WKE JAN 2016

PROJECT ID: 1060-38-70
WITH: 1060-38-71

COUNTY: WAUKESHA

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 = 348

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1060-38-70	WISC 2014383	1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

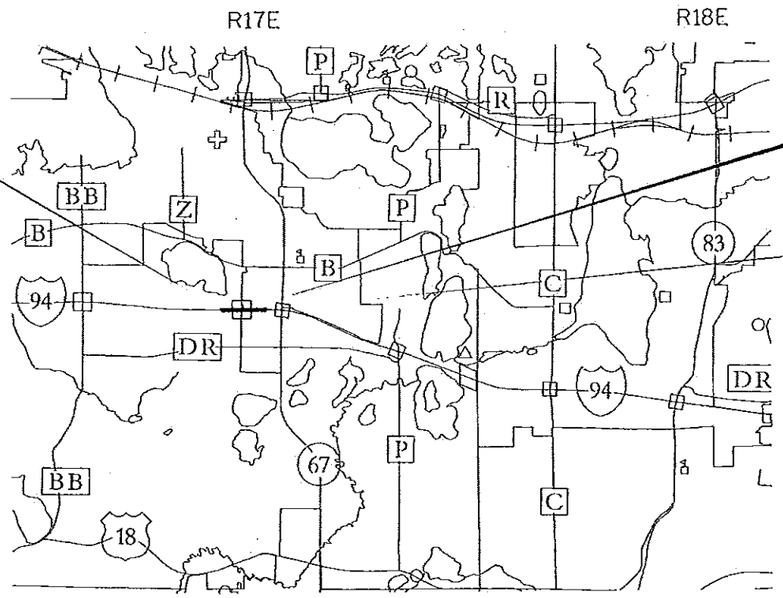
EAST-WEST FREEWAY

DOUSMAN RD BRIDGES (B-67-79 & 80)

IH-94

WAUKESHA COUNTY

STATE PROJECT NUMBER
1060-38-70



BEGIN PROJECT 1060-38-70
STA. 141+35.00
Y = 182,180.09
X = 614,664.01

STRUCTURES
B-67-339 & B-67-340

END PROJECT 1060-38-70
STA. 174+38.00

DESIGN DESIGNATION

A.A.D.T. 2015	=	43,100
A.A.D.T. 2035	=	46,500
D.H.V.	=	8.9
D.D.	=	60/40
T.	=	5.7
DESIGN SPEED	=	70
ESALS	=	18,242,700

CONVENTIONAL SYMBOLS

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

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

UTILITIES
- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.626 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), WAUKESHA COUNTY, NAD 83 (1991).
ELEVATIONS IN THIS PLAN ARE REFERENCED TO NGVD 29.

ORIGINAL PLANS PREPARED BY

benesch
engineers · scientists · planners
Alfred Benesch & Company
1300 W. Canal St. Phone: (414) 755-3000 Suite 150
Milwaukee, WI 53233-1427 Fax: (414) 755-3010 Job No. 20103.00

AMANDA E. ZACHARIAS E-35716 MILWAUKEE, WI PROFESSIONAL ENGINEER

7/29/15 (Date)

Amanda Zacharias (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	ALFRED BENESCH & CO
Designer	ALFRED BENESCH & CO
Project Manager	DAVID PITTMAN
Regional Examiner	
Regional Supervisor	
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 7/29/15 (Signature)

E

FILE NAME : Y:\milwaukee\20100s\20103.00\Eng_Docs\Sheets\1060-38-70\010101_ti.dgn PLOT DATE : 7/28/2015 PLOT BY : bwelgand PLOT NAME : PLOT SCALE : 1:200

WISDOT/CADDS SHEET 10

UTILITY CONTACTS

WE ENERGIES (GAS & ELECTRIC)
333 W. Everett St - A299
Milwaukee, WI 53203
Mr. Latroy Brumfield
414-221-5617
latroy.brumfield@we-energies.com

OCONOMOWOC UTILITIES (WASTEWATER)
900 S Worthington Street
Oconomowoc, WI 53066
Mr. Tom Steinbach
262-569-2192
tsteinbach@oconomowoc-wi.gov

AT&T WISCONSIN.
2005 Pewaukee Road
Waukesha, WI 53188
Mr. Alper Kolcu
262-970-8494
alper.kolcu@att.com

WINDSTREAM / KDL
13935 Bishops Drive
Brookfield, WI 53005
Mr. Jim Kostuch
262-792-7938
james.kostuch@windstream.com

AT&T LEGACY.
P.O. Box 244
Lake Mills, WI 53551
Mr. William Koenig
608-628-0575
smc140@frontier.com

CHARTER COMMUNICATIONS
N3760 CTH DJ
Juneau, WI 53039
Mr. Ron Frase
920-349-3202
ronald.frase@charter.net

WisDOT STOC
433 W St. Paul Ave., STE 300
Milwaukee, WI 53203-3007
Mr. Jeff Madson
414-225-3723
jeffrey.madson@dot.wi.gov

OCONOMOWOC UTILITIES (WATER)
900 S Worthington Street
Oconomowoc, WI 53066
Mr. Scott Osborn
262-569-6421
sosborn@oconomowoc-wi.gov

OTHER AGENCIES

CITY OF OCONOMOWOC
DPW
174 E. Wisconsin Ave.
Oconomowoc, WI 53066
Mr. Mark Frye
262-569-2184
mfrye@oconomowoc-wi.gov

DNR
DNR Satellite Center
141 NW Barstow Room 180
Waukesha WI 53188
Mr. Craig Webster
262-574-2100
craig.webster@wisconsin.gov

WisDOT
Southeast Region
141 NW Barstow Street
PO Box 798
Waukesha, WI 53187
Mr. David Pittman
262-548-6439
david.pittman@dot.wi.gov

VILLAGE OF SUMMIT
DPW
2911 N Dousman Rd,
Oconomowoc, WI 53066
Mr. Bill Miller
262-567-2757

DESIGN
Alfred Benesch & Company
1300 West Canal Street
Suite 150
Milwaukee, WI 53233
Ms. Amanda Zacharias
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azacharias@benesch.com

SEWRPC
W239 N1812 Rockwood Drive
PO Box 1607
Waukesha, WI 53187-1607
Mr. John Washburn
262-953-4295
jwashburn@sewrpc.org

PAVEMENT LOCATION	TOTAL PAVEMENT THICKNESS	LAYER	TYPE	NOMINAL MAXIMUM SIZE GRADATION	ASPHALTIC MATERIAL
IH-94	1.75”	1.75” UPPER	SMA	12.5 MM	-
	1.75” – 4”	1.75” UPPER	SMA	12.5 MM	-
		0 – 2.25” LEVELING	E-30	12.5 MM	PG 64-28
	4” – 6.25”	1.75” UPPER	SMA	12.5 MM	-
		2.25” LOWER	E-30	19.0 MM	PG 64-28
		0 – 2.25” LEVELING	E-30	12.5 MM	PG 64-28
IH-94 SHOULDERS*	3.75”	1.75” UPPER	E-3	12.5 MM	PG 64-28
		2” LOWER	E-3	12.5 MM	PG 64-28
	5”	1.75” UPPER	E-3	12.5 MM	PG 64-28
		3.25” LOWER	E-3	19.0 MM	PG 64-28
DOUSMAN RD	5”	2” UPPER	E-0.3	12.5 MM	PG 58-28
		3” LOWER	E-0.3	19.0 MM	PG 58-28

* SHOULDERS CONSTRUCTED IN STAGE 1, USED FOR TEMPORARY TRAFFIC, AND REMAINING IN PLACE WILL BE 5” ASPHALTIC SURFACE TEMPORARY.

GENERAL NOTES

1. NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.
2. EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS, BUT IS MEASURED AND PAID FOR AS COMMON EXCAVATION.
3. THE WISCONSIN DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR A MONUMENT WHICH SHALL BE SET IN THE STRUCTURES AS DESIGNATED BY THE ENGINEER IN THE FIELD.
4. DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED AND MULCHED.
5. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
6. MAINLINE STAGE 1, 2 AND 4 CROSS SECTIONS ARE REFERENCED FROM RL EB I-94.
7. CONTRACTOR MUST CONTACT THE PROJECT ENGINEER AND SEWRPC (JOHN WASHBURN); AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY SECTION CORNER MONUMENT.

EROSION CONTROL GENERAL NOTES

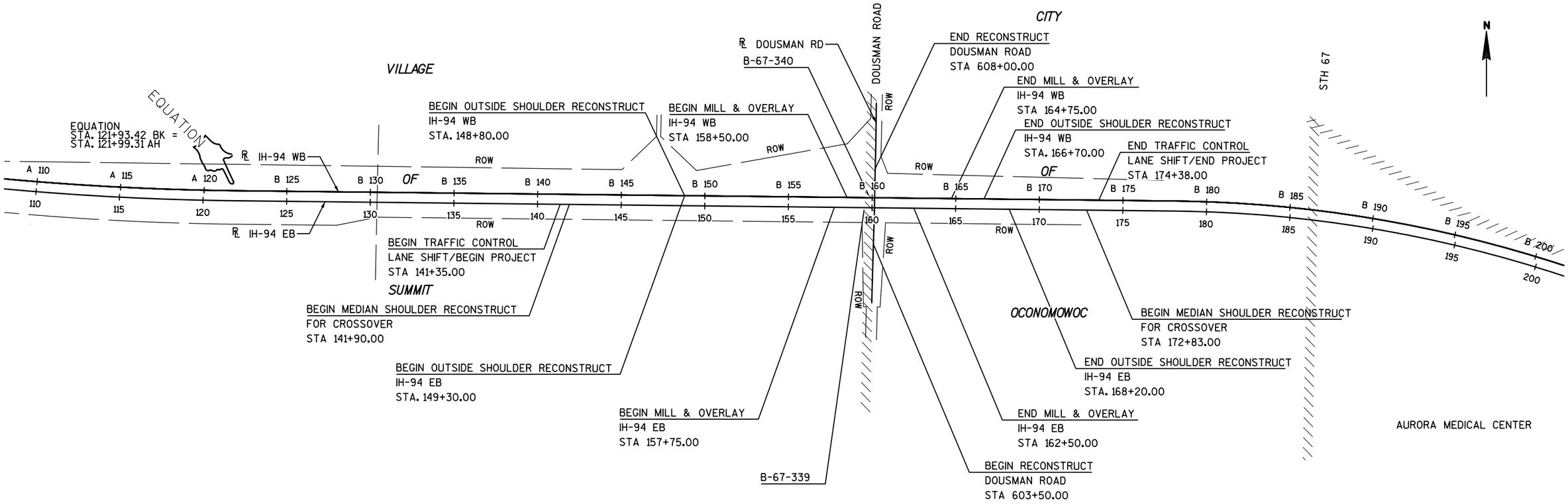
1. RE-TOPSOIL OF GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. SEED, FERTILIZE, AND MULCH/EROSION MAT TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN (14) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED.
2. STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION. IF STOCKPILED MATERIAL IS LEFT FOR MORE THAN FOURTEEN (14) CALENDAR DAYS, SEED THE STOCKPILE WITH TEMPORARY SEED.
3. EROSION CONTROL BMP’S ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTORS ECIP AND BY THE ENGINEER. EROSION CONTROL BMP’S SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE BMP IS NO LONGER REQUIRED.
4. EXISTING WETLANDS NOT DESIGNATED FOR IMPACTS SHALL BE PROTECTED USING SAFETY FENCE. SAFETY FENCE TO BE INSTALLED PRIOR TO START OPERATION OF HEAVY EQUIPMENT IN THE VICINITY OF THE WETLANDS. LOCATION OF SAFETY FENCE TO BE STAKED AND APPROVED BY THE ENGINEER BEFORE INSTALLATION.

ORDER OF SECTION 2 SHEETS

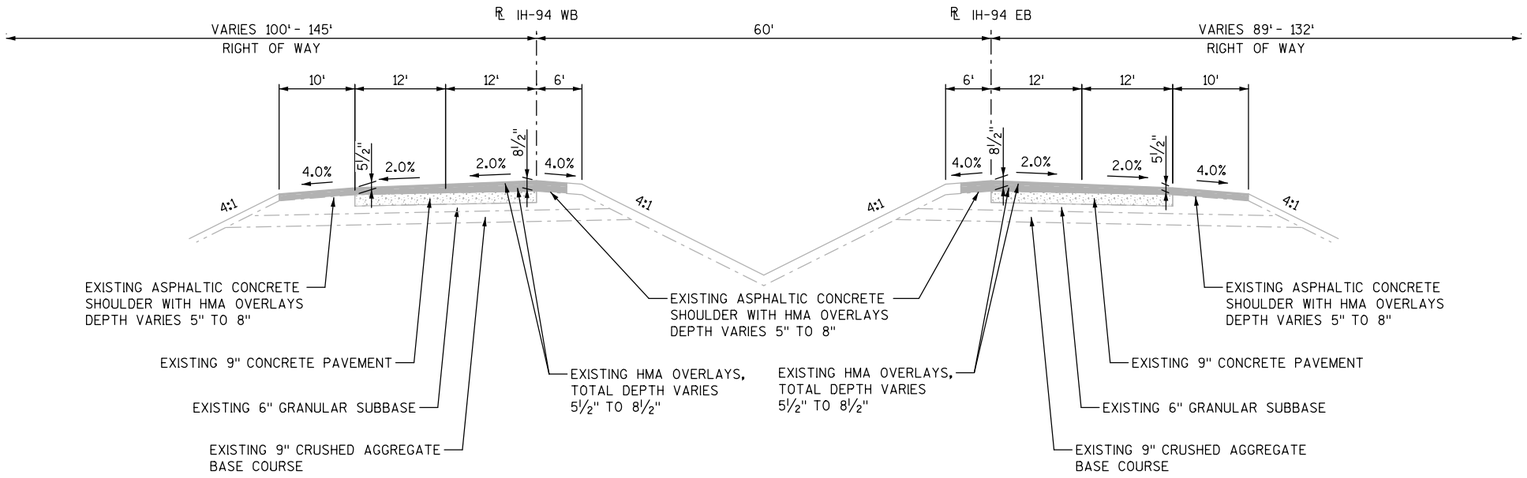
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
REMOVAL PLAN
PAVING DETAILS
EROSION CONTROL
STORM SEWER
PERMANENT SIGNING PLAN
PERMANENT PAVEMENT MARKING
TRAFFIC CONTROL AND CONSTRUCTION STAGING
DETOUR PLAN
ALIGNMENT PLAN

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

2



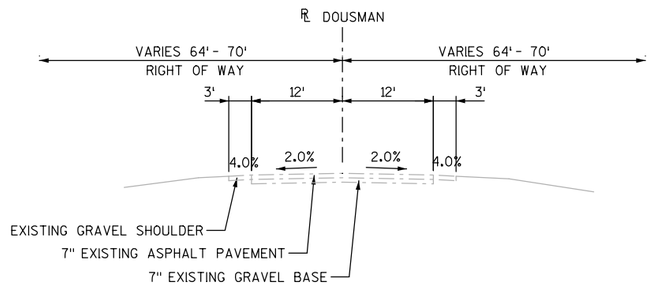
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PROJECT OVERVIEW	SHEET 3	E



TYPICAL IH-94 EXISTING SECTION

STA 141+90 TO 173+36 EB IH-94

STA 141+90 TO 172+82 WB IH-94

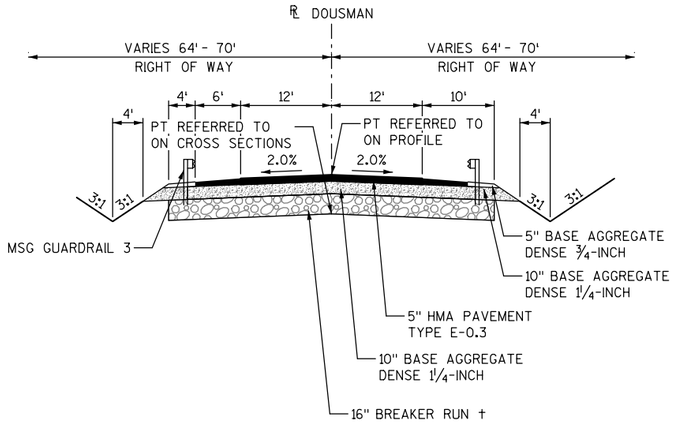


TYPICAL DOUSMAN RD EXISTING SECTION

STA 603+50 TO 608+00

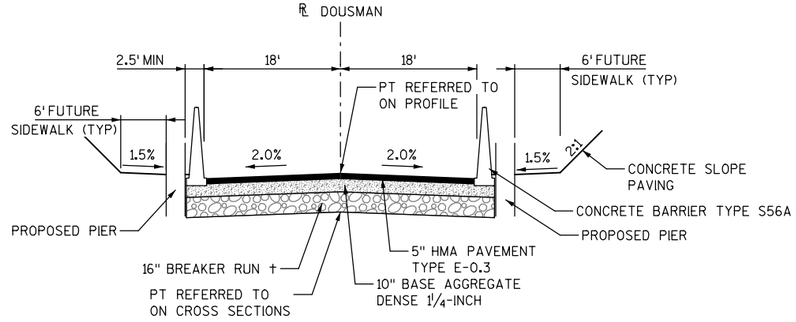
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	EXISTING TYPICAL SECTIONS	SHEET 4	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\020301_ts.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:20
WISDOT/CADDS SHEET 42



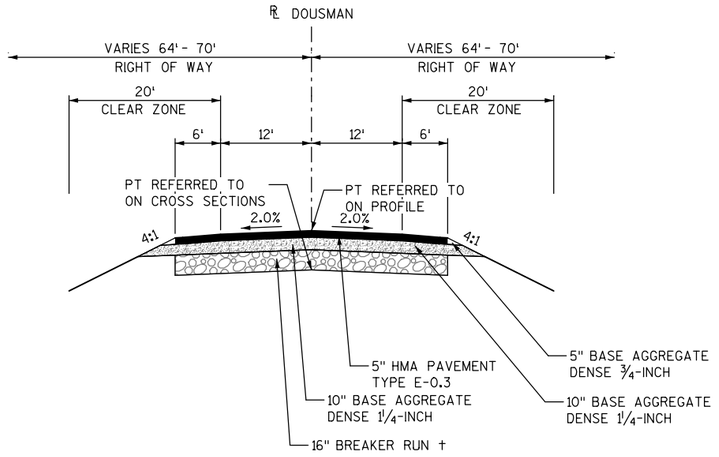
TYPICAL FINISHED SECTION DOUSMAN ROAD

STA 603+95 TO 604+85 DOUSMAN RD
STA 607+10 TO 608+00 DOUSMAN RD



TYPICAL FINISHED SECTION DOUSMAN ROAD

STA 604+85 TO 607+10 DOUSMAN RD

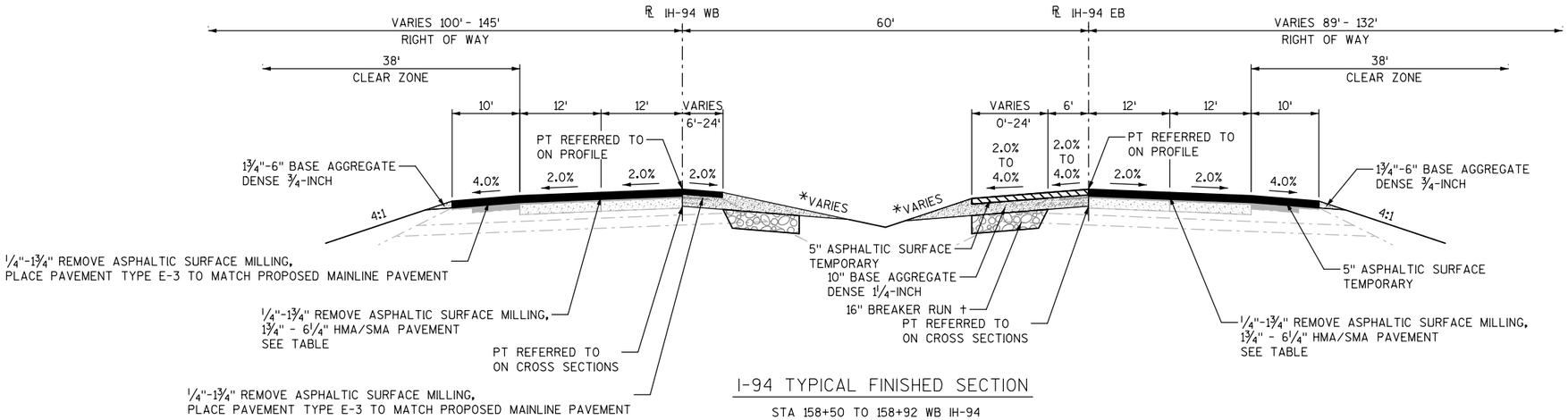


TYPICAL FINISHED SECTION DOUSMAN ROAD

STA 603+50 TO 603+95 DOUSMAN RD

† SEE RELIEF TRENCH DETAIL

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PROPOSED TYPICAL SECTIONS DOUSMAN ROAD	SHEET 5	E

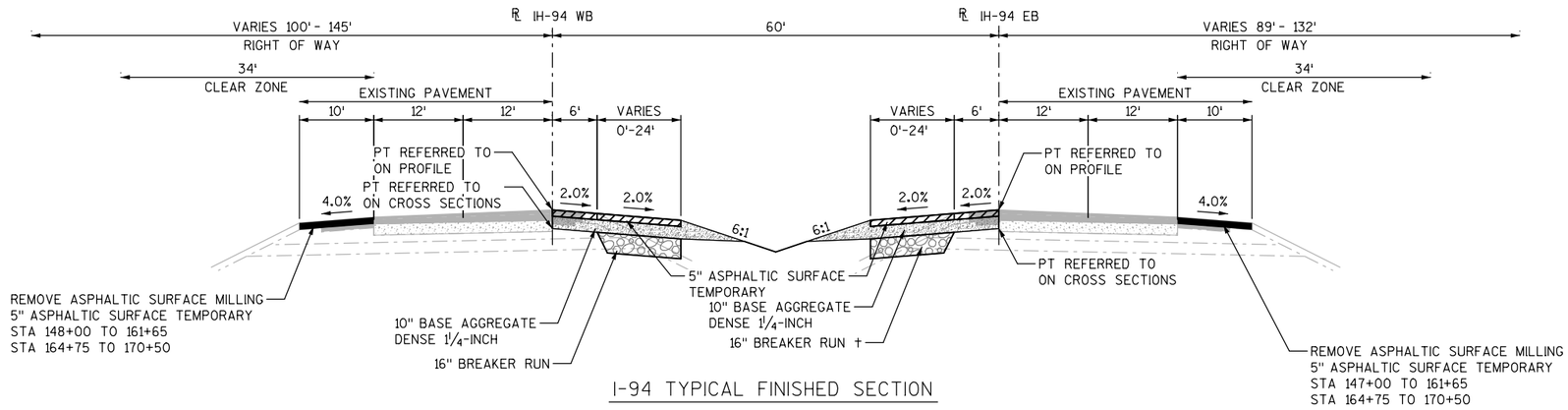


I-94 TYPICAL FINISHED SECTION

STA 158+50 TO 158+92 WB IH-94
STA 157+75 TO 158+92 EB IH-94
STA 161+38 TO 164+75 WB IH-94
STA 161+38 TO 162+50 EB IH-94

*6:1 MAX FINAL CONDITION
†SEE RELIEF TRENCH DETAIL

LOCATION	STATION LIMITS	PROFILE ADJUSTMENT	MILL DEPTH	HMA DEPTH
IH-94 EB	157+75 TO 158+92	0 TO 1½"	1¾" TO ¼"	1¾"
IH-94 EB	161+37 TO 162+50	1½" TO 0	¼" TO 1¾"	1¾"
IH-94 WB	158+50 TO 158+92	0 TO 1½"	1¾" TO ¼"	1¾"
IH-94 WB	161+38 TO 163+25	6" TO 3¾"	¼"	6¼" TO 4"
IH-94 WB	163+25 TO 163+95	3¾" TO 1½"	¼"	4" TO 1¾"
IH-94 WB	163+95 TO 164+75	1½" TO 0	¼" TO 1¾"	1¾"



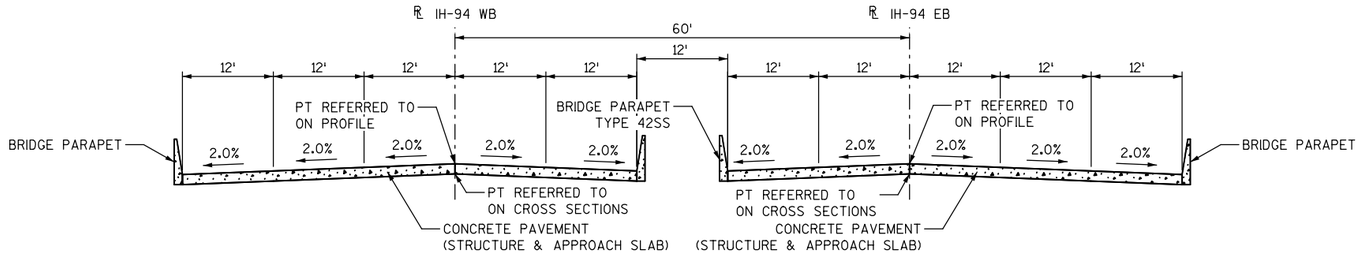
I-94 TYPICAL FINISHED SECTION

STA 141+90 TO 158+50 WB IH-94
STA 141+90 TO 157+75 EB IH-94
STA 164+75 TO 173+36 WB IH-94
STA 162+50 TO 172+82 EB IH-94

TRAFFIC CONTROL WIDENING. SAWCUT AND REMOVE AS FINAL PLAN DETAILS AND FINAL CROSS SECTIONS INDICATE

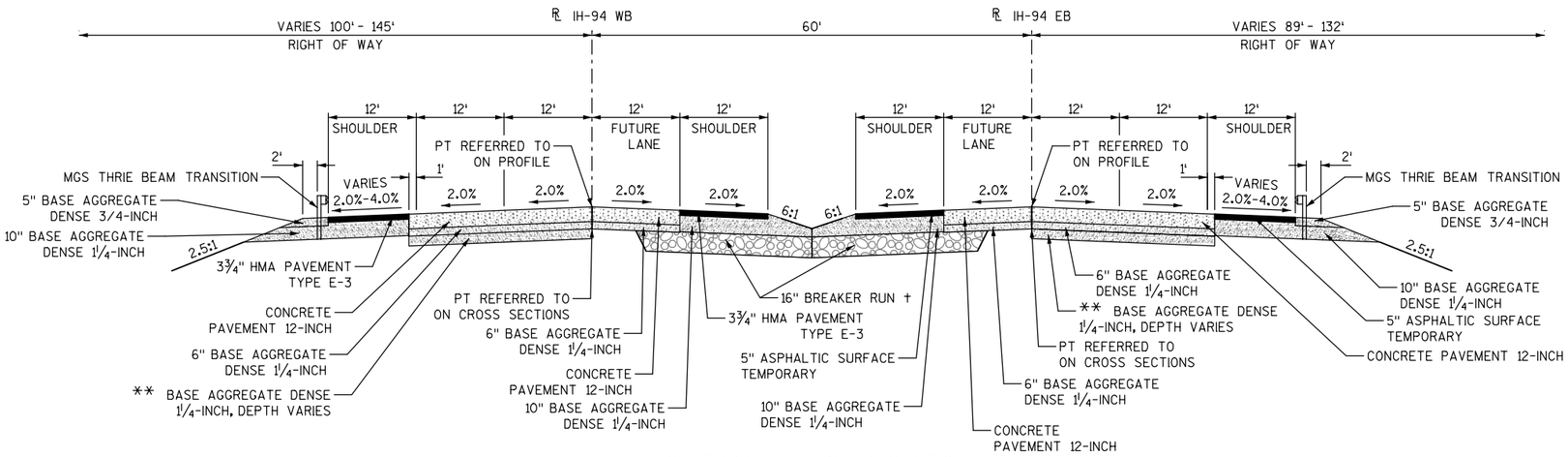
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PROPOSED TYPICAL SECTIONS IH-94 (AT DOUSMAN ROAD)	SHEET 6	E

2



I-94 TYPICAL FINISHED SECTION

STA 158+92 TO 160+93 EB/WB IH-94



I-94 TYPICAL FINISHED SECTION

STA 158+92 TO 159+37 EB/WB IH-94
STA 160+93 TO 161+38 EB/WB IH-94

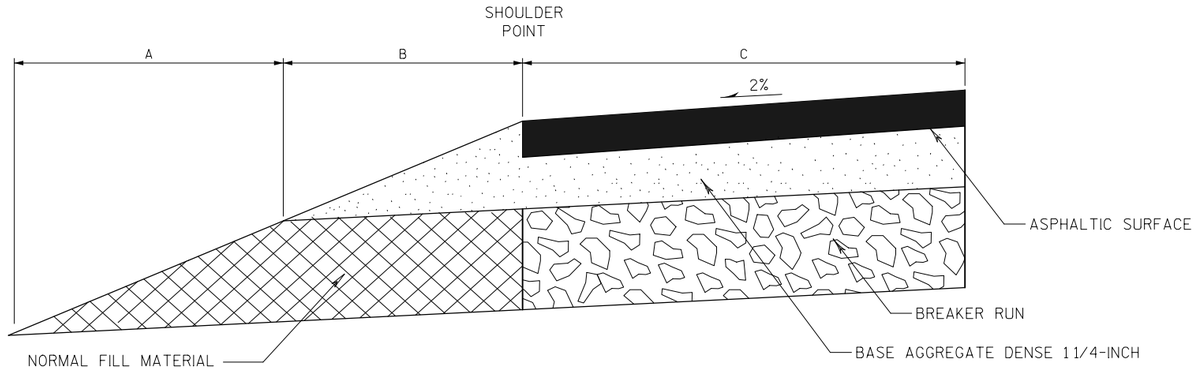
** REMOVE ALL CONCRETE BELOW SUBGRADE. PLACE BASE AGGREGATE 1¼-INCH AS SHOWN IN TYPICAL SECTIONS.

†SEE RELIEF TRENCH DETAIL

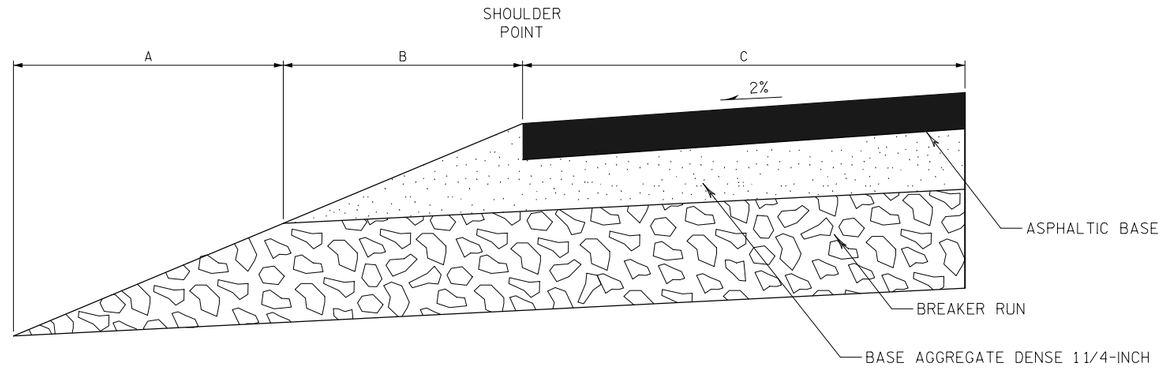
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PROPOSED TYPICAL SECTIONS IH-94 (AT DOUSMAN ROAD)	SHEET 7	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\020302_ts.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:20

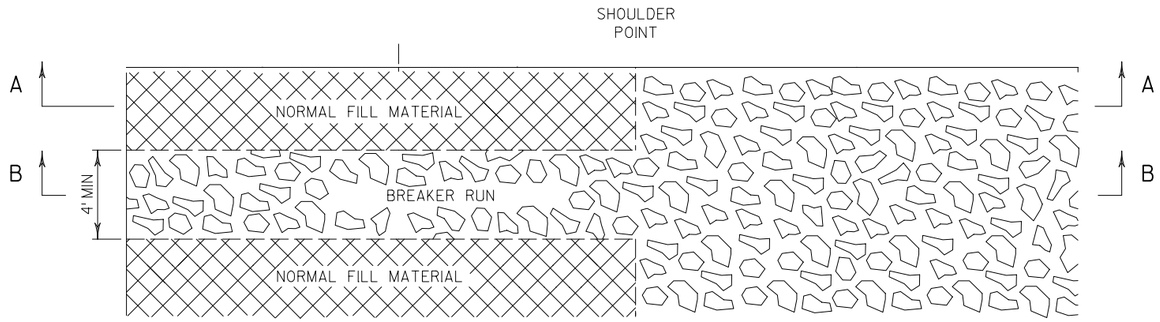
WISDOT/CADDS SHEET 42



TYPICAL HALF SECTION A-A WITHOUT RELIEF TRENCH



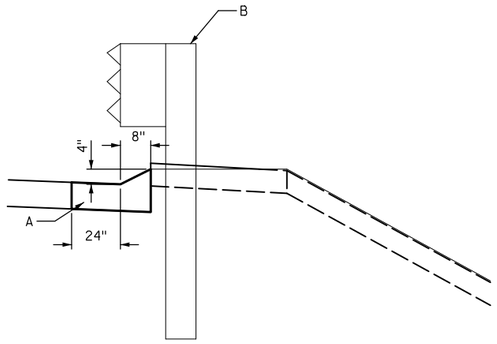
TYPICAL HALF SECTION B-B WITH RELIEF TRENCH



RELIEF TRENCH PLAN VIEW

RELIEF TRENCH

STAGE 1 - 142+00 EB/WB MEDIAN
STAGE 1 - 144+50 EB/WB MEDIAN
STAGE 1 - 172+50 WB MEDIAN
STAGE 2 - 162+50 EB MEDIAN



G-G

A. CURB (PAYMENT AS PART OF CONCRETE SURFACE DRAINS) FLOWLINE TO MATCH FACE OF BLOCKING

B. MGS THRIE BEAM TRANSITION (SEE SDD)

C. END OF MGS THRIE BEAM TRANSITION (SEE SDD)

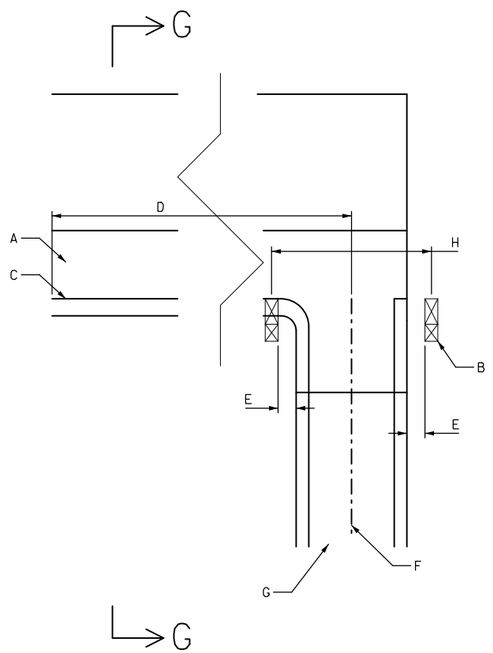
D. CENTER OF FLUME IS NO CLOSER THAN THE MID-SPAN OF THE 1ST 6'3" POST SPACING BEYOND THE THRIE BEAM TRANSITION (SEE PLAN).

E. MIN. 9" FROM FACE OF POST TO EDGE OF FLUME.

F. CENTER OF INLET IS NO CLOSER THAN MID-SPAN OF THE FIRST 6'3" POST SPACING BEYOND THE THRIE BEAM TRANSITION (SEE PLAN)

G. SEE PLAN AND SDD FOR CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES.

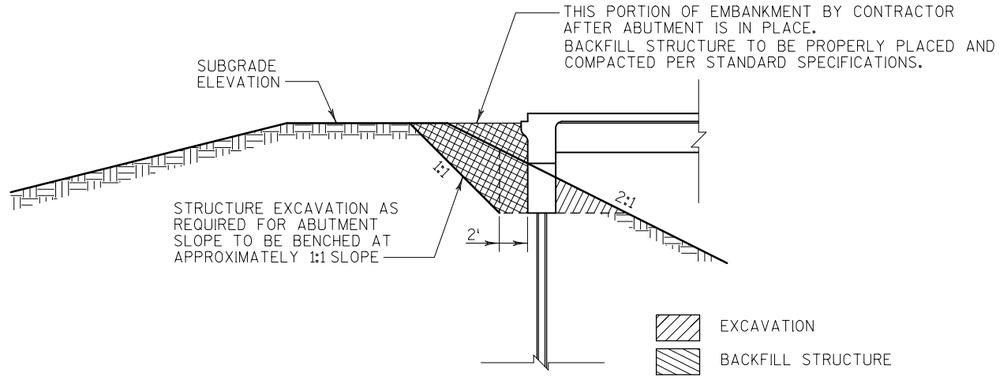
H. 6'3" POST SPACING



CONCRETE SURFACE DRAIN LOCATION PLAN VIEW

(BEAM GUARD RAIL NOT SHOWN)

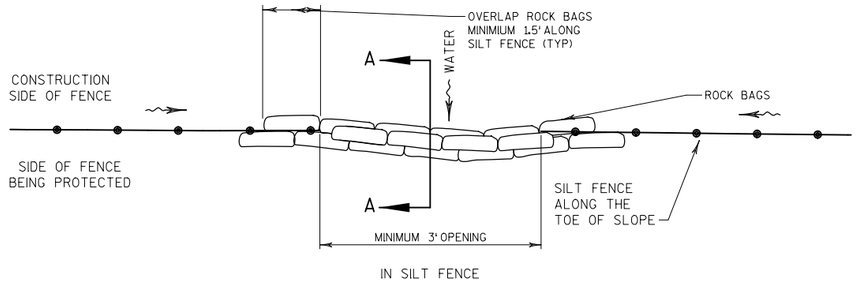
158+93.0 RT EB IH-94
159+27.5 LT WB IH-94



NOTE

THE EMBANKMENT CONFIGURATION SHOWN IS THE MINIMUM EMBANKMENT THAT MUST BE CONSTRUCTED PRIOR TO CONSTRUCTION OF THE ABUTMENTS.

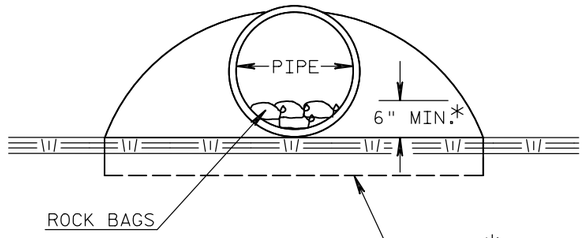
EMBANKMENT CONSTRUCTION & BACKFILL STRUCTURE DETAIL



PLAN VIEW

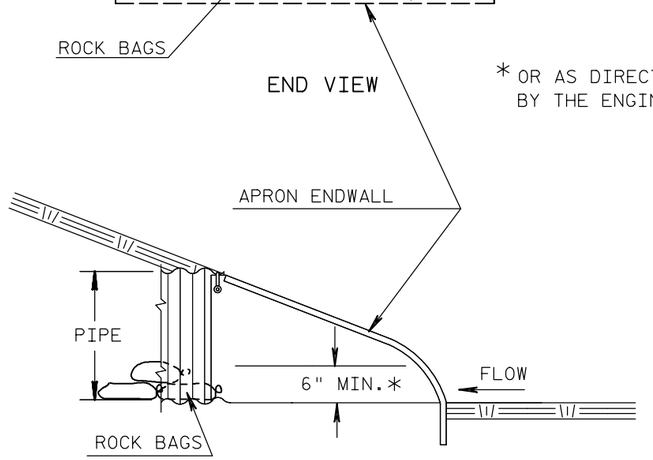
SECTION A-A

SILT FENCE DRAINAGE OUTLET, ROCK BAGS



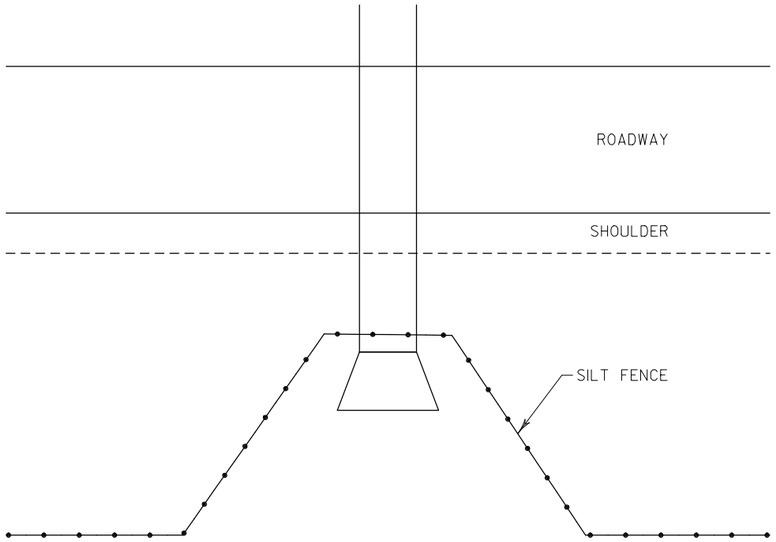
END VIEW

* OR AS DIRECTED
BY THE ENGINEER



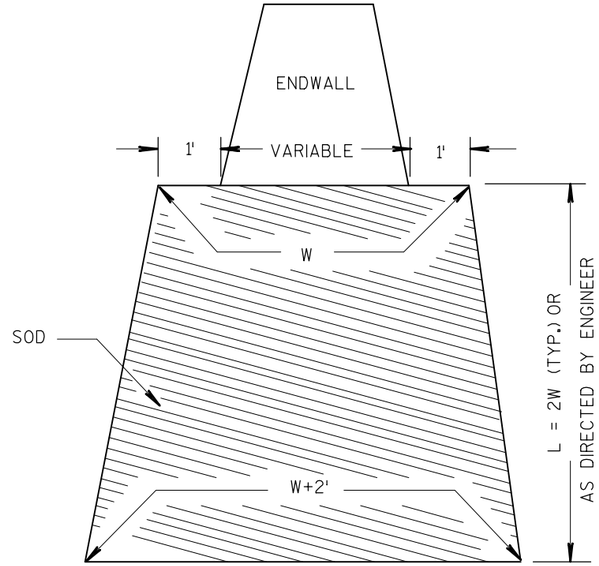
SIDE VIEW

CULVERT PIPE CHECK



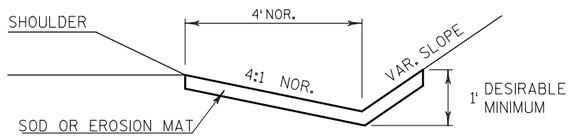
NOTE
SEE SILT FENCE SDD FOR ADDITIONAL INFORMATION.

TYPICAL SILT FENCE DETAIL AT PIPE INLET

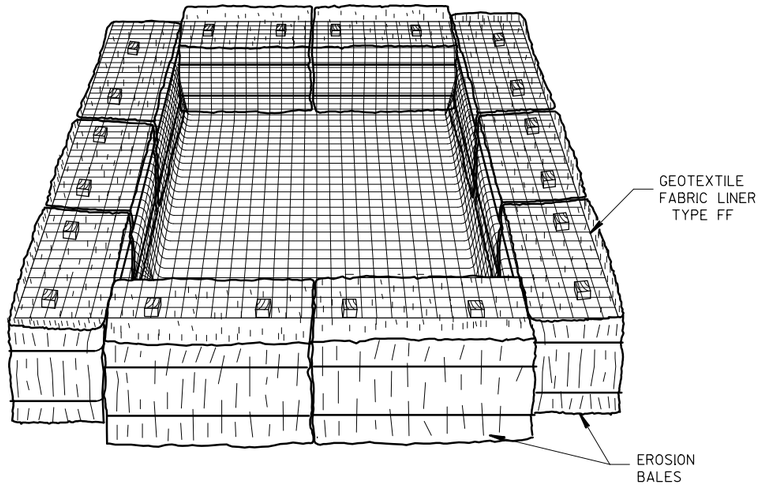


SOD TREATMENT AT CULVERTS

STA 607+05 LT & RT



SOD OR EROSION MAT DETAIL FOR DITCHES



TEMPORARY SETTLING BASIN

(SIZE TO BE DETERMINED IN FIELD AS INDICATED BELOW:)

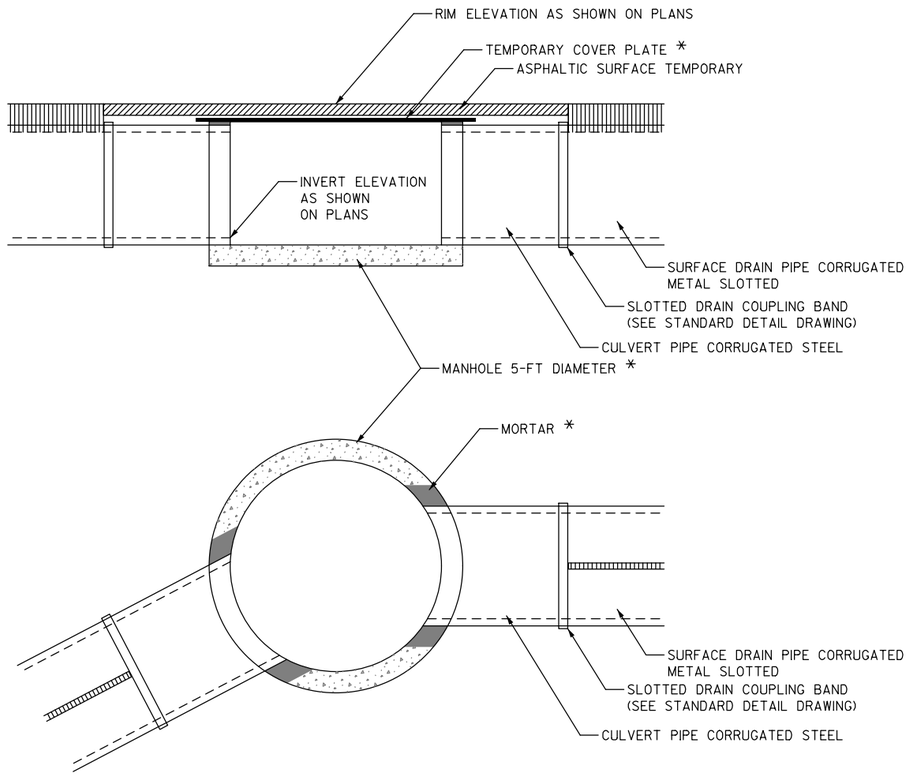
STORAGE VOLUME (C.F.) = 16 X GPM (PUMP RATE)

EXAMPLE:
CONTRACTOR INDICATES PUMP CAPABLE OF 50 GPM
HEIGHT OF BALES = 1.5 FT.

SOLUTION:
SV (C.F.) = 16 X 50
SV = 800 C.F.

$\frac{800\ C.F.}{1.5\ FT.}$ = 533 S.F.

USE A 20 FT. X 27 FT. BASIN



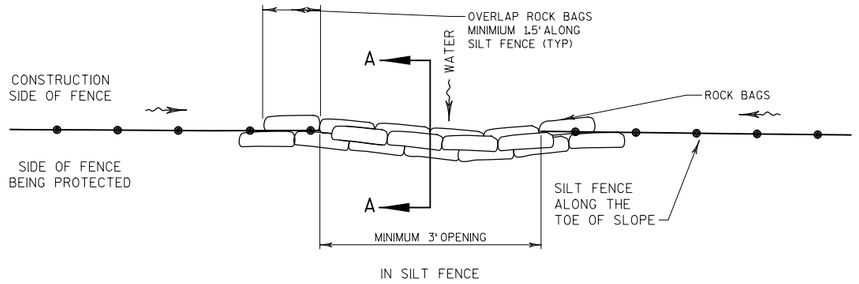
* ITEMS AND MATERIALS INCLUDED AS PART OF TEMPORARY MANHOLES AND COVER PLATE

NOTES:
1. DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINANT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS INCLUDING, BUT NOT LIMITED TO THE STANDARD DETAIL DRAWINGS FOR: MANHOLES 3-FT, 4-FT, 5-FT & 6-FT DIAMETER SLOTTED CORRUGATED METAL PIPE SURFACE DRAINS
2. MANHOLES TO BE LOCATED OUTSIDE THE TRAVEL LANES.

TEMPORARY MANHOLES AND COVER PLATE

STATION 163+01.63, 36.16' LT

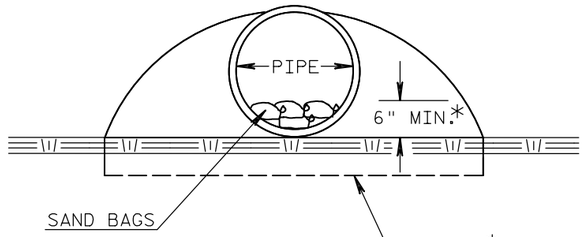
2



PLAN VIEW

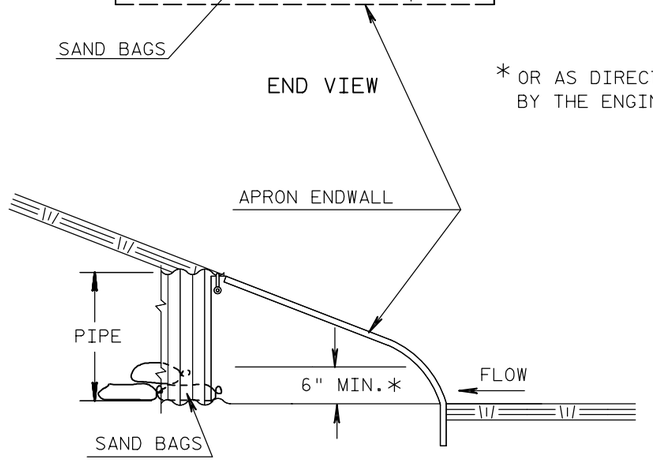
SECTION A-A

SILT FENCE DRAINAGE OUTLET, ROCK BAGS



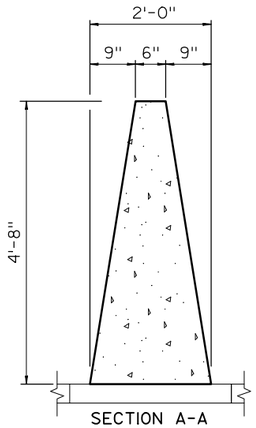
END VIEW

* OR AS DIRECTED BY THE ENGINEER

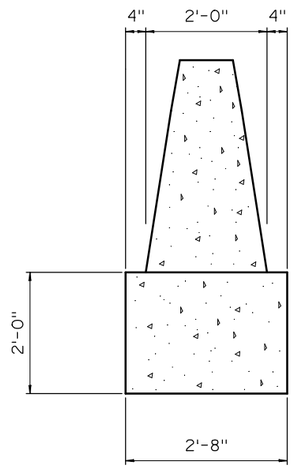


SIDE VIEW

CULVERT PIPE CHECK

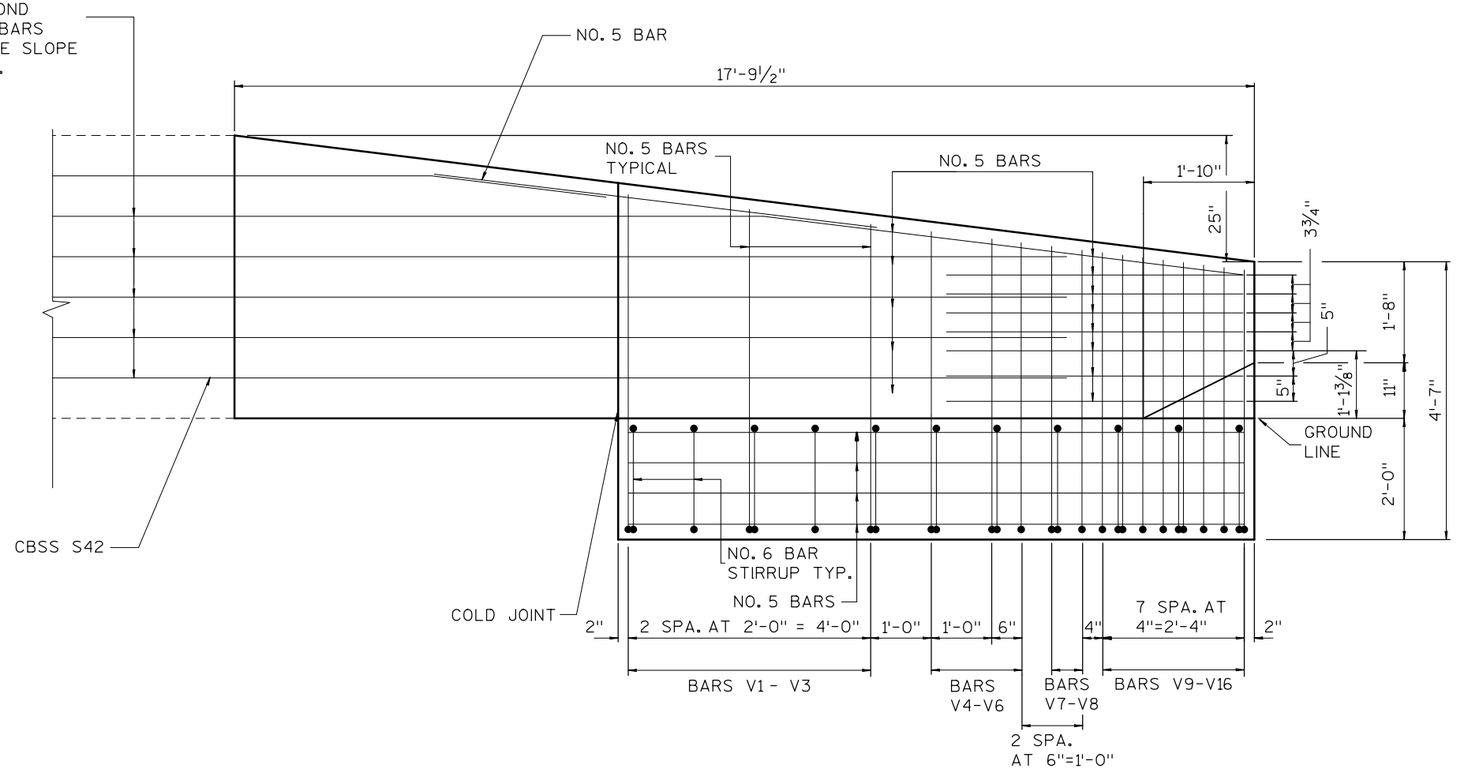


SECTION A-A

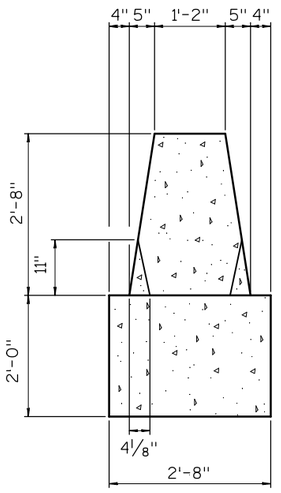


SECTION B-B

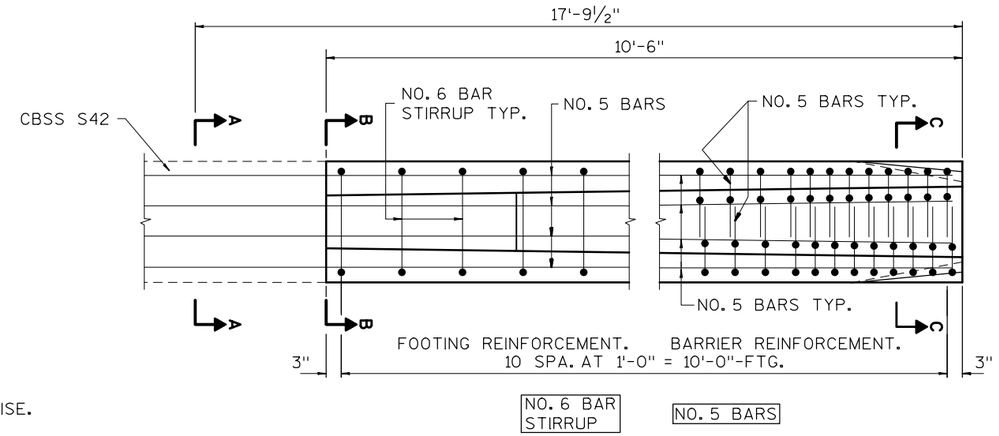
EVENLY SPACE H1 BARS.
NO. 5 BARS TO EXTEND 3' BEYOND END OF TRANSITION TIE NO. 5 BARS TO HORIZONTAL BARS IN SINGLE SLOPE BARRIER TO FORM COLD JOINT.



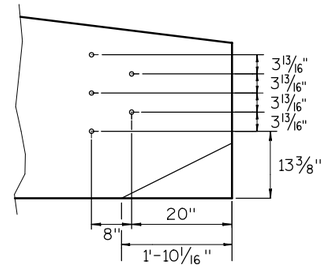
SEE SECTIONS ① THRU ⑯
ELEVATION VIEW



SECTION C-C



PLAN VIEW



PVC PIPE LOCATIONS

GENERAL NOTES:
1. CONSTRUCT PER STANDARD SPECIFICATION 603.
2. SPLICES OF LONGITUDINAL BARS TO BE 2' LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.
3. 4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS SECTION 501.
   USE 3/4" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.
   THRIE BEAM ANCHOR INCIDENTAL TO CONCRETE BARRIER ITEM.
   INSTALL SCHEDULE 40 PVC PIPE 1" DIAMETER AT LOCATIONS INDICATED.
   EXTEND PVC PIPE COMPLETELY THROUGH BARRIER.
   CUT ENDS OF PVC PIPE FLUSH WITH FINISHED FACE OF BARRIER.
   THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.
   2" CLEAR COVER TYPICAL.

CONCRETE BARRIER
SINGLE SLOPE 56"
THRIE BEAM ANCHOR

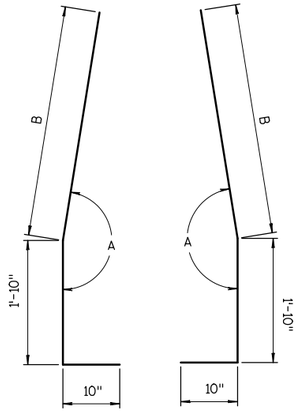
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CONSTRUCTION DETAILS	SHEET 14	E

2

2

BAR CHART
SECTIONS V1 - V11

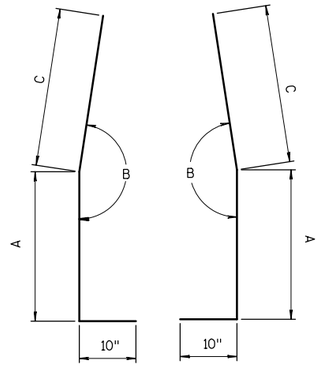
BAR	A	B
V1	170°-50'	3'-6"
V2	171°-20'	3'-4½"
V3	171°-30'	3'-2½"
V4	171°-25'	3'-1½"
V5	171°-15'	3'-0"
V6	171°-15'	2'-11"
V7	171°-20'	2'-10½"
V8	171°-10'	2'-9½"
V9	171°-10'	2'-9"
V10	171°-05'	2'-8½"
V11	171°-10'	2'-8"



BAR BENDING DETAIL
FOR BARS V1 - V11

BAR CHART
SECTIONS V12 - V13

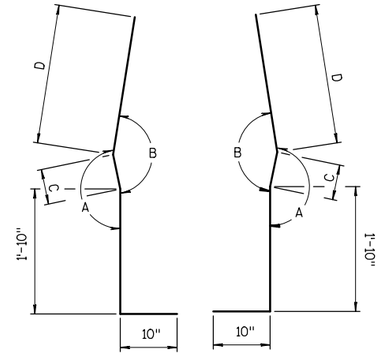
BAR	A	B	C
V12	2'-2"	171°-15'	2'-3½"
V13	2'-7"	171°-05'	1'-10"



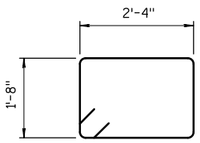
BAR BENDING DETAIL
FOR BARS V12 - V13

BAR CHART
SECTIONS V14 - V16

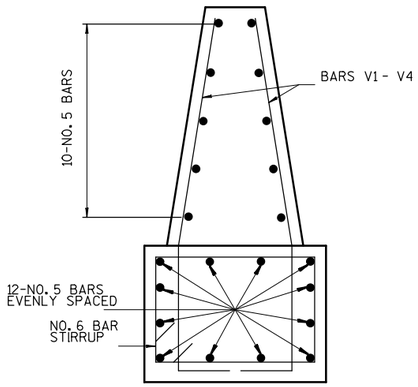
BAR	A	B	C	D
V14	168°-15'	159°-15'	6"	2'-0"
V15	169°-20'	161°-00'	8"	1'-10"
V16	168°-40'	160°-10'	10"	1'-8"



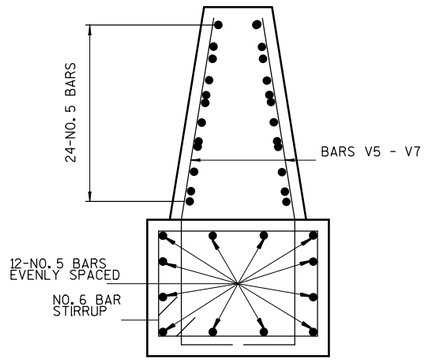
BAR BENDING DETAIL
FOR BARS V14 - V16



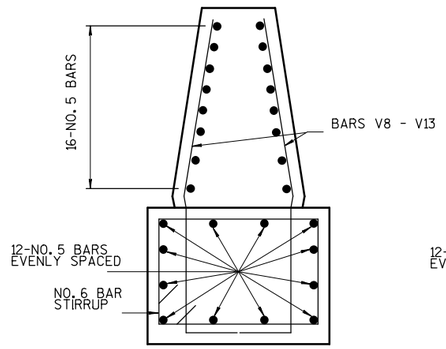
STIRRUP BAR
BENDING DETAIL



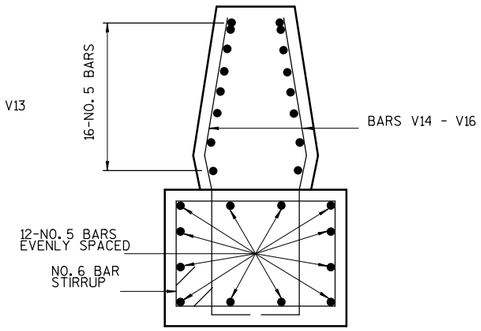
BAR DETAIL
SECTIONS V1 - V4



BAR DETAIL
SECTIONS V5 - V7



BAR DETAIL
SECTIONS V8 - V13



BAR DETAIL
SECTIONS V14 - V16

CONCRETE BARRIER
SINGLE SLOPE 56"
THRIE BEAM ANCHOR

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CONSTRUCTION DETAILS	SHEET 15	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\021004_cd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:2.5
WISDOT/CADDS SHEET 42

2

2

N

ROW

CAUTION SECTION CORNER,
CONTACT PROJECT ENGINEER AND SEWRPC
2 WEEKS BEFORE DISTURBING MONUMENT

ROW

REMOVE FENCE

REMOVE EXISTING GUARDRAIL

℄ IH-94 WB

IH-94 WB

IH-94 EB

ROW
REMOVE EXISTING GUARDRAIL

REMOVE EXISTING CULVERT
24-INCH CMP
SOUTH INVERT 868.09
NORTH INVERT 867.07

REMOVE FENCE

ROW

N DOUSMAN RD

ROW

REMOVE EXISTING CULVERT
30-INCH CMP
SOUTH INVERT 868.19
NORTH INVERT 866.38

ROW

℄ IH-94 EB

LEGEND

FINISHED PAVED SURFACE

LIMITS OF CONSTRUCTION IMPACT

NOTES

SEE PAVING DETAILS FOR SAWCUT LOCATION

UTILITIES TO BE RELOCATED BY OTHERS PRIOR TO CONSTRUCTION

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	REMOVAL PLAN	SHEET 16	E

2

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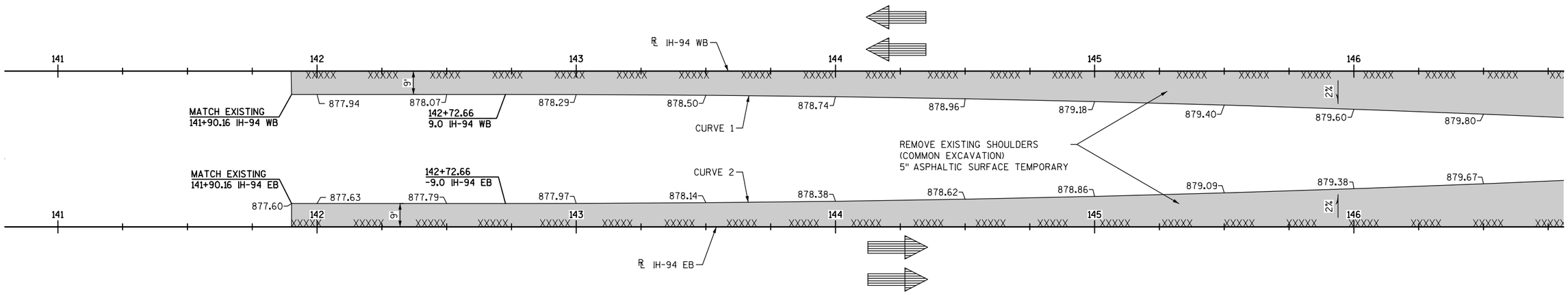

LEGEND

- HINGE POINT
- SAWING
- PAVEMENT
- ACTIVE TRAFFIC LANES (SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

	STA	OFF	R	L
CURVE 1	IH-94 WB		9393.0'	477.54'
PC	142+72.66	9.00 RT		
PT	147+50.00	21.14 RT		
PI	145+11.48	9.00 RT		
CURVE 2	IH-94 EB		9393.0'	477.54'
PC	142+72.66	9.00 LT		
PT	147+50.00	21.14 LT		
PI	145+11.48	9.00 LT		

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 1	SHEET 17	E

2

N

TRIM EXISTING SHOULDER
BASE AGGREGATE DENSE 3/4-INCH

PRESTAGE:
REMOVE ASPHALITC SURFACE MILLING
5" ASPHALTIC SURFACE TEMPORARY

148+79.95
-34.0 IH-94 WB

148+79.96
-24.0 IH-94 WB

10'

24'

℄ IH-94 WB

147 148 149 150 151 152

2%

880.01

21.1'

147+50.00
21.1 IH-94 WB

880.43

147+50.00
30.0 IH-94 WB

1.0%

880.44

880.59 880.84 881.10 881.37 881.60 881.83 882.05 882.27 882.56 882.86

879.97

147+50.00
-21.1 IH-94 EB

21.1'

1.2%

3.2%

2%

147 148 149 150 151 152

℄ IH-94 EB

REMOVE EXISTING SHOULDERS
(COMMON EXCAVATION)
5" ASPHALTIC SURFACE TEMPORARY

LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 1	SHEET 18	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\021202_pd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40

2

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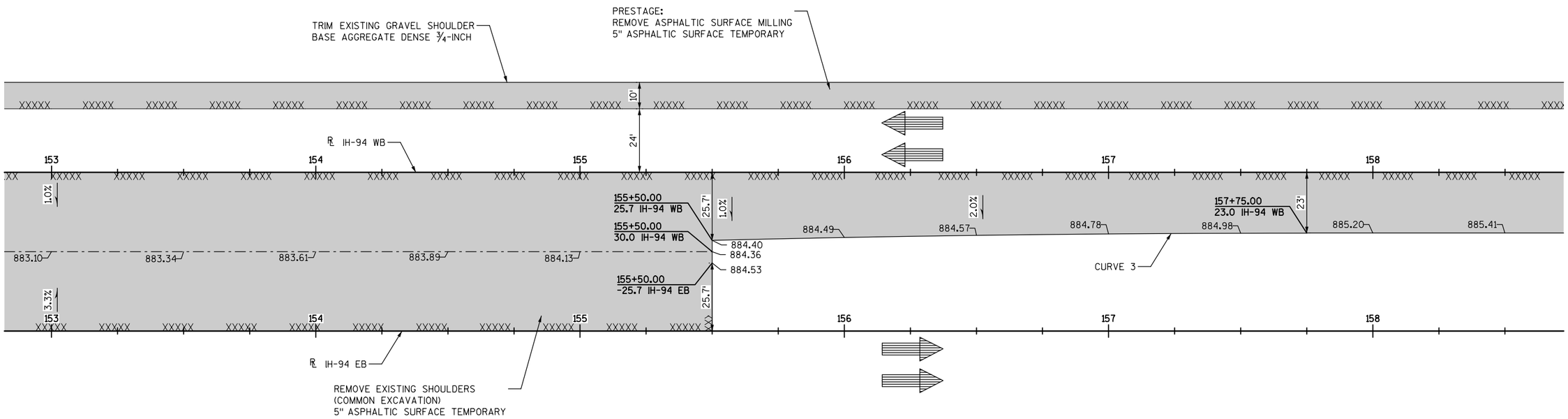

LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

	STA	OFF	R	L
CURVE 3	IH-94 WB		9394.0	225.02
PC	155+50.00	25.69 RT		
PT	157+75.00	23.00 RT		
PI	156+62.48	23.00 RT		

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 1	SHEET 19	E

2

N

℄ DOUSMAN RD

607

606

605

159+59.13
-34.0 IH-94 WB

160+69.79
-34.0 IH-94 WB

159+59.13
-24.0 IH-94 WB

160+69.79
-24.0 IH-94 WB

10'

24'

23'

2%

159+58.38
23.0 IH-94 WB

161+00.00
23.0 IH-94 WB

3%

PRESTAGE:
REMOVE ASPHALTIC SURFACE MILLING
5" ASPHALTIC SURFACE TEMPORARY

TRIM EXISTING GRAVEL SHOULDER
BASE AGGREGATE DENSE ¾-INCH

℄ IH-94 WB

℄ IH-94 EB

CURVE 4

REMOVE EXISTING SHOULDERS
(COMMON EXCAVATION)
5" ASPHALTIC SURFACE TEMPORARY

164+33.71
-23.8 IH-94 EB

159 160 161 162 163 164

885.55 885.66 886.25 886.34 886.31 886.26 886.18 886.10 886.18 886.48 887.18

LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

	STA	OFF	R	L
CURVE 4	IH-94 WB		4200.0	334.06
PC	162+67.12	22.97 RT		
PT	164+33.71	36.25 RT		
PI	161+00.00	22.97 RT		

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 1	SHEET 20	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\021204_pd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40

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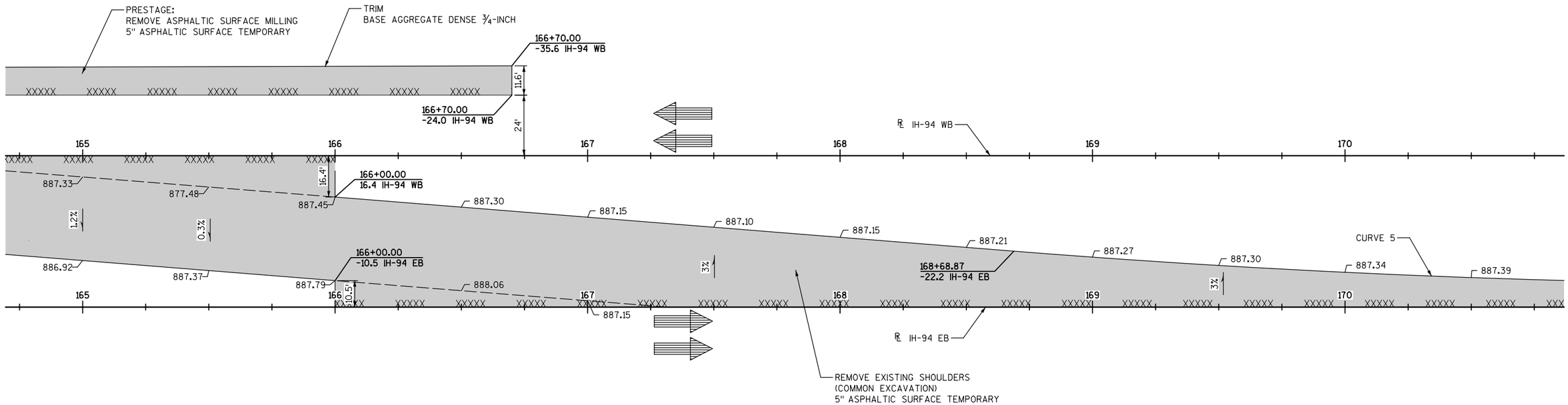


LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

	STA	OFF	R	L
CURVE 5	IH-94 EB		4167.0	331.44
PC	168+68.87	22.17 LT		
PT	171+99.96	9.00 LT		
PI	170+34.15	9.00 LT		

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 1	SHEET 21	E

2

N

℄ IH-94 WB

171 172 173 174 175 176 177

172+82.41
-9.0 IH-94 EB

887.43 887.46 887.48 887.50 887.51

3% 5"

171 172 173 174 175 176 177

REMOVE EXISTING SHOULDERS
(COMMON EXCAVATION)
5" ASPHALTIC SURFACE TEMPORARY

℄ IH-94 EB

LEGEND

HINGE POINT

SAWING

PAVEMENT

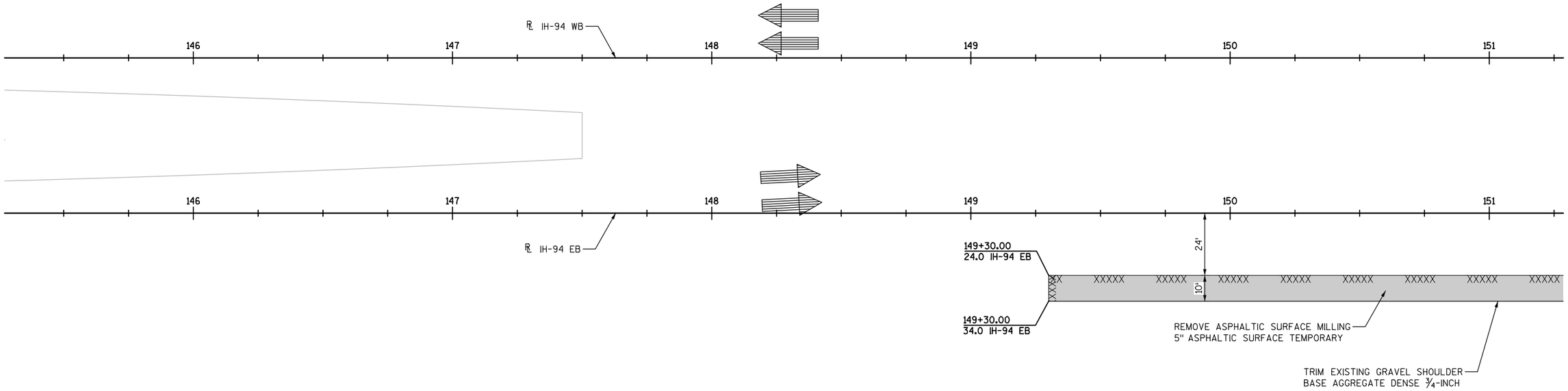
ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 1	SHEET 22	E

2

N



LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 2	SHEET 23	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\021211_pd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40

2

N

℄ IH-94 WB

152 153 154 155 156 157

CURVE 6

155+50.00
-25.7 IH-94 EB

884.53 885.00 885.46 885.88

25.7'

4.1%

2.0%

℄ IH-94 EB

24'

10'

152+96.81
34.2 IH-94 EB

152+46.81
36.3 IH-94 EB

MGS GUARDRAIL

MGS GUARDRAIL EAT

151+75.30
37.5 IH-94 EB

152+50.02
42.3 IH-94 EB

153+03.87
38.0 IH-94 EB

4"

REMOVE ASPHALTIC SURFACE MILLING
5" ASPHALTIC SURFACE TEMPORARY

REGRADE EXISTING SHOULDER
5" BASE AGGREGATE DENSE 3/4-INCH
ON BASE AGGREGATE DENSE 1 1/4-INCH

LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

	STA	OFF	R	L
CURVE 6	IH-94 EB		9394.0	225.02
PC	155+50.00	25.69 LT		
PT	157+75.00	23.00 LT		
PI	156+62.48	23.00 LT		

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 2	SHEET 24	E

2

N

℄ DOUSMAN RD

607

606

605

℄ IH-94 WB

℄ IH-94 EB

158 159 160 161 162 163

158+09.34
-24.8 IH-94 EB
MGS GUARDRAIL EAT
886.38
886.13
886.25
BEGIN MILL & OVERLAY
STA 157+75
23'
158+09.36
-24.0 IH-94 EB
158+01.11
-23.0 IH-94 EB
2%
886.84
886.54
SMA/HMA PAVEMENT
TYPE E-30
24'
10'
157+75.00
33.7 IH-94 EB
MGS GUARDRAIL
REMOVE ASPHALTIC SURFACE MILLING
5" ASPHALTIC SURFACE TMEPORARY
MGS GUARDRAIL
MGS THRIE BEAM TRANSITION
886.62
886.85
158+59.37
-23.9 IH-94 EB
12'
887.08
886.69
158+91.85
24.0 IH-94 EB
158+23.62
34.0 IH-94 EB
886.20
886.29
5" ASPHALTIC SURFACE TEMPORARY
REGRADE EXISTING SHOULDER
5" BASE AGGREGATE DENSE ¾-INCH ON
BASE AGGREGATE DENSE 1¼-INCH
5" ASPHALTIC SURFACE TEMPORARY
159+36.85
-24.0 IH-94 EB
887.28
887.05
887.29
25'
158+91.85
25.0 IH-94 EB
886.81
886.83
887.02
159+36.85
34.0 IH-94 EB
886.43
9'
159+36.85
36.0 IH-94 EB
159+00.00
36.0 IH-94 EB
887.84
159+36.85
38.0 IH-94 EB
MGS THRIE BEAM TRANSITION
CONCRETE BRIDGE
APPROACH (SEE SDD)
B-67-79
160+93.02
-24.0 IH-94 EB
887.85
887.58
160+93.02
38.0 IH-94 EB
160+98.62
36.0 IH-94 EB
161+38.02
-24.0 IH-94 EB
888.02
888.26
161+38.02
-12.0 IH-94 EB
888.54
888.30
161+38.02
24.0 IH-94 EB
887.80
888.02
161+38.02
25.0 IH-94 EB
11'
887.56
161+61.12
36.0 IH-94 EB
161+57.33
38.0 IH-94 EB
MGS GUARDRAIL TERMINAL TYPE 2
REGRADE EXISTING SHOULDER
5" BASE AGGREGATE DENSE ¾-INCH ON
BASE AGGREGATE DENSE 1¼-INCH
MGS GUARDRAIL
MGS THRIE BEAM
TRANSITION (EXIT END)
888.24
888.33
888.70
888.22
887.82
5" ASPHALTIC SURFACE TEMPORARY
END MILL & OVERLAY
STA 162+50
SMA/HMA PAVEMENT
TYPE E-30
5" ASPHALTIC SURFACE TEMPORARY
REMOVE ASPHALTIC SURFACE MILLING
5" ASPHALTIC SURFACE TMEPORARY
TRIM EXISTING GRAVEL SHOULDER
BASE AGGREGATE DENSE ¾-INCH

LEGEND

HINGE POINT

XXX XXXXX SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

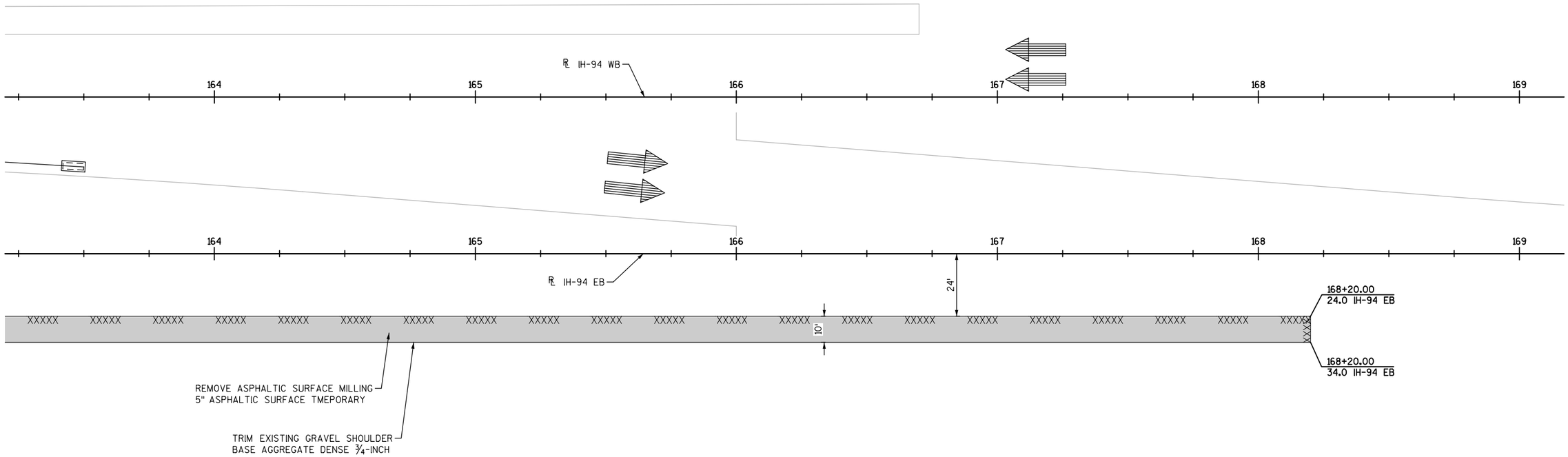
NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 2	SHEET 25	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\021213_pd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40

2

N



LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 2	SHEET 26	E

2

N

℄ DOUSMAN RD

607

606

605

158 159 160 161 162 163

℄ IH-94 WB

℄ IH-94 EB

162+50.00
-23.0 IH-94 EB
888.11
888.10
23'
2%

REMOVE EXISTING SHOULDER
(COMMON EXCAVATION)
5" ASPHALTIC SURFACE TEMPORARY

LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 2B	SHEET 27	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\021221_pd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40

2

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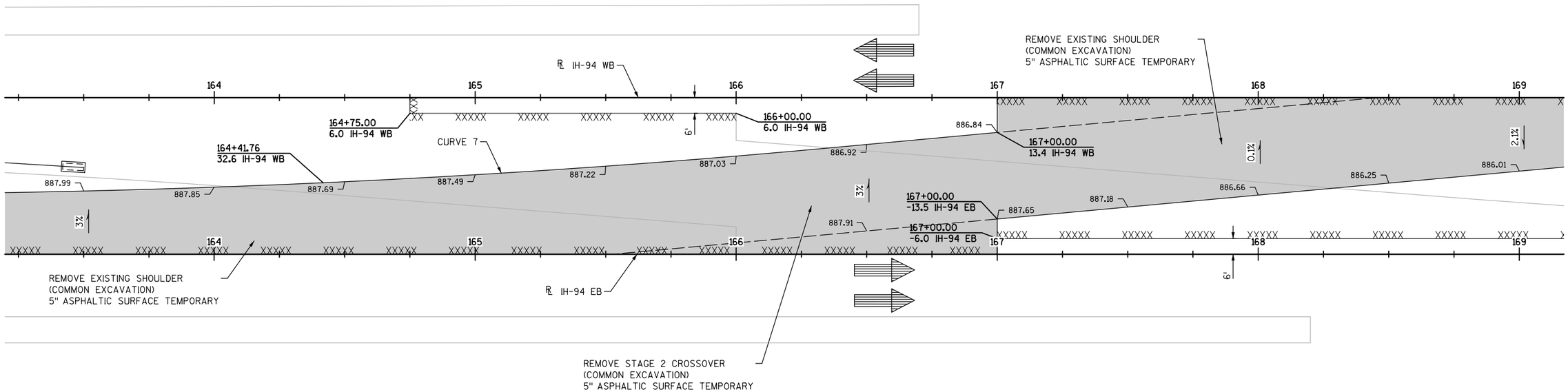


LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

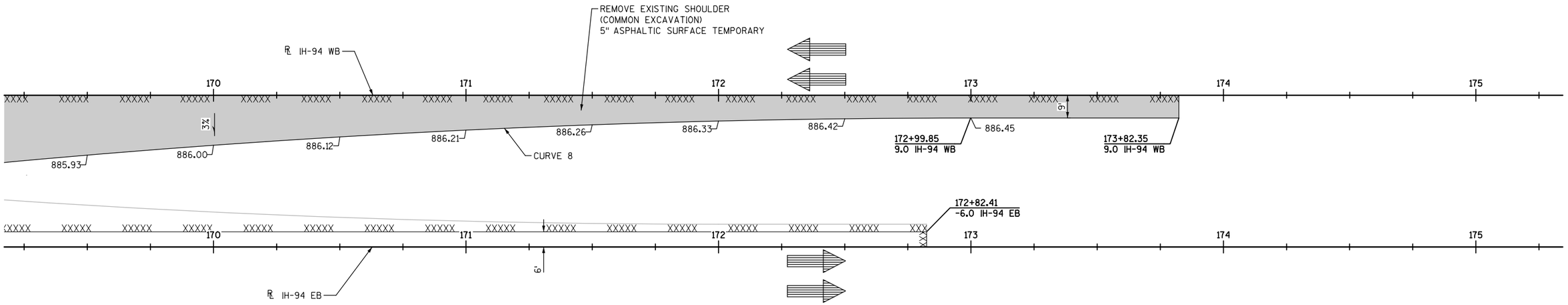
NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

	STA	OFF	R	L
CURVE 7	IH-94 EB		4200.0	383.66
PC	162+50.00	23.00 LT		
PT	166+33.12	40.50 LT		
PI	164+41.96	23.00 LT		

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 2B	SHEET 28	E

2

N



LEGEND

HINGE POINT

SAWING

PAVEMENT

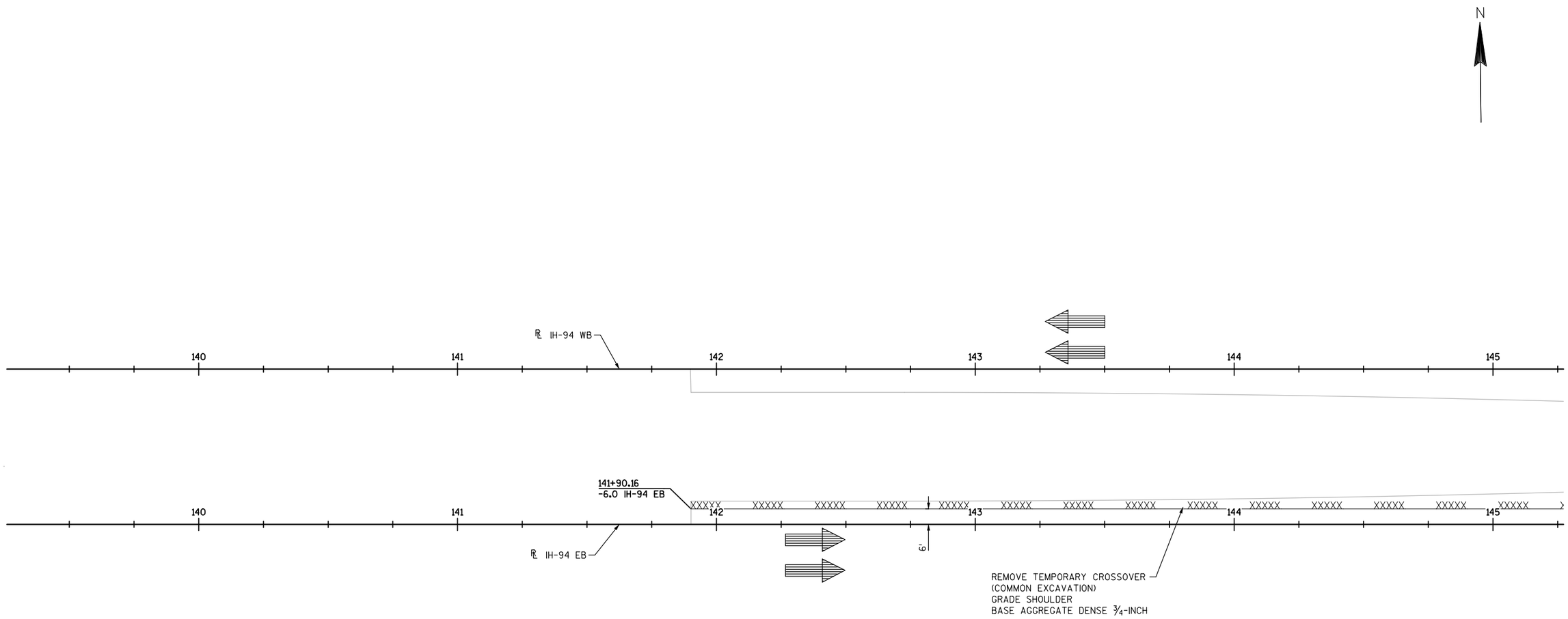
ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

	STA	OFF	R	L
CURVE 8	IH-94 WB		4167.0	380.64
PC	169+19.73	26.40 RT		
PT	172+99.85	9.00 RT		
PI	171+09.39	9.00 RT		

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 2B	SHEET 29	E

2



LEGEND

HINGE POINT

XXX XXXXX SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 3	SHEET 30	E

2

N

℄ IH-94 WB

146 147 148 149 150 151

147+50.00
-21.1 IH-94 EB

147+50.00
-6.0 IH-94 EB

XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX

146 147 148 149 150 151

6'

REMOVE TEMPORARY CROSSOVER
(COMMON EXCAVATION)
GRADE SHOULDER
BASE AGGREGATE DENSE ¾-INCH

℄ IH-94 EB

LEGEND

HINGE POINT

XXX XXXXX SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

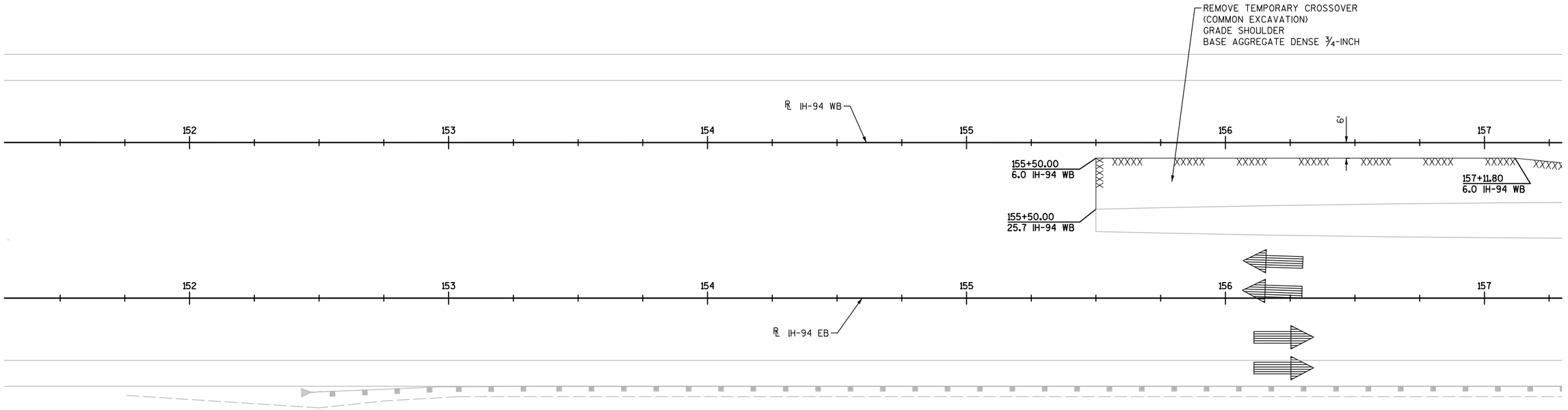
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 3	SHEET 31	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\021232_pd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40

WISDOT/CADDS SHEET 42

2

N



LEGEND

HINGE POINT

SAWING

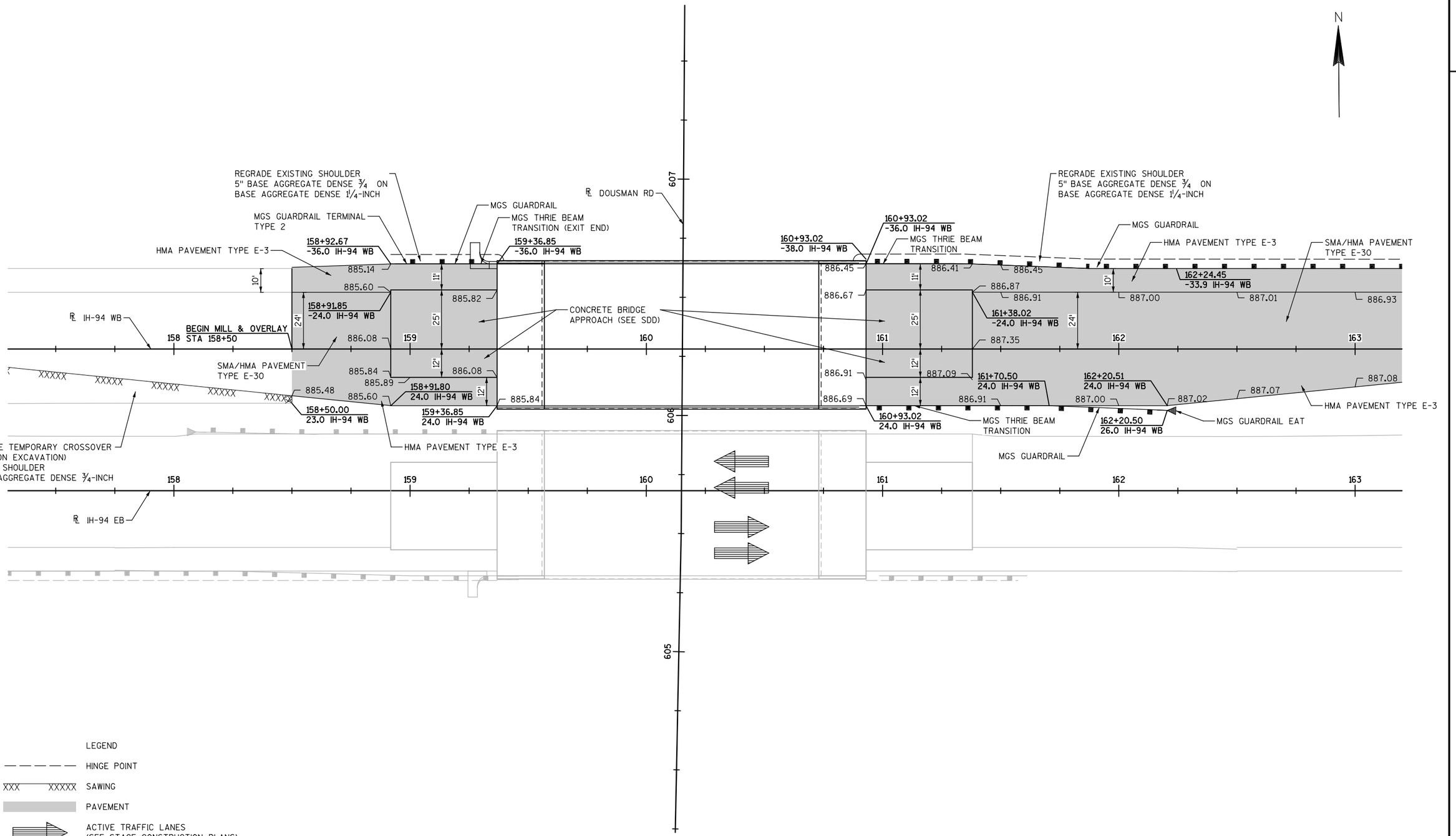
PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 3	SHEET 32	E

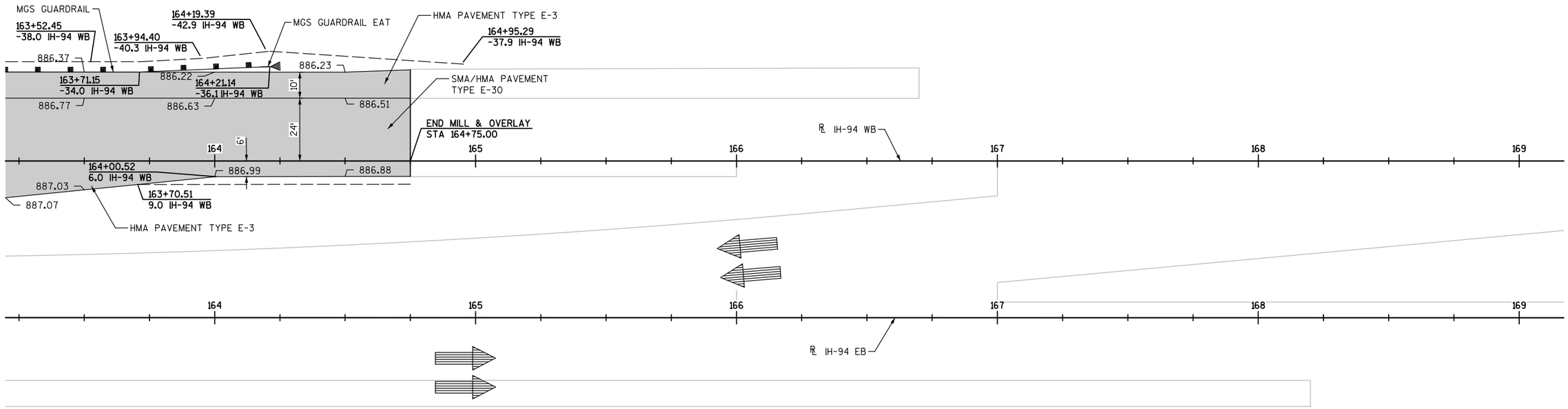
2



NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 3	SHEET 33	E

2



LEGEND

HINGE POINT

SAWING

PAVEMENT

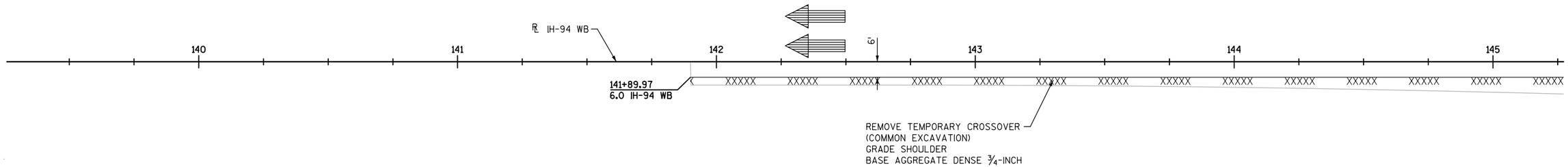
ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

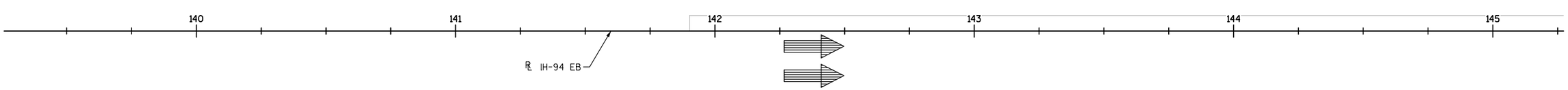
NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 3	SHEET 34	E

2

N





LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 4	SHEET 35	E

2

N

℄ IH-94 WB

146 147 148 149 150 151

XXXXX

6'

147+50.00
-6.0 IH-94 EB

℄ IH-94 EB

REMOVE TEMPORARY CROSSOVER
(COMMON EXCAVATION)
GRADE SHOULDER
BASE AGGREGATE DENSE 3/4-INCH

LEGEND

HINGE POINT

XXX XXXXX SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 4	SHEET 36	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\021242_pd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40

2

N

REMOVE TEMPORARY CROSSOVER
(COMMON EXCAVATION)
GRADE SHOULDER
BASE AGGREGATE DENSE ¾-INCH
INSTALL MAINTENANCE CROSSOVER,
SEE SDD MAINTENANCE CROSSOVER
FOR FREEWAY

℄ IH-94 WB

152 153 154 155 156 157

154+63.02
6.0 IH-94 WB

154+88.00
25.0 IH-94 WB

154+87.83
-27.9 IH-94 EB

154+63.02
-6.0 IH-94 EB

155+12.00
25.0 IH-94 WB

155+12.17
-27.9 IH-94 EB

155+36.98
-6.0 IH-94 EB

155+50.00
6.0 IH-94 WB

155+36.98
6.0 IH-94 WB

156+61.93
-6.0 IH-94 EB

152 153 154 155 156 157

℄ IH-94 EB

REMOVE TEMPORARY CROSSOVER
(COMMON EXCAVATION)
GRADE SHOULDER
BASE AGGREGATE DENSE ¾-INCH

REMOVE TEMPORARY CROSSOVER
(COMMON EXCAVATION)
GRADE SHOULDER
BASE AGGREGATE DENSE ¾-INCH

LEGEND

HINGE POINT

SAWING

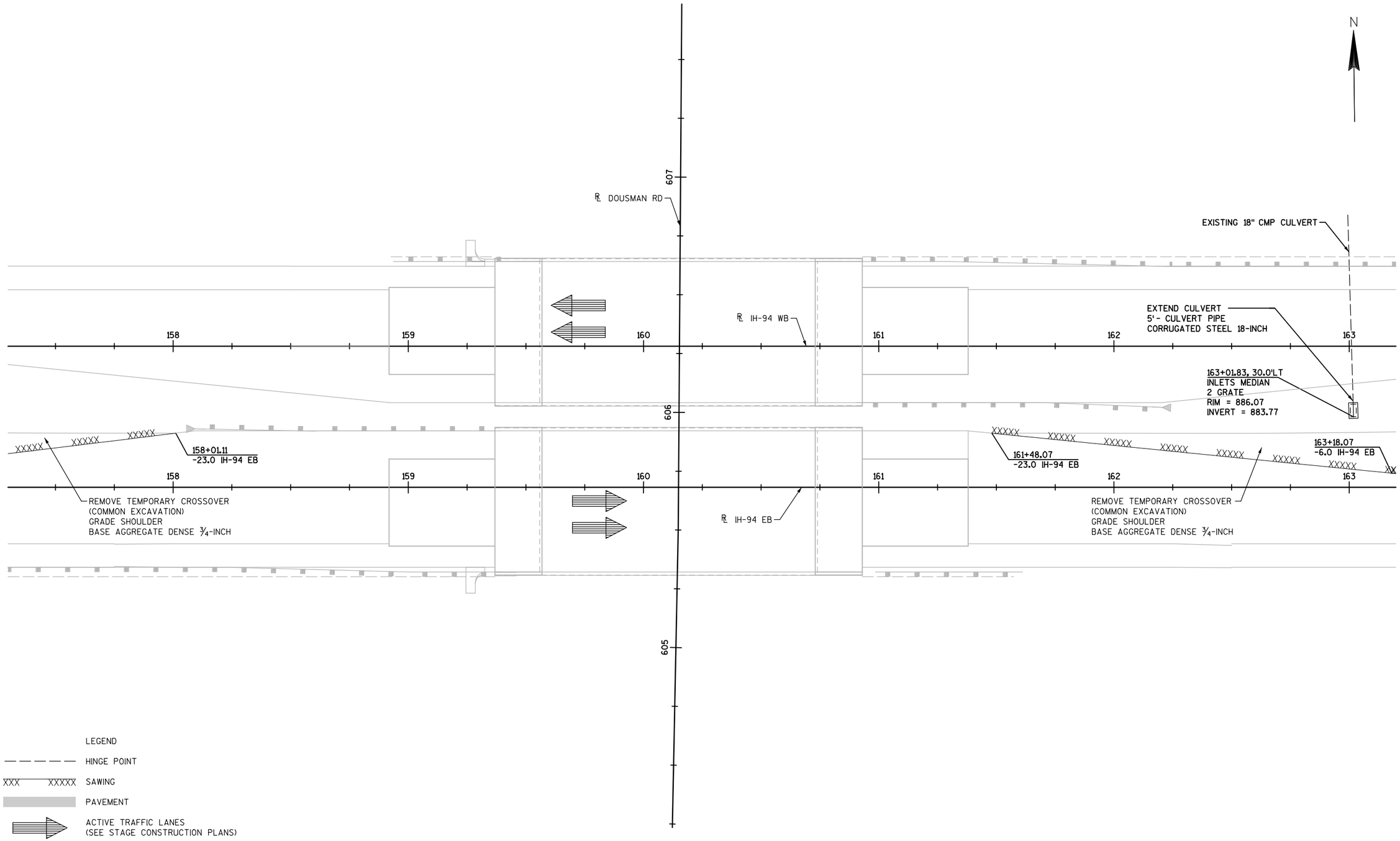
PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 4	SHEET 37	E

2



LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 4	SHEET 38	E

2

N

℄ IH-94 WB

164 165 166 167 168 169

166+00.00
6.0 IH-94 WB

167+00.00
6.0 IH-94 WB

6'

167+00.00
-6.0 IH-94 EB

164 165 166 167 168 169

6'

℄ IH-94 EB

REMOVE TEMPORARY CROSSOVER
(COMMON EXCAVATION)
GRADE SHOULDER
BASE AGGREGATE DENSE 3/4-INCH

LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 4	SHEET 39	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\021245_pd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40

2

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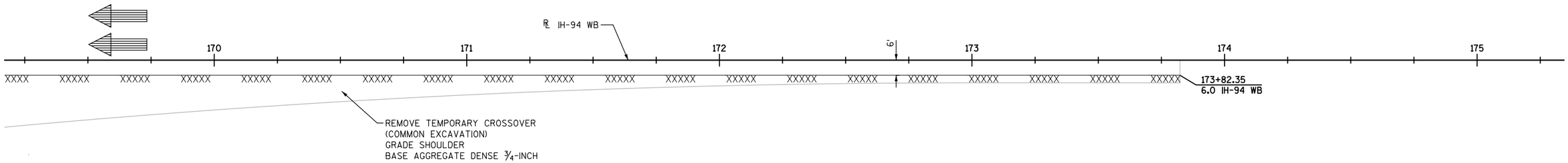
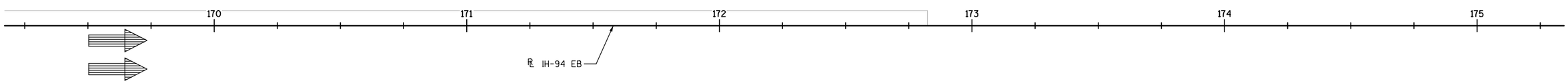




LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

NOTE: VERIFY ALL ELEVATIONS IN THE FIELD

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 4	SHEET 40	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\021246_pd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40

2

N

℄ IH-94 EB

℄ IH-94 WB

159

159

160

160

161

161

162

162

6'

6'

603+50
-18.0
603+50
-12.0

MGS GUARDRAIL EAT

603+95
-20.0

MGS THRIE BEAM TRANSITION

604+48
-18.0

604+85
-18.0

605+30
-28.8
605+30
-22.8
605+30
-18.0

SLOPE PAVING, SEE STRUCTURE PLAN

606+65
-29.9
606+65
-23.9

606+65
-19.2

606+91
-18.0

607+10
-18.0

MGS THRIE BEAM TRANSITION

607+47
-18.0

608+00
-20.0

MGS GUARDRAIL EAT

608+00
-18.0
608+00
-12.0

603

604

605

606

607

608

STA 603+50
MATCH EXISTING
XXXXX

STA 608+00
MATCH EXISTING
XXXXX

6'
12'
12'
6'

4.0%
2.0%
2.0%
4.0%

CONC. BARRIER SS 56"
THRIE BEAM ANCHOR
(SEE DETAIL)

CONCRETE BARRIER
TYPE S56

DOUSMAN RD

CONC. BARRIER SS 56"
THRIE BEAM ANCHOR
(SEE DETAIL)

℄ DOUSMAN RD

603+50
12.0
603+50
18.0

603+95
20.0

MGS GUARDRAIL EAT

604+48
18.0

MGS THRIE BEAM TRANSITION

604+85
18.0

605+04
18.0

605+31
19.1
605+31
24.7
605+31
30.7

606+66
18.0
606+66
23.6
606+66
29.6

SLOPE PAVING, SEE STRUCTURE PLAN

607+10
18.0

607+47
18.0

MGS THRIE BEAM TRANSITION

608+00
20.0

608+00
12.0
608+00
18.0

MGS GUARDRAIL EAT

LEGEND

XXXXX SAWCUT

MGS GUARDRAIL

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: DOUSMAN ROAD	SHEET 41	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\021256_pd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40

2

N

℄ IH-94 WB

B 142 B 143 B 144 B 145 B 146 B 147 B 148 B 149 B 150 B 151 B 152 B 153 IH-94 WB B 154 B 155 B 156 B 157

142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157

IH-94 EB

℄ IH-94 EB

LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC — CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB — TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT * SEE PAVING DETAILS FOR GRATE ELEVATIONS

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 1	SHEET 42	E

2

N

611
610
609
608
607
606
605
604
603
602

DOUSMAN ROAD

B-67-80

℄ IH-94 WB

B 158 B 159 B 160 B 161 B 162 B 163 B 164 B 165 B 166 B 167 B 168 B 169 B 170 IH-94 WB B 171 B 172 B 173

STH 67 ON-RAMP

158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173

IH-94 EB

STH 67 OFF-RAMP

B-67-79

℄ IH-94 EB

℄ DOUSMAN ROAD

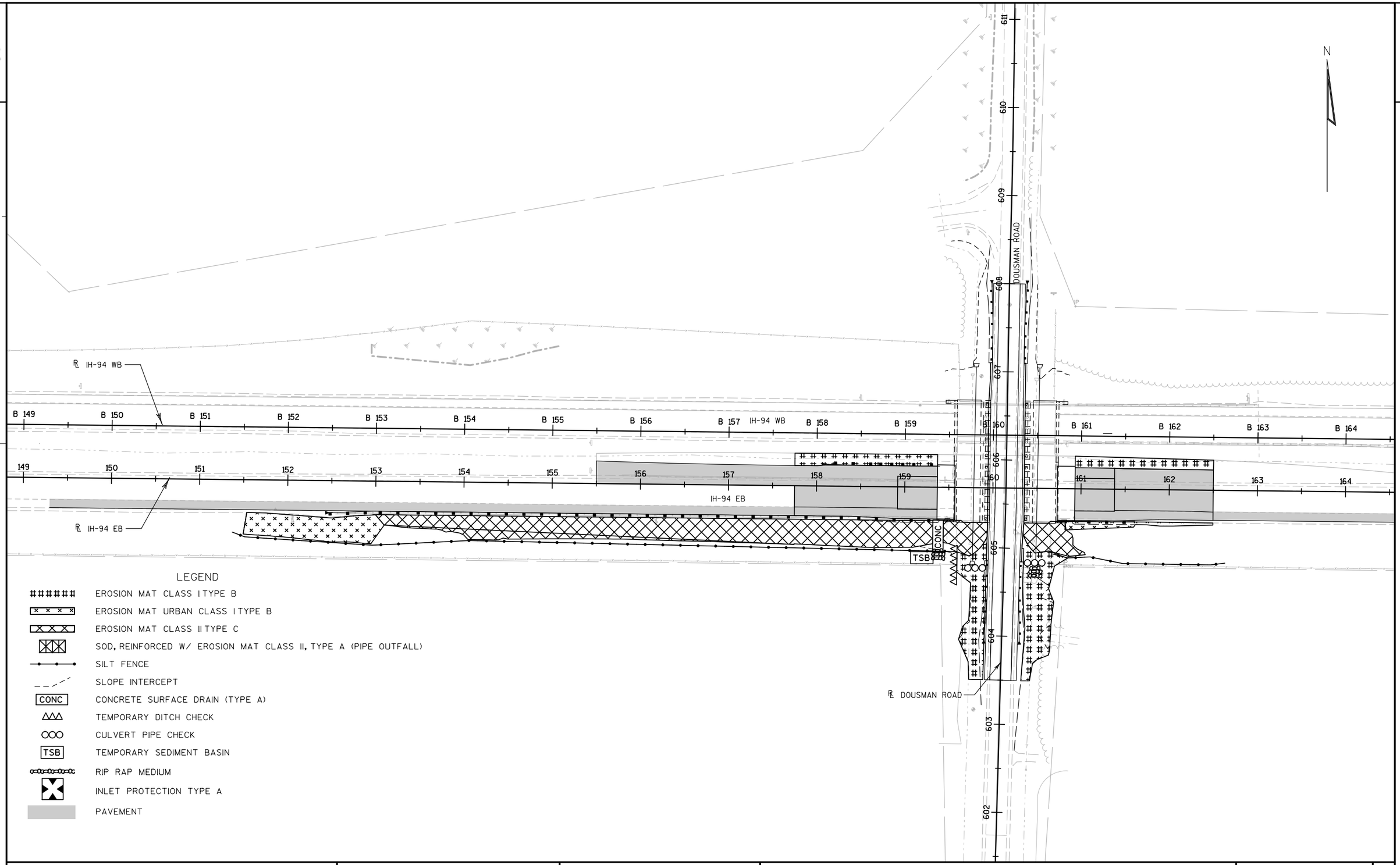
LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC — CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB — TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT

* SEE PAVING DETAILS FOR GRATE ELEVATIONS

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 1	SHEET 43	E

2



LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SLOPE INTERCEPT
- CONC — CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB — TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 2	SHEET 44	E

2

2

N

611
610
609
608
607
606
605
604
603
602

DOUSMAN ROAD

B-67-80

B-67-79

℄ IH-94 WB

IH-94 EB

℄ IH-94 EB

℄ DOUSMAN ROAD

B 159 B 160 B 161 B 162 B 163 B 164 B 165 IH-94 WB B 166 B 167 B 168 B 169 B 170 B 171 B 172 B 173 B 174

159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174

LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC — CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB — TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 2B	SHEET 45	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\022022_ec.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

N

DOUSMAN ROAD

B-67-80

℄ IH-94 WB

B 153 IH-94 WB | B 154 | B 155 | B 156 | B 157 | B 158 | B 159 | B 160 | B 161 | B 162 | B 163 | B 164 | B 165 | B 166 | B 167 | B 16

153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 | 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168

IH-94 EB

℄ IH-94 EB

B-67-79

℄ DOUSMAN ROAD

611 610 609 608 607 606 605 604 603 602

CONC

LEGEND

- ###### EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC — CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB — TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 3	SHEET 46	E

2

2

N

℄ IH-94 WB

B 162 B 163 B 164 B 165 B 166 B 167 B 168 B 169 CC B 170 B 171 B 172 B 173 CC B 174 B 175 B 176 IH-94 WB B 177

162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177

STH 67 ON-RAMP

IH-94 EB

℄ IH-94 EB

STH 67 OFF-RAMP

LEGEND

- ###### EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A

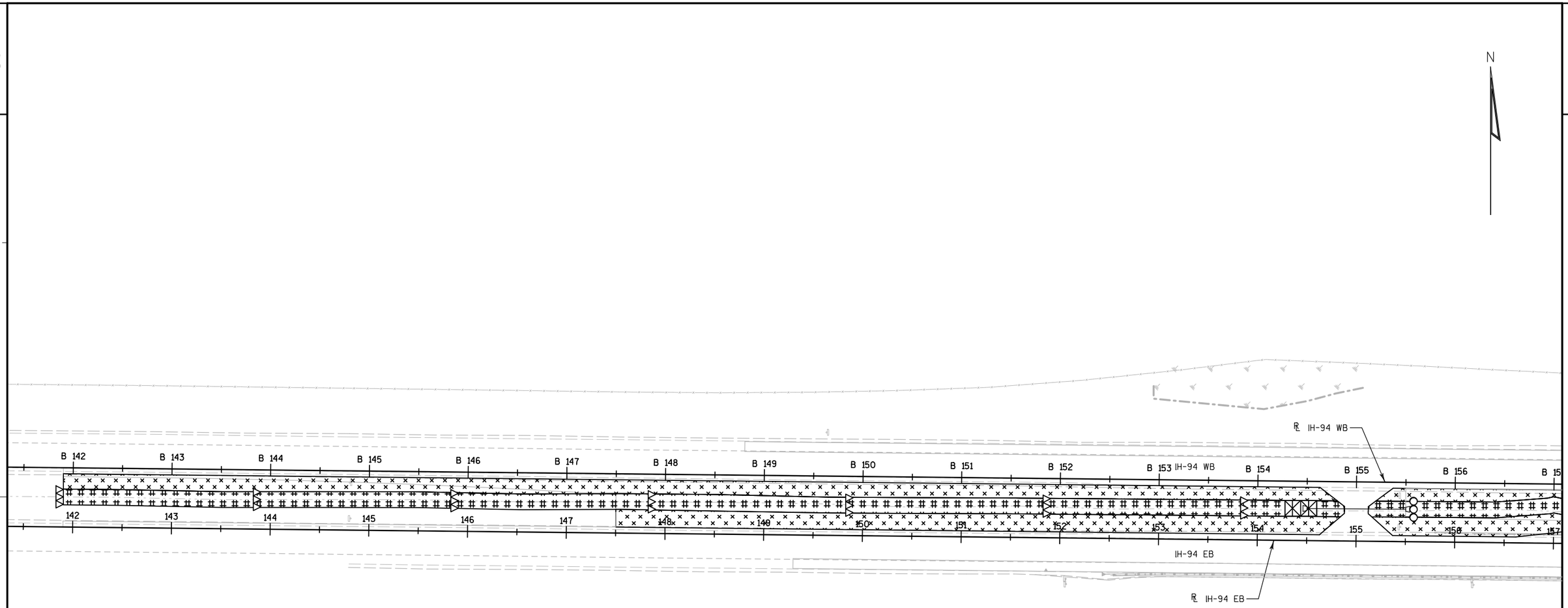
PAVEMENT

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 3	SHEET 47	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\022032_ec.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2



LEGEND

- ###### EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 4	SHEET 48	E

2

2

N

B-67-80

B-67-79

℄ DOUSMAN ROAD

℄ IH-94 WB

IH-94 WB

IH-94 EB

℄ IH-94 EB

B 155 B 156 B 157 B 158 B 159 B 160 B 161 B 162 B 163 B 164 B 165 B 166 B 167 B 168 B 169 B 170

155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170

602 603 604 605 606 607 608 609 610 611

DOUSMAN ROAD

LEGEND

- ###### EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 4	SHEET 49	E

2

N

℄ IH-94 WB

B 165 IH-94 WB B 166 B 167 B 168 B 169 B 170 B 171 B 172 B 173 B 174 B 175 B 176 B 177 B 178 B 179 B 18

165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180

IH-94 EB

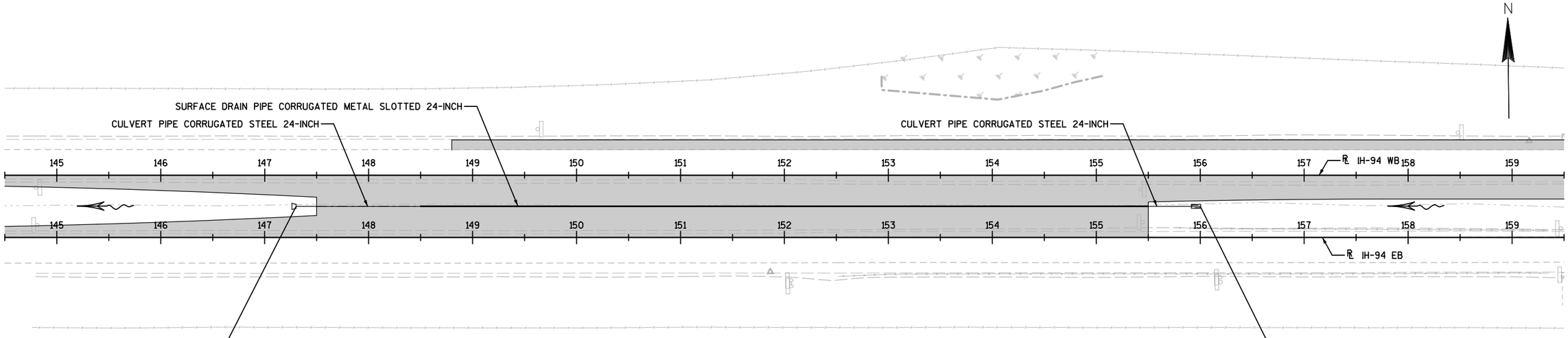
℄ IH-94 EB

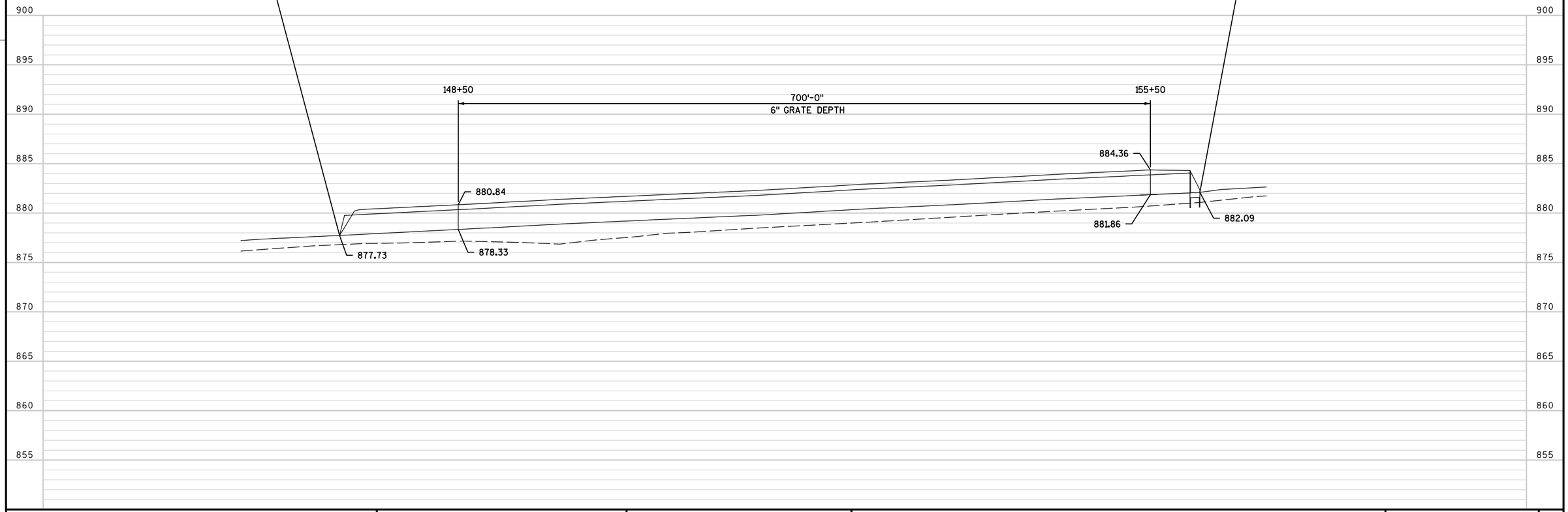
LEGEND

- ###### EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT

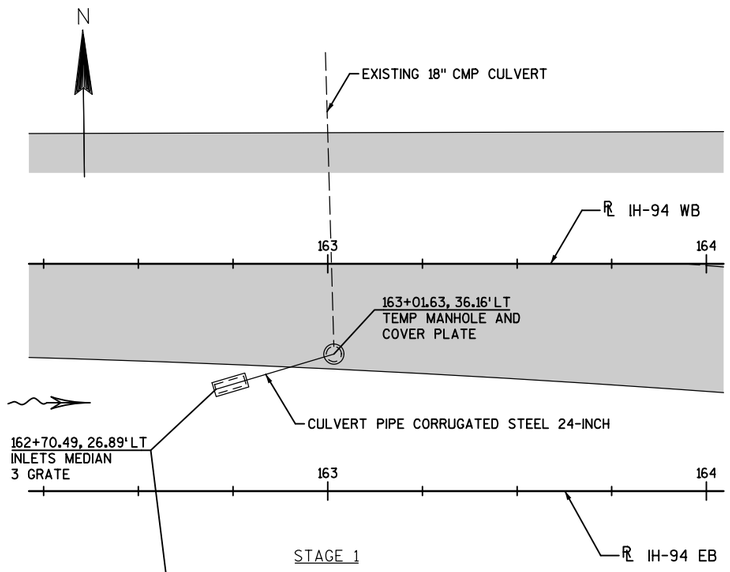
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 4	SHEET 50	E

2

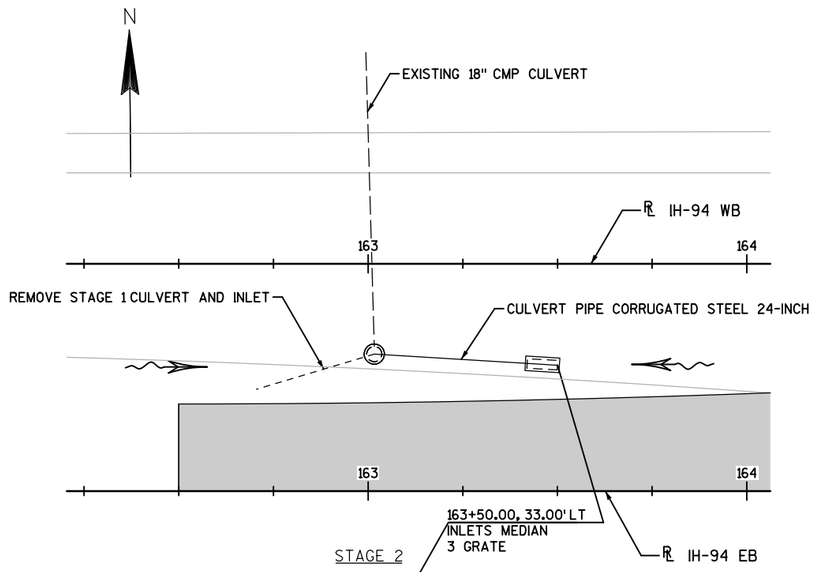




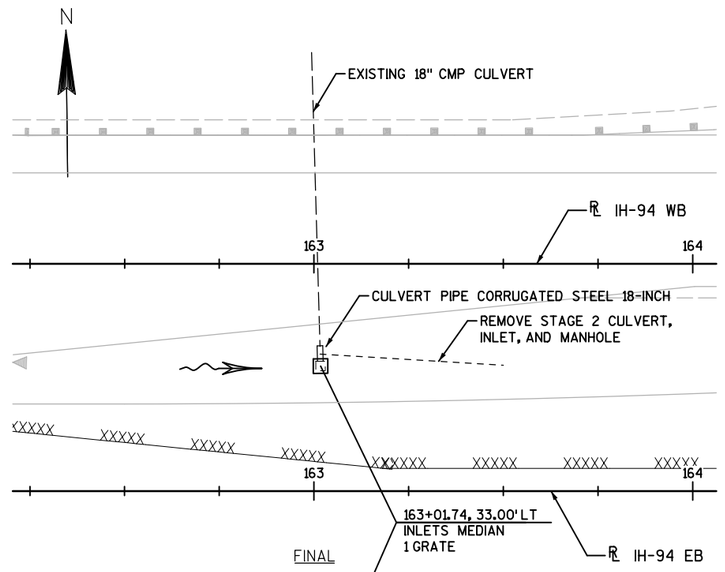
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	STORM SEWER	SHEET 51	E



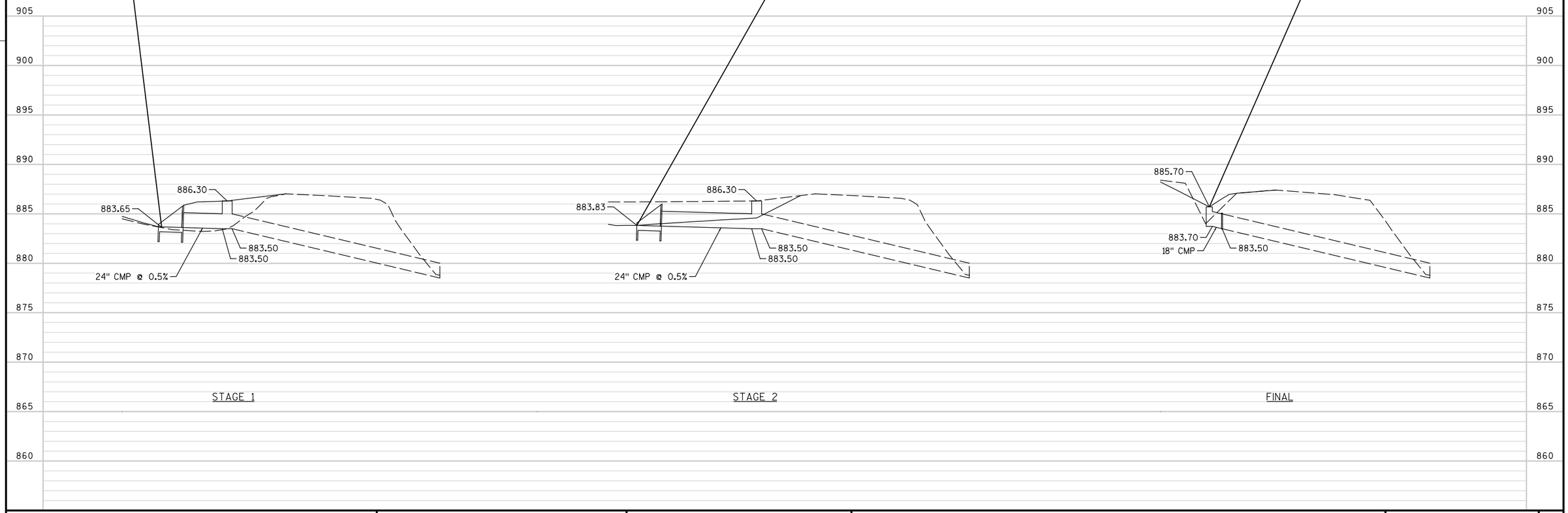
STAGE 1



STAGE 2



FINAL



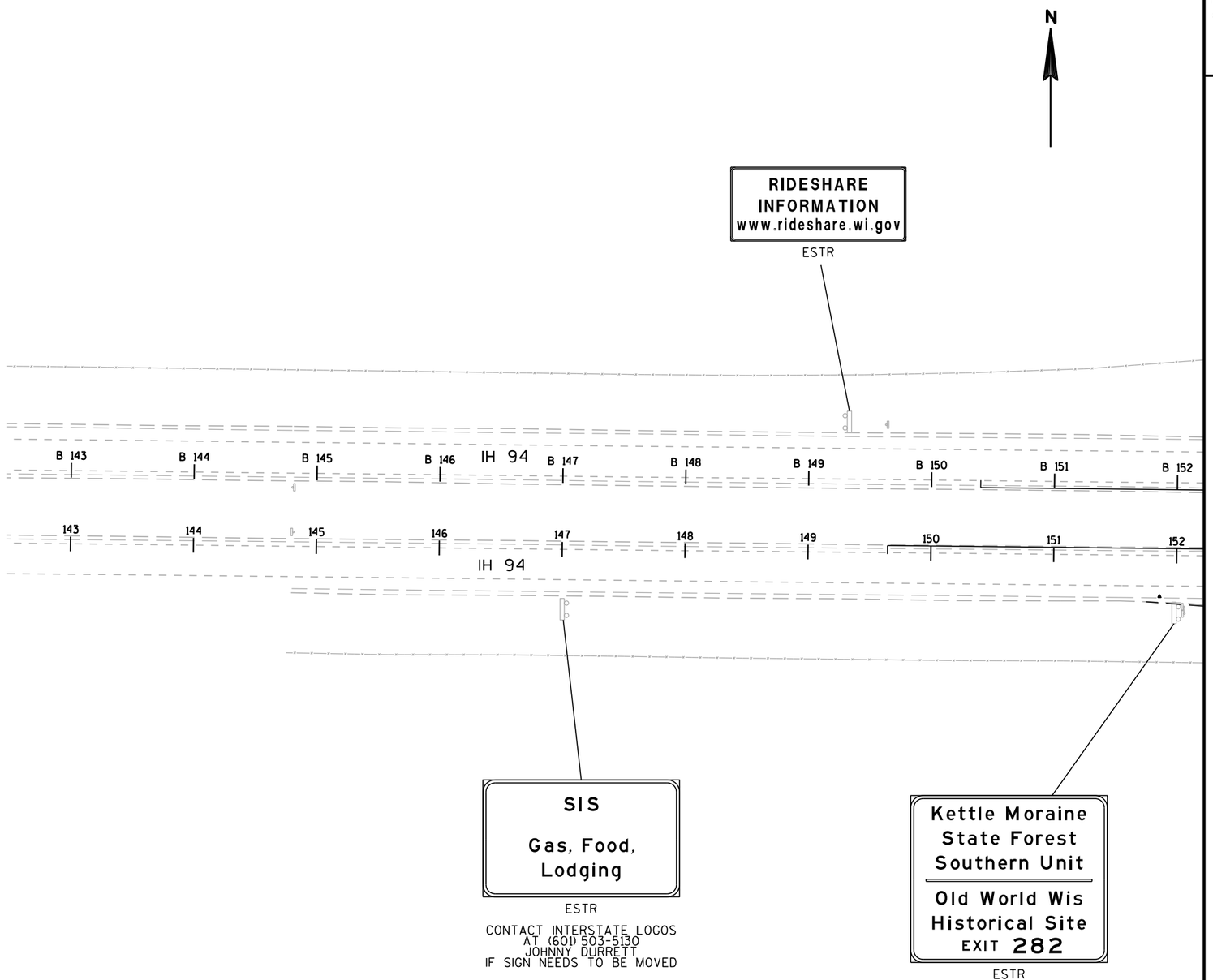
STAGE 1 STAGE 2 FINAL

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	STORM SEWER	SHEET 52	E

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO REMAIN



SHEET 1 OF 3

PROJECT NO: 1060-38-70	HWY: IH 94	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET	E

FILE NAME : J:\projects\d2_10603894\70\023201_SP.dgn PLOT DATE : 30-JUL-2015 12:42 PLOT BY : dotcmv PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO REMAIN

N

DOUSMAN RD

IH 94

NEW OPENING

TO BE CLOSED OPENING

40'

17 SPEED LIMIT 35 R2-1(5) REMOVE

12 WEST 94 MILE 281 .6 MOVE
REMOVE & REINSTALL AT CONCLUSION OF PROJECT

18 13 19 14 R3-4 / R3-4A (EXCEPT MAINTENANCE AND POLICE AUTHORIZED VEHICLES) MOVE

16 WEST 94 MILE 281 .8 MOVE
REMOVE & REINSTALL AT CONCLUSION OF PROJECT

15 EAST 94 MILE 281 .8 MOVE
REMOVE & REINSTALL AT CONCLUSION OF PROJECT

EMERGENCY STOPPING ONLY ESTR

11 EAST 94 MILE 281 .6 MOVE
REMOVE & REINSTALL AT CONCLUSION OF PROJECT

1 Dousman Rd M1-94 / Dousman Rd REMOVE

2 SPEED LIMIT 70 R2-1(5) / SPEED LIMIT 70 REMOVE

3 W5-52L(3) REMOVE

4 W5-52R(3) REMOVE

9 REDUCE SPEED AHEAD / 9a 35 M.P.H. REMOVE

6 W5-52L(3) REMOVE

5 W5-52R(3) REMOVE

7 Dousman Rd M1-94 / Dousman Rd REMOVE

8 SPEED LIMIT 35 W3-5(2M)

10 EXIT 40 M.P.H. W13-2 MOVE 150' EAST

EXIT 282
67
Dousman
Oconomowoc
ESTR

SHEET 2 OF 3

PROJECT NO: 1060-38-70	HWY: IH 94	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 54	E

FILE NAME : J:\projects\d2_10603894\70\023202_SP.dgn PLOT DATE : 30-JUL-2015 12:42 PLOT BY : dotcmv PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

2

LEGEND

EXISTING SIGN MOUNTED ON POST(S)

EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE

PROPOSED SIGN MOUNTED ON POST(S)

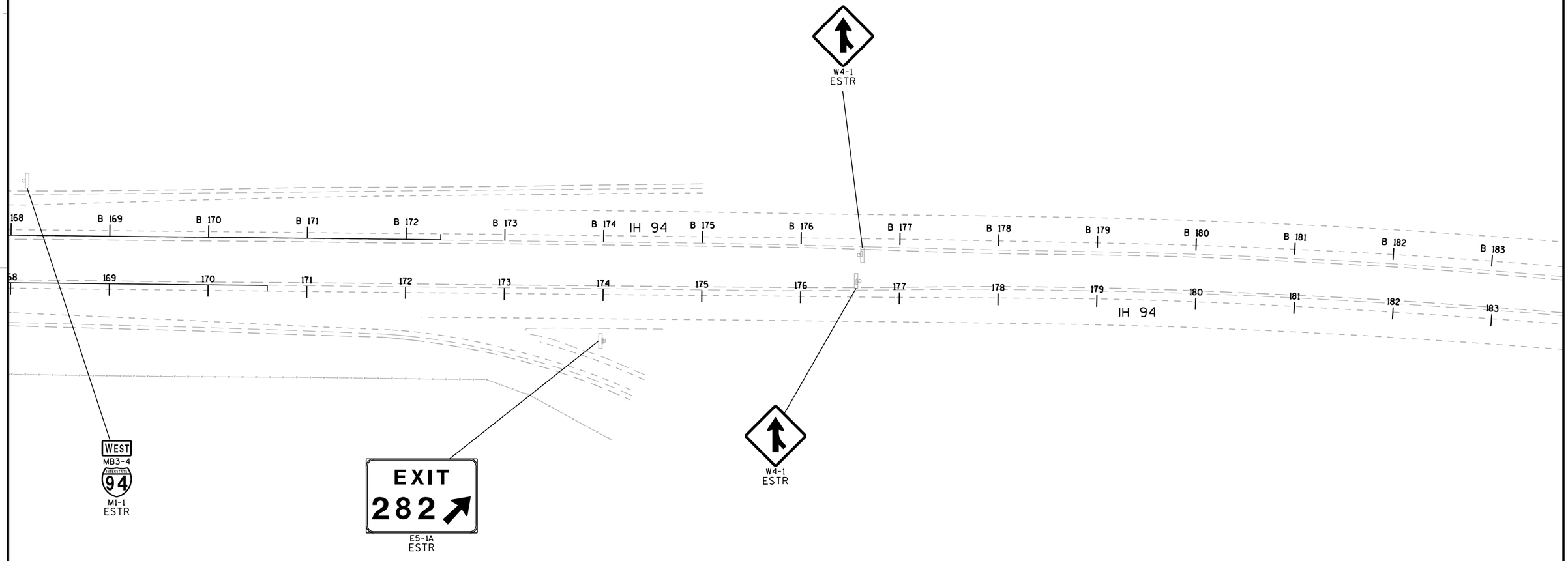
PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE

(XXX) DENOTES SIGN NUMBER

(X) INDICATES SIGN SIZE

ESTR EXISTING SIGN TO REMAIN

N



SHEET 3 OF 3

PROJECT NO: 1060-38-70	HWY: IH 94	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 55	E

FILE NAME : J:\projects\d2_10603894\70\023203_SP.dgn PLOT DATE : 30-JUL-2015 12:42 PLOT BY : dotcmv PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

2

N

ROW

STA 141+35 ℄ IH-94 WB
END PAVEMENT MARKING EPOXY 4-INCH (WHITE),
MATCH EXISTING PAVEMENT MARKING

STA 141+35 ℄ IH-94 WB
END PAVEMENT MARKING GROOVED WET REFLECTIVE
CONTRAST TAPE 4-INCH (DASHED WHITE), MATCH EXISTING
PAVEMENT MARKING

STA 141+35 ℄ IH-94 WB
END PAVEMENT MARKING EPOXY 4-INCH (YELLOW),
MATCH EXISTING PAVEMENT MARKING

℄ IH-94 WB

① ② ③

B 139 B 140 B 141 B 142 B 143 B 144 B 145 B 146 B 147 IH-94 WB B 148 B 149 B 150 B 151 B 152 B 153 B 154

139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154

IH-94 EB

STA 141+35 ℄ IH-94 EB
END PAVEMENT MARKING EPOXY 4-INCH (YELLOW),
MATCH EXISTING PAVEMENT MARKING

STA 141+35 ℄ IH-94 EB
END PAVEMENT MARKING GROOVED WET REFLECTIVE
CONTRAST TAPE 4-INCH (DASHED WHITE), MATCH EXISTING
PAVEMENT MARKING

STA 141+35 ℄ IH-94 EB
END PAVEMENT MARKING EPOXY 4-INCH (WHITE),
MATCH EXISTING PAVEMENT MARKING

℄ IH-94 EB

① ② ③

SLOPE INTERCEPT

ROW

PAVEMENT MARKING LEGEND

① PAVEMENT MARKING EPOXY 4-INCH (YELLOW)

② PAVEMENT MARKING EPOXY 4-INCH (WHITE)

③ PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH
(DASHED WHITE) (12.5' LINE, 37.5' SKIP)

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PERMANENT PAVEMENT MARKING	SHEET 56	E

2

2

N

ROW

DOUSMAN ROAD

SLOPE INTERCEPT

B-67-340

℄ IH-94 WB

IH-94 WB

SLOPE INTERCEPT

STA 168+00 ℄ IH-94 WB
END PAVEMENT MARKING EPOXY 4-INCH (WHITE)
MATCH EXISTING STH 67 ON-RAMP PAVEMENT
MARKING; REMOVE ANY REMAINING TEMPORARY
PAVEMENT MARKING REMOVABLE TAPE (BLACK)
COVERING EXISTING RAMP PAVEMENT MARKINGS

IH-94 EB

℄ IH-94 EB

ROW

SLOPE INTERCEPT

B-67-339

ROW

SLOPE INTERCEPT

STA 168+00 ℄ IH-94 EB
END PAVEMENT MARKING EPOXY 4-INCH (WHITE)
MATCH EXISTING STH 67 OFF-RAMP PAVEMENT
MARKING; REMOVE ANY REMAINING TEMPORARY
PAVEMENT MARKING REMOVABLE TAPE (BLACK)
COVERING EXISTING RAMP PAVEMENT MARKINGS

℄ DOUSMAN ROAD

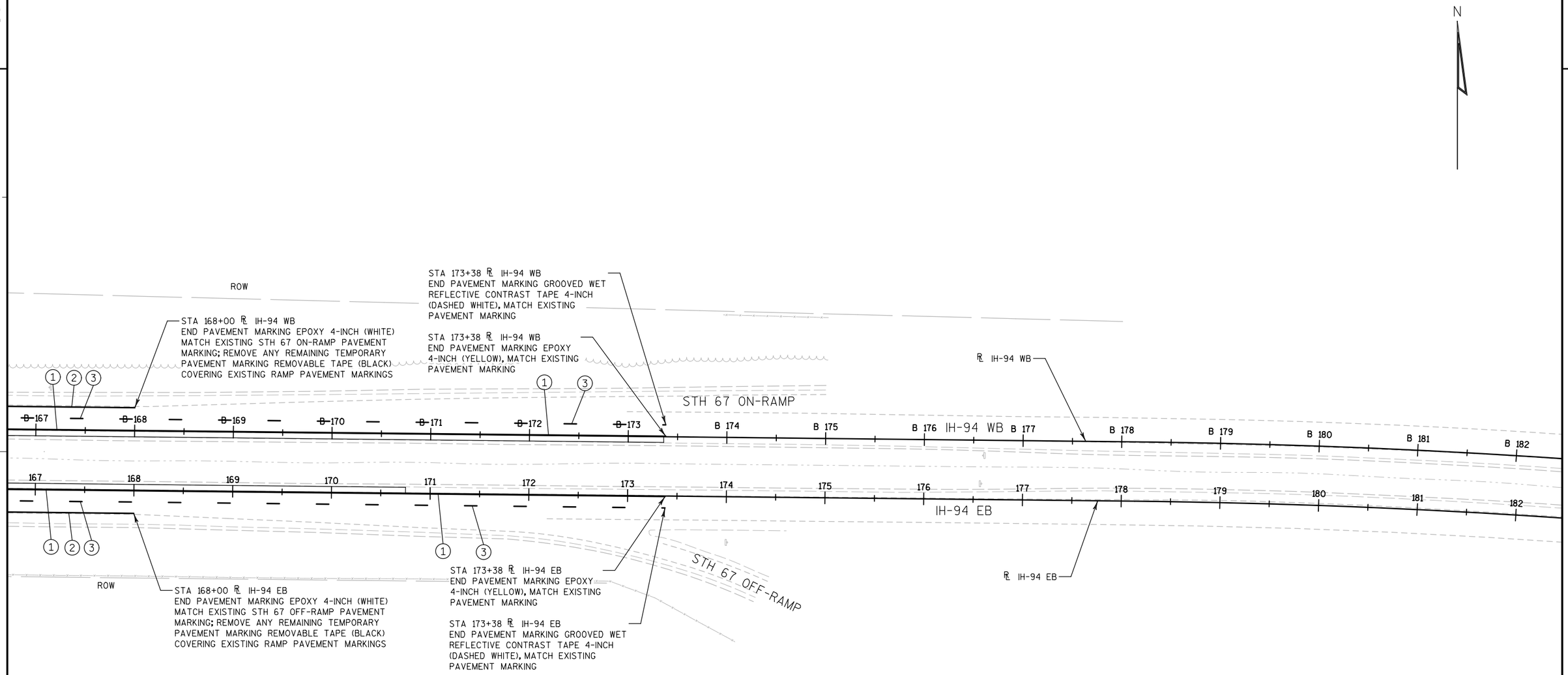
PAVEMENT MARKING LEGEND

1. PAVEMENT MARKING EPOXY 4-INCH (YELLOW)
2. PAVEMENT MARKING EPOXY 4-INCH (WHITE)
3. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (DASHED WHITE) (12.5' LINE, 37.5' SKIP)

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PERMANENT PAVEMENT MARKING	SHEET 57	E

2

N



PAVEMENT MARKING LEGEND

(1) PAVEMENT MARKING EPOXY 4-INCH (YELLOW)

(2) PAVEMENT MARKING EPOXY 4-INCH (WHITE)

(3) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (DASHED WHITE) (12.5' LINE, 37.5' SKIP)

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PERMANENT PAVEMENT MARKING	SHEET 58	E

2

N

℄ IH-94 EB

℄ IH-94 WB

IH-94 EB

IH-94 WB

159

160

161

162

604

605

606

607

608

609

℄ DOUSMAN RD

N DOUSMAN RD

ROW

STA 603+50 ℄ DOUSMAN RD
BEGIN PAVEMENT MARKING EPOXY 4-INCH (WHITE)

SLOPE INTERCEPT

STA 608+00 ℄ DOUSMAN RD
END PAVEMENT MARKING EPOXY 4-INCH (WHITE)

STA 603+50 ℄ DOUSMAN RD
BEGIN PAVEMENT MARKING EPOXY
4-INCH (DASHED YELLOW),
MATCH EXISTING CENTER LINE
PAVEMENT MARKING

STA 608+00 ℄ DOUSMAN RD
END PAVEMENT MARKING EPOXY
4-INCH (DASHED YELLOW),
MATCH EXISTING CENTER LINE
PAVEMENT MARKING

PAVEMENT MARKING LEGEND

(1) PAVEMENT MARKING EPOXY 4-INCH (WHITE)

(2) PAVEMENT MARKING EPOXY 4-INCH (DASHED YELLOW)
(12.5' LINE, 37.5' SKIP)

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PERMANENT PAVEMENT MARKING	SHEET 59	E

TRAFFIC CONTROL NOTES:

* SHIFT TRAFFIC TO CONFIGURATIONS SHOWN ON TRAFFIC CONTROL PLAN SHEETS FOR EACH CORRESPONDING STAGE.

* MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS DURING PEAK HOURS.

* FULL CLOSURES ARE REQUIRED ON GOLDEN LAKE ROAD AND DOUSMAN ROAD FOR EXISTING DECK REMOVAL, DECK CONSTRUCTION, AND CONSTRUCTION OF THESE SIDE ROADS. PLACE TWO FIXED MESSAGE SIGNS AT THE INTERSECTIONS OF DELAFIELD ROAD AND GOLDEN LAKE ROAD & DELAFIELD ROAD AND DOUSMAN ROAD AND AT THE INTERSECTIONS OF VALLEY ROAD AND GOLDEN LAKE ROAD & VALLEY ROAD AND DOUSMAN ROAD TO ALERT TRAFFIC OF CLOSURES AS DIRECTED BY THE ENGINEER. SEE FIXED MESSAGE SIGN DETAIL, GENERAL NOTES & LEGEND, AND DOUSMAN ROAD DETOUR PLAN SHEET FOR MORE DETAILS.

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

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

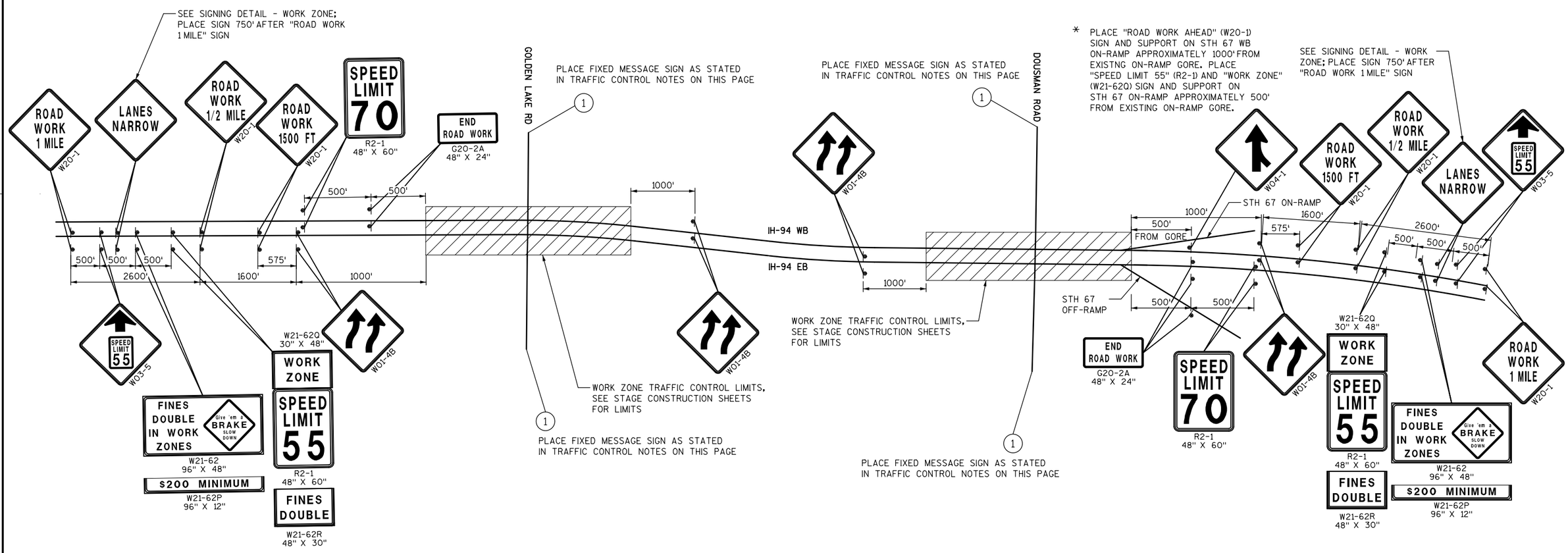
* "WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

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

* COORDINATE ALL ADVANCED WARNING SIGNS AND TRAFFIC CONTROL, NEAR DOUSMAN ROAD, WITH STH 67 BRIDGES PROJECT 1060-30-70 UNDER ANOTHER CONTRACT.

* ADJUST W01-4B SIGNS ACCORDING TO INDICATE PROPER TRAFFIC SHIFT DIRECTION AS DETERMINED PER TRAFFIC CONTROL LAYOUT FOR EACH PARTICULAR STAGE.

N



PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	ADVANCED SIGNING AND ADDITIONAL NOTES	SHEET 60	E

FIXED MESSAGE SIGNS (DETAILS SHEETS)

GENERAL NOTES:

1. ALL SIGNS TO HAVE FLUORESCENT REFLECTIVE SHEETING - REFERENCE: "WISDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," LATEST EDITION.

2. AFTER SIGNS HAVE BEEN LOCATED IN THE FIELD, BUT BEFORE INSTALLATION, THE PROJECT ENGINEER SHALL VERIFY EACH SIGN LOCATION.

3. ALL SIGNS TO BE MOUNTED ON WOODEN POST SUPPORTS (4"x6"). THE NUMBER OF POSTS REQUIRED FOR EACH LAYOUT IS SHOWN.

4. SIGNS ON THIS SHEET TO BE PAID UNDER THE ITEM "FIXED MESSAGE SIGNS."

5. SIGNS SHALL BE BLACK NON-REFLECTIVE MESSAGE ON ORANGE FLUORESCENT REFLECTIVE BACKGROUND PER SPEC 643 & 637.
6. ALL SIGNS SHALL HAVE CAPITAL LETTERS AND NUMERALS:
   12" CAPS SHALL BE SERIES "D"
   6" CAPS SHALL BE SERIES "C"

7. ALL SIGNS SHALL HAVE BORDER & RADIUS OF BORDERS AS FOLLOWS:

SIGN AREA	WIDTH OF BORDER
GREATER THAN 150 SQ FT	3"
60-150 SQ FT	2"
LESS THAN 60 SQ FT	1"

RADIUS SMALLEST OUTSIDE DIMENSION	CORNER RADIUS
> 8 FT	12"
> 6 FT	9"
> 4 FT	6"
LESS THAN 4 FT	3"

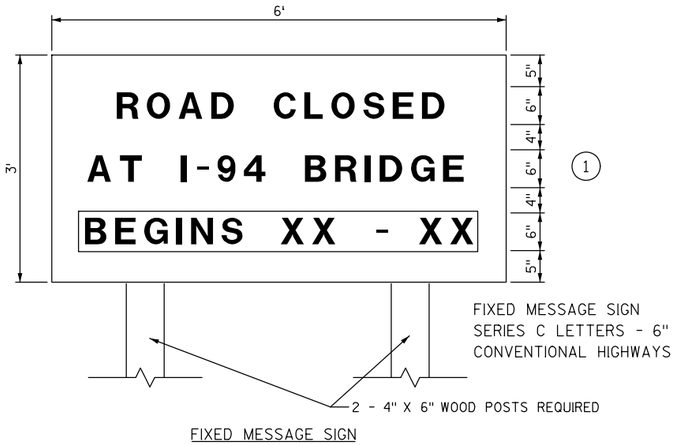
8. BEGIN XXX XX SIGNS SHALL BE SEPARATE PANELS, BUT SHALL BE CONSIDERED AS PART OF THE SIGN AND SHOULD BE REMOVED OR COVERED AFTER THEIR EFFECTIVE DATE. THE MONTH AND DAY SHALL BE AS DIRECTED BY THE ENGINEER IN THE FIELD.

9. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO MANUFACTURING.

10. SIGN BASE MATERIAL SHALL BE ACCORDING TO SECTION 643 & 637.

11. SIGNS TO BE IN PLACE 10 DAYS PRIOR TO CONSTRUCTION.

(X) = SIGN NUMBER



FIXED MESSAGE SIGN

FOR PLAN SHEETS

LEGEND: FIXED MESSAGE SIGNS

	EXISTING GUIDE SIGN TO BE COVERED
	FIXED MESSAGE SIGN(S) ON WOOD POST SUPPORTS
(XX)	FIXED MESSAGE SIGN NUMBER
(A1)	CONTRACTOR SHALL COVER AS DIRECTED BY THE ENGINEER ALL ROUTE MARKINGS PERTAINING TO THE PROJECT. INCIDENTAL TO WORK ZONE TRAFFIC CONTROL SIGNING.
CMS	CHANGEABLE MESSAGE SIGN

NOTES: FIXED MESSAGE SIGNS

1. CONTRACTOR SHOULD LOCATE FIXED MESSAGE SIGNS A MINIMUM OF 400' FROM ANY EXISTING TYPE "I" SIGN.

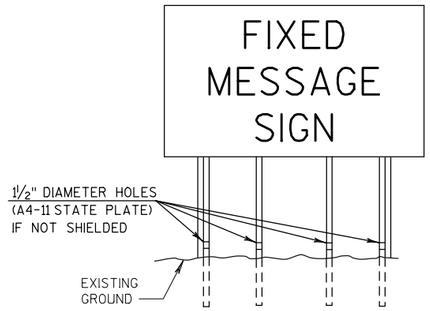
2. ALL FIXED MESSAGE SIGNS SHALL BE BLACK NON-REFLECTIVE MESSAGE ON ORANGE REFLECTIVE BACKGROUND.

3. SEE FIXED MESSAGE SIGNS AND SPECIAL MESSAGE SIGNS LAYOUT SHEETS FOR MORE INFORMATION.

4. COVER DETOUR SIGNING WHEN NOT IN USE. INCIDENTAL TO WORK ZONE TRAFFIC CONTROL SIGNING.

5. SIGNS TO BE PLACED 10 DAYS PRIOR TO CONSTRUCTION.

2



FRONT VIEW

NOTES

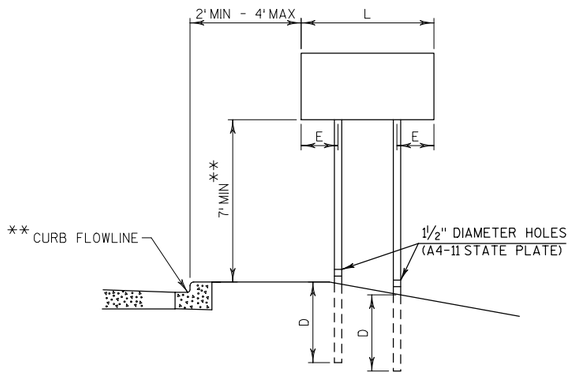
1. SEE TRAFFIC CONTROL SHEETS FOR SIGN LOCATIONS.

2. SEE TABLES BELOW FOR REQUIRED NUMBER OF POSTS.

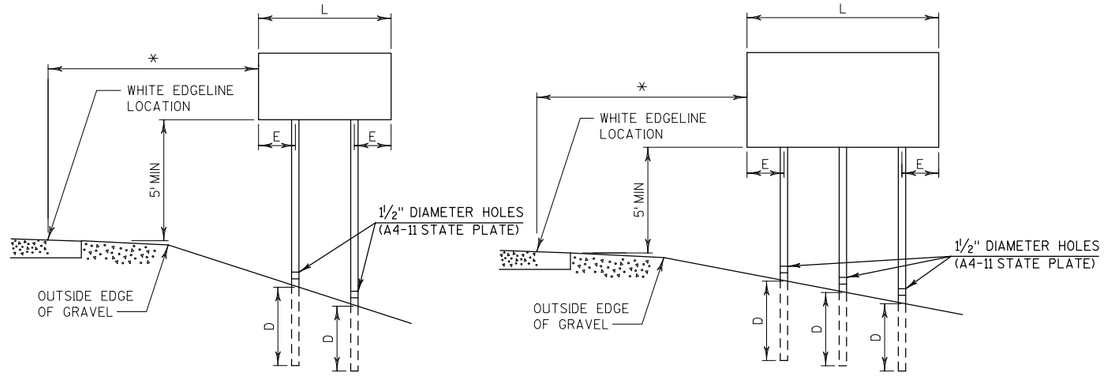
* 6' FROM EDGE OF A PAVED SHOULDER OR 12' FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) OR 2' FROM OUTSIDE EDGE OF GRAVEL, WHICHEVER IS GREATER UNLESS DIRECTED BY PROJECT ENGINEER.

** THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5' MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

3. 4X6 WOOD POSTS SHALL HAVE TWO HOLES PER STATE PLATE A4-11



URBAN AREA



RURAL AREA

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
GREATER THAN 48" LESS THAN 60"	12"
60" TO 120"	L/5

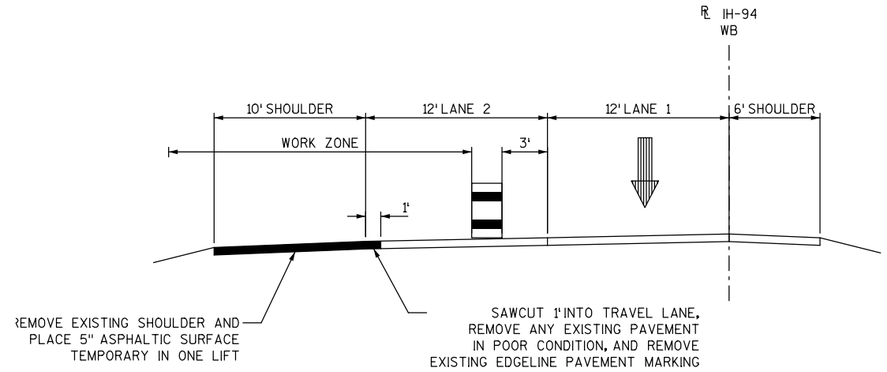
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
GREATER THAN 120" LESS THAN 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" AND GREATER	12"

POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

POST MOUNTING DETAIL FOR TRAFFIC CONTROL FIXED MESSAGE SIGNS



STA 148+80 TO STA 166+70 ℄ IH-94 WB

STAGE 1A CONSTRUCTION
TYPICAL SECTION
DURING NIGHT TIME CLOSURES WB IH-94

PRE-STAGE 1

WORK:

* SAWCUT AND COMPLETE 5" ASPHALTIC SURFACE MILLING ON THE OUTSIDE SHOULDERS AND 1' INTO "LANE 2" TRAVEL LANE.
* PAVE 5" ASPHALTIC SURFACE TEMPORARY ON THE OUTSIDE SHOULDERS IN ONE LIFT.
* AFTER MILLING PLACE SHOULDER PAVEMENT PRIOR TO OPENING ADJACENT LANE TO TRAFFIC.

TRAFFIC CONTROL:

* COMPLETE WORK DURING NIGHT TIME HOURS USING SINGLE LANE CLOSURES. UTILIZE SDD TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION, FOR SIGNING AND TRAFFIC CONTROL DEVICE LOCATIONS.
* IF MULTIPLE NIGHT TIME CLOSURES ARE NEEDED, UTILIZE SDD TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 M.P.H., FOR SIGNING AND TRAFFIC CONTROL DEVICE LOCATIONS DURING PEAK HOURS.
* THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
* THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FT, (500 FT DESIREABLE) DISTANCE TO EXISTING SIGNS.
* "WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.
* ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING OR ON "COVERED" OR "DOWNED" SIGNS.

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PRE-STAGE 1 TYPICAL SECTION AND NOTES	SHEET 63	E

2

STAGE 1

WORK:

* CONSTRUCT INSIDE SHOULDERS AND TEMPORARY CROSSOVERS ON BOTH EASTBOUND AND WESTBOUND IH-94.

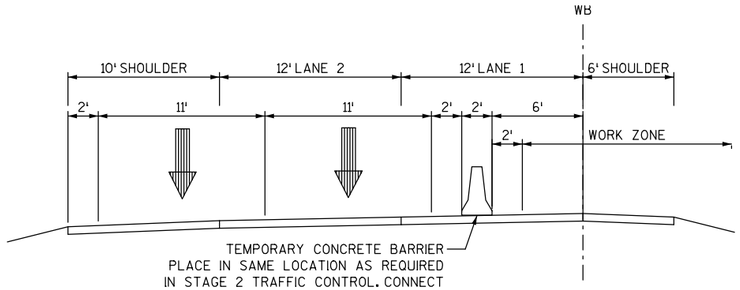
* CONSTRUCT TEMPORARY WESTBOUND BRIDGE WIDENING AT DOUSMAN ROAD. SEE TEMPORARY STRUCTURE PLANS AND STAGE 1B TYPICAL SECTION FOR DETAILS.

TRAFFIC CONTROL:

* COMPLETE CROSSOVER CONTRUCTION OPERATIONS UTILIZING STAGE 1 TRAFFIC CONTROL PLANS, SDD TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED HIGHWAY, SPEEDS GREATER THAN 40 M.P.H. AND TRAFFIC CONTROL, LANE CLOSERS, SPEED REDUCTION.

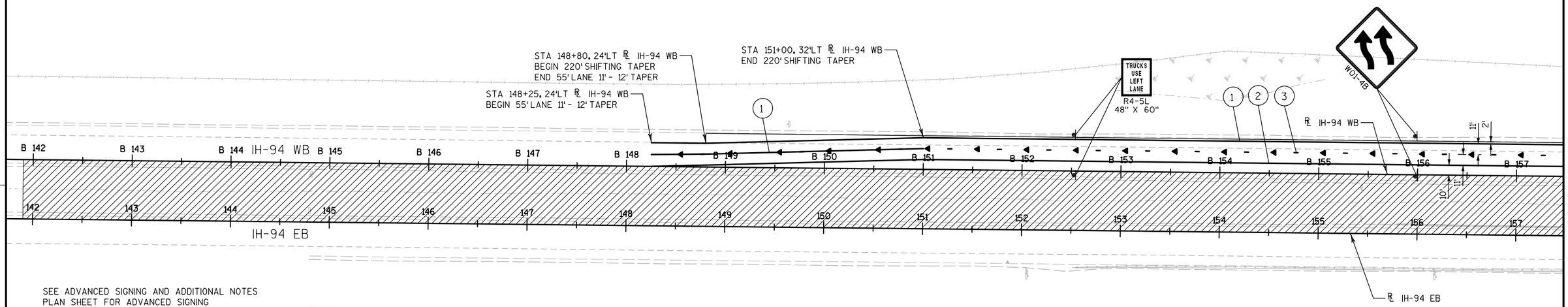
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.

* SEE ADVANCED SIGNING AND ADDITIONAL NOTES SHEET FOR ADVANCED SIGNING OUTSIDE OF WORK ZONE.



STAGE 1B CONSTRUCTION
TYPICAL SECTION
WB IH-94

NOTE:
TEMPORARY CONCRETE BARRIER LIMITS
STA 157+75 TO STA 163+83 ℄ IH-94 WB



SEE ADVANCED SIGNING AND ADDITIONAL NOTES
PLAN SHEET FOR ADVANCED SIGNING

LEGEND

↕	TYPE III BARRICADE	◀	TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
↕	TYPE III BARRICADE WTH ATTACHED SIGN	➡	DIRECTION OF TRAFFIC
●	TRAFFIC CONTROL DRUM	MB	PORTABLE CHANGEABLE MESSAGE BOARD
●	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	CC	TEMPORARY CRASH CUSHION BARRIER
	FLASHING ARROW BOARD	(1)	TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE)
	SIGN ON PERMANENT SUPPORT	(2)	TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (YELLOW)
	SIGN ON TEMPORARY SUPPORT	(3)	TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
	CONCRETE BARRIER TEMPORARY PRECAST	(4)	TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH
	WORK AREA		
	TEMPORARY BRIDGE		

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 1	SHEET 64	E

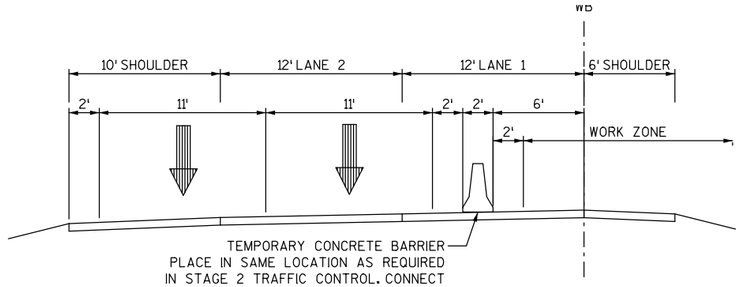
STAGE 1

WORK:

* CONSTRUCT INSIDE SHOULDERS AND TEMPORARY CROSSOVERS ON BOTH EASTBOUND AND WESTBOUND IH-94.
* CONSTRUCT TEMPORARY WESTBOUND BRIDGE WIDENING AT DOUSMAN ROAD. SEE TEMPORARY STRUCTURE PLANS AND STAGE 1B TYPICAL SECTION FOR DETAILS.

TRAFFIC CONTROL:

* COMPLETE CROSSOVER CONTRUCTION OPERATIONS UTILIZING STAGE 1 TRAFFIC CONTROL PLANS, SDD TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED HIGHWAY, SPEEDS GREATER THAN 40 M.P.H. AND TRAFFIC CONTROL, LANE CLOSERS, SPEED REDUCTION.
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.
* SEE ADVANCED SIGNING AND ADDITIONAL NOTES SHEET FOR ADVANCED SIGNING OUTSIDE OF WORK ZONE.



STAGE 1B CONSTRUCTION
TYPICAL SECTION
WB IH-94

NOTE:
TEMPORARY CONCRETE BARRIER LIMITS
STA 157+75 TO STA 163+83 ℄ IH-94 WB

N

STA 164+50, 32.0'LT ℄ IH-94 WB
BEGIN 220' SHIFTING TAPER

W5-52L
18" X 54"
MOUNT ON
BARRIER WALL

STA 167+25, 24.0'LT ℄ IH-94 WB
END 55' LANE 11' - 12' TAPER

STA 166+70, 24.0'LT ℄ IH-94 WB
END 220' SHIFTING TAPER
BEGIN 55' LANE 11' - 12' TAPER

W1-4B

CRASH CUSHION
TEMPORARY

TRUCKS
USE
LEFT
LANE
R4-5L
48" X 60"

SEE ADVANCED SIGNING AND ADDITIONAL NOTES
PLAN SHEET FOR ADVANCED SIGNING

℄ IH-94 WB

STH 67 ON-RAMP

DOUSMAN ROAD

B-67-80

B-67-79

STA 163+25 7.0'LT ℄ IH-94 WB
BEGIN TEMPORARY BARRIER TAPER

STA 164+15, 4.0'RT ℄ IH-94 WB
END TEMPORARY BARRIER TAPER

IH-94 EB

STH 67 OFF-RAMP

℄ IH-94 EB

℄ DOUSMAN ROAD

LEGEND

‡	TYPE III BARRICADE	◀	TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
‡	TYPE III BARRICADE WTH ATTACHED SIGN	➡	DIRECTION OF TRAFFIC
●	TRAFFIC CONTROL DRUM	MB	PORTABLE CHANGEABLE MESSAGE BOARD
●	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	CC	TEMPORARY CRASH CUSHION BARRIER
	FLASHING ARROW BOARD	1	TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE)
	SIGN ON PERMANENT SUPPORT	2	TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (YELLOW)
	SIGN ON TEMPORARY SUPPORT	3	TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
	CONCRETE BARRIER TEMPORARY PRECAST	4	TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH
	WORK AREA		
	TEMPORARY BRIDGE		

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 1	SHEET 65	E

2

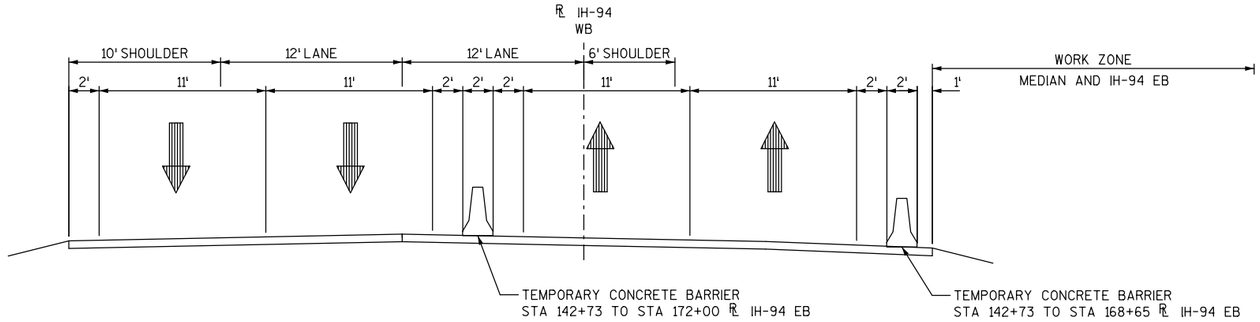
STAGE 2

WORK:

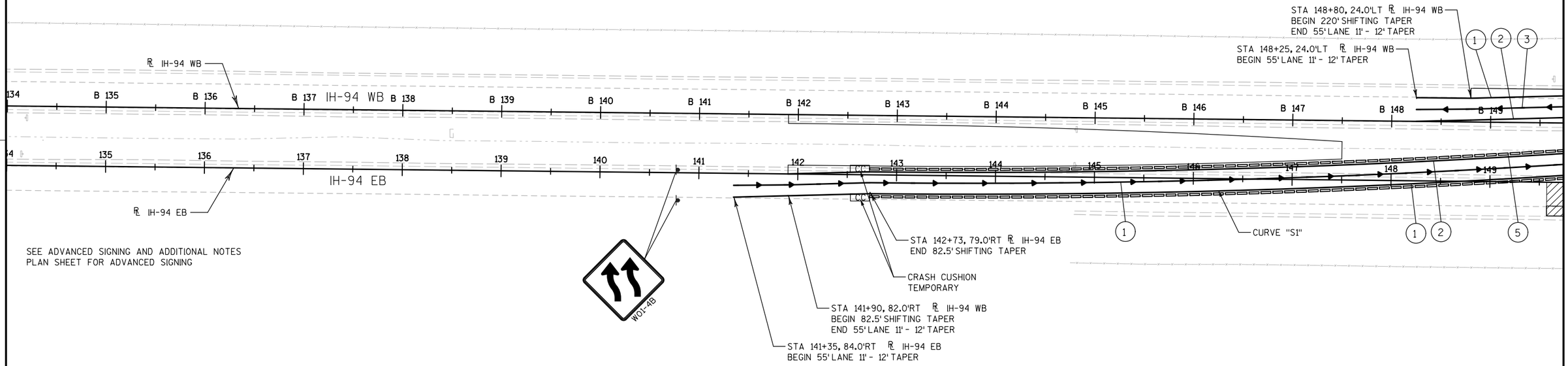
* CONSTRUCT IH-94 EB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDERS PER PLAN.
* CONSTRUCT STRUCTURE B-67-339 AT DOUSMAN ROAD. SEE STRUCTURE PLANS.
* REMOVE CROSSOVER CONSTRUCTED FOR STAGE 2 EAST OF DOUSMAN ROAD AND CONSTRUCT STAGE 3 CROSSOVER EAST OF DOUSMAN ROAD ONCE ALL STAGE 2 WORK IS COMPLETED AND TRAFFIC IS BACK IN NORMAL CONFIGURATIONS IN BOTH DIRECTIONS.

TRAFFIC CONTROL:

* EB TRAFFIC TO UTILIZE CROSSOVER, WB TRAFFIC SHIFTED TO IH-94 WB OUTSIDE LANE AND OUTSIDE SHOULDER.
* MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.
* COMPLETE WORK ON CROSSOVER REMOVAL AND STAGE 3 CROSSOVER CONSTRUCTION UTILIZING FULL TIME SHOULDER CLOSURES AND OFF PEAK SINGLE LANE CLOSURES.



STAGE 2 CONSTRUCTION
TYPICAL SECTION
IH-94



SEE ADVANCED SIGNING AND ADDITIONAL NOTES
PLAN SHEET FOR ADVANCED SIGNING

LEGEND

‡	TYPE III BARRICADE	◀	TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
‡	TYPE III BARRICADE WTH ATTACHED SIGN	➡	DIRECTION OF TRAFFIC
●	TRAFFIC CONTROL DRUM	MB	PORTABLE CHANGEABLE MESSAGE BOARD
●	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	CC	TEMPORARY CRASH CUSHION BARRIER
	FLASHING ARROW BOARD	1	TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE)
	SIGN ON PERMANENT SUPPORT	2	TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (YELLOW)
	SIGN ON TEMPORARY SUPPORT	3	TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
	CONCRETE BARRIER TEMPORARY PRECAST	4	TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH
	WORK AREA	5	GLARE SCREENS TEMPORARY (STA 142+73 TO 172+00)

	STA	OFF	R	L
CURVE S1	IH-94 EB		9421.0	846.94
PC	142+72.66	19.00 RT		
PT	151+18.47	19.00 LT		
PI	146+96.42	19.00 RT		

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 2	SHEET 66	E

STAGE 2

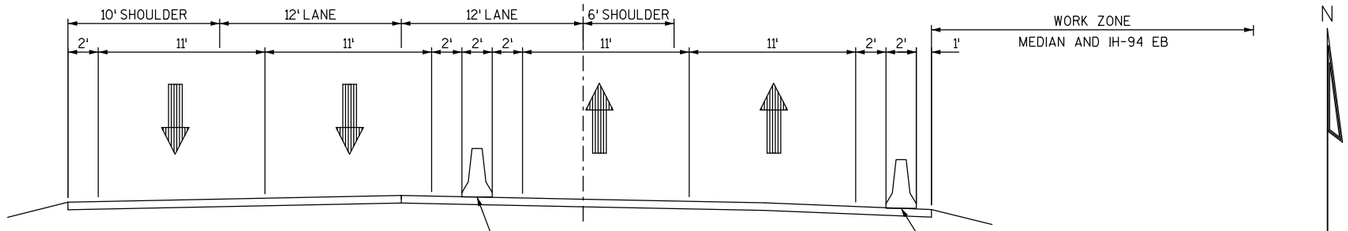
WORK:

* CONSTRUCT IH-94 EB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDERS PER PLAN.
* CONSTRUCT STRUCTURE B-67-339 AT DOUSMAN ROAD. SEE STRUCTURE PLANS.
* REMOVE CROSSOVER CONSTRUCTED FOR STAGE 2 EAST OF DOUSMAN ROAD AND CONSTRUCT STAGE 3 CROSSOVER EAST OF DOUSMAN ROAD ONCE ALL STAGE 2 WORK IS COMPLETED AND TRAFFIC IS BACK IN NORMAL CONFIGURATIONS IN BOTH DIRECTIONS.

TRAFFIC CONTROL:

* EB TRAFFIC TO UTILIZE CROSSOVER, WB TRAFFIC SHIFTED TO IH-94 WB OUTSIDE LANE AND OUTSIDE SHOULDER.
* MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.
* COMPLETE WORK ON CROSSOVER REMOVAL AND STAGE 3 CROSSOVER CONSTRUCTION UTILIZING FULL TIME SHOULDER CLOSURES AND OFF PEAK SINGLE LANE CLOSURES.

℄ IH-94 WB



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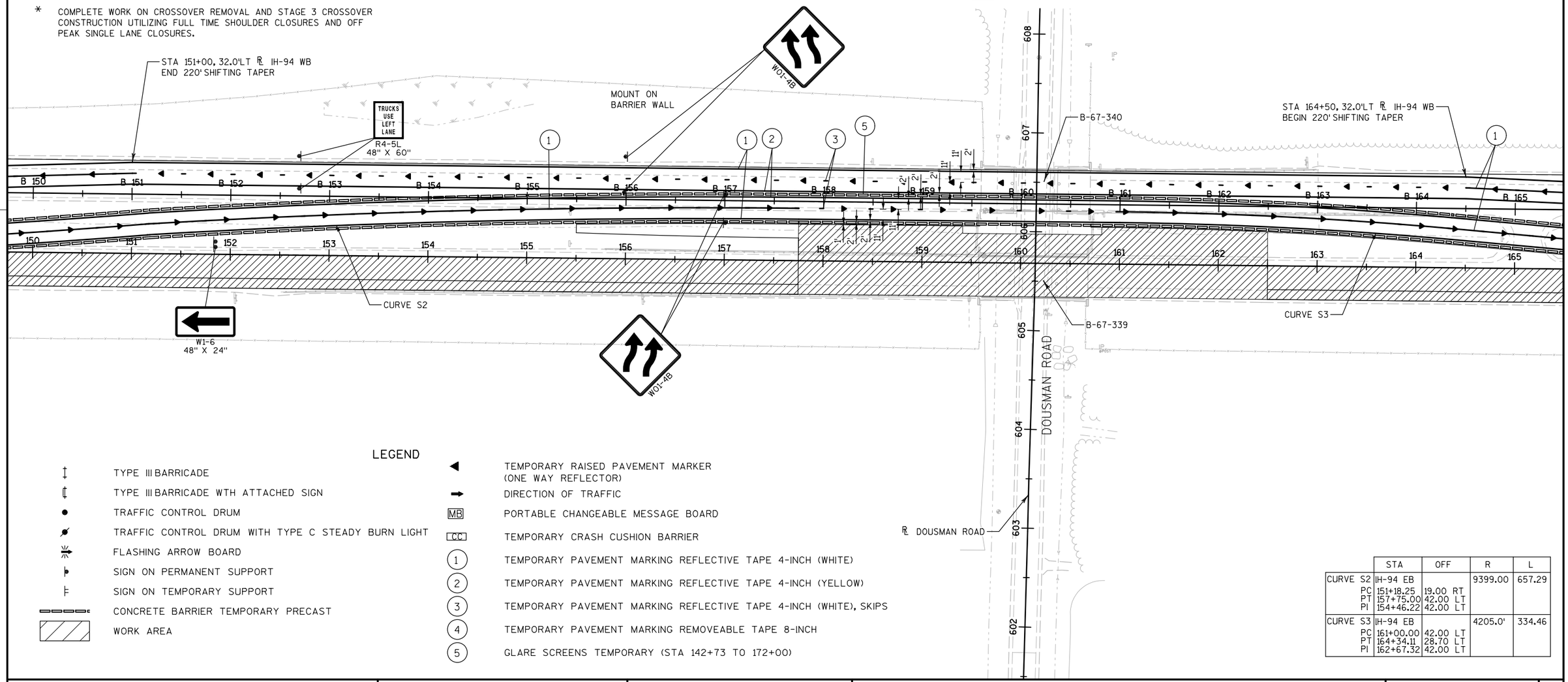
STAGE 2 CONSTRUCTION
TYPICAL SECTION
IH-94



LEGEND

TYPE III BARRICADE	TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
TYPE III BARRICADE WTH ATTACHED SIGN	DIRECTION OF TRAFFIC
TRAFFIC CONTROL DRUM	PORTABLE CHANGEABLE MESSAGE BOARD
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	TEMPORARY CRASH CUSHION BARRIER
FLASHING ARROW BOARD	(1) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE)
SIGN ON PERMANENT SUPPORT	(2) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (YELLOW)
SIGN ON TEMPORARY SUPPORT	(3) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
CONCRETE BARRIER TEMPORARY PRECAST	(4) TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH
WORK AREA	(5) GLARE SCREENS TEMPORARY (STA 142+73 TO 172+00)

	STA	OFF	R	L
CURVE S2	IH-94 EB		9399.00	657.29
PC	151+18.25	19.00 RT		
PT	157+75.00	42.00 LT		
PI	154+46.22	42.00 LT		
CURVE S3	IH-94 EB		4205.0'	334.46
PC	161+00.00	42.00 LT		
PT	164+34.11	28.70 LT		
PI	162+67.32	42.00 LT		

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 2	SHEET 67	E

2

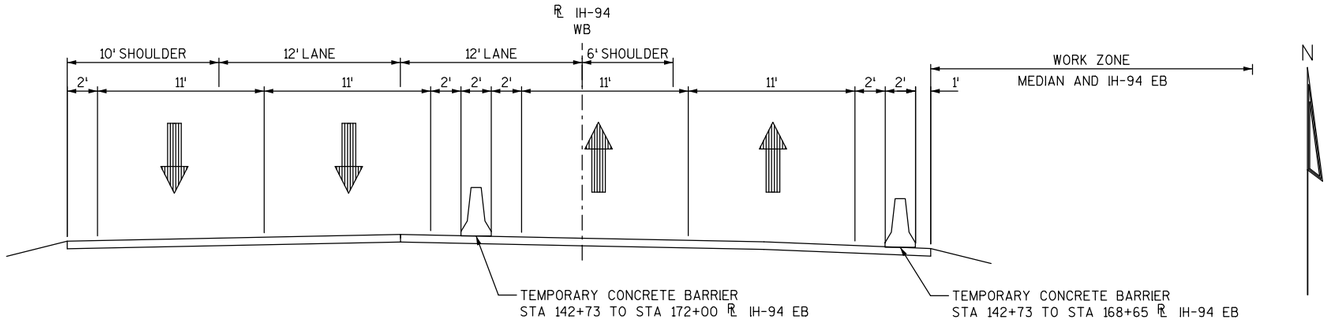
STAGE 2

WORK:

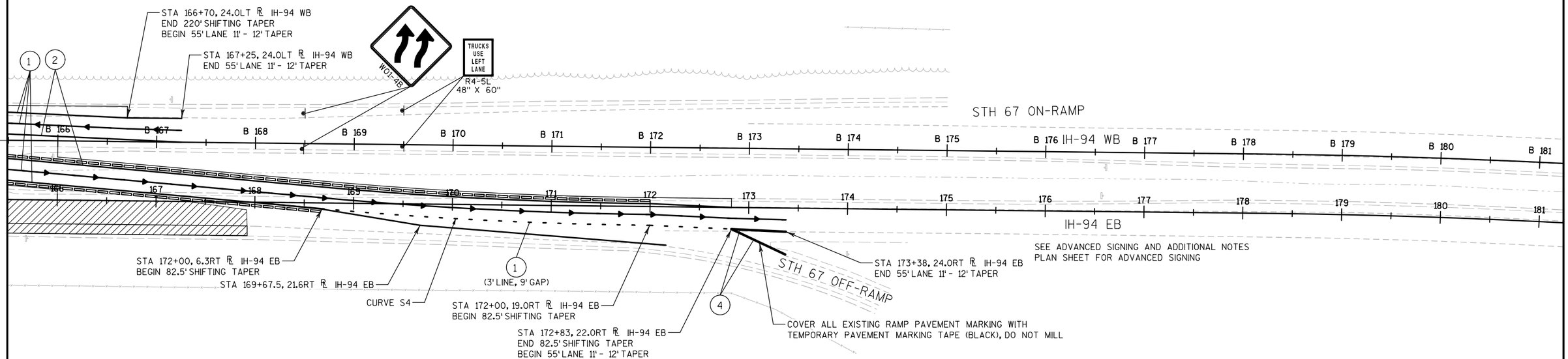
* CONSTRUCT IH-94 EB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDERS PER PLAN.
* CONSTRUCT STRUCTURE B-67-339 AT DOUSMAN ROAD. SEE STRUCTURE PLANS.
* REMOVE CROSSOVER CONSTRUCTED FOR STAGE 2 EAST OF DOUSMAN ROAD AND CONSTRUCT STAGE 3 CROSSOVER EAST OF DOUSMAN ROAD ONCE ALL STAGE 2 WORK IS COMPLETED AND TRAFFIC IS BACK IN NORMAL CONFIGURATIONS IN BOTH DIRECTIONS.

TRAFFIC CONTROL:

* EB TRAFFIC TO UTILIZE CROSSOVER, WB TRAFFIC SHIFTED TO IH-94 WB OUTSIDE LANE AND OUTSIDE SHOULDER.
* MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.
* COMPLETE WORK ON CROSSOVER REMOVAL AND STAGE 3 CROSSOVER CONSTRUCTION UTILIZING FULL TIME SHOULDER CLOSURES AND OFF PEAK SINGLE LANE CLOSURES.



STAGE 2 CONSTRUCTION
TYPICAL SECTION
IH-94



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
- DIRECTION OF TRAFFIC
- MB — PORTABLE CHANGEABLE MESSAGE BOARD
- CC — TEMPORARY CRASH CUSHION BARRIER
- (1) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE)
- (2) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (YELLOW)
- (3) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
- (4) TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH
- (5) GLARE SCREENS TEMPORARY (STA 142+73 TO 172+00)

	STA	OFF	R	L
CURVE S4	IH-94 EB		4195.0	333.67
PC	168+66.64	5.70 RT		
PT	171+99.96	19.00 RT		
PI	170+33.03	19.00 RT		

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 2	SHEET 68	E

2

STAGE 3

WORK:

* SAWCUT AND REMOVE PORTIONS OF TEMPORARY CROSSOVER PAVEMENT. 6'INSIDE PAVED SHOULDER TO REMAIN. SEE PLAN DETAILS FOR REMOVALS.
* CONSTRUCT IH-94 WB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDER PER PLAN.
* CONSTRUCT STRUCTURE B-67-340 AT DOUSMAN ROAD. SEE STRUCTURE PLANS.

TRAFFIC CONTROL:

* WB TRAFFIC TO UTILIZE CROSSOVER, EB TRAFFIC SHIFTED TO IH-94 EB OUTSIDE LANE AND OUTSIDE SHOULDER.
* MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.

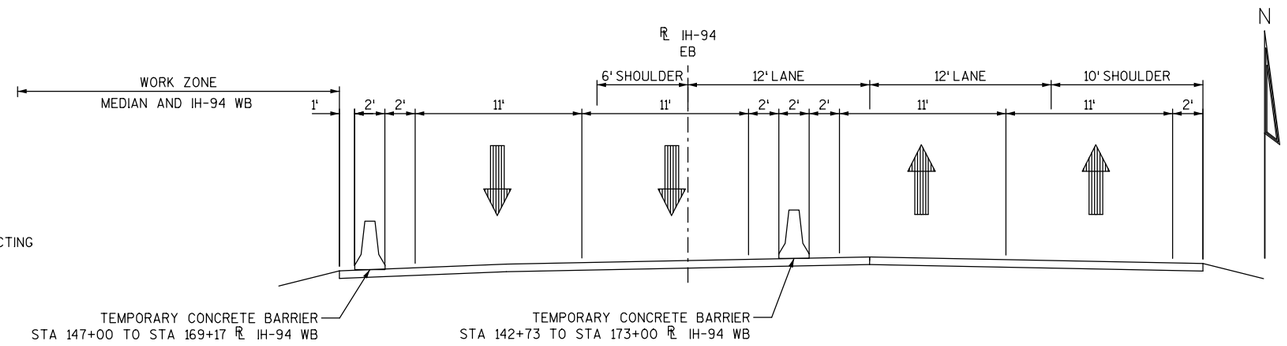
STAGE 4

WORK:

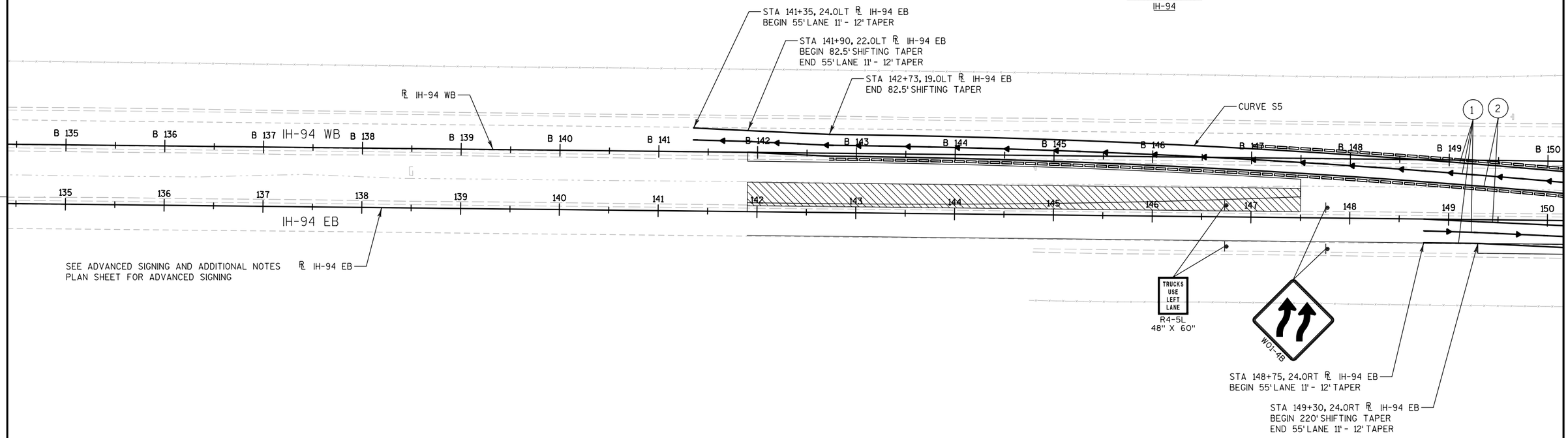
* WHEN CONSTRUCTION OF STRUCTURE B-67-340 AND IH-94 WB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDER IS COMPLETED, PLACE TRAFFIC BACK TO NORMAL CONFIGURATION. REMOVE REMAINING TEMPORARY CROSSOVERS, 6'INSIDE PAVED SHOULDER TO REMAIN, AND GRADE MEDIAN.

TRAFFIC CONTROL:

* MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.
* COMPLETE WORK ON CROSSOVER REMOVAL AND MEDIAN GRADING UTILIZING FULL TIME SHOULDER CLOSURES AND OFF PEAK SINGLE LANE CLOSURES.



STAGE 3 CONSTRUCTION
TYPICAL SECTION
IH-94



LEGEND

‡	TYPE III BARRICADE	◀	TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
‡	TYPE III BARRICADE WTH ATTACHED SIGN	➡	DIRECTION OF TRAFFIC
●	TRAFFIC CONTROL DRUM	MB	PORTABLE CHANGEABLE MESSAGE BOARD
●	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	CC	TEMPORARY CRASH CUSHION BARRIER
	FLASHING ARROW BOARD	1	TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE)
	SIGN ON PERMANENT SUPPORT	2	TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (YELLOW)
	SIGN ON TEMPORARY SUPPORT	3	TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
	CONCRETE BARRIER TEMPORARY PRECAST	4	TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH
	WORK AREA		

	STA	OFF	R	L
CURVE S5	IH-94 WB		9421.0	846.94
PC	142+72.66	19.00 LT		
PT	151+18.47	19.00 RT		
PI	146+96.42	19.00 LT		

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 3	SHEET 69	E

2

STAGE 3

WORK:

* SAWCUT AND REMOVE PORTIONS OF TEMPORARY CROSSOVER PAVEMENT. 6'INSIDE PAVED SHOULDER TO REMAIN. SEE PLAN DETAILS FOR REMOVALS.
* CONSTRUCT IH-94 WB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDER PER PLAN.
* CONSTRUCT STRUCTURE B-67-340 AT DOUSMAN ROAD. SEE STRUCTURE PLANS.

TRAFFIC CONTROL:

* WB TRAFFIC TO UTILIZE CROSSOVER, EB TRAFFIC SHIFTED TO IH-94 EB OUTSIDE LANE AND OUTSIDE SHOULDER.
* MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.

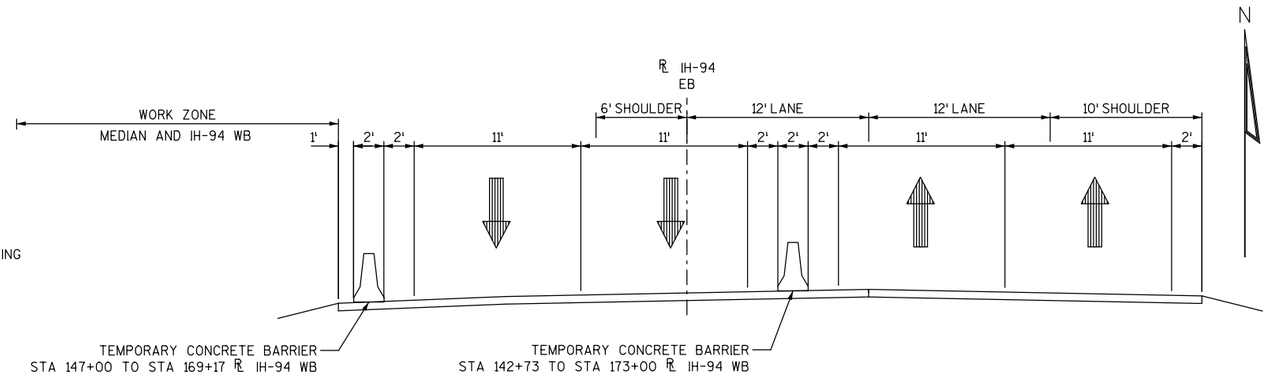
STAGE 4

WORK:

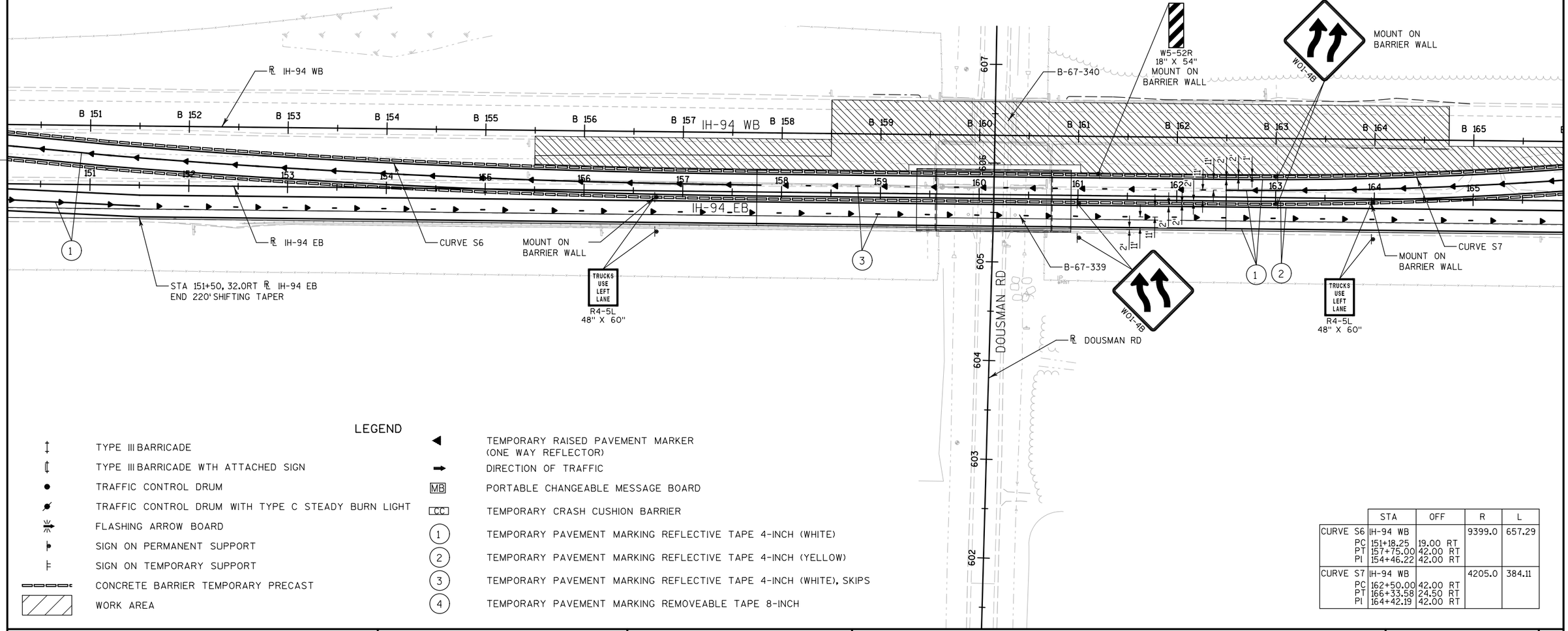
* WHEN CONSTRUCTION OF STRUCTURE B-67-340 AND IH-94 WB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDER IS COMPLETED, PLACE TRAFFIC BACK TO NORMAL CONFIGURATION. REMOVE REMAINING TEMPORARY CROSSOVERS, 6'INSIDE PAVED SHOULDER TO REMAIN, AND GRADE MEDIAN.

TRAFFIC CONTROL:

* MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.
* COMPLETE WORK ON CROSSOVER REMOVAL AND MEDIAN GRADING UTILIZING FULL TIME SHOULDER CLOSURES AND OFF PEAK SINGLE LANE CLOSURES.



STAGE 3 CONSTRUCTION
TYPICAL SECTION
IH-94



LEGEND

‡	TYPE III BARRICADE	◀	TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
‡	TYPE III BARRICADE WTH ATTACHED SIGN	➡	DIRECTION OF TRAFFIC
●	TRAFFIC CONTROL DRUM	MB	PORTABLE CHANGEABLE MESSAGE BOARD
●	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	CC	TEMPORARY CRASH CUSHION BARRIER
	FLASHING ARROW BOARD	1	TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE)
	SIGN ON PERMANENT SUPPORT	2	TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (YELLOW)
	SIGN ON TEMPORARY SUPPORT	3	TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
	CONCRETE BARRIER TEMPORARY PRECAST	4	TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH
	WORK AREA		

	STA	OFF	R	L
CURVE S6	IH-94 WB		9399.0	657.29
PC	151+18.25	19.00 RT		
PT	157+75.00	42.00 RT		
PI	154+46.22	42.00 RT		
CURVE S7	IH-94 WB		4205.0	384.11
PC	162+50.00	42.00 RT		
PT	166+33.58	24.50 RT		
PI	164+42.19	42.00 RT		

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 3	SHEET 70	E

2

STAGE 3

WORK:

* SAWCUT AND REMOVE PORTIONS OF TEMPORARY CROSSOVER PAVEMENT. 6'INSIDE PAVED SHOULDER TO REMAIN. SEE PLAN DETAILS FOR REMOVALS.
* CONSTRUCT IH-94 WB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDER PER PLAN.
* CONSTRUCT STRUCTURE B-67-340 AT DOUSMAN ROAD. SEE STRUCTURE PLANS.

TRAFFIC CONTROL:

* WB TRAFFIC TO UTILIZE CROSSOVER, EB TRAFFIC SHIFTED TO IH-94 EB OUTSIDE LANE AND OUTSIDE SHOULDER.
* MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.

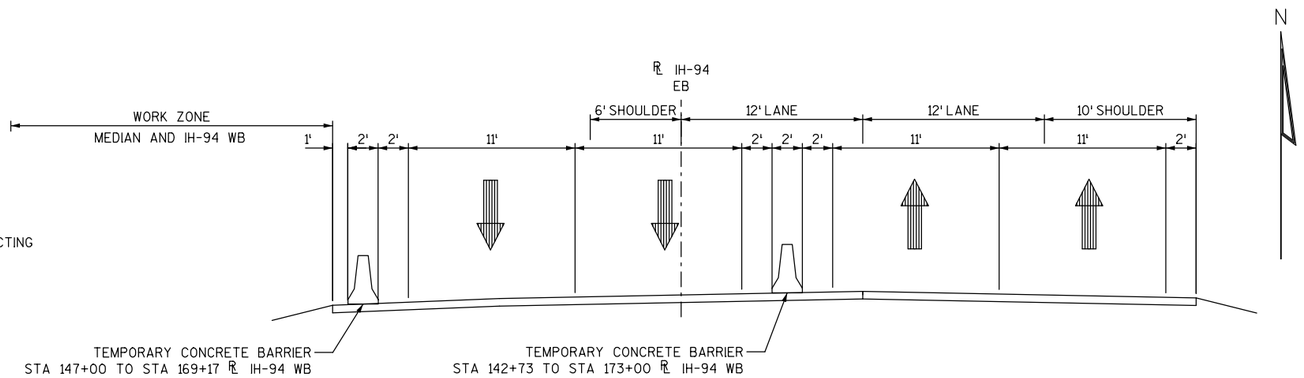
STAGE 4

WORK:

* WHEN CONSTRUCTION OF STRUCTURE B-67-340 AND IH-94 WB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDER IS COMPLETED, PLACE TRAFFIC BACK TO NORMAL CONFIGURATION. REMOVE REMAINING TEMPORARY CROSSOVERS, 6'INSIDE PAVED SHOULDER TO REMAIN, AND GRADE MEDIAN.

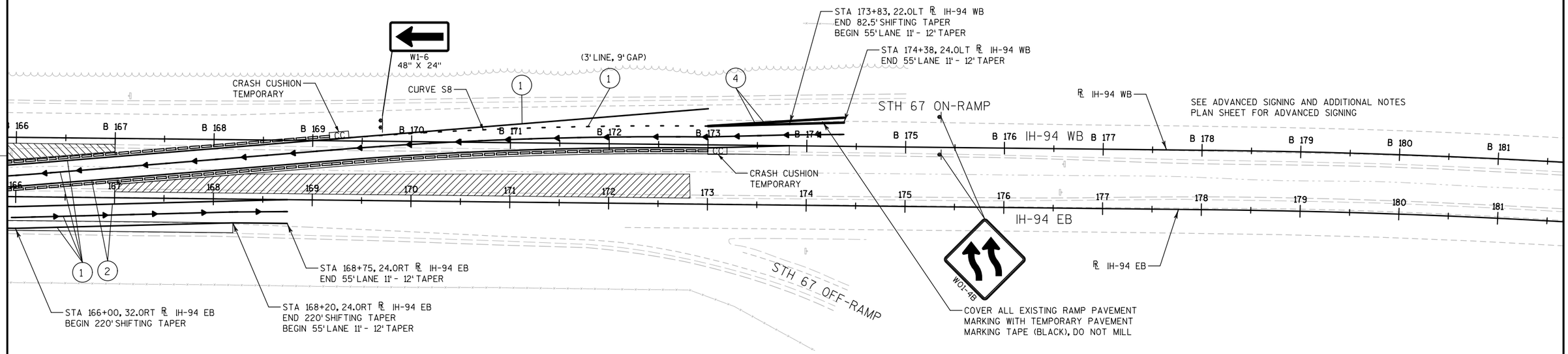
TRAFFIC CONTROL:

* MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.
* COMPLETE WORK ON CROSSOVER REMOVAL AND MEDIAN GRADING UTILIZING FULL TIME SHOULDER CLOSURES AND OFF PEAK SINGLE LANE CLOSURES.



STAGE 3 CONSTRUCTION
TYPICAL SECTION
IH-94

N



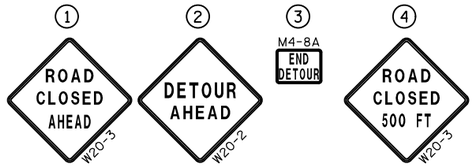
LEGEND

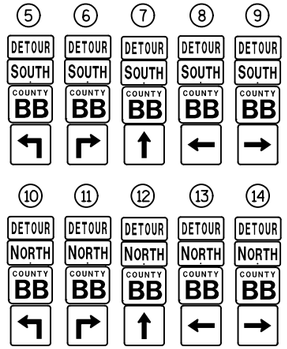
- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
- DIRECTION OF TRAFFIC
- MB — PORTABLE CHANGEABLE MESSAGE BOARD
- CC — TEMPORARY CRASH CUSHION BARRIER
- (1) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE)
- (2) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (YELLOW)
- (3) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
- (4) TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH

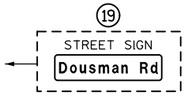
	STA	OFF	R	L
CURVE S8	IH-94 WB		4195.0	383.20
PC	169+17.18	1.50 LT		
PT	172+99.85	19.00 LT		
PI	171+08.19	19.00 LT		

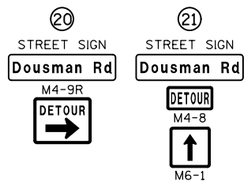
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 3	SHEET 71	E

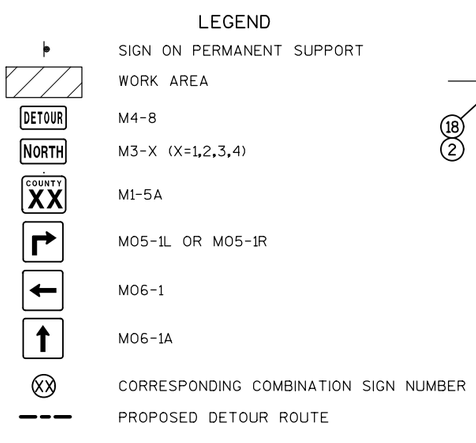
2

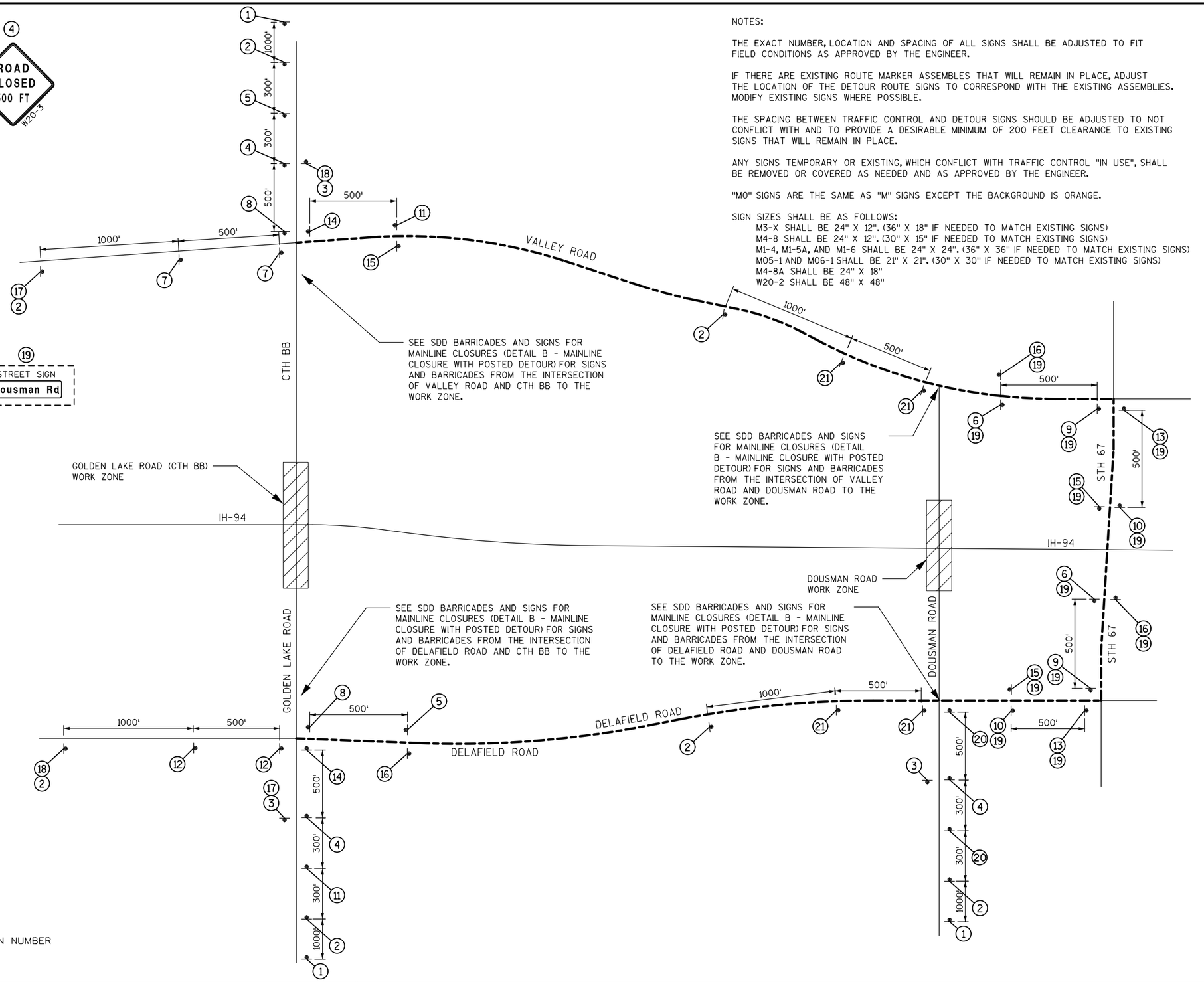












NOTES:

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

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

SIGN SIZES SHALL BE AS FOLLOWS:
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8A SHALL BE 24" X 18"
- W20-2 SHALL BE 48" X 48"

N

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	GOLDEN LAKE ROAD DETOUR	SHEET 72	E

2

N

T 7 N
9 10
16 15
R E
17

Y = 179,735.24
X = 616,475.86
CONCRETE MONUMENT
WITH SEWRPC BRASS CAP

PI 611+94.25
CP8 △

610 260.46' N 0°49'32.45" E

PI 609+33.79

133.79' N 1°27'14.25" E

℄ DOUSMAN RD
STATION 607+76.18
OFFSET 0.3'RT
Y = 182,367.55
X = 616,547.72
CONCRETE MONUMENT
WITH SEWRPC BRASS CAP

T 7 N
16 15
16 15
R E
17

END MILL & OVERLAY
IH-94 WB
STA 164+75.00

PI 608+00.00

250.00' N 1°00'28.23" E

PT 121+99.31
(PT LOCATED OFF PAGE)
STATION EQN
BK 121+93.42
AH 121+99.31

PT ℄ IH-94 WB
STA 121+99.31
Y = 182261.25
X = 612729.09

BEGIN MILL & OVERLAY
IH-94 WB
STA 158+50.00

℄ IH-94 WB

BM4

B 145 B 150 B 155 B 160 B 165 5614.40' S 89°22'24.32" E B 170 B 175

145 150 155 160 165 5614.40' S 89°22'24.32" E 170 175

PC ℄ IH-94 WB
STA 178+13.71
Y = 182199.86
X = 618343.15

PC 178+13.71
(PC LOCATED OFF PAGE)

BM3

PI 605+50.00

△CP5

△CP6

CP7 △

℄ IH-94 EB

PT 121+99.31
(PT LOCATED OFF PAGE)

PT ℄ IH-94 EB
STA 121+99.31
Y = 182201.26
X = 612728.43

605 200.00' N 1°45'23.92" E

BEGIN MILL & OVERLAY
IH-94 EB
STA 157+75.00

END MILL & OVERLAY
IH-94 EB
STA 162+50.00

PT ℄ IH-94 EB
STA 178+13.71
Y = 182139.86
X = 618,342.50

PC 178+13.71
(PC LOCATED OFF PAGE)

PI 603+50.00
BM5
PI 602+96.72

53.28' N 1°24'10.06" E

℄ DOUSMAN RD

POB STA 600+00.00
Y = 181591.63
X = 616527.70

PISTA 602+96.72
Y = 181888.23
X = 616536.00

PISTA 603+50.00
Y = 181941.50
X = 616537.31

PISTA 605+50.00
Y = 182141.41
X = 616543.44

PISTA 608+00.00
Y = 182391.37
X = 616547.83

PISTA 609+33.79
Y = 182525.12
X = 616551.23

POE STA 611+94.25
Y = 182785.55
X = 616554.98

296.72' N 1°36'09.37" E

PI 600+00

BM6

T 7 N
16 15
21 22
R E
17

Y = 179,735.24
X = 616,475.86
CONCRETE MONUMENT
WITH SEWRPC BRASS CAP

DESCRIPTION ELEVATION

NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM3			890.23	ALUMINUM DISK IN PARAPET - EB
BM4			888.95	ALUMINUM DISK IN PARAPET - WB
BM5			873.84	RR SPIKE IN WEST FACE OF POWER POLE
BM6			879.78	RR SPIKE IN EAST FACE OF POWER POLE
CP5	182,135.56	615,714.94		PK NAIL IN SHOULDER
CP6	182,126.19	616,621.06		PK NAIL IN SHOULDER
CP7	182,167.41	617,022.65		PK NAIL IN SHOULDER
CP8	182,771.96	616,541.07		PK NAIL IN SHOULDER

ALL PLAN ELEVATIONS AND BENCHMARK ELEVATIONS ARE DERIVED FROM ADJUSTED BEST FIT.

