

PROJECT ID: 1225-08-73

COUNTY: SHEBOYGAN

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 =



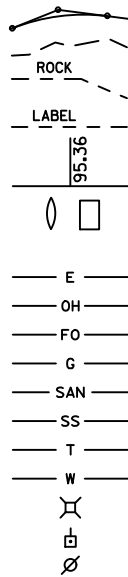
DESIGN DESIGNATION

A.A.D.T.	=
A.A.D.T.	=
D.H.V.	=
D.D.	=
T.	=
DESIGN SPEED	=
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	300'EB
REFERENCE LINE	----
EXISTING CULVERT	----
PROPOSED CULVERT (Box or Pipe)	----
COMBUSTIBLE FLUIDS	CAUTION
MARSH AREA	----
WOODED OR SHRUB AREA	----

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

SHEBOYGAN - MANITOWOC

STH 42 - NCL

IH 43

SHEBOYGAN COUNTY

STATE PROJECT NUMBER
1225-08-73

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1225-08-73		

TRANS 220 PROJECT PLAN
FOR
DESIGN OF UTILITY FACILITY
ALTERATIONS OR RELOCATIONS

Date: 02/13/2018



B-59-73
B-59-72
B-59-70
B-59-69
B-59-68
B-59-67
S-59-77
THRU
S-59-86

SCALE 0 2 MILES

TOTAL NET LENGTH OF CENTERLINE =

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

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	
Surveyor	WISDOT
Designer	K. WITTE
Project Manager	B. HAEN
Regional Examiner	REGIONAL EXAMINER
Regional Supervisor	C. DEGRAVE
APPROVED FOR THE DEPARTMENT	
DATE:	(Signature)

E

GENERAL NOTES

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

PIPE ELEVATIONS, LENGTHS, AND LOCATIONS AS SHOWN ON THE PLANS, MAY BE ADJUSTED TO FIT EXISTING FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

UTILITIES

AT&T WISCONSIN - COMMUNICATION LINE
205 S JEFFERSON ST
GREEN BAY, WI 54301
ATTN: JOSEPH KASSAB
PHONE:(920) 735-3206
EMAIL: JK572K@ATT.COM

CHARTER COMMUNICATIONS - COMMUNICATION LINE
1320 N DR MARTIN LUTHER KING JR DR.
MILWAUKEE, WI 53212-4002
ATTN: STEVEN CRAMER
PHONE (W): (414) 277-4045
PHONE (M): (414) 659-2385
EMAIL: WIS.ENGINEERING@CHARTER.COM

PAETEC COMMUNICATIONS - COMMUNICATION LINE
13935 BISHOPS DR.
BROOKFIELD, WI 53005
ATTN: MARY FISHER
PHONE: (262) 792-7938
EMAIL: MARY.B.FISHER@WINDSTREAM.COM

TDS TELECOMMUNICATIONS CORP. (TDS) - COMMUNICATION LINE
P.O. BOX 5158
MADISON, WI 53705-0158

WISCONSIN DEPARTMENT OF TRANSPORTATION - COMMUNICATION LINE
433 W. ST. PAUL AVE.
MILWAUKEE, WI 53203-3007
ATTN: JEFF MADSON
PHONE: (414) 225-3723
EMAIL: JEFFREY.MADSON@DOT.WI.GOV

ALLIANT ENERGY - ELECTICITY
4902 NORTH BILTMORE LN
MADISON, WI 53713
ATTN: MICHAEL BROLIN
PHONE: (608) 458-4871
EMAIL: MICHAELBROLIN@ALLIANTENERGY.COM

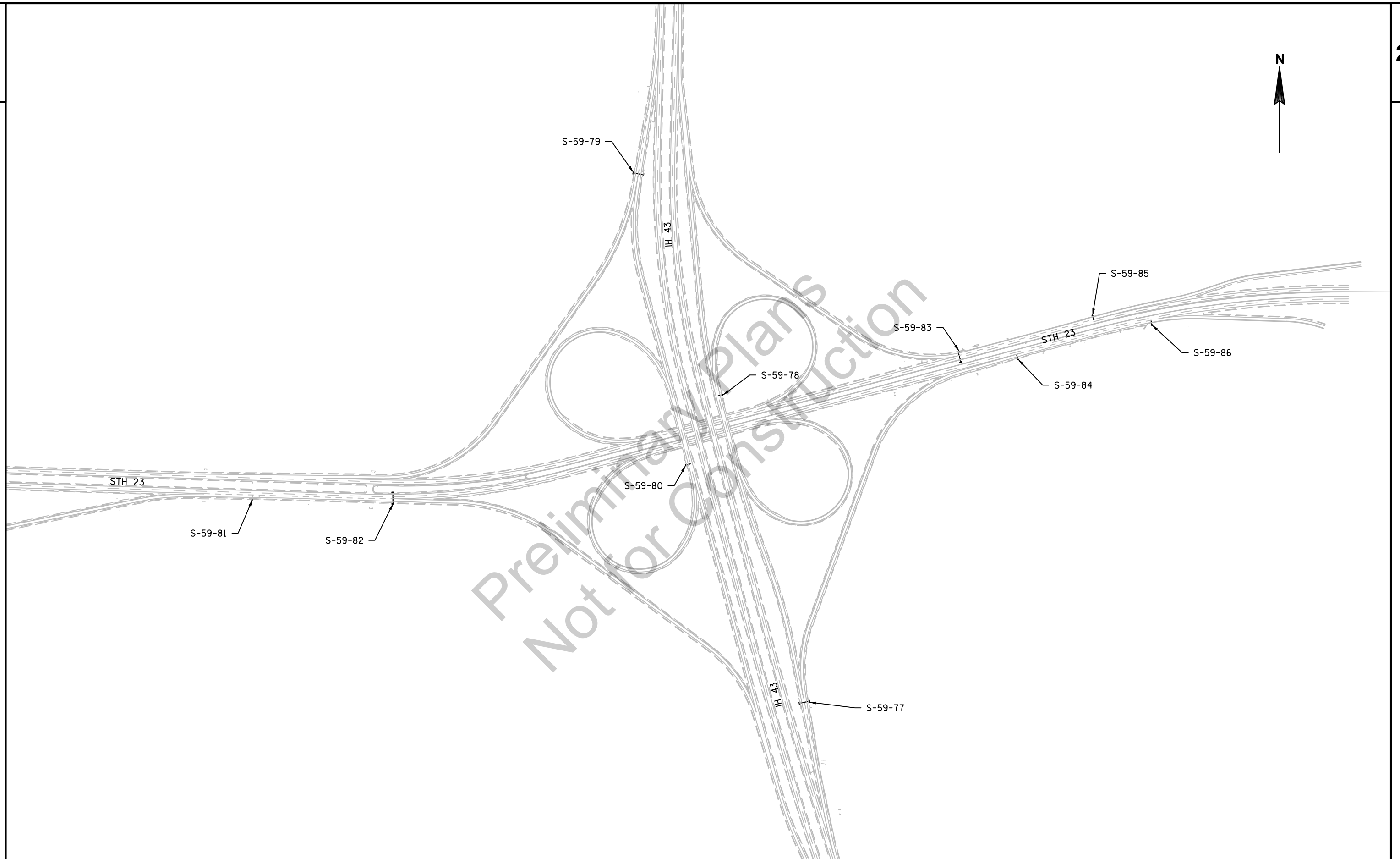
WISCONSIN PUBLIC SERVICE CORPORATION - GAS/PETROLEUM
700 N ADAMS ST
GREEN BAY, WI 54307-9001
ATTN: LORI BUTRY
PHONE: (920) 433-1703
EMAIL: LABUTRY@INTEGRYSGROUP.COM

SHEBOYGAN WATER UTILITY
72 PARK AVE
SHEBOYGAN, WI 53081
ATTN: RICH DALE
PHONE: (920) 459-4325
EMAIL: RICHDALE@SHEBOYGANWATER.ORG

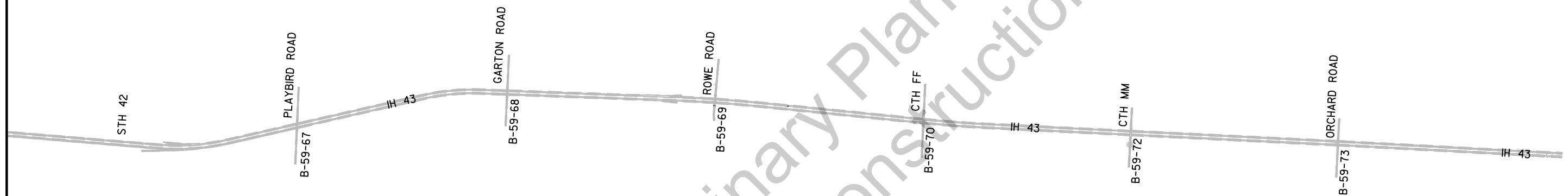


Dial 811 or (800)242-8511
www.DiggersHotline.com

Preliminary Plans
Not for Construction



PROJECT NO:1225-08-73	HWY:IH 43	COUNTY:SHEBOYGAN	PROJECT OVERVIEW	SHEET	E
-----------------------	-----------	------------------	------------------	-------	---



PROJECT NO:1225-08-73

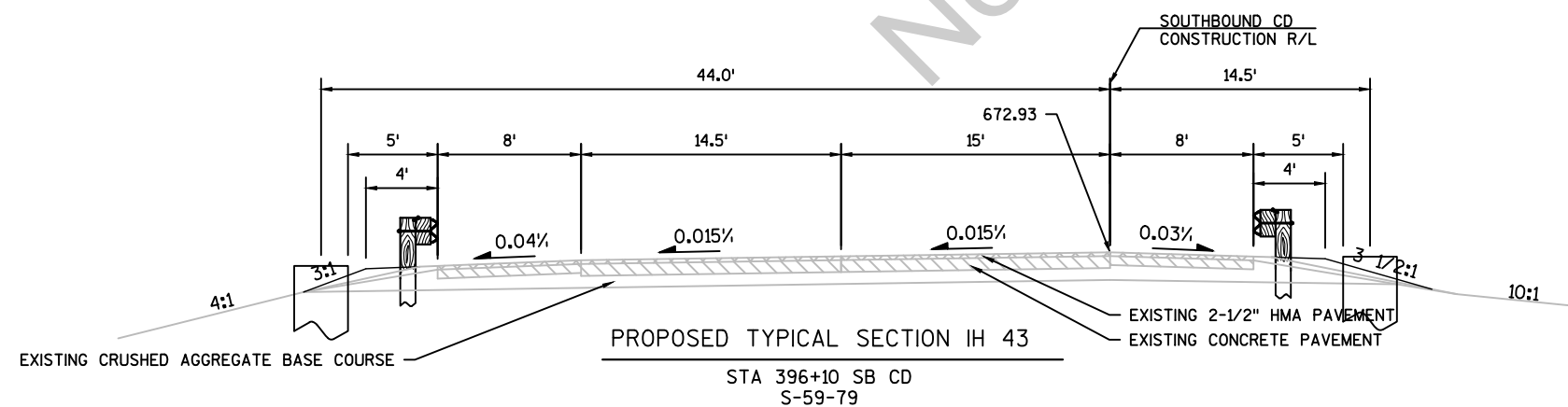
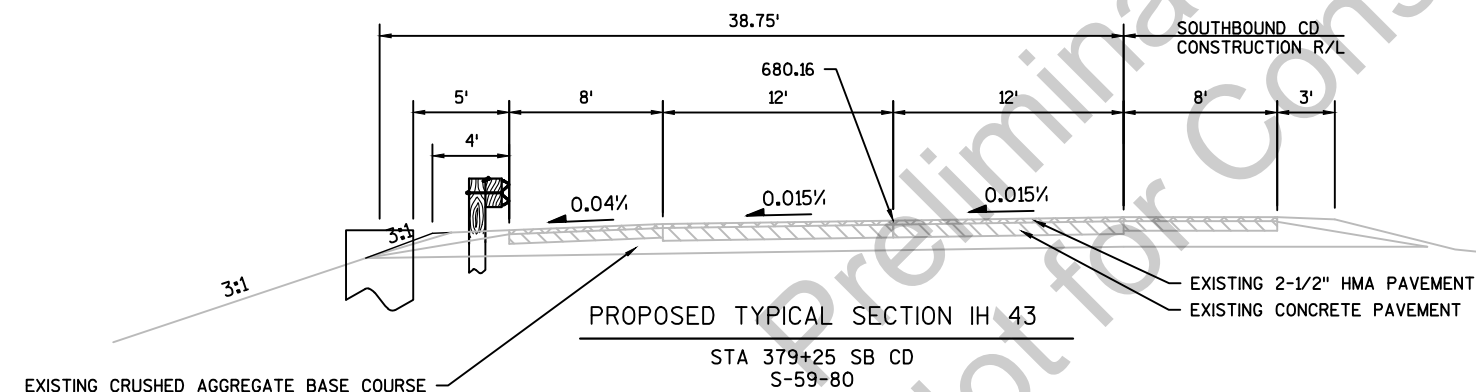
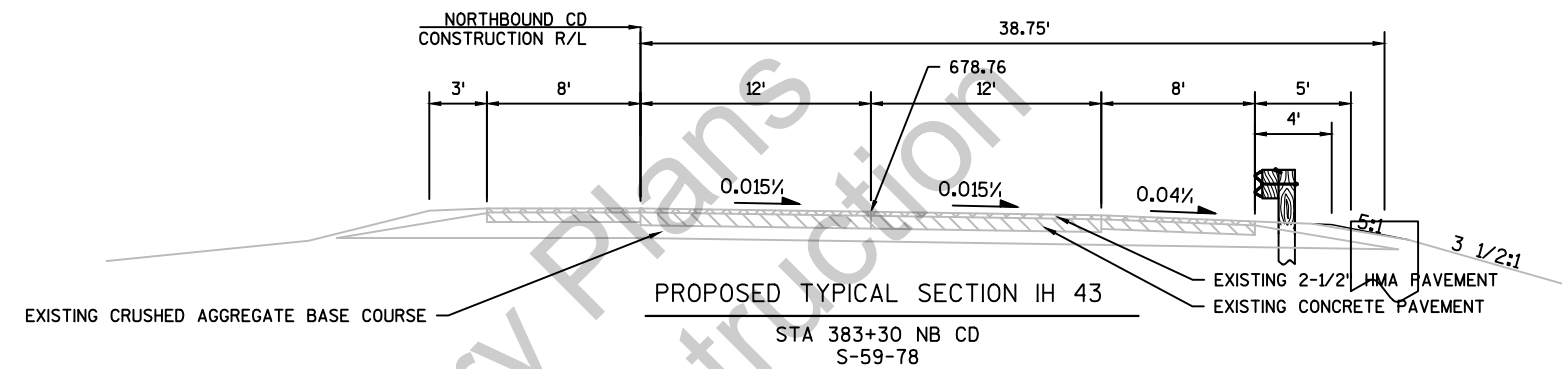
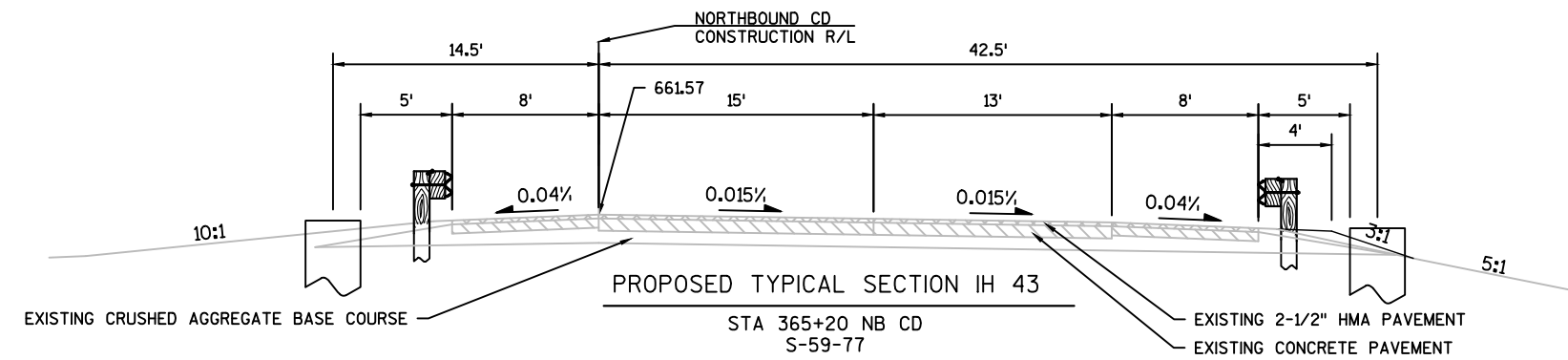
HWY:IH 43

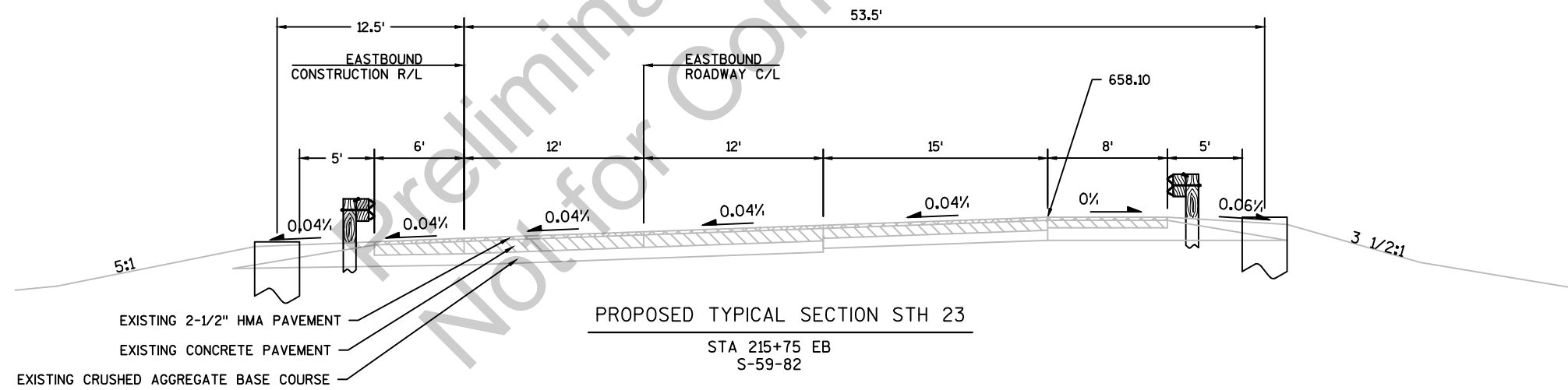
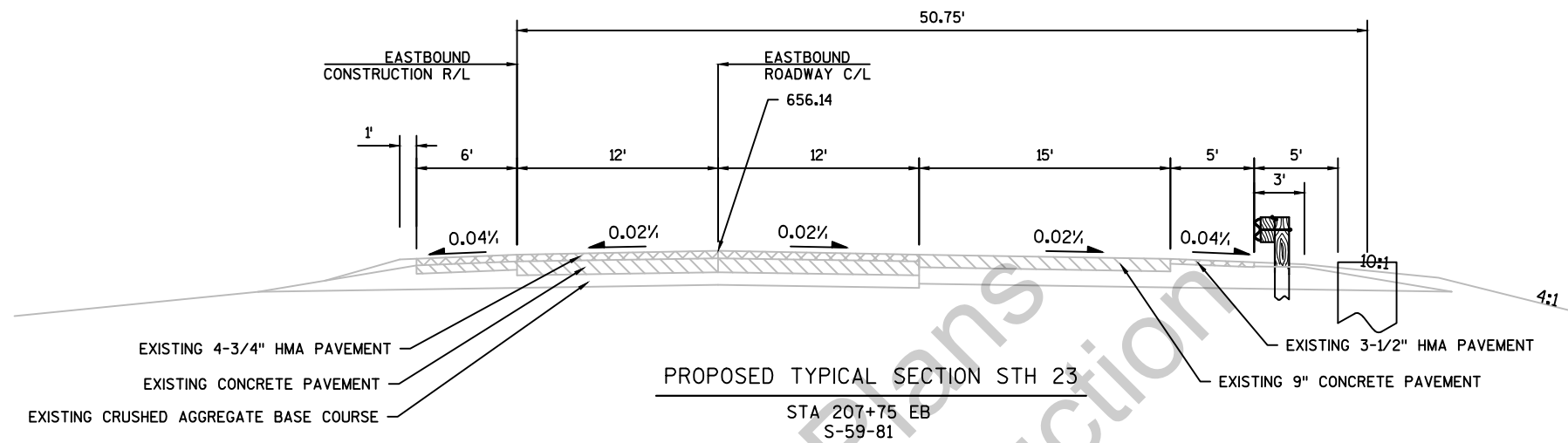
COUNTY:SHEBOYGAN

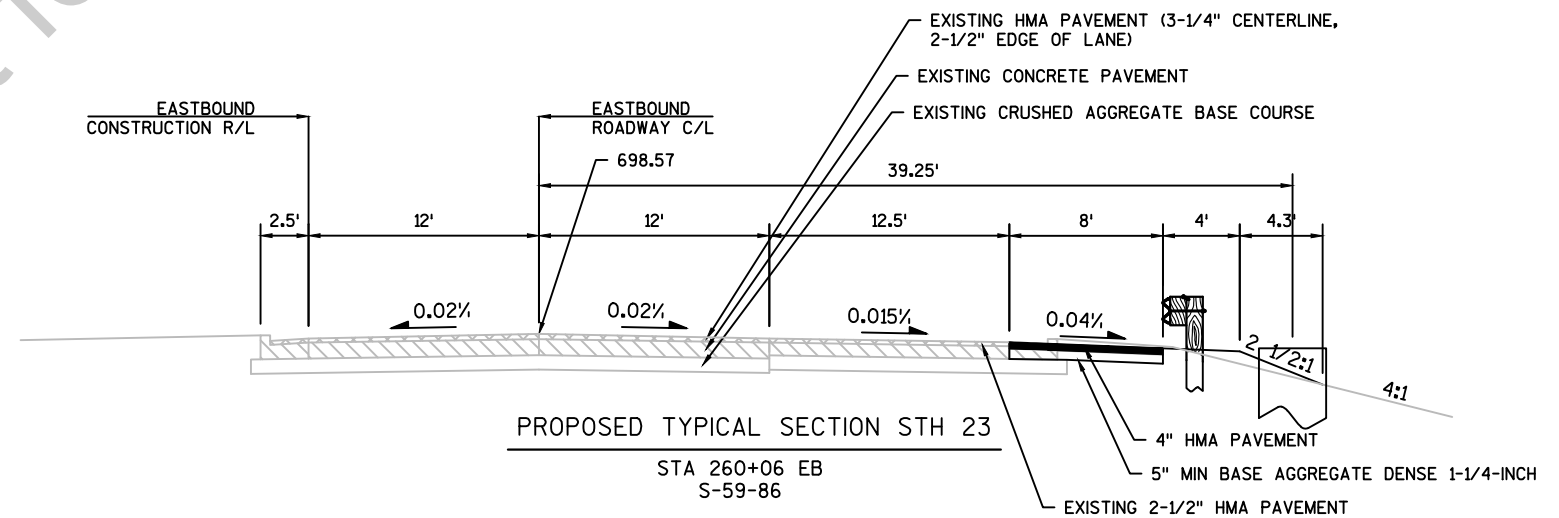
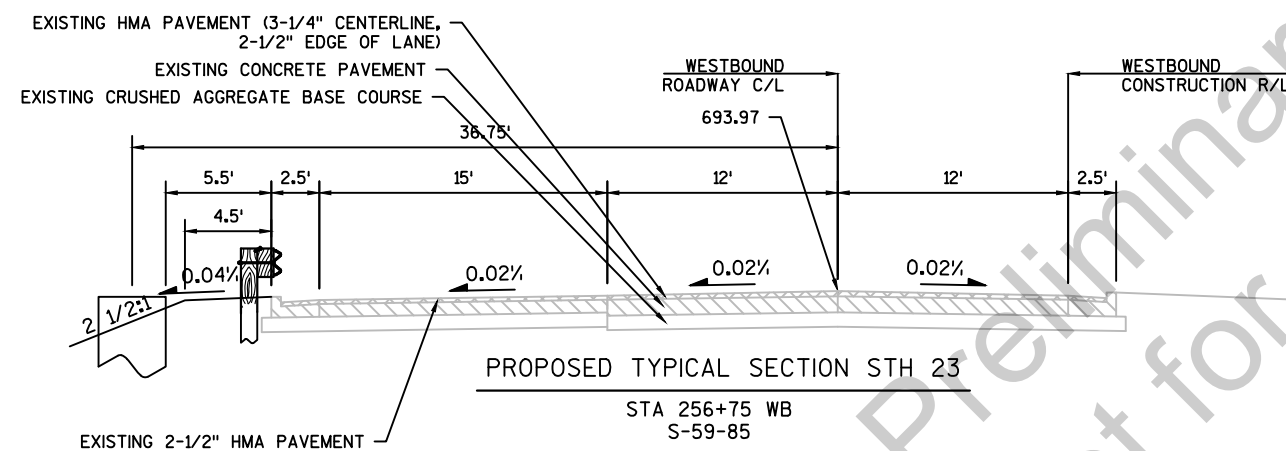
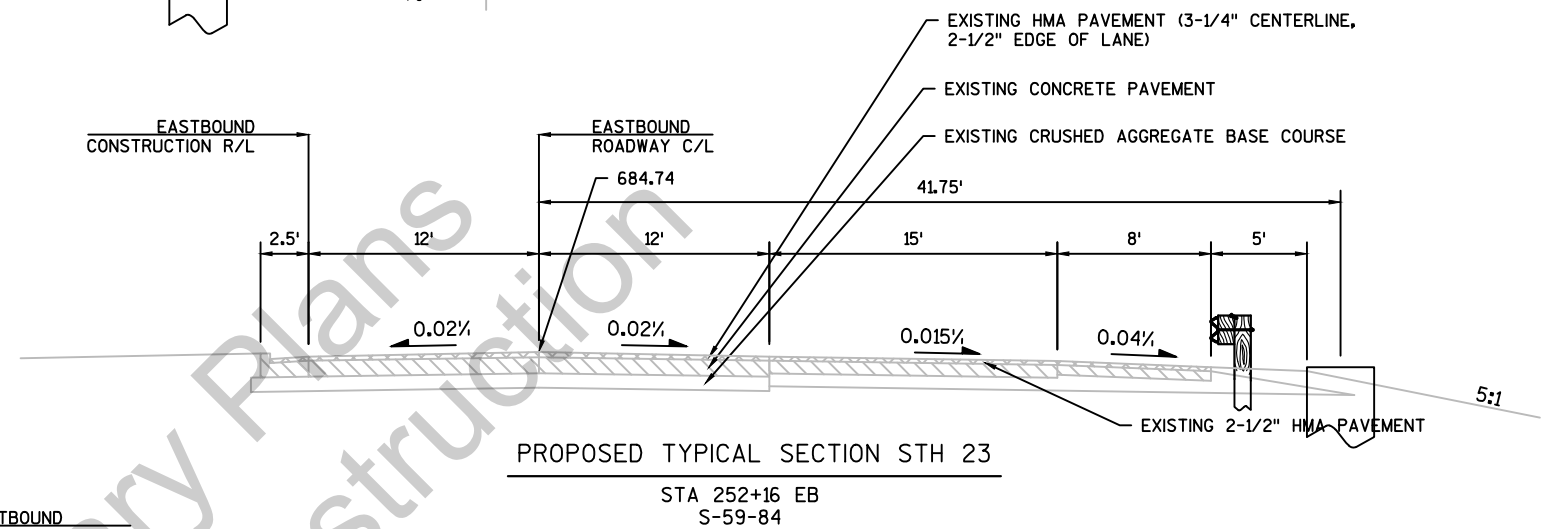
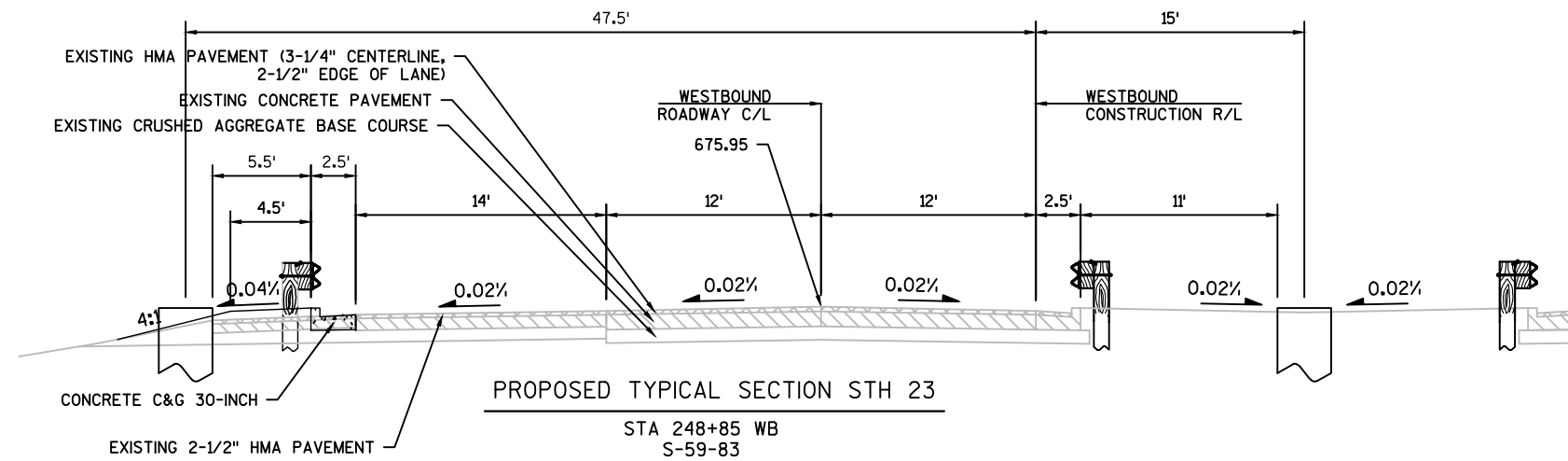
PROJECT OVERVIEW

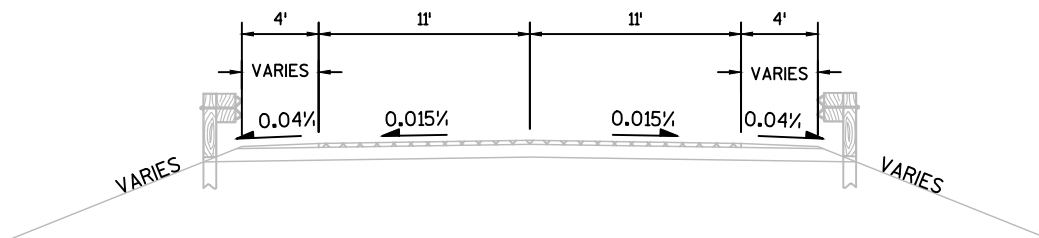
SHEET

E



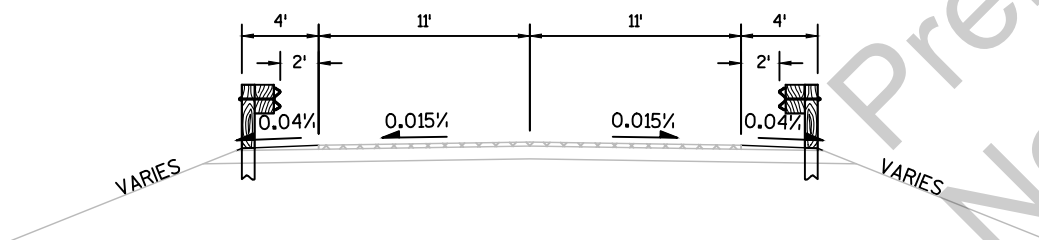






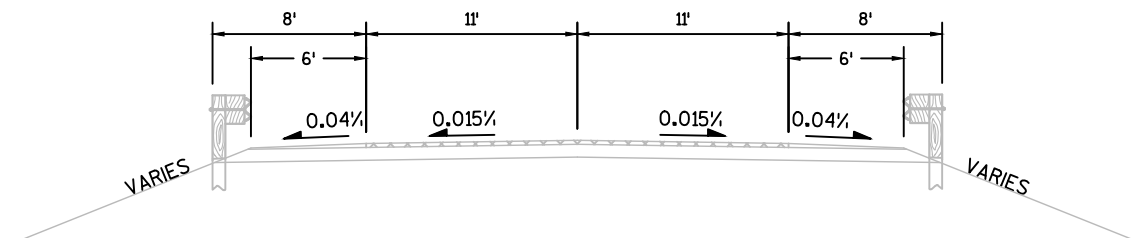
EXISTING TYPICAL SECTIONS

PLAYBIRD ROAD
GARTON ROAD
ROWE ROAD
ORCHARD ROAD



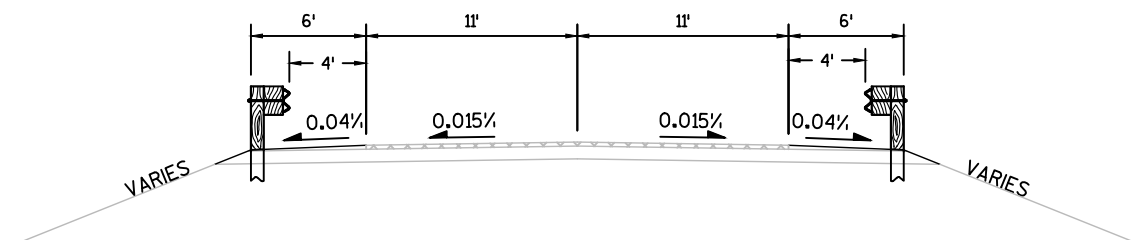
FINISHED TYPICAL SECTIONS

PLAYBIRD ROAD
GARTON ROAD
ROWE ROAD
ORCHARD ROAD



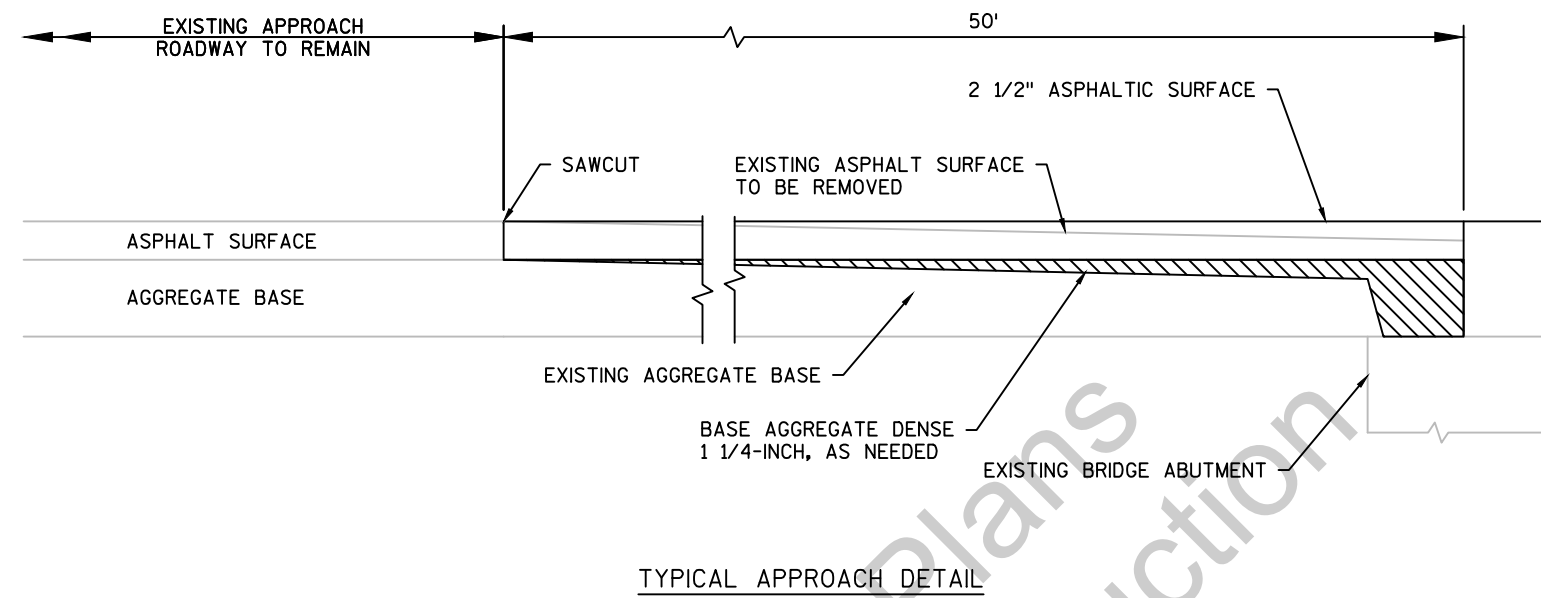
EXISTING TYPICAL SECTIONS

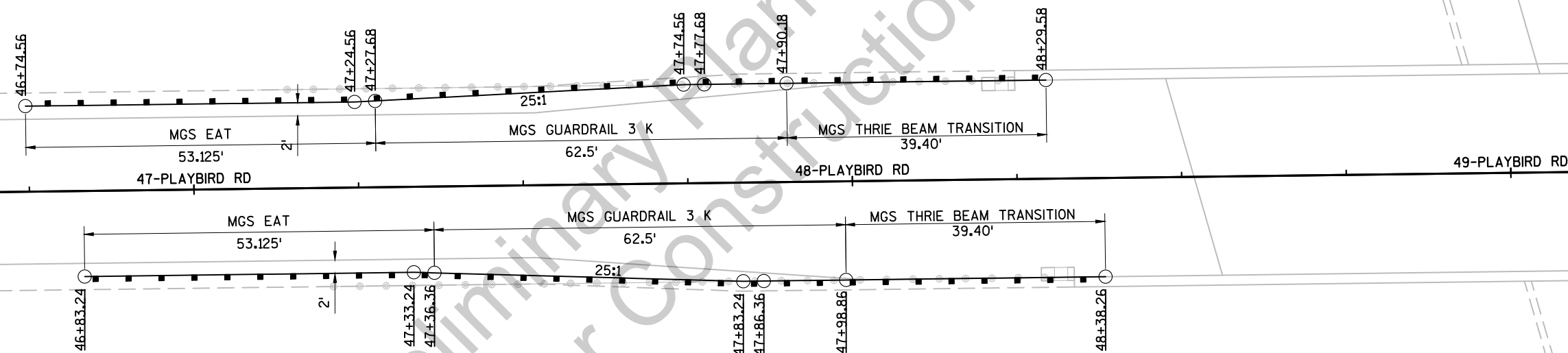
CTH FF
CTH MM

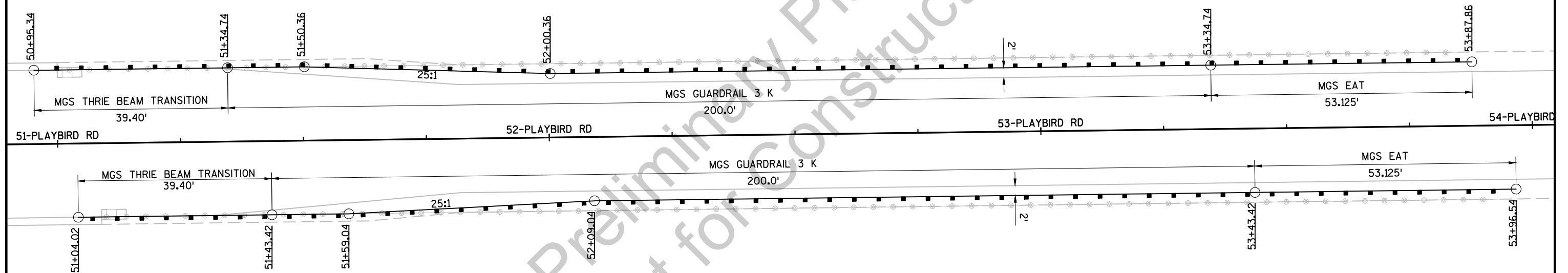


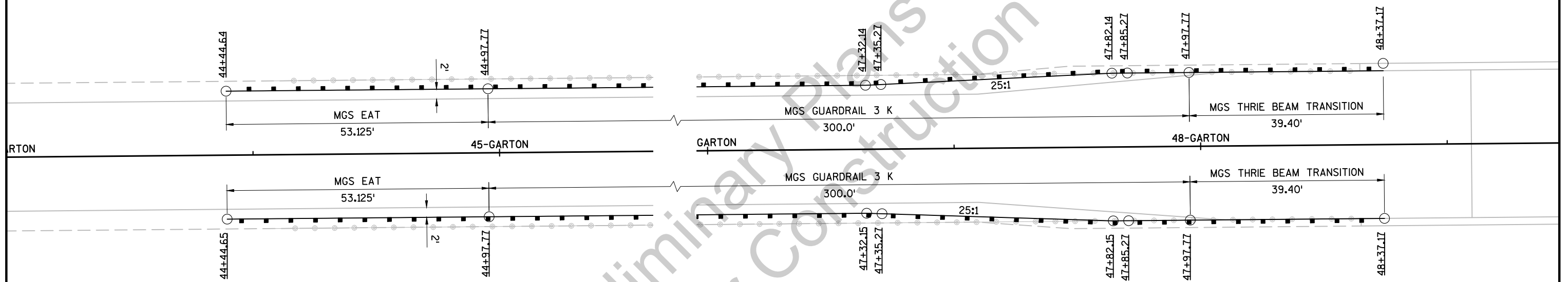
FINISHED TYPICAL SECTIONS

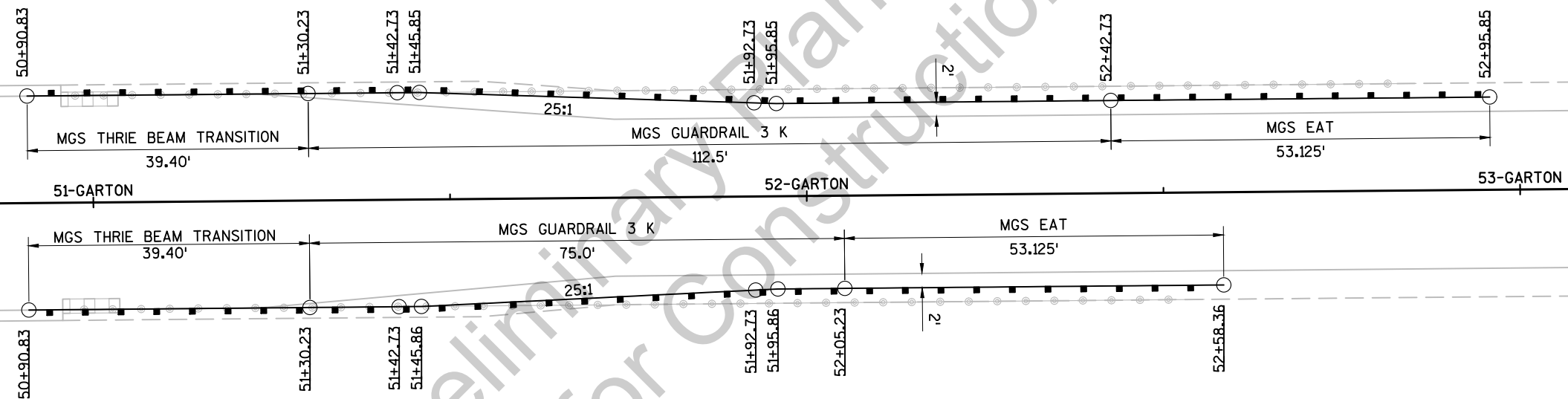
CTH FF
CTH MM

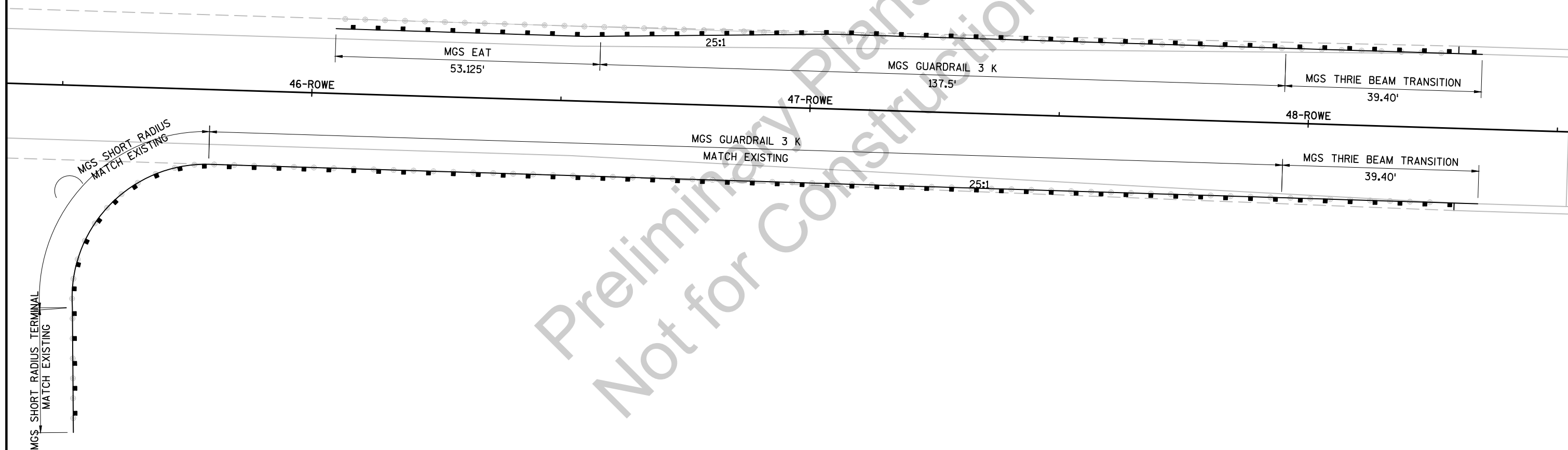


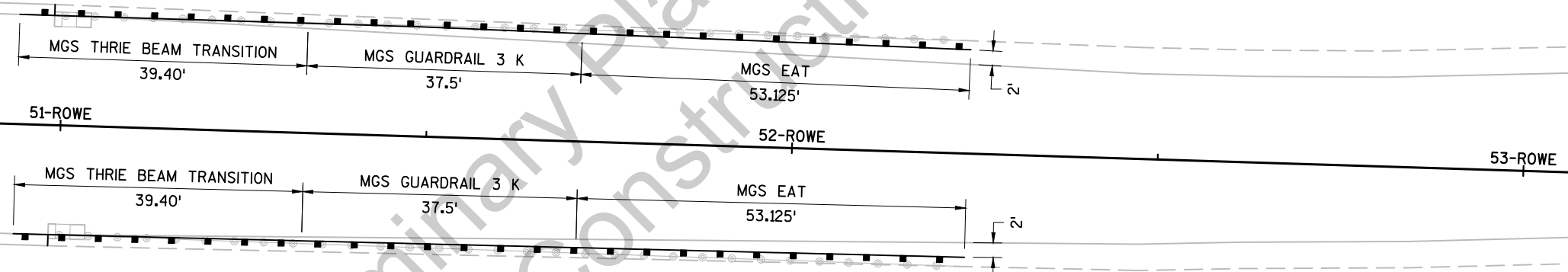


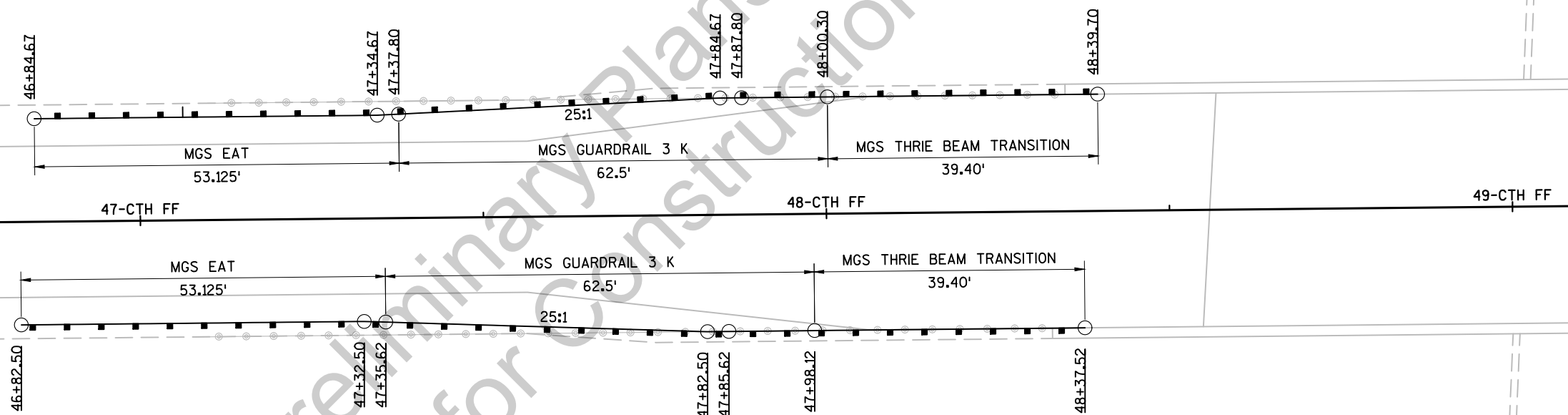


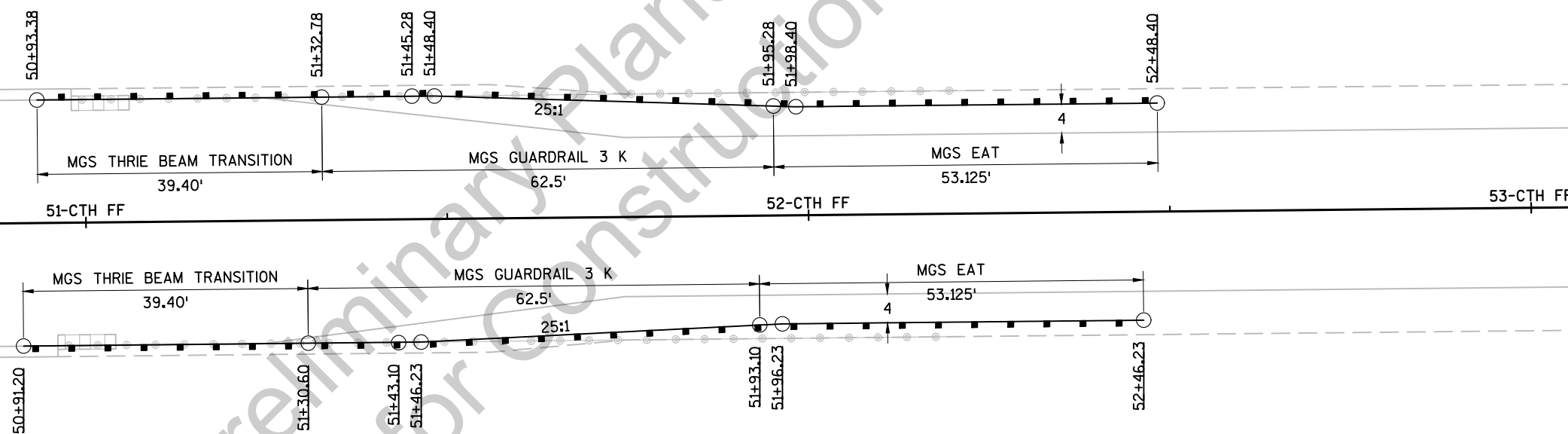


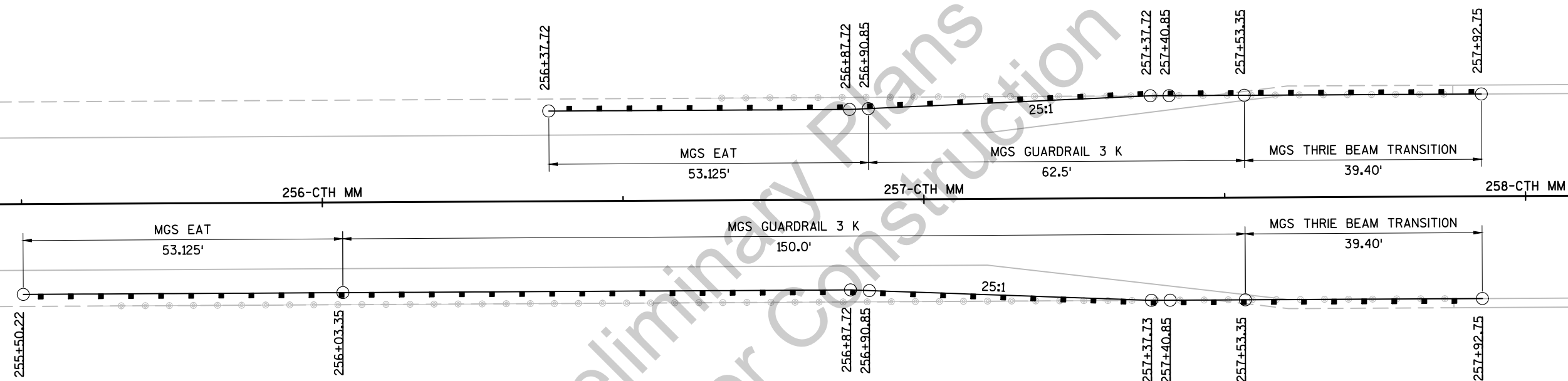


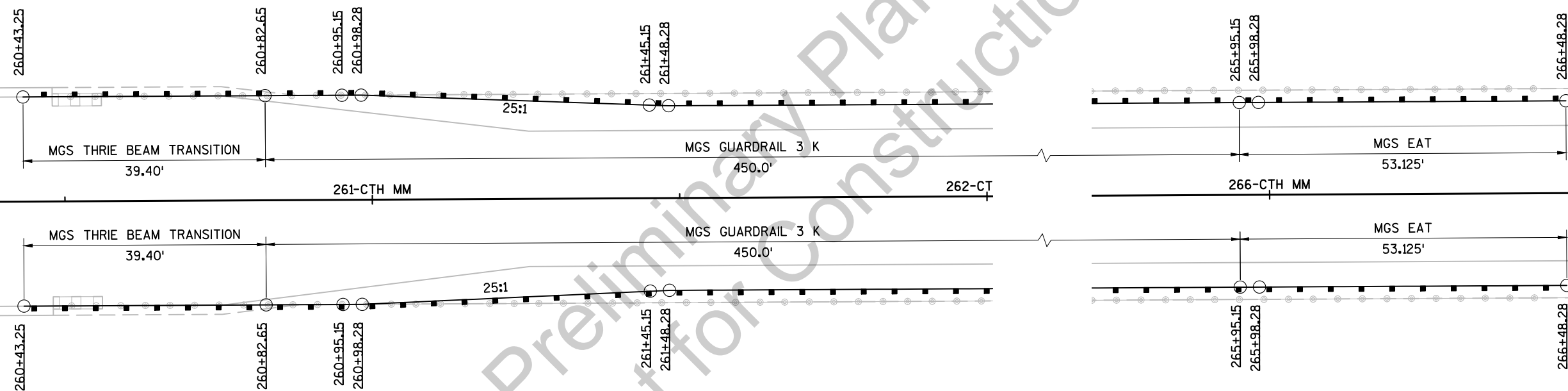


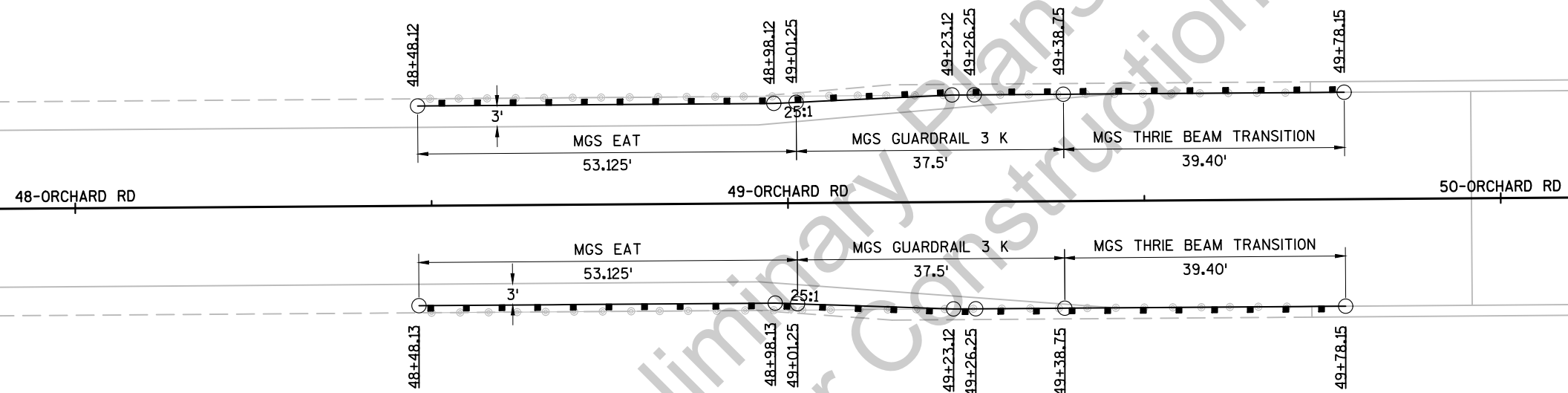


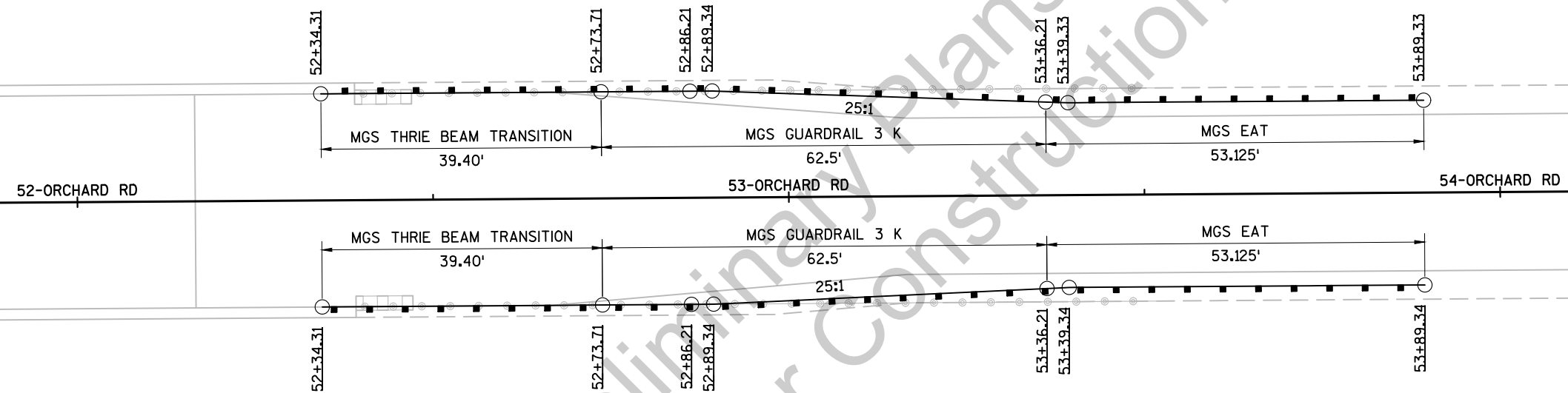




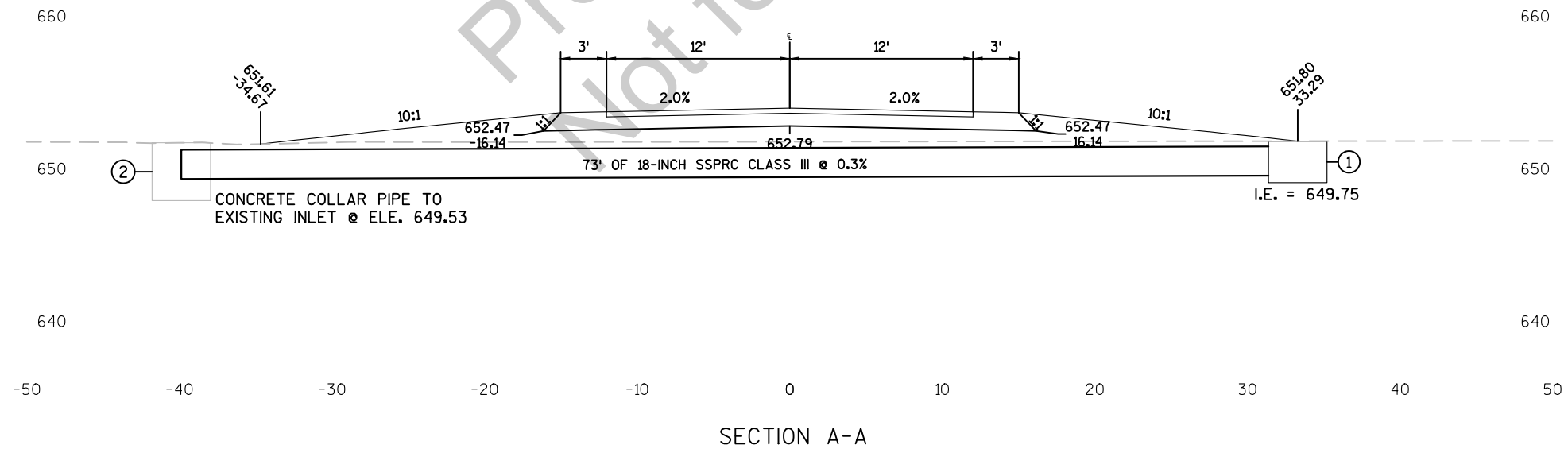
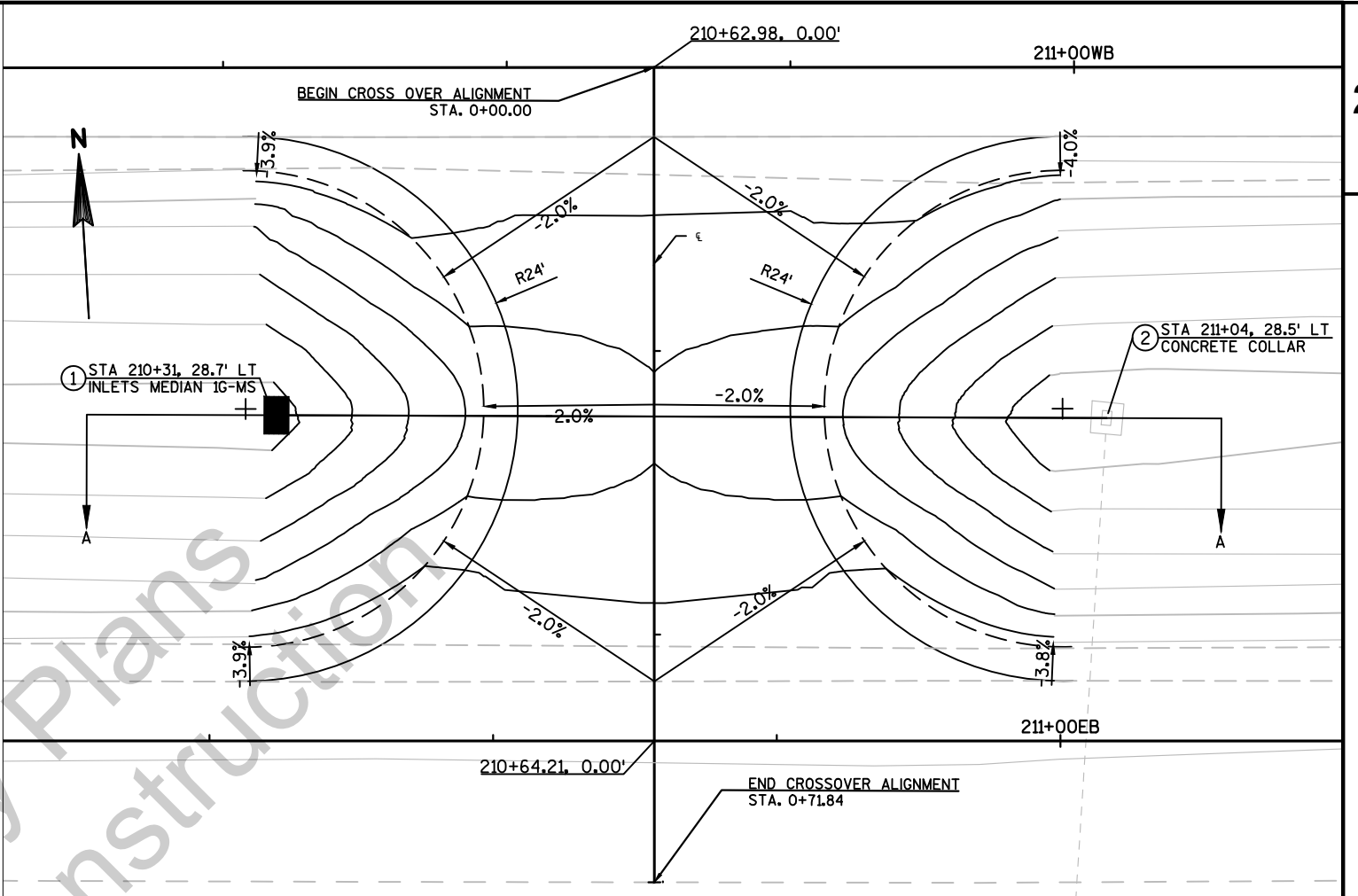
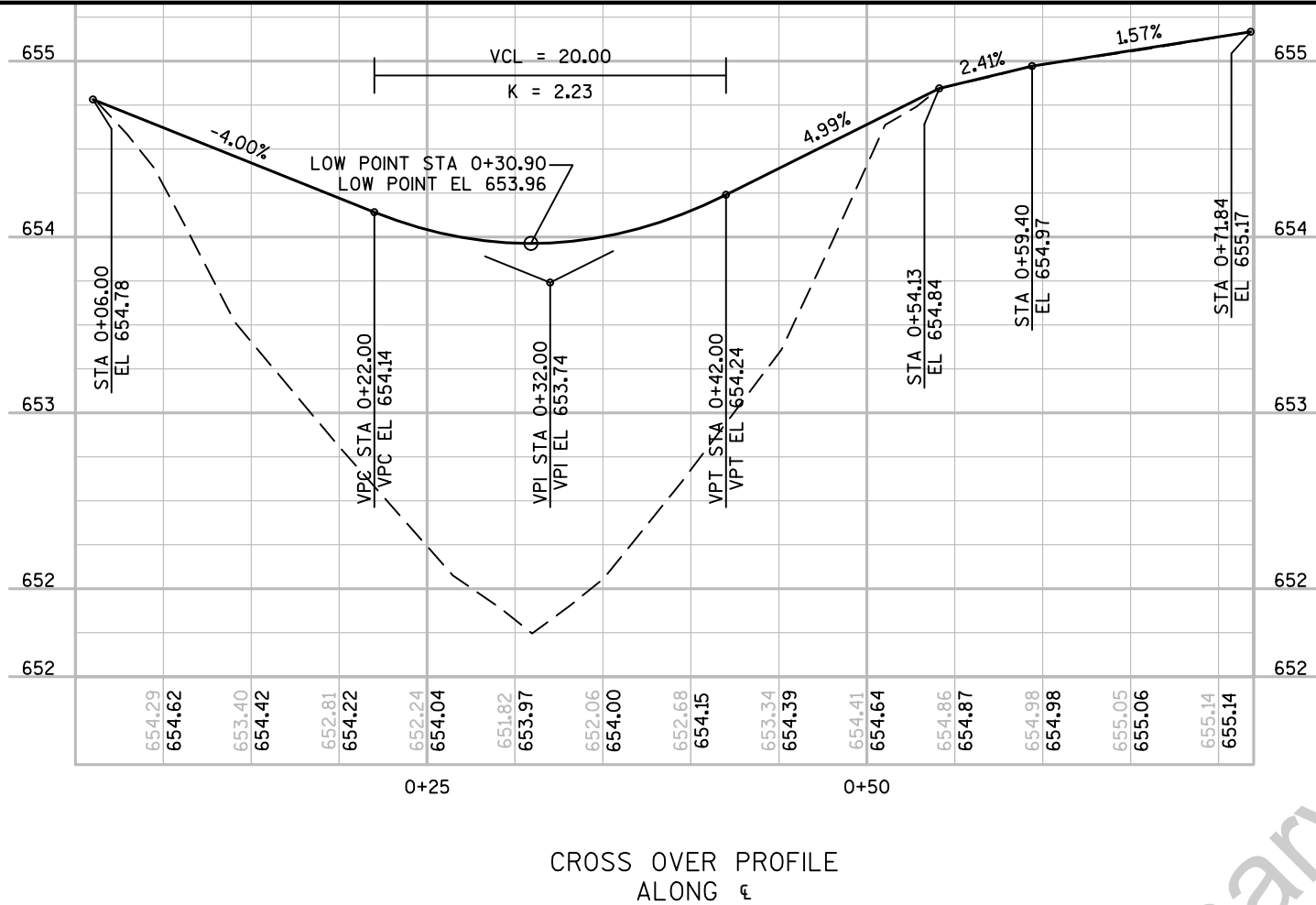


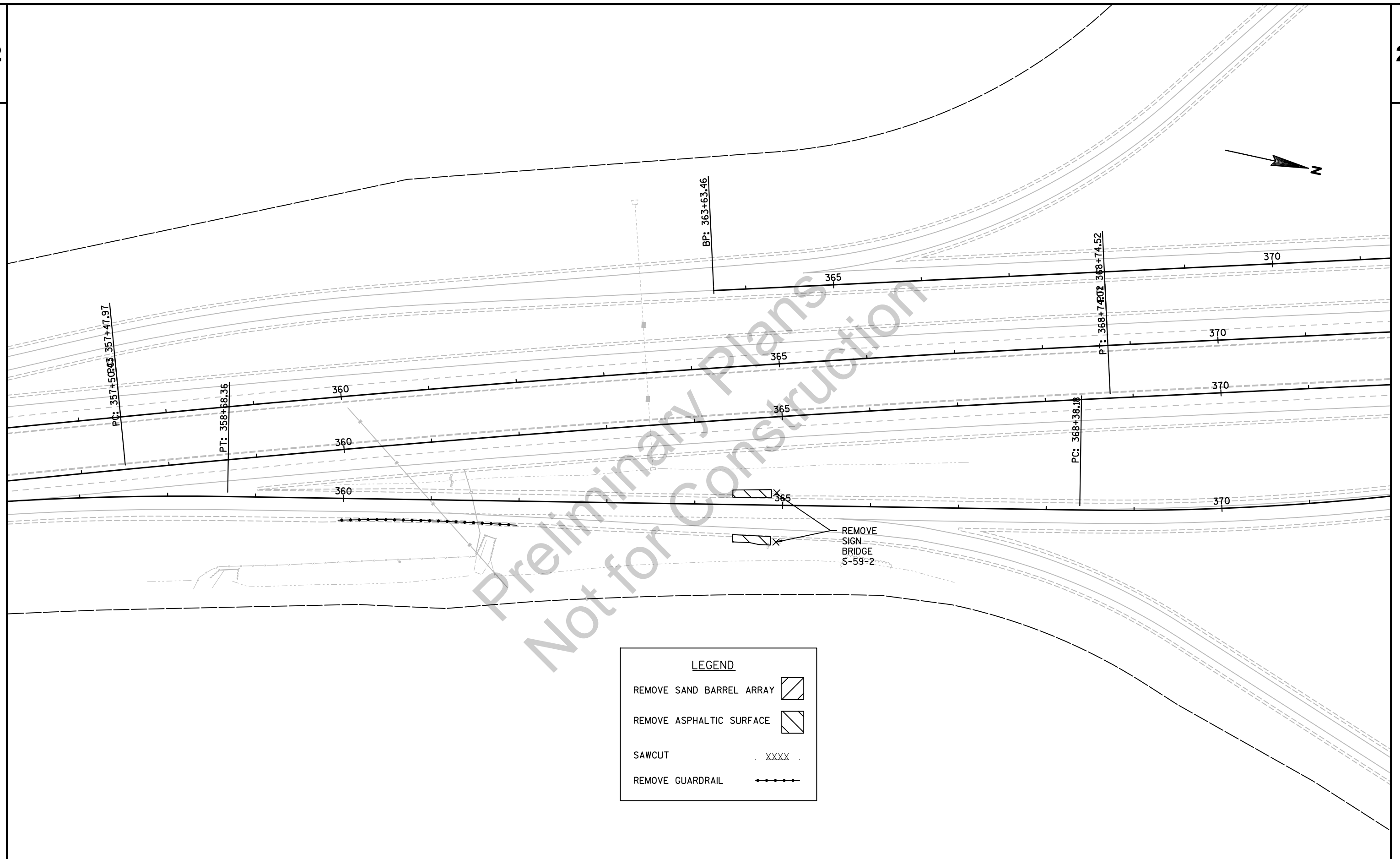




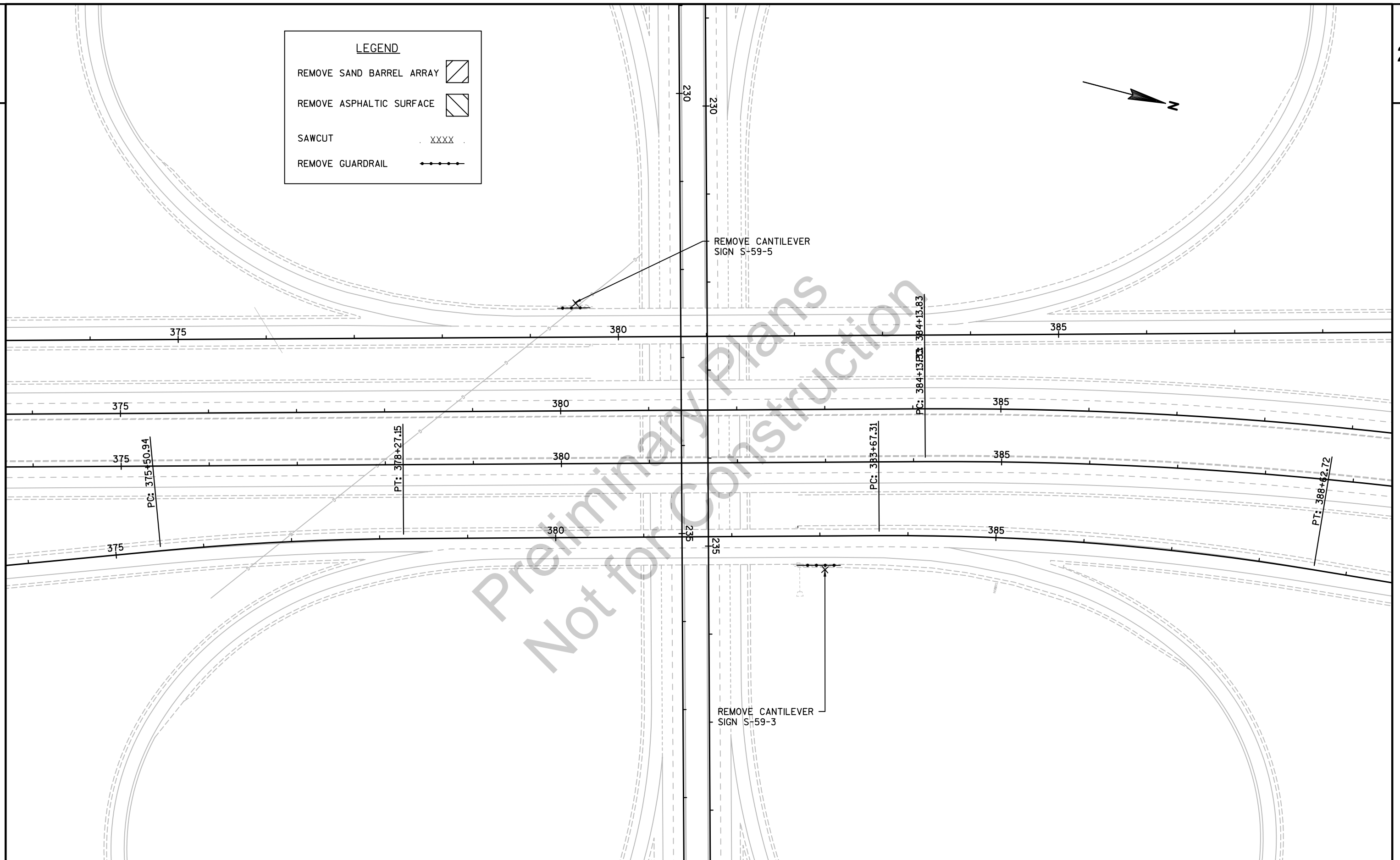


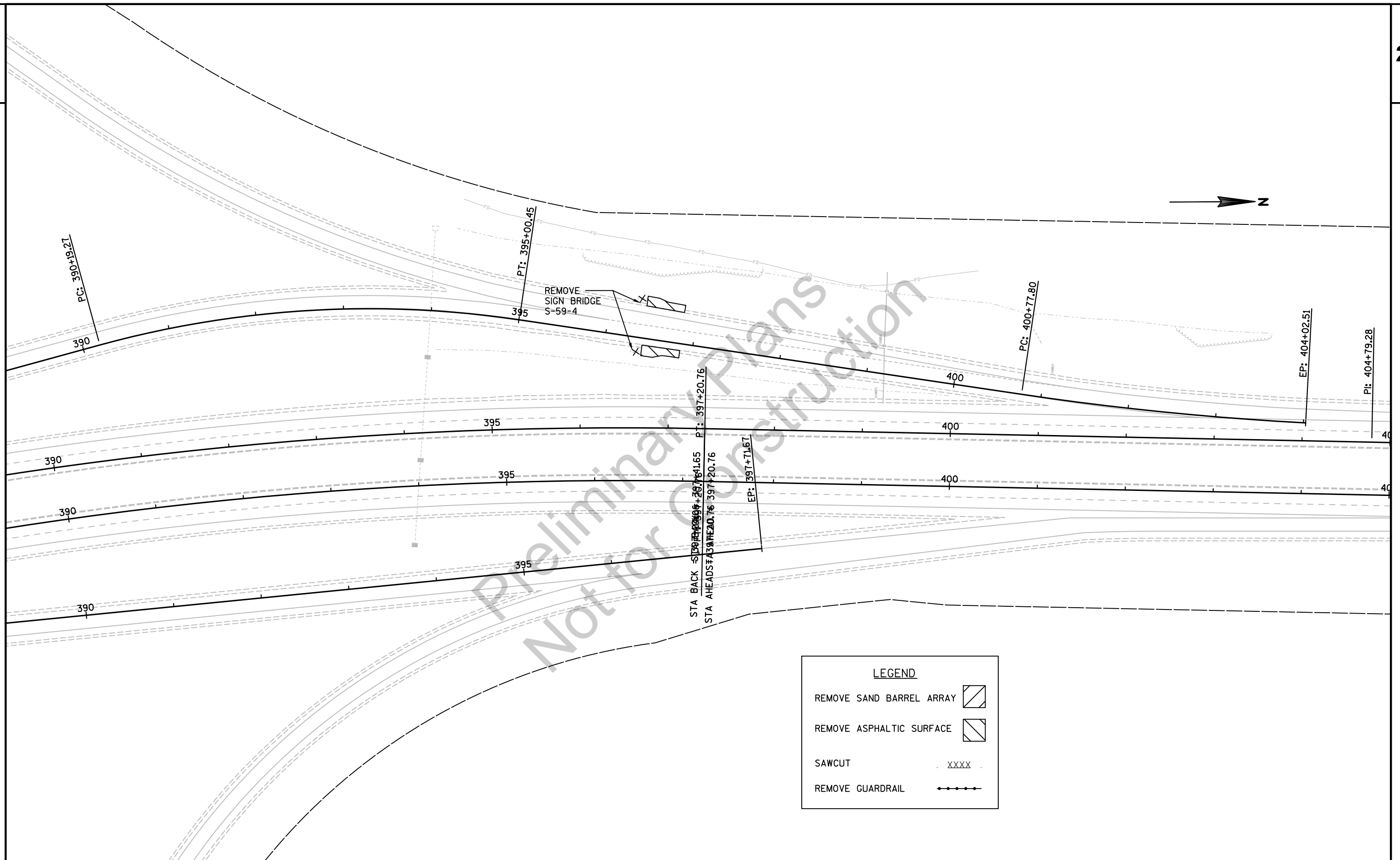
2



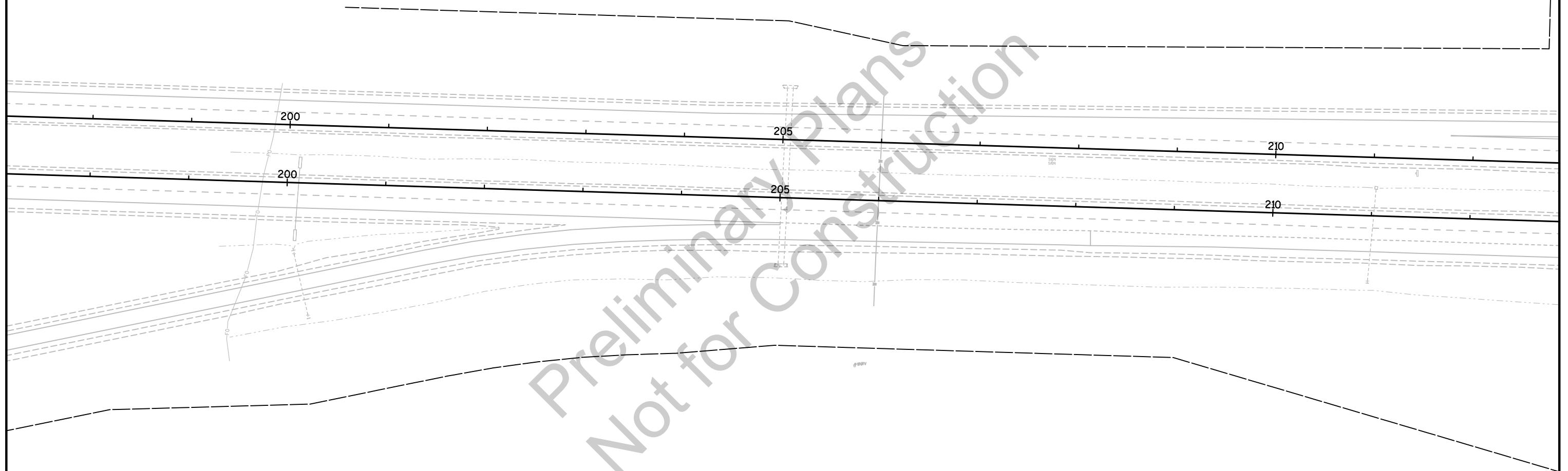


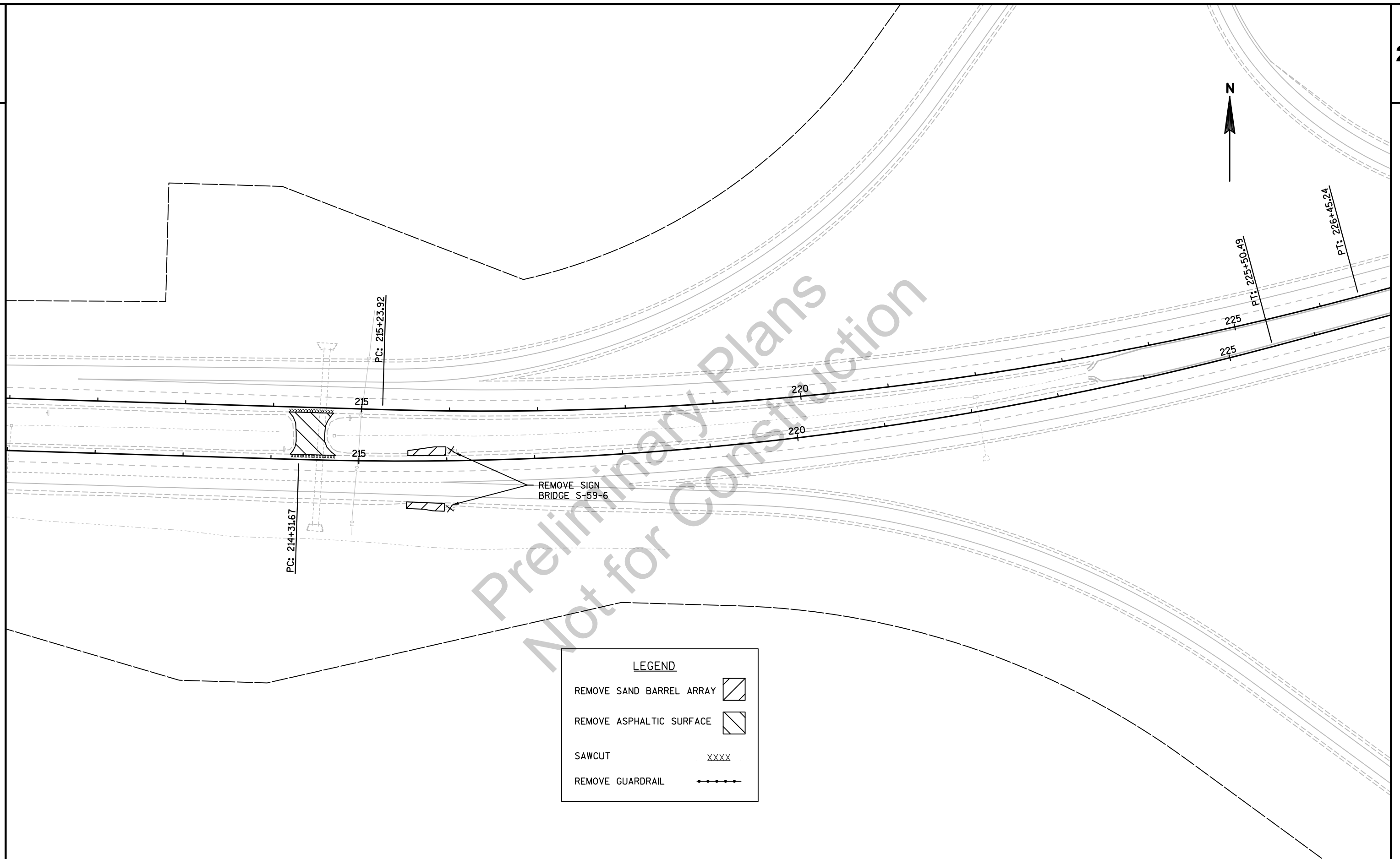
LEGEND	
REMOVE SAND BARREL ARRAY	
REMOVE ASPHALTIC SURFACE	
SAWCUT	. XXXX .
REMOVE GUARDRAIL	•••••

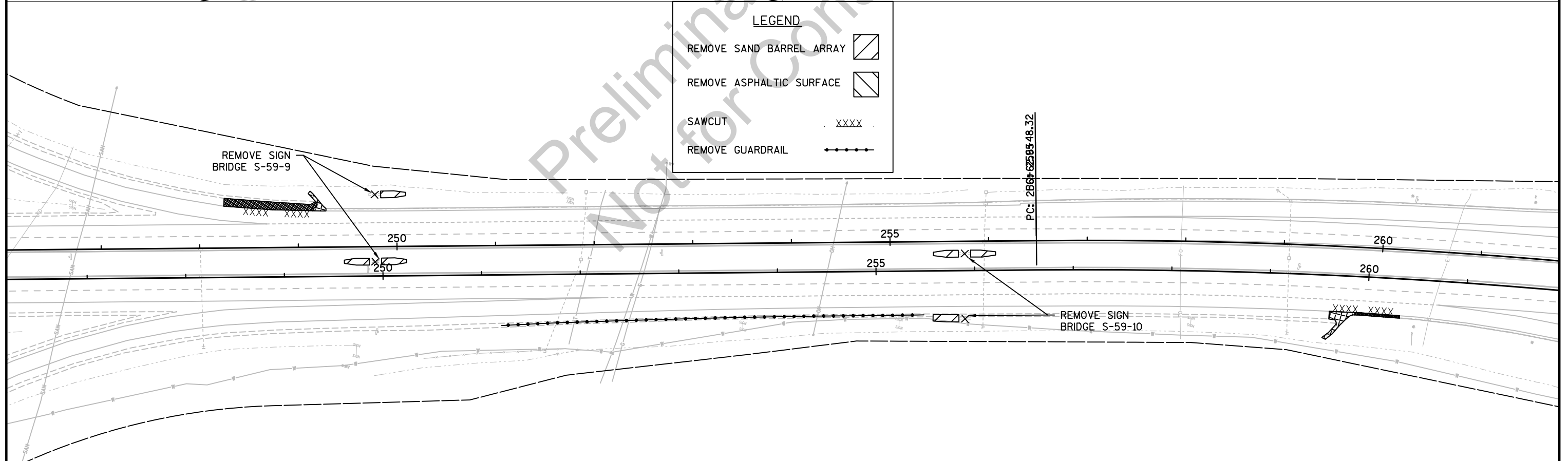
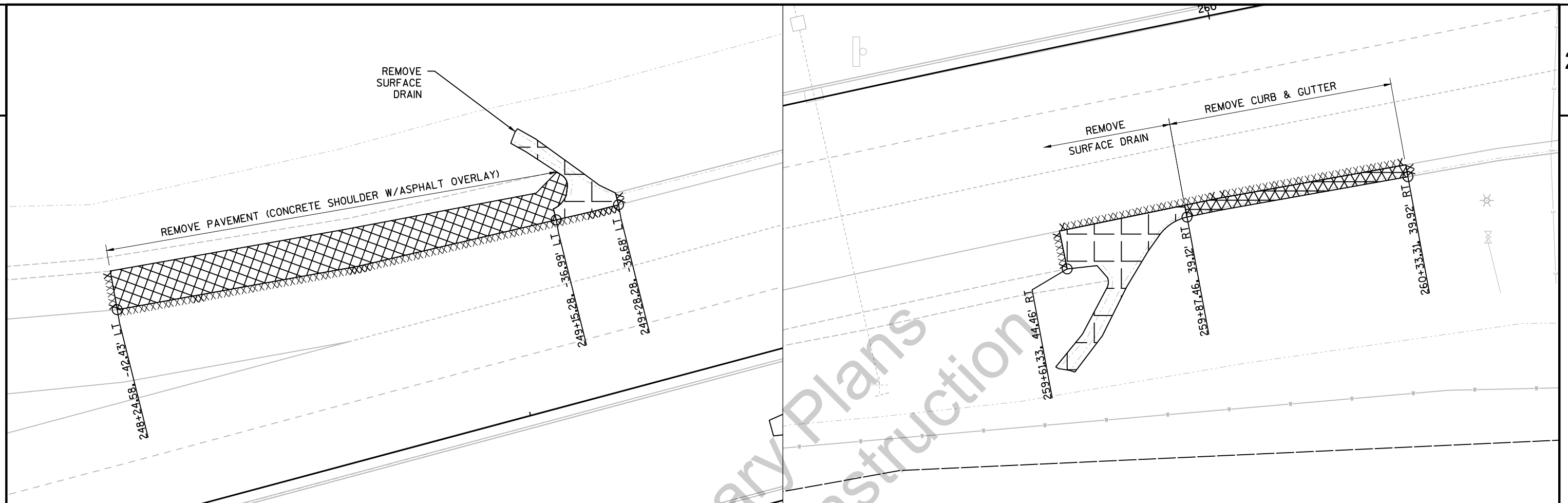




LEGEND	
REMOVE SAND BARREL ARRAY	
REMOVE ASPHALTIC SURFACE	
SAWCUT	
REMOVE GUARDRAIL	

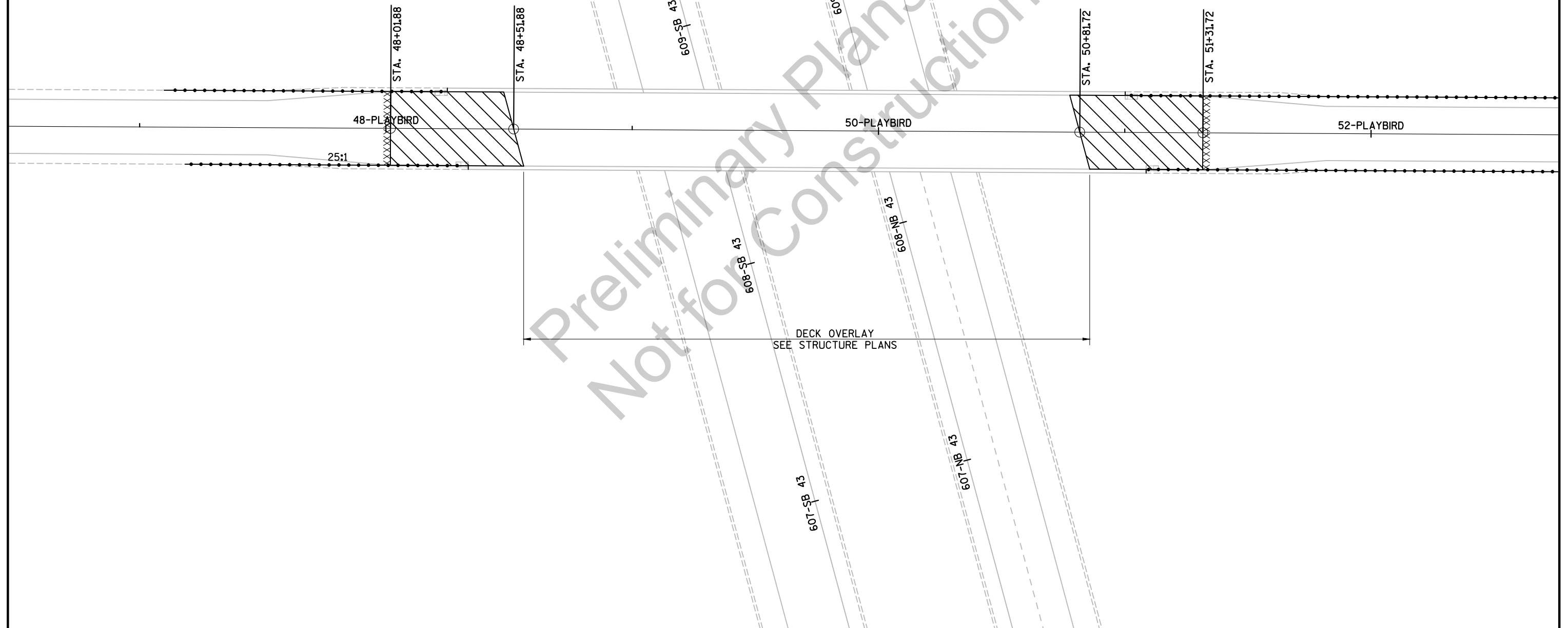




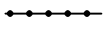


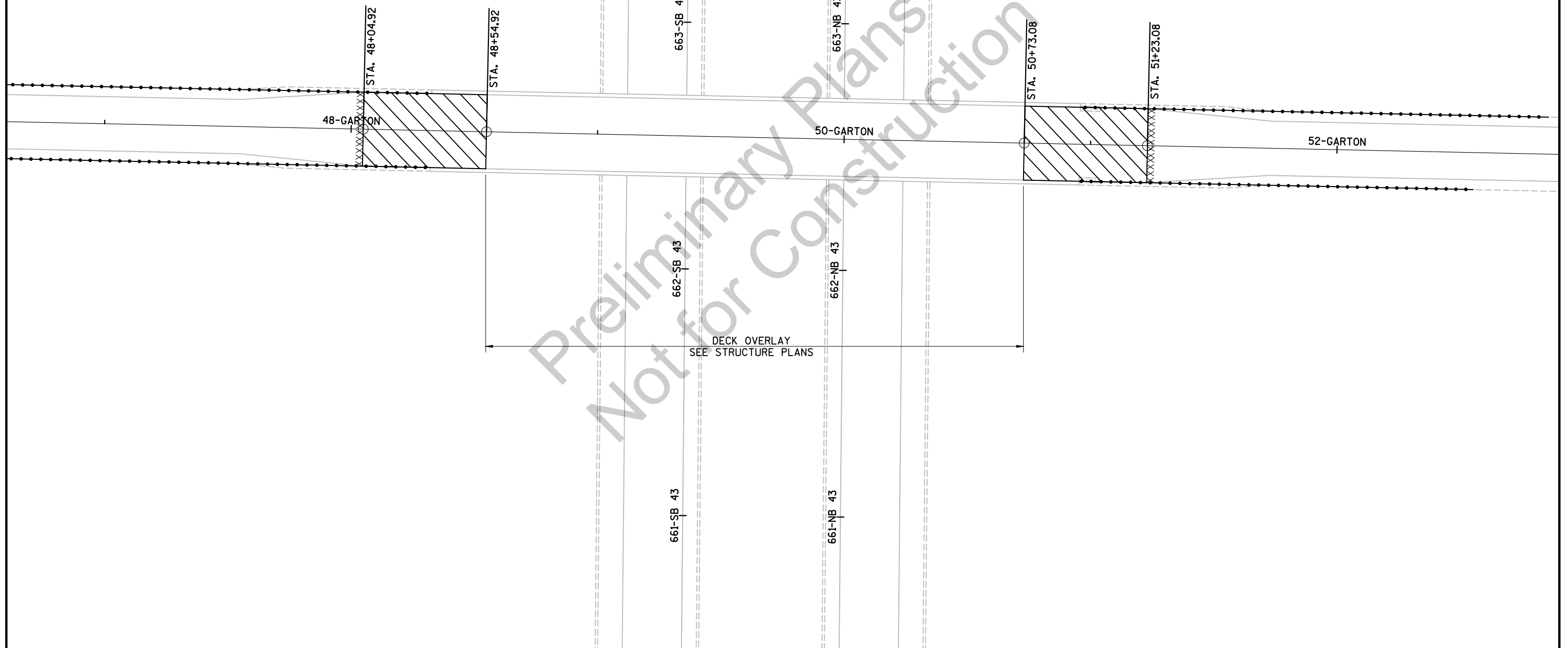
LEGEND

- REMOVE SAND BARREL ARRAY 
- REMOVE ASPHALTIC SURFACE 
- SAWCUT 
- REMOVE GUARDRAIL 



LEGEND

- REMOVE SAND BARREL ARRAY 
- REMOVE ASPHALTIC SURFACE 
- SAWCUT 
- REMOVE GUARDRAIL 



LEGEND

REMOVE SAND BARREL ARRAY



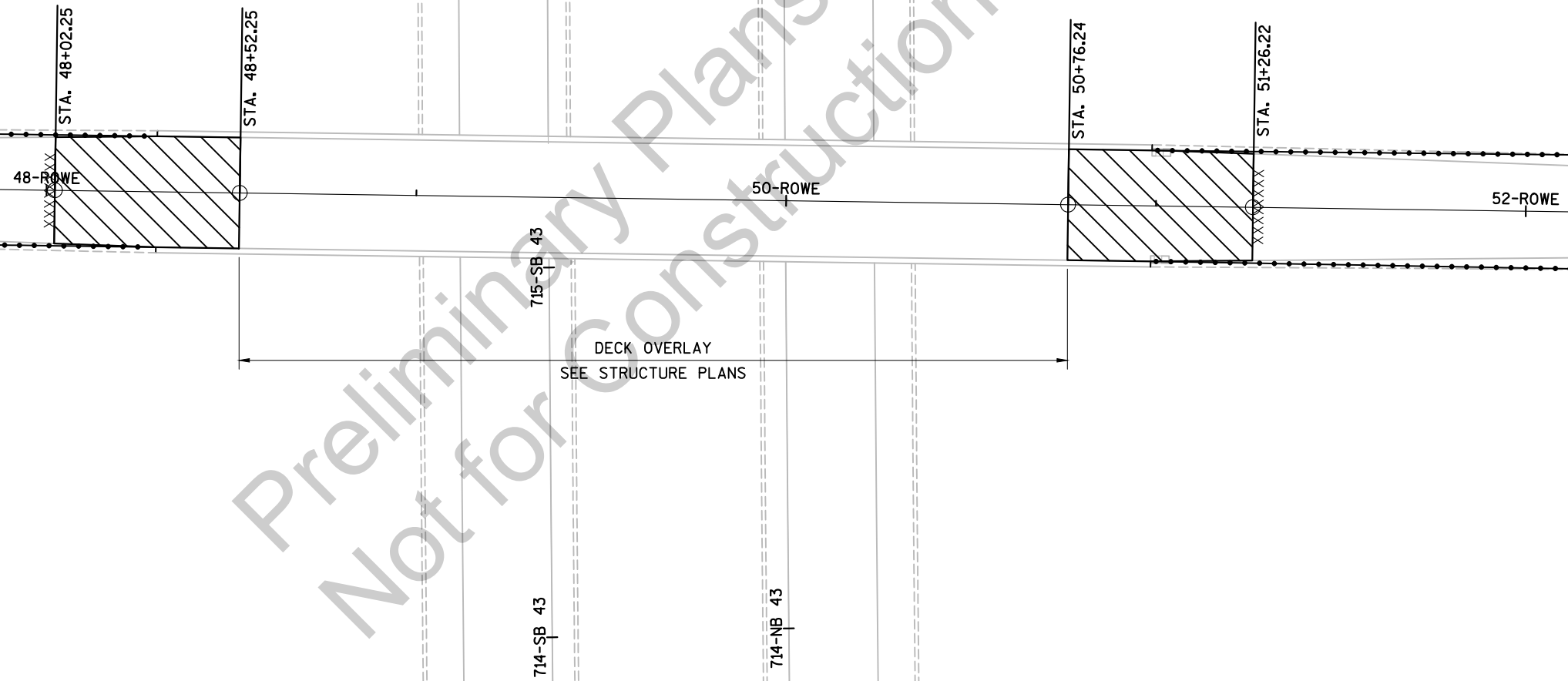
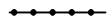
REMOVE ASPHALTIC SURFACE



SAWCUT

. XXXX .

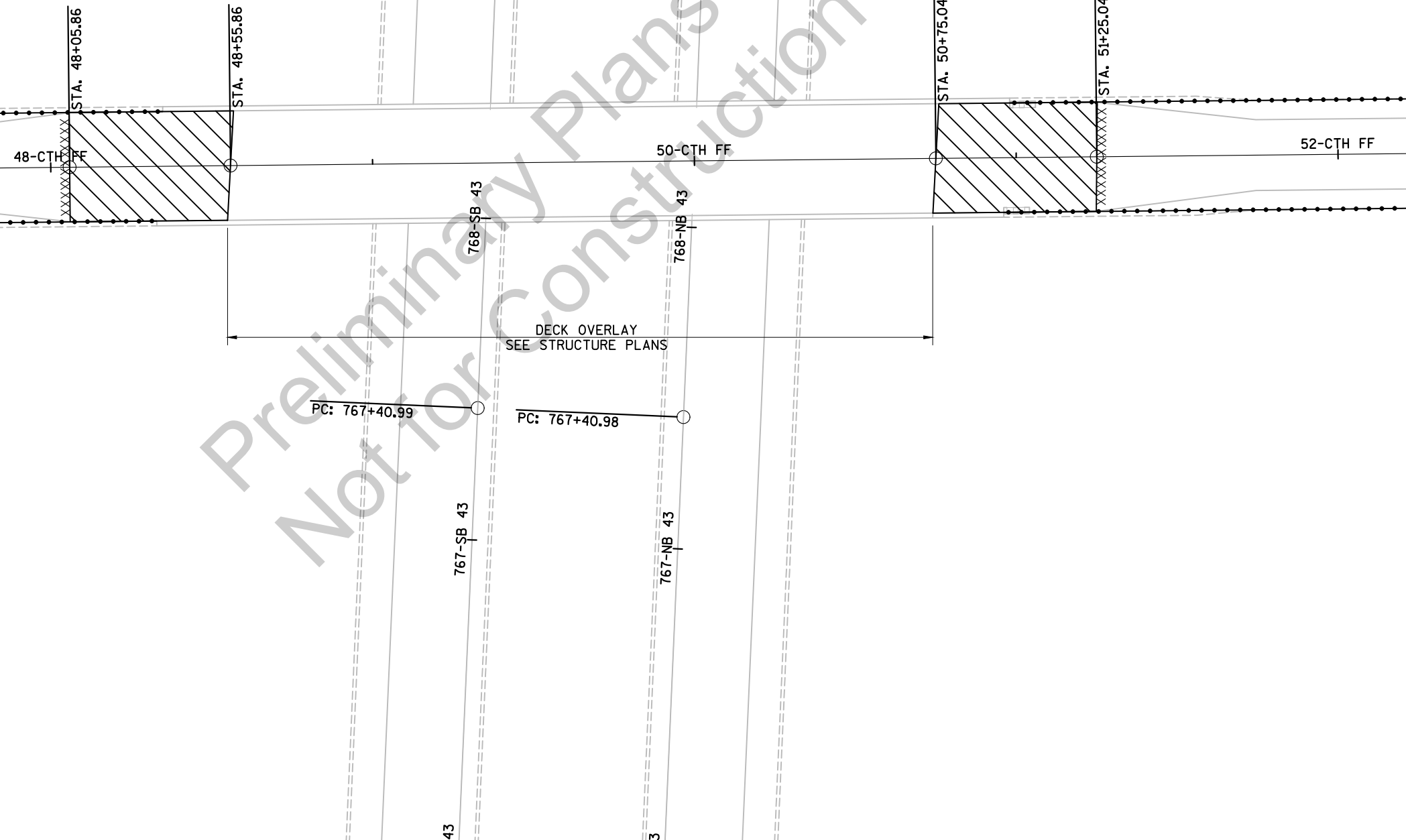
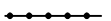
REMOVE GUARDRAIL



LEGEND

REMOVE SAND BARREL ARRAY REMOVE ASPHALTIC SURFACE 

SAWCUT . XXXX .

