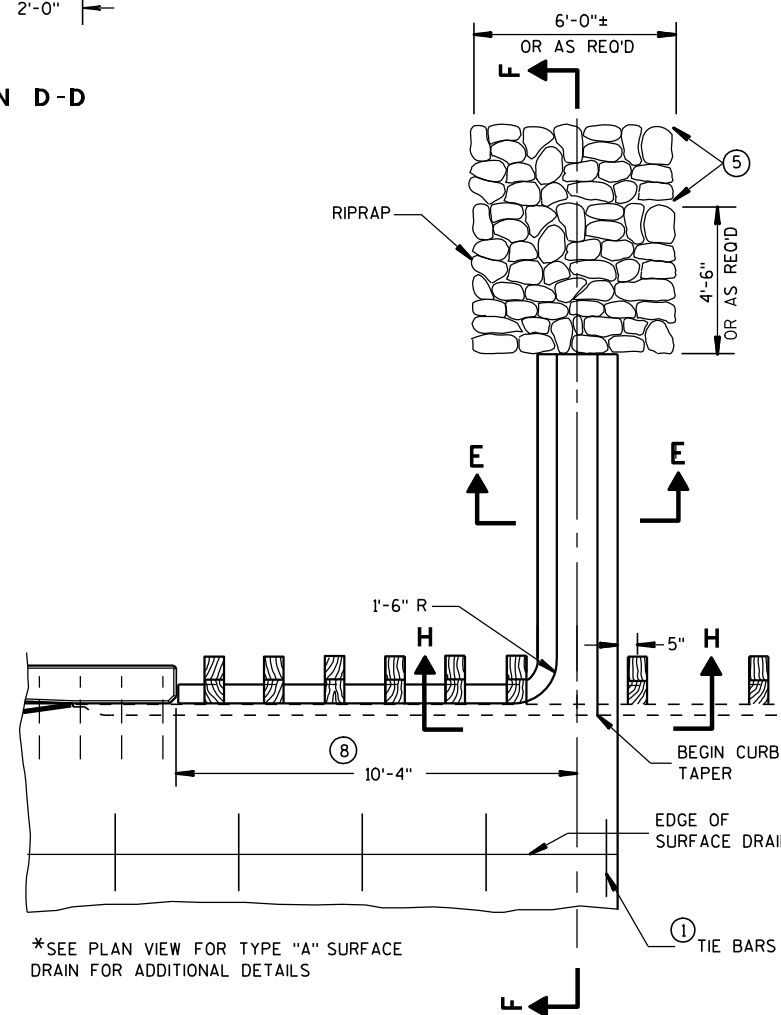
SECTION H-H



SECTION E-E



LOCATION OF TIE BARS IN WINGWALL



* PARTIAL PLAN VIEW
SURFACE DRAIN WITHOUT PIPE
TYPE "B"

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.

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

- ① NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.
- ② NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PIPE UNDERDRAIN MAY BE ANY OF THE MATERIALS LISTED IN SECTION 612.2 OF THE STANDARD SPECIFICATIONS EXCEPT DRAIN TILE.
- ④ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑤ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑥ GEOTEXTILE FABRIC, TYPE "R"
- ⑦ HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.
- ⑧ THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD, THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1/2".

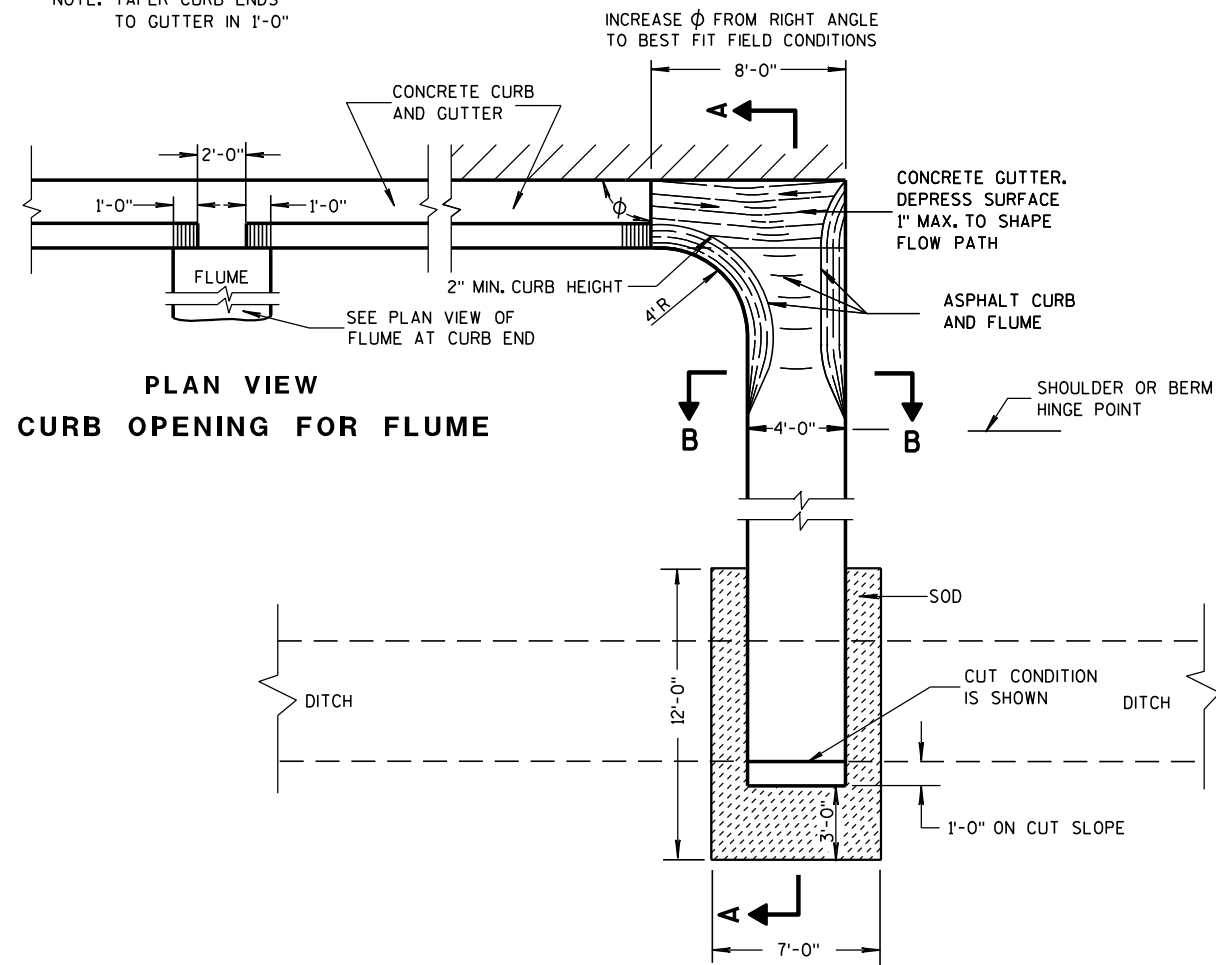
CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

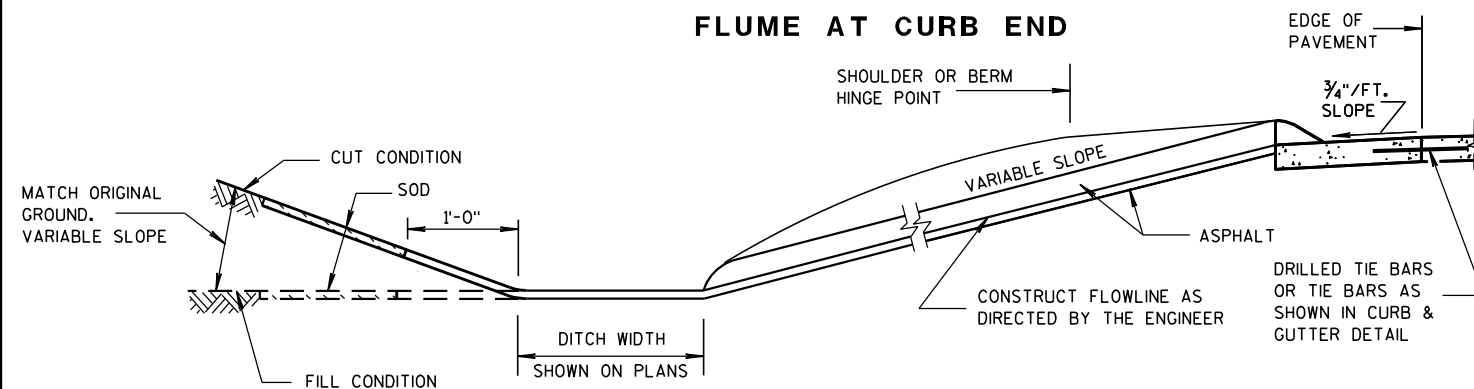
APPROVED
9/4/08 /S/ Jerry H. Zeng
DATE ROADWAY STANDARDS 162 'MENT
ENGINEER

ASPHALTIC FLUME

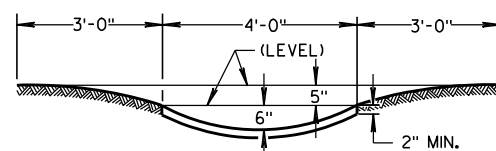
NOTE: TAPER CURB ENDS
TO GUTTER IN 1'-0"



PLAN VIEW FLUME AT CURB END



SECTION A-A



SECTION B-B

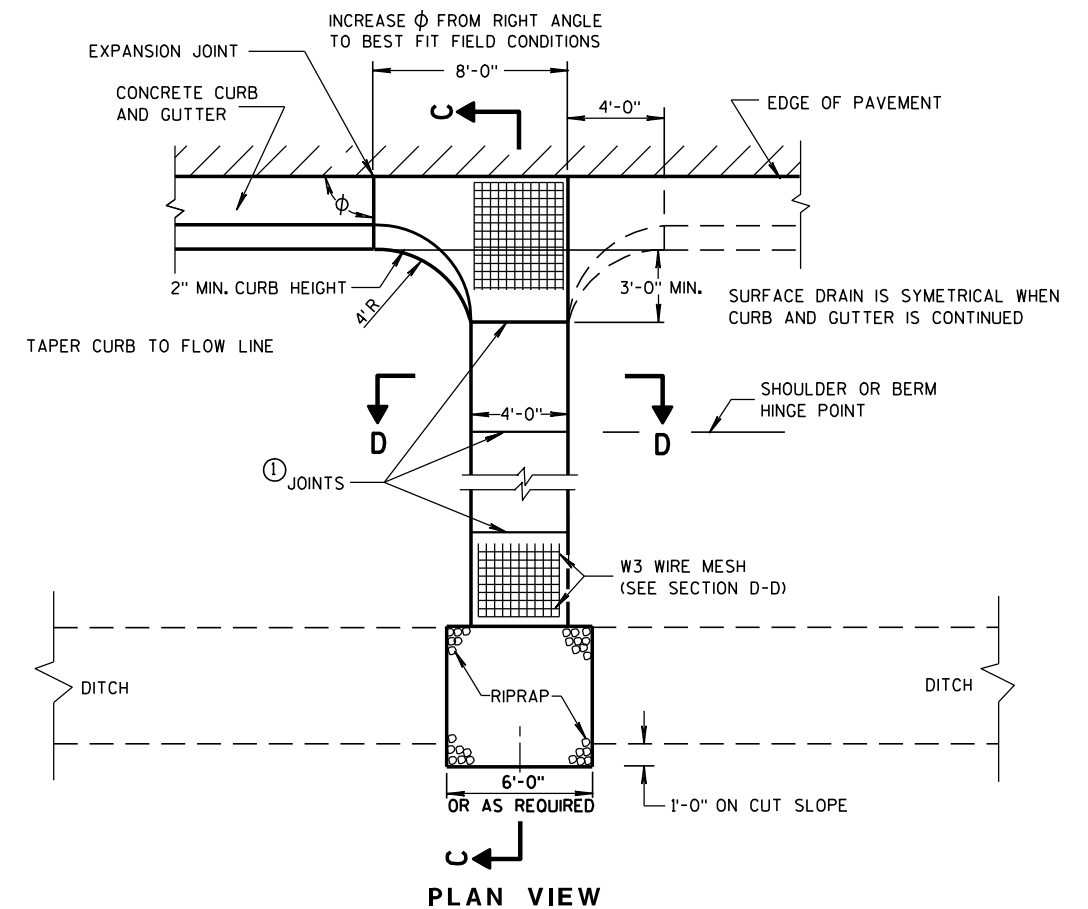
GENERAL NOTES

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

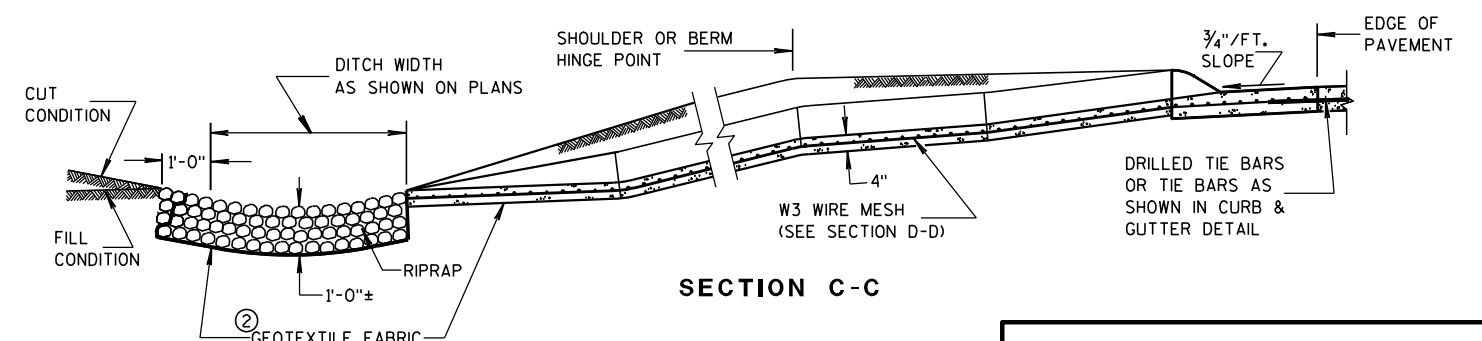
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

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

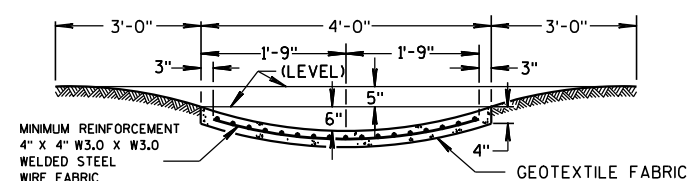
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9-4-08

DATE

/S/ Jerry H. 7000

ROADWAY STANDARDS 163

ENGINEER

FHWA



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



SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

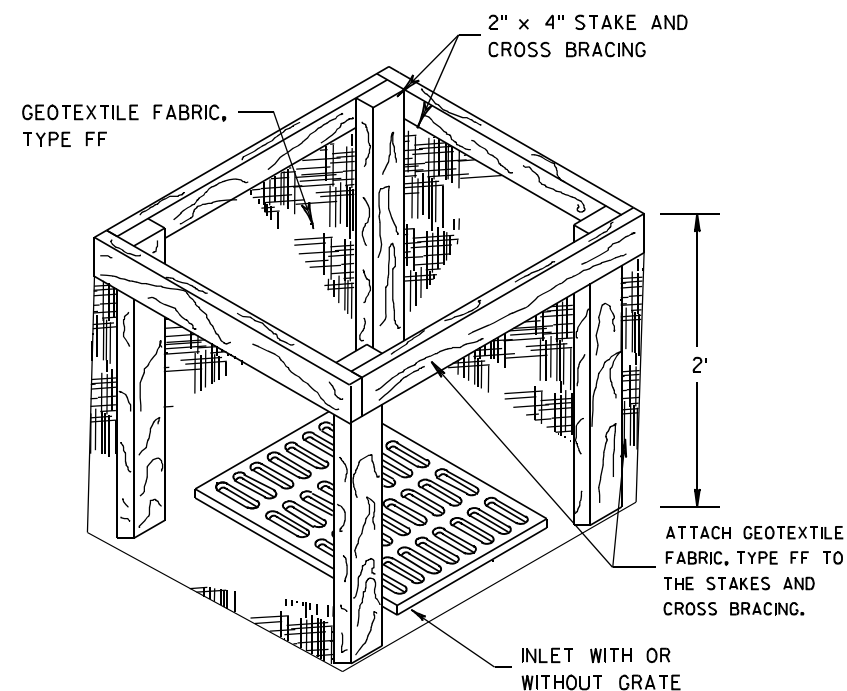
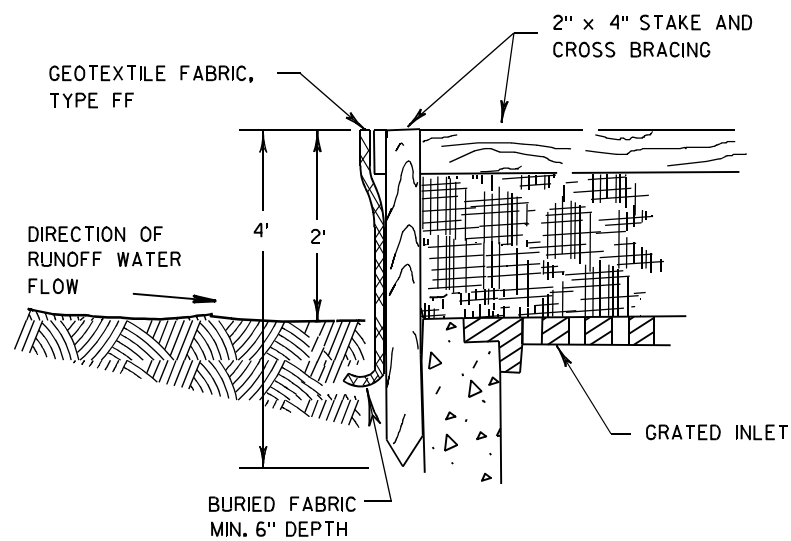
APPROVED
4-29-05
DATE

/S/ Beth Connolly
CHIEF ROADWAY DEVELOPMENT

164

ENGINEER

FHWA



INLET PROTECTION, TYPE A

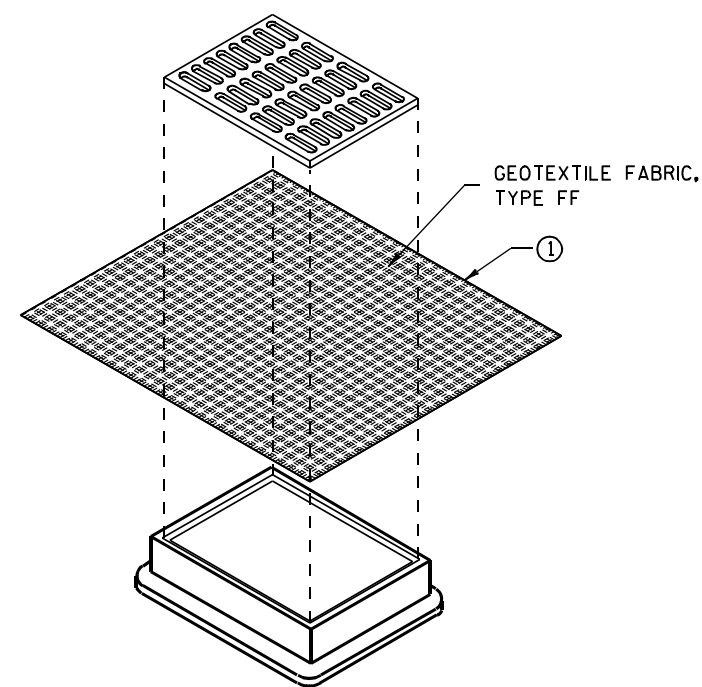
GENERAL NOTES

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

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

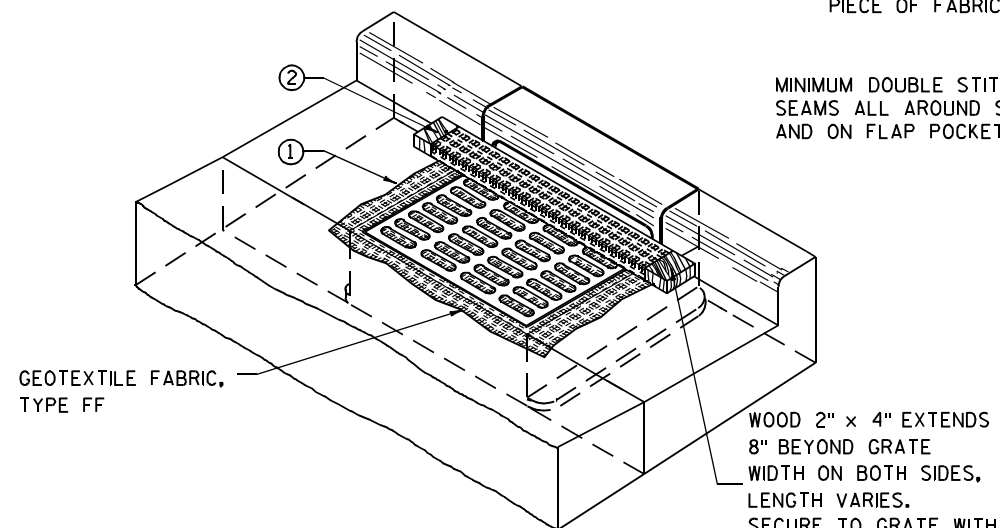
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

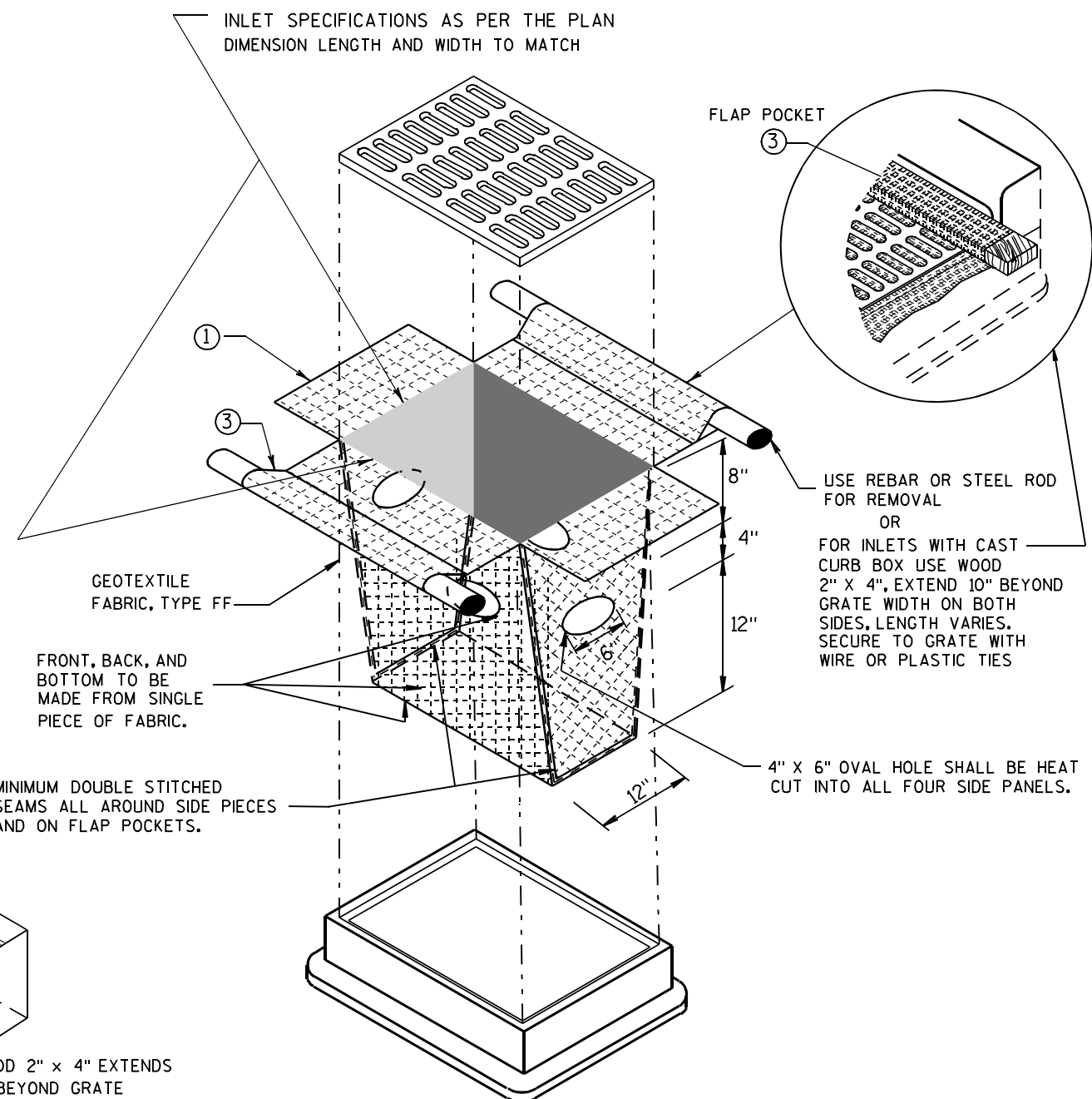
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



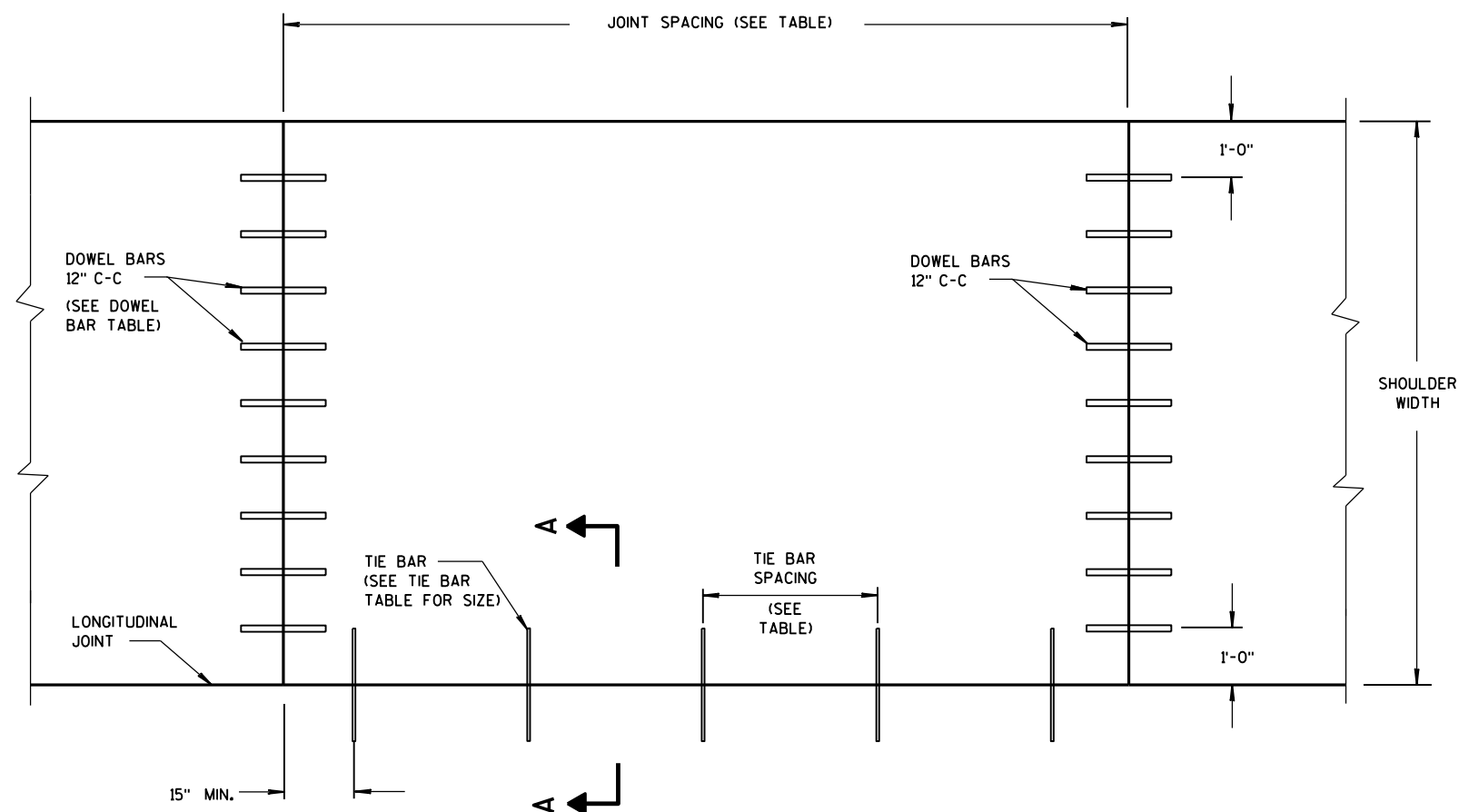
INLET PROTECTION, TYPE D

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

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

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DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 165
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



PLAN VIEW
CONCRETE PAVEMENT SHOULDER

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g., AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

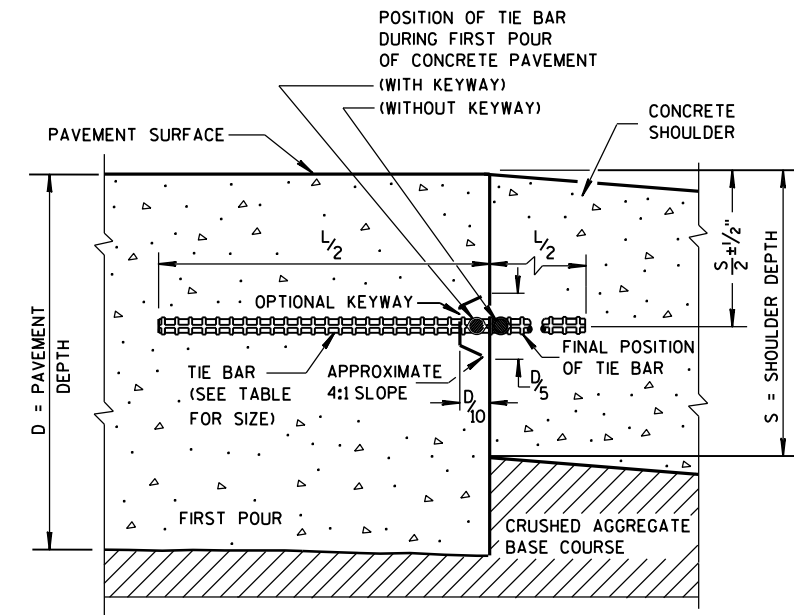
GENERAL NOTES

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.

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE
AND JOINT SPACING TABLE

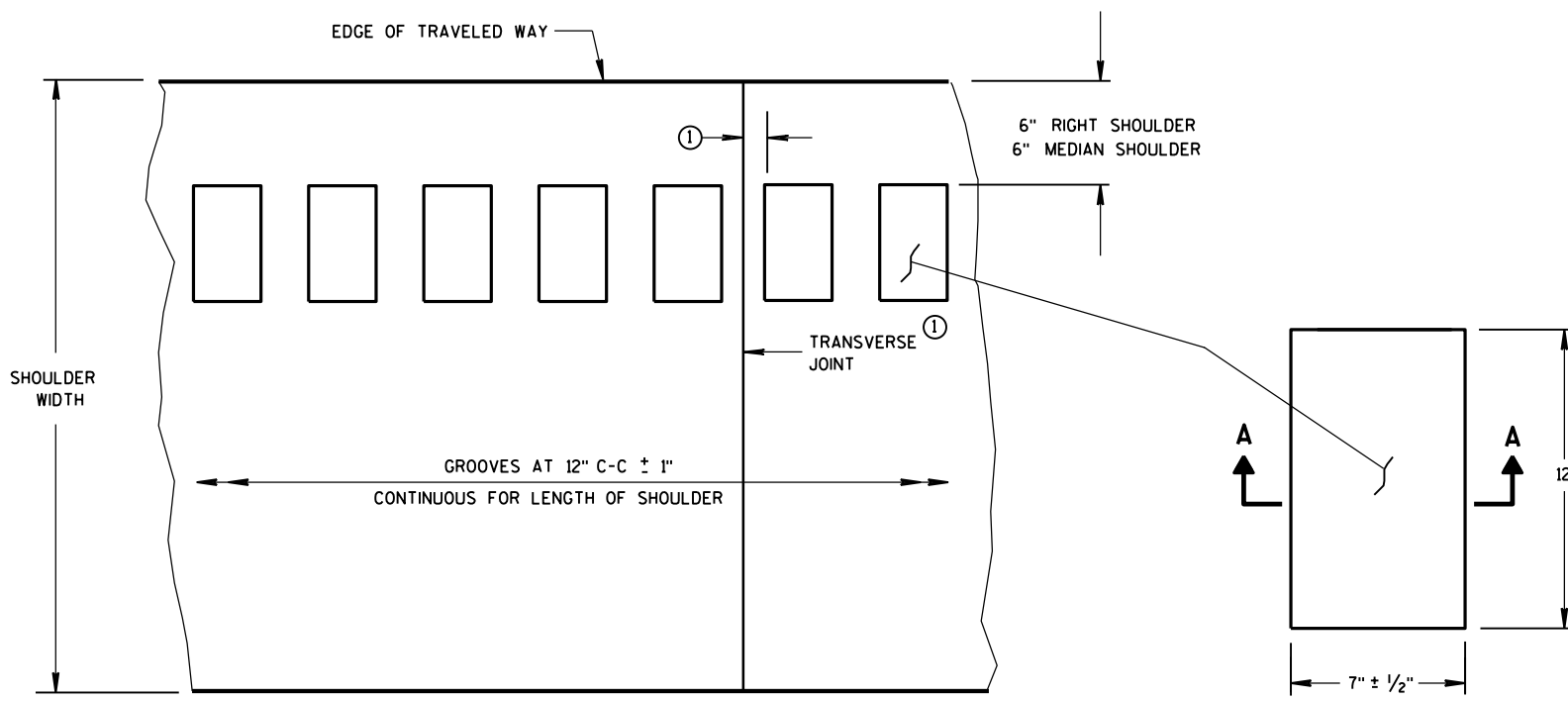
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER***	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9", 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'

*** FOR DOWELED CONCRETE SHOULDERS WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FOR THE AVERAGE THICKNESS OF THE CROSS SECTION.

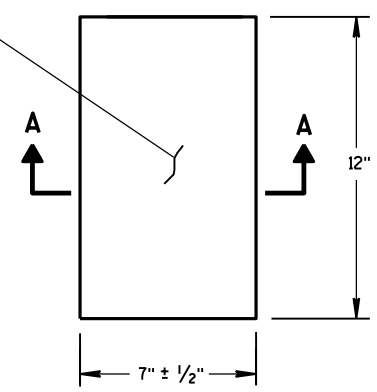
CONCRETE PAVEMENT SHOULDERS

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DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPEF 166
FHWA



PLAN VIEW
SHOULDER WITH GROOVES



PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

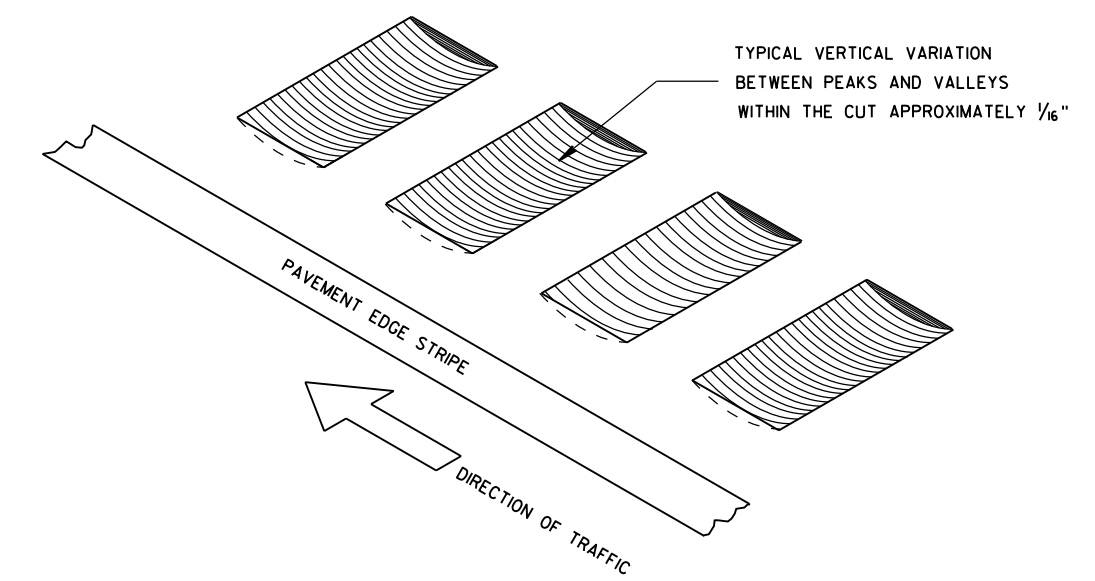
GENERAL NOTES

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

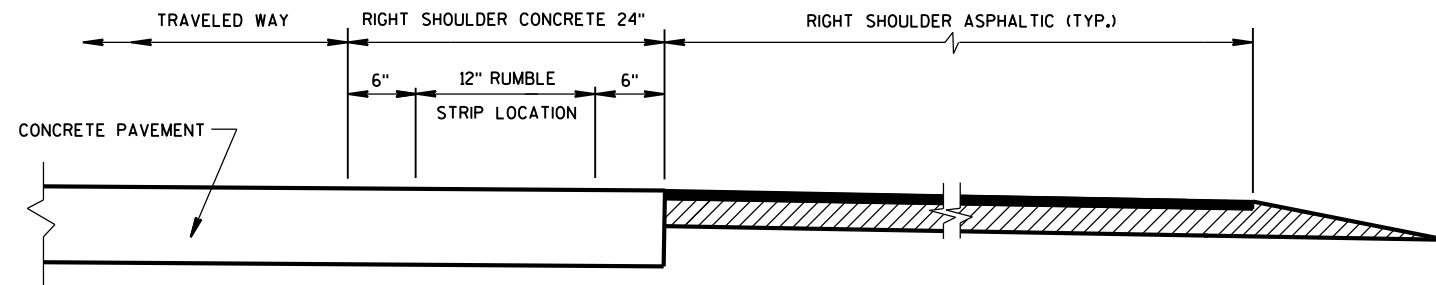
RUMBLE STRIPS ON EXPRESSWAYS

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.

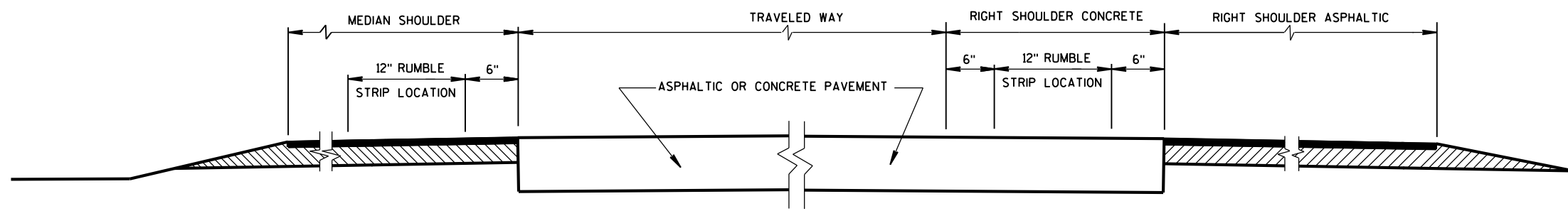
① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



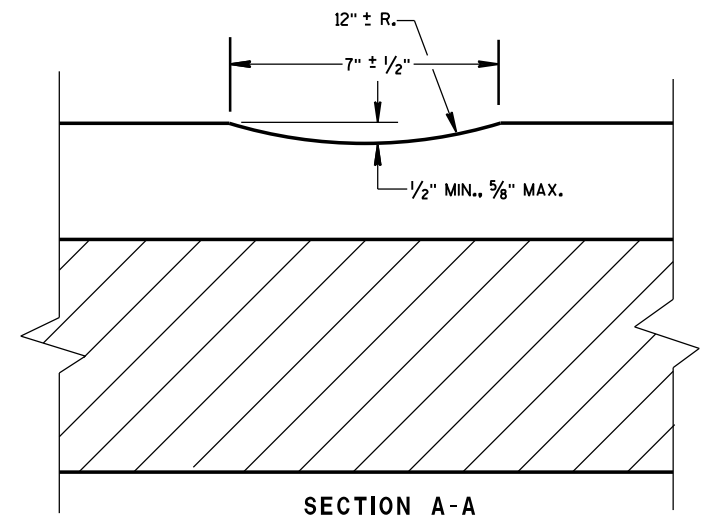
ISOMETRIC



SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



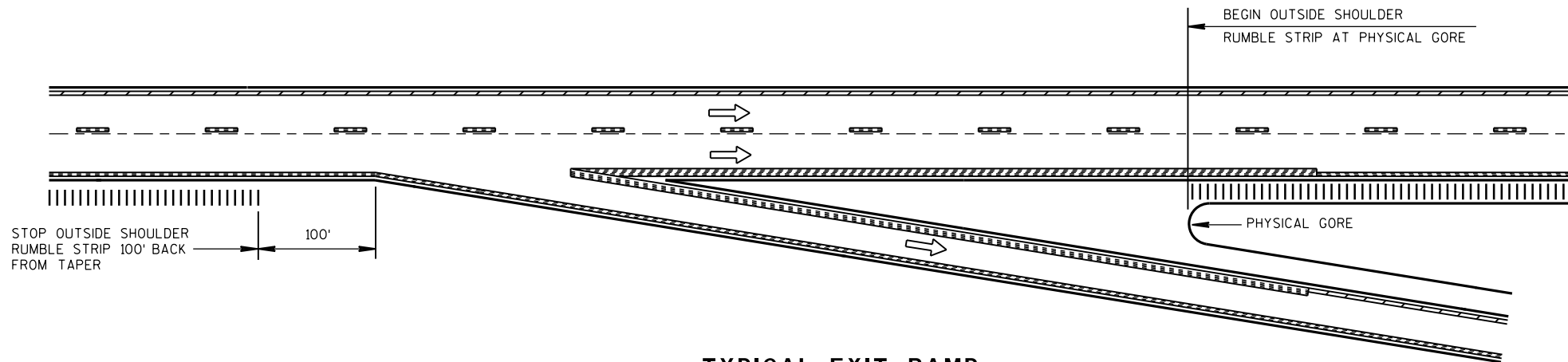
SECTION VIEW
TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS
IN RURAL DIVIDED HIGHWAYS
(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP,
MILLING

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DEPARTMENT OF TRANSPORTATION 167



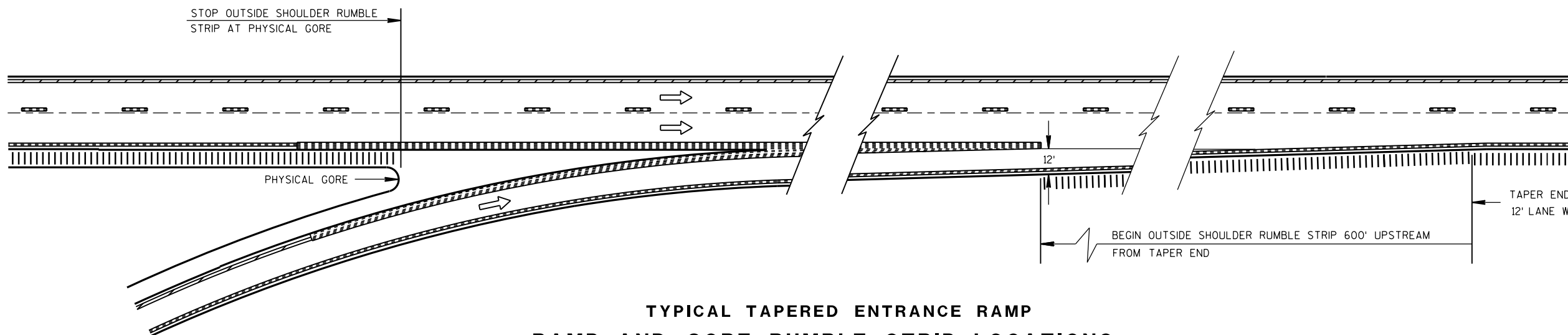
TYPICAL EXIT RAMP

NOTES:

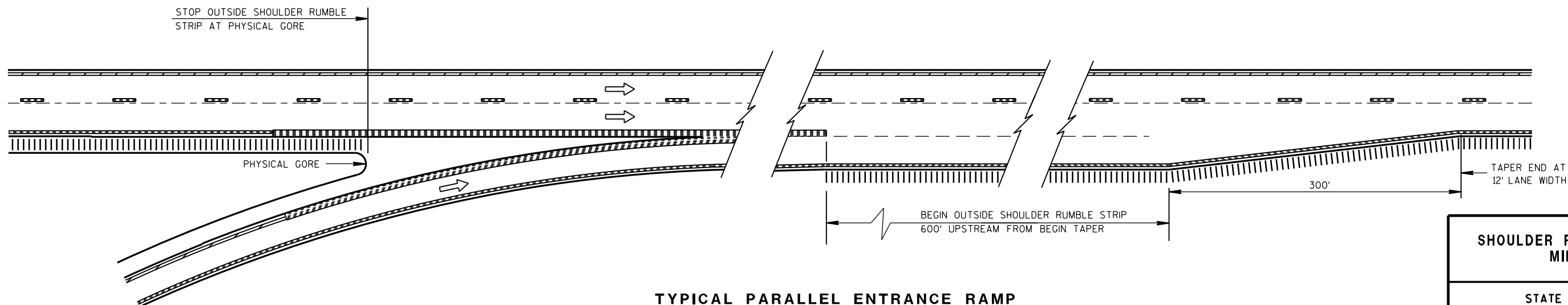
NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

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**

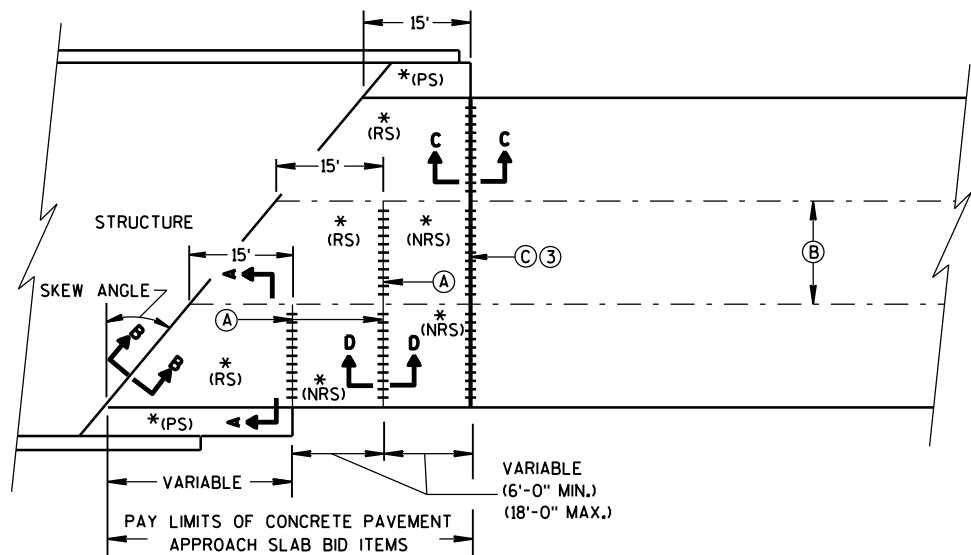
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/17/2012
DATE
FHWA

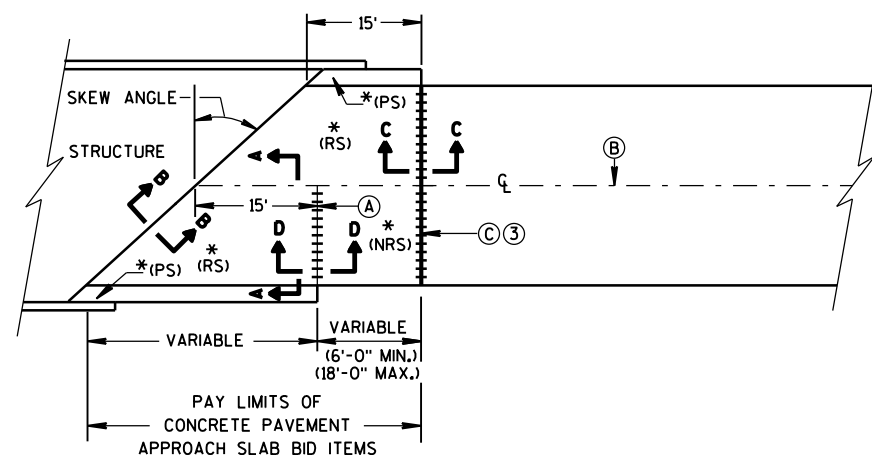
/S/ Jerry H. Zoagg
ROADWAY STANDARDS ENGINEER

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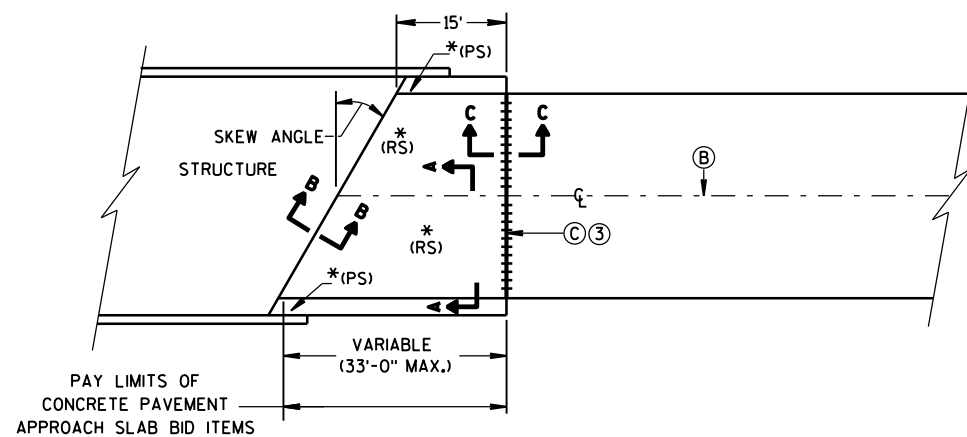
ENT



**SKewed APPROACH
(PAVEMENT MORE THAN 2 LANES)**



**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**

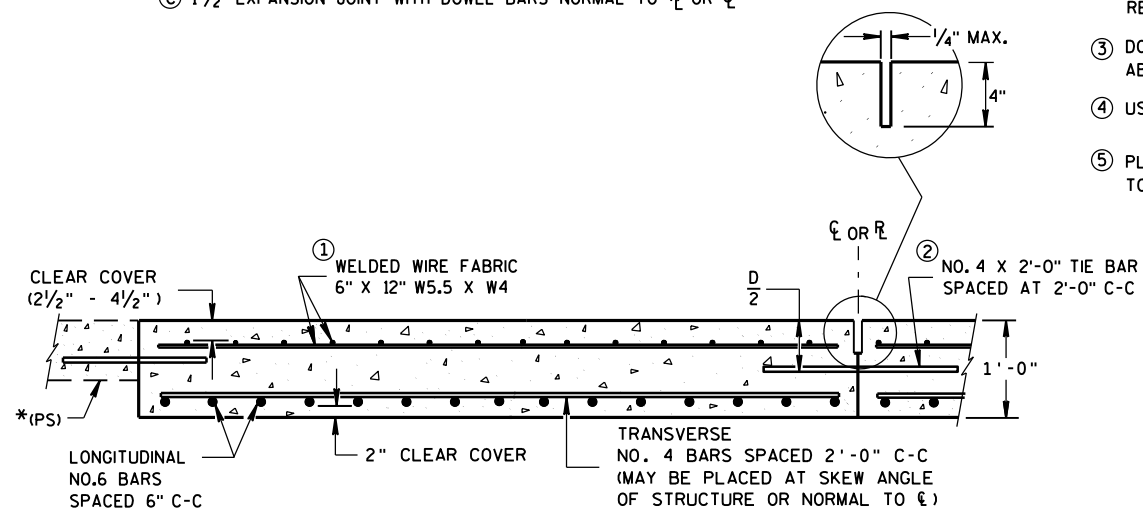


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

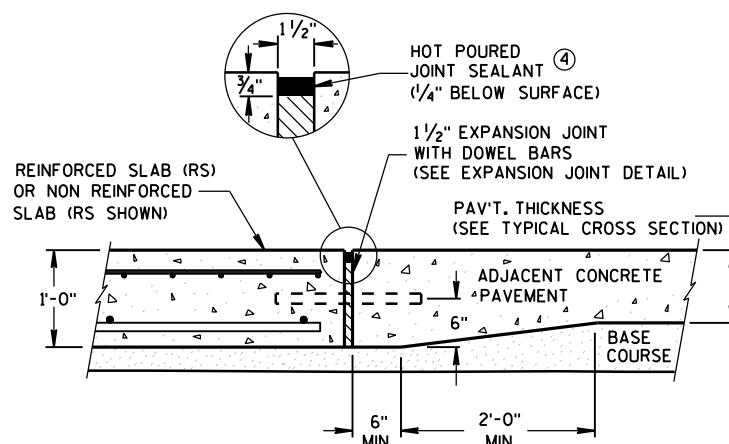
* (RS) = REINFORCED CONCRETE SLAB
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
* (NRS) = NON-REINFORCED CONCRETE SLAB

*** STANDARD DOWEL BAR DIAMETER
(SEE SDD 13C11, & SDD 13C13)

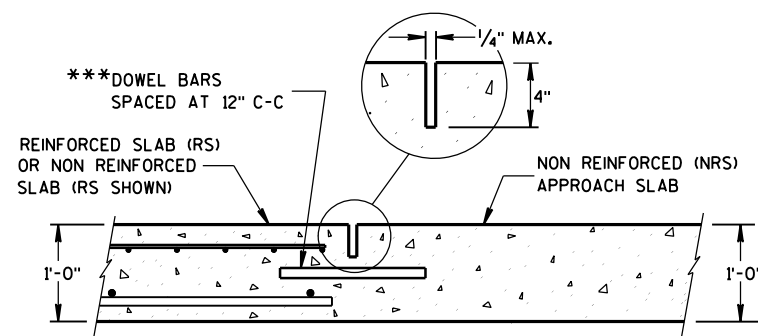
- (A) STANDARD CONTRACTION JOINT NORMAL TO ℓ OR ℓ_c
(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℓ OR ℓ_c



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



**SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**



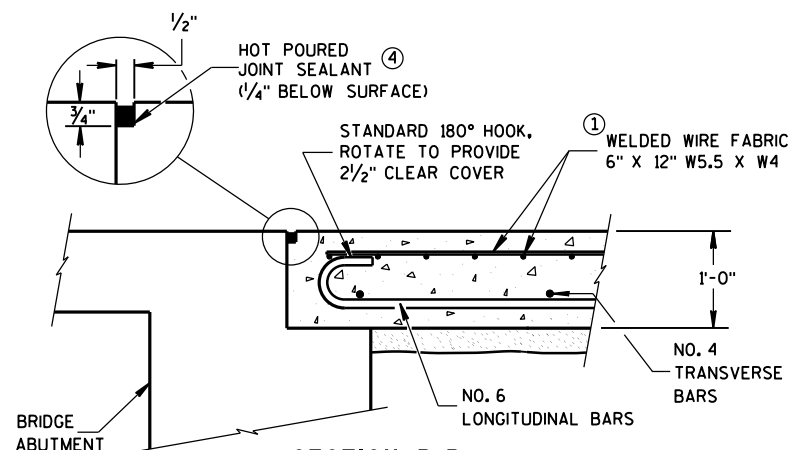
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

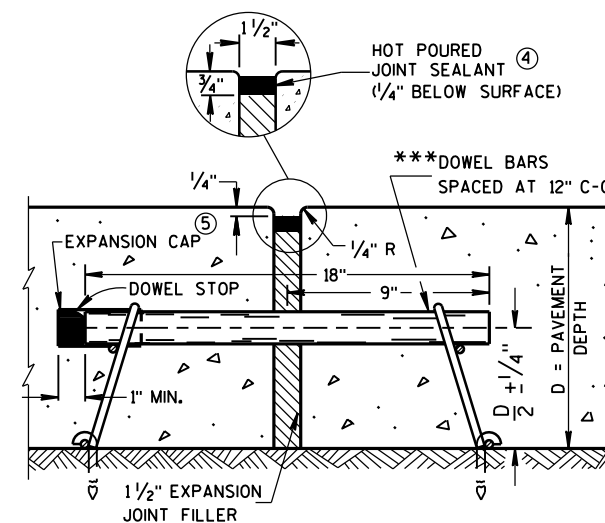
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.
- PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



**SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT**

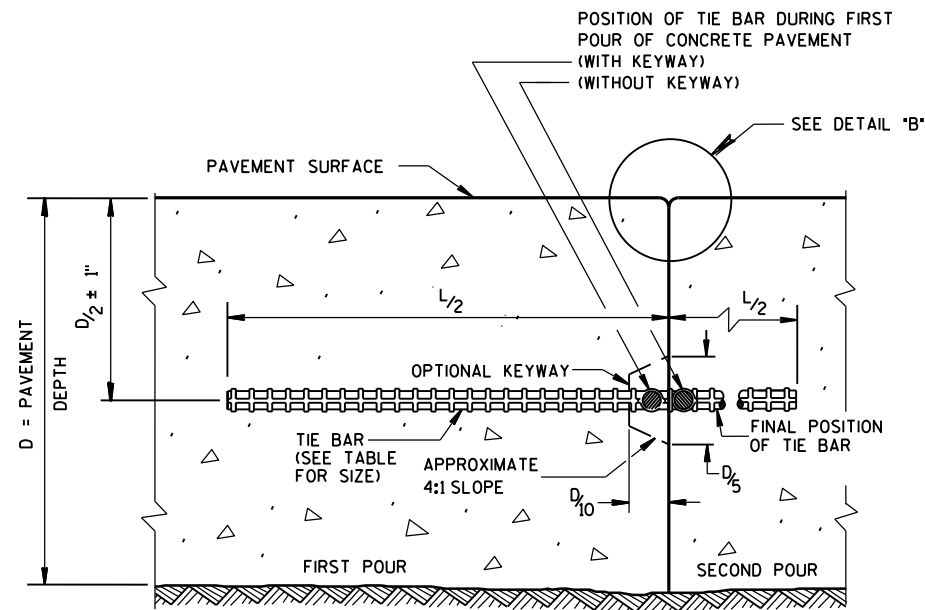


EXPANSION JOINT DETAIL

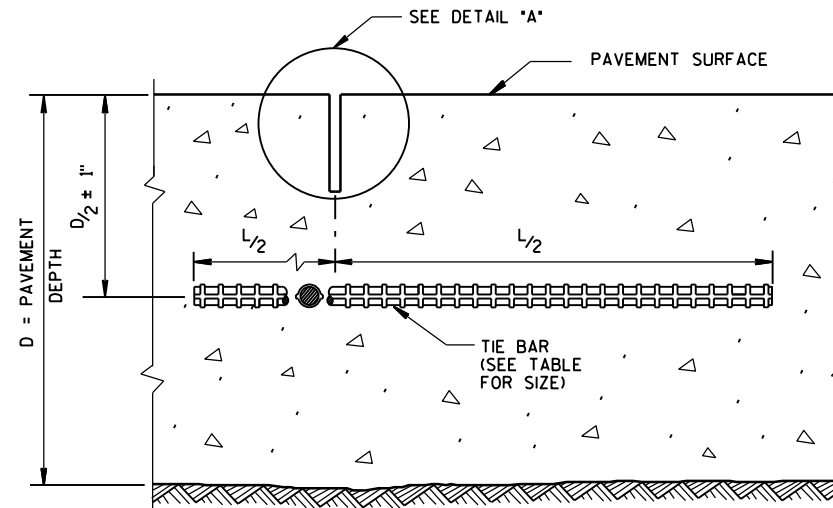
**CONCRETE PAVEMENT
APPROACH SLAB**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE
PAVEMENT SUPEP 169
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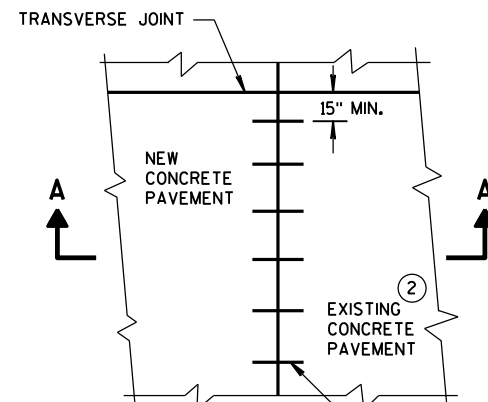
CONSTRUCTION JOINT



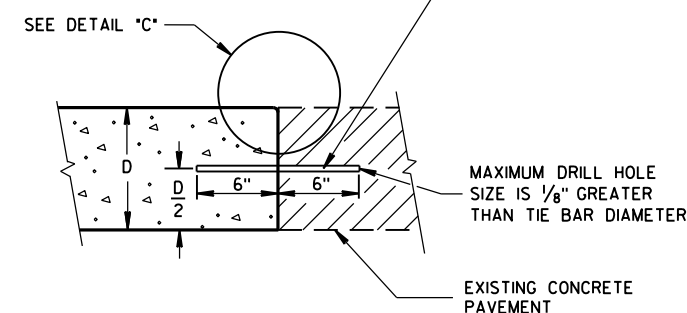
SAWED JOINT

GENERAL NOTES

- DO NOT SEAL OR FILL LONGITUDINAL JOINTS.
- CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.
- CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.
- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.



PLAN VIEW

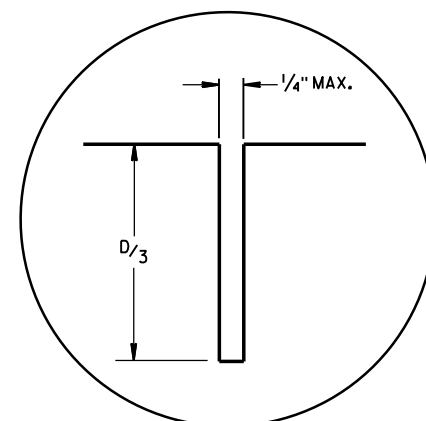


SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT

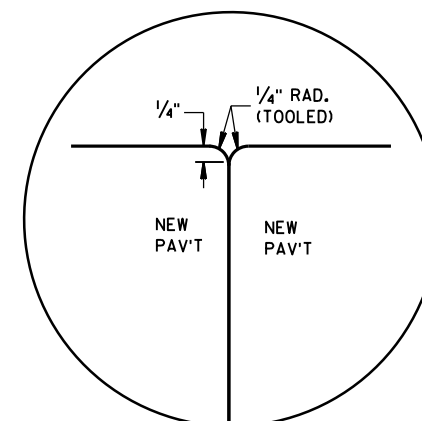
NO. 6 TIE BARS SPACED 30" C-C,
INSTALLED PERPENDICULAR
TO THE LONGITUDINAL JOINT. ①

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

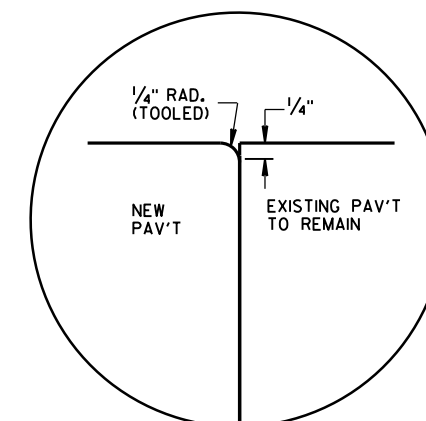
EXISTING CONCRETE
PAVEMENT



DETAIL "A"



DETAIL "B"



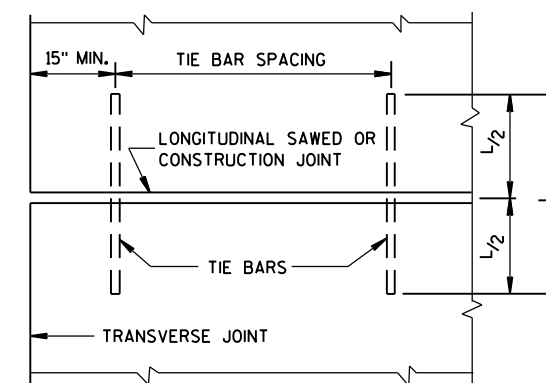
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

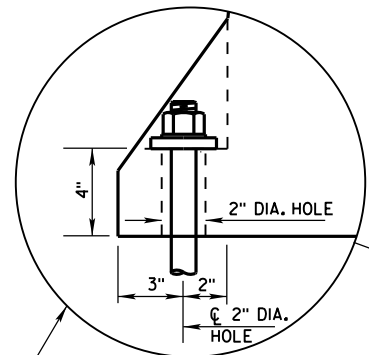


PLAN VIEW
SHOWING LOCATION OF TIE BARS

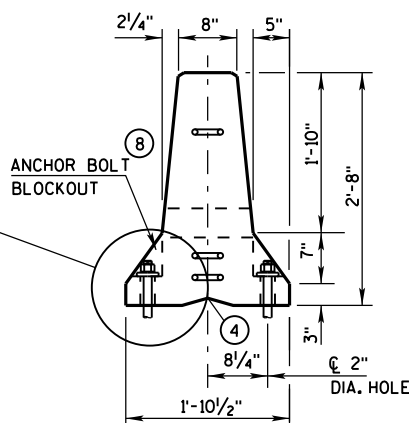
CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

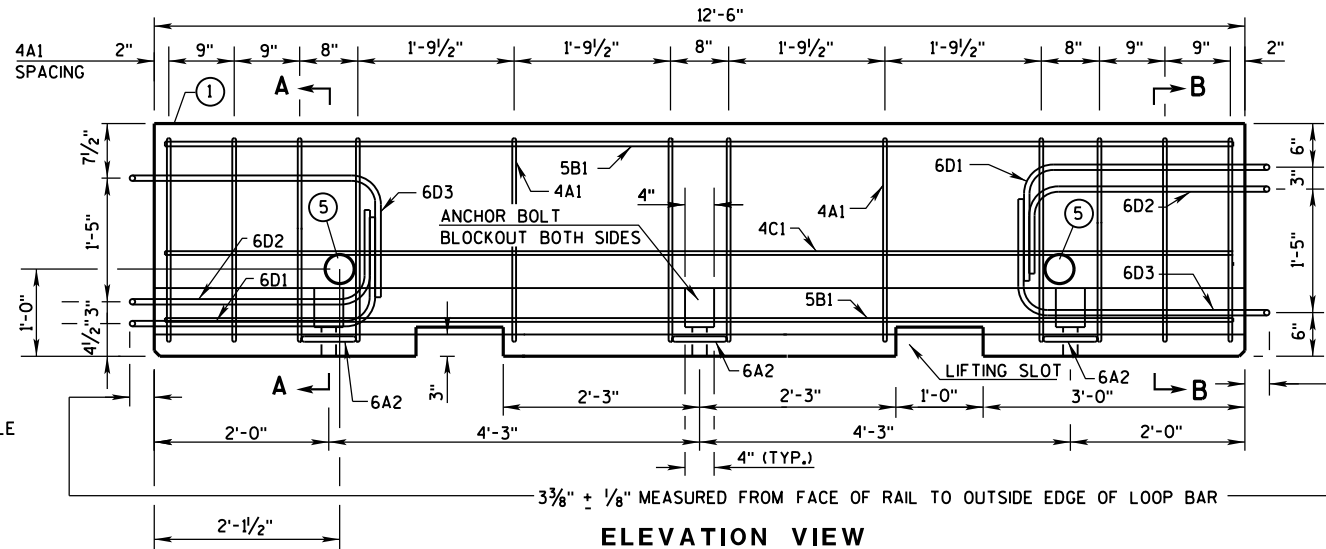
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June, 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPER 170
FHWA



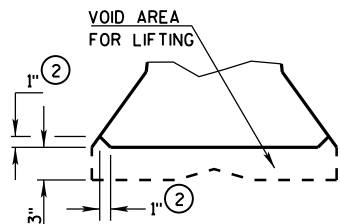
ANCHOR ON TRAFFIC SIDE
ONLY WHEN REQUIRED
(SEE SHEET D FOR ADDITIONAL
ANCHOR DETAIL)



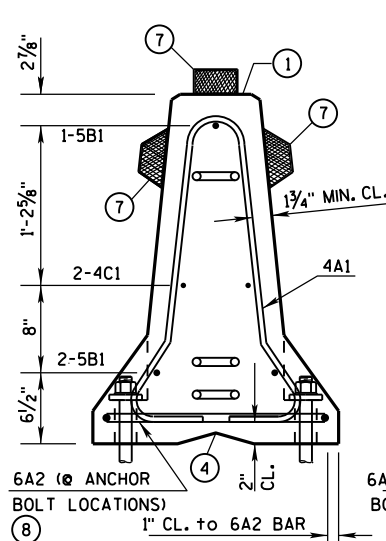
END VIEW



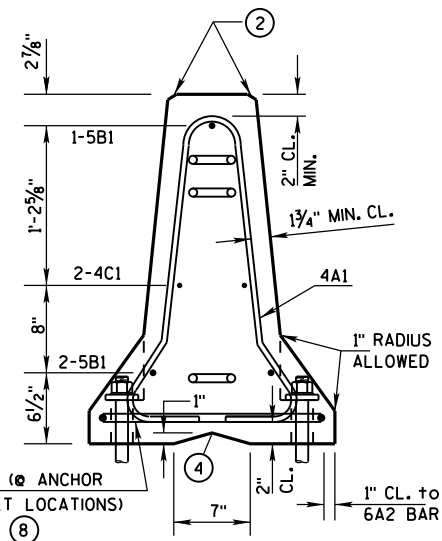
ELEVATION VIEW



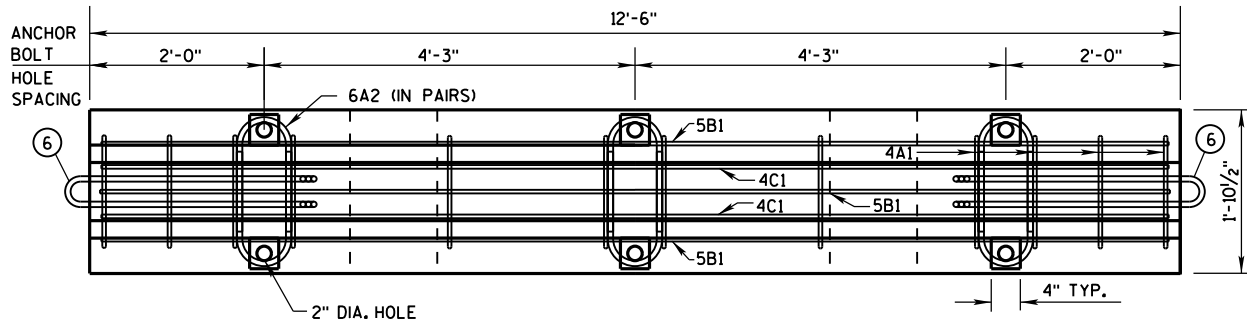
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

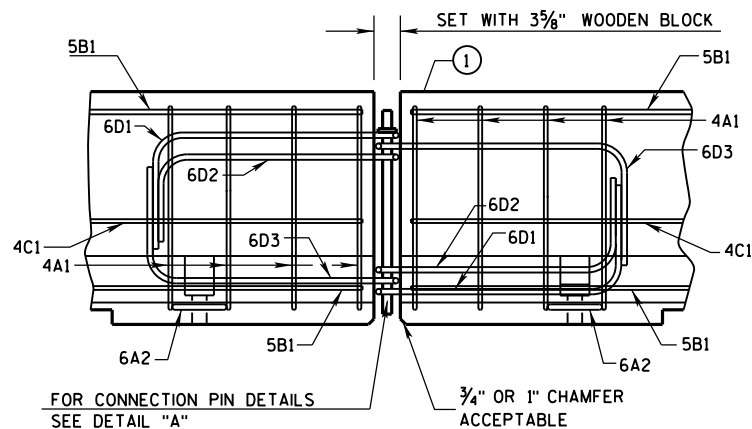


SECTION B-B
(STIRRUP PLACEMENT)

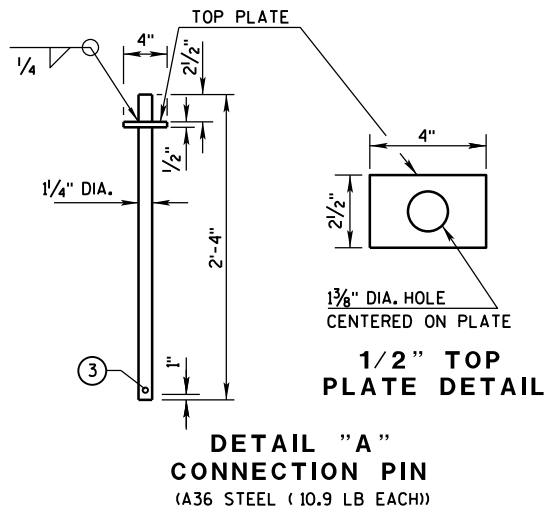


PLAN VIEW

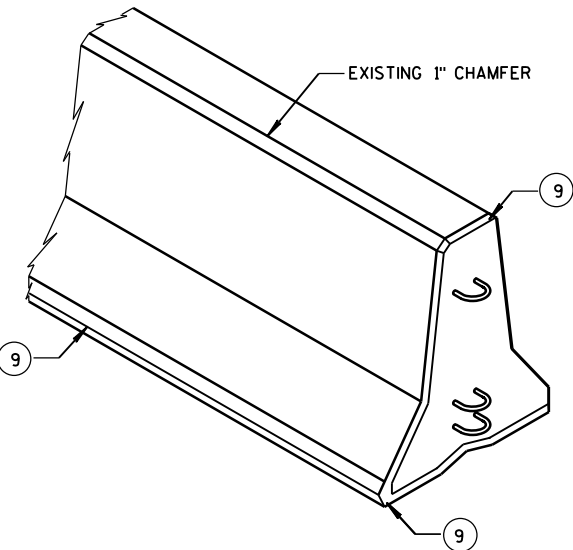
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
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GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-14(g) THRU 14B7-14(h).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

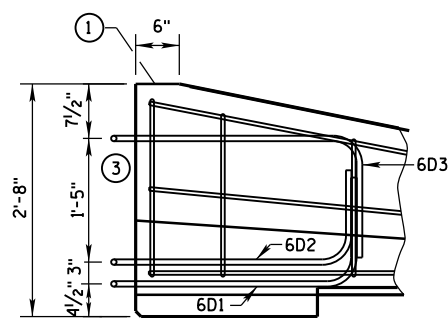
LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE 3/4" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-1/2" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN 1/8" OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

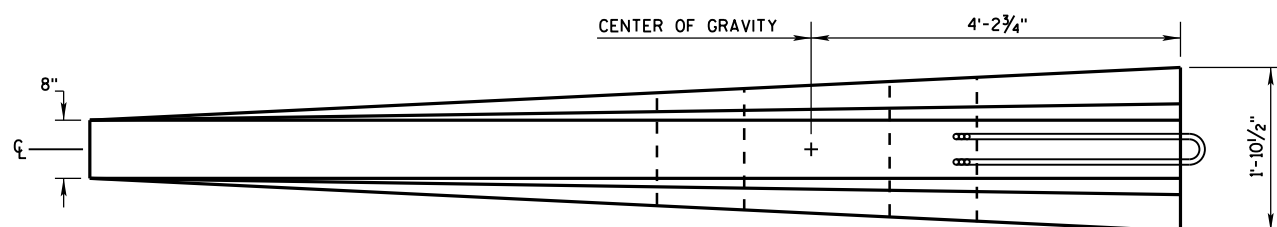
INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - TYPE: WICBTP
 - MANUFACTURER
 - DATE MANUFACTURED (MONTH AND YEAR)
- 1" CHAMFER TO PREVENT SPALLING.
- A 3/8" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- "V" NOTCH IS OPTIONAL.
- THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURER'S INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.
- SEE SHEET D FOR ANCHORING CRITERIA.
- 1" CHAMFER OPTIONAL.

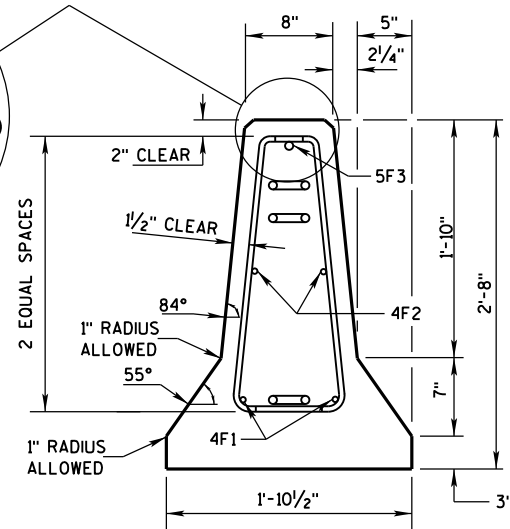


- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)



**CHAMFER
DETAIL**



The diagram consists of two parts. The top part, titled "BARRIER ON CURVE", shows a perspective view of a barrier segment on a curved road. A callout indicates a "10'± OFFSET" from the road centerline. Another callout shows a "5°± MAX." angle between the barrier and the road's centerline. Two segments of the barrier are dimensioned as "12'-6\"". The bottom part, titled "FLARE AT BARRIER END", shows a perspective view of a barrier segment flaring out at its end. A dimension line at the end of the segment is labeled "12'-6\"".

POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1

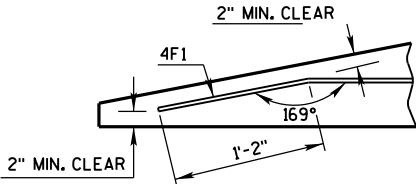
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 172

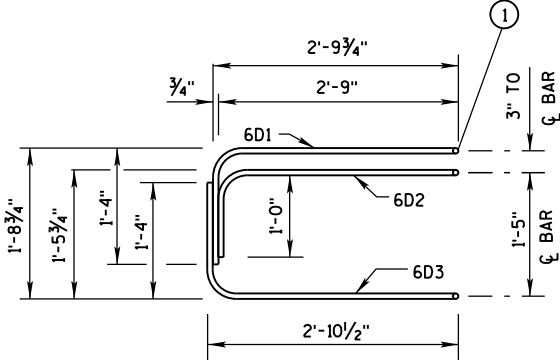
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

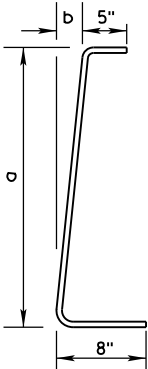
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

BAR	a	b
V1	10"	1"
V2	1'-1"	1 1/4"
V3	1'-5"	1 5/8"
V4	1'-8"	1 7/8"
V5	2'-0 1/2"	2 3/8"
V6	2'-3"	2 3/4"

TAPER BARRIER SECTION

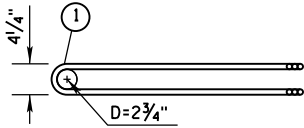
GENERAL NOTES

① NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

BARRIER SECTION
BILL OF MATERIALS

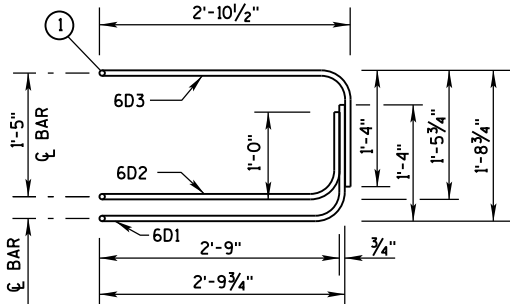
(PER 12'-6" BARRIER SECTION)

BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"

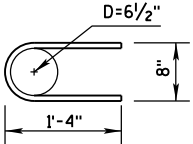


PLAN VIEW
LOOP BAR ASSEMBLY

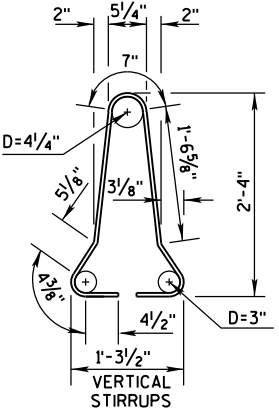
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

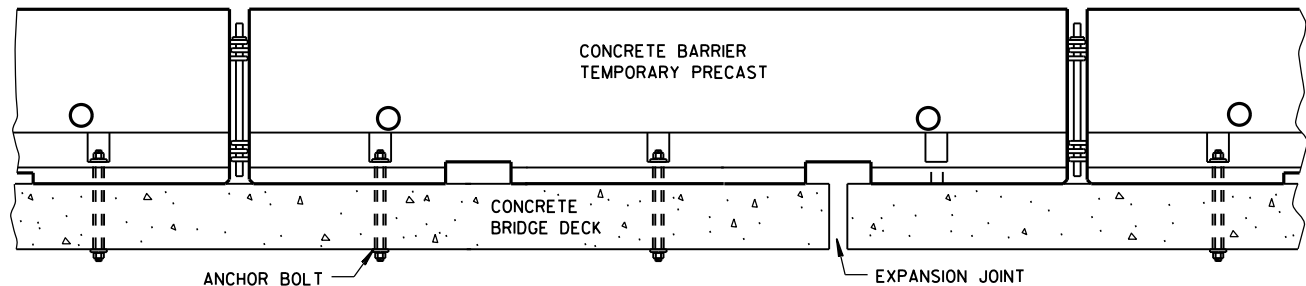
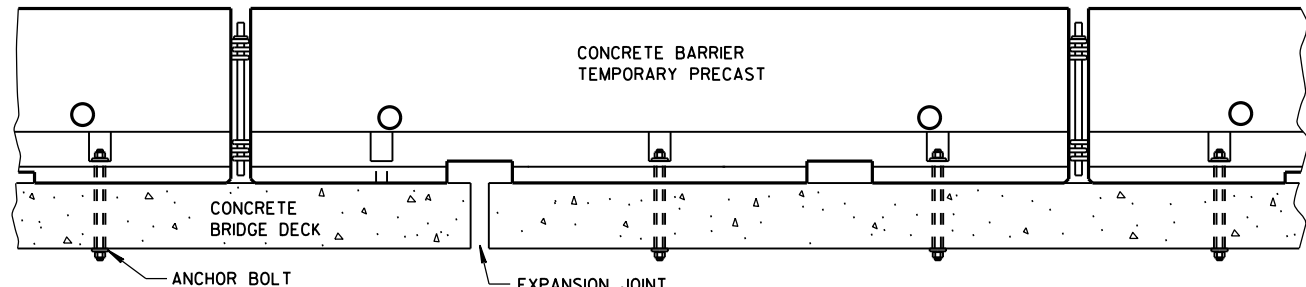


4A1

BARRIER SECTION

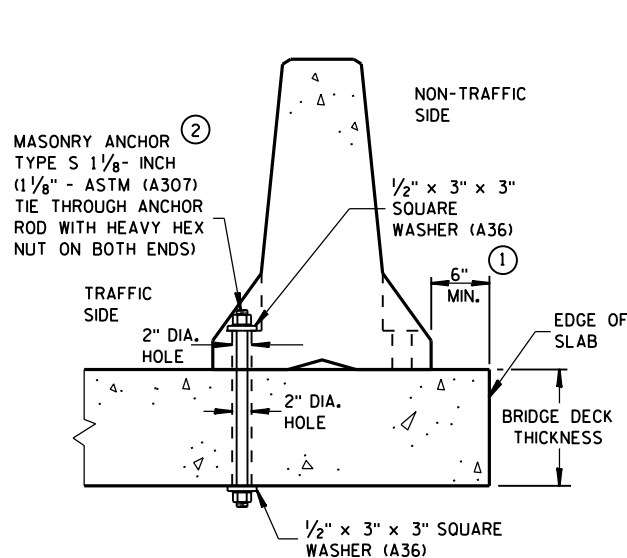
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

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DEPARTMENT OF TRANSPORTATION 173



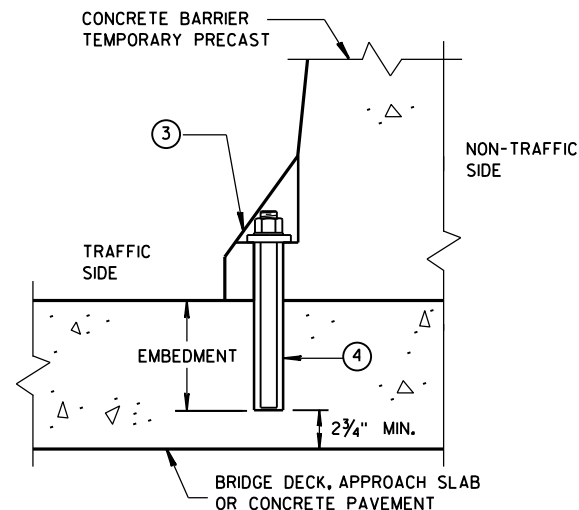
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



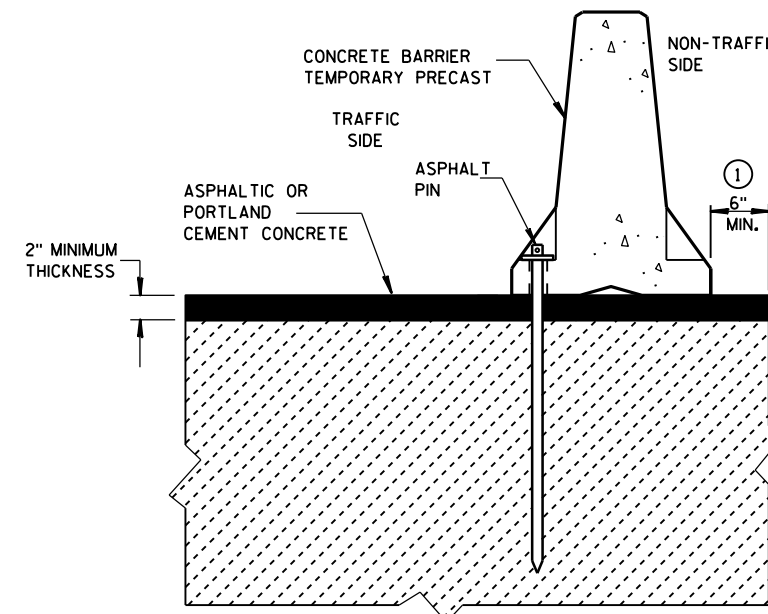
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



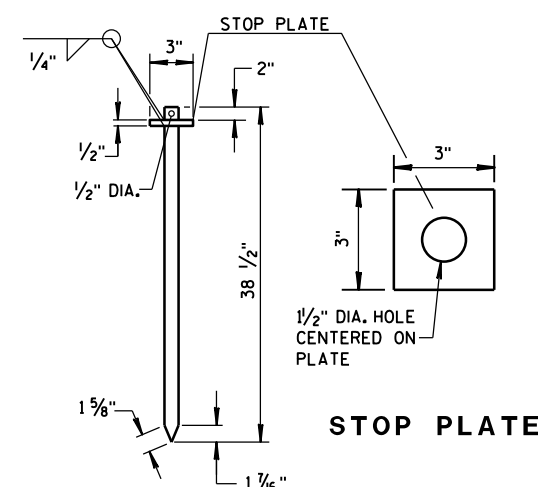
REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

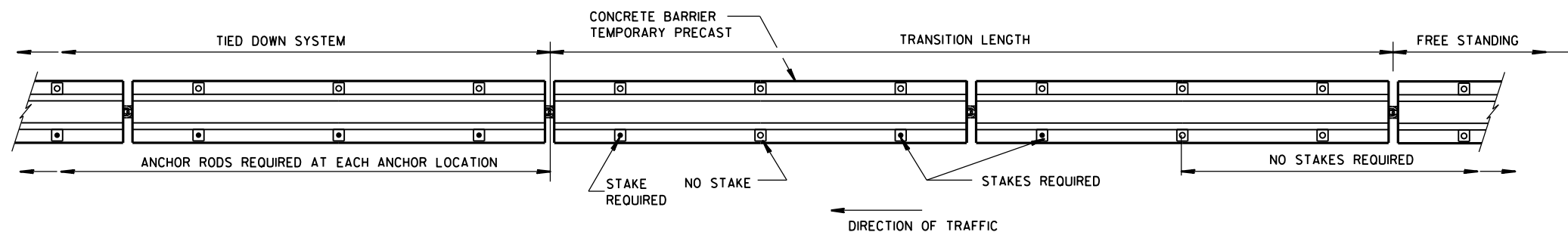


STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



ASPHALT PIN
(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

GENERAL NOTES

- CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

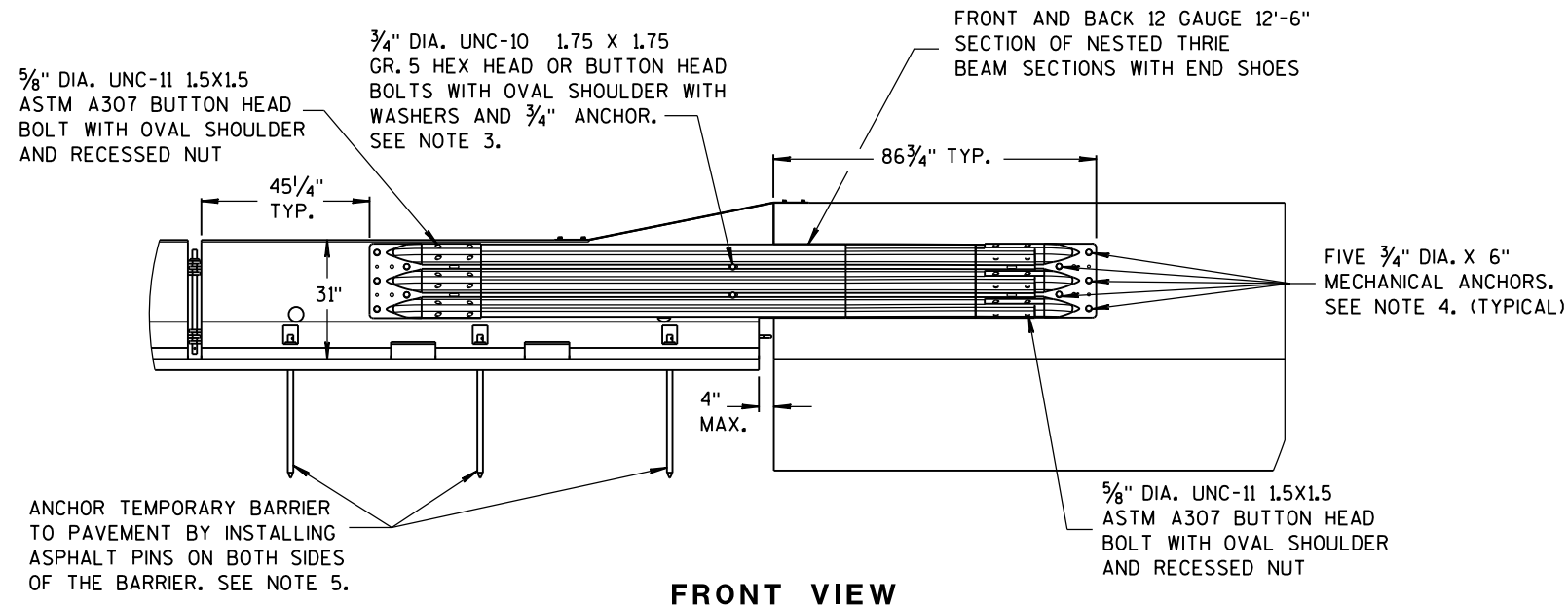
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.
- ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1 1/8-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

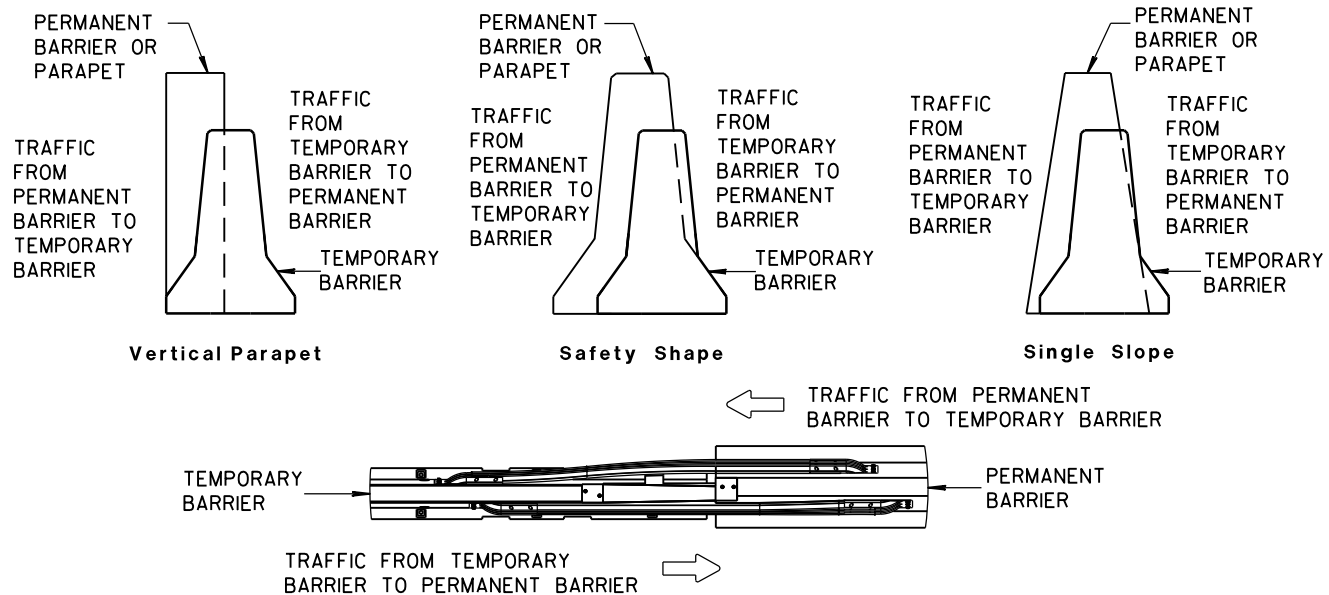
UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALL ANCHOR BOLTS AND COMPLETELY FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERCIAL GROUT OR MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.
- 1/8" DIAMETER A307 THREADED ROD, 1/2" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 174



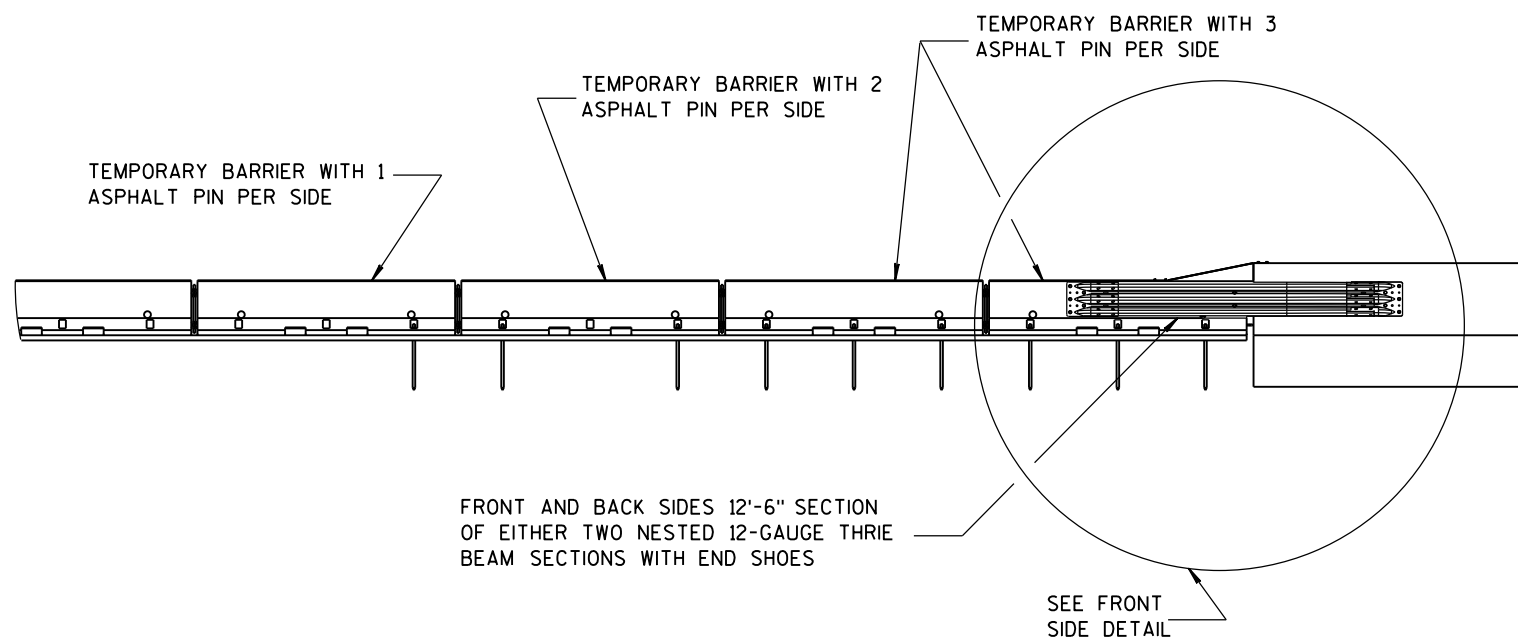
FRONT VIEW



TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

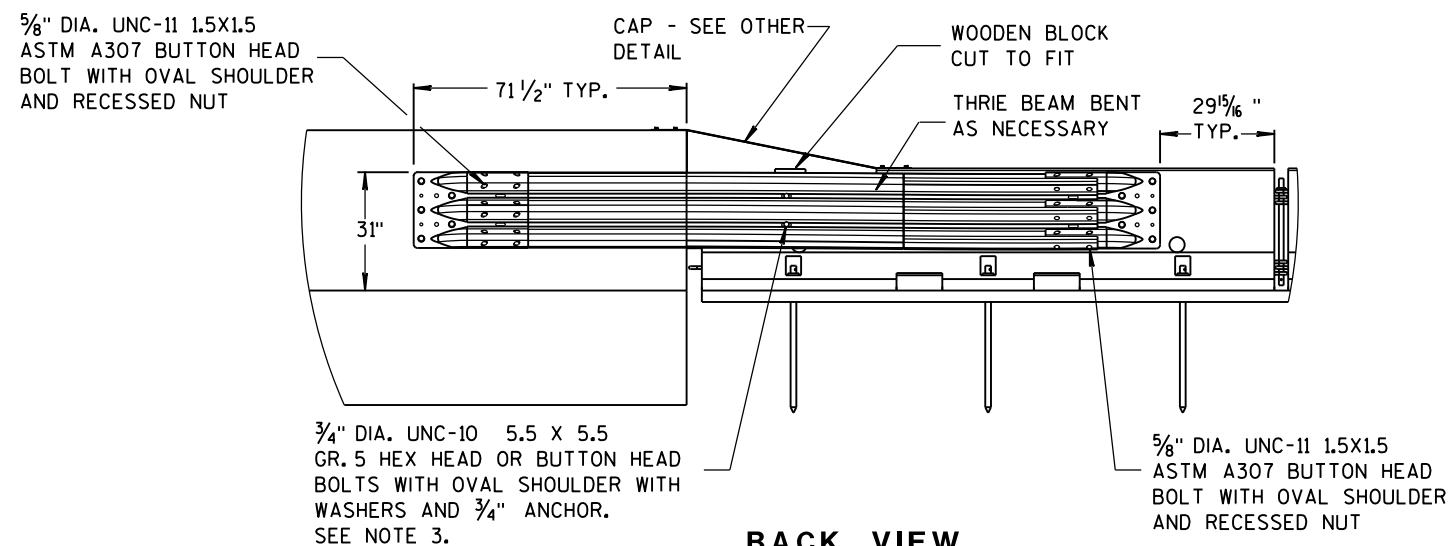
NOTES

1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

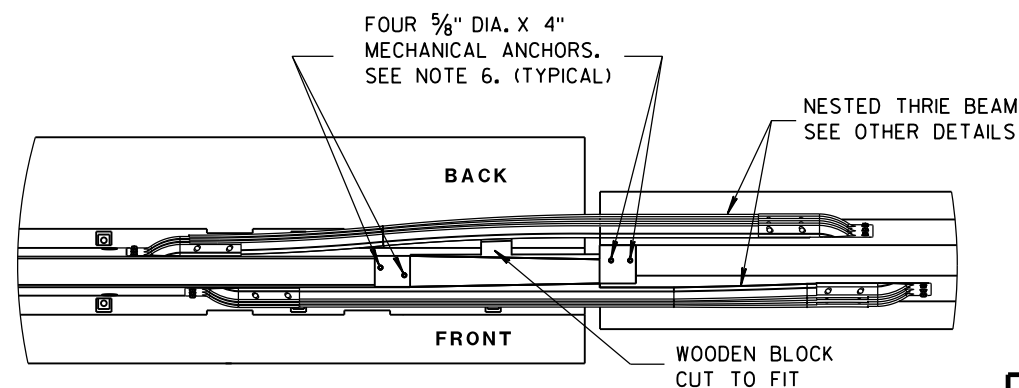


FRONT VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



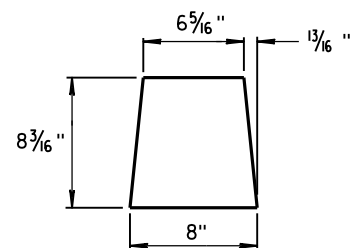
BACK VIEW



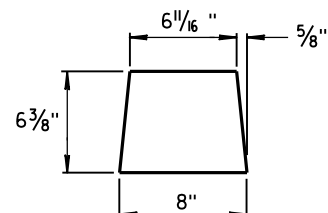
PLAN VIEW

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

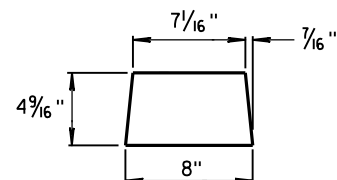
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



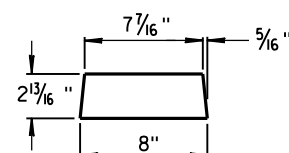
GUSSET 1



GUSSET 2

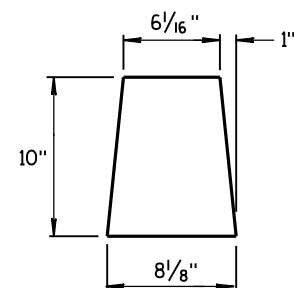


GUSSET 3

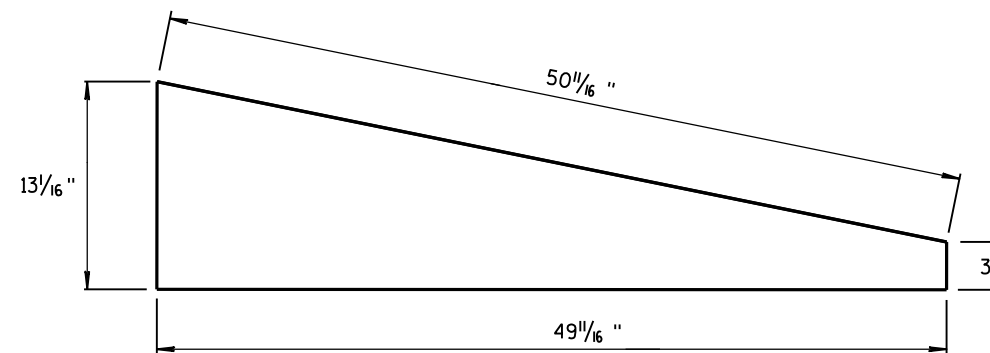


GUSSET 4

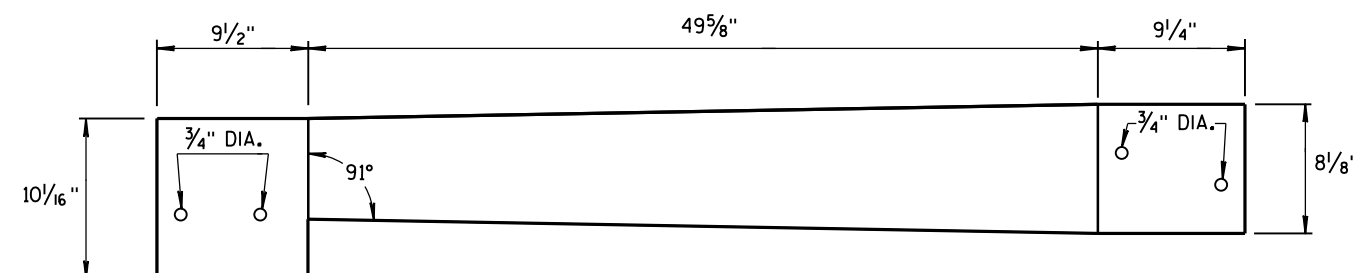
GUSSETS



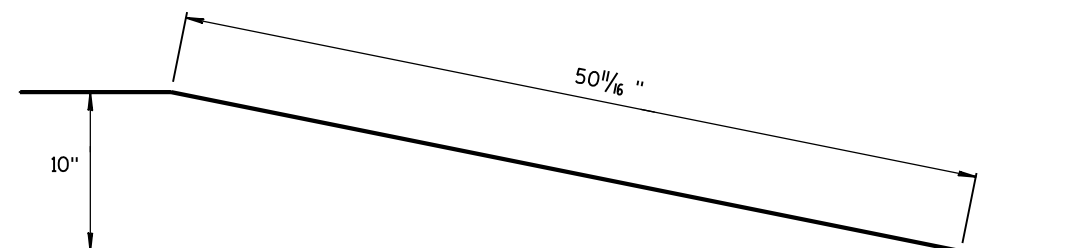
END PLATE



SIDE PLATE

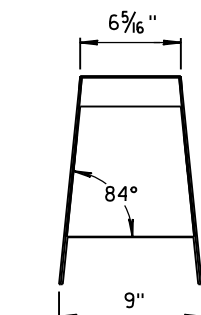
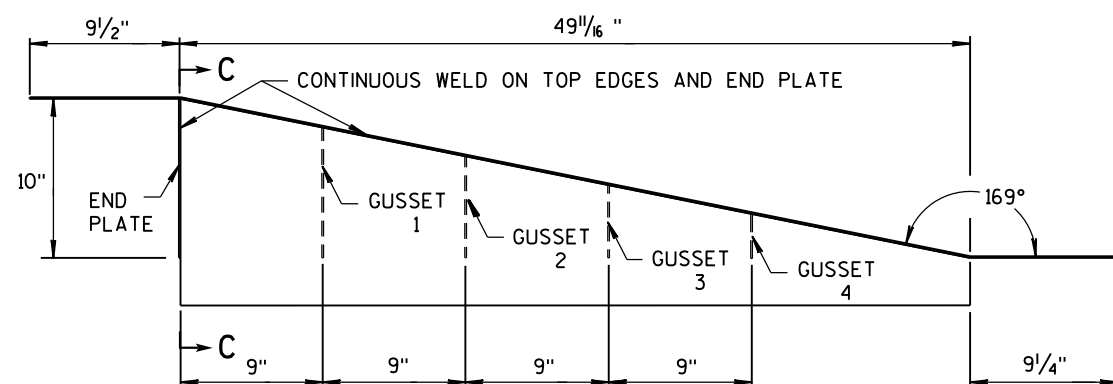
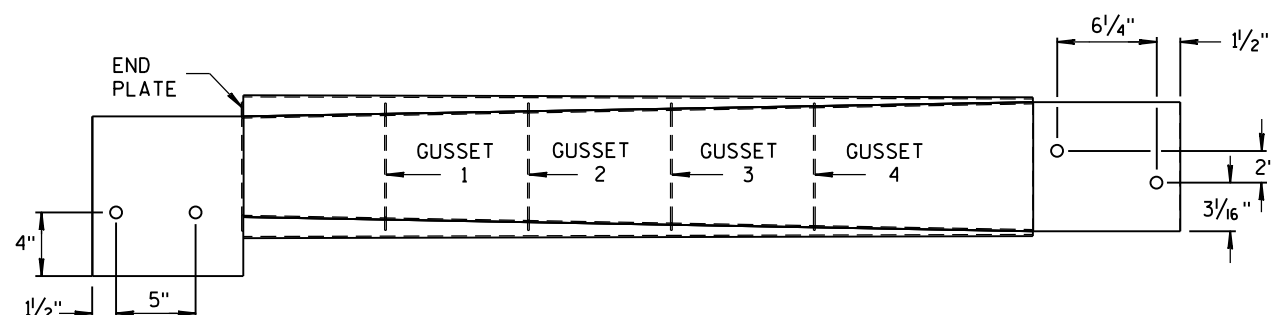


TOP PLATE



**SIDE, TOP AND END PLATES FOR CAP
FROM TEMPORARY CONCRETE BARRIER
TO 42" PERMANENT CONCRETE BARRIER**

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.