DATE 12NOV15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-38-70 QUANTITY
0010	108.4400	CPM Progress Schedule 01. 1060-38-70	EACH	1.000	1.000
0030	201.0105	Clearing	STA	5.000	5.000
0040	201.0205	Grubbing	STA	5.000	5.000
0050	203.0100	Removing Small Pipe Culverts	EACH	3.000	3.000
0060	203.0200	Removing Old Structure (station) 01. 159+59 EB	LS	1.000	1.000
0070	203.0200	Removing Old Structure (station) 02. 159+59 WB	LS	1.000	1.000
0100	203.0200	Removing Old Structure (station) 05. 159+59 WB Stage 1	LS	1.000	1.000
0140	204.0125	Removing Asphaltic Surface Milling	TON	1,200.000	1,200.000
0150	204.0165	Removing Guardrail	LF	1,740.000	1,740.000
0160	204.0170	Removing Fence	LF	170.000	170.000
0170	204.0220	Removing Inlets	EACH	1.000	1.000
0180	204.9090.S	Removing (item description) 01. Surface Drain Corrugated Metal Slotted	LF	710.000	710.000
0190	205.0100	Excavation Common **P**	CY	14,855.000	14,855.000
0200	206.1000	Excavation for Structures Bridges (structure) 01. B-67-339	LS	1.000	1.000
0210	206.1000	Excavation for Structures Bridges (structure) 02. B-67-340	LS	1.000	1.000
0240	206.1000	Excavation for Structures Bridges (structure) 05. B-67-80	LS	1.000	1.000
0260	208.0100	Borrow **P**	CY	3,379.000	3,379.000
0270	210.0100	Backfill Structure	CY	495.000	495.000
0280	213.0100	Finishing Roadway (project) 01. 1060-38-70	EACH	1.000	1.000
0300	305.0110	Base Aggregate Dense 3/4-Inch	TON	400.000	400.000
0310	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	10,972.000	10,972.000
0320	311.0110	Breaker Run	TON	10,000.000	10,000.000
0350	415.0120	Concrete Pavement 12-Inch	SY	510.000	510.000
0360	415.0410	Concrete Pavement Approach Slab	SY	255.000	255.000
0370	416.1010	Concrete Surface Drains	CY	2.000	2.000
0380	440.4410	Incentive IRI Ride	DOL	3,014.000	3,014.000
0390	455.0105	Asphaltic Material PG58-28	TON	30.000	30.000
0400	455.0120	Asphaltic Material PG64-28	TON	25.000	25.000
0410	455.0605	Tack Coat	GAL	130.000	130.000
0420	460.1100	HMA Pavement Type E-0.3	TON	530.000	530.000
0430	460.1103	HMA Pavement Type E-3	TON	330.000	330.000
0440	460.1130	HMA Pavement Type E-30	TON	110.000	110.000
0450	460.1700	HMA Pavement Type SMA	TON	210.000	210.000
0460	460.2000	Incentive Density HMA Pavement	DOL	760.000	760.000
0470	460.4000	HMA Cold Weather Paving	TON	800.000	800.000
0480	465.0125	Asphaltic Surface Temporary	TON	5,500.000	5,500.000
0490	465.0400	Asphaltic Shoulder Rumble Strips	LF	9,400.000	9,400.000
0500	501.1000.S	Ice Hot Weather Concreting	LB	13,759.000	13,759.000
0510	502.0100	Concrete Masonry Bridges **P**	CY	686.000	686.000
0520	502.3200	Protective Surface Treatment **P**	SY	2,086.000	2,086.000
0530	502.3210	Pigmented Surface Sealer **P**	SY	306.000	306.000
0540	502.5005	Masonry Anchors Type L No. 5 Bars	EACH	94.000	94.000
0550	505.0400	Bar Steel Reinforcement HS Structures	LB	64,506.000	64,506.000
0560	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	310,804.000	310,804.000
0570	505.0800.S	Bar Steel Reinforcement HS Stainless Structures	LB	4,352.000	4,352.000

3

DATE 12NOV15 — E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-38-70 QUANTITY
0580	509.2500	Concrete Masonry Overlay Decks	CY	5.000	5.000
0590	511.1200	Temporary Shoring (structure) 01. B-67-80	SF	60.000	60.000
0610	516.0500	Rubberized Membrane Waterproofing	SY	68.000	68.000
0620	517.1010.S	Concrete Staining (structure) 01. B-67-339 **P**	SF	3,874.000	3,874.000
0630	517.1010.S	Concrete Staining (structure) 02. B-67-340 **P**	SF	3,711.000	3,711.000
0660	517.1015.S	Concrete Staining Multi-Color (structure) 01. B-67-339 **P**	SF	423.000	423.000
0670	517.1015.S	Concrete Staining Multi-Color (structure) 02. B-67-340 **P**	SF	423.000	423.000
0700	517.1050.S	Architectural Surface Treatment (structure) 01. B-67-339 **P**	SF	423.000	423.000
0710	517.1050.S	Architectural Surface Treatment (structure) 02. B-67-340 **P**	SF	423.000	423.000
0740	521.0118	Culvert Pipe Corrugated Steel 18-Inch	LF	5.000	5.000
0750	521.0124	Culvert Pipe Corrugated Steel 24-Inch	LF	234.000	234.000
0770	521.1012	Apron Endwalls for Culvert Pipe Steel 12-Inch	EACH	2.000	2.000
0790	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	1.000	1.000
0810	521.2005.S	Surface Drain Pipe Corrugated Metal Slotted (inch) 01. 24-inch	LF	710.000	710.000
0840	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	450.000	450.000
0900	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	4.000	4.000
0920	550.0500	Pile Points	EACH	160.000	160.000
0930	550.1120	Piling Steel HP 12-Inch X 53 Lb	LF	12,030.000	12,030.000
0950	603.1156	Concrete Barrier Type S56	LF	460.000	460.000
0960	603.8000	Concrete Barrier Temporary Precast Delivered	LF	5,600.000	5,600.000
0970	603.8125	Concrete Barrier Temporary Precast Installed	LF	11,500.000	11,500.000
0980	604.0400	Slope Paving Concrete	SY	1,040.000	1,040.000
0990	606.0200	Riprap Medium	CY	10.000	10.000
1000	611.0642	Inlet Covers Type MS	EACH	10.000	10.000
1010	611.3901	Inlets Median 1 Grate	EACH	1.000	1.000
1020	611.3903	Inlets Median 3 Grate	EACH	3.000	3.000
1040	612.0106	Pipe Underdrain 6-Inch	LF	20.000	20.000
1050	612.0206	Pipe Underdrain Unperforated 6-Inch	LF	80.000	80.000
1060	612.0212	Pipe Underdrain Unperforated 12-Inch	LF	55.000	55.000
1070	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	1,030.000	1,030.000
1080	612.0600	Underdrain Trench	LF	80.000	80.000
1090	612.0806	Apron Endwalls for Underdrain Reinforced Concrete 6-Inch	EACH	1.000	1.000
1100	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	7.000	7.000
1110	614.0905	Crash Cushions Temporary	EACH	7.000	7.000
1120	614.2300	MGS Guardrail 3	LF	1,100.000	1,100.000
1130	614.2500	MGS Thrie Beam Transition	LF	350.000	350.000
1140	614.2610	MGS Guardrail Terminal EAT	EACH	8.000	8.000
1150	614.2620	MGS Guardrail Terminal Type 2	EACH	2.000	2.000
1160	616.0100	Fence Woven Wire (height) 01. 4-FT	LF	215.000	215.000
1170	616.0700.S	Fence Safety	LF	50.000	50.000

3

DATE 12NOV15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-38-70 QUANTITY
1180	619.1000	Mobilization	EACH	0.500	0.500
1190	623.0200	Dust Control Surface Treatment	SY	2,000.000	2,000.000
1200	624.0100	Water	MGAL	165.000	165.000
1210	625.0500	Salvaged Topsoil	SY	28,800.000	28,800.000
1220	627.0200	Mulching	SY	100.000	100.000
1230	628.1104	Erosion Bales	EACH	35.000	35.000
1240	628.1504	Silt Fence	LF	1,750.000	1,750.000
1250	628.1520	Silt Fence Maintenance	LF	1,750.000	1,750.000
1260	628.1905	Mobilizations Erosion Control	EACH	30.000	30.000
1270	628.1910	Mobilizations Emergency Erosion Control	EACH	20.000	20.000
1280	628.2004	Erosion Mat Class I Type B	SY	13,100.000	13,100.000
1290	628.2008	Erosion Mat Urban Class I Type B	SY	12,800.000	12,800.000
1300	628.2021	Erosion Mat Class II Type A	SY	100.000	100.000
1310	628.2027	Erosion Mat Class II Type C	SY	3,100.000	3,100.000
1320	628.7005	Inlet Protection Type A	EACH	6.000	6.000
1330	628.7504	Temporary Ditch Checks	LF	517.000	517.000
1340	628.7555	Culvert Pipe Checks	EACH	10.000	10.000
1350	628.7560	Tracking Pads	EACH	5.000	5.000
1360	628.7570	Rock Bags	EACH	25.000	25.000
1370	629.0210	Fertilizer Type B	CWT	15.000	15.000
1380	630.0120	Seeding Mixture No. 20	LB	800.000	800.000
1390	630.0200	Seeding Temporary	LB	800.000	800.000
1400	631.0300	Sod Water	MGAL	1.000	1.000
1410	631.1100	Sod Erosion Control	SY	84.000	84.000
1420	633.0100	Delineator Posts Steel	EACH	2.000	2.000
1430	633.0500	Delineator Reflectors	EACH	2.000	2.000
1440	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	8.000	8.000
1450	634.0622	Posts Wood 4x6-Inch X 22-FT	EACH	9.000	9.000
1460	637.2210	Signs Type II Reflective H	SF	53.000	53.000
1470	637.2230	Signs Type II Reflective F	SF	22.500	22.500
1480	638.2102	Moving Signs Type II	EACH	11.000	11.000
1490	638.2602	Removing Signs Type II	EACH	10.000	10.000
1500	638.3000	Removing Small Sign Supports	EACH	18.000	18.000
1510	642.5001	Field Office Type B	EACH	0.500	0.500
1520	643.0200	Traffic Control Surveillance and Maintenance (project) 01. 1060-38-70	DAY	191.000	191.000
1540	643.0300	Traffic Control Drums	DAY	3,400.000	3,400.000
1550	643.0420	Traffic Control Barricades Type III	DAY	2,080.000	2,080.000
1560	643.0705	Traffic Control Warning Lights Type A	DAY	2,750.000	2,750.000
1570	643.0715	Traffic Control Warning Lights Type C	DAY	50.000	50.000
1580	643.0800	Traffic Control Arrow Boards	DAY	100.000	100.000
1590	643.0900	Traffic Control Signs	DAY	10,500.000	10,500.000
1600	643.0910	Traffic Control Covering Signs Type I	EACH	10.000	10.000
1610	643.0920	Traffic Control Covering Signs Type II	EACH	10.000	10.000
1620	643.1000	Traffic Control Signs Fixed Message	SF	72.000	72.000
1630	643.1050	Traffic Control Signs PCMS	DAY	20.000	20.000
1640	643.1055.S	Truck or Trailer Mounted Attenuator	DAY	4.000	4.000
1650	643.2000	Traffic Control Detour (project) 01. 1060-38-70	EACH	1.000	1.000
1660	643.3000	Traffic Control Detour Signs	DAY	18,000.000	18,000.000
1670	645.0120	Geotextile Fabric Type HR	SY	30.000	30.000
1680	646.0106	Pavement Marking Epoxy 4-Inch	LF	13,000.000	13,000.000
1690	646.0600	Removing Pavement Markings	LF	200.000	200.000

DATE 12NOV15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-38-70 QUANTITY
1700	646.0841.S	Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch	LF	1,650.000	1,650.000
1710	649.0300	Temporary Pavement Marking Reflective Tape 4-Inch	LF	30,200.000	30,200.000
1720	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	2,500.000	2,500.000
1730	649.0801	Temporary Pavement Marking Removable Tape 8-Inch	LF	800.000	800.000
1740	649.2100	Temporary Raised Pavement Markers	EACH	220.000	220.000
1750	690.0150	Sawing Asphalt	LF	17,960.000	17,960.000
1760	690.0250	Sawing Concrete	LF	111.000	111.000
1770	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
1780	715.0502	Incentive Strength Concrete Structures	DOL	4,116.000	4,116.000
1800	ASP.1T0A	On-the-Job Training Apprentice at $5. 00/HR	HRS	1,500.000	1,500.000
1810	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	2,225.000	2,225.000
1820	SPV.0035	Special 01. HPC Masonry Superstructures **P**	CY	1,148.000	1,148.000
1830	SPV.0035	Special 02. Backfill Slurry Special	CY	100.000	100.000
1840	SPV.0060	Special 01. Temporary Sediment Basin	EACH	1.000	1.000
1850	SPV.0060	Special 02. Mobilization Emergency Pavement Repair	EACH	2.000	2.000
1860	SPV.0060	Special 03. Section Corner Monuments Special	EACH	1.000	1.000
1870	SPV.0060	Special 04. Temporary Manholes And Cover Plates	EACH	1.000	1.000
1880	SPV.0090	Special 01. Removing Existing Timber Piling	LF	2,860.000	2,860.000
1890	SPV.0090	Special 02. Glare Screens Temporary	LF	6,000.000	6,000.000
1900	SPV.0105	Special 01. Pavement Cleanup Project 1060-38-70	LS	1.000	1.000
1920	SPV.0105	Special 03. Survey Project 1060-38-70	LS	1.000	1.000
1940	SPV.0165	Special 01. Longitudinal Grooving Bridge Deck **P**	SF	17,804.000	17,804.000
1950	SPV.0170	Special 01. Proof Rolling	STA	2.000	2.000
1960	SPV.0195	Special 01. Cold Patch	TON	20.000	20.000

3

CLEARING AND GRUBBING

LOCATION				ITEM 201.0105 CLEARING (STA)	ITEM 201.0205 GRUBBING (STA)
163+00	to	165+00	RT	2	2
603+00	to	606+00	RT	3	3
		TOTALS		5	5

REMOVALS

LOCATION				ITEM 203.0100 REMOVING SMALL PIPE CULVERTS (EACH)	ITEMS 204.0125 REMOVING ASPHALTIC SURFACE MILLING (TON)	ITEMS 204.0165 REMOVING GUARDRAIL (LF)	ITEMS 204.0170 REMOVING FENCE (LF)	ITEM 204.0220 REMOVING INLETS (EA)	ITEM 204.9090.S REMOVING SURFACE DRAIN CORRUGATED METAL SLOTTED (LF)	ITEMS 690.0150 SAWING ASPHALT (LF)
PRESTAGE										
148+80	TO	159+59	WB OUTSIDE SHOULDER (TEMP)	-	337	-	-	-	-	1080
160+70	TO	166+70	WB OUTSIDE SHOULDER (TEMP)	-	202	-	-	-	-	600
SUBTOTAL				0	539	0	0	-	-	1680
STAGE 1										
150+00	to	170+25	EB	-	-	359.0	-	-	-	1926
	159+54			1	-	41.0	-	-	-	-
	160+70			1	-	41.0	-	-	-	-
150+50	to	170+50	WB	-	-	612.0	85.0	-	-	2141
141+90	TO	157+75	EB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	1585
163+43	TO	172+82	EB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	682
141+90	TO	159+59	WB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	1770
160+70	TO	167+71	WB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	530
SUBTOTAL				2	-	1053	85	-	-	8634
STAGE 2										
162+70.49, 26.89' LT				-	-	-	-	1.0	-	-
162+70	TO	163+02	MEDIAN	1	-	-	-	-	-	-
152+52	TO	159+35	EB	-	-	684	81	-	-	-
149+30	TO	157+75	EB OUTSIDE SHOULDER (TEMP)	-	263	-	-	-	-	865
162+50	TO	168+20	EB OUTSIDE SHOULDER (TEMP)	-	178	-	-	-	-	590
157+75	TO	158+92	EB LANES (PERM)	-	18	-	-	-	-	-
161+38	TO	162+50	EB LANES (PERM)	-	17	-	-	-	-	-
SUBTOTAL				1	476	684	81	1	0	1455
STAGE 2B										
164+75	TO	166+00	EB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	131
167+00	TO	172+82	WB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	588
SUBTOTAL				0	0	0	0	0	0	719
STAGE 3										
158+50	TO	158+92	WB	-	11	-	-	-	-	-
161+38	TO	164+75	WB	-	42	-	-	-	-	-
155+50	TO	158+50	WB INSIDE SHOULDER	-	-	-	-	-	-	324
SUBTOTAL				0	53	0	0	0	0	324
STAGE 4										
147+50	TO	155+50		-	-	-	-	-	700	-
161+38	TO	164+75	WB	-		-	-	-	-	1360
141+90	TO	155+50	WB	-	-	-	-	-	-	1360
167+00	TO	173+82	WB	-	-	-	-	-	-	682
147+50	TO	158+01	EB	-	-	-	-	-	-	1052
161+48	TO	167+00	EB	-	-	-	-	-	-	556
SUBTOTAL				0	0	0	0	0	700	5010
DOUSMAN ROAD										
604+00	to	608+00	DOUSMAN	-		-	-	-	-	72
SUBTOTAL				0	0	0	0	0	0	72
UNDISTRIBUTED				-	132	3	4	-	10	66
		TOTALS		**3**	**1200**	**1740**	**170**	**1**	**710**	**17960**

3

3

EARTHWORK SUMMARY

Stage	From/To Station	Location	Common Excavation (1) (item # 205.0100)		Salvaged/ Unusable Pavement Material (4)	Available Material (5)	Reduced EBS in Fill (6)	Expanded EBS Backfill (7) (item # 311.0110)	Unexpanded Fill	Expanded Fill (8)	Mass Ordinate +/- (9)	Waste	Borrow	Comment:
			Cut (2)	EBS Excavation (3)				Factor 1.00		Factor 1.30			(item #208.0100)	
	149+95 - 159+35	I-94 Median	3374	337	2277	1097	0	337	2856	3713	-2616			
Stage 1 Subtotal			3374	337	2277	1097	0	337	2856	3713	-2616	0	2616	
	151+00 - 163+00	I-94 EB	877	93	480	397	0	93	842	969	-572			
Stage 2 Subtotal			877	93	480	397	0	93	842	969	-572	0	572	
	162+50 - 173+36	I-94 EB	2451	0	122	2328	0	0	308	401	1928			
Stage 2b Subtotal			2451	0	122	2328	0	0	308	401	1928	1928	0	
	B 158+50 - B 165+00	I-94 WB	167	0	0	167	0	0	253	329	-162			
	603+00 - 608+50	Dousman Rd	3311	331	3311	0	0	331	22	29	-29			
Stage 3 Subtotal			3478	331	3311	167	0	331	275	358	-191	0	191	
	141+90 - 173+00	I-94 EB	3914	0	0	3914	0	0	471	612	3302			
Stage 4 Subtotal			3914	0	0	3914	0	0	471	612	3302	3302	0	
Grand Total			14094	761	6191	7903	0	761	4752	6053	1850	5229	3379	
		Total Common Exc		14855										

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Breaker Run. Quantity for Stage 1, 2 and Dousman Rd represents 10% increase over total Cut.
4) Salvaged/Unusable Pavement Material includes pavement and 50% of total cut of Stage 1 & 2, 100% of total cut for Dousman Road assumed to be unusable for embankment.
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
6) Reduced EBS in Fill - EBS soil should be considered waste and not reused as fill
7) Expanded EBS Backfill - This is to be filled with Breaker Run material. EBS Backfill Factor = 1.0. Item number 311.0110
8) Expanded Fill. Factor = 1.30

Depending on selections:

Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor

Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor

Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor

Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor

9) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

AGGREGATE

LOCATION				ITEM 305.0110 BASE AGGREGATE DENSE 3/4-INCH (TON)	ITEM 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH (TON)	ITEM 311.0110 BREAKER RUN (TON)	ITEM 624.0100 WATER (MGAL)	ITEM SPV.0035.02 BACKFILL SLURRY SPECIAL (CY)	ITEM SPV.0170.01 PROOF ROLLING (STA)
STAGE 1									
141+90	TO	157+75	EB SHOULDER INSIDE (TEMP)	-	2244	-	34	-	-
163+43	TO	172+82	EB SHOULDER INSIDE (TEMP)	-	1026	1114	15	-	-
141+90	TO	159+59	WB SHOULDER INSIDE (TEMP)	-	2414	2532	36	-	-
160+70	TO	167+71	WB SHOULDER INSIDE (TEMP)	-	886	993	13	-	-
SUBTOTAL				-	6569	4639	98	-	-
STAGE 2									
149+30	TO	159+37	EB SHOULDER OUTSIDE (TEMP)	142	203	-	3	-	-
160+93	TO	168+20	EB SHOULDER OUTSIDE (TEMP)	38	16	-	-	-	-
157+75	TO	159+37	EB SHOULDER INSIDE (TEMP)	-	202	228	3	-	-
160+93	TO	162+50	EB SHOULDER INSIDE (TEMP)	-	228	44	3	-	-
158+92	TO	159+37	APPROACH SLAB	-	63	-	1	-	-
160+93	TO	161+38	APPROACH SLAB	-	63	-	1	-	-
SUBTOTAL				180	775	272	11	-	-
STAGE 2B									
162+50	TO	168+80	EB SHOULDER INSIDE (TEMP)	-	814	932	12	-	-
164+92	TO	173+83	WB SHOULDER INSIDE (TEMP)	-	894	923	13	-	-
SUBTOTAL				-	1707	1854	25	-	-
STAGE 3									
158+50	TO	159+37	WB SHOULDER INSIDE	3	-	103	-	-	-
160+93	TO	164+75	WB SHOULDER INSIDE	38	48	320	1	-	-
158+50	TO	159+37	WB SHOULDER OUTSIDE	10	-	-	-	-	-
160+93	TO	164+75	WB SHOULDER OUTSIDE	86	-	-	-	-	-
158+92	TO	159+37	APPROACH SLAB	-	63	-	1	-	-
160+93	TO	161+38	APPROACH SLAB	-	63	-	1	-	-
SUBTOTAL				137	175	423	3	-	-
STAGE 4									
157+75	to	159+37	EB SHOULDER INSIDE	22	31	-	-	-	-
160+93	to	162+50	EB SHOULDER INSIDE	6	-	-	-	-	-
SUBTOTAL				28	31	-	-	-	-
DOUSMAN ROAD									
604+00	to	608+00	DOUSMAN ROAD	29	667	1440	10	-	-
SUBTOTAL				29	667	1440	10	-	-
UNDISTRIBUTED				26	176	610	18	100	2
TOTALS				**400**	**10100**	**9239**	**165**	**100**	**2**

PAVEMENT

LOCATION				ITEM 415.0410 CONCRETE PAVEMENT APPROACH SLAB (SY)	ITEM 415.0120 CONCRETE PAVEMENT 12-INCH (SY)	ITEM 455.0105 ASPHALTIC MATERIAL PG58-28 (TON)	ITEM 455.0120 ASPHALTIC MATERIAL PG64-28 (TON)	ITEM 455.0605 TACK COAT (GALLON)	ITEM 460.1100 HMA PAVEMENT TYPE E-0.3 (TON)	ITEM 460.1103 HMA PAVEMENT TYPE E-3 (TON)	ITEM 460.1130 HMA PAVEMENT TYPE E-30 (TON)	ITEM 460.1700 HMA PAVEMENT TYPE SMA (TON)	ITEM 460.4000 HMA COLD WEATHER PAVING (TON)	ITEM 465.0125 ASPHALTIC SURFACE TEMPORARY (TON)	ITEM 465.0400 ASPHALTIC SHOULDER RUMBLE STRIPS (LF)	SPV.0060.02 MOBILIZATIONS EMERGEMCY PAVEMENT REPAIR (EACH)	SPV.0195.01 COLD PATCH (TON)
PRESTAGE																	
148+80	TO	159+59	WB OUTSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	-	-	369	-	-	-
160+70	TO	166+70	WB OUTSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	-	-	205	-	-	-
SUBTOTAL				-	-	-	-	-	-	-	-	-	-	575	-	-	-
STAGE 1																	
141+90	TO	157+75	EB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	-	-	-	-	1131	-	-	-
163+43	TO	172+82	EB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	-	-	-	-	517	-	-	-
141+90	TO	159+59	WB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	-	-	-	-	1217	-	-	-
160+70	TO	167+71	WB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	-	-	-	-	446	-	-	-
SUBTOTAL				-	-	-	-	-	-	-	-	-	-	3311	-	-	-
STAGE 2																	
149+30	TO	157+75	EB OUTSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	-	-	289	-	-	-
162+50	TO	168+20	EB OUTSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	-	-	195	-	-	-
157+75	TO	159+37	EB OUTSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	-	-	49	-	-	-
157+75	TO	158+92	EB LANES (PERM)	-	-	-	-	8	-	-	-	31	-	-	-	-	-
161+38	TO	162+50	EB LANES (PERM)	-	-	-	-	7	-	-	-	29	-	-	-	-	-
157+75	TO	159+37	EB INSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	-	-	102	-	-	-
160+93	TO	161+38	EB INSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	-	-	15	-	-	-
158+92	TO	159+37	APPROACH SLAB	63	127	-	-	-	-	-	-	-	-	-	-	-	-
160+93	TO	161+38	APPROACH SLAB	63	127	-	-	-	-	-	-	-	-	-	-	-	-
SUBTOTAL				126	254	-	-	15	-	-	-	60	-	650	-	-	-
STAGE 2B																	
160+93	TO	161+38	APPROACH SLAB	63	127	-	-	-	-	-	-	-	-	-	-	-	-
SUBTOTAL				126	254	-	-	15	-	-	-	60	-	650	-	-	-
STAGE 2B																	
161+38	TO	168+80	EB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	-	-	-	-	410	-	-	-
164+92	TO	173+83	WB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	-	-	-	-	450	-	-	-
SUBTOTAL				-	-	-	-	-	-	-	-	-	-	861	-	-	-
STAGE 3																	
158+50	TO	158+92	WB OUTSIDE SHOULDER	-	-	-	-	1	-	5	-	-	-	-	-	-	-
158+92	TO	159+37	WB OUTSIDE SHOULDER	-	-	-	1	2	-	13	-	-	-	-	-	-	-
160+93	TO	161+38	WB OUTSIDE SHOULDER	-	-	-	1	2	-	13	-	-	-	-	-	-	-
161+38	TO	164+75	WB OUTSIDE SHOULDER	-	-	-	2	9	-	37	-	-	-	-	-	-	-
158+50	TO	159+37	WB INSIDE SHOULDER (PERM)	-	-	-	2	2	-	34	-	-	-	-	-	-	-
160+93	TO	164+75	WB INSIDE SHOULDER (PERM)	-	-	-	9	9	-	164	-	-	-	-	-	-	-
158+50	TO	158+92	WB LANES (PERM)	-	-	-	-	3	-	-	-	11	-	-	-	-	-
161+38	TO	163+25	WB LANES (PERM)	-	-	-	3	12	-	-	63	49	-	-	-	-	-
163+25	TO	163+95	WB LANES (PERM)	-	-	-	2	12	-	-	31	49	-	-	-	-	-
163+95	TO	164+75	WB LANES (PERM)	-	-	-	-	5	-	-	-	18	-	-	-	-	-
158+92	TO	159+37	APPROACH SLAB	63	127	-	-	-	-	-	-	-	-	-	-	-	-
160+93	TO	161+38	APPROACH SLAB	63	127	-	-	-	-	-	-	-	-	-	-	-	-
SUBTOTAL				126	254	-	20	56	-	266	94	127	266	-	-	-	-
STAGE 4																	
141+90	TO	172+83		-	-	-	-	-	-	-	-	-	-	-	9400	-	-
155+00	TO	155+00	EMERGENCY TURN AROUND	-	-	-	2	-	-	40	-	-	-	-	-	-	-
SUBTOTAL				-	-	-	2	-	-	40	-	-	-	-	9400	-	-
DOUSMAN ROAD																	
604+00	to	608+00	DOUSMAN	-	-	27	-	45	500	-	-	-	-	-	-	-	-
SUBTOTAL				-	-	27	-	45	500	-	-	-	500	-	-	-	-
UNDISTRIBUTED				3	2	3	3	14	30	24	16	23	34	104	-	2	20
		TOTALS		**255**	**510**	**30**	**25**	**130**	**530**	**330**	**110**	**210**	**800**	**5500**	**9400**	**2**	**20**

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SURFACE DRAINS

LOCATION		ITEM 416.1010 CONCRETE SURFACE DRAINS (CY)	ITEM 521.1012 APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH (EACH)	ITEM 606.0200 RIPRAP MEDIUM (CY)	ITEM 612.0106 PIPE UNDERDRAIN 6-INCH (LF)	ITEM 612.0206 PIPE UNDERDRAIN UNPERFORATED 6-INCH (LF)	ITEM 612.0212 PIPE UNDERDRAIN UNPERFORATED 12-INCH (LF)	ITEM 612.0600 UNDERDRAIN TRENCH (LF)	ITEM 612.0806 APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE 6-INCH (EACH)	ITEM 645.0120 GEOTEXTILE FABRIC TYPE HR (SY)
STAGE 1										
STAGE 2										
158+93.00	EB	1	1	1.0	-	-	25	-	-	3
159+27.50	WB	1	1	1.0	-	-	30	-	-	3
607+75 RT	DOUSMAN	-	-	8.0	-	-	-	-	-	24
607+80 to 608+51	DOUSMAN	-	-	-	20	80	-	80	1	-
STAGE 3										
UNDISTRIBUTED		-	-	-	-	-	-	-	-	-
	TOTALS	**2**	**2**	**10**	**20**	**80**	**55**	**80**	**1**	**30**

DRAINAGE

UPSTREAM STA	OFFSET	INV ELEV		DOWNSTREAM STA	OFFSET	INV ELEV	ITEM 521.0118 CULVERT PIPE CORRUGATED STEEL 18-INCH (LF)	ITEM 521.0124 CULVERT PIPE CURRUGATED STEEL 24-INCH (LF)	ITEM 521.1024 APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH (EA)	ITEM 522.0124 CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH (LF)	ITEM 522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH (EACH)	ITEM 521.2005.S.01 SURFACE DRAIN PIPE CORRUGATED METAL SLOTTED 24-INCH (LF)	ITEM 611.0642 INLET COVERS TYPE MS (EA)	SPV.0060.04 TEMPORARY MANHOLES AND COVER PLATE (EA)	ITEM 611.3901 INLETS MEDIAN 1 GRATE (EA)	ITEM 611.3903 INLETS MEDIAN 3 GRATE (EA)	ITEM 628.7005 INLET PROTECTION TYPE A (EA)
STAGE 1																	
156+00	30' LT	882.09	to	147+30	30' LT	877.73	-	162	1	-	-	700	3	-	-	1	1
162+70	26.89' LT	883.65	to	163+02	36.16' LT	883.50	-	25	-	-	-	-	3	1	-	1	1
STAGE 2													-				
604+85	36' LT	868.33	to	607+05	36' LT	866.68	-	-	-	220	2	-	-	-	-	-	-
604+85	36' RT	686.11	to	607+05	36' RT	867.01	-	-	-	220	2	-	-	-	-	-	-
163+50	33.00' LT	883.83	to	163+02	36.16' LT	883.50	-	40	-	-	-	-	3	-	-	1	1
STAGE 4																	
163+02	33' LT	883.50					5	-	-	-	-	-	1	-	1	-	1
UNDISTRIBUTED							-	7	-	10	-	10	-	-	-	-	2
							5	**234**	**1**	**450**	**4**	**710**	**10**	**1**	**1**	**3**	**6**

TEMPORARY BARRIER

STAGE	LOCATION	ITEM 603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED (LF)	ITEM 603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED (LF)	ITEM 614.0905 CRASH CUSHIONS TEMPORARY (EACH)	BACK WIDTH (FT)	OBJECT MARKING PATTERN	CRASH TEST LEVEL	TRAFFIC DIRECTION	TRAFFIC LOCATION	CRASH CUSHION SHIELDS	ITEM 643.1055.S TRUCK OR TRAILER-MOUNTED ATTENUATOR (DAY)	SPV.0090.02 GLARE SCREENS TEMPORARY (LF)
TOTAL PROJECT												
Stage 1	157+75 to 165+00 WB	612.5	612.5	1	2	OM-3L	TL-3	Unidirectional	LT	Temporary Concrete Barrier	-	-
Stage 2	142+73 to 172+00 EB	2325.0	2937.5	1	2	OM-3L	TL-3	Unidirectional	LT	Temporary Concrete Barrier	-	2940.0
	142+73 to 168+66 EB	2600.0	2600.0	1	2	OM-3R	TL-3	Unidirectional	RT	Temporary Concrete Barrier	-	-
Stage 3	142+73 to 173+00 WB	-	3037.5	1	2	OM-3L	TL-3	Unidirectional	LT	Temporary Concrete Barrier	-	3037.5
	147+00 to 169+25 WB	-	2225.0	1	2	OM-3R	TL-3	Unidirectional	RT	Temporary Concrete Barrier	-	-
UNDISTRIBUTED		62.5	87.5	2	-	-	TL-3	-	-	-	4	22.5
		5,600	**11,500**	**7**							**4**	**6,000**

BARRIER

LOCATION			ITEM 603.1156 CONCRETE BARRIER TYPE S56 (LF)	ITEM 614.2300 MGS GUARDRAIL 3 (LF)	ITEM 614.2500 MGS THRIE BEAM TRANSITION (LF)	ITEM 614.2610 MGS GUARDRAIL TERMINAL EAT (EACH)	ITEM 614.2620 MGS GUARDRAIL TERMINAL TYPE 2 (EACH)	COMMENTS
STAGE 2								
152+50	to 159+39	EB	-	600.0	39.4	1.0	-	-
158+09	to 159+39	EB	-	37.5	39.4	1.0	-	-
160+90	to 162+51	EB	-	62.5	8.2	-	1.0	EXIT END
603+95	to 607+10	NB	225.0	-	39.4	1.0	-	-
603+95	to 607+10	SB	225.0	-	39.4	1.0	-	-
607+10	to 608+00	NB	-	-	39.4	1.0	-	-
607+10	to 608+00	SB	-	-	39.4	1.0	-	-
STAGE 3								
158+50	to 159+39	WB	-	37.5	8.2	-	1.0	EXIT END
160+91	to 162+21	WB	-	37.5	39.4	1.0	-	-
160+90	to 164+26	WB	-	237.5	39.4	1.0	-	-
UNDISTRIBUTED			10	87.5	18.4	-	-	
TOTALS			**460**	**1100**	**350**	**8**	**2**	

FENCE

LOCATION	ITEM 616.0100 FENCE WOVEN WIRE 4-FT (LF)
604+80 to 605+28 LT	53
604+83 to 605+31 RT	51
606+66 to 607+31 LT	64
606+67 to 607+14 RT	47
TOTALS	**215**

EROSION CONTROL

LOCATION	ITEM 616.0700.S SAFETY FENCE (LF)	ITEM 623.0200 DUST CONTROL SURFACE TREATMENT (SY)	ITEM 628.1104 EROSION BALES (EACH)	ITEM 628.1905 MOBILIZATIONS EROSION CONTROL (EACH)	ITEM 628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)	ITEM 628.7560 TRACKING PADS (EACH)	ITEM 628.7570 ROCK BAGS (EACH)
STAGE 1	-	-	-	5	3	-	-
STAGE 2	-	-	-	5	3	-	-
STAGE 2B	-	-	-	5	3	-	-
STAGE 3	-	-	-	5	3	-	-
STAGE 4	-	-	-	5	3	-	-
UNDISTRIBUTED	50	2,000	35	5	5	5	25
TOTALS	**50**	**2,000**	**35**	**30**	**20**	**5**	**25**

RESTORATION

LOCATION				ITEM 625.0500 SALVAGED TOPSOIL (SY)	ITEM 627.0200 MULCHING (SY)	ITEM 628.2004 EROSION MAT CLASS I TYPE B (SY)	ITEM 628.2008 EROSION MAT URBAN CLASS I TYPE B (SY)	ITEM 628.2021 EROSION MAT CLASS II TYPE A (SY)	ITEM 628.2027 EROSION MAT CLASS II TYPE C (SY)	ITEM 629.0210 FERTILIZER TYPE B (CWT)	ITEM 630.0120 SEEDING MIXTURE NO. 20 (LB)	ITEM 630.0200 SEEDING TEMPORARY (LB)
Application Rate										**7** ***lbs/1000 sf***	**3** ***lbs/1000 sf***	**3** ***lbs/1000 sf***
STAGE 1												
141+90	TO	147+50		2175	-	929	1189	57	-	1	59	59
155+50	TO	159+55		861	-	577	284	-	-	1	23	23
160+70	TO	166+00		1238	-	801	437	-	-	1	33	33
166+00	TO	172+82		2533	-	1152	1381	-	-	2	68	68
STAGE 2												
151+38	TO	162+64.00	EB	2924	-	303	462	-	2160	*	79	79
603+50.00	TO	609+00.00	DOUSMAN SB	522	-	522	-	-	-	*	14	14
STAGE 2B												
161+38.00	TO	167+00.00		1198	-	1048	150	-	-	0.8	32	32
167+00.00	TO	173+82.00		2268	-	1129	1139	-	-	1.4	61	61
STAGE 3												
158+36.00	TO	165+06.00	WB	2188	-	740	652	-	795	*	59	59
603+50.00	TO	609+00.00	DOUSMAN NB	612	-	612	-	-	-	*	17	17
STAGE 4												
141+90.00	TO	158+01.00		7193	-	2830	4363	-	-	4.5	194	194
161+48.00	TO	173+82.00		4755	-	2212	2543	-	-	3.0	128	128
UNDISTRIBUTED				332	100	244	200	43	145	1.0	31	31
			TOTALS	**28,800**	**100**	**13,100**	**12,800**	**100**	**3,100**	**15**	**800**	**800**

*NO FERTILIZER WILL BE USED IN THE UPLAND AREAS ADJACENT TO THE WETLANDS

EROSION CONTROL

LOCATION				ITEM 628.1504 SILT FENCE (LF)	ITEM 628.1520 SILT FENCE MAINTENANCE (LF)	ITEM 628.7504 TEMPORARY DITCH CHECKS (LF)	ITEM 628.7555 CULVERT PIPE CHECKS (EACH)	ITEM 631.0300 SOD WATER (MGAL)	ITEM 631.1100 SOD EROSION CONTROL (SY)	SPV.0060.01 TEMPORARY SEDIMENT BASIN (EACH)
STAGE 1										
141+90	TO	147+50		-	-	48	-	-	57	-
155+50	TO	159+55		-	-	16	-	-	-	-
160+70	TO	166+00		-	-	16	-	-	-	-
166+00	TO	172+82		-	-	48	-	-	-	-
STAGE 2										
151+38	TO	162+64.00	EB	1088	1088	24	-	-	-	1
603+50.00	TO	609+00.00	DOUSMAN SB	-	-	12	1	-	11	-
STAGE 2B										
161+38.00	TO	167+00.00		-	-	48	-	-	-	-
167+00.00	TO	173+82.00		-	-	48	-	-	-	-
STAGE 3										
158+36.00	TO	165+06.00	EB	618	618	-	-	-	-	-
603+50.00	TO	609+00.00	DOUSMAN NB	-	-	12	2	-	11	-
STAGE 4										
141+90.00	TO	158+01.00		-	-	128	-	-	-	-
161+48.00	TO	173+82.00		-	-	96	-	-	-	-
UNDISTRIBUTED				44	44	21	7	1	5	-
			TOTALS	**1,750**	**1,750**	**517**	**10**	**1**	**84**	**1**

TYPE II PERMANENT SIGNING -

1060-38-70 IH-94

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	**637.2210** SIGNS TYPE II REFLC H [SF]	**637.2230** SIGNS TYPE II REFLC F [SF]	**638.2602** REM SIGNS TYPE II [EA]	**638.3000** REM SMALL SIGN SUP [EA]	**634.0618** WOOD POSTS 4"X 6"x18' [EA]	**634.0622** WOOD POSTS 4"X 6"x22' [EA]	**638.2102** MOVE SIGNS TYPE II [EA]	REMARKS / NEW SIGN LOCATION
1	M1-94	DOUSMAN RD	96	x	21	14.000	--	1	2	--	2	--	--
2	R2-1 (5)	SPEED LIMIT 70	48	x	60	20.000	--	1	1	--	1	--	--
3	W5-52R	--	--	x	--	--	--	1	1	--	--	--	--
4	W5-52L(3)	--	18	x	54	--	6.750	1	1	1	--	--	--
5	W5-52L(3)	--	18	x	54	--	6.750	1	1	1	--	--	--
6	W5-52R(3)	--	--	x	--	--	--	1	1	--	--	--	--
7	M1-94	DOUSMAN RD	96	x	21	14.000	--	1	2	--	2	--	--
8	W3-5(2M)	SPEED LIMIT 35 AHEAD	36	x	36	--	9.000	--	--	--	1	--	--
9	--	REDUCE SPEED AHEAD	--	x	--	--	--	1	1	--	--	--	--
9a	--	35 MPH	--	x	--	--	--	1	--	--	--	--	--
10	W13-2	EXIT 40 MPH SIGN	--	x	--	--	--	--	--	--	1	1	MOVE SIGN 150' EAST OF EXISTING
11	D10-5	--	--	x	--	--	--	--	1	1	--	1	--
12	D10-5	--	--	x	--	--	--	--	1	1	--	1	--
13	R3-4	--	--	x	--	--	--	--	1	1	--	1	--
14	R3-4A	--	--	x	--	--	--	--	--	--	--	1	MOUNT UNDER SIGN #13
15	D10-5	--	--	x	--	--	--	--	1	1	--	1	--
16	D10-5	--	--	x	--	--	--	--	1	1	--	1	--
17	R2-1(2S)	--	24	x	30	5.000	--	1	1	1	--	--	--
18	R3-4	--	--	x	--	--	--	--	--	--	--	1	MOUNT ON BACKSIDE OF SIGN #13
19	R3-4A	--	--	x	--	--	--	--	--	--	--	1	MOUNT UNDER SIGN #18
UNDISTRIBUTED								--	2	--	2	2	
TOTALS						53.000	22.500	10	18	8	9	11	

TRAFFIC CONTROL

STAGE	LOCATION	DURATION CALANDAR DAYS	ITEM 643.0200 TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE (DAYS)	ITEM 643.0300 TRAFFIC CONTROL DRUMS #	(DAYS)	ITEM 643.0420 TRAFFIC CONTROL BARRICADES TYPE III #	(DAYS)	ITEM 643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A #	(DAYS)	ITEM 643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C #	(DAYS)	ITEM 643.0800 TRAFFIC CONTROL ARROW BOARDS #	(DAYS)	ITEM 643.0900 TRAFFIC CONTROL SIGNS #	(DAYS)	ITEM 643.0910 TRAFFIC CONTROL COVERING SIGNS TYPE I (EACH)	Cycles	ITEM 643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II (EACH)	Cycles	ITEM 643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE (SF)	ITEM 643.1050 TRAFFIC CONTROL SIGNS PCMS (DAYS)	ITEM 643.2000 TRAFFIC CONTROL DETOUR (1060-38-70) (EACH)	ITEM 643.3000 TRAFFIC CONTROL DETOUR SIGNS #	(DAYS)
PROJECT			191	-	-	-	-	-	-	-	-	-	-	*29*	5539	-		-		-	-	*1*	-	-
Pre Stage	148+80 to 166+70 WB	6	-	*47*	282	*2*	12	*4*	24	*7*	42	*2*	12	*14*	84	-		-		-	-	-	-	-
Stage 1	141+90 to 167+99 WB	21	-	*33*	693	-	-	-	-	-	-	*1*	21	*19*	399	-		-		-	-	-	-	-
	141+90 to 172+82 EB	21	-	*42*	882	-	-	-	-	-	-	*1*	21	*8*	168	-		-		-	-	-	-	-
	Dousman Rd & Golden Lake Rd	21	-	-	-	*18*	378	*24*	504	-	-		-	*12*	252	-		-		*36*	-	-	*150*	3150
Stage 2	141+50 to 173+38 EB	82	-	-	-	-	-	-	-	-	-	-	-	*4*	328	-		-		-	-	-	-	-
	148+25 to 170+00 WB	82	-	-	-	-	-	-	-	-	-	-	-	*8*	656	-		-		-	-	-	-	-
	Dousman Rd & Golden Lake Rd	82	-	-	-	*18*	1476	*24*	1968	-	-	-	-	*12*	984	-		-		*36*	-	-	*150*	12300
Stage 3	146+50 to 168+75 EB	82	-	-	-	-	-	-	-	-	-	-	-	*10*	820	-		-		-	-	-	-	-
	141+75 to 174+38 WB	82	-	-	-	-	-	-	-	-	-	-	-	*4*	328	-		-		-	-	-	-	-
Stage 4	141+90 to 173+82 WB	19	-	*43*	815	*2*	*38*	*4*	76	-	-	*1*	19	*8*	152	-		-		-	-	-	-	-
	147+50 to 167+00 EB	19	-	*31*	*580*	*2*	*38*	*4*	76	-	-	*1*	19	*8*	152	-		-		-	-	-	-	-
UNDISTRIBUTED			-		148		*138*		102		8		8		638	5	2	5	2	-	20	-		2550
	TOTALS		**191**		**3,400**		**2,080**		**2,750**		**50**		**100**		**10,500**	**10**		**10**		**72**	**20**	**1**		**18,000**

MAINTENANCE CROSSOVER

LOCATION	633.0100 DELINEATOR POSTS STEEL (EACH)	633.0500 DELINEATOR REFLECTORS (EACH)
MAINTENANCE CROSSOVER	2	2
TOTALS	**2**	**2**

PAVEMENT MARKING

LOCATION		ITEM 646.0106 PAVEMENT MARKING EPOXY 4-INCH YELLOW (LF)	WHITE (LF)	ITEM 646.0600 REMOVING PAVEMENT MARKINGS (LF)	ITEM 646.0841.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH WHITE (LF)	ITEM 649.0300 TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH YELLOW (LF)	WHITE (LF)	ITEM 649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH BLACK (LF)	ITEM 649.0801 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 8-INCH WHITE (LF)	BLACK (LF)	ITEM 649.2100 TEMPORARY RAISED PAVEMENT MARKERS (EACH)
PRESTAGE											
148+80 to 166+70	WB	-	-	-	-	-	1790	-	-	-	-
STAGE 1											
148+25 to 151+00	WB	-	-	-	-	275	550	69	-	-	6
151+00 to 164+50	WB	-	-	156	-	1350	1458	182	-	-	27
164+50 to 167+25	WB	-	-	-	-	275	550	69	-	-	6
STAGE 2											
141+35 to 157+75	EB	-	-	-	-	1640	3280	410	-	-	33
157+75 to 161+00	EB	-	-	-	-	325	351	82	-	-	7
161+00 to 173+38	EB	-	-	-	-	1238	2476	310	-	-	25
172+00 to 173+38	EB	-	-	-	-	-	84	-	115	250	-
STAGE 3											
141+35 to 157+75	WB	-	-	-	-	1640	3280	410	-	-	33
157+75 to 162+50	WB	-	-	-	-	475	513	119	-	-	10
162+50 to 174+38	WB	-	-	-	-	1188	2376	297	-	-	24
169+17 to 174+38	WB	-	-	-	-	-	96	-	276	140	-
141+35 to 168+00	WB	-	2665	-	-	-	-	-	-	-	-
141+35 to 173+38	WB	3203	-	-	810	-	-	-	-	-	-
148+75 to 151+50	EB	-	-	-	-	275	550	69	-	-	6
151+50 to 166+00	EB	-	-	-	-	1450	1566	363	-	-	29
166+00 to 168+75	EB	-	-	-	-	275	550	69	-	-	6
603+50 to 608+00	Dousman	113	900	-	-	-	-	-	-	-	-
STAGE 4											
141+35 to 168+00	EB	-	2665	-	-	-	-	-	-	-	-
141+35 to 173+38	EB	3203	-	-	810	-	-	-	-	-	-
UNDISTRIBUTED		125	126	44	30	162	162	51	10	9	8
	TOTALS	**13,000**		**200**	**1650**	**30,200**		**2500**	**800**		**220**

3

CLEANUP

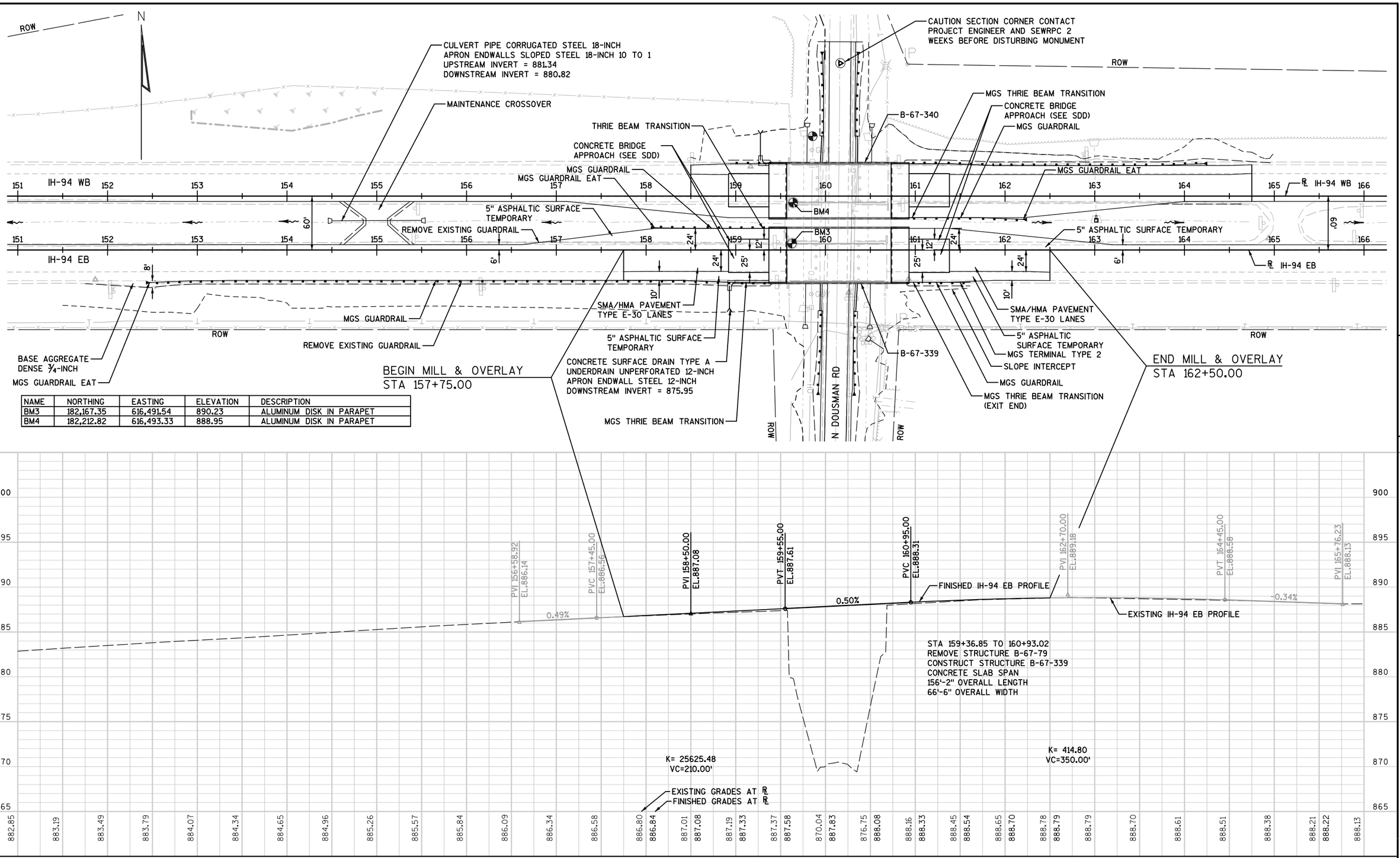
LOCATION	SPV.0105.01 PAVEMENT CLEANUP PROJECT 1060-38-70 (LS)
PROJECT	1
TOTALS	**1**

STAKING

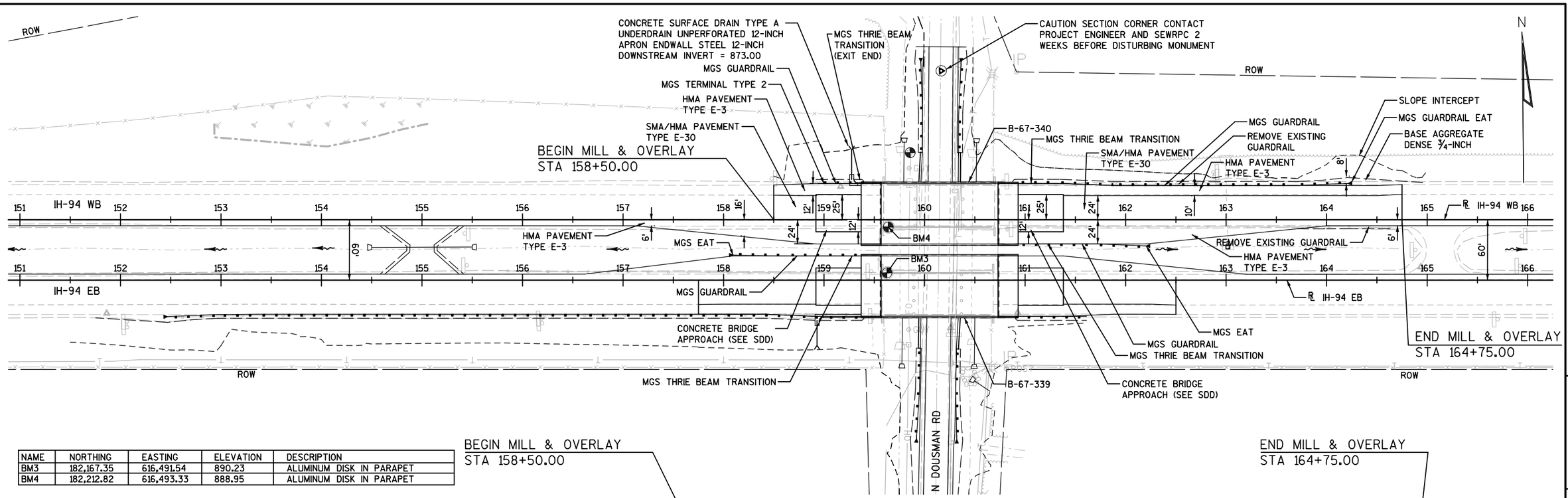
LOCATION	SPV.0105.03 SURVEY PROJECT 1060-38-70 (LS)
PROJECT	1
TOTALS	**1**

LANDMARK REFERENCE MONUMENTS SPECIAL

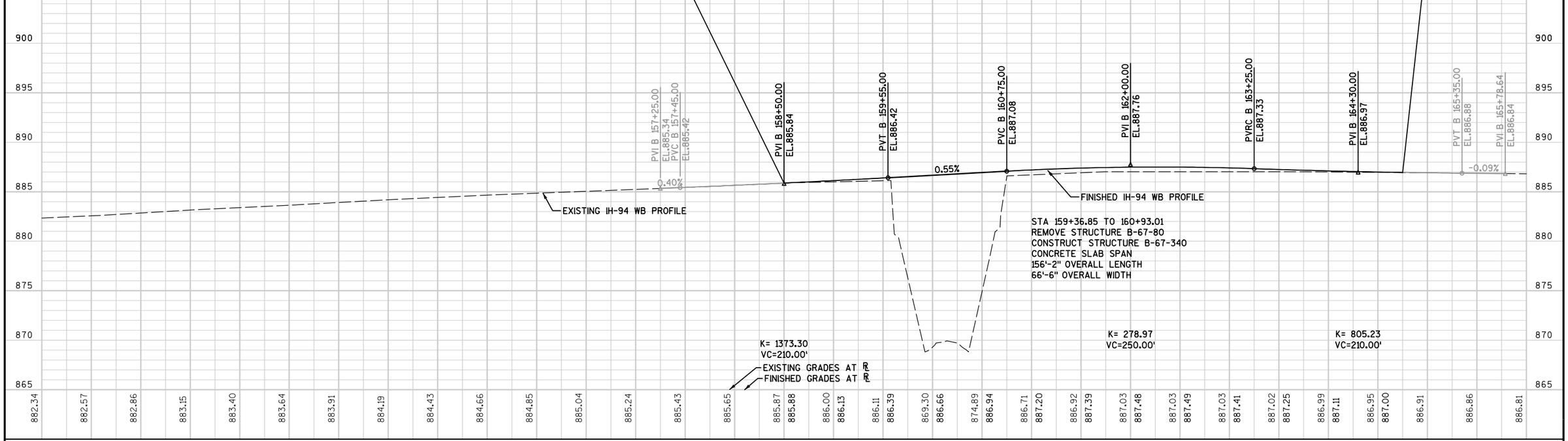
LOCATION	STATION	OFFSET	TOWNSHIP	RANGE	SECTION CORNER	SPV.0060.03 SECTION CORNER MONUMENTS SPECIAL (EACH)
DOUSMAN ROAD	607+76	0'	T7N	R17E	15/16	1
TOTAL						**1**



PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PLAN PROFILE : IH-94 EASTBOUND	SHEET 88	E



NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM3	182,167.35	616,491.54	890.23	ALUMINUM DISK IN PARAPET
BM4	182,212.82	616,493.33	888.95	ALUMINUM DISK IN PARAPET



PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PLAN PROFILE : IH-94 WESTBOUND	SHEET 89	E

NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM3	182,167.35	616,491.54	890.23	ALUMINUM DISK IN PARAPET
BM4	182,212.82	616,493.33	888.95	ALUMINUM DISK IN PARAPET

N

APRON ENDWALL RCP
INVERT = 868.33

ROW

REMOVE EXISTING FENCE
FENCE WOVEN WIRE 4-FT
TYPICAL ALL QUADRANTS

IH-94 EB

IH-94 WB

24-INCH CULVERT
RCP CLASS III

APRON ENDWALL RCP
INVERT = 866.68

MGS GUARDRAIL EAT

MGS THRIE BEAM TRANSITION

APRON ENDWALL FOR
UNDERDRAIN 6-INCH
INVERT = 865.20

BEGIN RECONSTRUCT
STA 603+50.00

PAVED SHOULDER

SLOPE INTERCEPT

MGS GUARDRAIL EAT
BASE AGGREGATE
DENSE ¾-INCH

MGS THRIE BEAM
TRANSITION

BM3

BM4

SLOPE INTERCEPT

BASE AGGREGATE
DENSE ¾-INCH

PIPE UNDERDRAIN
UNPERFORATED
6-INCH
SLOPE 0.40%

2'
6'
12'
6'
26'
18'

604 605 606 607 608 609

160
161

CONCRETE BARRIER
TYPE S56

18'
12'
6'
26'

PIPE UNDERDRAIN
6-INCH

℄ DOUSMAN RD

N DOUSMAN RD

END RECONSTRUCT
STA 608+00.00

BASE AGGREGATE
DENSE ¾-INCH

MGS GUARDRAIL EAT

ROW

SLOPE INTERCEPT

PROTECT AND MAINTAIN
EXISTING PIPE AND ENDWALL

MGS THRIE BEAM
TRANSITION

APRON ENDWALL RCP
INVERT = 868.11

MGS THRIE BEAM TRANSITION

SLOPE INTERCEPT

APRON ENDWALL RCP
INVERT = 867.01

24-INCH CULVERT
RCP CLASS III

MGS GUARDRAIL EAT

LANDMARK REFERENCE MONUMENT
CAUTION SECTION CORNER CONTACT
PROJECT ENGINEER AND SEWRPC 2
WEEKS BEFORE DISTURBING MONUMENT

HMA PAVEMENT TYPE E-0.3

HMA PAVEMENT TYPE E-0.3

BASE AGGREGATE DENSE ¾-INCH

5

5

IH-94 EB

IH-94 WB

EB PGL ℄ DOUSMAN
ELEV. 887.90

WB PGL ℄ DOUSMAN
ELEV. 886.75

36' 24' 2.0% 2.0% 1.0% 1.33' 1.5'

24' 36' 2.0% 2.0% 1.0%

EXISTING BRIDGES

15.52'

15.42'

15.57'

BEGIN RECONSTRUCT
STA 603+50.00

END RECONSTRUCT
STA 608+00.00

PVI 603+50.00
EL.873.55

PVC 604+85.00
EL.871.05

EXISTING PROFILE

-1.85%

FINISHED PROFILE

PVI 605+60.00
EL.869.66

K= 114.25
VC=150.00'

PVT 606+35.00
EL.869.26

PVC 606+60.00
EL.869.13

-0.54%

PVI 607+50.00
EL.868.64

K= 274.38
VC=180.00'

PVT 608+40.00
EL.868.75

PVI 608+50.00
EL.868.76

+0.12%

EXISTING GRADES AT ℄
FINISHED GRADES AT ℄

895 885 875 865

874.01 873.54 873.55 873.08 873.08 872.62 872.62 872.26 872.16 871.90 871.70 871.53 871.23 871.17 870.78 870.92 870.38 870.66 870.03 870.41 869.74 870.16 869.50 869.94 869.32 869.72 869.18 869.51 869.05 869.29 868.94 869.07 868.86 868.88 868.79 868.73 868.75 868.74 868.73 868.75 868.76 868.77 868.74 868.55

604 605 606 607 608 609

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	PLAN PROFILE : N DOUSMAN RD	SHEET 90	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\050160_pp.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40

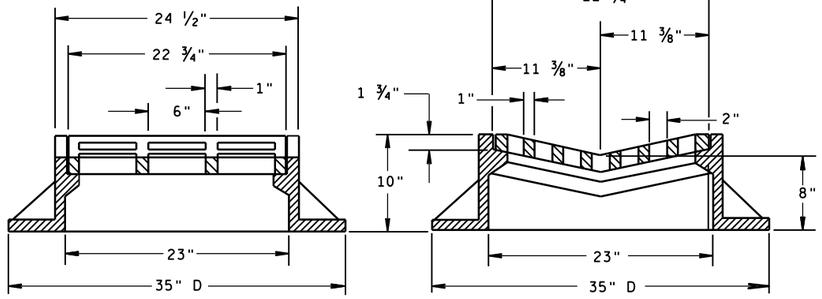
WISDOT/CADDS SHEET 30

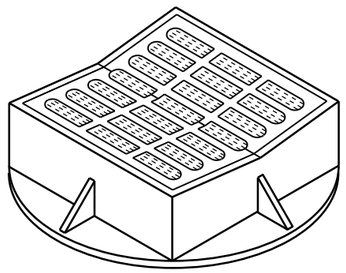
Standard Detail Drawing List

08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08B09-01	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C08-01	INLETS MEDIAN 1 AND 2 GRATE
08C09-01	INLETS MEDIAN 3 AND 4 GRATE
08D01-18	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D02-06	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D13-01	SLOTTED CORRUGATED METAL PIPE SURFACE DRAINS
08E04-02	SOD OR MASONRY AND SOD DITCH CHECKS
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F05-01	CLASS "B" BEDDING FOR CULVERT PIPE OR STORM SEWER
08F06-04	REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN
11A01-05	MAINTENANCE CROSSOVER FOR FREEWAYS
12A03-10	NAME PLATE (STRUCTURES)
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13B02-07A	CONCRETE BRIDGE APPROACH
13B02-07B	STRUCTURAL APPROACH SLAB AND CONCRETE BRIDGE APPROACH
13C01-18	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C11-11A	RURAL DOWELED CONCRETE PAVEMENT
13C11-11B	RURAL DOWELED CONCRETE PAVEMENT
13C18-03A	CONCRETE PAVEMENT JOINTING
13C18-03B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-03C	CONCRETE PAVEMENT JOINT TIES
13C18-03D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B32-03A	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-03B	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-03C	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-03D	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-03E	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B33-01H	CONCRETE BARRIER SINGLE SLOPE 42" THRIE BEAM ANCHOR
14B39-01E	42-INCH SSCB TO 56-INCH SSCB HEIGHT TRANSITION
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B47-02A	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-02B	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-02C	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
15A02-08	DELINEATOR POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING
15B01-08A	FENCE WOVEN WIRE
15B01-08B	FENCE WOVEN WIRE
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES

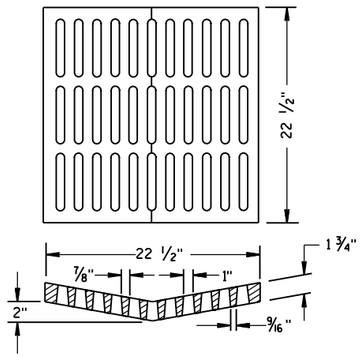
Standard Detail Drawing List

15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-02	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15D03-02	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER
15D12-05B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D27-02	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
16A01-06	LANDMARK REFERENCE MONUMENTS AND COVERS



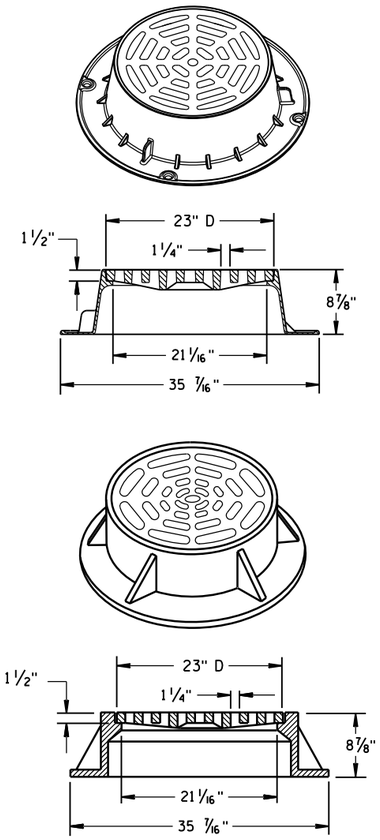


TYPE "B"



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"

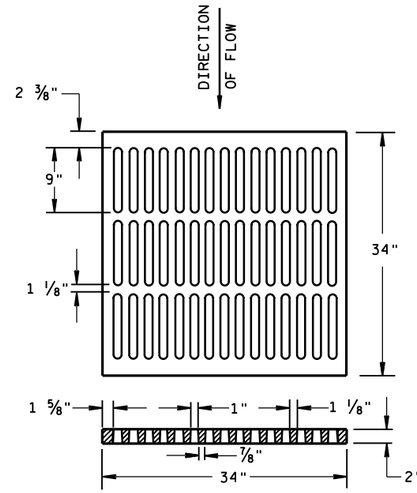
NOTE: EITHER CASTING IS ACCEPTABLE

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.

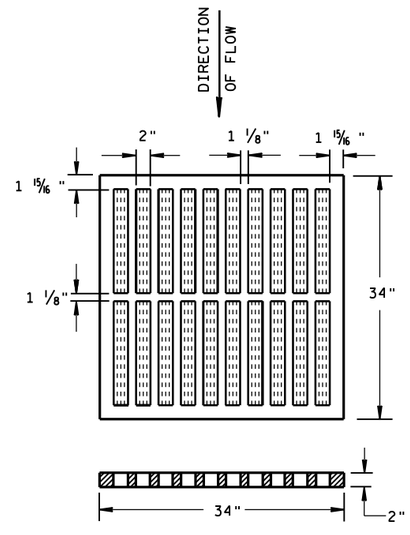
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



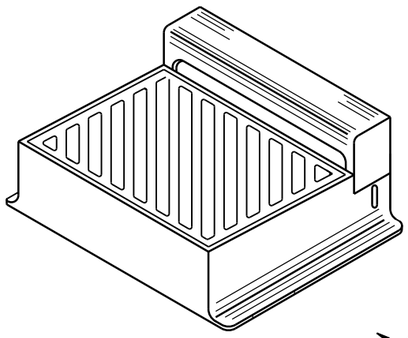
ALTERNATIVE TYPE "MS"

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

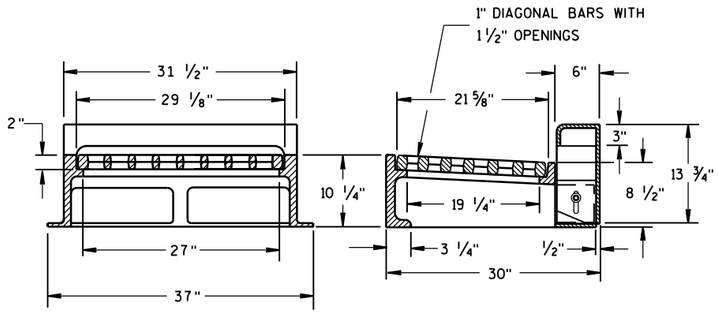


TYPE "MS"

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



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



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

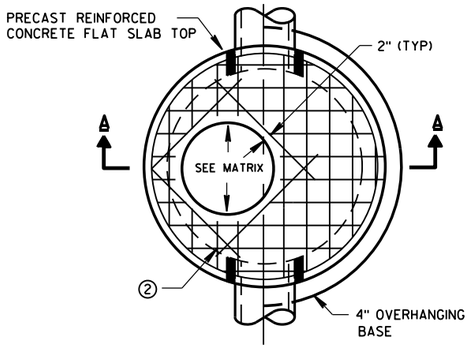
INLET COVERS
TYPE B, B-A, C, MS, MS-A, & WM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

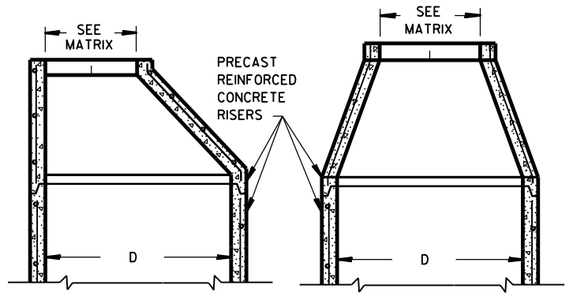
APPROVED
11/27/2013 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 8 A 5-19b

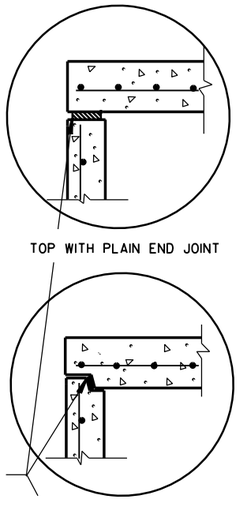


PLAN VIEW CIRCULAR OPENING



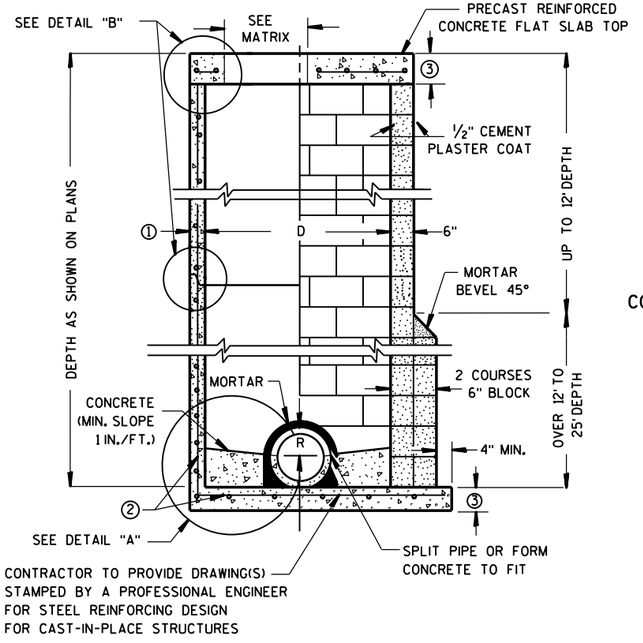
OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP



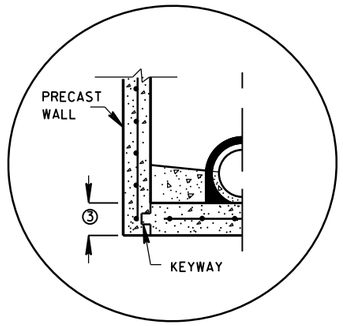
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

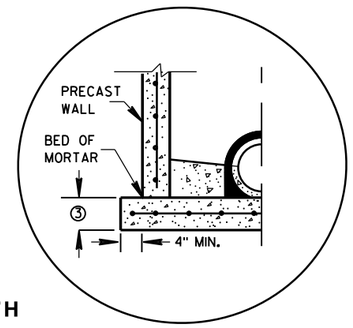


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

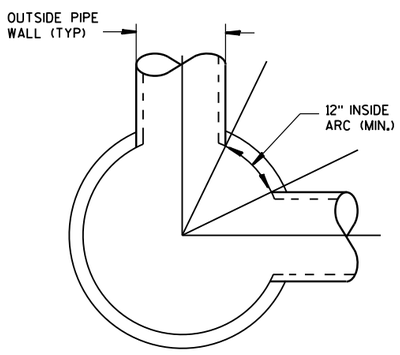


PRECAST REINFORCED
CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED
CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE CONE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

CONCRETE BLOCK WILL NOT BE PERMITED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.

② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

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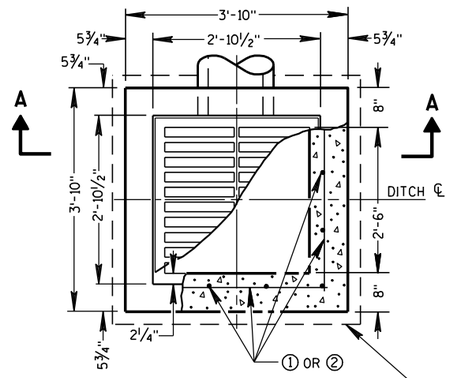
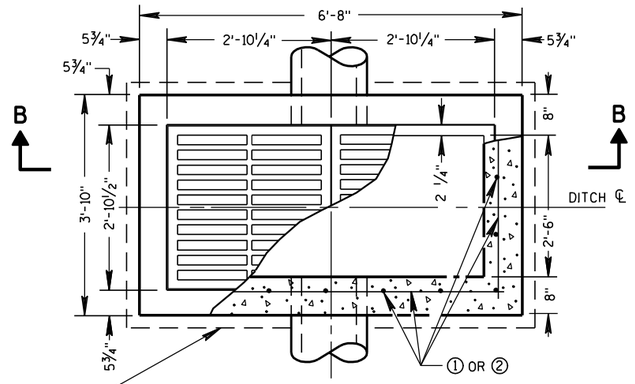
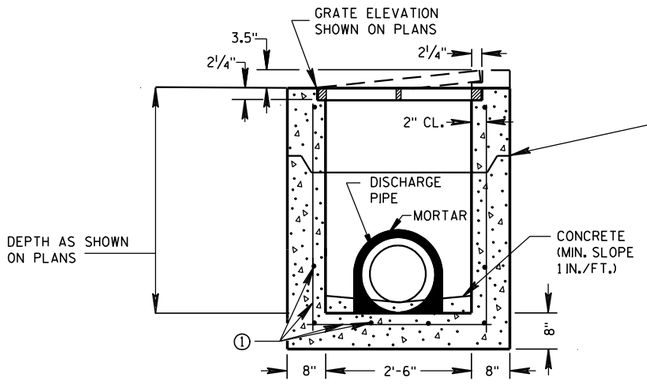


PLAN VIEW

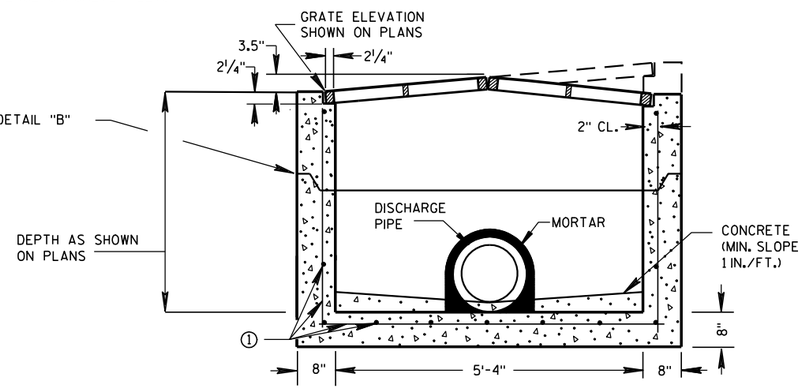


PLAN VIEW

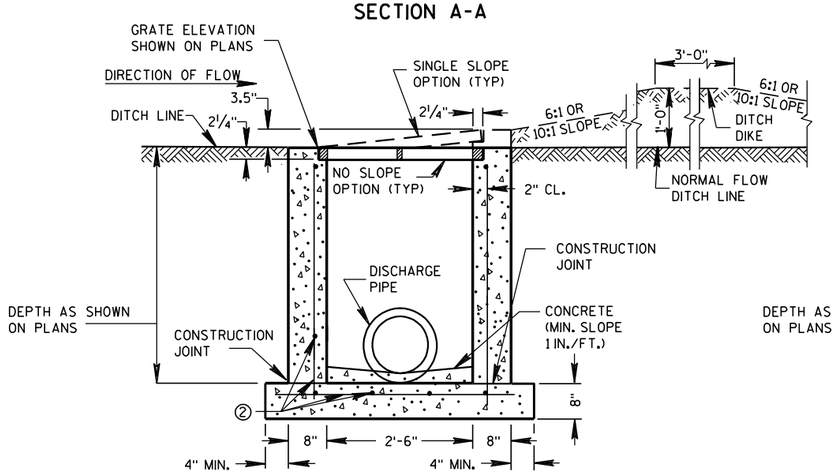
4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS



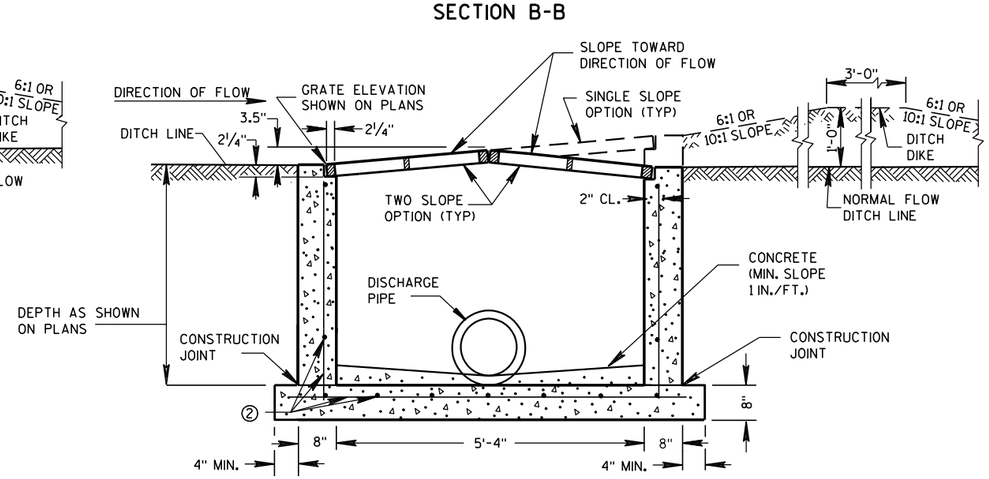
PRECAST REINFORCED CONCRETE SECTION A-A



PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

INLETS MEDIAN 1 GRATE

INLETS MEDIAN 2 GRATE

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, 1G-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

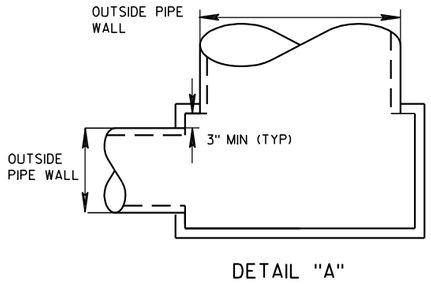
MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

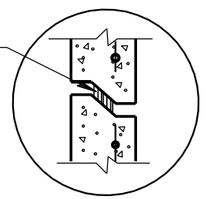
PIPE MATRIX

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



DETAIL "A"

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



DETAIL "B"

INLETS MEDIAN 1 AND 2 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

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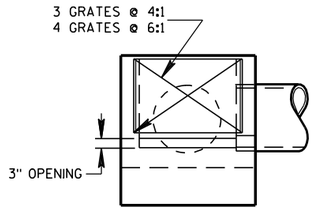
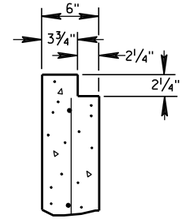
S.D.D. 8 C 8-1

6

S.D.D. 8 C 8-1



SECTION B-B



SECTION C-C

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.

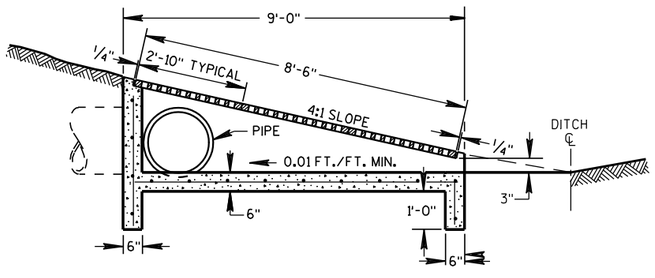
UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

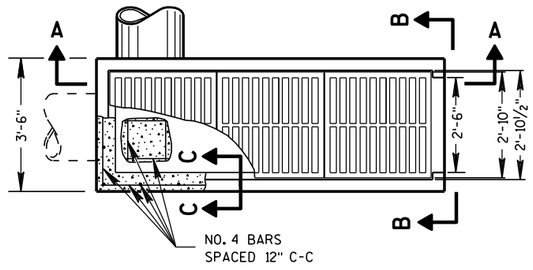
ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, 3G-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

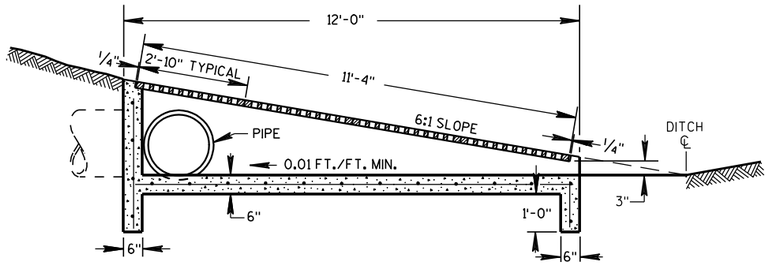


SECTION A-A

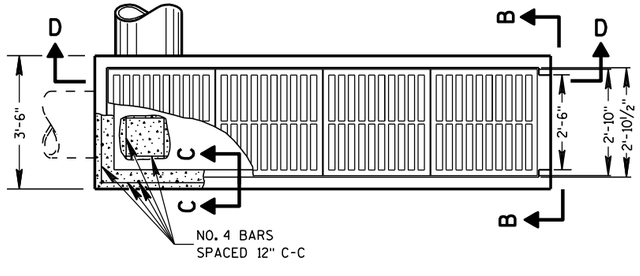


PLAN VIEW

INLETS MEDIAN 3 GRATE



SECTION D-D



PLAN VIEW

INLETS MEDIAN 4 GRATE

INLETS MEDIAN 3 AND 4 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

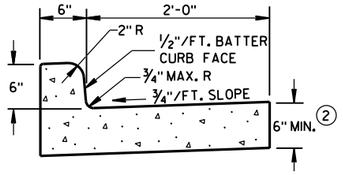
6/5/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEV ENGINEER

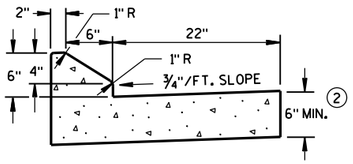
FHWA

6

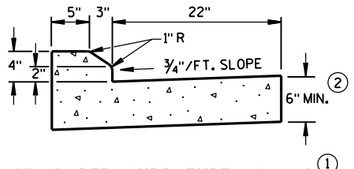
S.D.D. 8 C 9-1



TYPES A & D ①

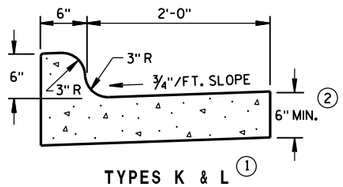


6" SLOPED CURB TYPES G & J ①

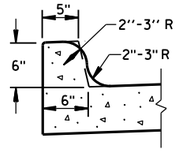


4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"

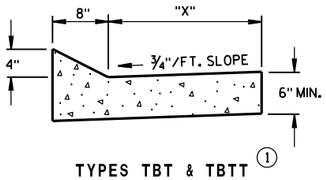


TYPES K & L ①



OPTIONAL CURB SHAPE FOR TYPES K & L ①

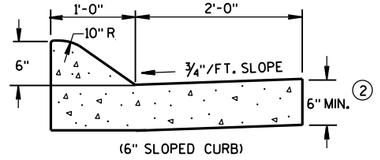
CONCRETE CURB & GUTTER 30"



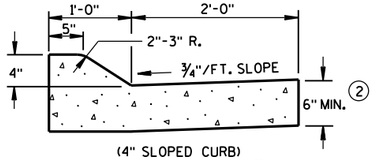
TYPES TBT & TBTT ①

CONCRETE CURB & GUTTER

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

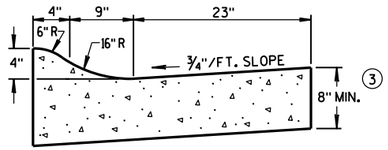


(6" SLOPED CURB)



(4" SLOPED CURB)

TYPES A & D ①



4" SLOPED CURB TYPES R & T ① ④

CONCRETE CURB & GUTTER 36"

GENERAL NOTES

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

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

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

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

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

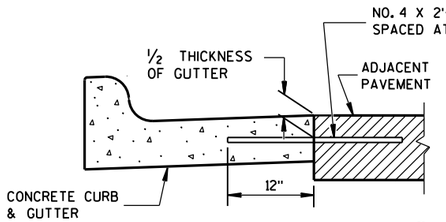
① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.

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.

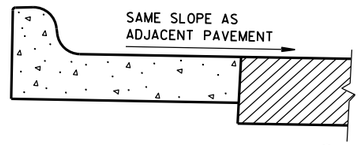
③ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

④ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

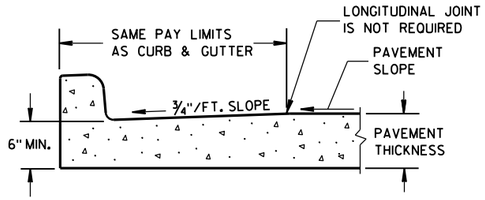
⑤ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



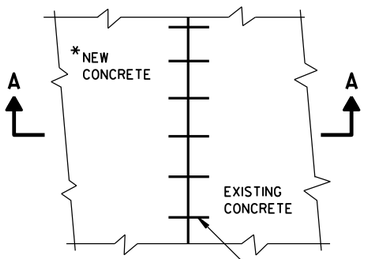
TYPICAL TIE BAR LOCATION ①



REVERSE SLOPE GUTTER ⑤
(TYPICAL FOR ALL CURB & GUTTER TYPES)

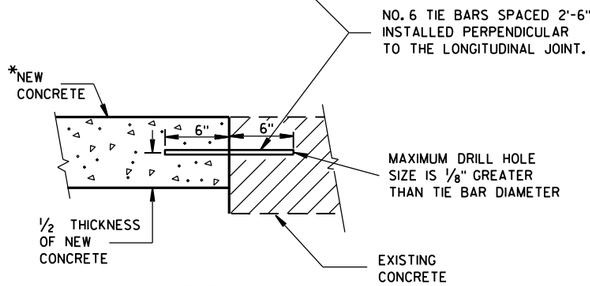


PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



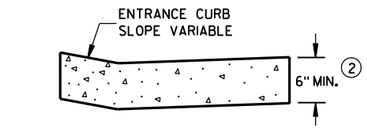
PLAN VIEW

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

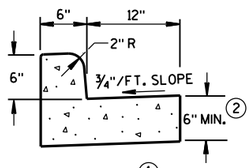


SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT

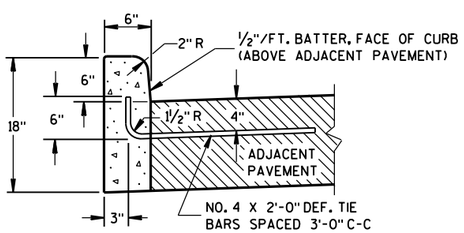


DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

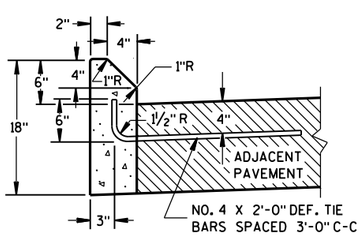


① TYPES A & D

CONCRETE CURB & GUTTER 18"

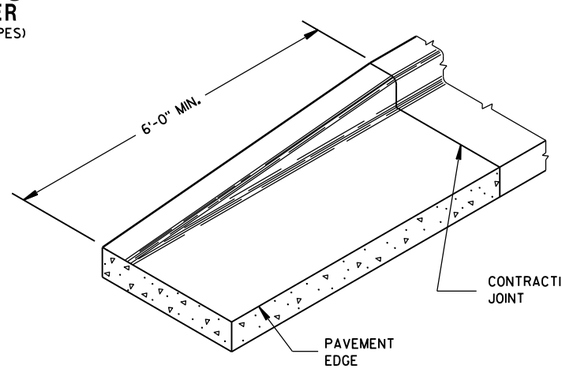


① TYPES A & D



① TYPES G & J

CONCRETE CURB



END SECTION CURB & GUTTER

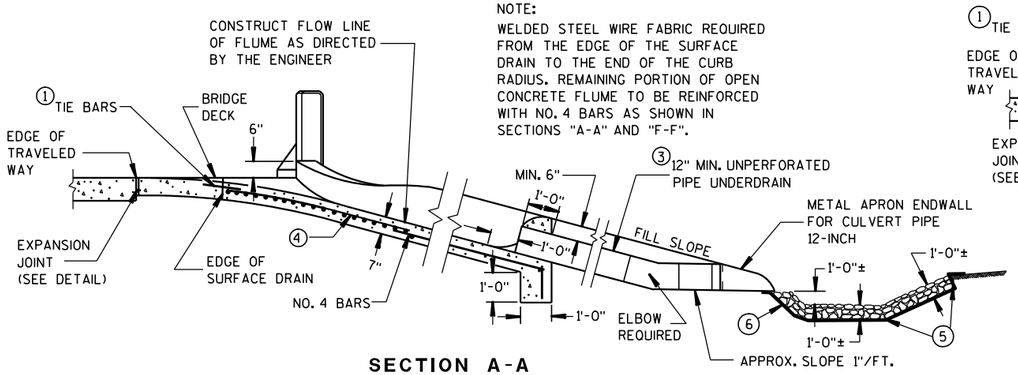
CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

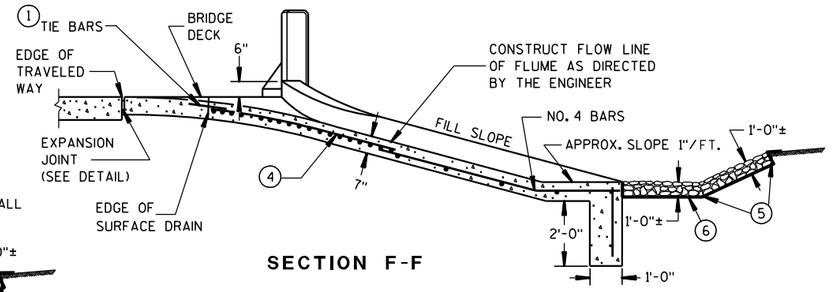
APPROVED
June, 2015 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 8 D 1-18



SECTION A-A



SECTION F-F

GENERAL NOTES

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

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

(1) NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.

(2) NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.

(3) PIPE UNDERDRAIN MAY BE ANY OF THE MATERIALS LISTED IN SECTION 612.2 OF THE STANDARD SPECIFICATIONS EXCEPT DRAIN TILE.

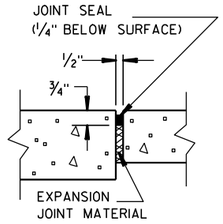
(4) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.

(5) LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.

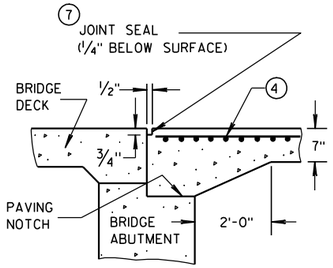
(6) GEOTEXTILE FABRIC, TYPE 'R"

(7) HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.

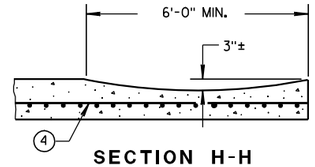
(8) THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1½".



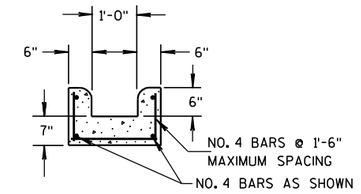
EXPANSION JOINT DETAIL



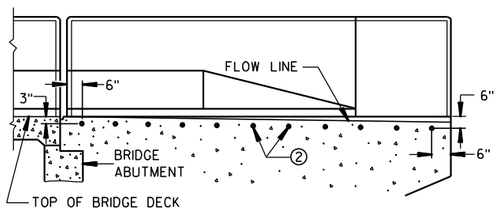
SECTION D-D



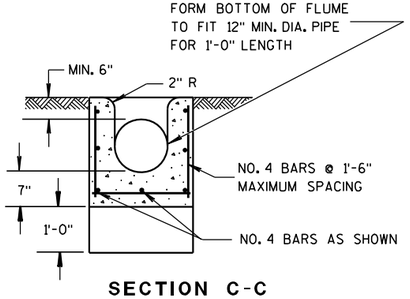
SECTION H-H



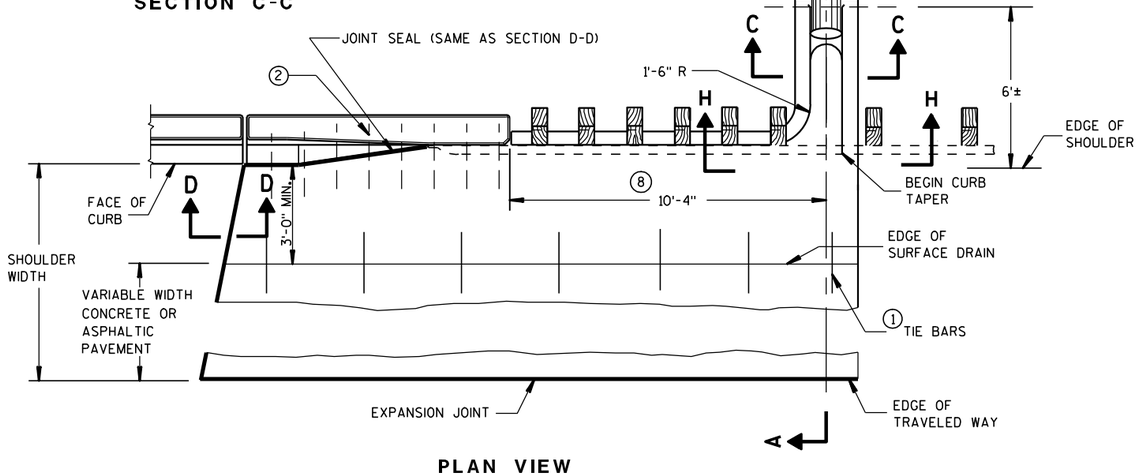
SECTION E-E



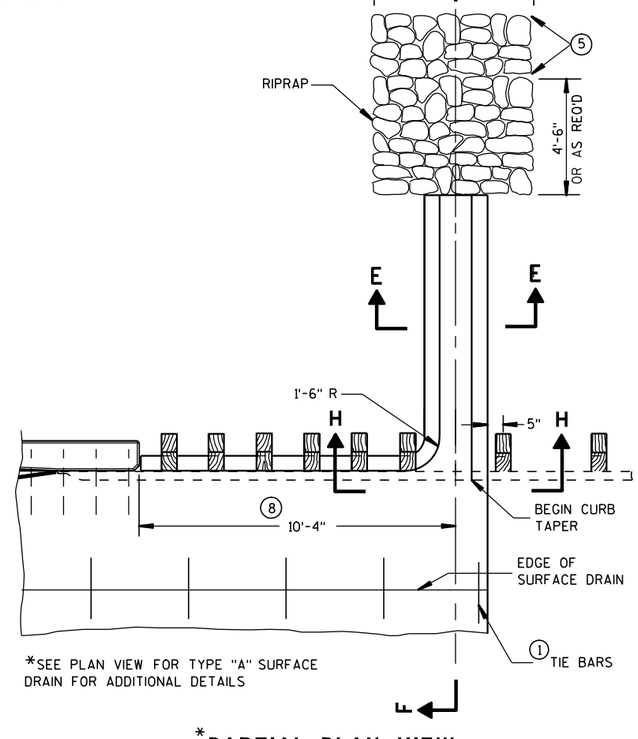
LOCATION OF TIE BARS IN WINGWALL



SECTION C-C



PLAN VIEW
SURFACE DRAIN WITH PIPE
TYPE "A"



*SEE PLAN VIEW FOR TYPE "A" SURFACE DRAIN FOR ADDITIONAL DETAILS

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

CONCRETE SURFACE DRAINS
FLUME TYPE
AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

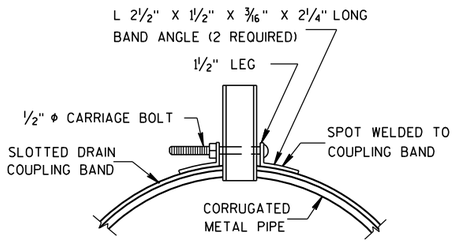
APPROVED
9/4/08 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

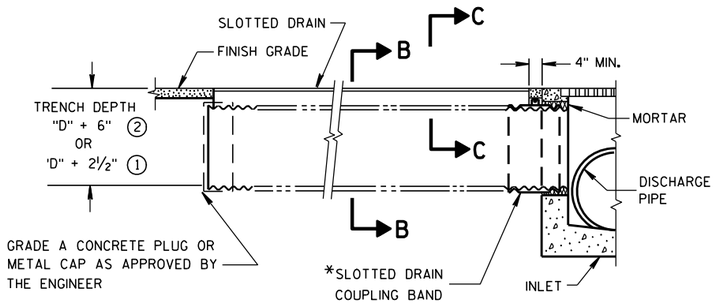
S.D.D. 8 D 2-6

6

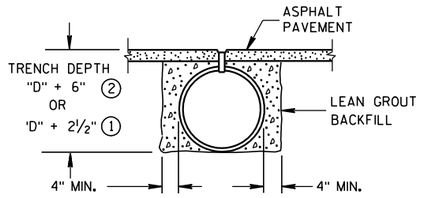
S.D.D. 8 D 2-6



SECTION A-A



SLOTTED DRAIN INSTALLATION TYPE "A"



SECTION B-B

GENERAL NOTES

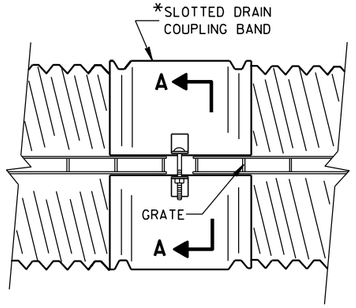
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

BACKFILL MATERIAL

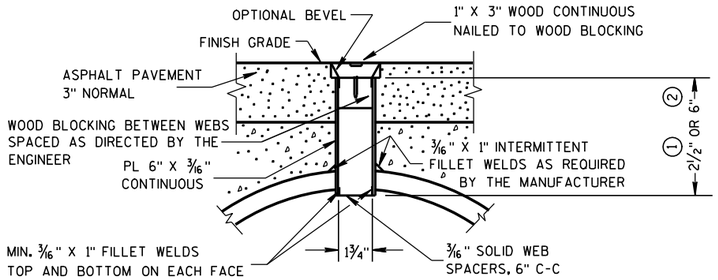
THE LEAN GROUT BACKFILL MATERIAL SHALL BE A FINE AGGREGATE, IN ACCORDANCE WITH SUBSECTION 501.3.6.3.6 OF THE STANDARD SPECIFICATIONS, MIXED WITH 150 POUNDS OF CEMENT AND APPROXIMATELY 30 GALLONS OF WATER FOR EACH 3000 POUNDS OF FINE AGGREGATE.

THE PIPE FOR THE SLOTTED DRAIN SHALL MEET AASHTO DESIGNATION M-36, AND THE GRATE ASSEMBLIES SHALL BE MADE FROM STRUCTURAL STEEL SUITABLY WELDED TO FORM THE OPEN SLOT AND HOT-DIP GALVANIZED TO MEET THE PROVISIONS OF AASHTO DESIGNATION M-111.

NORMAL PIPE SIZES ARE 12-INCH THROUGH 24-INCH DIAMETER IN 0.064 INCH THICKNESS, AND 30-INCH DIAMETER PIPE IN 0.079 INCH THICKNESS.

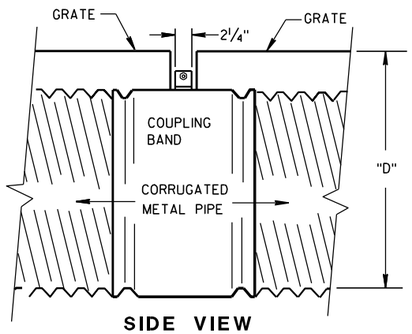


PLAN VIEW



SECTION C-C

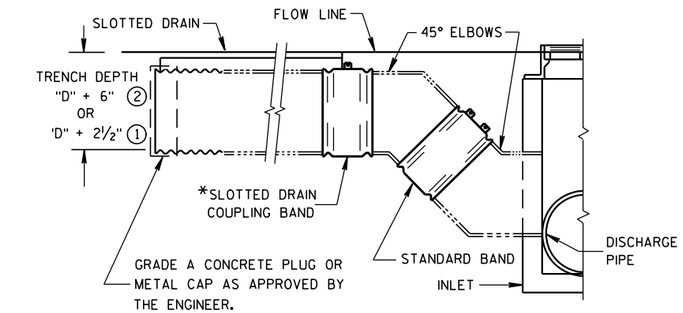
GRATE SLOT DETAIL



SIDE VIEW

*TYPICAL COUPLING BAND FOR SLOTTED DRAIN

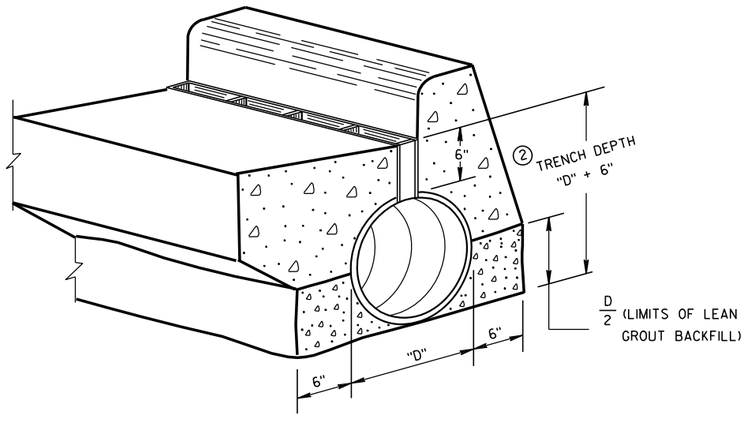
(ALTERNATES PERMITTED AS APPROVED BY THE ENGINEER)



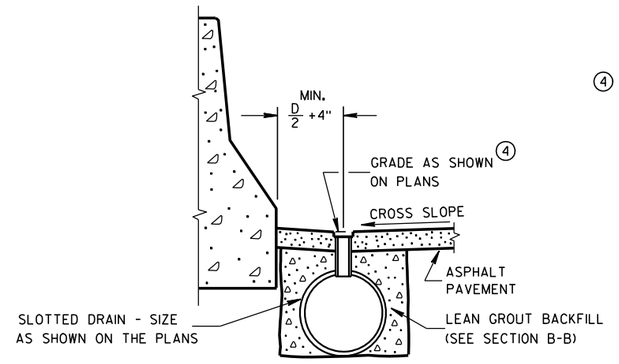
SLOTTED DRAIN INSTALLATION TYPE "B"

NOTE:

TO PREVENT "FLOATING" OF THE SLOTTED DRAIN DURING BACKFILL OPERATIONS PROVIDE ADEQUATE WEDGES, OR POUR THE LEAN GROUT ON TOP OF THE PLUGGED SLOT ALLOWING IT TO SLOUGH TO THE SIDES OF THE PIPE. THIS WILL PROVIDE ENOUGH WEIGHT ON TOP TO KEEP THE PIPE FROM FLOATING.



SLOTTED DRAIN INSTALLATION IN FLOW LINE OF CURB & GUTTER TYPE "C"



SLOTTED DRAIN INSTALLATION AT MEDIAN BARRIER TYPE "D"

① 2½" NORMAL GRATE DEPTH.

② 6" SPECIAL GRATE DEPTH, WHEN SPECIFIED ON THE PLANS.

③ FOR SCREEDING DIRECTLY OVER THE SLOTTED DRAIN WITH ASPHALT PAVER. FOR CONCRETE SURFACE USE 3" WIDE TAPE OVER THE SLOT TO KEEP MATERIAL OUT OF THE PIPE.

④ WHEN THE SURFACE IS CONCRETE PAVEMENT THE GRADE AS SHOWN ON THE PLANS WILL BE FLUSH WITH THE TOP OF THE SLOTTED DRAIN.

SLOTTED CORRUGATED METAL PIPE SURFACE DRAINS

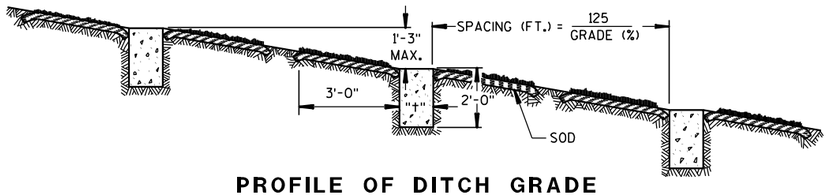
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

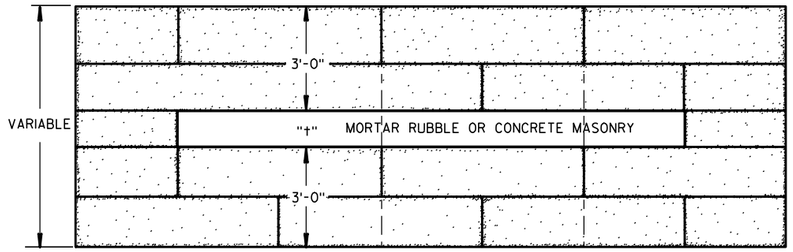
8/30/79 — DATE

/S/ D. L. Str--- — CHIEF ROADWAY DEVELOP 99 — ...INEER

FHWA

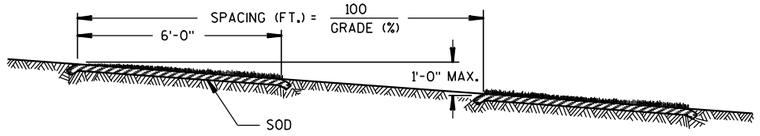


PROFILE OF DITCH GRADE

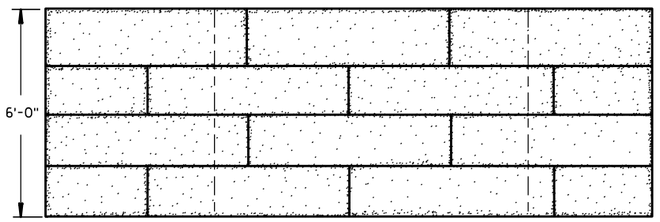


PLAN VIEW SHOWING MASONRY AND SOD

"+" - MASONRY THICKNESS SHALL BE 0'-9" FOR CONCRETE AND 1'-0" FOR MORTAR RUBBLE.



PROFILE OF DITCH GRADE



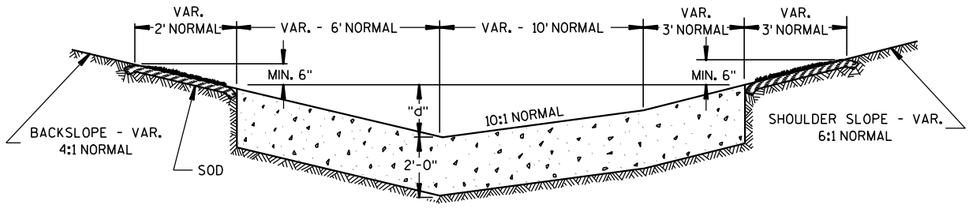
PLAN VIEW SHOWING SOD

GENERAL NOTES

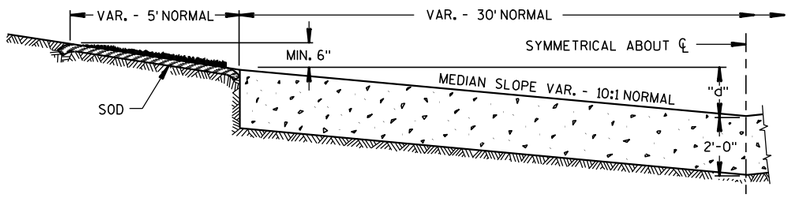
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

ALTERNATE DESIGNS FOR DITCH CHECKS, OF THE MATERIAL OR COMBINATION OF MATERIALS SHOWN HEREON, MAY BE USED UPON WRITTEN PERMISSION OF THE ENGINEER.

SOD STRIPS FOR DITCH CHECKS MAY BE PLACED EITHER TRANSVERSELY OR LONGITUDINALLY TO THE DIRECTION OF WATER FLOW.



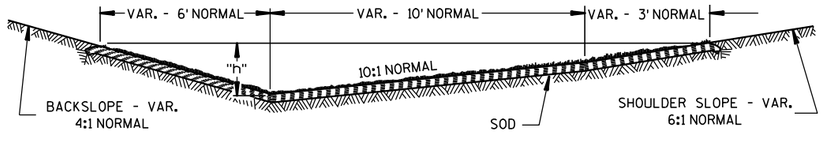
SIDE DITCH CROSS SECTION



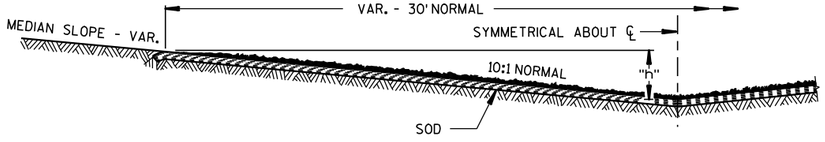
MEDIAN DITCH CROSS SECTION

"d" - THE MINIMUM DEPTH OF THE MASONRY PORTION OF THE DITCH CHECKS SHALL BE EQUAL TO THE MAXIMUM DEPTH OF FLOW. THE NORMAL "d" WILL BE 1'-6".

MASONRY AND SOD DITCH CHECKS



SIDE DITCH CROSS SECTION



MEDIAN DITCH CROSS SECTION

"h" - THE MINIMUM HEIGHT OF DITCH TO BE SODDED SHALL BE EQUAL TO THE MAXIMUM DEPTH OF FLOW PLUS 6". THE NORMAL "h" WILL BE 1'-6".

SOD DITCH CHECKS

SOD OR MASONRY AND SOD DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/7/71 — DATE

/S/ L.C. Harris — ACTING CHIEF DESIG

FHWA

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S.D.D. 8 E 4-2

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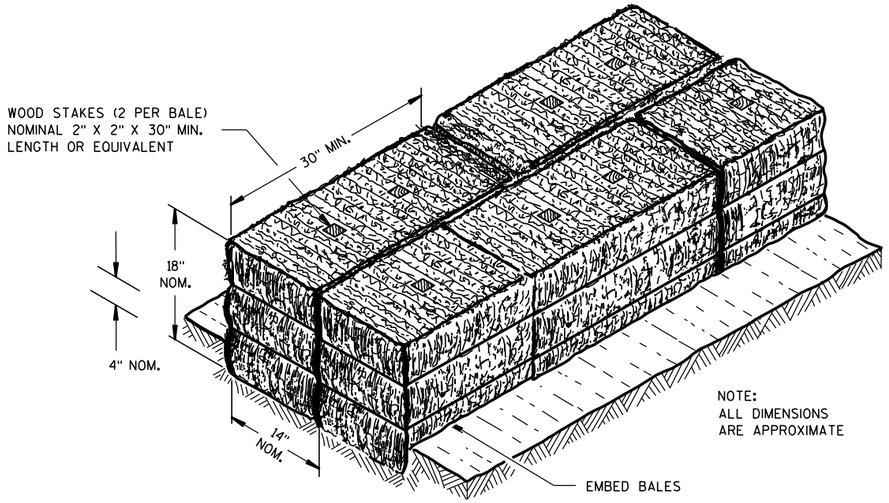
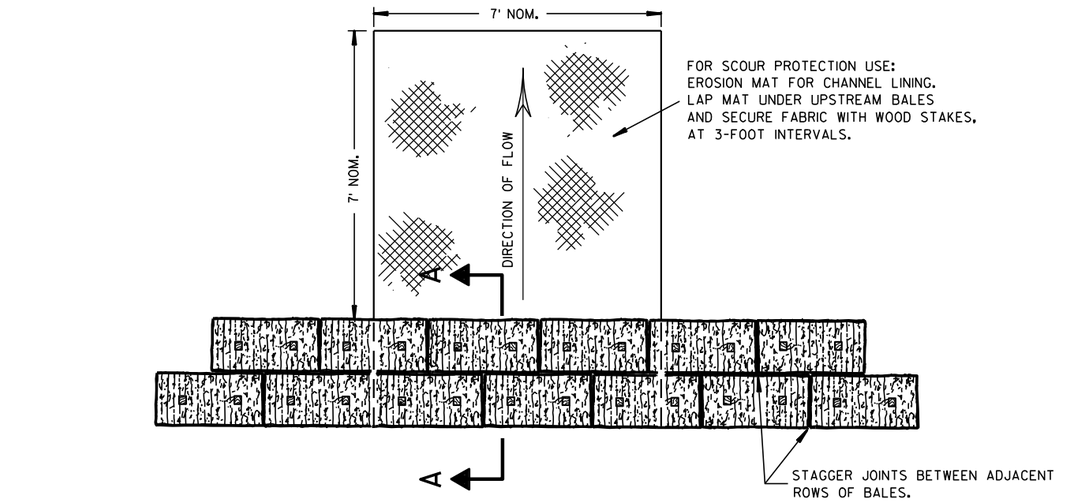
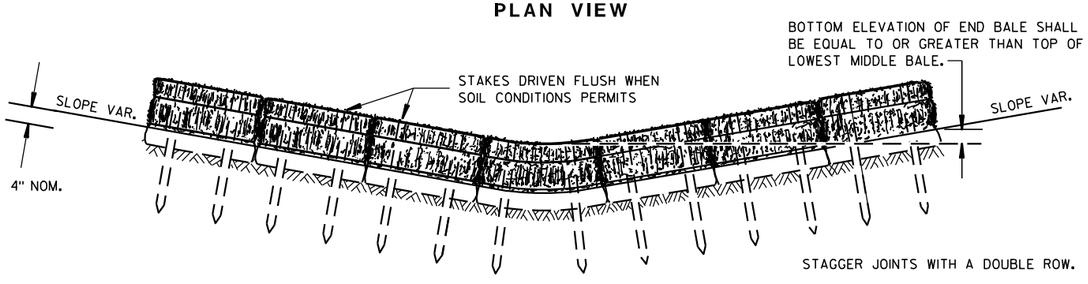
S.D.D. 8 E 4-2



SECTION A-A



PLAN VIEW



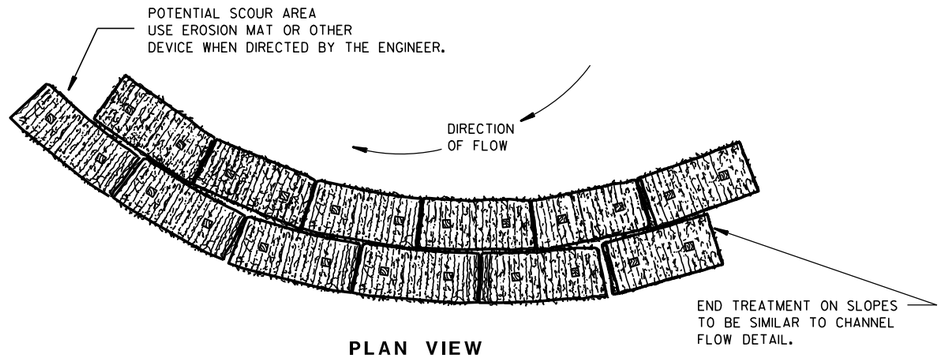
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

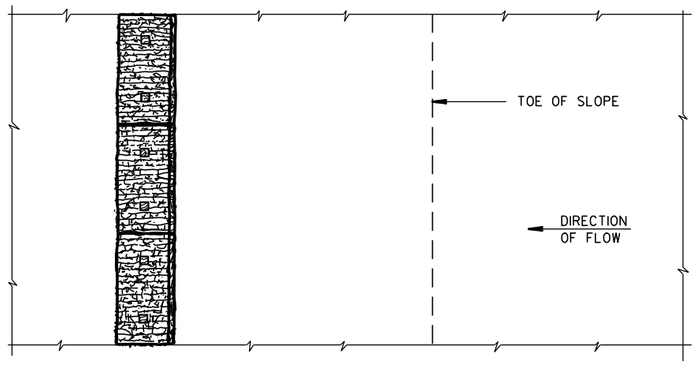
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

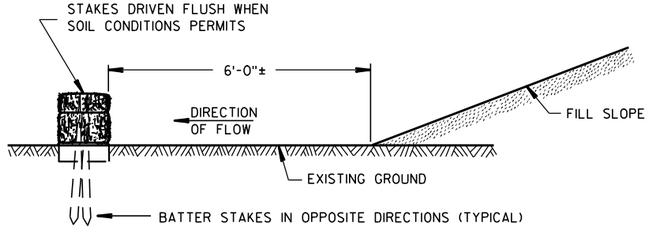


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

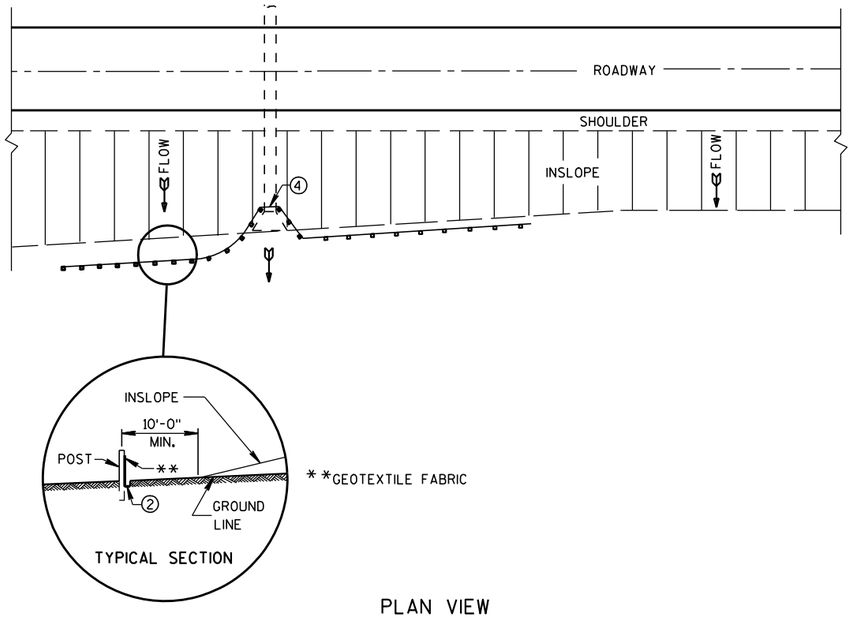
EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

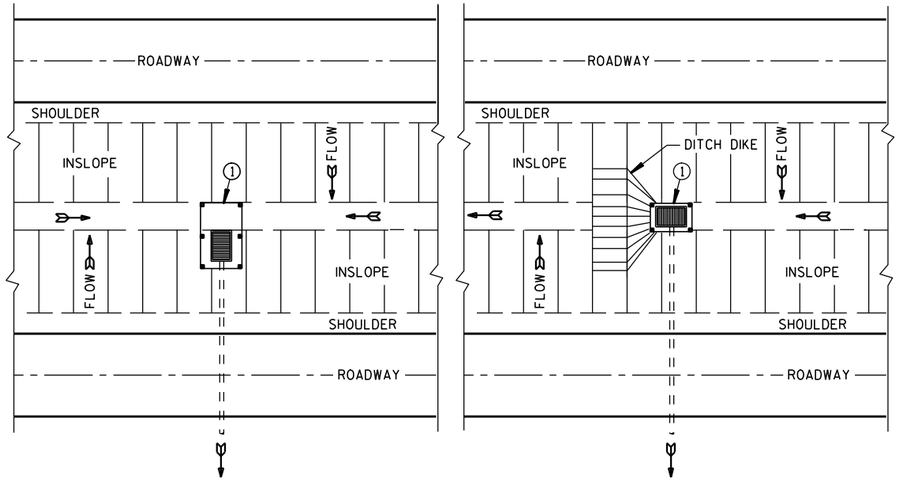
APPROVED
6/04/02 — DATE
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6
S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

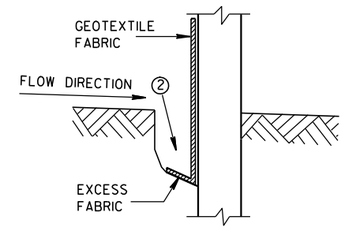
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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.

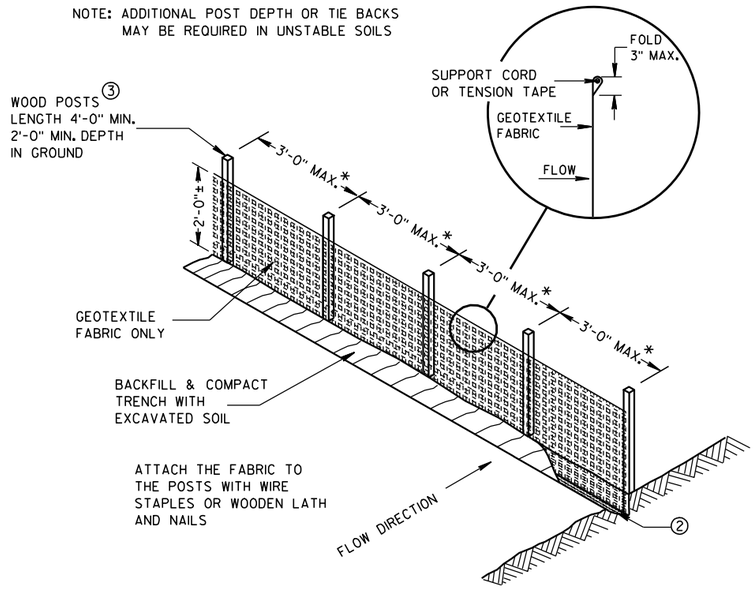
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

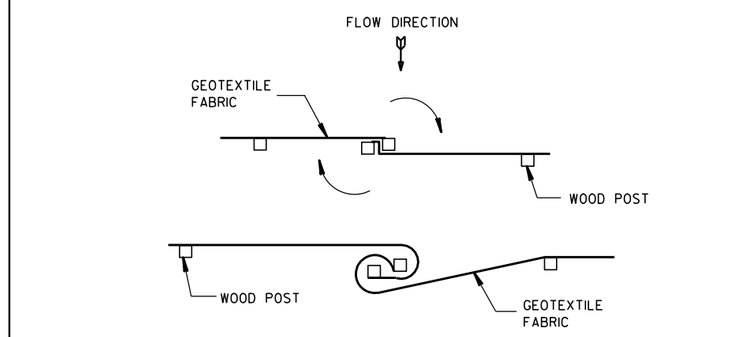
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



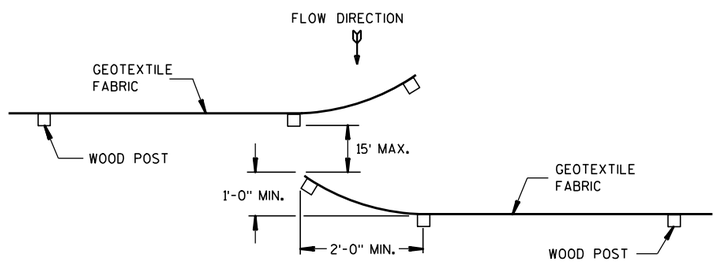
TRENCH DETAIL



SILT FENCE

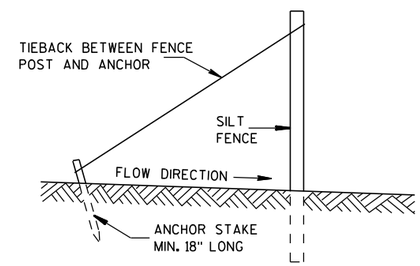


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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S.D.D. 8 E 9-6

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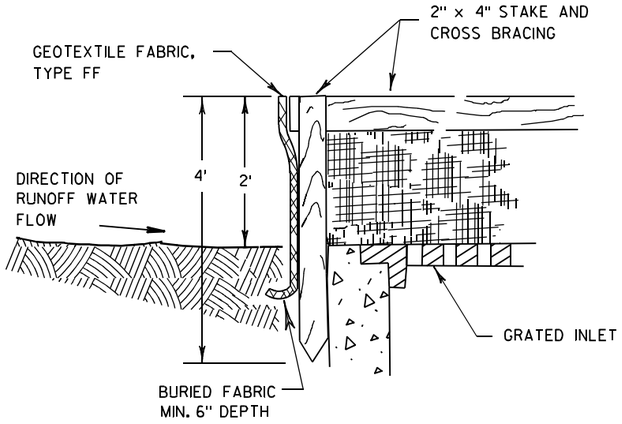
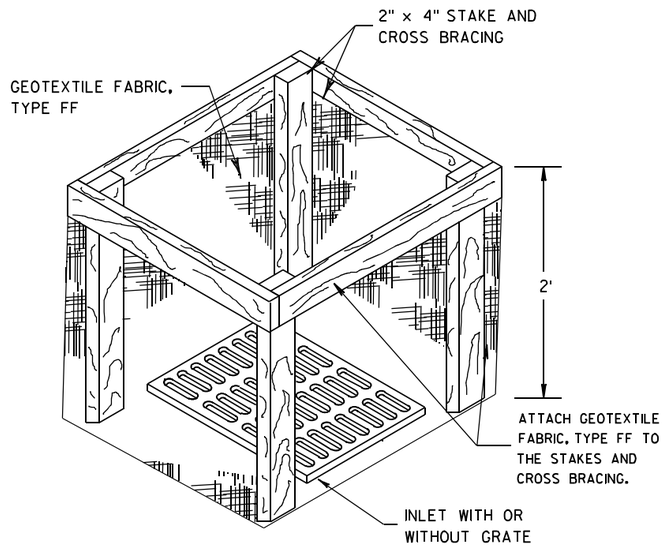
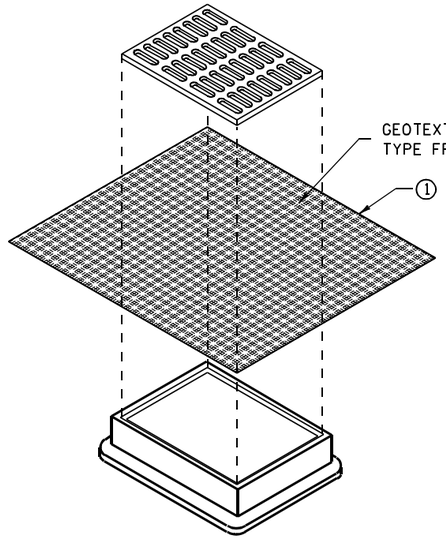
S.D.D. 8 E 9-6



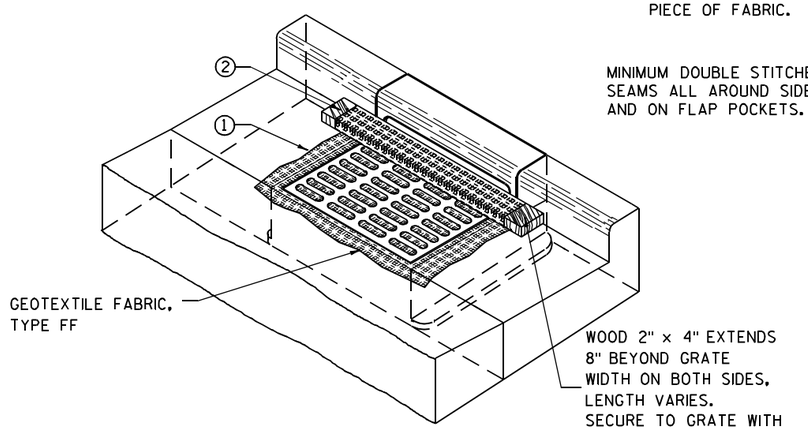


INLET PROTECTION, TYPE A

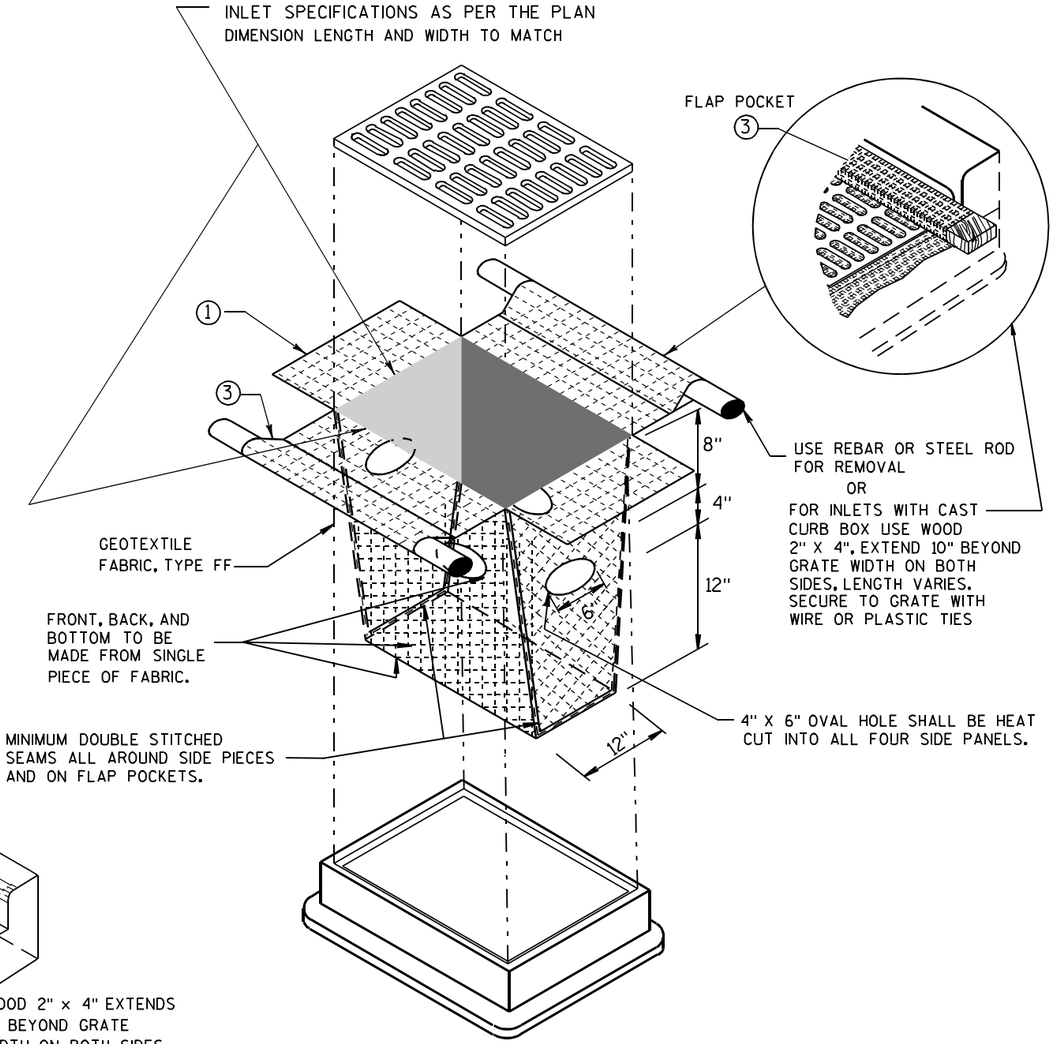


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

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.

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 A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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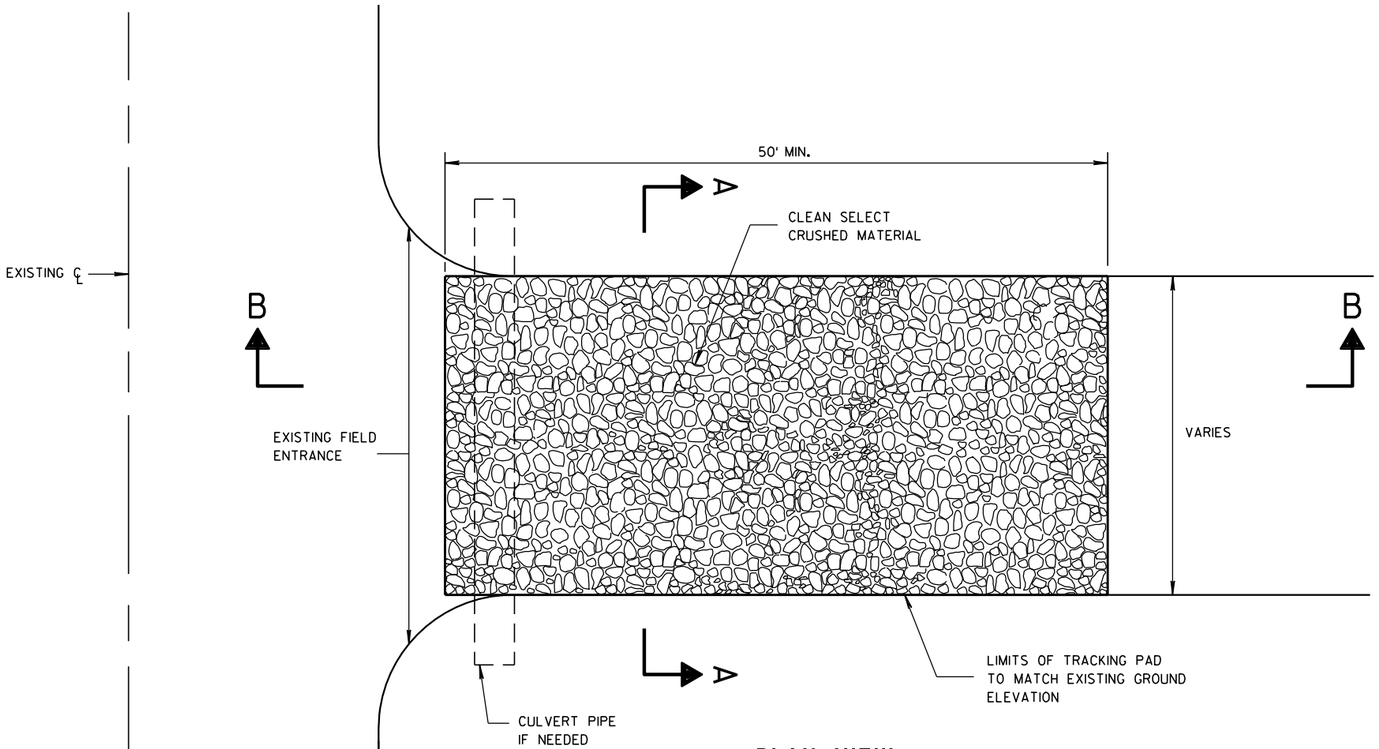
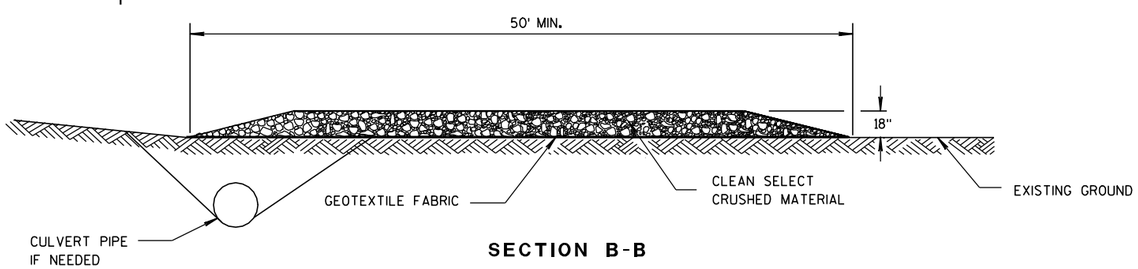
S.D.D. 8 E 10-2



PLAN VIEW



SECTION B-B

GENERAL NOTES

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

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

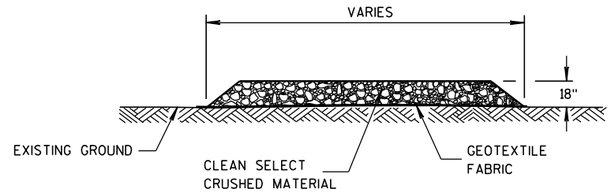
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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

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

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

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



SECTION A-A

TRACKING PAD

TRACKING PAD	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3/24/2011 DATE FHWA	/S/ Jerry H. Zoda ROADWAY STANDARDS ENGINEER

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S.D.D. 8 E 14-1

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S.D.D. 8 E 14-1

METAL APRON ENDWALLS

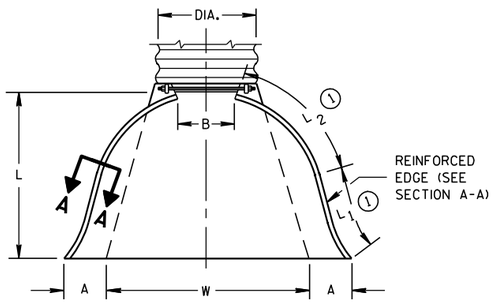
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

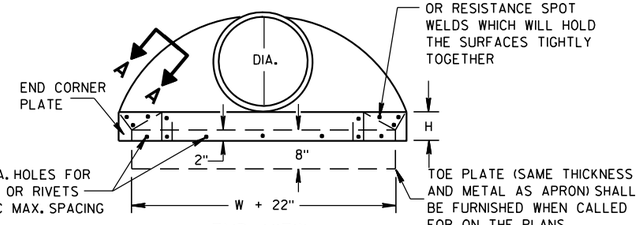
REINFORCED CONCRETE APRON ENDWALLS

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

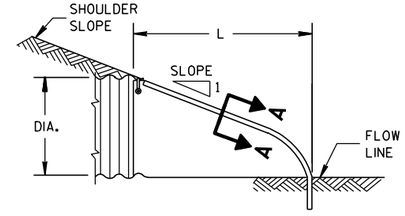
*MINIMUM
**MAXIMUM



PLAN VIEW

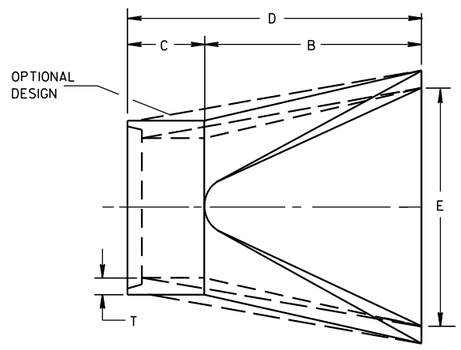


END VIEW

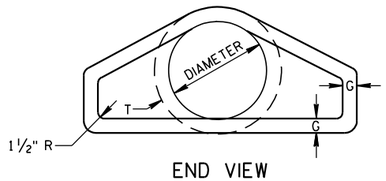


SIDE ELEVATION

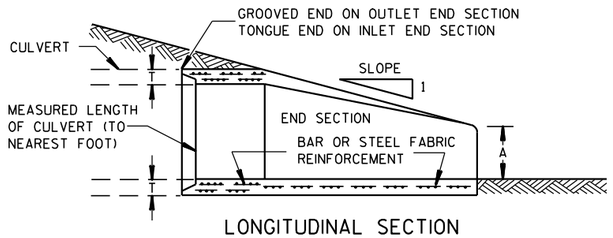
METAL ENDWALLS



PLAN

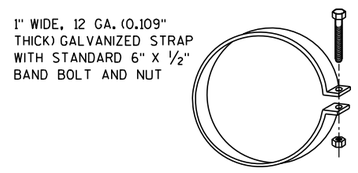


END VIEW



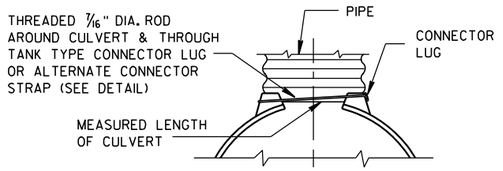
LONGITUDINAL SECTION

CONCRETE ENDWALLS

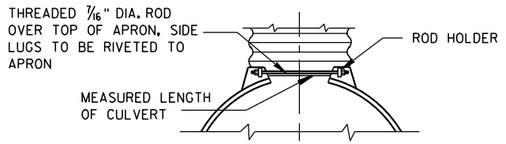


ALTERNATE FOR TYPE 1 CONNECTION

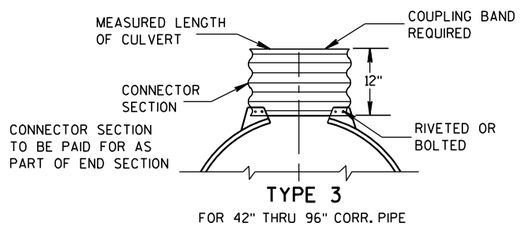
END SECTION CONNECTOR STRAP



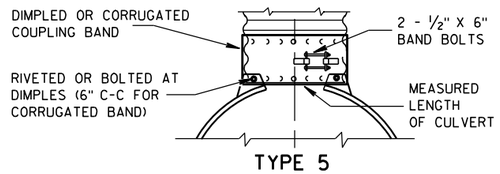
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

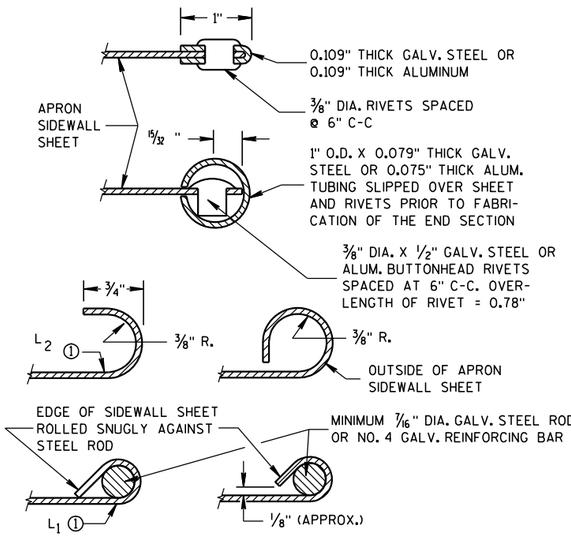
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

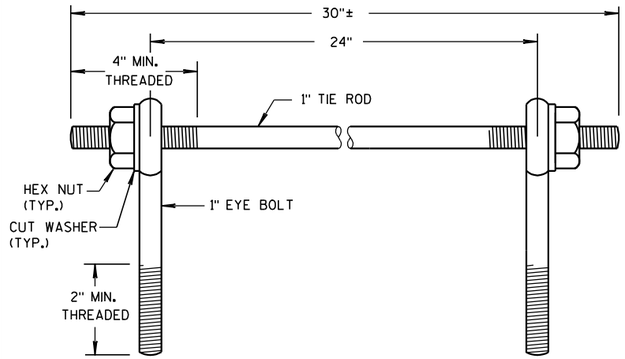
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

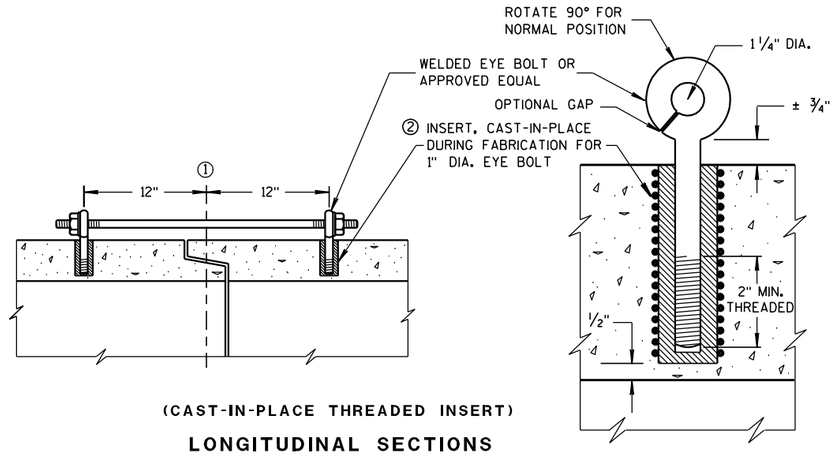
APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

6
S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

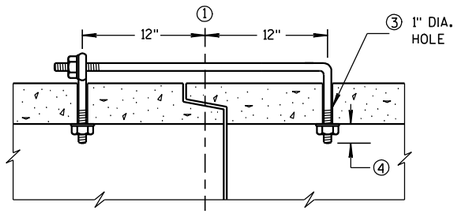
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

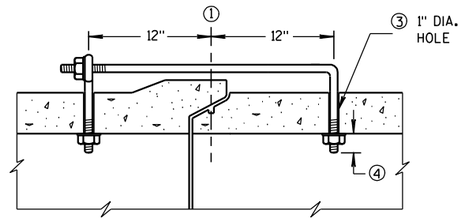
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

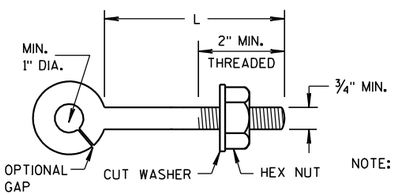


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

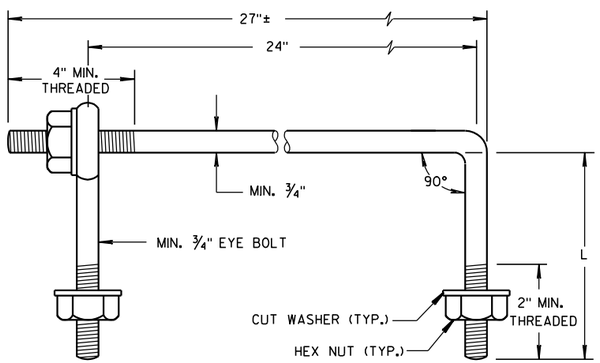
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

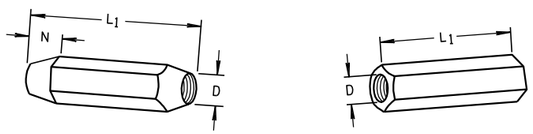
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

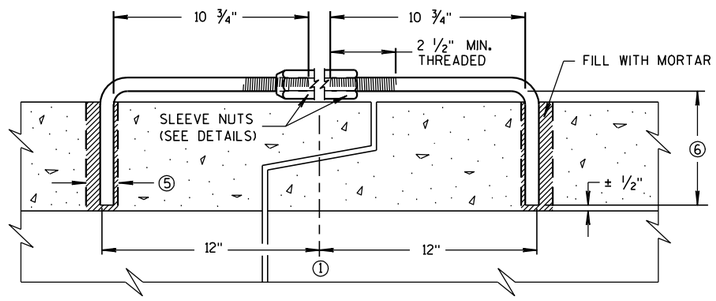
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

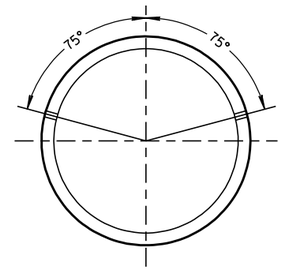
SLEEVE NUTS



LONGITUDINAL SECTION

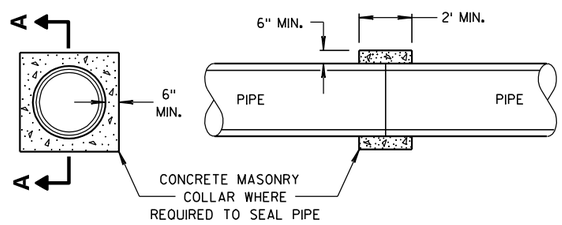
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 8 F 4-7

6

S.D.D. 8 F 4-7

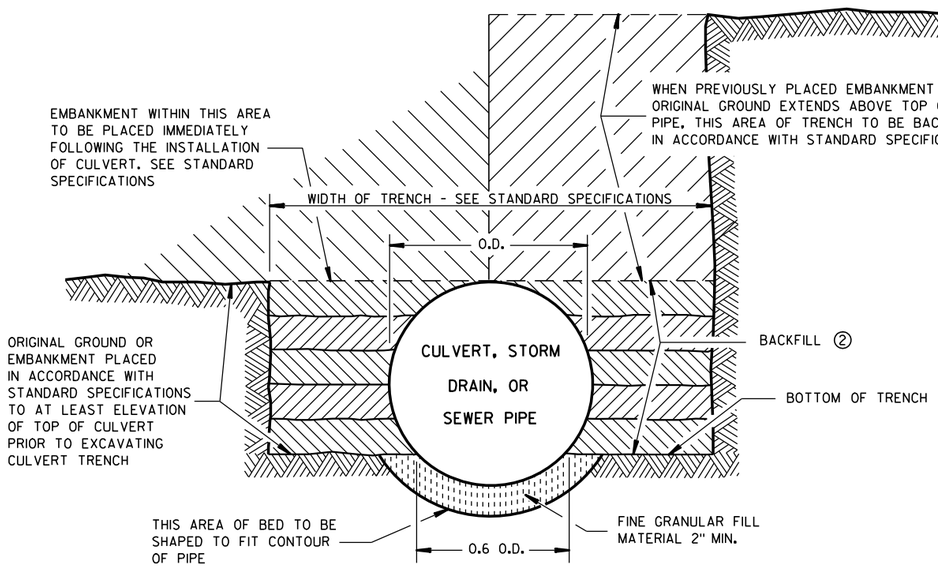
GENERAL NOTES

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

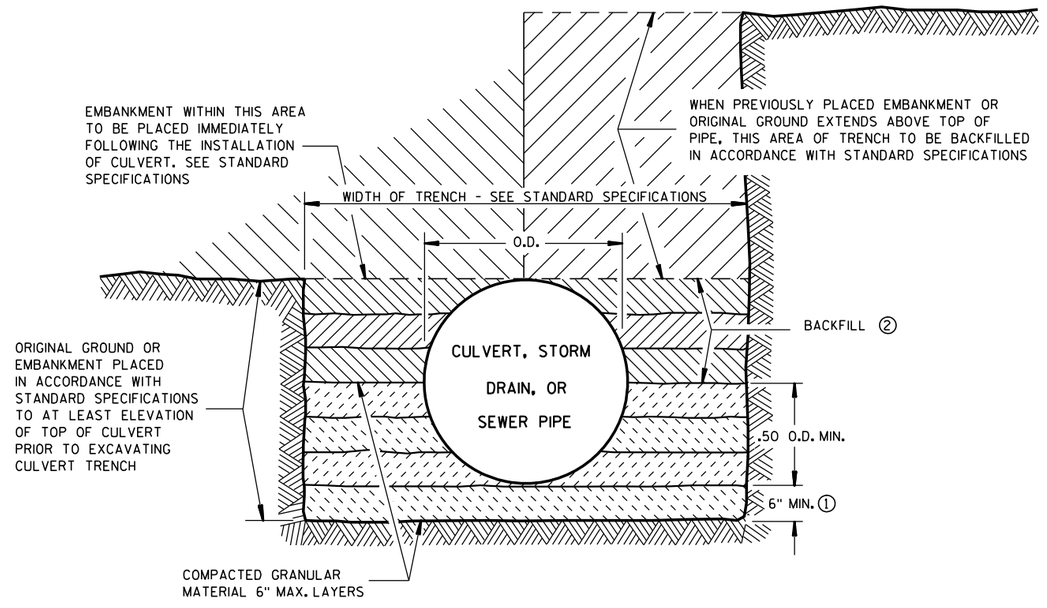
THE SHAPED SUBGRADE WITH GRANULAR FOUNDATION IS AN EQUAL ALTERNATE TO THE GRANULAR FOUNDATION EXCEPT WHERE ROCK IS ENCOUNTERED.

① WHERE ROCK, HARD PAN OR FRAGMENTED MATERIAL IS ENCOUNTERED, THE TRENCH SHALL BE EXCAVATED BELOW THE BOTTOM OF THE PIPE AN AMOUNT EQUAL TO ½ INCH PER FOOT OF PROPOSED EMBANKMENT ABOVE THE TOP OF THE PIPE, BUT NOT LESS THAN 6 INCHES.

② TRENCH SHALL BE BACKFILLED AS REQUIRED BY STANDARD SPECIFICATIONS; SECTION 520 FOR PIPE CULVERTS AND SECTION 607 FOR STORM SEWERS.



SHAPED SUBGRADE WITH GRANULAR FOUNDATION



GRANULAR FOUNDATION

CLASS "B" BEDDING

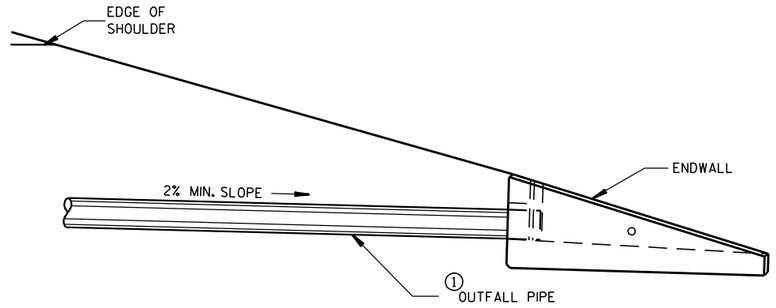
CLASS "B" BEDDING FOR CULVERT PIPE OR STORM SEWER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
4/7/83 DATE	/S/ D. L. Strand STATE DESIGN ENGINEER
FHWA	HWYS

6

S.D.D. 8 F 5-1

DIMENSIONS IN INCHES											
PIPE DIA.	A	B	C	D	E	F	G	H	J	L	Z
**4	6	12	5 1/4	9	8	32	36	11	2 3/8	6 1/2	4
6	8	14	7 1/4	11	10	42	44	13	3 5/8	8 1/2	6

**APRON ENDWALL FOR 6 INCH DIAMETER PIPE MAY BE SUBSTITUTED FOR THIS SIZE PROVIDED THE HOLE IN THE HEADWALL IS SIZED AND LOCATED TO CONFORM TO THE 4 INCH DIAMETER PIPE DIMENSIONS (C & J)



INSTALLATION DETAIL

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.

ALTERNATIVE DESIGNS WHICH PROVIDE EQUIVALENT CAPACITY AND STRENGTH MAY BE USED WHEN APPROVED BY THE ENGINEER. ENDWALL MAY BE EITHER PRECAST OR CAST-IN-PLACE CONCRETE.

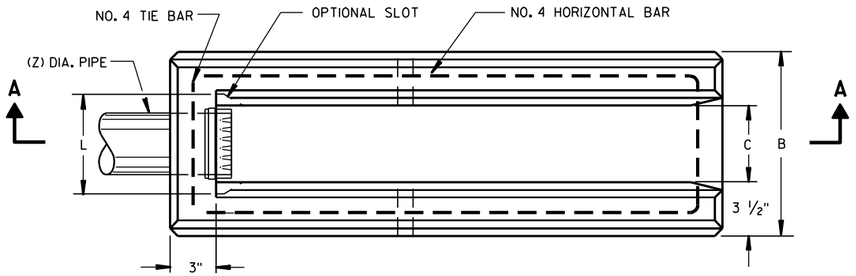
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

THE UPPERMOST POINT OF THE ENDWALL SHALL BE PLACED FLUSH WITH THE ROADWAY SLOPE. ADJACENT EMBANKMENT SLOPES SHALL BE SHAPED TO FIT THE SIDES AND TOE OF THE ENDWALL. EXACT PLACEMENT OF THE OUTFALL PIPE AND ENDWALL SHALL BE DETERMINED BY THE ENGINEER TO MATCH THE ELEVATIONS AND FLOW DIRECTION OF THE ROADSIDE DITCH.

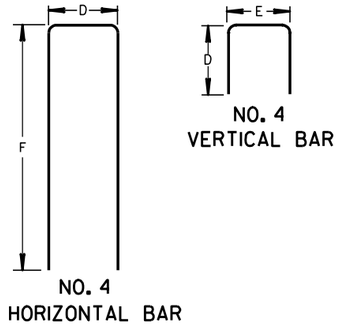
① THE OUTFALL PIPE UNDERDRAIN AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION FOR POLY (VINYL CHORIDE) (PVC) PLASTIC DRAIN, WASTE AND VENT PIPE AND FITTINGS, ASTM DESIGNATION: D 2665, SCHEDULE 40 PVC OR THE STANDARD SPECIFICATION FOR TYPE PSM POLY (VINYL CHORIDE) (PVC) SEWER PIPE AND FITTINGS, ASTM DESIGNATION: D 3034, TYPE PSM SDR 23.5 PVC SEWER PIPE, ALL JOINTS SHALL BE SOLVENT WELDED.

THE OUTFALL PIPE INCLUDING ALL FITTINGS AND THE RODENT SHIELD SHALL BE MEASURED AND PAID FOR AS PIPE UNDERDRAIN UNPERFORATED.

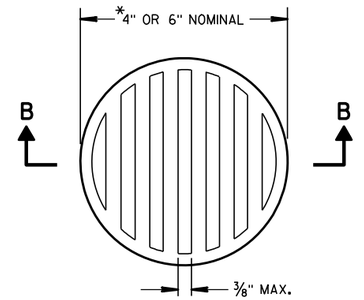
② THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



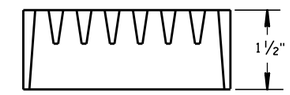
PLAN VIEW



BAR STEEL REINFORCEMENT DETAILS



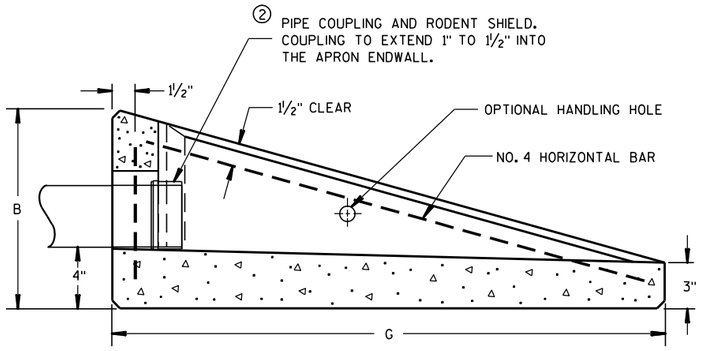
NOTE: ORIENT SHIELD SO SLOTS ARE VERTICAL.



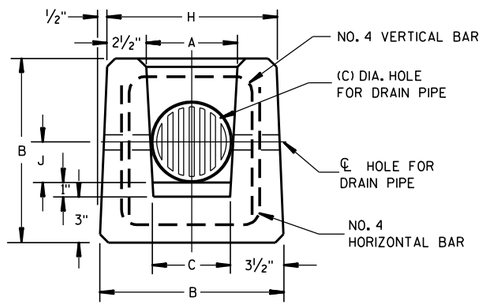
SECTION B-B

② RODENT SHIELD

*NOTE: DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.



SECTION A-A



END VIEW

CONCRETE APRON ENDWALL FOR UNDERDRAIN

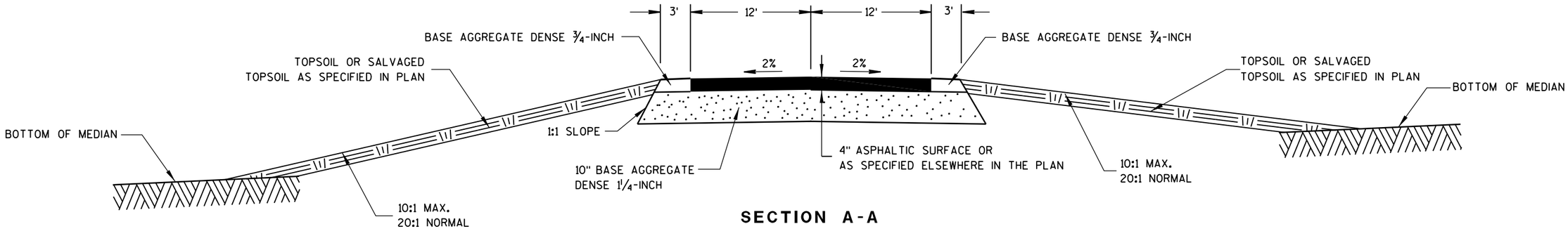
REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

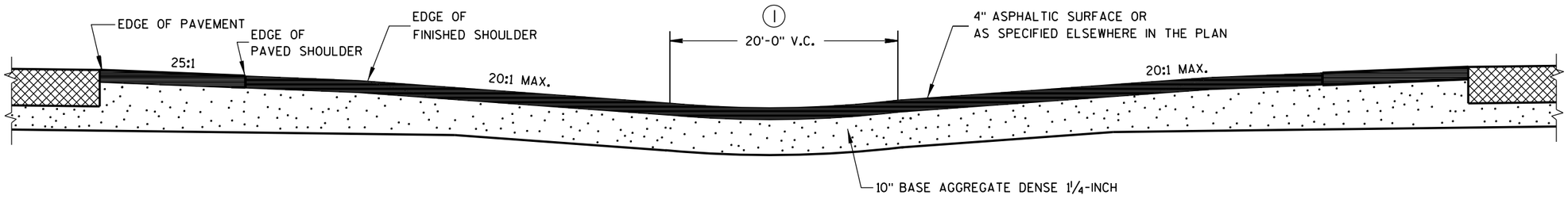
APPROVED
3/10/98 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

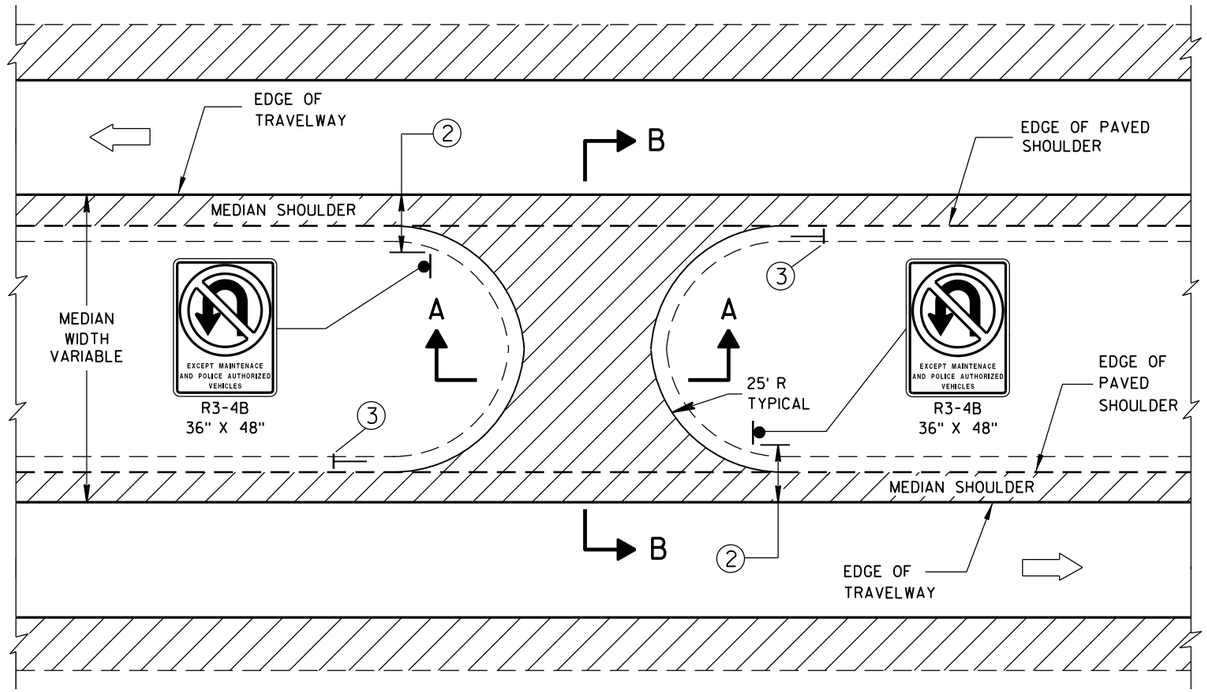
S.D.D. 8 F 6-4



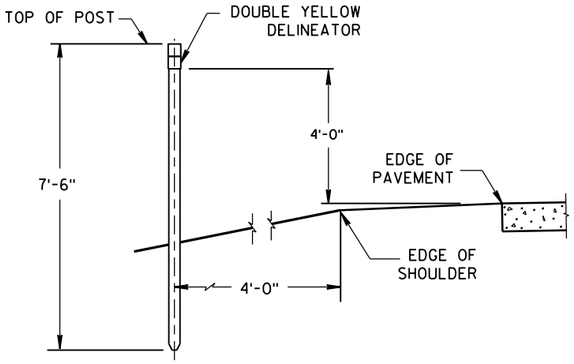
SECTION A-A



SECTION B-B



PLAN VIEW



DOUBLE YELLOW DELINEATOR INSTALLATION

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

/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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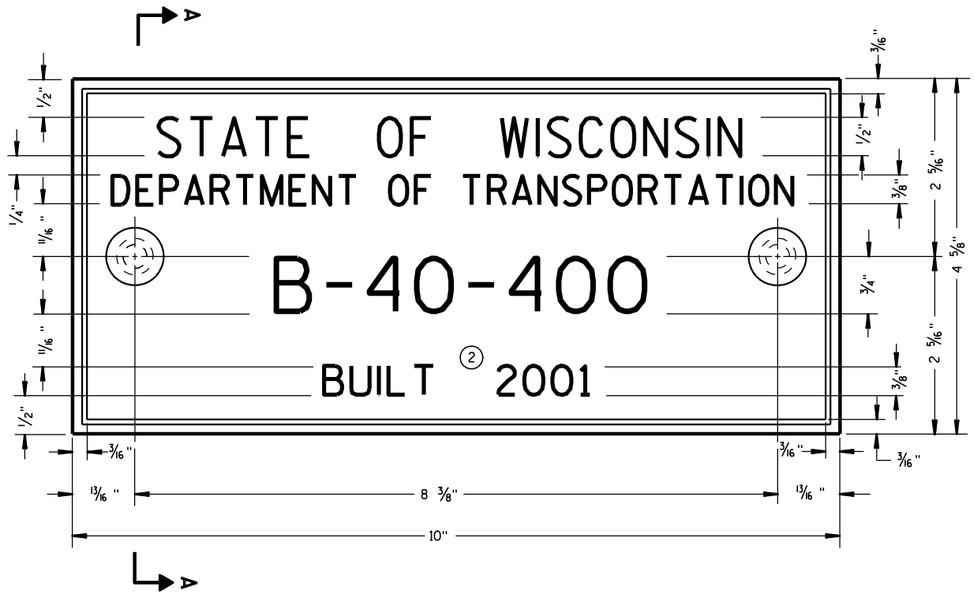
S.D.D. 11 A 1-5



TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

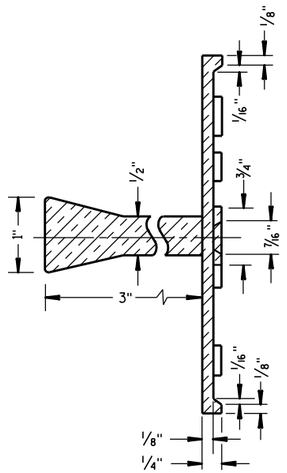
GENERAL NOTES

NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

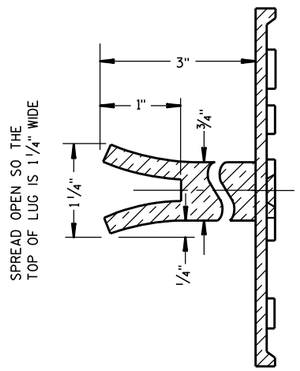
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

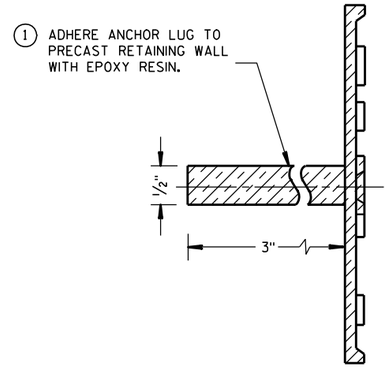
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

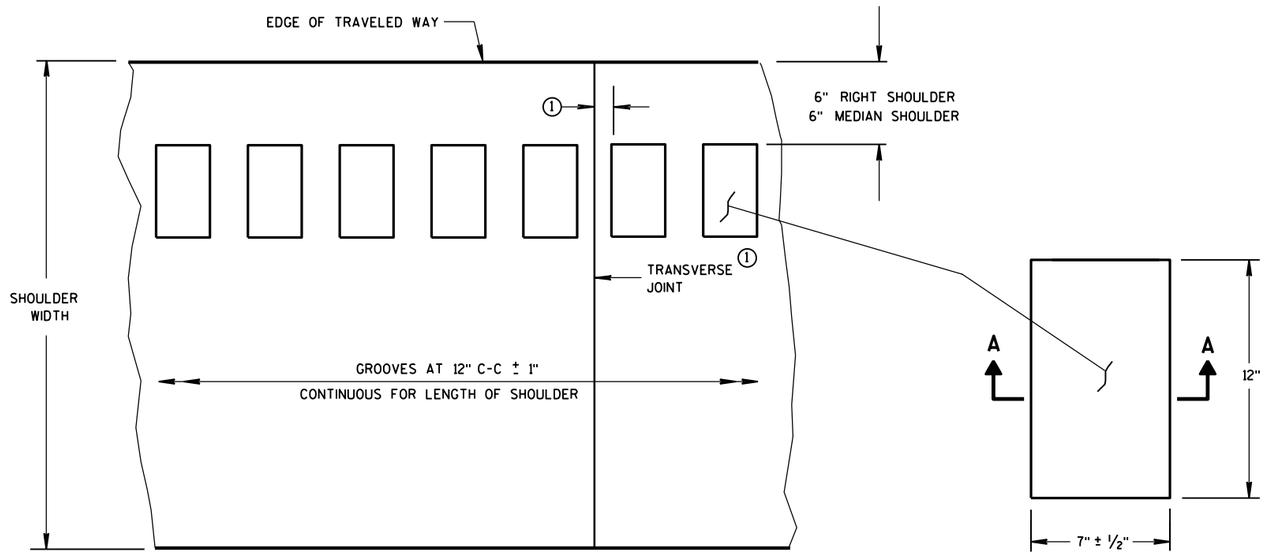
3/26/10 DATE

/S/ Scot Beck
CHIEF STRUCTURAL DEVELOP ENGINEER

FHWA

6

S.D.D. 12 A 3-10



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

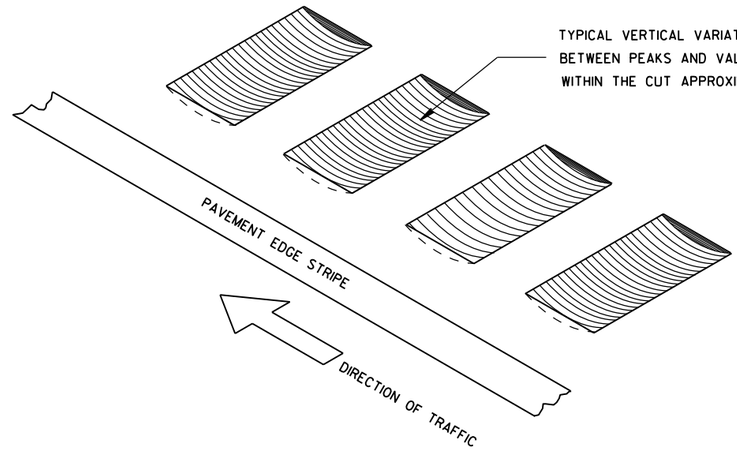
GENERAL NOTES

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

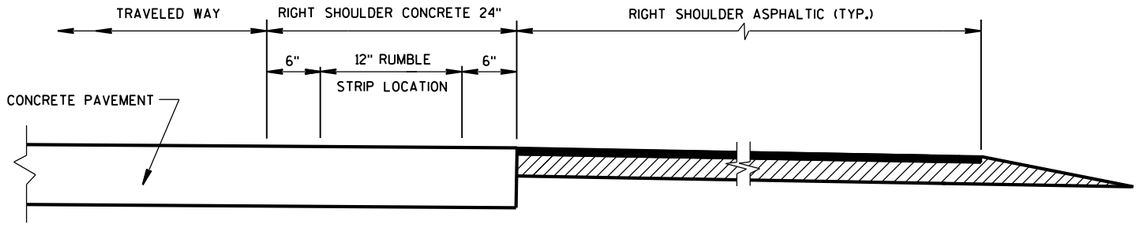
RUMBLE STRIPS ON EXPRESSWAYS

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

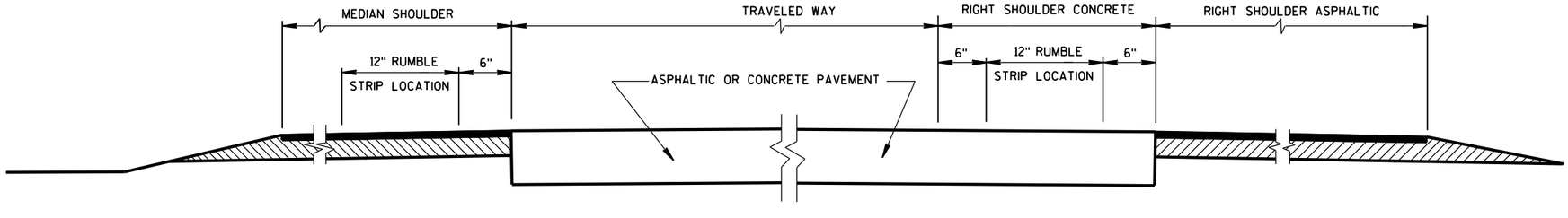
(1) CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



ISOMETRIC



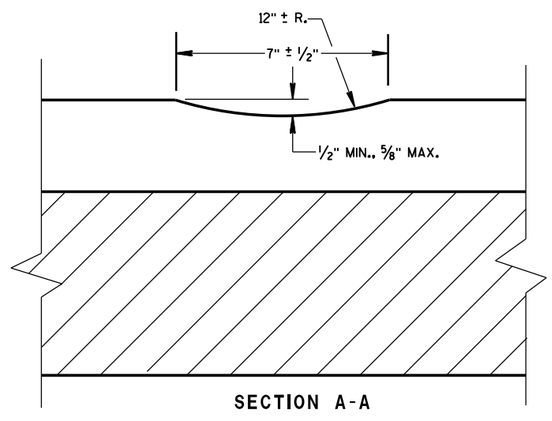
SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION VIEW

TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS IN RURAL DIVIDED HIGHWAYS

(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 13 A 5-5a

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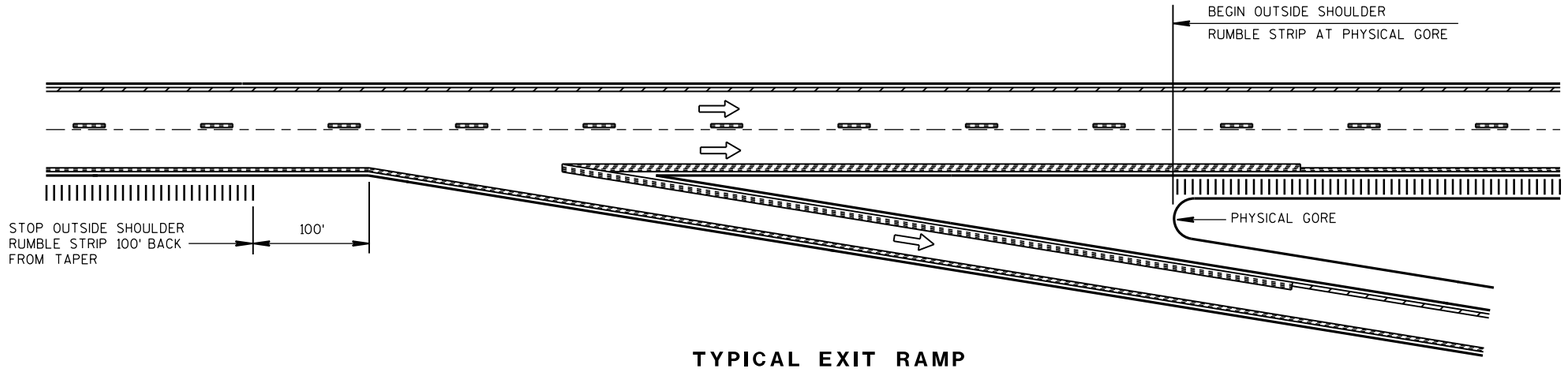
S.D.D. 13 A 5-5a



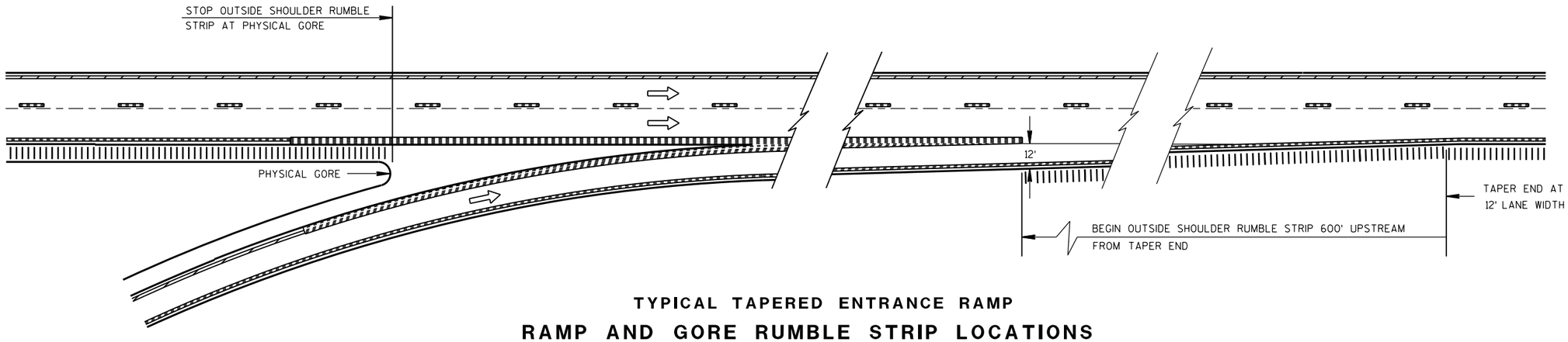
TYPICAL EXIT RAMP

NOTES:

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

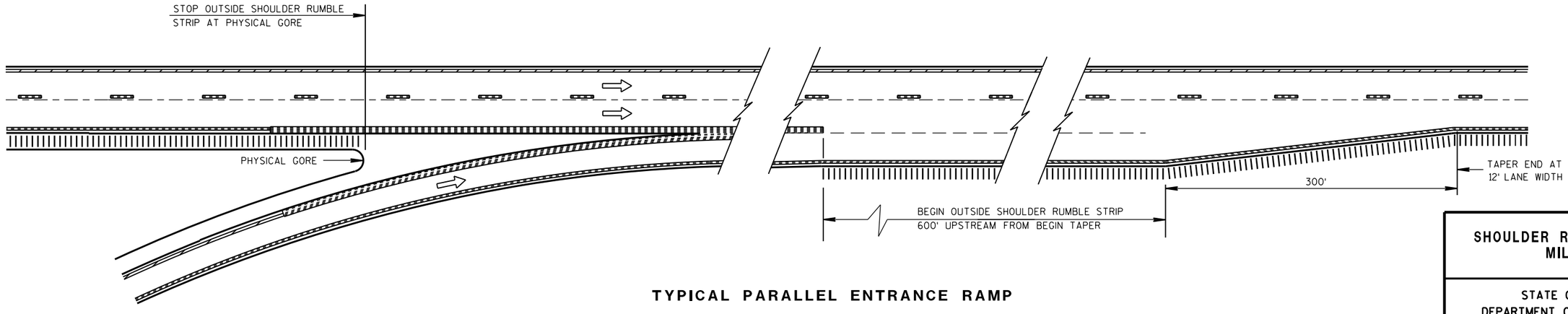
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS

SHOULDER RUMBLE STRIP, MILLING

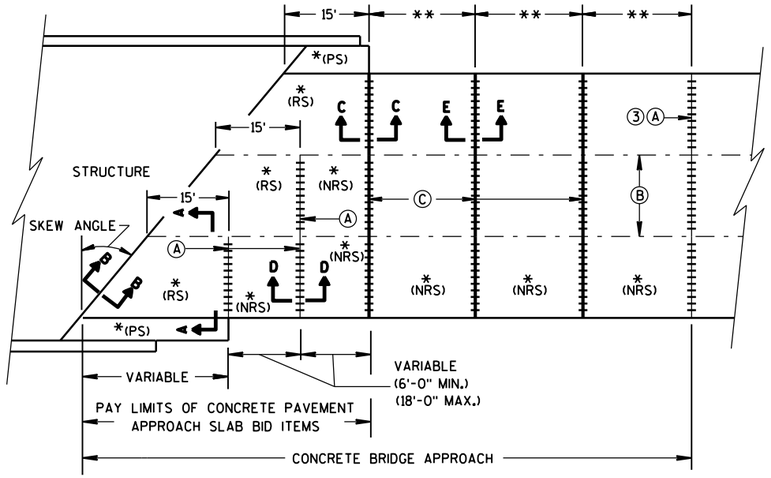
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/17/2012
DATE
/S/ Jerry H. Zoga
ROADWAY STANDARDS ENGINEER

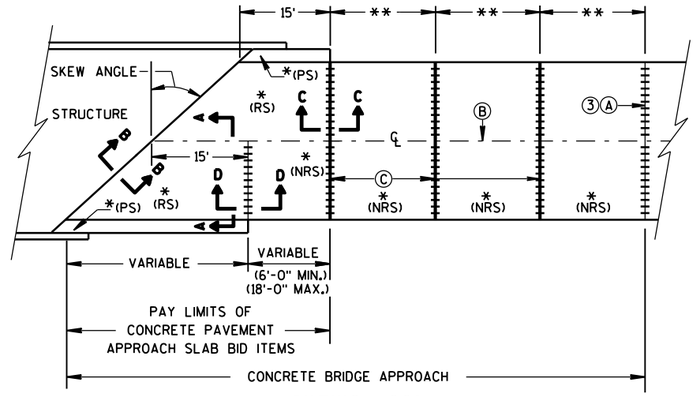
FHWA

6

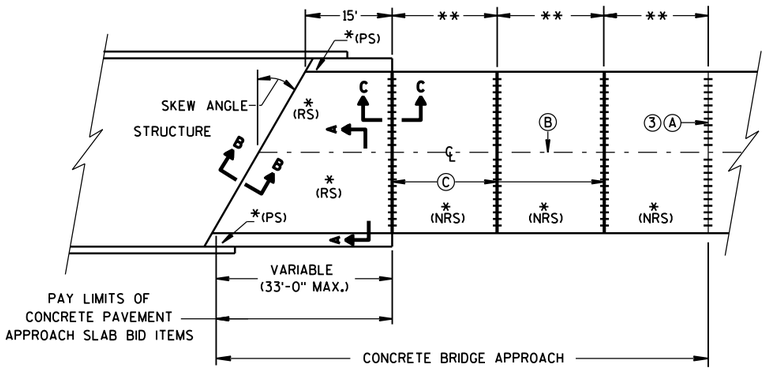
S.D.D. 13 A 5-5b



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



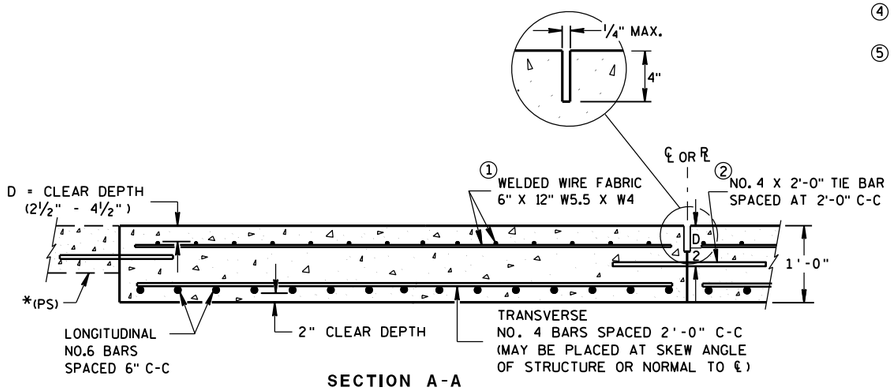
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

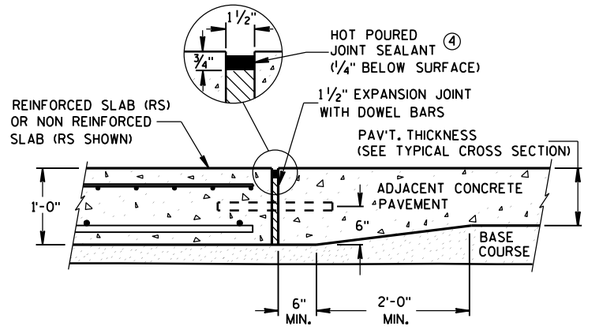
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN (SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

**STANDARD TRANSVERSE JOINT SPACING (SEE SDD 13C4, SDD 13C11, & SDD 13C13)
***STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11, & SDD 13C13)

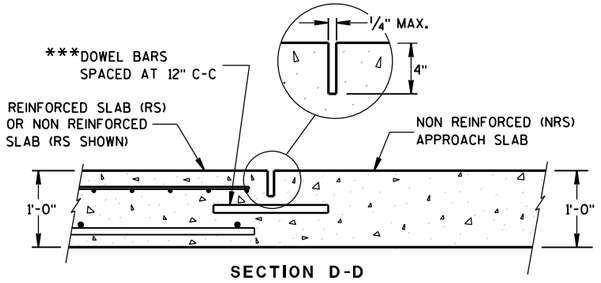
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) STANDARD LONGITUDINAL JOINT AND TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



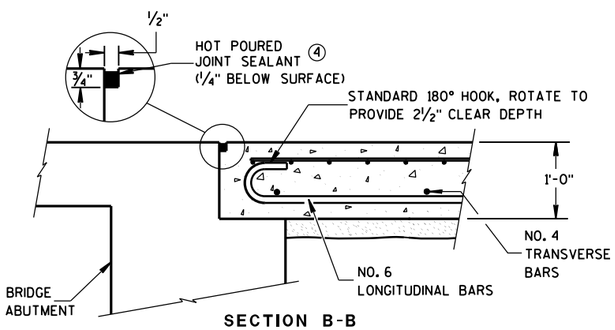
SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

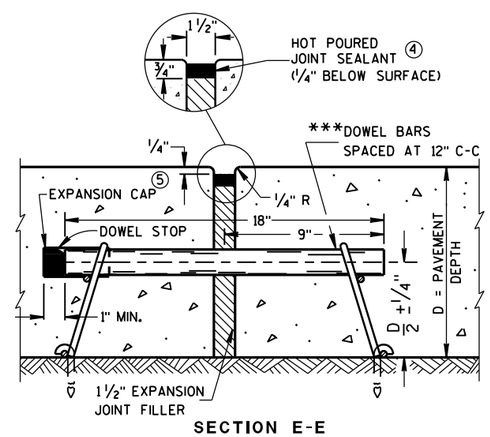
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

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



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT

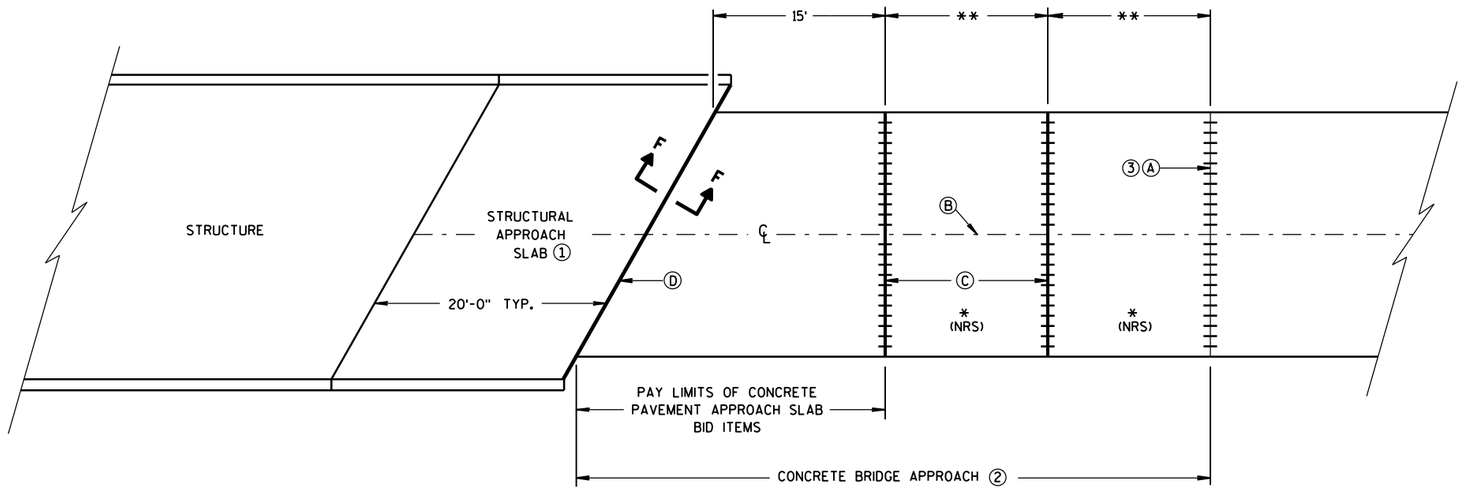


SECTION E-E
EXPANSION JOINT

CONCRETE BRIDGE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2014 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE
FHWA



BRIDGE APPROACHES

GENERAL NOTES

ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE BRIDGE APPROACH.

① CONFORM TO APPLICABLE BRIDGE MANUAL STANDARD DRAWINGS FOR *STRUCTURAL APPROACH SLABS* (SEE CHAPTER 12 - ABUTMENTS).

② CONFORM TO SHEET (a) OF THIS SET FOR *CONCRETE BRIDGE APPROACH* DETAILS, WITH ONE EXCEPTION — WHEN CONSTRUCTING A *CONCRETE BRIDGE APPROACH* NEXT TO A *STRUCTURAL APPROACH SLAB*, AS SHOWN IN THE DETAIL DRAWING, THE *CONCRETE BRIDGE APPROACH* WILL ONLY HAVE TWO EXPANSION JOINTS; THE THIRD EXPANSION JOINT IS AT THE END OF THE *STRUCTURAL APPROACH SLAB*.

③ DO NOT DOWEL A CONTRACTION JOINT THAT ABUTS AN HMA PAVEMENT.

*(NRS) = NON-REINFORCED CONCRETE SLAB

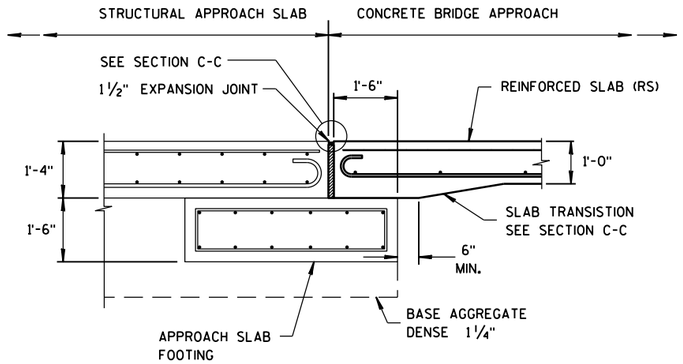
**STANDARD TRANSVERSE JOINT SPACING (SEE SDD 13C4, SDD 13C11, & SDD 13C13)

Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄

Ⓑ STANDARD LONGITUDINAL JOINT AND TIE BARS.

Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄

Ⓓ 1½" EXPANSION JOINT (NO DOWELS)



SECTION F-F

FOOTING DETAIL

STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

STRUCTURAL APPROACH SLAB AND CONCRETE BRIDGE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2014 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE
FHWA — EER

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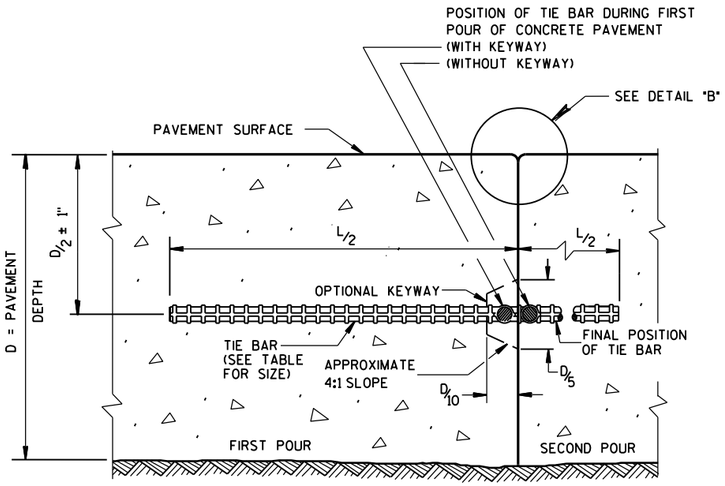
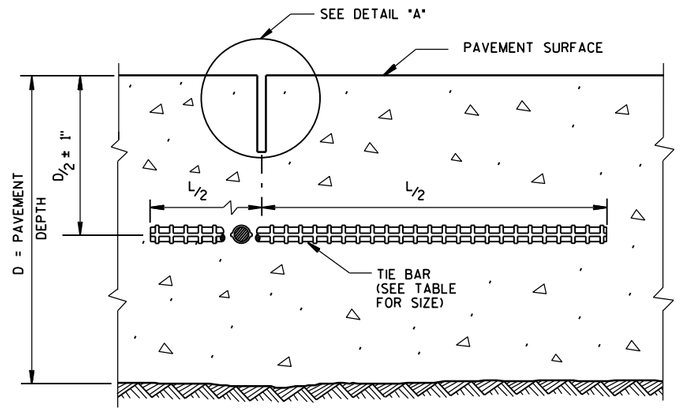
S.D.D. 13 B 2-7b



CONSTRUCTION JOINT



SAWED JOINT

GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

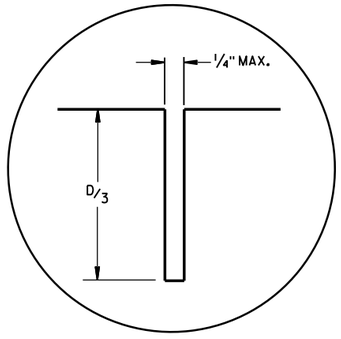
(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

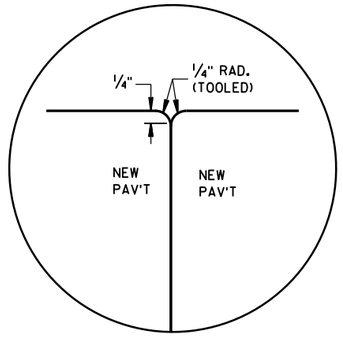
PLAN VIEW

SECTION A-A

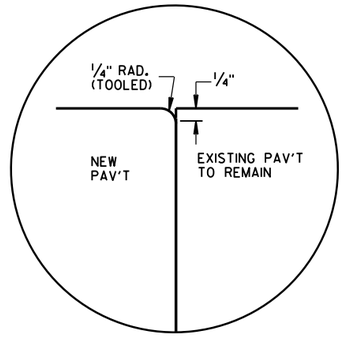
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



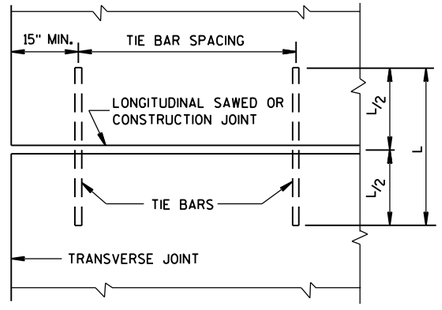
DETAIL "C"

TIE BAR TABLE

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

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

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



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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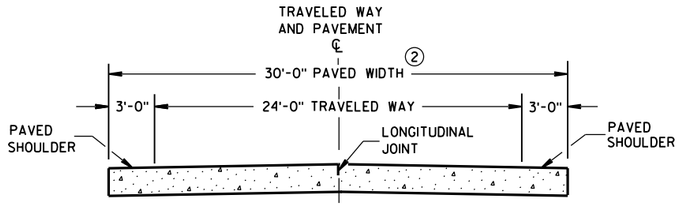
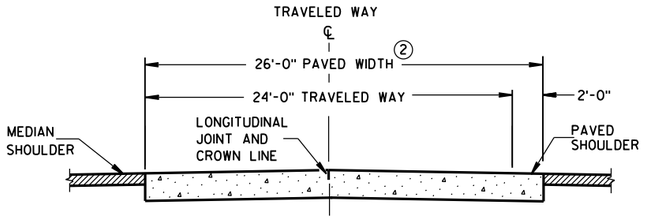
S.D.D. 13 C 1-18

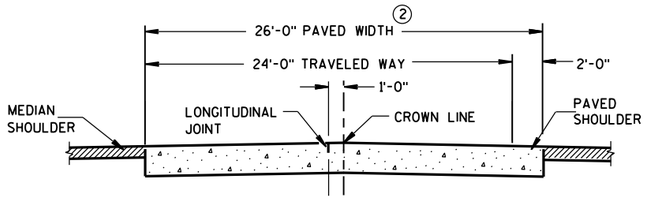


SECTION A-A ①

TWO-LANE TWO-WAY HIGHWAY



SECTION B-B



ALTERNATIVE SECTION B-B ①

DIVIDED HIGHWAY

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT SEAL OR FILL CONTRACTION JOINTS.

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

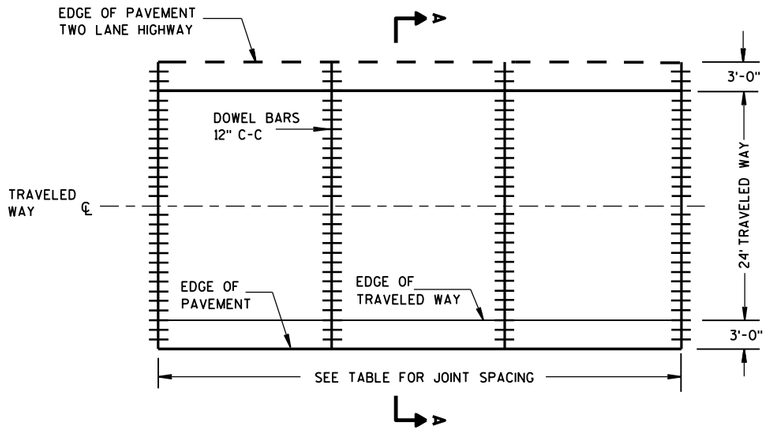
LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

① REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.

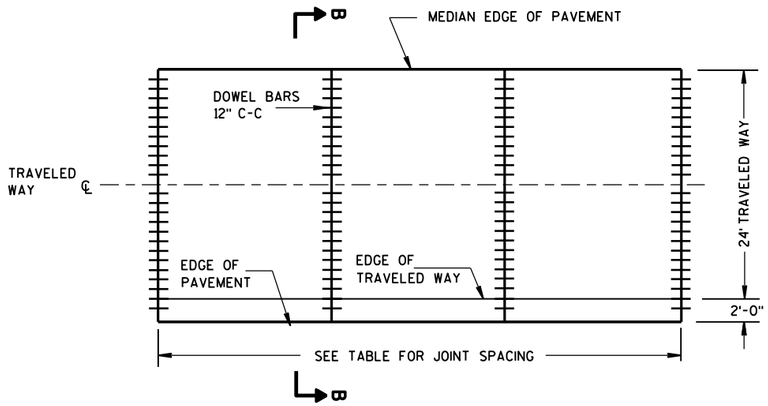
② MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'



CONTRACTION JOINT LAYOUT
FOR TWO-LANE TWO-WAY HIGHWAY



CONTRACTION JOINT LAYOUT
FOR DIVIDED HIGHWAY

RURAL DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 13 C 11-11a

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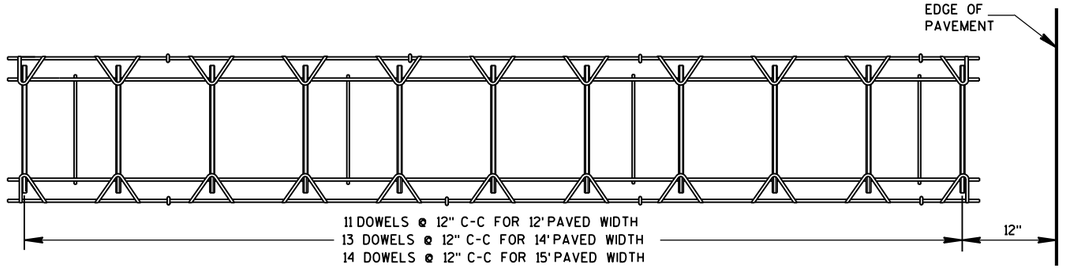
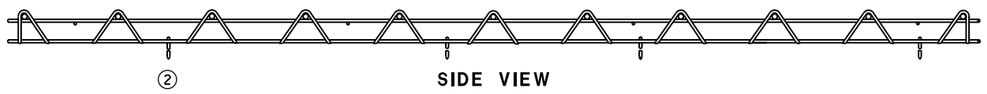


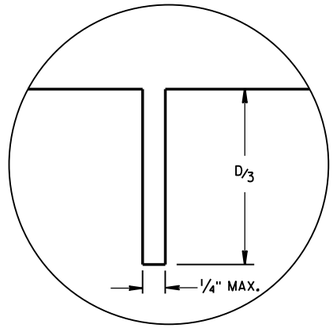
PLAN VIEW



SIDE VIEW

(NORMAL TO CENTERLINE)

CONTRACTION JOINT DOWEL ASSEMBLY ①



JOINT DETAIL

GENERAL NOTES

① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.

② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

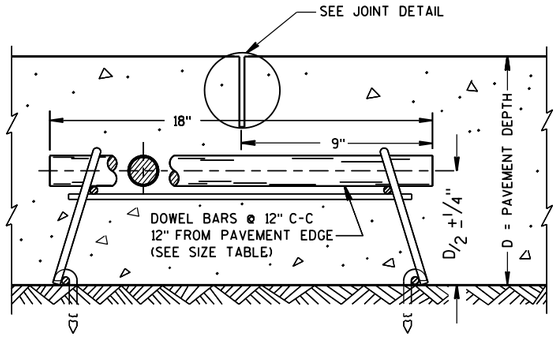
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.

④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

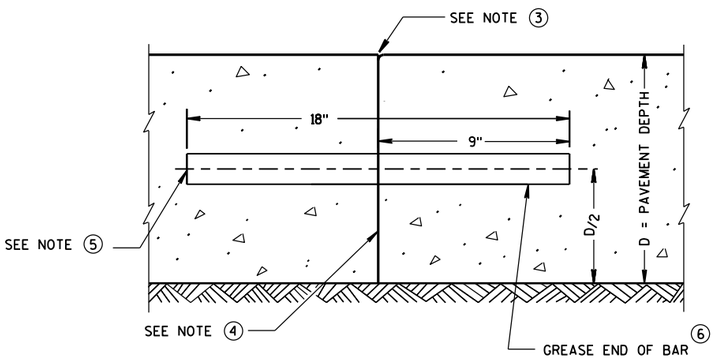
⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.

⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

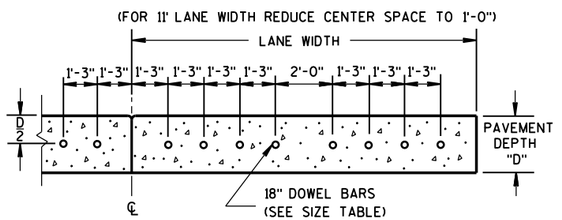
⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS 1/8-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦

RURAL DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/3/2013 DATE
/S/ Deb Bischoff PAVEMENT POLICY & DE ENGINEER
FHWA

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S.D.D. 13 C 11-11b

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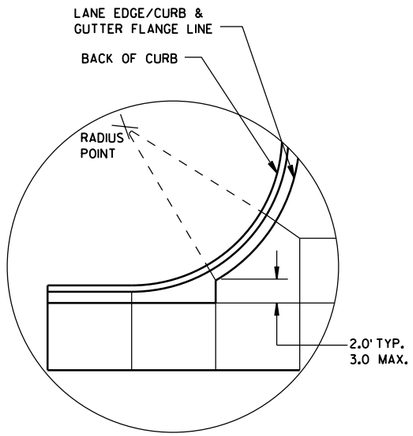
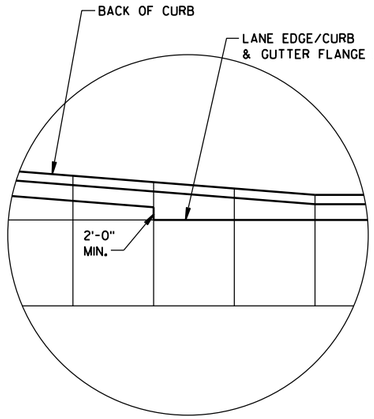
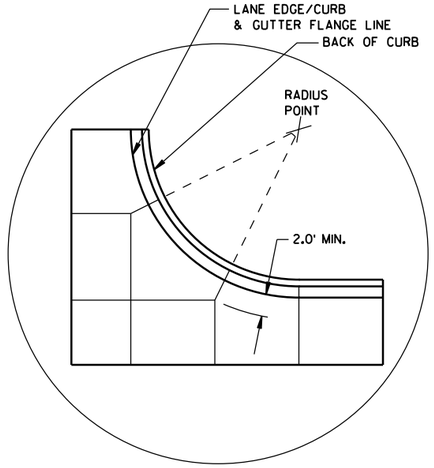
S.D.D. 13 C 11-11b



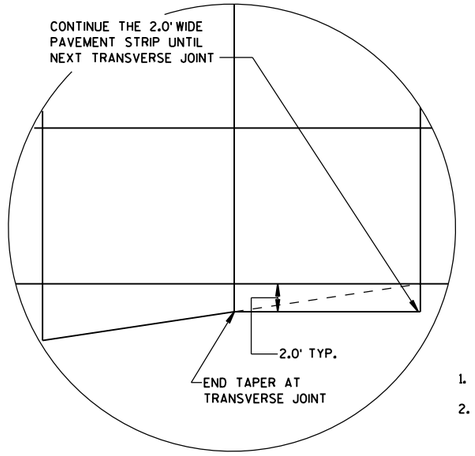
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G. MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.

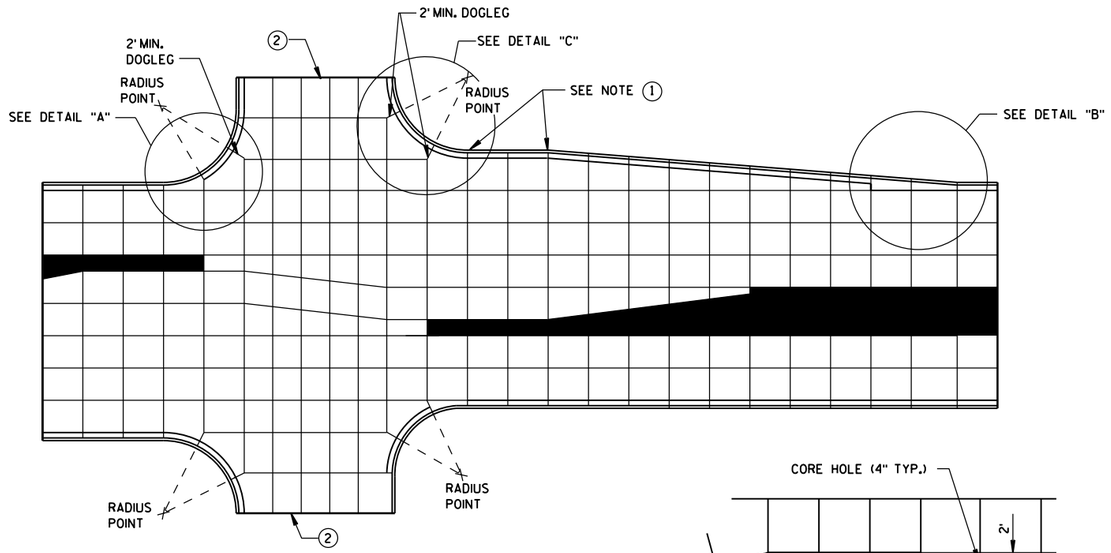
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.

AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

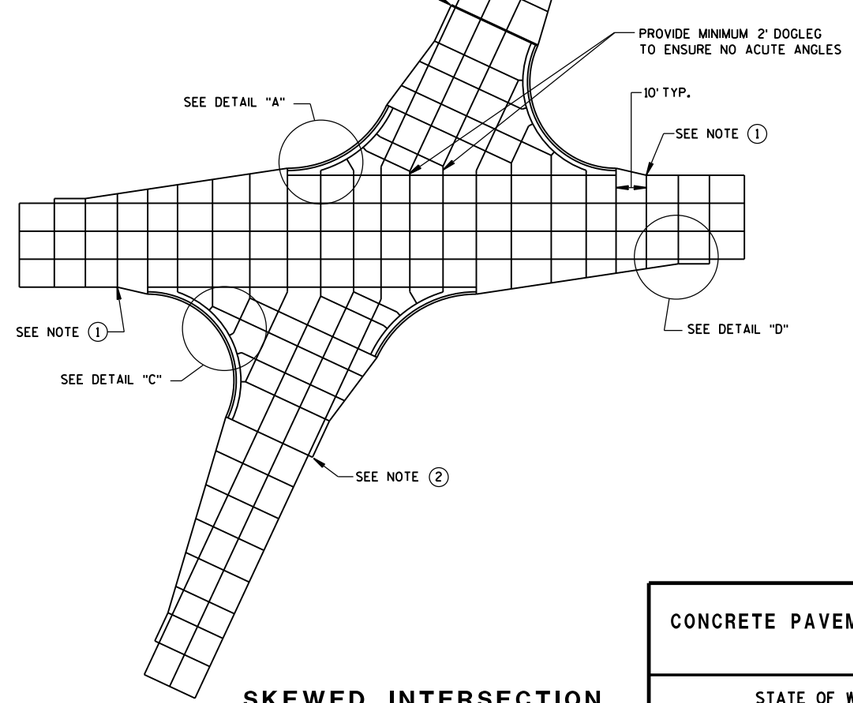
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



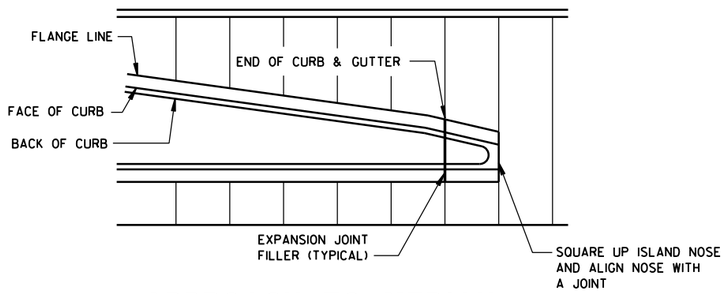
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

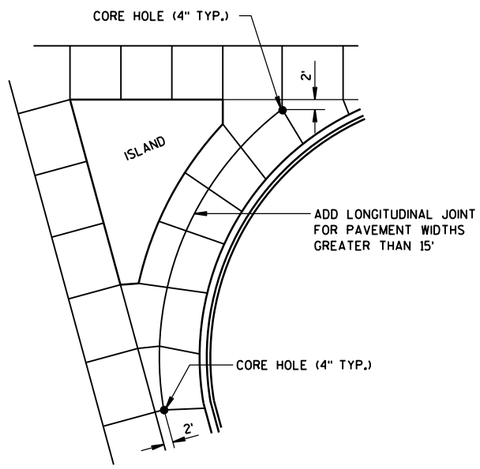
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 118

6

S.D.D. 13 C 18-3a

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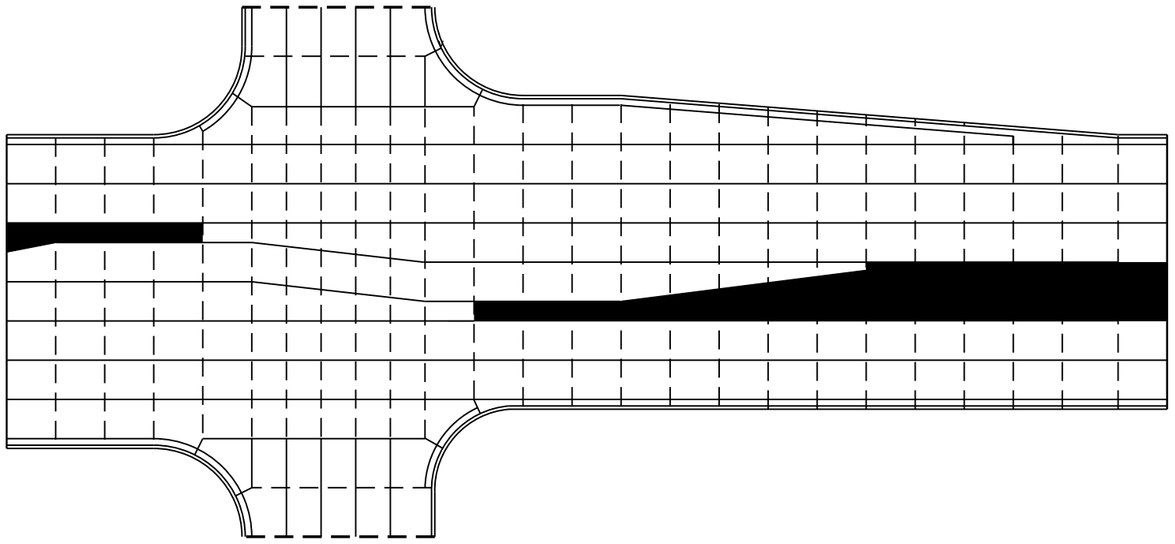
S.D.D. 13 C 18-3a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

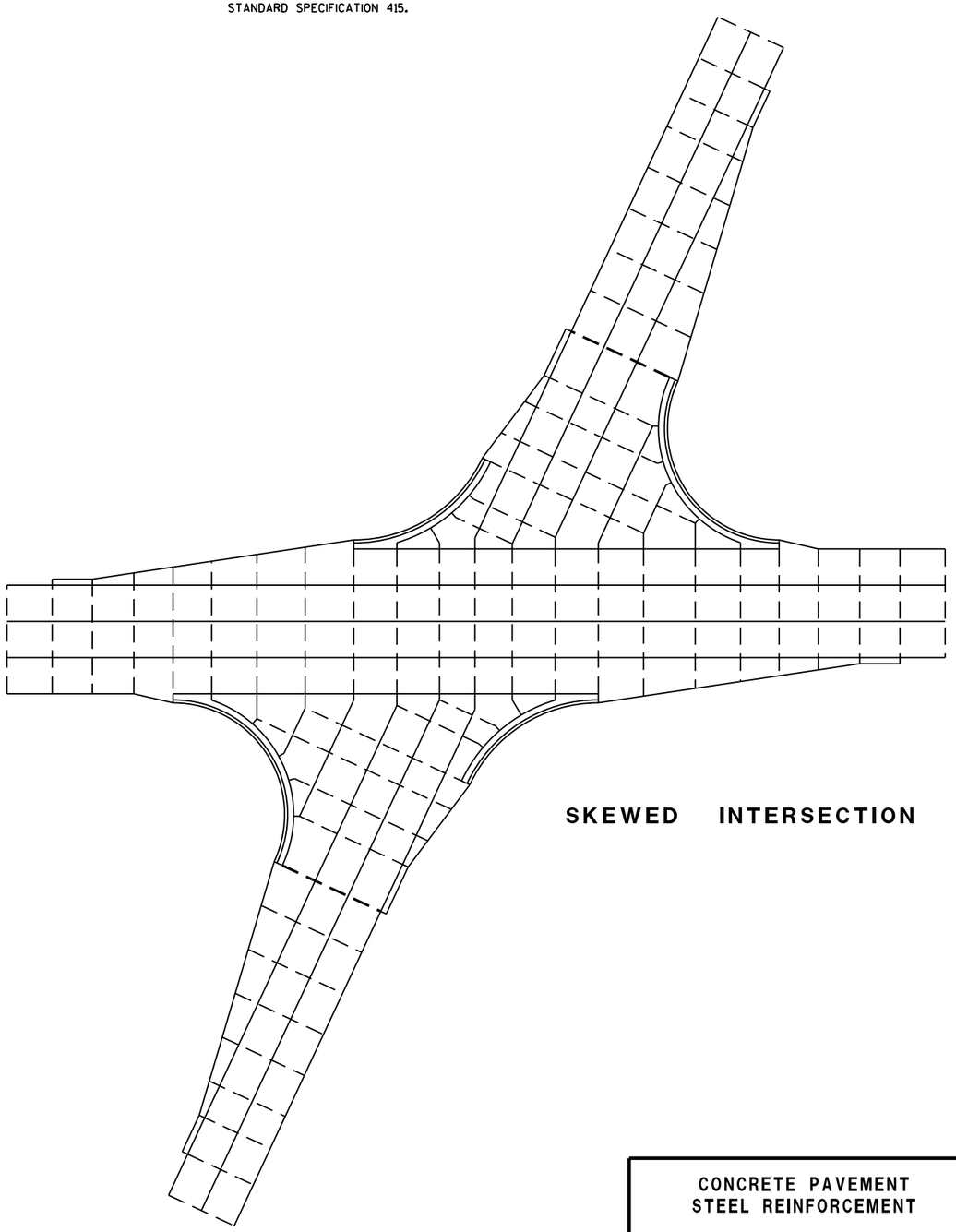
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 13 C 18-3b

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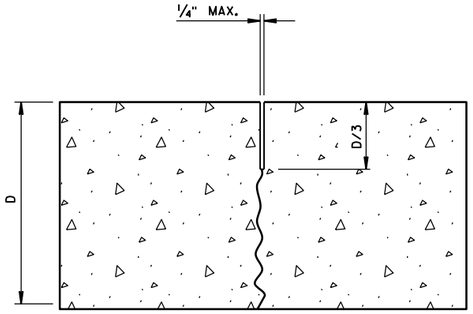
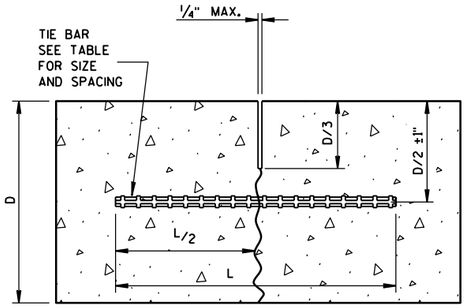
S.D.D. 13 C 18-3b



UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

TIE BAR TABLE

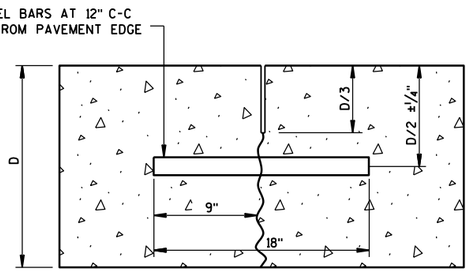
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4*	30"	24"**

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

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

GENERAL NOTES

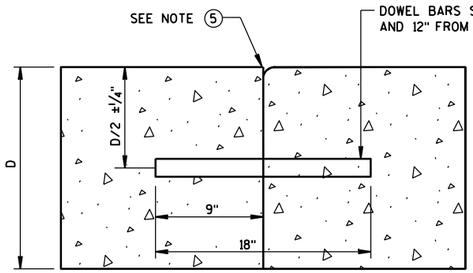
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
5. IF JOINT IS FORMED, PROVIDE A 1/4-INCH RADIUS.
6. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



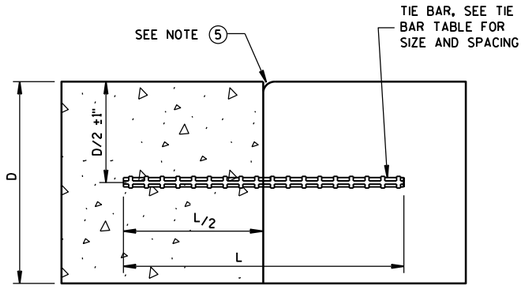
DOWELED-TRANSVERSE

CONTRACTION JOINTS

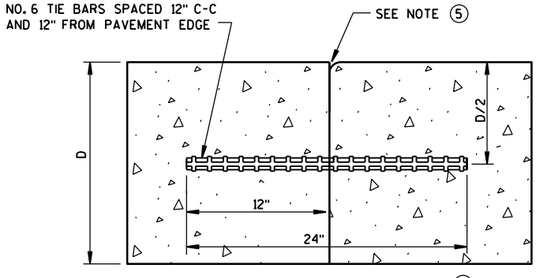
SEE NOTE (2)



DOWELED TRANSVERSE (3)

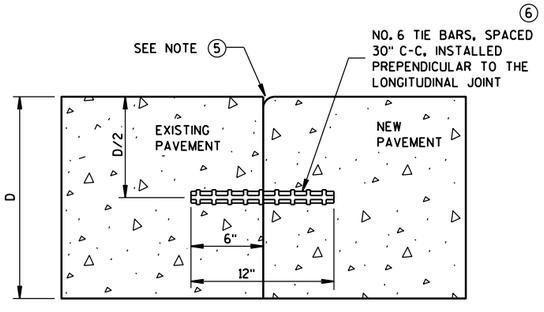


TIED LONGITUDINAL



TIED TRANSVERSE (3)

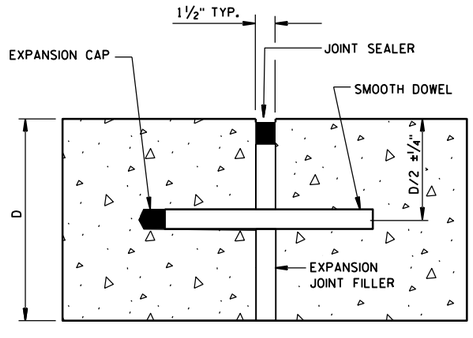
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

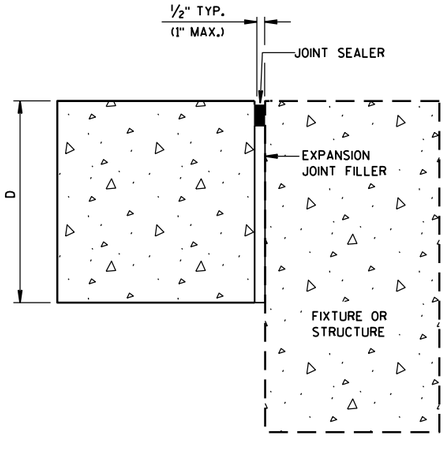
CONSTRUCTION JOINTS

SEE NOTE (4)



DOWELED-TRANSVERSE

SEE NOTE (1)



UNTIED-LONGITUDINAL

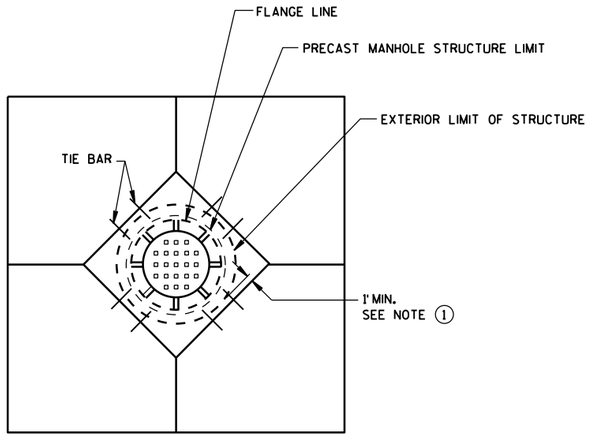
EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

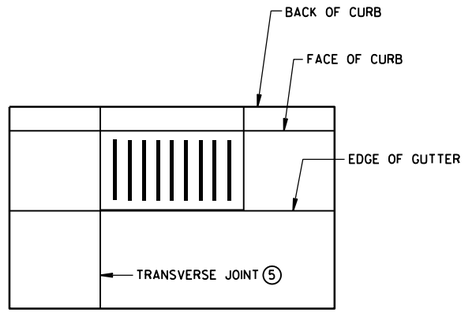
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

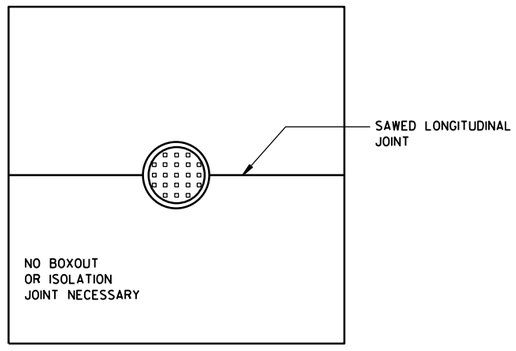
S.D.D. 13 C 18-3c



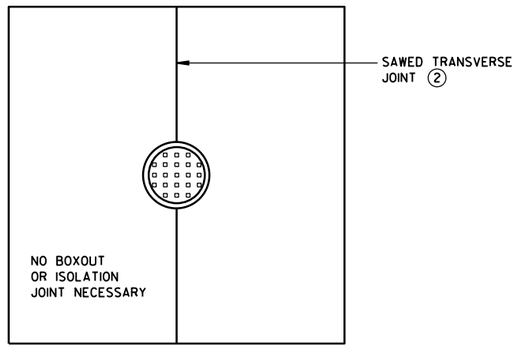
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



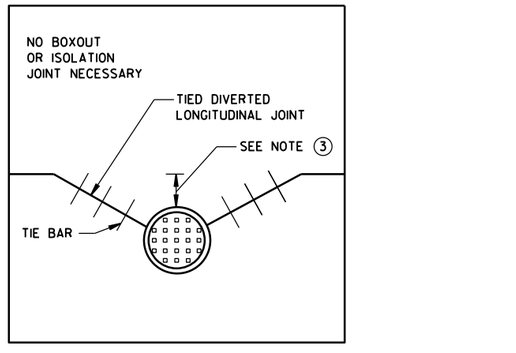
INLET WITH TRANSVERSE JOINT



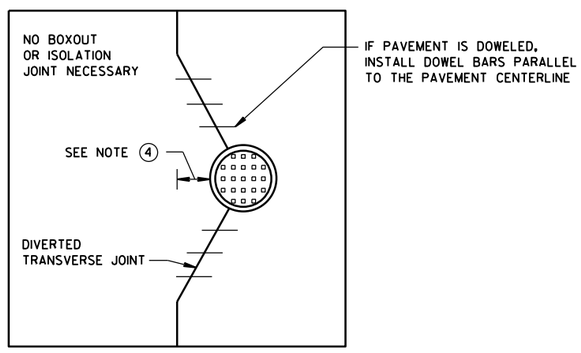
MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

GENERAL NOTES

(1) USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.