REMOVE GUARDRAIL 

PROJECT NO:1225-08-73

HWY:IH 43

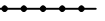
COUNTY:SHEBOYGAN

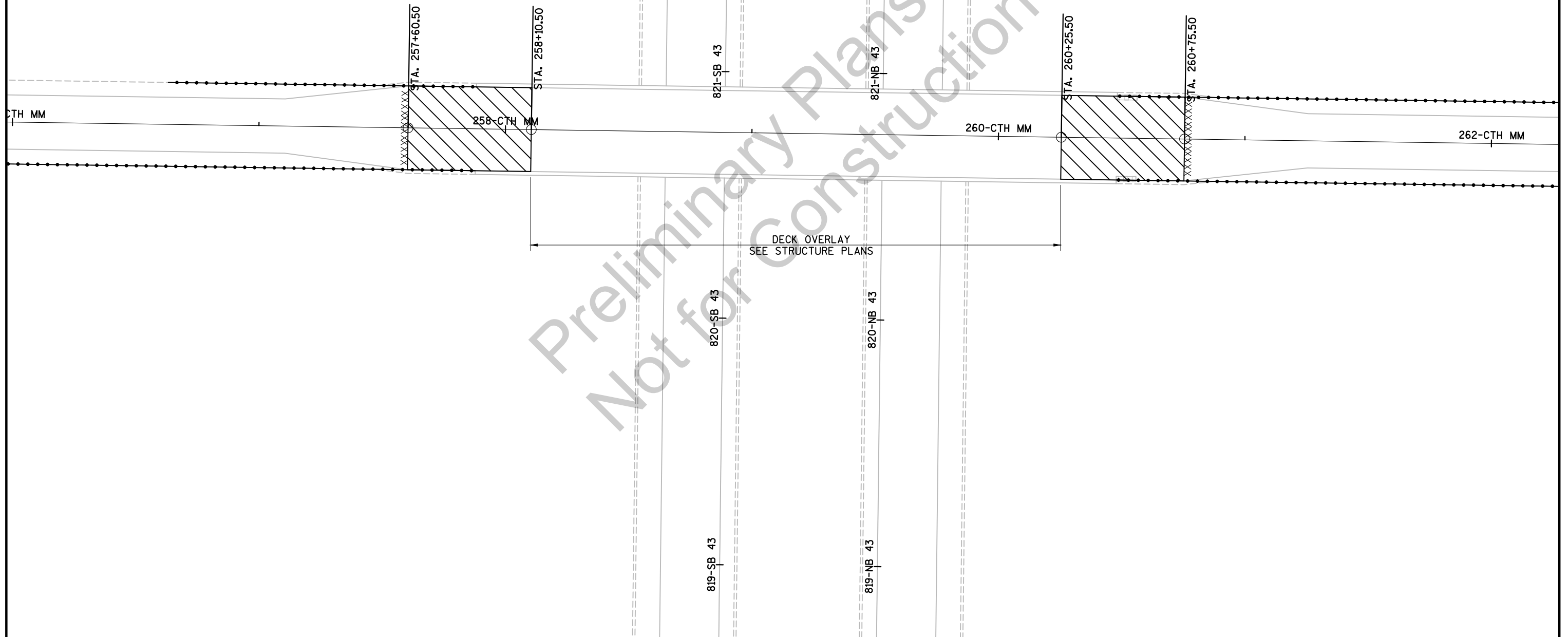
REMOVAL PLAN: CTH FF

SHEET

E

LEGEND

- REMOVE SAND BARREL ARRAY 
- REMOVE ASPHALTIC SURFACE 
- SAWCUT 
- REMOVE GUARDRAIL 



LEGEND

REMOVE SAND BARREL ARRAY



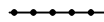
REMOVE ASPHALTIC SURFACE



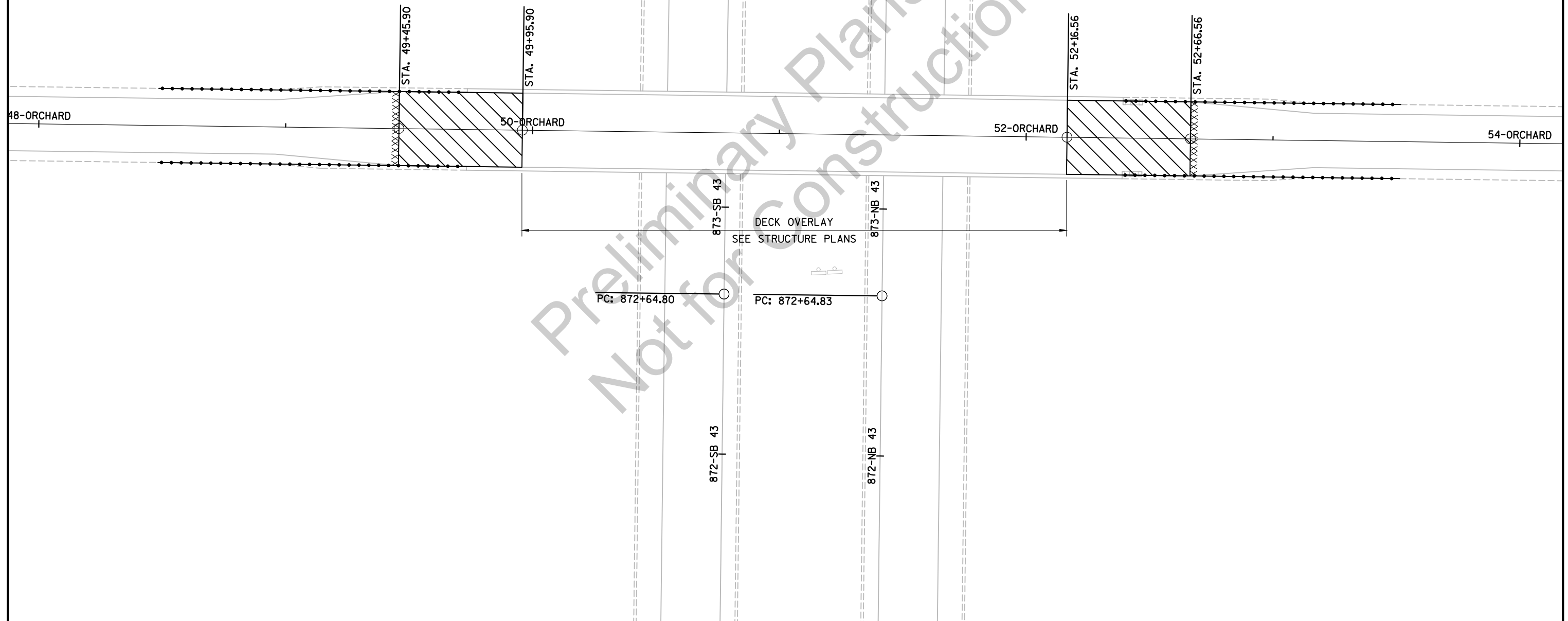
SAWCUT

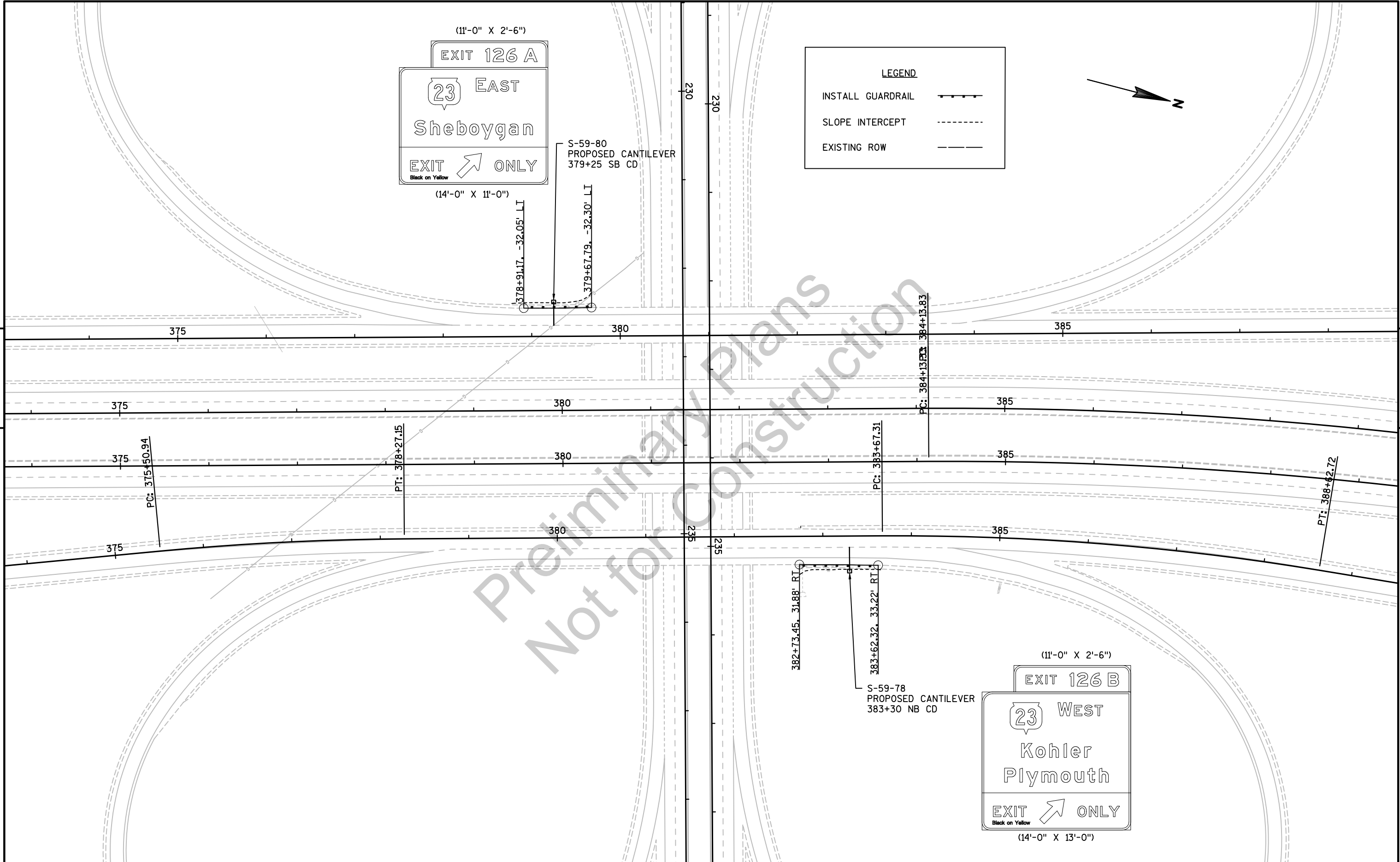
XXXX

REMOVE GUARDRAIL



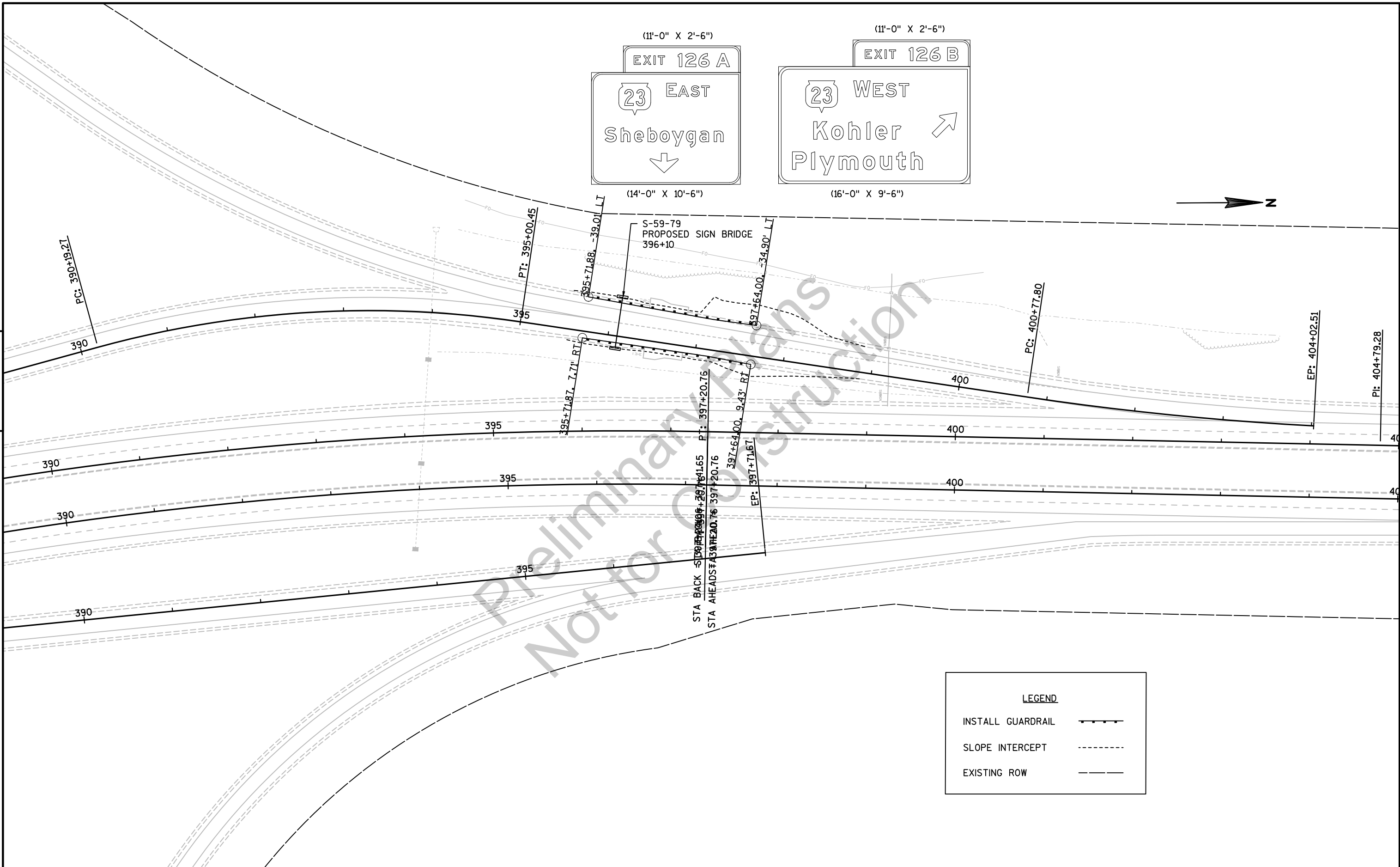
N





5

5



LEGEND

INSTALL GUARDRAIL - - - - -

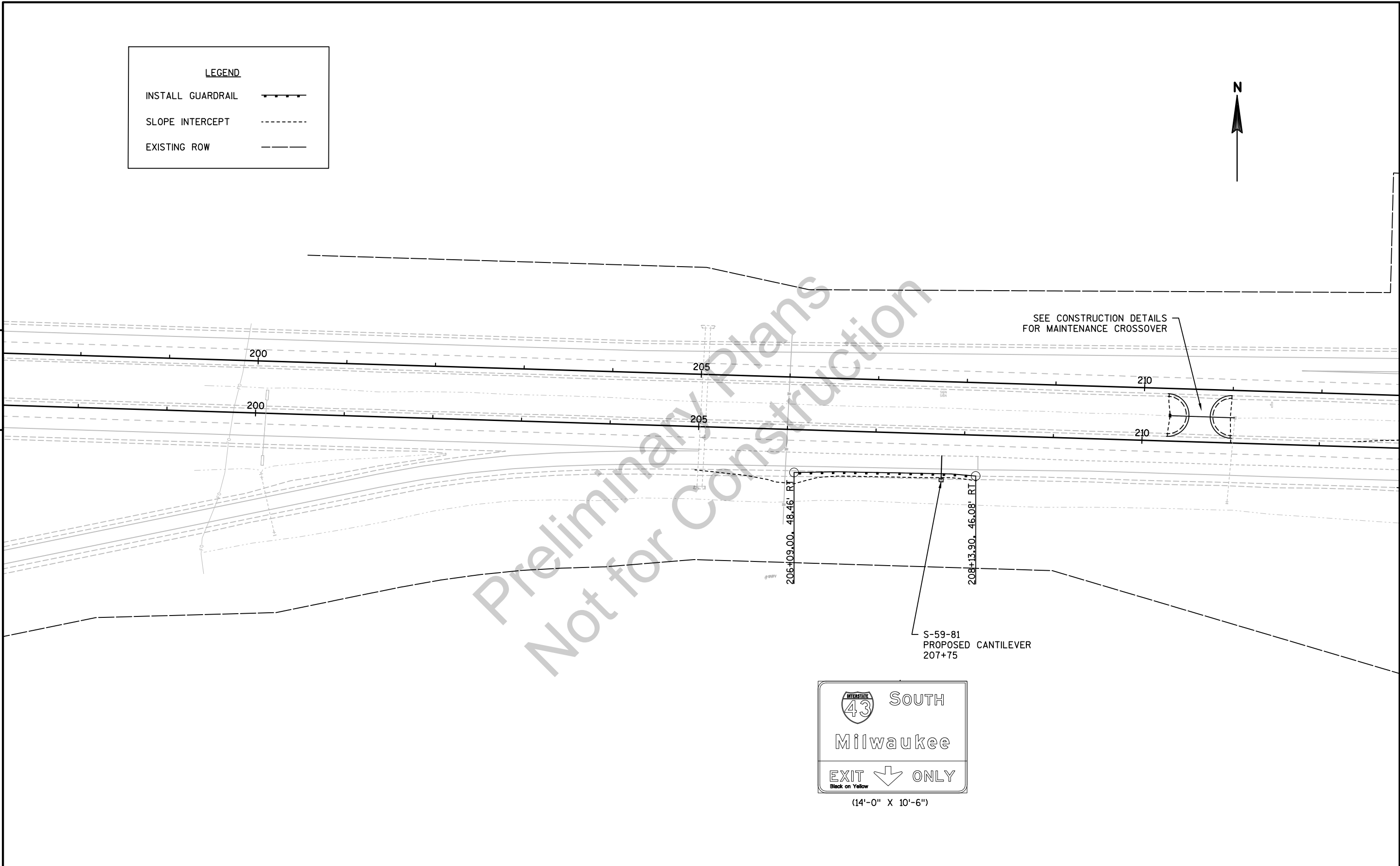
SLOPE INTERCEPT - - - - -

EXISTING ROW - - - - -



5

5



INTERSTATE

43

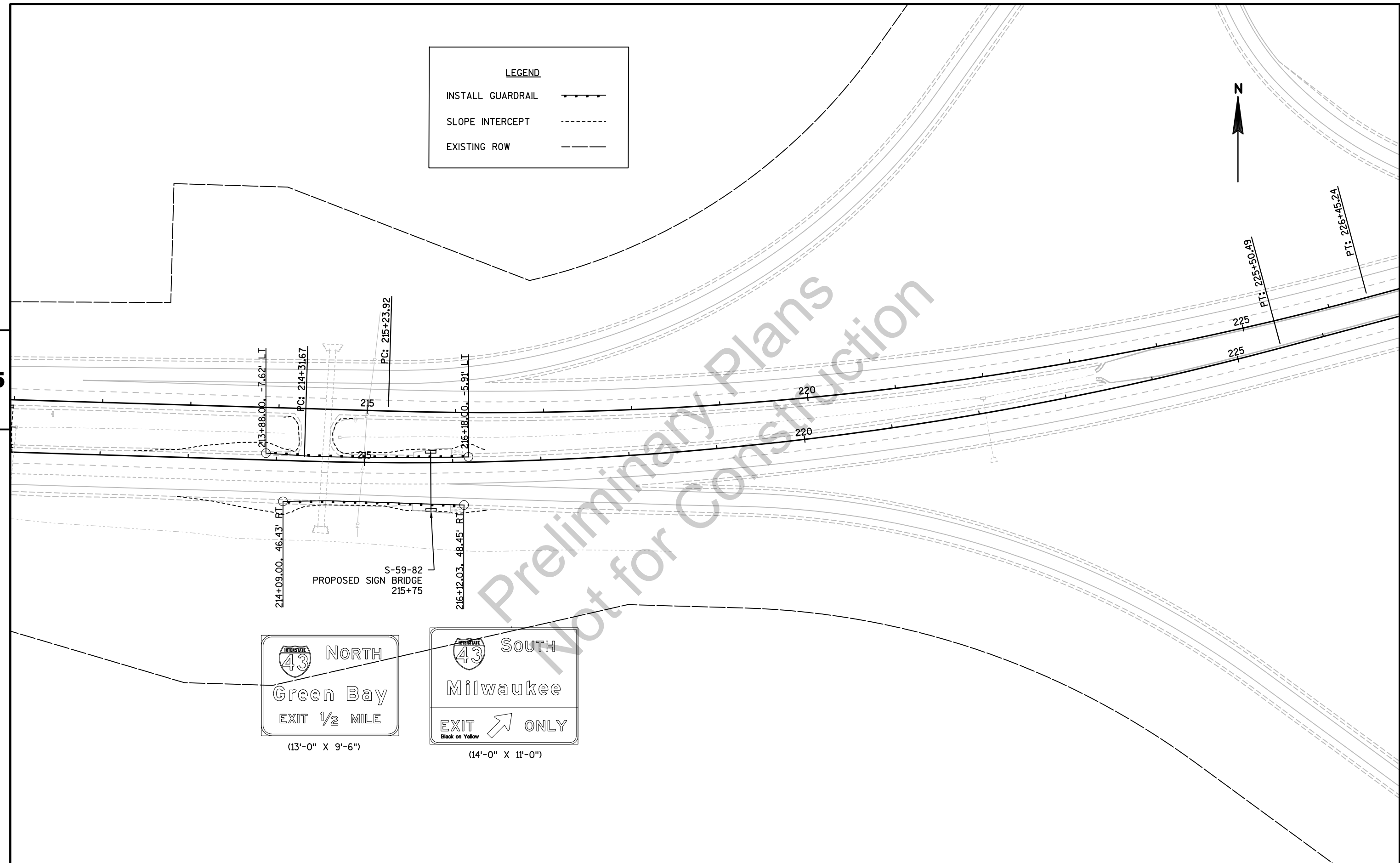
SOUTH

Milwaukee

EXIT  ONLY

Black on Yellow

(14'-0" X 10'-6")



PROJECT NO:1225-08-73

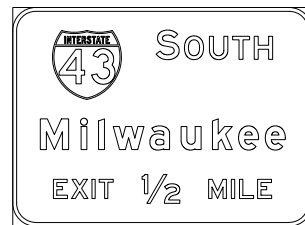
HWY:IH 43

COUNTY:SHEBOYGAN

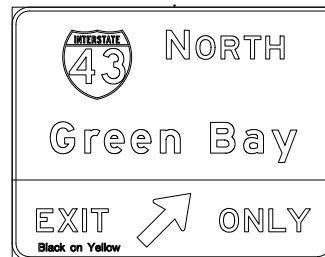
PLAN

SHEET

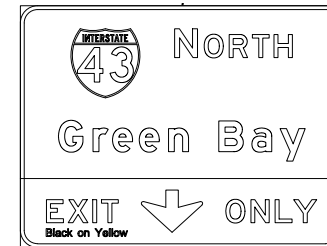
E



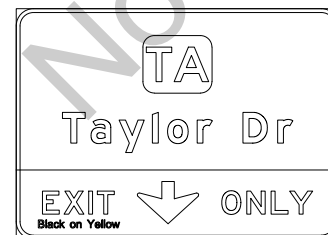
(13'-0" X 9'-6")



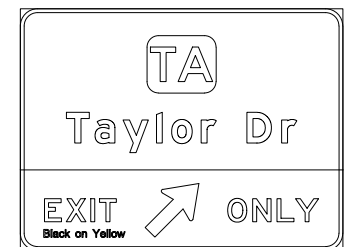
(14'-0" X 10'-6")



(14'-0" X 10'-6")

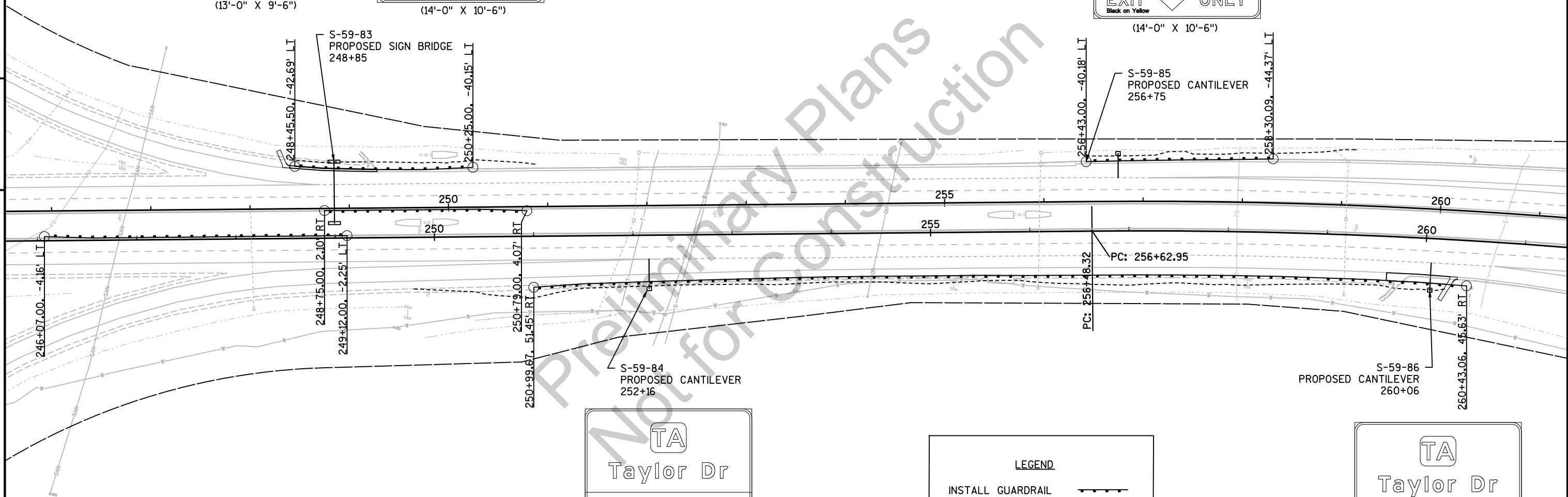


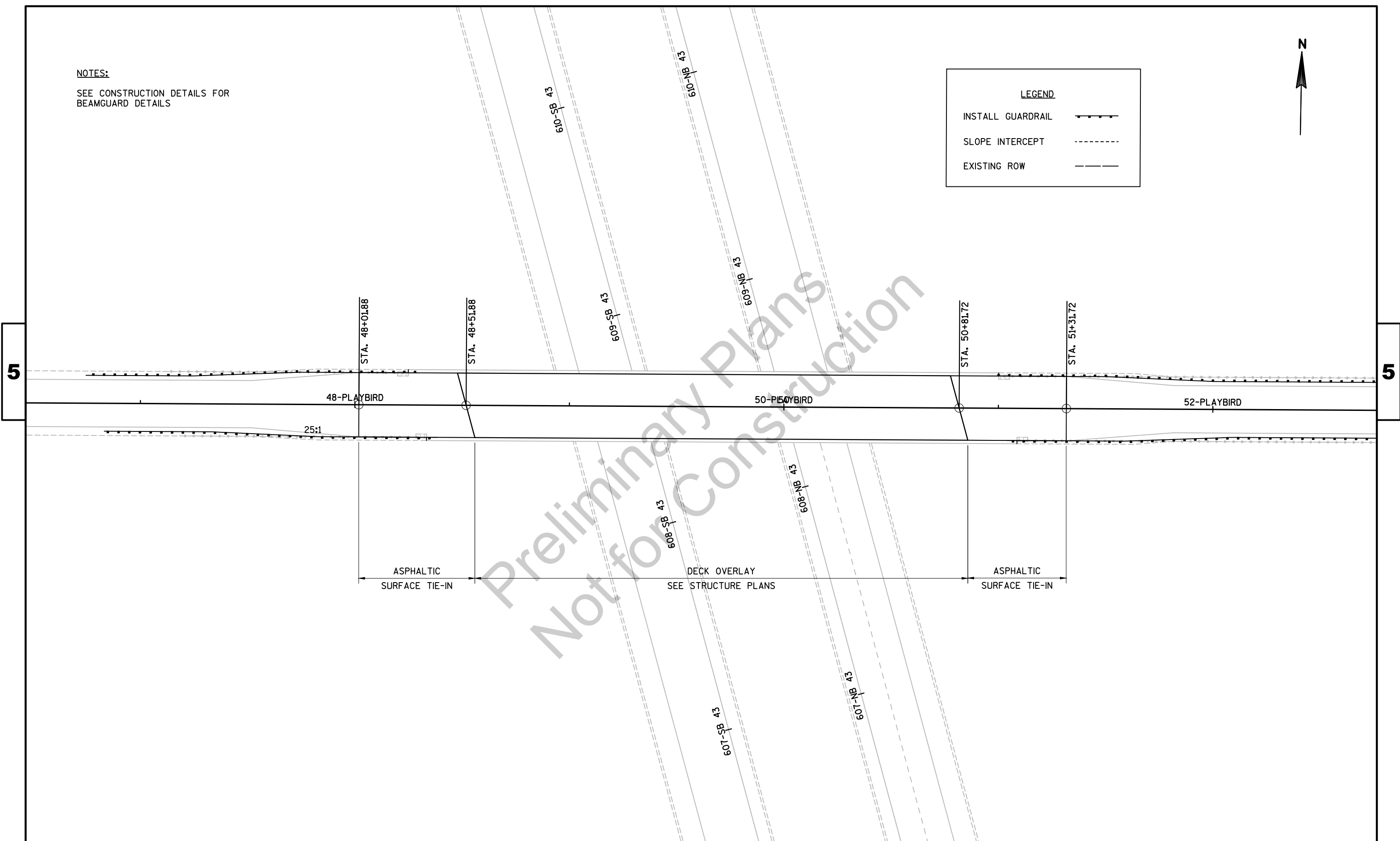
(14'-0" X 10'-0")



(14'-0" X 10'-6")

LEGEND	
INSTALL GUARDRAIL	----
SLOPE INTERCEPT	-----
EXISTING ROW	-----





NOTES:
SEE CONSTRUCTION DETAILS FOR
BEAMGUARD DETAILS

LEGEND

INSTALL GUARDRAIL

SLOPE INTERCEPT

EXISTING ROW



5

5

NOTES:

SEE CONSTRUCTION DETAILS FOR
BEAMGUARD DETAILS

LEGEND

INSTALL GUARDRAIL



SLOPE INTERCEPT



EXISTING ROW



5

5

48-GARTON

50-GARTON

52-GARTON

ASPHALTIC
SURFACE TIE-IN

DECK OVERLAY
SEE STRUCTURE PLANS

ASPHALTIC
SURFACE TIE-IN

664-SB 43

664-NB 43

663-SB 43

663-NB 43

662-SB 43

662-NB 43

661-SB 43

661-NB 43

PROJECT NO:1225-08-73

HWY: IH 43

COUNTY: SHEBOYGAN

PLAN: GARTON ROAD

SHEET

E

NOTES:

SEE CONSTRUCTION DETAILS FOR
BEAMGUARD DETAILS

LEGEND

INSTALL GUARDRAIL

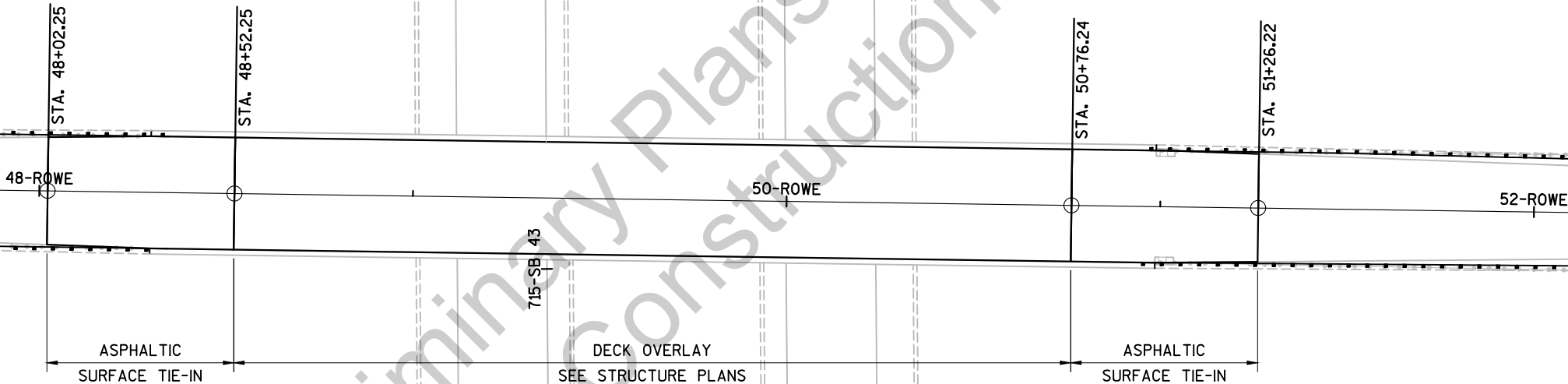
SLOPE INTERCEPT

EXISTING ROW



5

5



PROJECT NO:1225-08-73

HWY:IH 43

COUNTY:SHEBOYGAN

PLAN: ROWE ROAD

SHEET

E

NOTES:
SEE CONSTRUCTION DETAILS FOR
BEAMGUARD DETAILS

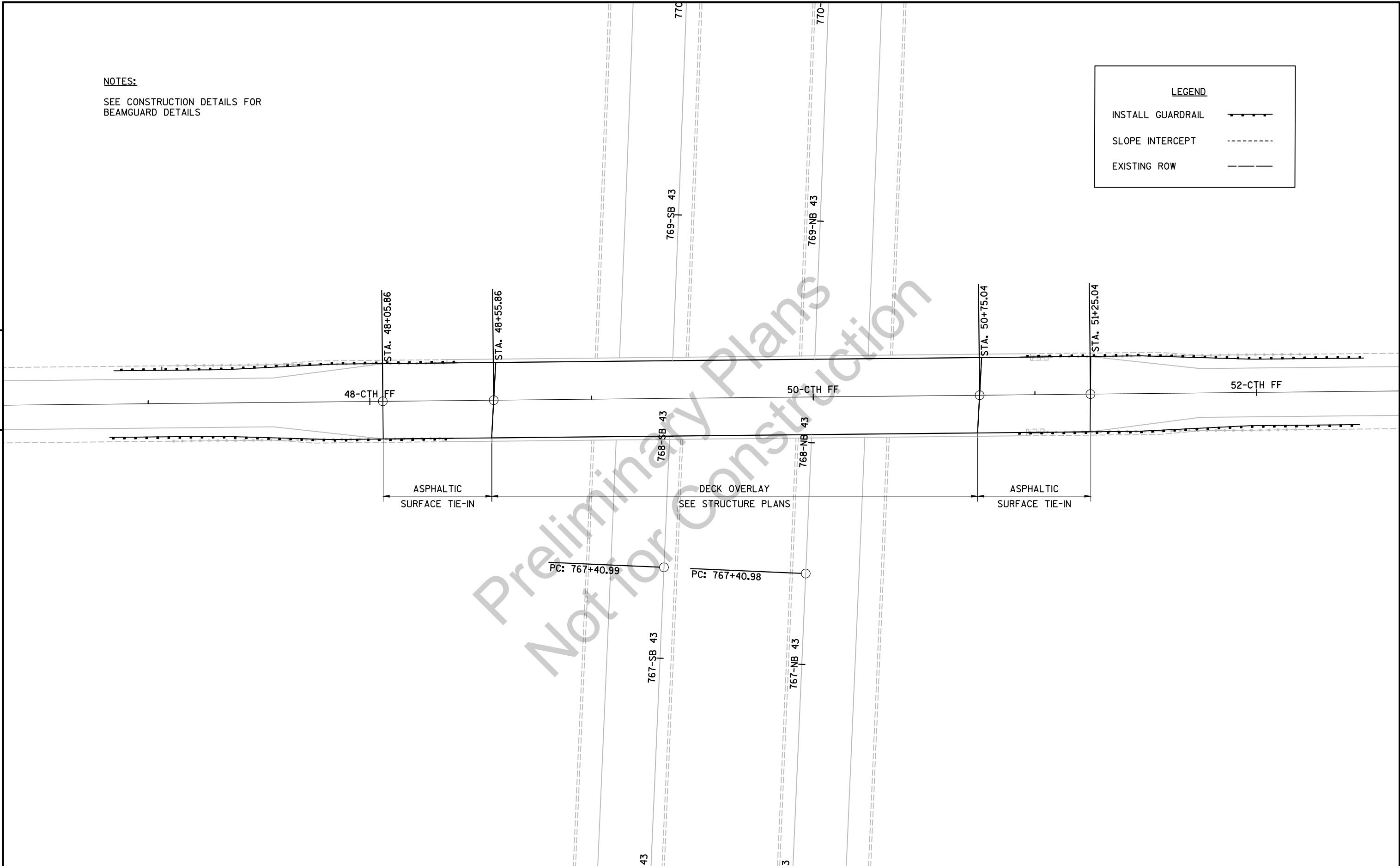
LEGEND

INSTALL GUARDRAIL

SLOPE INTERCEPT

EXISTING ROW

5



5

NOTES:

SEE CONSTRUCTION DETAILS FOR
BEAMGUARD DETAILS

LEGEND

INSTALL GUARDRAIL - - - - -
SLOPE INTERCEPT - - - - -
EXISTING ROW - - - - -



5

CTH MM

STA. 257+60.50

STA. 258+10.50

258-CTH MM

821-SB 43

822-SB 43

821-NB 43

822-NB 43

STA. 260+25.50

260-CTH MM

STA. 260+75.50

262-CTH MM

5

ASPHALTIC
SURFACE TIE-IN

DECK OVERLAY
SEE STRUCTURE PLANS

ASPHALTIC
SURFACE TIE-IN

820-SB 43

819-SB 43

820-NB 43

819-NB 43

PROJECT NO:1225-08-73

HWY:IH 43

COUNTY:SHEBOYGAN

PLAN: CTH MM

SHEET

E

NOTES:

SEE CONSTRUCTION DETAILS FOR
BEAMGUARD DETAILS

LEGEND

INSTALL GUARDRAIL - - - - -
SLOPE INTERCEPT - - - - -
EXISTING ROW - - - - -



5

48-ORCHARD

STA. 49+45.90

STA. 49+95.90

50-ORCHARD

875-SB 43

874-SB 43

PT: 873+97.94

STA AHEAD = 873+97.94

STA BACK = 873+97.94

875-NB 43

874-NB 43

PT: 873+97.71

STA. 52+16.56

52-ORCHARD

STA. 52+66.56

54-ORCHARD

5

ASPHALTIC
SURFACE TIE-IN

873-SB 43

DECK OVERLAY
SEE STRUCTURE PLANS

873-NB 43

ASPHALTIC
SURFACE TIE-IN

PC: 872+64.80

PC: 872+64.83

872-SB 43

872-NB 43

PROJECT NO:1225-08-73

HWY: IH 43

COUNTY: SHEBOYGAN

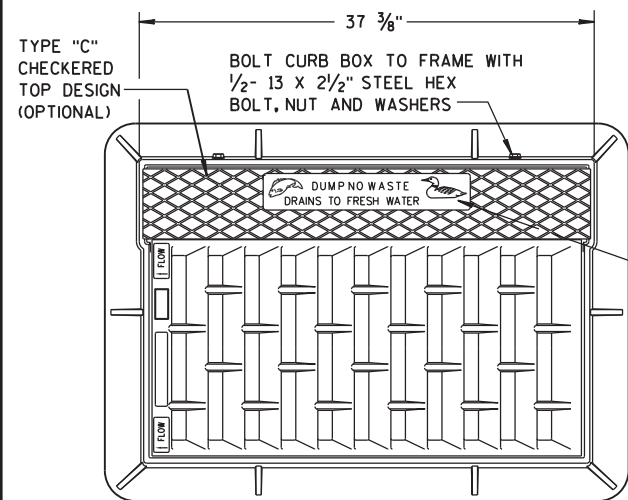
PLAN: ORCHARD ROAD

SHEET

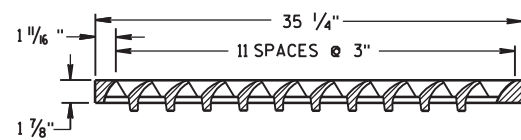
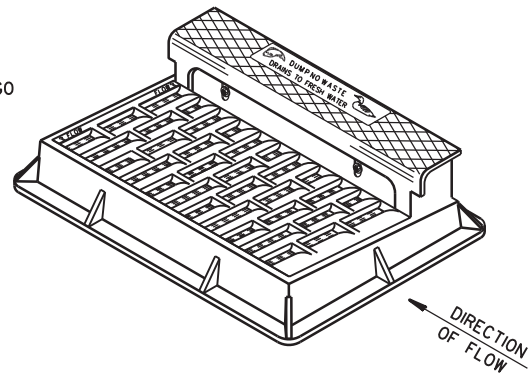
E



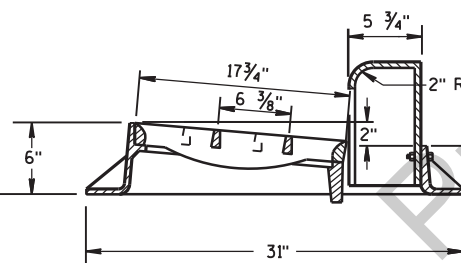
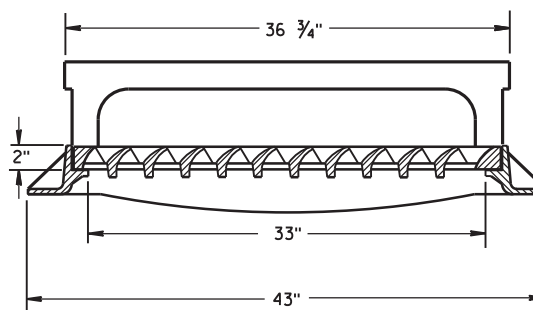
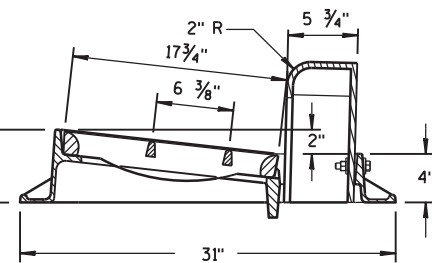
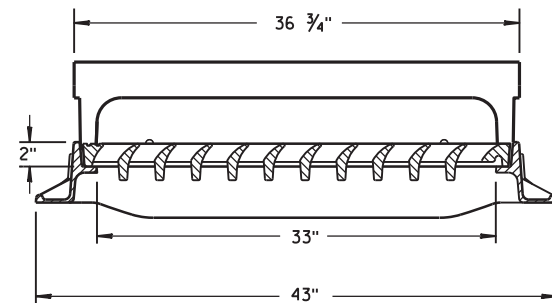
8A5 sheet a: Inlet Covers Type A, H, A-S, H-S & Z



NOTE:
GRATE IS REVERSIBLE.

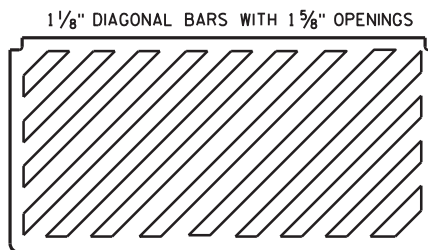


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"



TYPE "H"

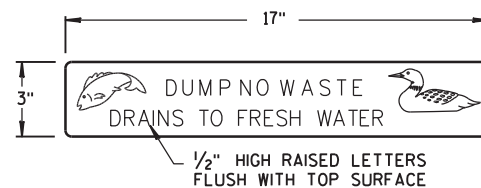
NOTE: EITHER CASTING IS ACCEPTABLE



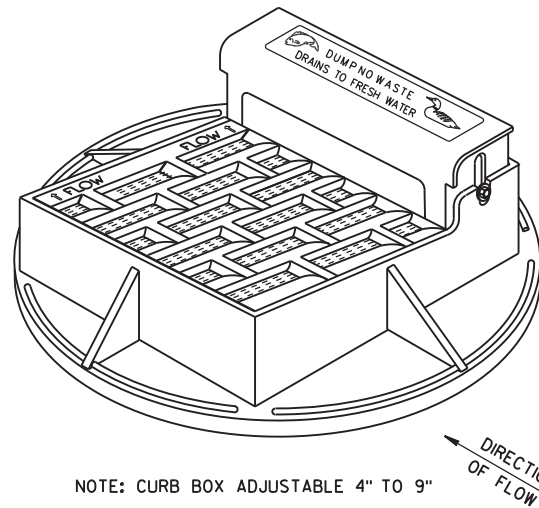
SPECIAL GRATE FOR
TYPE "H" COVER

(MEASURES 35 1/4" X 17 3/4" X 2")

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

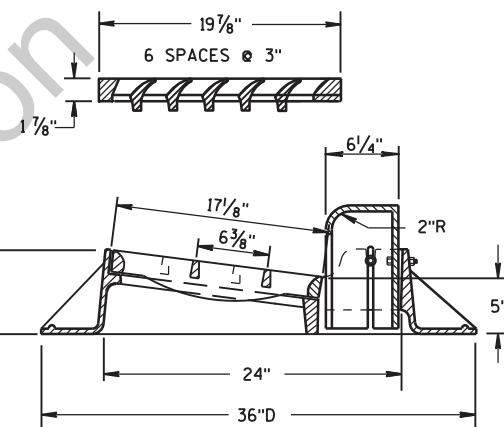
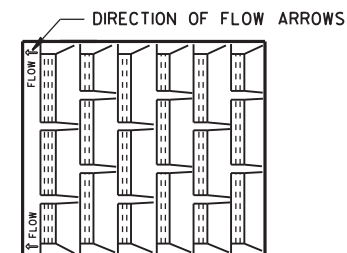
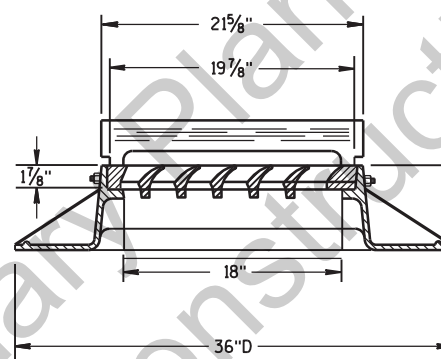


LOGO DETAIL

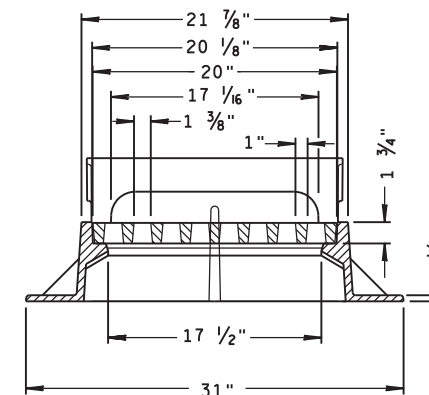
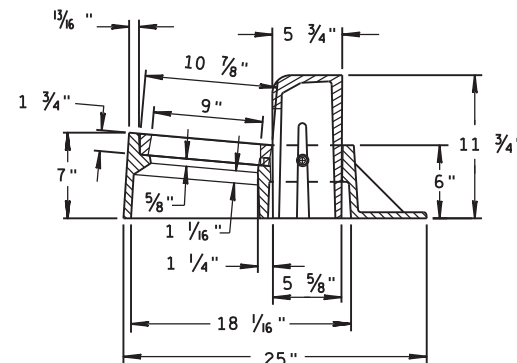


NOTE: CURB BOX ADJUSTABLE 4" TO 9"

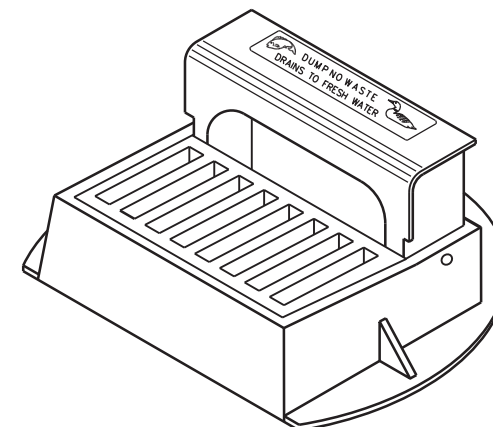
NOTE:
GRATE IS REVERSIBLE.



TYPE "A"



TYPE "Z"



INLET COVERS
TYPE A, H, A-S, H-S & Z

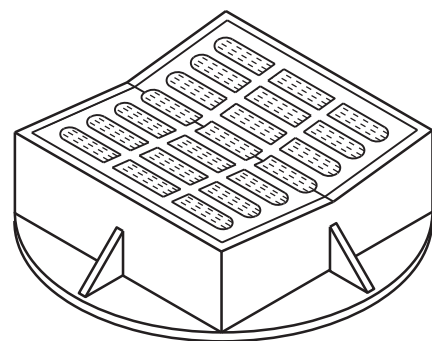
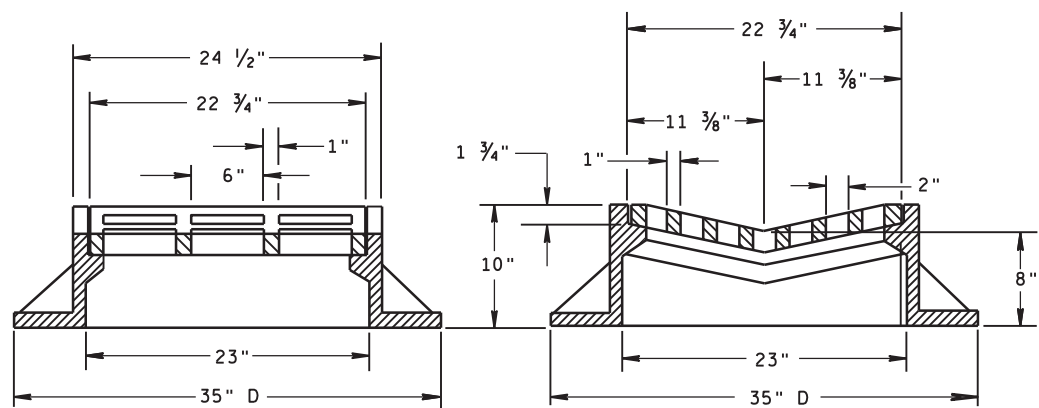
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11-27-13
DATE
FHWA

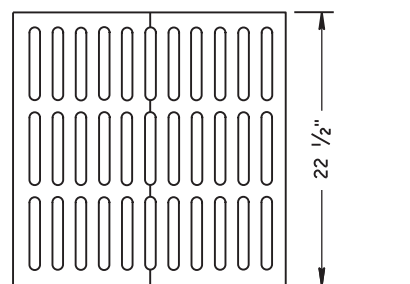
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



8A5 sheet b: Inlet Covers Type B, B-A, C, MS, MS-A, & WM

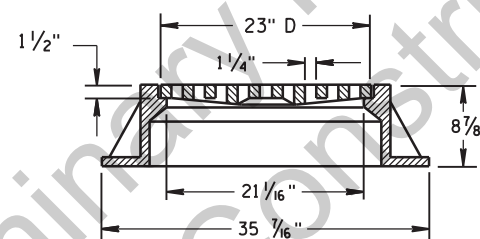
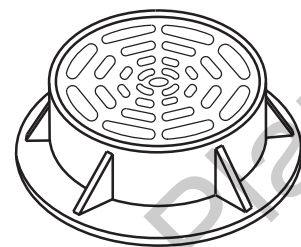
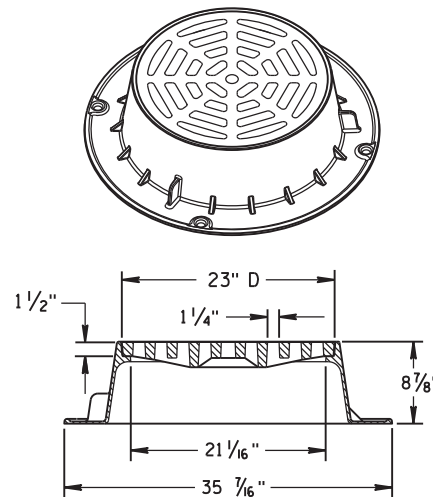


TYPE "B"



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"

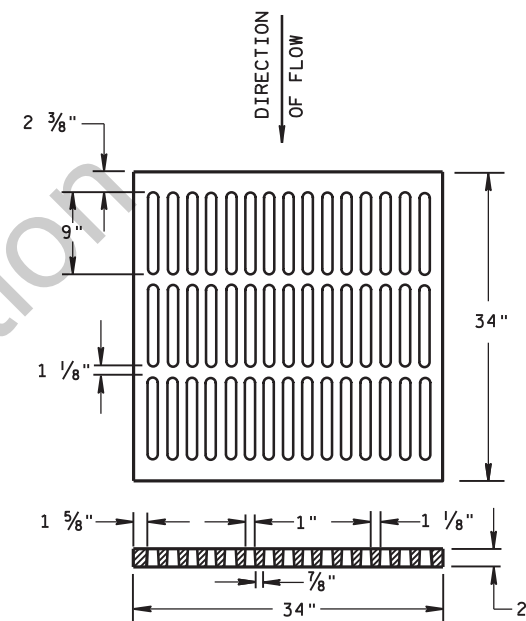
NOTE: EITHER CASTING IS ACCEPTABLE

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.

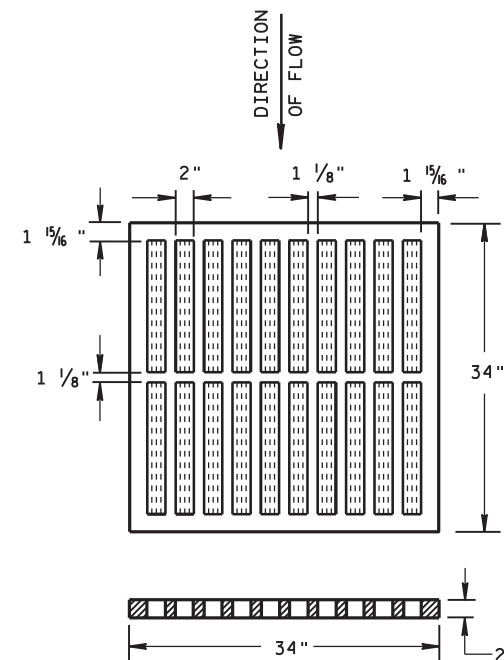
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



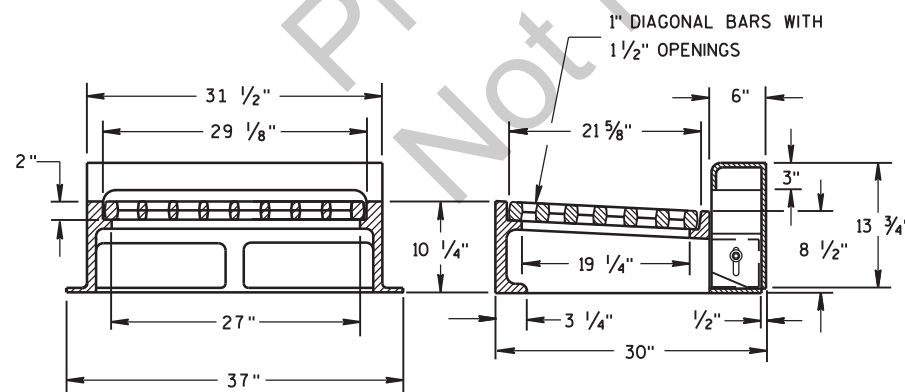
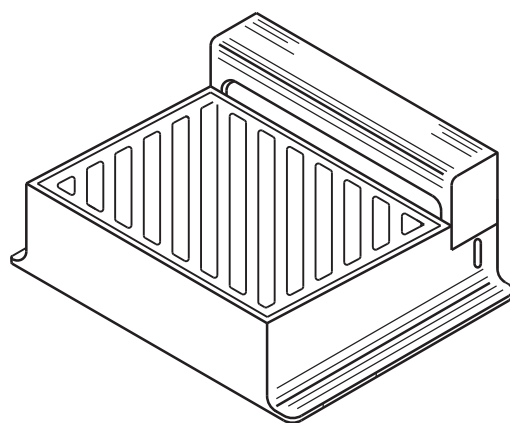
ALTERNATIVE TYPE "MS"

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"

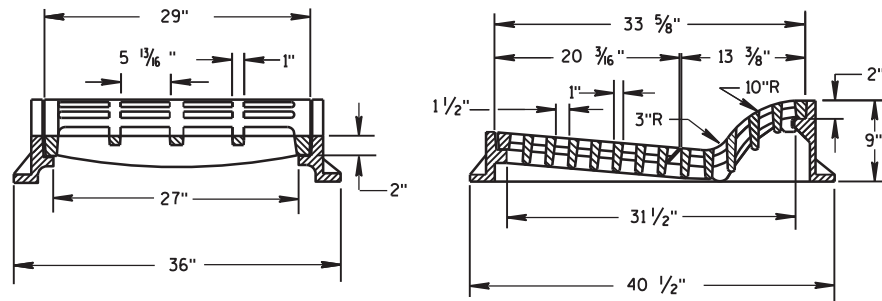
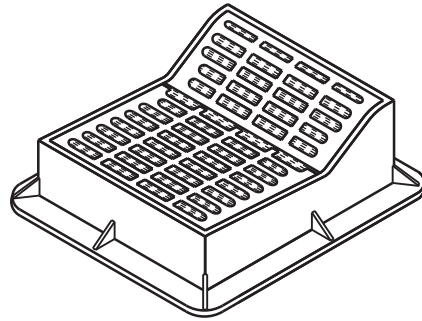
DIAGONAL SLOTS, SHALL BE ORIENTED
TO THE DIRECTION OF FLOW AS ILLUSTRATED.
GRATES ARE MANUFACTURED TO BE REVERSIBLE.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



TYPE "F"

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

ALTERNATIVE CURB BOX
FOR TYPE "HM" COVER

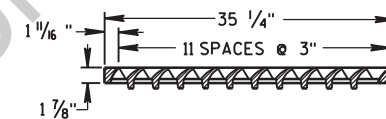
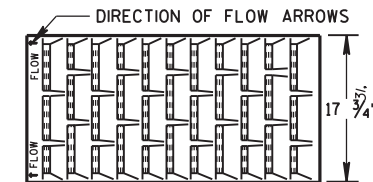
USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLE

NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

GENERAL NOTES

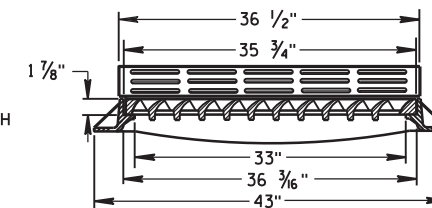
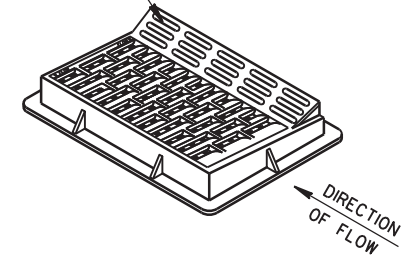
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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



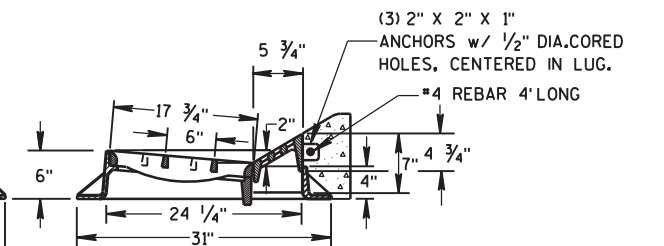
1" X 5 7/8" SLOTS
(TYPICAL)

NOTE:
GRATE IS REVERSIBLE.

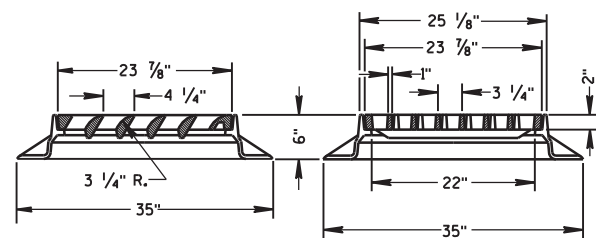
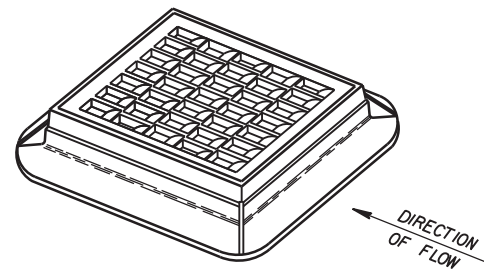


TYPE "HM"

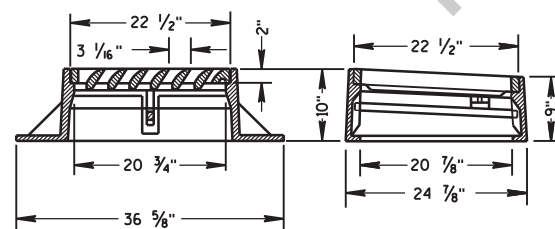
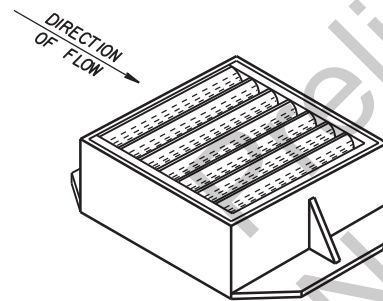
USE WITH TYPES A & D CONCRETE
CURB & GUTTER, 36 INCH.



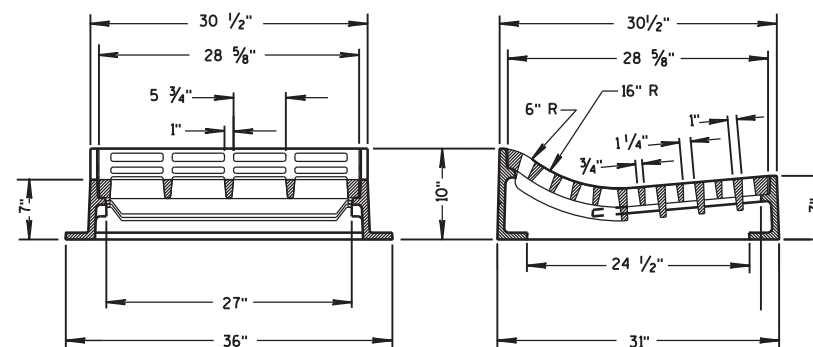
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE



TYPE "S"

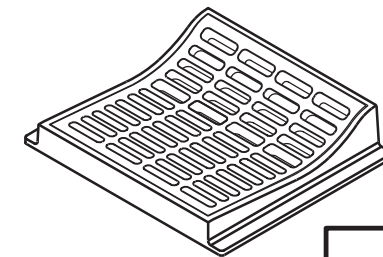


TYPE "V"



TYPE "T"

USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.



INLET COVERS
TYPE F, HM, HM-S, S, T, V,
HM-GJ, & HM-GJ-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

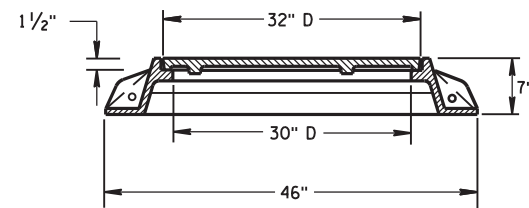
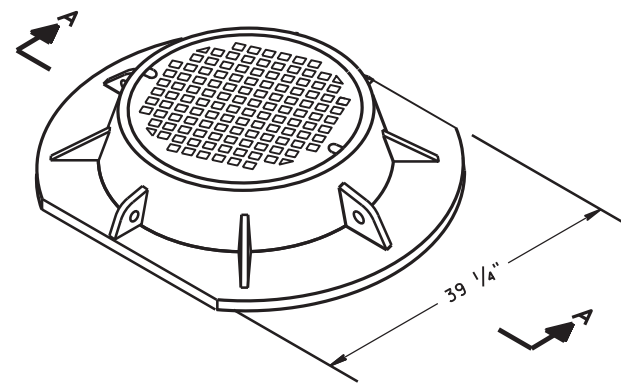


GENERAL NOTES

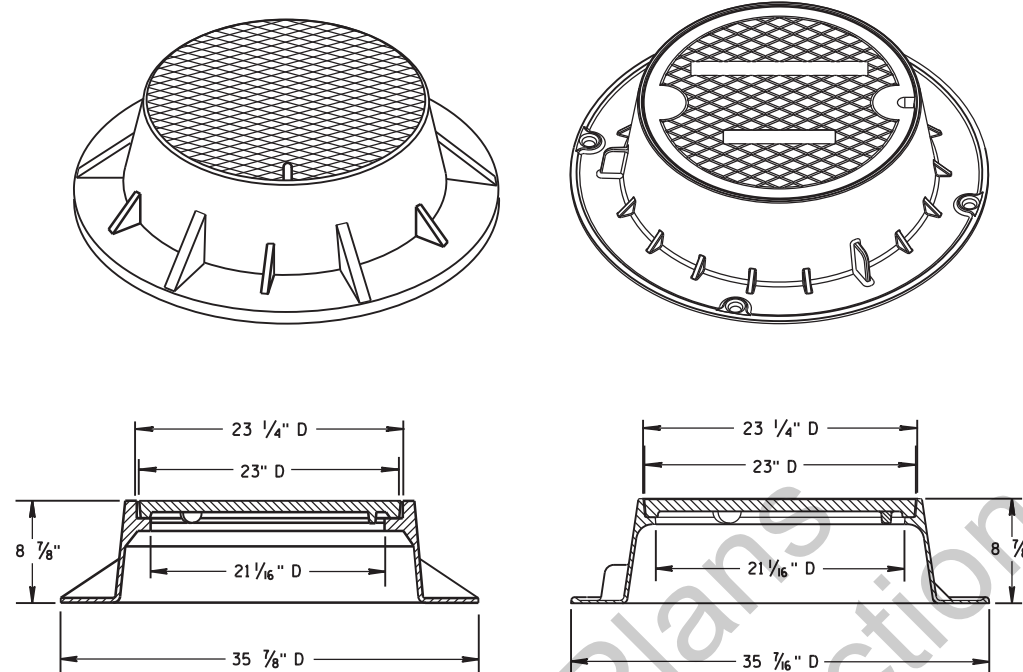
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE 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.

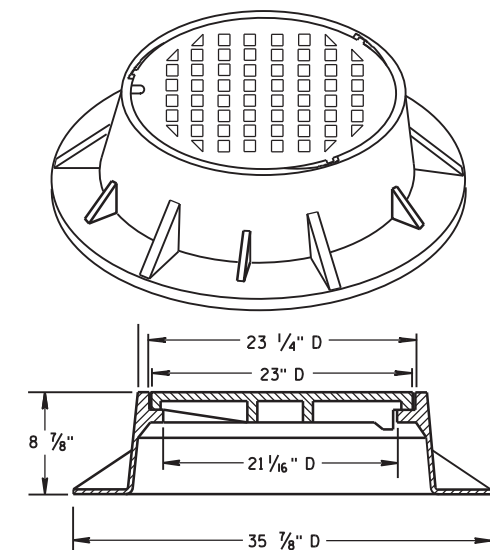
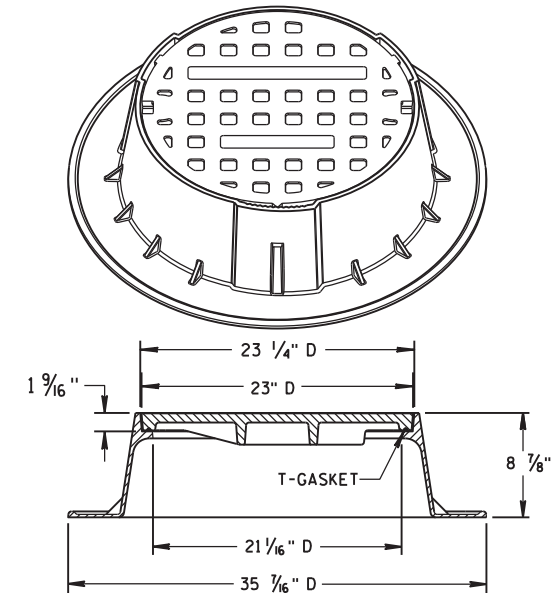


SECTION A-A
TYPE "K"



TYPE "J"

NOTE: EITHER CASTING IS ACCEPTABLE

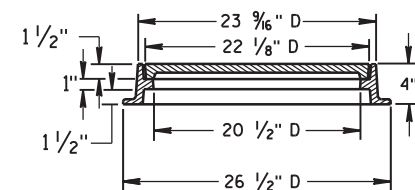
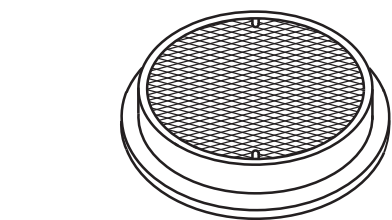


TYPE "J" SPECIAL

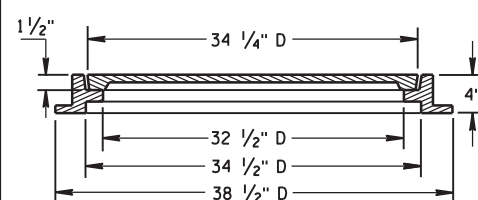
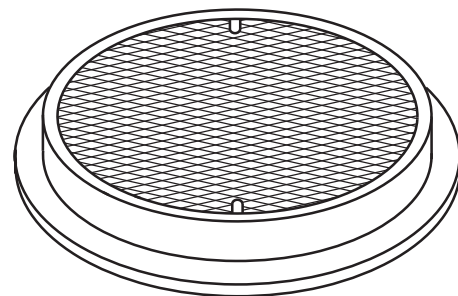
TYPE "B" NON-ROCKING SELF-SEAL LID

(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

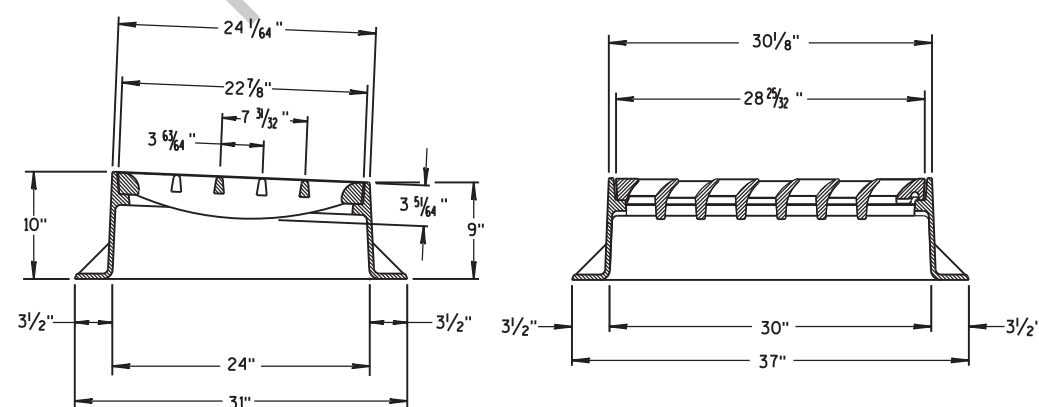
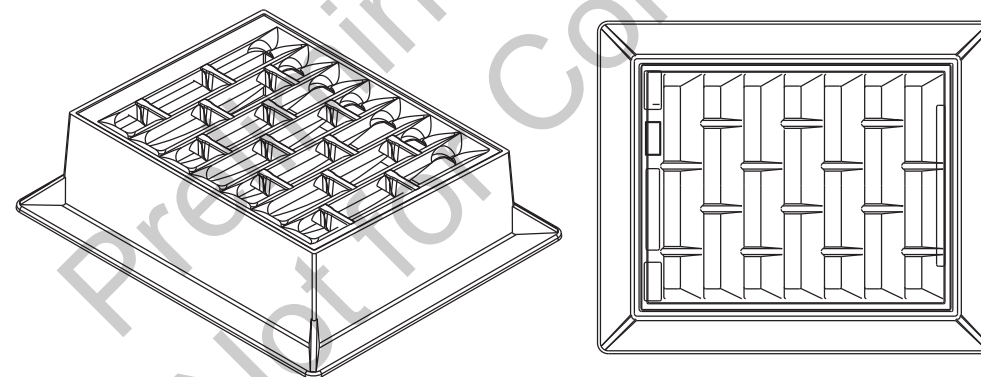
NOTE: EITHER CASTING IS ACCEPTABLE



TYPE "L"



TYPE "M"



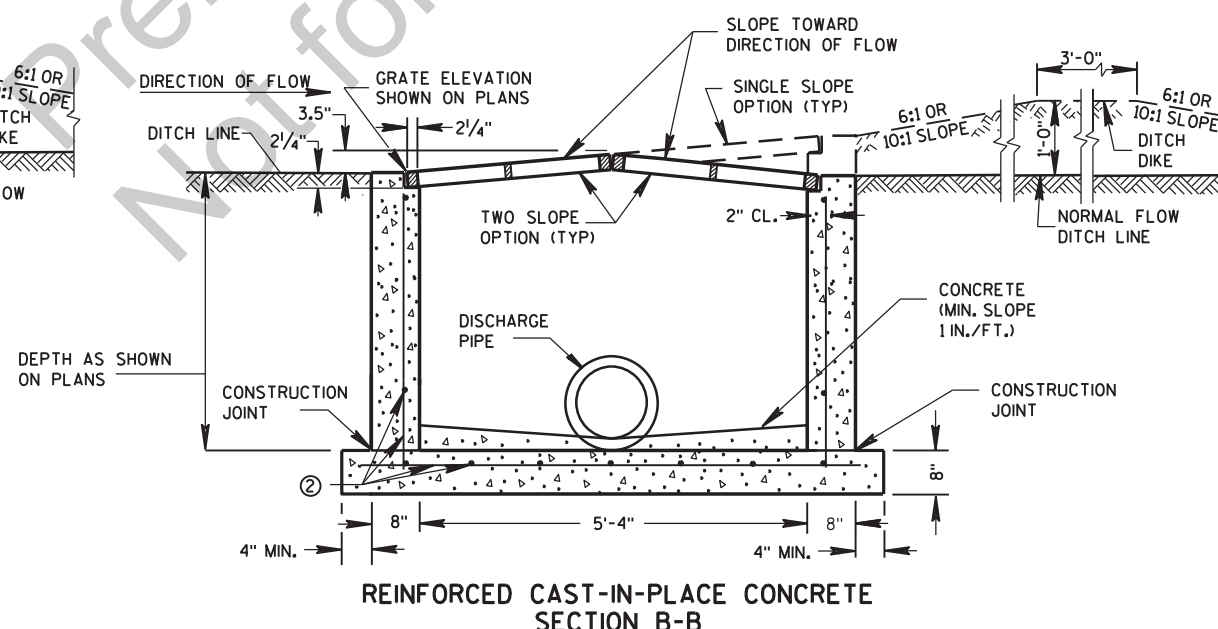
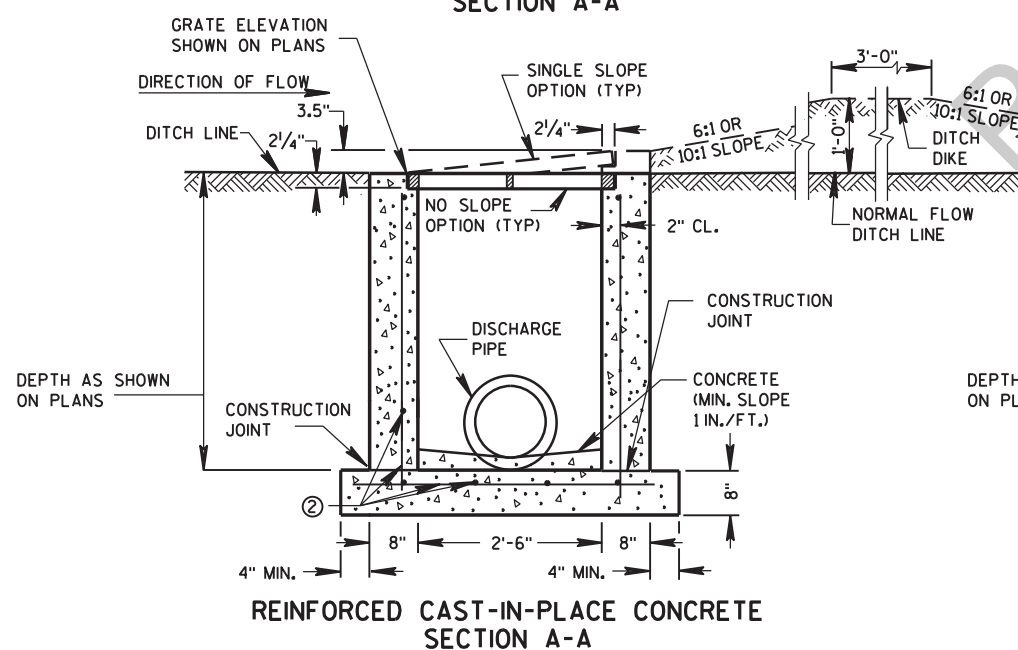
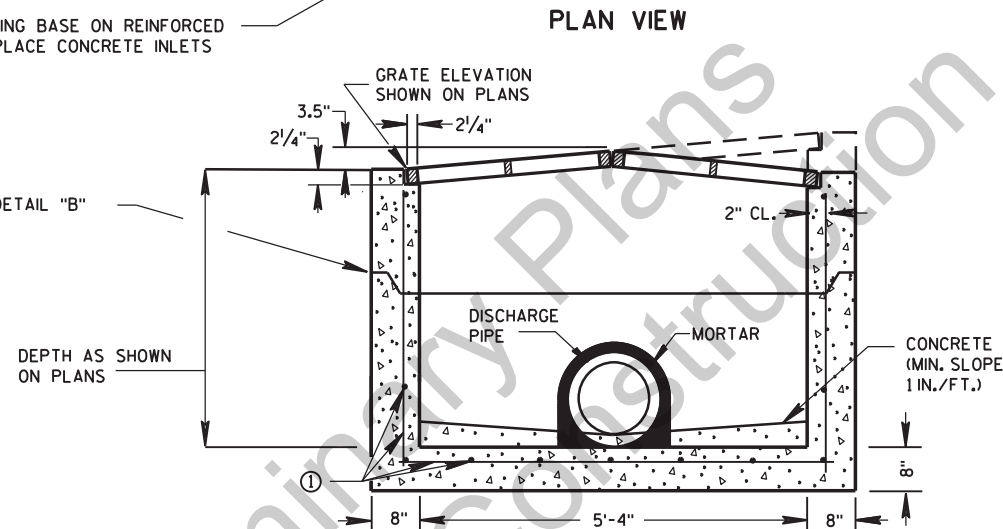
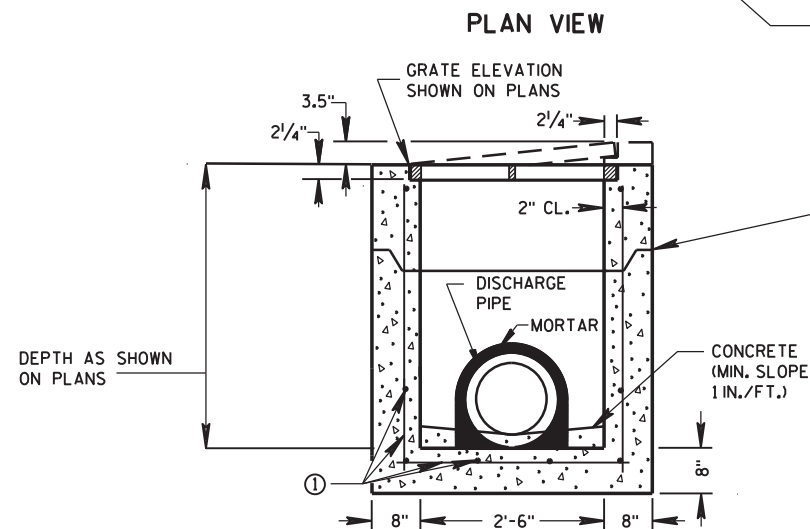
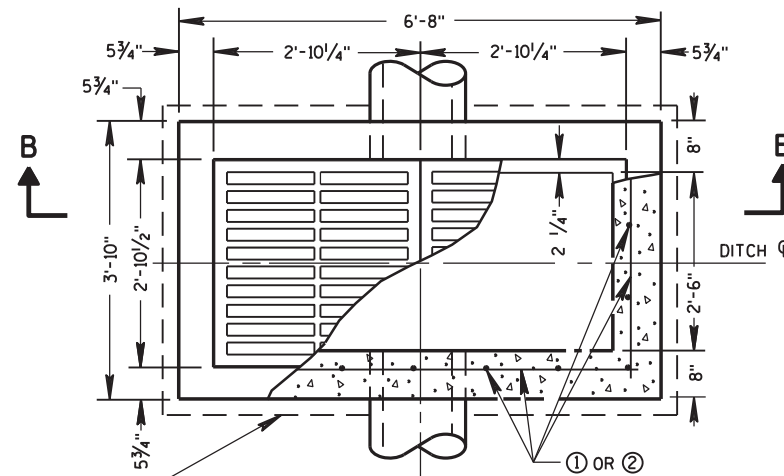
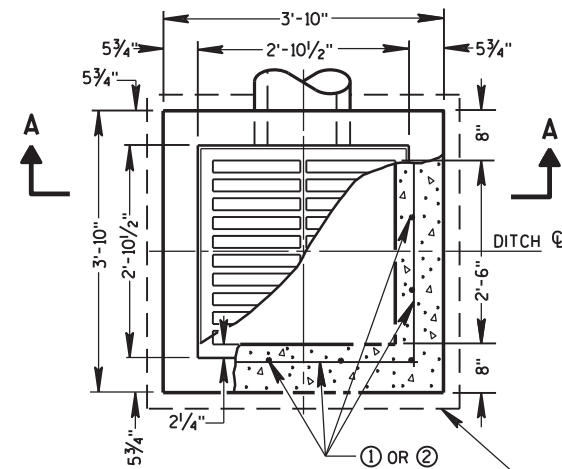
INLET COVER TYPE "BW"

INLET COVER TYPE BW
MANHOLE COVERS, TYPE K,
J, J-S, L & M

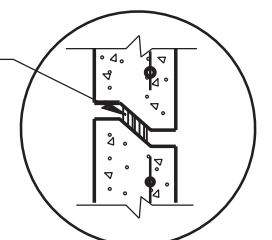
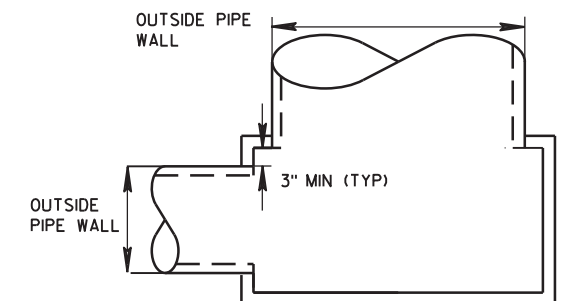
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



PIPE MATRIX		
	MAXIMUM INSIDE PIPE DIAMETER	
INLET SIZE	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18
2 GRATE	18	42



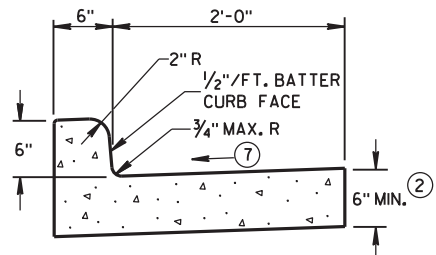
JOINTS TO BE SEALED WITH
A BUTYL RUBBER SEAL PER
SEALANT MANUFACTURERS
RECOMMENDATIONS
CONFORMING TO ASTM C 990
(TYP)

INLETS MEDIAN 1 AND 2 GRATE

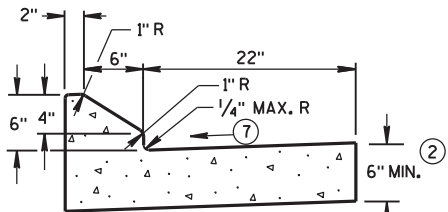
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016
DATE
FHWA

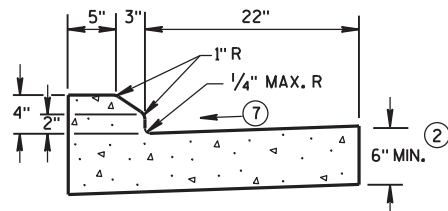
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR



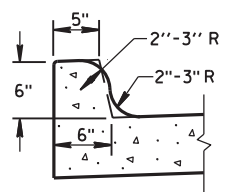
TYPES A^① & D



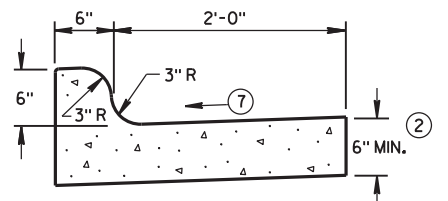
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

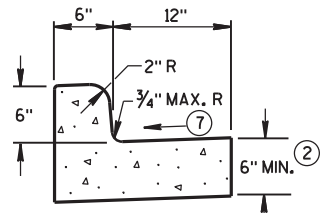


TYPES K^① & L
(OPTIONAL CURB SHAPE)



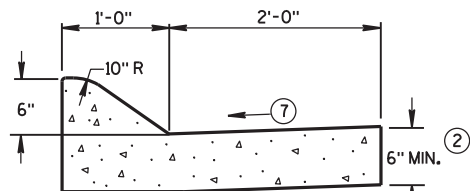
TYPES K^① & L

CONCRETE CURB & GUTTER 30"

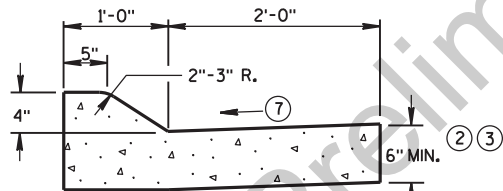


TYPES A^① & D

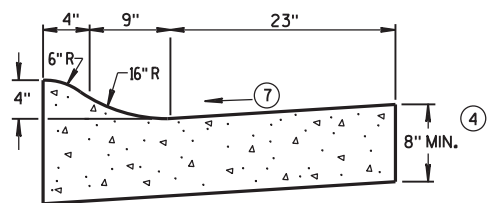
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A^① & D

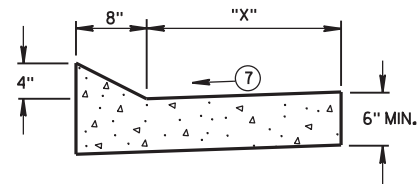


4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

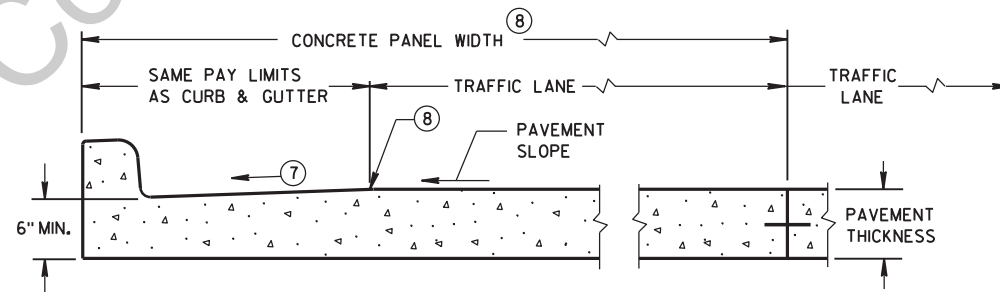
CONCRETE CURB & GUTTER 36"



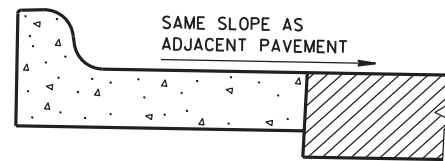
TYPES TBT & TBTT^①

CONCRETE CURB & GUTTER

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



PARTIAL SECTION OF PAVEMENT^{*}
WITH INTEGRAL CURB & GUTTER



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

GENERAL NOTES

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

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

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

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

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

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

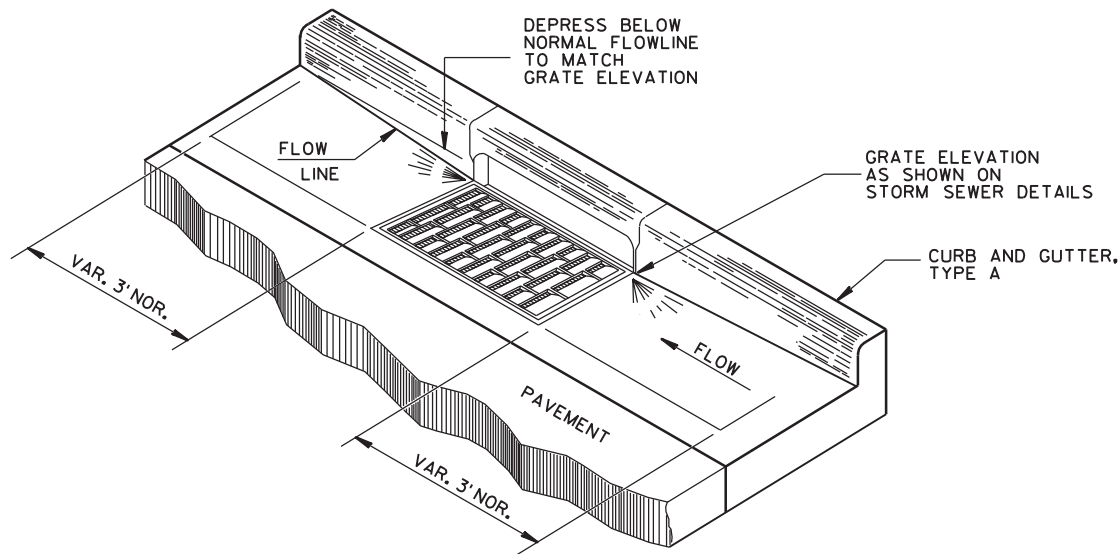
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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

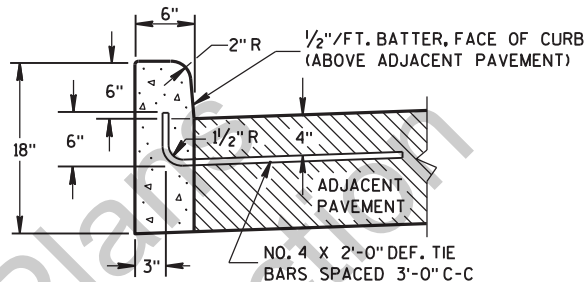
* BIKE LANE IS NOT SHOWN.

CONCRETE CURB & GUTTER

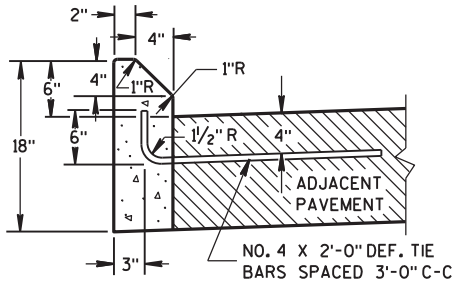
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

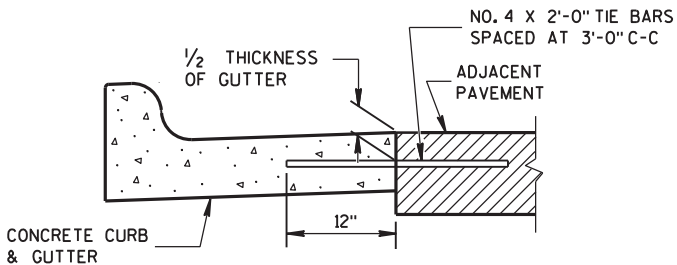


TYPES A^① & D

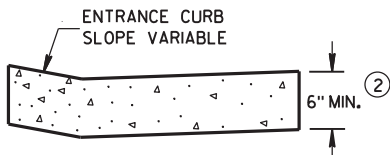


TYPES G^① & J

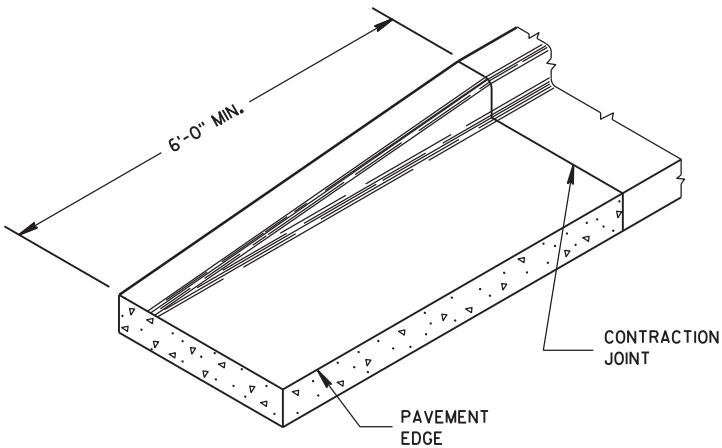
CONCRETE CURB



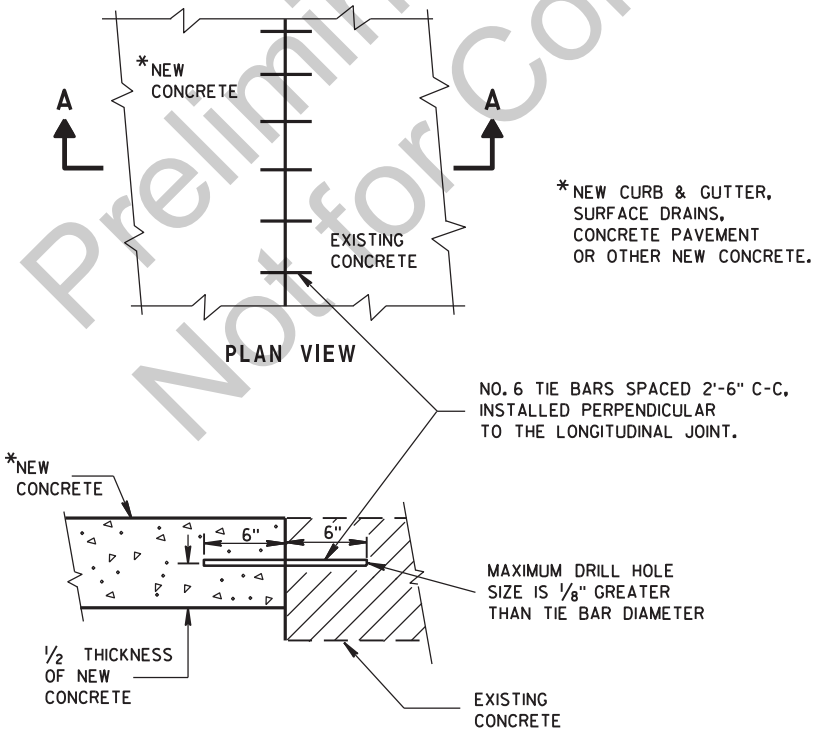
TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑨
(WHEN DIRECTED BY THE ENGINEER)



END SECTION CURB & GUTTER



SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT

GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
 - ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
 - ③ REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June, 2017 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

6

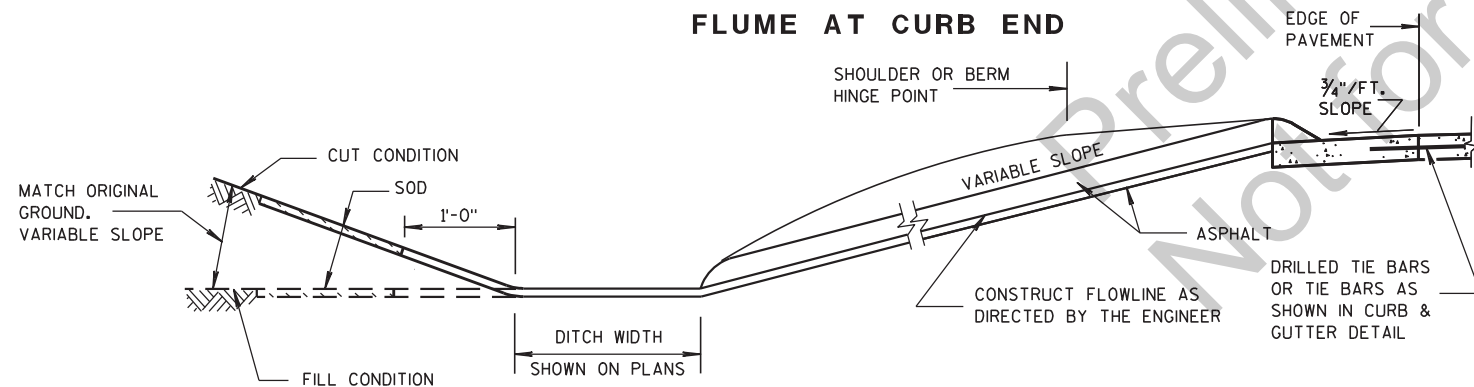


Figure 10-1 is a cross-section diagram of a roadbed. The roadbed is 12 feet wide, with 3'-0" on each side of the centerline. The centerline is labeled "(LEVEL)". The depth of the curve is 6 inches at the centerline. The depth of the curve at the edges is 5 inches. The minimum depth of the curve is 2 inches.