SECTION C-C

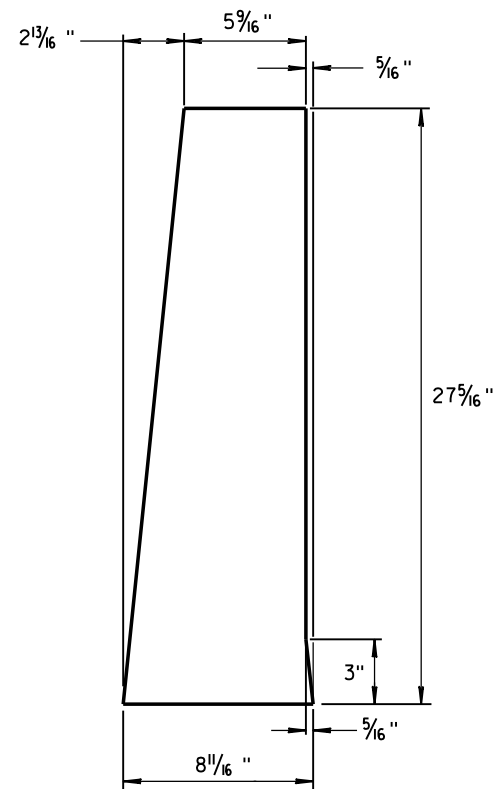
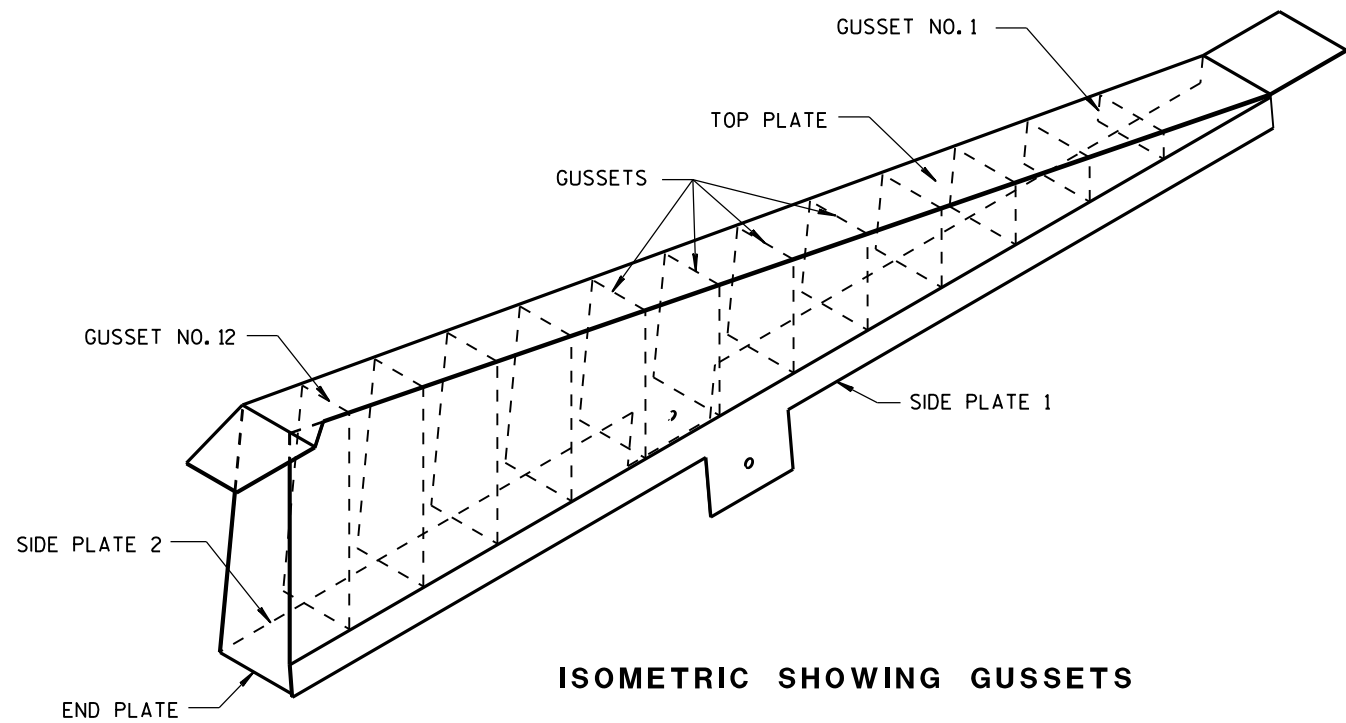
NOTES

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

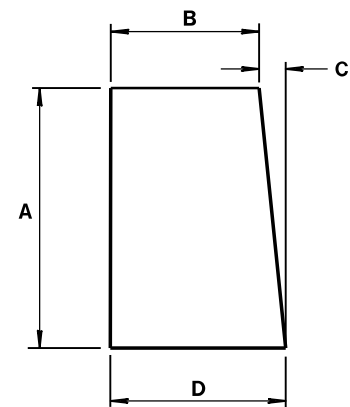
**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
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END PLATE
1/8" STEEL PLATE

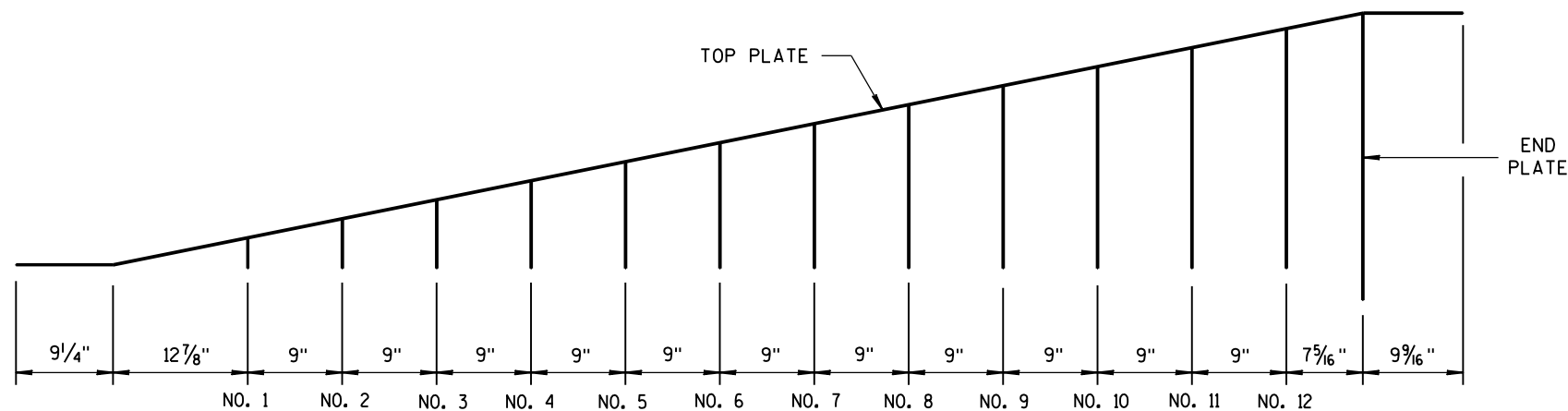


GUSSETS 1 - 12
ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 1/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	1 1/16 "	8 1/16 "
4	8 5/16"	7 3/16"	7/8"	8 1/16 "
5	10 1/8"	7"	1 1/16 "	8 1/16 "
6	11 5/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8"	1 7/16 "	8 1/16 "
8	15 9/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16"	6 1/16"	1 15/16 "	8 1/16 "
11	21"	5 7/8"	2 3/16"	8 1/16 "
12	22 13/16 "	5 11/16 "	2 5/16"	8 1/16 "

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

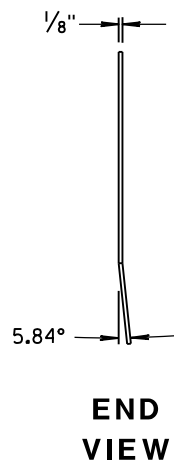
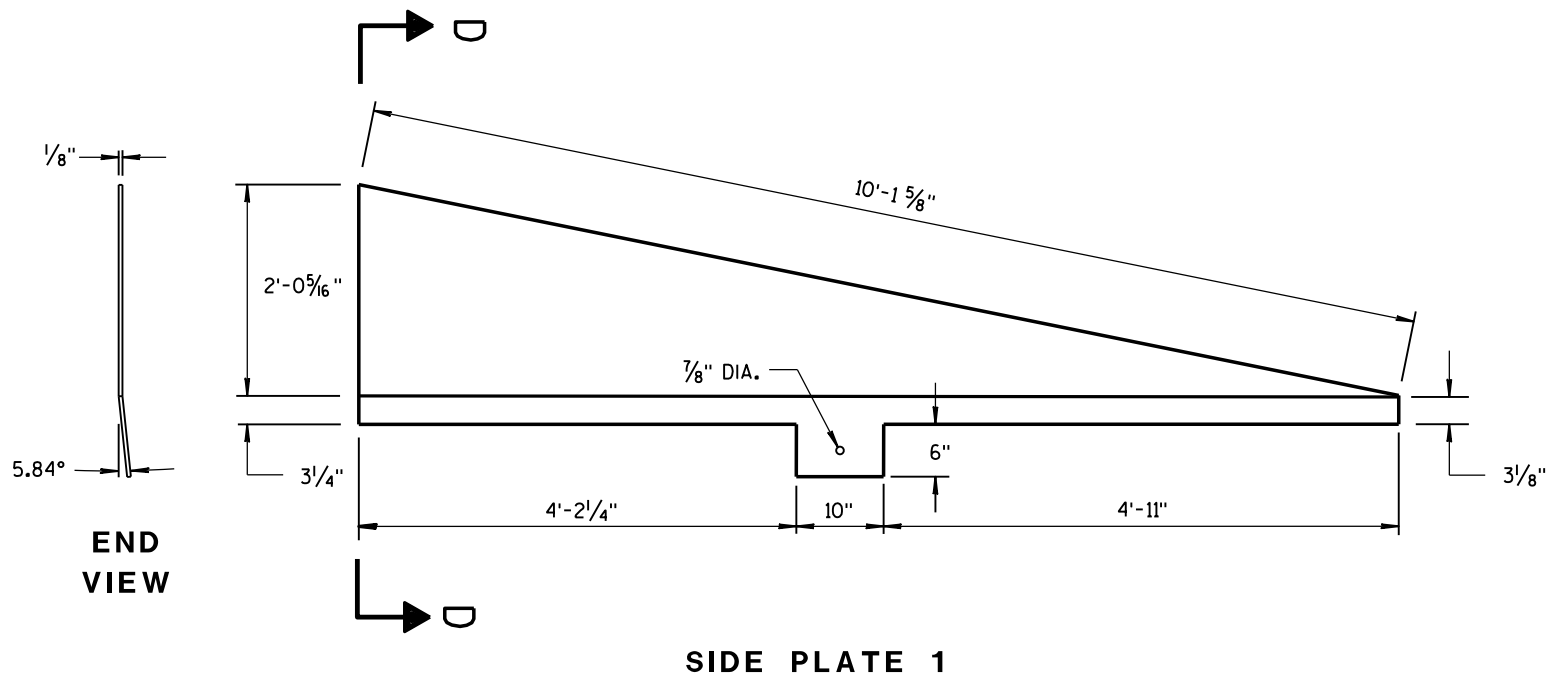
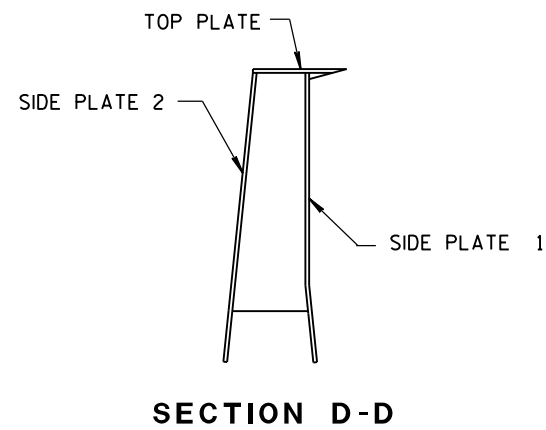
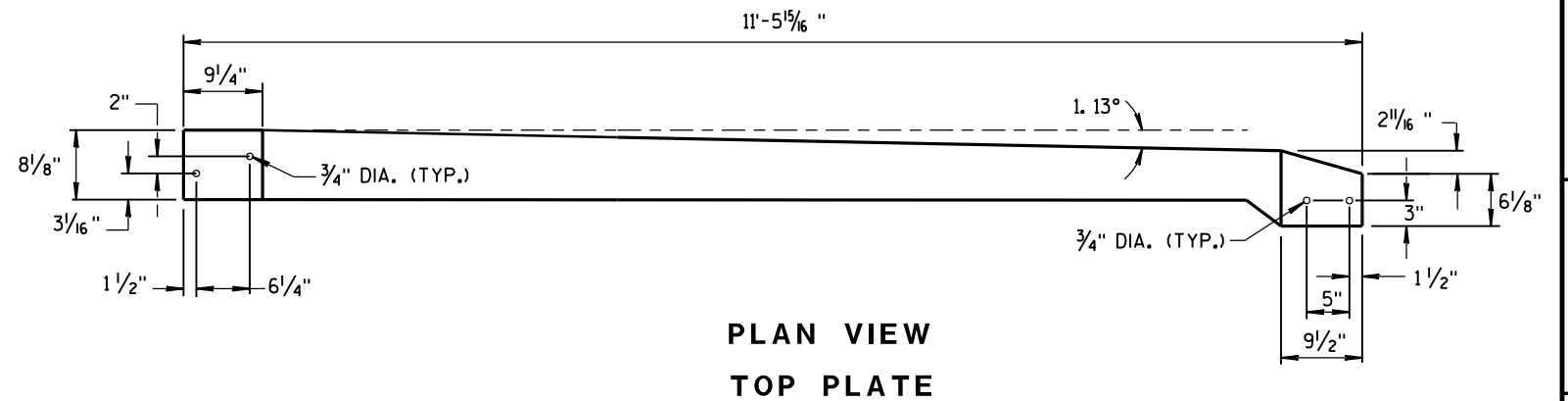
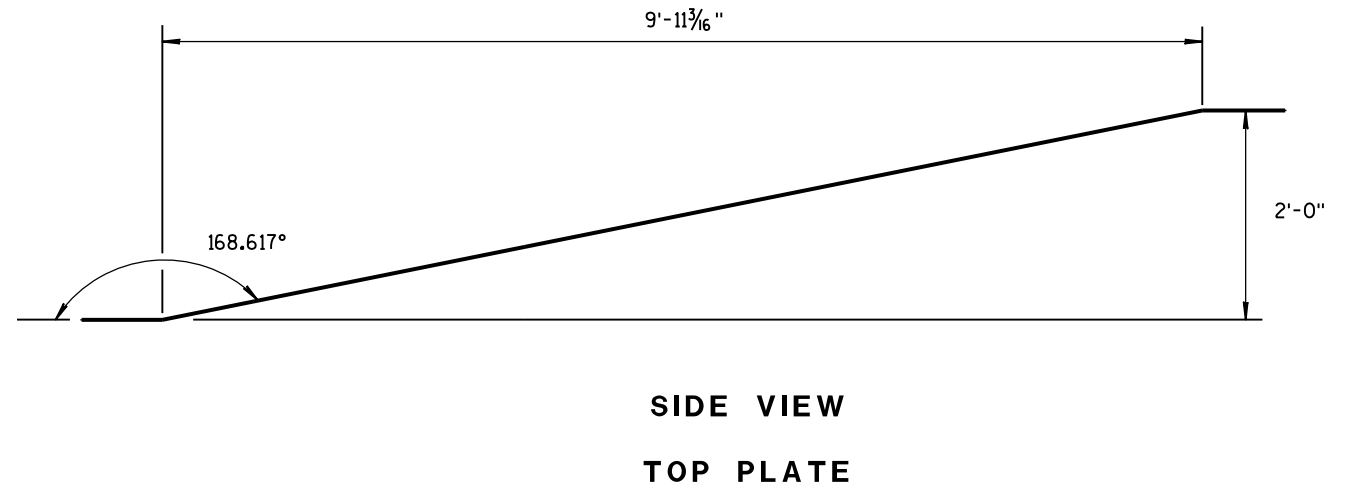
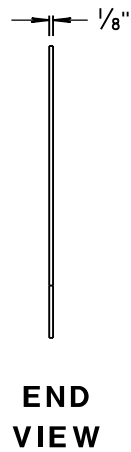
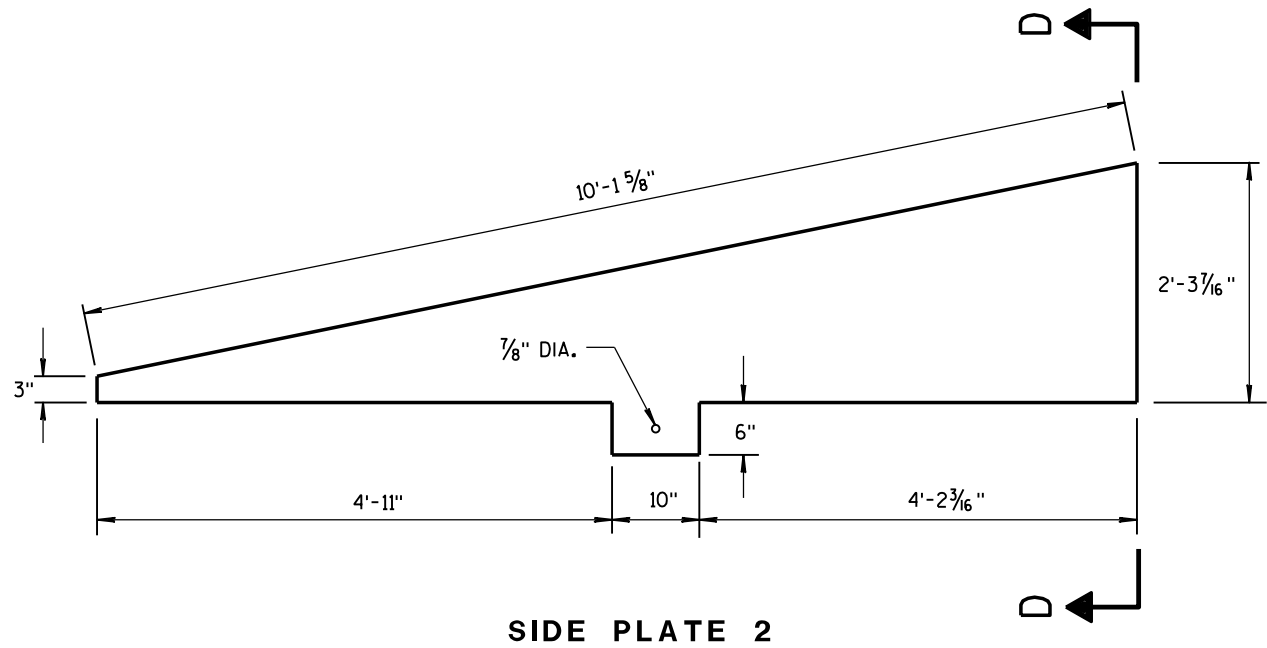
GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 56" PERMANENT CONCRETE BARRIER

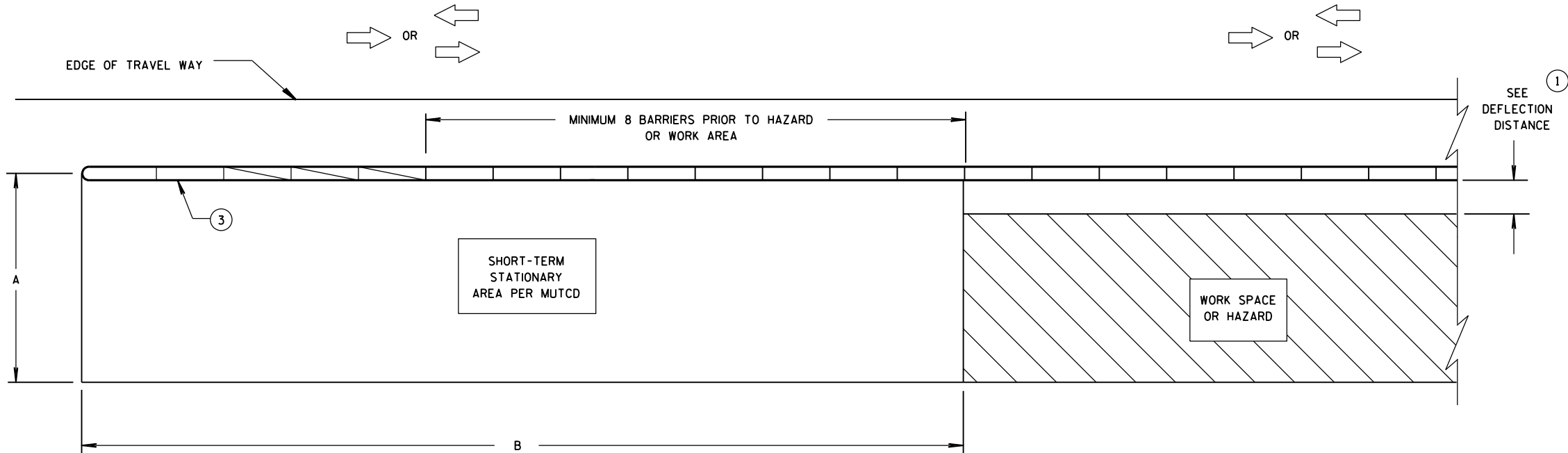
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 177

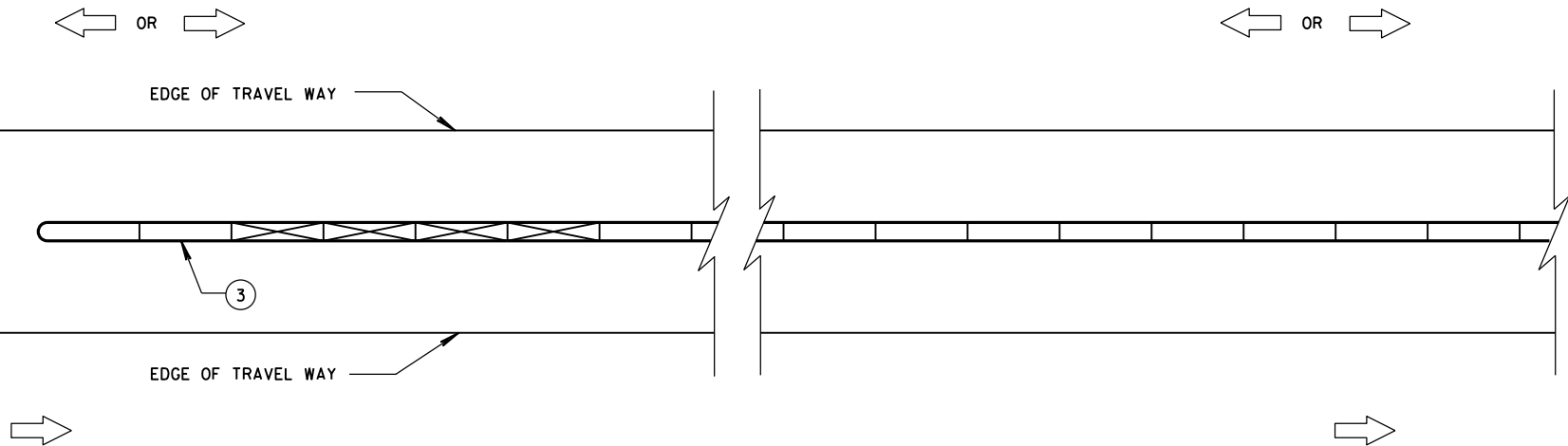


CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
June 2014	/S/ Jerry H. Zoog		
DATE	ROADWAY STANDARD	178	INT
FHWA	ENGINEER		



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER**



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER**

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

- ① FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.
- ② VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.
- ③ ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

DIMENSION A TABLE ②

FACILITY	POSTED SPEED MPH	DIMENSION A	
		MIN. FT	MAX. FT
FREEWAY/EXPRESSWAY	ALL	15	20
NON-FREEWAY/EXPRESSWAY	GREATER THAN OR EQUAL TO 45	10	15
NON-FREEWAY/EXPRESSWAY	LESS THAN 45	8	10
AADT LESS THAN 1,500	ALL	8	10

DIMENSION B TABLE ②

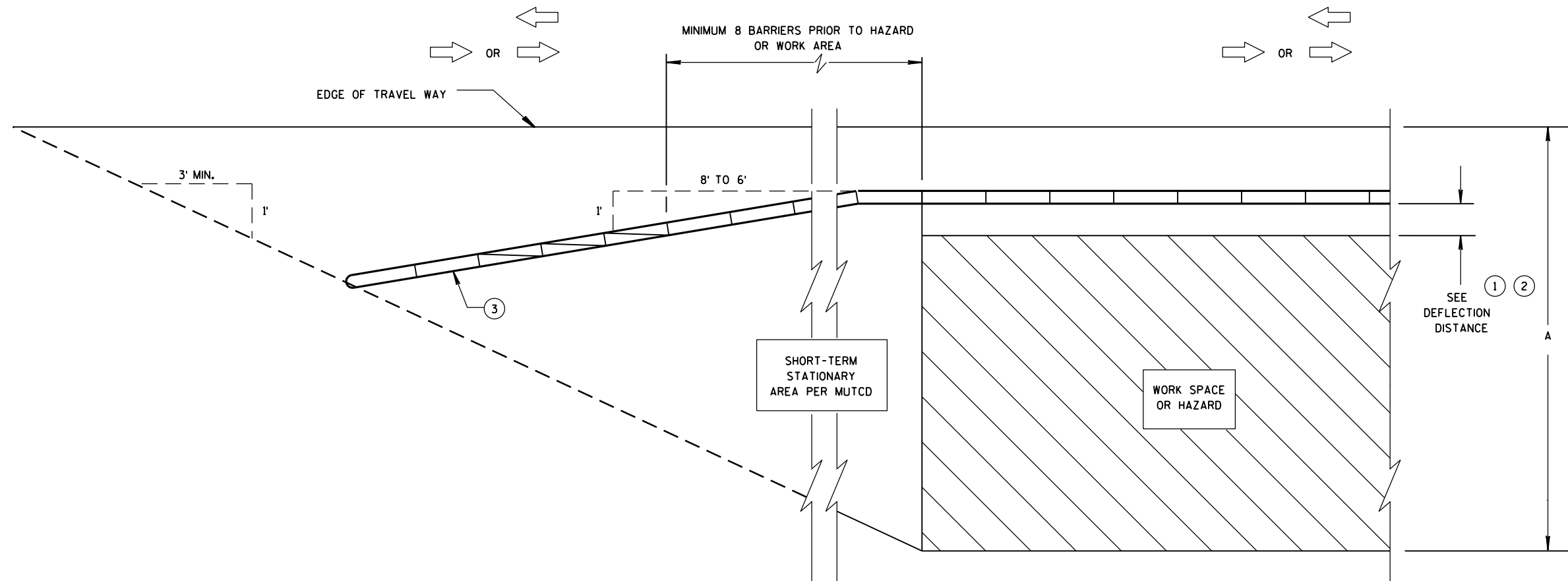
POSTED SPEEDS MPH	DIMENSION B FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645

LEGEND

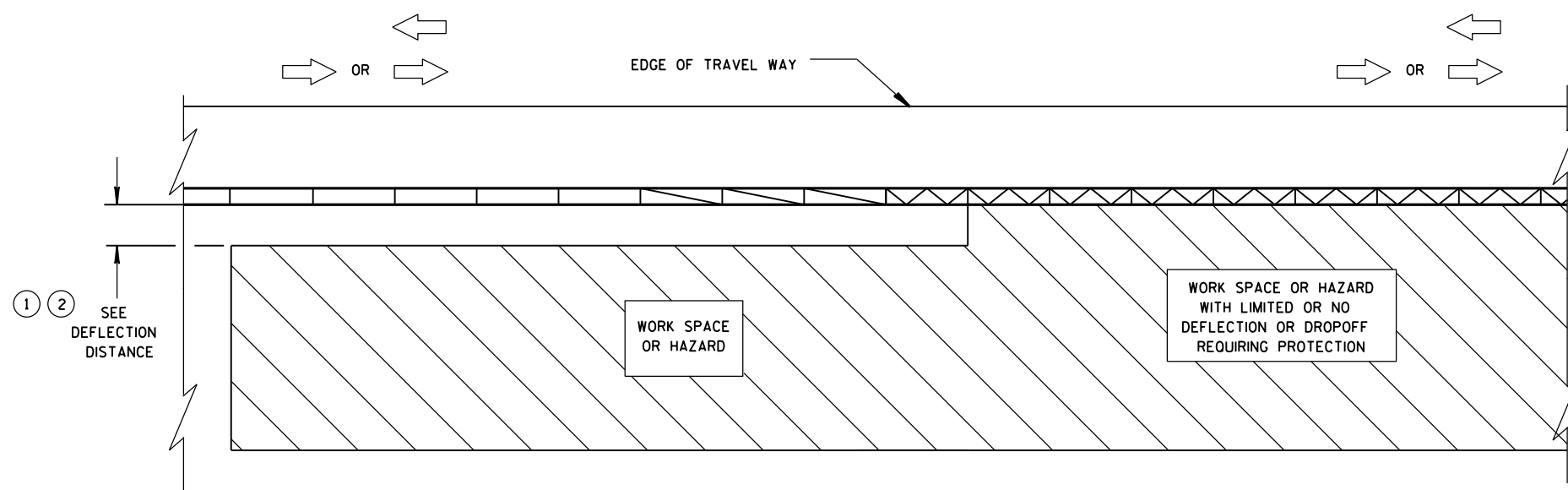
- DIRECTION OF TRAVEL →
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION**



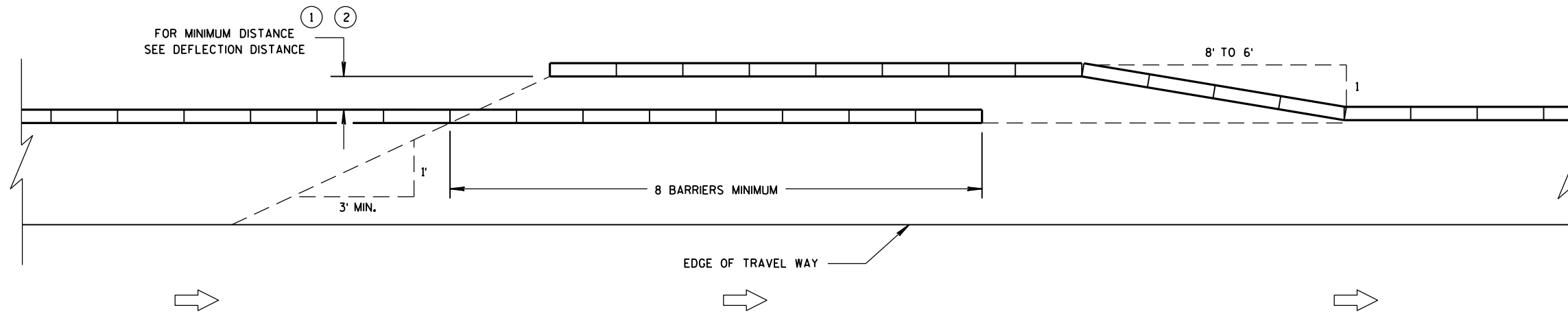
**TRANSITION FROM FREE STANDING TEMPORARY BARRIER
TO ANCHORED BARRIER**

LEGEND

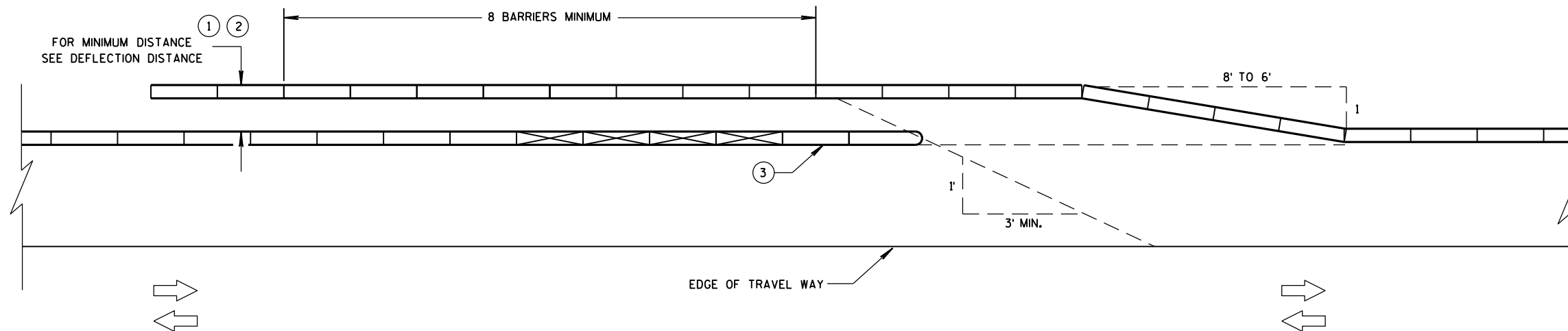
DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

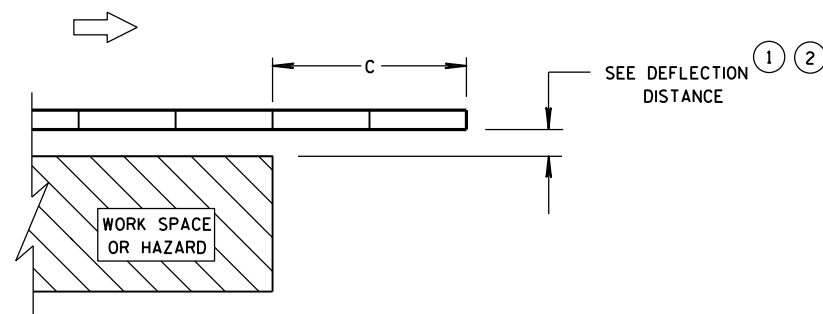
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 180



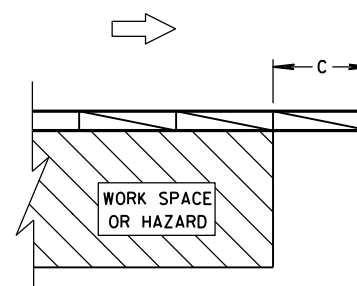
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



**ENDING TEMPORARY BARRIER
DOWNSTREAM - UNANCHORED**



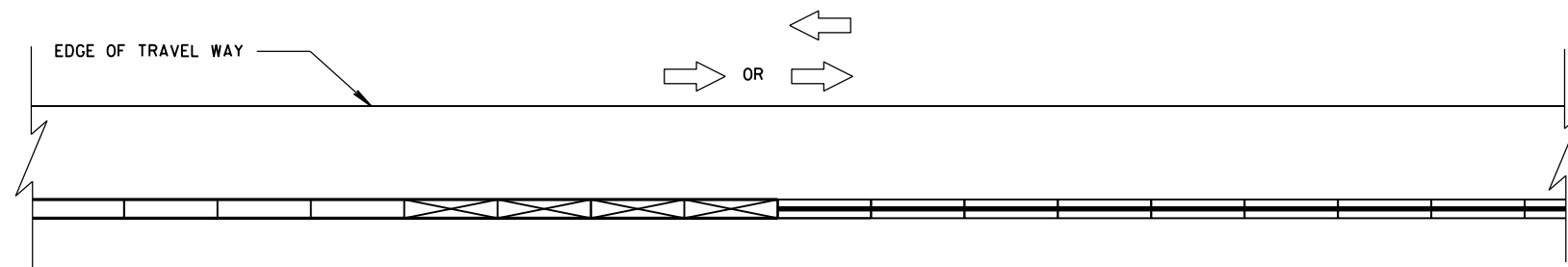
**ENDING TEMPORARY BARRIER
DOWNSTREAM - ANCHORED**

LEGEND

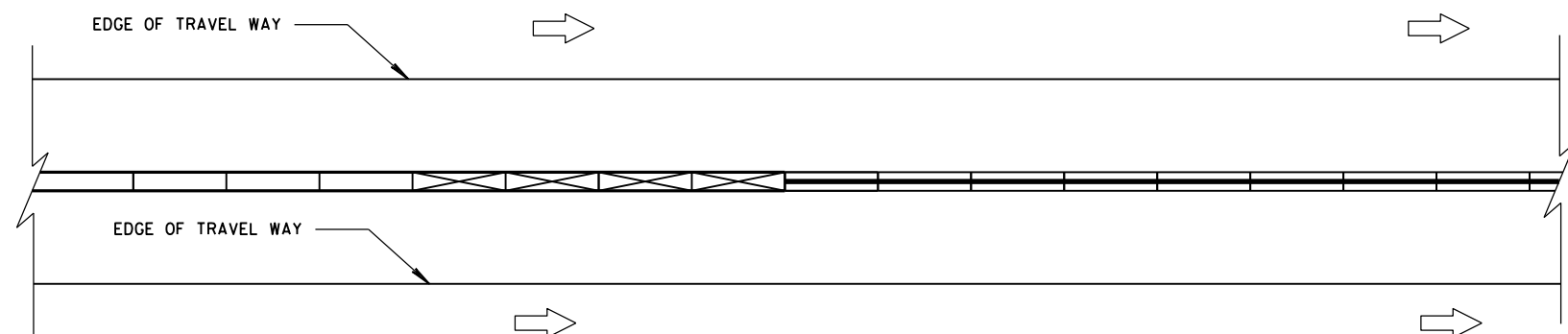
DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 181



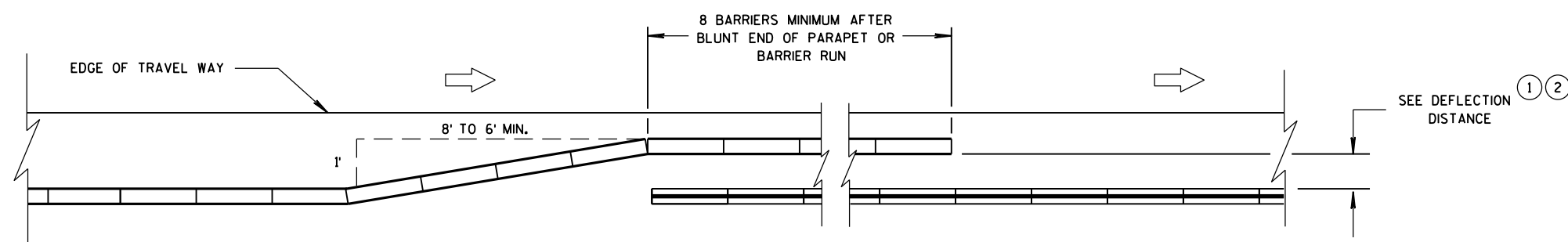
**CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE**



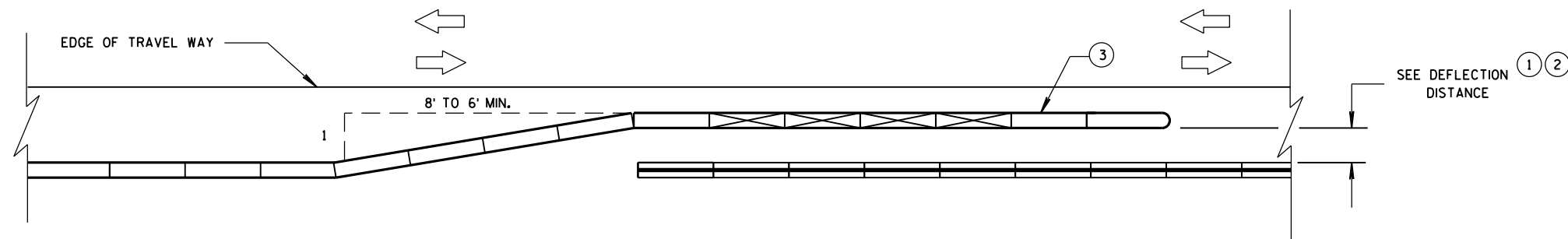
**CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES**

LEGEND

DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	



**OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC**



**OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC**

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 182

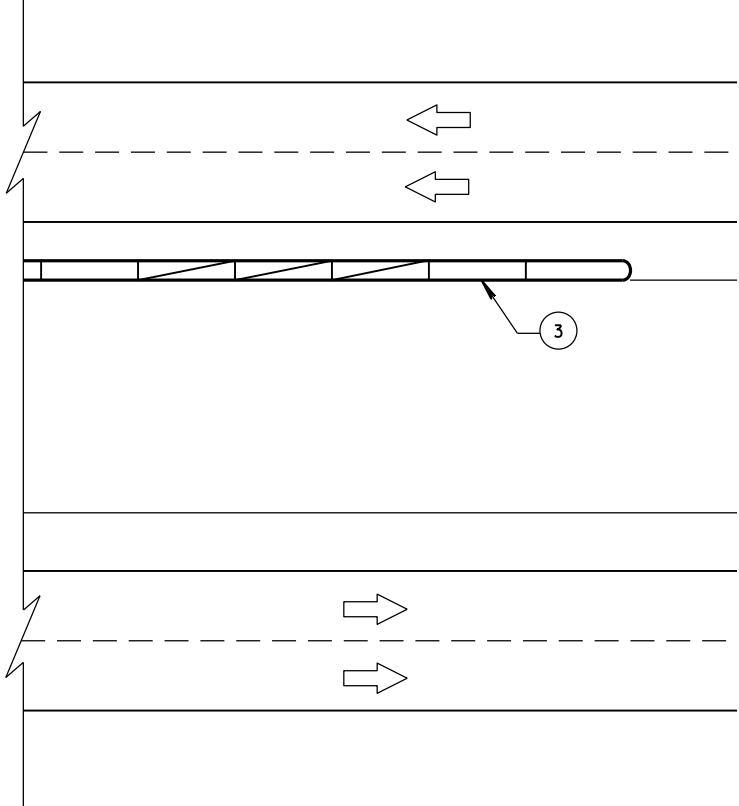
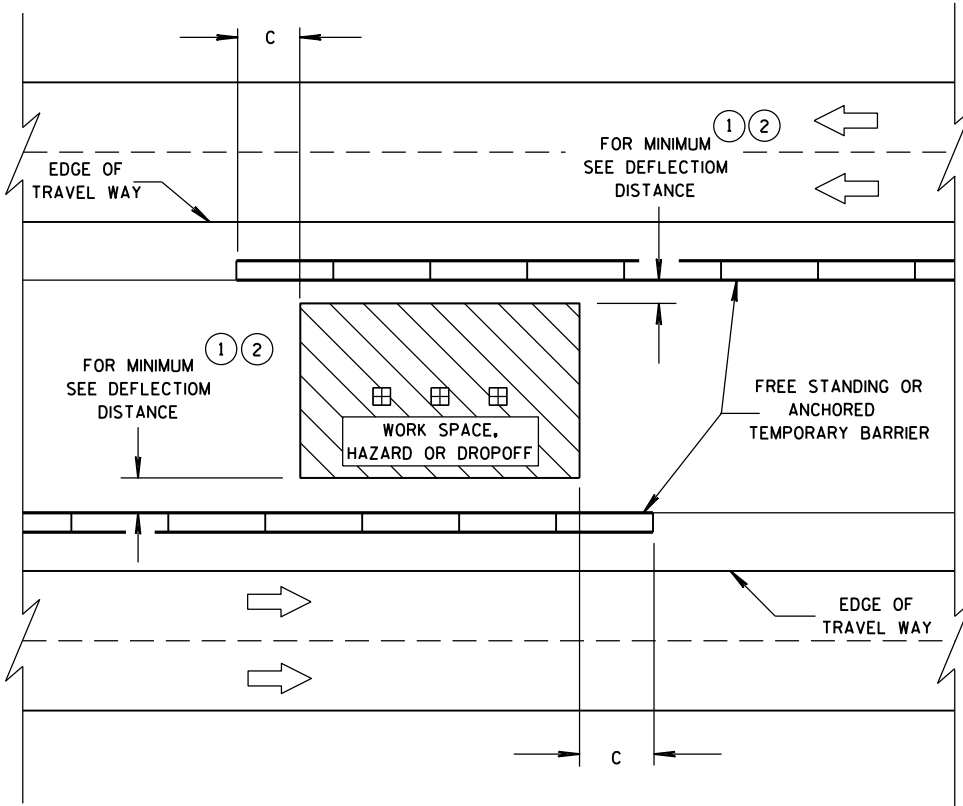
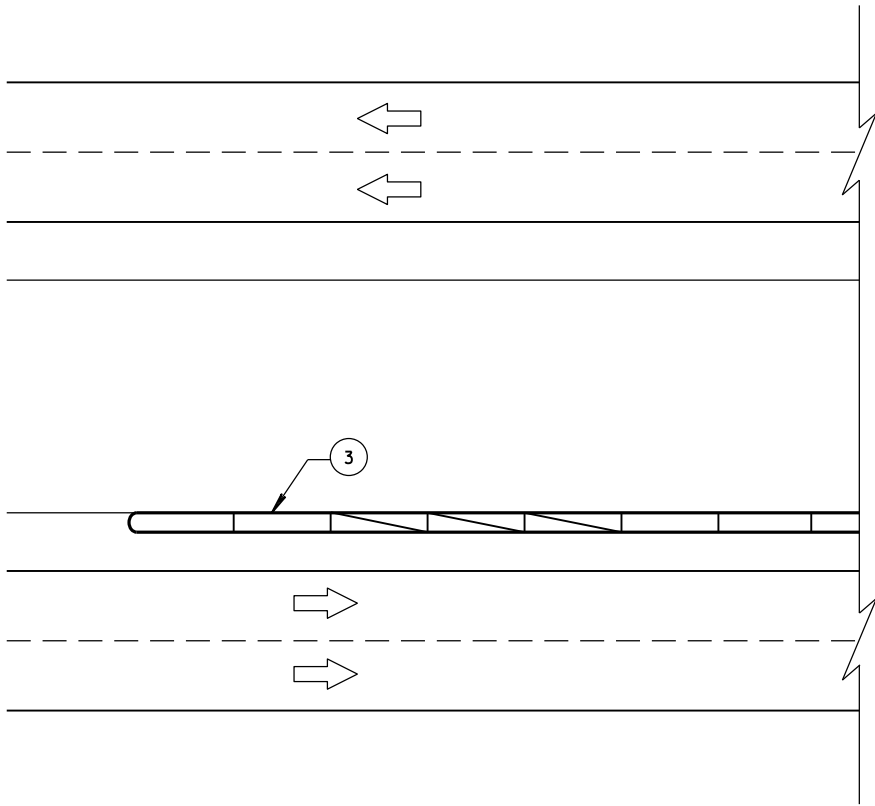
LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE

AVAILABLE DEFLECTION DISTANCE	MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT
GREATER THAN 8'	12.5
LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4'	50
LESS THAN OR EQUAL TO 4'	100

6



6

CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

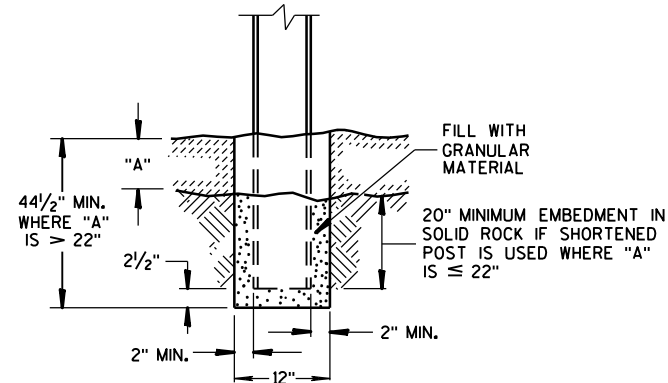
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER 183 ENT
FHWA

GENERAL NOTES

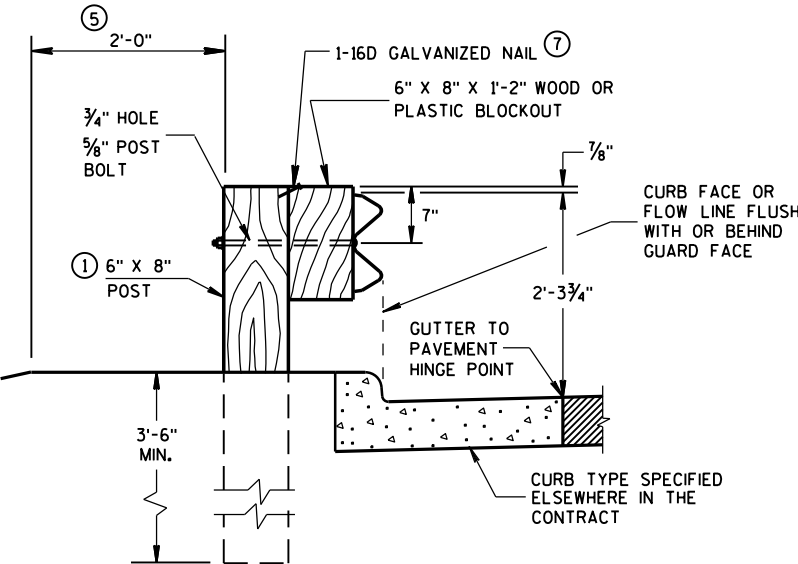
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, AND THE APPLICABLE SPECIAL PROVISIONS.

- ① W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS. DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.
- ② USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111 EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.
- ③ INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ④ USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.
- ⑤ IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).
- ⑥ IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2 INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN THE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATELY.
- ⑦ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

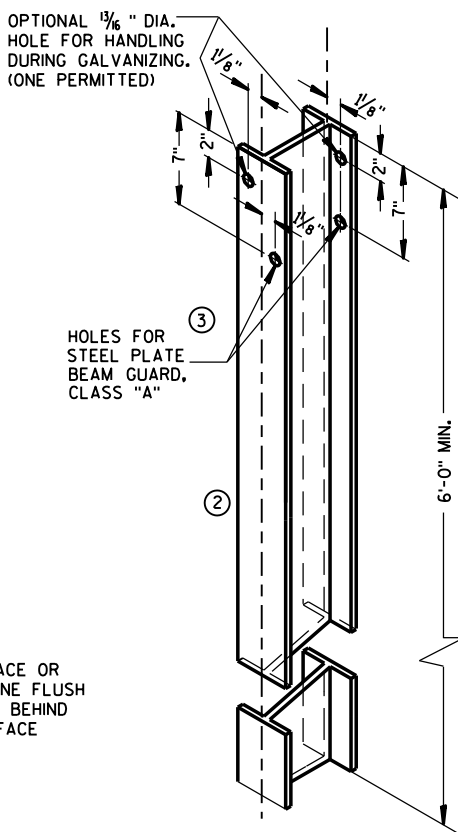
INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



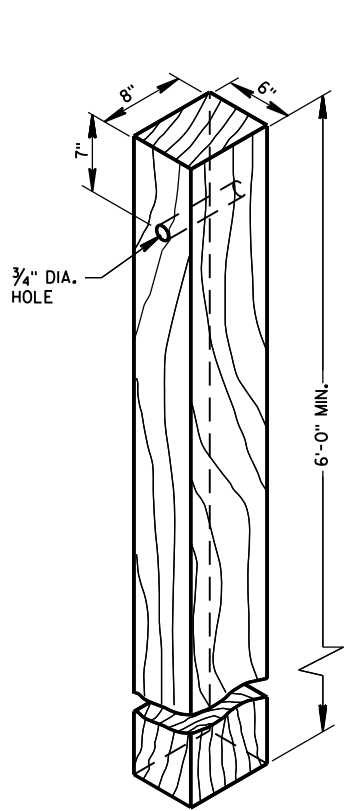
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ⑥



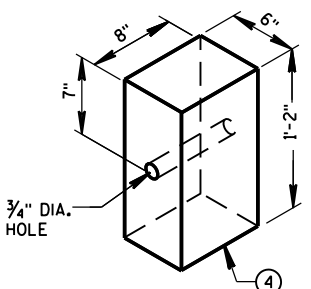
END VIEW
LOCATED ALONG A CURBED ROADWAY



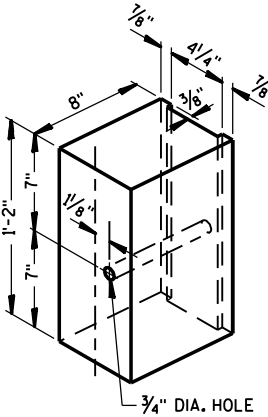
STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) ①
ALL HOLES 1 3/8" DIAMETER EXCEPT AS NOTED



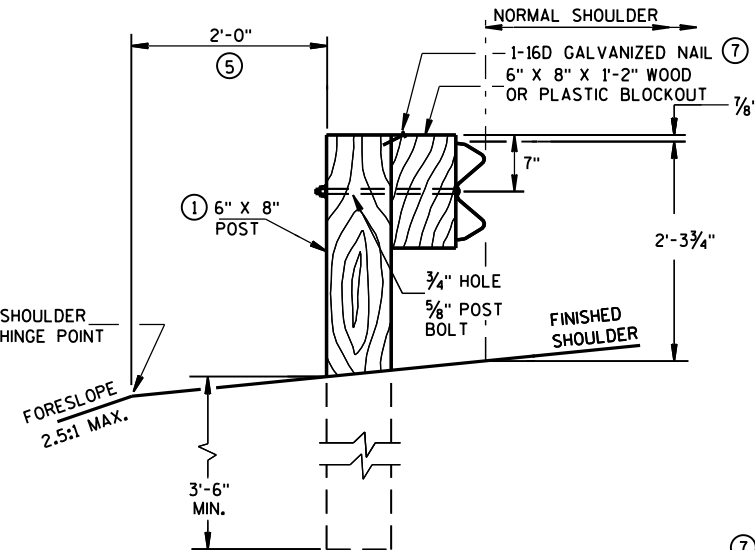
WOOD POST
(6" X 8") NOMINAL



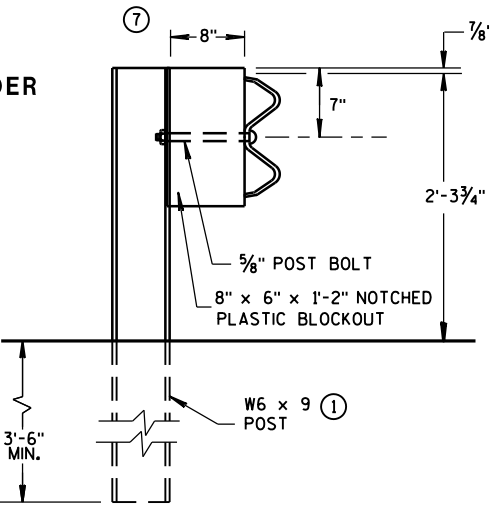
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



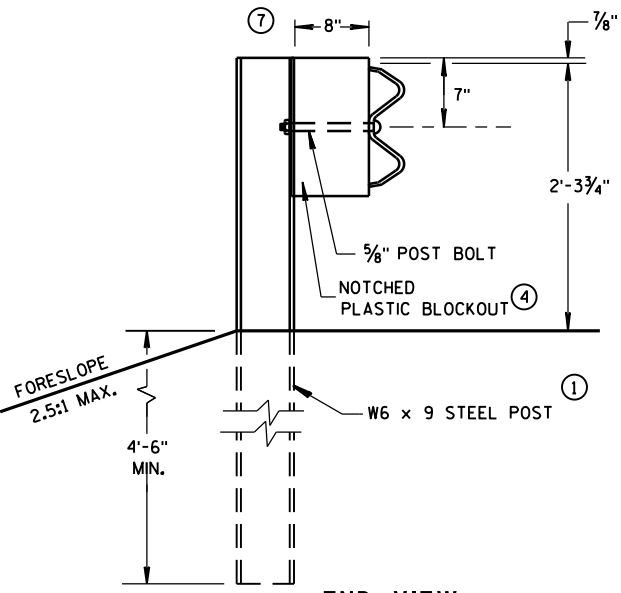
TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS ①



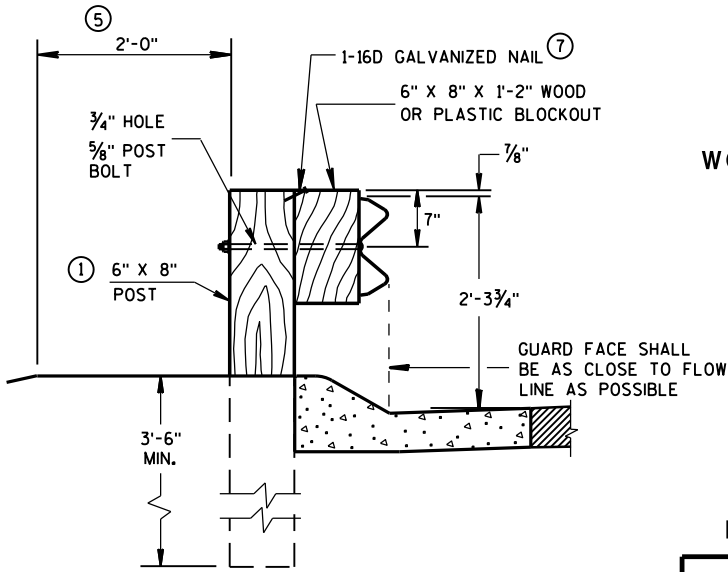
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



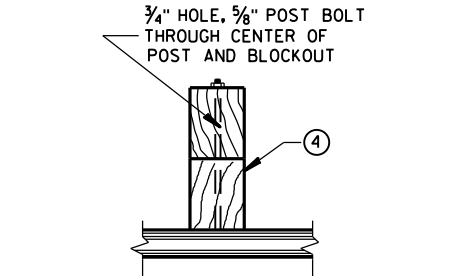
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



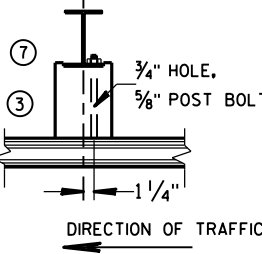
END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)



END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY



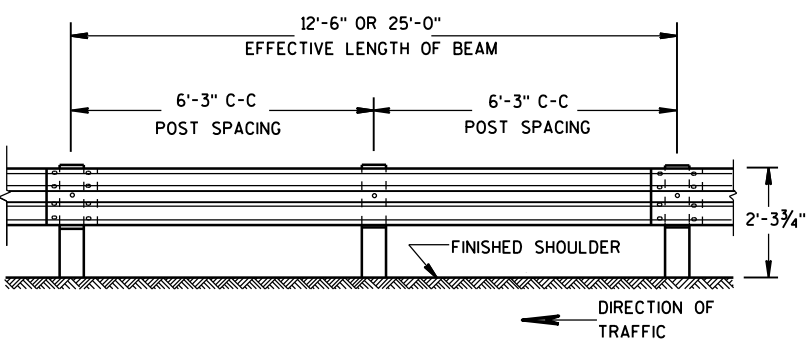
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

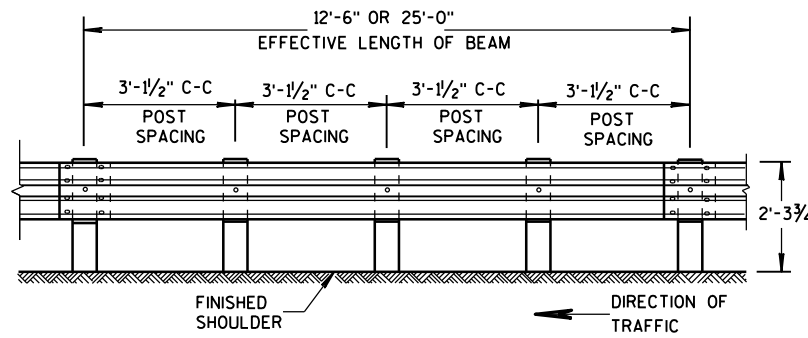
STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 184



FRONT VIEW

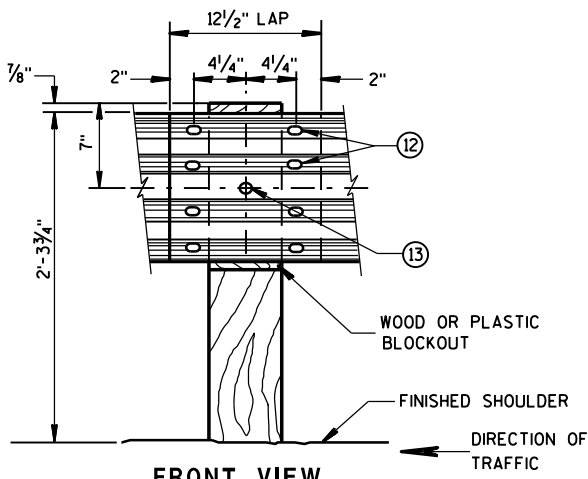
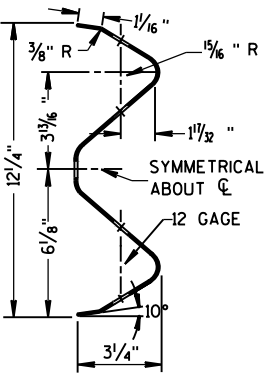
POST SPACING STANDARD INSTALLATION



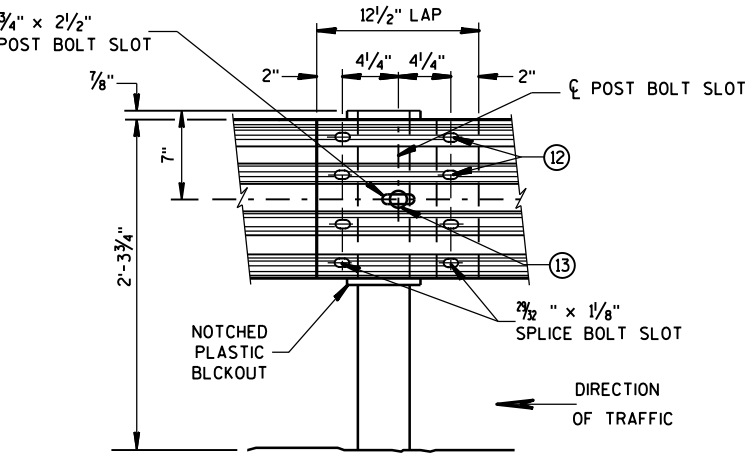
FRONT VIEW

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

SECTION THRU W BEAM



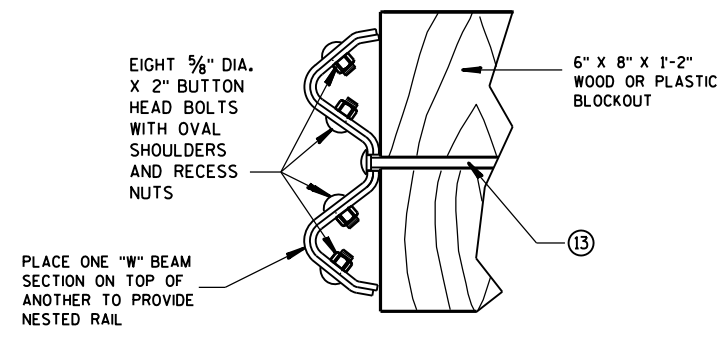
FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL



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

GENERAL NOTES

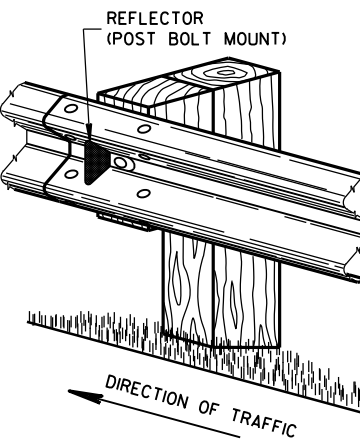
- ⑧ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- ⑩ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- ⑪ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



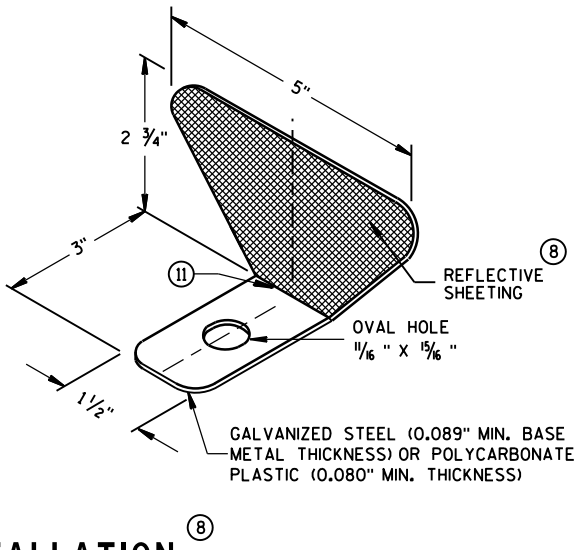
NESTED W BEAM (NW)
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

REFLECTOR SPACING ⑨

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ⑩	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ⑪	3
	> 200'	100' C-C	2	

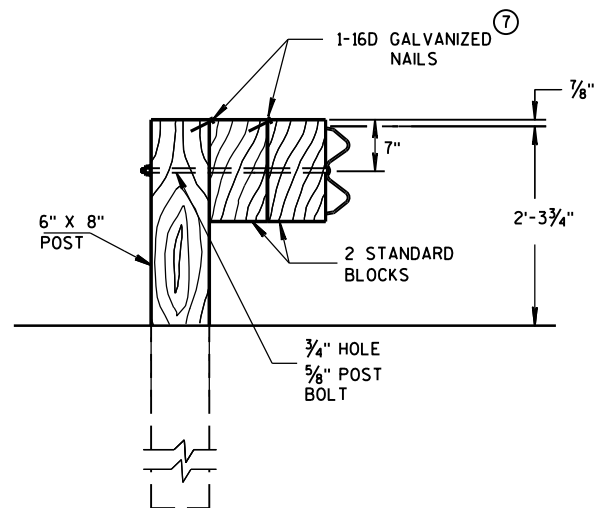


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION



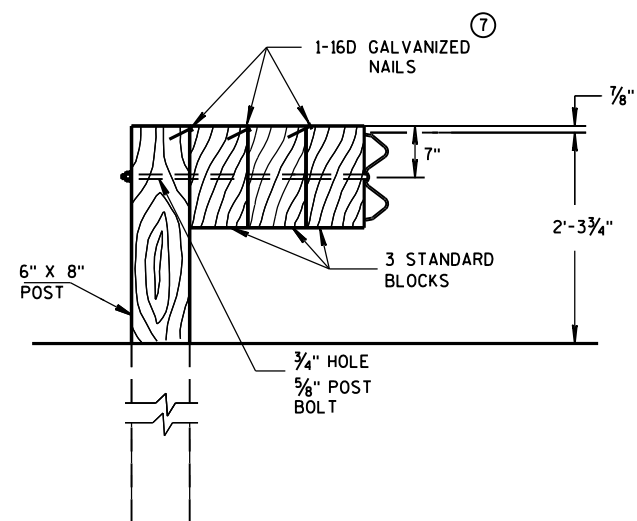
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 185



DETAIL FOR DOUBLE BLOCKS

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

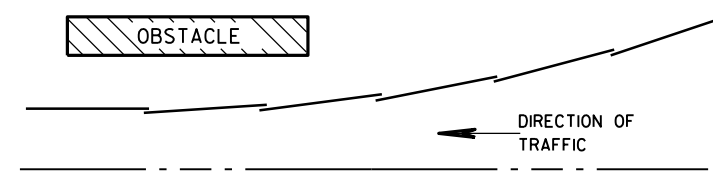


DETAIL FOR TRIPLE BLOCKS

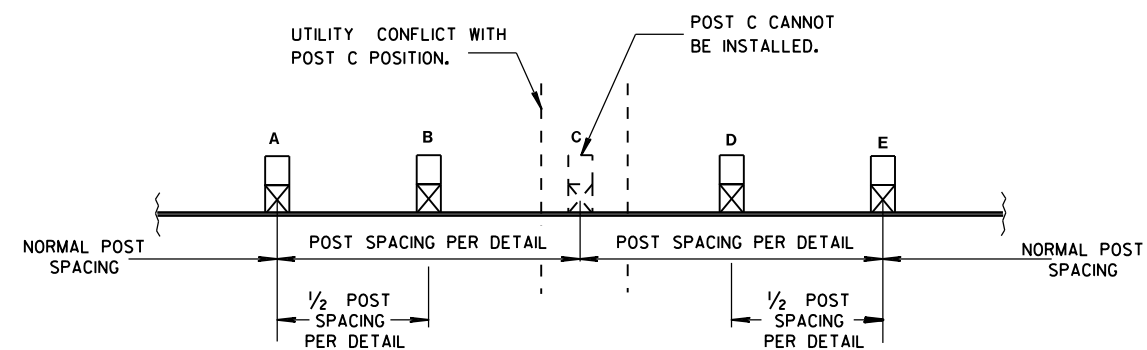
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

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

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



PLAN VIEW BEAM LAPPING DETAIL



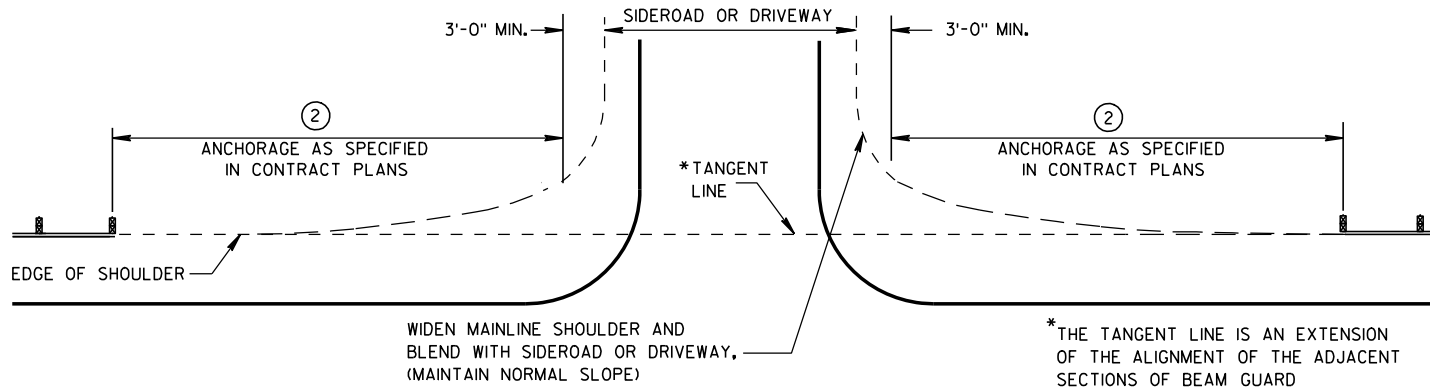
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

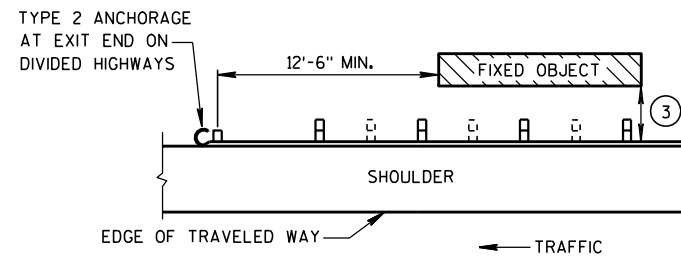
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER 186
FHWA



BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC

GENERAL NOTES

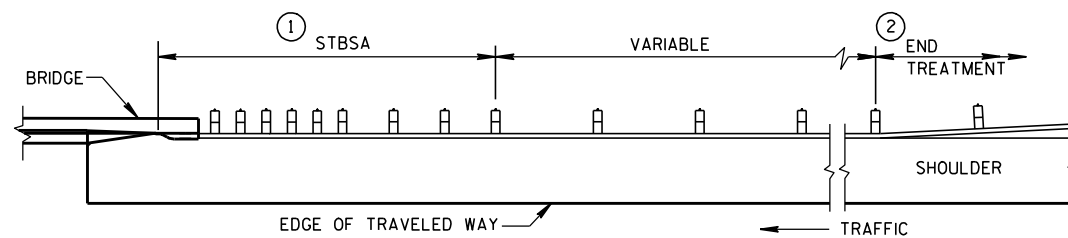
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

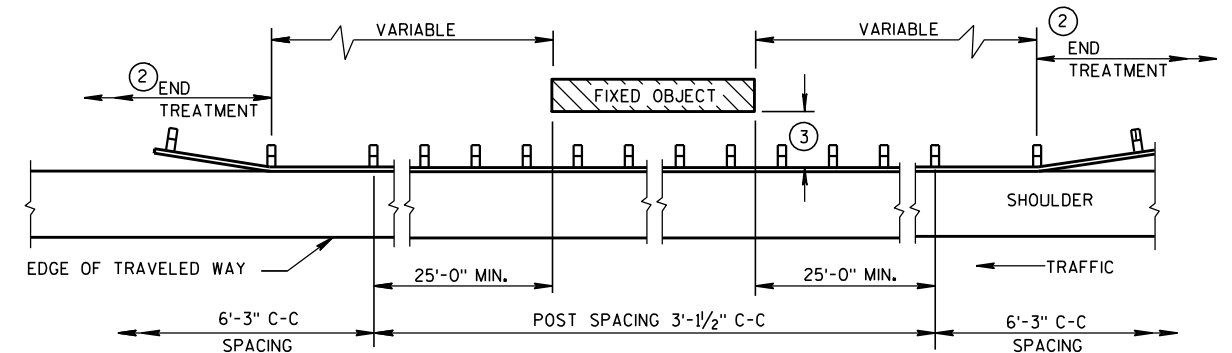
THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

- ① STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.
- ② USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1½"
4'-6"	6' - 3"



BEAM GUARD AT FULL WIDTH BRIDGES

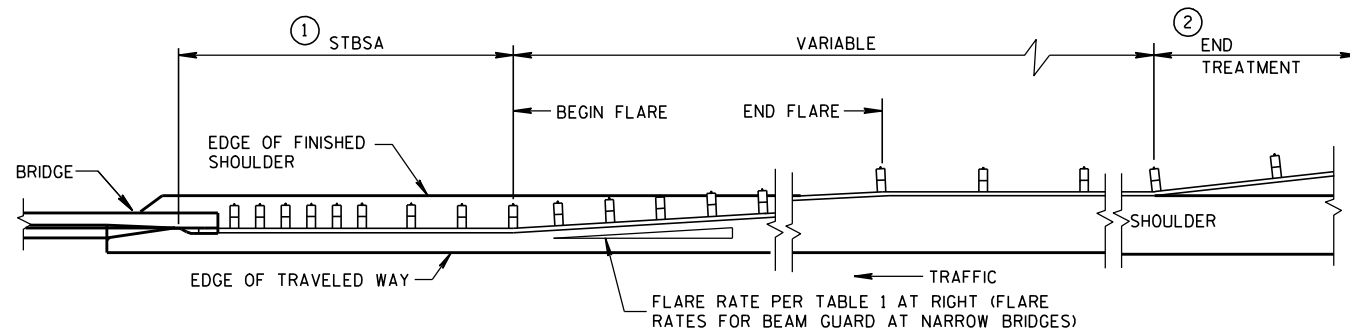


BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")

TABLE 1
FLARE RATES FOR BEAM
GUARD AT NARROW BRIDGES

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1

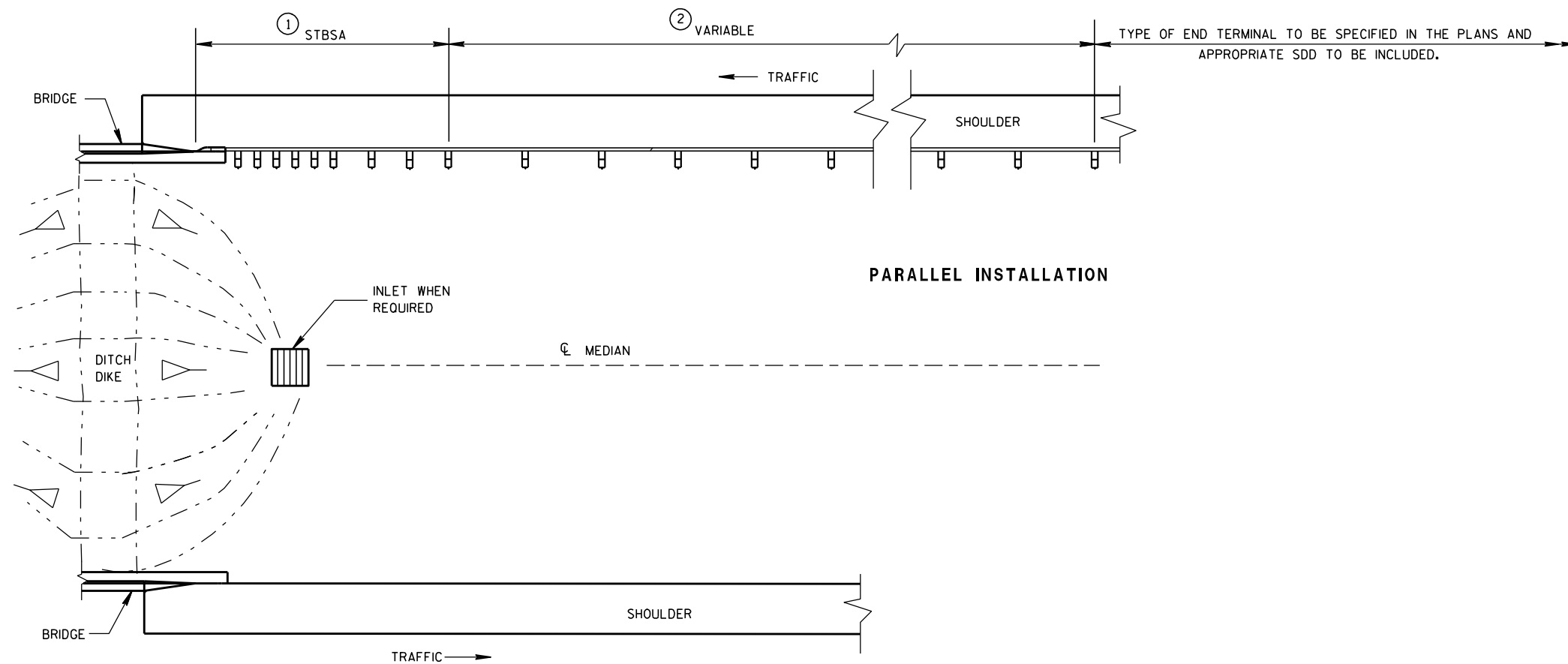


BEAM GUARD AT NARROW BRIDGES (FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

STEEL PLATE BEAM GUARD
CLASS "A"
AT BRIDGES, OBSTACLES
AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-21-07 /S/ Jerry H. Zoon
DATE ROADWAY STANDARDS 187 INT
FHWA ENGINEER



BEAM GUARD AT MEDIAN APPROACH TO BRIDGES

GENERAL NOTES

- ① STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.
- ② LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

STEEL PLATE BEAM GUARD
CLASS "A" AT
MEDIAN APPROACH TO BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-21-07

DATE

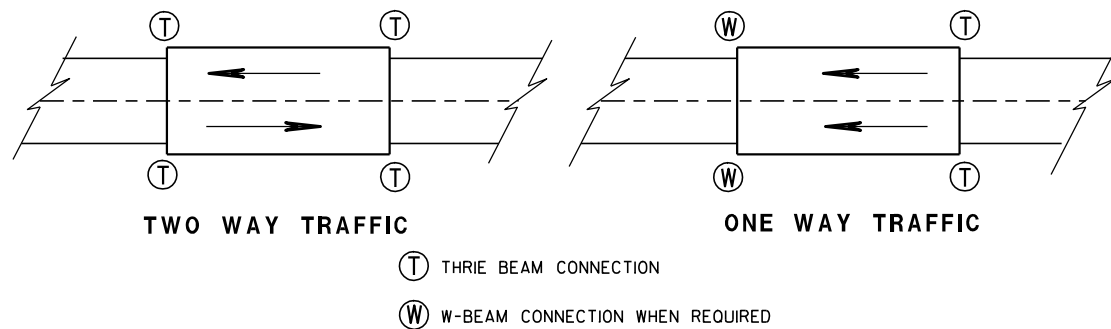
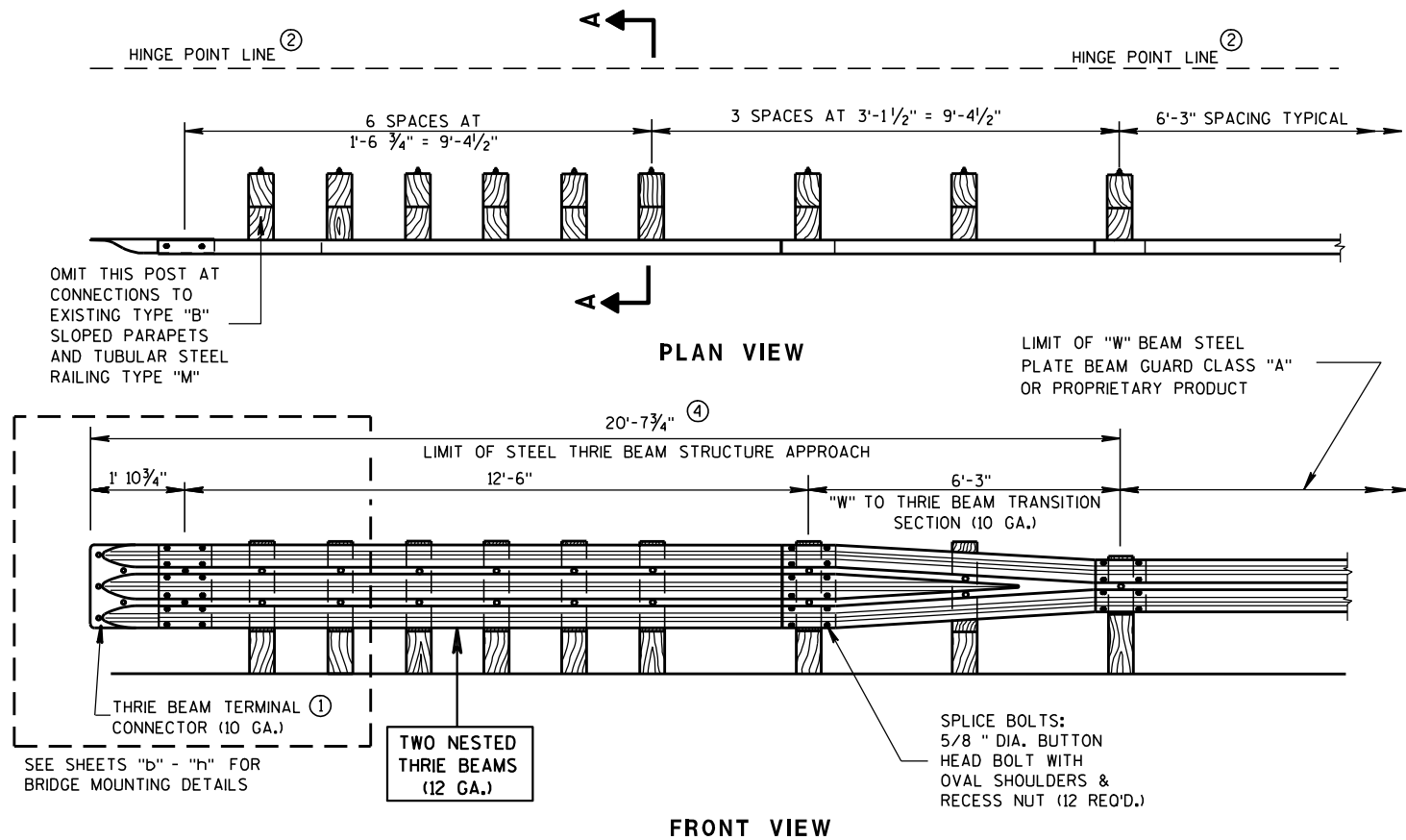
FHWA

/S/ Jerry H. Zogg

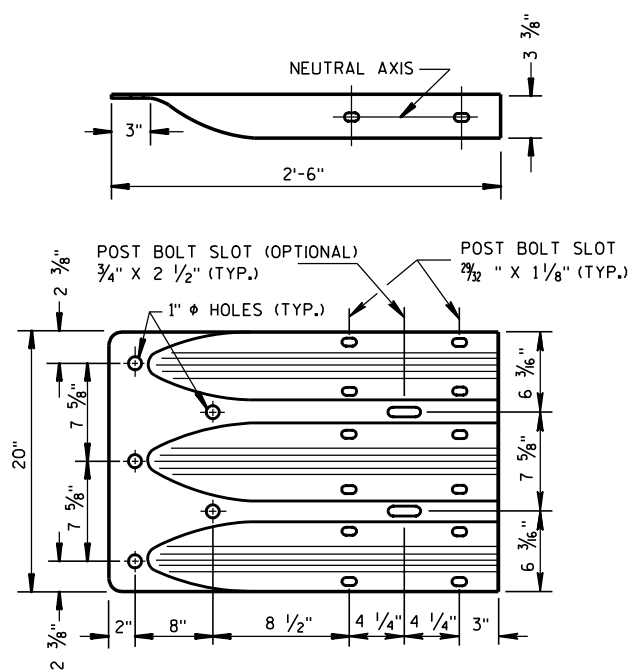
ROADWAY STANDARDS 188

ENGINEER

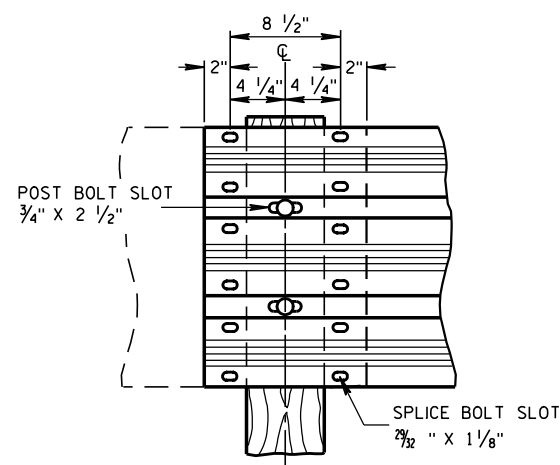
ENT



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



THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

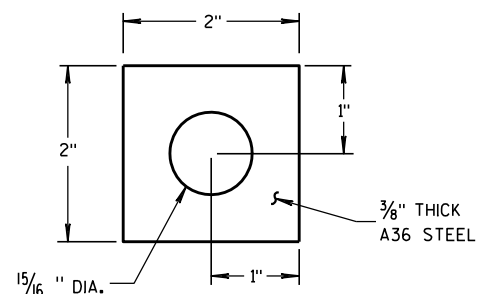
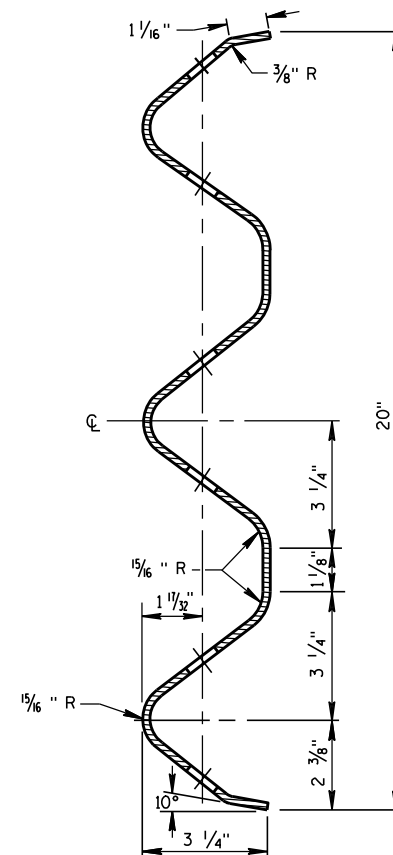


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

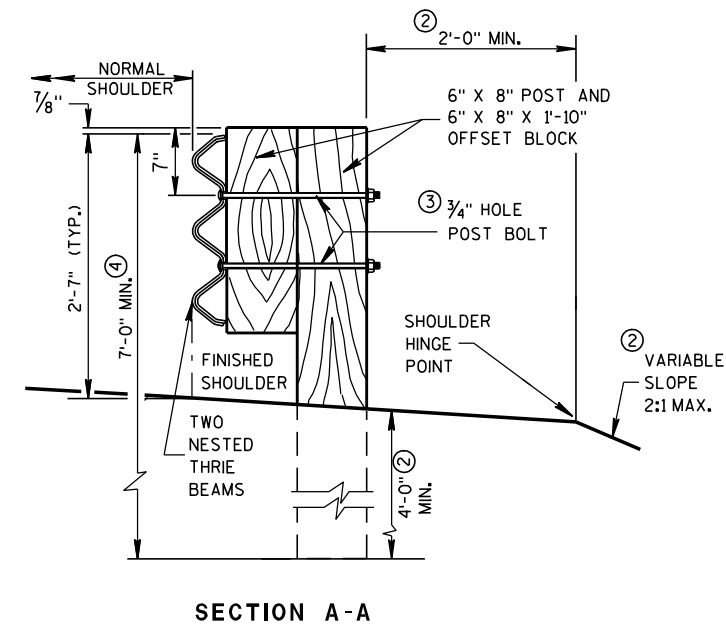
GENERAL NOTES

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

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

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

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



STEEL THRIE BEAM STRUCTURE APPROACH

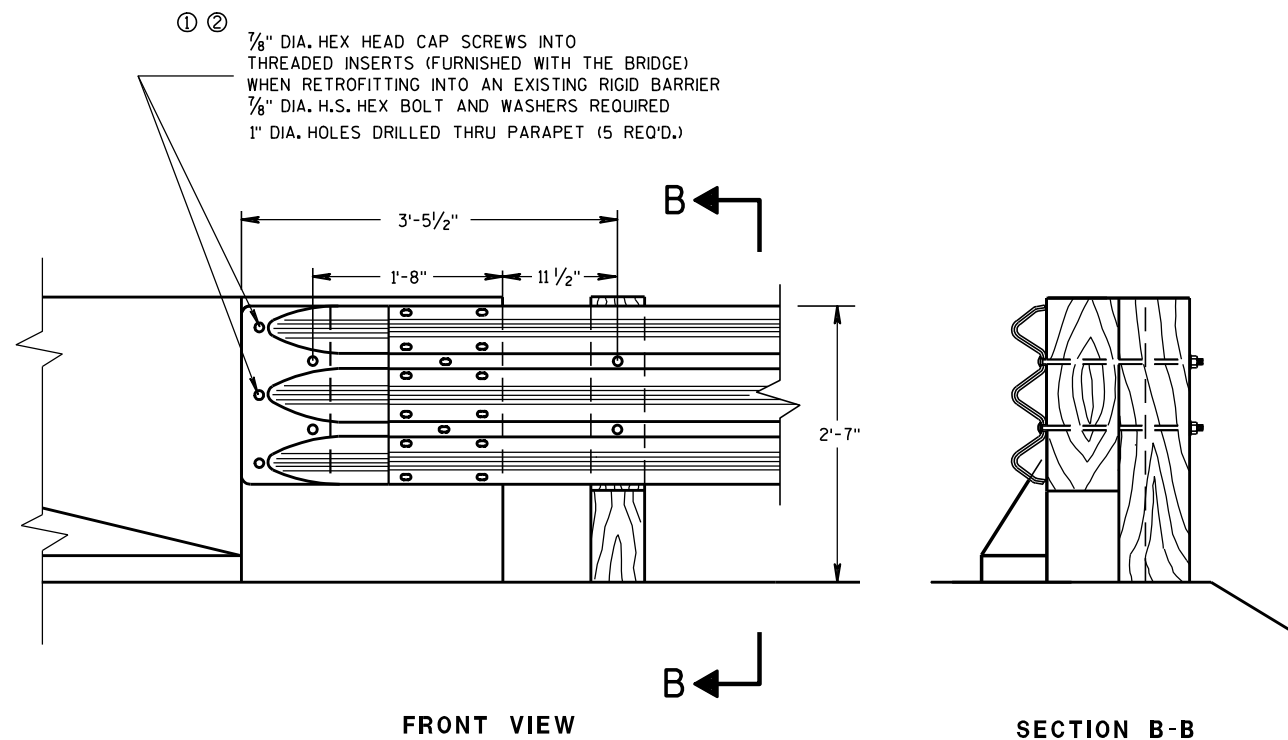
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

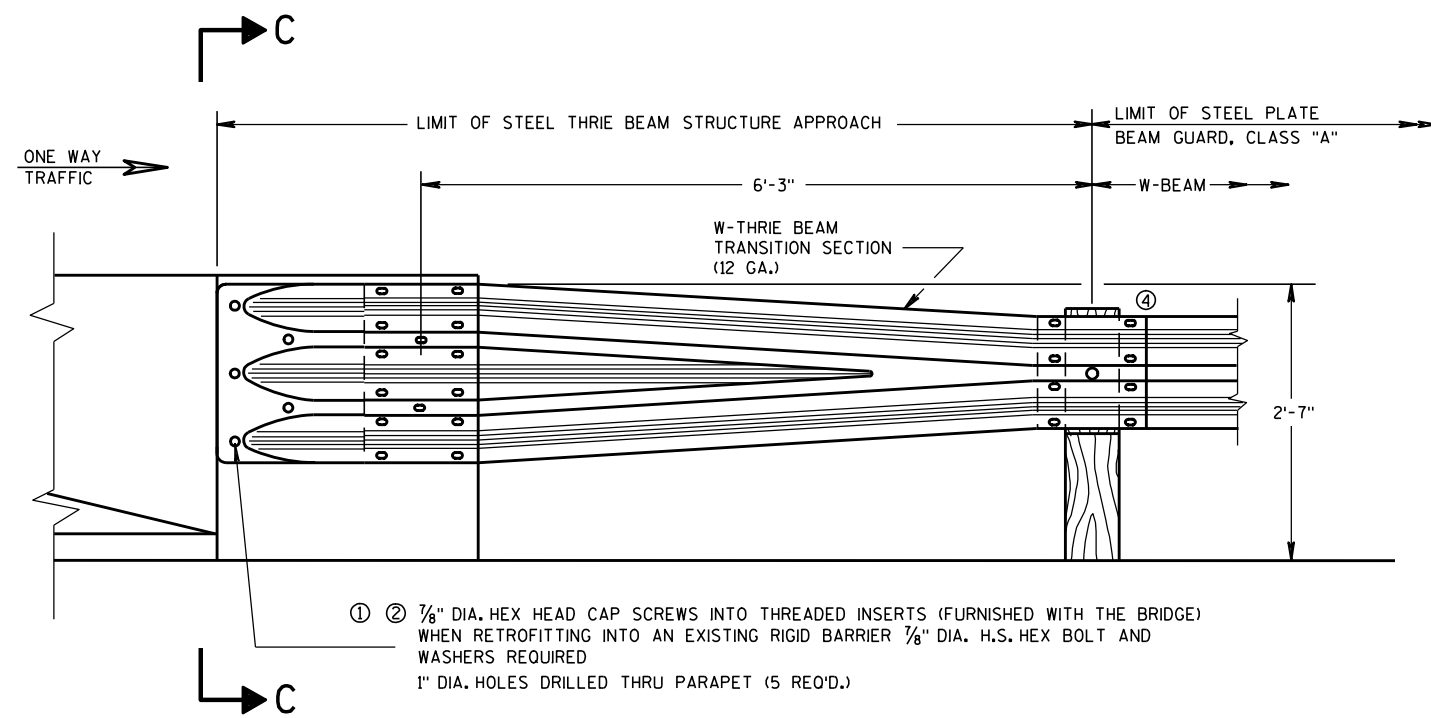
8/31/2012
DATE

FHWA

/s/ Jerry H. Zoon
ROADWAY STANDARDS 189
ENGINEER



THRIE BEAM CONNECTION TO BRIDGE
PARAPET WITH SQUARE ENDS



W BEAM TRANSITION AND CONNECTION TO
BRIDGE PARAPETS WITH SQUARE ENDS
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

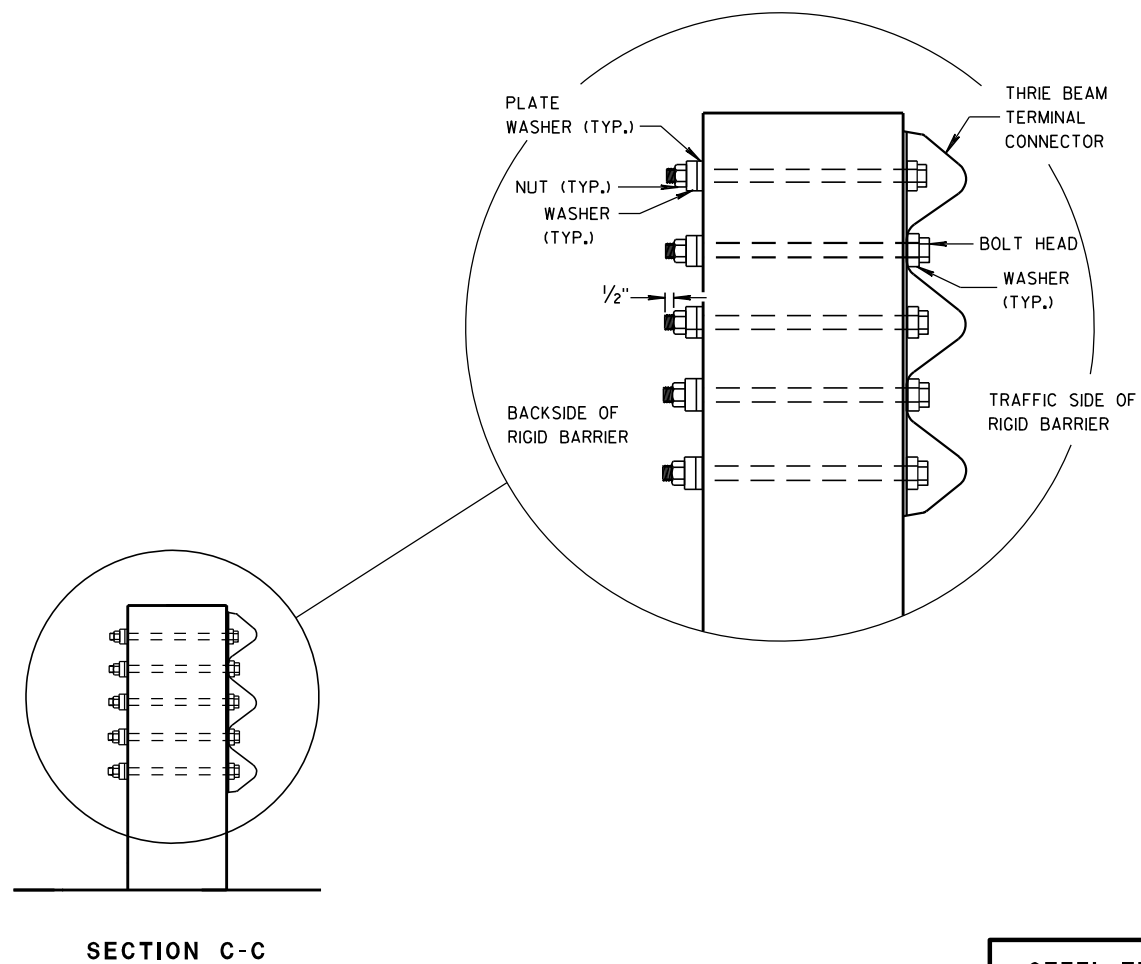
GENERAL NOTES

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

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

- 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 TERMINAL CONNECTOR. 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 THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- ④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

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



STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

FHWA

/S/ Jerry H. Zapp
ROADWAY STANDARDS ENGINEER

ENT

BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
①	4	WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" X 3'-9"
②	**	STEEL TUBE: OPTION 1 - QUANTITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANTITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG
③	2	SOIL PLATE: 2'-0" X 1'-6" X 1/4" **
④	4	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	6	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	1	PIPE SLEEVE: 2" X 5 1/2" STANDARD PIPE
⑦	1	BEARING PLATE
⑧	1	BCT CABLE ASSEMBLY
⑨	1	CABLE ANCHOR BOX
⑩	1	STRUT & YOKE
⑪	1	STEEL PLATE BEAM, END PANEL 12 GA. 13'-6 1/2" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
⑫	3	STEEL PLATE BEAM: 12 GA. 13'-6 1/2"
⑬	1	ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER
⑭	1	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
⑮	1	E.A.T. MARKER POST

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS, IF NONE ARE AVAILABLE, INSTALL 3/8" ϕ X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

(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) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(E) THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE 3/4" ABOVE THE FINISHED GROUND LINE.