(2) ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.

(3) IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDIAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(4) IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(5) ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

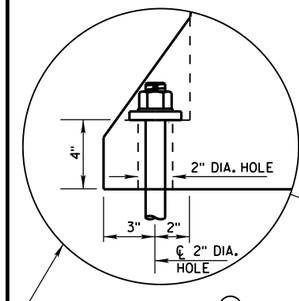
CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

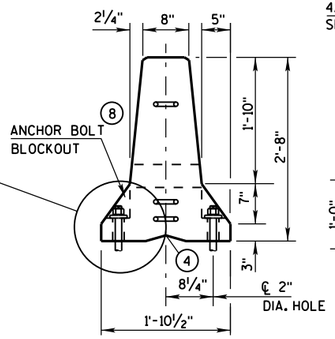
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

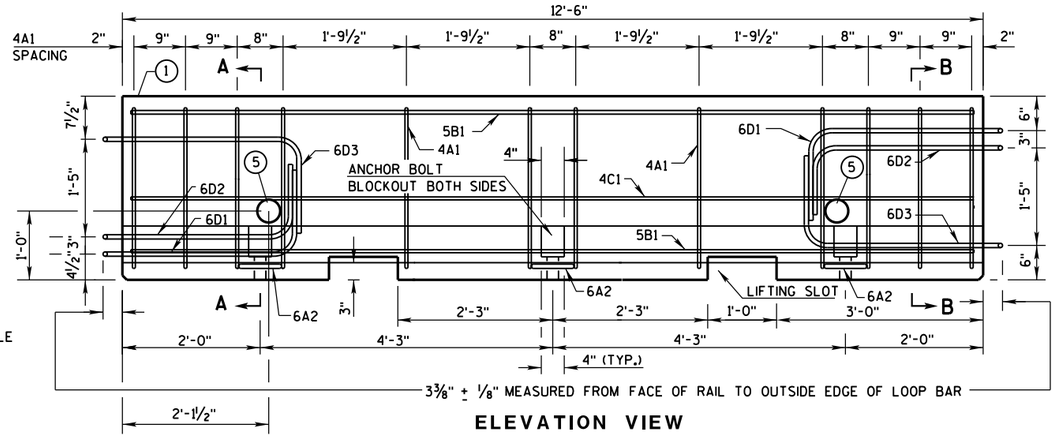
6

S.D.D. 13 C 18-3d

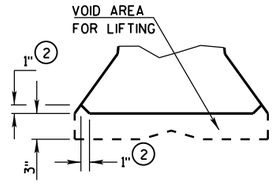




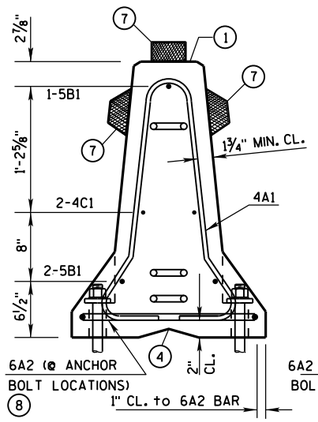
END VIEW



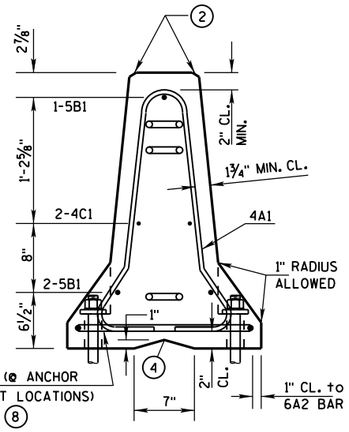
ELEVATION VIEW



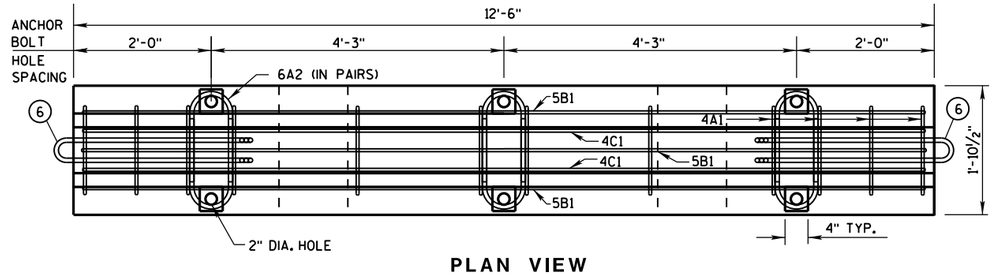
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

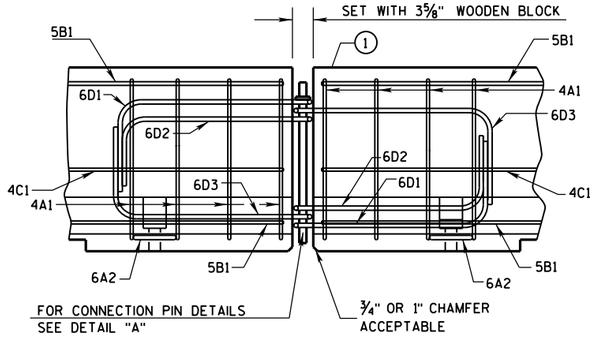


SECTION B-B
(STIRRUP PLACEMENT)

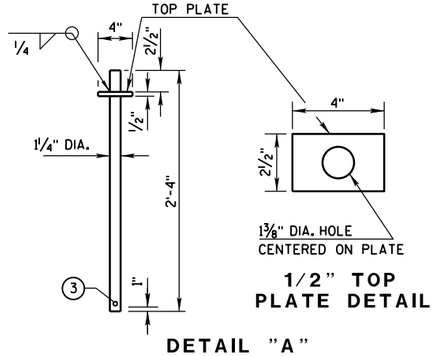


PLAN VIEW

DETAILS OF BARRIER SECTION

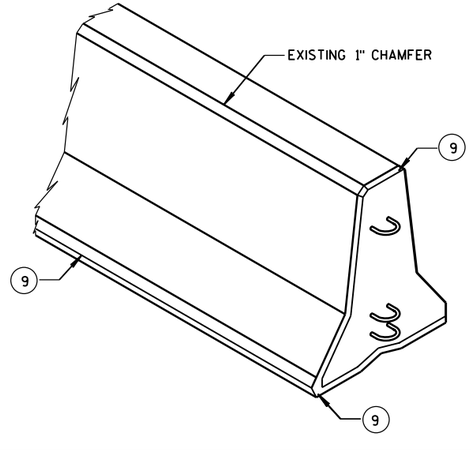


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

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



GENERAL NOTES

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

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

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

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE ¾" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" OF THE PLAN DIMENSION.

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

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

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

(1) MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
- a. TYPE: WI CBTP
- b. MANUFACTURER
- c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..

(4) "V" NOTCH IS OPTIONAL.

(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

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

(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

(8) SEE SHEET D FOR ANCHORING CRITERIA.

(9) 1" CHAMFER OPTIONAL.

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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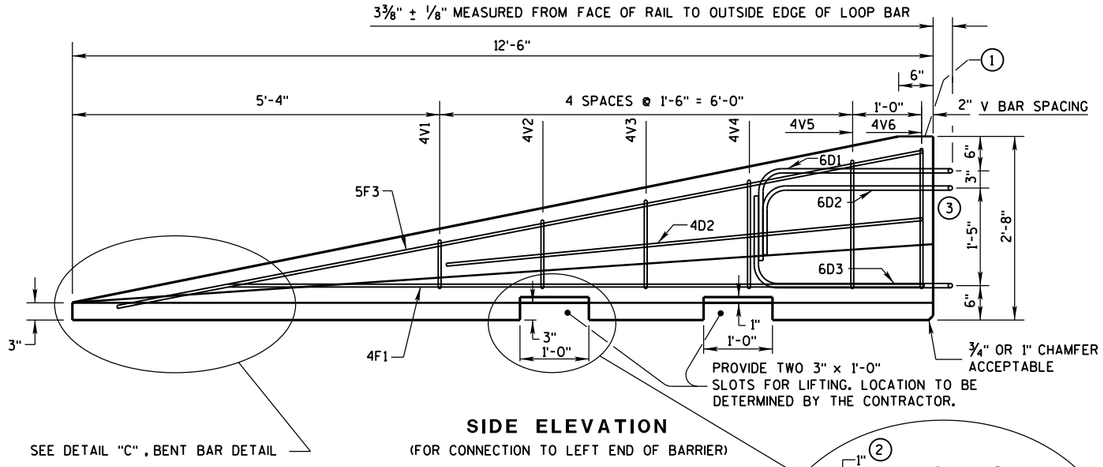
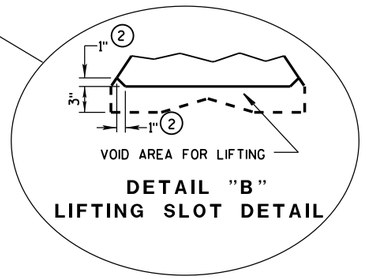
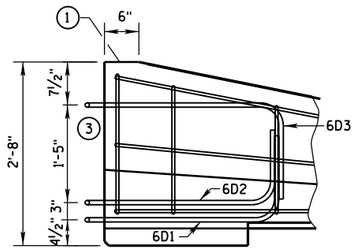
S.D.D. 14 B 7-14a



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



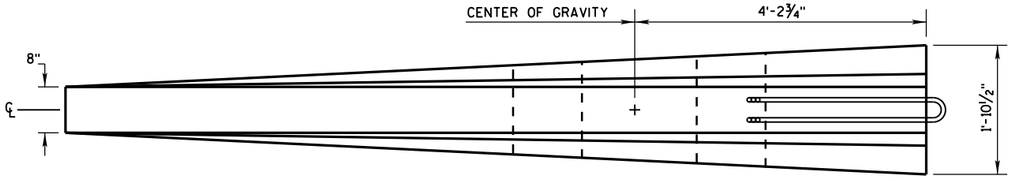
DETAIL "B"
LIFTING SLOT DETAIL



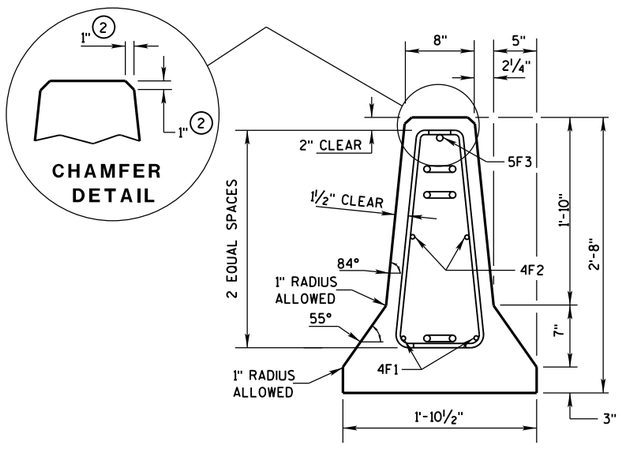
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

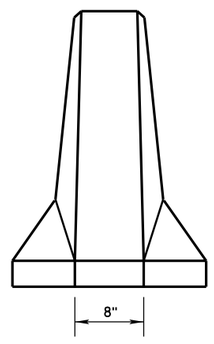
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



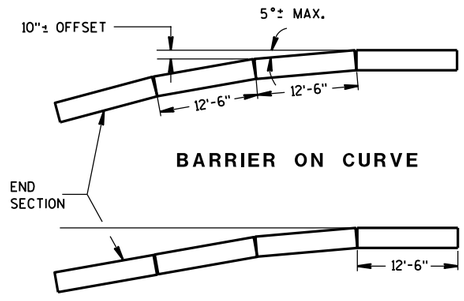
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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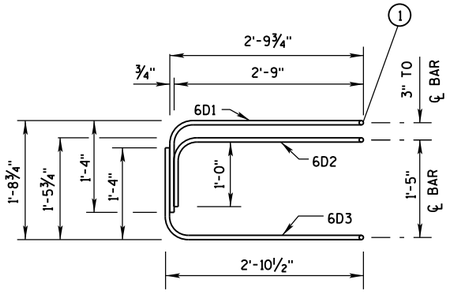
S.D.D. 14 B 7-14b

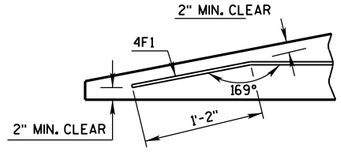
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

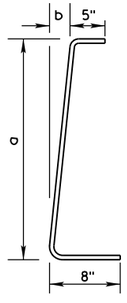
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



BAR	a	b
V1	10"	1"
V2	1'-1"	1¼"
V3	1'-5"	1⅝"
V4	1'-8"	1⅞"
V5	2'-0½"	2⅜"
V6	2'-3"	2¾"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

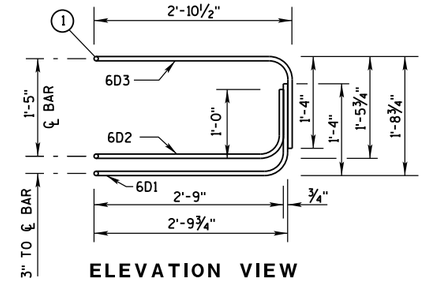
GENERAL NOTES

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

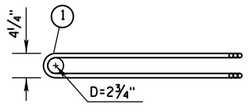
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

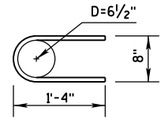
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



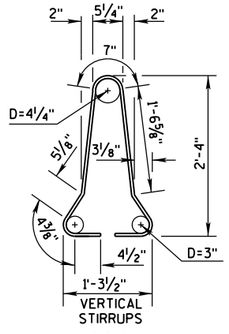
ELEVATION VIEW



PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



6A2



4A1

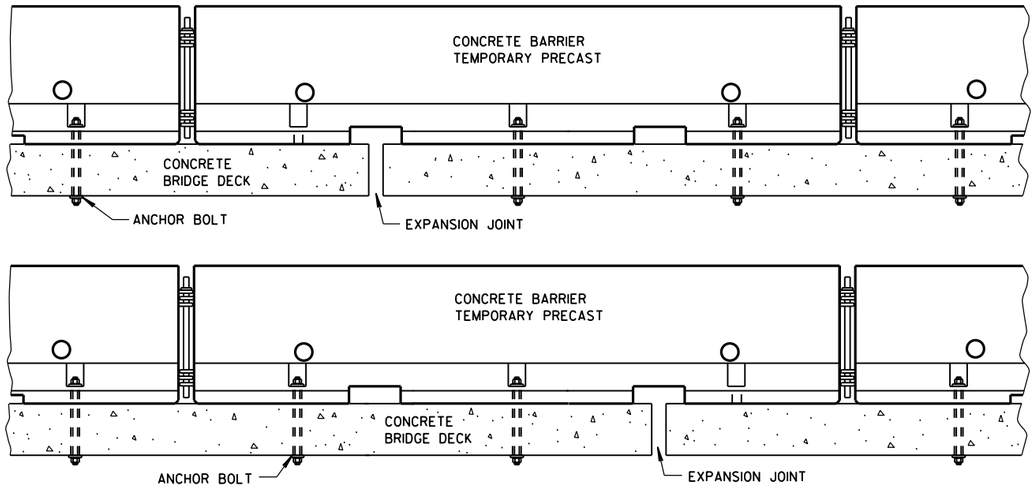
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

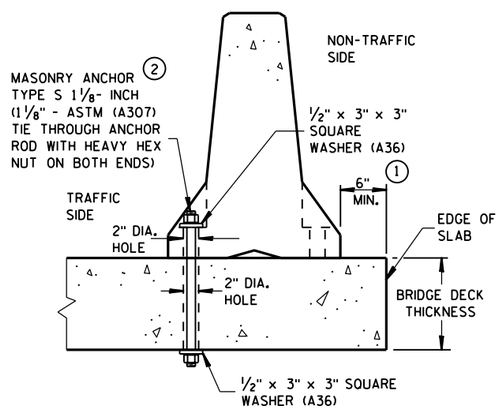
6

S.D.D. 14 B 7-14c



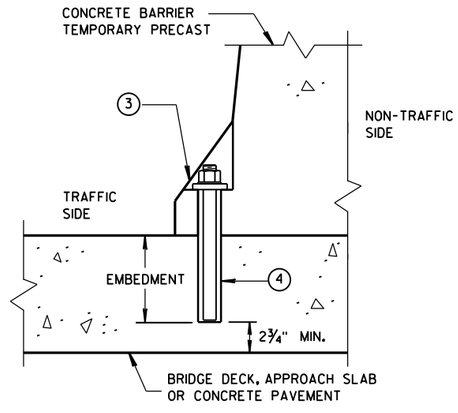
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

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



THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT ②

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

GENERAL NOTES

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

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

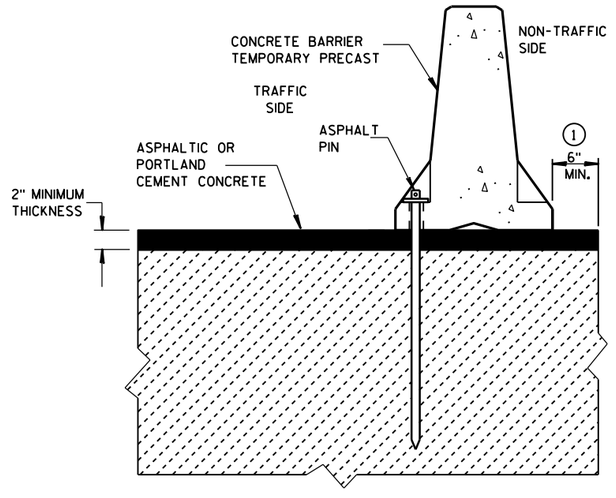
② ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1⅛-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALL ANCHOR BOLTS AND COMPLETELY FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERICAL GROUT OR MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.

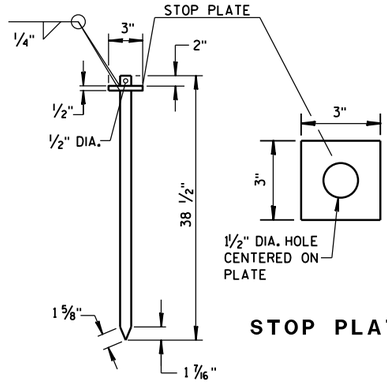
③ 1⅛" DIAMENTER A307 THREADED ROD, ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.

④ ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

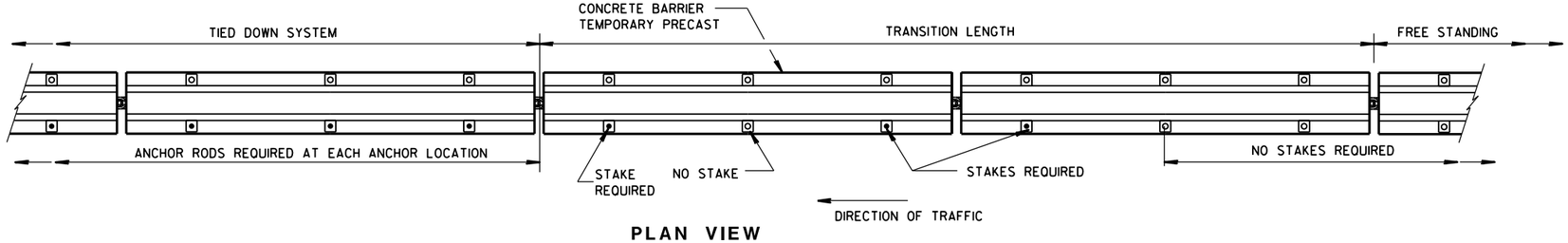
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT PIN

(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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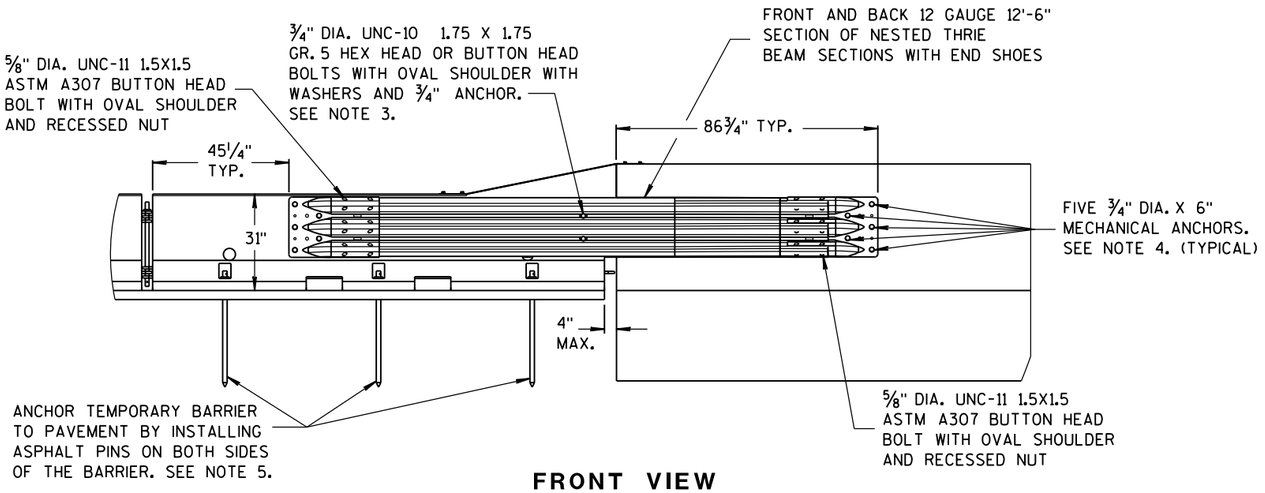
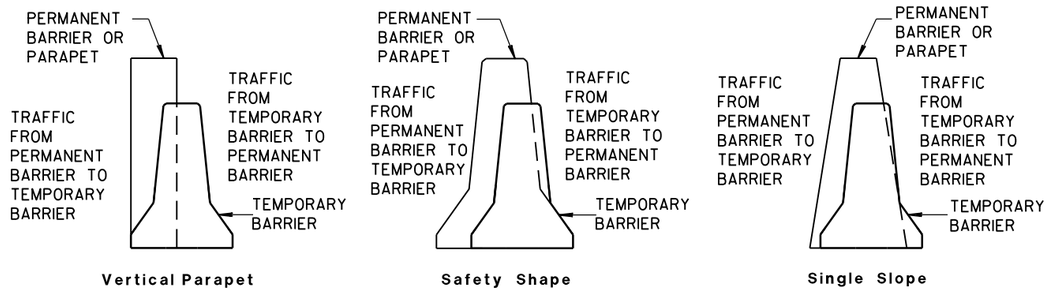
S.D.D. 14 B 7-14d



FRONT VIEW

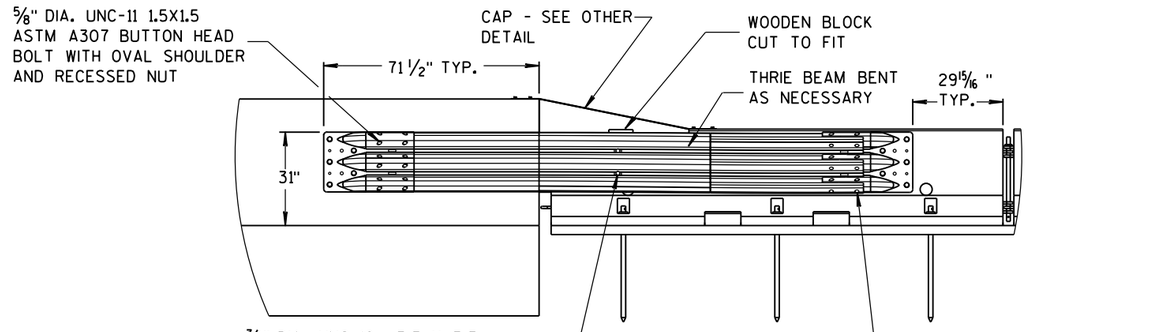


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

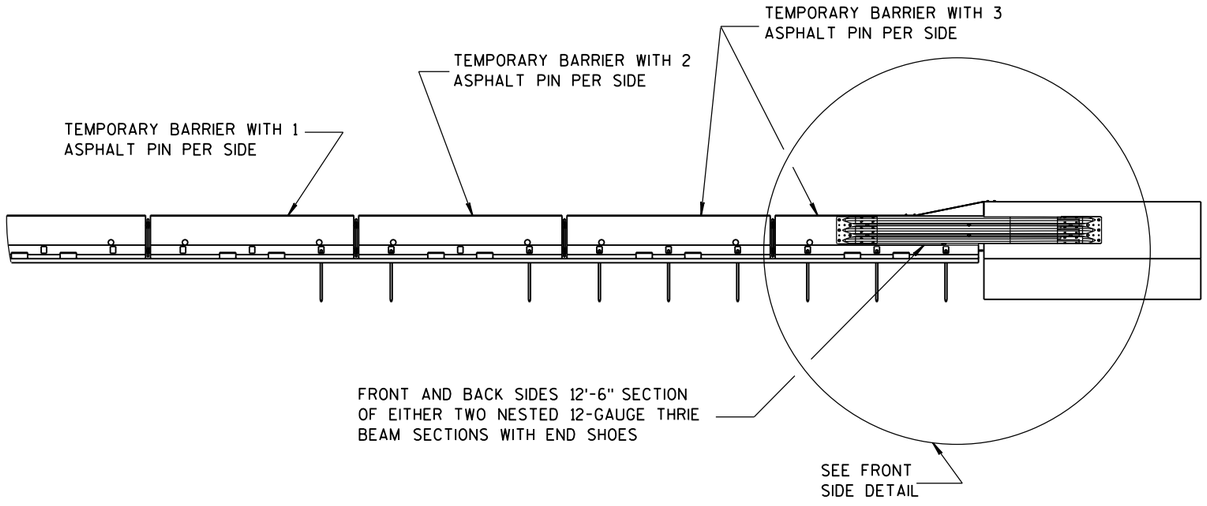
NOTES

NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS.

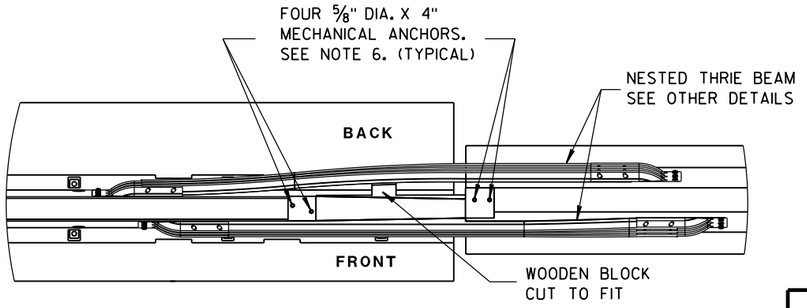
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD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



BACK VIEW



FRONT VIEW



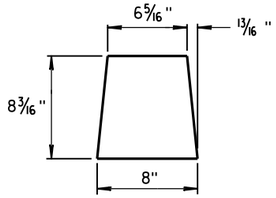
PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

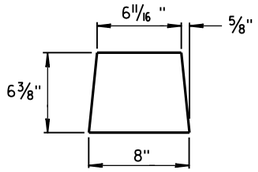
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6
S.D.D. 14 B 7-14e



GUSSET 1



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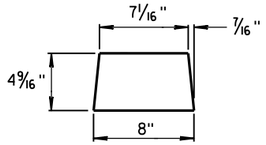

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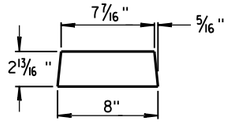
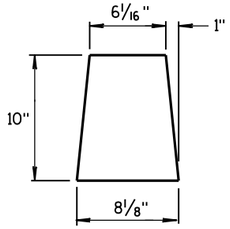
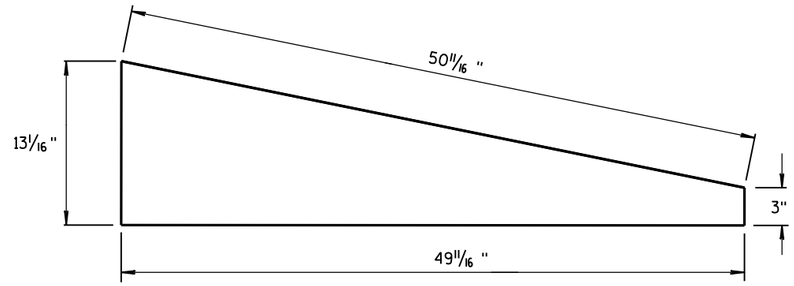


GUSSET 4

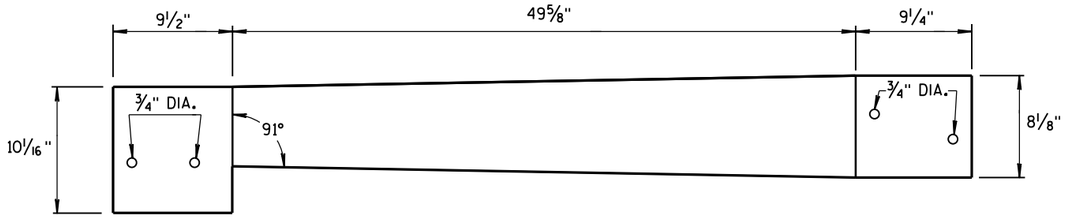
GUSSETS

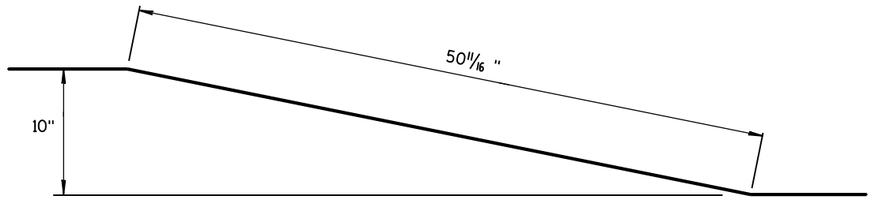


END PLATE



SIDE PLATE

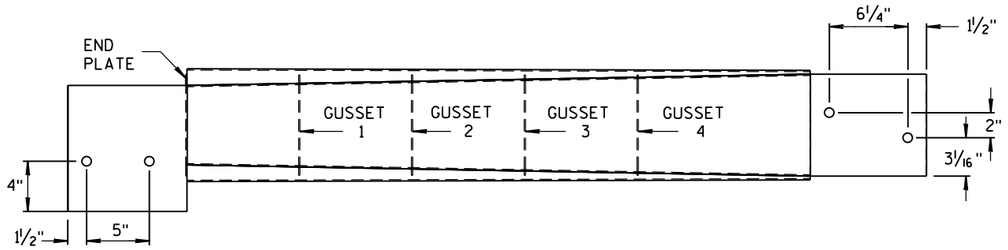


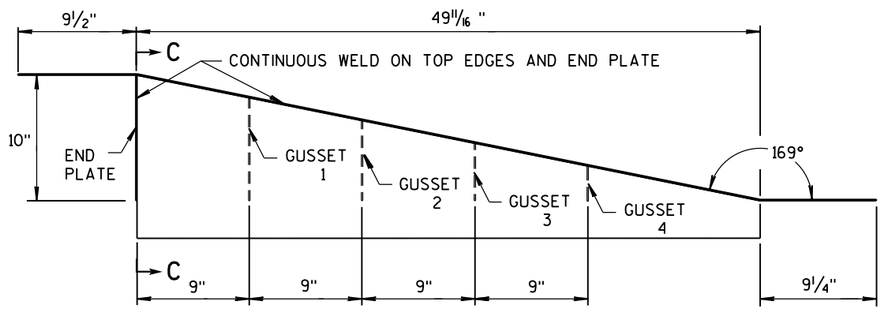


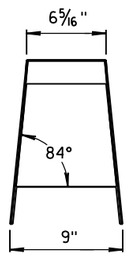
TOP PLATE

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

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







SECTION C-C

NOTES

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

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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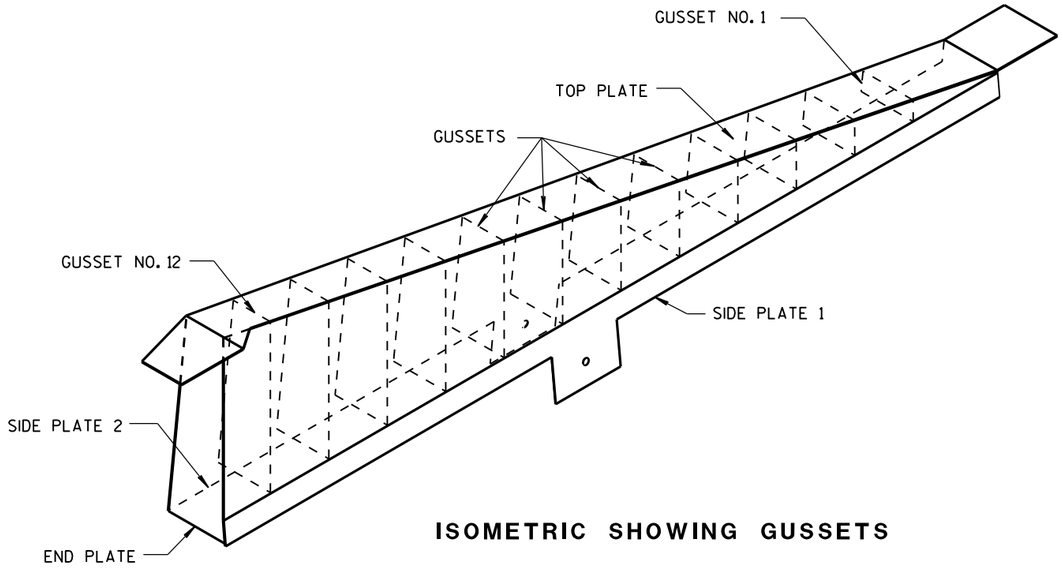
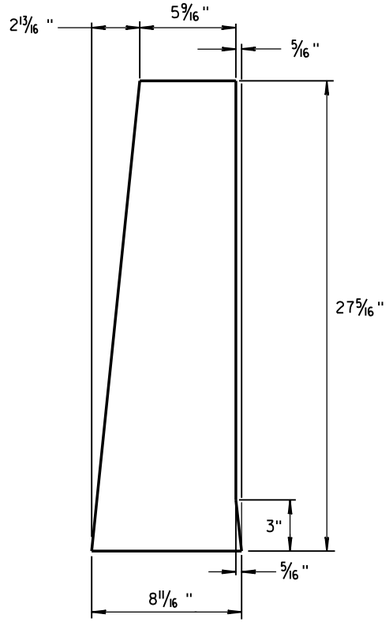
S.D.D. 14 B 7-14f

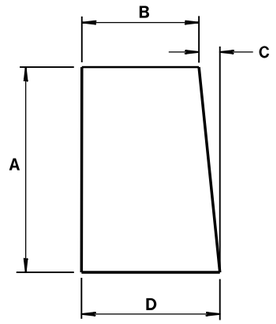


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



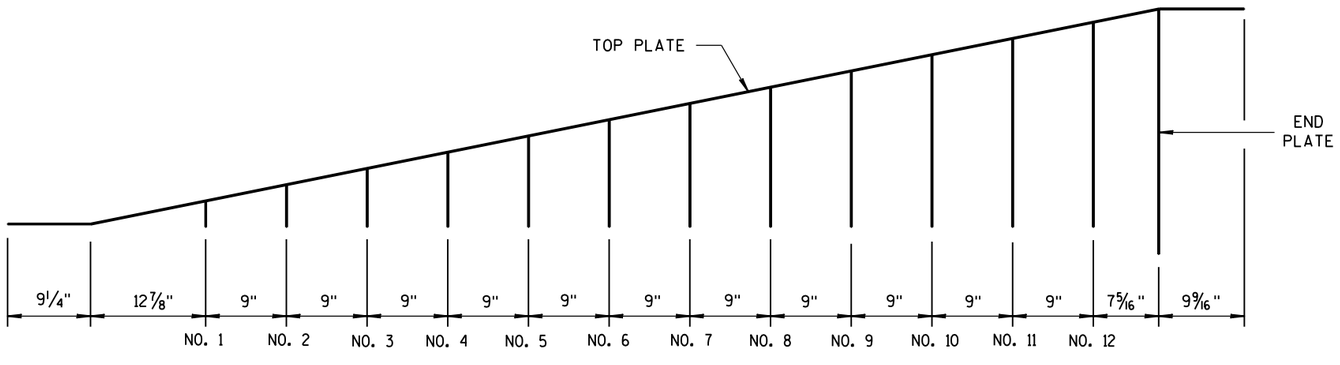
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

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

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

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



GUSSET LOCATION

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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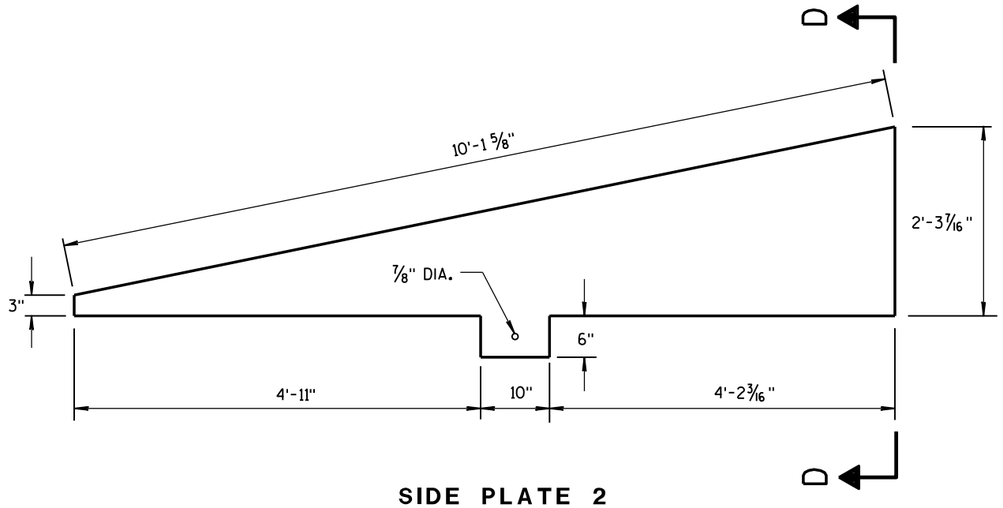
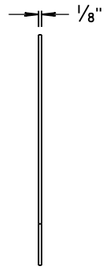
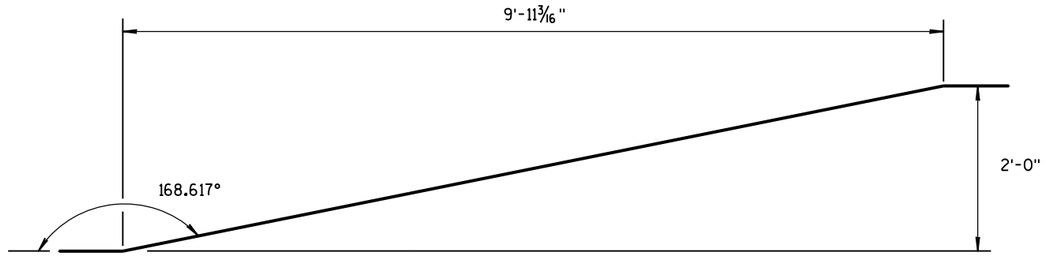
S.D.D. 14 B 7-14g



SIDE PLATE 2

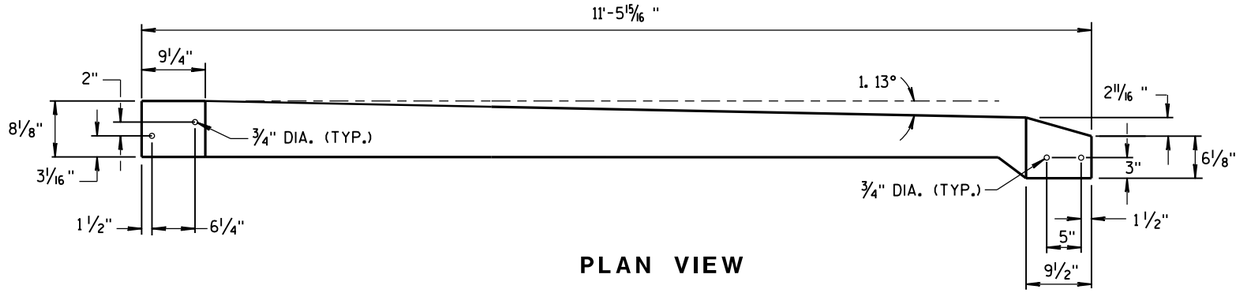


END VIEW



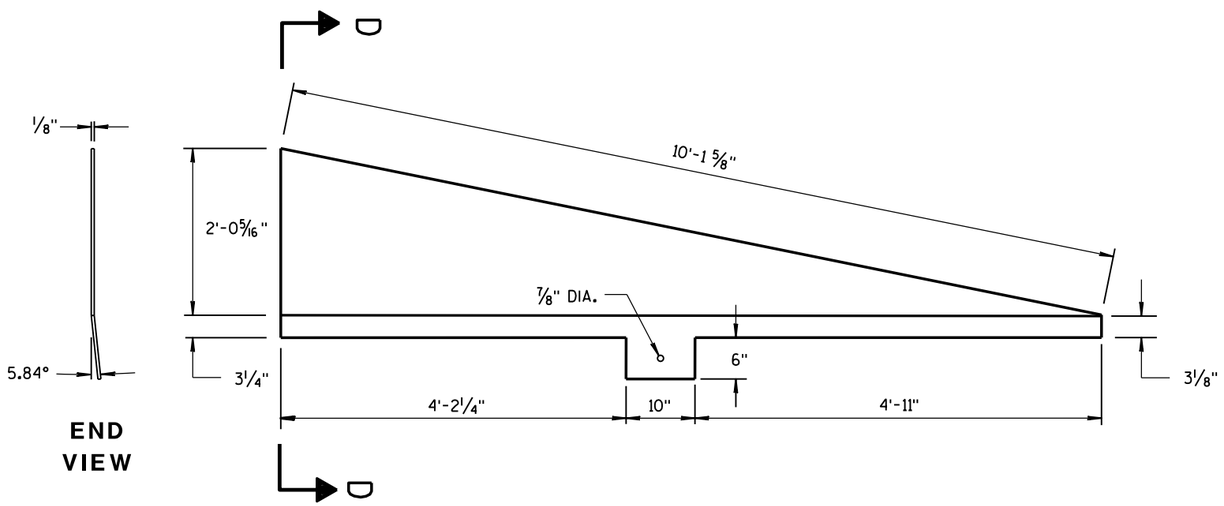
SIDE VIEW

TOP PLATE



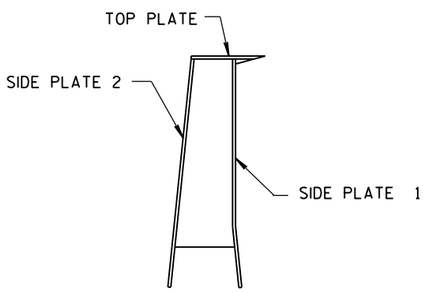
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Jerry H. Zoaa — ROADWAY STANDARD DEVELOPMENT ENGINEER
FHWA

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S.D.D. 14 B 7-14h

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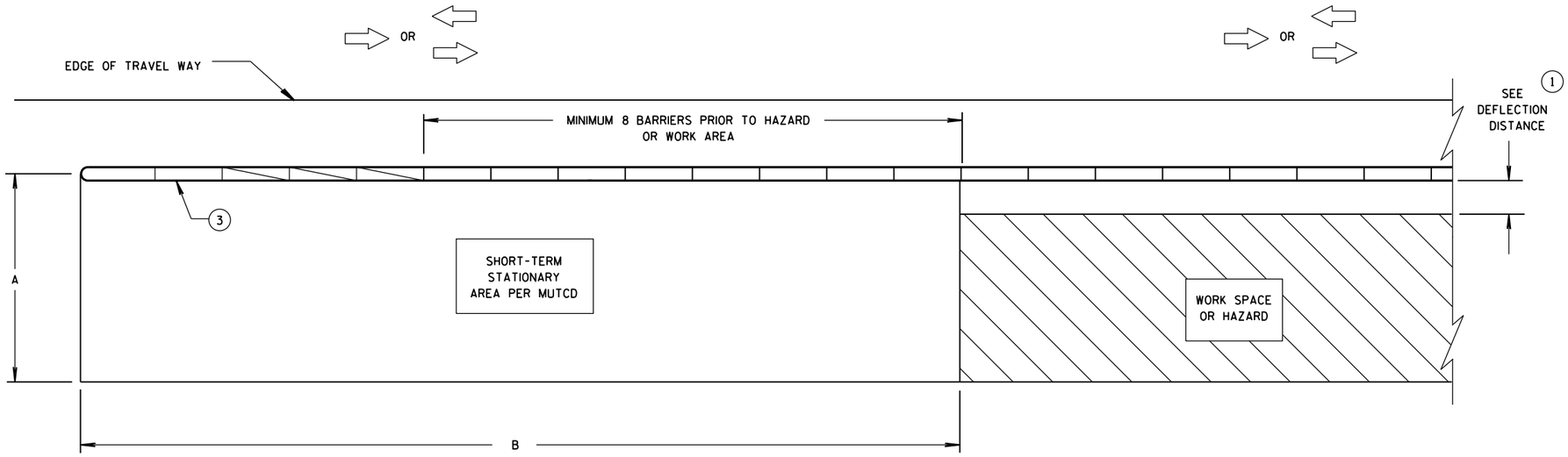
S.D.D. 14 B 7-14h



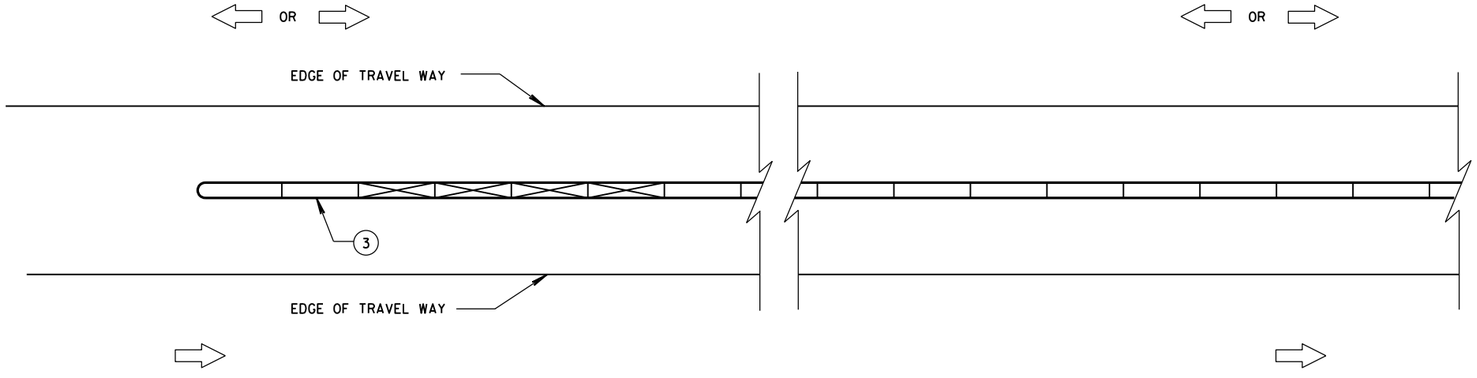
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE (2)

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

DIMENSION B TABLE (2)

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



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

LEGEND

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

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

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

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

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

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

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

(1) FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.

(2) VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

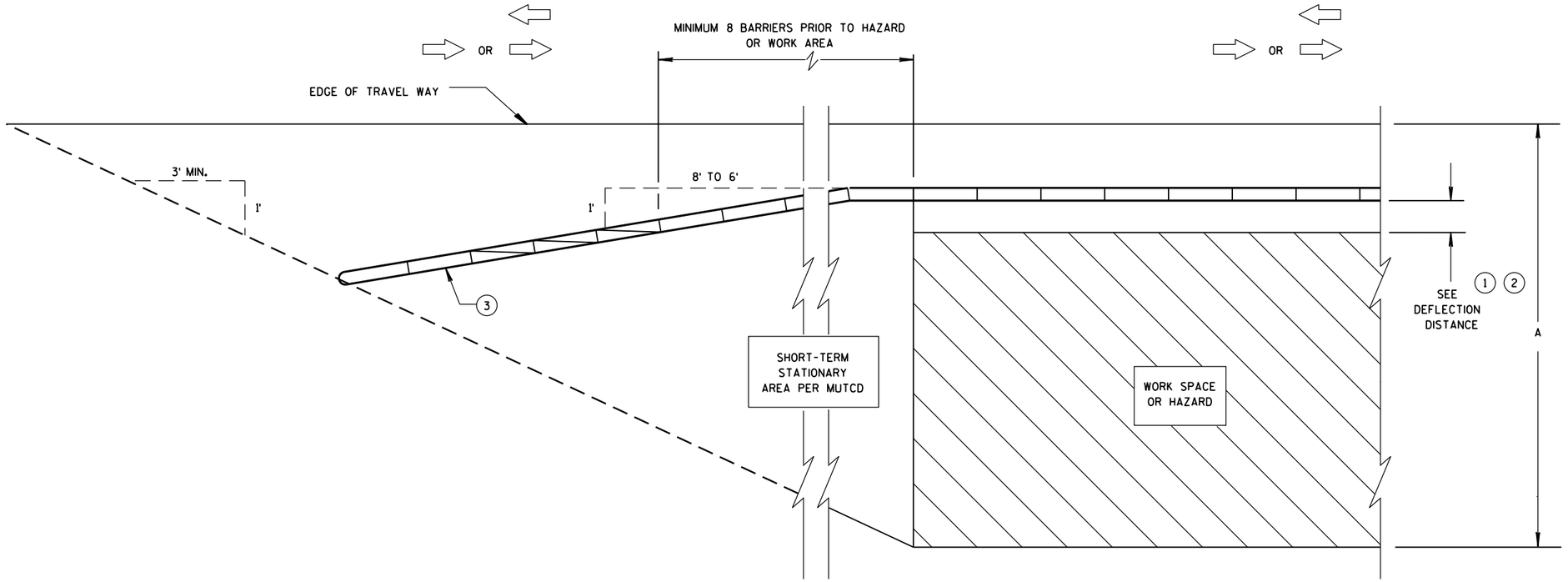
(3) ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

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

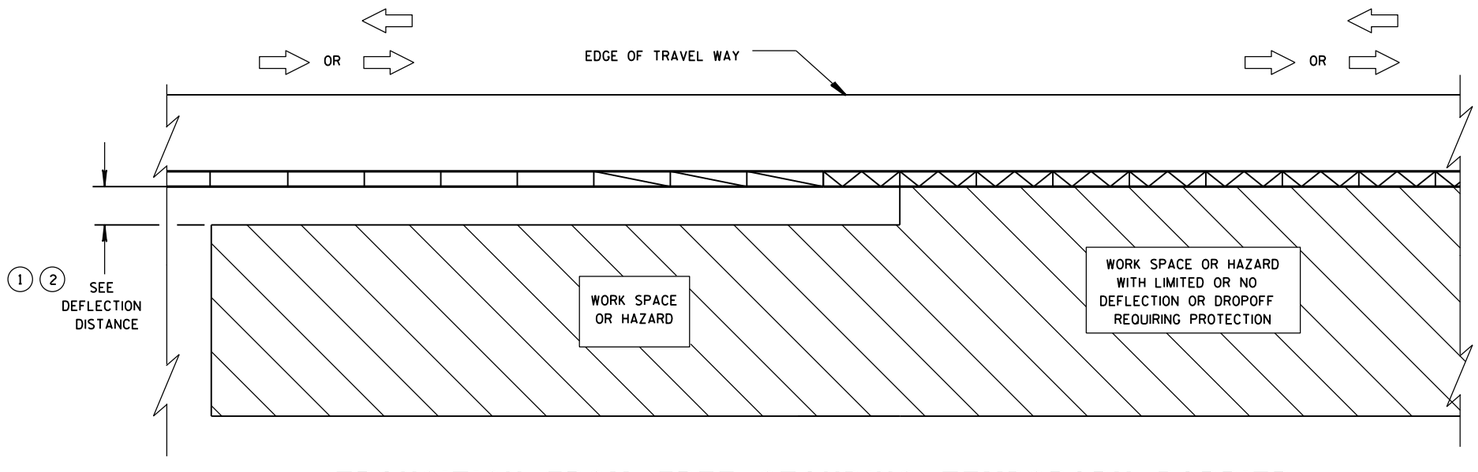
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 8-2a
S.D.D. 14 B 8-2a



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



TRANSITION FROM FREE STANDING TEMPORARY BARRIER TO ANCHORED BARRIER

LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 14 B 8-2b

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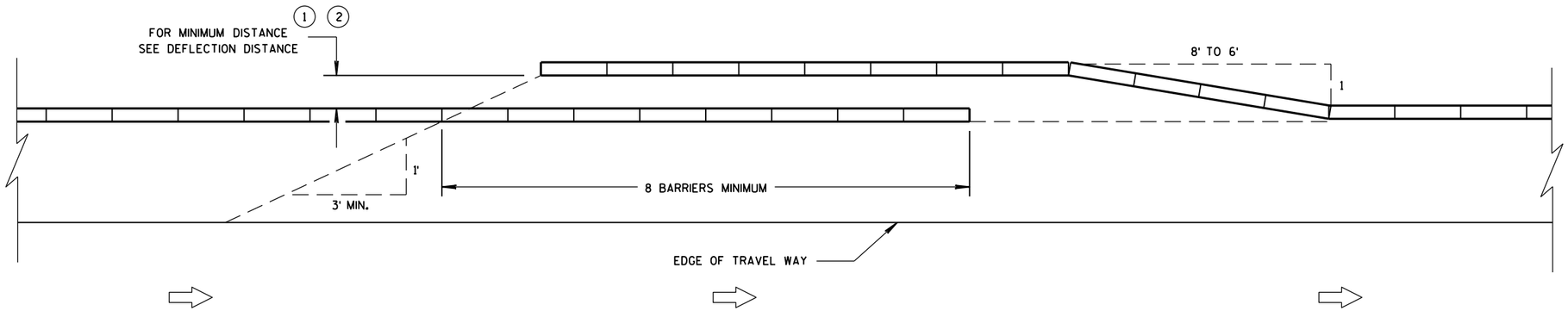
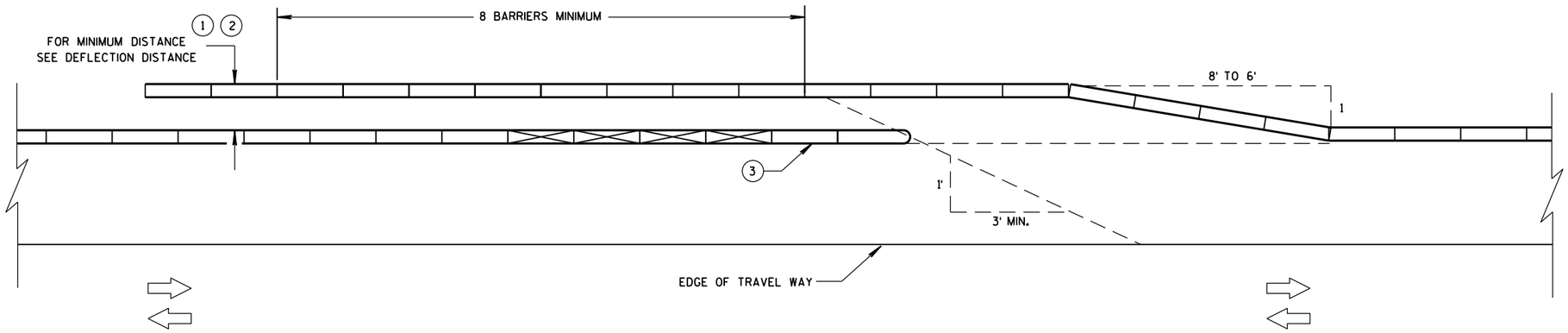
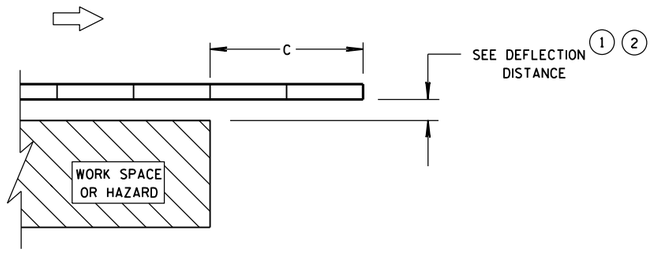
S.D.D. 14 B 8-2b



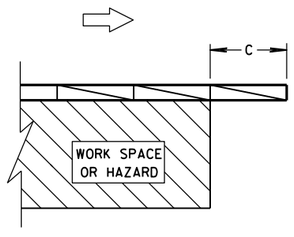
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

LEGEND

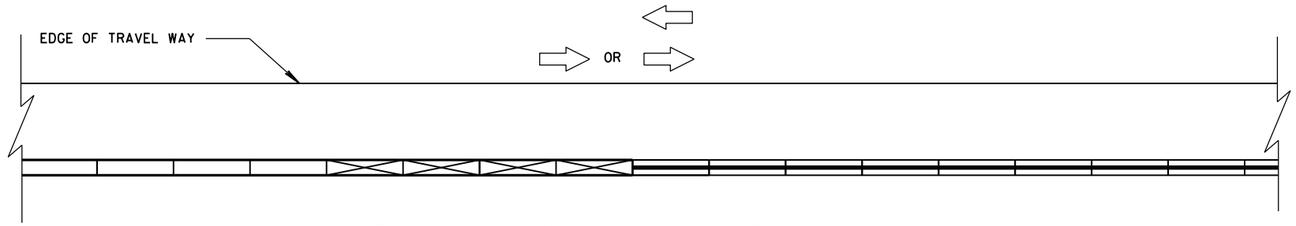
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

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

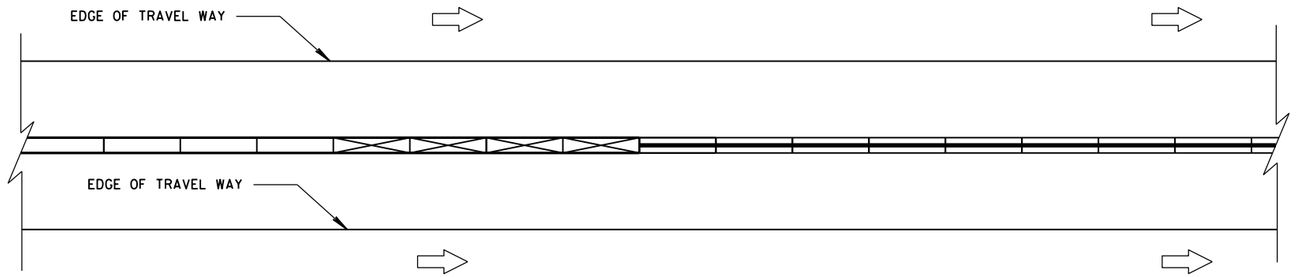
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 8-2c



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



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

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR
SAND BARREL ARRAY

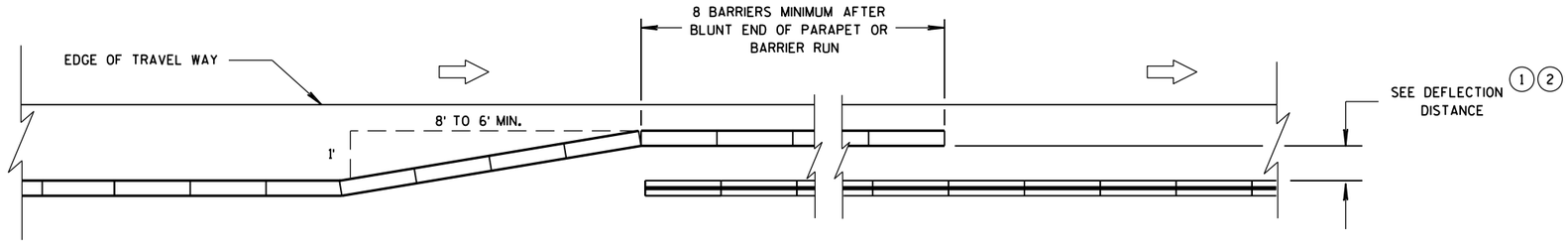
SEE FREE STANDING TRANSITION
TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION
TO TIED-DOWN SYSTEM DETAILS

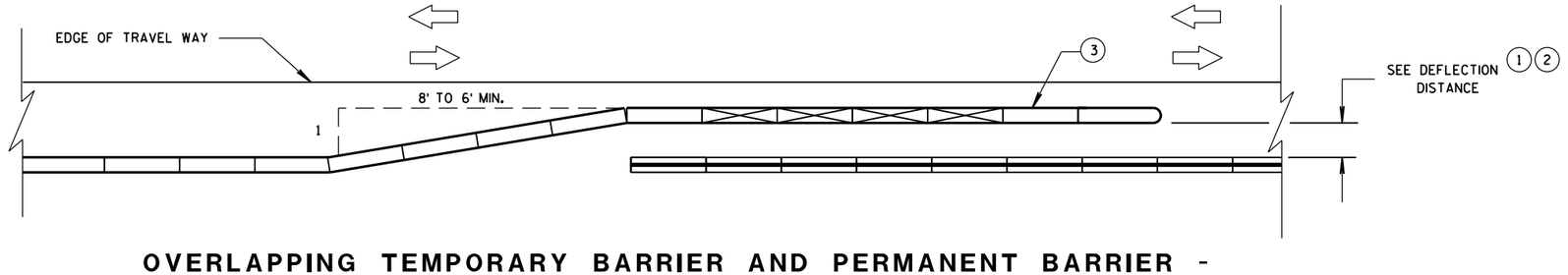
3 PINS PLACED ON
TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER
OR CONCRETE PARAPET

FREE STANDING TEMPORARY
BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 14 B 8-2d

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

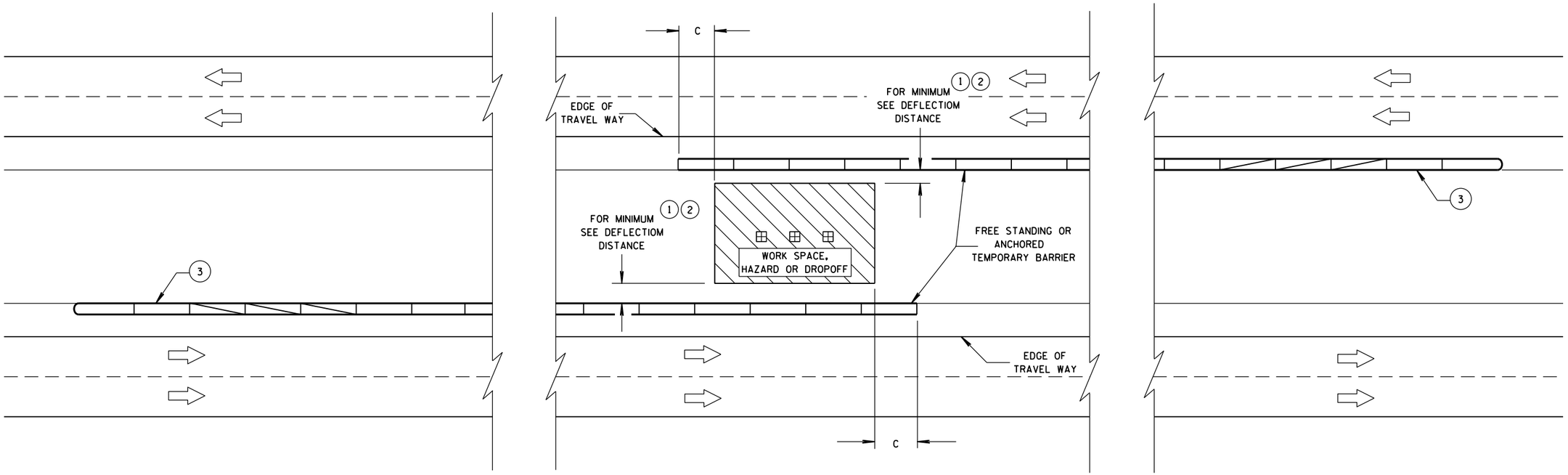
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

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



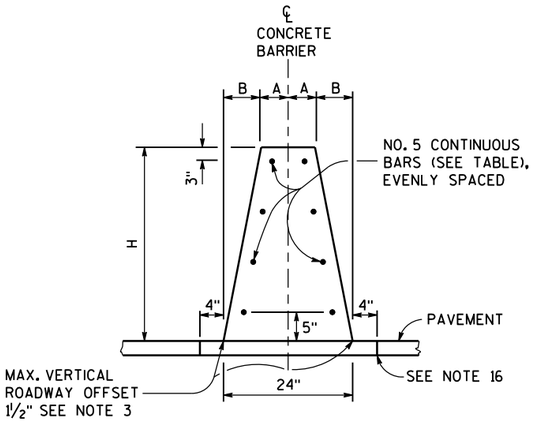
CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

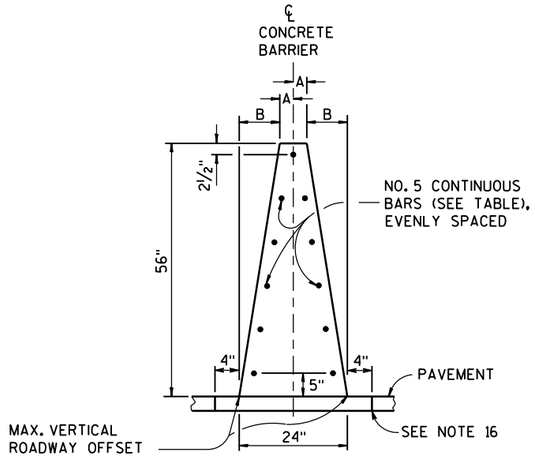
APPROVED
June, 2015
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINNER
FHWA

6

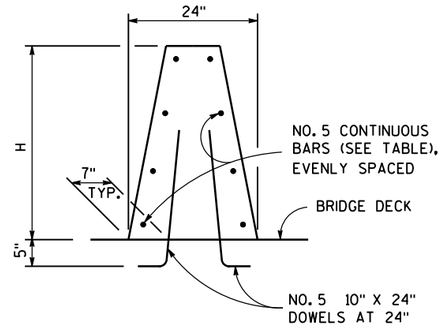
S.D.D. 14 B 8-2e



32-INCH, 36-INCH OR 42-INCH SINGLE SLOPE CONCRETE BARRIER (TYPE S32, TYPE S36, AND TYPE S42)



56-INCH SINGLE SLOPE CONCRETE BARRIER (TYPE S56)



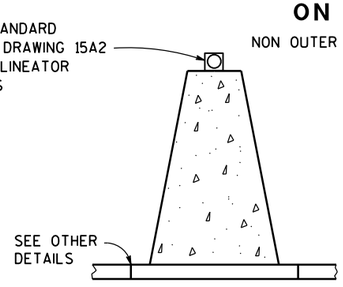
SINGLE SLOPE CONCRETE BARRIER ON BRIDGE

NON OUTER PARAPET APPLICATION

GENERAL NOTES

1. WHERE THE CONCRETE BARRIER IS ADDED TO THE FACE OF EXISTING CONCRETE STRUCTURE, MATCH EXISTING WEEP HOLES.
2. EXPANSION JOINTS IN CONCRETE BARRIER SHALL BE LOCATED AT ALL DECK, AND PRINCIPAL WALL JOINTS. EXPANSION JOINT FILLER MATERIAL SHALL BE THE SAME SIZE AS JOINT OR ½" MINIMUM.
3. WHERE VERTICAL ROADWAY OFFSET IS GREATER THAN 1½", USE TYPE A
4. PLACE BARRIER PERPENDICULAR TO SHOULDER GRADE, UNLESS INDICATED IN PLAN.
5. EXCEPT IN ANCHORS, VERTICAL REINFORCING STIRRUP NOT REQUIRED FOR ROADWAY OFFSETS LESS THAN 1'-0".
6. FOR TYPE S32, TYPE S36, TYPE S42, AND S56 MONOLITHIC FOOTING OR DOWELED FOOTING WITH 2-#8 x 8" @ 2'-0".
7. STAGGER LAPPING OF LONGITUDINAL STEEL. MINIMUM OVERLAP OF STEEL 2 FEET. BARS AT LAPS TO BE FIRMLY TIED OR CONNECTED.
8. 4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATION 501.
9. WHEN SWITCHING BETWEEN SLIP FORM AND CAST-IN-PLACE OPERATIONS, EXTEND LONGITUDINAL STEEL 3 FEET BEYOND SLIP-FORMING CUT OFF POINT. EXPOSED STEEL INTO NEXT POURS REINFORCEMENT. LAPS TO BE FIRMLY TIED.
10. USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.
11. 2" CLEAR COVER TYPICAL.
12. COLD-JOINTS MAY BE USED BETWEEN ANCHOR INSTALLATIONS. WHEN A COLD JOINT IS NEEDED, 3 FEET OF LAP OF LONGITUDINAL STEEL IS REQUIRED. LAPS TO BE FIRMLY TIED.
13. IN TYPE S32, TYPE S36, TYPE S42 AND TYPE S56 NO ADDITIONAL VERTICAL STEEL NEEDED. IN TYPE S32A, TYPE S36A, TYPE S42A AND TYPE S56A REQUIRES VERTICAL STEEL. SEE OTHER DETAIL.
14. IN TYPE S32, TYPE S36, TYPE S42 AND TYPE S56 DEPTH OF FOOTING 10". IN TYPE S32A, TYPE S36A, TYPE S42A AND TYPE S56A MATCH TOTAL HEIGHT OF SINGLE SLOPE BARRIER RETAINING WALL.
15. FOR ALL BARRIER TYPES SHOWN, ANCHOR IS REQUIRED AT CONCRETE BARRIER ENDS AND AT INTERRUPTIONS IN CONCRETE BARRIER. ANCHOR MAY BE AS SHOWN ON DRAWING OR DETAILS SHOWN ON S.D.D. 14B33. ANCHORS INCIDENTAL TO CBSS.
16. CONCRETE PAD UNDER CBSS MAY BE PLACED INTEGRAL WITH BARRIER, PLACED SEPARATELY OR PLACED WITH CONCRETE SHOULDER AND SAWED FULL DEPTH. CONCRETE PAD MINIMUM DEPTH IS 6 INCHES, OR EQUAL TO THE DEPTH OF THE CONCRETE SHOULDER.

BARRIER HEIGHT H INCHES	A INCHES	B INCHES	NUMBER OF NO. 5 BARS EACH
32	7	5	8
36	6¼	5¾	8
42	5¼	6¾	10
56	3	9	11



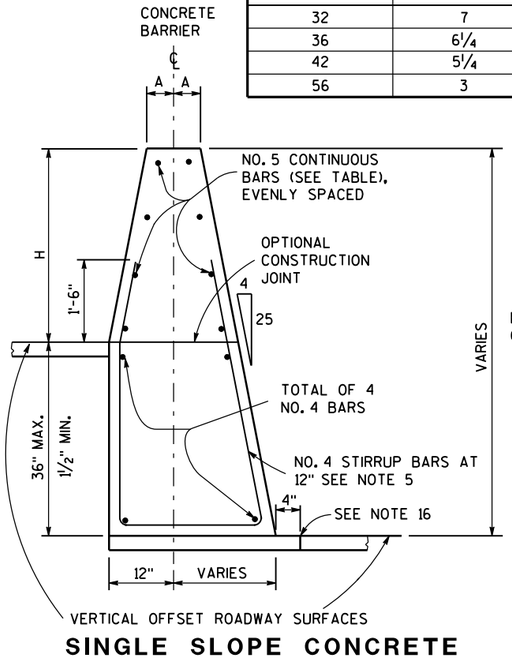
DELINEATION

DELINEATOR SPACING ON HORIZONTAL CURVES

RADIUS OF CURVE	APPROXIMATE SPACING ON CURVE
50 FEET	20 FEET
115 FEET	25 FEET
180 FEET	35 FEET
250 FEET	40 FEET
300 FEET	50 FEET
400 FEET	55 FEET
500 FEET	65 FEET
600 FEET	70 FEET
700 FEET	75 FEET
800 FEET	80 FEET
900 FEET	85 FEET
1000 FEET	90 FEET

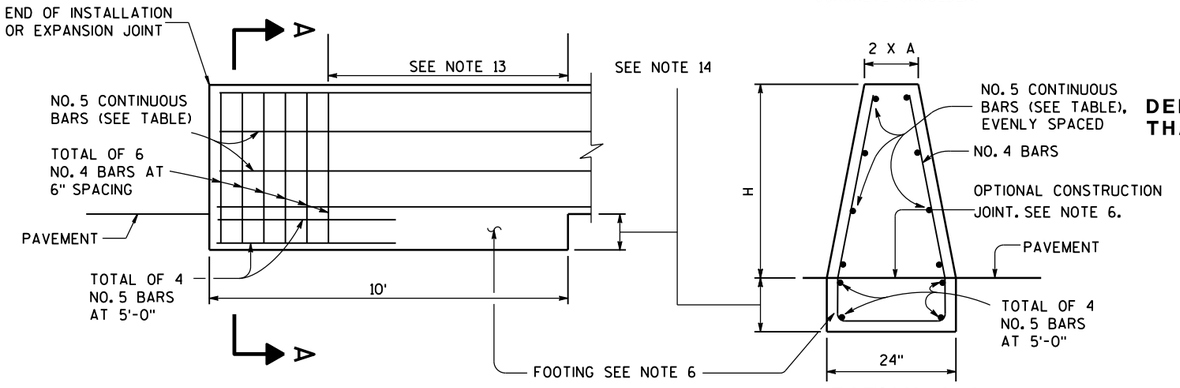
DELINEATOR SPACING ON RADIUS GREATER THAN 1000 FEET OR TANGENT SECTIONS

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



SINGLE SLOPE CONCRETE BARRIER AND RETAINING WALL (TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)

(BETWEEN ADJACENT ROADWAYS)



END ANCHOR SINGLE SLOPE CONCRETE BARRIER

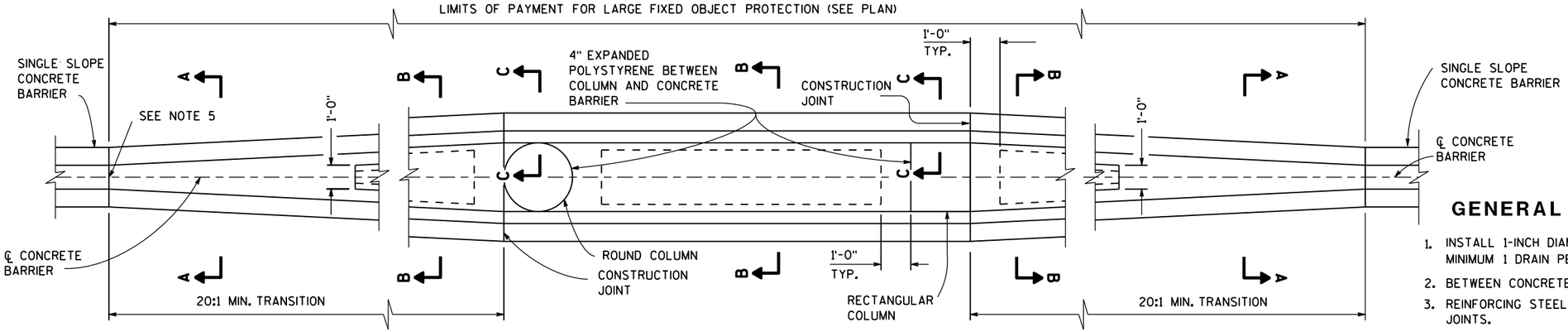
AT CONSTRUCTION JOINT

SECTION A-A

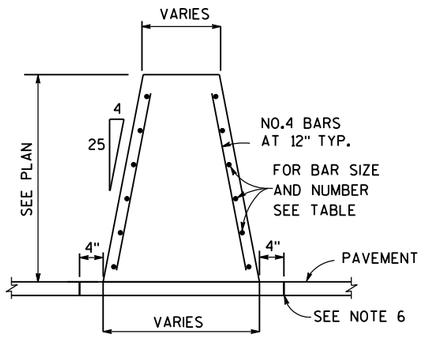
CONCRETE BARRIER SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

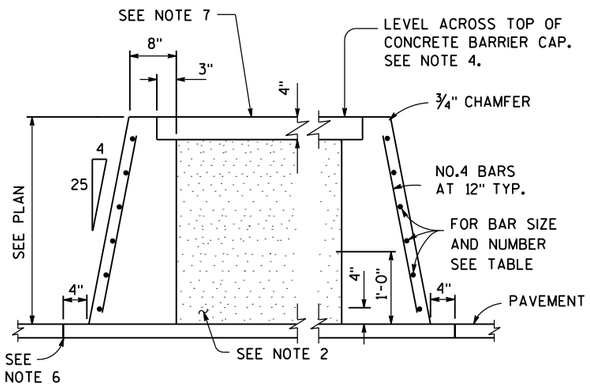
6
S.D.D. 14 B 32-3a



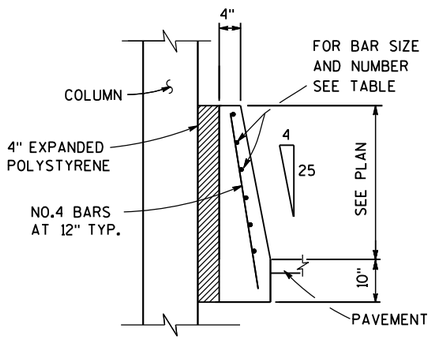
LARGE FIXED OBJECTS PROTECTION
TYPE S32, TYPE S36, TYPE S42, TYPE S56



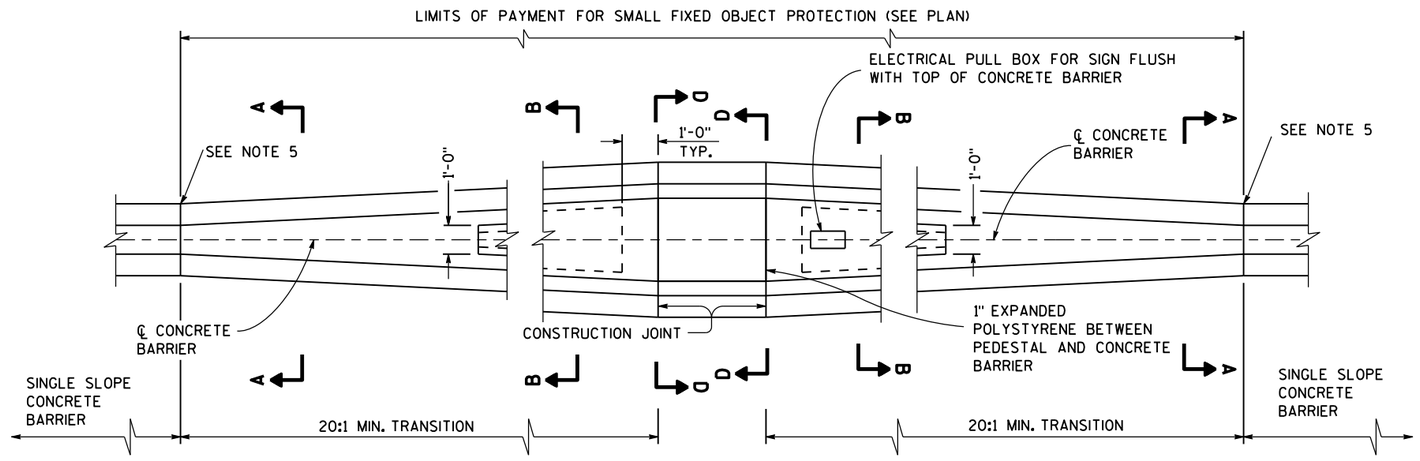
SECTION A-A



SECTION B-B



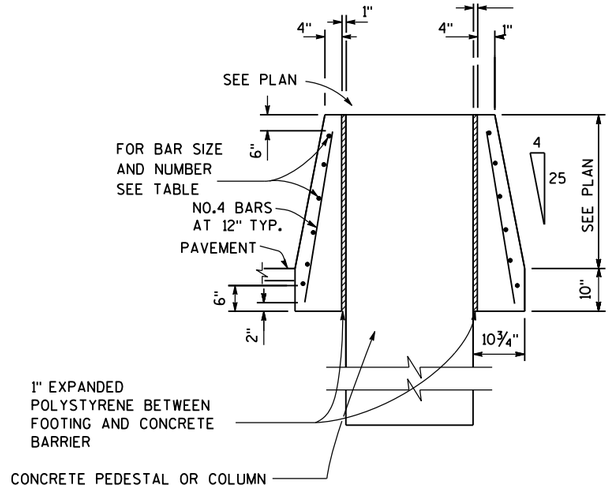
SECTION C-C



SMALL FIXED OBJECTS PROTECTION
TYPE S32, TYPE S36, TYPE S42, TYPE S56

GENERAL NOTES

1. INSTALL 1-INCH DIAMETER DRAIN PIPE EVERY 20 FEET OF CROSS SECTION B-B. MINIMUM 1 DRAIN PER CAVITY.
2. BETWEEN CONCRETE BARRIER WALLS FILL WITH GRANULAR BACKFILL GRADE 2
3. REINFORCING STEEL SHALL EXTEND CONTINUOUS THROUGH CONSTRUCTION JOINTS.
4. ADJUST HEIGHT OF CONCRETE BARRIER WALL ON LOW SIDE OF OFFSET OR SUPERELEVATED ROADWAYS TO PROVIDE LEVEL GRADE ACROSS TOP OF CONCRETE CAP.
5. IF FIXED OBJECT PROTECTION IS INSTALLED FIRST, USE COLD JOINTS. IF CBSS PLACED FIRST, USE EXPANSION JOINT.
6. CONCRETE PAD UNDER CBSS MAY BE PLACED INTEGRAL WITH BARRIER, PLACED SEPARATELY OR PLACED WITH CONCRETE SHOULDER AND SAWED FULL DEPTH. SAWING OF CONCRETE SHOULDER IS INCIDENTAL TO CONCRETE BARRIER BID ITEM. CONCRETE PAD MINIMUM DEPTH IS 6 INCHES, OR EQUAL TO THE DEPTH OF THE CONCRETE SHOULDER.
7. USE NO. 3 BAR SPACED 12 INCHES CENTER TO CENTER (PLACED IN EACH DIRECTION) OR EQUIVALENT WIRE MESH.



SECTION D-D

BARRIER HEIGHT H INCHES	BAR SIZE	NUMBER OF BARS EACH
32	4	6
36	4	6
42	5	6
56	5	9

CONCRETE BARRIER SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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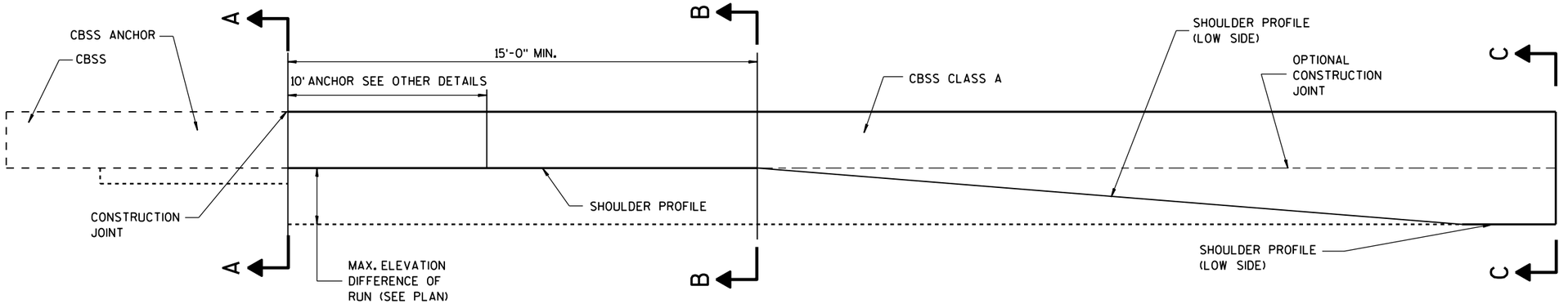
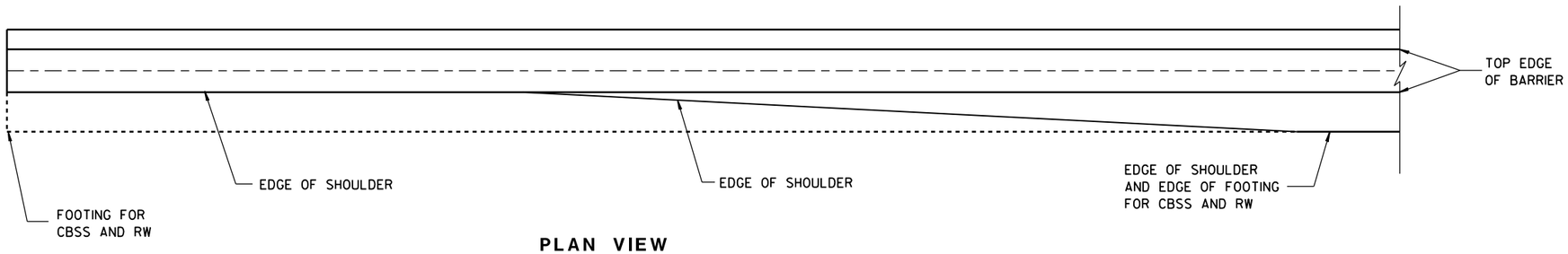
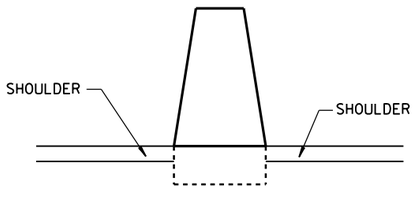
S.D.D. 14 B 32-3b



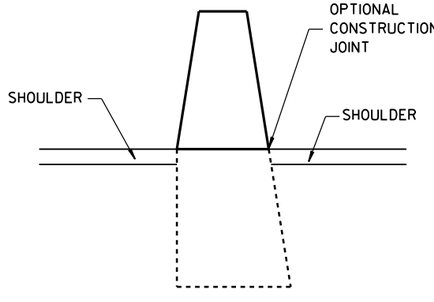
ELEVATION VIEW
TRANSITION TO CBSS CLASS A
(TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)



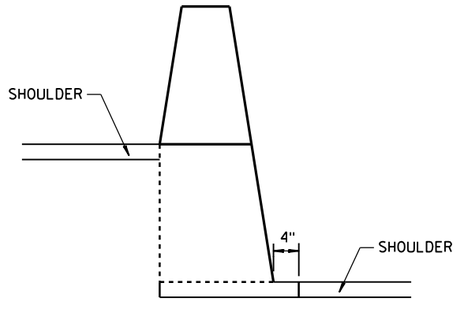
PLAN VIEW
TRANSITION TO CBSS CLASS A
(TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)



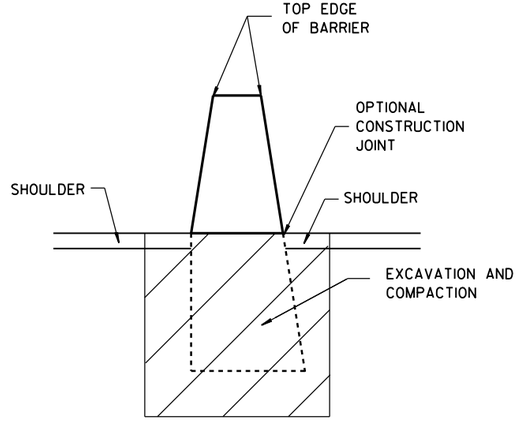
SECTION A-A



SECTION B-B



SECTION C-C



CONCRETE BARRIER SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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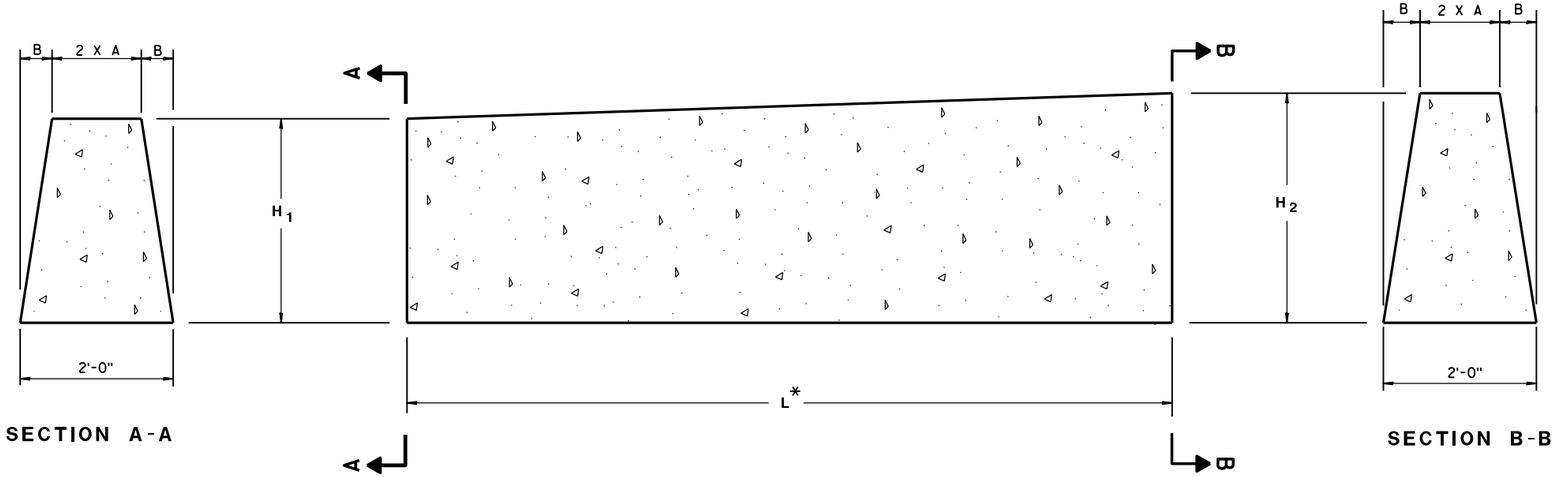
S.D.D. 14 B 32-3c



SECTION A-A

SECTION B-B

DOUBLE COLD JOINT HEIGHT TRANSITION

BARRIER DIMENSIONS

BARRIER HEIGHT INCHES	A INCHES	B INCHES
32	7	5
36	6 1/4	5 3/4
42	5 1/4	6 3/4
56	3	9

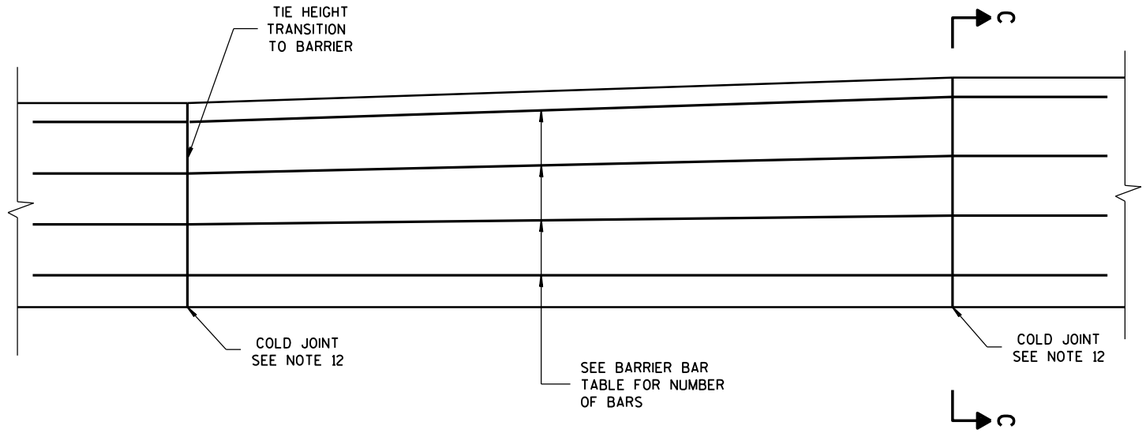
MULTIPLE HEIGHT TRANSITIONS MAY BE USED IN SEQUENCE TO GET TO APPROPRIATE HEIGHT.

USE COLD JOINT TO CONNECT MULTIPLE HEIGHT TRANSITIONS.

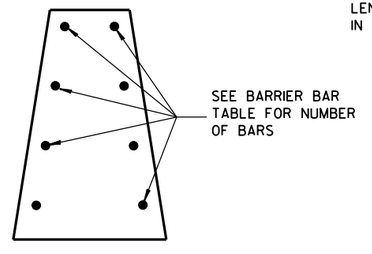
BARRIER BARS

H_1	H_2	L*	NUMBER OF NO. 5 BARS
32"	36"	10'-0"	8
36"	42"	10'-6"	10
42"	56"	24'-6"	11

* LENGTH OF DOUBLE COLD JOINT INCLUDED IN THE TOTAL LENGTH OF CBSS.



STEEL REINFORCEMENT DETAIL



SECTION C-C

CONCRETE BARRIER SINGLE SLOPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2014 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

6

S.D.D. 14 B 32-3d

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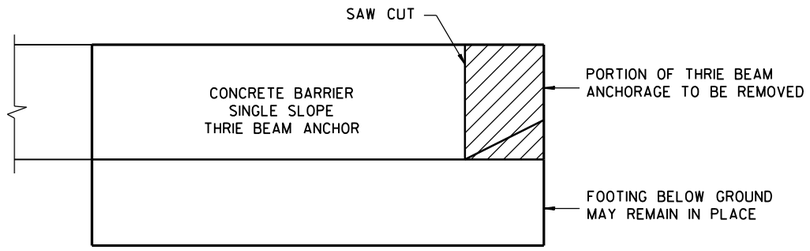
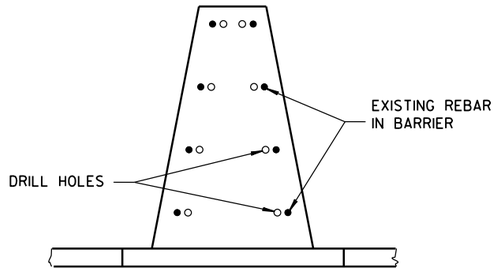
S.D.D. 14 B 32-3d



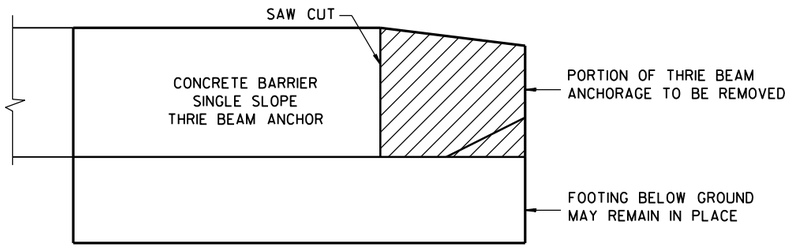
REMOVAL AREA OF
32" CONCRETE THRIE BEAM ANCHORAGE



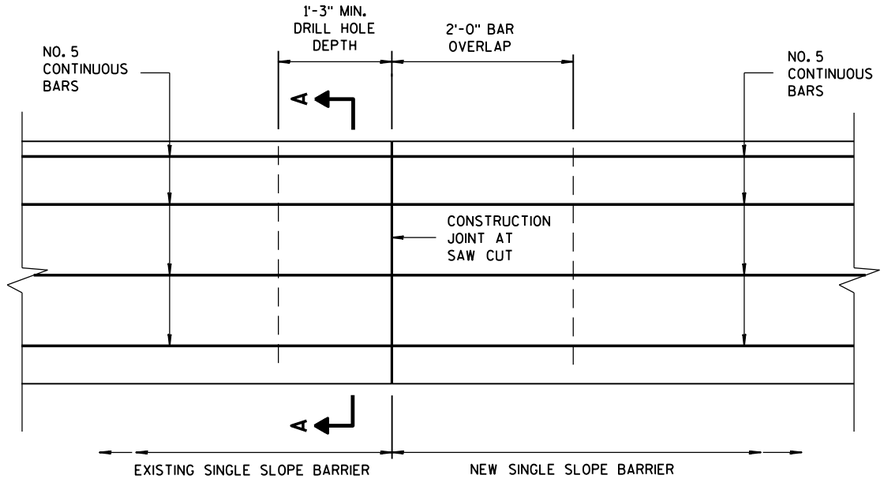
SECTION A-A

GENERAL NOTES

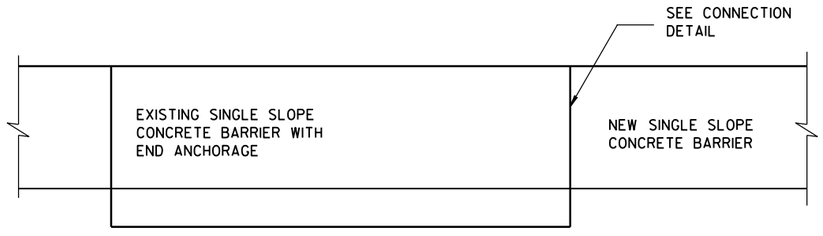
1. THE NUMBER OF DRILL HOLES IS EQUAL TO THE NUMBER OF REBAR IN BARRIER (SEE OTHER DETAILS).
2. MINIMUM DEPTH OF DRILL HOLES IS 1'-3".
3. DRILL HOLES TO BE A MINIMUM OF 4 INCHES FROM THE EDGE OF CONCRETE.
4. INSTALL EPOXY COATED NO. 5 BARS IN DRILL HOLES.
5. END ANCHORAGE MAY OR MAY NOT BE PRESENT ON EXISTING BARRIER.
6. REMOVE THRIE BEAM ANCHORAGE AS SHOWN.



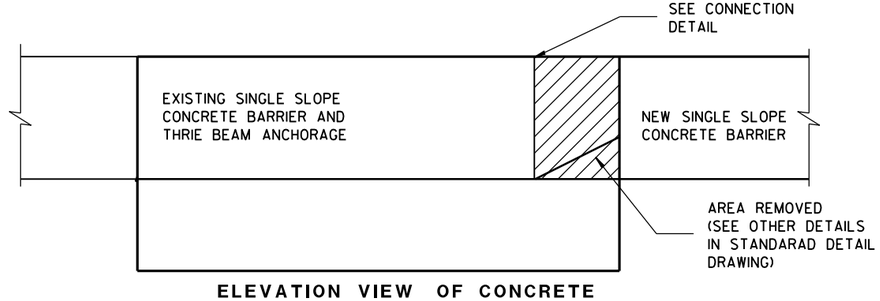
REMOVAL AREA OF CONCRETE THRIE BEAM
ANCHORAGE WITH HEIGHT GREATER THAN 32"



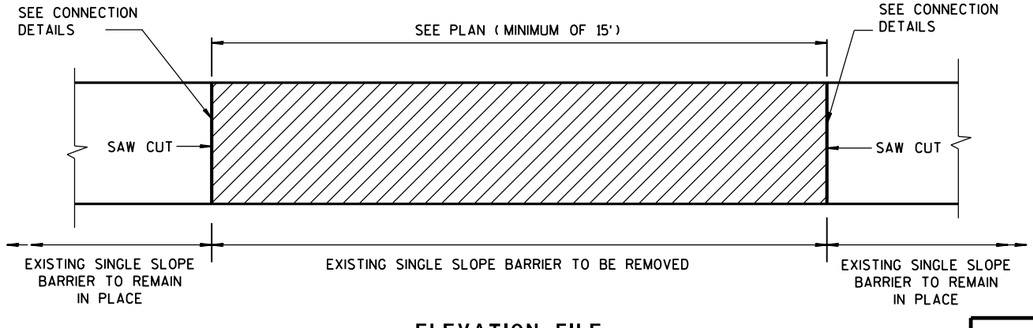
CONNECTION OF EXISTING SINGLE SLOPE CONCRETE BARRIER TO
NEW SINGLE SLOPE CONCRETE BARRIER



ELEVATION VIEW OF CONCRETE
BARRIER EXTENSION NEAR END ANCHORAGE



ELEVATION VIEW OF CONCRETE
BARRIER EXTENSION NEAR THRIE BEAM TERMINAL



ELEVATION FILE
BARRIER REMOVAL AND REPLACEMENT

CONCRETE BARRIER
SINGLE SLOPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

RETROFIT OR REPAIR SINGLE SLOPE CONCRETE BARRIER

6

S.D.D. 14 B 32-3e

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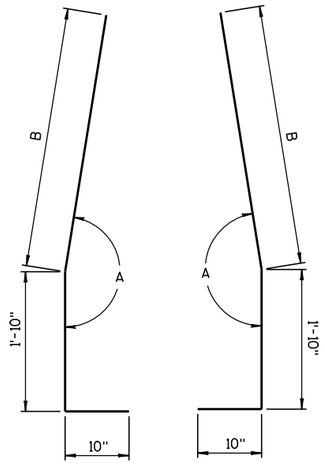
S.D.D. 14 B 32-3e

BAR CHART
SECTIONS V1 - V11

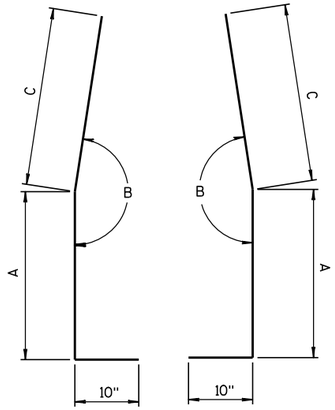
BAR	A	B
V1	170°-50'	3'-4½"
V2	171°-20'	3'-4½"
V3	171°-30'	3'-2½"
V4	171°-25'	3'-1½"
V5	171°-15'	3'-0"
V6	171°-15'	2'-11"
V7	171°-20'	2'-10½"
V8	171°-10'	2'-9½"
V9	171°-10'	2'-9"
V10	171°-05'	2'-8½"
V11	171°-10'	2'-8"



BAR BENDING DETAIL
FOR BARS V1 - V11

BAR CHART
SECTIONS V12 - V13

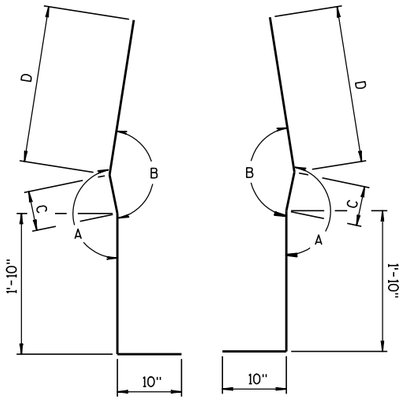
BAR	A	B	C
V12	2'-2"	171°-15'	2'-3½"
V13	2'-7"	171°-05'	1'-10"



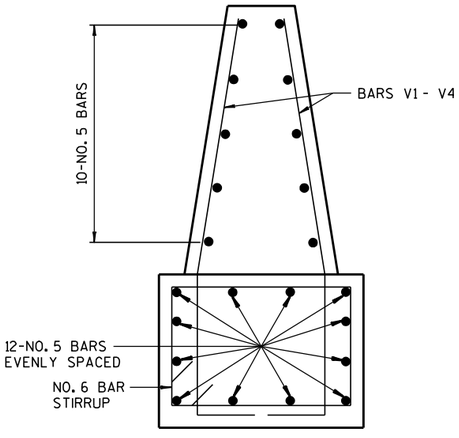
BAR BENDING DETAIL
FOR BARS V12 - V13

BAR CHART
SECTIONS V14 - V16

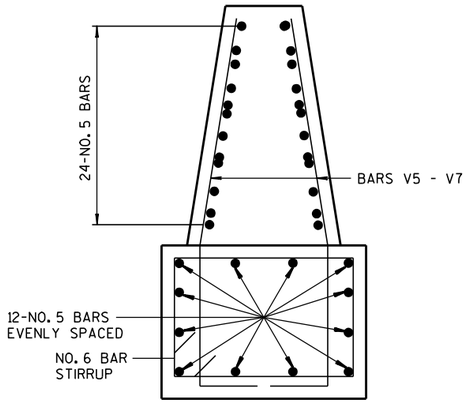
BAR	A	B	C	D
V14	168°-15'	159°-15'	6"	2'-0"
V15	169°-20'	161°-00'	8"	1'-10"
V16	168°-40'	160°-10'	10"	1'-8"



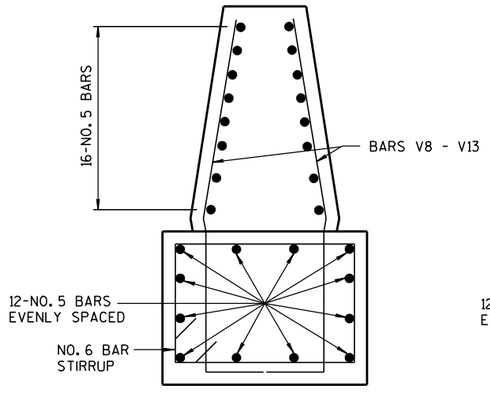
BAR BENDING DETAIL
FOR BARS V14 - V16



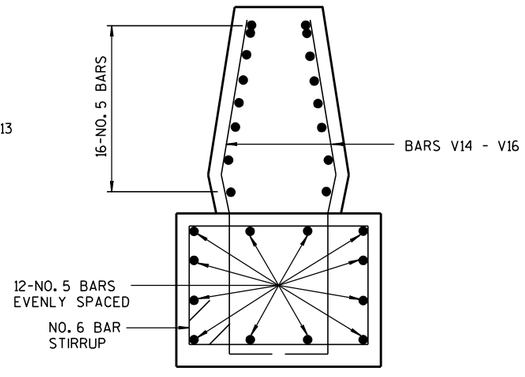
BAR DETAIL
SECTIONS V1 - V4



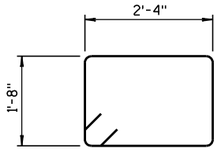
BAR DETAIL
SECTIONS V5 - V7



BAR DETAIL
SECTIONS V8 - V13



BAR DETAIL
SECTIONS V14 - V16



STIRRUP BAR
BENDING DETAIL

CONCRETE BARRIER
SINGLE SLOPE 42"
THRIE BEAM ANCHOR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6-3-2010
DATE

/S/ Jerry H. Z---
ROADWAY STANDARDS ENGINEER

FHWA

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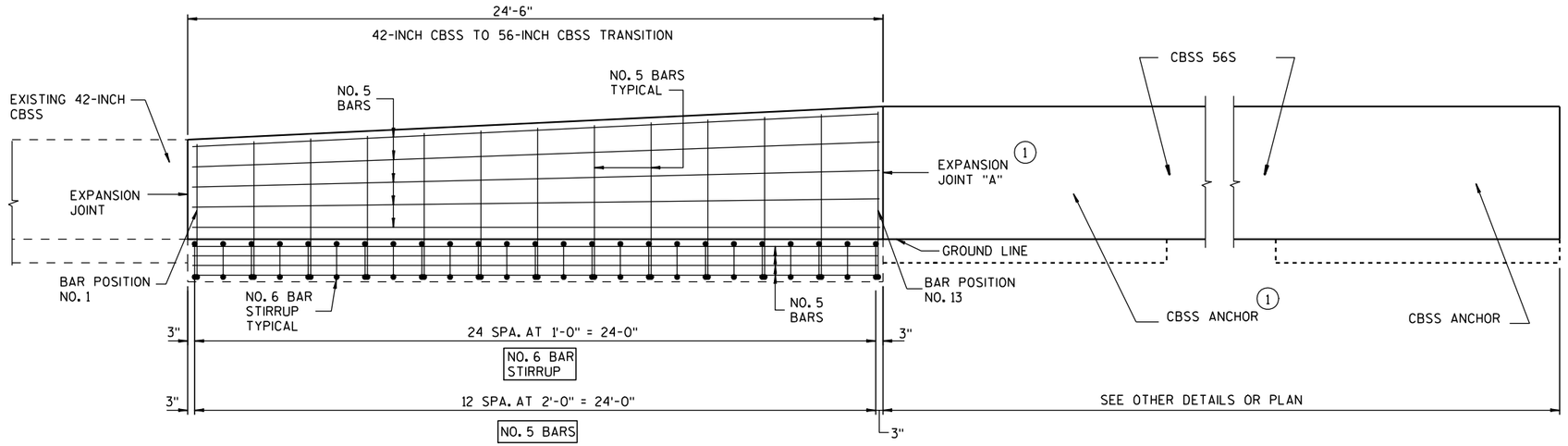
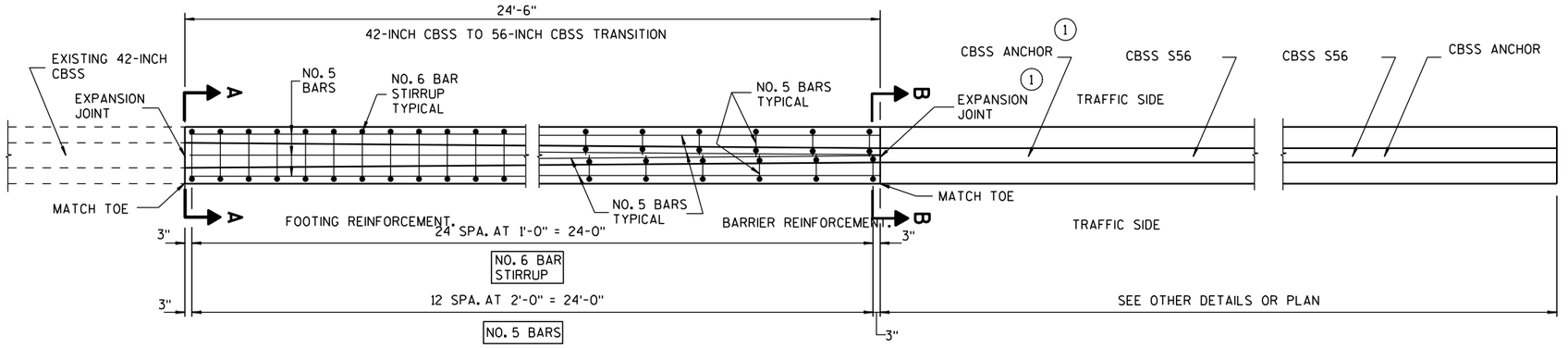
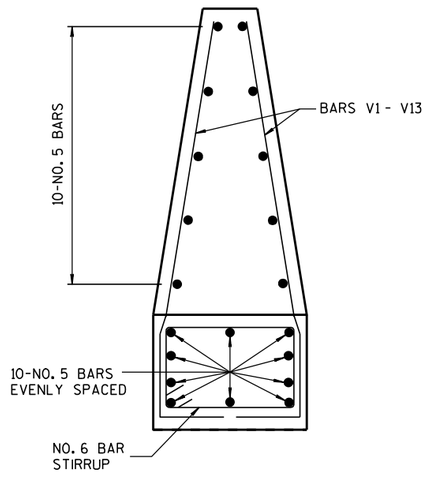
S.D.D. 14 B 33-1h



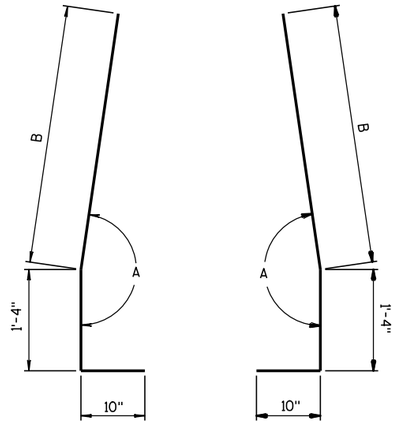
ELEVATION VIEW



PLAN VIEW



BAR DETAIL
BAR POSITION NO. 1 - NO. 13



BAR BENDING DETAIL
FOR BARS V1 - V13

BAR CHART SECTIONS V1 - V13

BAR	A	B
V1	170°-50'	3'-4½"
V2	170°-50'	3'-6"
V3	170°-55'	3'-7"
V4	171°	3'-8"
V5	170°-55'	3'-9½"
V6	170°-50'	3'-10½"
V7	170°-50'	3'-11½"

BAR	A	B
V8	170°-55'	4'-0½"
V9	170°-50'	4'-2"
V10	170°-50'	4'-3"
V11	170°-50'	4'-4½"
V12	170°-55'	4'-5½"
V13	170°-50'	4'-6½"

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2'LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.

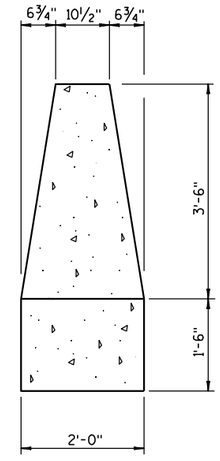
4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS 501.

USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.

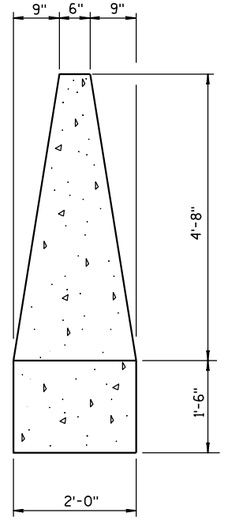
THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

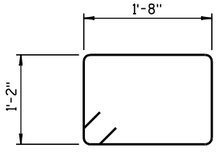
(1) EXPANSION JOINT "A" MAY BE REPLACED WITH A COLD-JOINT PROVIDED THAT 3 FEET OF LAP OF LONGITUDINAL STEEL IS PROVIDED. IF COLD-JOINT IS USED ANCHOR NOT REQUIRED.



SECTION A-A



SECTION B-B



STIRRUP BAR
BENDING DETAIL

42-INCH SINGLE SLOPE CONCRETE BARRIER TO 56-INCH SINGLE SLOPE CONCRETE BARRIER HEIGHT TRANSITION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6-3-2010 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
FHWA

6
S.D.D. 14 B 39-1e

GENERAL NOTES

(1) WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

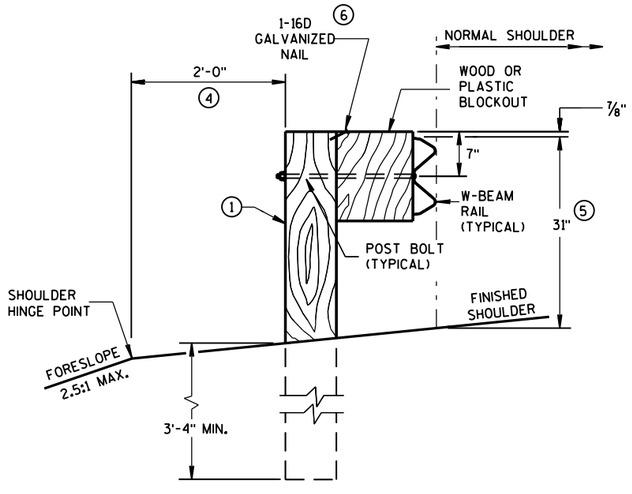
(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

(4) WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

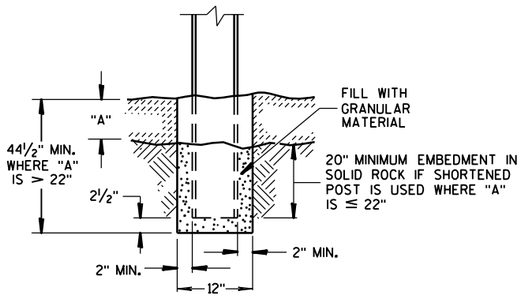
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

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



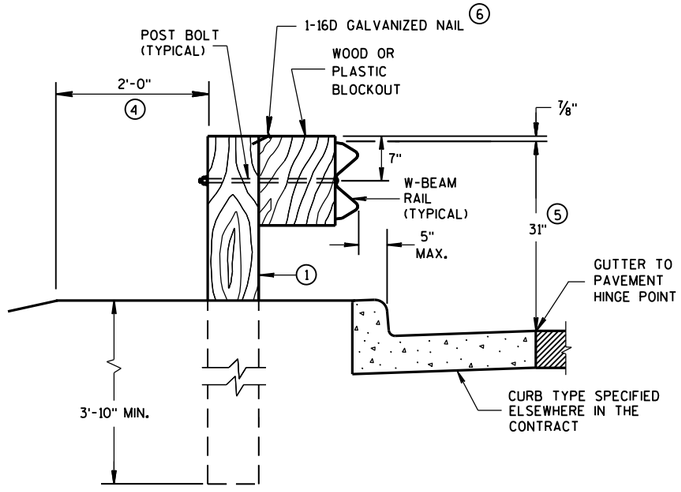
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



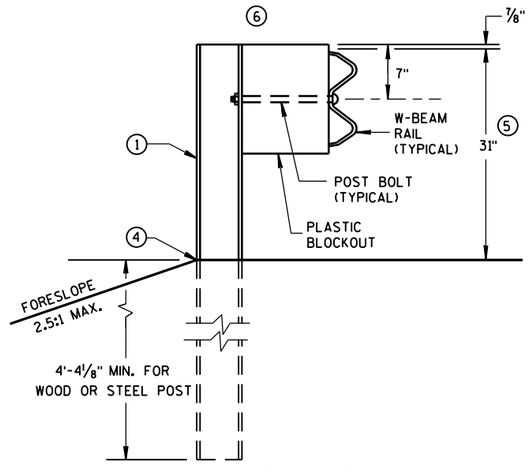
END VIEW

SETTING STEEL OR WOOD POST IN ROCK (3)



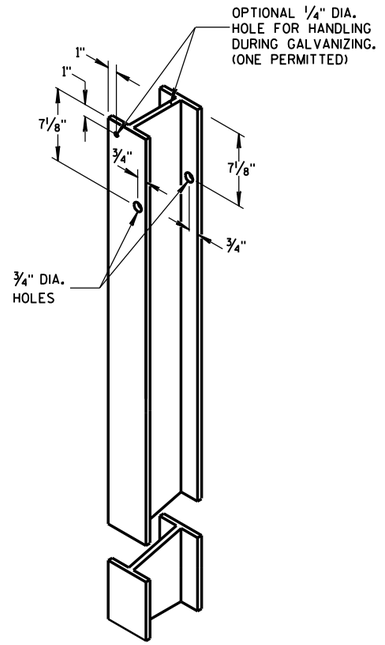
END VIEW

LOCATED ALONG A CURBED ROADWAY

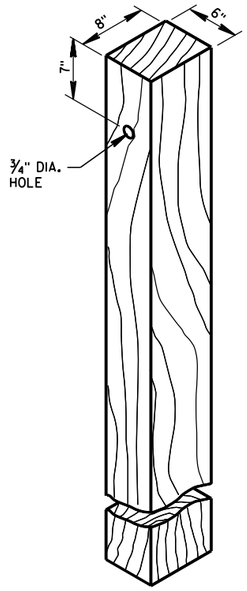


END VIEW

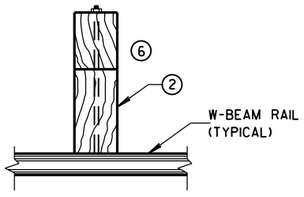
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



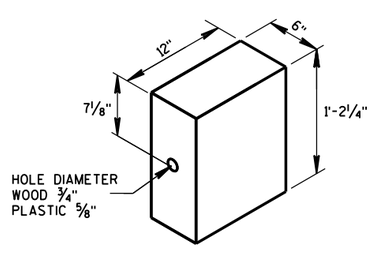
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



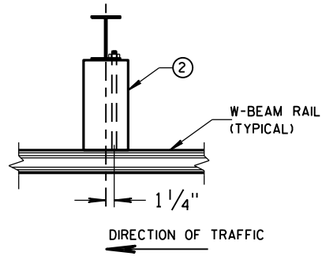
WOOD POST
(6" X 8") NOMINAL (1)



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT (2)



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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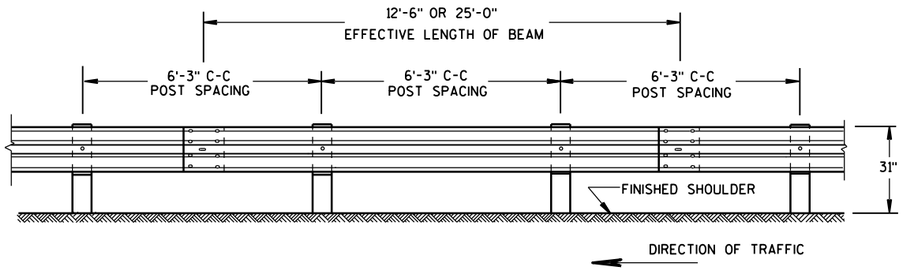
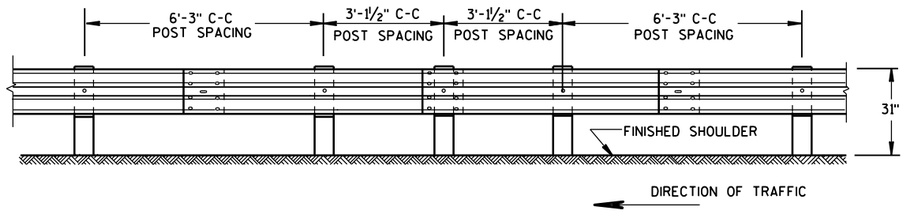
S.D.D. 14 B 42-3a



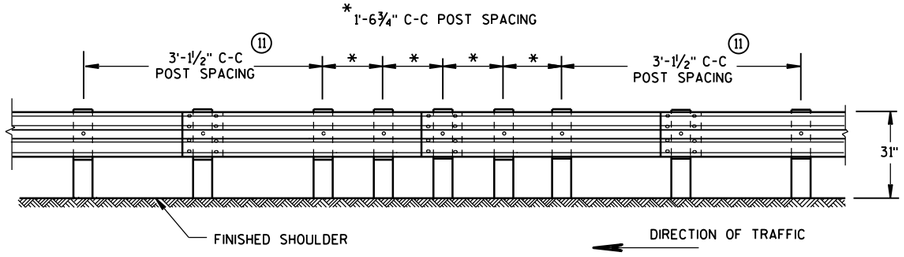
FRONT VIEW

POST SPACING STANDARD INSTALLATION



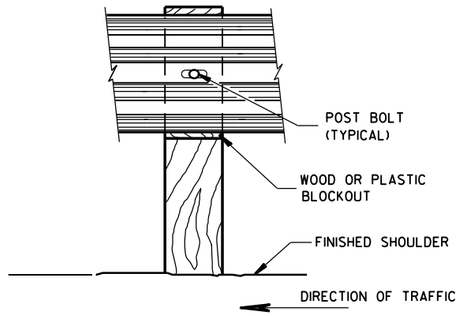
FRONT VIEW

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

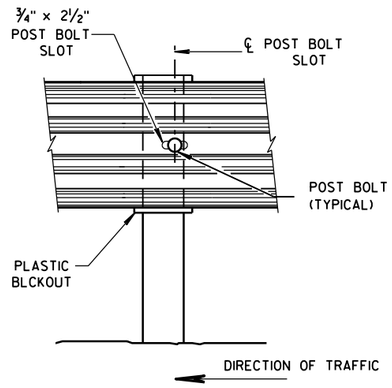


FRONT VIEW

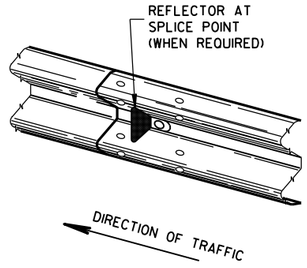
QUARTER POST SPACING (QS)

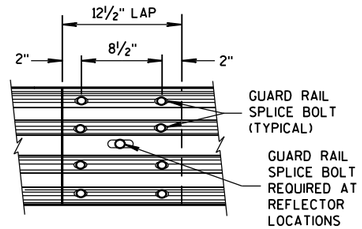


FRONT VIEW AT WOOD POST



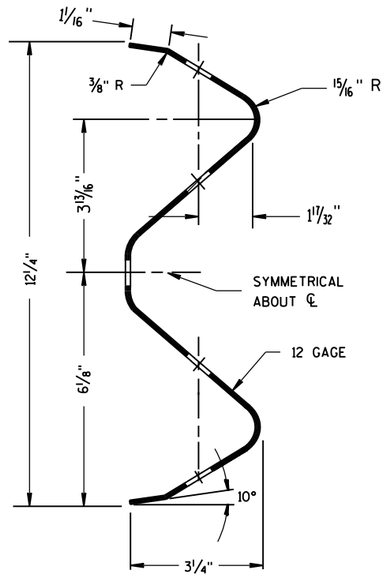
FRONT VIEW AT STEEL POST



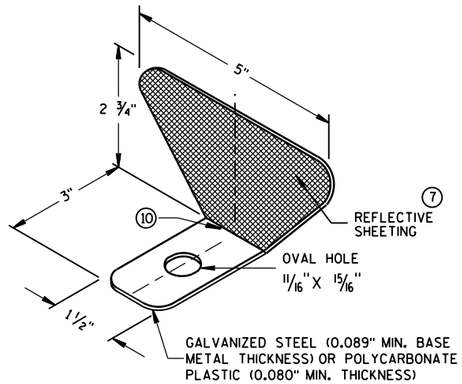


FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ⑦

GENERAL NOTES

⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

⑩ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING ⑧

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

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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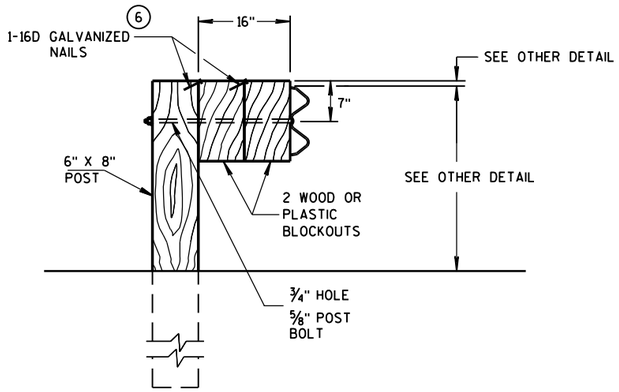
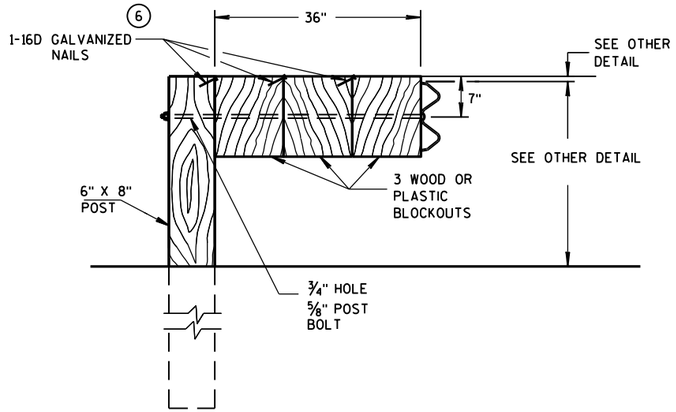
S.D.D. 14 B 42-3b



DETAIL FOR 16" BLOCKOUT DEPTH

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

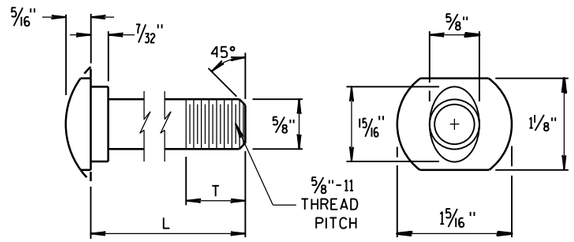


DETAIL FOR 36" BLOCKOUT DEPTH

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

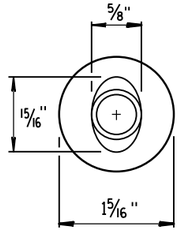
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

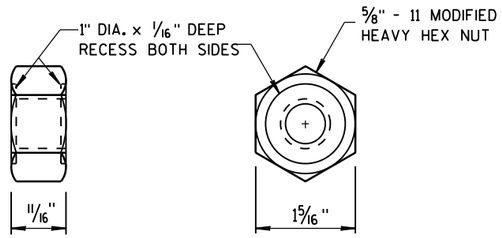


POST BOLT TABLE

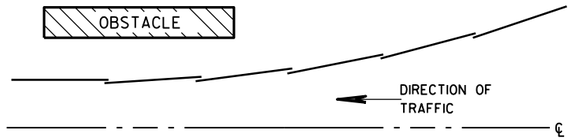
L	T (MIN.)
1¼"	1⅛"
2"	1¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

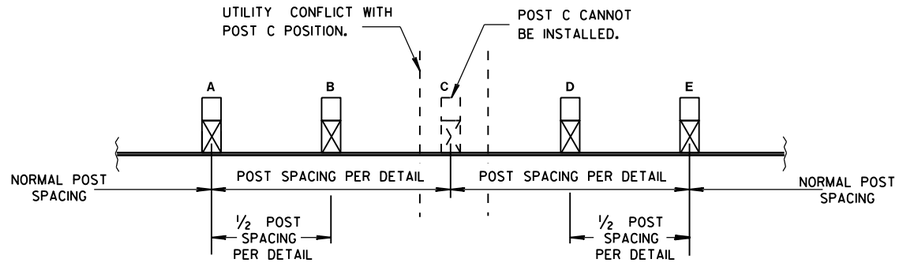


POST BOLT AND RECESS NUT

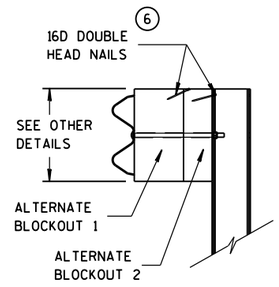


PLAN VIEW

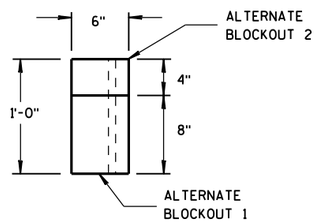
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 14 B 42-3c

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

(D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

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

(G) ½" DIAMETER X 3" LONG LAG BOLT AND WASHER.

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

(I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

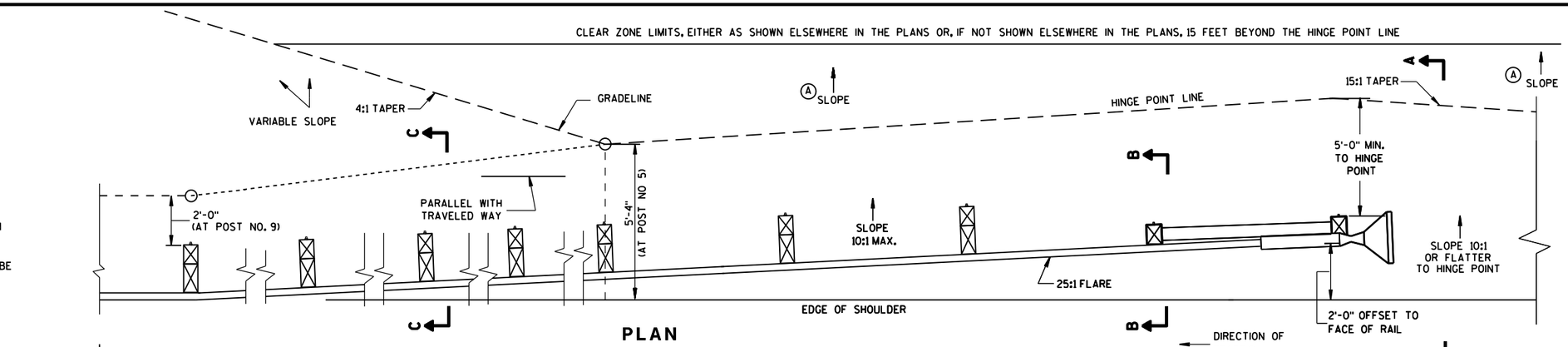
SEE SDD 14B42 FOR MORE INFORMATION.

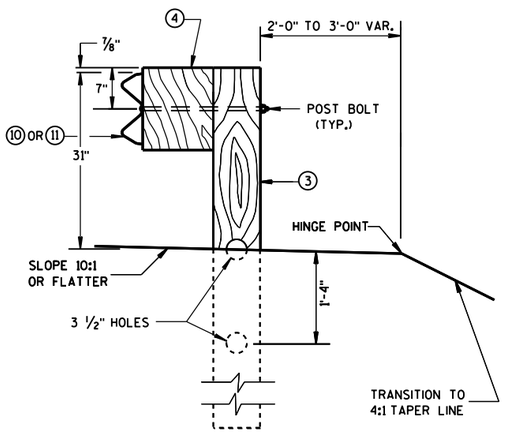
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

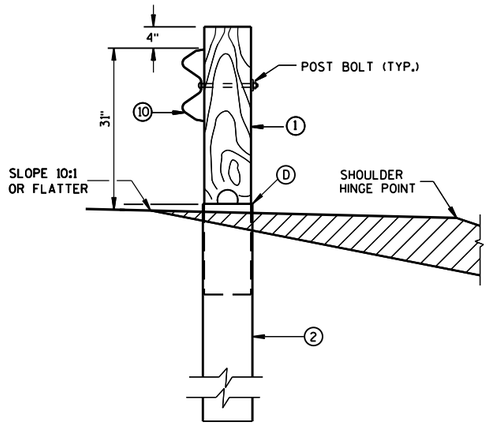
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3½" 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.

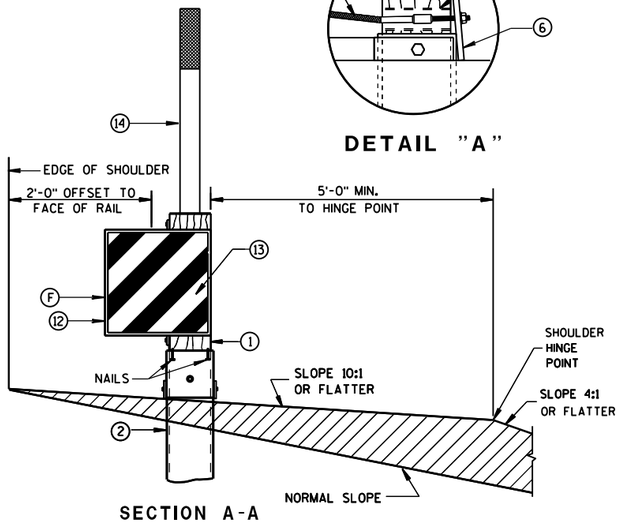




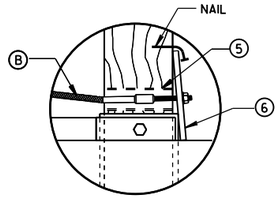
SECTION C-C
TYPICAL AT POST NOS. 3-9



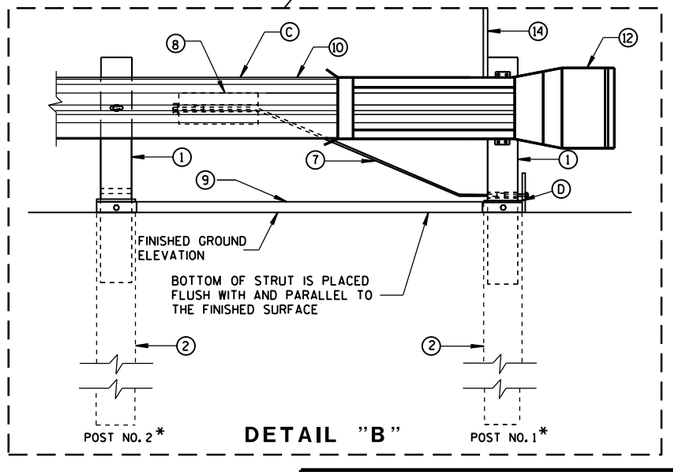
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"

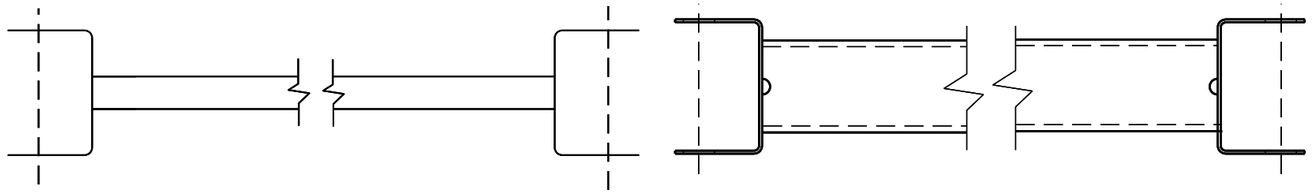


DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

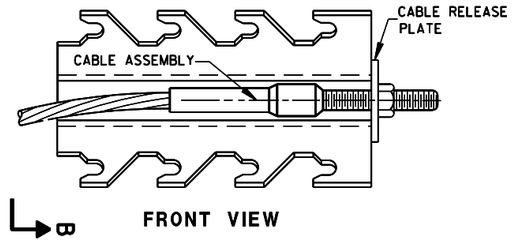
S.D.D. 14 B 44-2a



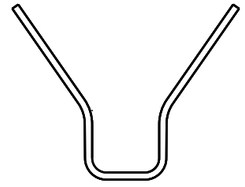
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

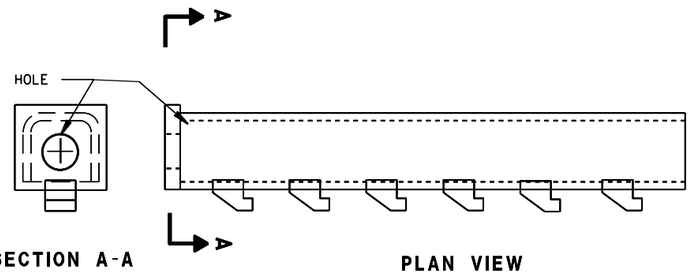
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR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



FRONT VIEW



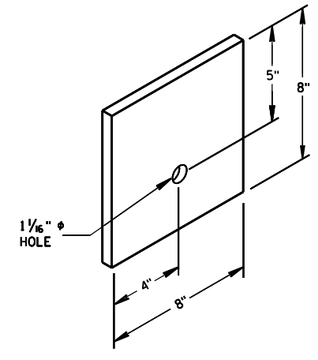
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



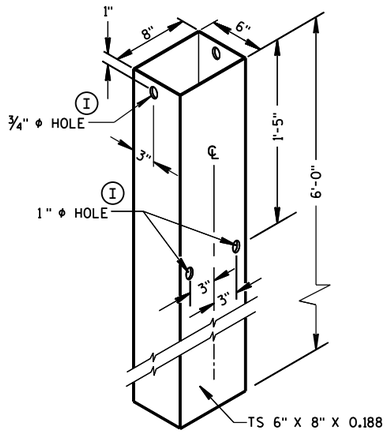
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

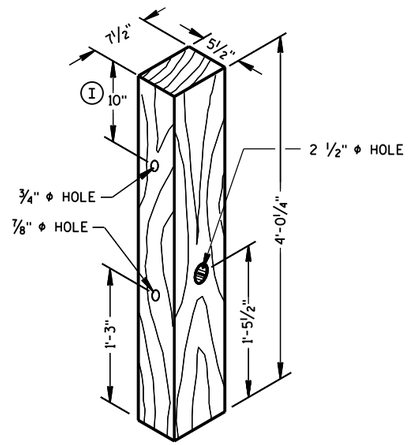
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 44-2b

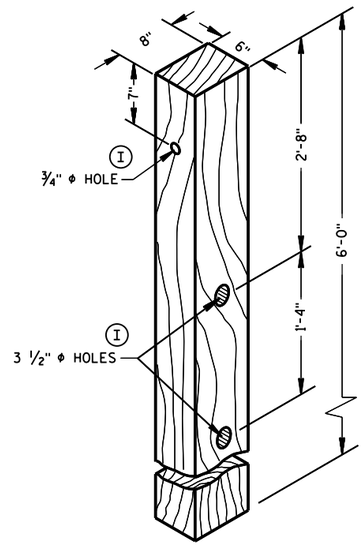


FOUNDATION TUBE (2)



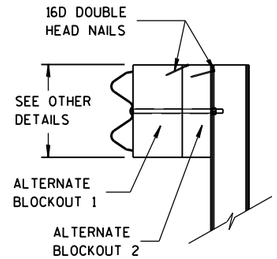
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

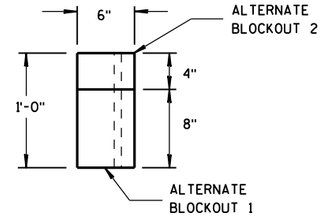


POSTS NUMBER 3-9

WOOD CRT POST (3)

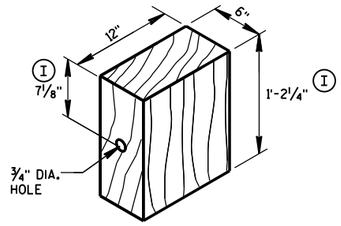


SIDE VIEW



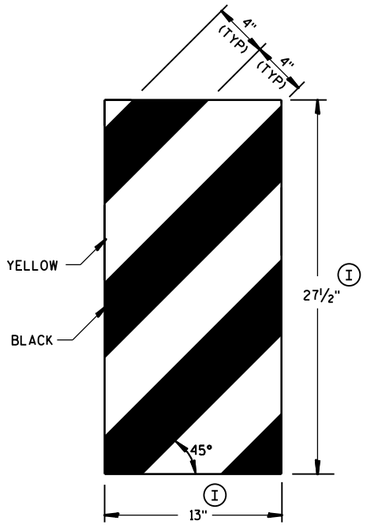
TOP VIEW

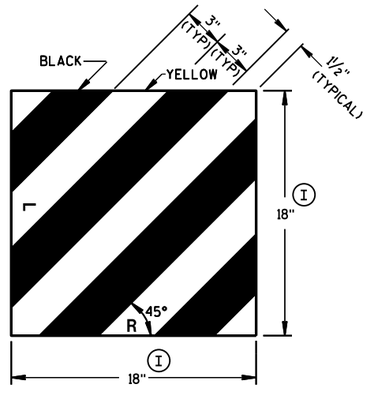
ALTERNATE WOOD BLOCKOUT DETAIL



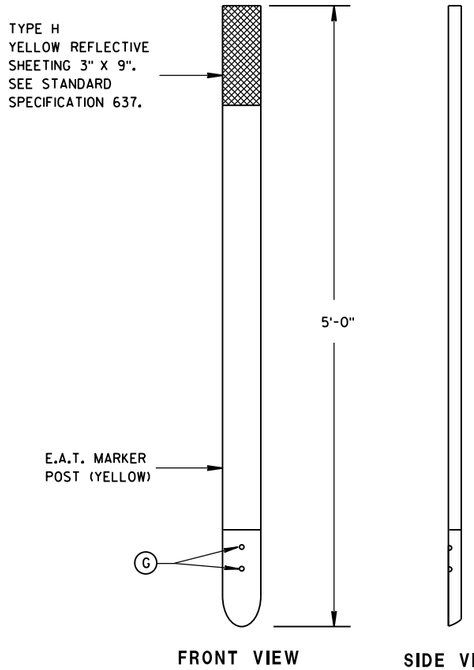
WOOD BLOCKOUT (4)

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





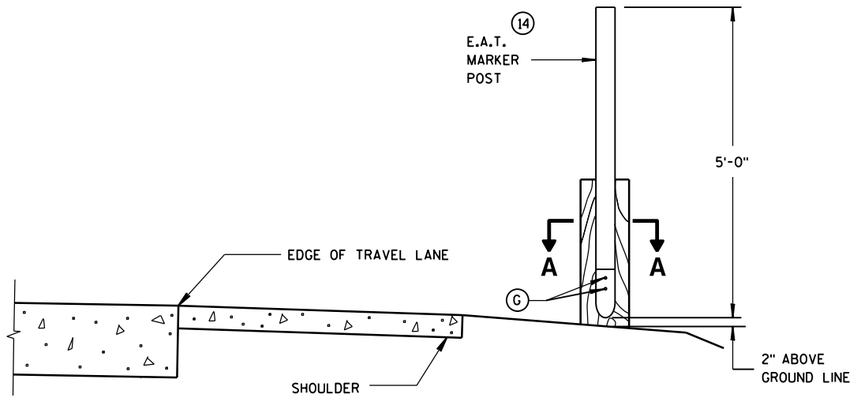
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

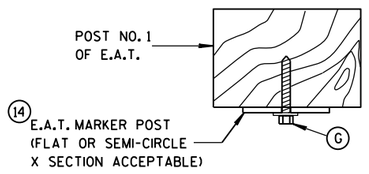
SIDE VIEW

E.A.T. MARKER POST (14)



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1

(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

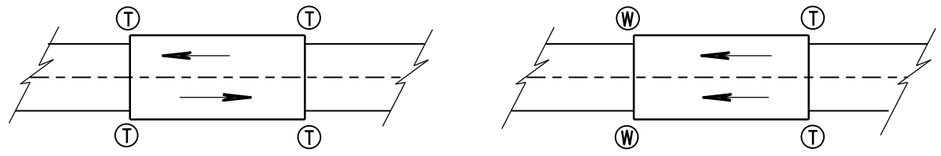
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 14 B 44-2c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

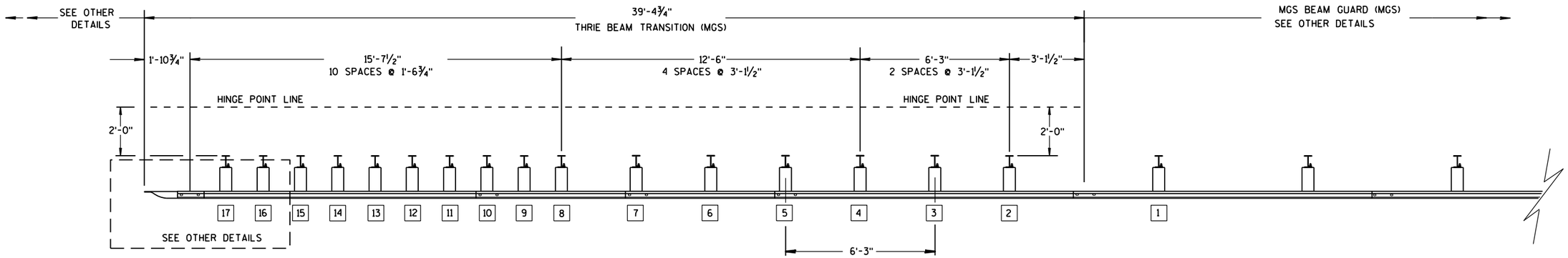
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

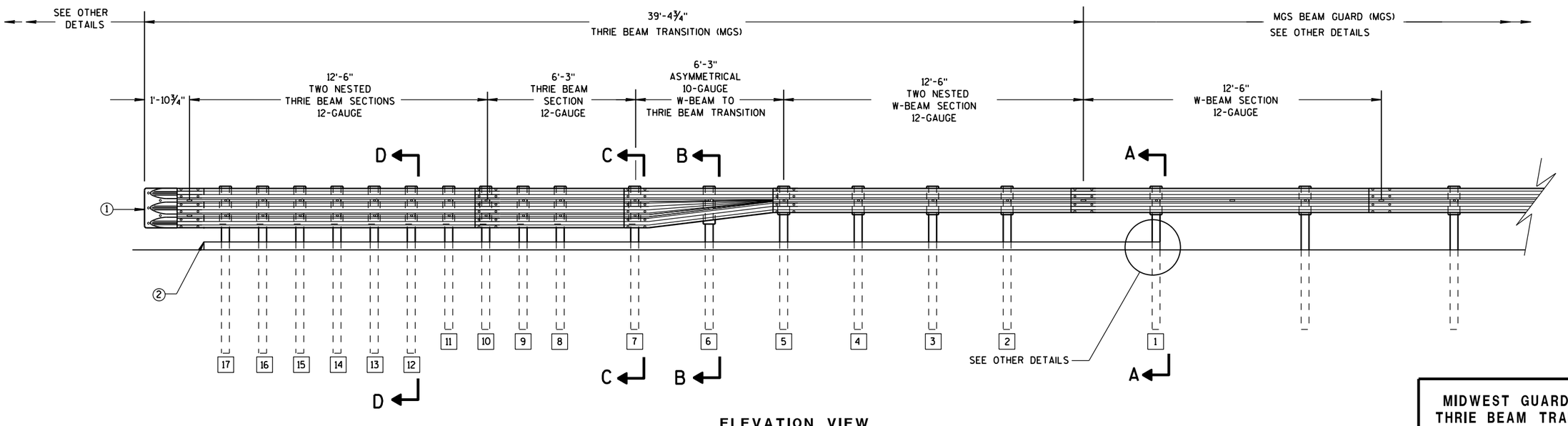
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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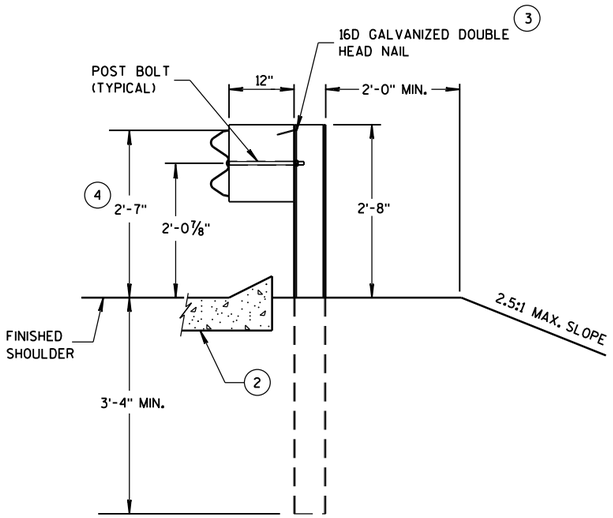
S.D.D. 14 B 45-4a

GENERAL NOTES

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE_FEATURE SEE PLAN FOR INFORMATION.

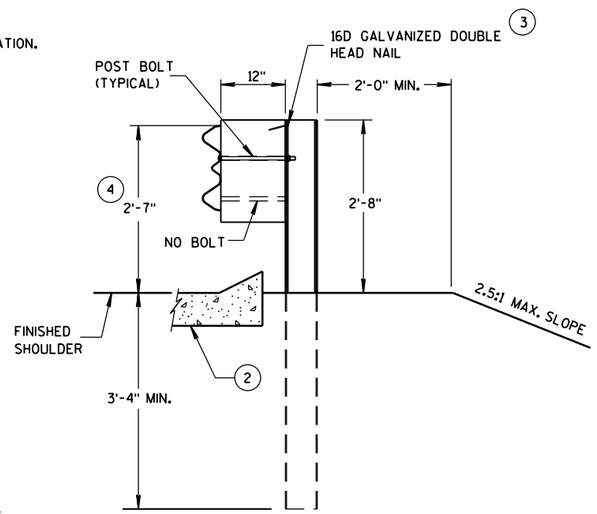
(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



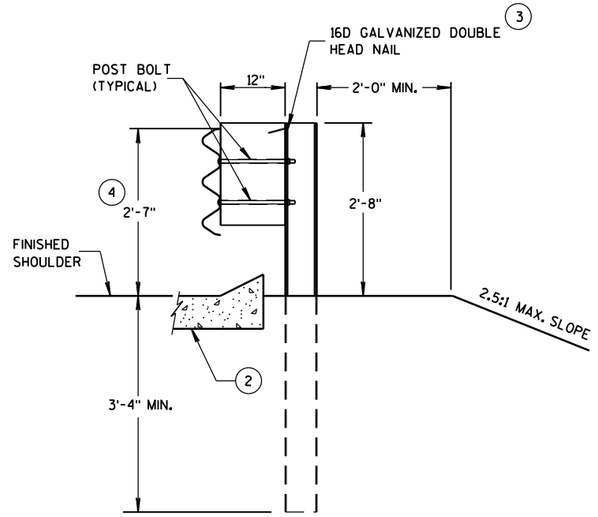
SECTION A-A

POSTS 1-5



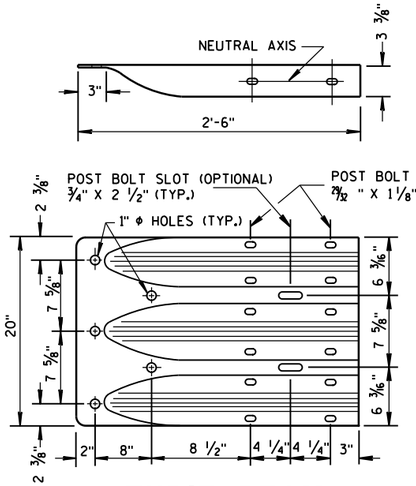
SECTION B-B

POST 6



SECTION C-C

POSTS 7-11



THRIE BEAM TERMINAL CONNECTOR

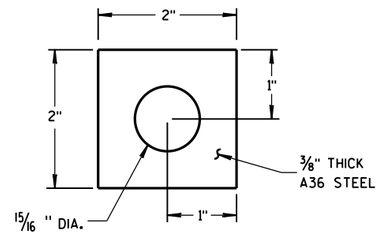
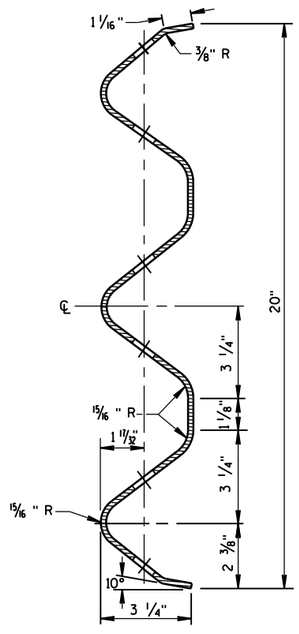
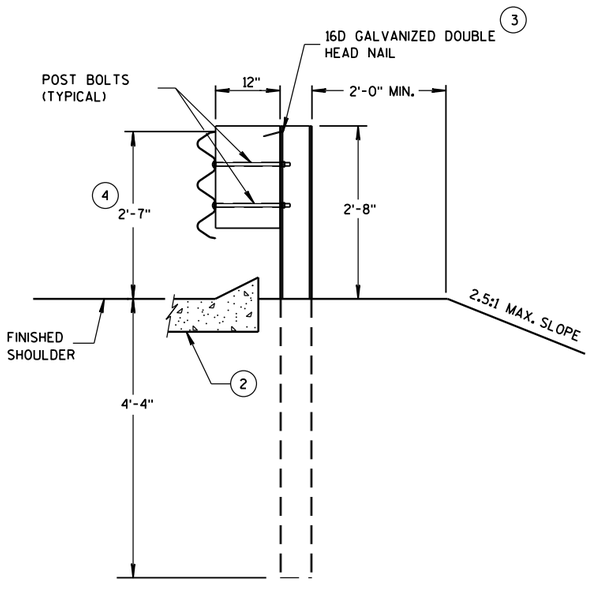


PLATE WASHER DETAIL

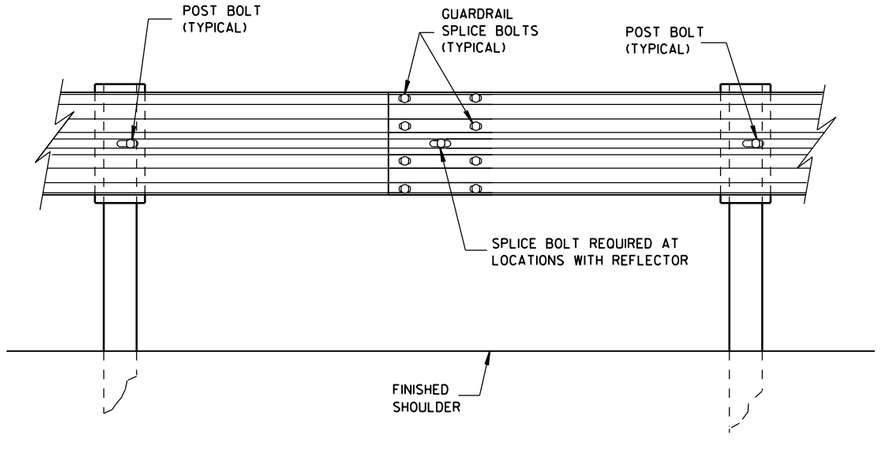


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-17



SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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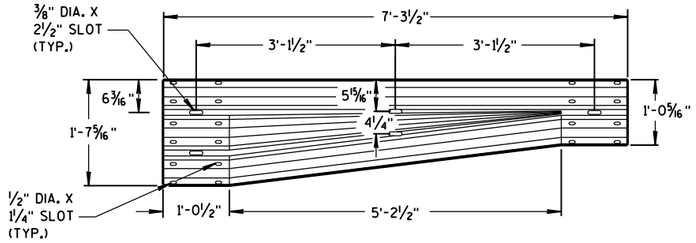
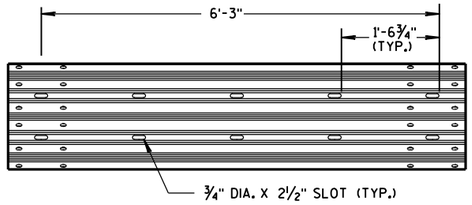
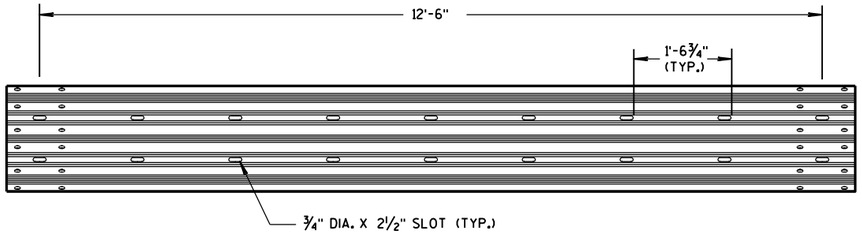
S.D.D. 14 B 45-4b



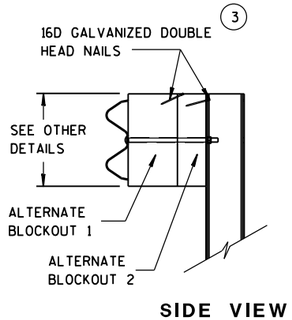
W-BEAM TO THRIE BEAM TRANSITION SECTION



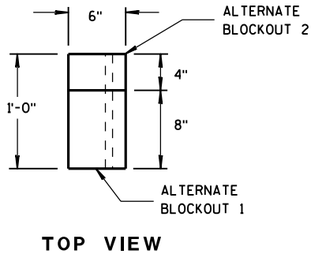
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

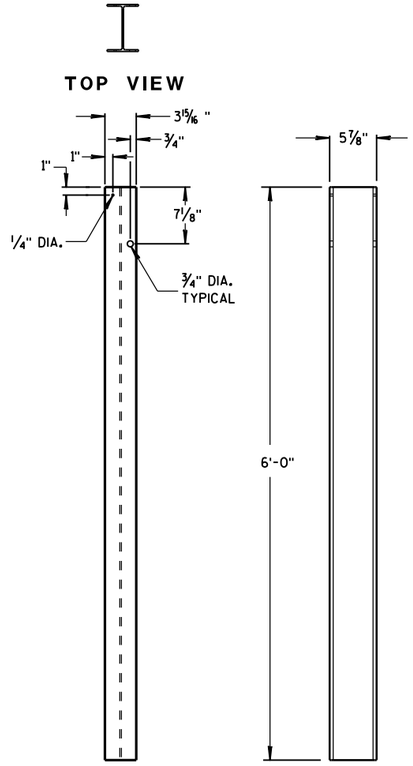


SIDE VIEW

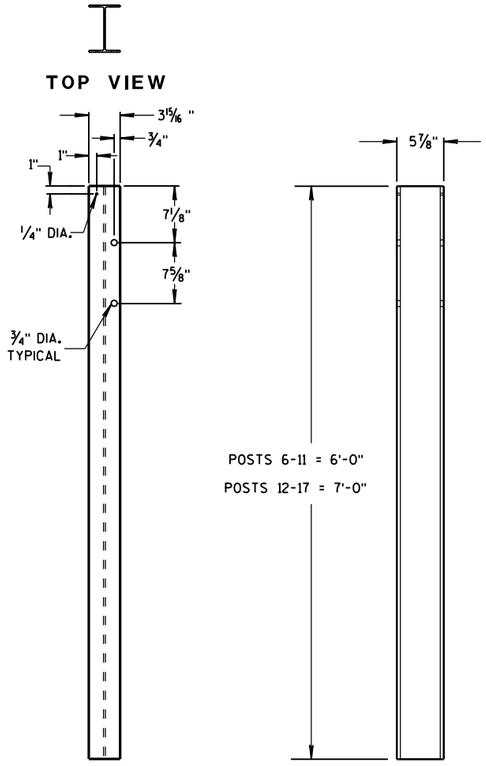


TOP VIEW

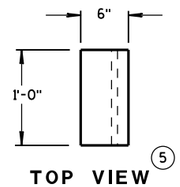
ALTERNATE WOOD BLOCKOUT DETAIL



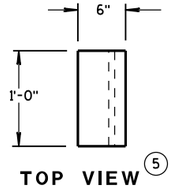
STEEL POSTS 1-5



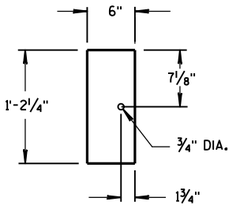
STEEL POSTS 6-17



TOP VIEW (5)

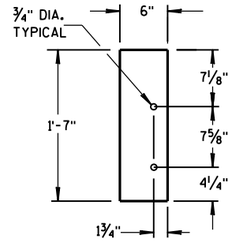


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

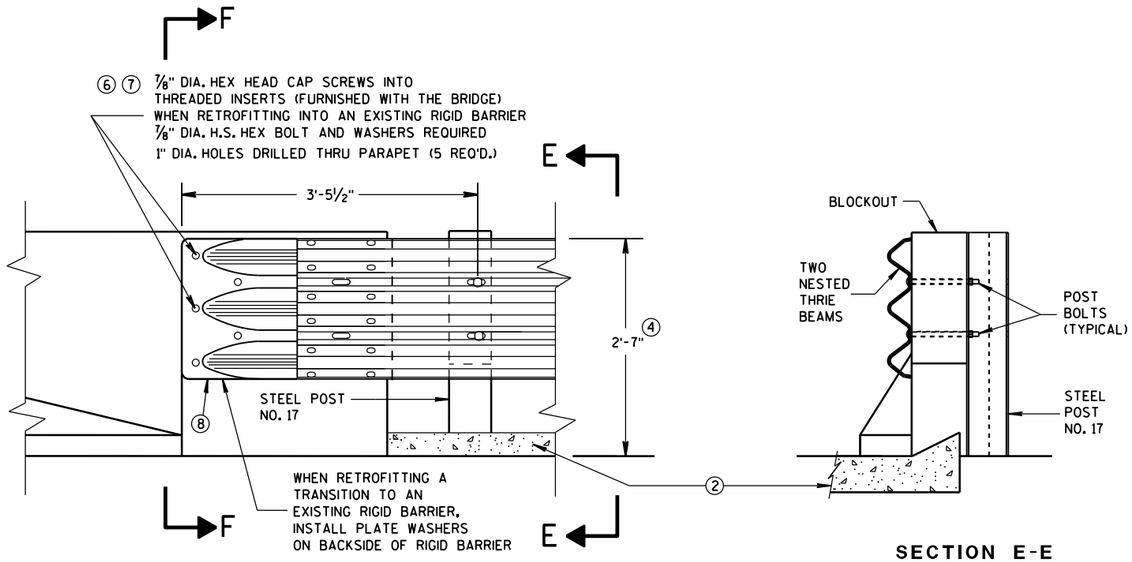
(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 45-4c



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

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

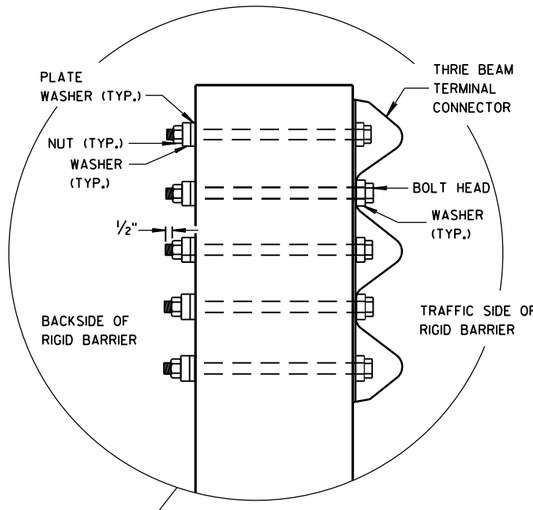
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

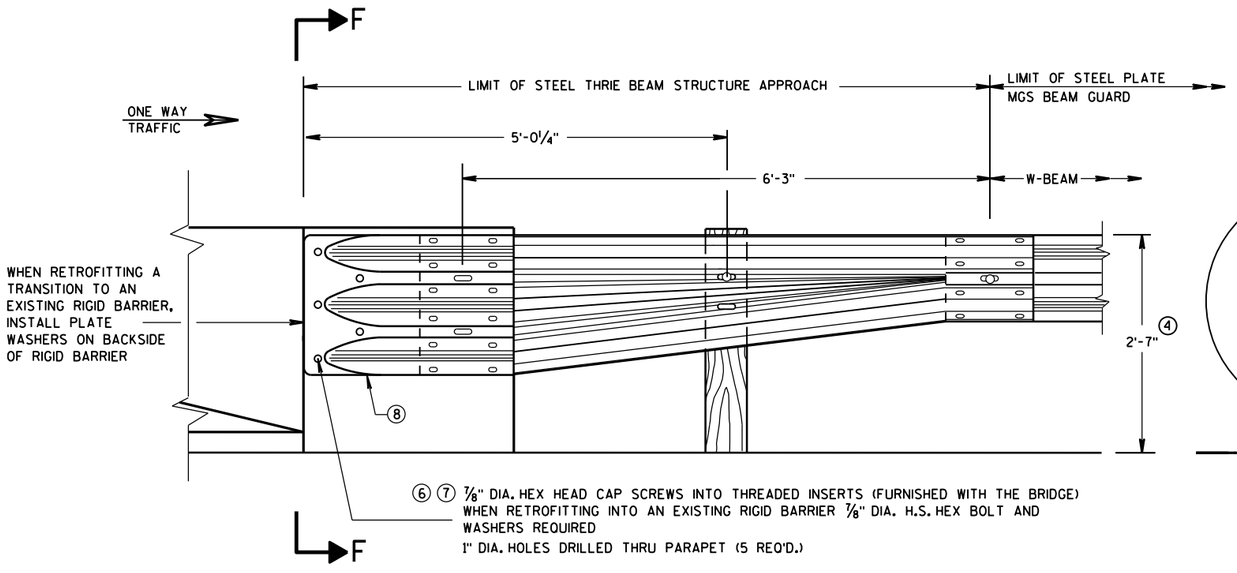
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

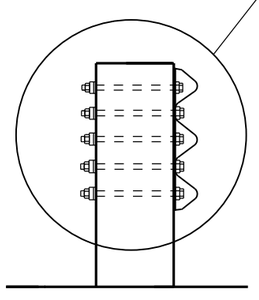
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

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

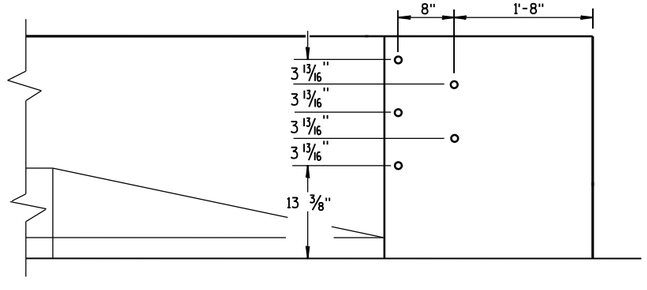




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(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 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 14 B 45-4d

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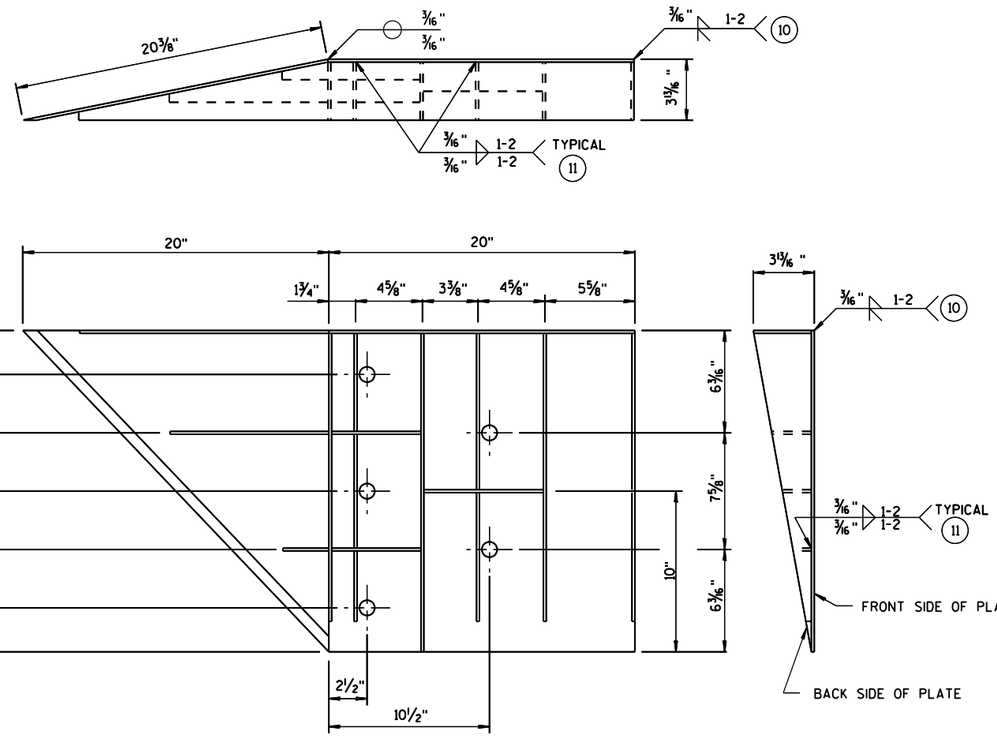
S.D.D. 14 B 45-4d



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

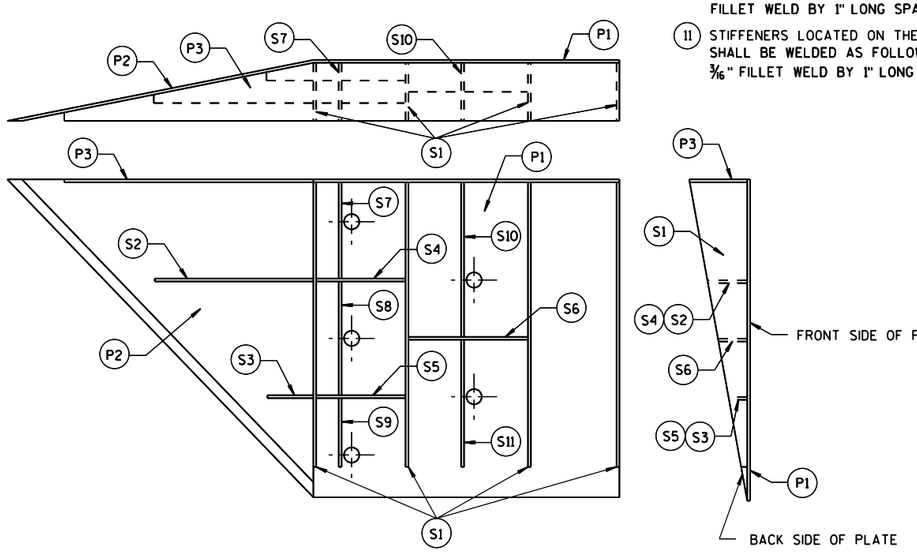


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

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

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

(11) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

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 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 3/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" 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 1/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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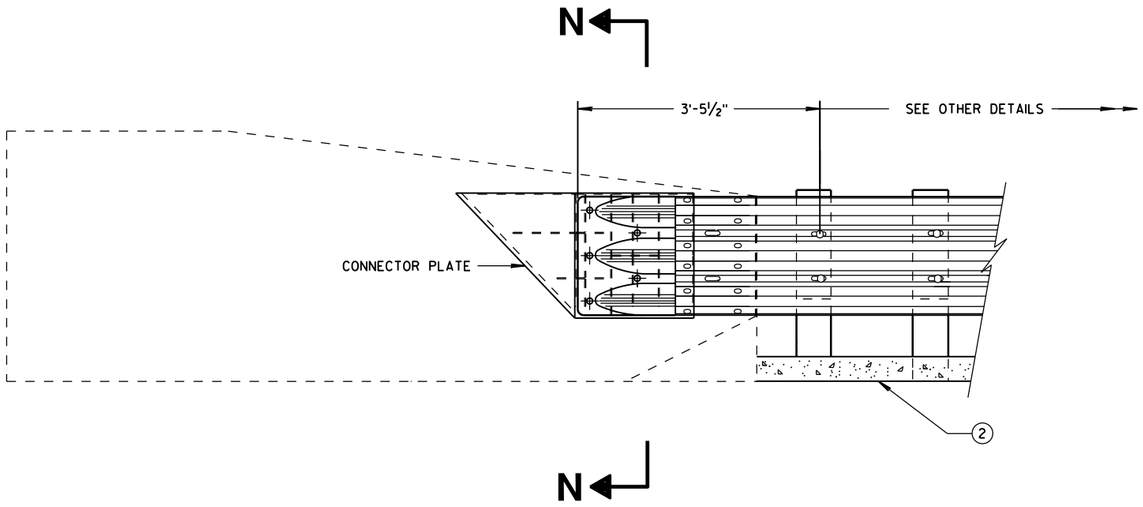
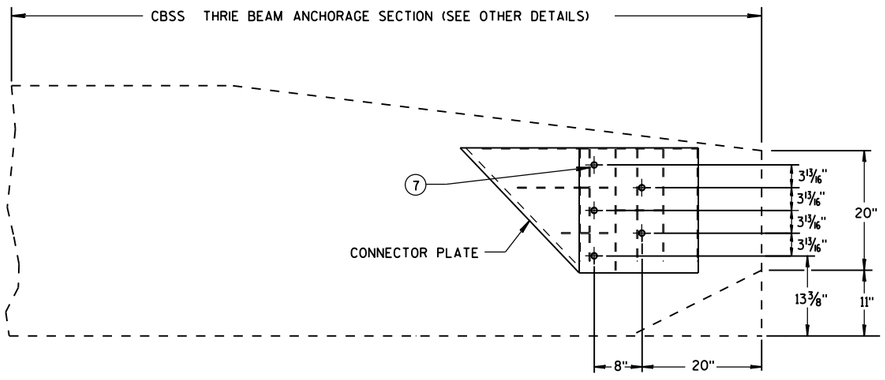


THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



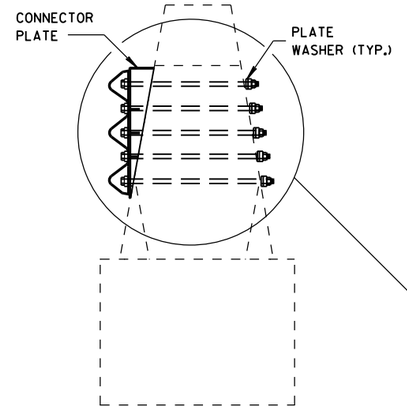
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

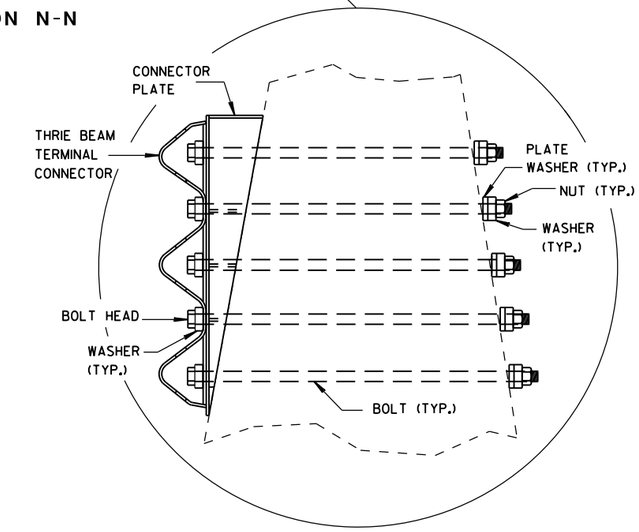
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

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



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Jerry H. Zoga — ROADWAY STANDARDS DEVELOPMENT ENGINEER
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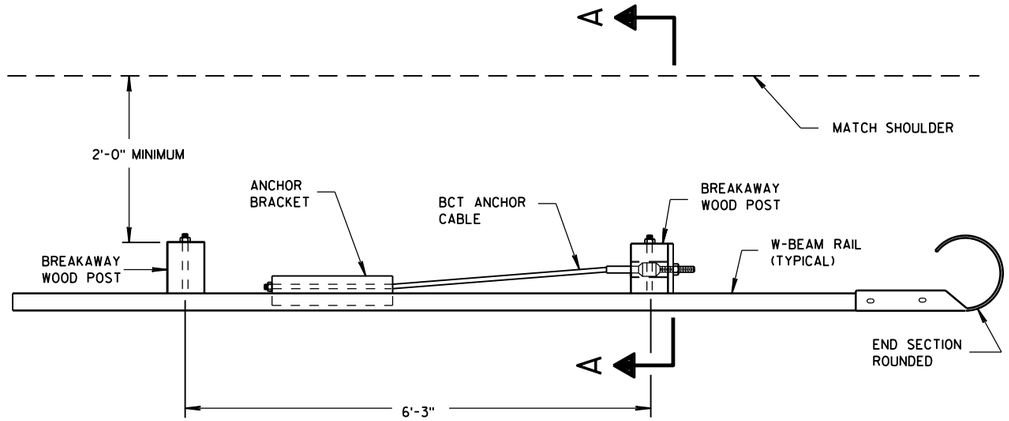
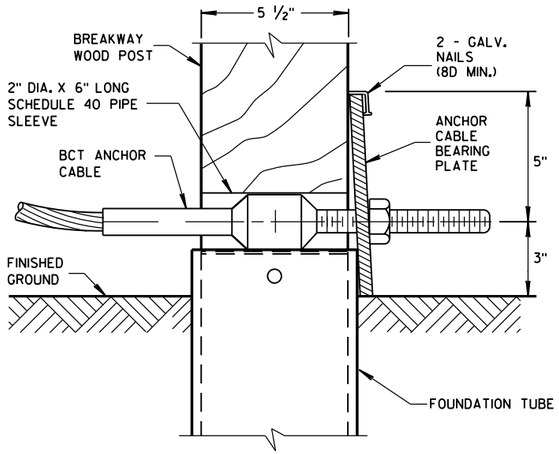


PLAN VIEW



DETAIL A

POST NO. 1
GROUNG STRUT NOT SHOWN FOR CLARITY.

GENERAL NOTES

SEE SDD 14 B 42 FOR MORE INFORMATION.

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

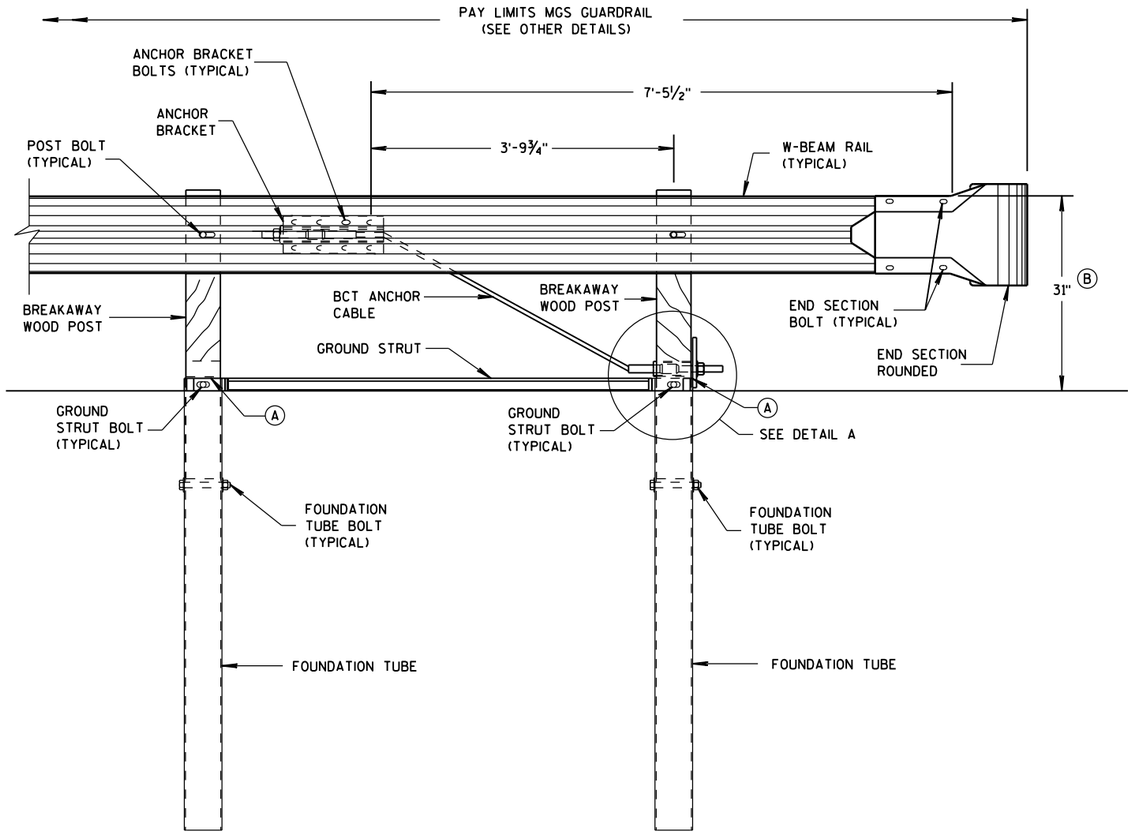
FOUNDATION TUBE BOLTS ARE ⅞" DIAMETER ASTM A307 HEX HEAD BOLT. FOUNDATION TUBE BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 ⅞" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

ANCHOR BRACKET AND GROUND STRUT BOLTS ARE A ⅝" DIAMETER ASTM A307 HEX HEAD BOLT. ANCHOR BRACKET BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 ⅝" 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.

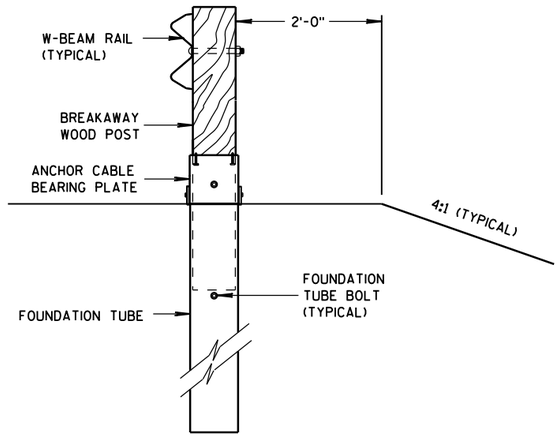
(A) TOP OF FOUNDATION TUBE SHALL BE NO MORE THAN 3" ABOVE FINISHED GROUND.

(B) FOR NEW CONSTRUCTION TOP OF RAIL IS 31" ± 1".
FOR EXISTING INSTALLATIONS TOP OF RAIL IS BETWEEN 27¾" TO 32" ± 1".

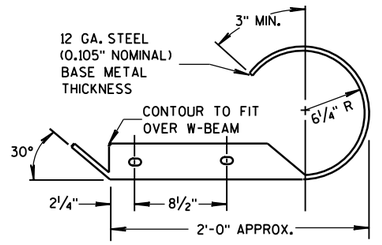


FRONT VIEW

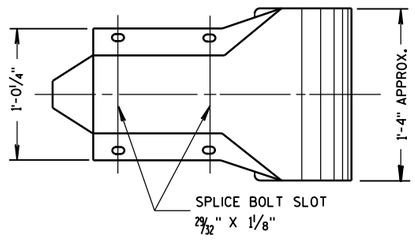
END RAIL DETAIL



SECTION A-A



PLAN VIEW



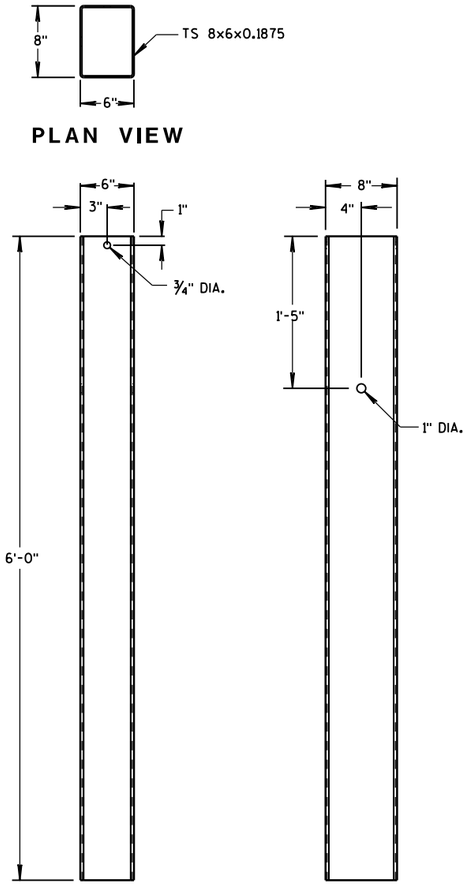
FRONT VIEW

W BEAM END SECTION ROUNDED

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

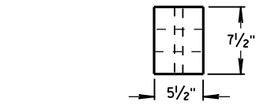
6
S.D.D. 14 B 47-2a



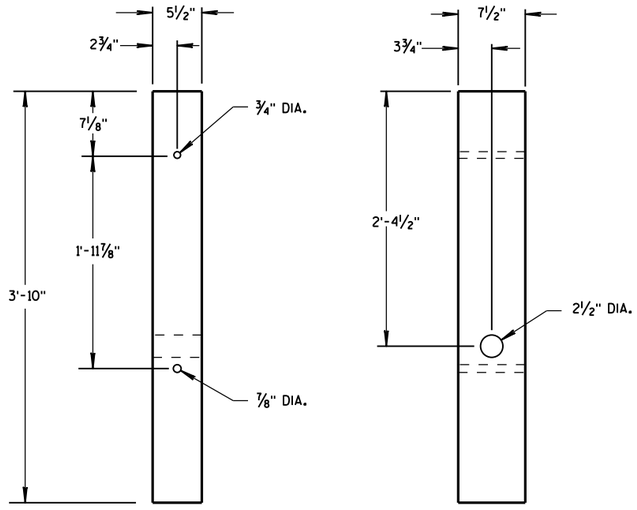
PLAN VIEW

FRONT VIEW SIDE VIEW

FOUNDATION TUBE



PLAN VIEW

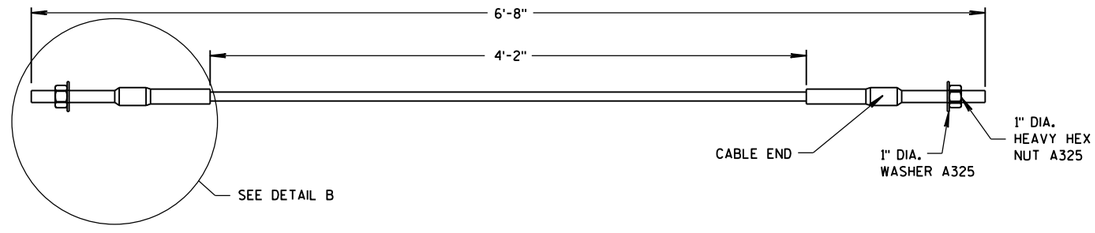


FRONT VIEW SIDE VIEW

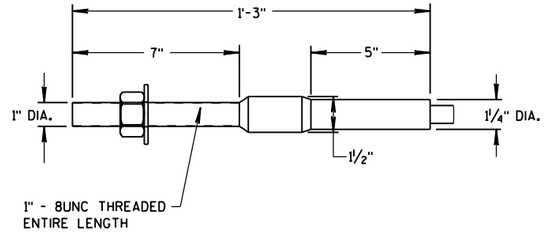
BREAKAWAY WOOD POST

GENERAL NOTES

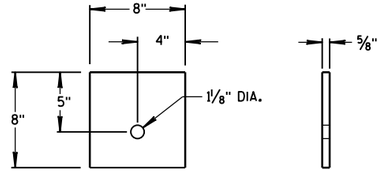
BCT ANCHOR CABLE IS A ¾" DIAMETER 6X19 IWRC IPS GALVANIZED WIRE ROPE. THE SWAGED FITTINGS AND STUD ARE REQUIRED. END FITTING SHALL BE MACHINED FROM HOT-ROLLED CARBON STEEL CONFORMING TO ASTM A576 GRADE 1035 AND GALVANIZED ACCORDING TO ASTM A123. TREADED STUD SHALL CONFORM TO ASTM A325 OR SAE GRADE 5. MINIMUM BREAKING STRENGTH OF WIRE ROPE IS 43,000 LB. WIRE ROPE IS TO BE TAUT.



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 TRANSPOI

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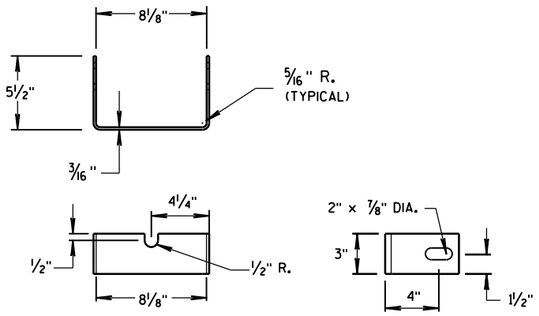
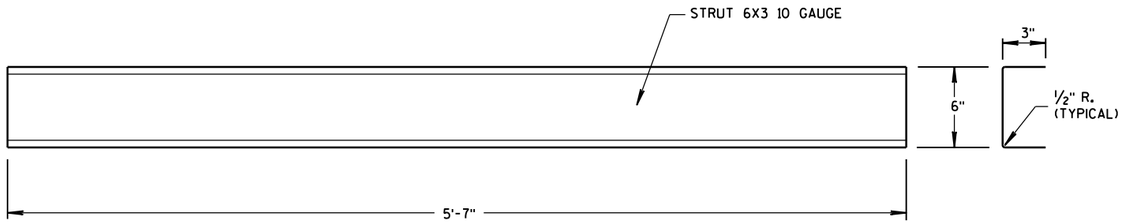
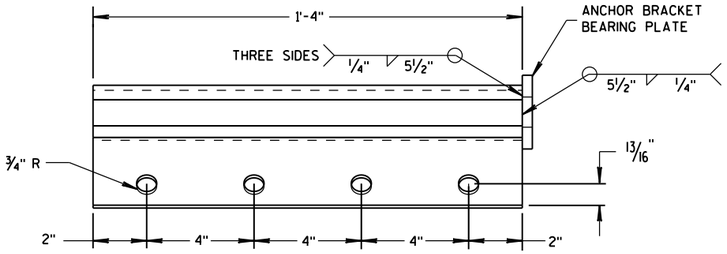
S.D.D. 14 B 47-2b

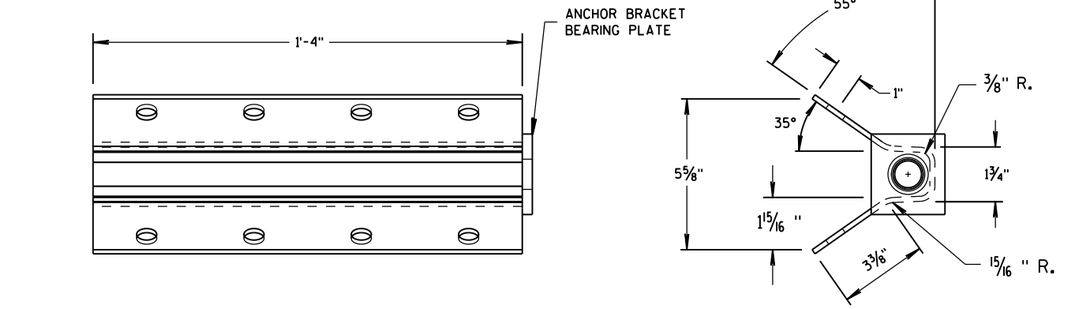


YOKE DETAIL

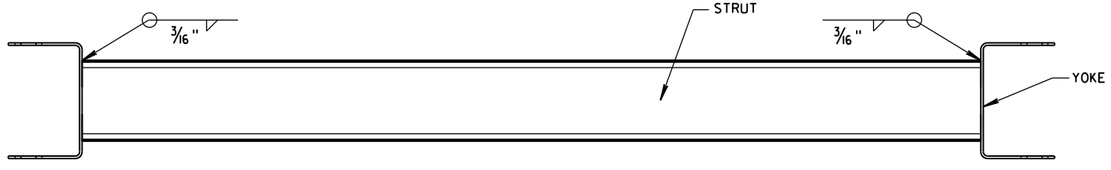


STRUT DETAIL

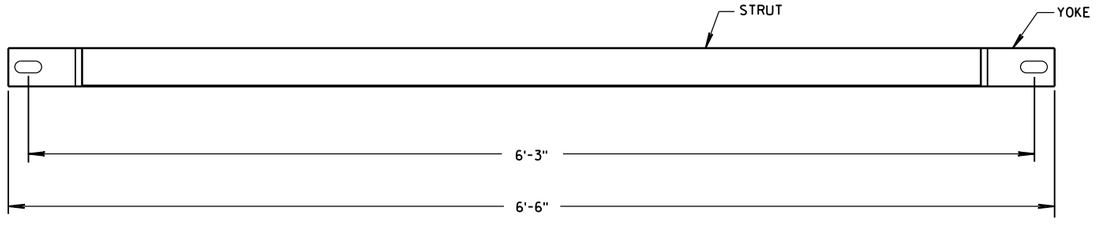




ANCHOR BRACKET

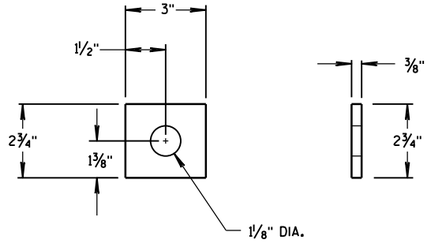


PLAN VIEW



FRONT VIEW

GROUND STRUT DETAIL



ANCHOR BRACKET BEARING PLATE

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

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

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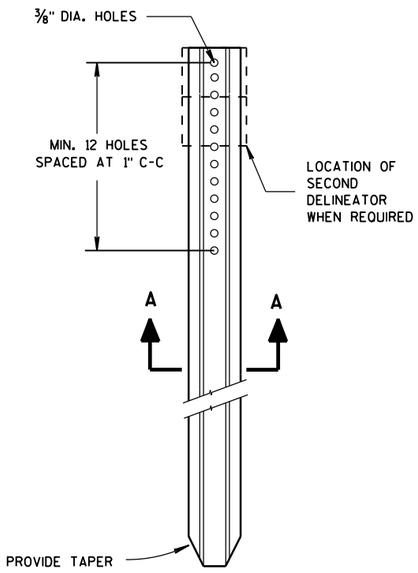
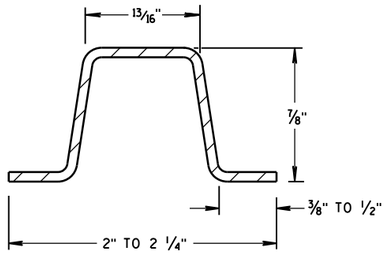
S.D.D. 14 B 47-2c

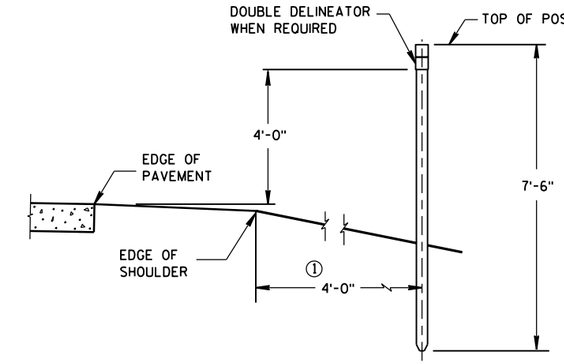


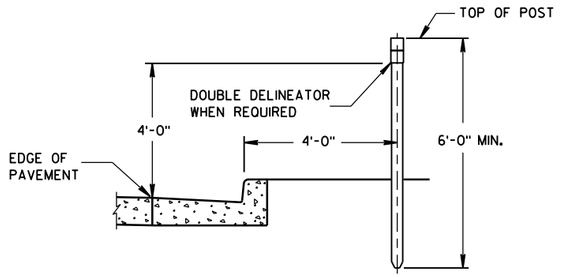
DELINEATOR POST



SECTION A-A

WEIGHT 1.12 LBS PER FT. ± 0.1 LB.



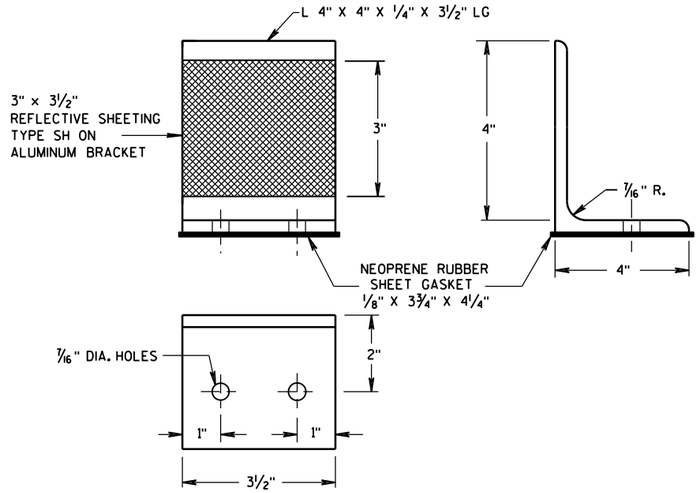


TYPICAL INSTALLATIONS OF DELINEATOR POSTS

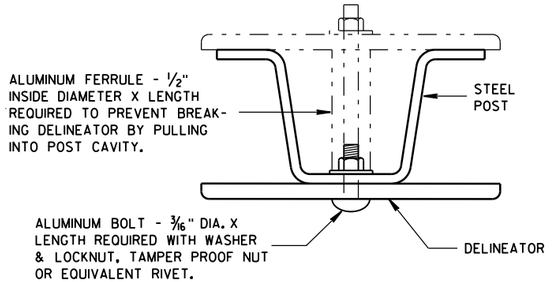
GENERAL NOTES

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

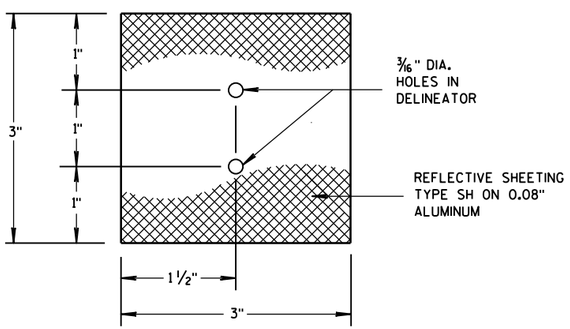
① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.



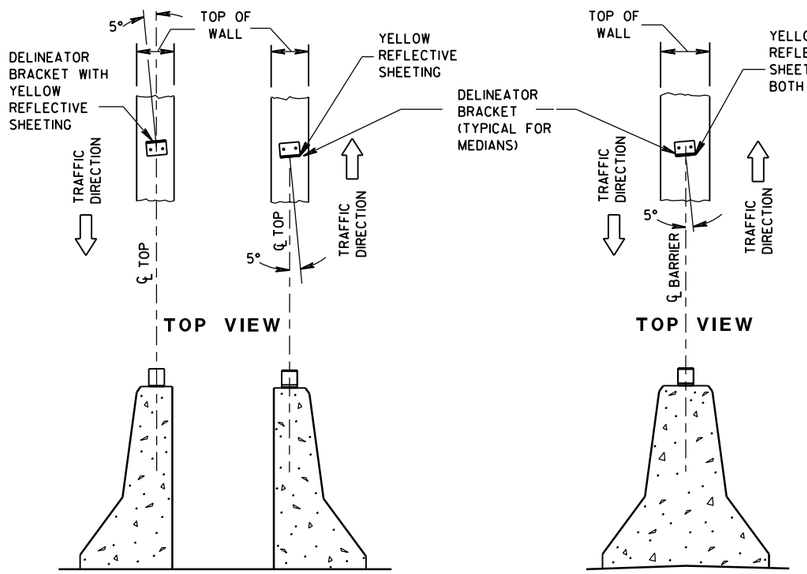
DELINEATOR BRACKET



MOUNTING DETAIL FOR DELINEATOR



3"x 3" DELINEATOR

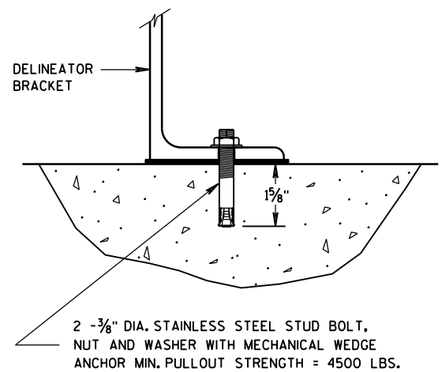


DOUBLE BARRIERS IN MEDIAN

MEDIAN BARRIER

BARRIER LOCATED TO RT. OF TRAFFIC FLOW

LOCATION AND AIMING DETAILS FOR DELINEATOR BRACKETS MOUNTED ON CONCRETE BARRIERS



DELINEATOR BRACKET MOUNTING DETAIL

DELINEATOR POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC E
FHWA

6

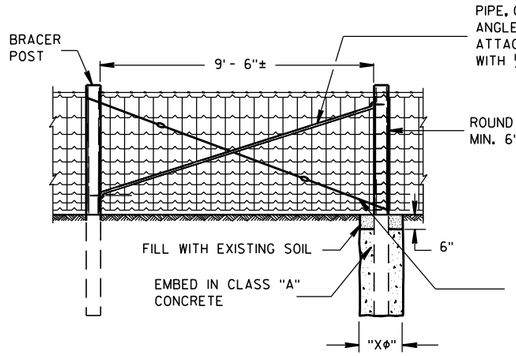
S.D.D. 15 A 2-8

6

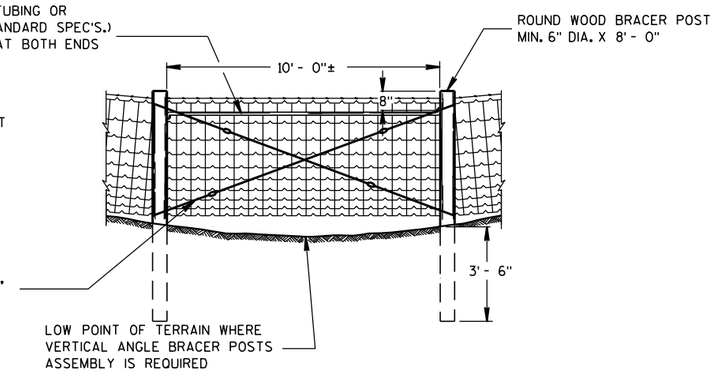
S.D.D. 15 A 2-8

NOTE: PULL OR STRETCHER POST ASSEMBLIES SHALL BE PLACED MIDWAY BETWEEN END POSTS AND CORNER POSTS WHERE A RUN OF FENCE EXCEEDS 660' BUT IS LESS THAN 1,320'. FOR RUNS OF FENCE IN EXCESS OF 1,320' MAXIMUM SPACING OF PULL OR STRETCHER POST ASSEMBLIES SHALL BE 660'± C-C.

ILLUSTRATION SHOWS POSITION OF STANDARD STEEL BRACE, DOUBLE STRAND GALVANIZED WIRE, AND THE POST TO BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM LEFT TO RIGHT. THE BRACES SHALL BE POSITIONED ON THE OPPOSITE DIAGONALS AND THE OPPOSITE POST SHALL BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM RIGHT TO LEFT.



PULL OR STRETCHER POSTS ASSEMBLY



VERTICAL ANGLE BRACER POSTS ASSEMBLY

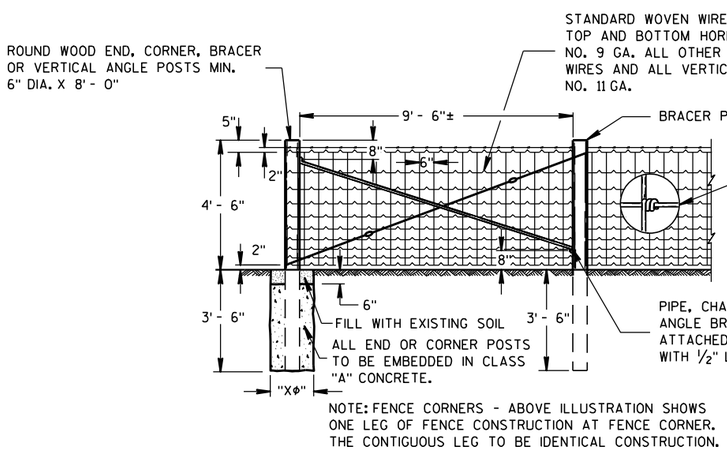
GENERAL NOTES

"XΦ" = DIAMETER OF THE POST PLUS 12".

FENCE STAPLES SHOULD NEVER BE DRIVEN VERTICALLY INTO WOOD POSTS (WITH BOTH LEGS PARALLEL WITH THE WOOD GRAIN). DOING SO CAN SEPARATE THE GRAIN AND SIGNIFICANTLY REDUCE THE HOLDING POWER. ROTATING THE STAPLES SLIGHTLY OFF VERTICAL STRADDLES THE GRAIN AND PROVIDES MORE RESISTANCE TO PULL-OUT.

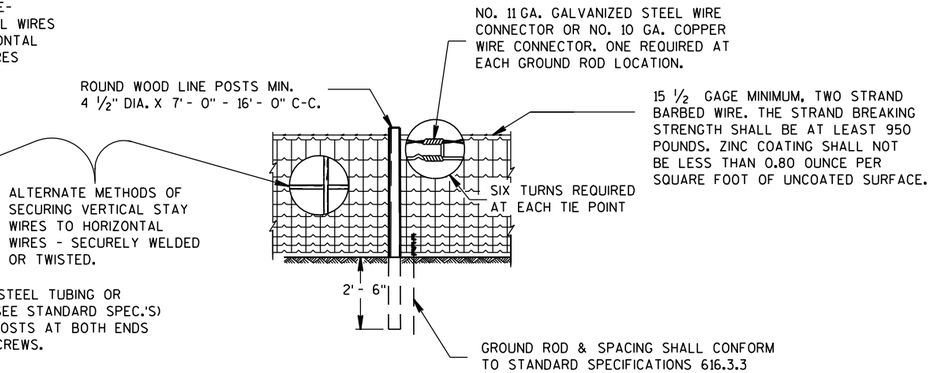
DO NOT STAPLE WIRE TIGHT TO THE LINE POSTS. ALLOW MOVEMENT OF WIRE FOR EXPANSION AND CONTRACTION. STAPLE ARRANGEMENT SHALL BE THE SAME FOR ALL OTHER POSTS EXCEPT THAT THEY SHALL BE DRIVEN TIGHT TO POSTS. ALL STAPLES SHALL BE 2" X 9 GAGE AND SHALL BE MANUFACTURED FROM GALVANIZED WIRE OR HOT DIP GALVANIZED AFTER FORMING. STAPLES SHALL HAVE SLASH-CUT POINTS.

FENCE SHALL BE LOCATED 3'-0" INSIDE THE RIGHT OF WAY LINE UNLESS OTHERWISE INDICATED ON THE PLANS.



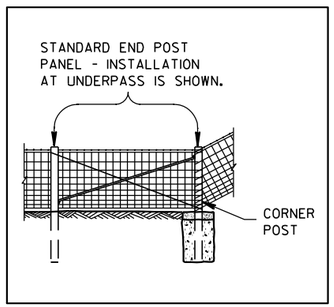
NOTE: FENCE CORNERS - ABOVE ILLUSTRATION SHOWS ONE LEG OF FENCE CONSTRUCTION AT FENCE CORNER. THE CONTIGUOUS LEG TO BE IDENTICAL CONSTRUCTION.

END OR CORNER POSTS ASSEMBLY

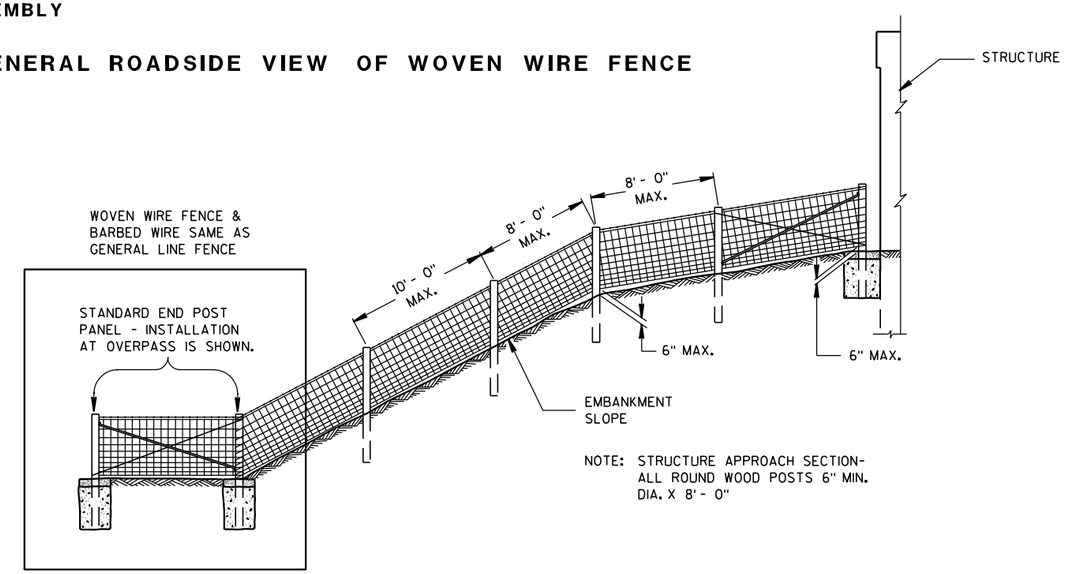


LINE FENCE CONSTRUCTION

GENERAL ROADSIDE VIEW OF WOVEN WIRE FENCE



ALTERNATE FENCE DESIGN AT STRUCTURE



NOTE: STRUCTURE APPROACH SECTION- ALL ROUND WOOD POSTS 6" MIN. DIA. X 8' - 0"

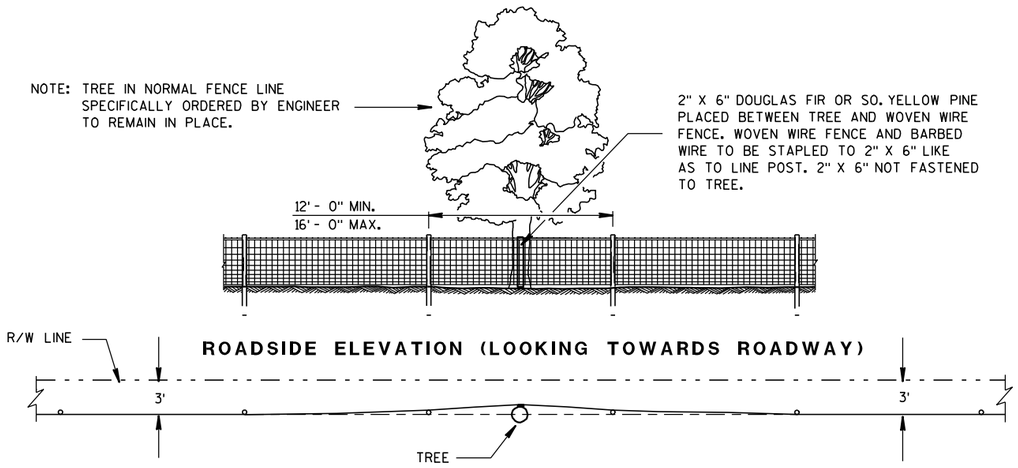
FENCE DESIGN AT STRUCTURE APPROACH

FENCE WOVEN WIRE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

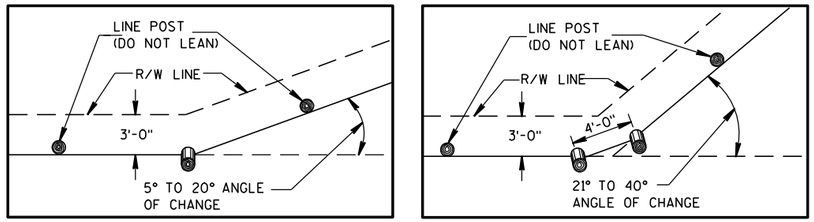
6

S.D.D. 15 B 1-8a



PLAN VIEW

FENCE DESIGN AT TREES REMAINING IN NORMAL FENCE LINE



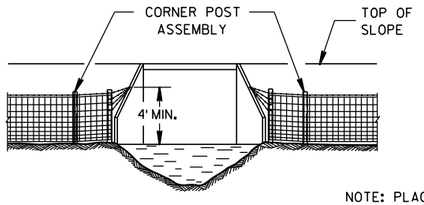
PLAN VIEW
SINGLE POST CORNER

PLAN VIEW
DOUBLE POST CORNER

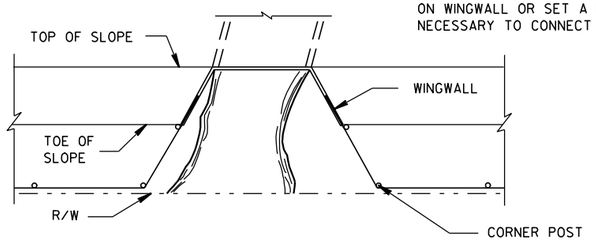
RIGHT OF WAY LINE CHANGE 40° AND LESS

NOTE: SINGLE AND DOUBLE POSTS SHALL BE A MIN. 6" DIA. X 8'-0" WITH A LEAN OF 4" TOWARD THE OUTSIDE OF THE CURVE.