S.D.D. 8 D 4-5

6

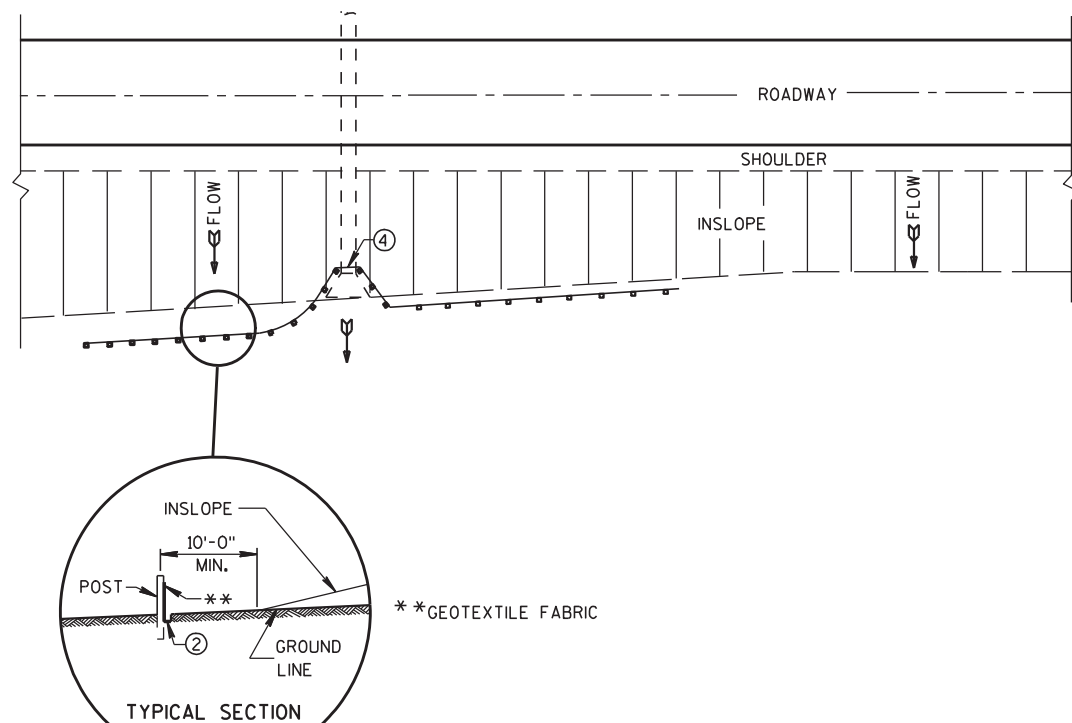
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

- ### ③ CONCRETE SURFACE DRAIN



APPROVED
9-4-08 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

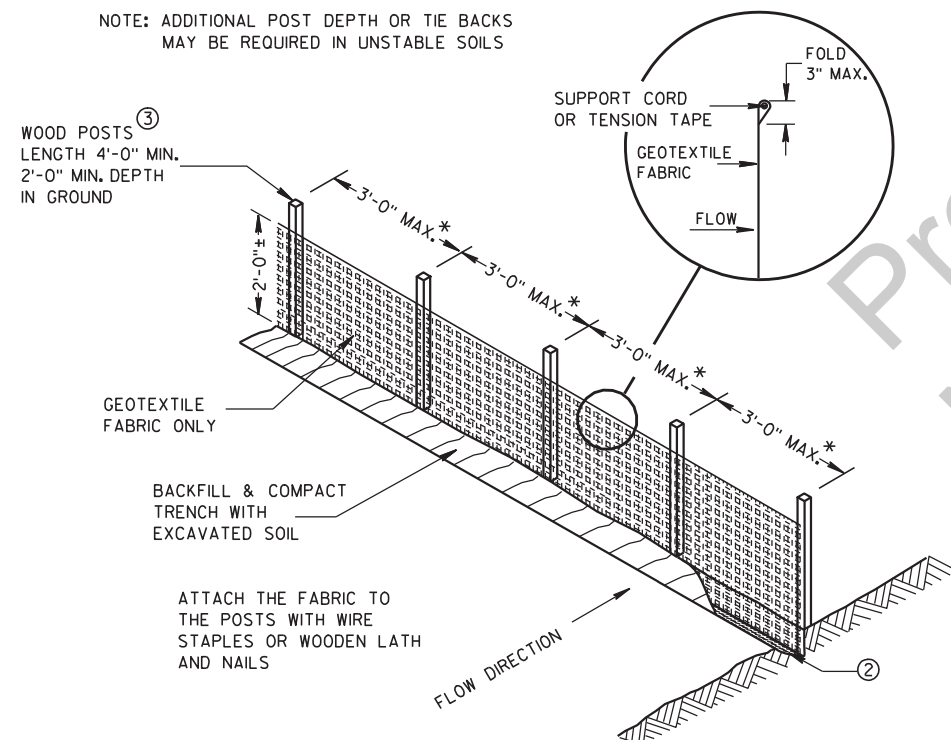
S.D.D. 8 D 4-5



PLAN VIEW

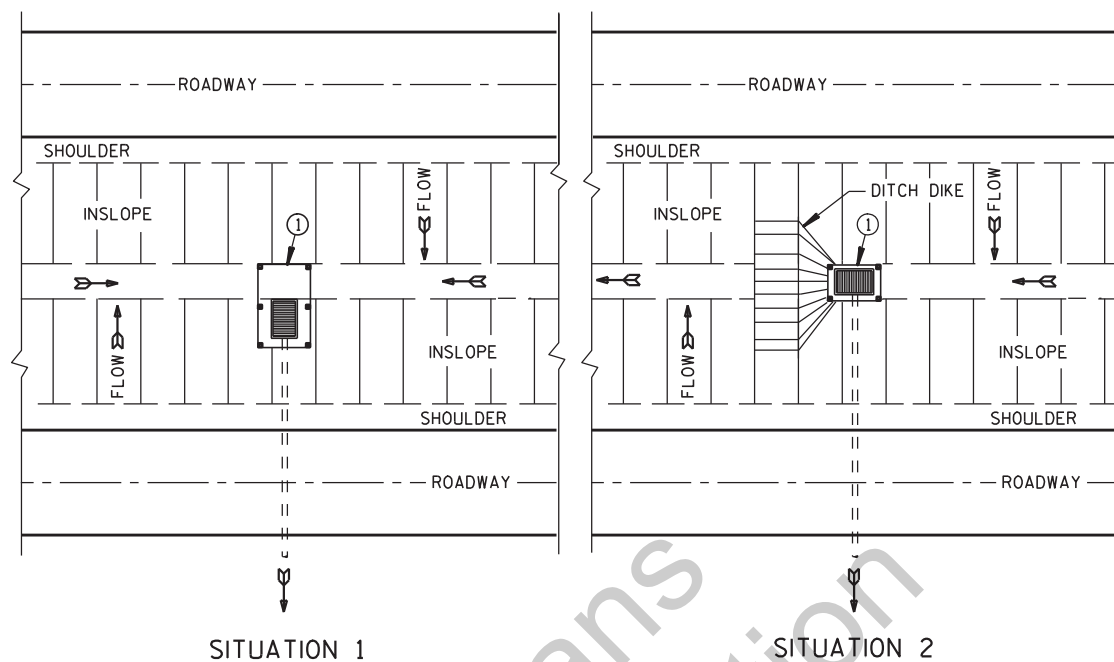
TYPICAL APPLICATION OF SILT FENCE

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



SILT FENCE

* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

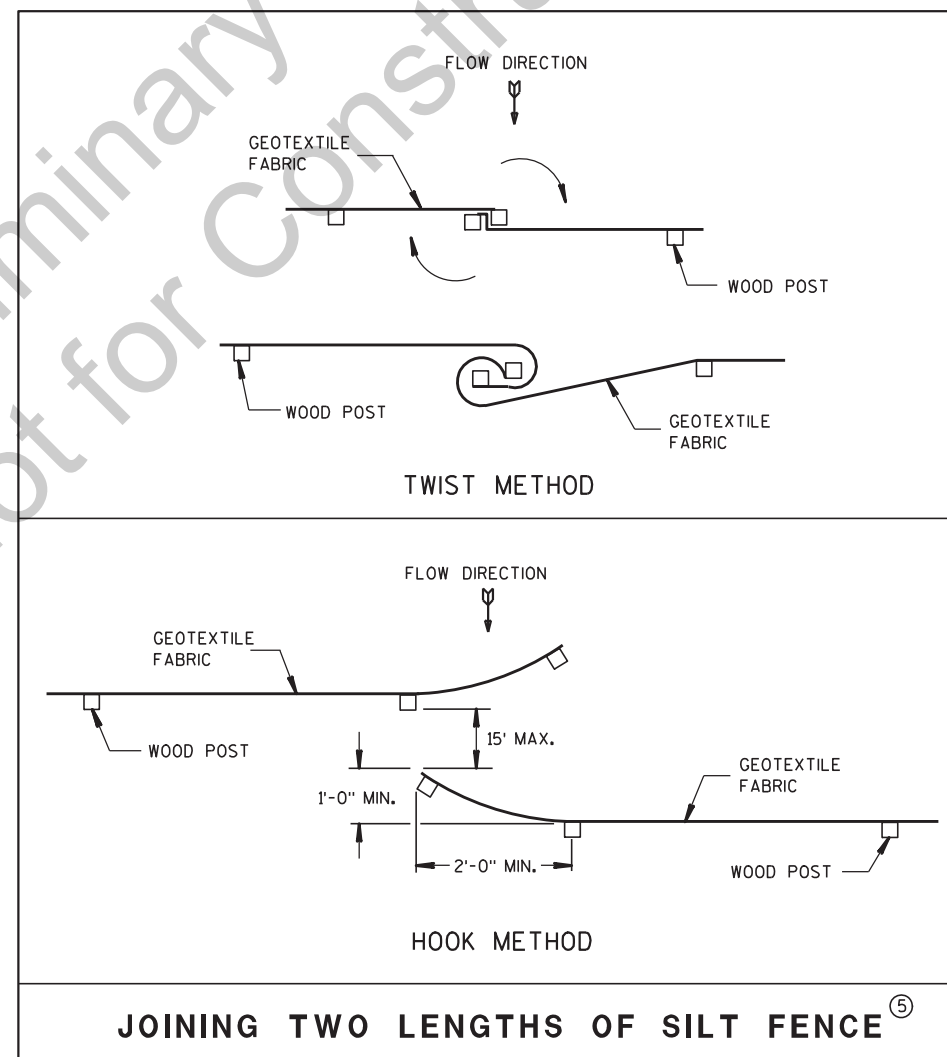


SITUATION 1

SITUATION 2

PLAN VIEW

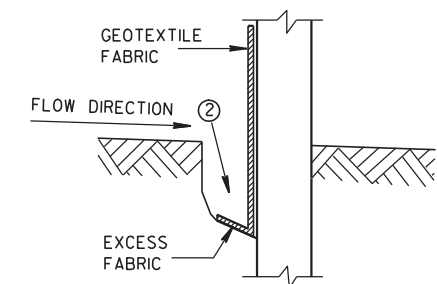
SILT FENCE AT MEDIAN SURFACE DRAINS

JOINING TWO LENGTHS OF SILT FENCE^⑤

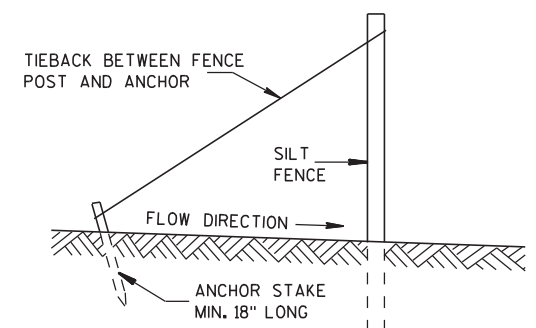
GENERAL NOTES

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

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



TRENCH DETAIL

SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

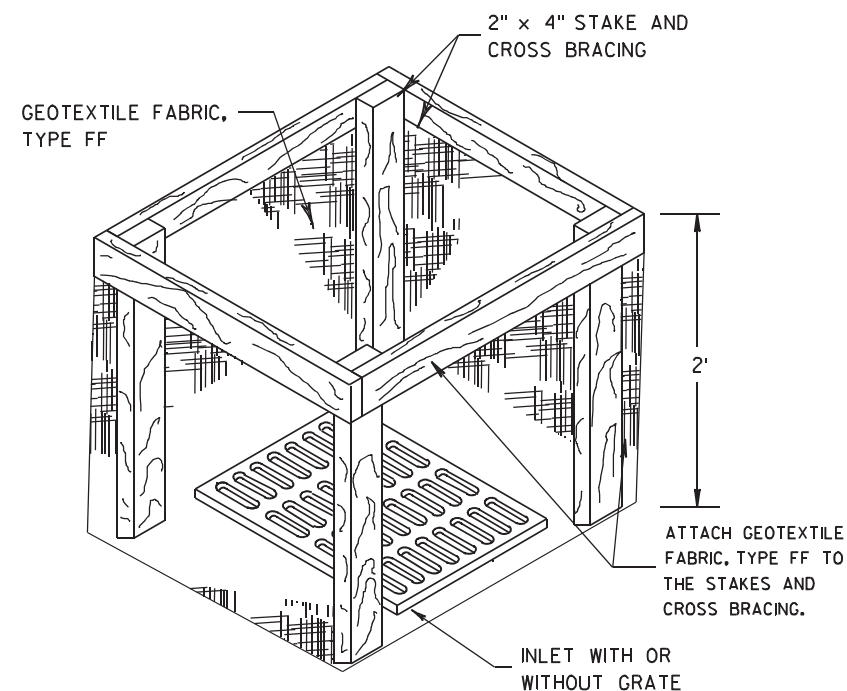
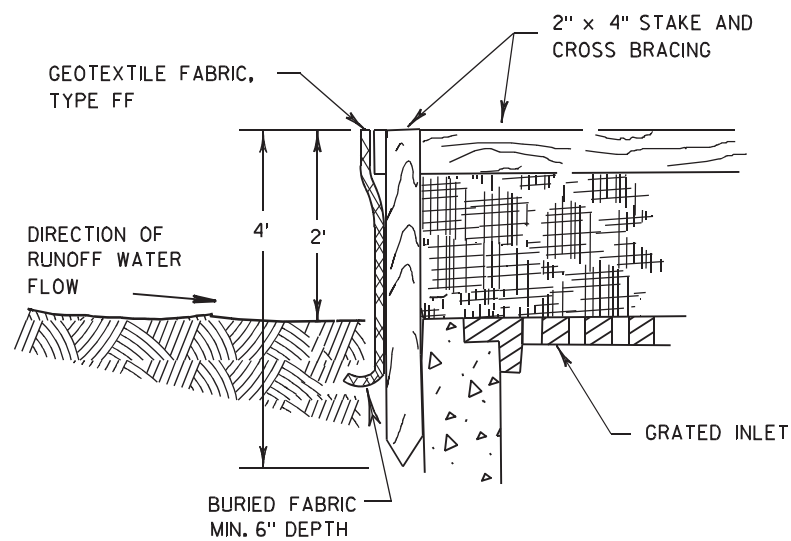
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-29-05
DATE

FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



INLET PROTECTION, TYPE A

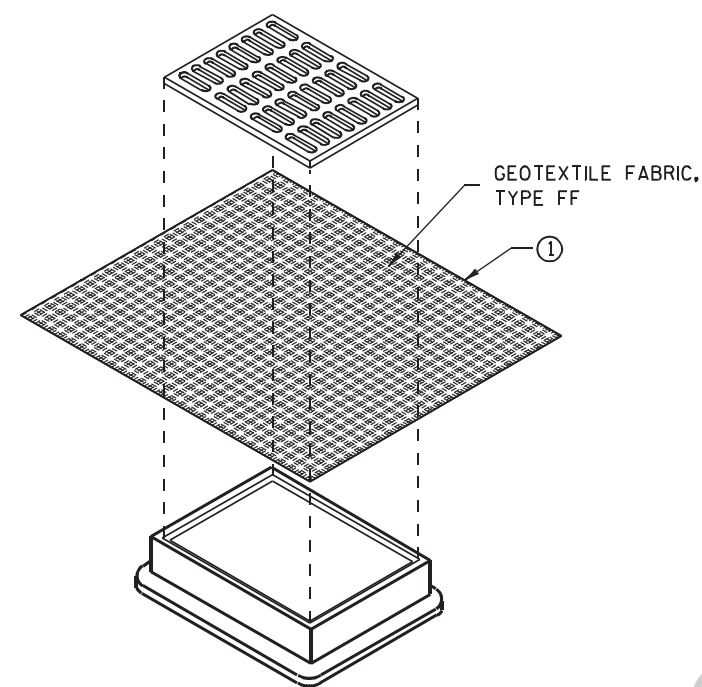
GENERAL NOTES

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

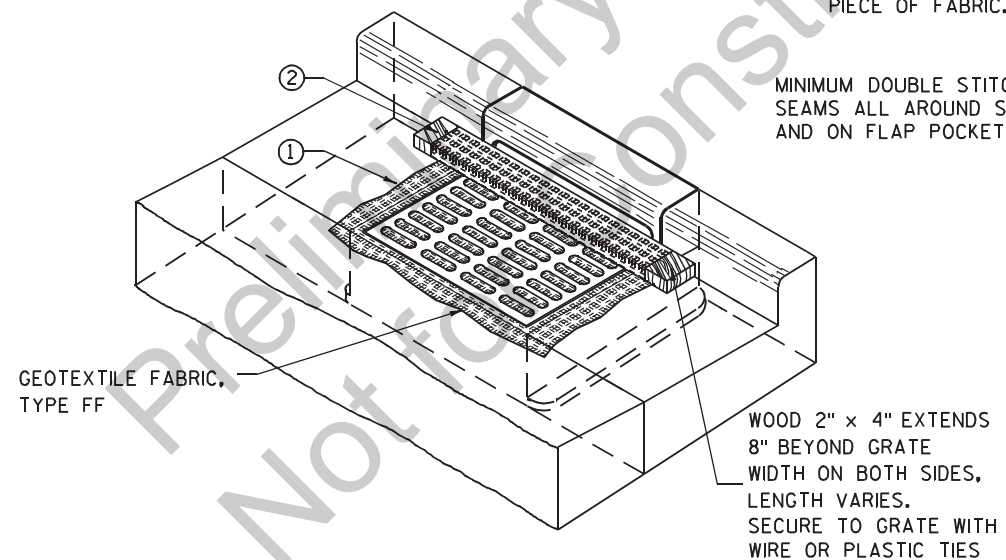
MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

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

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



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**
(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

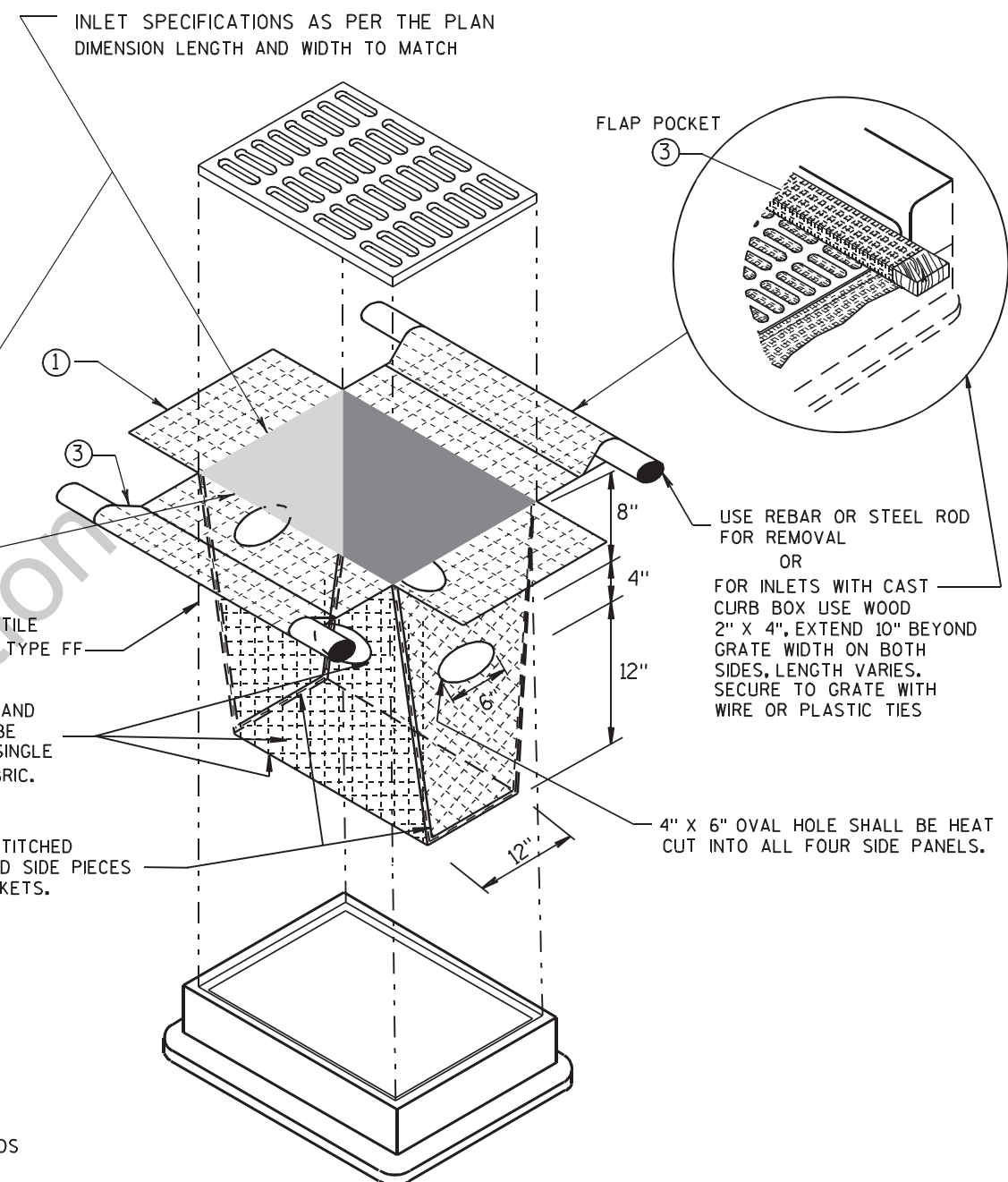
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



INLET PROTECTION, TYPE D

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

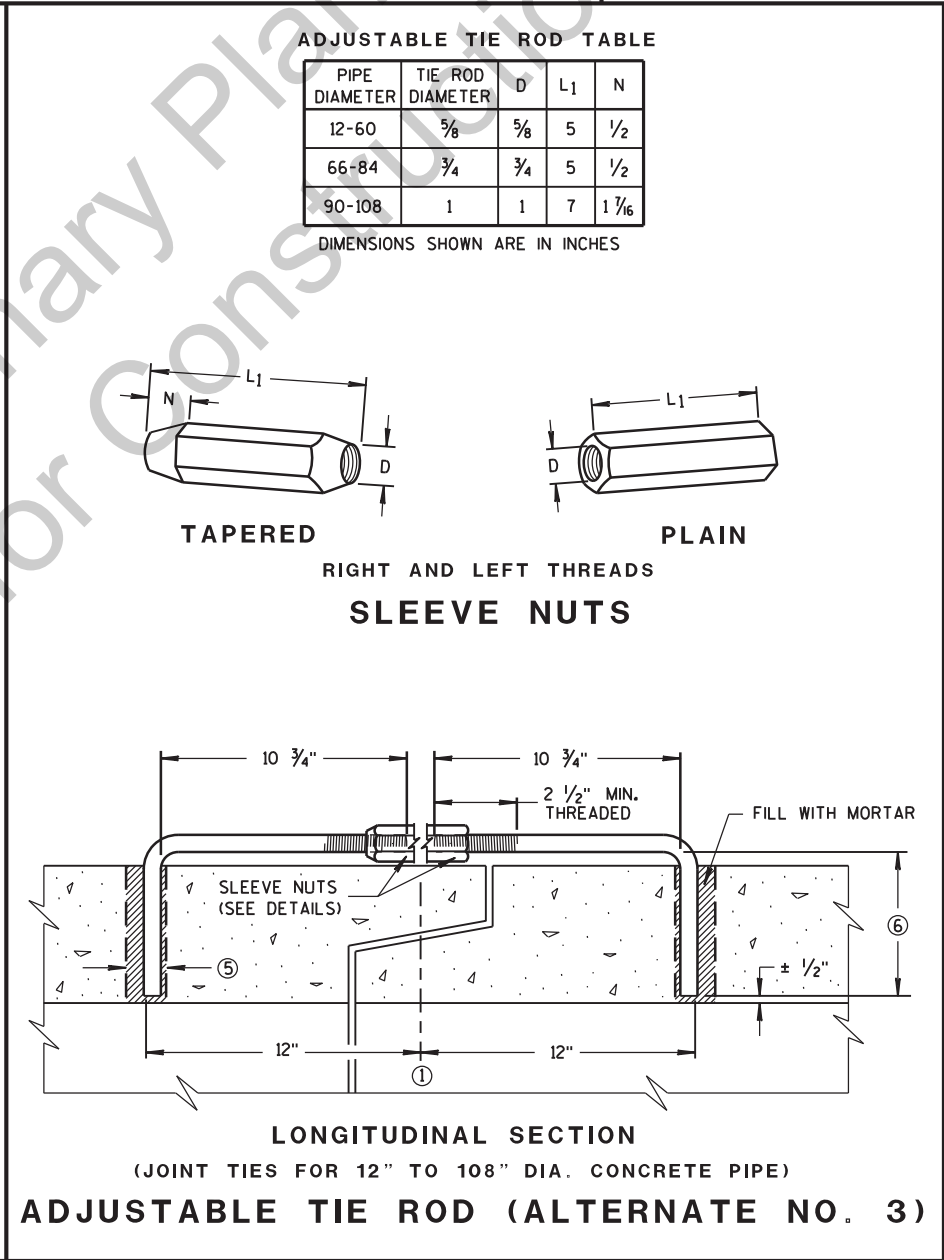
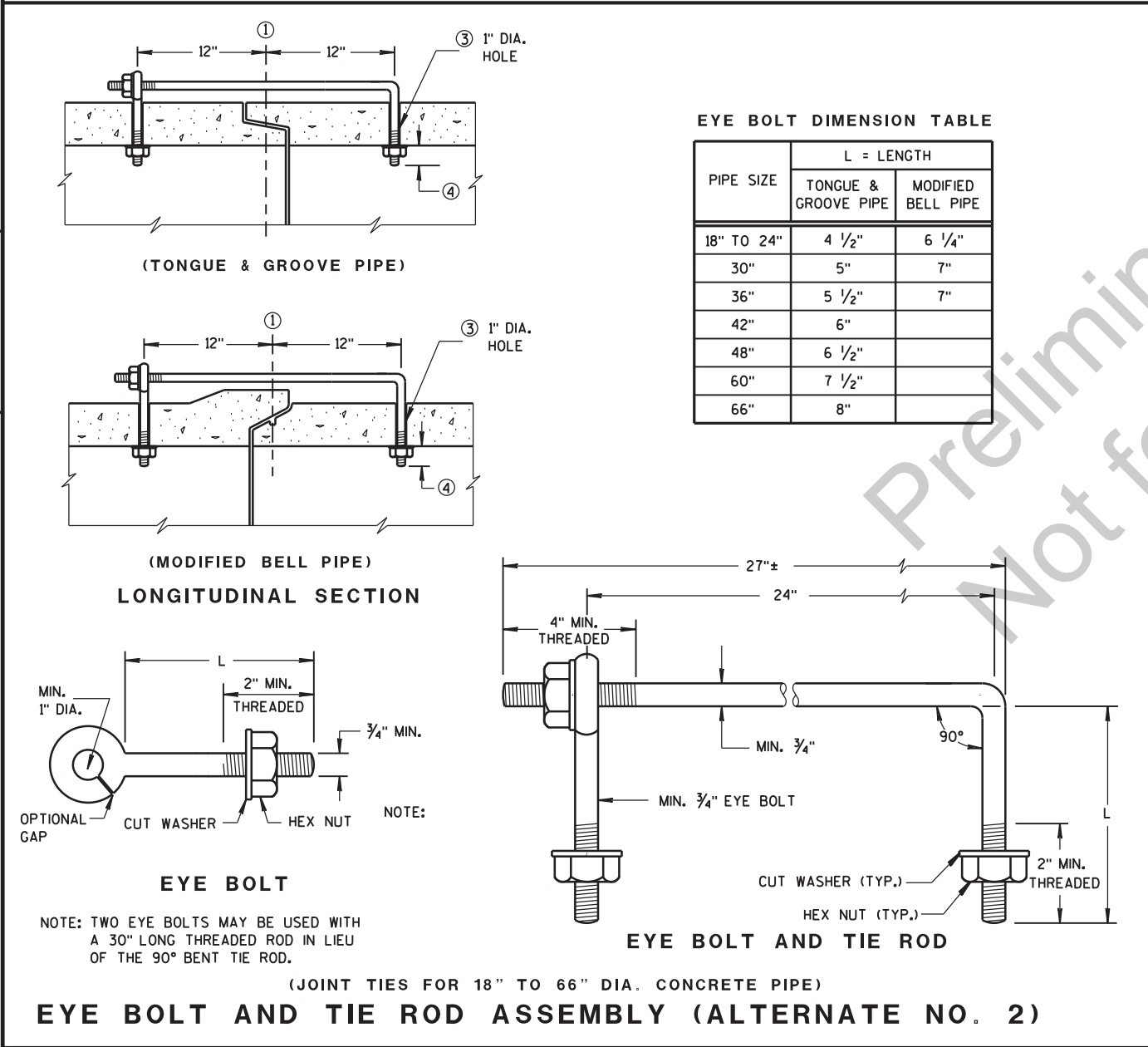
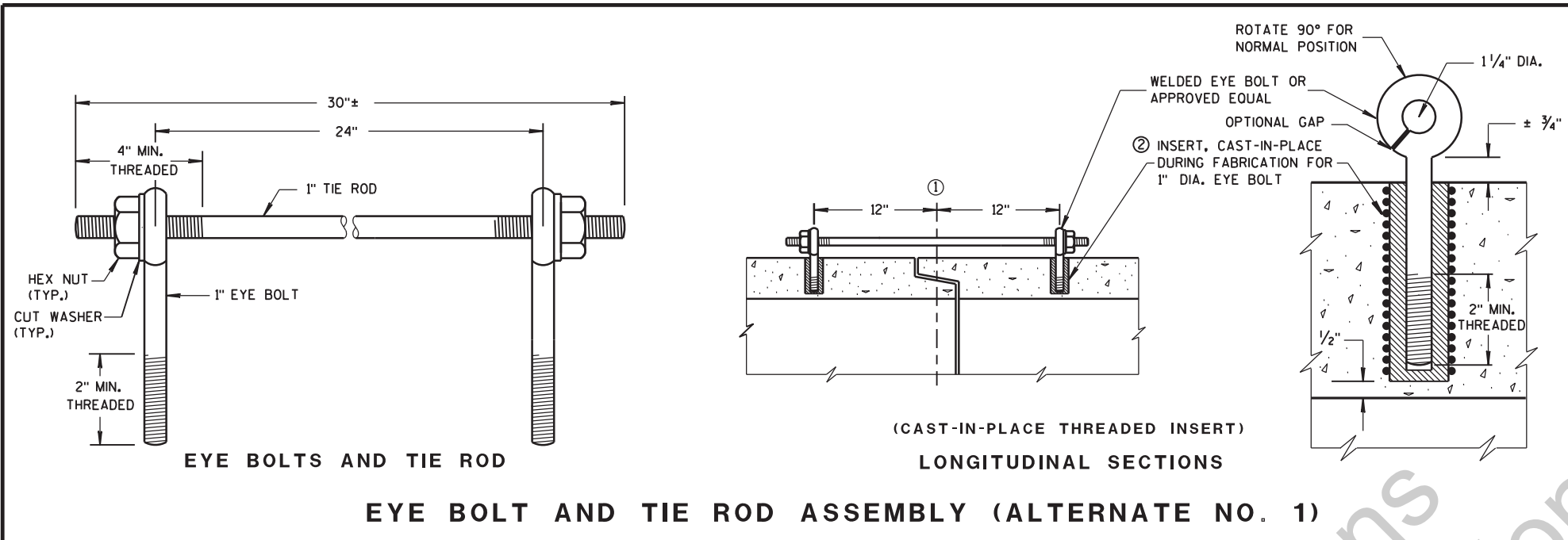
**INLET PROTECTION
TYPE A, B, C, AND D**

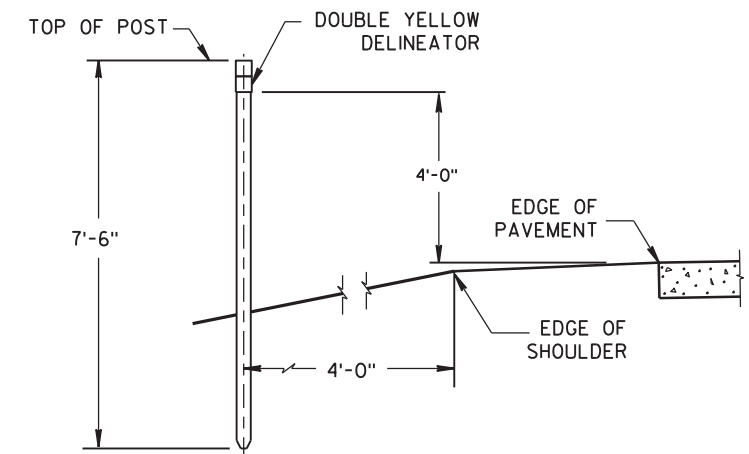
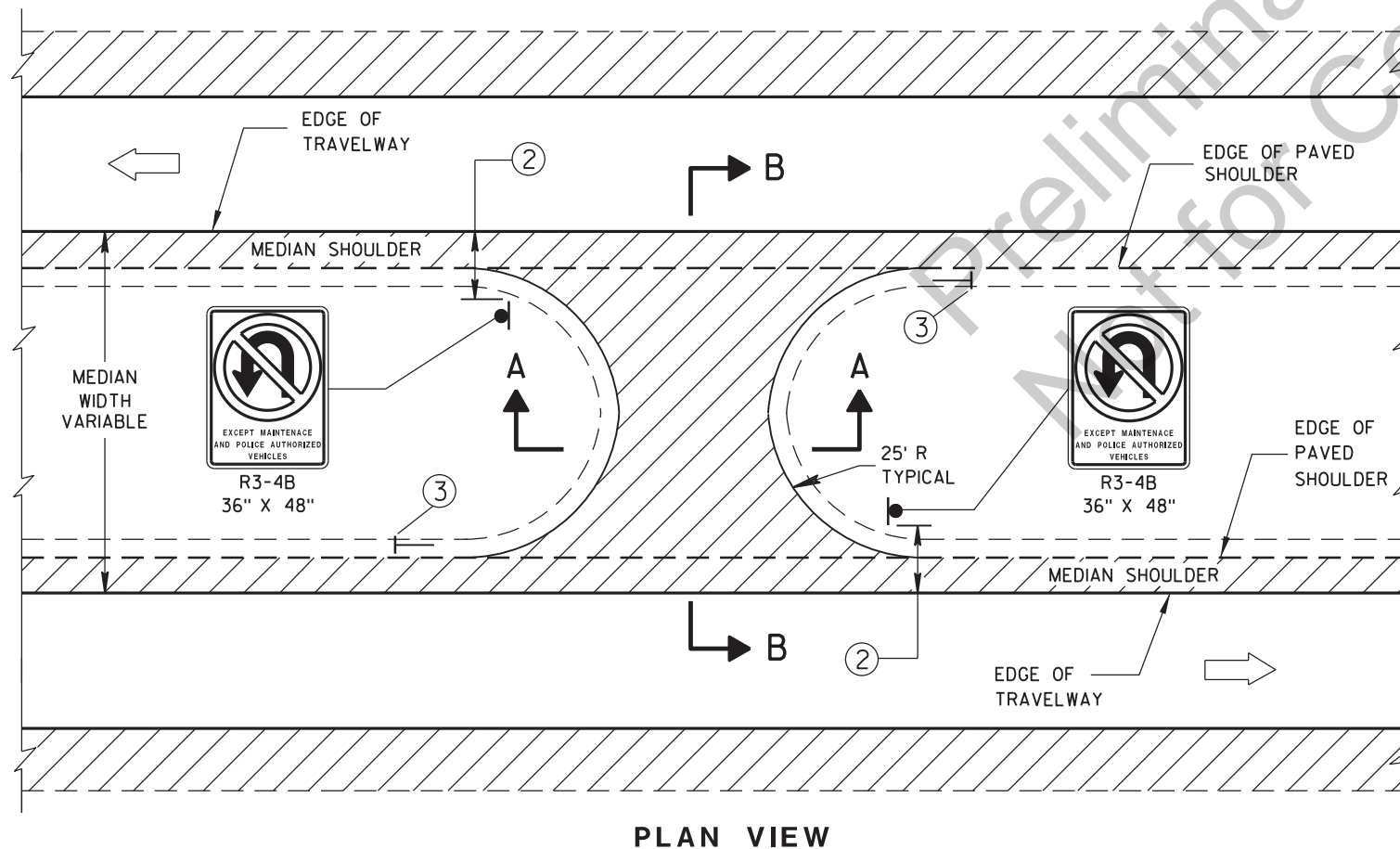
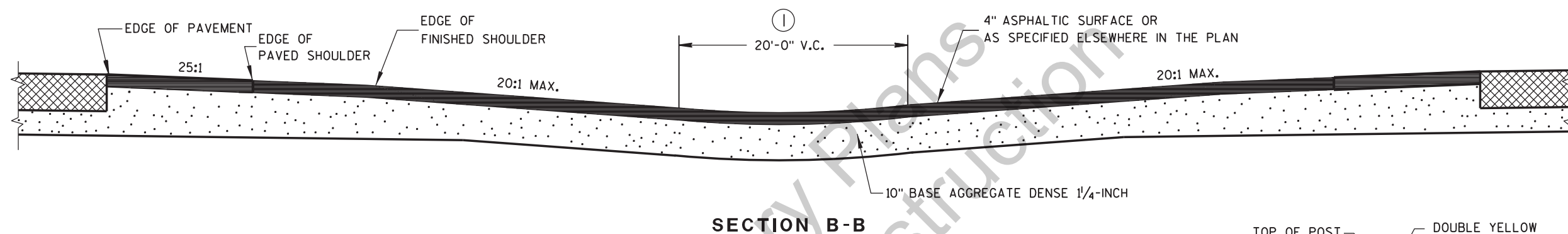
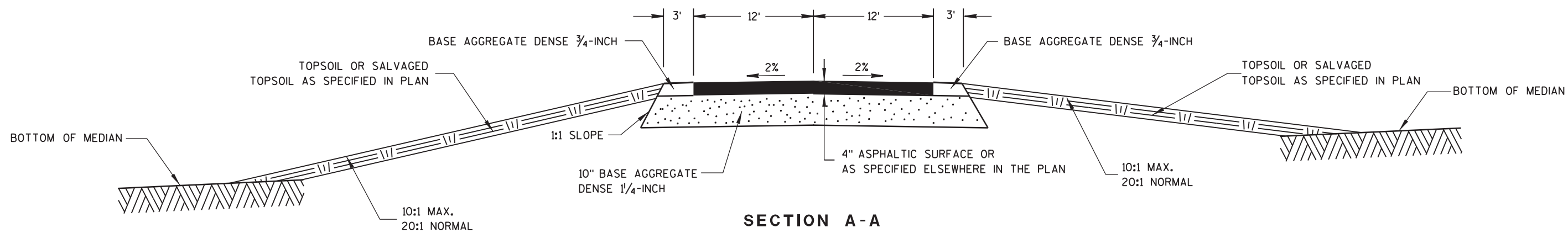
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



8F4: Joint Ties for Concrete Pipe





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 ADJUST VERTICAL CURVE LOCATION LATERALLY TO MAINTAIN 20:1 MAX.
- ② SIGNING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.
- ③ INSTALL DOUBLE YELLOW DELINEATOR. SEE STANDARD DETAIL DRAWING 15A2.

MAINTENANCE CROSSOVER
FOR FREEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



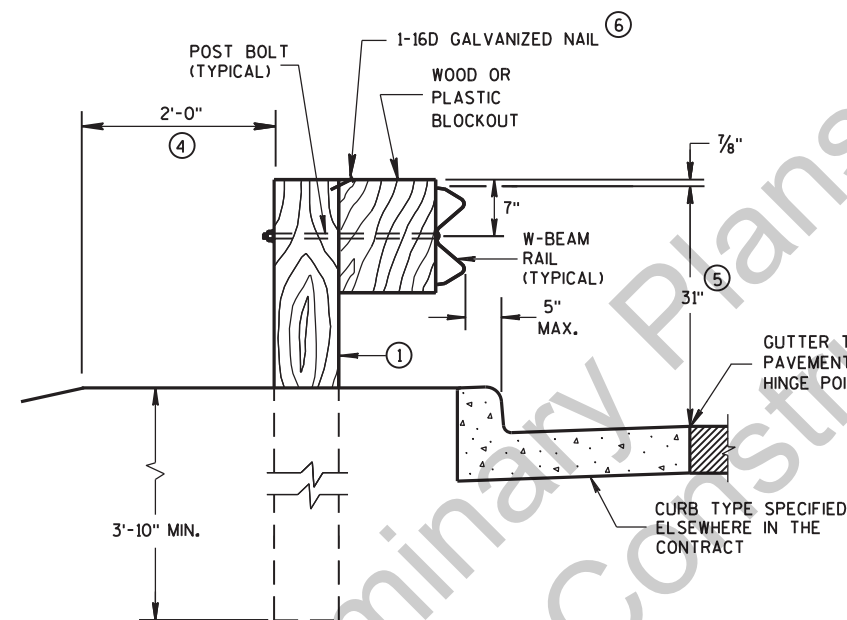
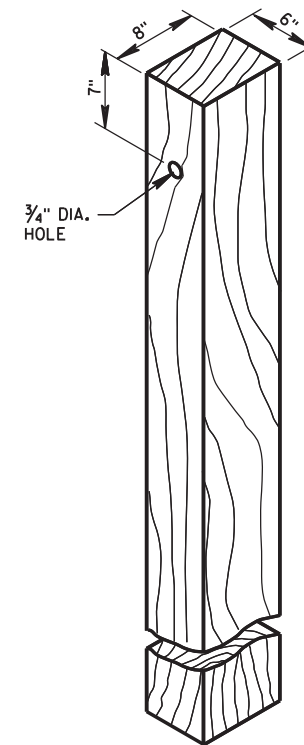
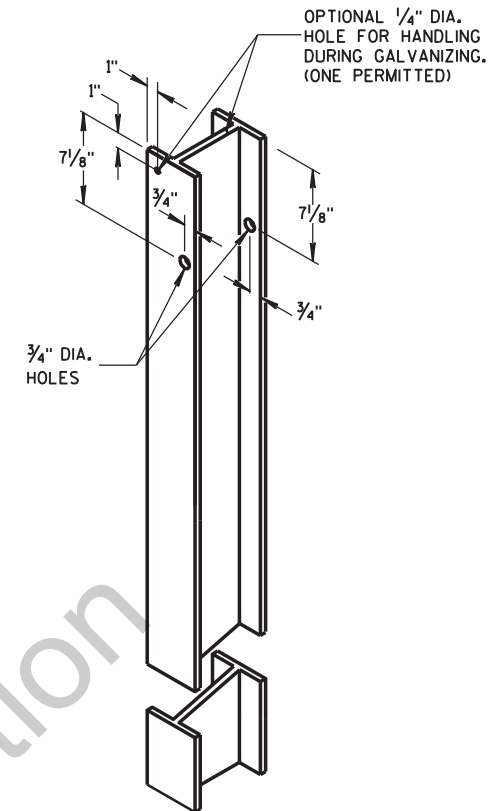
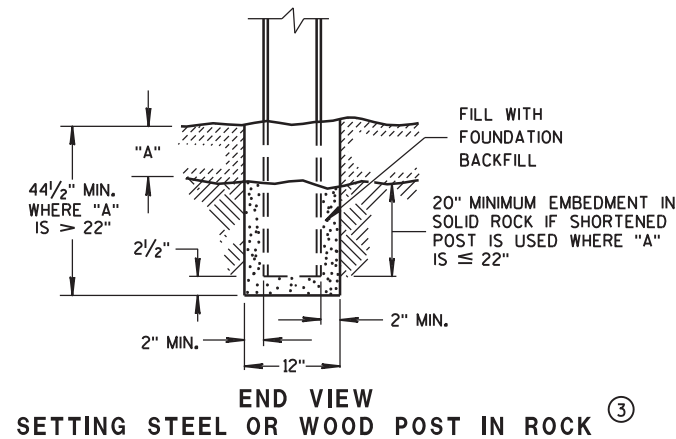
** LETTER "G" UTILIZED FOR RAMP GATES.
 LETTER "S" UTILIZED FOR SIGN BRIDGES,
 OVERHEAD SIGN SUPPORTS, AND TRAFFIC
 SIGNALS.

S.D.D. 12 A 4-3



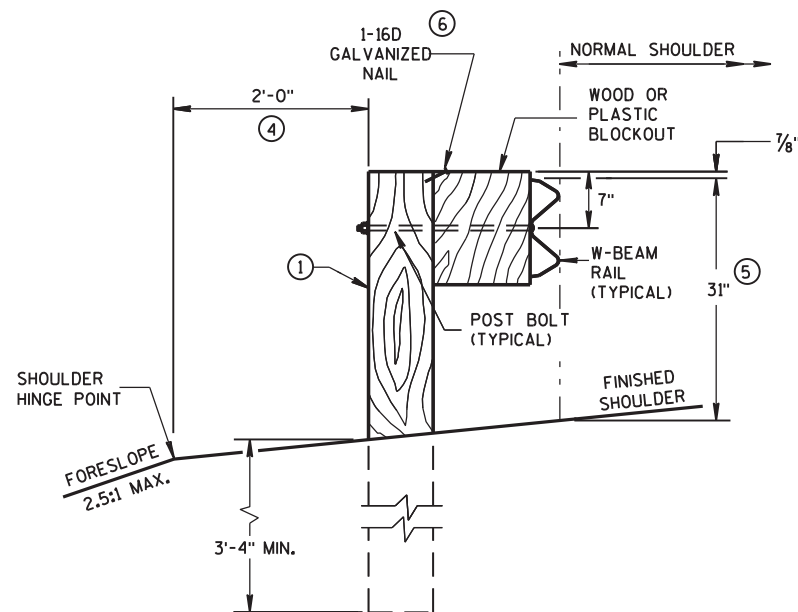
14B42 sheet a: Midwest Guardrail System (MGS) Installation Cross Sections, Post and Block Details

- WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2 INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

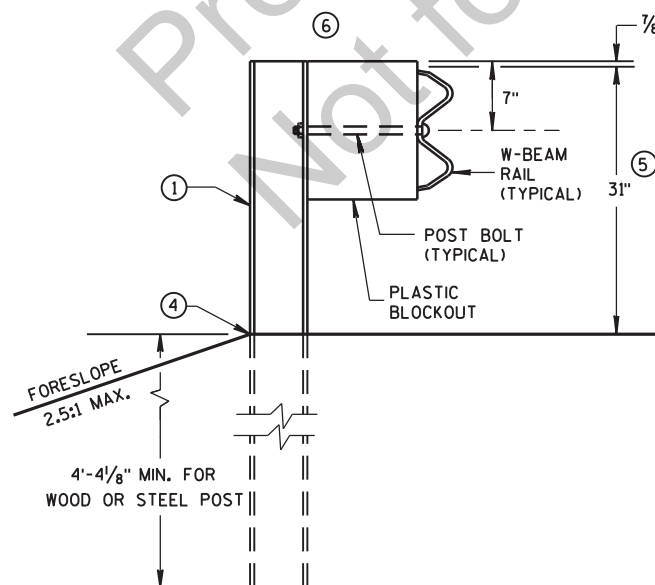


STEEL POST & HOLE PUNCHING DETAIL (w6X9)

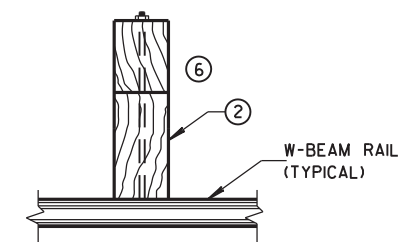
WOOD POST (6" X 8") NOMINAL



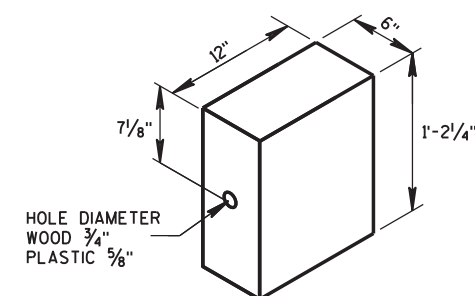
END VIEW LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



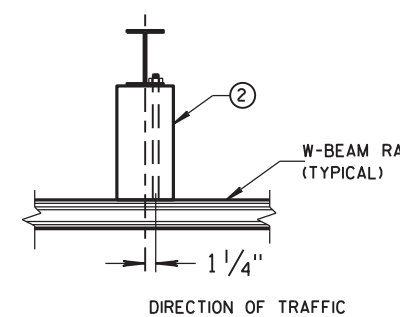
END VIEW MGS LONGER POST AT HALFPST SPACING W BEAM (K)



PLAN VIEW WOOD POST, BLOCKOUT & BEAM



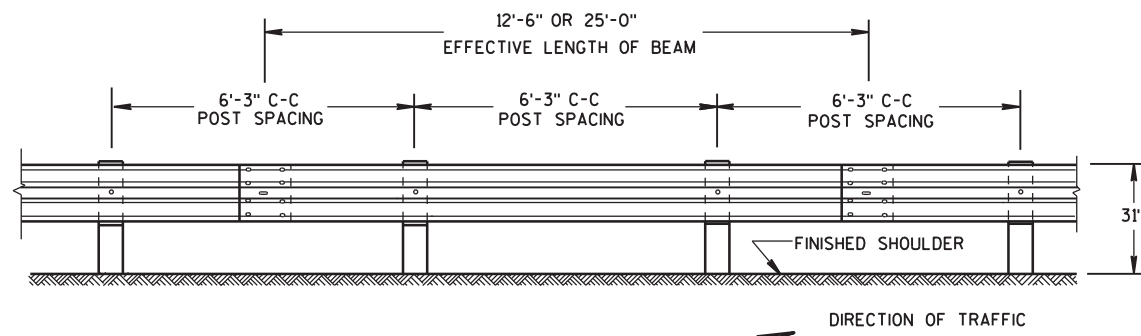
WOOD OR PLASTIC BLOCKOUT



PLAN VIEW STEEL POST, PLASTIC BLOCKOUT & BEAM

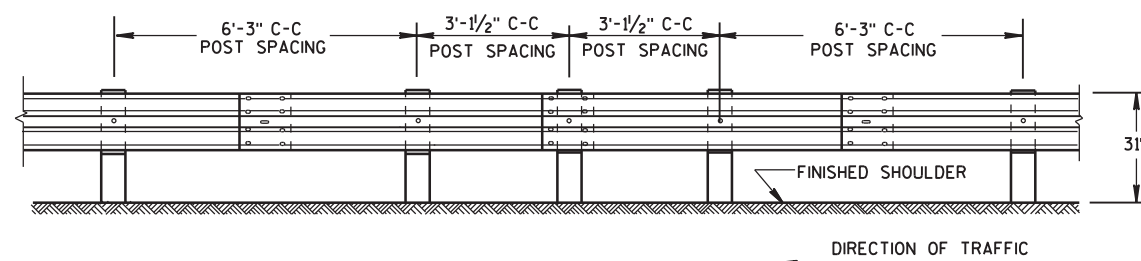
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



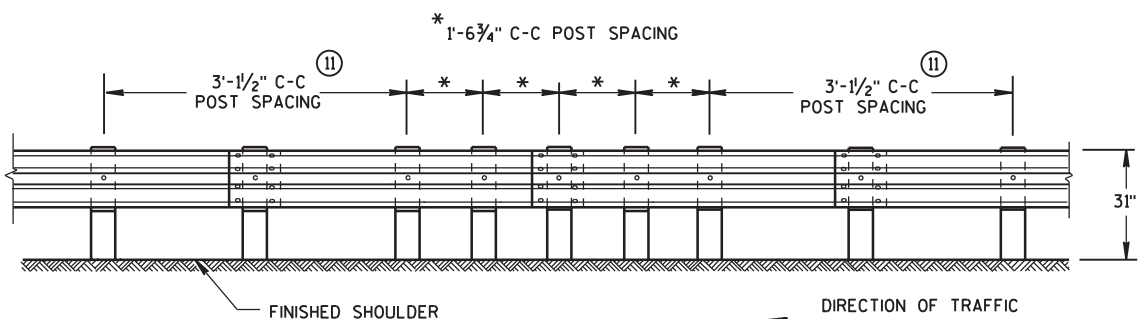
FRONT VIEW

POST SPACING STANDARD INSTALLATION



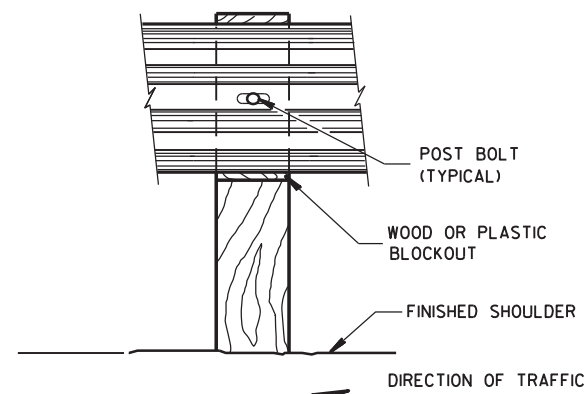
FRONT VIEW

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

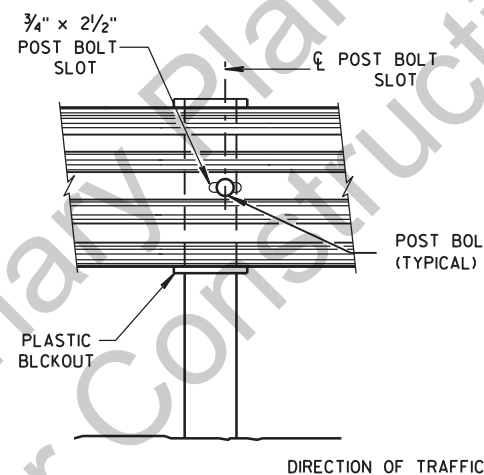


FRONT VIEW

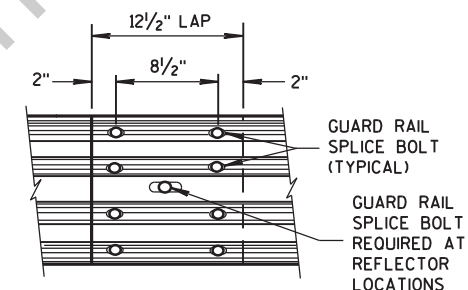
QUARTER POST SPACING (QS)



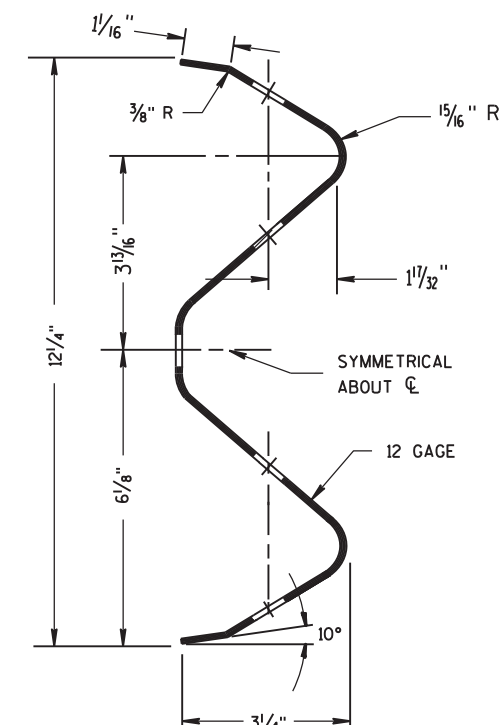
FRONT VIEW AT WOOD POST



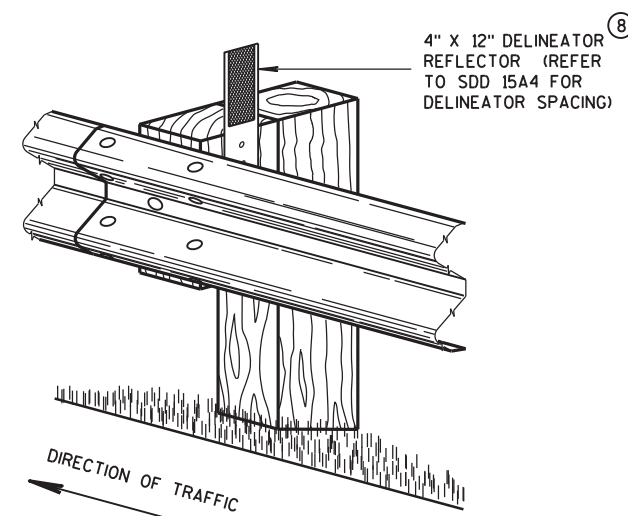
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



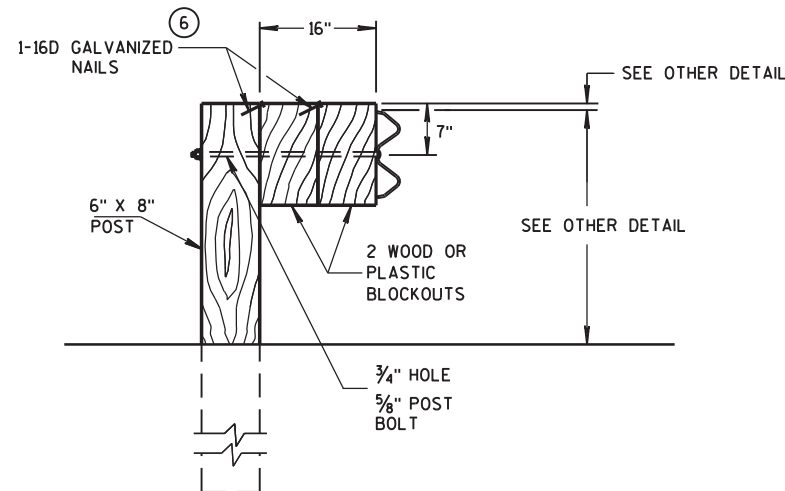
SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

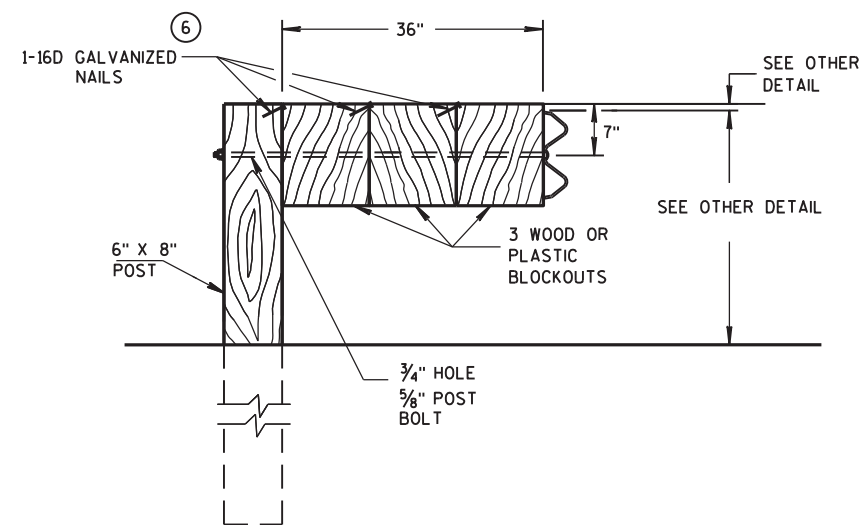
GENERAL NOTES

- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
- ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



DETAIL FOR 16" BLOCKOUT DEPTH

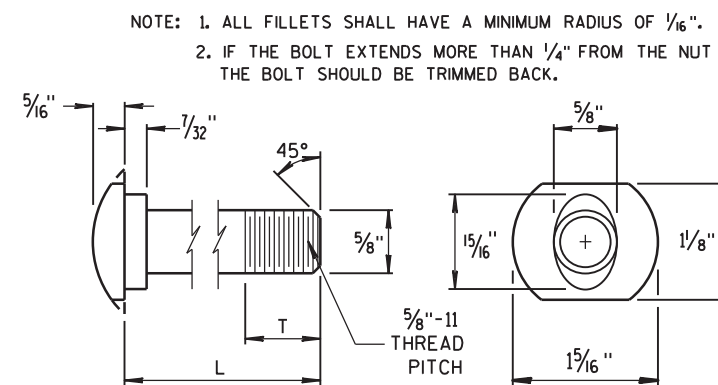
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

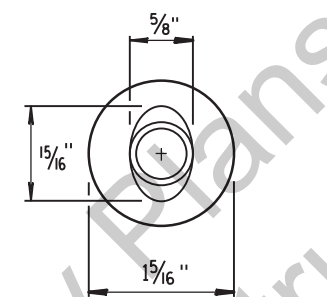
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

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

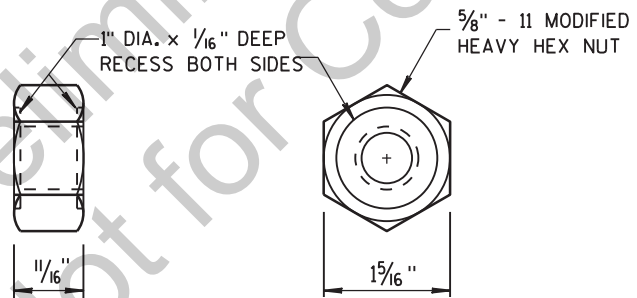


POST BOLT TABLE

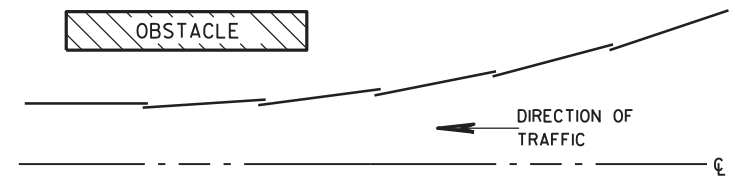
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



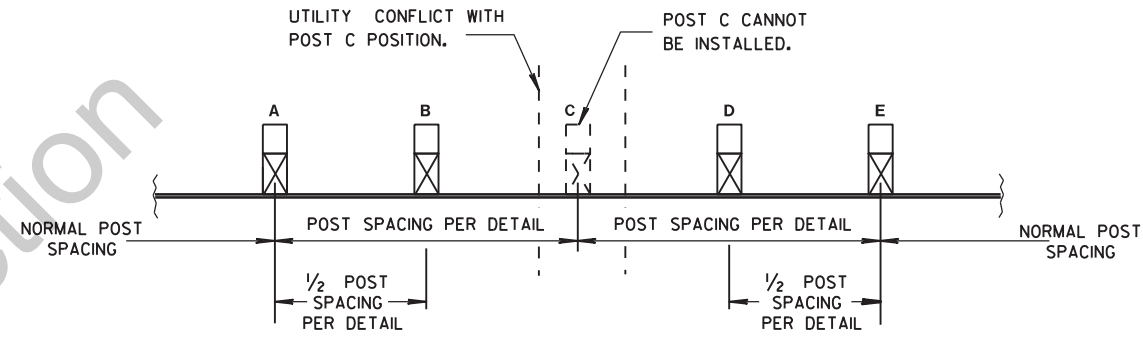
ALTERNATE BOLT HEAD



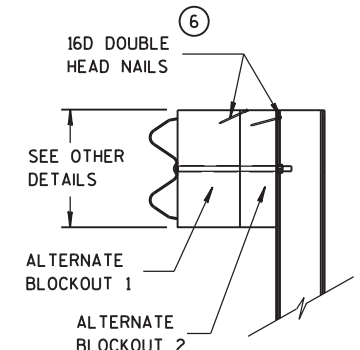
POST BOLT, SPLICE BOLT AND RECESS NUT



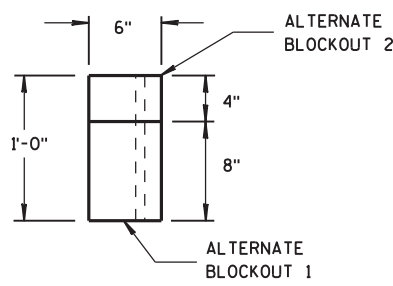
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

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

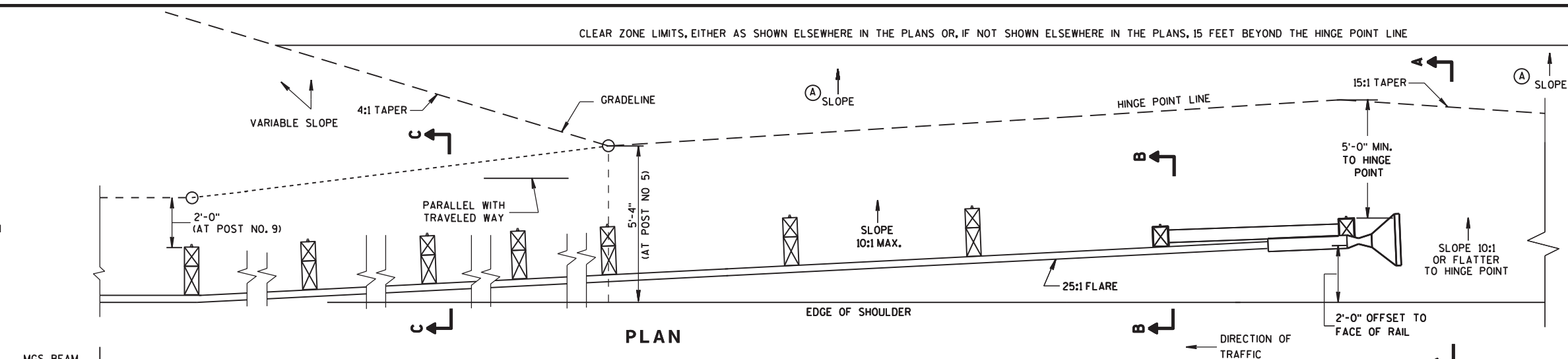
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

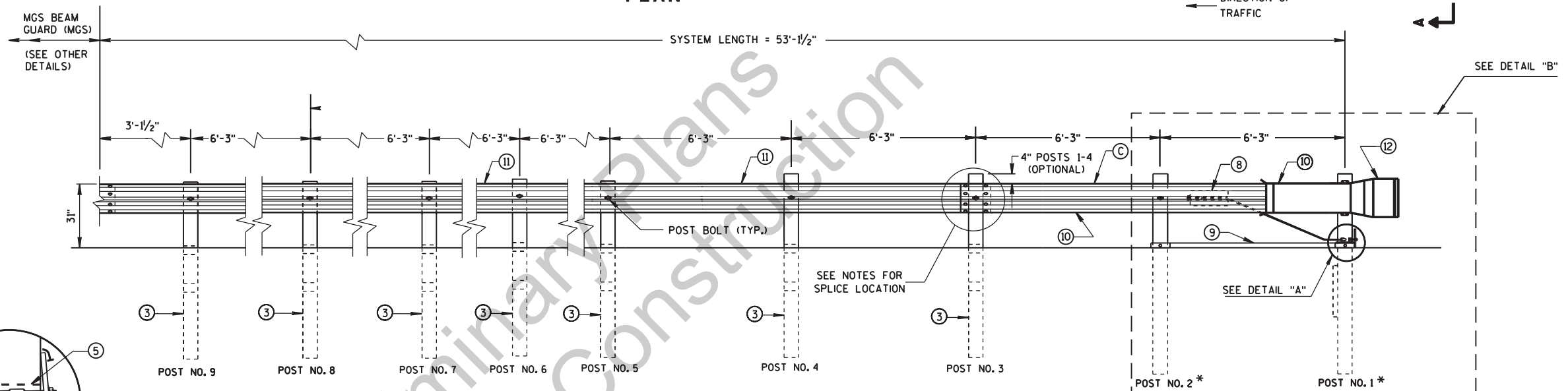
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE
APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

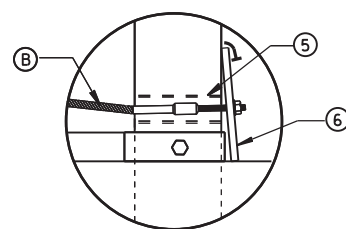
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



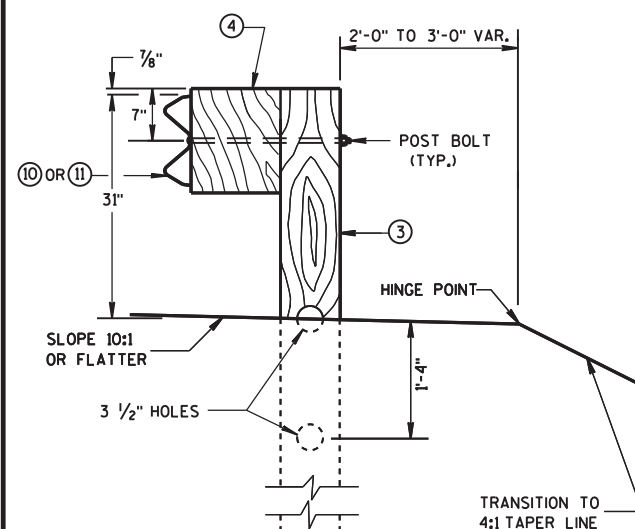
PLAN



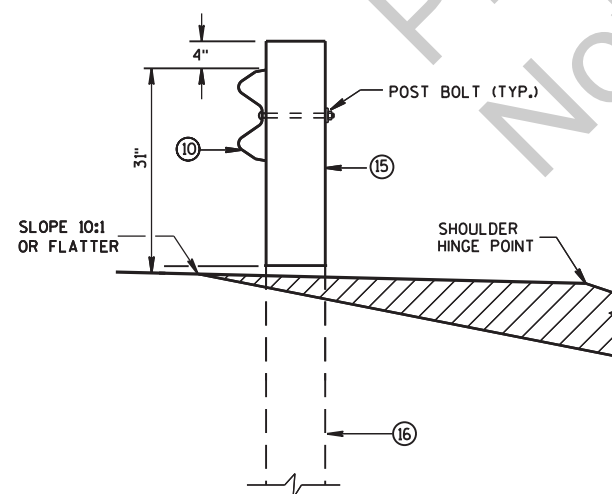
ELEVATION



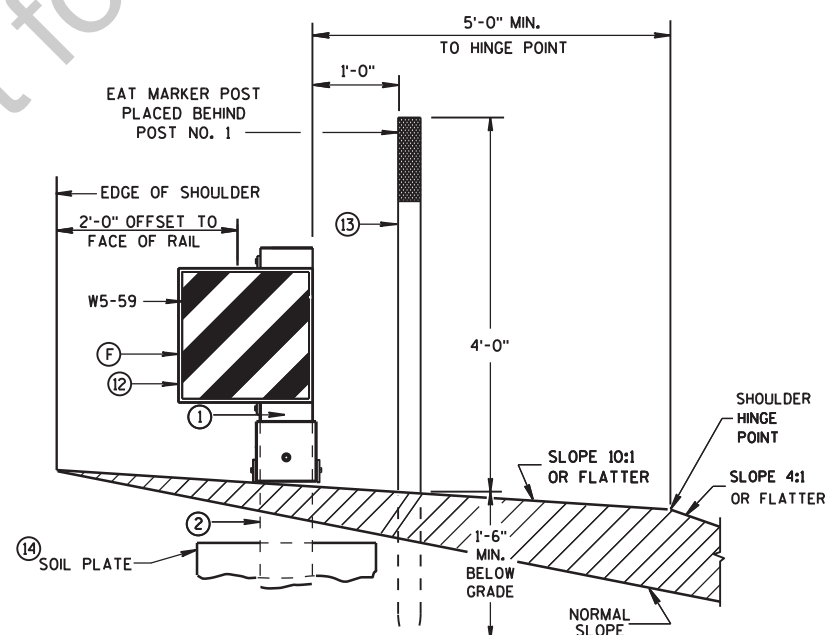
DETAIL "A"



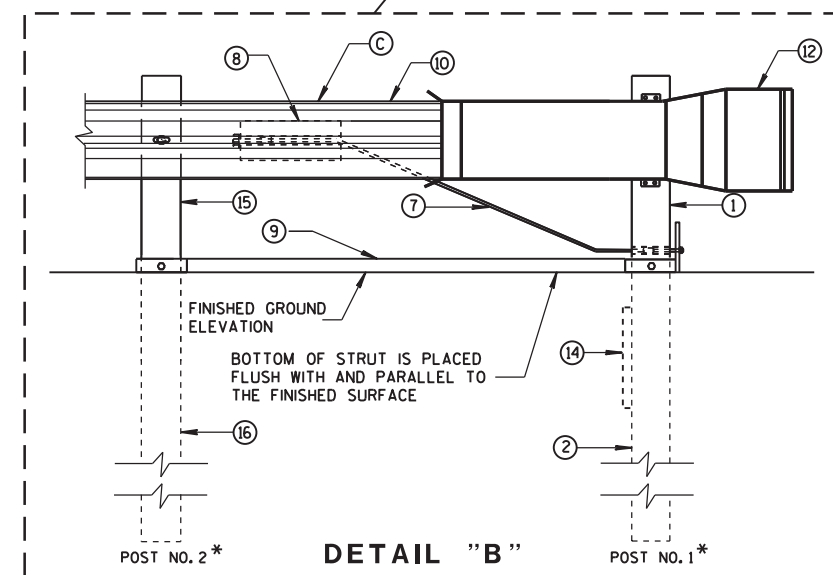
SECTION C-C
TYPICAL AT POST NOS. 3-9



SECTION B-B
TYPICAL AT POST NO. 2*



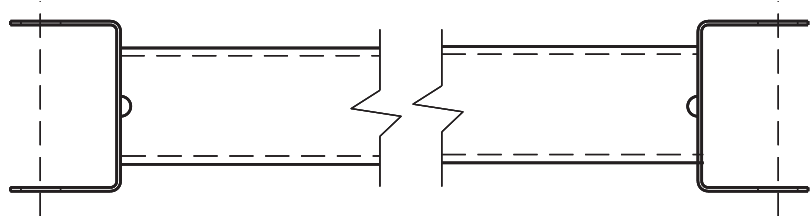
SECTION A-A
TYPICAL AT POST NO. 1 *



DETAIL "B"

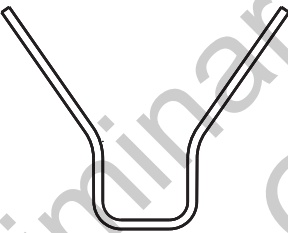
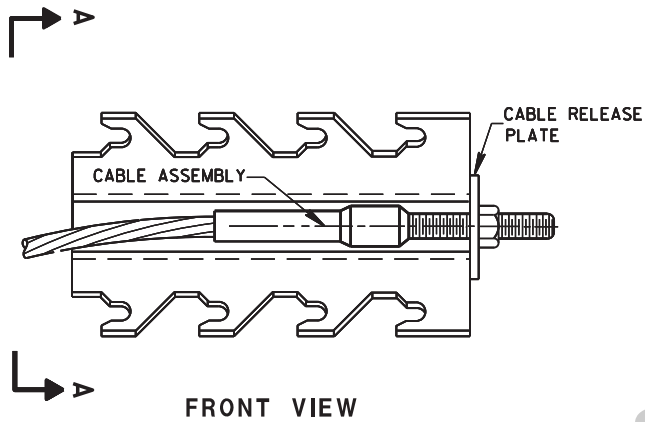
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



9 H

GENERIC GROUND STRUT



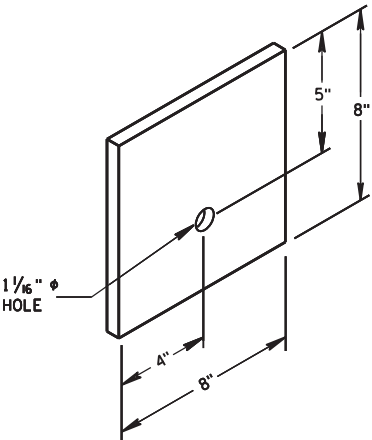
SECTION A-A

8 H

GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

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

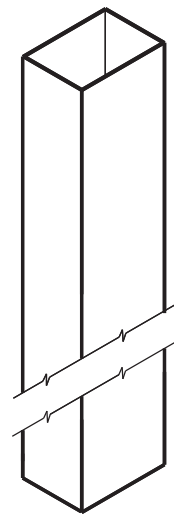


6

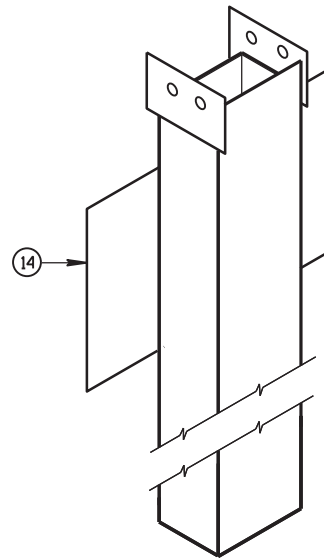
BEARING PLATE

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

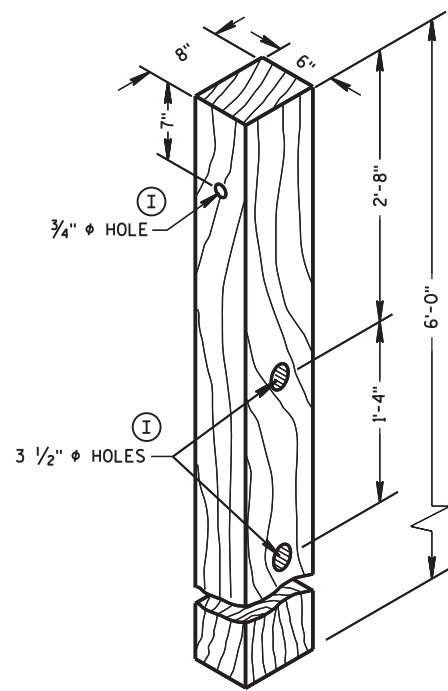
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



UPPER POST NO. 1⁽¹⁾



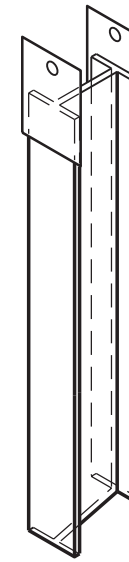
LOWER POST NO. 1⁽²⁾



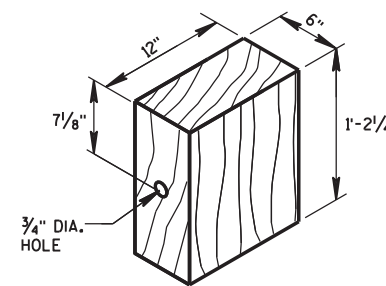
POSTS NUMBER 3-9
WOOD CRT POST⁽³⁾



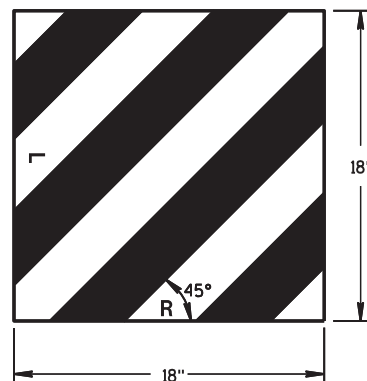
UPPER POST NO. 2⁽¹⁵⁾



LOWER POST NO. 2⁽¹⁶⁾



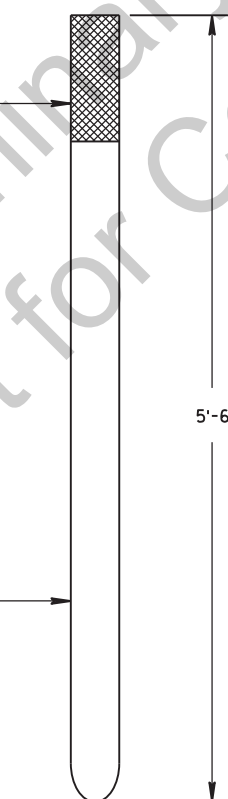
WOOD BLOCKOUT⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



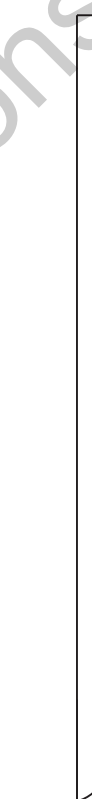
REFLECTIVE SHEETING DETAIL^(H)

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

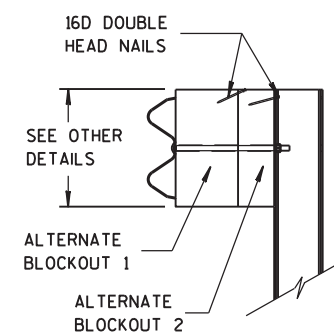
E.A.T. MARKER
POST (YELLOW)



FRONT VIEW
E.A.T. MARKER POST⁽¹³⁾

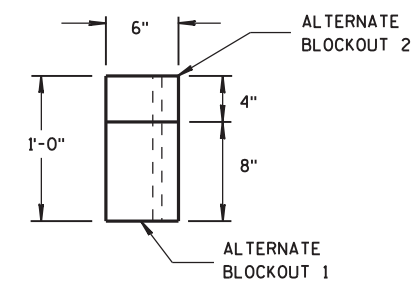


SIDE VIEW



SIDE VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL



TOP VIEW

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

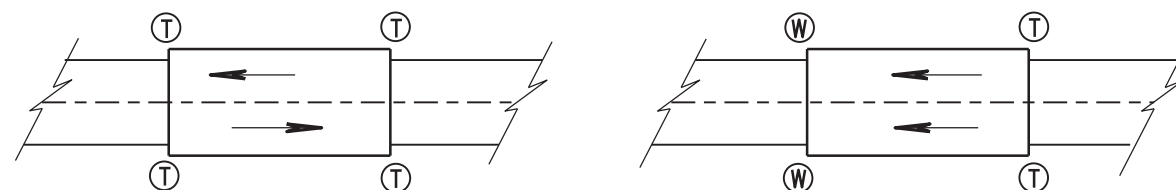
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR



14B45 sheet a: Midwest Guardrail System (MGS) Thrie Beam Transition: Layout



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

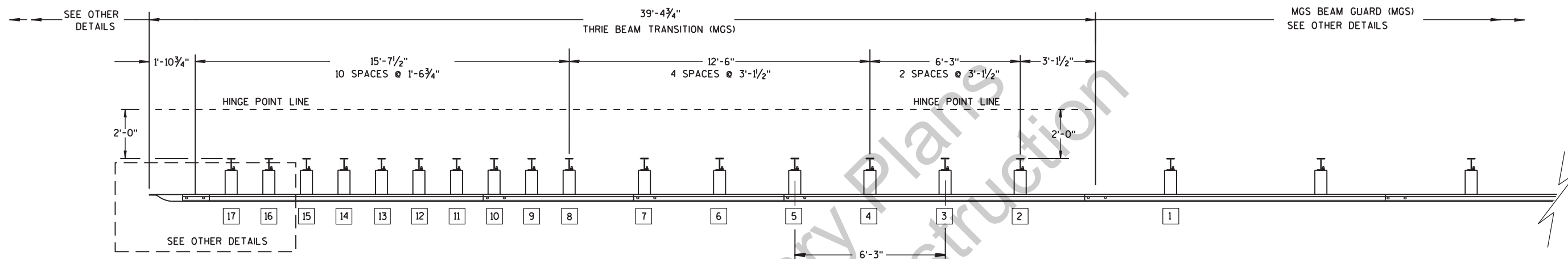
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

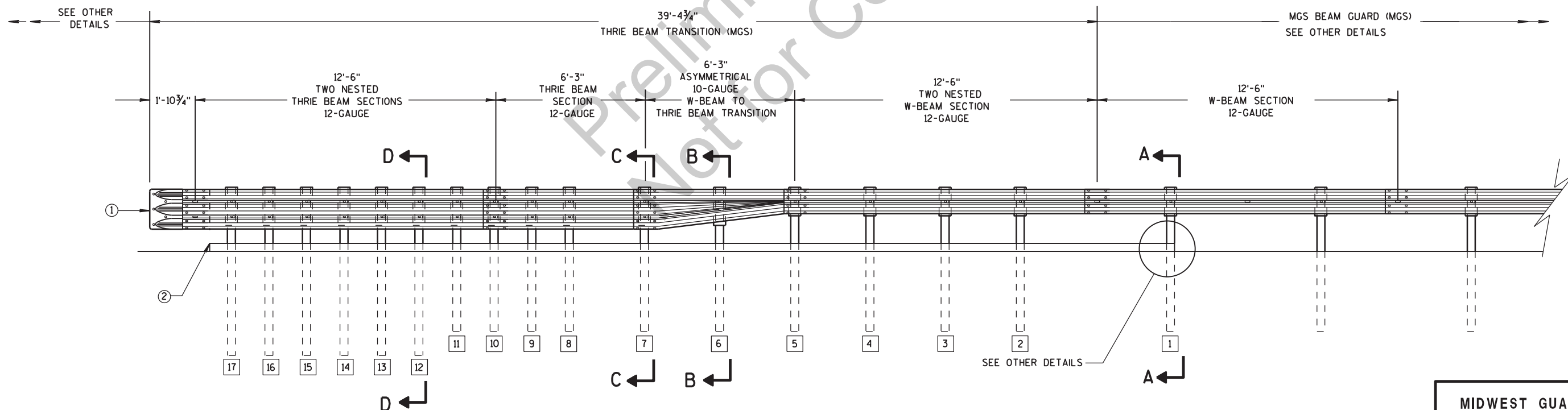
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

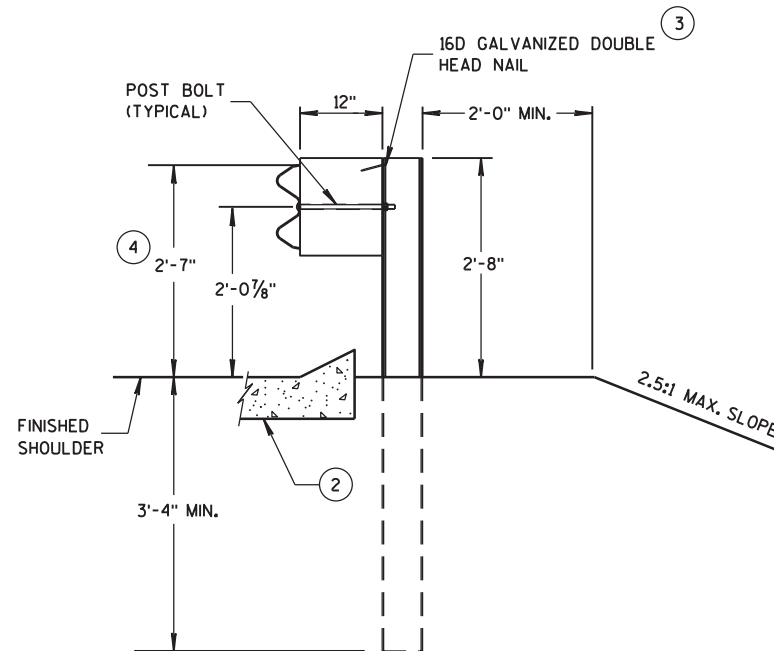
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

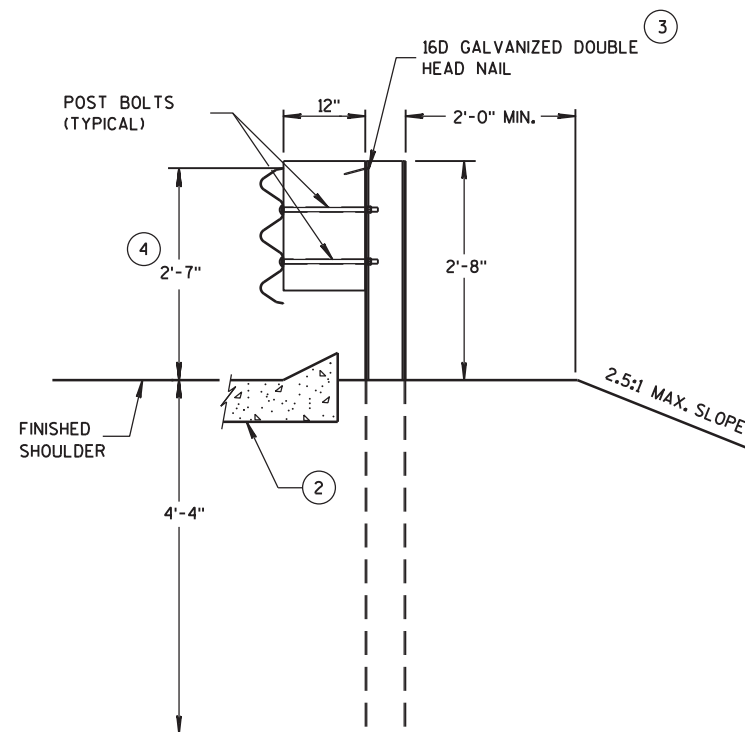


GENERAL NOTES

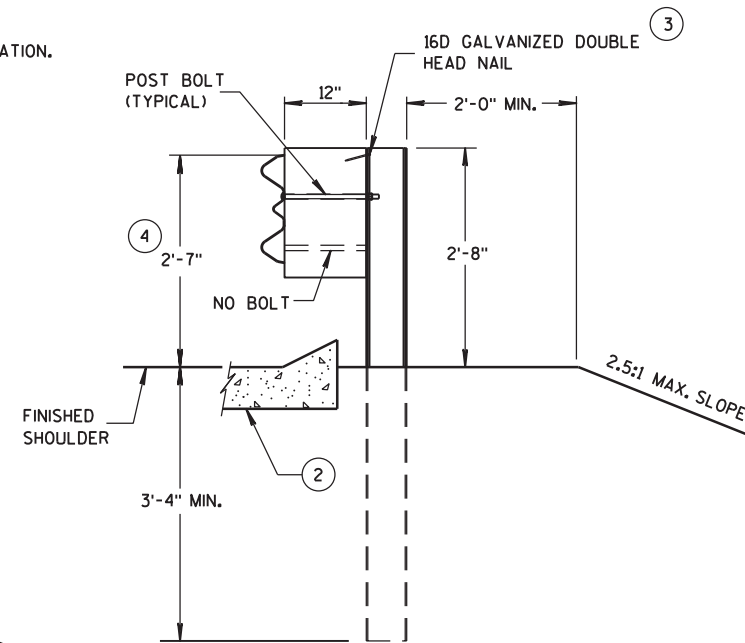
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm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



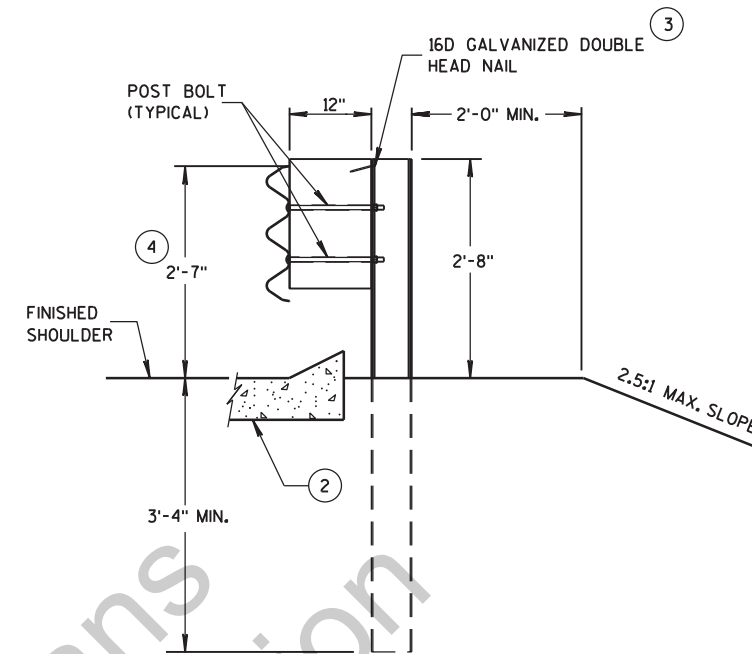
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

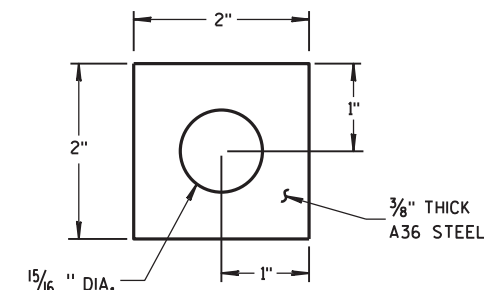
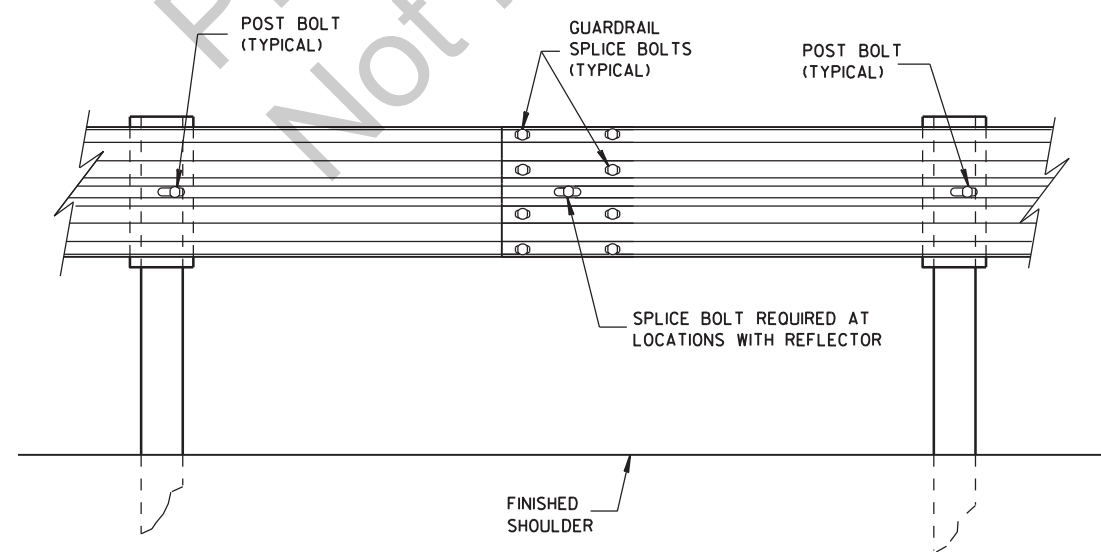
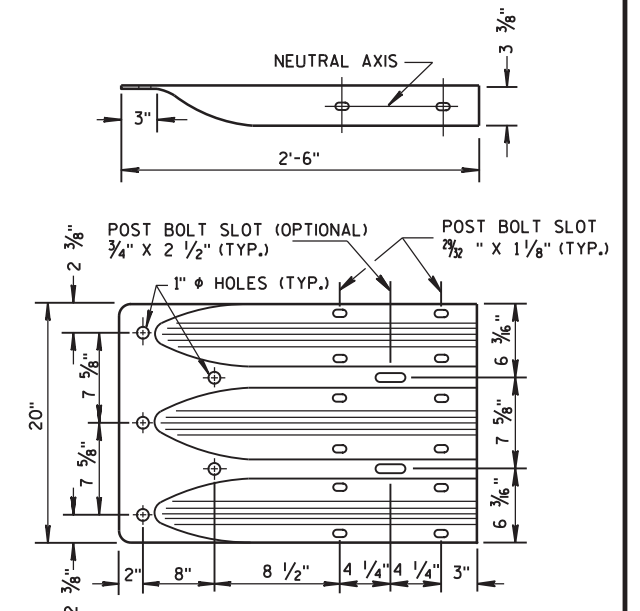


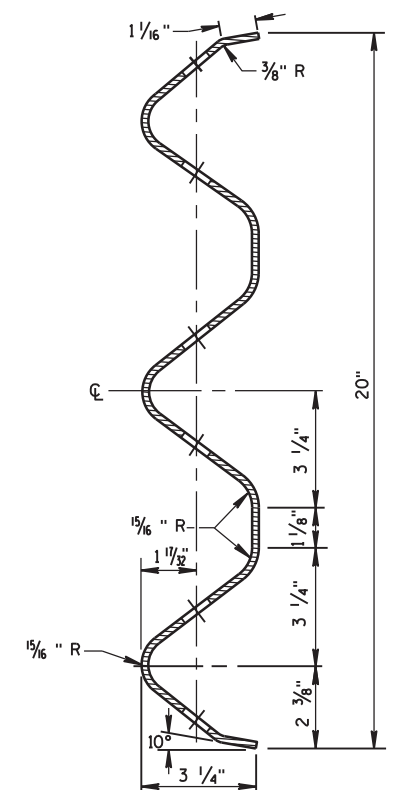
PLATE WASHER DETAIL



SPlice DETAIL



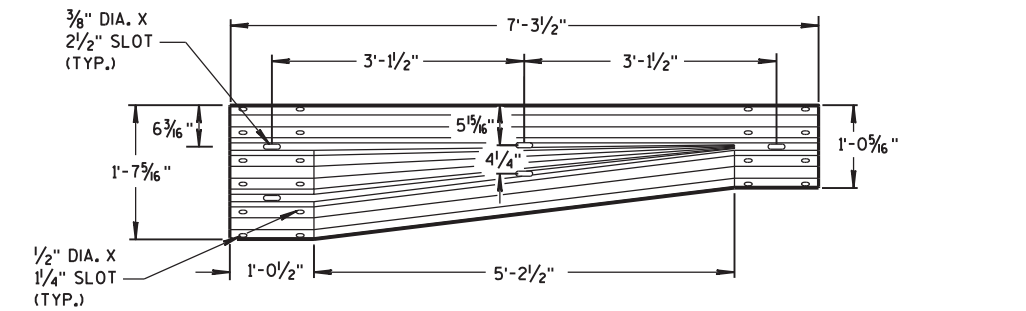
THRIE BEAM
TERMINAL CONNECTOR



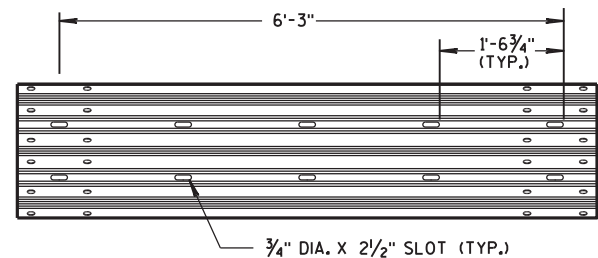
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

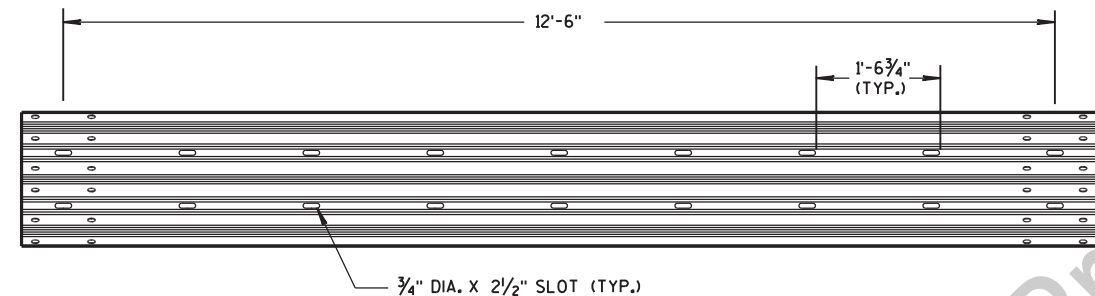
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



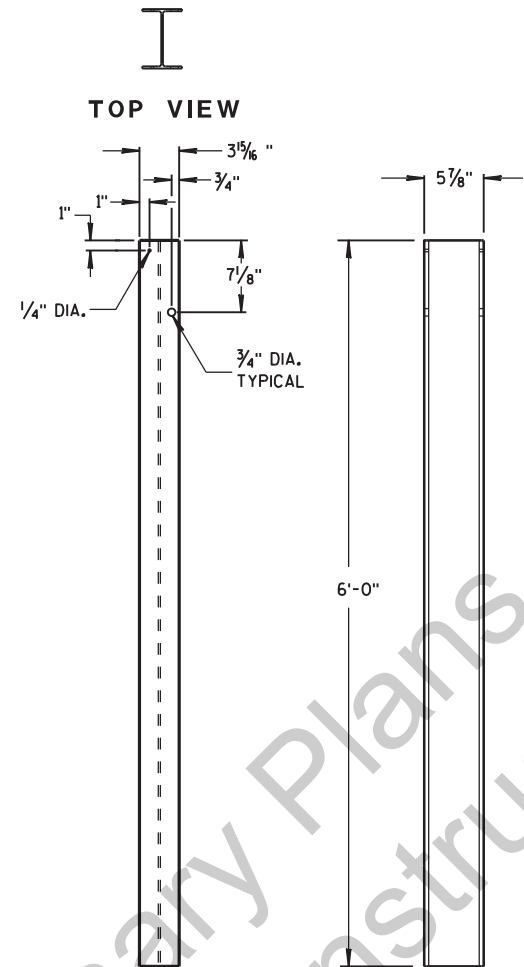
W-BEAM TO THRIE BEAM TRANSITION SECTION



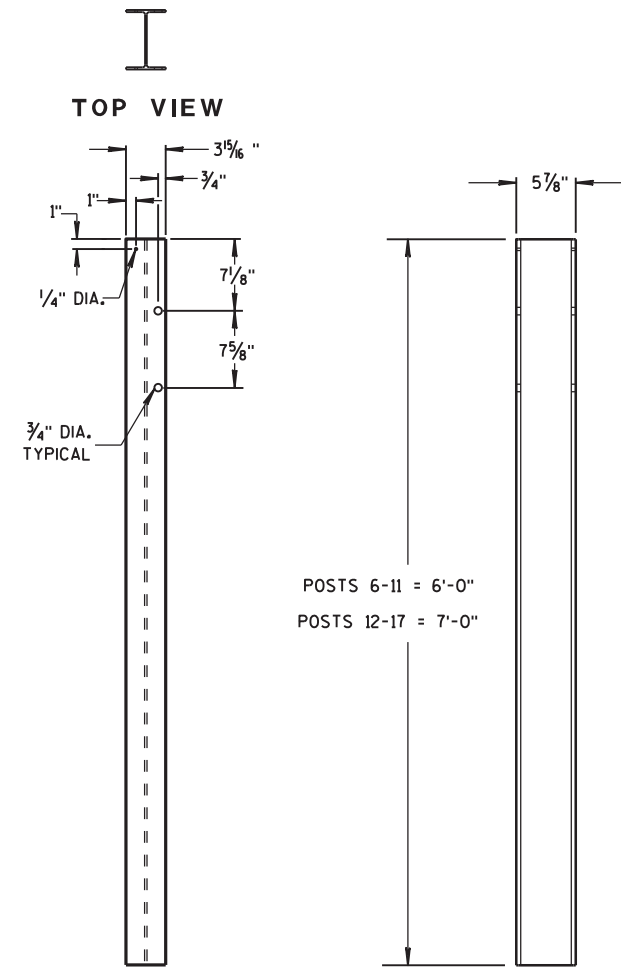
6'-3" THRIE BEAM SECTION



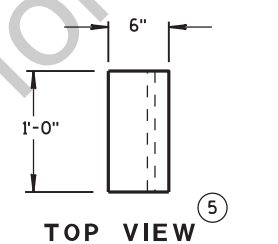
12'-6" THRIE BEAM SECTION



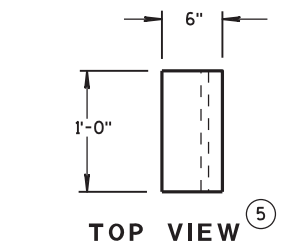
STEEL POSTS 1-5



STEEL POSTS 6-17



BLOCKOUT POSTS 1-5



BLOCKOUT POSTS 6-17

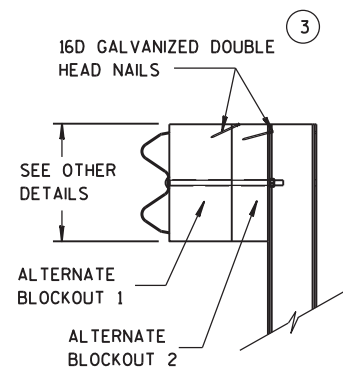
GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

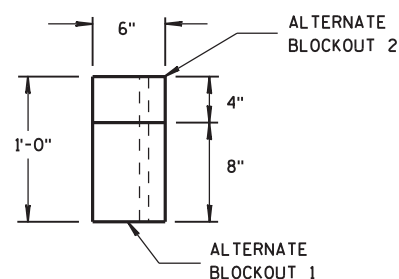
BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

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

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



SIDE VIEW

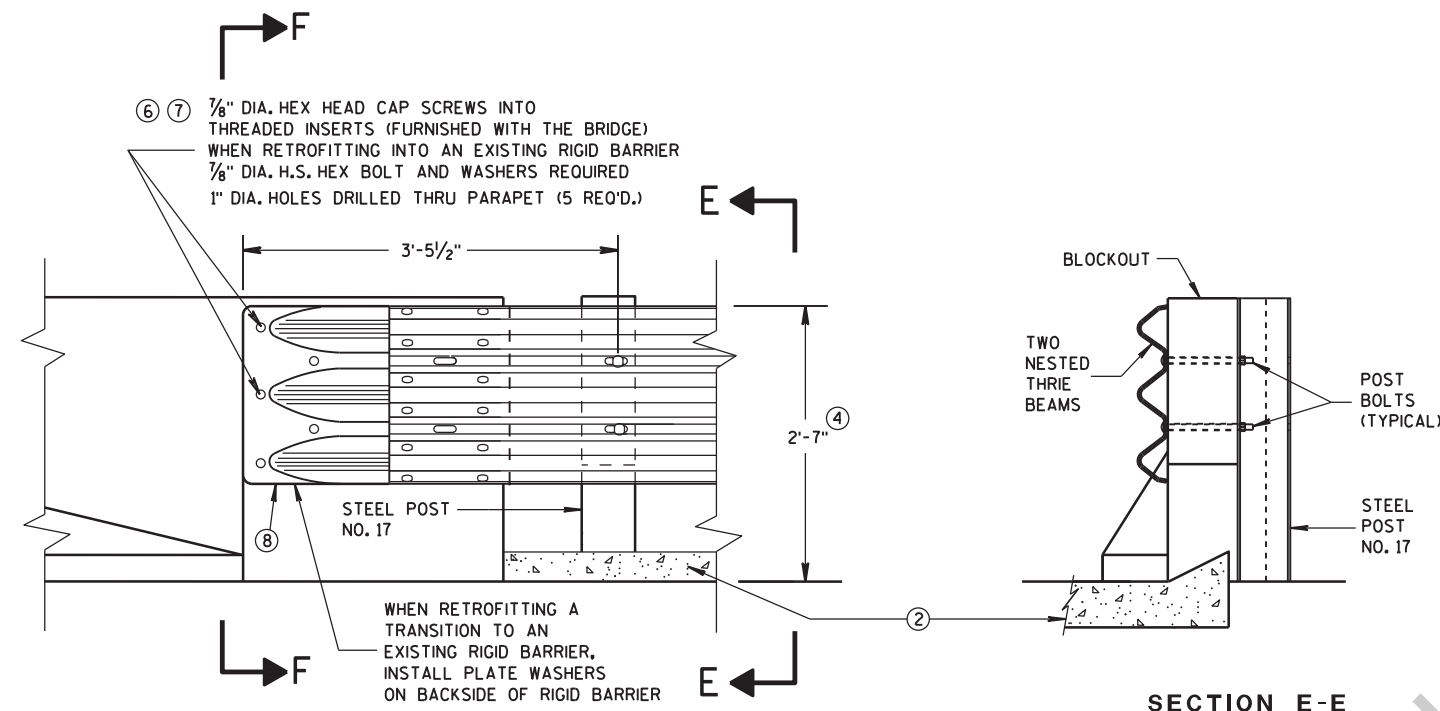


TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE
PARAPET WITH SQUARE ENDS

SECTION E-E

GENERAL NOTES

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

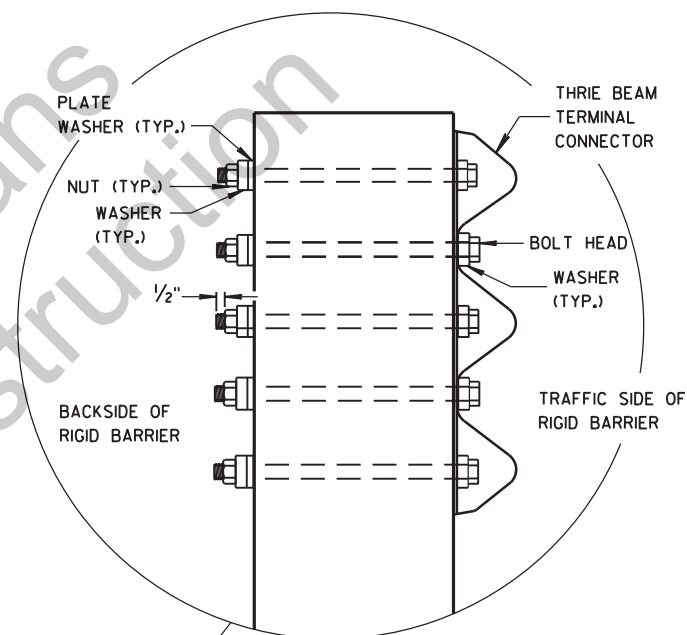
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

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

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X $\frac{5}{8}"$ THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X $3\frac{1}{2}"$.



DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

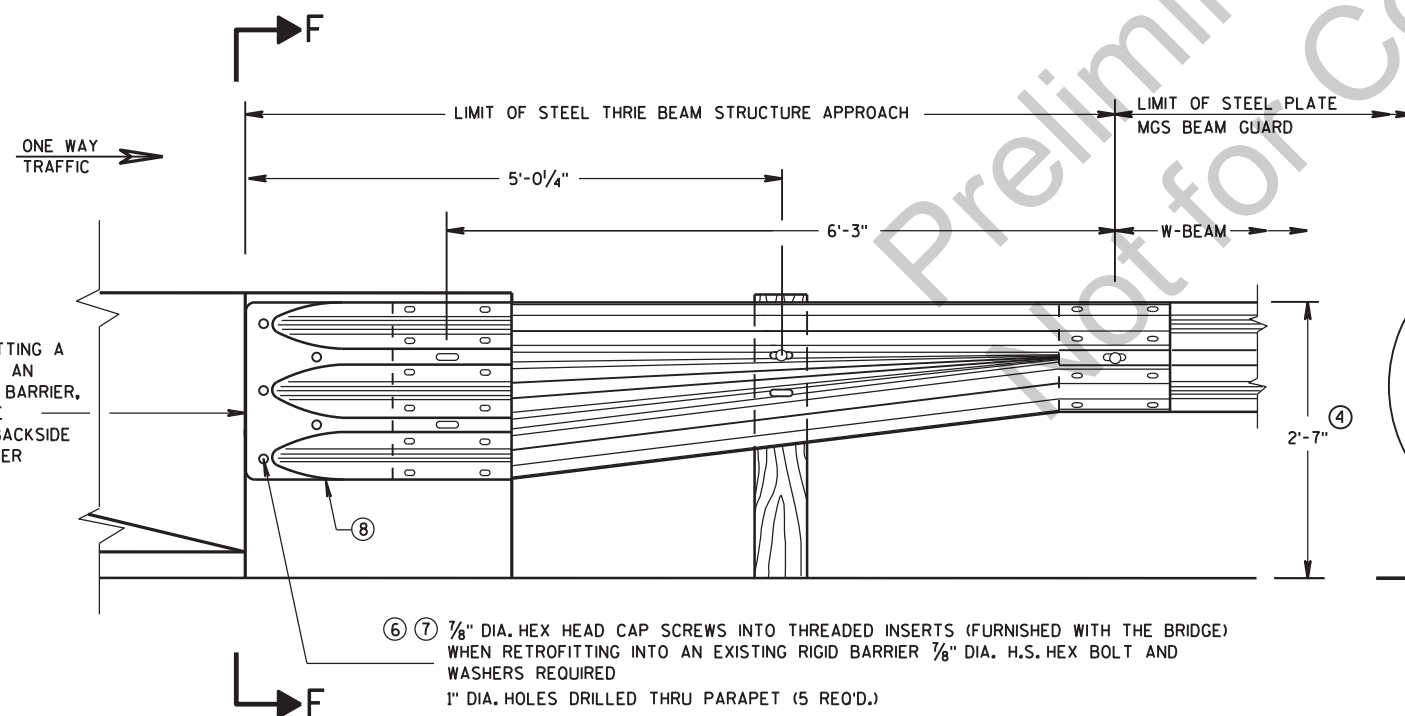
APPROVED
June, 2015

DATE

FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT
ENGINEER



FRONT VIEW

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

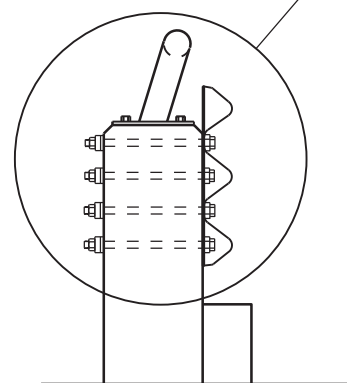
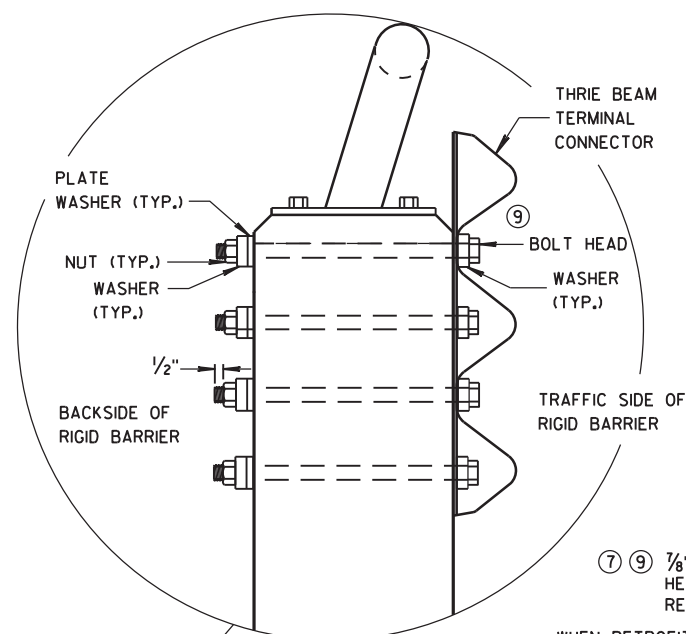
SECTION F-F



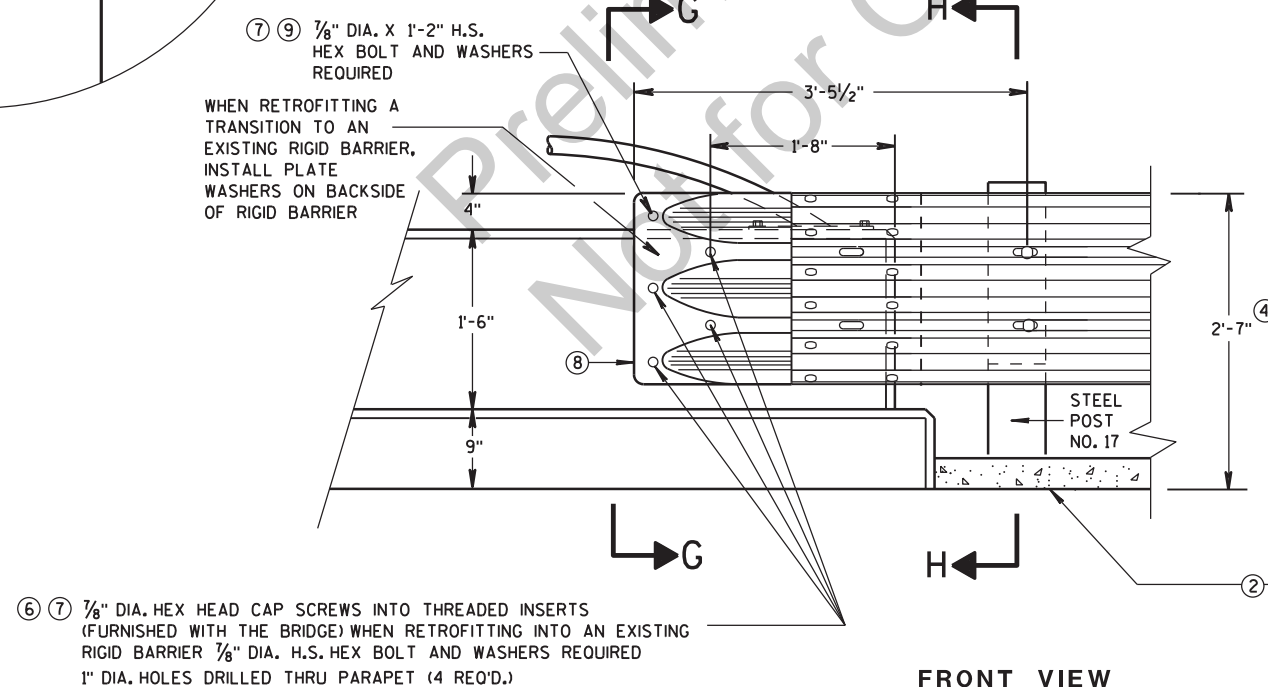
GENERAL NOTES

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

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

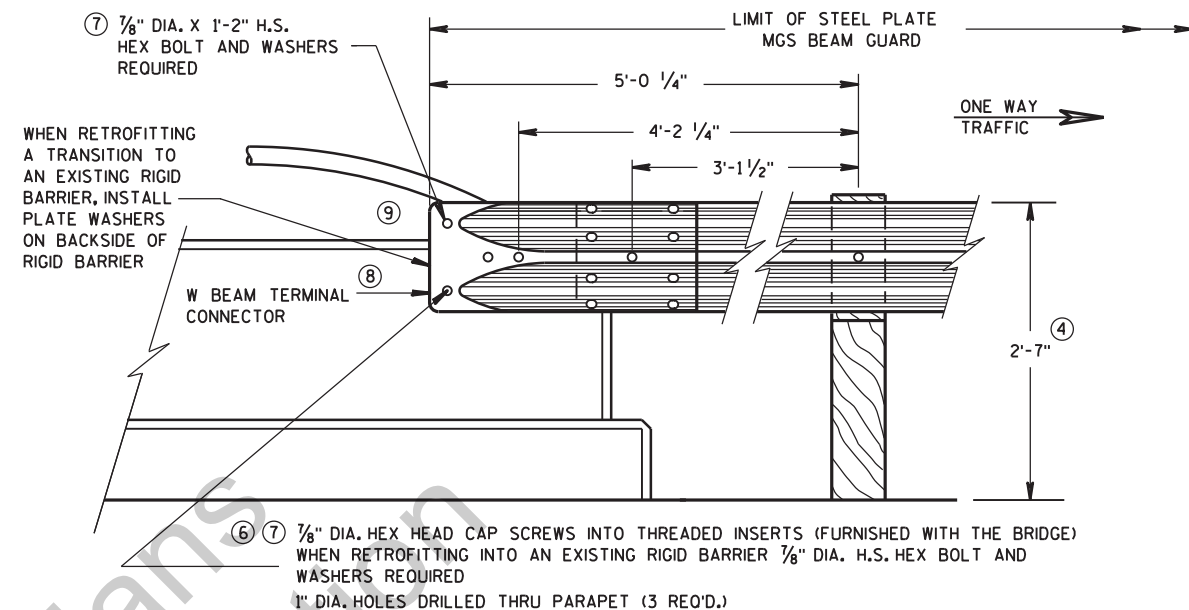


SECTION G-G



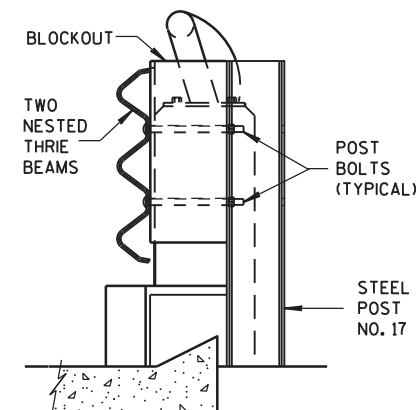
FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

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



SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

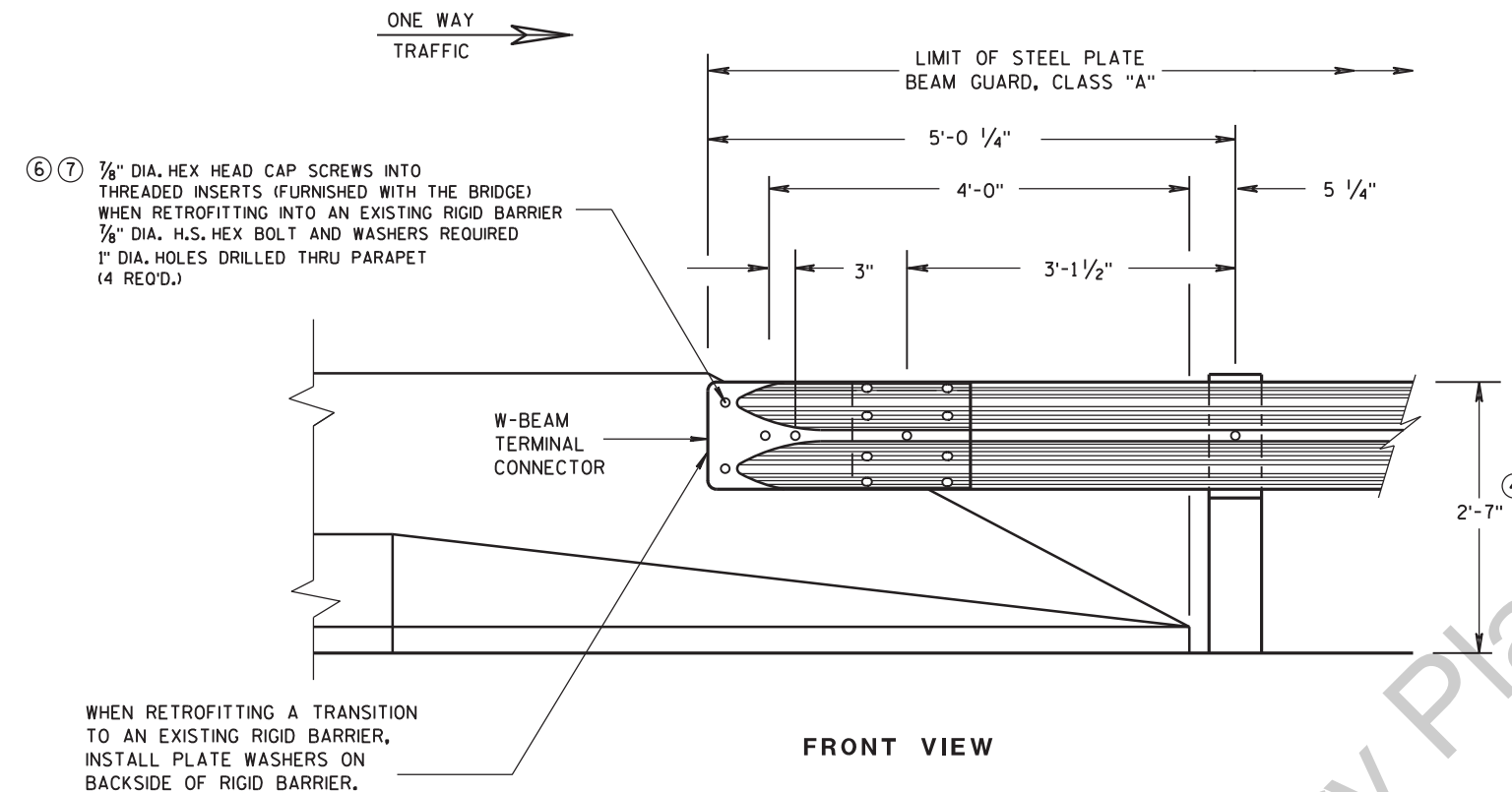
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

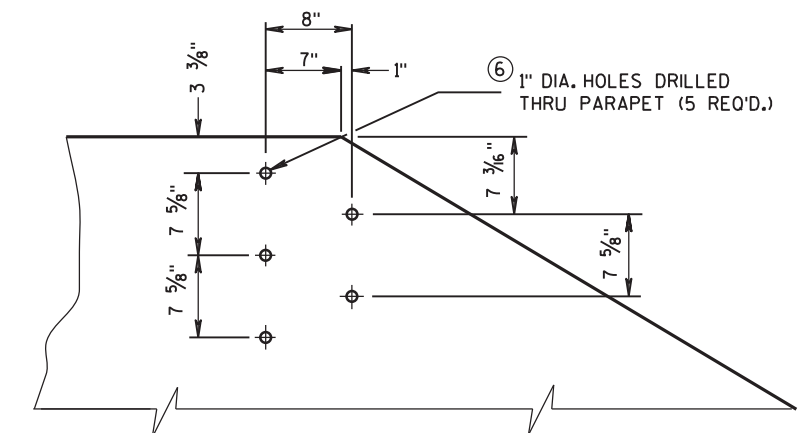


GENERAL NOTES

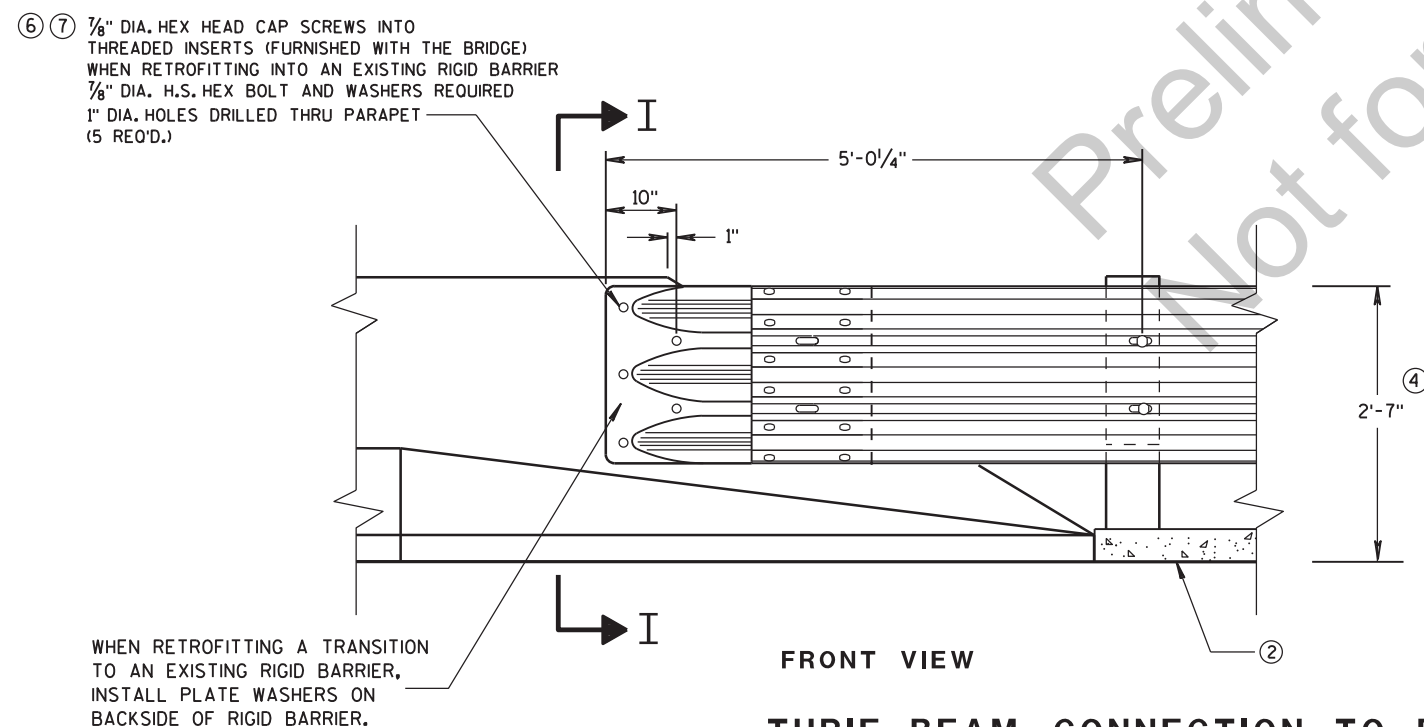
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH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



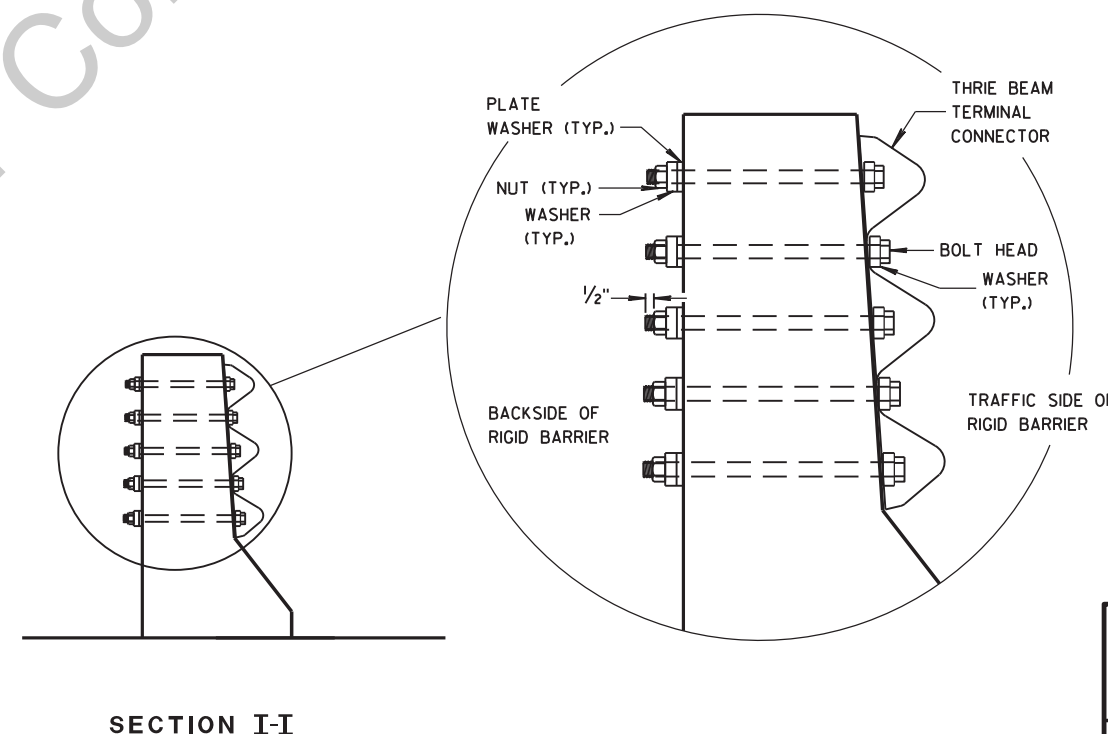
W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)



DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



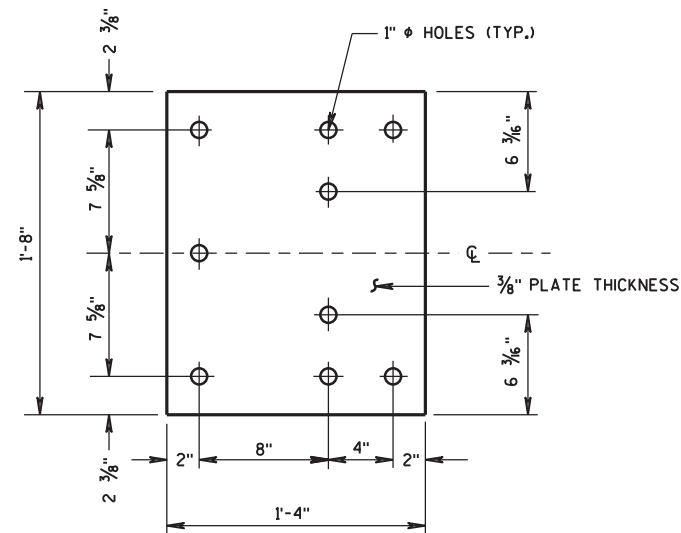
THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS



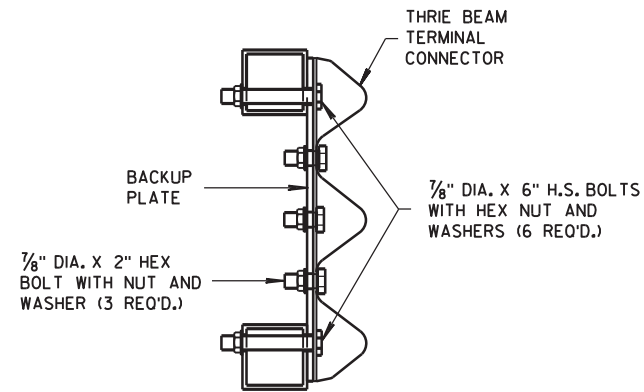
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

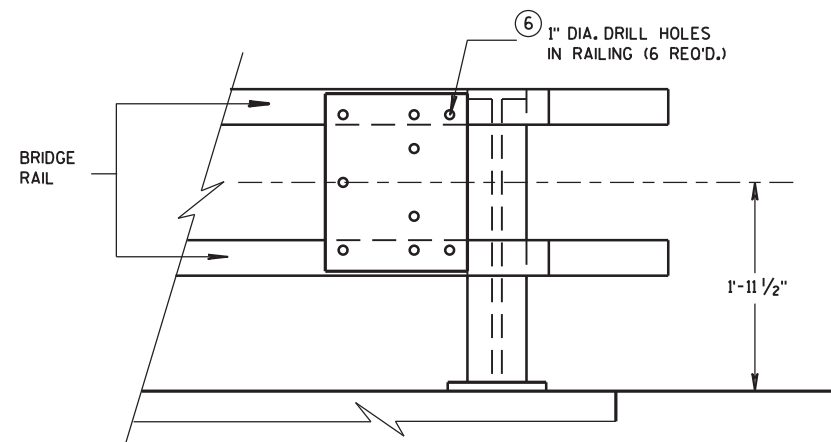
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA ENGINEER



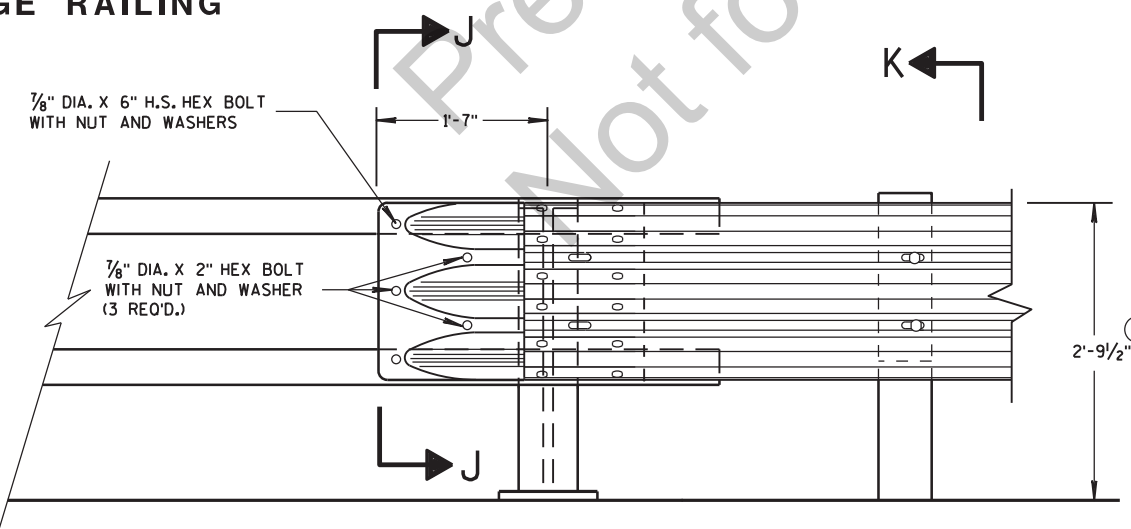
BACK-UP PLATE DETAIL



SECTION J-J



BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

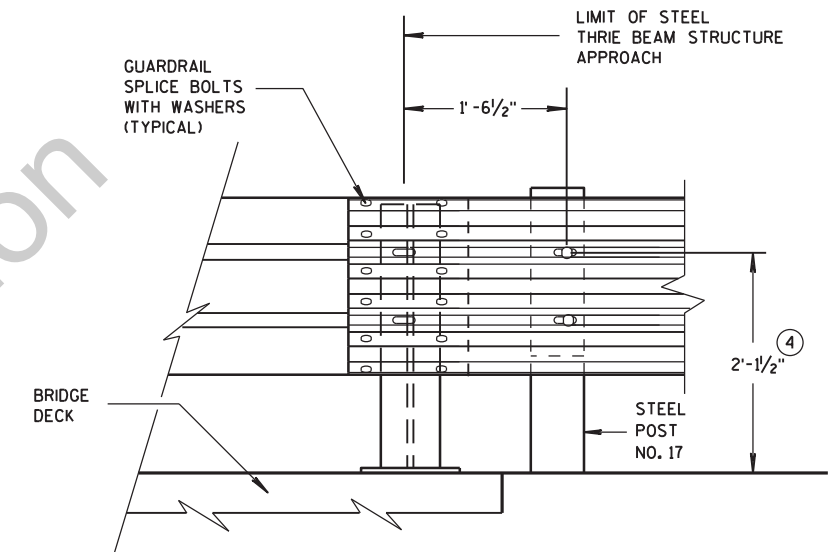


FRONT VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

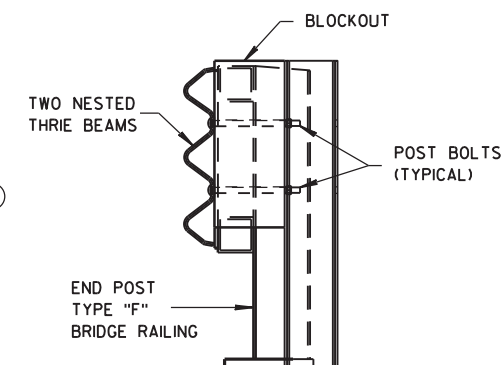
GENERAL NOTES

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



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



SECTION K-K

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

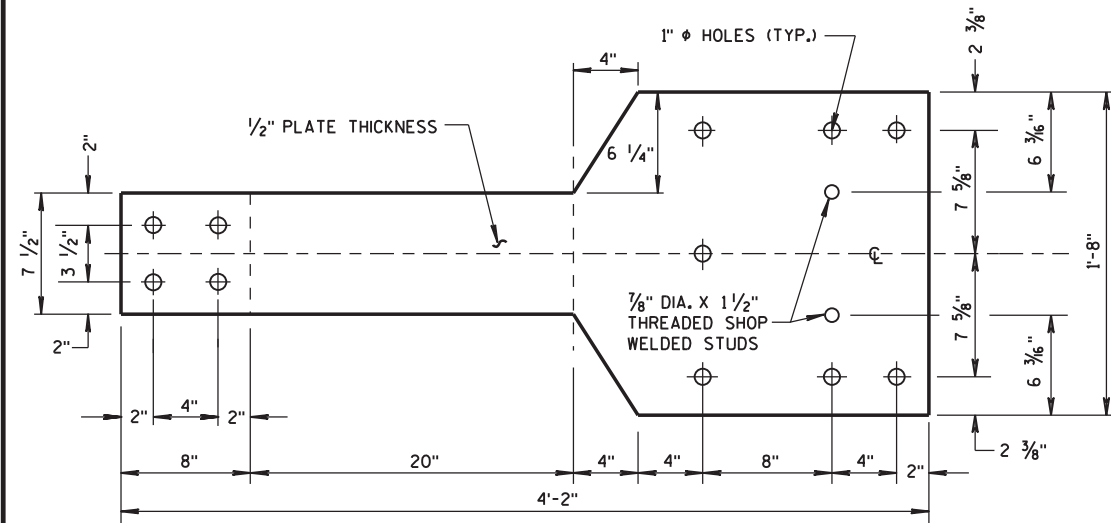
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

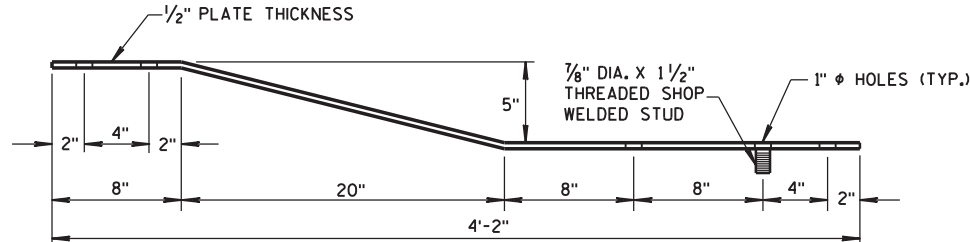


GENERAL NOTES

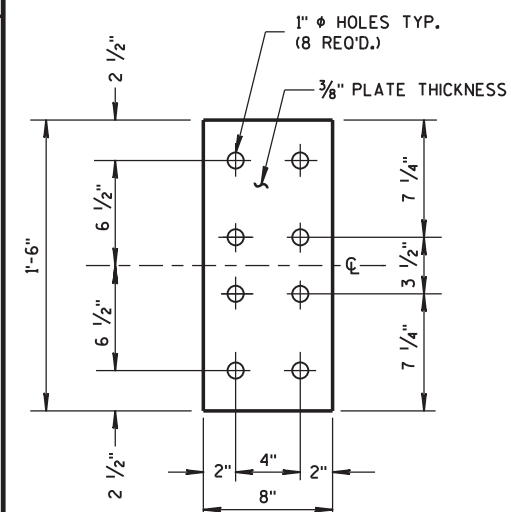
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



FRONT VIEW

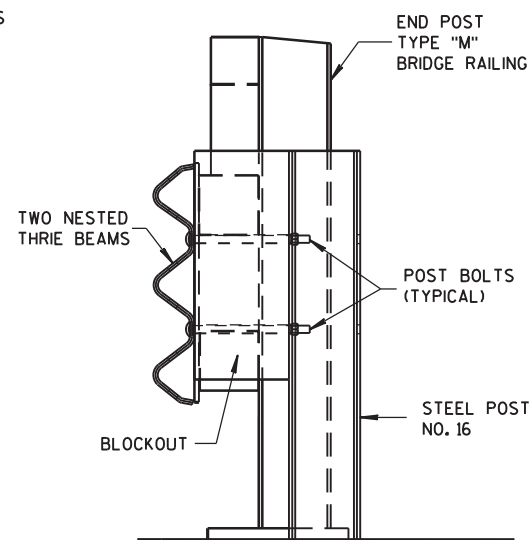


PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"

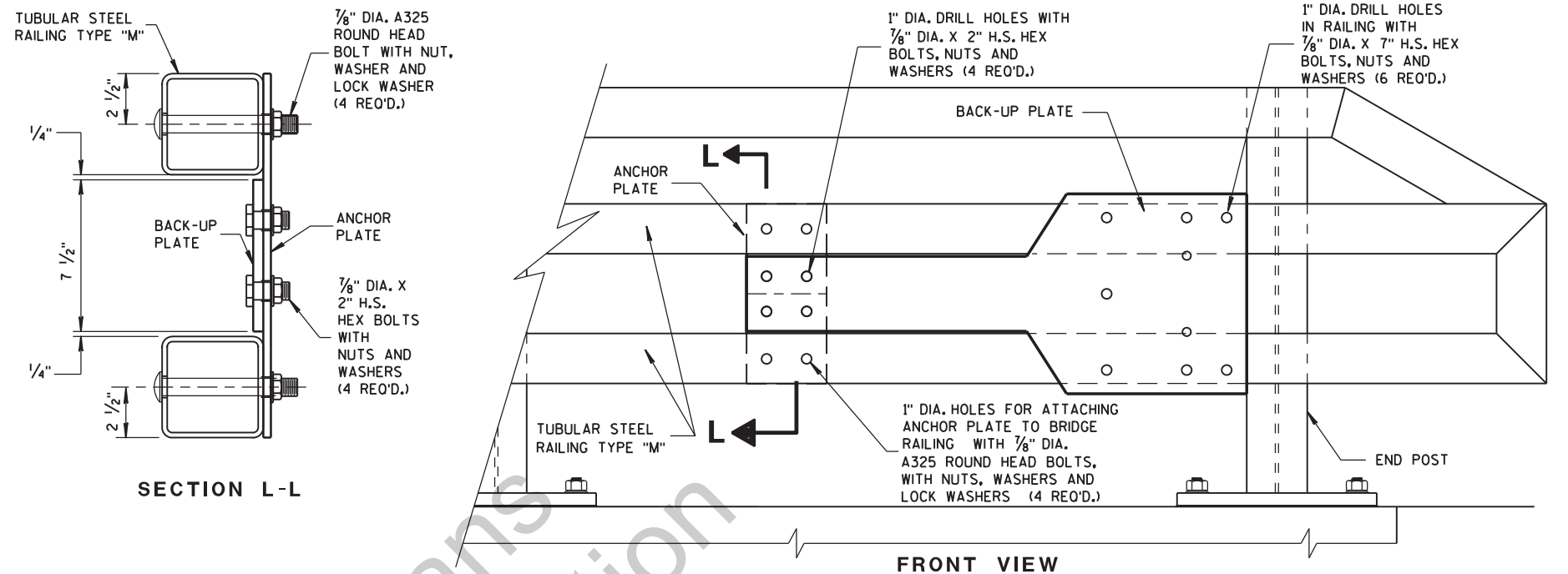


FRONT VIEW

ANCHOR
PLATE DETAIL,
TYPE "M"



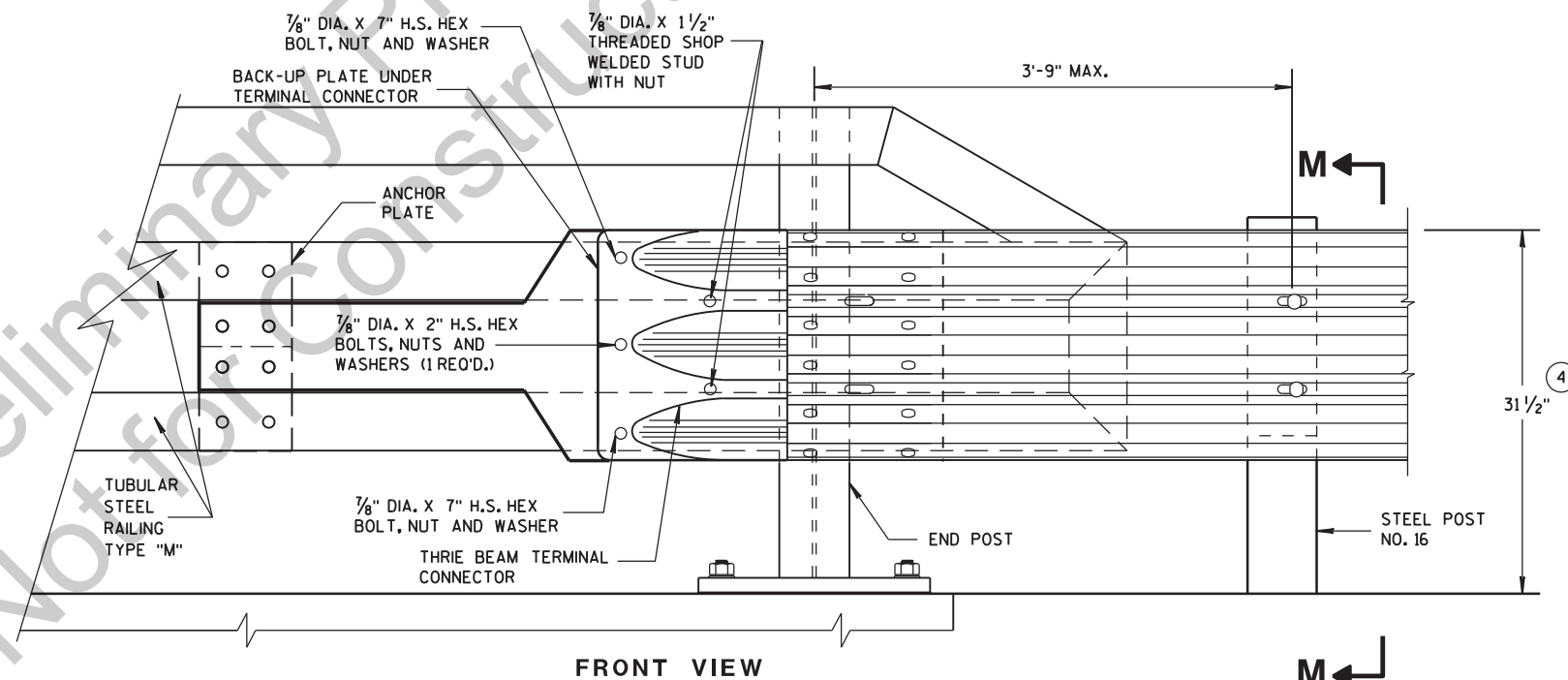
SECTION M-M



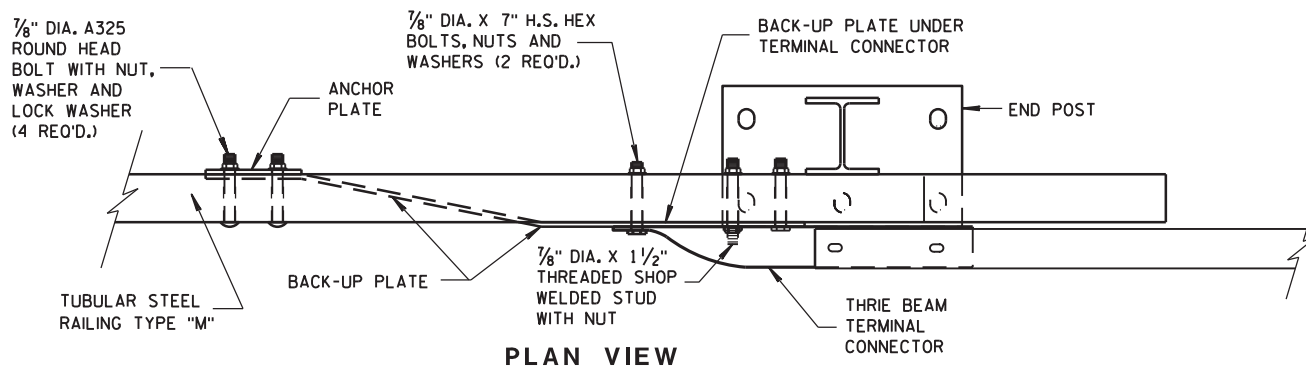
SECTION L-L

FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015

DATE

FHWA

/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

COVER PLATE PANELS ARE $\frac{3}{16}$ " THICK.

ALL STIFFENERS ARE 1/4" THICK.

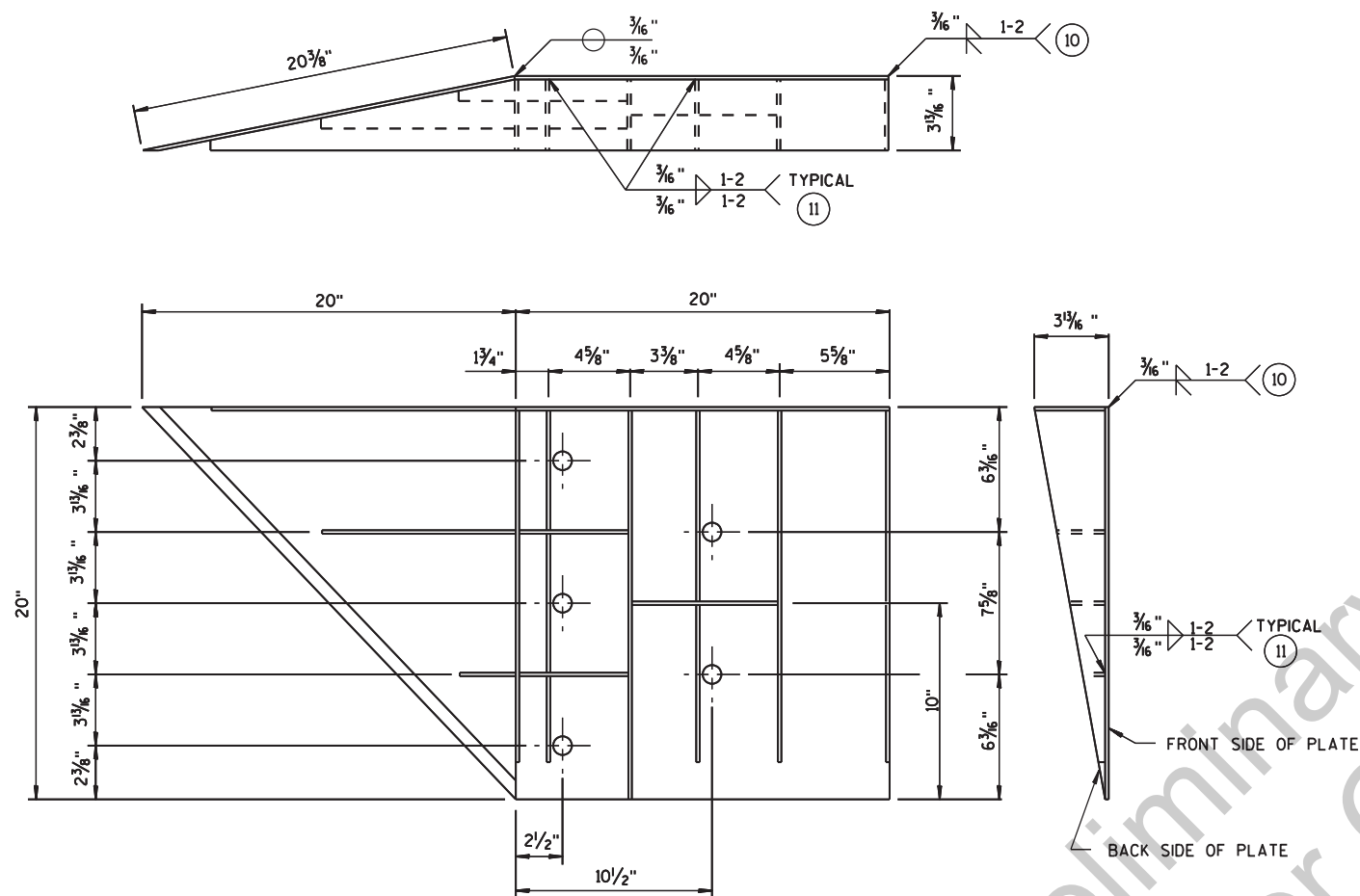
CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE
A36 STEEL AND GALVANIZED.

FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE
STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

- 10 STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND $\frac{1}{8}$ " FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- 11 STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
 $\frac{3}{8}$ " FILLET WELD BY 1" LONG SPACED AT 2".



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

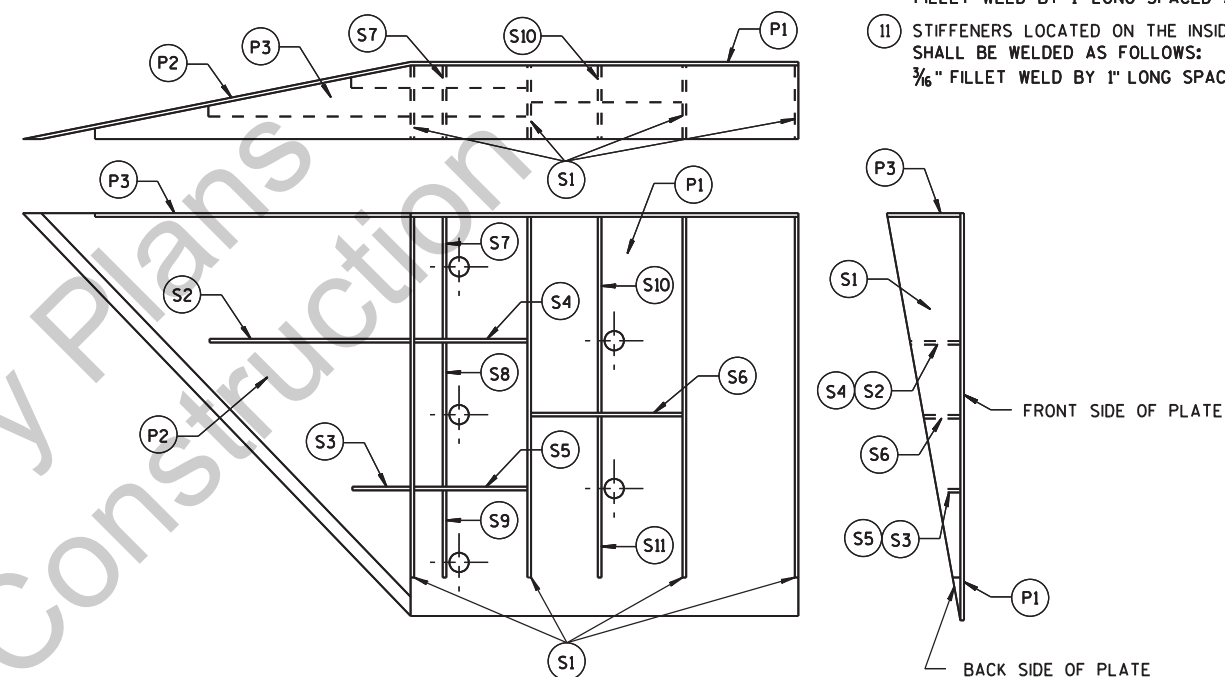


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

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

SINGLE SLOPE CONNECTION PLATE

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015
DATE

FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT
ENGINEER

ENGINEER

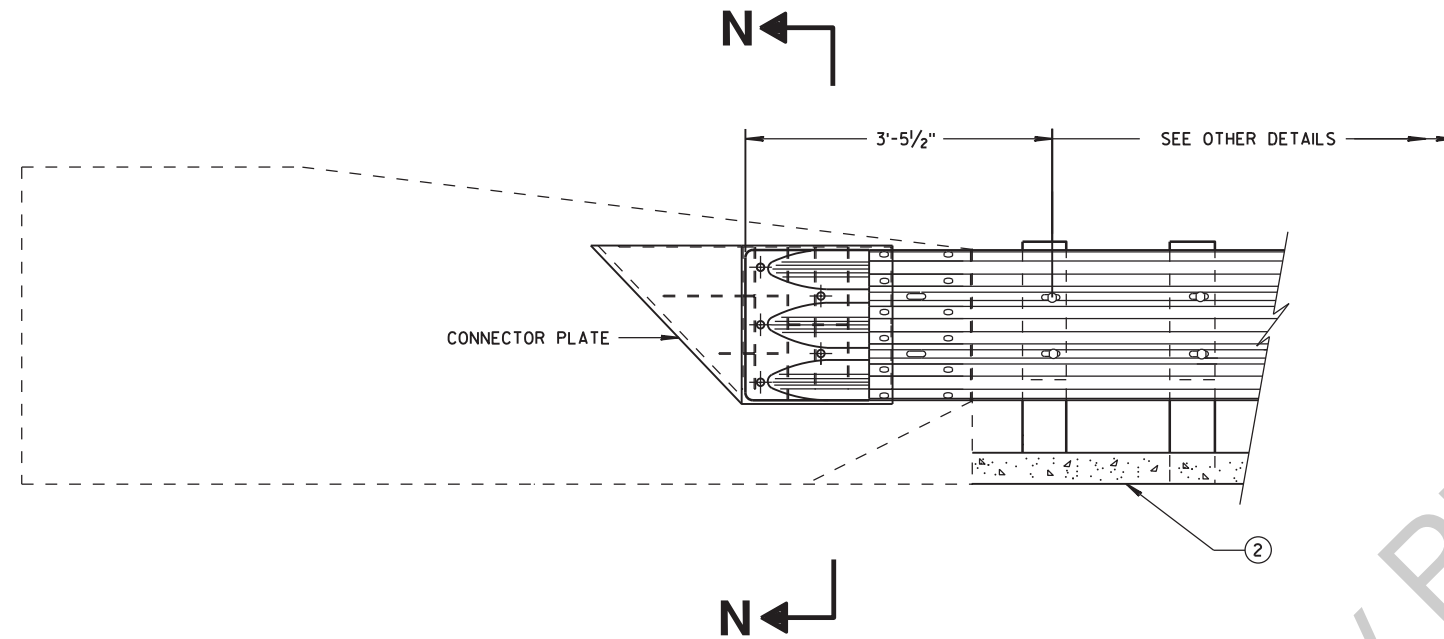


GENERAL NOTES

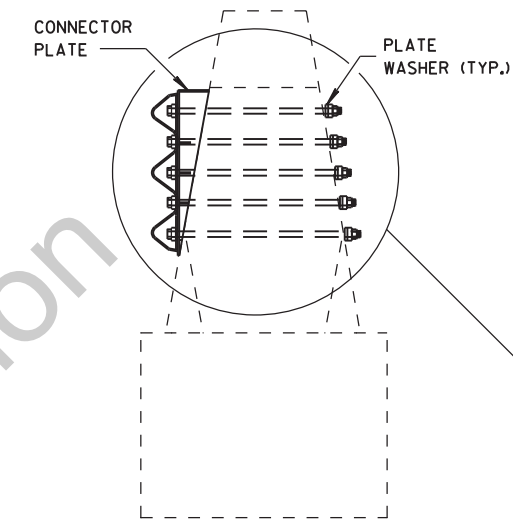
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

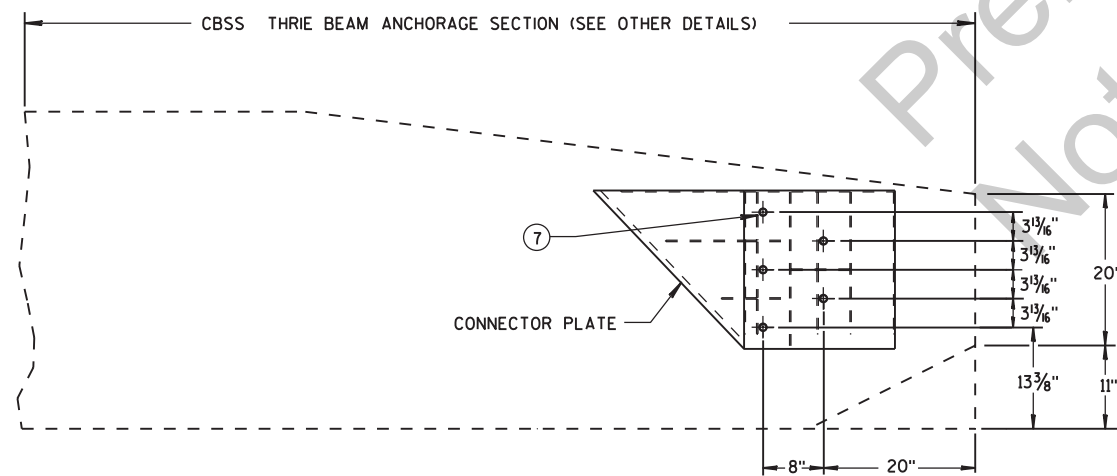
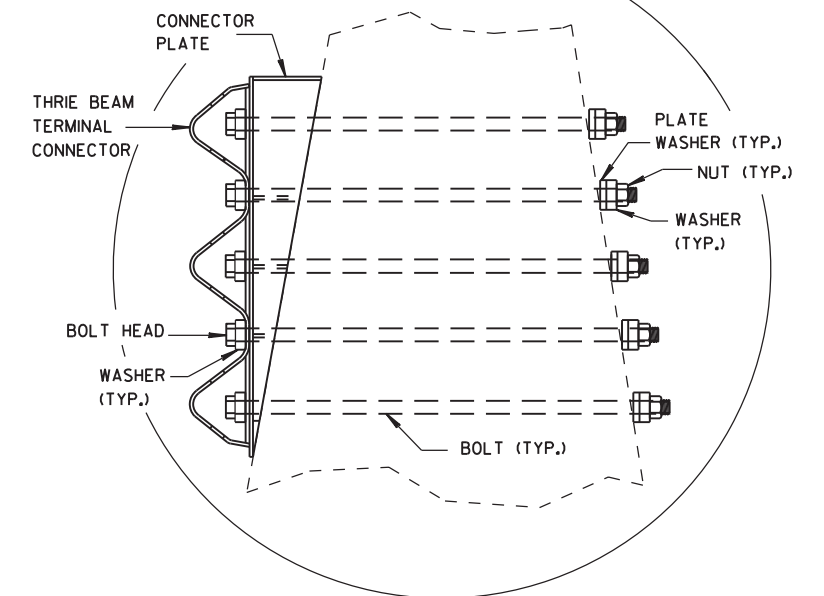
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X $\frac{5}{8}$ " THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



SECTION N-N



SINGLE SLOPE CONNECTION PLATE PLACEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

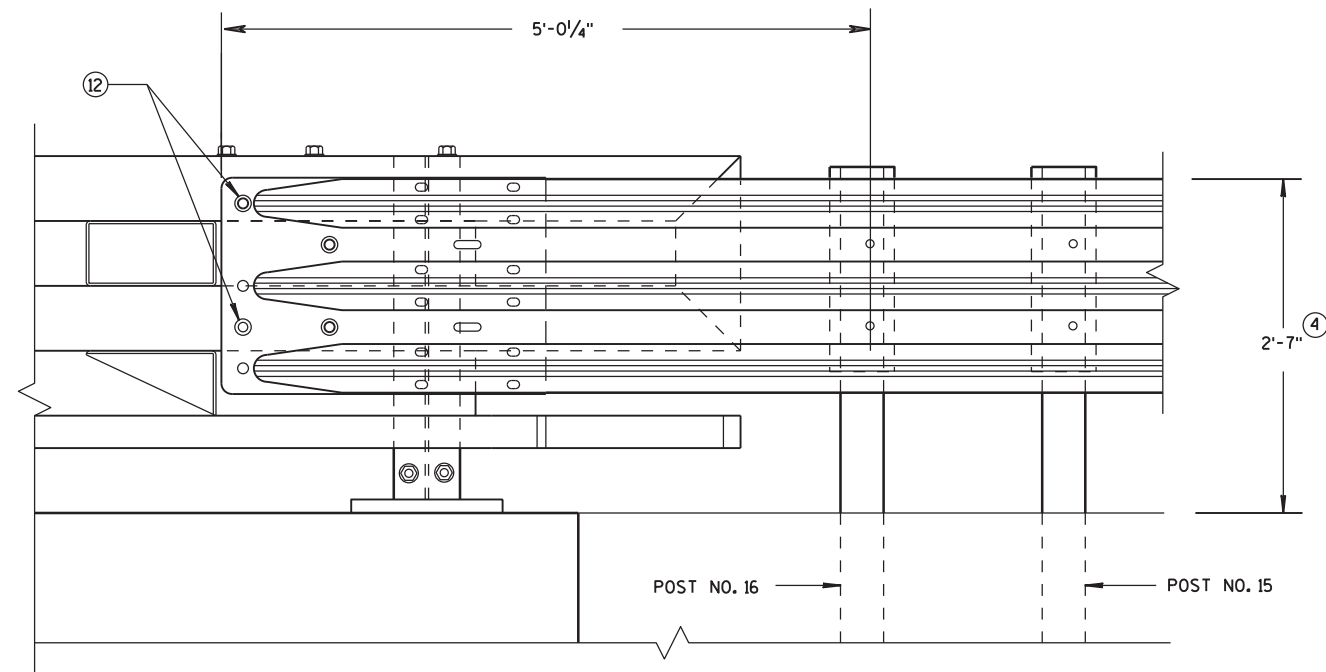
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA ENGINEER



GENERAL NOTES

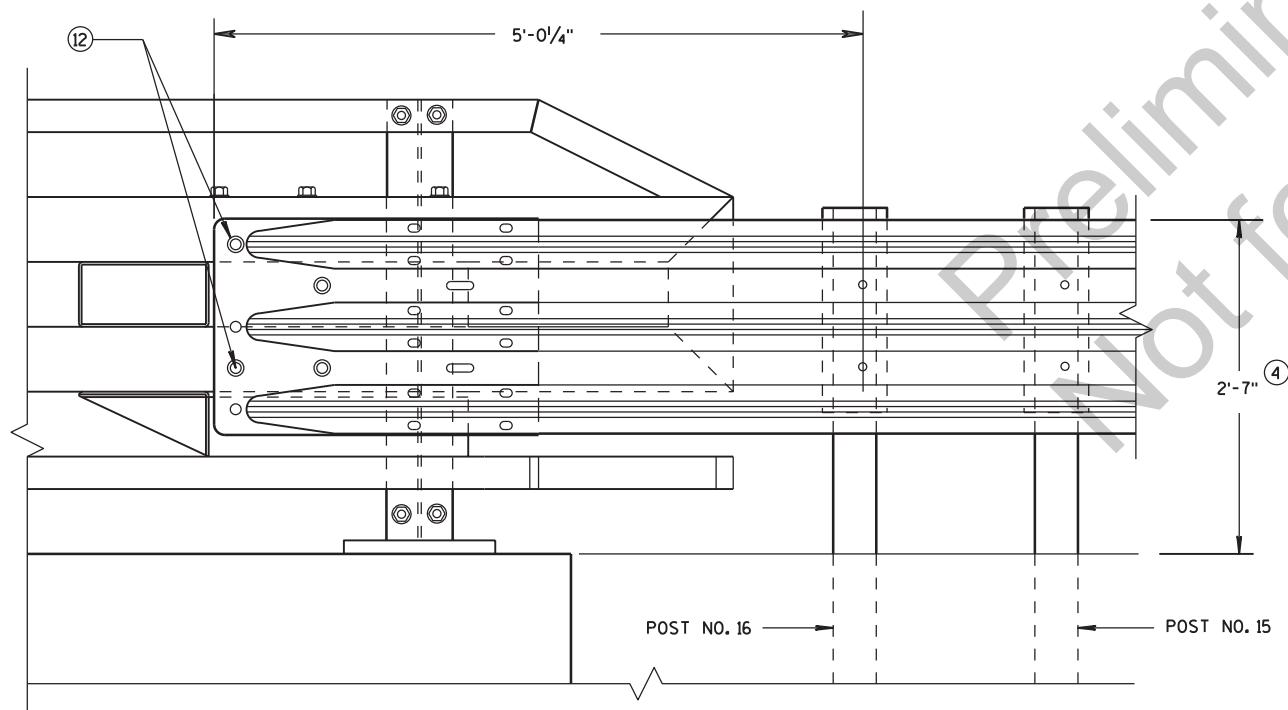
④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

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



ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



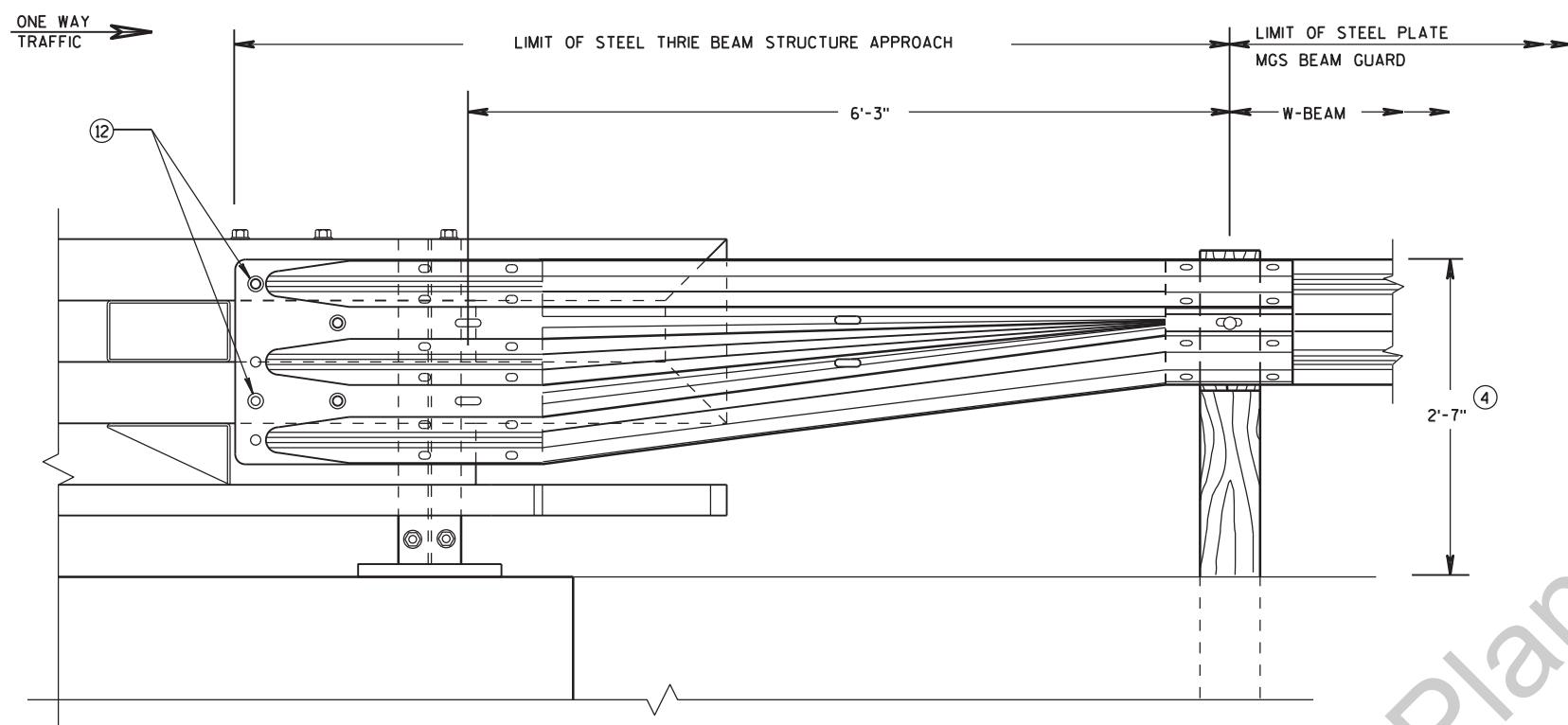
ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

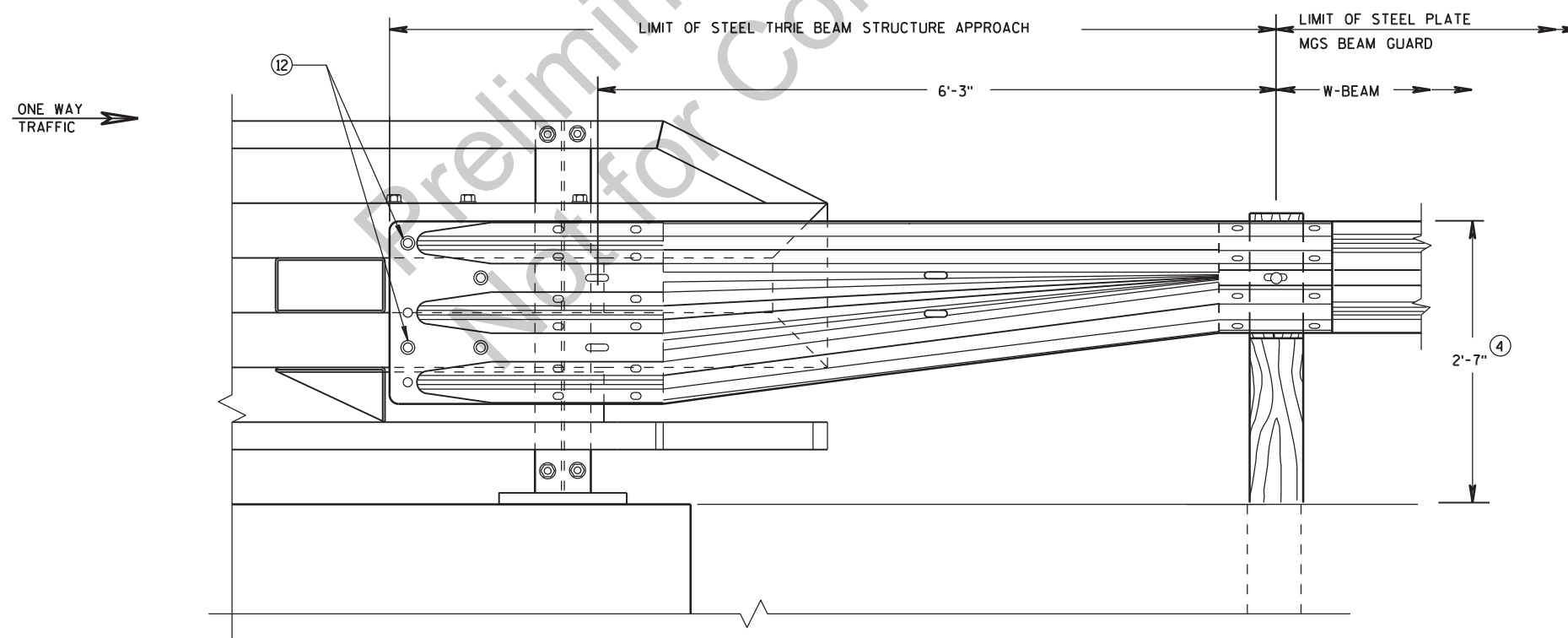
APPROVED	/S/ Jerry H. Zogg
June, 2015	ROADWAY STANDARDS DEVELOPMENT
DATE	ENGINEER
FHWA	



GENERAL NOTES

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

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



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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



14B47 sheet a: Midwest Guardrail System (MGS) Type 2 Terminal: Terminal Layout, End and Section Detail

GENERAL NOTES

SEE SDD 14 B 42 FOR MORE INFORMATION.

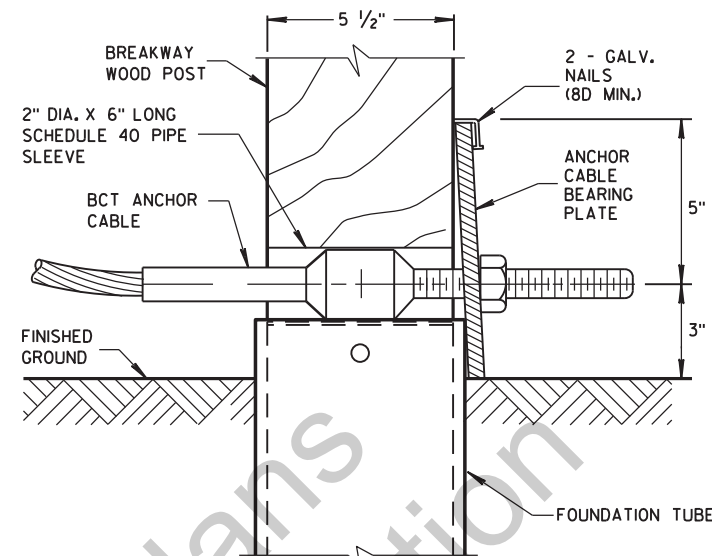
END SECTION BOLTS AND NUTS HAVE THE SAME MATERIAL REQUIREMENTS AS SPLICE BOLTS.

FOUNDATION TUBE BOLTS ARE $\frac{7}{8}$ " DIAMETER ASTM A307 HEX HEAD BOLT. FOUNDATION TUBE BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 $\frac{7}{8}$ " DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

ANCHOR BRACKET AND GROUND STRUT BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 HEX HEAD BOLT. ANCHOR BRACKET BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 $\frac{5}{8}$ " DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

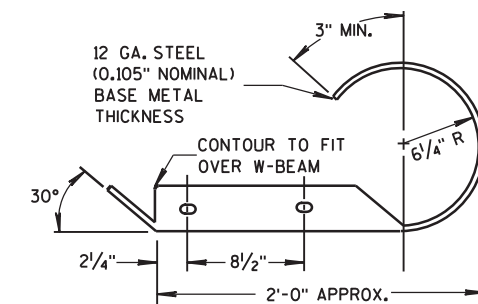
W-BEAM END SECTION ROUNDED HAS THE SAME MATERIAL PROPERTIES AS STANDARD STEEL RAIL.

- (A) TOP OF FOUNDATION TUBE SHALL BE NO MORE THAN 3" ABOVE FINISHED GROUND.
- (B) FOR NEW CONSTRUCTION TOP OF RAIL IS $31" \pm 1"$. FOR EXISTING INSTALLATIONS TOP OF RAIL IS BETWEEN $27\frac{3}{4}"$ TO $32" \pm 1"$.

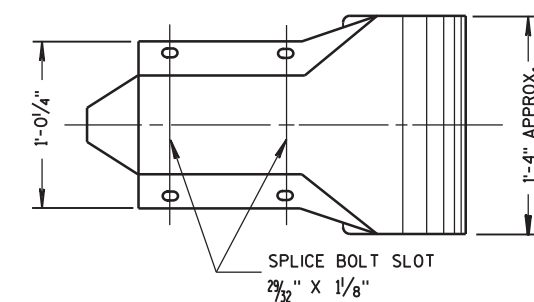


DETAIL A

POST NO. 1
GROUND STRUT NOT SHOWN FOR CLARITY.

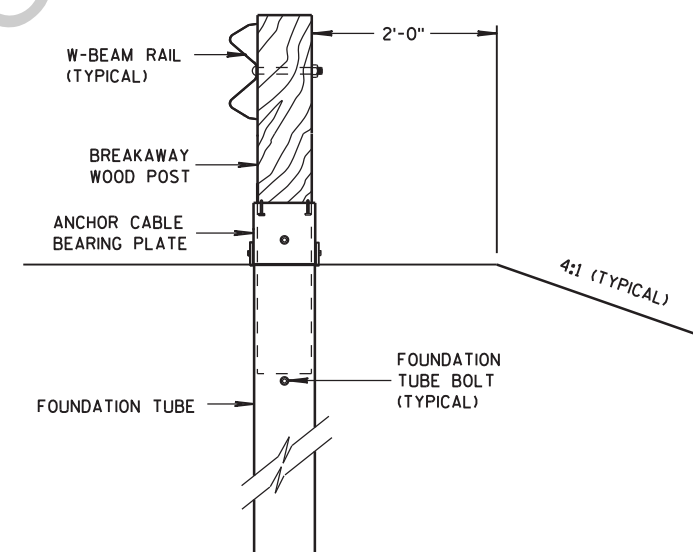


PLAN VIEW

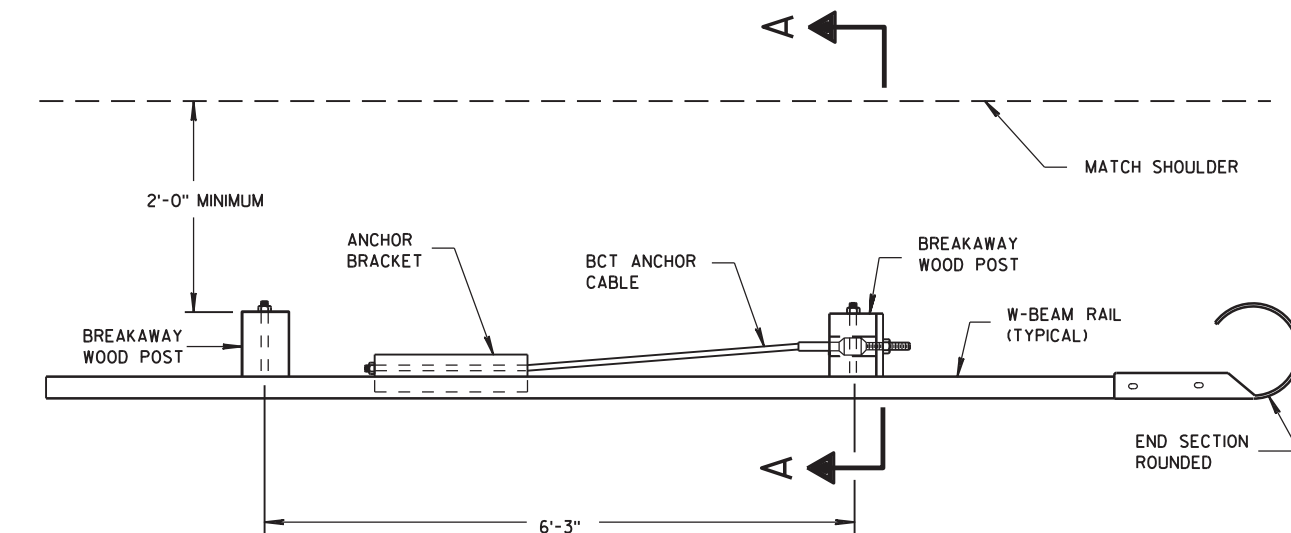


FRONT VIEW

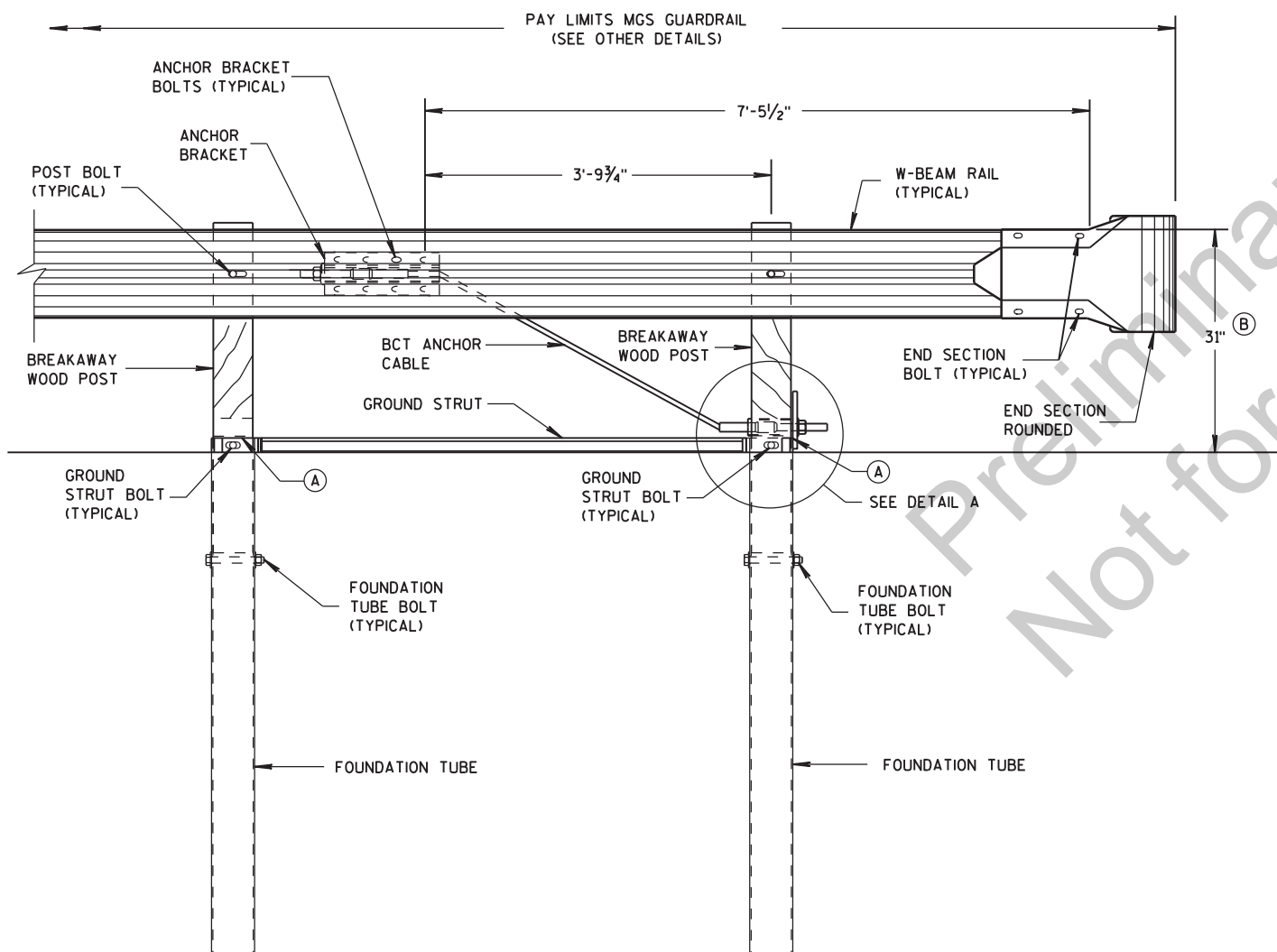
W BEAM END
SECTION ROUNDED



SECTION A-A



PLAN VIEW



FRONT VIEW

END RAIL DETAIL

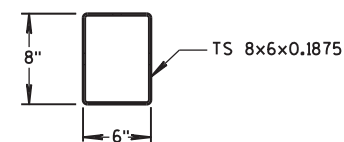
MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

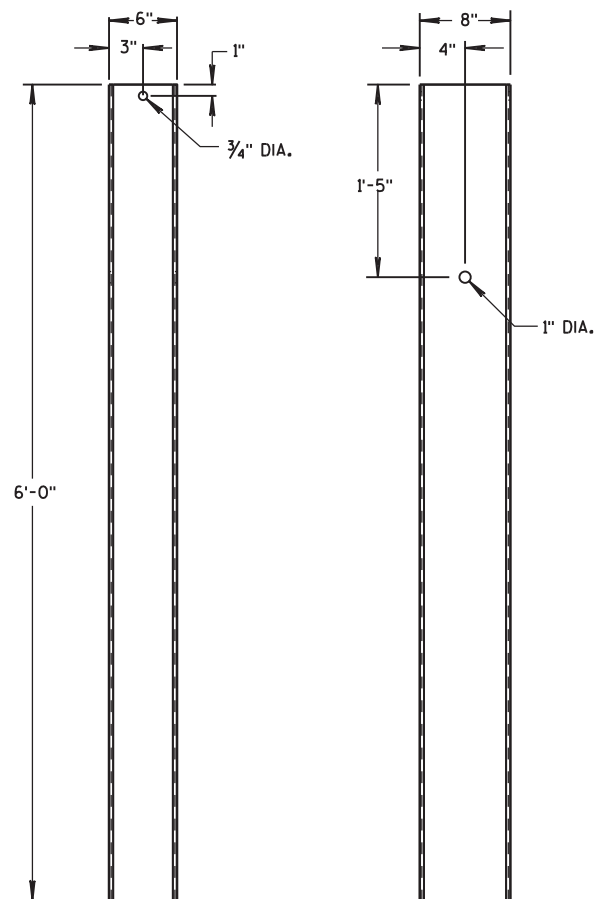


GENERAL NOTES

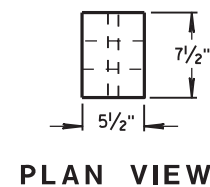
BCT ANCHOR CABLE IS A $\frac{3}{4}$ " DIAMETER 6X19 IWRC IPS GALVANIZED WIRE ROPE. THE SWAGED FITTINGS AND STUD ARE REQUIRED. END FITTING SHALL BE MACHINED FROM HOT-ROLLED CARBON STEEL CONFORMING TO ASTM A576 GRADE 1035 AND GALVANIZED ACCORDING TO ASTM A123. TREADED STUD SHALL CONFORM TO ASTM A325 OR SAE GRADE 5. MINIMUM BREAKING STRENGTH OF WIRE ROPE IS 43,000 LB. WIRE ROPE IS TO BE TAUT.



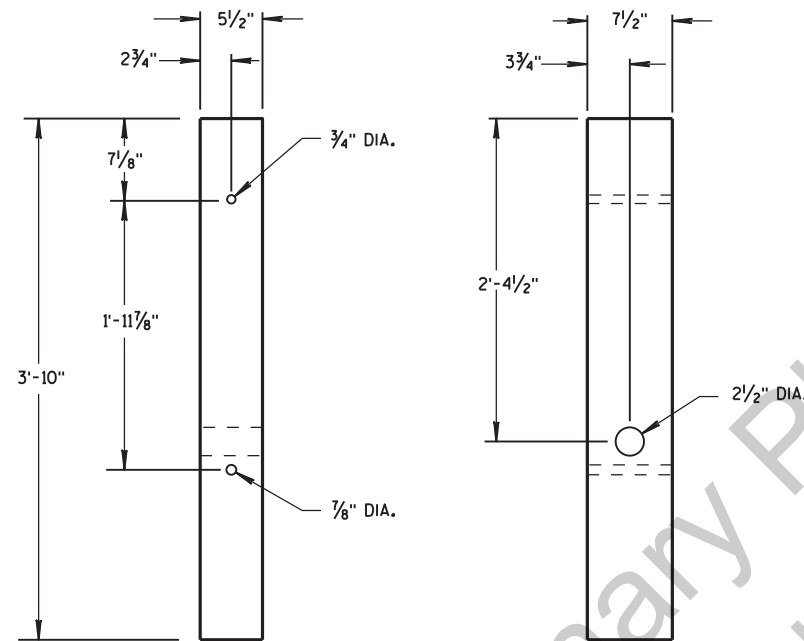
PLAN VIEW



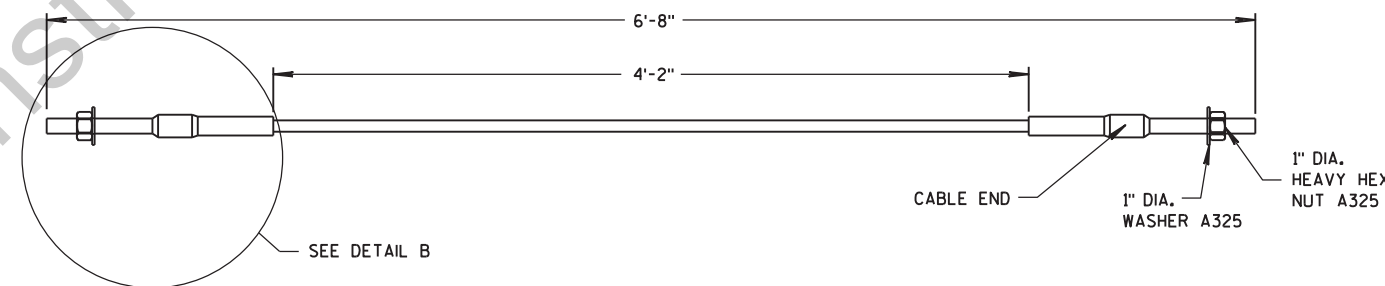
FRONT VIEW
SIDE VIEW
FOUNDATION TUBE



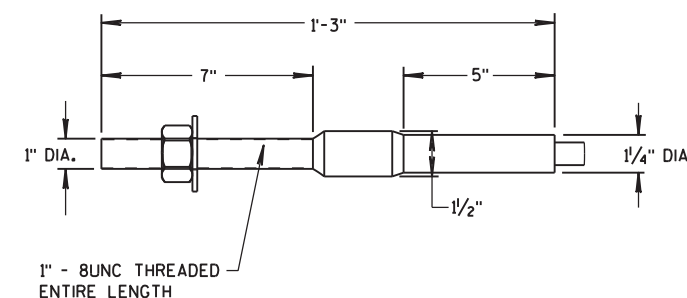
PLAN VIEW



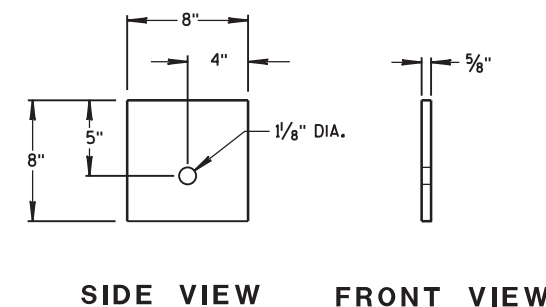
FRONT VIEW
SIDE VIEW
BREAKAWAY WOOD POST



BCT ANCHOR CABLE



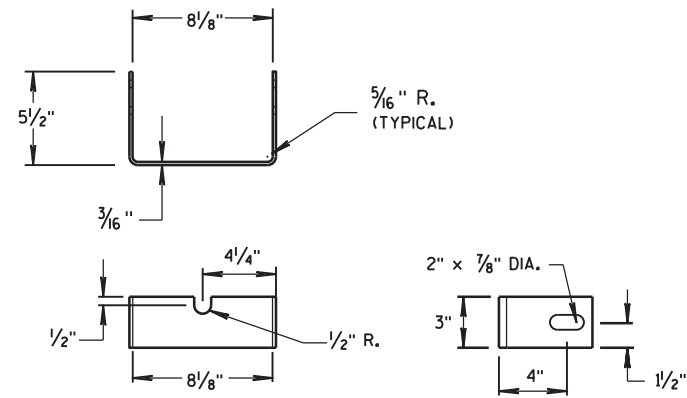
DETAIL B



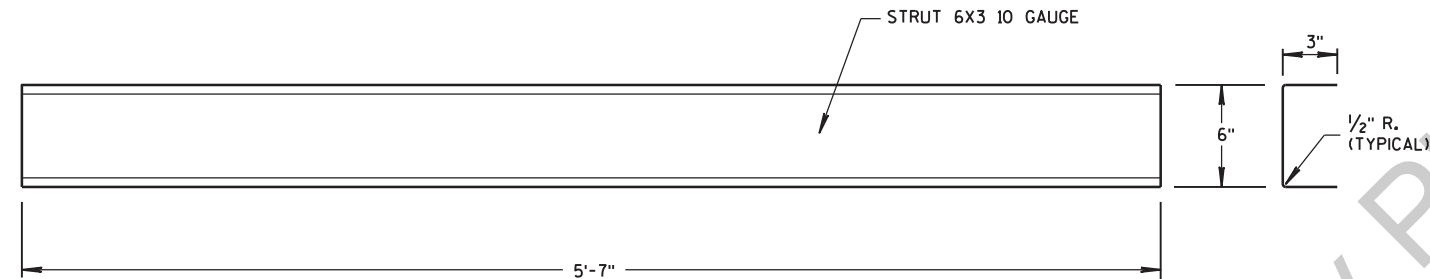
SIDE VIEW
FRONT VIEW
ANCHOR CABLE
BEARING PLATE

MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

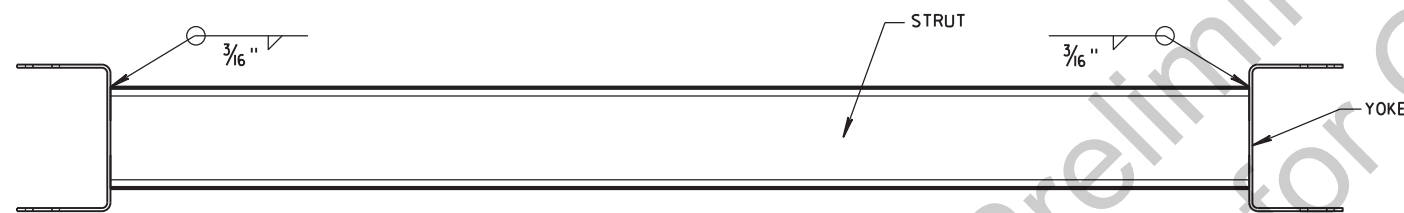
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



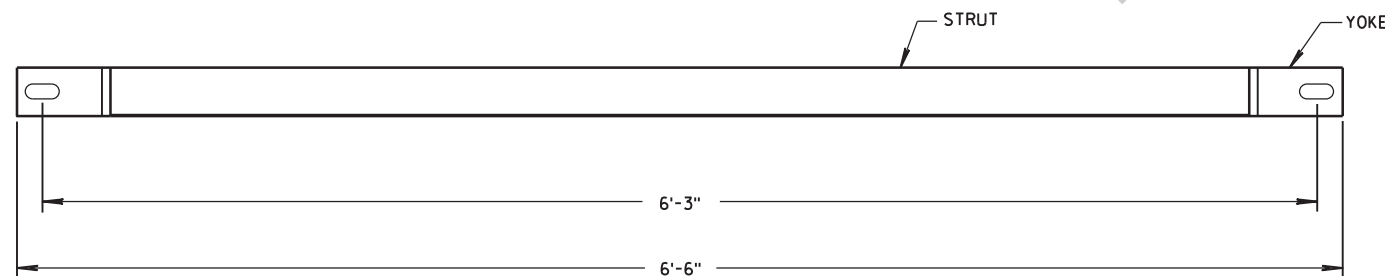
YOKE DETAIL



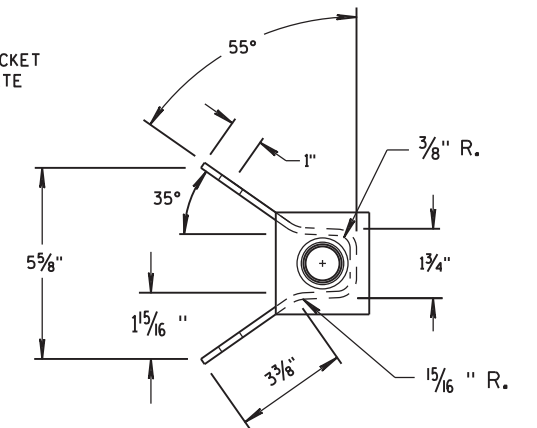
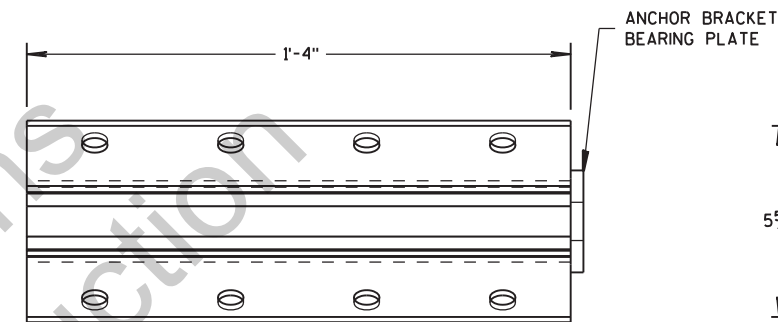
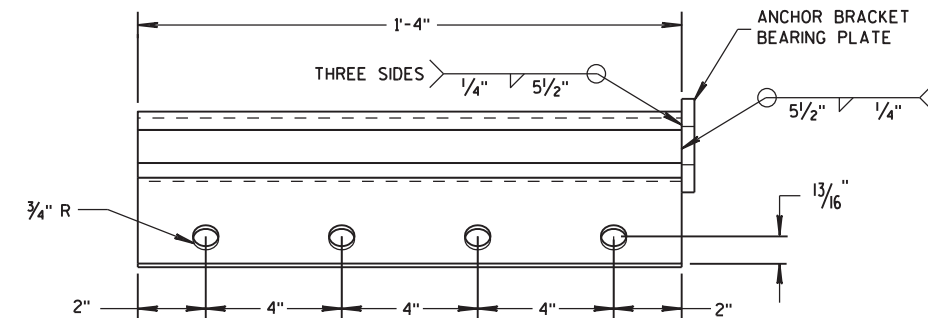
STRUT DETAIL



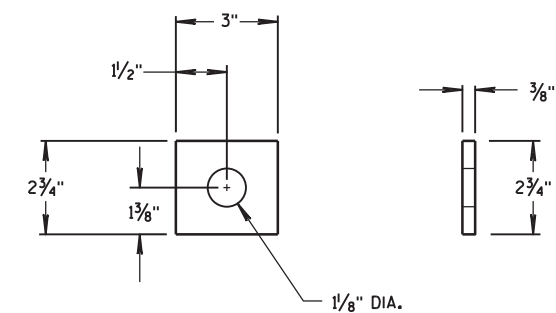
PLAN VIEW



FRONT VIEW
GROUND STRUT DETAIL

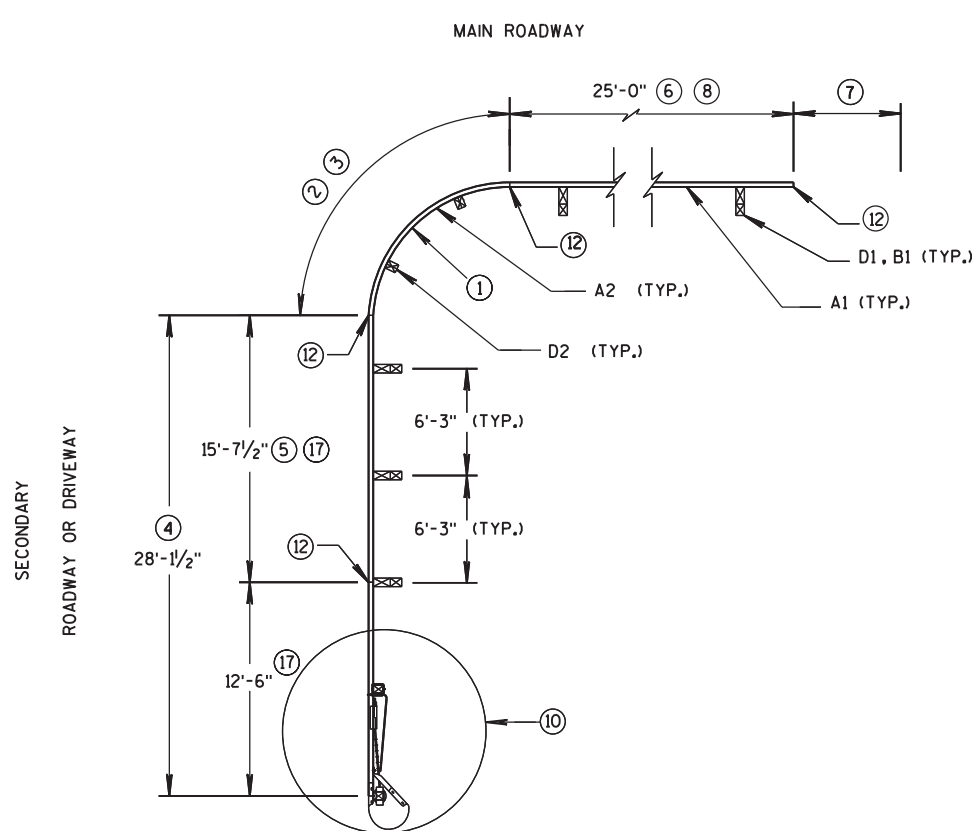


ANCHOR BRACKET

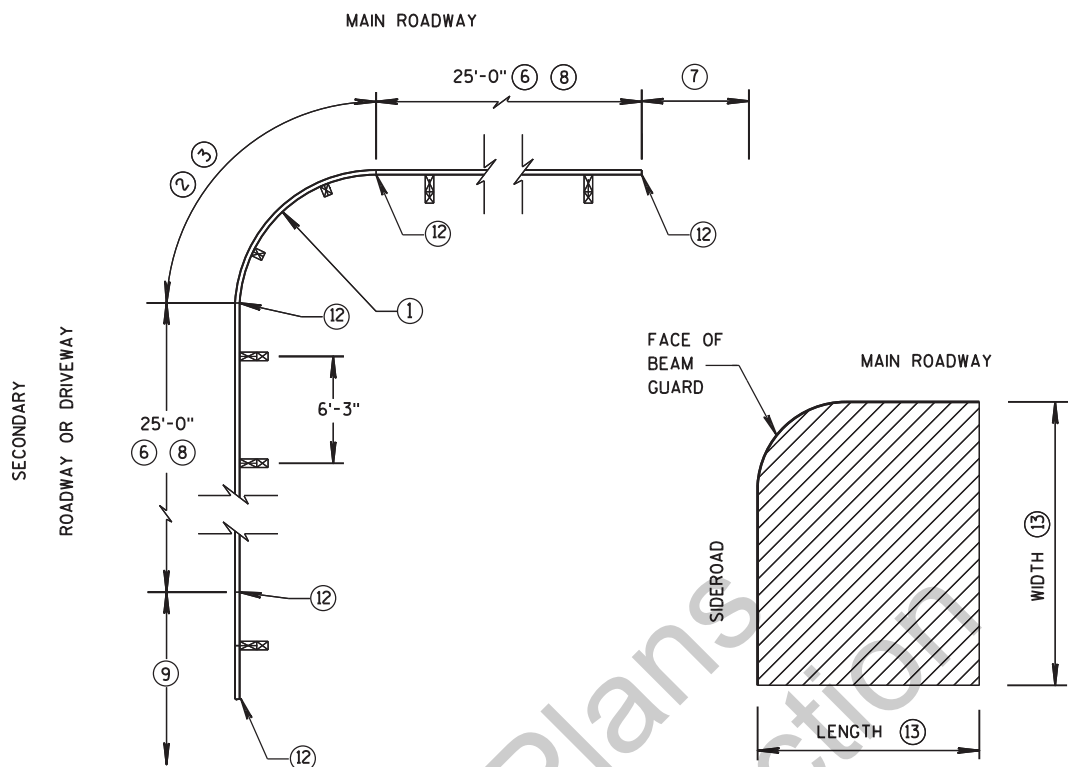


ANCHOR BRACKET
BEARING PLATE

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2014 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



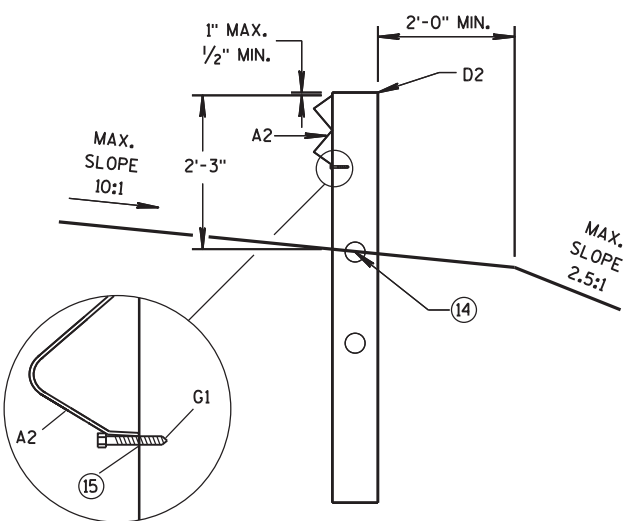
SHORT RADIUS BEAM GUARD WITH
SHORT RADIUS TERMINAL ON
SECONDARY ROAD OR DRIVEWAY
PLAN VIEW



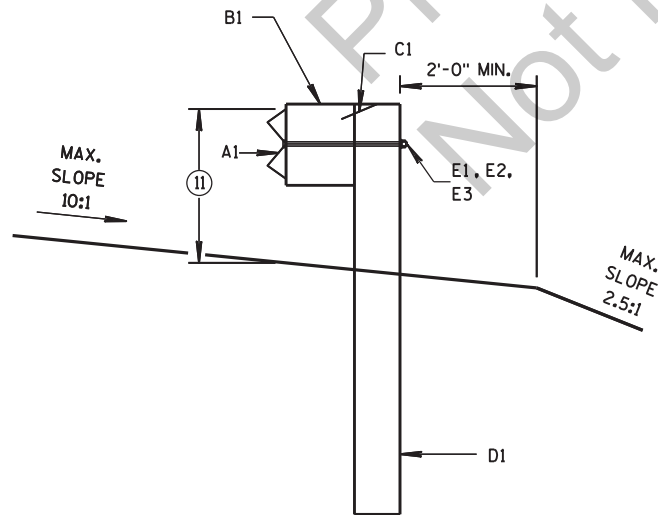
SHORT RADIUS BEAM GUARD WITH
EAT, ADDITIONAL BEAM GUARD
OR
TRANSITION TO RIGID BARRIER
ON SECONDARY ROAD OR
DRIVEWAY
PLAN VIEW

TABLE FOR RADIUS OF 32' AND LESS

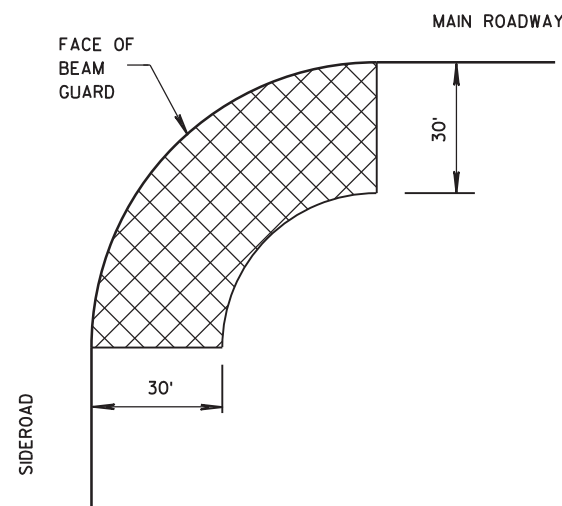
RADIUS FT	LENGTH FT	WIDTH FT
8	25	15
16	30	15
24	40	20
32	50	30



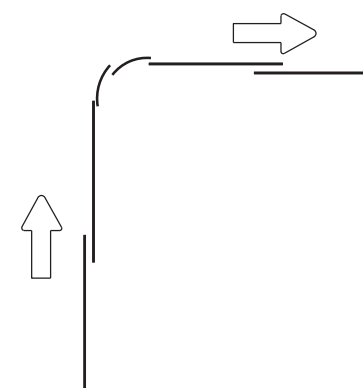
CONTROLLED RELEASE
TERMINAL POST (CRT) IN RADIUS



BEAM GUARD POSTS
IN HEIGHT TRANSITION



AREA FREE OF FIXED OBJECTS¹⁶
RADIUS GREATER THAN 32'



LAP SPLICE DETAIL

GENERAL NOTES

SEE PLANS FOR OTHER BARRIER SYSTEM AND LOCATION SPECIFICS.

SEE 14B42 FOR MORE INFORMATION ON BEAM GUARD INSTALLATION, PARTS, MATERIALS, AND INSTALLATION INFORMATION.

GALVANIZE PARTS AFTER FABRICATION.

WELDING IS TO FOLLOW CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1

UNLESS NOTED OTHERWISE, ALL PLATES ARE FLAT AND FREE OF WARP.

UNLESS NOTED OTHERWISE, ALL EDGES ARE SMOOTH, STRAIGHT AND VERITCAL.

ALL CUTS AND HOLES, EXCEPT IN BEAM GUARD RAIL ARE TO BE MACHINED OR MACHINE FLAME CUTS.

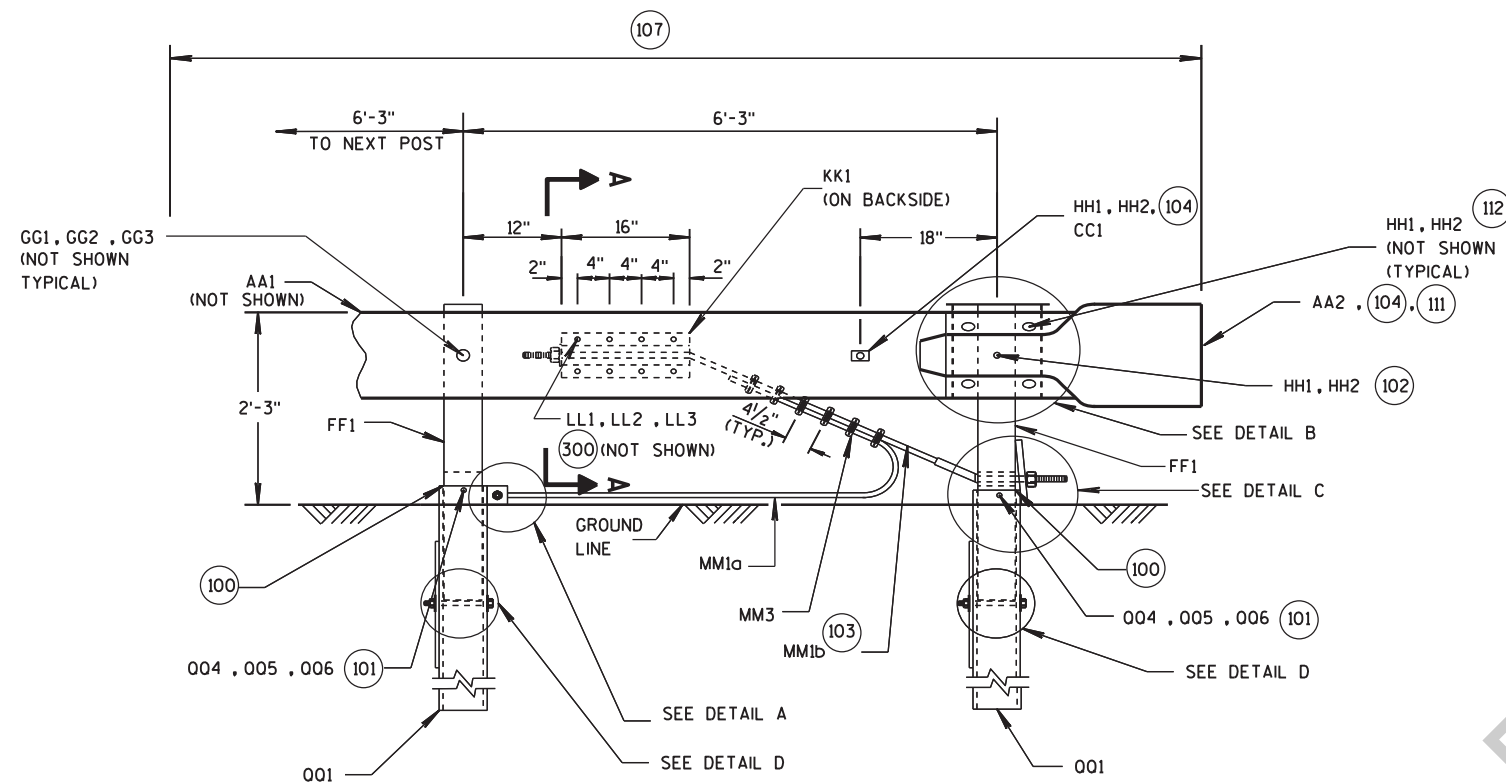
UNLESS NOTED OTHERWISE CUT OR PROVIDE BOLTS THAT ARE 1/4" TO 1/2" BEYOND THE NUT

DRAWINGS ARE NOT TO SCALE.

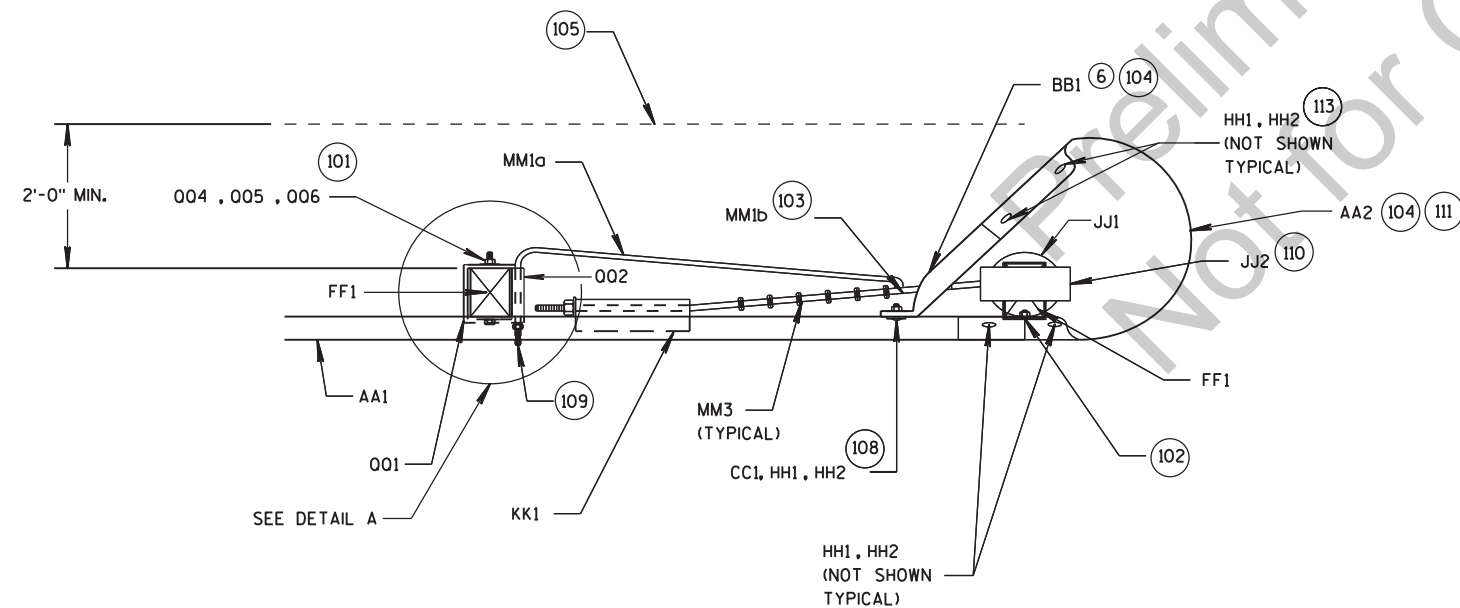
- RADIUS MEASURE FROM INSIDE OF RAIL. LENGTH OF BEAM GUARD SHORT RADIUS GUARD MEASURED ALONG TRAFFIC SIDE OF RAIL. RADIUS BETWEEN 8 FEET TO 150 FEET. SEE PLAN FOR REQUIRED RADIUS. BEAM GUARD RAIL IN RADIUS IS SHOP BENT. ODD RAIL LENGTH OR FIELD CUTS MAY BE REQUIRED.
- CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE USED IN THE RADIUS. CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE SPACED 6'-3". SEE PLAN FOR NUMBER OF CONTROLLED RELEASE TERMINAL (CRT) POSTS.
- WITHIN RADIUS BEAM GUARD RAILS ARE NOT BOLTED TO POSTS. BEAM GUARD RAILS RESTED ON TOP OF LAG SCREW.
- MINIMUM LENGTH OF BEAM GUARD ALONG SIDE ROAD OR DRIVEWAY TO INSTALL SHORT RADIUS TERMINAL. BEAM GUARD IS PAID FOR WITH BEAM GUARD ITEM.
- ODD LENGTH OF BEAM GUARD REQUIRED TO INSTALL SHORT RADIUS TERMINAL.
- MINIMUM AMOUNT OF BEAM GUARD TO BE INSTALLED PRIOR TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD, OR EAT. BEAM GUARD PAID FOR WITH BEAM GUARD ITEM. SEE PLANS FOR MORE DETAIL.
- BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. SEE PLAN.
- TOP OF BEAM GUARD BY THE RADIUS IS 27". HEIGHT OF BEAM GUARD IS 31" BY TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD OR EAT.
- ADDITIONAL BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. BEAM GUARD SHOWN. SEE PLAN FOR DETAILS.
- SHORT RADIUS TERMINAL (SEE OTHER DETAILS)
- HEIGHT VARIES. SEE NOTE (8) AND (17).
- BEAM GUARD RAIL SPLICE LOCATION. SPLICE LOCATION REQUIRE PART F1 AND F2. SEE SDD 14B42 FOR DETAILS.
- SEE TABLE FOR VALUES.
- MAXIMUM HEIGHT FOR CENTER OF HOLE IS 3/4" ABOVE FINISHED GROUND ±1".
- DRILL 15/64" DIA. PILOT HOLE. DO NOT HAMMER LAG SCREW INTO POST.
- SMALL SIGNS ON BREAKAWAY HARDWARE ARE ACCEPTABLE.
- TOP OF RAIL HEIGHT IS 27" WHEN USING A SHORT RADIUS TERMINAL.

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

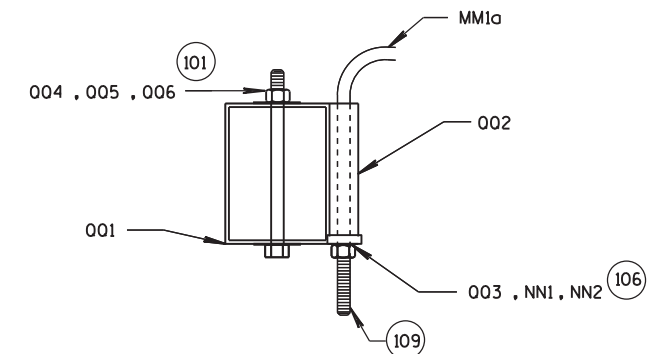


SHORT RADIUS TERMINAL
PROFILE VIEW

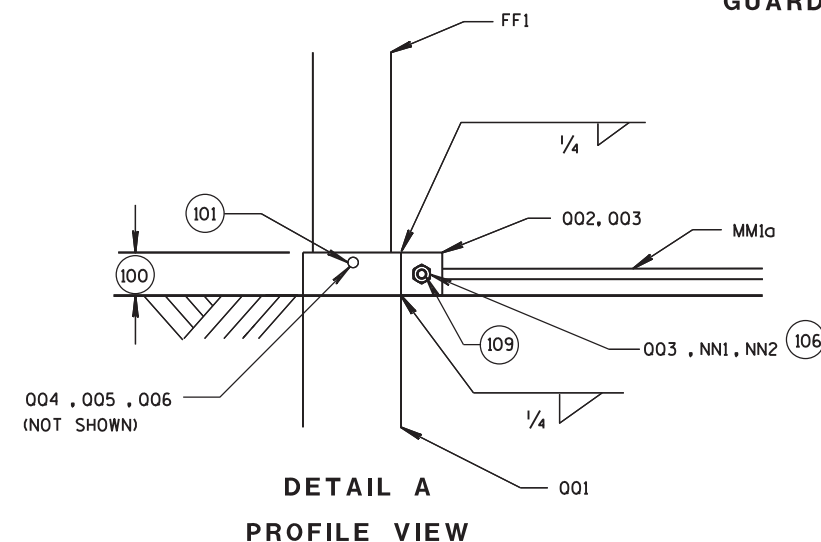


SHORT RADIUS TERMINAL
TOP VIEW

- 100 TOP OF FOUNDATION TUBE 2 INCHES MAXIMUM ABOVE FINISHED GROUND.
- 101 WASHERS REQUIRED BETWEEN BOLT HEAD AND FOUNDATION TUBE AND BETWEEN NUT AND FOUNDATION TUBE.
- 102 SPLICE BOLT AND NUT CONNECTS BEAM GUARD RAIL, W-BEAM END SECTION BUFFER, AND STEEL PIPE ASSEMBLY. NO WASHER REQUIRED. SEE DETAIL B.
- 103 CABLE IS TAUT.
- 104 ADJUST AA2 AND BB1 TO FIT.
- 105 BREAK POINT OF SHOULDER.
- 106 TACK WELD CABLE CONNECTOR TUBE PLATE TO CABLE CONNECTION TUBE. SEE DETAIL A PROFILE VIEW.
- 107 PAY LIMIT FOR BEAM GUARD.
- 108 SQUARE WASHER BETWEEN HEAD OF BOLT AND TRAFFIC FACE OF BEAM GUARD. ROUND WASHER REQUIRED BETWEEN NUT AND BB1.
- 109 CUT OR PROVIDE THREADED STUD THAT IS FLUSH WITH FACE OF BEAM GUARD RAIL KK1 (PLUS OR MINUS 1/2" TOLERANCE). DEBURR AFTER CUTTING.
- 110 SEE STEEL PIPE ASSEMBLY DETAILS.
- 111 ATTACH UU2 WITH UU3. SHOP APPLY UU1 TO UU2.
- 112 FOUR HH1 AND HH2 REQUIRED TO ATTACH AA1 TO AA2.
- 113 FOUR HH1 AND HH2 REQUIRED TO ATTACH AA2 TO BB1.