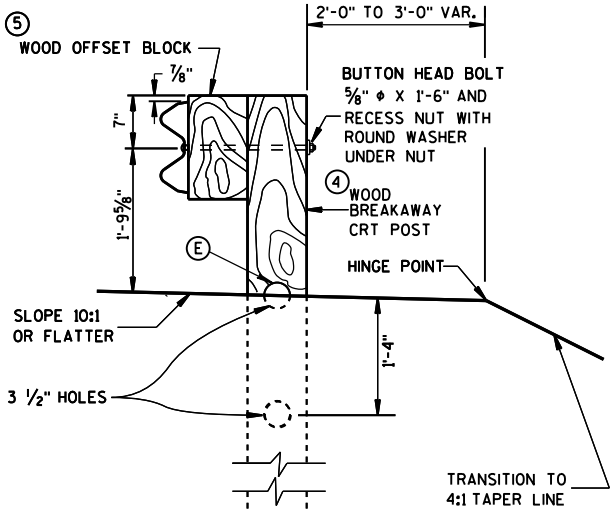
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.

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

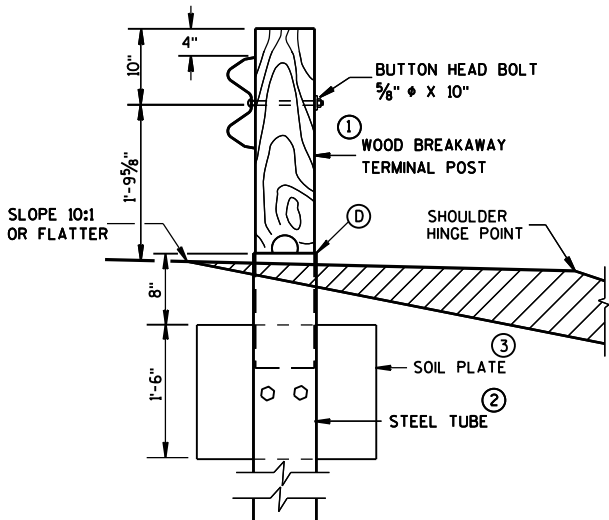
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

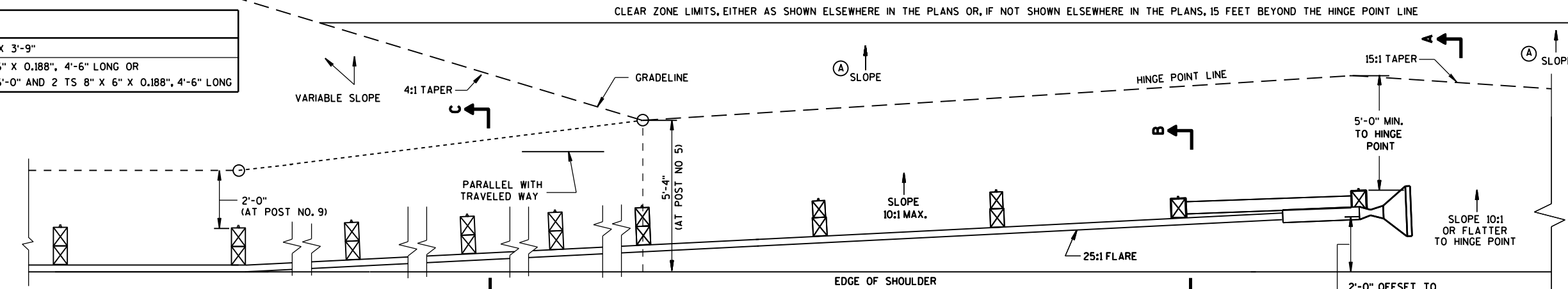
** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH SOIL TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.



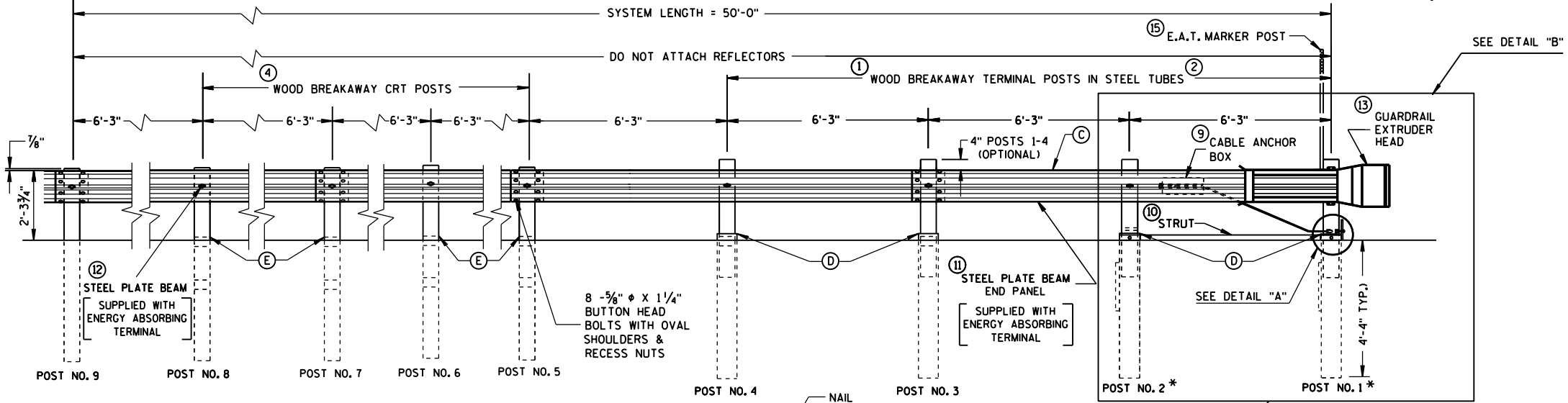
SECTION C-C
TYPICAL AT POST NOS. 6, 8



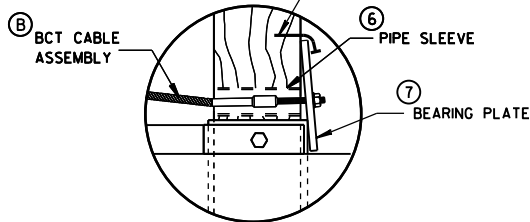
SECTION B-B
TYPICAL AT POST NO. 2 *



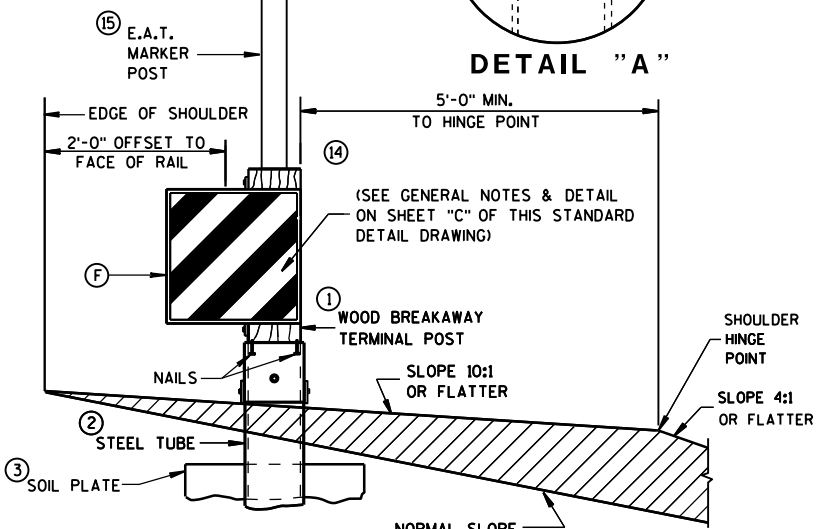
PLAN



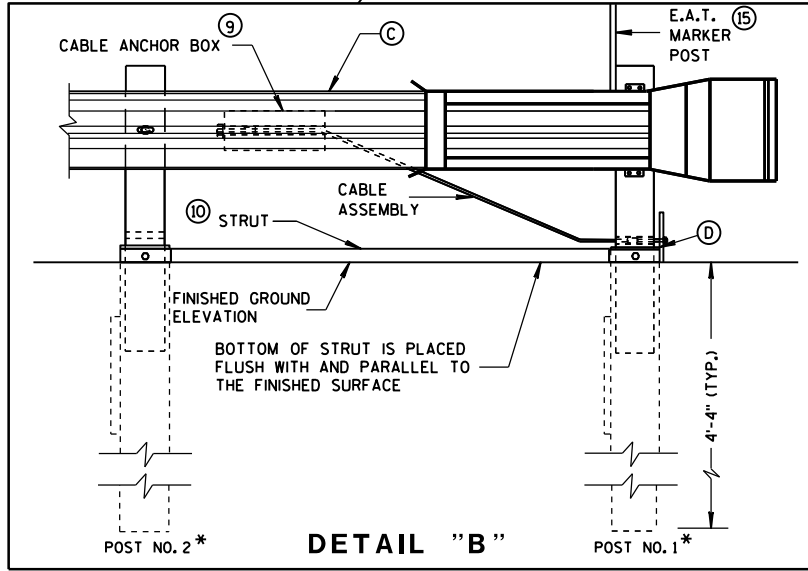
ELEVATION



DETAIL "A"



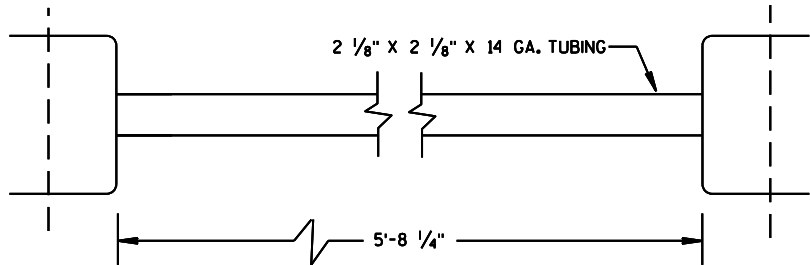
SECTION A-A
TYPICAL AT POST NO. 1 *



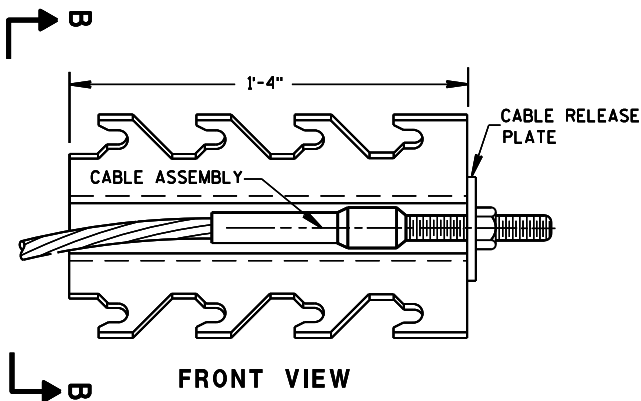
DETAIL "B"

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

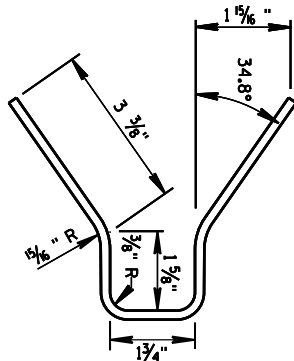
STATE OF WISCONSIN
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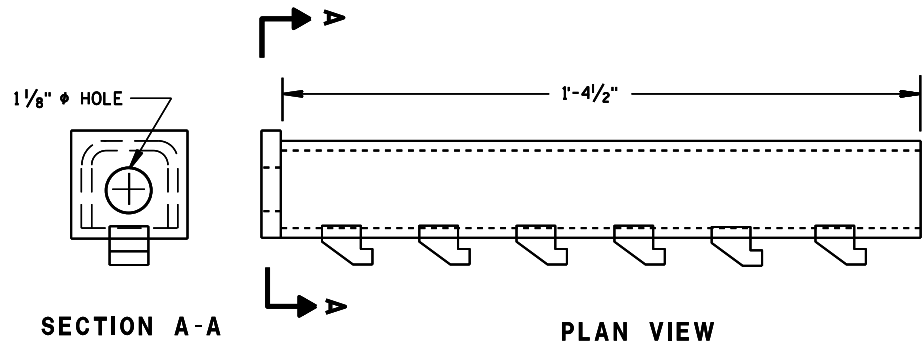
⑩ STRUT DETAIL (SKT-350)



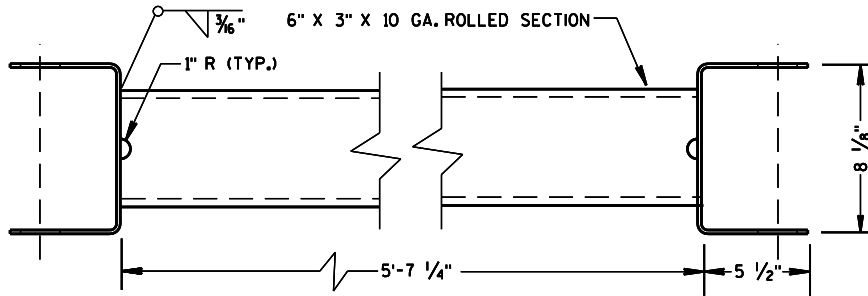
⑨ CABLE ANCHOR BOX (SKT-350)
(SKT-350)



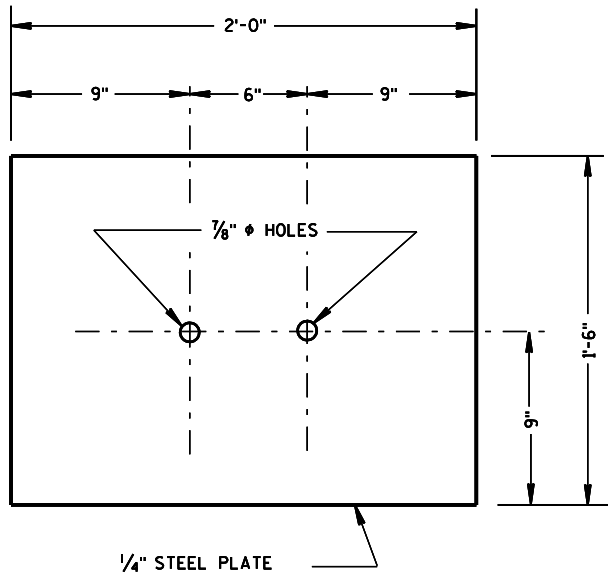
SECTION B-B



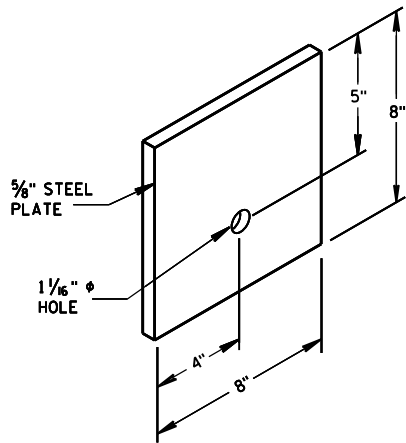
⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)
(ET-2000/ET-2000 PLUS)



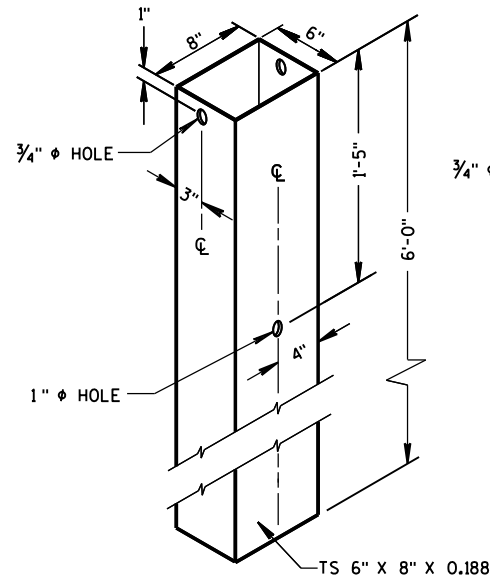
③ SOIL PLATE
(SKT-350, ET-2000/ET-2000 PLUS)



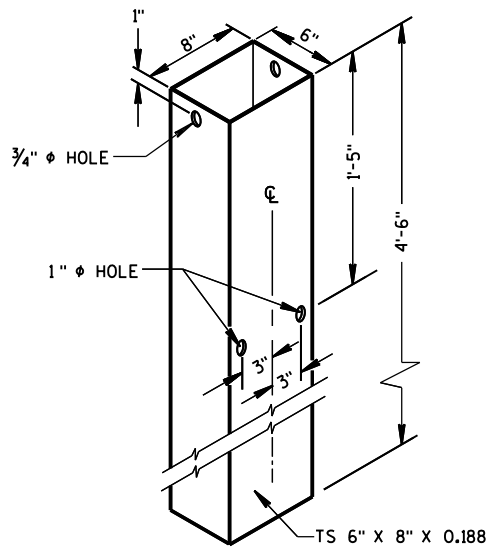
⑦ STEEL BEARING PLATE
(SKT-350, ET-2000/ET-2000 PLUS)

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

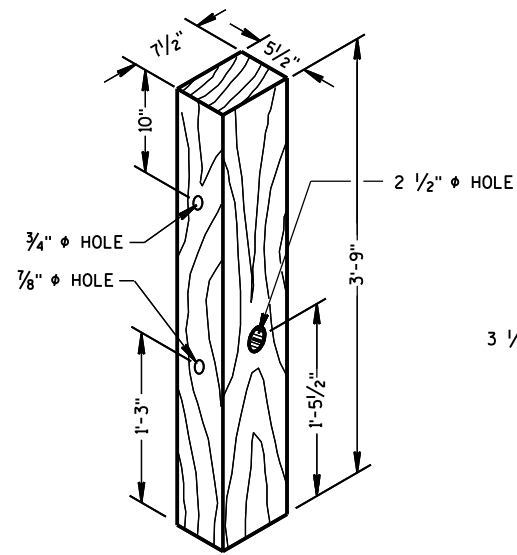
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 192



② 72" STEEL TUBE
(POSTS NO. 1-4)

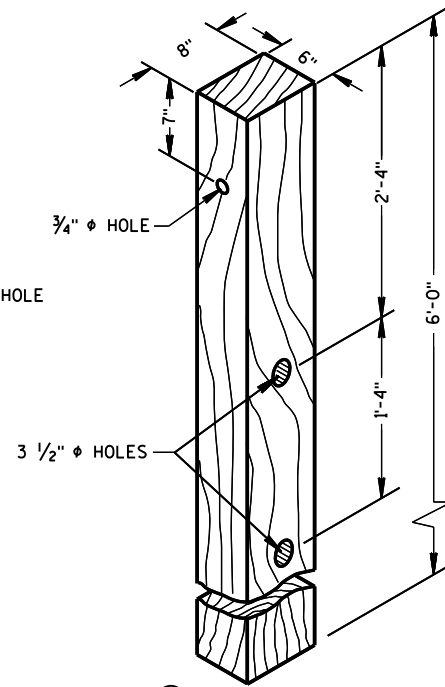


② 54" STEEL TUBE
(POSTS NO. 1-4)



① TERMINAL POST
(POSTS NO. 1-4)

WOOD BREAKAWAY POSTS



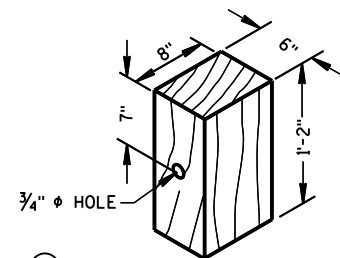
④ CRT POST
(POSTS NO'S 5-8)

GENERAL NOTES

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

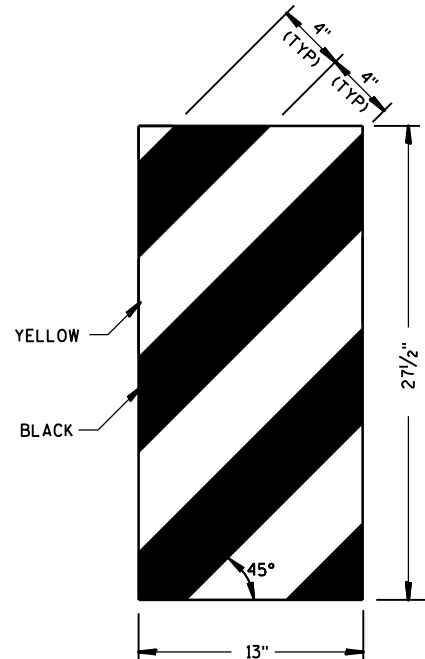
SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE E. A. T. MARKER POST.

⑥ 1/2" DIA. X 3" LAG BOLT WITH WASHER.

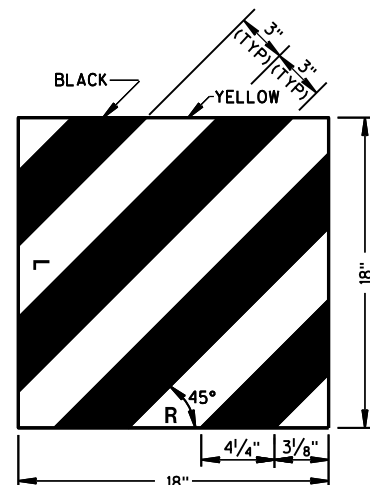


⑤ WOOD OFFSET BLOCK
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

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

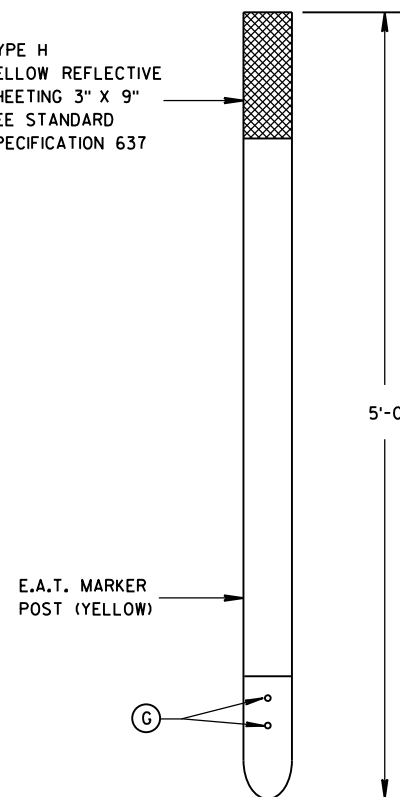


ET-2000 PLUS ONLY

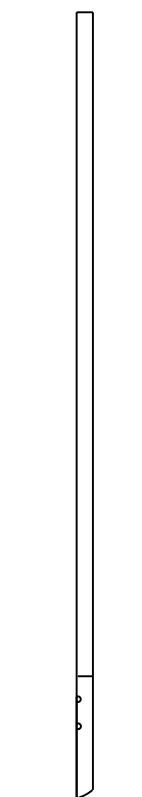


ET-2000 AND SKT-350

⑭ REFLECTIVE SHEETING DETAILS

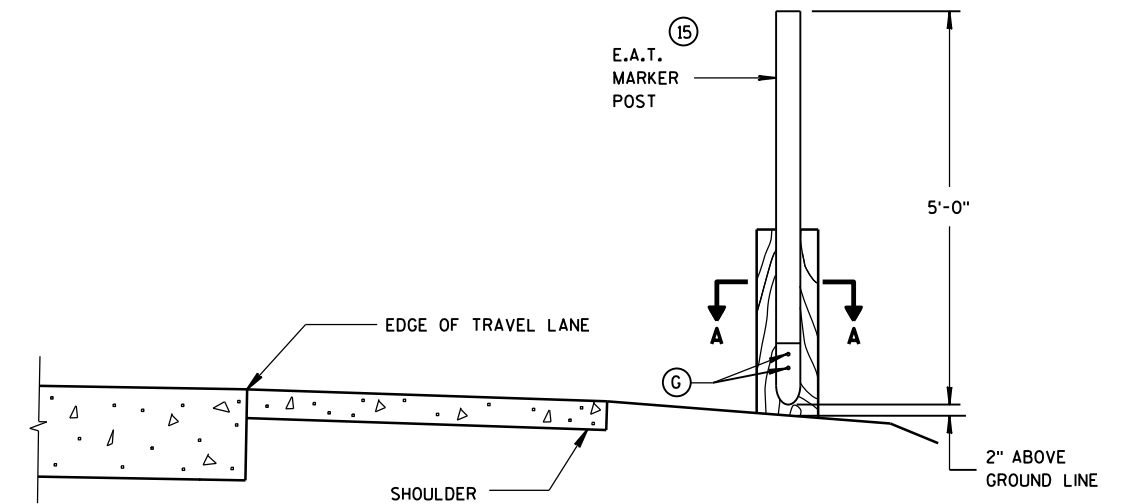


FRONT VIEW

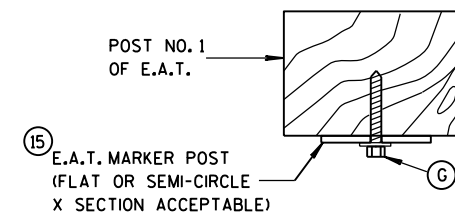


SIDE VIEW

⑮ E.A.T. MARKER POST



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

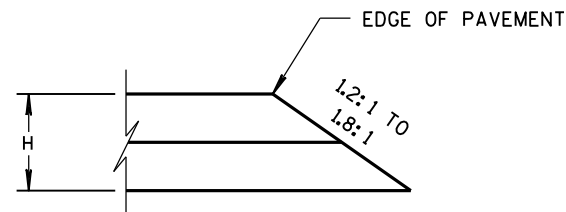


SECTION A-A

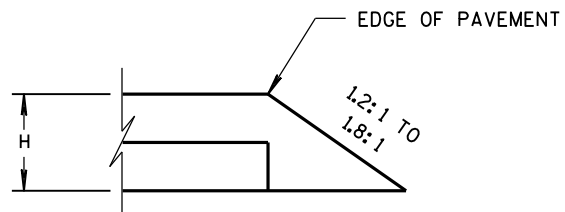
STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

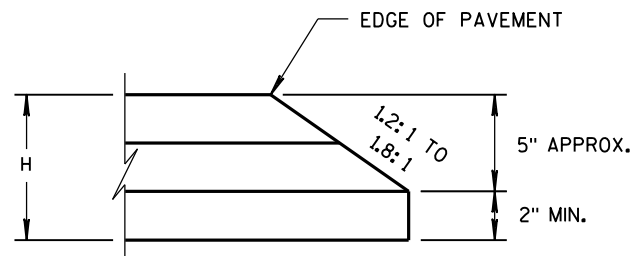
APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 193 ENT
FHWA ENGINEER



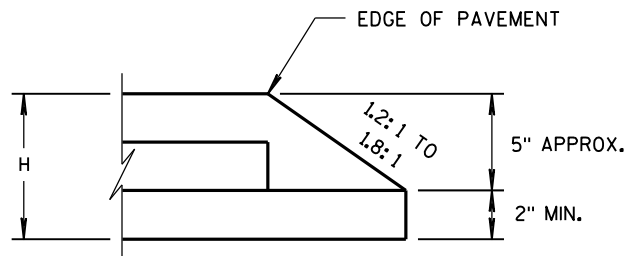
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

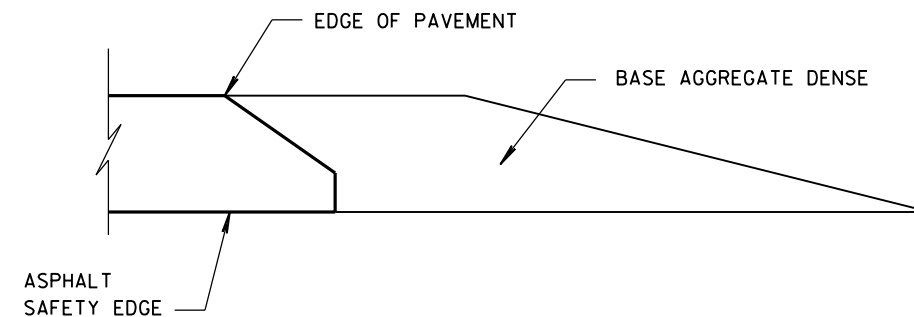


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

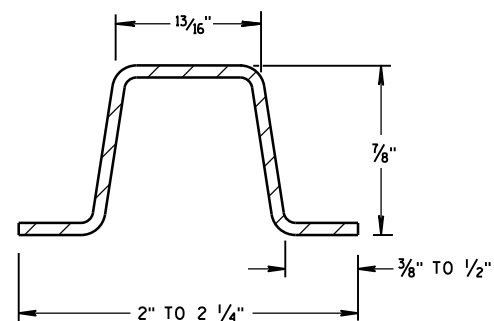
HMA PAVEMENT AND HMA OVERLAYS



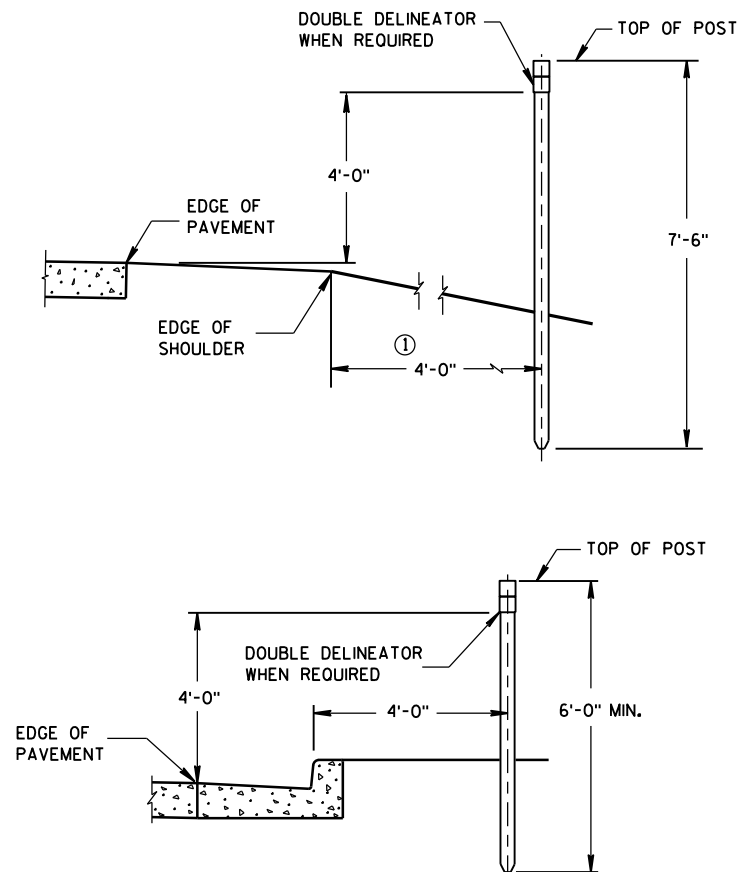
FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE _{SM}		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED DATE 11/30/2012	/S/ Jerry H. Zoaga ROADWAY STANDARDS ENGINEER	194 ENT
FHWA		

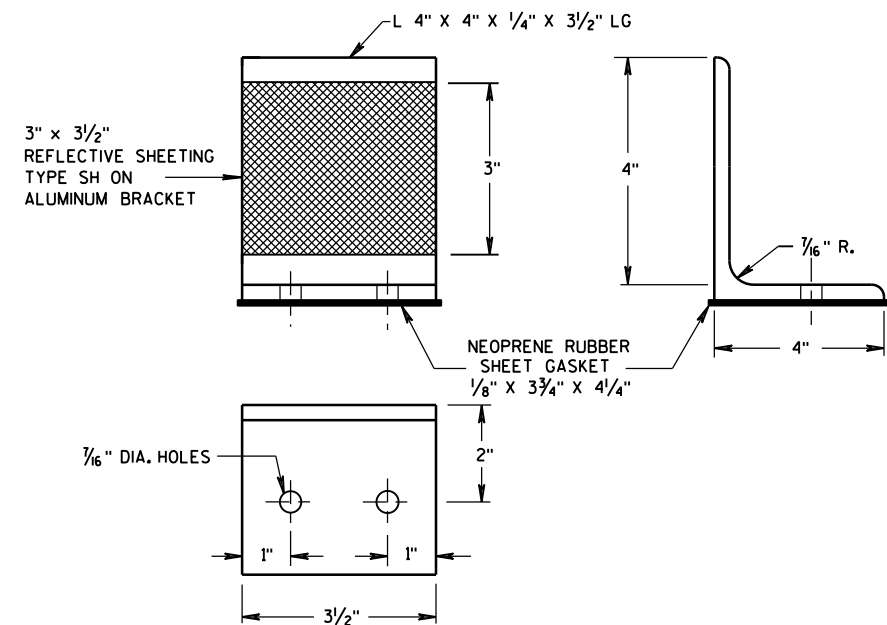
DELINEATOR POST



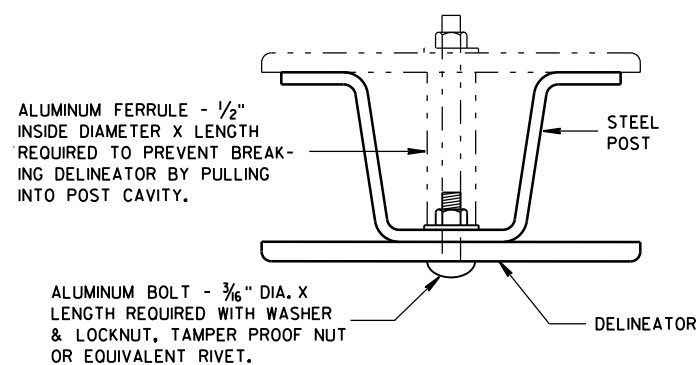
SECTION A-A
WEIGHT 1.12 LBS PER FT. $\pm$ 0.1 LB.



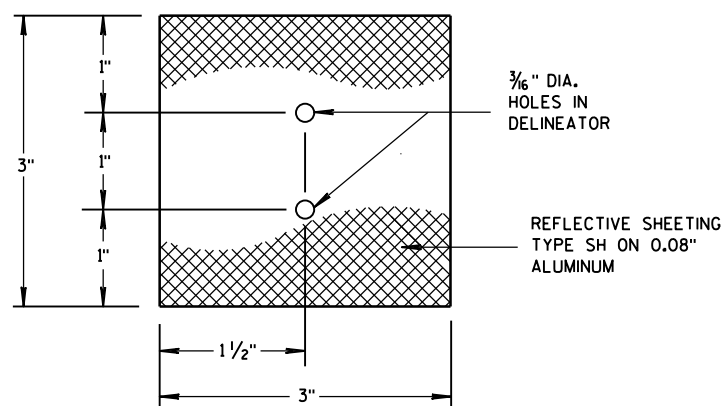
TYPICAL INSTALLATIONS OF DELINEATOR POSTS



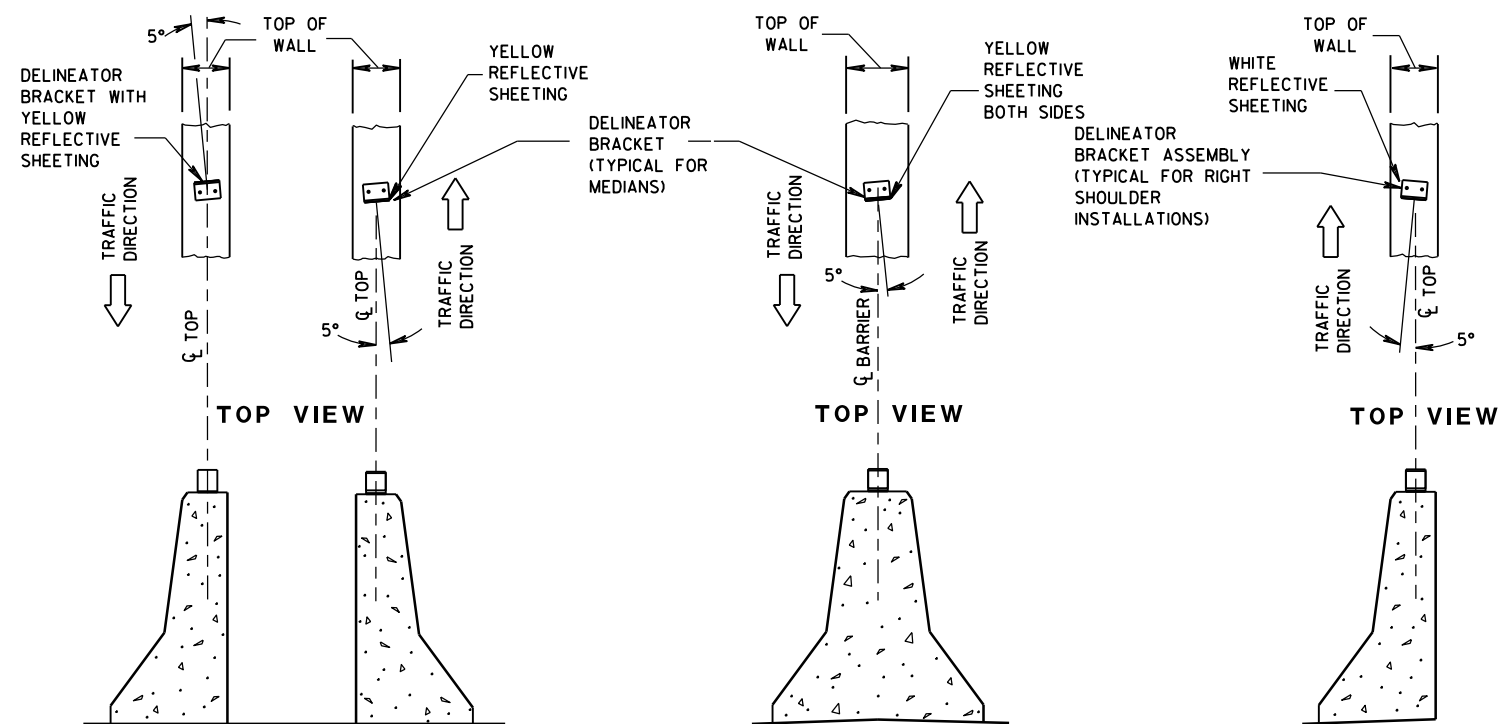
DELINEATOR BRACKET



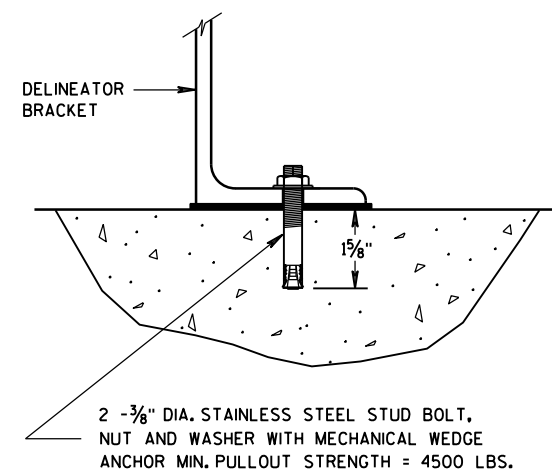
MOUNTING DETAIL FOR DELINEATOR



3" x 3" DELINEATOR



LOCATION AND AIMING DETAILS FOR DELINEATOR BRACKETS MOUNTED ON CONCRETE BARRIERS



DELINEATOR BRACKET MOUNTING DETAIL

DELINEATOR POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING

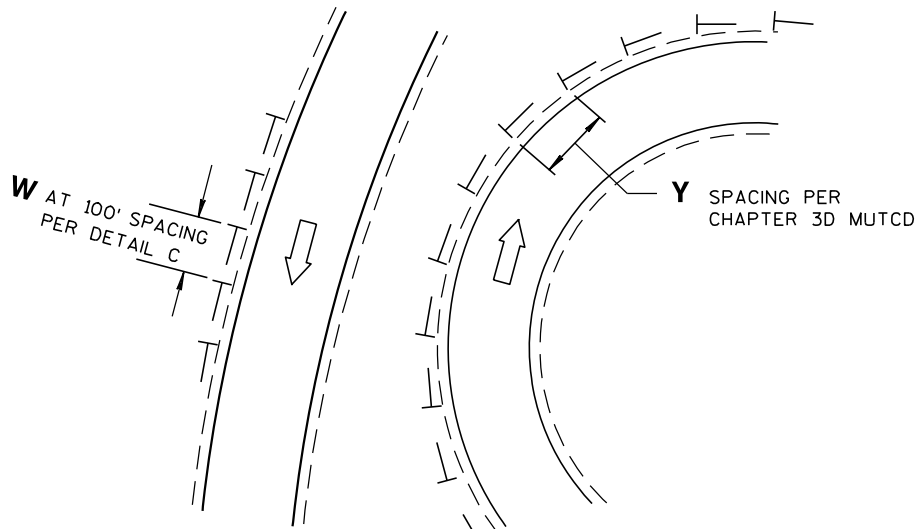
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

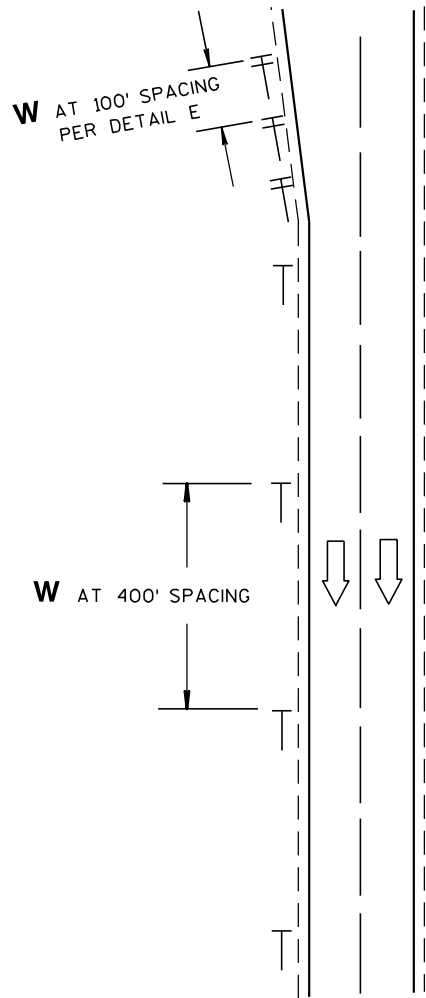
7/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E 195

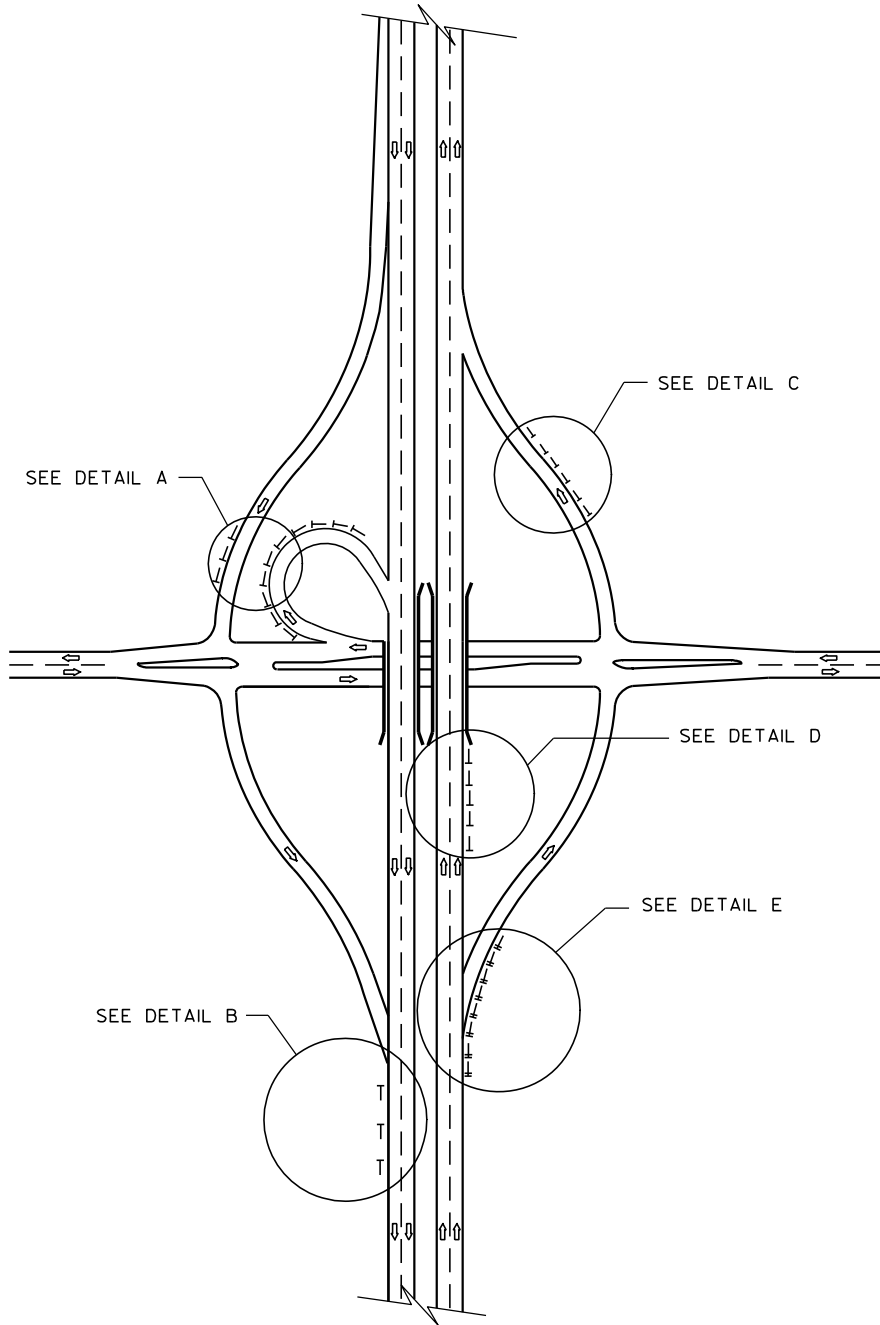
FHWA



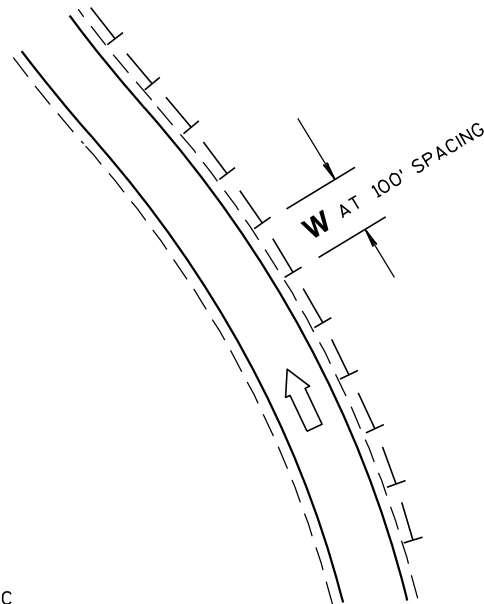
DETAIL A
DELINEATOR LAYOUT AT CURVED RAMP



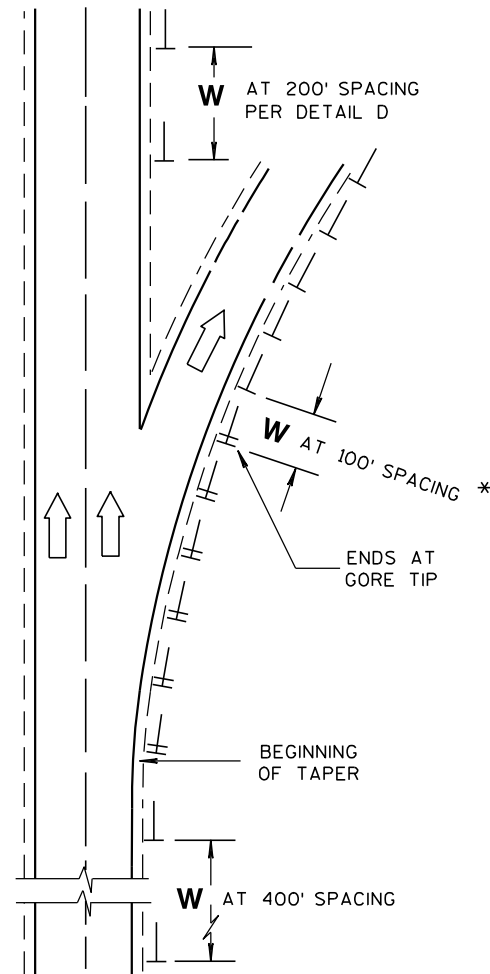
DETAIL B
DELINEATOR LAYOUT
ALONG MAINLINE



DELINEATOR LAYOUT



DETAIL C
DELINEATOR LAYOUT ALONG RAMP



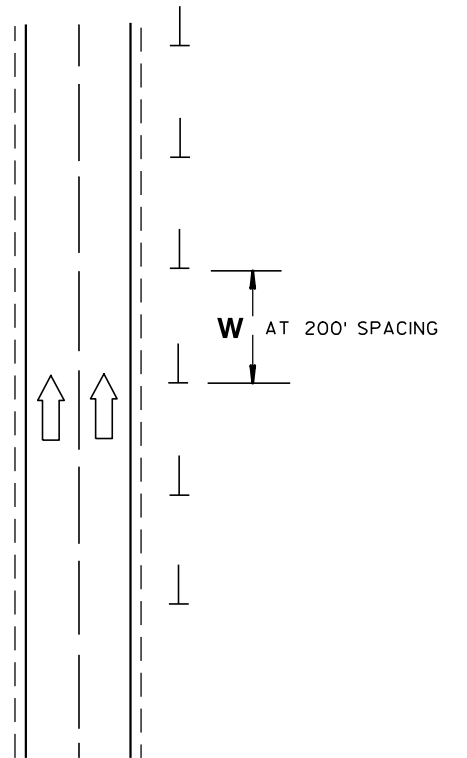
DETAIL E
DELINEATOR LAYOUT FOR ACCELERATION
- DECELERATION LANES AND TAPERS AT RAMPS

GENERAL NOTES

* USE DOUBLE DELINEATOR ALONG ACCELERATION-DECELERATION LANES AND TAPERS.
USE SINGLE DELINEATOR WHEN RAMP PAVEMENT IS FULL WIDTH.

LEGEND

- DIRECTION OF TRAFFIC FLOW
- SINGLE DELINEATOR
- DOUBLE DELINEATOR
- W** WHITE
- Y** YELLOW

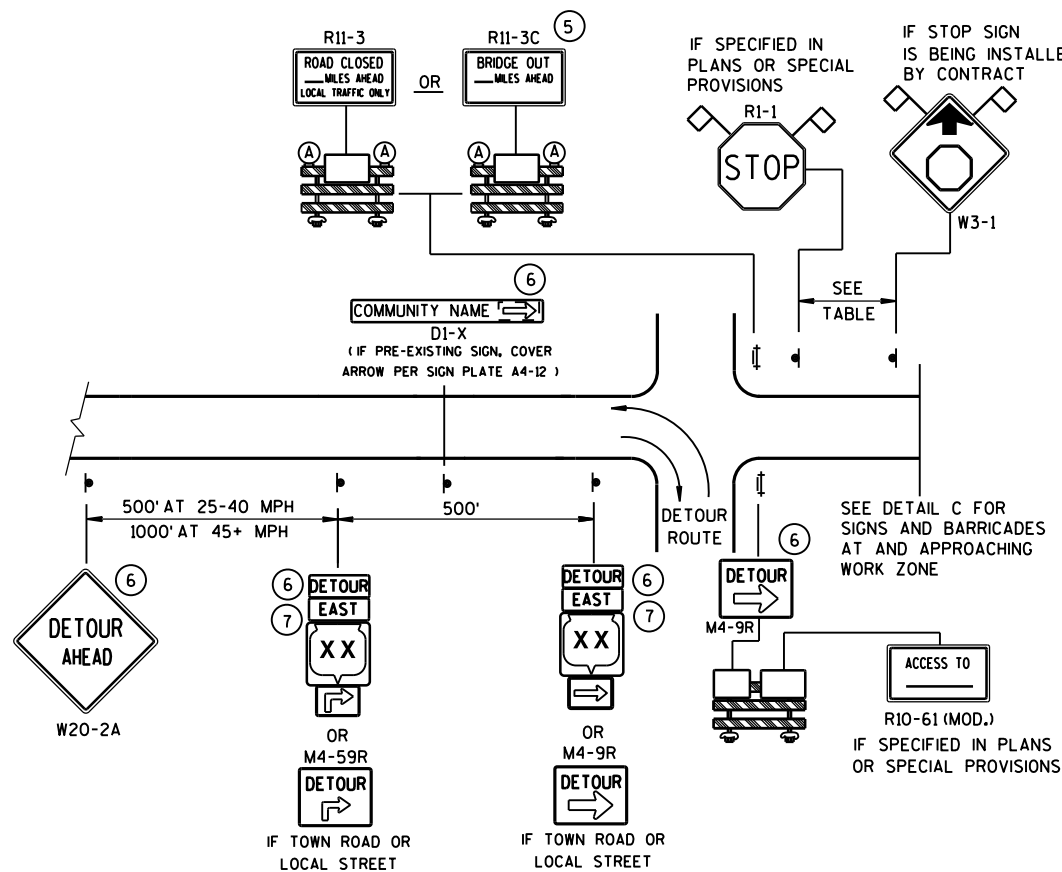


DETAIL D
DELINEATOR LAYOUT
BETWEEN INTERCHANGE RAMPS

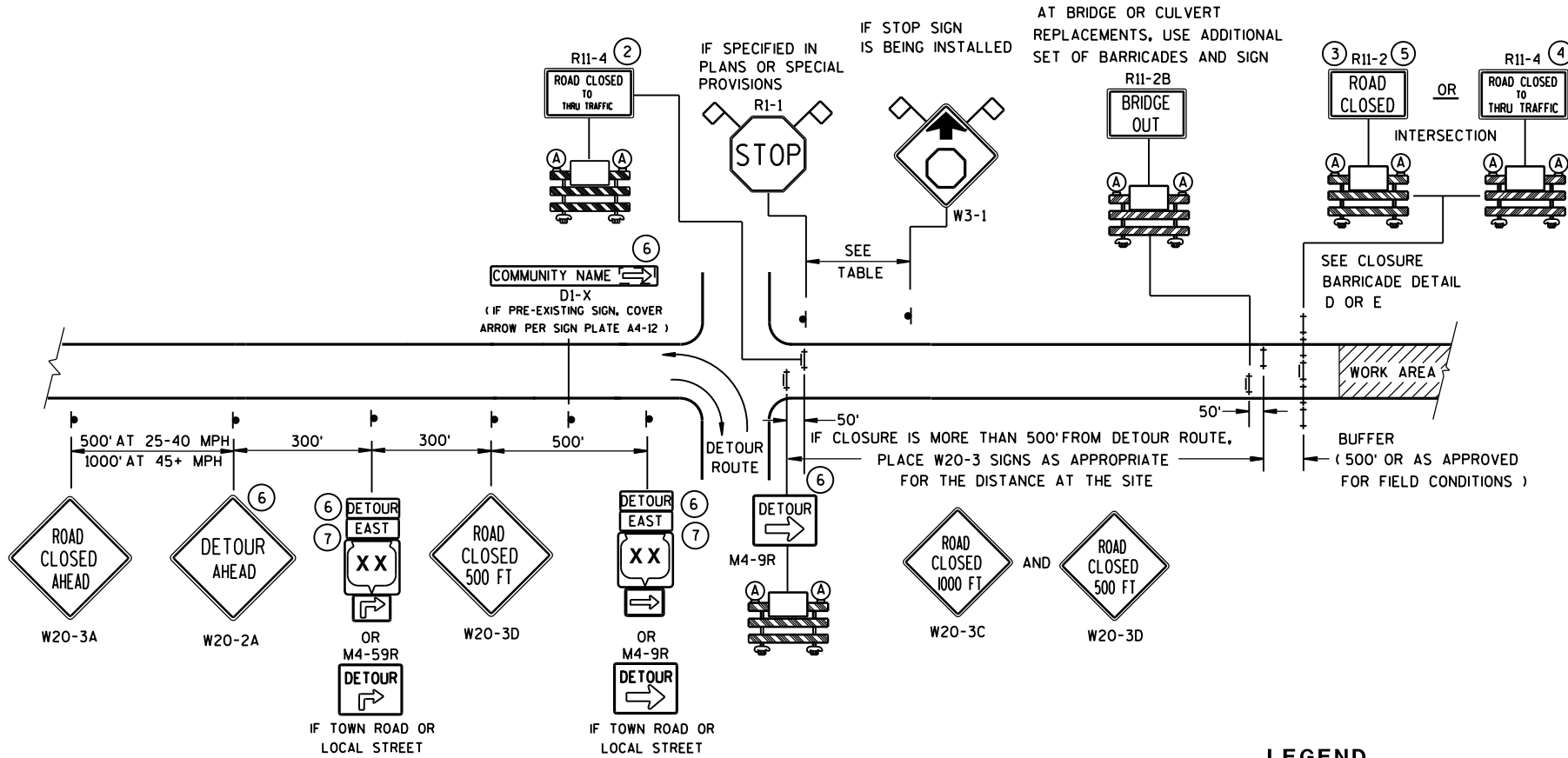
DELINEATOR LAYOUT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

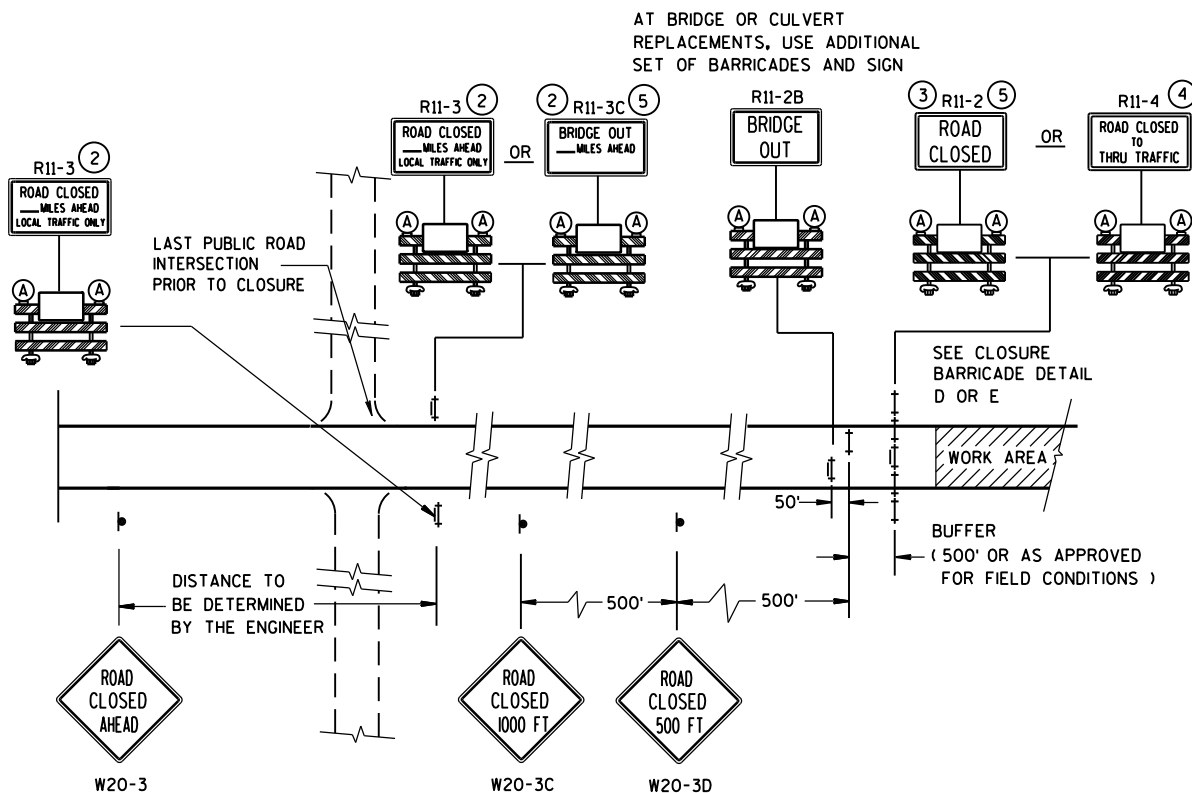
APPROVED
2/5/09 /S/ Thomas N. Nothmann
DATE STATE TRAFFIC ENGINEER SIGN
FHWA



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

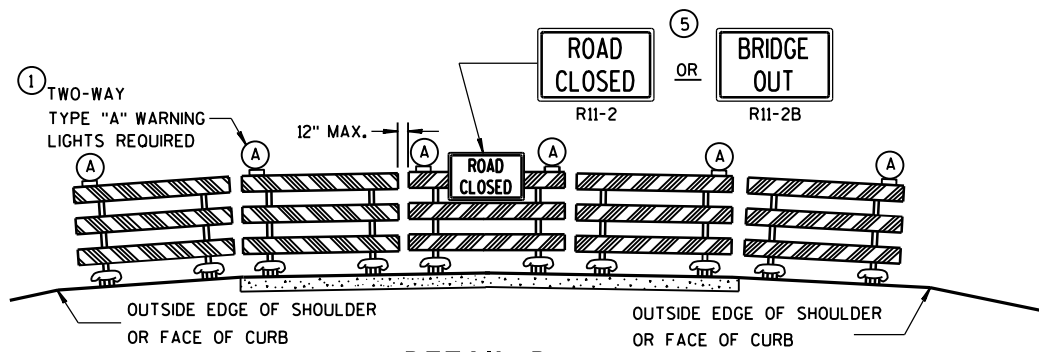


DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

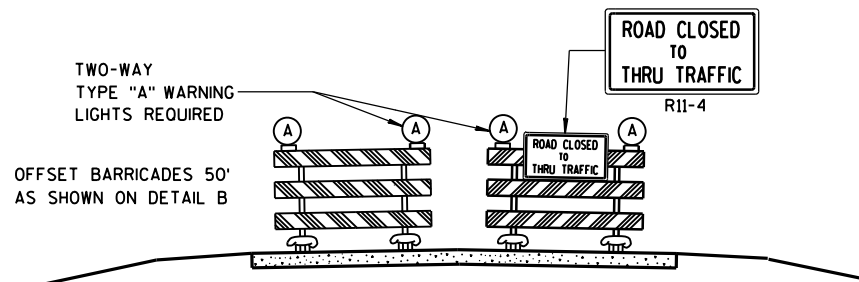
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
Sept. 2015 DATE	/S/ Peter Amokobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER	FIC



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

THE R11-2, R11-3, M4-9, R11-4 AND R10-61 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

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

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

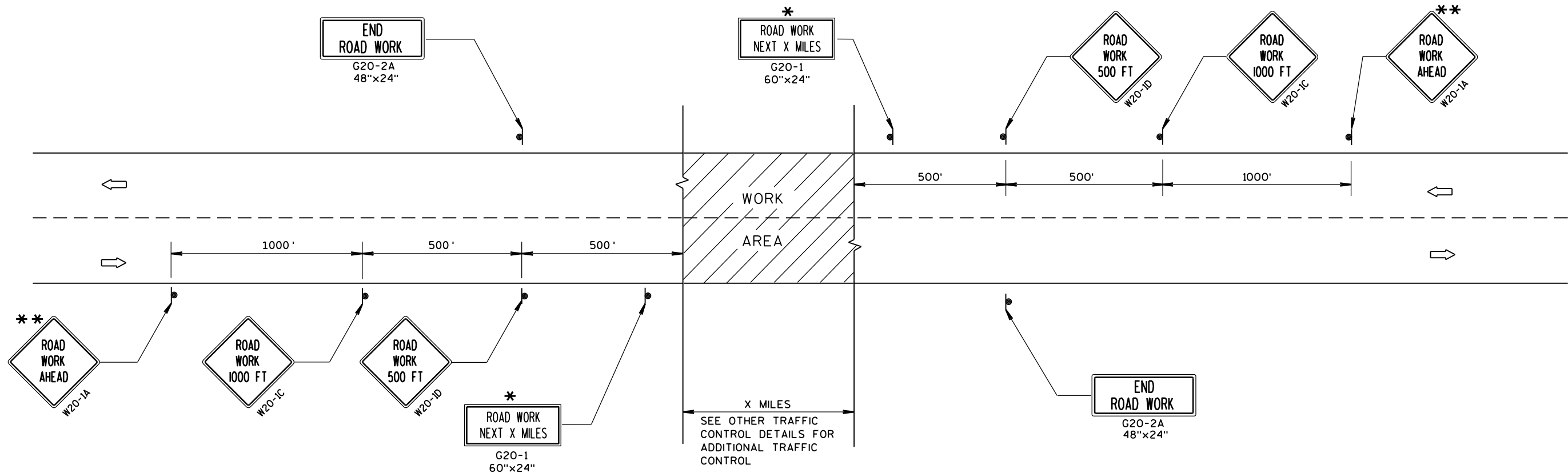
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).
- 2 THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.
- 3 FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.
- 4 FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.
- 5 FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.
- 6 INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- 7 "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

**BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

Sept. 2015 /S/ Peter Amokobe Atepe
DATE STATEWIDE WORK ZO 198 FIC
FHWA SAFETY ENGI



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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

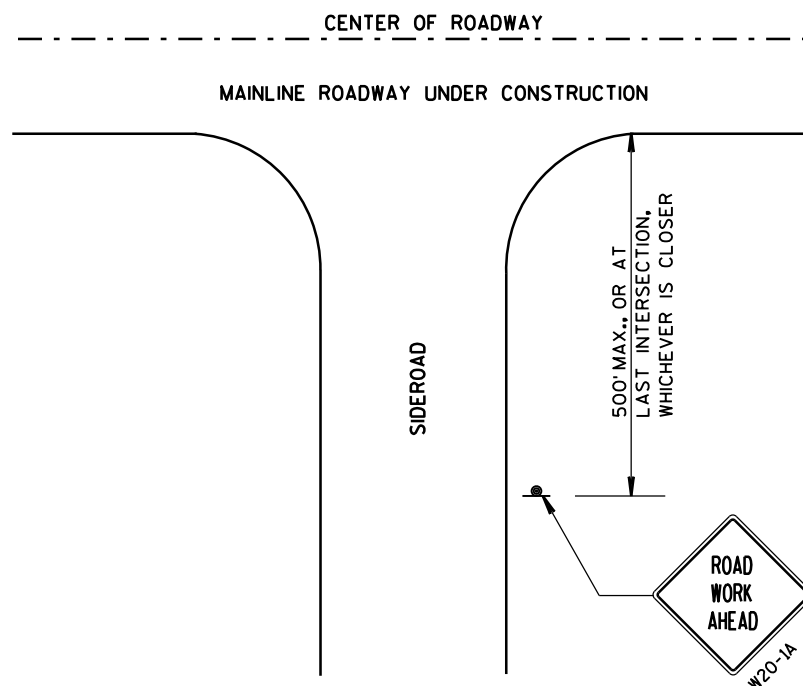
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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



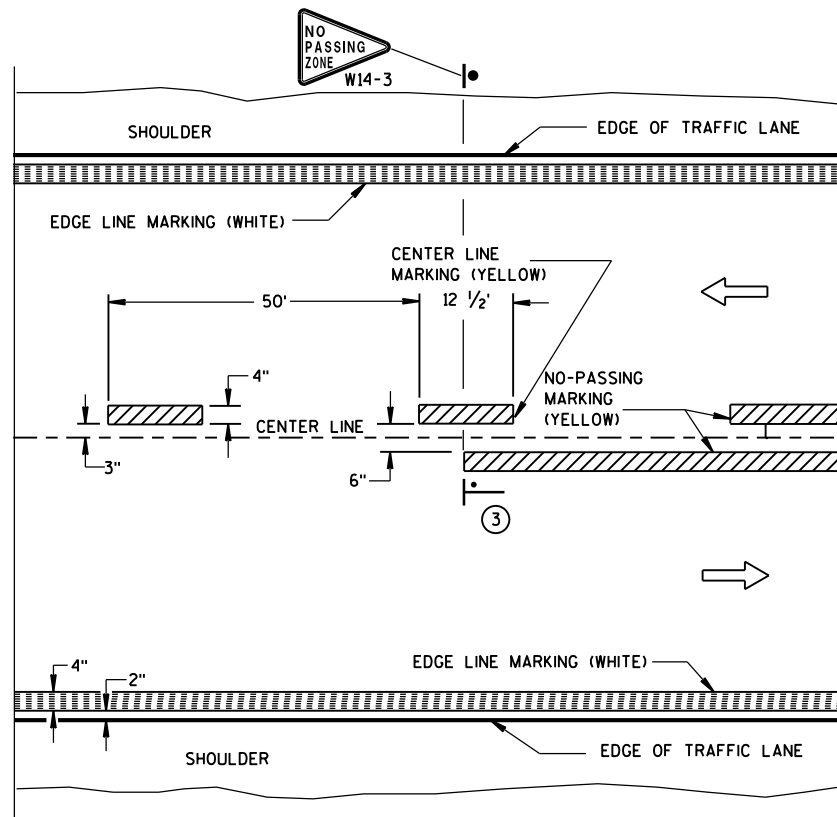
LEGEND

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

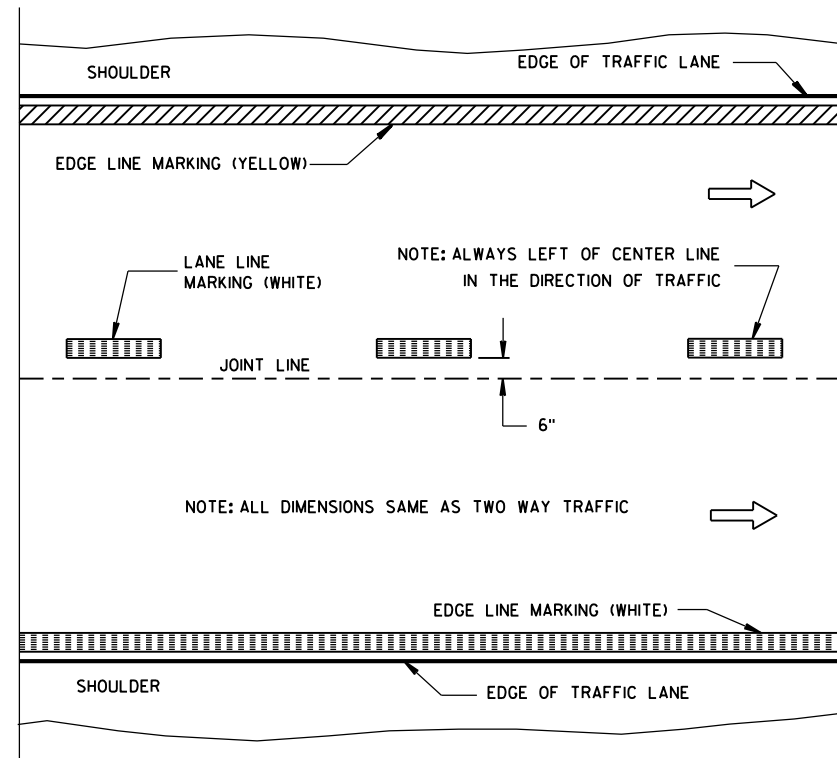
TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

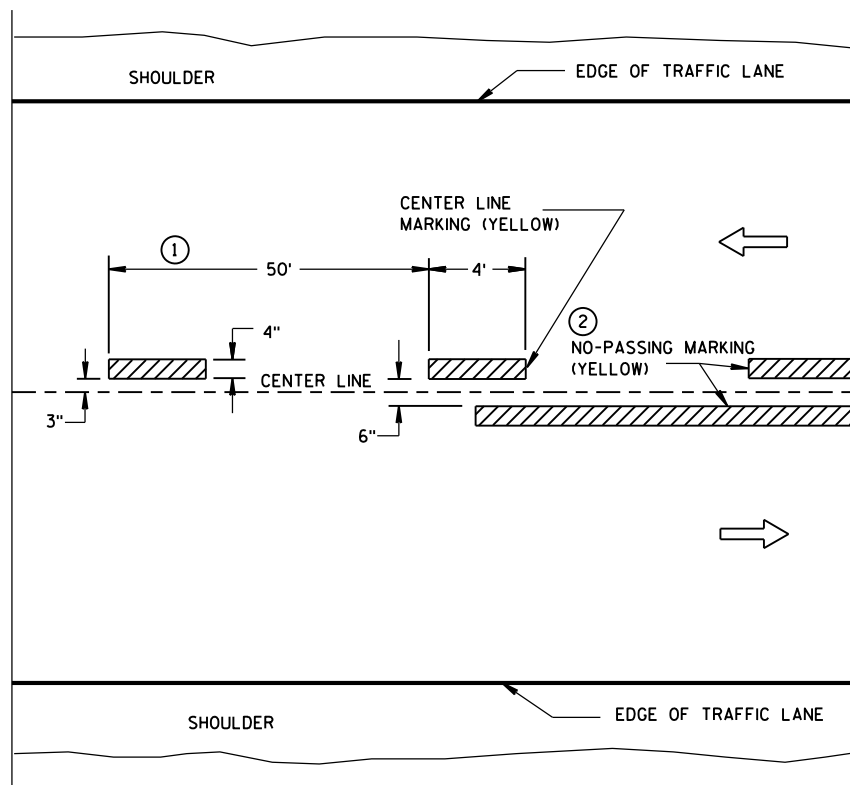


TWO WAY TRAFFIC

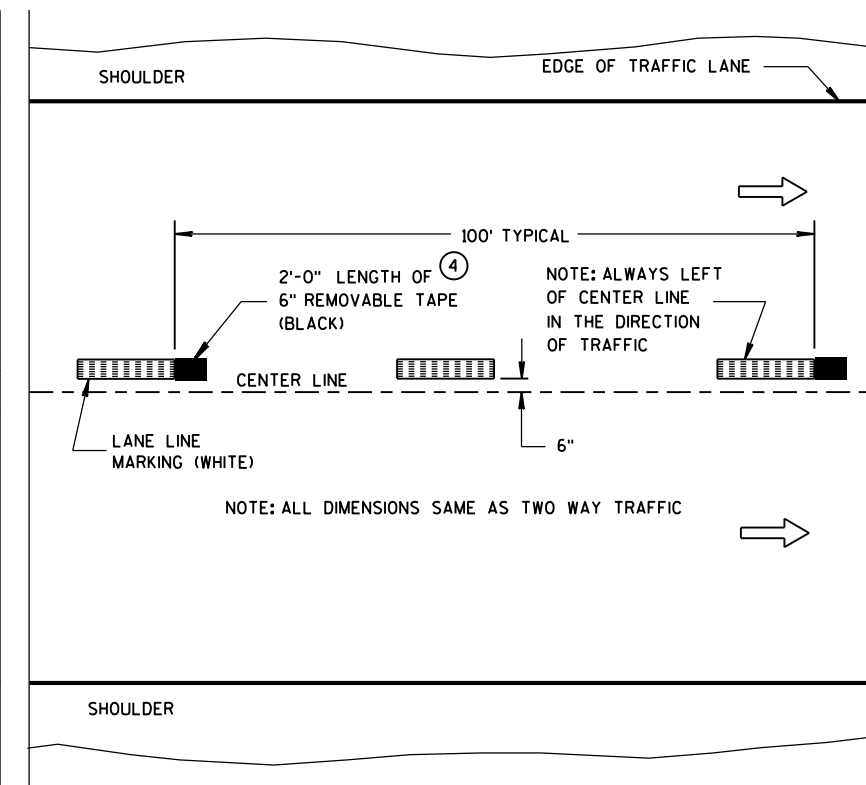


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

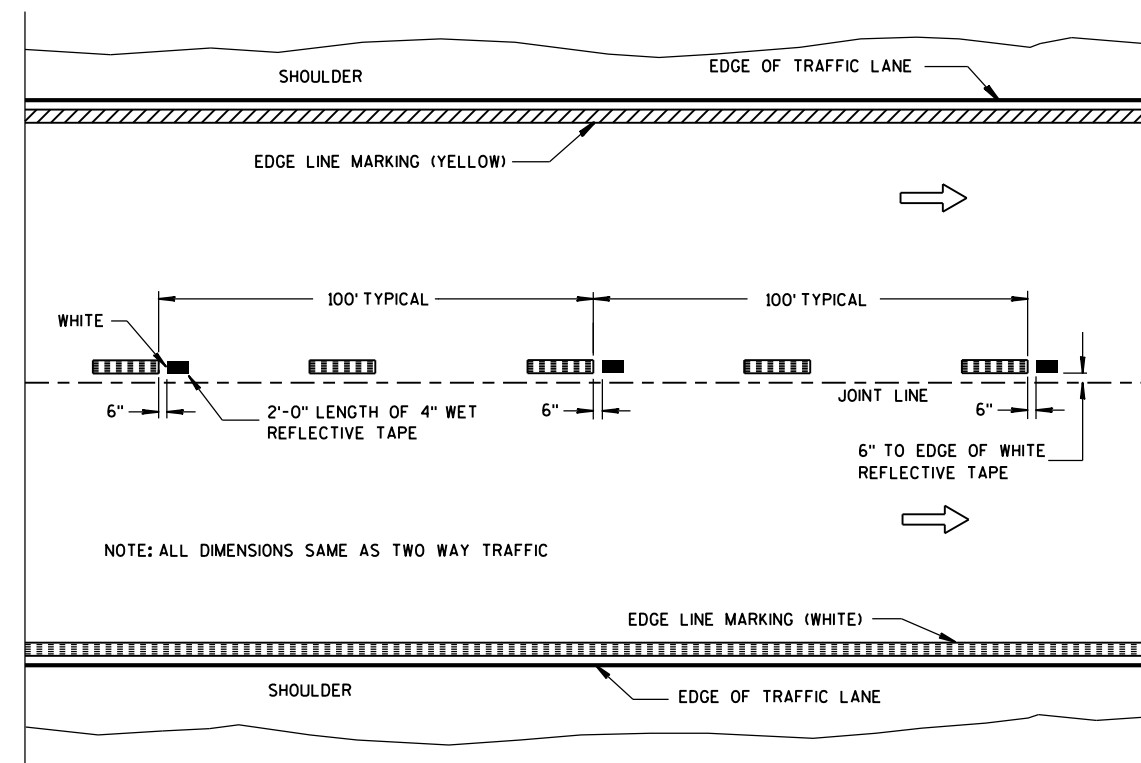
GENERAL NOTES

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
DATE

FHWA

/S/ Travis Feltes
STATE TRAFFIC E 200

LEGEND

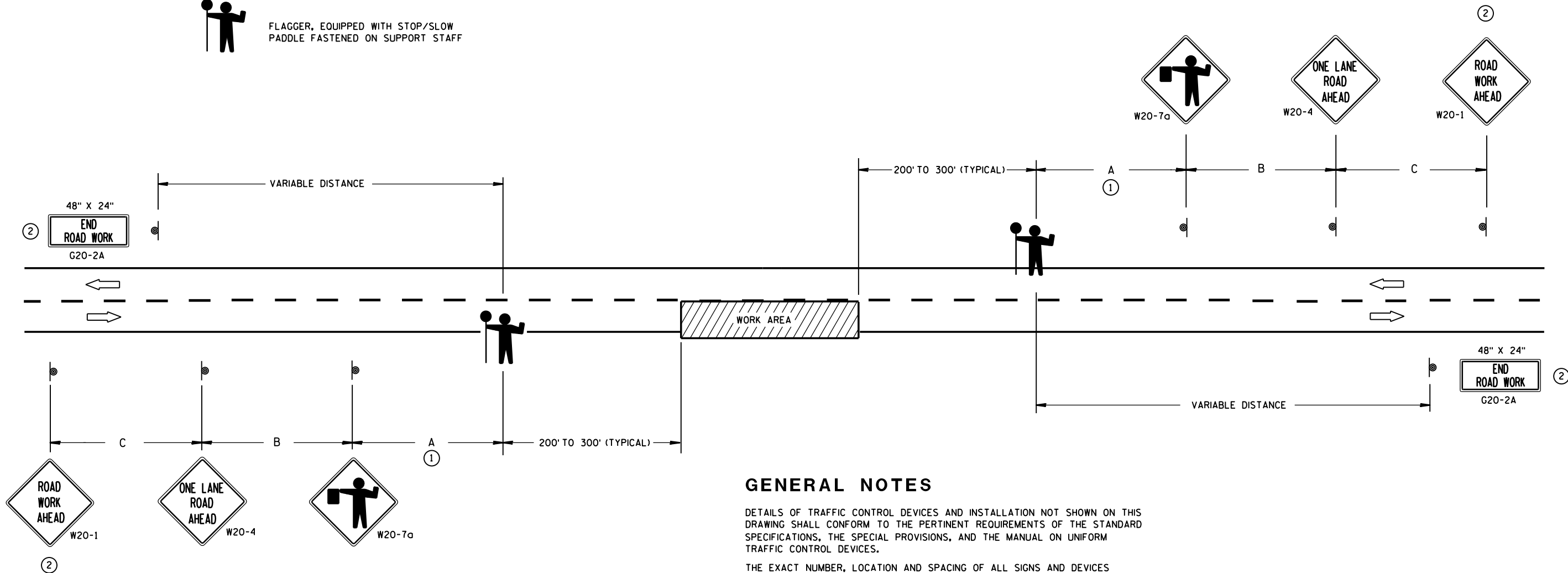
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

SPEED LIMIT	SIGN SPACING A,B,C
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



GENERAL NOTES

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

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

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

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

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

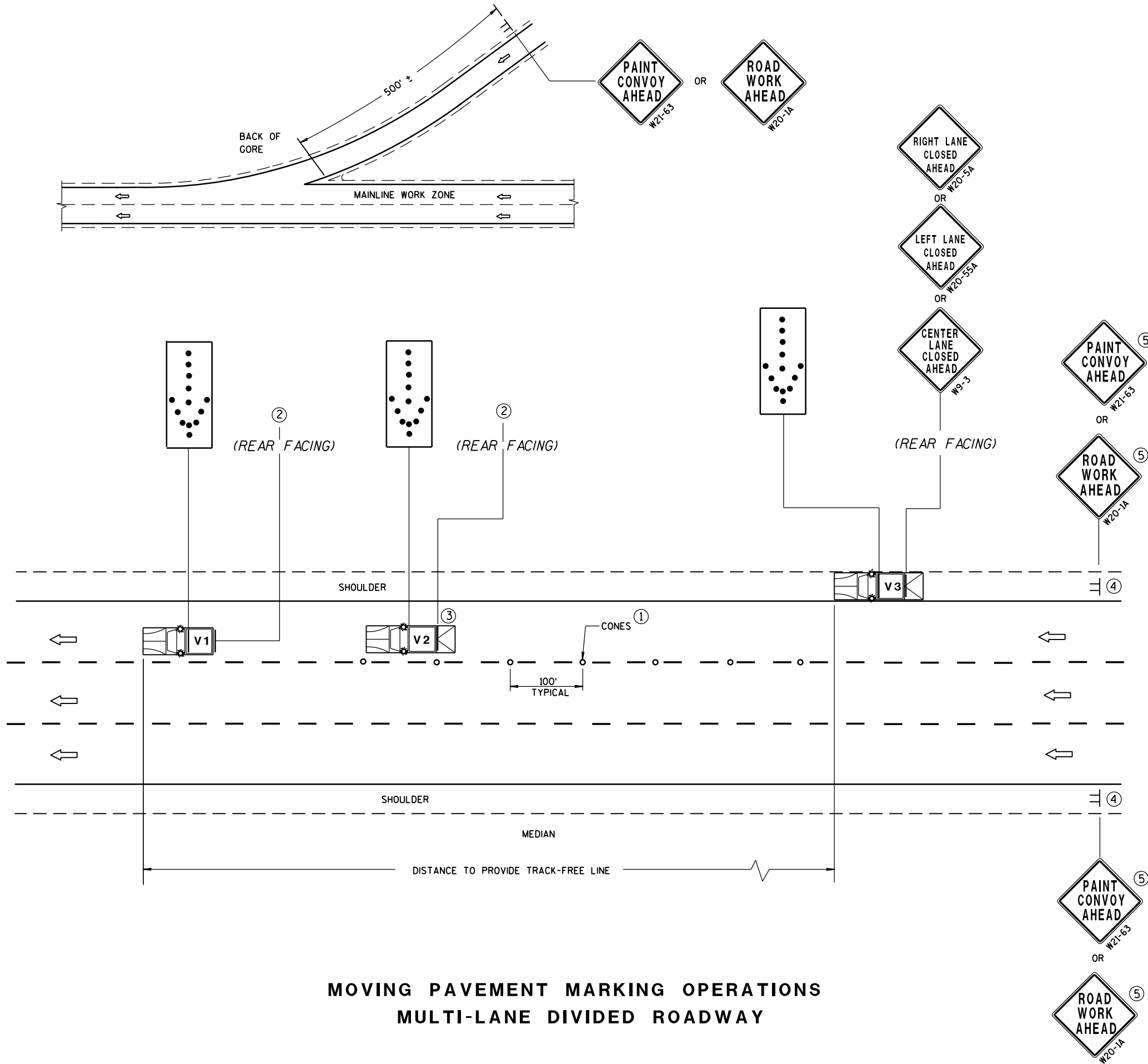
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

- ① FOR A MOVING WORK OPERATION, SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINE 201 SIGN
FHWA



MOVING PAVEMENT MARKING OPERATIONS
MULTI-LANE DIVIDED ROADWAY

GENERAL NOTES

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

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

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

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

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

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

FOR EDGE LINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH. USE DOUBLE ARROWS WHEN CONVOY IS IN CENTER LANE ONLY.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

THIS DRAWING SHALL BE USED FOR EDGE LINE OR LANELINE MARKING FOR MULTILANE DIVIDED ROADWAYS.

- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.
- ③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.
- ④ SIGNS SHALL BE REPEATED AFTER EVERY ON RAMP OR EVERY THREE MILES.
- ⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

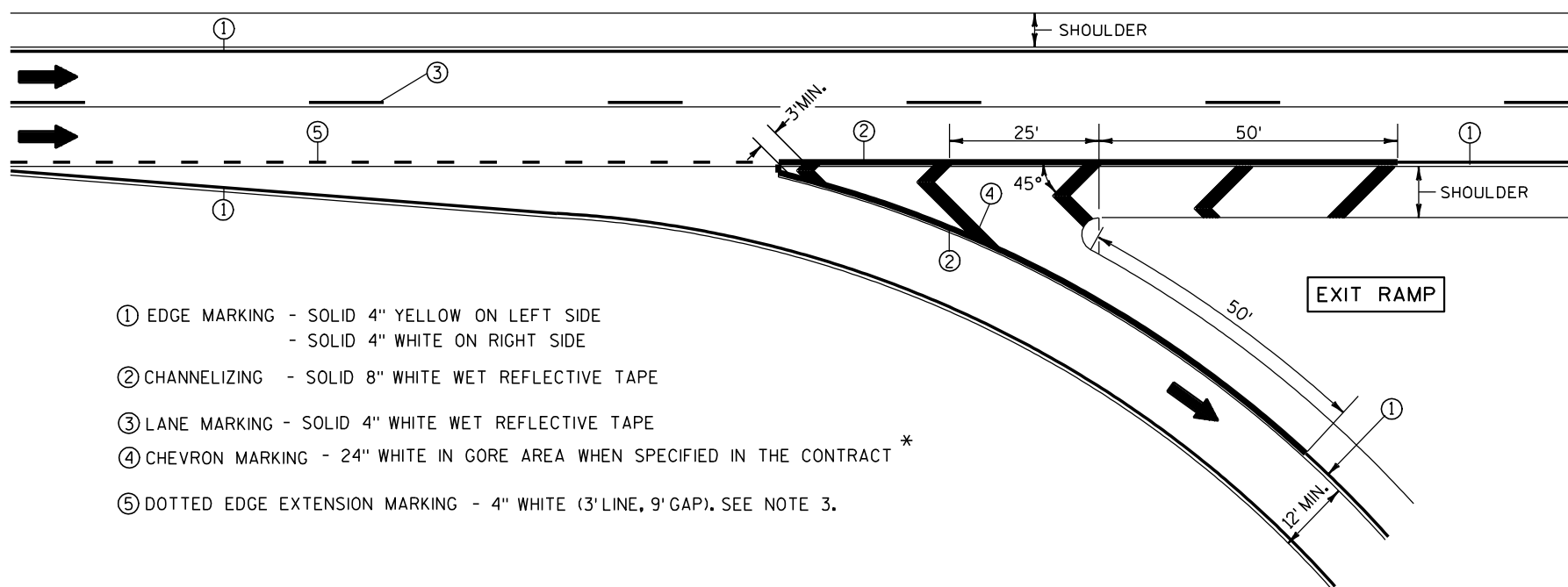
LEGEND

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

MOVING PAVEMENT MARKING
OPERATION
MULTI-LANE DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

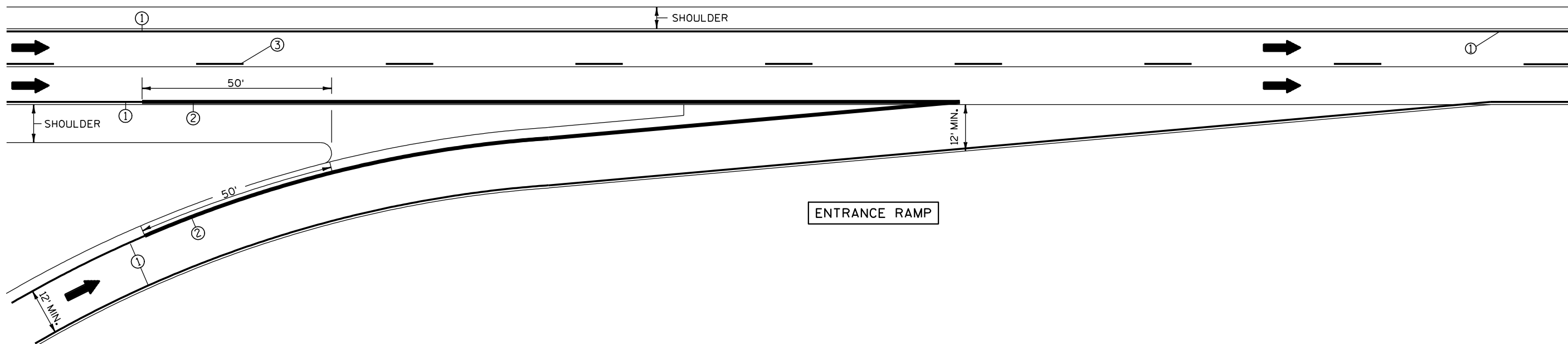


- ① EDGE MARKING - SOLID 4" YELLOW ON LEFT SIDE
- SOLID 4" WHITE ON RIGHT SIDE
- ② CHANNELIZING - SOLID 8" WHITE WET REFLECTIVE TAPE
- ③ LANE MARKING - SOLID 4" WHITE WET REFLECTIVE TAPE
- ④ CHEVRON MARKING - 24" WHITE IN GORE AREA WHEN SPECIFIED IN THE CONTRACT *
- ⑤ DOTTED EDGE EXTENSION MARKING - 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.

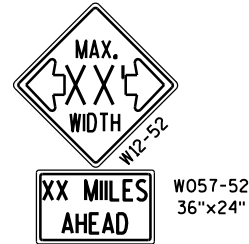


PAVEMENT MARKING
(RAMPS AND GORES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- REMOVING PAVEMENT MARKING
- CONCRETE BARRIER TEMPORARY PRECAST
- DIRECTION OF TRAFFIC
- WORK AREA



INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1 FOOT LESS THAN AVAILABLE WIDTH (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET).



LOCATED 500 FEET IN ADVANCE OF R2-1 SIGN AND 500 FEET BEYOND THE "ROAD WORK 1 MILE" SIGN.



R2-1
48"x60"
(BLACK AND WHITE)

IF THE REGULATORY SPEED HAS BEEN REDUCED, 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 RESUME SPEED LIMIT SIGN A MINIMUM OF 200 FEET (500 FEET DESIRABLE) AFTER END ROAD WORK SIGNS.

GENERAL NOTES

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

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 DESIRABLE) CLEARANCE TO EXISTING SIGNS.

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 OR AS APPROVED BY THE ENGINEER.

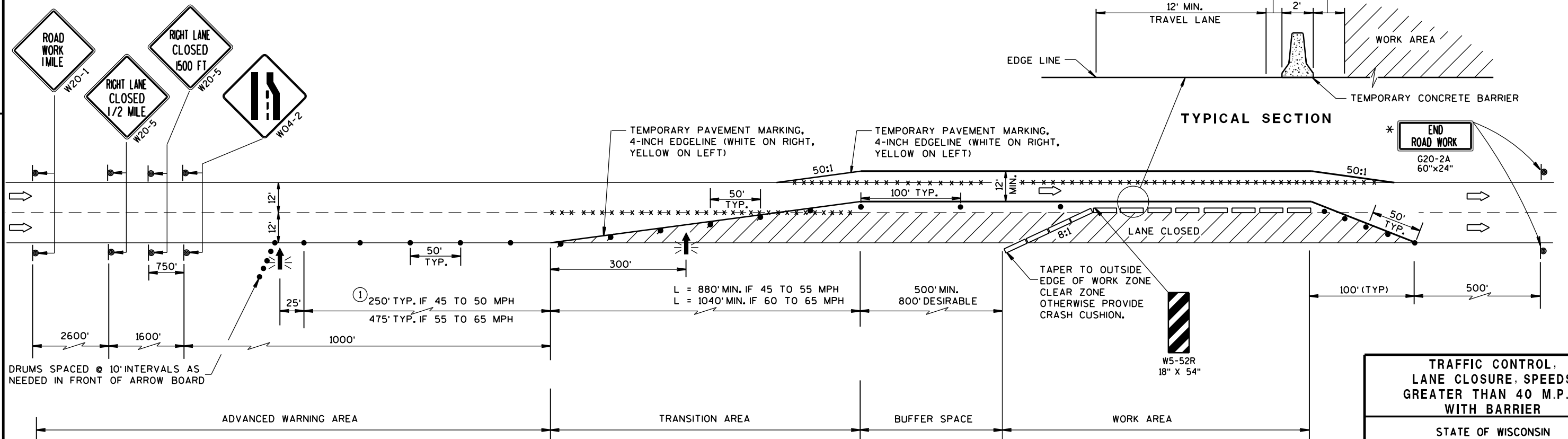
1. CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUM TAPER.

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 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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 OR INTERSECTION. THE LANE CLOSURE 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.



DRUMS SPACED @ 10' INTERVALS AS NEEDED IN FRONT OF ARROW BOARD

TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED 8/2013	/S/ Travis Feltes	
DATE	STATE TRAFFIC ENGINE	204 SIGN
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.

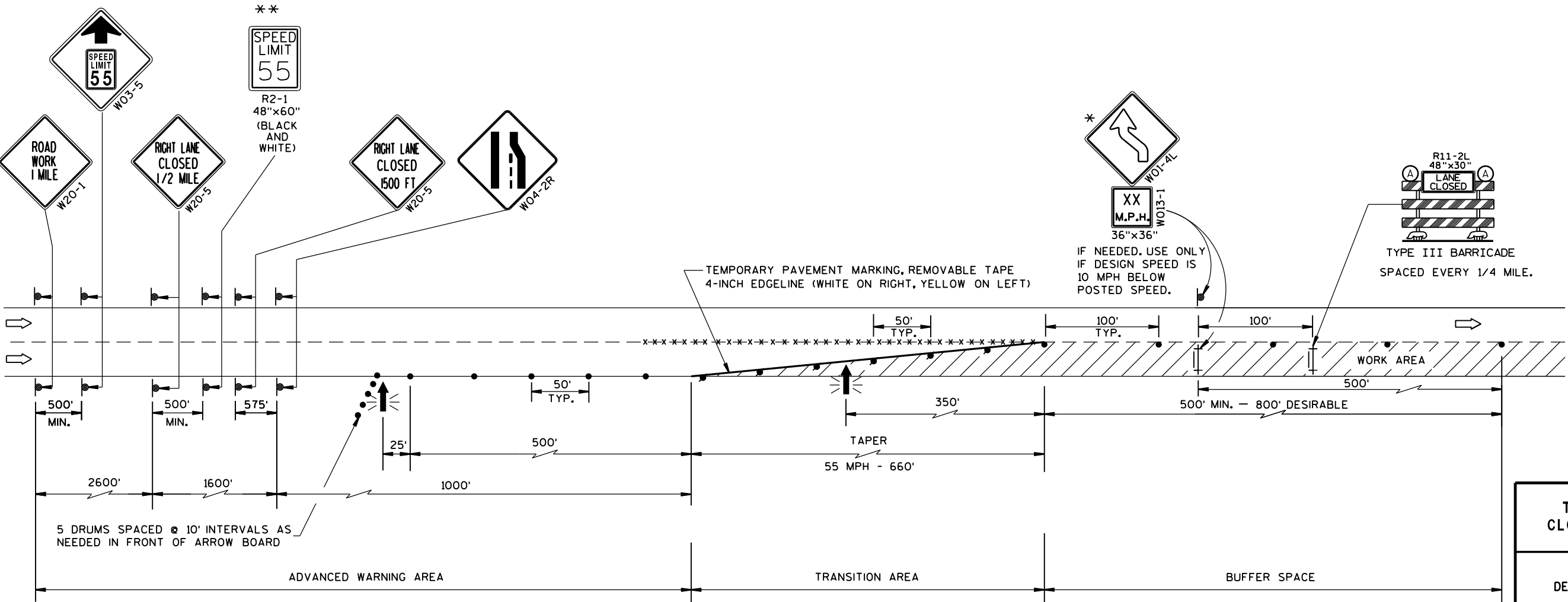
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

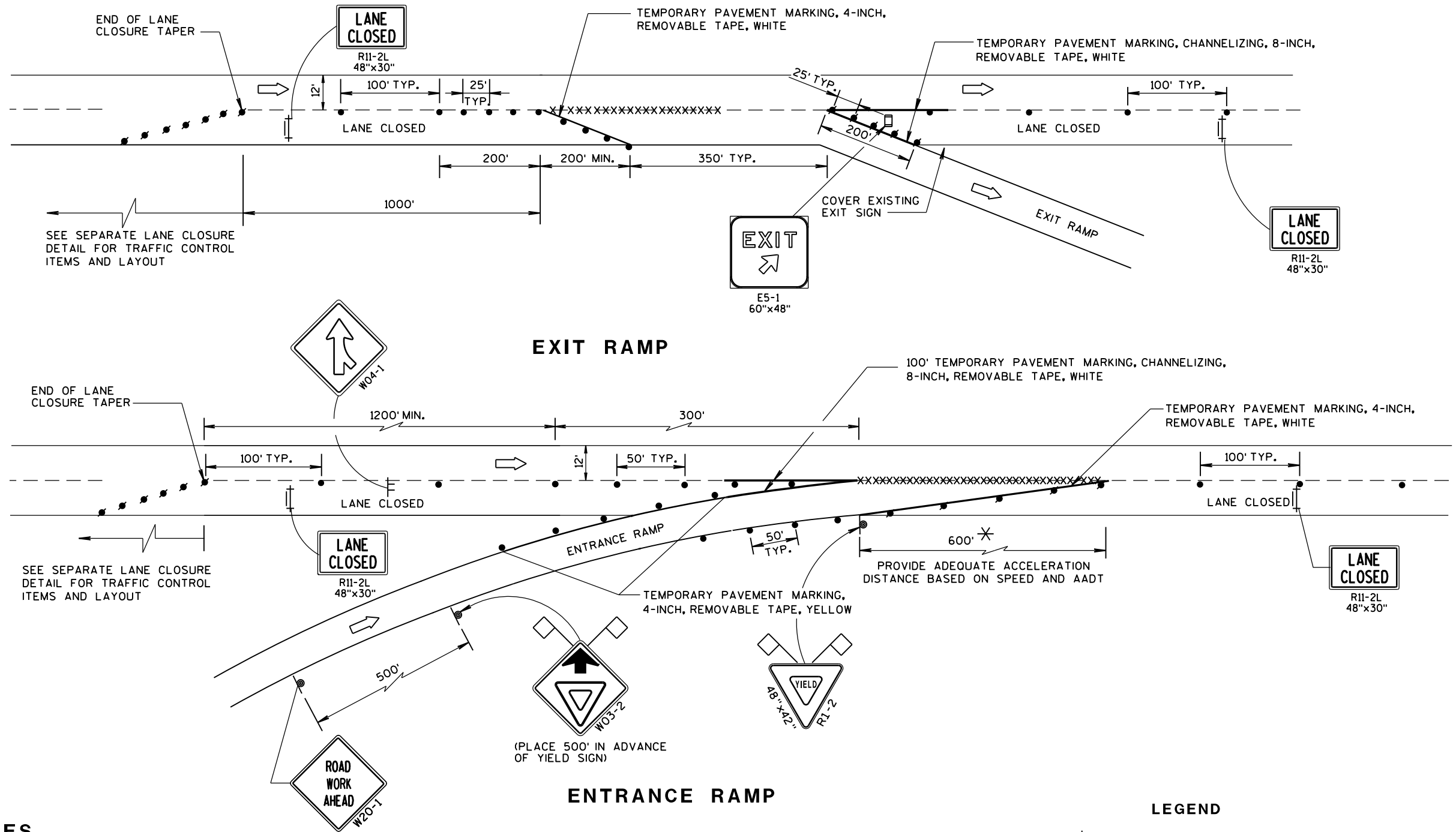
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN 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 Feb. 2015 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER 205 SIGN
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 R11-2L "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.

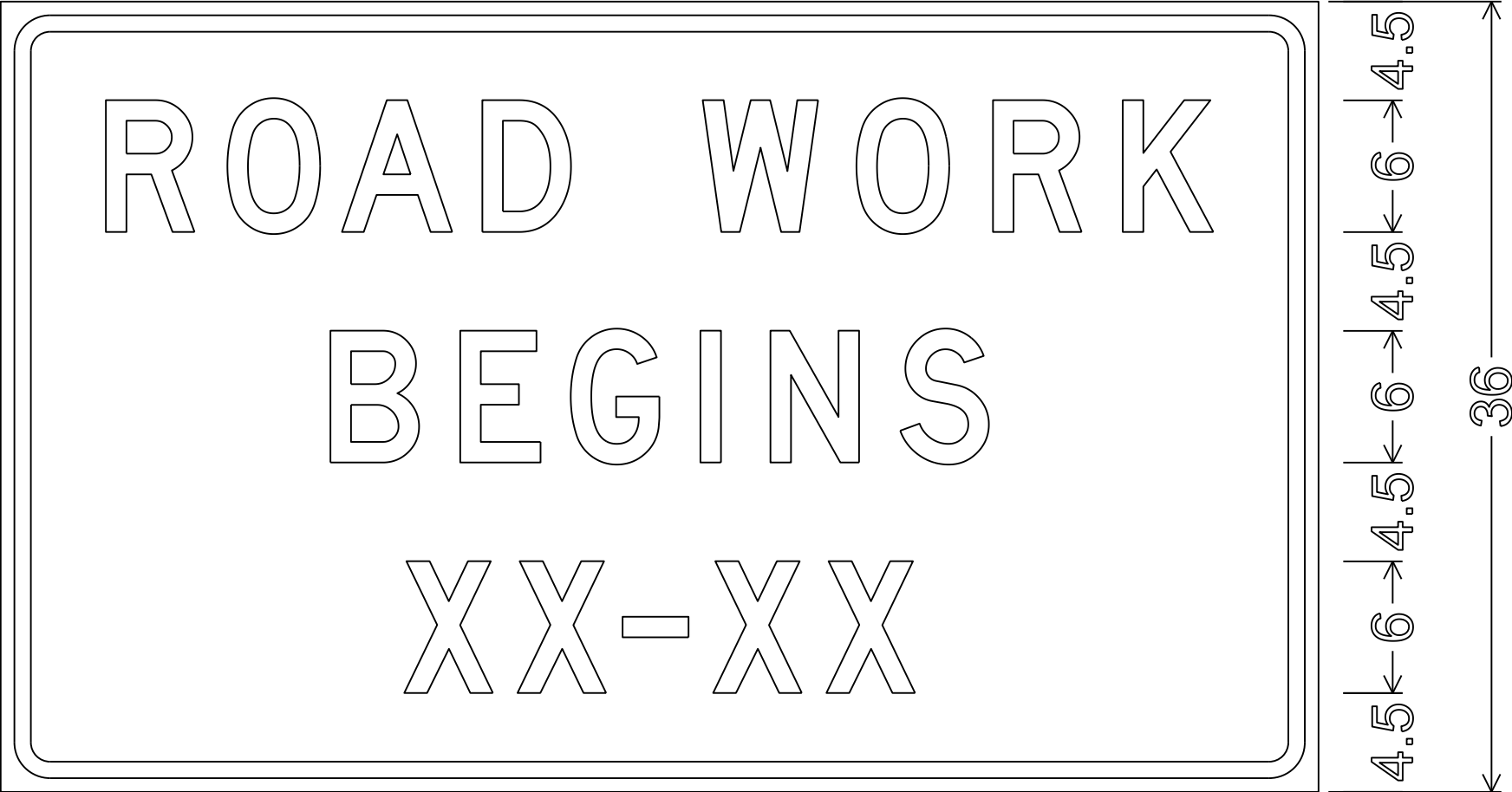
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

LEGEND

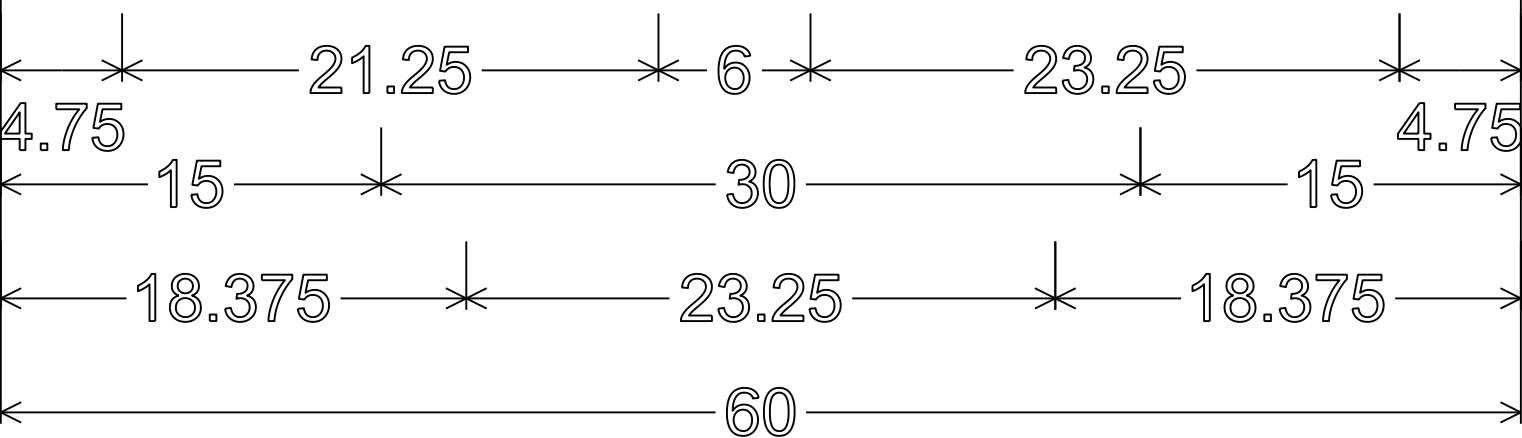
- ⊙ SIGN ON PERMANENT SUPPORT
- ┼ SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- XXXXX REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- ┼ TYPE III BARRICADE WITH ATTACHED SIGN
- ▢ FLAGS, 16" x 16" MIN., (ORANGE)
- ➡ DIRECTION OF TRAFFIC

TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2015 DATE	/S/ Peter Amokobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA	



NOTES

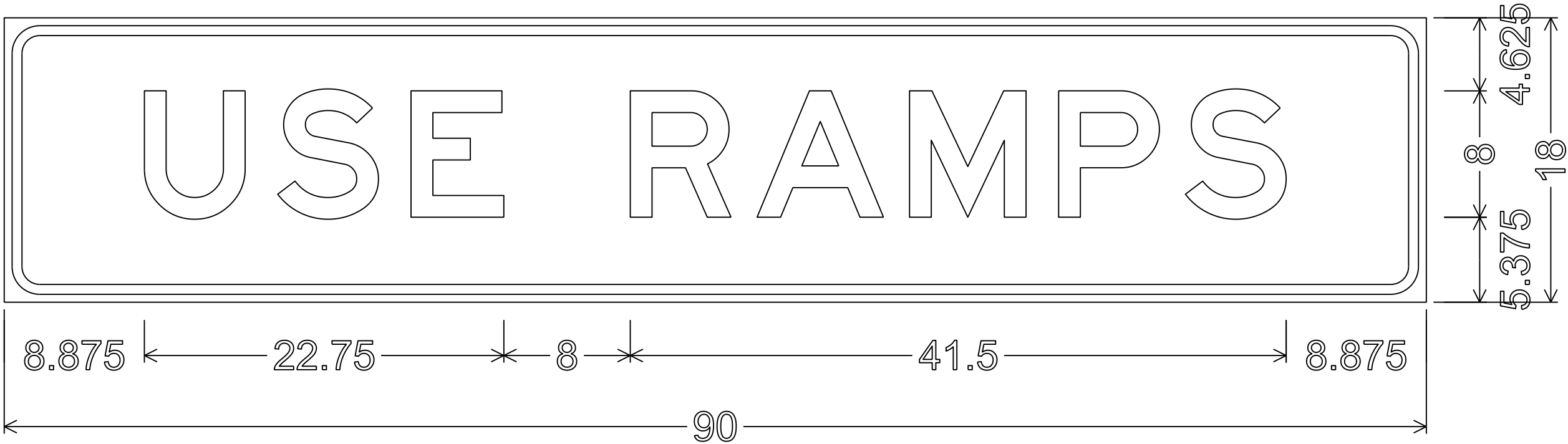
- 1. All Signs Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - D



2.250" Radius, 0.750" Border, 0.625" Indent

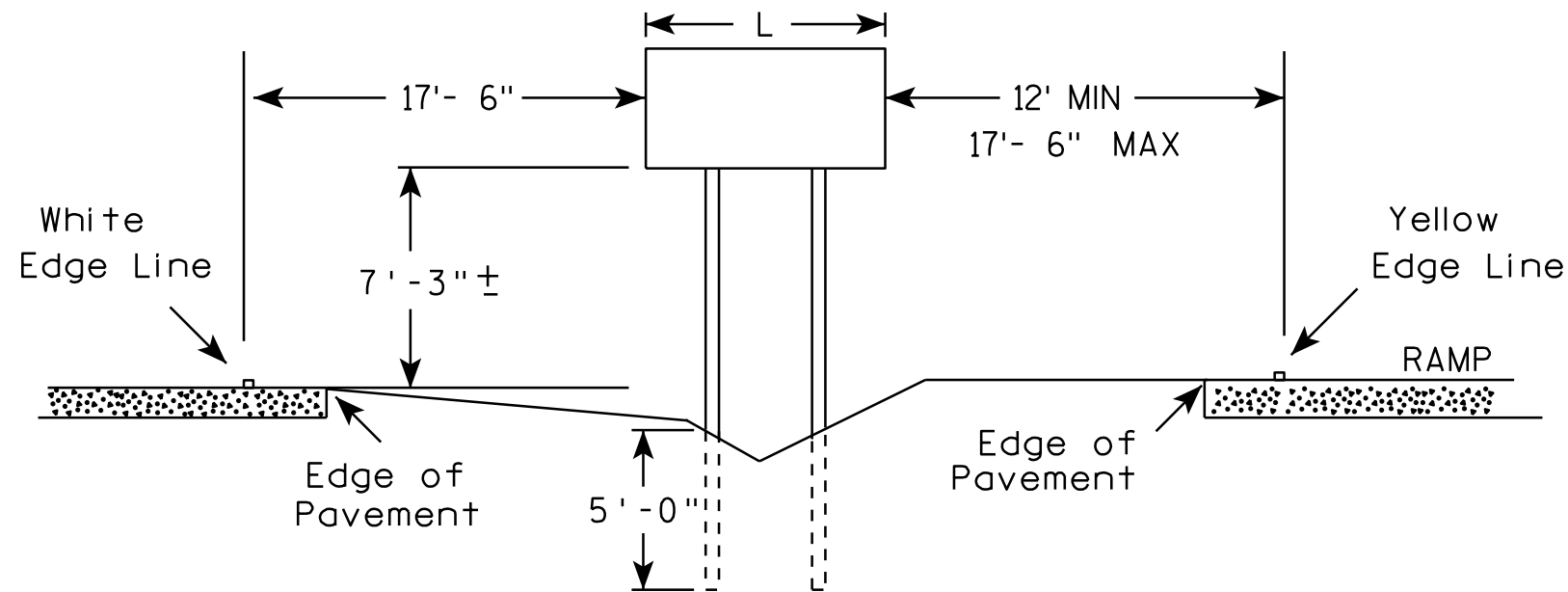
NOTES

- 1. All Signs Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - E



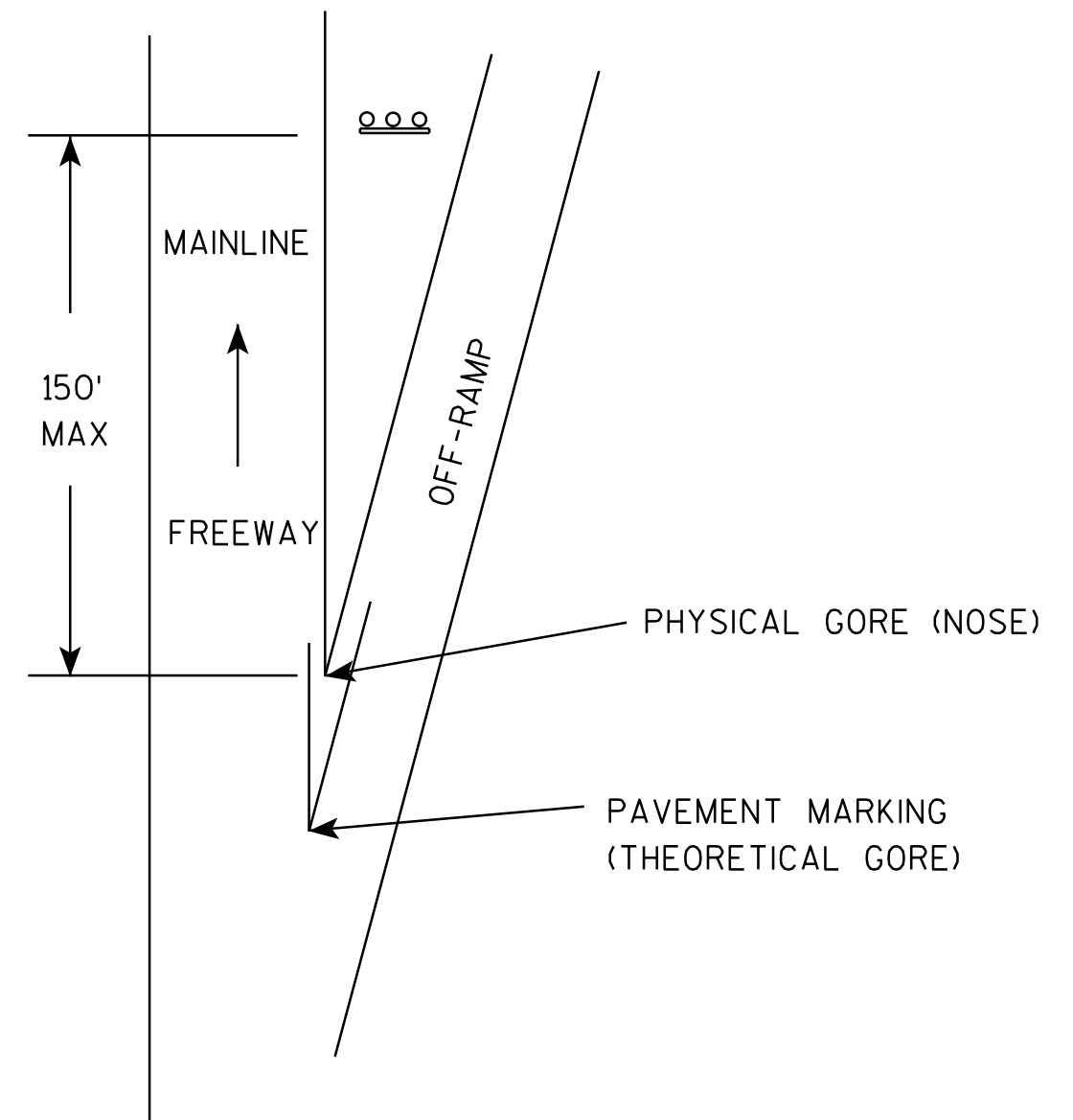
2.250" Radius, 0.625" Border, 0.500" Indent, Black on White;
"USE" E; "RAMPS" E;

7



GENERAL NOTES

1. The 150 foot distance from the physical gore (where pavement ends) will normally provide the offsets as shown.
2. If roadway geometrics permit, the sign may be closer than the 150 foot distance as long as the offsets are maintained.
3. At no time shall the location be greater than 150 feet. If the normal offsets cannot be maintained, they can be reduced to 6 feet from the edge of the paved shoulder (both freeway and ramp).
4. The offset from edge of sign to the yellow edge line on the ramp is shown as a minimum of 12 feet and a maximum of 17 feet, 6 inches. Preference is adhering to the maximum rather than the minimum dimension.
5. When L is equal to or exceeds 10 feet, use 3 posts as per A4-4.
6. The ($\pm$) tolerance for the mounting height is 3 inches.



TYPICAL INSTALLATION
OF TYPE II SIGNS ON
WOOD POSTS IN GORE

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

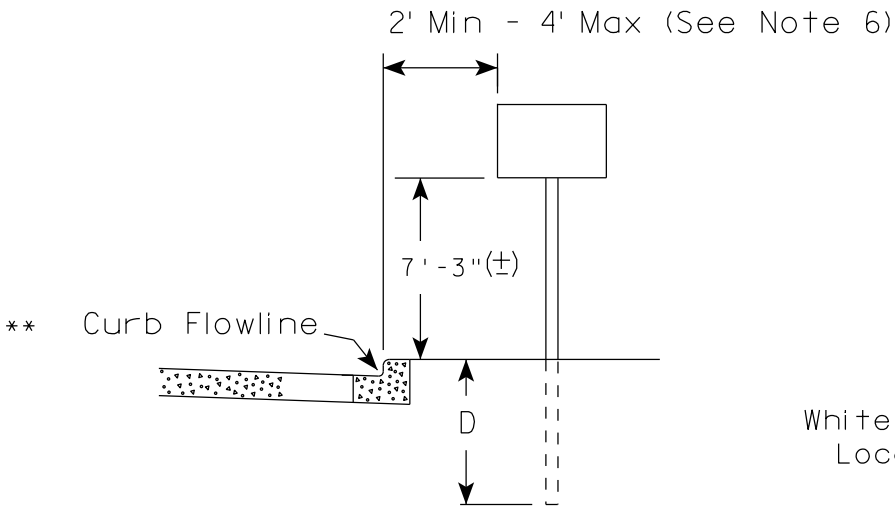
DATE 2/06/14 PLA 209 A4-2.3

PROJECT NO:

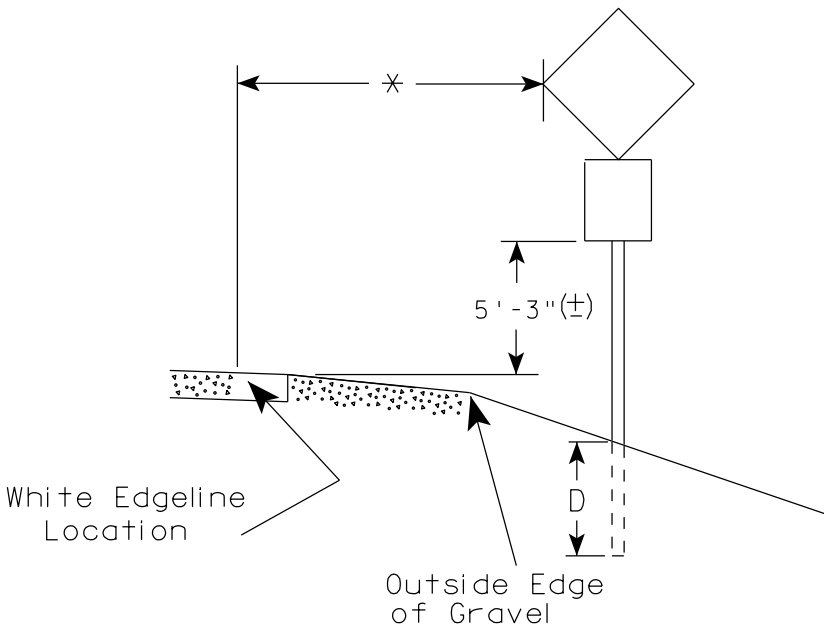
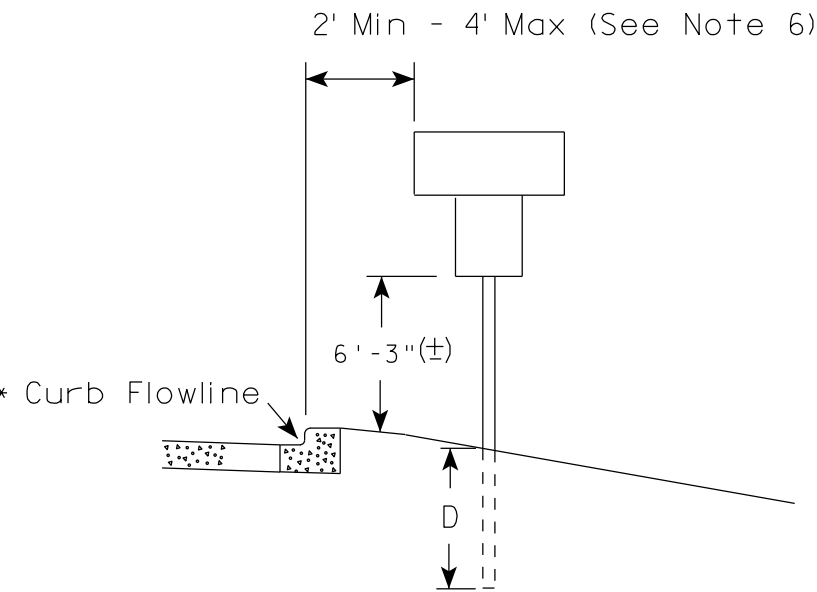
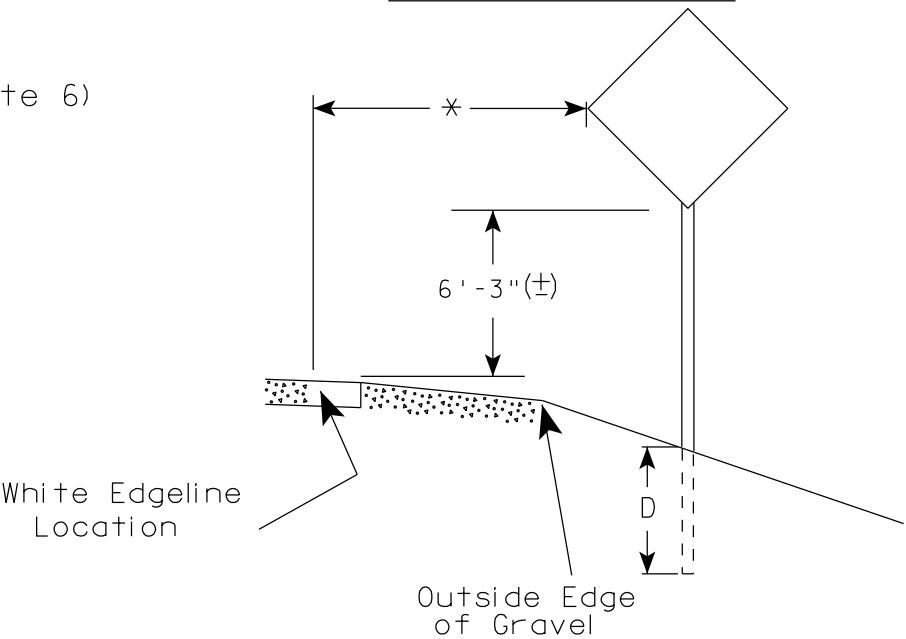
SHEET NO:

E

URBAN AREA



RURAL AREA (See Note 2)



POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on 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" (±).

* * 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.

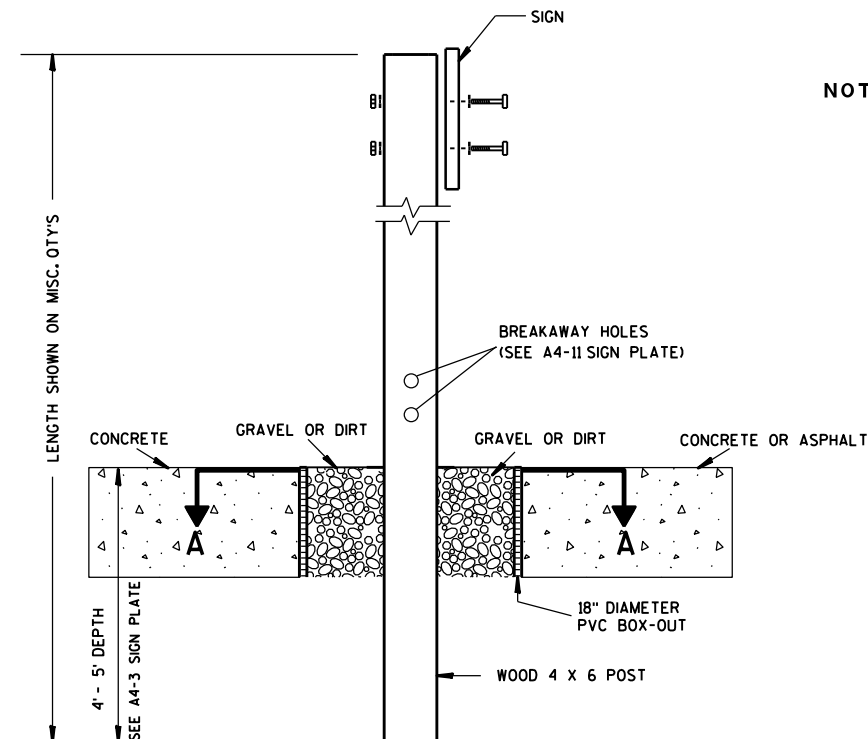
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

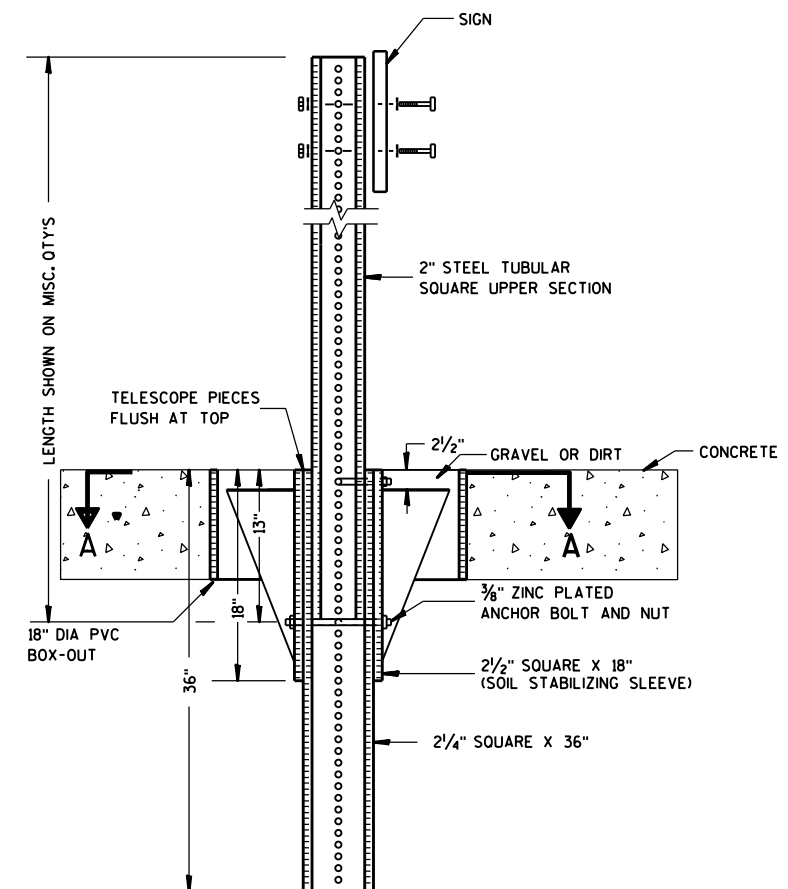
DATE 7/23/15 PLATE NO. A4-3.20
210



ELEVATION VIEW

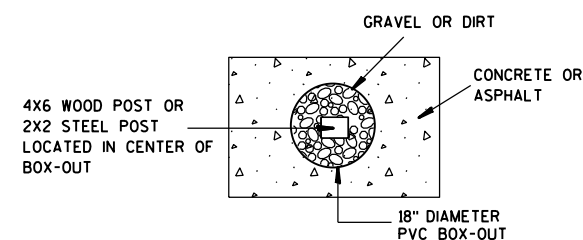
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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

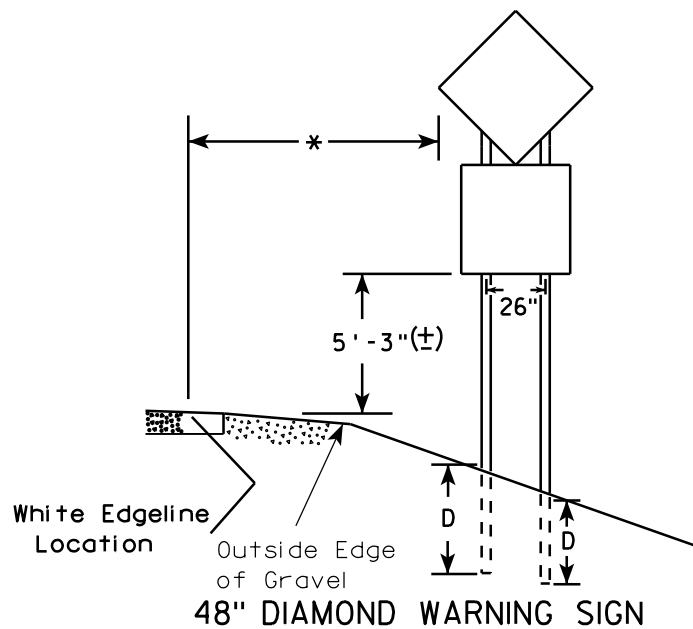
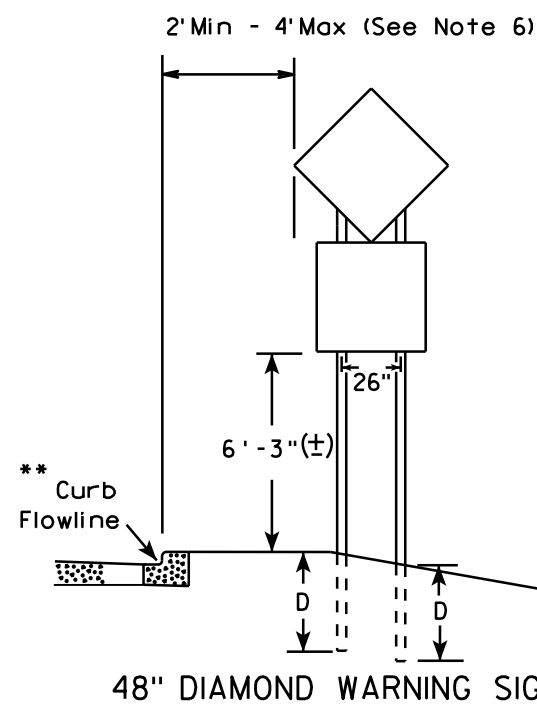
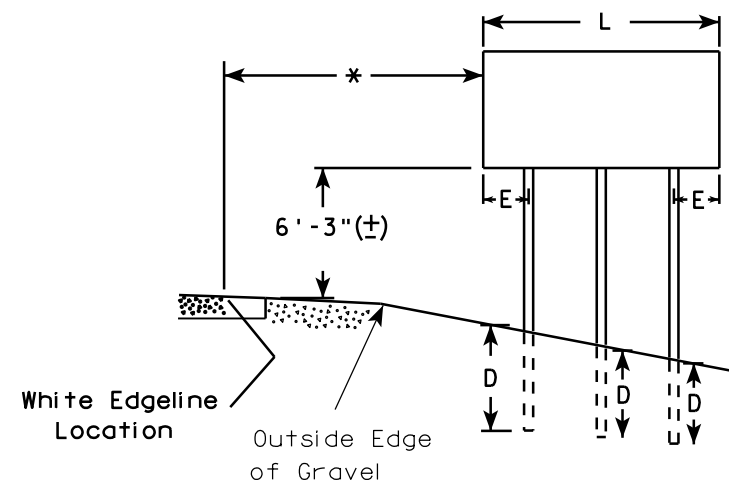
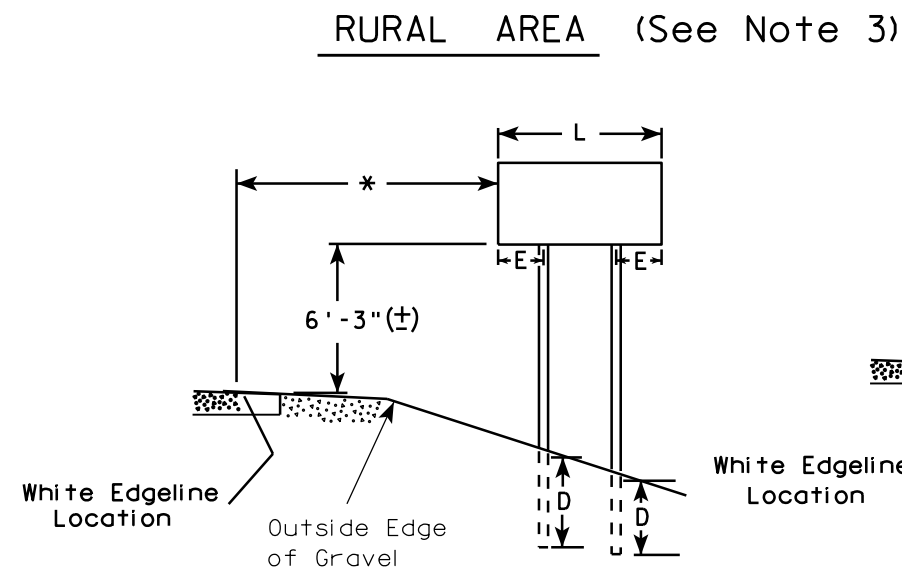
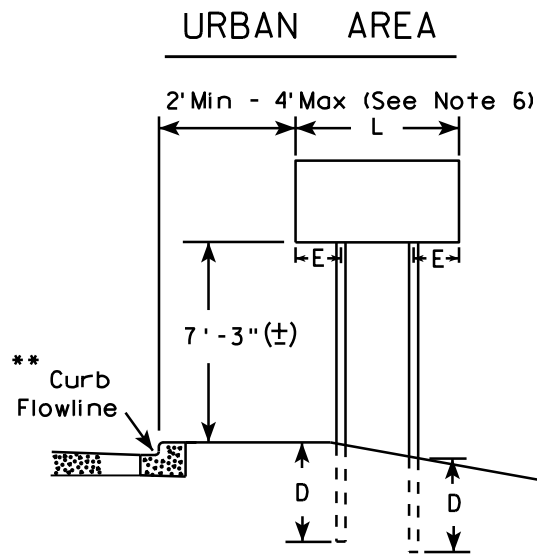
FOR NEW CONCRETE/ASPHALT INSTALLATIONS

**SIGN POST
BOX-OUTS
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 211 A4-3B.1



48" DIAMOND WARNING SIGN

48" DIAMOND WARNING SIGN

- 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 and 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

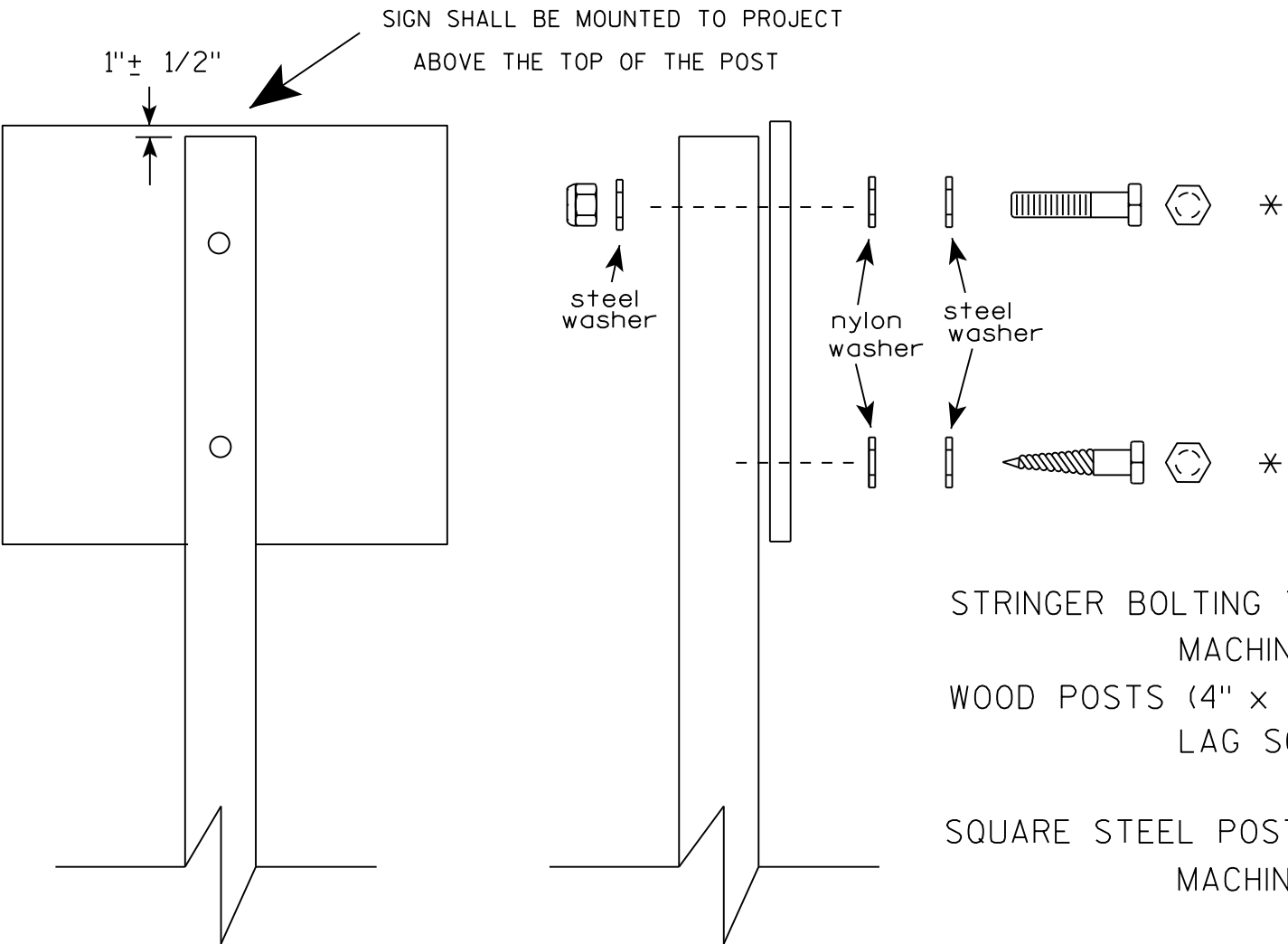
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-A 14-212



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

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

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

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

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

ATTACHMENT OF SIGNS
TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8
213

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**

1"

$\frac{1}{8}"$

ALL HOLES $\frac{7}{16}"$
SPACED 1" C-C
ALL FOUR SIDES

4" x 10" x 10 GA. — 
STEEL PLATE (CUT
AS SHOWN) WELDED
TO ALL FOUR CORNERS
OF TELESAR TUBE

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

2 1/2" TELESAR TUBE

4" x 10" x 10 GA. STEEL PLATE (CUT AS SHOWN) WELDED TO ALL FOUR CORNERS OF TELESAR TUBE

4"

2 1/2"

10"

3 1/2"

19"

LENGTH SHOWN ON MISC. QTY'S
 18" DIA SCHEDULE 40 PVC BOX-OUT
 TELESCOPE PIECES FLUSH AT TOP
 2" STEEL TUBULAR SQUARE UPPER SECTION
 ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES
 $\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT
 2" GRAVEL OR DIRT
 $\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT
 2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
 2" SQUARE X 36"
 SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
 SIGN

[illegible]

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT

DIRECTION
OF TRAFFIC

SECTION A-A

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

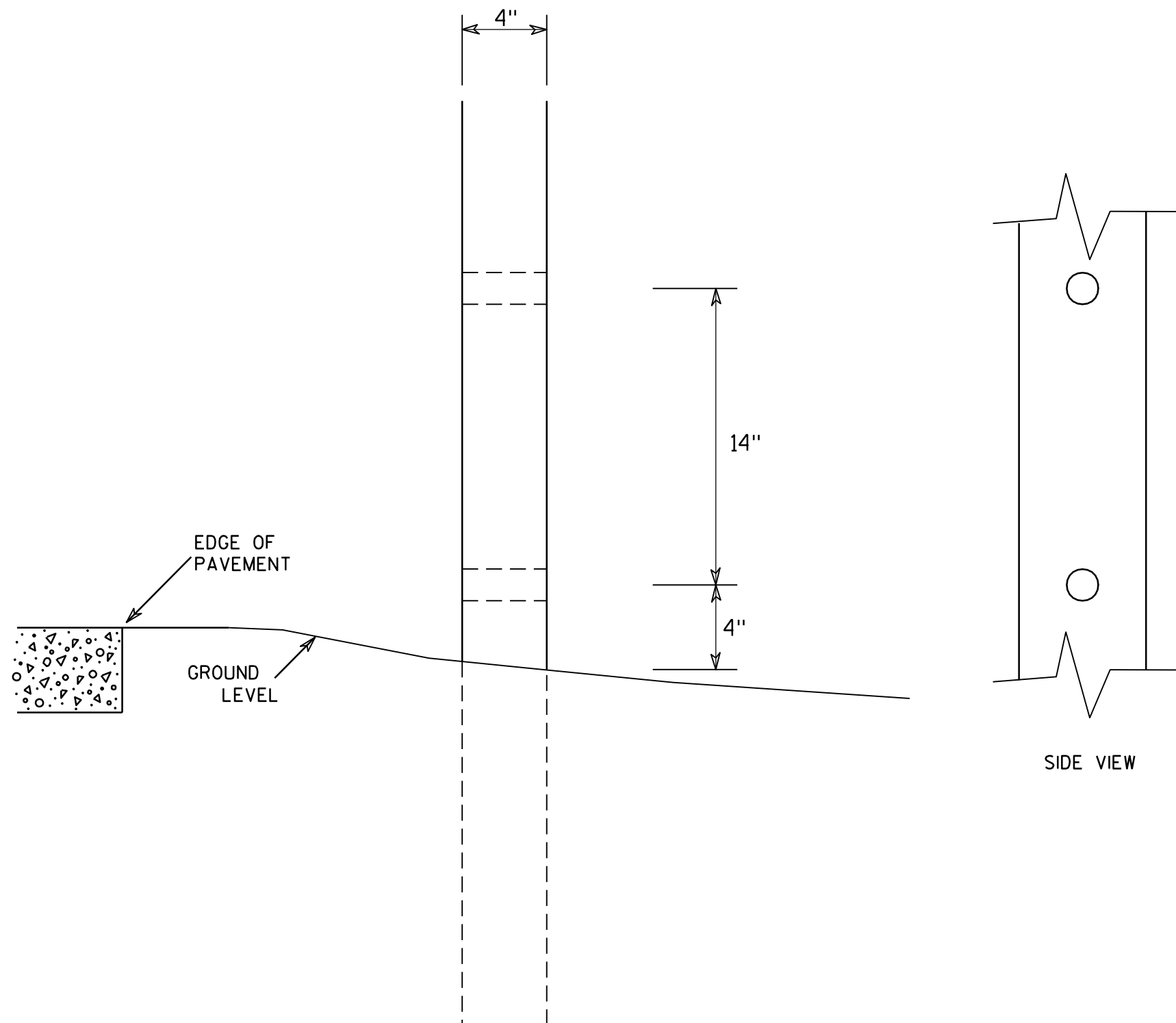
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch
For State Traffic Engineer

DATE 2/05/15 PLAT 214 14-9.9

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

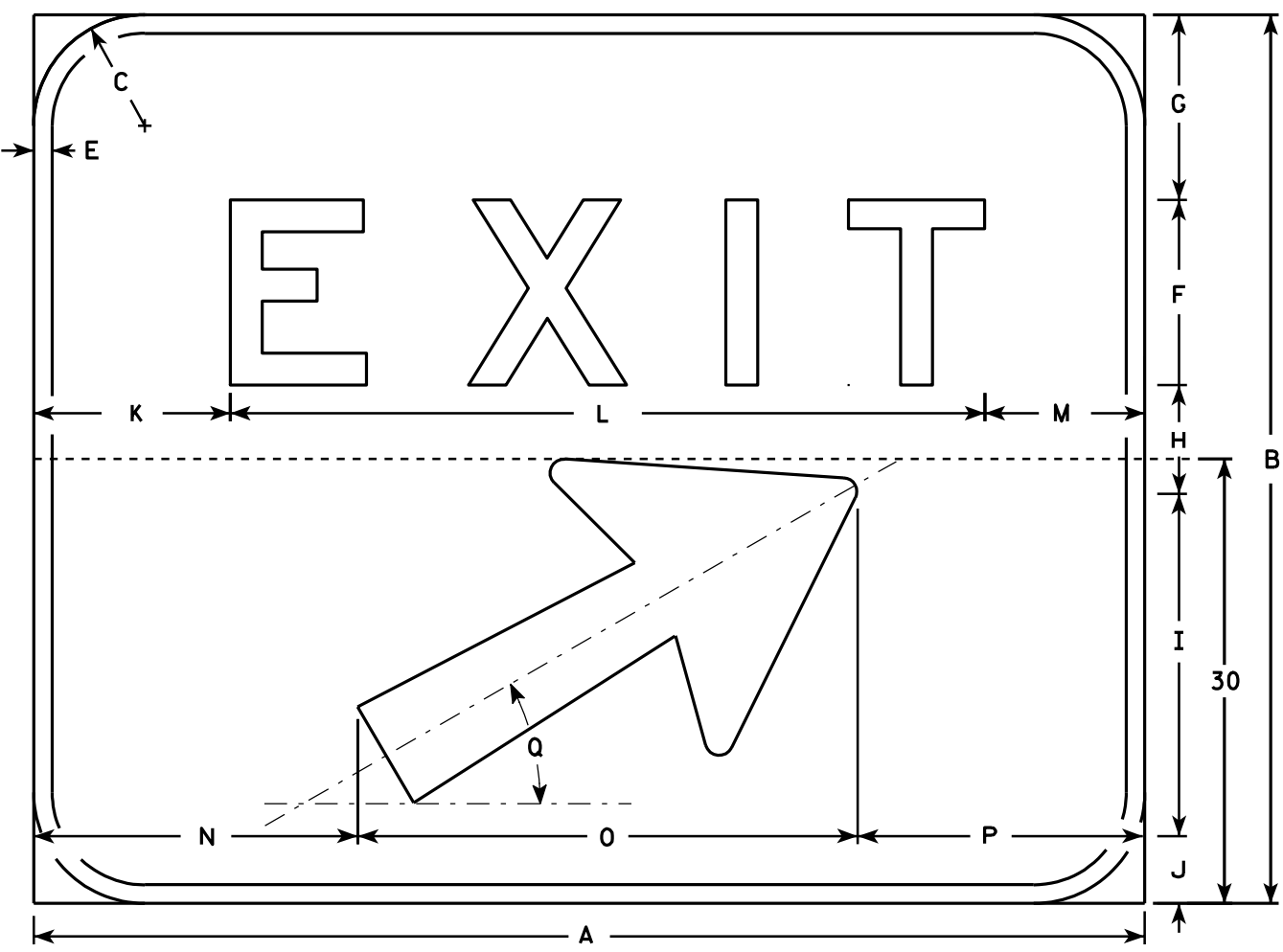
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 215

E



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:

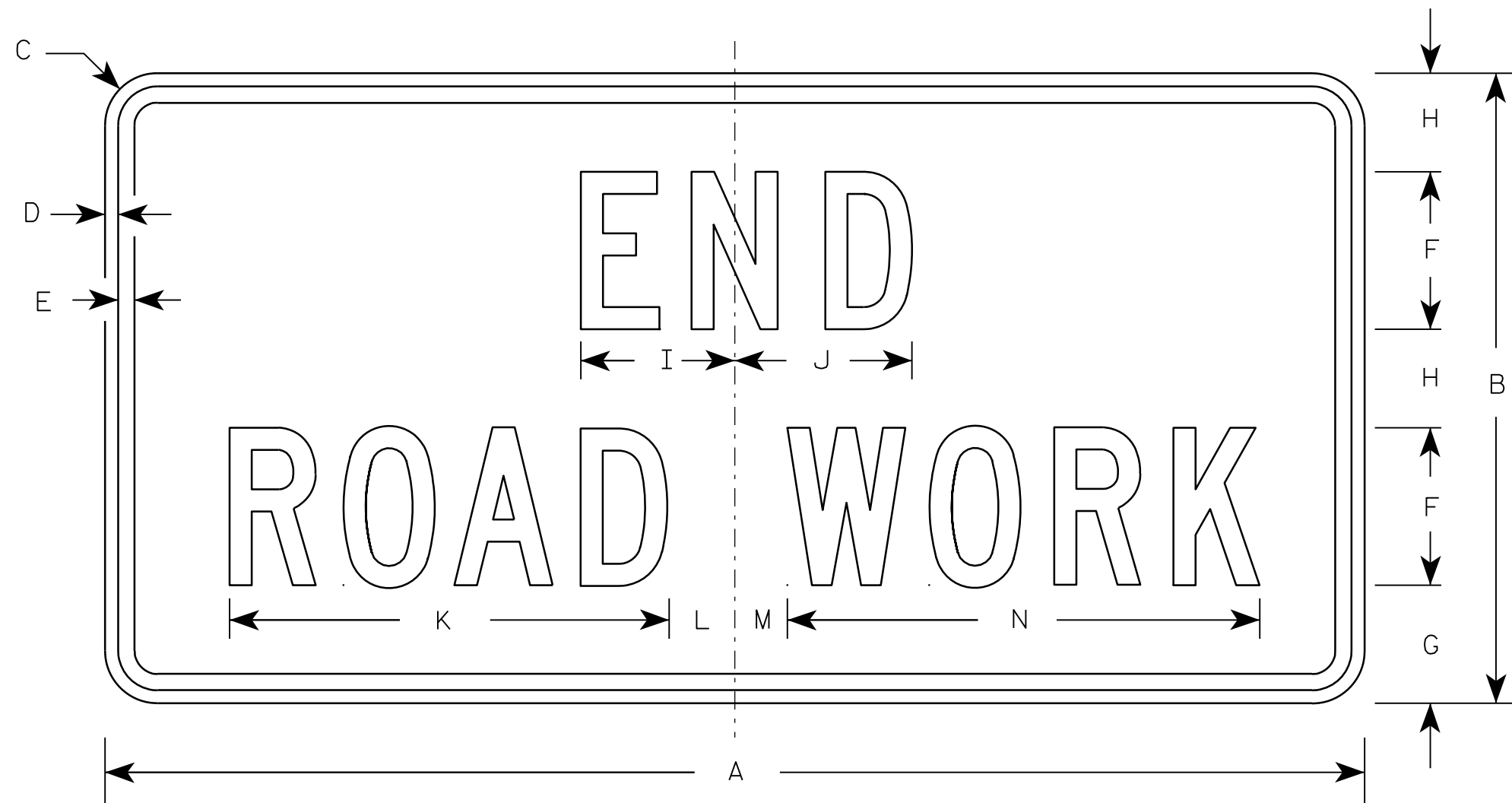
HWY:

COUNTY:

SHEET NO: 216

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

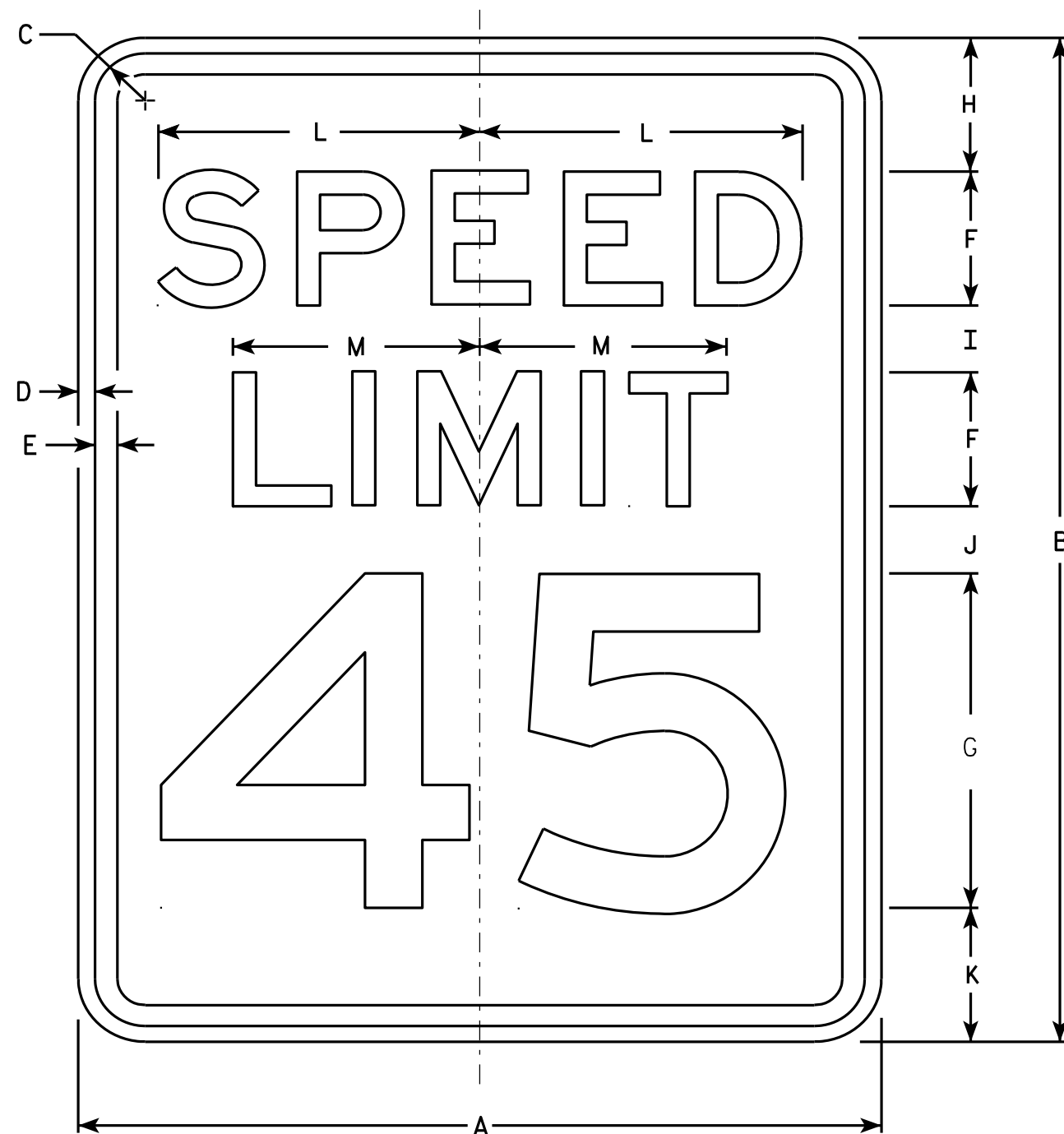
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 217

E



R2-1

NOTES

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

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

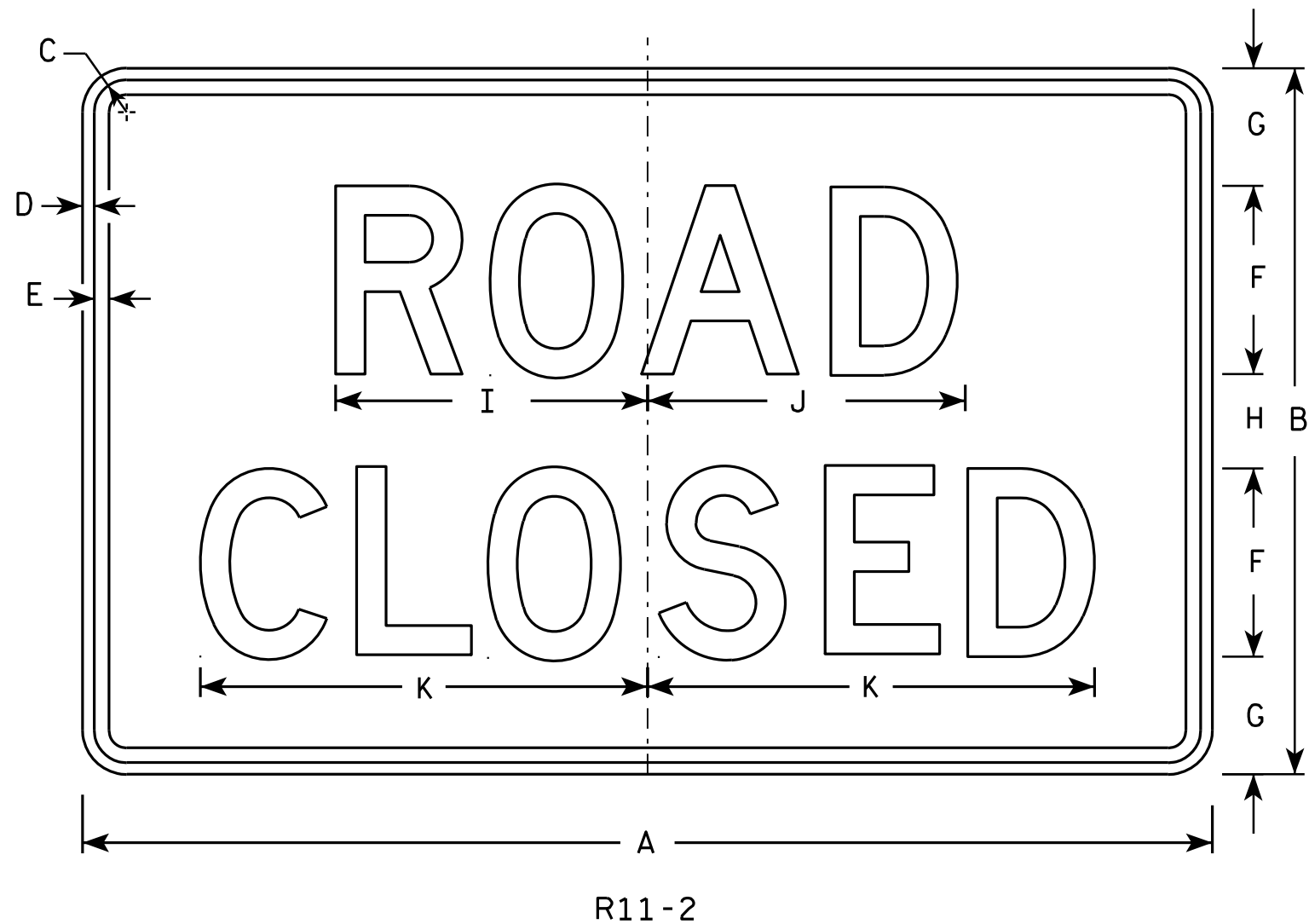
STANDARD SIGN R2-1

WISCONSIN DEPT OF TRANSPORTATION

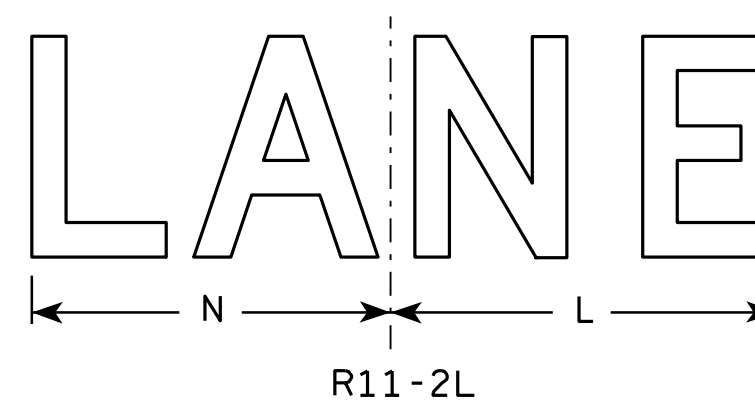
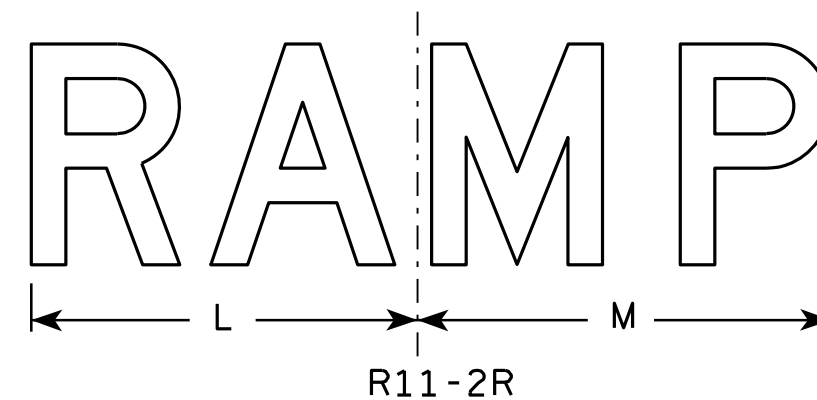
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

PROJECT NO: HWY: COUNTY: SHEET NO: 218 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 - 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.

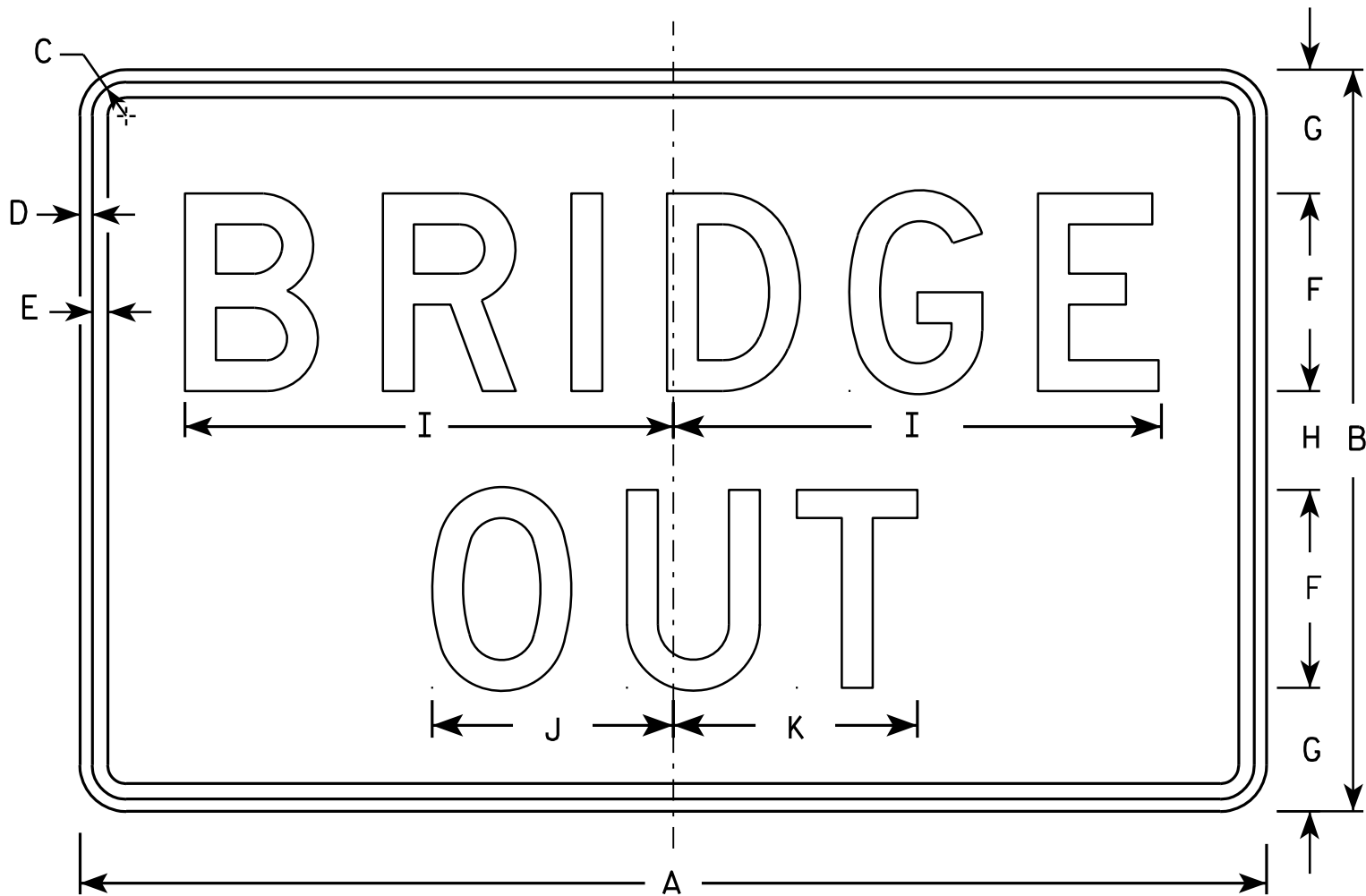


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
2M	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
3	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													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	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE <u>4/1/11</u>	PLATE NO. <u>R11-2.10</u>

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.



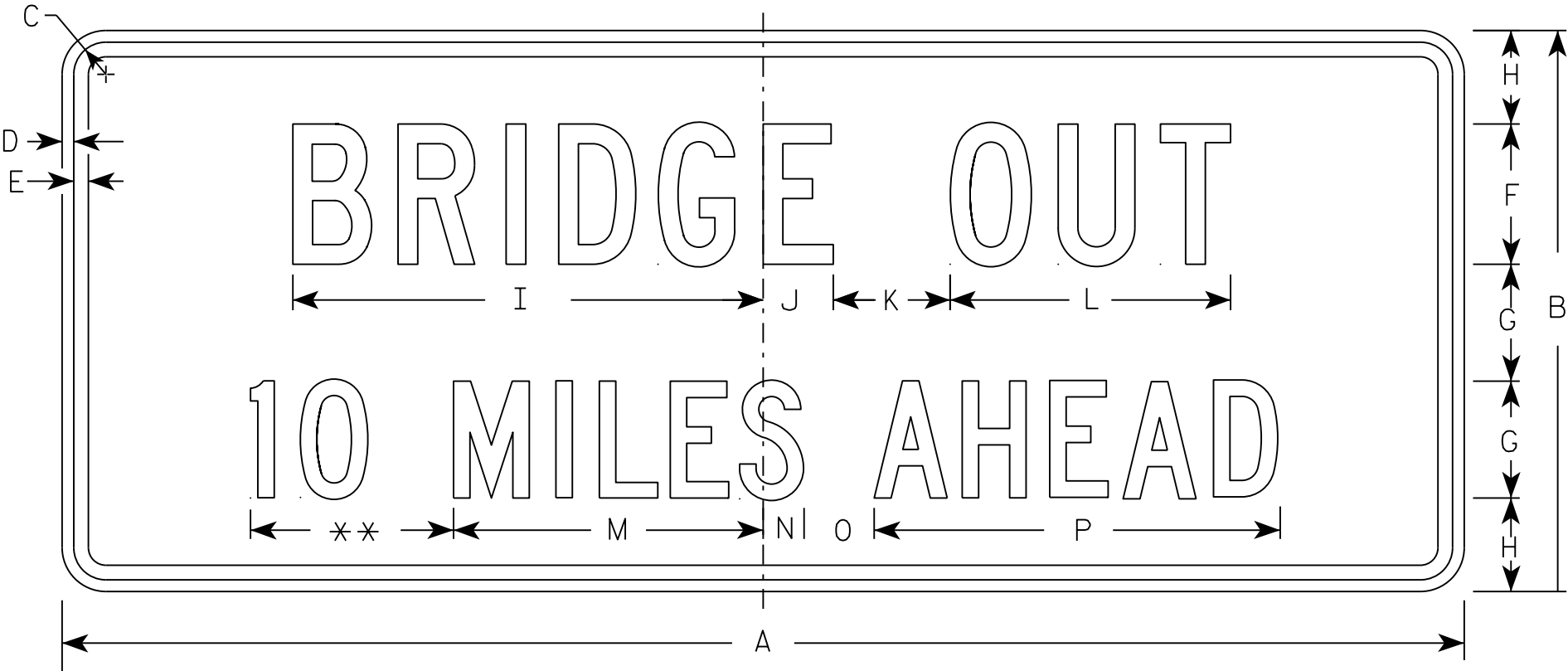
R11-2B

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	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

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

NOTES

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



R11-3C

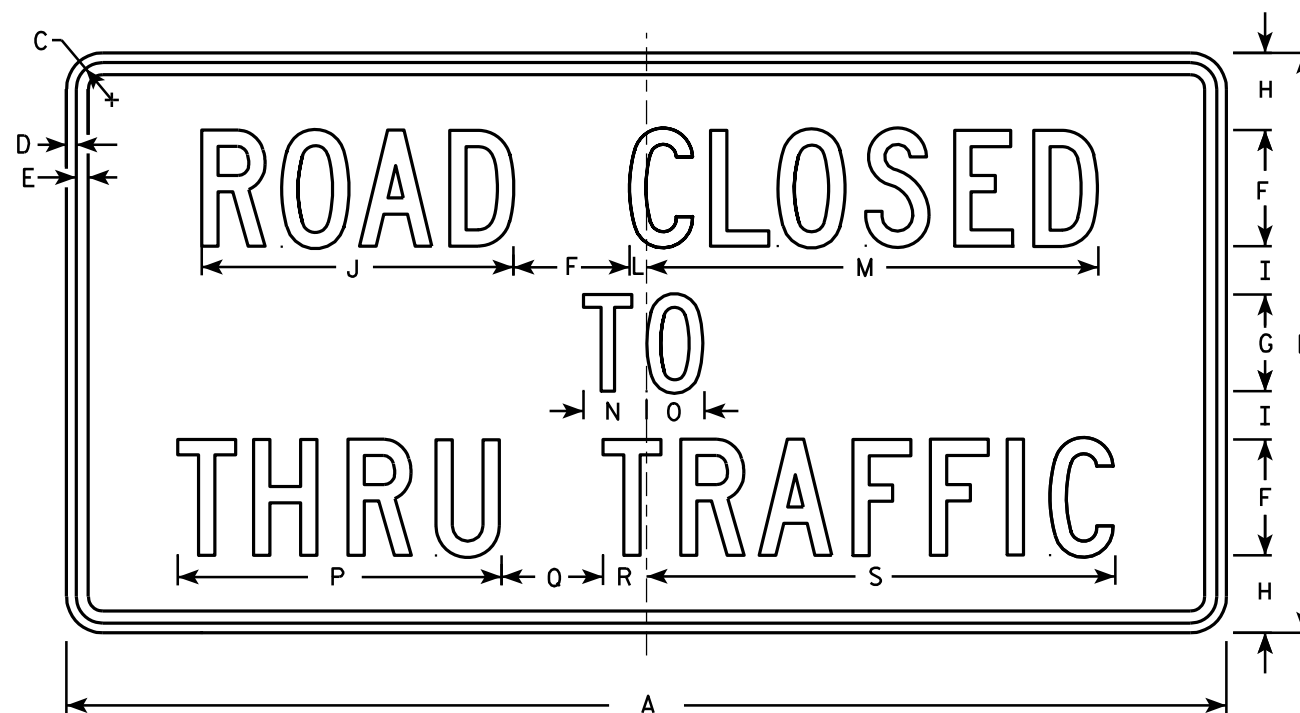
** See Note 5

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	15	1 3/8	1/2	5/8	4	3	2 1/2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4											3.75
2S	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8											10.0
2M	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8											10.0
3																											
4																											
5																											

PROJECT NO:

SHEET NO:

E



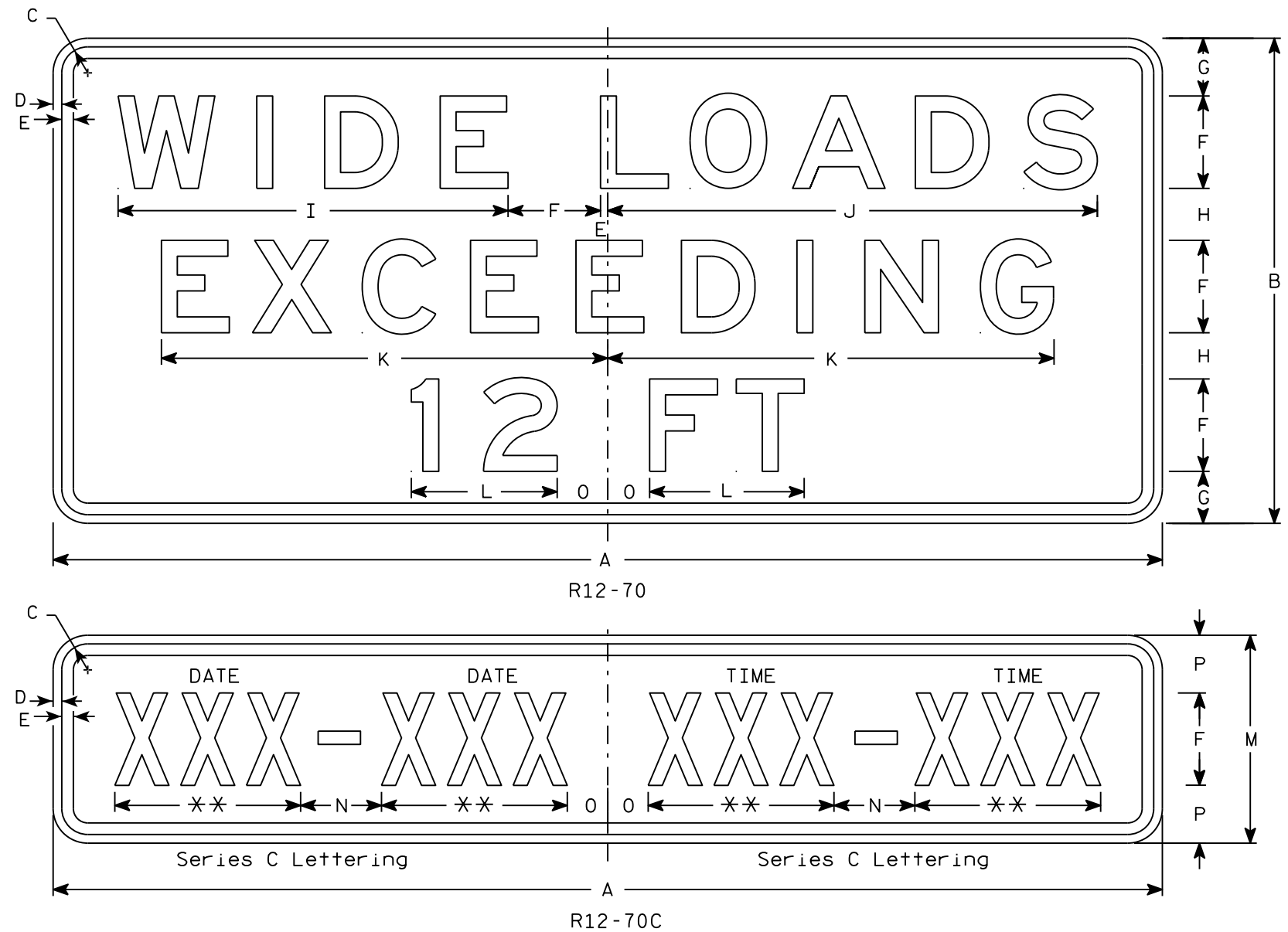
R11-4

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	60	30	1 3⁄8	½	5⁄8	6	5	4	2 ½	16 ⅛		7⁄8	23 3⁄8	3 ¼	3	16 ¾	5 ¼	2 ¼	24 ¼								12.5
2M	60	30	1 3⁄8	½	5⁄8	6	5	4	2 ½	16 ⅛		7⁄8	23 3⁄8	3 ¼	3	16 ¾	5 ¼	2 ¼	24 ¼								12.5
3																											
4																											
5																											

STANDARD SIGN	
R11 - 4	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 4/1/11	PLATE NO. R11-4.3



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 except as noted
 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.
- ** Substitute appropriate message, optically center message

																											R12-70	R12-70C
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 sq. ft.
1																												
2S	66	36	2 1/4	1/2	5/8	6	4	5	20 7/8	28 3/8	24 5/8	8 1/8	12	6	3	3											16.5	5.5
2M	66	36	2 1/4	1/2	5/8	6	4	5	20 7/8	28 3/8	24 5/8	8 1/8	12	6	3	3											16.5	5.5
3																												
4	96	42	2 1/4	3/4	1	8	5	4	34	42	39	13	18	7	3 1/2	5											36.0	12.0
5	96	42	2 1/4	3/4	1	8	5	4	34	42	39	13	18	7	3 1/2	5											36.0	12.0

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

TYPICAL SIGN
R12-70

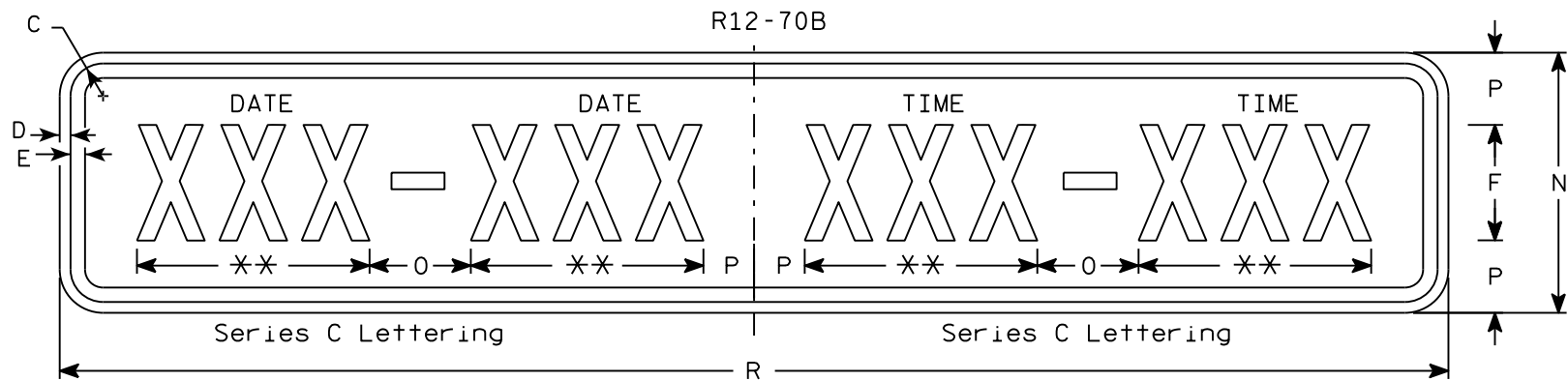
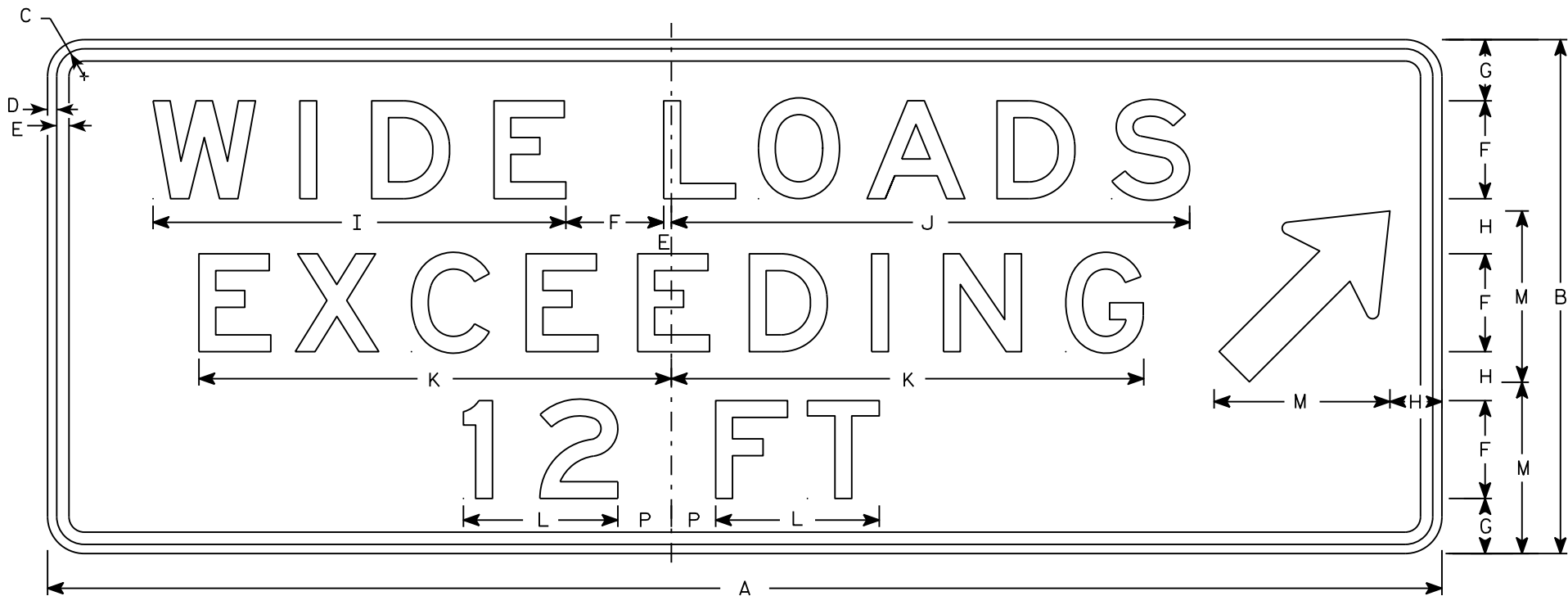
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 11/5/15 PLATE NO. 223 R12-70.6

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 - Black
 - 3. Message Series - E except as noted
 - 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.
- ** Substitute appropriate message, optically center message



R12 - 70C																												R12-70	R12-70C
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 sq. ft.	
1																													
2S	90	36	2 1/4	1/2	5/8	6	4	5	20 7/8	28 3/8	24 5/8	8 1/8	12	12	6	3		66									22.5	5.5	
2M	90	36	2 1/4	1/2	5/8	6	4	5	20 7/8	28 3/8	24 5/8	8 1/8	12	12	6	3		66									22.5	5.5	
3																													
4	114	42	2 1/4	3/4	1	8	5	4	34	42	39	13	14	18	7	3 1/2		96									36.75	12.0	
5	114	42	2 1/4	3/4	1	8	5	4	34	42	39	13	14	18	7	3 1/2		96									36.75	12.0	

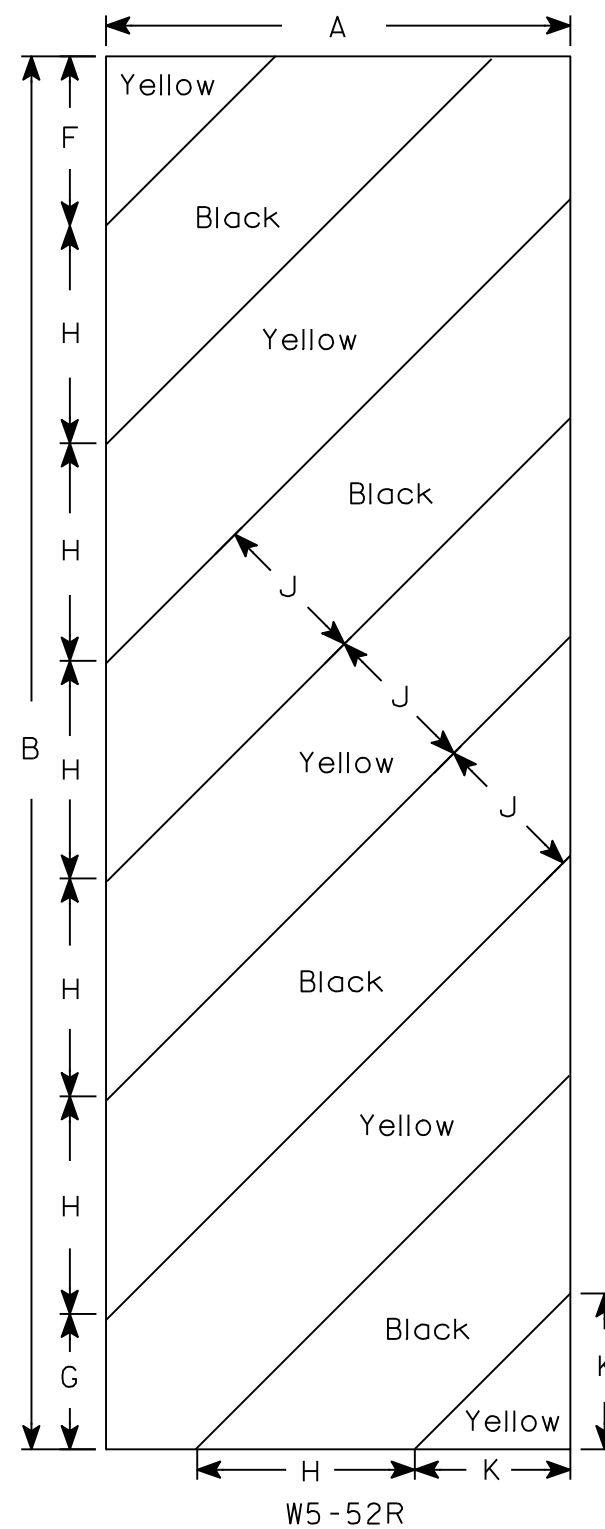
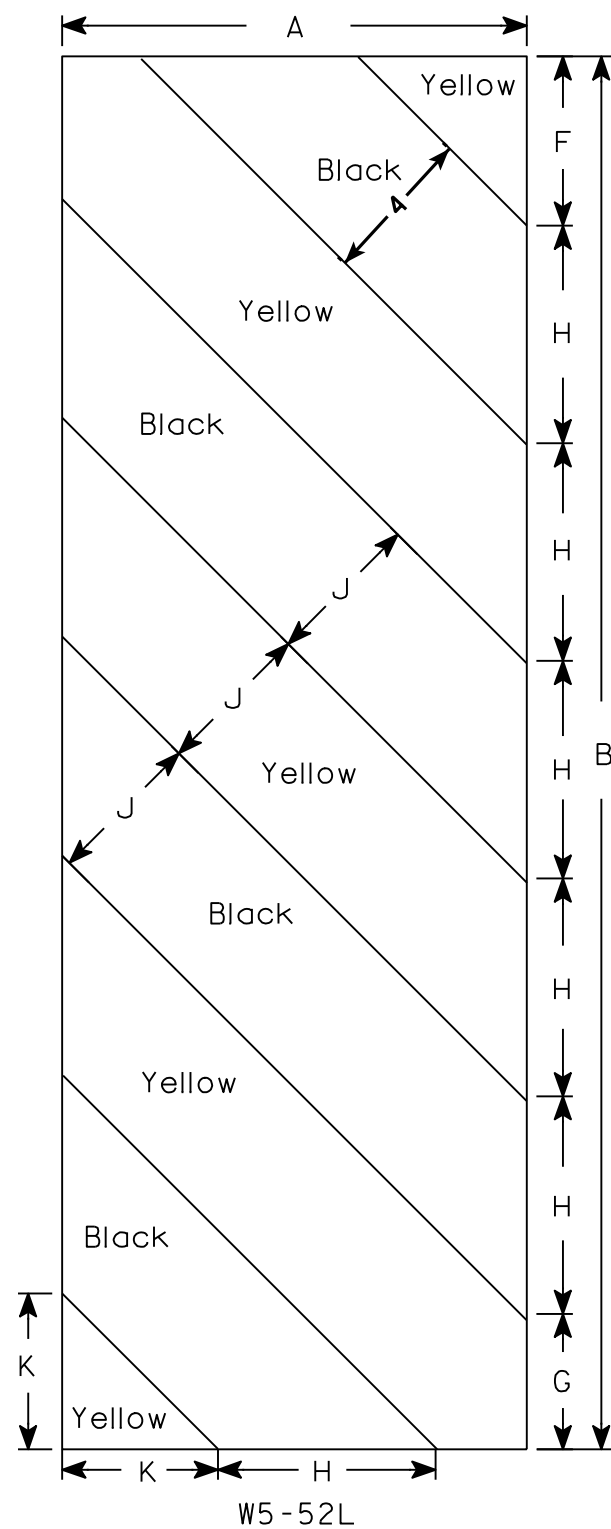
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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TYPICAL SIGN
R12-70B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/10/15 PLATE NO. 224 R12-70B.3



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. Alternate colors of stripes as shown.