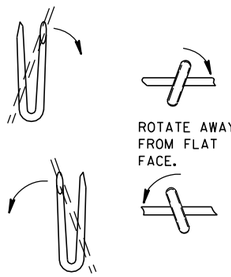
WHEN THE RIGHT OF WAY LINE CHANGE IS MORE THAN 40° USE THE CORNER OR STRETCHER POSTS ASSEMBLY.



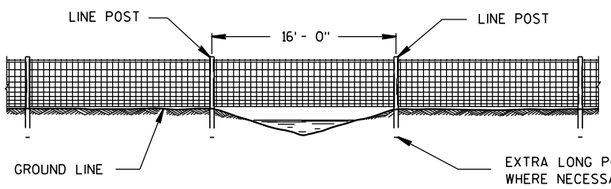
NOTE: PLACE A MINIMUM OF 4 STRANDS OF BARBED WIRE, 6" MAXIMUM CENTERS IN FAN SHAPE CONNECTED TO AN EYE BOLT ON WINGWALL OR SET A LONE POST WHEN NECESSARY TO CONNECT BARBED WIRE.



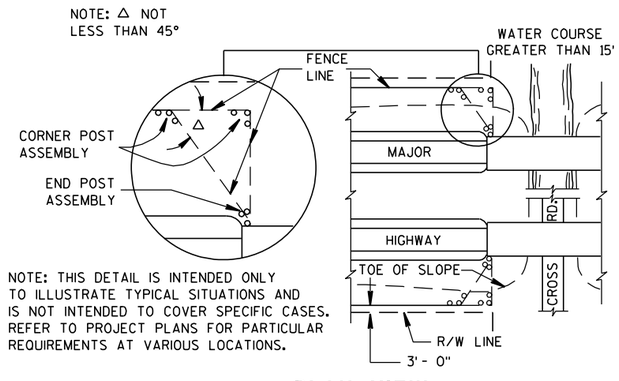
FENCE INSTALLATION TO WINGWALLS



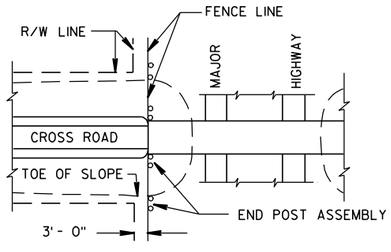
LINE POST



FENCE CONSTRUCTION OVER STREAM COURSES OF 15 FT. OR LESS IN WIDTH

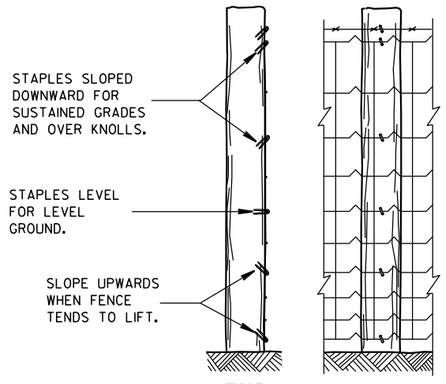


PLAN VIEW
MAJOR HIGHWAY OVERPASS OR STREAM COURSE CROSSING OF GREATER THAN 15 FT. IN WIDTH



PLAN VIEW
MAJOR HIGHWAY UNDERPASS

NOTE: WHEN POSTS ARE DRIVEN THE SMALL END SHALL BE DOWN.



END ELEVATION **FARM SIDE ELEVATION**

FENCE MOUNTING DETAIL

FENCE LOCATION AT STRUCTURES

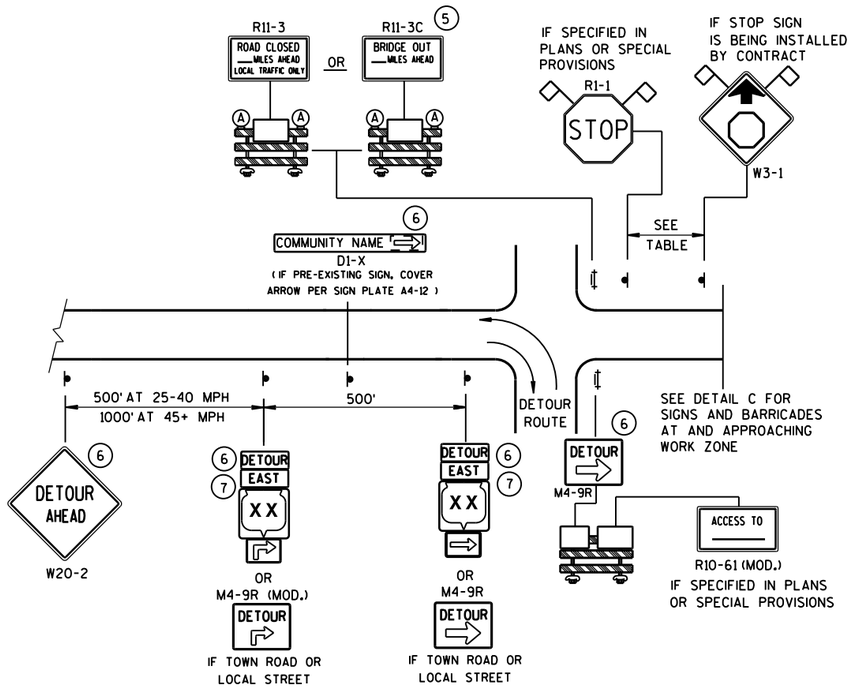
FENCE WOVEN WIRE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/4/2008 DATE
/S/ Jerry H. ---
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

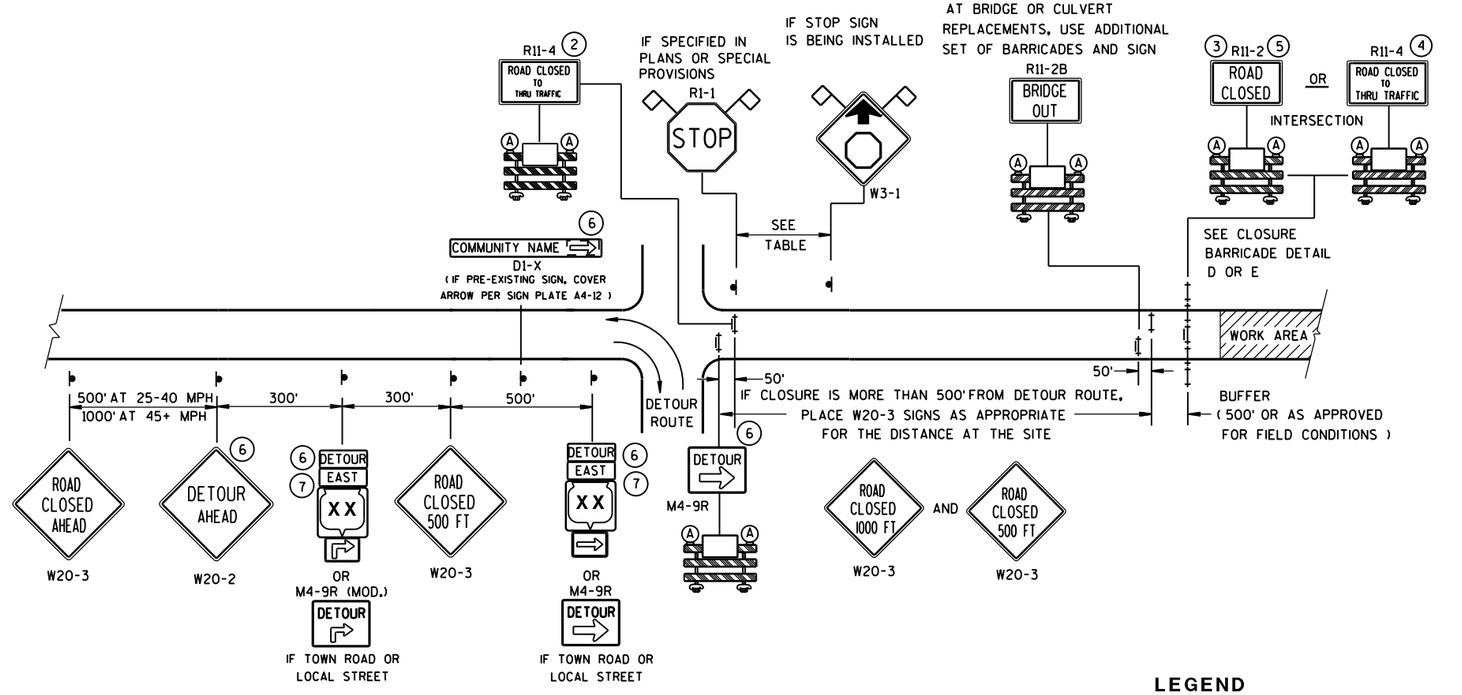
6

S.D.D. 15 B 1-8b



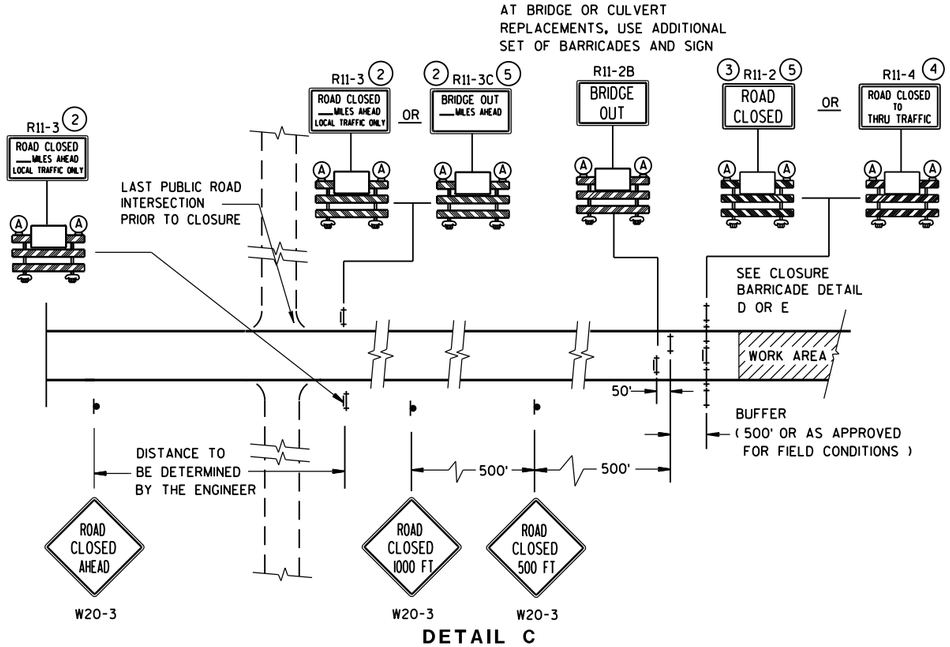
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

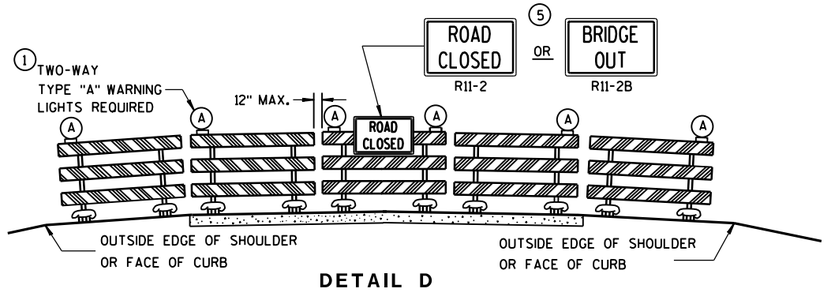
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE — /S/ Travis Feltes STATE TRAFFIC ENGINEER — DESIGN

FHWA

6

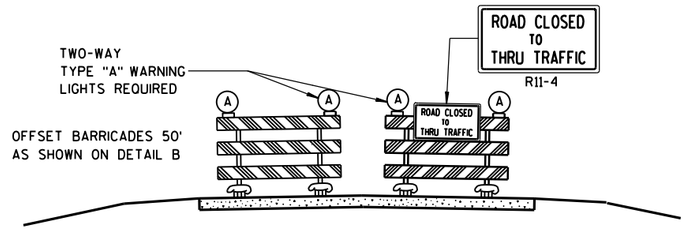
S.D.D. 15 C 2-5a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 C 2-5b

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

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

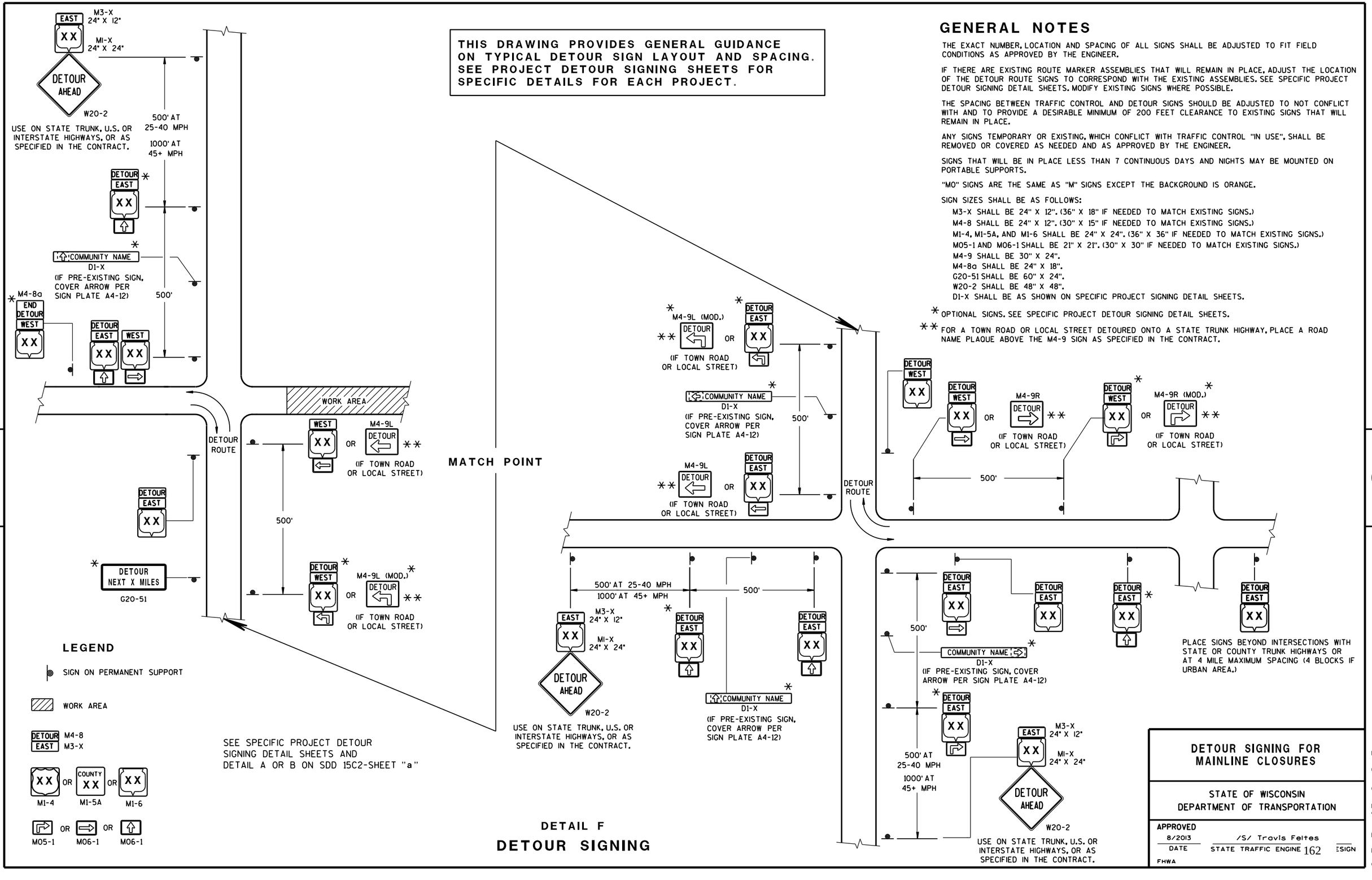
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



DETAIL F

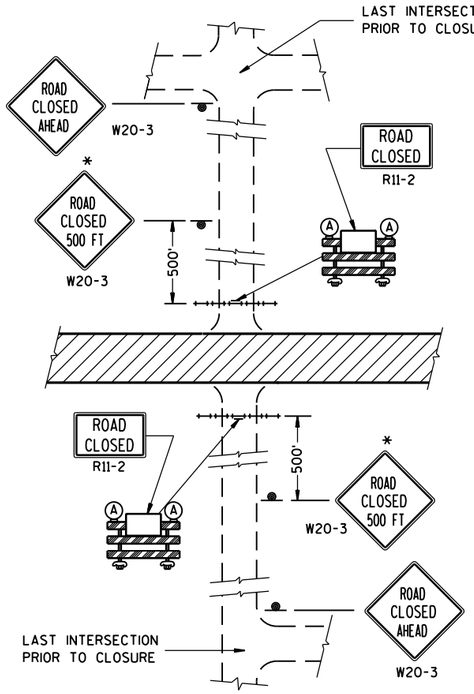
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

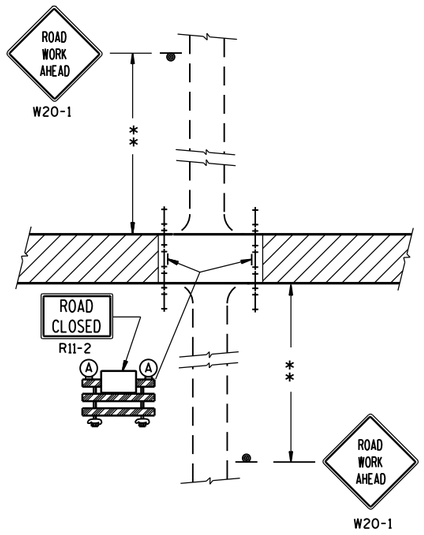
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6 S.D.D. 15 C 2-5c



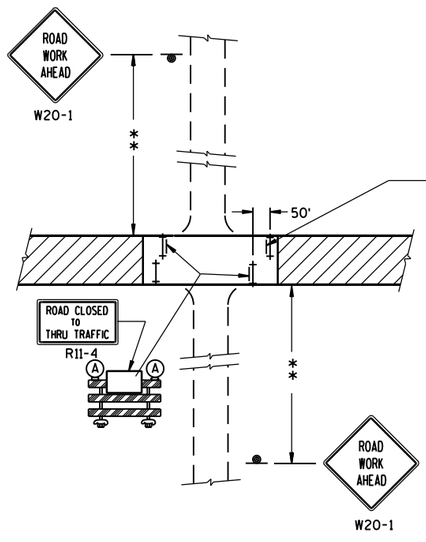
DETAIL 1

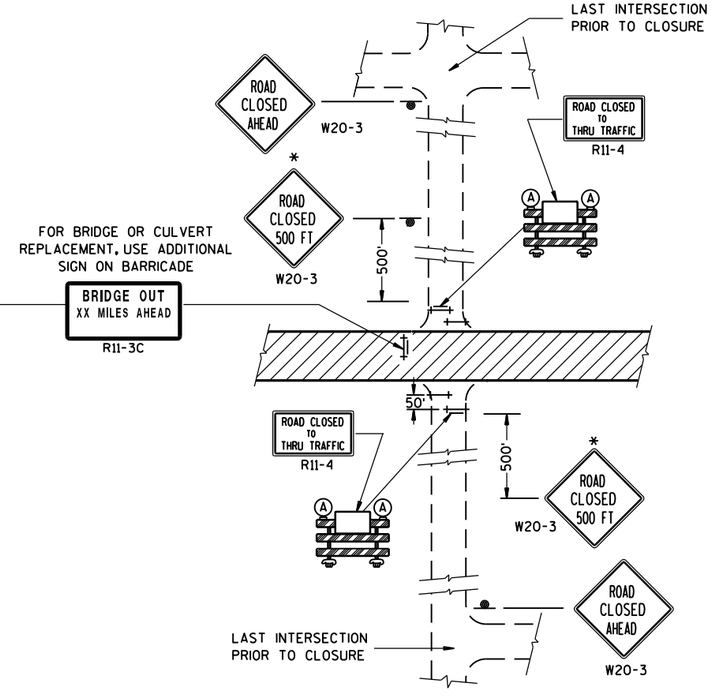
(NO ACCESS TO PROJECT)



DETAIL 2

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





DETAIL 3

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

DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

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

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

LEGEND

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

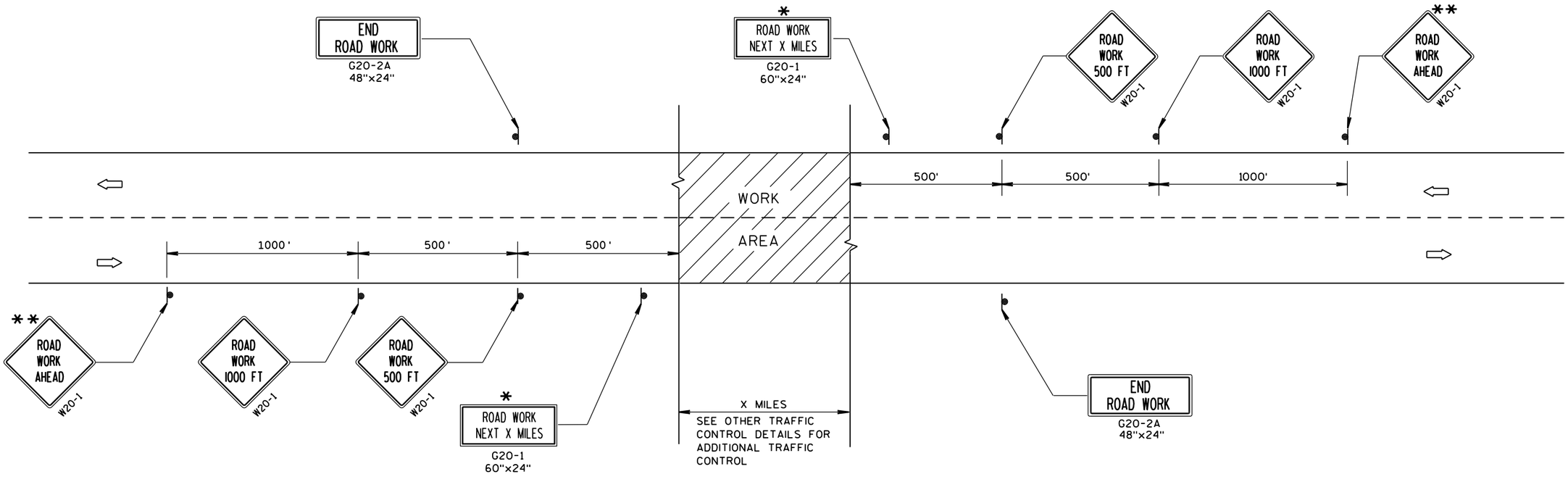
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 C 3-2

6

S.D.D. 15 C 3-2



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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

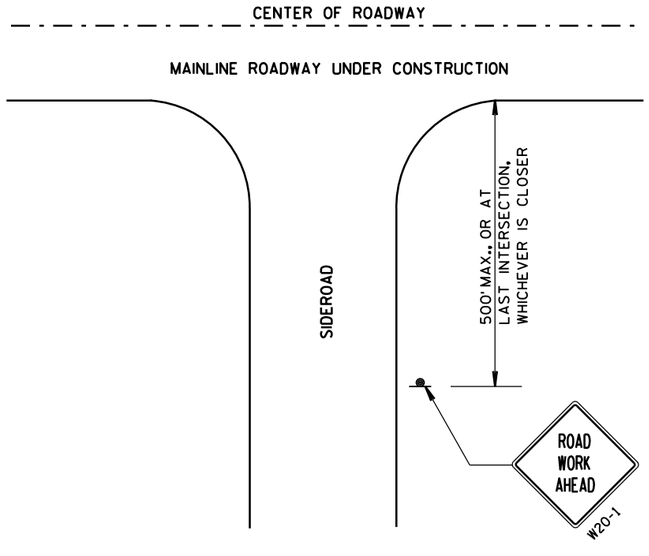
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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



LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

SIGN

6

S.D.D. 15 C 4-2

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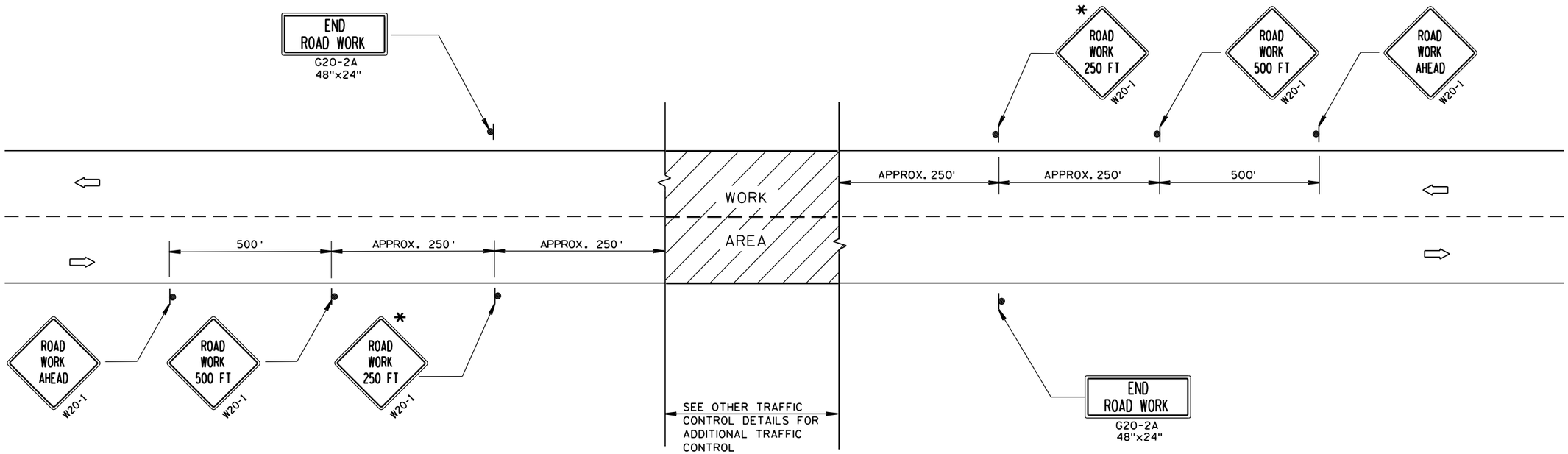
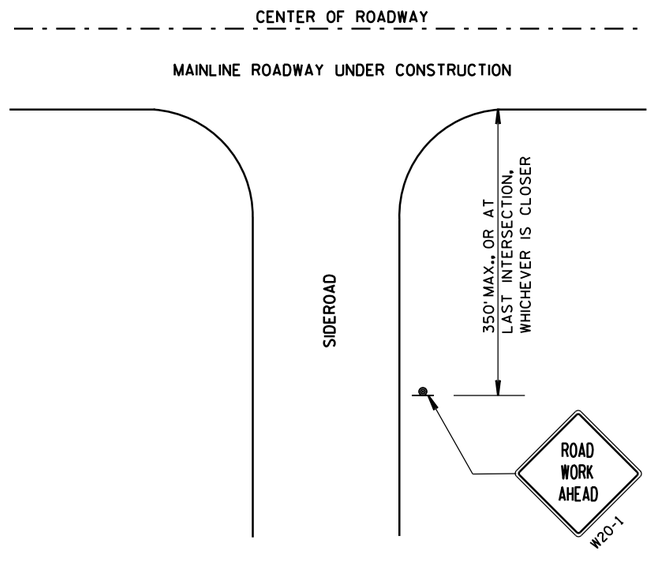
S.D.D. 15 C 4-2



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL



GENERAL NOTES

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS.

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

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

* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

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

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 — DATE

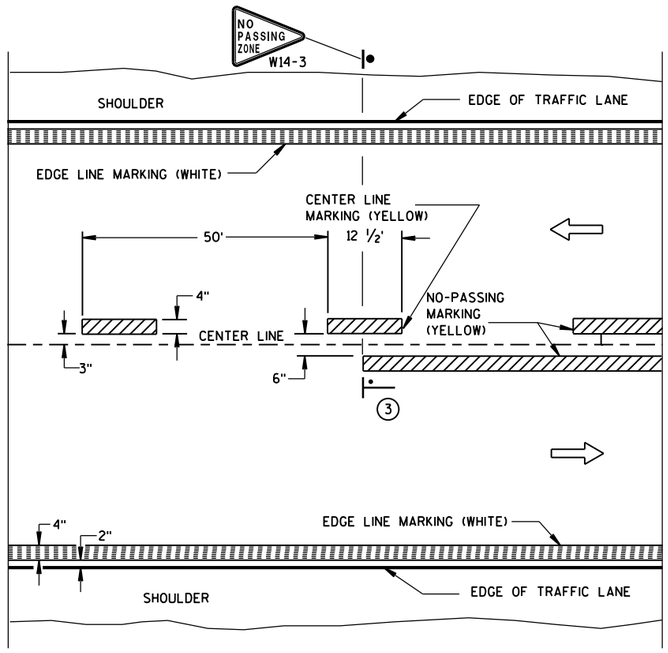
/S/ Travis Feltes — STATE TRAFFIC ENGINEER

SIGN

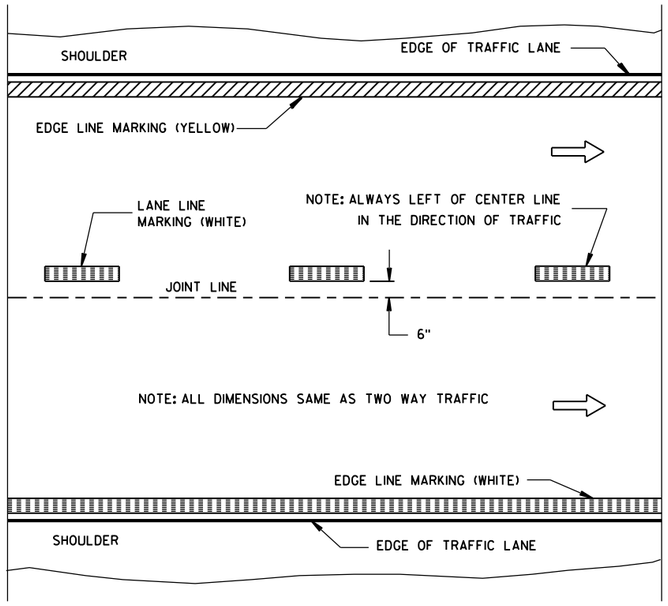
FHWA

6

S.D.D. 15 C 5-2

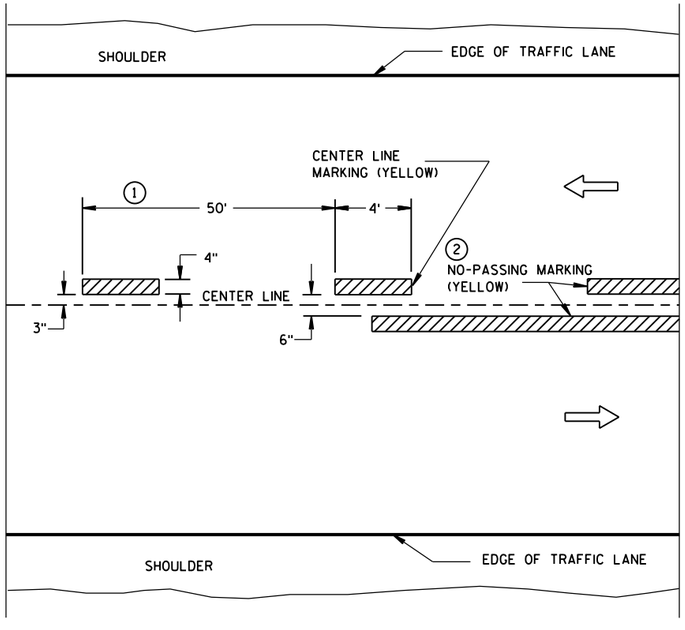


TWO WAY TRAFFIC

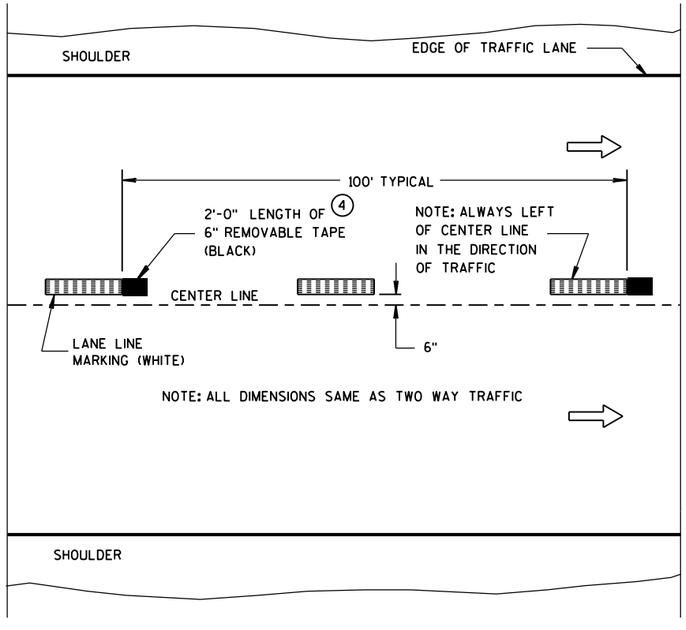


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

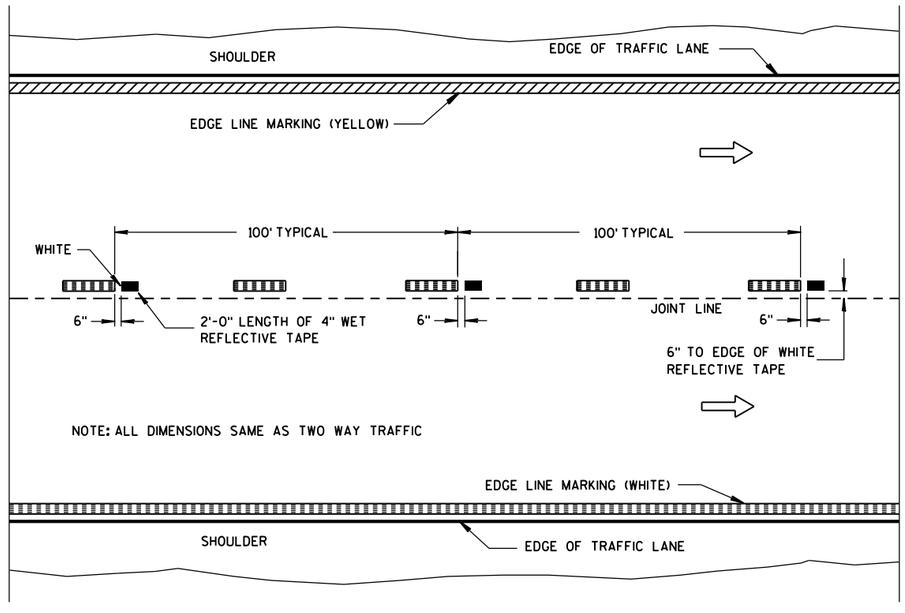
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



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

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E

FHWA

6

S.D.D. 15 C 8-16a

6

S.D.D. 15 C 8-16a

LEGEND

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

W057-52
36"x24"

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

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

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

IF THE REGULATORY SPEED HAS BEEN REDUCED, A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES.

* INCLUDE RESUME SPEED LIMIT SIGN A MINIMUM OF 200 FEET (500 FEET DESIRABLE) AFTER END ROAD WORK SIGNS.

GENERAL NOTES

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

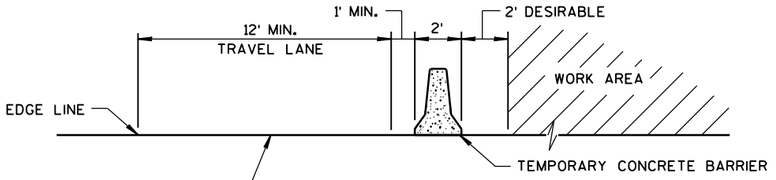
(1) CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUM TAPER.

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

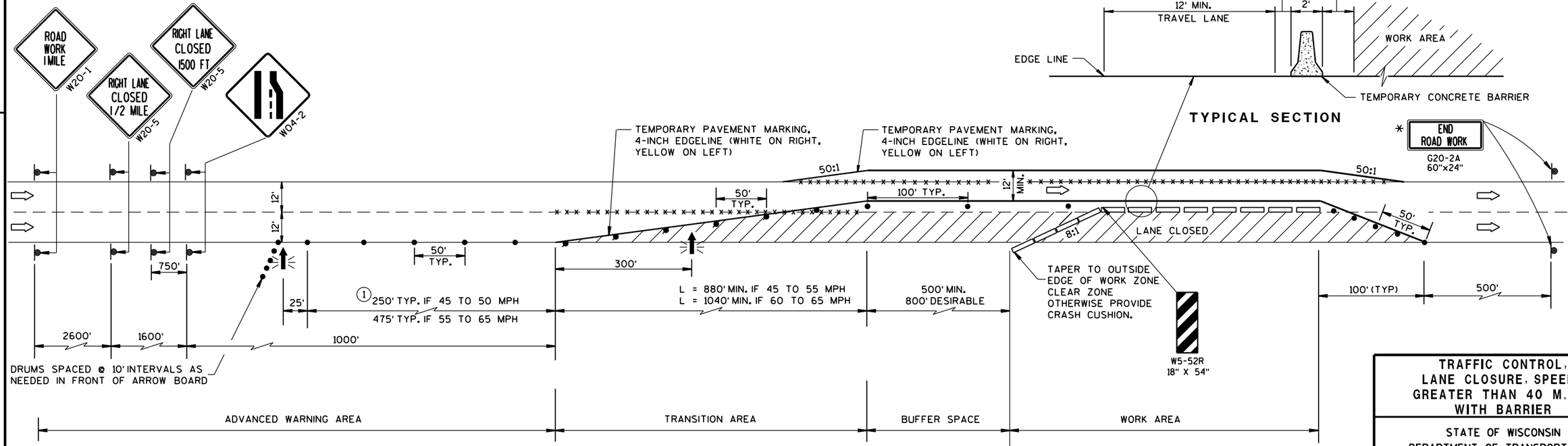
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

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



TYPICAL SECTION



TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 (DATE) /S/ Travis Feltes (STATE TRAFFIC ENGINEER) (SIGN)
FHWA

S.D.D. 15 D 3-2

S.D.D. 15 D 3-2

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

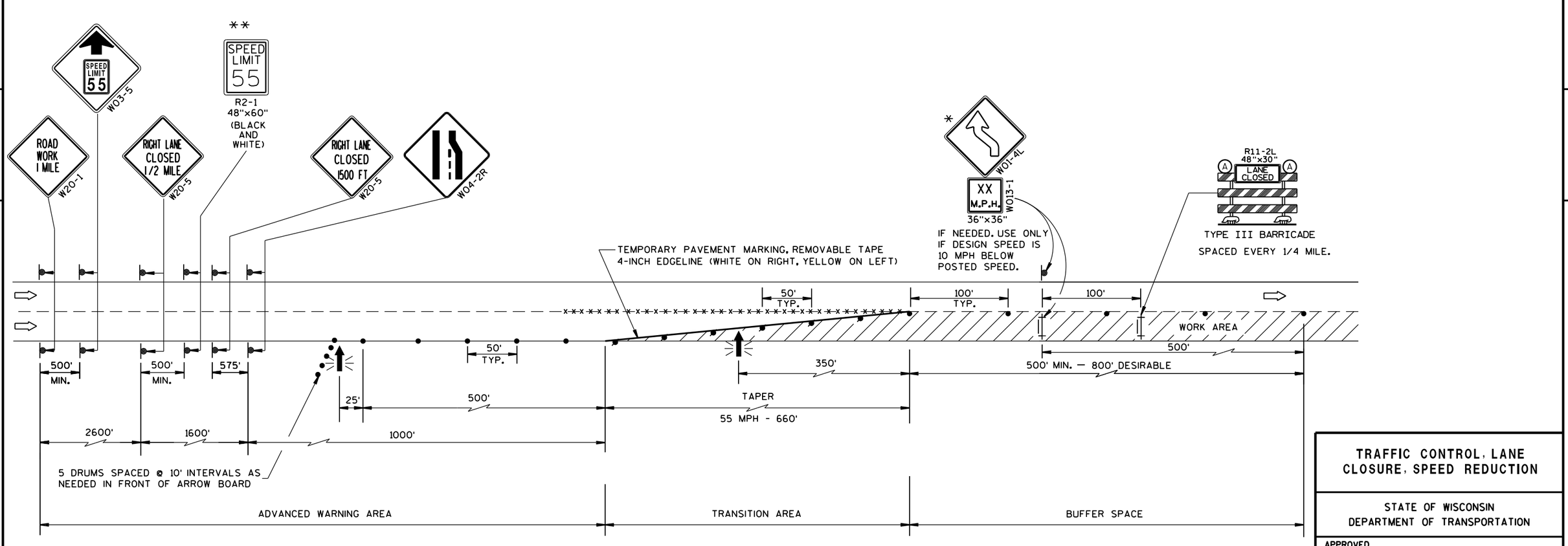
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

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

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

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



TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Feb. 2015 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

S.D.D. 15 D 12-5b

S.D.D. 15 D 12-5b

LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- WORK AREA

GENERAL NOTES

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

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

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

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

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

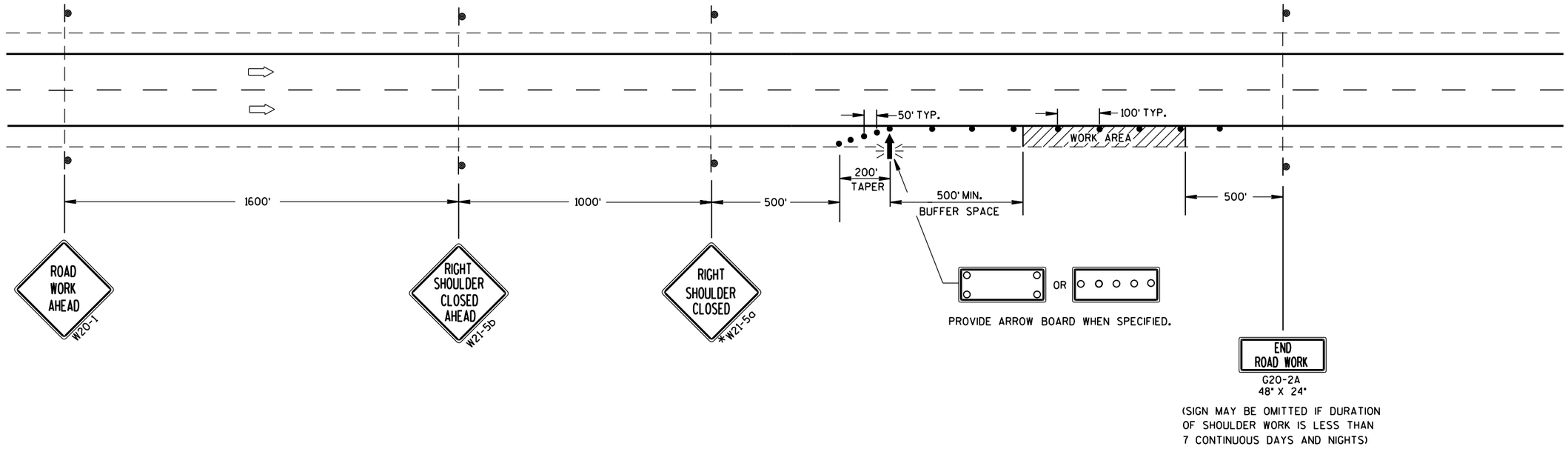
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

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



6

S.D.D. 15 D 27-2

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

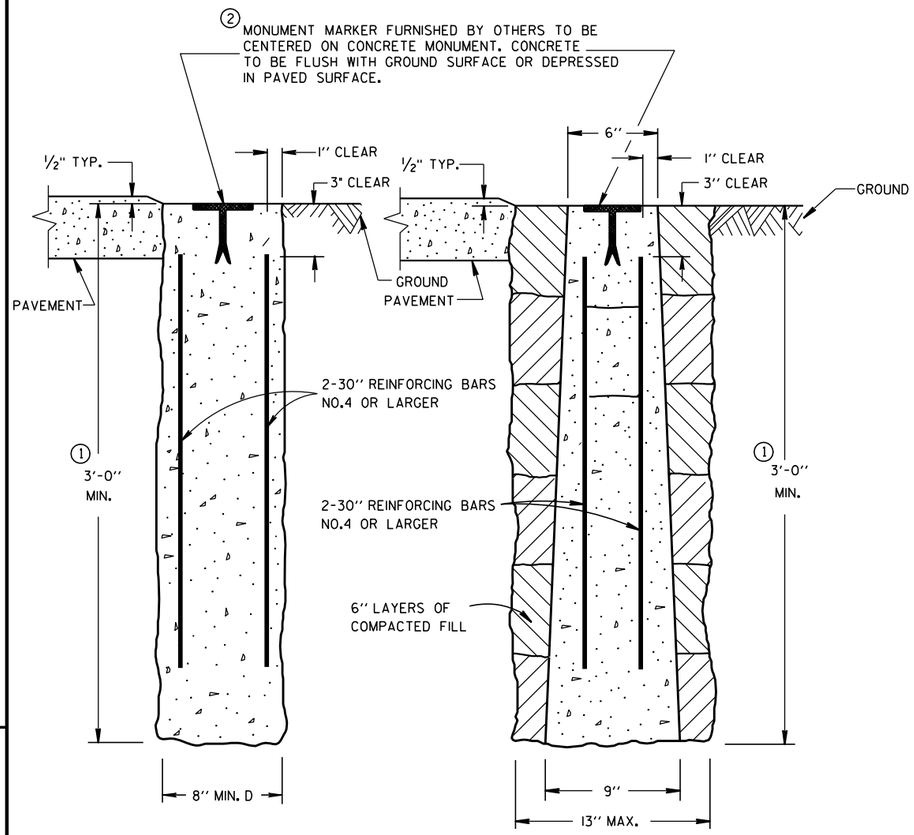
8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

6

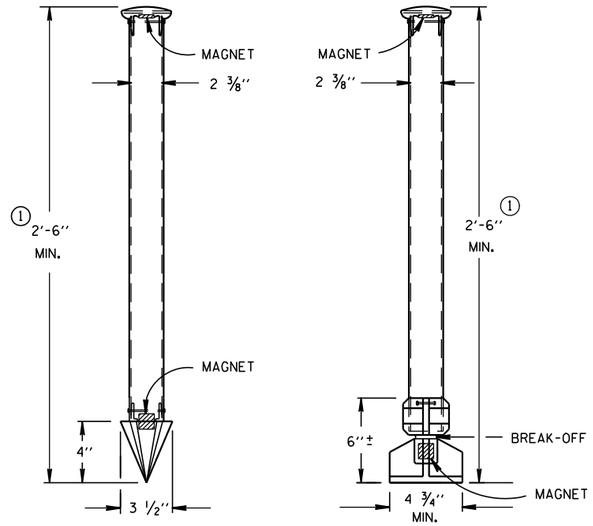
S.D.D. 15 D 27-2



CAST-IN-PLACE PRECAST

CONCRETE MONUMENTS

TYPE A



TYPE C DRIVE-IN MONUMENT

TYPE D BREAK-OFF MONUMENT

ALUMINUM MONUMENTS

(INCLUDES MARKER)

GENERAL NOTES

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

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

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

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

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

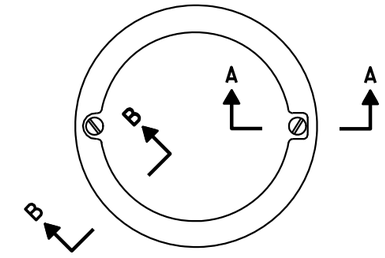
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

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

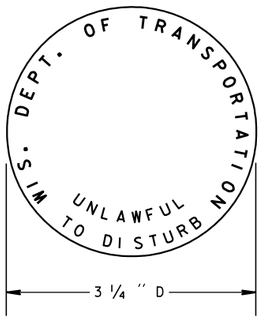
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

① MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.

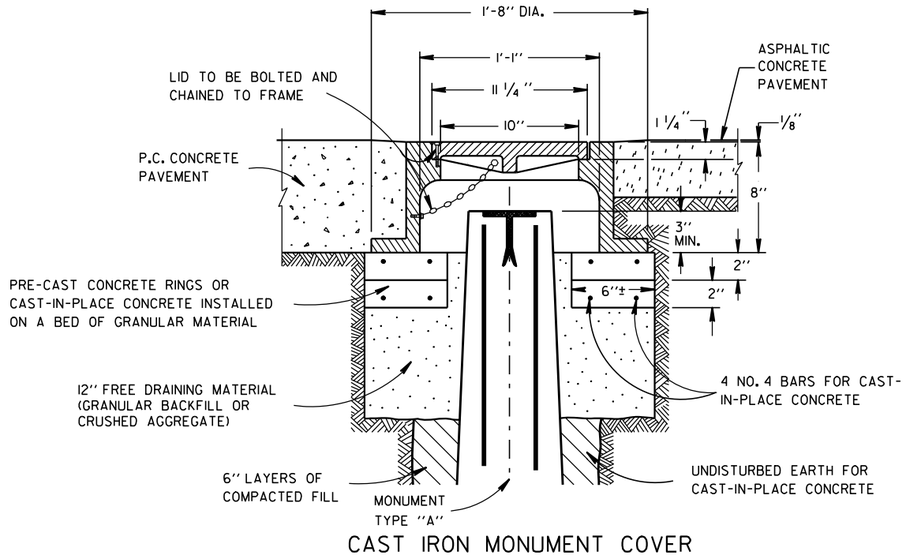
② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.



TOP VIEW

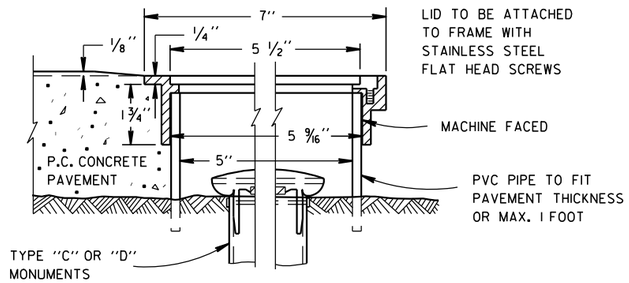


② WIS DOT MONUMENT MARKER LOGO FOR TYPES "A", "C" & "D"



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT - 95 LBS.)



SECTION B-B SECTION A-A

ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)

(FOR CONCRETE PAVEMENT ONLY)

LANDMARK REFERENCE MOUNMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/22/1999 DATE

/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER

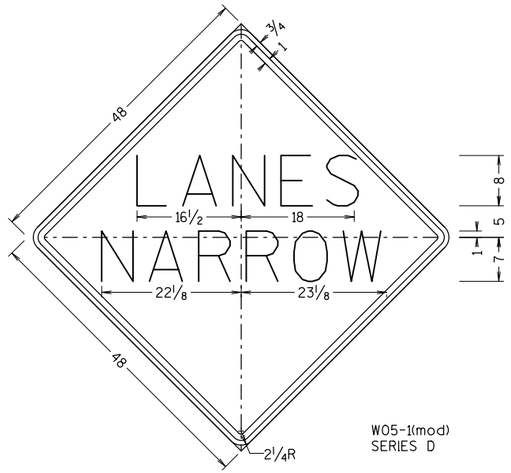
FHWA

6

S.D.D. 16 A 1-6

6

S.D.D. 16 A 1-6



TYPE II
ORANGE-BACKGROUND
BLACK-COPY

7

7

SHEET 1 OF 1

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	SIGNING DETAIL - WORK ZONE	SCALE: 0 1/2" 1"	SHEET 171	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\070101_sd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:48.125

WISDOT/CADDS SHEET 47

GENERAL NOTES:

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

2. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET ARE "SIGNS, TYPE II".

3. UNLESS OTHERWISE NOTED, TYPE II SIGNS ON THIS SHEET SHALL HAVE "TYPE H REFLECTIVE SHEETING" AND, "TYPE H MESSAGE MATERIAL". TYPE I SIGNS SHALL HAVE TYPE SH REFLECTIVE SHEETING.

4. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE A GREEN BACKGROUND AND WHITE MESSAGE.

5. TYPE II SIGNS ALL UPPER CASE MESSAGE (EXCEPT ON SHIELDS OR WHERE OTHERWISE NOTED) SHALL BE "SERIES E. ALL LOWER CASE MESSAGE WITH AN INITIAL UPPER CASE LETTER SHALL BE "SERIES E.

6. TYPE I SIGNS - ALL UPPER CASE MESSAGE (EXCEPT ON SHIELDS OR WHERE OTHERWISE NOTED) SHALL BE SERIES "E" MODIFIED. ALL LOWER CASE MESSAGE WITH AN INITIAL UPPER CASE LETTER SHALL BE SERIES "E" MODIFIED. ALL CAP WORDS ARE "SERIES E"

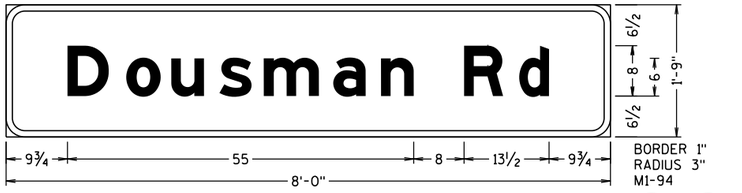
7. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE "TYPE A" OR "TYPE C" ARROWS AS SHOWN. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS.

8. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS ON ROUTE MARKER SHIELDS.

9. THE SIGN NUMBER IS DENOTED IN THE CIRCLE NEAR EACH DETAIL.

10. NUMBER FRACTIONS FOR INTERCHANGE SEQUENCE SIGNS SHALL BE SERIES "E" PER PLATES ALL-7 AND ALL-10

11. DO NOT SCALE.



1 7

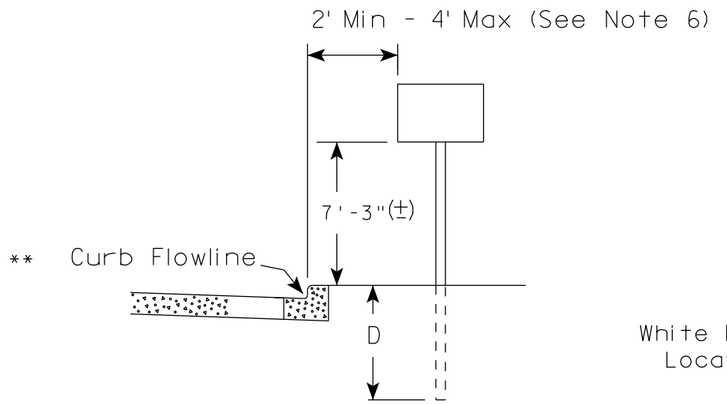
7

7

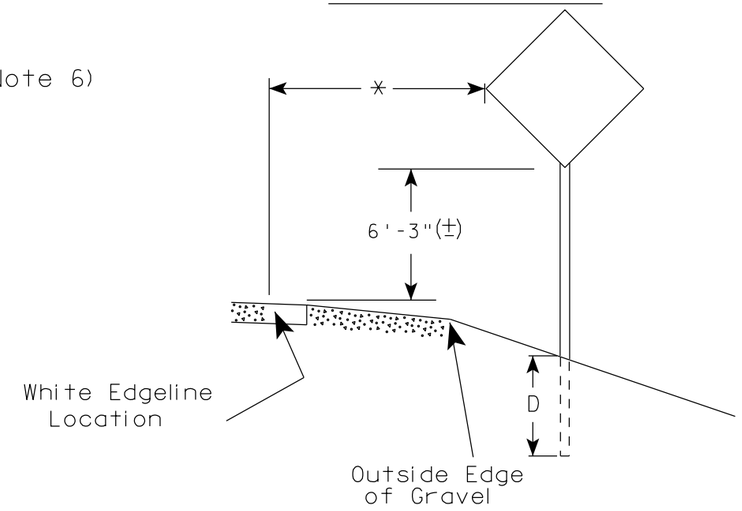
SHEET 1 OF 1

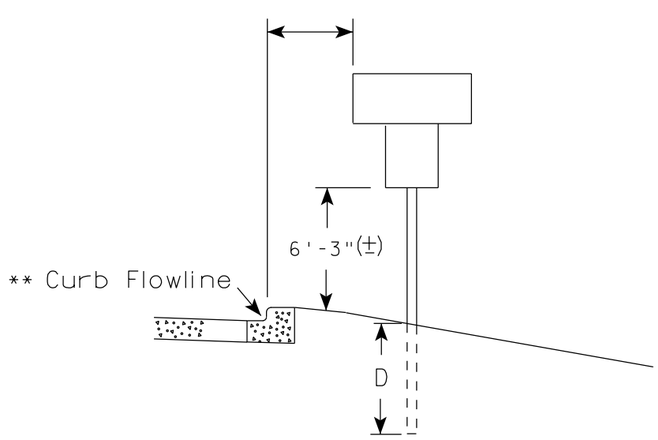
PROJECT NO: 1060-38-70	HWY: IH 94	COUNTY: MILWAUKEE	SIGNING DETAIL - TYPE II SIGNS	SCALE: 0 ½" 1"	SHEET 172	E

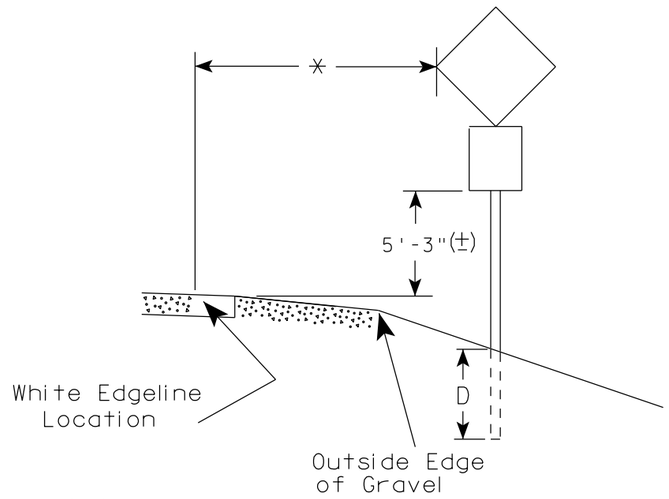
URBAN AREA



RURAL AREA (See Note 2)







GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

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

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

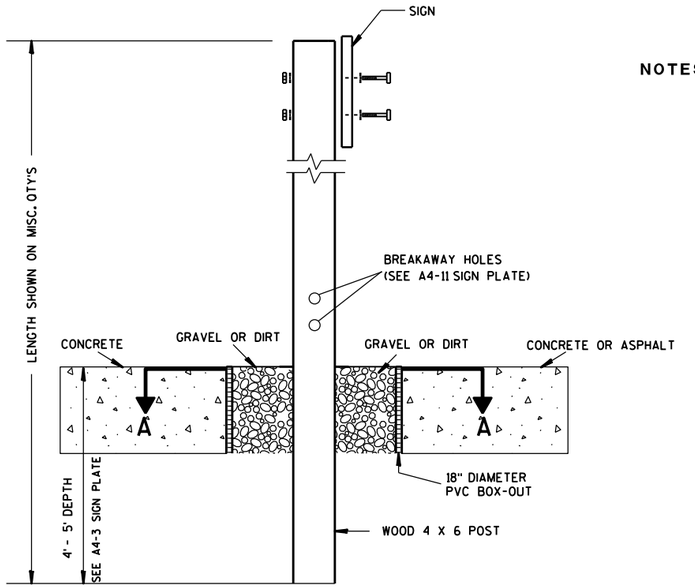
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

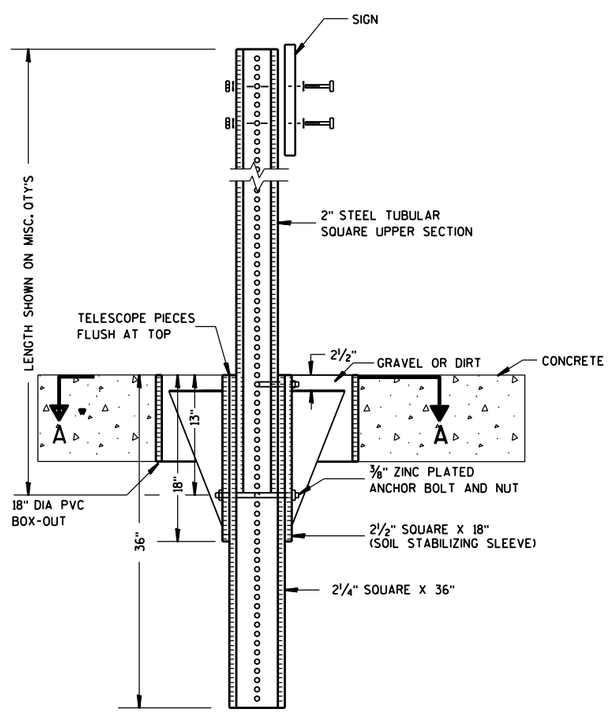
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



ELEVATION VIEW

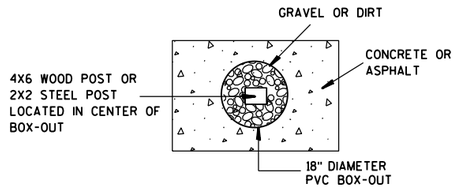
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

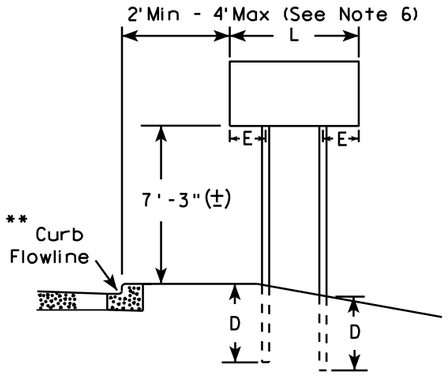
APPROVED Matthew R Rauch
for State Traffic Engineer

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

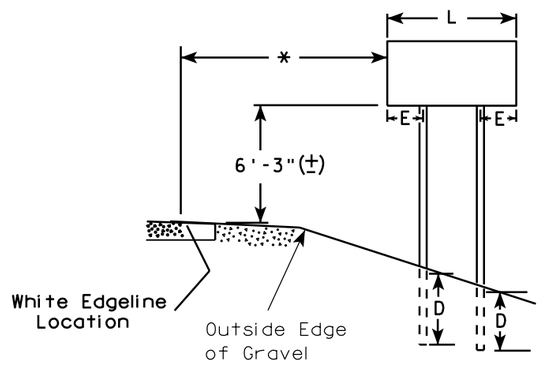
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

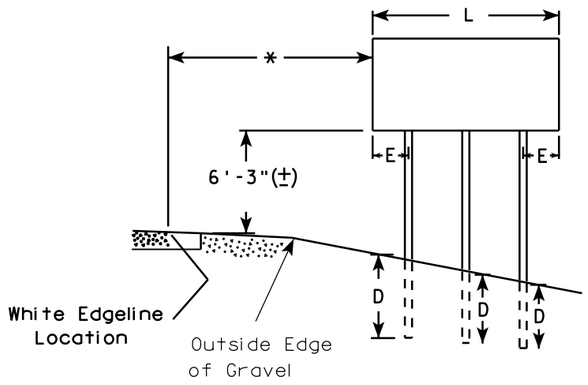
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

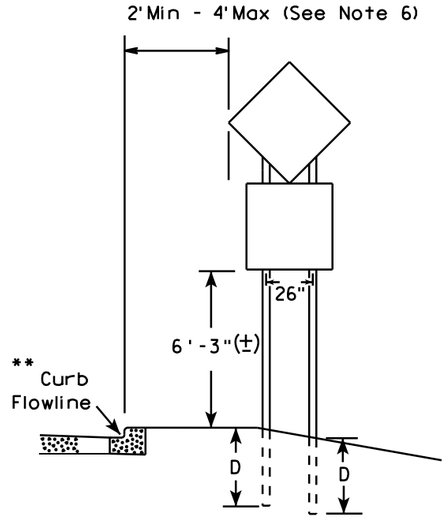
URBAN AREA



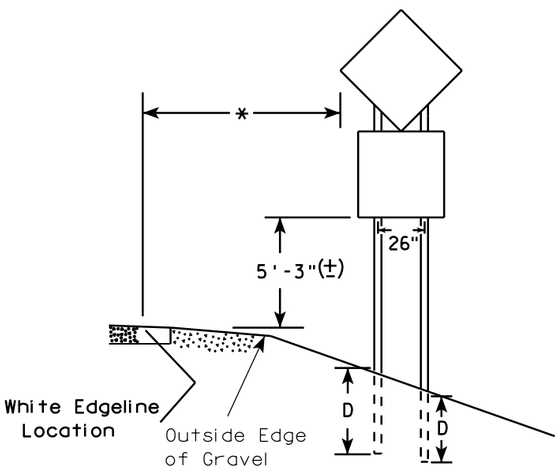
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

GENERAL NOTES

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

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

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

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

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

***

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

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

POST EMBEDMENT DEPTH

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

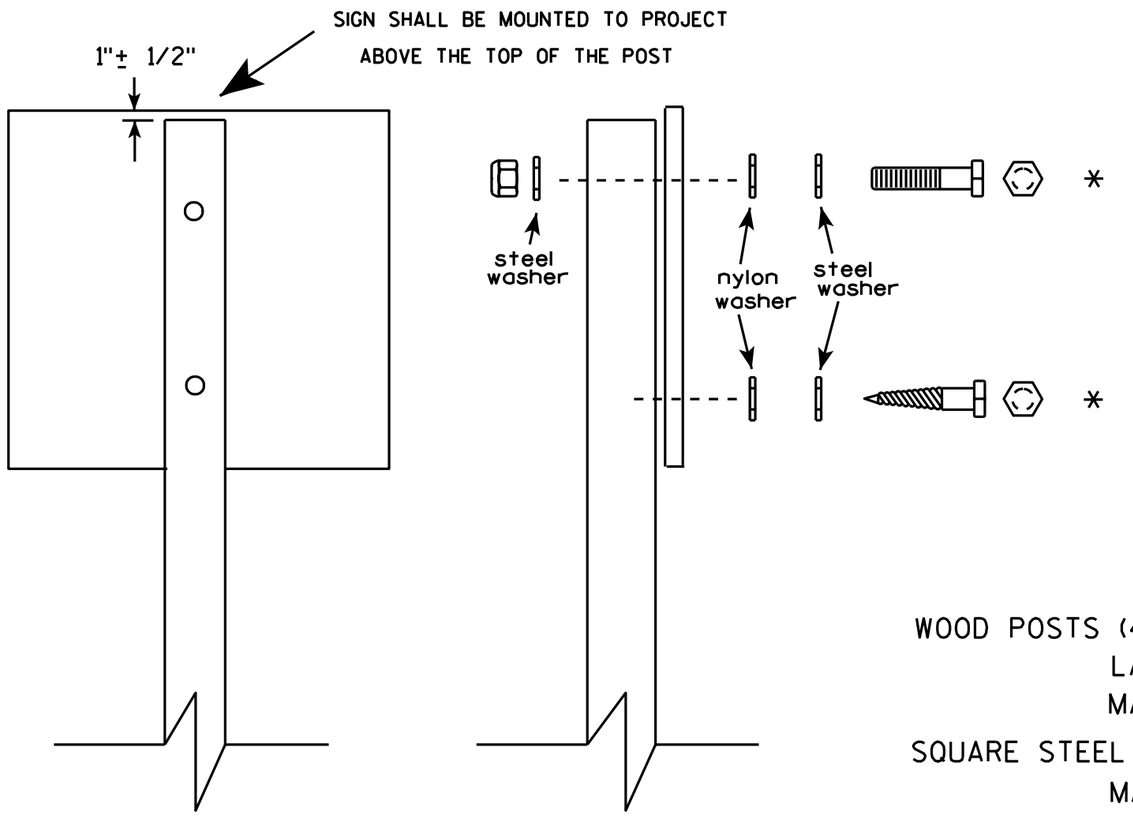
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-4 175 14

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

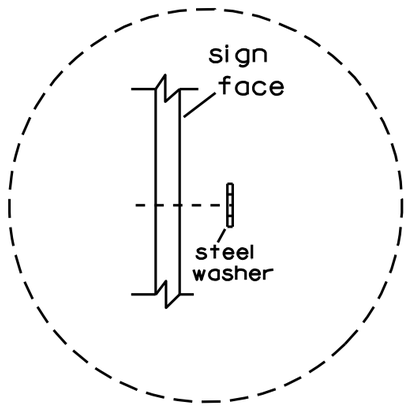
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

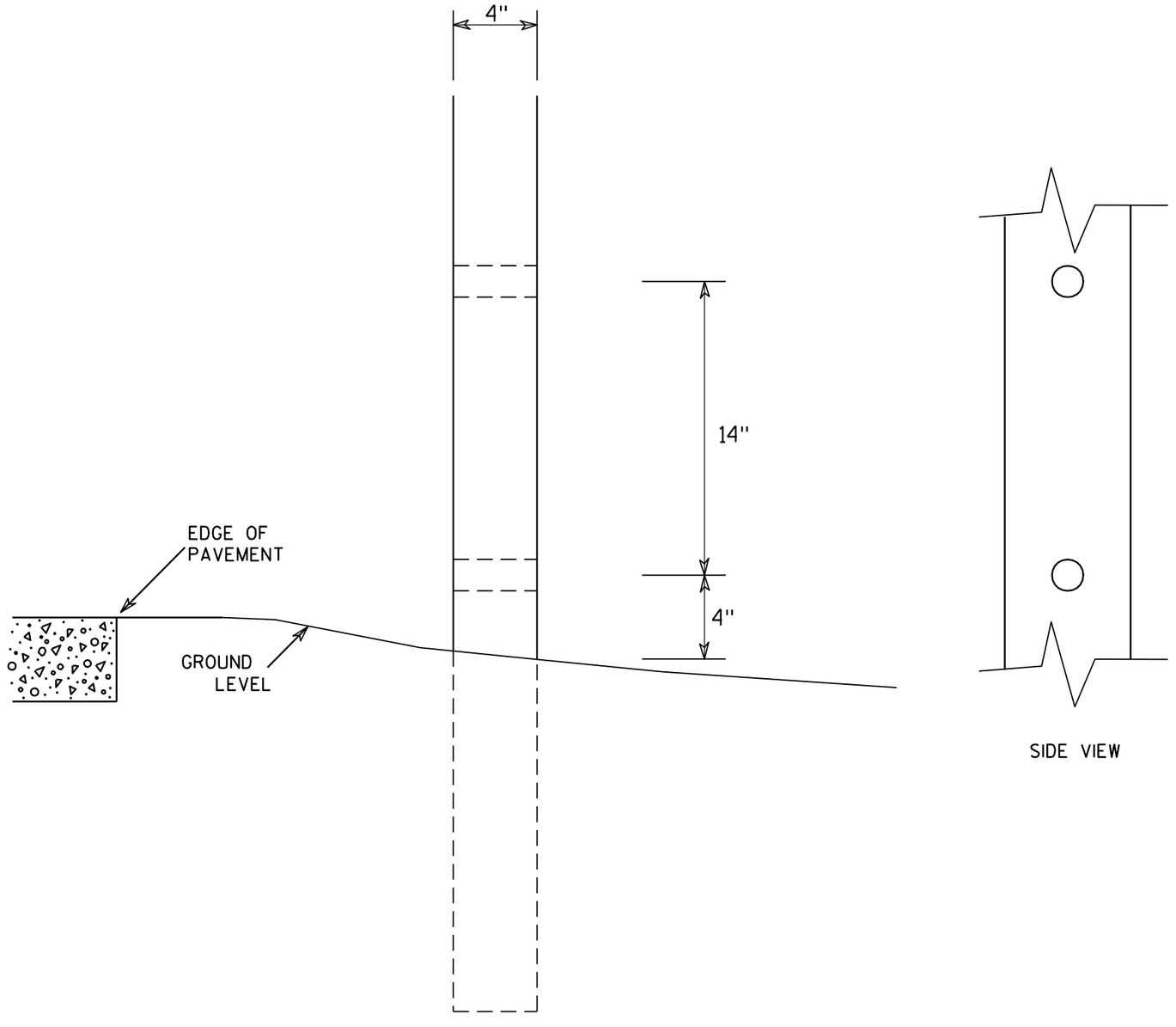
DATE 3/23/10 PLATE NO. A4-8.7

7

7

PROJECT NO:

SHEET NO: 176 E



SIDE VIEW

GENERAL NOTES

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

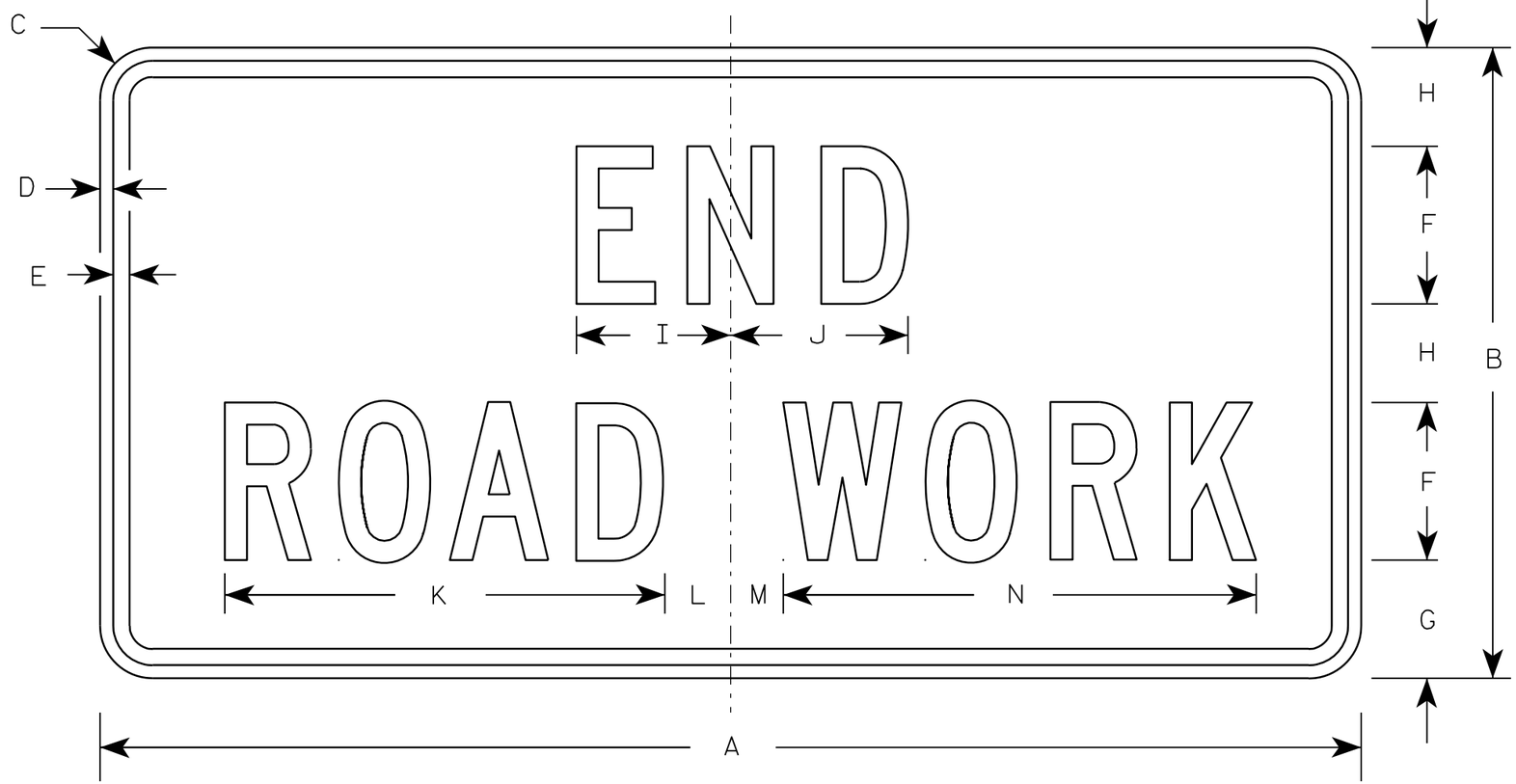
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 177	E



G20-2A

NOTES

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

Metric equivalent for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

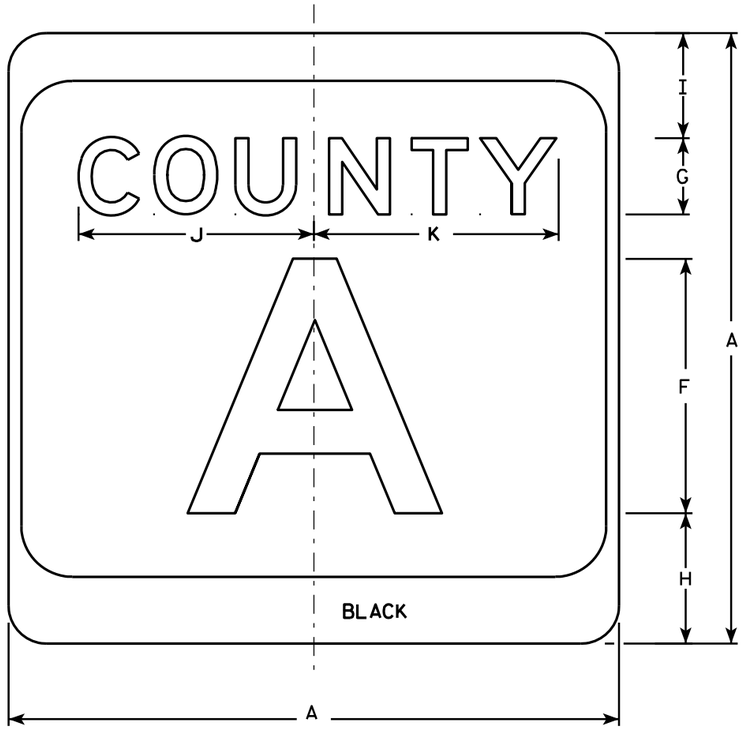
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

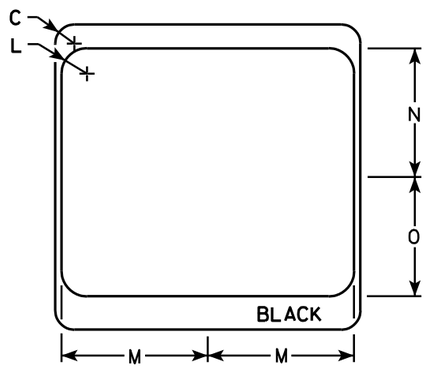
APPROVED Matthew R Rauch
for State Traffic Engineer

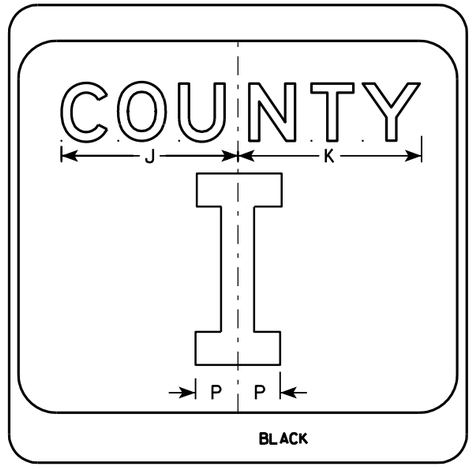
DATE 9/30/09 PLATE NO. G20-2A.8

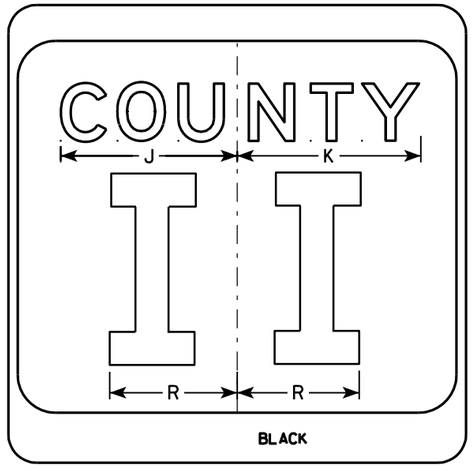
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 178	E



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

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

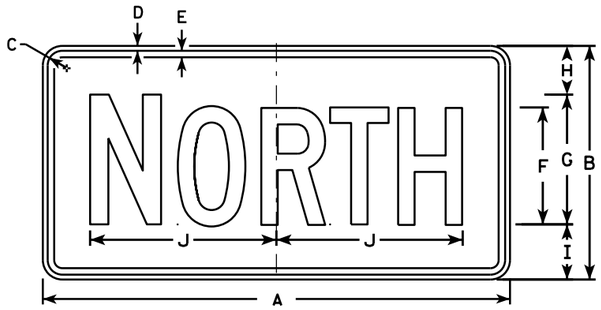
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

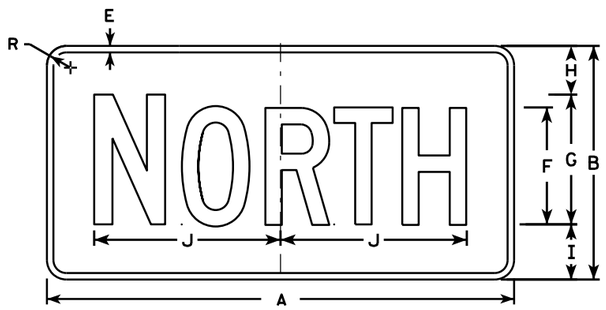
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 179 | E



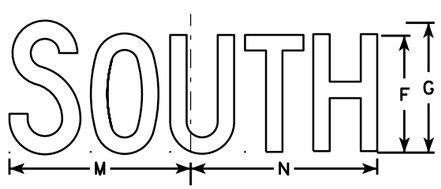
M3-1
MK3-1
MM3-1
MN3-1



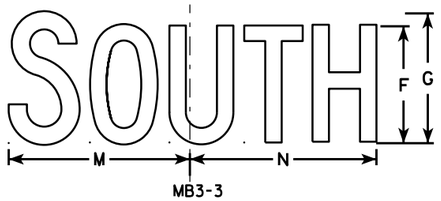
MB3-1

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

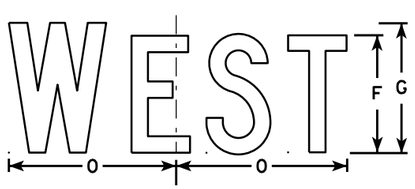
MB3-2



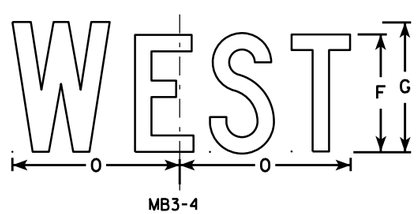
M3-3
MK3-3
MM3-3
MN3-3



MB3-3



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



MB3-4

NOTES

1. All Signs Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
6. Note the first letter of each direction is larger than the remainder of the message.

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

STANDARD SIGNS
M3-1 thur M3-4
SERIES

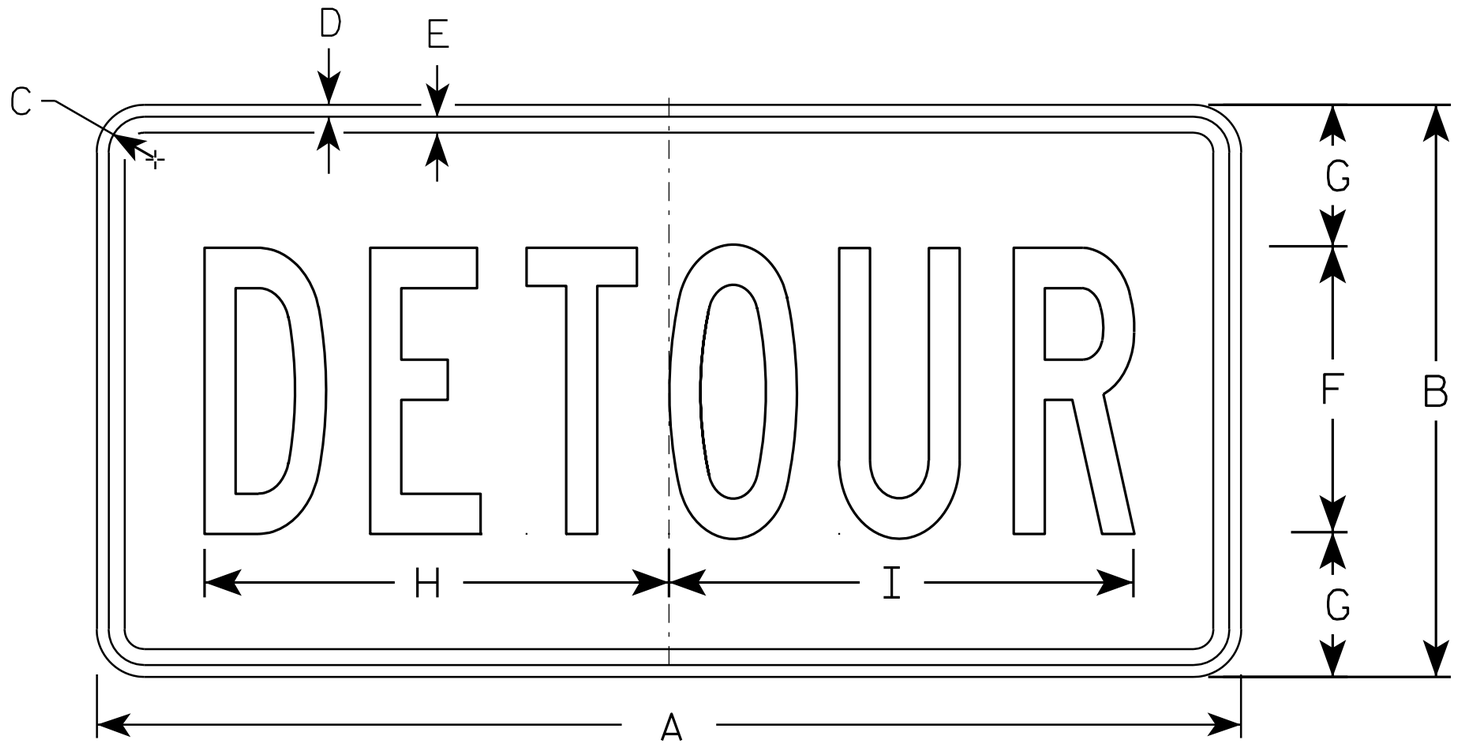
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 6/30/14 PLATE NO M3-1.13

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

7



M4-8

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

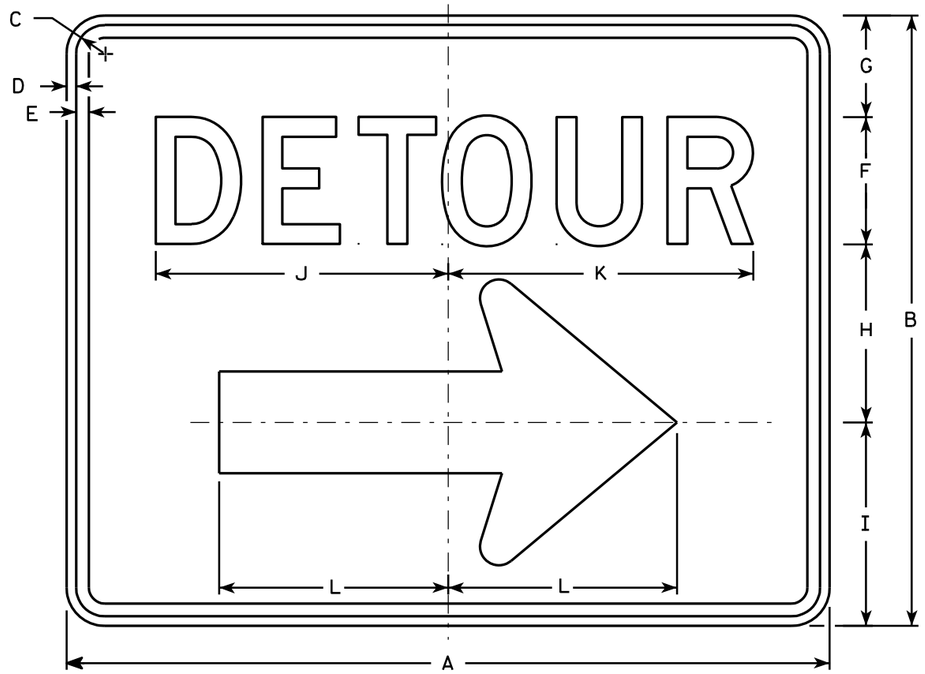
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

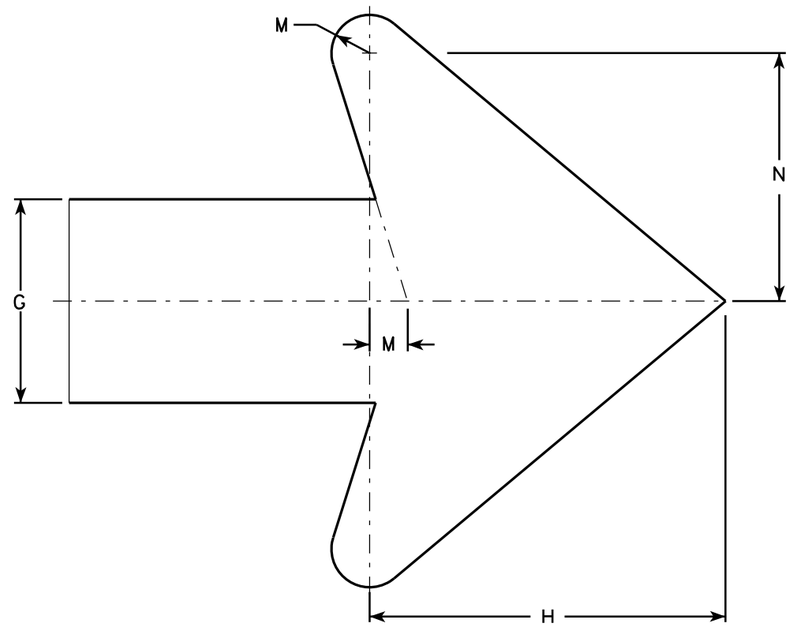
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 181	E



M4-9R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-9L is the same as M4-9R except the arrow is reversed.



Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
3	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
4	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0
5	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0

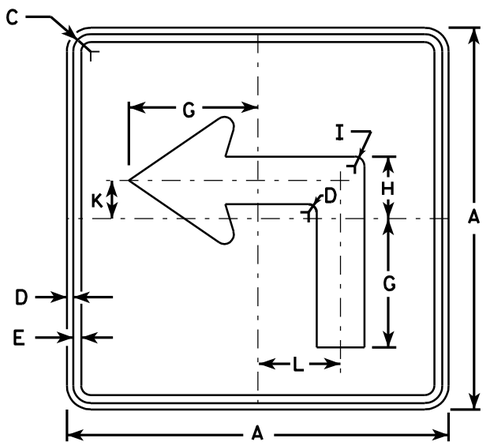
STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

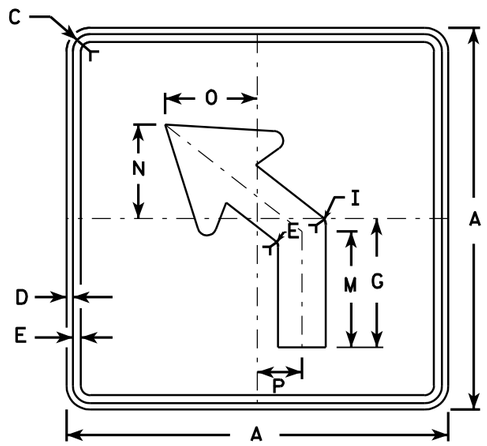
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-9R.4

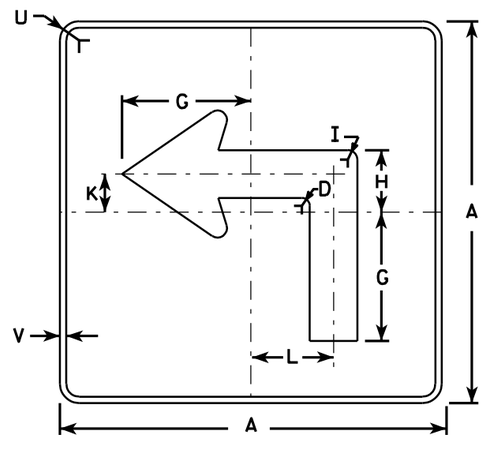
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 182	E



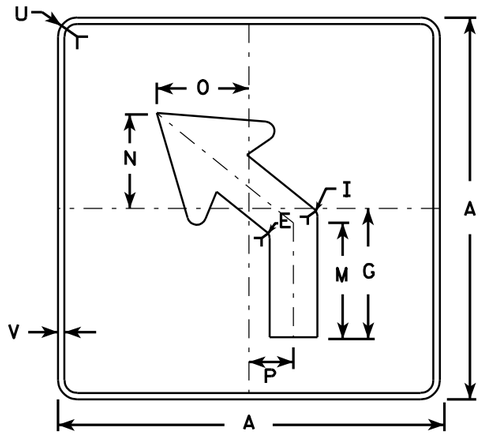
M5-1L
MK5-1L
MM5-1L
MO5-1L
MP5-1L
MR5-1L



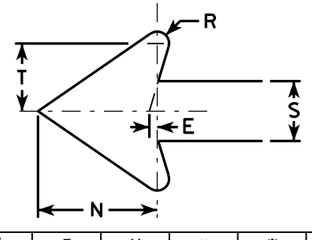
M5-2L
MK5-2L
MM5-2L
MO5-2L
MP5-2L
MR5-2L



MB5-1L
MG5-1L
MN5-1L



MB5-2L
MG5-2L
MN5-2L



NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M5-1 and M5-2 Background - White - Type H Reflective
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White - Type H Reflective
   MG5-1 and MG5-2 Background - Green
   Message - White - Type H Reflective
   MK5-1 and MK5-2 Background - Green
   Message - White Type H Reflective
   MM5-1 and MM5-2 Background - White - Type H Reflective
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White - Type H Reflective
   MO5-1 and MO5-2 Background - Orange - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White - Type H Reflective
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow - Type H Reflective
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 1/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 1/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 1/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

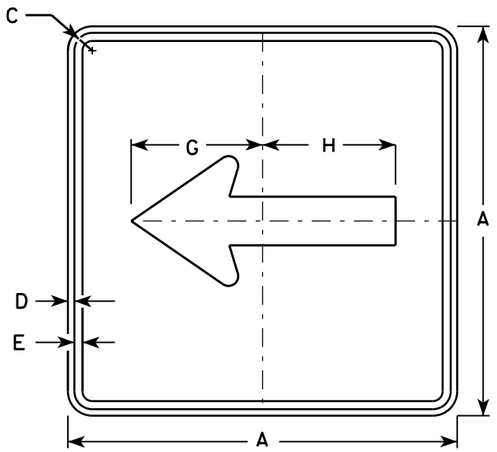
STANDARD SIGN
M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

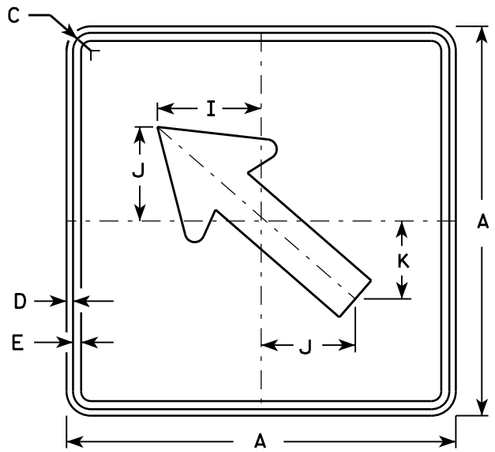
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/29/13 PLATE NO. M5-1.12

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 183 | E



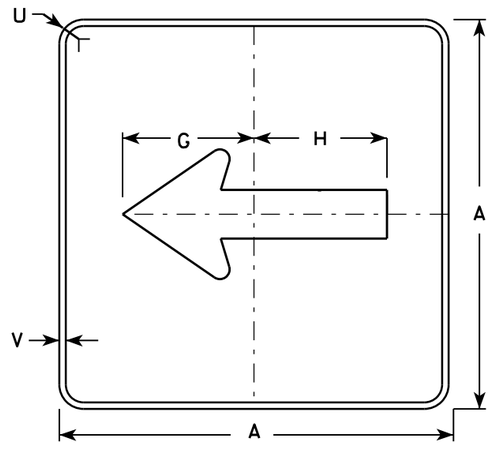
M6-1
MK6-1
MM6-1
MN6-1
MO6-1
MP6-1
MR6-1



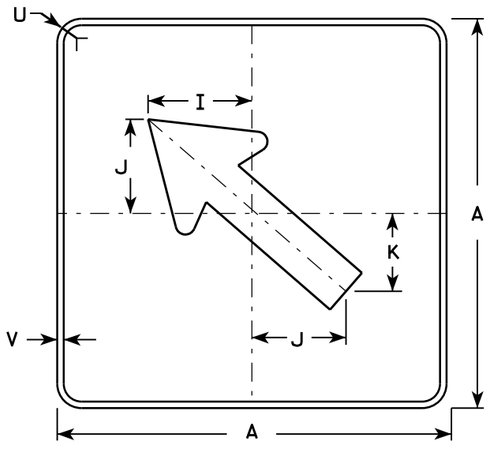
M6-2
MK6-2
MM6-2
MN6-2
MO6-2
MP6-2
MR6-2

NOTES

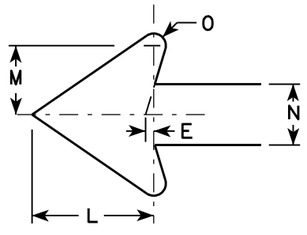
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MG6-1 and MG6-2 Background - Green
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



MB6-1



MB6-2



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2						3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25

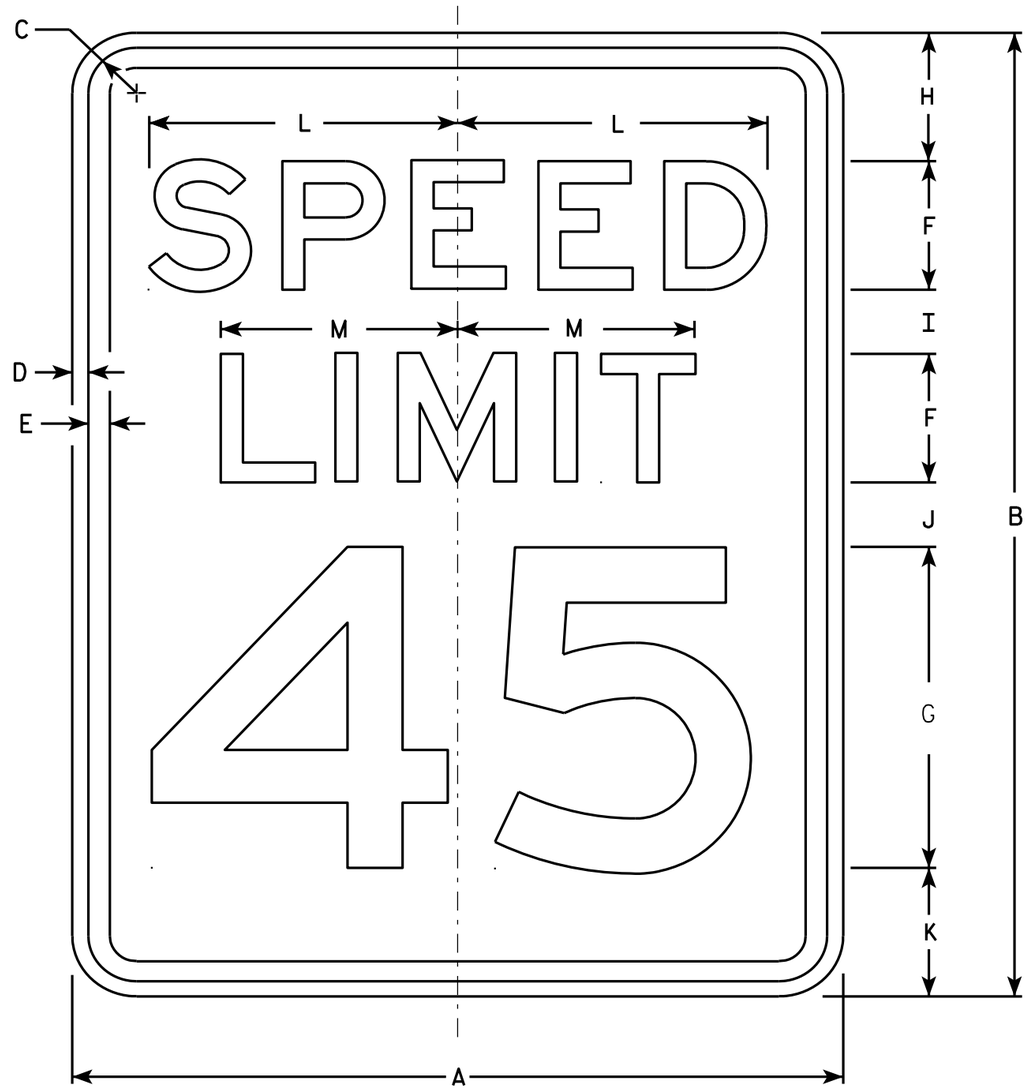
STANDARD SIGN
M6-1 & M6-2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/03/14 PLATE 184 M6-1.14

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



R2-1

NOTES

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

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

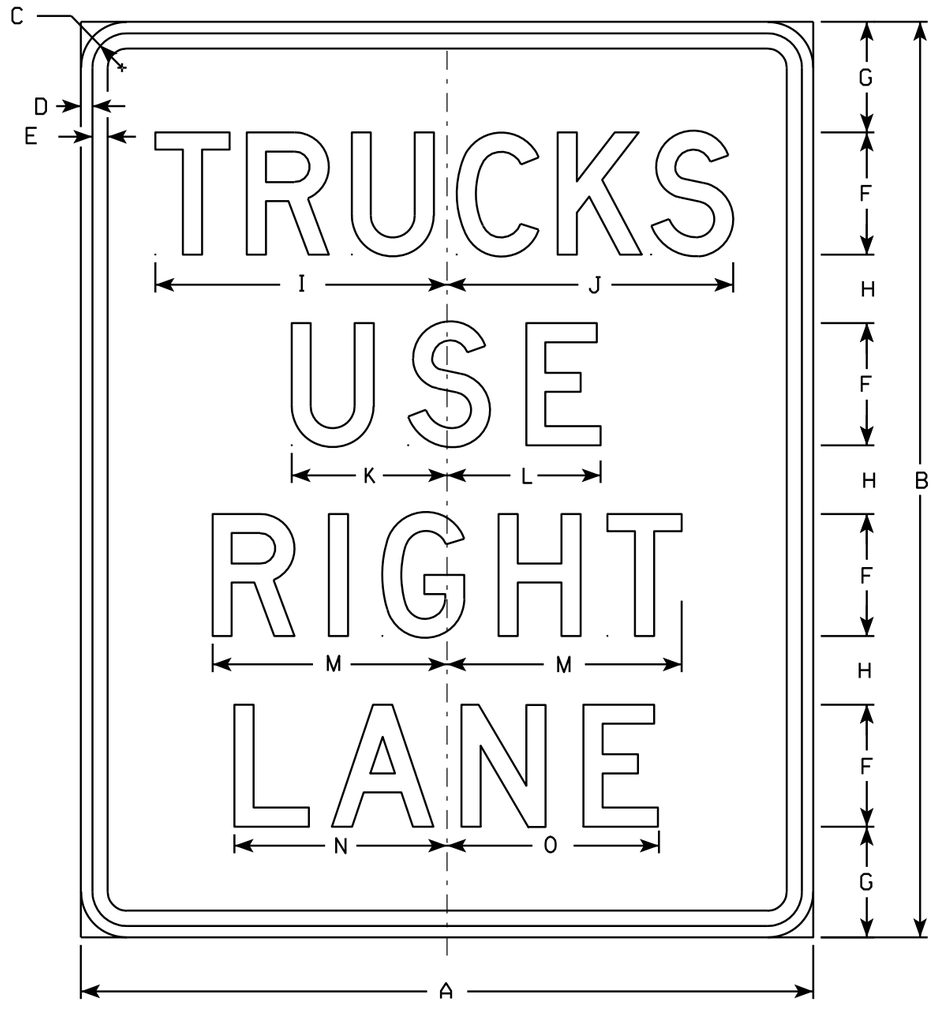
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 185	E

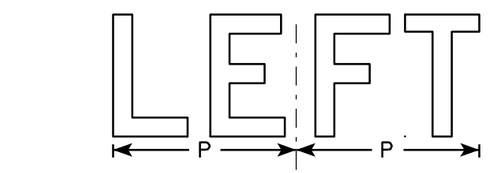


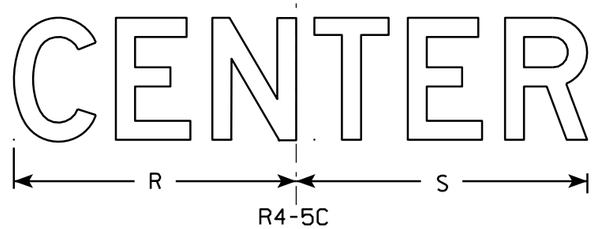
R4-5

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R4-5L & R4-5C are the same as R4-5 except LEFT or CENTER replaces RIGHT as order by code.

R4-5L





R4-5C

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	30	1 1/8	3/8	1/2	4	3 5/8	2 1/4	9 5/8	9 3/8	5 1/8	5 1/8	7 3/4	7 1/4	7	6		9 1/4	9 1/2								5.0
2M	24	30	1 1/8	3/8	1/2	4	3 5/8	2 1/4	9 5/8	9 3/8	5 1/8	5 1/8	7 3/4	7 1/4	7	6		9 1/4	9 1/2								5.0
3																											
4	36	48	2 1/4	5/8	3/4	6	6	4	14 3/8	14 1/8	7 7/8	7 7/8	12 1/4	10 3/4	10 1/2	9 5/8		13 7/8	14 1/4								12.0
5	48	60	2 1/4	3/4	1	8	7 1/4	4 1/2	19 1/8	18 3/4	10 1/4	10 1/8	15 3/8	14	13 7/8	12		18 1/2	19 1/8								20.0

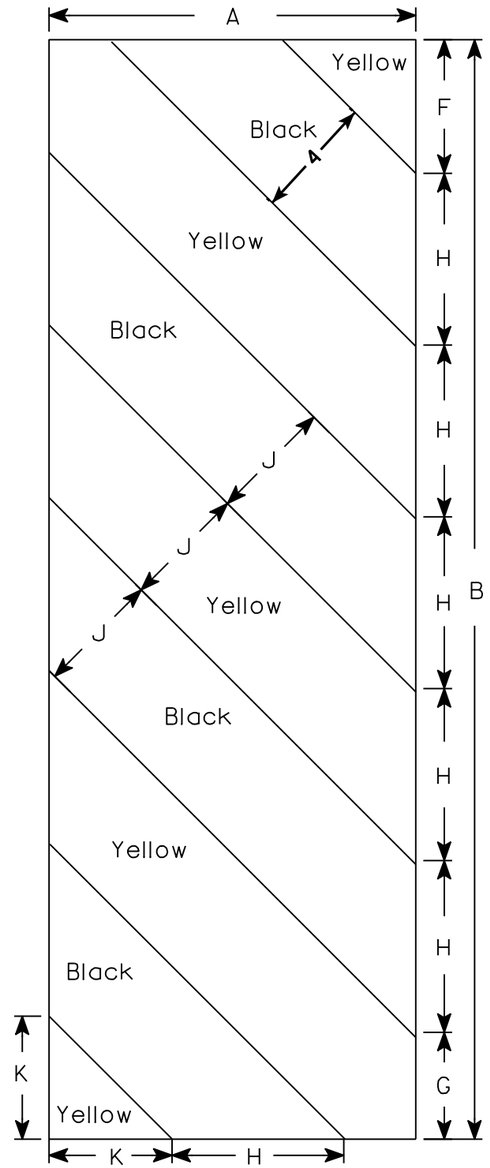
STANDARD SIGN
R4-5

WISCONSIN DEPT OF TRANSPORTATION

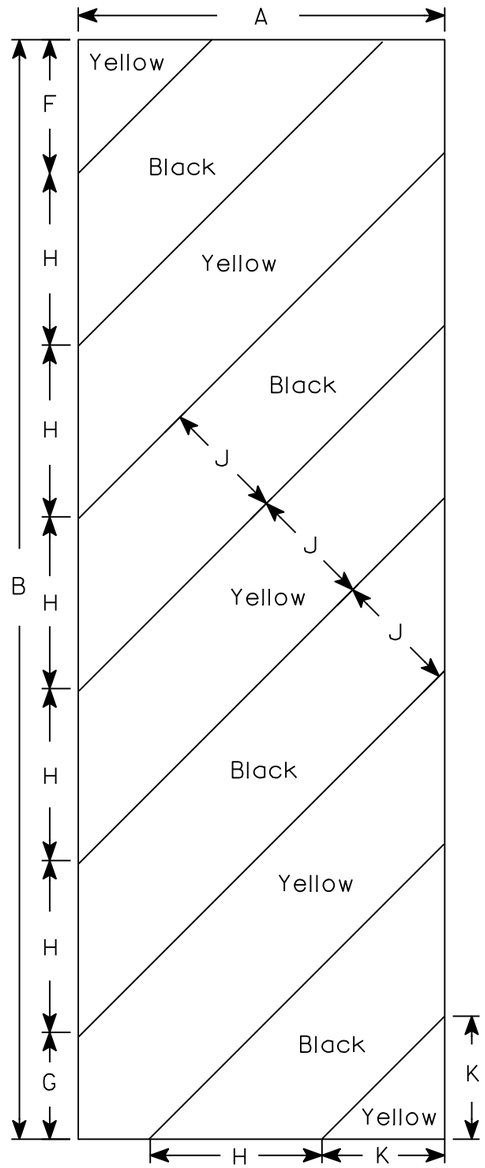
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-5.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 186 | E



W5-52L



W5-52R

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN

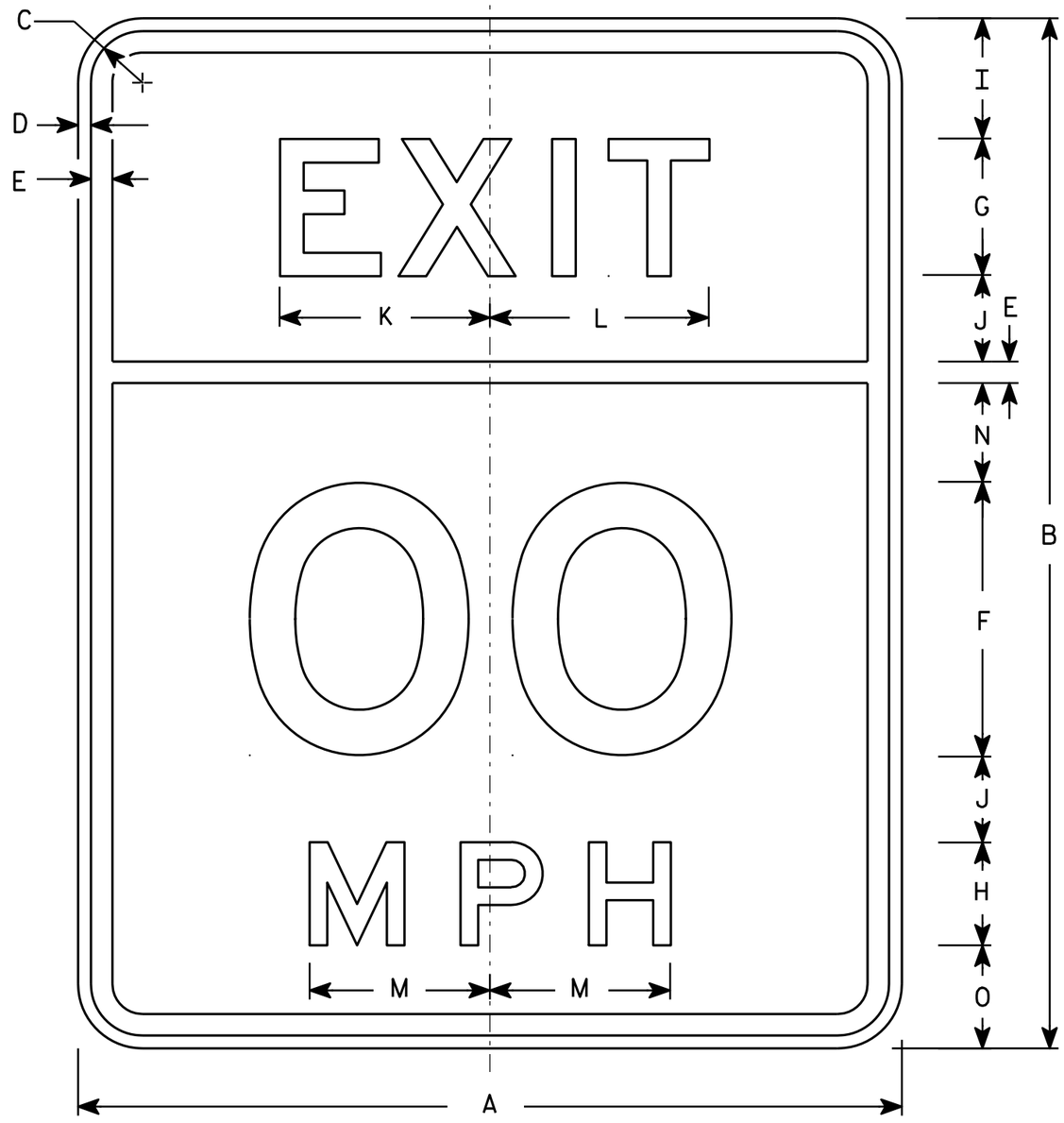
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 187	E



W13-2

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	30	1 1/2	3/8	5/8	8	4	3	3 1/2	2 1/2	6 1/8	6 3/8	5 1/4	2 7/8	3												5.0
2M	24	30	1 1/2	3/8	5/8	8	4	3	3 1/2	2 1/2	6 1/8	6 3/8	5 1/4	2 7/8	3												5.0
3	36	48	2 1/4	5/8	7/8	12	6	4	6	4	9 1/4	9 1/2	7 1/8	5 1/8	6												12.0
4	36	48	2 1/4	5/8	7/8	12	6	4	6	4	9 1/4	9 1/2	7 1/8	5 1/8	6												12.0
5	48	60	2 1/4	3/4	1	16	8	6	7	5	12 1/4	12 3/4	10 5/8	5 3/4	6												20.0

STANDARD SIGN
W13-2

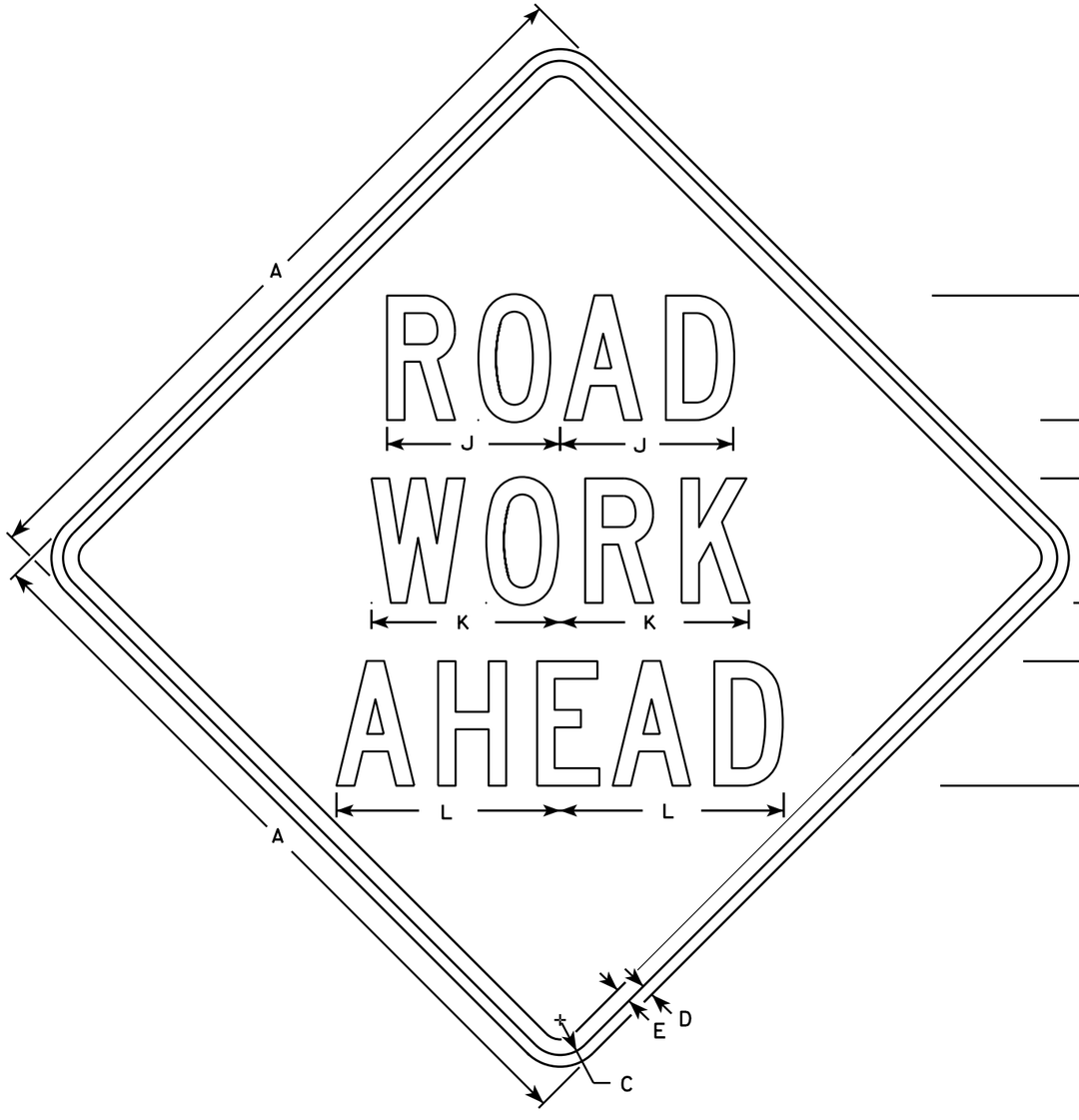
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

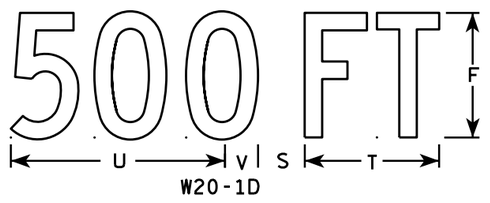
DATE 5/31/12 PLATE NO. W13-2.9

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 188 | E

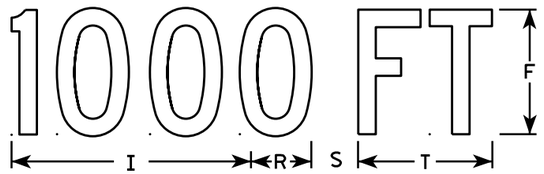
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W132.DGN PLOT DATE : 31-MAY-2012 11:03 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 4.167994:1.000000
WISDOT/CADDS SHEET 42



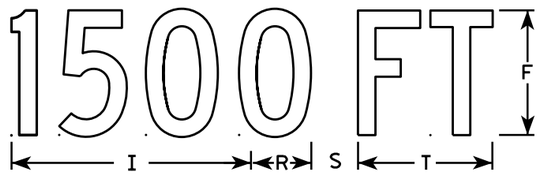
W20-1A



W20-1D



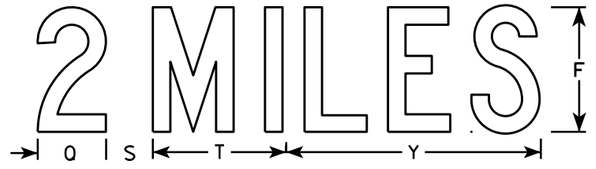
W20-1C



W20-1B

W20-1G

W20-1F



W20-1E

NOTES

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

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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

State Traffic Engineer

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

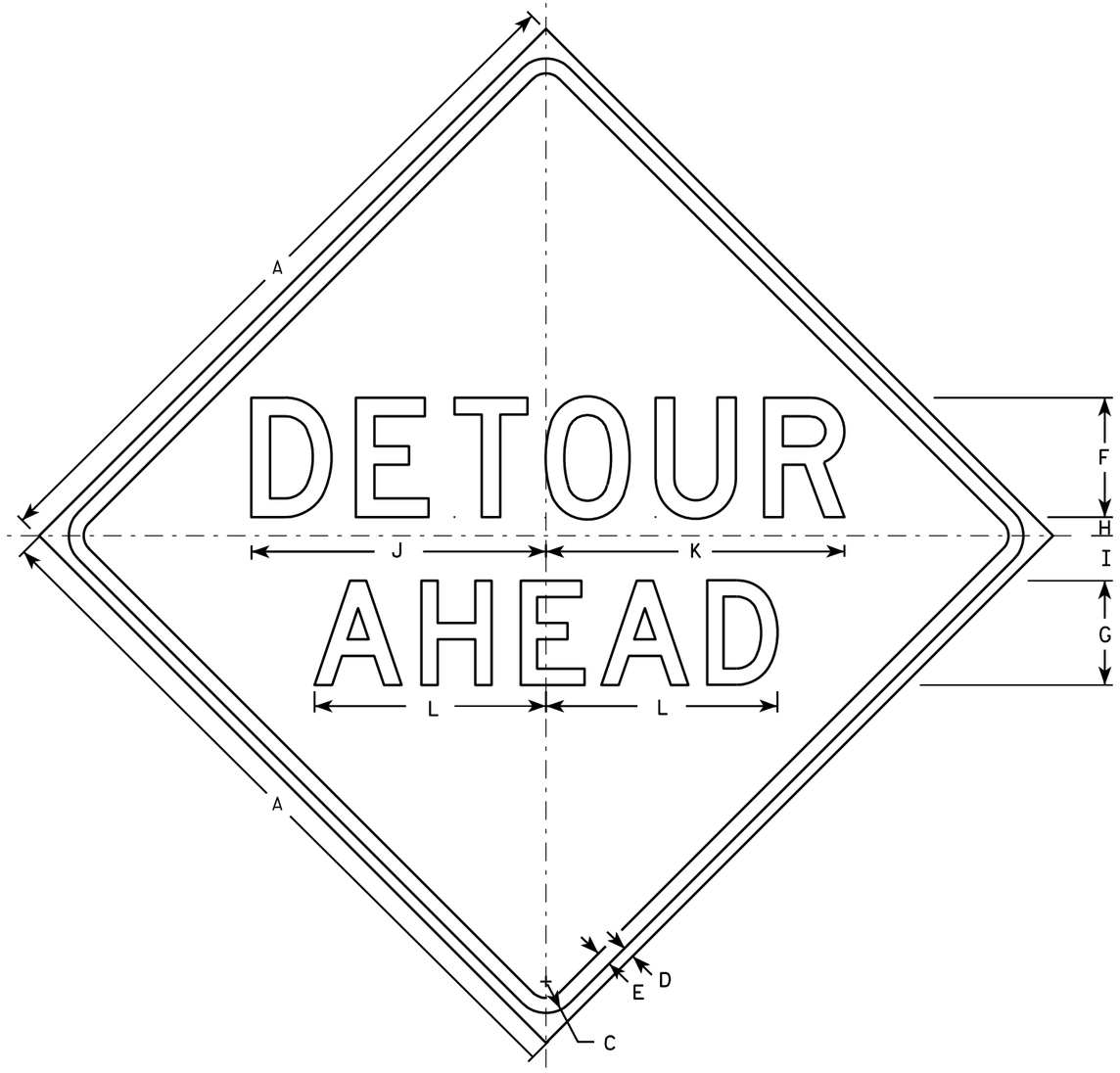
PROJECT NO:

SHEET NO: E

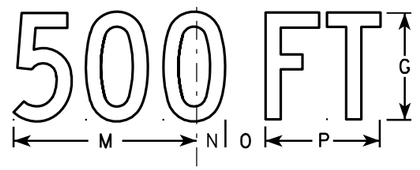
7

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W201.dgn PLOT DATE : 27-MAY-2015 15:58 PLOT BY : mscsja

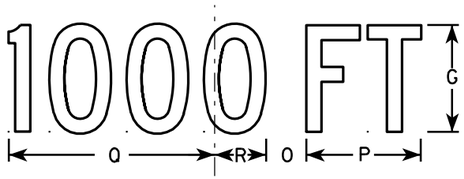
WISDOT/CADDS SHEET 42



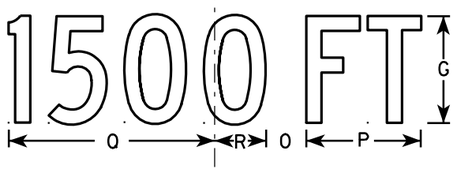
W20-2A



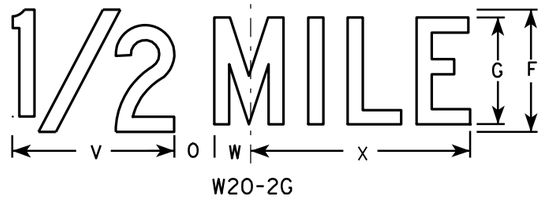
W20-2D



W20-2C



W20-2B



W20-2G

W20-2F

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

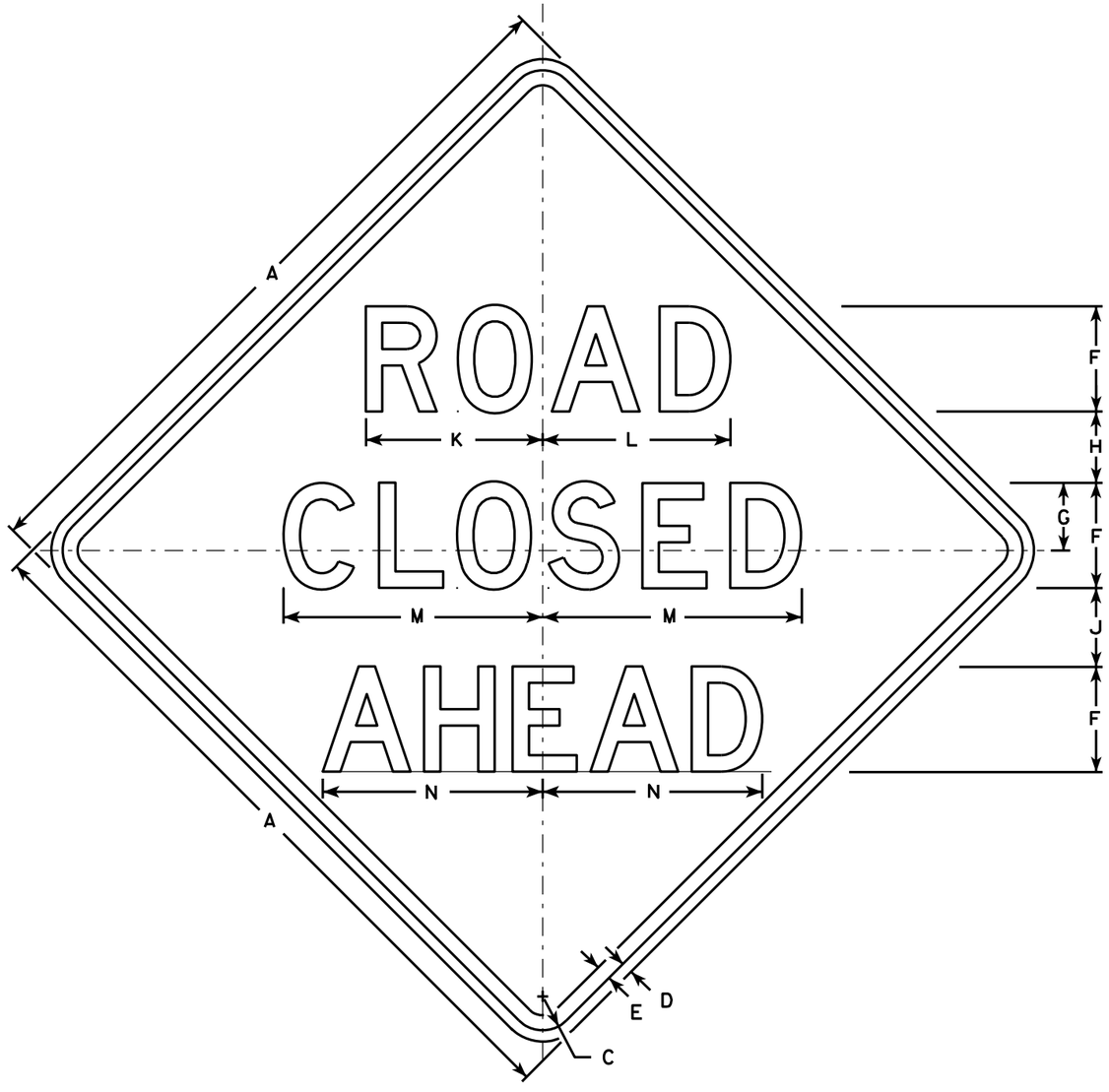
STANDARD SIGN
W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION

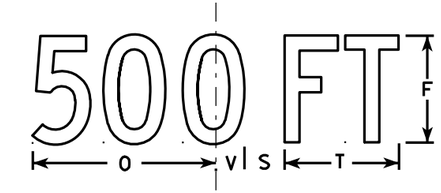
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

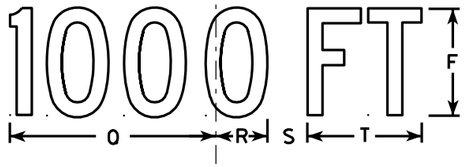
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 190 | E



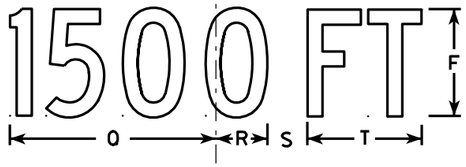
W20-3A



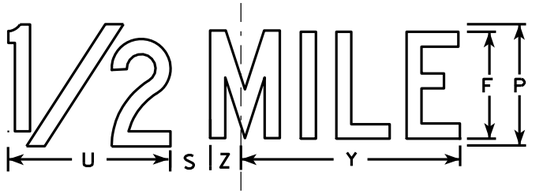
W20-3D



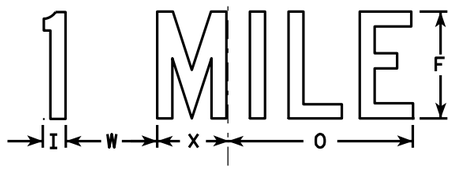
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

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

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

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

WISCONSIN DEPT OF TRANSPORTATION

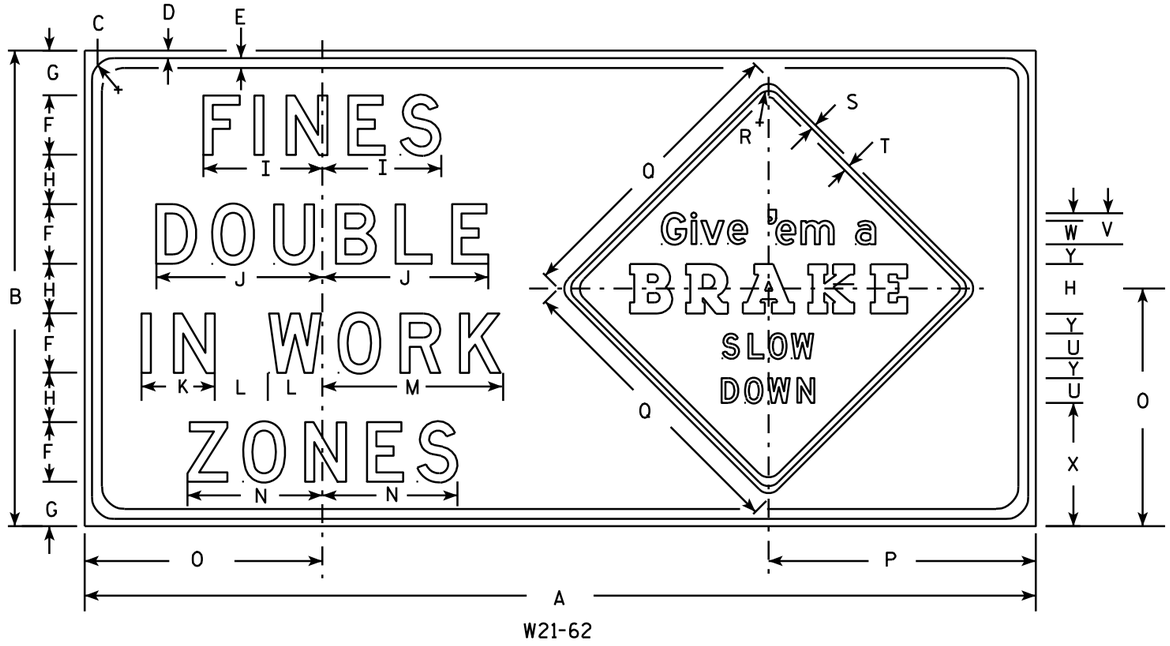
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 191 | E

7

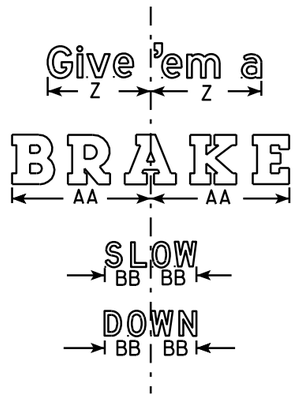
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W203.DGN PLOT DATE : 18-MAR-2011 12:08 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.931739:1.000000
WISDOT/CADDS SHEET 42



W21-62

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White - (See Note 5)
   Message - Black
3. Message Series -
   Fines Double Message - All lines are Series D
   Give 'em a Brake -
   Line one is Series E, line two is a Special Graphic Series and lines three and four are Series D.
4. The base material shall be plywood. Corners may be square or rounded, but borders shall be rounded as shown. The base material for Give 'em a Brake sign can be a seperate sheet of aluminum with the corners and borders rounded as shown. This seperate panel shall then be attached to the plywood with aluminum or stainless steel sheet metal screws.
5. Background for the Give 'em a Brake sign shall be Type F reflective orange.



W21-62P

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	Area sq. ft.
1																															
2S																															
2M																															
3	96	48	2 1/4	3/4	1	6	4 1/2	5	12	16 3/4	7 3/8	5 1/2	18 1/4	13 5/8	24	27	30	1 3/8	1/2	5/8	2 1/2	3 1/8	2 3/8	12 1/2	2	10 3/4	14	4 5/8	34 1/2	4	32.0
4																															
5																															

STANDARD SIGN
W21-62

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-62.5

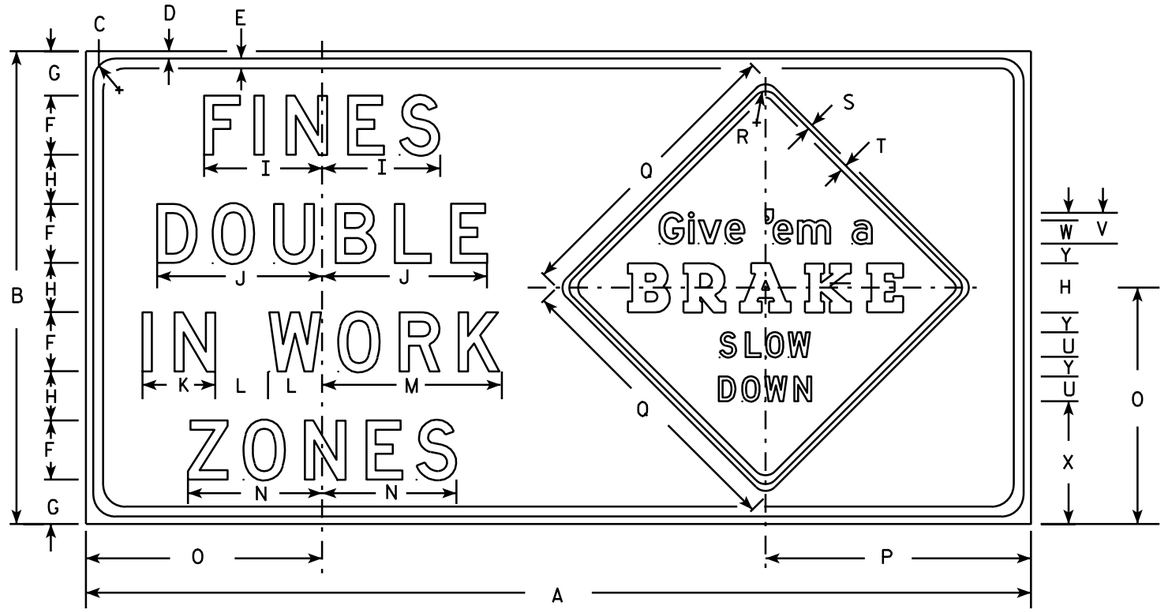
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 192	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W2162.DGN PLOT DATE : 21-MAR-2011 10:25 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 15.294877:1.000000

WISDOT/CADDS SHEET 42

7

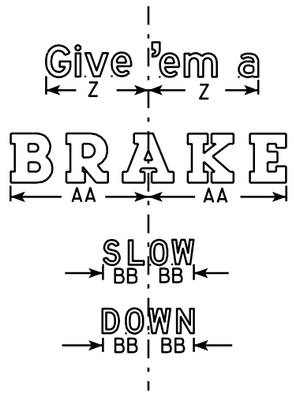
7

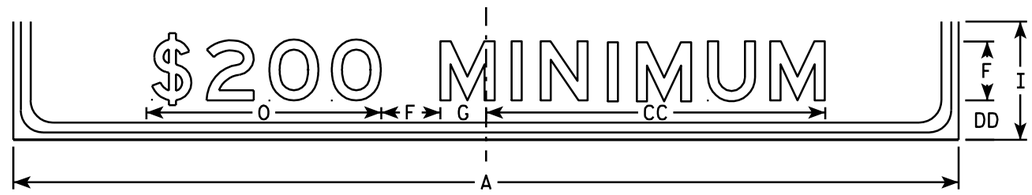


W21-62

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White - (See Note 5)
   Message - Black
3. Message Series -
   Fines Double Message - All lines are Series D
   Give 'em a Brake -
   Line one is Series E, line two is a Special Graphic Series and lines three and four are Series D.
4. The base material shall be plywood. Corners may be square or rounded, but borders shall be rounded as shown. The base material for Give 'em a Brake sign can be a seperate sheet of aluminum with the corners and borders rounded as shown. This seperate panel shall then be attached to the plywood with aluminum or stainless steel sheet metal screws.
5. Background for the Give 'em a Brake sign shall be Type F reflective orange.





W21-62P

Metric equivalent for this sign is:

SIZE	
1	
2	
3	2400 mm X 1200 mm
4	
5	

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	Area sq. ft.	Area m2
1																																
2																																
3	96	48	2 1/4	3/4	1	6	4 1/2	5	12	16 3/4	7 3/8	5 1/2	18 1/4	13 5/8	24	27	30	1 3/8	1/2	5/8	2 1/2	3 1/8	2 3/8	12 1/2	2	10 3/4	14	4 5/8	34 1/2	4	32.0	2.88
4																																
5																																

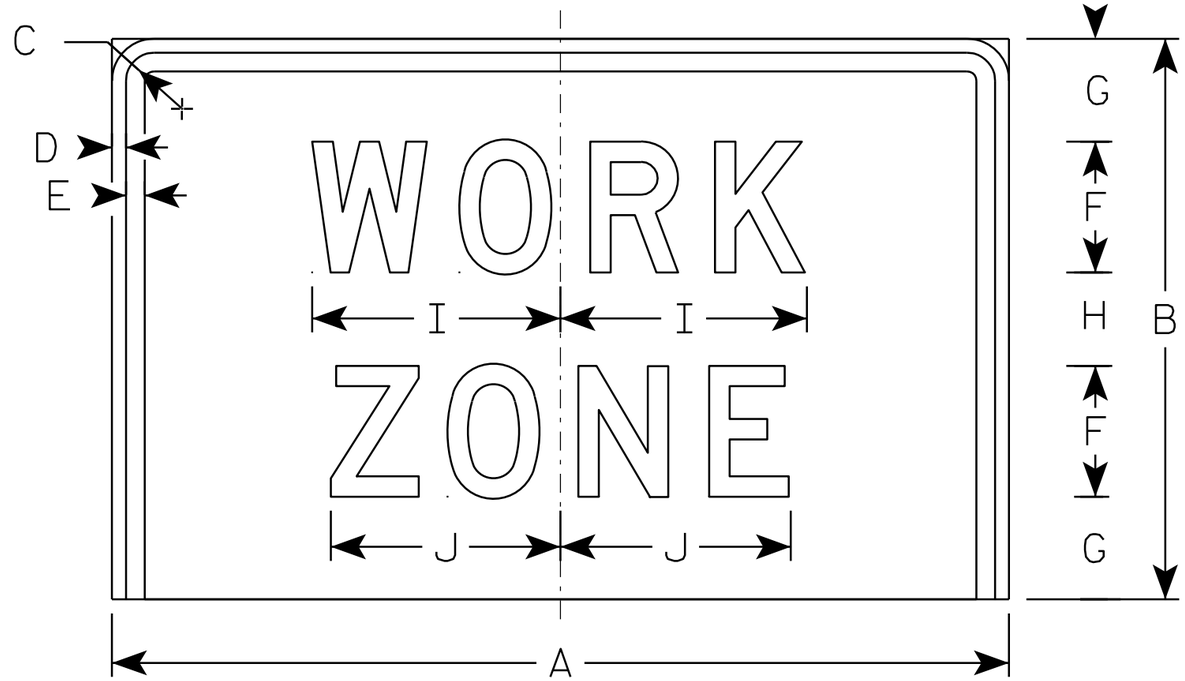
STANDARD SIGN
W21-62

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/16/07 PLATE NO. W21-62.4

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 193	E



W21-620

NOTES

1. Sign is Type II - Type F - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	2 1/4	3/4	1	7	5 1/2	5	13 1/4	12 1/4																	10.0
2M	48	30	2 1/4	3/4	1	7	5 1/2	5	13 1/4	12 1/4																	10.0
3																											
4																											
5																											

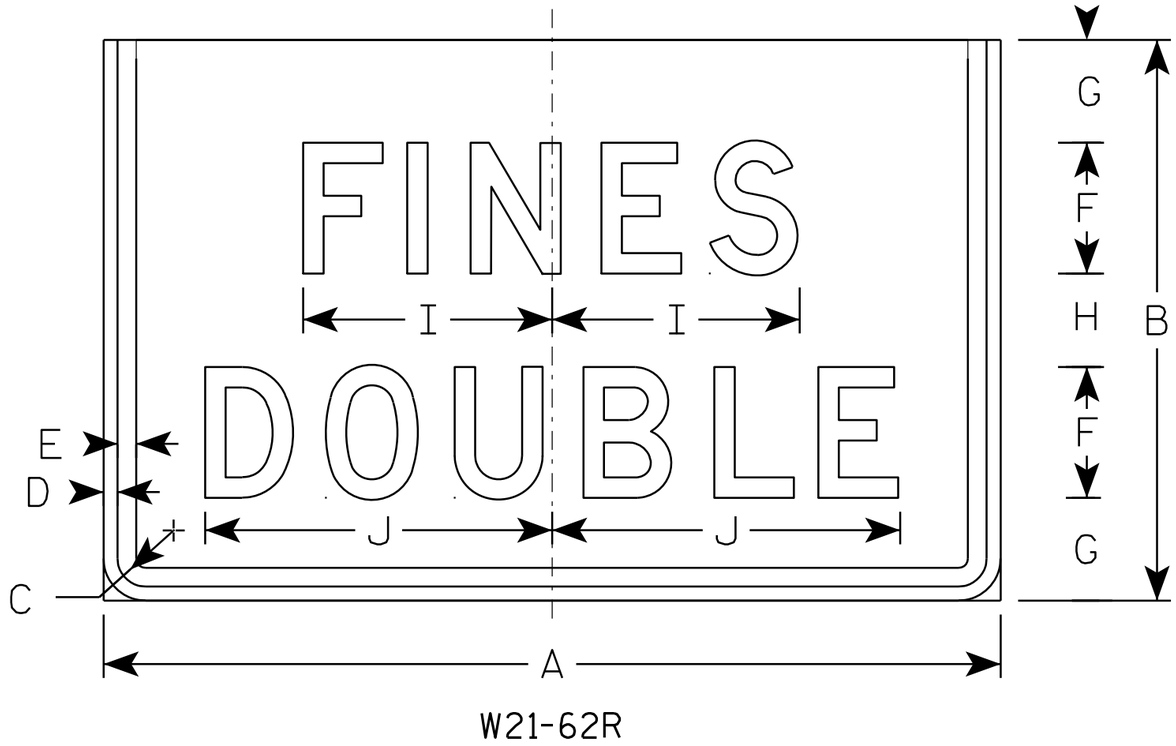
STANDARD SIGN
W21-620

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-620.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 194	E



W21-62R

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	2 1/4	3/4	1	7	5 1/2	5	13 1/4	18 5/8																	10.0
2M	48	30	2 1/4	3/4	1	7	5 1/2	5	13 1/4	18 5/8																	10.0
3																											
4																											
5																											

STANDARD SIGN
W21-62R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-62R.2

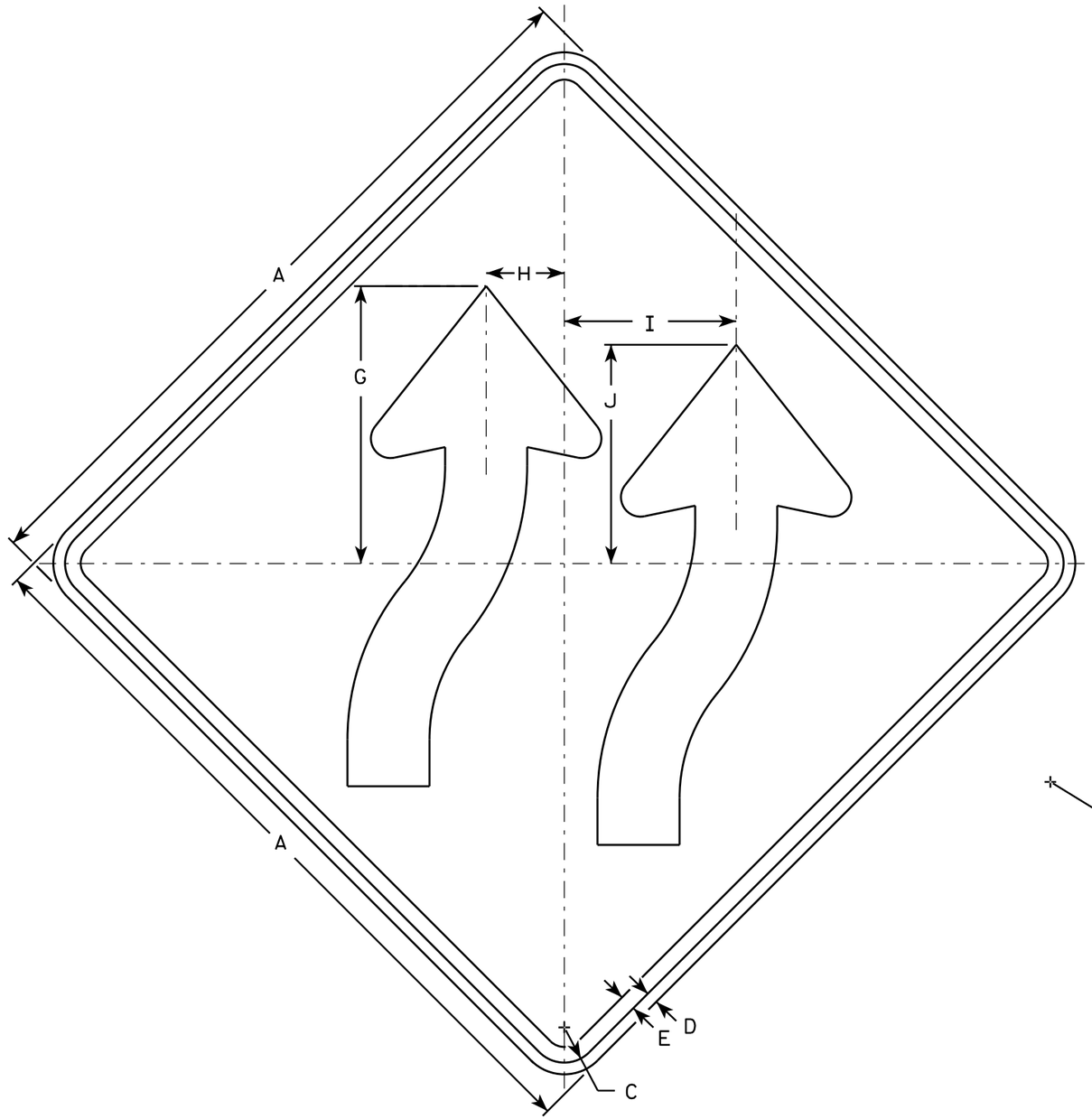
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 195	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W2162R.DGN PLOT DATE : 21-MAR-2011 10:51 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 8.108332:1.000000

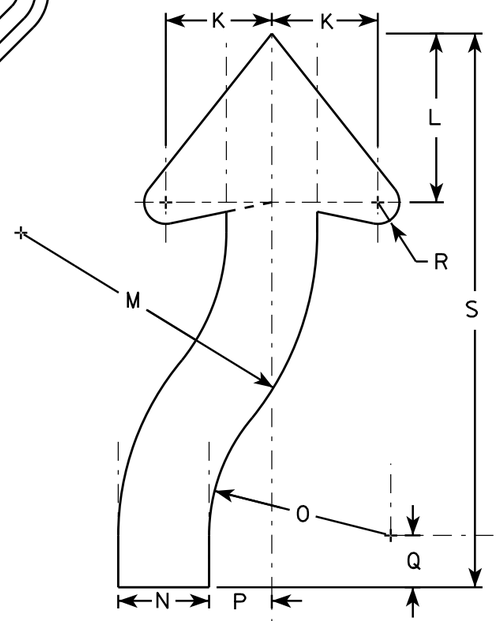
WISDOT/CADDS SHEET 42

7

7



W01-4bR



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W01-4bL is the same as W014-bR exept arrows are reversed along the vertical centerline

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4		13 3/8	3 3/4	8 1/4	10 1/2	4 5/8	7 3/8	12 7/8	3 7/8	7 7/8	2 3/4	2 1/4	7/8	24								9.0
2S	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
2M	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
3	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
4	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
5	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0

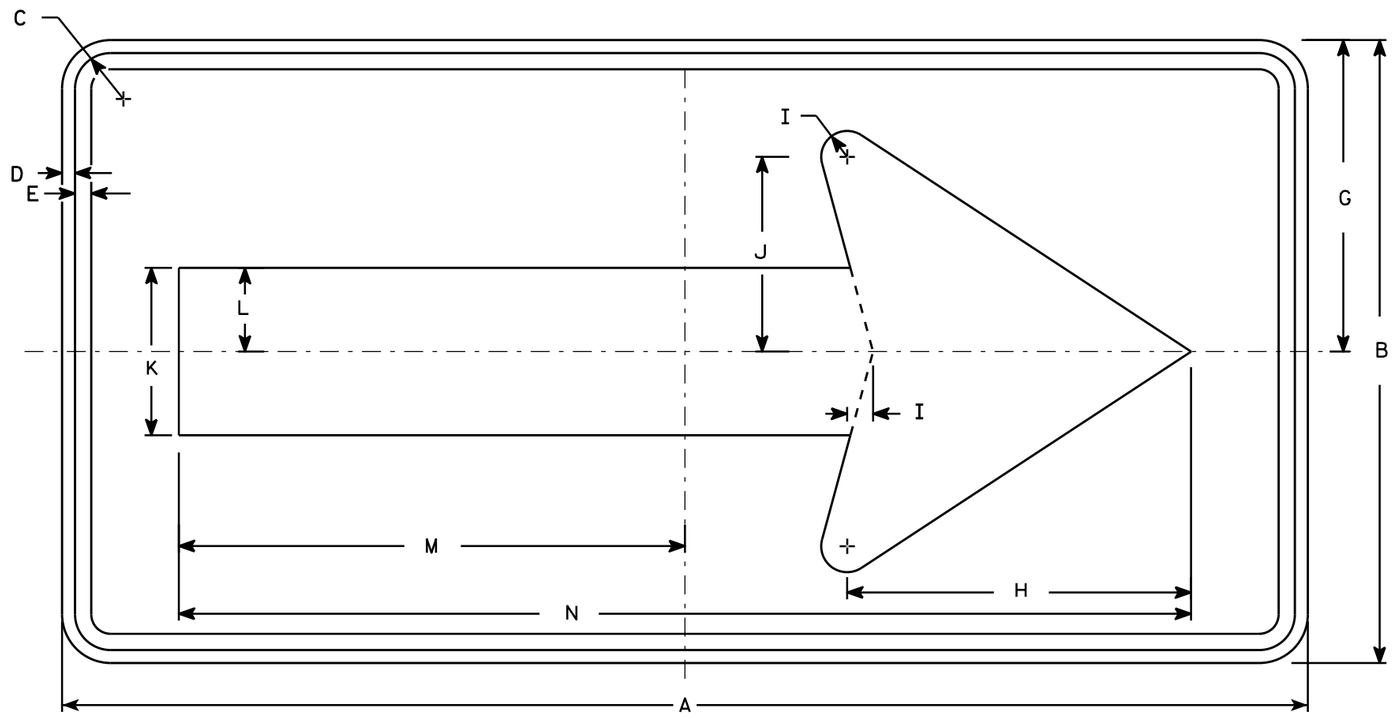
STANDARD SIGN
W01-4b

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-4b.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



W01-6

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

STANDARD SIGN
W01-6

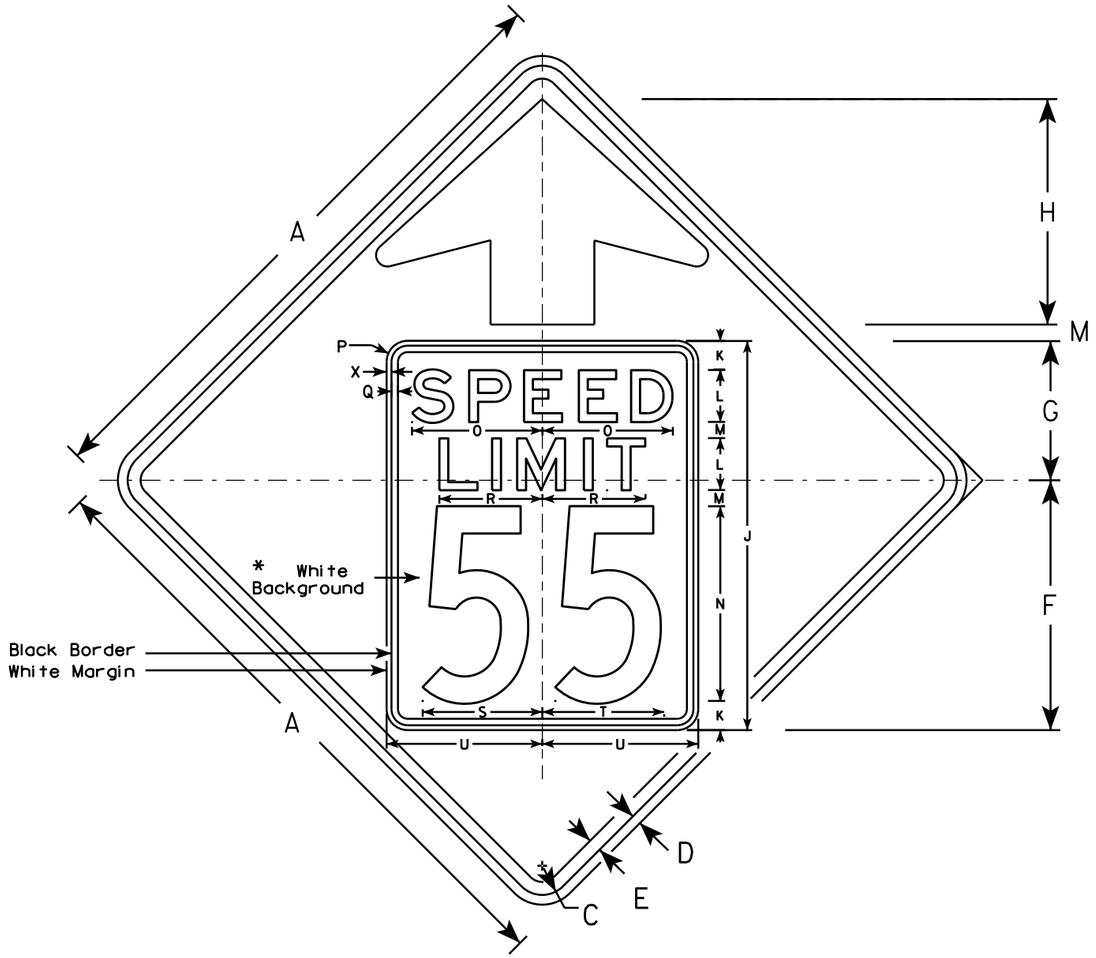
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-6.1

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W016.DGN PLOT DATE : 28-FEB-2014 11:37 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 5.837526:1.000000 WISDOT/CADDS SHEET 42

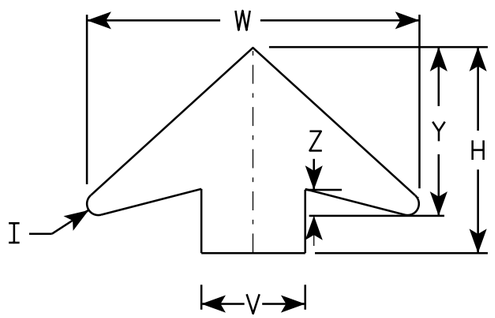


W03-5

NOTES

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

*Speed Limit Sign shall have a White Background



ARROW DETAIL

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

STANDARD SIGN
W03-5

WISCONSIN DEPT OF TRANSPORTATION

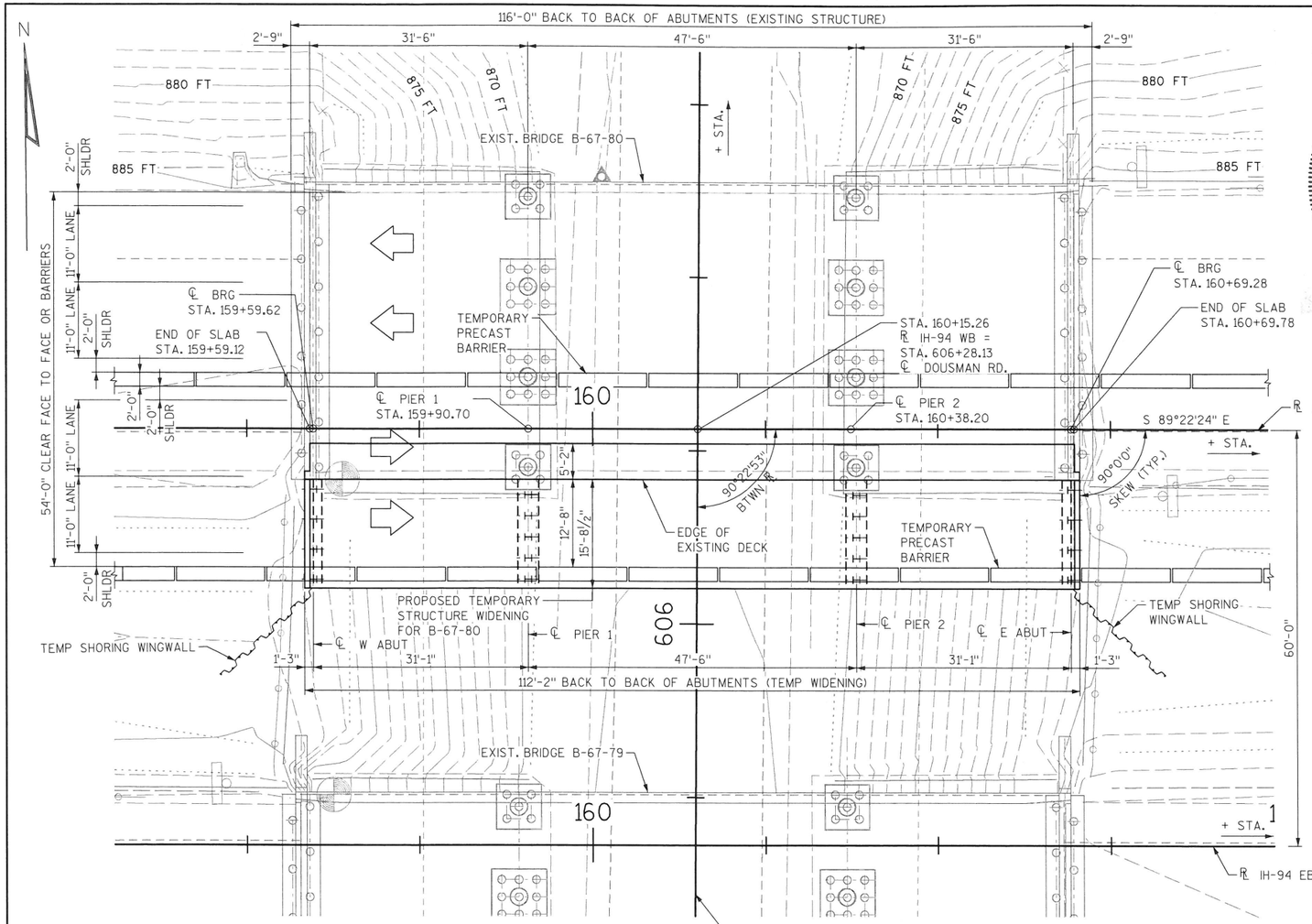
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE W03-5.1

PROJECT NO: SHEET NO: E

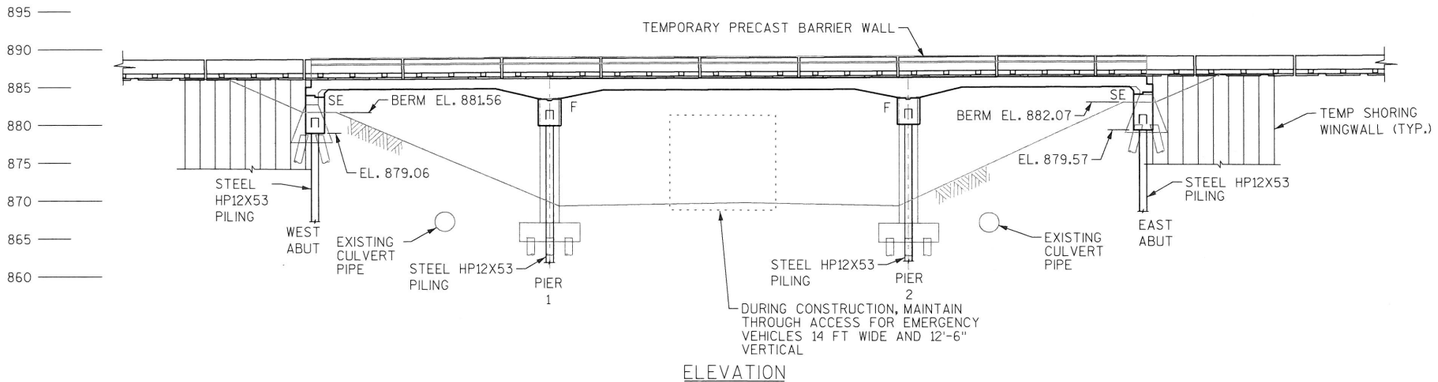
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W035.DGN PLOT DATE : 20-NOV-2013 11:32 PLOT BY : mscsja

WISDOT/CADDS SHEET 42



PLAN

EXISTING C.I.P. CONCRETE SLAB BRIDGE
WITH C.I.P. CONCRETE ABUTMENTS
AND MULTI-COLUMNED PIERS WITH TEMPORARY
WIDENING TO SOUTH



ELEVATION

8

STATE PROJECT NUMBER
1060-38-70

EXISTING STRUCTURE:

THE EXISTING BRIDGE (B-67-80) IS A THREE SPAN CONCRETE SLAB BRIDGE FOUNDED ON MULTICOLUMN CONCRETE PIERS AND CONCRETE STUB ABUTMENTS. THE FOUNDATIONS ARE SUPPORTED ON TIMBER PILING.

DESIGN DATA

LIVE LOAD:

DESIGN LOADING HL-93
INVENTORY RATING FACTOR 1.08
OPERATING RATING FACTOR 1.40
WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV) = 250 KIPS

ULTIMATE DESIGN STRESSES:

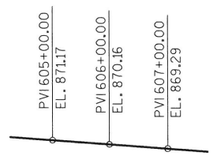
CONCRETE MASONRY SUPERSTRUCTURE	fc' = 4000 PSI
ALL OTHER	fc' = 3500 PSI
STEEL REINFORCEMENT HIGH STRENGTH BAR, GRADE 60	fy = 60 KSI

FOUNDATION DATA:

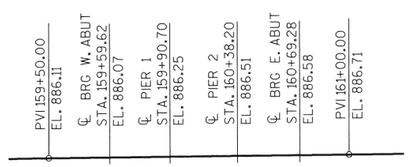
PLACE PIERS AND ABUTMENTS ON STEEL HP12X53 PILING WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS/PILE* AT PIERS AND 60 TONS/PILE* AT ABUTMENTS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

* THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

EST. PILE LENGTHS: 60 FT AT W. ABUT.
75 FT AT PIER 1
75 FT AT PIER 2
60 FT AT E. ABUT.



PROFILE GRADE LINE DOUSMAN RD.



PROFILE GRADE LINE IH-94 WB

BENCHMARKS

NAME	ELEVATION	DESCRIPTION
BM3	890.23	ALUMINUM DISK IN PARAPET - EB
BM4	888.95	ALUMINUM DISK IN PARAPET - WB

TRAFFIC DATA IH-94:

AADT (2015) = 43100
AADT (2035) = 46500
TRUCK % = 16.2%
D = 60/40
DESIGN SPEED = 70 MPH.

TRAFFIC DATA DOUSMAN RD:

AADT (2015) = 1400
AADT (2035) = 1700
DESIGN SPEED = 50 MPH.

LIST OF DRAWINGS:

1. GENERAL PLAN AND ELEVATION
2. CROSS SECTION
3. QUANTITIES & GENERAL NOTES
4. SUBSURFACE EXPLORATION
5. ABUTMENTS
6. PIERS
7. SUPERSTRUCTURE
8. SUPERSTRUCTURE DETAILS

BRIDGE OFFICE CONTACT:

WILLIAM DREHER, PE
(608) 266-8489

CONSULTANT CONTACT:

WILLIAM J. ZIPPEL, PE, SE
ALFRED BENESCH AND CO.
1300 WEST CANAL STREET, SUITE 150
MILWAUKEE, WI 53233
PHONE: 414-308-1321

NO.	DATE	REVISION	BY

benesch
Alfred Benesch & Company
1300 West Canal Street, Suite 150
Milwaukee, Wisconsin 53233
414-308-1310 Job No. 20166.00

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 10/14/15
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-67-80
IH-94 WB OVER DOUSMAN RD.

COUNTY	~~TOWN/CITY~~/VILLAGE
WAUKESHA	SUMMIT

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
		WMN	WJZ

GENERAL PLAN AND ELEVATION

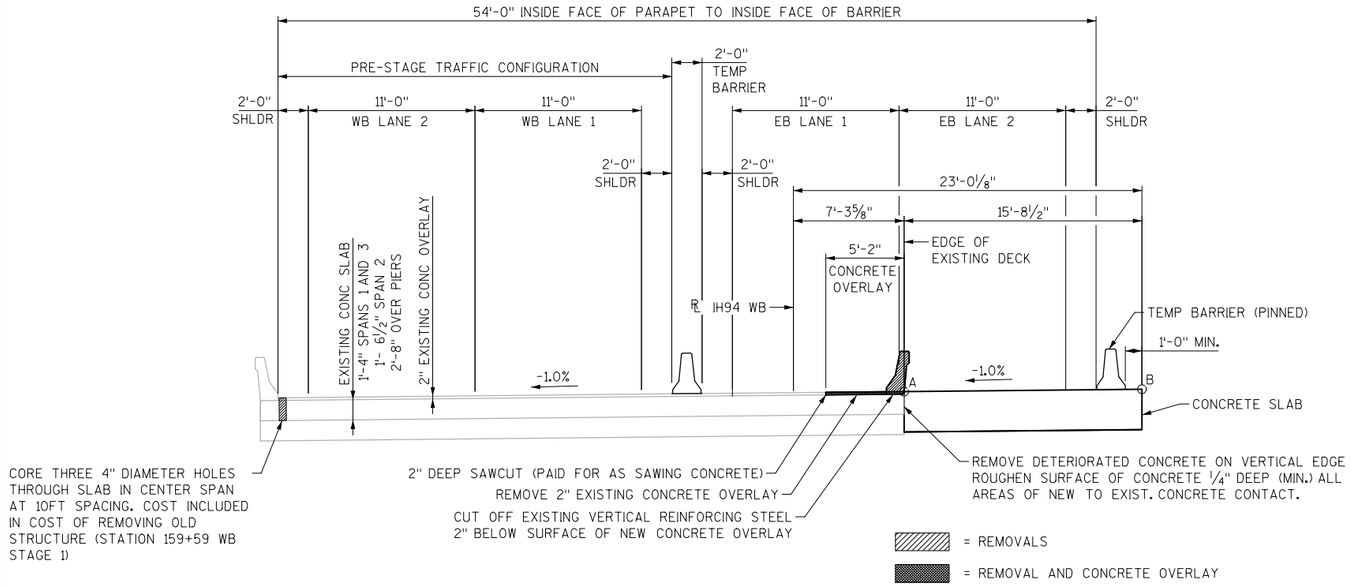
SHEET 1 OF 8

199

8

FILE = 085001.B670080_GP&E.DGN
SCALE = 1:20

STATE PROJECT NUMBER
1060-38-70

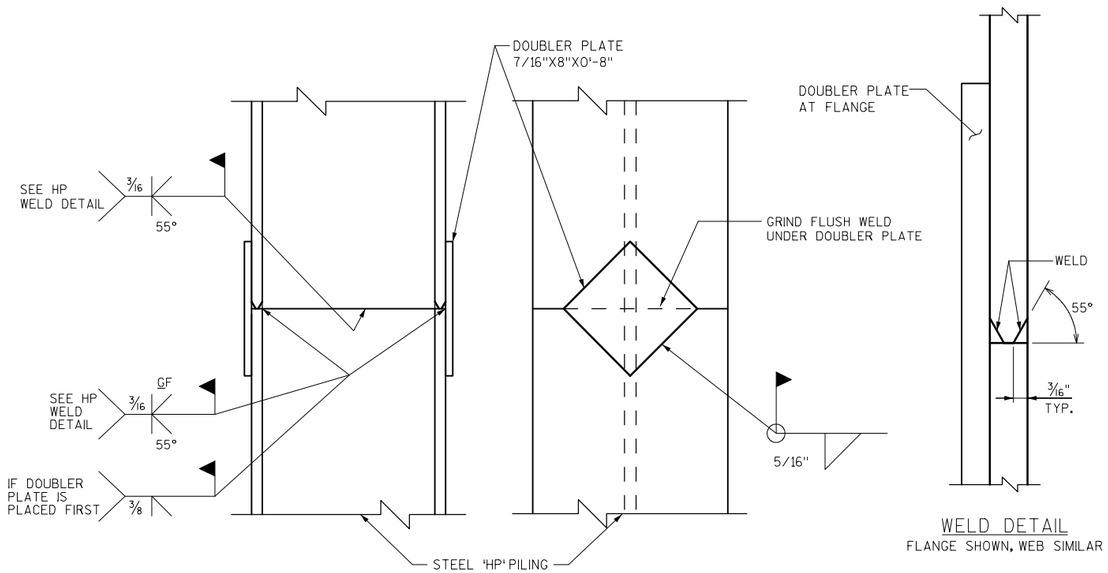


TYPICAL SECTION

TOP OF DECK ELEVATIONS

MATCH EXISTING DECK ELEVATIONS AND CROSS SLOPE.

LOCATION	STATION	PT. A (NORTH EDGE)	PT. B (SOUTH EDGE)
END OF SLAB	159+59.12	886.14	886.30
CL BRG. WEST ABUT.	159+59.62	886.14	886.30
0.1	159+62.73	886.15	886.31
0.2	159+65.83	886.18	886.34
0.3	159+68.94	886.20	886.36
0.4	159+72.05	886.22	886.38
0.5	159+75.16	886.24	886.40
0.6	159+78.27	886.26	886.42
0.7	159+81.38	886.27	886.43
0.8	159+84.48	886.29	886.45
0.9	159+87.59	886.31	886.47
CL PIER 1	159+90.70	886.32	886.48
0.1	159+95.45	886.34	886.50
0.2	160+00.20	886.36	886.52
0.3	160+04.95	886.37	886.53
0.4	160+09.70	886.40	886.56
0.5	160+14.45	886.42	886.58
0.6	160+19.20	886.45	886.61
0.7	160+23.95	886.47	886.63
0.8	160+28.70	886.51	886.67
0.9	160+33.45	886.55	886.71
CL PIER 2	160+38.20	886.58	886.74
0.1	160+41.31	886.60	886.76
0.2	160+44.42	886.61	886.77
0.3	160+47.52	886.62	886.78
0.4	160+50.63	886.63	886.78
0.5	160+53.74	886.63	886.79
0.6	160+56.85	886.64	886.80
0.7	160+59.96	886.64	886.80
0.8	160+63.07	886.65	886.81
0.9	160+66.17	886.65	886.81
CL BRG. EAST ABUT.	160+69.28	886.65	886.81
END OF SLAB	160+69.78	886.65	886.81



STEEL PILING SPLICE DETAILS

WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-80

DRAWN BY WMN | PLANS CK'D. WJZ

CROSS-SECTION

SHEET 2 OF 8

200

FILE= 085002_B67O080_STAGECONST.DGN
SCALE = 1:10

STATE PROJECT NUMBER

1060-38-70

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	PIER 1	PIER 2	E. ABUT.	SUPER	TOTAL
203.0200	REMOVING OLD STRUCTURE (STATION 159+59 WB STAGE 1)	LS	----	----	----	----	1	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES (B-67-80)	LS	0.5	----	----	0.5	----	1
210.0100	BACKFILL STRUCTURE	CY	23	----	----	23	----	46
501.1000.S	ICE HOT WEATHER CONCRETING	LB	60	53	53	60	803	1029
502.0100	CONCRETE MASONRY BRIDGES	CY	8	7	7	8	107	137
502.5005	MASONRY ANCHORS TYPE L NO.5 BARS	EACH	10	----	----	10	74	94
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	769	575	575	769	23938	26626
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	----	----	----	----	5	5
511.1200	TEMPORARY SHORING (STRUCTURE B-67-80)	SF	30	----	----	30	----	60
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	3	----	----	3	----	6
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	240	375	375	240	----	1230
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	35	----	----	35	----	70
690.0250	SAWING CONCRETE	LF	----	----	----	----	111	111
	NON-BID ITEMS							
	JOINT FILLER							
	NON-BITUMINOUS JOINT SEALER							
	POLYETHYLENE SHEETS							

GENERAL NOTES:

1. DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.
2. DRAWINGS SHALL NOT BE SCALED. BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
3. SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
4. THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
5. THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES FOR THE ABUTMENTS SHALL BE THE BOTTOM OF SLOPE PROTECTION.
6. AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.
7. THE QUANTITY FOR BACKFILL STRUCTURE, BID ITEM 210.0100, IS CALCULATED BASED ON THE APPLICABLE FIGURES 12.6-1 AND 12.6-2 IN THE WISCONSIN DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL.
8. TEMPORARY BRIDGE DECK SUFACE SHALL MATCH EXISTING DECK PROFILE AND CROSS-SLOPE.
9. OPEN LONGITUDINAL JOINTS SHALL NOT BE USED.
10. ALL TEMPORARY STRUCTURE COMPONENTS TO BE REMOVED AFTER COMPLETION OF STAGE. COST OF REMOVAL IS INCLUDED IN COST OF REMOVING OLD STRUCTURE (STA. 159+59).

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-80

DRAWN BY WMN | PLANS CK'D. WJZ

QUANTITIES & GENERAL NOTES

SHEET 3 OF 8

201

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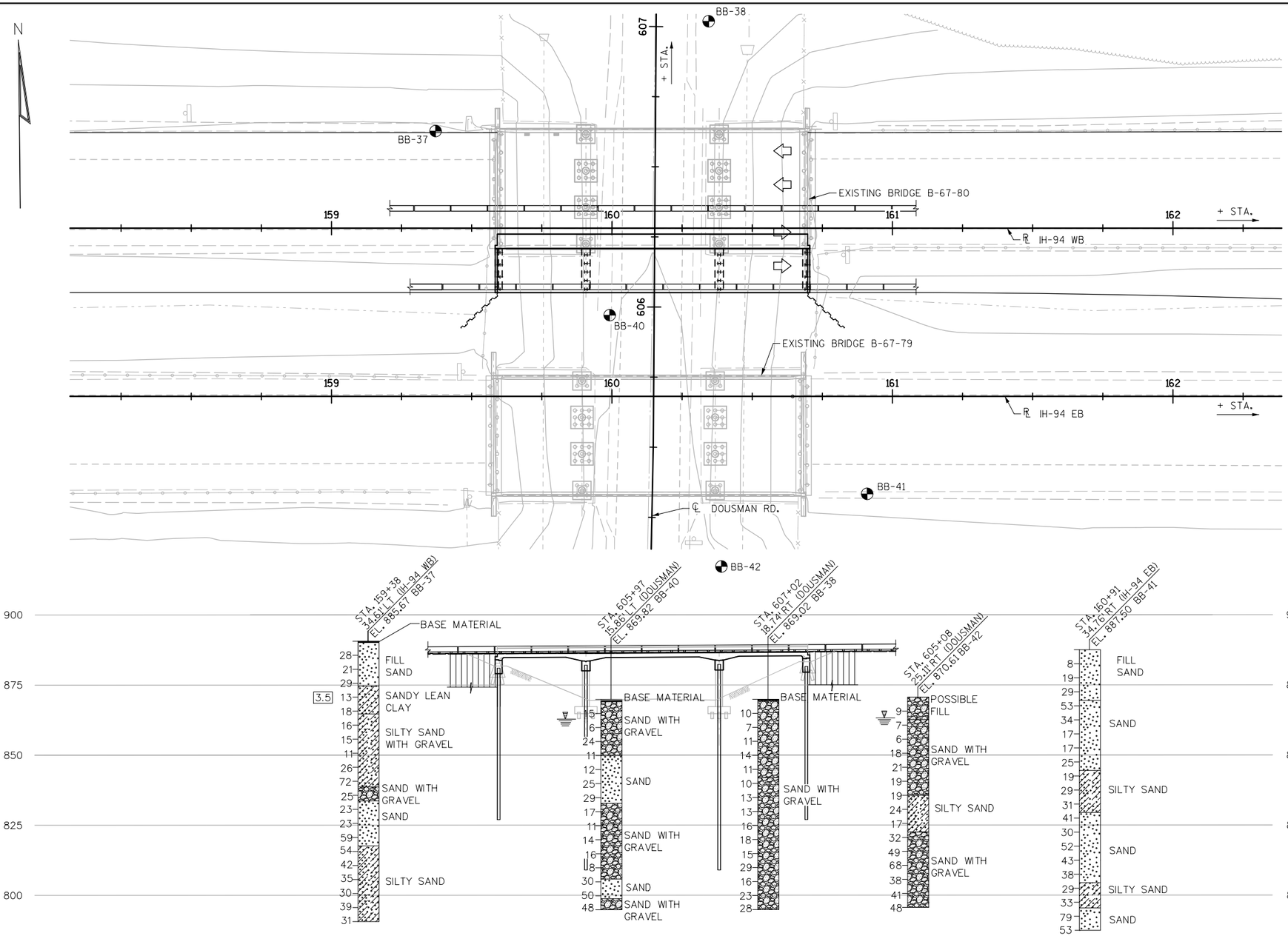
SCALE = 1:10



NOTES:

FOUNDATION DESIGN PARAMETERS ARE BASED ON RECOMMODATIONS FROM THE GEOTECHNICAL EXPLORATION REPORT DATED JULY, 2013 BY HIMALAYAN CONSULTANTS, LLC, AVAILABLE FROM WISDOT.

REFER TO THE GEOTECHNICAL REPORT FOR FULL SOIL DESCRIPTIONS AND DETAILS OF BORING LOGS.

HISTORIC BORINGS ARE AVAILABLE UPON REQUEST FROM WISDOT.

CONTACT THE WISCONSIN DEPARTMENT OF TRANSPORTATION FOR THE GEOTECHNICAL REPORT AND BORING LOGS.

EXISTING FOOTINGS ARE SHOWN FOR EXISTING STRUCTURES. ACTUAL LOCATIONS MAY VARY. CONTRACTOR SHALL VERIFY LOCATIONS IN THE FIELD.

STATE PROJECT NUMBER

1060-38-70

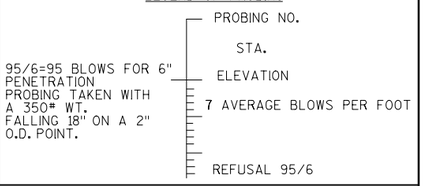
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

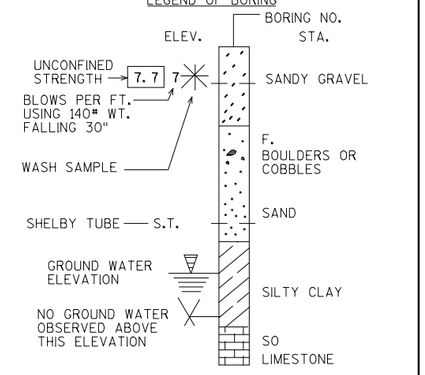
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-80

DRAWN BY WMN | PLANS CK'D. WJZ

SUBSURFACE EXPLORATION

SHEET 4 OF 8

202

8

8

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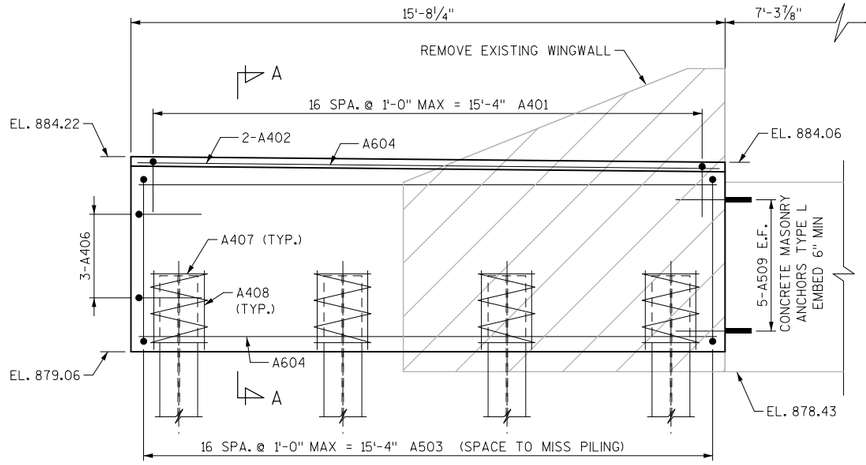
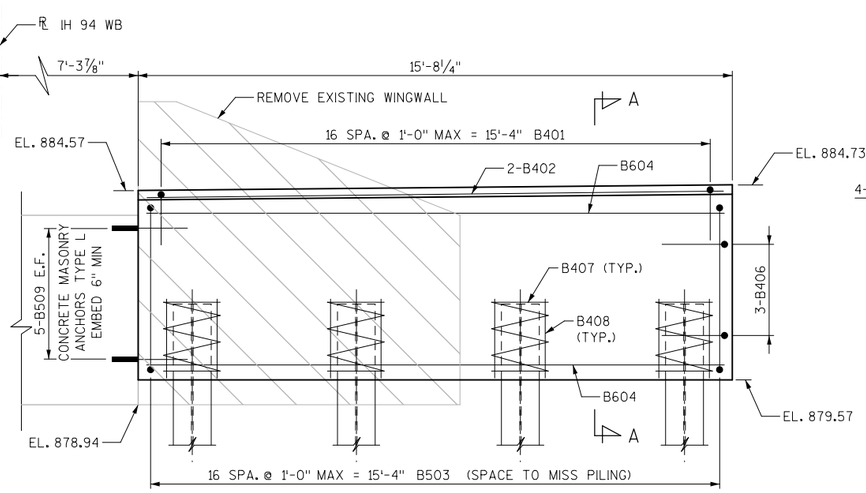
STATE PROJECT NUMBER

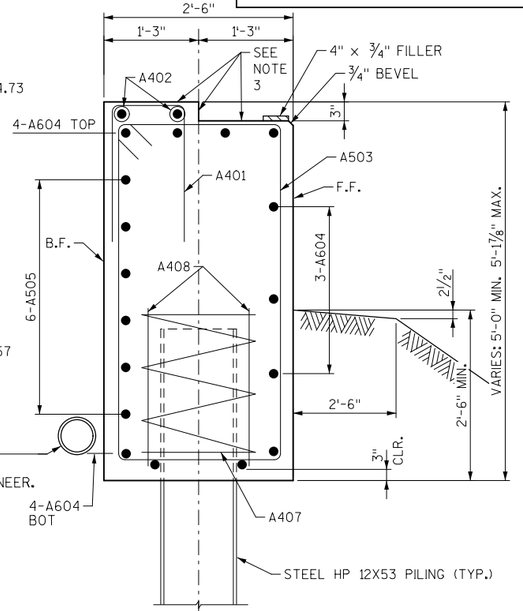
1060-38-70



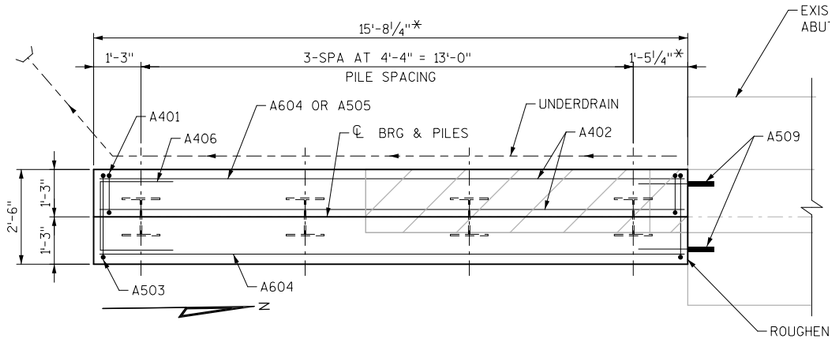
ELEVATION (W. ABUT)



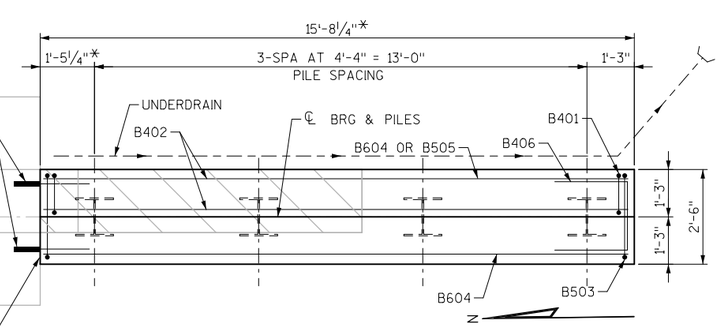
ELEVATION (E. ABUT)



PIPE UNDERDRAIN WRAPPED 6". SLOPE 0.5% MIN. EXIT TO SUITABLE LOCATION AS DIRECTED BY THE ENGINEER.



PLAN (W. ABUT)



PLAN (E. ABUT)

BAR NUMBERS FOR E ABUT BARS ARE THE SAME AS W ABUT BARS EXCEPT "A" CALLOUT IS REPLACED WITH "B".

SECTION A-A

PLACE ABUTMENTS ON STEEL HP 12x53 PILING WITH A REQUIRED DRIVING RESISTANCE OF 60 TONS/PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

NOTES

1. EXCAVATE TO BOTTOM OF ABUTMENTS BEFORE DRIVING PILES.
2. DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF ABUTMENT, UNTIL SUPERSTRUCTURE IS IN PLACE.
3. STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEET OVER ENTIRE ABUTMENT BEFORE PLACING SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".
4. WINGWALLS NOT SHOWN FOR CLARITY.

LEGEND

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

= REMOVALS

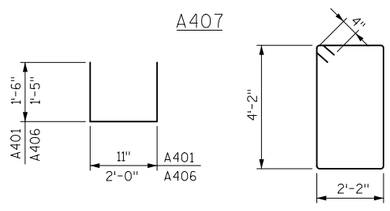
BILL OF BARS (W. ABUT)

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	0# COATED 769# UNCOATED LOCATION
A401		17	3'-9"	X			TOP VERTICAL-U
A402		2	15'-4"				TOP HORIZONTAL
A503		17	13'-4"	X			MAIN STIRRUP
A604		11	15'-4"				MAIN HORIZONTAL
A505		6	15'-4"				MAIN HORIZONTAL
A406		3	4'-8"	X			END OF ABUTMENT-U
A407		4	28'-0"	X			PILE SPIRAL
A408		8	2'-3"				PILE VERTICAL
A509		10	2'-3"				ABUTMENT TIE

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

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

A407



A401 & A406

A503

BILL OF BARS (E. ABUT)

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	0# COATED 769# UNCOATED LOCATION
B401		17	3'-9"	X			TOP VERTICAL-U
B402		2	15'-4"				TOP HORIZONTAL
B503		17	13'-4"	X			MAIN STIRRUP
B604		11	15'-4"				MAIN HORIZONTAL
B505		6	15'-4"				MAIN HORIZONTAL
B406		3	4'-8"	X			END OF ABUTMENT-U
B407		4	28'-0"	X			PILE SPIRAL
B408		8	2'-3"				PILE VERTICAL
B509		10	2'-3"				ABUTMENT TIE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-80

DRAWN BY WMN | PLANS CK'D. WJZ

ABUTMENTS

SHEET 5 OF 8

203

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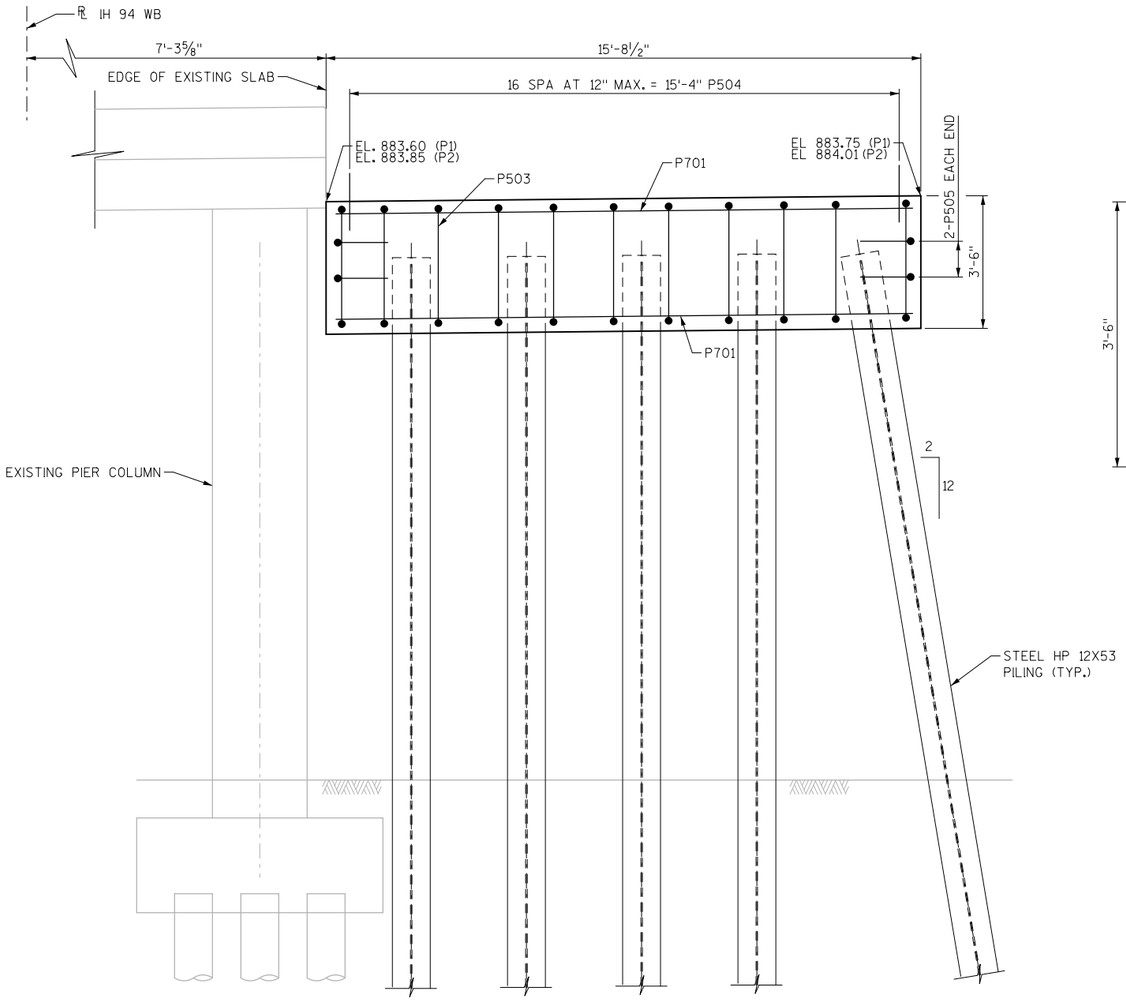
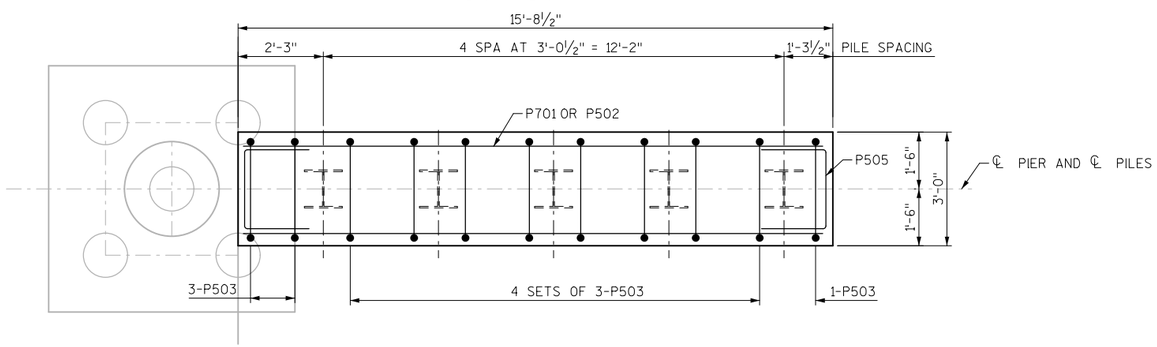
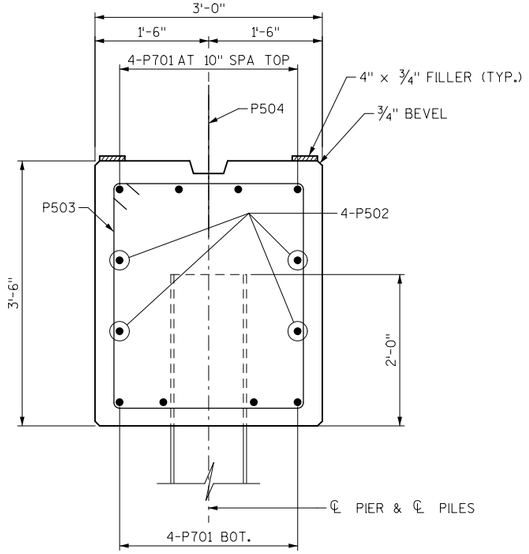
STATE PROJECT NUMBER
1060-38-70



ELEVATION
(LOOKING EAST)



PLAN



CAP SECTION

BILL OF BARS - PIER 1

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	0 # COATED 575 # UNCOATED LOCATION
P701		8	15'-4"				TOP AND BOTTOM
P502		4	15'-4"				SIDES
P503		16	12'-2"	X			STIRRUP
P504		17	2'-0"				DOWEL
P505		4	5'-1"	X			END U-BARS

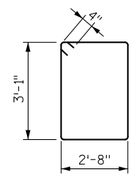
BILL OF BARS - PIER 2

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	0 # COATED 575 # UNCOATED LOCATION
C701		8	15'-4"				TOP AND BOTTOM
C502		4	15'-4"				SIDES
C503		16	12'-2"	X			STIRRUP
C504		17	2'-0"				DOWEL
C505		4	5'-1"	X			END U-BARS

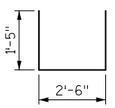
PLACE PIERS ON STEEL HP 12x53 PILING WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS/PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

NOTES

1. THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
2. BENDING DIMENSIONS ARE OUT TO OUT OF BARS.
3. BAR NUMBERS FOR PIER 1 BARS ARE THE SAME AS PIER 2 BARS EXCEPT "P" CALLOUT IS REPLACED WITH "C".



P503



P505

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-80

DRAWN BY	WMN	PLANS CK'D.	WJZ

PIERS

SHEET 6 OF 8

204

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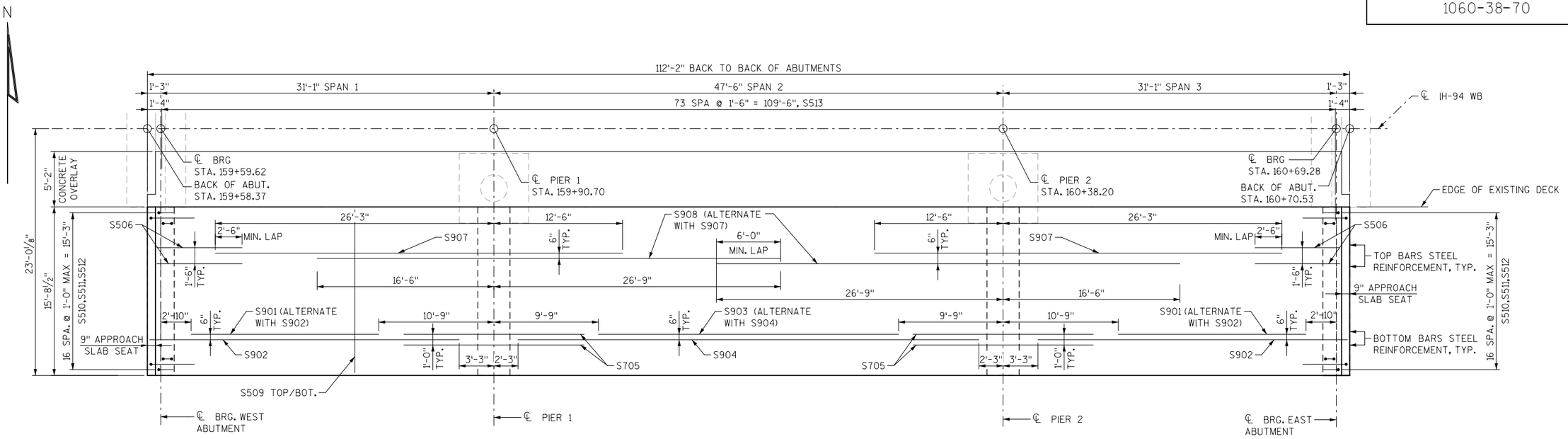
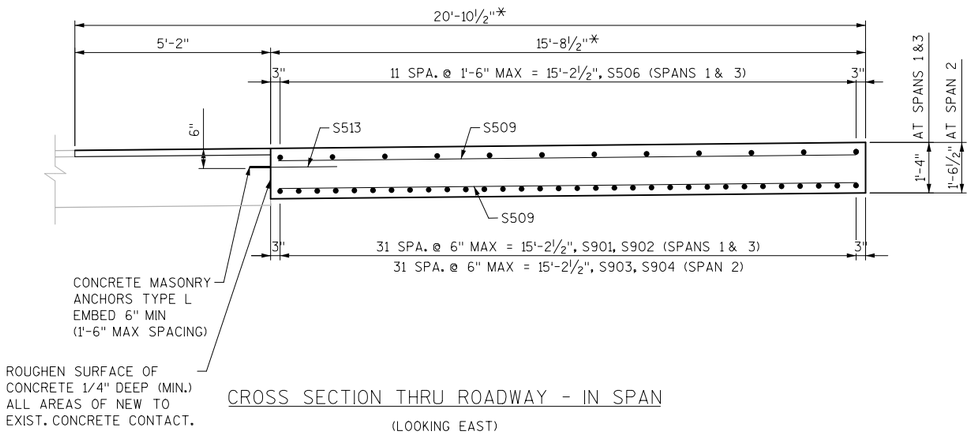
8

STATE PROJECT NUMBER

1060-38-70

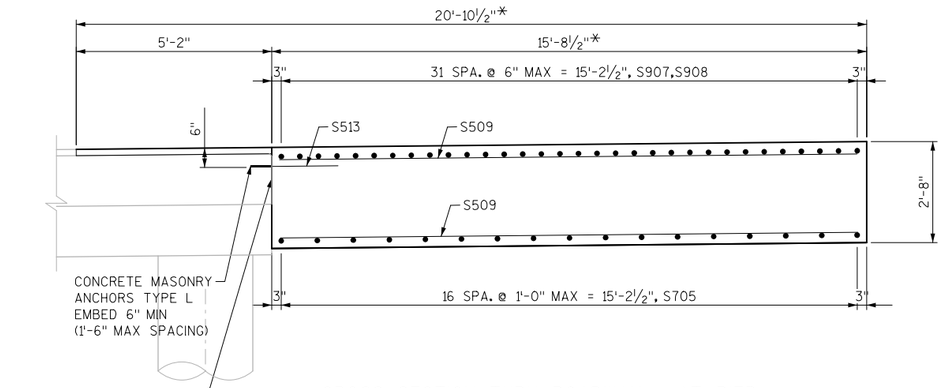


SLAB PLAN



CROSS SECTION THRU ROADWAY - IN SPAN

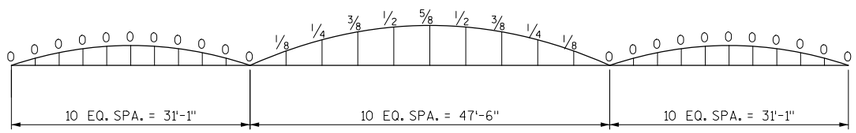
(LOOKING EAST)



CROSS SECTION THRU ROADWAY - AT PIER

(LOOKING EAST)

* EXISTING LOCATIONS AND DIMENSIONS ARE APPROXIMATE. VERIFY IN FIELD.



CAMBER DIAGRAM

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEADLOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-80

DRAWN BY WMN | PLANS CK'D. WJZ

SUPERSTRUCTURE

SHEET 7 OF 8

205

8

8

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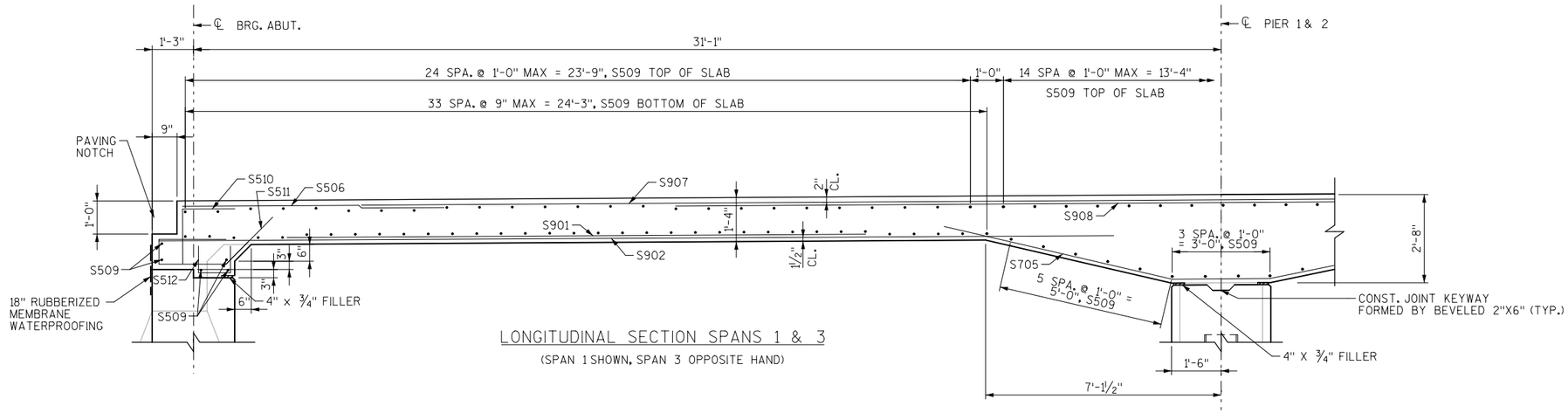
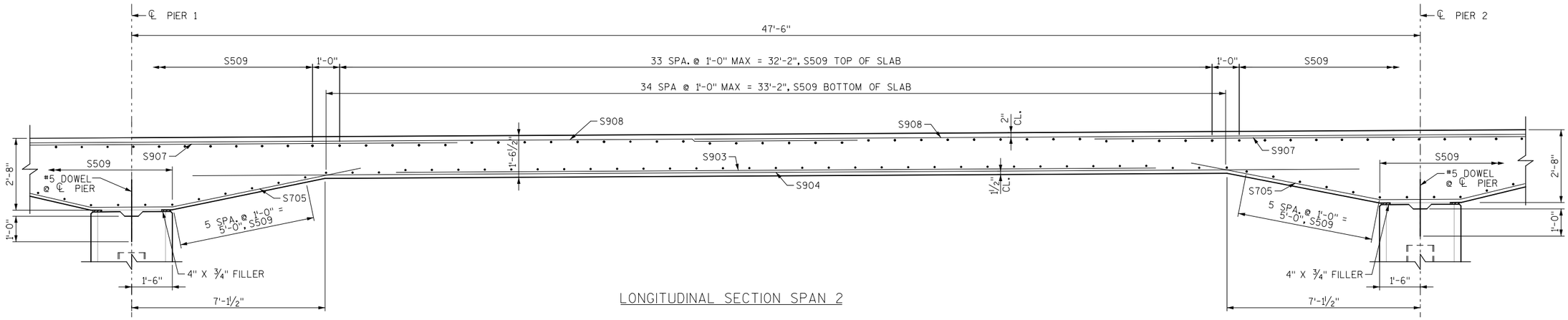
STATE PROJECT NUMBER
1060-38-70



LONGITUDINAL SECTION SPANS 1 & 3

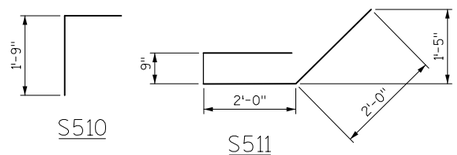
(SPAN 1 SHOWN, SPAN 3 OPPOSITE HAND)



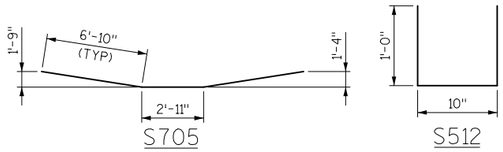
LONGITUDINAL SECTION SPAN 2

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	0 # COATED 23938# UNCOATED LOCATION
S901		32	17'-6"				SLAB LONG. BOT, SPAN 1 & 3
S902		32	28'-11"				SLAB LONG. BOT, SPAN 1 & 3
S903		16	28'-0"				SLAB LONG. BOT, SPAN 2
S904		16	43'-0"				SLAB LONG. BOT, SPAN 2
S705		34	16'-8"	X			SLAB LONG BOT, PIER
S506		24	7'-11"				SLAB LONG. TOP , SPAN 1 & 3
S907		32	38'-9"				SLAB LONG. TOP, PIER
S908		32	43'-3"				SLAB LONG. TOP, PIER
S509		255	15'-3"				SLAB TRANS.
S510		34	3'-4"	X			SLAB @ ABUT. HAUNCH
S511		34	6'-6"	X			SLAB @ ABUT. HAUNCH
S512		34	2'-7"	X			SLAB @ ABUT. HAUNCH
S513		74	3'-3"				DECK TIE



S510 S511



S705 S512

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

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.

0
23938

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-80

DRAWN BY WMN | PLANS CK'D. WJZ

SUPERSTRUCTURE DETAILS

SHEET 8 OF 8

206

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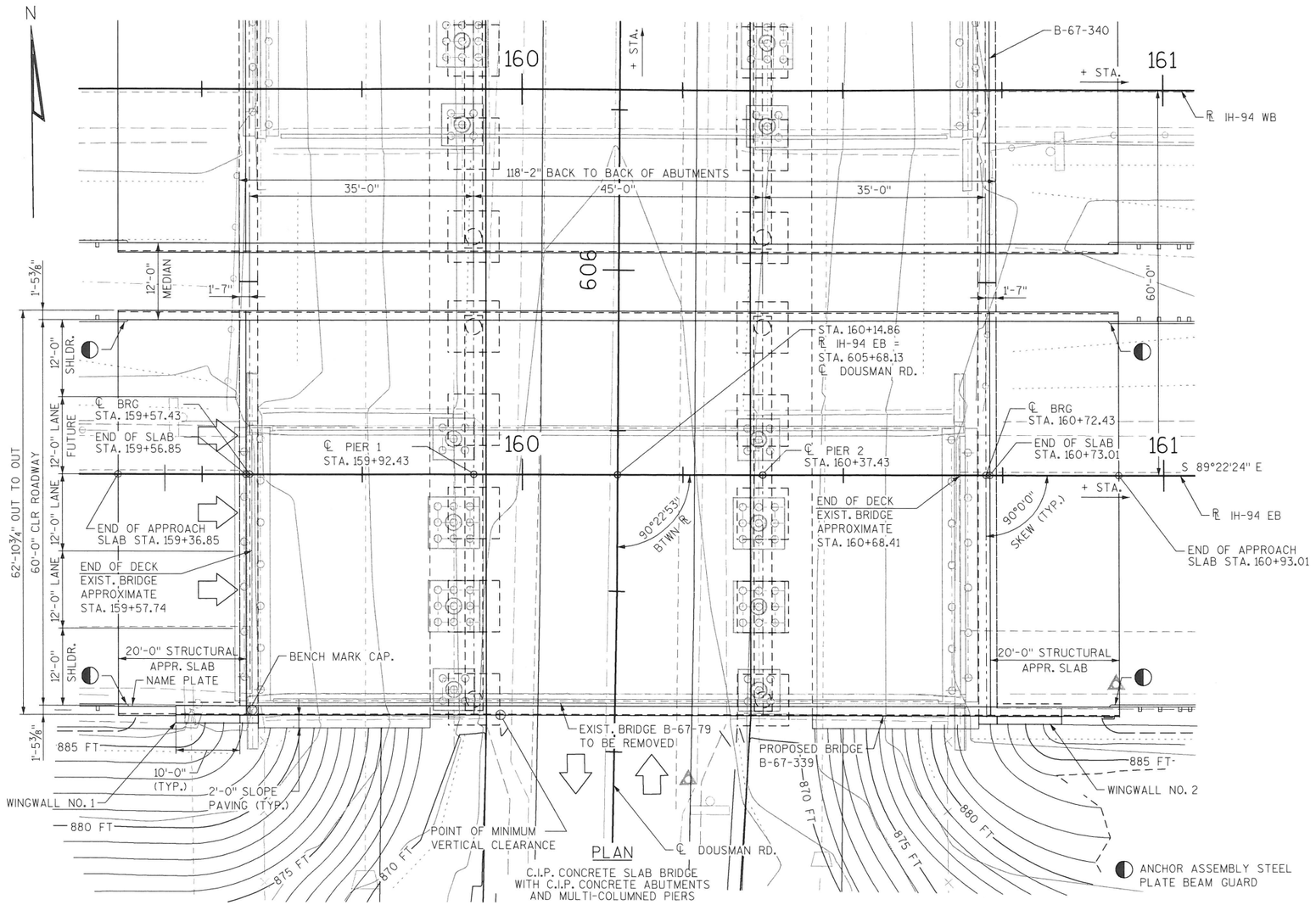
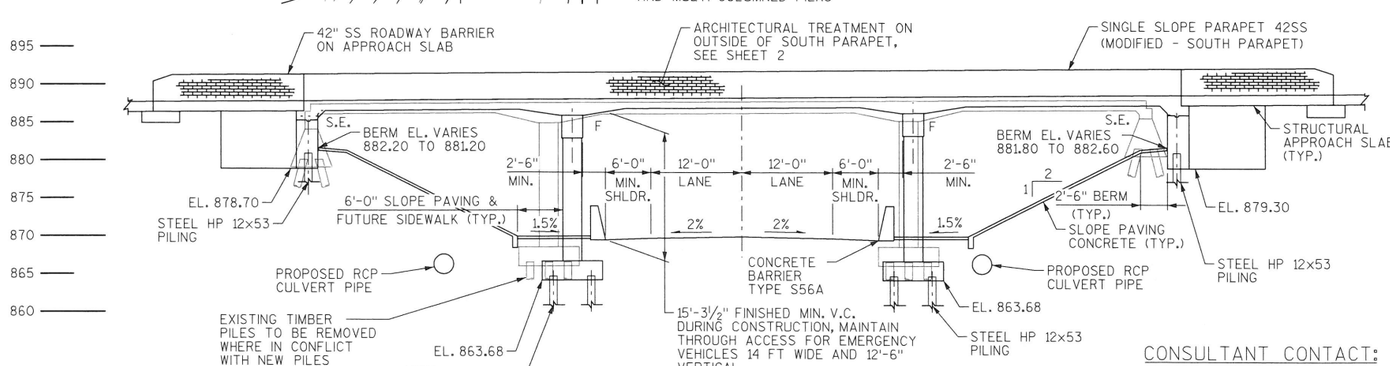


PLAN

C.I.P. CONCRETE SLAB BRIDGE WITH C.I.P. CONCRETE ABUTMENTS AND MULTI-COLUMNED PIERS



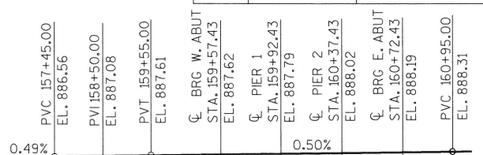
ELEVATION

BRIDGE OFFICE CONTACT:

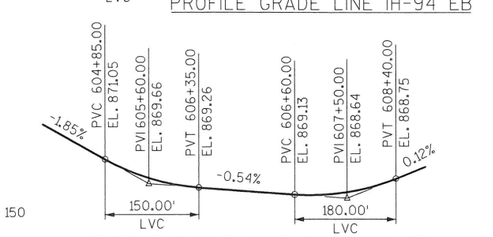
WILLIAM DREHER, PE
(608) 266-8489

CONSULTANT CONTACT:

WILLIAM J. ZIPPEL, PE, SE
ALFRED BENESCH AND CO.
1300 WEST CANAL STREET, SUITE 150
MILWAUKEE, WI 53233
PHONE: 414-308-1321



PROFILE GRADE LINE IH-94 EB



PROFILE GRADE LINE DOUSMAN RD.

DESIGN DATA

LIVE LOAD:

DESIGN LOADING HL-93
INVENTORY RATING FACTOR 1.06
OPERATING RATING FACTOR 1.38
WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV) = 250 KIPS
DESIGN ACCOUNTS FOR FUTURE WEARING SURFACE = 20 PSF

MATERIAL PROPERTIES:

CONCRETE MASONRY SUPERSTRUCTURE (HPC)	fc' = 4000 PSI
ALL OTHER	fc' = 3500 PSI
STEEL REINFORCEMENT HIGH STRENGTH BAR, GRADE 60	fy = 60 KSI

FOUNDATION DATA:

PLACE PIERS AND ABUTMENTS ON STEEL HP 12X53 PILING WITH PILE POINTS WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS/PILE* AT PIERS AND 105 TONS/PILE* AT ABUTMENTS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

* THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

EST. PILE LENGTHS: 75 FT AT W. ABUT.
65 FT AT PIER 1
65 FT AT PIER 2
75 FT AT E. ABUT.

TRAFFIC DATA DOUSMAN RD:

AADT (2015) = 1400
AADT (2035) = 1700
DESIGN SPEED = 50 MPH.

TRAFFIC DATA IH-94:

AADT (2015) = 43100
AADT (2035) = 46500
TRUCK % = 16.2%
D = 60/40
DESIGN SPEED = 70 MPH.

LIST OF DRAWINGS:

1. GENERAL PLAN AND ELEVATION
2. CROSS-SECTION
3. QUANTITIES & GENERAL NOTES
4. SUBSURFACE EXPLORATION
5. WEST ABUTMENT PLAN & ELEVATION
6. EAST ABUTMENT PLAN & ELEVATION
7. WEST ABUTMENT DETAILS
8. EAST ABUTMENT DETAILS
9. PIERS 1 & 2
10. PIERS 1 & 2 DETAILS
11. SUPERSTRUCTURE
12. SUPERSTRUCTURE PLAN
13. SUPERSTRUCTURE DETAILS
14. STRUCTURAL APPROACH SLABS
15. STRUCTURAL APPROACH SLAB DETAILS
16. SINGLE SLOPE PARAPET 42SS MODIFIED
17. ALTERNATE CONSTRUCTION JOINT

WISCONSIN
WILLIAM J. ZIPPEL
38868-006
MILWAUKEE, WI
PROFESSIONAL ENGINEER
10/13/2015

EXISTING STRUCTURE:

THE EXISTING BRIDGE (B-67-79) IS A THREE SPAN CONCRETE SLAB BRIDGE FOUNDED ON MULTICOLUMN CONCRETE PIERS AND CONCRETE STUB ABUTMENTS. THE EXISTING BRIDGE IS 112'-2" LONG AND THE DECK IS 42'-6" WIDE. THE FOUNDATIONS ARE SUPPORTED ON TIMBER PILING.