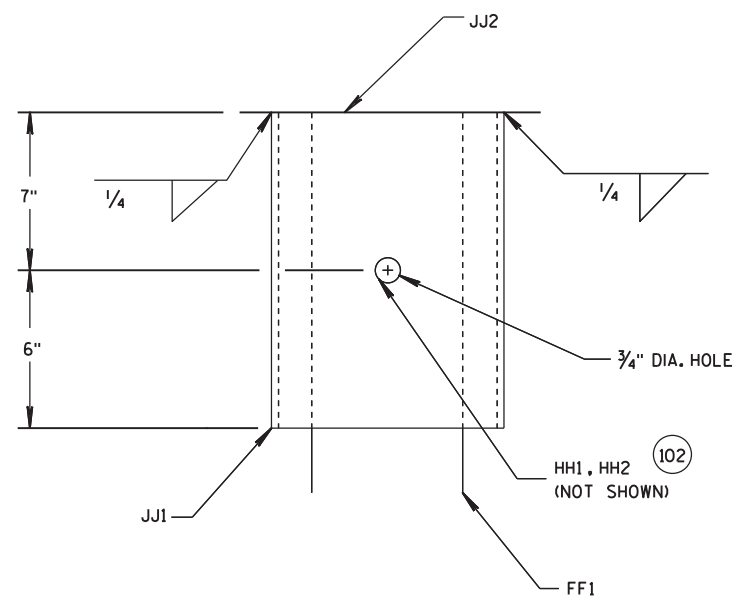
DETAIL A
TOP VIEW
(WOOD BREAKAWAY AND BEAM
GUARD RAIL POSTS NOT SHOWN)



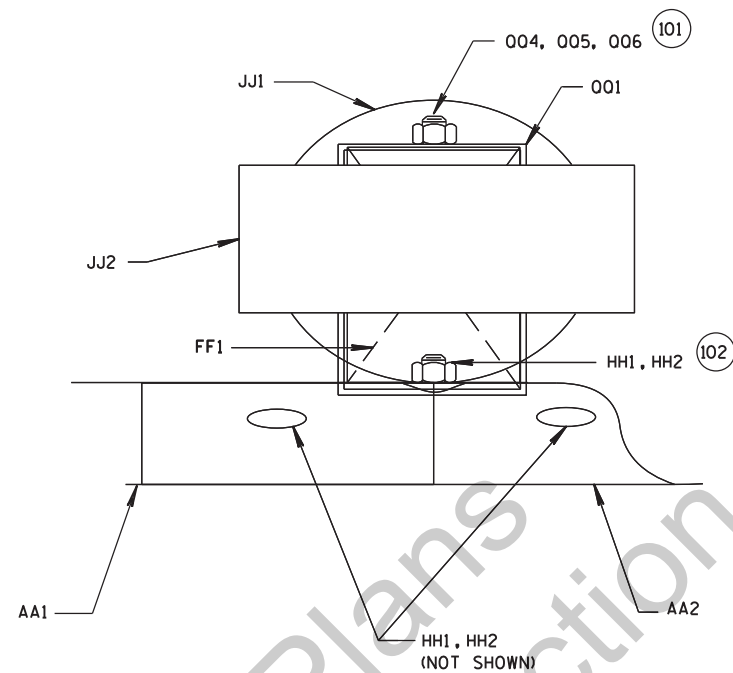
DETAIL A
PROFILE VIEW

STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL
MGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

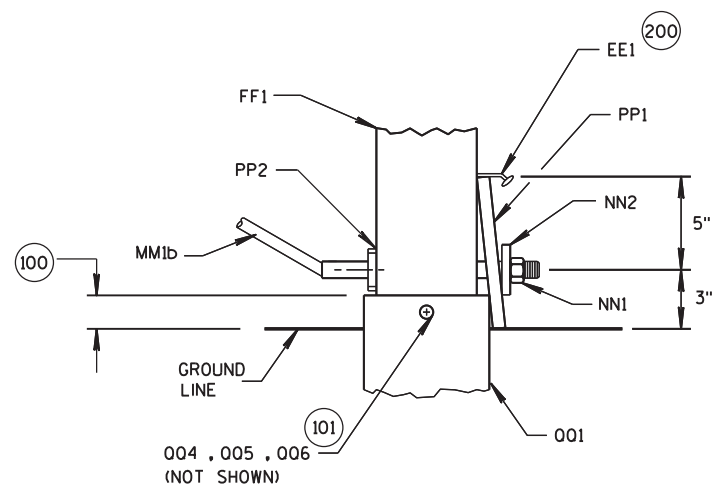


DETAIL B
PROFILE VIEW OF STEEL PIPE ASSEMBLY
(BEAM GUARD AND W-BEAM
END SECTION NOT SHOWN)

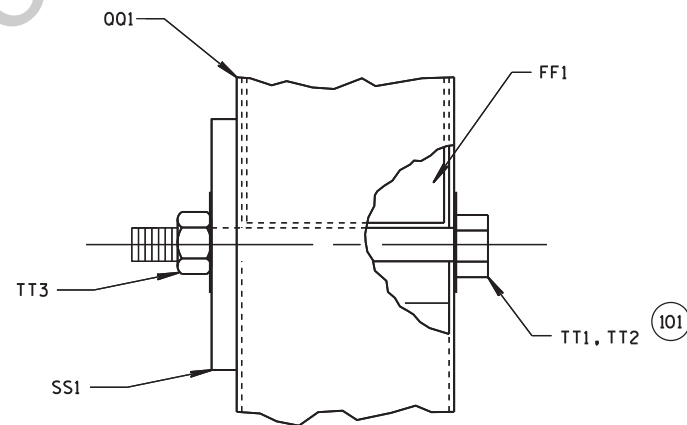


DETAIL B
PLAN VIEW OF STEEL PIPE ASSEMBLY

(200) 2 NAILS SPACED 4 INCHES CENTER TO CENTER.



DETAIL C
PROFILE VIEW



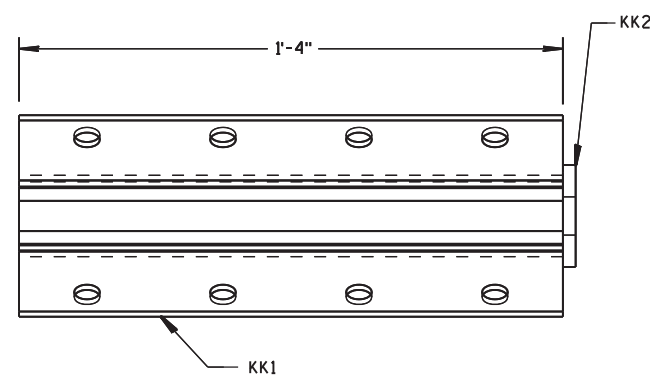
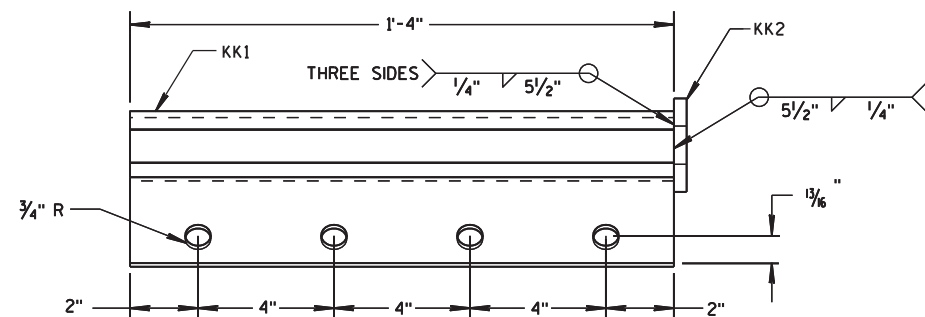
DETAIL D
PROFILE VIEW

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

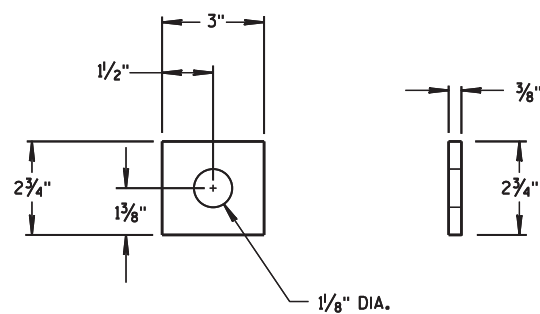
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



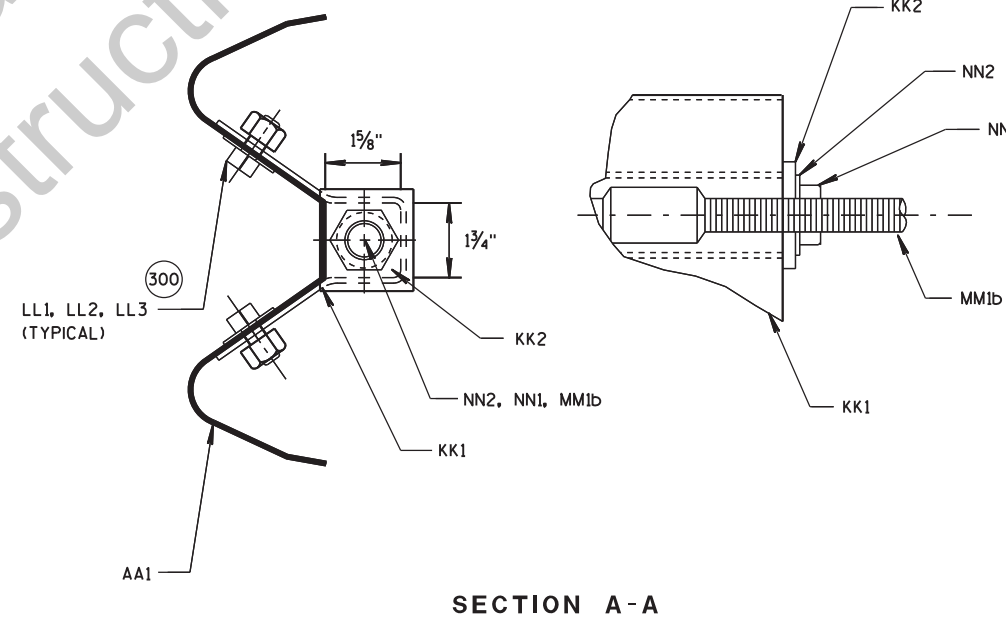
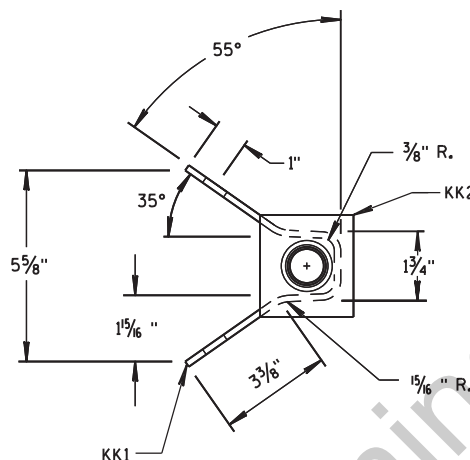
300 WASHERS REQUIRED BETWEEN BOLT HEAD AND BEAM GUARD RAIL AND BETWEEN NUT AND ANCHOR BRACKET. EIGHT LL1 AND LL3 REQUIRED. SIXTEEN LL2 REQUIRED.



ANCHOR BRACKET (KK1, KK2)



ANCHOR BRACKET BEARING PLATE (KK2)



SECTION A-A

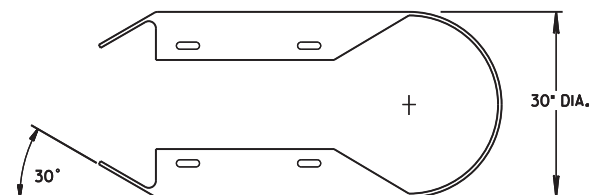
SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

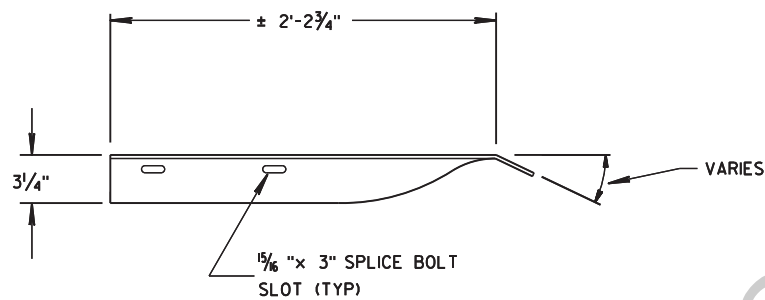


400 CROSS SECTION OF PART IS TO FIT OVER AA1.

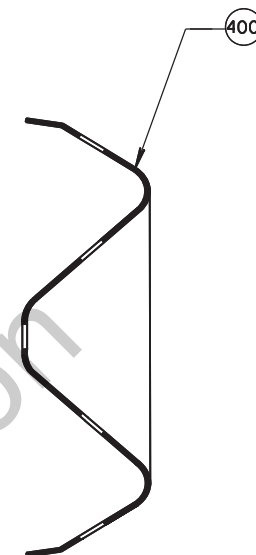
401 CROSS SECTION OF PART IS TO FIT OVER OR UNDER AA1.



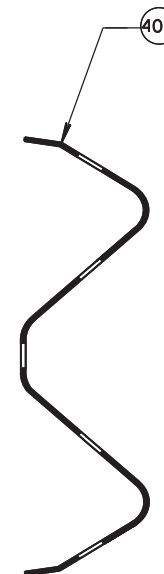
TOP VIEW



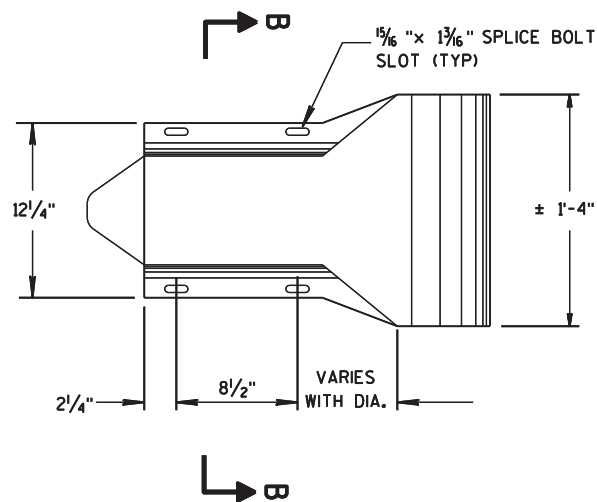
TOP VIEW



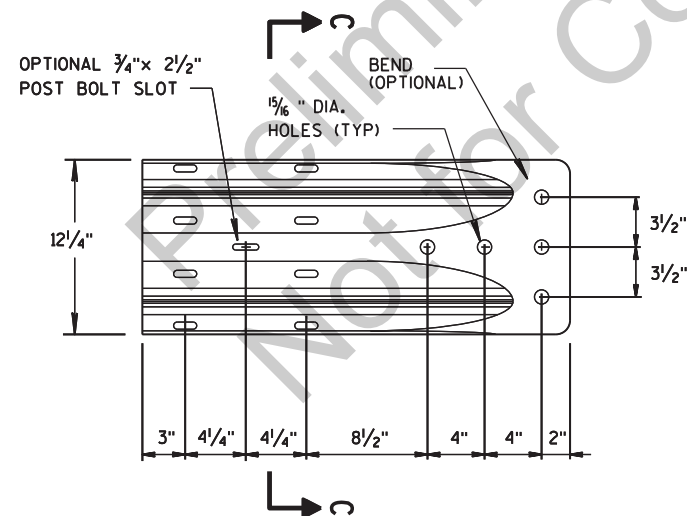
SECTION B-B



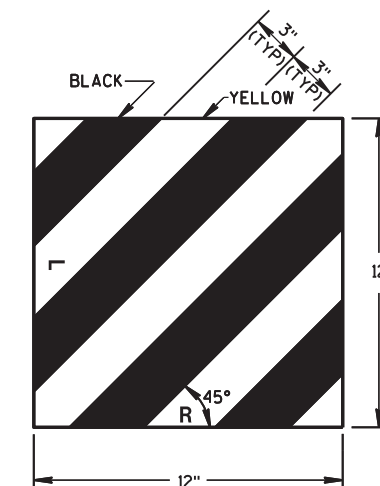
SECTION C-C



W-BEAM
END SECTION BUFFER (AA2)
PROFILE VIEW



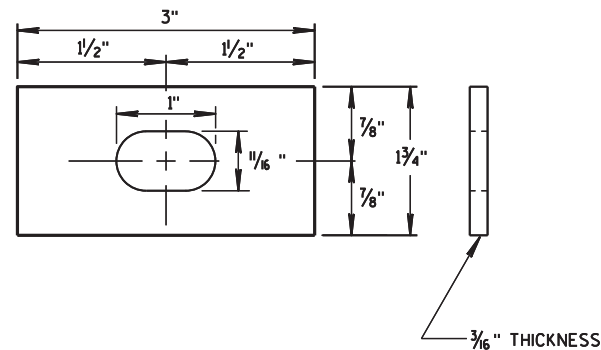
W-BEAM
TERMINAL CONNECTOR (BB1)
PROFILE VIEW



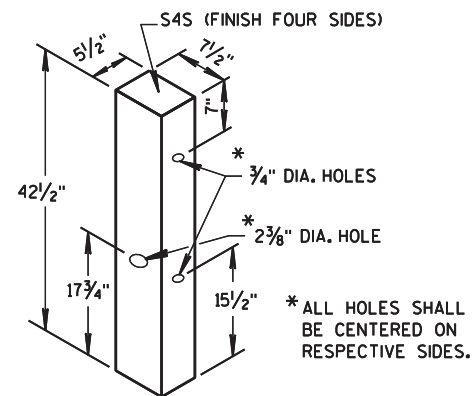
REFLECTIVE SHEETING
(UU1, UU2)

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

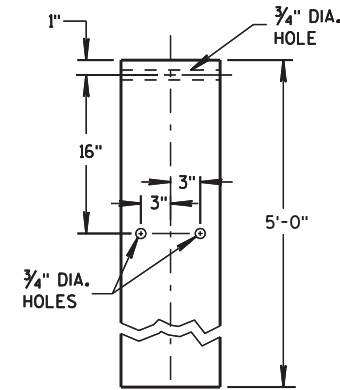
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



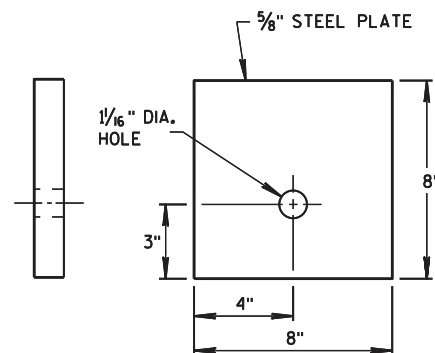
RECTANGULAR
PLATE WASHER (CC1)



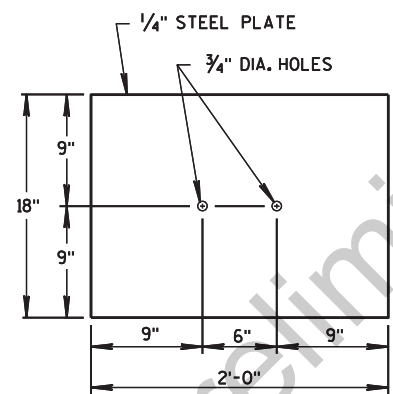
WOOD BREAKAWAY POST
(FF1)



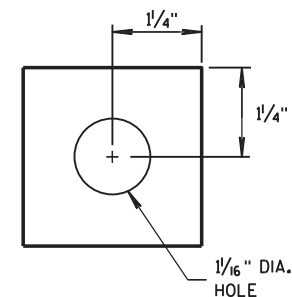
FOUNDATION TUBE (QQ1)



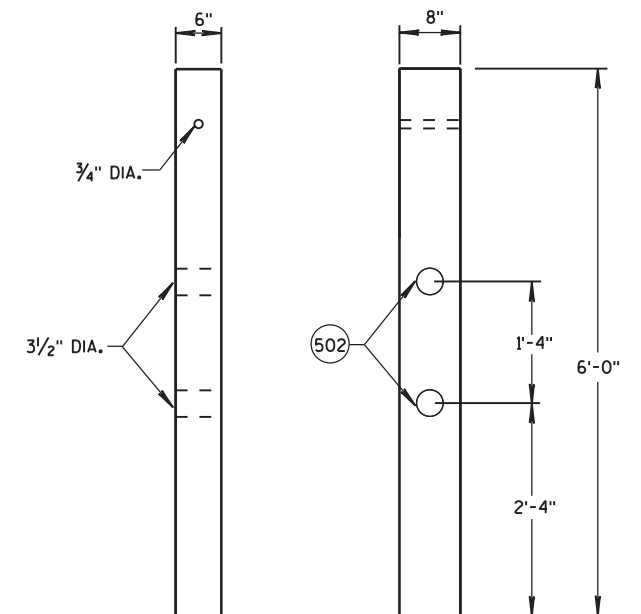
BEARING PLATE (PP1)



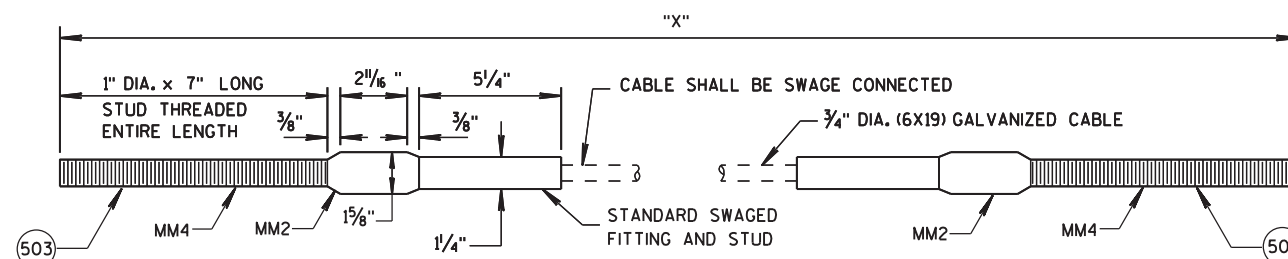
SOIL PLATE (SS1)



TUBE END PLATE (QQ3)



FRONT VIEW SIDE VIEW
CONTROLLED RELEASE
TERMINAL POST (CRT) (D2)



CABLE ASSEMBLY (MM1a, MM1b)

"X" LENGTH	
MM1a	9'-0"
MM1b	6'-8"

- (500) SEE DETAIL "D" FOR LOCATION AND ATTACHING SSL.
- (501) FOR MM1a THREADED STUD ONLY REQUIRED ON ONE END. SWAGED FITTING REQUIRED.
- (502) LOCATE HOLES ON THE CENTERLINE OF THE SIDE OF THE POST.
- (503) MM1a MAY HAVE ONE THREADED STUD 4 INCHES LONG. SEE NOTE (109).



BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	BEAM GUARD RAIL	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
A2	BEAM GUARD RAIL - SHOP BENT	INDICATE ON BACK OF RAIL RADIUS THAT RAIL WAS BENT TO. SHOP BEND RADIUS IS TO THE NEAREST FOOT. FOLLOW AASHTO M180 ON HOW TO MARK RADIUS INFORMATION.	
		AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
B1	BLOCK - WOOD	WISDOT SPEC. 614	SEE SDD 14B42
C1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEAD)	
D1	POST-STRONG POST-WOOD	WISDOT SPEC. 614	SEE SDD 14B42
D2	POST-CRT-WOOD	WISDOT SPEC. 614	
E1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
E2	POST BOLT-WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	5/8" DIA.
		GALV. AASHTO M111/ASTM A 123 OR GALV. HOT DIP, TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329	
E3	POST BOLT - NUT	AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	5/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
F1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	5/8" DIA. SEE SDD 14B42 FOR GEOMETRY AND OTHER INFORMATION
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
F2	SPLICE BOLT - NUT	ASTM A563 GRADE A	5/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
G1	LAG SCREW	UNC	3/8" DIA. 3" LONG
		ASTM A308 GRADE A ASTM A153 CLASS D	
H1	DELINEATOR - BEAM GUARD		SEE SDD 14B42 FOR MORE INFORMATION
H2	DELINEATION - SHEETING	YELLOW OR WHITE WISDOT SPEC 637 TYPE SH APPROVED PRODUCT LIST	
J1	FOUNDATION BACKFILL	STANDARD SPEC. 614	
AA1	BEAM GUARD RAIL - PUNCHED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
AA2	BEAM GUARD RAIL - END SECTION BUFFER	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
BB1	BEAM GUARD RAIL - TERMINAL CONNECTOR MODIFIED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
CC1	SHORT RADIUS - SQUARE WASHER	AASHTO M180 GALV. AASHTO M111 / ASTM A123	
		ASTM A153 HOT DIP CLASS D	
EE1	NAIL	ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEADED)	
FF1	POST - BCT - WOOD	S4S FINISH ON 4 SIDES	
		WISDOT SPEC. 614	
GG1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	3/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
GG2	POST BOLT - WASHER	UNC	3/8" DIA.
		ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
GG3	POST BOLT - NUT	ASTM A563 GRADE A	3/8" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	SEE 14B42 FOR GEOMETRY
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
HH1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	3/8" DIA. SEE 14B42 FOR GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180 HEAD GEOMETRY	
HH2	SPLICE BOLT - NUT	ASTM A563 GRADE A	3/8" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	SEE 14B42 FOR GEOMETRY
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
JJ1	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	10" O.D.
JJ2	TOP PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 3/8" X 4" X 1'-0"
		GALV. AASHTO M111 / ASTM A123	
KK1	ANCHOR BRACKET	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
KK2	ANCHOR BRACKET - BEARING PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
LL1	ANCHOR BRACKET - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	5/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
LL2	ANCHOR BRACKET - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
LL3	ANCHOR BRACKET - NUT	ASTM A563 GRADE A	5/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A563	
		UNC	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
MM1a	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIC CLASS C ZINC COATED	
MM1b	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIC CLASS C ZINC COATED	
MM2	ANCHOR CABLE - SWAGE FITTING	ASTM A576 GRADE 1035	
		SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. WITH A BREAKING STRENGTH 40,000 LBS.	
		GALV. AASHTO M111 / ASTM A123	
MM2	ANCHOR CABLE - SWAGE FITTING	ASME B30.26 FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING INTO CONNECTION: NAME OF MANUFACTURER OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE.	
MM3	WIRE ROPE CABLE CLAMPS	FF-C-450D TYPE 1 CLASS 1	3/4"
		ASTM A153 HOT DIP CLASS D	
MM4	ANCHOR CABLE - SWAGE FITTING - STUD	ASTM F3125 GRADE A325 TYPE 1 OR SAE GRADE 5 OR ASTM A449 TYPE 1 HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
NN1	ANCHOR CABLE - NUT	ASTM A563 GRADE A	1" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
NN1	ANCHOR CABLE - NUT	OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A563	
		UNC	
NN2	ANCHOR CABLE - NUT - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	1" DIA.
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
PP1	BEARING PLATE AT POST	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
PP2	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	2" DIA. x 6" LONG
QQ1	FOUNDATION TUBE	ASTM A500 GRADE B	8" X 6" X 3/16"
		GALV. AASHTO M111 / ASTM A123	
QQ2	SHORT RADIUS - FOUNDATION TUBE - ANCHOR CABLE - TUBE	ASTM A500 GRADE B	DIMENSIONS 2 1/2" X 2 1/4" X 1/4" X 8"
		GALV. AASHTO M111 / ASTM A123	

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

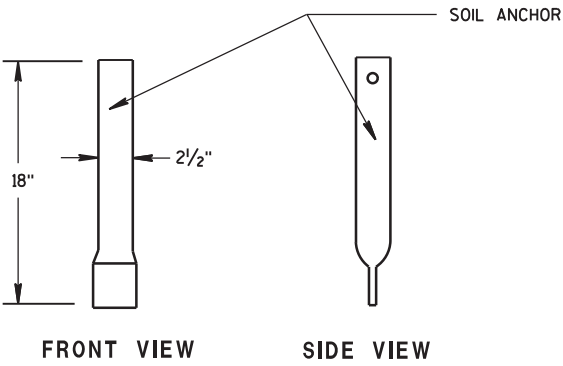
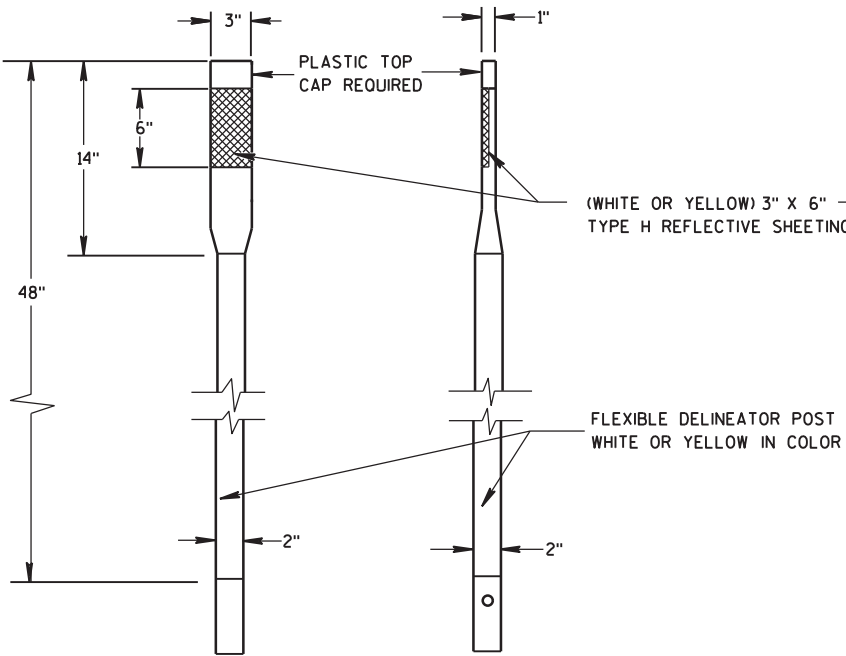
PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
003	SHORT RADIUS - SOIL TUBE - ANCHOR CABLE - TUBE - END PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 2 1/2" X 2 1/2" X 1/4"
		GALV. AASHTO M111 / ASTM A123	
004	GROUND STRUT AND YOKE - BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8" DIA.
		ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	
		UNC	
005	GROUND PLATE AND YOKE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
006	GROUND STRUT AND YOKE - NUT	HEAVY HEX	5/8" DIA.
		UNC	
		ASTM A563 GRADE A	
		OVER TAPPED NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
SS1	SOIL PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
TT1	SOIL PLATE - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	5/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
TT2	SOIL PLATE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
TT3	SOIL PLATE - NUT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8" DIA.
UU1	OBJECT MARKER - SHEETING	MUTCD / WISDOT OBJECT MARKER TYPE 3	PATTERN AND COLOR FOR SHEETING SHEETING TYPE FOR MARKER
		WISDOT SPEC 637 TYPE F	
		APPROVED PRODUCT LIST	
UU2	OBJECT MARKER - ALUMINUM PLATE	WISDOT SPEC 637 ALUMINUM PLATE	MATERIAL AND THICKNESS OF MATERIALS
UU3	OBJECT MARKER - SCREWS	STAINLESS SELF-TAPPING SCREWS	
VV1	FOUNDATION BACKFILL	WISDOT SPEC 614	

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

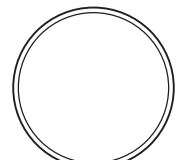
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE

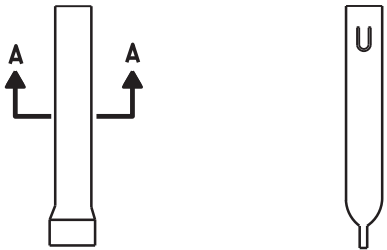
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



ALTERNATE 1

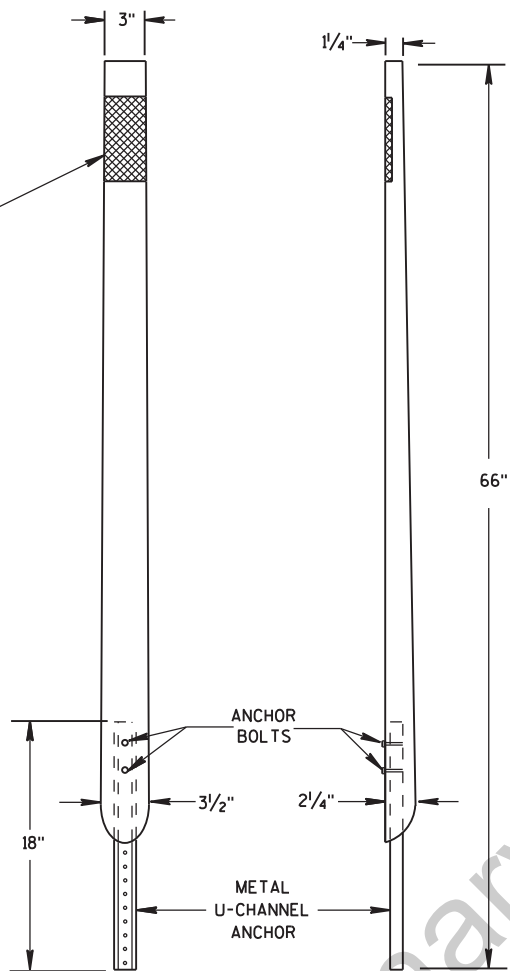


SECTION A-A



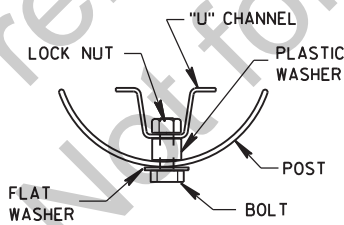
FRONT VIEW SIDE VIEW

ALTERNATE 1

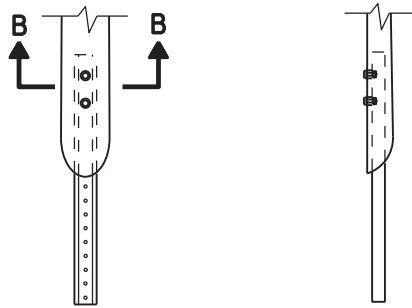


FRONT VIEW SIDE VIEW

ALTERNATE 2
FLEXIBLE DELINEATOR POSTS

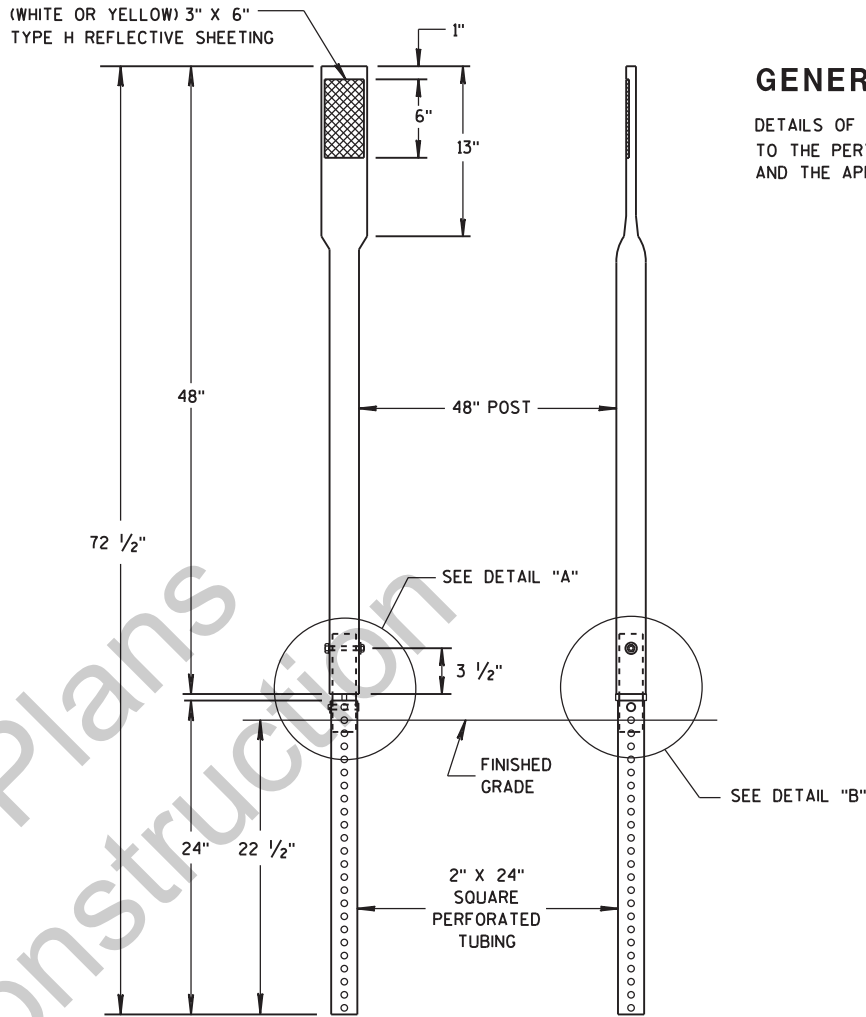


SECTION B-B



FRONT VIEW SIDE VIEW

ALTERNATE 2
FLEXIBLE MARKER POST ANCHORS

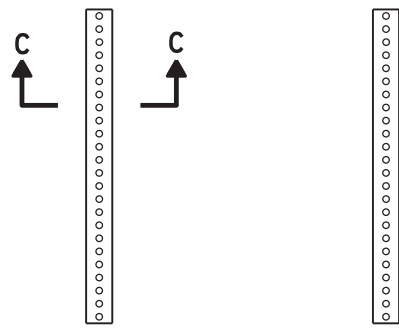


FRONT VIEW SIDE VIEW

ALTERNATE 3



SECTION C-C

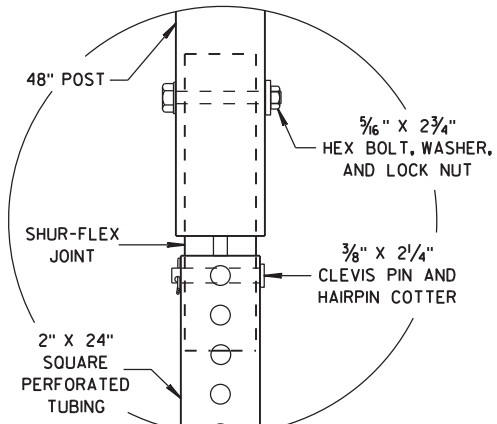


FRONT VIEW SIDE VIEW

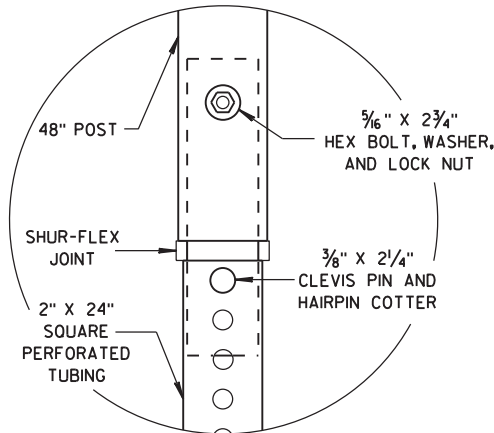
ALTERNATE 3

GENERAL NOTES

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



DETAIL A



DETAIL B

REFLECTOR SPACING TABLE

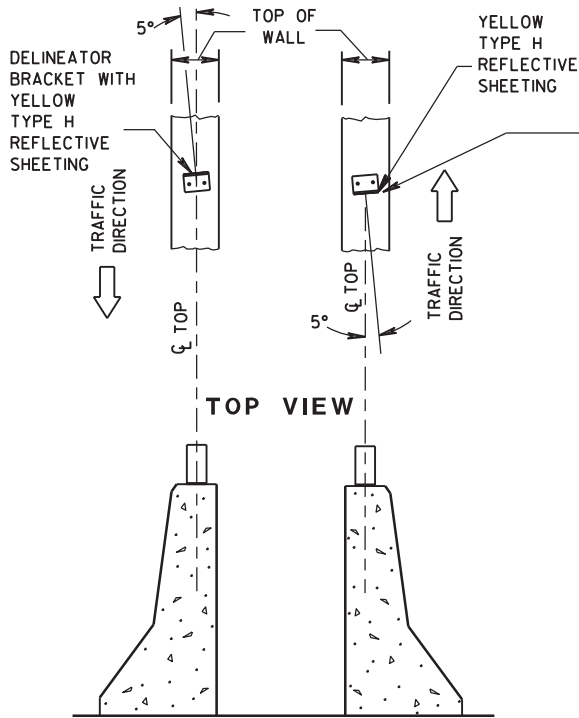
REFLECTOR SPACING	LOCATION
*100' C-C	RAMPS
400' C-C	MAINLINE

*START AT BEGINNING OF RAMP TAPER AND END AT END OF RAMP TAPER

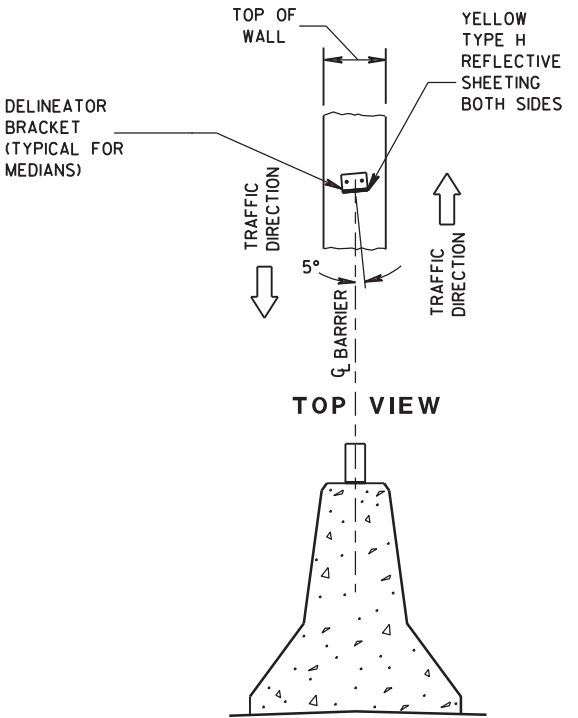
FLEXIBLE DELINEATOR POST

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

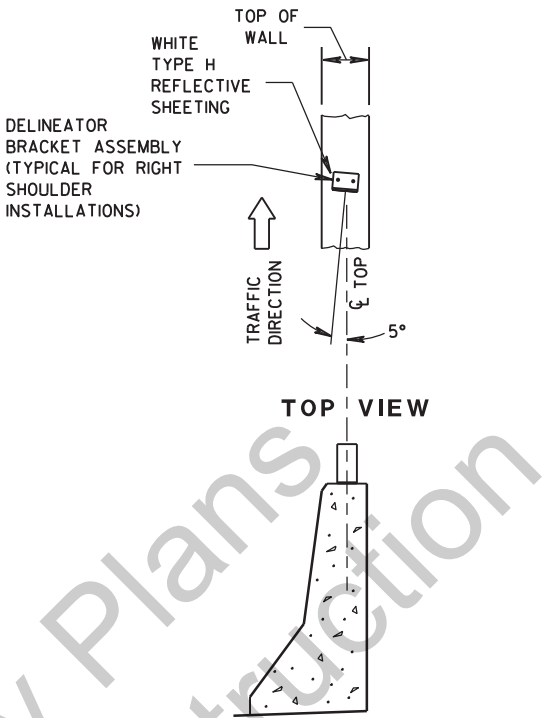
APPROVED
June 2017 /S/ Andrew Heidtke
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



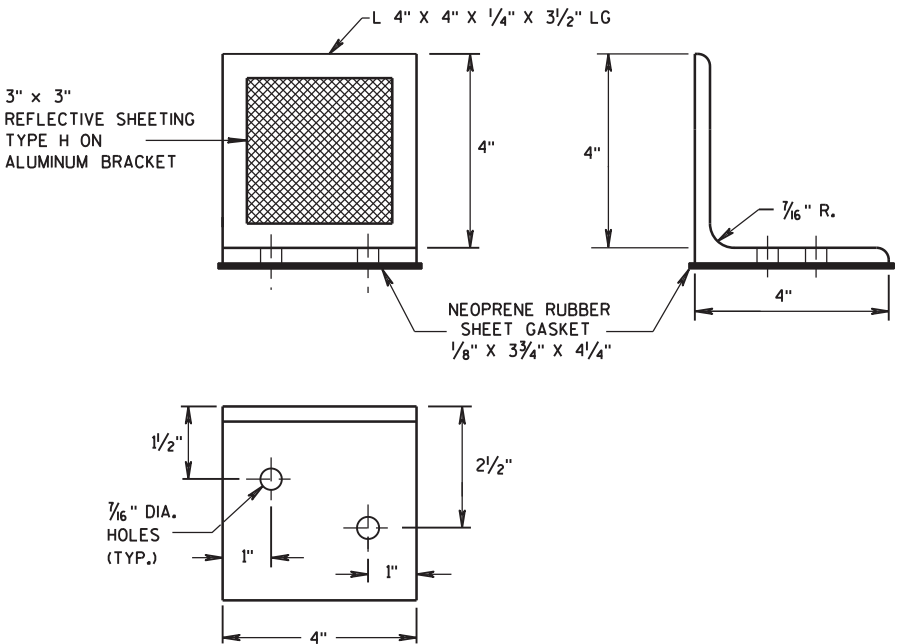
DOUBLE BARRIERS IN MEDIAN



MEDIAN BARRIER



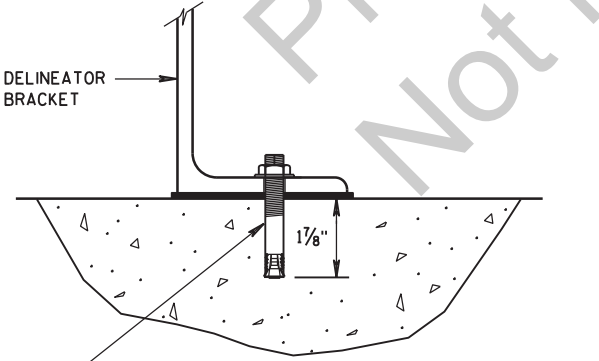
BARRIER LOCATED TO RT. OF TRAFFIC FLOW



DELINEATOR BRACKET

REFLECTOR SPACING TABLE

REFLECTOR SPACING	MINIMUM NUMBER OF REFLECTORS
100' C-C	3

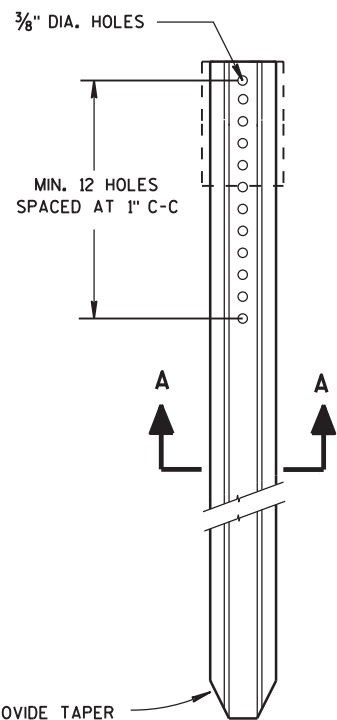


DELINEATOR BRACKET MOUNTING DETAIL

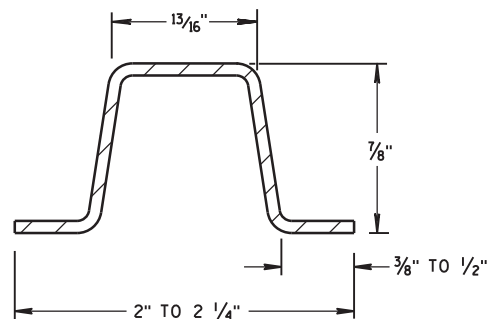
DELINEATOR BRACKET WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

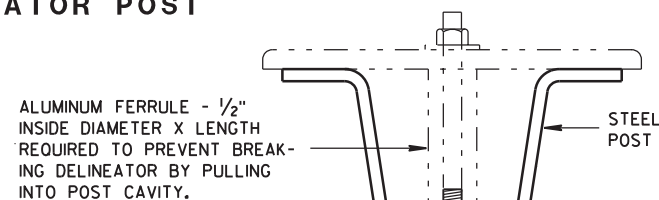


DELINEATOR POST



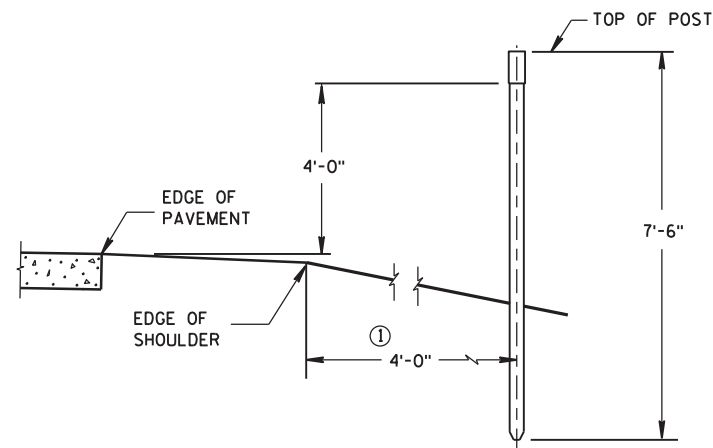
SECTION A-A

WEIGHT 1.12 LBS PER FT. ± 0.1 LB.

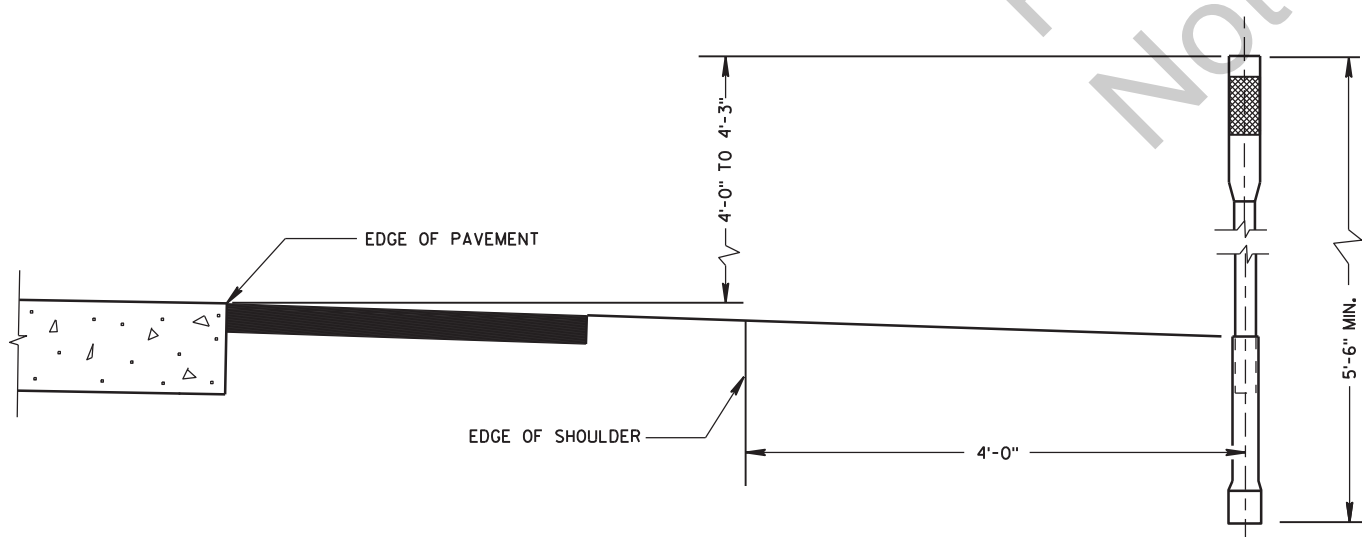
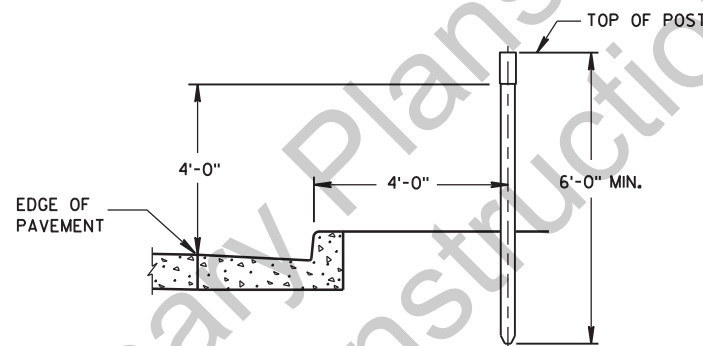


ALUMINUM BOLT - 3/16 inch DIA. X LENGTH REQUIRED WITH WASHER & LOCKNUT, TAMPER PROOF NUT OR EQUIVALENT RIVET.

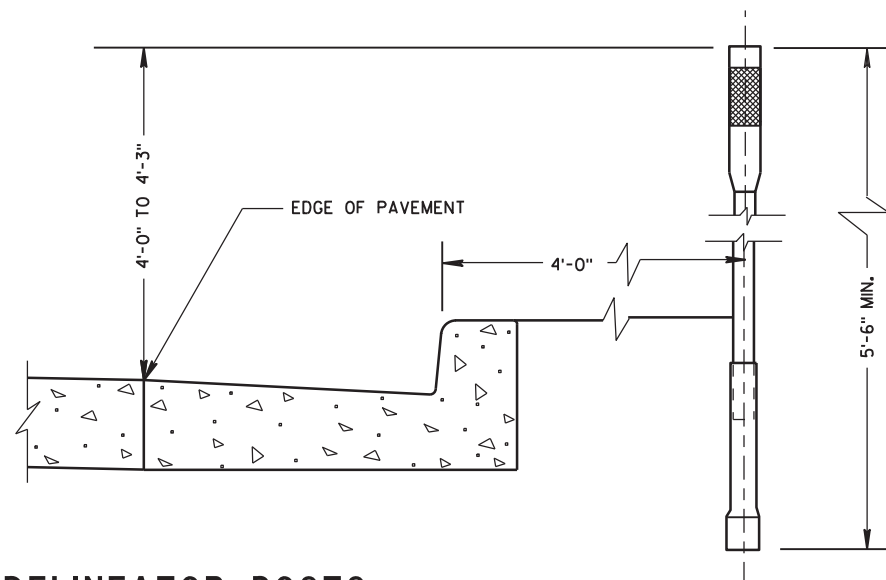
MOUNTING DETAIL FOR DELINEATOR REFLECTOR



TYPICAL INSTALLATIONS OF DELINEATOR POSTS



TYPICAL INSTALLATIONS OF FLEXIBLE DELINEATOR POSTS



GENERAL NOTES

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

- ① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.

REFLECTOR SPACING TABLE

REFLECTOR SPACING	LOCATION
400'	MAINLINE
100'	RAMPS *

* START AT BEGINNING OF RAMP TAPER AND END AT END OF RAMP TAPER.

DELINEATOR POST WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



GENERAL NOTES

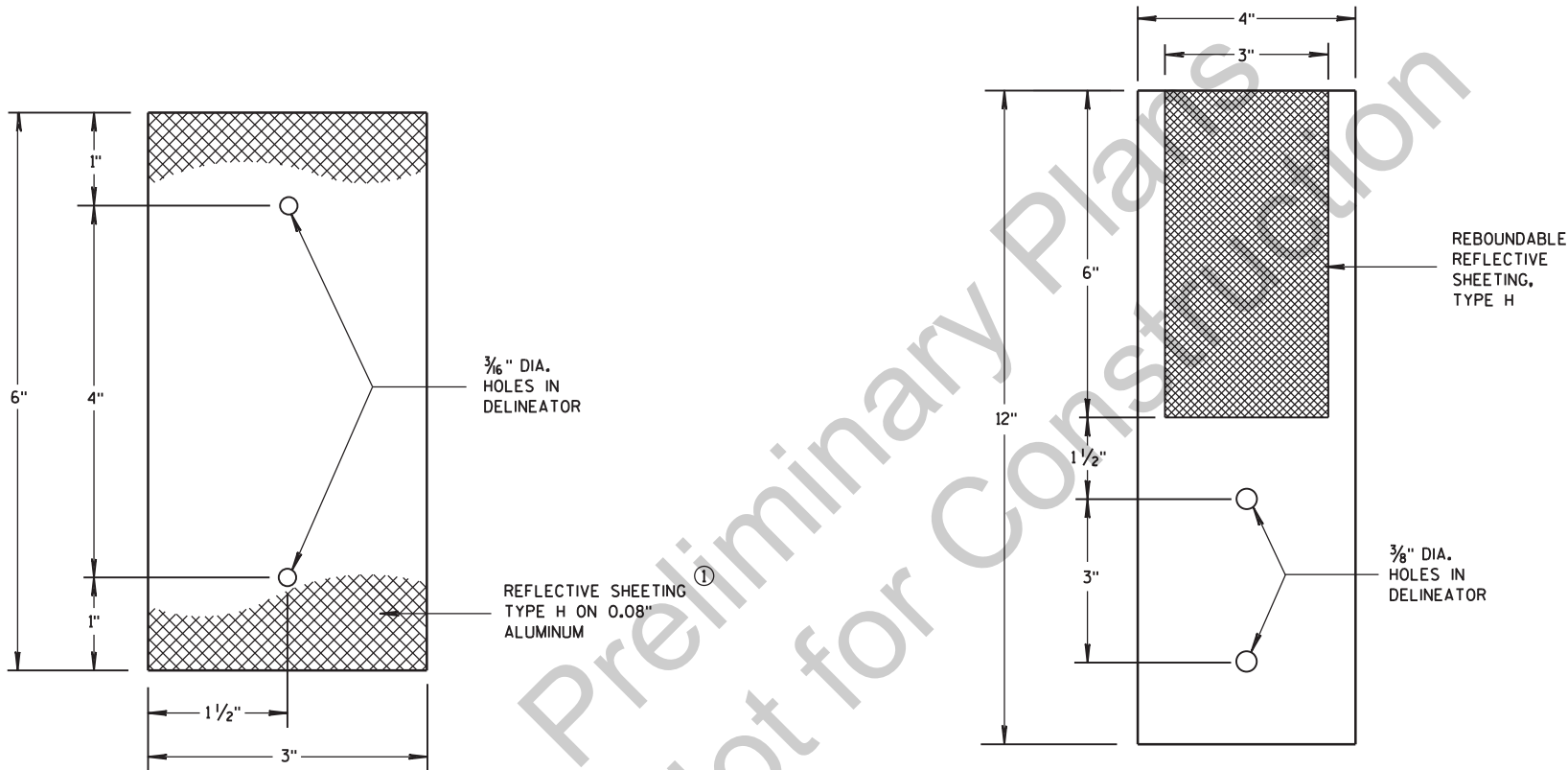
PANEL THICKNESS SHALL BE A MINIMUM OF 0.08 INCHES.

PLASTIC BASE MATERIAL SHALL BE WHITE, UV STABILIZED, FLAME TREATED TO THE MANUFACTURER SPECIFICATIONS AND BE ABLE TO WITHSTAND SUB FREEZING TEMPERATURES WITHOUT BREAKING.

- ① FURNISH TYPE H SHEETING FROM THE APPROVED PRODUCTS LIST.
- ② FURNISH DELINEATOR REFLECTOR FOR GUARDRAIL FROM THE APPROVED PRODUCTS LIST.

REFLECTOR SPACING TABLE

REFLECTOR SPACING	MINIMUM NUMBER OF REFLECTORS
100' C-C	3



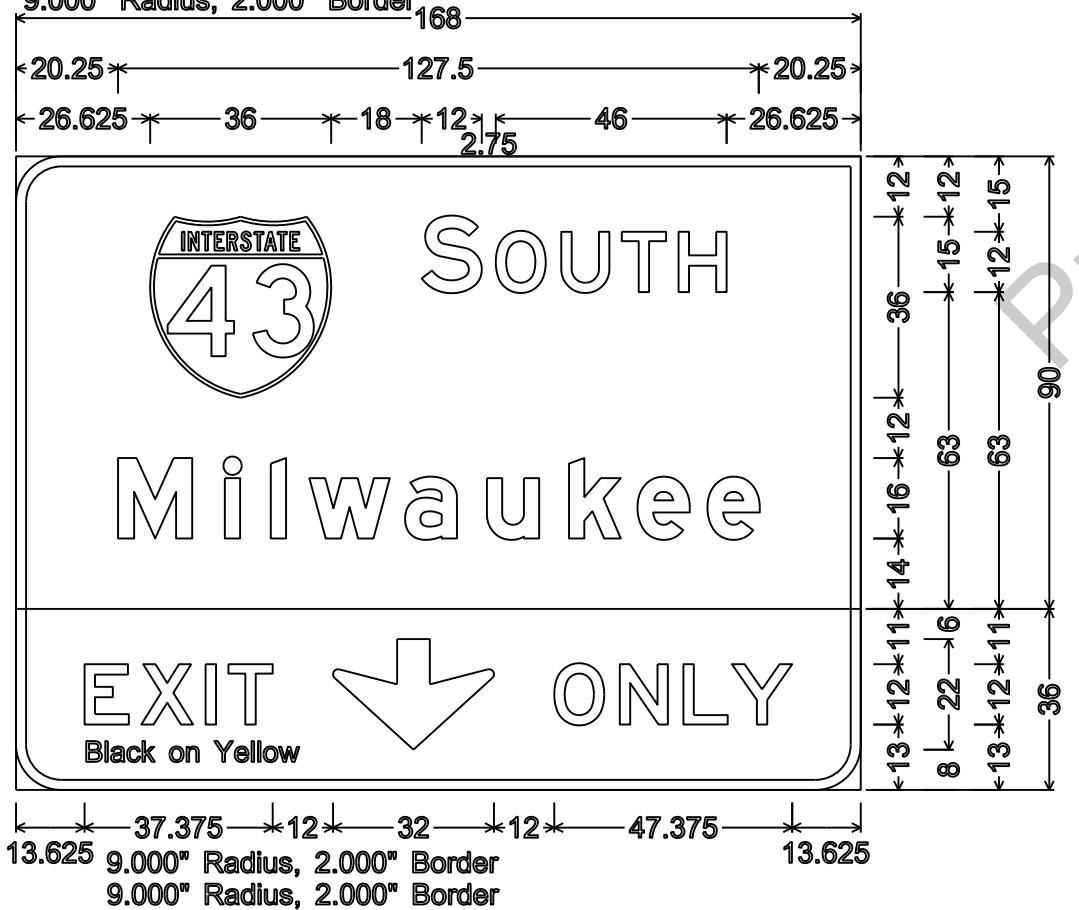
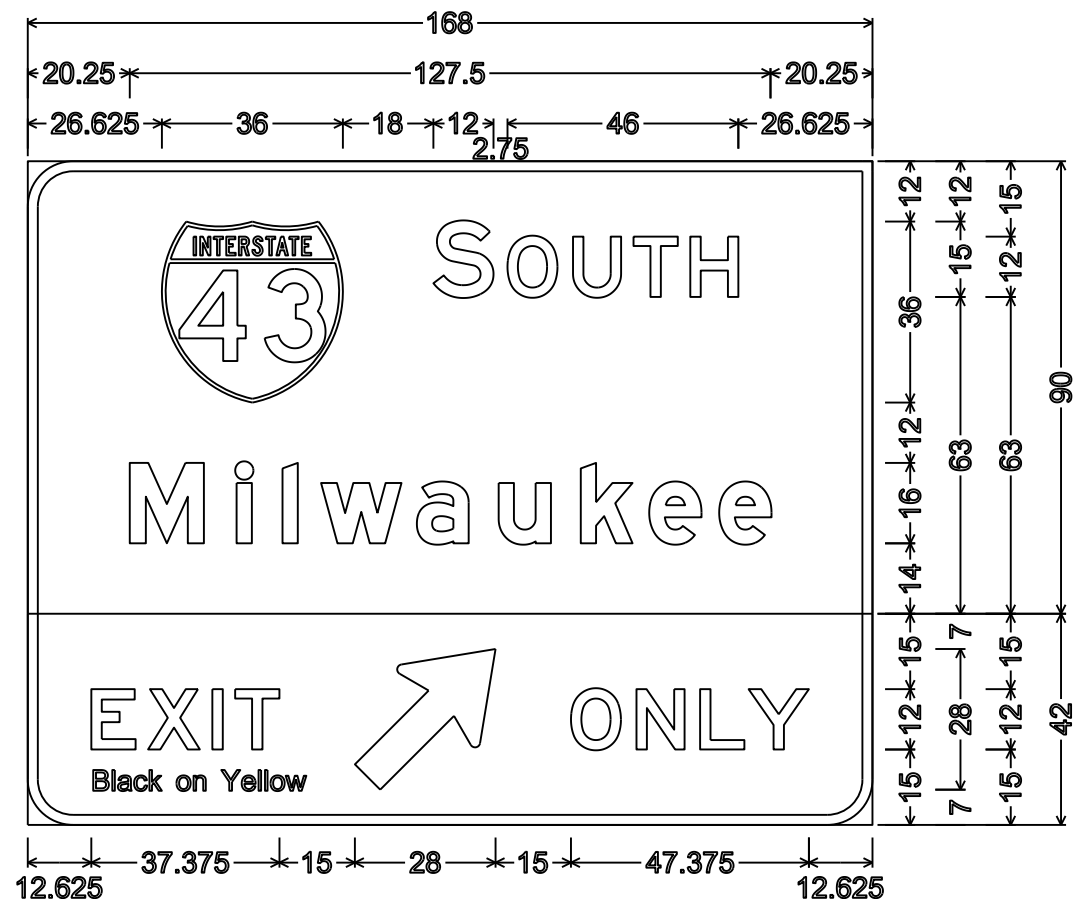
3''x 6'' DELINEATOR REFLECTOR
(FOR STEEL POSTS)

4''x 12'' DELINEATOR REFLECTOR
(FOR GUARDRAIL) ②

DELINEATOR
WITH REFLECTIVE SHEETING

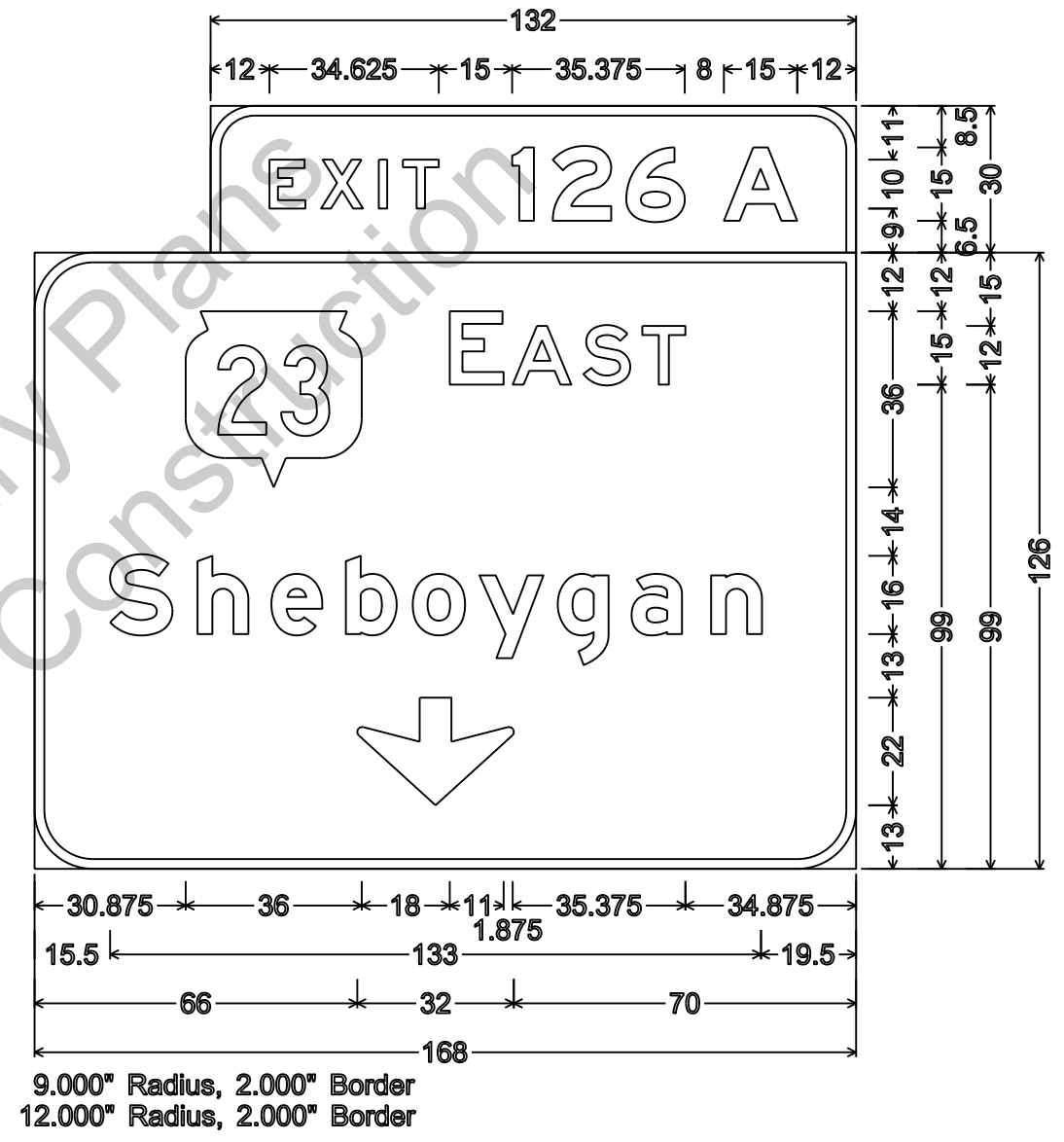
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



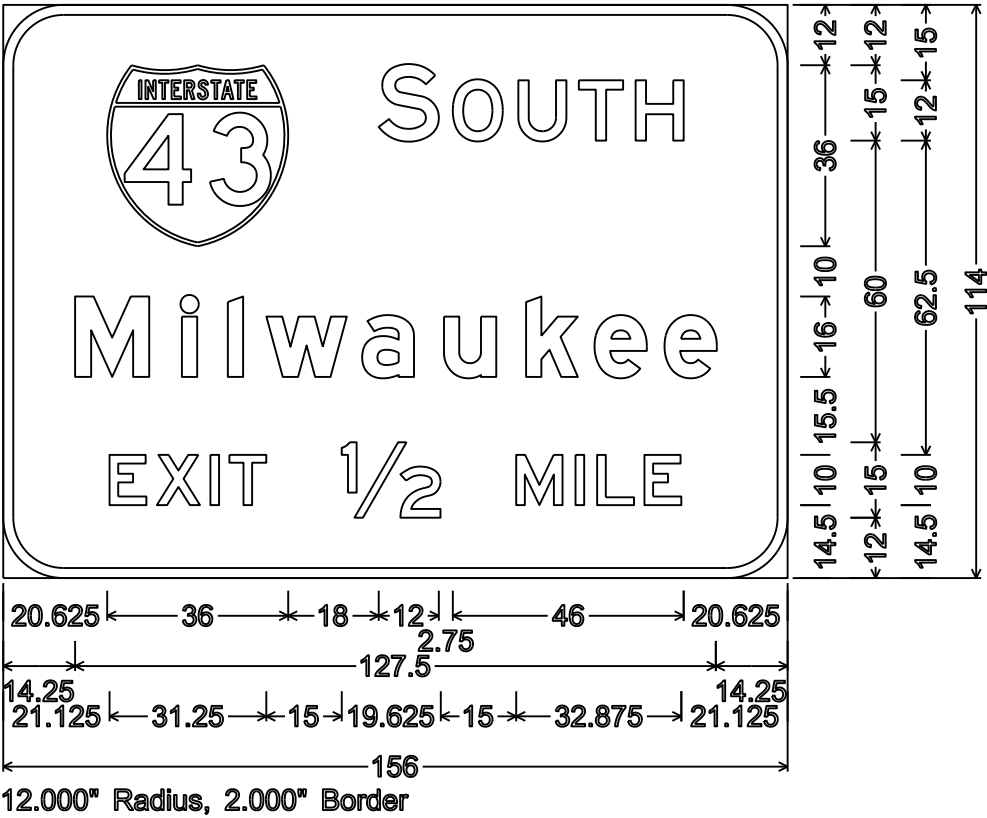
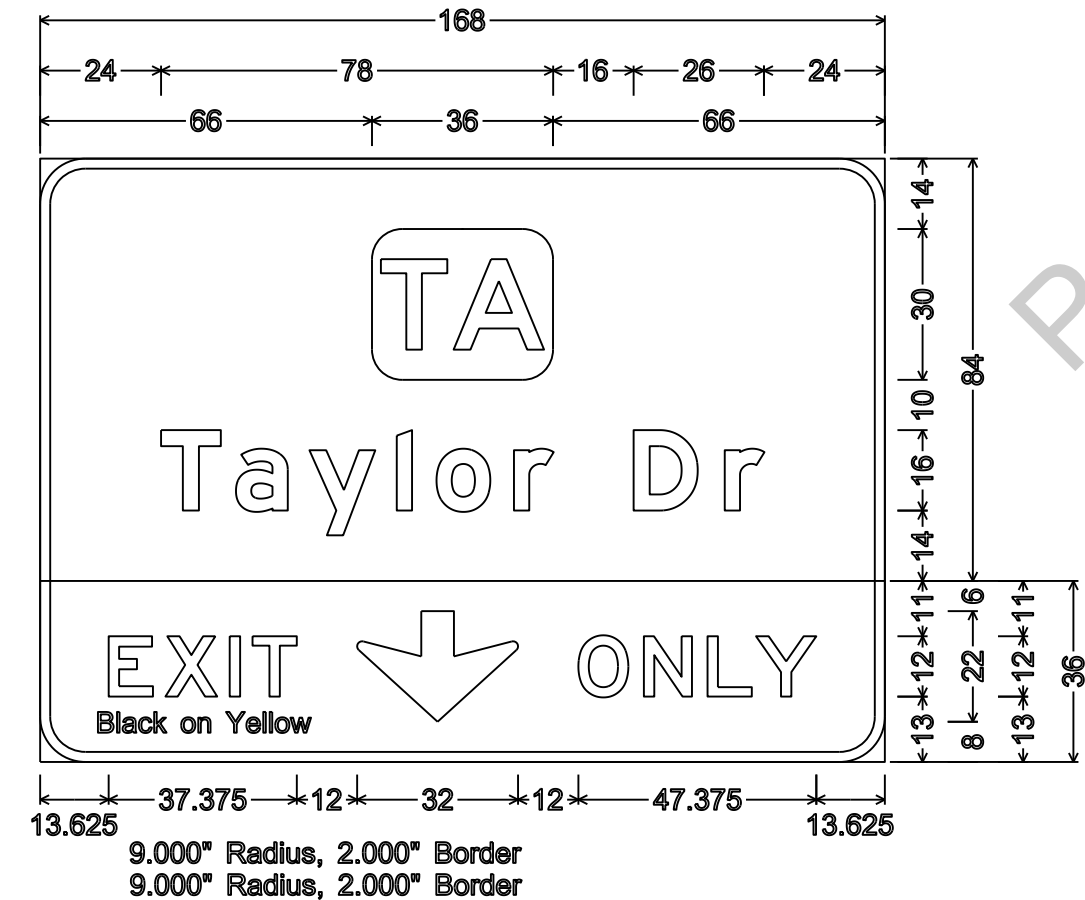
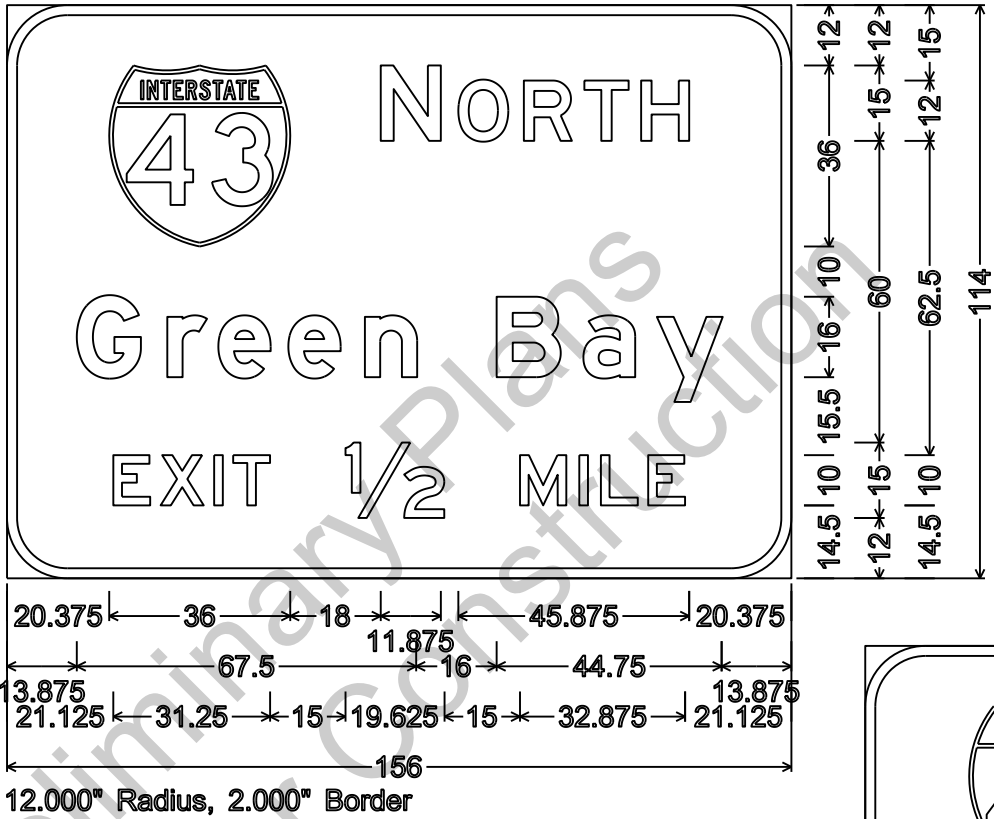
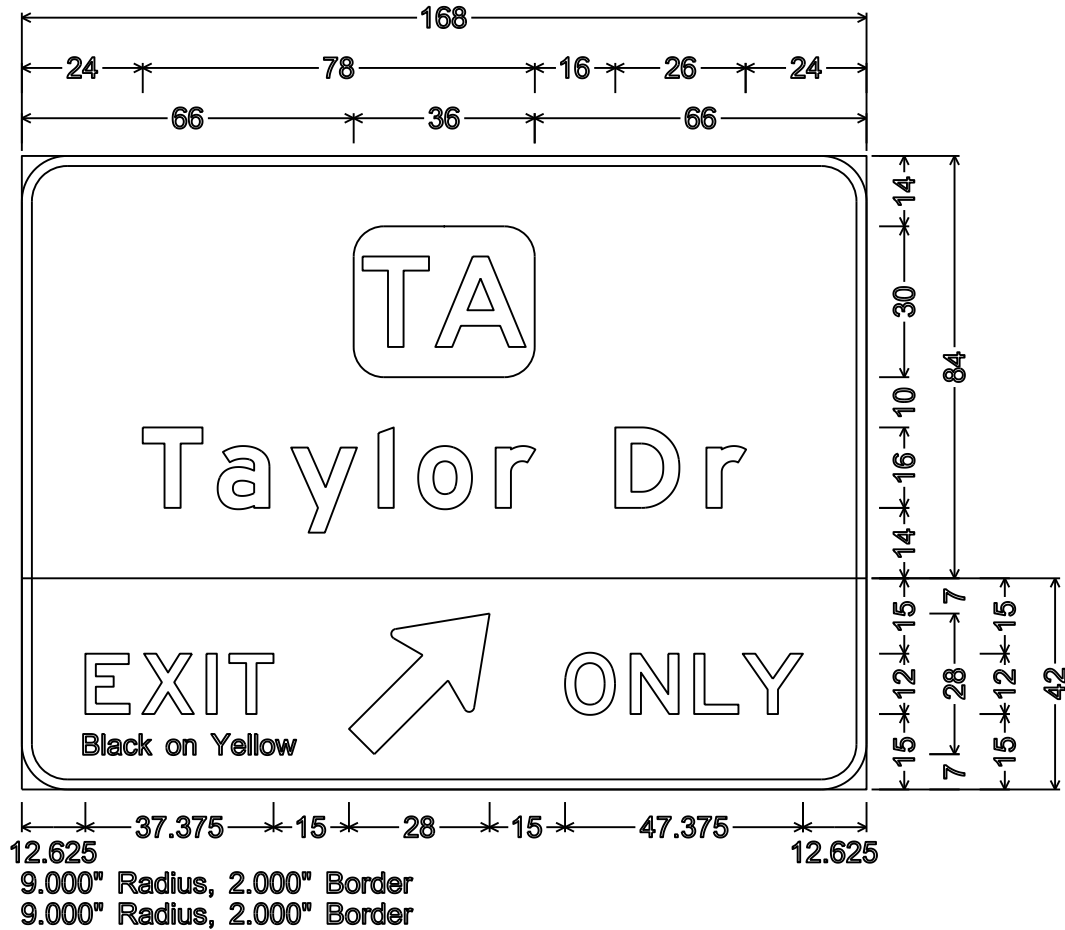
- NOTES

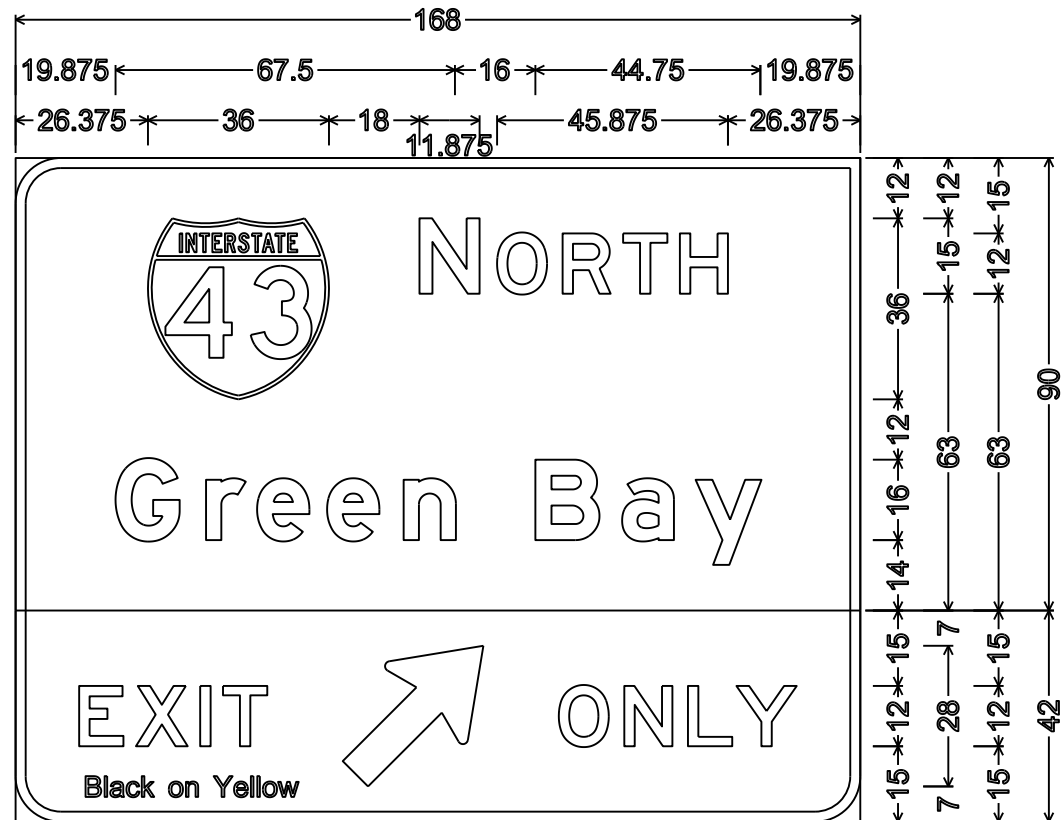
1. Signs are Type I - Type SH Reflective
2. Color:
 - Background - Green
 - Message - White
3. Message Series - E Modified except all CAP words Series E
4. Exit Only Panels Type F Reflective Sheeting with Black Message



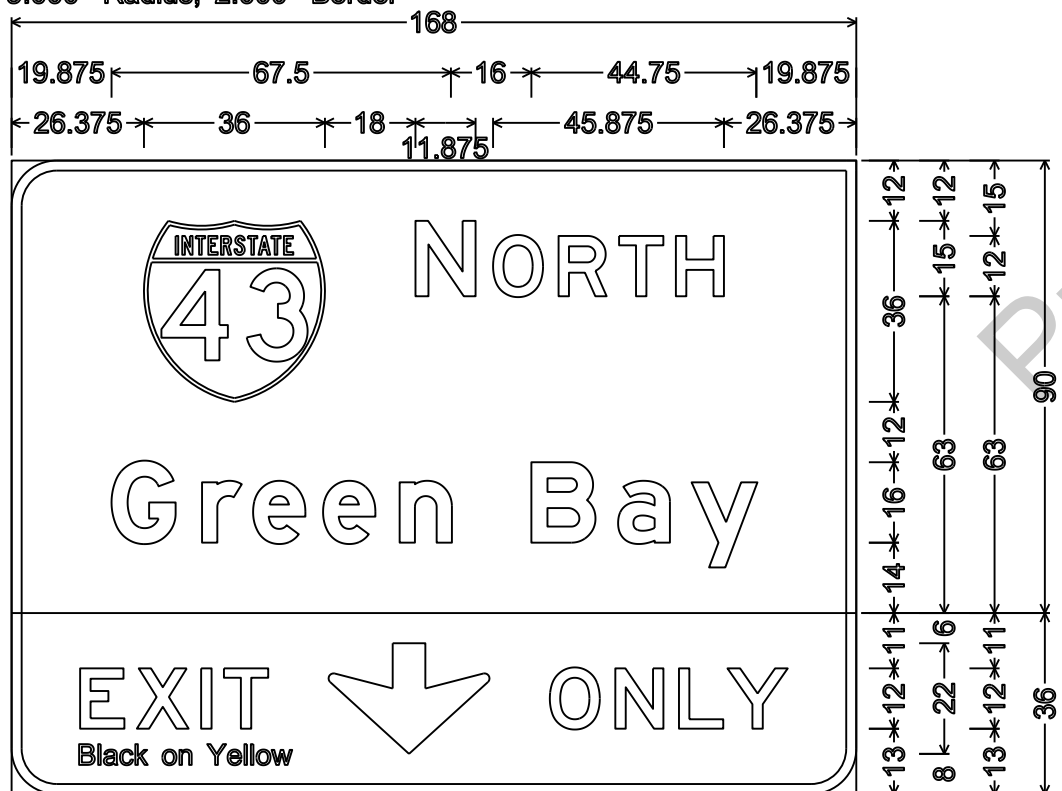
NOTES

- 1. Signs are Type I - Type SH Reflective
- 2. Color:
 - Background - Green
 - Message - White
- 3. Message Series - E Modified except all CAP words Series E
- 4. Exit Only Panels Type F Reflective Sheeting with Black Message





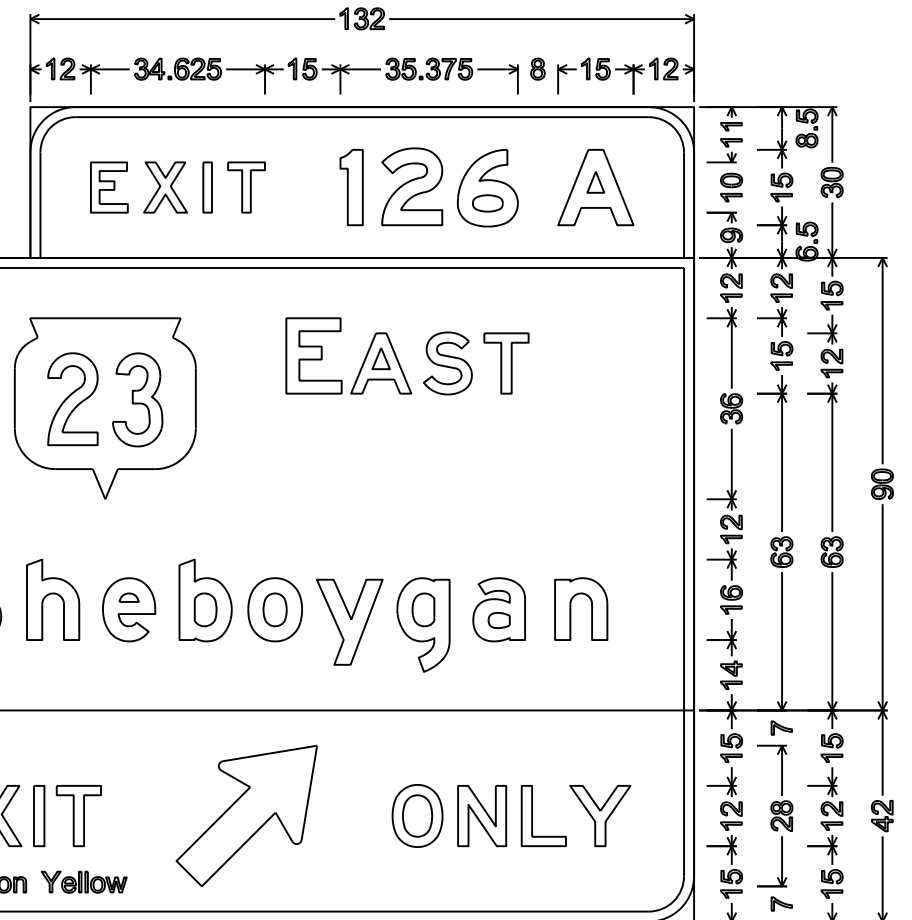
12.625
9.000" Radius, 2.000" Border
9.000" Radius, 2.000" Border



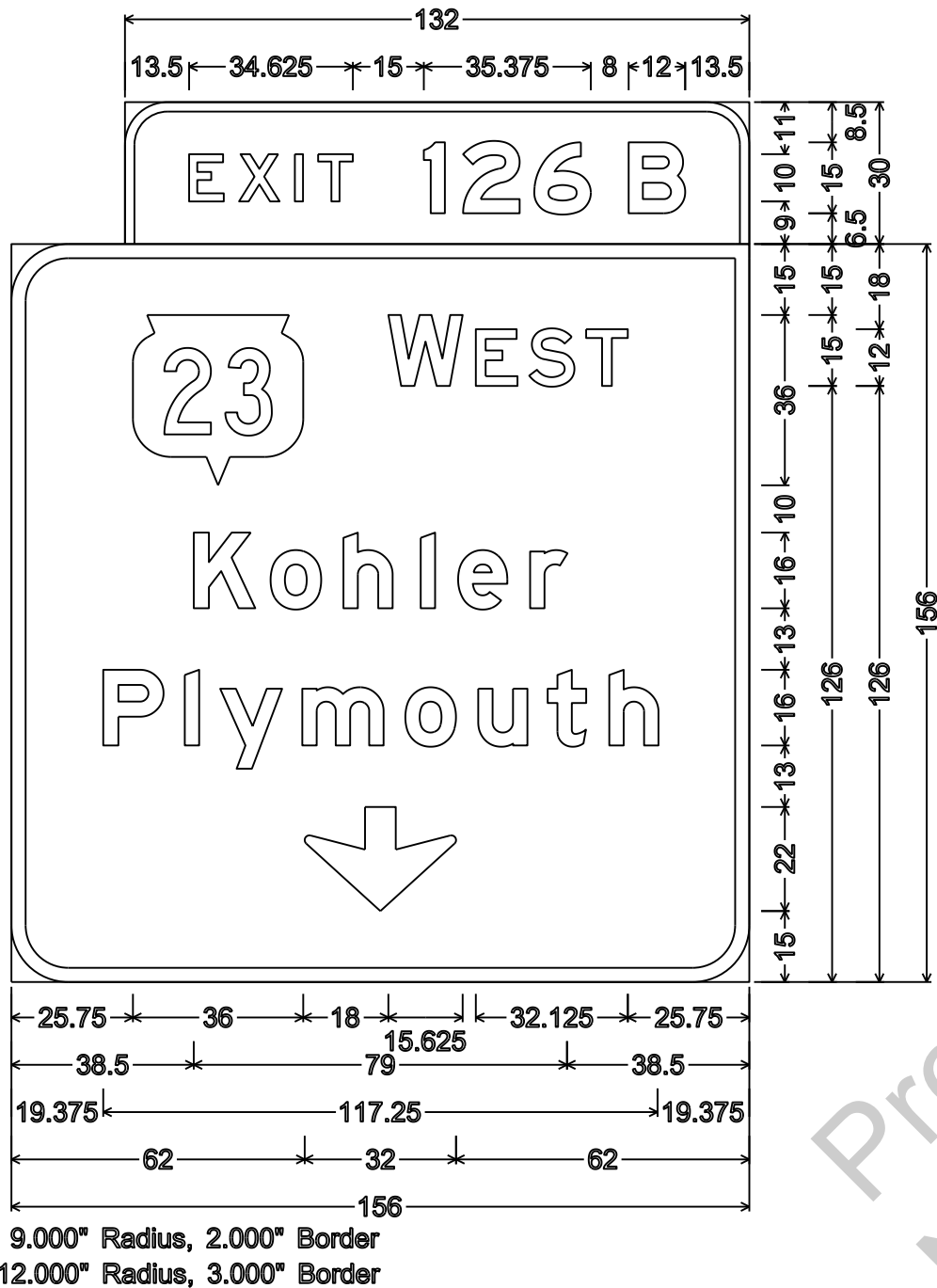
13.625
9.000" Radius, 2.000" Border
9.000" Radius, 2.000" Border

NOTES

1. Signs are Type I - Type SH Reflective
2. Color:
Background - Green
Message - White
3. Message Series - E Modified except all CAP words Series E
4. Exit Only Panels Type F Reflective Sheeting with Black Message

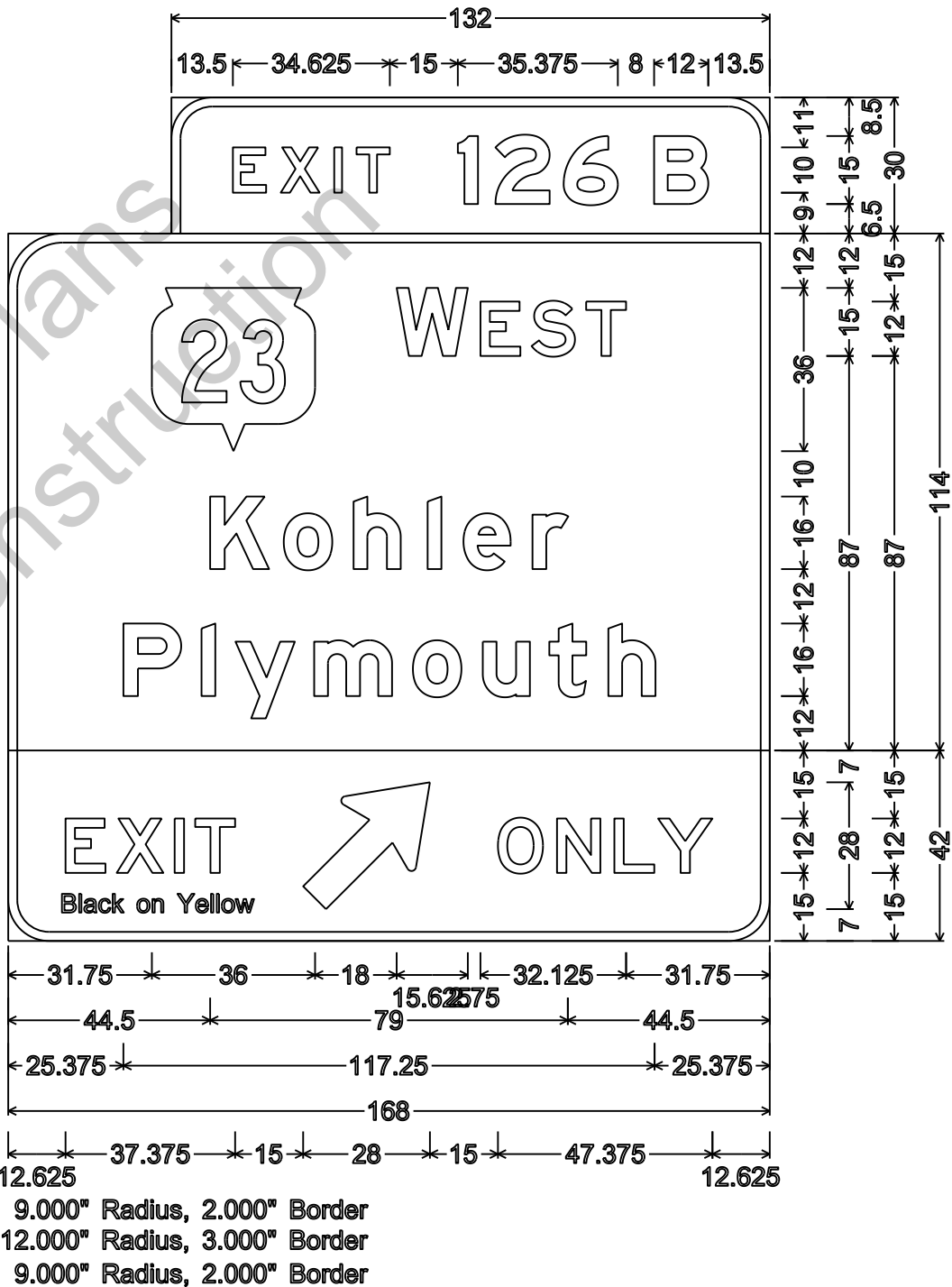


12.625
9.000" Radius, 2.000" Border
9.000" Radius, 2.000" Border
9.000" Radius, 2.000" Border



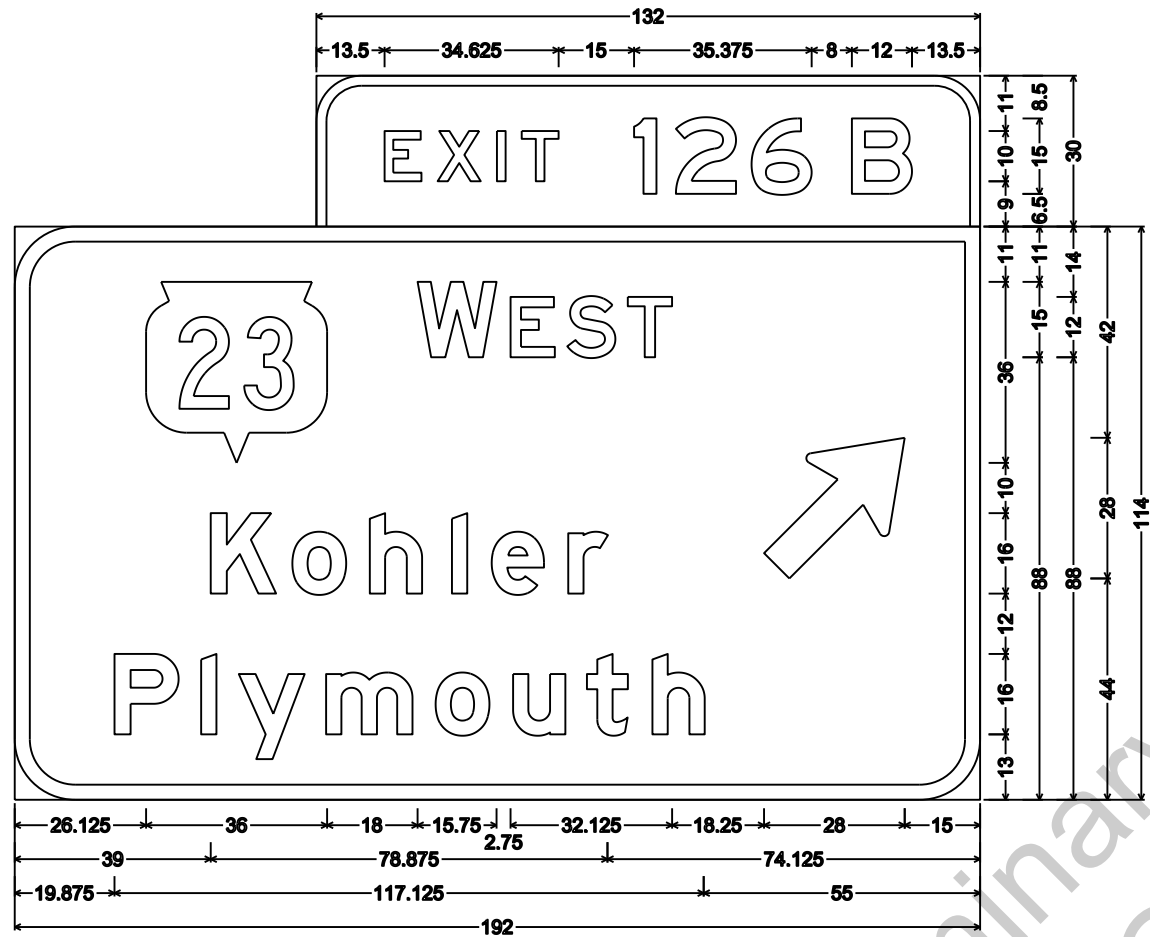
NOTES

- 1. Signs are Type I - Type SH Reflective
- 2. Color:
Background - Green
Message - White
- 3. Message Series - E Modified except all CAP words Series E
- 4. Exit Only Panels Type F Reflective Sheeting with Black Message

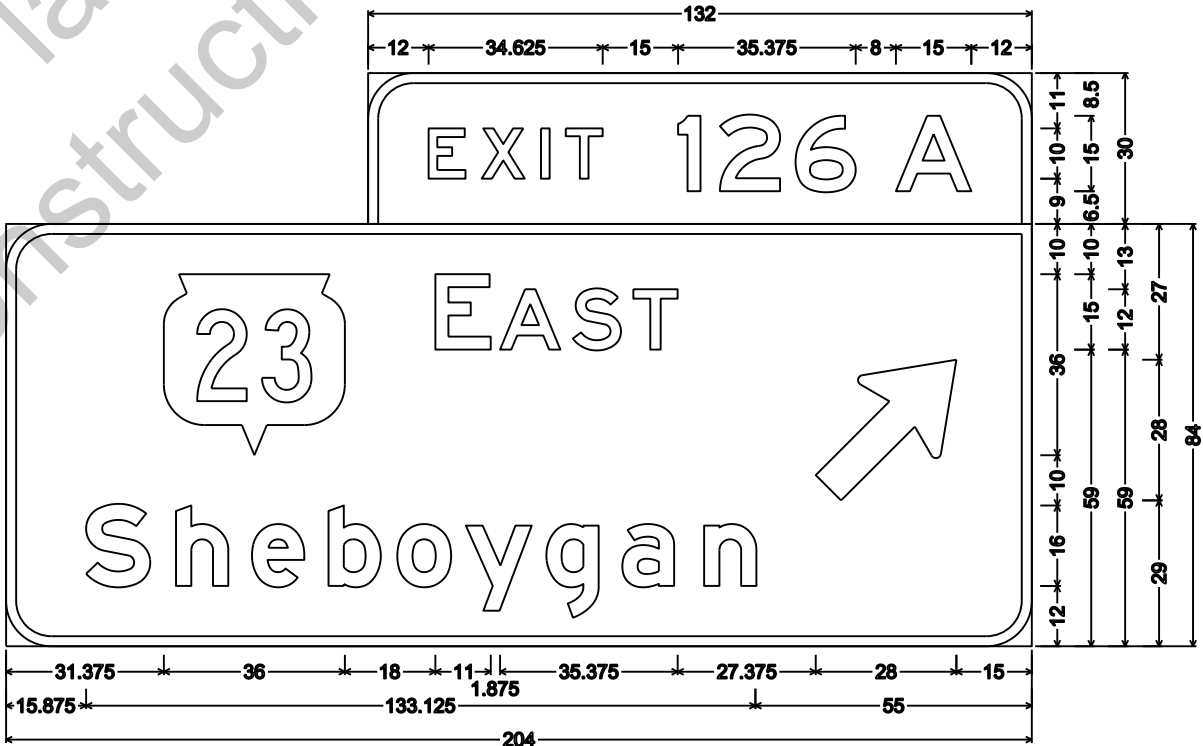


NOTES

- 1. Signs are Type I - Type SH Reflective
- 2. Color:
Background - Green
Message - White
- 3. Message Series - E Modified except all CAP words Series E



9.000" Radius, 2.000" Border,
12.000" Radius, 3.000" Border



9.000" Radius, 2.000" Border,
9.000" Radius, 2.000" Border

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALTERNATE DESIGNS ARE NOT ALLOWED.

ALL STRUCTURAL STEEL MEMBERS, PLATES, ANCHOR RODS, H.S. BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED PER SECTION 641 OF THE WISDOT STANDARD SPECIFICATIONS.

UNLESS DETAILED OTHERWISE IN THE PLANS, ALL H.S. BOLTED CONNECTIONS SHALL BE MADE WITH 3/4" Ø (DIAMETER) A325 GALVANIZED BOLTS. FIELD CONNECTIONS SHALL BE INSTALLED WITH DTI WASHERS.

WELDED CONNECTIONS CAN BE USED IN LIEU OF BOLTED CONNECTIONS IF A TRUSS UNIT CAN BE GALVANIZED IN ONE PIECE.

CONTRACTOR SHALL VERIFY DIMENSIONS AND LOCATIONS OF ELECTRICAL FEEDS PRIOR TO FABRICATION OF STRUCTURE.

WELD TEST AS PER AWS D1.1.

THE STRUCTURE MUST BE ASSEMBLED IN THE SHOP TO ASSURE FIT UP PER SECTION 641.3.3 OF THE WISDOT STANDARD SPECIFICATIONS. EXACT LOCATION OF SIGN BRIDGE SHALL BE DETERMINED BY THE REGION TRAFFIC ENGINEER.

CONTRACTOR SHALL VERIFY UTILITY CONFLICTS PRIOR TO CONSTRUCTION OF FOOTINGS.

SEE SIGN PLATE NO. A4-6 OF THE SIGN PLATE MANUAL FOR INSTRUCTION ON CENTERING SIGN VERTICALLY ON TRUSS.

CONTRACTOR SHALL SHOW SIGNS ON SHOP DRAWINGS.

PROVIDE A 3/4" CHAMFER ON ALL EXPOSED CONCRETE EDGES.

SIGN BRIDGE NAME PLATES AND ID PLAQUES SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "SIGN BRIDGE S-59-XX." LOCATE THE NAME PLATE OR ID PLAQUE ON THE FREEWAY SIDE OF THE SUPPORT COLUMN SO THAT IT CAN BE SEEN FROM THE ROADWAY. FABRICATE AND INSTALL NAME PLATE IN ACCORDANCE WITH S.D.D. 12 A 3-10.

DO NOT GROUT THE SPACE BETWEEN TOP OF CONCRETE COLUMN AND BOTTOM OF BASE PLATE.

ANCHOR RODS SHALL BE PROVIDED WITH TEMPLATES (TOP & BOTTOM) TO MAINTAIN VERTICAL ALIGNMENT AND SPACING DURING CONCRETE PLACEMENT. TEMPLATES SHALL NOT BE WELDED TO THE ANCHOR RODS.

DESIGN DATA

DEAD LOAD - 3 PSF OF SIGN, WT. OF SUPPORTING STRUCTURE
ICE LOAD - 3 PSF TO ONE FACE OF SIGN & AROUND SURFACE OF MEMBERS.
WIND PRESSURE - 90 MPH (3-SECOND GUST SPEED) TO SIGN AREA & EXPOSED MEMBERS

DESIGNED ACCORDING TO THE 6TH EDITION OF AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS."

WIND COMPONENTS	NORMAL	TRANSVERSE
COMBINATION 1	1.0	0.2
COMBINATION 2	0.6	0.3

GROUP LOADS

	% OF ALLOWABLE STRESS
1. DEAD	100
2. DEAD + WIND	133
3. DEAD + ICE + 1/2(WIND *)	133
*MIN. VALUE OF 25 P.S.F. FOR GR. 3	

MATERIAL PROPERTIES

CONCRETE MASONRY ————— f'c = 3,500 P.S.I

BAR STEEL REINFORCEMENT, GRADE 60 ————— fy = 60,000 P.S.I.

COLUMN AND CHORD PIPE, API SPEC. 5L GRADE X42 ————— fy = 42,000 P.S.I. **

PLATES, BARS, AND STRUCTURAL ANGLES, ASTM A709 ————— fy = 36,000 P.S.I.

GRADE 36

ANCHOR RODS, ASTM F1554, GRADE 55 ————— fy = 55,000 P.S.I.

ASTM A563A HEAVY HEX NUTS AND ASTM F436 WASHERS

** CONTRACTOR MAY SUBSTITUTE ALTERNATE MATERIALS PER WISDOT BRIDGE MANUAL SECTION 39.3 AT NO ADDITIONAL COST, PROVIDED THAT APPROVAL IS OBTAINED FROM THE DEPARTMENT.