[illegible]

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 5/29/12 PLATE NO. W5-52.9

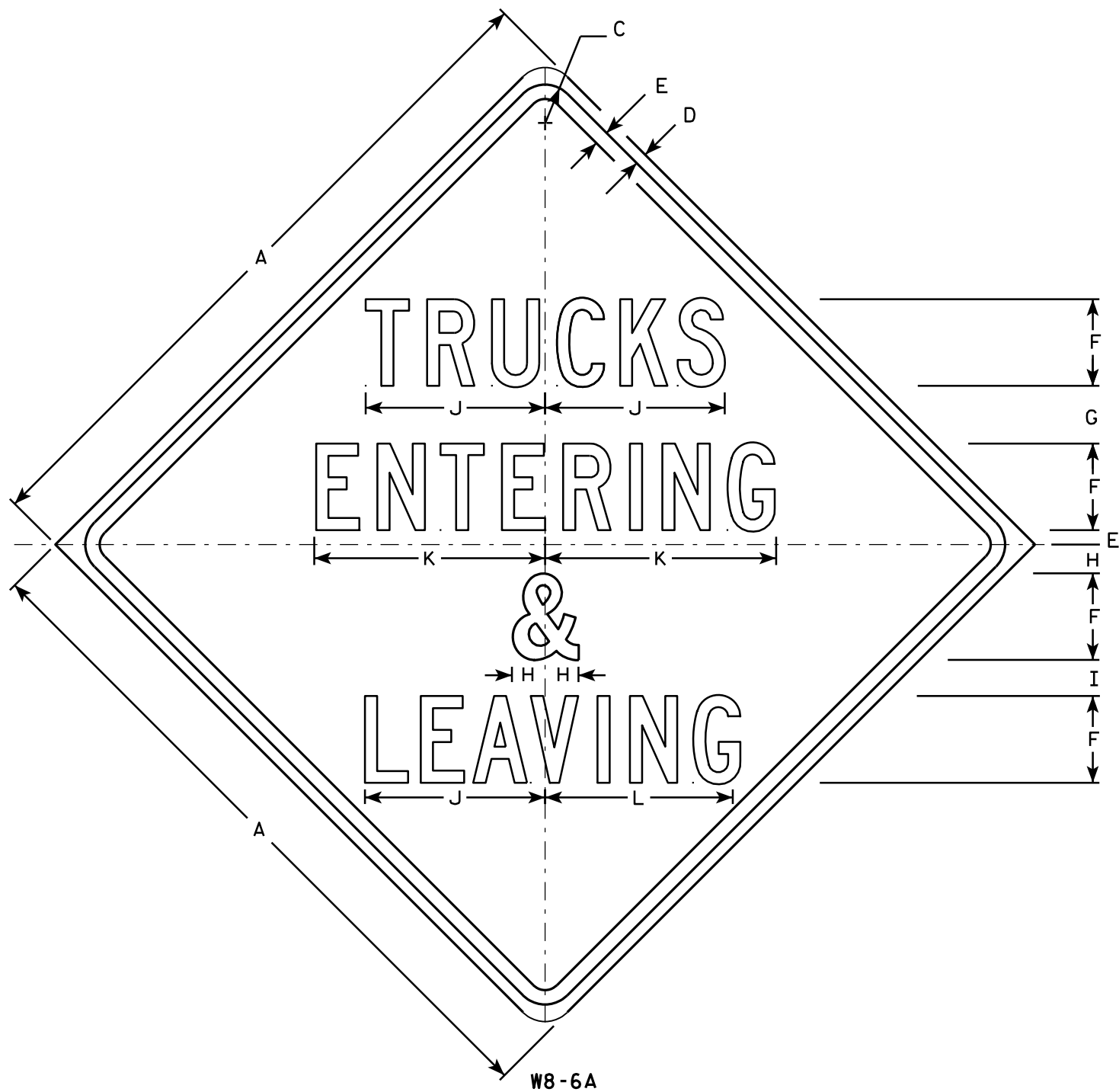
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 225

E



W8-6A

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.

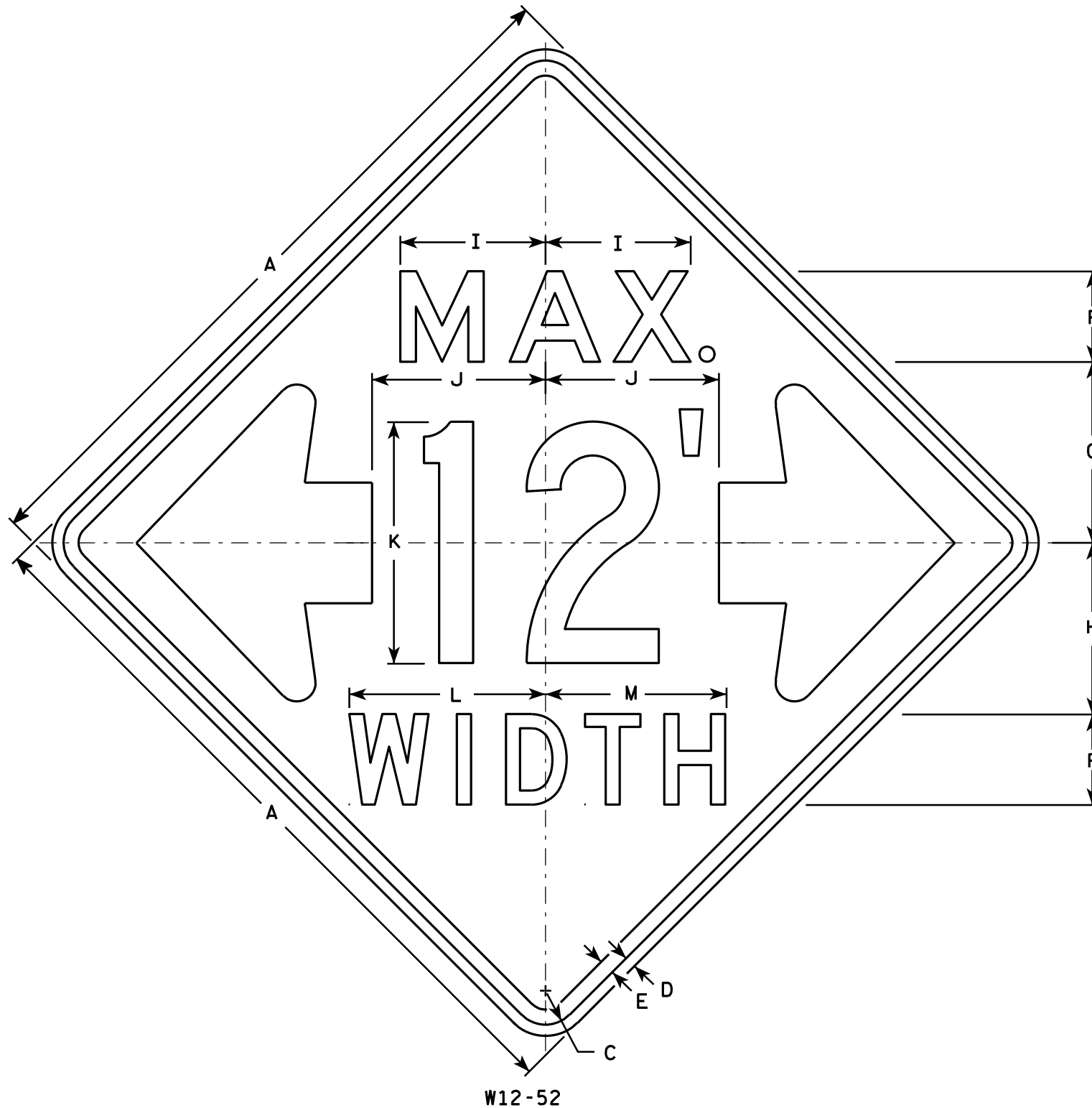
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	4 1/2	3	1 1/2	1 7/8	9 3/8	12	9 3/4															9
2S	48		2 1/4	3/4	1	6	4	2	2 1/2	12 1/2	16	13															16
2M	48		2 1/4	3/4	1	6	4	2	2 1/2	12 1/2	16	13															16
3	48		2 1/4	3/4	1	6	4	2	2 1/2	12 1/2	16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

STANDARD SIGN
W8-6A

WISCONSIN DEPT OF TRANSPORTATION

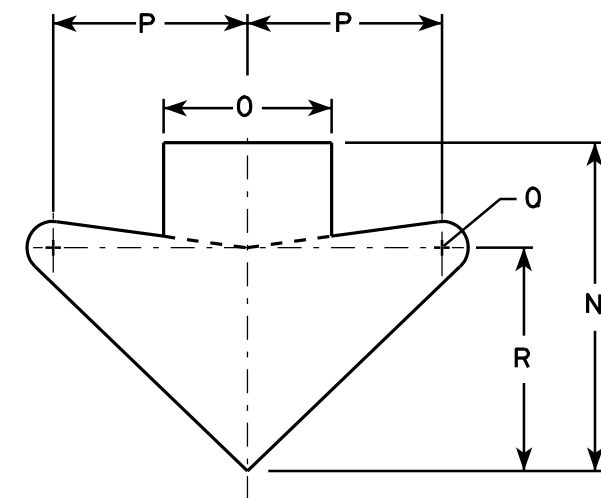
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/23/11 PLATE NO. W8-6A.2



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 - See note 5
- 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.
- The top line is series E, the numerals are series C, and the bottom line is series D.
- 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

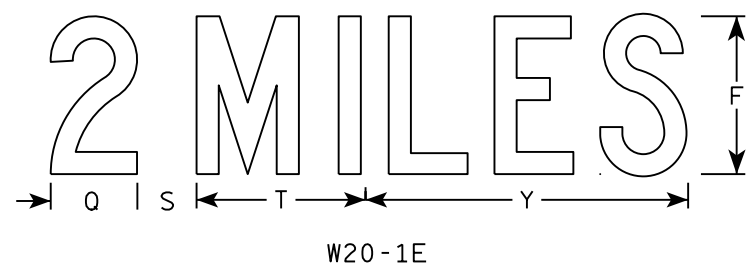
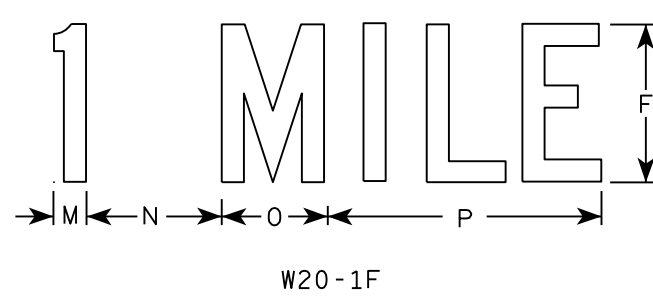
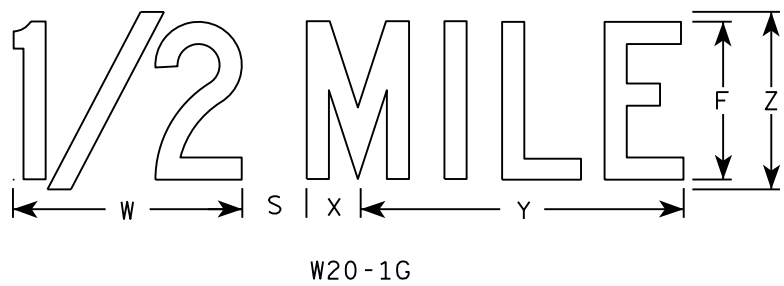
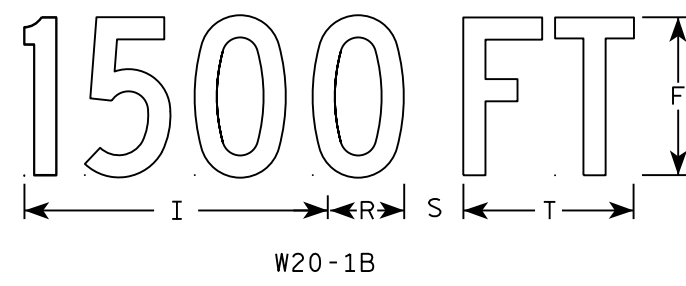
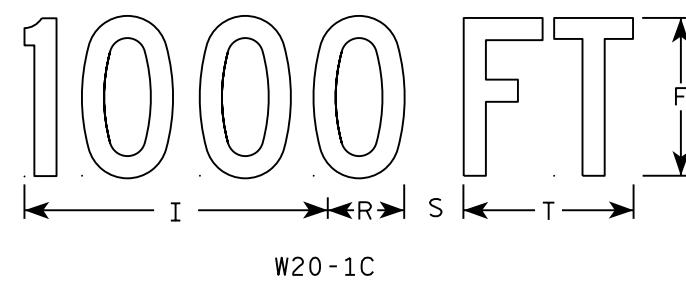
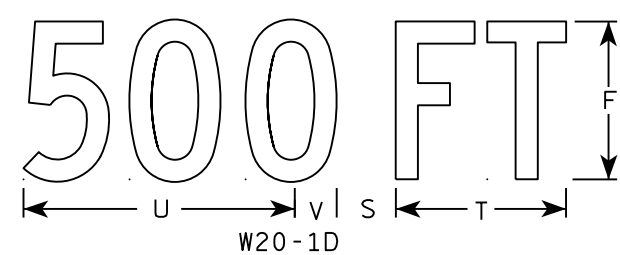
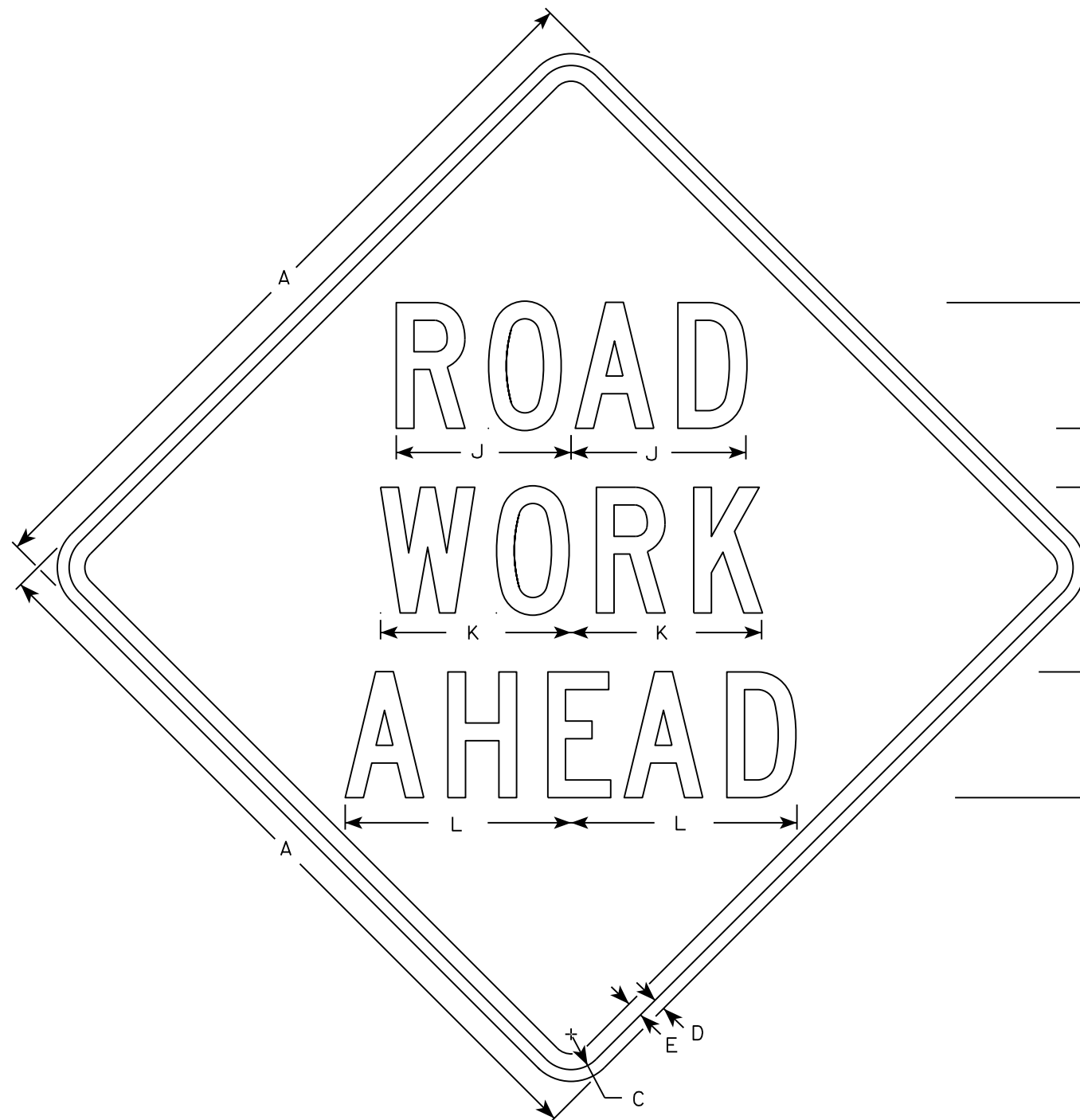
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 227

E



NOTES

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

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

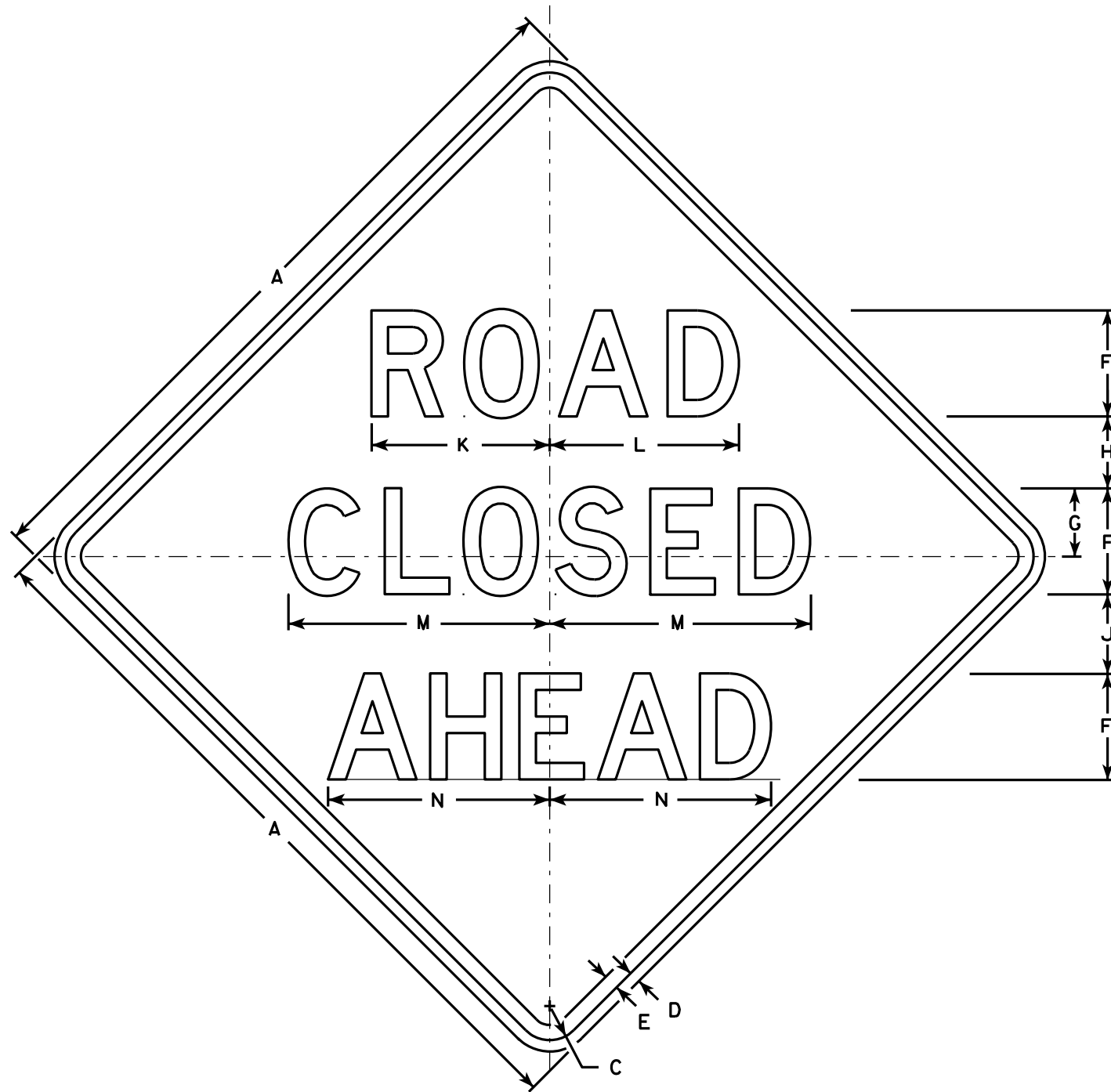
STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/07/15 PLATE NO. W20-1.10

228



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

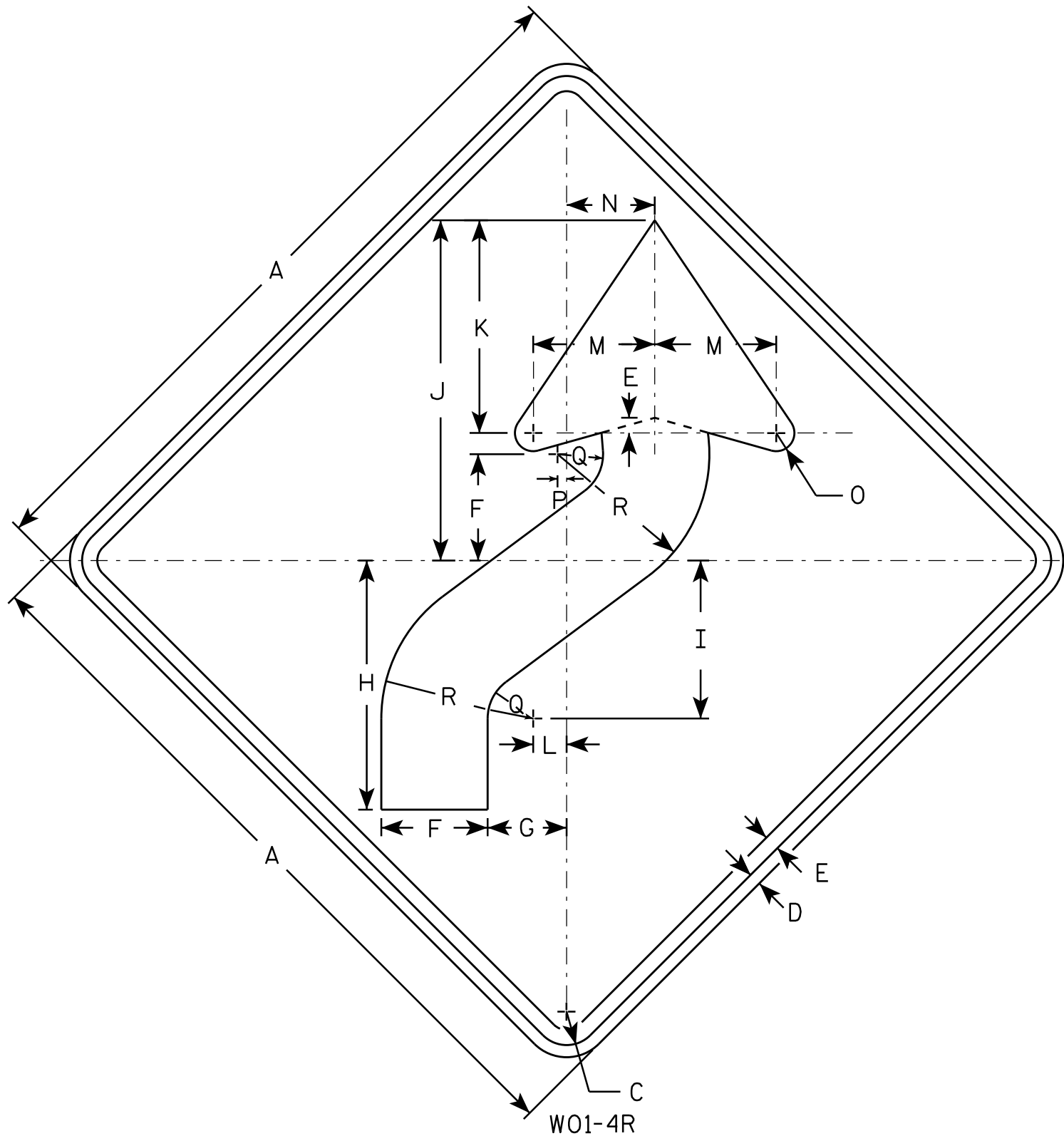
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 229

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 - Orange
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. W01-4L is the same as W01-4R 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	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

STANDARD SIGN
W01-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

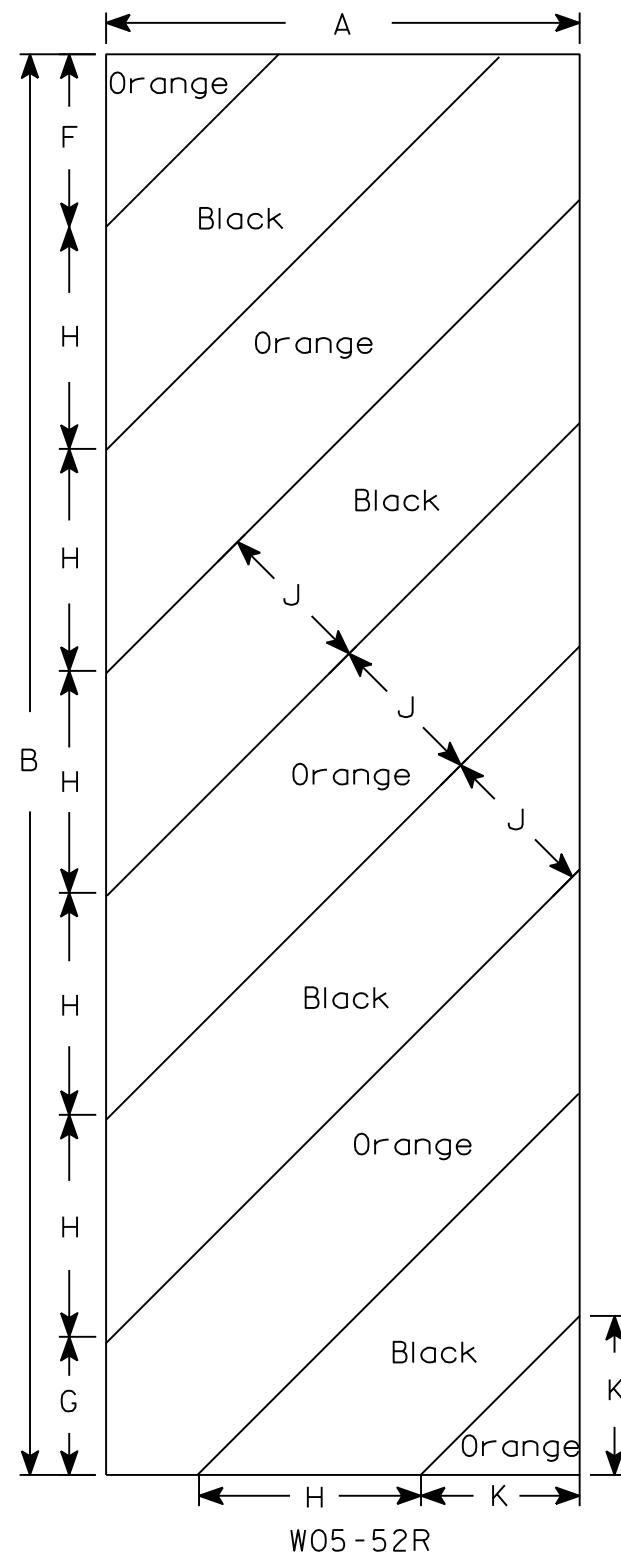
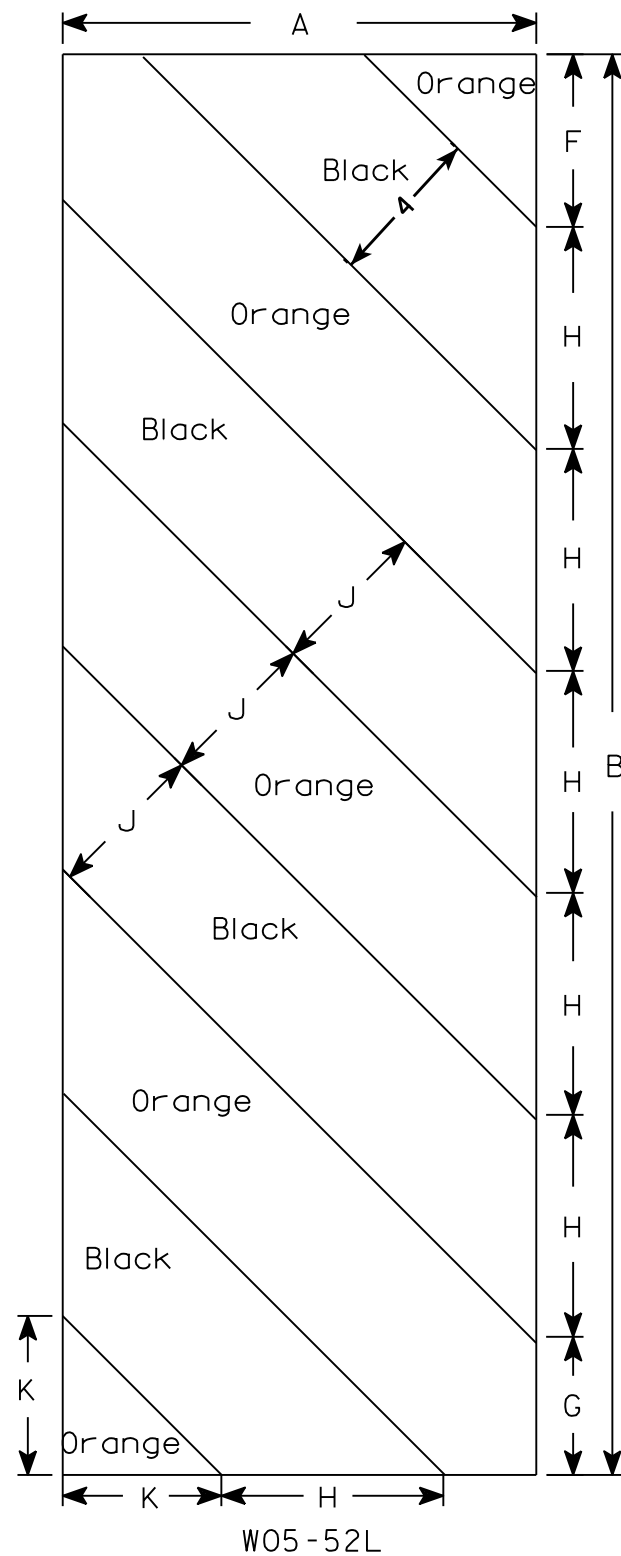
DATE 11/18/13 PLATE NO. W01-4.1
230

PROJECT NO:

HWY:

COUNTY:

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 - Orange
 - 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. Alternate colors of stripes as shown.

[illegible]

STANDARD SIGN
W05-52L & W05-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch

DATE 11/20/13 PLATE 231 ^W5-52.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E
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GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.

ANY EXCAVATION NECESSARY TO COMPLETE THE OVERLAY OR JOINT REPAIR AT THE ABUTMENTS IS CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

REMOVAL LINES NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1" DEEP SAW CUT AT THE CONCRETE SURFACES.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.

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

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, CONCRETE SURFACE REPAIR, CURB REPAIR, AND FULL DEPTH DECK REPAIR AREAS SHALL BE DETERMINED BY THE FIELD ENGINEER.

A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM "CLEANING DECKS".

APPLY BRIDGE SEAT PROTECTION, AS PER SECTION 502.3.12 OF THE STANDARD SPECIFICATIONS, TO THE TOP SURFACES OF BOTH ABUTMENTS BELOW EXPANSION DEVICES, POWER WASH AND ADEQUATELY DRY SURFACES BEFORE APPLICATION. WORK TO BE INCIDENTAL TO "JOINT REPAIR".

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 1 1/2" PLACED ABOVE THE DECK SURFACE AFTER "CLEANING DECKS". EXPECTED AVERAGE OVERLAY THICKNESS IS 2 1/2". IF EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN 1/2", CONTACT THE STRUCTURES DESIGN SECTION.

PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED TO THE CONCRETE OVERLAY.

PIGMENTED SURFACE SEALER IS TO BE APPLIED TO THE TOP OF PARAPETS, INSIDE FACE OF PARAPETS, TOP AND FACE OF CURB.

EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID FOR IN THE LUMP SUM PRICE BID AS "EXPANSION DEVICE B-69-13".

PARAPET JOINTS TO BE RE-SEALED WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). WORK CONSIDERED INCIDENTAL TO "JOINT REPAIR".

AT CURB REPAIR, EXPOSE EXISTING REINFORCEMENT A MINIMUM OF 1 1/2" CLEAR.

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HS-20

INVENTORY RATING: HS-11

OPERATING RATING: HS-18

WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 120 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY BRIDGES

$f'_c = 4,000$ p.s.i.

CONCRETE MASONRY OVERLAY DECKS

$f'_c = 4,000$ p.s.i.

HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60)

$f_y = 60,000$ p.s.i.

TRAFFIC DATA:

IH 39

A.D.T. = 15,200 (2012)

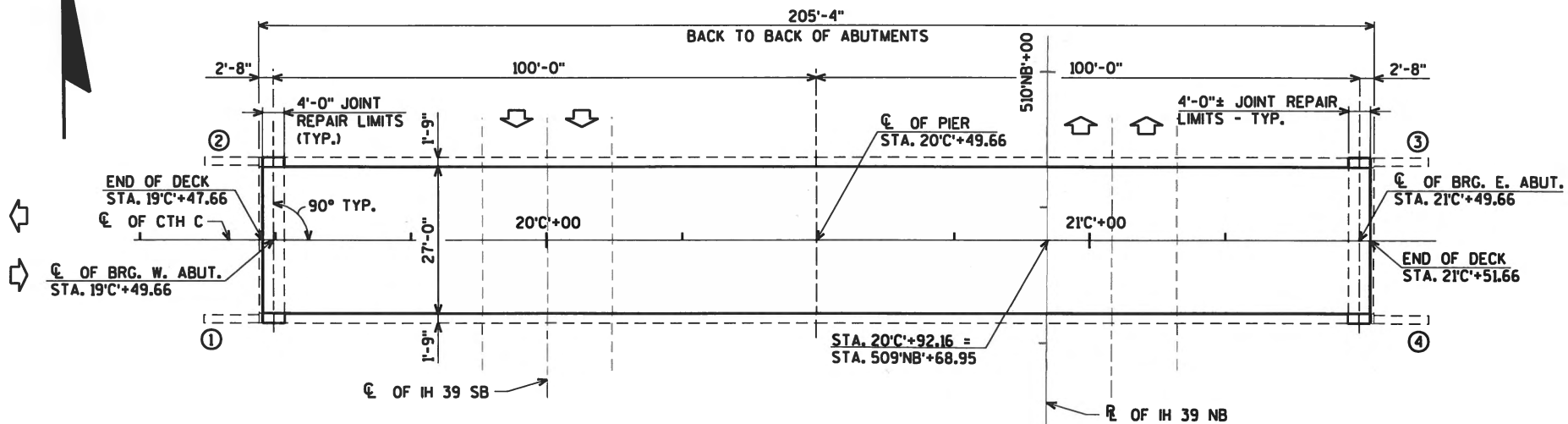
R.D.S. = 70 M.P.H.

CTH C

A.D.T. = 550 (2009)

R.D.S. = 50 M.P.H.

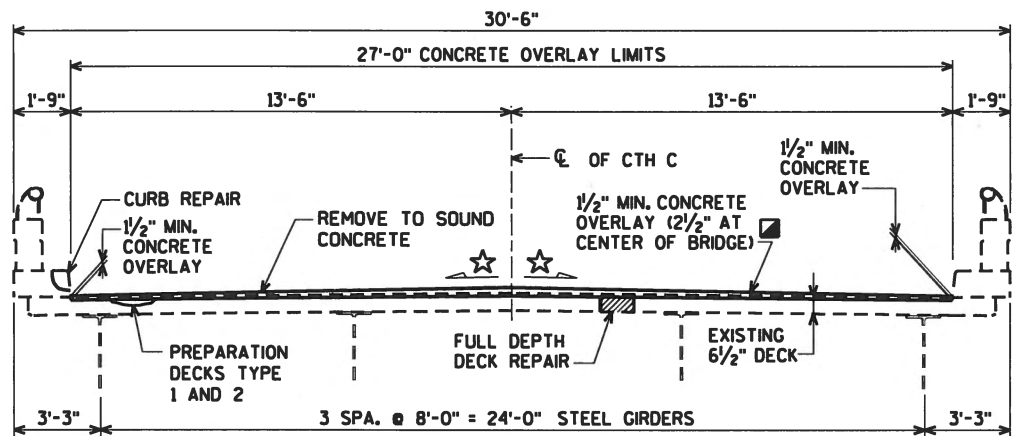
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O DENOTES WING NUMBER

PLAN

2-SPAN STEEL DECK GIRDER BRIDGE CONCRETE OVERLAY



CROSS SECTION THRU BRIDGE

(LOOKING EAST)

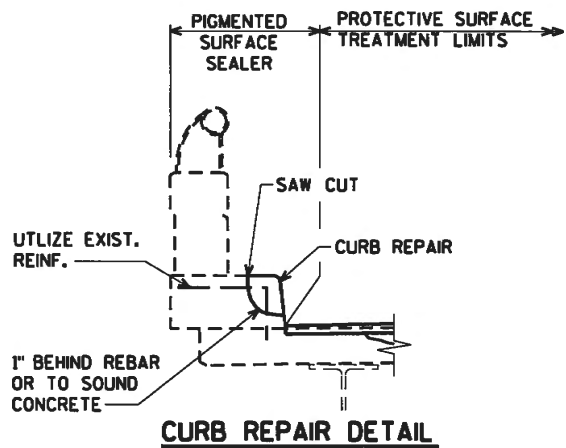
LEGEND

☆ NEW CONCRETE OVERLAY SLOPE = 0.015 %
CURRENT CONCRETE DECK SLOPE = 0.01 %

■ THE PROPOSED CONCRETE OVERLAY THICKNESS VARIES FROM 1 1/2" MIN. AT THE CURBS TO 2 1/2" MIN. AT THE CROWN. THE EXPECTED AVERAGE OVERLAY THICKNESS IS 2 1/2"

△ BID ITEM ALSO INCLUDES CONCRETE FOR:
"PREPARATION DECKS TYPE 1"
"PREPARATION DECKS TYPE 2"
"FULL-DEPTH DECK REPAIR"
"JOINT REPAIR"
"CURB REPAIR"

△ BID ITEM INCLUDES CONCRETE FOR CURBS AND PARAPETS.



CURB REPAIR DETAIL

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTAL
502.0100	CONCRETE MASONRY BRIDGES	CY	2
502.3100	EXPANSION DEVICE B-69-13	LS	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	612
502.3210	PIGMENTED SURFACE SEALER	SY	252
502.5005	MASONRY ANCHORS TYPR L NO. 5 BARS	EA	54
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,310
509.0301	PREPARATION DECKS TYPE 1	SY	100
509.0302	PREPARATION DECKS TYPE 2	SY	50
509.0500	CLEANING DECKS	SY	612
509.1000	JOINT REPAIR	SY	27
509.1200	CURB REPAIR	LF	5
509.1500	CONCRETE SURFACE REPAIR	SF	5
509.2000	FULL-DEPTH DECK REPAIR	SY	1
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	59
509.9050.S	CLEANING PARAPETS	LF	467

LIST OF DRAWINGS

1. GENERAL PLAN
2. EXPANSION JOINT DETAILS AT ABUTMENTS
3. EXPANSION JOINT DETAILS AT ABUTMENTS
4. EXPANSION JOINT DETAILS AT ABUTMENTS
5. PARAPET DETAILS



BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

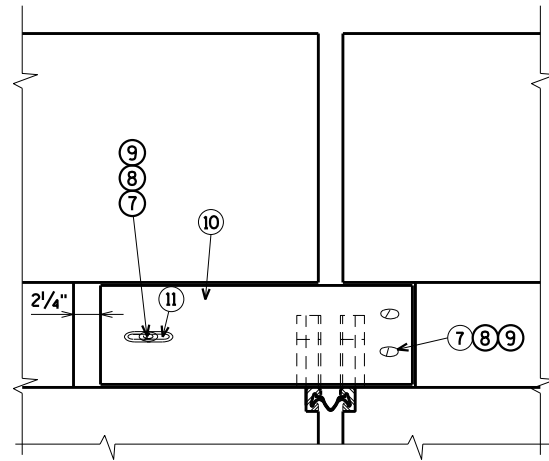
CONSULTANT CONTACT:
DAN SYDOW
(715)-834-3161

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY AYRES ASSOCIATES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED <i>William C. Dreher</i> SR		05/03/16 DATE	
CHIEF STRUCTURES DESIGN ENGINEER			
STRUCTURE B-69-13			
CTH C OVER IH 39			
COUNTY	WAUSHARA	TOWN/CITY/VILLAGE	HANCOCK
DESIGN SPEC.	REHABILITATION	N/A	
DESIGNED BY	JWZ	DESIGN CK'D.	CJM
DRAWN BY	CLS	PLANS CK'D.	DNS
GENERAL PLAN			SHEET 1 OF 5 232

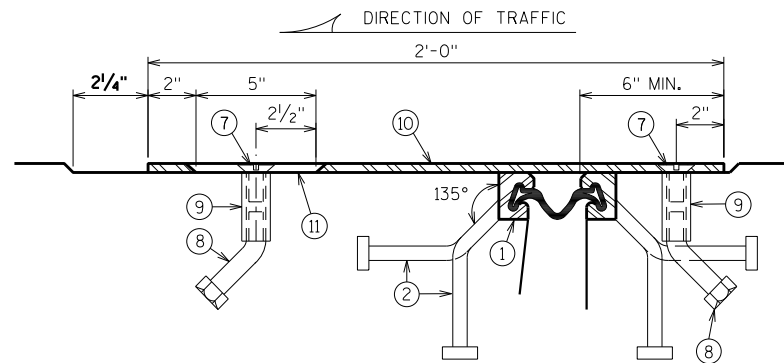
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U:\42-0912.00 - Waushara County, IH39 Overlays\B-69-13 CTH C over IH39\BRIDGE\FINAL\B-69-13 exp.DGN

STATE PROJECT NUMBER

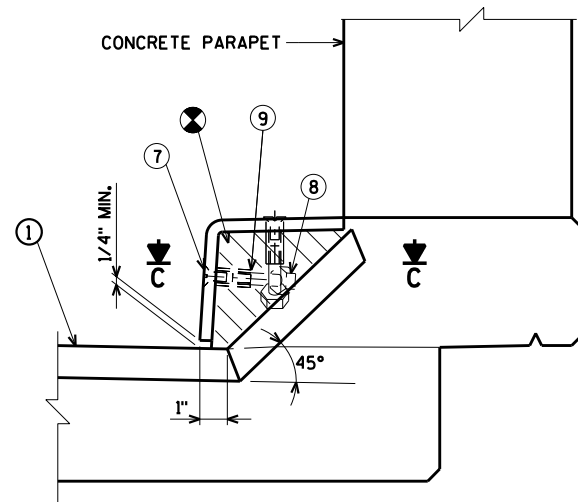
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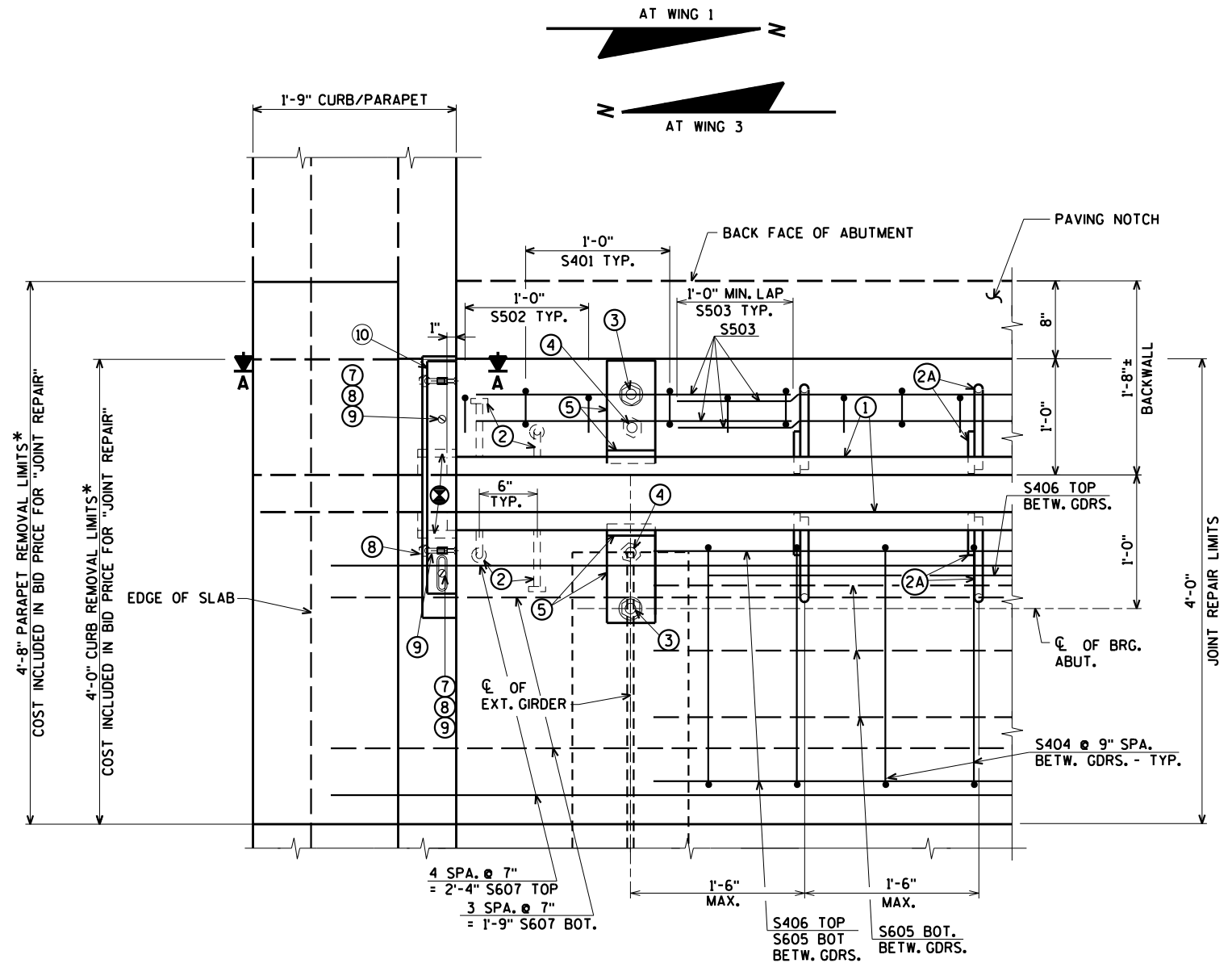
**VIEW OF PARAPET PLATES
FROM ROADWAY**



SECTION C



SECTION A



**PART PLAN
AT WINGS 1 & 3**

*UTILIZE EXISTING VERTICAL BAR
STEEL FOR PARAPET REMOVAL
LIMITS OUTSIDE OF THE "JOINT
REPAIR" LIMITS.

⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.

WORK THIS SHEET WITH SHEETS 3 & 4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-13			
DRAWN BY CJM		PLANS CK'D. AEB	
EXPANSION JOINT DETAILS AT ABUTMENTS		SHEET 2 OF 5 233	

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☆

STAR	BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	2,310" COATED
								LOCATION
	S401	X	56	3-1	X			PAVING BLOCK VERT.
	S502	X	54	3-2	X			PAVING BLOCK VERT. ANCHOR
	S503	X	24	8-0				PAVING BLOCK HORIZ.
	S404	X	60	3-7	X			DIAPH. VERT.
	S605	X	30	7-8				DIAPH. HORIZ.
	S406	X	24	7-6				DIAPH. HORIZ.
	S607	X	36	16-4				DECK TRANSVERSE
	S508	X	24	3-1	X			PARAPET VERT.
	S509	X	24	4-6	X			PARAPET VERT.
	S510	X	24	1-4				PARAPET HORIZ. APPROACH
	S511	X	36	2-6				PARAPET HORIZ. STRUCTURE

S401

8"

8"

4 1/2"

S502

10"

VERT. LEG

S404

4 1/2"

6"

2'-2"

S508

11"

10"

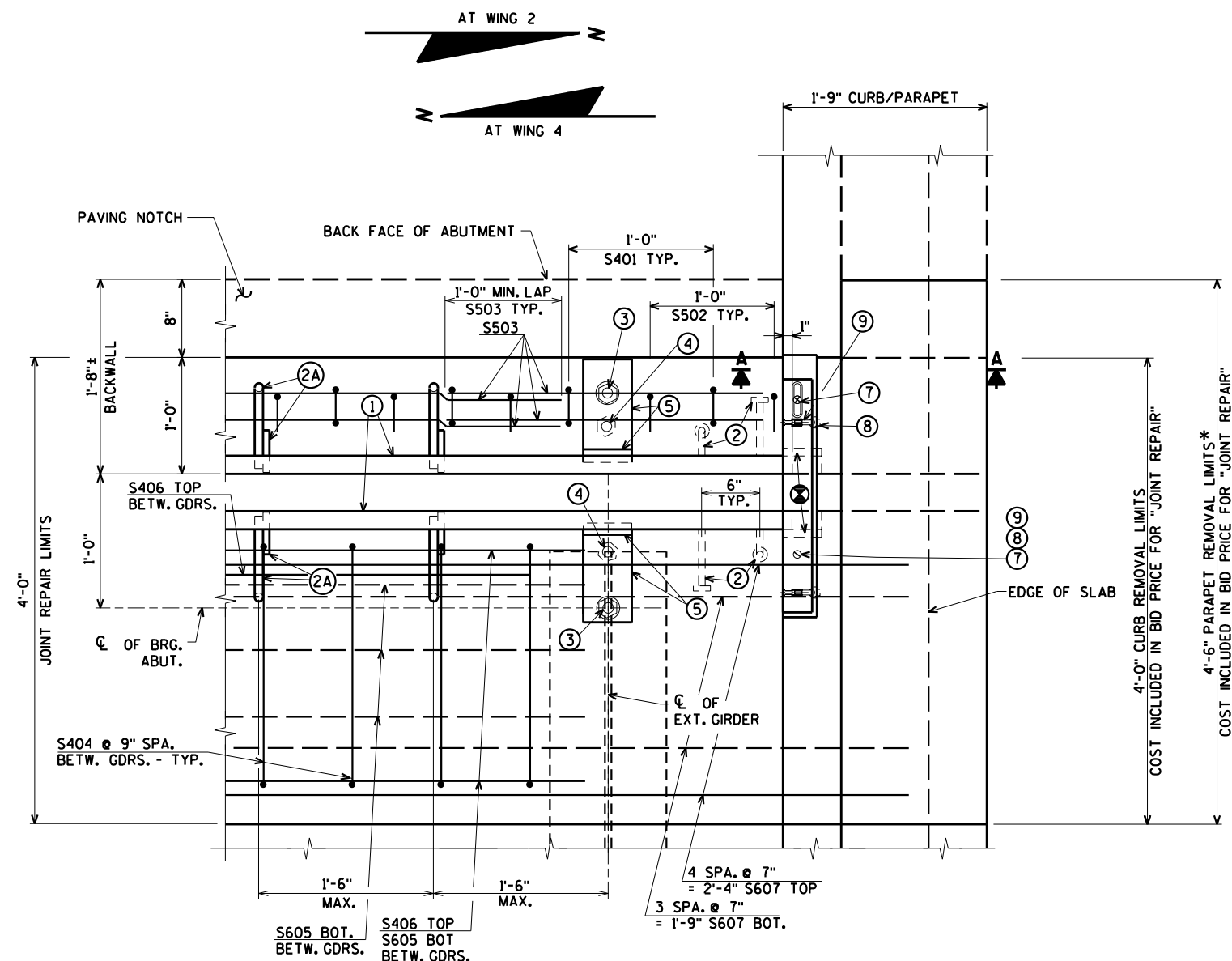
10"

S509

2 1/4" RAD.

1'-7"

1'-7"



PART PLAN
AT WINGS 2 & 4

* UTILIZE EXISTING VERTICAL BAR STEEL FOR PARAPET REMOVAL LIMITS OUTSIDE OF THE "JOINT REPAIR" LIMITS.

WORK THIS SHEET WITH SHEETS 2 & 4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-13			
DRAWN BY		CJM	PLANS CK'D. AEB
EXPANSION JOINT DETAILS AT ABUTMENTS		SHEET 3 OF 5 234	

⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.

ORIGINAL PLANS PREPARED BY

AYRES
ASSOCIATES

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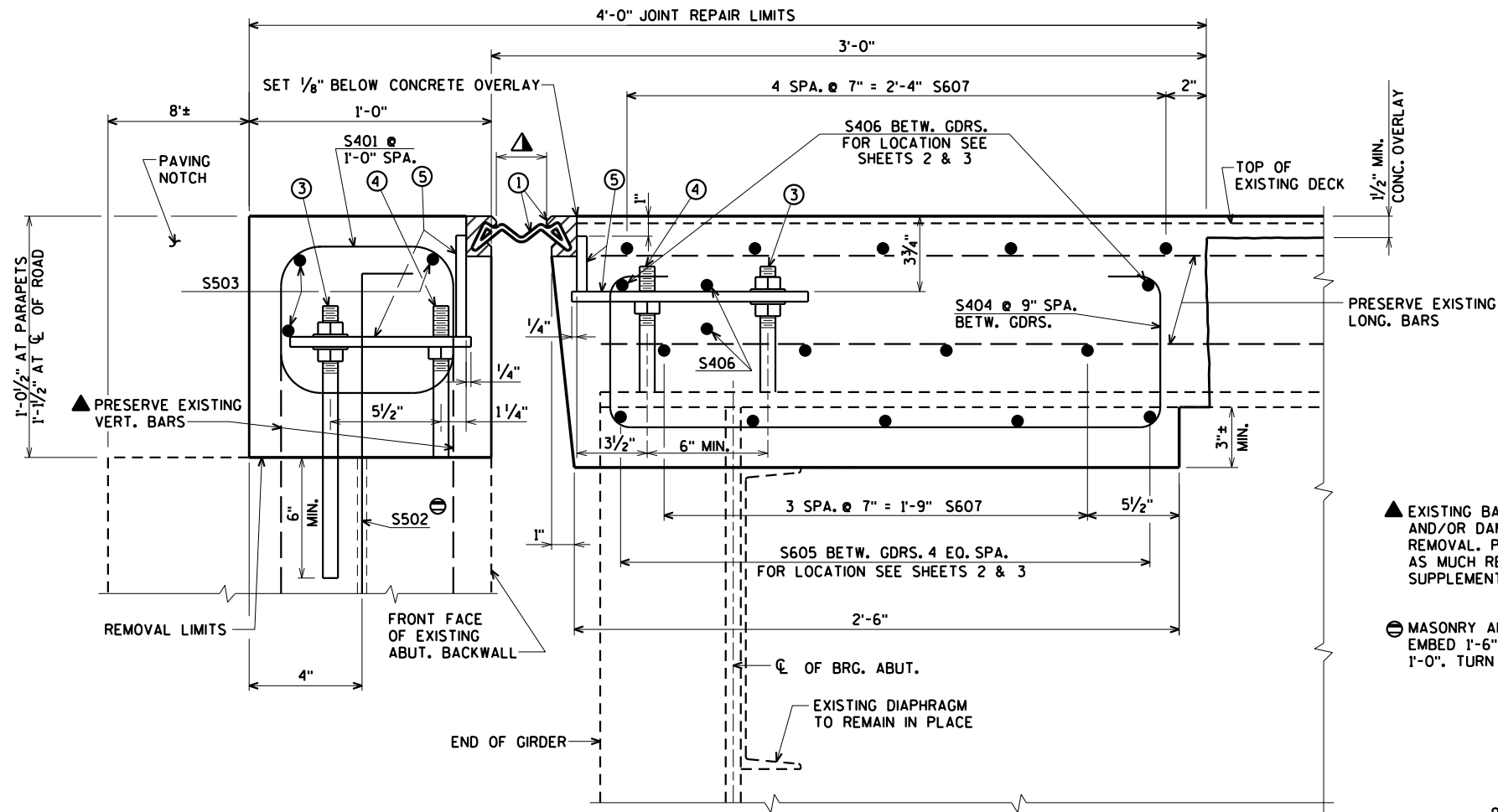
EXPANSION JOINT DETAILS AT ABUTMENTS

SHEET 3 OF 5
234

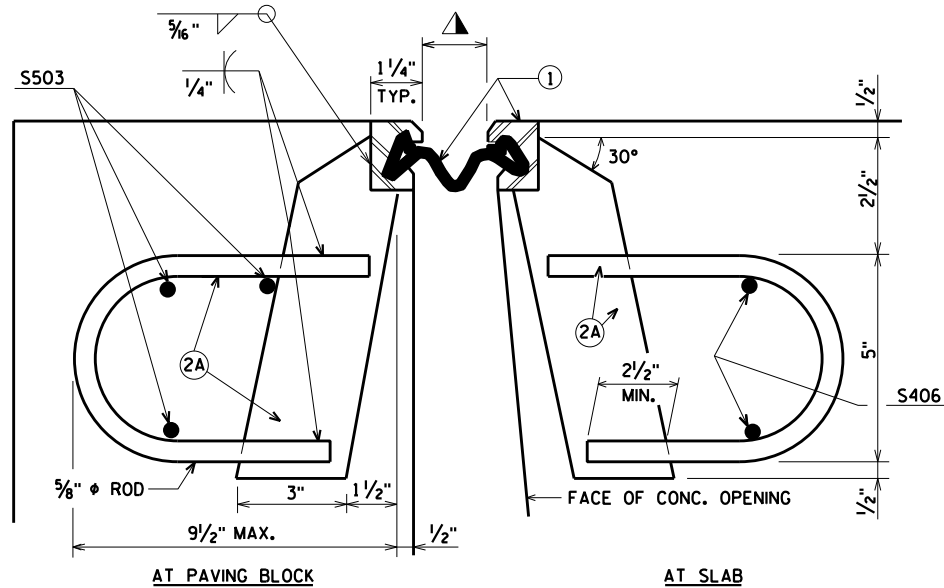
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STATE PROJECT NUMBER

1166-06-64

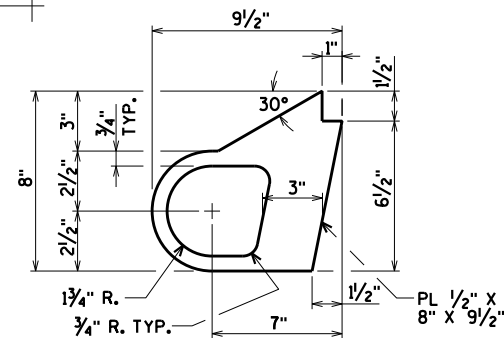


TYPICAL SECTION THRU JOINT
NORMAL TO CL SUBSTRUCTURE

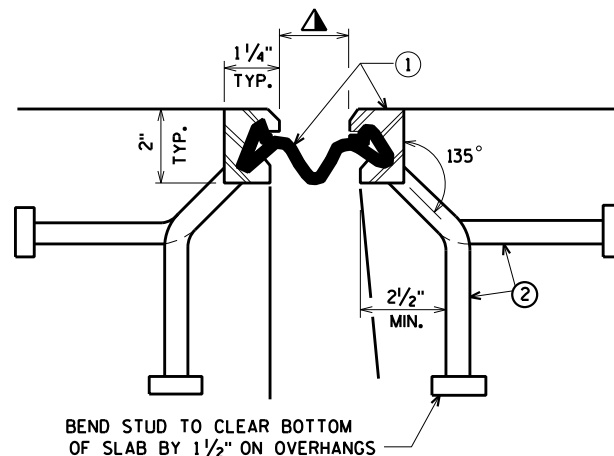


SECTION THRU JOINT
ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.

SYM. ABOUT CL JOINT UNLESS
OTHERWISE SHOWN OR NOTED.



ALTERNATE STRIP SEAL ANCHOR



SECTION THRU JOINT
EXTERIOR GIRDER TO EDGE OF SLAB &
AT CURBS.

LEGEND

- NEOPRENE STRIP SEAL (4 - INCH) & STEEL EXTRUSIONS. SET JOINT OPENING AT 1 3/4".
- STUDS 5/8" x 6 3/8" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.
- 1/2" THICK ANCHOR PLATE WITH 5/8" ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO #1 AT 1'-6" CTRS. BETWEEN GIRDERS.
- 3/4" x 1/2" THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE, GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
- 3/4" x 1/2" THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
- FABRICATE SUPPORT FROM 3" x 1/2" BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. FIELD OR SHOP WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1 1/2" x 1/2" HOLE FOR NO. 3 & 1" x 1/2" HOLE FOR NO. 4.
- 3/4" x 1/2" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLES. RECESS 1/16" BELOW PLATE SURFACE.
- 3/4" x 4" GALV. HEX HEAD BOLT. BEND 45°.
- 3/4" x 2 1/4" GALV. THREADED COUPLING.
- CURB COVER PLATE 3/8" x 1 1/2" x 2'-0". BEND DOWN FACE OF CURB WITH HOLES FOR NO. 7.
- 1" x 5" SLOTTED CSK. HOLE FOR #7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN & SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST PLATES, SUPPORTS, & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING THE PLATES, SUPPORTS, & EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

ANCHOR SYSTEM #8 & #9 SHALL CONFORM TO ASTM A307 & SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C & D.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS & HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-69-13".

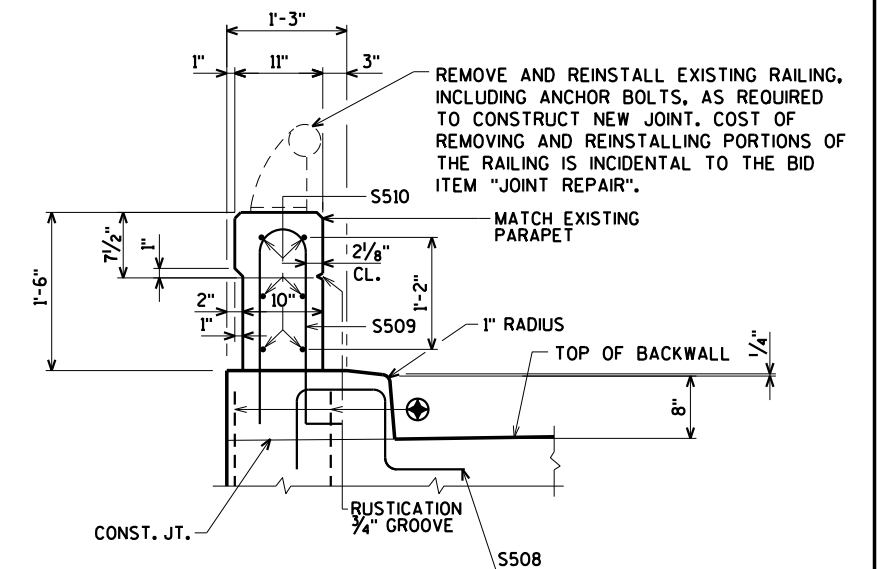
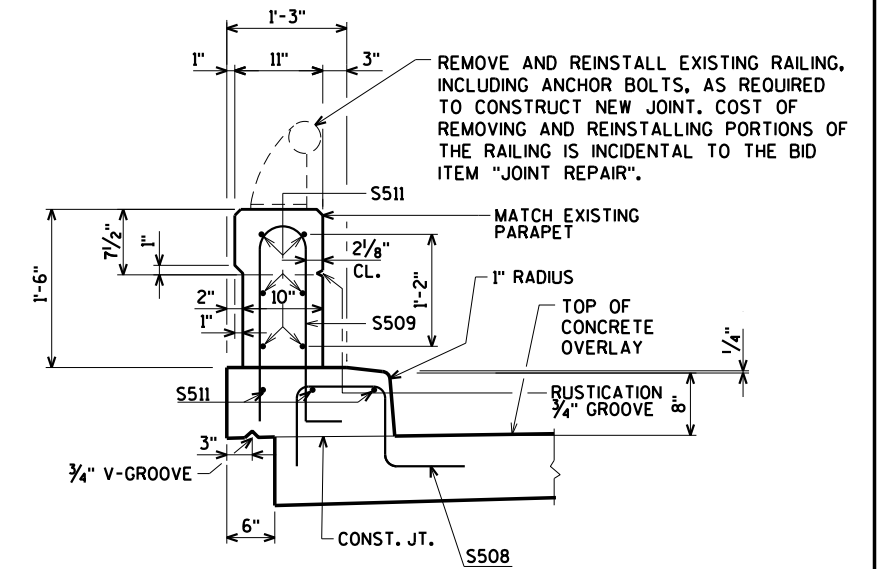
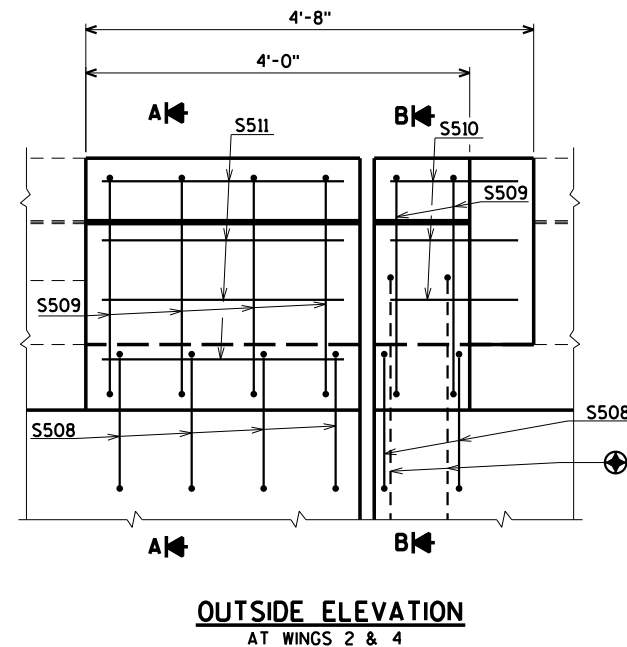
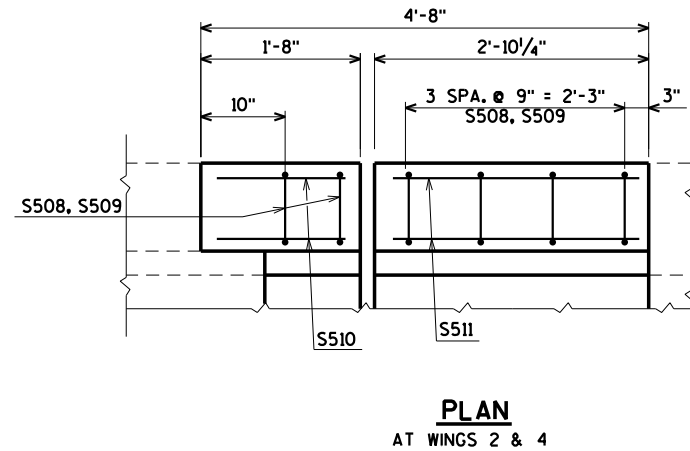
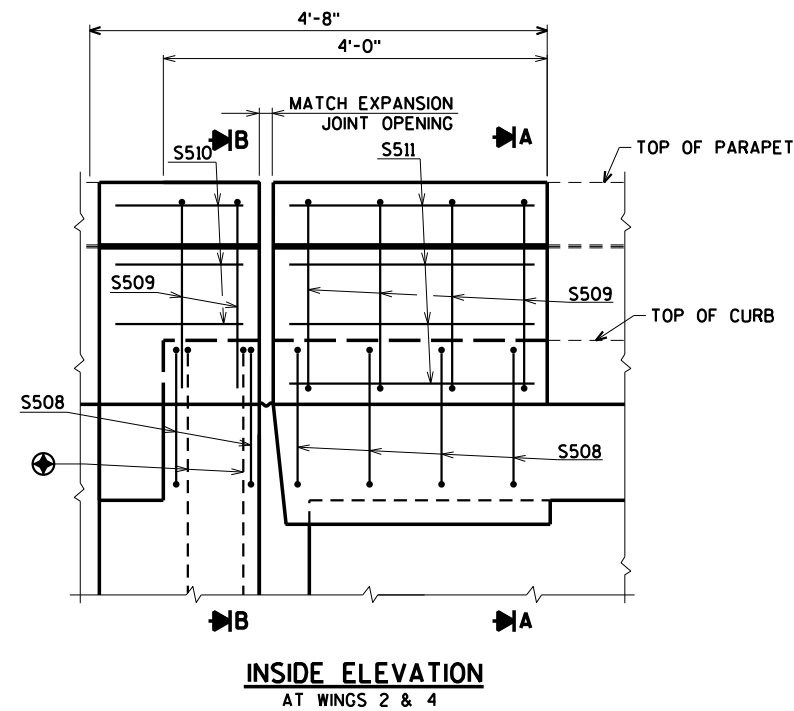
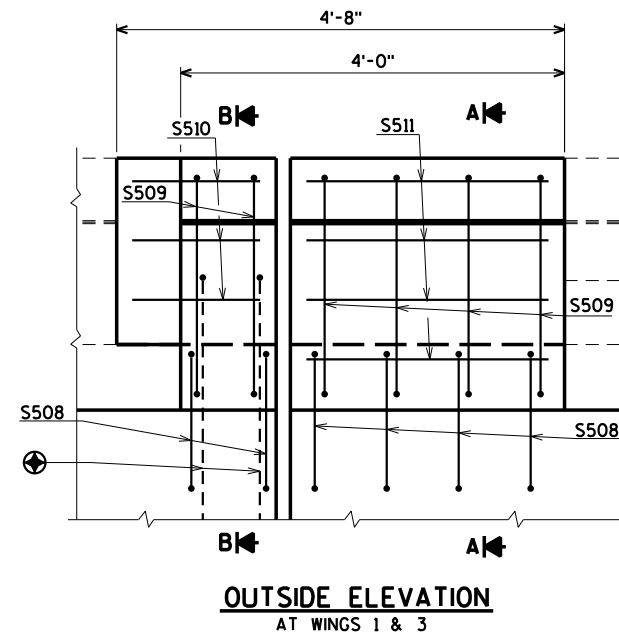
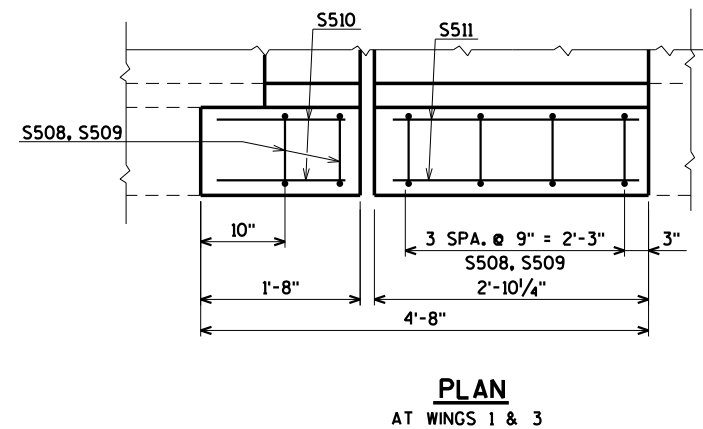
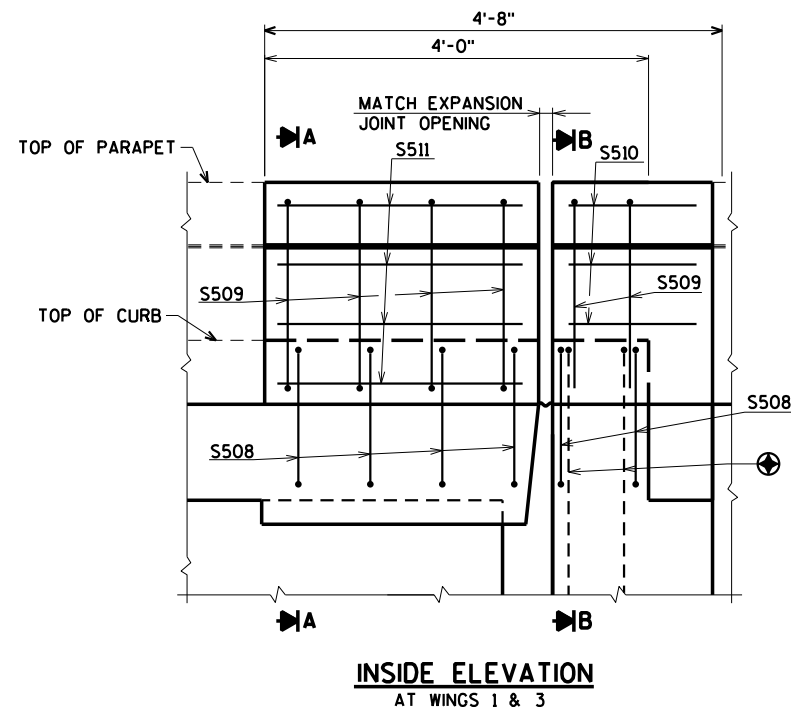
WORK THIS SHEET WITH SHEETS 2 & 3

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-13			
DRAWN BY CJM		PLANS CK'D. AEB	
EXPANSION JOINT DETAILS AT ABUTMENTS		SHEET 4 OF 5 235	

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AYRES ASSOCIATES
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8



UTILIZE EXISTING VERTICAL BAR STEEL

NOTE: INCORPORATE EXISTING LONGITUDINAL BAR STEEL IN PARAPETS AND CURB INTO NEW WORK.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-13			
DRAWN BY		CJM	PLANS CK'D. AEB
PARAPET DETAILS		SHEET 5 OF 5 236	

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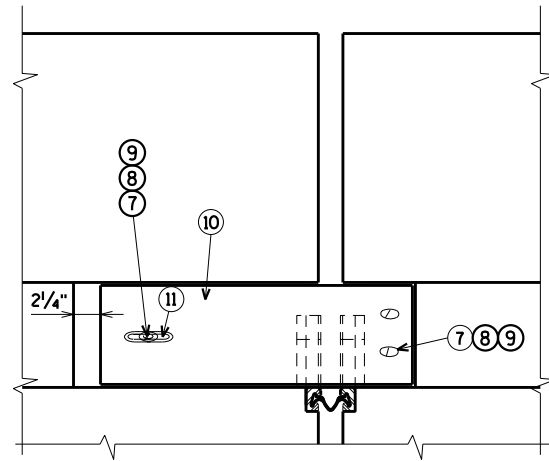
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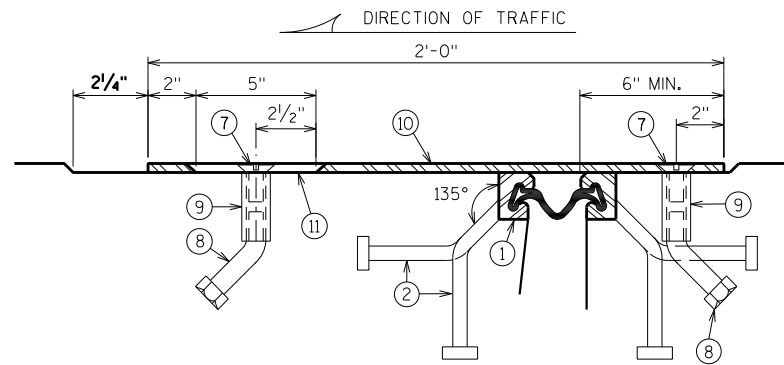
\$PRNAME\$
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STATE PROJECT NUMBER

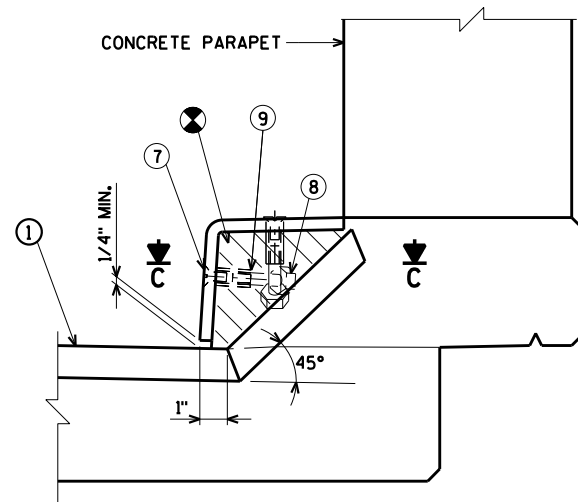
1166-06-64



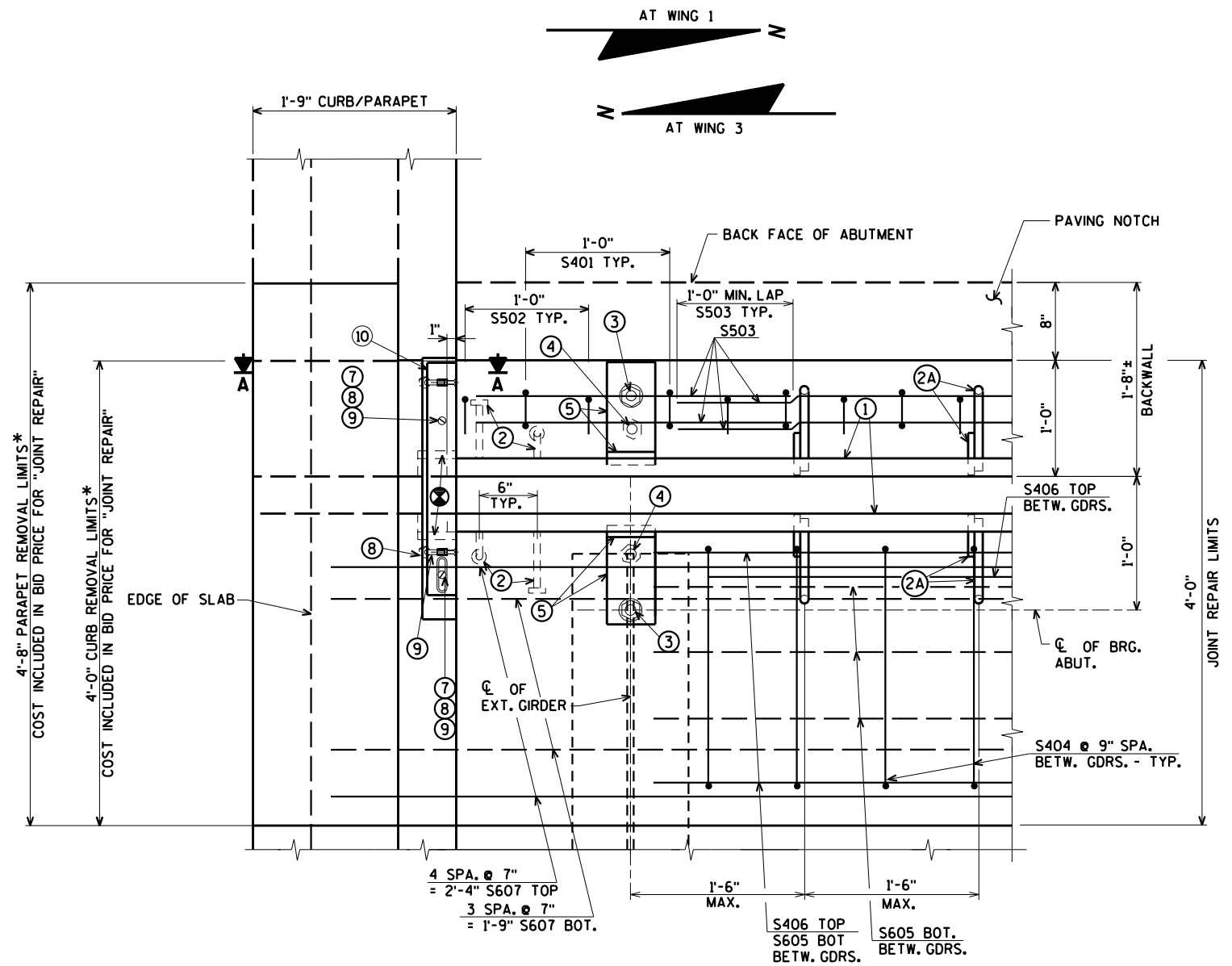
**VIEW OF PARAPET PLATES
FROM ROADWAY**



SECTION C



SECTION A



**PART PLAN
AT WINGS 1 & 3**

*UTILIZE EXISTING VERTICAL BAR
STEEL FOR PARAPET REMOVAL
LIMITS OUTSIDE OF THE "JOINT
REPAIR" LIMITS.

⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.

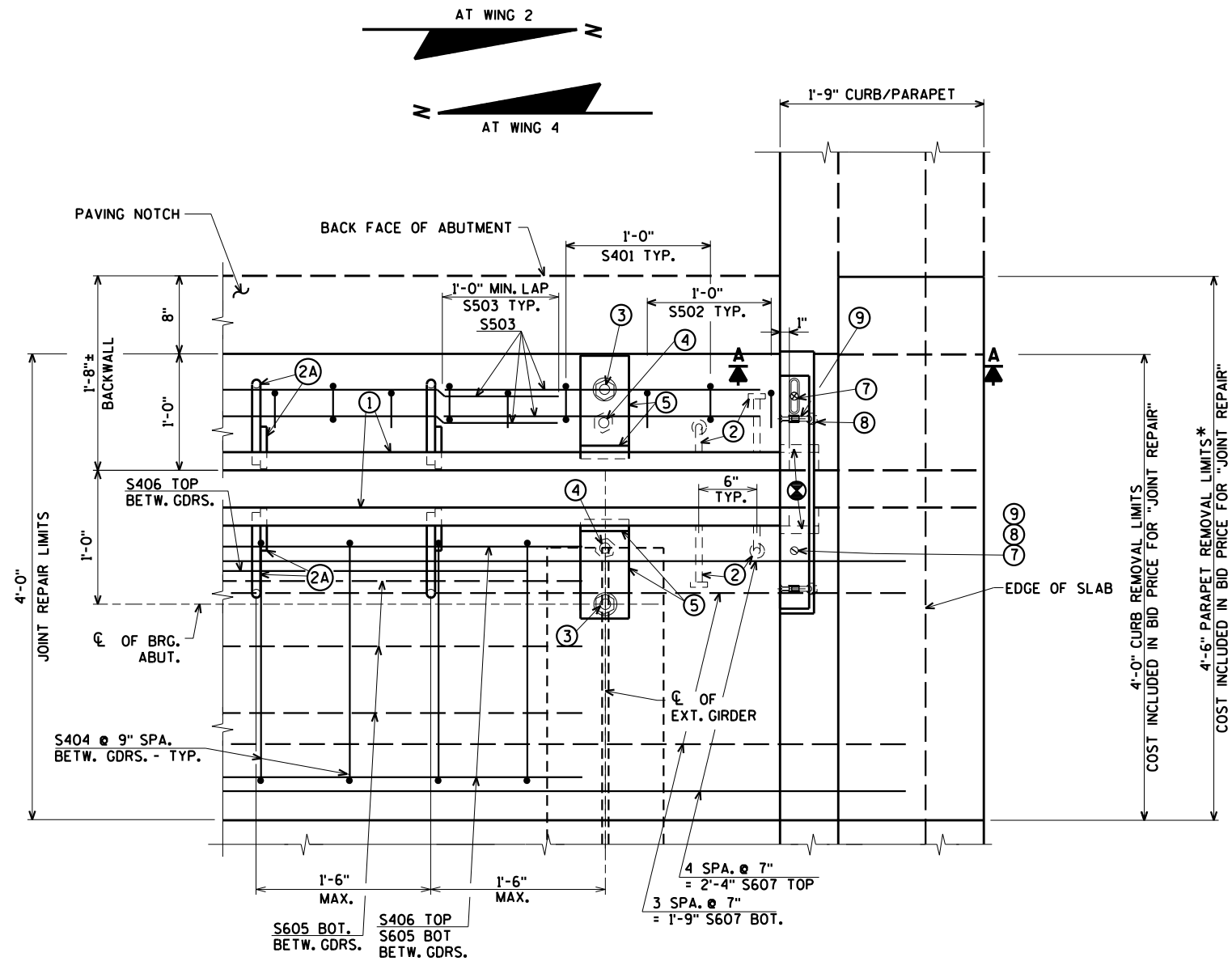
WORK THIS SHEET WITH SHEETS 3 & 4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-15			
DRAWN BY CJM		PLANS CK'D. AEB	
EXPANSION JOINT DETAILS AT ABUTMENTS		SHEET 2 OF 5 238	

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Eau Claire, WI 54701
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8



PART PLAN
AT WINGS 2 & 4

* UTILIZE EXISTING VERTICAL BAR
STEEL FOR PARAPET REMOVAL
LIMITS OUTSIDE OF THE "JOINT
REPAIR" LIMITS.

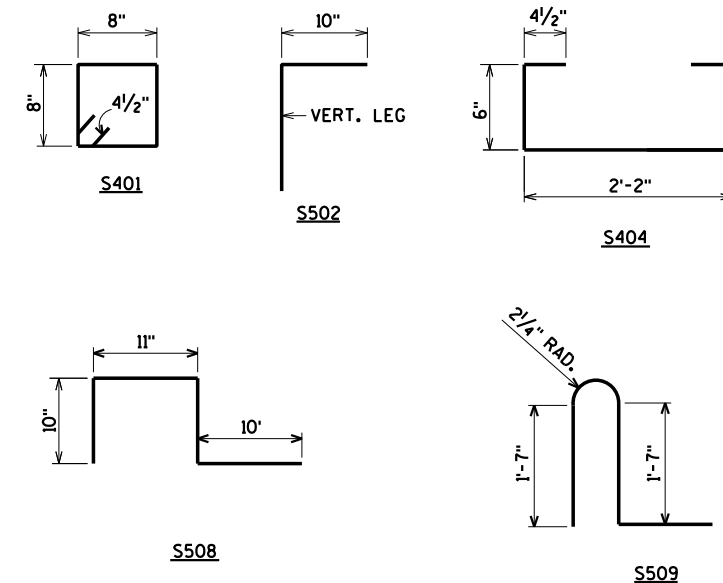
STATE PROJECT NUMBER

1166-06-64

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	2,310# COATED
							LOCATION
S401	X	56	3-1	X			PAVING BLOCK VERT.
S502	X	54	3-2	X			PAVING BLOCK VERT. ANCHOR
S503	X	24	8-0				PAVING BLOCK HORIZ.
S404	X	60	3-7	X			DIAPH. VERT.
S605	X	30	7-8				DIAPH. HORIZ.
S406	X	24	7-6				DIAPH. HORIZ.
S607	X	36	16-4				DECK TRANSVERSE
S508	X	24	3-1	X			PARAPET VERT.
S509	X	24	4-6	X			PARAPET VERT.
S510	X	24	1-4				PARAPET HORIZ. APPROACH
S511	X	36	2-6				PARAPET HORIZ. STRUCTURE

☆ MASONRY ANCHOR TYPE L NO. 5 BARS



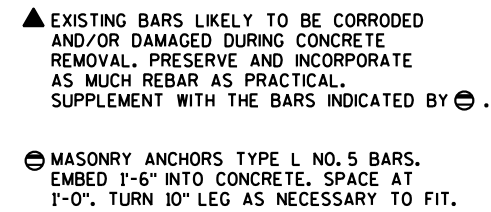
⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

WORK THIS SHEET WITH SHEETS 2 & 4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-15			
DRAWN BY CJM		PLANS CK'D. AEB	
EXPANSION JOINT DETAILS AT ABUTMENTS		SHEET 3 OF 5 239	

8

[illegible]

Technical drawing of a curb and gutter cross-section, showing two views: "AT PAVING BLOCK" and "AT SLAB".

Dimensions and Labels:

- Top Left:** 5/16" (hole), 1/4" (gap), 1 1/4" TYP. (width), 30° (angle).
- Right Side:** 1/2" (gap), 2 1/2" (height), 5" (height), 2 1/2" MIN. (width), 1/2" (gap).
- Bottom Left:** 5/8" ϕ ROD (rod), 3" (gap), 1 1/2" (gap), 9 1/2" MAX. (width), 1/2" (gap).
- Labels:** S503, S406, 2A, 1, FACE OF CONC. OPENING.

Diagram illustrating the connection of bent-up bars between two beams. The bent-up bar is shown with a 135° bend. The distance from the centerline of the beam to the centerline of the bent-up bar is 2" TYP. The distance from the centerline of the bent-up bar to the centerline of the beam is 1 1/4" TYP. The distance from the centerline of the bent-up bar to the centerline of the beam is 2 1/2" MIN. The bent-up bar is labeled 1. The bent-up bar is labeled 2. The bent-up bar is labeled 2.