BENCHMARKS

NAME	ELEVATION	DESCRIPTION
BM3	890.23	ALUMINUM DISK IN PARAPET - EB
BM4	888.95	ALUMINUM DISK IN PARAPET - WB

STATE PROJECT NUMBER
1060-38-70

NO.	DATE	REVISION	BY

benesch engineers · scientists · planners
Alfred Benesch & Company
1300 West Canal Street, Suite 150
Milwaukee, Wisconsin 53233
414-308-1310 Job No. 20103.00

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 10/14/15
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-67-339

IH-94 EB OVER DOUSMAN RD.

COUNTY WAUKESHA — ~~TOWN/CITY~~/VILLAGE SUMMIT

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY WMN	PLANS CK'D. WJZ

GENERAL PLAN AND ELEVATION

SHEET 1 OF 17

207

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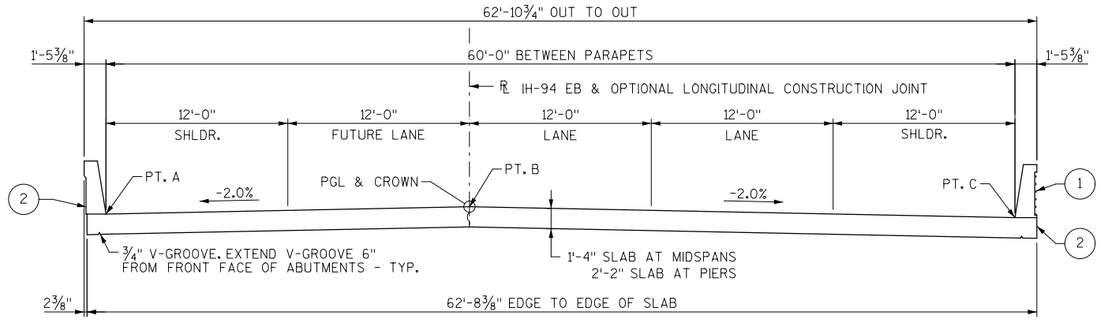
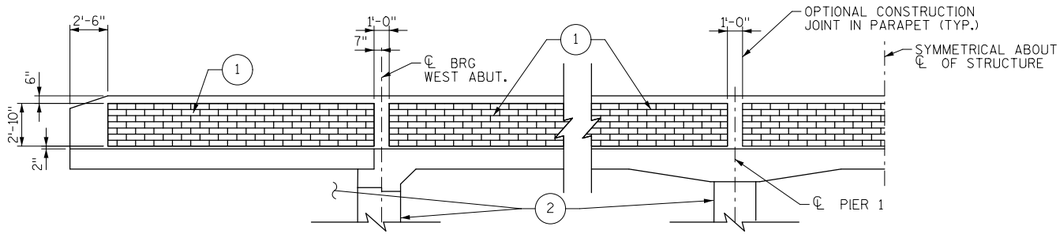


TYPICAL CROSS SECTION

(LOOKING EAST)

(1) FINISH OF ARCHITECTURAL SURFACE TREATMENT AT THE BACK FACE OF THE PARAPET SHALL ACHIEVE THE LOOK OF "NEW BRICK" WITH MAXIMUM RELIEF OF 3/16", SEE SPECIAL PROVISION FOR "ARCHITECTURAL SURFACE TREATMENT, B-67-339" AND "CONCRETE STAINING MULTI-COLOR, B-67-339".

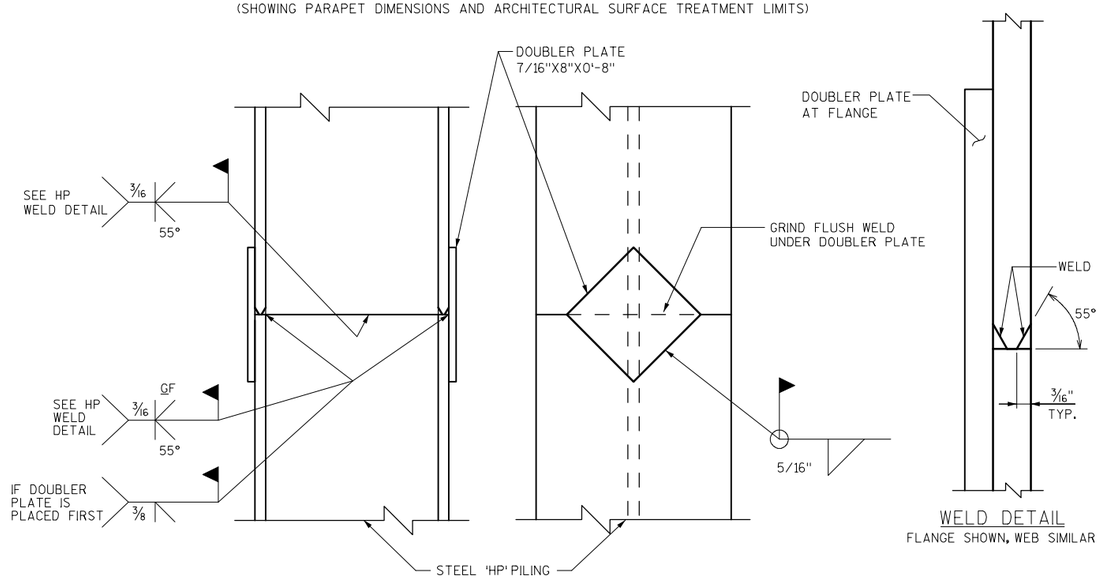
(2) CONCRETE STAINING B-67-339 APPLIED TO SURFACES NOT RECIEVING ARCHITECTURAL SURFACE TREATMENT OF WINGWALLS, FRONT FACE OF ABUTMENT, PIER COLUMNS AND CAPS, OUTSIDE FACE OF NORTH PARAPET. APPLY STAIN TO 12" BELOW FINISHED GRADE.



NOTE: COLOR AND APPEARANCE SHALL MATCH I-94 OVER CTH-P BRIDGES AND WALLS NEAR PABST FARMS.

ELEVATION - SOUTH FACE OF SOUTH PARAPET

(SHOWING PARAPET DIMENSIONS AND ARCHITECTURAL SURFACE TREATMENT LIMITS)



STEEL PILING SPLICE DETAILS

WELD DETAIL

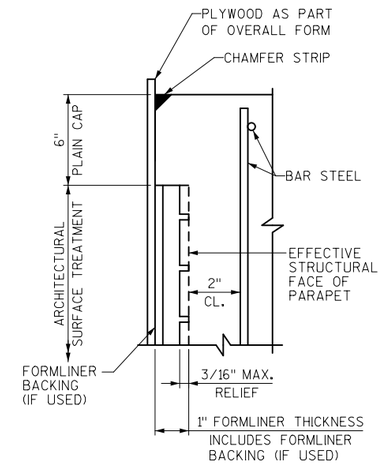
FLANGE SHOWN, WEB SIMILAR

TOP OF DECK ELEVATIONS

LOCATION	STATION	PT. A (FLOWLINE)	PT. B (PGL/CONSTR. JT.)	PT. C (FLOWLINE)
END OF SLAB	159+56.85	887.14	887.62	886.90
CL BRG. WEST ABUT.	159+57.43	887.14	887.62	886.90
0.1	159+60.93	887.16	887.64	886.92
0.2	159+64.43	887.17	887.65	886.93
0.3	159+67.93	887.19	887.67	886.95
0.4	159+71.43	887.21	887.69	886.97
0.5	159+74.93	887.23	887.71	886.99
0.6	159+78.43	887.24	887.72	887.00
0.7	159+81.93	887.26	887.74	887.02
0.8	159+85.43	887.28	887.76	887.04
0.9	159+88.93	887.30	887.78	887.06
CL PIER 1	159+92.43	887.31	887.79	887.07
0.1	159+96.93	887.34	887.82	887.10
0.2	160+01.43	887.36	887.84	887.12
0.3	160+05.93	887.38	887.86	887.14
0.4	160+10.43	887.40	887.88	887.16
0.5	160+14.93	887.43	887.91	887.19
0.6	160+19.43	887.45	887.93	887.21
0.7	160+23.93	887.47	887.95	887.23
0.8	160+28.43	887.49	887.97	887.25
0.9	160+32.93	887.52	888.00	887.28
CL PIER 2	160+37.43	887.54	888.02	887.30
0.1	160+40.93	887.56	888.04	887.32
0.2	160+44.43	887.57	888.05	887.33
0.3	160+47.93	887.59	888.07	887.35
0.4	160+51.43	887.61	888.09	887.37
0.5	160+54.93	887.63	888.11	887.39
0.6	160+58.43	887.64	888.12	887.40
0.7	160+61.93	887.66	888.14	887.42
0.8	160+65.43	887.68	888.16	887.44
0.9	160+68.93	887.70	888.18	887.46
CL BRG. EAST ABUT.	160+72.43	887.71	888.19	887.47
END OF SLAB	160+73.01	887.72	888.20	887.48

STATE PROJECT NUMBER

1060-38-70



SECTION THRU FORMLINER

NOTE

FORMLINER COURSING ON PARAPETS SHALL BE PARALLEL TO TOP OF PARAPET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-339

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CROSS-SECTION

SHEET 2 OF 17

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8

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TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	WEST APPR. SLAB	W. ABUT.	PIER 1	PIER 2	E. ABUT.	EAST APPR. SLAB	SUPER	TOTAL
203.0200	REMOVING OLD STRUCTURE (STATION 159+59 EB)	LS	----	----	----	----	----	----	1	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES (B-67-339)	LS	----	0.5	----	----	0.5	----	----	1
210.0100	BACKFILL STRUCTURE	CY	----	125	----	----	125	----	----	250
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	----	218	----	----	218	----	----	436
501.1000.S	ICE HOT WEATHER CONCRETING	LB	634	420	518	518	420	634	3285	6429
502.0100	CONCRETE MASONRY BRIDGES	CY	17	56	69	69	56	17	----	283
502.3200	PROTECTIVE SURFACE TREATMENT	SY	134	----	----	----	----	134	775	1043
502.3210	PIGMENTED SURFACE SEALER	SY	19	----	----	----	----	19	115	153
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	----	5240	4298	4299	5240	----	----	19077
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	14201	745	10809	10828	745	14201	103985	155514
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STEEL STRUCTURES	LB	1088	----	----	----	----	1088	----	2176
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	----	16	----	----	16	----	----	32
517.1010.S.01	CONCRETE STAINING, B-67-339	SF	67	347	1149	1158	353	67	733	3874
517.1015.S.01	CONCRETE STAINING MULTI-COLOR BRICK, B-67-339	SF	----	----	----	----	----	----	423	423
517.1050.S.01	ARCHITECTUAL SURFACE TREATMENT BRICK, B-67-339	SF	----	----	----	----	----	----	423	423
550.0500	PILE POINTS	EACH	----	10	30	30	10	----	----	80
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	----	750	1950	1950	750	----	----	5400
604.0400	SLOPE PAVING CONCRETE	SY	----	260	----	----	260	----	----	520
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	----	240	----	----	240	----	----	480
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	----	----	----	----	2	----	4
SPV.0035.01	HPC MASONRY SUPERSTRUCTURES	CY	68	----	----	----	----	68	438	574
SPV.0090.01	REMOVING EXISTING TIMBER PILING	LF	----	260	560	560	120	----	----	1500
SPV.0165.01	LONGITUDINAL GROOVING BRIDGE DECK	SF	1140	----	----	----	----	1140	6622	8902
	NON-BID ITEMS									
	JOINT FILLER									
	NAME PLATE									
	NON-BITUMINOUS JOINT SEALER									
	POLYETHYLENE SHEETS									

GENERAL NOTES:

1. DRAWINGS SHALL NOT BE SCALED. BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
2. SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
3. THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
4. THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING CONCRETE TO THE EXTENT SHOWN.
5. THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.
6. THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES FOR THE ABUTMENTS SHALL BE THE BOTTOM OF SLOPE PROTECTION.
7. AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.
8. THE QUANTITY FOR BACKFILL STRUCTURE, BID ITEM 210.0100, IS CALCULATED BASED ON THE APPLICABLE FIGURES 12.6-1 AND 12.6-2 IN THE WISCONSIN DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL.

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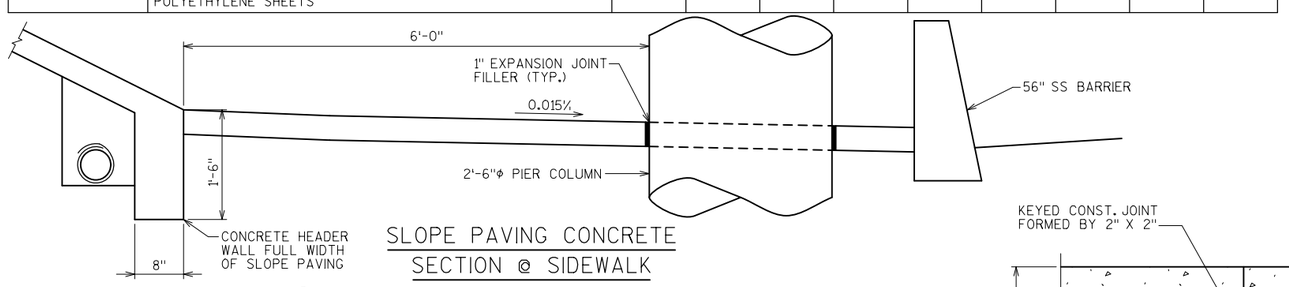
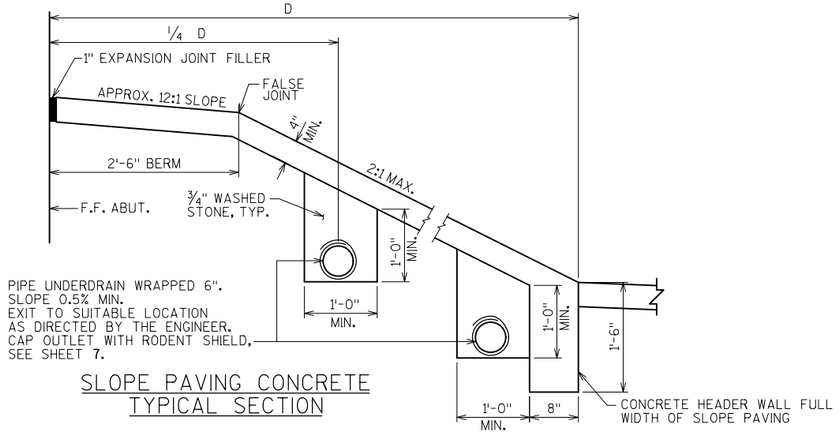
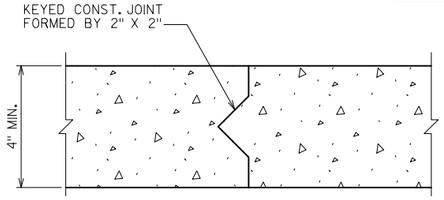


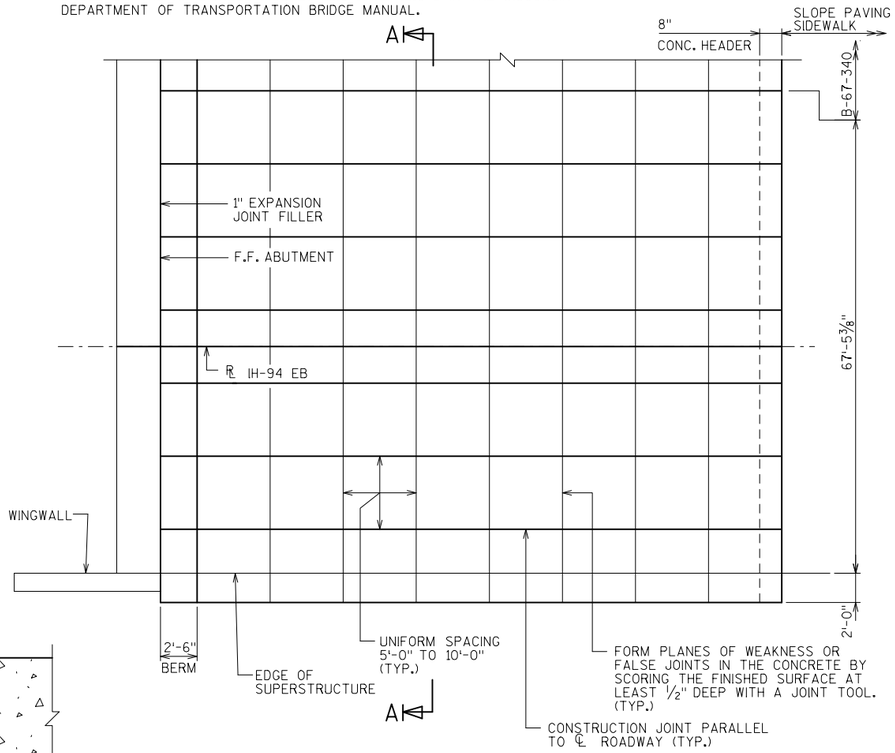
SLOPE PAVING CONCRETE SECTION @ SIDEWALK



SLOPE PAVING CONCRETE TYPICAL SECTION

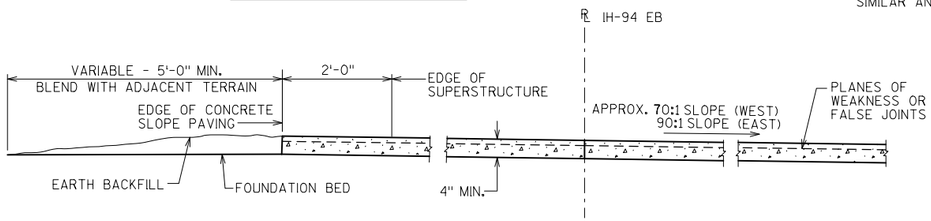


CONSTRUCTION JOINT



SLOPE PAVING CONCRETE - PLAN

(WEST ABUTMENT SLOPE SHOWN; EAST ABUTMENT SLOPE SIMILAR AND OPPOSITE HAND)



SECTION A-A

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-339

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QUANTITIES & GENERAL NOTES

SHEET 3 OF 17

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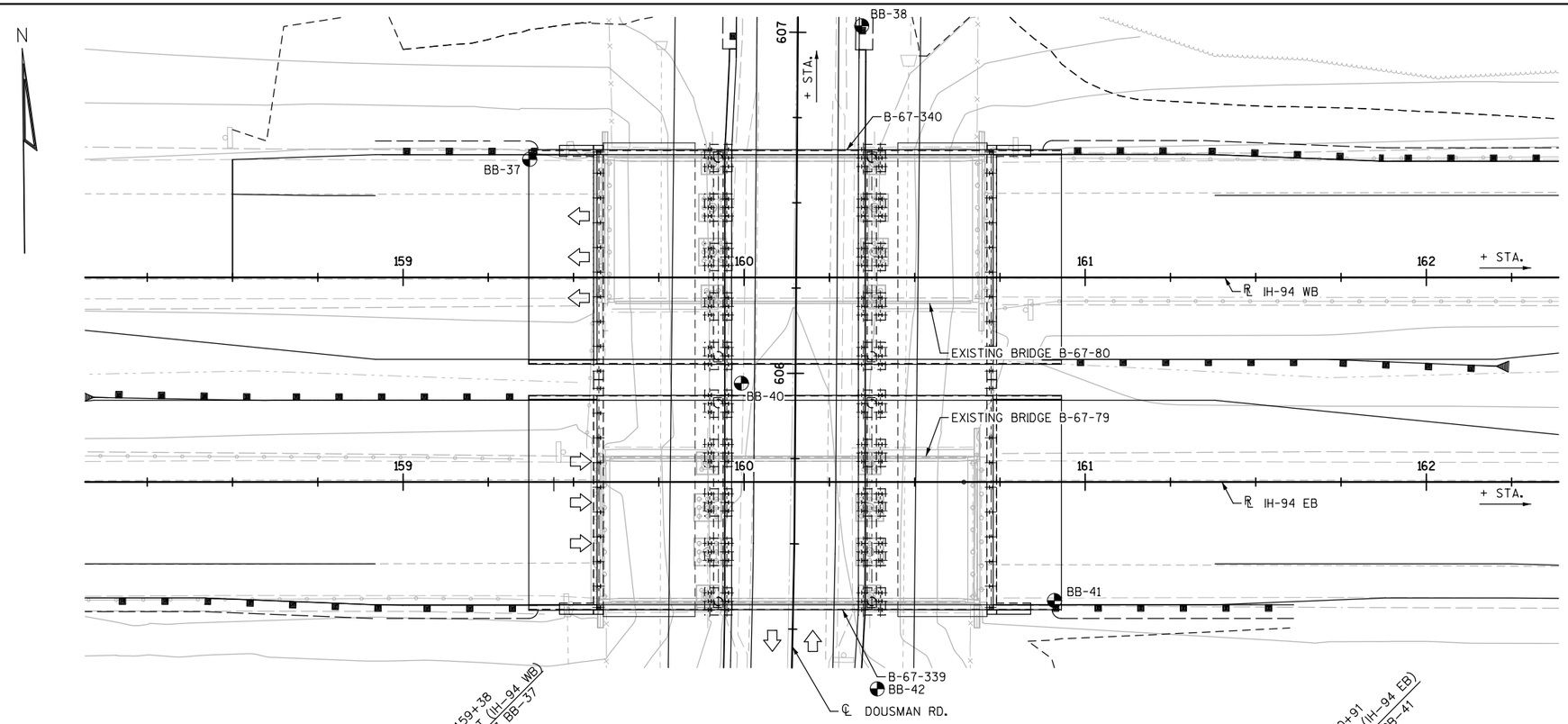

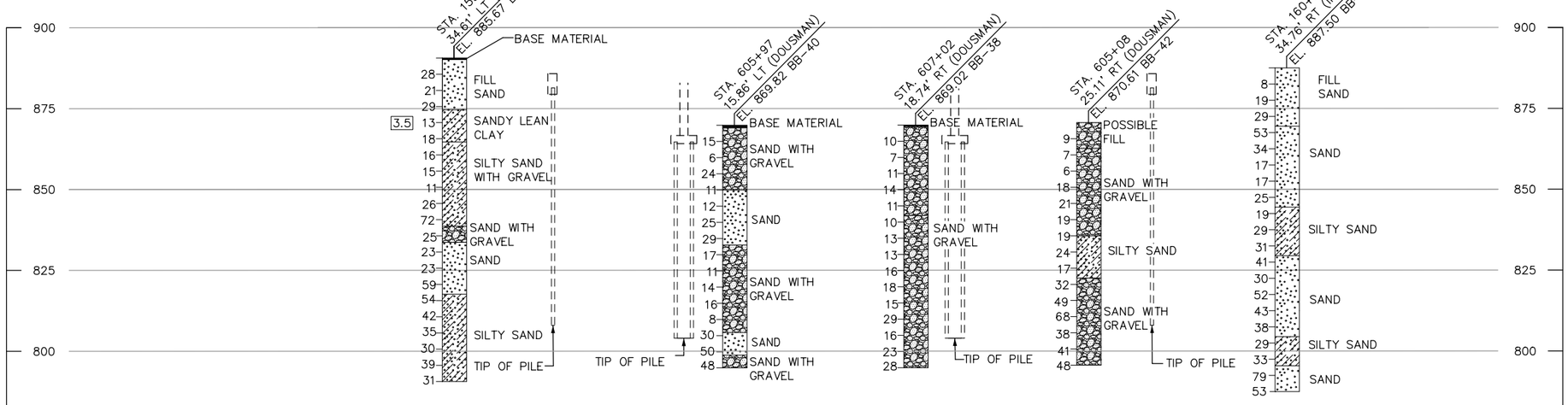

NOTES:

FOUNDATION DESIGN PARAMETERS ARE BASED ON RECOMMODATIONS FROM THE GEOTECHNICAL EXPLORATION REPORT DATED JULY, 2013 BY HIMALAYAN CONSULTANTS, LLC, AVAILABLE FROM WISDOT.

REFER TO THE GEOTECHNICAL REPORT FOR FULL SOIL DESCRIPTIONS AND DETAILS OF BORING LOGS.

HISTORIC BORINGS ARE AVAILABLE UPON REQUEST FROM WISDOT.

CONTACT THE WISCONSIN DEPARTMENT OF TRANSPORTATION FOR THE GEOTECHNICAL REPORT AND BORING LOGS.

EXISTING FOOTINGS ARE SHOWN FOR EXISTING STRUCTURES. ACTUAL LOCATIONS MAY VARY. CONTRACTOR SHALL VERIFY LOCATIONS IN THE FIELD.

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ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE, SAND, PEAT, LIMESTONE, GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.
STA.
ELEVATION
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

95/6=95 BLOWS FOR 6" PENETRATION PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

LEGEND OF BORING

BORING NO.
ELEV.
STA.
UNCONFINED STRENGTH
7.7 7
BLOWS PER FT. USING 140# WT. FALLING 30"
WASH SAMPLE
SHELBY TUBE — S.T.
GROUND WATER ELEVATION
NO GROUND WATER OBSERVED ABOVE THIS ELEVATION
SANDY GRAVEL
F. BOULDERS OR COBBLES
SAND
SILTY CLAY
SO LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-339

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SUBSURFACE EXPLORATION

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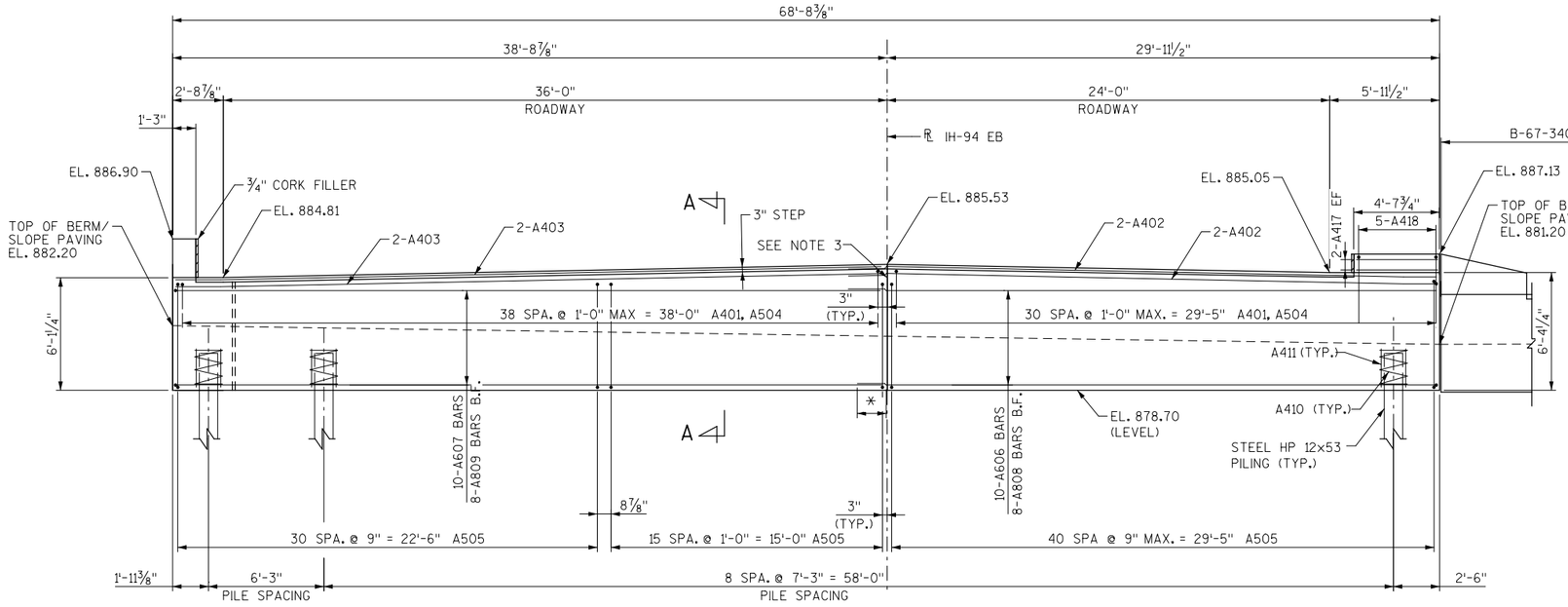
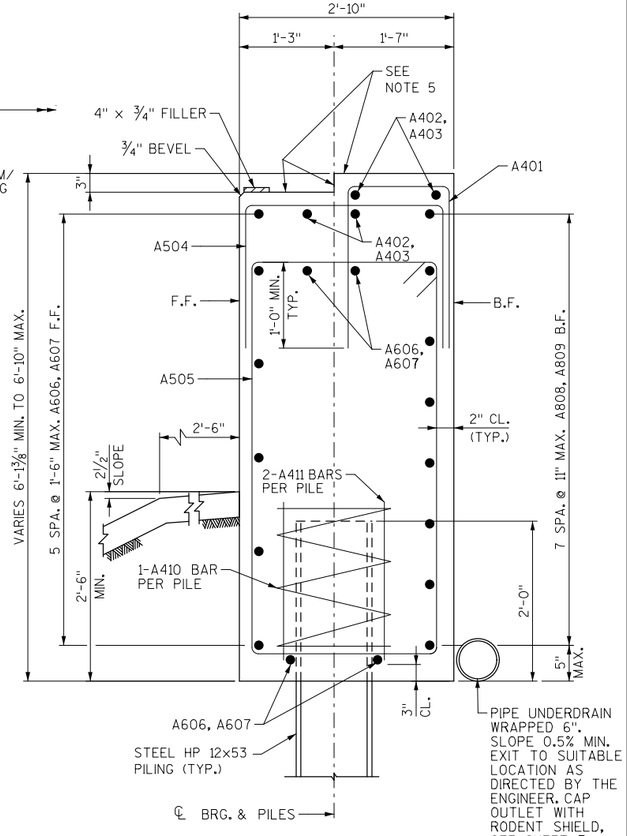
STATE PROJECT NUMBER
1060-38-70



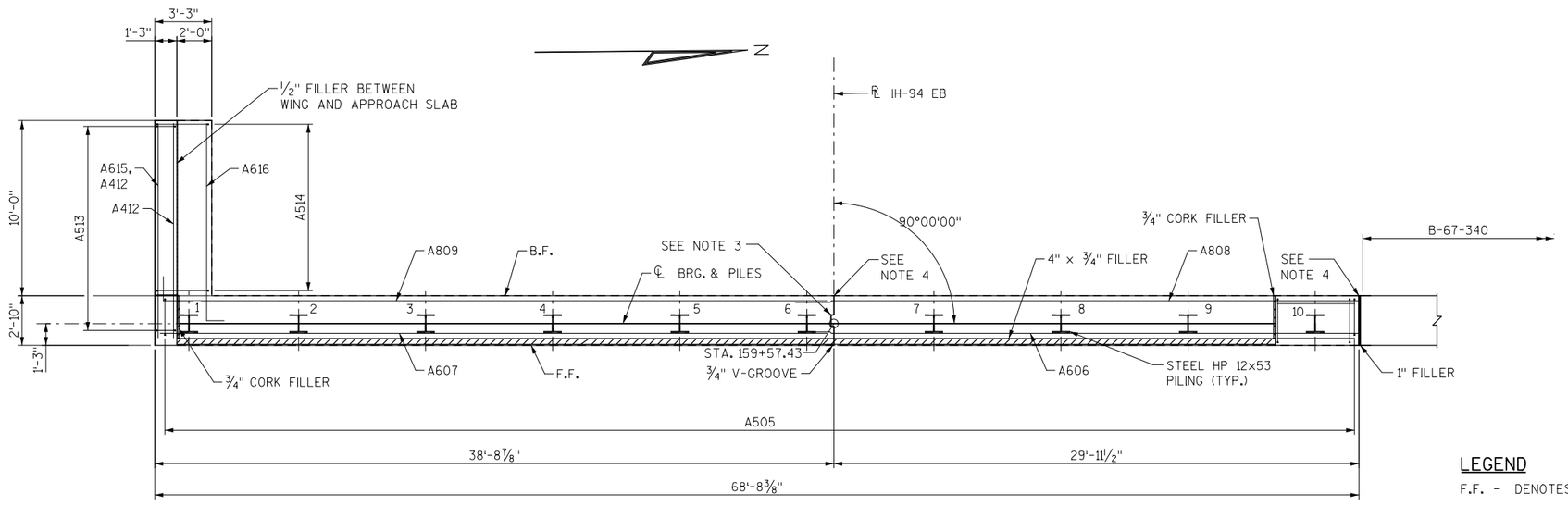
ELEVATION
(LOOKING WEST)

PLACE ABUTMENTS ON STEEL HP 12x53 PILING WITH PILE POINTS WITH A REQUIRED DRIVING RESISTANCE OF 105 TONS/PILE AT ABUTMENTS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

* LAP LENGTHS
- #4 BARS - 1'-11"
- #6 BARS - 2'-11"
- #8 BARS - 5'-1"



SECTION A-A



PLAN & PILE LAYOUT

NOTES

1. EXCAVATE TO BOTTOM OF ABUTMENTS BEFORE DRIVING PILES.
2. DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF ABUTMENT, UNTIL SUPERSTRUCTURE IS IN PLACE.
3. VERT. CONST. JOINT KEYWAY FORMED BY BEVELED 2x8.
4. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON THE BACK FACE OF THE ABUTMENT AND WING.
5. STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEET OVER ENTIRE ABUTMENT BEFORE PLACING SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

LEGEND

F.F. - DENOTES FRONT FACE

B.F. - DENOTES BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-339

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WEST ABUTMENT PLAN & ELEVATION

SHEET 5 OF 17

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STATE PROJECT NUMBER

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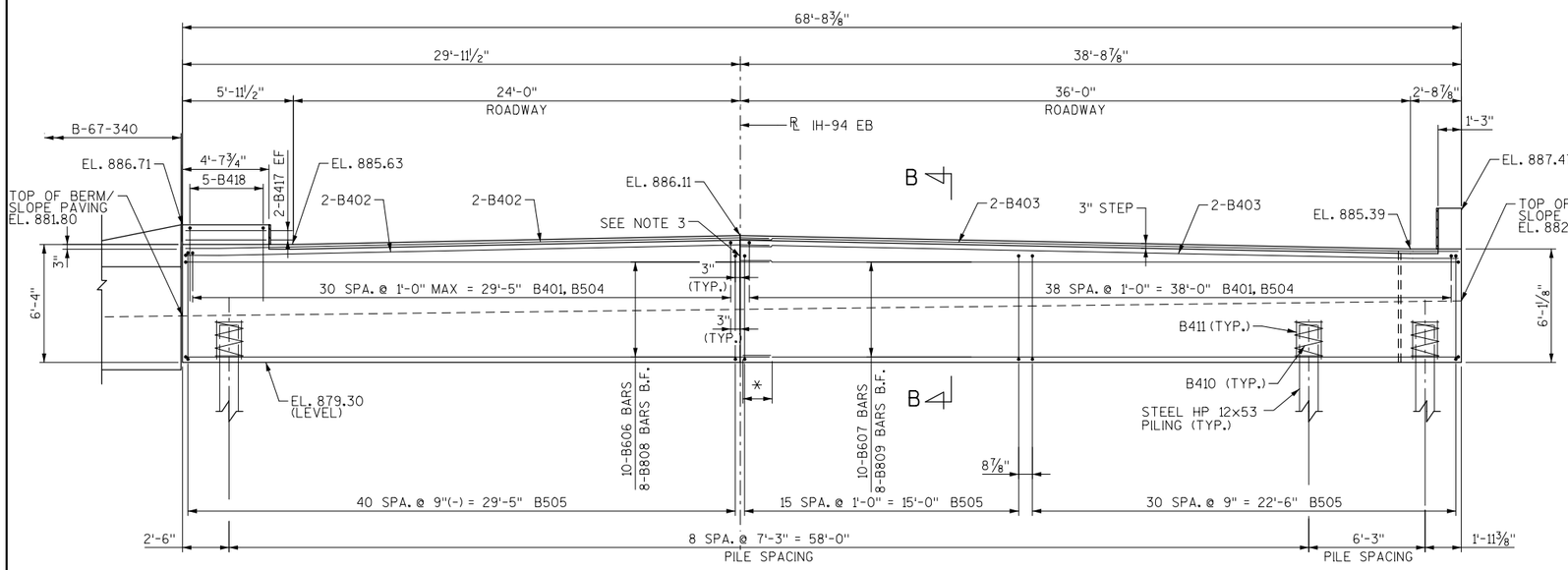
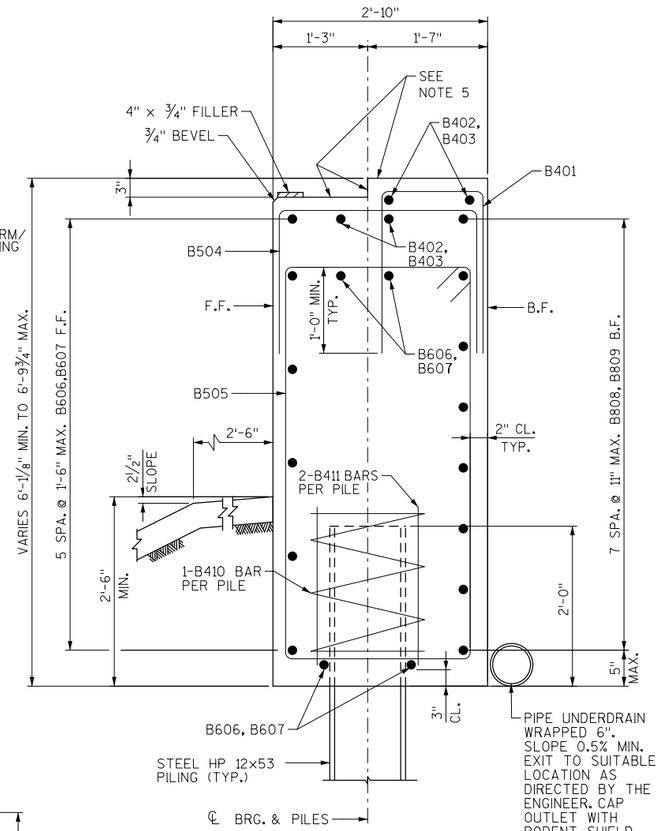


ELEVATION

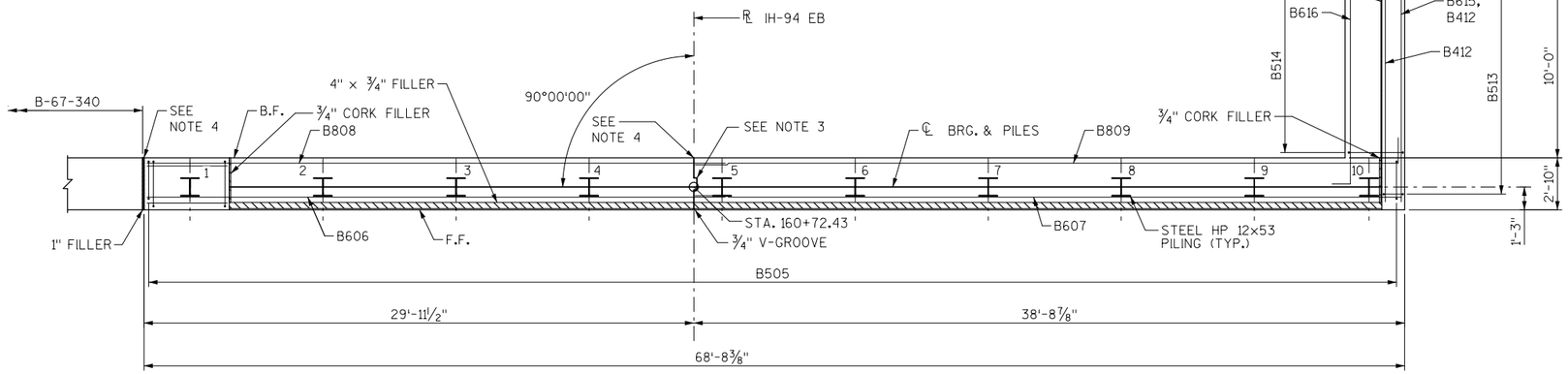
(LOOKING EAST)

PLACE ABUTMENTS ON STEEL HP 12x53 PILING WITH PILE POINTS WITH REQUIRED DRIVING RESISTANCE OF 105 TONS/PILE AT ABUTMENTS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

* LAP LENGTHS
- #4 BARS - 1'-11"
- #6 BARS - 2'-11"
- #8 BARS - 5'-1"



SECTION B-B



PLAN & PILE LAYOUT

NOTES

1. EXCAVATE TO BOTTOM OF ABUTMENTS BEFORE DRIVING PILES.
2. DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF ABUTMENT, UNTIL SUPERSTRUCTURE IS IN PLACE.
3. VERT. CONST. JOINT KEYWAY FORMED BY BEVELED 2x8.
4. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON THE BACK FACE OF THE ABUTMENT AND WING.
5. STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEET OVER ENTIRE ABUTMENT BEFORE PLACING SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03"

LEGEND

F.F. - DENOTES FRONT FACE

B.F. - DENOTES BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-339

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EAST ABUTMENT
PLAN & ELEVATION

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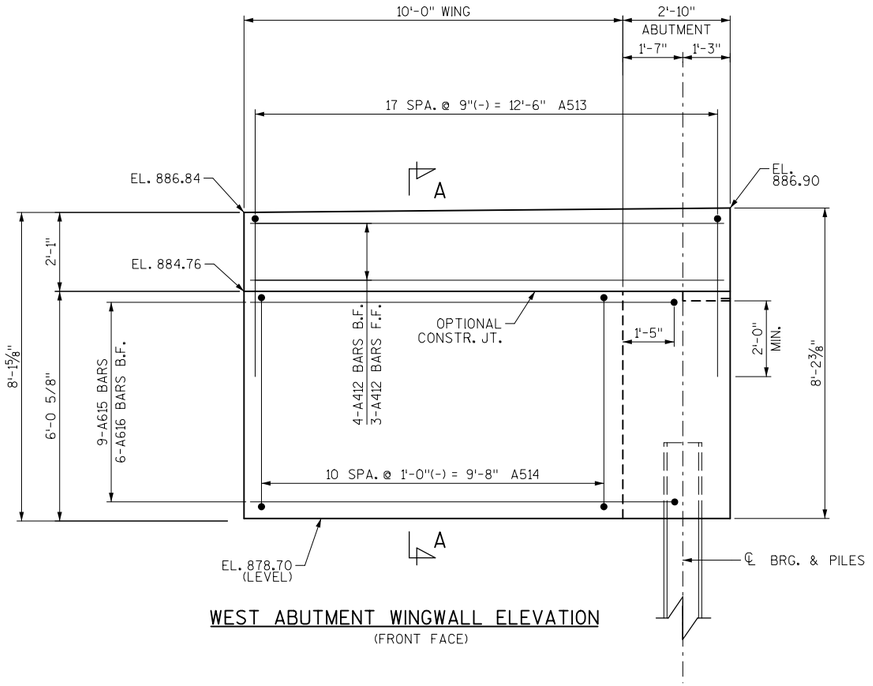
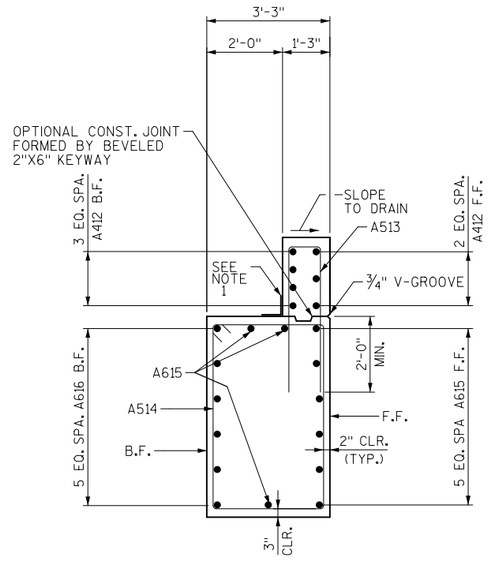


WEST ABUTMENT WINGWALL ELEVATION
(FRONT FACE)



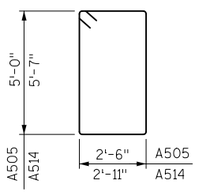
SECTION A-A

BILL OF BARS

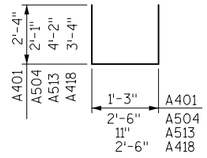
BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	745 # COATED 5240 # UNCOATED LOCATION
A401		70	5'-9"	X			TOP VERTICAL-U
A402		4	31'-8"				TOP HORIZONTAL
A403		4	38'-6"				TOP HORIZONTAL
A504		70	6'-5"	X			TOP VERTICAL-U
A505		88	15'-8"	X			MAIN STIRRUP
A606		10	32'-8"				MAIN HORIZONTAL
A607		10	38'-6"				MAIN HORIZONTAL
A808		8	34'-10"				MAIN HORIZONTAL
A809		8	39'-8"	X			MAIN HORIZONTAL
A410		10	28'-0"	X			PILE SPIRAL
A411		20	2'-3"				PILE VERTICAL
A412	X	7	12'-6"				WING TOP HORIZONTAL
A513	X	18	9'-0"	X			WING VERTICAL-U
A514	X	11	17'-8"	X			WING STIRRUP
A615	X	9	12'-6"				WING HORIZONTAL
A616	X	6	12'-1"	X			WING HORIZONTAL
A417	X	4	4'-4"				MEDIAN HORIZONTAL
A418	X	5	7'-5"	X			MEDIAN VERTICAL-U

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

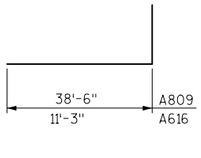
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



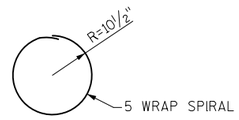
A505, A514



A401, A504, A513, A418



A809, A616



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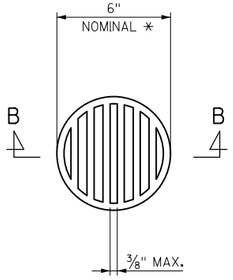
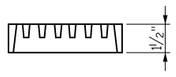


NOTE: ORIENT SHIELD SO SLOTS ARE VERTICAL.



SECTION B-B

* NOTE: DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THE SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

COST OF RODENT SHIELD IS INCLUDED IN THE COST OF PIPE-UNDERDRAIN WRAPPED 6-INCH.

RODENT SHIELD

NOTES

1. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON THE BACK FACE OF THE ABUTMENT AND WING.

LEGEND

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-339

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WEST ABUTMENT DETAILS

SHEET 7 OF 17

213

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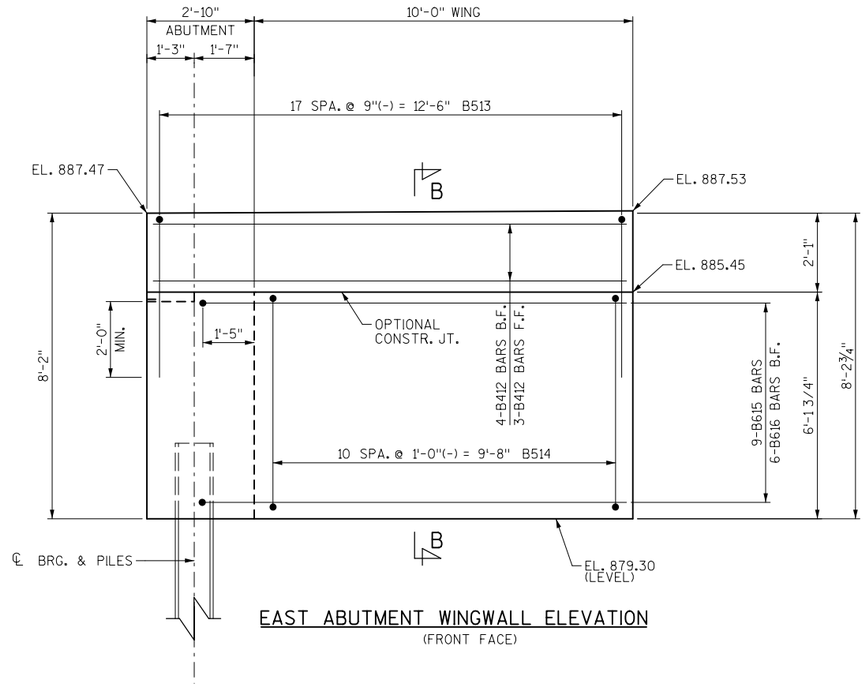
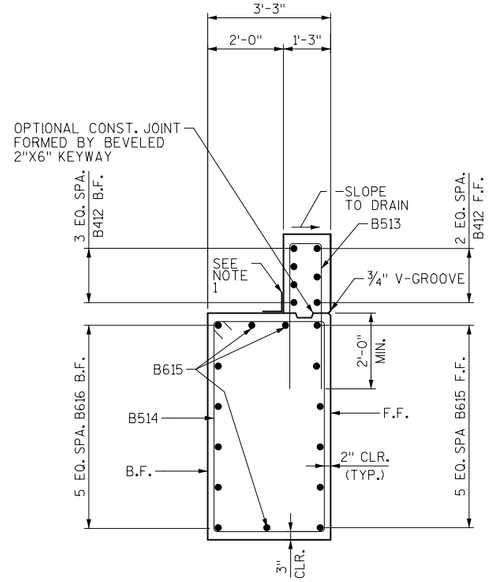


EAST ABUTMENT WINGWALL ELEVATION
(FRONT FACE)



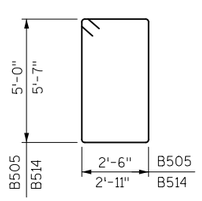
SECTION B-B

BILL OF BARS

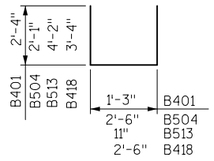
BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	745 # COATED 5240 # UNCOATED LOCATION
B401		70	5'-9"	X			TOP VERTICAL-U
B402		4	31'-8"				TOP HORIZONTAL
B403		4	38'-6"				TOP HORIZONTAL
B504		70	6'-5"	X			TOP VERTICAL-U
B505		88	15'-8"	X			MAIN STIRRUP
B606		10	32'-8"				MAIN HORIZONTAL
B607		10	38'-6"				MAIN HORIZONTAL
B808		8	34'-10"				MAIN HORIZONTAL
B809		8	39'-8"	X			MAIN HORIZONTAL
B410		10	28'-0"	X			PILE SPIRAL
B411		20	2'-3"				PILE VERTICAL
B412	X	7	12'-6"				WING TOP HORIZONTAL
B513	X	18	9'-0"	X			WING VERTICAL-U
B514	X	11	17'-8"	X			WING STIRRUP
B615	X	9	12'-6"				WING HORIZONTAL
B616	X	6	12'-1"	X			WING HORIZONTAL
B417	X	4	4'-4"				MEDIAN HORIZONTAL
B418	X	5	7'-5"	X			MEDIAN VERTICAL-U

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

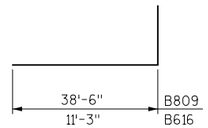
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



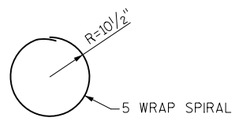
B505, B514



B401, B504, B513, B418



B809, B616



B410

NOTES

1. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON THE BACK FACE OF THE ABUTMENT AND WING.

LEGEND

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-339

DRAWN BY WMN | PLANS CK'D. WJZ

EAST ABUTMENT DETAILS

SHEET 8 OF 17

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STATE PROJECT NUMBER

1060-38-70

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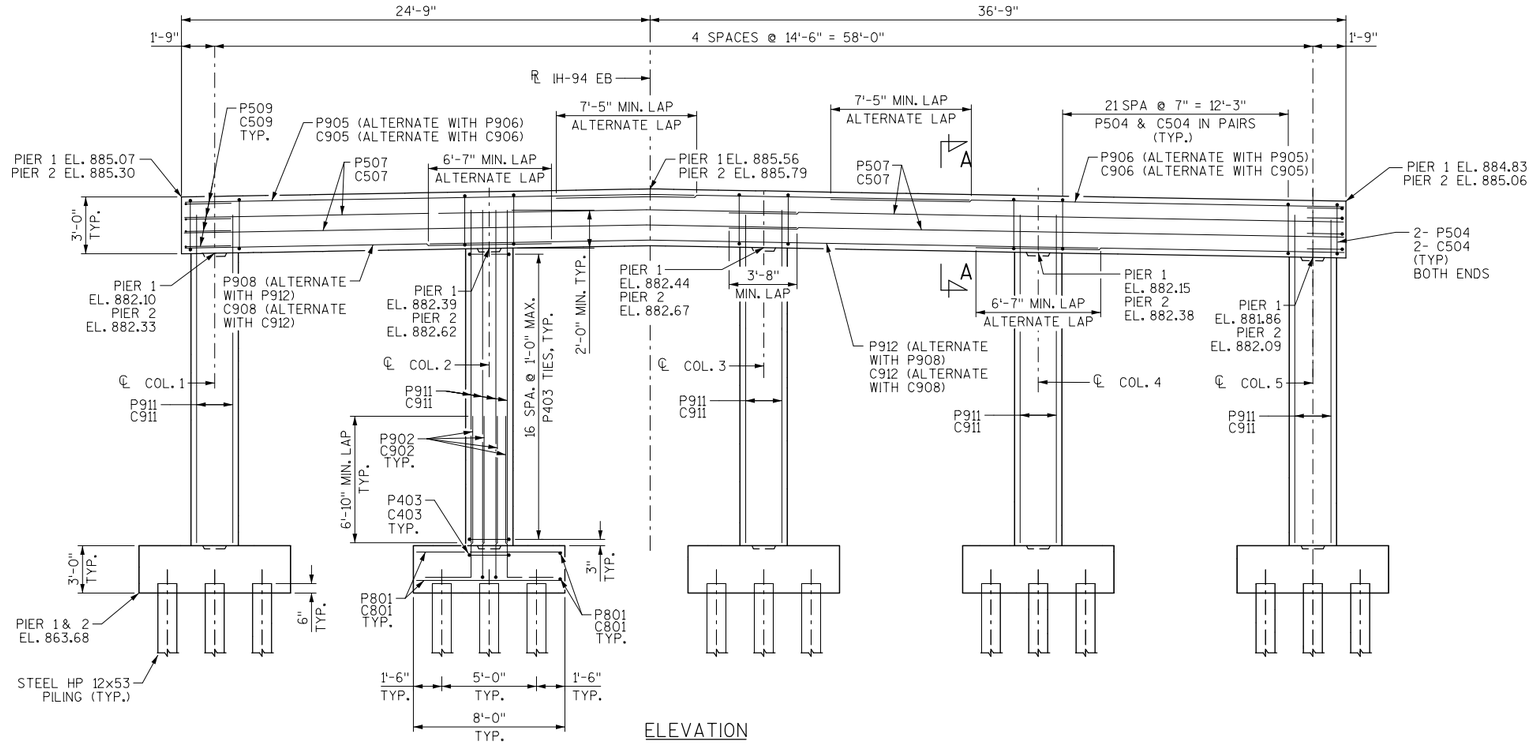
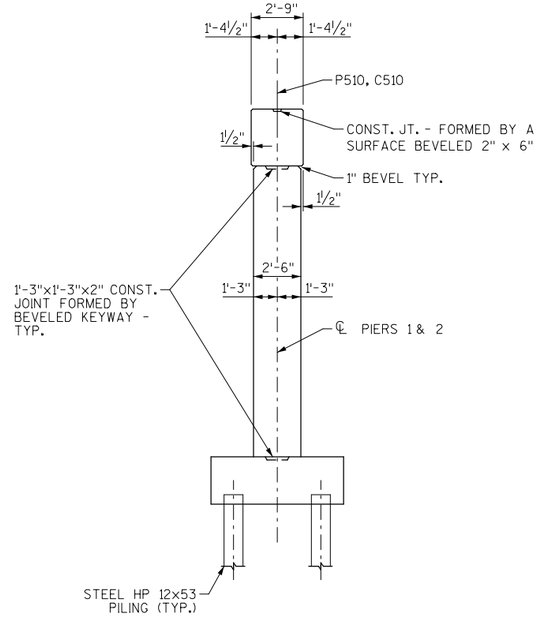
STATE PROJECT NUMBER

1060-38-70



ELEVATION

(LOOKING EAST)

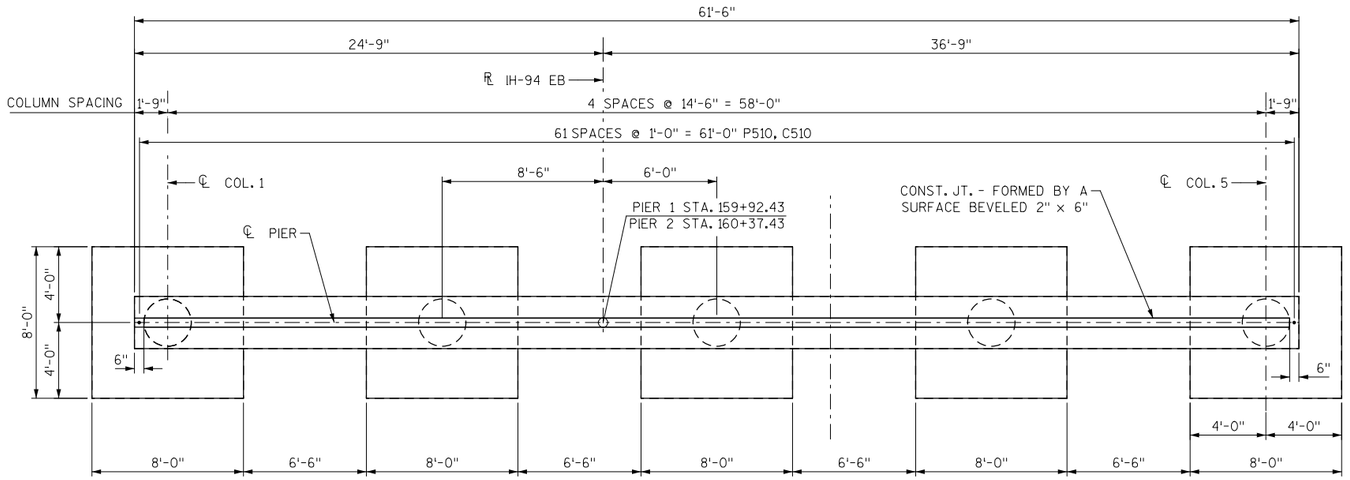


END VIEW

(LOOKING NORTH)

PLACE PIERS ON STEEL HP 12x53 PILING WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS/PILE AT PIERS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

N



PLAN

NOTES: PXXX BARS DENOTE PIER 1 BARS.

CXXX BARS DENOTE PIER 2 BARS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-339

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PIERS 1 & 2

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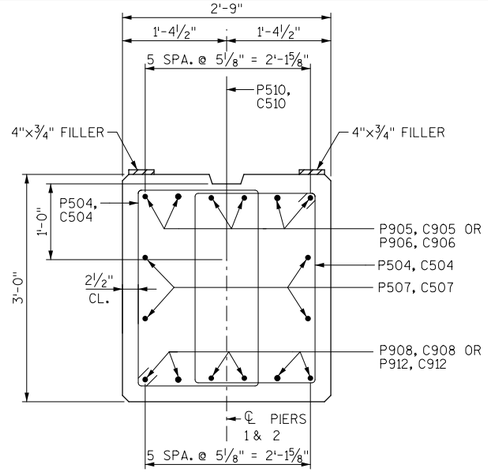
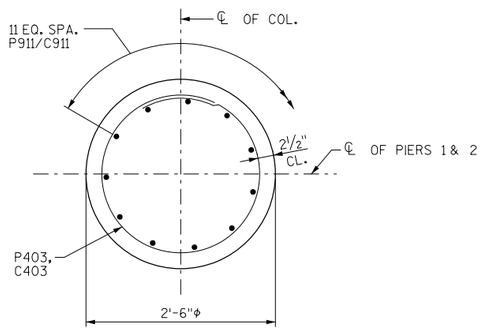
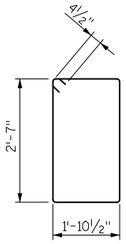


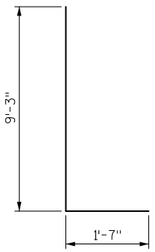
SECTION A-A



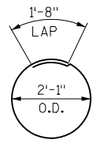
TYPICAL SECTION THRU COLUMN



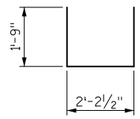
P504 & C504



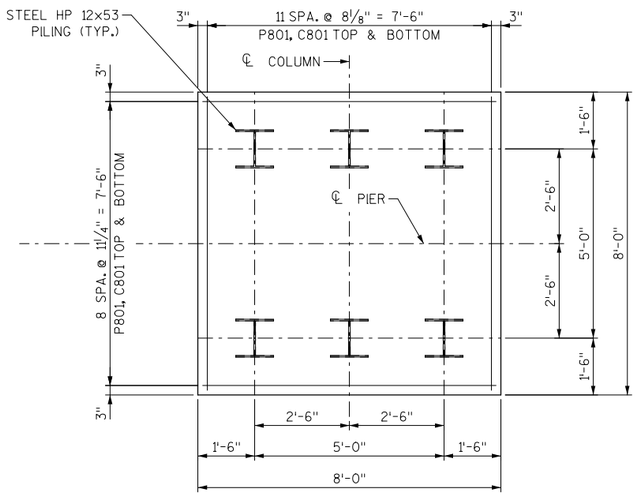
P902 & C902



P403 & C403



P509 & C509



FOOTING PLAN

BILL OF BARS - PIER 1

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	10809 # COATED 4298 # UNCOATED LOCATION
P801		210	6'-20"				FOOTING-HORIZ.
P902	X	55	10'-7"	X			FOOTING DOWELS - COLUMN VERT
P403	X	90	8'-3"	X			COLUMN STIRRUPS
P504	X	180	9'-8"	X			CAP STIRRUPS
P905	X	6	27'-1"				CAP-HORIZ-TOP
P906	X	6	41'-7"				CAP-HORIZ-TOP
P507	X	8	32'-5"				CAP-HORIZ-SIDES
P908	X	6	19'-5"				CAP-HORIZ-BTM
P509	X	8	5'-6"	X			CAP-HORIZ-ENDS
P510	X	62	2'-0"				CAP DOWELS
P911	X	55	17'-7"				COLUMN VERT
P912	X	6	48'-0"				CAP-HORIZ-BTM

BILL OF BARS - PIER 2

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	10828# COATED 4299# UNCOATED LOCATION
C801		210	7'-8"				FOOTING-HORIZ.
C902	X	55	10'-7"	X			FOOTING DOWELS - COLUMN VERT
C403	X	85	8'-3"	X			COLUMN STIRRUPS
C504	X	180	9'-8"	X			CAP STIRRUPS
C905	X	6	27'-1"				CAP-HORIZ-TOP
C906	X	6	41'-7"				CAP-HORIZ-TOP
C507	X	8	32'-5"				CAP-HORIZ-SIDES
C908	X	6	19'-5"				CAP-HORIZ-BTM
C509	X	8	5'-6"	X			CAP-HORIZ-ENDS
C510	X	62	2'-0"				CAP DOWELS
C911	X	55	17'-10"				COLUMN VERT
C912	X	6	48'-5"				CAP-HORIZ-BTM

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

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

STATE PROJECT NUMBER

1060-38-70

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-339

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PIERS 1 & 2 DETAILS

SHEET 10 OF 17

216

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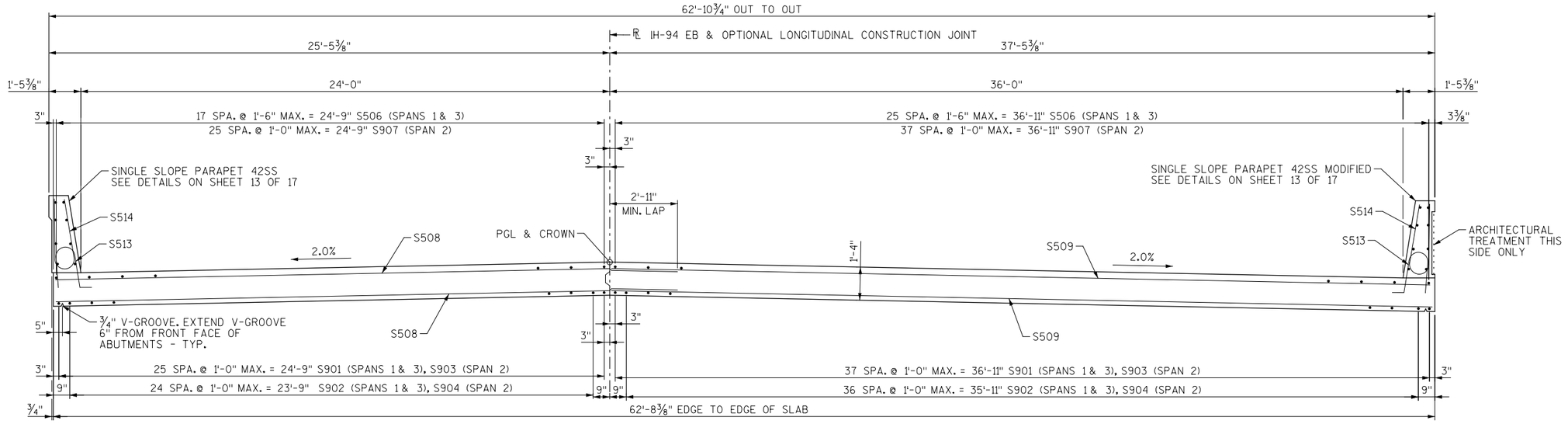
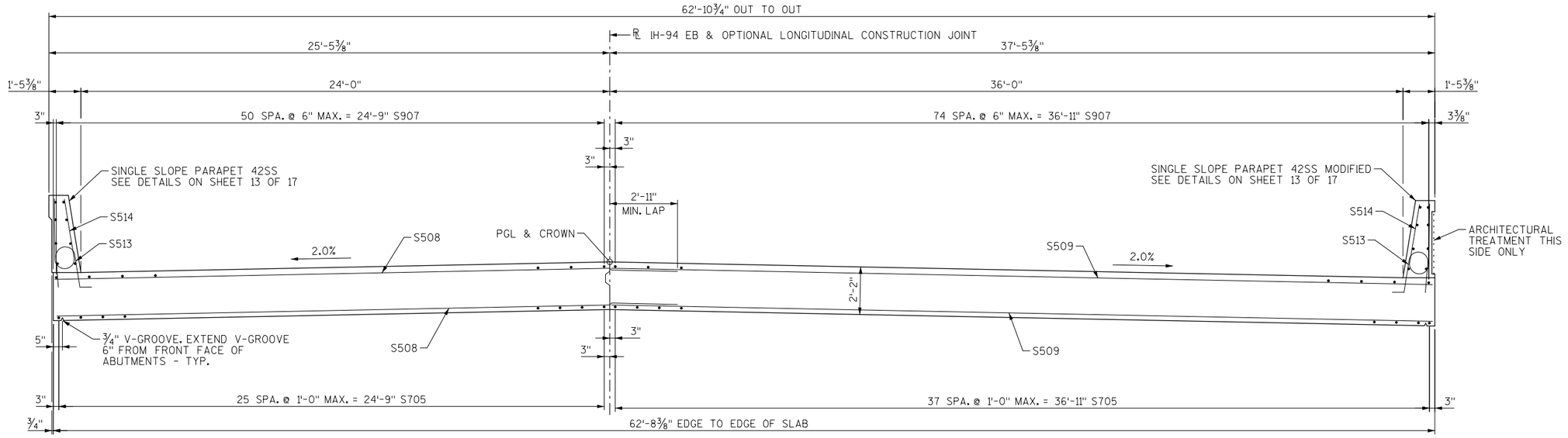
STATE PROJECT NUMBER

1060-38-70



CROSS SECTION THRU ROADWAY - IN SPAN

(LOOKING EAST)



CROSS SECTION THRU ROADWAY - AT PIER

(LOOKING EAST)

NOTES:

1. TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BARS CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.
2. ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).
3. PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS, THE ℄ OF PIERS AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND CROWN OR ℄.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-339

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SUPERSTRUCTURE

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217

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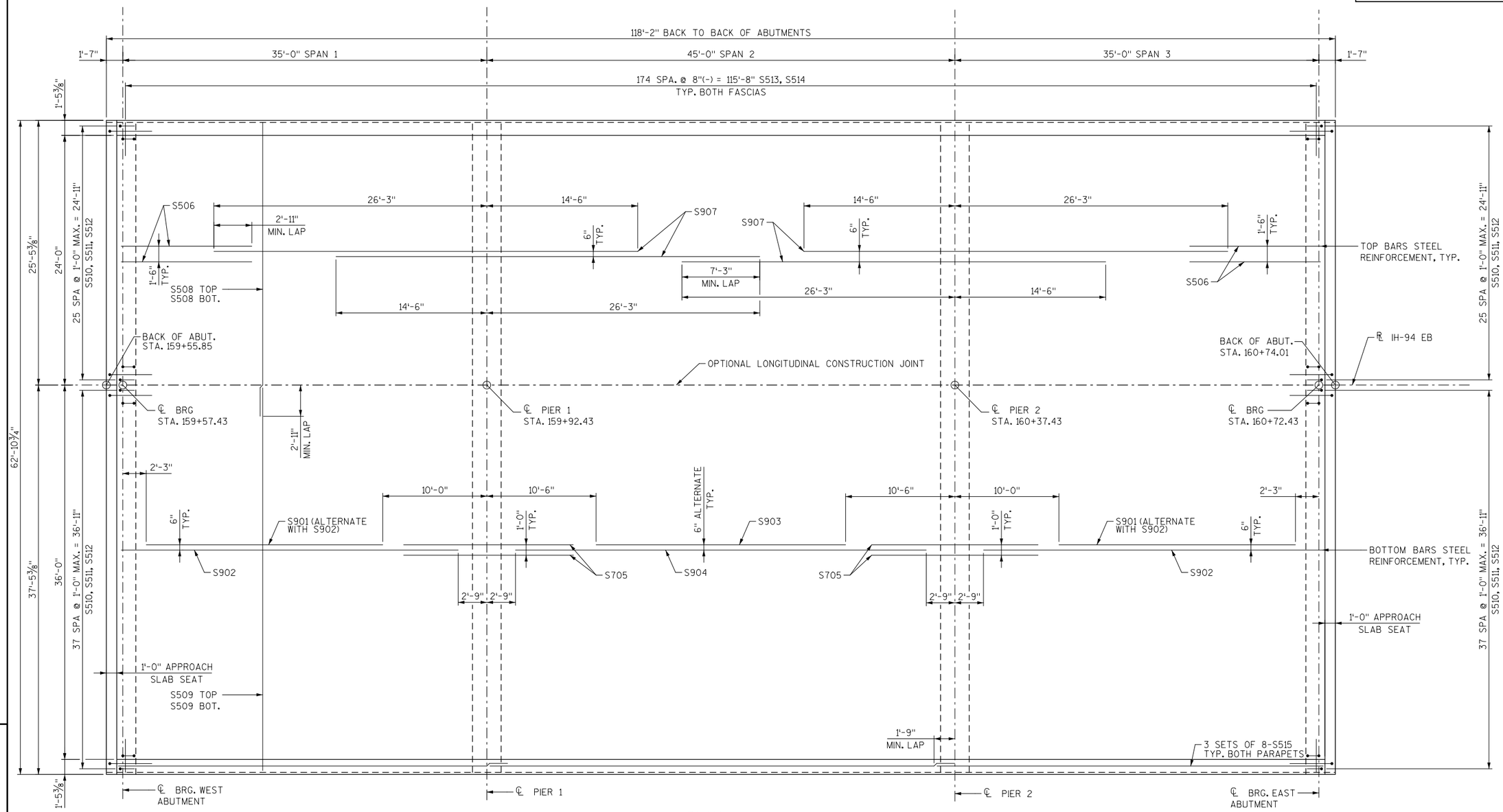
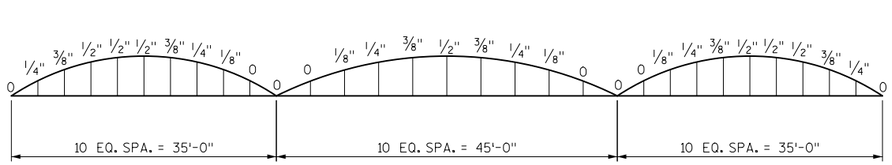
STATE PROJECT NUMBER
1060-38-70

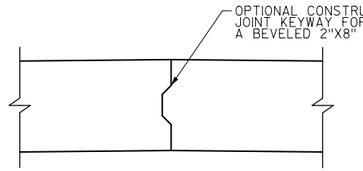


PLAN



CAMBER DIAGRAM

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEADLOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.



OPTIONAL LONGITUDINAL CONSTRUCTION JOINT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-339

DRAWN BY WMN | PLANS CK'D. WJZ

SUPERSTRUCTURE PLAN

SHEET 12 OF 17

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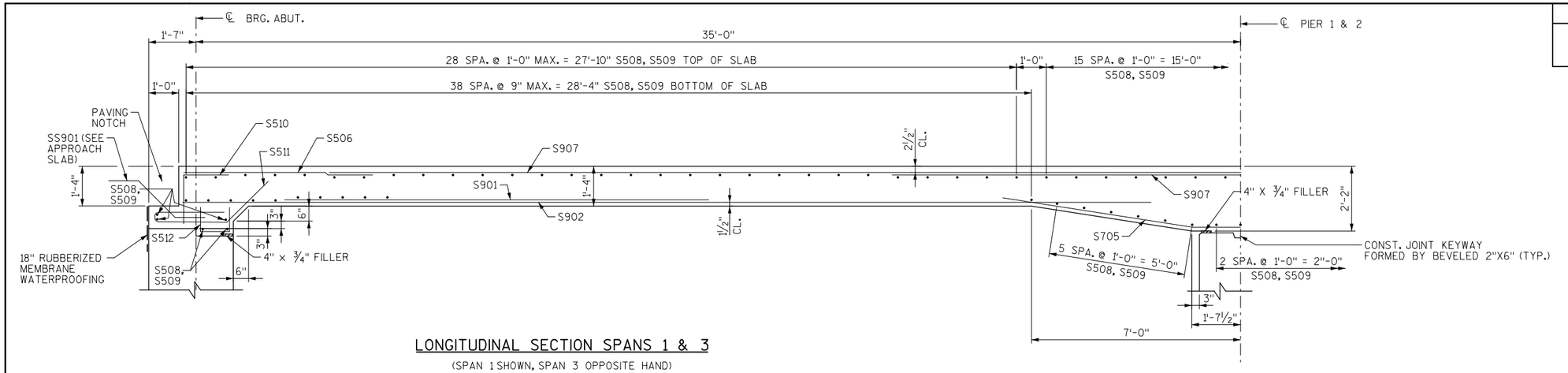
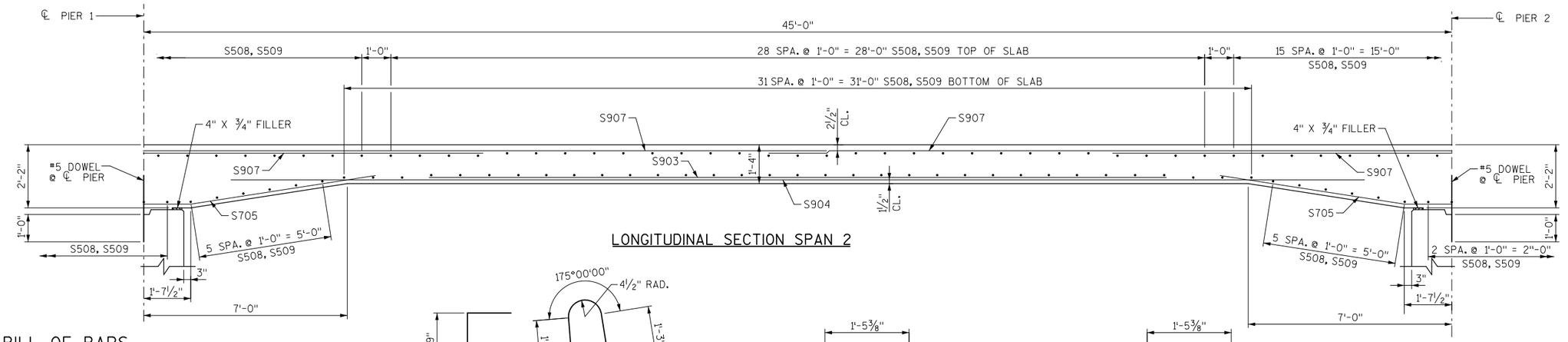


LONGITUDINAL SECTION SPANS 1 & 3

(SPAN 1 SHOWN, SPAN 3 OPPOSITE HAND)



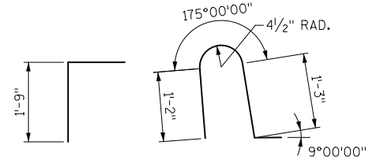
LONGITUDINAL SECTION SPAN 2

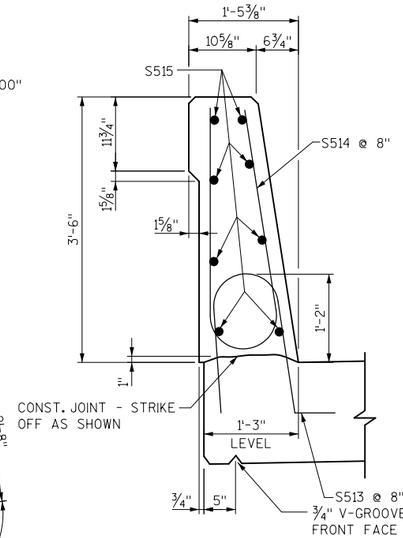
BILL OF BARS

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

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	103985# COATED 0# UNCOATED LOCATION
S901	X	128	22'-9"				SLAB LONG. BOT, SPAN 1 & 3
S902	X	124	32'-8"				SLAB LONG. BOT, SPAN 1 & 3
S903	X	64	24'-0"				SLAB LONG. BOT, SPAN 2
S904	X	62	39'-6"				SLAB LONG. BOT, SPAN 2
S705	X	128	16'-9"	X			SLAB LONG BOT, PIER
S506	X	88	12'-1"				SLAB LONG. TOP , SPAN 1 & 3
S907	X	254	40'-9"				SLAB LONG. TOP, PIER
S508	X	269	28'-1"				SLAB TRANS.
S509	X	269	37'-2"				SLAB TRANS.
S510	X	128	3'-4"	X			SLAB @ ABUT. HAUNCH
S511	X	128	7'-0"	X			SLAB @ ABUT. HAUNCH
S512	X	128	2'-7"	X			SLAB @ ABUT. HAUNCH
S513	X	350	4'-5"	X			PARAPET VERTICAL
S514	X	350	6'-8"	X			PARAPET VERTICAL
S515	X	48	40'-0"				PARAPET HORIZONTAL

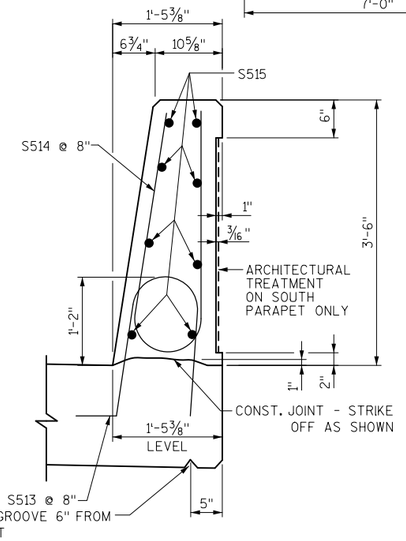
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.





SECTION THRU NORTH PARAPET ON BRIDGE

(SINGLE SLOPE PARAPET 42SS)



SECTION THRU SOUTH PARAPET ON BRIDGE

(SINGLE SLOPE PARAPET 42SS MODIFIED)

NOTES:

1. FOR SS901 BAR LOCATION AND BILL OF BARS, SEE SHEET 15.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-339

DRAWN BY WMN | PLANS CK'D. WJZ

SUPERSTRUCTURE DETAILS

SHEET 13 OF 17

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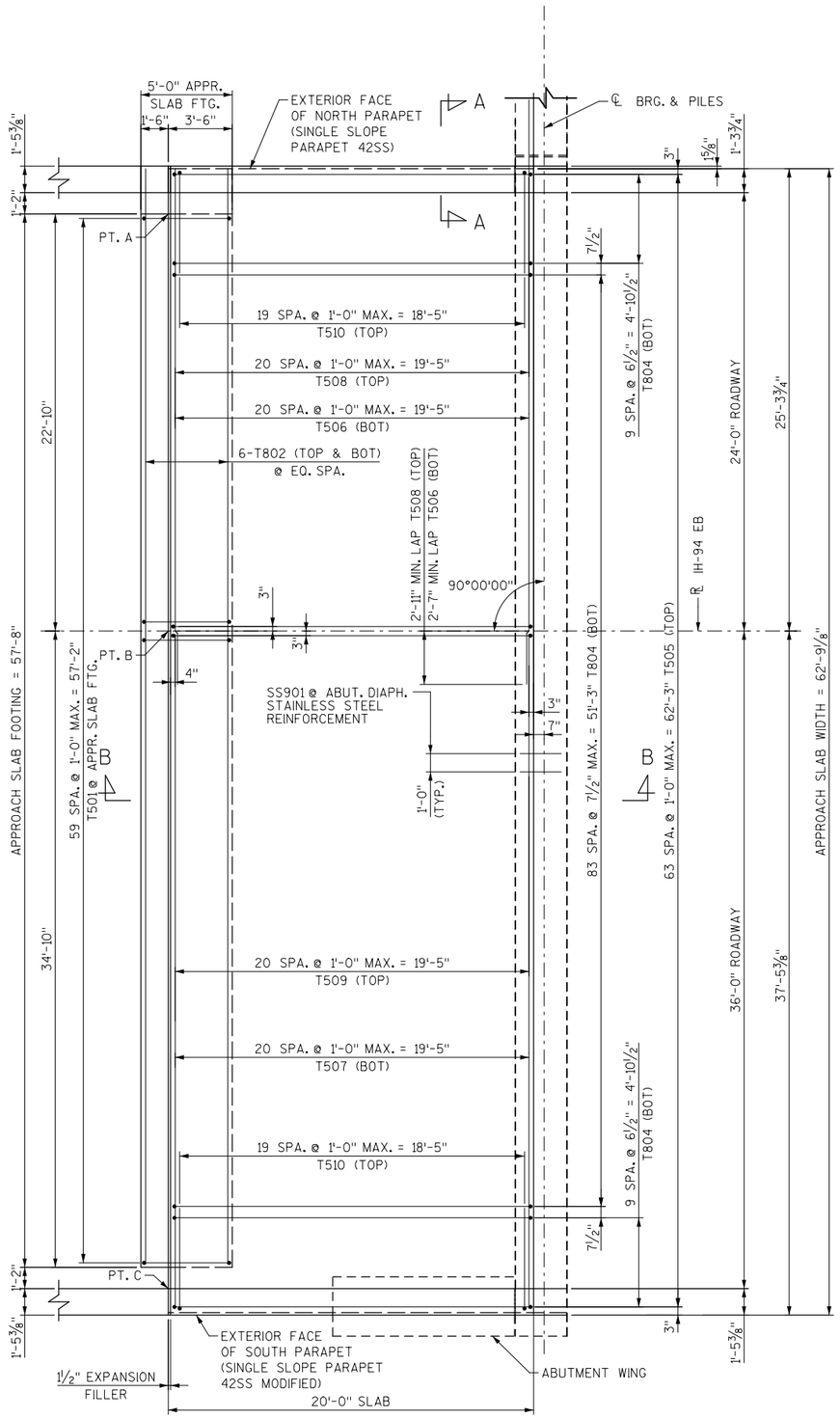


APPROACH SLAB PLAN
(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR OPPOSITE HAND)

N

BILL OF BARS

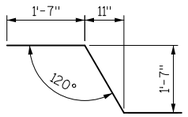
STAINLESS STEEL

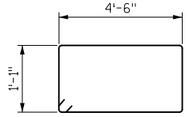
BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	0# COATED 2176# UNCOATED STAINLESS STEEL LOCATION
SS901		128	5'-0"	X			ABUT. DIAPH. TO APPROACH SLAB

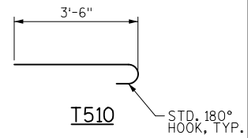
BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	2571# COATED 0# UNCOATED LOCATION
T501	X	120	11'-10"	X			FOOTING STIRRUP
T802	X	24	57'-4"				FOOTING HORIZONTAL
T804	X	208	21'-5"	X			BOTTOM LONGITUDINAL
T505	X	128	19'-7"				TOP LONGITUDINAL
T506	X	42	27'-10"				BOTTOM TRANSVERSE
T507	X	42	37'-2"				BOTTOM TRANSVERSE
T508	X	42	28'-2"				TOP TRANSVERSE
T509	X	42	37'-2"				TOP TRANSVERSE
T510	X	80	4'-1"	X			TOP TRANSVERSE

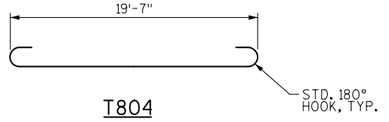
NOTES: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.









POINT	WEST ABUT. APPROACH SLAB STATION	WEST ABUT. APPROACH SLAB ELEVATION	EAST ABUT. APPROACH SLAB STATION	EAST ABUT. APPROACH SLAB ELEVATION
A	159+36.85	887.04	160+93.01	887.82
B	159+36.85	887.52	160+93.01	888.30
C	159+36.85	886.80	160+93.01	887.58

NOTES:

1. FOR NORTH PARAPET DETAILS ON APPROACH SLAB (SINGLE SLOPE PARAPET 42SS), SEE SHEET 15.
2. FOR SOUTH PARAPET DETAILS ON APPROACH SLAB (SINGLE SLOPE PARAPET 42SS MODIFIED), SEE SHEET 16.

STATE PROJECT NUMBER

1060-38-70

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-339

DRAWN BY WMN | PLANS CK'D. WJZ

STRUCTURAL APPROACH SLABS

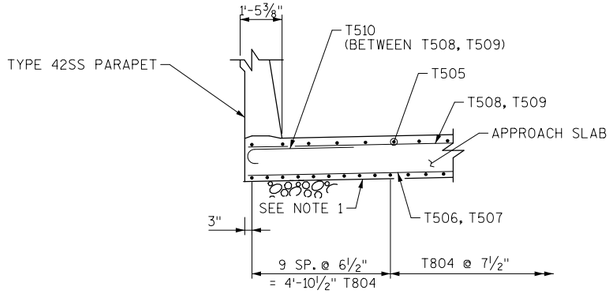
SHEET 14 OF 17

220

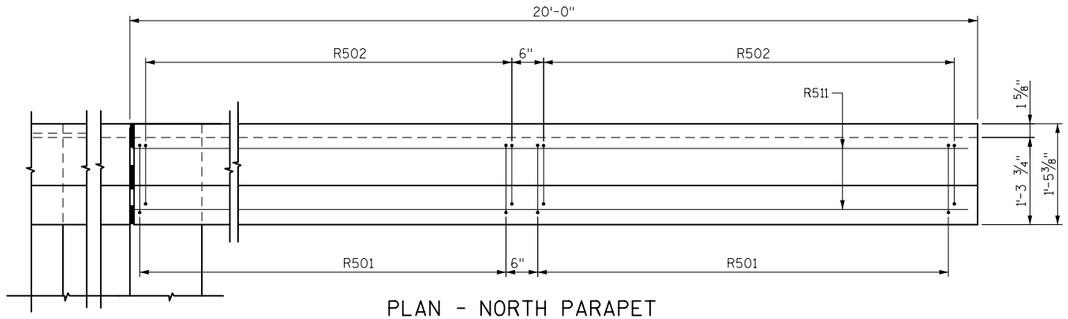
FILE= 081040_B670339_14APPR.DGN
SCALE = 1:8

STATE PROJECT NUMBER

1060-38-70

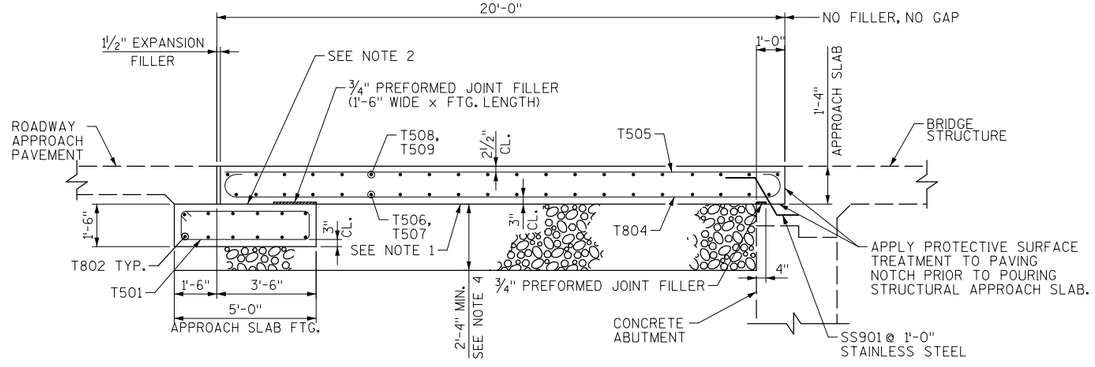


SECTION A-A



PLAN - NORTH PARAPET

(SINGLE SLOPE PARAPET 42SS ON APPROACH SLAB)



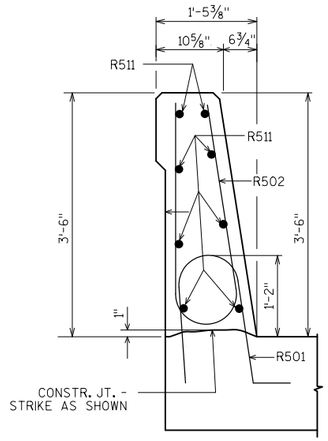
SECTION B-B THRU APPROACH SLAB

NOTES:
1. PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE, BENEATH SLAB.

2. STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER ENTIRE TOP OF FOOTING.

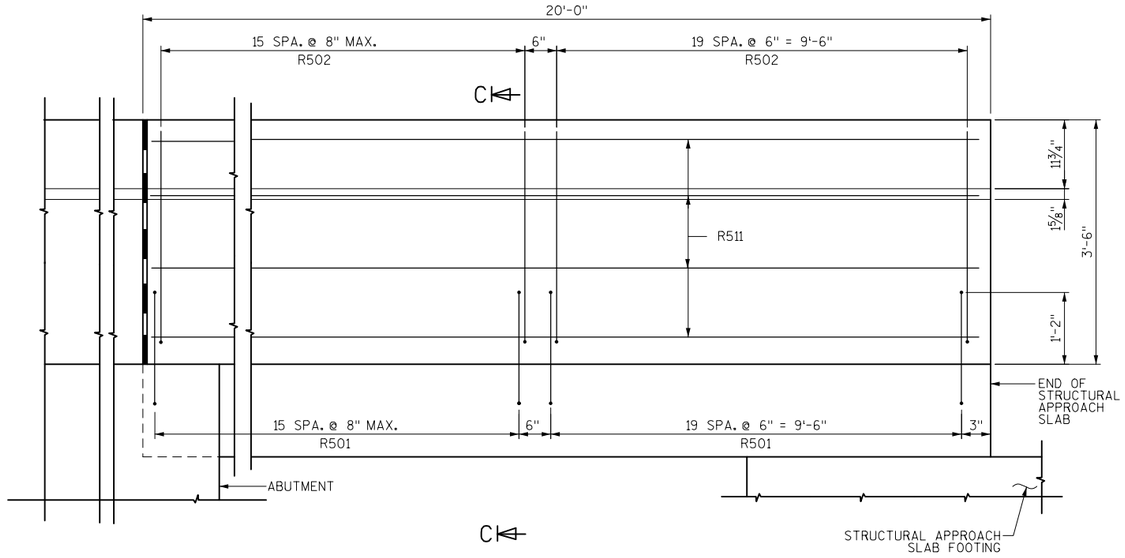
3. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTERLINE AT INSIDE FACE.

4. BELOW THE APPROACH SLAB FOOTING AND APPROACH SLAB, PLACE BASE AGGREGATE DENSE 1-¼ INCH.



SECTION C-C

(SINGLE SLOPE PARAPET 42SS)



TYPICAL OUTSIDE ELEVATION - NORTH PARAPET

(SINGLE SLOPE PARAPET 42SS ON APPROACH SLAB)

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-339

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STRUCTURAL APPROACH SLAB DETAILS

SHEET 15 OF 17

221

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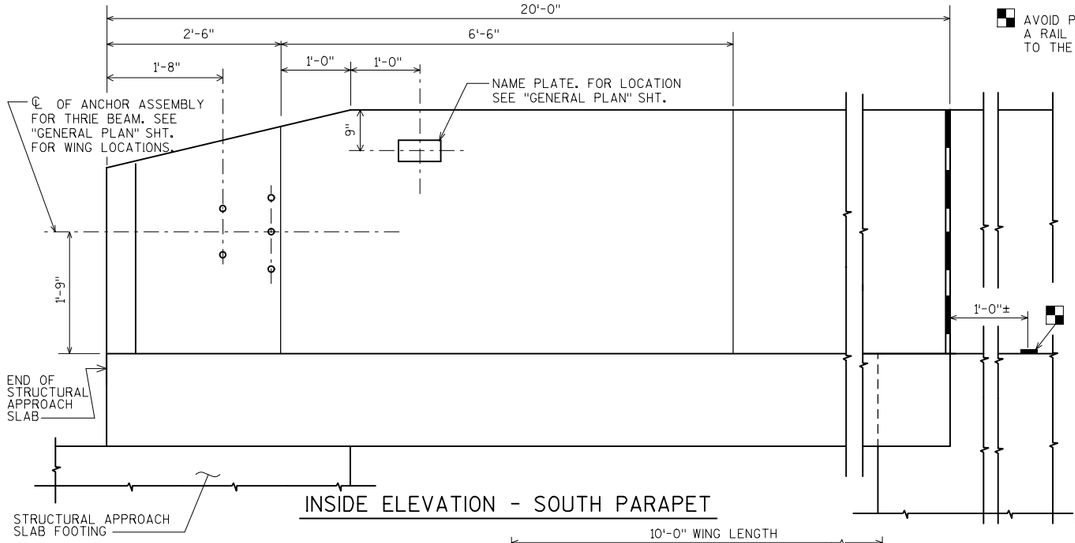
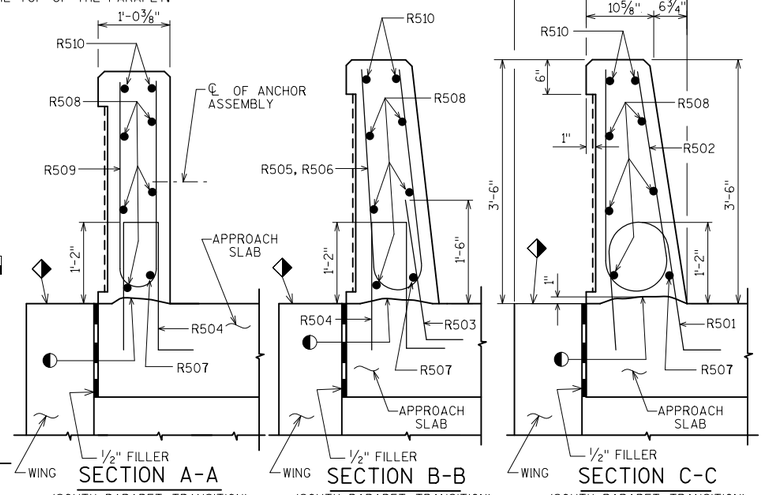
STATE PROJECT NUMBER

1060-38-70



INSIDE ELEVATION - SOUTH PARAPET

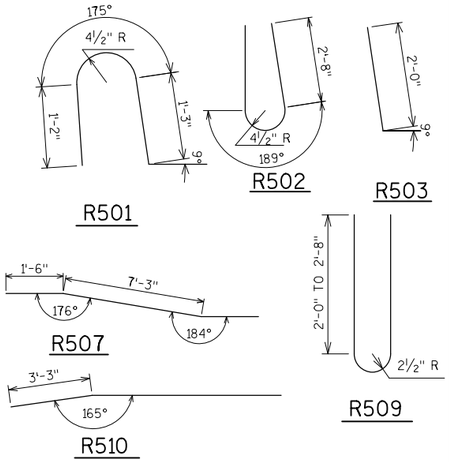
AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.

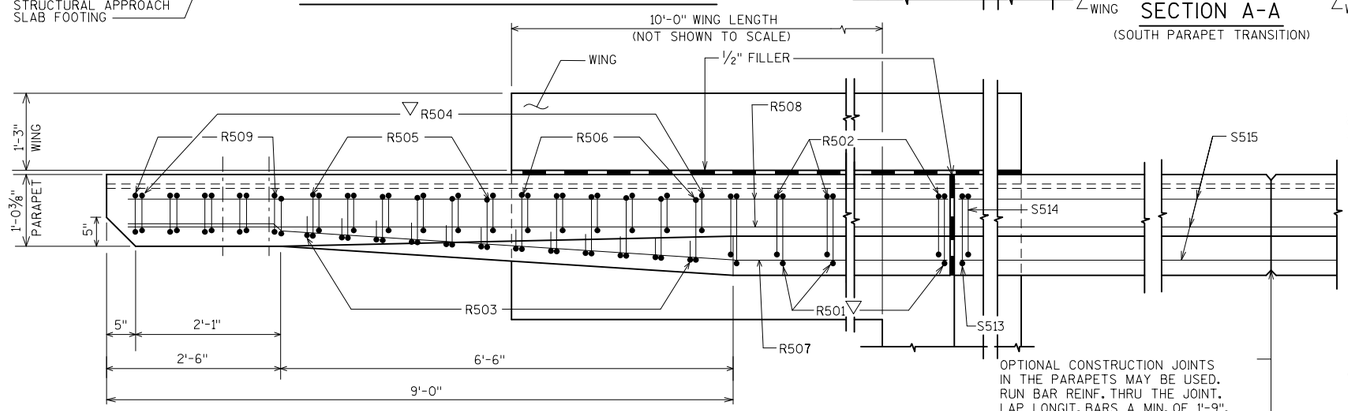


SECTION A-A
(SOUTH PARAPET TRANSITION)

SECTION B-B
(SOUTH PARAPET TRANSITION)

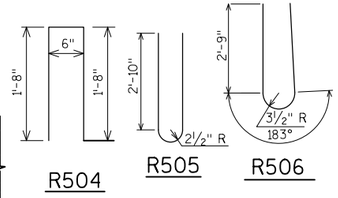
SECTION C-C
(SOUTH PARAPET TRANSITION)





PLAN - SOUTH PARAPET

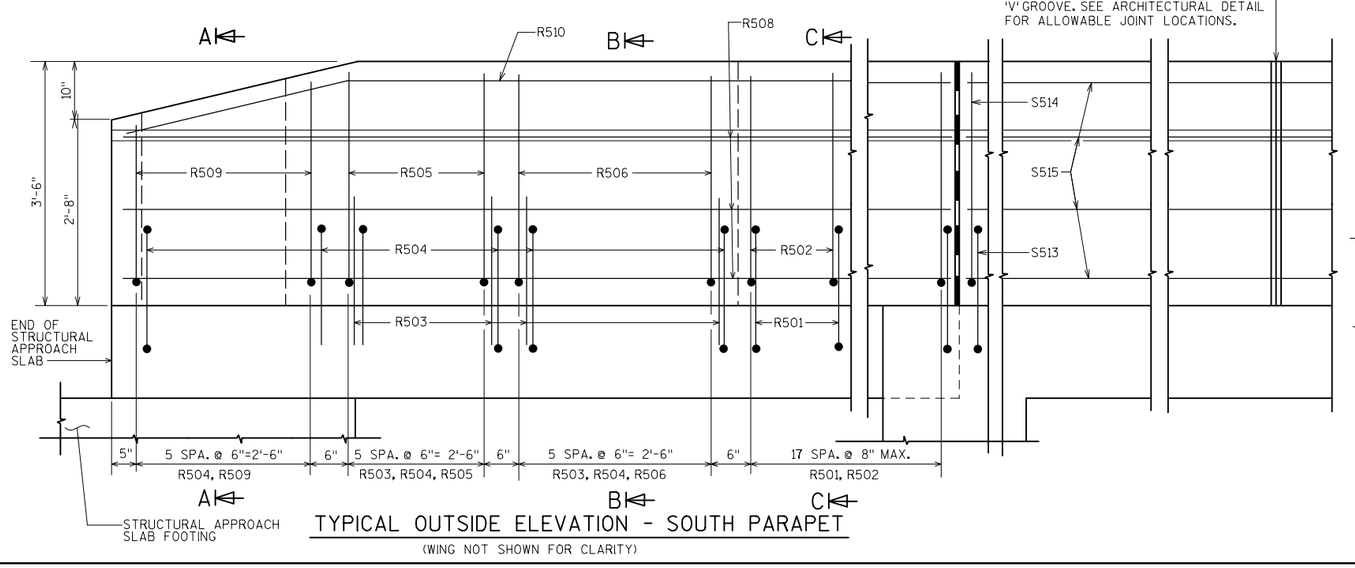
OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A ¾" - 'V' GROOVE. SEE ARCHITECTURAL DETAIL FOR ALLOWABLE JOINT LOCATIONS.



◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◆ SLOPE FOR DRAINAGE

▽ R501 AND R504 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.



TYPICAL OUTSIDE ELEVATION - SOUTH PARAPET

(WING NOT SHOWN FOR CLARITY)

BILL OF BARS

FOR STRUCTURAL APPROACH SLAB PARAPETS

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED CUT BARS	2,688# COATED 0# UNCOATED LOCATION
R501	X	108	4'-5"	X		PARAPET VERTICAL
R502	X	108	6'-8"	X		PARAPET VERTICAL
R503	X	24	2'-9"	X		PARAPET VERTICAL
R504	X	36	4'-4"	X		PARAPET VERTICAL
R505	X	12	6'-5"	X		PARAPET VERTICAL
R506	X	12	6'-6"	X		PARAPET VERTICAL
R507	X	2	19'-6"	X		PARAPET HORIZONTAL
R508	X	26	19'-6"			PARAPET HORIZONTAL
R509	X	12	5'-5"	X	X	PARAPET VERTICAL
R510	X	4	19'-6"	X		PARAPET HORIZONTAL
R511	X	16	19'-7"			PARAPET HORIZONTAL

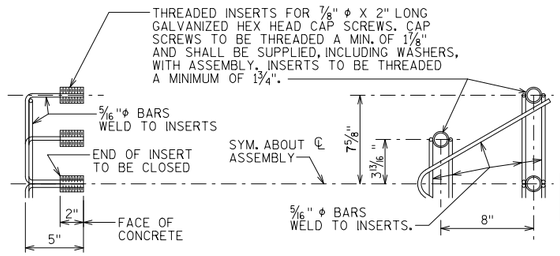
NOTES: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

LENGTH SHOWN FOR CUT BARS IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.

BAR SERIES TABLE

MARK	NO. REQ'D.	LENGTH
R509	2 SERIES OF 6	4'-9" TO 6'-1"



DETAIL OF ANCHOR ASSEMBLY

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

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-339

DRAWN BY WMN | PLANS CK'D. WJZ

SINGLE SLOPE PARAPET 42SS MODIFIED

SHEET 16 OF 17

222

FILE= 081040_B670339_16PRPT.DGN
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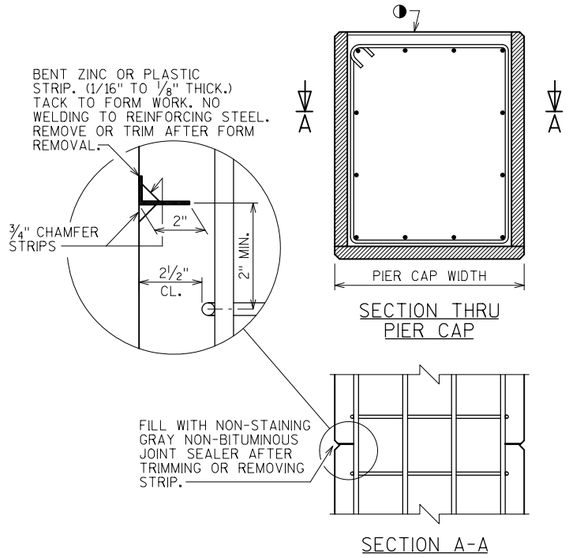
STATE PROJECT NUMBER

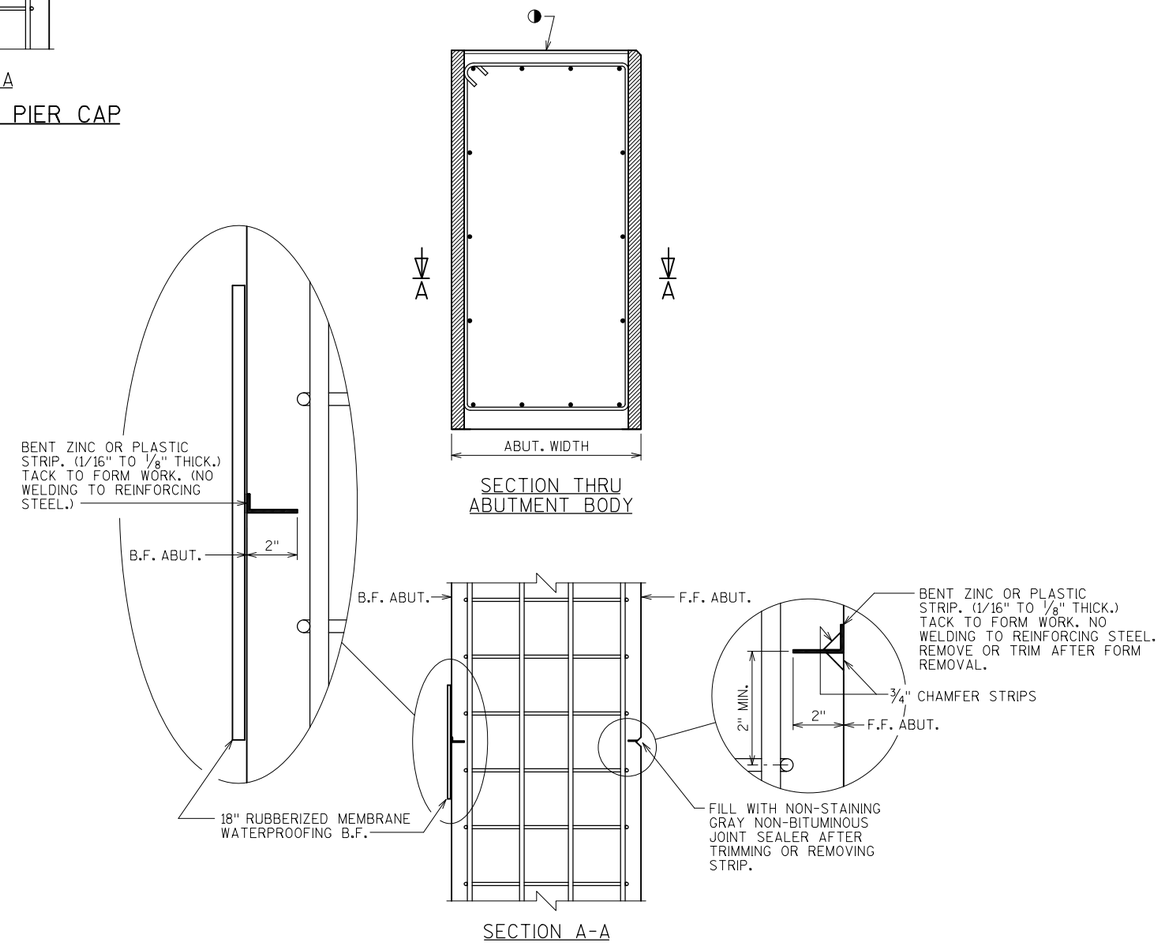
1060-38-70



SECTION THRU PIER CAP

SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT PIER CAP



SECTION THRU ABUTMENT BODY

SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

SAWCUTTING THE CONSTRUCTION JOINT IS NOT ALLOWED

◑ USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-339

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ALTERNATE CONSTRUCTION JOINT

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ALTJOINT
10-08

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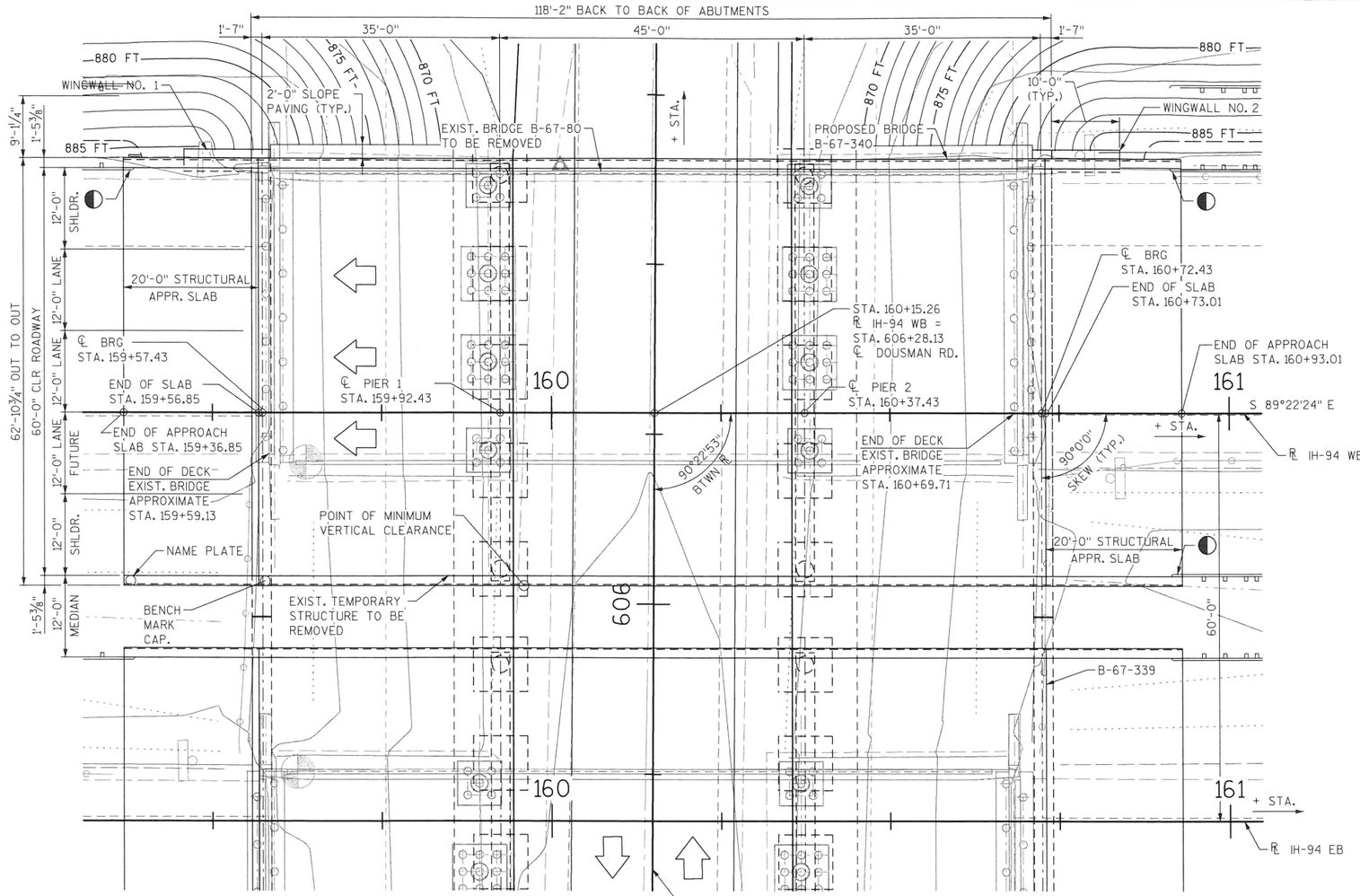
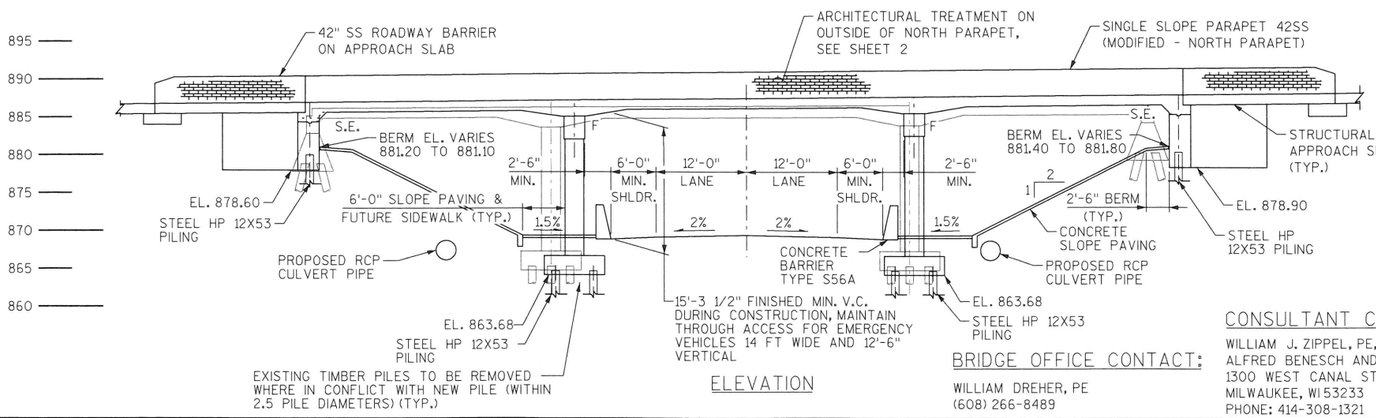


PLAN

C.I.P. CONCRETE SLAB BRIDGE
WITH C.I.P. CONCRETE ABUTMENTS
AND MULTI-COLUMNED PIERS



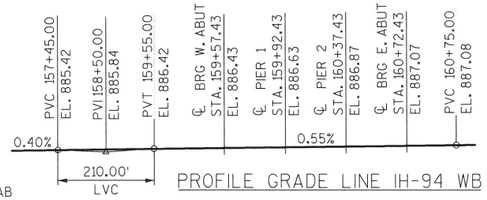
ELEVATION

BRIDGE OFFICE CONTACT:

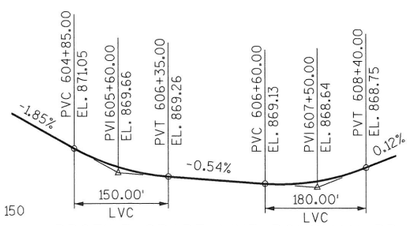
WILLIAM DREHER, PE
(608) 266-8489

CONSULTANT CONTACT:

WILLIAM J. ZIPPEL, PE, SE
ALFRED BENESCH AND CO.
1300 WEST CANAL STREET, SUITE 150
MILWAUKEE, WI 53233
PHONE: 414-308-1321



PROFILE GRADE LINE IH-94 WB



PROFILE GRADE LINE DOUSMAN RD.

DESIGN DATA

LIVE LOAD:

DESIGN LOADING HL-93
INVENTORY RATING FACTOR 1.06
OPERATING RATING FACTOR 1.38
WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV) = 250 KIPS
DESIGN ACCOUNTS FOR FUTURE WEARING SURFACE = 20 PSF

MATERIAL PROPERTIES:

CONCRETE MASONRY SUPERSTRUCTURE (HPC) — fc' = 4000 PSI
ALL OTHER — fc' = 3500 PSI
STEEL REINFORCEMENT HIGH STRENGTH BAR, GRADE 60 — fy = 60 KSI

FOUNDATION DATA:

PLACE PIERS AND ABUTMENTS ON STEEL HP 12X53 PILING WITH PILE POINTS WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS/PILE* AT PIERS AND 105 TONS/PILE* AT ABUTMENTS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

* THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

EST. PILE LENGTHS:
75 FT AT W. ABUT.
65 FT AT PIER 1
65 FT AT PIER 2
75 FT AT E. ABUT.

TRAFFIC DATA DOUSMAN RD:

AADT (2015) = 1400
AADT (2035) = 1700
DESIGN SPEED = 50 MPH.

TRAFFIC DATA IH-94:

AADT (2015) = 43100
AADT (2035) = 46500
TRUCK % = 16.2%
D = 60/40
DESIGN SPEED = 70 MPH.

LIST OF DRAWINGS:

1. GENERAL PLAN AND ELEVATION
2. CROSS-SECTION
3. QUANTITIES & GENERAL NOTES
4. SUBSURFACE EXPLORATION
5. WEST ABUTMENT PLAN & ELEVATION
6. EAST ABUTMENT PLAN & ELEVATION
7. WEST ABUTMENT DETAILS
8. EAST ABUTMENT DETAILS
9. PIERS 1 & 2
10. PIERS 1 & 2 DETAILS
11. SUPERSTRUCTURE
12. SUPERSTRUCTURE PLAN
13. SUPERSTRUCTURE DETAILS
14. STRUCTURAL APPROACH SLABS
15. STRUCTURAL APPROACH SLAB DETAILS
16. SINGLE SLOPE PARAPET 42SS MODIFIED
17. ALTERNATE CONSTRUCTION JOINT

EXISTING STRUCTURE:

THE EXISTING BRIDGE (B-67-80) IS A THREE SPAN CONCRETE SLAB BRIDGE FOUNDED ON MULTI COLUMN CONCRETE PIERS AND CONCRETE STUB ABUTMENTS. THE EXISTING BRIDGE IS 112'-2" LONG AND THE DECK IS 42'-6" WIDE WITH TEMPORARY WIDENING TO THE SOUTH. THE FOUNDATIONS ARE SUPPORTED ON TIMBER PILING.

BENCHMARKS

NAME	ELEVATION	DESCRIPTION
BM3	890.23	ALUMINUM DISK IN PARAPET - EB
BM4	888.95	ALUMINUM DISK IN PARAPET - WB

STATE PROJECT NUMBER
1060-38-70

WISCONSIN
WILLIAM J. ZIPPEL
38868-006
MILWAUKEE, WI
PROFESSIONAL ENGINEER
10/1/2015

NO.	DATE	REVISION	BY

benesch engineers · scientists · planners
Alfred Benesch & Company
1300 West Canal Street, Suite 150
Milwaukee, Wisconsin 53233
414-308-1310 Job No. 20103.00

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 10/14/15
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-67-340

IH-94 WB OVER DOUSMAN RD.

COUNTY: WAUKESHA — ~~TOWN/CITY~~/VILLAGE: SUMMIT
DESIGN SPEC.: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY: WMN	PLANS CK'D.: WJZ

GENERAL PLAN AND ELEVATION

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224

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SCALE = 1:20

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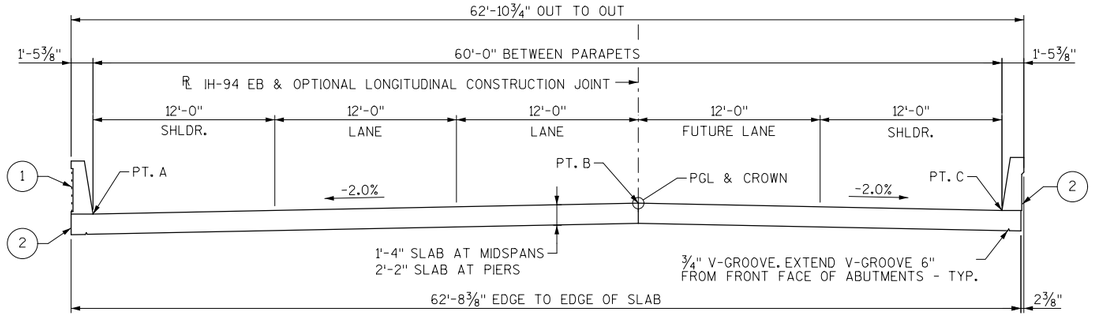
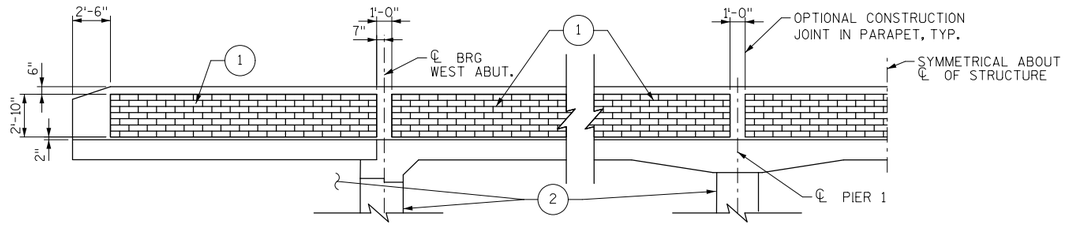


TYPICAL CROSS SECTION

(LOOKING EAST)

(1) FINISH OF ARCHITECTURAL SURFACE TREATMENT AT THE BACK FACE OF THE PARAPET SHALL ACHIEVE THE LOOK OF "NEW BRICK" WITH MAXIMUM RELIEF OF 3/16". SEE SPECIAL PROVISION FOR "ARCHITECTURAL SURFACE TREATMENT, B-67-340" AND "CONCRETE STAINING MULTI-COLOR, B-67-340".

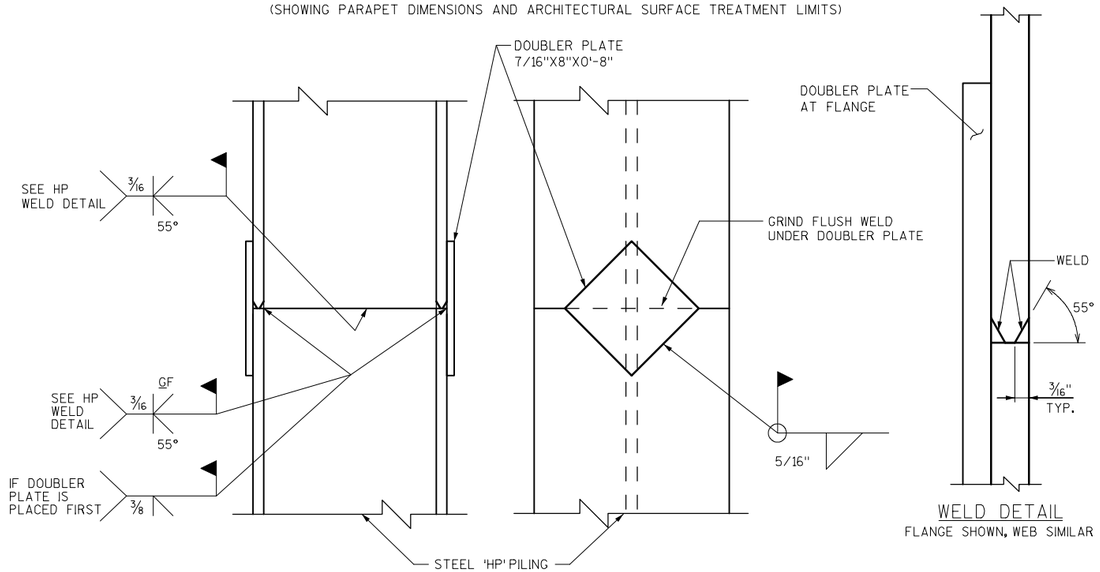
(2) CONCRETE STAINING B-67-340 APPLIED TO SURFACES NOT RECIEVING ARCHITECTURAL SURFACE TREATMENT OF WINGWALLS, FRONT FACE OF ABUTMENT, PIER COLUMNS AND CAPS, OUTSIDE FACE OF SOUTH PARAPET. APPLY STAIN TO 12" BELOW FINISHED GRADE.



NOTE: COLOR AND APPEARANCE SHALL MATCH I-94 OVER CTH-P BRIDGES AND WALLS NEAR PABST FARMS.

ELEVATION - NORTH FACE OF NORTH PARAPET

(SHOWING PARAPET DIMENSIONS AND ARCHITECTURAL SURFACE TREATMENT LIMITS)



STEEL PILING SPLICE DETAILS

WELD DETAIL

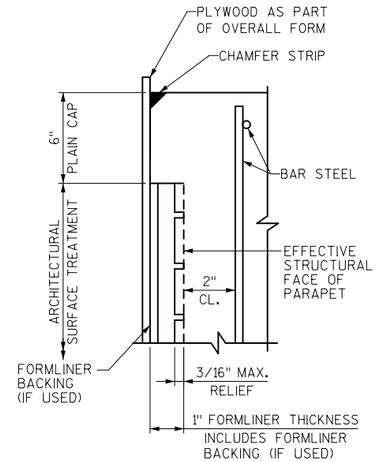
FLANGE SHOWN, WEB SIMILAR

TOP OF DECK ELEVATIONS

LOCATION	STATION	PT. A (FLOWLINE)	PT. B (PGL/CONSTR. JT.)	PT. C (FLOWLINE)
END OF SLAB	159+56.85	885.71	886.43	885.95
CL BRG. WEST ABUT.	159+57.43	885.71	886.43	885.95
0.1	159+60.93	885.73	886.45	885.97
0.2	159+64.43	885.75	886.47	885.99
0.3	159+67.93	885.77	886.49	886.01
0.4	159+71.43	885.79	886.51	886.03
0.5	159+74.93	885.81	886.53	886.05
0.6	159+78.43	885.83	886.55	886.07
0.7	159+81.93	885.84	886.56	886.08
0.8	159+85.43	885.86	886.58	886.10
0.9	159+88.93	885.88	886.60	886.12
CL PIER 1	159+92.43	885.90	886.62	886.14
0.1	159+96.93	885.93	886.65	886.17
0.2	160+01.43	885.95	886.67	886.19
0.3	160+05.93	885.98	886.70	886.22
0.4	160+10.43	886.00	886.72	886.24
0.5	160+14.93	886.03	886.75	886.27
0.6	160+19.43	886.05	886.77	886.29
0.7	160+23.93	886.08	886.80	886.32
0.8	160+28.43	886.10	886.82	886.34
0.9	160+32.93	886.13	886.85	886.37
CL PIER 2	160+37.43	886.15	886.87	886.39
0.1	160+40.93	886.17	886.89	886.41
0.2	160+44.43	886.19	886.91	886.43
0.3	160+47.93	886.21	886.93	886.45
0.4	160+51.43	886.23	886.95	886.47
0.5	160+54.93	886.25	886.97	886.49
0.6	160+58.43	886.27	886.99	886.51
0.7	160+61.93	886.28	887.00	886.52
0.8	160+65.43	886.30	887.02	886.54
0.9	160+68.93	886.32	887.04	886.56
CL BRG. EAST ABUT.	160+72.43	886.34	887.06	886.58
END OF SLAB	160+73.01	886.35	887.07	886.59

STATE PROJECT NUMBER

1060-38-70



SECTION THRU FORMLINER

NOTE

FORMLINER COURSING ON PARAPETS SHALL BE PARALLEL TO TOP OF PARAPET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-340

DRAWN BY WMN | PLANS CK'D. WJZ

CROSS-SECTION

SHEET 2 OF 17

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SCALE = 1:10

TOTAL ESTIMATED QUANTITIES

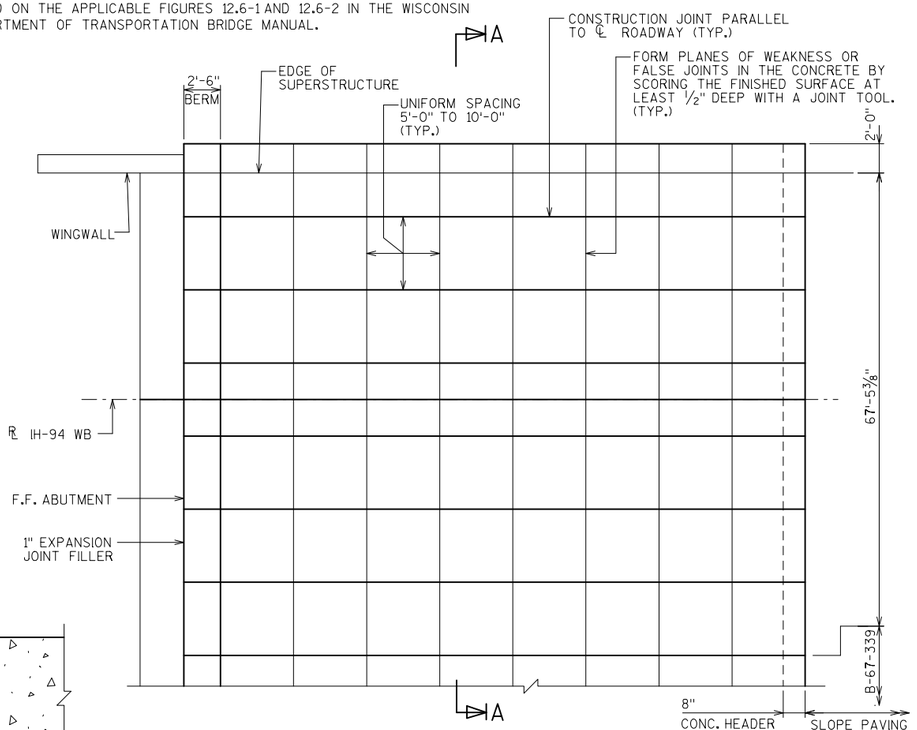
BID ITEM NUMBER	BID ITEMS	UNIT	WEST APPR. SLAB	W. ABUT.	PIER 1	PIER 2	E. ABUT.	EAST APPR. SLAB	SUPER	TOTAL
203.0200	REMOVING OLD STRUCTURE (STATION 159+59 WB)	LS	----	----	----	----	----	----	1	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES (B-67-340)	LS	----	0.5	----	----	0.5	----	----	1
210.0100	BACKFILL STRUCTURE	CY	----	95	----	----	104	----	----	199
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	----	218	----	----	218	----	----	436
501.1000.S	ICE HOT WEATHER CONCRETING	LB	634	353	510	510	375	634	3285	6301
502.0100	CONCRETE MASONRY, BRIDGES	CY	17	47	68	68	50	17	----	266
502.3200	PROTECTIVE SURFACE TREATMENT	SY	134	----	----	----	----	134	775	1043
502.3210	PIGMENTED SURFACE SEALER	SY	19	----	----	----	----	19	115	153
505.0400	BAR STEEL REINFORCEMENT HS, STRUCTURES	LB	----	5019	4299	4299	5186	----	----	18803
505.0600	BAR STEEL REINFORCEMENT HS COATED, STRUCTURES	LB	14201	741	10563	10610	754	14201	104220	155290
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STEEL STRUCTURES	LB	1088	----	----	----	----	1088	----	2176
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	----	15	----	----	15	----	----	30
517.1010.S.02	CONCRETE STAINING, B-67-340	SF	67	304	1103	1112	325	67	733	3711
517.1015.S.02	CONCRETE STAINING MULTI-COLOR BRICK, B-67-340	SF	----	----	----	----	----	----	423	423
517.1050.S.02	ARCHITECTUAL SURFACE TREATMENT BRICK, B-67-340	SF	----	----	----	----	----	----	423	423
550.0500	PILE POINTS	EACH	----	10	30	30	10	----	----	80
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	----	750	1950	1950	750	----	----	5400
604.0400	SLOPE PAVING CONCRETE	SY	----	260	----	----	260	----	----	520
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	----	240	----	----	240	----	----	480
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	1	----	----	----	----	2	----	3
SPV.0035.01	HPC MASONRY SUPERSTRUCTURES	CY	68	----	----	----	----	68	438	574
SPV.0090.01	REMOVING EXISTING TIMBER PILING	LF	----	120	560	560	120	----	----	1360
SPV.0165.01	LONGITUDINAL GROOVING BRIDGE DECK	SF	1140	----	----	----	----	1140	6622	8902
	NON-BID ITEMS									
	JOINT FILLER									
	NAME PLATE									
	NON-BITUMINOUS JOINT SEALER									
	POLYETHYLENE SHEETS									

GENERAL NOTES:

1. DRAWINGS SHALL NOT BE SCALED. BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
2. SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
3. THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
4. THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING CONCRETE TO THE EXTENT SHOWN.
5. THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.
6. THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES FOR THE ABUTMENTS SHALL BE THE BOTTOM OF SLOPE PROTECTION.
7. AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.
8. THE QUANTITY FOR BACKFILL STRUCTURE, BID ITEM 210.0100, IS CALCULATED BASED ON THE APPLICABLE FIGURES 12.6-1 AND 12.6-2 IN THE WISCONSIN DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL.

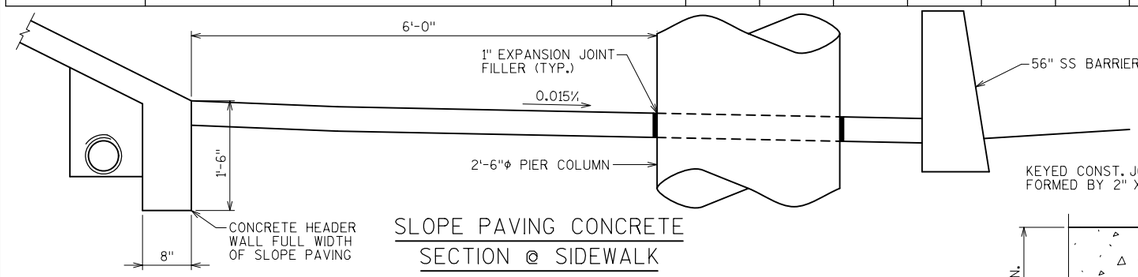
STATE PROJECT NUMBER

1060-38-70

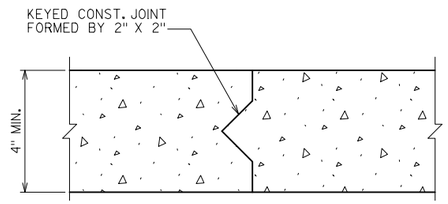


SLOPE PAVING CONCRETE - PLAN

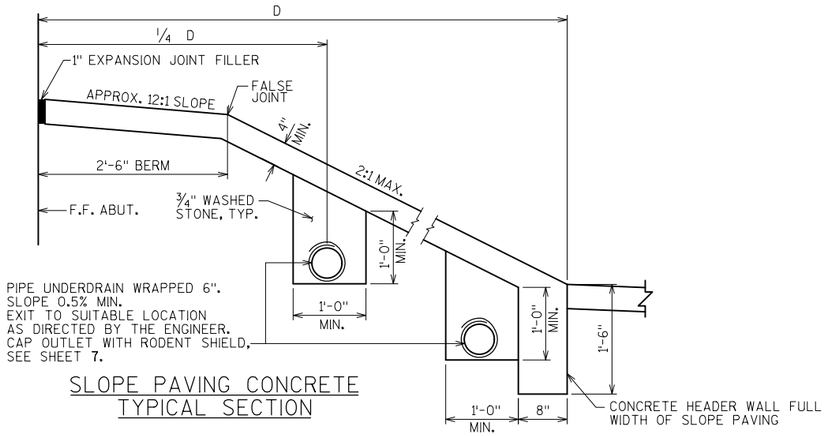
(WEST ABUTMENT SLOPE SHOWN; EAST ABUTMENT SLOPE SIMILAR AND OPPOSITE HAND)



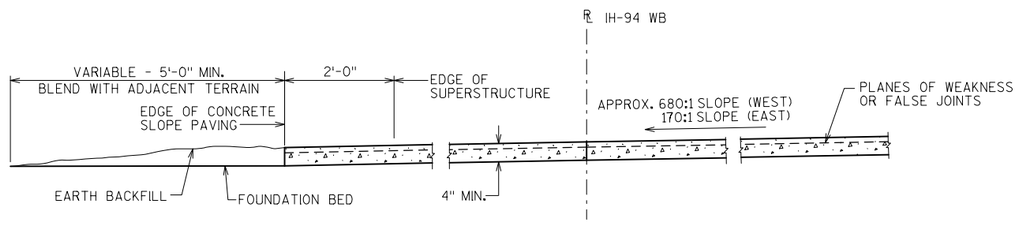
SLOPE PAVING CONCRETE
SECTION @ SIDEWALK



CONSTRUCTION JOINT



SLOPE PAVING CONCRETE
TYPICAL SECTION



SECTION A-B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-340

DRAWN BY WMN | PLANS CK'D. WJZ

QUANTITIES & GENERAL NOTES

SHEET 3 OF 17

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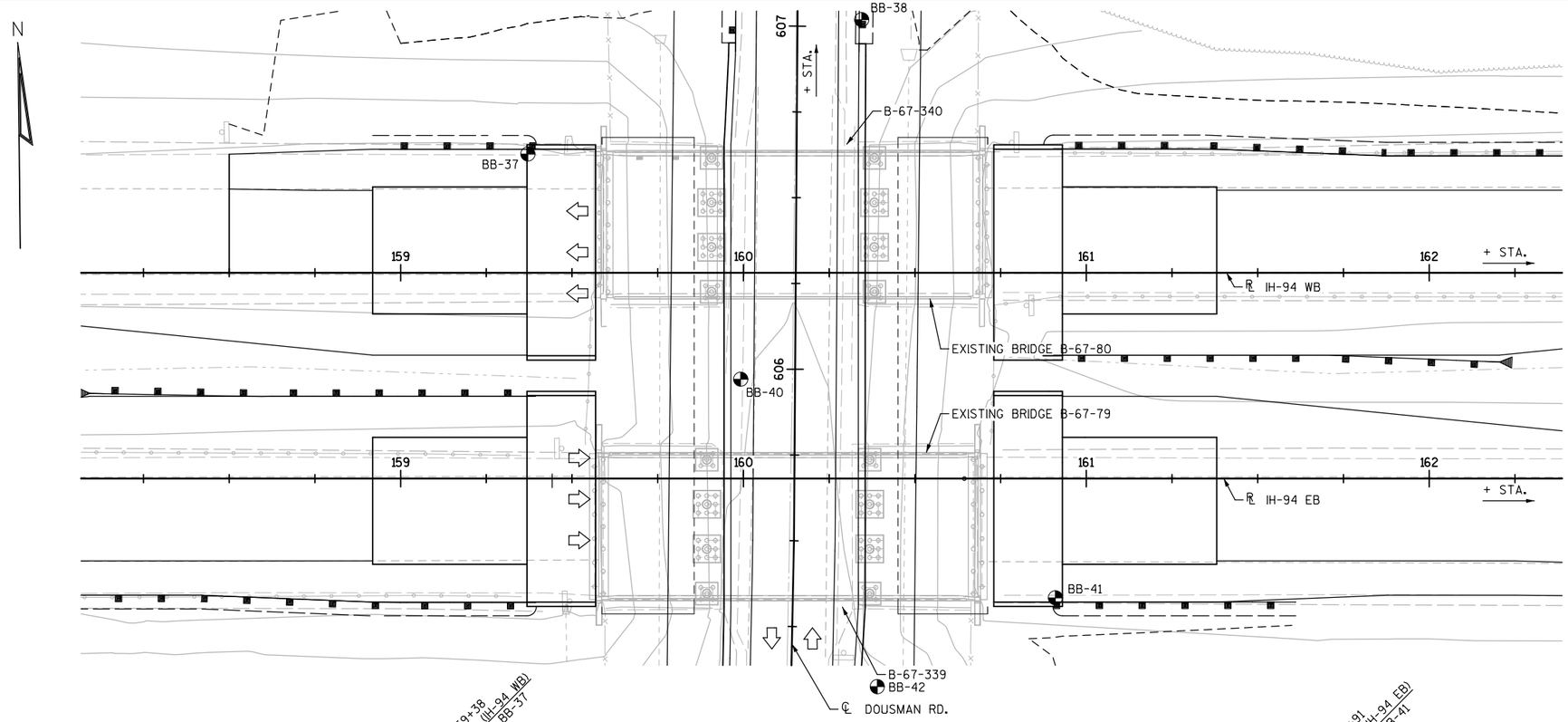

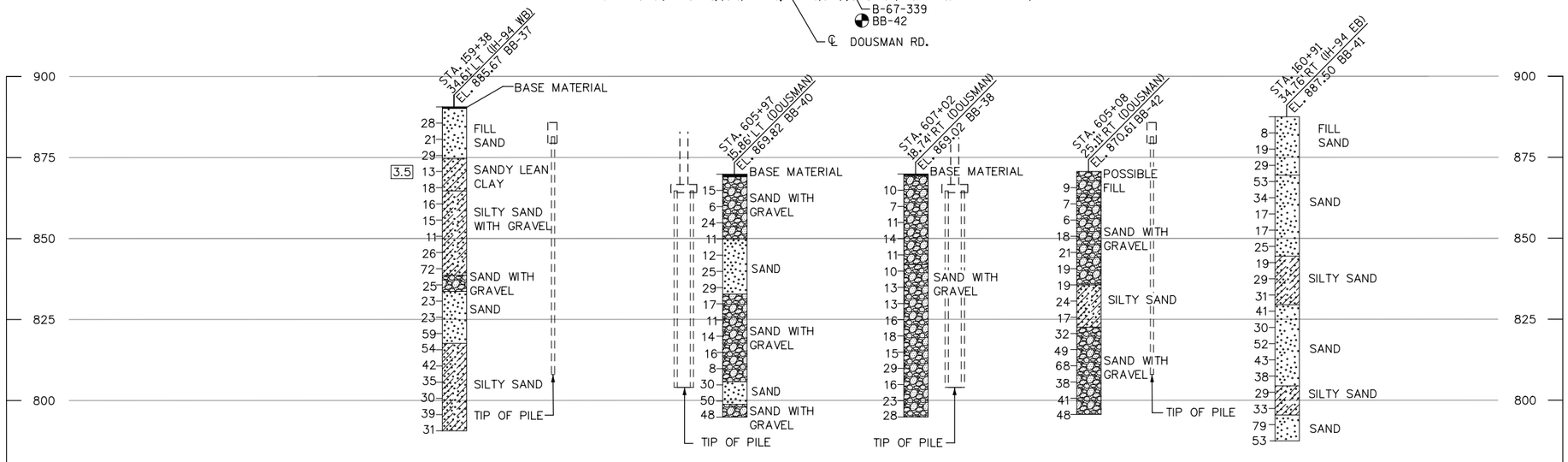

NOTES:

FOUNDATION DESIGN PARAMETERS ARE BASED ON RECOMMODATIONS FROM THE GEOTECHNICAL EXPLORATION REPORT DATED JULY, 2013 BY HIMALAYAN CONSULTANTS, LLC, AVAILABLE FROM WISDOT.

REFER TO THE GEOTECHNICAL REPORT FOR FULL SOIL DESCRIPTIONS AND DETAILS OF BORING LOGS.

HISTORIC BORINGS ARE AVAILABLE UPON REQUEST FROM WISDOT.

CONTACT THE WISCONSIN DEPARTMENT OF TRANSPORTATION FOR THE GEOTECHNICAL REPORT AND BORING LOGS.

EXISTING FOOTINGS ARE SHOWN FOR EXISTING STRUCTURES. ACTUAL LOCATIONS MAY VARY. CONTRACTOR SHALL VERIFY LOCATIONS IN THE FIELD.

STATE PROJECT NUMBER

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ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE, SAND, PEAT, LIMESTONE, GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.
STA.
ELEVATION
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

95/6=95 BLOWS FOR 6" PENETRATION PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

LEGEND OF BORING

BORING NO.
ELEV.
STA.
UNCONFINED STRENGTH
7.7 7
BLOWS PER FT. USING 140# WT. FALLING 30"
WASH SAMPLE
SHELBY TUBE — S.T.
GROUND WATER ELEVATION
NO GROUND WATER OBSERVED ABOVE THIS ELEVATION
SANDY GRAVEL
F. BOULDERS OR COBBLES
SAND
SILTY CLAY
SO
LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-340

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SUBSURFACE EXPLORATION

SHEET 4 OF 17

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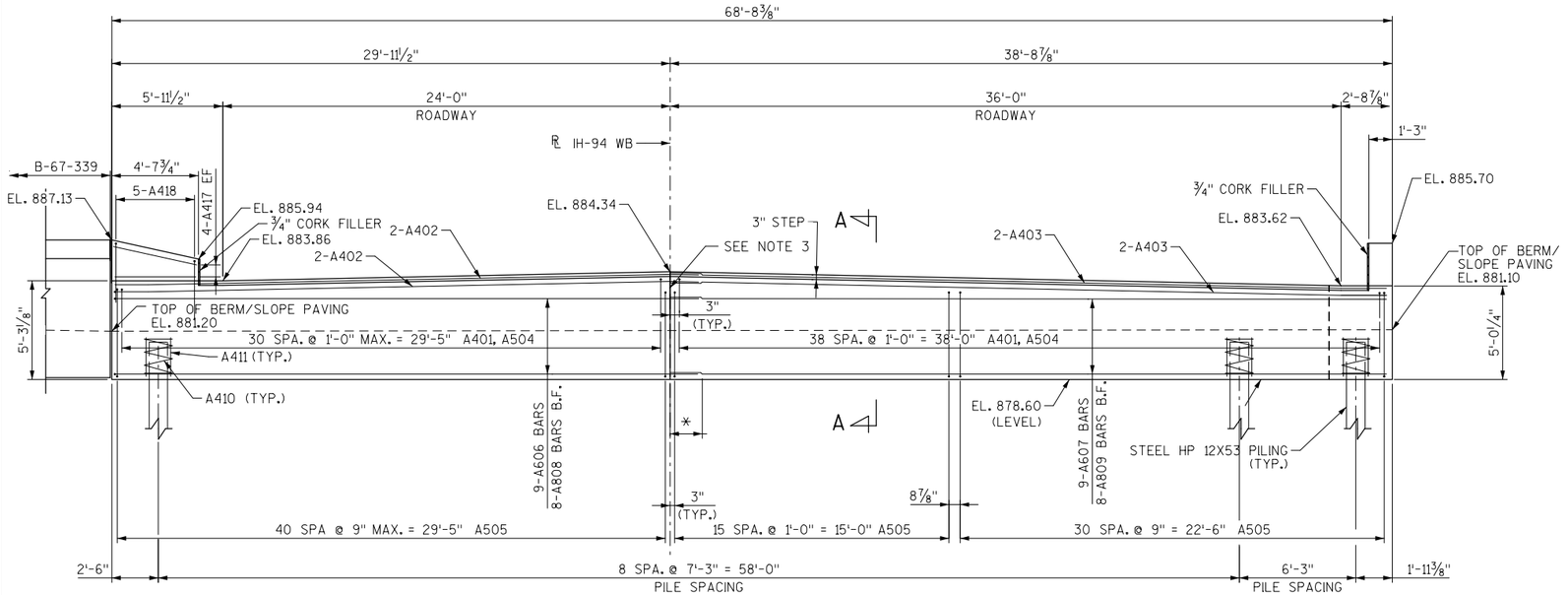
STATE PROJECT NUMBER

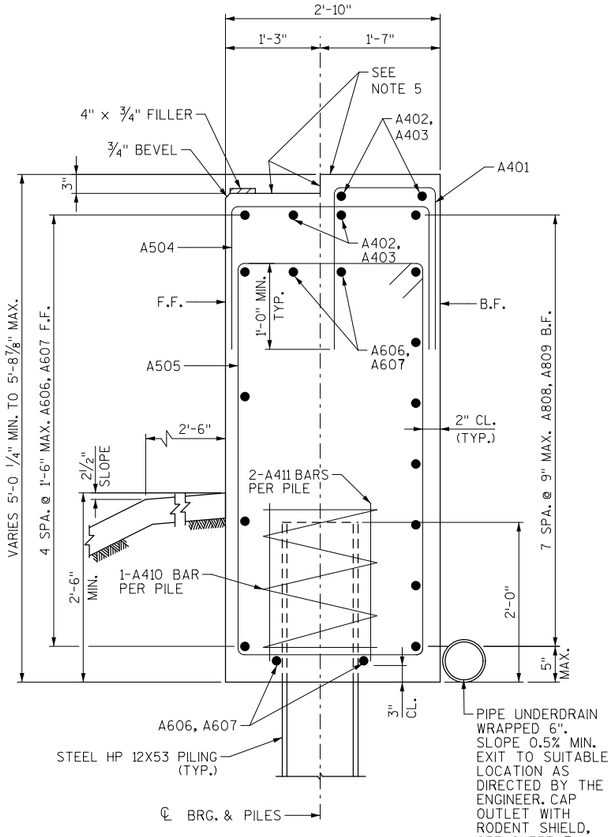
1060-38-70



ELEVATION
(LOOKING WEST)

* LAP LENGTHS
- #4 BARS - 1'-11"
- #6 BARS - 2'-11"
- #8 BARS - 5'-1"

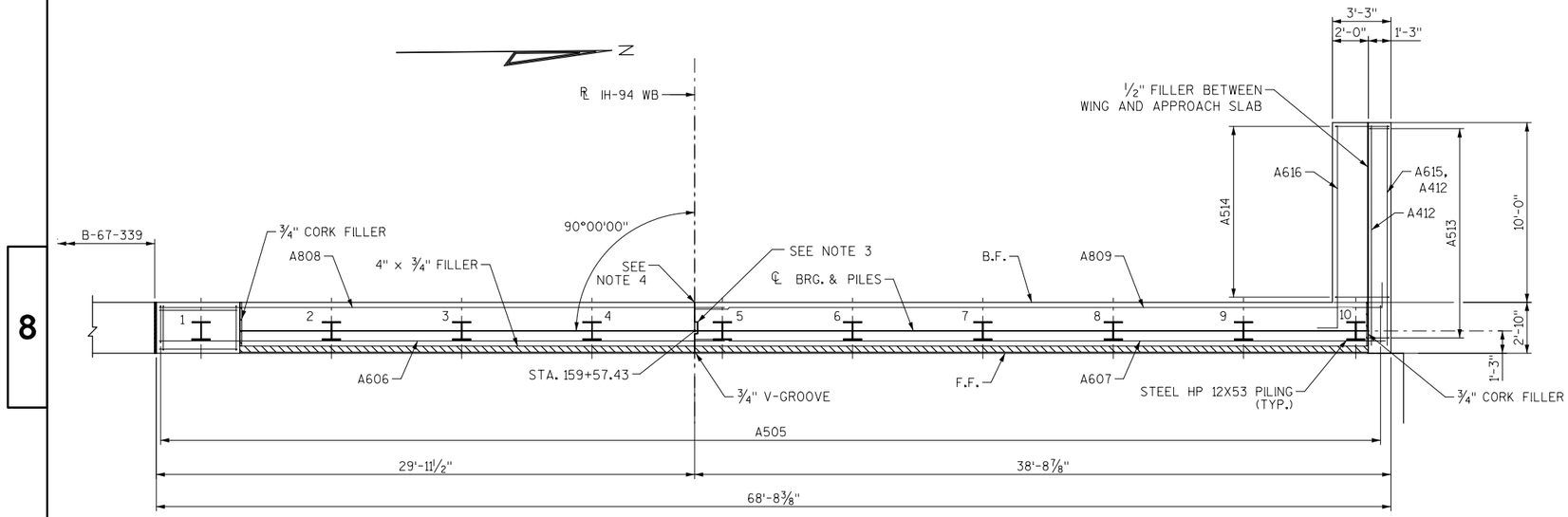
PLACE ABUTMENTS ON STEEL HP 12X53 PILING WITH PILE POINTS WITH A REQUIRED DRIVING RESISTANCE OF 105 TONS/PILE AT ABUTMENTS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.



SECTION A-A

NOTES

1. EXCAVATE TO BOTTOM OF ABUTMENTS BEFORE DRIVING PILES.
2. DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF ABUTMENT, UNTIL SUPERSTRUCTURE IS IN PLACE.
3. VERT. CONST. JOINT KEYWAY FORMED BY BEVELED 2x8.
4. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON THE BACK FACE OF THE ABUTMENT AND WING.
5. STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEET OVER ENTIRE ABUTMENT BEFORE PLACING SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03"



PLAN & PILE LAYOUT

LEGEND

F.F. - DENOTES FRONT FACE

B.F. - DENOTES BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-340

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WEST ABUTMENT PLAN & ELEVATION

SHEET 5 OF 17

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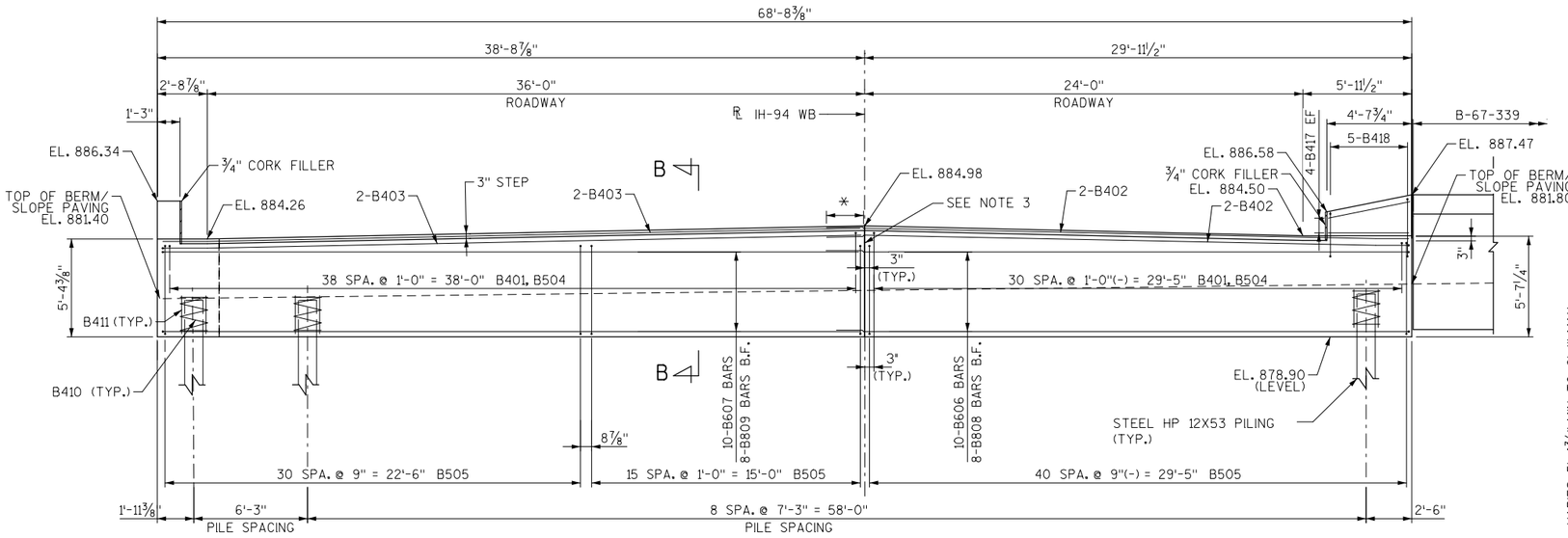
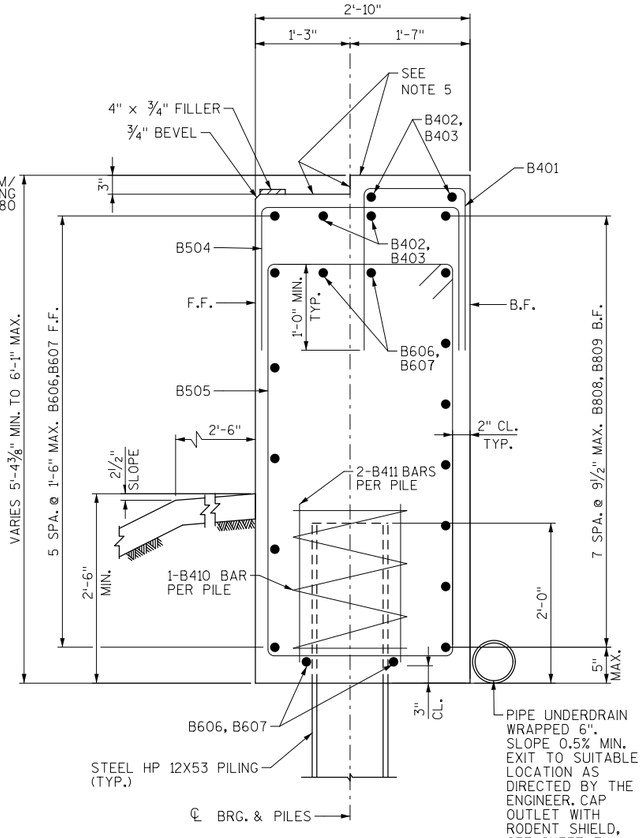
STATE PROJECT NUMBER
1060-38-70



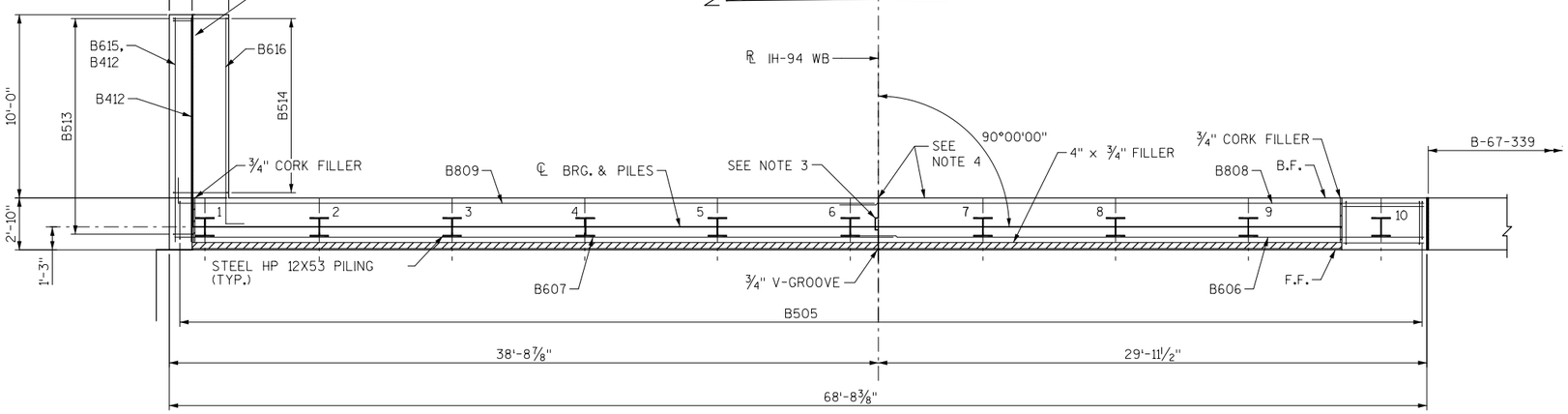
PLACE ABUTMENTS ON STEEL HP 12X53 PILING WITH PILE POINTS WITH A REQUIRED DRIVING RESISTANCE OF 105 TONS/PILE AT ABUTMENTS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

ELEVATION
(LOOKING EAST)

* LAP LENGTHS
#4 BAR - 1'-11"
#6 BAR - 2'-11"
#8 BAR - 5'-1"



SECTION B-B



PLAN & PILE LAYOUT

NOTES

1. EXCAVATE TO BOTTOM OF ABUTMENTS BEFORE DRIVING PILES.
2. DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF ABUTMENT, UNTIL SUPERSTRUCTURE IS IN PLACE.
3. VERT. CONST. JOINT KEYWAY FORMED BY BEVELED 2x8.
4. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON THE BACK FACE OF THE ABUTMENT AND WING.
5. STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEET OVER ENTIRE ABUTMENT BEFORE PLACING SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03"

LEGEND

F.F. - DENOTES FRONT FACE

B.F. - DENOTES BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-340

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EAST ABUTMENT PLAN & ELEVATION

SHEET 6 OF 17

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STATE PROJECT NUMBER
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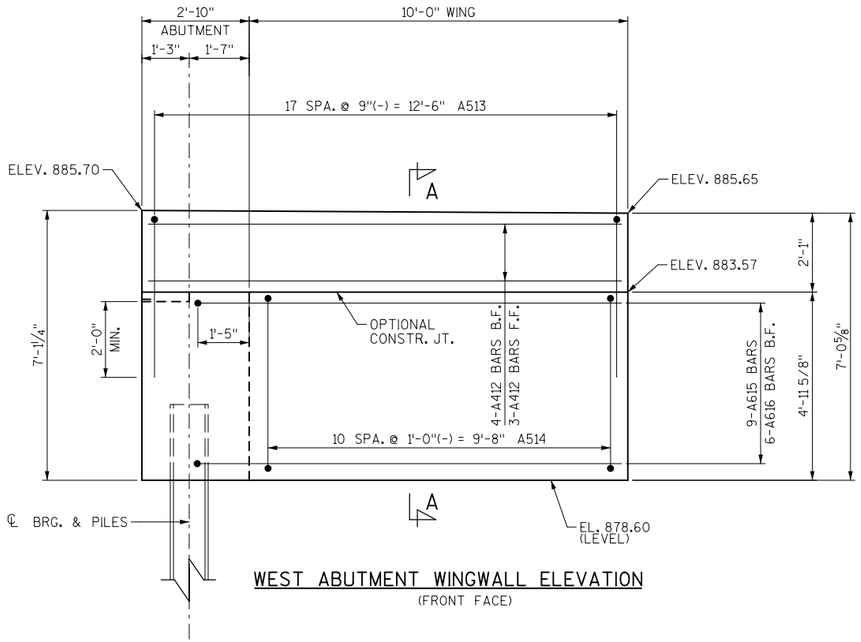
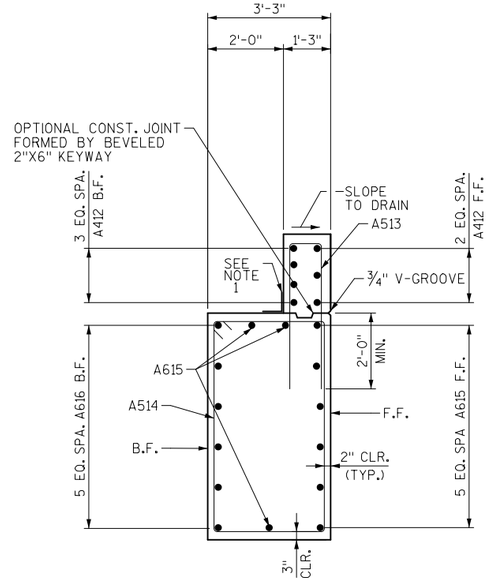


WEST ABUTMENT WINGWALL ELEVATION
(FRONT FACE)



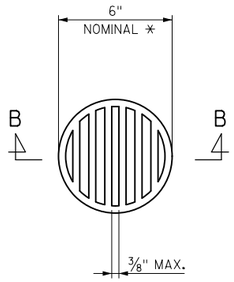
SECTION A-A

BILL OF BARS

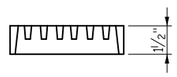
BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	741 # COATED 5019 # UNCOATED LOCATION
A401		70	5'-9"	X			TOP VERTICAL-U
A402		4	31'-8"				TOP HORIZONTAL
A403		4	38'-6"				TOP HORIZONTAL
A504		70	6'-5"	X			TOP VERTICAL-U
A505		88	14'-5"	X			MAIN STIRRUP
A606		9	32'-8"				MAIN HORIZONTAL
A607		9	38'-6"				MAIN HORIZONTAL
A808		8	34'-10"				MAIN HORIZONTAL
A809		8	39'-8"	X			MAIN HORIZONTAL
A410		10	28'-0"	X			PILE SPIRAL
A411		20	2'-3"				PILE VERTICAL
A412	X	7	12'-6"				WING TOP HORIZONTAL
A513	X	18	9'-0"	X			WING VERTICAL-U
A514	X	11	15'-3"	X			WING STIRRUP
A615	X	9	12'-6"				WING HORIZONTAL
A616	X	6	12'-1"	X			WING HORIZONTAL
A417	X	8	4'-4"				MEDIAN HORIZONTAL
A418	X	5	11'-2"	X			MEDIAN VERTICAL-U

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

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



NOTE: ORIENT SHIELD SO SLOTS ARE VERTICAL.



SECTION B-B

* NOTE: DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THE SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

COST OF RODENT SHIELD IS INCLUDED IN THE COST OF PIPE-UNDERDRAIN WRAPPED 6-INCH.

RODENT SHIELD

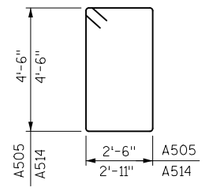
NOTES

1. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON THE BACK FACE OF THE ABUTMENT AND WING.

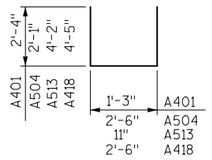
LEGEND

F.F. DENOTES FRONT FACE

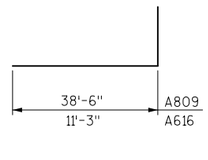
B.F. DENOTES BACK FACE



A505, A514



A401, A504, A513, A418



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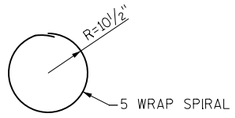

A410

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-340

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WEST ABUTMENT DETAILS

SHEET 7 OF 17

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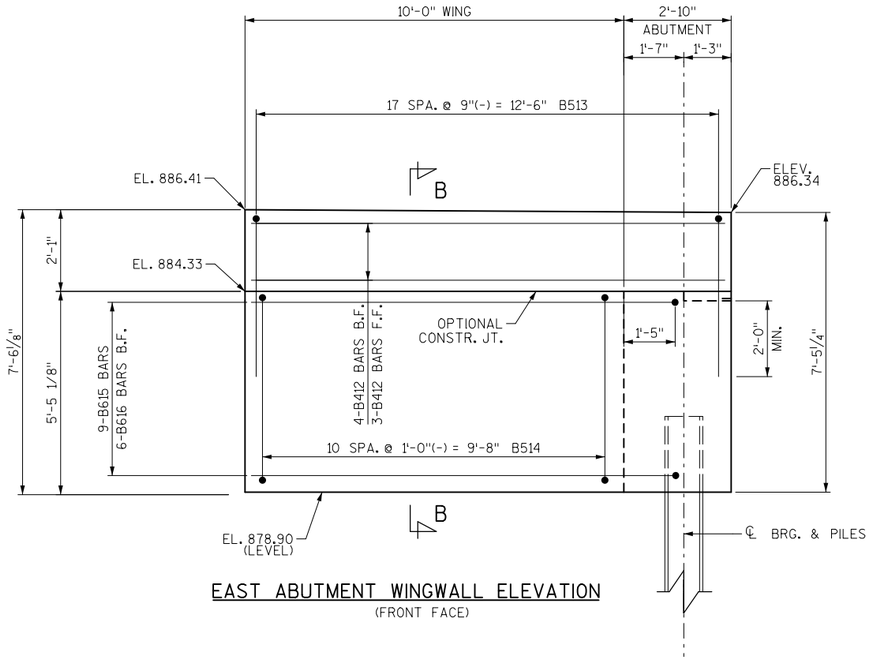
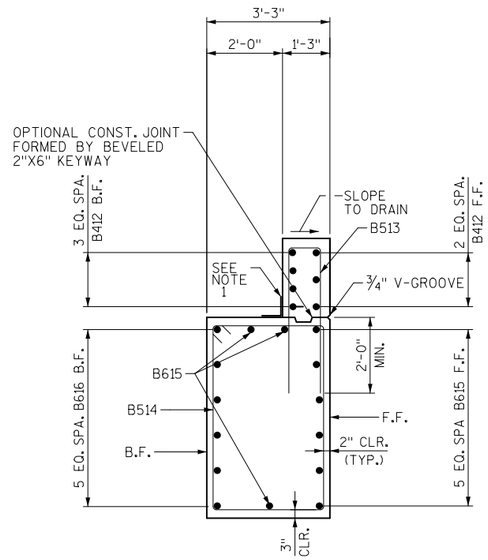
STATE PROJECT NUMBER

1060-38-70



EAST ABUTMENT WINGWALL ELEVATION

(FRONT FACE)



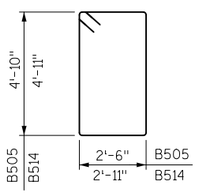
SECTION B-B

BILL OF BARS

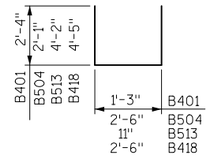
BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	754 # COATED 5186 # UNCOATED LOCATION
B401		70	5'-9"	X			TOP VERTICAL-U
B402		4	31'-8"				TOP HORIZONTAL
B403		4	38'-6"				TOP HORIZONTAL
B504		70	6'-5"	X			TOP VERTICAL-U
B505		88	15'-1"	X			MAIN STIRRUP
B606		10	32'-8"				MAIN HORIZONTAL
B607		10	38'-6"				MAIN HORIZONTAL
B808		8	34'-10"				MAIN HORIZONTAL
B809		8	39'-8"	X			MAIN HORIZONTAL
B410		10	28'-0"	X			PILE SPIRAL
B411		20	2'-3"				PILE VERTICAL
B412	X	7	12'-6"				WING TOP HORIZONTAL
B513	X	18	9'-0"	X			WING VERTICAL-U
B514	X	11	16'-4"	X			WING STIRRUP
B615	X	9	12'-6"				WING HORIZONTAL
B616	X	6	12'-1"	X			WING HORIZONTAL
B417	X	8	4'-4"				MEDIAN HORIZONTAL
B418	X	5	11'-2"	X			MEDIAN VERTICAL-U

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

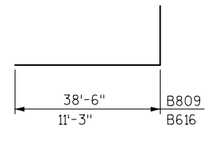
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



B505, B514



B401, B504, B513, B418



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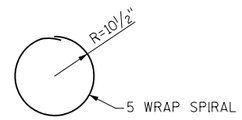

A410

NOTES

1. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON THE BACK FACE OF THE ABUTMENT AND WING.

LEGEND

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-340

DRAWN BY WMN | PLANS CK'D. WJZ

EAST ABUTMENT DETAILS

SHEET 8 OF 17

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FILE= 082040_B670340_08EASTABDT.DGN
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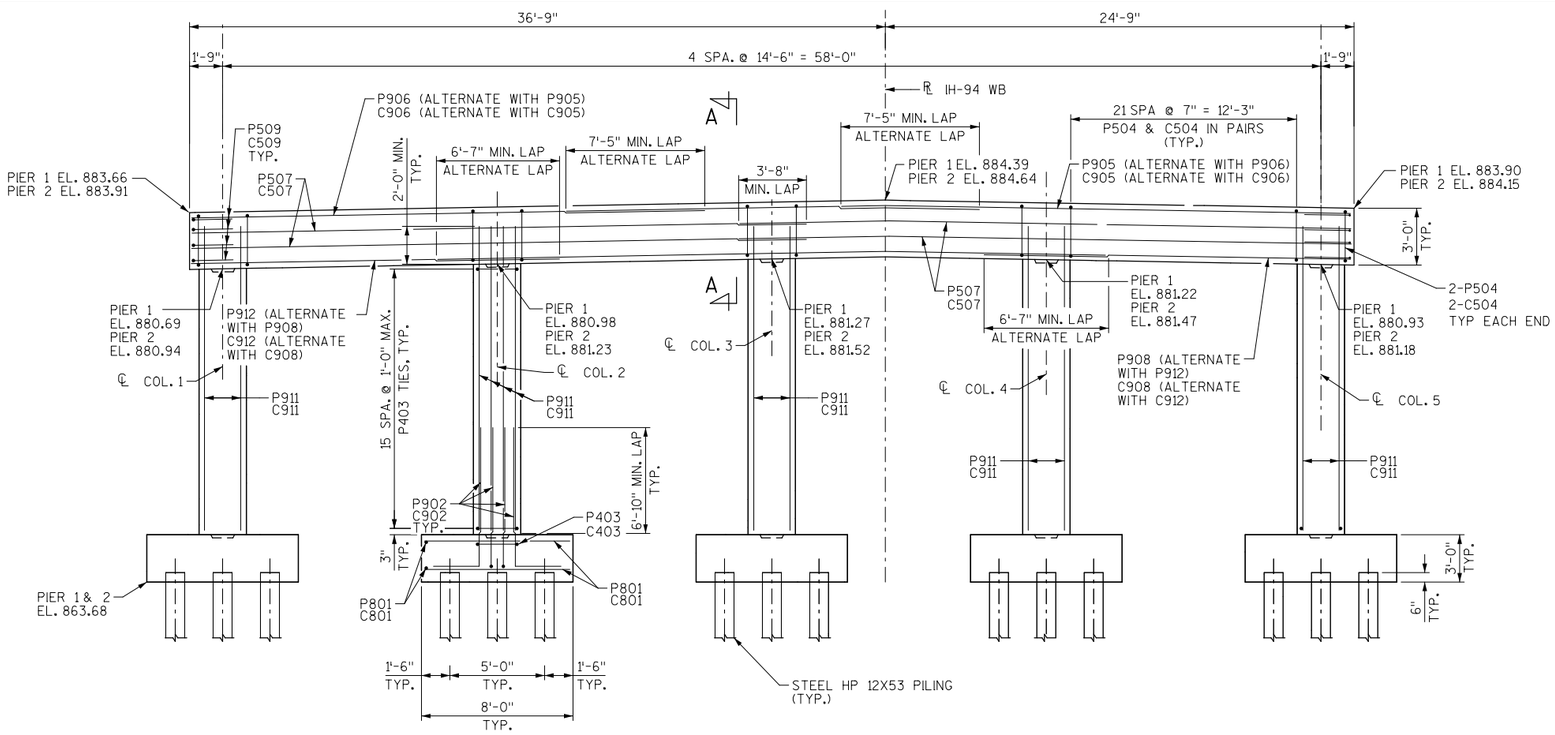
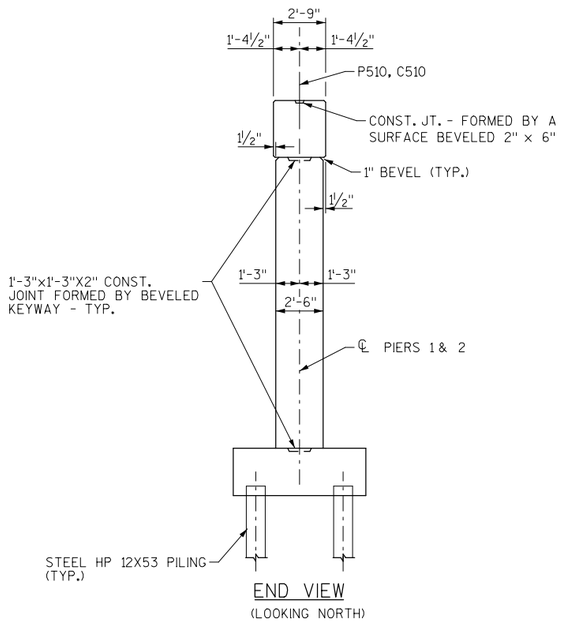
STATE PROJECT NUMBER

1060-38-70



ELEVATION

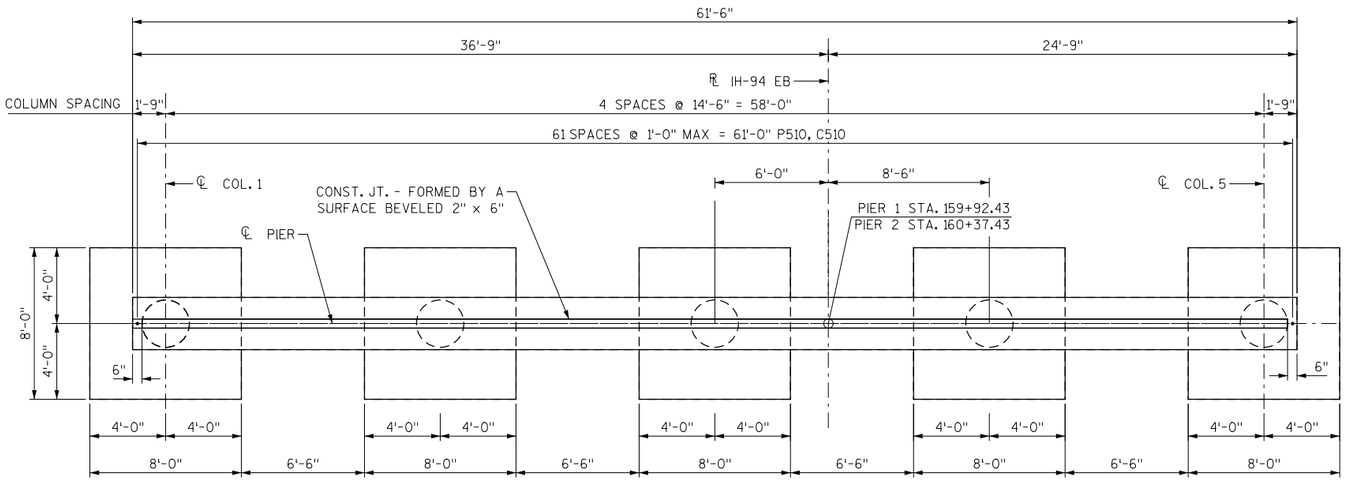
(LOOKING EAST)



END VIEW

(LOOKING NORTH)

PLACE PIERS ON STEEL HP 12X53 PILING WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS/PILE AT PIERS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.



PLAN

NOTES: PXXX BARS DENOTE PIER 1 BARS.

CXXX BARS DENOTE PIER 2 BARS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-340

DRAWN BY WMN | PLANS CK'D. MLM

PIERS 1 & 2

SHEET 9 OF 17

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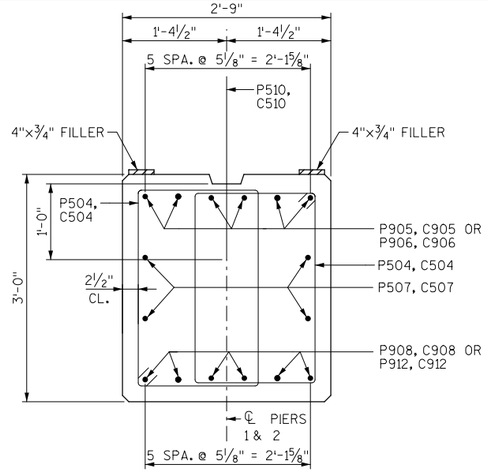
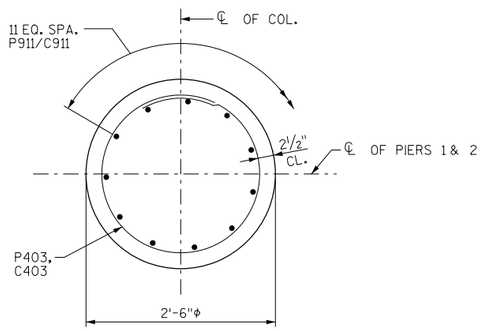
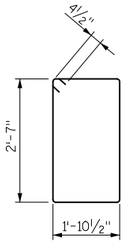


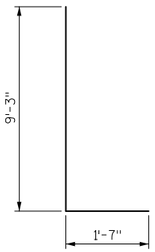
SECTION A-A



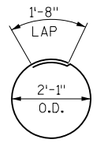
TYPICAL SECTION THRU COLUMN



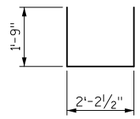
P504 & C504



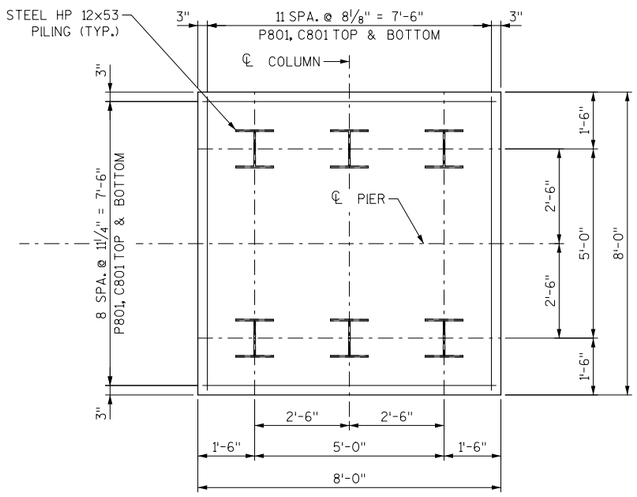
P902 & C902



P403 & C403



P509 & C509



FOOTING PLAN

BILL OF BARS - PIER 1

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	10,563# COATED 4,299# UNCOATED LOCATION
P801		210	7'-8"				FOOTING-HORIZ.
P902	X	55	10'-7"	X			FOOTING DOWELS - COLUMN VERT
P403	X	85	8'-3"	X			COLUMN STIRRUPS
P504	X	180	9'-8"	X			CAP STIRRUPS
P905	X	6	27'-1"				CAP-HORIZ-TOP
P906	X	6	41'-7"				CAP-HORIZ-TOP
P507	X	8	32'-5"				CAP-HORIZ-SIDES
P908	X	6	19'-5"				CAP-HORIZ-BTM
P509	X	8	5'-6"	X			CAP-HORIZ-ENDS
P510	X	62	2'-0"				CAP DOWELS
P911	X	55	16'-5"				COLUMN VERT
P912	X	6	48'-5"				CAP-HORIZ-BTM

BILL OF BARS - PIER 2

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	10,610 # COATED 4,299 # UNCOATED LOCATION
C801		210	7'-8"				FOOTING-HORIZ.
C902	X	55	10'-7"	X			FOOTING DOWELS - COLUMN VERT
C403	X	85	8'-3"	X			COLUMN STIRRUPS
C504	X	180	9'-8"	X			CAP STIRRUPS
C905	X	6	27'-1"				CAP-HORIZ-TOP
C906	X	6	41'-7"				CAP-HORIZ-TOP
C507	X	8	32'-5"				CAP-HORIZ-SIDES
C908	X	6	19'-5"				CAP-HORIZ-BTM
C509	X	8	5'-6"	X			CAP-HORIZ-ENDS
C510	X	62	2'-0"				CAP DOWELS
C911	X	55	16'-8"				COLUMN VERT
C912	X	6	48'-5"				CAP-HORIZ-BTM

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

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

STATE PROJECT NUMBER

1060-38-70

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-340

DRAWN BY WMN | PLANS CK'D. WJZ

PIERS 1 & 2 DETAILS

SHEET 10 OF 17

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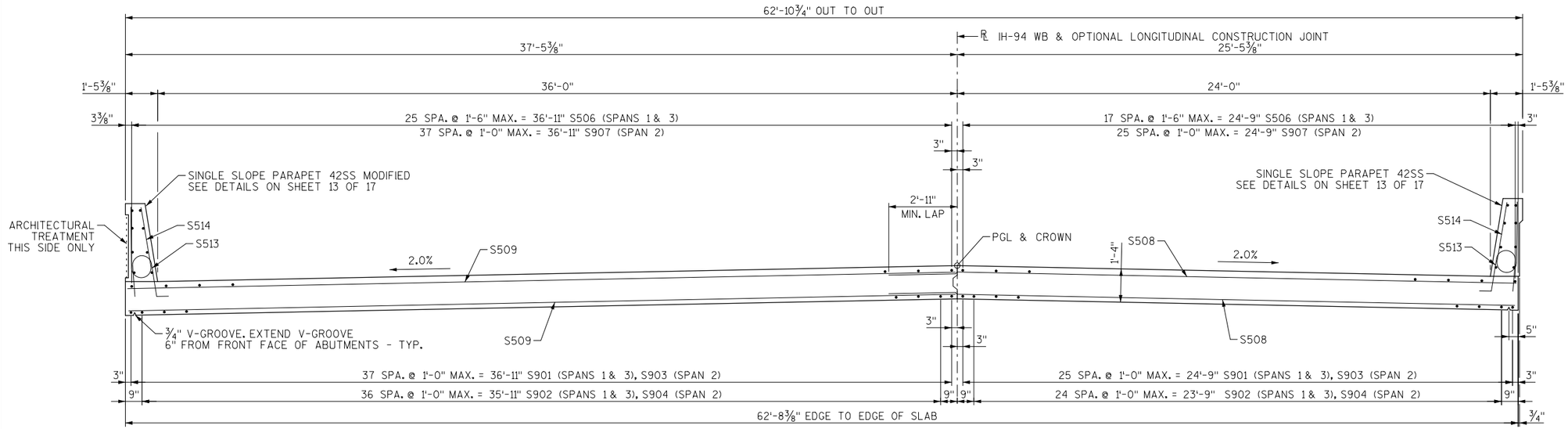
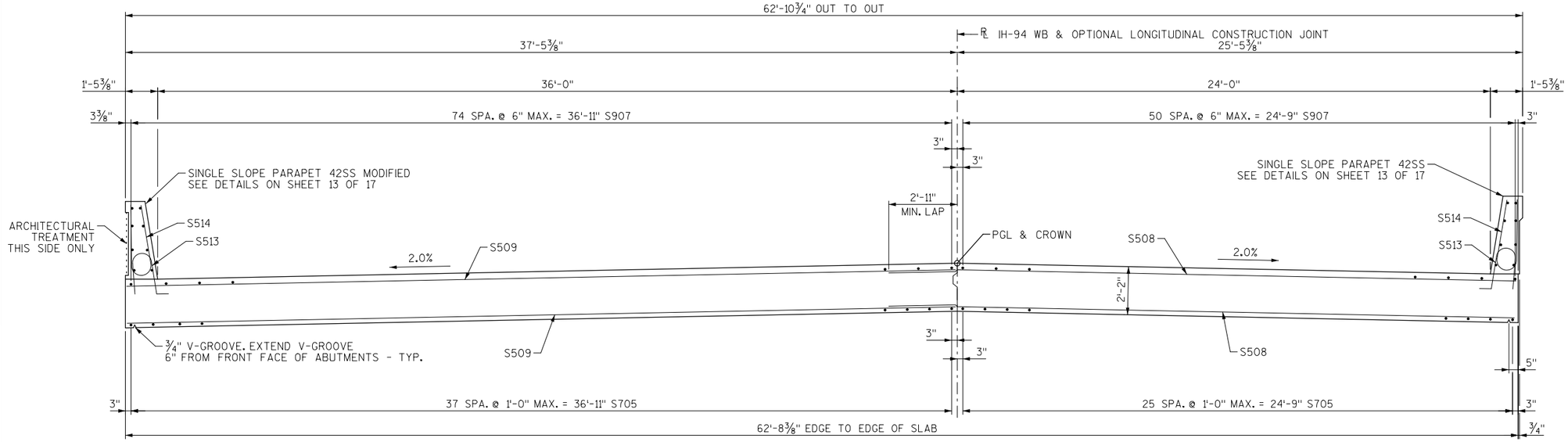
STATE PROJECT NUMBER

1060-38-70



CROSS SECTION THRU ROADWAY - IN SPAN

(LOOKING EAST)



CROSS SECTION THRU ROADWAY - AT PIER

(LOOKING EAST)

NOTES:

1. TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BARS CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.
2. ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).
3. PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS, THE ℄ OF PIERS AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND CROWN OR ℄.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-340

DRAWN BY WMN | PLANS CK'D. WJZ

SUPERSTRUCTURE

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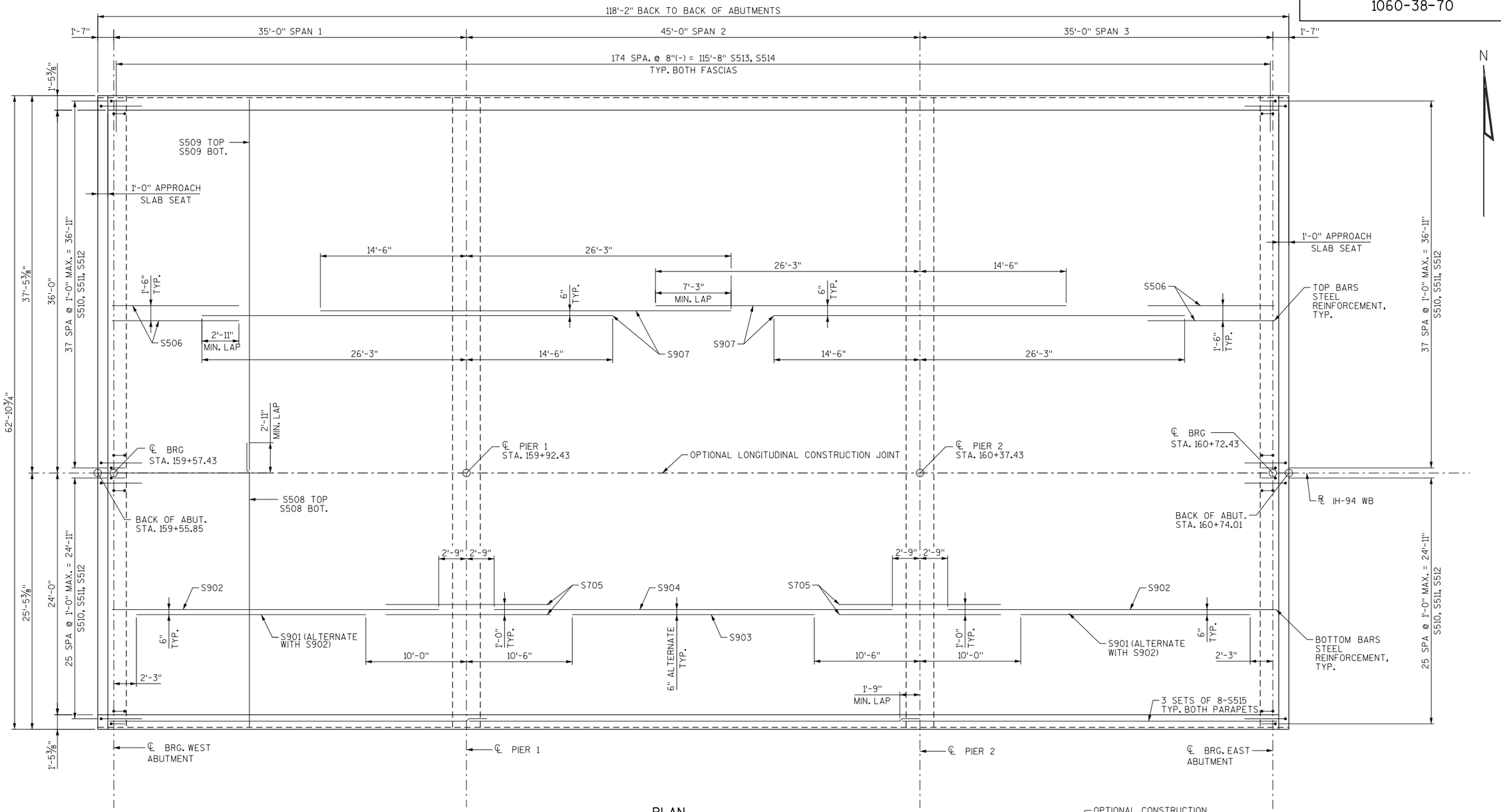
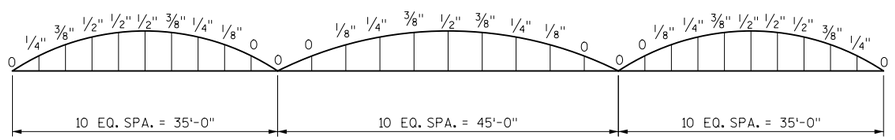
STATE PROJECT NUMBER

1060-38-70

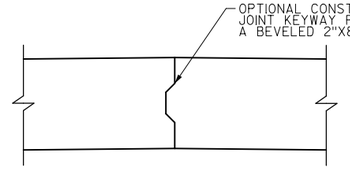


PLAN



CAMBER DIAGRAM

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEADLOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.



OPTIONAL LONGITUDINAL CONSTRUCTION JOINT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-340

DRAWN BY WMN | PLANS CK'D. WJZ

SUPERSTRUCTURE PLAN

SHEET 12 OF 17

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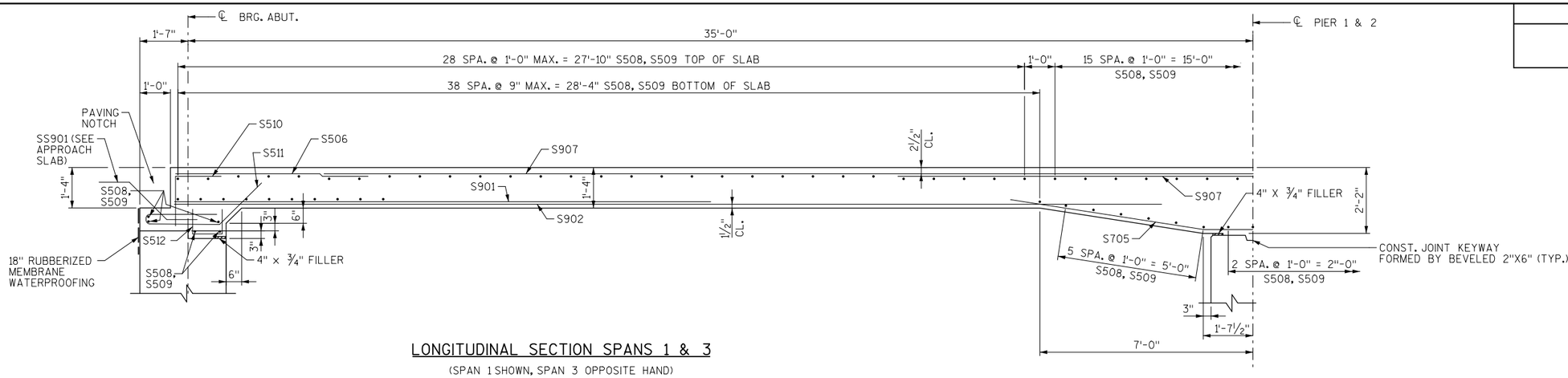
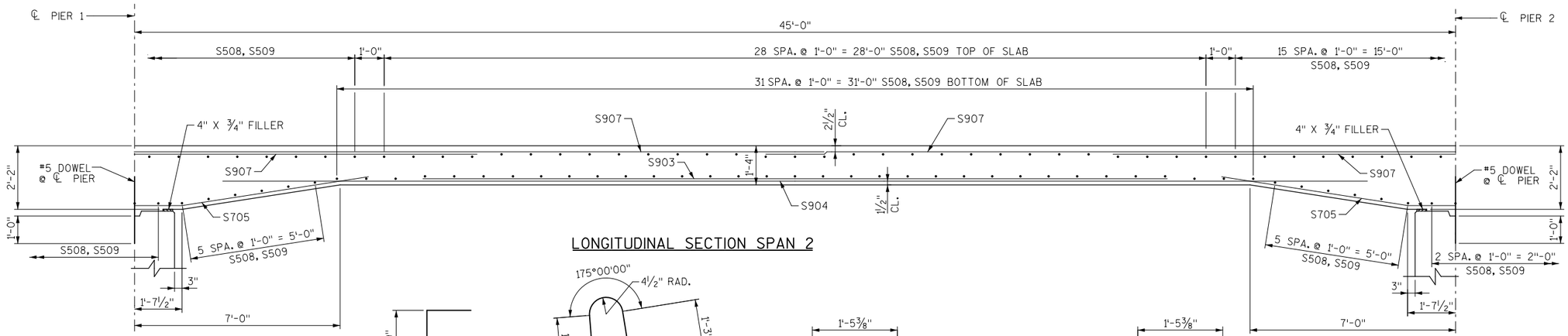
STATE PROJECT NUMBER
1060-38-70



LONGITUDINAL SECTION SPANS 1 & 3

(SPAN 1 SHOWN, SPAN 3 OPPOSITE HAND)



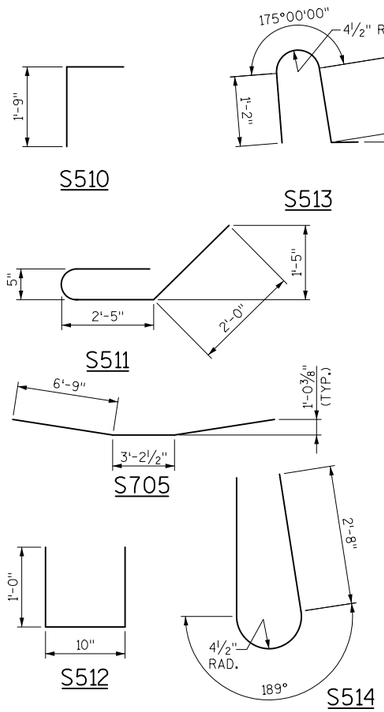
LONGITUDINAL SECTION SPAN 2

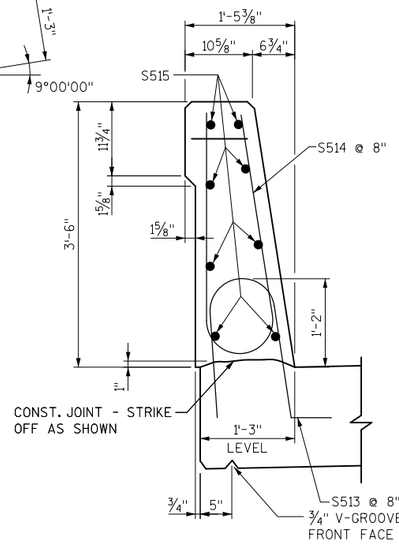
BILL OF BARS

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

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	104220# COATED 0# UNCOATED LOCATION
S901	X	128	22'-9"				SLAB LONG. BOT, SPAN 1 & 3
S902	X	124	32'-8"				SLAB LONG. BOT, SPAN 1 & 3
S903	X	64	24'-0"				SLAB LONG. BOT, SPAN 2
S904	X	62	39'-6"				SLAB LONG. BOT, SPAN 2
S705	X	128	16'-9"	X			SLAB LONG BOT, PIER
S506	X	88	12'-1"				SLAB LONG. TOP , SPAN 1 & 3
S907	X	254	40'-9"				SLAB LONG. TOP, PIER
S508	X	269	28'-11"				SLAB TRANS.
S509	X	269	37'-2"				SLAB TRANS.
S510	X	128	3'-4"	X			SLAB @ ABUT. HAUNCH
S511	X	128	7'-0"	X			SLAB @ ABUT. HAUNCH
S512	X	128	2'-7"	X			SLAB @ ABUT. HAUNCH
S513	X	350	4'-5"	X			PARAPET VERTICAL
S514	X	350	6'-8"	X			PARAPET VERTICAL
S515	X	48	40'-0"				PARAPET HORIZONTAL

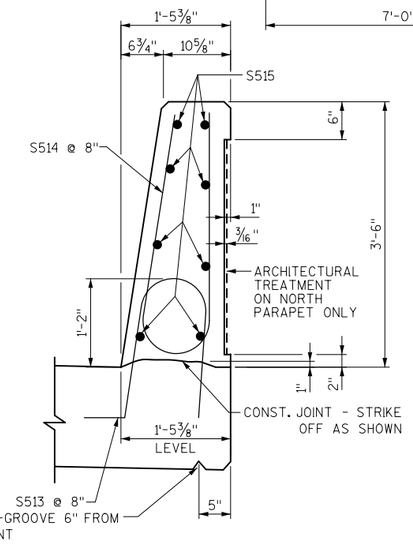
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.





SECTION THRU SOUTH PARAPET ON BRIDGE

(SINGLE SLOPE PARAPET 42SS)



SECTION THRU NORTH PARAPET ON BRIDGE

(SINGLE SLOPE PARAPET 42SS MODIFIED)

NOTES:

1. FOR SS901 BAR LOCATION AND BILL OF BARS, SEE SHEET 15.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-340

DRAWN BY	WMN	PLANS CK'D.	WJZ

SUPERSTRUCTURE DETAILS

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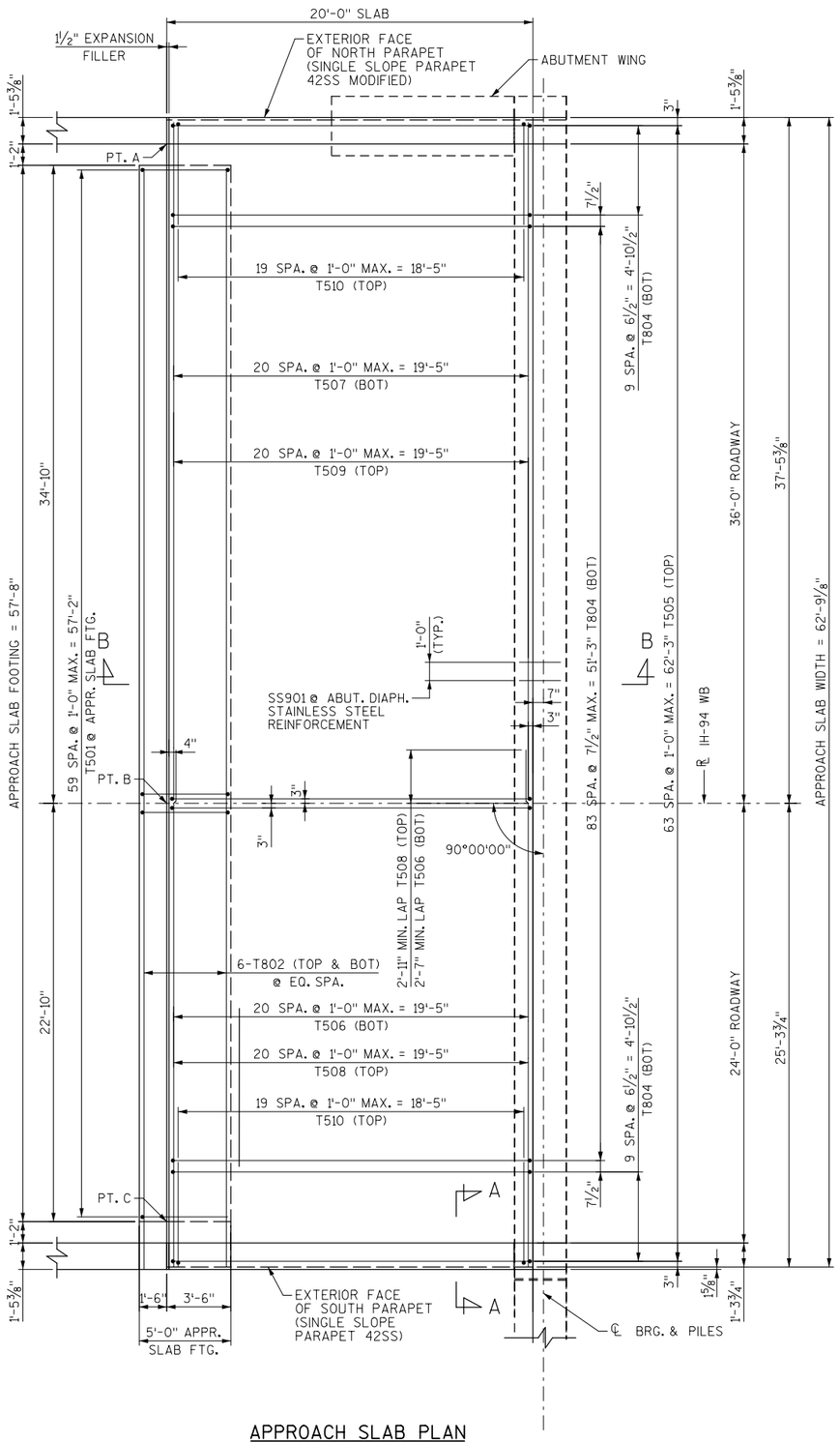


APPROACH SLAB PLAN

(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR OPPOSITE HAND)

BILL OF BARS

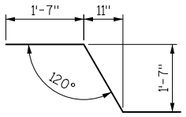
STAINLESS STEEL →

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	0# COATED 2,176# UNCOATED STAINLESS STEEL — LOCATION
SS901		128	5'-0"	X			ABUT. DIAPH. TO APPROACH SLAB

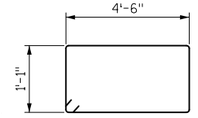
BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	25714# COATED 0# UNCOATED — LOCATION
T501	X	120	11'-10"	X			FOOTING STIRRUP
T802	X	24	57'-4"				FOOTING HORIZONTAL
T804	X	208	21'-5"	X			BOTTOM LONGITUDINAL
T505	X	128	19'-7"				TOP LONGITUDINAL
T506	X	42	27'-10"				BOTTOM TRANSVERSE
T507	X	42	37'-2"				BOTTOM TRANSVERSE
T508	X	42	28'-2"				TOP TRANSVERSE
T509	X	42	37'-2"				TOP TRANSVERSE
T510	X	80	4'-1"	X			TOP TRANSVERSE

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

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



SS901



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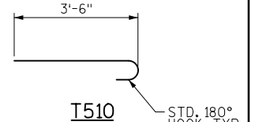

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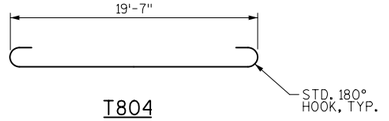

T804

POINT	WEST ABUT. APPROACH SLAB STATION	WEST ABUT. APPROACH SLAB ELEVATION	EAST ABUT. APPROACH SLAB STATION	EAST ABUT. APPROACH SLAB ELEVATION
A	159+36.85	885.60	160+93.01	886.46
B	159+36.85	886.32	160+93.01	887.18
C	159+36.85	885.84	160+93.01	886.70

NOTES:

1. FOR SOUTH PARAPET DETAILS ON APPROACH SLAB (SINGLE SLOPE PARAPET 42SS), SEE SHEET 15.
2. FOR NORTH PARAPET DETAILS ON APPROACH SLAB (SINGLE SLOPE PARAPET 42SS MODIFIED), SEE SHEET 16.

STATE PROJECT NUMBER

1060-38-70

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-340

DRAWN BY WMN | PLANS CK'D. WJZ

STRUCTURAL APPROACH SLABS

SHEET 14 OF 17

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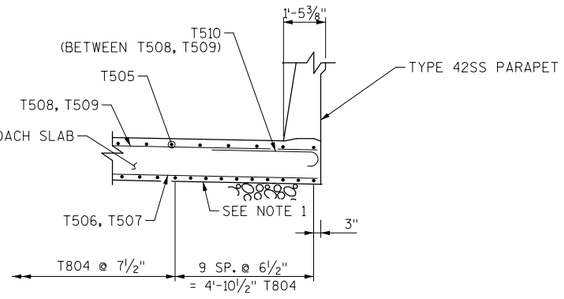
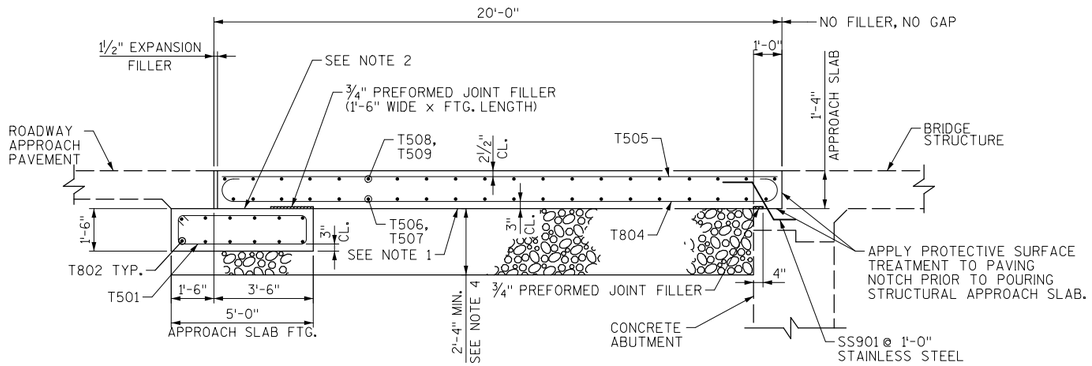
STATE PROJECT NUMBER

1060-38-70

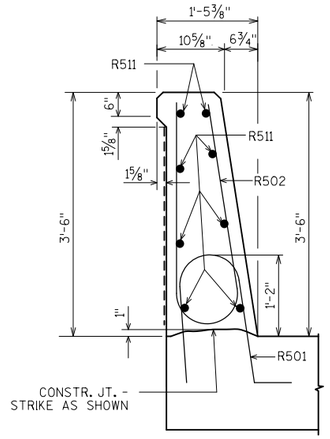


SECTION A-A



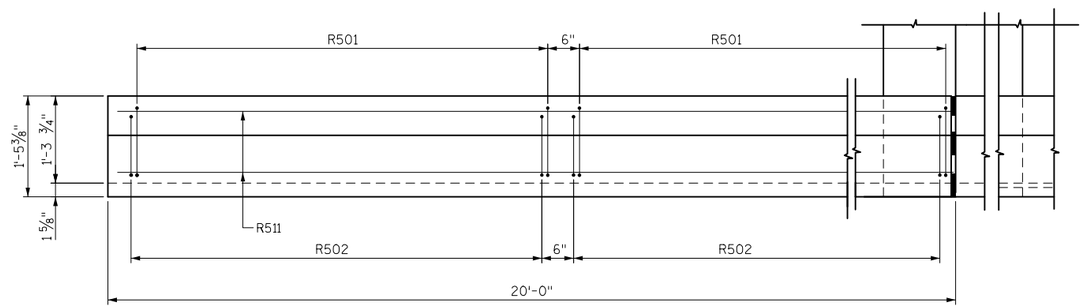
SECTION B-B THRU APPROACH SLAB

NOTES:
1. PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE, BENEATH SLAB.
2. STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER ENTIRE TOP OF FOOTING.
3. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTERLINE AT INSIDE FACE.
4. BELOW THE APPROACH SLAB FOOTING AND APPROACH SLAB, PLACE BASE AGGREGATE DENSE 1-1/4 INCH.



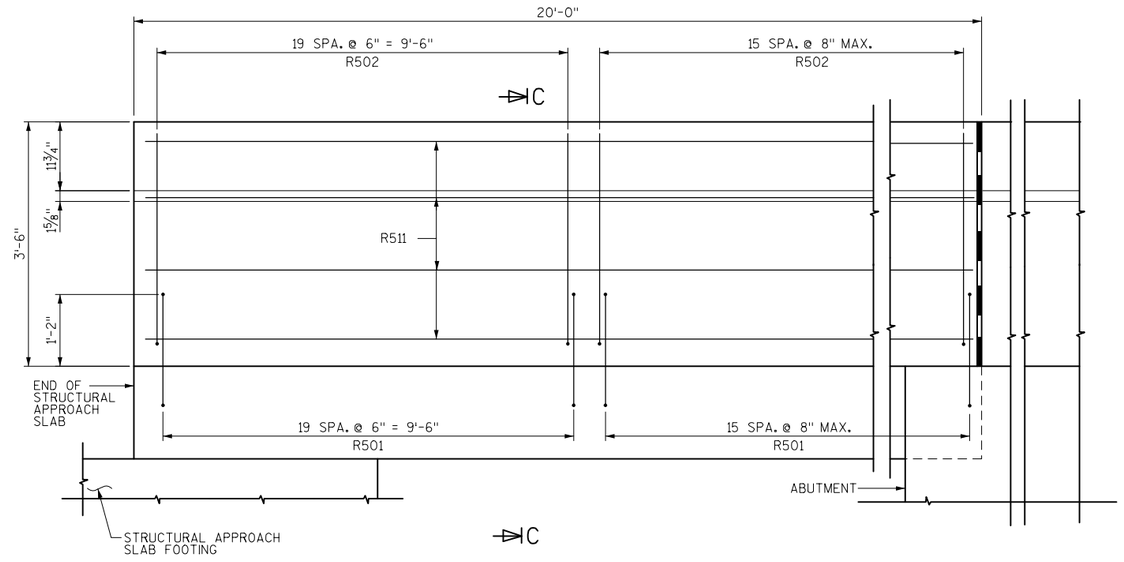
SECTION C-C

(SINGLE SLOPE PARAPET 42SS)



PLAN - SOUTH PARAPET

(SINGLE SLOPE PARAPET 42SS ON APPROACH SLAB)



TYPICAL OUTSIDE ELEVATION - SOUTH PARAPET

(SINGLE SLOPE PARAPET 42SS ON APPROACH SLAB)

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-340

DRAWN BY WMN | PLANS CK'D. WJZ

STRUCTURAL APPROACH SLAB DETAILS

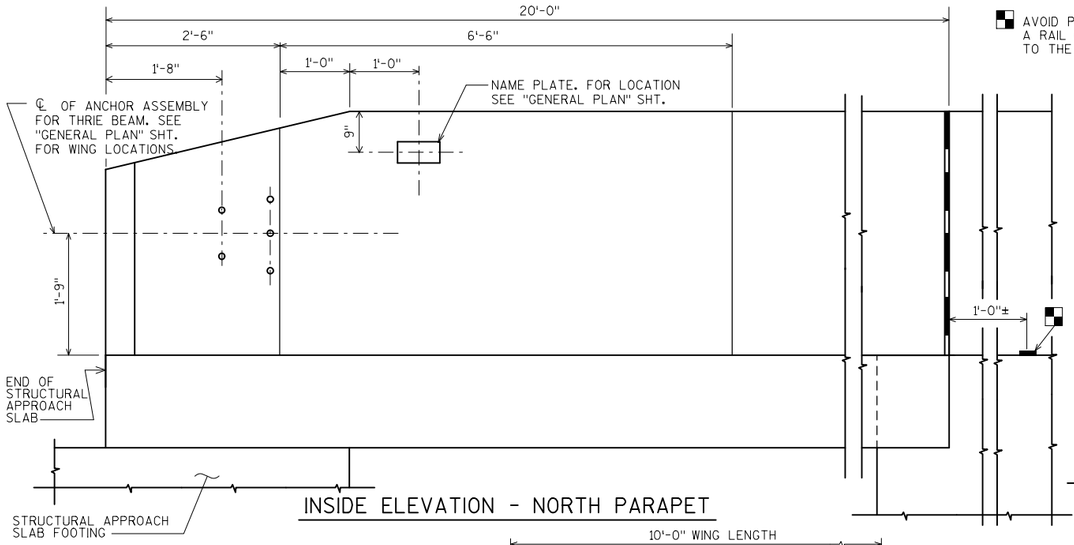
SHEET 15 OF 17

238

FILE= 082040_B67O340_15APDT.DGN
SCALE = 1:5.3333

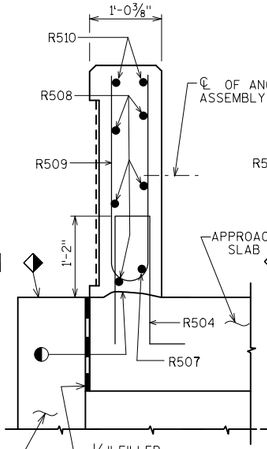
STATE PROJECT NUMBER

1060-38-70



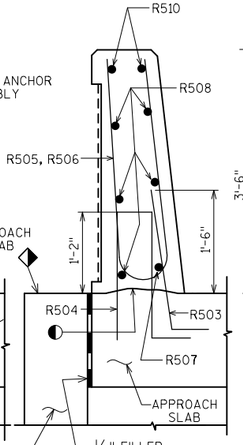
INSIDE ELEVATION - NORTH PARAPET

■ AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.



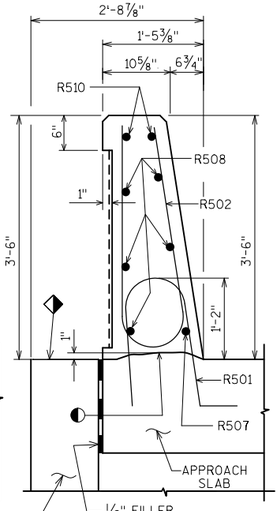
SECTION A-A

(NORTH PARAPET TRANSITION)



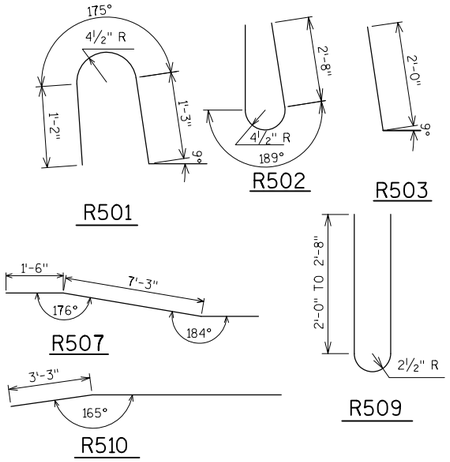
SECTION B-B

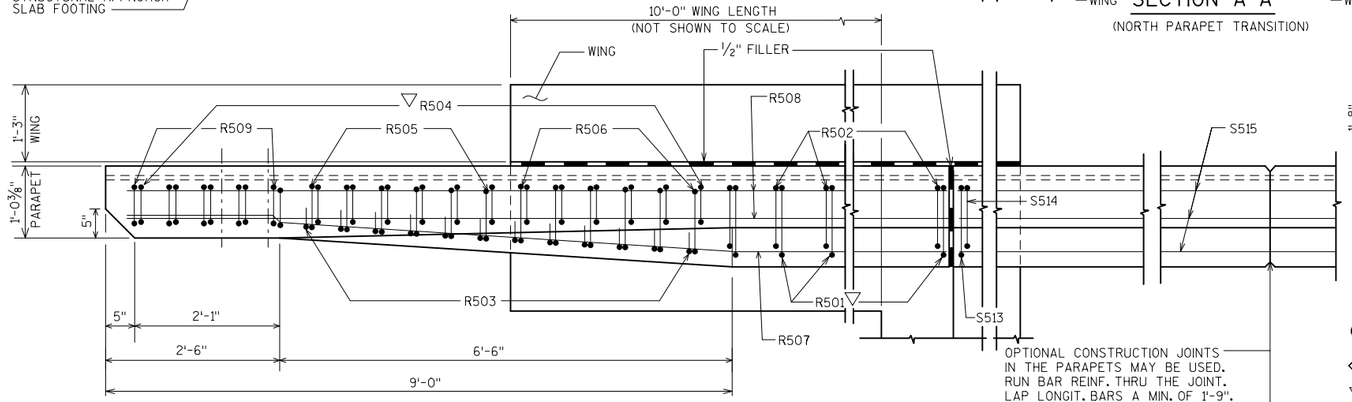
(NORTH PARAPET TRANSITION)



SECTION C-C

(NORTH PARAPET TRANSITION)





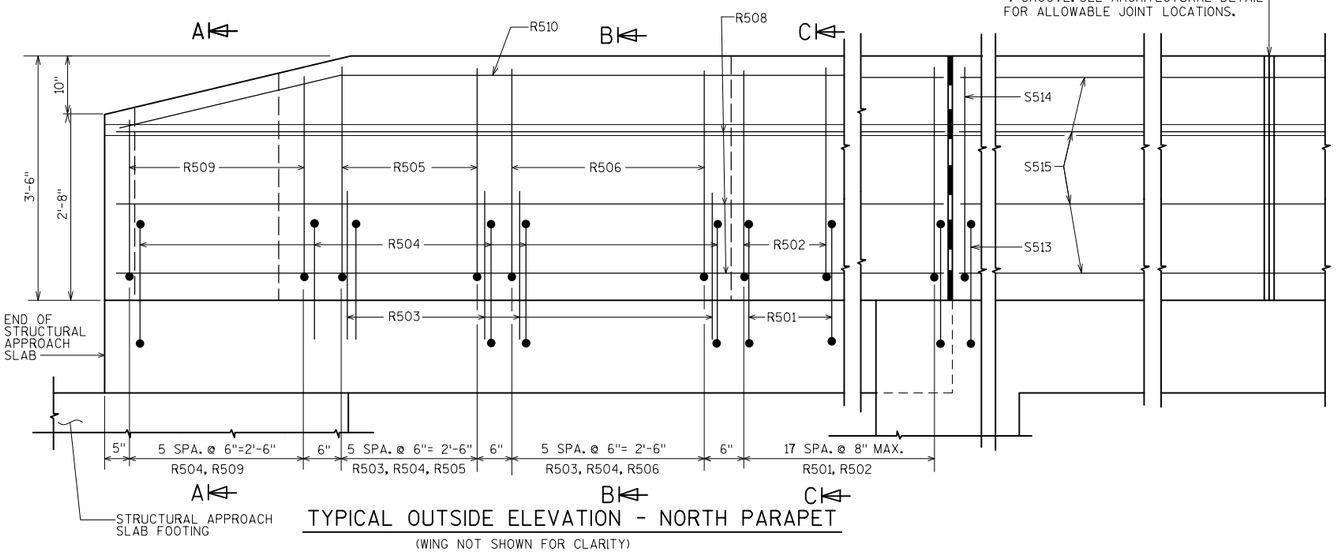
PLAN - NORTH PARAPET

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A ¾" - 'V' GROOVE. SEE ARCHITECTURAL DETAIL FOR ALLOWABLE JOINT LOCATIONS.