STRUCTURE	DESIGN SIGN AREA	MAX. SIGN DEPTH
S-59-77	468	13'-0"
S-59-79	432	12'-0"
S-59-82	576	12'-0"
S-59-83	450	12'-0"

PRELIMINARY PLAN

LIST OF DRAWINGS

- 1. GENERAL NOTES
- 2. S-59-77 GENERAL LAYOUT
- 3. S-59-79 GENERAL LAYOUT
- 4. S-59-82 GENERAL LAYOUT
- 5. S-59-83 GENERAL LAYOUT

STATE PROJECT NUMBER

1225-08-73

STRUCTURE DESIGN CONTACTS

BRITTANY JACKSON (608) 266-0214
LAURA SHADEWALD (608) 267-9592

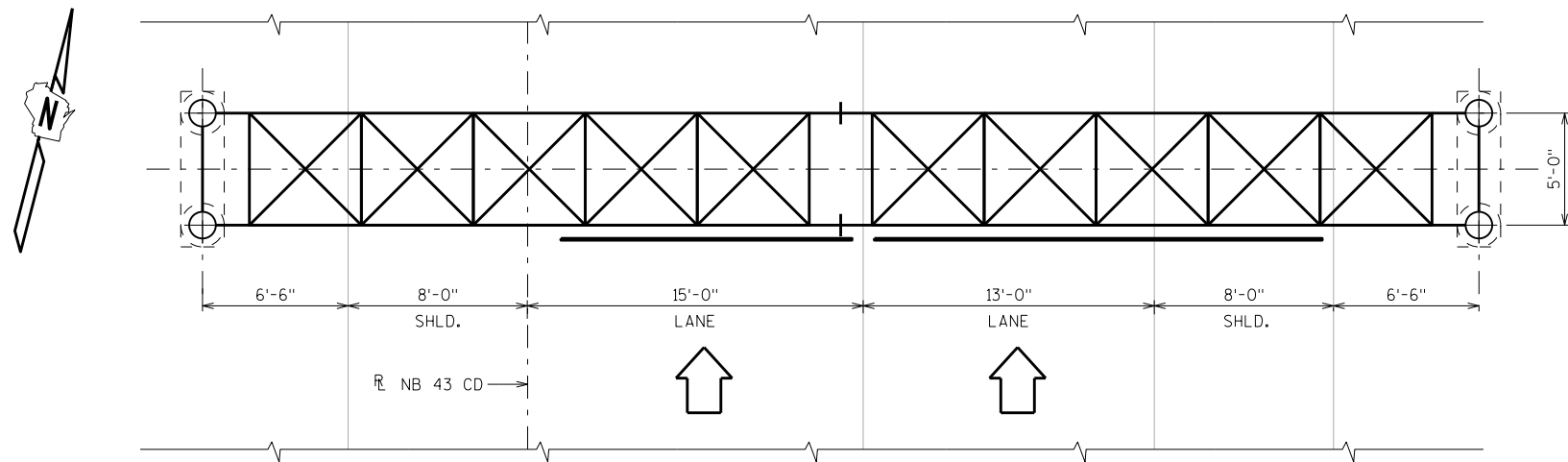
NO.	DATE	REVISION	BY
BUREAU OF STRUCTURES			
ACCEPTED CHIEF STRUCTURES DESIGN ENGINEER _____ DATE _____			
STRUCTURE S-59-77,79,82,83			
IH 43 / STH 23 INTERCHANGE			
COUNTY	SHEBOYGAN		CITY
SHEBOYGAN			
DESIGN SPEC. AASHTO STD. SPEC. FOR HIGHWAY BRIDGES, 17TH EDITION			
DESIGNED BY	DESIGNED BY	DRAWN BY	PLANS BY
BLJ	CK'D. MWB	BLJ	CK'D. LLS
GENERAL NOTES			SHEET 1 OF 5

I.D. 1225-08-00

DATE: AUG. 2017

8

SCALE = 4:00



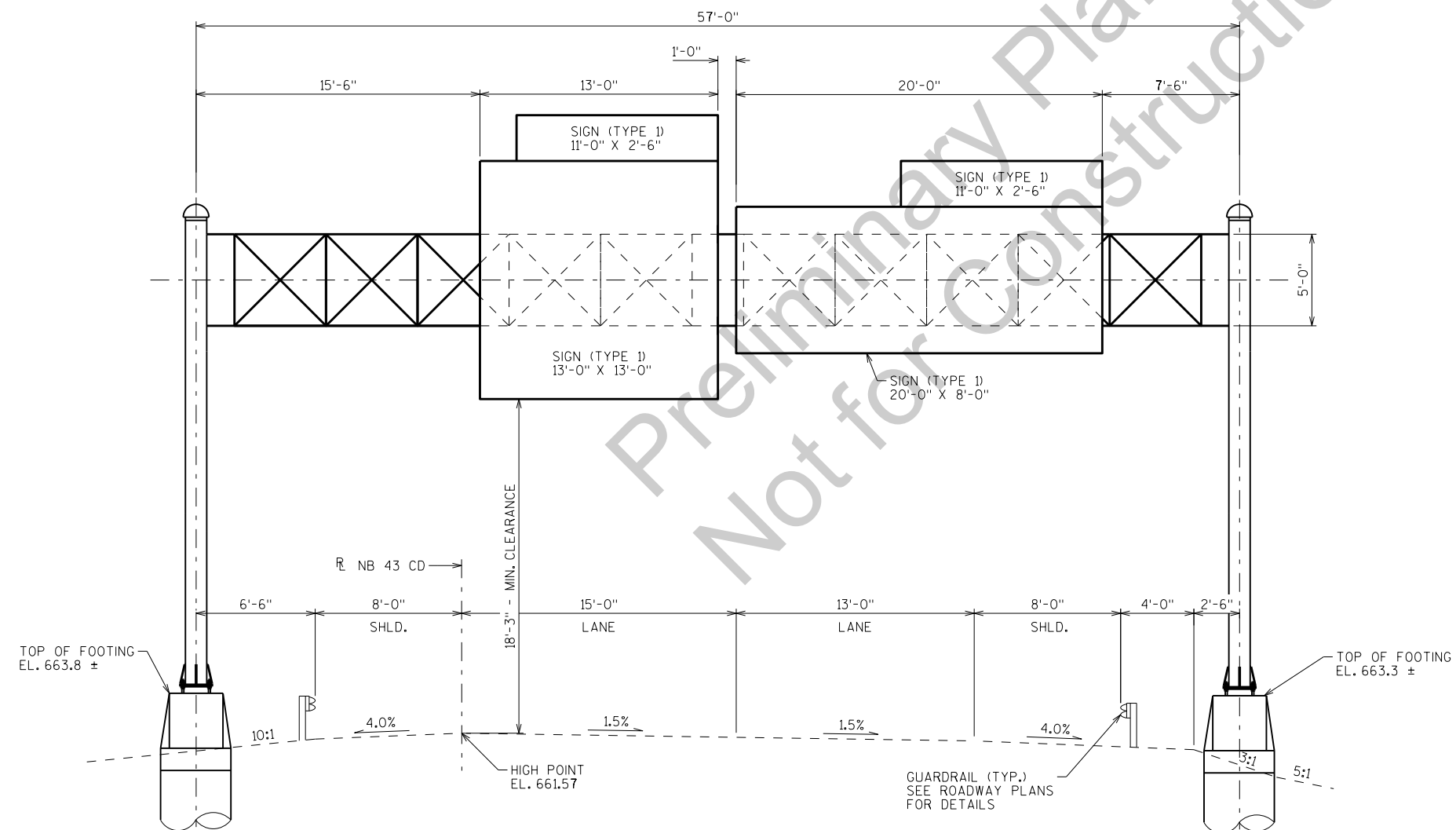
PLAN
STA. 365+20 NB 43

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
636.0100	SIGN SUPPORTS CONCRETE MASONRY	CY	
636.1500	SIGN SUPPORTS STEEL COATED REINFORCEMENT HS	LB	
641.6600	SIGN BRIDGE S-59-77	LS	1
SPV.0105	REMOVING SIGN BRIDGE S-59-02	LS	1

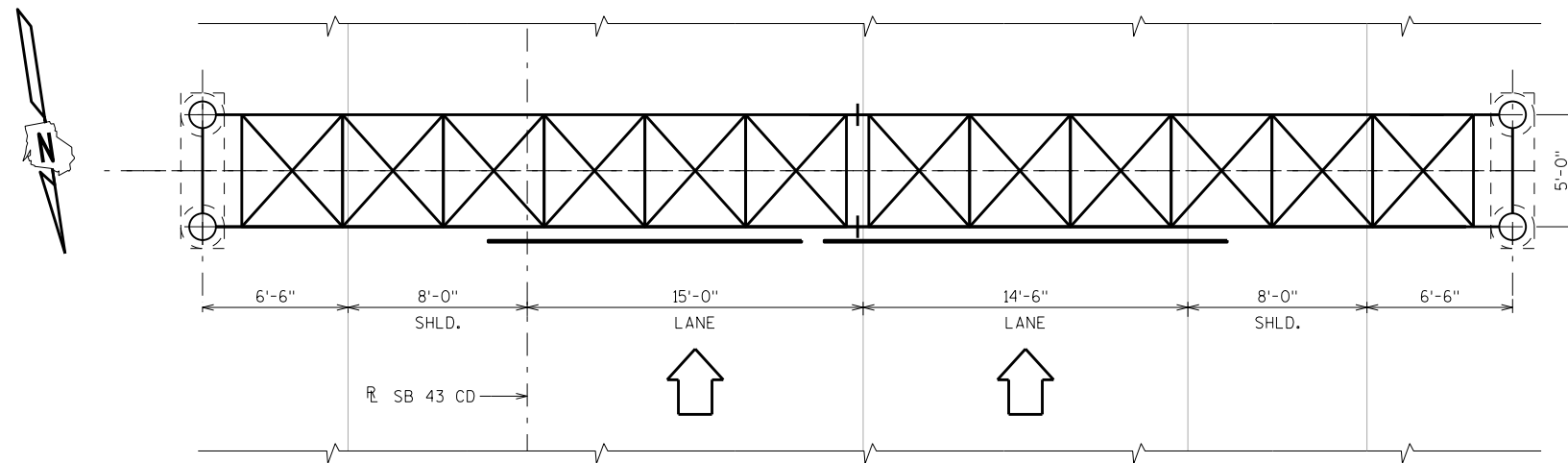
TRAFFIC VOLUME

NB 43 CD
A.D.T. = 6,700
R.D.S. = 70 M.P.H.



ELEVATION
(LOOKING NORTH AT FRONT FACE OF SIGN)

PRELIMINARY PLAN



PLAN
STA. 396+10 SB CD

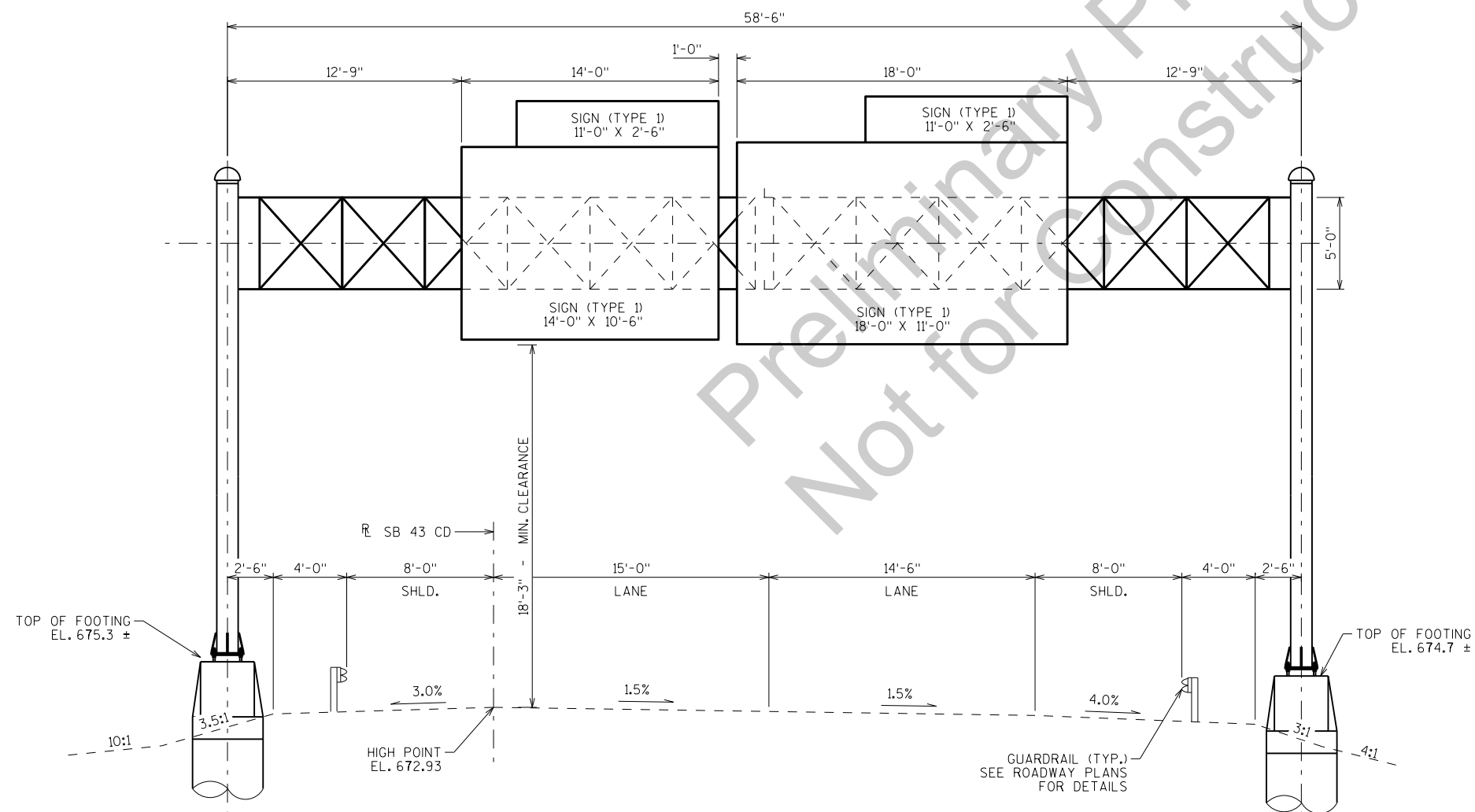
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
636.0100	SIGN SUPPORTS CONCRETE MASONRY	CY	
636.1500	SIGN SUPPORTS STEEL COATED REINFORCEMENT HS	LB	
641.6600	SIGN BRIDGE S-59-79	LS	1
SPV.0105	REMOVING SIGN BRIDGE S-59-04	LS	1

TRAFFIC VOLUME

SB 43 CD

A.D.T. = 2,200
R.D.S. = 70 M.P.H.



ELEVATION

(LOOKING SOUTH AT FRONT FACE OF SIGN)

PRELIMINARY PLAN

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
636.0100	SIGN SUPPORTS CONCRETE MASONRY	CY	
636.1500	SIGN SUPPORTS STEEL COATED REINFORCEMENT HS	LB	
641.6600	SIGN BRIDGE S-59-82	LS	1
SPV.0105	REMOVING SIGN BRIDGE S-59-06	LS	1

TRAFFIC VOLUME

EB 23

A.D.T. = 28,900
R.D.S. = 70 M.P.H.

PLAN

STA. 215+75 STH 23 EB

PRELIMINARY PLAN

ELEVATION

(LOOKING EAST AT FRONT FACE OF SIGN)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE S-59-77,79,82,83			
DRAWN BY		BLJ	PLANS CK'D. LLS
S-59-82 GENERAL LAYOUT		SHEET 4	

SCALE = 4:00

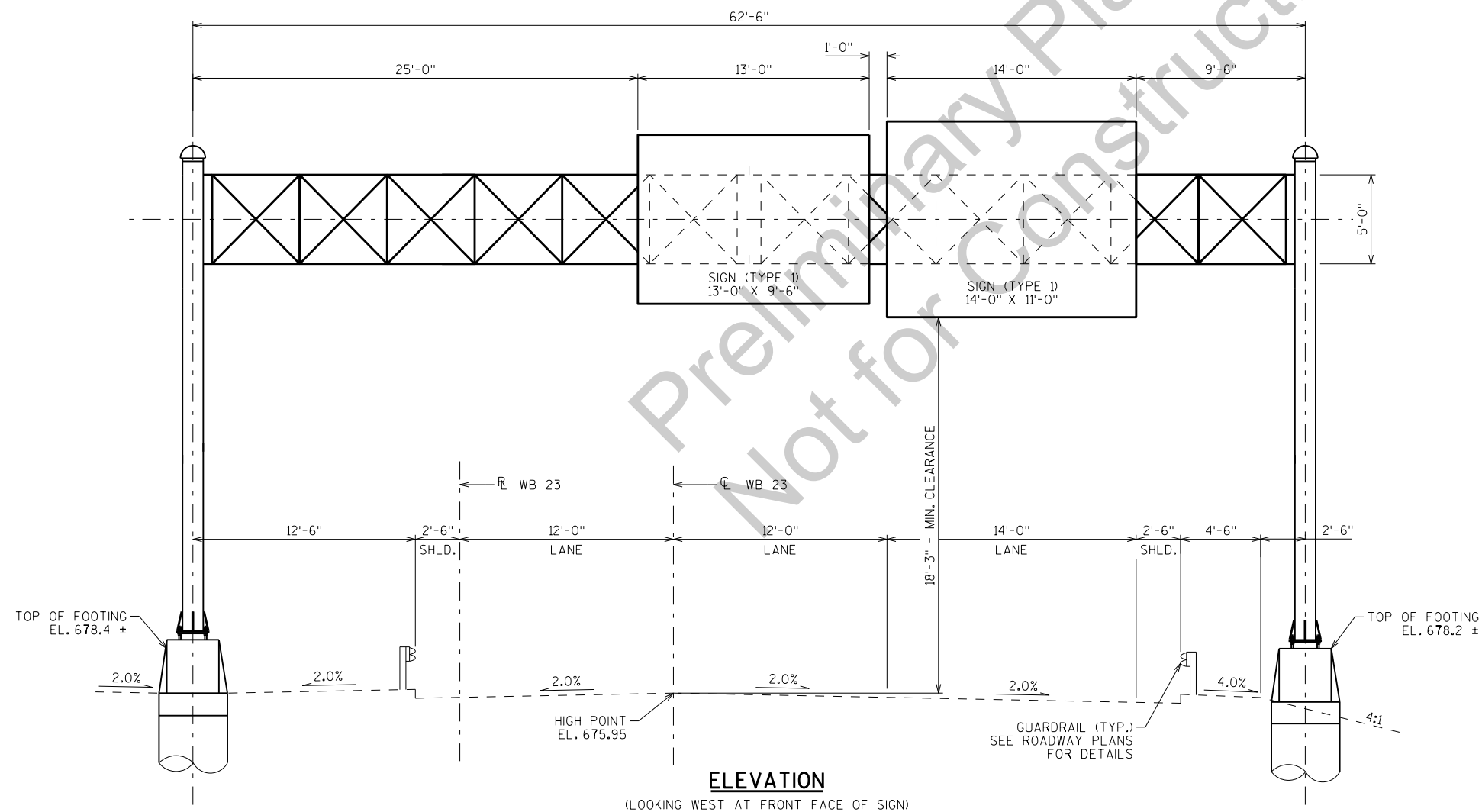
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
636.0100	SIGN SUPPORTS CONCRETE MASONRY	CY	
636.1500	SIGN SUPPORTS STEEL COATED REINFORCEMENT HS	LB	
641.6600	SIGN BRIDGE S-59-83	LS	1
SPV.0105	REMOVING SIGN BRIDGE S-59-09	LS	1

TRAFFIC VOLUME

STH 23 WB

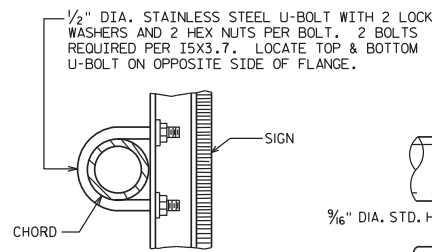
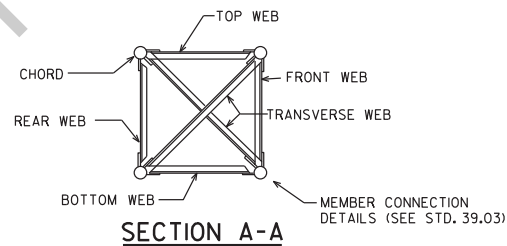
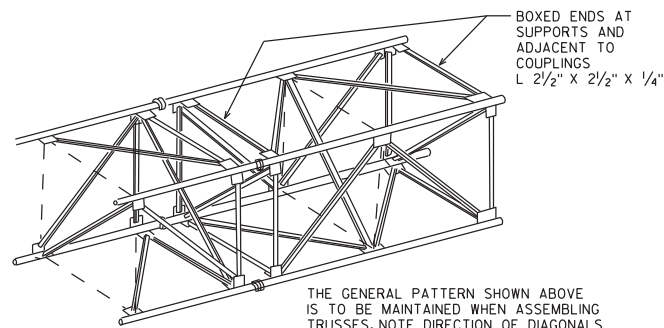
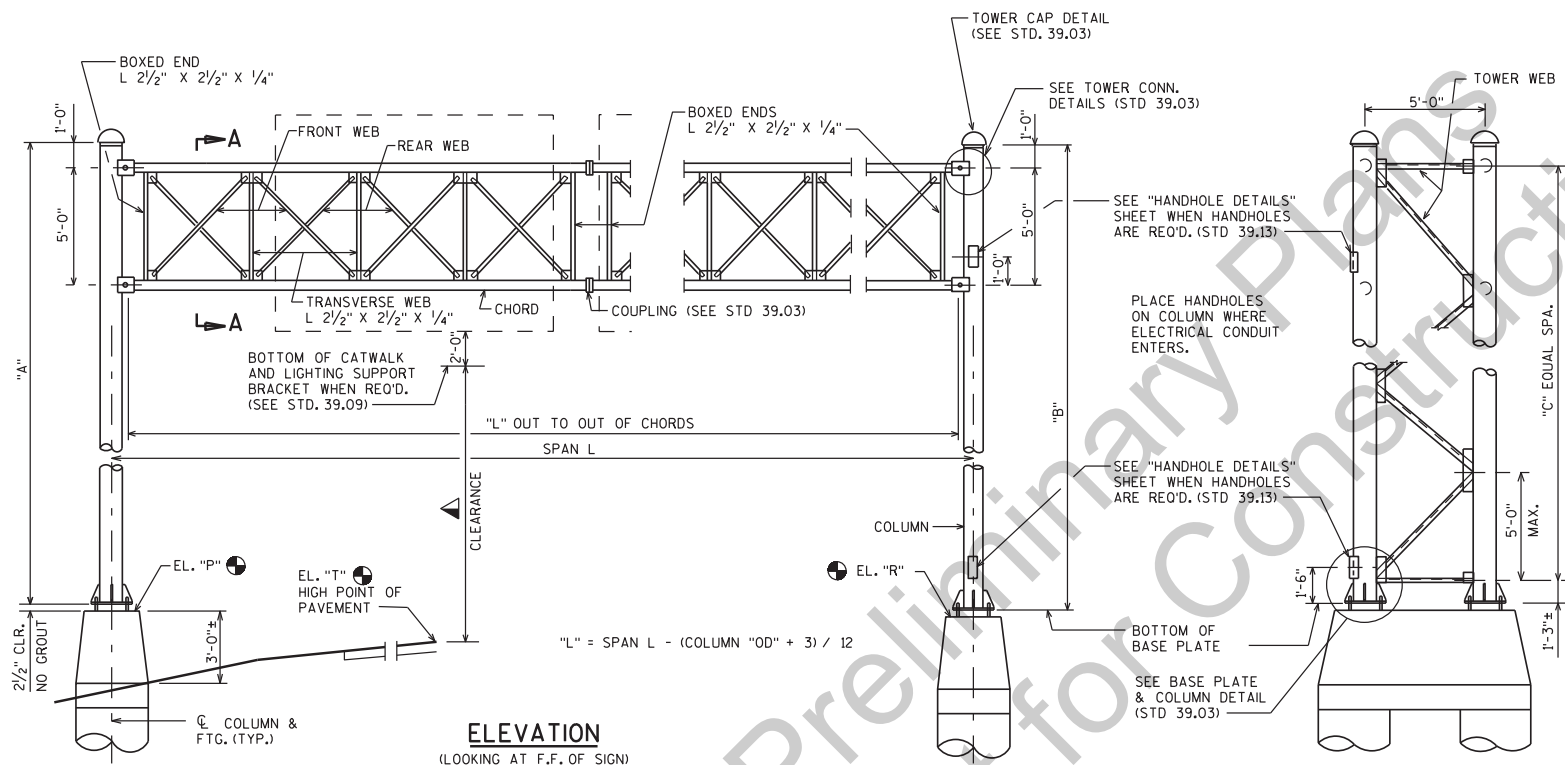
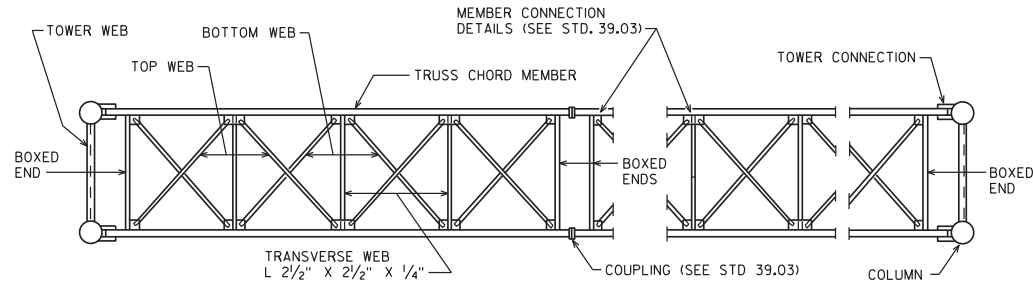
A.D.T. = 13,500
R.D.S. = 70 M.P.H.



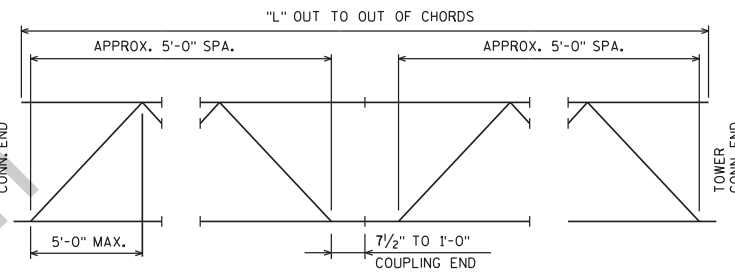
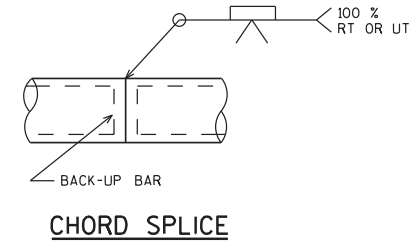
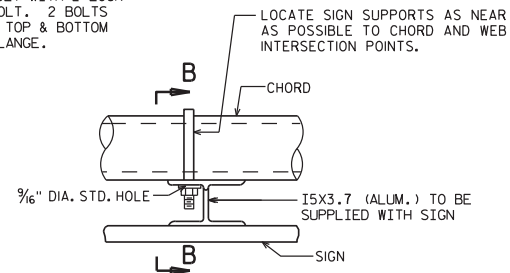
PRELIMINARY PLAN

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE S-59-77,79,82,83			
		DRAWN BY	PLANS CKD. LLJ
S-59-83 GENERAL LAYOUT		SHEET 5	

SCALE = 4.00



TYPICAL SIGN CONNECTION
USE FOR TYPE I AND II SIGNS ONLY



NOTES

- DRAWINGS SHALL NOT BE SCALED.
- STEEL COLUMN AND CHORD PIPES SHALL BE API SPEC. 5L GRADE X42 $F_y = 42,000$ PSI **
- PLATES, BARS & STRUCTURAL ANGLES SHALL BE ASTM A709 GRADE 36 $F_y = 36,000$ PSI
- STEEL ANCHOR RODS SHALL MEET THE REQUIREMENTS OF ASTM F1554 GRADE 55, ASTM A563A HEAVY HEX NUTS, AND ASTM F436 WASHERS.
- UNLESS DETAILED OTHERWISE IN THE PLANS, ALL H.S. BOLTED CONNECTIONS SHALL BE MADE WITH $3/4$ " DIA. A325 GALVANIZED BOLTS. FIELD CONNECTIONS SHALL BE INSTALLED WITH DTI WASHERS.
- ALL STRUCTURAL STEEL MEMBERS, PLATES, ANCHOR RODS, H.S. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER SECTION 641 OF THE WISDOT STANDARD SPECIFICATIONS.
- WELDED CONNECTIONS CAN BE USED IN LIEU OF BOLTED CONNECTIONS, IF A TRUSS UNIT CAN BE GALVANIZED IN ONE PIECE.
- WELD TEST AS PER AWS D11.
- EXACT LOCATION OF SIGN BRIDGE SHALL BE DETERMINED BY THE REGION TRAFFIC ENGINEER.
- SEE SIGN PLATE NO. A4-6 OF THE SIGN PLATE MANUAL FOR INSTRUCTION ON CENTERING SIGN VERTICALLY ON TRUSS.
- ** SEE WISDOT BRIDGE MANUAL SECTION 39.3 FOR ACCEPTABLE ALTERNATE MATERIAL.

- ELEVATIONS TO BE SHOWN ON "GENERAL LAYOUT" SHEET.
- 20'-0" MIN. FOR OSOW HIGH CLEARANCE ROUTE, 18'-3" MIN. FOR ALL OTHERS.

DESIGN DATA

- DEAD LOAD - 3 PSF OF SIGN, WT. OF SUPPORTING STRUCTURE, CATWALK, LIGHTS AND RAILINGS.
- ICE LOAD - 3 PSF TO 1 FACE OF SIGN & AROUND SURFACE OF MEMBERS.
- WIND PRESSURE - 90 MPH (3-SECOND GUST SPEED) TO SIGN AREA & EXPOSED MEMBERS.
- FATIGUE GROUP LOAD IS APPLIED PER SECTION 39.4.2 OF THE WISDOT BRIDGE MANUAL.
- DESIGNED ACCORDING TO THE 6TH EDITION OF AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS."

STANDARDS 39.03, 39.09, AND 39.13 DETAILS ARE USED WITH THIS STANDARD TO DETAIL A "4-CHORD GALVANIZED STEEL SIGN BRIDGE" FOR TYPE I AND II SIGNS ONLY.

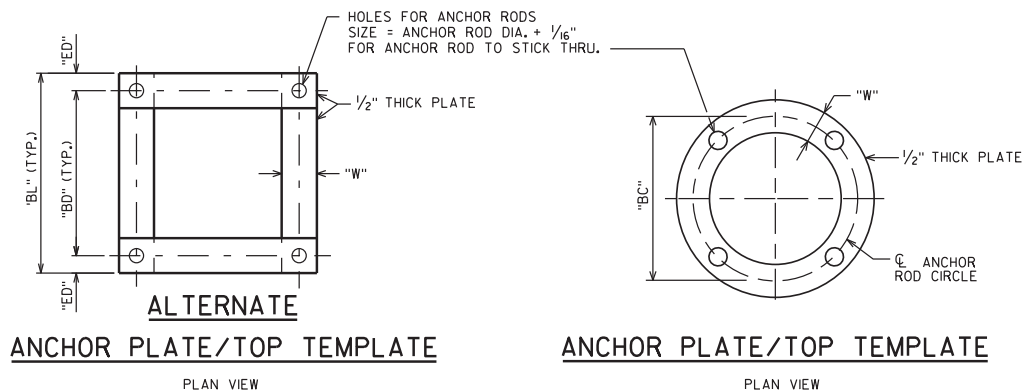
4-CHORD GALVANIZED STEEL SIGN BRIDGE



BUREAU OF
STRUCTURES

APPROVED: Bill Oliva

DATE:
7-16



CAP FABRICATED FROM STEEL PLATES (MIN. THICKNESS = 3/16") WILL BE ACCEPTABLE, SUBJECT TO APPROVAL BY THE ENGINEER.

DRILL AND TAP 2 HOLES 180° APART FOR 1/2" DIA. SET SCREWS.

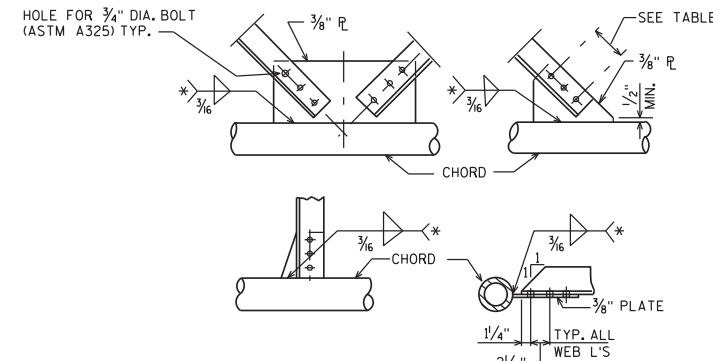
TOWER CAP DETAIL

3/4" DIA. BOLT MAY BE ASTM A449. SNUG-TIGHT ONLY, DO NOT OVER TIGHTEN.

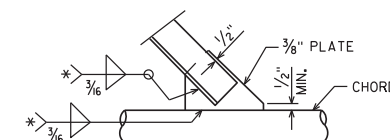
OVERSIZED, OR PLATE WASHER. (TYP.)

TOWER CONNECTION DETAIL

⊖ BOLT, PLATE & HOLE DETAILS SHOWN ARE MIN.



TYPICAL TRUSS CONNECTION DETAILS



TYPICAL WELDED ALTERNATE

DESIGN DATA

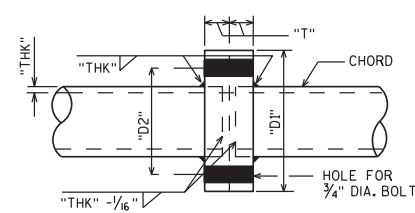
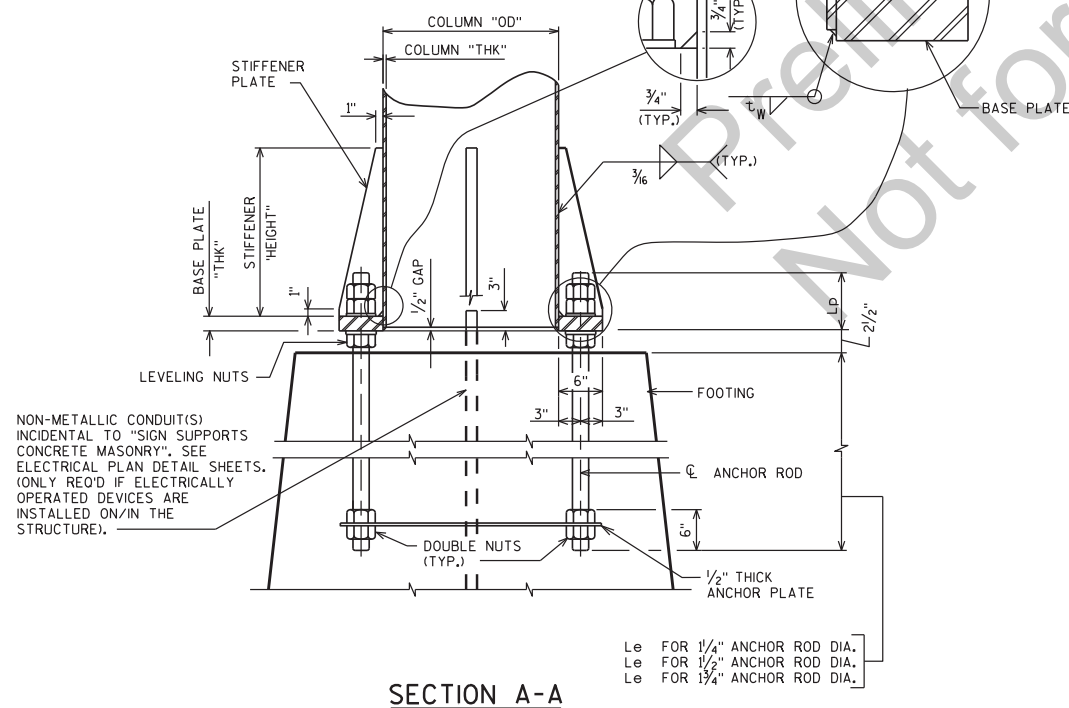
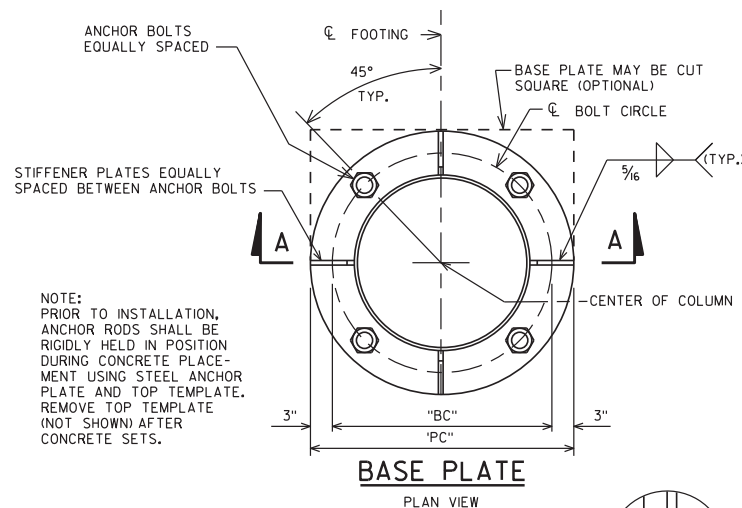
WEB MEMBERS & BOXED ENDS

ANGLE SIZE	*WELD LENGTH	NO. OF BOLTS
2 1/2"x2 1/2"x1/4"	11"	3
3"x3"x3/16"	10"	3
3"x3"x1/4"	13"	4
3"x3"x5/16"	16 1/2"	5
3"x3"x3/8"	19 1/2"	6
4"x4"x1/4"	18"	5
4"x4"x3/16"	22"	6
4"x4"x3/8"	26"	8
4"x4"x1/2"	30"	9
4"x4"x1/2"	34"	10

● ONLY USED FOR BOXED ENDS AND TRANSVERSE WEBS.

OTHER DATA

"BC" = COLUMN "OD" + 6"
 "PC" = COLUMN "OD" + 1'-0"
 "W" = 2 x (ANCHOR ROD DIA.)
 "BD" = "BC" x COS(45°)
 "ED" = "W" / 2
 "BL" = "BD" + "W"
 "PD" = (CHORD "OD") / 2 + 3/4"
 "PS" = CHORD "OD" + 3/16"



COUPLING DETAIL

CONTRACTOR SHALL PROVIDE #16 GA. GALVANIZED STEEL SHIMS, AS REQUIRED TO PROVIDE FOR CAMBER

4-CHORD SIGN BRIDGE DETAILS



BUREAU OF STRUCTURES

APPROVED: Bill Oliva

DATE: 1-17

MATERIAL PROPERTIES

CONCRETE MASONRY - f'c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 - fy = 60,000 P.S.I.
COLUMN PIPE, APISPEC. 5L GRADE X42, PSL-2 - fy = 42,000 P.S.I. **
CHORD PIPE, APISPEC. 5L GRADE X42 - fy = 42,000 P.S.I. **
PLATES, BARS AND STRUCTURAL ANGLES, ASTM A709 GRADE 36 - fy = 36,000 P.S.I.
ANCHOR RODS, ASTM F1554, GRADE 55 - fy = 55,000 P.S.I.
ASTM A563A HEAVY HEX NUTS, AND ASTM F436 WASHERS.

** CONTRACTOR MAY SUBSTITUTE ALTERNATE MATERIALS PER WISDOT BRIDGE MANUAL SECTION 39.3 AT NO ADDITIONAL COST, PROVIDED THAT APPROVAL IS OBTAINED FROM THE DEPARTMENT.

DESIGN DATA

DEAD LOAD - 3 PSF OF SIGN (INCLUDING SUPPORTING BRACKETS), CATWALK, LIGHTS AND RAILINGS.
ICE LOAD - 3 PSF TO ONE FACE OF SIGN & AROUND SURFACE OF MEMBERS.
WIND PRESSURE - 90 MPH (3-SECOND GUST SPEED) TO SIGN AREA & EXPOSED MEMBERS.
FATIGUE - CATEGORY I WITHOUT GALLOPING WIND EFFECTS.

DESIGNED ACCORDING TO THE 4TH EDITION AND INTERIM REVISIONS OF AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.

STRUCTURE	DESIGN SIGN AREA	MAX. SIGN DEPTH
S-59-78	264 SF	13'-0"
S-59-80	264 SF	12'-0"
S-59-81	264 SF	12'-0"
S-59-84	264 SF	12'-0"
S-59-85	264 SF	12'-0"
S-59-86	264 SF	12'-0"

FOUNDATION DATA

ALLOWABLE SOIL BEARING PRESSURE = 4,000 P.S.F.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
ALTERNATE DESIGNS ARE NOT ALLOWED.
ALL STRUCTURAL STEEL MEMBERS, PLATES, ANCHOR RODS, H.S. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER SECTION 641 OF THE WISDOT STANDARD SPECIFICATIONS.
ALL H.S. BOLTED CONNECTIONS SHALL BE MADE WITH 3/4" ϕ (DIAMETER) A325 GALVANIZED BOLTS. FIELD CONNECTIONS SHALL BE INSTALLED WITH DTI.
PREFABRICATE CAMBER INTO THE HORIZONTAL SUPPORT PROVIDING AN AMOUNT "Y" AT END OF TRUSS SHOWN IN "CAMBER DIAGRAM". DO NOT RAKE COLUMN BY ADJUSTMENT OF LEVELING NUTS.
WELD TEST AS PER AWS D1.1.
THE STRUCTURE MUST BE ASSEMBLED IN THE SHOP TO ASSURE FIT UP PER SECTION 641.3.3 OF THE WISDOT STANDARD SPECIFICATIONS.
EXACT LOCATION OF SIGN BRIDGE SHALL BE DETERMINED BY THE REGION TRAFFIC ENGINEER.
SEE SIGN PLATE NO. A4-6 OF THE SIGN PLATE MANUAL FOR INSTRUCTION ON CENTERING SIGN VERTICALLY ON TRUSS.
HANDHOLES ARE NOT REQUIRED.
PROVIDE AN IDENTIFICATION PLAQUE FOR SIGN BRIDGE CANTILEVERED SUPPORT, TO BE CONSIDERED INCIDENTAL TO SIGN "SIGN BRIDGE CANTILEVERED S-59-XX".
SIGNS OR BLANKS SHALL BE INSTALLED ON THE TRUSS AT THE TIME OF ERECTION. BLANKS SHALL BE 1/4" THE LENGTH OF THE CANTILEVER TRUSS, 2'-0" DEEPER THAN CENTER OF CHORDS AND SHALL BE CENTERED VERTICALLY ON THE TRUSS. SIGN SIZES APPLICABLE TO EACH STRUCTURE ARE NOTED ON EACH "S-59-XX SIGN BRIDGE LAYOUT" SHEET. SIGN BLANKS AND MOUNTING HARDWARE SHALL BE CONSIDERED INCIDENTAL TO "SIGN BRIDGE CANTILEVERED S-59-XX" BID ITEMS.

STRUCTURE DESIGN CONTACTS:

ALEXANDER CRABTREE (608) 266-3686
LAURA SHADEWALD (608) 267-9592

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	S-59-78	S-59-80	S-59-81	S-59-84	S-59-85	S-59-86	TOTAL
636.0100	SIGN SUPPORTS CONCRETE MASONRY	CY	8	8	8	8	8	8	48
636.1500	SIGN SUPPORTS STEEL COATED REINFORCEMENT HS	LB	990	990	990	990	990	990	5,940
641.1200	SIGN BRIDGE CANTILEVERED S-59-78	LS	1	—	—	—	—	—	1
641.1200	SIGN BRIDGE CANTILEVERED S-59-80	LS	—	1	—	—	—	—	1
641.1200	SIGN BRIDGE CANTILEVERED S-59-81	LS	—	—	1	—	—	—	1
641.1200	SIGN BRIDGE CANTILEVERED S-59-84	LS	—	—	—	1	—	—	1
641.1200	SIGN BRIDGE CANTILEVERED S-59-85	LS	—	—	—	—	1	—	1
641.1200	SIGN BRIDGE CANTILEVERED S-59-86	LS	—	—	—	—	—	1	1
SPV.0105	REMOVING SIGN BRIDGE S-59-003	LS	1	—	—	—	—	—	1
SPV.0105	REMOVING SIGN BRIDGE S-59-005	LS	—	1	—	—	—	—	1
SPV.0105	REMOVING SIGN BRIDGE S-59-010	LS	—	—	—	—	—	1	1

▲ PAYMENT FOR EXCAVATION IS INCLUDED WITH "SIGN SUPPORTS CONCRETE MASONRY".

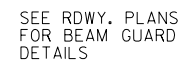
LIST OF DRAWINGS

- GENERAL NOTES & QUANTITIES
- S-59-78 SIGN BRIDGE LAYOUT
- S-59-80 SIGN BRIDGE LAYOUT
- S-59-81 SIGN BRIDGE LAYOUT
- S-59-84 SIGN BRIDGE LAYOUT
- S-59-85 SIGN BRIDGE LAYOUT
- S-59-86 SIGN BRIDGE LAYOUT
- GALVANIZED STEEL CANTILEVER SIGN TRUSS
- GALVANIZED STEEL CANTILEVER SIGN TRUSS DETAILS
- CANTILEVER TRUSS FOOTING

NO.	DATE	REVISION	BY
		BUREAU OF STRUCTURES	
ACCEPTED CHIEF STRUCTURES DESIGN ENGINEER _____ DATE _____			
STRUCT. S-59-78,80,81,84-86			
IH 43 / STH 23 INTERCHANGE			
COUNTY	SHEBOYGAN	TOWN/CITY/VILLAGE	SHEBOYGAN/KOHLER
DESIGN SPEC. AASHTO STD. SPEC. FOR HIGHWAY BRIDGES, 17TH EDITION			
DESIGNED BY	DESIGNED BY ARC	DRAWN BY JDM	PLANS CK'D. JDM
GENERAL NOTES & QUANTITIES			SHEET 1 OF 10



STA. 383+30 NB CD



(LOOKING UPSTATION AT FRONT FACE OF SIGN)

← CANTILEVER TRUSS
FOOTING. (SEE SELF
TITLED SHEET FOR
DETAILS.)

IH 43 NB CD
A.D.T. = 4,600
R.D.S. = 70 M.P.H.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCT. S-59-78,80,81,84-86			
		DRAWN BY	PLANS C'K'D. JDM
S-59-78 SIGN BRIDGE LAYOUT		SHEET 2	

EXISTING STRUCTURE S-59-005
LOCATED STA. 379+51.7± SB CD,
38.25' LT. R IH 43 SB CD

EXISTING STRUCTURE S-59-005. A CANTILEVER SIGN BRIDGE W/
A 26' CANTILEVER ATOP OF A CONC. PEDESTAL, SUPPORTED BY
FOOTING & (4) 2'DIA. DRILLED SHAFTS (EA. 10' LONG).

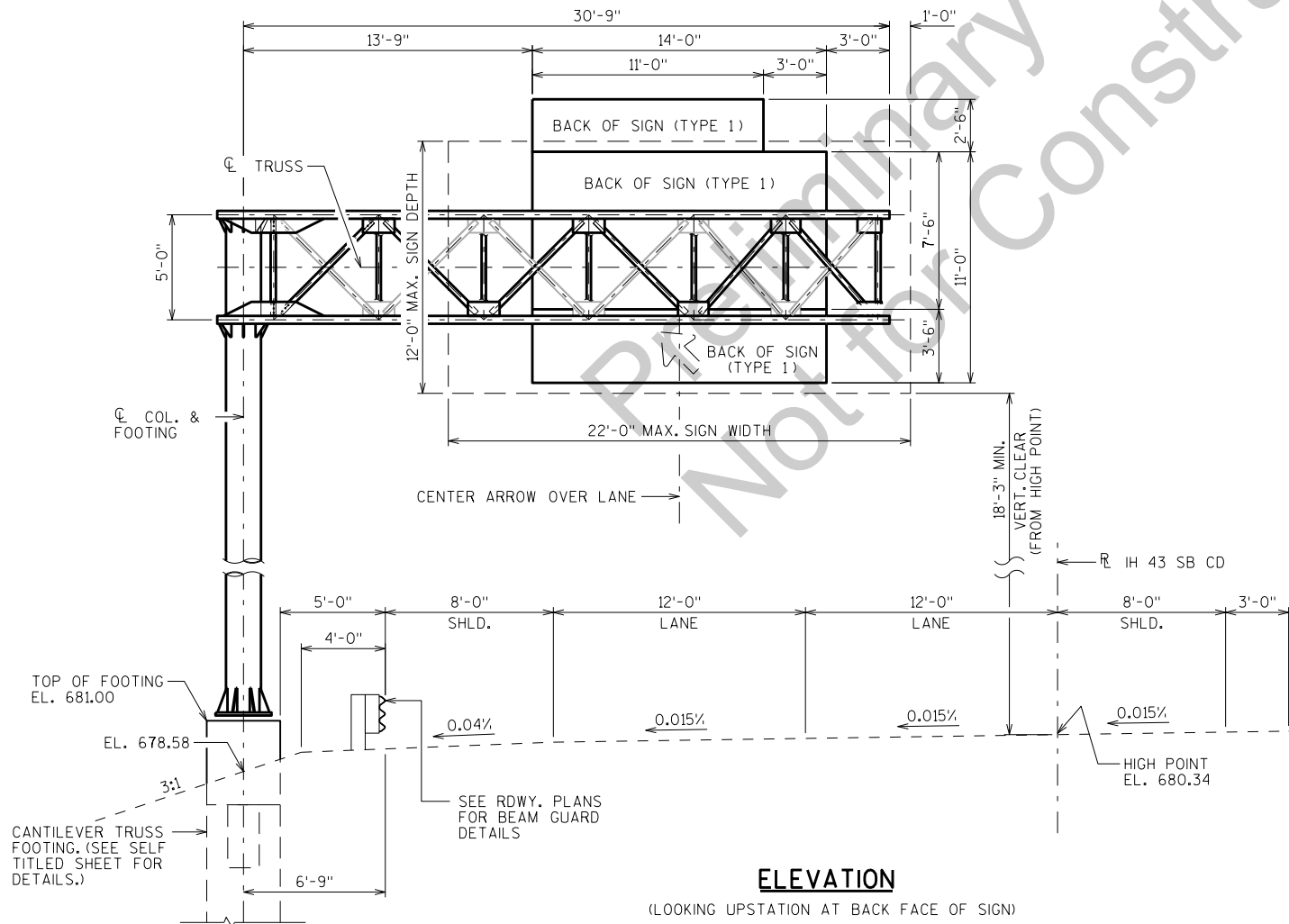
EXISTING GAS LINE
AT STRUCTURE S-59-005.
CONTRACTOR TO VERIFY.

CL COL. & FOOTING.
SEE "CANTILEVER
TRUSS FOOTING" SHT.
FOOTING DIMENSIONS
& DETAILS.

STA. 379+25.00 SB CD,
38.75' LT. R IH 43 SB CD

PLAN

STA. 379+25 SB CD



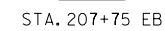
ELEVATION

(LOOKING UPSTATION AT BACK FACE OF SIGN)

TRAFFIC VOLUME

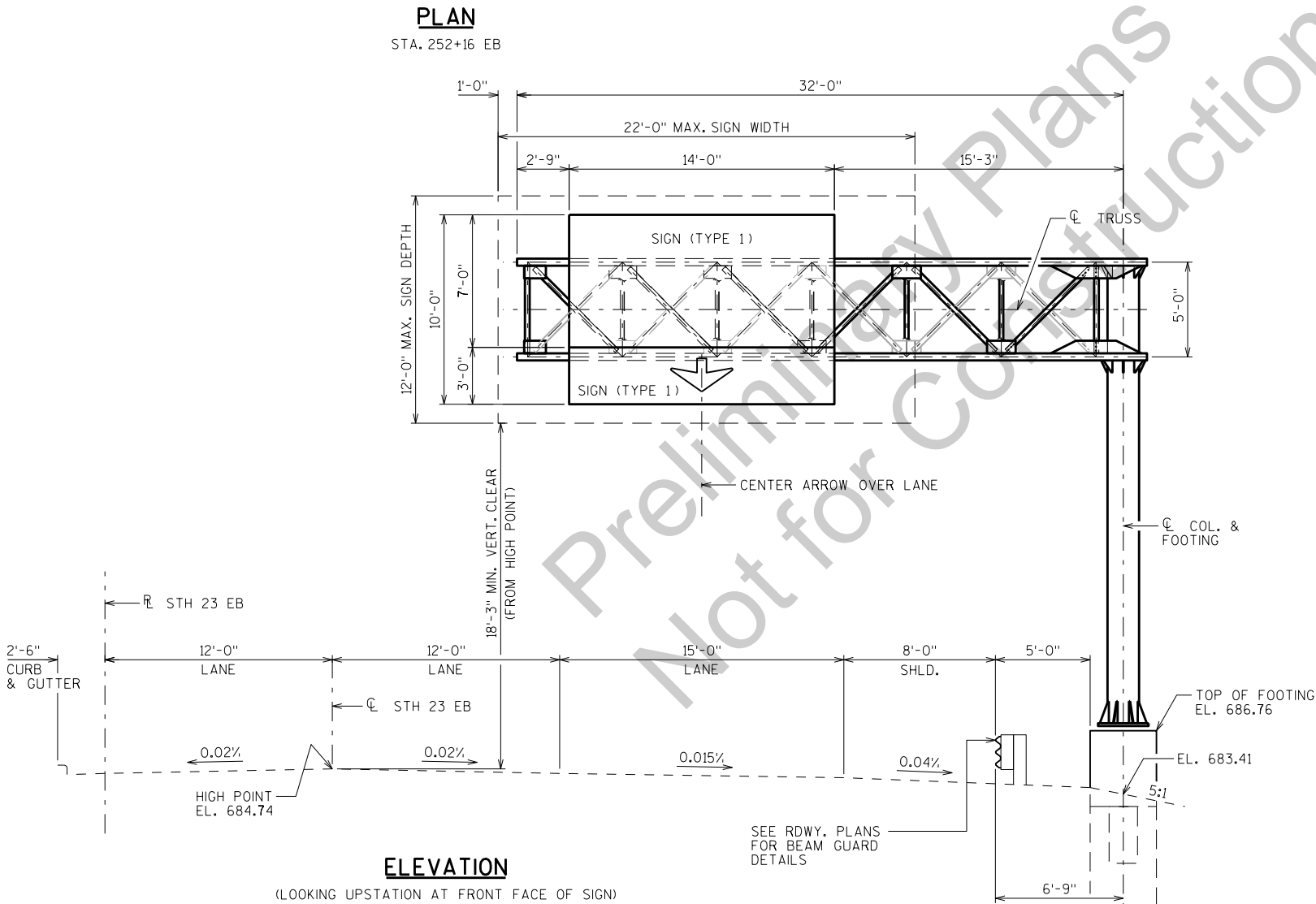
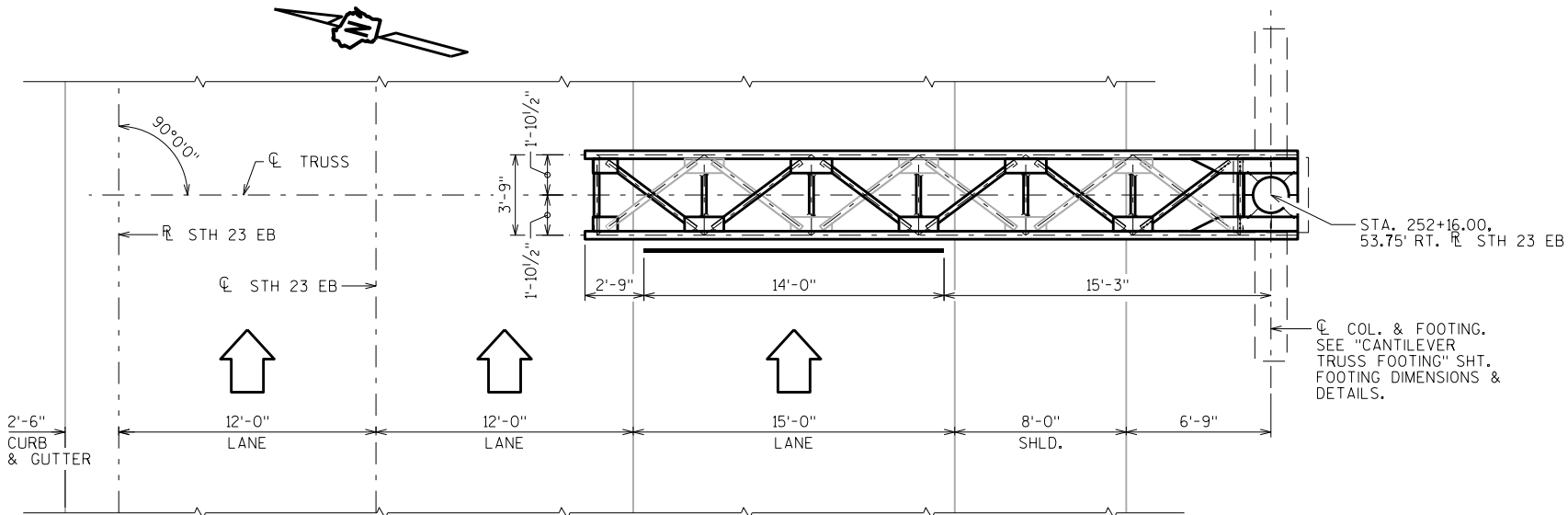
IH 43 SB CD
A.D.T. = 6,000
R.D.S. = 70 M.P.H.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCT. S-59-78,80,81,84-86			
DRAWN BY		ARC	PLANS CK'D. JDM
S-59-80 SIGN BRIDGE LAYOUT		SHEET 3	



STH 23 EB
A.D.T. = 28,900
R.D.S. = 70 M.P.H.

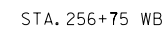
SCALE = 4.00



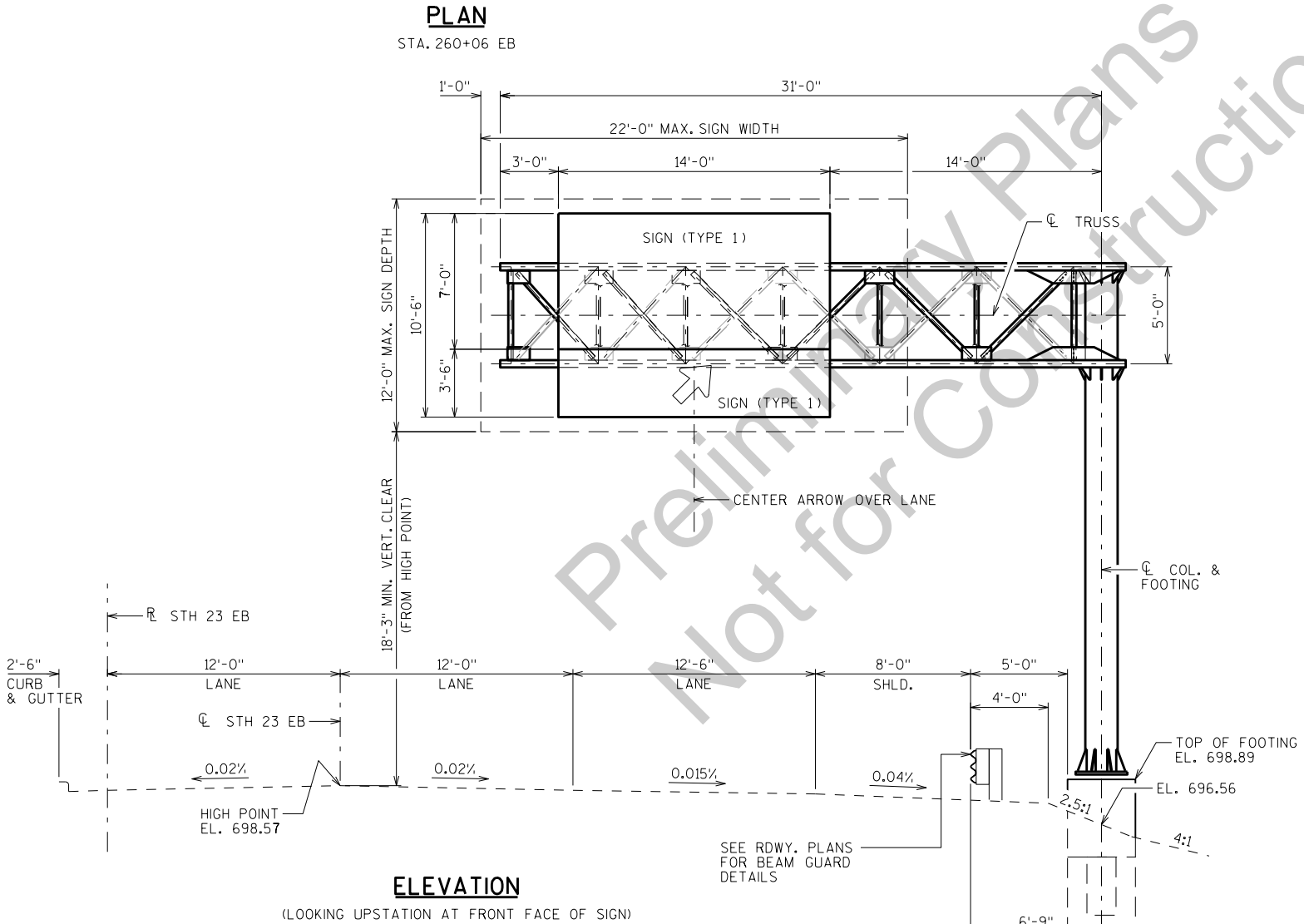
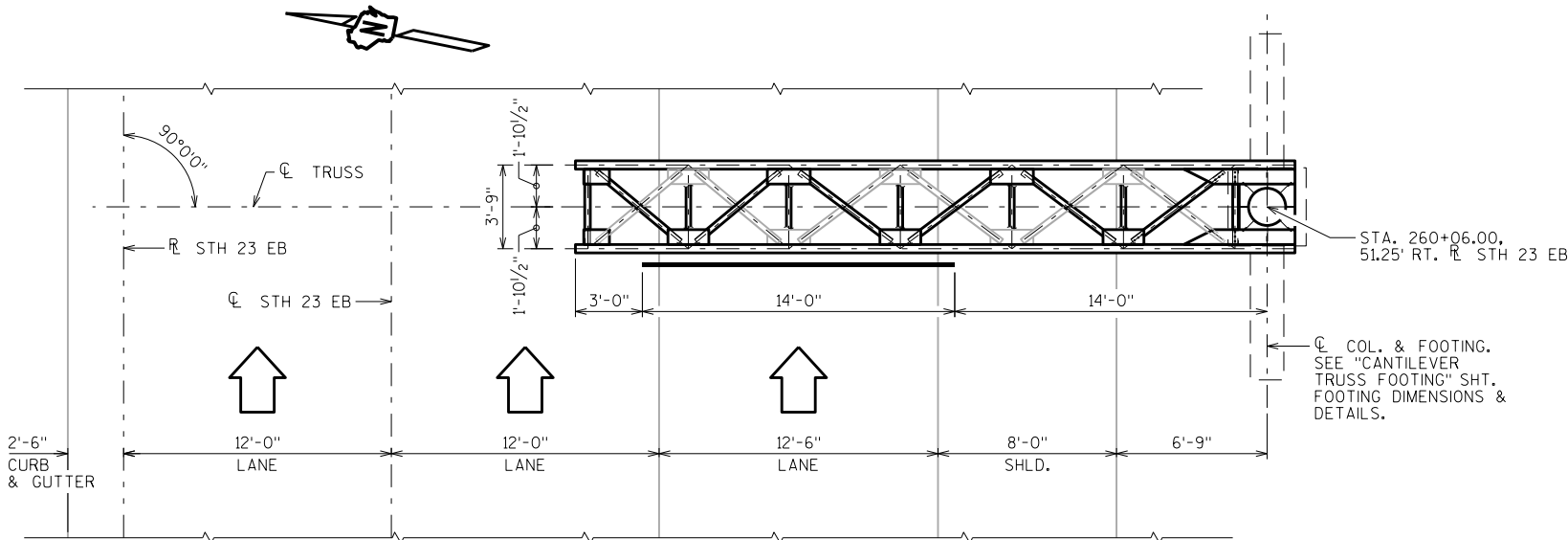
TRAFFIC VOLUME

STH 23 EB
A.D.T. = 13,550
R.D.S. = 50 M.P.H.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCT. S-59-78,80,81,84-86			
DRAWN BY		ARC	PLANS CK'D. JDM
S-59-84 SIGN BRIDGE LAYOUT			SHEET 5



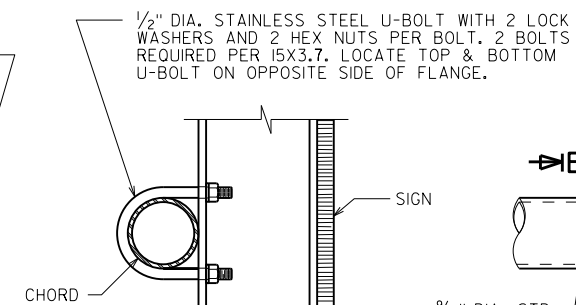
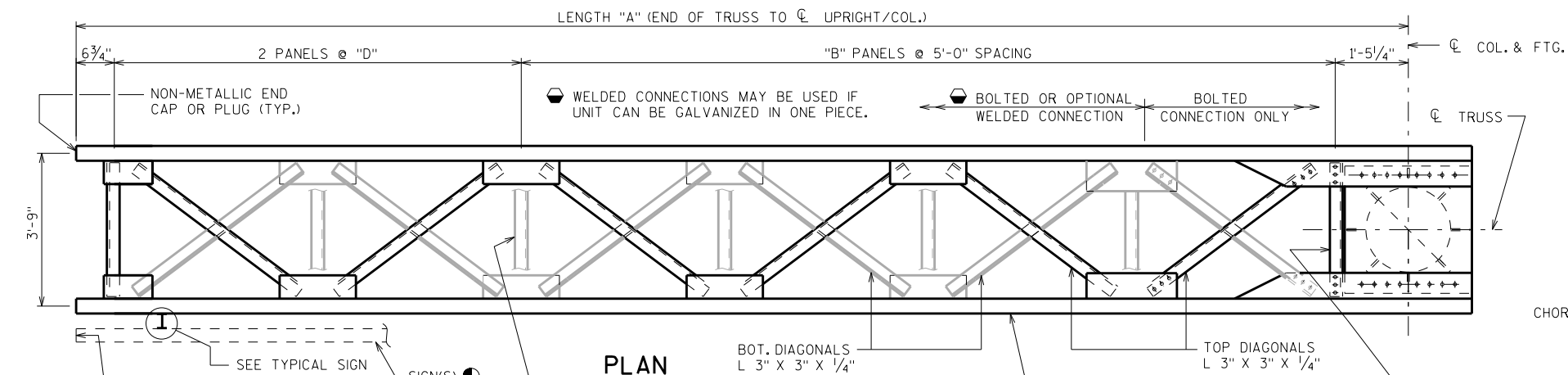
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCT. S-59-78,80,81,84-86			
DRAWN BY		ARC	PLANS CKD. JDM
S-59-85 SIGN BRIDGE LAYOUT			SHEET 6



TRAFFIC VOLUME

STH 23 EB
A.D.T. = 13,500
R.D.S. = 50 M.P.H.

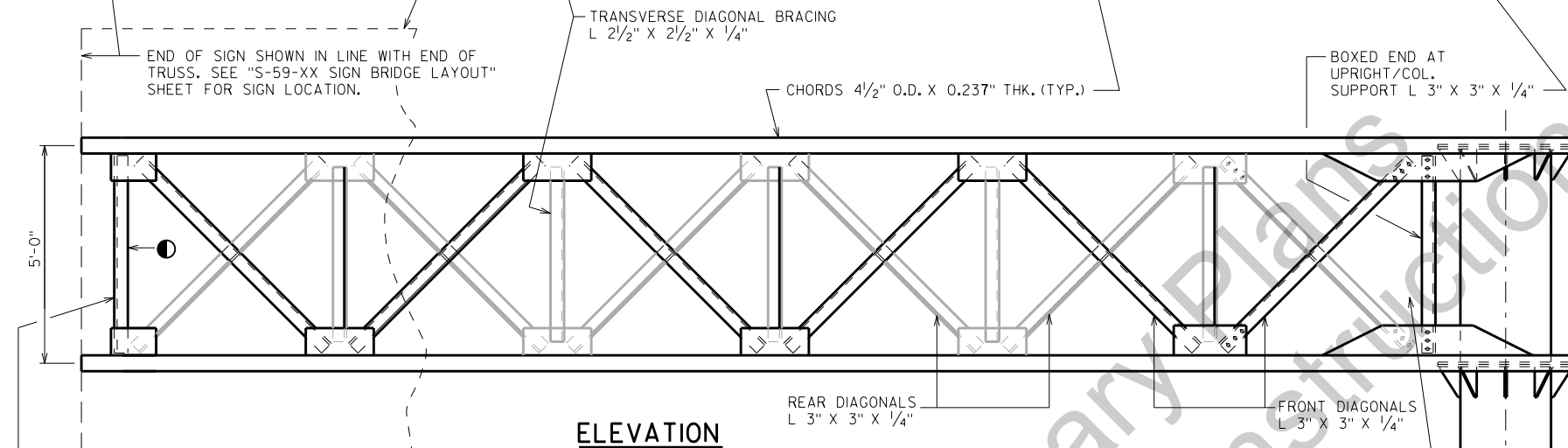
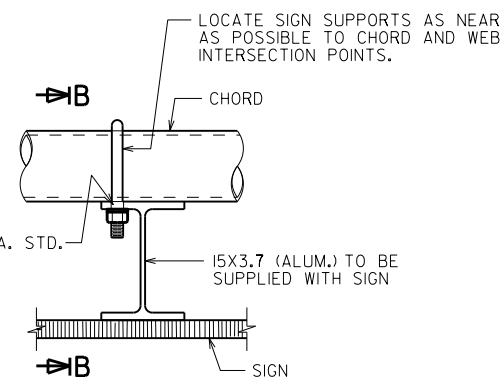
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCT. S-59-78,80,81,84-86			
DRAWN BY		ARC	PLANS CK'D. JDM
S-59-86 SIGN BRIDGE LAYOUT		SHEET 7	



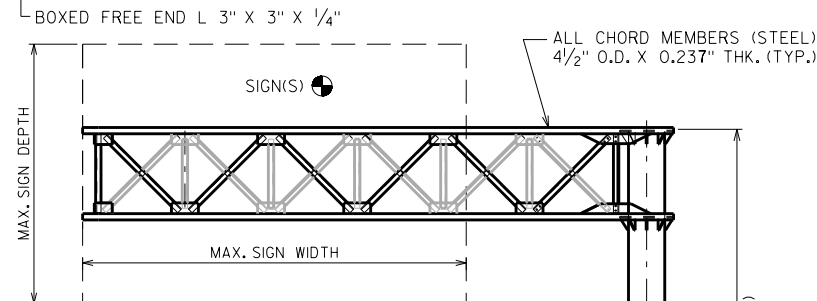
SECTION B-B

TYPICAL SIGN CONNECTION

FOR TYPE I AND II SIGNS ONLY



ELEVATION



ELEVATION

LOOKING AT F.F. OF SIGN RAILING NOT SHOWN

SEE SECTIONS C-C AND D-D ON "GALVANIZED STEEL CANTILEVER SIGN TRUSS DETAILS" SHEET FOR CONNECTION OF TRANSVERSE DIAGONAL BRACING AT COLUMN SUPPORT AND FREE END.

ALL CHORD MEMBERS (STEEL) 4 1/2" O.D. X 0.237" THK. (TYP.)

STEEL UPRIGHT/COL. 20" O.D. X 0.500" THK.

CL. COL. & FTG.

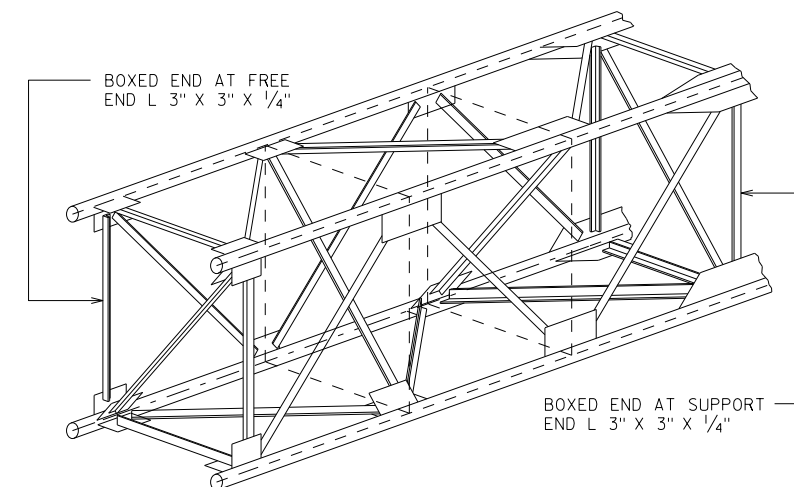
TOP OF CONC. FOOTING ELEVATION

COLUMN LENGTH "L" (BOT. OF BASEPLATE TO CL. CHORD)

BOTTOM OF BASE PLATE

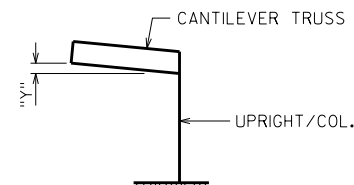
SEE APPLICABLE "S-59-XX SIGN BRIDGE LAYOUT" SHEET FOR SIGN SIZES, MAX. SIGN SIZES & ELEVATIONS.

END VIEW



TYPICAL TRUSS SECTION

THE GENERAL PATTERN SHOWN ABOVE IS TO BE MAINTAINED WHEN ASSEMBLING TRUSSES.



CAMBER DIAGRAM

PREFABRICATE CAMBER INTO THE HORIZONTAL SUPPORT PROVIDING AN AMOUNT "Y" AT END OF TRUSS SHOWN. DO NOT RAKE VERTICAL UPRIGHT BY ADJUSTMENT OF LEVELING NUTS.

DIMENSIONS & CAMBER VALUES

STRUCTURE	"A"	"L"	"B"	"D"	"Y"
S-59-78	30'-10 1/2"	25'-1"	4	4'-5 1/4"	2 1/4"
S-59-80	30'-9"	25'-11"	4	4'-4 1/2"	2 3/8"
S-59-81	30'-3"	24'-7"	4	4'-1 1/2"	2 1/8"
S-59-84	32'-0"	24'-6"	4	5'-0"	2 1/2"
S-59-85	27'-3"	25'-7"	3	5'-1 1/2"	1 5/8"
S-59-86	31'-0"	26'-3"	4	4'-6"	2 3/8"

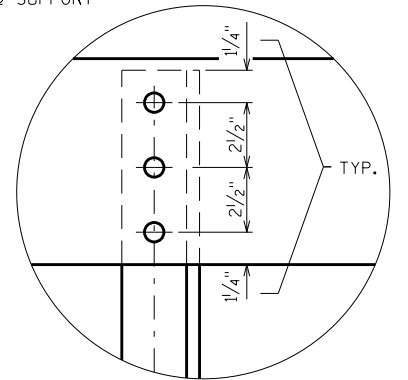
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCT. S-59-78,80,81,84-86			
DRAWN BY		ARC	PLANS CKD. JDM
GALVANIZED STEEL CANTILEVER SIGN TRUSS		SHEET 8	



ANGLE SIZE	*WELD LENGTH (MIN.)
L 2 1/2" x 2 1/2" x 1/4"	7"
L 3" x 3" x 1/4"	8"

BOLTED OR OPTIONAL WELDED CONNECTION
 BOLTED CONNECTION
 CHORD (TYP.)
 PANEL WORKING POINT
 3/4" ϕ H.S. BOLTS (TYP.)
 1 3/4"
 1 3/4"
 2"
 3 SPA. 3 3/4"
 1 3/4"
 8" X 1/2"
 3'-9"
 3 3/8"
 1 1/4"
 1'-5 1/4"
 1'-3"
 3/8" PL
 3/16"
 PANEL WORKING POINT
 8" X 3/8" PL
 L 3" X 3" X 1/4"
 TOP & BOT. DIAGONALS
 SEE DETAIL "A"
 COL. & FTG.

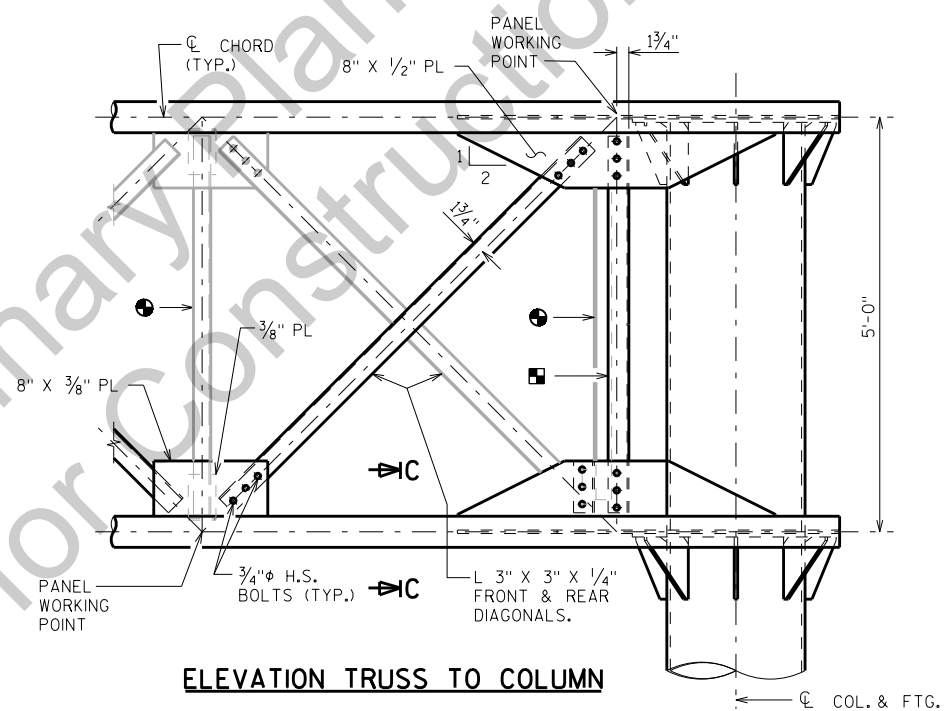
PLAN TRUSS TO COLUMN



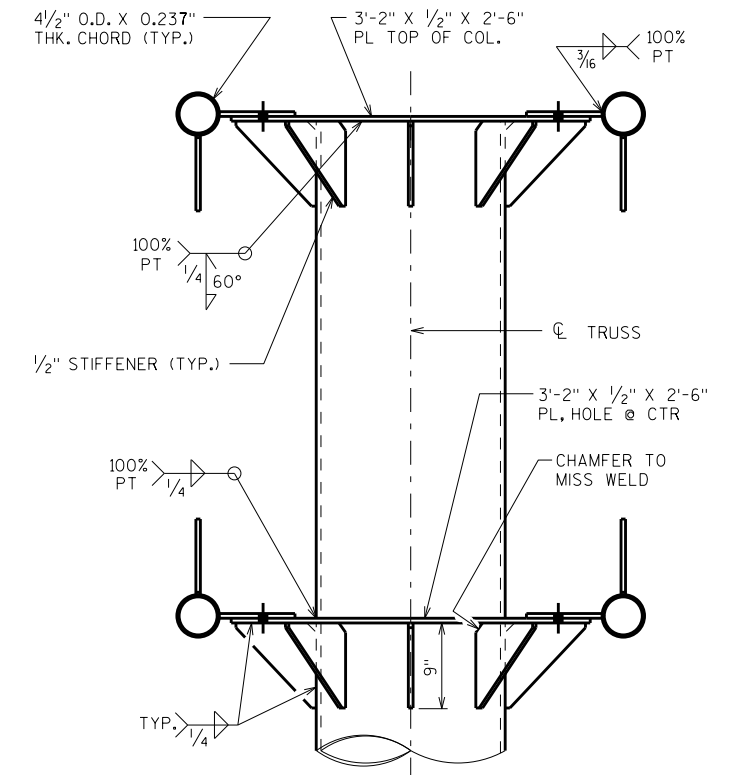
DETAIL "A"



(LOOKING DOWN @ BOT. HORIZ. PLANE @ FRONT CHORD)

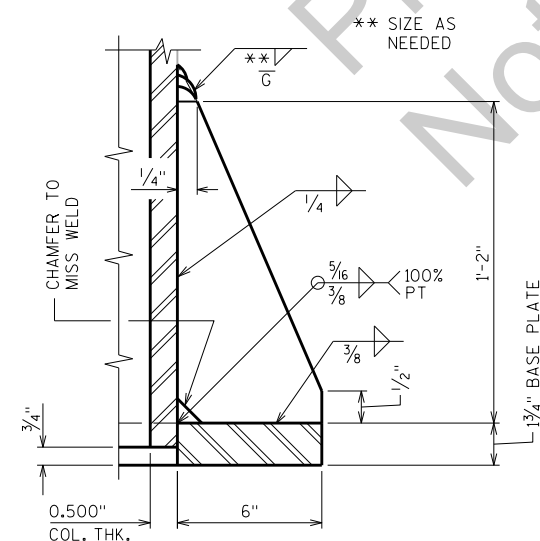


ELEVATION TRUSS TO COLUMN

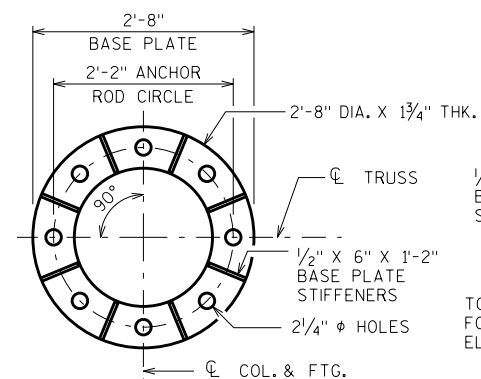


END VIEW TRUSS TO COLUMN

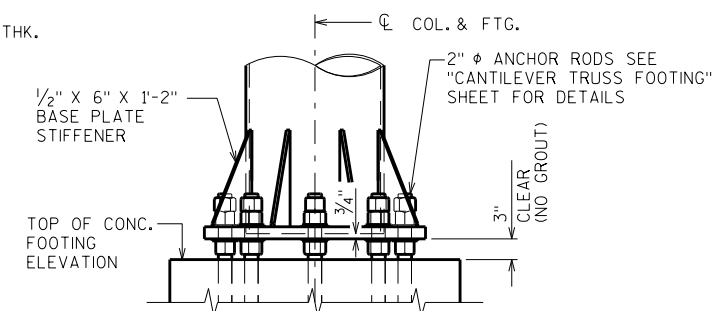
(WEB MEMBERS NOT SHOWN)



BASE PLATE STIFFENER DETAIL



BASE PLATE DETAILS



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCT. S-59-78,80,81,84-86			
DRAWN BY		ARC	PLANS CK'D. JDM
GALVANIZED STEEL CANTILEVER SIGN TRUSS DETAILS		SHEET 9	

NOTES

CONTRACTOR SHALL VERIFY UTILITY CONFLICTS PRIOR TO CONSTRUCTION OF FOOTING.

FOOTING BELOW THE WINGS SHALL BE EXCAVATED BY THE USE OF CIRCULAR AUGER.

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

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 3" CLEAR UNLESS DETAILED OTHERWISE.

BENDING DIMENSIONS ARE OUT TO OUT OF BAR.

CENTER ANCHOR ROD ASSEMBLY TO MISS BAR STEEL REINFORCEMENT AND MAKE SURE IT IS PLUMB. MAINTAIN ANCHOR ROD PROJECTION ABOVE FOOTING AS DETAILED ON PLAN. ANCHOR ROD ASSEMBLY SHALL BE RIGIDLY SECURE IN POSITION DURING AND AFTER CONCRETE PLACEMENT. DO NOT WELD THE ANCHOR RODS.

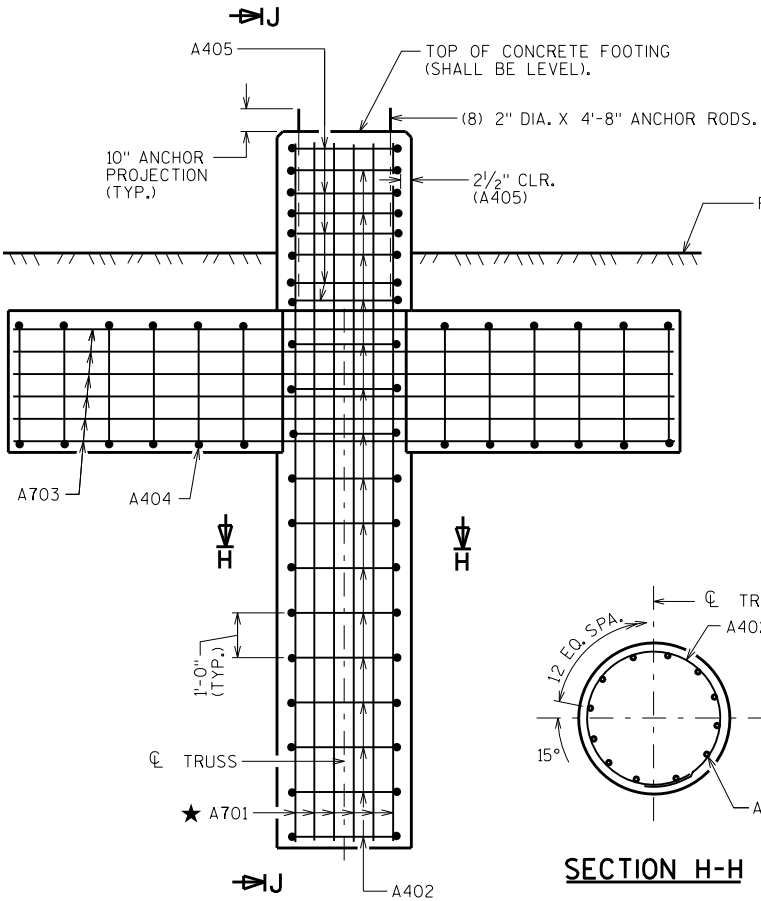
PROVIDE A 3/4" CHAMFER ON ALL EXPOSED CONCRETE EDGES.

UNLESS NOTED ON PLAN, REMOVE ALL CASING AND FORMS USED TO CONSTRUCT THE FOOTING PRIOR TO BACKFILLING AROUND THE FOOTING. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE IN LAYERS OF 1'-0" OR LESS.

BILL OF BARS

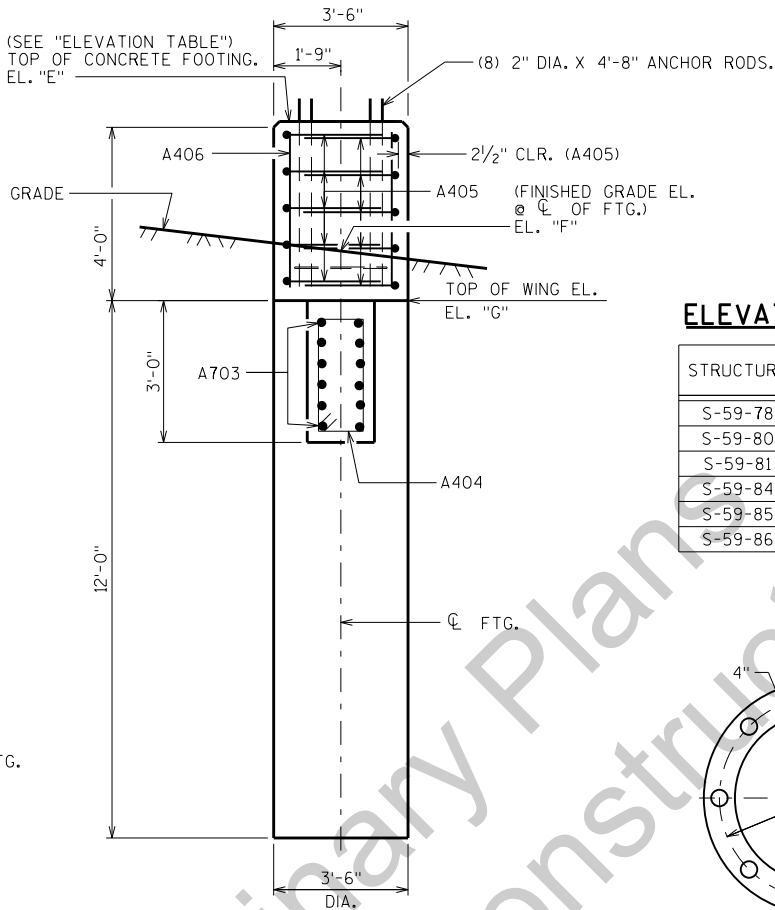
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
A701	X	12	15'-6"		SHAFT - VERT. REINF.
A402	X	16	11'-2"	X	SHAFT - HOOPS
A703	X	12	15'-0"		WINGS - HORIZ.
A404	X	12	7'-6"	X	WINGS - STIRRUPS
A405	X	10	7'-11"	X	SHAFT - TOP - HORIZ.
A406	X	4	3'-6"		SHAFT - TOP - VERT.

("BILL OF BARS" TABLE FOR EACH FOOTING. TOTAL QTY. SHOWN ON "GENERAL NOTES & QUANTITIES" SHT.)



ELEVATION

★ PLACE A701 BARS TO MISS ANCHOR RODS



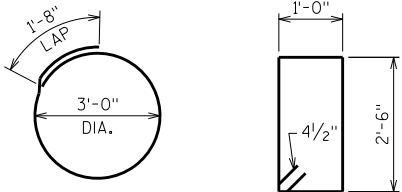
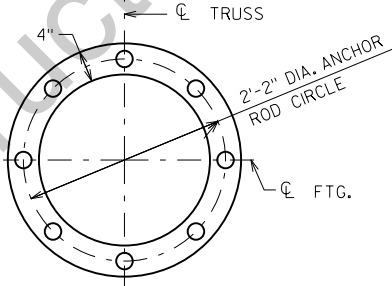
SECTION J-J

SHOWING WING AND CAP STEEL ONLY

ELEVATION TABLE

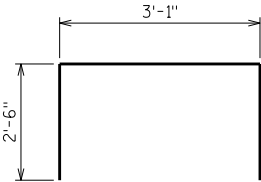
STRUCTURE	EL. "E"	EL. "F"	EL. "G"
S-59-78	680.90	677.55	676.90
S-59-80	681.00	678.58	677.00
S-59-81	658.08	654.91	654.08
S-59-84	686.76	683.41	682.76
S-59-85	694.89	692.59	690.89
S-59-86	698.89	696.56	694.89

TOP TEMPLATE AND BOTTOM ANCHOR PLATE

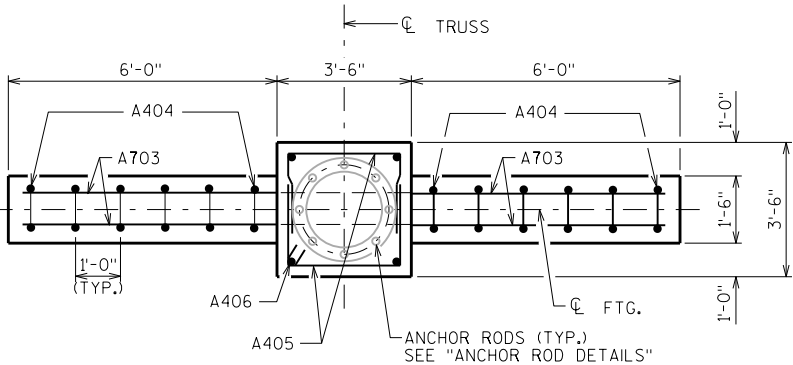


A402

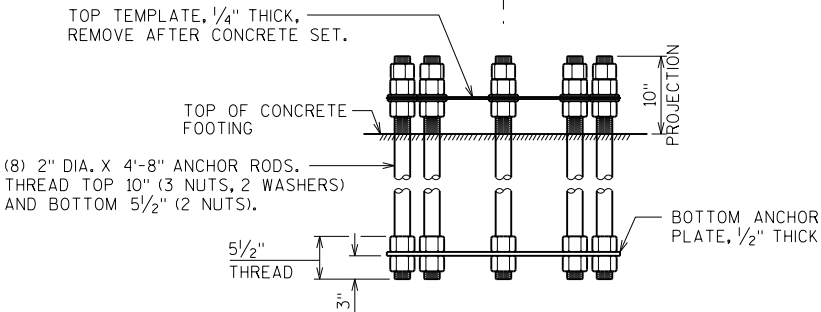
A404



A405



PLAN



ANCHOR ROD ASSEMBLY DETAILS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCT. S-59-78,80,81,84-86			
DRAWN BY		ARC	PLANS CKD. JDM
CANTILEVER TRUSS FOOTING		SHEET 10	

DESIGN RATING: HS-25
INVENTORY RATING: HS-17
OPERATING RATING: HS-31
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 210 (KIPS)

CONCRETE MASONRY:

CONCRETE MASONRY OVERLAY DECKS	f'c = 4,000 P.S.I.
CONCRETE MASONRY SUPERSTRUCTURE	f'c = 4,000 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60	f _y = 60,000 P.S.I.

(A29) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM FOR ALL AREAS OF NEW TO EXISTING CONCRETE CONTACT.

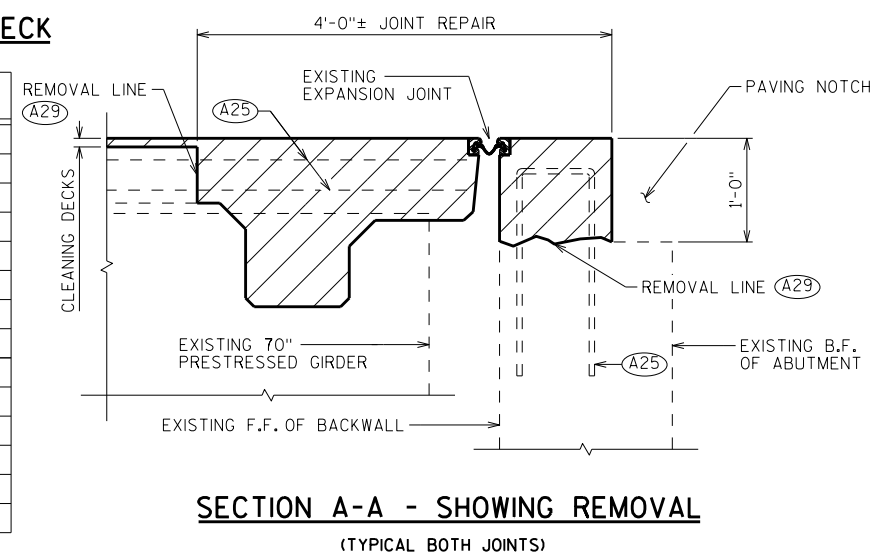
JONATHON RESHESKE (608) 266-8491
LAURA SHADEWALD (608) 267-9592

NO.		DATE		REVISION		BY	
				BUREAU OF STRUCTURES			
ACCEPTED _____ CHIEF STRUCTURES DESIGN ENGINEER _____ DATE _____							
STRUCTURE B-59-67							
PLAYBIRD ROAD OVER IH 43							
COUNTRY				TOWN		MOSE	
SHEBOYGAN							
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS							
DESIGNED BY		DESIGNED CK'D.		DRAWN BY		PLANS CK'D.	
JLR		XYZ		JLR		JLR	
CONCRETE OVERLAY						SHEET 1 OF 5	

8



<u>TOTAL ESTIMATED QUANTITIES</u>		<u>CROSS-SECTION THRU D</u>	
BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
502.0100	CONCRETE MASONRY BRIDGES	CY	11
502.3100	EXPANSION DEVICE B-59-67	LS	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	759
502.3210	PIGMENTED SURFACE SEALER	SY	8
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,220
509.0301	PREPARATION DECKS TYPE 1	SY	83
509.0302	PREPARATION DECKS TYPE 2	SY	60
509.0500	CLEANING DECKS	SY	759
509.1000	JOINT REPAIR	SY	15
509.1500	CONCRETE SURFACE REPAIR	SF	112
509.2000	FULL-DEPTH DECK REPAIR	SY	1
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	44
604.9010.S	SLOPE PAVING REPAIR CRUSHED AGGREGATE	CY	XX



DESIGN RATING: HS-25
INVENTORY RATING: HS-19
OPERATING RATING: HS-31
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 169 (KIPS)

CONCRETE MASONRY: _____
 CONCRETE MASONRY OVERLAY DECKS _____ $f'_c = 4,000$ P.S.I.
 CONCRETE MASONRY SUPERSTRUCTURE _____ $f'_c = 4,000$ P.S.I.
 BAR STEEL REINFORCEMENT, GRADE 60 _____ $f_y = 60,000$ P.S.I.

(A29) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM FOR ALL AREAS OF NEW TO EXISTING CONCRETE CONTACT

JONATHON RESHESKE (608) 266-8491
LAURA SHADEWALD (608) 267-9592

OVERLAY	
---------	--



BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
502.0100	CONCRETE MASONRY BRIDGES	CY	11
502.3100	EXPANSION DEVICE B-59-68	LS	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	759
502.3210	PIGMENTED SURFACE SEALER	SY	8
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,220
509.0301	PREPARATION DECKS TYPE 1	SY	83
509.0302	PREPARATION DECKS TYPE 2	SY	60
509.0500	CLEANING DECKS	SY	759
509.1000	JOINT REPAIR	SY	15
509.1500	CONCRETE SURFACE REPAIR	SF	112
509.2000	FULL-DEPTH DECK REPAIR	SY	1
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	44
604.9010.S	SLOPE PAVING REPAIR CRUSHED AGGREGATE	CY	XX



(TYPICAL BOTH JOINTS)

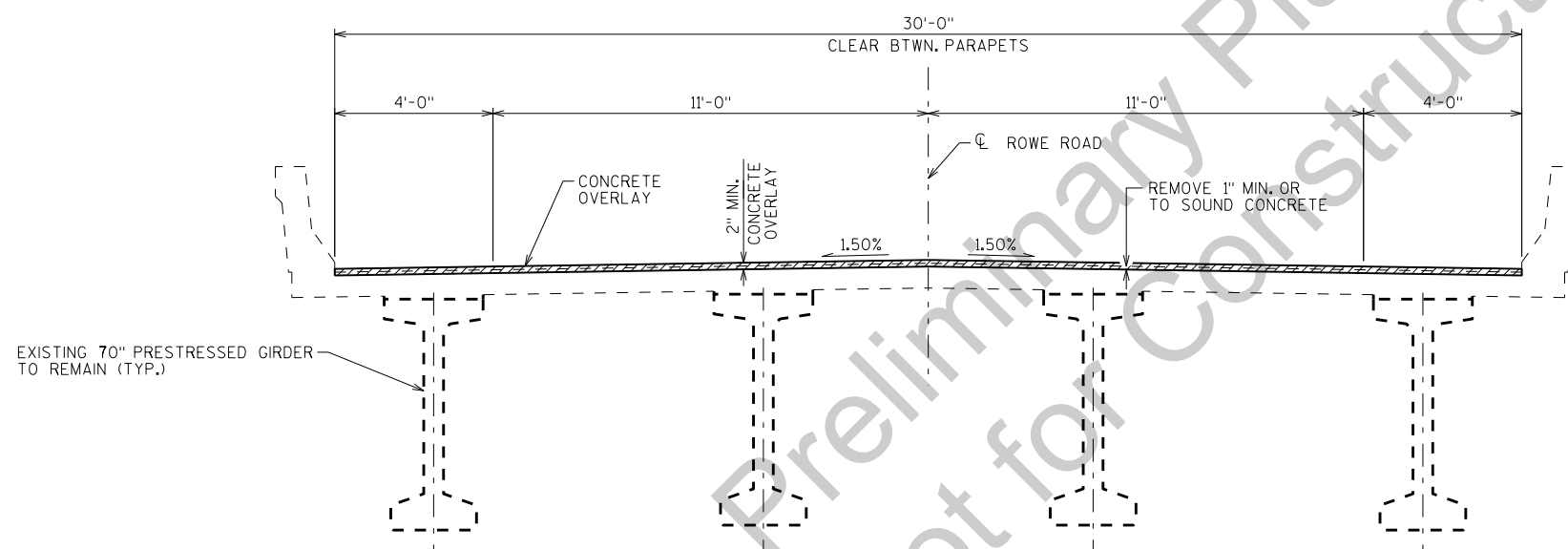
DESIGN RATING: HS-25
INVENTORY RATING: HS-18
OPERATING RATING: HS-34
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 240 (KIPS)

CONCRETE MASONRY: CONCRETE MASONRY OVERLAY DECKS _____ f'c = 4,000 P.S.I.
CONCRETE MASONRY SUPERSTRUCTURE _____ f'c = 4,000 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 _____ fy = 60,000 P.S.I.

(A29) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM FOR ALL AREAS OF NEW TO EXISTING CONCRETE CONTACT.

JONATHON RESHESKE (608) 266-8491
LAURA SHADEWALD (608) 267-9592

CONCRETE OVERLAY	SHEET 1 OF 3



CROSS-SECTION THRU DECK

(TYPICAL BOTH JOINTS)

DESIGN DATA

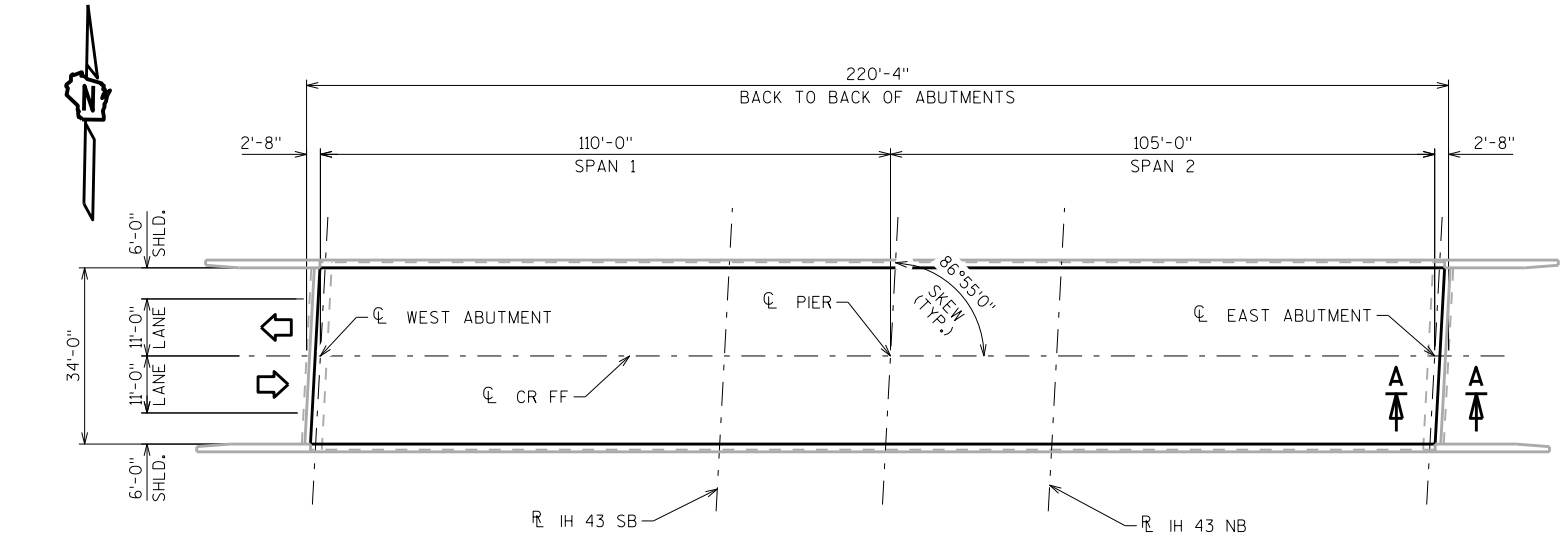
LIVE LOAD:
DESIGN RATING: HS-25
INVENTORY RATING: HS-19
OPERATING RATING: HS-31
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 169 (KIPS)

MATERIAL PROPERTIES:

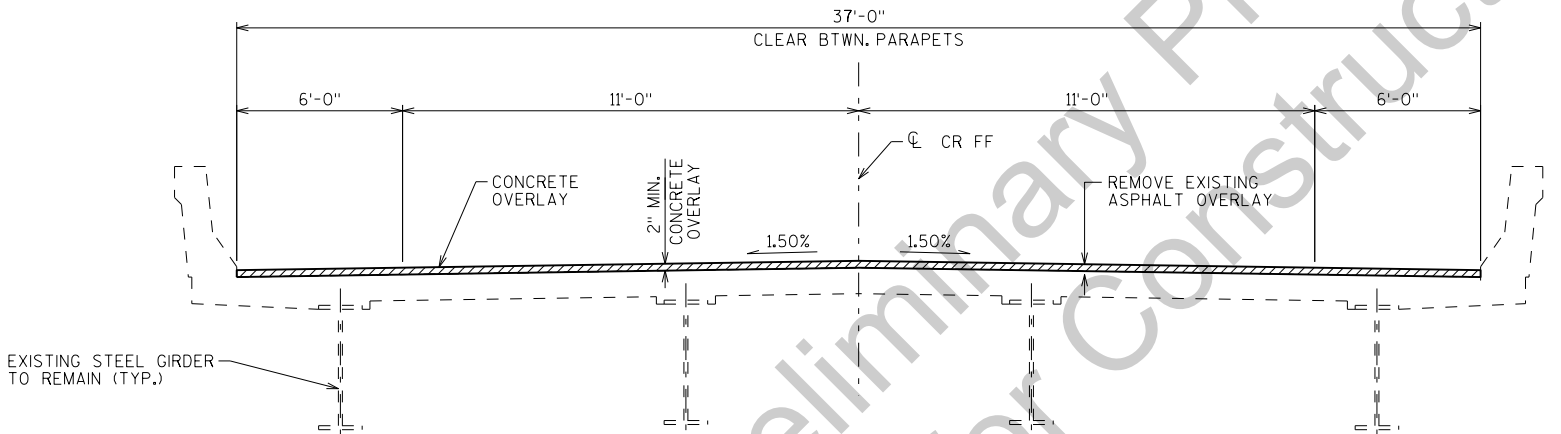
CONCRETE MASONRY:
CONCRETE MASONRY OVERLAY DECKS $f'_c = 4,000$ P.S.I.
CONCRETE MASONRY SUPERSTRUCTURE $f'_c = 4,000$ P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 $f_y = 60,000$ P.S.I.

GENERAL NOTES

- DRAWINGS SHALL NOT BE SCALED.
- DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.
- ANY EXCAVATION NECESSARY TO COMPLETE THE OVERLAY OR JOINT REPAIR AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".
- CONTACT THE BUREAU OF STRUCTURES BEFORE PLACEMENT OF OVERLAY IF THE AVERAGE THICKNESS OF THE NEW OVERLAY WILL EXCEED THE AVERAGE OVERLAY SHOWN ON THE PLANS BY MORE THAN 1/2".
- A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM "CLEANING DECKS".
- "CONCRETE SURFACE REPAIR" IS REQ'D ON PARAPETS AND BOTH ABUTMENTS AS DIRECTED BY ENGINEER.
- "CONCRETE MASONRY OVERLAY DECKS" BID ITEM INCLUDES CONCRETE FOR "PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", "FULL DEPTH DECK REPAIR", AND OVERLAY.
- "CONCRETE MASONRY BRIDGES" BID ITEM INCLUDES CONCRETE FOR JOINT REPAIRS.
- PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF OVERLAY SURFACE.
- PIGMENTED PROTECTIVE SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS, INCLUDING PARAPETS ON APPROACH SLABS.
- PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, AND FULL DEPTH DECK REPAIR SHALL BE DETERMINED BY THE FIELD ENGINEER.
- ALL LINES OF REMOVAL SHALL BE DEFINED BY A MIN. 1" DEEP SAW CUP.
- (A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- (A29) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM FOR ALL AREAS OF NEW TO EXISTING CONCRETE CONTACT.