ORIGINAL PLANS PREPARED BY

AYRES
ASSOCIATES

3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

1. NEOPRENE STRIP SEAL (4 - INCH) & STEEL EXTRUSIONS.
SET JOINT OPENING AT $1\frac{3}{4}$ ".
2. STUDS $\frac{5}{8}$ " ϕ x $6\frac{3}{8}$ " LONG AT 6" ALTERNATE CENTERS.
WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.
- 2A. $\frac{1}{2}$ " THICK ANCHOR PLATE WITH $\frac{5}{8}$ " ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO #1 AT 1'-6" CTRS. BETWEEN GIRDERS.
3. $\frac{3}{4}$ " ϕ THREADED ROD WITH 2 NUTS AND PLATE WASHERS.
WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE, GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
4. $\frac{3}{4}$ " ϕ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
5. FABRICATE SUPPORT FROM 3" x $\frac{1}{2}$ " BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. FIELD OR SHOP WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE $1\frac{1}{2}$ " ϕ HOLE FOR NO. 3 & 1" ϕ HOLE FOR NO. 4.
7. $\frac{3}{4}$ " ϕ x $1\frac{1}{2}$ " STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLES. RECESS $\frac{1}{16}$ " BELOW PLATE SURFACE.
8. $\frac{3}{4}$ " ϕ x 4" GALV. HEX HEAD BOLT. BEND 45°.
9. $\frac{3}{4}$ " ϕ x $2\frac{1}{4}$ " GALV. THREADED COUPLING.
10. CURB COVER PLATE $\frac{3}{8}$ " x $11\frac{5}{8}$ " x 2'-0".
BEND DOWN FACE OF CURB WITH HOLES FOR NO. 7.
11. 1" x 5" SLOTTED CSK. HOLE FOR #7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

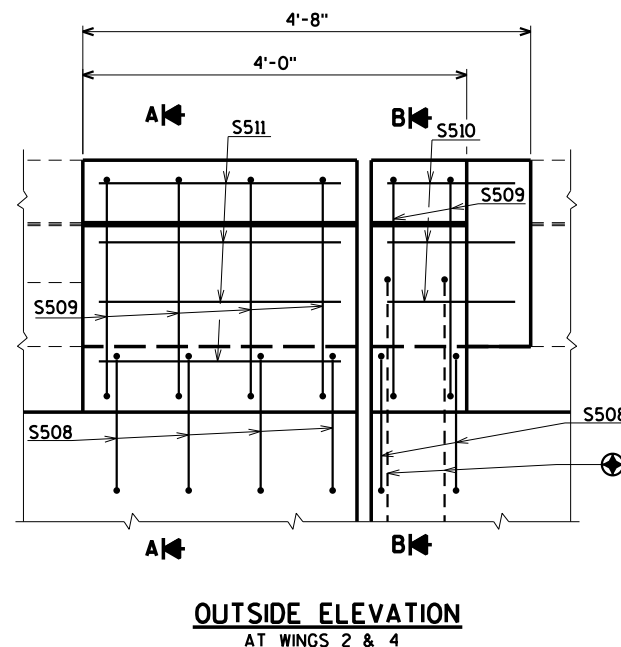
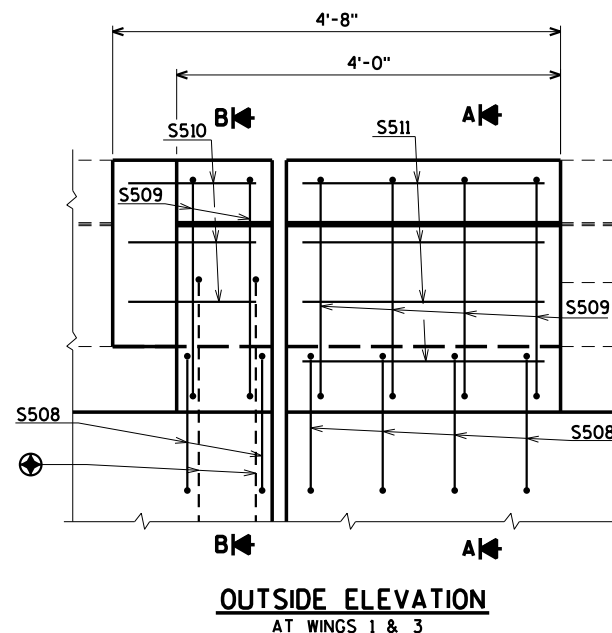
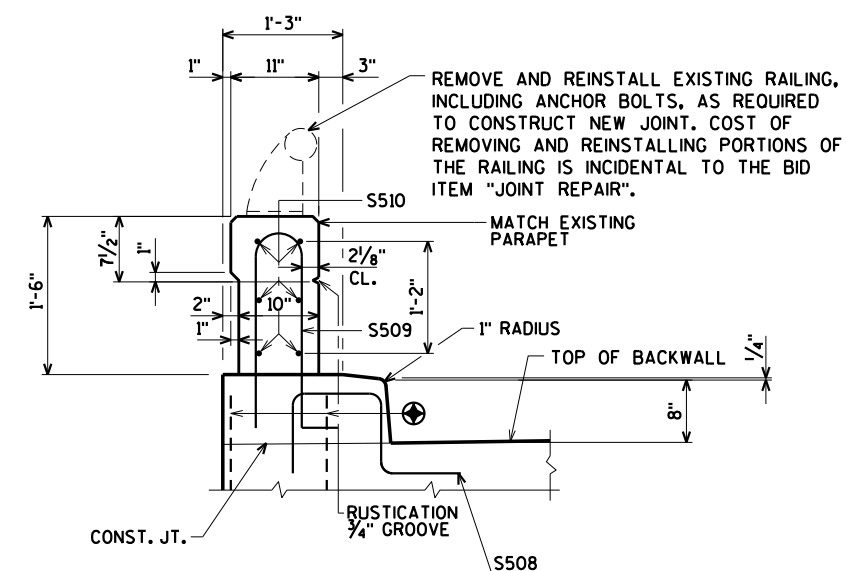
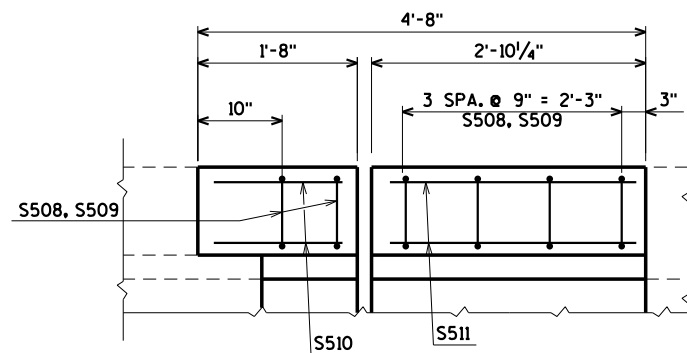
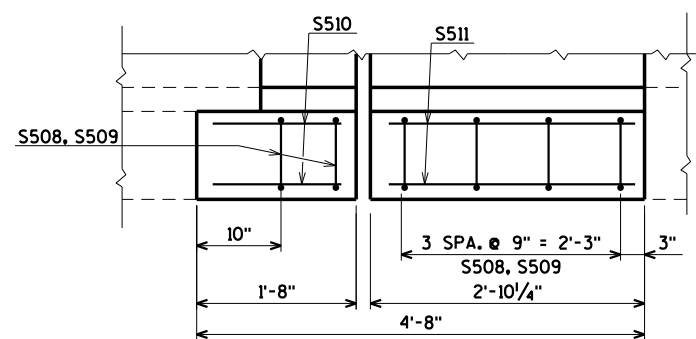
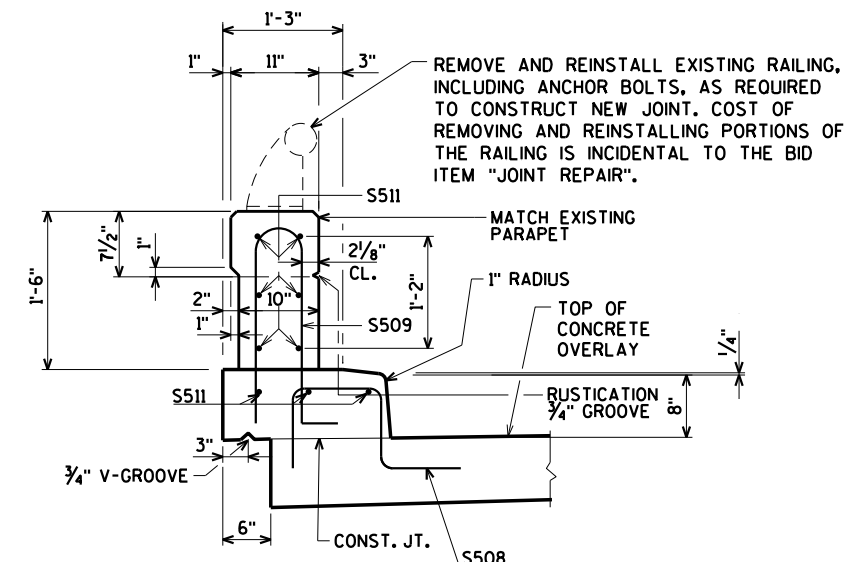
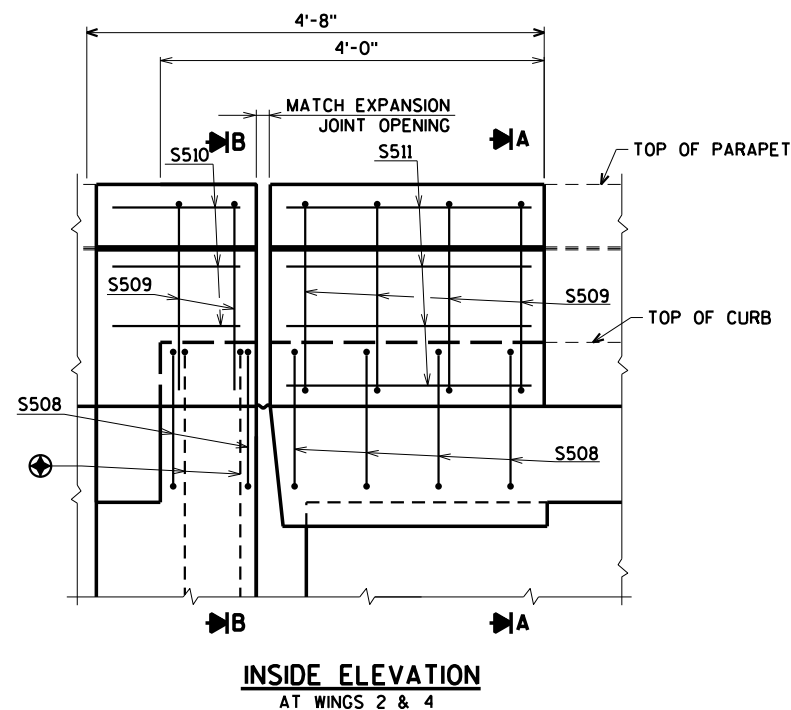
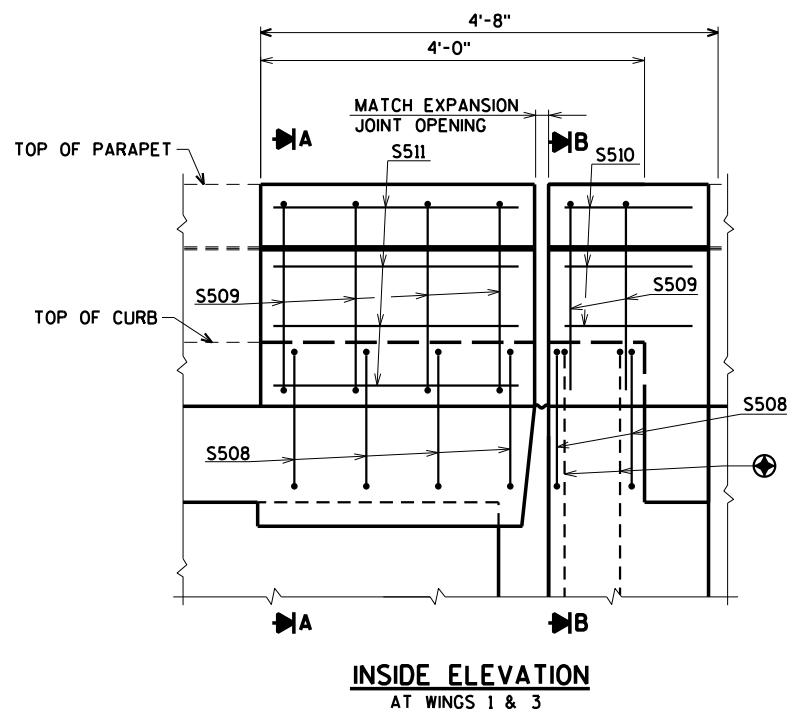
STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS & HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-69-15".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-15			
		DRAWN BY CJM	PLANS CK'D. AEB
EXPANSION JOINT DETAILS AT ABUTMENTS		SHEET 4 OF 5 240	

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U:\42-0912.00 - Waushara County, IH39 Overlays\B-69-15 CTH 0 over IH 39\BRIDGE\FINAL\B-69-15 para.dgn

STATE PROJECT NUMBER

1166-06-64



⊕ UTILIZE EXISTING VERTICAL BAR STEEL
NOTE: INCORPORATE EXISTING LONGITUDINAL BAR STEEL IN PARAPETS AND CURB INTO NEW WORK.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-15			
DRAWN BY CJM		PLANS CK'D. AEB	
PARAPET DETAILS		SHEET 5 OF 5 241	

ORIGINAL PLANS PREPARED BY
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Eau Claire, WI 54701
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GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.
ANY EXCAVATION NECESSARY TO COMPLETE THE OVERLAY OR JOINT REPAIR AT THE ABUTMENTS IS CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".
REMOVAL LINES NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1" DEEP SAW CUT AT THE CONCRETE SURFACES.
UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, CONCRETE SURFACE REPAIR, CURB REPAIR, AND FULL DEPTH DECK REPAIR AREAS SHALL BE DETERMINED BY THE FIELD ENGINEER.
A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM "CLEANING DECKS".
APPLY BRIDGE SEAT PROTECTION, AS PER SECTION 502.3.12 OF THE STANDARD SPECIFICATIONS, TO THE TOP SURFACES OF BOTH ABUTMENTS BELOW EXPANSION DEVICES, POWER WASH AND ADEQUATELY DRY SURFACES BEFORE APPLICATION. WORK TO BE INCIDENTAL TO "JOINT REPAIR".
PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 1 1/2" PLACED ABOVE THE DECK SURFACE AFTER "CLEANING DECKS". EXPECTED AVERAGE OVERLAY THICKNESS IS 2 1/2". IF EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN 1/2", CONTACT THE STRUCTURES DESIGN SECTION.
PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED TO THE CONCRETE OVERLAY.
PIGMENTED SURFACE SEALER IS TO BE APPLIED TO THE TOP OF PARAPETS, INSIDE FACE OF PARAPETS, TOP AND FACE OF CURB.
EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID FOR IN THE LUMP SUM PRICE BID AS "EXPANSION DEVICE B-69-16".
AT CURB REPAIR, EXPOSE EXISTING REINFORCEMENT A MINIMUM OF 1/2" CLEAR.

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HS-20
INVENTORY RATING: HS-11
OPERATING RATING: HS-19
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 120 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY BRIDGES $f'_c = 4,000$ p.s.i.
CONCRETE MASONRY OVERLAY DECKS $f'_c = 4,000$ p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) $f_y = 60,000$ p.s.i.

TRAFFIC DATA:

IH 39
A.D.T. = 15,200 (2012)
R.D.S. = 70 M.P.H.

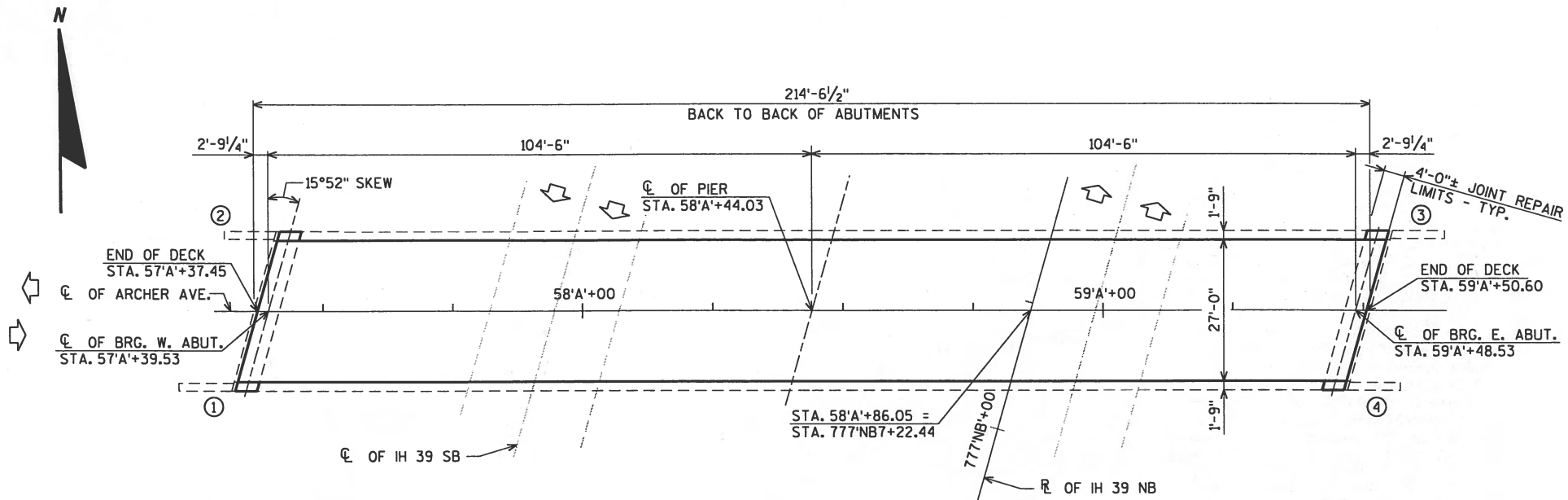
ARCHER AVE.
A.D.T. = 200± (2009)
R.D.S. = 50 M.P.H.



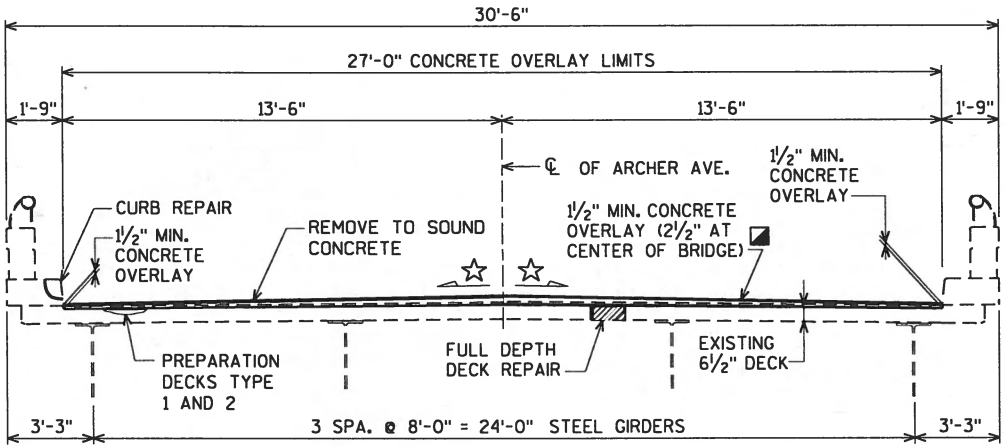
BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
DAN SYDOW
(715)-834-3161

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
AYRES ASSOCIATES		3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	<i>William C. Dreher</i> SDR		05/05/16
	CHIEF STRUCTURES DESIGN ENGINEER		DATE
STRUCTURE B-69-16			
ARCHER AVE. OVER IH 39 / USH 51			
COUNTY	WAUSHARA	TOWN/CITY/VILLAGE	PLAINFIELD
DESIGN SPEC.		REHABILITATION N/A	
DESIGNED BY	JWZ	DESIGN CK'D.	CJM
DRAWN BY	CLS	PLANS CK'D.	DNS
GENERAL PLAN		SHEET 1 OF 5 242	



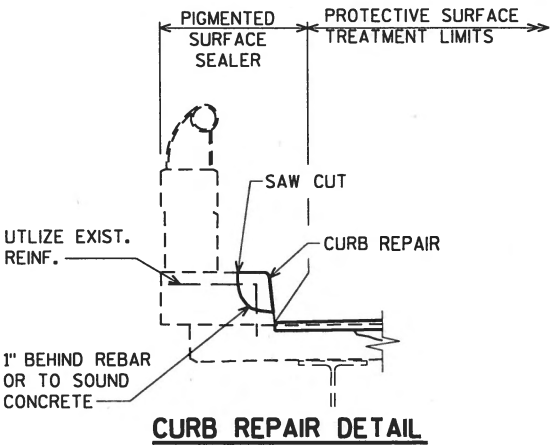
PLAN
2-SPAN STEEL GIRDER BRIDGE



CROSS SECTION THRU BRIDGE
(LOOKING EAST)

LEGEND

- ☆ NEW CONCRETE OVERLAY SLOPE = 0.015 %
CURRENT CONCRETE DECK SLOPE = 0.01 %
- THE PROPOSED CONCRETE OVERLAY THICKNESS VARIES FROM 1 1/2" MIN. AT THE CURBS TO 2 1/2" MIN. AT THE CROWN. THE EXPECTED AVERAGE OVERLAY THICKNESS IS 2 1/2"
- △ BID ITEM ALSO INCLUDES CONCRETE FOR:
"PREPARATION DECKS TYPE 1"
"PREPARATION DECKS TYPE 2"
"FULL-DEPTH DECK REPAIR"
"JOINT REPAIR"
"CURB REPAIR"
- ▲ BID ITEM INCLUDES CONCRETE FOR CURBS AND PARAPETS.



CURB REPAIR DETAIL

LIST OF DRAWINGS

1. GENERAL PLAN
2. EXPANSION JOINT DETAILS AT ABUTMENTS
3. EXPANSION JOINT DETAILS AT ABUTMENTS
4. EXPANSION JOINT DETAILS AT ABUTMENTS
5. PARAPET DETAILS

TOTAL ESTIMATED QUANTITIES

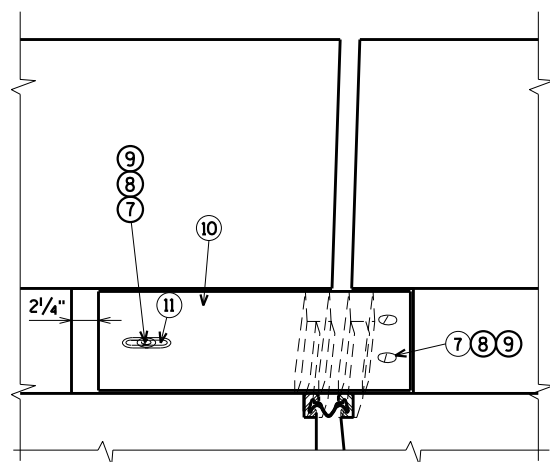
BID ITEM NUMBER	BID ITEMS	UNIT	TOTAL
502.0100	CONCRETE MASONRY BRIDGES	CY	2
502.3100	EXPANSION DEVICE B-69-16	LS	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	640
502.3210	PIGMENTED SURFACE SEALER	SY	261
502.5005	MASONRY ANCHORS TYPR L NO. 5 BARS	EA	62
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,400
509.0301	PREPARATION DECKS TYPE 1	SY	50
509.0302	PREPARATION DECKS TYPE 2	SY	25
509.0500	CLEANING DECKS	SY	640
509.1000	JOINT REPAIR	SY	27
509.1200	CURB REPAIR	LF	5
509.1500	CONCRETE SURFACE REPAIR	SF	5
509.2000	FULL-DEPTH DECK REPAIR	SY	1
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	58
509.9050.S	CLEANING PARAPETS	LF	485

DATE: 10/21/15
DATE: 10/22/15
DATE: 10/22/15
CHECKED BY: AEB
BACK CHECKED BY: CJM
CORRECTED BY: CJM

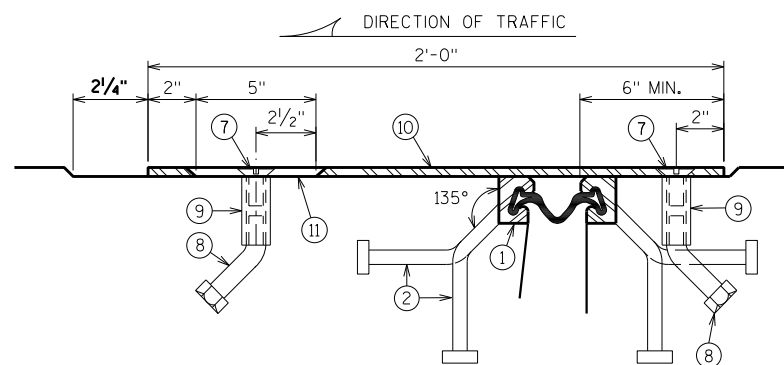
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STATE PROJECT NUMBER

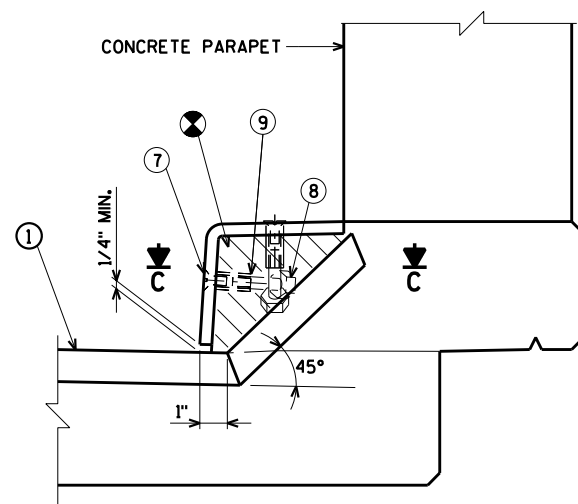
1166-06-64



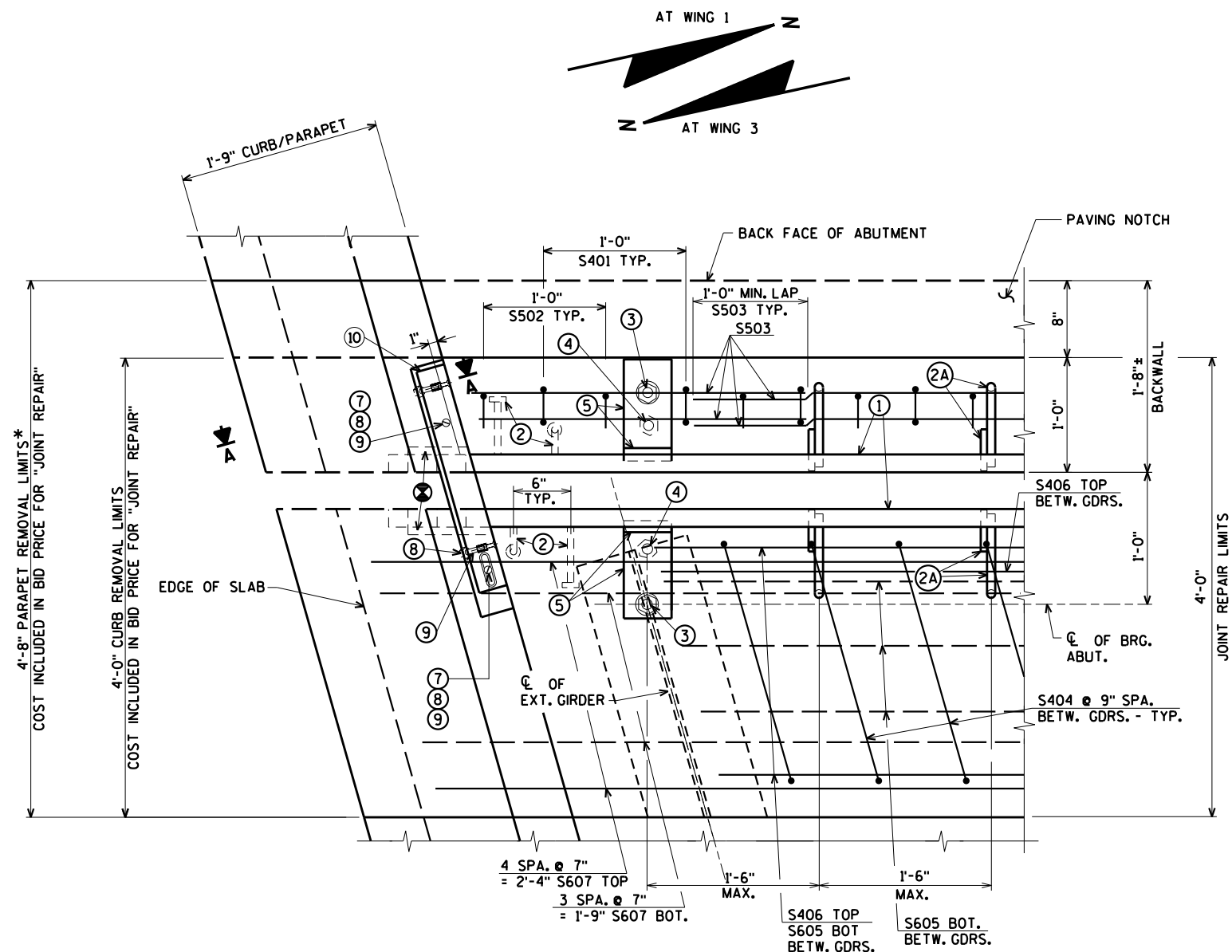
**VIEW OF PARAPET PLATES
FROM ROADWAY**



SECTION C



SECTION A



**PART PLAN
AT WINGS 1 & 3**

*UTILIZE EXISTING VERTICAL BAR
STEEL FOR PARAPET REMOVAL
LIMITS OUTSIDE OF THE "JOINT
REPAIR" LIMITS.

⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.

WORK THIS SHEET WITH SHEETS 3 & 4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-16			
DRAWN BY CJM		PLANS CK'D. AEB	
EXPANSION JOINT DETAILS AT ABUTMENTS		SHEET 2 OF 5 243	

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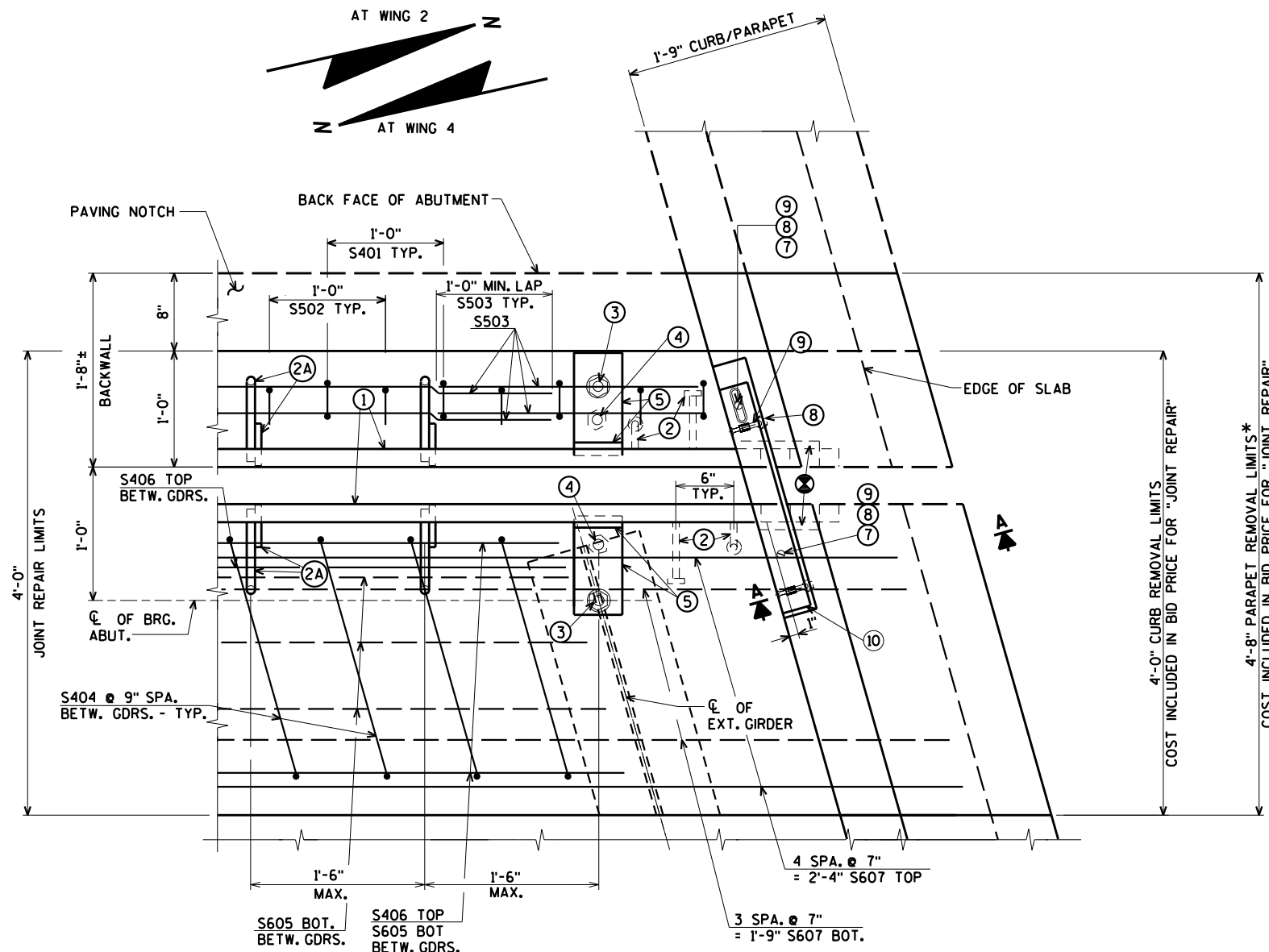
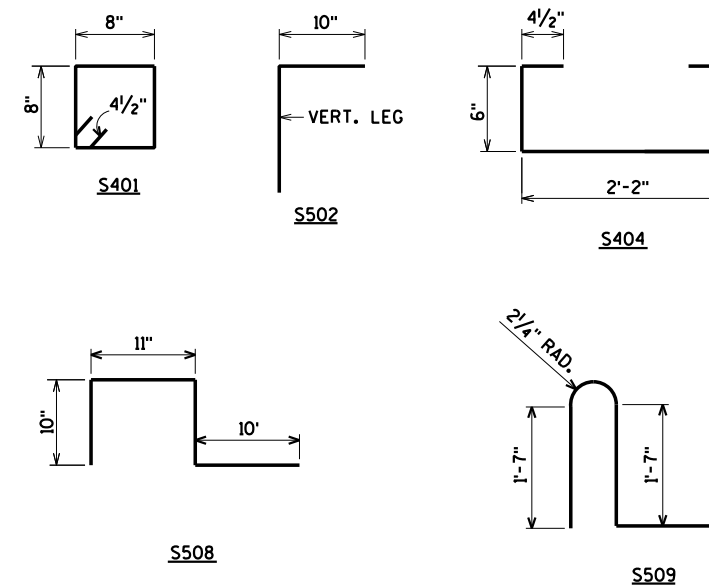
STATE PROJECT NUMBER

1166-06-64

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	2,400* COATED
						LOCATION
S401	X	64	3-1	X		PAVING BLOCK VERT.
S502	X	62	3-2	X		PAVING BLOCK VERT. ANCHOR
S503	X	30	8-0			PAVING BLOCK HORIZ.
S404	X	60	3-7	X		DIAPH. VERT.
S605	X	30	7-8			DIAPH. HORIZ.
S406	X	24	7-6			DIAPH. HORIZ.
S607	X	36	16-4			DECK TRANSVERSE
S508	X	24	3-1	X		PARAPET VERT.
S509	X	24	4-6	X		PARAPET VERT.
S510	X	24	1-4			PARAPET HORIZ. APPROACH
S511	X	36	2-6			PARAPET HORIZ. STRUCTURE

☆ MASONRY ANCHOR TYPE L NO. 5 BARS



PART PLAN

AT WINGS 2 & 4

* UTILIZE EXISTING VERTICAL BAR STEEL FOR PARAPET REMOVAL LIMITS OUTSIDE OF THE "JOINT REPAIR" LIMITS.

⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.

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Eau Claire, WI 54701
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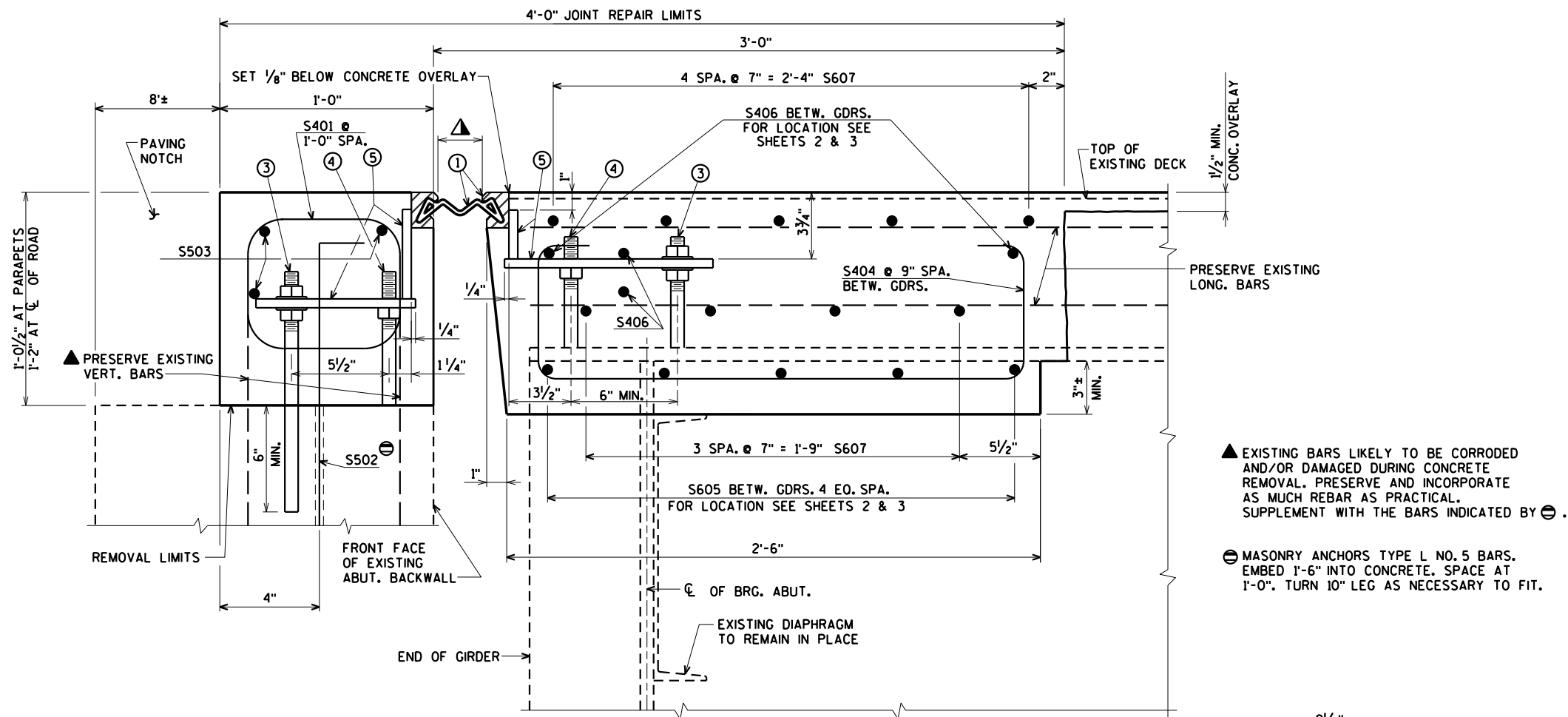
WORK THIS SHEET WITH SHEETS 2 & 4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-16			
DRAWN BY	CJM	PLANS CK'D.	AEB
EXPANSION JOINT DETAILS AT ABUTMENTS		SHEET 3 OF 5 244	

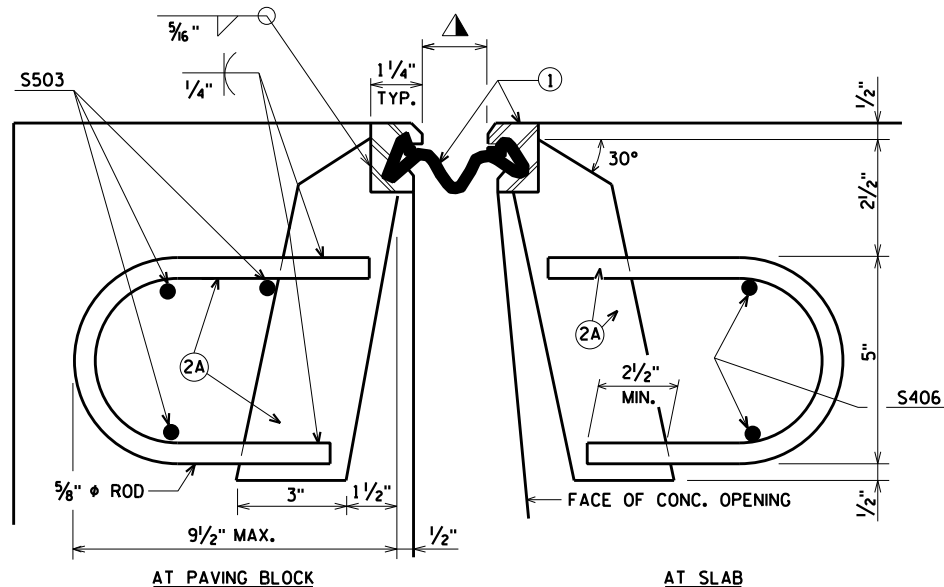
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STATE PROJECT NUMBER

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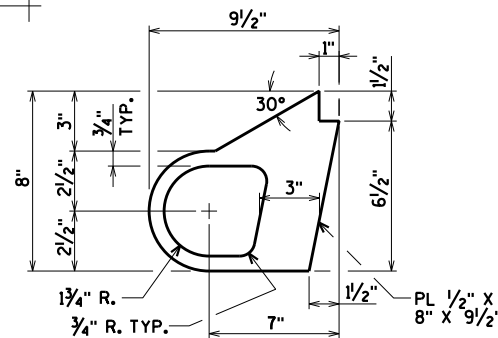


TYPICAL SECTION THRU JOINT
NORMAL TO CL SUBSTRUCTURE

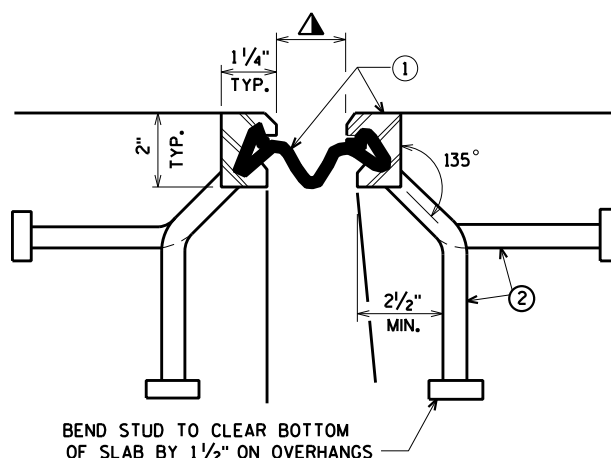


SECTION THRU JOINT
ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.

SYM. ABOUT CL JOINT UNLESS
OTHERWISE SHOWN OR NOTED.



ALTERNATE STRIP SEAL ANCHOR



SECTION THRU JOINT
EXTERIOR GIRDER TO EDGE OF SLAB &
AT CURBS.

LEGEND

1. NEOPRENE STRIP SEAL (4 - INCH) & STEEL EXTRUSIONS. SET JOINT OPENING AT 1 3/4".
2. STUDS 5/8" ϕ X 6 3/8" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.
- 2A. 1/2" THICK ANCHOR PLATE WITH 5/8" ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO #1 AT 1'-6" CTRS. BETWEEN GIRDERS.
3. 3/4" ϕ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE, GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
4. 3/4" ϕ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
5. FABRICATE SUPPORT FROM 3" X 1/2" BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. FIELD OR SHOP WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1 1/2" ϕ HOLE FOR NO. 3 & 1" ϕ HOLE FOR NO. 4.
7. 3/4" ϕ X 1 1/2" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLES. RECESS 1/16" BELOW PLATE SURFACE.
8. 3/4" ϕ X 4" GALV. HEX HEAD BOLT. BEND 45°.
9. 3/4" ϕ X 2 1/4" GALV. THREADED COUPLING.
10. CURB COVER PLATE 3/8" X 1 1/2" X 2'-0". BEND DOWN FACE OF CURB WITH HOLES FOR NO. 7.
11. 1" X 5" SLOTTED CSK. HOLE FOR #7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN & SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST PLATES, SUPPORTS, & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING THE PLATES, SUPPORTS, & EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

ANCHOR SYSTEM #8 & #9 SHALL CONFORM TO ASTM A307 & SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C & D.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS & HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-69-16".

WORK THIS SHEET WITH SHEETS 2 & 3

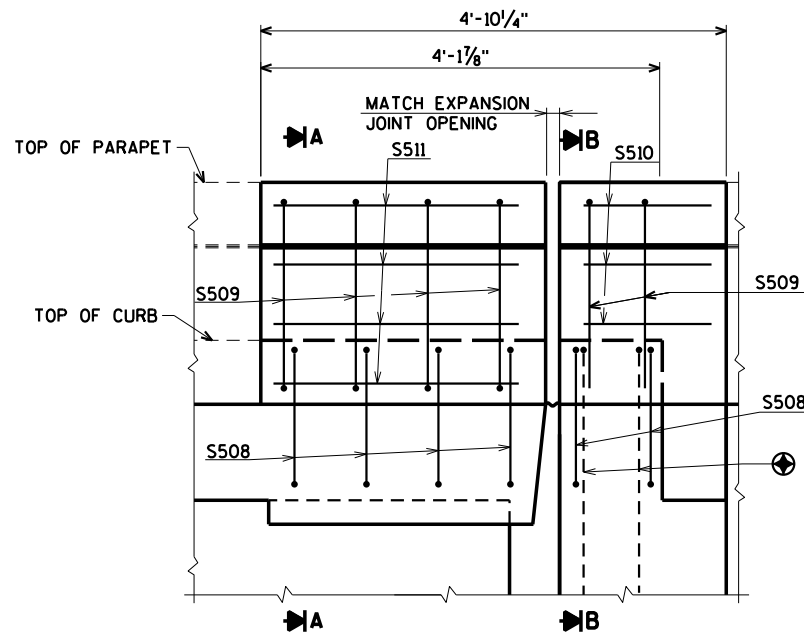
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-16			
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EXPANSION JOINT DETAILS AT ABUTMENTS		SHEET 4 OF 5 245	

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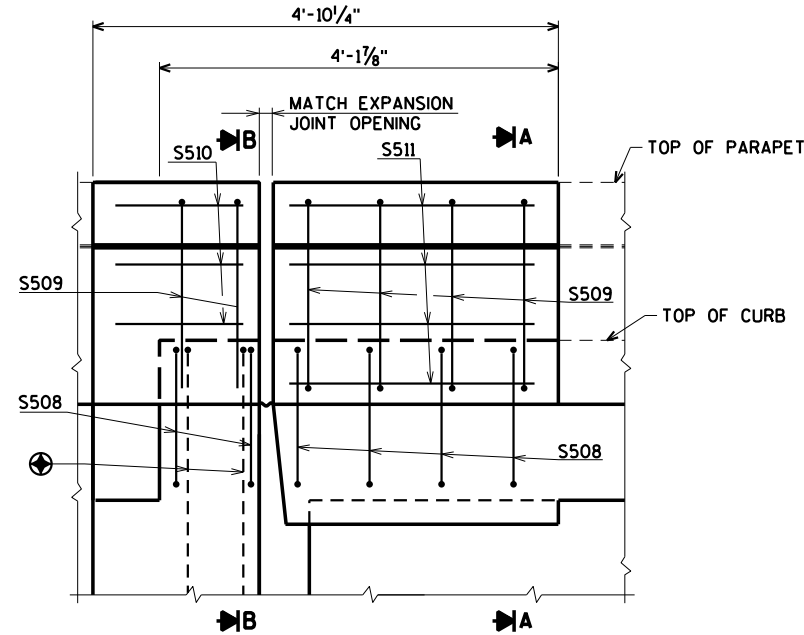
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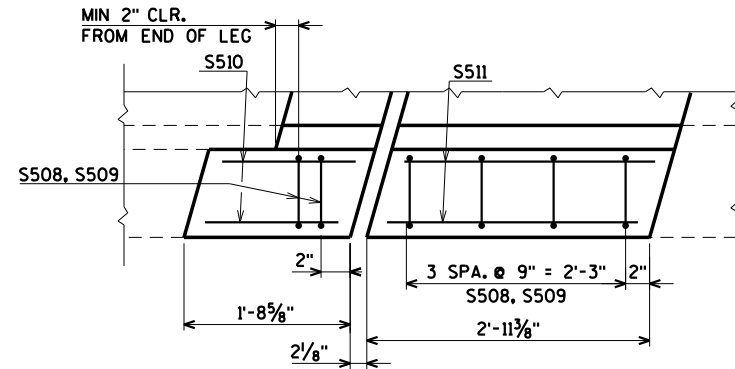
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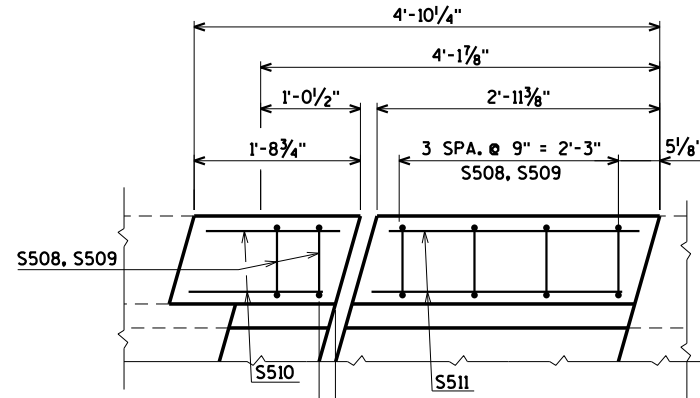
INSIDE ELEVATION
AT WINGS 1 & 3



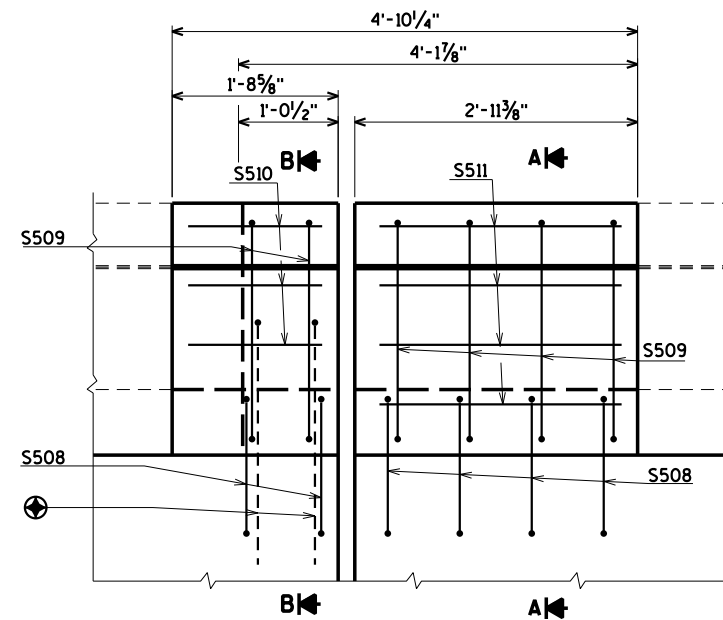
INSIDE ELEVATION
AT WINGS 2 & 4



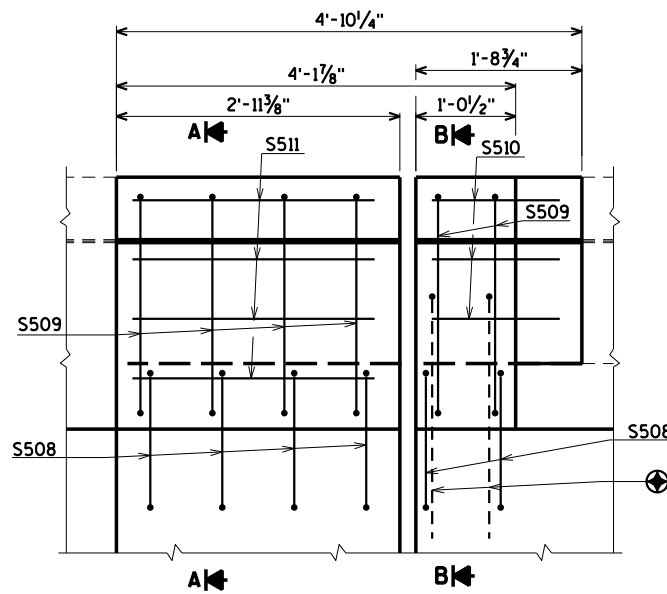
PLAN
AT WINGS 1 & 3



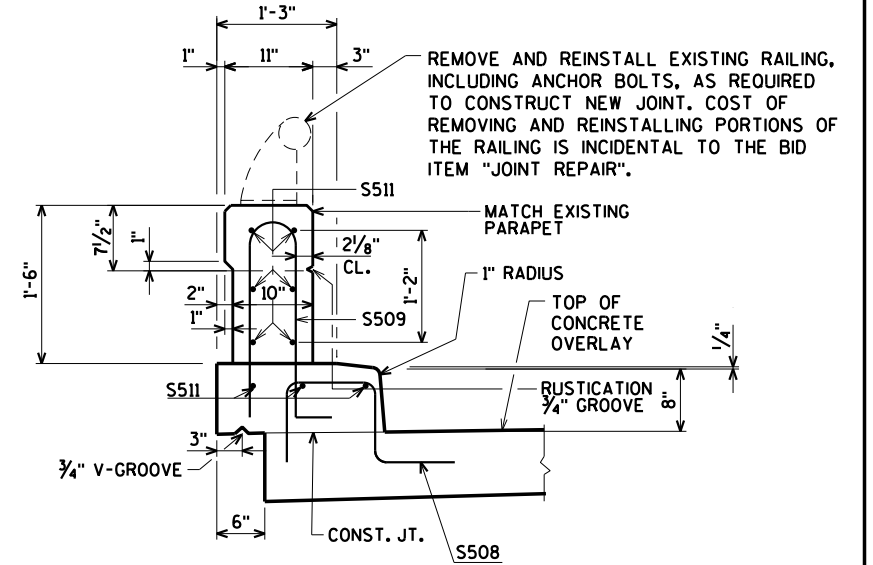
PLAN
AT WINGS 2 & 4



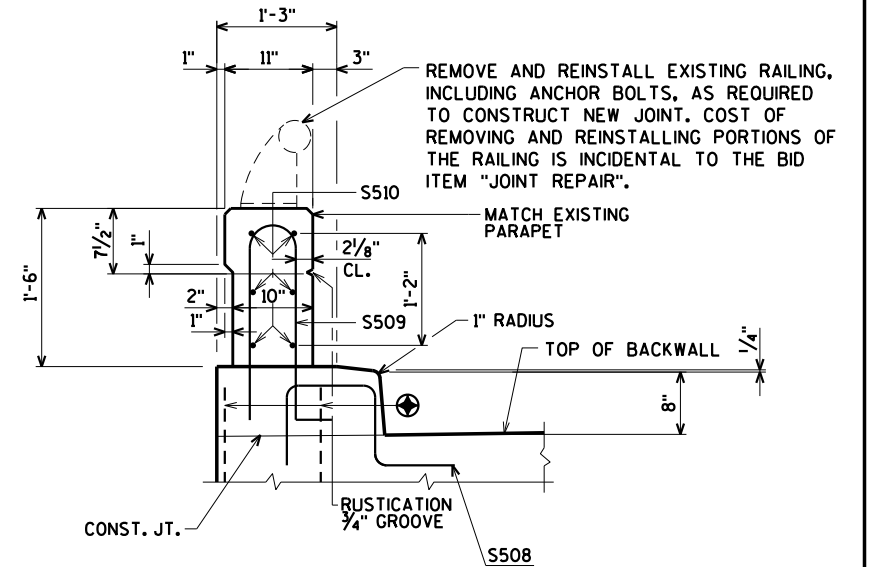
OUTSIDE ELEVATION
AT WINGS 1 & 3



OUTSIDE ELEVATION
AT WINGS 2 & 4



SECTION A



SECTION B

UTILIZE EXISTING VERTICAL BAR STEEL
NOTE: INCORPORATE EXISTING LONGITUDINAL BAR STEEL IN PARAPETS AND CURB INTO NEW WORK.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-16			
DRAWN BY CJM		PLANS CK'D. AEB	
PARAPET DETAILS		SHEET 5 OF 5 246	

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

CURVE DATA

IH 39 SB
P.I. STA. 883'SB'+61.69
 $\Delta = 5^\circ 59' 57''$
 $D = 0^\circ 29' 47''$
 $R = 11,539.77'$
 $T = 604.70'$
 $L = 1,208.30'$
 $E = 15.83'$
 $S.E. = 0.015\%$

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.
ANY EXCAVATION NECESSARY TO COMPLETE THE OVERLAY IS CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

REMOVAL LINES NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1" DEEP SAW CUT AT THE CONCRETE SURFACES.
PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, CONCRETE SURFACE REPAIR, CURB REPAIR, AND FULL DEPTH DECK REPAIR AREAS SHALL BE DETERMINED BY THE FIELD ENGINEER.

A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM "CLEANING DECKS".

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF $1\frac{1}{2}$ " PLACED ABOVE THE DECK SURFACE AFTER "CLEANING DECKS". EXPECTED AVERAGE OVERLAY THICKNESS IS 2". IF EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN $\frac{1}{2}$ ", CONTACT THE STRUCTURES DESIGN SECTION.

CURVE DATA

IH 39 NB
P.I. STA. 884'NB'+57.14
 $\Delta = 6^\circ 00' 05''$
 $D = 0^\circ 29' 58''$
 $R = 11,471.69'$
 $T = 601.34'$
 $L = 1,201.59'$
 $E = 15.75'$
 $S.E. = 0.015\%$

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HS-20
INVENTORY RATING: HS-23
OPERATING RATING: HS-28
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

MATERIAL PROPERTIES

CONCRETE MASONRY OVERLAY DECKS $f'_c = 4,000$ p.s.i.

TRAFFIC DATA:

IH 39

A.D.T. = 15,200 (2012)
R.D.S. = 70 M.P.H.

STH 73

A.D.T. = 6,400 (2009)
R.D.S. = 50 M.P.H.

LIST OF DRAWINGS

1. GENERAL PLAN
2. QUANTITIES & CROSS SECTION



BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

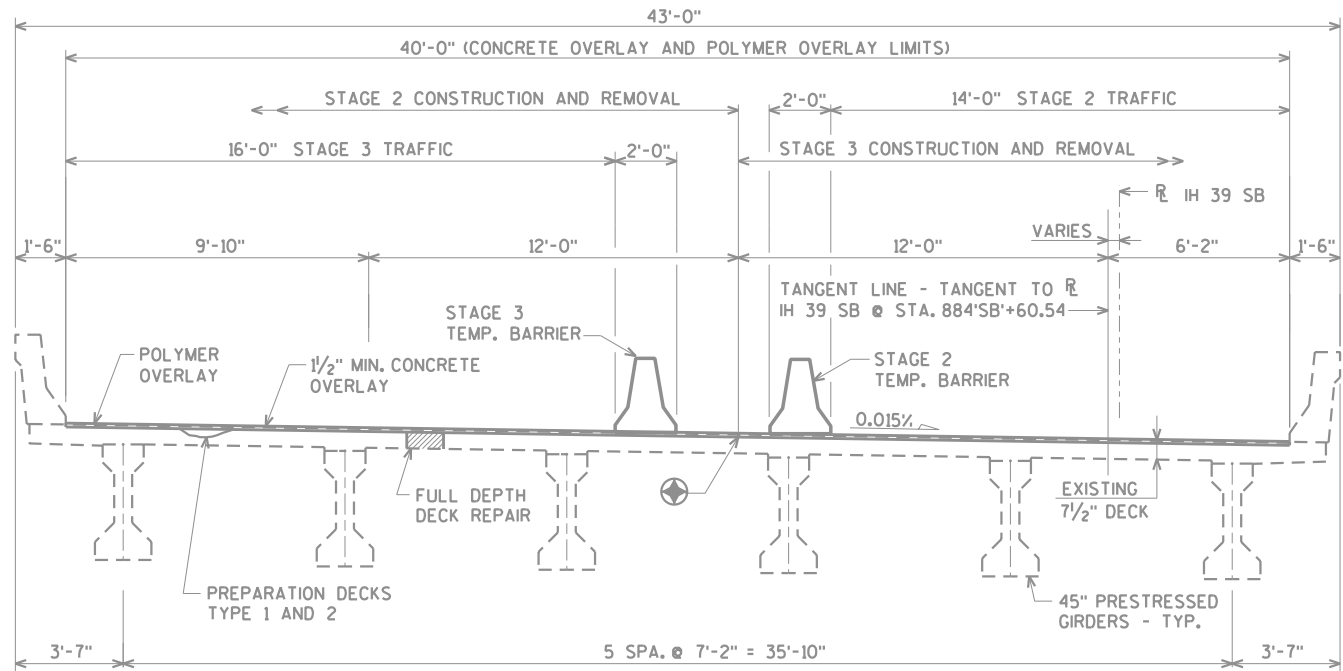
CONSULTANT CONTACT:
DAN SYDOW
(715)-834-3161

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY AYRES ASSOCIATES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED <i>William C. Dreher</i> SDR CHIEF STRUCTURES DESIGN ENGINEER		DATE 05/05/16	
STRUCTURE B-69-22			
IH 39 NB OVER STH 73			
COUNTY	WAUSHARA	TOWN/CITY/VILLAGE	PLAINFIELD
DESIGN SPEC.	REHABILITATION	N/A	
DESIGNED BY	JWZ	DESIGN CK'D.	CJM
DRAWN BY	CLS	PLANS CK'D.	DNS
GENERAL PLAN			SHEET 1 OF 2 247

\$PRNAME\$
U:\42-0912.00 - Waushara County, IH39 Overlays\B-69-22 IH 39 NB over STH 73\BRIDGE\FINAL\B-69-22 CP.dgn

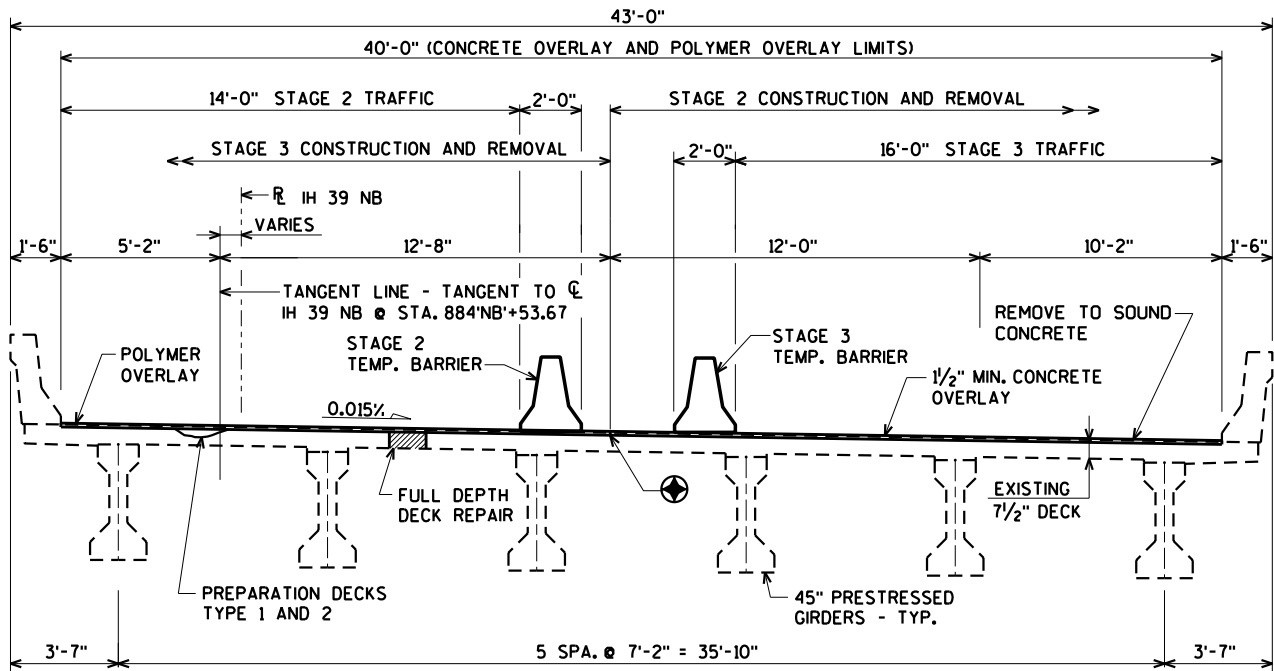
STATE PROJECT NUMBER

1166-06-64



B-69-23

CROSS SECTION THRU BRIDGES
(LOOKING NORTH)



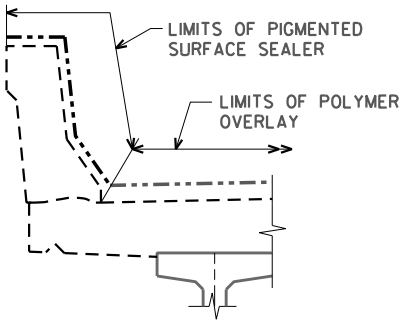
B-69-22

LONG. CONST. JOINT
SEAL WITH CRACK SEALER
PER SECTION 502.3.13 OF STD. SPEC.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTAL
502.3210	PIGMENTED SURFACE SEALER	SY	155
509.0301	PREPARATION DECKS TYPE 1	SY	40
509.0302	PREPARATION DECKS TYPE 2	SY	20
509.0500	CLEANING DECKS	SY	782
509.1500	CONCRETE SURFACE REPAIR	SF	5
509.2000	FULL-DEPTH DECK REPAIR	SY	1
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	47
509.5100.S	POLYMER OVERLAY	SY	782
509.9050.S	CLEANING PARAPETS	LF	398

△ BID ITEM ALSO INCLUDES CONCRETE FOR:
"PREPARATION DECKS TYPE 1"
"PREPARATION DECKS TYPE 2"
"FULL-DEPTH DECK REPAIR"



**POLYMER OVERLAY AND
PIGMENTED SURFACE SEALER DETAIL**

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-22			
DRAWN BY		CLS	PLANS CK'D. AEB
QUANTITIES & CROSS SECTION			SHEET 2 OF 2 248

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

CURVE DATA

IH 39 SB
P.I. STA. 883'SB'+61.69
 $\Delta = 5^{\circ}59'57''$
 $D = 0^{\circ}29'47''$
 $R = 11,539.77'$
 $T = 604.70'$
 $L = 1,208.30'$
 $E = 15.83'$
 $S.E. = 0.015\%$

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.
ANY EXCAVATION NECESSARY TO COMPLETE THE OVERLAY IS CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".
REMOVAL LINES NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1" DEEP SAW CUT AT THE CONCRETE SURFACES.
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, CONCRETE SURFACE REPAIR, AND FULL DEPTH DECK REPAIR AREAS SHALL BE DETERMINED BY THE FIELD ENGINEER.
UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.
A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM "CLEANING DECKS".
PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 1 1/2" PLACED ABOVE THE DECK SURFACE AFTER "CLEANING DECKS". EXPECTED AVERAGE OVERLAY THICKNESS IS 2". IF EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN 1/2", CONTACT THE STRUCTURES DESIGN SECTION.
THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES AT THE WING REPAIR.
REMOVAL OF THE WING WALL AND PARAPET IS INCLUDED IN THE BID ITEM "REMOVING OLD STRUCTURE STATION 884'SB'+60.54".
AT WING REPAIRS, ALL EXCAVATED VOLUME NOT OCCUPIED BY THE NEW WING SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

CURVE DATA

IH 39 NB
P.I. STA. 884'NB'+57.14
 $\Delta = 6^{\circ}00'05''$
 $D = 0^{\circ}29'58''$
 $R = 11,471.69'$
 $T = 601.34'$
 $L = 1,201.59'$
 $E = 15.75'$
 $S.E. = 0.015\%$

*ANCHOR ASSEMBLY FOR THRIE BEAM TYPE GUARDRAIL.
○ DENOTES WING NUMBER

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HS-20
INVENTORY RATING: HS-23
OPERATING RATING: HS-28
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

MATERIAL PROPERTIES

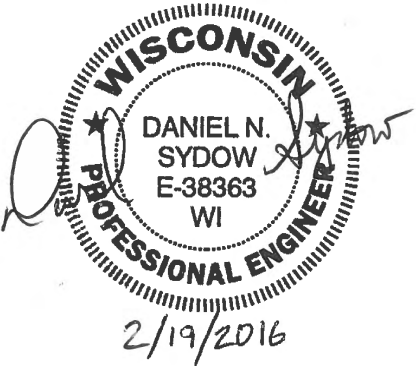
CONCRETE MASONRY { SUPERSTRUCTURE $f'_c = 4,000$ p.s.i.
ALL OTHER $f'_c = 3,500$ p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) $f_y = 60,000$ p.s.i.

TRAFFIC DATA:

IH 39 STH 73
A.D.T. = 15,200 (2012) A.D.T. = 6,400 (2009)
R.D.S. = 70 M.P.H. R.D.S. = 50 M.P.H.

LIST OF DRAWINGS

1. GENERAL PLAN
2. QUANTITIES & CROSS SECTION
3. WING 4 DETAILS
4. SLOPED FACE PARAPET B



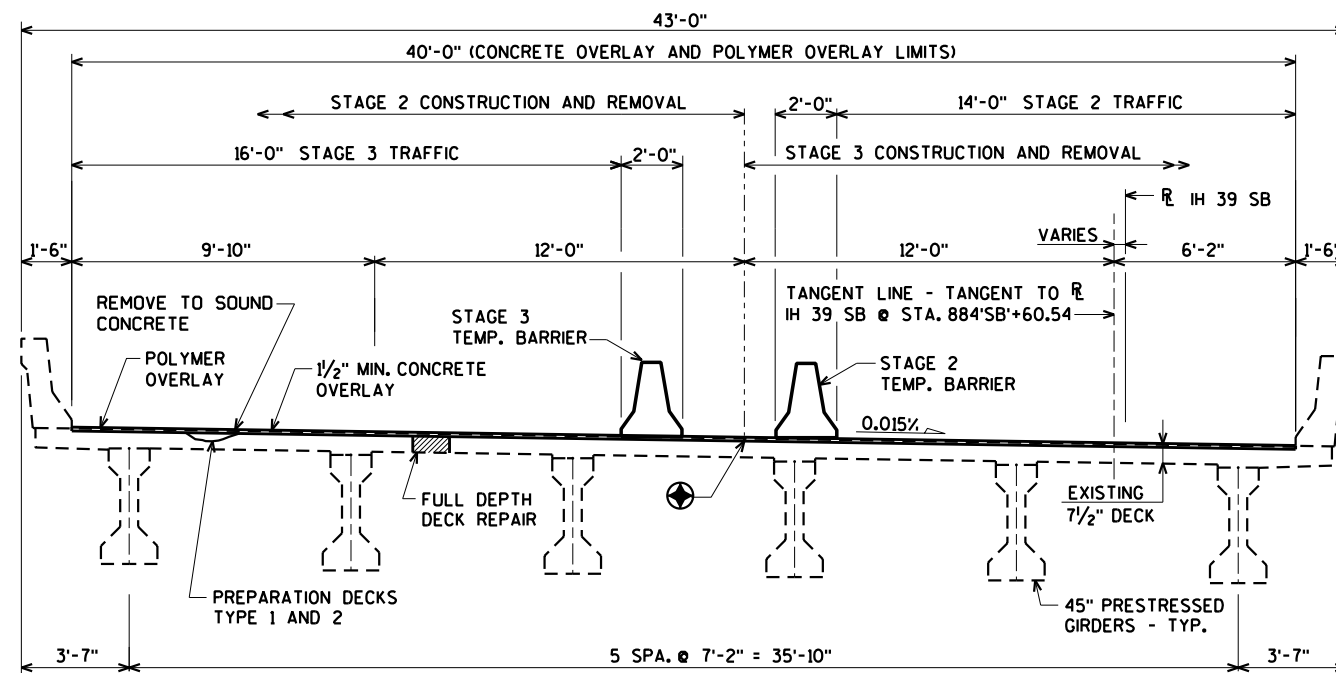
BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489
CONSULTANT CONTACT:
DAN SYDOW
(715)-834-3161

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY AYRES ASSOCIATES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED <i>William C. Dreher</i> SR		05/05/16 DATE	
CHIEF STRUCTURES DESIGN ENGINEER			
STRUCTURE B-69-23			
IH 39 SB OVER STH 73			
COUNTY	WAUSHARA	TOWN/CITY/VILLAGE	PLAINFIELD
DESIGN SPEC.	REHABILITATION	N/A	
DESIGNED BY	JWZ	DESIGN CK'D.	CJM
DRAWN BY	CLS	PLANS CK'D.	DLS
GENERAL PLAN			SHEET 1 OF 4 249

\$PRNAME\$
U:\42-0912.00 - Waushara County, IH39 Overlays\B-69-23 IH 39 SB over STH 73\BRIDGE\FINAL\B-69-23 CP.dgn

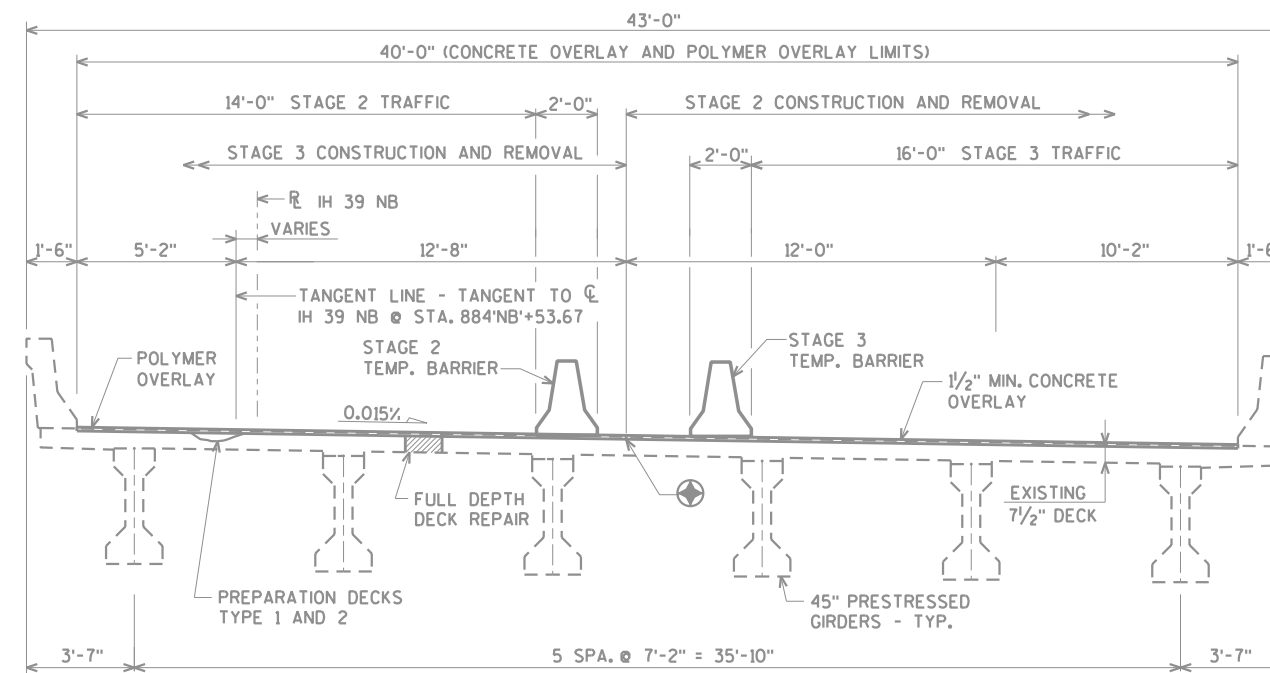
STATE PROJECT NUMBER

1166-06-64



LONG. CONST. JOINT
SEAL WITH CRACK SEALER
PER SECTION 502.3.13 OF STD. SPEC.

B-69-23



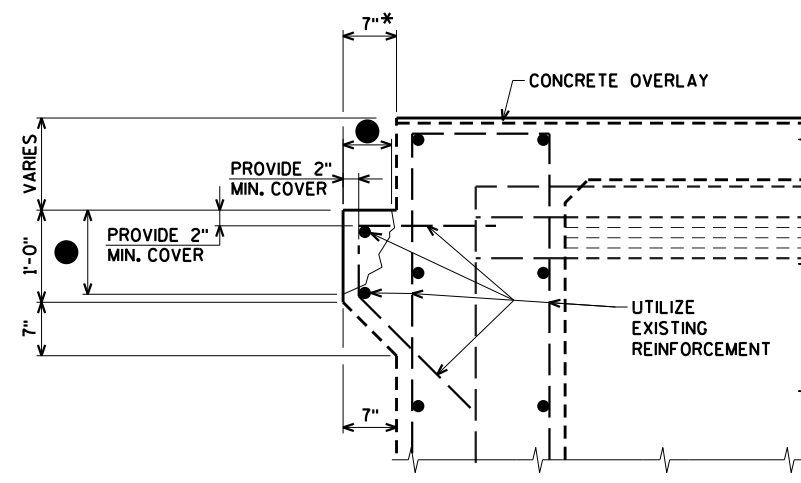
B-69-22

CROSS SECTION THRU BRIDGES
(LOOKING NORTH)

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTAL
203.0200	REMOVING OLD STRUCTURE STATION 884'SB'+60.54	LS	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-69-23	LS	1
210.0100	BACKFILL STRUCTURE	CY	22
502.0100	CONCRETE MASONRY BRIDGES	CY	5
502.3210	PIGMENTED SURFACE SEALER	SY	155
502.5005	MASONRY ANCHOR TYPE L NO. 5 BARS	EACH	10
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	620
509.0301	PREPARATION DECKS TYPE 1	SY	40
509.0302	PREPARATION DECKS TYPE 2	SY	20
509.0500	CLEANING DECKS	SY	782
509.1500	CONCRETE SURFACE REPAIR	SF	5
509.2000	FULL-DEPTH DECK REPAIR	SY	1
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	48
509.5100.S	POLYMER OVERLAY	SY	782
509.9050.S	CLEANING PARAPETS	LF	387
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	3
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	1
SPV.0090	PAVING NOTCH REPAIR	LF	80
NON-BID ITEMS			
	FILLER	SIZE	1/2"

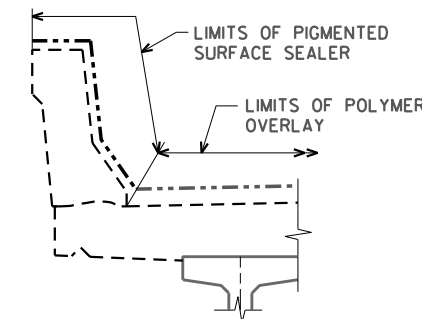
△ BID ITEM ALSO INCLUDES CONCRETE FOR:
"PREPARATION DECKS TYPE 1"
"PREPARATION DECKS TYPE 2"
"FULL-DEPTH DECK REPAIR"



PAVING NOTCH REPAIR
(CONCRETE SURFACE REPAIR)

* DIMENSION IS TAKEN NORMAL TO SUBSTRUCTURE UNITS.

● REMOVE CONCRETE TO SOUND CONCRETE OR AT LEAST 1" BEHIND EXISTING REINFORCEMENT.



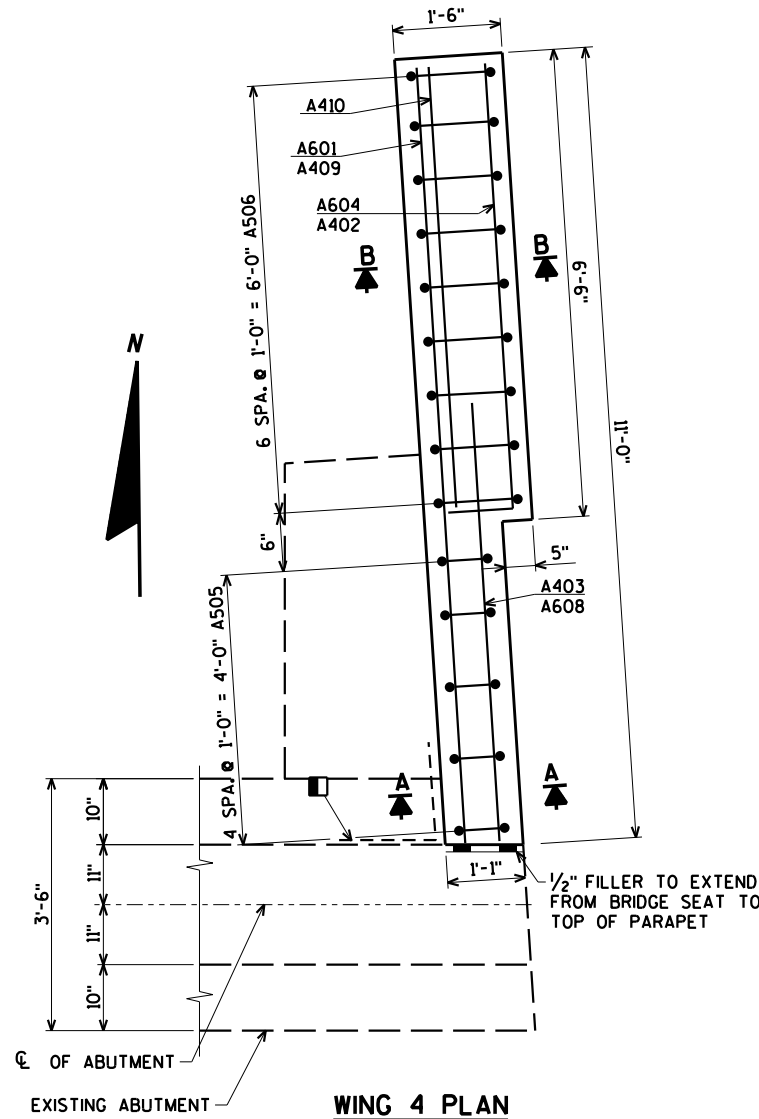
POLYMER OVERLAY AND PIGMENTED SURFACE SEALER DETAIL

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-23			
DRAWN BY		CLS	PLANS CK'D. AEB
QUANTITIES & CROSS SECTION		SHEET 2 OF 4 250	

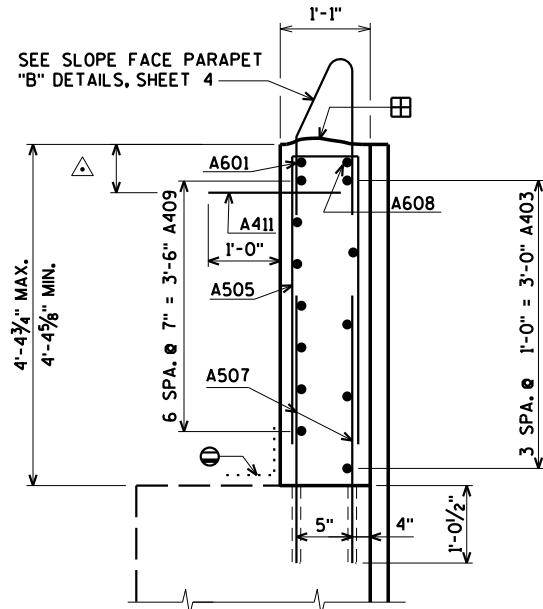
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

\$PRNAME\$
Ut±42-0912.00 - Waushara County, IH39 Overlays±B-69-23 IH 39 SB over STH 73±BRIDGE±FINAL±B-69-23 WINGS.DGN

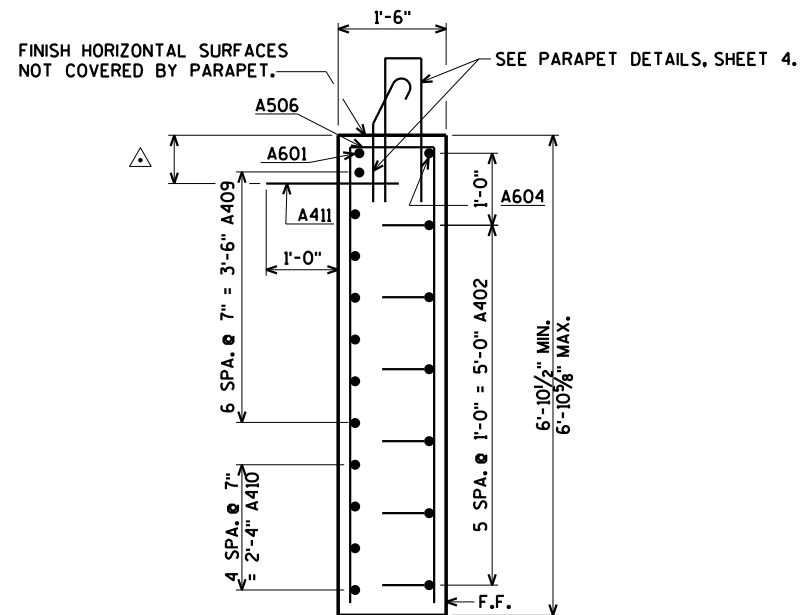
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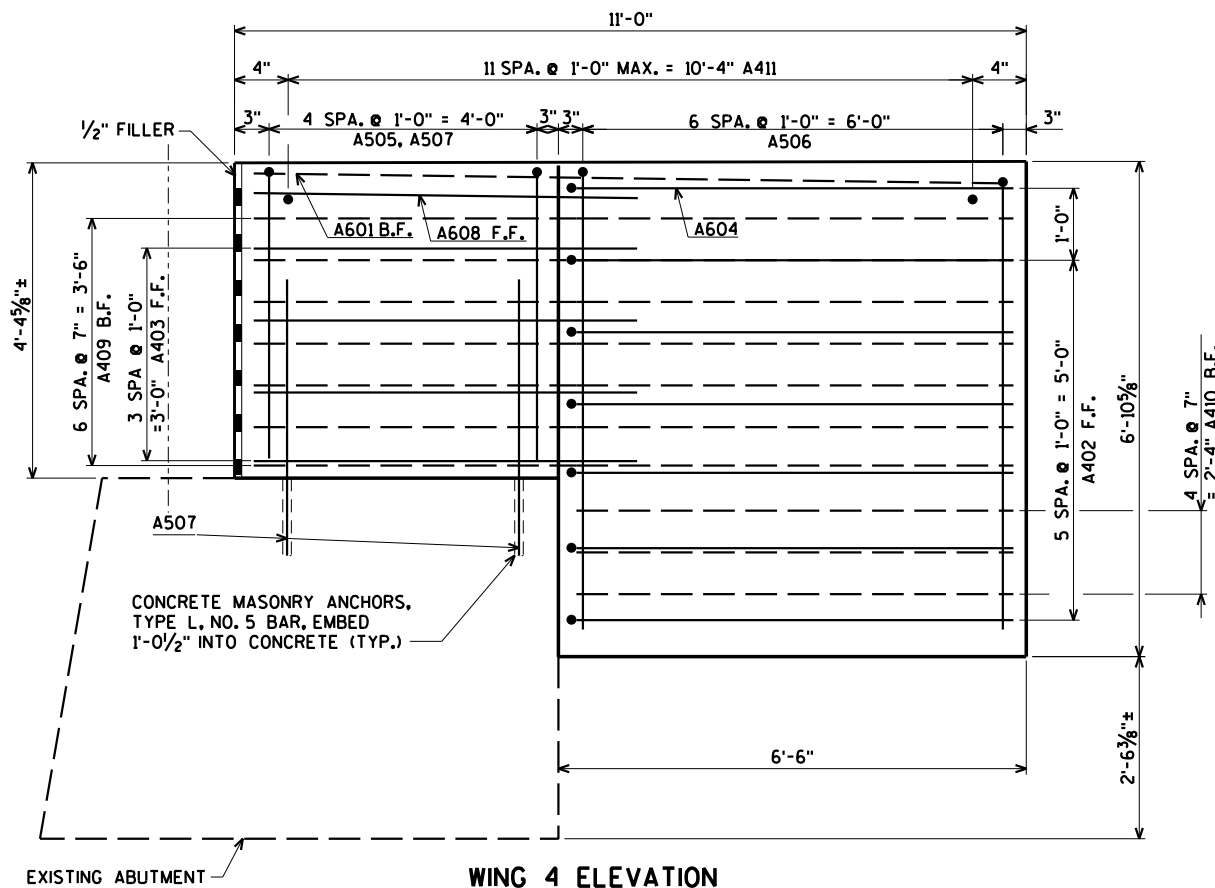
WING 4 PLAN



SECTION A



SECTION B

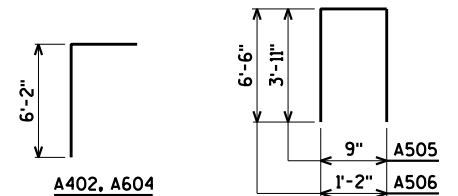


WING 4 ELEVATION

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	620# COATED*
						LOCATION
A601	X	1	10-8			WING TOP HORIZ B.F.
A402	X	6	6-11	X		WING HORIZ. F.F.
A403	X	4	6-10			WING HORIZ. F.F.
A604	X	1	7-0	X		WING TOP HORIZ. F.F.
A505	X	5	8-4	X		WING TOP VERT.
A506	X	7	13-11	X		WING TOP VERT.
A507	X	10	4-2			WING BOT. VERT. DOWEL BARS
A608	X	1	7-10			WING TOP HORIZ. F.F.
A409	X	7	10-8			WING HORIZ. B.F.
A410	X	5	6-2			WING HORIZ. B.F.
A411	X	12	2-0			WING DOWELS

* INCLUDES WEIGHT OF PARAPET BARS. SEE SHEET 4.



- △ 3" MIN. TO 6" MAX., SEE CONCRETE SURFACE DRAIN SDD.
- ⊞ STRIKE OFF AS SHOWN AND LEAVE ROUGH.
- VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING
- ⊖ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE.

B.F. DENOTES BACK FACE.
F.F. DENOTES FRONT FACE.
E.F. DENOTES EACH FACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-23			
DRAWN BY CJM		PLANS CK'D. AEB	
WING 4 DETAILS		SHEET 3 OF 4 251	

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

8

\$PRNAME\$
U:\42-0912.00 - Waushara County, IH39 Overlays\B-69-23 IH 39 SB over STH 73\BRIDGE\FINAL\B-69-23 pptb.dgn

STATE PROJECT NUMBER

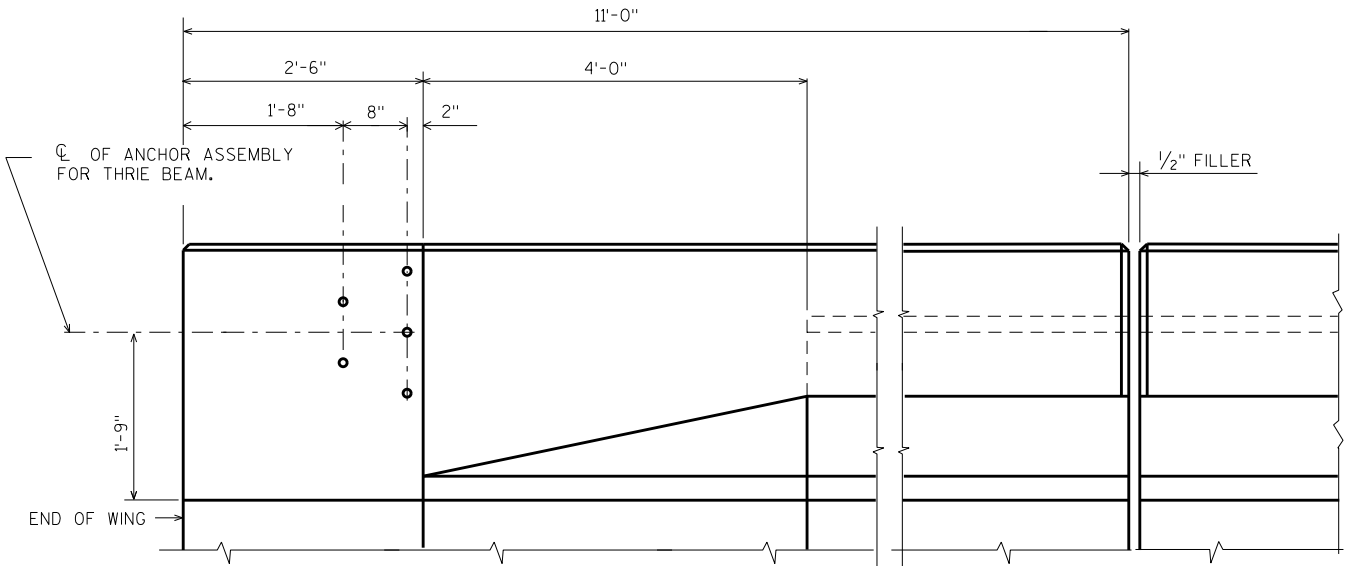
1166-06-64

BILL OF BARS

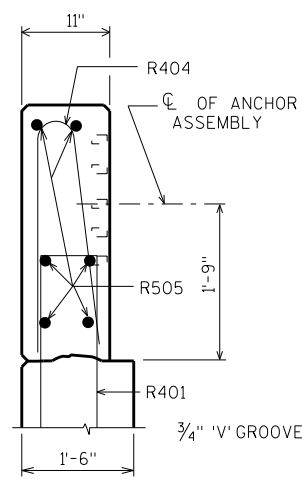
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
EPOXY COAT ALL PARAPET REINF.

BAR MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
	WING 4			
R401	15	4-9	X	WING 4 VERT.
R402	4	3-1	X	WING 4 VERT.
R403	7	4-9	X	WING 4 VERT.
R404	15	4-9	X	WING 4 VERT.
R505	6	6-2		WING 4 HORIZ.
R406	7	4-10	X	WING 4 VERT.
R507	4	7-1		WING 4 HORIZ.
R508	1	7-1	X	WING 4 HORIZ.

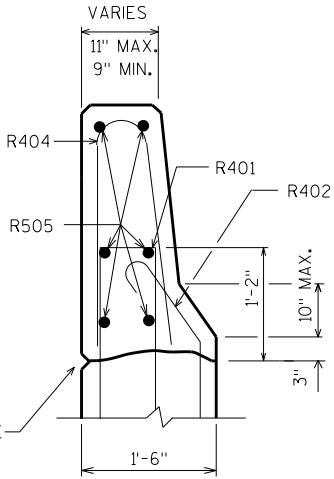
INSIDE ELEVATION



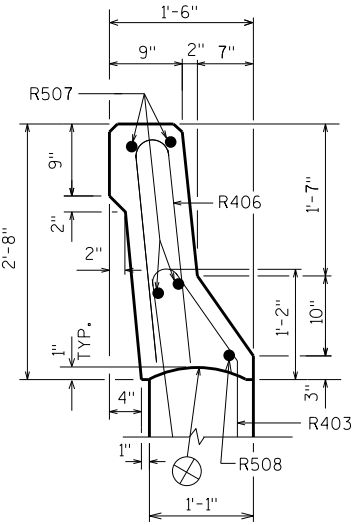
SECTION A



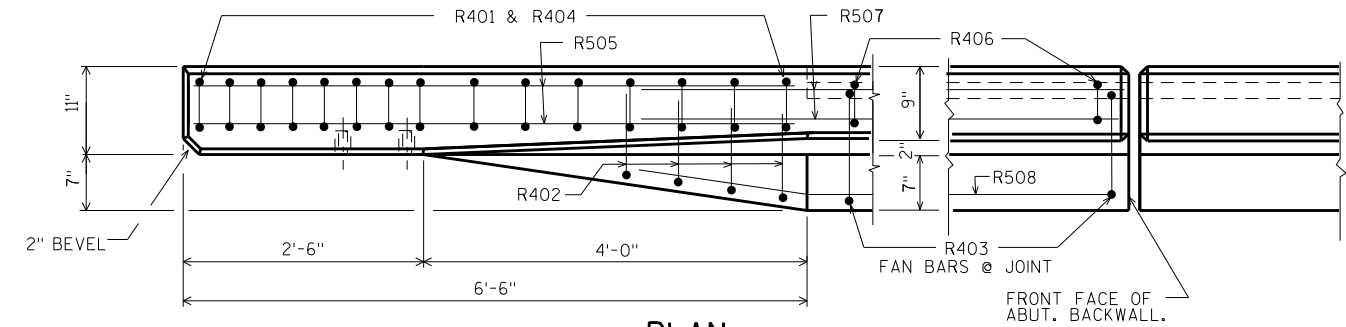
SECTION B



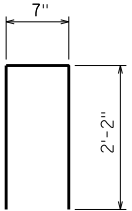
SECTION C



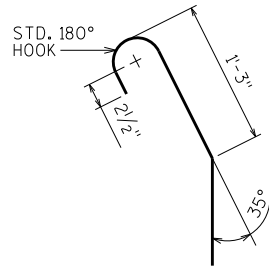
PLAN



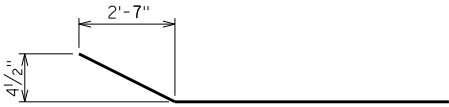
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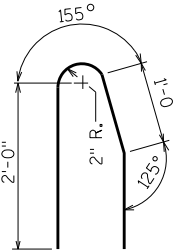
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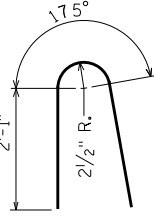
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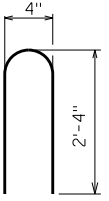
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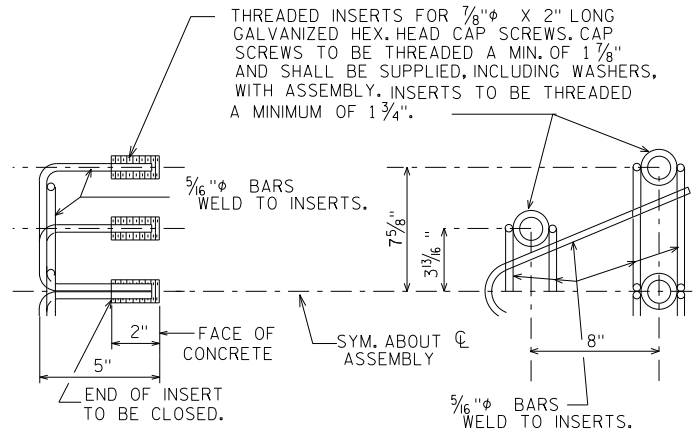
R404



R406

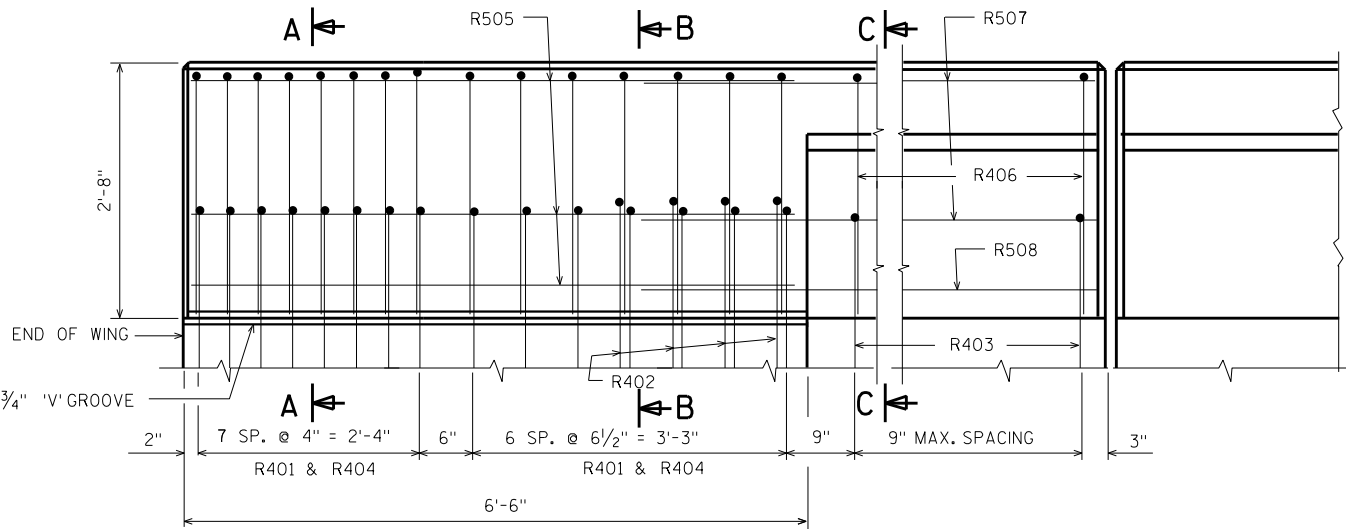


DETAIL OF ANCHOR ASSEMBLY



NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

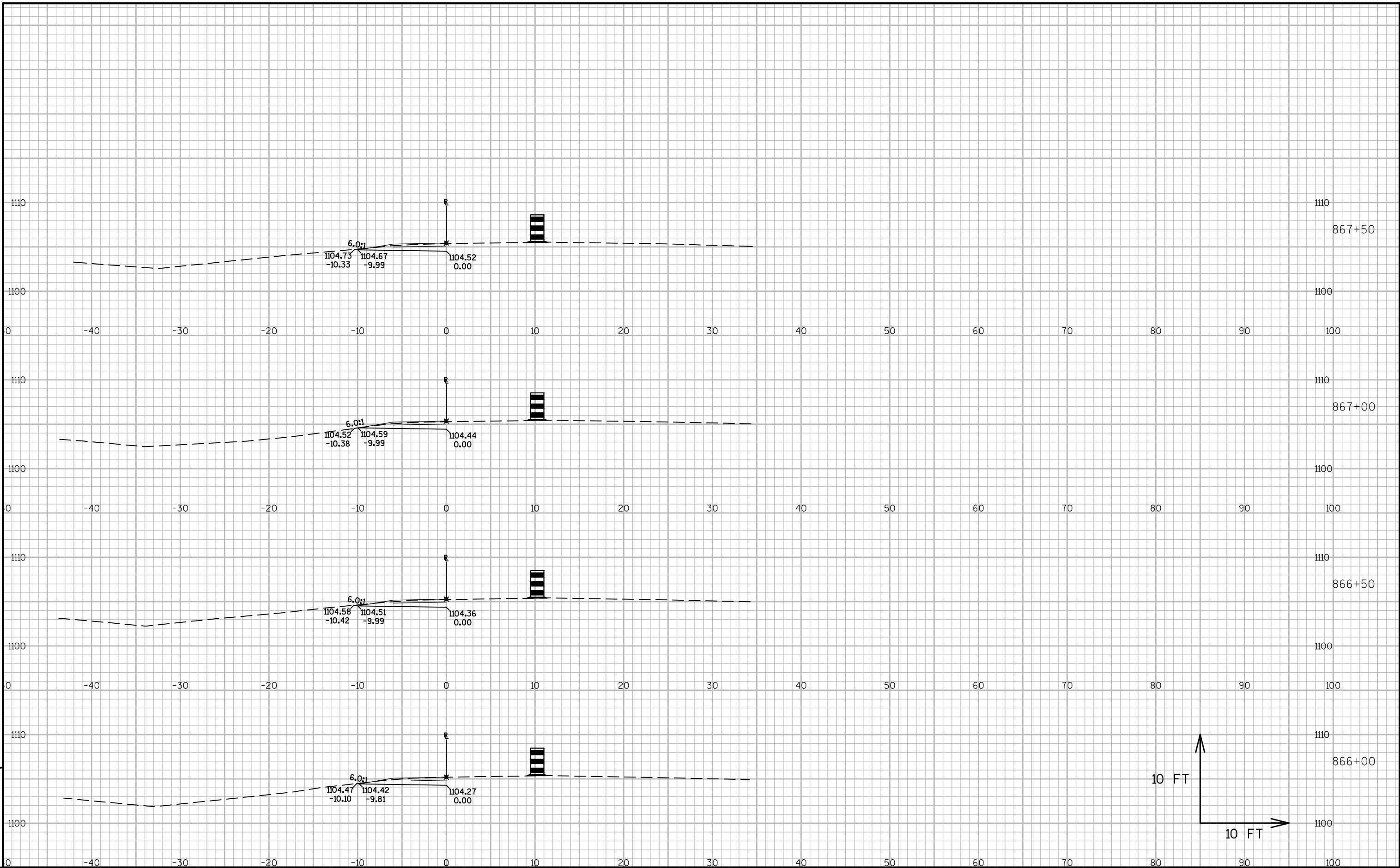
OUTSIDE ELEVATION

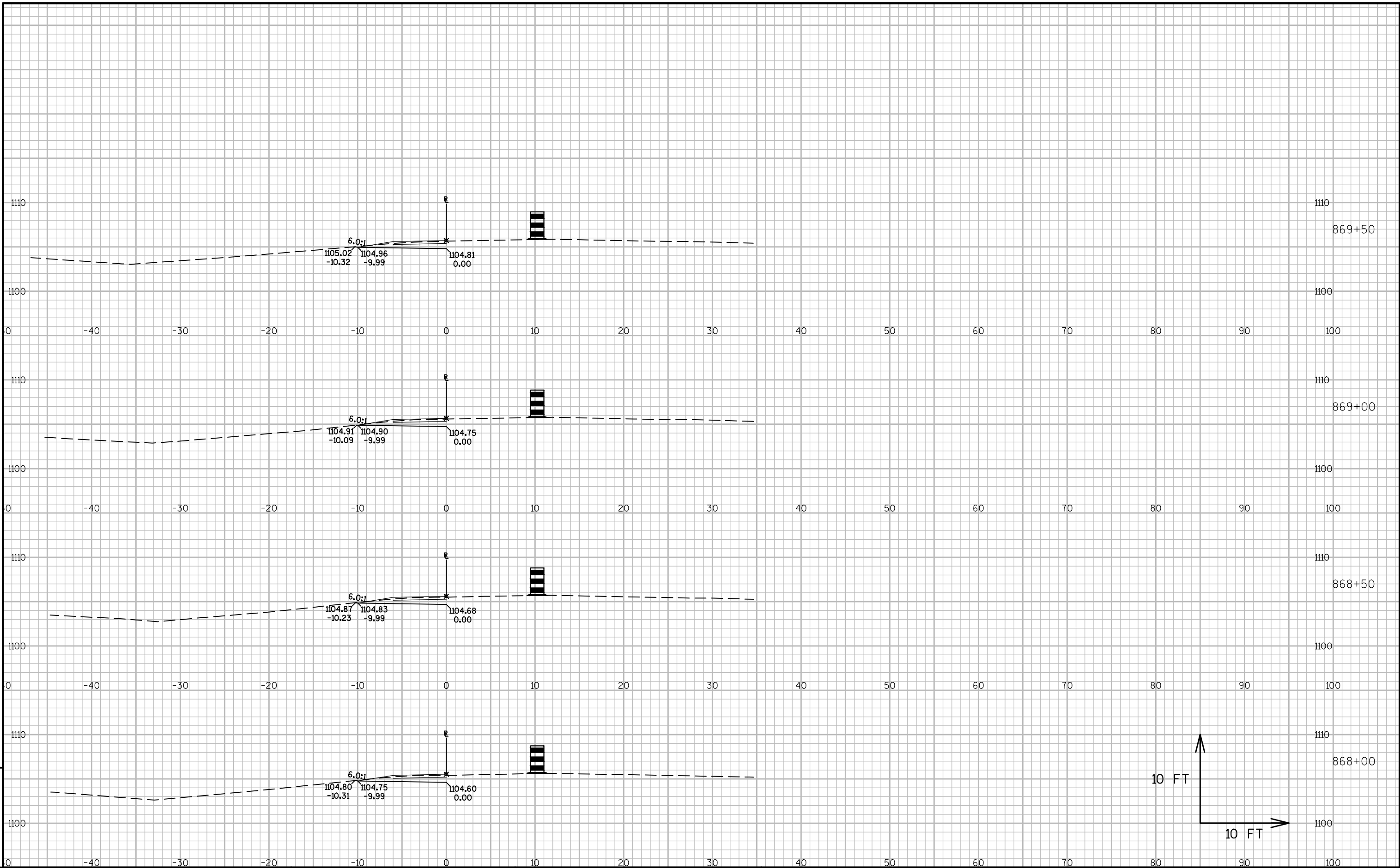


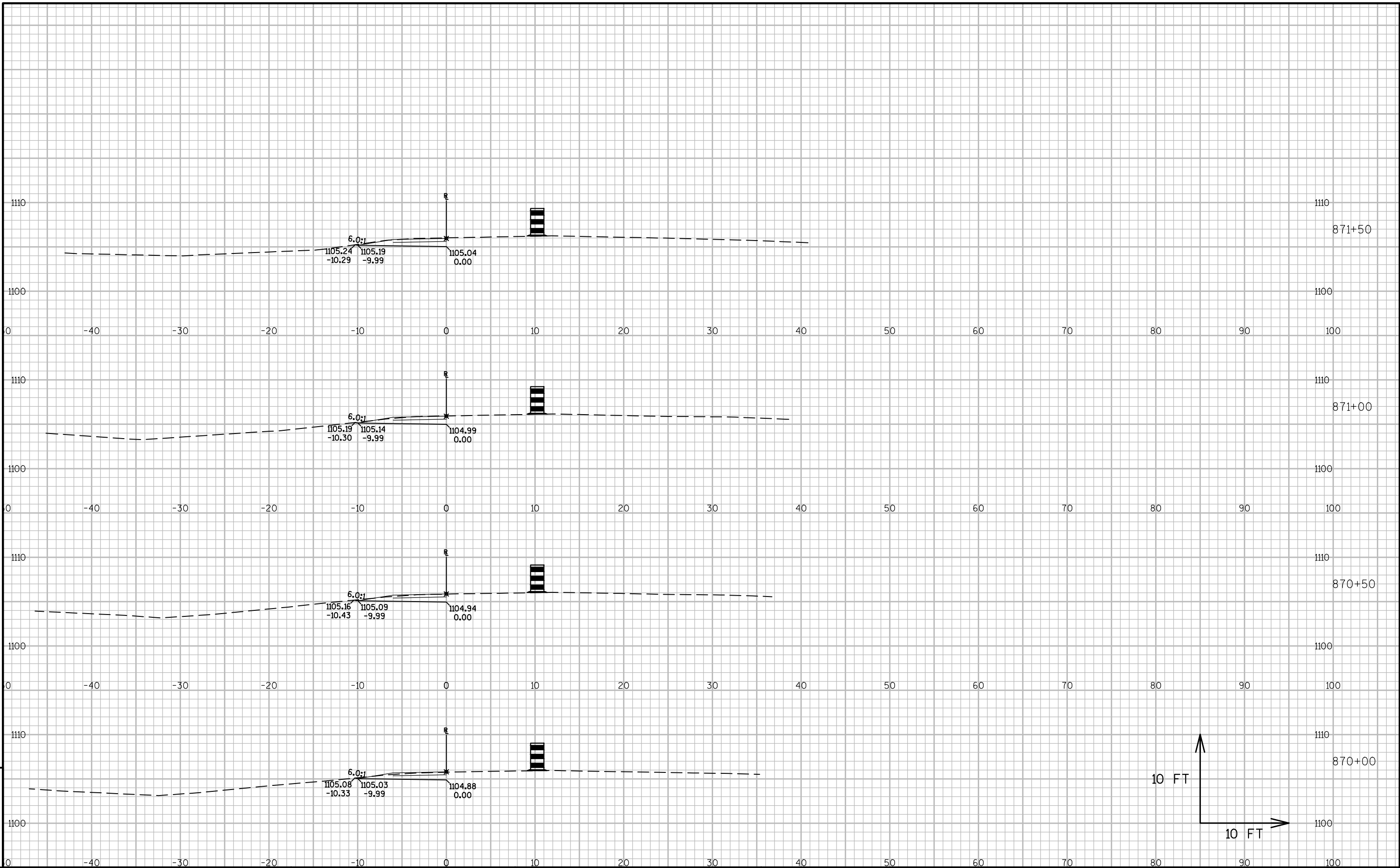
CONST. JOINT - STRIKE OFF AS SHOWN.