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

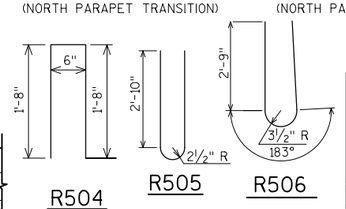
◆ SLOPE FOR DRAINAGE

▽ R501 AND R504 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.



TYPICAL OUTSIDE ELEVATION - NORTH PARAPET

(WING NOT SHOWN FOR CLARITY)



BILL OF BARS

FOR STRUCTURAL APPROACH SLAB PARAPETS

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	2,688# COATED 0# UNCOATED LOCATION
R501	X	108	4'-5"	X			PARAPET VERTICAL
R502	X	108	6'-8"	X			PARAPET VERTICAL
R503	X	24	2'-9"	X			PARAPET VERTICAL
R504	X	36	4'-4"	X			PARAPET VERTICAL
R505	X	12	6'-5"	X			PARAPET VERTICAL
R506	X	12	6'-6"	X			PARAPET VERTICAL
R507	X	2	19'-6"	X			PARAPET HORIZONTAL
R508	X	26	19'-6"				PARAPET HORIZONTAL
R509	X	12	5'-5"	X		X	PARAPET VERTICAL
R510	X	4	19'-6"	X			PARAPET HORIZONTAL
R511	X	16	19'-7"				PARAPET HORIZONTAL

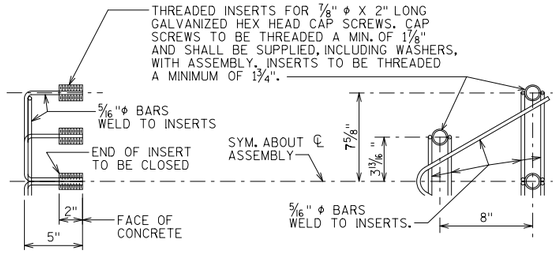
NOTES: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

LENGTH SHOWN FOR CUT BARS IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.

BAR SERIES TABLE

MARK	NO. REQ'D.	LENGTH
R509	2 SERIES OF 6	4'-9" TO 6'-1"



DETAIL OF ANCHOR ASSEMBLY

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

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-340

DRAWN BY WMN | PLANS CK'D. WJZ

SINGLE SLOPE PARAPET 42SS MODIFIED

SHEET 16 OF 17

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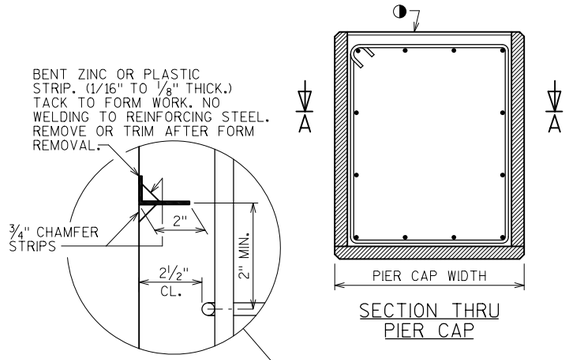
FILE= 082040_B67O340_16PRPT.DGN

SCALE = 1:2.1759

STATE PROJECT NUMBER

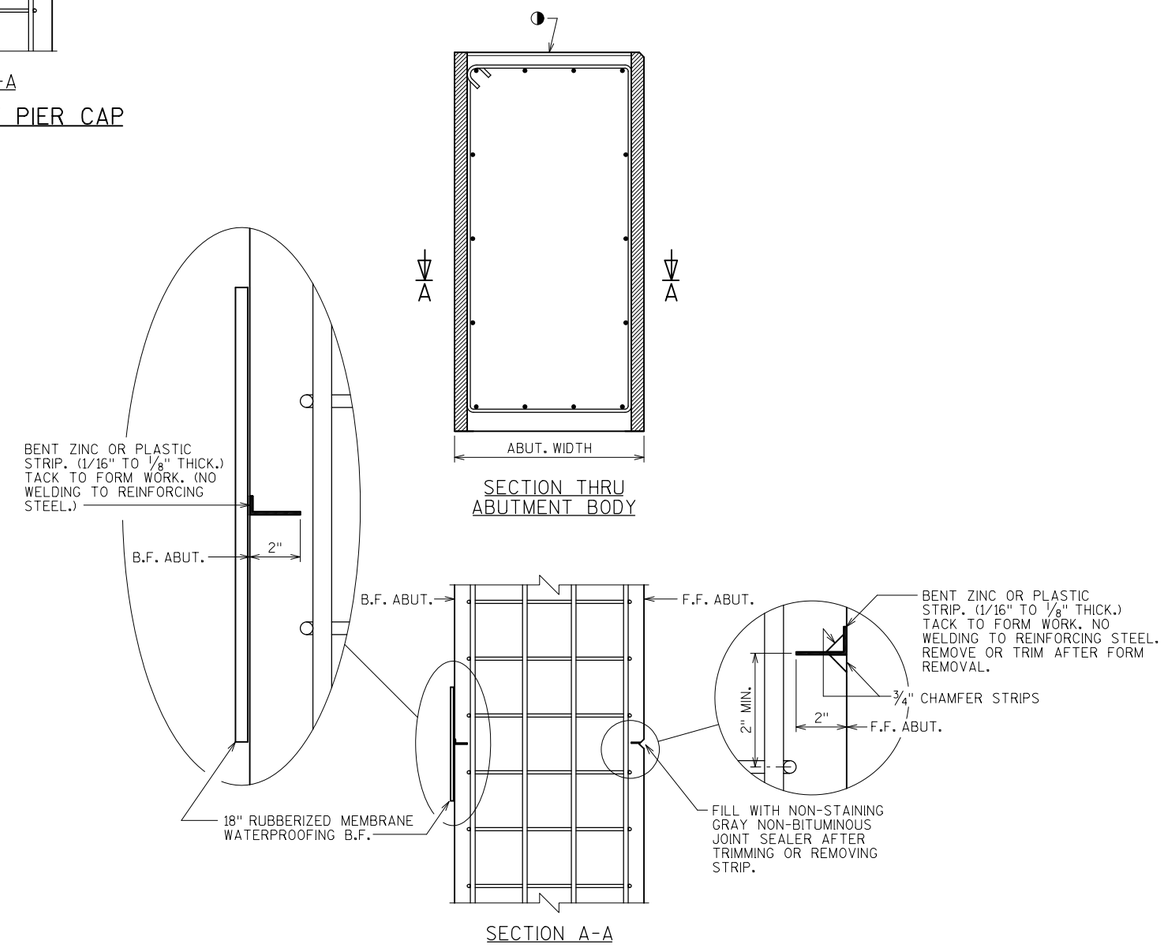
1060-38-70



SECTION THRU PIER CAP

SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT PIER CAP



SECTION THRU ABUTMENT BODY

SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

SAWCUTTING THE CONSTRUCTION JOINT IS NOT ALLOWED

◑ USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-340

DRAWN BY WMN | PLANS CK'D. WJZ

ALTERNATE CONSTRUCTION JOINT

SHEET 17 OF 17

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ALTJOINT
10-08

FILE= 082040_B670340_17ALTJOINT.DGN
SCALE = 1:2

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1 2 3 6

I-94 MEDIAN, STAGE 1, PART I

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)				Mass Ordinate
			Cut	Salvaged/ Unusable Pavement Material	Fill	EBS	Cut	Salvaged/ Unusable Pavement Material	FILL	EBS	Cut 1.00	Expanded Fill 1.30	Expanded EBS Backfill 1.30	Reduced EBS In Fill 0.80	
							Note 1	Note 2	Note 3		Note 1		Note 5	Note 7	Note 8
141+90.00	14190		-		-	-	-	-	-	-	-	-	-	-	-
142+00.00	14200	10	25	18	31	2	5	7	6	0	5	7	1	0	-9
142+50.00	14250	50	25	18	35	2	46	34	61	5	51	82	7	4	-72
143+00.00	14300	50	24	18	39	2	46	34	68	5	96	166	12	8	-145
143+50.00	14350	50	25	19	43	3	46	34	76	5	142	260	18	11	-226
144+00.00	14400	50	27	19	45	3	48	35	81	5	190	360	25	15	-314
144+50.00	14450	50	28	20	47	3	51	37	85	5	241	465	31	19	-405
145+00.00	14500	50	31	22	51	3	55	39	91	6	297	577	39	24	-500
145+50.00	14550	50	35	24	53	4	62	42	96	6	359	696	47	29	-599
146+00.00	14600	50	37	24	50	4	67	45	95	7	426	812	55	34	-693
146+50.00	14650	50	38	25	46	4	70	46	89	7	495	920	64	40	-777
147+00.00	14700	50	39	25	42	4	72	47	81	7	567	1018	74	45	-850
147+30.00	14730	30	35	24	40	4	41	27	46	4	608	1073	79	49	-892
147+50.00	14750	20	35	23	13	3	26	17	20	3	634	1096	82	51	-906
148+00.00	14800	50	33	23	17	3	63	43	28	6	697	1126	91	56	-915
148+50.00	14850	50	33	22	19	3	61	42	33	6	758	1163	99	61	-933
149+00.00	14900	50	33	22	26	3	61	41	42	6	819	1212	106	65	-962
149+50.00	14950	50	32	22	32	3	60	41	54	6	879	1276	114	70	-1008
150+00.00	15000	50	34	23	28	3	61	42	55	6	940	1342	122	75	-1054
150+50.00	15050	50	36	24	21	4	65	44	45	6	1005	1394	131	80	-1085
151+00.00	15100	50	36	24	20	4	67	45	38	7	1072	1436	139	86	-1105
151+50.00	15150	50	36	24	19	4	67	45	36	7	1139	1475	148	91	-1121
152+00.00	15200	50	36	24	19	4	67	45	35	7	1206	1514	157	97	-1138
152+50.00	15250	50	38	25	19	4	69	45	35	7	1275	1552	166	102	-1153
153+00.00	15300	50	40	26	18	4	72	47	34	7	1347	1589	175	108	-1164
153+50.00	15350	50	43	27	17	4	77	50	33	8	1424	1623	185	114	-1171
154+00.00	15400	50	43	27	18	4	79	51	32	8	1503	1657	195	120	-1177
154+50.00	15450	50	43	28	17	4	80	51	32	8	1583	1690	206	127	-1181
155+00.00	15500	50	46	29	15	5	82	52	30	8	1665	1720	216	133	-1181
155+50.00	15550	50	50	31	14	5	88	55	27	9	1753	1746	228	140	-1174
155+67.00	15567	17	20	16	35	2	22	15	16	2	1775	1764	231	142	-1185
156+00.00	15600	33	22	17	32	2	25	20	41	3	1800	1816	234	144	-1231
156+50.00	15650	50	23	18	32	2	42	32	60	4	1842	1889	239	147	-1295
157+00.00	15700	50	24	18	33	2	44	33	60	4	1886	1963	245	151	-1358
157+50.00	15750	50	25	18	33	2	45	34	61	5	1931	2038	251	155	-1421
158+00.00	15800	50	26	16	34	3	47	32	62	5	1978	2113	257	158	-1481
158+09.34	15809	9	26	16	33	3	9	6	12	1	1987	2127	258	159	-1492
158+34.34	15834	25	26	16	33	3	24	15	31	2	2012	2165	262	161	-1520
158+50.00	15850	16	27	16	33	3	15	9	19	2	2027	2188	264	162	-1537
158+59.34	15859	9	27	16	33	3	9	6	11	1	2036	2202	265	163	-1548
158+91.85	15892	33	32	19	29	3	35	21	37	4	2071	2246	269	166	-1578
159+00.00	15900	8	33	19	27	3	10	6	8	1	2081	2256	271	166	-1584
159+36.85	15937	37	37	22	21	4	48	28	33	5	2129	2294	277	170	-1602

I-94 MEDIAN, STAGE 1, PART II

STATION	Real Station	Distance	AREA (SF) Cut	Salvaged/ Unusable Pavement Material	Fill	EBS	Incremental Vol (CY) (Unadjusted) Cut Note 1	Salvaged/ Unusable Pavement Material Note 2	FILL Note 3	EBS	Cumulative Vol (CY) Cut 1.00 Note 1	Expanded Fill 1.30	Expanded EBS Backfill 1.30 Note 5	Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
159+50.00	15950	13		BEGIN STRUCTURE			-	-	-	-	2129	2294	277	170	-1602
159+56.85	15957	7	-	-	-	-	-	-	-	-	2129	2294	277	170	-1602
160+00.00	16000	43	-	-	-	-	-	-	-	-	2129	2294	277	170	-1602
160+50.00	16050	50	-	-	-	-	-	-	-	-	2129	2294	277	170	-1602
160+73.02	16073	23	-	-	-	-	-	-	-	-	2129	2294	277	170	-1602
160+93.02	16093	20	-	-	-	-	-	-	-	-	2129	2294	277	170	-1602
161+00.00	16100	7		END STRUCTURE			-	-	-	-	2129	2294	277	170	-1602
161+38.02	16138	38	33	19	20	3	-	-	-	-	2129	2294	277	170	-1602
161+50.00	16150	12	32	19	19	3	14	9	9	1	2143	2304	279	171	-1606
161+70.50	16171	21	31	19	18	3	24	14	14	2	2168	2320	282	173	-1612
161+95.50	16196	25	29	18	14	3	28	17	15	3	2196	2336	285	176	-1617
162+00.00	16200	5	29	17	14	3	5	3	2	0	2201	2339	286	176	-1618
162+20.50	16221	21	28	17	11	3	21	13	9	2	2222	2348	289	178	-1619
162+50.00	16250	30	29	17	10	3	31	19	11	3	2253	2360	293	180	-1618
162+70.00	16270	20	32	19	11	3	23	13	8	2	2275	2368	296	182	-1617
163+00.00	16300	30	34	20	8	3	37	22	11	4	2312	2377	301	185	-1612
163+50.00	16350	50	38	22	2	4	67	39	10	7	2379	2383	309	190	-1590
164+00.00	16400	50	48	27	1	5	79	45	4	8	2458	2379	320	197	-1552
164+50.00	16450	50	55	31	1	6	95	53	2	10	2553	2372	332	204	-1502
165+00.00	16500	50	91	48	-	9	135	73	1	14	2689	2358	350	215	-1427
165+50.00	16550	50	59	33	0	6	139	75	0	14	2828	2344	368	226	-1349
166+00.00	16600	50	22	17	32	2	75	46	30	8	2903	2376	377	232	-1351
166+50.00	16650	50	19	16	40	2	38	30	67	4	2941	2459	382	235	-1426
167+00.00	16700	50	21	16	44	2	37	30	78	4	2978	2556	387	238	-1516
167+50.00	16750	50	23	17	46	2	40	31	84	4	3018	2661	392	241	-1611
168+00.00	16800	50	23	17	46	2	42	32	85	4	3061	2767	398	245	-1708
168+50.00	16850	50	24	18	42	2	43	33	81	4	3104	2868	403	248	-1798
169+00.00	16900	50	22	17	32	2	42	32	68	4	3146	2952	409	252	-1872
169+50.00	16950	50	21	16	26	2	39	31	54	4	3185	3018	414	255	-1930
170+00.00	17000	50	20	16	25	2	38	30	48	4	3223	3076	419	258	-1980
170+50.00	17050	50	18	15	24	2	35	29	46	4	3258	3132	424	261	-2029
171+00.00	17100	50	15	14	22	2	31	26	42	3	3289	3184	428	263	-2077
171+50.00	17150	50	13	13	19	1	27	24	38	3	3315	3230	431	265	-2121
172+00.00	17200	50	13	12	23	1	24	23	39	2	3339	3278	434	267	-2169
172+50.00	17250	50	12	12	25	1	23	23	44	2	3362	3334	437	269	-2223
173+00.00	17300	50	-	6	-	-	12	17	23	1	3374	3362	439	270	-2257
173+36.00	17336	36	-	6	-	-	-	8	-	-	3374	3362	439	270	-2265
						Column totals	3374	2277	2856	337					

I-94 EB Stage 2

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)				Mass Ordinate
			Cut	Salvaged/ Unusable Pavement Material	Fill	EBS	Cut	Salvaged/ Unusable Pavement Material	FILL	EBS	Cut	Expanded Fill	Expanded EBS Backfill	Reduced EBS In Fill	
							Note 1	Note 2	Note 3		1.00 Note 1	1.30	1.30 Note 5	0.80 Note 7	Note 8
149+57.50	14958		-	-	-	-	-	-	-	-	-	-	-	-	-
150+00.00	15000	43	-	6	-	-	-	5	-	-	-	-	-	-	-5
150+50.00	15050	50	-	-	-	-	-	6	-	-	-	-	-	-	-10
151+00.00	15100	50	-	-	-	-	-	-	-	-	-	-	-	-	-10
151+50.00	15150	50	3	-	6	-	3	-	5	-	3	7	-	-	-14
152+00.00	15200	50	3	-	23	-	6	-	27	-	9	42	-	-	-43
152+46.82	15247	47	5	-	34	-	7	-	49	-	16	106	-	-	-101
152+50.00	15250	3	5	-	34	-	1	-	4	-	16	111	-	-	-106
152+71.82	15272	22	3	-	30	-	3	-	26	-	19	145	-	-	-136
152+96.82	15297	25	-	-	23	-	1	-	25	-	21	178	-	-	-167
153+00.00	15300	3	3	-	4	-	0	-	2	-	21	180	-	-	-169
153+50.00	15350	50	2	-	7	-	5	-	10	-	26	193	-	-	-177
154+00.00	15400	50	2	-	13	-	4	-	19	-	30	217	-	-	-198
154+50.00	15450	50	2	-	19	-	4	-	30	-	33	256	-	-	-233
155+00.00	15500	50	2	-	21	-	4	-	37	-	37	304	-	-	-277
155+50.00	15550	50	2	-	26	-	4	-	43	-	41	360	-	-	-329
156+00.00	15600	50	32	16	37	3	32	15	58	3	73	432	4	2	-384
156+50.00	15650	50	37	19	39	4	64	32	71	6	137	518	12	8	-437
157+00.00	15700	50	37	19	35	4	69	34	69	7	206	600	21	13	-485
157+50.00	15750	50	37	19	34	4	69	35	64	7	275	676	30	19	-527
157+75.00	15775	25	44	25	33	4	38	20	31	4	313	713	35	22	-547
158+00.00	15800	25	45	26	32	5	41	24	30	4	354	748	40	25	-563
158+50.00	15850	50	50	28	35	5	88	50	62	9	443	819	52	32	-596
158+91.85	15892	42	91	49	44	9	109	59	61	11	552	888	66	41	-615
159+00.00	15900	8	91	49	44	9	28	15	13	3	579	902	70	43	-616
159+36.85	15937	37	71	38	23	7	110	59	46	11	690	951	84	52	-614
159+50.00	15950	13		BEGIN STRUCTURE			-	19	-	3	690	947	88	54	-629
160+00.00	16000	50	-	-		-	-	-	-	-	690	947	88	54	-629
160+50.00	16050	50	-	-		-	-	-	-	-	690	947	88	54	-629
160+93.02	16093	43		-		-	-	-	-	-	690	947	88	54	-629
161+00.00	16100	7		END STRUCTURE			-	-	-	-	690	947	88	54	-629
161+38.02	16138	38	42	24	13	4	-	-	-	6	690	941	96	59	-623
161+50.00	16150	12	43	25	12	4	19	11	5	2	709	946	99	61	-620
162+00.00	16200	50	38	22	11	4	75	43	21	7	783	966	108	67	-608
162+50.00	16250	50	32	19	11	3	64	38	21	6	848	987	117	72	-602
163+00.00	16300	50	-	-	-	-	29	18	11	3	877	998	120	74	-601
163+50.00	16350	50	-	-	-	-	-	-	-	-	877	998	120	74	-601
164+00.00	16400	50	-	-	-	-	-	-	-	-	877	998	120	74	-601
164+50.00	16450	50	-	-	-	-	-	-	-	-	877	998	120	74	-601
165+00.00	16500	50	-	-	-	-	-	-	-	-	877	998	120	74	-601
165+50.00	16550	50	-	-	-	-	-	-	-	-	877	998	120	74	-601
166+00.00	16600	50	-	-	-	-	-	-	-	-	877	998	120	74	-601
166+50.00	16650	50	-	-	-	-	-	-	-	-	877	998	120	74	-601
167+00.00	16700	50	-		-		-	-	-	-	877	998	120	74	-601
167+50.00	16750	50	-	-	-	-	-	-	-	-	877	998	120	74	-601
167+92.50	16793	43	-	-	-	-	-	-	-	-	877	998	120	74	-601
						Column totals	877	480	842	93					

I-94 EB Stage 2b

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)				Mass Ordinate
			Cut	Salvaged/ Unusable Pavement Material	Fill	EBS	Cut	Salvaged/ Unusable Pavement Material	FILL	EBS	Cut	Expanded Fill	Expanded EBS Backfill	Reduced EBS In Fill	
											1.00	1.30	1.30	0.80	
			Note 1				Note 1	Note 2	Note 3		Note 1		Note 5	Note 7	Note 8
162+50.00	16250	30	44	3	15	-	24	2	8	-	24	10	-	-	12
162+70.00	16270	20	45	3	17	-	33	2	12	-	57	25	-	-	28
163+00.00	16300	30	50	3	15	-	53	3	18	-	109	49	-	-	54
163+50.00	16350	50	55	3	12	-	97	6	25	-	207	81	-	-	112
164+00.00	16400	50	51	3	6	-	98	6	16	-	304	103	-	-	183
164+50.00	16450	50	54	3	2	-	97	6	7	-	401	111	-	-	266
165+00.00	16500	50	69	3	0	-	114	6	2	-	516	113	-	-	373
165+50.00	16550	50	89	3	-	-	146	6	0	-	662	114	-	-	513
166+00.00	16600	50	131	3	26	-	204	6	24	-	866	145	-	-	680
166+50.00	16650	50	108	3	-	-	221	6	24	-	1086	175	-	-	865
167+00.00	16700	50	108	3	-	-	200	6	-	-	1286	175	-	-	1060
167+50.00	16750	50	97	3	-	-	191	6	-	-	1477	175	-	-	1245
168+00.00	16800	50	89	3	-	-	172	6	-	-	1649	175	-	-	1411
168+50.00	16850	50	78	3	-	-	155	6	-	-	1804	175	-	-	1561
169+00.00	16900	50	63	3	0	-	131	6	0	-	1935	176	-	-	1686
169+50.00	16950	50	56	3	2	-	111	6	3	-	2046	179	-	-	1788
170+00.00	17000	50	42	3	6	-	91	6	8	-	2137	189	-	-	1863
170+50.00	17050	50	34	3	8	-	70	6	12	-	2208	205	-	-	1912
171+00.00	17100	50	28	3	10	-	57	6	16	-	2265	226	-	-	1943
171+50.00	17150	50	24	3	11	-	48	6	19	-	2313	251	-	-	1961
172+00.00	17200	50	22	3	12	-	43	6	22	-	2356	279	-	-	1970
172+50.00	17250	50	22	3	14	-	42	6	24	-	2398	311	-	-	1974
173+00.00	17300	50	14	3	25	-	34	6	36	-	2432	358	-	-	1956
173+36.00	17336	36	14	3	24	-	19	4	33	-	2451	401	-	-	1928
						Column totals	2451	122	308	0					

I-94 WB Stage 3

STATION	Real Station	Distance	AREA (SF) Cut	Salvaged/ Unusable Pavement Material	Fill	EBS	Incremental Vol (CY) (Unadjusted) Cut Note 1	Salvaged/ Unusable Pavement Material Note 2	FILL Note 3	EBS	Cumulative Vol (CY) Cut 1.00 Note 1	Expanded Fill 1.30	Expanded EBS Backfill 1.30 Note 5	Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
B 158+50.00	15850		19	-	-	-	-	-	-	-	-	-	-	-	-
B 158+91.85	15892	42	16		55	-	27	-	42	-	27	55	-	-	-28
B 159+00.00	15900	8	37	-	34	-	8	-	13	-	35	73	-	-	-38
B 159+36.85	15937	37	30	-	50	-	46	-	57	-	81	147	-	-	-67
B 159+50.00	15950	13		BEGIN STRUCTURE			-	-	-	-	81	147	-	-	-67
B 160+00.00	16000	50	-	-		-	-	-	-	-	81	147	-	-	-67
B 160+50.00	16050	50	-	-		-	-	-	-	-	81	147	-	-	-67
B 160+93.02	16093	43	-	-		-	-	-	-	-	81	147	-	-	-67
B 161+00.00	16100	7	-	-		-	-	-	-	-	81	147	-	-	-67
B 161+38.02	16138	38		END STRUCTURE			-	-	-	-	81	147	-	-	-67
B 161+50.00	16150	12	2	-	22	-	-	-	-	-	81	147	-	-	-67
B 162+00.00	16200	50	3	-	16	-	5	-	35	-	86	193	-	-	-107
B 162+20.50	16221	21	4	-	14	-	3	-	11	-	88	208	-	-	-119
B 162+45.50	16246	25	9	-	14	-	6	-	13	-	94	224	-	-	-130
B 162+50.00	16250	5	5	-	21	-	1	-	3	-	95	228	-	-	-132
B 162+70.50	16271	21	5	-	19	-	4	-	15	-	99	248	-	-	-149
B 163+00.00	16300	30	7	-	15	-	7	-	18	-	106	272	-	-	-166
B 163+50.00	16350	50	7	-	8	-	13	-	22	-	119	300	-	-	-181
B 163+71.00	16371	21	7	-	5	-	5	-	5	-	124	307	-	-	-183
B 163+96.00	16396	25	8	-	5	-	7	-	5	-	131	313	-	-	-182
B 164+00.00	16400	4	8	-	6	-	1	-	1	-	132	314	-	-	-182
B 164+21.00	16421	21	10	-	7	-	7	-	5	-	139	320	-	-	-182
B 164+50.00	16450	29	13	-	2	-	12	-	5	-	151	327	-	-	-176
B 164+75.00	16475	25	9	-	1	-	10	-	1	-	161	328	-	-	-167
B 165+00.00	16500	25	4	-	1	-	6	-	1	-	167	329	-	-	-162
						Column totals	167	0	253	0					

I-94 MEDIAN, STAGE 4, PART I

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)				Mass Ordinate
			Cut	Salvaged / Unusable Pavement Material	Fill	EBS	Cut	Salvaged / Unusable Pavement Material	FILL	EBS	Cut	Expanded Fill	Expanded EBS Backfill	Reduced EBS In Fill	
							Note 1	Note 2	Note 3		1.00 Note 1	1.30	1.30 Note 5	0.80 Note 7	Note 8
142+00.00	14200		4	-	3	-	-	-	-	-	-	-	-	-	-
142+50.00	14250	50	5	-	-	-	8	-	3	-	8	4	-	-	4
143+00.00	14300	50	8	-	-	-	12	-	-	-	20	4	-	-	16
143+50.00	14350	50	12	-	-	-	18	-	-	-	38	4	-	-	34
144+00.00	14400	50	15	-	-	-	25	-	-	-	63	4	-	-	59
144+50.00	14450	50	19	-	-	-	32	-	-	-	95	4	-	-	91
145+00.00	14500	50	24	-	-	-	40	-	-	-	135	4	-	-	131
145+50.00	14550	50	29	-	-	-	49	-	-	-	185	4	-	-	181
146+00.00	14600	50	35	-	-	-	59	-	-	-	244	4	-	-	240
146+50.00	14650	50	41	-	-	-	70	-	-	-	314	4	-	-	310
147+00.00	14700	50	46	-	-	-	80	-	-	-	394	4	-	-	390
147+30.00	14730	30	48	-	-	-	52	-	-	-	446	4	-	-	443
147+50.00	14750	20	73	-	-	-	45	-	-	-	491	4	-	-	487
148+00.00	14800	50	73	-	-	-	135	-	-	-	626	4	-	-	622
148+50.00	14850	50	73	-	-	-	135	-	-	-	761	4	-	-	757
149+00.00	14900	50	73	-	-	-	135	-	-	-	895	4	-	-	891
149+50.00	14950	50	73	-	-	-	134	-	-	-	1030	4	-	-	1026
150+00.00	15000	50	72	-	-	-	134	-	-	-	1164	4	-	-	1160
150+50.00	15050	50	72	-	-	-	134	-	-	-	1298	4	-	-	1294
151+00.00	15100	50	68	-	-	-	130	-	-	-	1428	4	-	-	1424
151+50.00	15150	50	68	-	-	-	126	-	-	-	1554	4	-	-	1550
152+00.00	15200	50	68	-	-	-	126	-	-	-	1680	4	-	-	1676
152+50.00	15250	50	68	-	-	-	126	-	-	-	1806	4	-	-	1802
153+00.00	15300	50	68	-	-	-	126	-	-	-	1932	4	-	-	1928
153+50.00	15350	50	68	-	-	-	126	-	-	-	2058	4	-	-	2054
154+00.00	15400	50	68	-	-	-	126	-	-	-	2184	4	-	-	2180
154+50.00	15450	50	68	-	-	-	126	-	-	-	2309	4	-	-	2306
155+00.00	15500	50	64	-	-	-	122	-	-	-	2431	4	-	-	2427
155+50.00	15550	50	57	-	2	-	112	-	2	-	2543	6	-	-	2536
155+67.00	15567	17	57	-	-	-	36	-	1	-	2579	7	-	-	2571
156+00.00	15600	33	52	-	0	-	67	-	0	-	2645	7	-	-	2638
156+50.00	15650	50	51	-	0	-	96	-	0	-	2741	8	-	-	2733
157+00.00	15700	50	35	-	1	-	80	-	1	-	2821	9	-	-	2812
157+50.00	15750	50	15	-	7	-	46	-	7	-	2867	19	-	-	2848
158+00.00	15800	50	3	-	14	-	17	-	19	-	2884	43	-	-	2841
158+09.34	15809	9	2	-	15	-	1	-	5	-	2885	50	-	-	2835
158+34.34	15834	25	1	-	15	-	1	-	14	-	2886	68	-	-	2818
158+50.00	15850	16	0	-	9	-	0	-	7	-	2886	77	-	-	2810
158+59.34	15859	9	-	-	17	-	0	-	4	-	2886	82	-	-	2804
158+91.85	15892	33	-	-	12	-	-	-	17	-	2886	105	-	-	2781
159+00.00	15900	8	-	-	12	-	-	-	4	-	2886	110	-	-	2777
159+36.85	15937	37	0	-	10	-	0	-	15	-	2886	130	-	-	2757

I-94 MEDIAN, STAGE 4, PART II

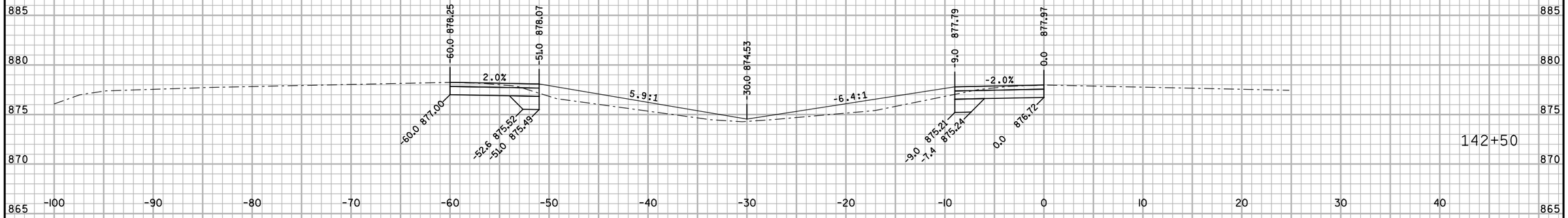
STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)				Mass Ordinate
			Cut	Salvaged / Unusable Pavement Material	Fill	EBS	Cut	Salvaged / Unusable Pavement Material	FILL	EBS	Cut 1.00	Expanded Fill 1.30	Expanded EBS Backfill 1.30	Reduced EBS In Fill 0.80	
							Note 1	Note 2	Note 3		Note 1		Note 5	Note 7	Note 8
159+50.00	15950	13		BEGIN STRUCTURE			-	-	-	-	2886	130	-	-	2757
159+56.85	15957	7	-	-	-	-	-	-	-	-	2886	130	-	-	2757
160+00.00	16000	43	-	-	-	-	-	-	-	-	2886	130	-	-	2757
160+50.00	16050	50	-	-	-	-	-	-	-	-	2886	130	-	-	2757
160+73.02	16073	23	-	-	-	-	-	-	-	-	2886	130	-	-	2757
160+93.02	16093	20	-	-	-	-	-	-	-	-	2886	130	-	-	2757
161+00.00	16100	7		END STRUCTURE			-	-	-	-	2886	130	-	-	2757
161+38.02	16138	38	-	-	8	-	-	-	-	-	2886	130	-	-	2757
161+50.00	16150	12	-	-	9	-	-	-	4	-	2886	134	-	-	2752
161+70.50	16171	21	-	-	9	-	-	-	7	-	2886	143	-	-	2744
161+95.50	16196	25	0	-	9	-	0	-	8	-	2887	154	-	-	2733
162+00.00	16200	5	1	-	9	-	0	-	2	-	2887	155	-	-	2731
162+20.50	16221	21	1	-	10	-	1	-	7	-	2887	165	-	-	2723
162+50.00	16250	30	5	-	19	-	4	-	15	-	2891	185	-	-	2706
162+70.00	16270	20	6	-	15	-	4	-	12	-	2895	201	-	-	2694
163+00.00	16300	30	9	-	17	-	8	-	18	-	2903	224	-	-	2679
163+50.00	16350	50	14	-	22	-	21	-	36	-	2923	270	-	-	2653
164+00.00	16400	50	16	-	18	-	28	-	37	-	2951	319	-	-	2632
164+50.00	16450	50	25	-	11	-	38	-	27	-	2989	355	-	-	2635
165+00.00	16500	50	33	-	4	-	53	-	14	-	3042	373	-	-	2670
165+50.00	16550	50	35	-	1	-	62	-	5	-	3104	378	-	-	2726
166+00.00	16600	50	37	-	1	-	66	-	2	-	3171	380	-	-	2790
166+50.00	16650	50	49	-	0	-	79	-	1	-	3250	381	-	-	2869
167+00.00	16700	50	53	-	0	-	94	-	0	-	3344	382	-	-	2962
167+50.00	16750	50	52	-	6	-	97	-	6	-	3441	389	-	-	3052
168+00.00	16800	50	44	-	5	-	89	-	10	-	3530	402	-	-	3128
168+50.00	16850	50	31	-	2	-	69	-	7	-	3599	411	-	-	3188
169+00.00	16900	50	26	-	0	-	53	-	3	-	3652	415	-	-	3237
169+50.00	16950	50	21	-	3	-	43	-	3	-	3695	419	-	-	3277
170+00.00	17000	50	22	-	8	-	39	-	10	-	3734	431	-	-	3303
170+50.00	17050	50	21	-	11	-	39	-	17	-	3774	453	-	-	3321
171+00.00	17100	50	19	-	13	-	37	-	22	-	3811	482	-	-	3329
171+50.00	17150	50	17	-	15	-	34	-	26	-	3845	516	-	-	3329
172+00.00	17200	50	15	-	16	-	30	-	29	-	3876	553	-	-	3322
172+50.00	17250	50	13	-	16	-	26	-	30	-	3902	592	-	-	3309
173+00.00	17300	50	-	-	-	-	12	-	15	-	3914	612	-	-	3302
173+36.00	17336	36	-	-	-	-	-	-	-	-	3914	612	-	-	3302
					Column totals		3914	0	471	0					

DOUSMAN ROAD, STAGE 3

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)				Mass Ordinate
			Cut	Salvaged / Unusable Pavement Material	FILL	EBS	Cut	Salvaged / Unusable Pavement	FILL	EBS	Cut	Expanded Fill	Expanded EBS Backfill	Reduced EBS In Fill	
							Note 1	Note 2	Note 3		1.00 Note 1	1.30	1.30 Note 5	0.80 Note 7	Note 8
603+00.00	60300	0	0	0	0	0	0	0	0	0	0	0	0	0	0
603+50.00	60350	50	123	123	0	12	114	114	0	11	114	-12	15	9	12
603+95.00	60395	45	138	138	2	14	217	217	1	22	331	-33	43	26	33
604+00.00	60400	5	132	132	1	13	25	25	0	2	356	-35	46	28	35
604+20.00	60420	20	136	136	0	14	99	99	0	10	455	-45	59	36	45
604+45.00	60445	25	139	139	0	14	128	128	0	13	583	-58	76	47	58
604+50.00	60450	5	142	142	0	14	26	26	0	3	609	-61	79	49	61
604+85.00	60485	35	156	156	0	16	193	193	0	19	802	-80	104	64	80
605+00.00	60500	15	119	119	7	12	76	76	2	8	878	-86	114	70	86
605+50.00	60550	50	287	287	2	29	375	375	8	38	1254	-114	163	100	114
606+00.00	60600	50	306	306	0	31	549	549	2	55	1803	-169	234	144	169
606+50.00	60650	50	269	269	1	27	533	533	1	53	2335	-223	304	187	223
607+00.00	60700	50	124	124	4	12	364	364	5	36	2699	-254	351	216	254
607+05.00	60705	5	130	130	1	13	23	23	0	2	2723	-256	354	218	256
607+50.00	60750	45	135	135	0	14	221	221	1	22	2944	-278	383	236	278
607+75.00	60775	25	132	132	0	13	124	124	0	12	3068	-291	399	245	291
608+00.00	60800	25	131	131	0	13	122	122	0	12	3189	-303	415	255	303
608+50.00	60850	50	0	0	0	0	121	121	0	12	3311	-316	430	265	316
						Column totals	3311	3311	22	331					

R

EB I-94



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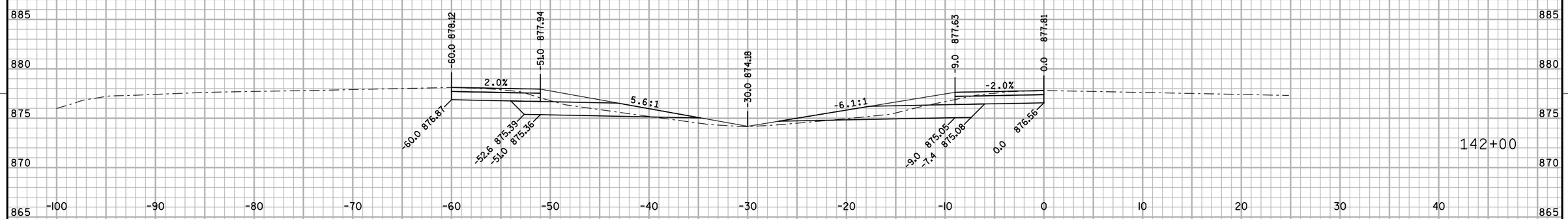

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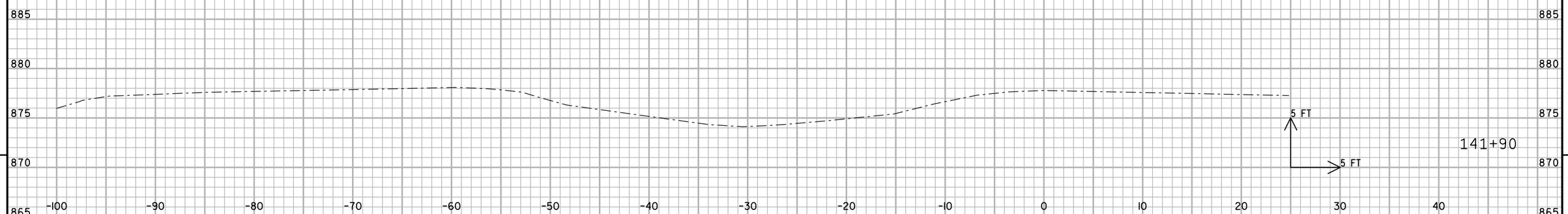
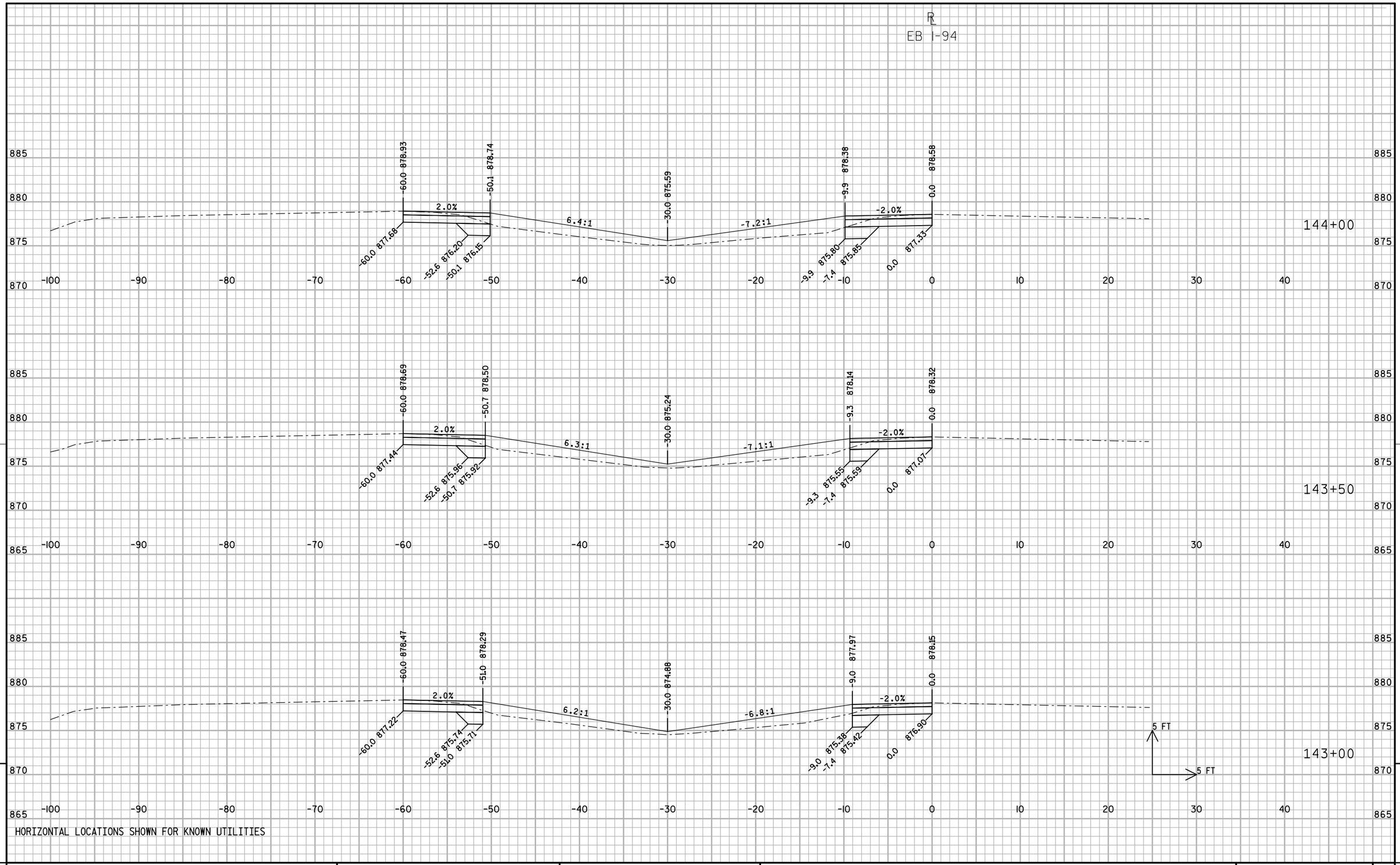


141+90

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 249	E

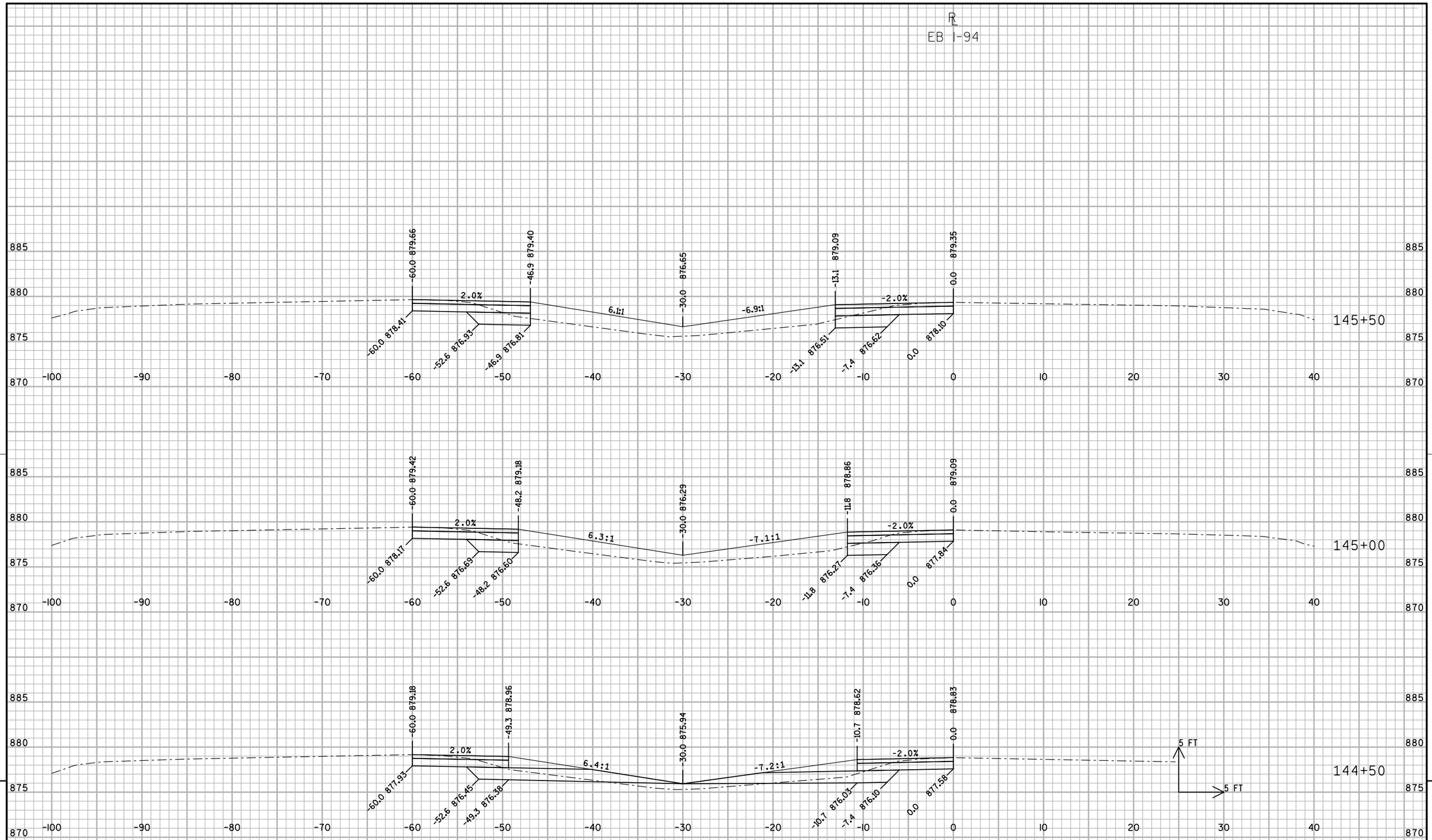


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 250	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090241_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : bweigand PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 251	E

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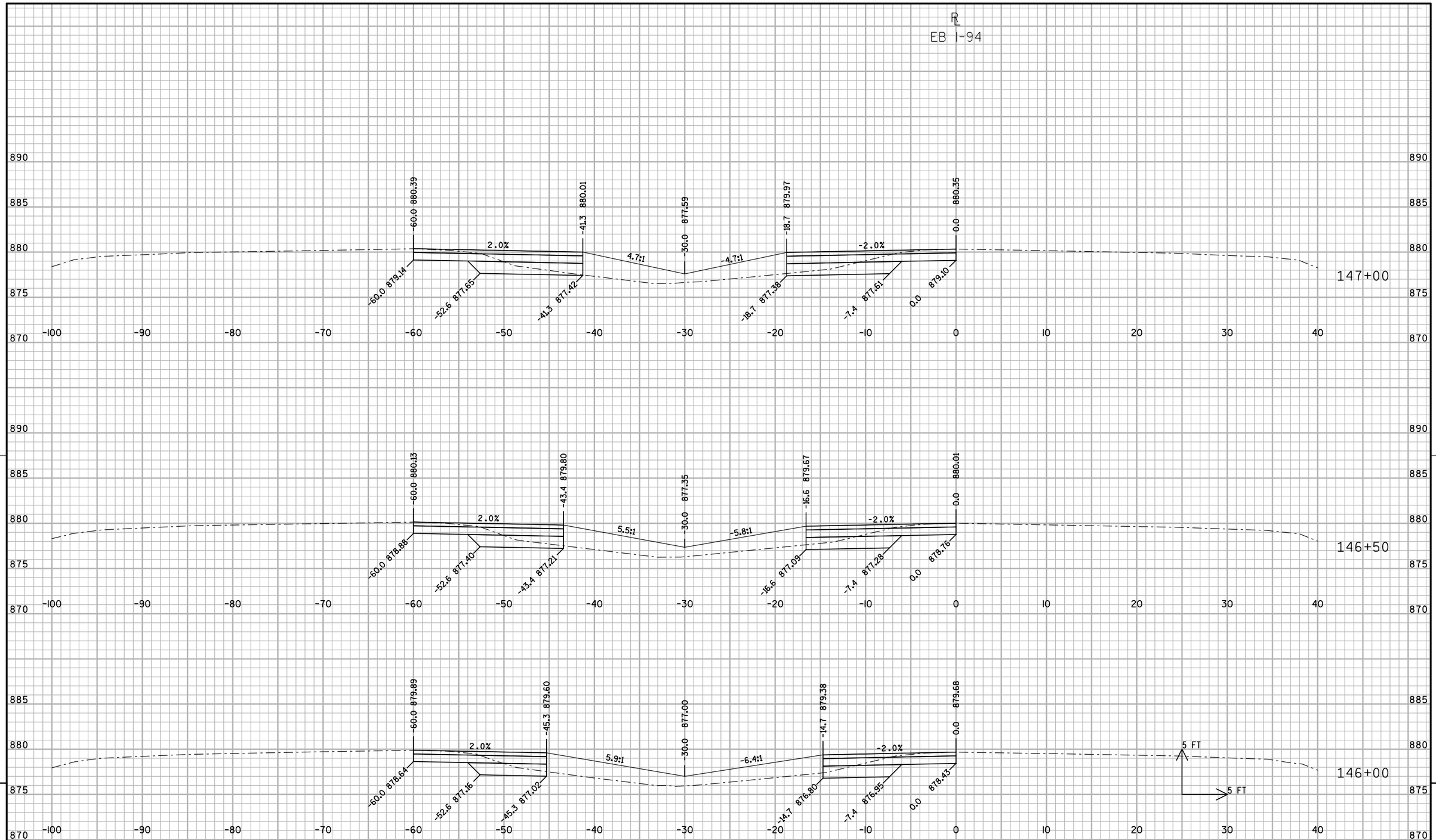

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 252	E

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WISDOT/CADDS SHEET 21

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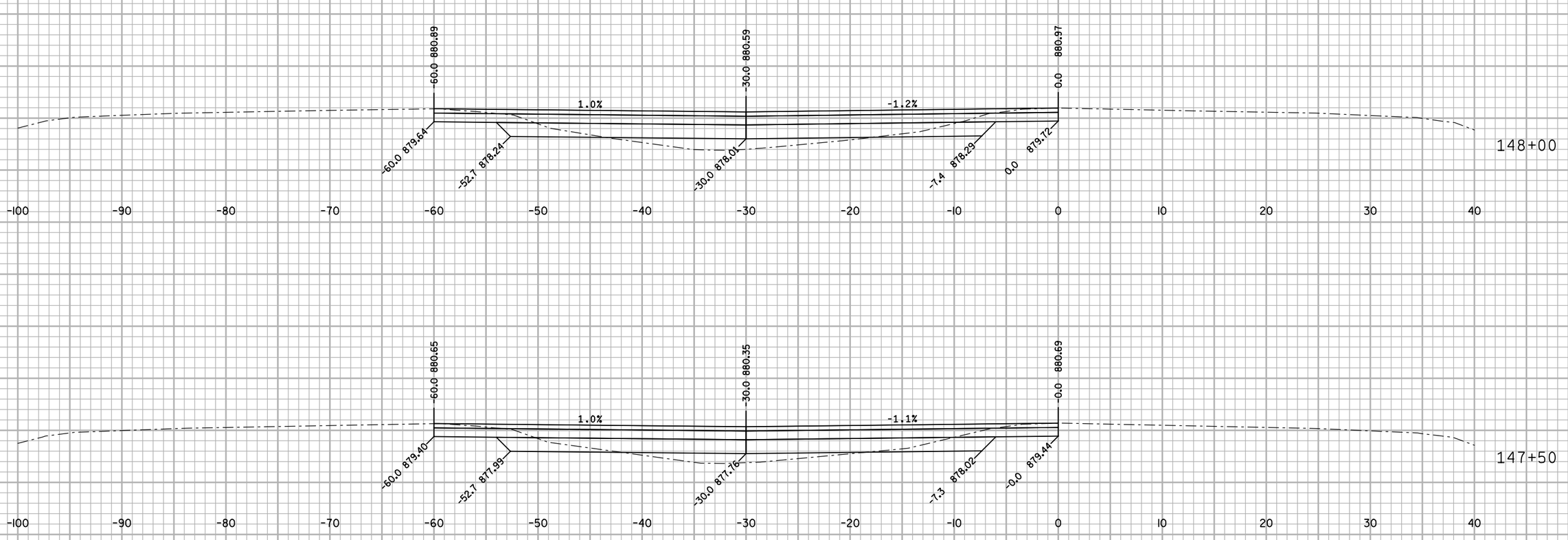
EB I-94



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 253	E

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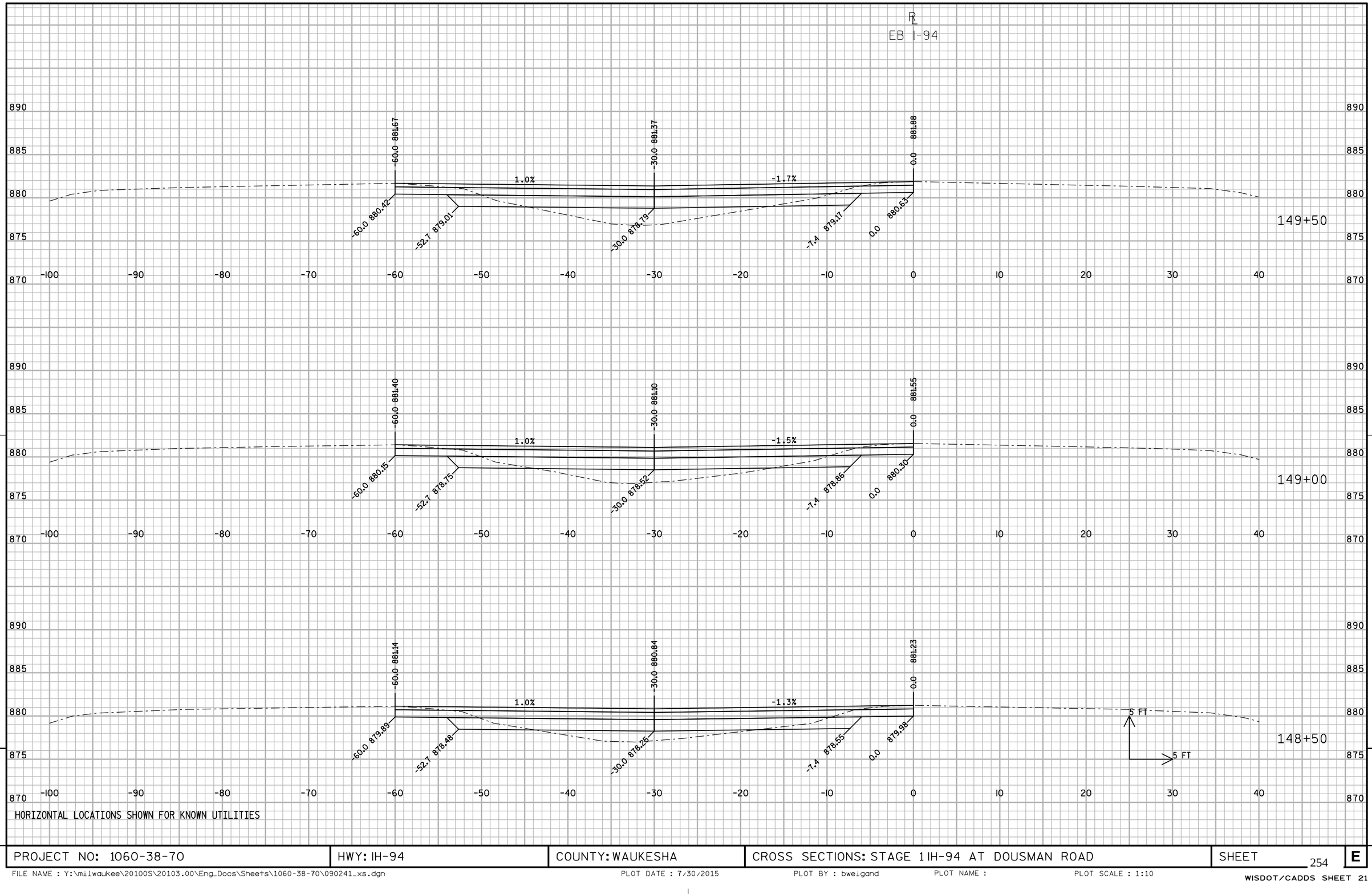

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 254	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090241_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : bweigand PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

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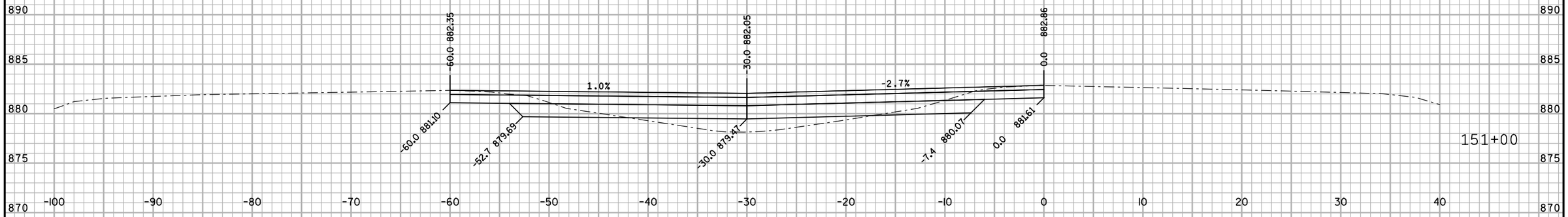

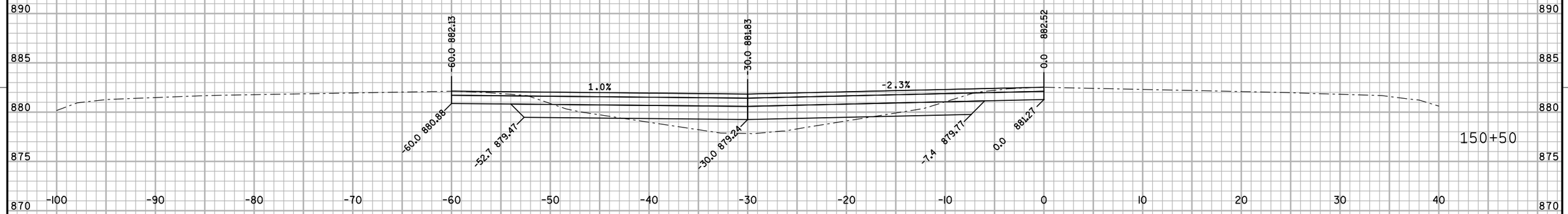

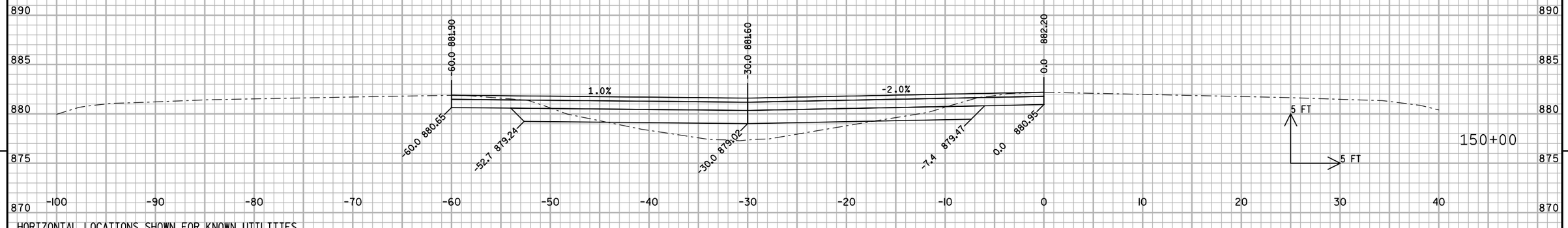

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 255	E

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 256	E

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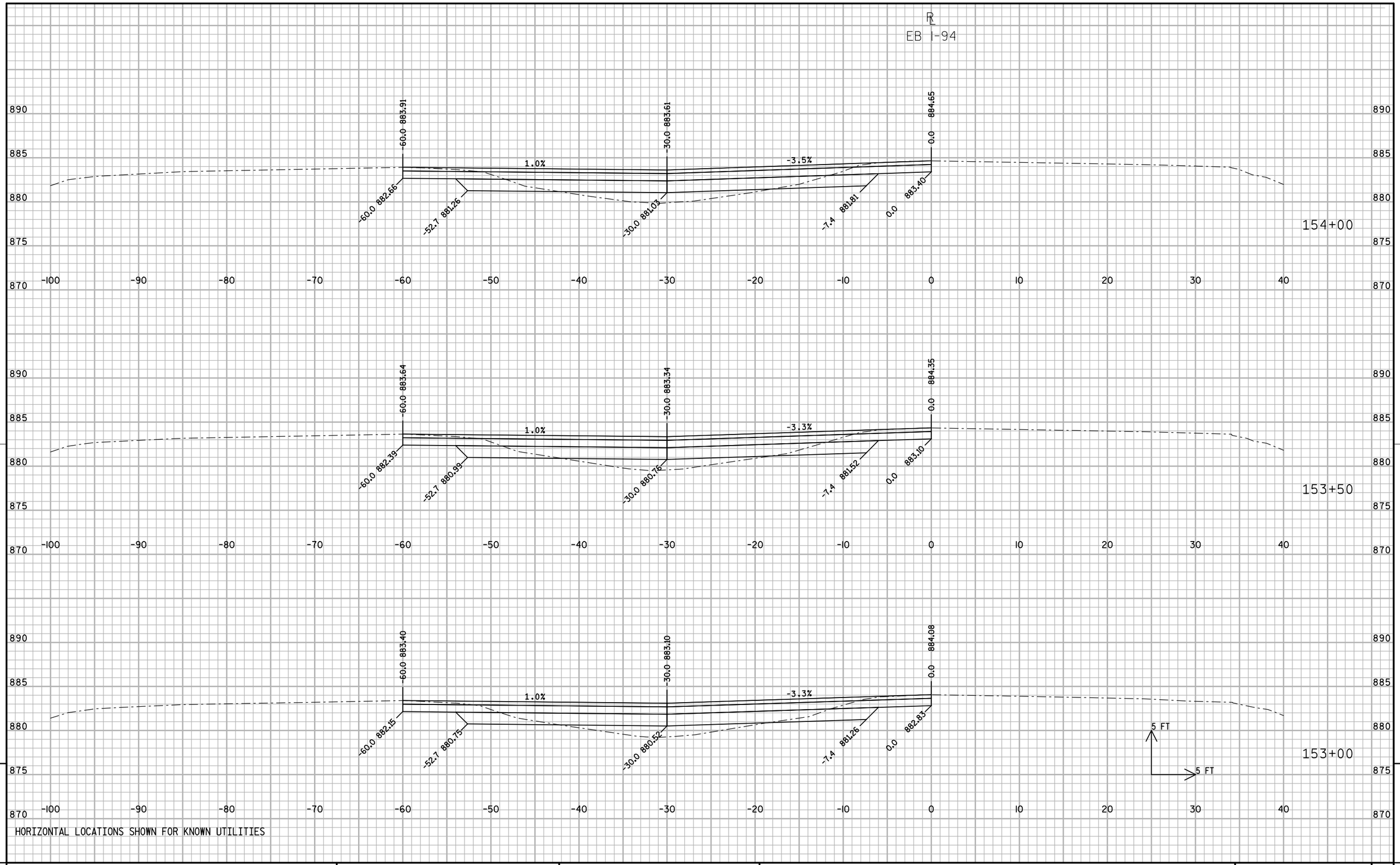

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 257	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090241_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : bweigand PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

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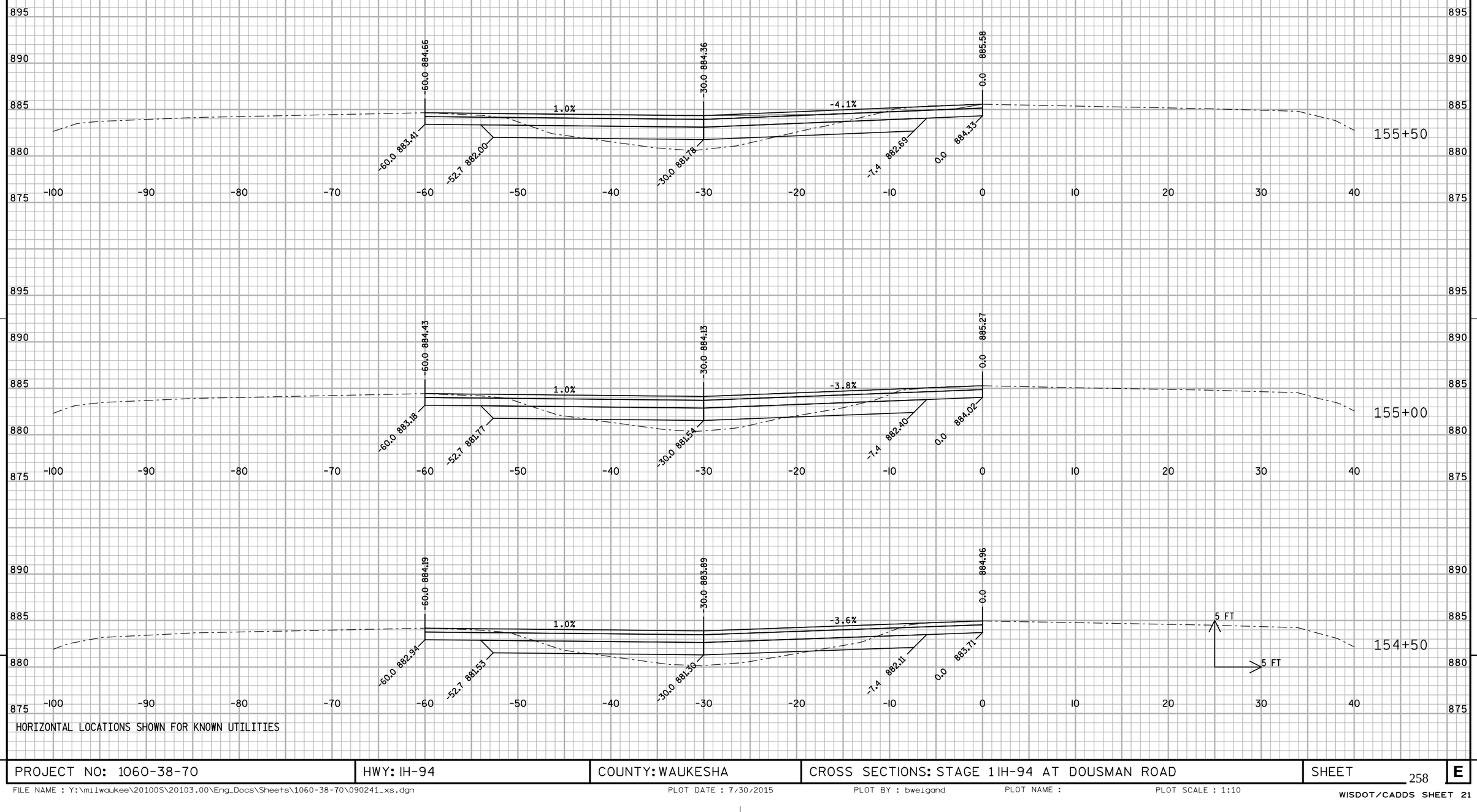

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 258	E

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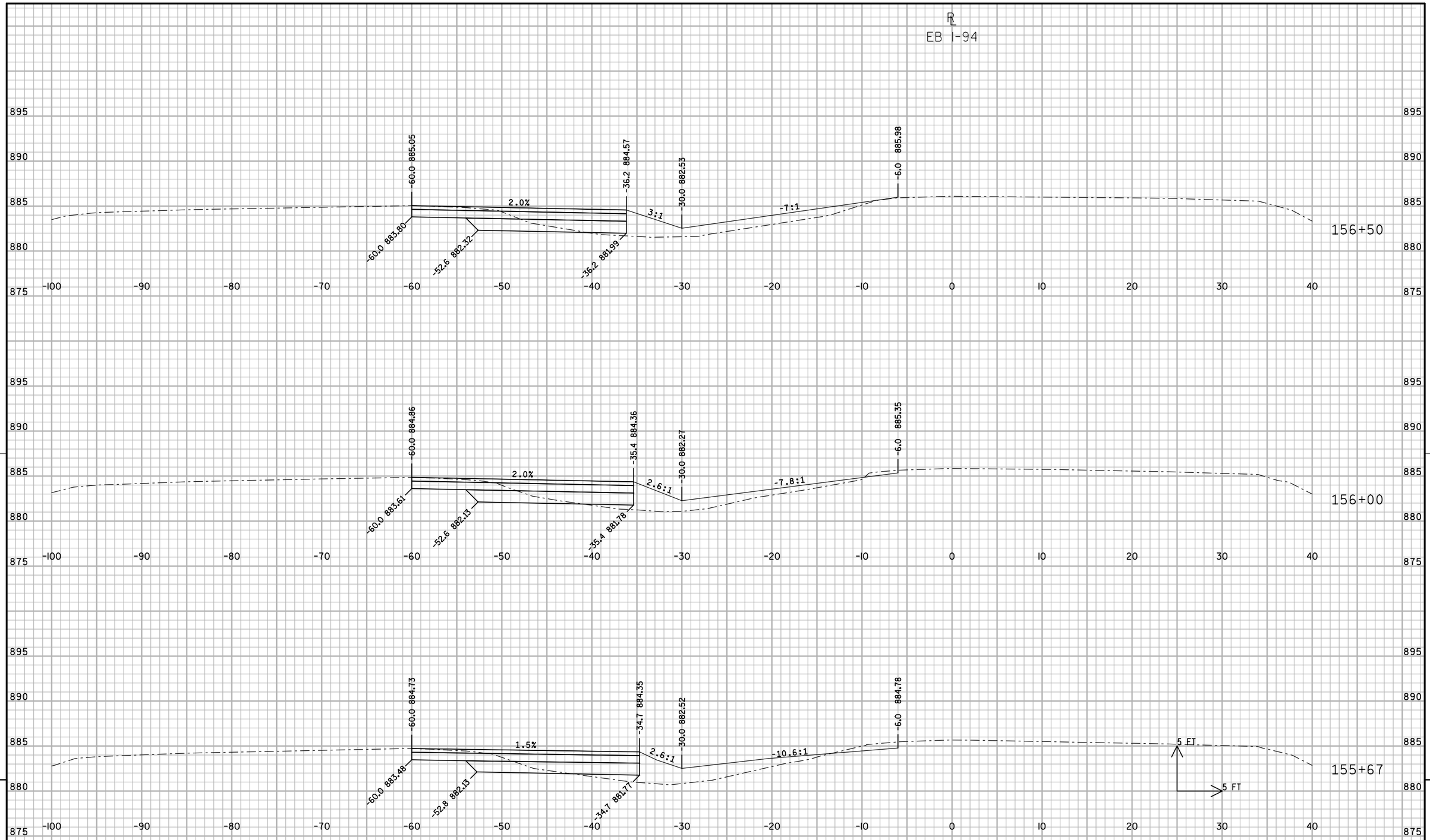

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 259	E

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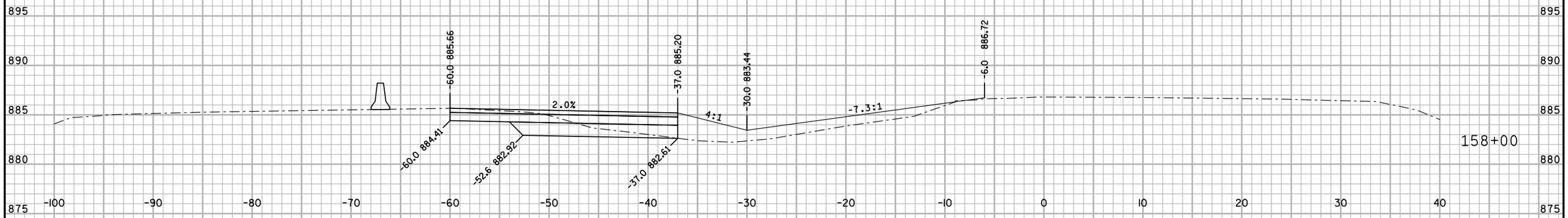
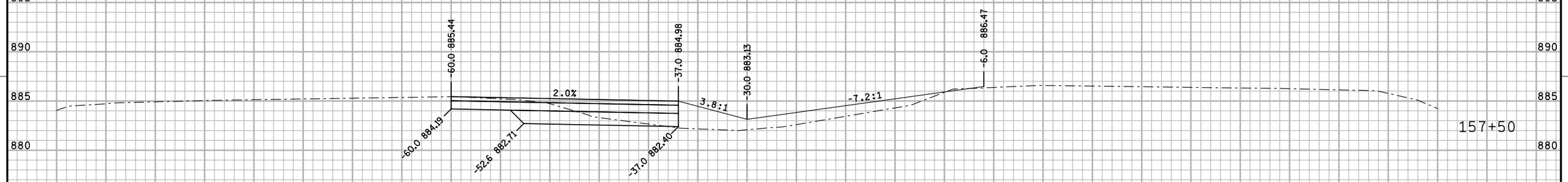
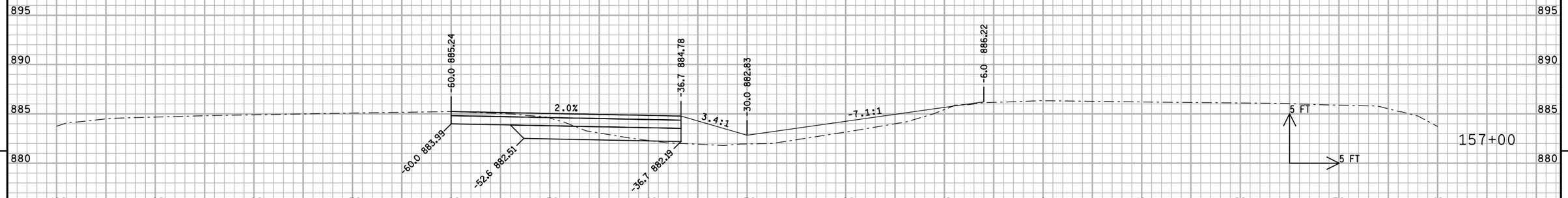
EB I-94

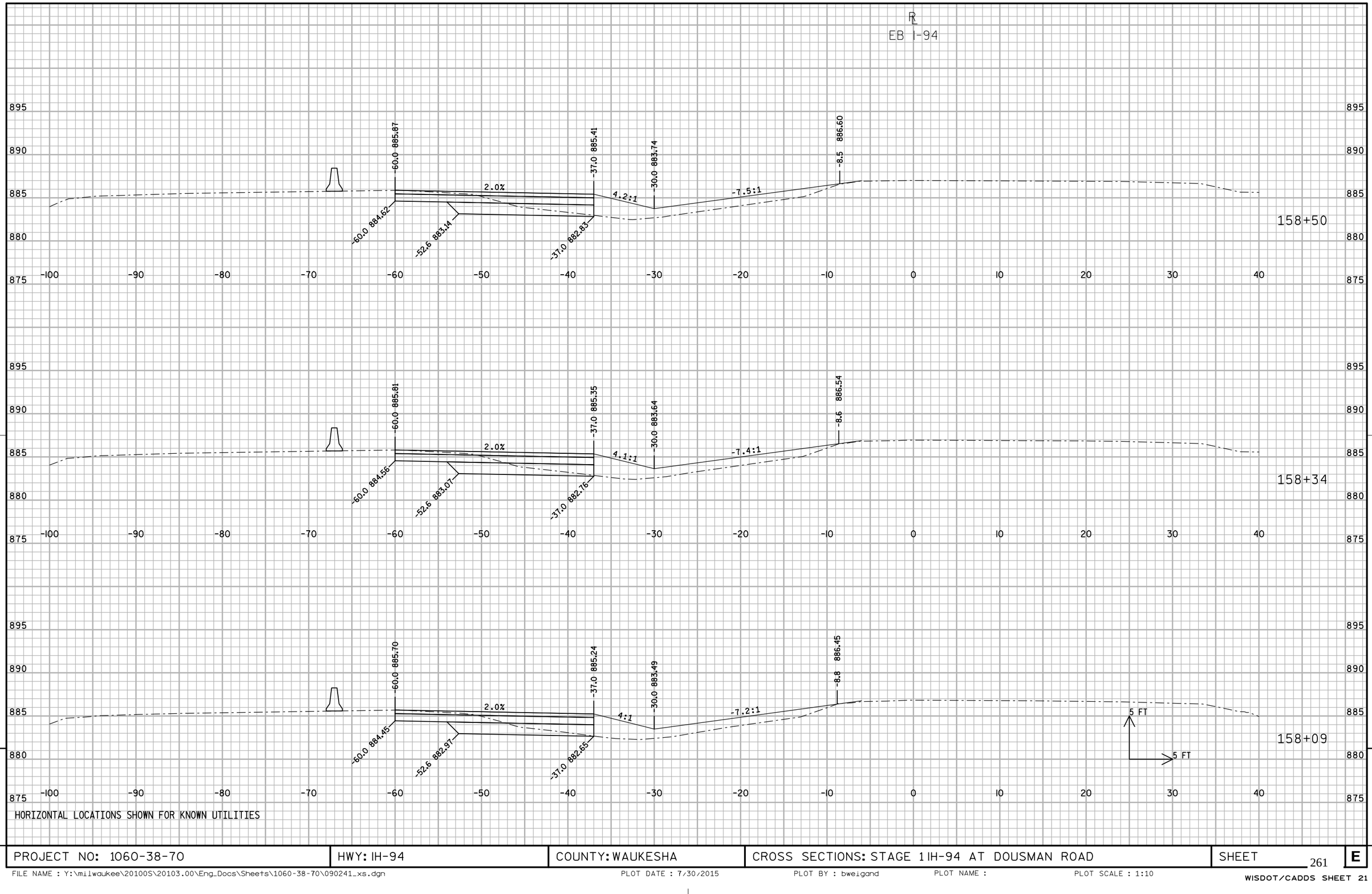






HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 260	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 261	E

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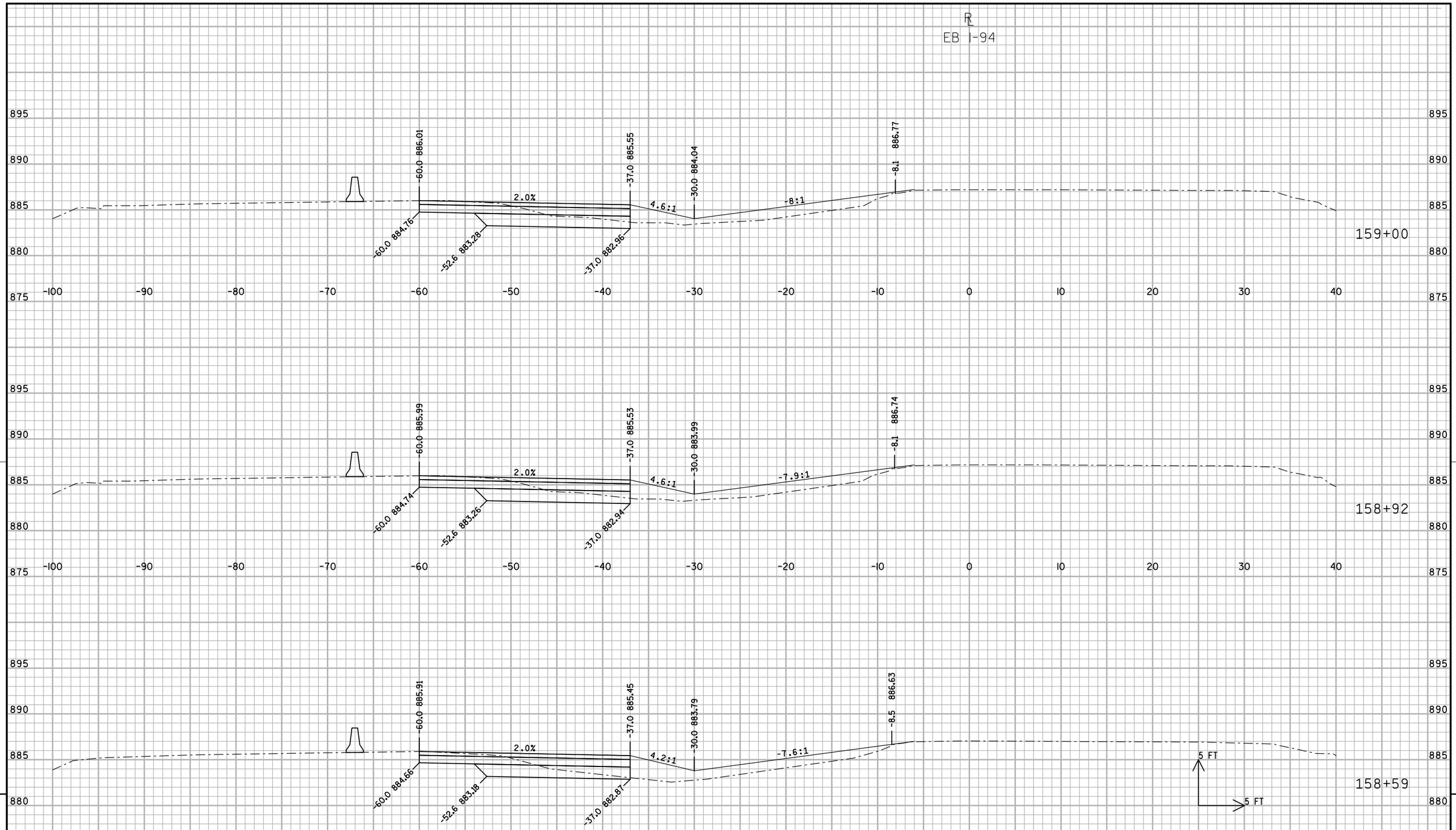

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 262	E

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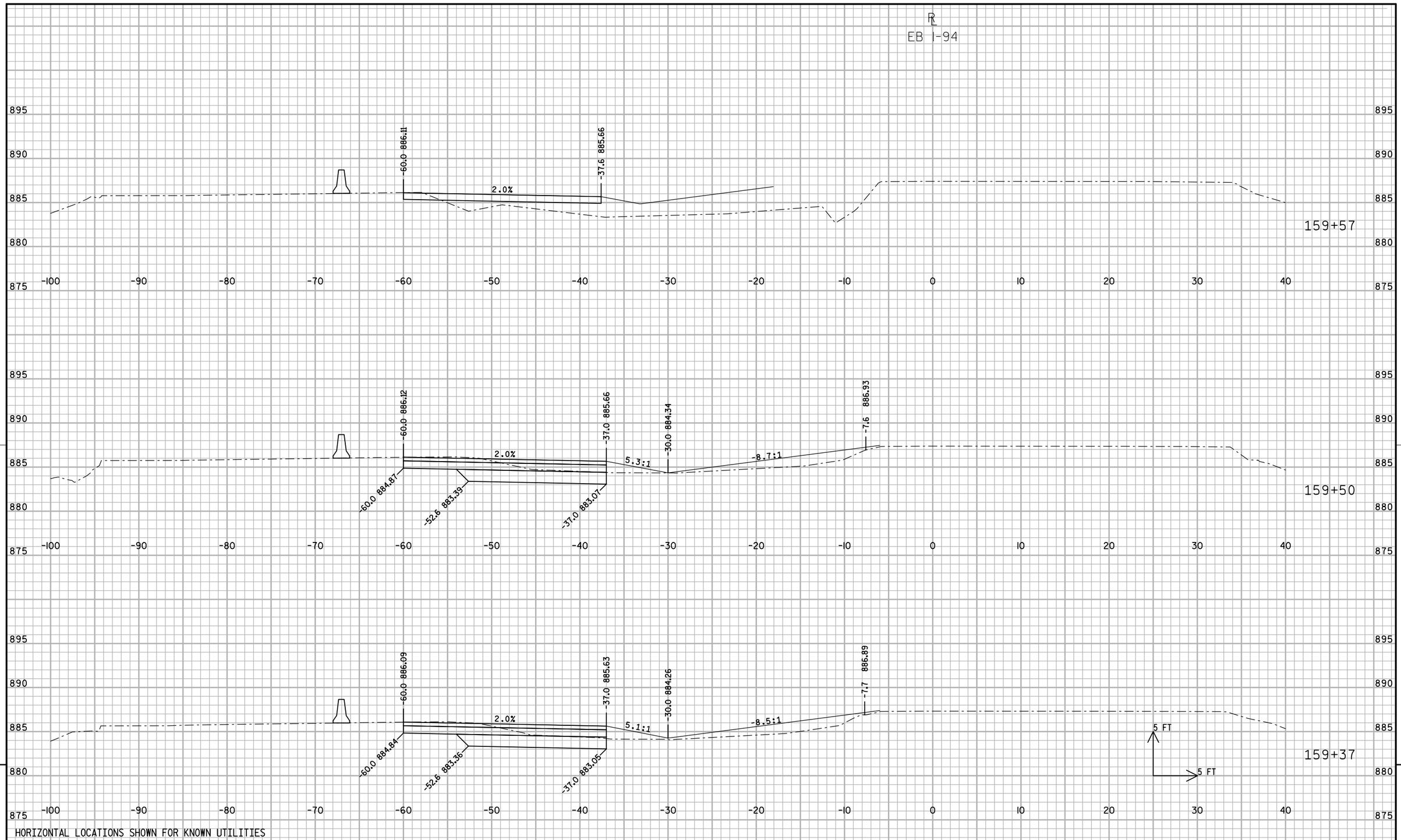

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 263	E

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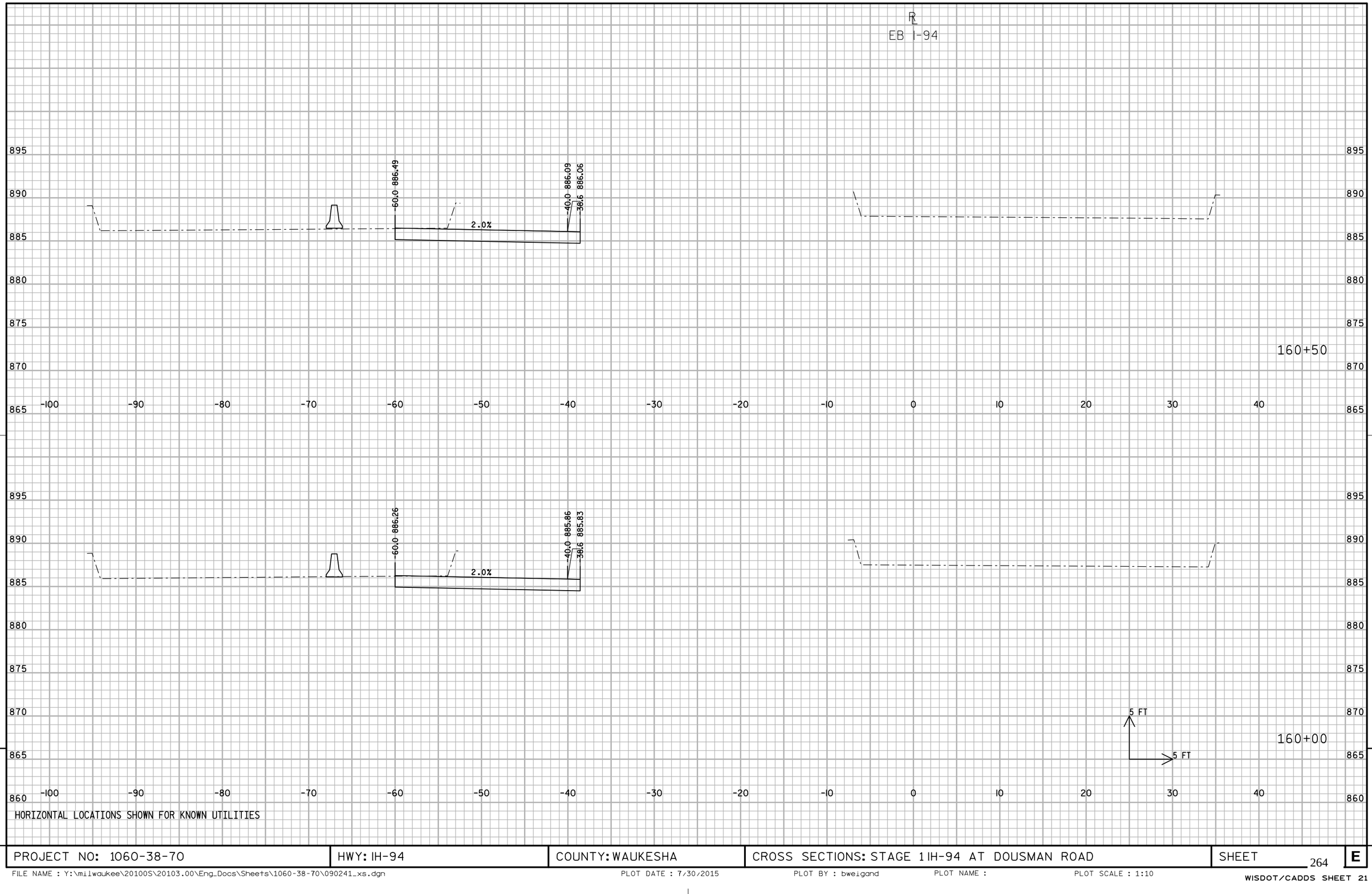

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 264	E

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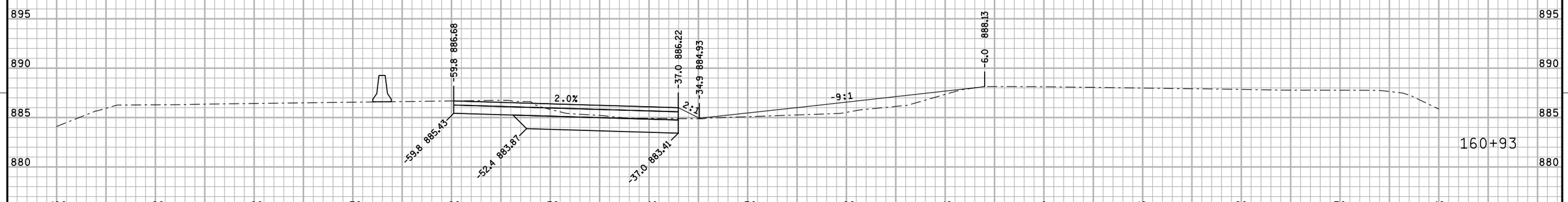

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 265	E

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WISDOT/CADDS SHEET 21

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 266	E

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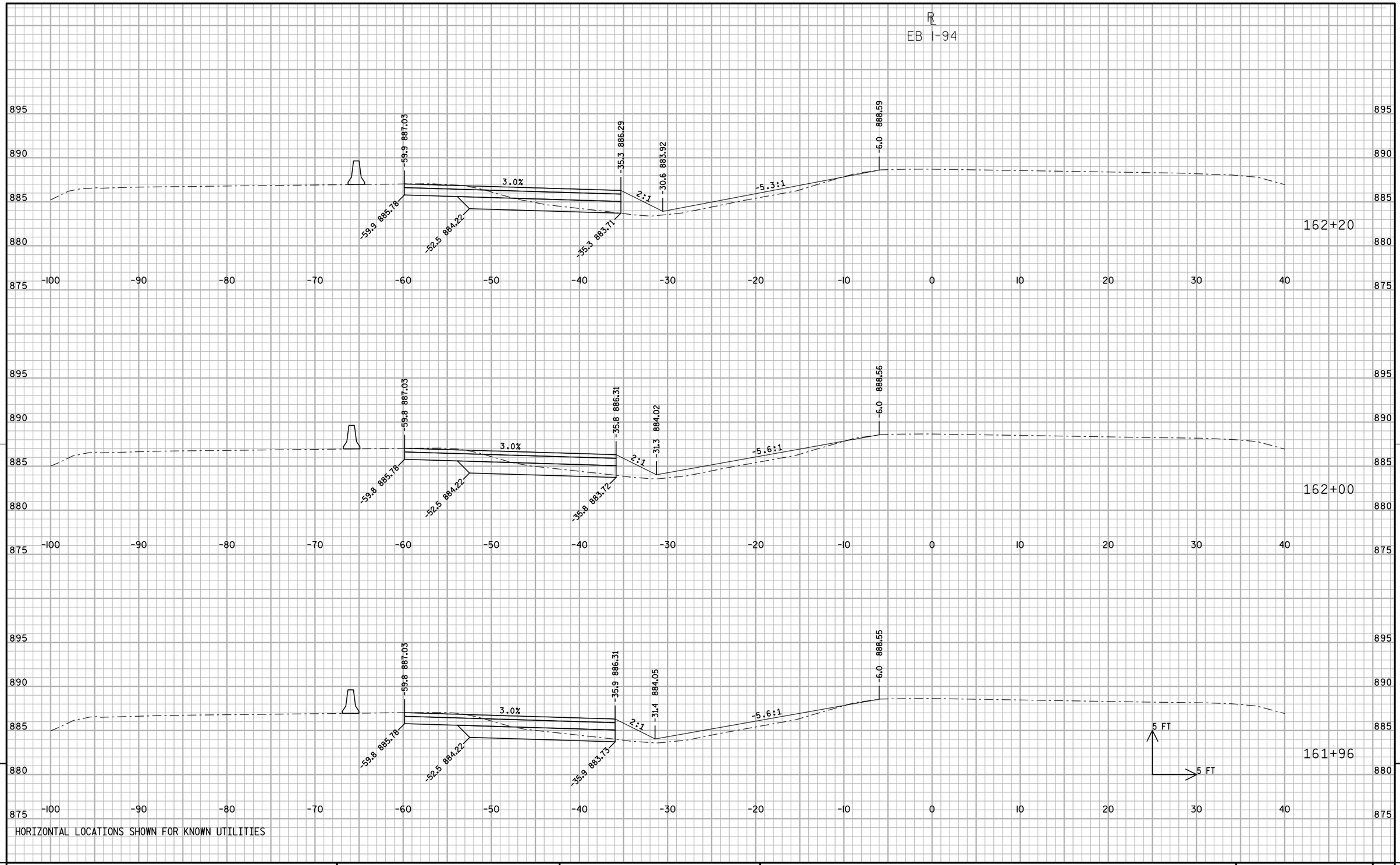

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 267	E

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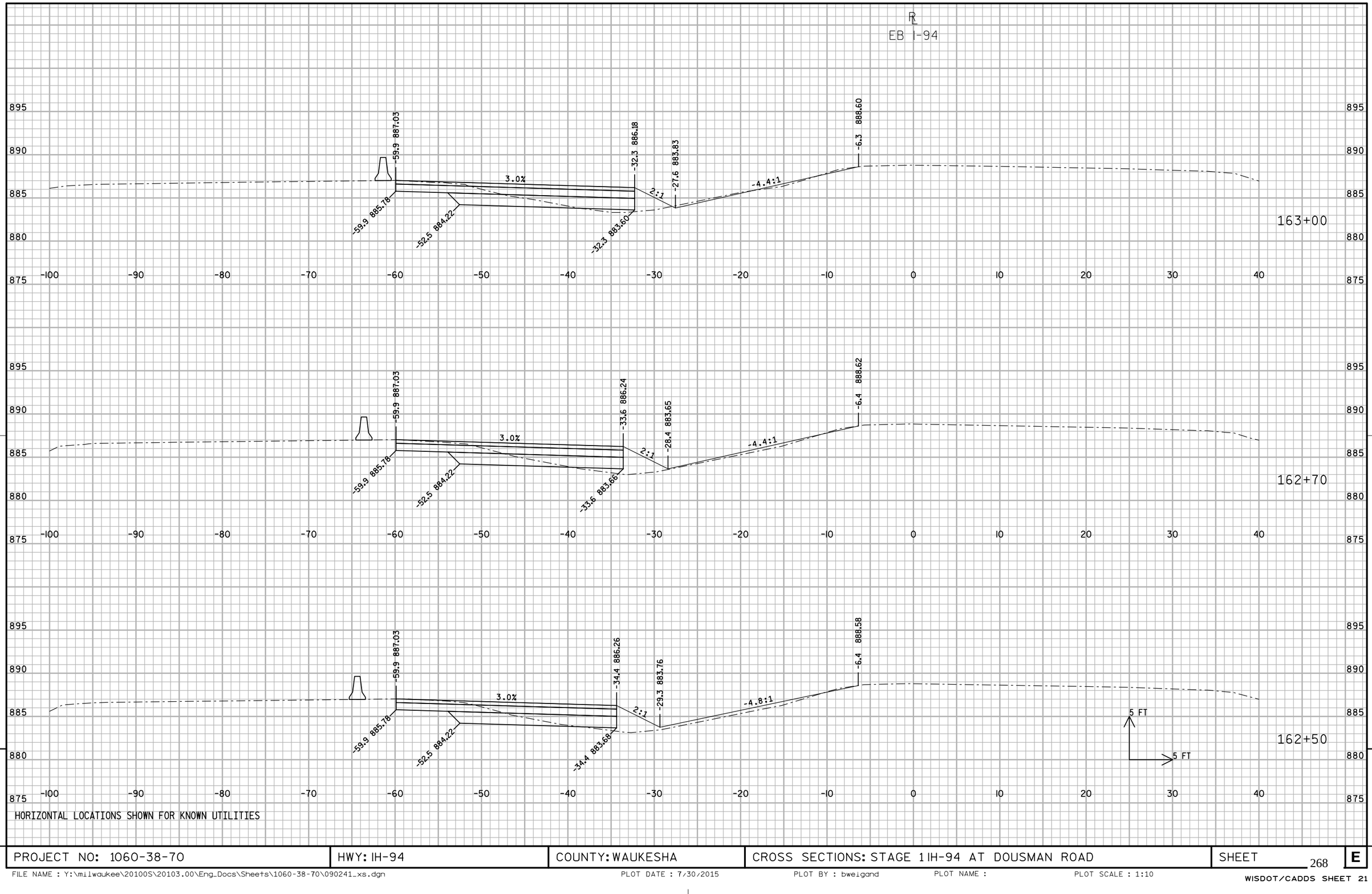

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 268	E

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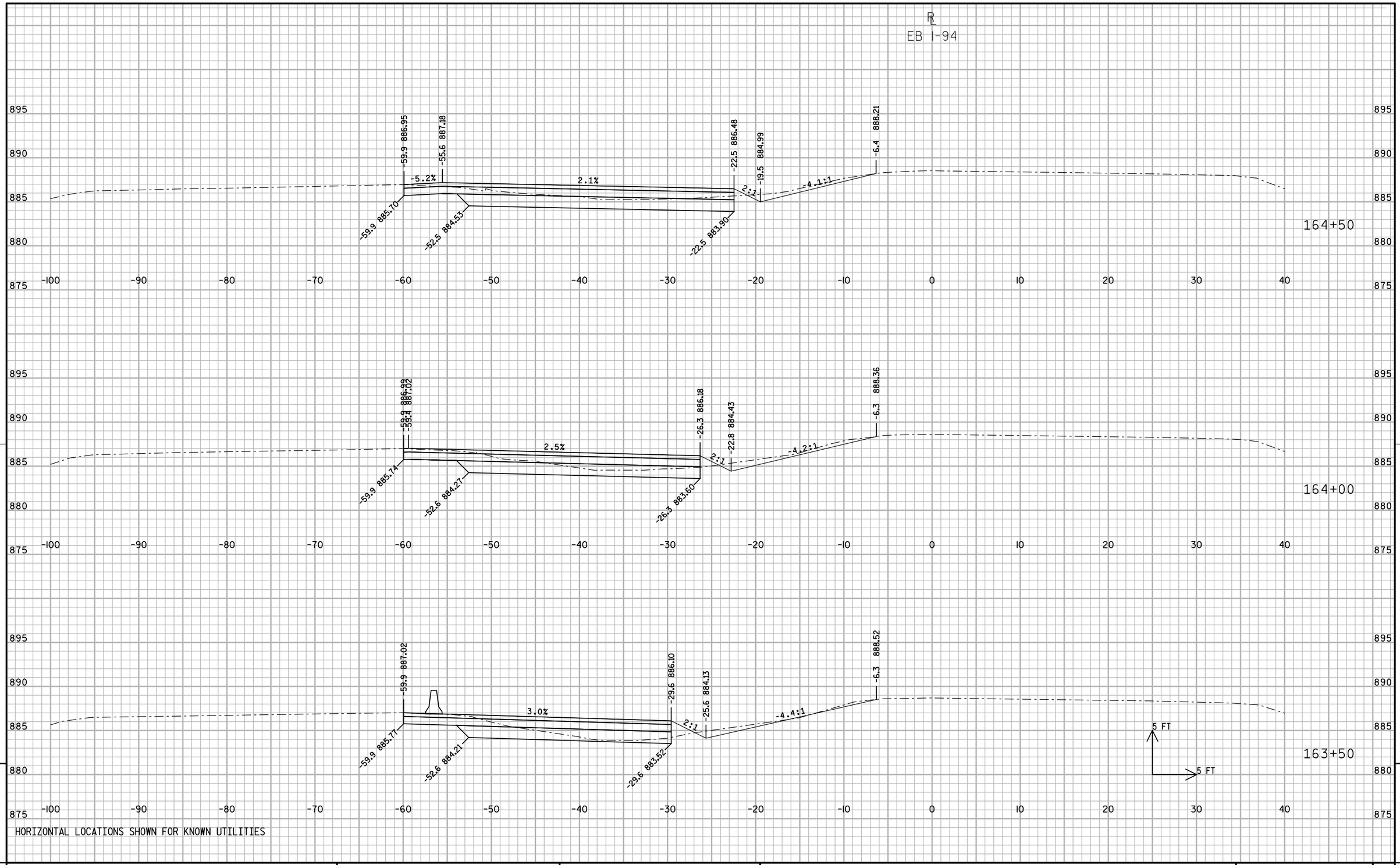

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 269	E

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WISDOT/CADDS SHEET 21

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 270	E

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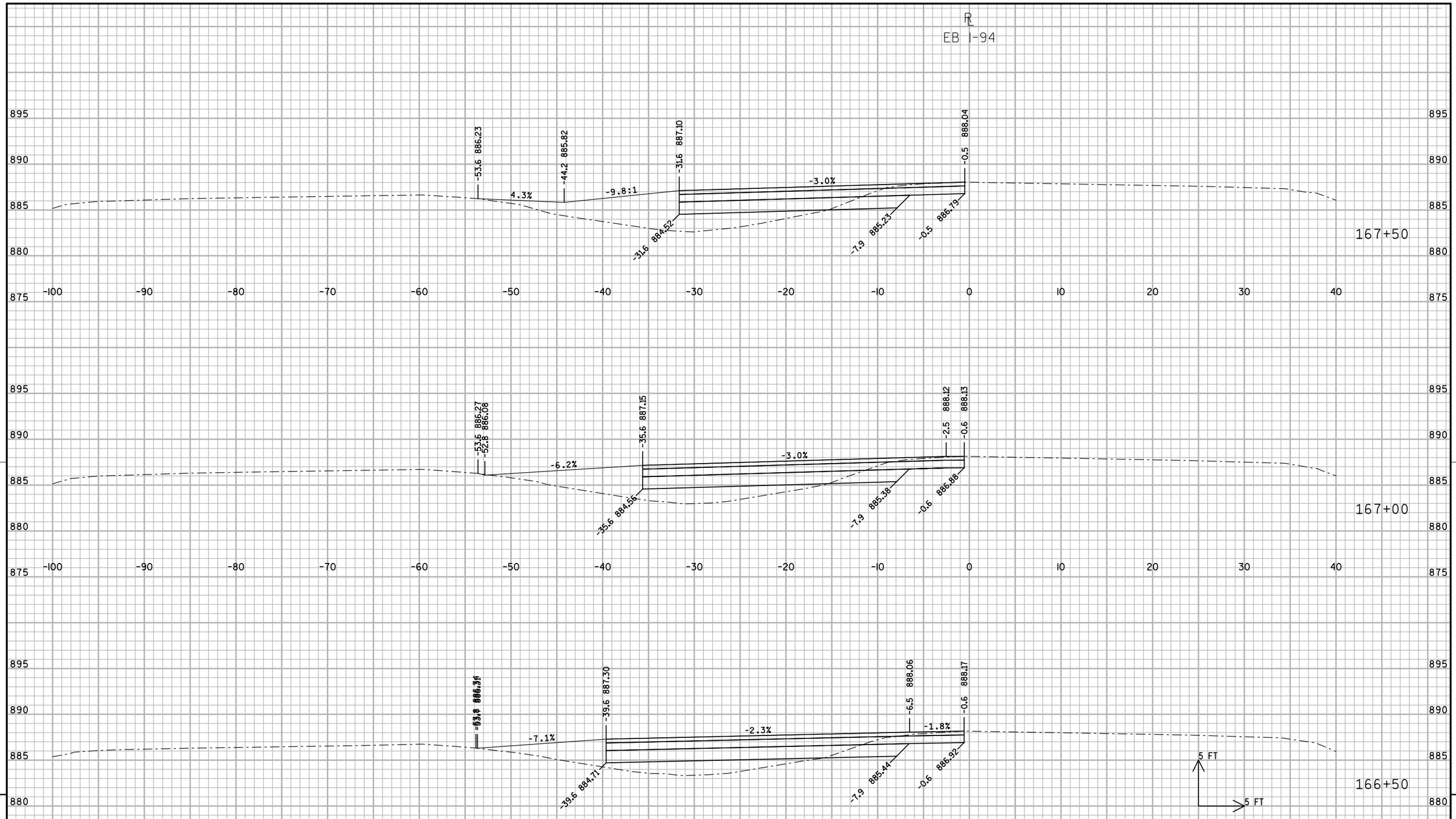

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 271	E

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WISDOT/CADDS SHEET 21

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 272	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090241_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : bweigand PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 273	E

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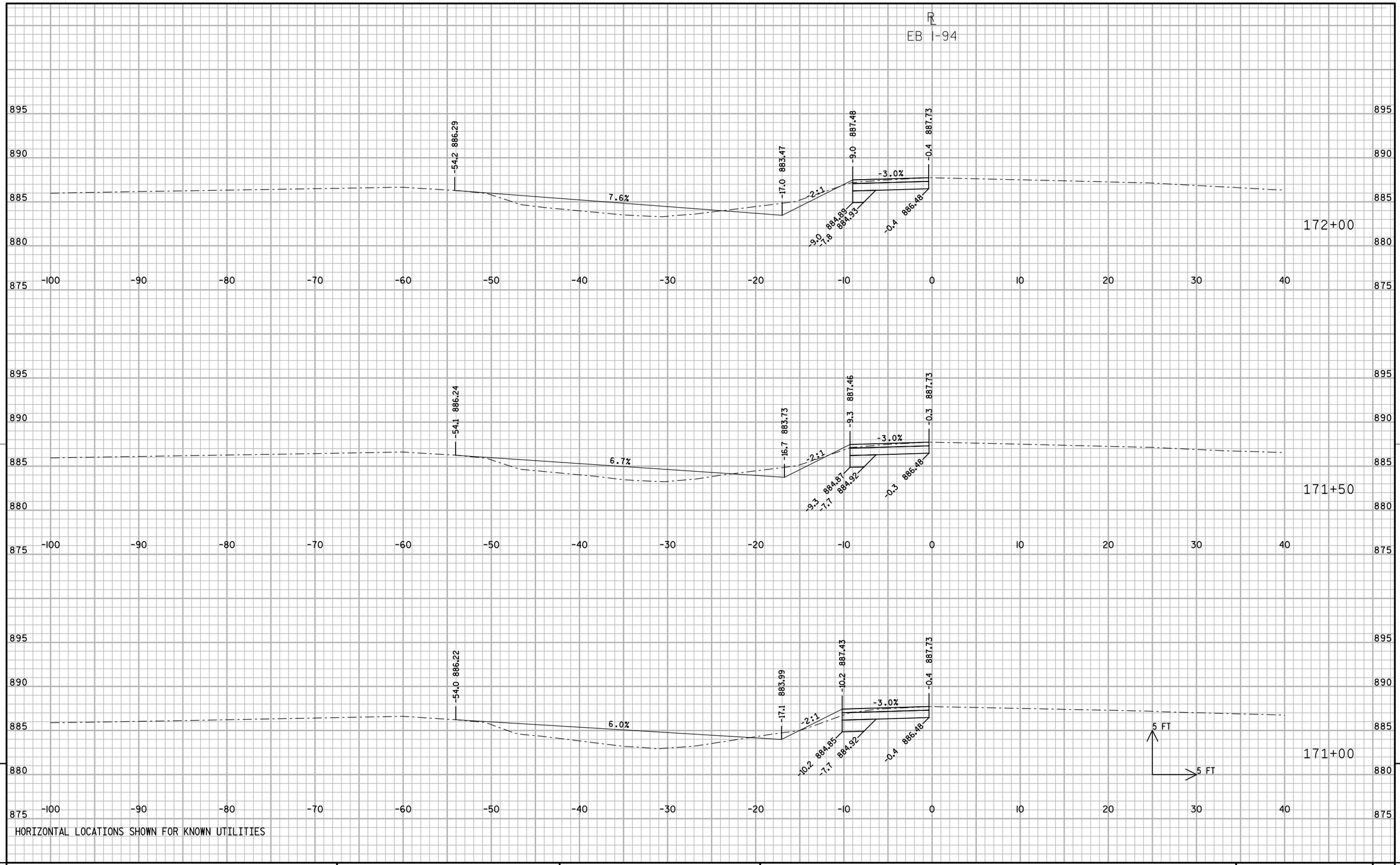
WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 274	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090241_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : bweigand PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

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895
890
885
880
875

-100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40

173+36

173+00

172+50

-54.3 886.37
11.7:1
-17.6 883.22
2:1
-9.0 887.50
-3.0%
-0.5 887.75
-9.0 884.92
-7.9 884.95
-0.5 886.50
5 FT
5 FT

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT DOUSMAN ROAD	SHEET 275	E

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WISDOT/CADDS SHEET 21

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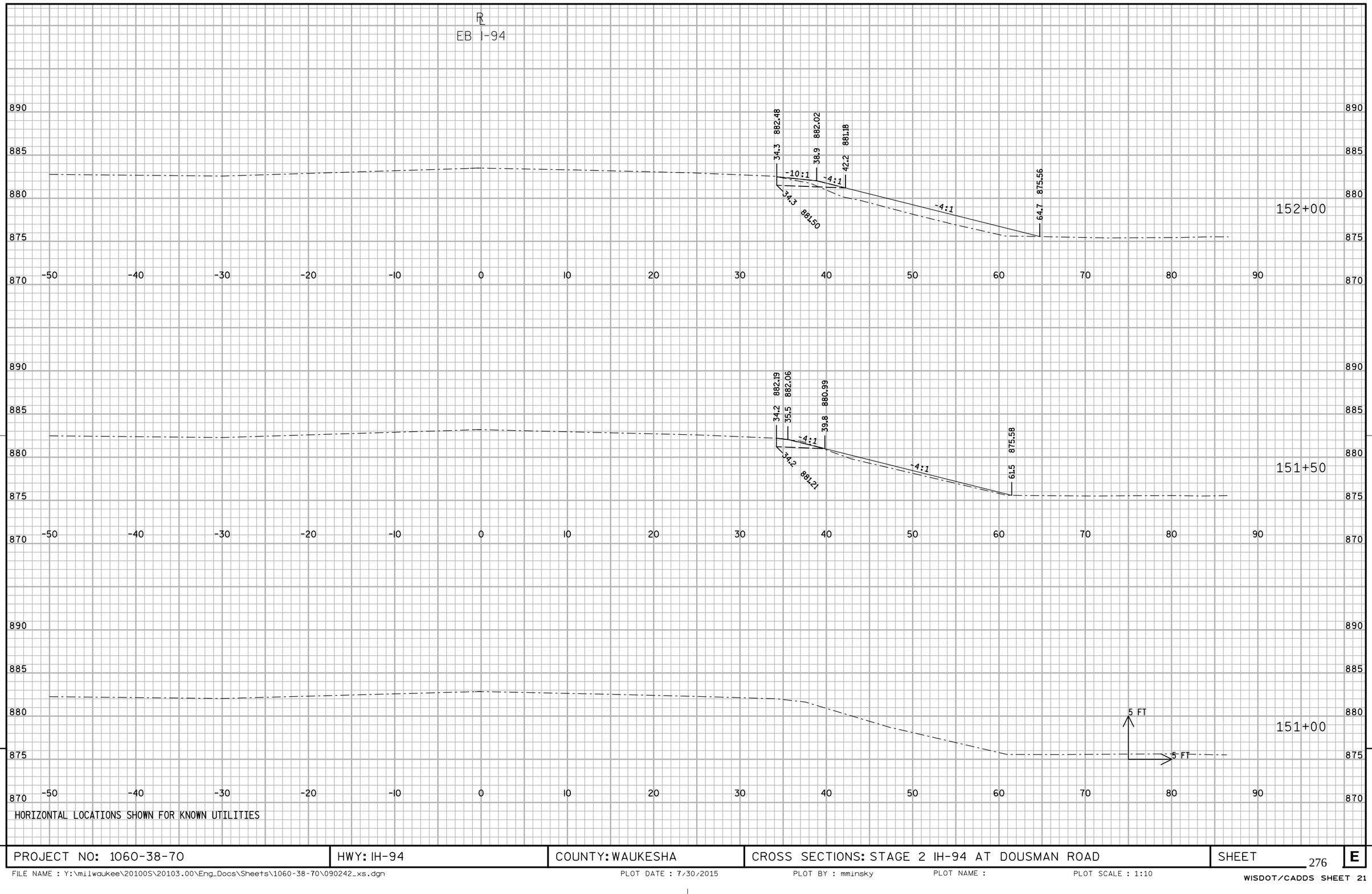

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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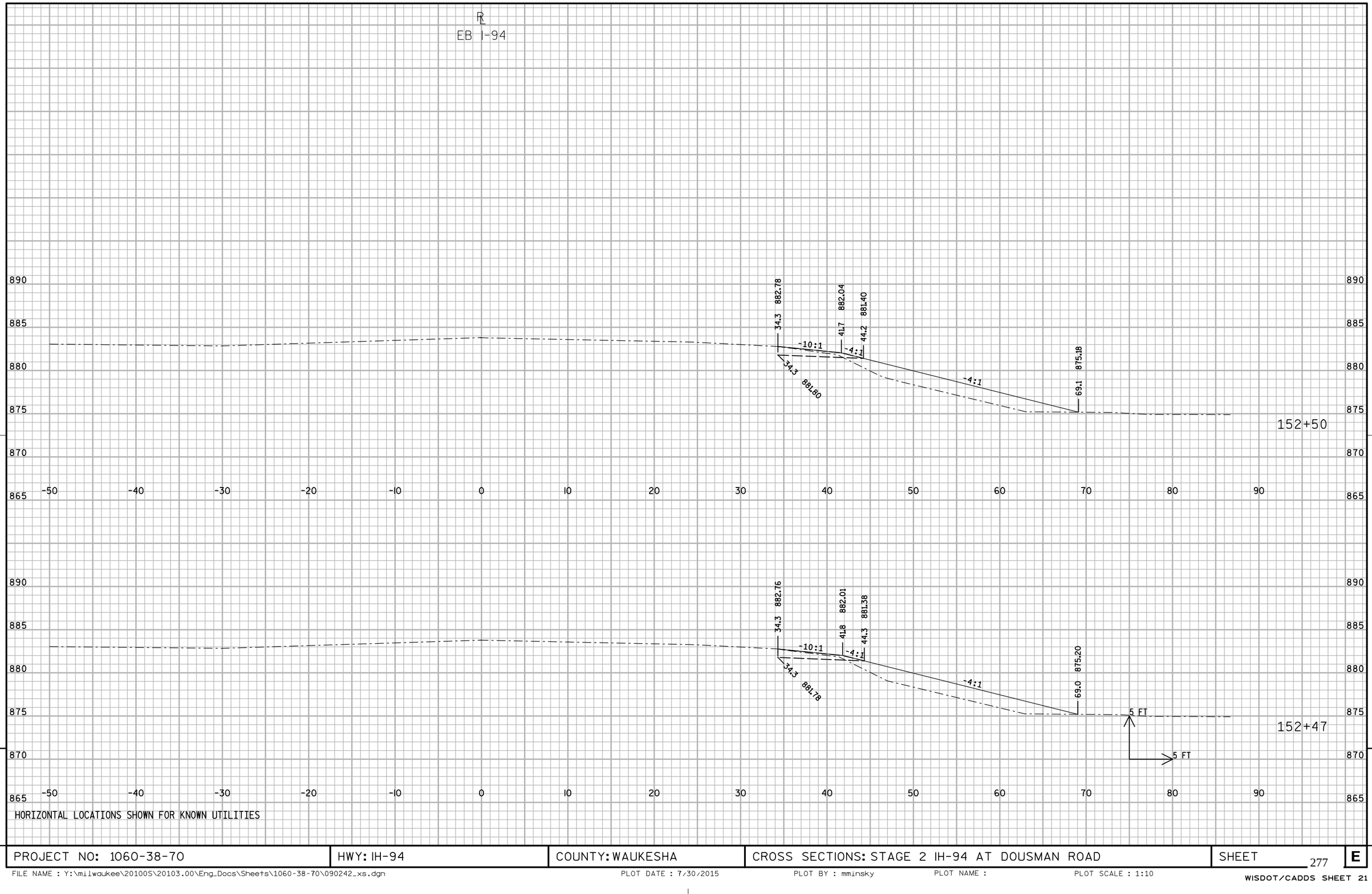
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT DOUSMAN ROAD	SHEET 276	E



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT DOUSMAN ROAD	SHEET 277	E

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WISDOT/CADDS SHEET 21

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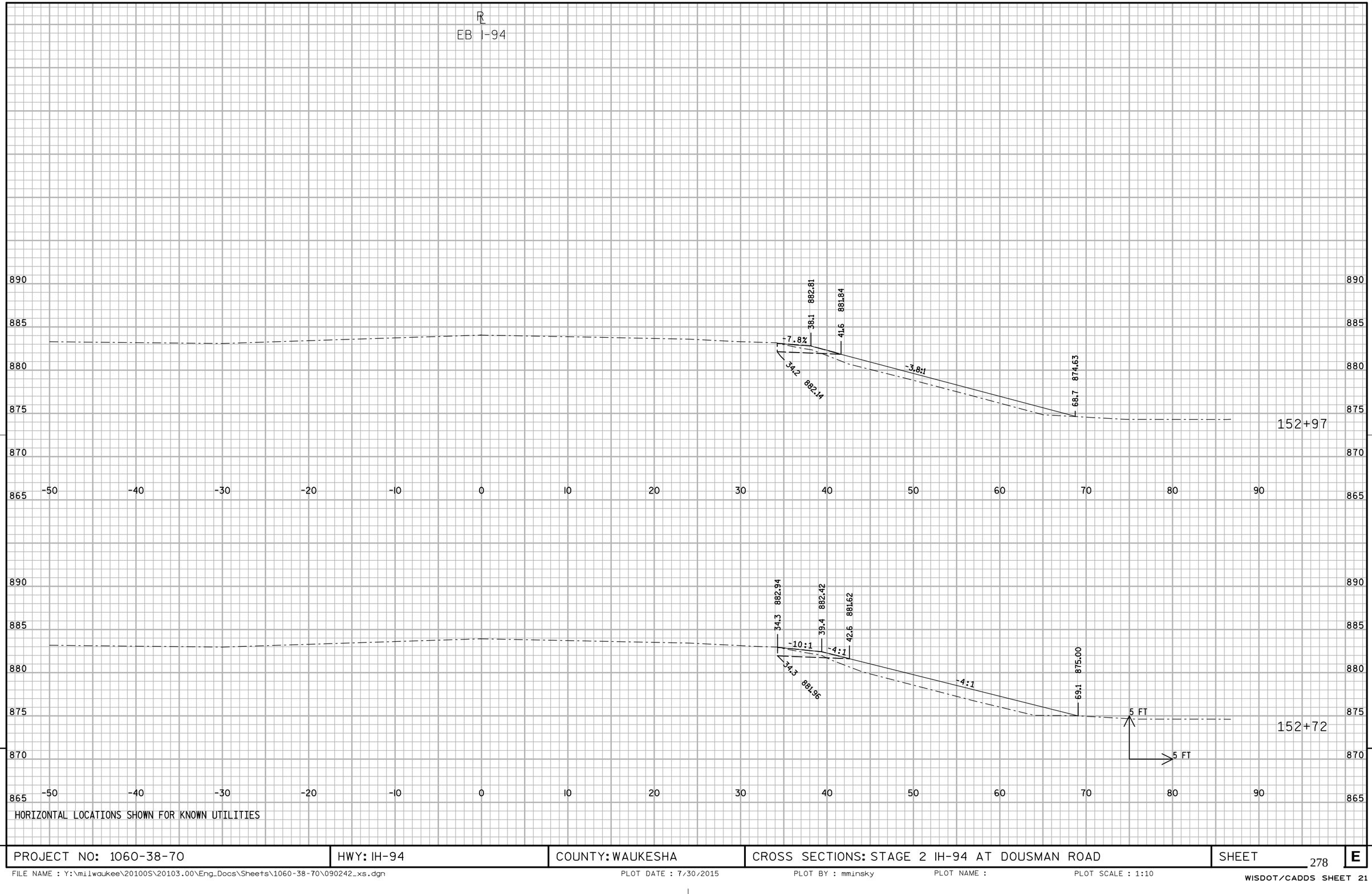
EB I-94



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT DOUSMAN ROAD	SHEET 278	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090242_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

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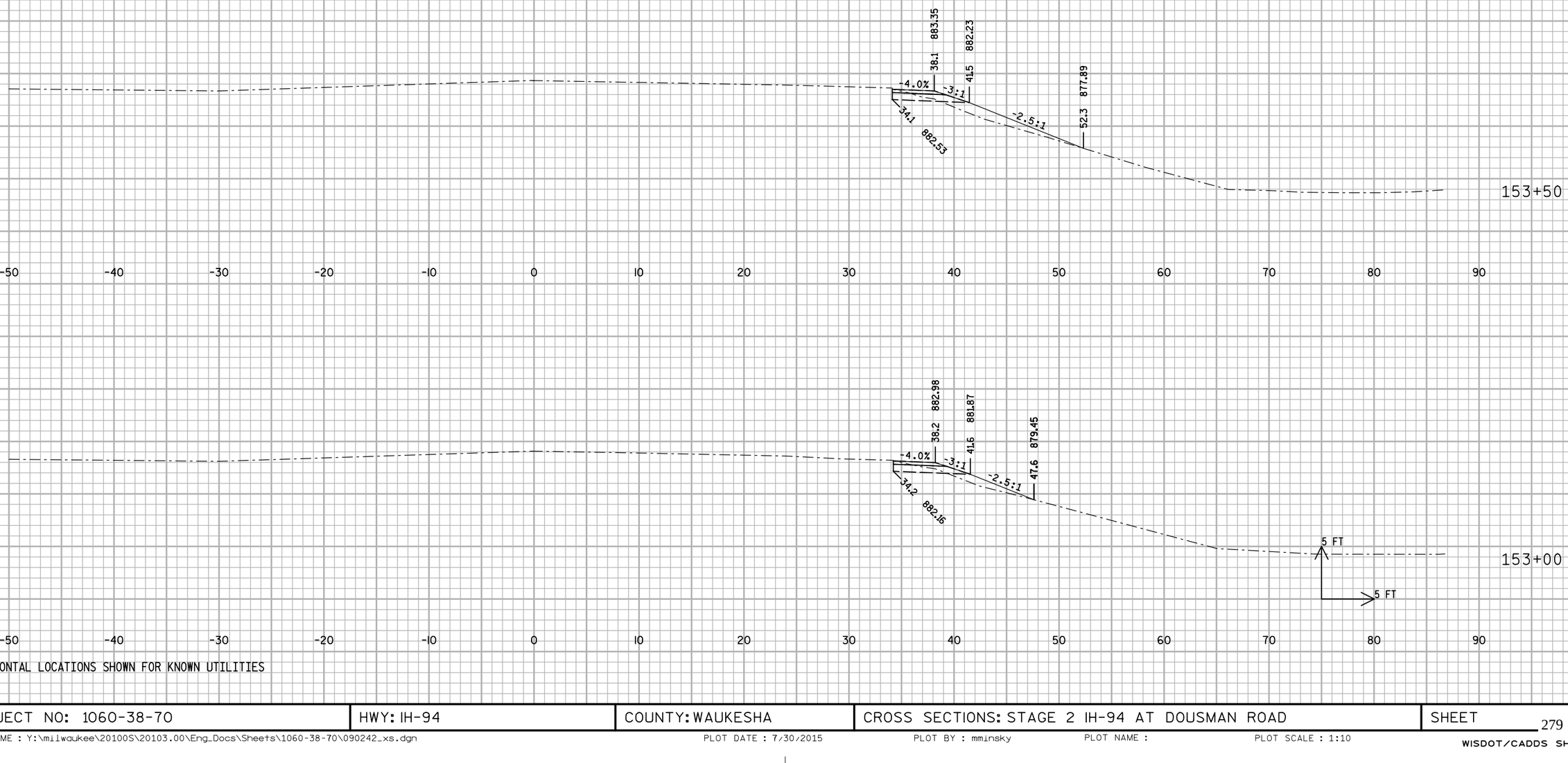
EB I-94



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT DOUSMAN ROAD	SHEET 279	E

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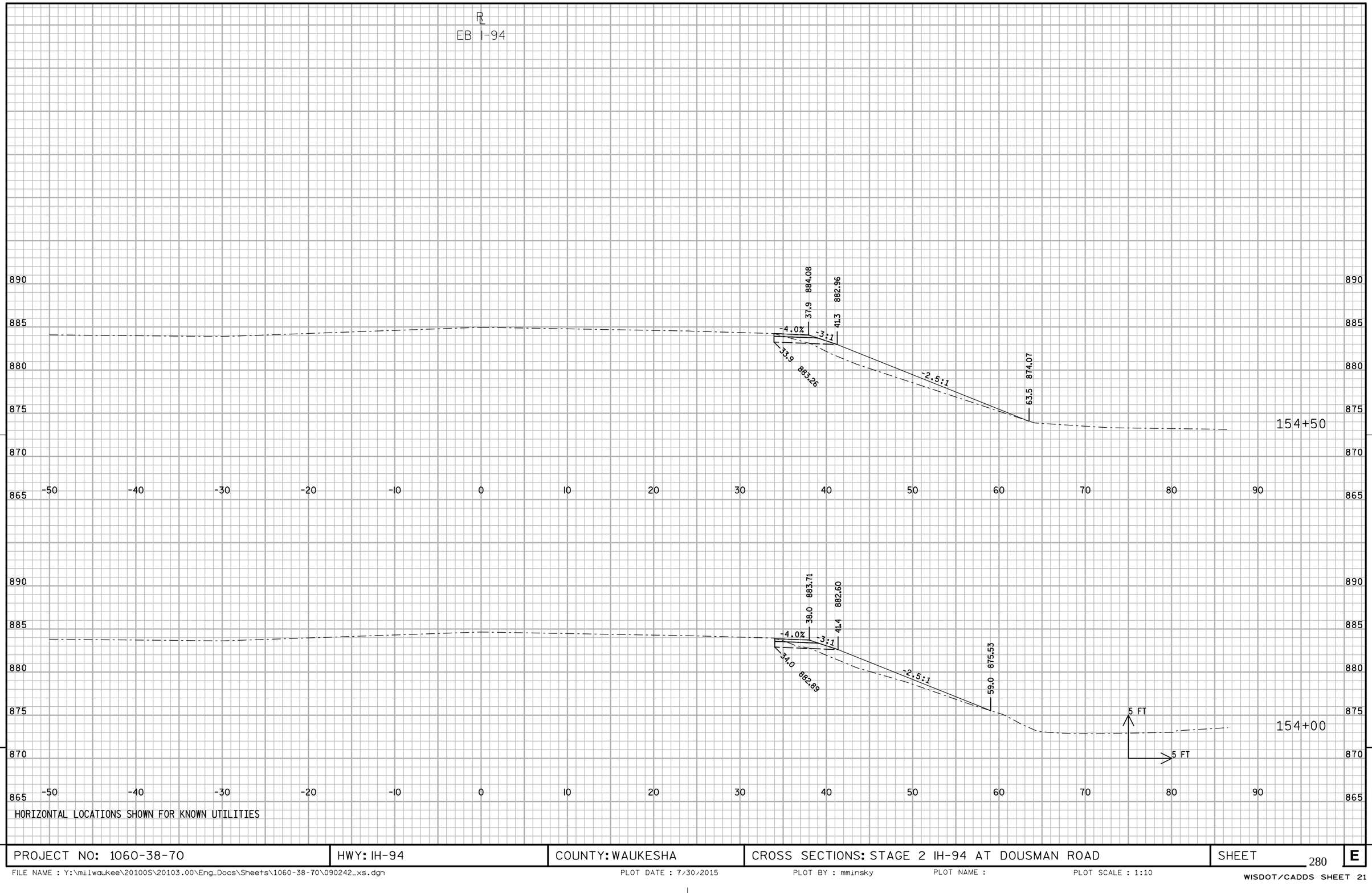
WISDOT/CADDS SHEET 21



9

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

9

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT DOUSMAN ROAD	SHEET 280	E

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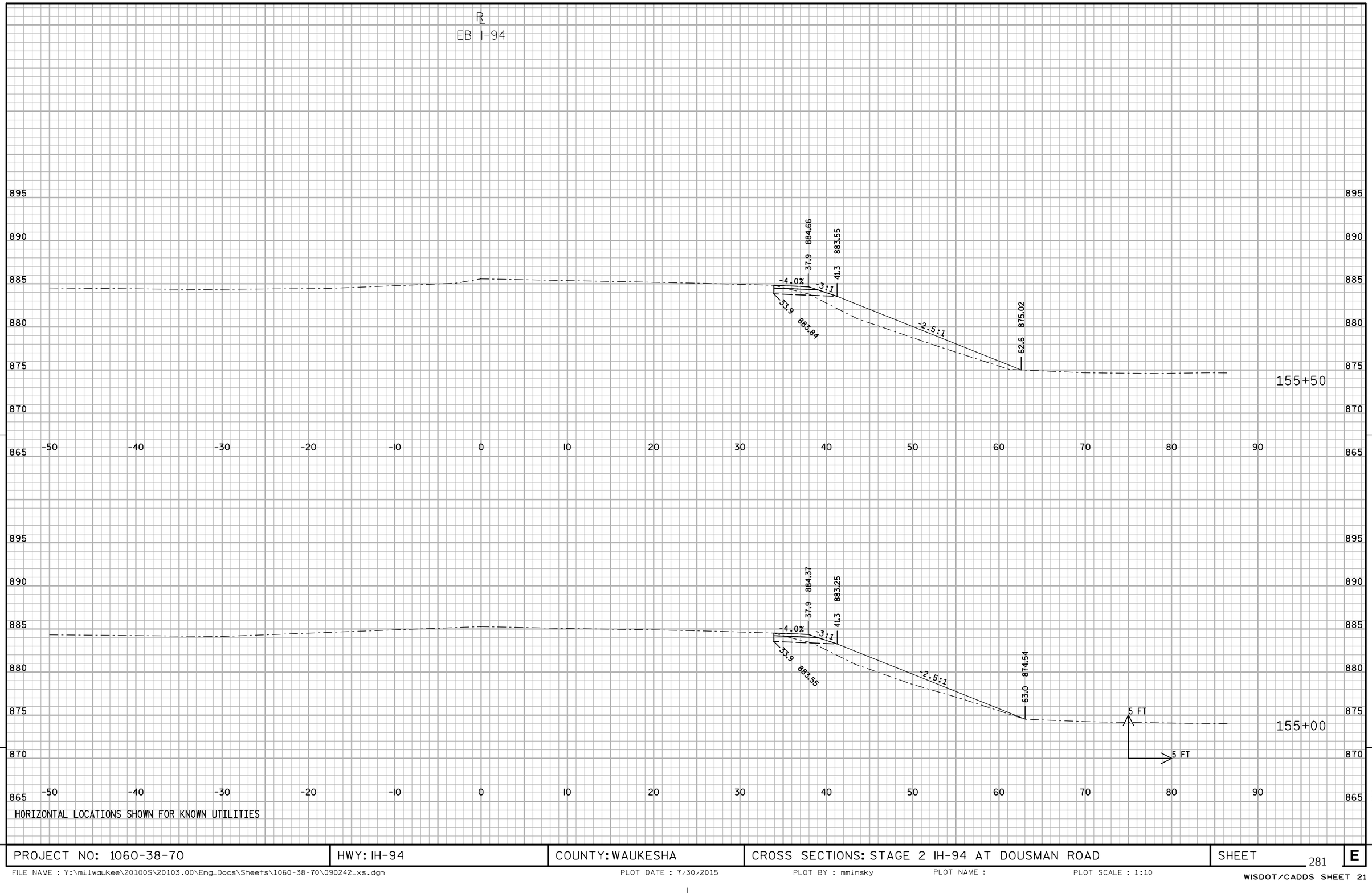

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

9

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT DOUSMAN ROAD	SHEET 281	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090242_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

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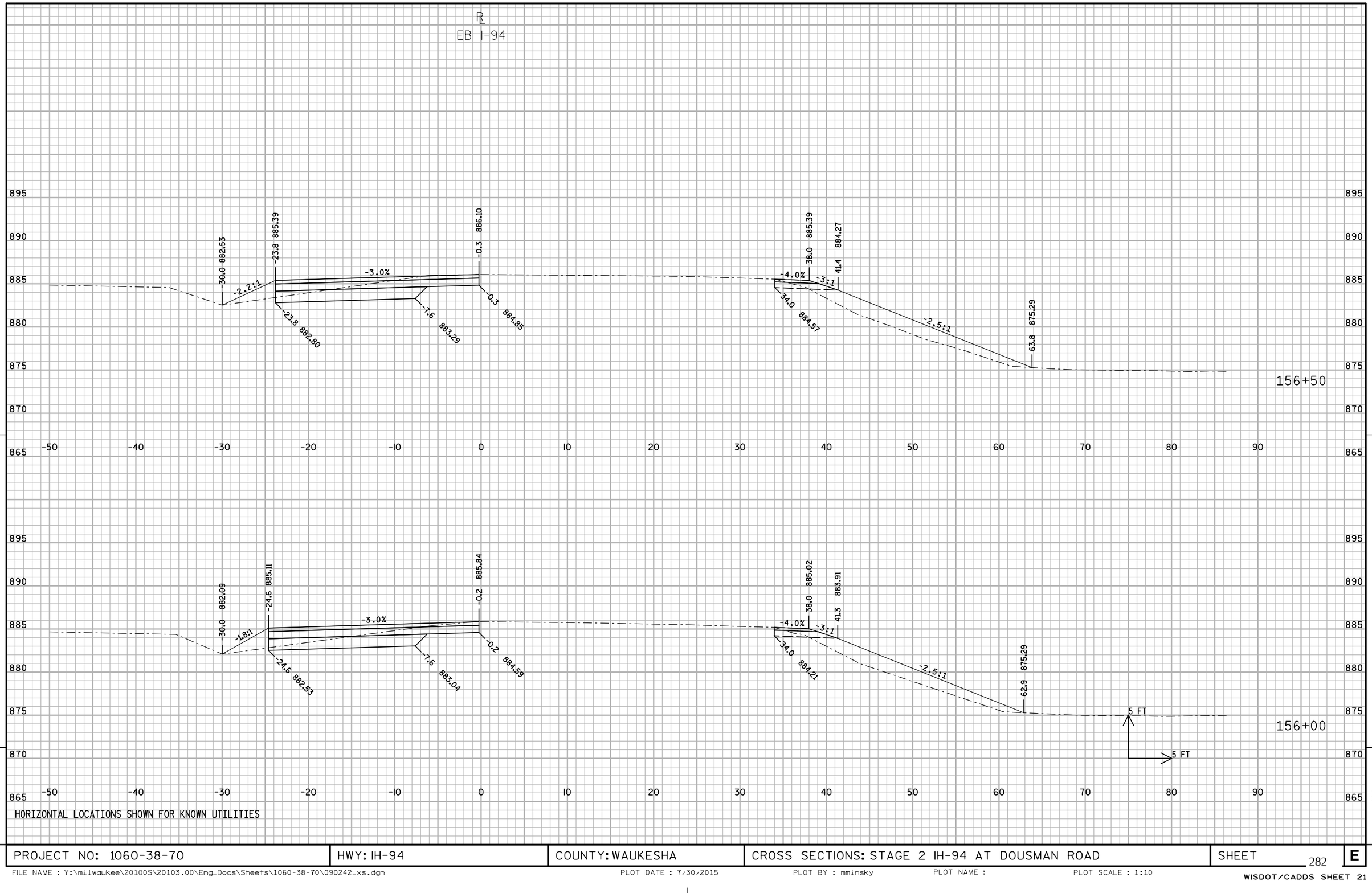
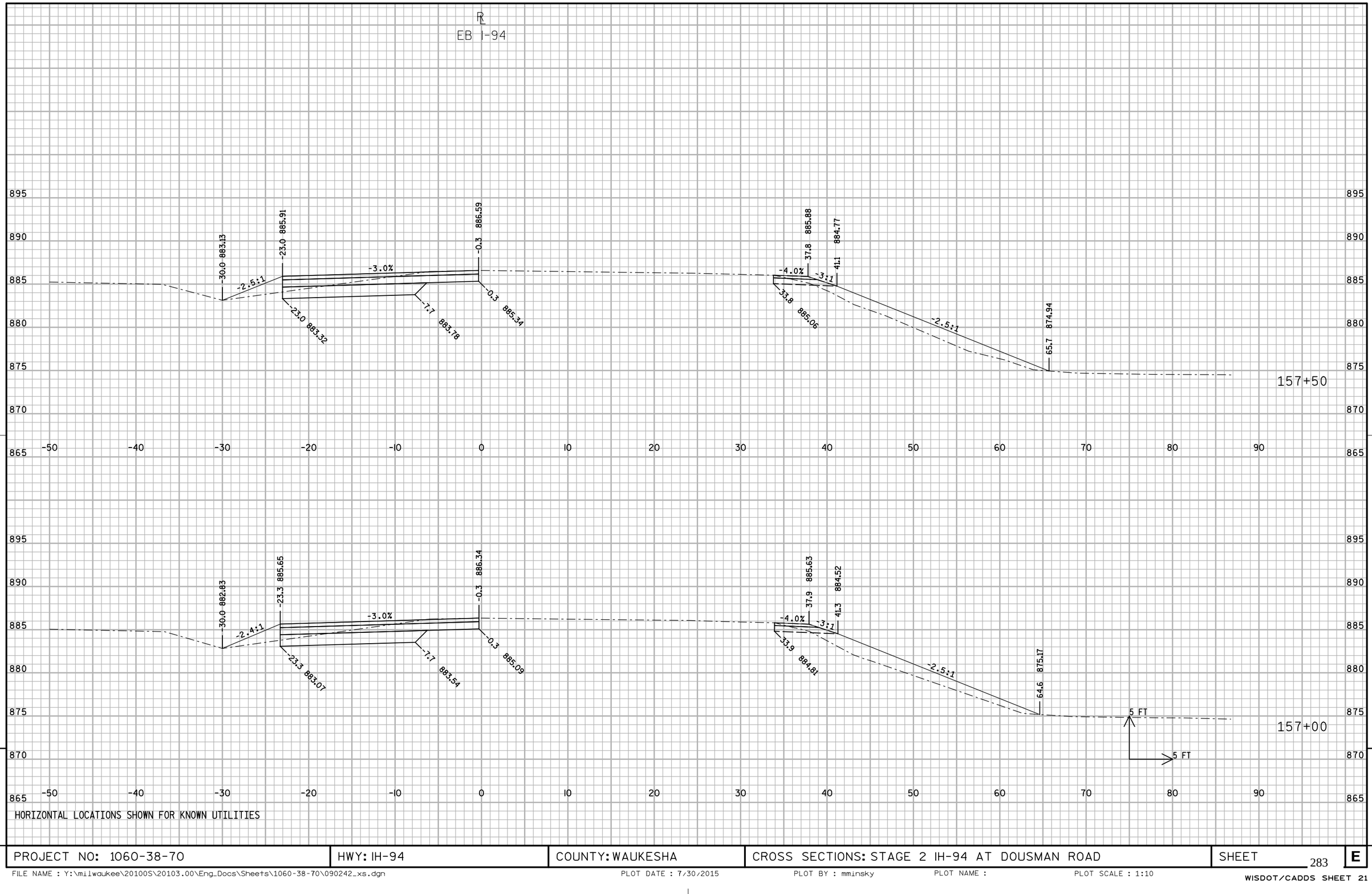


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT DOUSMAN ROAD	SHEET 282	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT DOUSMAN ROAD	SHEET 283	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090242_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

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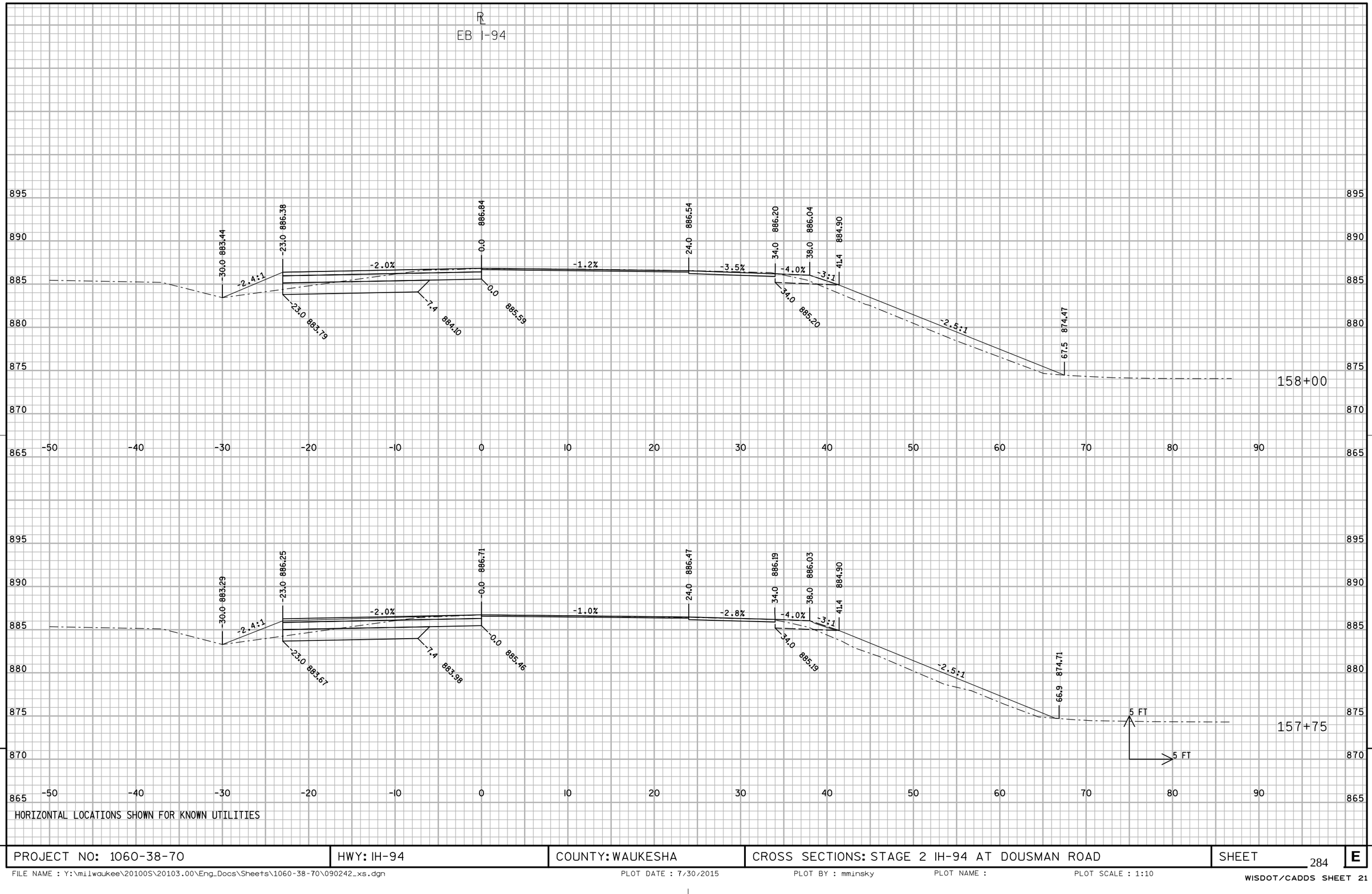
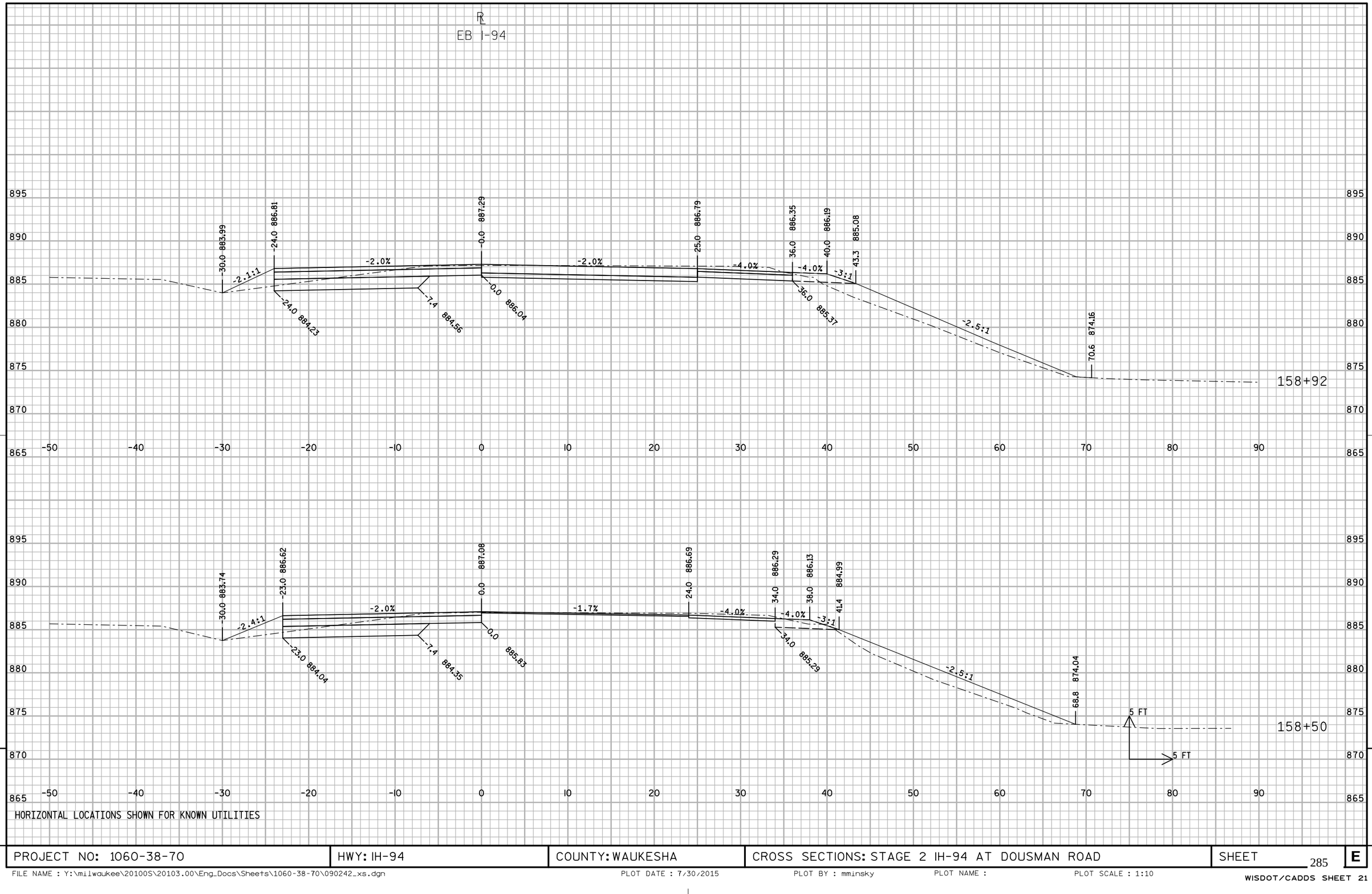


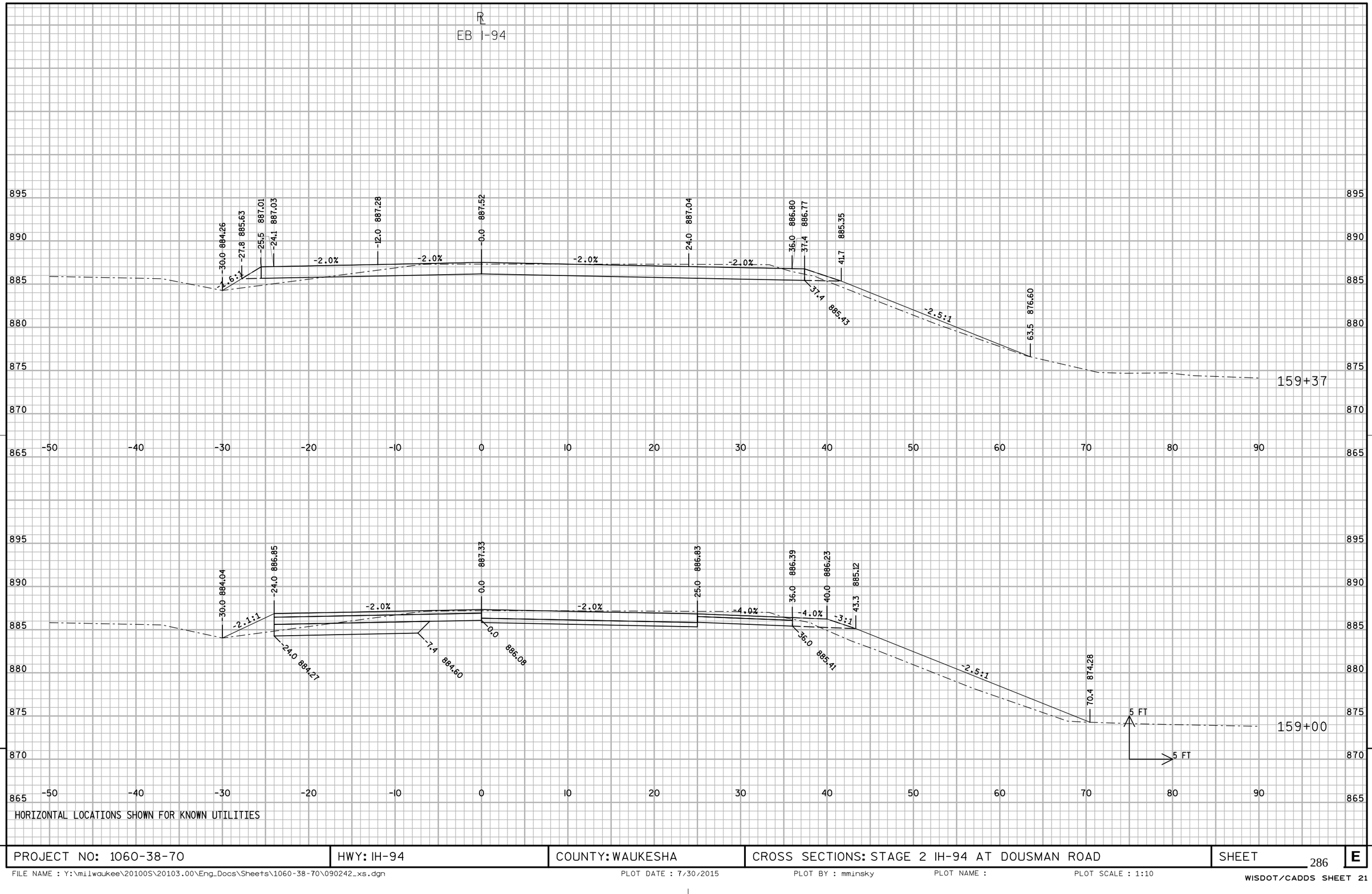
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT DOUSMAN ROAD	SHEET 284	E



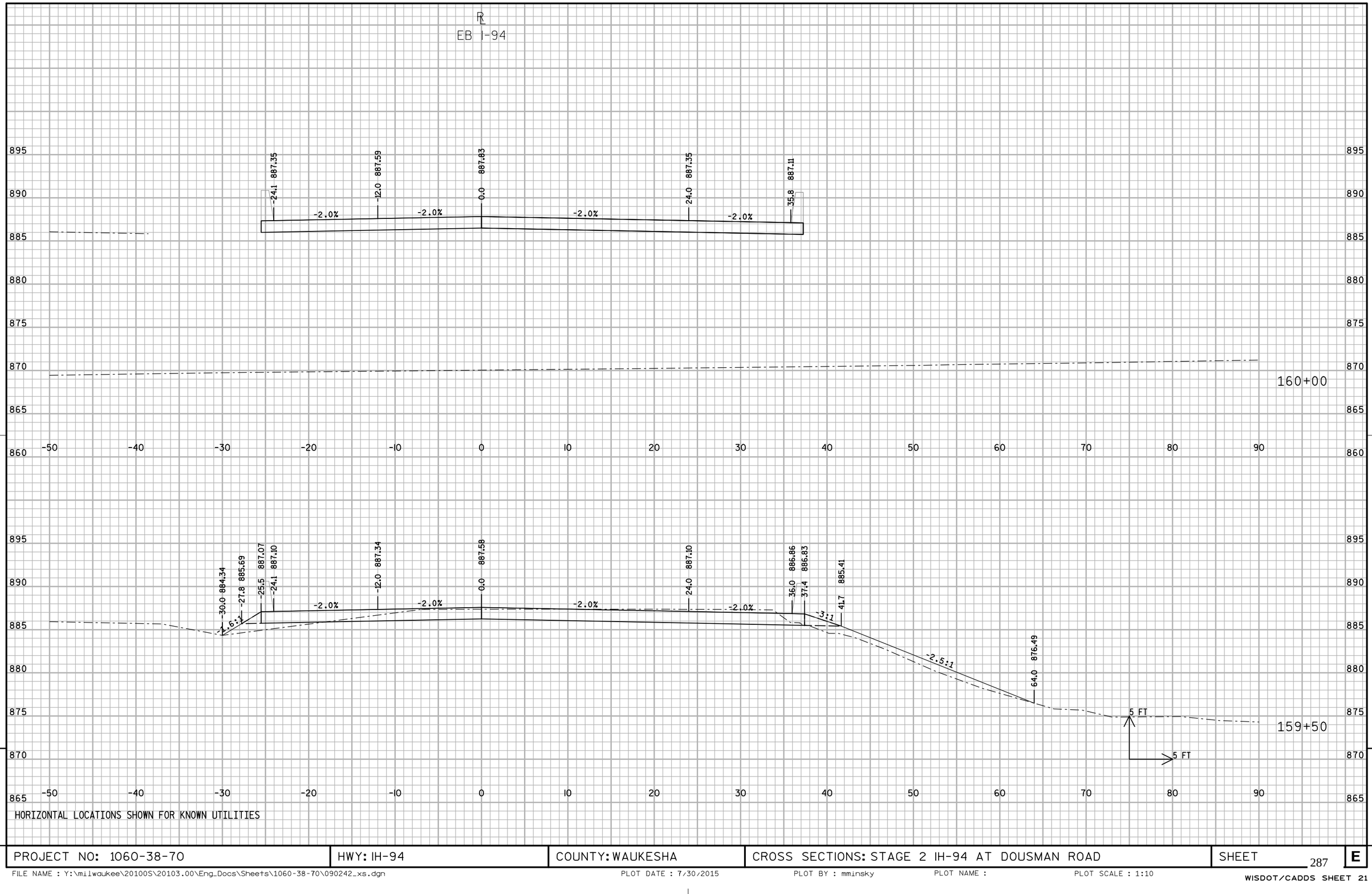
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT DOUSMAN ROAD	SHEET 285	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT DOUSMAN ROAD	SHEET 286	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT DOUSMAN ROAD	SHEET 287	E

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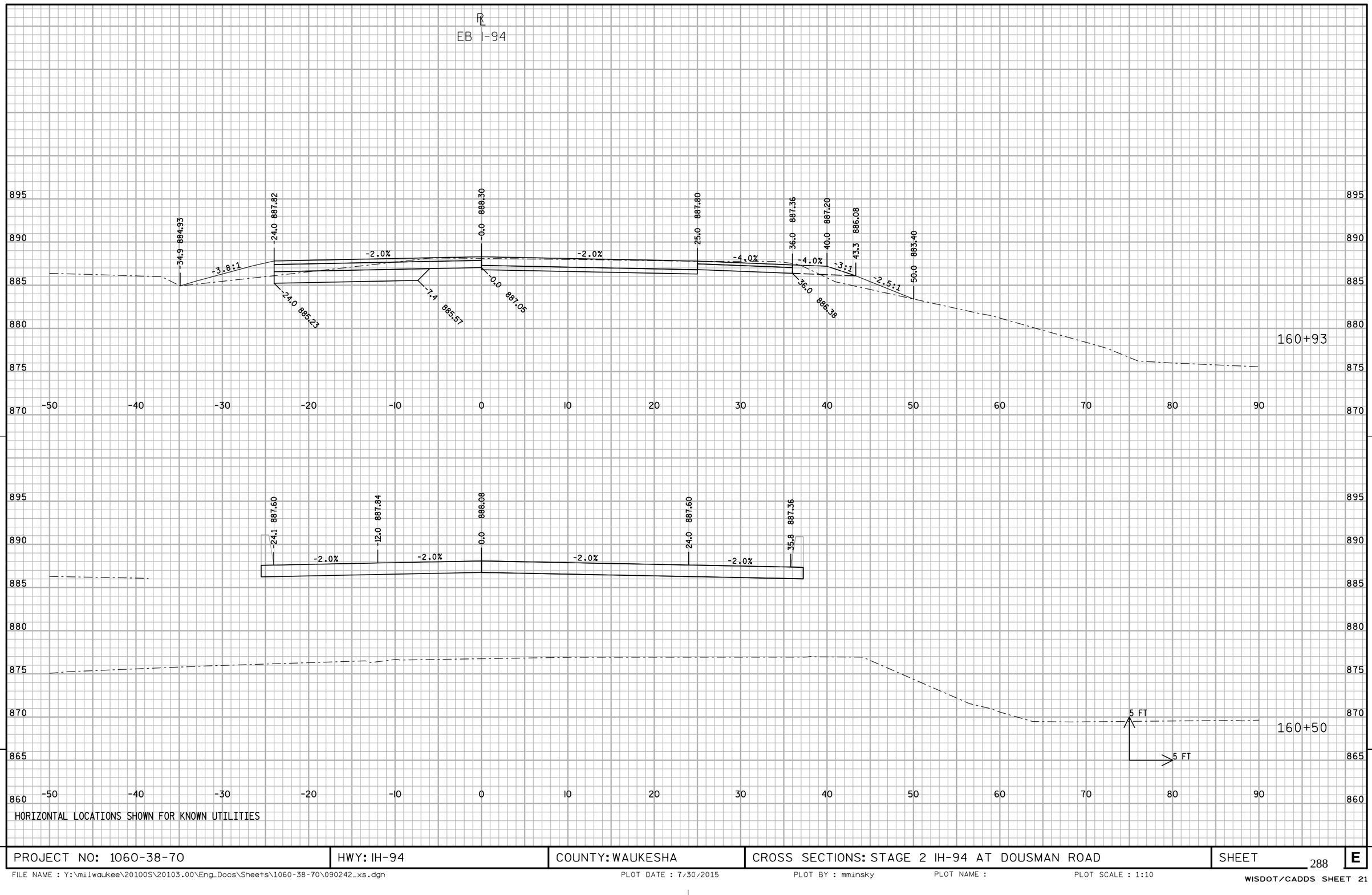
WISDOT/CADDS SHEET 21

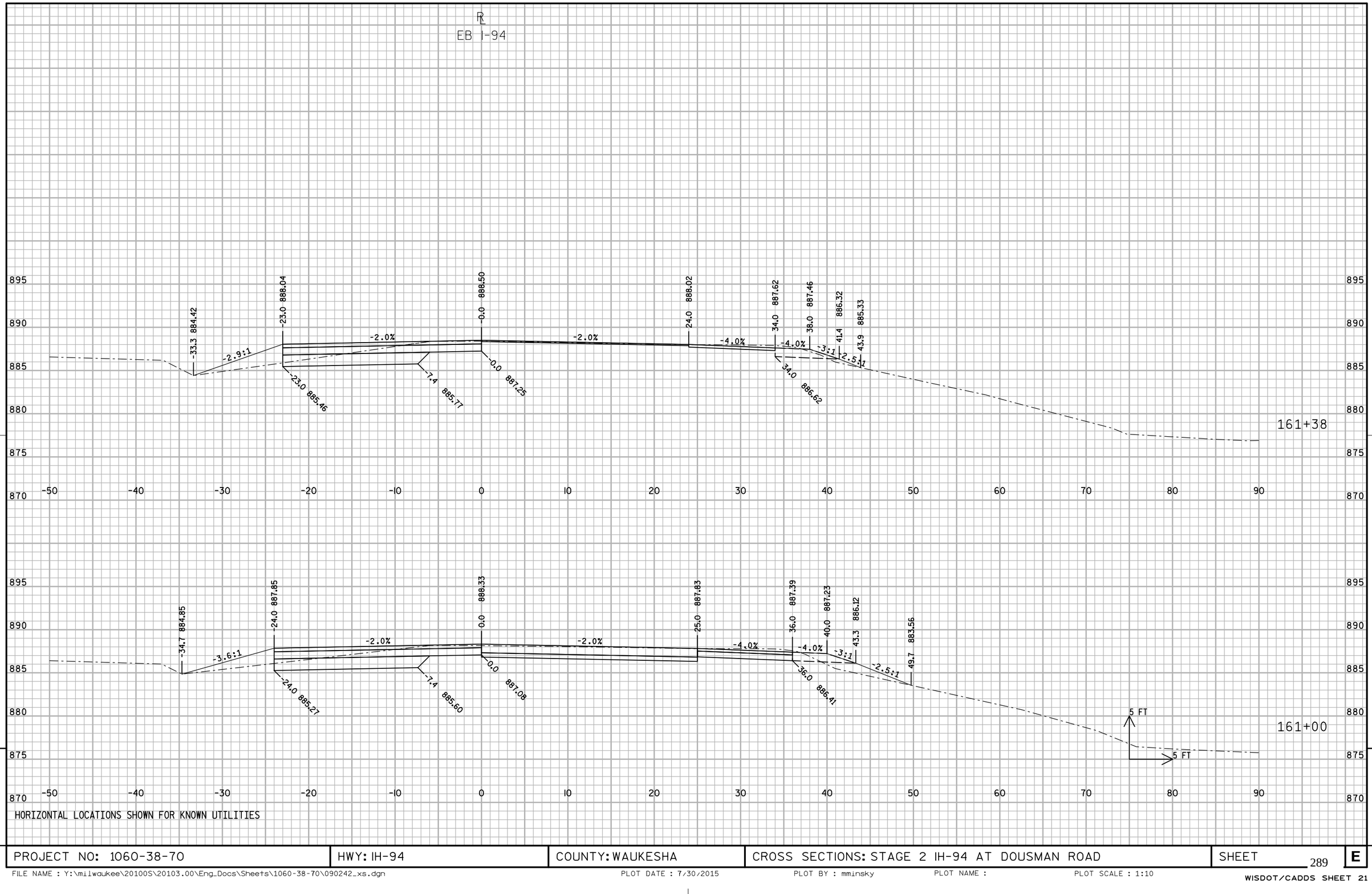


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT DOUSMAN ROAD	SHEET 288	E

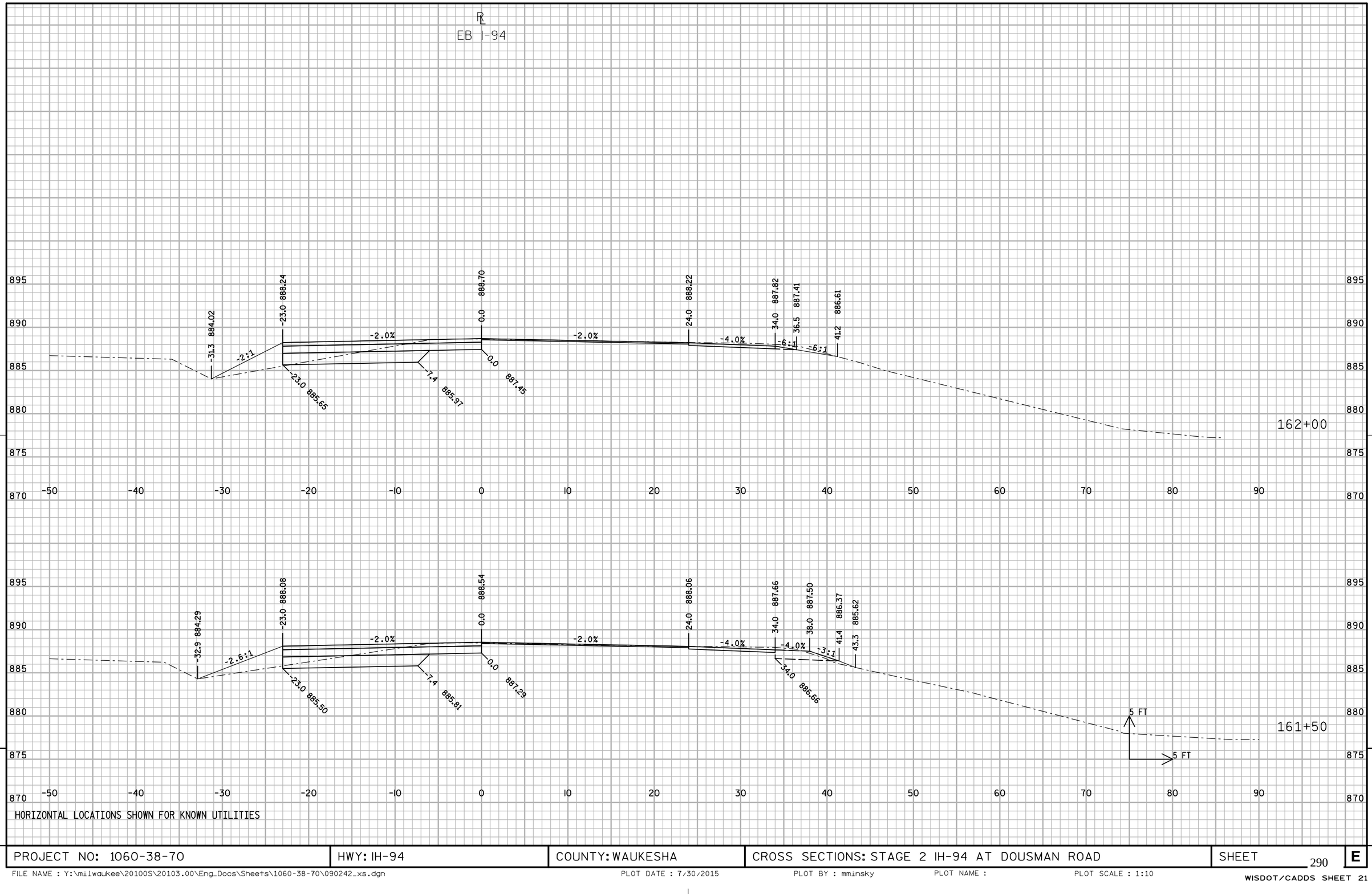
FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090242_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



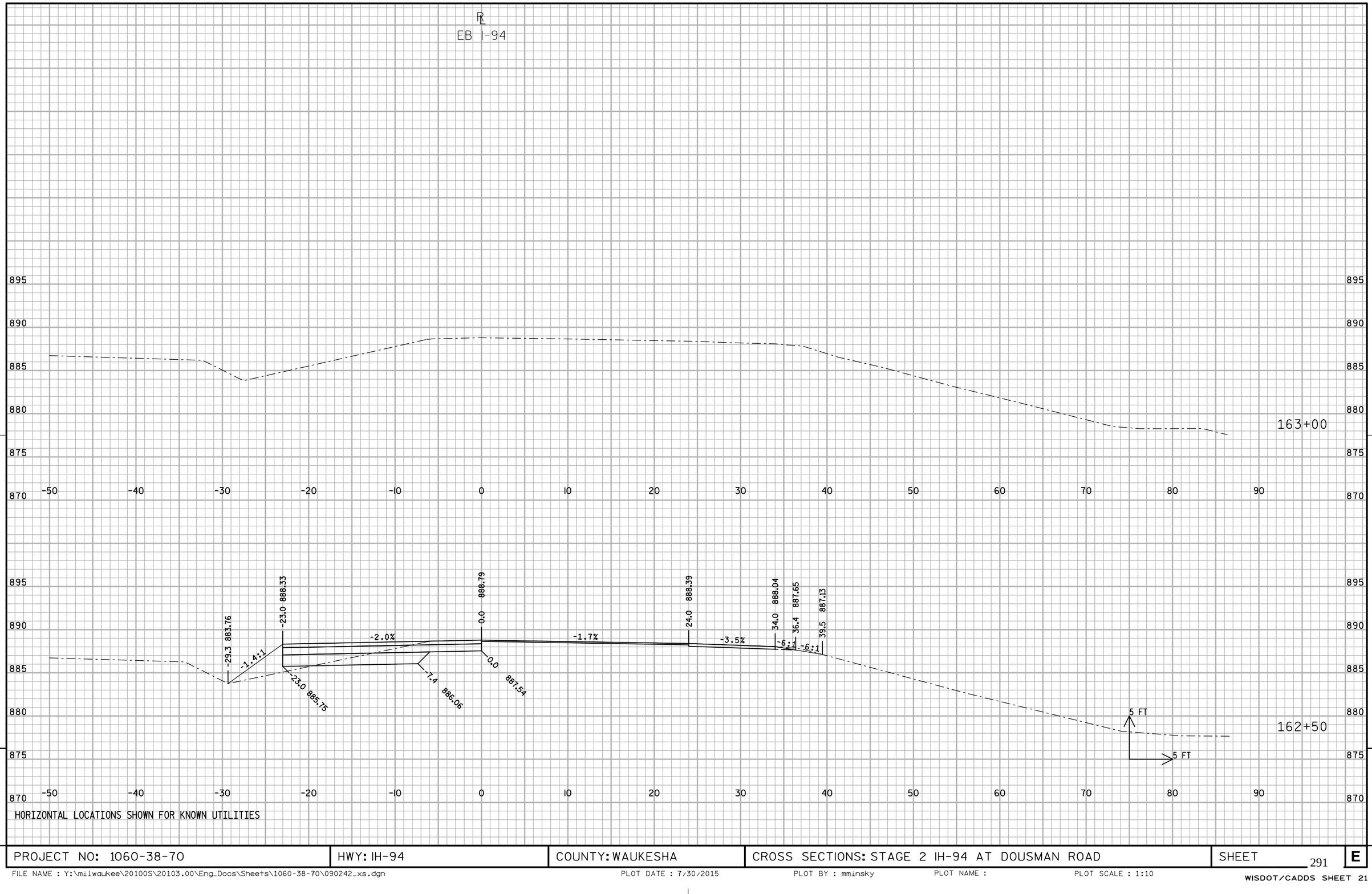
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT DOUSMAN ROAD	SHEET 289	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT DOUSMAN ROAD	SHEET 290	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT DOUSMAN ROAD	SHEET 291	E

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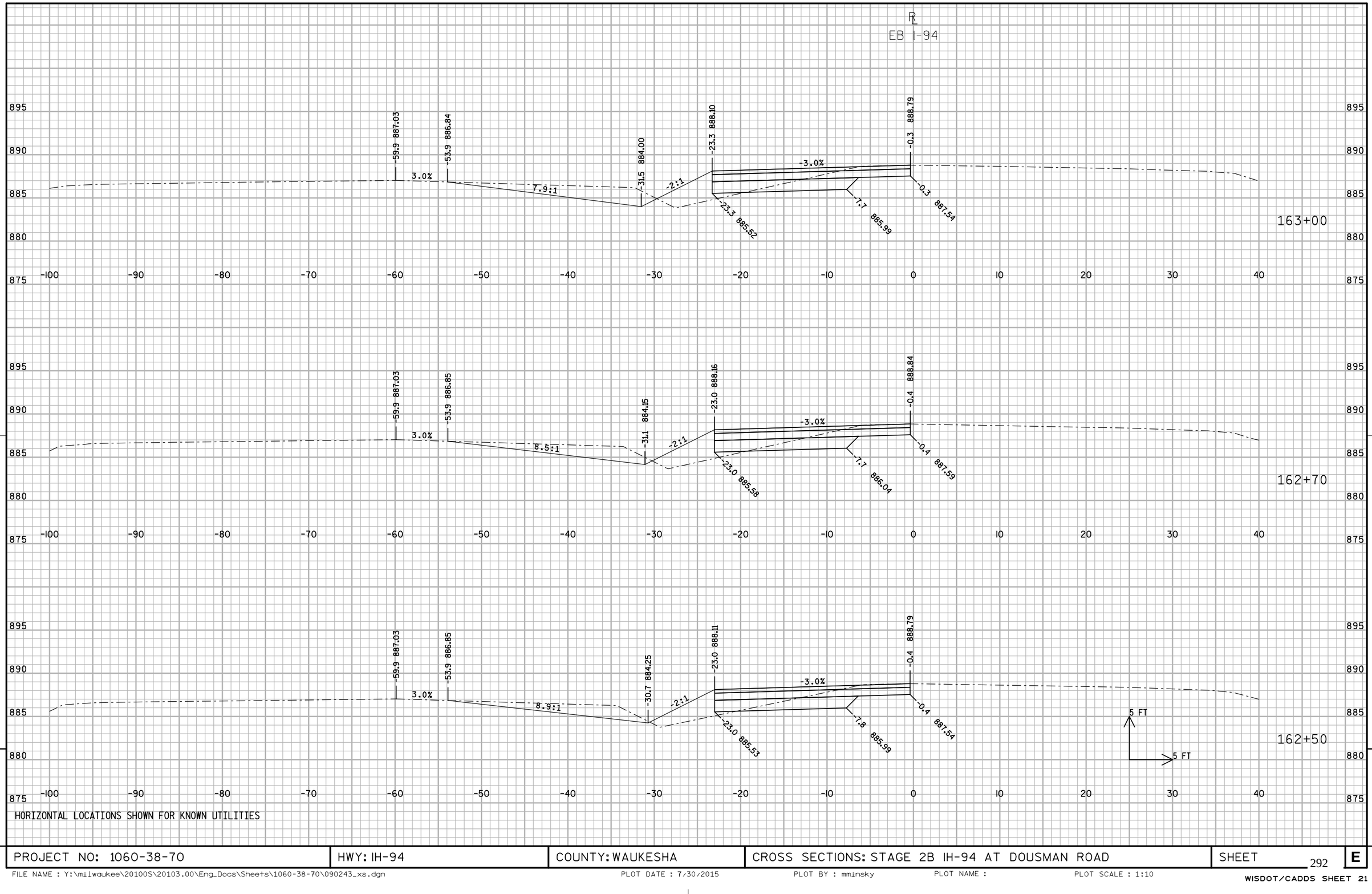

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

9

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2B IH-94 AT DOUSMAN ROAD	SHEET 292	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090243_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

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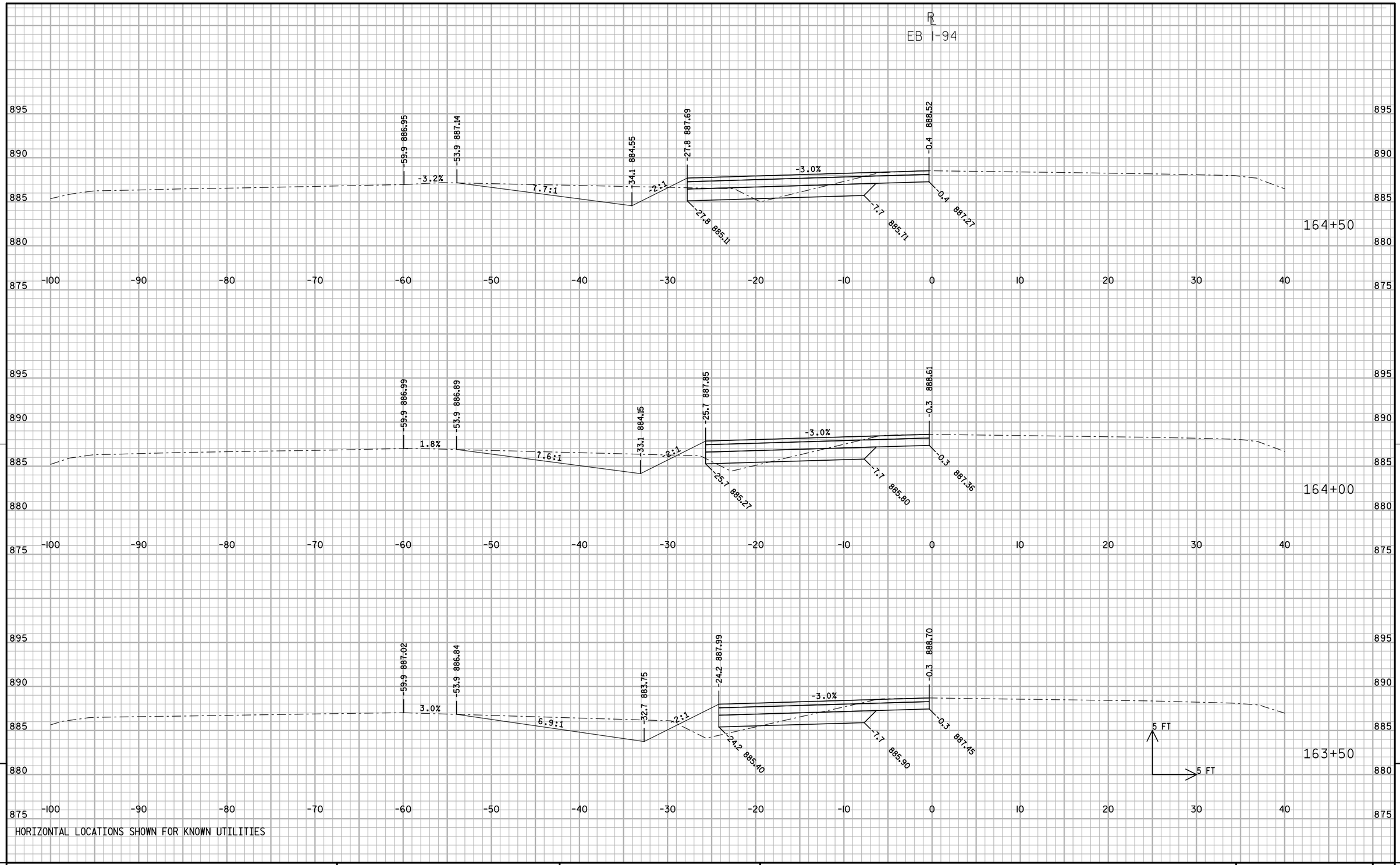

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2B IH-94 AT DOUSMAN ROAD	SHEET 293	E

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WISDOT/CADDS SHEET 21

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2B IH-94 AT DOUSMAN ROAD	SHEET 294	E

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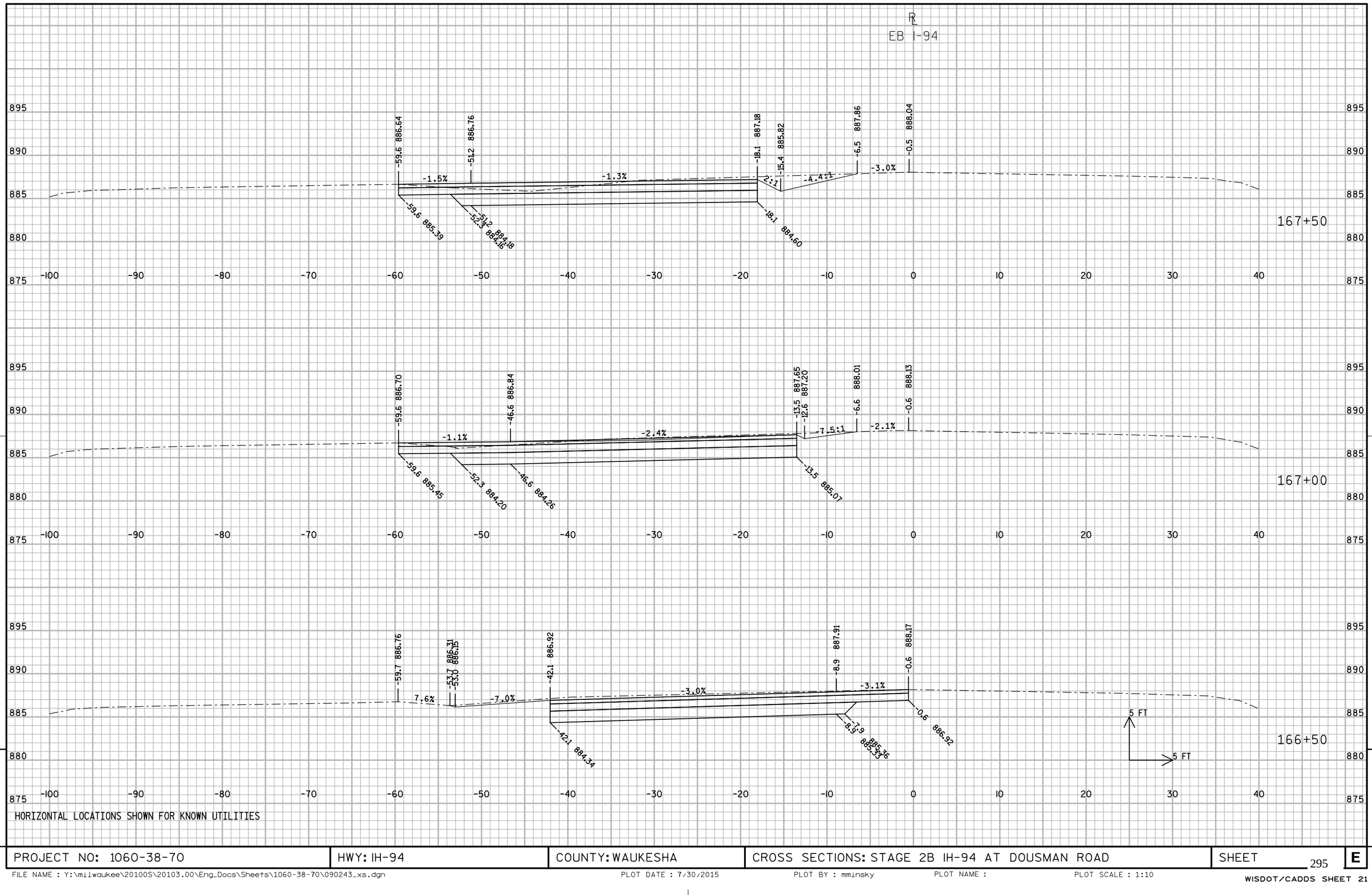
WISDOT/CADDS SHEET 21



PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2B IH-94 AT DOUSMAN ROAD	SHEET 295	E

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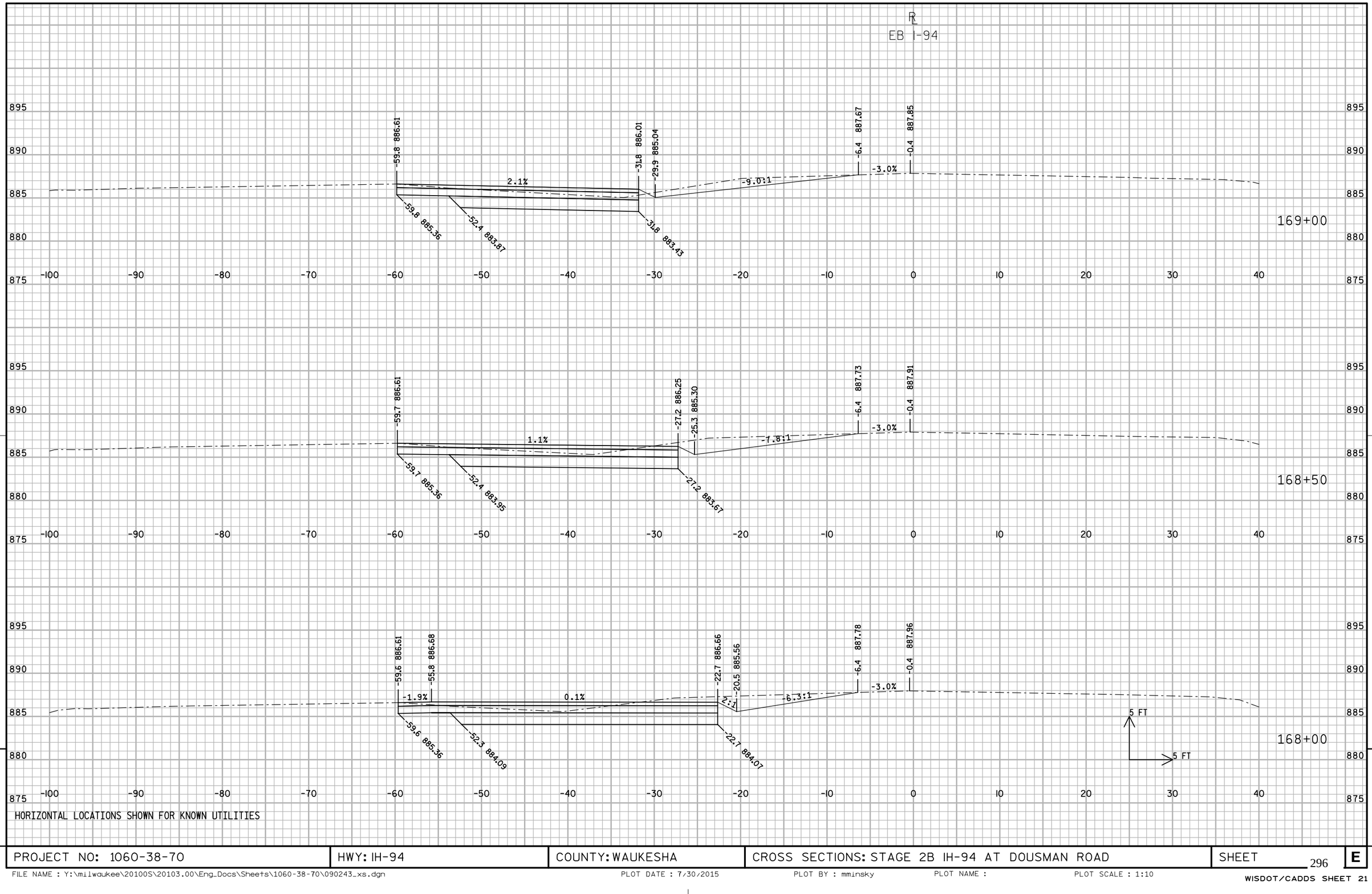
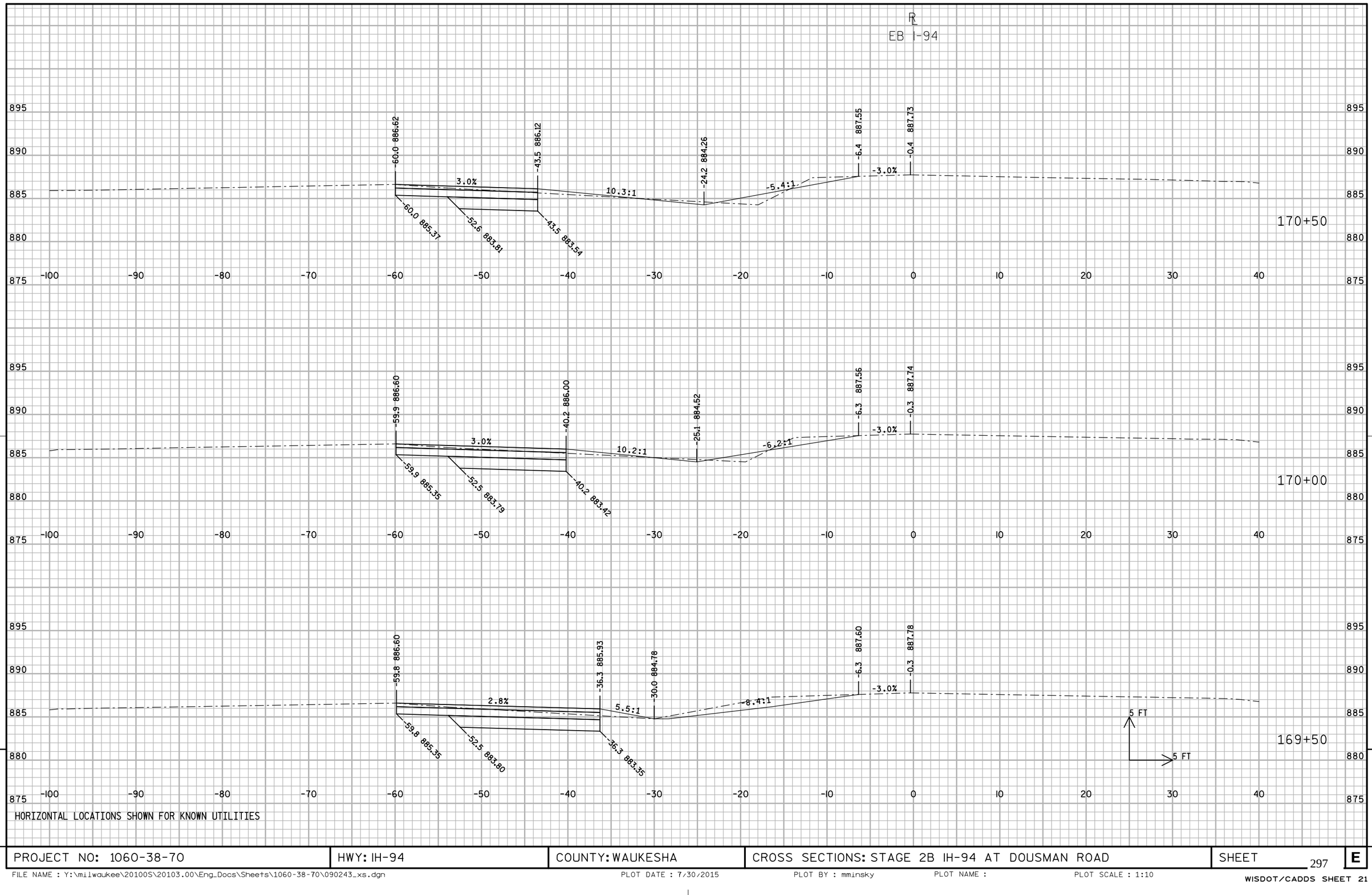
WISDOT/CADDS SHEET 21



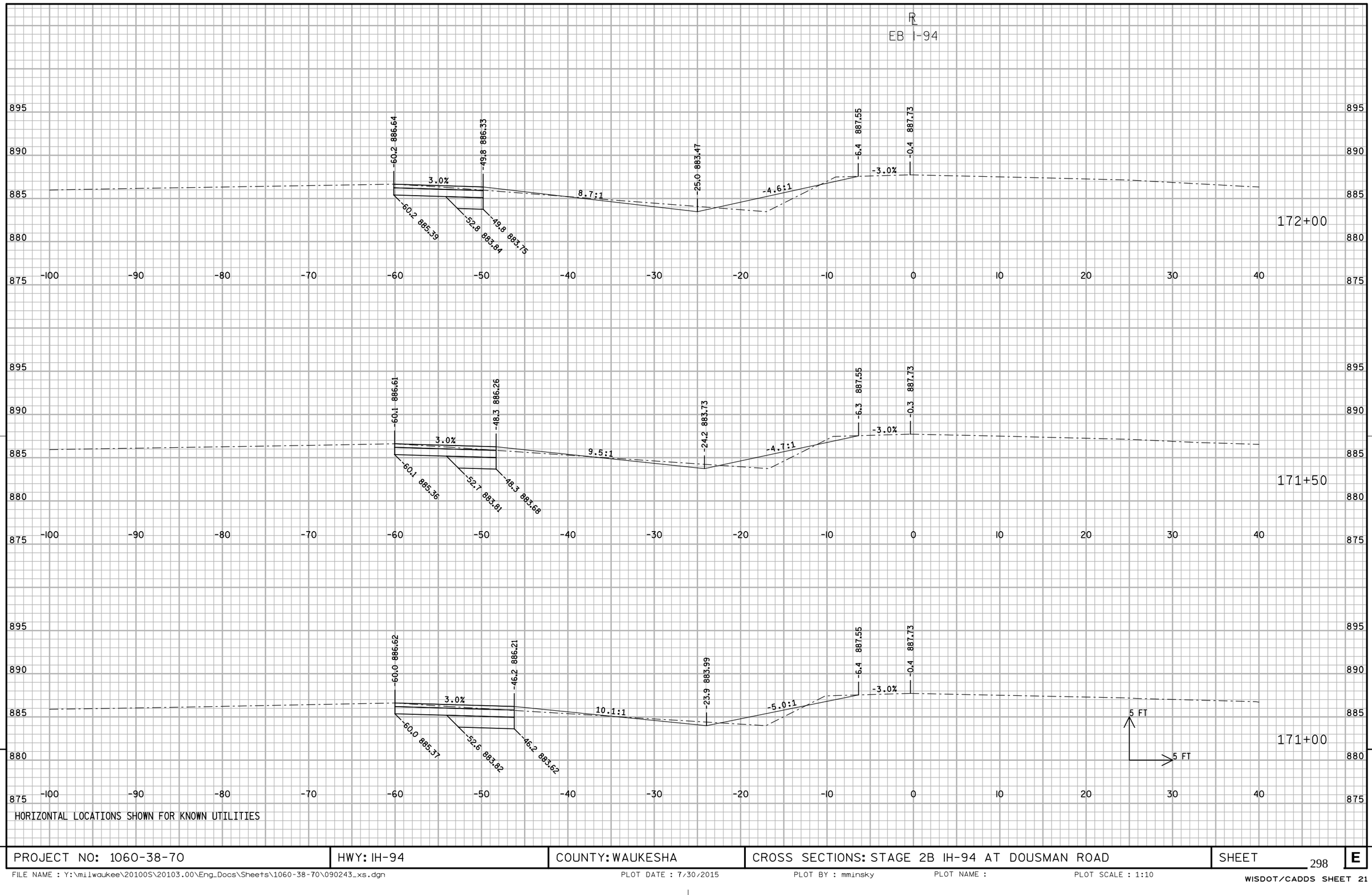
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2B IH-94 AT DOUSMAN ROAD	SHEET 296	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2B IH-94 AT DOUSMAN ROAD	SHEET 297	E



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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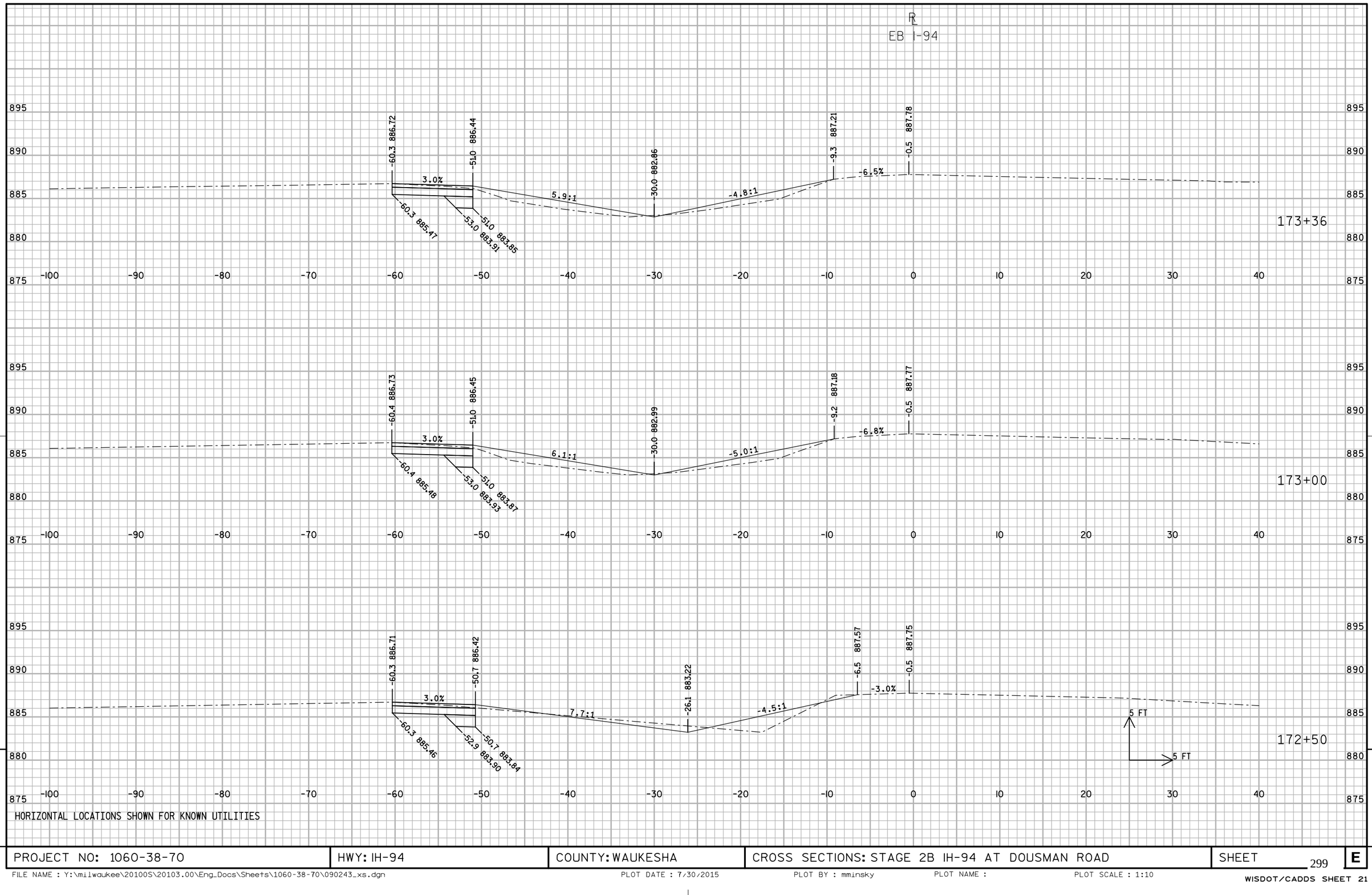
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2B IH-94 AT DOUSMAN ROAD	SHEET 298	E



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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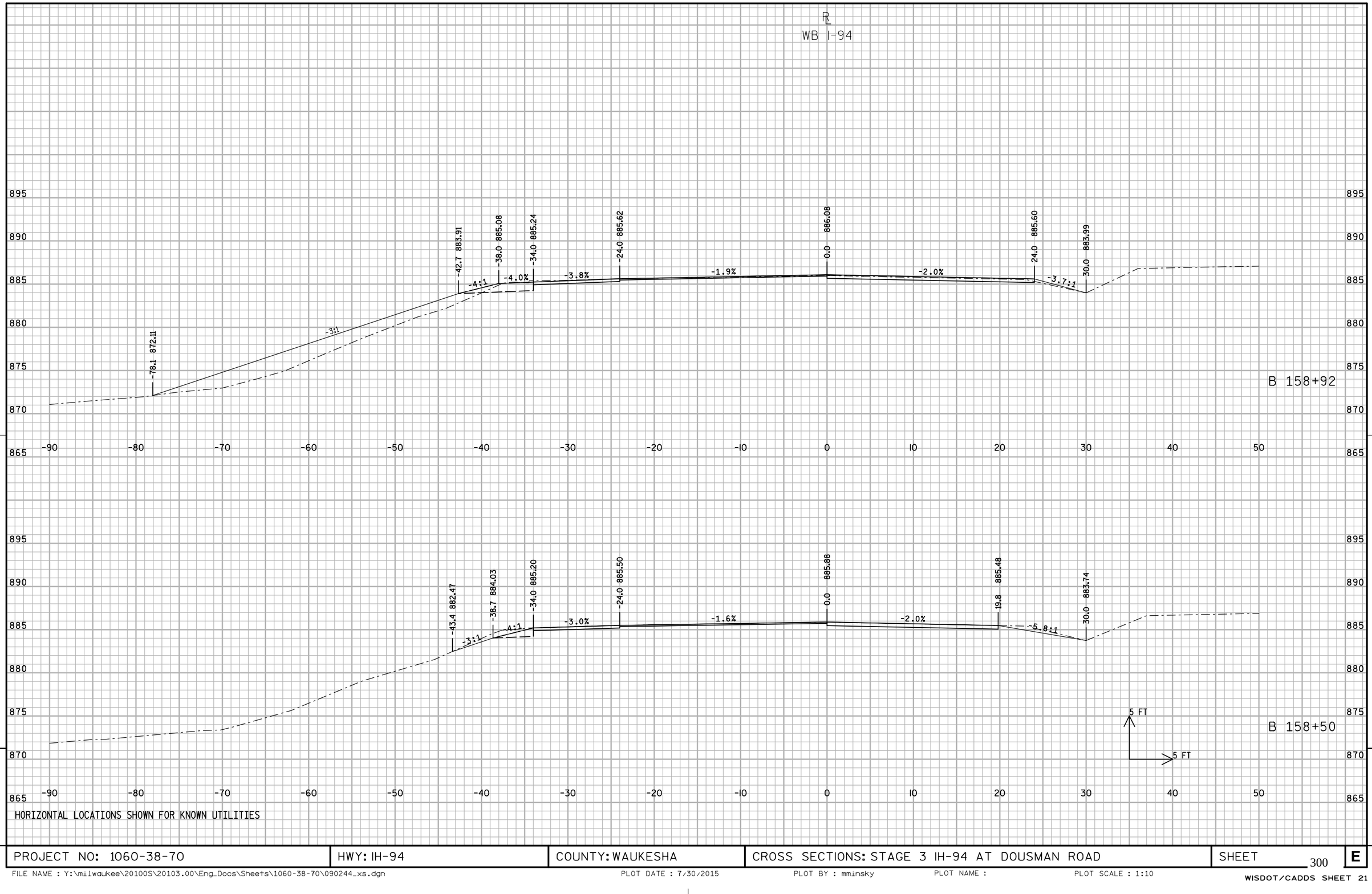
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2B IH-94 AT DOUSMAN ROAD	SHEET 299	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090243_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT DOUSMAN ROAD	SHEET 300	E

R

WB I-94

-75.1 871.40

-2.5:1

-43.3 884.11

-3:1

-40.0 885.22

-7.7:1

-37.2 885.57

-36.0 885.38

-4.0%

-25.0 885.82

-2.0%

0.0 886.32

-2.0%

24.0 885.84

-2.9:1

25.5 885.81

30.0 884.38

30.6 884.28

B 159+37

-71.3 872.80

-2.5:1

-43.3 883.97

-3:1

-40.0 885.09

-4.0%

-36.0 885.25

-3.6%

-25.0 885.65

-1.9%

0.0 886.13

-2.0%

24.0 885.65

-3.7:1

30.0 884.04

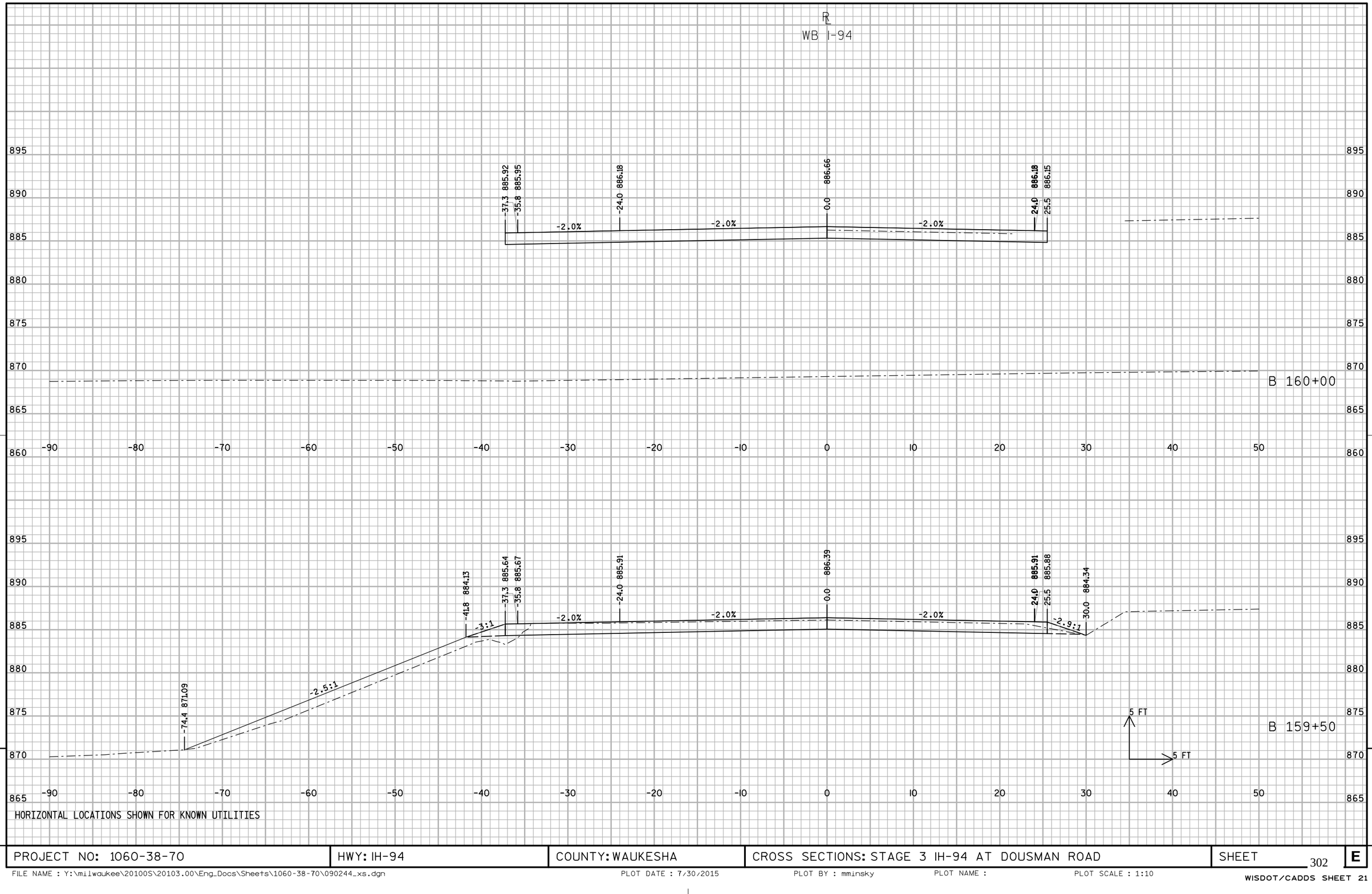
B 159+00

5 FT

5 FT

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT DOUSMAN ROAD	SHEET 301	E



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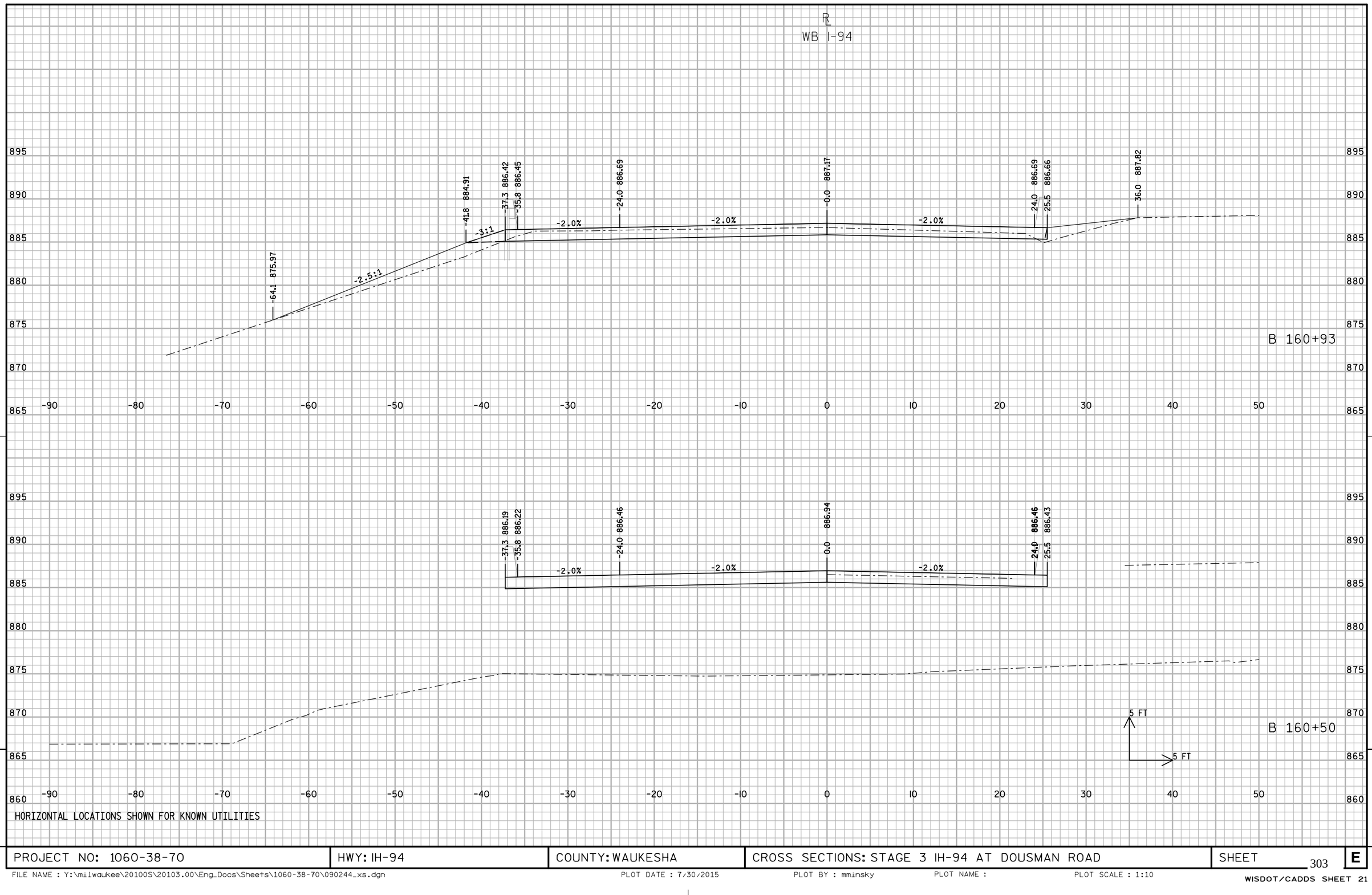
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

9

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT DOUSMAN ROAD	SHEET 302	E

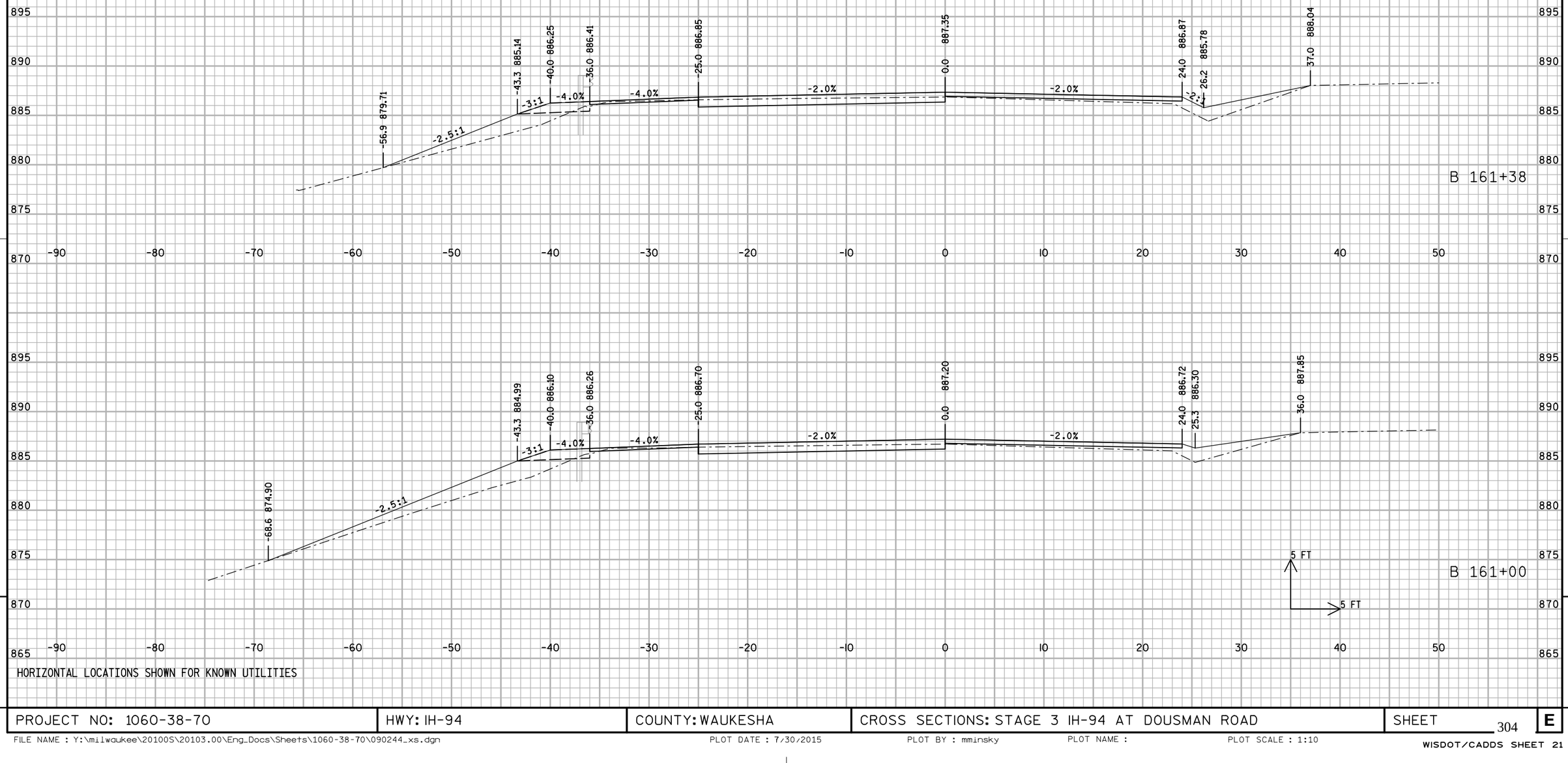


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT DOUSMAN ROAD	SHEET 303	E

R

WB I-94

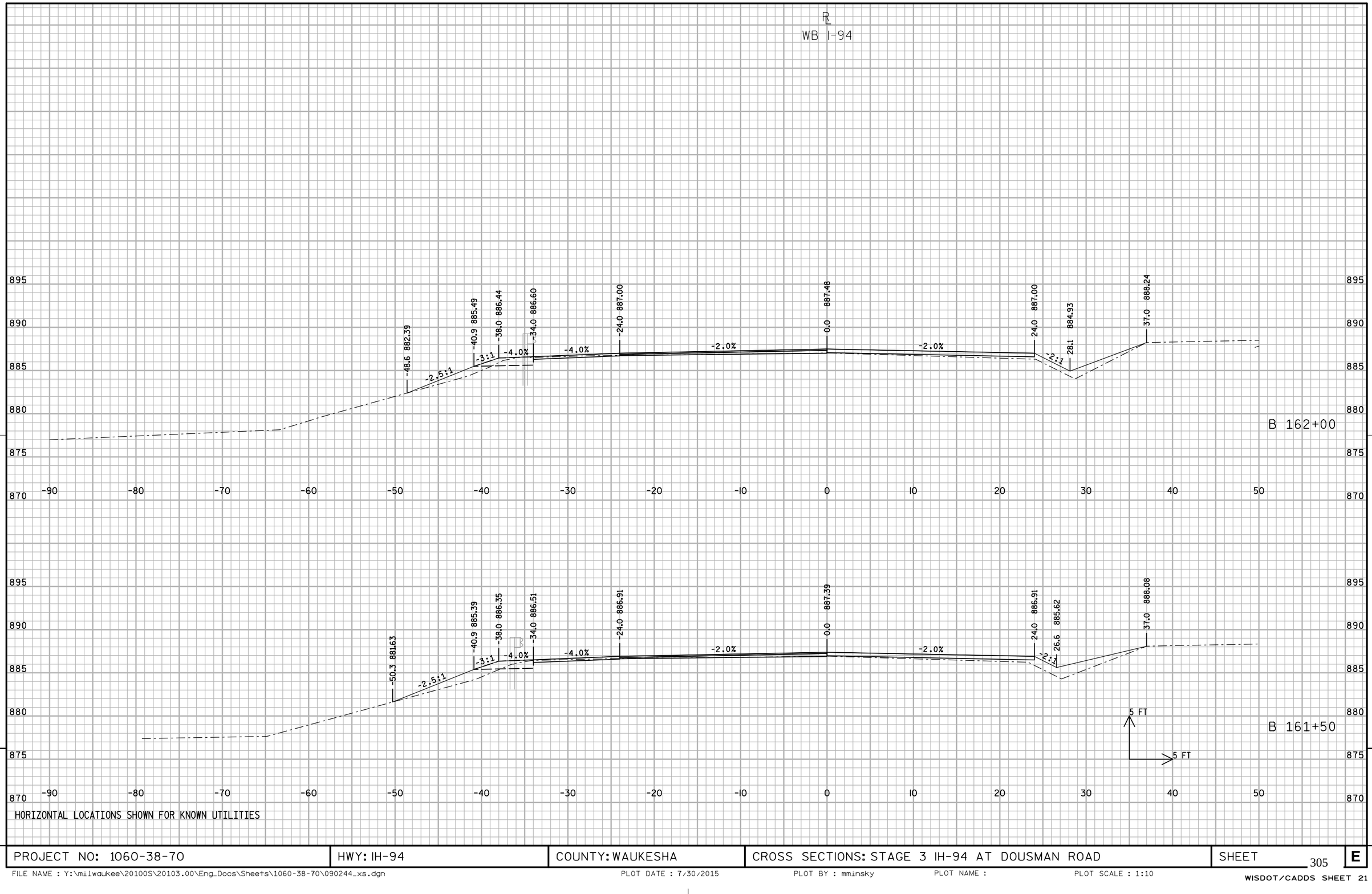


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT DOUSMAN ROAD	SHEET 304	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090244_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT DOUSMAN ROAD	SHEET 305	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090244_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