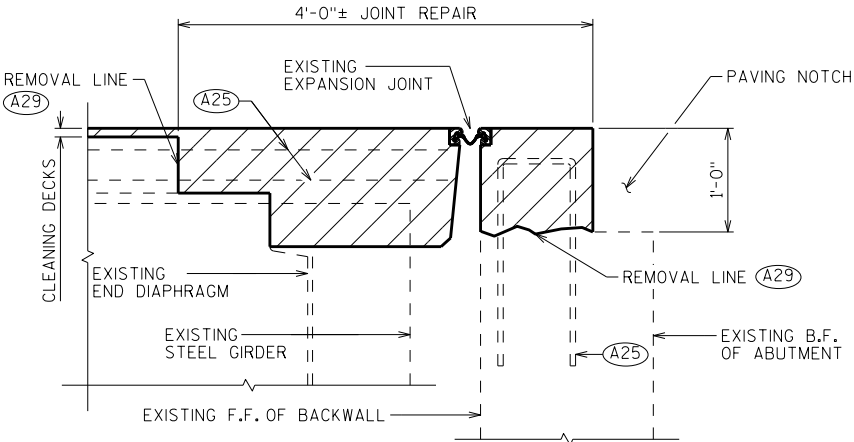
PLAN



CROSS-SECTION THRU DECK

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
502.0100	CONCRETE MASONRY BRIDGES	CY	11
502.3100	EXPANSION DEVICE B-59-68	LS	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	759
502.3210	PIGMENTED SURFACE SEALER	SY	8
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,220
509.0301	PREPARATION DECKS TYPE 1	SY	83
509.0302	PREPARATION DECKS TYPE 2	SY	60
509.0500	CLEANING DECKS	SY	759
509.1000	JOINT REPAIR	SY	15
509.1500	CONCRETE SURFACE REPAIR	SF	112
509.2000	FULL-DEPTH DECK REPAIR	SY	1
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	44
604.9010.S	SLOPE PAVING REPAIR CRUSHED AGGREGATE	CY	XX



SECTION A-A - SHOWING REMOVAL
(TYPICAL BOTH JOINTS)

STRUCTURE DESIGN CONTACTS:
JONATHON RESHESKE (608) 266-8491
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY
			
ACCEPTED CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-59-70			
CR FF OVER IH 43			
COUNTY	SHEBOYGAN	TOWN	MOSEL
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	JLR	DESIGNED CK'D.	XYZ
DRAWN BY	JLR	PLANS CK'D.	
CONCRETE OVERLAY			SHEET 1 OF 5

DESIGN DATA

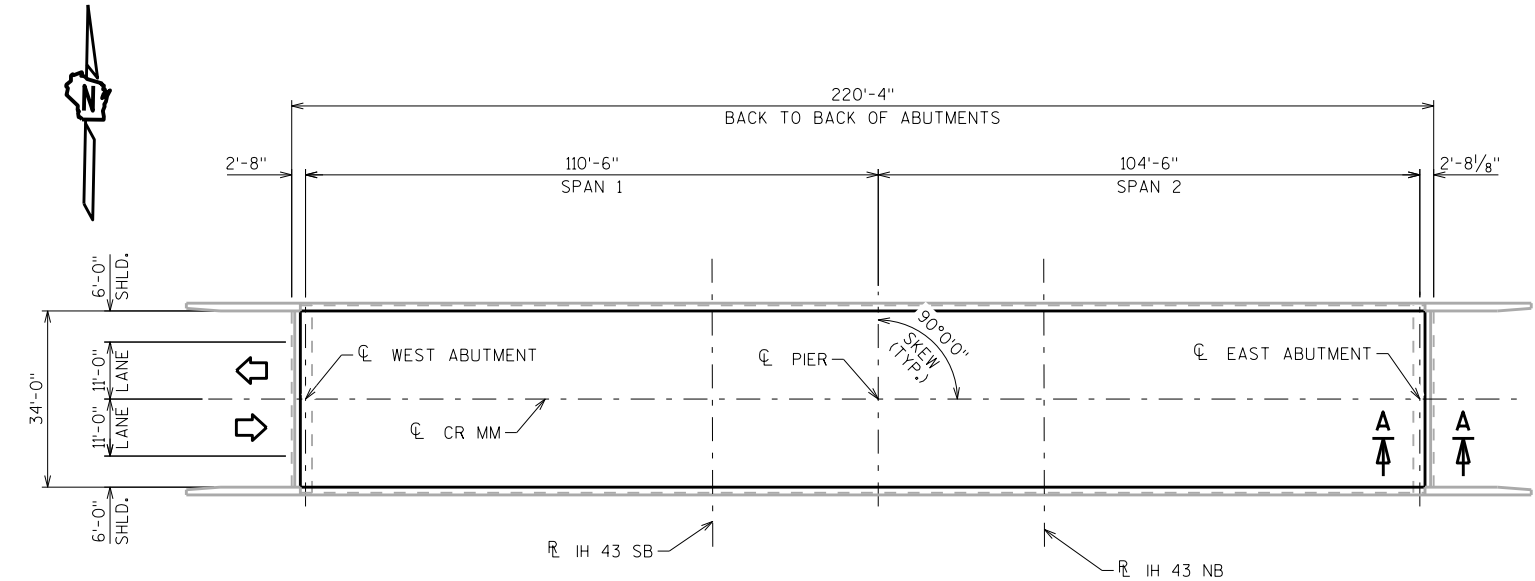
LIVE LOAD:
DESIGN RATING: HS-25
INVENTORY RATING: HS-19
OPERATING RATING: HS-31
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 169 (KIPS)

MATERIAL PROPERTIES:

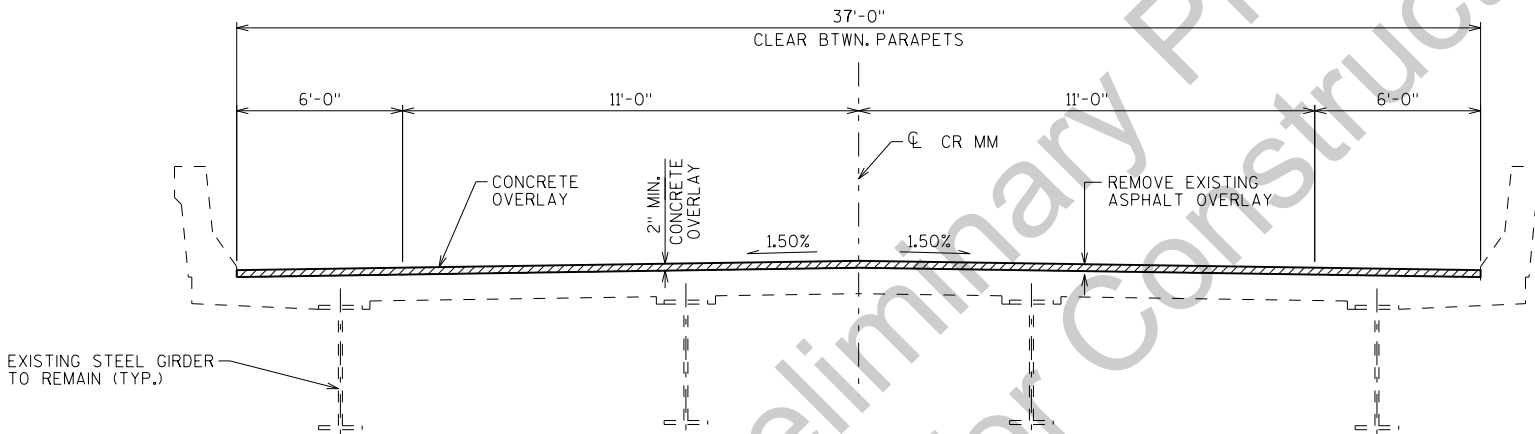
CONCRETE MASONRY:
CONCRETE MASONRY OVERLAY DECKS $f'_c = 4,000$ P.S.I.
CONCRETE MASONRY SUPERSTRUCTURE $f'_c = 4,000$ P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 $f_y = 60,000$ P.S.I.

GENERAL NOTES

- DRAWINGS SHALL NOT BE SCALED.
- DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.
- ANY EXCAVATION NECESSARY TO COMPLETE THE OVERLAY OR JOINT REPAIR AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".
- CONTACT THE BUREAU OF STRUCTURES BEFORE PLACEMENT OF OVERLAY IF THE AVERAGE THICKNESS OF THE NEW OVERLAY WILL EXCEED THE AVERAGE OVERLAY SHOWN ON THE PLANS BY MORE THAN $\frac{1}{2}$ ".
- A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM "CLEANING DECKS".
- "CONCRETE SURFACE REPAIR" IS REQ'D ON PARAPETS AND BOTH ABUTMENTS AS DIRECTED BY ENGINEER.
- "CONCRETE MASONRY OVERLAY DECKS" BID ITEM INCLUDES CONCRETE FOR "PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", "FULL DEPTH DECK REPAIR", AND OVERLAY.
- "CONCRETE MASONRY BRIDGES" BID ITEM INCLUDES CONCRETE FOR JOINT REPAIRS.
- PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF OVERLAY SURFACE.
- PIGMENTED PROTECTIVE SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS, INCLUDING PARAPETS ON APPROACH SLABS.
- PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, AND FULL DEPTH DECK REPAIR SHALL BE DETERMINED BY THE FIELD ENGINEER.
- ALL LINES OF REMOVAL SHALL BE DEFINED BY A MIN. 1" DEEP SAW CUP.
- (A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- (A29) ROUGHEN SURFACE OF CONCRETE $\frac{1}{4}$ " DEEP MINIMUM FOR ALL AREAS OF NEW TO EXISTING CONCRETE CONTACT.



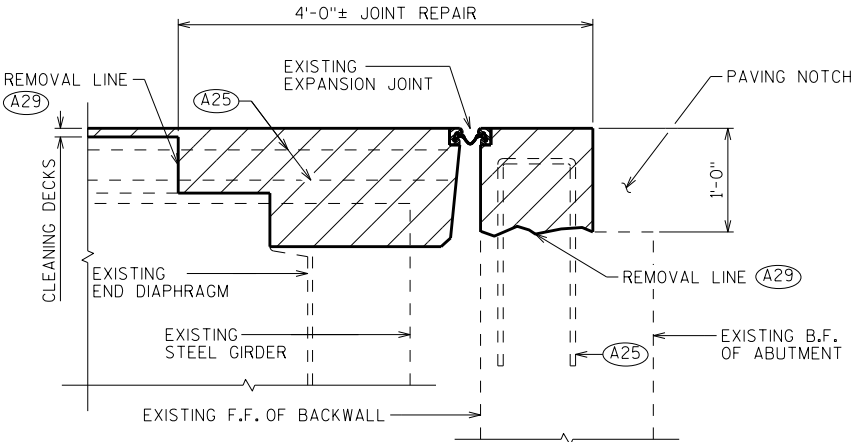
PLAN



CROSS-SECTION THRU DECK

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
502.0100	CONCRETE MASONRY BRIDGES	CY	11
502.3100	EXPANSION DEVICE B-59-68	LS	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	759
502.3210	PIGMENTED SURFACE SEALER	SY	8
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,220
509.0301	PREPARATION DECKS TYPE 1	SY	83
509.0302	PREPARATION DECKS TYPE 2	SY	60
509.0500	CLEANING DECKS	SY	759
509.1000	JOINT REPAIR	SY	15
509.1500	CONCRETE SURFACE REPAIR	SF	112
509.2000	FULL-DEPTH DECK REPAIR	SY	1
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	44
604.9010.S	SLOPE PAVING REPAIR CRUSHED AGGREGATE	CY	XX



SECTION A-A - SHOWING REMOVAL
(TYPICAL BOTH JOINTS)

STRUCTURE DESIGN CONTACTS:
JONATHON RESHESKE (608) 266-8491
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY
			
ACCEPTED CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-59-70			
CR MM OVER IH 43			
COUNTY	SHEBOYGAN	TOWN	MOSEL
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	JLR	DESIGNED CK'D. XYZ	DRAWN BY JLR
CONCRETE OVERLAY			SHEET 1 OF 5

DESIGN DATA

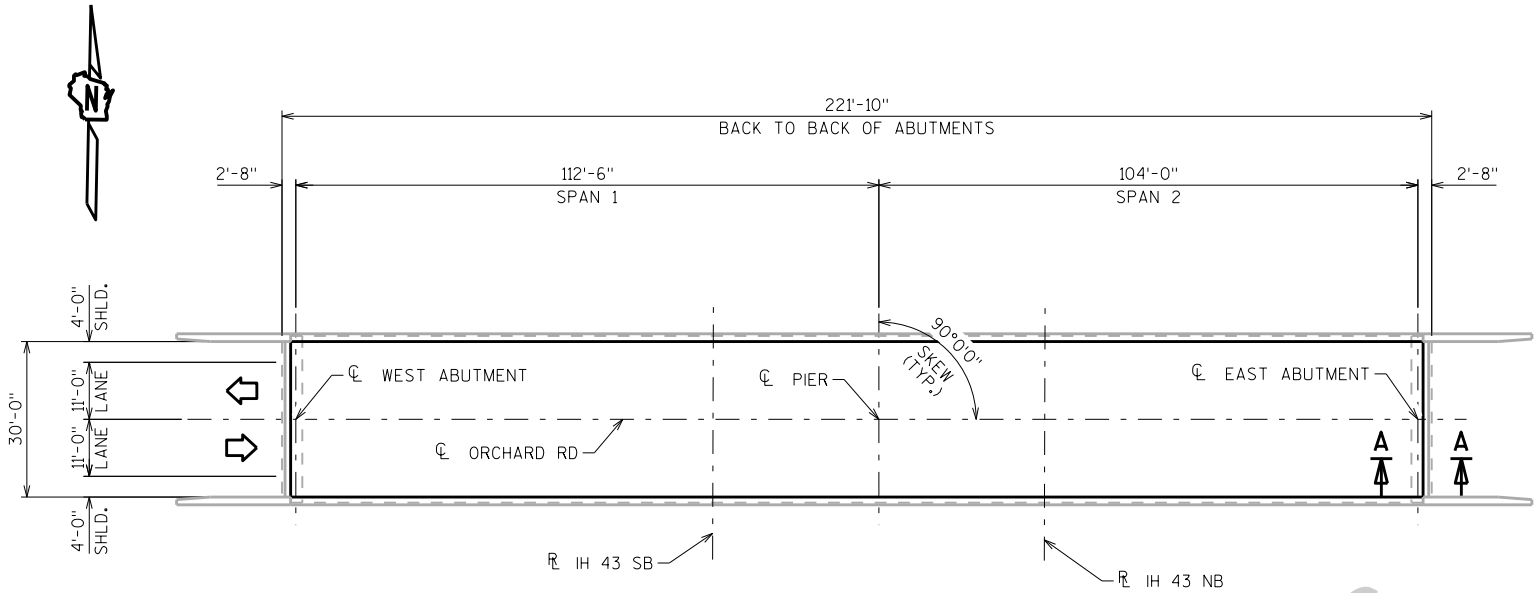
LIVE LOAD:
DESIGN RATING: HS-25
INVENTORY RATING: HS-19
OPERATING RATING: HS-31
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 169 (KIPS)

MATERIAL PROPERTIES:

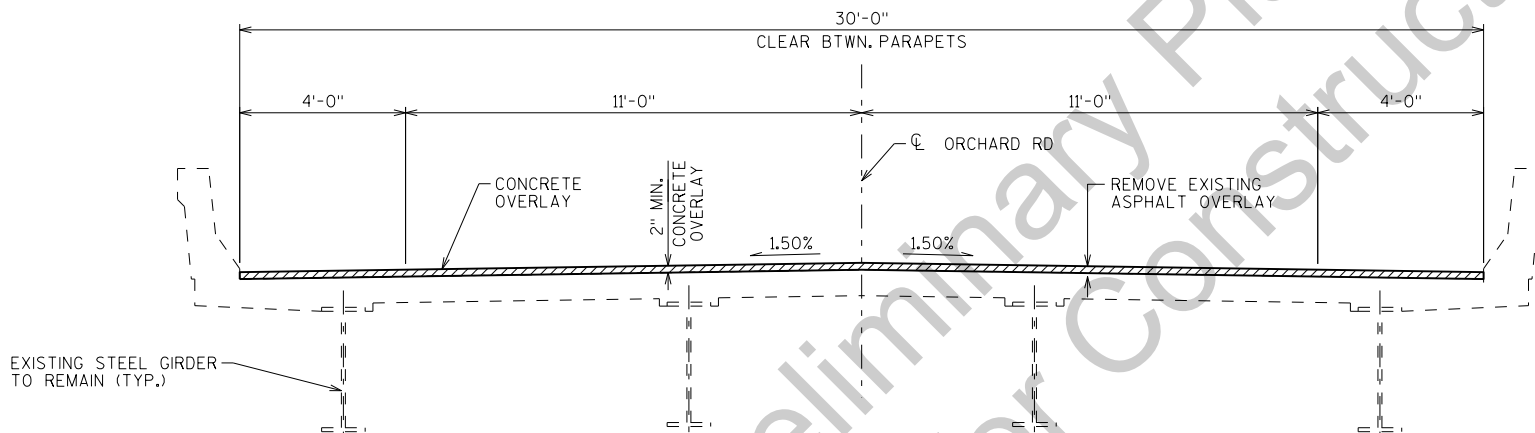
CONCRETE MASONRY:
CONCRETE MASONRY OVERLAY DECKS $f'_c = 4,000$ P.S.I.
CONCRETE MASONRY SUPERSTRUCTURE $f'_c = 4,000$ P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 $f_y = 60,000$ P.S.I.

GENERAL NOTES

- DRAWINGS SHALL NOT BE SCALED.
- DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.
- ANY EXCAVATION NECESSARY TO COMPLETE THE OVERLAY OR JOINT REPAIR AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".
- CONTACT THE BUREAU OF STRUCTURES BEFORE PLACEMENT OF OVERLAY IF THE AVERAGE THICKNESS OF THE NEW OVERLAY WILL EXCEED THE AVERAGE OVERLAY SHOWN ON THE PLANS BY MORE THAN $\frac{1}{2}$ ".
- A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM "CLEANING DECKS".
- "CONCRETE SURFACE REPAIR" IS REQ'D ON PARAPETS AND BOTH ABUTMENTS AS DIRECTED BY ENGINEER.
- "CONCRETE MASONRY OVERLAY DECKS" BID ITEM INCLUDES CONCRETE FOR "PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", "FULL DEPTH DECK REPAIR", AND OVERLAY.
- "CONCRETE MASONRY BRIDGES" BID ITEM INCLUDES CONCRETE FOR JOINT REPAIRS.
- PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF OVERLAY SURFACE.
- PIGMENTED PROTECTIVE SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS, INCLUDING PARAPETS ON APPROACH SLABS.
- PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, AND FULL DEPTH DECK REPAIR SHALL BE DETERMINED BY THE FIELD ENGINEER.
- ALL LINES OF REMOVAL SHALL BE DEFINED BY A MIN. 1" DEEP SAW CUP.
- (A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- (A29) ROUGHEN SURFACE OF CONCRETE $\frac{1}{4}$ " DEEP MINIMUM FOR ALL AREAS OF NEW TO EXISTING CONCRETE CONTACT.



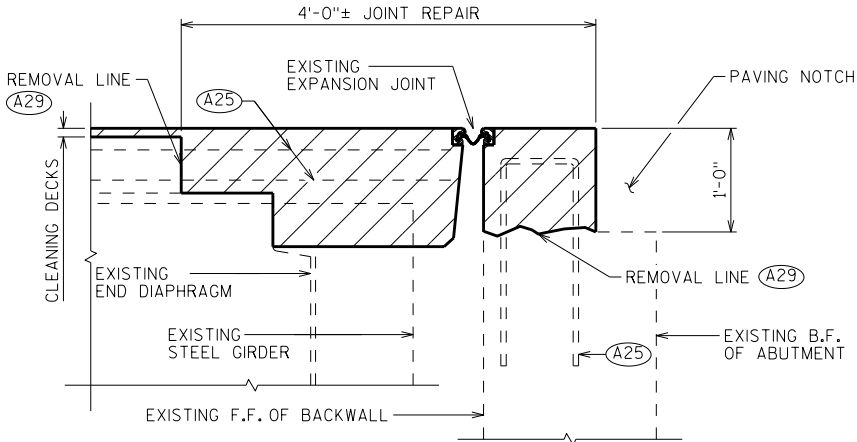
PLAN



CROSS-SECTION THRU DECK

TOTAL ESTIMATED QUANTITIES

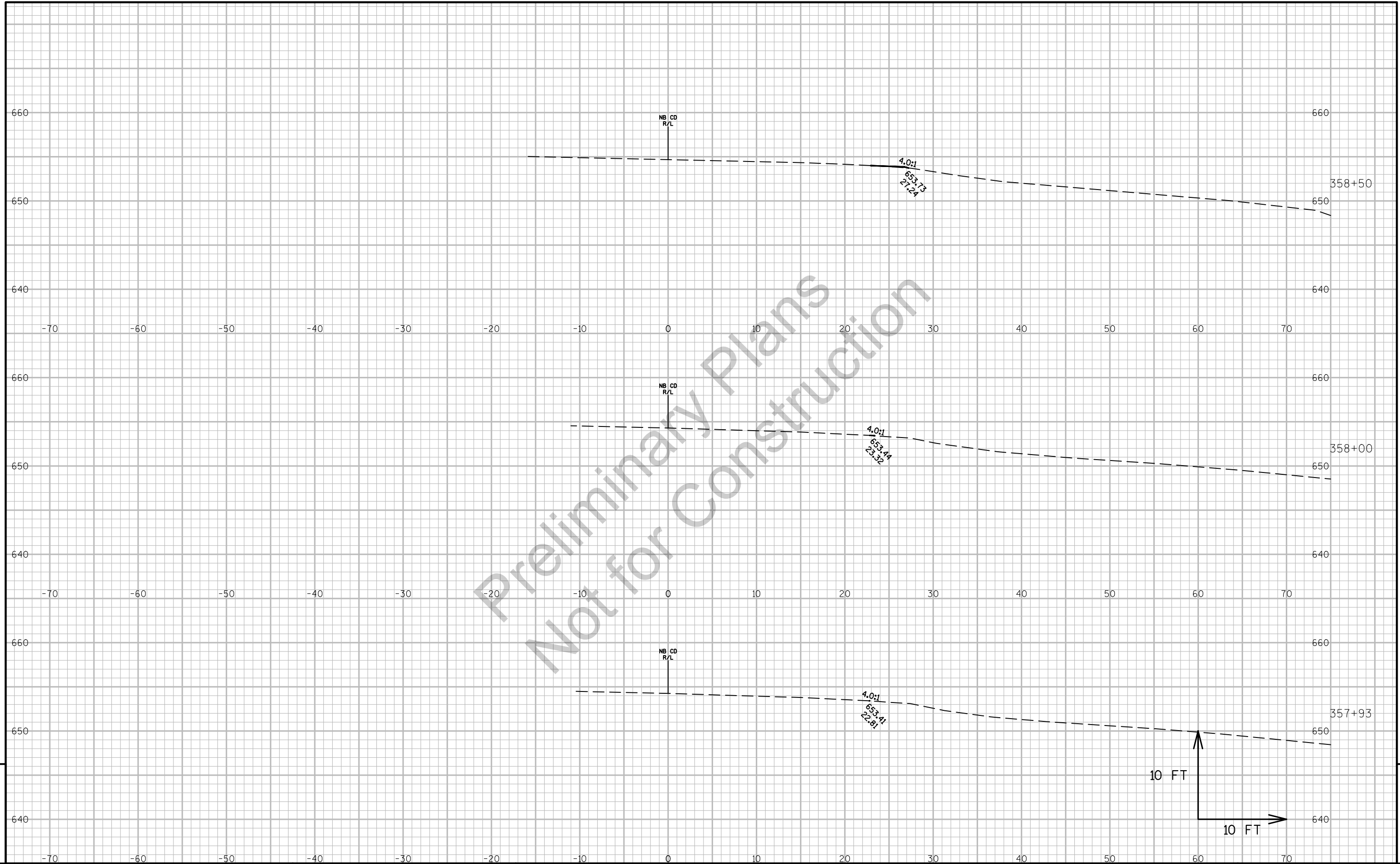
BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
502.0100	CONCRETE MASONRY BRIDGES	CY	11
502.3100	EXPANSION DEVICE B-59-68	LS	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	759
502.3210	PIGMENTED SURFACE SEALER	SY	8
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,220
509.0301	PREPARATION DECKS TYPE 1	SY	83
509.0302	PREPARATION DECKS TYPE 2	SY	60
509.0500	CLEANING DECKS	SY	759
509.1000	JOINT REPAIR	SY	15
509.1500	CONCRETE SURFACE REPAIR	SF	112
509.2000	FULL-DEPTH DECK REPAIR	SY	1
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	44
604.9010.S	SLOPE PAVING REPAIR CRUSHED AGGREGATE	CY	XX



SECTION A-A - SHOWING REMOVAL
(TYPICAL BOTH JOINTS)

STRUCTURE DESIGN CONTACTS:
JONATHON RESHESKE (608) 266-8491
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY
			
ACCEPTED CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-59-73			
ORCHARD RD OVER IH 43			
COUNTY	SHEBOYGAN	TOWN	MOSEL
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	JLR	DESIGNED CK'D.	XYZ
DRAWN BY	JLR	PLANS CK'D.	
CONCRETE OVERLAY			SHEET 1 OF 5



9

9

PROJECT NO:1225-08-73

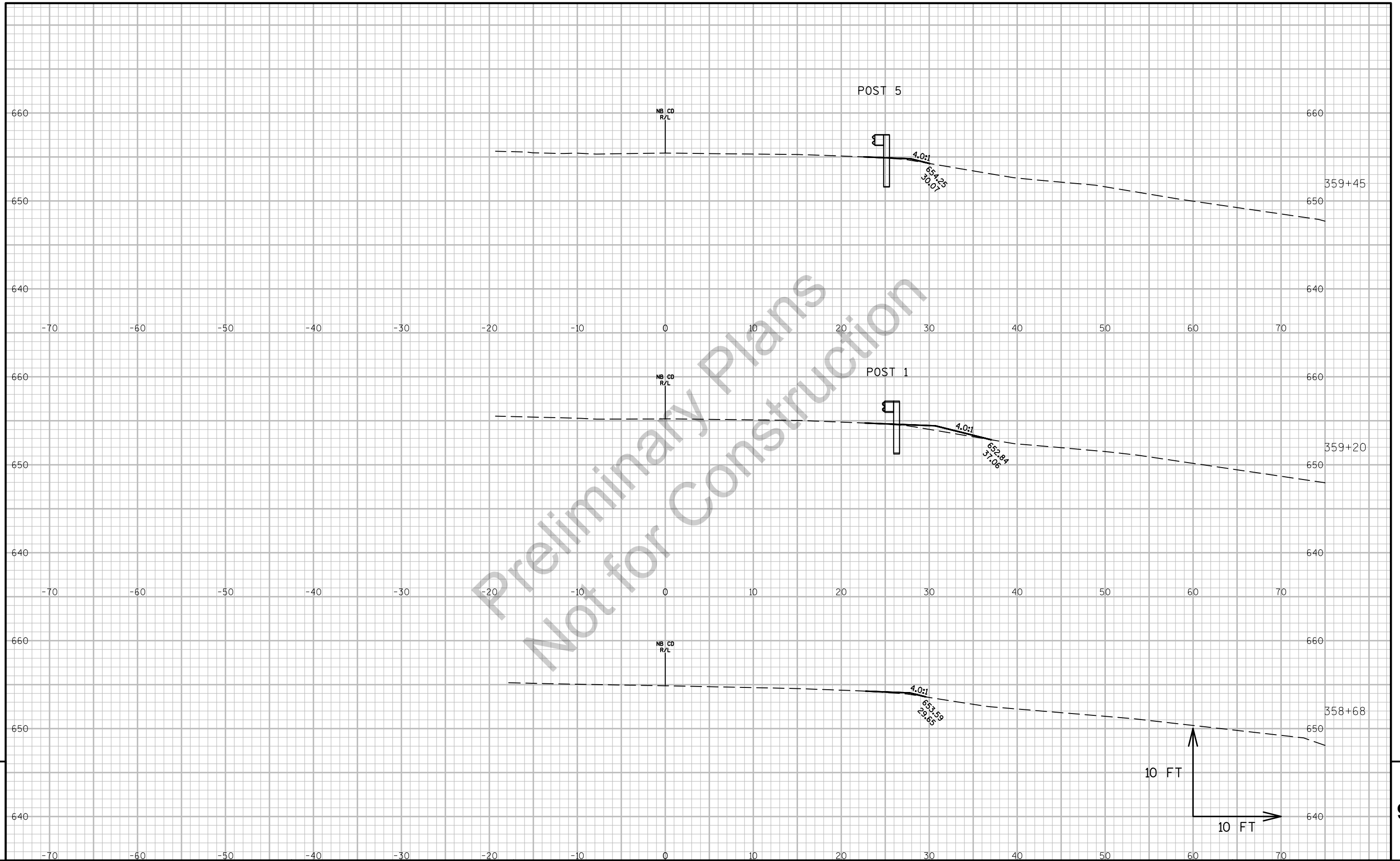
HWY:IH 43

COUNTY:SHEBOYGAN

CROSS SECTIONS: IH 43 NB CD

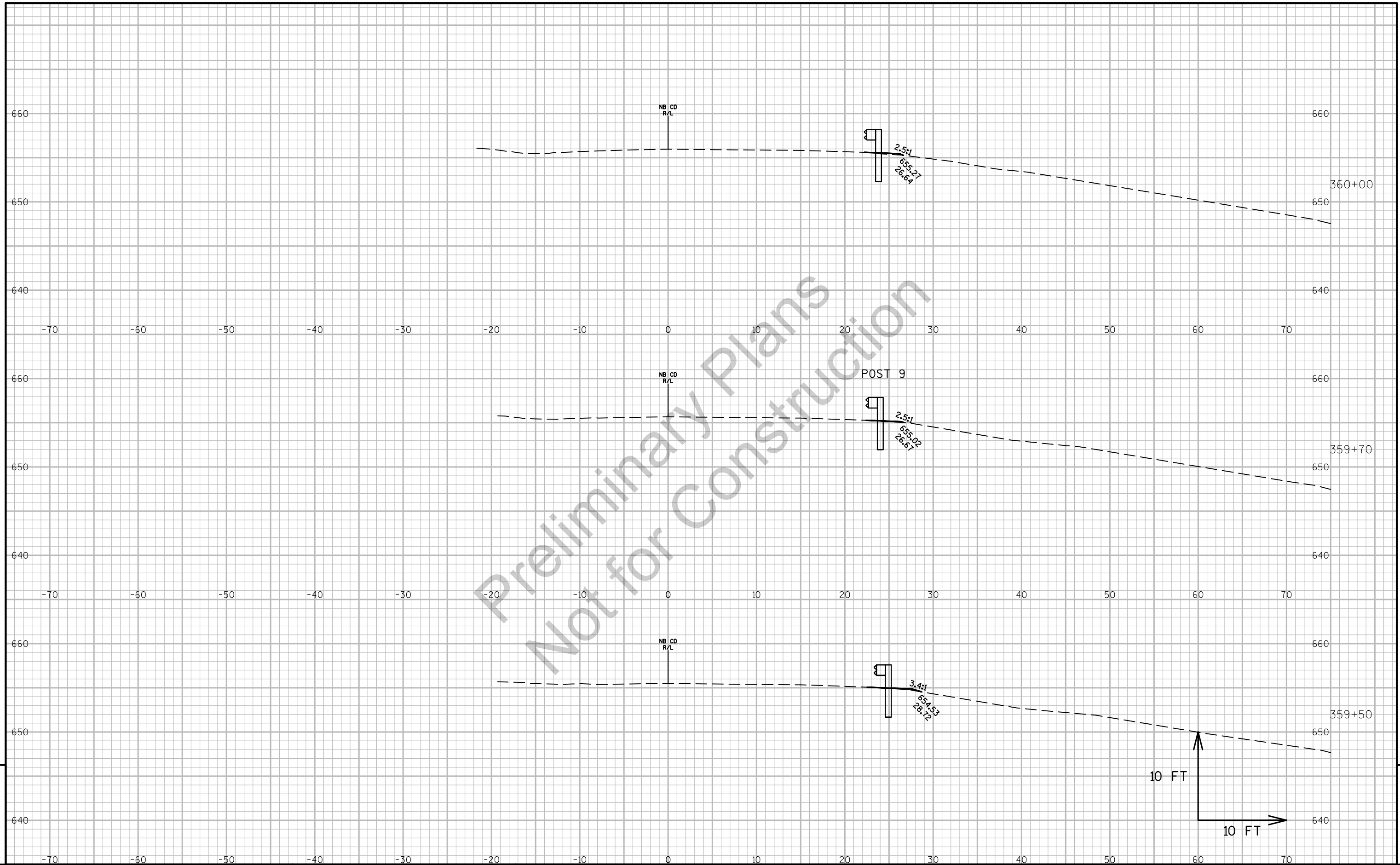
SHEET

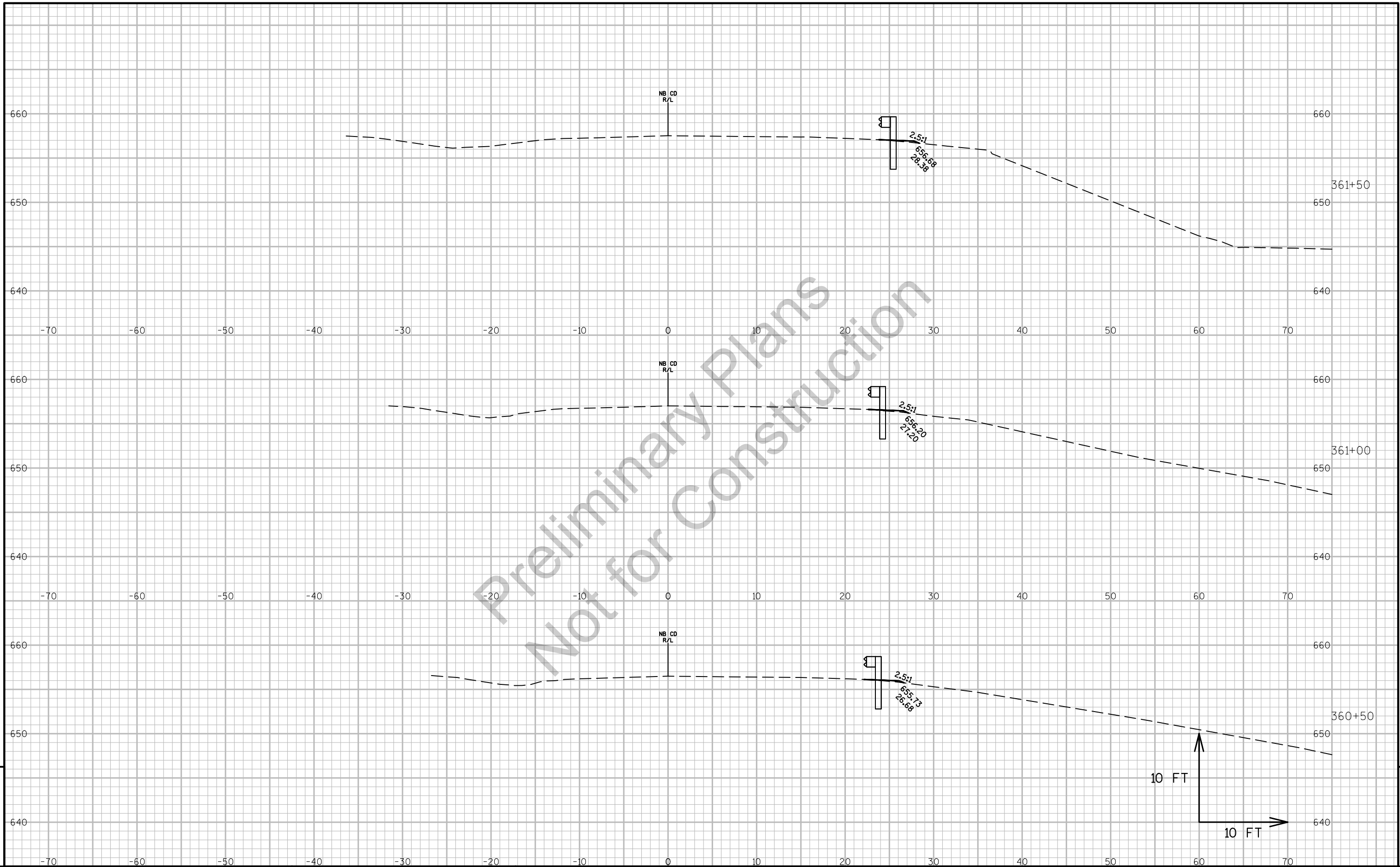
E



9

9

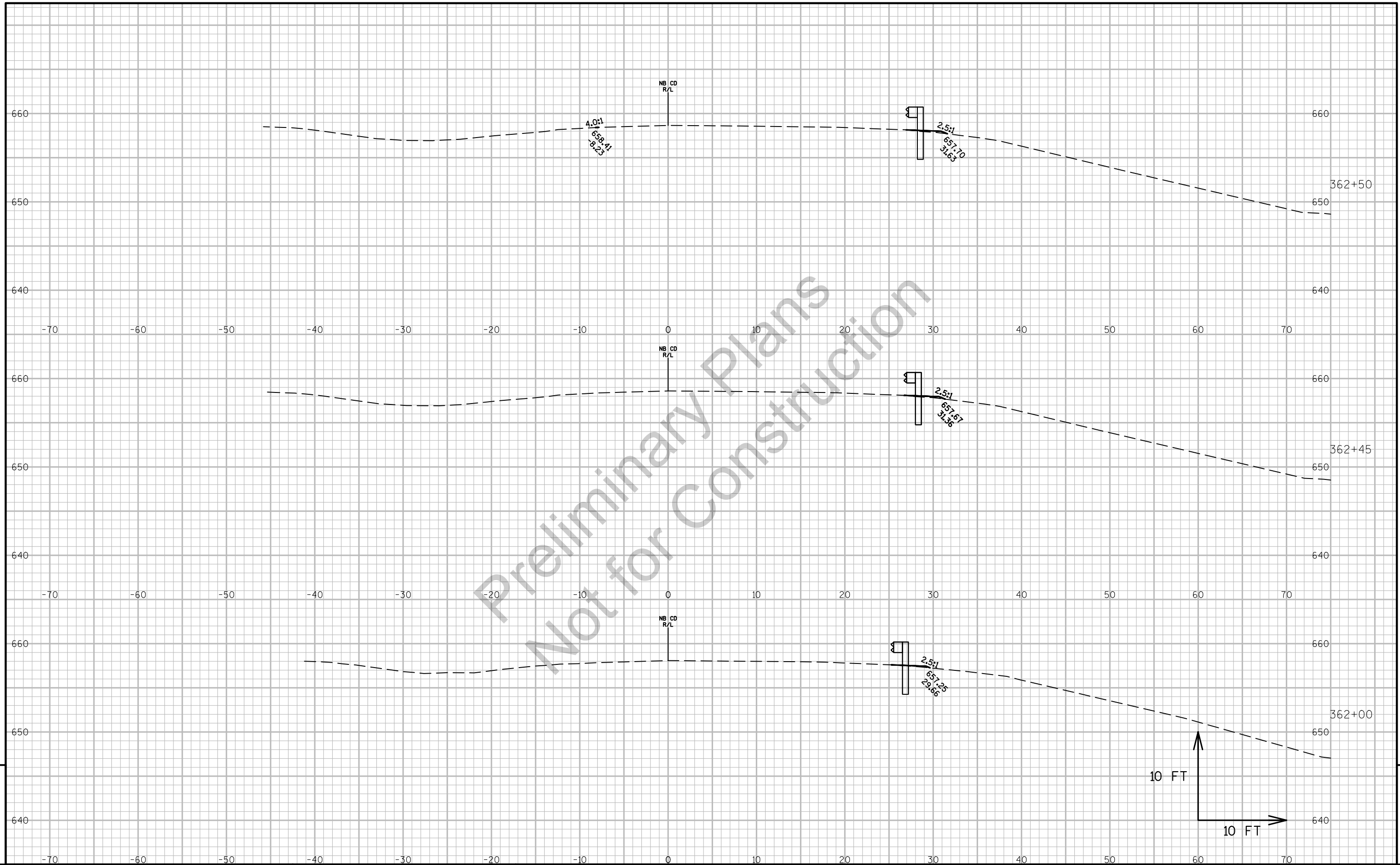


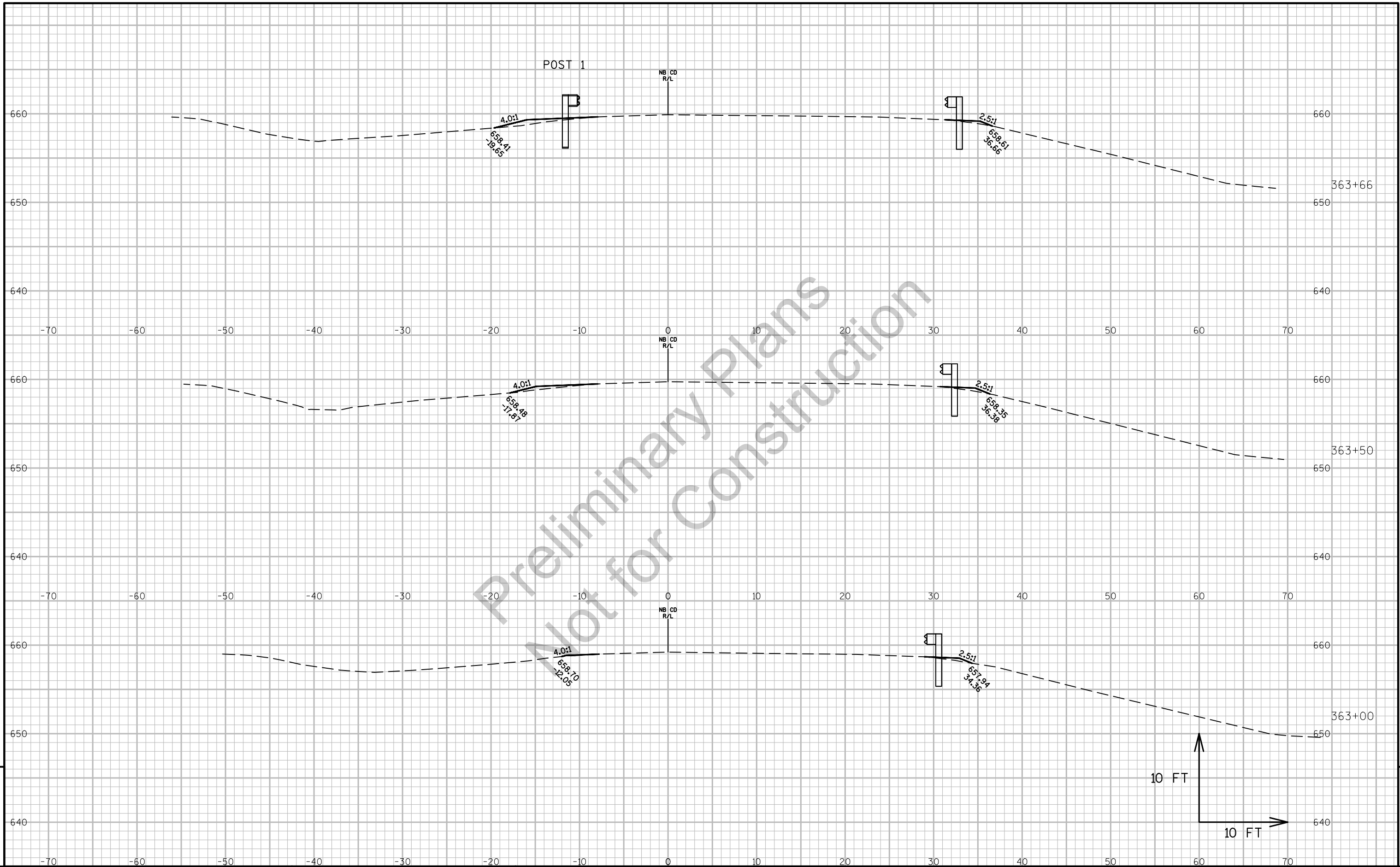


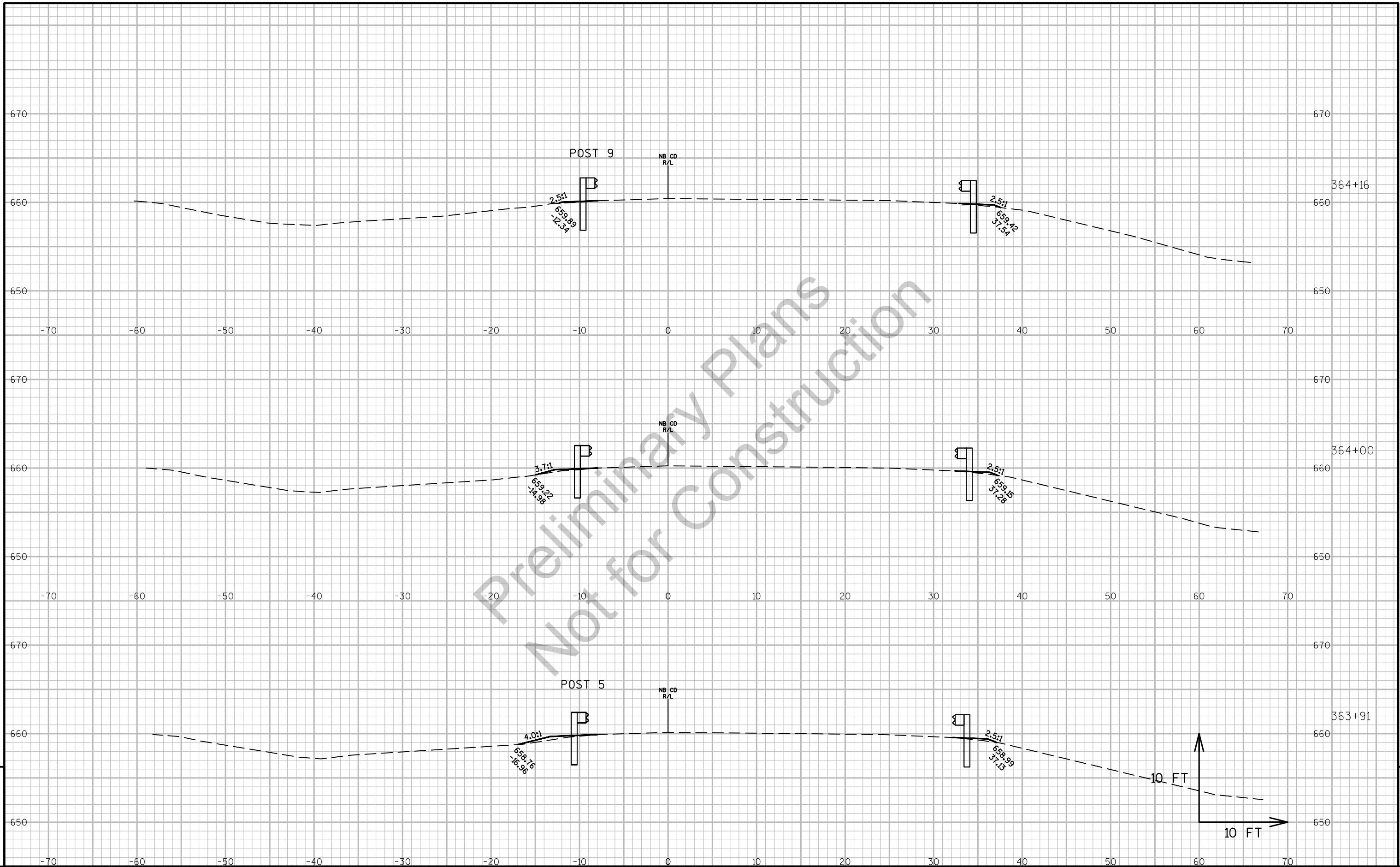
9

9

PROJECT NO:1225-08-73	HWY:IH 43	COUNTY:SHEBOYGAN	CROSS SECTIONS: IH 43 NB CD	SHEET	E
-----------------------	-----------	------------------	-----------------------------	-------	---