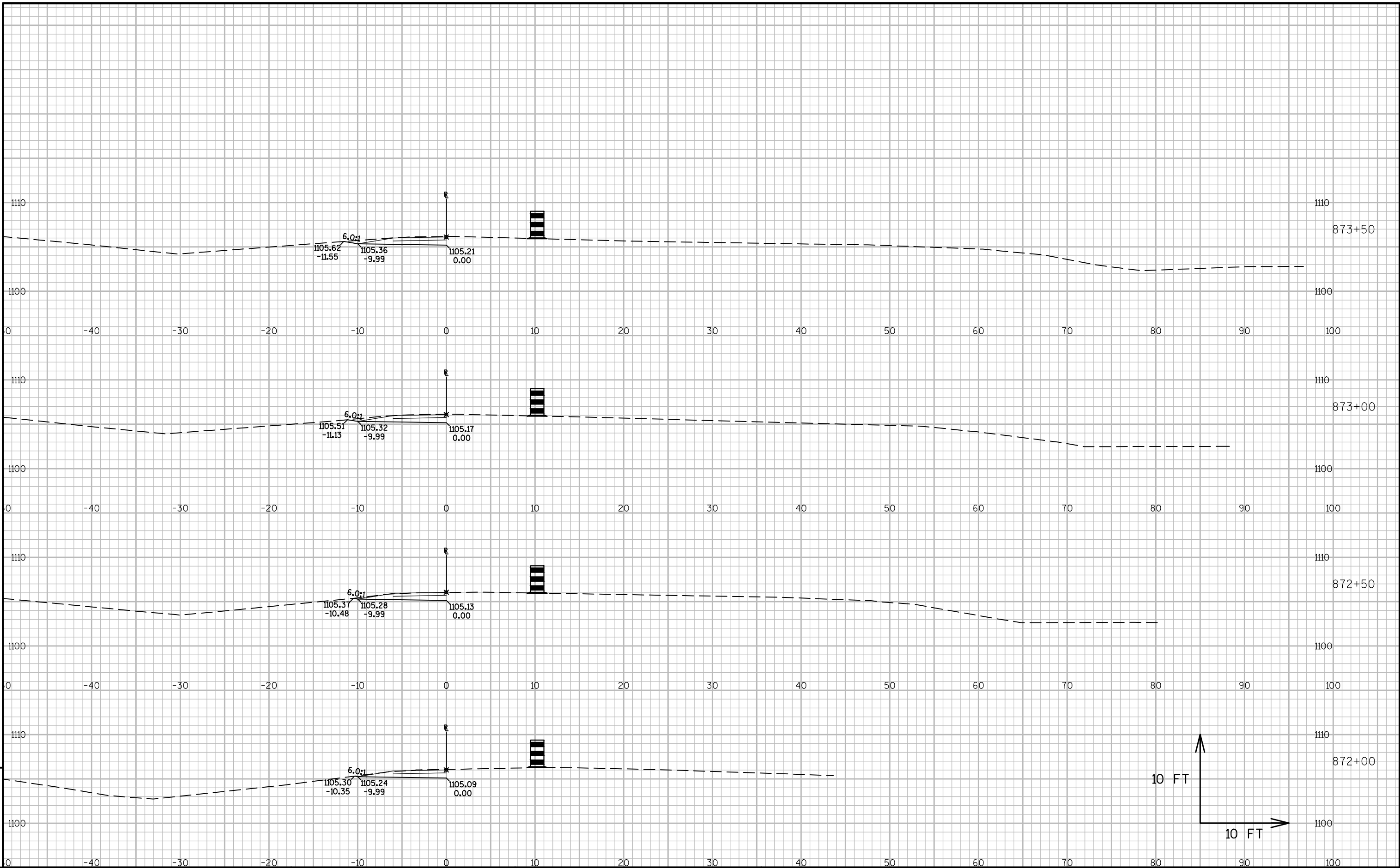
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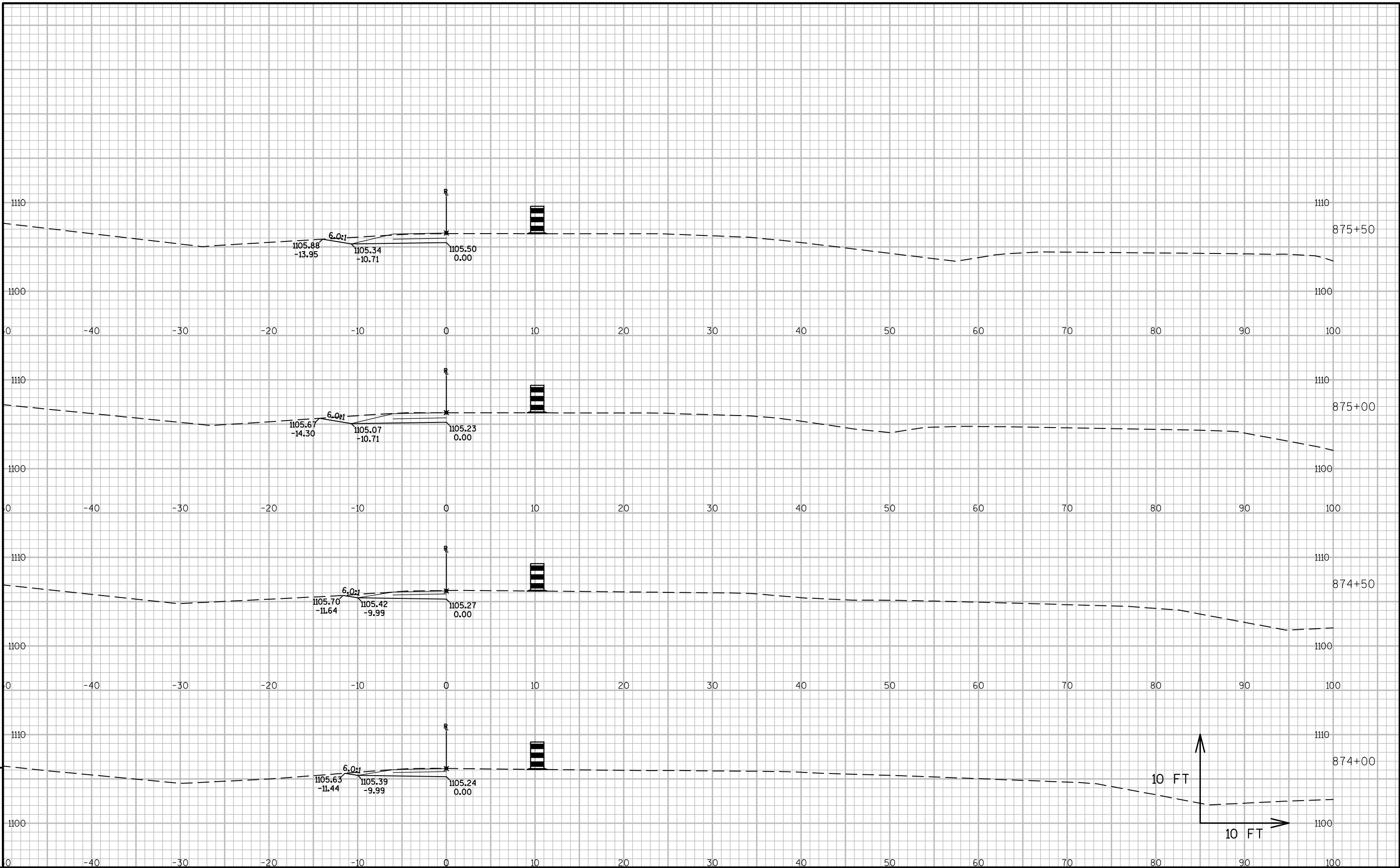
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-23			
DRAWN BY	CJM	PLANS CK'D.	AEB
SLOPED FACE PARAPET "B"		SHEET 4 OF 4 252	

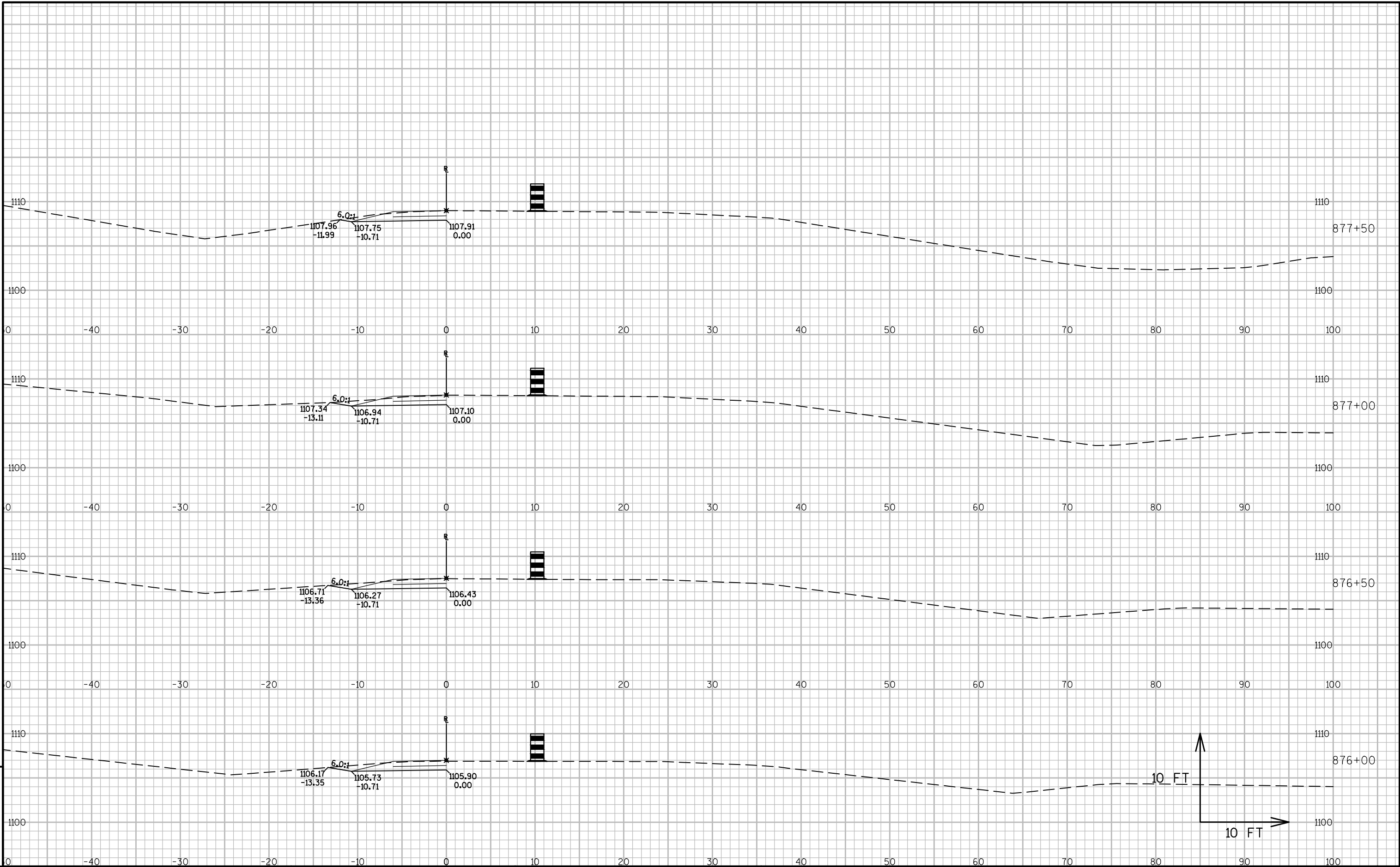


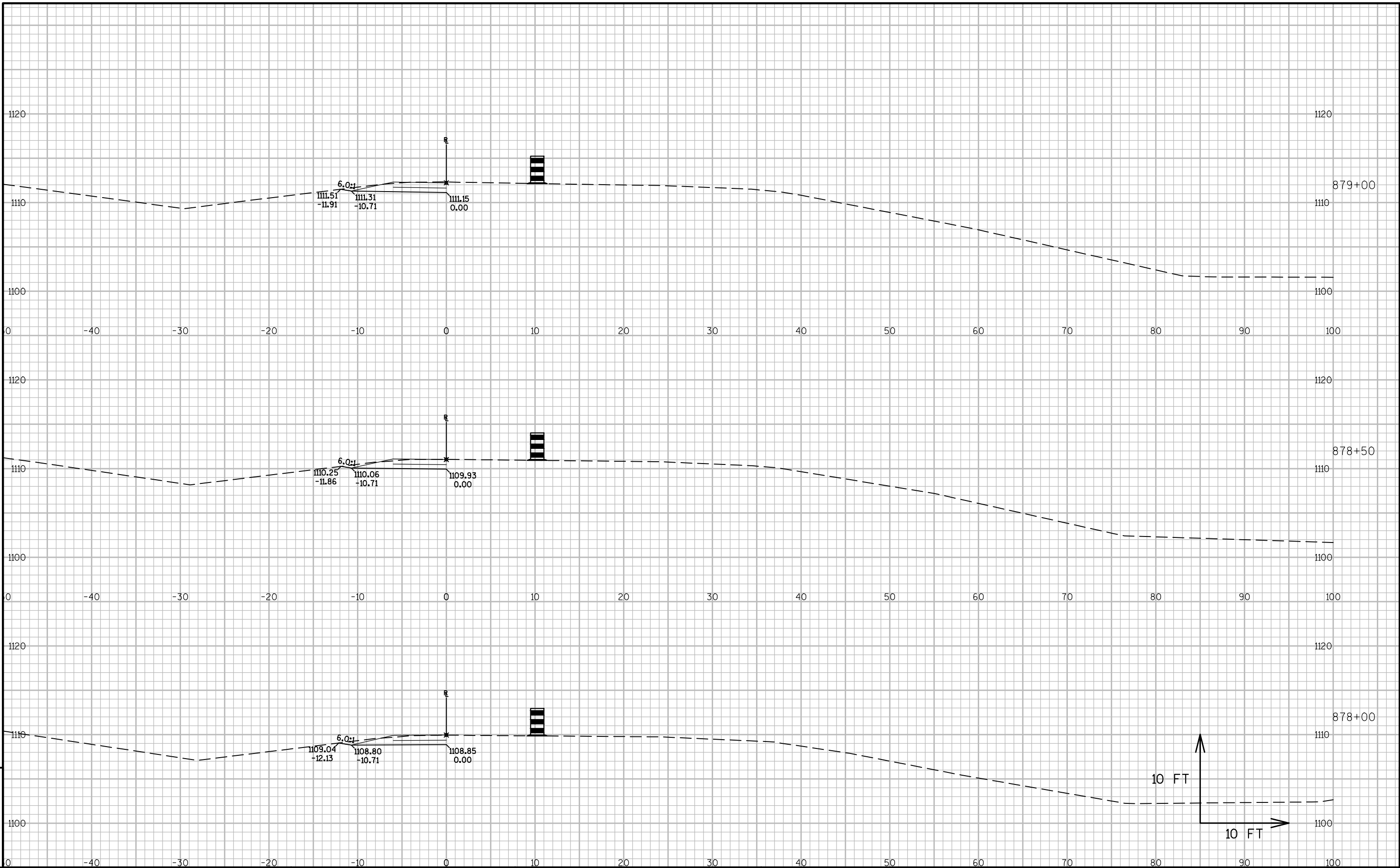


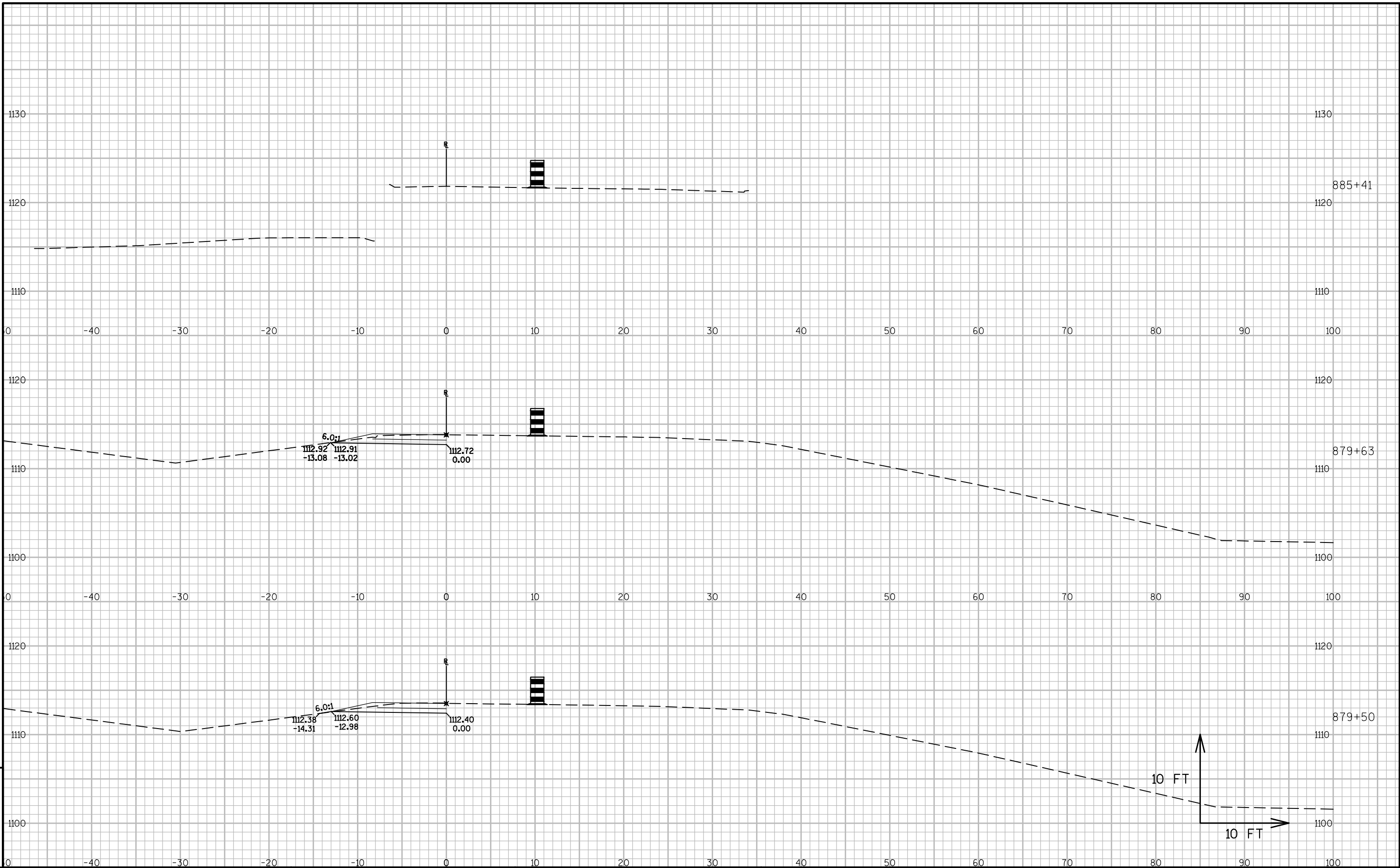


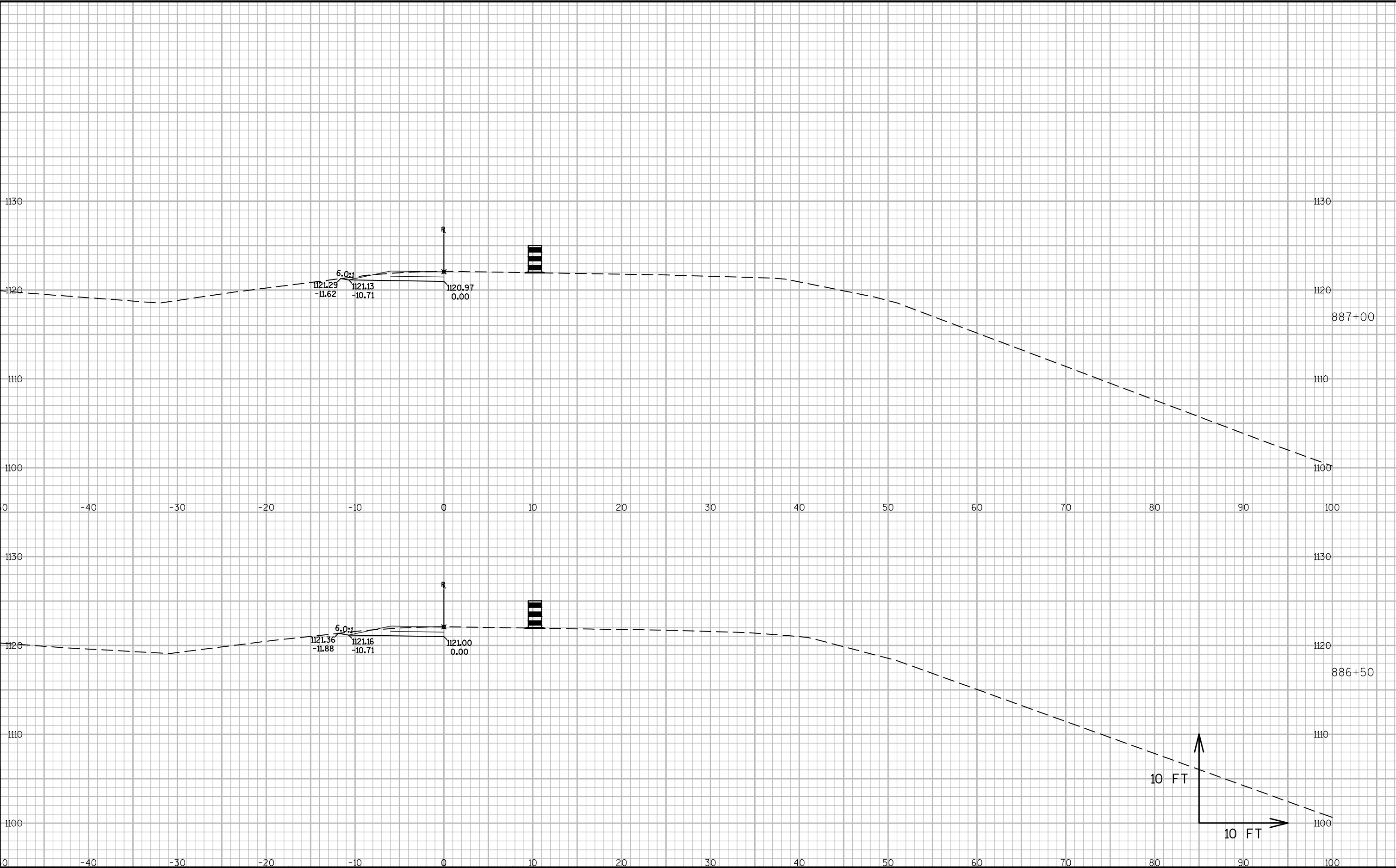






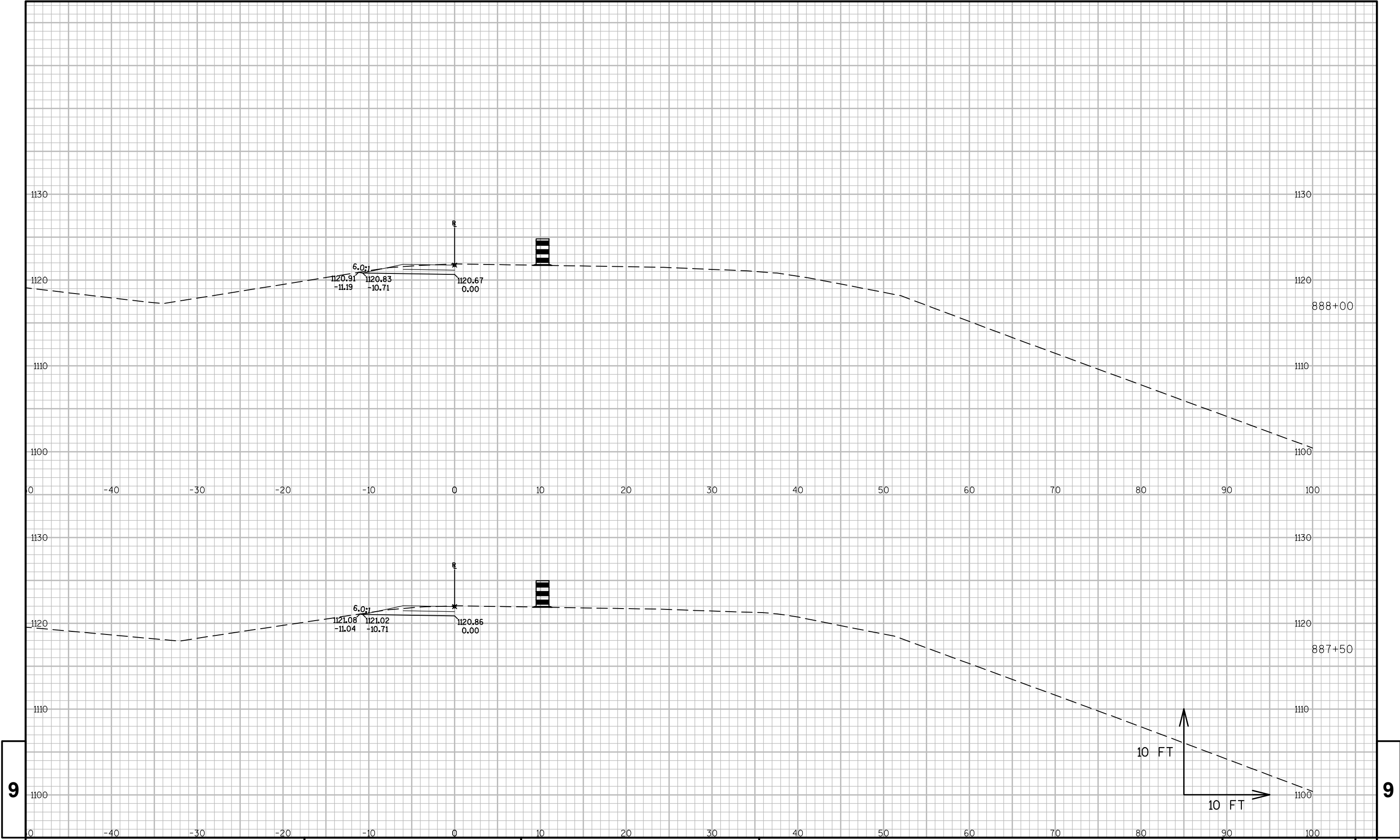






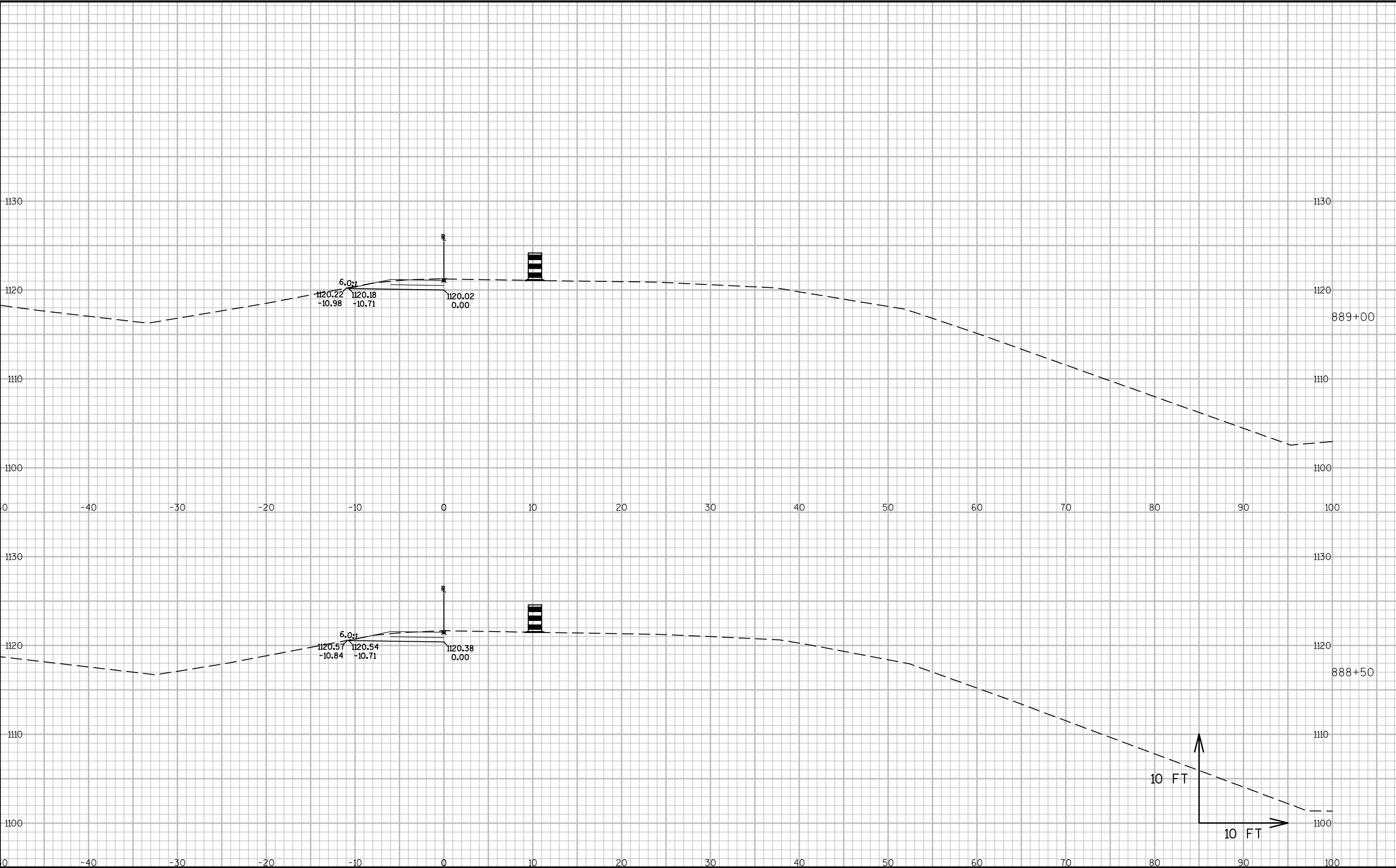
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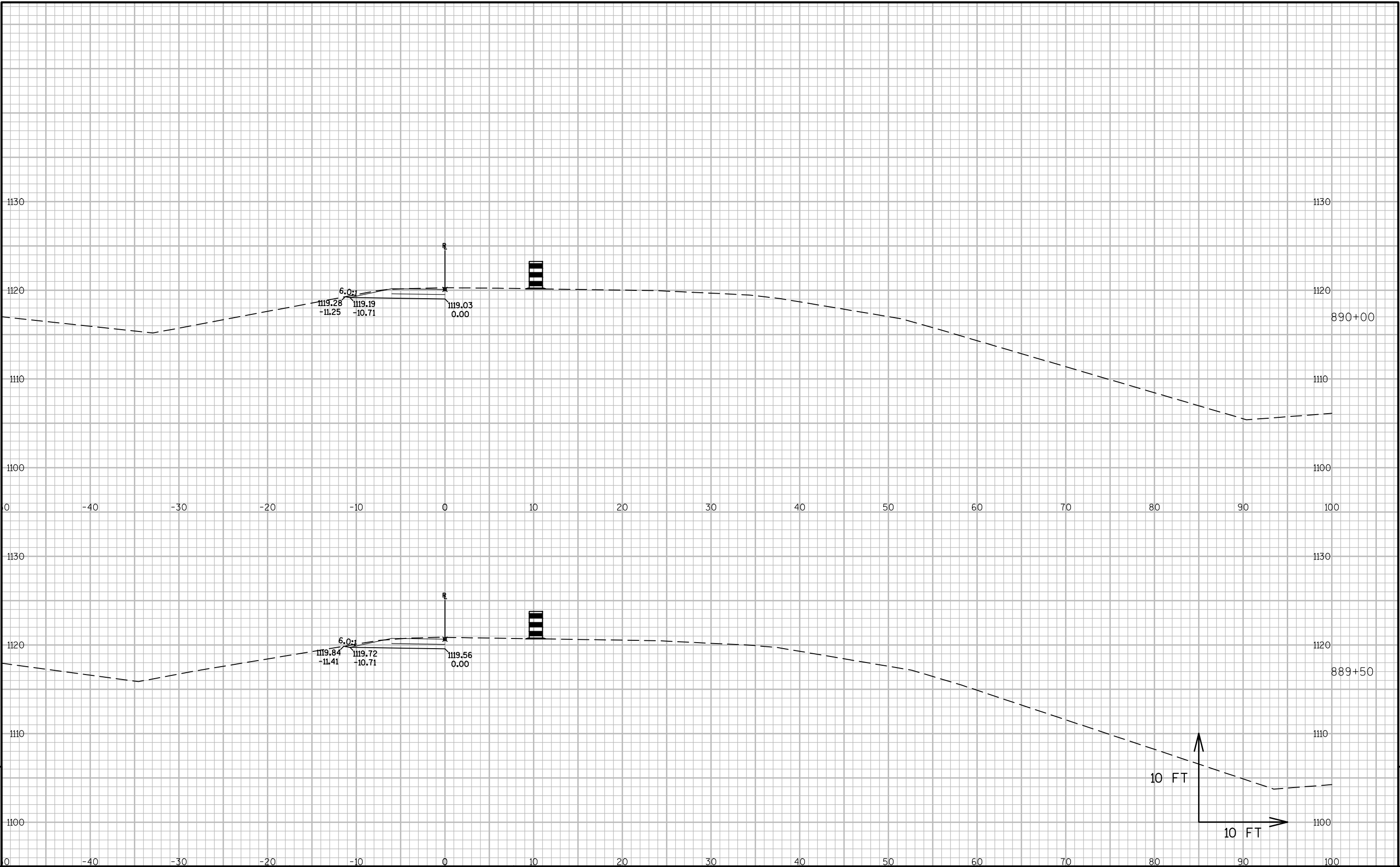
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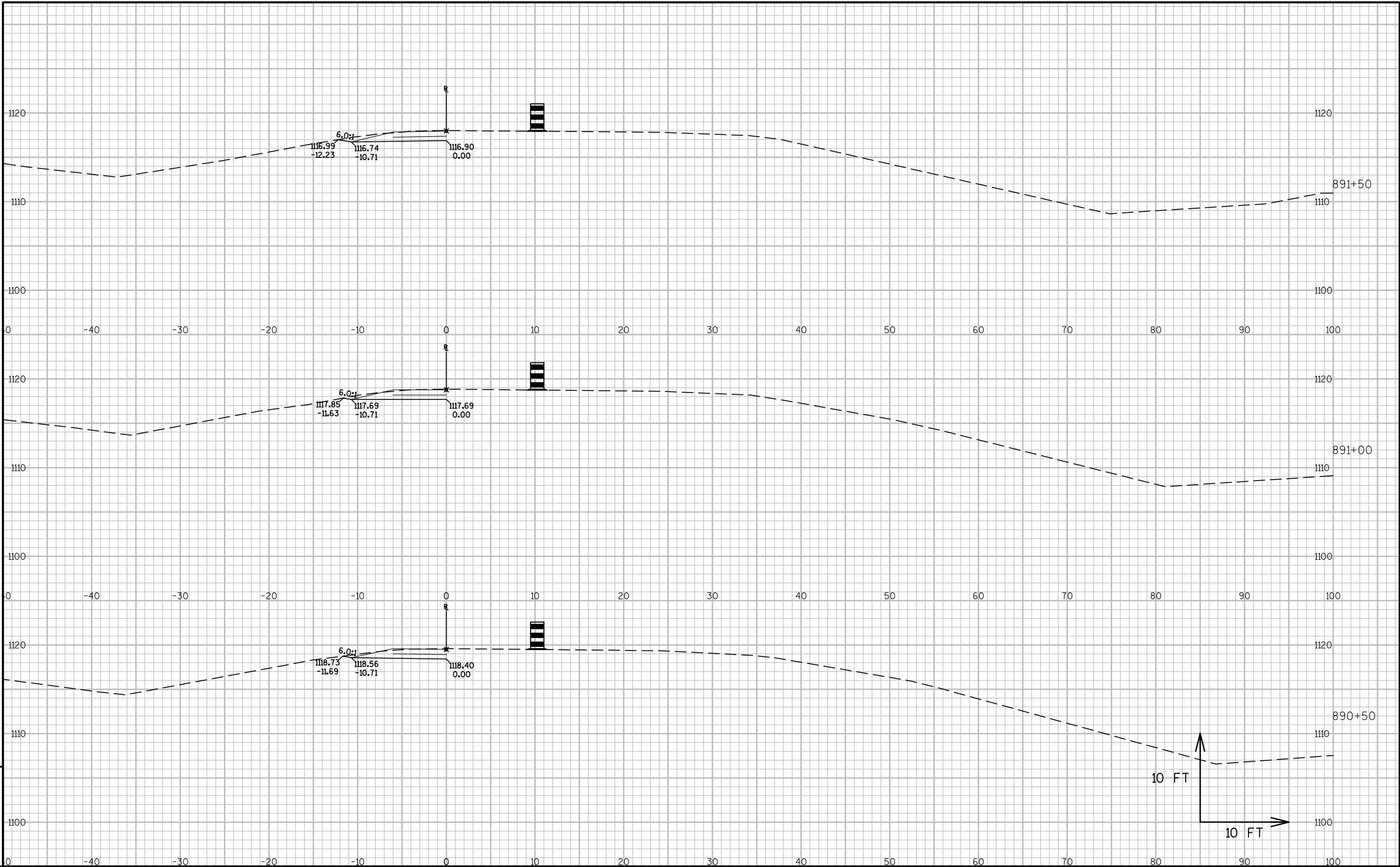
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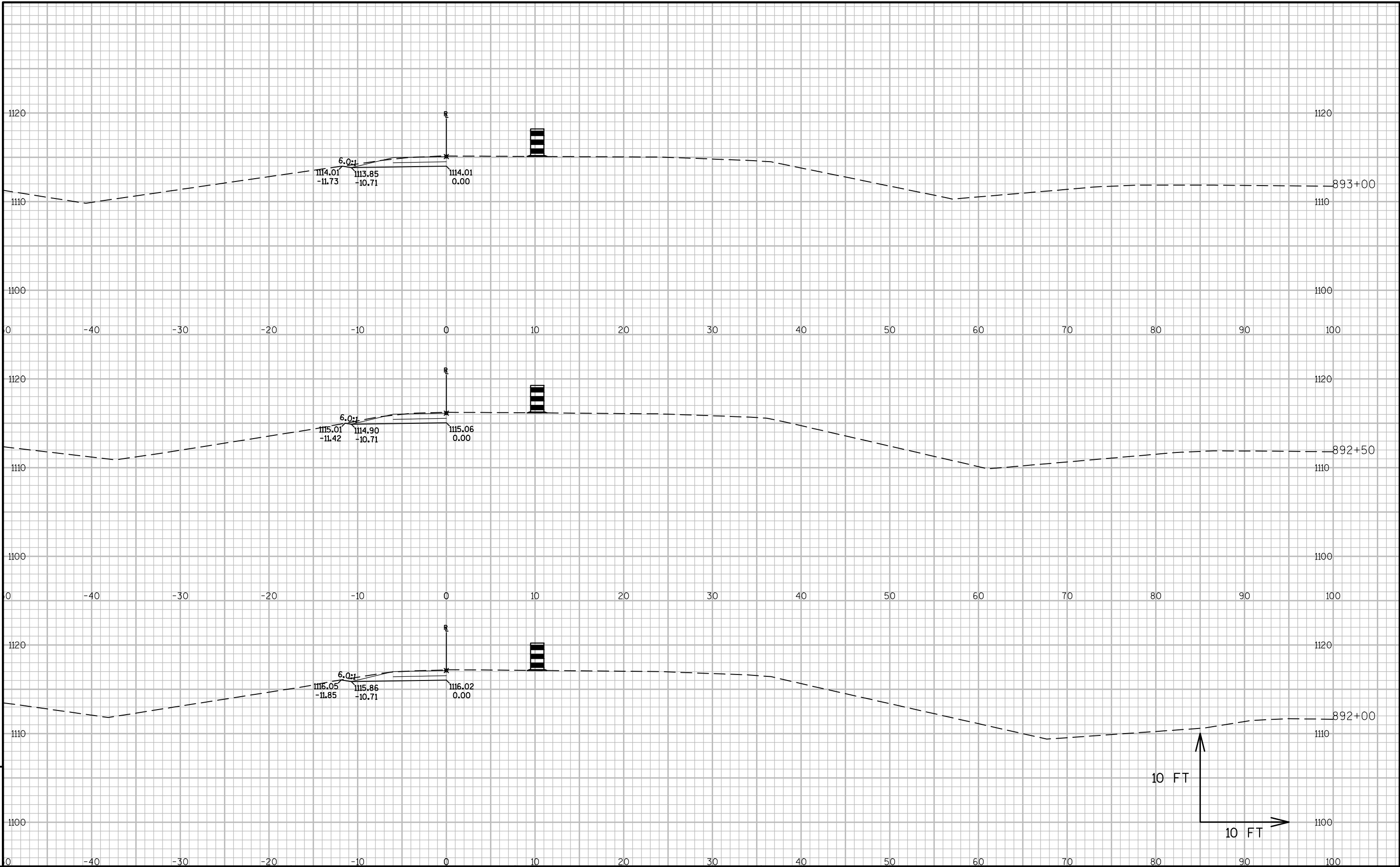


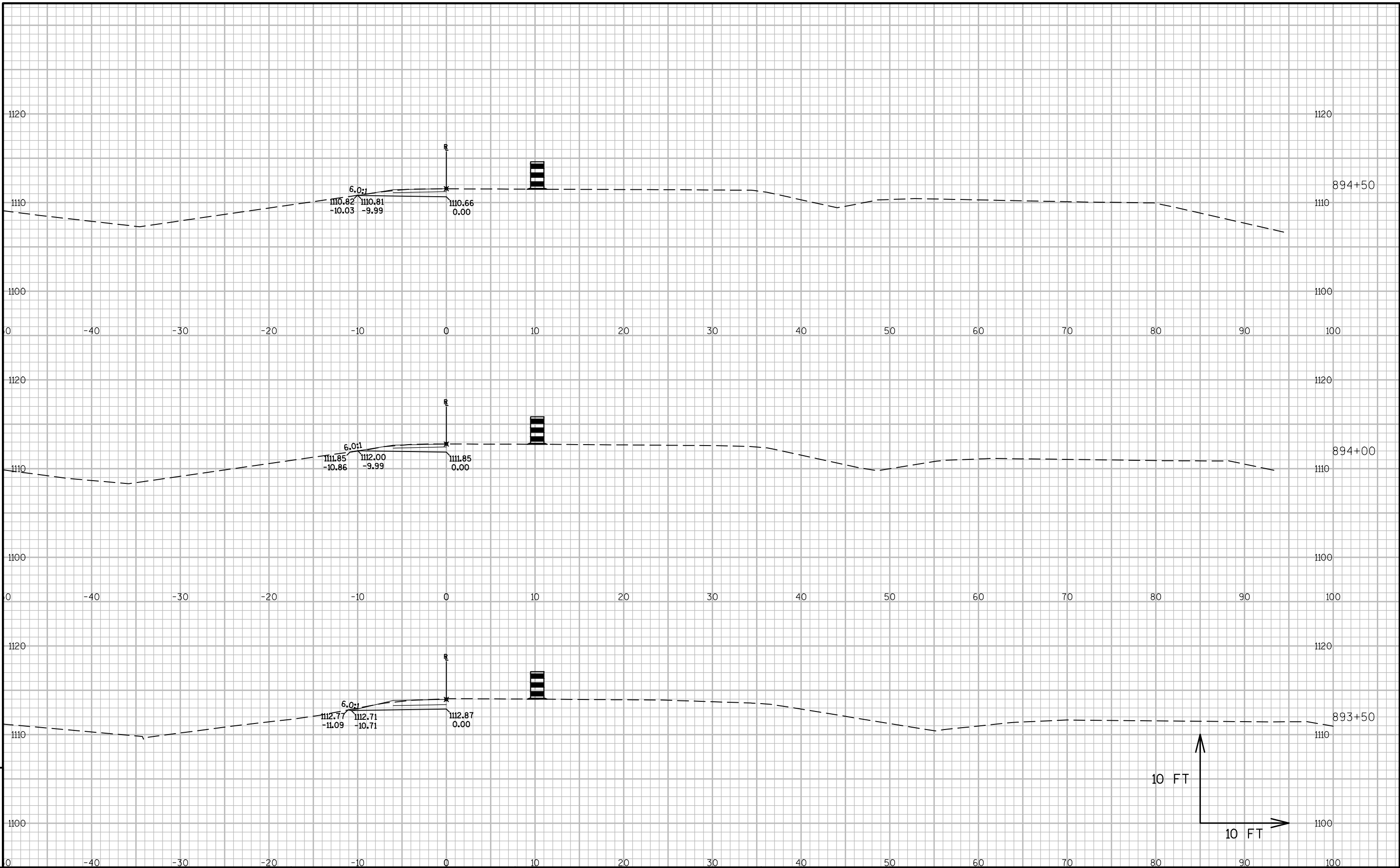
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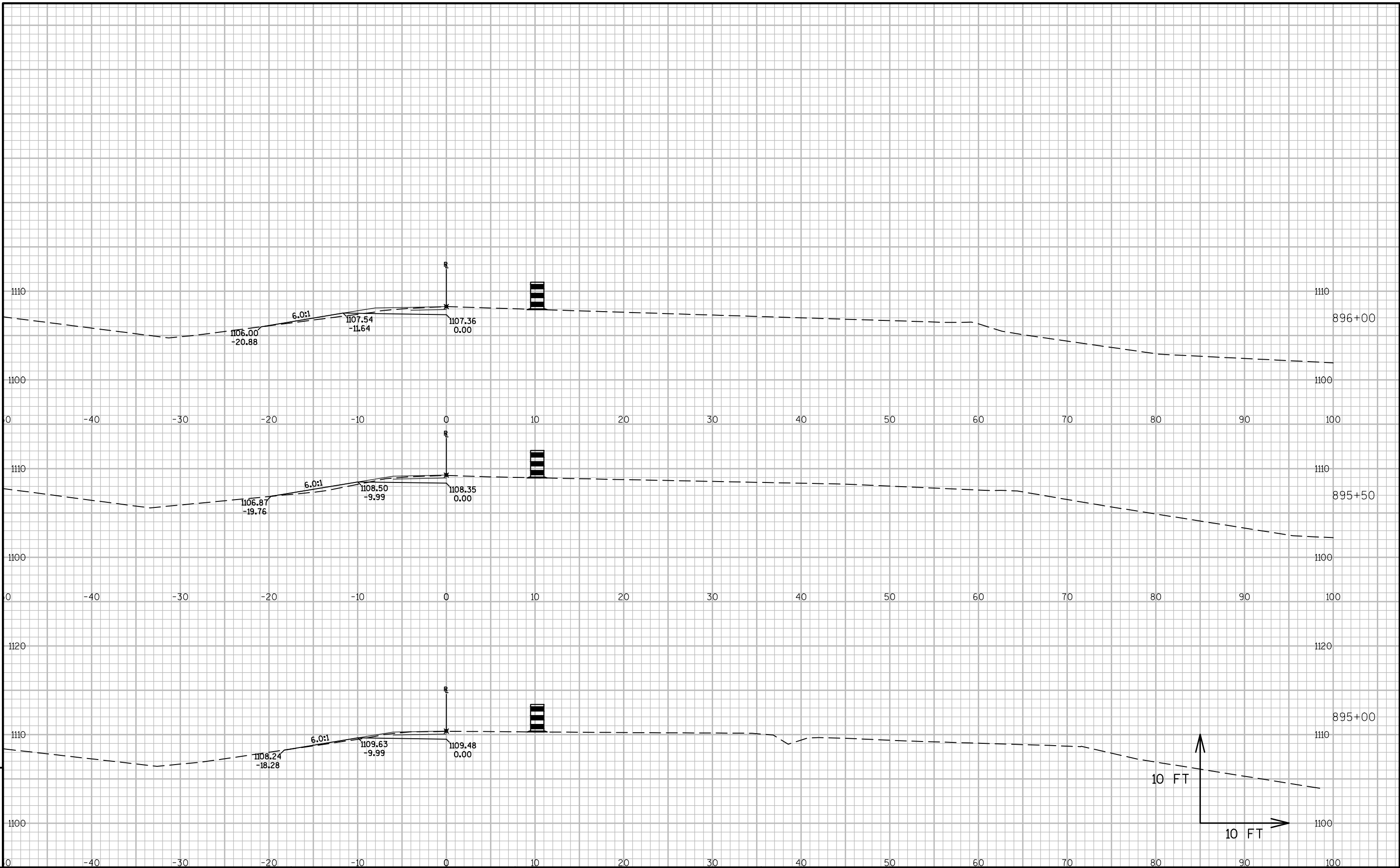
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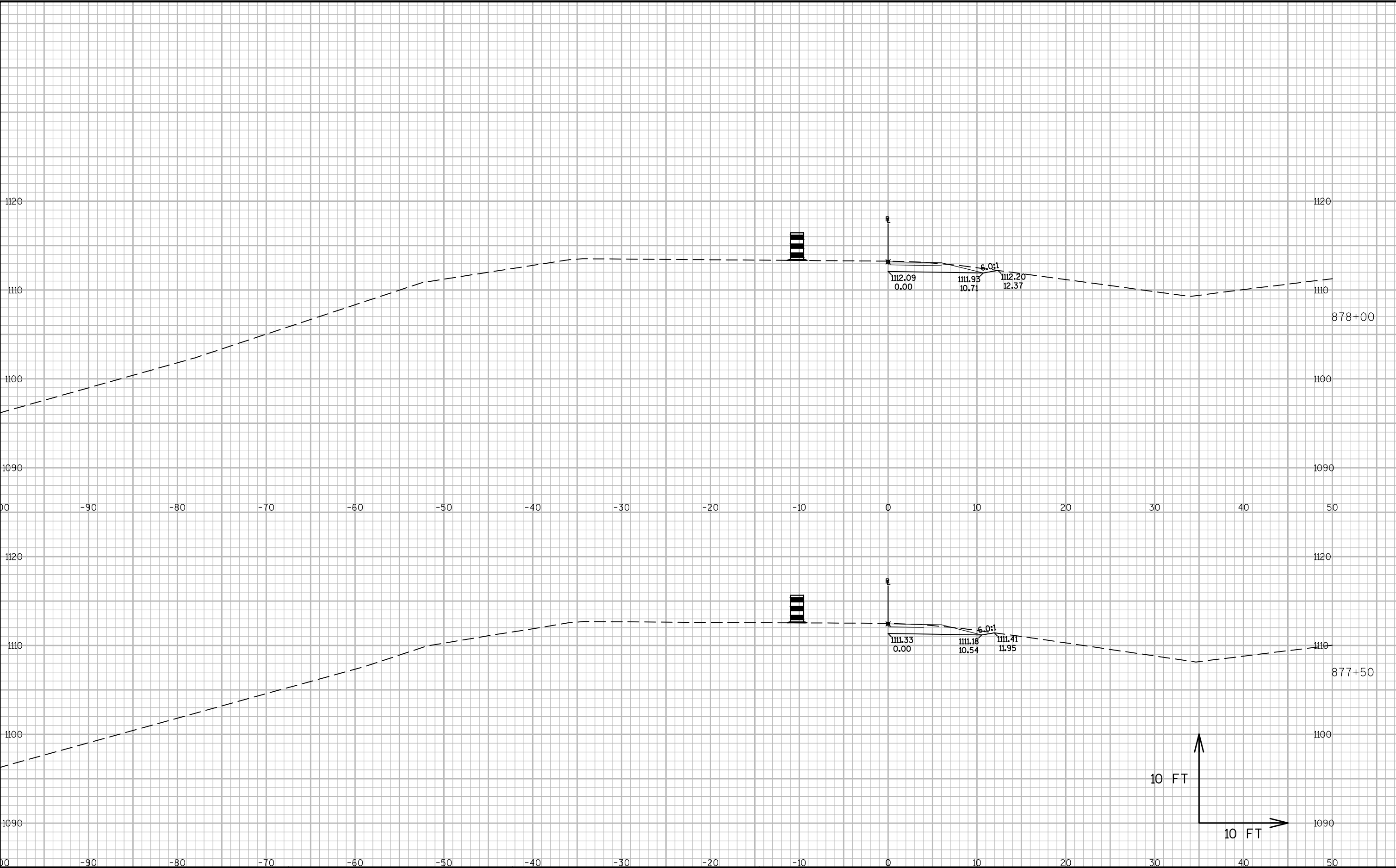


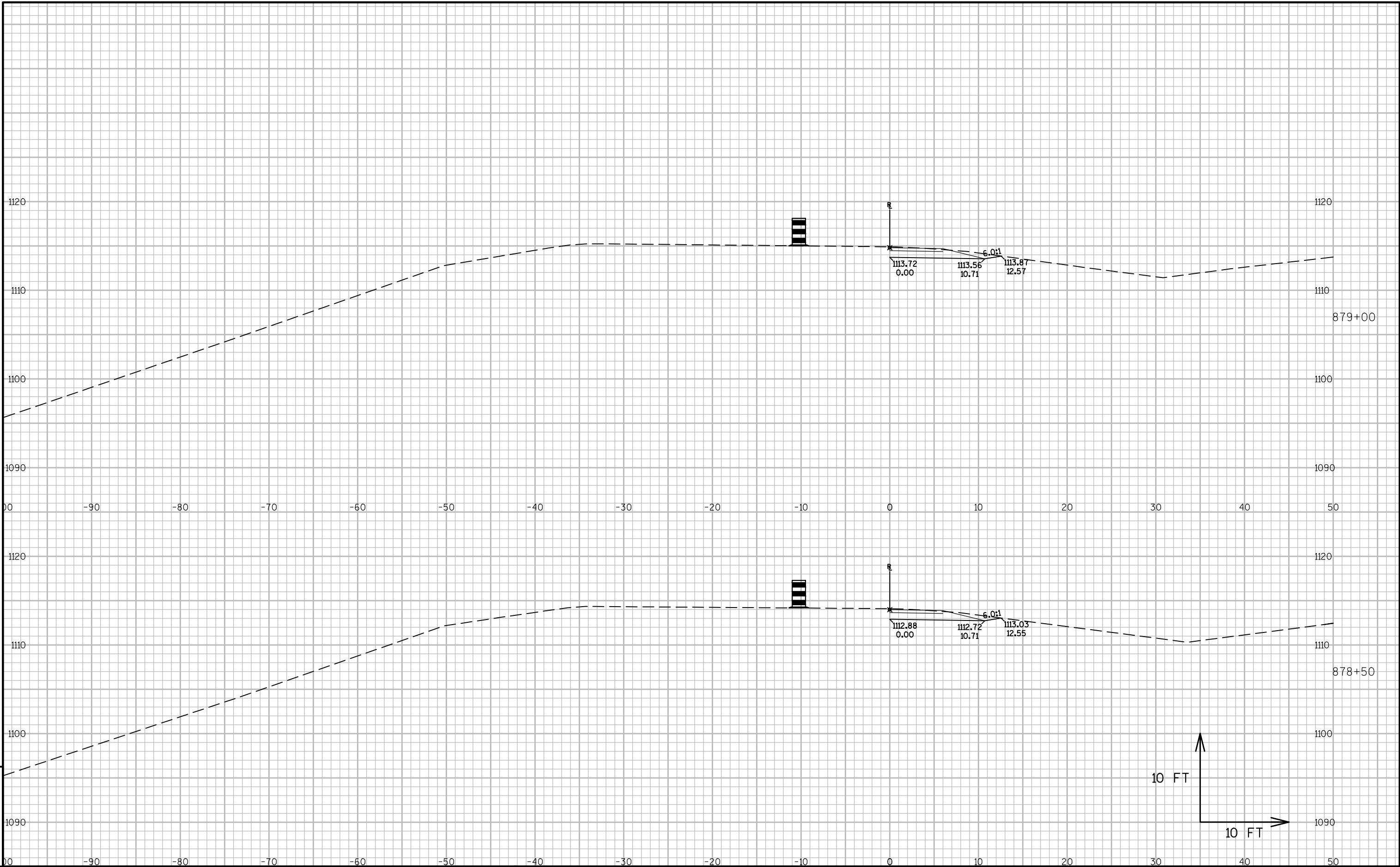


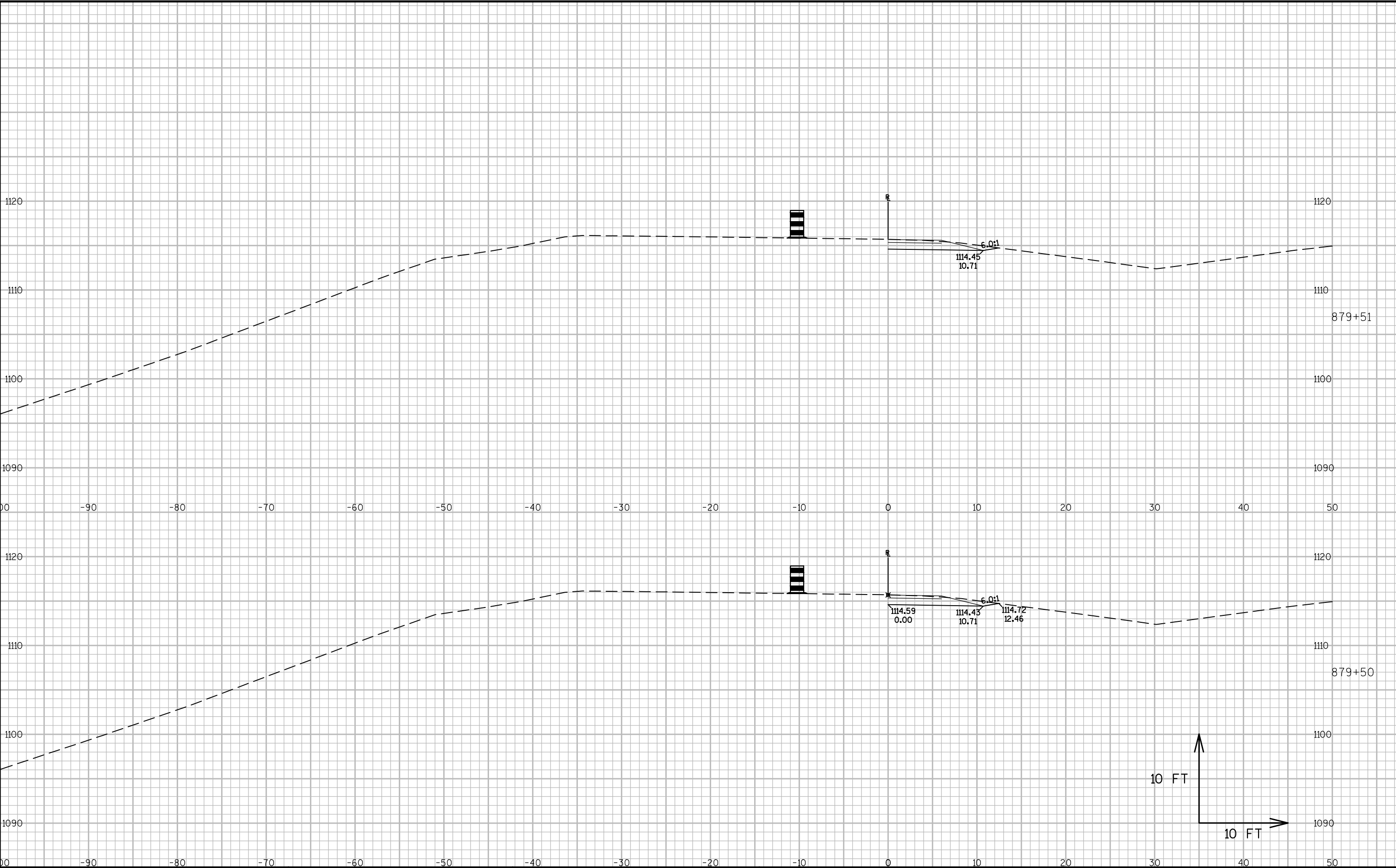


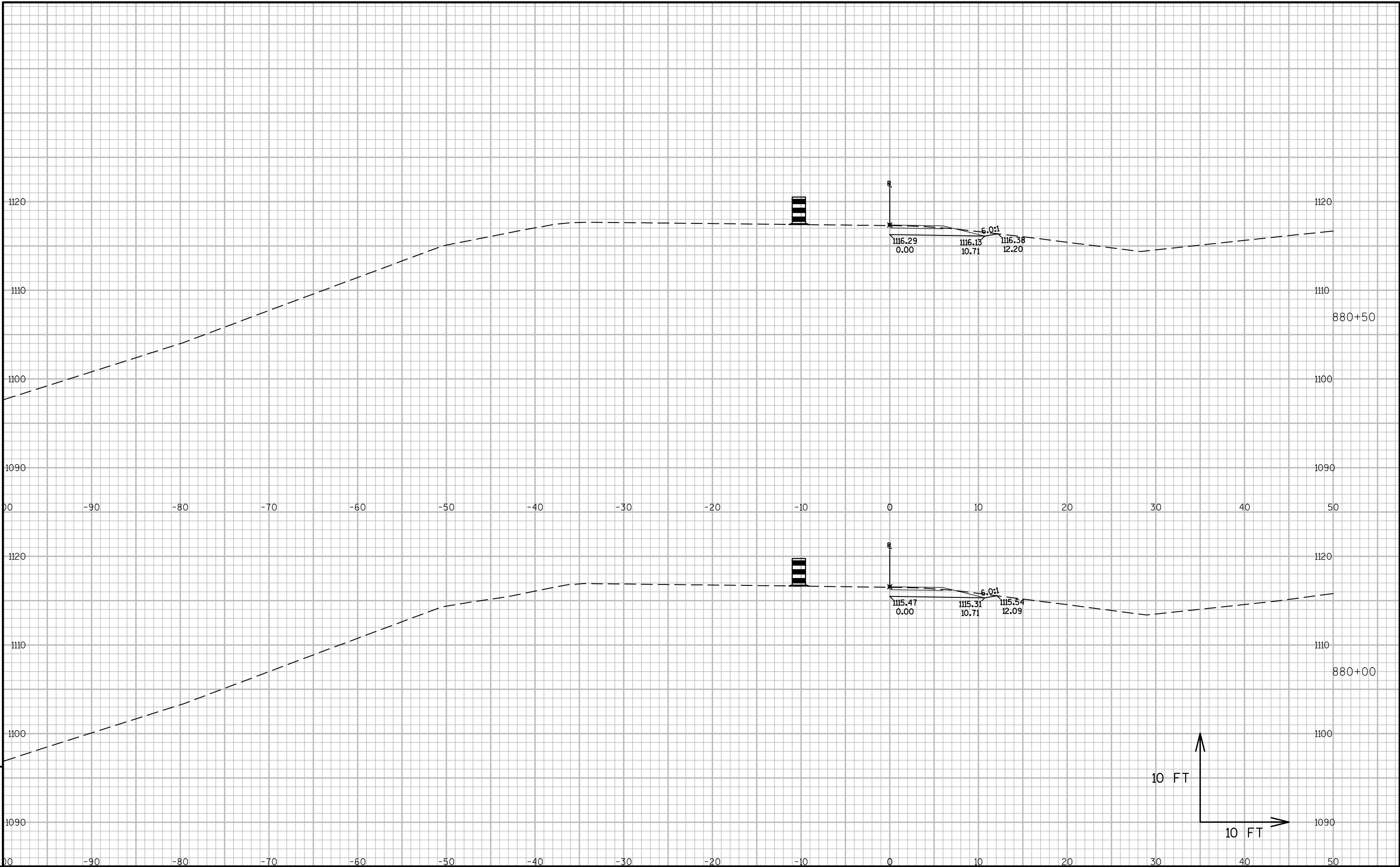


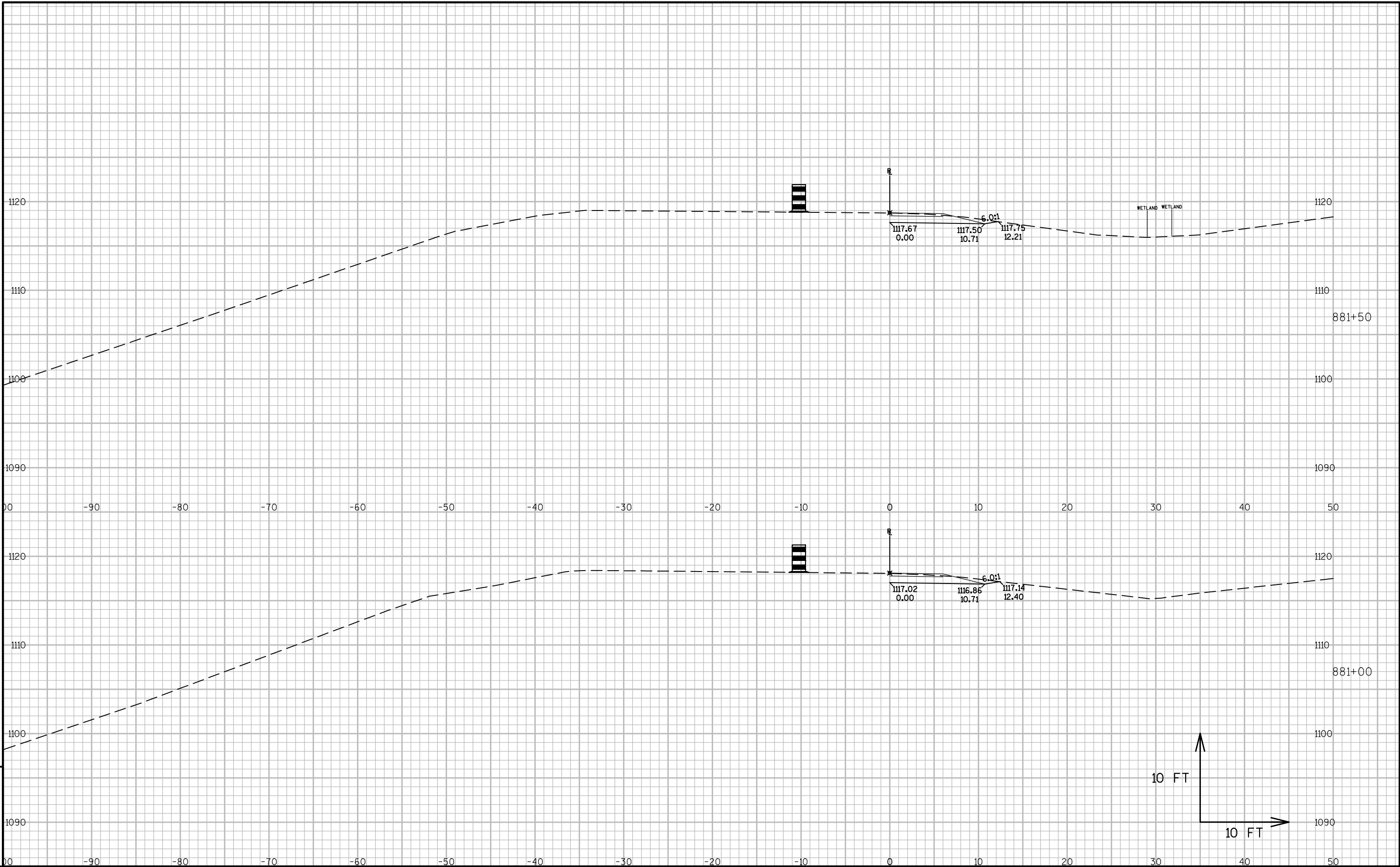


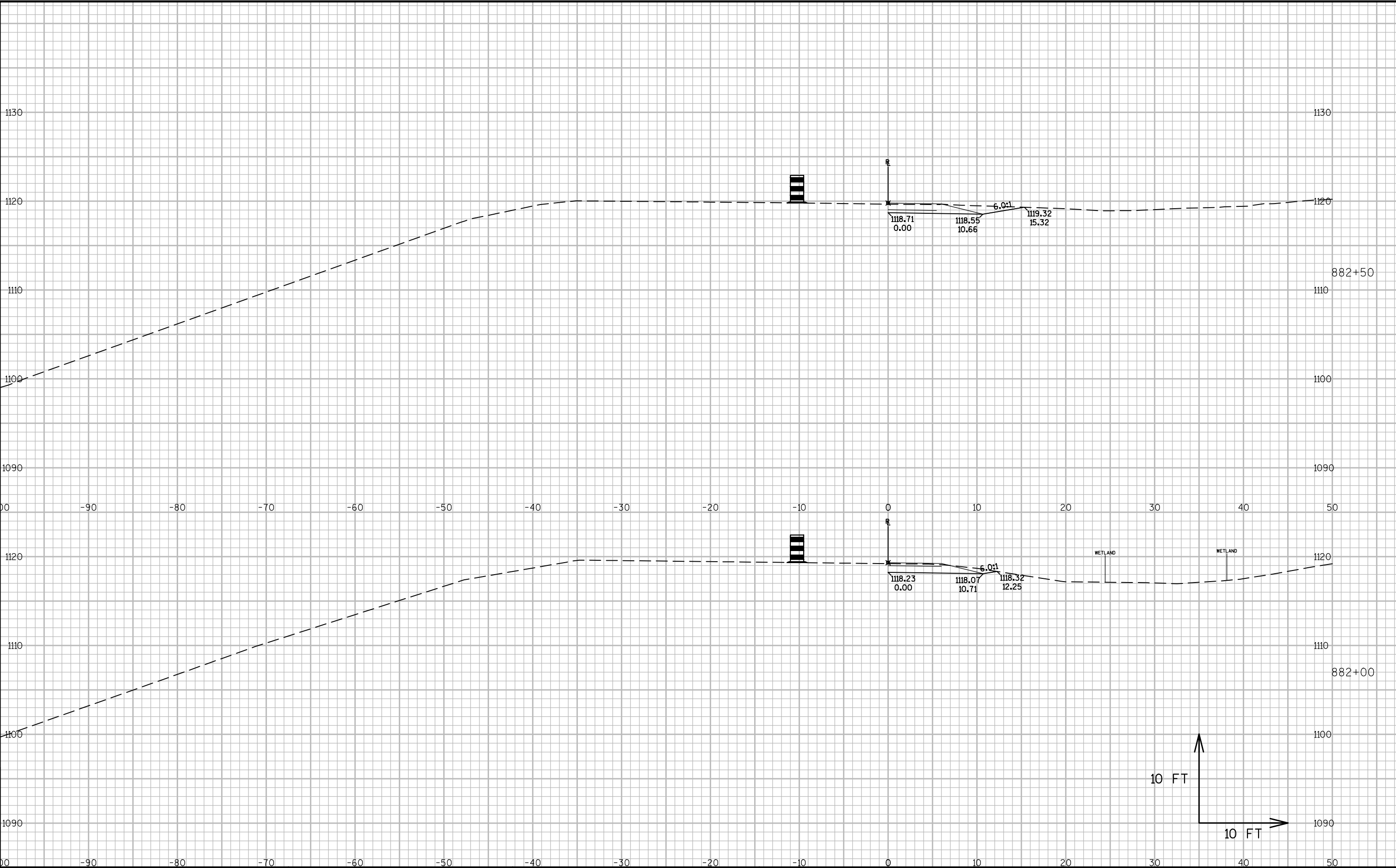


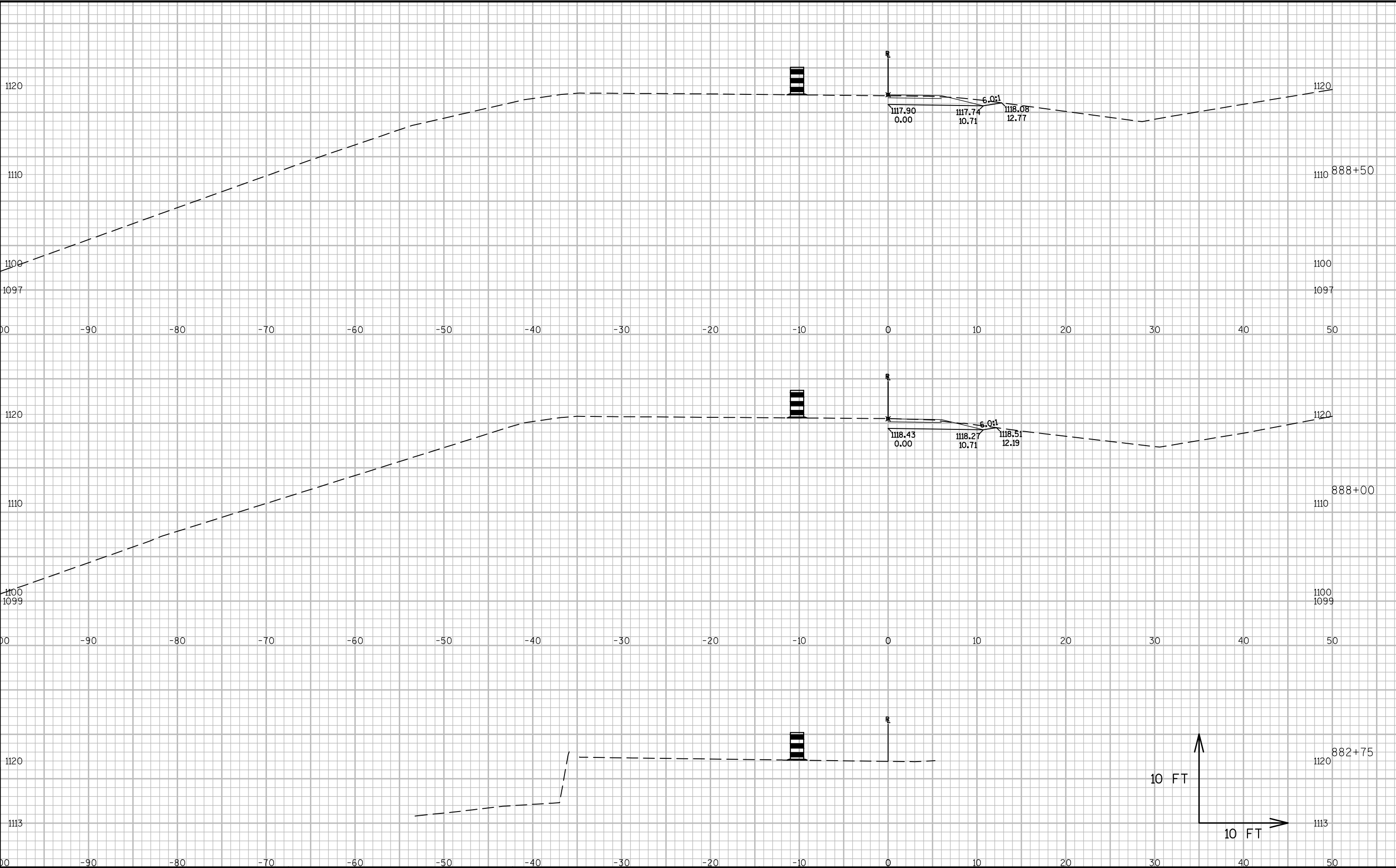






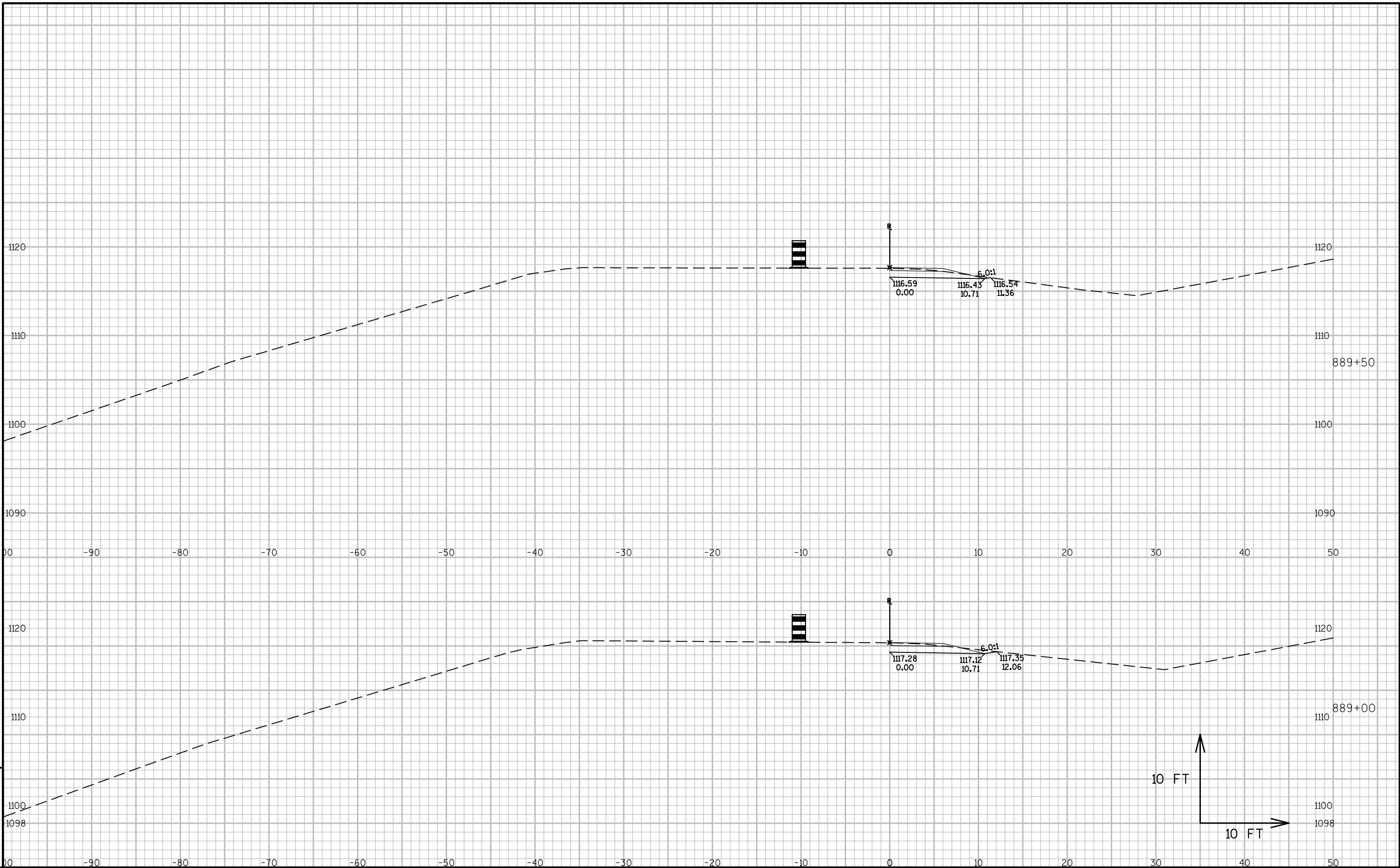


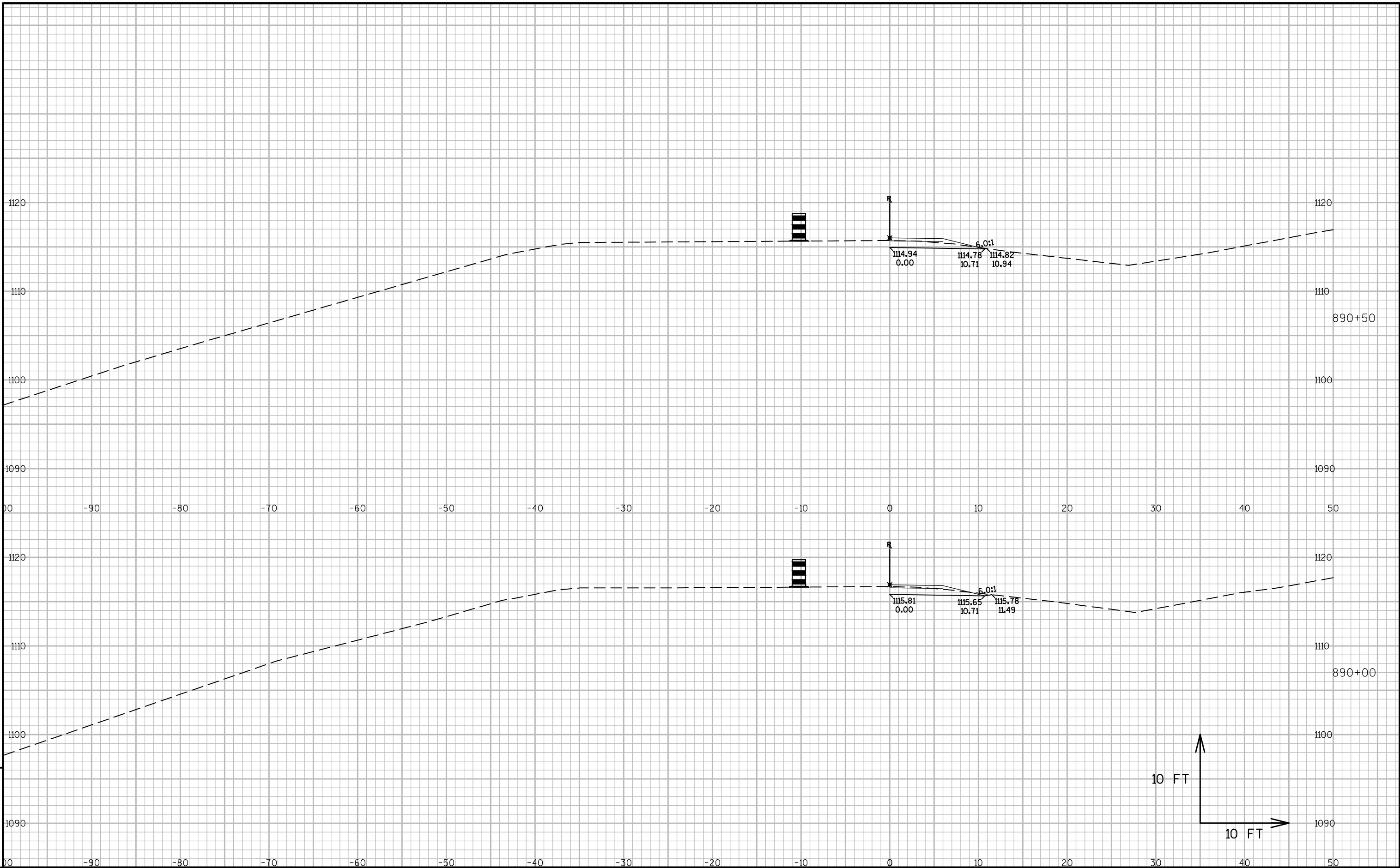


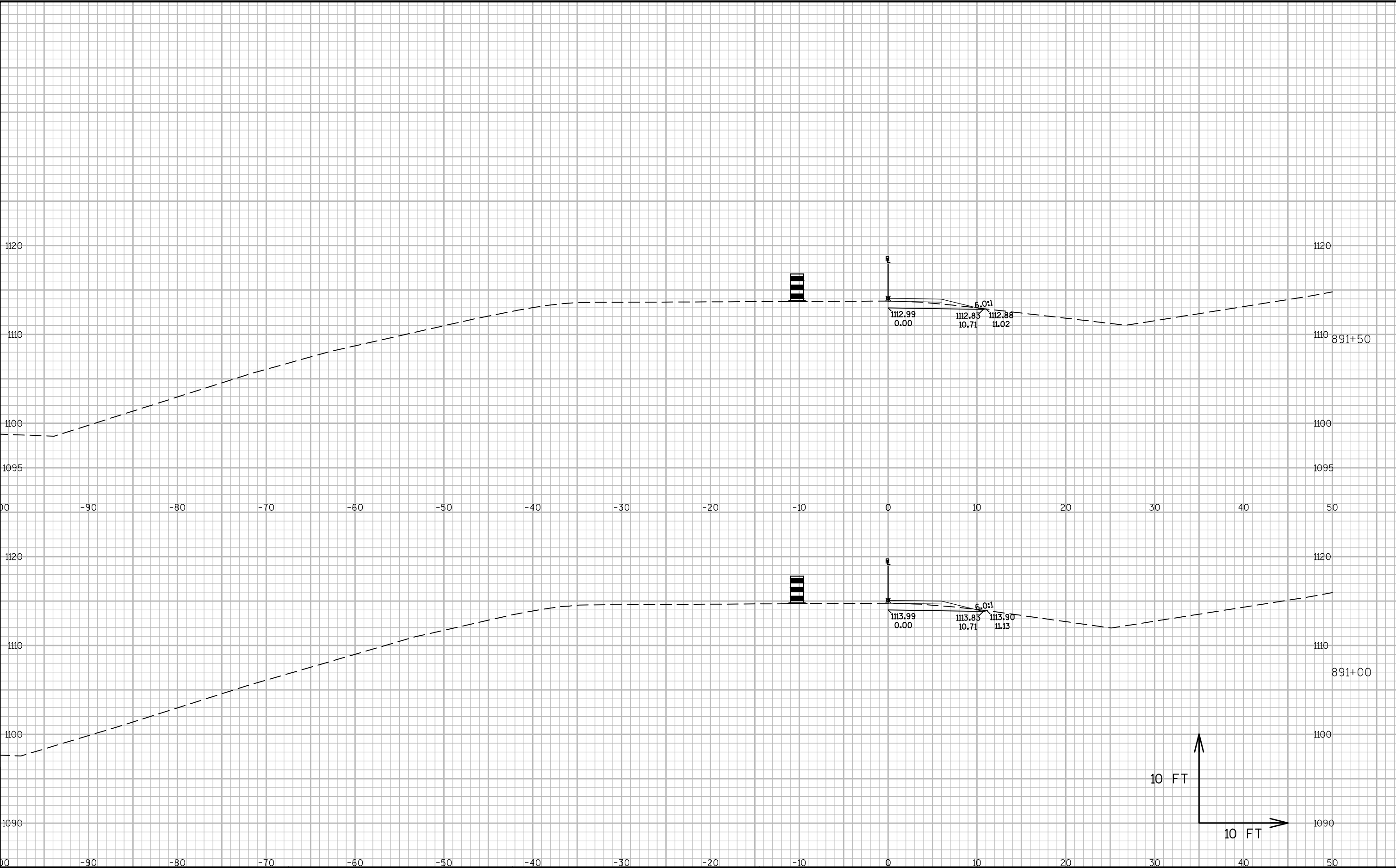


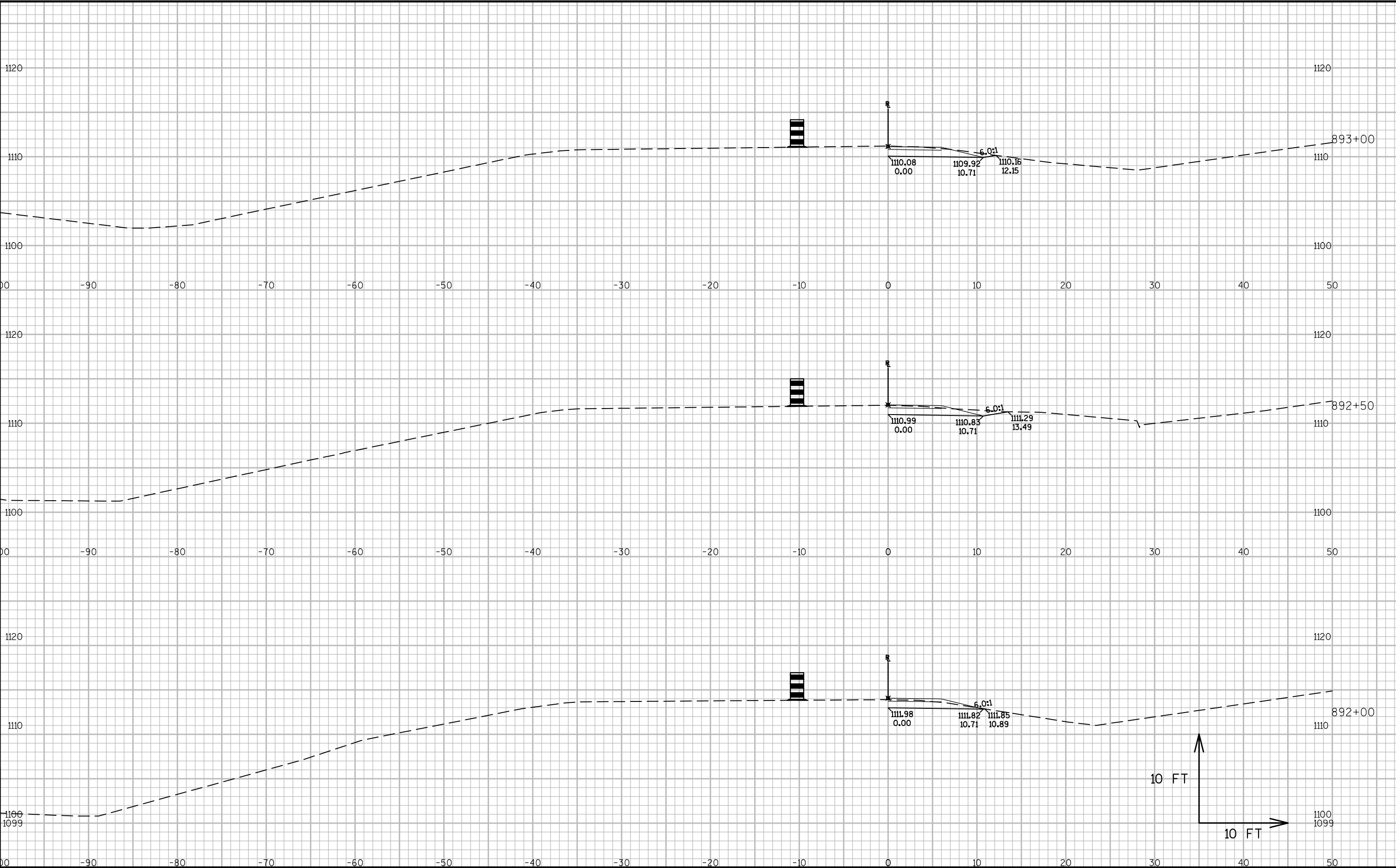
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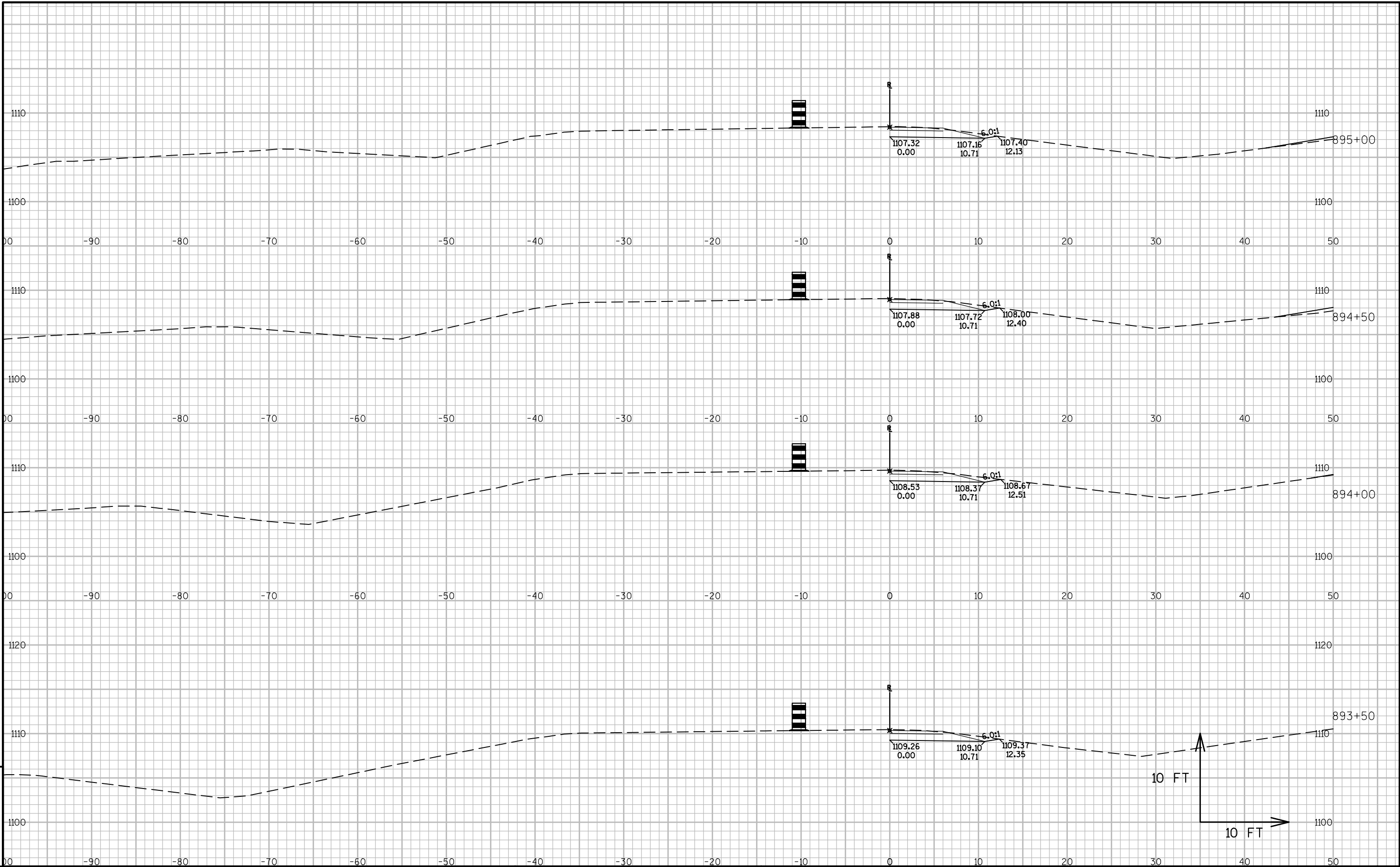
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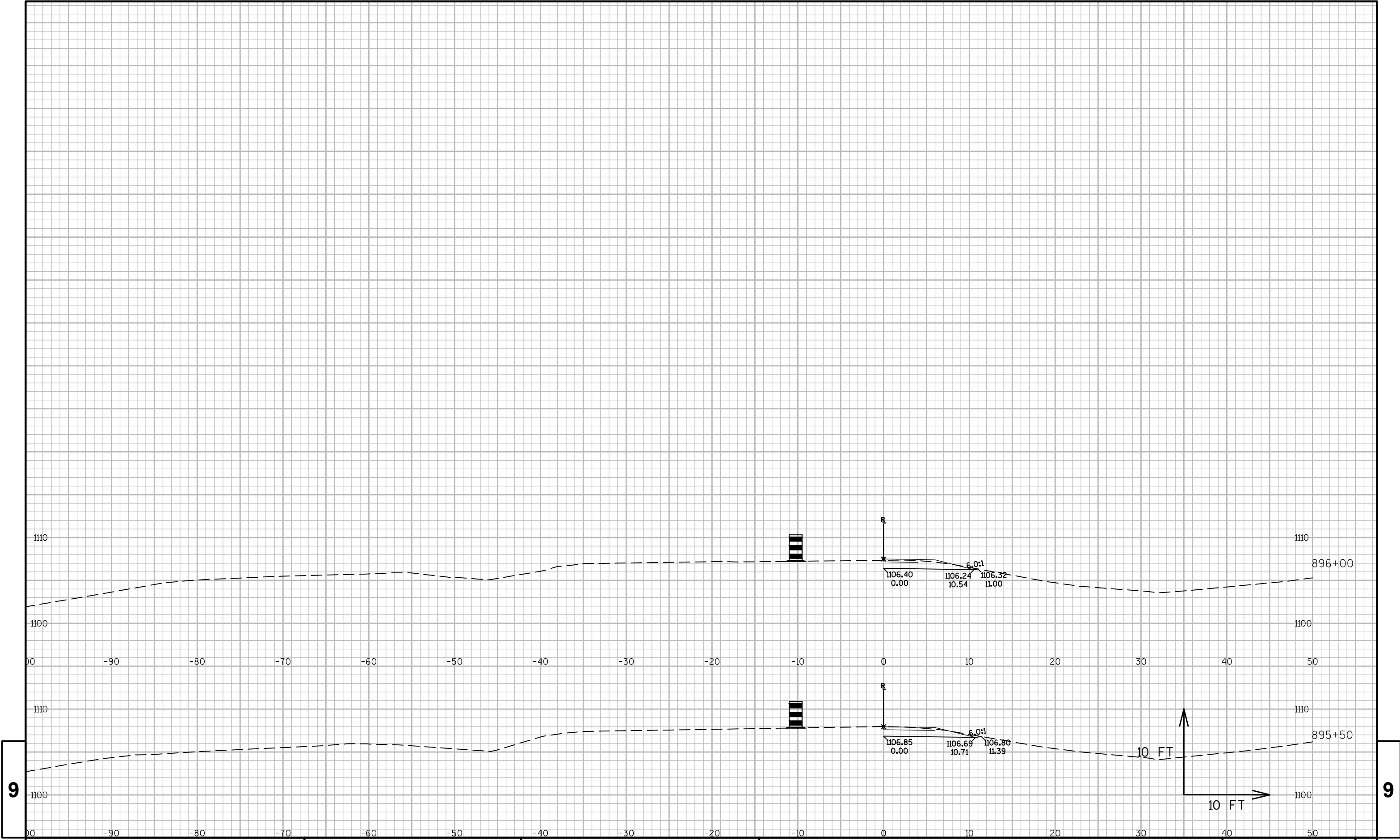