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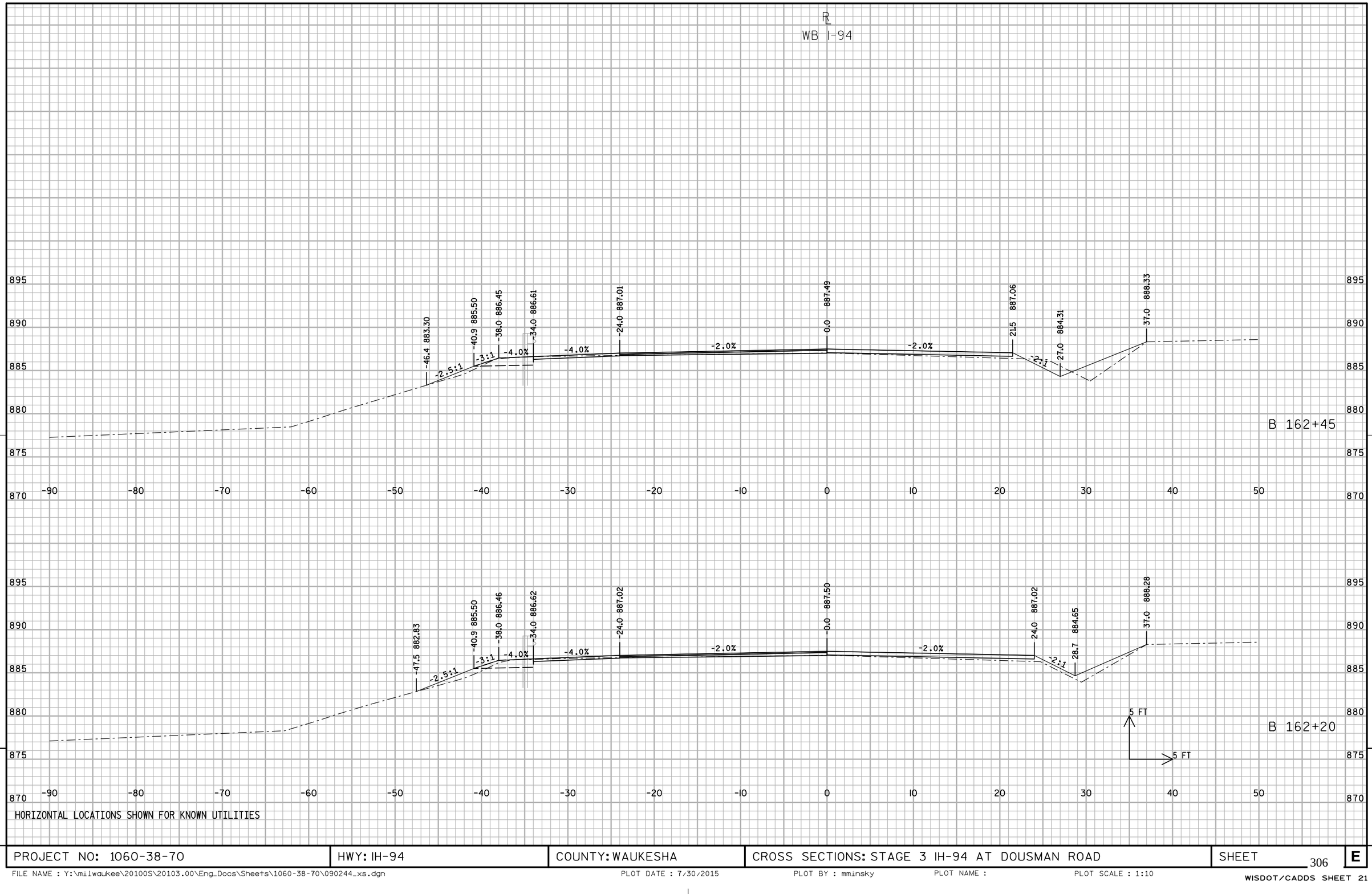

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT DOUSMAN ROAD	SHEET 306	E

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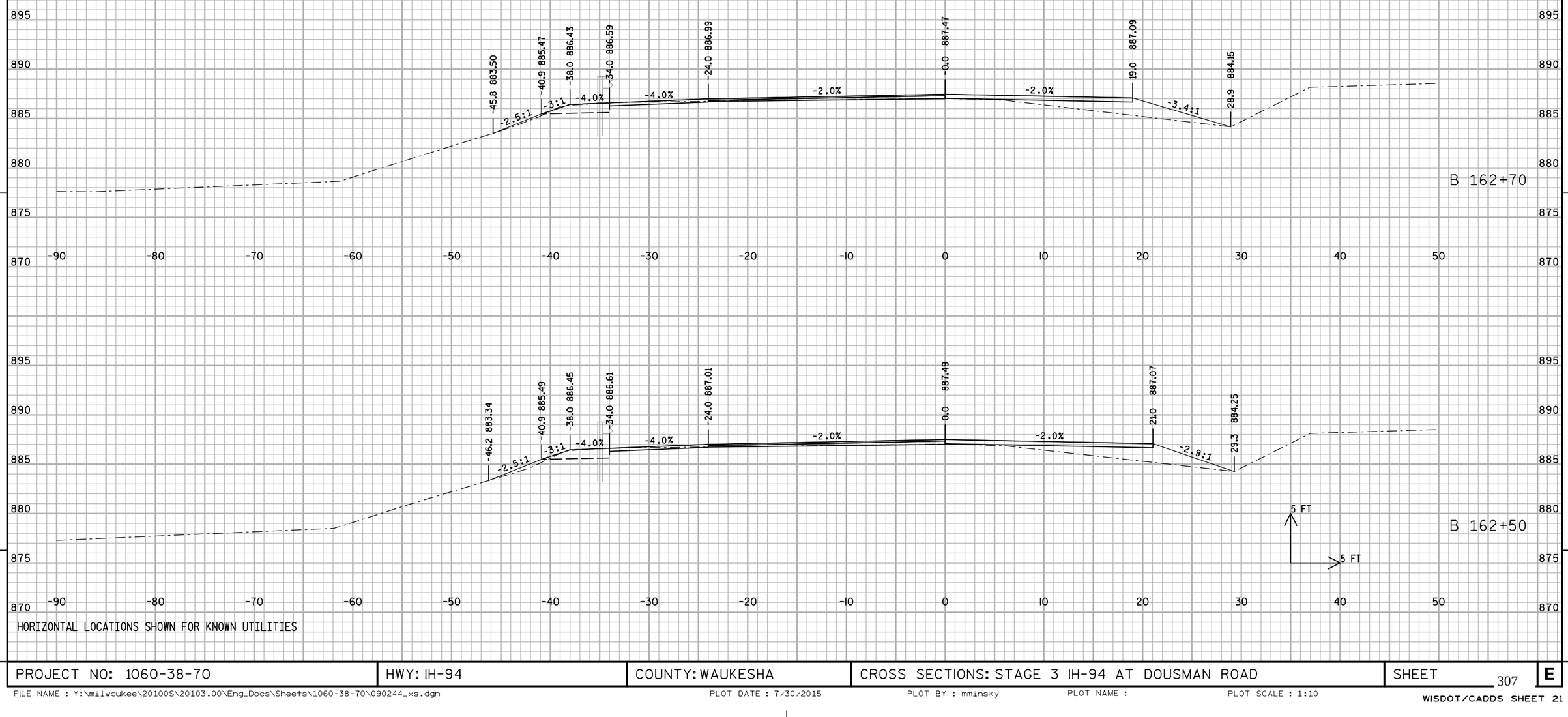
WB I-94



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT DOUSMAN ROAD	SHEET 307	E

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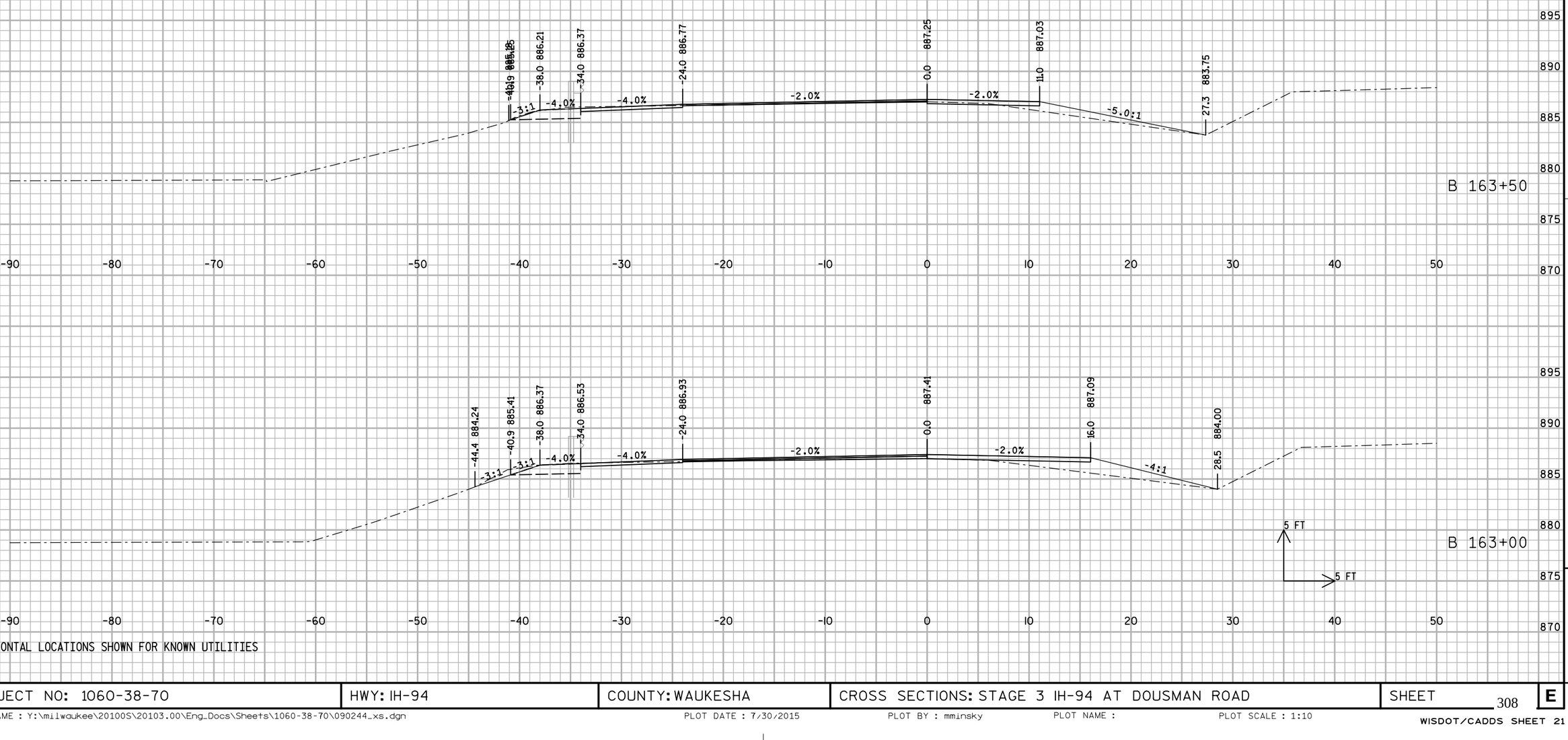
WB I-94



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

9

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT DOUSMAN ROAD	SHEET 308	E

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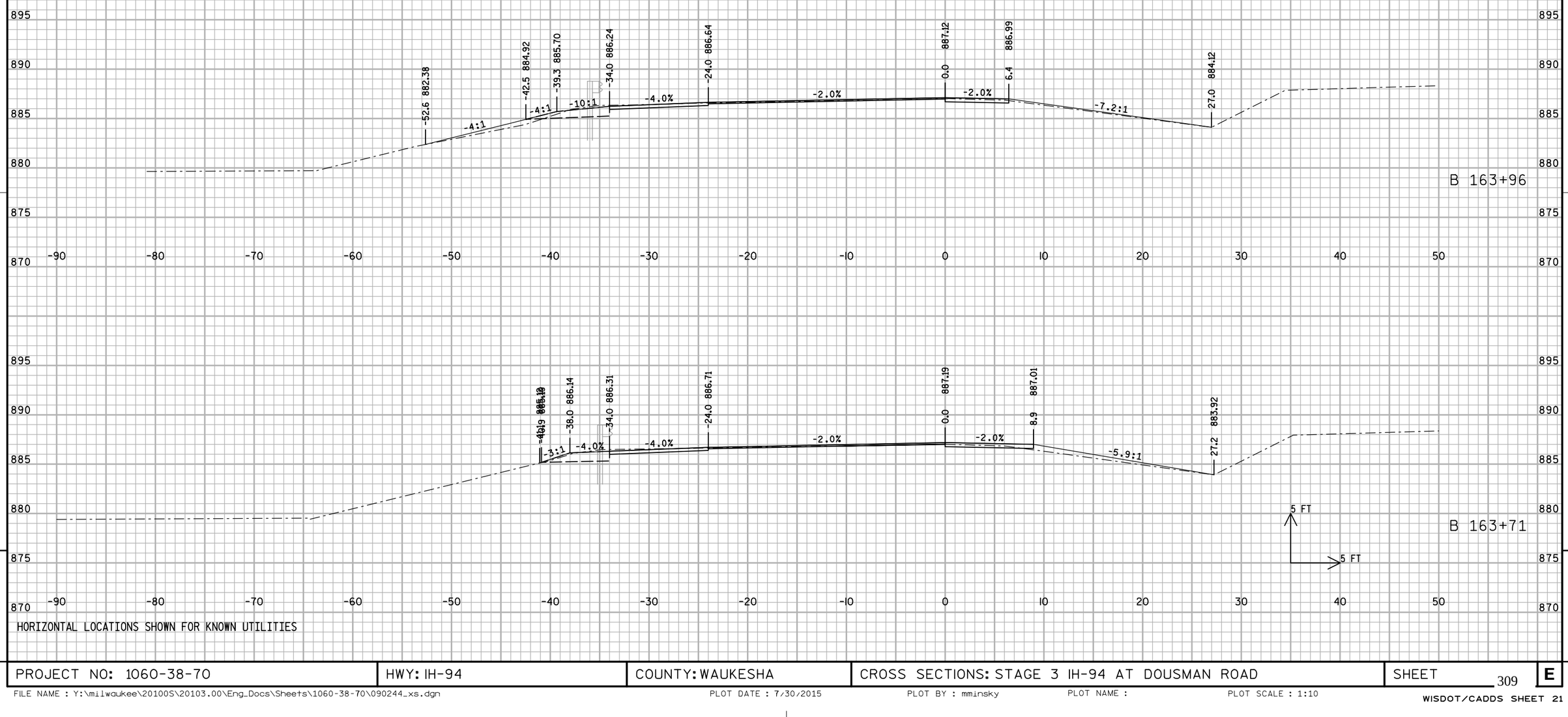
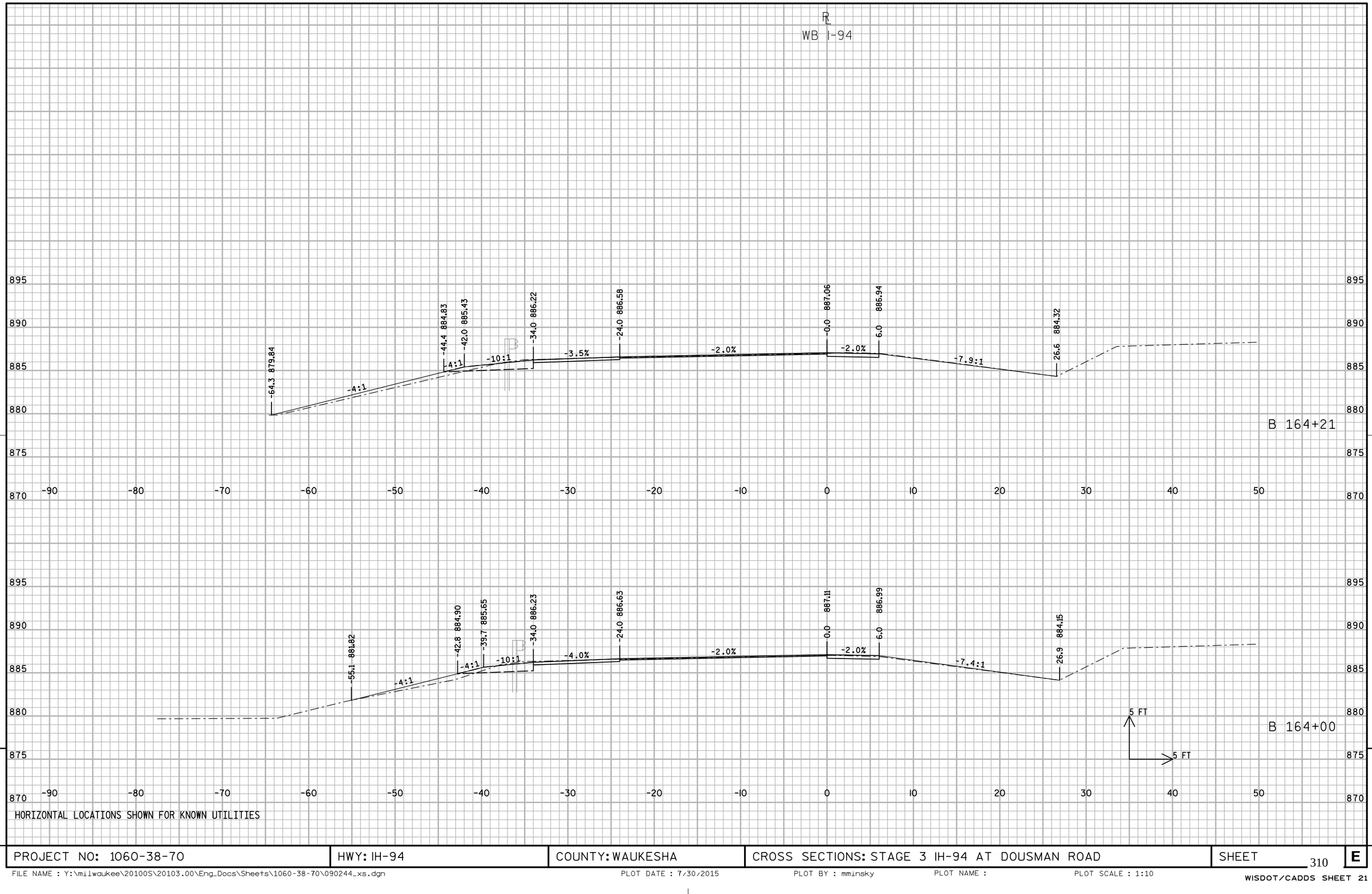
WB I-94



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

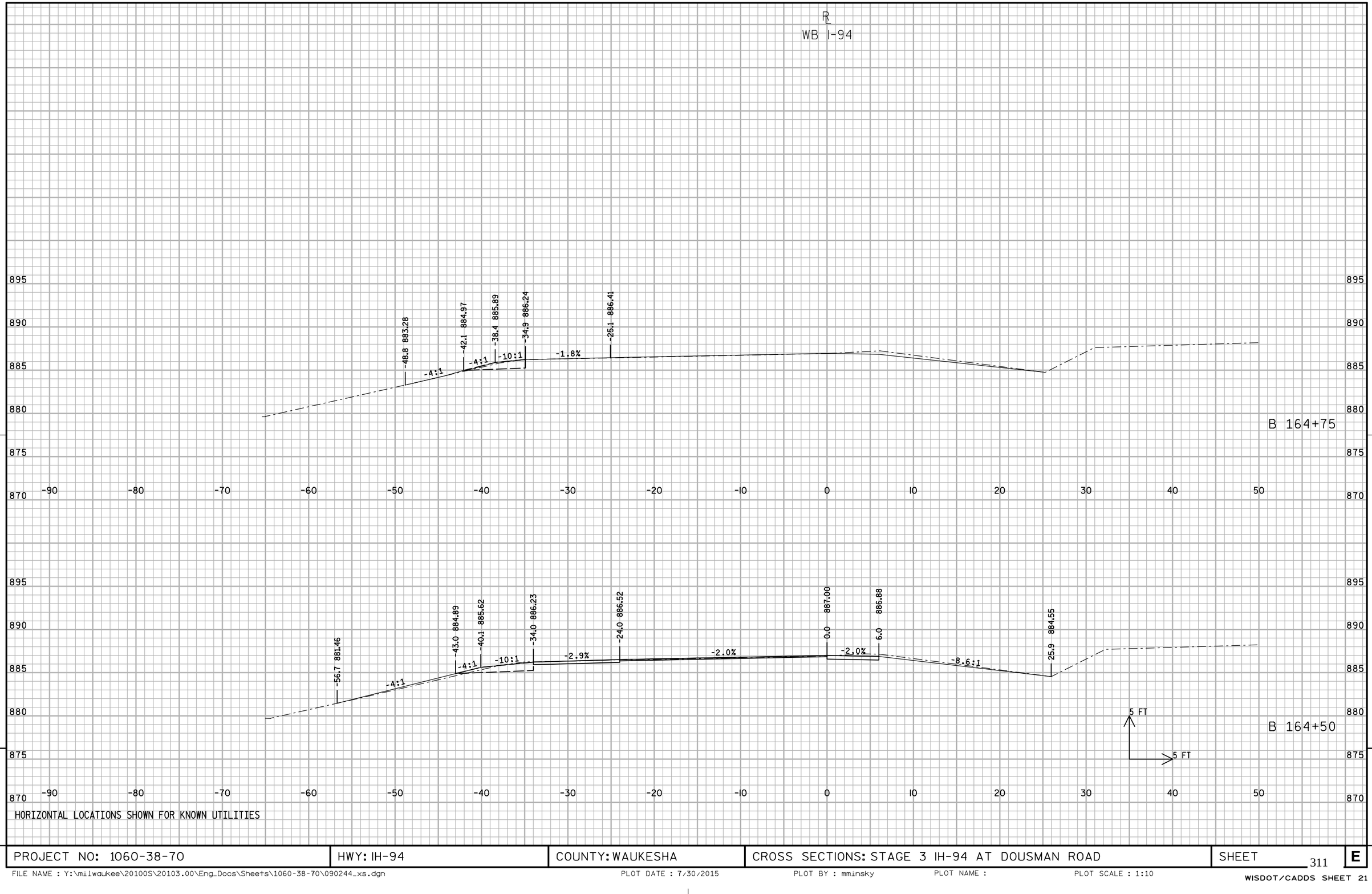
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT DOUSMAN ROAD	SHEET 309	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

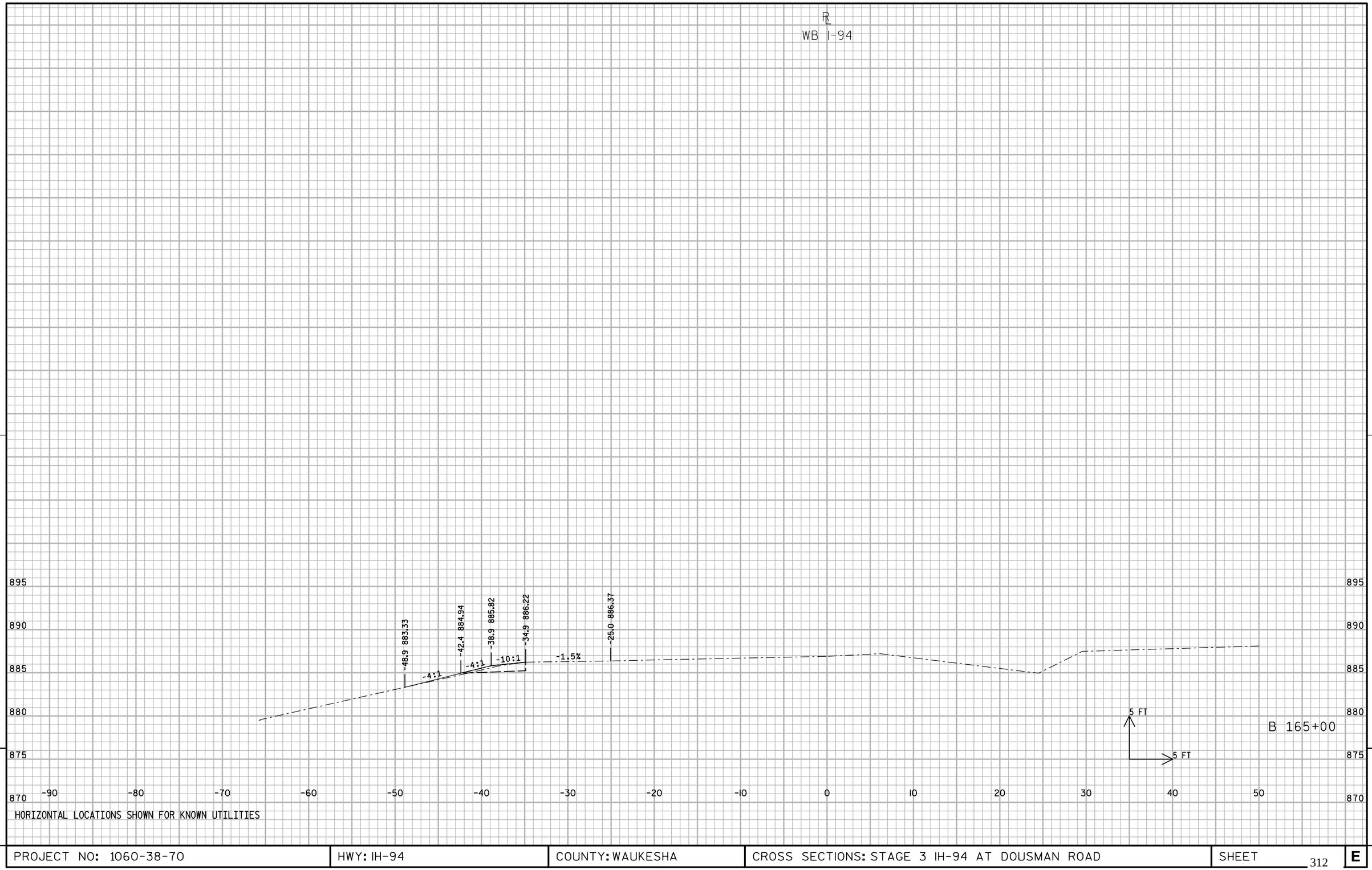
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT DOUSMAN ROAD	SHEET 310	E

R
WB I-94



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT DOUSMAN ROAD	SHEET 311	E



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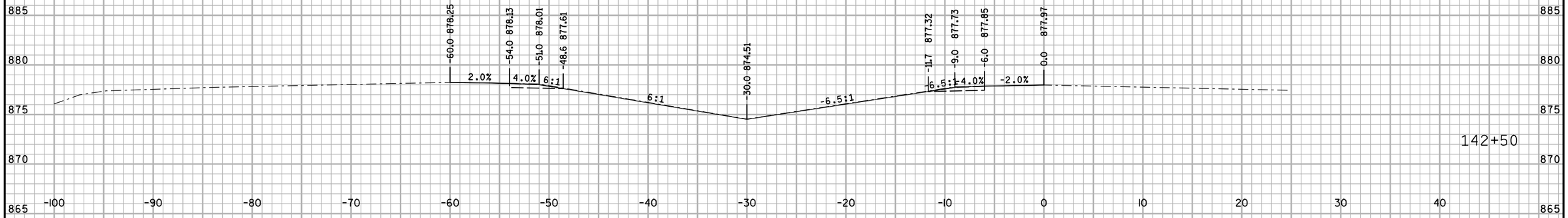
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

9

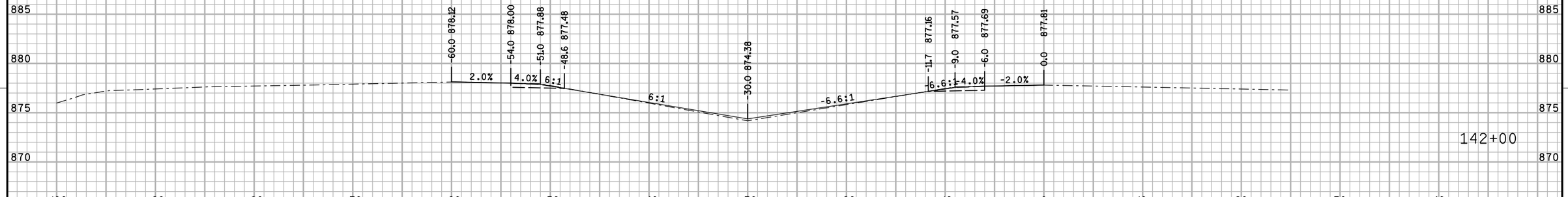
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT DOUSMAN ROAD	SHEET 312	E

R

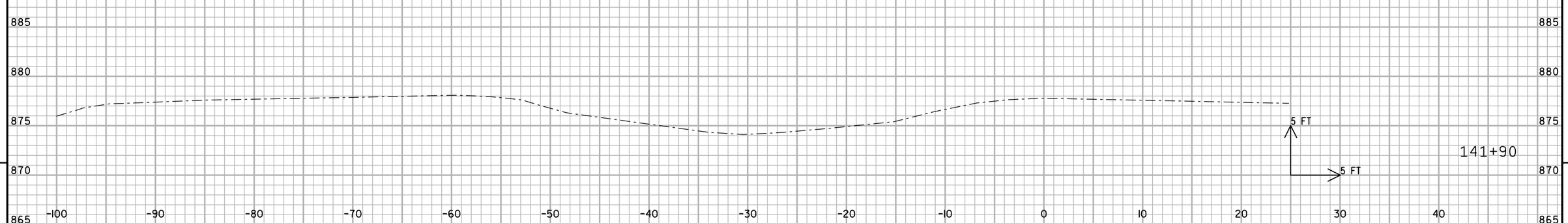
EB I-94



142+50



142+00



141+90

9

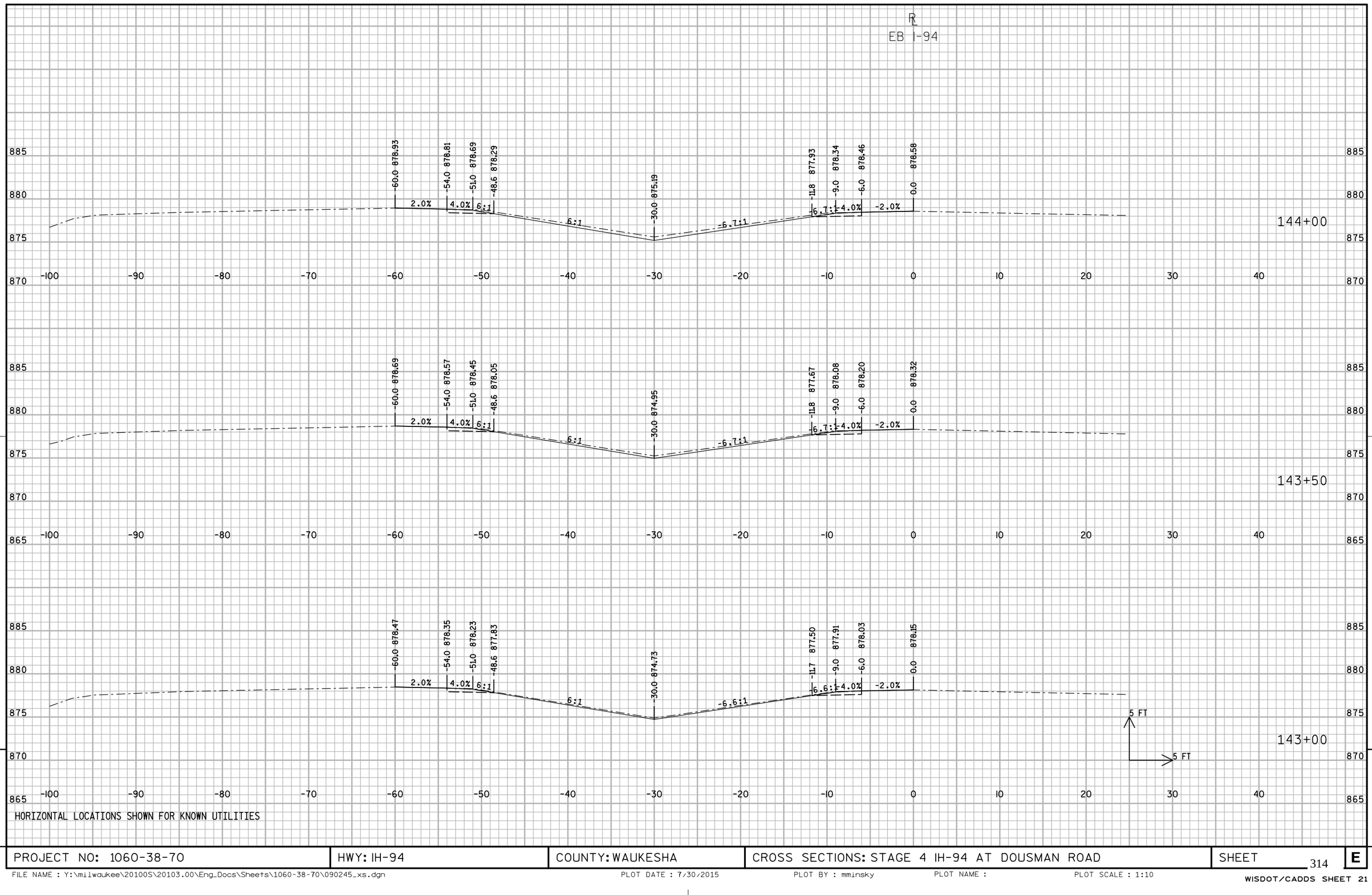
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

9

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 313	E

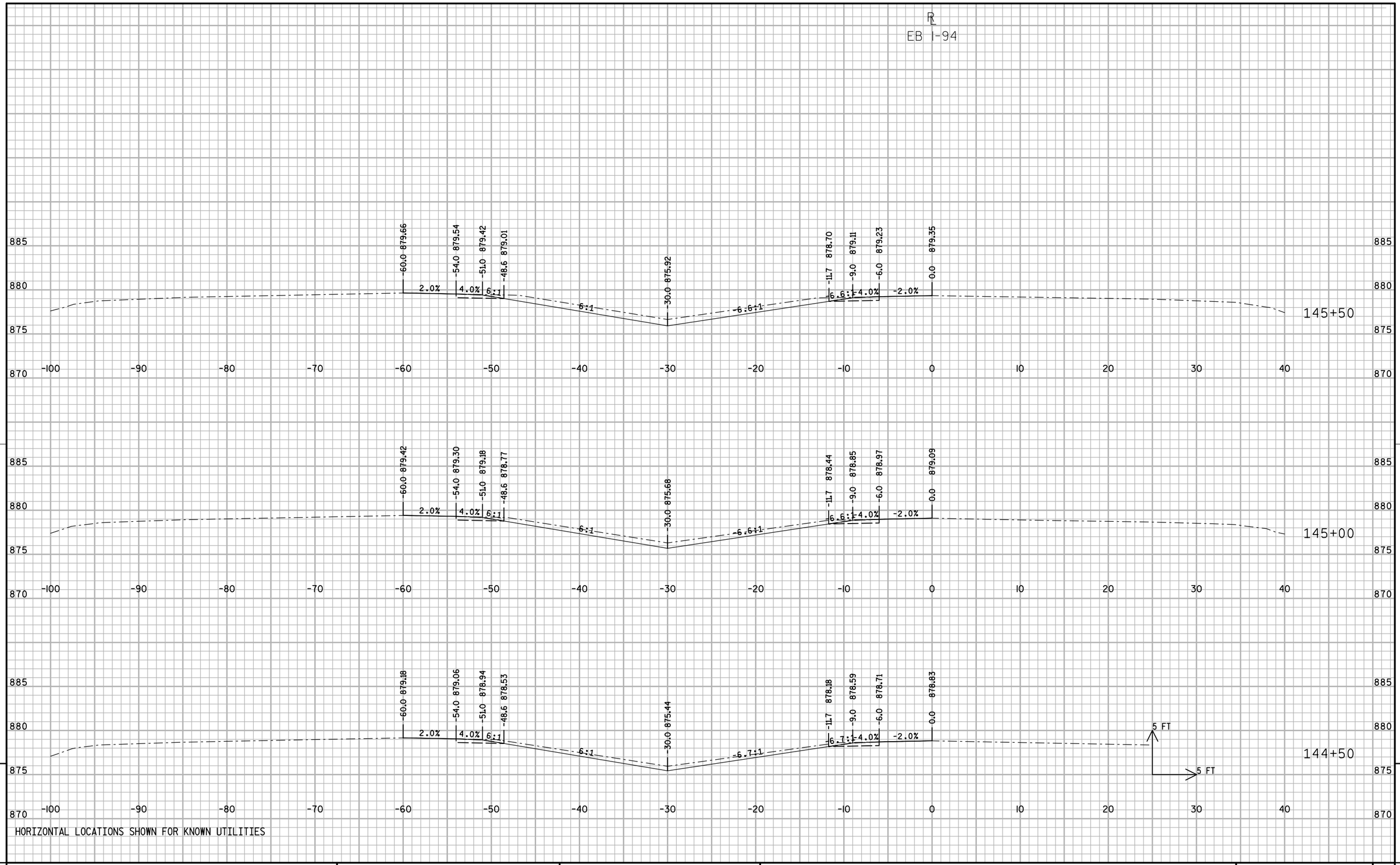
FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090245_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



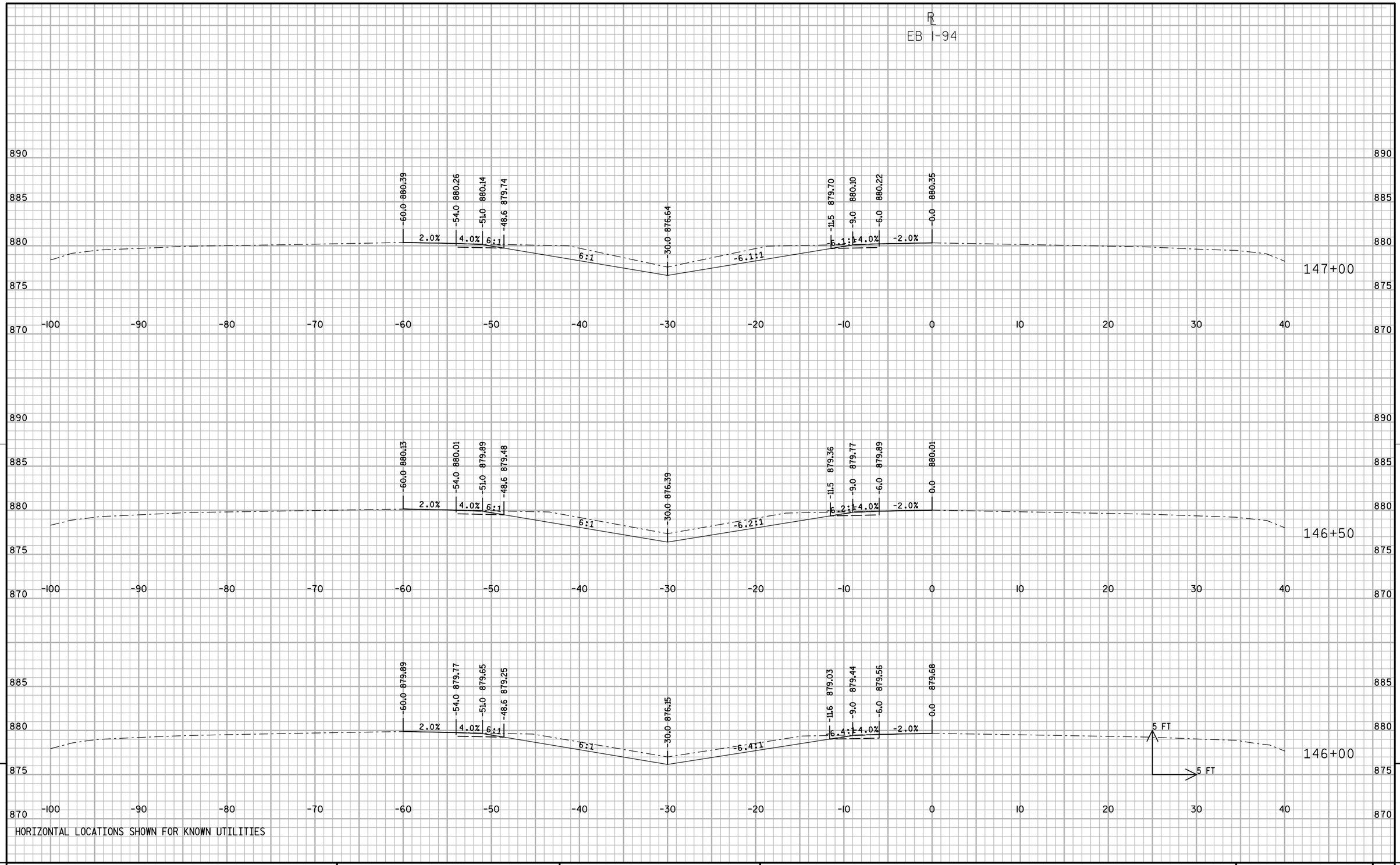
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 314	E



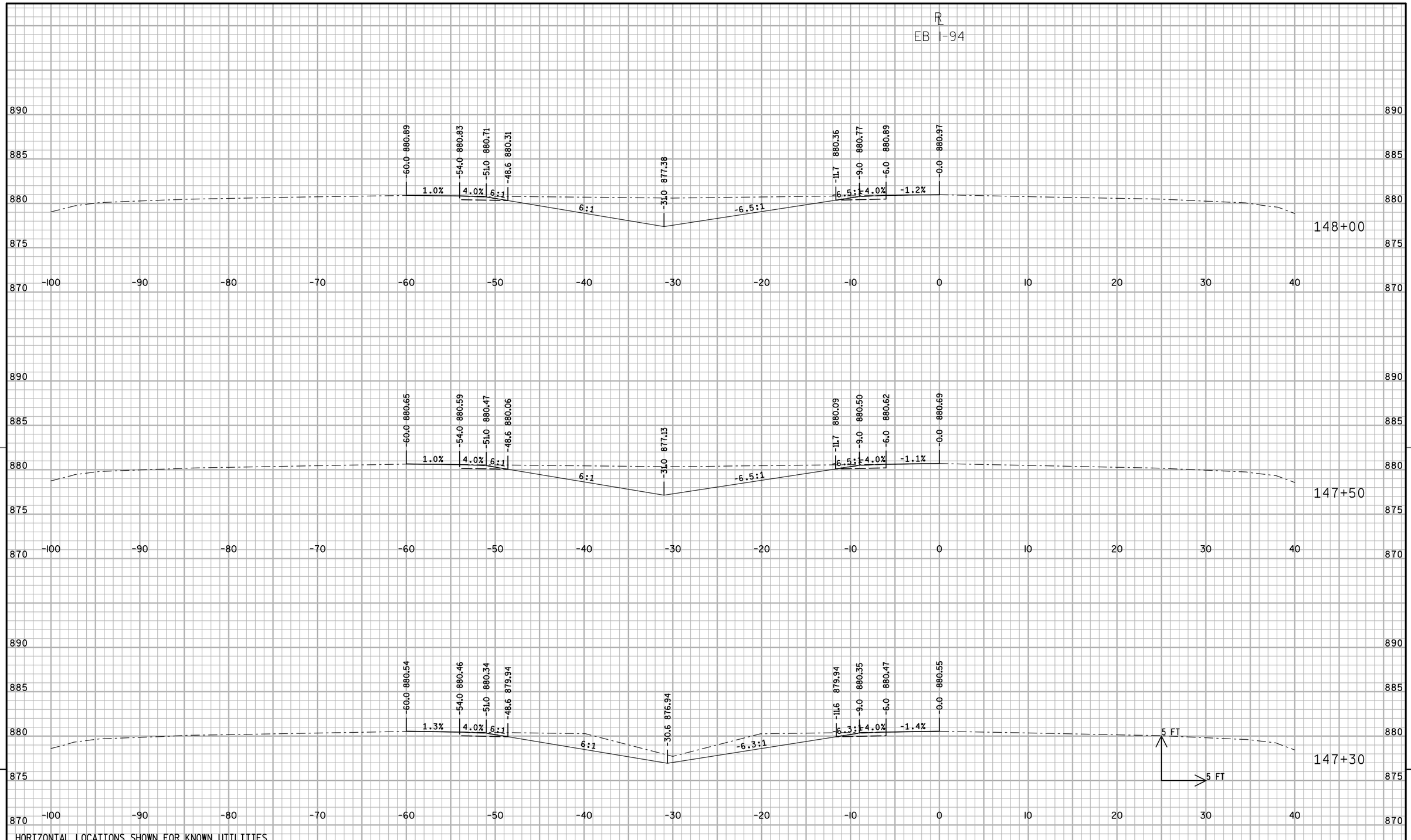
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 315	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 316	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

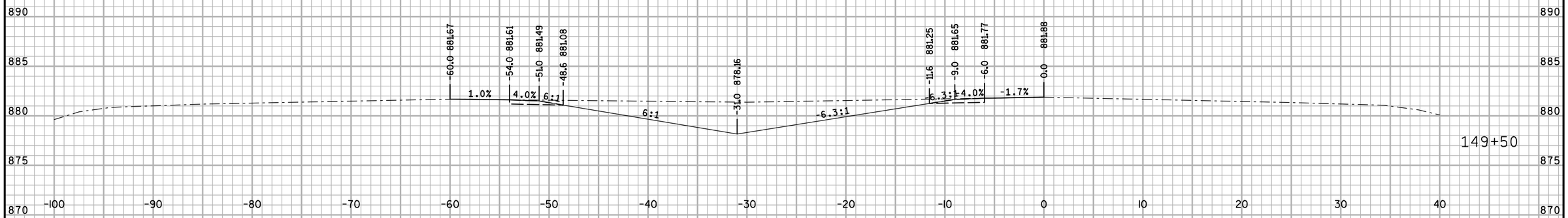
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 317	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090245_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

R

EB I-94



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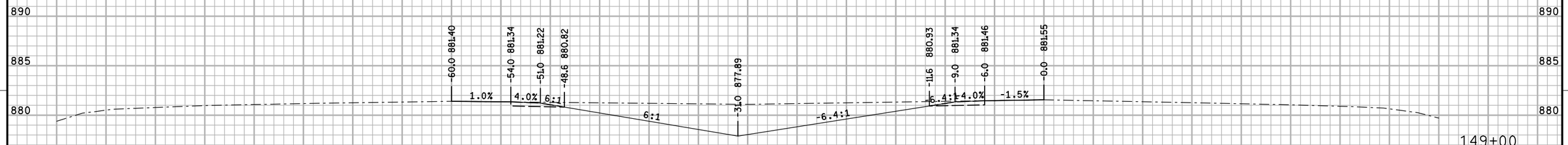

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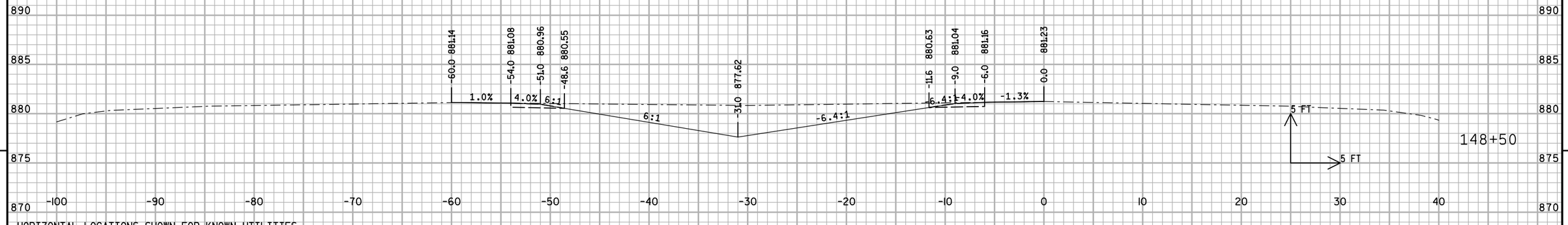


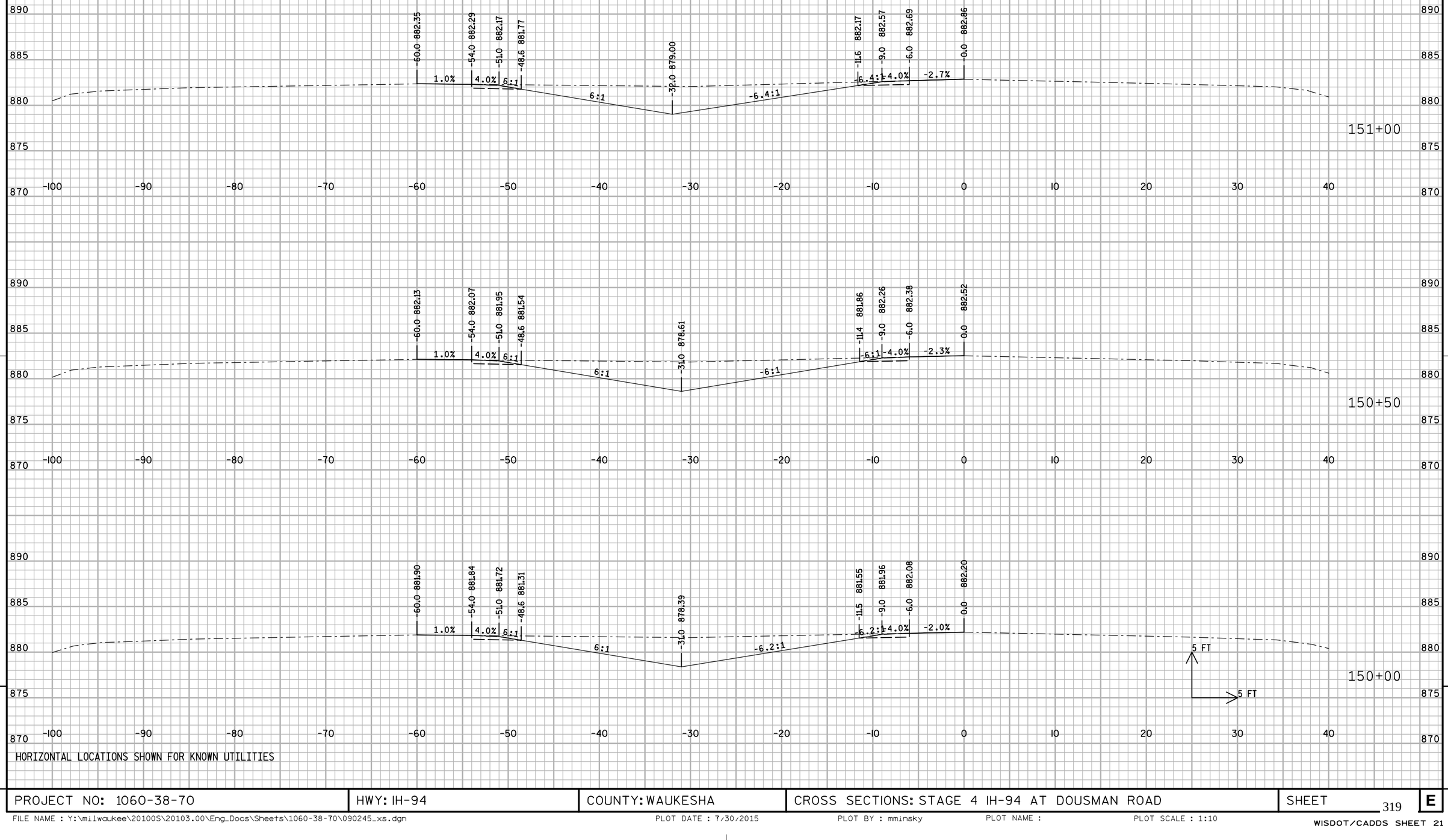
148+50

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 318	E

R

EB I-94



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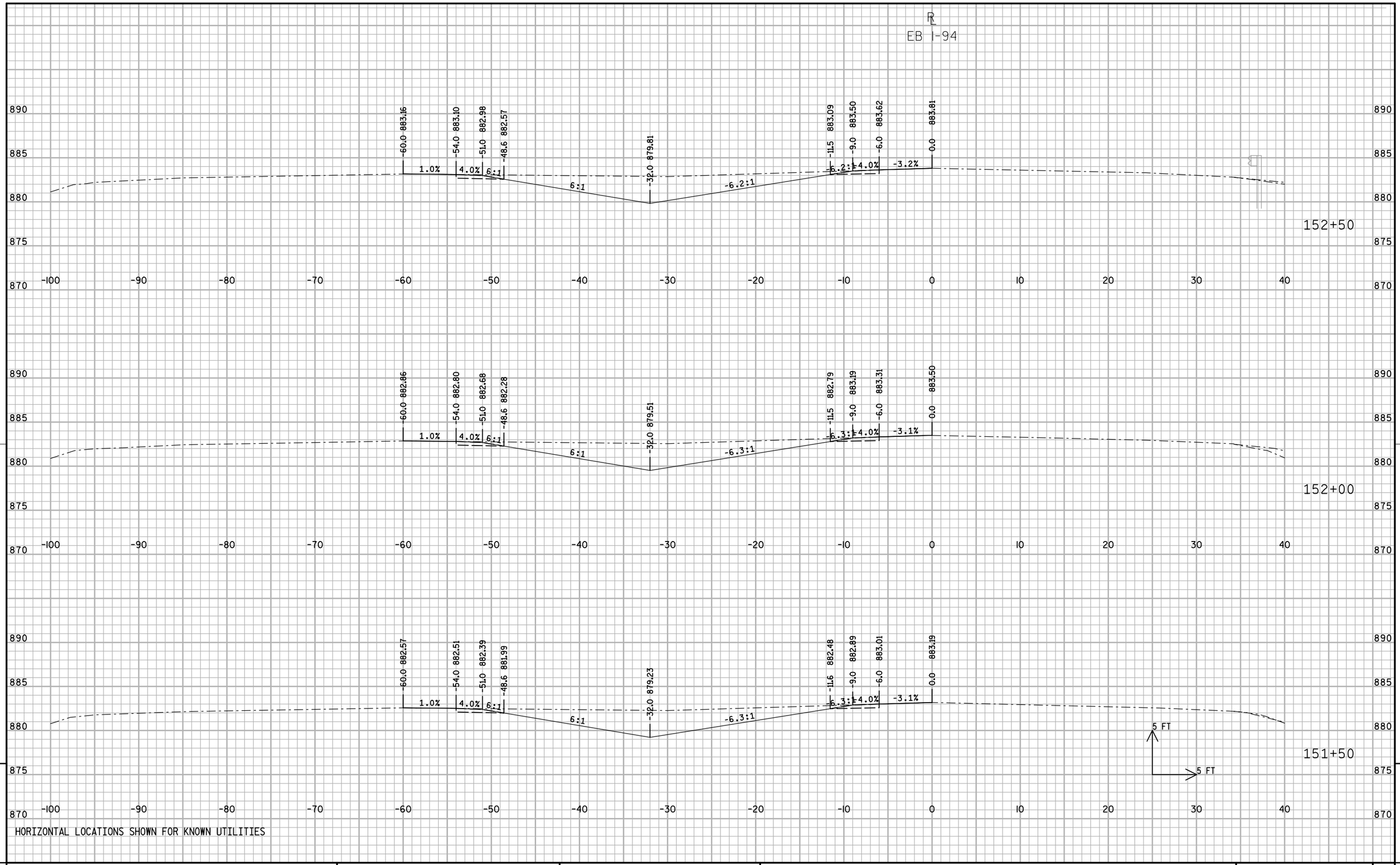
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

9

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 319	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090245_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

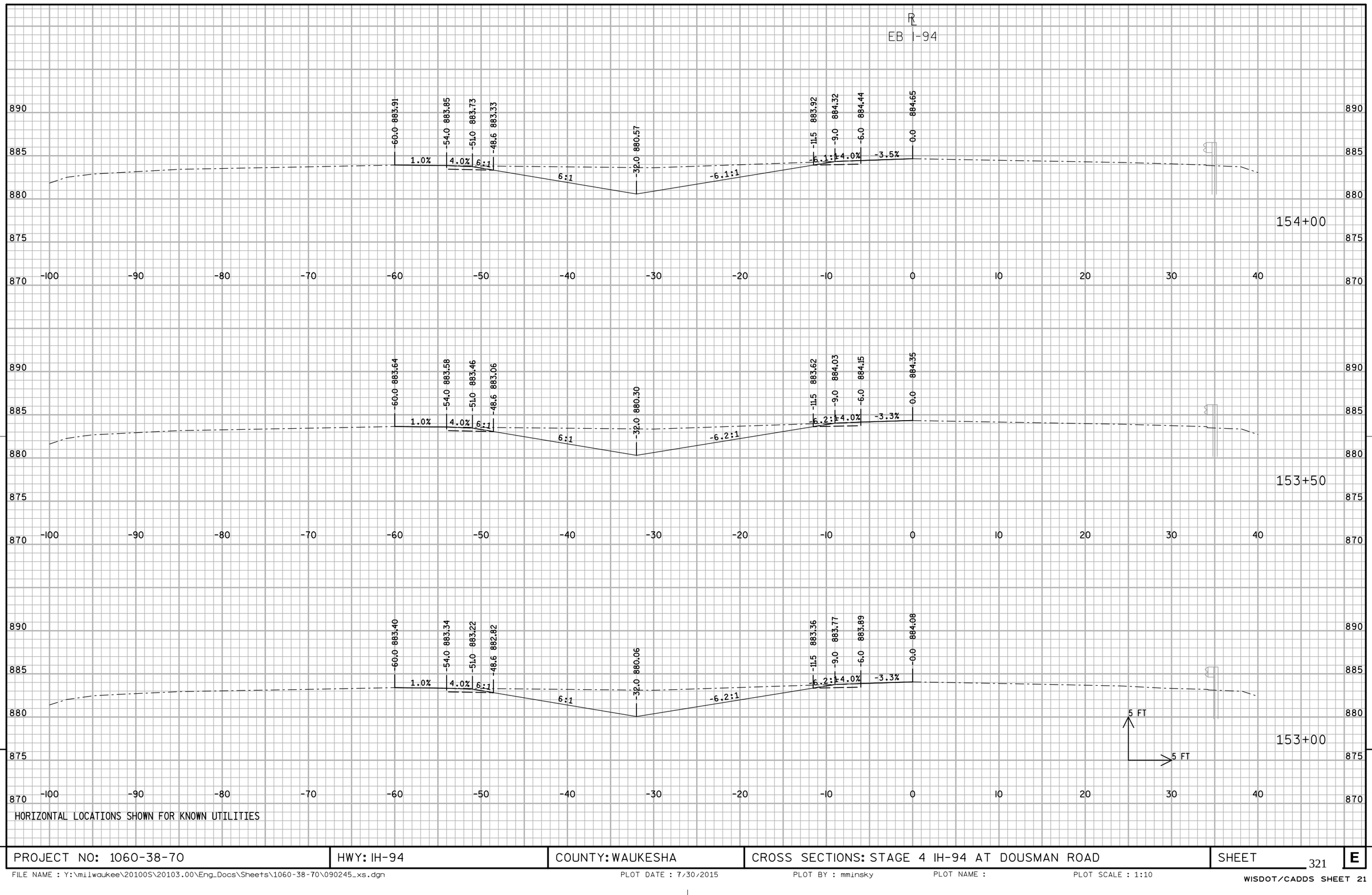


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 320	E

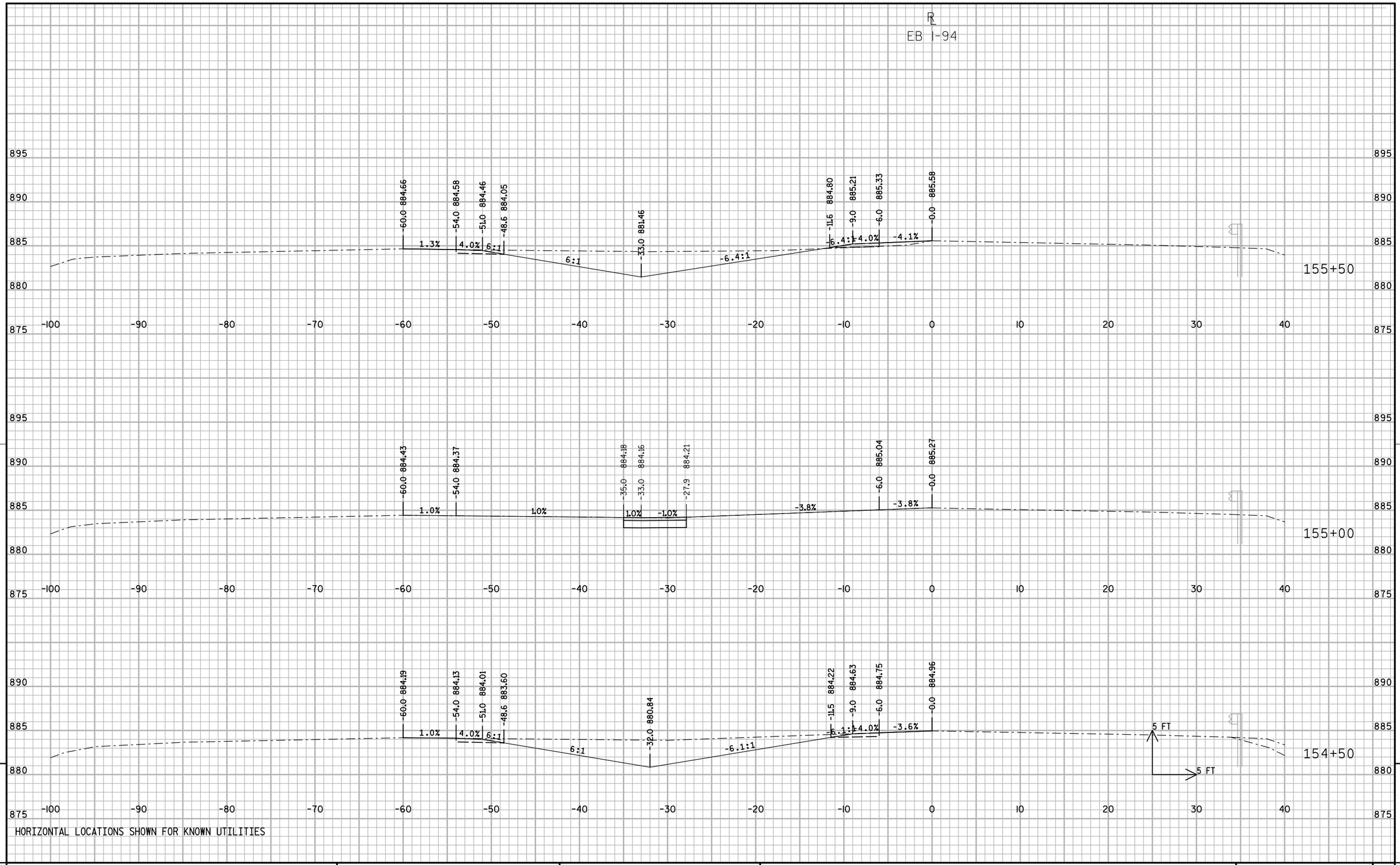
FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090245_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 321	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 322	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090245_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

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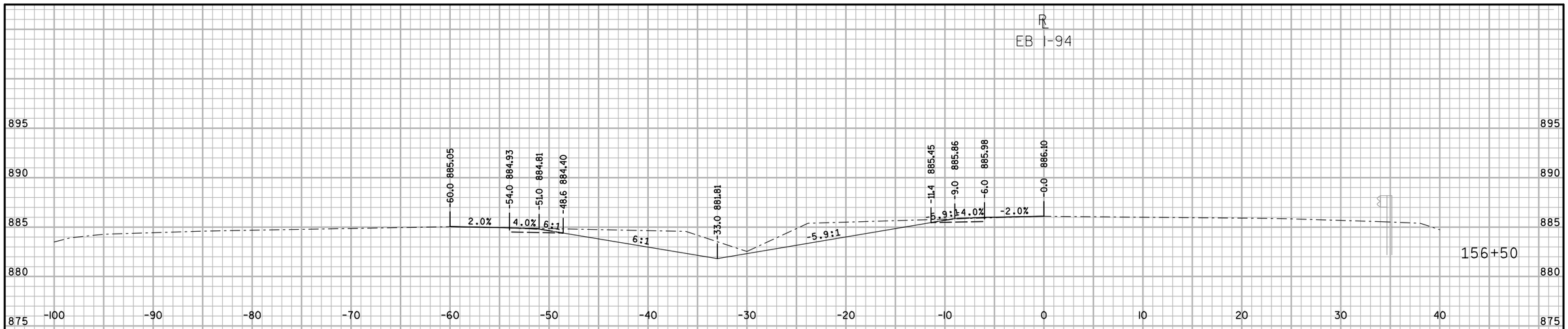
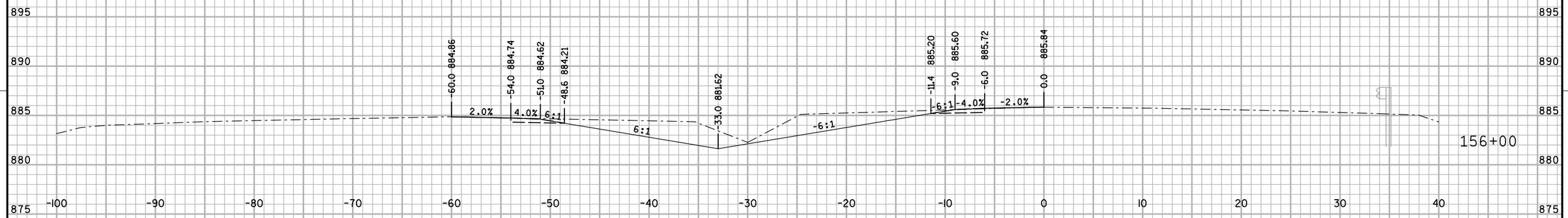
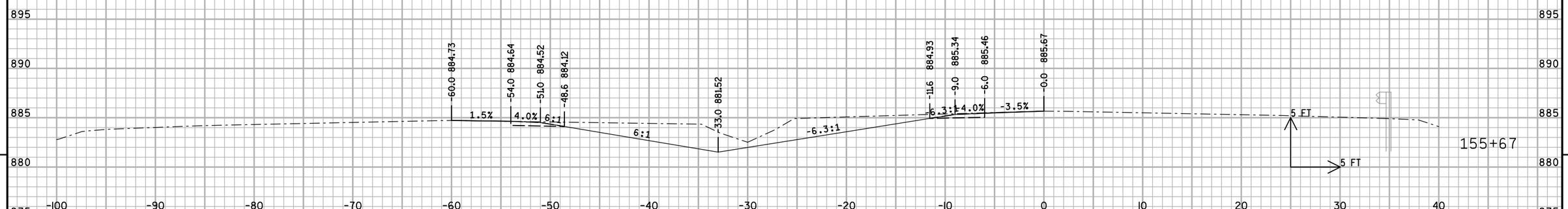
EB I-94

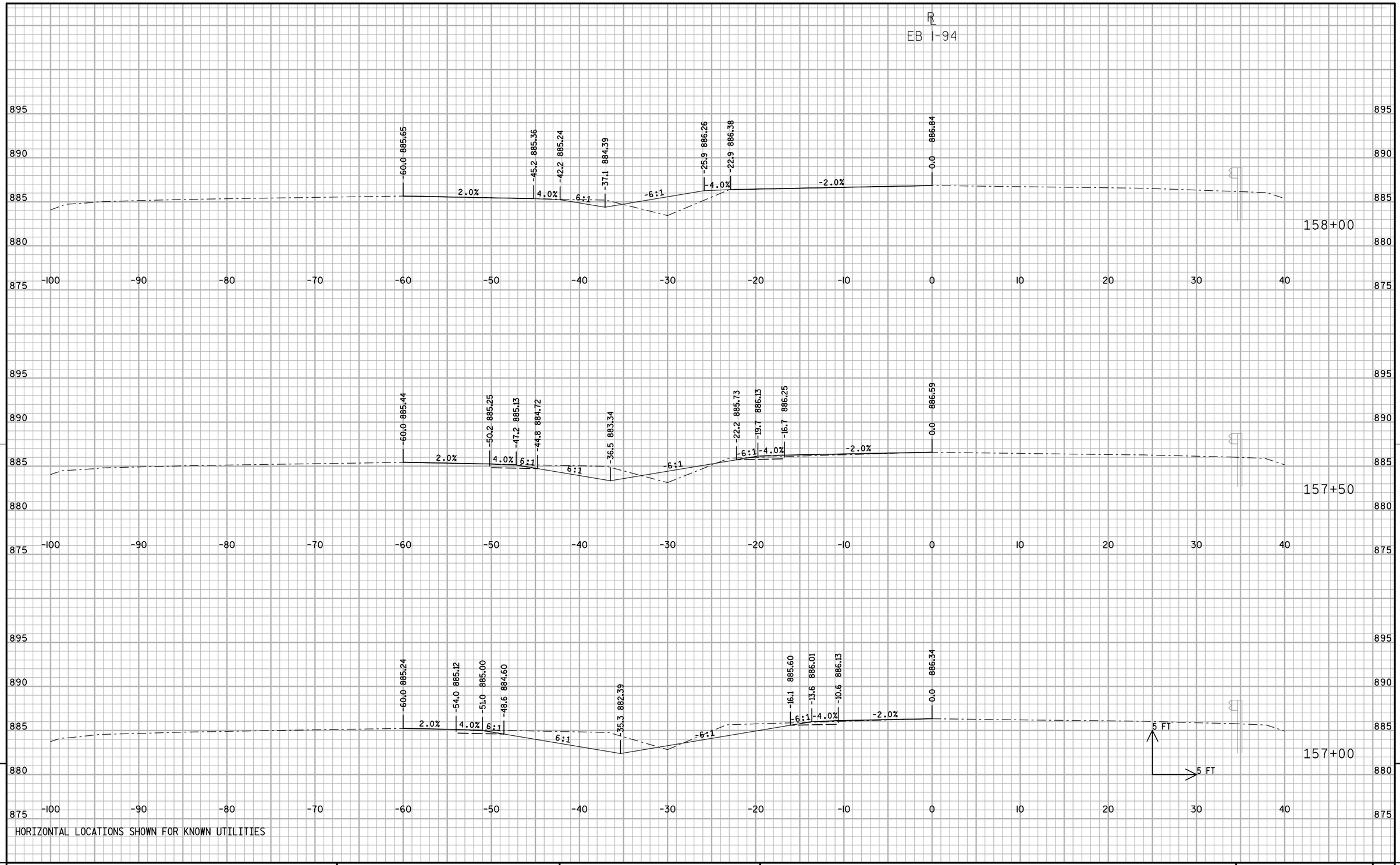






HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 323	E



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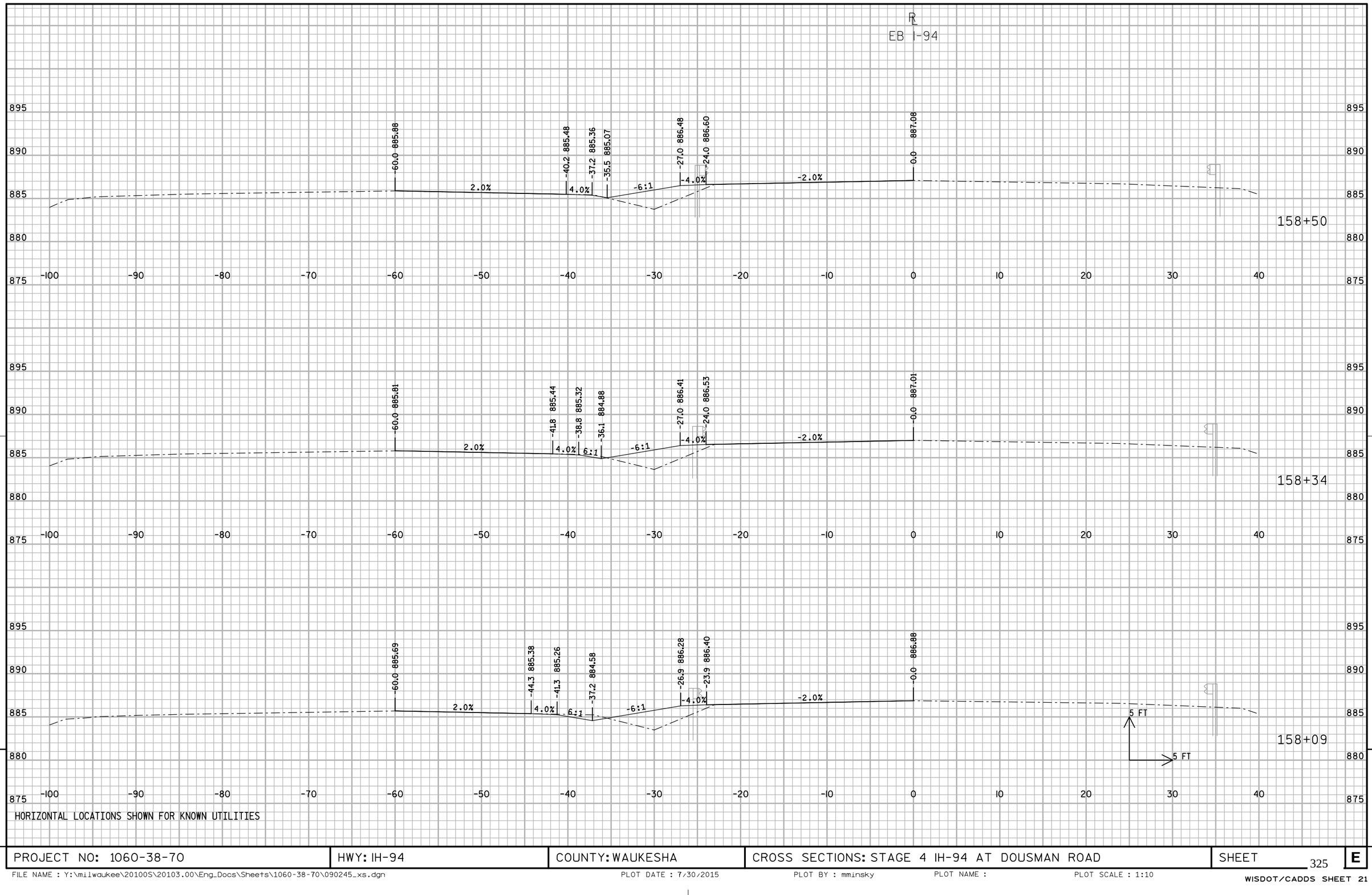
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

9

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 324	E

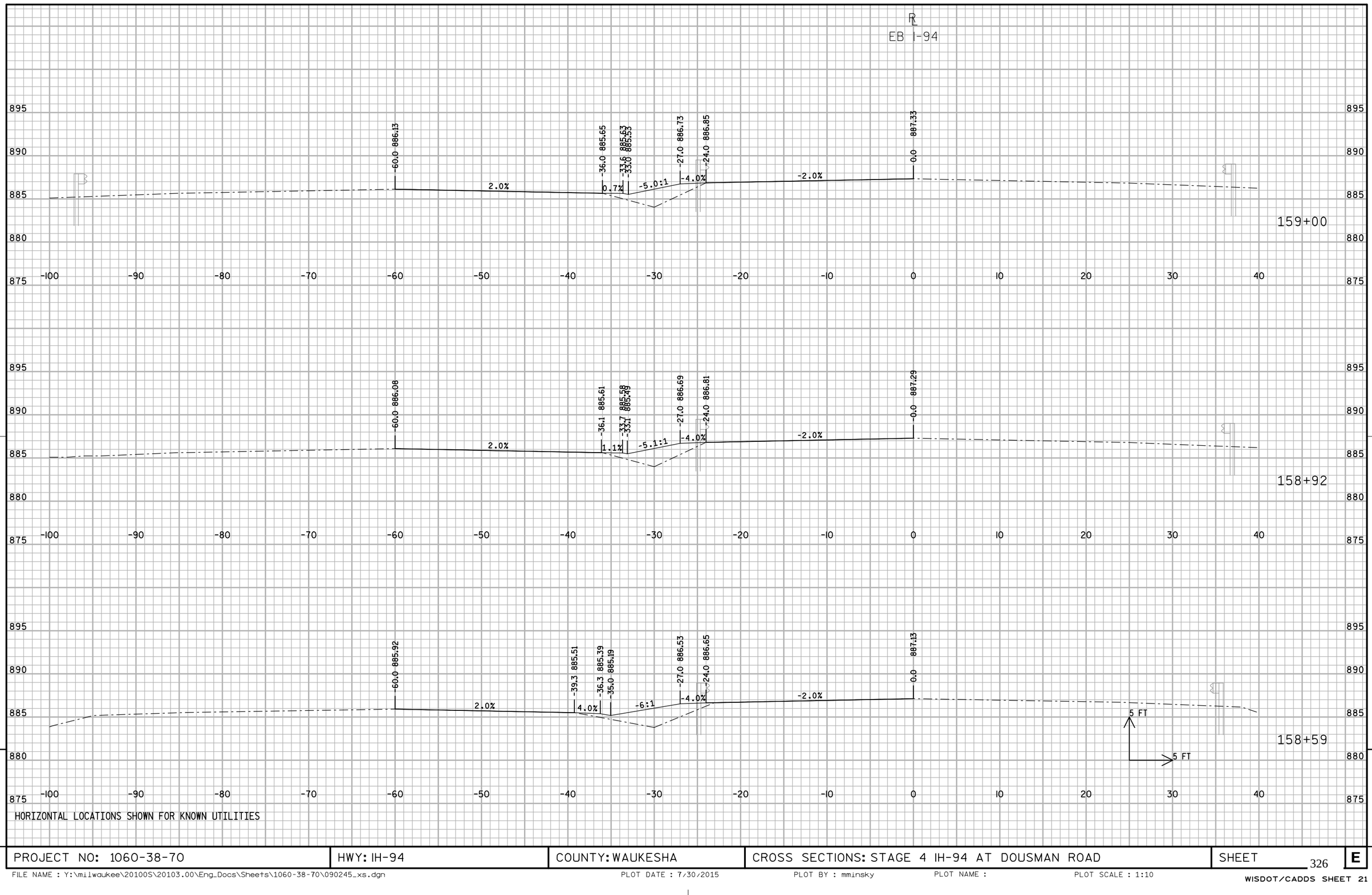


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 325	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090245_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

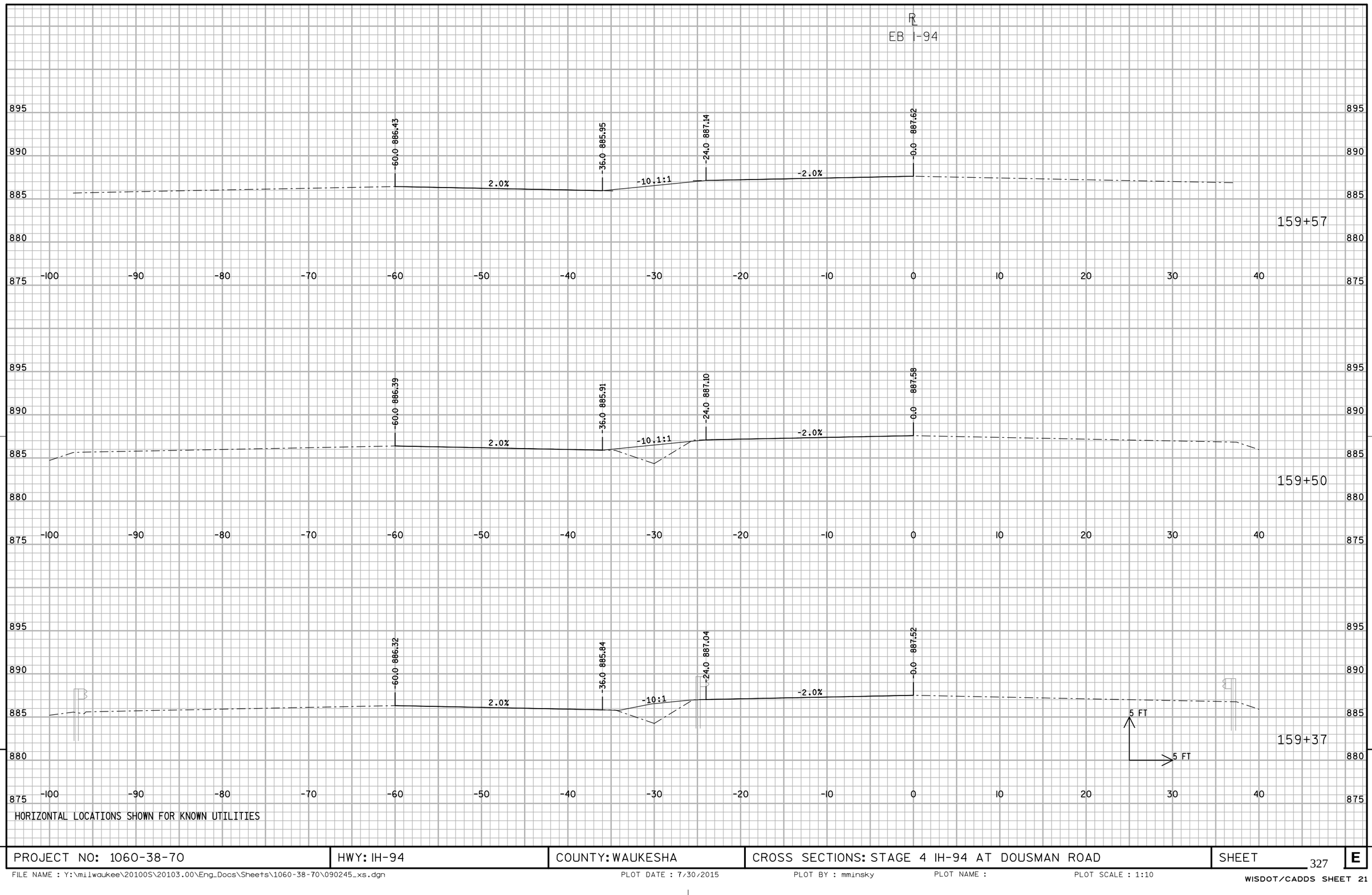


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 326	E

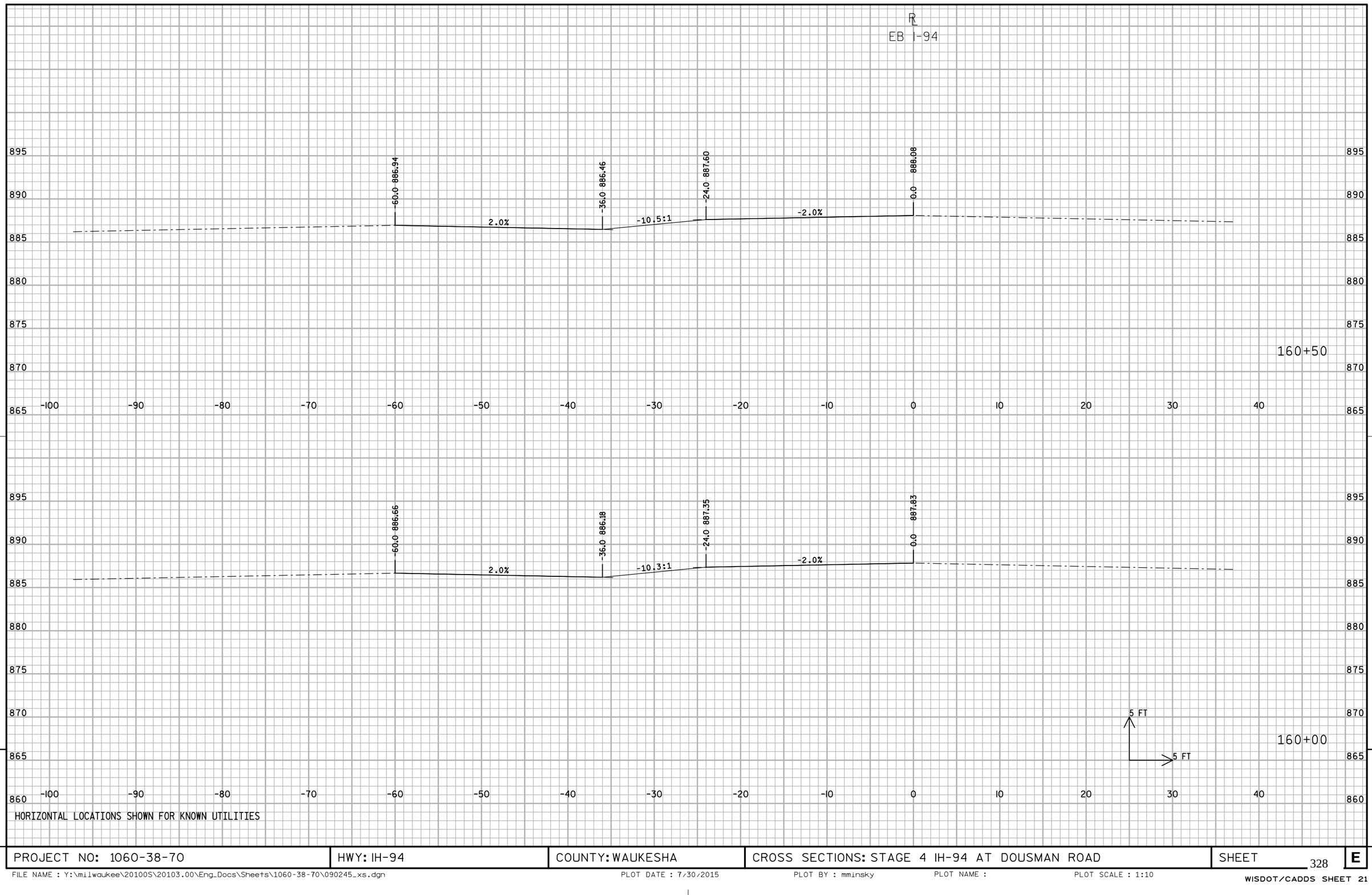
FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090245_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



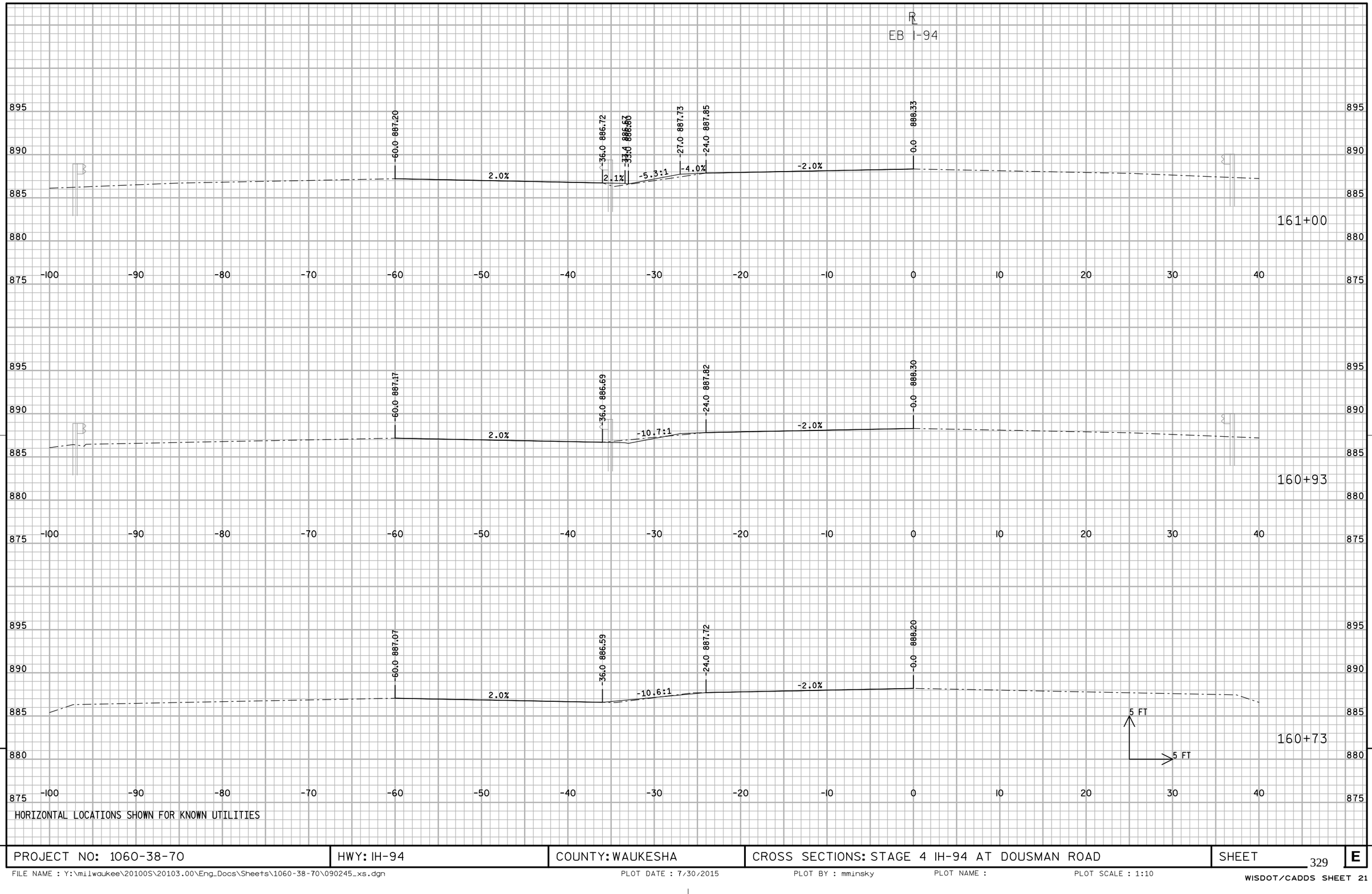
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 327	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 328	E



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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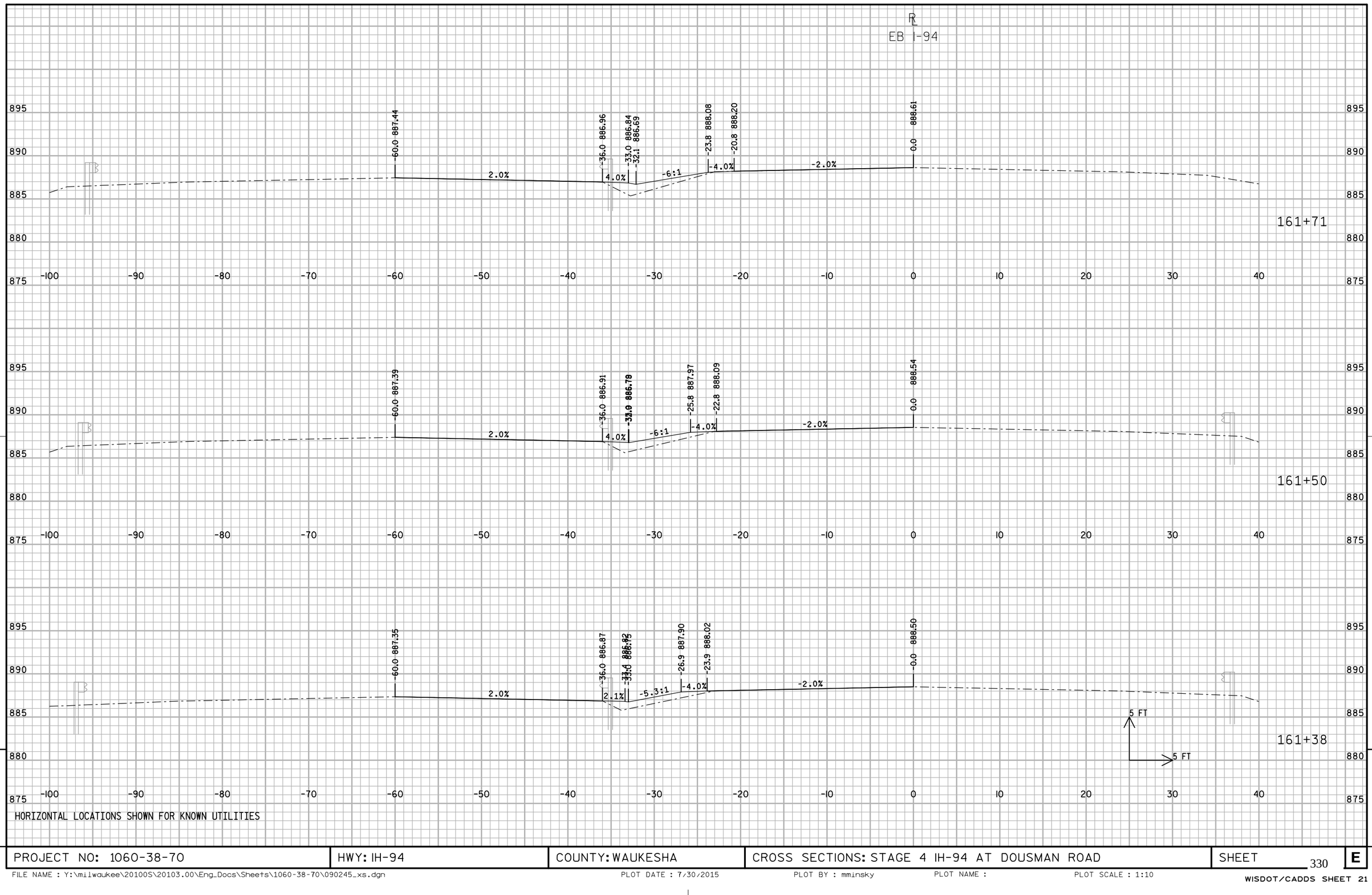
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 329	E



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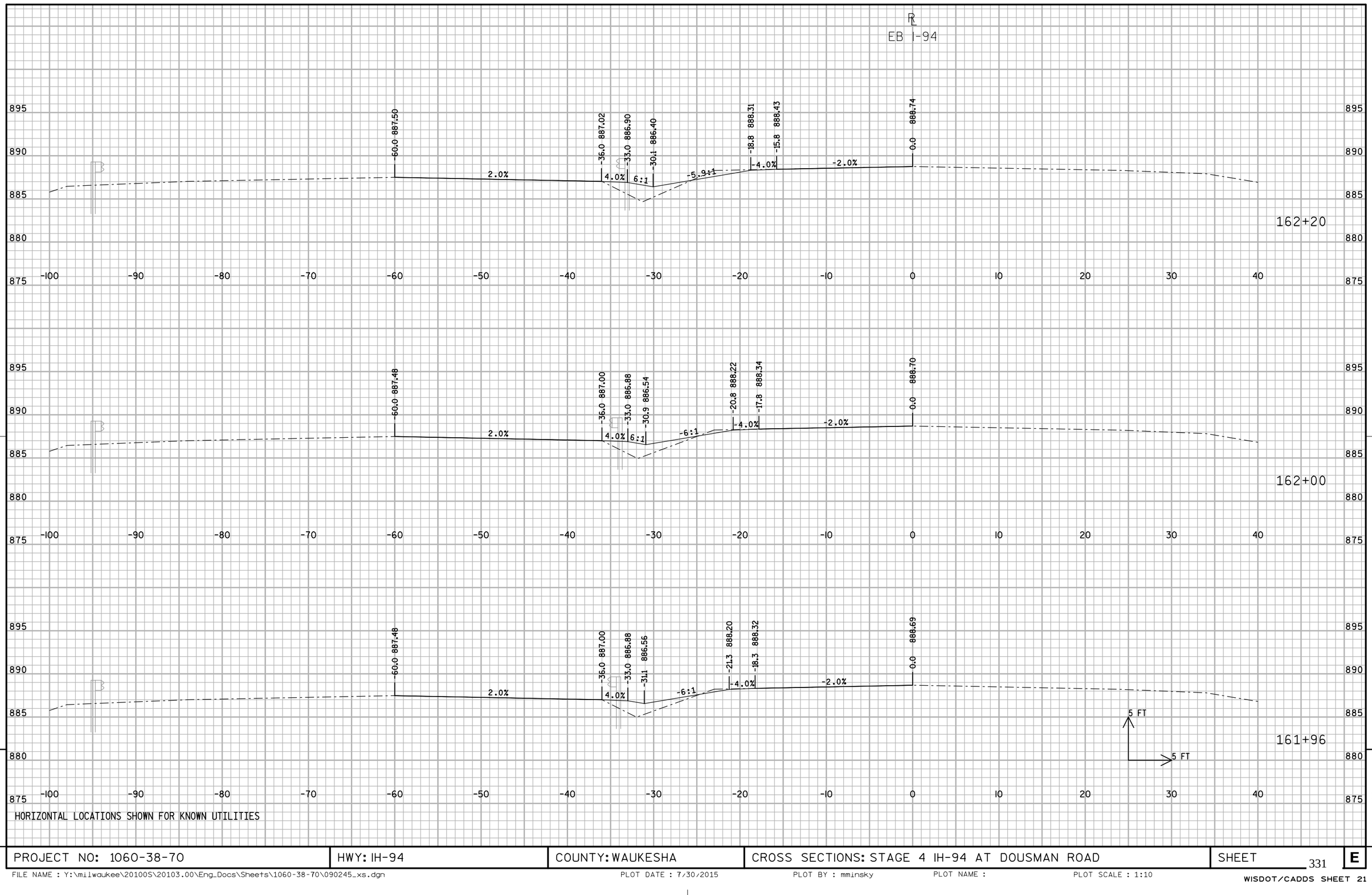
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

9

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 330	E

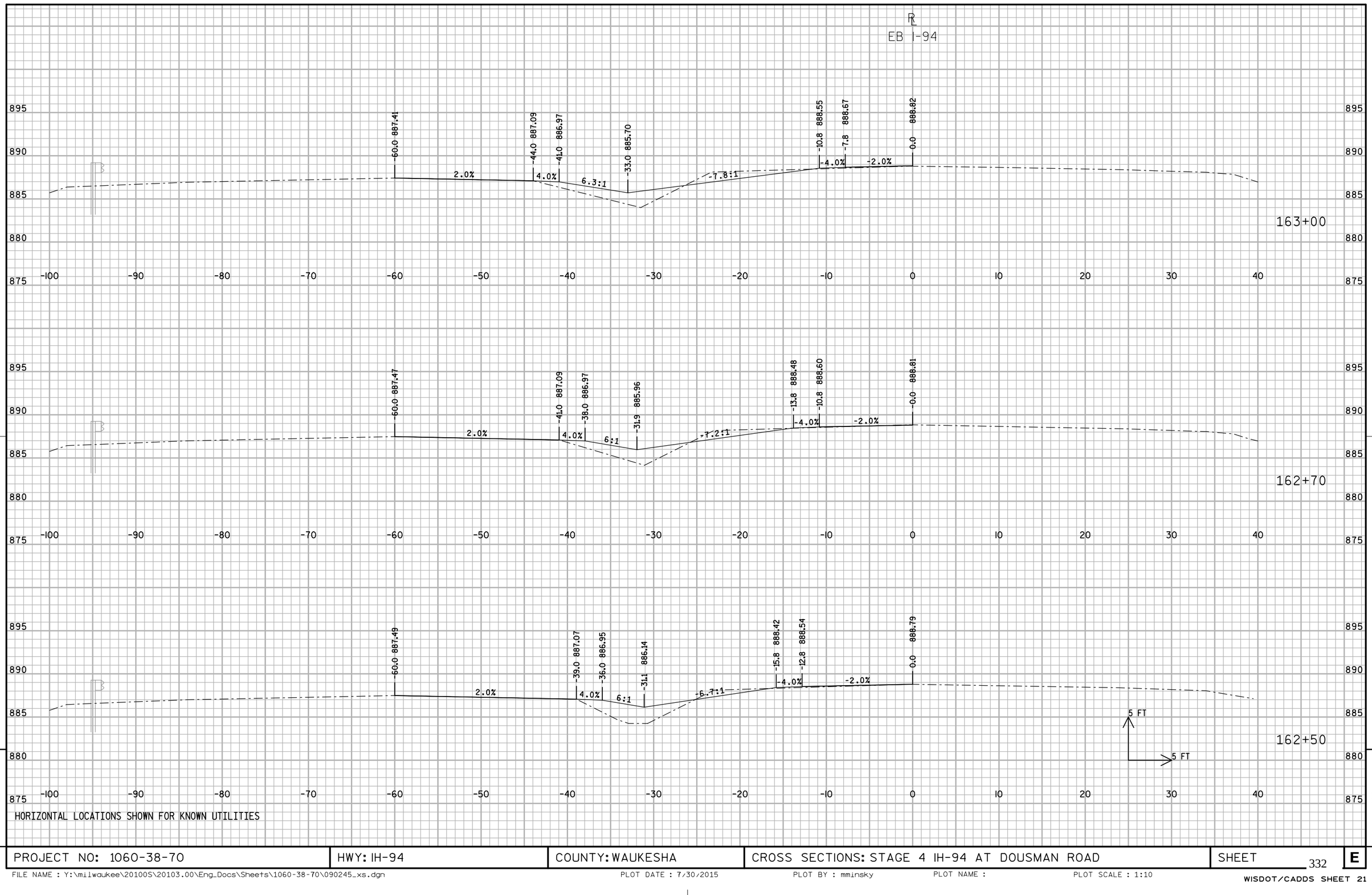
FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090245_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 331	E

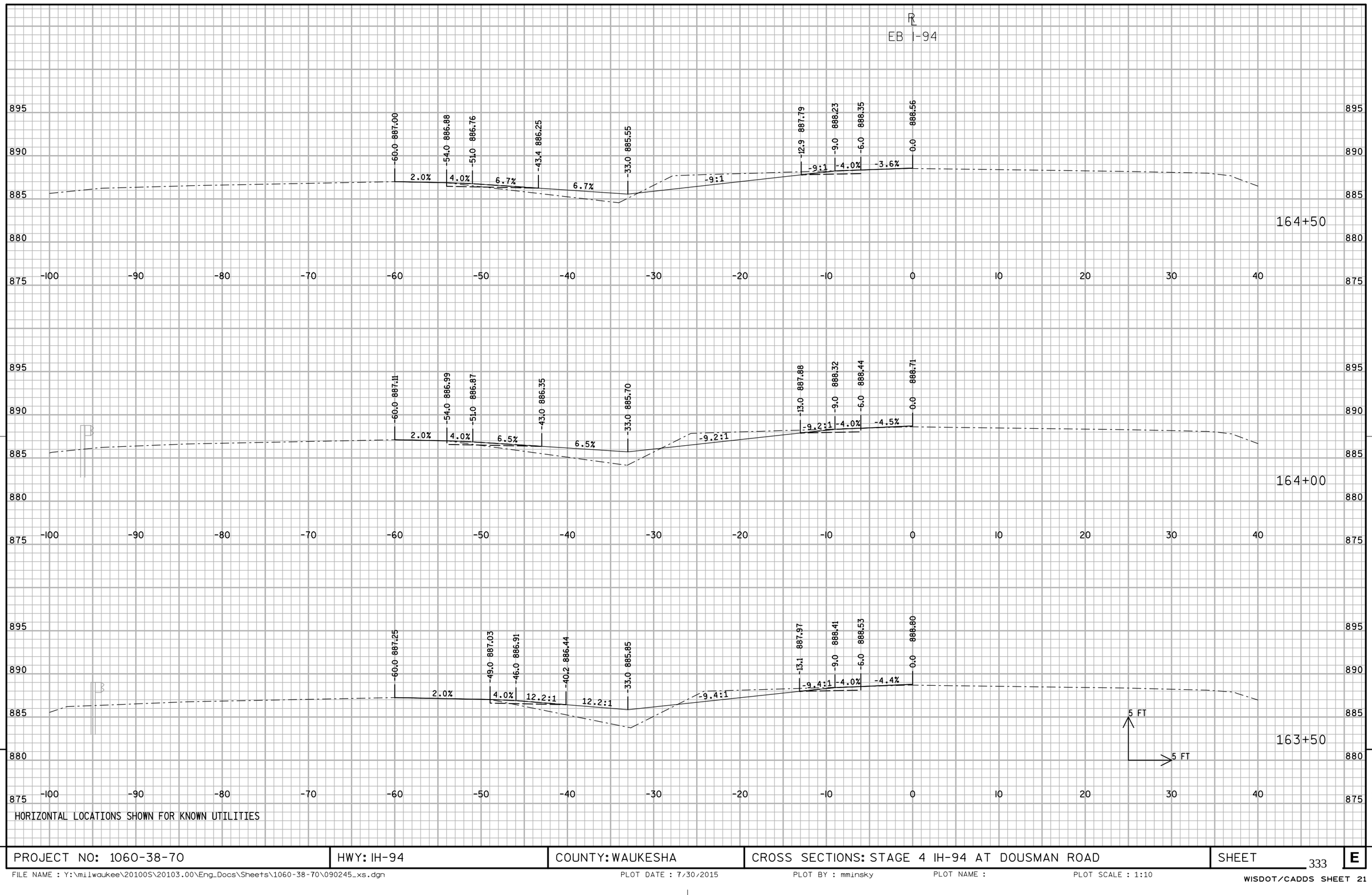


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 332	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090245_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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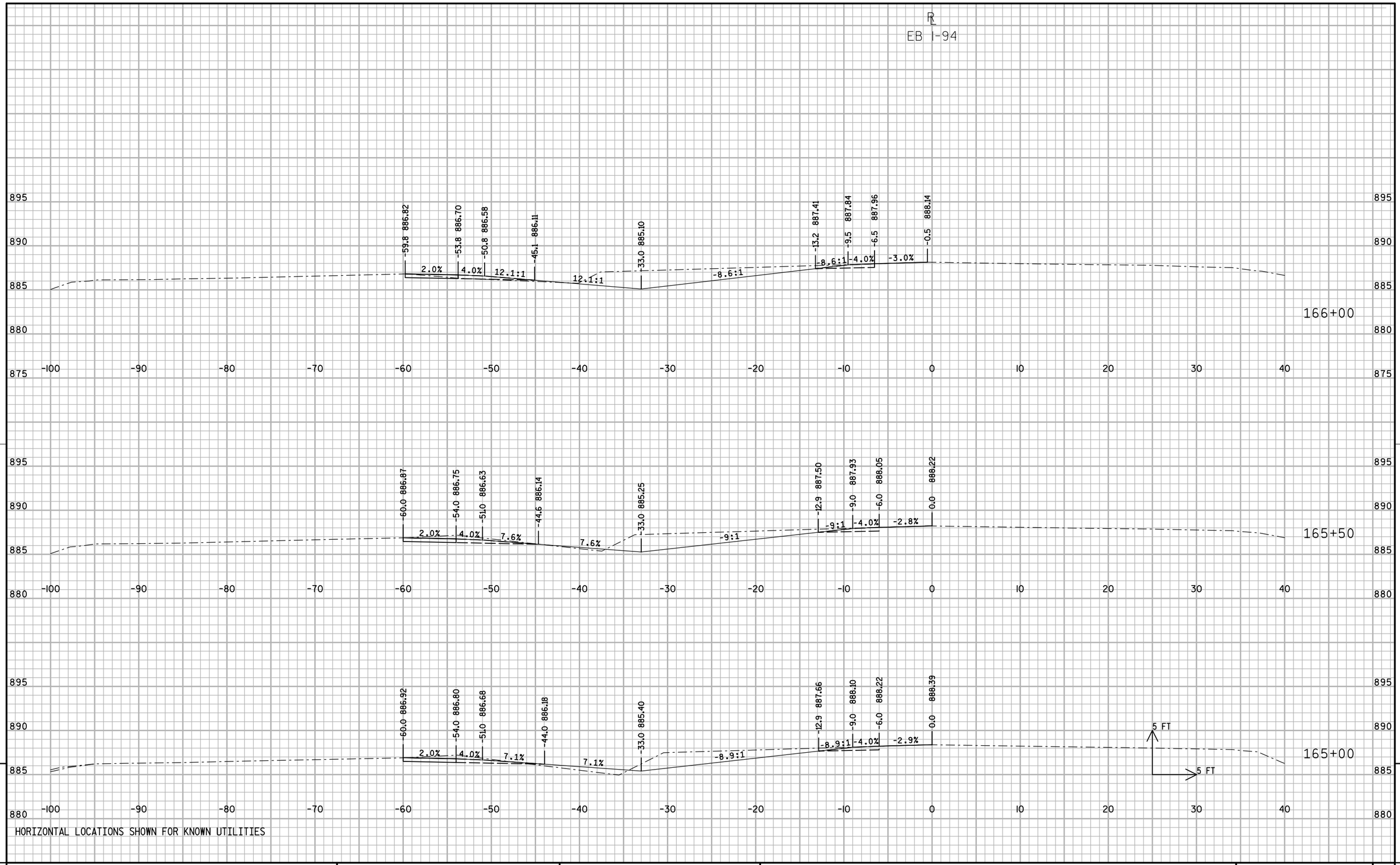
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 333	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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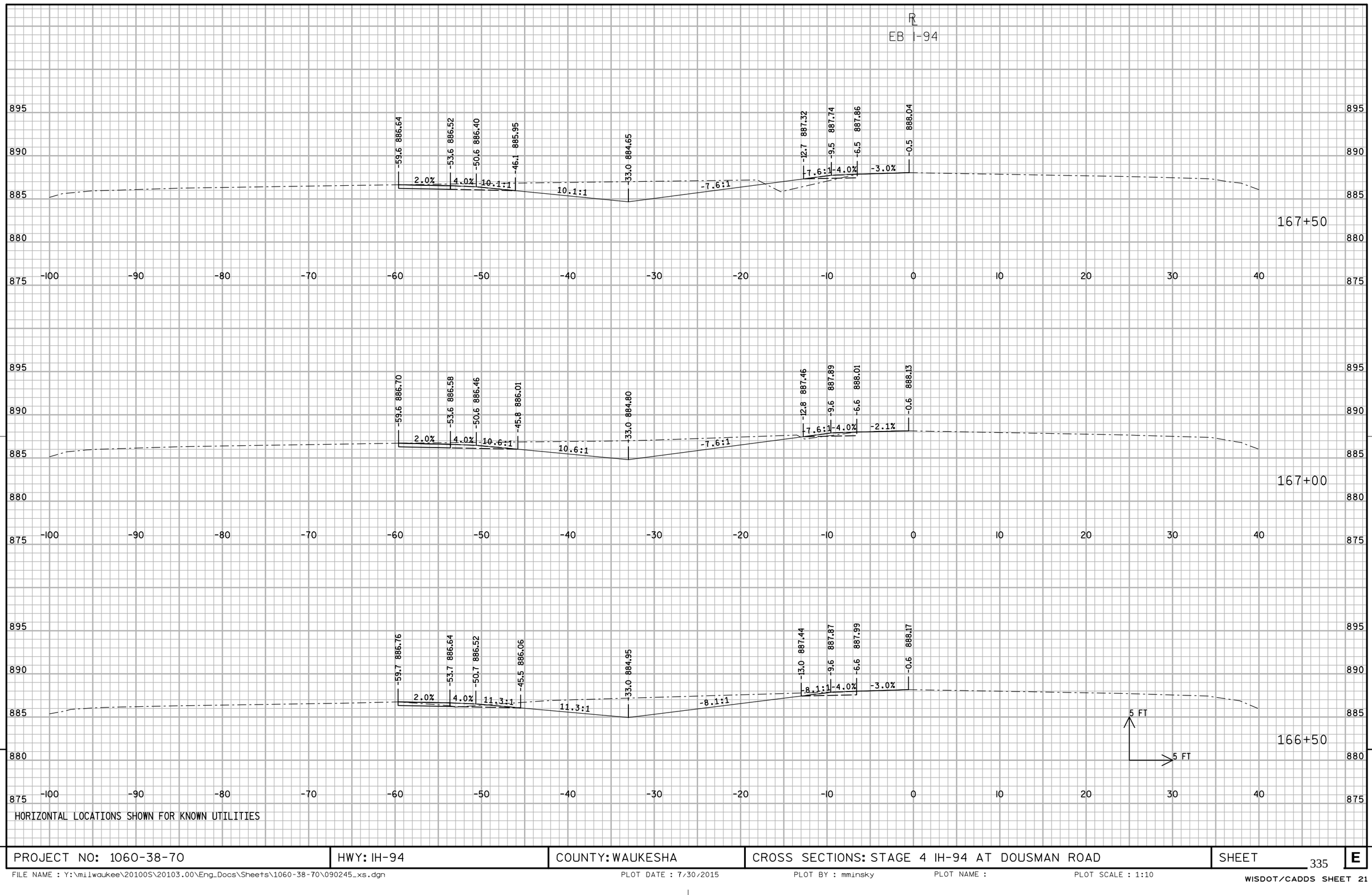
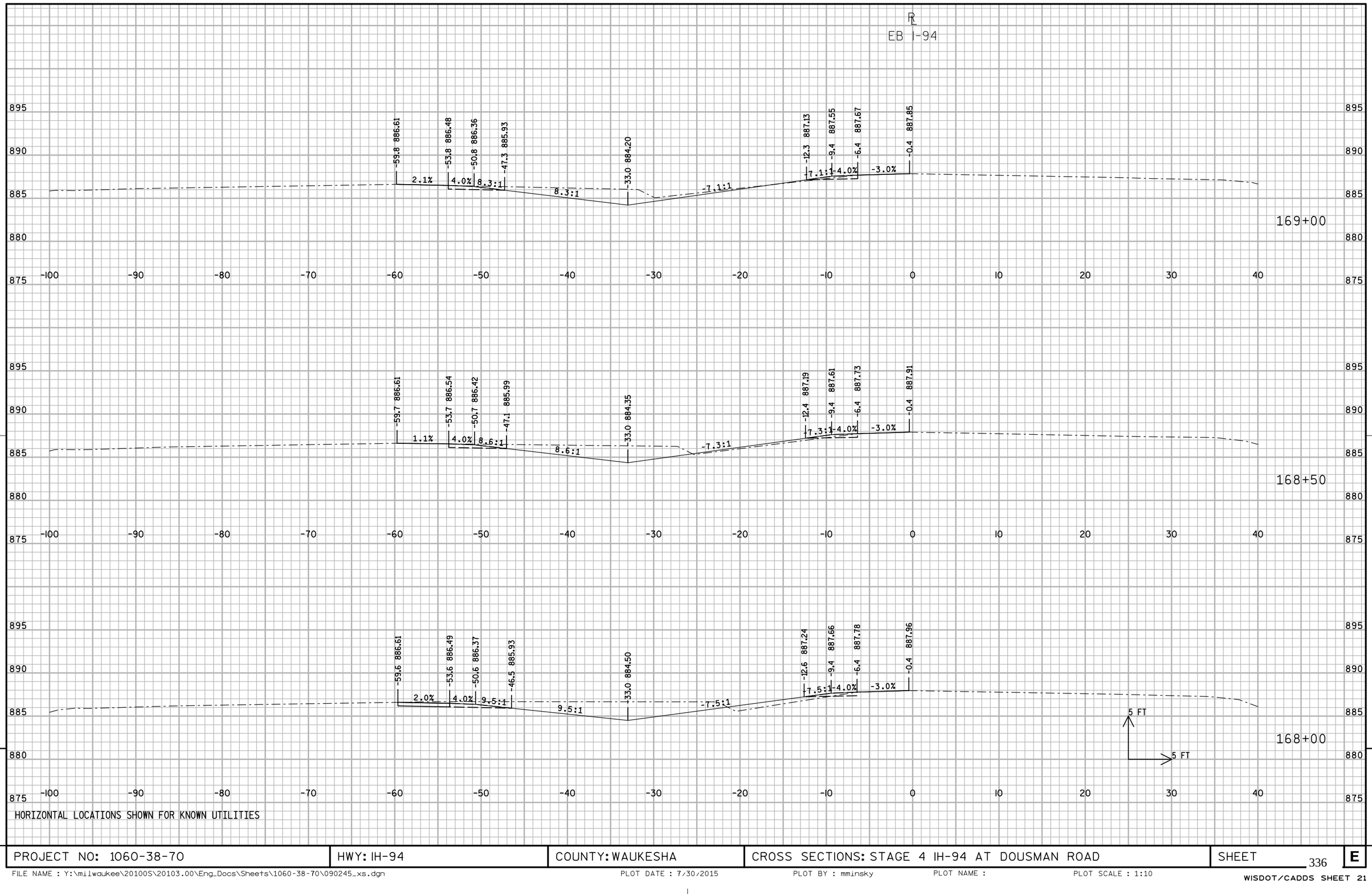


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 335	E

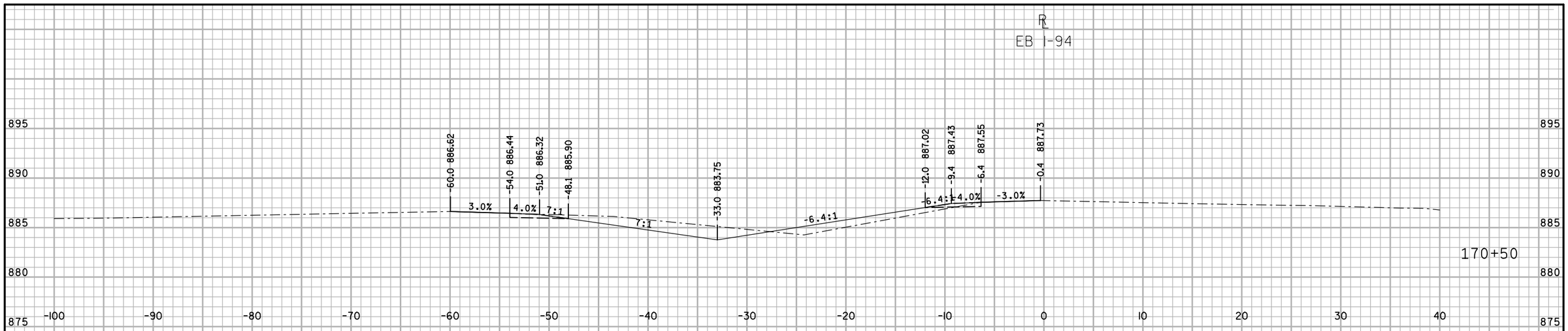


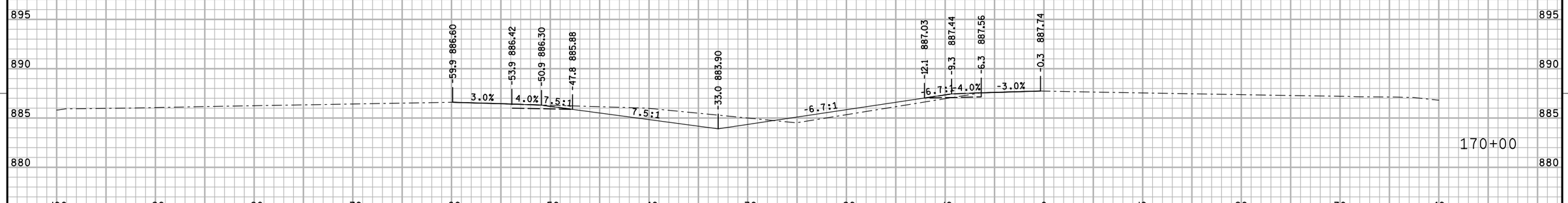
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

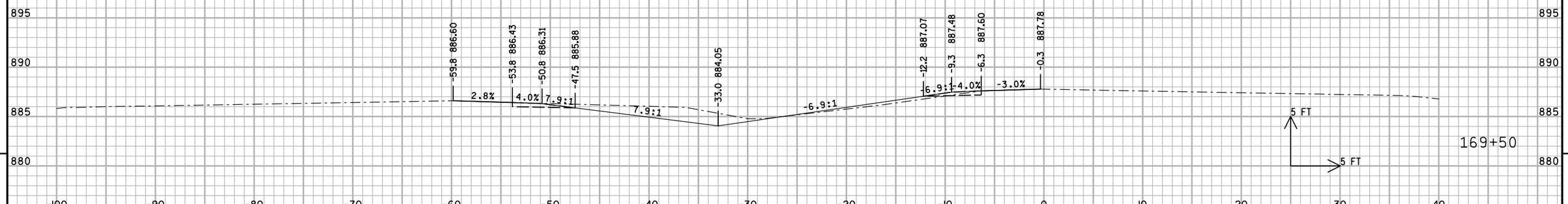
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 336	E

R

EB I-94







HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 337	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090245_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

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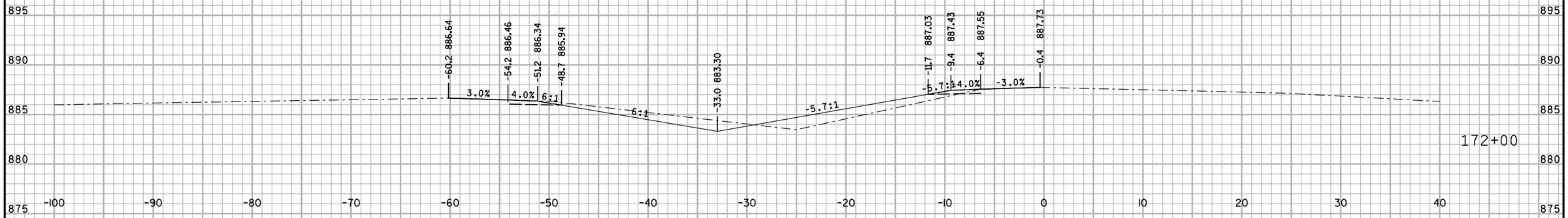
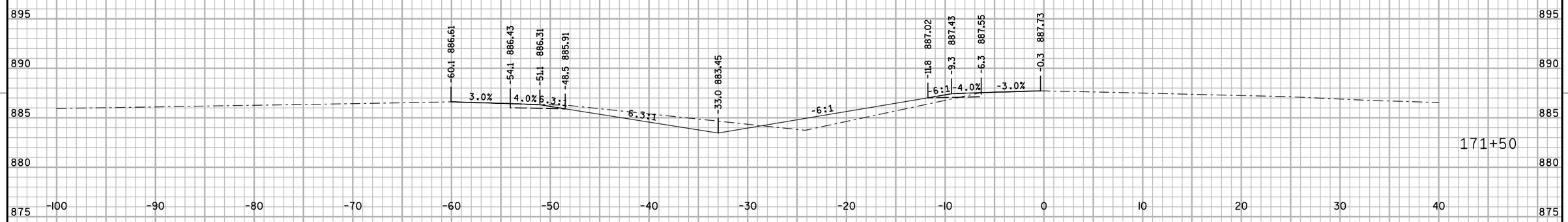
EB I-94



172+00



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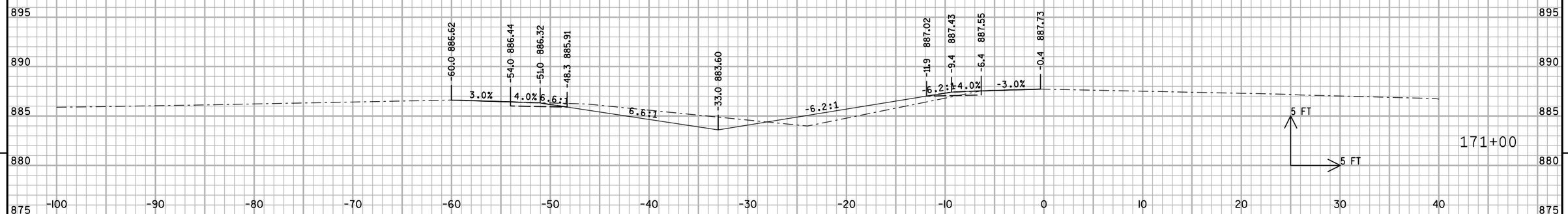

171+00

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 338	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090245_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

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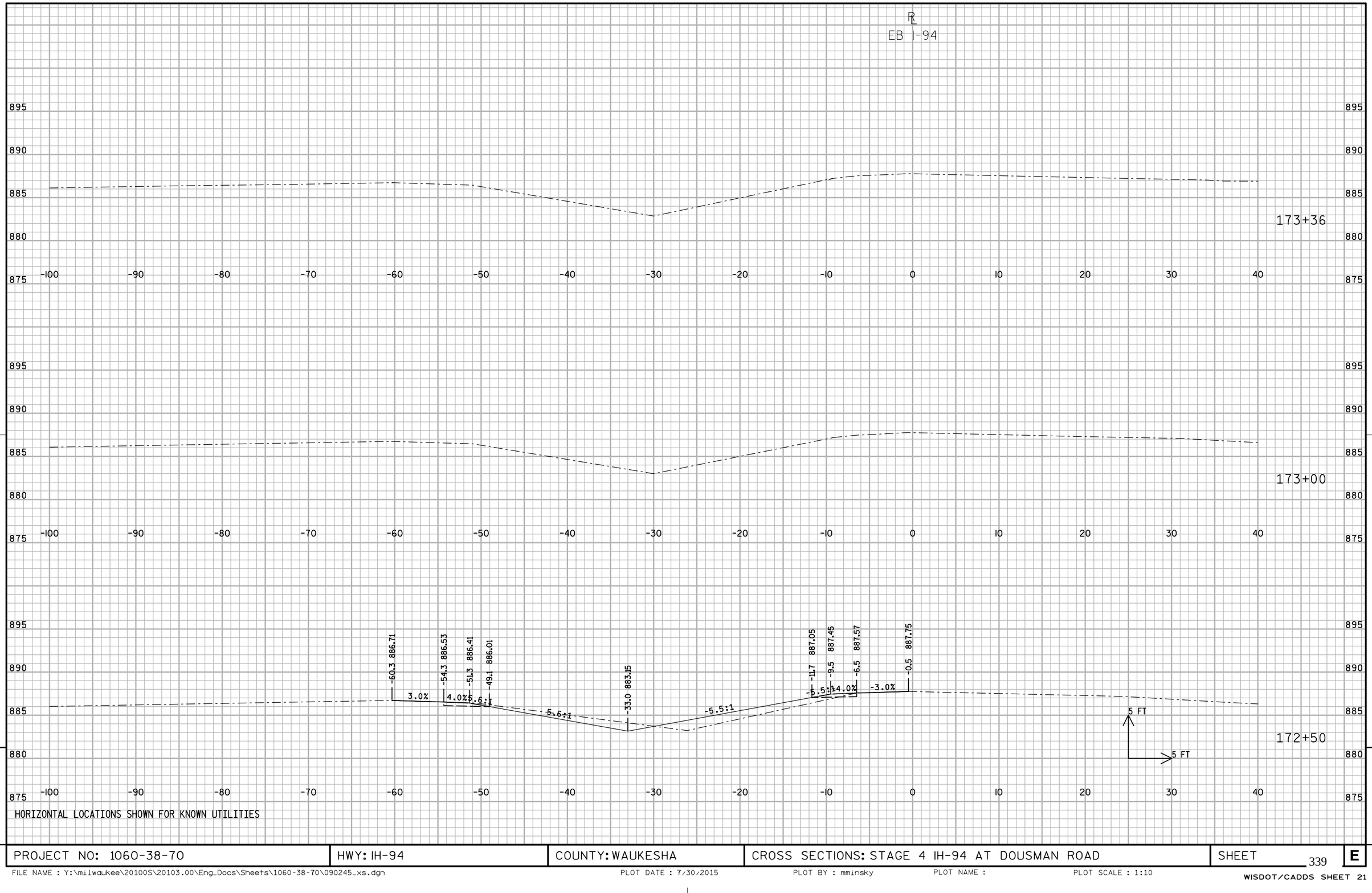
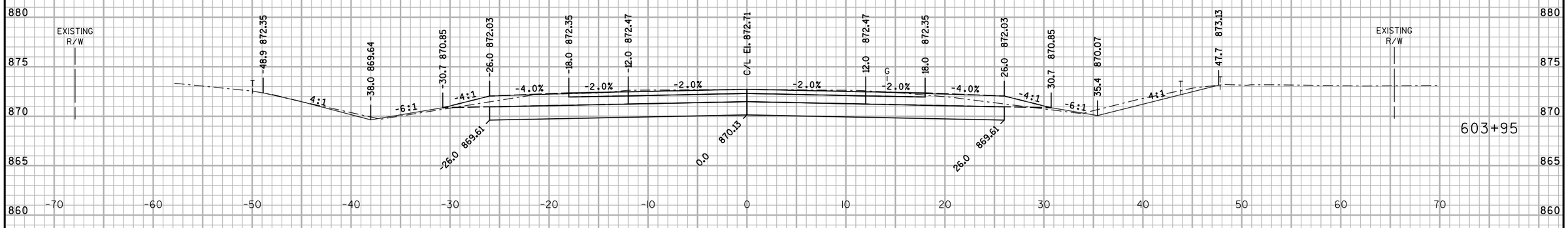
EB I-94

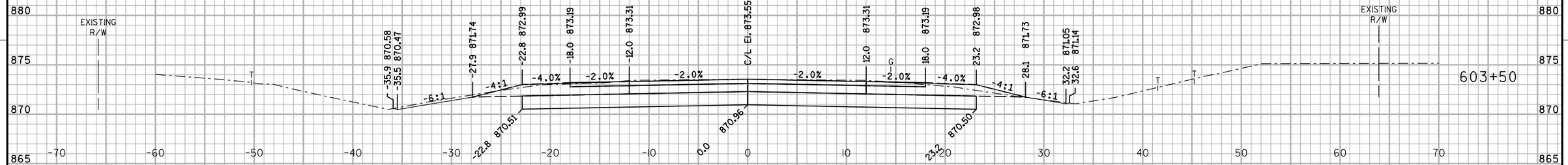


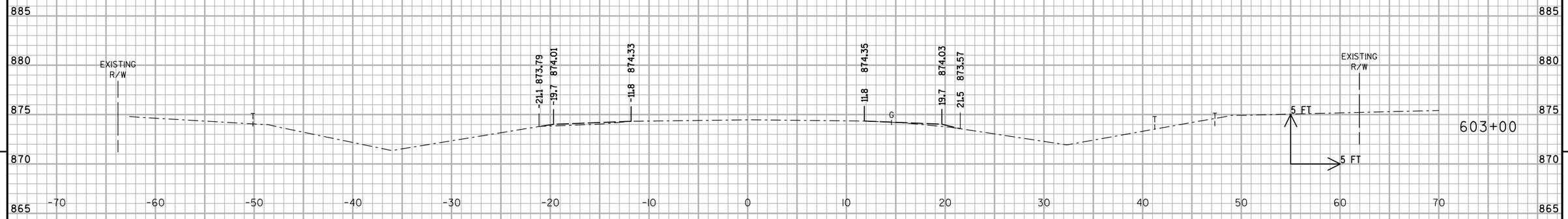
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT DOUSMAN ROAD	SHEET 339	E

DOUSMAN ROAD

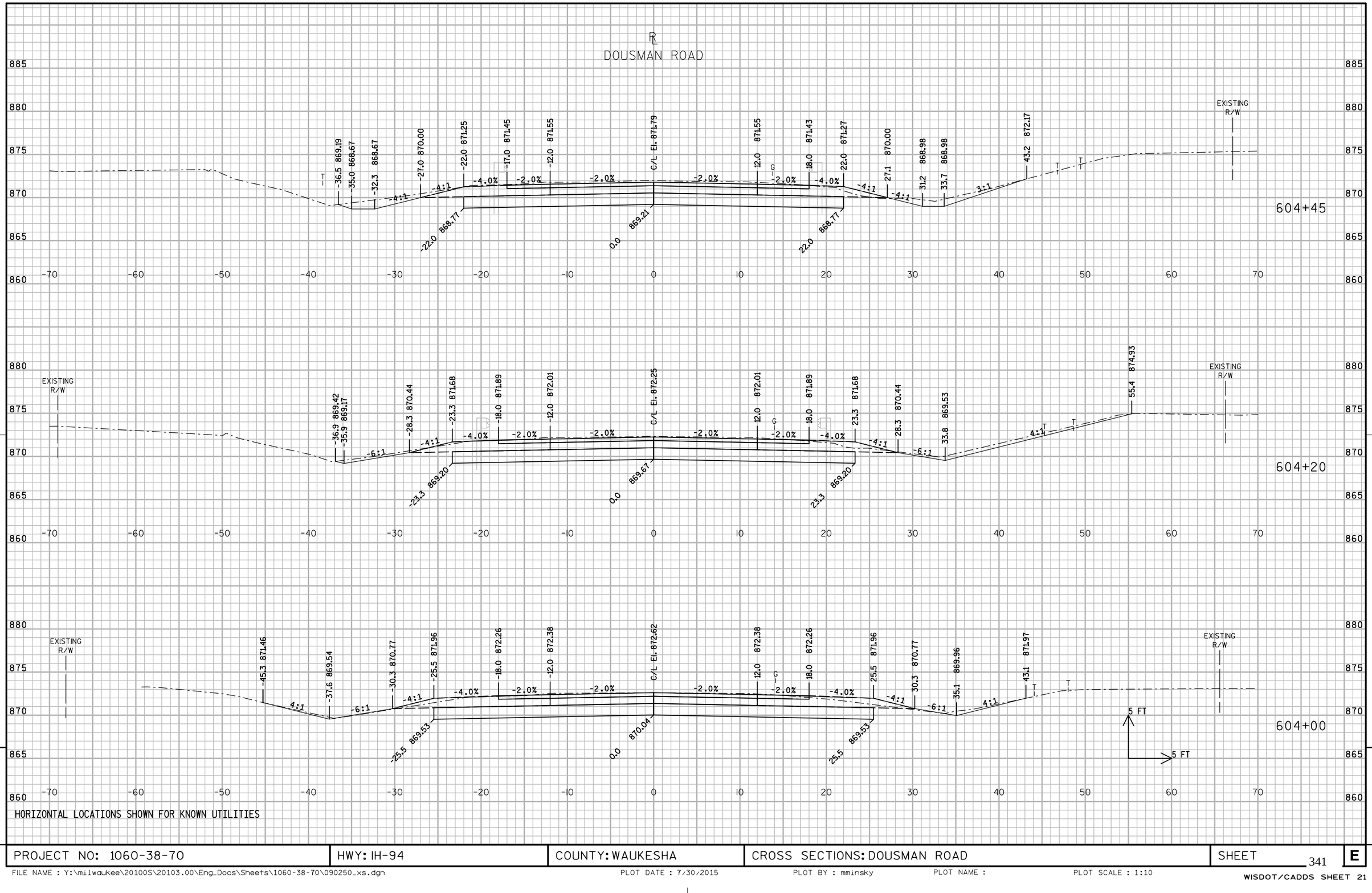






HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

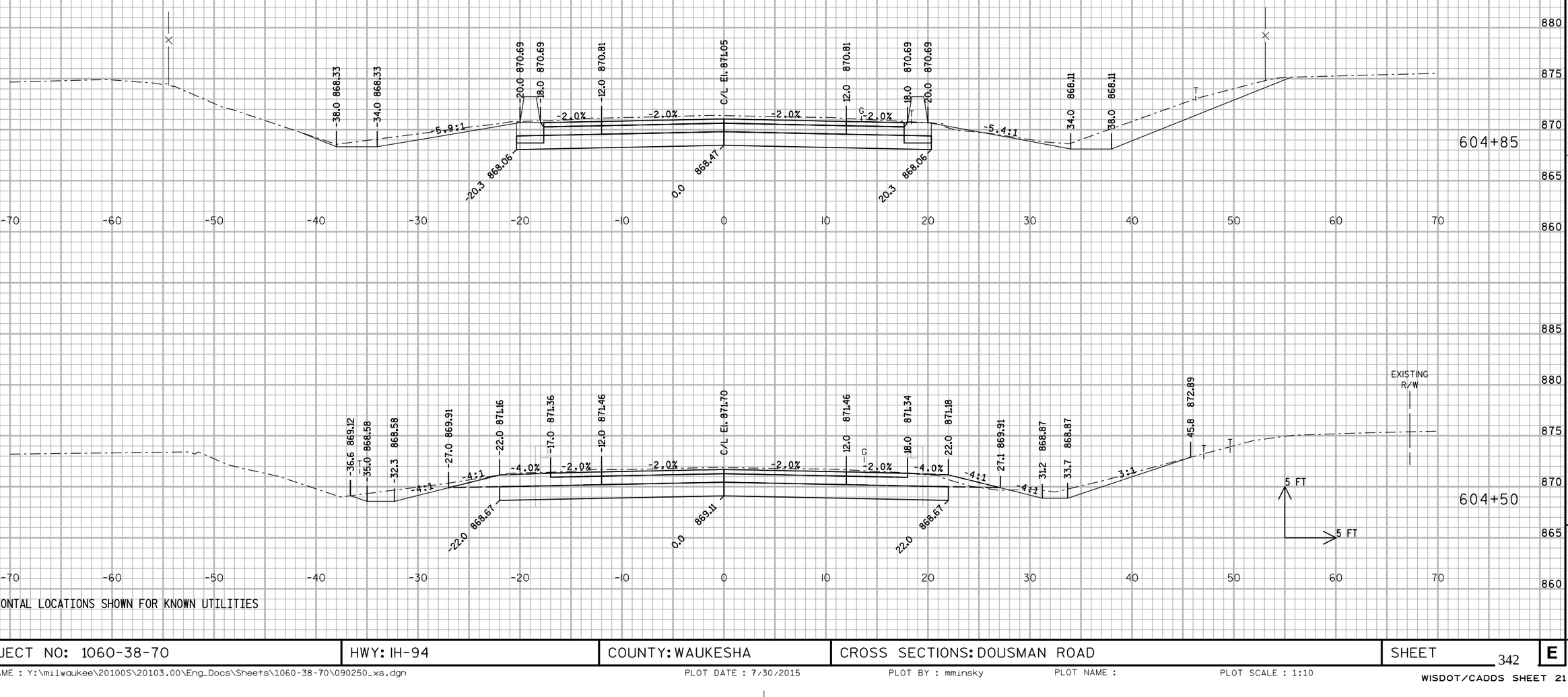
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: DOUSMAN ROAD	SHEET 340	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

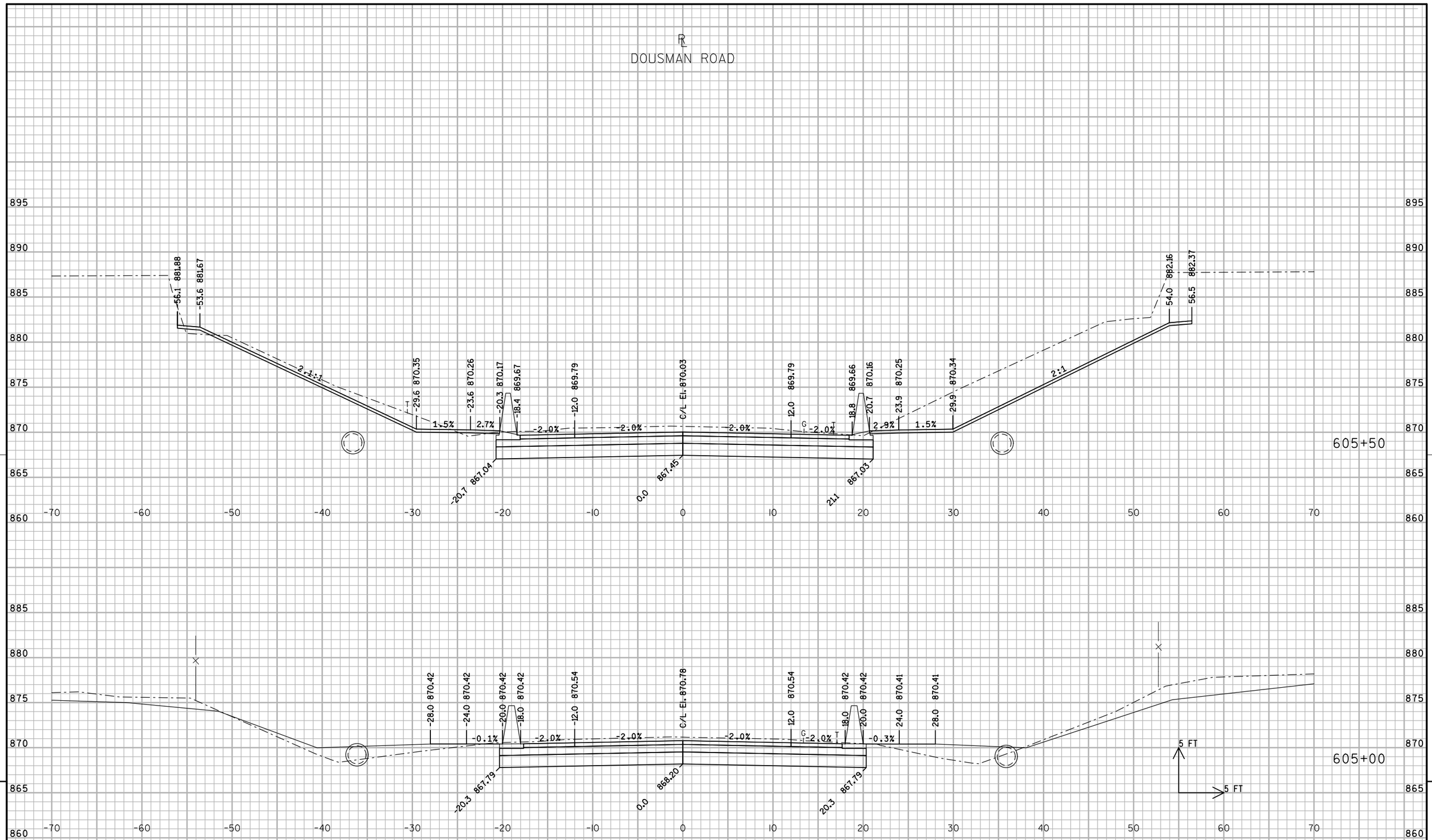
PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: DOUSMAN ROAD	SHEET 341	E

DOUSMAN ROAD



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: DOUSMAN ROAD	SHEET 342	E

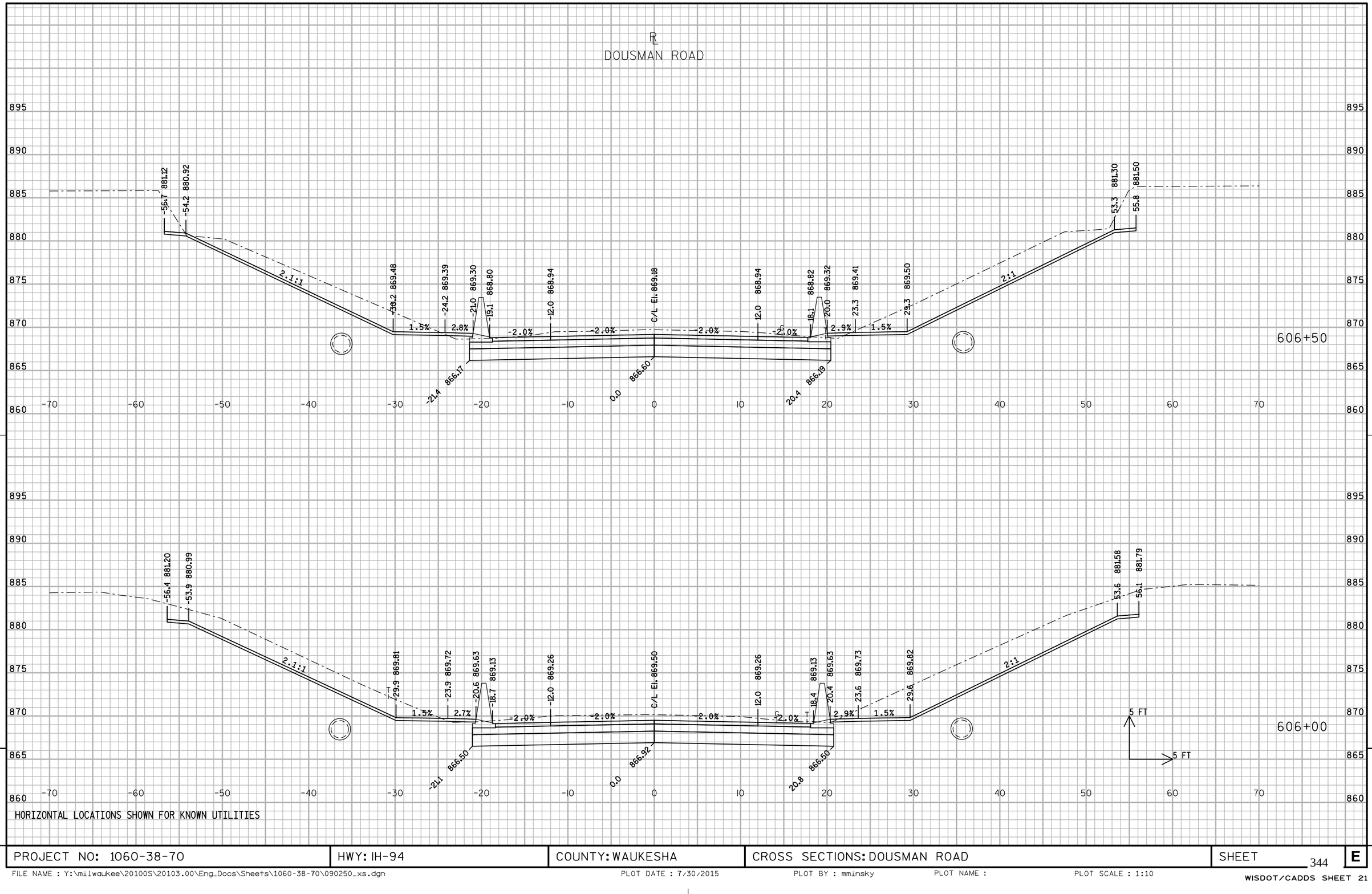


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: DOUSMAN ROAD	SHEET 343	E

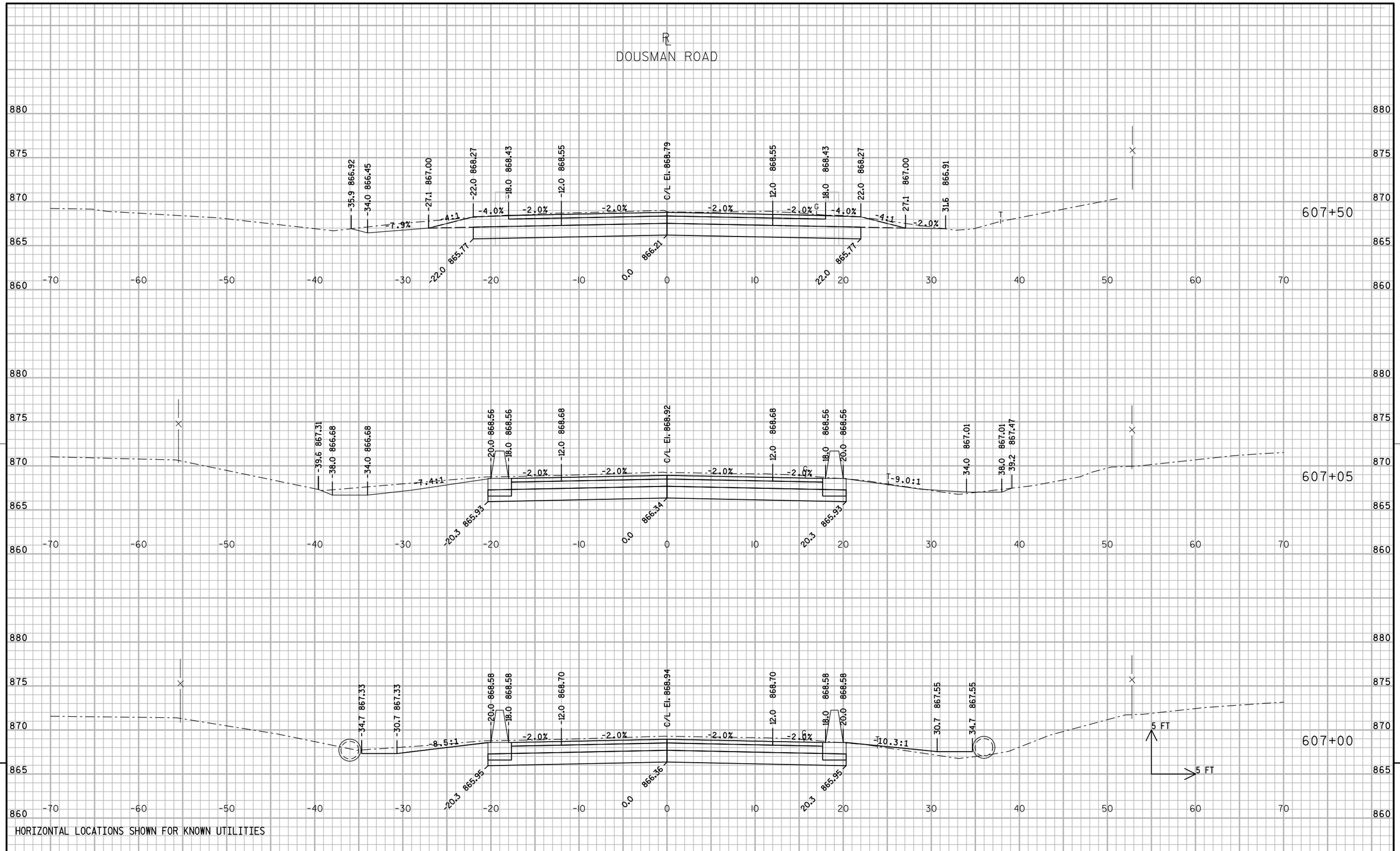
FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090250_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: DOUSMAN ROAD	SHEET 344	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: DOUSMAN ROAD	SHEET 345	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090250_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

℄
DOUSMAN ROAD

608+50

-22.7 868.16
-11.7 868.60
11.7 868.47
22.7 868.04
EXISTING R/W
-46.0 865.29

608+00

-30.7 866.87
-26.0 868.05
-18.0 868.37
-12.0 868.49
C/L El. 868.73
12.0 868.49
18.0 868.37
26.0 868.05
30.7 866.87
31.6 866.85
-4:1
-4.0%
-2.0%
-2.0%
-2.0%
-2.0%
-4.0%
-4:1
EXISTING R/W
-26.0 865.63
-25.0 865.54
0.0 866.15
26.0 865.63

607+75

-35.3 866.65
-34.0 866.33
-28.3 866.93
-23.3 868.18
-18.0 868.39
-12.0 868.51
C/L El. 868.75
12.0 868.51
18.0 868.39
23.3 868.18
28.3 866.93
31.7 866.87
-9.4:1
-4:1
-4.0%
-2.0%
-2.0%
-2.0%
-2.0%
-4.0%
-4:1
-2.0%
5 FT
5 FT
-23.3 865.70
0.0 866.17
23.3 865.70

-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70
860 865 870 875 880

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-70	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: DOUSMAN ROAD	SHEET 346	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-70\090250_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov

WKE

JAN 2016

PROJECT ID: 1060-38-71
WITH: 1060-38-70

COUNTY: WAUKESHA

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 = 370

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1060-38-71	WISC 2016005	1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

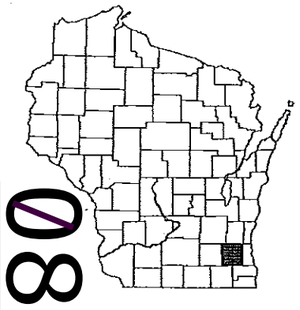
EAST-WEST FREEWAY

GOLDEN LAKE RD (CTH BB) BRIDGES

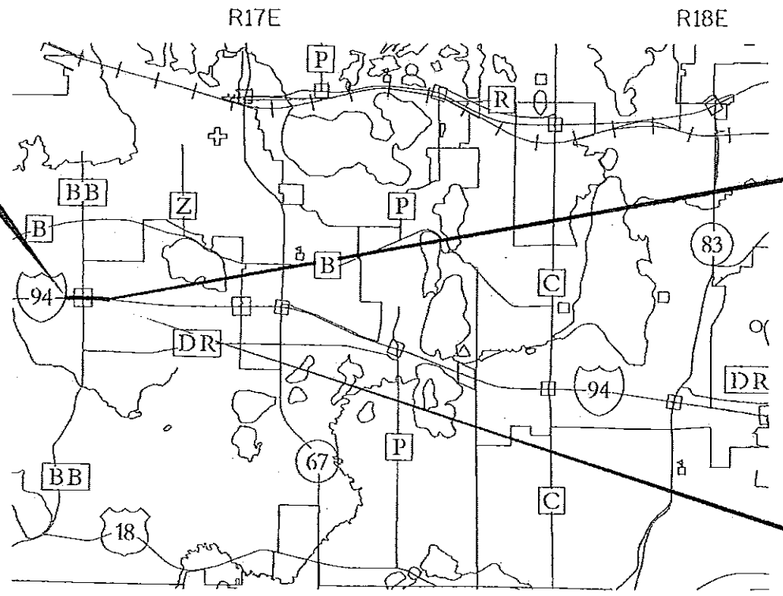
IH-94

WAUKESHA COUNTY

STATE PROJECT NUMBER
1060-38-71



BEGIN PROJECT 1060-38-71
STA. 34+60.00
Y = 182,761.28
X = 604,016.44



END PROJECT 1060-38-71
STA. 78+85.00

STRUCTURES
B-67-341 & B-67-342

DESIGN DESIGNATION

A.A.D.T.	2016	=	43,100
A.A.D.T.	2036	=	46,500
D.H.V.		=	8.9
D.D.		=	60/40
T.		=	5.7
DESIGN SPEED		=	70
ESALS		=	18,242,700

CONVENTIONAL SYMBOLS

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

PROFILE
- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.35)
- CULVERT (Profile View)

UTILITIES
- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.838 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), WAUKESHA COUNTY, NAD 83 (1991).
ELEVATIONS IN THIS PLAN ARE REFERENCED TO NGVD 29.

ORIGINAL PLANS PREPARED BY

benesch
engineers · scientists · planners
Alfred Benesch & Company
1300 West Canal Street, Suite 150
Milwaukee, Wisconsin 53233
414-906-1310 Fax No. 2010110

AMANDA E. ZACHARIAS
E-35716
MILWAUKEE
WI

7/29/15 (Date)

(Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	ALFRED BENESCH & CO
Designer	ALFRED BENESCH & CO
Project Manager	DAVID PITTMAN
Regional Examiner	
Regional Supervisor	
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 7/29/15 (Signature)

E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\010101_ti.dgn
PLOT DATE : 7/28/2015
PLOT BY : bwelgand
PLOT NAME :
PLOT SCALE : 1:200

WISDOT/CADDS SHEET 10

UTILITY CONTACTS

WE ENERGIES (GAS & ELECTRIC)
333 W. Everett St - A299
Milwaukee, WI 53203
Mr. Latroy Brumfield
414-221-5617
latroy.brumfield@we-energies.com

AT&T WISCONSIN.
2005 Pewaukee Road
Waukesha, WI 53188
Mr. Alper Kolcu
262-970-8494
alper.kolcu@att.com

AT&T LEGACY.
P.O. Box 244
Lake Mills, WI 53551
Mr. William Koenig
608-628-0575
smc140@frontier.com

CHARTER COMMUNICATIONS
N3760 CTH DJ
Juneau, WI 53039
Mr. Ron Frase
920-349-3202
ronald.frase@charter.net

WisDOT STOC
433 W St. Paul Ave., STE 300
Milwaukee, WI 53203-3007
Mr. Jeff Madson
414-225-3723
jeffrey.madson@dot.wi.gov

OTHER AGENCIES

CITY OF OCONOMOWOC
DPW
174 E. Wisconsin Ave.
Oconomowoc, WI 53066
Mr. Mark Frye
262-569-2184
mfrye@oconomowoc-wi.gov

DNR
DNR Satellite Center
141 NW Barstow Room 180
Waukesha WI 53188
Mr. Craig Webster
262-574-2100
craig.webster@wisconsin.gov

WisDOT
Southeast Region
141 NW Barstow Street
PO Box 798
Waukesha, WI 53187
Mr. David Pittman
262-548-6439
david.pittman@dot.wi.gov

VILLAGE OF SUMMIT
DPW
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Oconomowoc, WI 53066
Mr. Bill Miller
262-567-2757

DESIGN
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1300 West Canal Street
Suite 150
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Ms. Amanda Zacharias
414-308-1320
azacharias@benesch.com

SEWRPC
W239 N1812 Rockwood Drive
PO Box 1607
Waukesha, WI 53187-1607
Mr. John Washburn
262-953-4295
jwashburn@sewrpc.org

PAVEMENT LOCATION	TOTAL PAVEMENT THICKNESS	LAYER	TYPE	NOMINAL MAXIMUM SIZE GRADATION	ASPHALTIC MATERIAL
IH-94	3.75”	1.75” UPPER	SMA	12.5 MM	-
		2” LOWER	E-30	12.5 MM	PG 64-28
IH-94 SHOULDERS*	3.75”	1.75” UPPER	E-3	12.5 MM	PG 64-28
		2” LOWER	E-3	12.5 MM	PG 64-28
	5”	1.75” UPPER	E-3	12.5 MM	PG 64-28
		3.25” LOWER	E-3	19.0 MM	PG 64-28
GOLDEN LAKE RD	5”	2” UPPER	E-0.3	12.5 MM	PG 58-28
		3” LOWER	E-0.3	19.0 MM	PG 58-28

* SHOULDERS CONSTRUCTED IN STAGE 1, USED FOR TEMPORARY TRAFFIC, AND REMAINING IN PLACE WILL BE 5” ASPHALTIC SURFACE TEMPORARY.

GENERAL NOTES

1. NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.
2. EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS, BUT IS MEASURED AND PAID FOR AS COMMON EXCAVATION.
3. THE WISCONSIN DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR A MONUMENT WHICH SHALL BE SET IN THE STRUCTURES AS DESIGNATED BY THE ENGINEER IN THE FIELD.
4. DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED AND MULCHED.
5. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
6. MAINLINE STAGE 1 AND 3 CROSS SECTIONS ARE REFERENCED FROM RL EB I-94.
7. CONTRACTOR MUST CONTACT THE PROJECT ENGINEER AND SEWRPC (JOHN WASHBURN); AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY SECTION CORNER MONUMENT.

EROSION CONTROL GENERAL NOTES

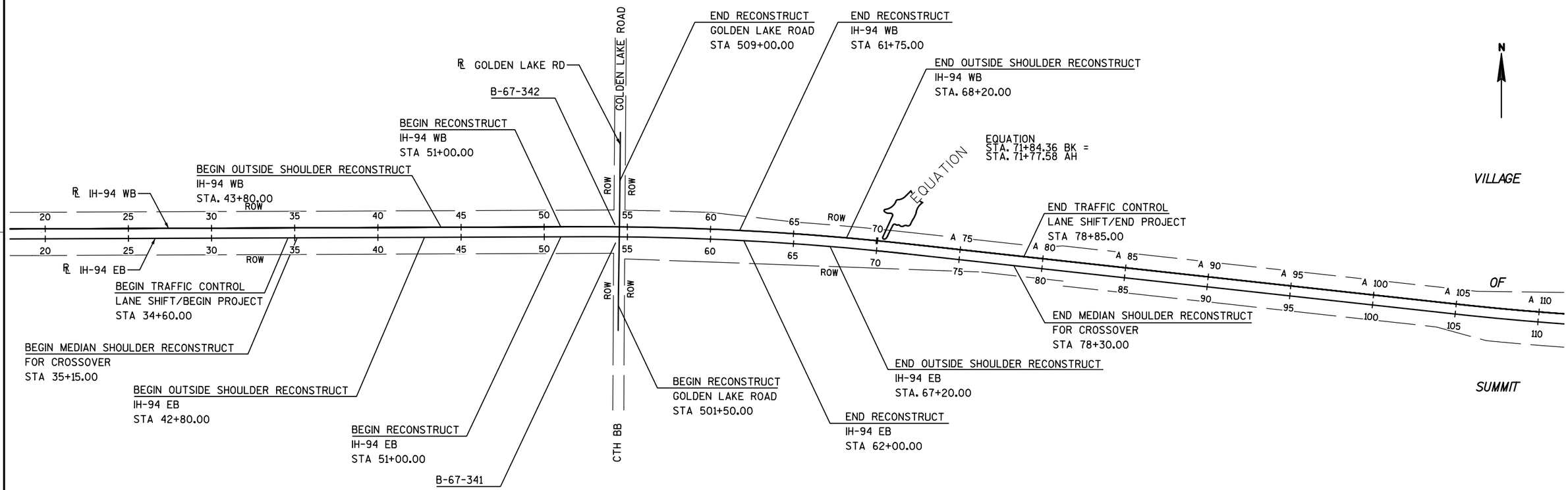
1. RE-TOPSOIL OF GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. SEED, FERTILIZE, AND MULCH/EROSION MAT TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN (14) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED.
2. STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION. IF STOCKPILED MATERIAL IS LEFT FOR MORE THAN FOURTEEN (14) CALENDAR DAYS, SEED THE STOCKPILE WITH TEMPORARY SEED.
3. EROSION CONTROL BMP’S ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTORS ECIP AND BY THE ENGINEER. EROSION CONTROL BMP’S SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE BMP IS NO LONGER REQUIRED.
4. EXISTING WETLANDS NOT DESIGNATED FOR IMPACTS SHALL BE PROTECTED USING SAFETY FENCE. SAFETY FENCE TO BE INSTALLED PRIOR TO START OPERATION OF HEAVY EQUIPMENT IN THE VICINITY OF THE WETLANDS. LOCATION OF SAFETY FENCE TO BE STAKED AND APPROVED BY THE ENGINEER BEFORE INSTALLATION.

ORDER OF SECTION 2 SHEETS

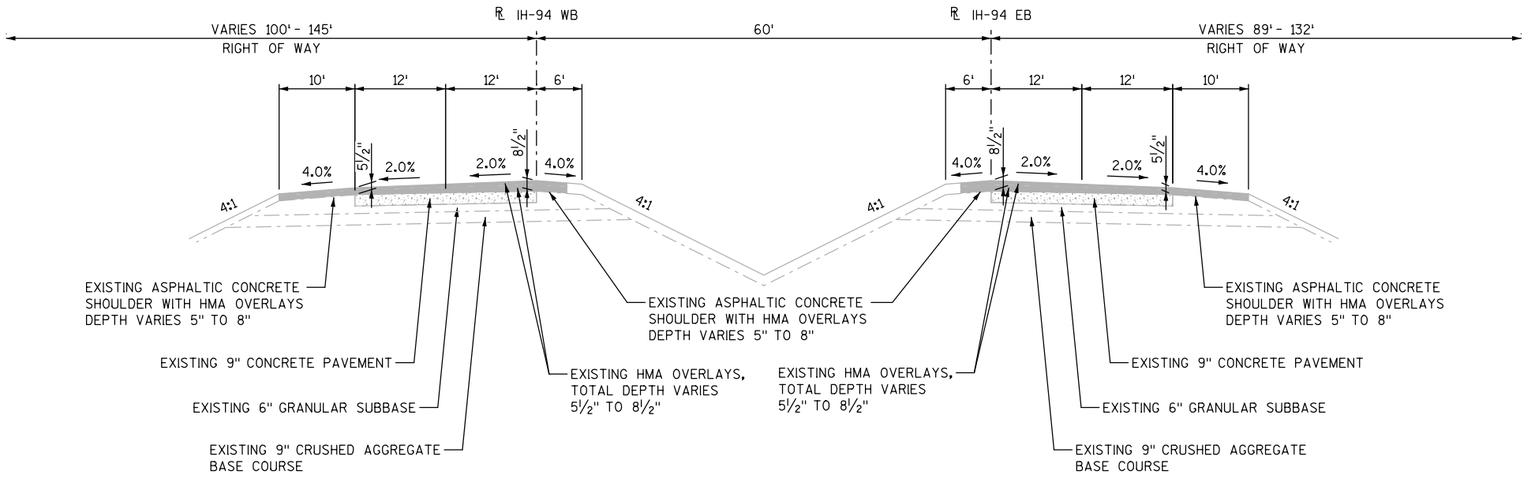
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
REMOVAL PLAN
PAVING DETAILS
EROSION CONTROL
STORM SEWER
PERMANENT SIGNING PLAN
PERMANENT PAVEMENT MARKING
TRAFFIC CONTROL AND CONSTRUCTION STAGING
ALIGNMENT PLAN

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

2

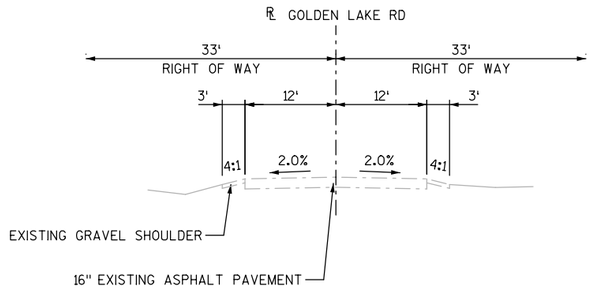


PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PROJECT OVERVIEW	SHEET 3	E



TYPICAL IH-94 EXISTING SECTION

STA 35+15 TO 78+29 WB IH-94
STA 35+15 TO 77+69 EB IH-94

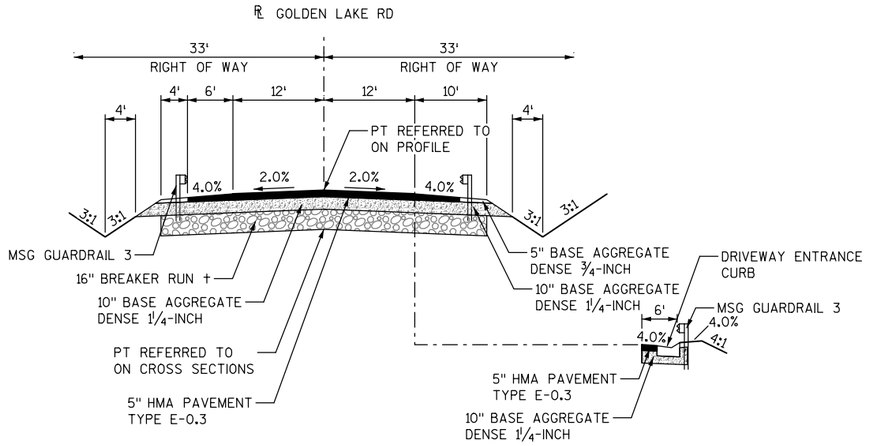


TYPICAL GOLDEN LAKE RD EXISTING SECTION

STA 501+50 TO 509+00

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	EXISTING TYPICAL SECTIONS	SHEET 4	E

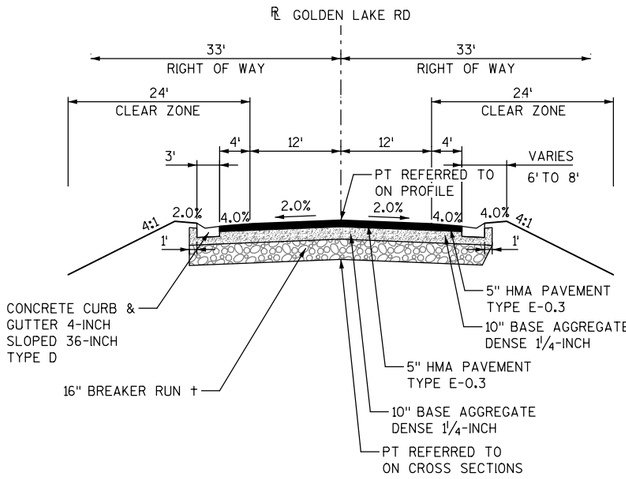
FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\020301_ts.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:20
WISDOT/CADDS SHEET 42



STA 502+75 TO 504+35 RT GOLDEN LAKE RD

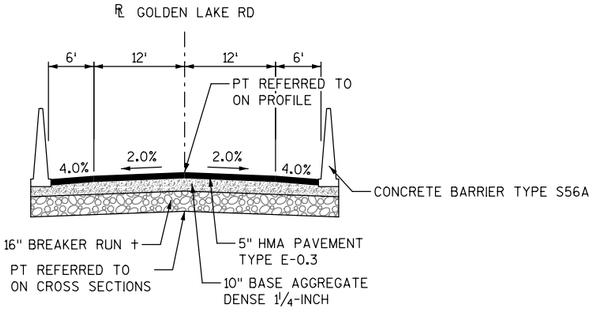
TYPICAL FINISHED SECTION GOLDEN LAKE ROAD

STA 503+81 TO 504+84 LT GOLDEN LAKE RD
STA 504+35 TO 504+84 RT GOLDEN LAKE RD
STA 507+01 TO 507+92 GOLDEN LAKE RD



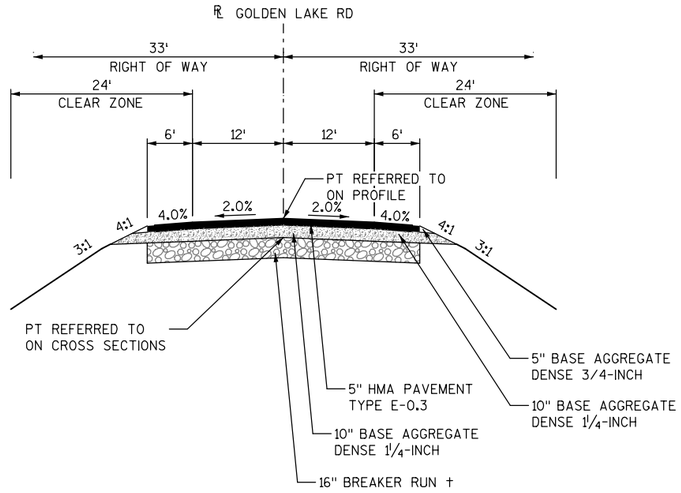
TYPICAL FINISHED SECTION GOLDEN LAKE ROAD

STA 501+75 TO 502+75 GOLDEN LAKE RD



TYPICAL FINISHED SECTION GOLDEN LAKE ROAD

STA 504+84 TO 507+01 GOLDEN LAKE RD

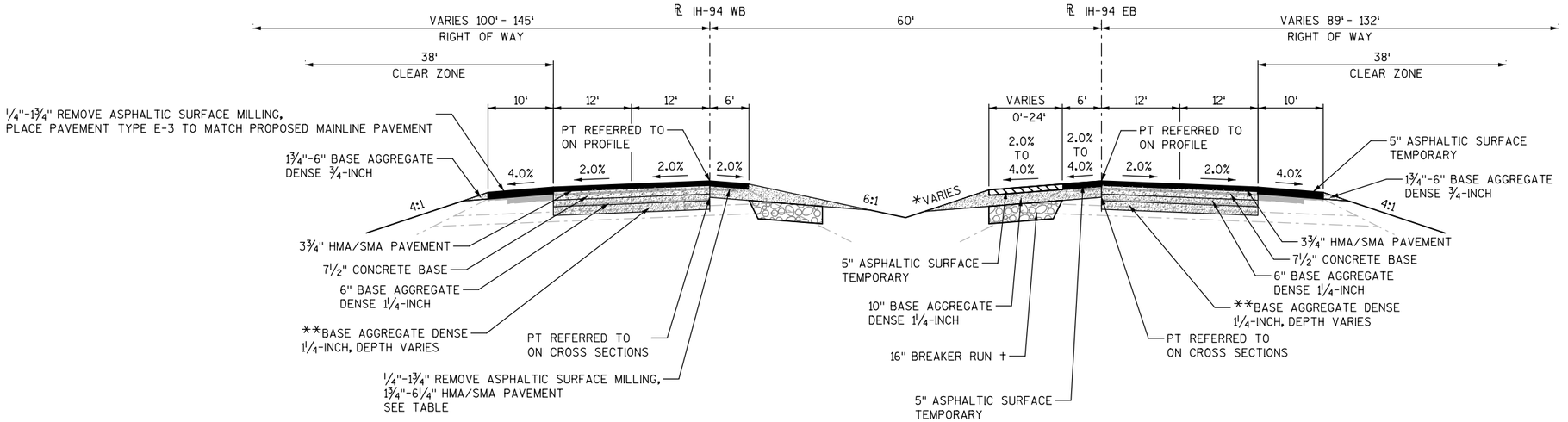


TYPICAL FINISHED SECTION GOLDEN LAKE ROAD

STA 501+50 TO 501+75 GOLDEN LAKE RD
STA 502+75 TO 503+81 LT GOLDEN LAKE RD
STA 507+92 TO 509+00 GOLDEN LAKE RD

† SEE RELIEF TRENCH DETAIL

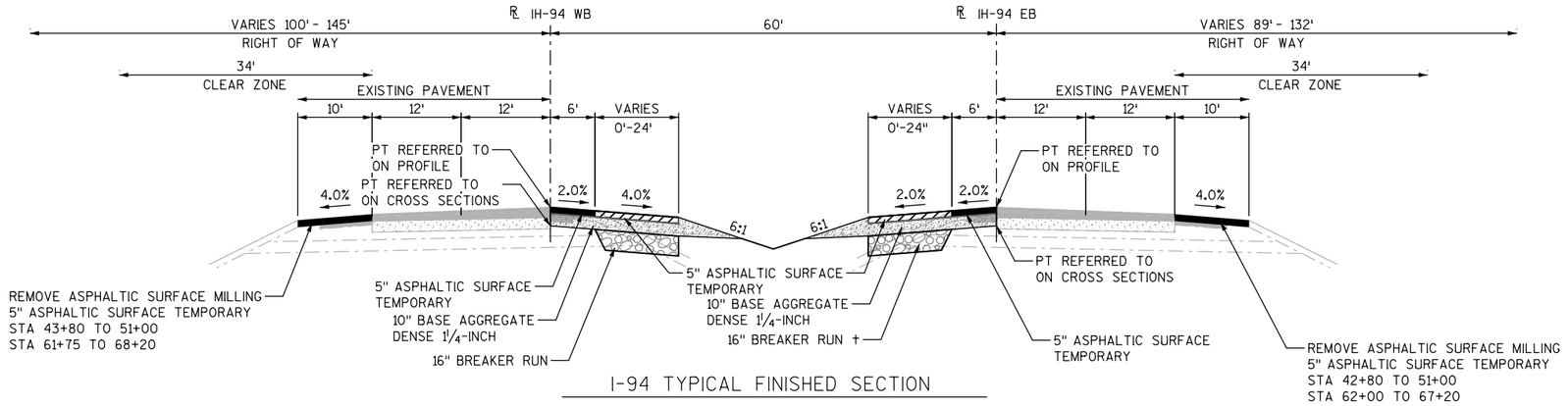
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PROPOSED TYPICAL SECTIONS GOLDEN LAKE ROAD	SHEET 5	E



I-94 TYPICAL FINISHED SECTION

STA 51+00 TO 53+37 EB IH-94
STA 51+00 TO 53+37 WB IH-94
STA 55+67 TO 62+00 EB IH-94
STA 55+67 TO 61+75 WB IH-94

*6:1 MAX FINAL CONDITION
+SEE RELIEF TRENCH DETAIL

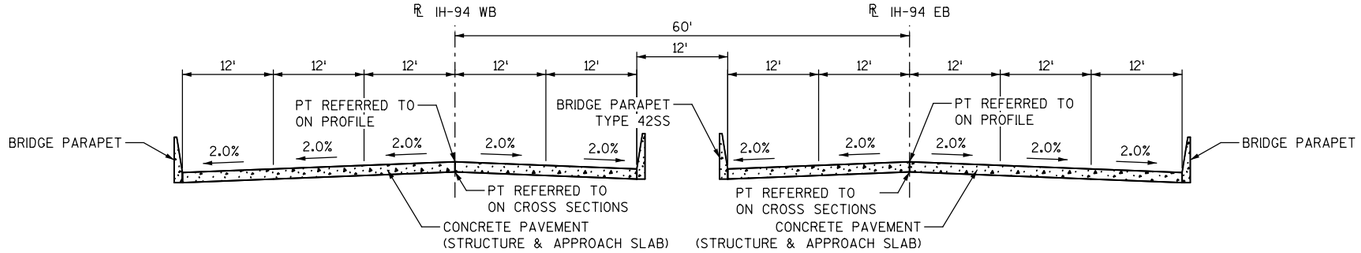


I-94 TYPICAL FINISHED SECTION

STA 35+15 TO 51+00 WB IH-94
STA 35+15 TO 51+00 EB IH-94
STA 62+00 TO 77+69 EB IH-94
STA 61+75 TO 78+29 WB IH-94

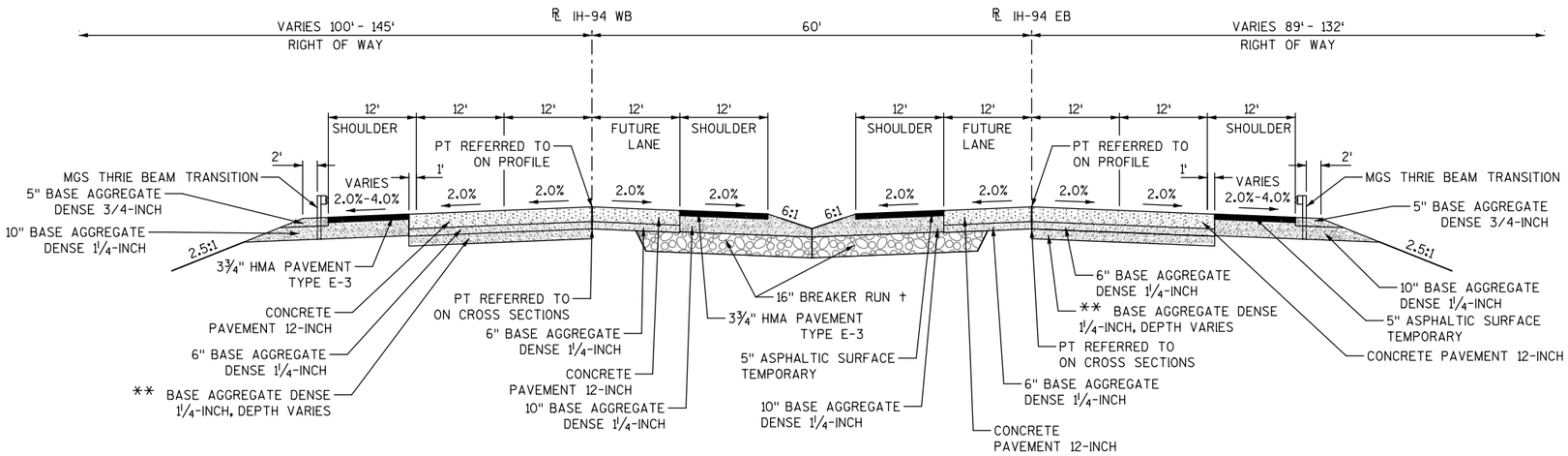
TRAFFIC CONTROL WIDENING. SAWCUT AND REMOVE AS FINAL PLAN DETAILS AND FINAL CROSS SECTIONS INDICATE

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PROPOSED TYPICAL SECTIONS IH-94 (AT GOLDEN LAKE ROAD)	SHEET 6	E



I-94 TYPICAL FINISHED SECTION

STA 53+81 TO 55+23 EB IH-94
STA 53+81 TO 55+23 WB IH-94



I-94 TYPICAL FINISHED SECTION

STA 53+37 TO 53+81 EB/WB IH-94
STA 55+23 TO 55+67 EB/WB IH-94

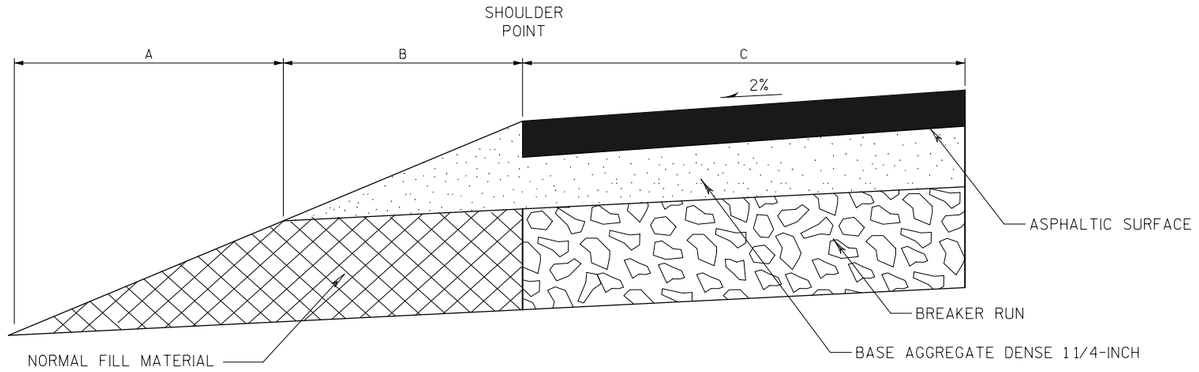
** REMOVE ALL CONCRETE BELOW SUBGRADE. PLACE BASE AGGREGATE 1¼-INCH AS SHOWN IN TYPICAL SECTIONS.

†SEE RELIEF TRENCH DETAIL

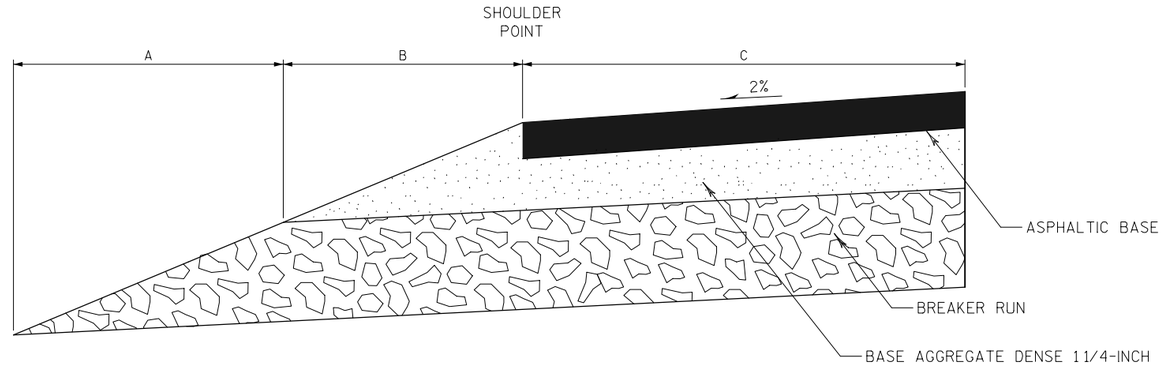
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PROPOSED TYPICAL SECTIONS IH-94 (AT GOLDEN LAKE ROAD)	SHEET 7	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\020302_ts.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:20

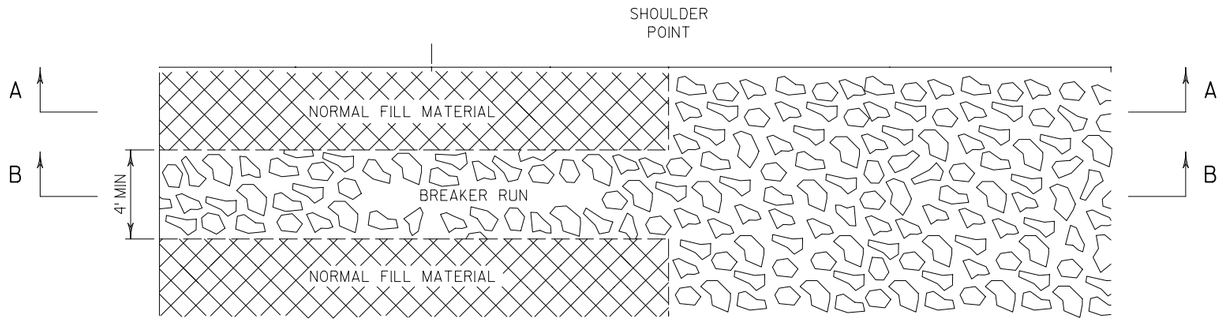
WISDOT/CADDS SHEET 42



TYPICAL HALF SECTION A-A WITHOUT RELIEF TRENCH



TYPICAL HALF SECTION B-B WITH RELIEF TRENCH

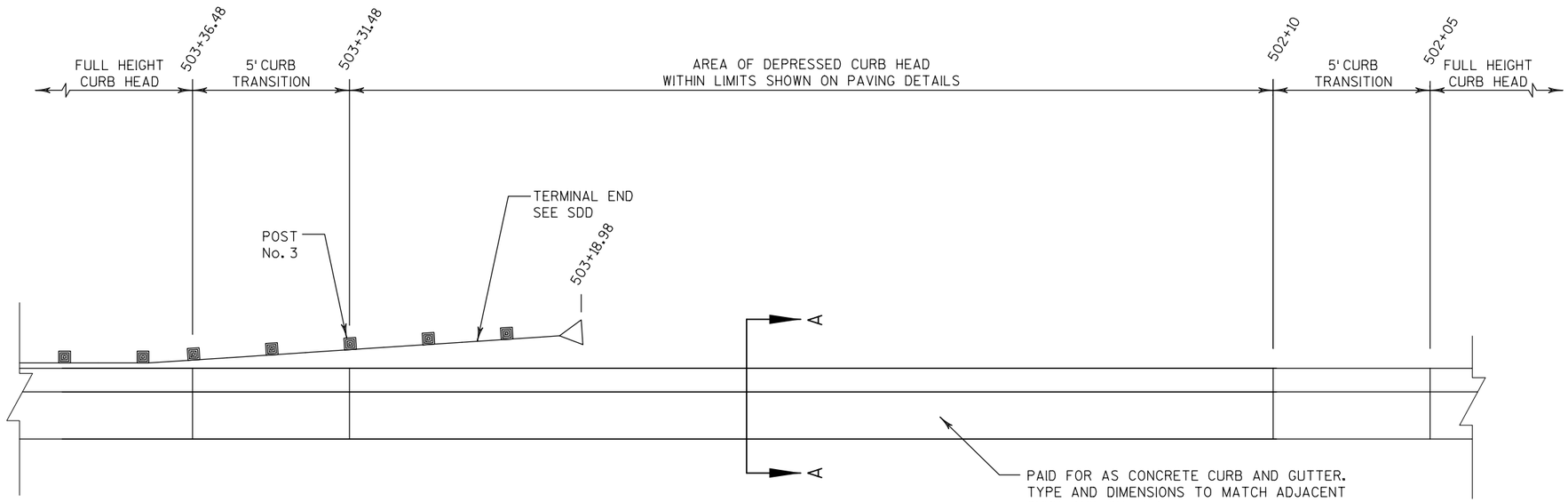


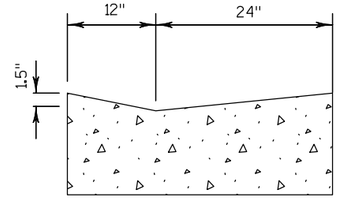
RELIEF TRENCH PLAN VIEW

RELIEF TRENCH

STAGE 1- 44+00 EB/WB MEDIAN
STAGE 1- 66+50 EB MEDIAN
STAGE 1- 68+50 EB/WB MEDIAN
GOLDEN LAKE - 507+00 RT/LT

2

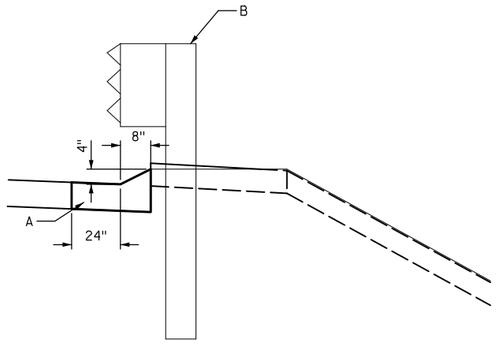




SECTION A-A

DEPRESSED CURB HEAD AT BEAM GUARD TERMINAL

GOLDEN LAKE ROAD
STA. 503+94 RT



G-G

A. CURB (PAYMENT AS PART OF CONCRETE SURFACE DRAINS) FLOWLINE TO MATCH FACE OF BLOCKING

B. MGS THRIE BEAM TRANSITION (SEE SDD)

C. END OF MGS THRIE BEAM TRANSITION (SEE SDD)

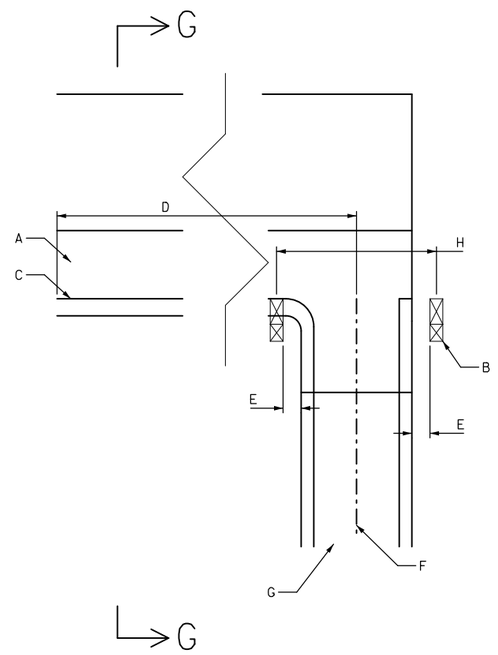
D. CENTER OF FLUME IS NO CLOSER THAN THE MID-SPAN OF THE 1ST 6'3" POST SPACING BEYOND THE THRIE BEAM TRANSITION (SEE PLAN)

E. MIN. 9" FROM FACE OF POST TO EDGE OF FLUME

F. CENTER OF INLET IS NO CLOSER THAN MID-SPAN OF THE FIRST 6'3" POST SPACING BEYOND THE THRIE BEAM TRANSITION (SEE PLAN)

G. SEE PLAN AND SDD FOR CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

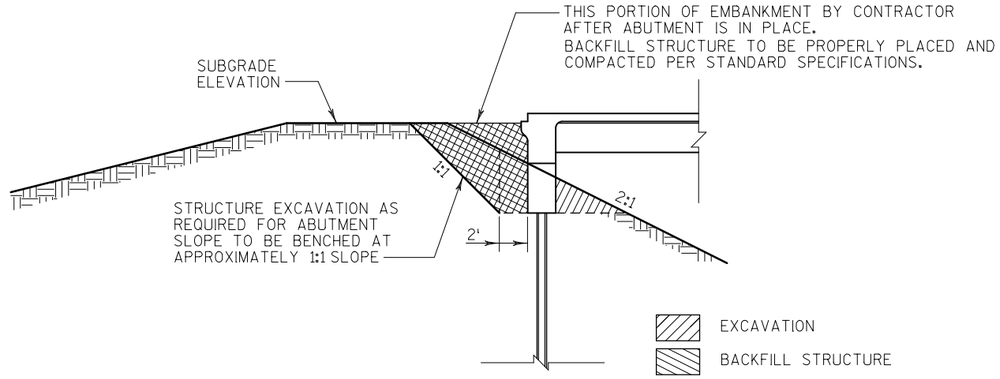
H. 6'3" POST SPACING



CONCRETE SURFACE DRAIN LOCATION PLAN VIEW

(BEAM GUARD RAIL NOT SHOWN)

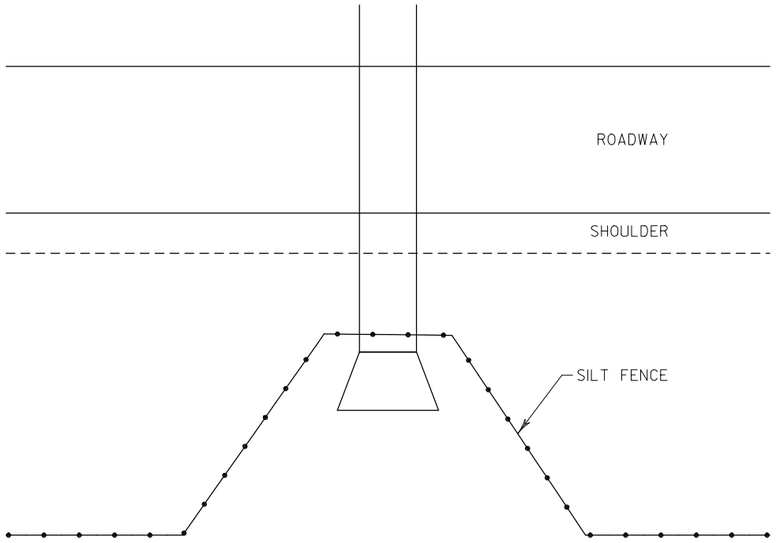
158+93.0 RT EB IH-94
159+27.5 LT WB IH-94



NOTE

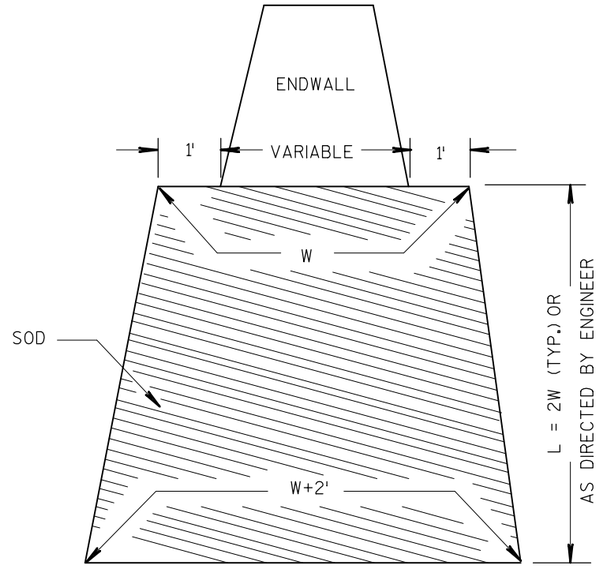
THE EMBANKMENT CONFIGURATION SHOWN IS THE MINIMUM EMBANKMENT THAT MUST BE CONSTRUCTED PRIOR TO CONSTRUCTION OF THE ABUTMENTS.

EMBANKMENT CONSTRUCTION & BACKFILL STRUCTURE DETAIL



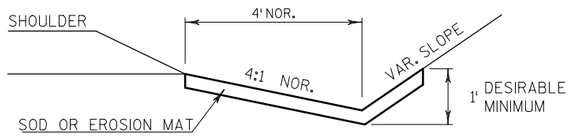
NOTE
SEE SILT FENCE SDD FOR ADDITIONAL INFORMATION.

TYPICAL SILT FENCE DETAIL AT PIPE INLET

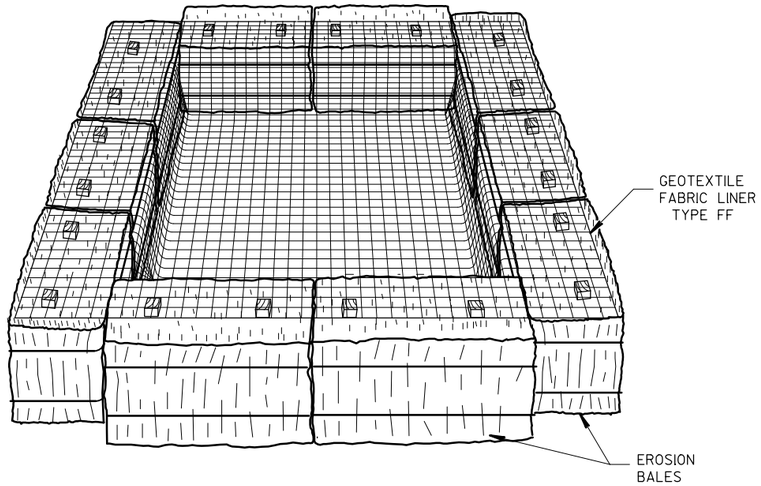


SOD TREATMENT AT CULVERTS

STA 504+75 LT
STA 504+80 LT
STA 504+80 RT
STA 507+12 LT



SOD OR EROSION MAT DETAIL FOR DITCHES



TEMPORARY SETTLING BASIN

(SIZE TO BE DETERMINED IN FIELD AS INDICATED BELOW:)

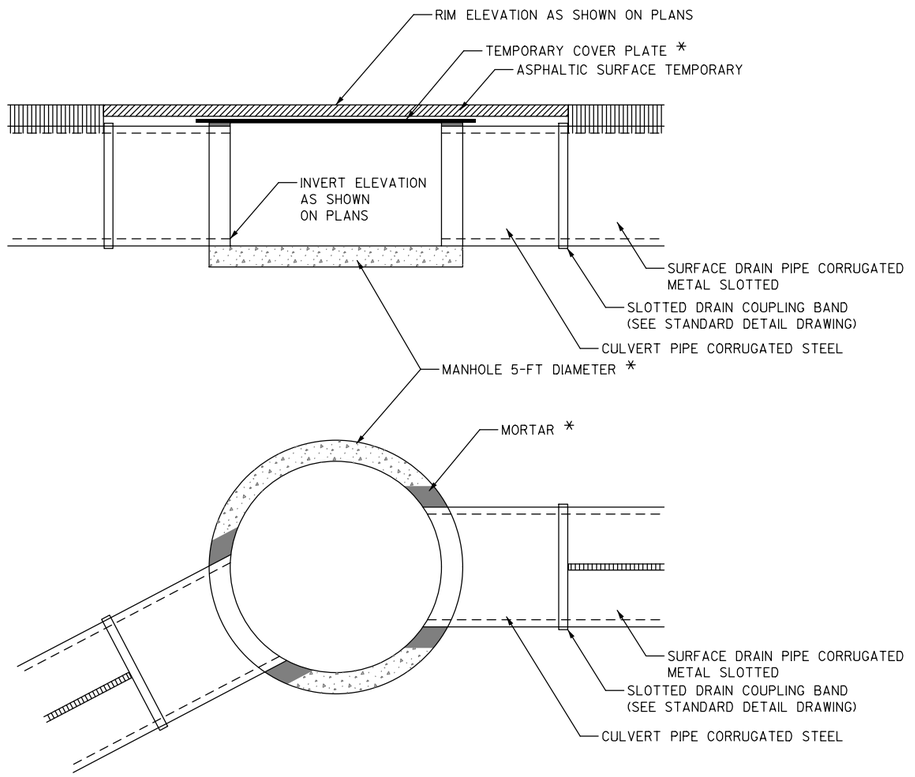
STORAGE VOLUME (C.F.) = 16 X GPM (PUMP RATE)

EXAMPLE:
CONTRACTOR INDICATES PUMP CAPABLE OF 50 GPM
HEIGHT OF BALES = 1.5 FT.

SOLUTION:
SV (C.F.) = 16 X 50
SV = 800 C.F.

$\frac{800\ C.F.}{1.5\ FT.}$ = 533 S.F.

USE A 20 FT. X 27 FT. BASIN



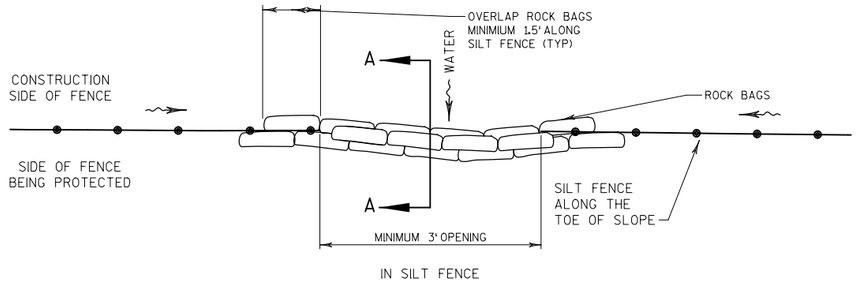
* ITEMS AND MATERIALS INCLUDED AS PART OF TEMPORARY MANHOLES AND COVER PLATE

NOTES:
1. DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINANT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS INCLUDING, BUT NOT LIMITED TO THE STANDARD DETAIL DRAWINGS FOR: MANHOLES 3-FT, 4-FT, 5-FT & 6-FT DIAMETER SLOTTED CORRUGATED METAL PIPE SURFACE DRAINS
2. MANHOLES TO BE LOCATED OUTSIDE THE TRAVEL LANES.

TEMPORARY MANHOLES AND COVER PLATE

STA 44+00.42, 16.5'LT
STA 64+97.93, 26.22'LT
STA 68+70.00, 47.00'LT
STA 71+00.00, 28.50'LT

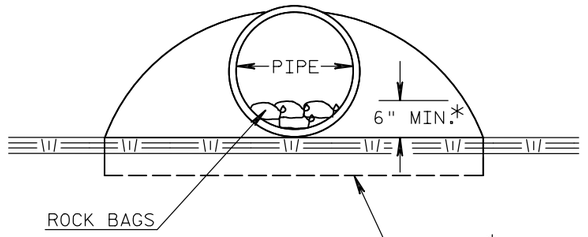
2



PLAN VIEW

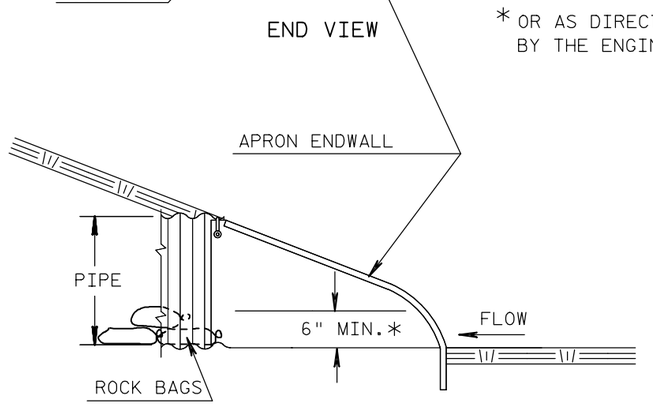
SECTION A-A

SILT FENCE DRAINAGE OUTLET, ROCK BAGS



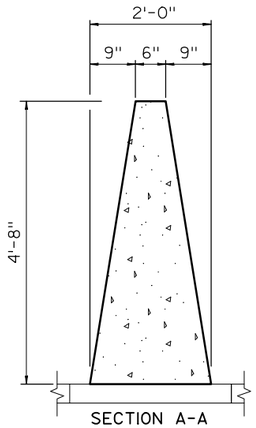
END VIEW

* OR AS DIRECTED
BY THE ENGINEER

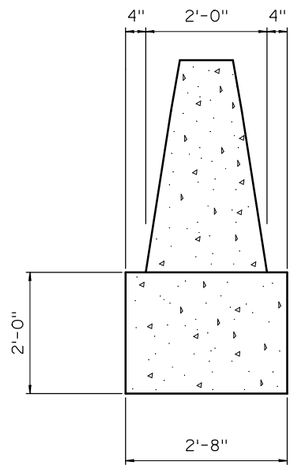


SIDE VIEW

CULVERT PIPE CHECK

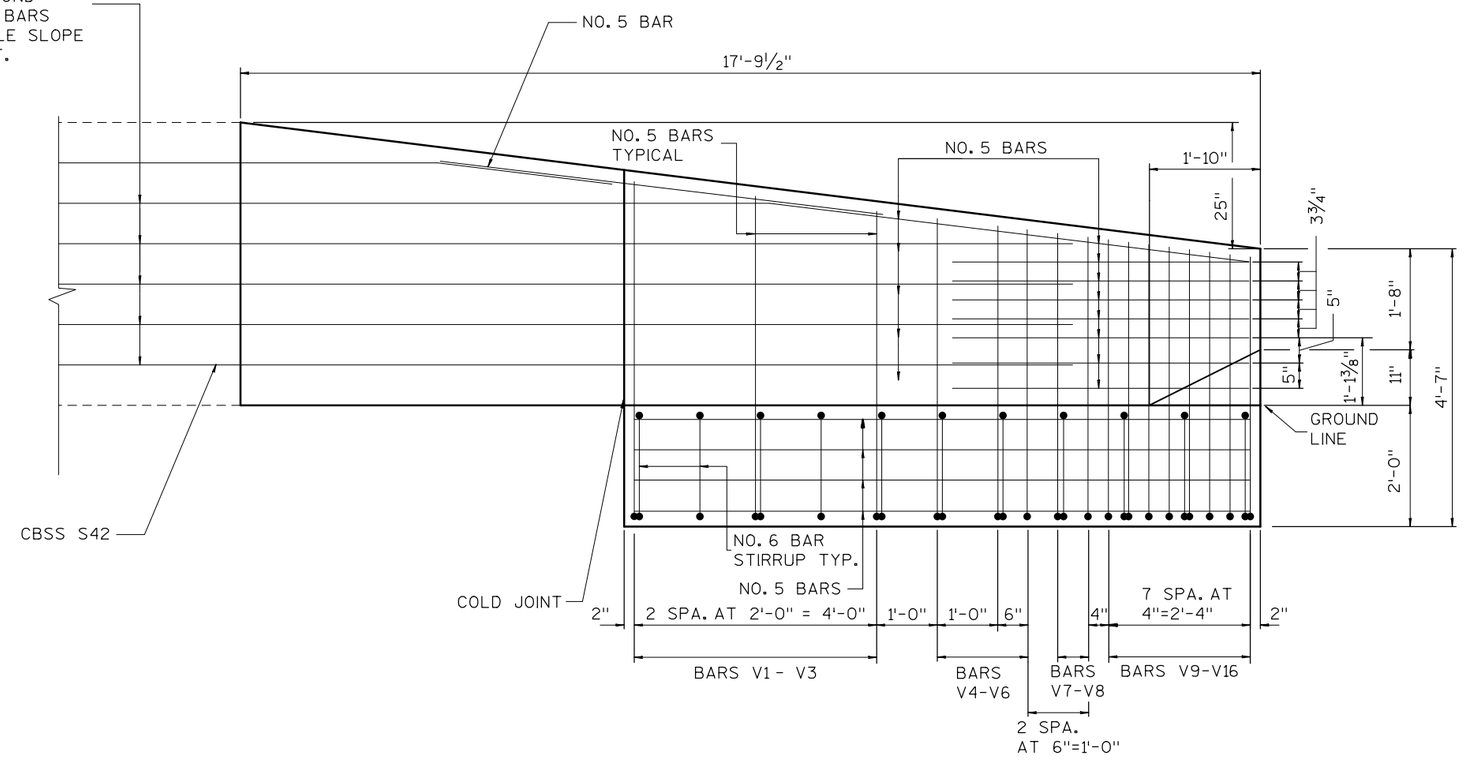


SECTION A-A

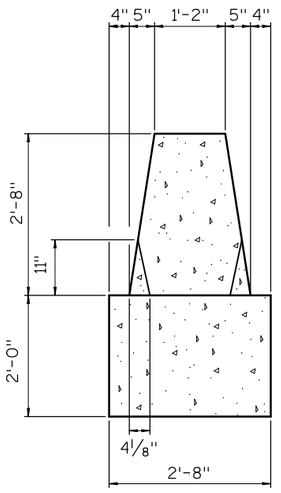


SECTION B-B

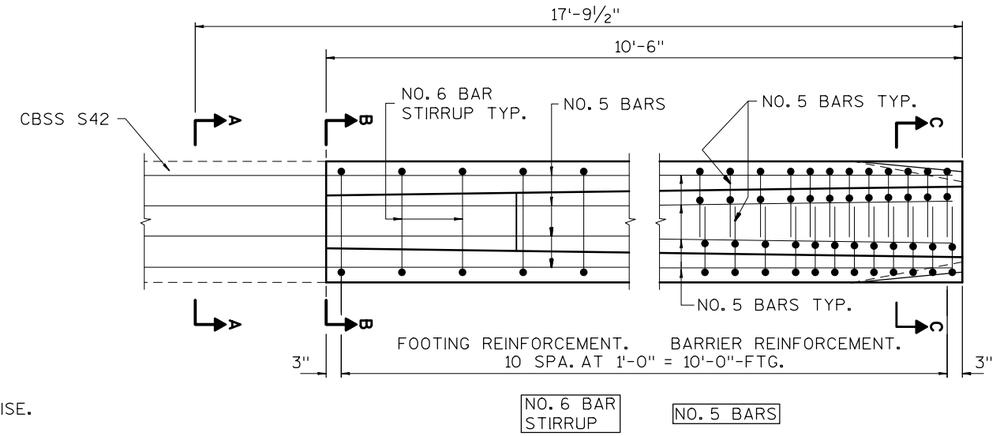
EVENLY SPACE H1 BARS.
NO. 5 BARS TO EXTEND 3' BEYOND END OF TRANSITION TIE NO. 5 BARS TO HORIZONTAL BARS IN SINGLE SLOPE BARRIER TO FORM COLD JOINT.



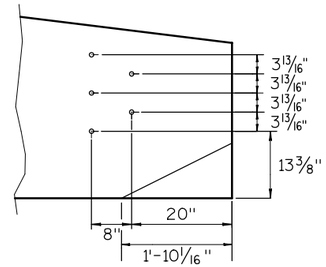
SEE SECTIONS ① THRU ⑯
ELEVATION VIEW



SECTION C-C



PLAN VIEW



PVC PIPE LOCATIONS

GENERAL NOTES:
1. CONSTRUCT PER STANDARD SPECIFICATION 603.
2. SPLICES OF LONGITUDINAL BARS TO BE 2' LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.
3. 4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS SECTION 501.
   USE 3/4" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.
   THRIE BEAM ANCHOR INCIDENTAL TO CONCRETE BARRIER ITEM.
   INSTALL SCHEDULE 40 PVC PIPE 1" DIAMETER AT LOCATIONS INDICATED.
   EXTEND PVC PIPE COMPLETELY THROUGH BARRIER.
   CUT ENDS OF PVC PIPE FLUSH WITH FINISHED FACE OF BARRIER.
   THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.
   2" CLEAR COVER TYPICAL.