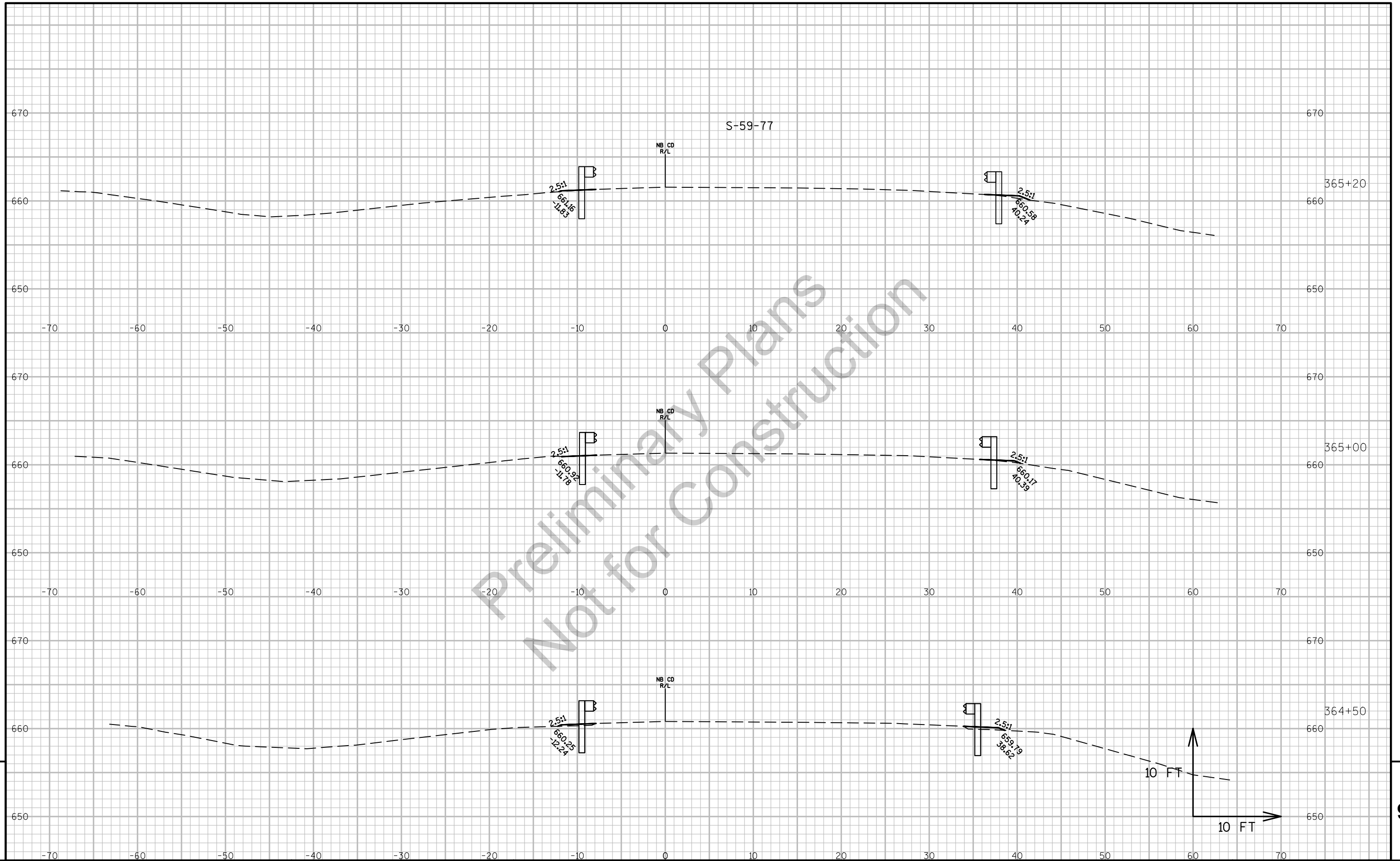


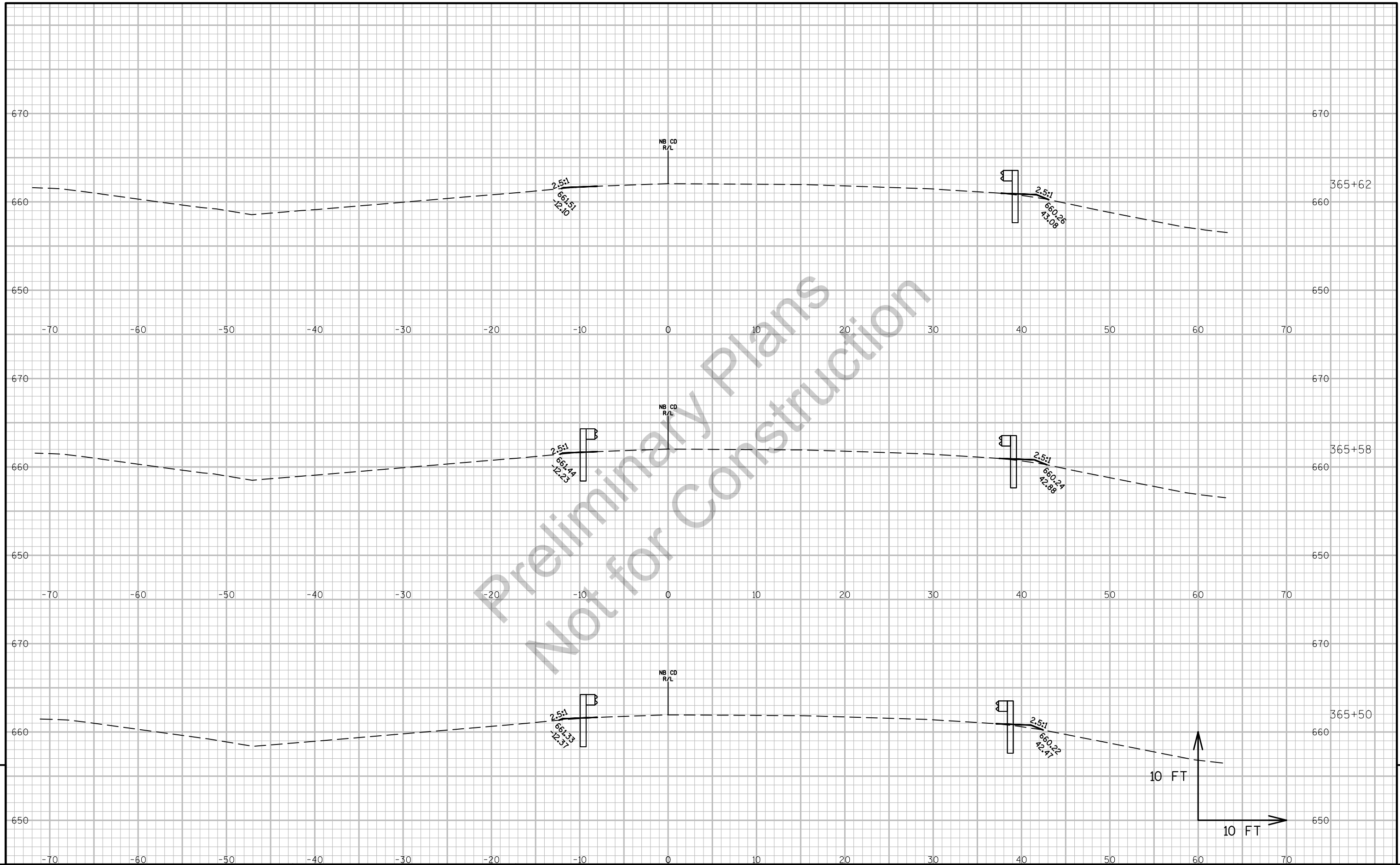


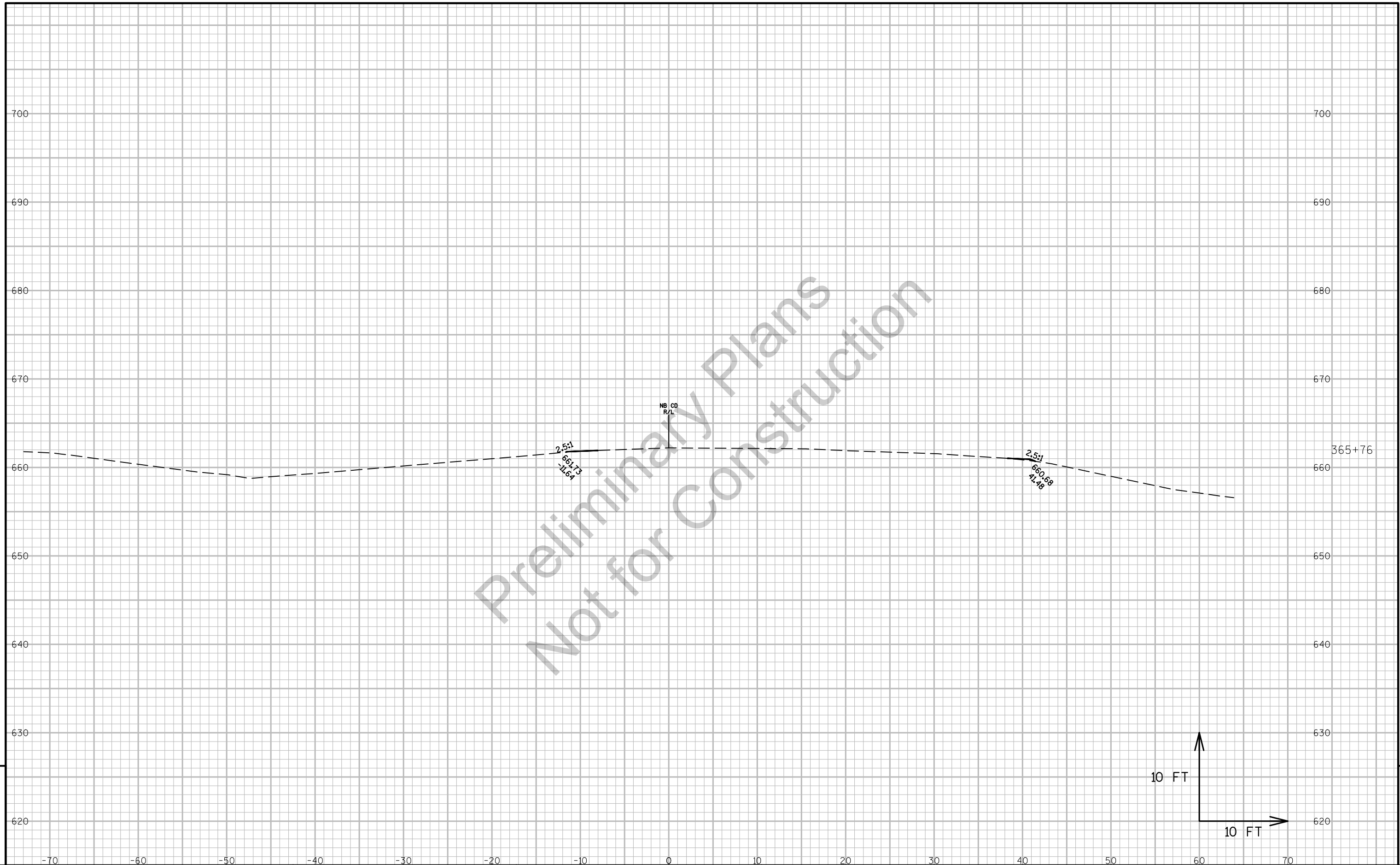


9

9







9

9

PROJECT NO:1225-08-73

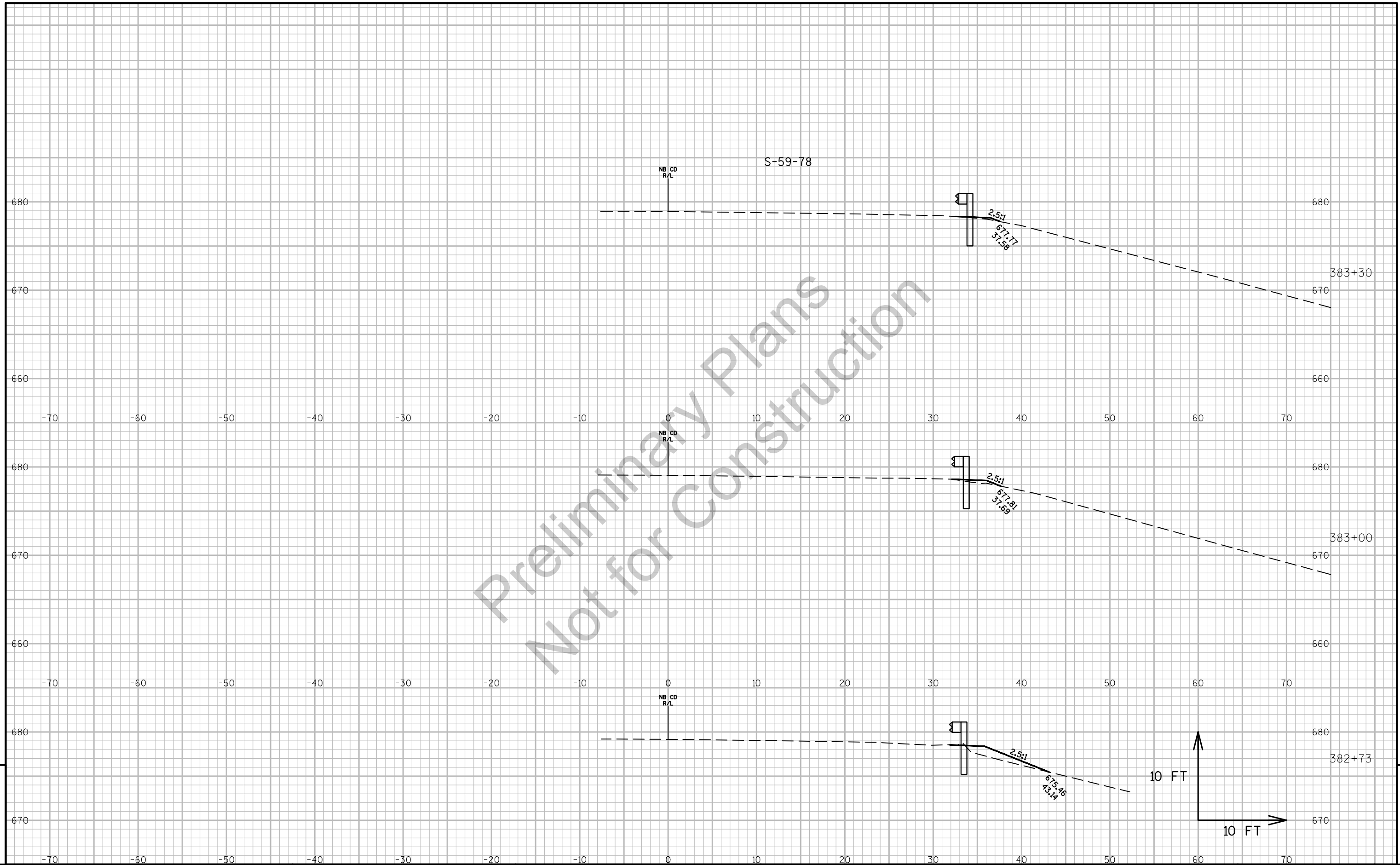
HWY:IH 43

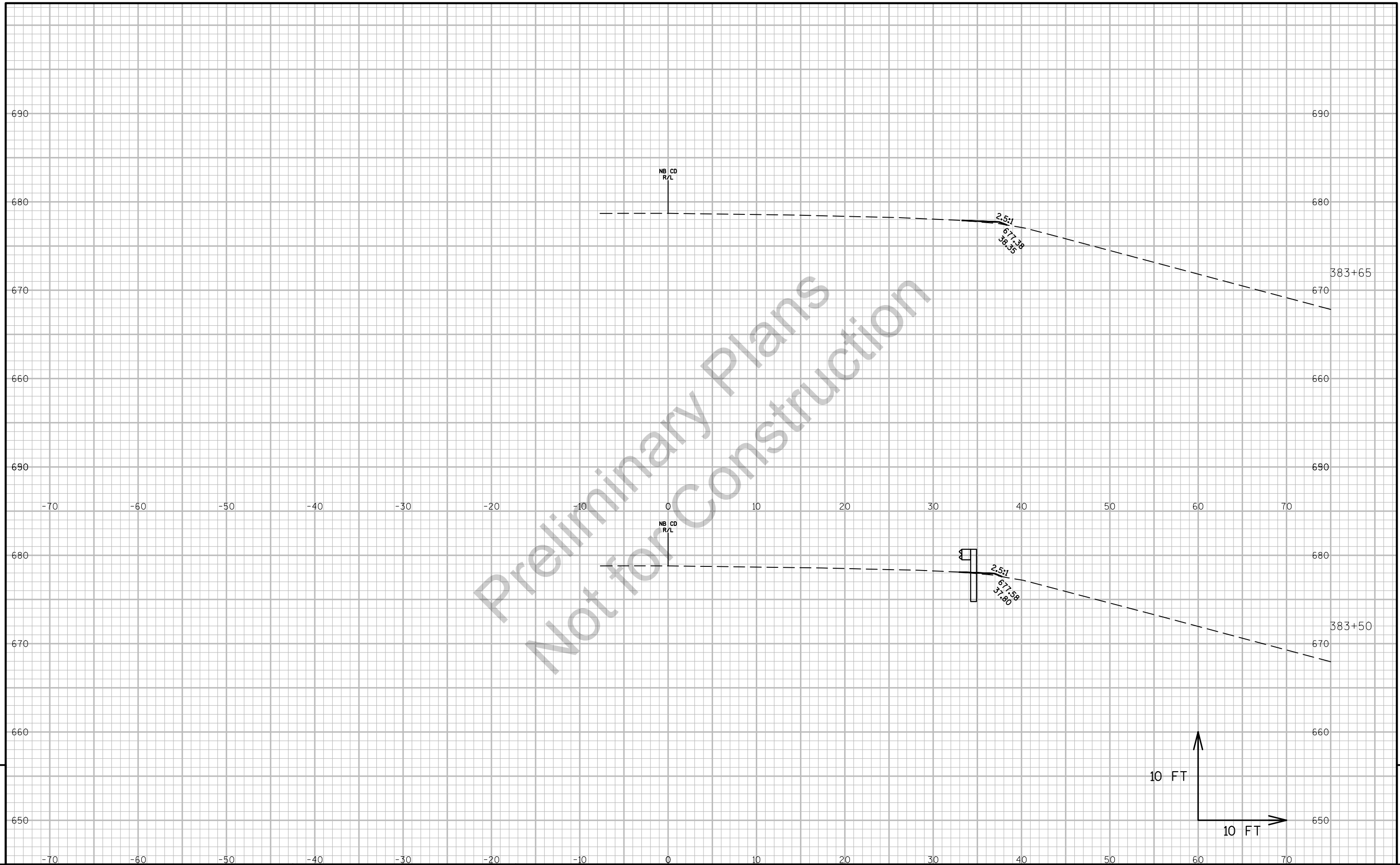
COUNTY:SHEBOYGAN

CROSS SECTIONS:IH 43 NB CD

SHEET

E





9

9

PROJECT NO:1225-08-73

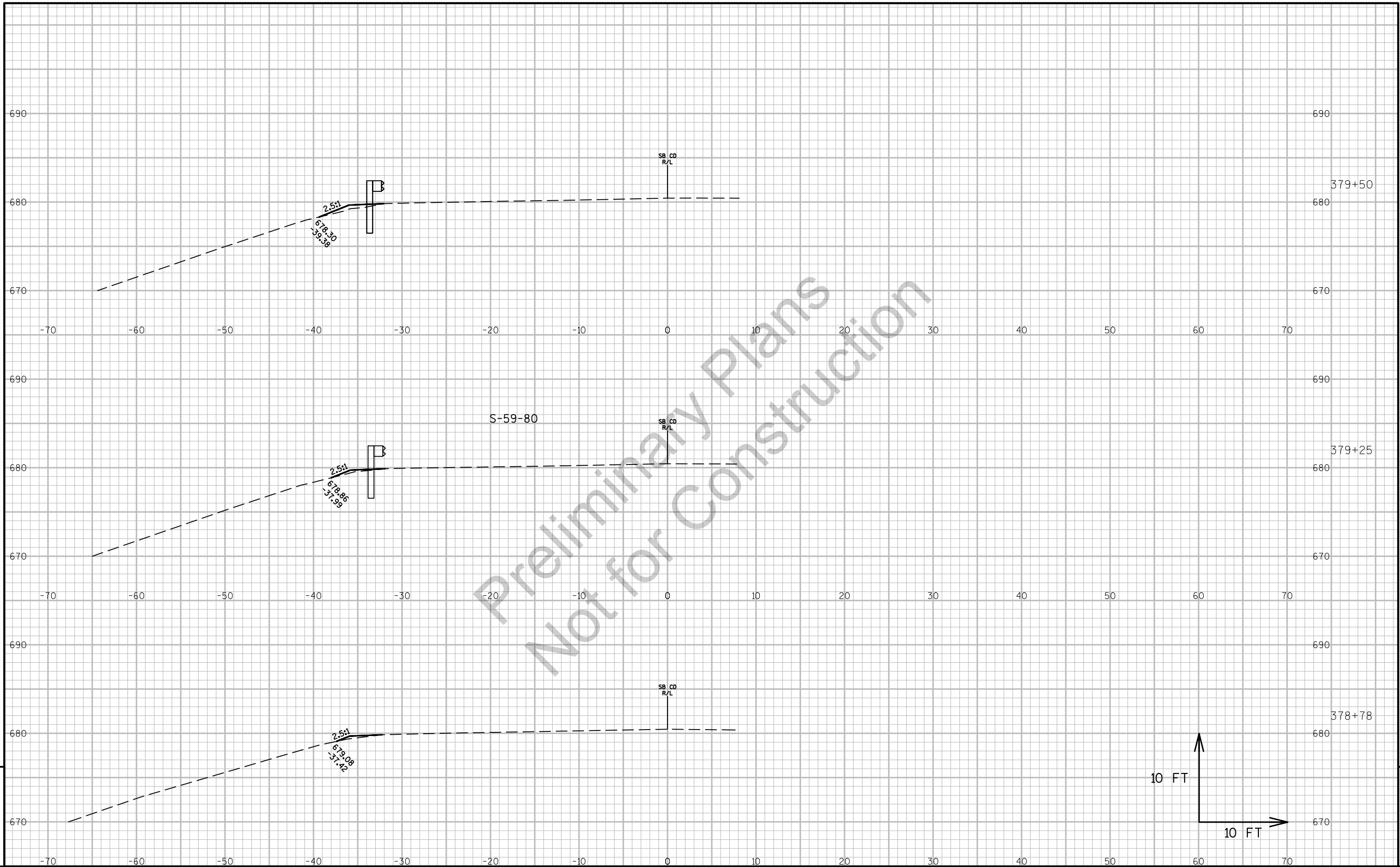
HWY:IH 43

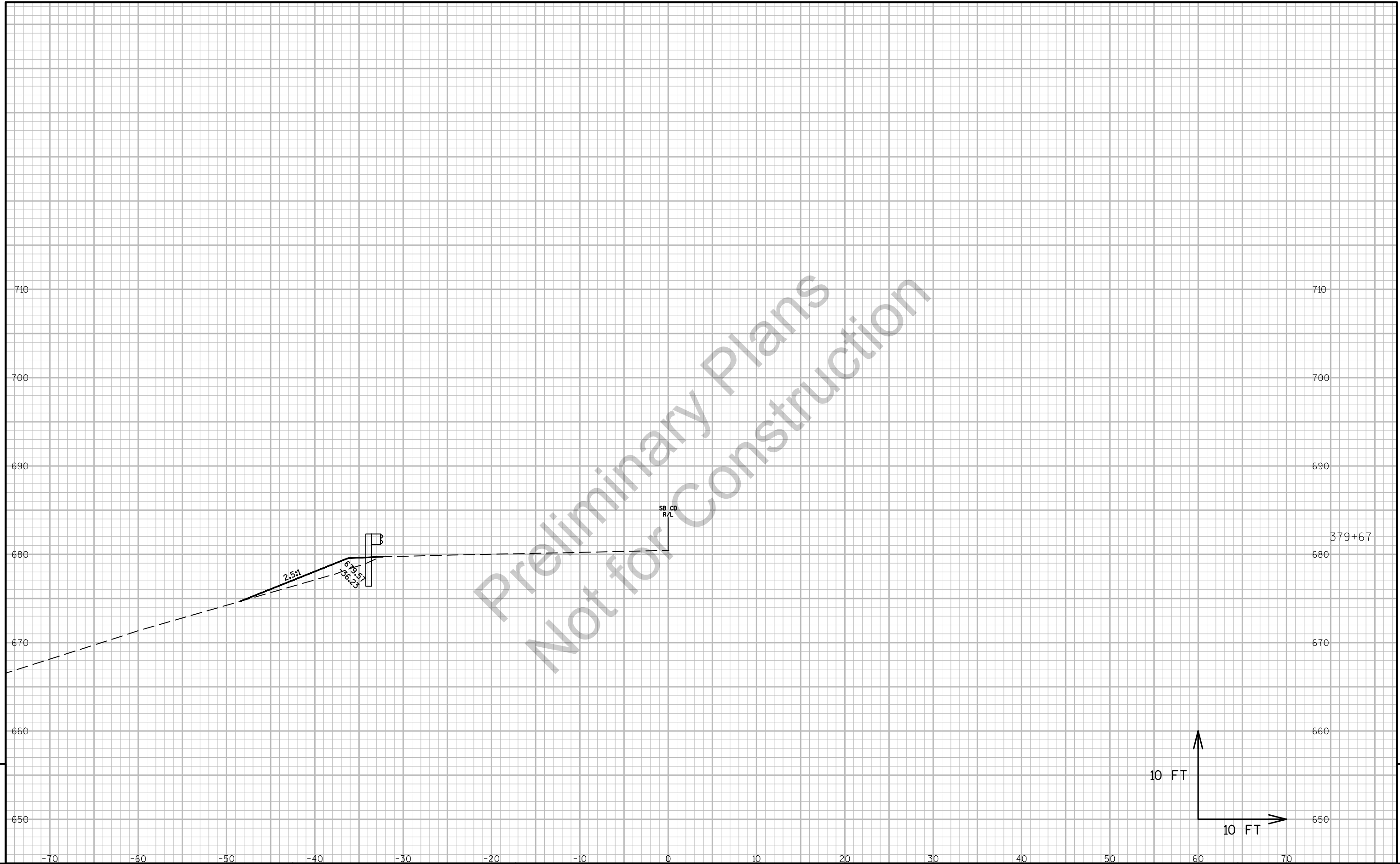
COUNTY:SHEBOYGAN

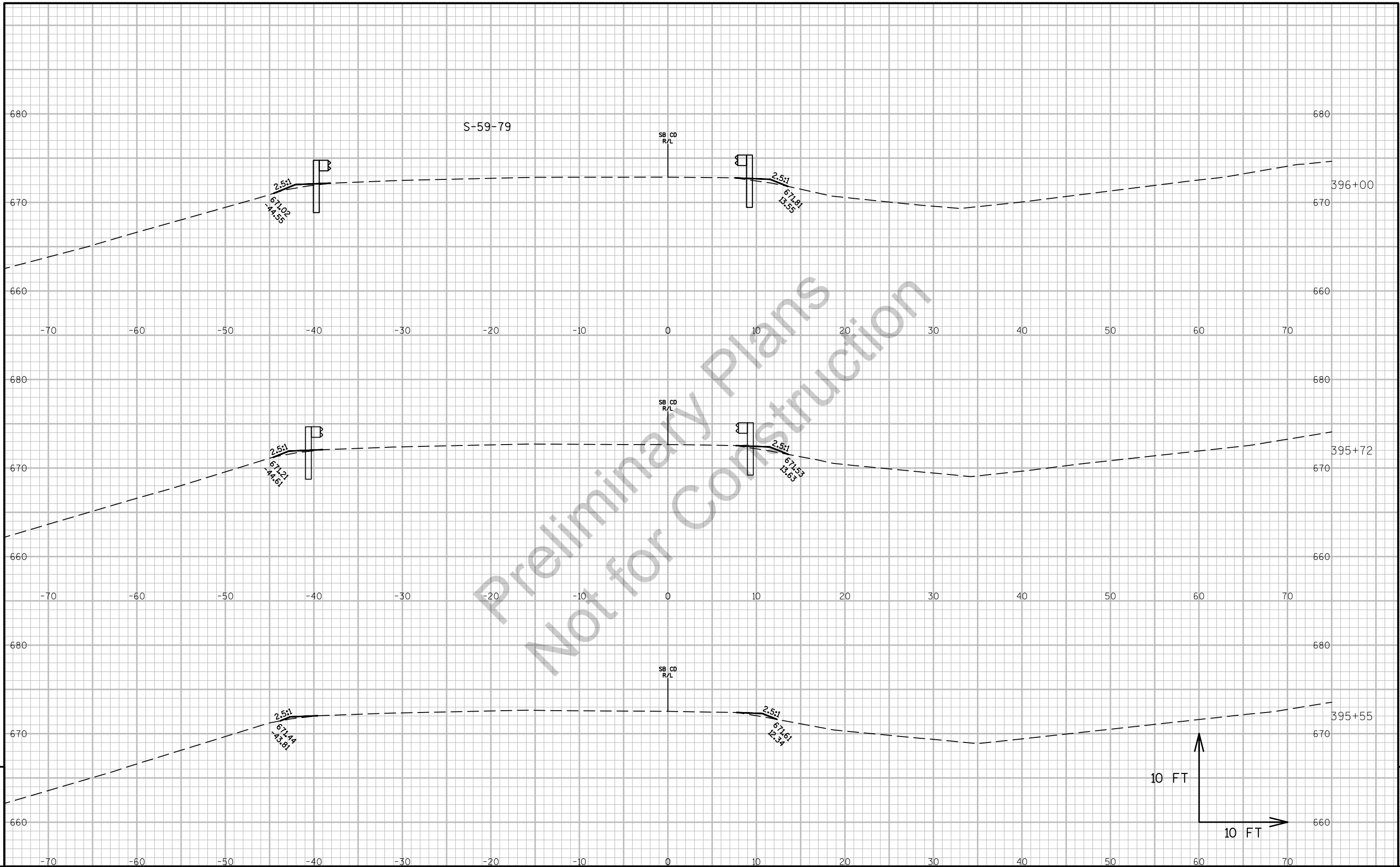
CROSS SECTIONS: IH 43 NB CD

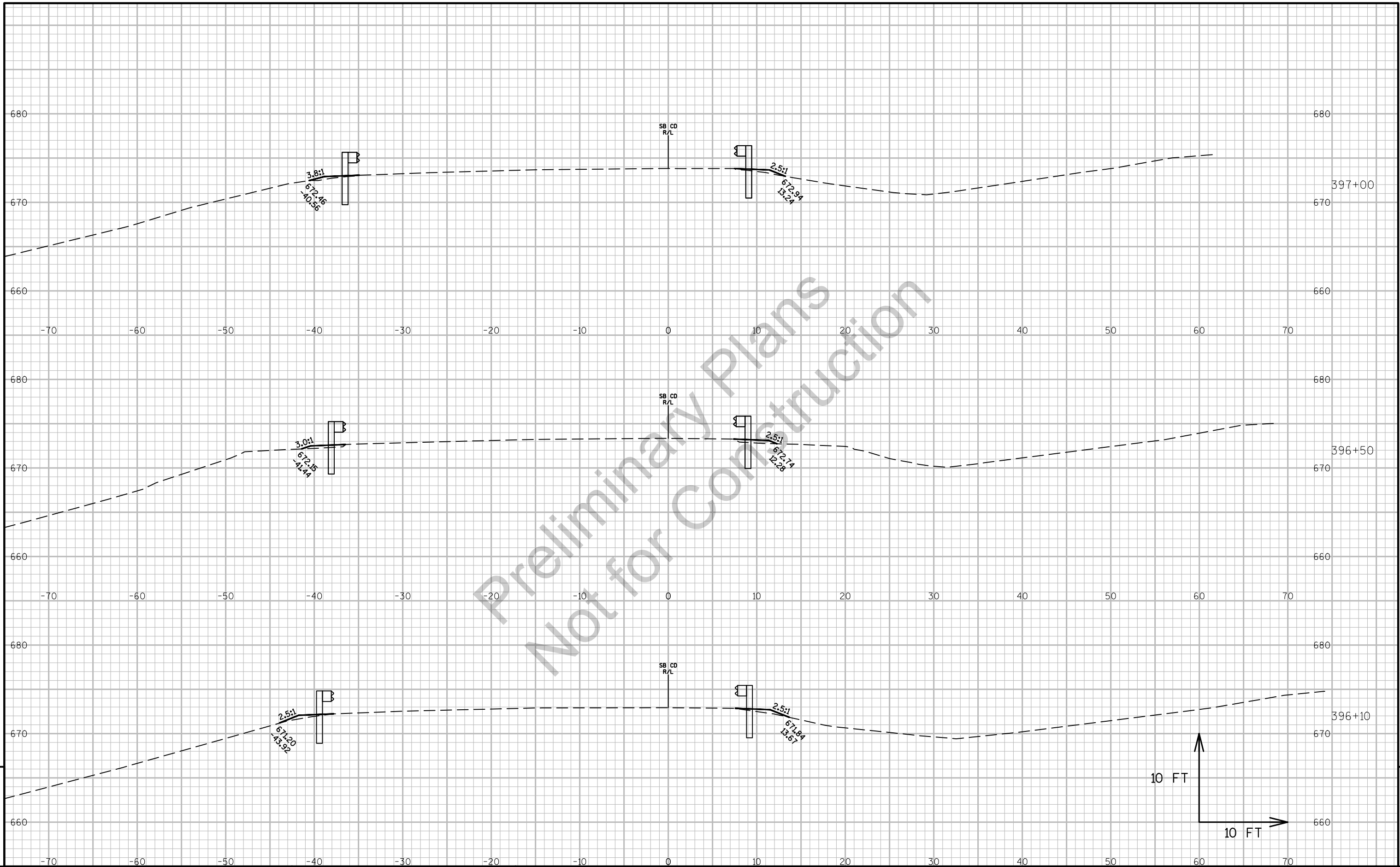
SHEET

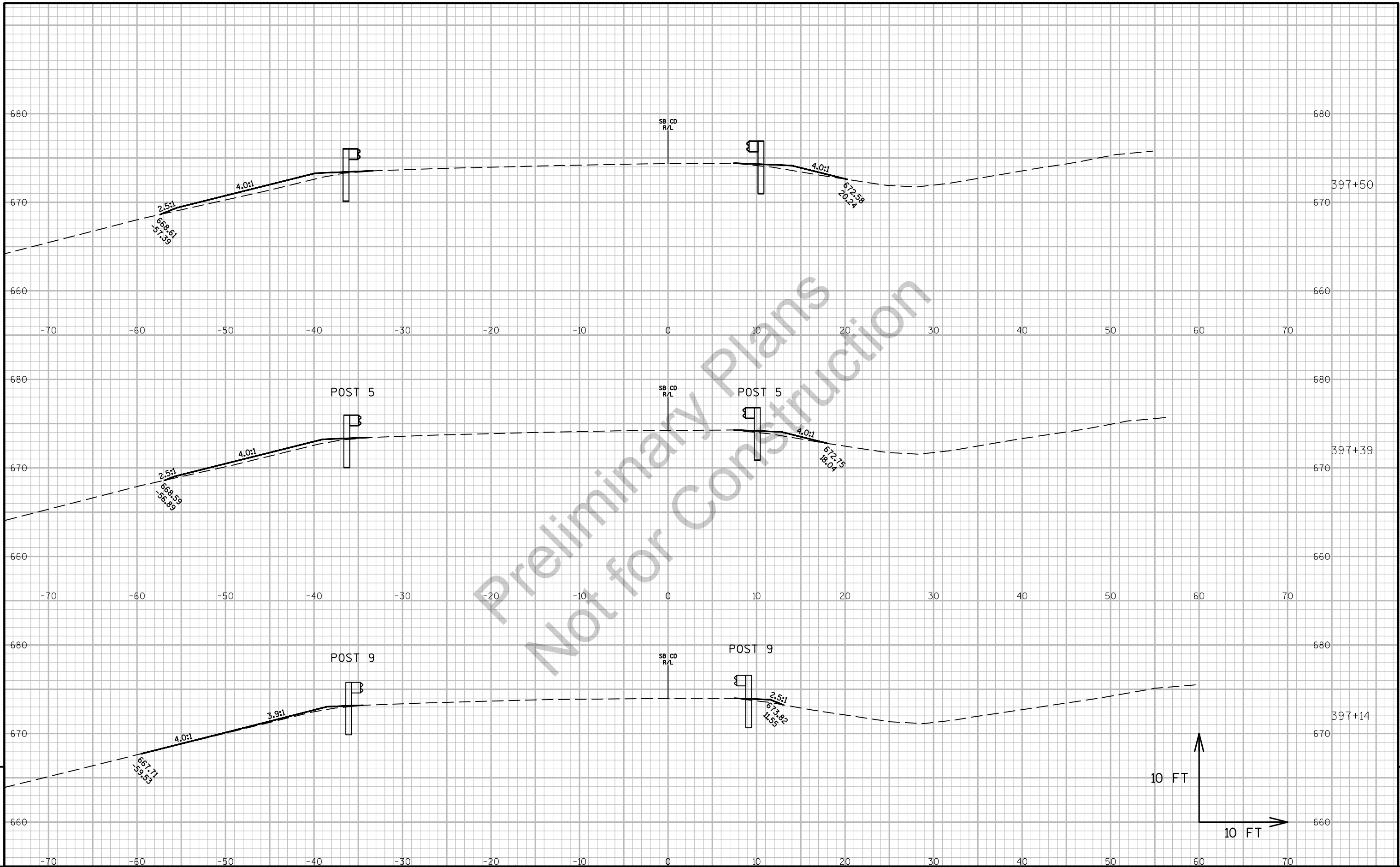
E

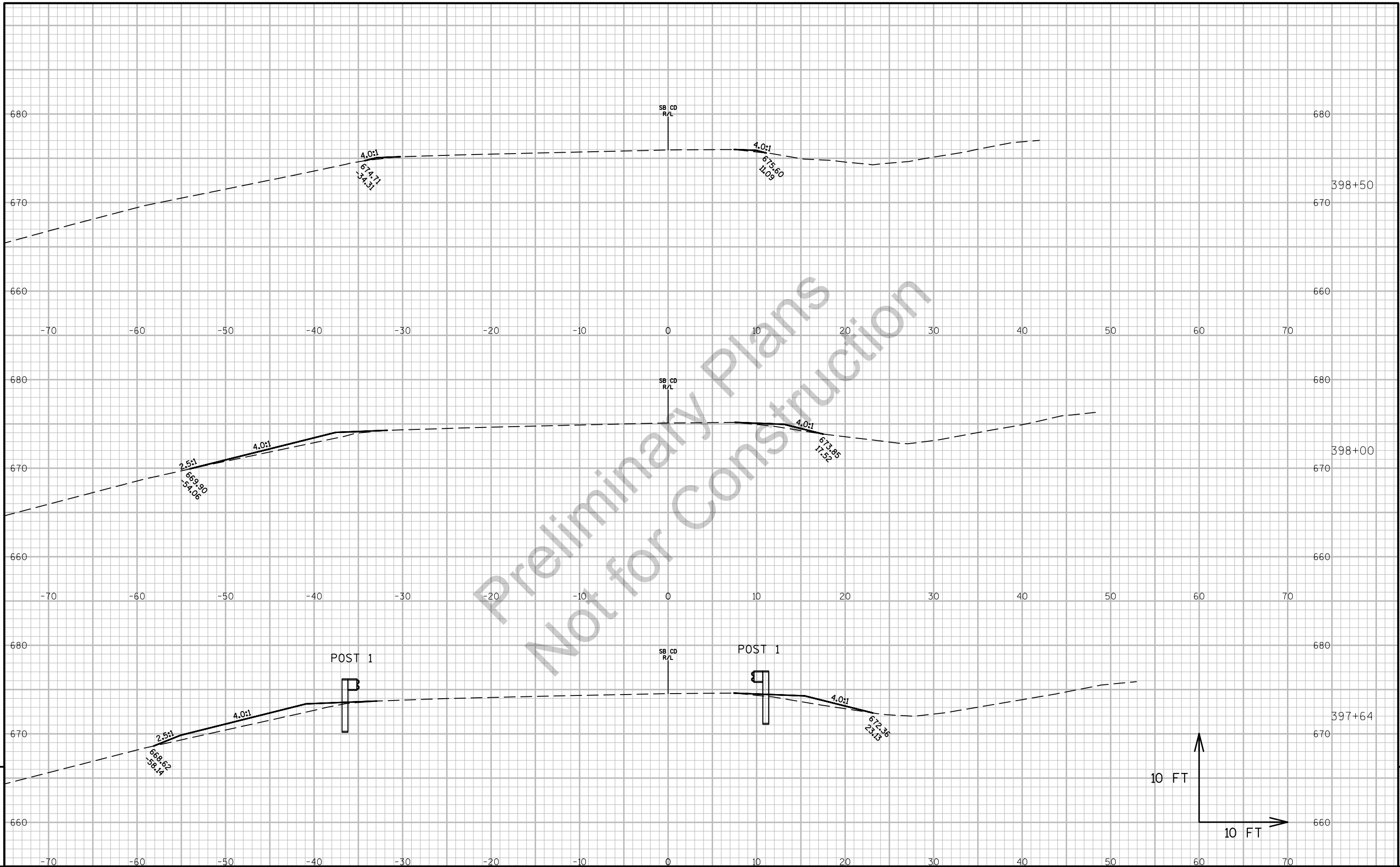


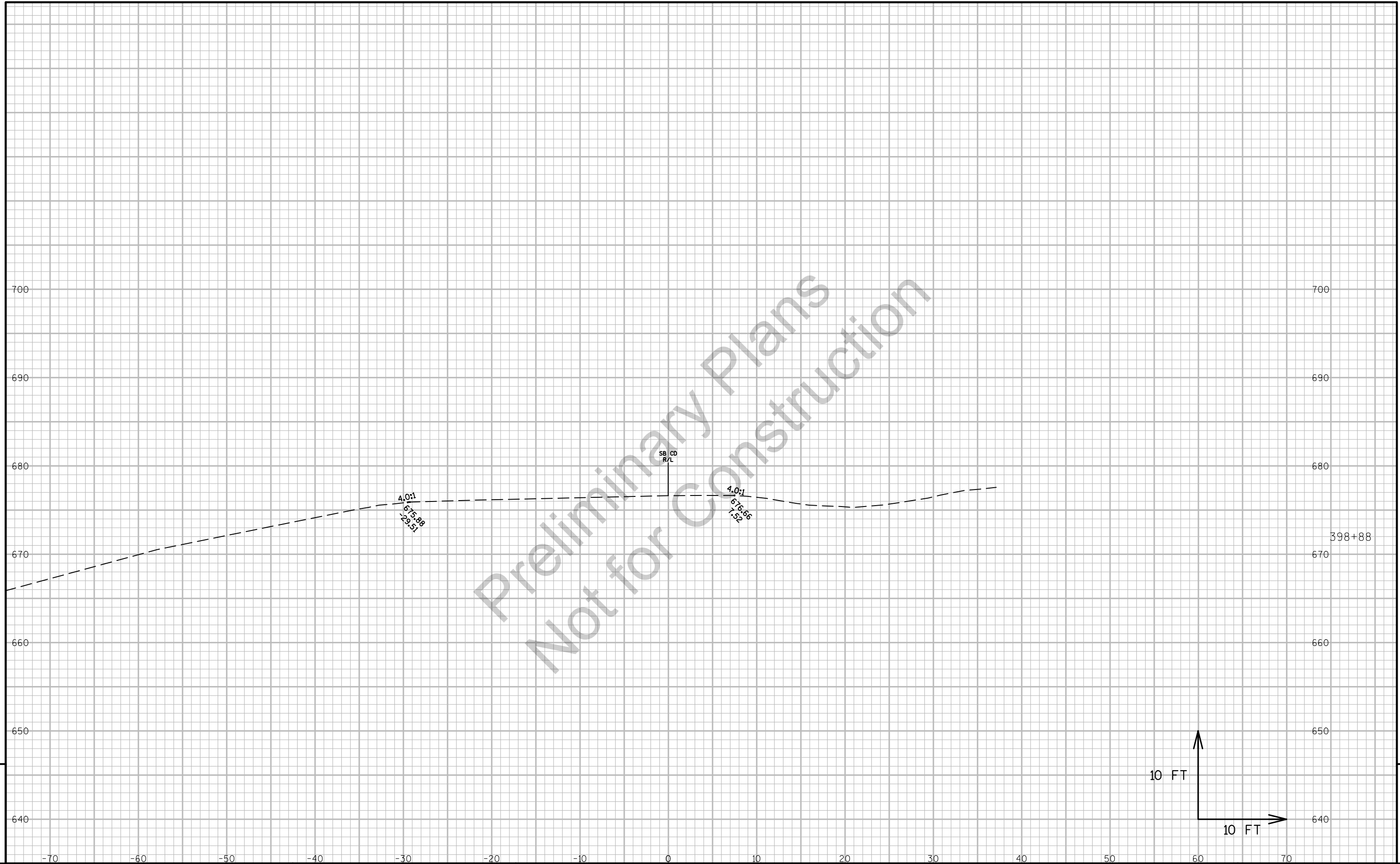












9

9

PROJECT NO:1225-08-73

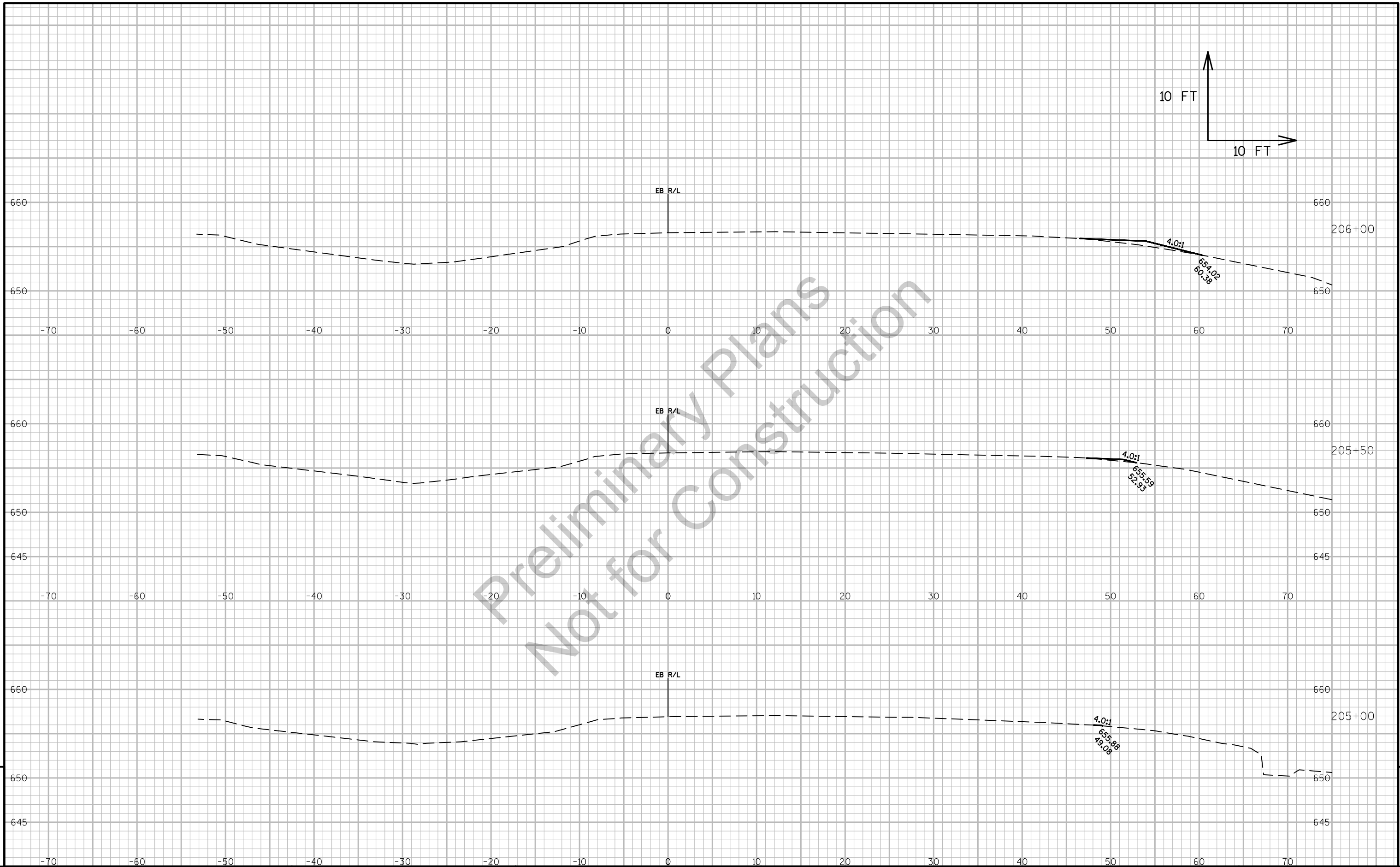
HWY:IH 43

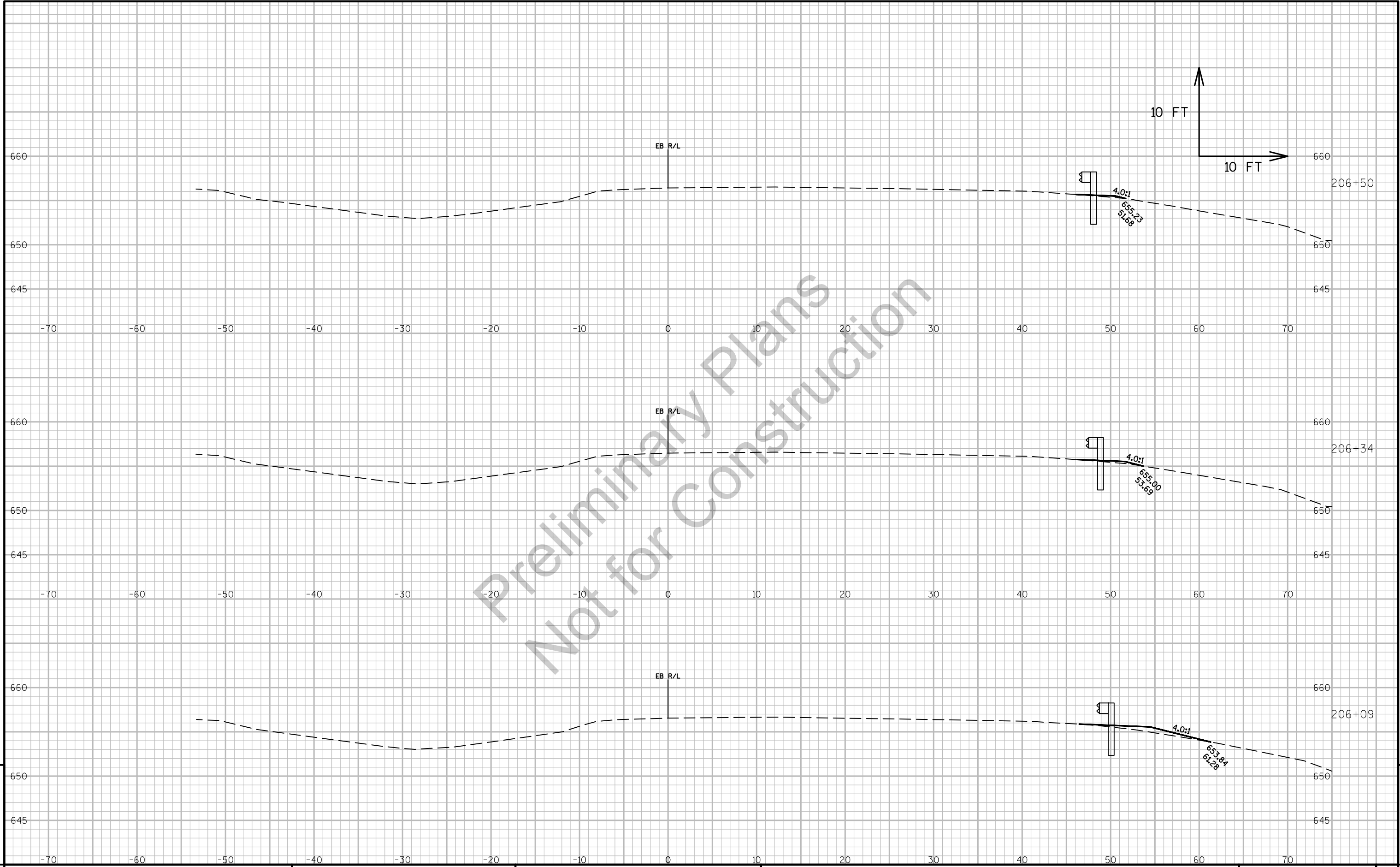
COUNTY:SHEBOYGAN

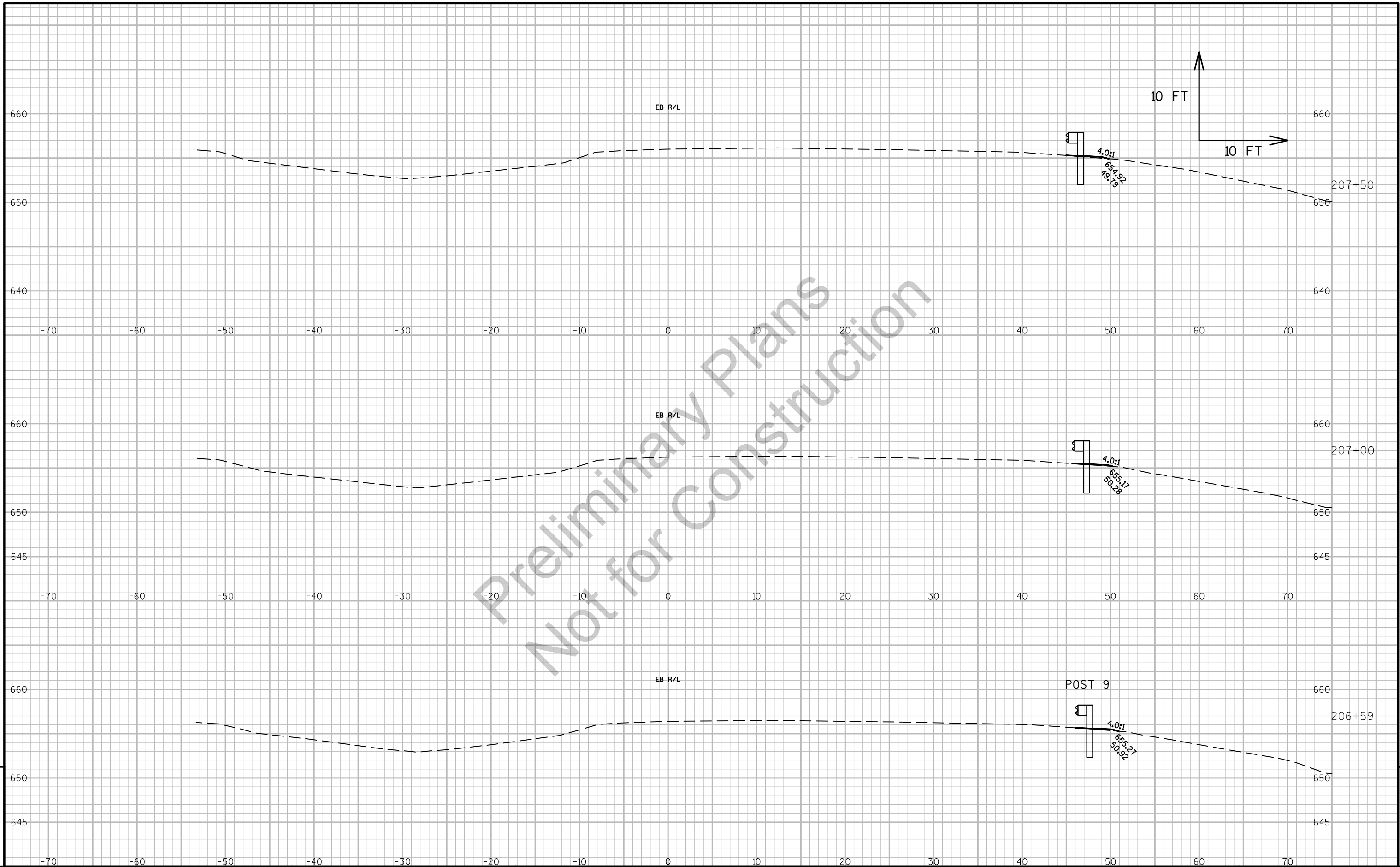
CROSS SECTIONS:IH 43 SB CD

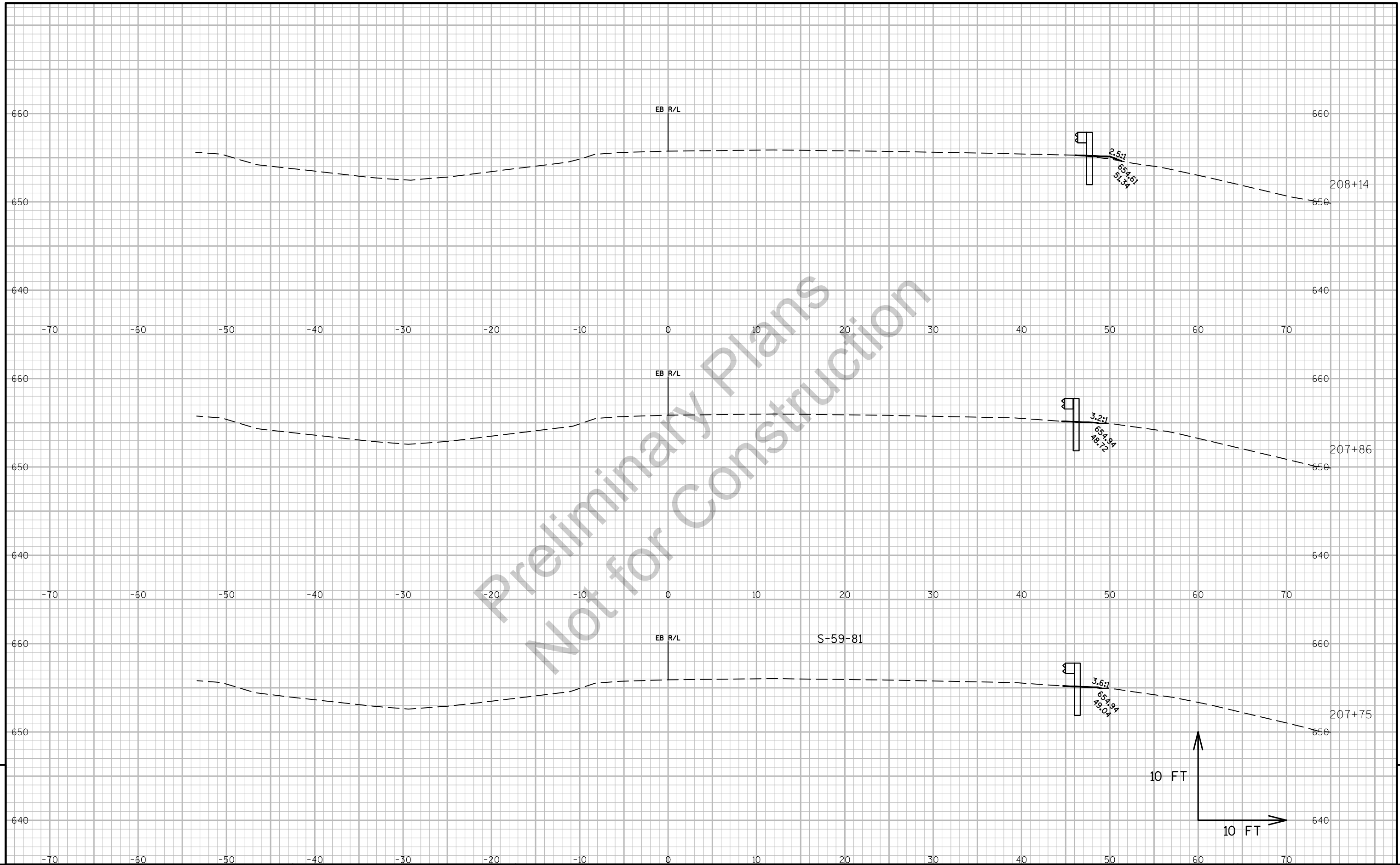
SHEET

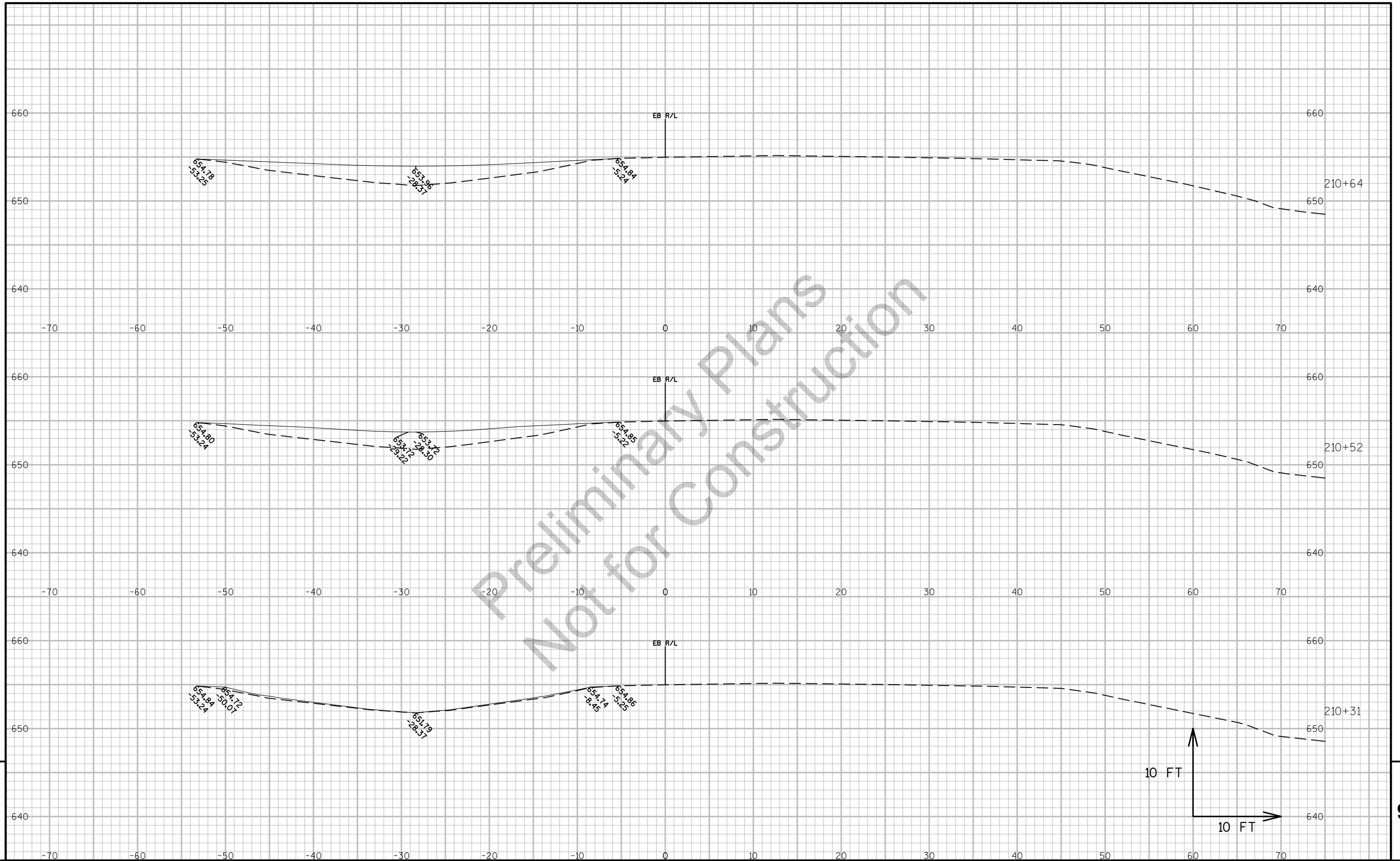
E





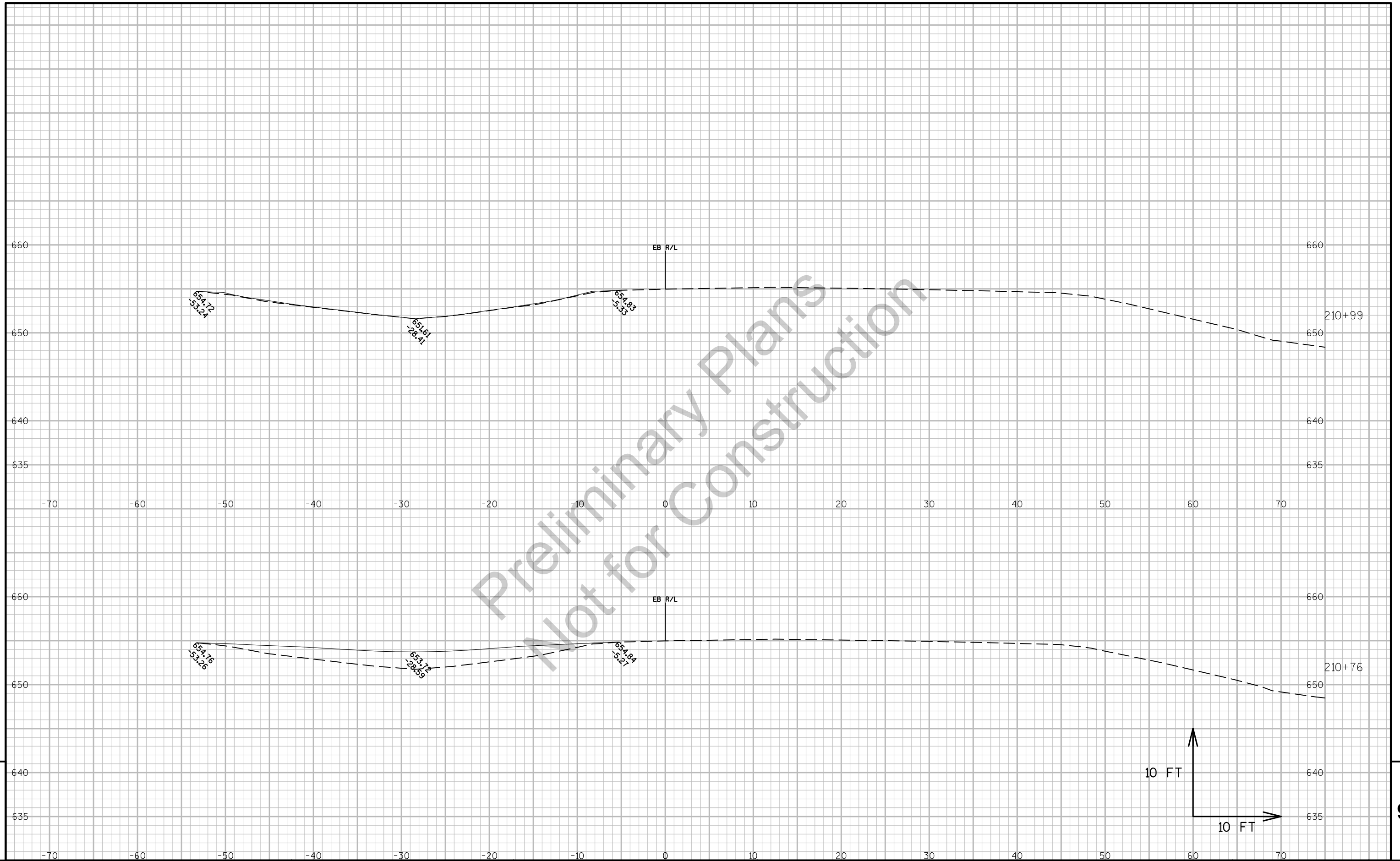


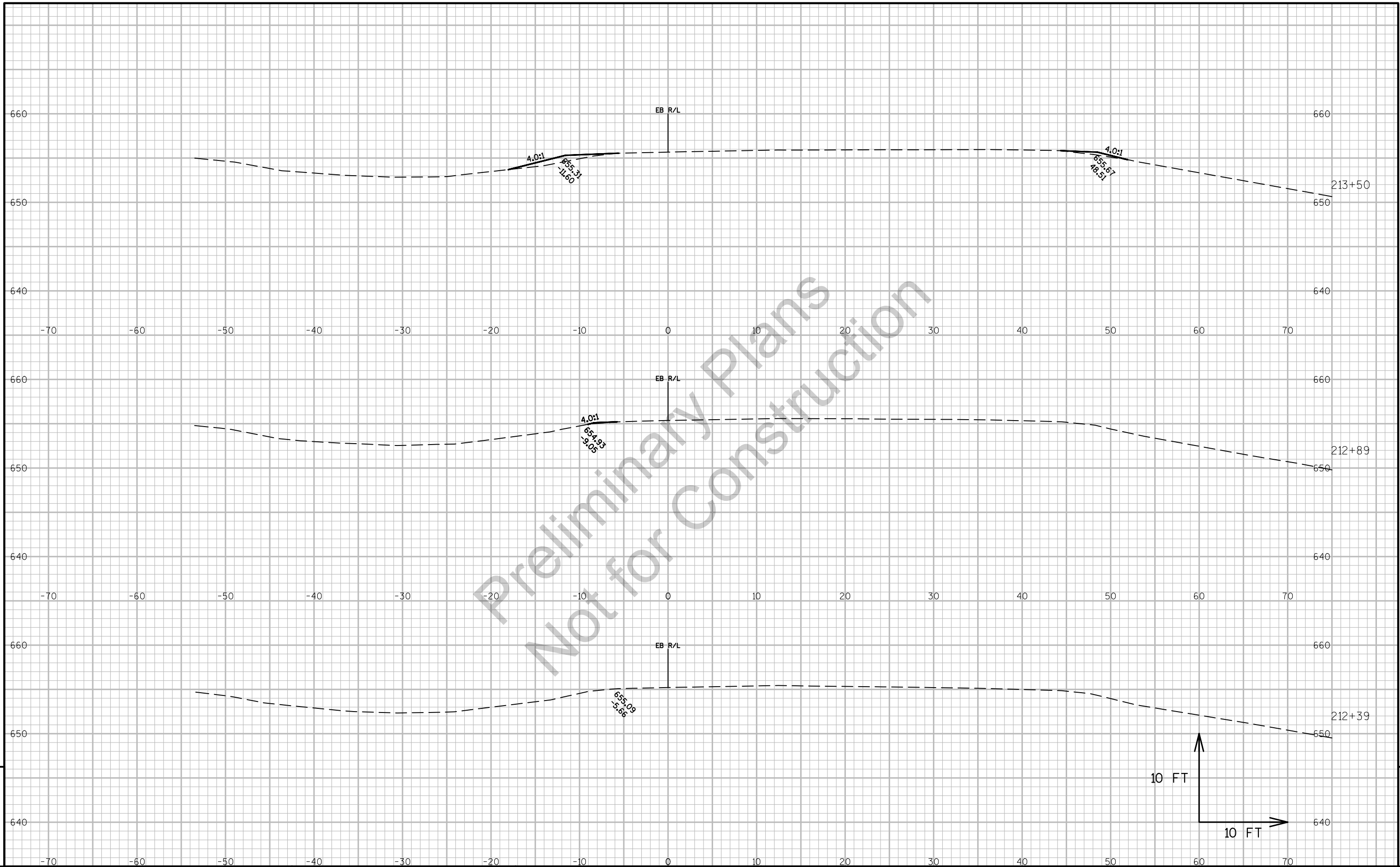




9

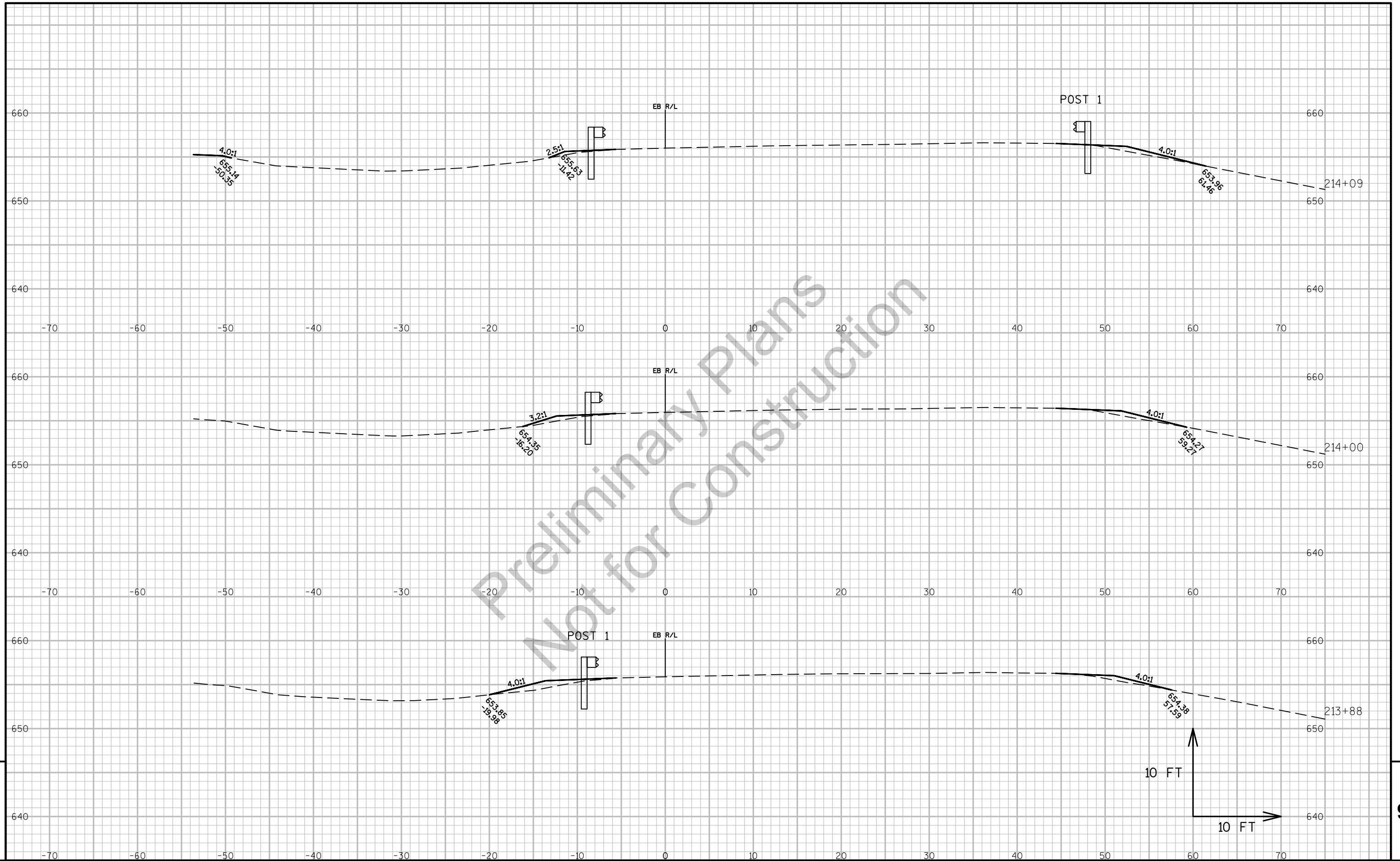
9

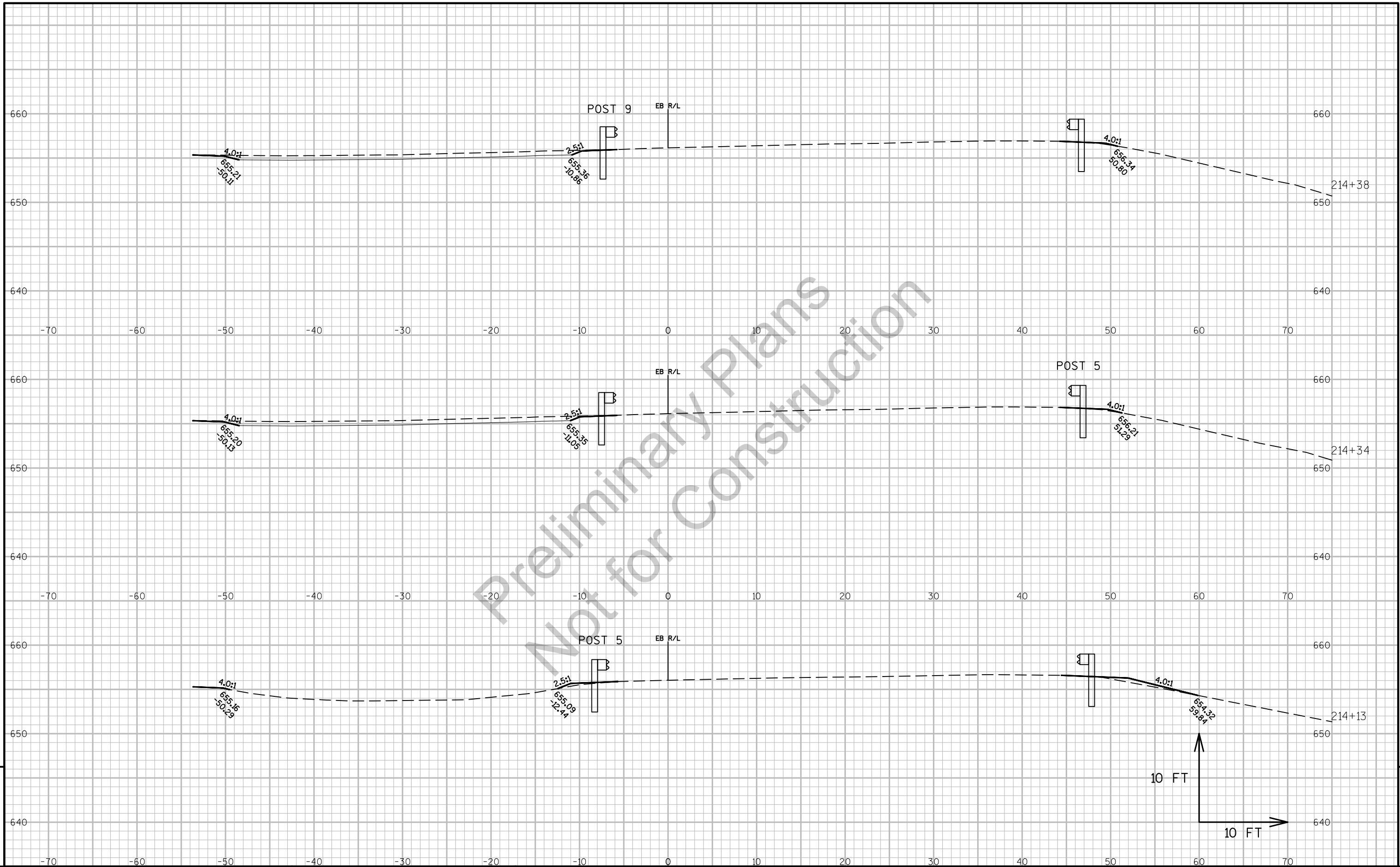


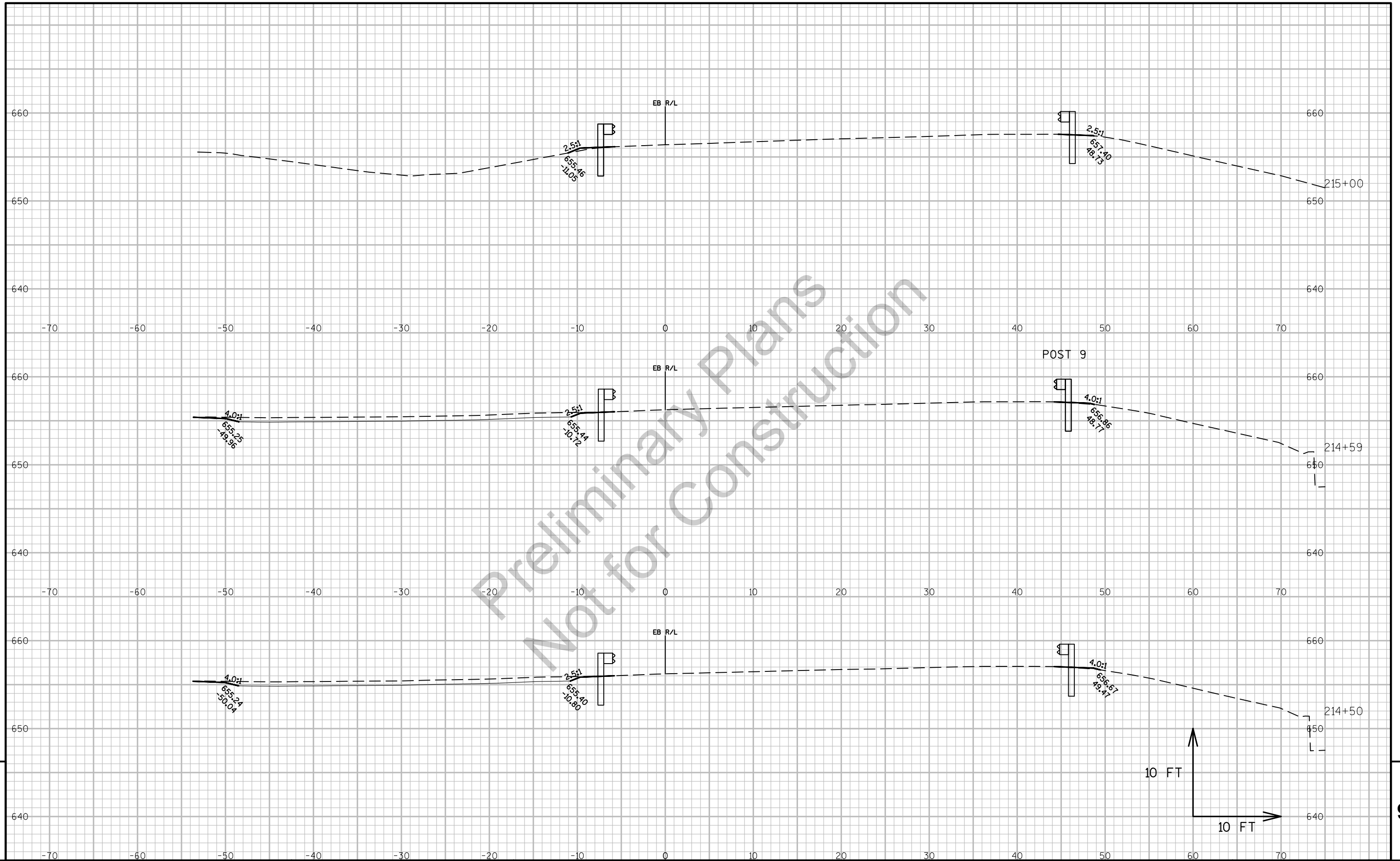


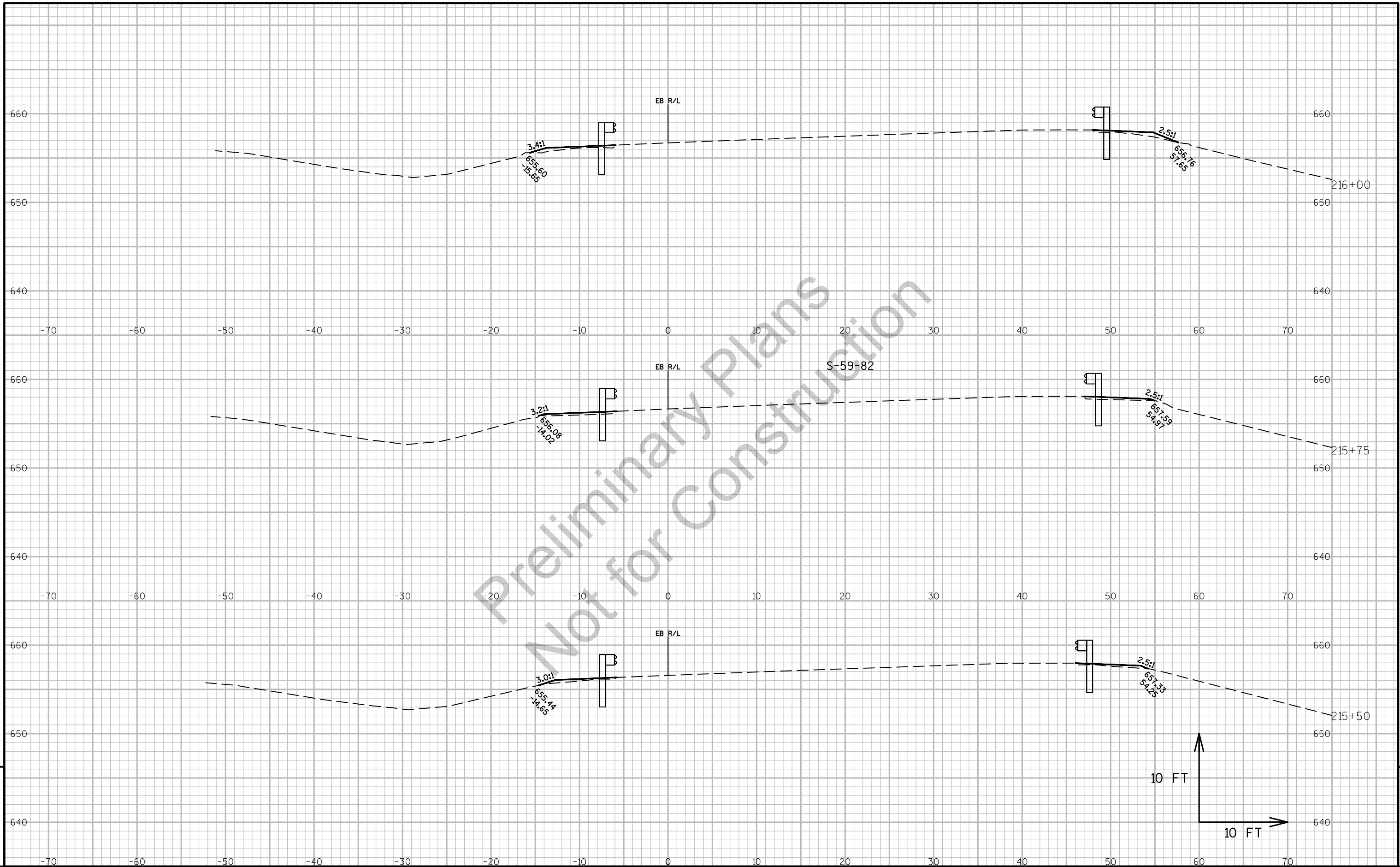
9

9



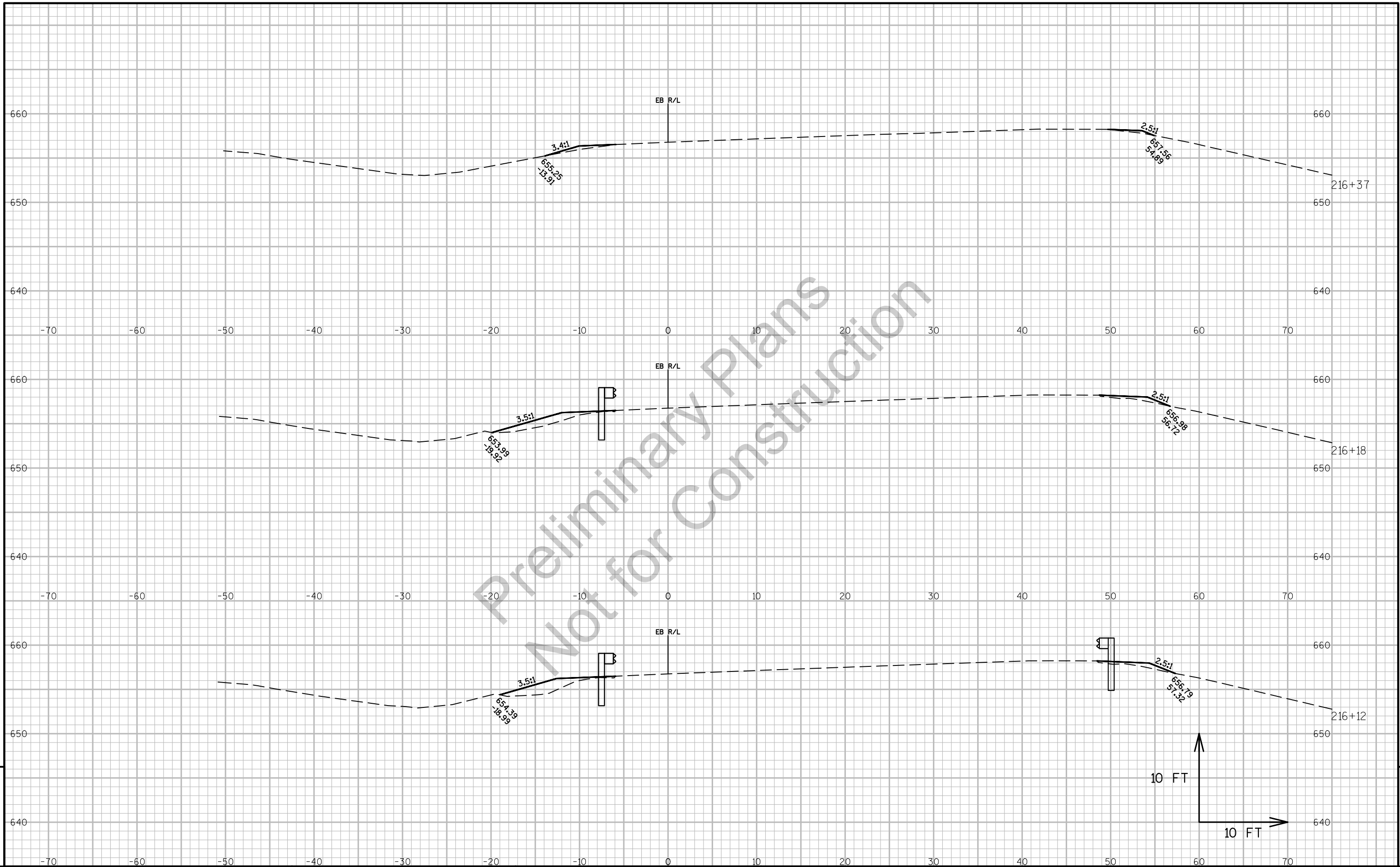






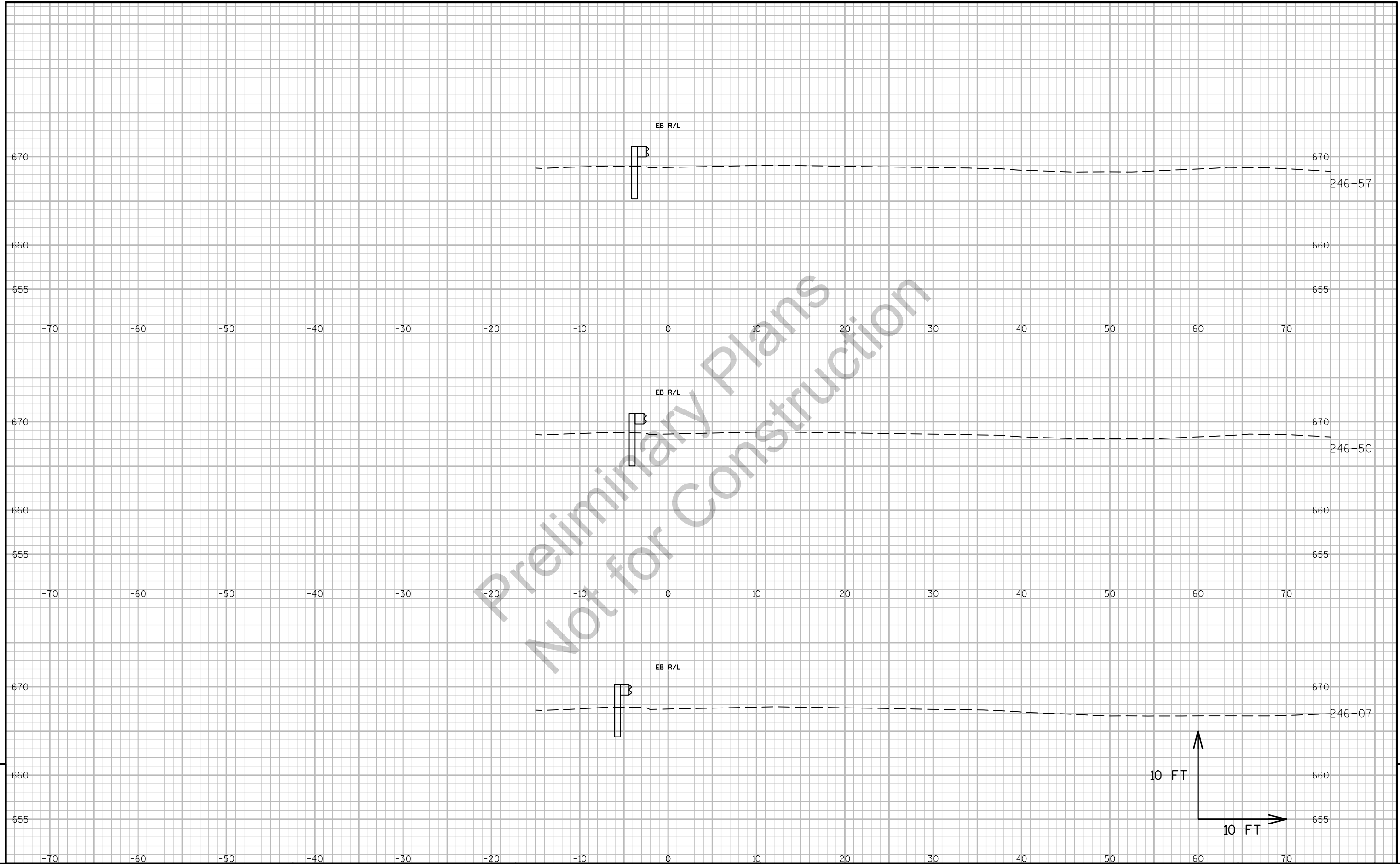
9

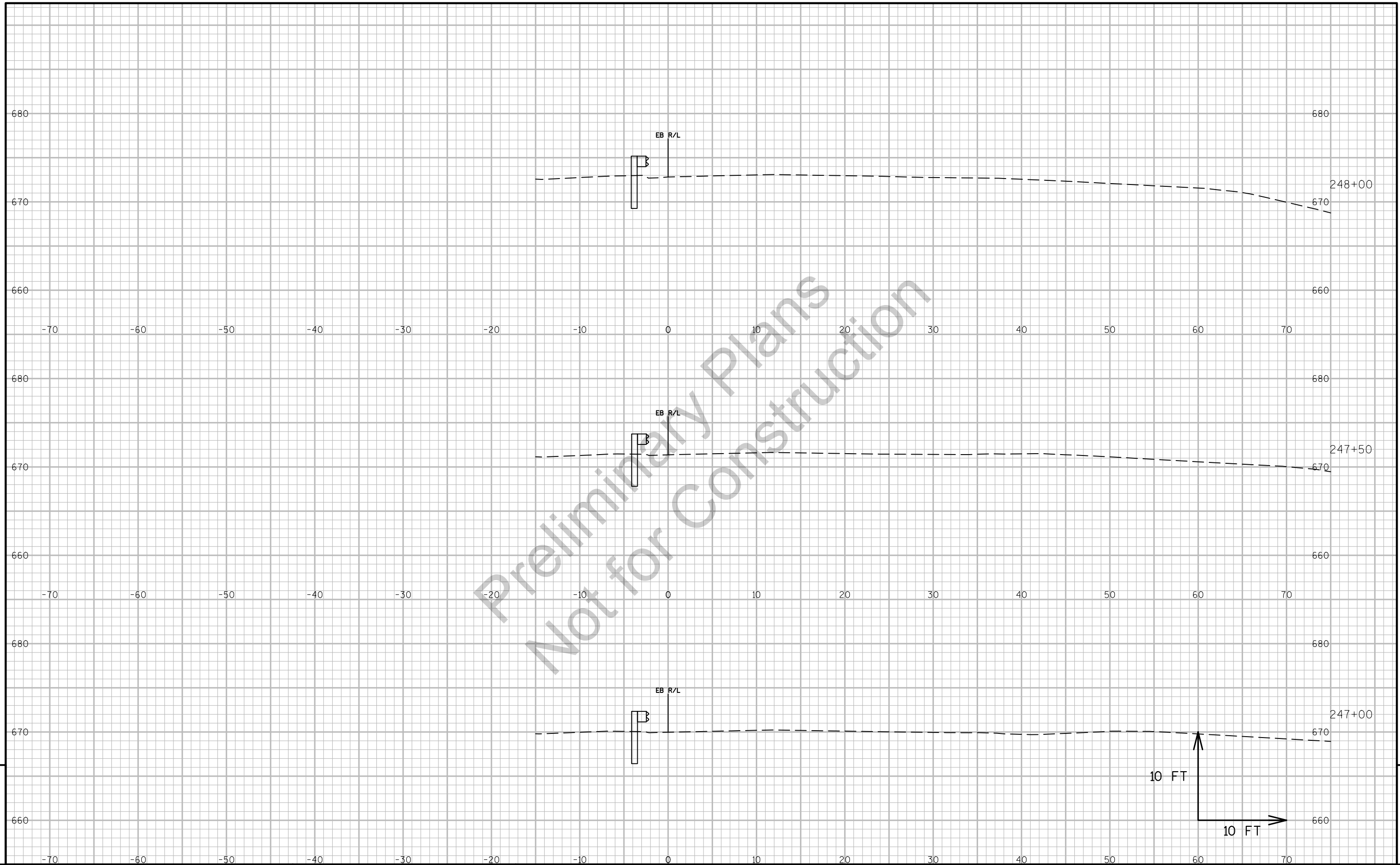
9



9

9

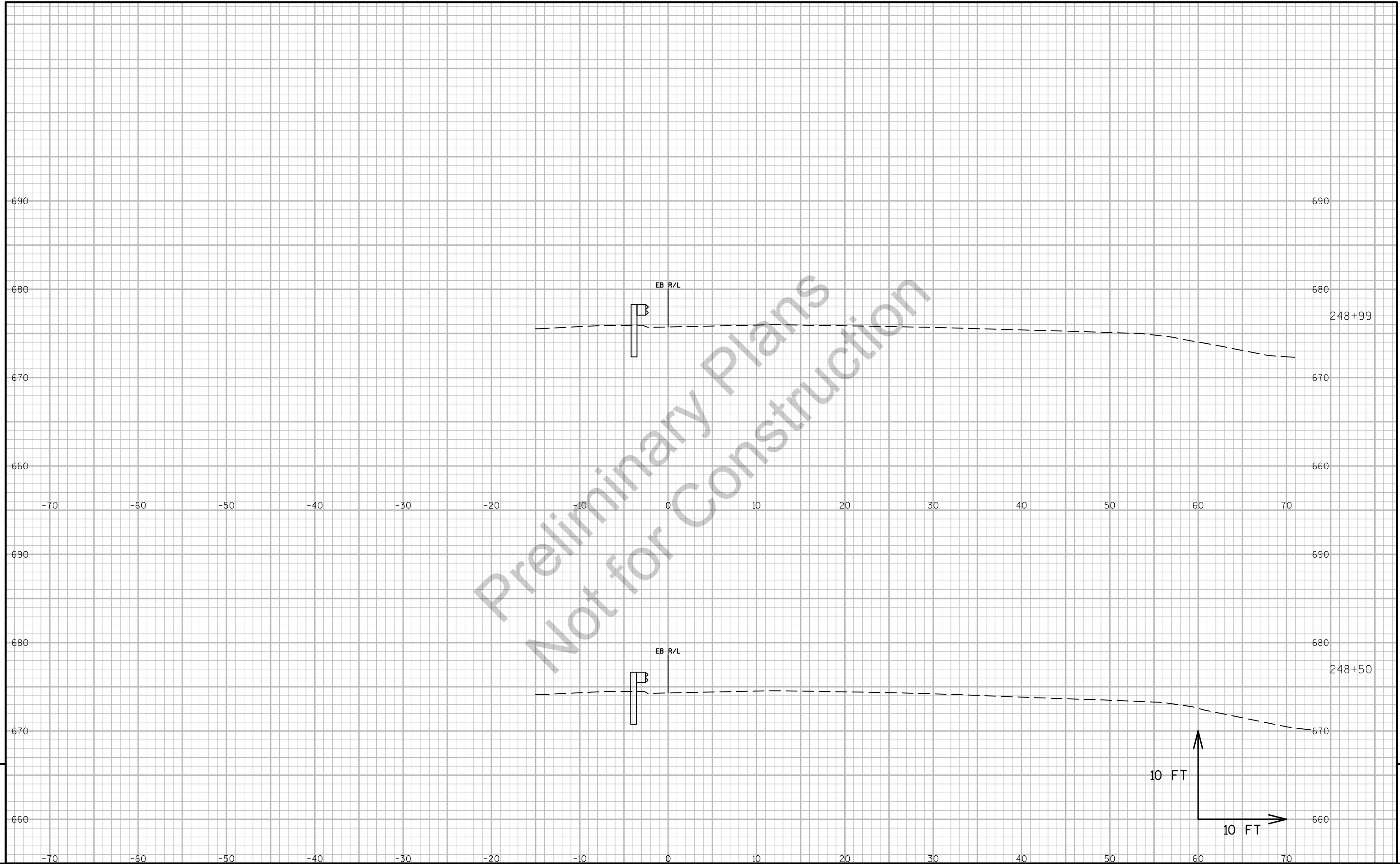




9

9

PROJECT NO:1225-08-73	HWY:IH 43	COUNTY:SHEBOYGAN	CROSS SECTIONS: STH 23 EB	SHEET	E
-----------------------	-----------	------------------	---------------------------	-------	---



9

9

PROJECT NO:1225-08-73

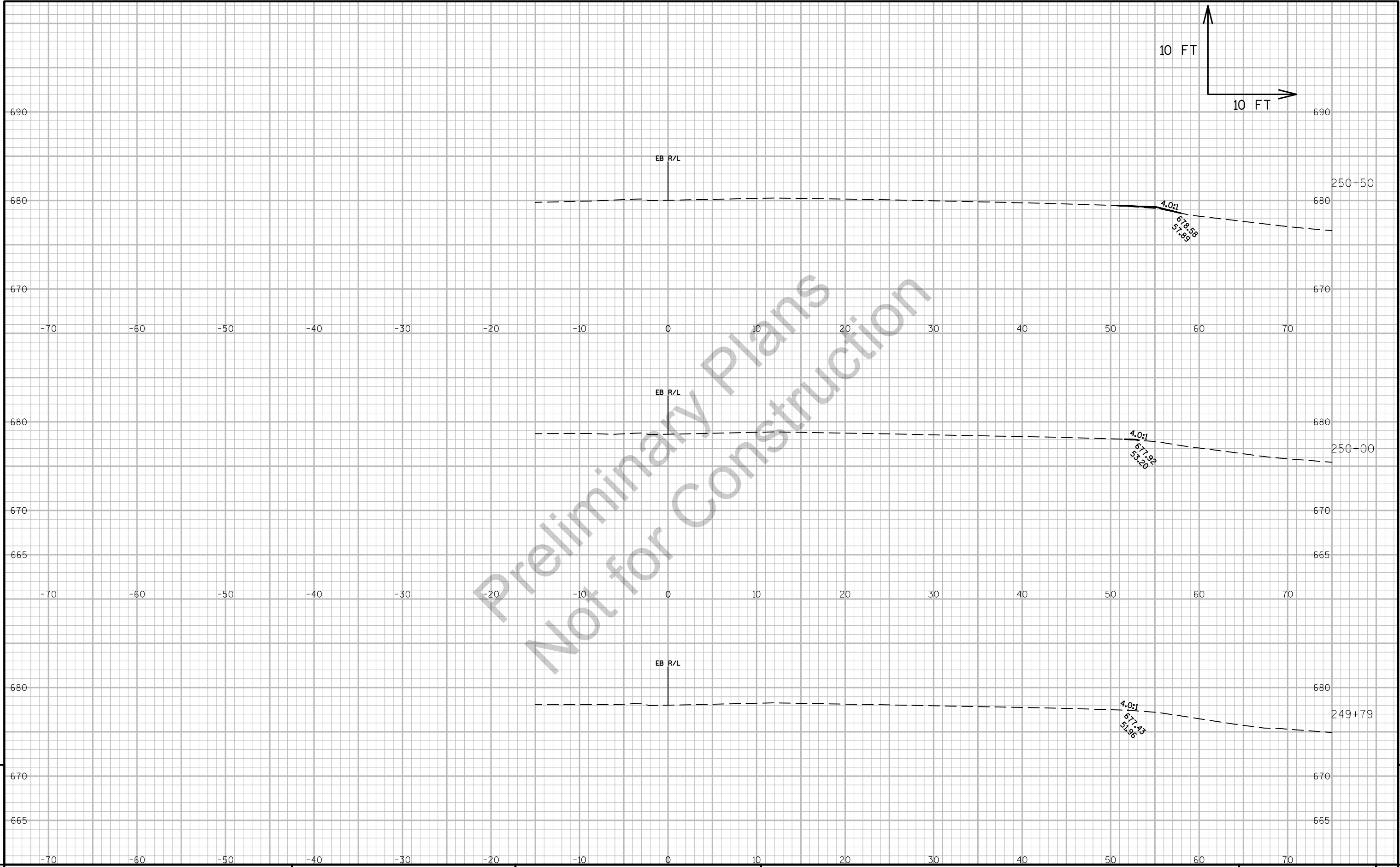
HWY:IH 43

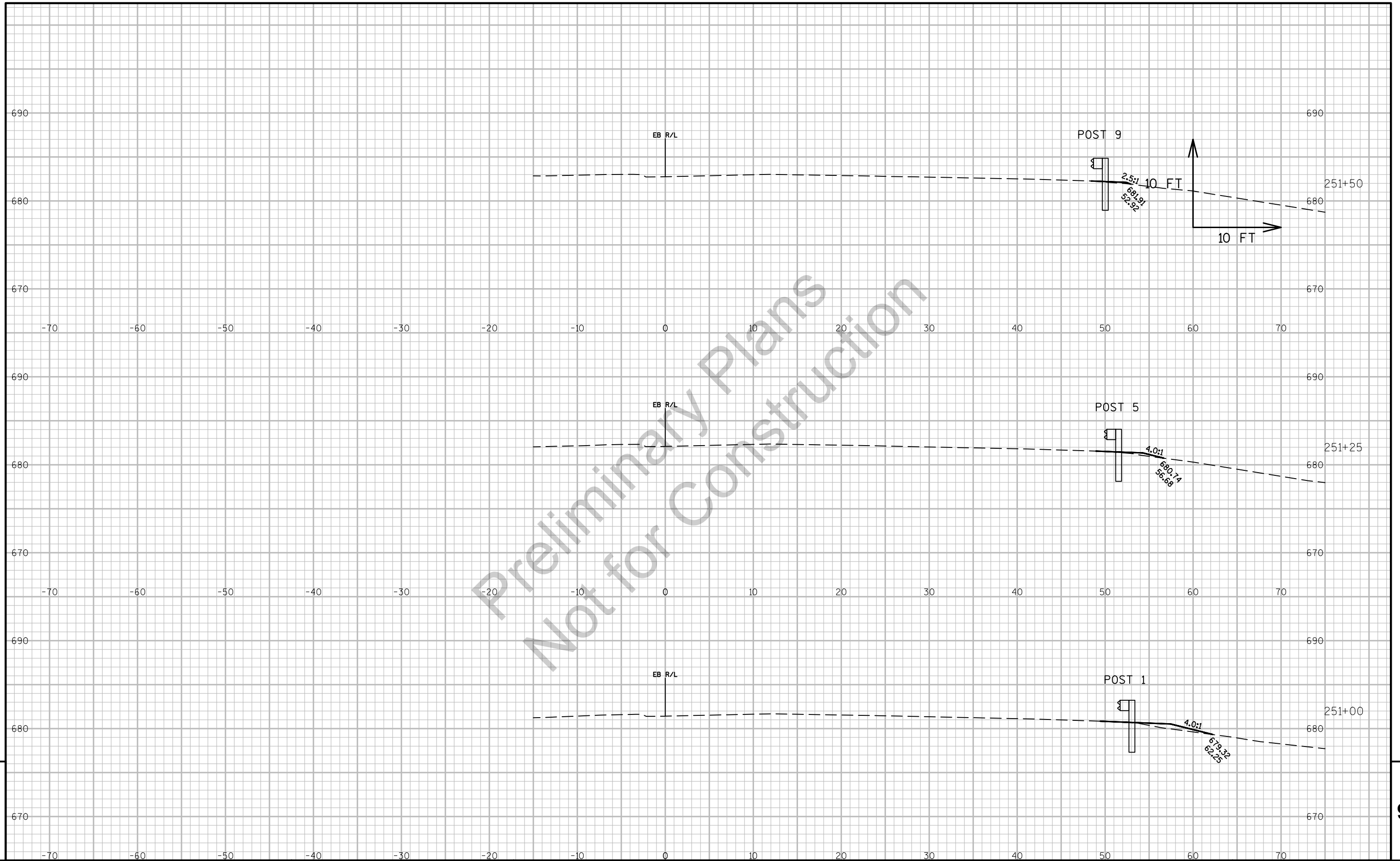
COUNTY:SHEBOYGAN

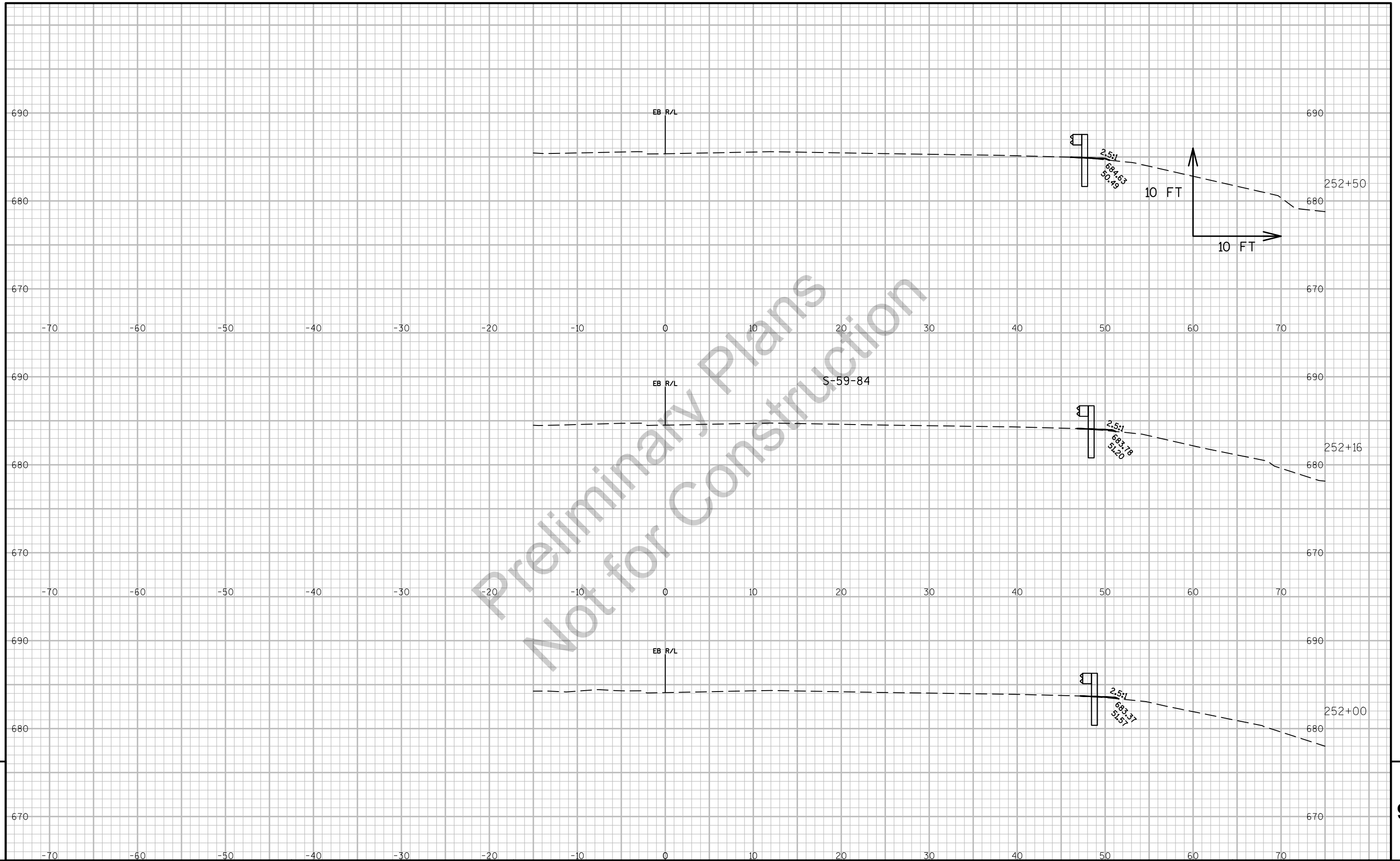
CROSS SECTIONS: STH 23 EB

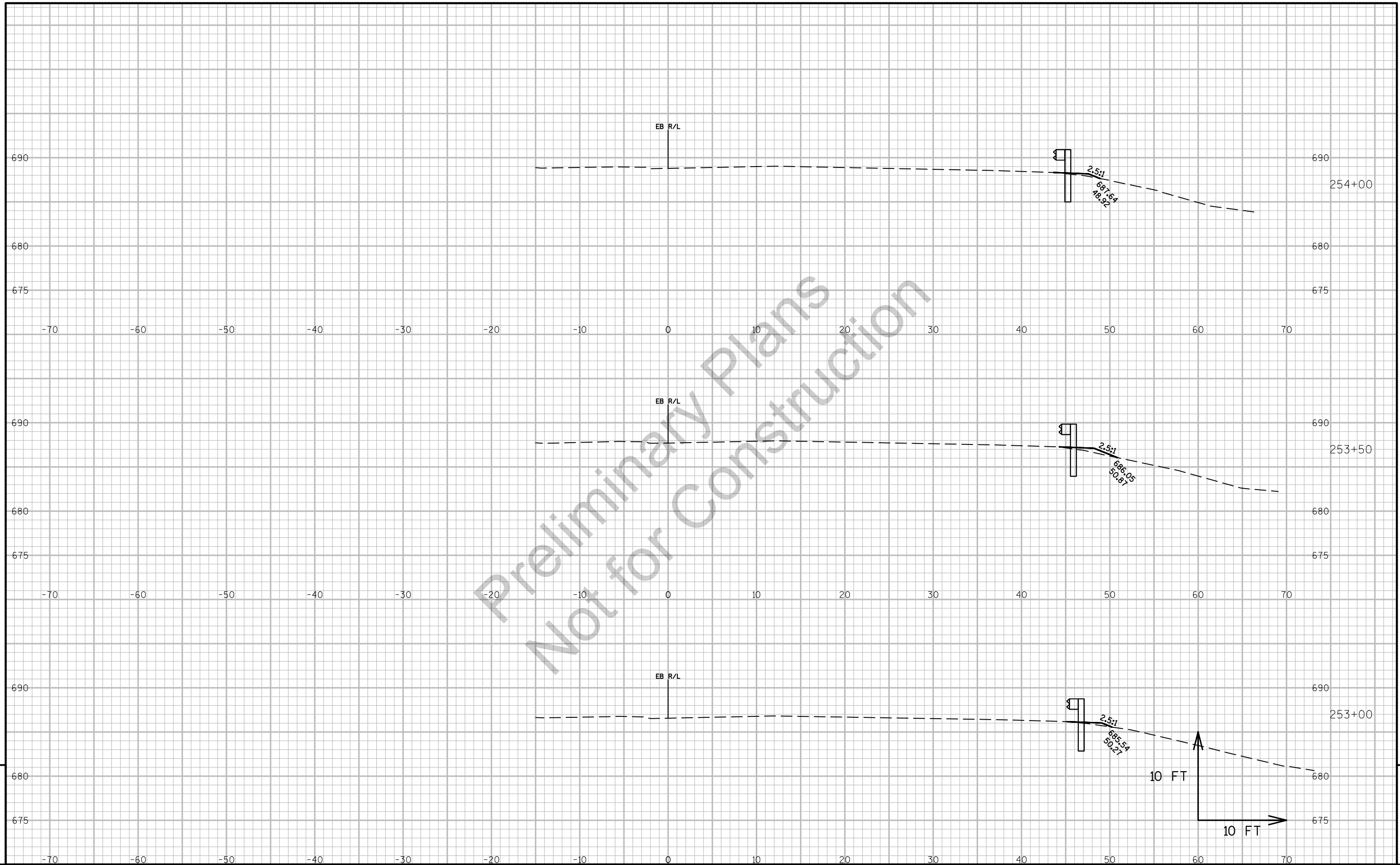
SHEET

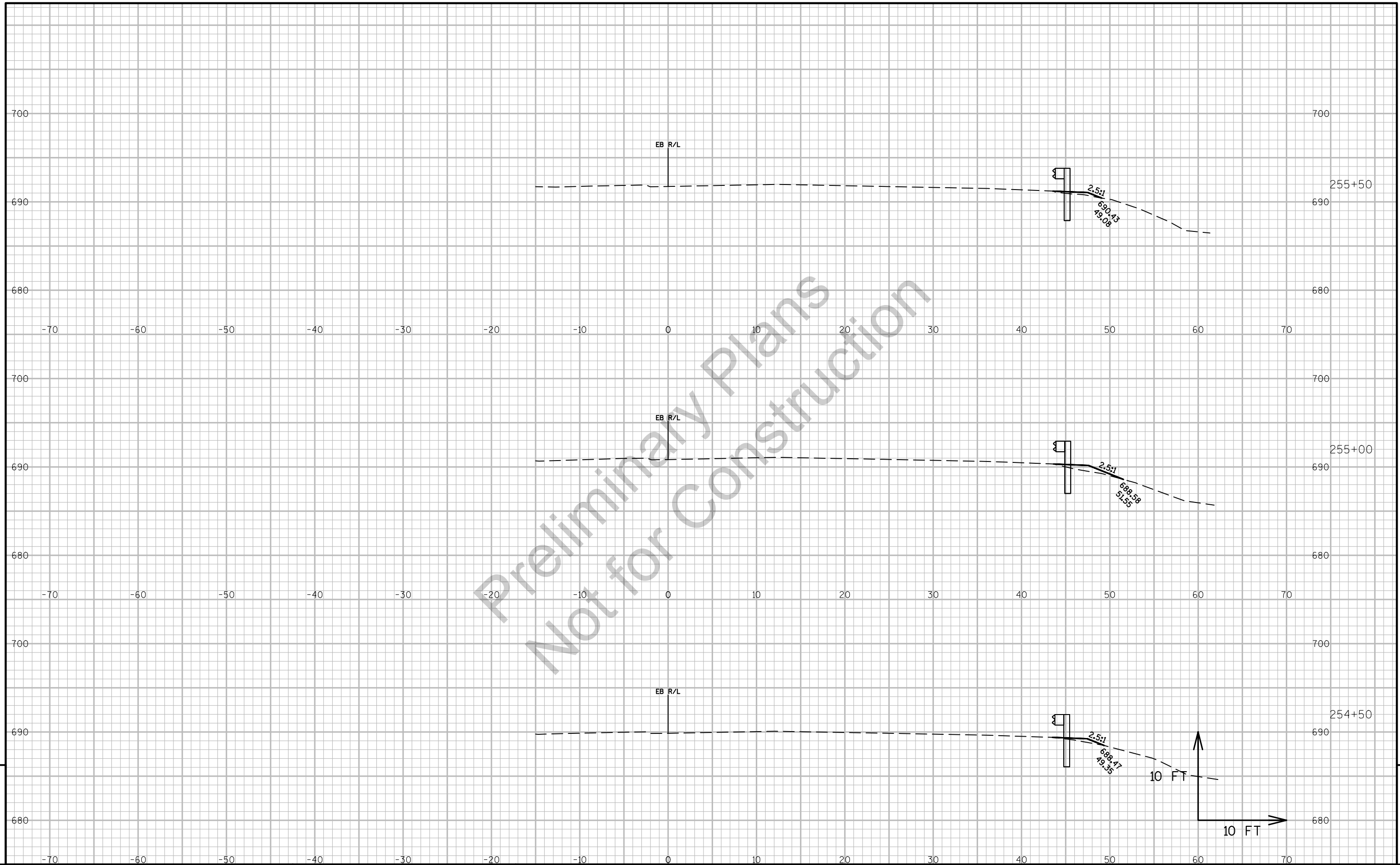
E

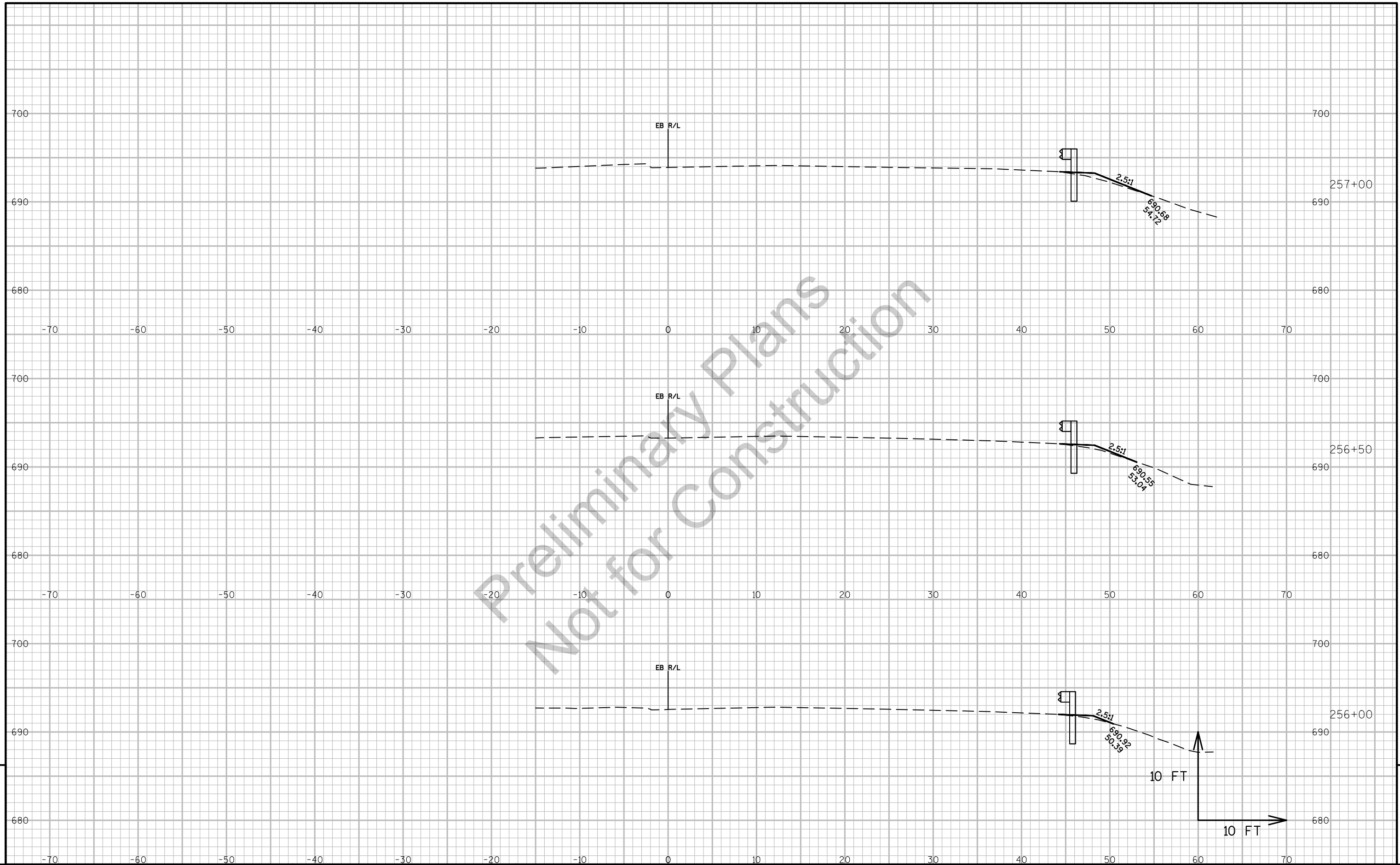








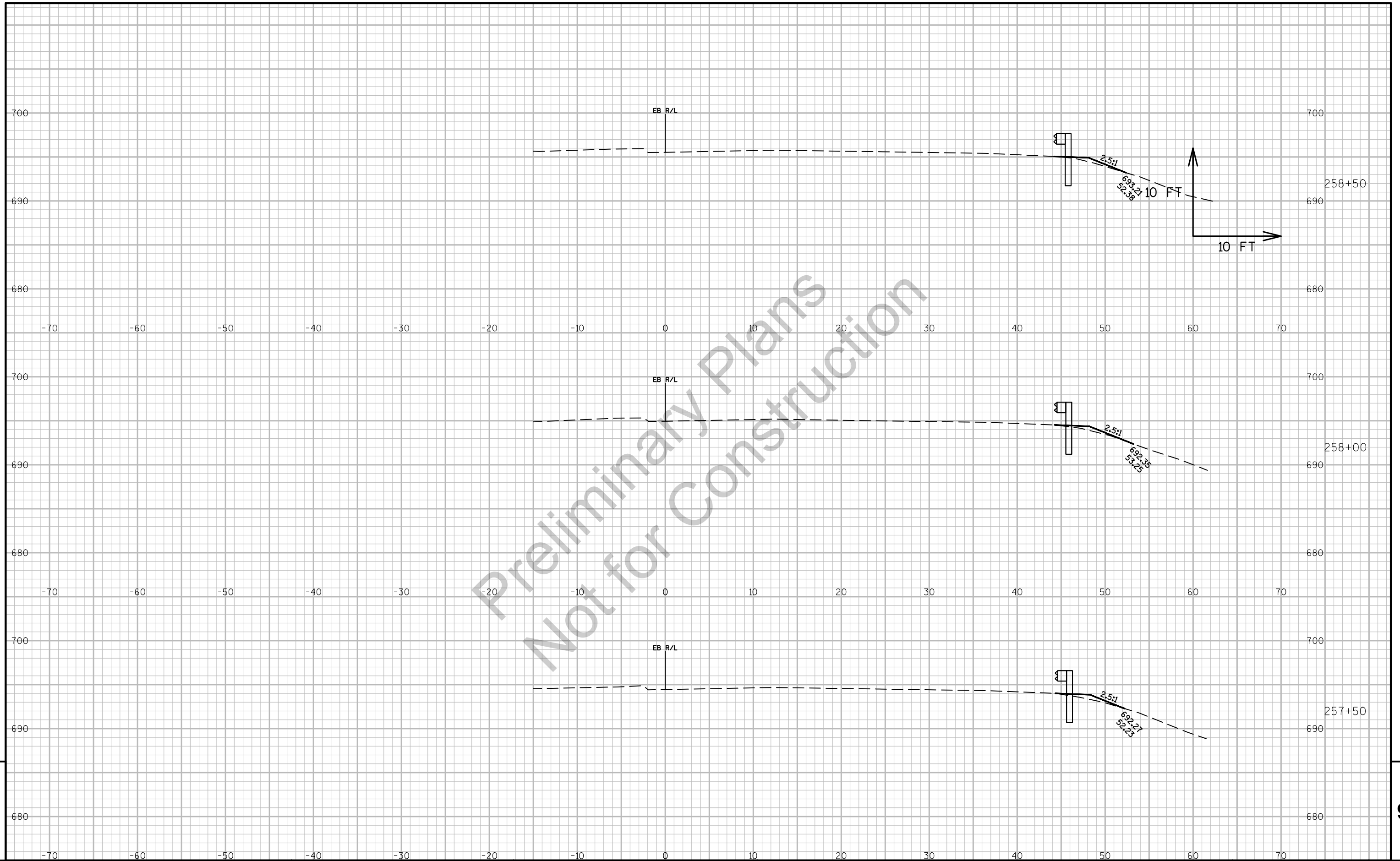


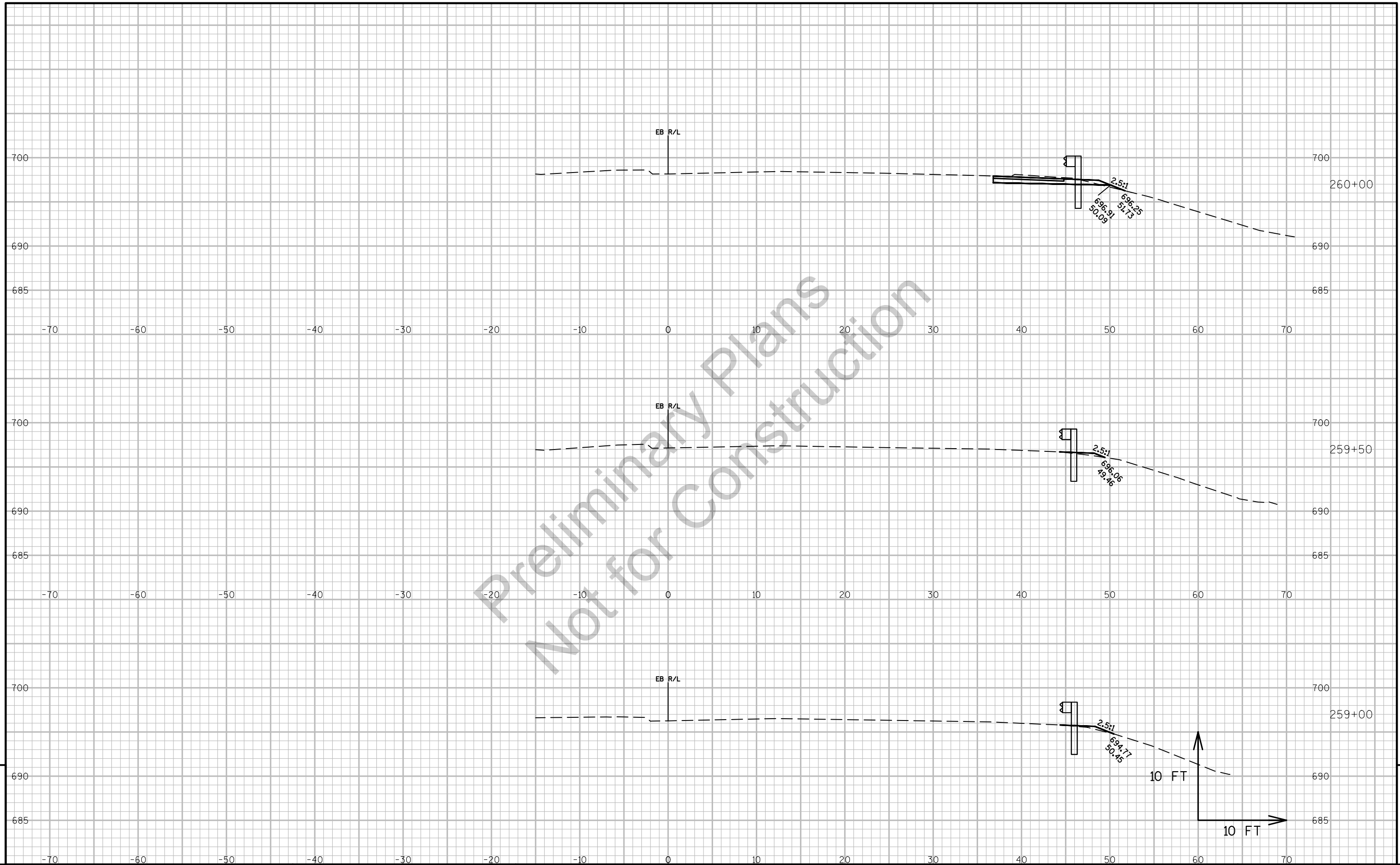


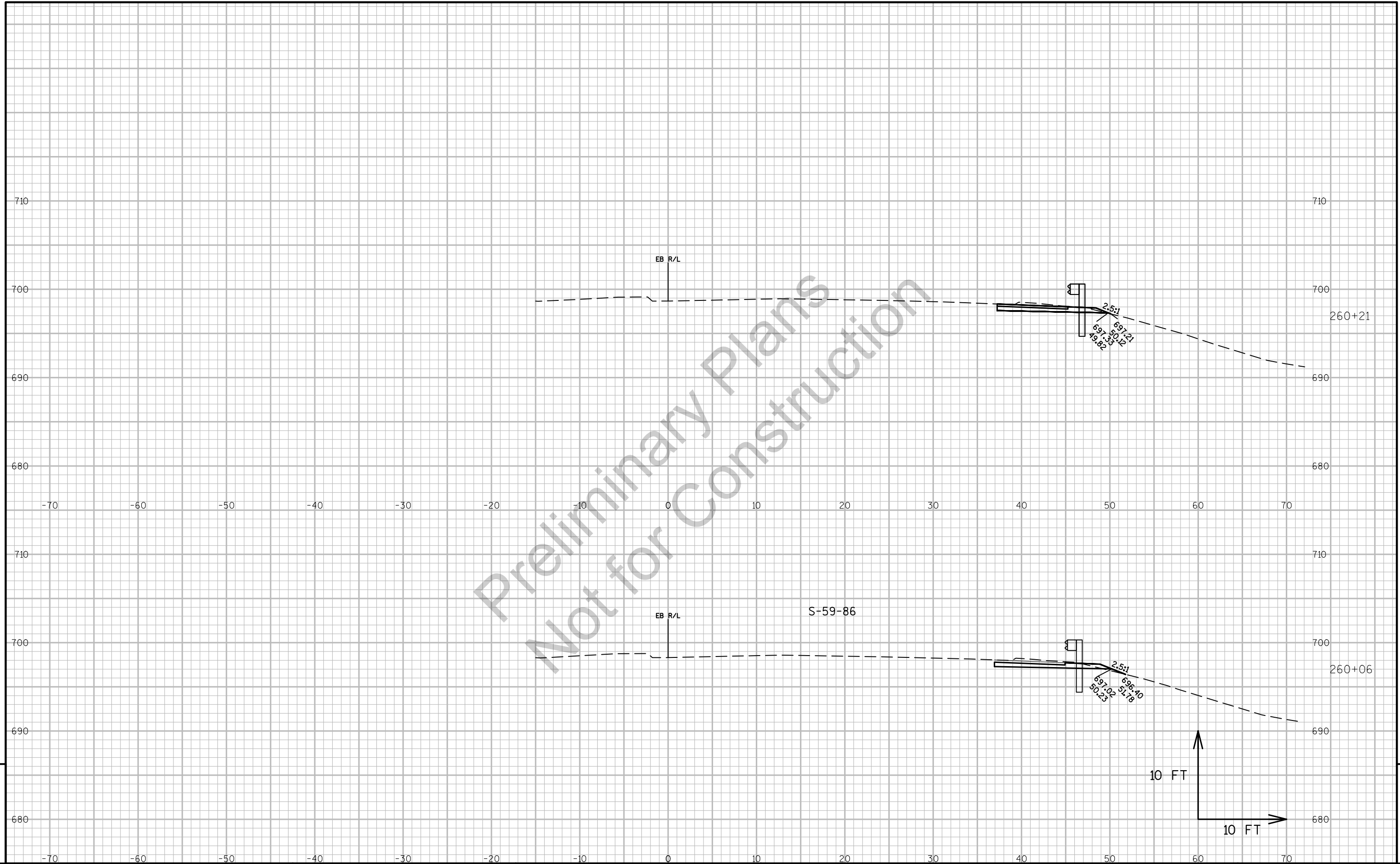
9

9

PROJECT NO:1225-08-73	HWY:IH 43	COUNTY:SHEBOYGAN	CROSS SECTIONS: STH 23 EB	SHEET	E
-----------------------	-----------	------------------	---------------------------	-------	---







9

9

PROJECT NO:1225-08-73

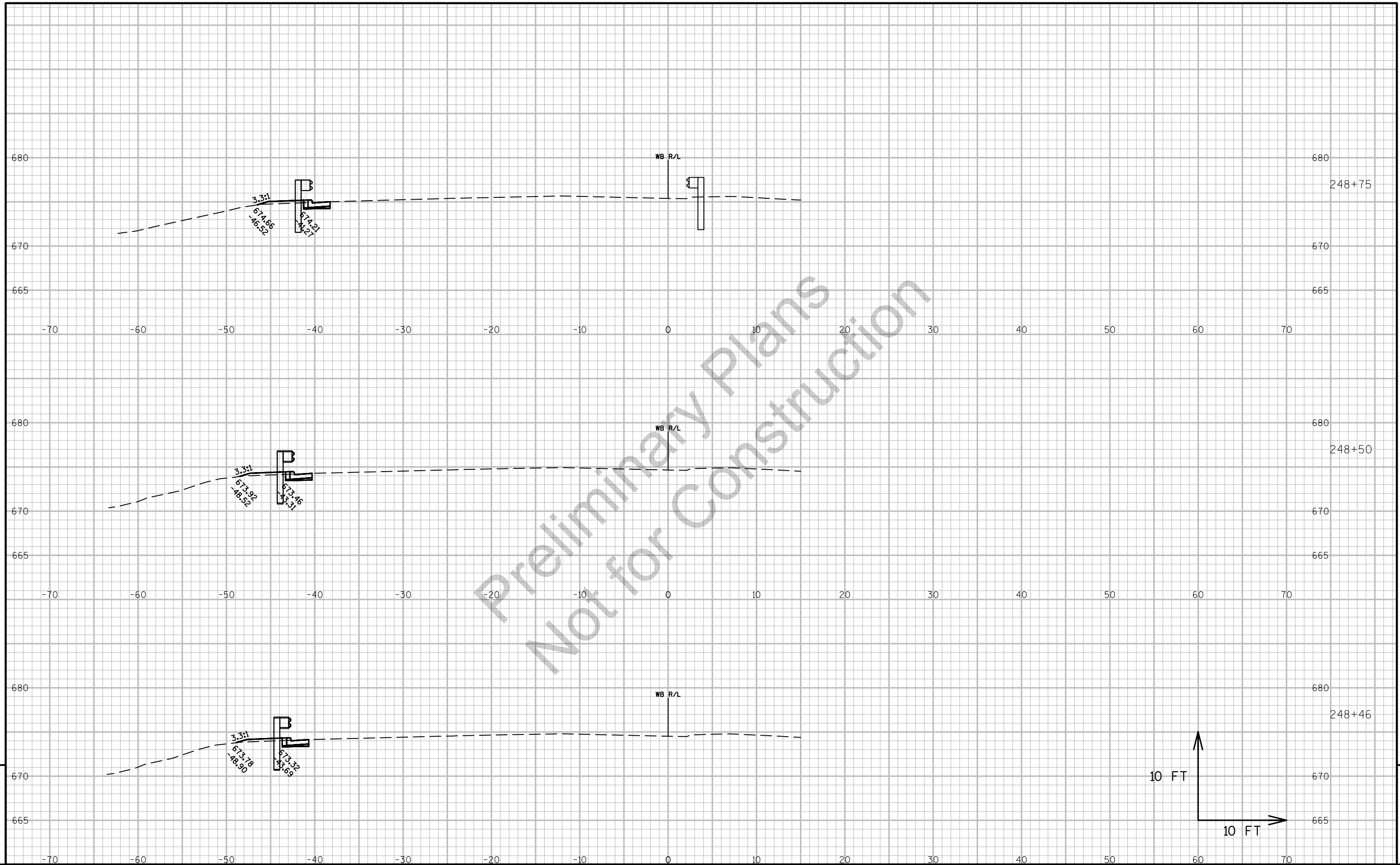
HWY:IH 43

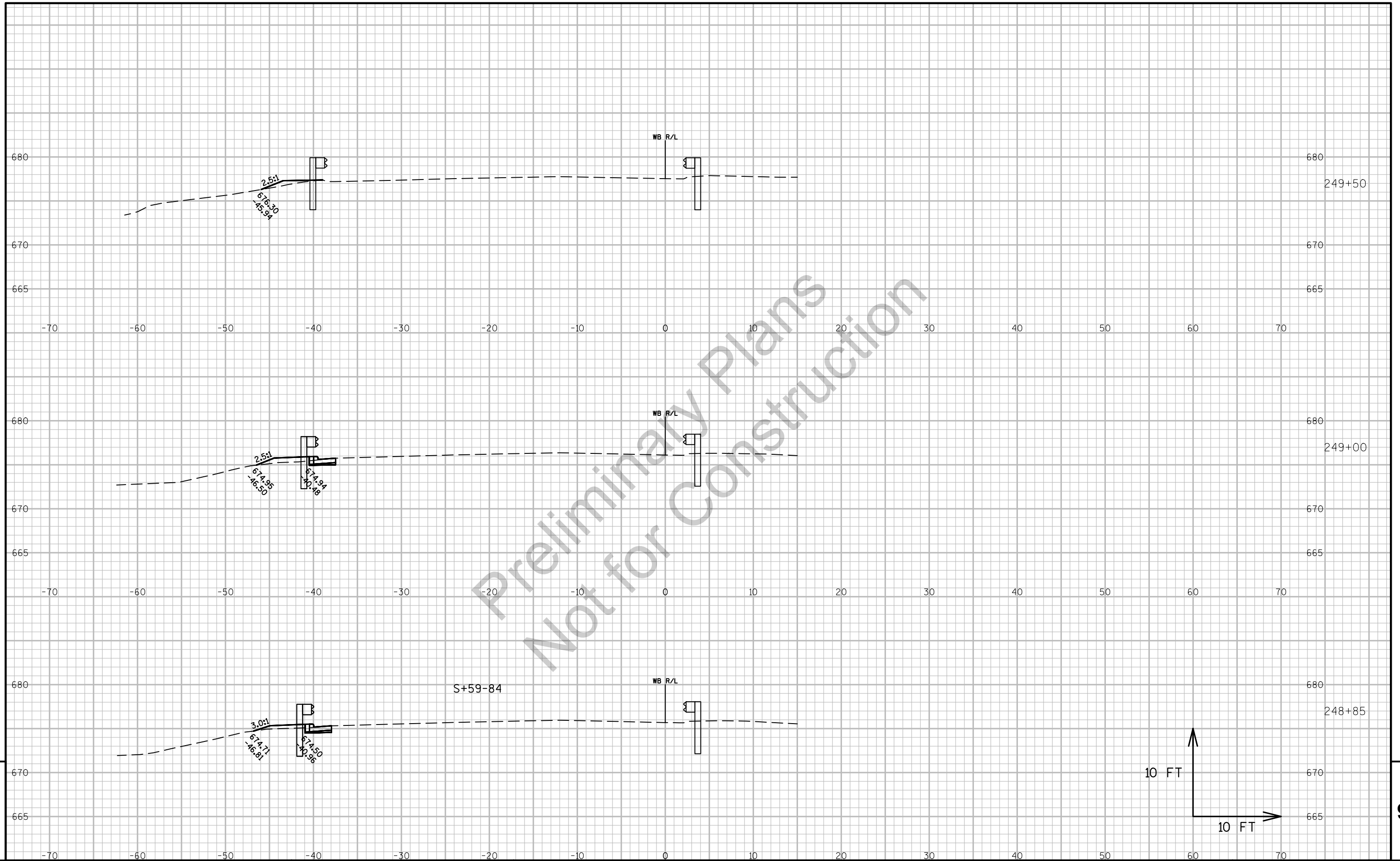
COUNTY:SHEBOYGAN

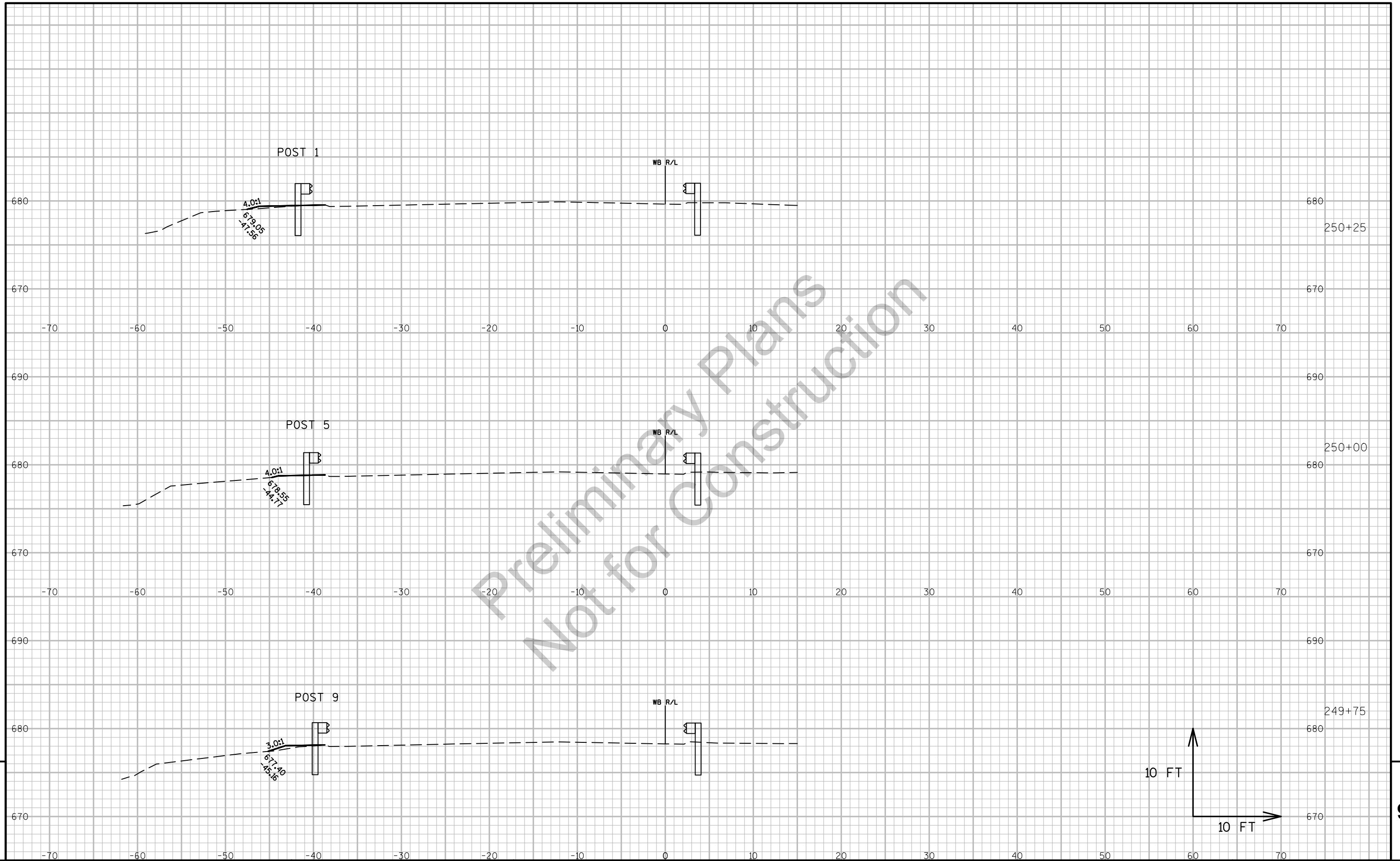
CROSS SECTIONS: STH 23 EB

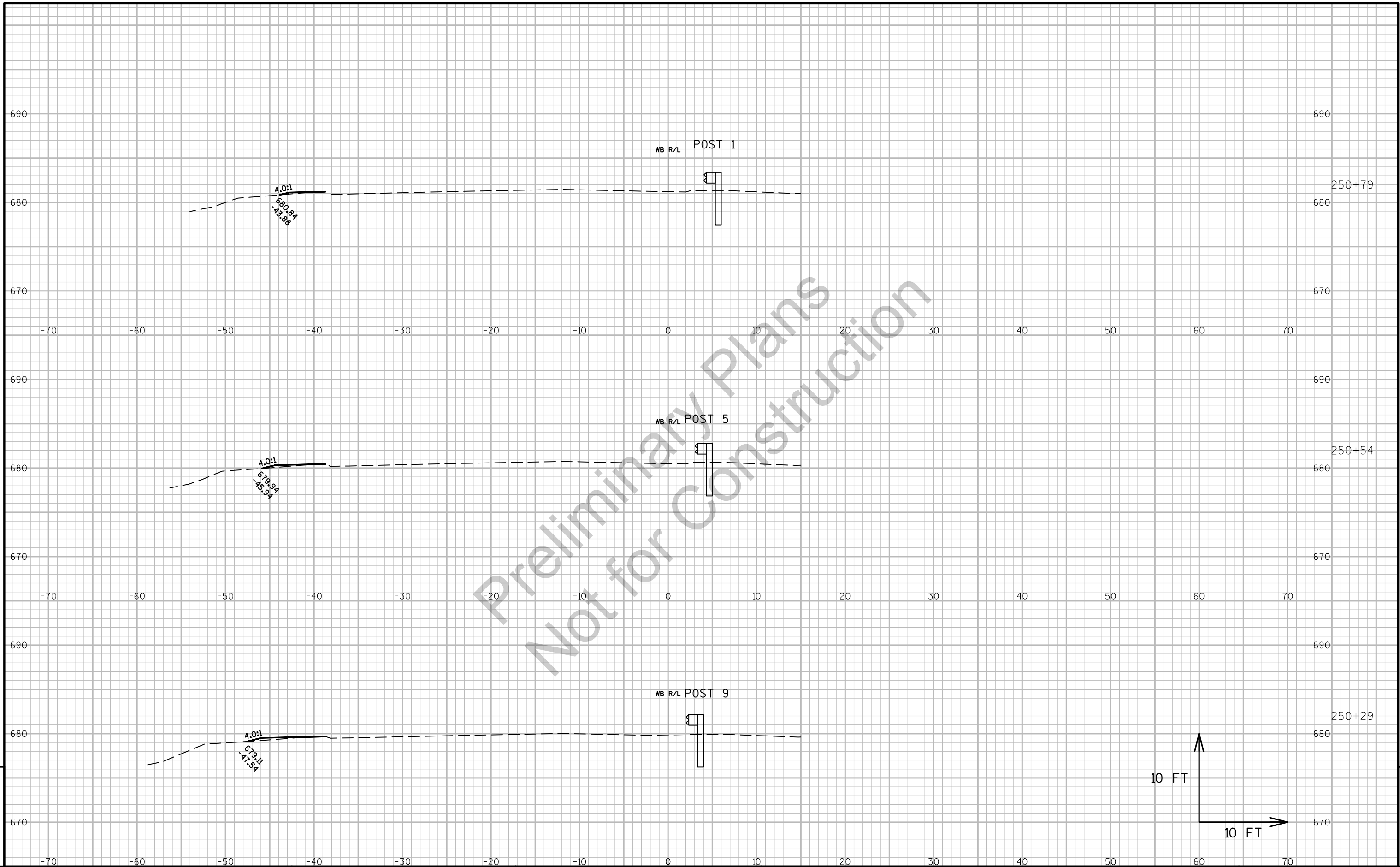
SHEET

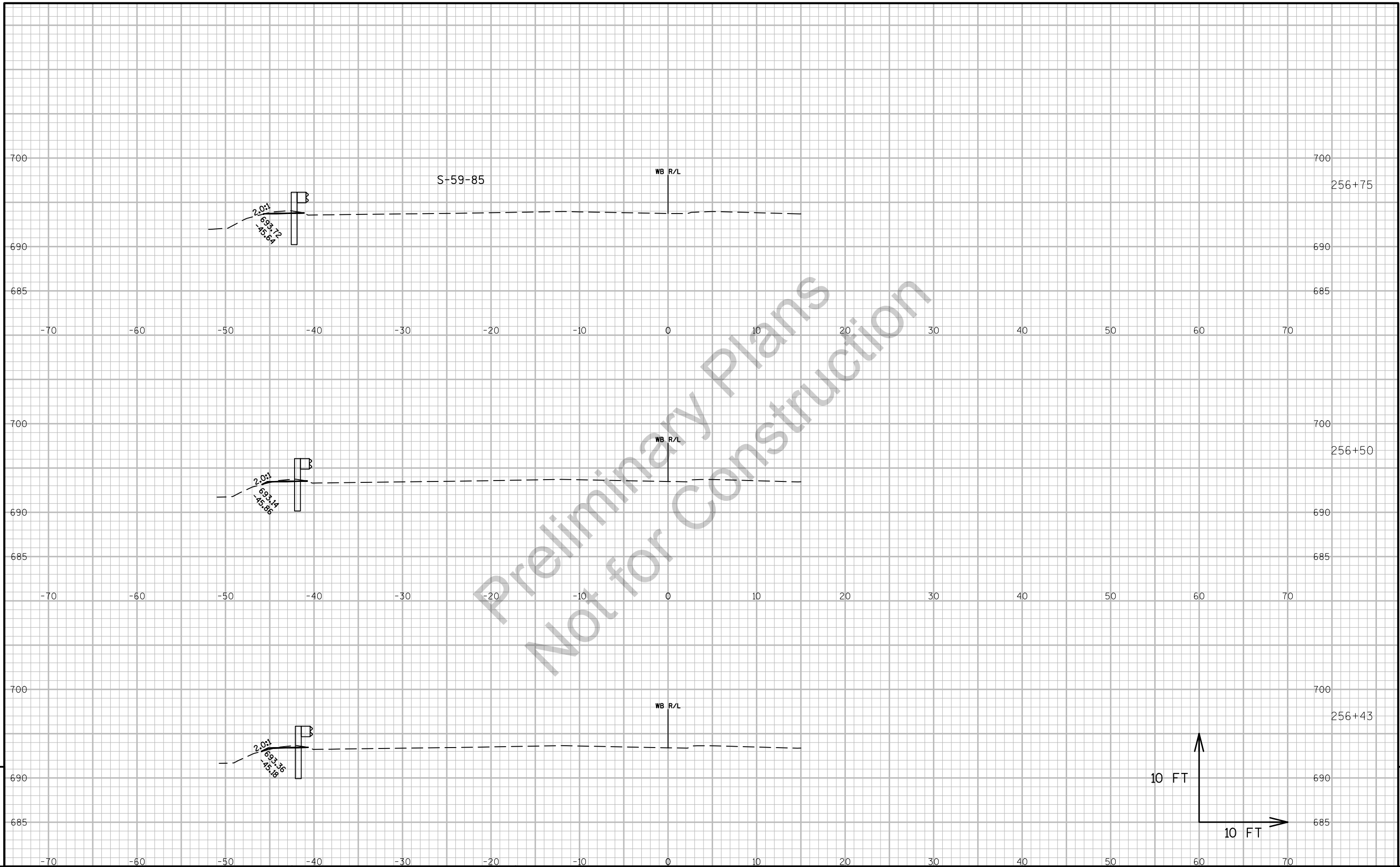
E

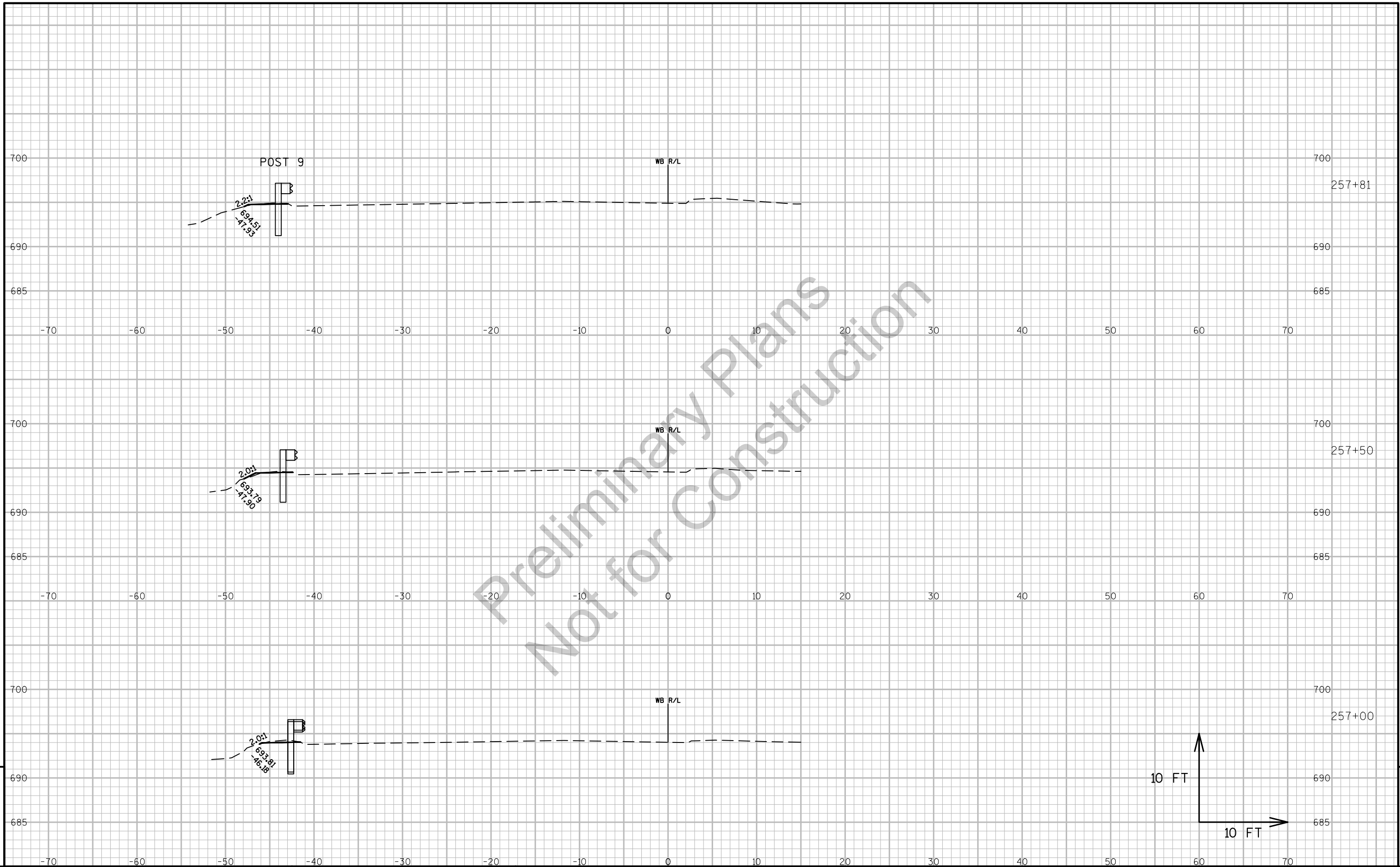


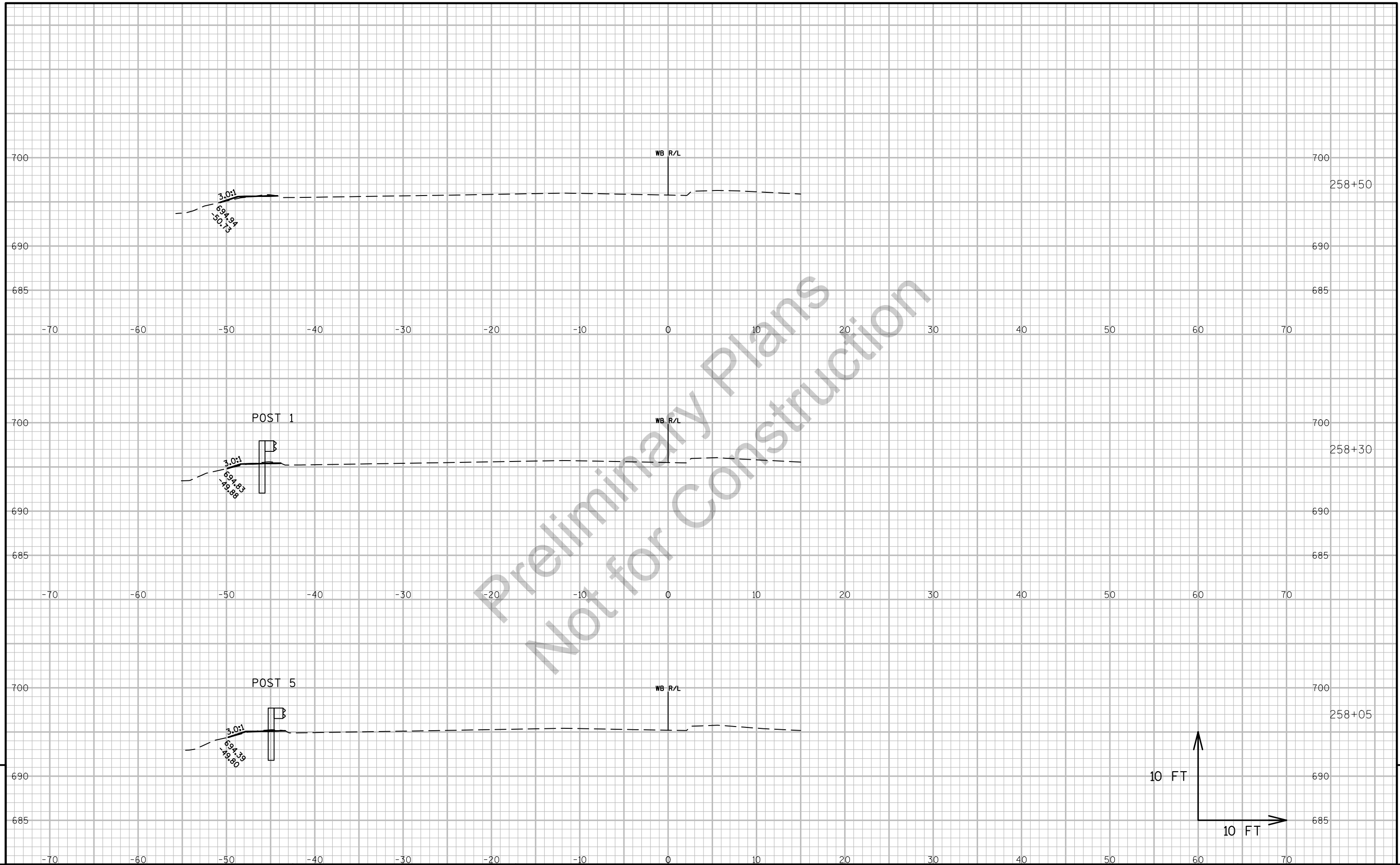




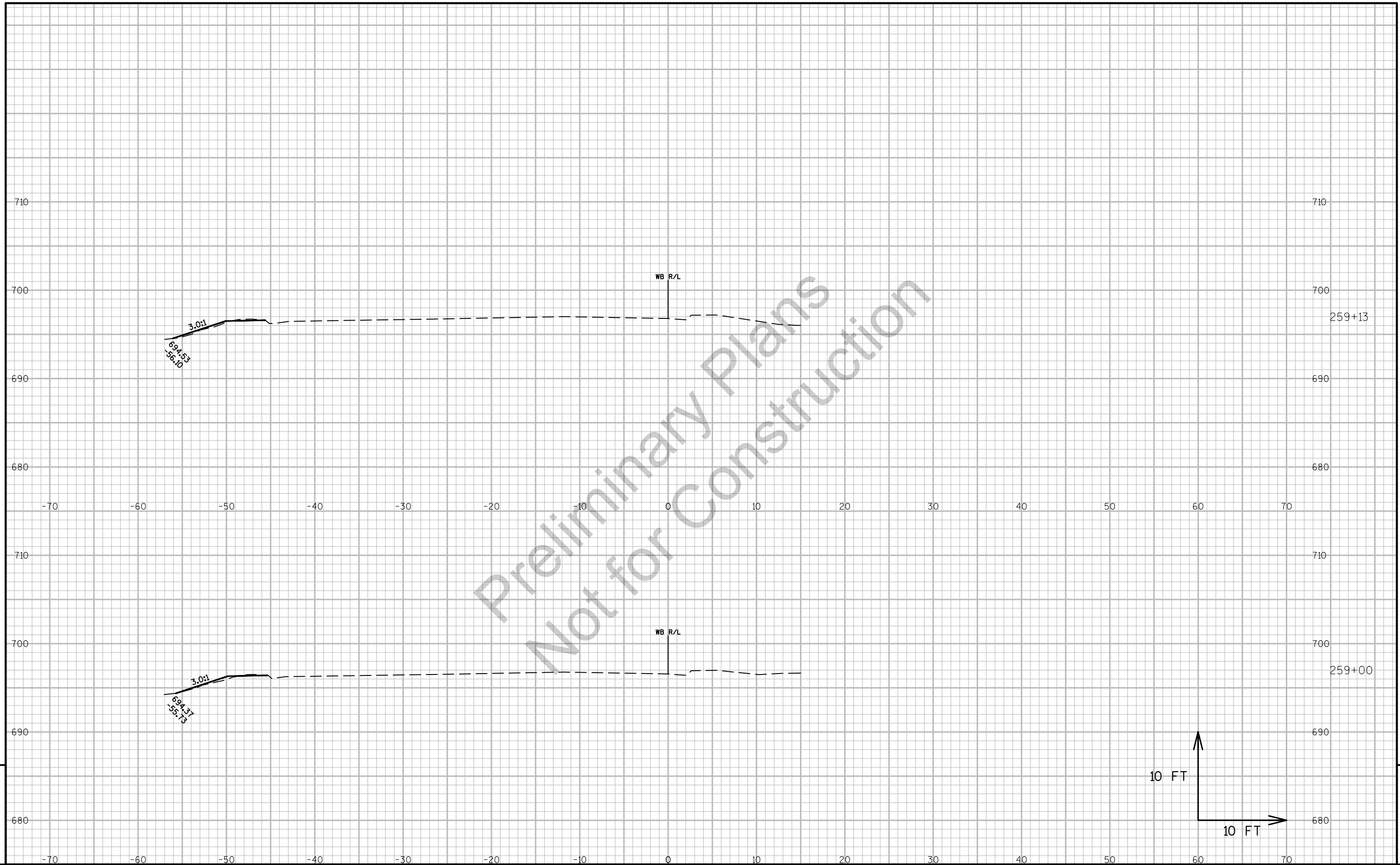








PROJECT NO:1225-08-73	HWY:IH 43	COUNTY:SHEBOYGAN	CROSS SECTIONS: STH 23 WB	SHEET	E
-----------------------	-----------	------------------	---------------------------	-------	---



9

9

PROJECT NO:1225-08-73	HWY:IH 43	COUNTY:SHEBOYGAN	CROSS SECTIONS: STH 23 WB	SHEET	E
-----------------------	-----------	------------------	---------------------------	-------	---

EPlans Preliminary Sheet Numbering Tool

This sheet: ftp://ftp.dot.state.wi.us/transp/roads/eplans/prelim_sheet_numbers.pdf

Notes

- Acrobat 5 or higher is required to use this tool.
- The Bureau of Highway Construction places sheet numbers in the final plan.
- This sheet is for placing preliminary sheet numbers with a "PRE_" prefix.
- If a plan contains multiple projects, number each plan individually.
- Leave this sheet in the plan.

TO ADD PRELIMINARY SHEET NUMBERS

1. Insert this sheet at the end of the plan

- a. With the plan open in Acrobat, select Document > Insert Pages.
- b. In the Select File to Insert dialog box, select this file (prelim_sheet_numbers.pdf)
- c. In the Insert dialog box, choose After for Location and Last page for Page.
- d. Click OK.

2. Click the Place Preliminary Sheet Numbers button

- a. Go to the last sheet of the plan.
- b. Click the Place Preliminary Sheet Numbers button once.
(The preliminary sheet number appears in the bottom right corner of the sheets.
The number should match the page number in the Acrobat Status bar).

3. Re-Save the PDF

- a. Select File > Save As and save the PDF.

TO REMOVE PRELIMINARY SHEET NUMBERS