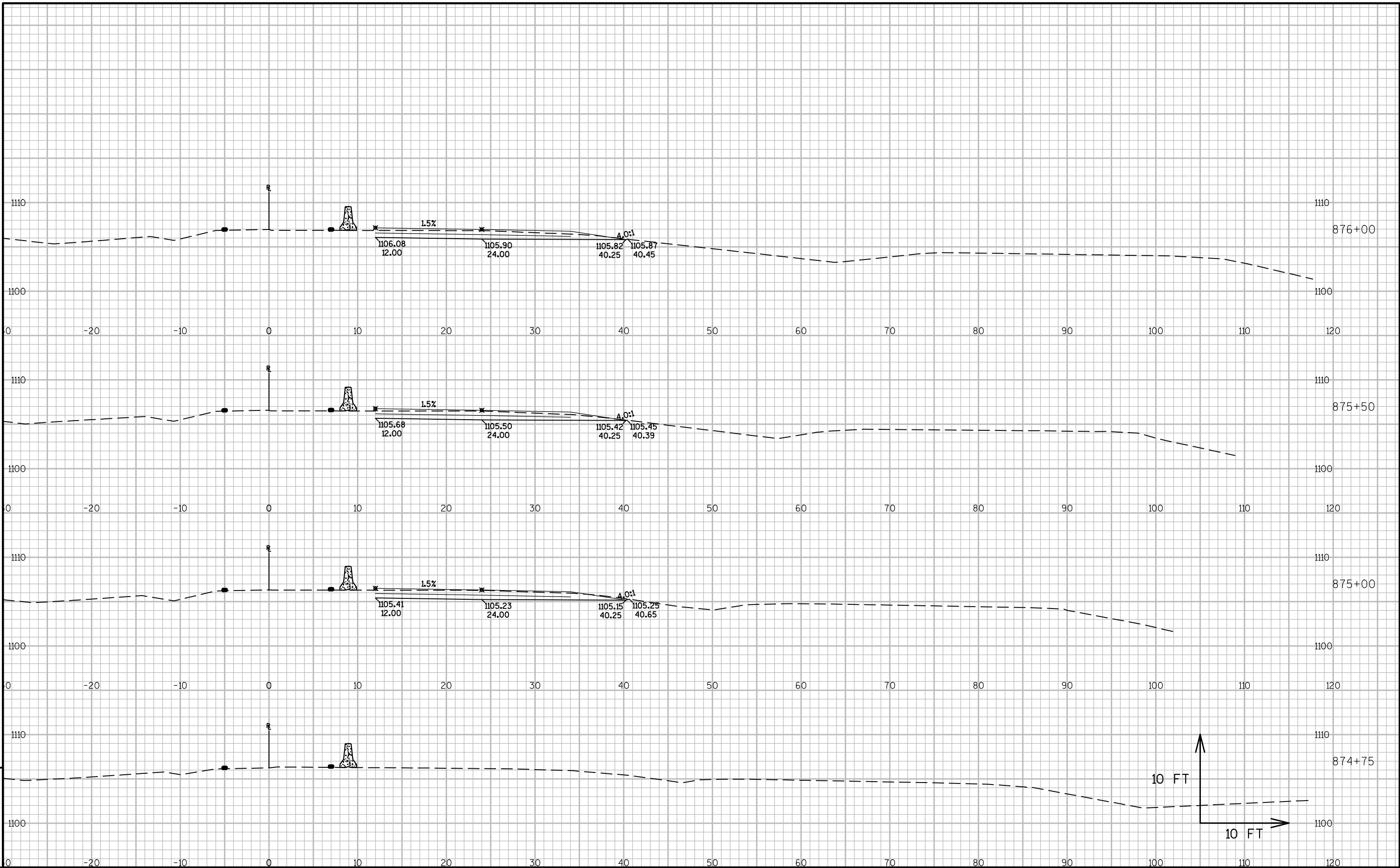


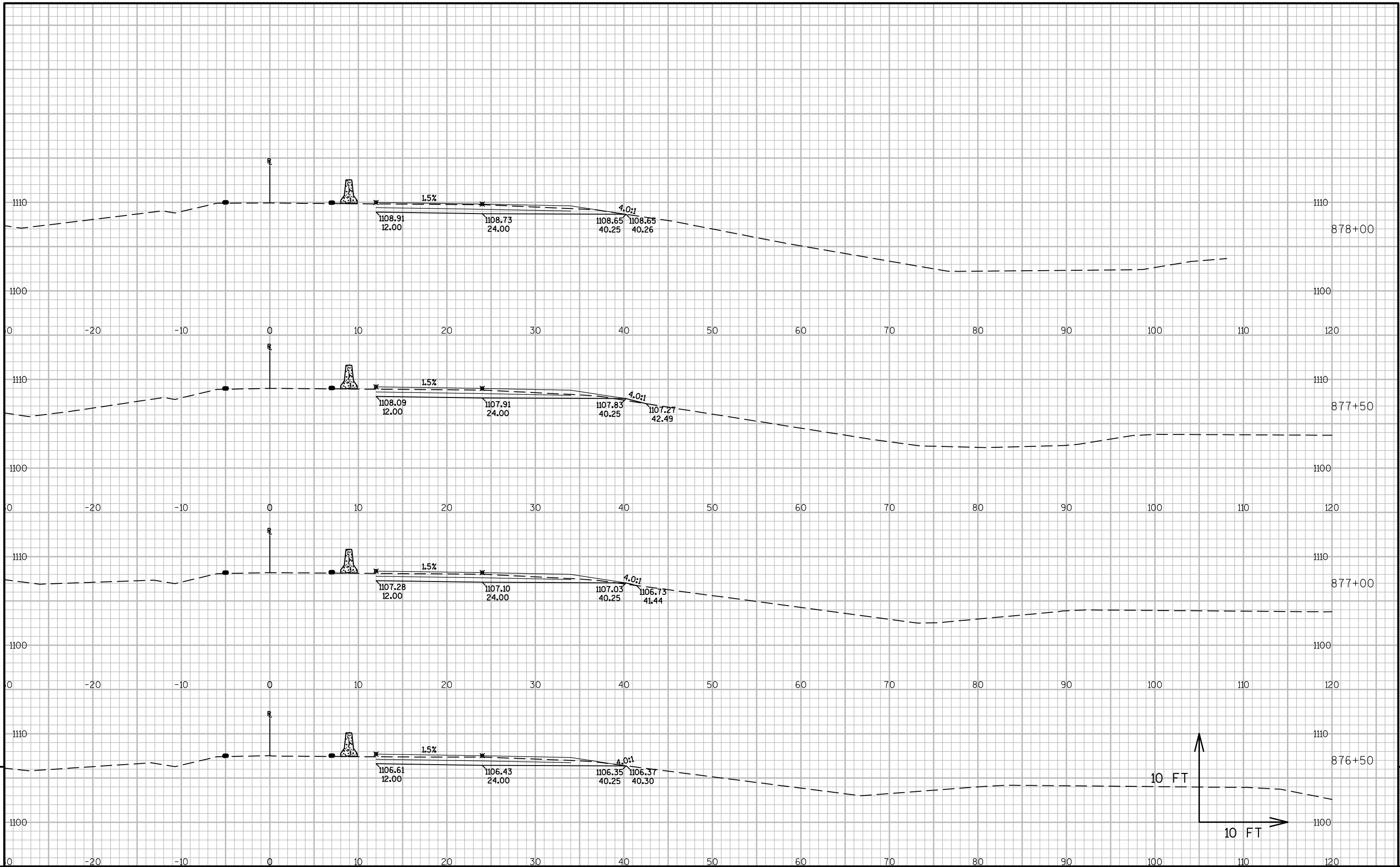


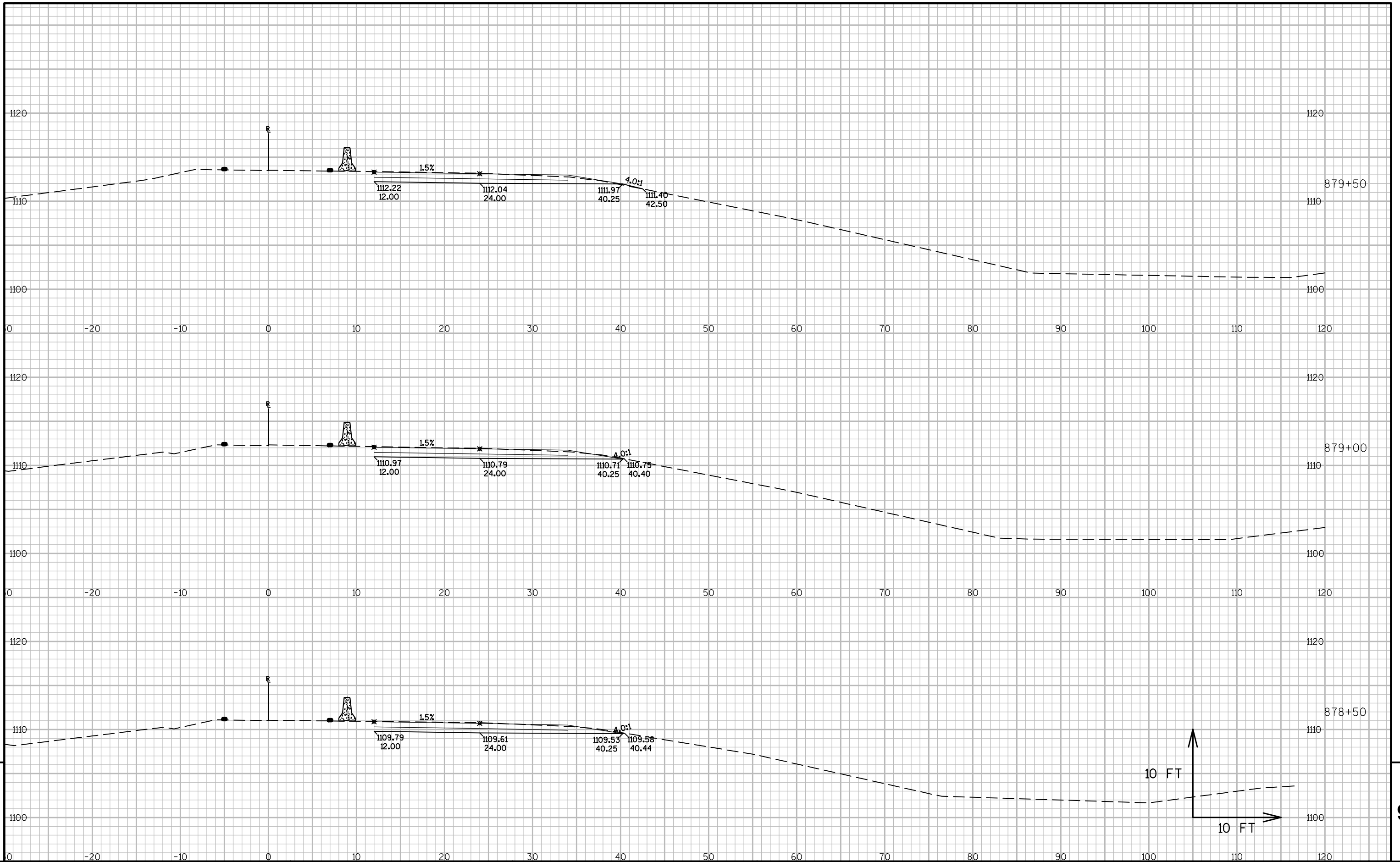


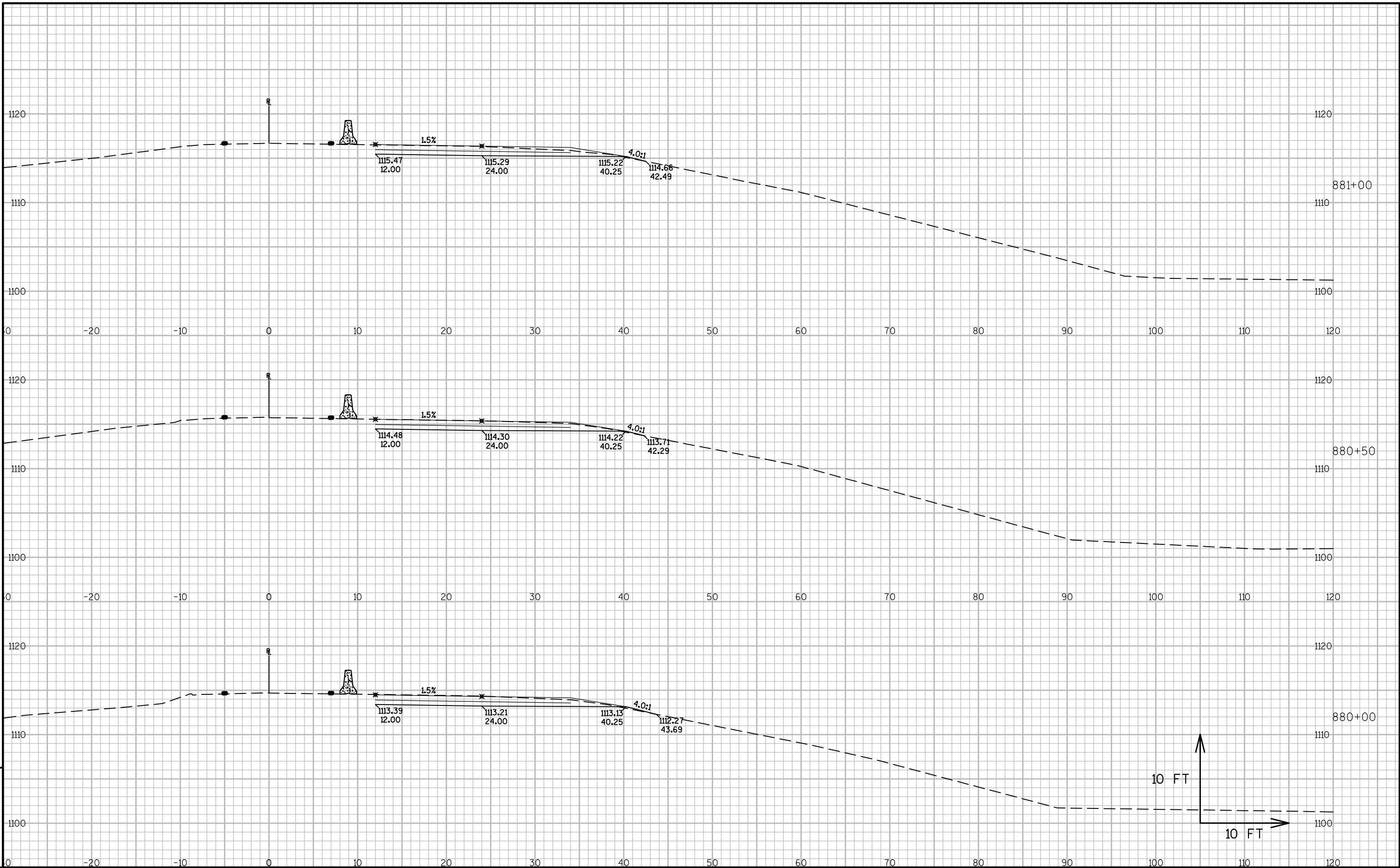


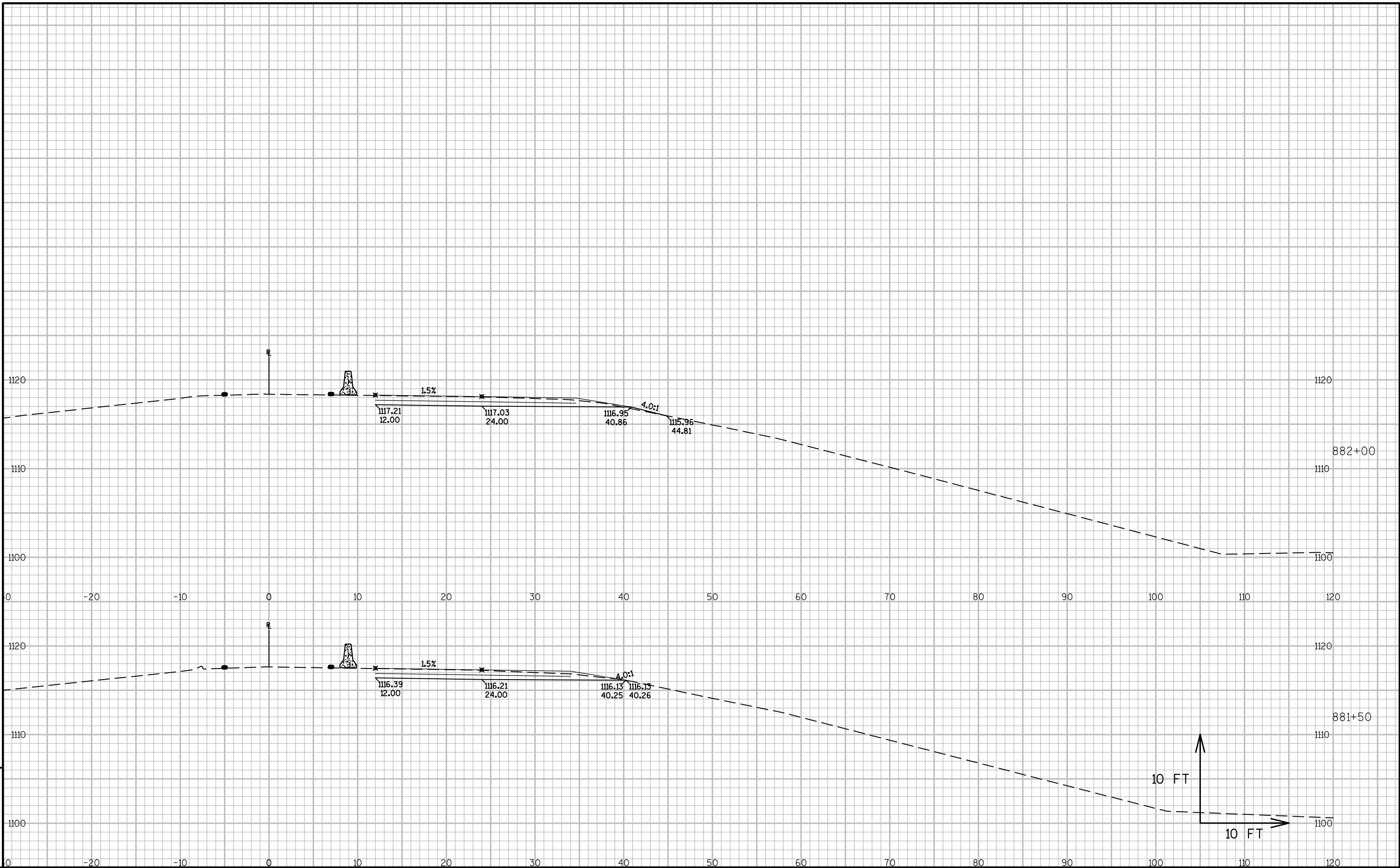


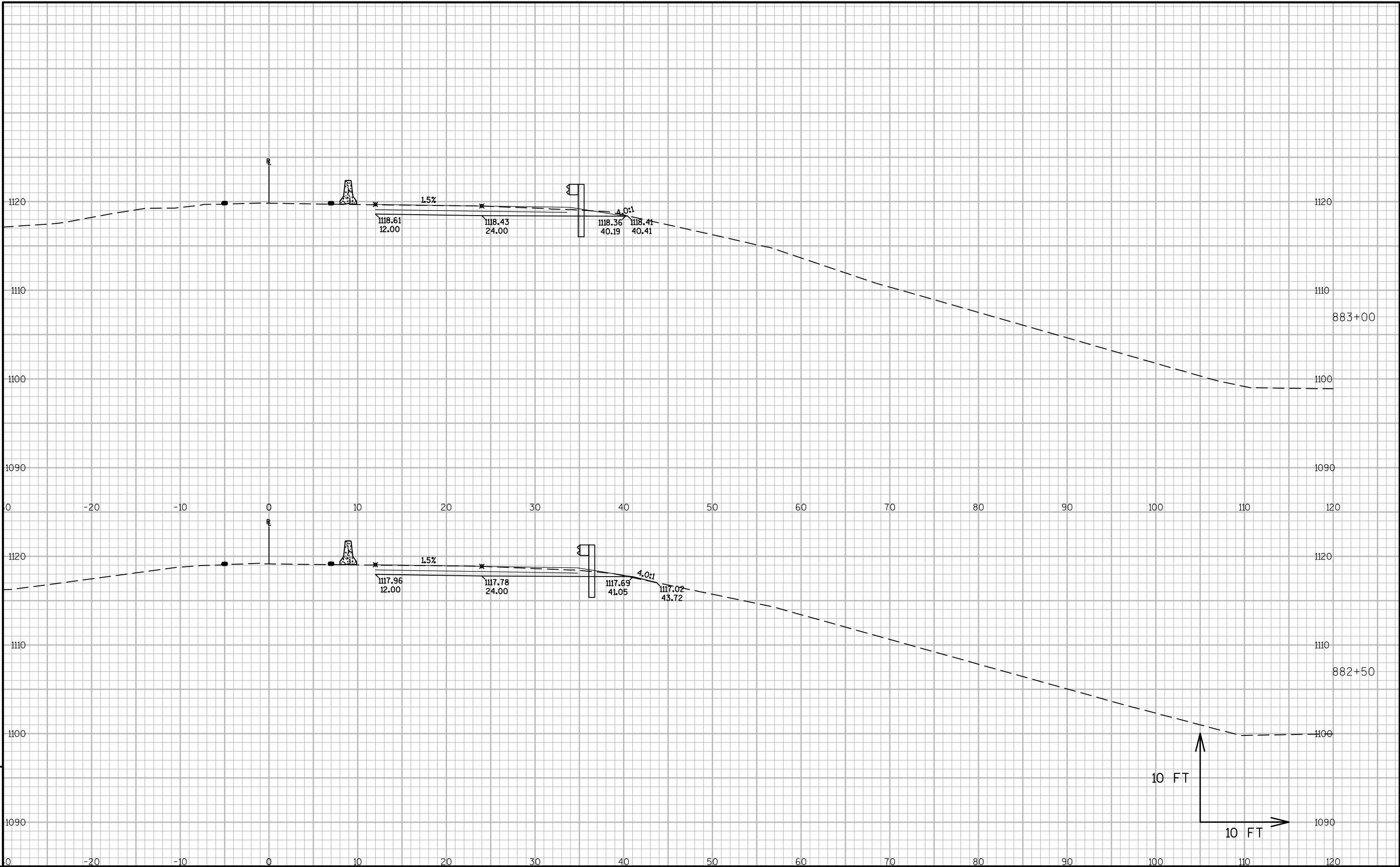


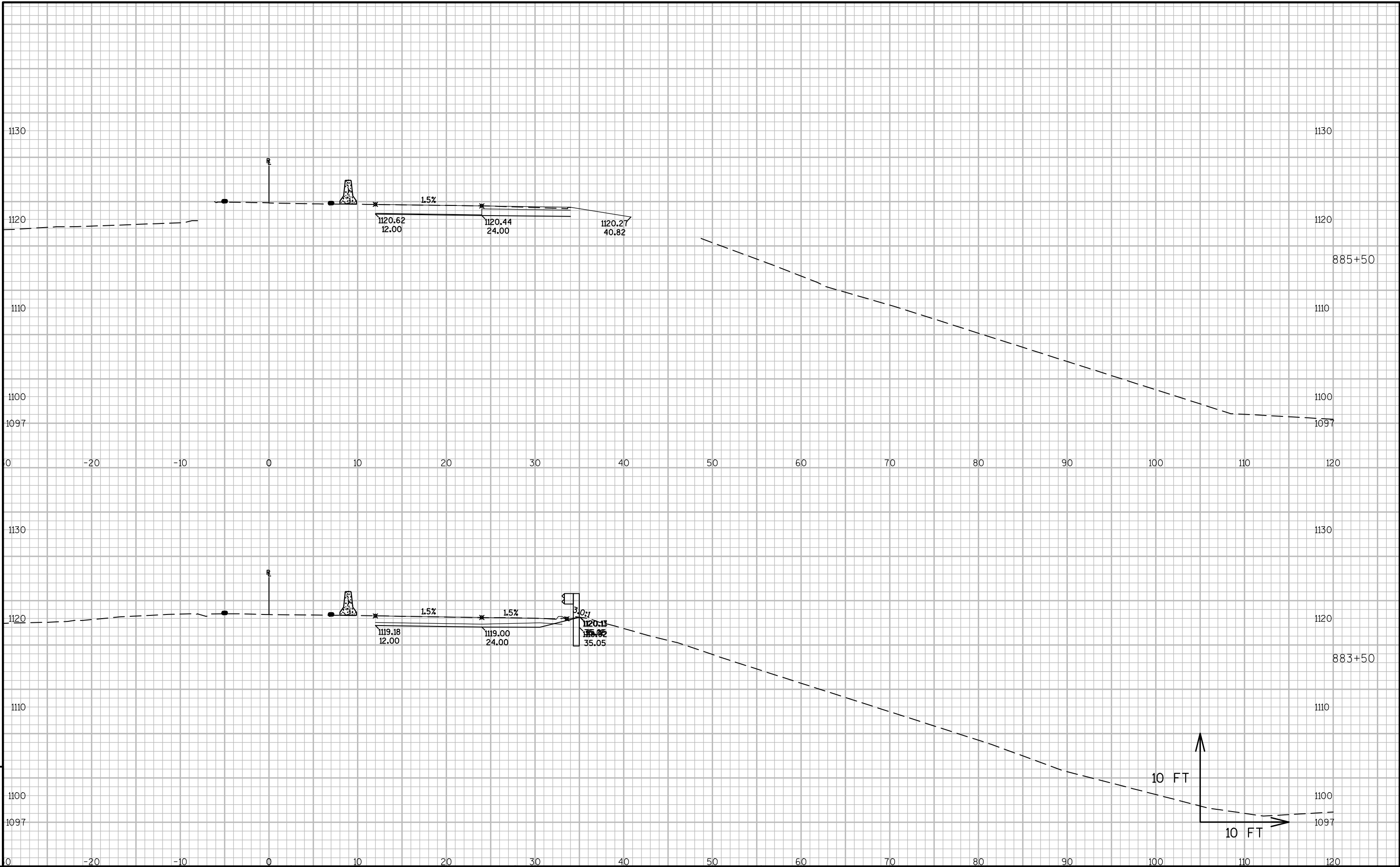


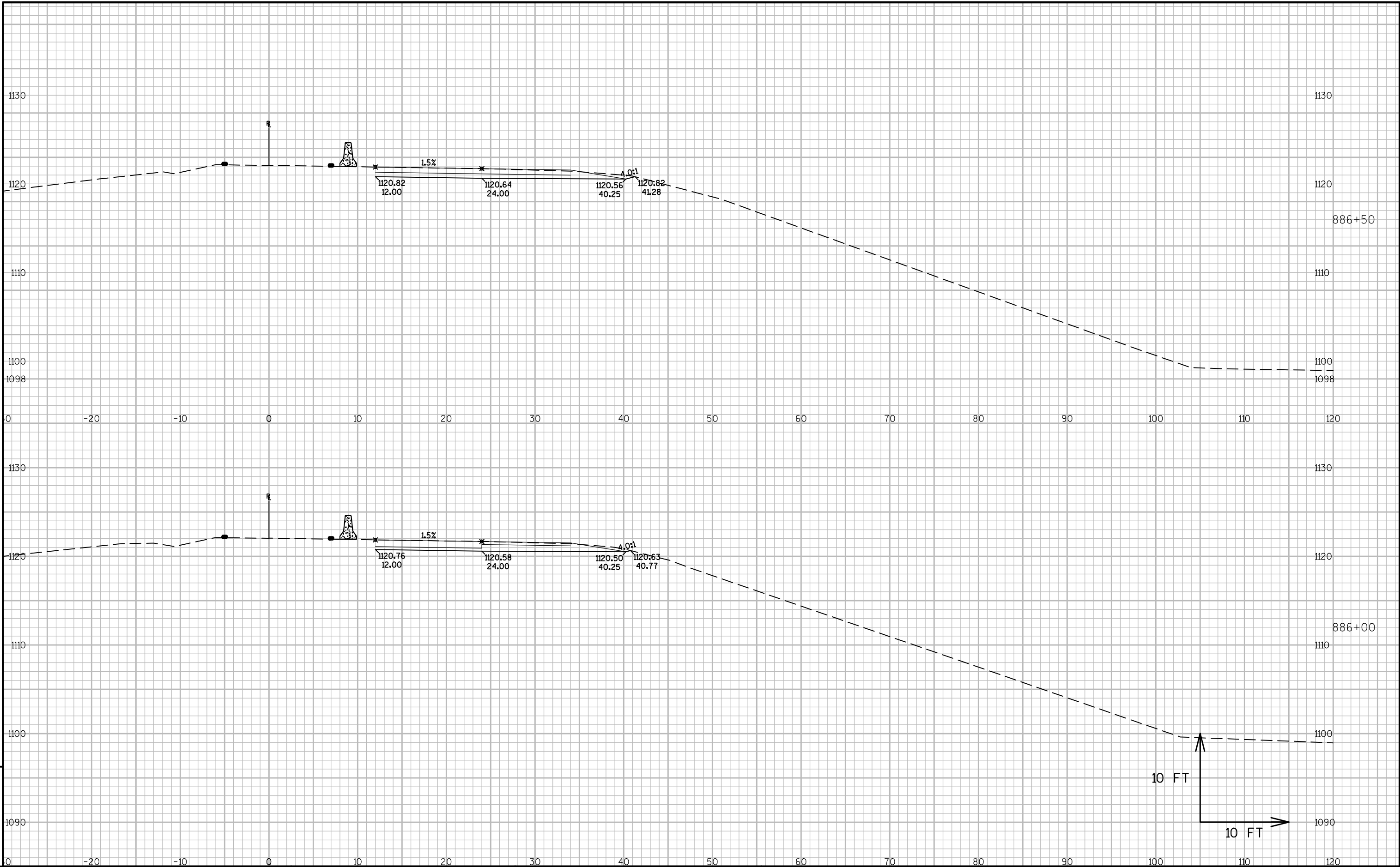


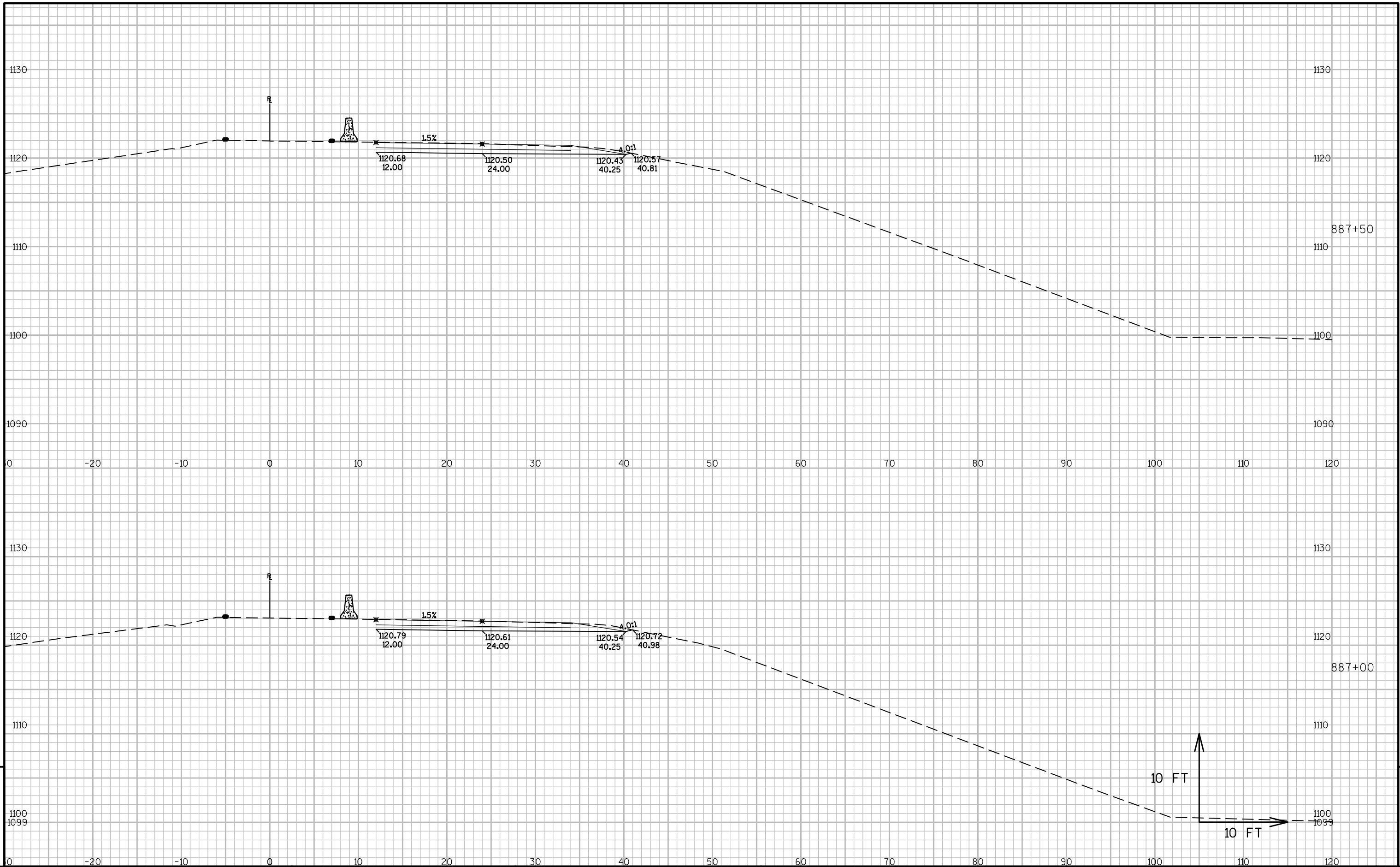


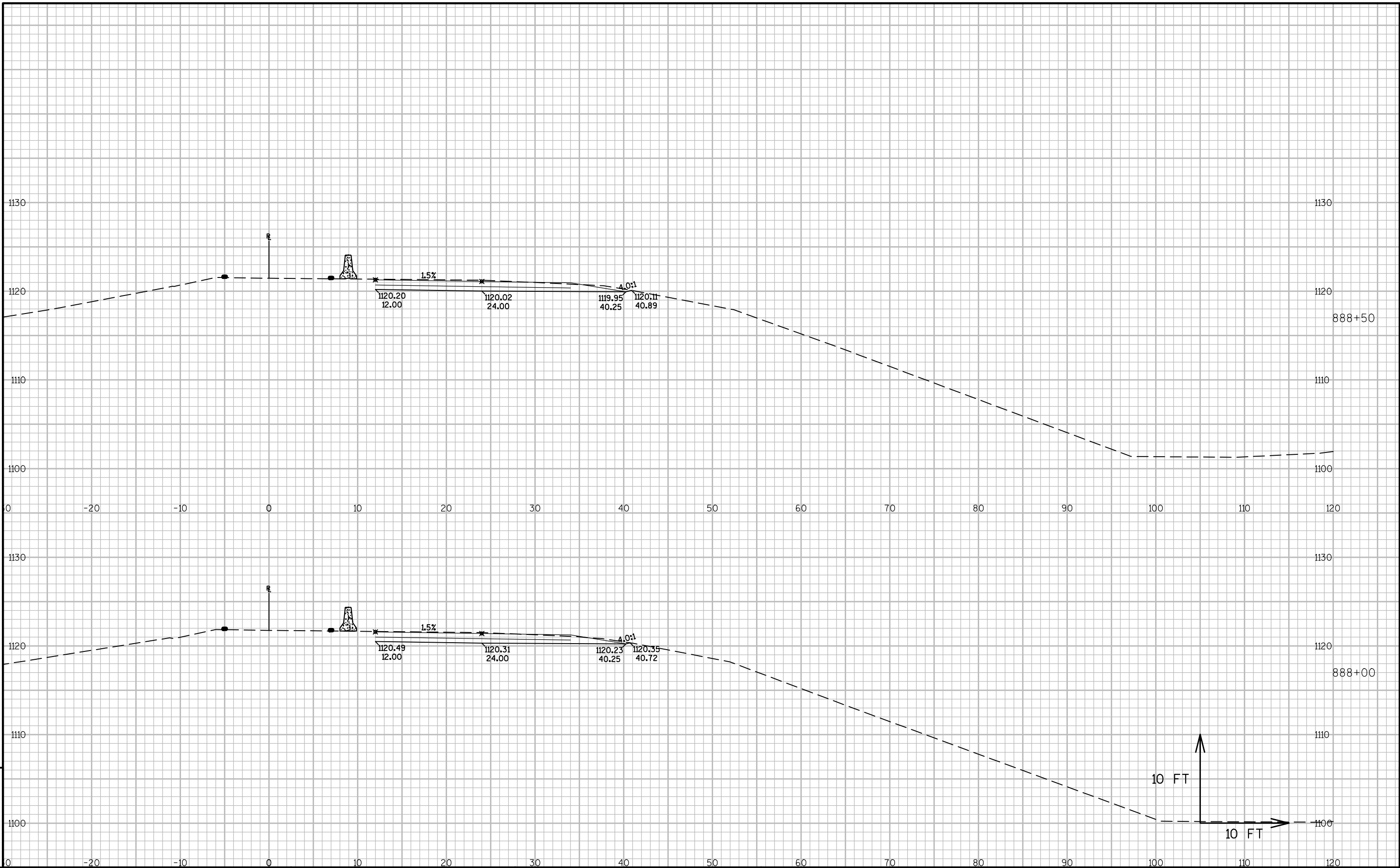


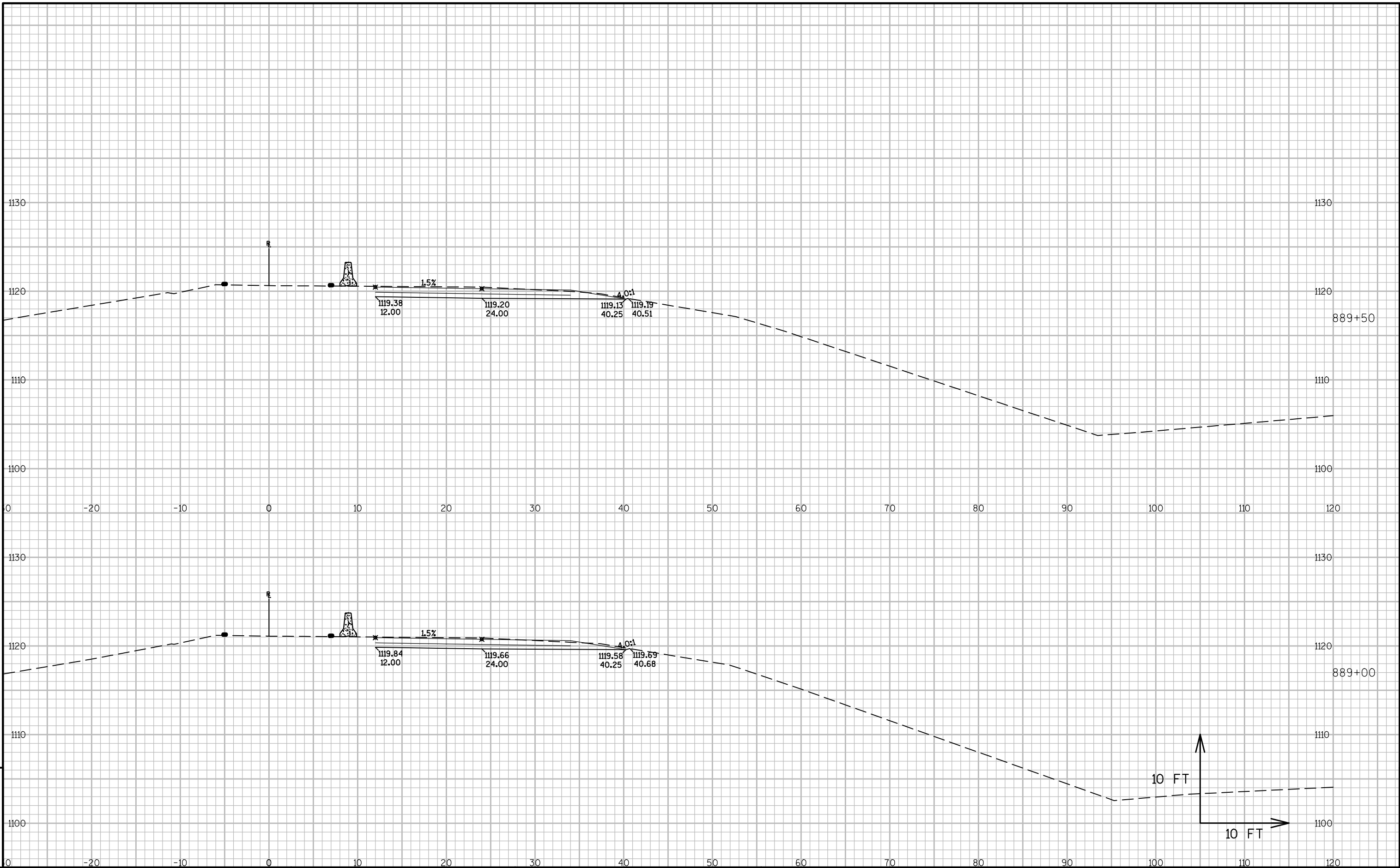


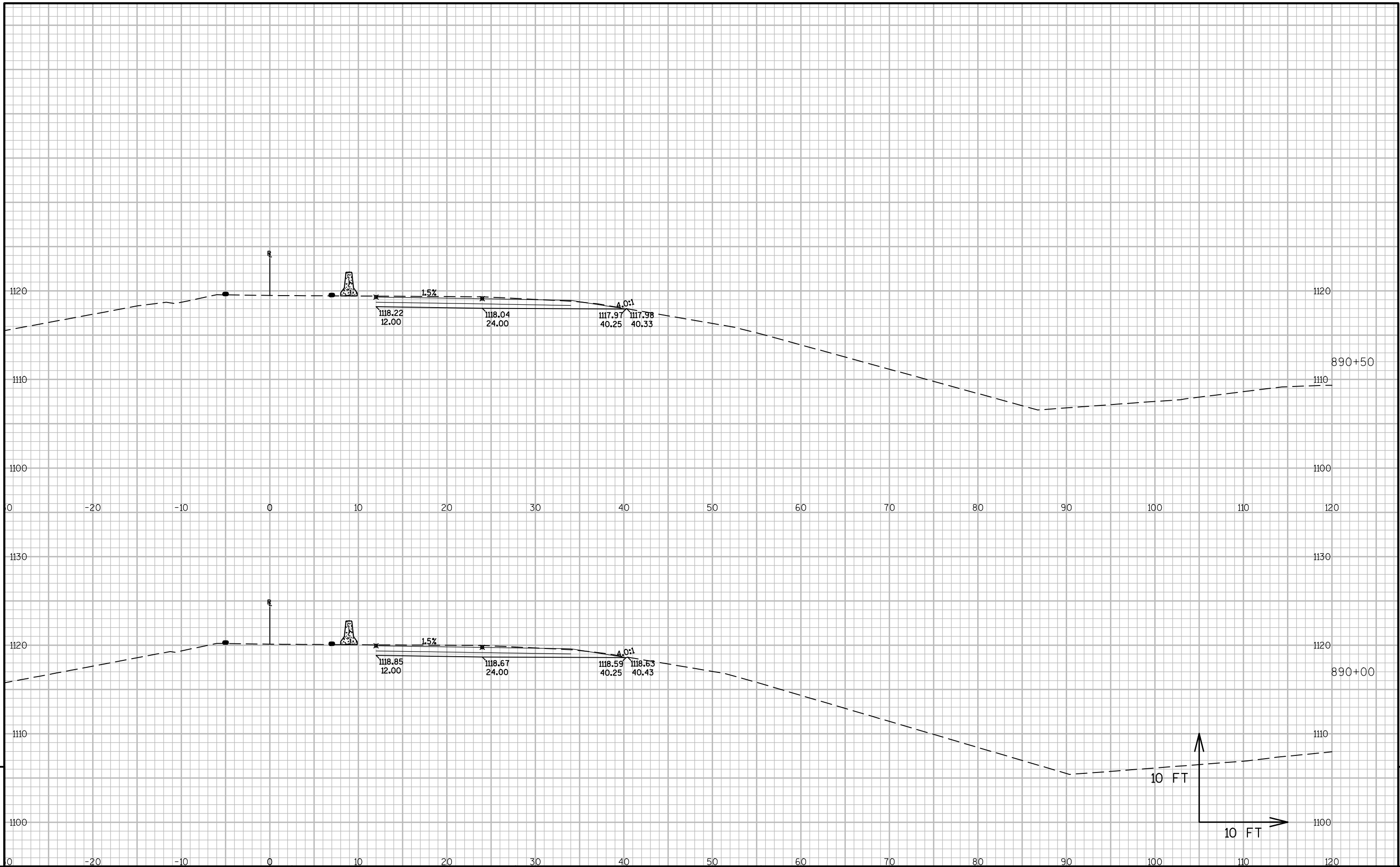


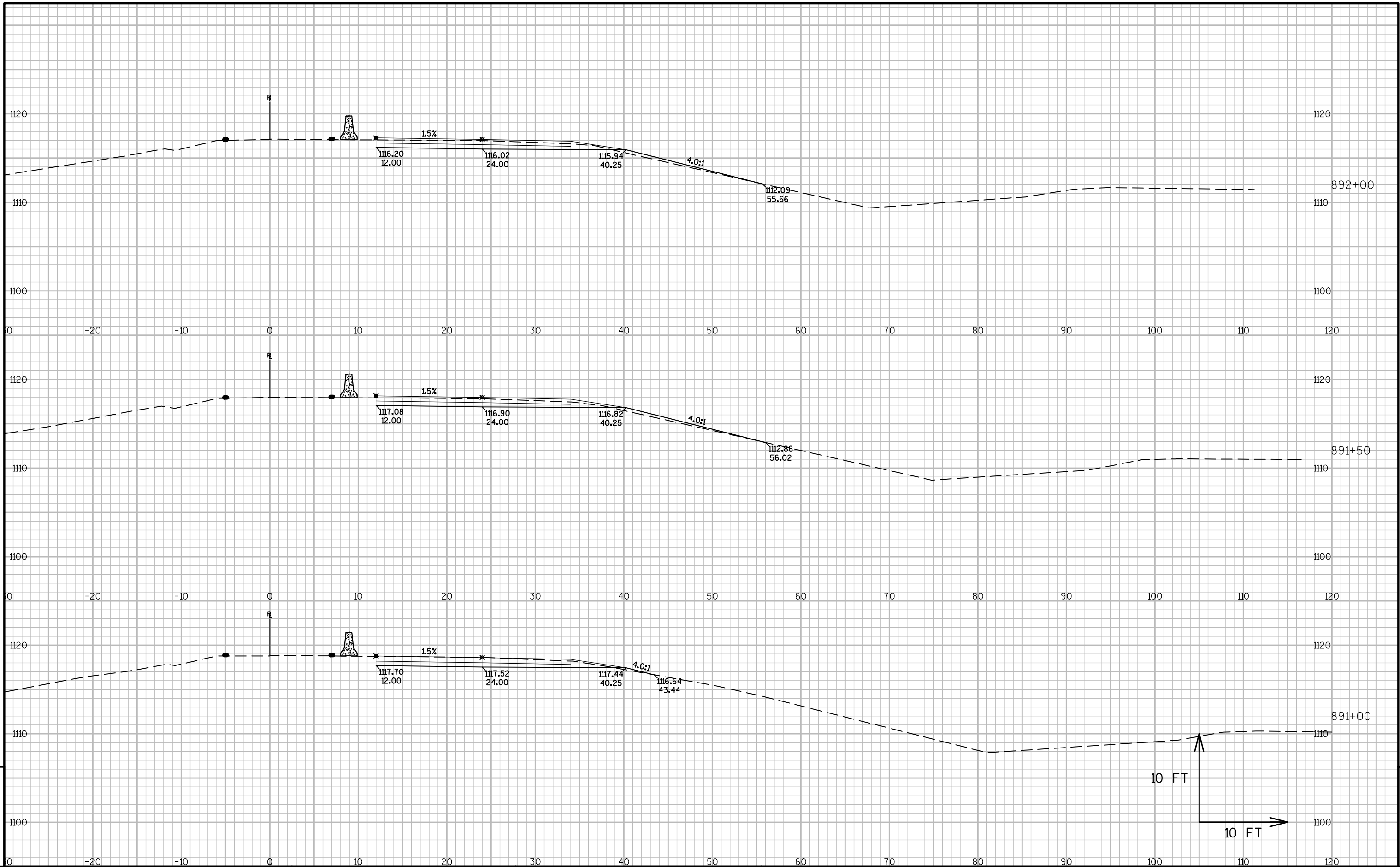


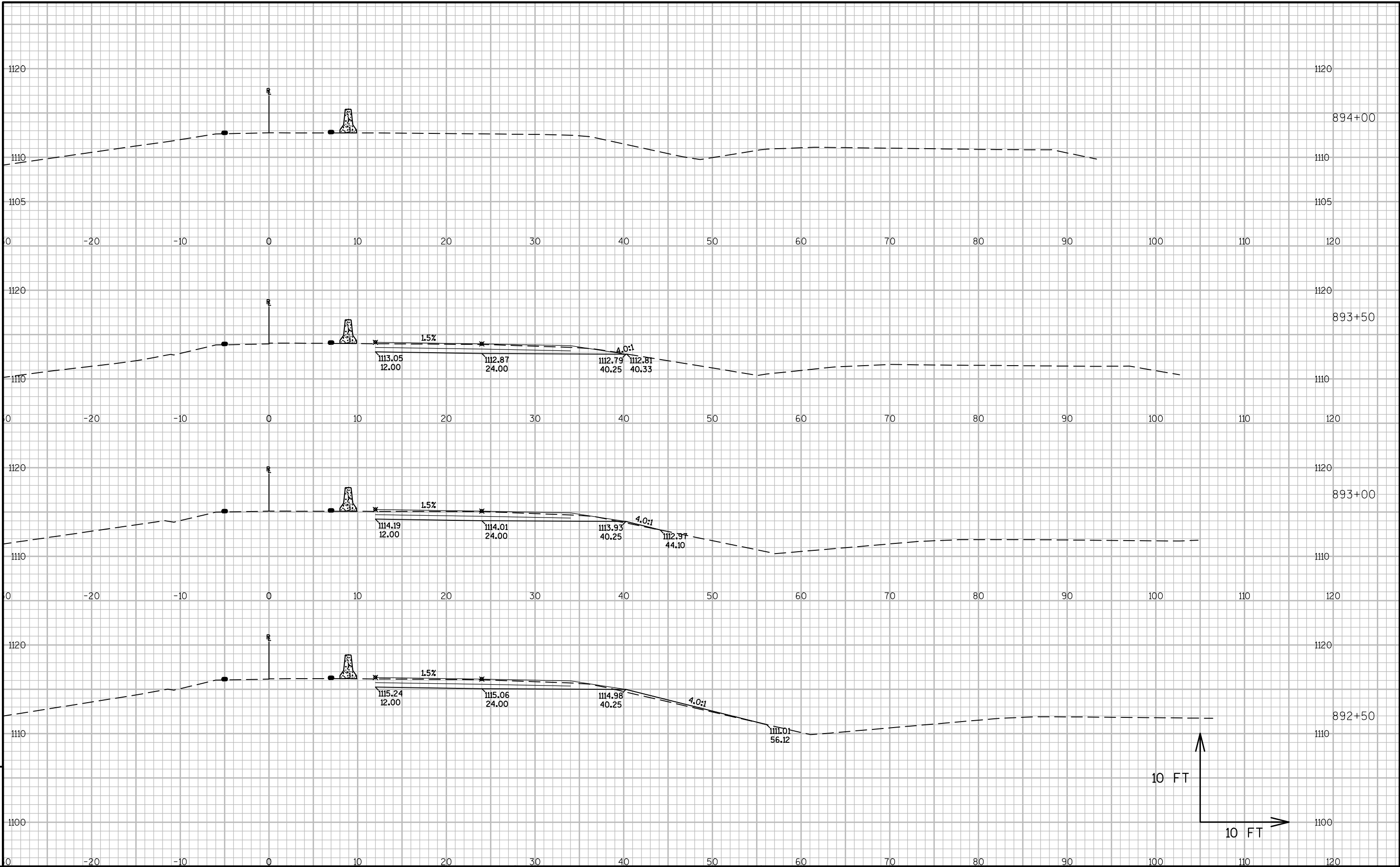


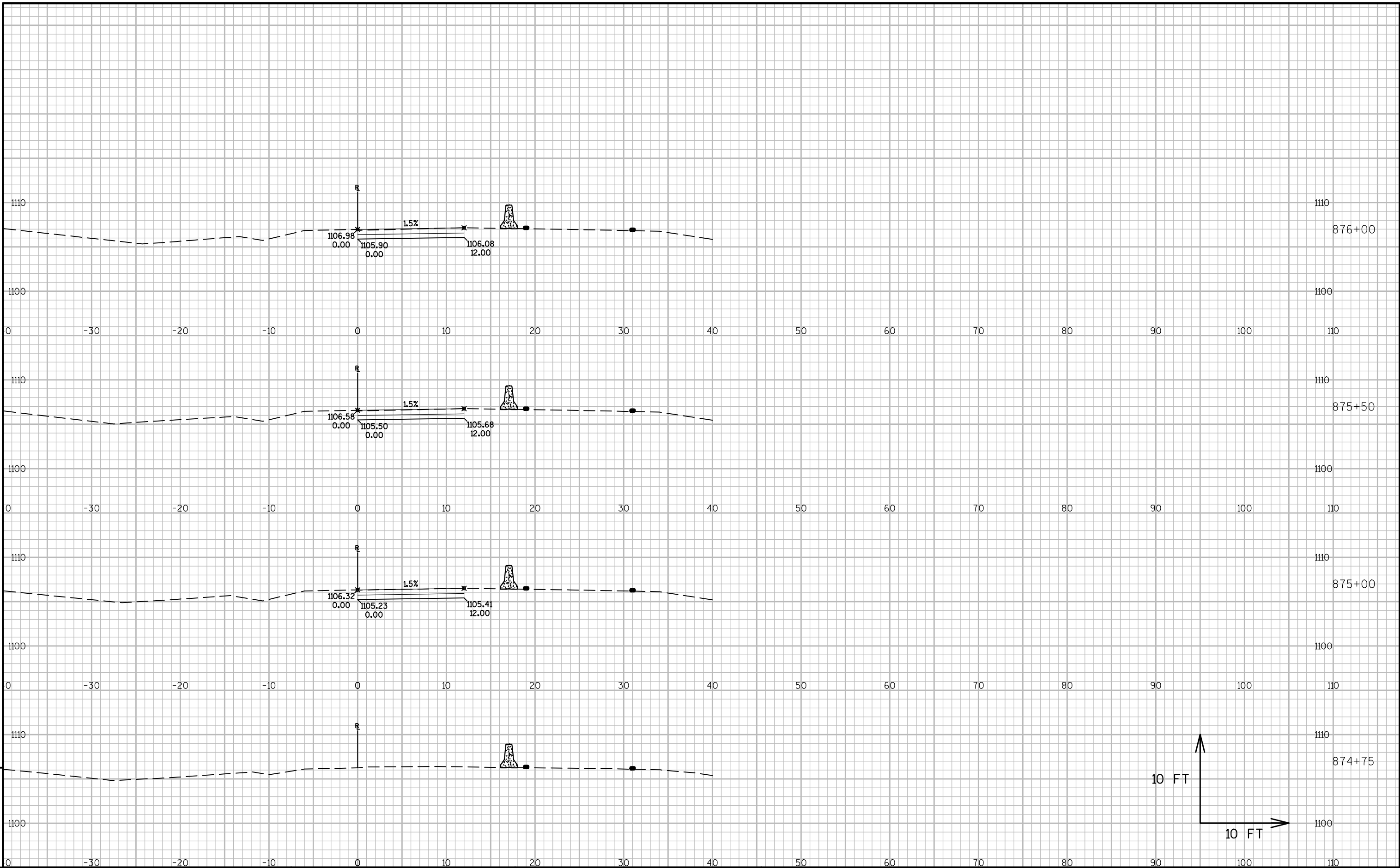


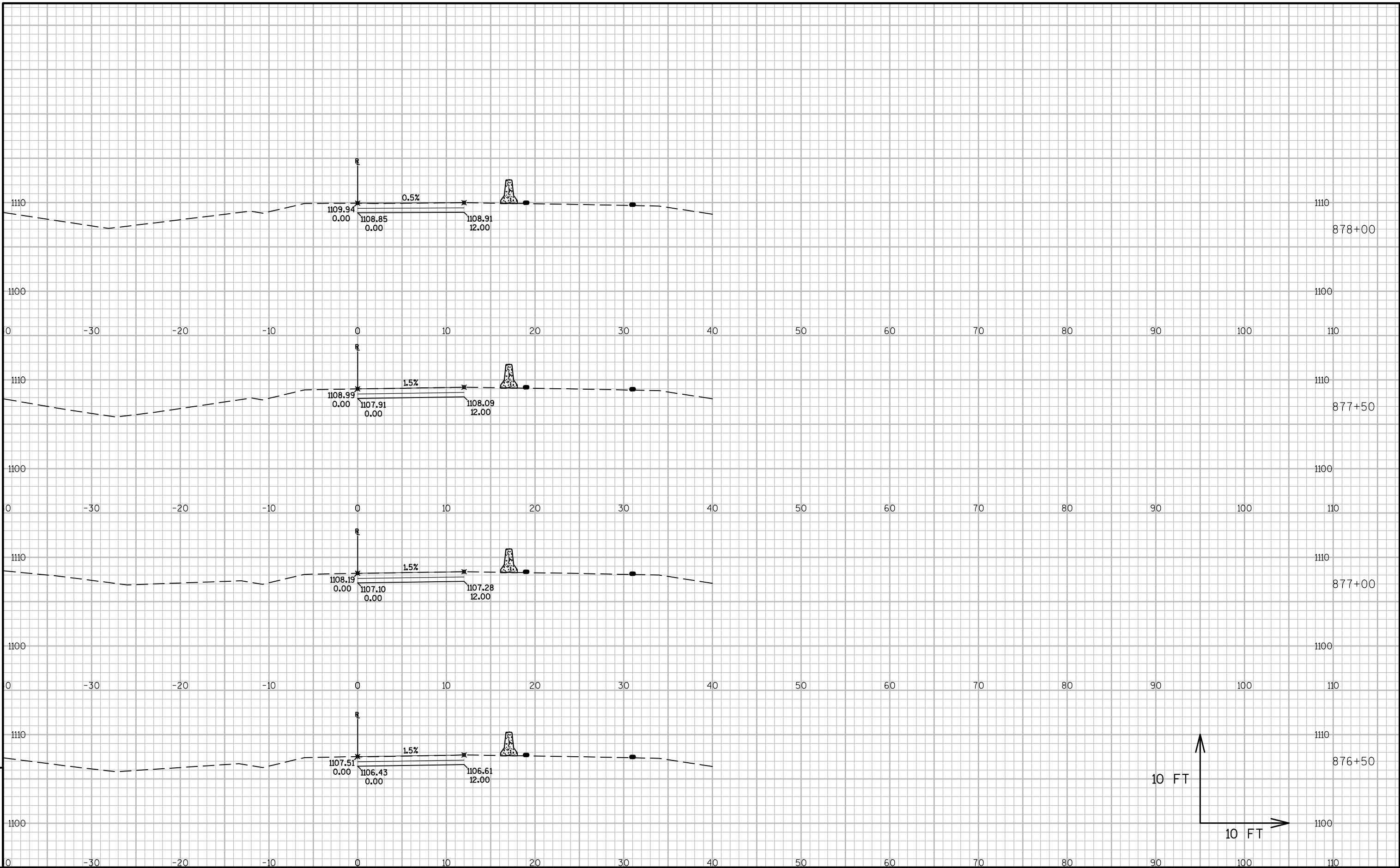


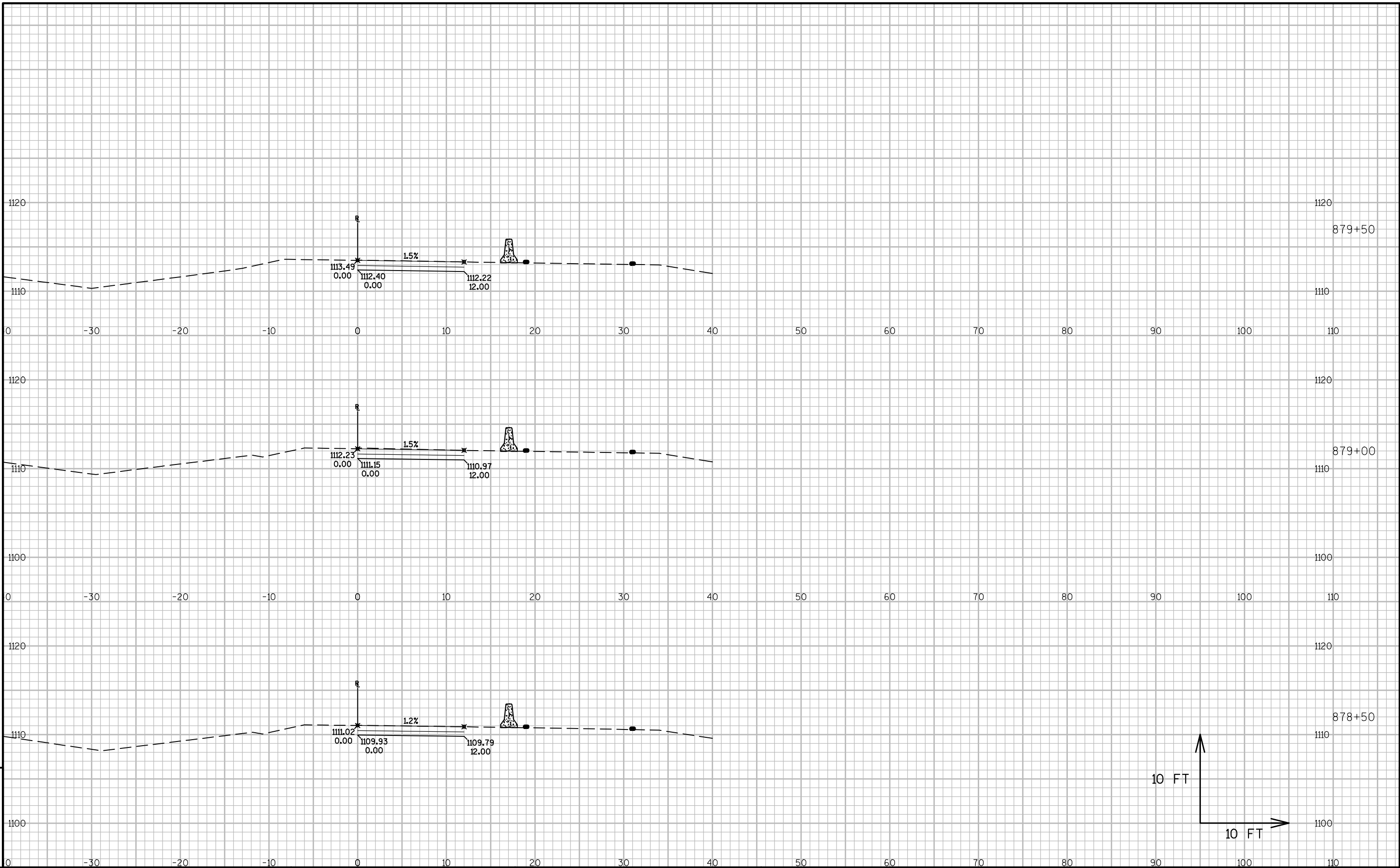


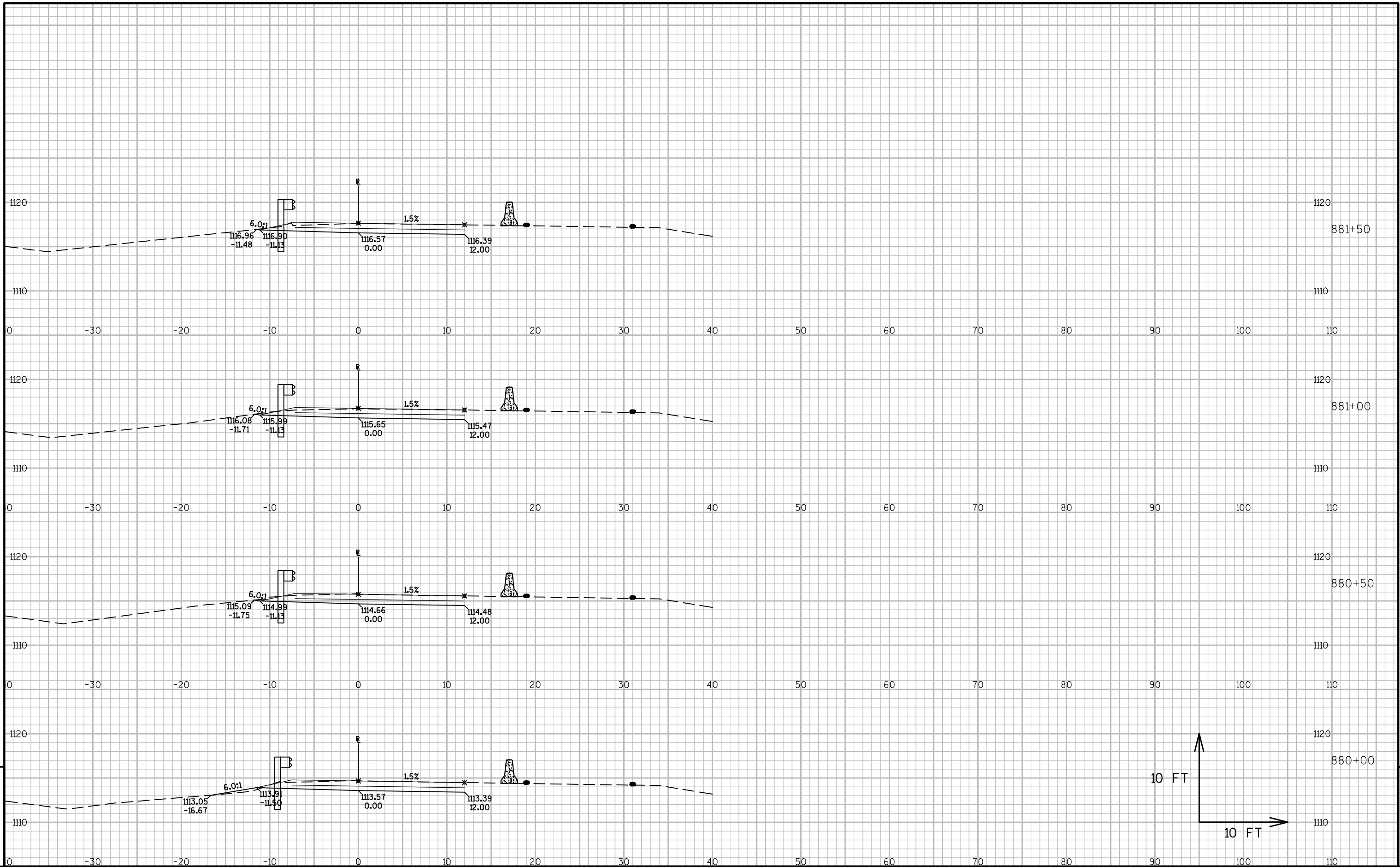


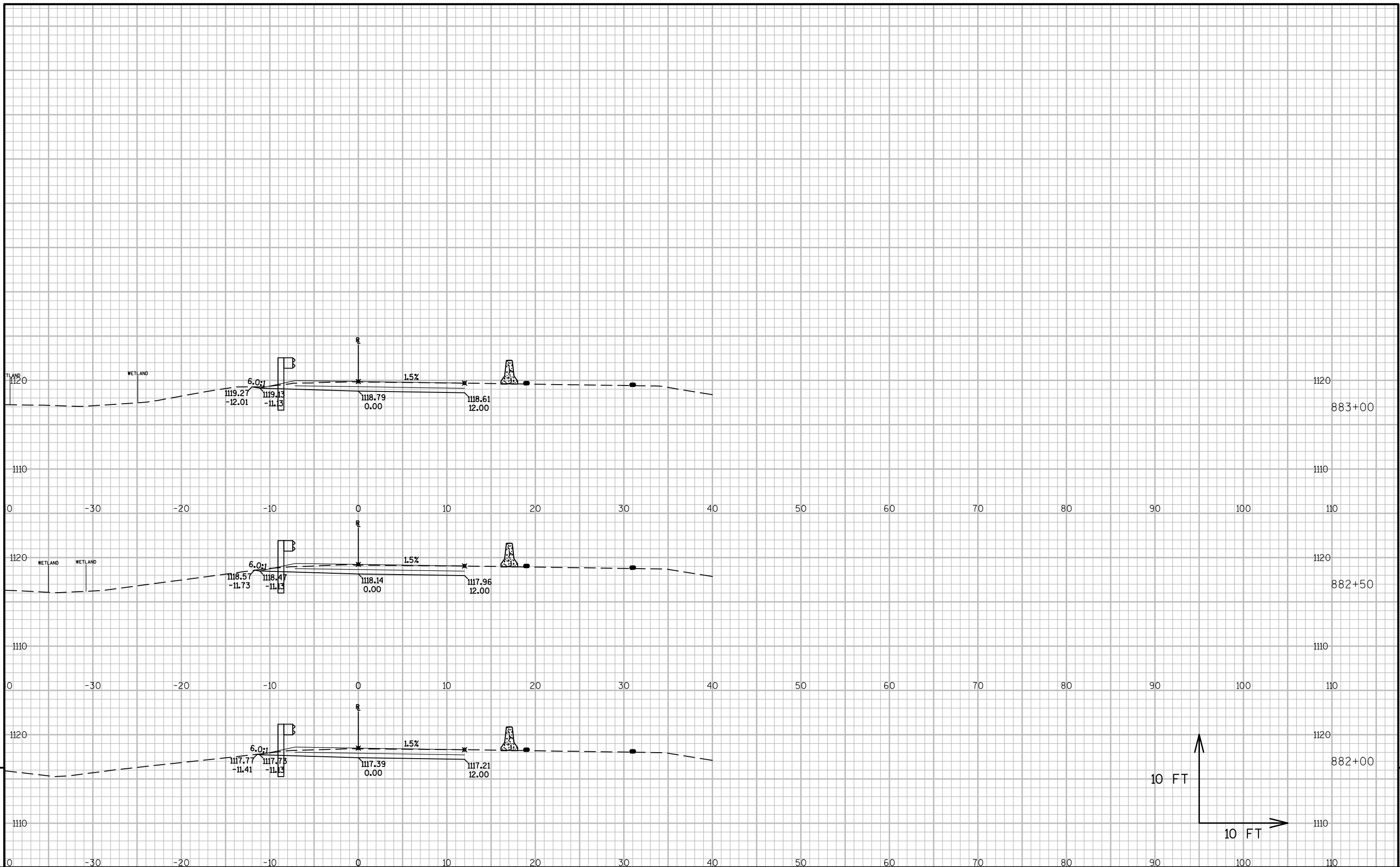


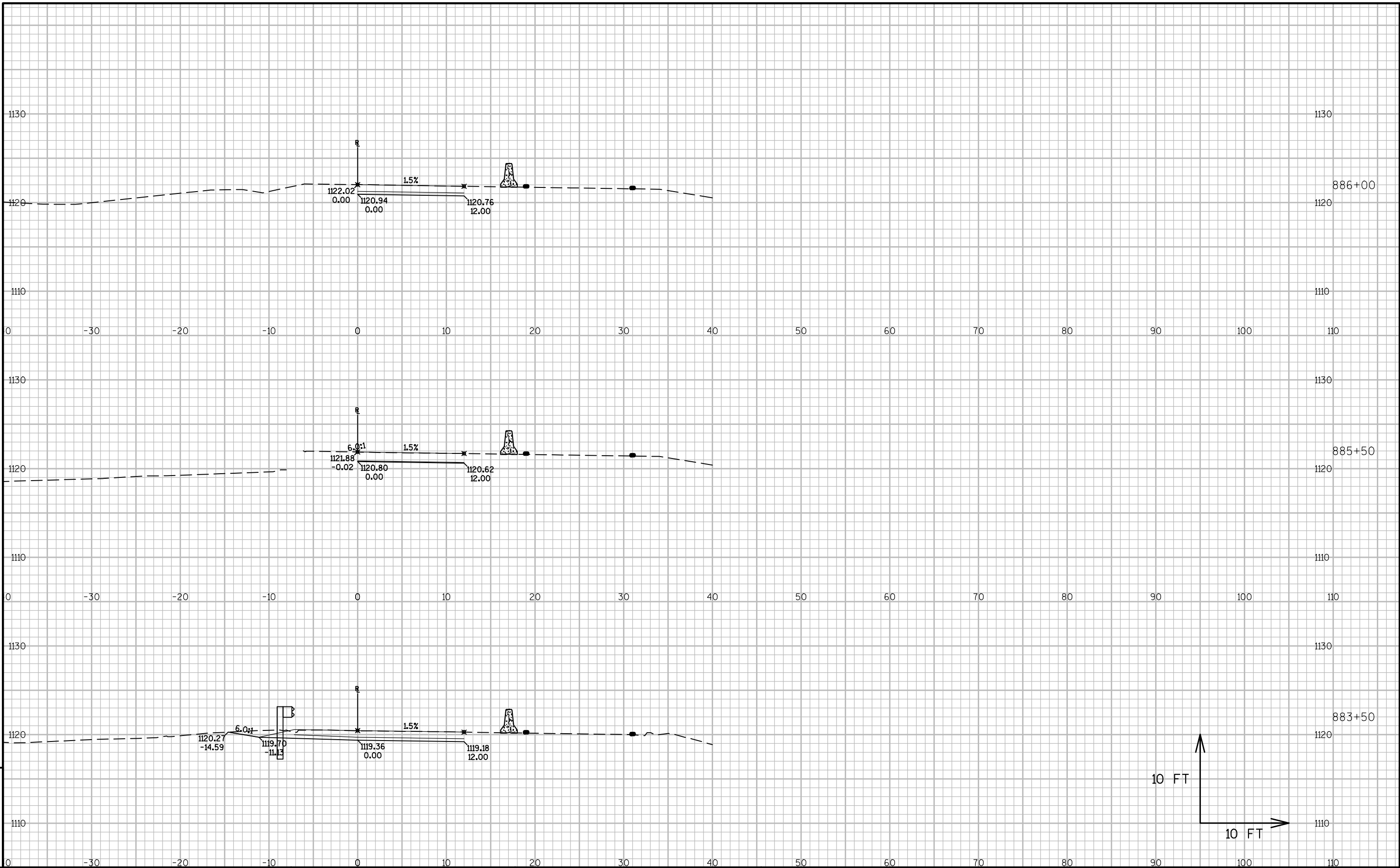


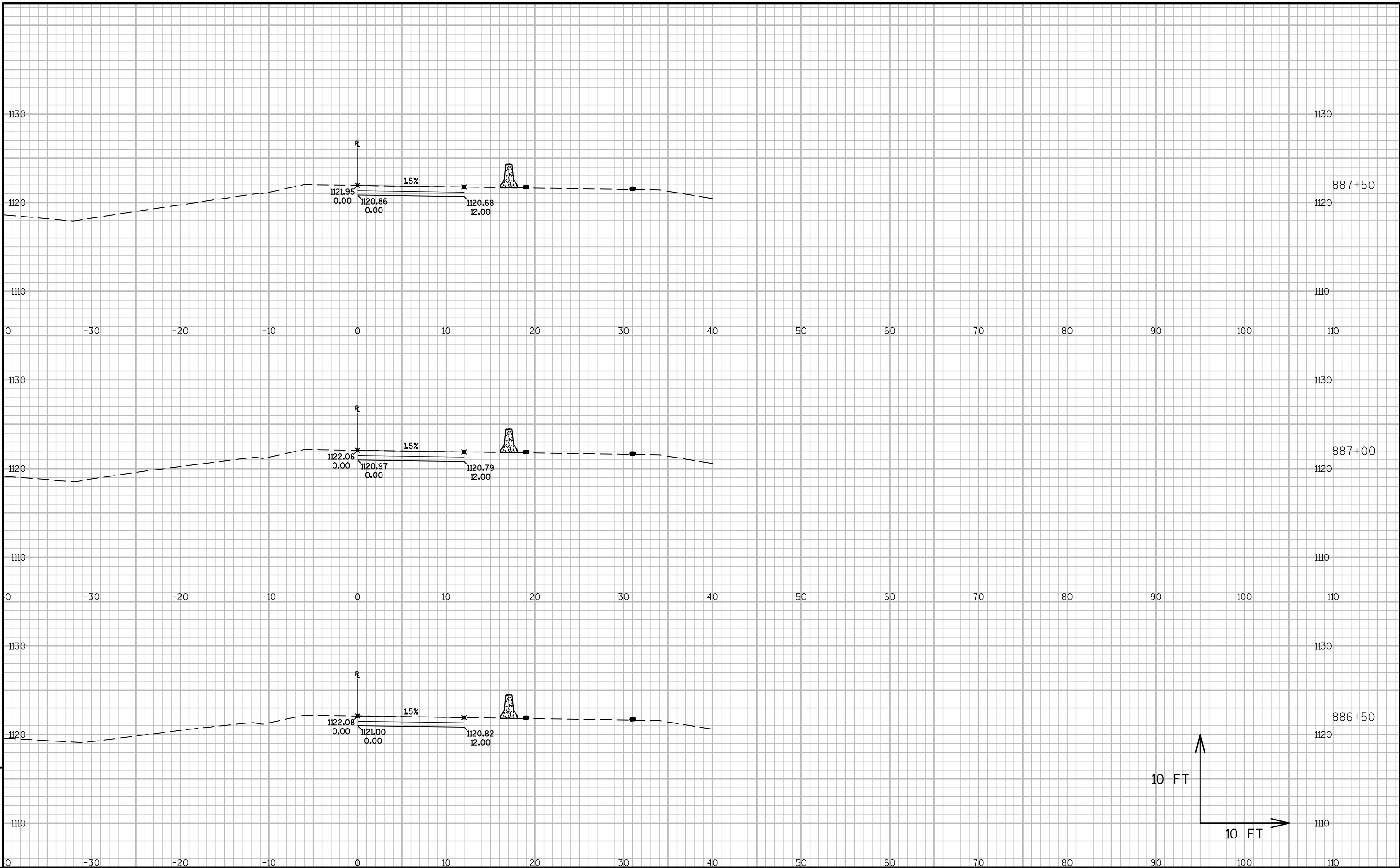


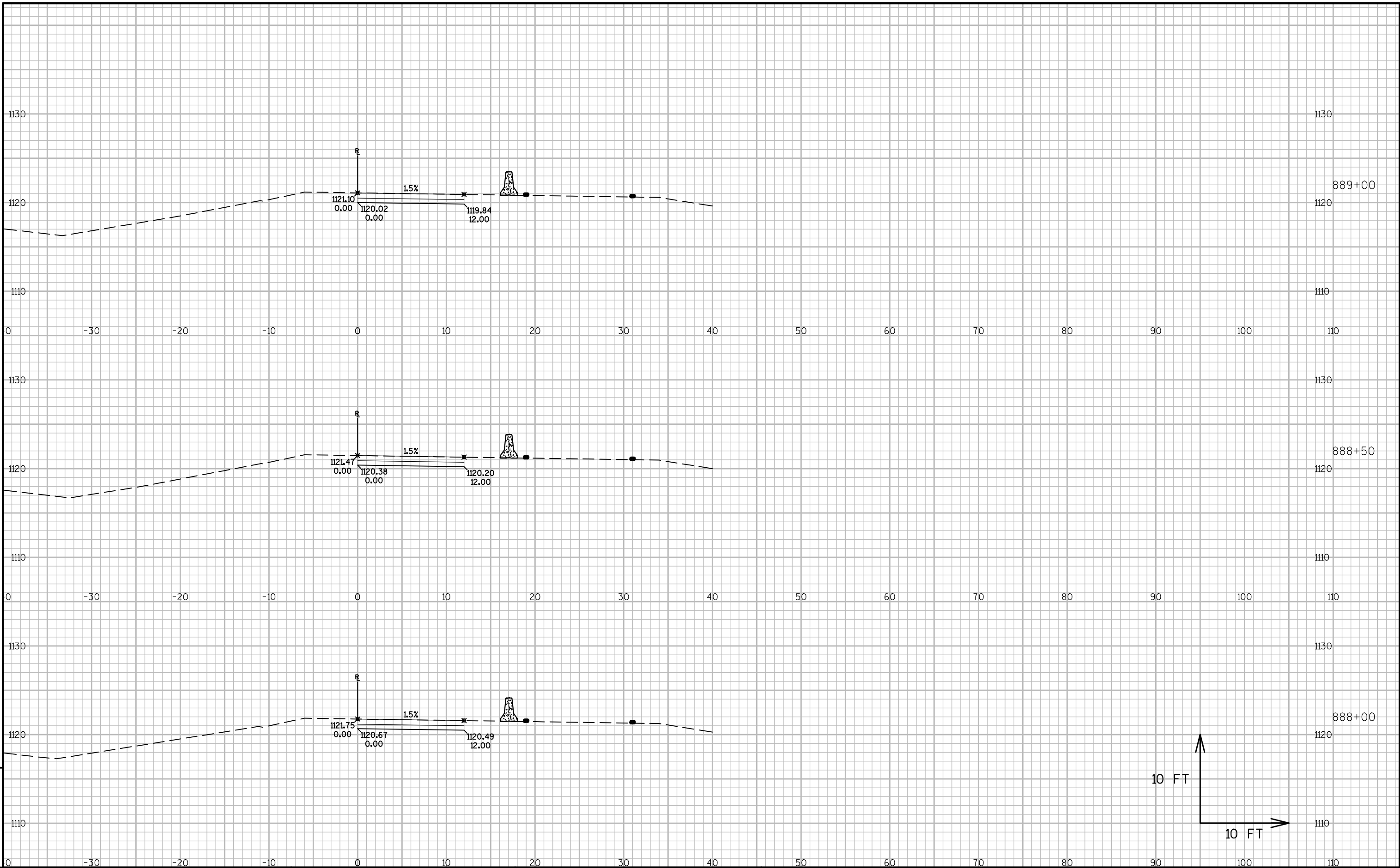


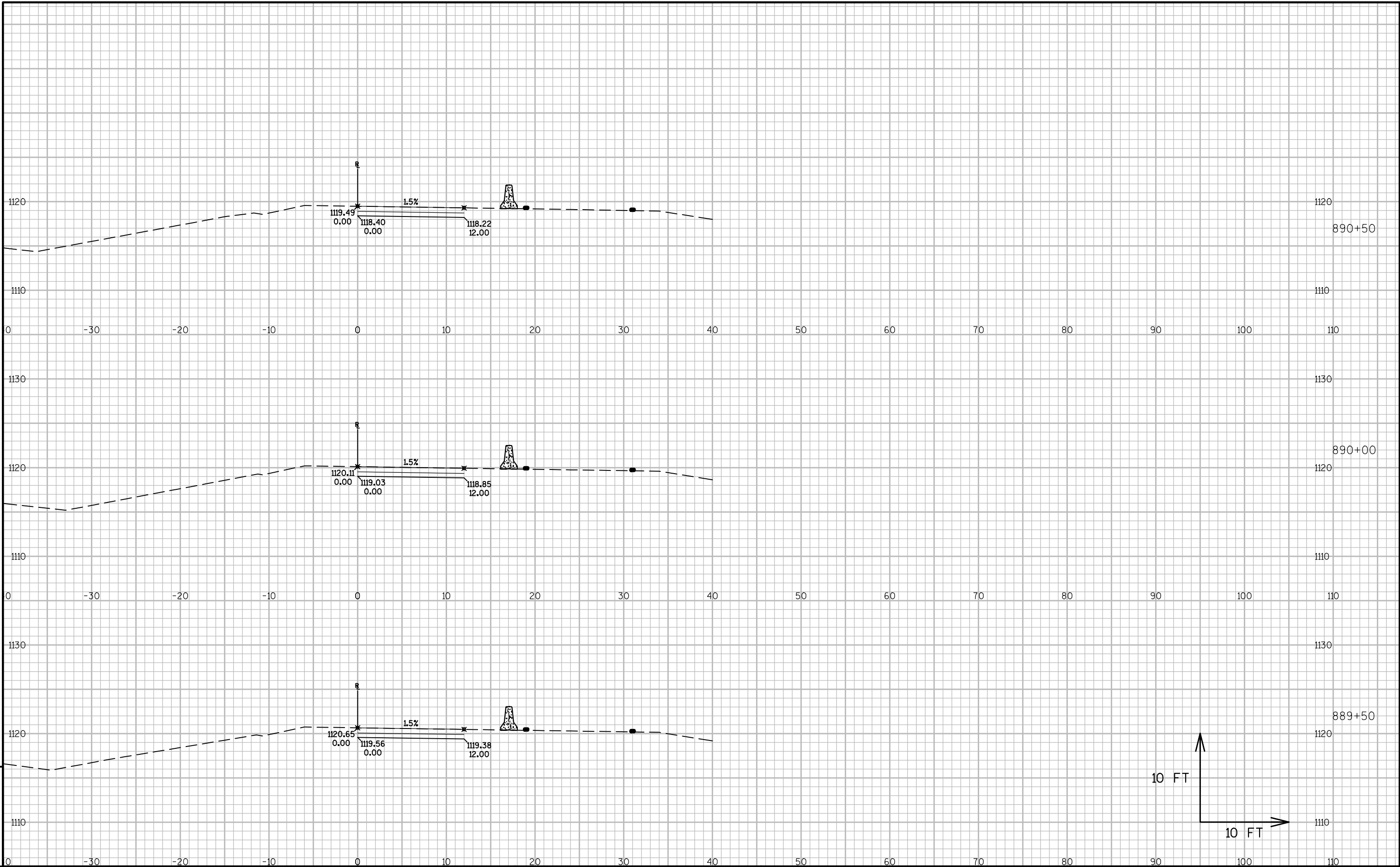


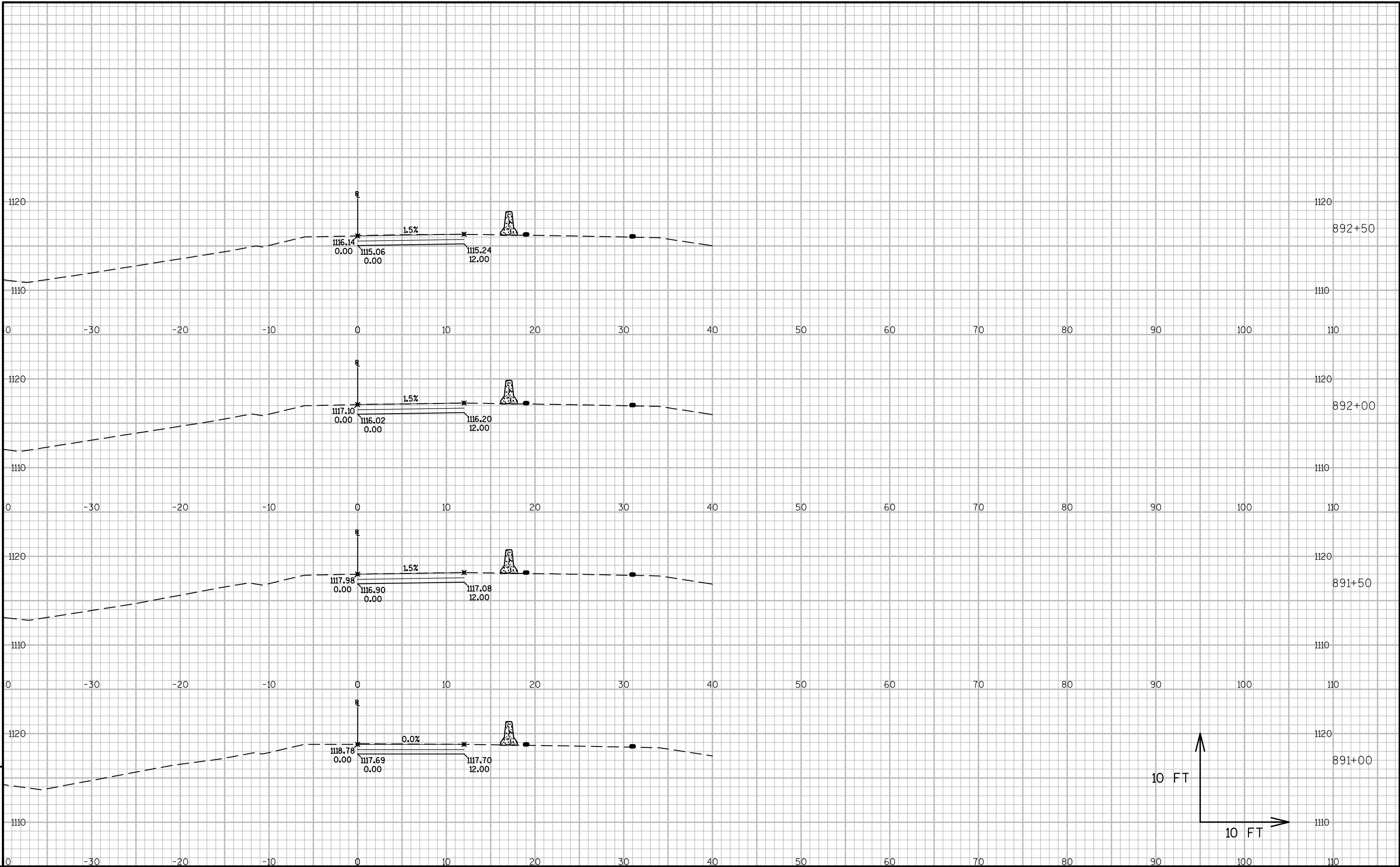


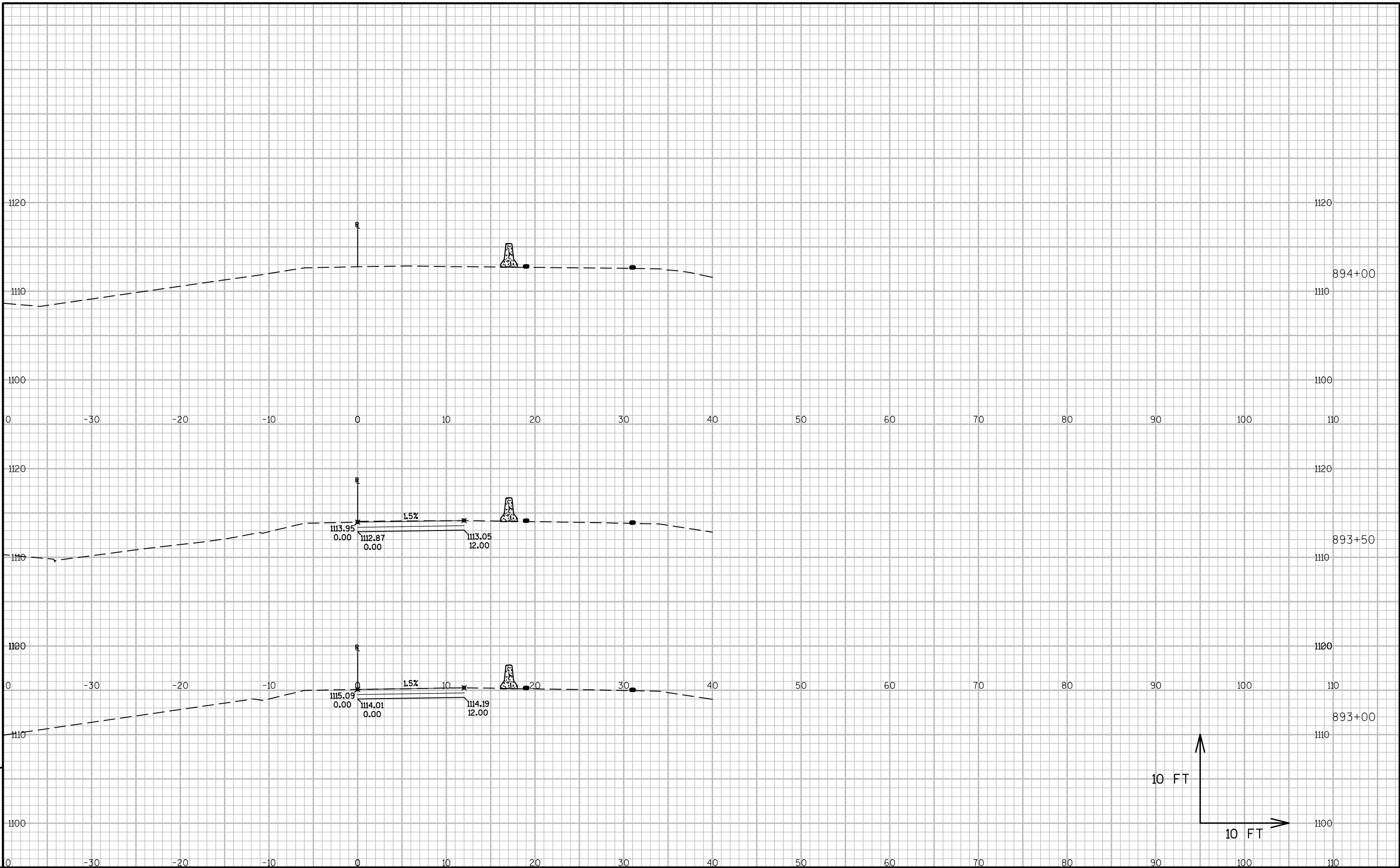


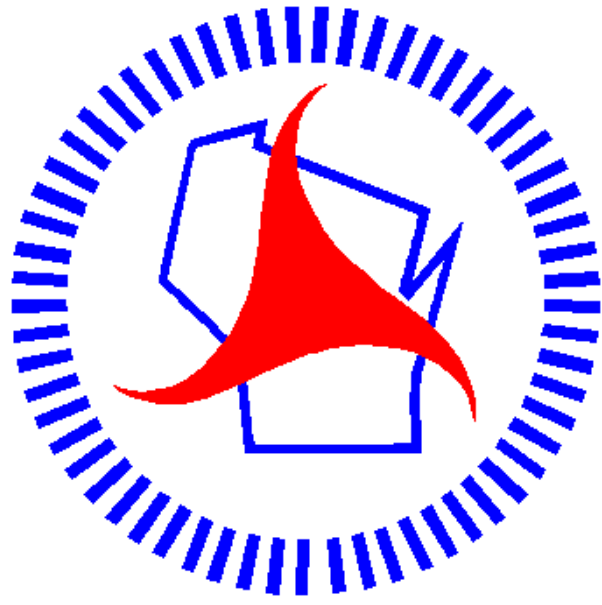












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