CONCRETE BARRIER
SINGLE SLOPE 56"
THRIE BEAM ANCHOR

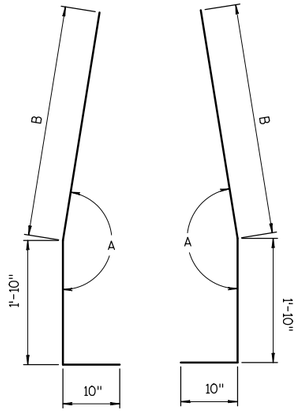
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CONSTRUCTION DETAILS	SHEET 14	E

2

2

BAR CHART
SECTIONS V1 - V11

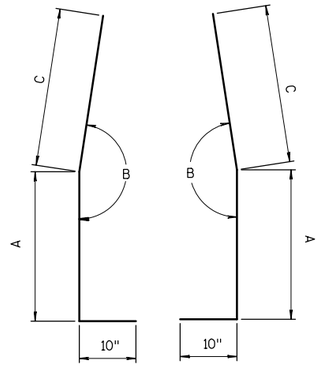
BAR	A	B
V1	170°-50'	3'-6"
V2	171°-20'	3'-4½"
V3	171°-30'	3'-2½"
V4	171°-25'	3'-1½"
V5	171°-15'	3'-0"
V6	171°-15'	2'-11"
V7	171°-20'	2'-10½"
V8	171°-10'	2'-9½"
V9	171°-10'	2'-9"
V10	171°-05'	2'-8½"
V11	171°-10'	2'-8"



BAR BENDING DETAIL
FOR BARS V1 - V11

BAR CHART
SECTIONS V12 - V13

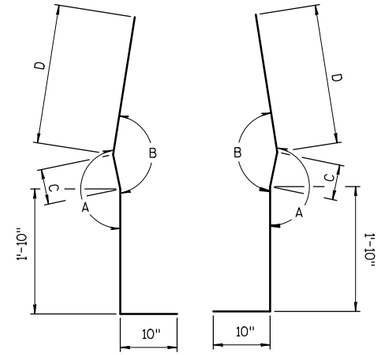
BAR	A	B	C
V12	2'-2"	171°-15'	2'-3½"
V13	2'-7"	171°-05'	1'-10"



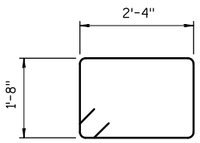
BAR BENDING DETAIL
FOR BARS V12 - V13

BAR CHART
SECTIONS V14 - V16

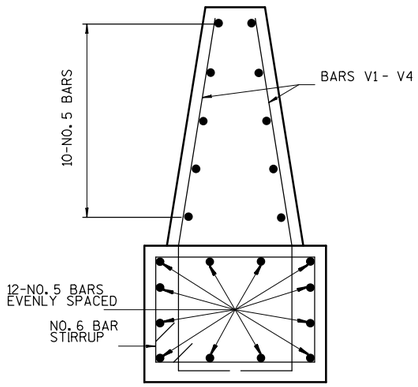
BAR	A	B	C	D
V14	168°-15'	159°-15'	6"	2'-0"
V15	169°-20'	161°-00'	8"	1'-10"
V16	168°-40'	160°-10'	10"	1'-8"



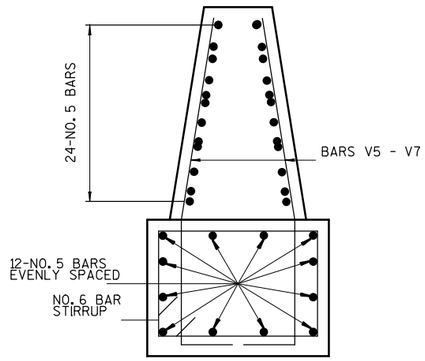
BAR BENDING DETAIL
FOR BARS V14 - V16



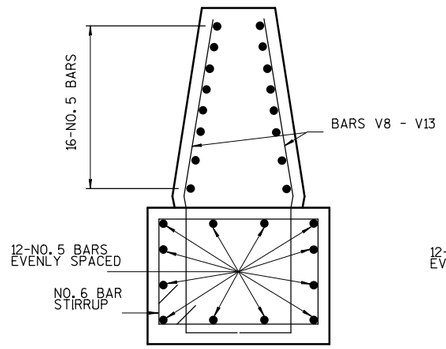
STIRRUP BAR
BENDING DETAIL



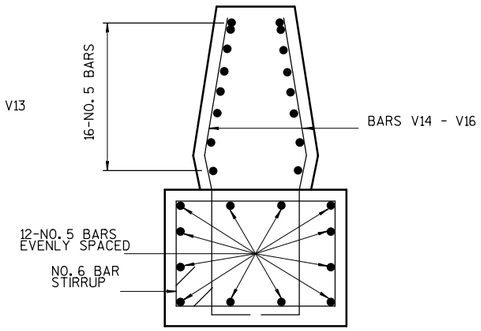
BAR DETAIL
SECTIONS V1 - V4



BAR DETAIL
SECTIONS V5 - V7



BAR DETAIL
SECTIONS V8 - V13



BAR DETAIL
SECTIONS V14 - V16

CONCRETE BARRIER
SINGLE SLOPE 56"
THRIE BEAM ANCHOR

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CONSTRUCTION DETAILS	SHEET 15	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\021004_cd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:2.5
WISDOT/CADDS SHEET 42

2

2

N

N GOLDEN LAKE RD

REMOVE EXISTING CULVERT
36-INCH CMP
EAST INVERT 851.53
WEST INVERT 851.14

℄ IH-94 WB

ROW

REMOVE EXISTING GUARDRAIL

WETLAND IMPACT

REMOVE FENCE

WETLAND IMPACT

REMOVE FENCE

REMOVE EXISTING GUARDRAIL

ROW

IH-94 WB

IH-94 EB

WETLAND IMPACT

REMOVE EXISTING GUARDRAIL

ROW

REMOVE FENCE

℄ IH-94 EB

REMOVE EXISTING CULVERT
36-INCH CMP
NORTH INVERT 851.07
SOUTH INVERT 850.47

REMOVE EXISTING CULVERT
18-INCH CMP
EAST INVERT 851.84
WEST INVERT 851.14

REMOVE FENCE

ROW

ROW

ROW

CAUTION SECTION CORNER,
CONTACT PROJECT ENGINEER AND SEWRPC
2 WEEKS BEFORE DISTURBING MONUMENT

CTH BB

LEGEND

FINISHED PAVED SURFACE

LIMITS OF CONSTRUCTION IMPACT

WETLAND IMPACT

REMOVE

NOTES

SEE PAVING DETAILS FOR SAWCUT LOCATION

UTILITIES TO BE RELOCATED BY OTHERS PRIOR TO CONSTRUCTION

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	REMOVAL PLAN	SHEET	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\021010_cd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:200

WISDOT/CADDS SHEET 42

2

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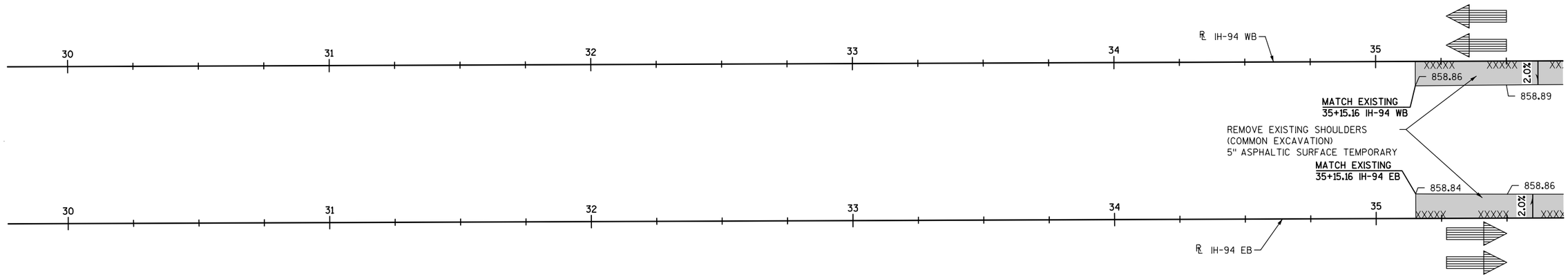

LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 1	SHEET 17	E

2

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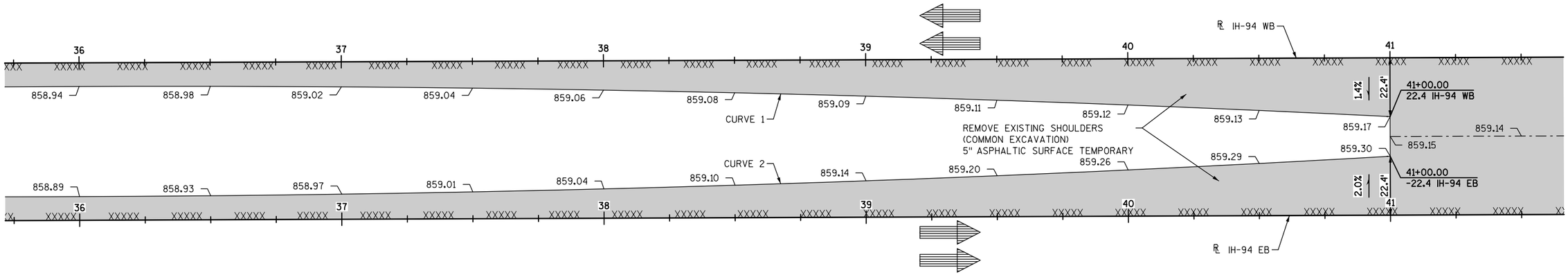


	STA	OFF	R	L
CURVE 1	IH-94 WB		9393.0'	585.08'
PC	35+15.16	9.36 RT		
PT	41+00.00	22.44 RT		
PI	38+07.79	6.79 RT		
CURVE 2	IH-94 EB		9393.0'	585.08'
PC	35+15.16	9.36 LT		
PT	41+00.00	22.44 LT		
PI	38+07.79	6.79 LT		

LEGEND

HINGE POINT

SAWING

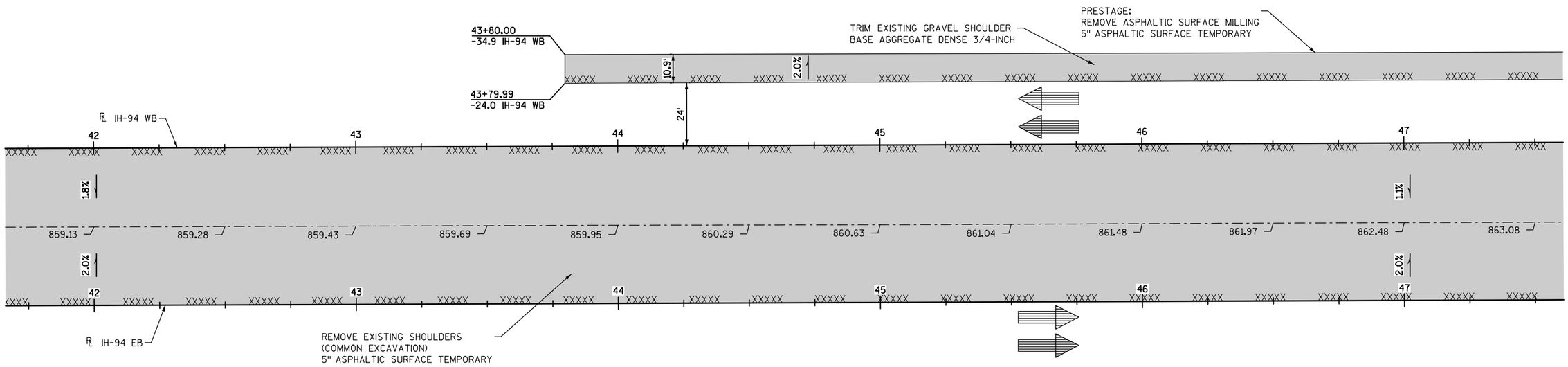
PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 1	SHEET 18	E

2

N



LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 1	SHEET 19	E

2

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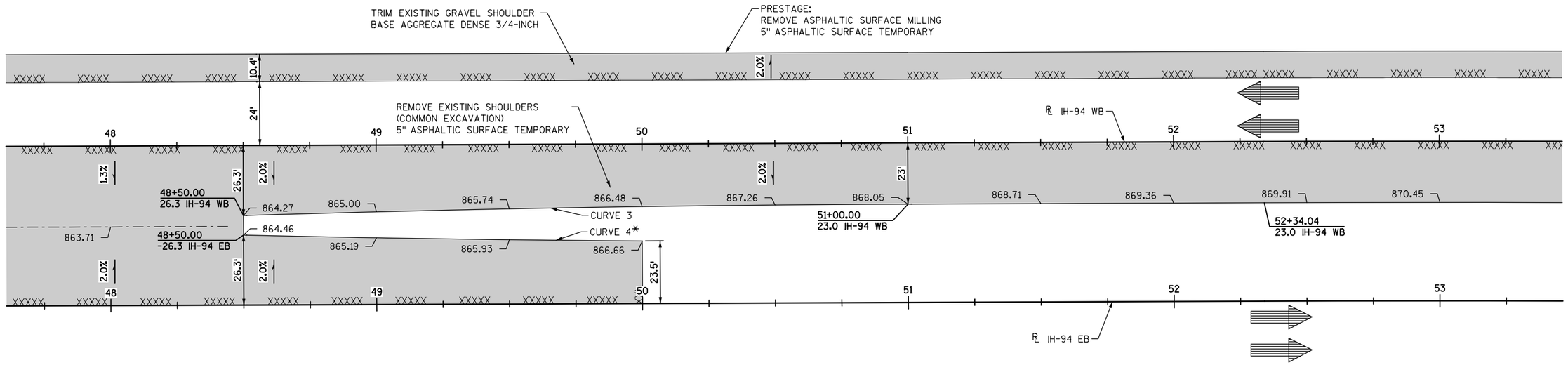


LEGEND

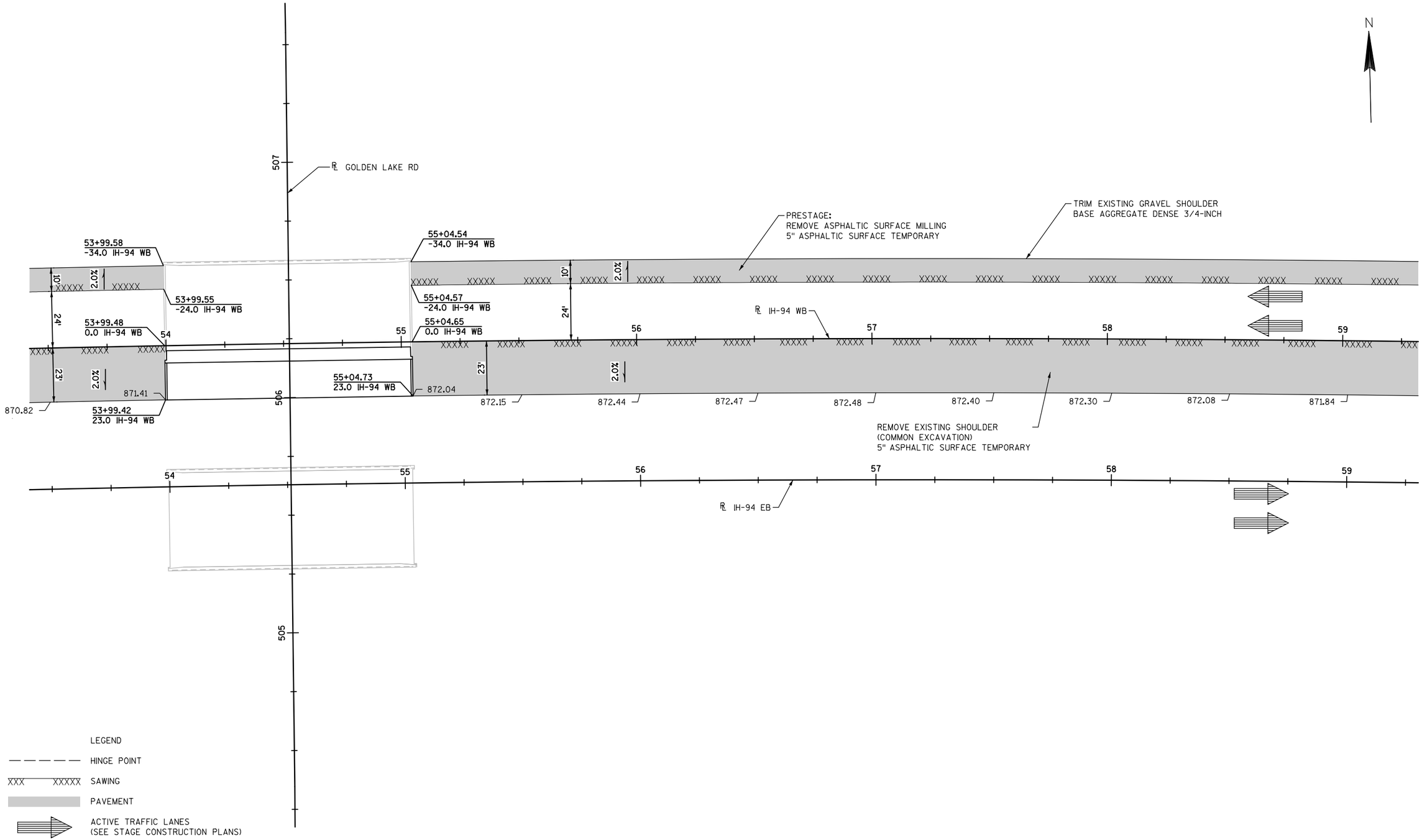
- HINGE POINT
- SAWING
- PAVEMENT
- ACTIVE TRAFFIC LANES (SEE STAGE CONSTRUCTION PLANS)

	STA	OFF	R	L
CURVE 3	IH-94 WB		9394.0'	250.03'
PC	48+50.00	26.33 RT		
PT	51+00.00	23.00 RT		
PI	49+74.98	23.00 RT		
CURVE 4*	IH-94 EB		9394.0'	250.03'
PC	48+50.00	26.33 LT		
PT	51+00.00	23.00 LT		
PI	49+74.98	23.00 LT		

*STAGE 1 STA 48+50.00 TO 50+00.00
STAGE 2 STA 50+00.00 TO 51+00.00

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 1	SHEET 20	E

2



PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 1	SHEET 21	E

2

N

PRESTAGE:
REMOVE ASPHALTIC SURFACE MILLING
5" ASPHALTIC SURFACE TEMPORARY

TRIM EXISTING GRAVEL SHOULDER
BASE AGGREGATE DENSE 3/4-INCH

℄ IH-94 WB

60 61 62 63 64 65

2.0% 10' 24' 2.0% 1.0% 25.7' 1.0%

871.48 871.10 870.65 870.17 869.56

62+03.37
23.0 IH-94 WB
868.92

62+00.00
-23.0 IH-94 EB
869.62

868.21 868.99

CURVE 5
867.47 868.27

866.80 867.31

CURVE 6
866.15 866.39

64+04.07
25.7 IH-94 WB
866.11

865.39

64+99.40
29.7 IH-94 WB
864.74

63+99.99
-23.3 IH-94 EB

65+00.00
-26.2 IH-94 EB
864.63

REMOVE EXISTING SHOULDER
(COMMON EXCAVATION)
5" ASPHALTIC SURFACE TEMPORARY

23' 2.0% 3.7% 23.3' 4.5%

60 61 62 63 64 65

℄ IH-94 EB

LEGEND

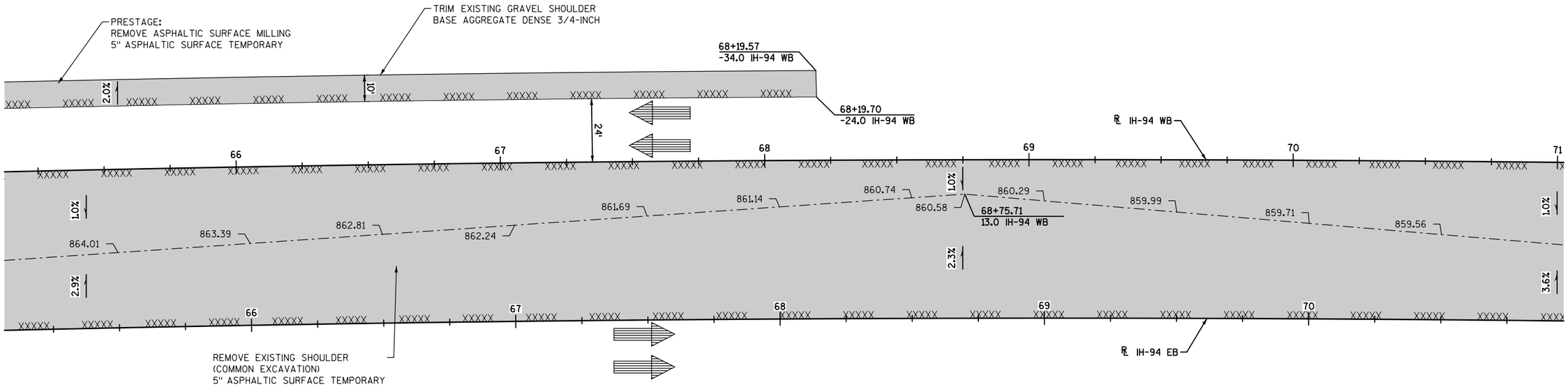
- HINGE POINT
- SAWING
- PAVEMENT
- ACTIVE TRAFFIC LANES (SEE STAGE CONSTRUCTION PLANS)

	STA	OFF	R	L
CURVE 5	IH-94 WB		6804.0'	200.44'
PC	62+03.37	23.08 RT		
PT	64+04.07	25.68 RT		
PI	63+01.03	23.12 RT		
CURVE 6	IH-94 EB		9394.0'	55.46'
PC	63+44.61	23.00 LT		
PT	63+99.99	23.25 LT		
PI	63+72.30	23.02 LT		

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 1	SHEET 22	E

2

N



LEGEND

HINGE POINT

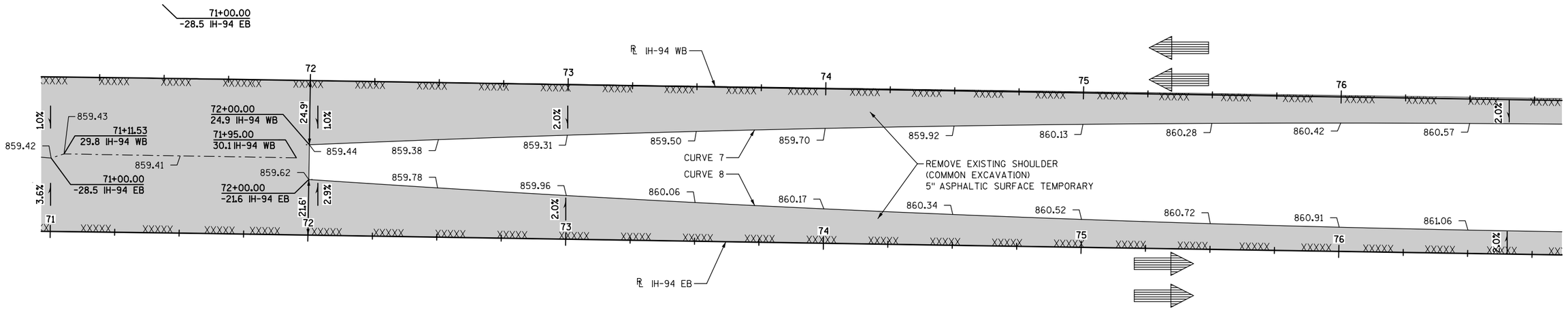
SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 1	SHEET 23	E

2



LEGEND

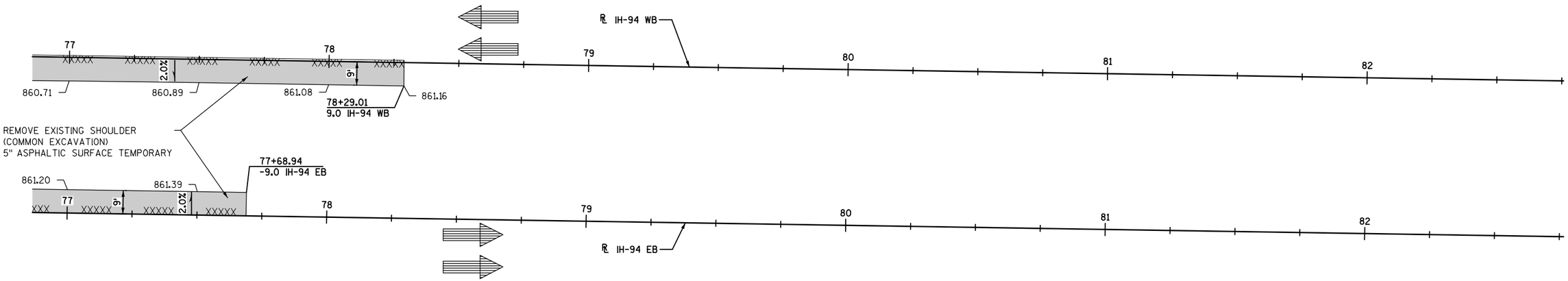
- HINGE POINT
- SAWING
- PAVEMENT
- ACTIVE TRAFFIC LANES (SEE STAGE CONSTRUCTION PLANS)

	STA	OFF	R	L
CURVE 7	IH-94 WB		9393.0'	546.81'
PC	72+00.00	35.09 RT		
PT	77+46.50	51.00 RT		
PI	74+73.02	9.00 RT		
CURVE 8	IH-94 EB		9393.0'	486.57'
PC	72+00.00	21.60 LT		
PT	76+86.45	9.00 LT		
PI	74+43.06	9.00 LT		

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 1	SHEET 24	E

2

N



LEGEND

HINGE POINT

SAWING

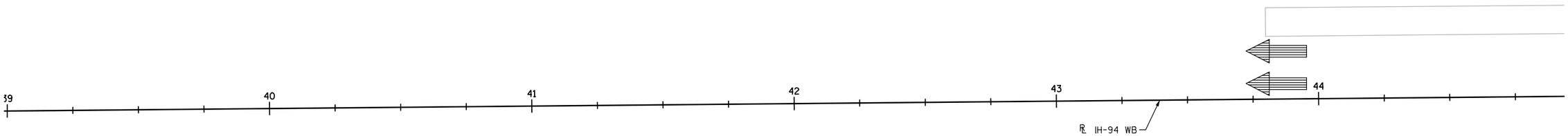
PAVEMENT

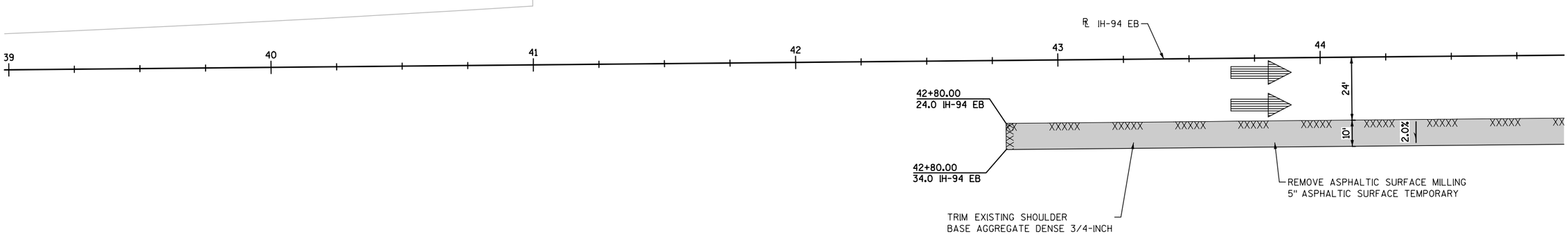
ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 1	SHEET 25	E

2

N





LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 2	SHEET 26	E

2

N

℄ IH-94 WB

45 46 47 48 49 50

48+88.77
-23.5 IH-94 EB

CURVE 4*

868.34

867.43

2.0%

℄ IH-94 EB

45 46 47 48 49 50

50+00.00
0.0 IH-94 EB

24"

10"

2.0%

49+65.65
36.6 IH-94 EB

50+18.75
34.0 IH-94 EB

MGS GUARDRAIL

MGS GUARDRAIL EAT

48+88.77
37.8 IH-94 EB

49+65.65
42.9 IH-94 EB

49+90.65
40.2 IH-94 EB

50+15.65
38.9 IH-94 EB

TRIM EXISTING GRAVEL SHOULDER
BASE AGGREGATE DENSE 3/4-INCH

REMOVE ASPHALTIC SURFACE MILLING
5" ASPHALTIC SURFACE TEMPORARY

REGRADE EXISTING SHOULDER
5" BASE AGGREGATE DENSE 3/4-INCH
ON BASE AGGREGATE DENSE 1¼-INCH

LEGEND

HINGE POINT

SAWING

PAVEMENT

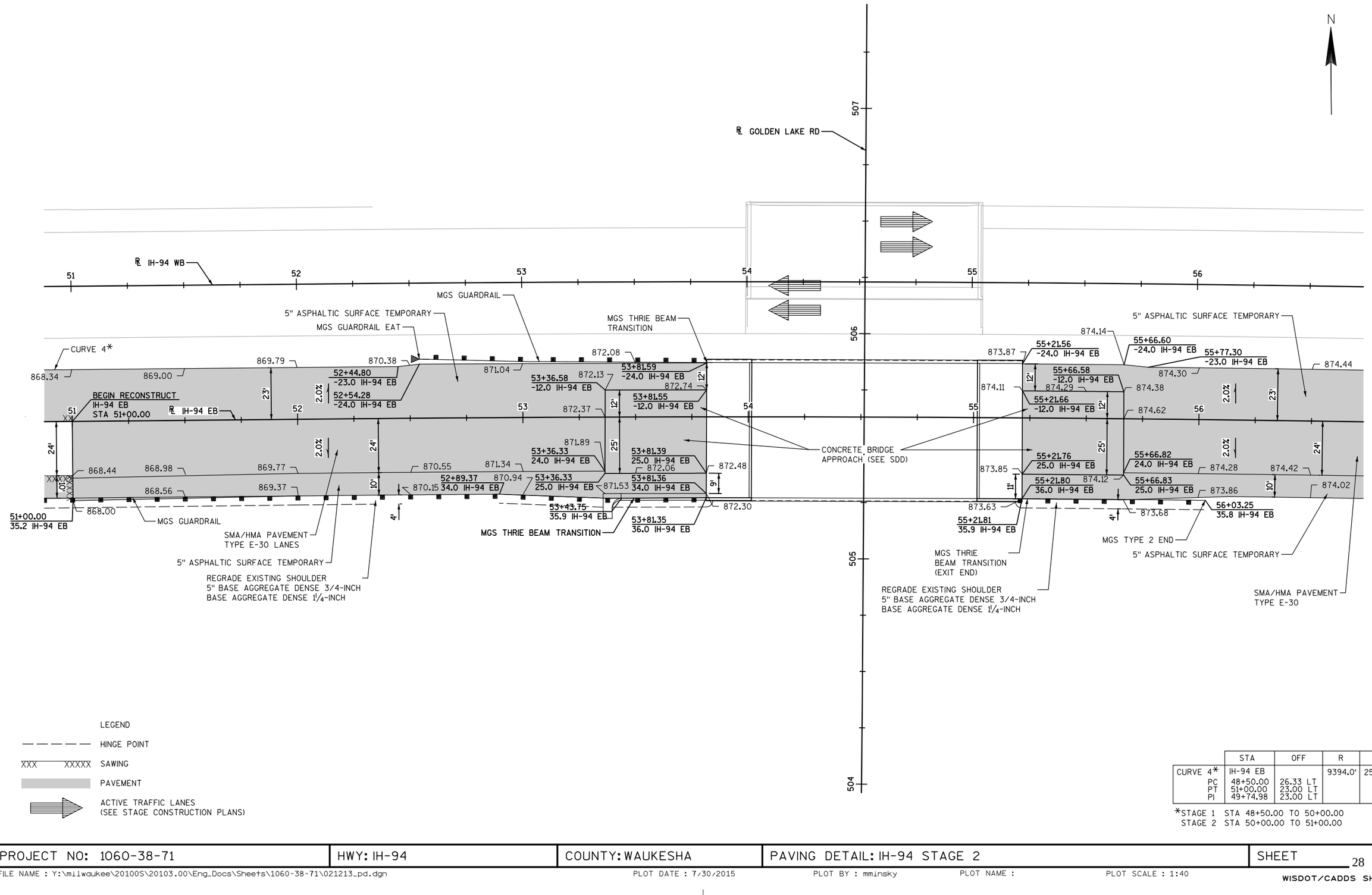
ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

	STA	OFF	R	L
CURVE 4*	IH-94 EB		9394.0'	250.03'
PC	48+50.00	26.33 LT		
PT	51+00.00	23.00 LT		
PI	49+74.98	23.00 LT		

*STAGE 1 STA 48+50.00 TO 50+00.00
STAGE 2 STA 50+00.00 TO 51+00.00

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 2	SHEET 27	E

2



LEGEND

- HINGE POINT
- SAWING
- PAVEMENT
- ACTIVE TRAFFIC LANES (SEE STAGE CONSTRUCTION PLANS)

	STA	OFF	R	L
CURVE 4*	IH-94 EB		9394.0'	250.03'
PC	48+50.00	26.33 LT		
PT	51+00.00	23.00 LT		
PI	49+74.98	23.00 LT		

*STAGE 1 STA 48+50.00 TO 50+00.00
STAGE 2 STA 50+00.00 TO 51+00.00

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 2	SHEET 28	E

2

N

℄ IH-94 WB

57 58 59 60 61 62

5" ASPHALTIC SURFACE TEMPORARY

874.48 874.42 874.25 873.99 873.62 873.15 872.58 871.91 871.18 870.45 869.72

23'

℄ IH-94 EB

2.0%

57 58 59 60 61 62

END RECONSTRUCT
IH-94 EB
STA 62+00

24'

2.0%

874.46 874.40 874.23 873.97 873.60 873.13 872.56 871.89 871.16 870.43 869.70

61+00.00
24.0 IH-94 EB

62+00.00
24.0 IH-94 EB

24'

10'

874.06 874.00 873.83 873.57 873.20 872.73 872.16 871.49 870.76 870.03

61+00.00
34.0 IH-94 EB

62+00.00
34.0 IH-94 EB

SMA/HMA PAVEMENT
TYPE E-30

5" ASPHALTIC SURFACE TEMPORARY

TRIM EXISTING SHOULDER
BASE AGGREGATE DENSE 3/4-INCH

REMOVE ASPHALTIC SURFACE MILLING
5" ASPHALTIC SURFACE TEMPORARY

LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 2	SHEET 29	E

2

N

℄ IH-94 WB

63 64 65 66 67 68

℄ IH-94 EB

63 64 65 66 67 68

24'

10'

2.0%

67+20.31
24.0 IH-94 EB

67+20.44
34.0 IH-94 EB

TRIM EXISTING GRAVEL SHOULDER
BASE AGGREGATE DENSE 3/4-INCH

REMOVE ASPHALTIC SURFACE MILLING
5" ASPHALTIC SURFACE TEMPORARY

LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 2	SHEET 30	E

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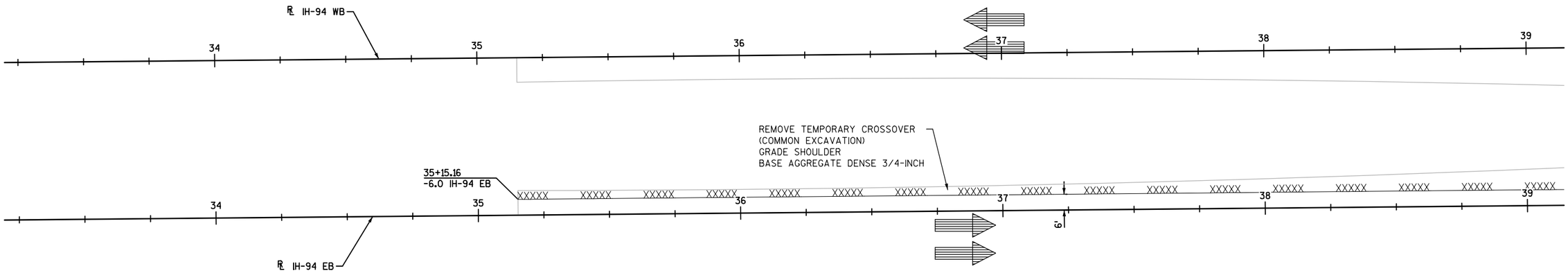


LEGEND

HINGE POINT

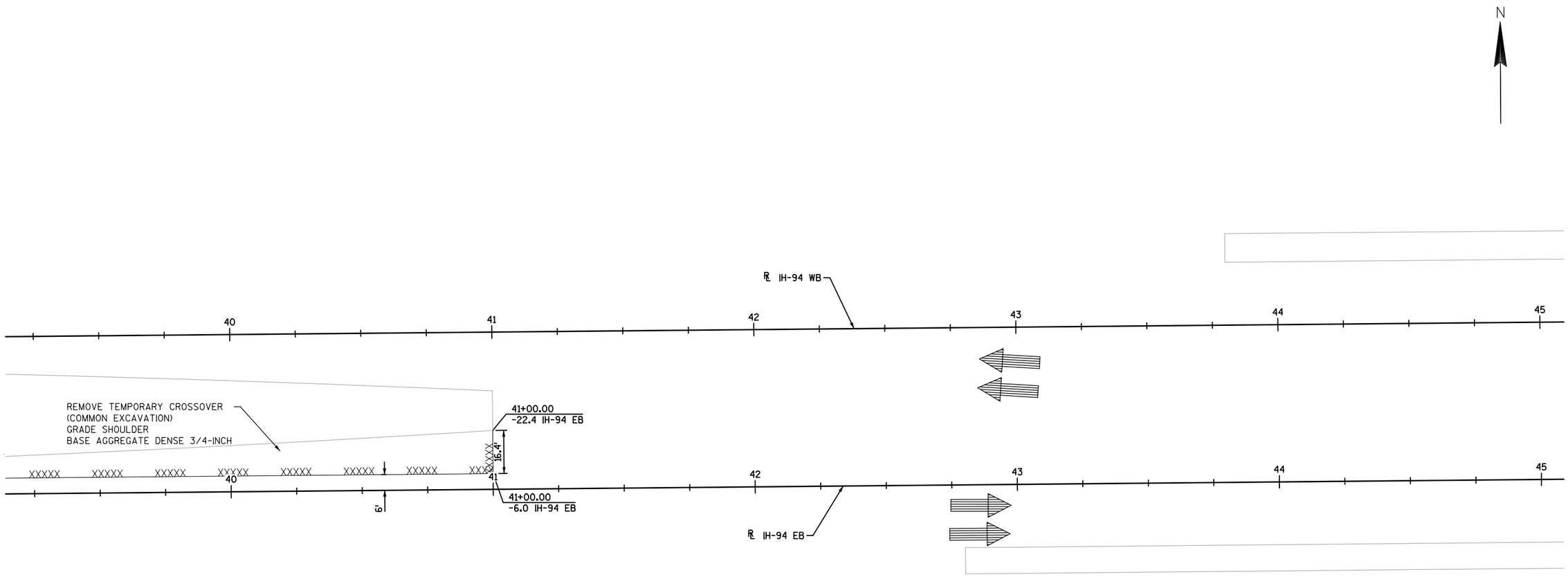
XXX XXXXX SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 3	SHEET 31	E

2



LEGEND

HINGE POINT

SAWING

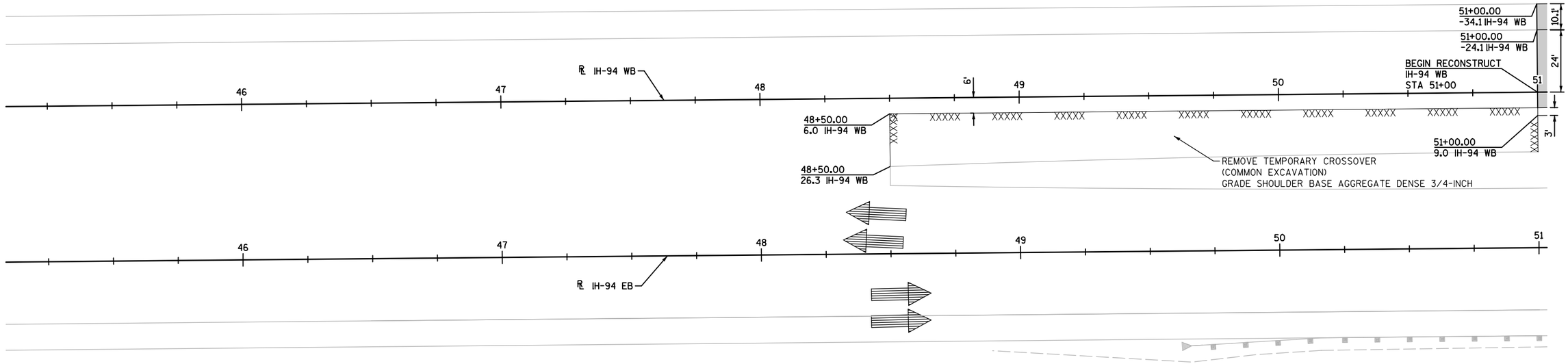
PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 3	SHEET 32	E

2

N



LEGEND

HINGE POINT

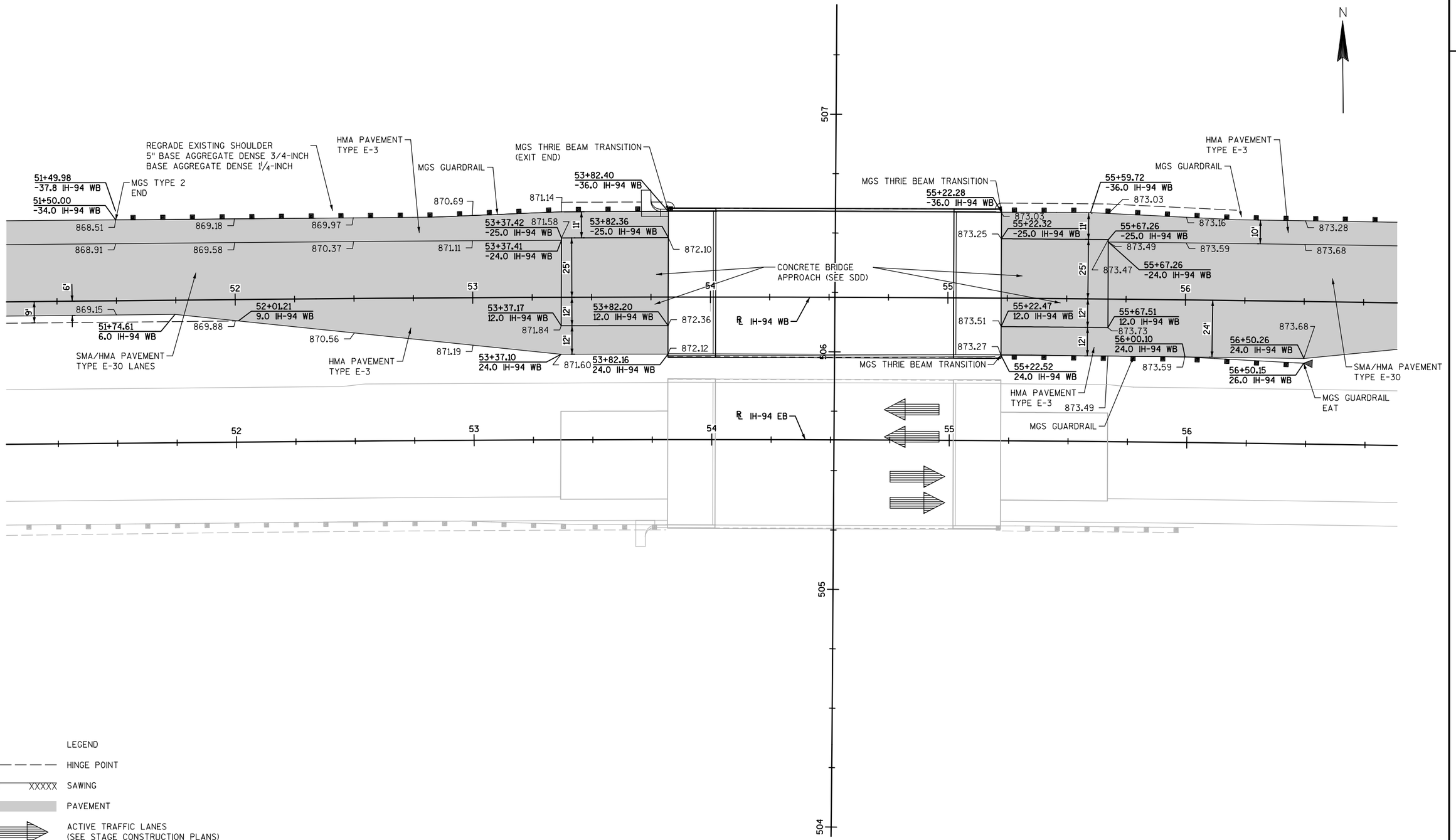
SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 3	SHEET 33	E

2



LEGEND

HINGE POINT

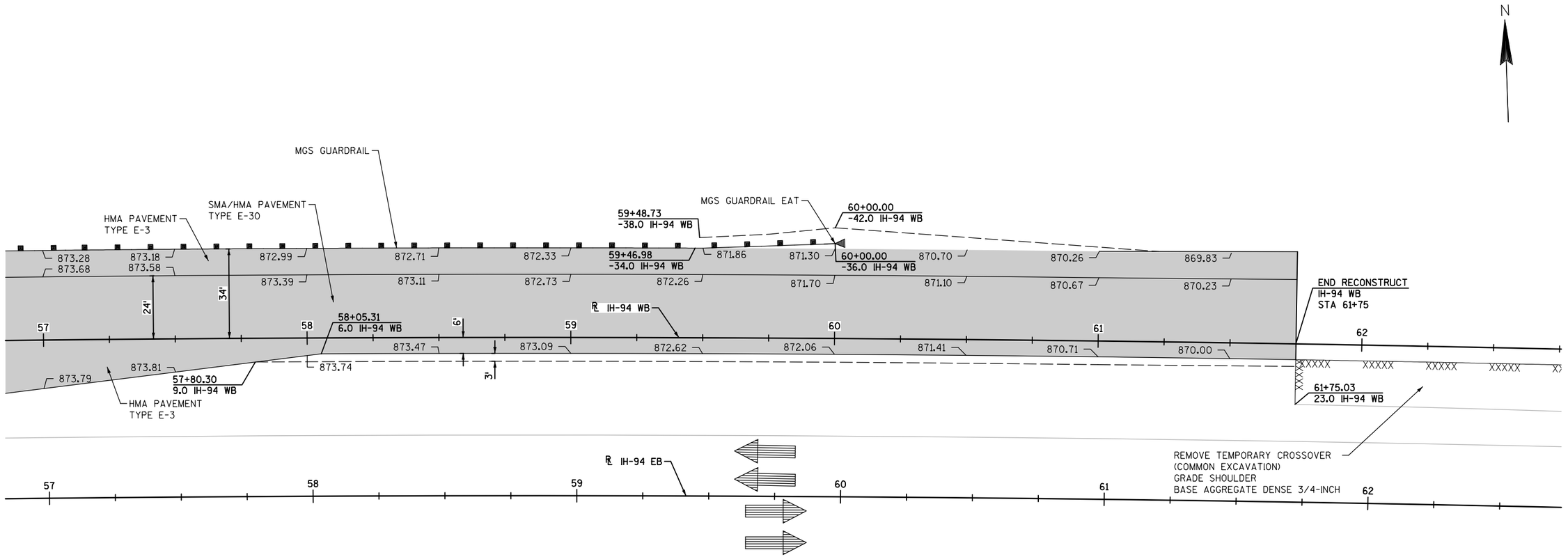
SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 3	SHEET 34	E

2



LEGEND

HINGE POINT

SAWING

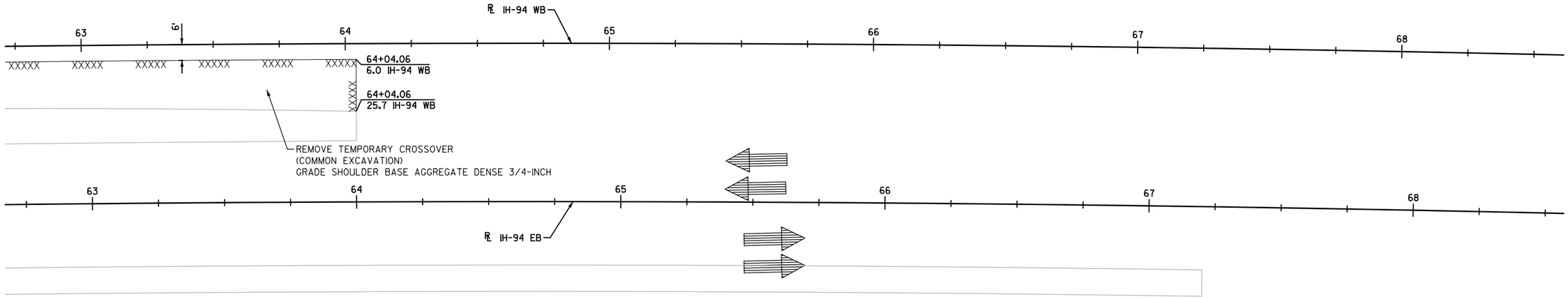
PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 3	SHEET 35	E

2

N

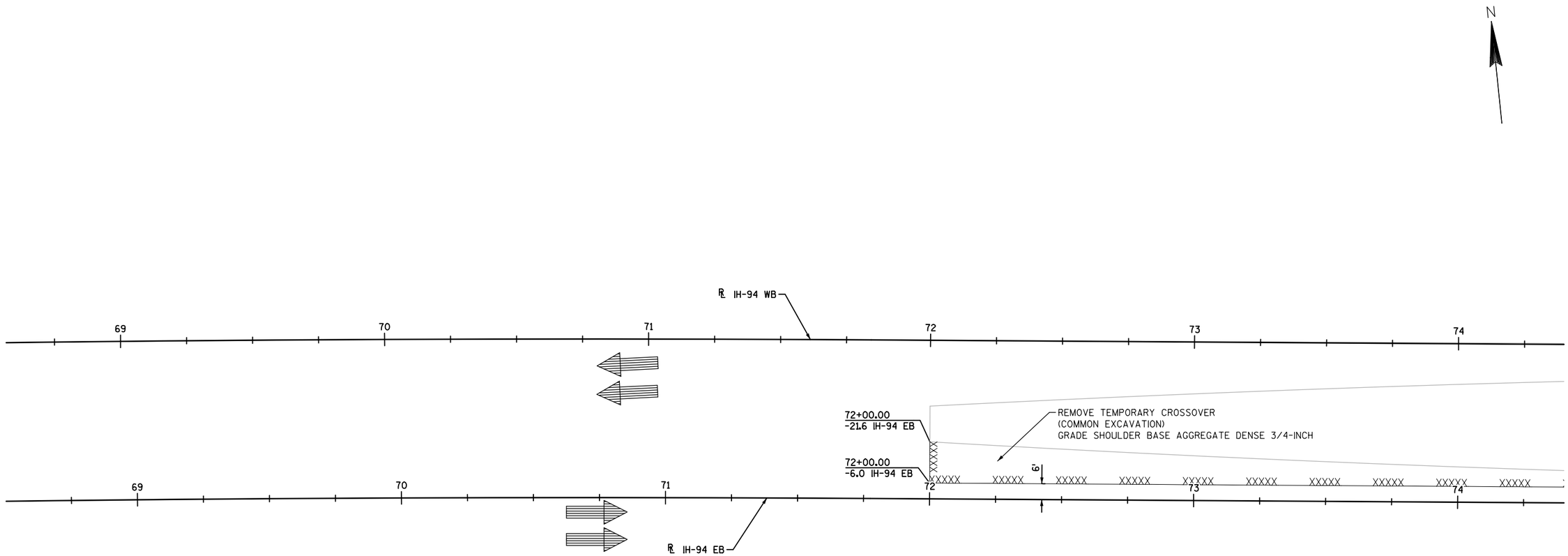


LEGEND

- HINGE POINT
- SAWING
- PAVEMENT
- ACTIVE TRAFFIC LANES (SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 3	SHEET 36	E

2



LEGEND

HINGE POINT

XXX XXXXX SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 3	SHEET 37	E

2

N

℄ IH-94 WB

75 76 77 78 79 80

REMOVE TEMPORARY CROSSOVER
(COMMON EXCAVATION)
GRADE SHOULDER BASE AGGREGATE DENSE 3/4-INCH

77+68.91
-6.0 IH-94 EB

℄ IH-94 EB

LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 3	SHEET 38	E

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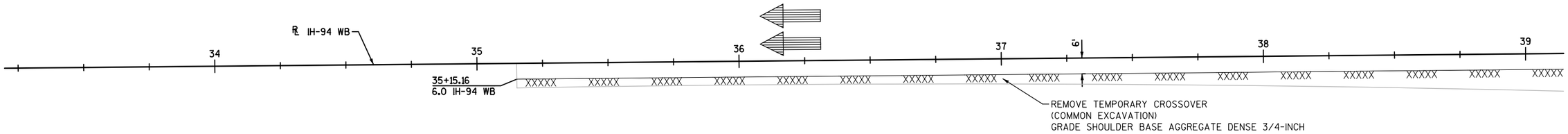

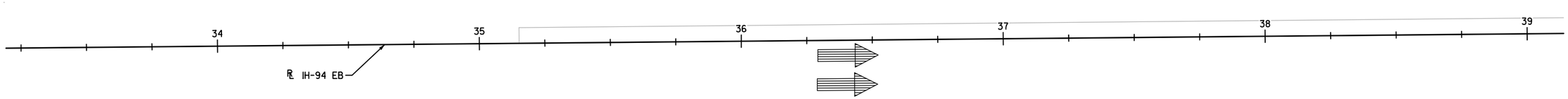

LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 4	SHEET 39	E

2

N

℄ IH-94 WB

40 41 42 43 44 45

6'

REMOVE TEMPORARY CROSSOVER
(COMMON EXCAVATION)
GRADE SHOULDER BASE AGGREGATE DENSE 3/4-INCH

41+00.00
-6.0 IH-94 EB

40 41 42 43 44 45

6'

℄ IH-94 EB

LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 4	SHEET 40	E

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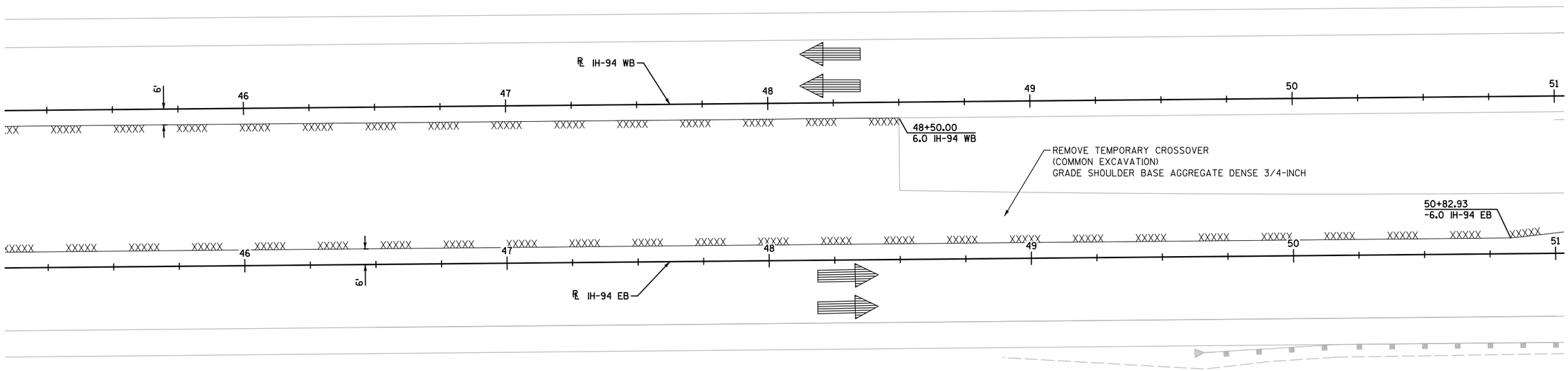

LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 4	SHEET 41	E

2

2

N

℄ GOLDEN LAKE RD

℄ IH-94 WB

℄ IH-94 EB

507

506

505

504

52

53

54

55

56

REMOVE TEMPORARY CROSSOVER
(COMMON EXCAVATION)
GRADE SHOULDER
BASE AGGREGATE DENSE 3/4-INCH

52+44.80
-23.0 IH-94 EB

23'

REMOVE TEMPORARY CROSSOVER
(COMMON EXCAVATION)
GRADE SHOULDER
BASE AGGREGATE DENSE 3/4-INCH

55+77.30
-23.0 IH-94 EB

23'

LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 4	SHEET 42	E

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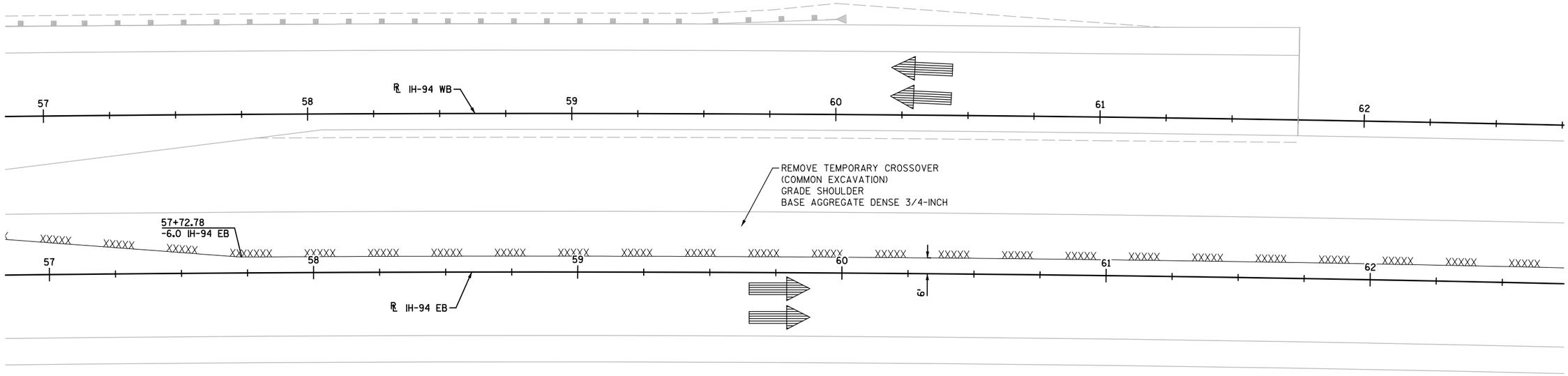


LEGEND

HINGE POINT

SAWING

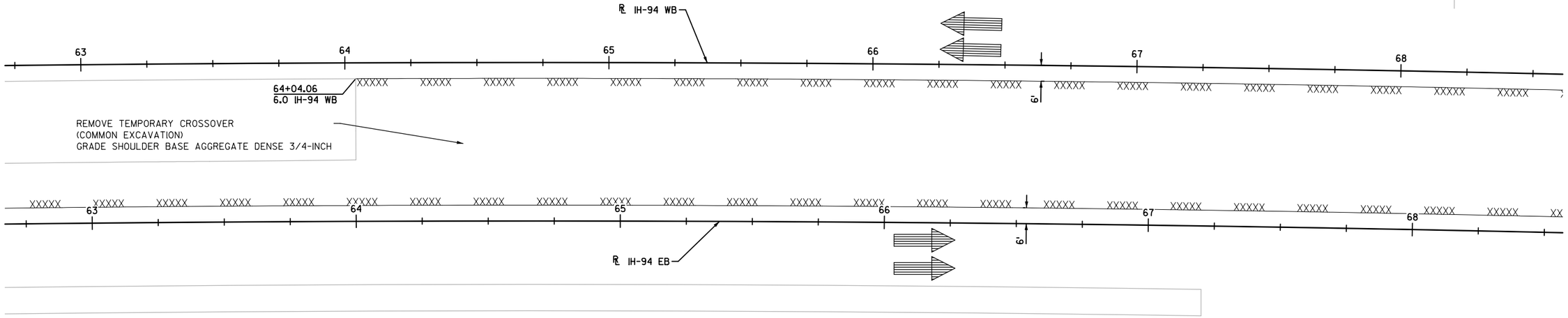
PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 4	SHEET 43	E

2

N



LEGEND

HINGE POINT

SAWING

PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 4	SHEET 44	E

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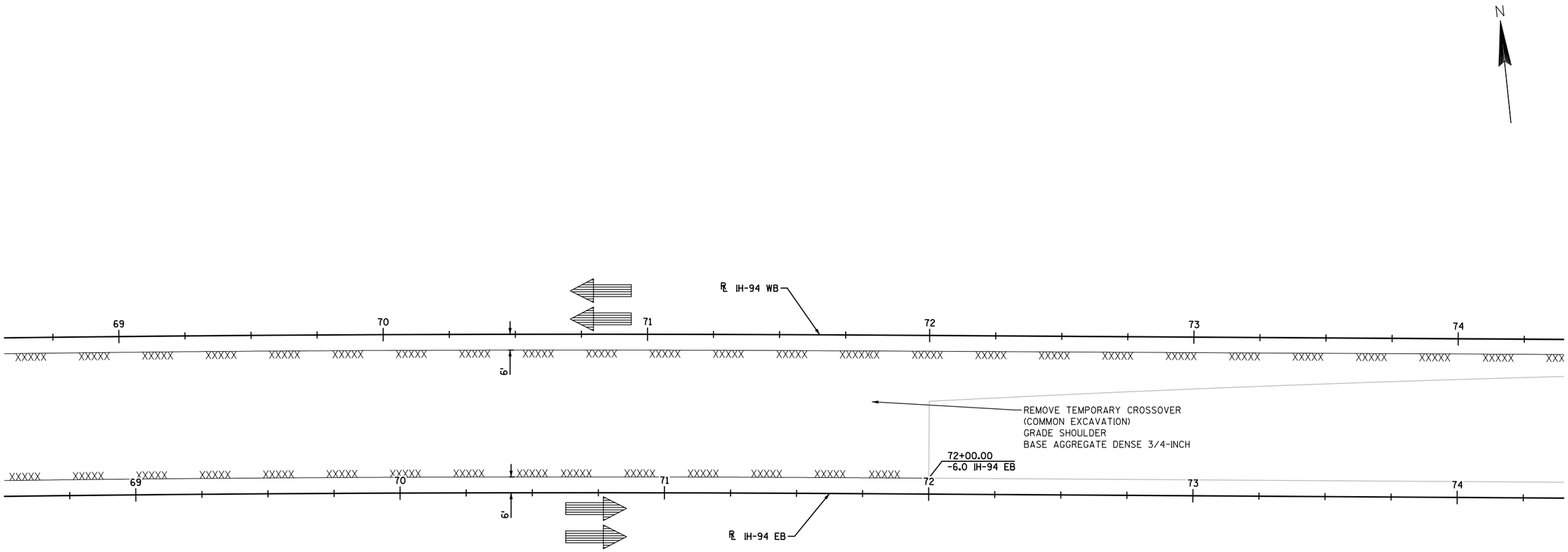


LEGEND

HINGE POINT

SAWING

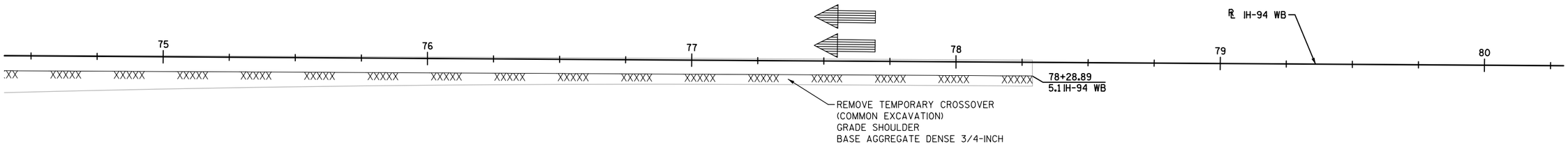
PAVEMENT

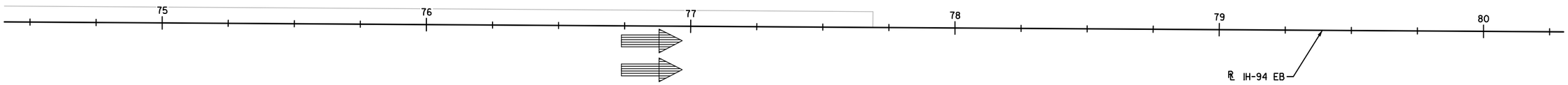
ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 4	SHEET 45	E

2

N





LEGEND

HINGE POINT

SAWING

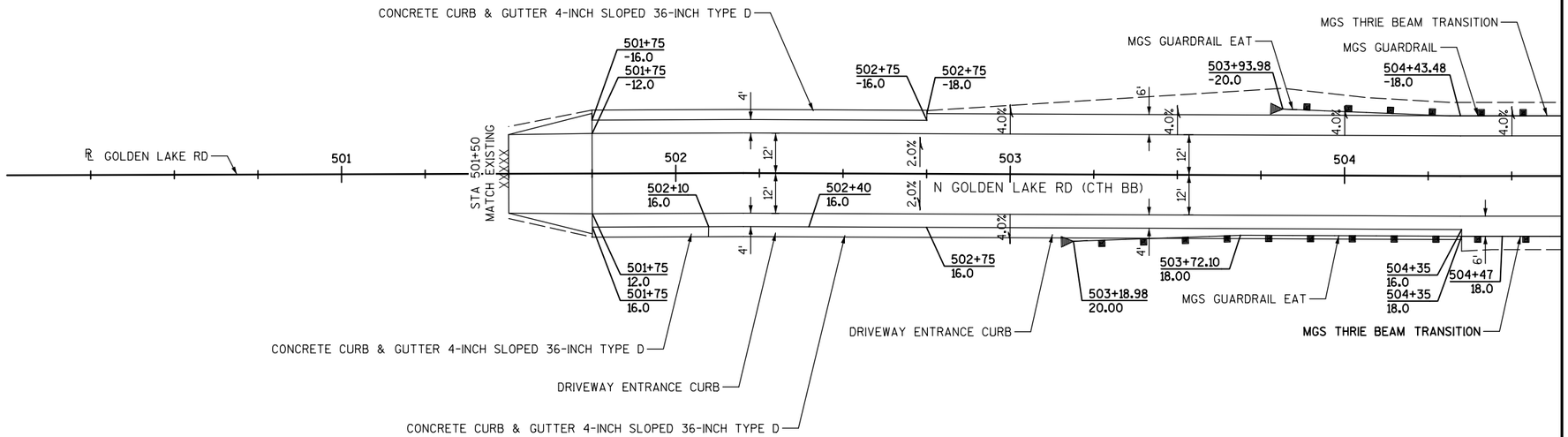
PAVEMENT

ACTIVE TRAFFIC LANES
(SEE STAGE CONSTRUCTION PLANS)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: IH-94 STAGE 4	SHEET 46	E

2

N



LEGEND

XXXXX SAWCUT

MGS GUARDRAIL

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: GOLDEN LAKE ROAD	SHEET 47	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\021257_pd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40

2

N

℄ IH-94 EB

℄ IH-94 WB

53

54

55

56

MGS THRIE BEAM TRANSITION

504+84
-18.0

CONC. BARRIER SS 56"
THRIE BEAM ANCHOR
(SEE DETAIL)

507+02
-18.0

MGS THRIE BEAM TRANSITION

507+39
-18.0

MGS GUARDRAIL EAT

508+04.52
-17.9

508+54.52
-19.9

508+75
-18.0

509+00
-12.0

6'

4.0%

2.0%

2.5%

6.0%

505

506

507

508

509

510

12'

CONCRETE BARRIER TYPE S56

℄ GOLDEN LAKE RD

N GOLDEN LAKE RD (CTH BB)

XXXXX
STA 509+00
MATCH EXISTING

504+84
18.0

CONC. BARRIER SS 56"
THRIE BEAM ANCHOR
(SEE DETAIL)

MGS THRIE BEAM TRANSITION

507+02
18.0

507+42.02
18.0

+42

MGS THRIE BEAM TRANSITION

507+92.02
20.0

MGS GUARDRAIL EAT

508+75
18.0

509+00
12.0

LEGEND

XXXXX SAWCUT

MGS GUARDRAIL

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PAVING DETAIL: GOLDEN LAKE ROAD	SHEET 48	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\021258_pd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40

2

N

℄ IH-94 WB

IH-94 WB

33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

IH-94 EB

℄ IH-94 EB

LEGEND

######	EROSION MAT CLASS I TYPE B
	EROSION MAT URBAN CLASS I TYPE B
	EROSION MAT CLASS II TYPE C
	SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
	SILT FENCE
	SILT FENCE BACKED BY EROSION BALES
	SAFETY FENCE
	SLOPE INTERCEPT
CONC	CONCRETE SURFACE DRAIN (TYPE A)
	TEMPORARY DITCH CHECK
	CULVERT PIPE CHECK
TSB	TEMPORARY SEDIMENT BASIN
	RIP RAP MEDIUM
	INLET PROTECTION TYPE A
	PAVEMENT

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 1	SHEET 49	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\022011_ec.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:100

2

2

N

GOLDEN LAKE ROAD

510
509
508
507
506
505
504
503
502

B-67-82

℄ IH-94 WB

IH-94 WB

48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

IH-94 EB

℄ IH-94 EB

B-67-81

℄ GOLDEN LAKE ROAD

LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC — CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB — TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 1	SHEET 50	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\022012_ec.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

N

64 65 66 67 68 69 70 71 A 72 A 73 A 74 A 75 A 76 A 77 A 78 A 79

IH-94 WB

IH-94 EB

℄ IH-94 WB

℄ IH-94 EB

LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC — CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB — TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 1	SHEET 51	E

2

N

℄ IH-94 WB

41 42 43 44 45 46 47 48 49 50 51 52 53 54 55

IH-94 WB

IH-94 EB

℄ IH-94 EB

GOLDEN LAKE ROAD

510 509 508 507 506 505 504 503 502

CONC

TSB

48+34 ℄ IH-94 EB
62.9' RT

48+68 ℄ IH-94 EB
73.2' RT

48+77 ℄ IH-94 EB
81.8' RT

49+17 ℄ IH-94 EB
89.2' RT

49+95 ℄ IH-94 EB
90.3' RT

50+12 ℄ IH-94 EB
74.9' RT

52+63 ℄ IH-94 EB
75.3' RT

54+08 ℄ IH-94 EB
84.8' RT

USE EROSION MAT URBAN CLASS I TYPE B BEWEEN AGGREGATE SHOULDER AND SLOPE INTERCEPT ON GOLDEN LAKE ROAD

℄ GOLDEN LAKE ROAD

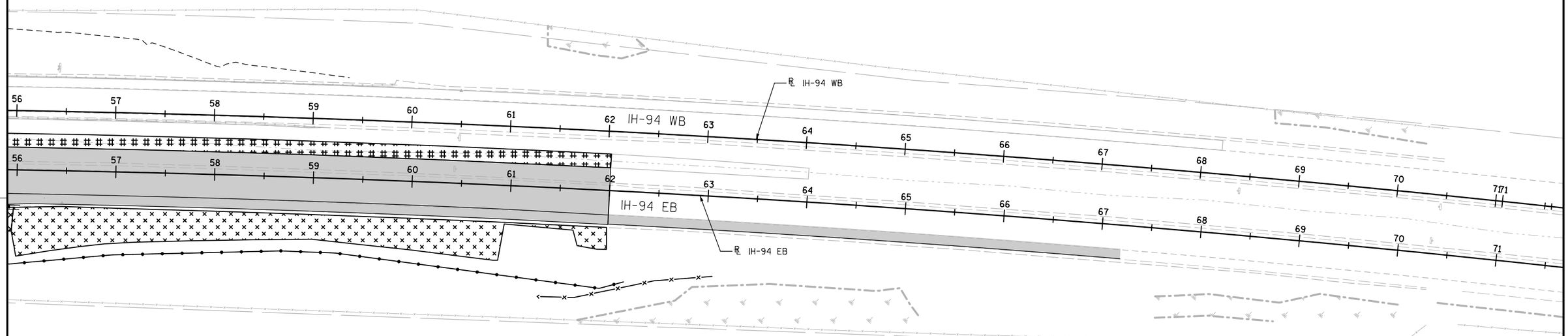
LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC — CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB — TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 2	SHEET 52	E

2

N



LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC — CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB — TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 2	SHEET 53	E

2

2

510+00
℄ GOLDEN LAKE RD
21.2' LT

509+81
℄ GOLDEN LAKE RD
21.5' RT

509+00
℄ GOLDEN LAKE RD
29.0' LT

509+00
℄ GOLDEN LAKE RD
27.4' RT

USE EROSION MAT URBAN CLASS I
TYPE B BEWEEN AGGREGATE SHOULDER
AND SLOPE INTERCEPT ON GOLDEN
LAKE ROAD

508+50
℄ GOLDEN LAKE RD
33.0' LT

508+00
℄ GOLDEN LAKE RD
31.0' RT

508+00
℄ GOLDEN LAKE RD
30.0' LT

507+50
℄ GOLDEN LAKE RD
28.1' RT

507+20
℄ GOLDEN LAKE RD
32.6' LT

54+85
℄ IH-94 WB
97.2' LT

53+99 ℄ IH-94 WB
89.1' LT

55+04
℄ IH-94 WB
87.3' LT

GOLDEN LAKE ROAD

CONC

℄ IH-94 WB

IH-94 WB

IH-94 EB

℄ IH-94 EB

℄ GOLDEN LAKE ROAD

N

LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC — CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB — TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 3	SHEET 54	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\022031_ec.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

2

N

GOLDEN LAKE ROAD

℄ IH-94 WB

IH-94 WB

IH-94 EB

℄ IH-94 EB

B-67-82

B-67-81

℄ GOLDEN LAKE ROAD

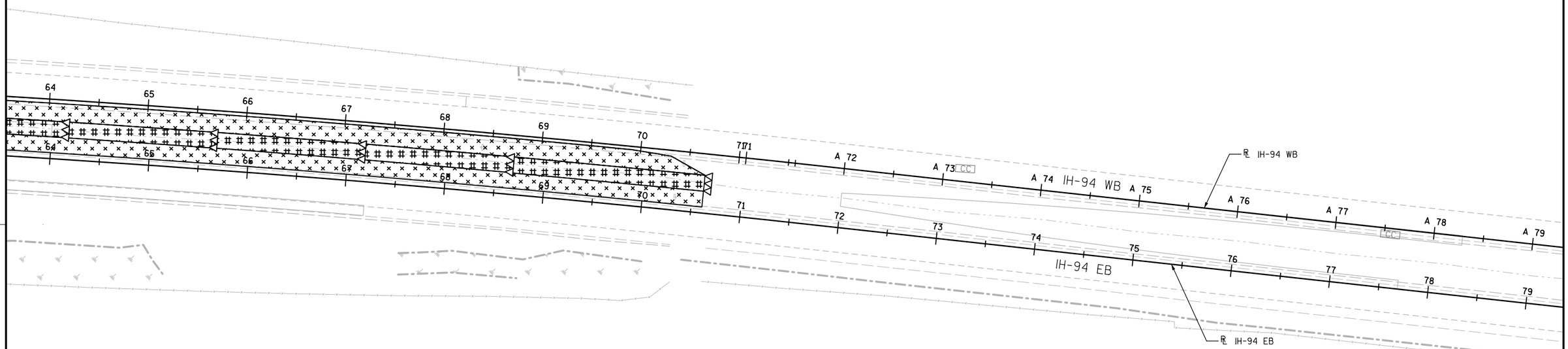
LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC — CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB — TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 3	SHEET 55	E

2

N



LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC — CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB — TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 3	SHEET 56	E

2

N

℄ IH-94 WB

34 35 36 37 38 IH-94 WB 39 40 41 42 43 44 45 46 47 48

34 35 36 37 38 39 40 41 42 43 44 45 46 47 48

IH-94 EB

℄ IH-94 EB

LEGEND

- ###### EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 4	SHEET 57	E

2

N

IH-94 WB

IH-94 EB

℄ IH-94 WB

℄ IH-94 EB

LEGEND

######	EROSION MAT CLASS I TYPE B
x x x x	EROSION MAT URBAN CLASS I TYPE B
XXXX	EROSION MAT CLASS II TYPE C
	SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
	SILT FENCE
	SILT FENCE BACKED BY EROSION BALES
—x—x—	SAFETY FENCE
	SLOPE INTERCEPT
CONC	CONCRETE SURFACE DRAIN (TYPE A)
△△△	TEMPORARY DITCH CHECK
○○○	CULVERT PIPE CHECK
TSB	TEMPORARY SEDIMENT BASIN
	RIP RAP MEDIUM
	INLET PROTECTION TYPE A
	PAVEMENT

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 4	SHEET 58	E

2

N

64 65 66 67 68 69 70 71 A 72 A 73 A 74 A 75 A 76 A 77 A 78 A 79

℄ IH-94 WB

℄ IH-94 EB

IH-94 WB

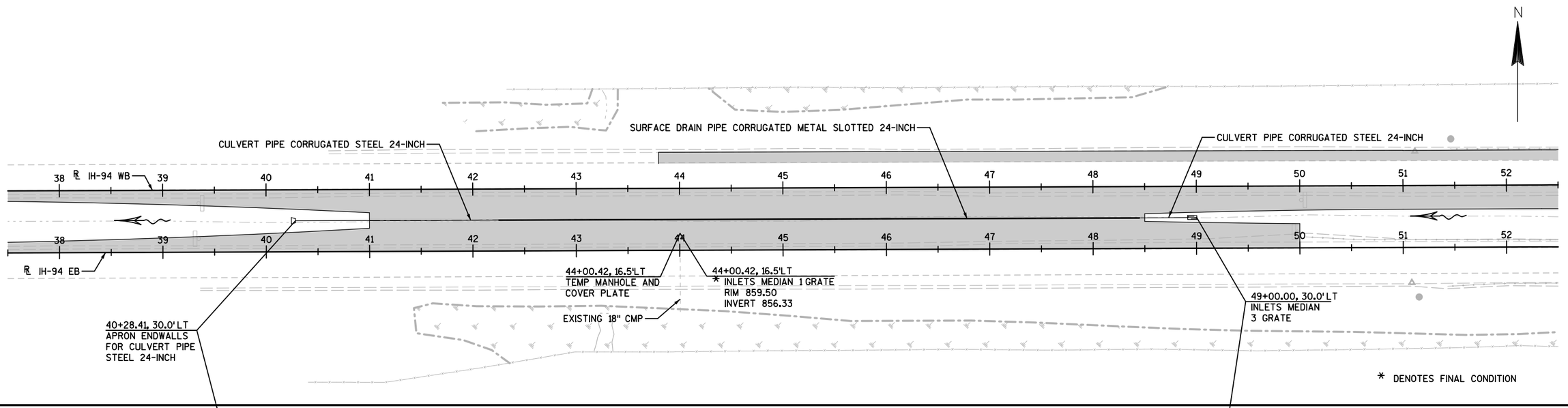
IH-94 EB

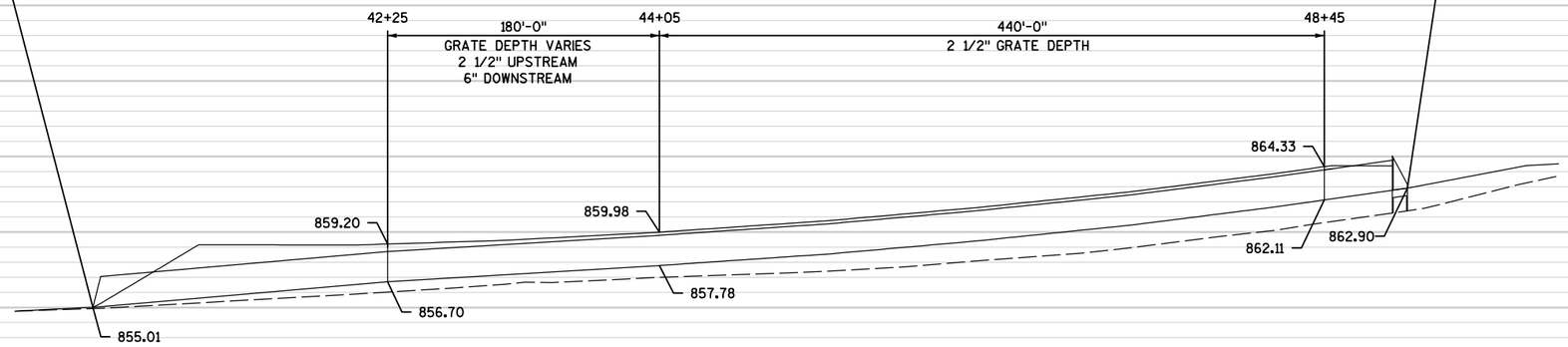
LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- EROSION MAT CLASS II TYPE C
- SOD, REINFORCED W/ EROSION MAT CLASS II, TYPE A (PIPE OUTFALL)
- SILT FENCE
- SILT FENCE BACKED BY EROSION BALES
- SAFETY FENCE
- SLOPE INTERCEPT
- CONC — CONCRETE SURFACE DRAIN (TYPE A)
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- TSB — TEMPORARY SEDIMENT BASIN
- RIP RAP MEDIUM
- INLET PROTECTION TYPE A
- PAVEMENT

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	EROSION CONTROL: STAGE 4	SHEET 59	E

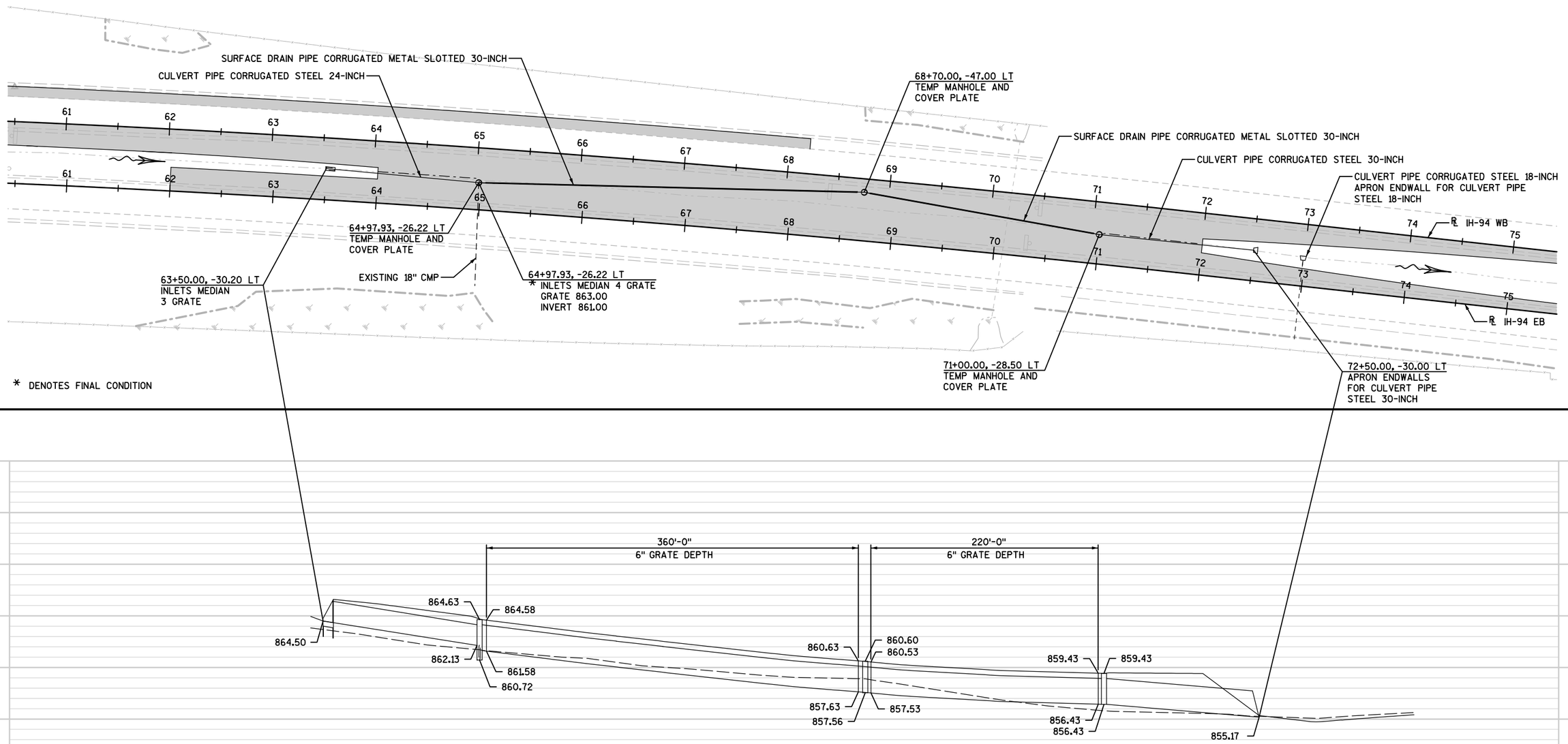
2

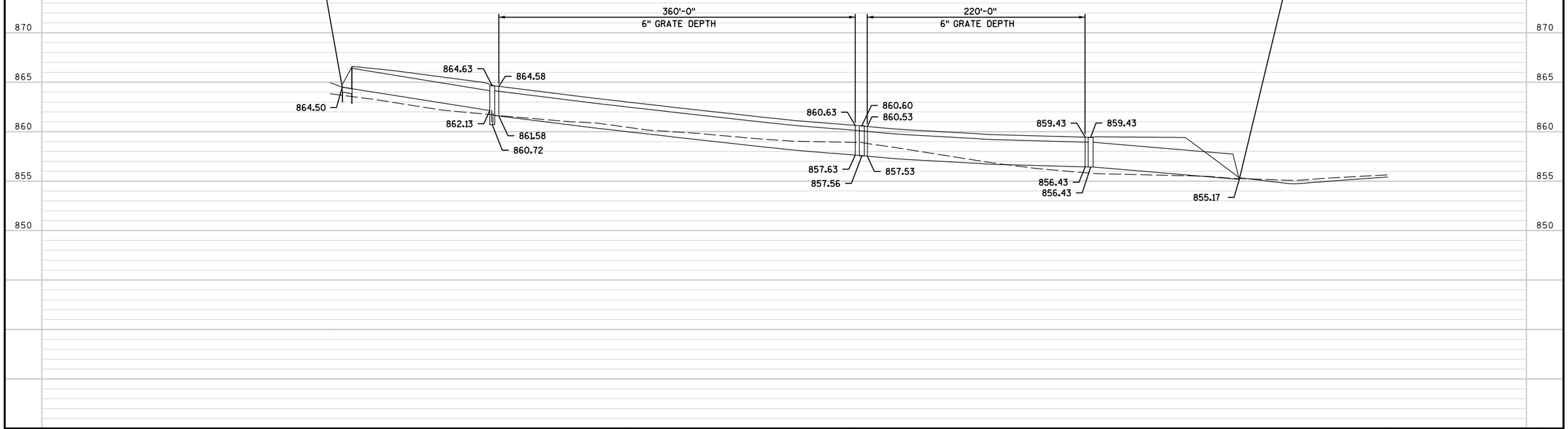




PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	STORM SEWER: TEMPORARY AND FINAL	SHEET 60	E

2



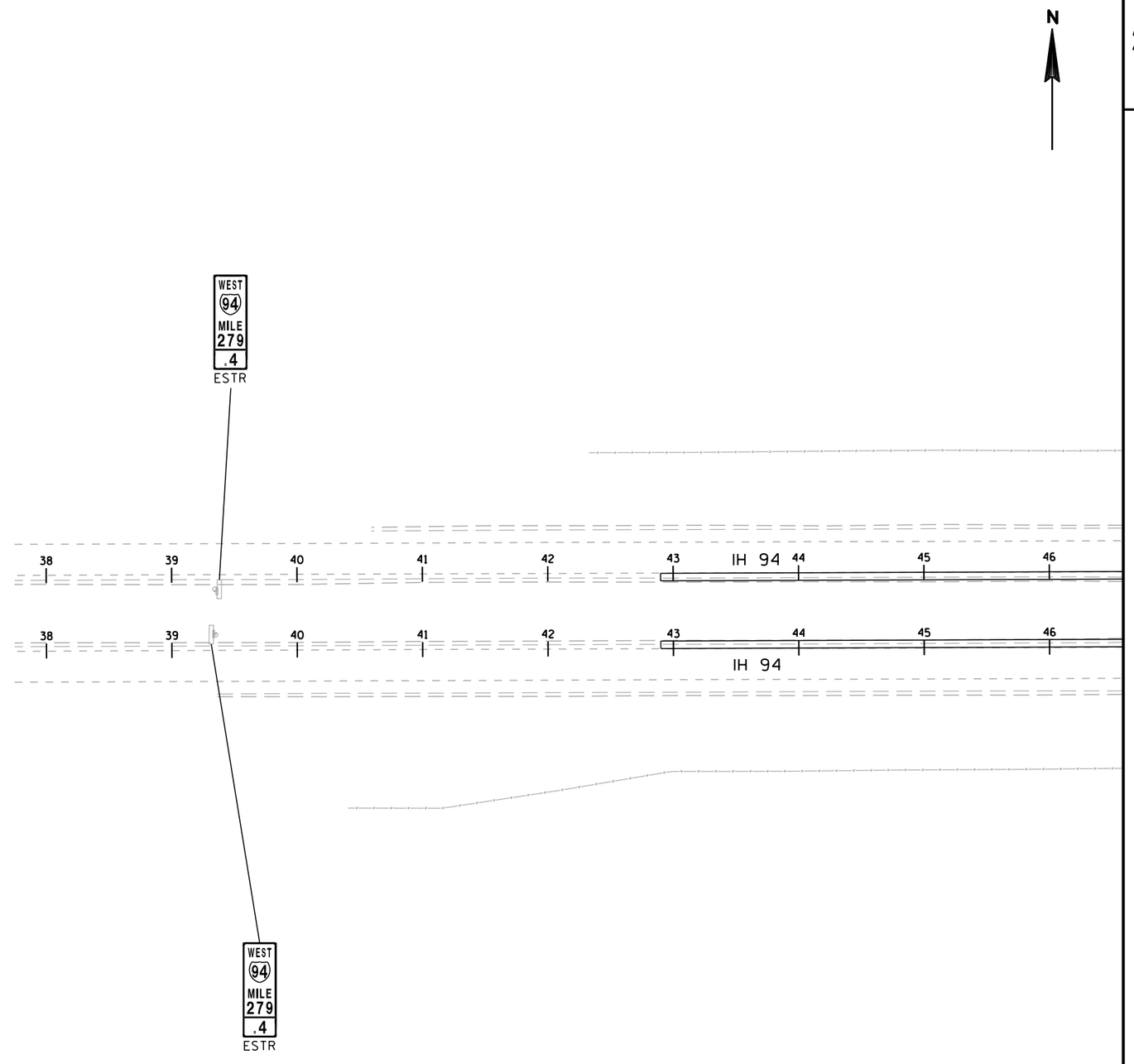


PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	STORM SEWER : TEMPORARY AND FINAL	SHEET 61	E

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO REMAIN



2

SHEET 1 OF 3

PROJECT NO: 1060-38-71	HWY: IH 94	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 62	E

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO REMAIN

N

GOLDEN LAKE RD

IH 94

EAST 94 MILE 279 .6 — REMOVE

EAST 94 MILE 279 .6 — 101 — D10-5(4)

REMOVE — 108 — W5-52R(3)

109 — W5-52L(3) — REMOVE

Hwy BB — REMOVE

Hwy BB — 110 — M1-94

EAST 94 MILE 279 .8 — REMOVE

EAST 94 MILE 279 .8 — 103 — D10-5(4)

EAST 94 MILE 279 .6 — 102 — D10-5(4)

EAST 94 MILE 279 .6 — REMOVE

Hwy BB — 105 — M1-94

Hwy BB — REMOVE

106 — W5-52L(3) — REMOVE

107 — W5-52R(3)

REMOVE

EAST 94 MILE 279 .8 — 104 — D10-5(4)

EAST 94 MILE 279 .8 — REMOVE

SHEET 2 OF 3

PROJECT NO: 1060-38-71	HWY: IH 94	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET	E

FILE NAME : J:\projects\d2_10603894\71\023202_PS.dgn PLOT DATE : 10-JUN-2014 09:57 PLOT BY : mscppl PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO REMAIN

N

2

SLOWER TRAFFIC KEEP RIGHT
REMOVE

SLOWER TRAFFIC KEEP RIGHT (111)
R4-3(3)

WEST 94 MILE 280 .0
ESTR

EAST 94 MILE 280 .0
ESTR

IH 94

63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78

A 72 A 73 A 74 A 75 A 76 A 77

SHEET 3 OF 3

PROJECT NO: 1060-38-71	HWY: IH 94	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 64	E

FILE NAME : J:\projects\d2_10603894\71\023203_PS.dgn PLOT DATE : 10-JUN-2014 09:57 PLOT BY : mscppl PLOT NAME : PLOT SCALE : 100:1

2

2

N

STA 34+60 ℄ IH-94 WB
END PAVEMENT MARKING EPOXY 4-INCH (WHITE),
MATCH EXISTING PAVEMENT MARKING

STA 34+60 ℄ IH-94 WB
END PAVEMENT MARKING GROOVED WET REFLECTIVE
CONTRAST TAPE 4-INCH (DASHED WHITE), MATCH EXISTING
PAVEMENT MARKING

STA 34+60 ℄ IH-94 WB
END PAVEMENT MARKING EPOXY 4-INCH (YELLOW),
MATCH EXISTING PAVEMENT MARKING

℄ IH-94 WB

ROW

34 35 36 37 38 IH-94 WB 39 40 41 42 43 44 45 46 47 48

① ② ③

34 35 36 37 38 39 40 41 42 43 44 45 46 47 48

IH-94 EB

℄ IH-94 EB

STA 34+60 ℄ IH-94 EB
END PAVEMENT MARKING EPOXY 4-INCH (YELLOW),
MATCH EXISTING PAVEMENT MARKING

STA 34+60 ℄ IH-94 EB
END PAVEMENT MARKING GROOVED WET REFLECTIVE
CONTRAST TAPE 4-INCH (DASHED WHITE), MATCH EXISTING
PAVEMENT MARKING

STA 34+60 ℄ IH-94 EB
END PAVEMENT MARKING EPOXY 4-INCH (WHITE),
MATCH EXISTING PAVEMENT MARKING

ROW

① ② ③

PAVEMENT MARKING LEGEND

① PAVEMENT MARKING EPOXY 4-INCH (YELLOW)

② PAVEMENT MARKING EPOXY 4-INCH (WHITE)

③ PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH
(DASHED WHITE) (12.5' LINE, 37.5' SKIP)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PERMANENT PAVEMENT MARKING	SHEET 65	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\024501_pm.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:100

2

N

GOLDEN LAKE ROAD

510 509 508 507 506 505 504 503 502 501

ROW

SLOPE INTERCEPT

℄ IH-94 WB

B-67-342

IH-94 WB

IH-94 EB

48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

1 2 3

℄ IH-94 EB

B-67-341

SLOPE INTERCEPT

ROW

SLOPE INTERCEPT

ROW

℄ GOLDEN LAKE ROAD

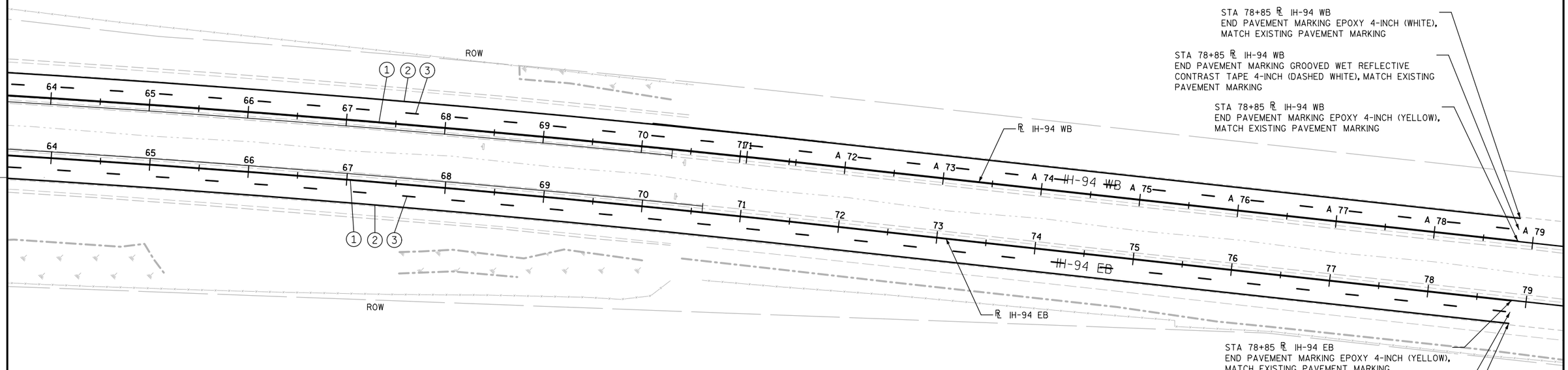
PAVEMENT MARKING LEGEND

1. PAVEMENT MARKING EPOXY 4-INCH (YELLOW)
2. PAVEMENT MARKING EPOXY 4-INCH (WHITE)
3. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (DASHED WHITE) (12.5' LINE, 37.5' SKIP)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PERMANENT PAVEMENT MARKING	SHEET 66	E

2

N



PAVEMENT MARKING LEGEND

(1) PAVEMENT MARKING EPOXY 4-INCH (YELLOW)

(2) PAVEMENT MARKING EPOXY 4-INCH (WHITE)

(3) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (DASHED WHITE) (12.5' LINE, 37.5' SKIP)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PERMANENT PAVEMENT MARKING	SHEET 67	E

2

N

STA 501+50 ℄ GOLDEN LAKE RD
BEGIN PAVEMENT MARKING EPOXY 4-INCH (WHITE),
MATCH EXISTING EDGE LINE PAVEMENT MARKING

SLOPE INTERCEPT

ROW

℄ GOLDEN LAKE RD

501

502

503

N GOLDEN LAKE RD (CTH BB)

504

STA 501+50 ℄ GOLDEN LAKE RD
BEGIN PAVEMENT MARKING EPOXY
4-INCH (DASHED YELLOW),
MATCH EXISTING CENTER LINE
PAVEMENT MARKING

STA 501+50 ℄ GOLDEN LAKE RD
BEGIN PAVEMENT MARKING EPOXY 4-INCH (WHITE),
MATCH EXISTING EDGE LINE PAVEMENT MARKING

SLOPE INTERCEPT

ROW

ROW

PAVEMENT MARKING LEGEND

(1) PAVEMENT MARKING EPOXY 4-INCH (WHITE)

(2) PAVEMENT MARKING EPOXY 4-INCH (DASHED YELLOW)
(12.5' LINE, 37.5' SKIP)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PERMANENT PAVEMENT MARKING	SHEET 68	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\024504_pm.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40

2

N

℄ IH-94 EB

℄ IH-94 WB

IH-94 EB

IH-94 WB

ROW

ROW

ROW

ROW

ROW

SLOPE INTERCEPT

STA 509+00 ℄ GOLDEN LAKE RD
BEGIN PAVEMENT MARKING EPOXY 4-INCH (WHITE),
MATCH EXISTING EDGE LINE PAVEMENT MARKING

505 506 507 508 509 510

℄ GOLDEN LAKE RD

N GOLDEN LAKE RD (CTH BB)

53 53 54 54 55 55 56 56

1 2

SLOPE INTERCEPT

STA 509+00 ℄ GOLDEN LAKE RD
BEGIN PAVEMENT MARKING EPOXY
4-INCH (DASHED YELLOW),
MATCH EXISTING CENTER LINE
PAVEMENT MARKING

STA 509+00 ℄ GOLDEN LAKE RD
BEGIN PAVEMENT MARKING EPOXY 4-INCH (WHITE),
MATCH EXISTING EDGE LINE PAVEMENT MARKING

PAVEMENT MARKING LEGEND

1. PAVEMENT MARKING EPOXY 4-INCH (WHITE)
2. PAVEMENT MARKING EPOXY 4-INCH (DASHED YELLOW)
(12.5' LINE, 37.5' SKIP)

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PERMANENT PAVEMENT MARKING	SHEET 69	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\024505_pm.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40

TRAFFIC CONTROL NOTES:

* SHIFT TRAFFIC TO CONFIGURATIONS SHOWN ON TRAFFIC CONTROL PLAN SHEETS FOR EACH CORRESPONDING STAGE.

* MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS DURING PEAK HOURS.

* FULL CLOSURES ARE REQUIRED ON GOLDEN LAKE ROAD AND DOUSMAN ROAD FOR EXISTING DECK REMOVAL, DECK CONSTRUCTION, AND CONSTRUCTION OF THESE SIDE ROADS. PLACE TWO FIXED MESSAGE SIGNS AT THE INTERSECTIONS OF DELAFIELD ROAD AND GOLDEN LAKE ROAD & DELAFIELD ROAD AND DOUSMAN ROAD AND AT THE INTERSECTIONS OF VALLEY ROAD AND GOLDEN LAKE ROAD & VALLEY ROAD AND DOUSMAN ROAD TO ALERT TRAFFIC OF CLOSURES AS DIRECTED BY THE ENGINEER. SEE FIXED MESSAGE SIGN DETAIL, GENERAL NOTES & LEGEND, AND DOUSMAN ROAD DETOUR PLAN SHEET FOR MORE DETAILS.

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

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

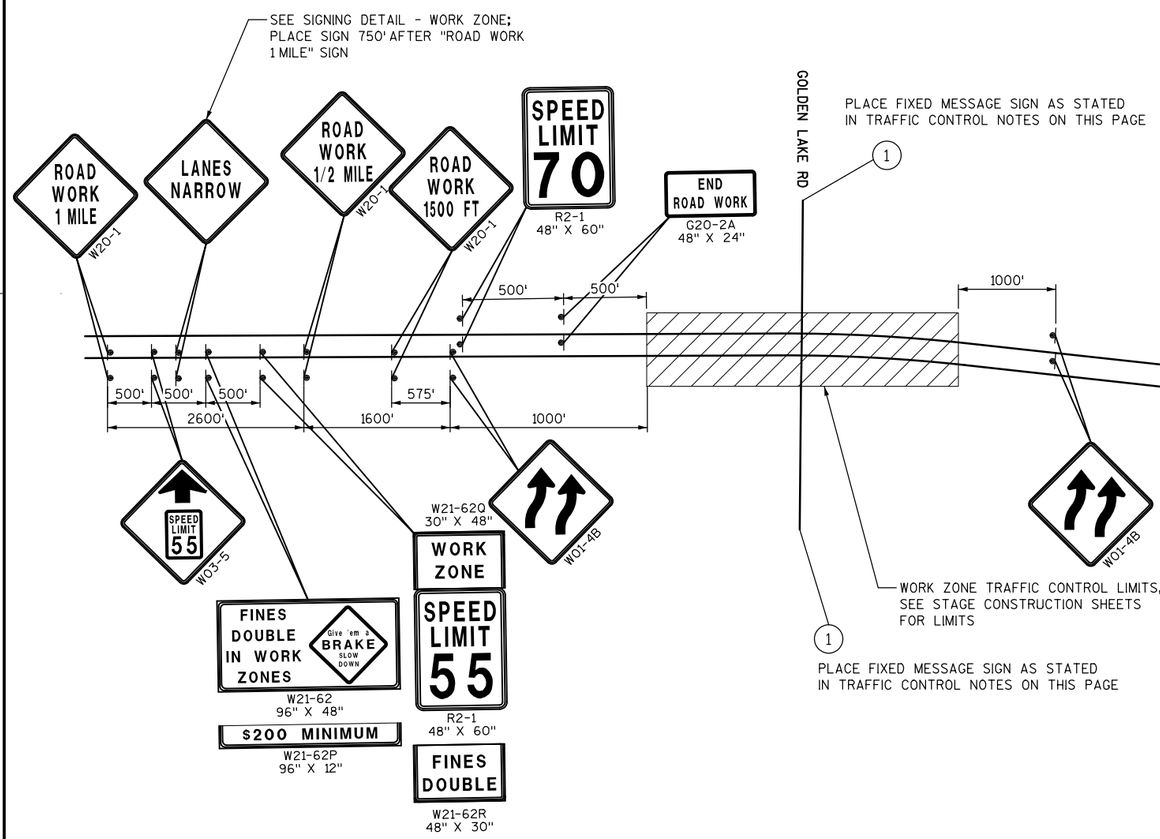
* "WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

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

* COORDINATE ALL ADVANCED WARNING SIGNS AND TRAFFIC CONTROL, NEAR DOUSMAN ROAD, WITH STH 67 BRIDGES PROJECT 1060-30-70 UNDER ANOTHER CONTRACT.

* ADJUST W01-4B SIGNS ACCORDING TO INDICATE PROPER TRAFFIC SHIFT DIRECTION AS DETERMINED PER TRAFFIC CONTROL LAYOUT FOR EACH PARTICULAR STAGE.

N



PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	ADVANCED SIGNING AND ADDITIONAL NOTES	SHEET 70	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\026001_s1.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:400

WISDOT/CADDS SHEET 42

2

FIXED MESSAGE SIGNS (DETAILS SHEETS)

GENERAL NOTES:

1. ALL SIGNS TO HAVE FLUORESCENT REFLECTIVE SHEETING - REFERENCE: "WISDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," LATEST EDITION.

2. AFTER SIGNS HAVE BEEN LOCATED IN THE FIELD, BUT BEFORE INSTALLATION, THE PROJECT ENGINEER SHALL VERIFY EACH SIGN LOCATION.

3. ALL SIGNS TO BE MOUNTED ON WOODEN POST SUPPORTS (4"x6"). THE NUMBER OF POSTS REQUIRED FOR EACH LAYOUT IS SHOWN.

4. SIGNS ON THIS SHEET TO BE PAID UNDER THE ITEM "FIXED MESSAGE SIGNS."

5. SIGNS SHALL BE BLACK NON-REFLECTIVE MESSAGE ON ORANGE FLUORESCENT REFLECTIVE BACKGROUND PER SPEC 643 & 637.
6. ALL SIGNS SHALL HAVE CAPITAL LETTERS AND NUMERALS:
   12" CAPS SHALL BE SERIES "D"
   6" CAPS SHALL BE SERIES "C"

7. ALL SIGNS SHALL HAVE BORDER & RADIUS OF BORDERS AS FOLLOWS:

SIGN AREA	WIDTH OF BORDER
GREATER THAN 150 SQ FT	3"
60-150 SQ FT	2"
LESS THAN 60 SQ FT	1"

RADIUS SMALLEST OUTSIDE DIMENSION	CORNER RADIUS
> 8 FT	12"
> 6 FT	9"
> 4 FT	6"
LESS THAN 4 FT	3"

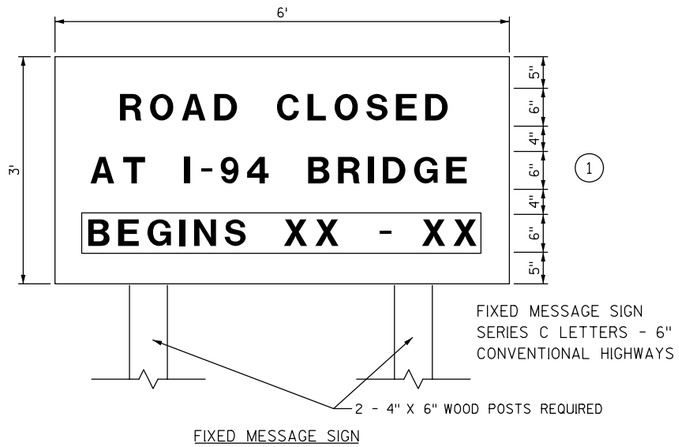
8. BEGIN XXX XX SIGNS SHALL BE SEPARATE PANELS, BUT SHALL BE CONSIDERED AS PART OF THE SIGN AND SHOULD BE REMOVED OR COVERED AFTER THEIR EFFECTIVE DATE. THE MONTH AND DAY SHALL BE AS DIRECTED BY THE ENGINEER IN THE FIELD.

9. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO MANUFACTURING.

10. SIGN BASE MATERIAL SHALL BE ACCORDING TO SECTION 643 & 637.

11. SIGNS TO BE IN PLACE 10 DAYS PRIOR TO CONSTRUCTION.

(X) = SIGN NUMBER



FIXED MESSAGE SIGN

FOR PLAN SHEETS

LEGEND: FIXED MESSAGE SIGNS

- EXISTING GUIDE SIGN TO BE COVERED
- FIXED MESSAGE SIGN(S) ON WOOD POST SUPPORTS
- (XX) FIXED MESSAGE SIGN NUMBER
- (A1) CONTRACTOR SHALL COVER AS DIRECTED BY THE ENGINEER ALL ROUTE MARKINGS PERTAINING TO THE PROJECT. INCIDENTAL TO WORK ZONE TRAFFIC CONTROL SIGNING.
- [CMS] CHANGEABLE MESSAGE SIGN

NOTES: FIXED MESSAGE SIGNS

1. CONTRACTOR SHOULD LOCATE FIXED MESSAGE SIGNS A MINIMUM OF 400' FROM ANY EXISTING TYPE "I" SIGN.

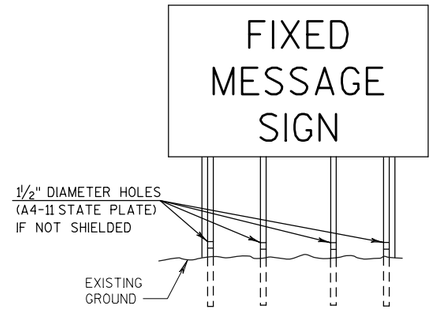
2. ALL FIXED MESSAGE SIGNS SHALL BE BLACK NON-REFLECTIVE MESSAGE ON ORANGE REFLECTIVE BACKGROUND.

3. SEE FIXED MESSAGE SIGNS AND SPECIAL MESSAGE SIGNS LAYOUT SHEETS FOR MORE INFORMATION.

4. COVER DETOUR SIGNING WHEN NOT IN USE. INCIDENTAL TO WORK ZONE TRAFFIC CONTROL SIGNING.

5. SIGNS TO BE PLACED 10 DAYS PRIOR TO CONSTRUCTION.

2



FRONT VIEW

NOTES

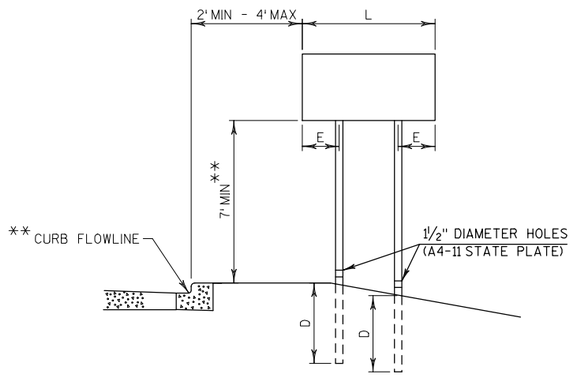
1. SEE TRAFFIC CONTROL SHEETS FOR SIGN LOCATIONS.

2. SEE TABLES BELOW FOR REQUIRED NUMBER OF POSTS.

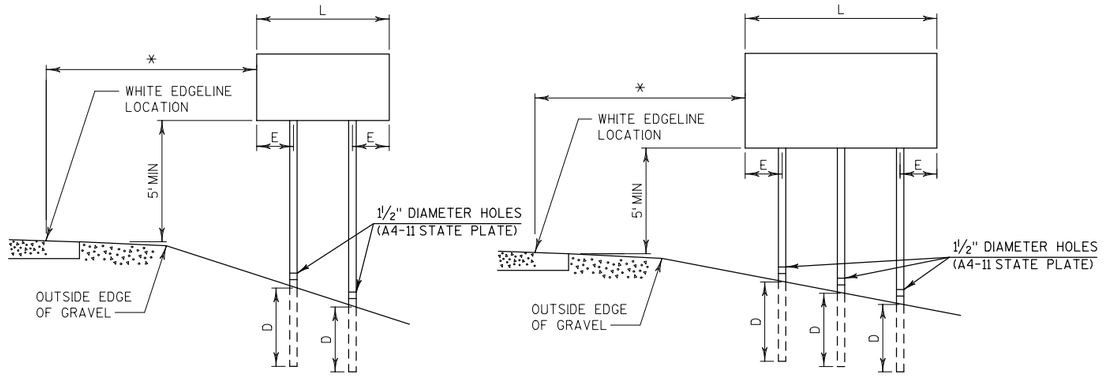
* 6' FROM EDGE OF A PAVED SHOULDER OR 12' FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) OR 2' FROM OUTSIDE EDGE OF GRAVEL, WHICHEVER IS GREATER UNLESS DIRECTED BY PROJECT ENGINEER.

** THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5' MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

3. 4X6 WOOD POSTS SHALL HAVE TWO HOLES PER STATE PLATE A4-11



URBAN AREA



RURAL AREA

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
GREATER THAN 48" LESS THAN 60"	12"
60" TO 120"	L/5

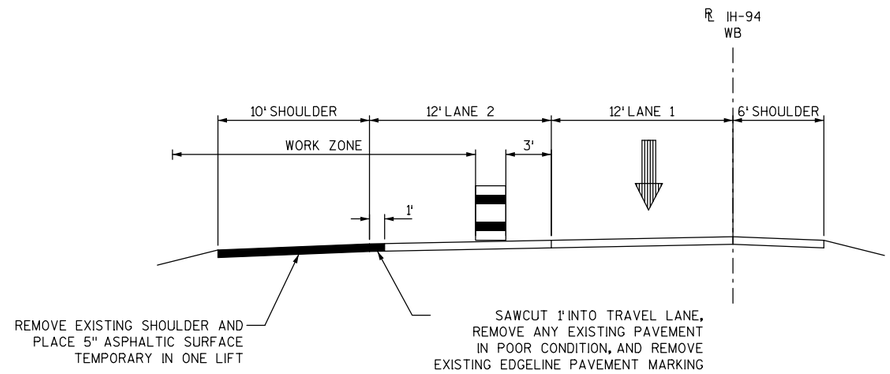
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
GREATER THAN 120" LESS THAN 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" AND GREATER	12"

POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

POST MOUNTING DETAIL FOR TRAFFIC CONTROL FIXED MESSAGE SIGNS



STA 43+80 TO STA 68+20 ℄ IH-94 WB

STAGE 1A CONSTRUCTION
TYPICAL SECTION
DURING NIGHT TIME CLOSURES WB IH-94

PRE-STAGE 1

WORK:

* SAWCUT AND COMPLETE 5" ASPHALTIC SURFACE MILLING ON THE OUTSIDE SHOULDERS AND 1'INTO "LANE 2" TRAVEL LANE.
* PAVE 5" ASPHALTIC SURFACE TEMPORARY ON THE OUTSIDE SHOULDERS IN ONE LIFT.
* AFTER MILLING PLACE SHOULDER PAVEMENT PRIOR TO OPENING ADJACENT LANE TO TRAFFIC.

TRAFFIC CONTROL:

* COMPLETE WORK DURING NIGHT TIME HOURS USING SINGLE LANE CLOSURES. UTILIZE SDD TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION, FOR SIGNING AND TRAFFIC CONTROL DEVICE LOCATIONS.
* IF MULTIPLE NIGHT TIME CLOSURES ARE NEEDED, UTILIZE SDD TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 M.P.H., FOR SIGNING AND TRAFFIC CONTROL DEVICE LOCATIONS DURING PEAK HOURS.
* THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
* THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FT, (500 FT DESIREABLE) DISTANCE TO EXISTING SIGNS.
* "WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.
* ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING OR ON "COVERED" OR "DOWNED" SIGNS.

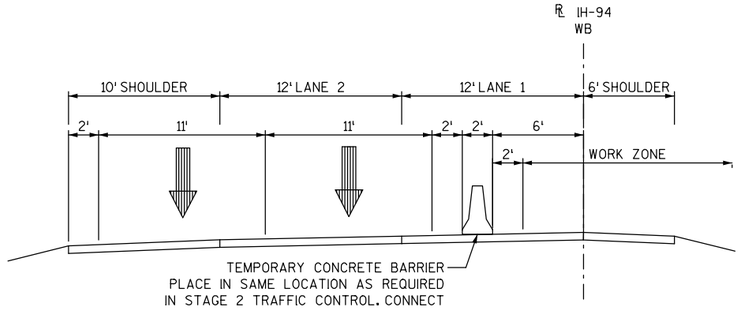
STAGE 1

WORK:

* CONSTRUCT INSIDE SHOULDERS AND TEMPORARY CROSSOVERS ON BOTH EASTBOUND AND WESTBOUND IH-94.
* CONSTRUCT TEMPORARY WESTBOUND BRIDGE WIDENING AT GOLDEN LAKE ROAD. SEE TEMPORARY STRUCTURE PLANS AND STAGE 1B TYPICAL SECTION FOR DETAILS.

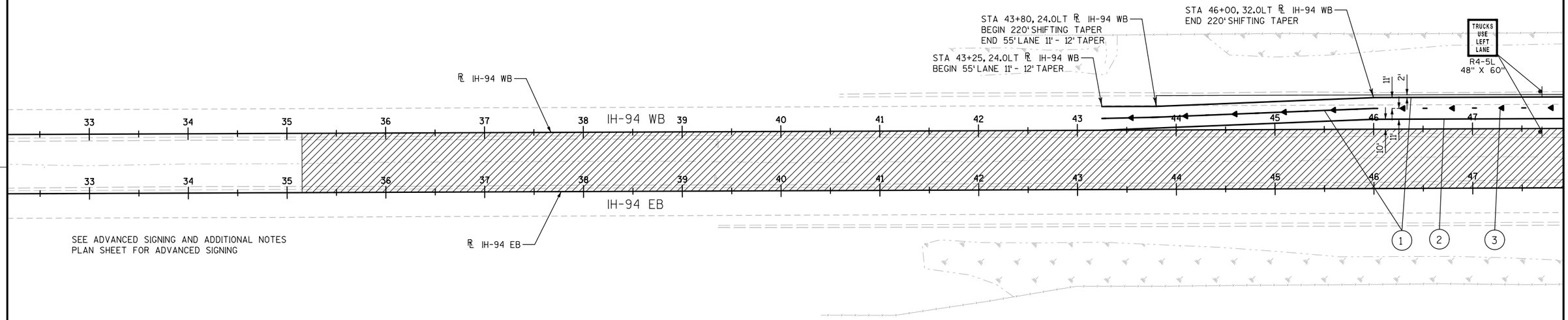
TRAFFIC CONTROL:

* COMPLETE CROSSOVER CONTRUCTION OPERATIONS UTILIZING STAGE 1 TRAFFIC CONTROL PLANS, SDD TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED HIGHWAY, SPEEDS GREATER THAN 40 M.P.H. AND TRAFFIC CONTROL, LANE CLOSERS, SPEED REDUCTION.
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.
* SEE ADVANCED SIGNING AND ADDITIONAL NOTES SHEET FOR ADVANCED SIGNING OUTSIDE OF WORK ZONE.



STAGE 1B CONSTRUCTION
TYPICAL SECTION
WB IH-94

NOTE:
TEMPORARY CONCRETE BARRIER LIMITS
STA 52+34 TO STA 58+18 ℄ IH-94 WB



SEE ADVANCED SIGNING AND ADDITIONAL NOTES
PLAN SHEET FOR ADVANCED SIGNING

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- TEMPORARY BRIDGE
- TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
- DIRECTION OF TRAFFIC
- MB — PORTABLE CHANGEABLE MESSAGE BOARD
- CC — TEMPORARY CRASH CUSHION BARRIER
- (1) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE)
- (2) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (YELLOW)
- (3) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
- (4) TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 1	SHEET 74	E

2

STAGE 1

WORK:

* CONSTRUCT INSIDE SHOULDERS AND TEMPORARY CROSSOVERS ON BOTH EASTBOUND AND WESTBOUND IH-94.

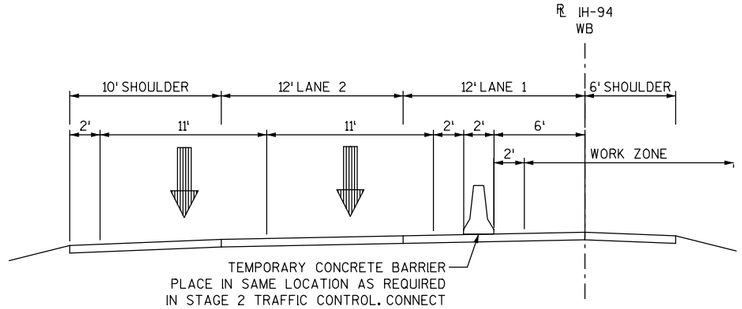
* CONSTRUCT TEMPORARY WESTBOUND BRIDGE WIDENING AT GOLDEN LAKE ROAD. SEE TEMPORARY STRUCTURE PLANS AND STAGE 1B TYPICAL SECTION FOR DETAILS.

TRAFFIC CONTROL:

* COMPLETE CROSSOVER CONTRUCTION OPERATIONS UTILIZING STAGE 1 TRAFFIC CONTROL PLANS, SDD TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED HIGHWAY, SPEEDS GREATER THAN 40 M.P.H. AND TRAFFIC CONTROL, LANE CLOSERS, SPEED REDUCTION.

* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.

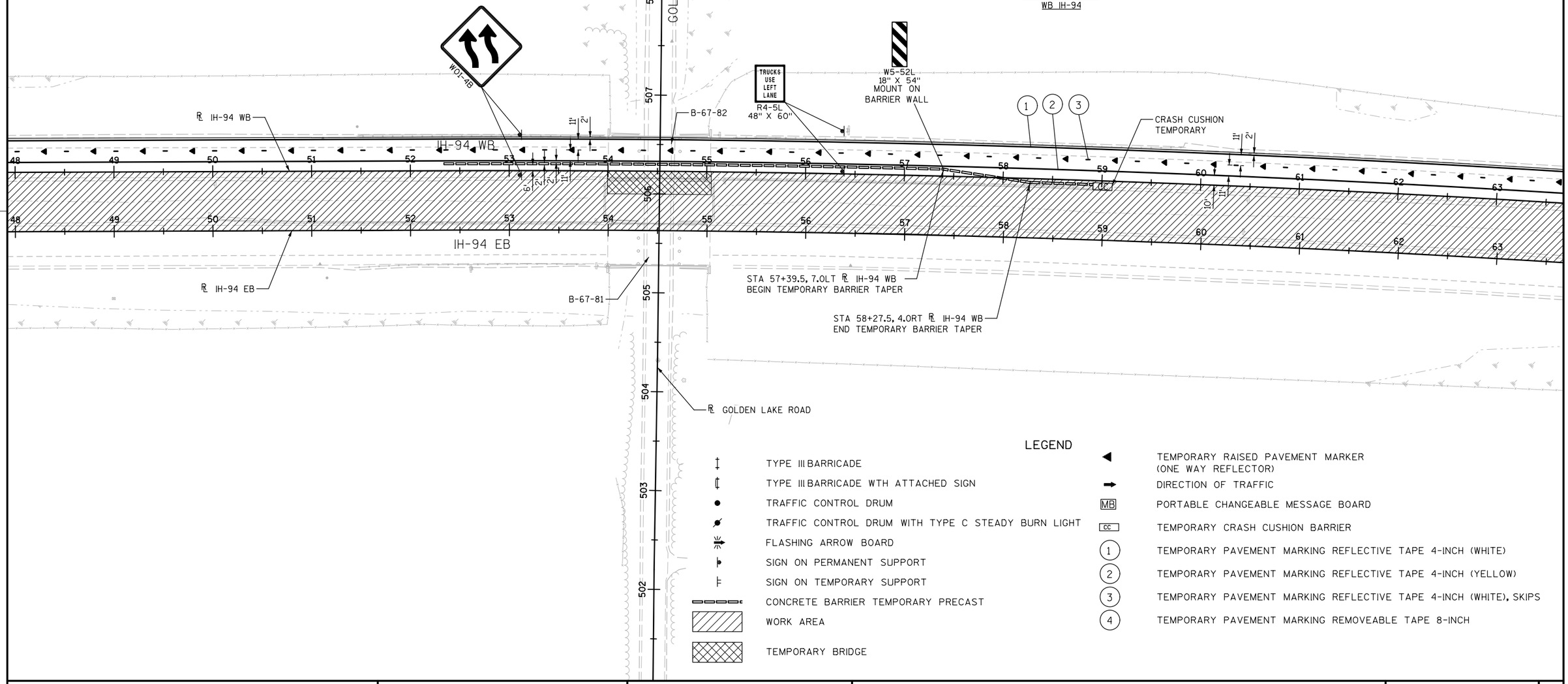
* SEE ADVANCED SIGNING AND ADDITIONAL NOTES SHEET FOR ADVANCED SIGNING OUTSIDE OF WORK ZONE.



STAGE 1B CONSTRUCTION
TYPICAL SECTION
WB IH-94

NOTE:
TEMPORARY CONCRETE BARRIER LIMITS
STA 52+34 TO STA 58+18 ℄ IH-94 WB

N



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- TEMPORARY BRIDGE
- TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
- DIRECTION OF TRAFFIC
- MB — PORTABLE CHANGEABLE MESSAGE BOARD
- CC — TEMPORARY CRASH CUSHION BARRIER
- (1) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE)
- (2) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (YELLOW)
- (3) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
- (4) TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 1	SHEET 75	E

2

STAGE 1

WORK:

* CONSTRUCT INSIDE SHOULDERS AND TEMPORARY CROSSOVERS ON BOTH EASTBOUND AND WESTBOUND IH-94.

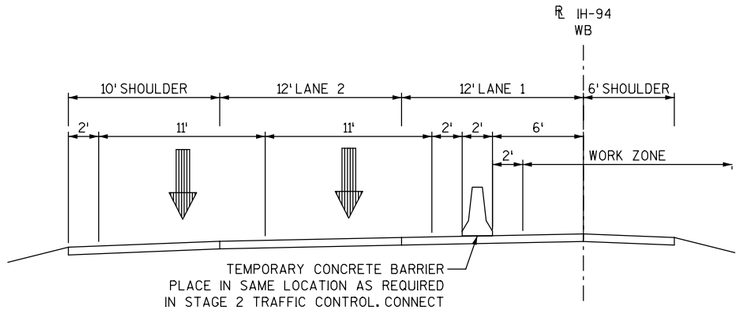
* CONSTRUCT TEMPORARY WESTBOUND BRIDGE WIDENING AT GOLDEN LAKE ROAD. SEE TEMPORARY STRUCTURE PLANS AND STAGE 1B TYPICAL SECTION FOR DETAILS.

TRAFFIC CONTROL:

* COMPLETE CROSSOVER CONTRUCTION OPERATIONS UTILIZING STAGE 1 TRAFFIC CONTROL PLANS, SDD TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED HIGHWAY, SPEEDS GREATER THAN 40 M.P.H. AND TRAFFIC CONTROL, LANE CLOSERS, SPEED REDUCTION.

* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.

* SEE ADVANCED SIGNING AND ADDITIONAL NOTES SHEET FOR ADVANCED SIGNING OUTSIDE OF WORK ZONE.

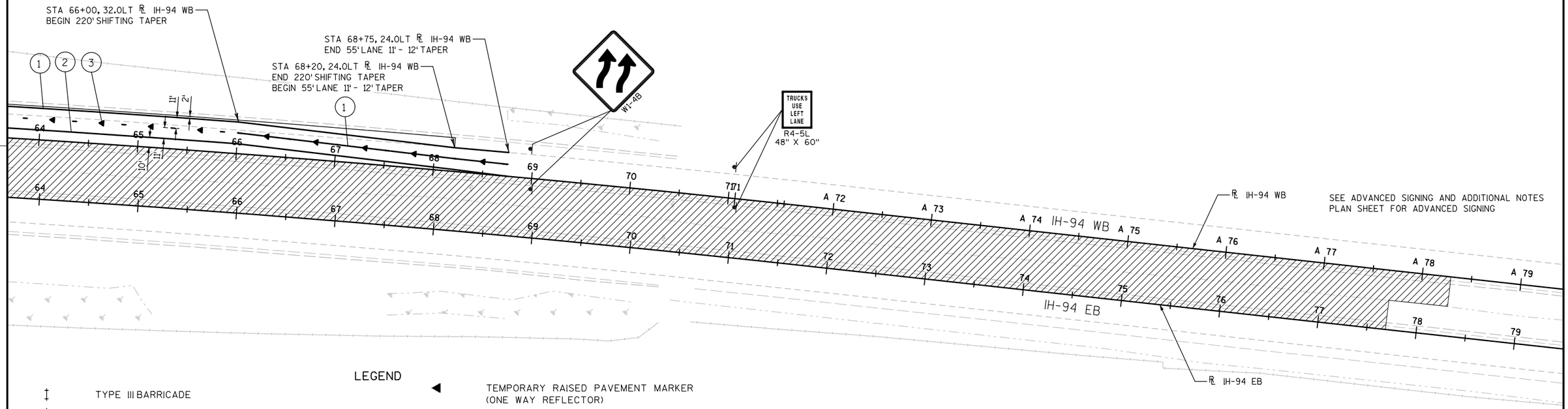


STAGE 1B CONSTRUCTION
TYPICAL SECTION
WB IH-94

NOTE:
TEMPORARY CONCRETE BARRIER LIMITS
STA 52+34 TO STA 58+18 ℄ IH-94 WB

N

2



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- TEMPORARY BRIDGE
- TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
- DIRECTION OF TRAFFIC
- MB — PORTABLE CHANGEABLE MESSAGE BOARD
- CC — TEMPORARY CRASH CUSHION BARRIER
- (1) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE)
- (2) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (YELLOW)
- (3) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
- (4) TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 1	SHEET 76	E

2

STAGE 2

WORK:

*CONSTRUCT IH-94 EB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDERS PER PLAN.

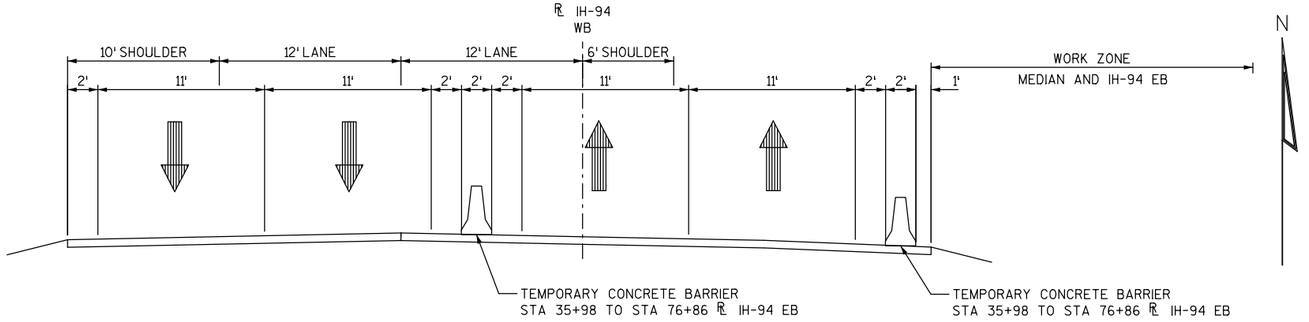
*CONSTRUCT STRUCTURE B-67-341 AT GOLDEN LAKE ROAD. SEE STRUCTURE PLANS.

TRAFFIC CONTROL:

*EB TRAFFIC TO UTILIZE CROSSOVER, WB TRAFFIC SHIFTED TO IH-94 WB OUTSIDE LANE AND OUTSIDE SHOULDER.

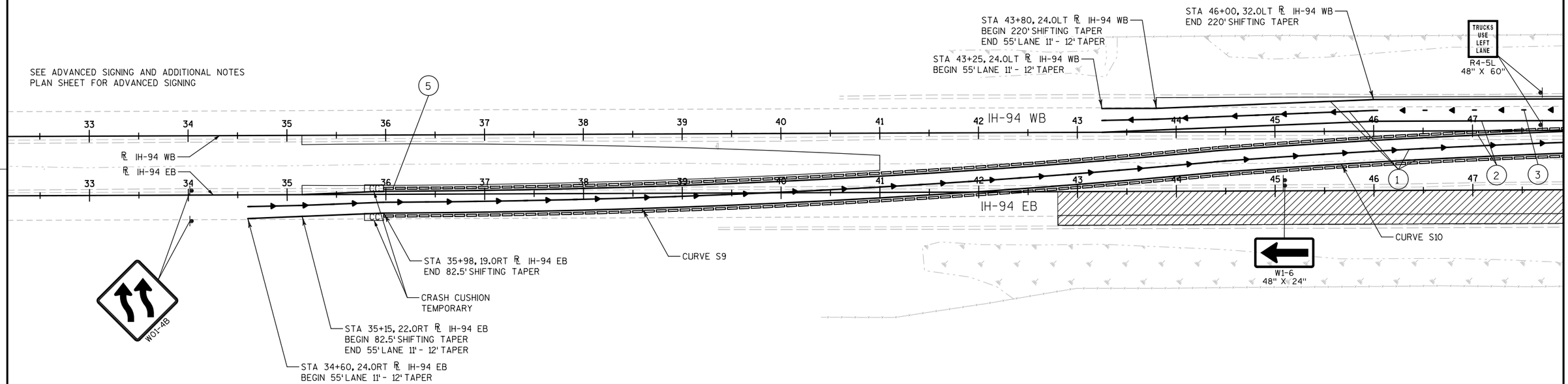
*MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.

*REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.



STAGE 2 CONSTRUCTION
TYPICAL SECTION
IH-94

SEE ADVANCED SIGNING AND ADDITIONAL NOTES
PLAN SHEET FOR ADVANCED SIGNING



LEGEND

TYPE III BARRICADE	TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
TYPE III BARRICADE WTH ATTACHED SIGN	DIRECTION OF TRAFFIC
TRAFFIC CONTROL DRUM	MB — PORTABLE CHANGEABLE MESSAGE BOARD
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	CC — TEMPORARY CRASH CUSHION BARRIER
FLASHING ARROW BOARD	(1) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE)
SIGN ON PERMANENT SUPPORT	(2) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (YELLOW)
SIGN ON TEMPORARY SUPPORT	(3) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
CONCRETE BARRIER TEMPORARY PRECAST	(4) TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH
WORK AREA	(5) GLARE SCREENS TEMPORARY (STA 36+00 TO 76+86)

	STA	OFF	R	L
CURVE S9	IH-94 EB		9421.0	846.95
PC	35+97.66	19.00 RT		
PT	44+43.47	19.00 LT		
PI	40+21.42	19.00 RT		
CURVE S10	IH-94 EB		9399.0	657.29
PC	44+43.25	19.00 LT		
PT	51+00.00	42.00 LT		
PI	47+71.22	42.00 LT		

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 2	SHEET 77	E

2

STAGE 2

WORK:

*CONSTRUCT IH-94 EB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDERS PER PLAN.

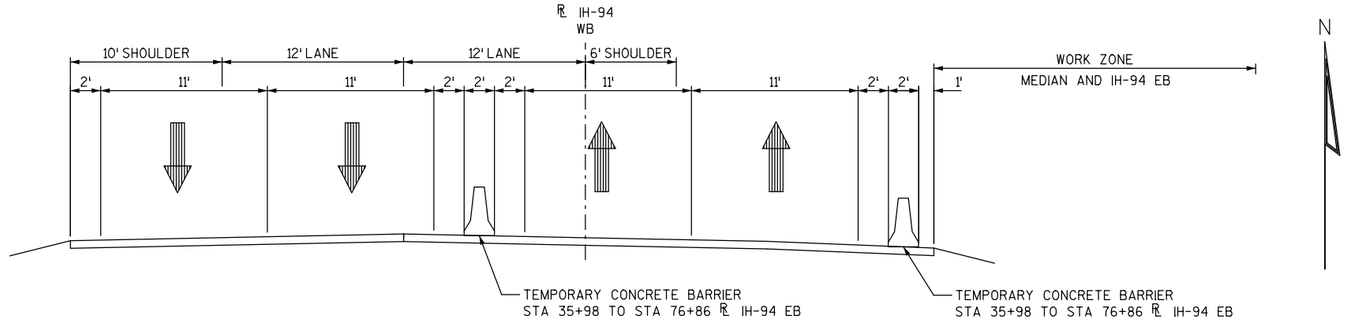
*CONSTRUCT STRUCTURE B-67-341 AT GOLDEN LAKE ROAD. SEE STRUCTURE PLANS.

TRAFFIC CONTROL:

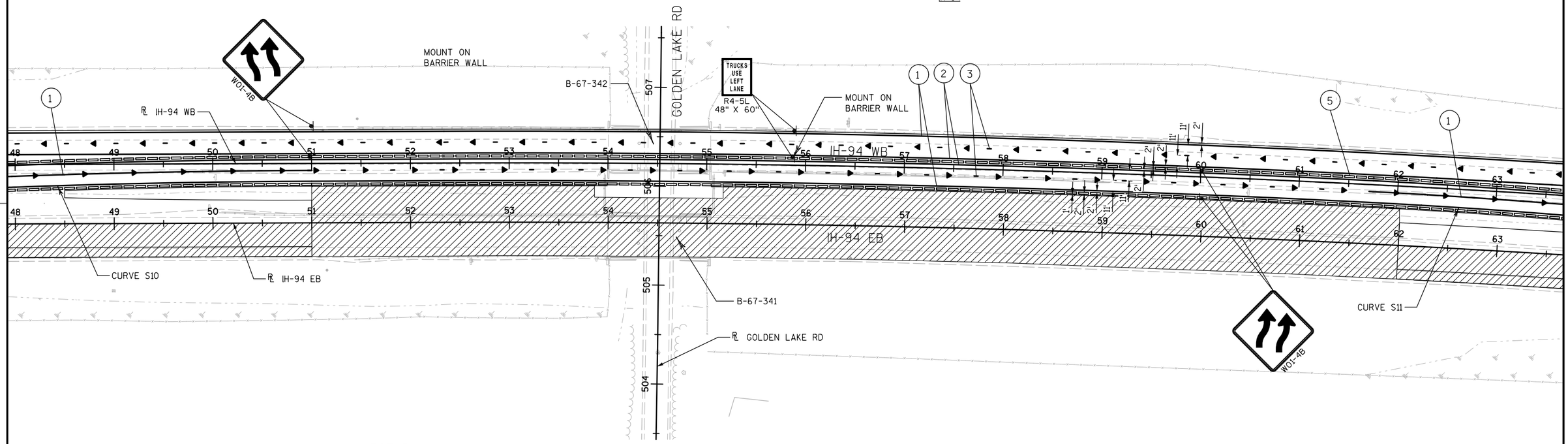
*EB TRAFFIC TO UTILIZE CROSSOVER, WB TRAFFIC SHIFTED TO IH-94 WB OUTSIDE LANE AND OUTSIDE SHOULDER.

*MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.

*REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.



STAGE 2 CONSTRUCTION
TYPICAL SECTION
IH-94



LEGEND

TYPE III BARRICADE	TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
TYPE III BARRICADE WTH ATTACHED SIGN	DIRECTION OF TRAFFIC
TRAFFIC CONTROL DRUM	PORTABLE CHANGEABLE MESSAGE BOARD
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	TEMPORARY CRASH CUSHION BARRIER
FLASHING ARROW BOARD	(1) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE)
SIGN ON PERMANENT SUPPORT	(2) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (YELLOW)
SIGN ON TEMPORARY SUPPORT	(3) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
CONCRETE BARRIER TEMPORARY PRECAST	(4) TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH
WORK AREA	(5) GLARE SCREENS TEMPORARY (STA 36+00 TO 76+86)

	STA	OFF	R	L
CURVE S10	IH-94 EB		9399.0	657.29
PC	44+43.25	19.00 LT		
PT	51+00.00	42.00 LT		
PI	47+71.22	42.00 LT		
CURVE S11	IH-94 EB		6809.0	567.64
PC	61+71.75	42.00 LT		
PT	67+37.92	26.80 LT		
PI	64+55.03	43.90 LT		

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 2	SHEET 78	E

2

STAGE 2

WORK:

*CONSTRUCT IH-94 EB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDERS PER PLAN.

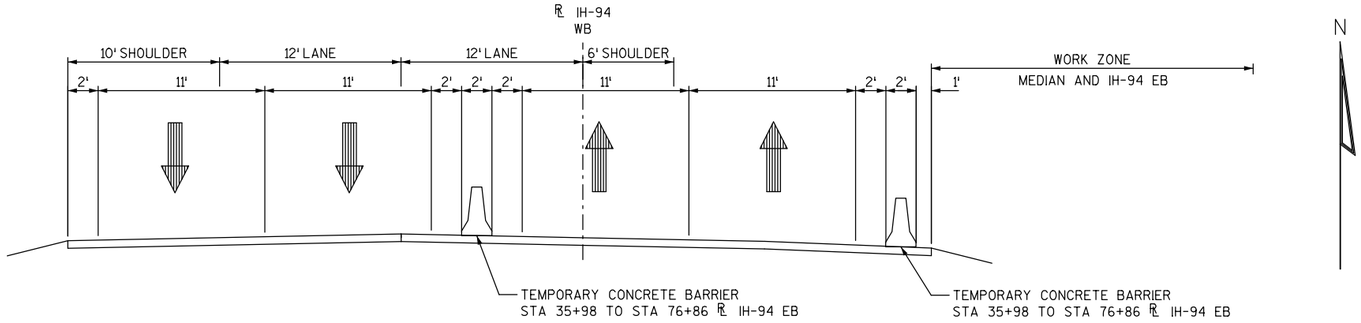
*CONSTRUCT STRUCTURE B-67-341 AT GOLDEN LAKE ROAD. SEE STRUCTURE PLANS.

TRAFFIC CONTROL:

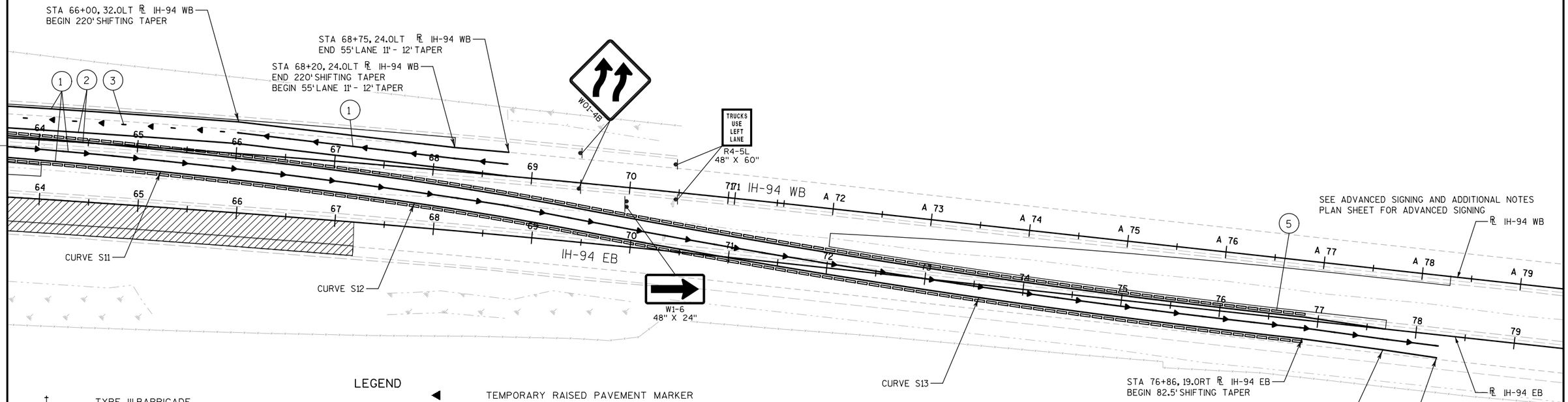
*EB TRAFFIC TO UTILIZE CROSSOVER, WB TRAFFIC SHIFTED TO IH-94 WB OUTSIDE LANE AND OUTSIDE SHOULDER.

*MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.

*REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.



STAGE 2 CONSTRUCTION
TYPICAL SECTION
IH-94



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
- DIRECTION OF TRAFFIC
- MB — PORTABLE CHANGEABLE MESSAGE BOARD
- CC — TEMPORARY CRASH CUSHION BARRIER
- (1) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE)
- (2) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (YELLOW)
- (3) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
- (4) TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH
- (5) GLARE SCREENS TEMPORARY (STA 36+00 TO 76+86)

	STA	OFF	R	L
CURVE S11	IH-94 EB		6809.0	567.64
PC	61+71.75	42.00 LT		
PT	67+37.92	26.80 LT		
PI	64+55.03	43.90 LT		
CURVE S12	IH-94 EB		3950.0	207.21
PC	67+37.92	26.80 LT		
PT	69+44.33	11.90 LT		
PI	68+41.28	21.70 LT		
CURVE S13	IH-94 EB		9421.0	742.95
PC	69+44.33	11.90 LT		
PT	76+86.36	19.00 RT		
PI	73+14.69	19.00 RT		

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 2	SHEET 79	E

2

STAGE 3

WORK:

* SAWCUT AND REMOVE PORTIONS OF TEMPORARY CROSSOVER PAVEMENT. 6'INSIDE PAVED SHOULDER TO REMAIN. SEE PLAN DETAILS FOR REMOVALS.
* CONSTRUCT IH-94 WB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDER PER PLAN.
* CONSTRUCT STRUCTURE B-67-342 AT GOLDEN LAKE ROAD. SEE STRUCTURE PLANS.

TRAFFIC CONTROL:

* WB TRAFFIC TO UTILIZE CROSSOVER, EB TRAFFIC SHIFTED TO IH-94 EB OUTSIDE LANE AND OUTSIDE SHOULDER.
* MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.

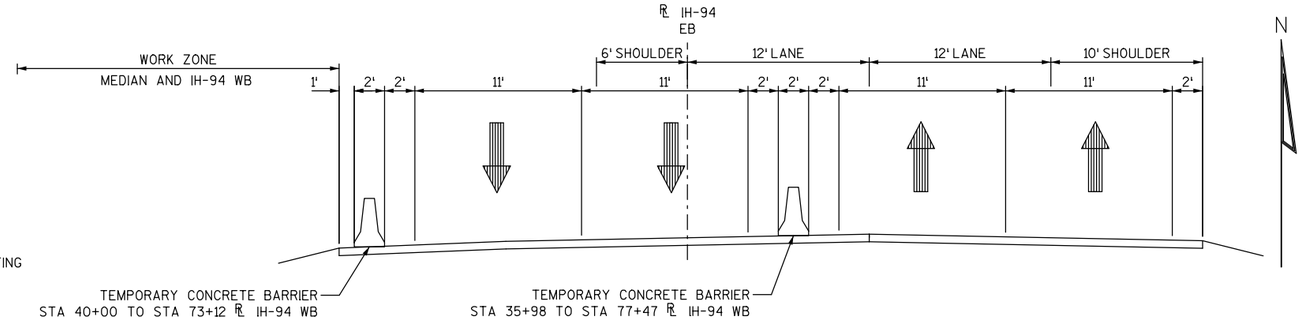
STAGE 4

WORK:

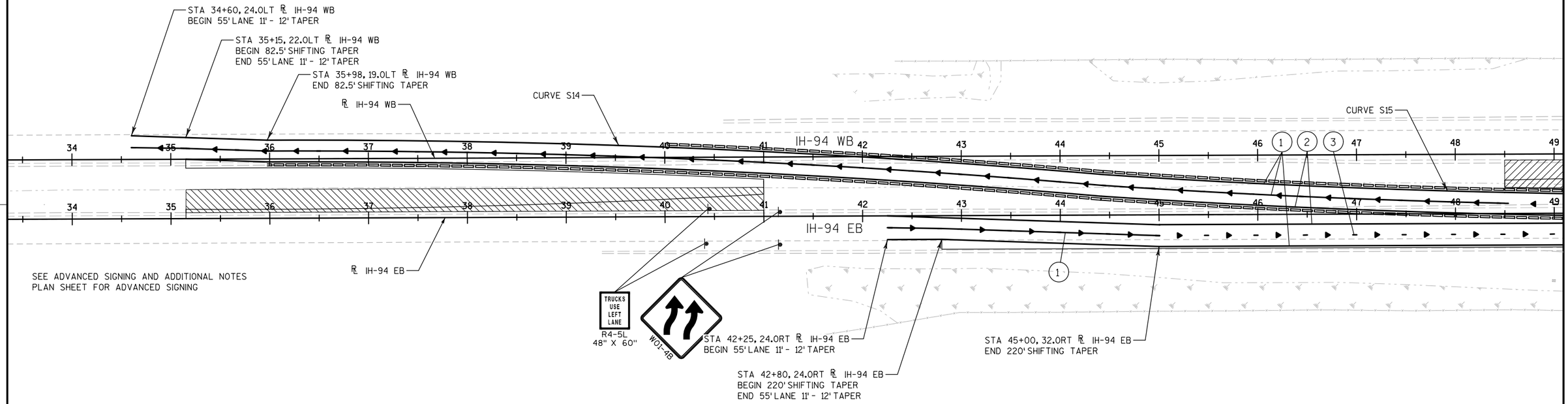
* WHEN CONSTRUCTION OF STRUCTURE B-67-342 AND IH-94 WB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDER IS COMPLETED, PLACE TRAFFIC BACK TO NORMAL CONFIGURATION. REMOVE REMAINING TEMPORARY CROSSOVERS, 6'INSIDE PAVED SHOULDER TO REMAIN, AND GRADE MEDIAN.

TRAFFIC CONTROL:

* MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.
* COMPLETE WORK ON CROSSOVER REMOVAL AND MEDIAN GRADING UTILIZING FULL TIME SHOULDER CLOSURES AND OFF PEAK SINGLE LANE CLOSURES.



STAGE 3 CONSTRUCTION
TYPICAL SECTION
IH-94



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
- DIRECTION OF TRAFFIC
- MB — PORTABLE CHANGEABLE MESSAGE BOARD
- CC — TEMPORARY CRASH CUSHION BARRIER
- (1) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE)
- (2) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (YELLOW)
- (3) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
- (4) TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH

	STA	OFF	R	L
CURVE S14	IH-94 WB		9421.0	846.95
PC	35+97.66	19.00 LT		
PT	44+43.47	19.00 RT		
PI	40+21.42	19.00 LT		
CURVE S15	IH-94 WB		9399.0	657.25
PC	44+43.25	19.00 RT		
PT	51+00.00	42.00 RT		
PI	47+71.22	42.00 RT		

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 3	SHEET 80	E

STAGE 3

WORK:

* SAWCUT AND REMOVE PORTIONS OF TEMPORARY CROSSOVER PAVEMENT. 6' INSIDE PAVED SHOULDER TO REMAIN. SEE PLAN DETAILS FOR REMOVALS.
* CONSTRUCT IH-94 WB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDER PER PLAN.
* CONSTRUCT STRUCTURE B-67-342 AT GOLDEN LAKE ROAD. SEE STRUCTURE PLANS.

TRAFFIC CONTROL:

* WB TRAFFIC TO UTILIZE CROSSOVER, EB TRAFFIC SHIFTED TO IH-94 EB OUTSIDE LANE AND OUTSIDE SHOULDER.
* MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.

STAGE 4

WORK:

* WHEN CONSTRUCTION OF STRUCTURE B-67-342 AND IH-94 WB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDER IS COMPLETED, PLACE TRAFFIC BACK TO NORMAL CONFIGURATION. REMOVE REMAINING TEMPORARY CROSSOVERS, 6' INSIDE PAVED SHOULDER TO REMAIN, AND GRADE MEDIAN.

TRAFFIC CONTROL:

* MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.
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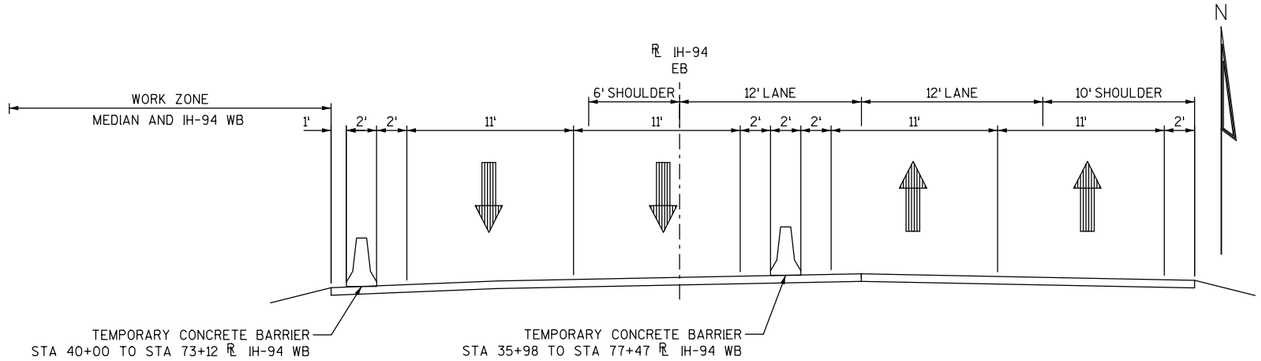
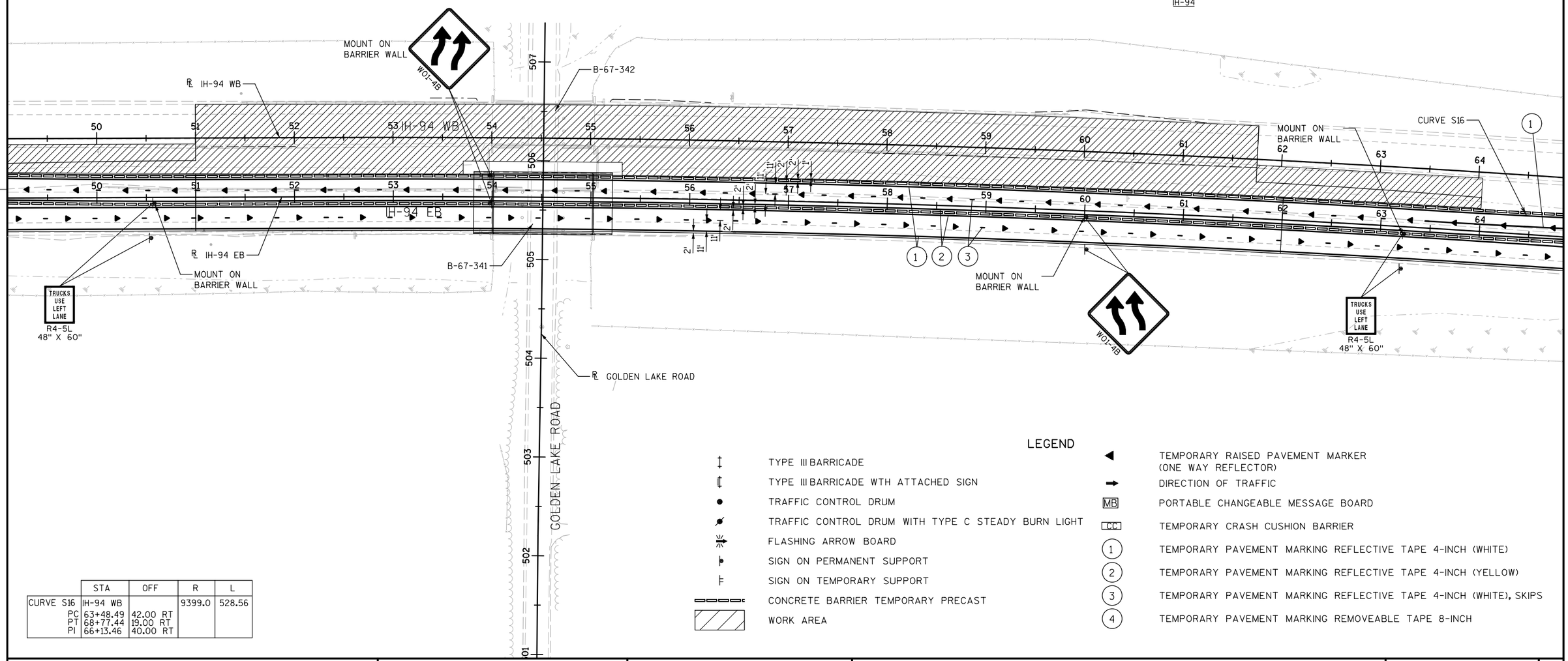


STAGE 3 CONSTRUCTION
TYPICAL SECTION
IH-94



	STA	OFF	R	L
CURVE S16	IH-94 WB		9399.0	528.56
PC	63+48.49	42.00 RT		
PT	68+77.44	19.00 RT		
PI	66+13.46	40.00 RT		

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
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- (3) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
- (4) TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 3	SHEET 81	E

2

STAGE 3

WORK:

* SAWCUT AND REMOVE PORTIONS OF TEMPORARY CROSSOVER PAVEMENT. 6' INSIDE PAVED SHOULDER TO REMAIN. SEE PLAN DETAILS FOR REMOVALS.
* CONSTRUCT IH-94 WB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDER PER PLAN.
* CONSTRUCT STRUCTURE B-67-342 AT GOLDEN LAKE ROAD. SEE STRUCTURE PLANS.

TRAFFIC CONTROL:

* WB TRAFFIC TO UTILIZE CROSSOVER, EB TRAFFIC SHIFTED TO IH-94 EB OUTSIDE LANE AND OUTSIDE SHOULDER.
* MAINTAIN TWO LANES OF TRAFFIC IN BOTH EASTBOUND AND WESTBOUND DIRECTIONS.
* REMOVE OR COVER WITH TEMPORARY BLACK TAPE ALL CONFLICTING PAVEMENT MARKINGS.

STAGE 4

WORK:

* WHEN CONSTRUCTION OF STRUCTURE B-67-342 AND IH-94 WB LANES, INSIDE SHOULDER, AND OUTSIDE SHOULDER IS COMPLETED, PLACE TRAFFIC BACK TO NORMAL CONFIGURATION. REMOVE REMAINING TEMPORARY CROSSOVERS, 6' INSIDE PAVED SHOULDER TO REMAIN, AND GRADE MEDIAN.

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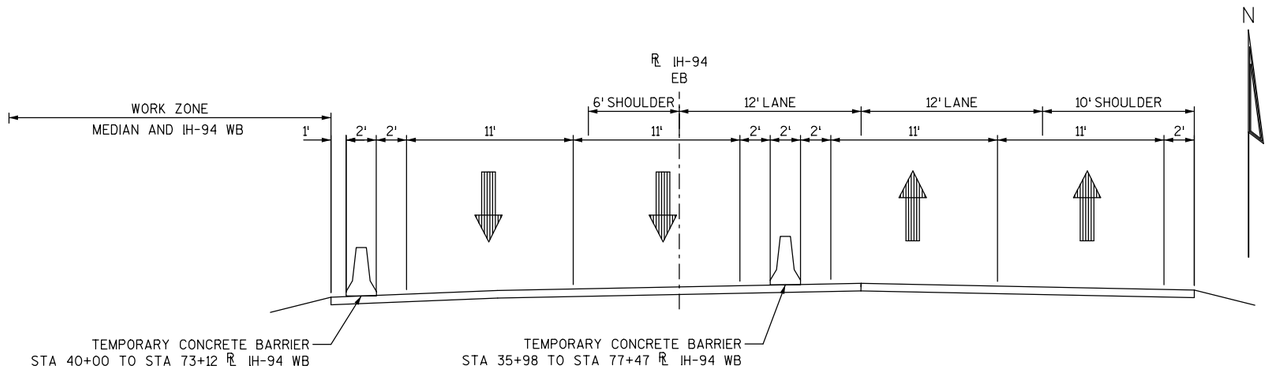
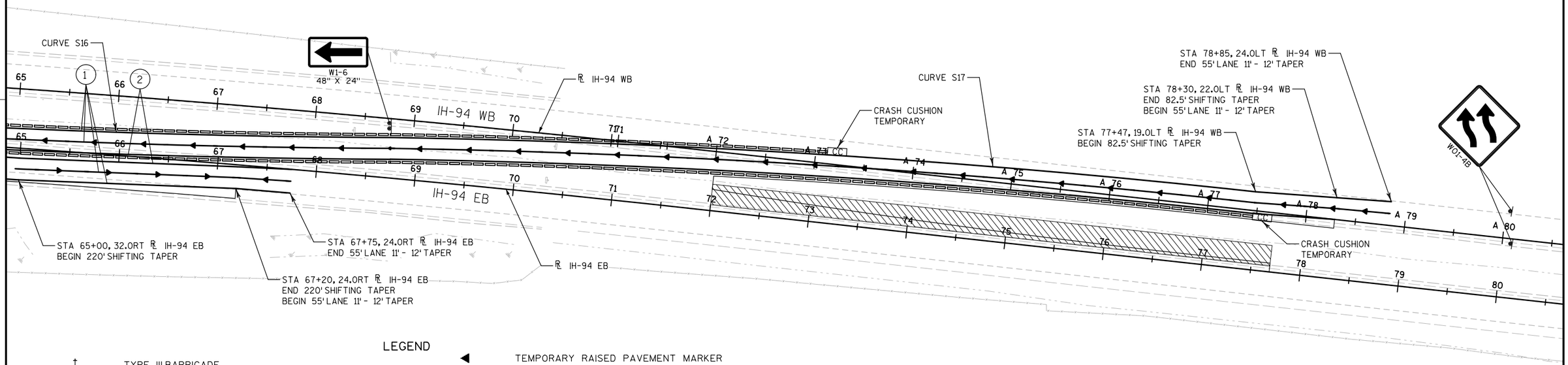


STAGE 3 CONSTRUCTION
TYPICAL SECTION
IH-94



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
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- SIGN ON TEMPORARY SUPPORT
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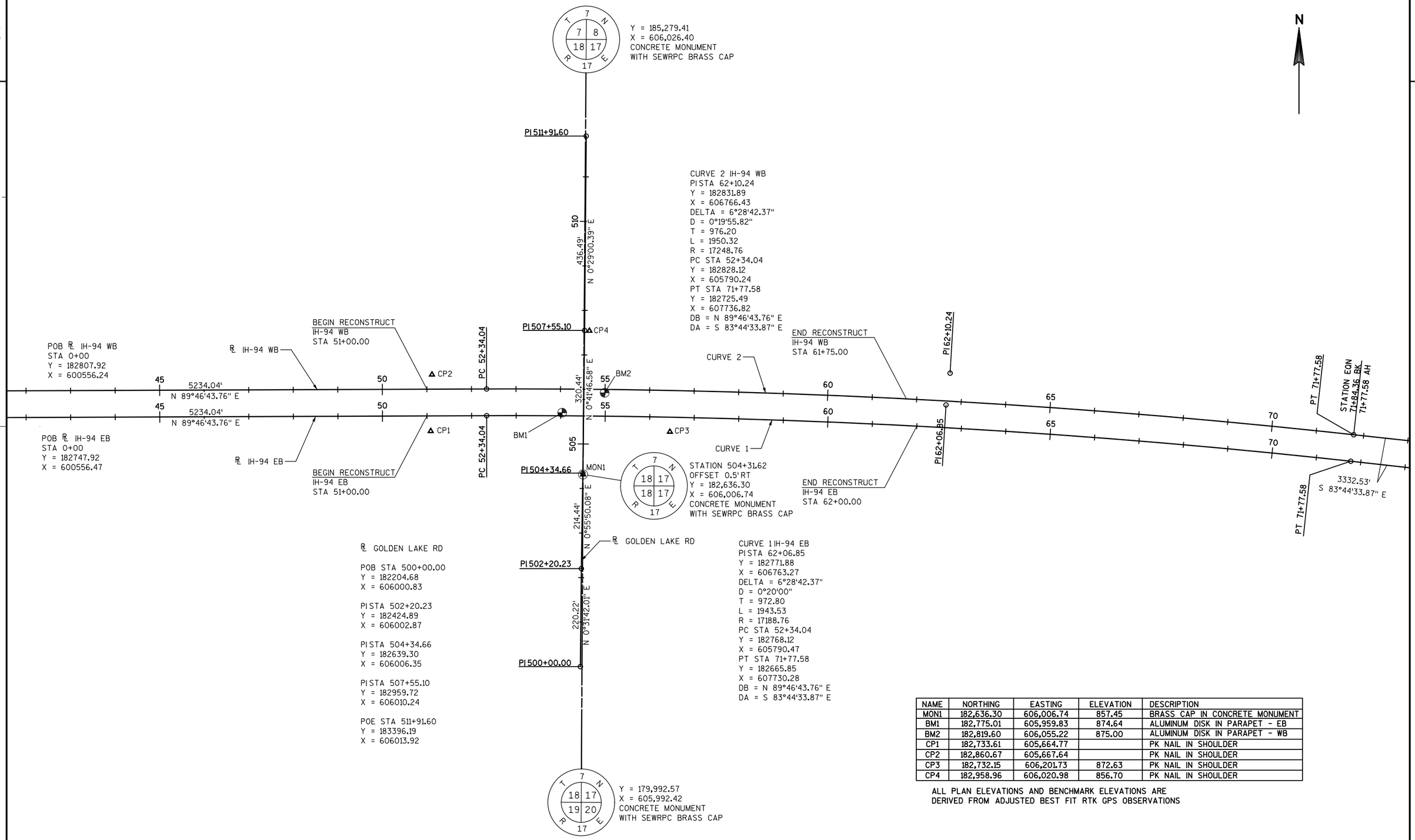
- (3) TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH (WHITE), SKIPS
- (4) TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 8-INCH

SEE ADVANCED SIGNING AND ADDITIONAL NOTES PLAN SHEET FOR ADVANCED SIGNING

	STA	OFF	R	L
CURVE S16	IH-94 WB		9399.0	528.56
PC	63+48.49	42.00 RT		
PT	68+77.44	19.00 RT		
PI	66+13.46	40.00 RT		
CURVE S17	IH-94 WB		9421.0	876.64
PC	68+77.56	19.00 RT		
PT	77+46.51	19.00 LT		
PI	73+07.87	19.00 LT		

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	STAGE CONSTRUCTION: STAGE 3	SHEET 82	E

2



NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
MON1	182,636.30	606,006.74	857.45	BRASS CAP IN CONCRETE MONUMENT
BM1	182,775.01	605,959.83	874.64	ALUMINUM DISK IN PARAPET - EB
BM2	182,819.60	606,055.22	875.00	ALUMINUM DISK IN PARAPET - WB
CP1	182,733.61	605,664.77		PK NAIL IN SHOULDER
CP2	182,860.67	605,667.64		PK NAIL IN SHOULDER
CP3	182,732.15	606,201.73	872.63	PK NAIL IN SHOULDER
CP4	182,958.96	606,020.98	856.70	PK NAIL IN SHOULDER

ALL PLAN ELEVATIONS AND BENCHMARK ELEVATIONS ARE
DERIVED FROM ADJUSTED BEST FIT RTK GPS OBSERVATIONS

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	ALIGNMENT PLAN	SHEET 83	E

DATE 12NOV15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-38-71 QUANTITY
0020	108.4400	CPM Progress Schedule 02. 1060-38-71	EACH	1.000	1.000
0030	201.0105	Clearing	STA	10.000	10.000
0040	201.0205	Grubbing	STA	10.000	10.000
0050	203.0100	Removing Small Pipe Culverts	EACH	3.000	3.000
0080	203.0200	Removing Old Structure (station) 03. 54+00 EB	LS	1.000	1.000
0090	203.0200	Removing Old Structure (station) 04. 54+00 WB	LS	1.000	1.000
0110	203.0200	Removing Old Structure (station) 06. 54+00 WB Stage 1	LS	1.000	1.000
0120	204.0100	Removing Pavement	SY	5,100.000	5,100.000
0130	204.0115	Removing Asphaltic Surface Butt Joints	SY	550.000	550.000
0140	204.0125	Removing Asphaltic Surface Milling	TON	1,350.000	1,350.000
0150	204.0165	Removing Guardrail	LF	1,790.000	1,790.000
0160	204.0170	Removing Fence	LF	195.000	195.000
0180	204.9090.S	Removing (item description) 01. Surface Drain Corrugated Metal Slotted	LF	1,240.000	1,240.000
0190	205.0100	Excavation Common **P**	CY	23,308.000	23,308.000
0220	206.1000	Excavation for Structures Bridges (structure) 03. B-67-341	LS	1.000	1.000
0230	206.1000	Excavation for Structures Bridges (structure) 04. B-67-342	LS	1.000	1.000
0250	206.1000	Excavation for Structures Bridges (structure) 06. B-67-82	LS	1.000	1.000
0260	208.0100	Borrow **P**	CY	4,969.000	4,969.000
0270	210.0100	Backfill Structure	CY	442.000	442.000
0290	213.0100	Finishing Roadway (project) 02. 1060-38-71	EACH	1.000	1.000
0300	305.0110	Base Aggregate Dense 3/4-Inch	TON	547.000	547.000
0310	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	19,776.000	19,776.000
0320	311.0110	Breaker Run	TON	20,000.000	20,000.000
0330	320.0140	Concrete Base 7 1/2-Inch	SY	4,600.000	4,600.000
0340	320.0340	Concrete Base HES 7 1/2-Inch	SY	500.000	500.000
0350	415.0120	Concrete Pavement 12-Inch	SY	510.000	510.000
0360	415.0410	Concrete Pavement Approach Slab	SY	255.000	255.000
0370	416.1010	Concrete Surface Drains	CY	2.000	2.000
0380	440.4410	Incentive IRI Ride	DOL	3,890.000	3,890.000
0390	455.0105	Asphaltic Material PG58-28	TON	50.000	50.000
0400	455.0120	Asphaltic Material PG64-28	TON	50.000	50.000
0410	455.0605	Tack Coat	GAL	100.000	100.000
0420	460.1100	HMA Pavement Type E-0.3	TON	840.000	840.000
0430	460.1103	HMA Pavement Type E-3	TON	427.000	427.000
0440	460.1130	HMA Pavement Type E-30	TON	530.000	530.000
0450	460.1700	HMA Pavement Type SMA	TON	525.000	525.000
0460	460.2000	Incentive Density HMA Pavement	DOL	1,490.000	1,490.000
0470	460.4000	HMA Cold Weather Paving	TON	1,720.000	1,720.000
0480	465.0125	Asphaltic Surface Temporary	TON	7,794.000	7,794.000
0490	465.0400	Asphaltic Shoulder Rumble Strips	LF	12,300.000	12,300.000
0500	501.1000.S	Ice Hot Weather Concreting	LB	12,710.000	12,710.000
0510	502.0100	Concrete Masonry Bridges **P**	CY	654.000	654.000
0520	502.3200	Protective Surface Treatment **P**	SY	1,872.000	1,872.000
0530	502.3210	Pigmented Surface Sealer **P**	SY	274.000	274.000
0540	502.5005	Masonry Anchors Type L No. 5 Bars	EACH	90.000	90.000
0550	505.0400	Bar Steel Reinforcement HS Structures	LB	62,522.000	62,522.000

3

DATE 12NOV15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-38-71 QUANTITY
0560	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	272,428.000	272,428.000
0570	505.0800.S	Bar Steel Reinforcement HS Stainless Structures	LB	4,352.000	4,352.000
0580	509.2500	Concrete Masonry Overlay Decks	CY	5.000	5.000
0600	511.1200	Temporary Shoring (structure) 02. B-67-82	SF	60.000	60.000
0610	516.0500	Rubberized Membrane Waterproofing	SY	66.000	66.000
0640	517.1010.S	Concrete Staining (structure) 03. B-67-341 **P**	SF	3,632.000	3,632.000
0650	517.1010.S	Concrete Staining (structure) 04. B-67-342 **P**	SF	3,569.000	3,569.000
0680	517.1015.S	Concrete Staining Multi-Color (structure) 03. B-67-341 **P**	SF	378.000	378.000
0690	517.1015.S	Concrete Staining Multi-Color (structure) 04. B-67-342 **P**	SF	378.000	378.000
0720	517.1050.S	Architectural Surface Treatment (structure) 03. B-67-341 **P**	SF	378.000	378.000
0730	517.1050.S	Architectural Surface Treatment (structure) 04. B-67-342 **P**	SF	378.000	378.000
0740	521.0118	Culvert Pipe Corrugated Steel 18-Inch	LF	5.000	5.000
0750	521.0124	Culvert Pipe Corrugated Steel 24-Inch	LF	420.000	420.000
0760	521.0130	Culvert Pipe Corrugated Steel 30-Inch	LF	165.000	165.000
0770	521.1012	Apron Endwalls for Culvert Pipe Steel 12-Inch	EACH	2.000	2.000
0780	521.1018	Apron Endwalls for Culvert Pipe Steel 18-Inch	EACH	1.000	1.000
0790	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	1.000	1.000
0800	521.1030	Apron Endwalls for Culvert Pipe Steel 30-Inch	EACH	1.000	1.000
0810	521.2005.S	Surface Drain Pipe Corrugated Metal Slotted (inch) 01. 24-inch	LF	640.000	640.000
0820	521.2005.S	Surface Drain Pipe Corrugated Metal Slotted (inch) 02. 30-inch	LF	600.000	600.000
0830	522.0121	Culvert Pipe Reinforced Concrete Class III 21-Inch	LF	230.000	230.000
0850	522.0130	Culvert Pipe Reinforced Concrete Class III 30-Inch	LF	230.000	230.000
0860	522.0315	Culvert Pipe Reinforced Concrete Class IV 15-Inch	LF	60.000	60.000
0870	522.0321	Culvert Pipe Reinforced Concrete Class IV 21-Inch	LF	70.000	70.000
0880	522.1015	Apron Endwalls for Culvert Pipe Reinforced Concrete 15-Inch	EACH	2.000	2.000
0890	522.1021	Apron Endwalls for Culvert Pipe Reinforced Concrete 21-Inch	EACH	4.000	4.000
0910	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	2.000	2.000
0920	550.0500	Pile Points	EACH	160.000	160.000
0930	550.1120	Piling Steel HP 12-Inch X 53 Lb	LF	11,360.000	11,360.000
0940	601.0553	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type D	LF	370.000	370.000
0950	603.1156	Concrete Barrier Type S56	LF	450.000	450.000
0960	603.8000	Concrete Barrier Temporary Precast Delivered	LF	8,250.000	8,250.000
0970	603.8125	Concrete Barrier Temporary Precast Installed	LF	16,450.000	16,450.000

3

DATE 12NOV15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-38-71 QUANTITY
0980	604.0400	Slope Paving Concrete	SY	1,040.000	1,040.000
0990	606.0200	Riprap Medium	CY	2.000	2.000
1000	611.0642	Inlet Covers Type MS	EACH	11.000	11.000
1010	611.3901	Inlets Median 1 Grate	EACH	1.000	1.000
1020	611.3903	Inlets Median 3 Grate	EACH	2.000	2.000
1030	611.3904	Inlets Median 4 Grate	EACH	1.000	1.000
1060	612.0212	Pipe Underdrain Unperforated 12-Inch	LF	87.000	87.000
1070	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	1,030.000	1,030.000
1100	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	8.000	8.000
1110	614.0905	Crash Cushions Temporary	EACH	7.000	7.000
1120	614.2300	MGS Guardrail 3	LF	1,300.000	1,300.000
1130	614.2500	MGS Thrie Beam Transition	LF	340.000	340.000
1140	614.2610	MGS Guardrail Terminal EAT	EACH	8.000	8.000
1150	614.2620	MGS Guardrail Terminal Type 2	EACH	2.000	2.000
1160	616.0100	Fence Woven Wire (height) 01. 4-FT	LF	222.000	222.000
1170	616.0700.S	Fence Safety	LF	500.000	500.000
1180	619.1000	Mobilization	EACH	0.500	0.500
1190	623.0200	Dust Control Surface Treatment	SY	2,000.000	2,000.000
1200	624.0100	Water	MGAL	170.000	170.000
1210	625.0500	Salvaged Topsoil	SY	38,400.000	38,400.000
1220	627.0200	Mulching	SY	100.000	100.000
1230	628.1104	Erosion Bales	EACH	10.000	10.000
1240	628.1504	Silt Fence	LF	3,500.000	3,500.000
1250	628.1520	Silt Fence Maintenance	LF	3,500.000	3,500.000
1260	628.1905	Mobilizations Erosion Control	EACH	25.000	25.000
1270	628.1910	Mobilizations Emergency Erosion Control	EACH	20.000	20.000
1280	628.2004	Erosion Mat Class I Type B	SY	14,500.000	14,500.000
1290	628.2008	Erosion Mat Urban Class I Type B	SY	20,500.000	20,500.000
1300	628.2021	Erosion Mat Class II Type A	SY	130.000	130.000
1310	628.2027	Erosion Mat Class II Type C	SY	3,500.000	3,500.000
1320	628.7005	Inlet Protection Type A	EACH	4.000	4.000
1330	628.7504	Temporary Ditch Checks	LF	600.000	600.000
1340	628.7555	Culvert Pipe Checks	EACH	10.000	10.000
1350	628.7560	Tracking Pads	EACH	5.000	5.000
1360	628.7570	Rock Bags	EACH	25.000	25.000
1370	629.0210	Fertilizer Type B	CWT	18.000	18.000
1380	630.0120	Seeding Mixture No. 20	LB	910.000	910.000
1390	630.0200	Seeding Temporary	LB	910.000	910.000
1400	631.0300	Sod Water	MGAL	1.000	1.000
1410	631.1100	Sod Erosion Control	SY	150.000	150.000
1440	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	5.000	5.000
1450	634.0622	Posts Wood 4x6-Inch X 22-FT	EACH	6.000	6.000
1460	637.2210	Signs Type II Reflective H	SF	66.250	66.250
1470	637.2230	Signs Type II Reflective F	SF	13.500	13.500
1490	638.2602	Removing Signs Type II	EACH	13.000	13.000
1500	638.3000	Removing Small Sign Supports	EACH	15.000	15.000
1510	642.5001	Field Office Type B	EACH	0.500	0.500
1530	643.0200	Traffic Control Surveillance and Maintenance (project) 02. 1060-38-71	DAY	230.000	230.000
1540	643.0300	Traffic Control Drums	DAY	13,100.000	13,100.000
1550	643.0420	Traffic Control Barricades Type III	DAY	3,880.000	3,880.000
1560	643.0705	Traffic Control Warning Lights Type A	DAY	5,160.000	5,160.000

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DATE 12NOV15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-38-71 QUANTITY
1570	643.0715	Traffic Control Warning Lights Type C	DAY	80.000	80.000
1580	643.0800	Traffic Control Arrow Boards	DAY	300.000	300.000
1590	643.0900	Traffic Control Signs	DAY	13,180.000	13,180.000
1600	643.0910	Traffic Control Covering Signs Type I	EACH	10.000	10.000
1610	643.0920	Traffic Control Covering Signs Type II	EACH	10.000	10.000
1620	643.1000	Traffic Control Signs Fixed Message	SF	72.000	72.000
1630	643.1050	Traffic Control Signs PCMS	DAY	20.000	20.000
1640	643.1055.S	Truck or Trailer Mounted Attenuator	DAY	4.000	4.000
1670	645.0120	Geotextile Fabric Type HR	SY	6.000	6.000
1680	646.0106	Pavement Marking Epoxy 4-Inch	LF	19,550.000	19,550.000
1690	646.0600	Removing Pavement Markings	LF	300.000	300.000
1700	646.0841.S	Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch	LF	2,270.000	2,270.000
1710	649.0300	Temporary Pavement Marking Reflective Tape 4-Inch	LF	31,300.000	31,300.000
1720	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	1,500.000	1,500.000
1740	649.2100	Temporary Raised Pavement Markers	EACH	310.000	310.000
1750	690.0150	Sawing Asphalt	LF	17,400.000	17,400.000
1760	690.0250	Sawing Concrete	LF	200.000	200.000
1770	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
1780	715.0502	Incentive Strength Concrete Structures	DOL	3,924.000	3,924.000
1790	999.1500.S	Crack and Damage Survey	LS	1.000	1.000
1800	ASP.1T0A	On-the-Job Training Apprentice at $5. 00/HR	HRS	1,500.000	1,500.000
1810	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	2,225.000	2,225.000
1820	SPV.0035	Special 01. HPC Masonry Superstructures **P**	CY	1,040.000	1,040.000
1830	SPV.0035	Special 02. Backfill Slurry Special	CY	100.000	100.000
1840	SPV.0060	Special 01. Temporary Sediment Basin	EACH	1.000	1.000
1850	SPV.0060	Special 02. Mobilization Emergency Pavement Repair	EACH	2.000	2.000
1860	SPV.0060	Special 03. Section Corner Monuments Special	EACH	1.000	1.000
1870	SPV.0060	Special 04. Temporary Manholes And Cover Plates	EACH	3.000	3.000
1880	SPV.0090	Special 01. Removing Existing Timber Piling	LF	2,800.000	2,800.000
1890	SPV.0090	Special 02. Glare Screens Temporary	LF	8,300.000	8,300.000
1910	SPV.0105	Special 02. Pavement Cleanup Project 1060-38-71	LS	1.000	1.000
1930	SPV.0105	Special 04. Survey Project 1060-38-71	LS	1.000	1.000
1940	SPV.0165	Special 01. Longitudinal Grooving Bridge Deck **P**	SF	15,980.000	15,980.000
1950	SPV.0170	Special 01. Proof Rolling	STA	2.000	2.000
1960	SPV.0195	Special 01. Cold Patch	TON	20.000	20.000

3

CLEARING AND GRUBBING

LOCATION				ITEM 201.0105 CLEARING (STA)	ITEM 201.0205 GRUBBING (STA)
501+00	to	505+00	LT	4	4
501+00	to	505+00	RT	4	4
506+00	to	508+00	LT	2	2
			TOTALS	10	10

REMOVALS

1060-38-71 LOCATION				ITEM 203.0100 REMOVING SMALL PIPE CULVERTS (EACH)	ITEM 204.0100 REMOVING PAVEMENT (SY)	ITEMS 204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS (SY)	ITEMS 204.0125 REMOVING ASPHALTIC SURFACE MILLING (TON)	ITEMS 204.0165 REMOVING GUARDRAIL (LF)	ITEMS 204.0170 REMOVING FENCE (LF)	ITEM 204.9090.S REMOVING SURFACE DRAIN PIPE CORRUGATED METAL SLOTTED (LF)	ITEMS 690.0150 SAWING ASPHALT (LF)	ITEMS 690.0250 SAWING CONCRETE (LF)
PRESTAGE												
43+80	TO	53+99	WB OUTSIDE SHOULDER (TEMP)	-	-	-	328	-	-	-	1020.0	-
55+04	TO	68+14	WB OUTSIDE SHOULDER (TEMP)	-	-	-	410	-	-	-	1317.0	-
SUBTOTAL				-	-	-	738	-	-	-	2337	-
STAGE 1												
42+90	to	70+10	EB	-	-	-	-	371.0	-	-	-	-
54+10				1	-	-	-	41.0	-	-	-	-
160+70				-	-	-	-	41.0	-	-	-	-
42+90	to	69+85	WB	-	-	-	-	384.0	-	-	-	-
35+15	TO	51+00	EB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	-	1608	-
62+00	TO	77+69	EB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	-	1569	-
35+15	TO	53+99	WB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	-	1885	-
55+04	TO	78+29	WB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	-	2332	-
SUBTOTAL				1	-	-	-	837	-	-	7394	-
STAGE 2												
42+90	to	51+00	EB	-	-	-	-	-	-	-	842.0	-
62+00	to	67+20	EB	-	-	-	-	-	-	-	540.0	-
42+90	to	70+10	EB	-	-	-	-	234.0	94.0	-	-	-
51+00	to	53+81	EB	-	749	-	-	-	-	-	-	24.0
55+22	to	62+00	EB	-	1808	-	-	-	-	-	-	24.0
SUBTOTAL				-	2557	-	-	234	94	-	1382	48
STAGE 3												
48+50	to	51+00	WB	-	-	-	-	-	-	-	288.0	-
61+72	to	64+00	WB	-	-	-	-	-	-	-	266.0	-
42+90	to	69+85	WB	-	-	-	-	710.0	96.0	-	-	-
51+00	to	53+82	WB	-	752	-	146	-	-	-	-	24.0
55+23	to	61+75	WB	-	1739	-	344	-	-	-	-	24.0
SUBTOTAL				-	2491	-	490	710	96	-	554	48
STAGE 4												
40+28	TO	48+65		-	-	-	-	-	-	620.0	-	-
63+85	TO	73+00		-	-	-	-	-	-	580.0	-	-
35+15	TO	48+50	WB	-	-	-	-	-	-	-	1335	-
64+00	TO	78+29	WB	-	-	-	-	-	-	-	1432	-
41+00	TO	52+45	EB	-	-	-	-	-	-	-	1146	-
55+77	TO	72+00	EB	-	-	-	-	-	-	-	1625	-
SUBTOTAL				-	-	-	-	-	-	1200	5538	-
GOLDEN LAKE												
GOLDEN LAKE RD BEGIN CONSTRUCTION				-	-	-	-	-	-	-	24.0	-
GOLDEN LAKE RD END CONSTRUCTION				-	-	-	-	-	-	-	24.0	-
GOLDEN LAKE RD 504+77				1	-	-	-	-	-	-	-	-
GODLEN LAKE RD 506+95				1	-	-	-	-	-	-	-	-
SUBTOTAL				2	-	-	-	-	-	-	48	-
BUTT JOINTS												
Butt Joint 50+50 to 51+00 EB				-	-	135	-	-	-	-	-	-
Butt Joint 50+50 to 51+00 WB				-	-	135	-	-	-	-	-	-
Butt Joint 62+00 to 62+50 EB				-	-	135	-	-	-	-	-	-
Butt Joint 61+75 to 62+25 WB				-	-	135	-	-	-	-	-	-
SUBTOTAL				-	-	541	-	-	-	-	-	-
UNDISTRIBUTED				-	52	9	122	9	5	40	147	-
TOTALS				**3**	**5100**	**550**	**1350**	**1790**	**195**	**1240**	**17400**	**96**

3

EARTHWORK SUMMARY

Stage	From/To Station	Location	Common Excavation (1) (item # 205.0100)		Salvaged/ Unusable Pavement Material (4)	Available Material (5)	Reduced EBS in Fill (6)	Expanded EBS Backfill (7) (item # 311.0110)	Unexpanded Fill	Expanded Fill (8)	Mass Ordinate +/- (9)	Waste	Borrow (10)	Comment:
			Cut (2)	EBS Excavation (3)				Factor 1.00		Factor 1.30			(item #208.0100)	
	35+15 - 78+29	I-94 Median	5199	524	3420	1779	0	524	4432	5762	-3983			
Stage 1 Subtotal			5199	524	3420	1779	0	524	4432	5762	-3983	0	3983	
	48+50 - 62+00	I-94 EB	2070	205	1131	940	0	205	1481	1925	-985			
Stage 2 Subtotal			2070	205	1131	940	0	205	1481	1925	-985	0	985	
	51+00 - 61+75	I-94 WB	1867	0	0	1867	0	0	767	997	869			
	501+50 - 509+75	Golden Lakes	2914	3652	2914	0	0	3652	470	611	-611			
Stage 3 Subtotal			4780	3652	2914	1867	0	3652	1237	1608	258	258	0	
	35+50 - 78+29	I-94 EB	6877	0	0	6877	0	0	872	1133	5744			
Stage 4 Subtotal			6877	0	0	6877	0	0	872	1133	5744	5744	0	
Grand Total			18927	4381	7465	11462	0	4381	8022	10428	1034	6002	4969	
		Total Common E		23308										

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Breaker Run. Quantity for Stage 1 and 2 represents 10% increase over total Cut.
4) Salvaged/Unusable Pavement Material includes pavement and 50% of total cut of Stage 1 & 2, 100% of total cut for Golden Lake Road assumed to be unusable for embankment.
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
6) Reduced EBS in Fill - EBS soil should be considered waste and not reused as fill
7) Expanded EBS Backfill - This is to be filled with Breaker Run material. EBS Backfill Factor = 1.0. Item number 311.0110
8) Expanded Fill. Factor = 1.30

Depending on selections:

Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor

Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor

Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor

Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor

9) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

AGGREGATE AND CONCRETE

LOCATION				ITEM 305.0110 BASE AGGREGATE DENSE 3/4-INCH (TON)	ITEM 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH (TON)	ITEM 311.0110 BREAKER RUN (TON)	ITEM 320.0140 CONCRETE BASE 7 1/2-INCH (SY)	ITEM 320.0340 CONCRETE BASE HES 7 1/2-INCH (SY)	ITEM 415.0410 CONCRETE PAVEMENT APPROACH SLAB (SY)	ITEM 415.0410 CONCRETE PAVEMENT 12-INCH (SY)	ITEM 624.0100 WATER (MGAL)	ITEM SPV.0035.02 BACKFILL SLURRY SPECIAL (CY)	ITEM SPV.0170.01 PROOF ROLLING (STA)
STAGE 1													
35+15	TO	51+00	EB INSIDE SHOULDER	-	2188	2359	-	-	-	-	33	-	-
62+00	TO	77+69	EB INSIDE SHOULDER	-	2209	2345	-	-	-	-	33	-	-
35+15	TO	53+99	WB INSIDE SHOULDER	-	2650	2812	-	-	-	-	40	-	-
55+04	TO	78+29	WB INSIDE SHOULDER	-	3318	3538	-	-	-	-	50	-	-
SUBTOTAL				-	10366	11053	-	-	-	-	155	-	-
STAGE 2													
42+80	TO	53+81	EB OUTSIDE SHOULDER	111	546	-	-	-	-	-	8	-	-
55+23	TO	67+20	EB OUTSIDE SHOULDER	63	186	-	-	-	-	-	3	-	-
51+00	TO	53+36	EB LANES	-	278	-	629	-	-	-	4	-	-
55+67	TO	62+00	EB LANES	-	1606	-	1688	-	-	-	24	-	-
51+00	TO	53+82	EB INSIDE SHOULDER	-	408	409	-	-	-	-	6	-	-
55+22	TO	62+00	EB INSIDE SHOULDER	-	931	1002	-	-	-	-	14	-	-
53+36	TO	53+82	CONCRETE PAVEMENT 12-INCH	-	63	-	-	-	63	127	1	-	-
55+22	TO	55+67	CONCRETE PAVEMENT 12-INCH	-	63	-	-	-	63	127	1	-	-
SUBTOTAL				174	4082	1411	2317	-	126	254	61	-	-
STAGE 3													
51+00	TO	53+81	WB OUTSIDE SHOULDER	6	546	-	-	-	-	-	8	-	-
55+23	TO	61+75	WB OUTSIDE SHOULDER	90	315	-	-	-	-	-	5	-	-
51+00	TO	54+06	WB INSIDE SHOULDER	18	155	-	-	-	-	-	2	-	-
55+21	TO	61+72	WB INSIDE SHOULDER	74	359	-	-	-	-	-	5	-	-
51+00	TO	53+37	WB LANES	-	247	-	632	-	-	-	4	-	-
55+66	TO	61+72	WB LANES	-	1047	-	1616	-	-	-	16	-	-
53+37	TO	53+82	CONCRETE PAVEMENT 12-INCH	-	63	-	-	-	63	127	1	-	-
55+21	TO	55+66	CONCRETE PAVEMENT 12-INCH	-	63	-	-	-	63	127	1	-	-
SUBTOTAL				188	2795	-	2248	-	126	254	42	-	-
STAGE 4													
51+00	to	53+81	EB SHOULDER INSIDE	12	-	-	-	-	-	-	-	-	-
55+22	TO	62+00	EB SHOULDER INSIDE	31	-	-	-	-	-	-	-	-	-
SUBTOTAL				43	-	-	-	-	-	-	-	-	-
GOLDEN LAKE													
603+50	TO	608+00	GOLDEN LAKE	118	1481	2533	-	-	-	-	22	-	-
SUBTOTAL				118	1481	2533	-	-	-	-	22	-	-
UNDISTRIBUTED				24	179	621	35	500	3	2	15	100	2
TOTALS				**547**	**18904**	**15619**	**4600**	**500**	**255**	**510**	**170**	**100**	**2**

PAVEMENT

LOCATION				ITEM 455.0105 ASPHALTIC MATERIAL PG58-28 (TON)	ITEM 455.0120 ASPHALTIC MATERIAL PG64-28 (TON)	ITEM 455.0605 TACK COAT (GALLON)	ITEM 460.1100 HMA PAVEMENT TYPE E-0.3 (TON)	ITEM 460.1103 HMA PAVEMENT TYPE E-3 (TON)	ITEM 460.1130 HMA PAVEMENT TYPE E-30 (TON)	ITEM 460.1700 HMA PAVEMENT TYPE SMA (TON)	ITEM 460.4000 HMA COLD WEATHER PAVING (TON)	ITEM 465.0125 ASPHALTIC SURFACE TEMPORARY (TON)	ITEM 465.0400 ASPHALTIC SHOULDER RUMBLE STRIPS (LF)	SPV.0060.02 MOBILIZATIONS EMERGEMCY PAVEMENT REPAIR (EACH)	SPV.0195.01 COLD PATCH (TON)
PRESTAGE															
43+80	TO	53+99	WB OUTSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	349	-	-	-
55+04	TO	68+14	WB OUTSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	448	-	-	-
SUBTOTAL				-	-	-	-	-	-	-	-	797	-	-	-
STAGE 1															
35+15	TO	51+00	EB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	-	-	1103	-	-	-
62+00	TO	77+69	EB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	-	-	1113	-	-	-
35+15	TO	53+99	WB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	-	-	1336	-	-	-
55+04	TO	78+29	WB SHOULDER INSIDE (TEMP)	-	-	-	-	-	-	-	-	1672	-	-	-
SUBTOTAL				-	-	-	-	-	-	-	-	5224	-	-	-
STAGE 2															
42+80	TO	51+00	EB OUTSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	255	-	-	-
62+00	TO	67+20	EB OUTSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	162	-	-	-
51+00	TO	53+37	EB OUTSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	84	-	-	-
53+37	TO	53+81	EB OUTSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	209	-	-	-
55+23	TO	55+67	EB OUTSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	84	-	-	-
55+67	TO	62+00	EB OUTSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	209	-	-	-
51+00	TO	53+36	EB LANES (PERM E-30)	-	4	-	-	-	70	62	-	-	-	-	-
55+67	TO	62+00	EB LANES (PERM E-30)	-	10	-	-	-	189	167	-	-	-	-	-
51+00	TO	53+82	EB INSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	206	-	-	-
55+22	TO	62+00	EB INSIDE SHOULDER (TEMP)	-	-	-	-	-	-	-	-	469	-	-	-
SUBTOTAL				0	14	0	0	0	260	229	-	1677	-	-	-
STAGE 3															
51+00	TO	53+81	WB OUTSIDE SHOULDER (PERM E-3)	-	6	-	-	109	-	-	-	-	-	-	-
55+23	TO	61+75	WB OUTSIDE SHOULDER (PERM E-3)	-	15	-	-	271	-	-	-	-	-	-	-
51+00	TO	54+06	WB INSIDE SHOULDER	-	-	-	-	19	-	-	-	-	-	-	-
55+21	TO	61+72	WB INSIDE SHOULDER	-	-	-	-	13	-	-	-	-	-	-	-
51+00	TO	53+37	WB LANES (PERM E-30)	-	4	-	-	-	71	62	-	-	-	-	-
55+66	TO	61+72	WB LANES (PERM E-30)	-	10	-	-	-	181	158	-	-	-	-	-
SUBTOTAL				0	35	0	0	412	252	220	884	0	0	0	0
STAGE 4															
35+15	TO	78+30		-	-	-	-	-	-	-	-	-	12300	-	-
SUBTOTAL				0	0	0	0	0	0	0	0	0	12300	0	0
GOLDEN LAKE															
603+50	TO	608+00	GOLDEN LAKE	44	-	72	804	-	-	-	804	-	-	-	-
SUBTOTAL				44	0	72	804	0	0	0	804	0	0	0	0
BUTT JOINTS															
			Butt Joint 50+50 to 51+00 EB	-	-	3	-	-	-	14	-	-	-	-	-
			Butt Joint 50+50 to 51+00 WB	-	-	3	-	-	-	14	-	-	-	-	-
			Butt Joint 62+00 to 62+50 EB	-	-	3	-	-	-	14	-	-	-	-	-
			Butt Joint 61+75 to 62+25 WB	-	-	3	-	-	-	14	-	-	-	-	-
SUBTOTAL				0	0	12	0	0	0	56	-	0	0	0	0
UNDISTRIBUTED				6	1	16	36	15	19	20	32	95	0	2	20
TOTALS				**50**	**50**	**100**	**840**	**427**	**530**	**525**	**1720**	**7794**	**12300**	**2**	**20**

SURFACE DRAIN

LOCATION		ITEM 416.1010 CONCRETE SURFACE DRAINS (CY)	ITEM 521.1012 APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH (EACH)	ITEM 606.0200 RIPRAP MEDIUM (CY)	ITEM 612.0212 PIPE UNDERDRAIN UNPERFORATED 12-INCH (LF)	ITEM 645.0120 GEOTEXTILE FABRIC TYPE HR (SY)
STAGE 2						
53+37.50	EB	1	1	1.0	43	3
53+73.00	WB	1	1	1.0	44	3
UNDISTRIBUTED						
TOTALS		**2**	**2**	**2**	**87**	**6**

DRAINAGE PART I

UPSTREAM STA	OFFSET		INV ELEV		DOWNSTREAM STA	OFFSET		INV ELEV	ITEM 521.0118 CULVERT PIPE CORRUGATED STEEL 18-INCH (LF)	ITEM 521.0124 CULVERT PIPE CORRUGATED STEEL 24-INCH (LF)	ITEM 521.0130 CULVERT PIPE PIPE CORRUGATED STEEL 30-INCH (LF)	ITEM 521.1018 APRON ENDWALLS FOR CULVERT PIPE STEEL 18-INCH (EA)	ITEM 521.1024 APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH (EA)	ITEM 521.1030 APRON ENDWALLS FOR CULVERT PIPE STEEL 30-INCH (EA)	ITEM 521.2005.S.01 SURFACE DRAIN PIPE CORRUGATED METAL SLOTTED 24-INCH (LF)	ITEM 521.2005.S.02 SURFACE DRAIN PIPE CORRUGATED METAL SLOTTED 30-INCH (LF)
STAGE 1																
49+00	30.0'	LT	862.90	to	40+28	30.0'	LT	855.01	-	252	-	-	1	-	620	-
63+50	30.2'	LT	864.50	to	72+50	30.0'	LT	855.60	-	150	151	-	-	1	-	580
73+00	25.0'	LT			73+00	30.0'	LT	854.75	5			1				
STAGE 2																
504+74	34.4'	RT	852.45	to	504+74	34.6'	LT	852.36	-	-	-	-	-	-	-	-
507+02	31.3'	LT	852.69	to	504+80	36.4'	LT	852.36	-	-	-	-	-	-	-	-
507+04	32.0'	RT	852.78	to	504+80	33.6'	RT	852.45	-	-	-	-	-	-	-	-
507+12	30.0'	RT	852.78	to	507+12	29.2'	LT	852.69	-	-	-	-	-	-	-	-
UNDISTRIBUTED									-	18	14	-	-	-	20	20
TOTALS					**TOTALS**				**5**	**420**	**165**	**1**	**1**	**1**	**640**	**600**

DRAINAGE PART II

UPSTREAM STA	OFFSET		INV ELEV	DOWNSTREAM STA	OFFSET		INV ELEV	ITEM 522.0121 CULVERT PIPE REINFORCED CONCRETE CLASS III 21-INCH (LF)	ITEM 522.0130 CULVERT PIPE REINFORCED CONCRETE CLASS III 30-INCH (LF)	ITEM 522.0315 CULVERT PIPE REINFORCED CONCRETE CLASS IV 15-INCH (LF)	ITEM 522.0321 CULVERT PIPE REINFORCED CONCRETE CLASS IV 21-INCH (LF)	ITEM 522.1015 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 15-INCH (EACH)	ITEM 522.1021 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 21-INCH (EACH)	ITEM 522.1030 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH (EACH)	ITEM 611.0642 INLET COVERS TYPE MS (EA)	ITEM 611.3901 INLETS MEDIAN 1 GRATE (EA)	ITEM 611.3903 INLETS MEDIAN 3 GRATE (EA)	ITEM 611.3904 INLETS MEDIAN 4 GRATE (EA)	ITEM 628.7005 INLET PROTECTION TYPE A (EA)	SPV.0060.04 TEMPORARY MANHOLES AND COVER PLATE (EA)
STAGE 1																			
49+00	30.0'	LT	862.90					-	-	-	-	-	-	-	3	-	1	-	1	-
63+50	30.2'	LT	864.50					-	-	-	-	-	-	-	3	-	1	-	1	-
64+97.93	26.22'	LT	860.72					-	-	-	-	-	-	-	-	-	-	-	-	1
68+70	47.0'	LT	857.53					-	-	-	-	-	-	-	-	-	-	-	-	1
71+00	28.5'	LT	856.43					-	-	-	-	-	-	-	-	-	-	-	-	1
STAGE 2																			
504+74	34.4'	RT	852.45	to	504+74	34.6'	LT	852.36	-	-	-	69	-	2	-	-	-	-	-	-
507+02	31.3'	LT	852.69	to	504+80	36.4'	LT	852.36	-	222	-	-	-	-	2	-	-	-	-	-
507+04	32.0'	RT	852.78	to	504+80	33.6'	RT	852.45	224	-	-	-	-	2	-	-	-	-	-	-
507+12	30.0'	RT	852.78	to	507+12	29.2'	LT	852.69	-	-	59	-	2	-	-	-	-	-	-	-
FINAL																			
44+00	16.3'	LT	856.33					-	-	-	-	-	-	-	1	1	-	-	-	-
64+97.93	26.2'	LT	861.00					-	-	-	-	-	-	-	4	-	-	1	-	-
UNDISTRIBUTED								6	8	1	1	-	-	-	-	-	-	-	2	-
TOTALS					**TOTALS**			**230**	**230**	**60**	**70**	**2**	**4**	**2**	**11**	**1**	**2**	**1**	**4**	**3**

CURB & BARRIER

LOCATION			ITEM 601.0553 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D (LF)	ITEM 603.1156 CONCRETE BARRIER TYPE S56 (LF)	ITEM 614.2300 MGS GUARDRAIL 3 (LF)	ITEM 614.2500 MGS THRIE BEAM TRANSITION (LF)	ITEM 614.2610 MGS GUARDRAIL TERMINAL EAT (EACH)	ITEM 614.2620 MGS GUARDRAIL TERMINAL TYPE 2 (EACH)	COMMENTS
1060-38-71									
STAGE 2									
49+66	to	53+83	EB	-	-	325.0	39.4	1.0	-	-
52+54	to	53+84	EB	-	-	37.5	39.4	1.0	-	-
55+20	to	55+59	EB	-	-	75.0	8.2	-	1.0	EXIT END
503+19	to	507+02	NB	-	218.0	75.0	39.4	1.0	-	-
501+75	to	504+35	NB	260	-	-	-	-	-	-
503+94	to	507+02	SB	-	218.0	-	39.4	1.0	-	-
501+75	to	502+75	SB	100	-	-	-	-	-	-
506+99	to	507+92	NB	-	-	-	39.4	1.0	-	-
506+99	to	508+55	SB	-	-	62.5	39.4	1.0	-	-
STAGE 3										
51+50	to	53+83	WB	-	-	225.0	8.2	-	1.0	EXIT END
55+19	to	56+49	WB	-	-	37.5	39.4	1.0	-	-
55+20	to	60+00	WB	-	-	387.5	39.4	1.0	-	-
UNDISTRIBUTED				10	14	75	8	-	-	
TOTALS				**370**	**450**	**1300**	**340**	**8**	**2**	

TEMPORARY BARRIER

STAGE	LOCATION	ITEM 603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED (LF)	ITEM 603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED (LF)	ITEM 614.0905 CRASH CUSHIONS TEMPORARY (EACH)	BACK WIDTH (FT)	OBJECT MARKING PATTERN	CRASH TEST LEVEL	TRAFFIC DIRECTION	TRAFFIC LOCATION	CRASH CUSHION SHIELDS	ITEM 643.1055.S TRUCK OR TRAILER-MOUNTED ATTENUATOR (DAY)	SPV.0090.02 GLARE SCREENS TEMPORARY (LF)
TOTAL PROJECT		-	-	-	-	-	-	-	-	-	-	-
Stage 1	52+34 to 58+18 WB	662.5	662.5	1	2	OM-3L	TL-3	Unidirectional	LT	Temporary Concrete Barrier	-	-
Stage 2	35+98 to 76+86 EB	3437.5	4100.0	1	2	OM-3L	TL-3	Unidirectional	LT	Temporary Concrete Barrier	-	4100.0
	35+98 to 76+86 EB	4100.0	4100.0	1	2	OM-3R	TL-3	Unidirectional	RT	Temporary Concrete Barrier	-	-
Stage 3	35+98 to 77+47 WB	-	4162.5	1	2	OM-3L	TL-3	Unidirectional	LT	Temporary Concrete Barrier	-	4162.5
	40+00 to 73+12 WB	-	3325.0	1	2	OM-3R	TL-3	Unidirectional	RT	Temporary Concrete Barrier	-	
Undistributed		50.0	100.0	2	-	-	TL-3	-	-	-	4	37.5
		8,250	**16,450**	**7**							**4**	**8,300**

FENCE

LOCATION	616.0100 FENCE WOVEN WIRE 4-FT (LF)
504+68 to 505+25 LT	57
504+79 to 505+25 RT	46
506+61 to 507+20 LT	58
506+62 to 507+17 RT	61
TOTALS	**222**

MISCELLANEOUS

LOCATION	ITEM 616.0700.S FENCE SAFETY (LF)
47+58 to 48+36 EB	78
61+32 to 63+09 EB	179
60+95 to 62+93 WB	200
UNDISTRIBUTED	43
TOTALS	**500**

EROSION CONTROL

LOCATION	ITEM 623.0200 DUST CONTROL SURFACE TREATMENT (SY)	ITEM 628.1905 MOBILIZATIONS EROSION CONTROL (EACH)	ITEM 628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)	ITEM 628.7560 TRACKING PADS (EACH)	ITEM 628.7570 ROCK BAGS (EACH)
STAGE 1	-	5	3	-	-
STAGE 2	-	5	3	-	-
STAGE 3		5	5	-	-
STAGE 4	-	5	5	-	-
UNDISTRIBUTED	2,000	5	4	5	25
TOTALS	**2,000**	**25**	**20**	**5**	**25**

RESTORATION

LOCATION				ITEM 625.0500 SALVAGED TOPSOIL (SY)	ITEM 627.0200 MULCHING (SY)	ITEM 628.2004 EROSION MAT CLASS I TYPE B (SY)	ITEM 628.2008 EROSION MAT URBAN CLASS I TYPE B (SY)	ITEM 628.2021 EROSION MAT CLASS II TYPE A (SY)	ITEM 628.2027 EROSION MAT CLASS II TYPE C (SY)	ITEM 629.0210 FERTILIZER TYPE B (CWT)	ITEM 630.0120 SEEDING MIXTURE NO. 20 (LB)	ITEM 630.0200 SEEDING TEMPORARY (LB)
Application Rate										7 *lbs/1000 sf*	3 *lbs/1000 sf*	3 *lbs/1000 sf*
STAGE 1												
35+15	TO	41+00		2228		960	1216	52	-	1.4	60	60
48+50	TO	53+95		1298		812	486	-	-	0.8	35	35
55+05	TO	64+00		2526	-	1408	1118	-	-	1.6	-	-
72+00	TO	78+29		2449	-	1064	1326	59	-	1.5	-	-
STAGE 2				-	-							
48+50	to	62+00	EB	5315	-	1469	2549	-	1297	*	144	144
501+50	to	509+75	Golden Lakes SB	462	-	-	462	-	-	*	12	12
STAGE 3												
51+00	to	61+75	WB	4867	-	1465	1345	-	2057	*	131	131
501+50	to	509+75	Golden Lakes NB	401	-	-	401	-	-	*	11	11
STAGE 4				-								
35+15	TO	52+45		8000	-	3093	4907	-	-	5.0	216	216
55+77	TO	78+29		10310	-	4003	6307	-	-	6.5	278	278
	UNDISTRIBUTED			544	100	226	382	19	146	1.1	22	22
			TOTALS	**38,400**	**100**	**14,500**	**20,500**	**130**	**3,500**	**18.0**	**910**	**910**

*NO FERTILIZER WILL BE USED IN THE UPLAND AREAS ADJACENT TO THE WETLANDS

EROSION CONTROL

LOCATION				ITEM 628.1104 EROSION BALES (EACH)	ITEM 628.1504 SILT FENCE (LF)	ITEM 628.1520 SILT FENCE MAINTENANCE (LF)	ITEM 628.7504 TEMPORARY DITCH CHECKS (LF)	ITEM 628.7555 CULVERT PIPE CHECKS (EACH)	ITEM 631.0300 SOD WATER (MGAL)	ITEM 631.1100 SOD EROSION CONTROL (SY)	SPV.0060.01 TEMPORARY SEDIMENT BASIN (EACH)
STAGE 1											
35+15	TO	41+00		-	-	-	48	1	-	52	-
48+50	TO	53+95		-	-	-	16	-	-	-	-
55+05	TO	64+00		-	-	-	48	-	-	-	-
72+00	TO	78+29		-	-	-	48	-	-	59	-
STAGE 2											
48+50	to	62+00	EB	-	1277	1277	-	1	-	-	-
501+50	to	509+75	Golden Lakes SB	-	616	616	24	1	-	10	-
STAGE 3											
51+00	to	61+75	WB	-	932	932	-	-	-	-	-
501+50	to	509+75	Golden Lakes NB	-	521	521	48	1	-	10	1
STAGE 4											
35+15	TO	52+45		-	-	-	144	-	-	-	-
55+77	TO	78+29		-	-	-	192	-	-	-	-
UNDISTRIBUTED				10	154	154	32	6	- 1	19	-
TOTALS				**10**	**3,500**	**3,500**	**600**	**10**	**1**	**150**	**1**

TRAFFIC CONTROL

STAGE	LOCATION	1060-38-71 DURATION CALANDAR DAYS	ITEM 643.0200 TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE (DAY)	ITEM 643.0300 TRAFFIC CONTROL DRUMS #	(DAYS)	ITEM 643.0420 TRAFFIC CONTROL BARRICADES TYPE III #	(DAYS)	ITEM 643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A #	(DAYS)	ITEM 643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C #	(DAYS)	ITEM 643.0800 TRAFFIC CONTROL ARROW BOARDS #	(DAYS)	ITEM 643.0900 TRAFFIC CONTROL SIGNS #	(DAYS)	ITEM 643.0910 TRAFFIC CONTROL COVERING SIGNS TYPE I (EACH)	Cycles	ITEM 643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II (EACH)	Cycles	ITEM 643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE (SF)	ITEM 643.1050 TRAFFIC CONTROL SIGNS PCMS (DAYS)
PROJECT			230	-	-	-	-	-	-	-	-	-	-	*24*	5520	-		-		-	-
Pre Stage	43+80 to 68+20 WB	10	-	*54*	540	*2*	20	*4*	40	*7*	70	*2*	20	*14*	140	-		-		-	-
Stage 1	35+15 to 78+29 WB	100	-	*49*	4900	-	-	-	-	-	-	*1*	100	*21*	2100	-		-		-	-
	35+15 to 77+69 EB	100	-	*54*	5400	-	-	-	-	-	-	*1*	100	*8*	800	-		-		-	-
	Golden Lake Rd	100	-	-	-	*18*	1800	*24*	2400	-	-		-	*12*	1200	-		-		36	-
Stage 2	34+00 to 78+24 WB	100	-	-	-	-	-	-	-		-	-	-	*10*	1000	-		-		-	-
	34+00 to 78+24 EB	100	-	-	-	-	-	-	-	-	-	-	-	*4*	400	-		-		-	-
	Golden Lake Rd	100	-	-	-	*18*	1800	*24*	2400	-	-	-	-	*12*	1200	-		-		36	-
Stage 3	34+60 to 78+85 WB	20	-	-	-	-	-	-	-	-	-	-	-	*4*	80	-		-		-	-
	40+00 to 67+75 EB	20	-	-	-	-	-	-	-	-	-	-	-	*10*	200	-		-		-	-
Stage 4	35+15 to 78+29 WB	20	-	*54*	1083	*2*	40	*4*	80	-	-	*1*	20	*8*	160	-		-		-	-
	35+15 to 72+00 EB	20	-	*48*	957	*2*	40	*4*	80	-	-	*1*	20	*8*	160	-		-		-	-
Undistributed			-		220		*180*		160		10		40		220	5	2	5	2	-	20
		TOTALS	**230**		**13,100**		**3,880**		**5,160**		**80**		**300**		**13,180**	**10**		**10**		**72**	**20**

3

TYPE II PERMANENT SIGNING -

Project ID:1060-38-71 GOLDEN LAKE RD Waukesha County						**637.2210** SIGNS TYPE II REFLC H [SF]	**637.2230** SIGNS TYPE II REFLC F [SF]	**638.2602** REM SIGNS TYPE II (EA)	**638.3000** REM SMALL SIGN SUP (EA)	**634.0618** WOOD POSTS 4"X 6"x18' [EA]	**634.0622** WOOD POSTS 4"X 6"x22' [EA]	
SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x x	H [IN.]							REMARKS / NEW SIGN LOCATION
101	D10-5(4)	WEST- I94 MILE 279.6	21	x	60	8.750	--	1	1	1	--	--
102	D10-5(4)	EAST- I94 MILE 279.6	21	x	60	8.750	--	1	1	1	--	--
103	D10-5(4)	WEST- I94 MILE 279.8	21	x	60	8.750	--	1	1	1	--	--
104	D10-5(4)	EAST- I94 MILE 279.8	21	x	60	8.750	--	1	1	1	--	--
105	M1-94	HWY BB	66	x	21	9.625	--	1	2	--	2	--
106	W5-52L	--	--	x	--	--	--	1	1	--	--	--
107	W5-52R (3)	--	18	x	54	--	6.750	1	1	--	--	--
108	W5-52R (3)	--	18	x	54	--	6.750	1	1	--	--	--
109	W5-52L	--	--	x	--	--	--	1	1	--	--	--
110	M1-94	HWY BB	66	x	21	9.625	--	1	2	--	2	--
111	R4-3(3)	--	36	x	48	12.000	--	1	1	1	--	--
				Undistributed		--	--	2	2	--	2	--
					TOTAL=	66.250	13.500	13	15	5	6	

PAVEMENT MARKING

1060-38-71 LOCATION			ITEM 646.0106 PAVEMENT MARKING EPOXY 4-INCH YELLOW (LF)	 WHITE (LF)	ITEM 646.0600 REMOVING PAVEMENT MARKINGS (LF)	ITEM 646.0841.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH WHITE (LF)	ITEM 649.0300 TEMPORARY PAVEMENT MARKING REFLECTIVE TAPE 4-INCH YELLOW (LF)	 WHITE (LF)	ITEM 649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH BLACK (LF)	ITEM 649.2100 TEMPORARY RAISED PAVEMENT MARKERS (EACH)
PRESTAGE			-	-	-	-	-	2440	-	-
STAGE 1										
43+25 to 51+00		WB	-	-	-	-	-	-	181	-
43+25 to 68+75		WB	-	-	-	-	2552	2753	-	50
51+00 to 61+75		WB	-	-	-	-	-	-	-	-
61+75 to 68+75		WB	-	-	269	-	-	-	175	-
STAGE 2										
34+60 to 41+00		EB	-	-	-	-	-	-	160	-
34+60 to 78+24		EB	-	-	-	-	4264	4724	-	88
34+60 to 78+85		EB	4425	4425	-	1110	-	-	-	-
71+00 to 78+24		EB	-	-	-	-	-	-	181	-
501+50 to 509+00		Golden Lake	188	1500	-	-	-	-	-	-
STAGE 3										
34+60 to 41+50		WB	-	-	-	-	-	-	173	-
72+00 to 78+84		WB	-	-	-	-	-	-	171	-
42+25 to 51+00		EB	-	-	-	-	-	-	219	-
61+75 to 67+75		EB	-	-	-	-	-	-	150	-
34+60 to 78+85		WB	-	-	-	-	4318	4782	-	88
42+25 to 67+75		EB	-	-	-	-	2551	2748	-	50
34+60 to 78+85		WB	4425	4425	-	1110	-	-	-	-
UNDISTRIBUTED			70	92	31	50	84	84	90	34
TOTALS			**19,550**		**300**	**2270**	**31,300**		**1,500**	**310**

CLEANUP

LOCATION	SPV.0105.02 PAVEMENT CLEANUP PROJECT 1060-38-71 (LS)
PROJECT	1
TOTALS	**1**

CRACK AND DAMAGE SURVERY

LOCATION	999.1500.S CRACK AND DAMAGE SURVEY (LS)
PROJECT	1
	1

STAKING

LOCATION	SPV.0105.04 SURVEY PROJECT 1060-38-71 (LS)
PROJECT	1
TOTALS	**1**

LANDMARK REFERENCE MONUMENTS SPECIAL

LOCATION	STATION	OFFSET	TOWNSHIP	RANGE	SECTION CORNER	SPV.0060.03 SECTION CORNER MONUMENTS SPECIAL (EACH)
GOLDEN LAKE ROAD	504+34	0'	T7N	R17E	18/17	1
				TOTAL		**1**

NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
MON1	182,636.30	606,006.74	857.45	BRASS CAP IN CONCRETE MONUMENT
BM1	182,775.01	605,959.83	874.64	ALUMINUM DISK IN PARAPET
BM2	182,819.60	606,055.22	875.00	ALUMINUM DISK IN PARAPET

N

N GOLDEN LAKE RD

CTH BB

ROW

B-67-342

B-67-341

BM1

BM2

MGS THRIE BEAM TRANSITION

MGS GUARDRAIL

MGS GUARDRAIL EAT

REMOVE EXISTING GUARDRAIL

5" ASPHALTIC SURFACE TEMPORARY

℄ IH-94 WB

℄ IH-94 EB

IH-94 WB

IH-94 EB

BASE AGGREGATE DENSE ¾-INCH

WETLAND IMPACT

MGS GUARDRAIL EAT

SMA/HMA PAVEMENT TYPE E-30 LANES

5" ASPHALTIC SURFACE TEMPORARY

REMOVE EXISTING GUARDRAIL

MGS GUARDRAIL

CONCRETE BRIDGE APPROACH (SEE SDD)

CONCRETE SURFACE DRAIN TYPE A
UNDERDRAIN UNPERFORATED 12-INCH
APRON ENDWALL STEEL 12-INCH
DOWNSTREAM INVERT = 856.00

WETLAND IMPACT

MGS THRIE BEAM TRANSITION

MON1
CAUTION SECTION CORNER
CONTACT PROJECT ENGINEER
AND SEWRPC 2 WEEKS BEFORE
DISTURBING MONUMENT

MGS TERMINAL TYPE 2

MGS GUARDRAIL

CONCRETE BRIDGE APPROACH (SEE SDD)

MGS THRIE BEAM TRANSITION (EXIT END)

SLOPE INTERCEPT

SMA/HMA PAVEMENT TYPE E-30 LANES

5" ASPHALTIC SURFACE TEMPORARY

BEGIN RECONSTRUCT
STA 51+00.00

END RECONSTRUCT
STA 62+00.00

PVC 53+05.00
EL.871.89

PVI 56+80.00
EL.877.78

PVT 60+55.00
EL.872.30

FINISHED IH-94 EB PROFILE

EXISTING IH-94 EB PROFILE

1.57%

-1.46%

STA 53+80.50 TO 55+22.66
REMOVE STRUCTURE B-67-81
CONSTRUCT STRUCTURE B-67-341
CONCRETE SLAB SPAN
142'-2" OVERALL LENGTH
66'-6" OVERALL WIDTH

K= 247.61
VC=750.00'

EXISTING GRADES AT ℄
FINISHED GRADES AT ℄

885 880 875 870 865 860 855 850

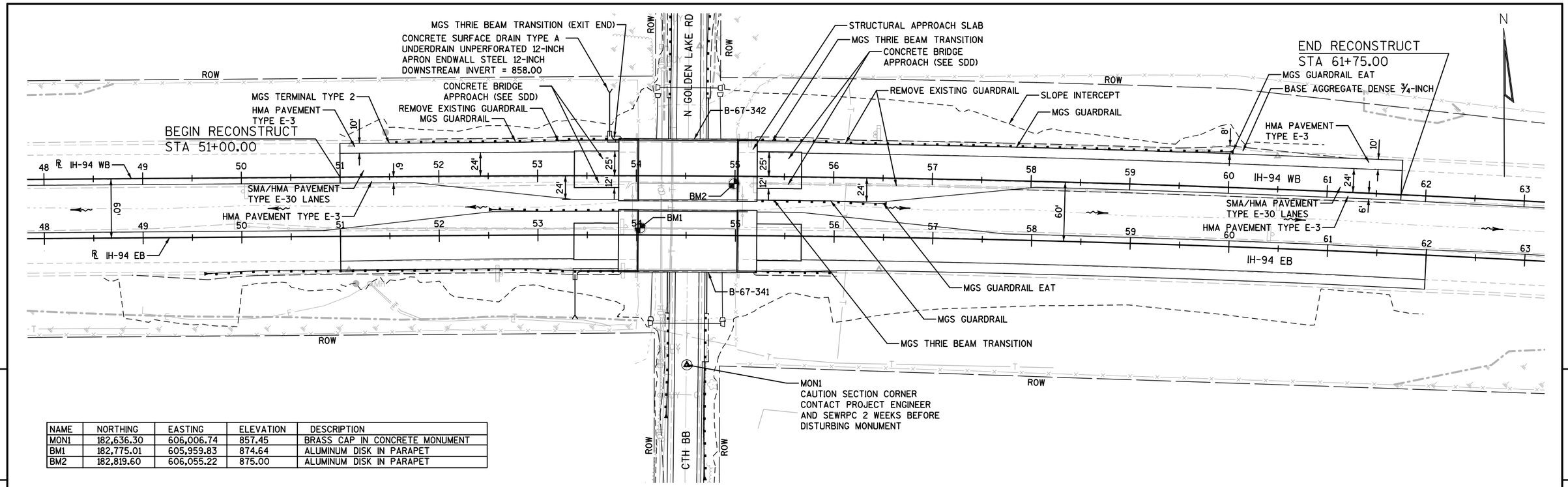
48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

864.97 865.68 866.40 867.12 867.89 868.68 868.68 869.35 869.46 870.00 870.25 870.54 871.03 871.06 871.82 871.54 872.56 868.84 873.20 856.09 873.74 867.34 874.19 872.66 874.53 872.81 874.76 872.95 874.90 873.07 874.94 873.13 874.88 873.18 874.71 873.09 874.45 872.97 874.08 872.65 873.61 872.30 873.04 871.86 872.37 871.39 871.64 870.81 870.91 870.19 870.18 869.46 868.72

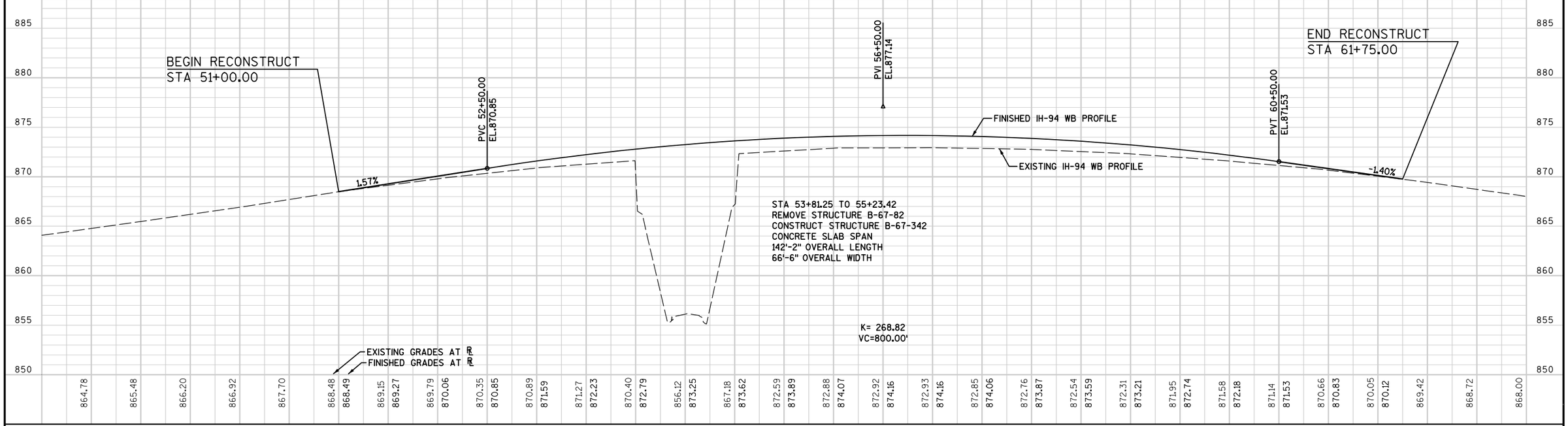
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PLAN PROFILE: IH-94 EASTBOUND	SHEET 98	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\050115_pp.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:100

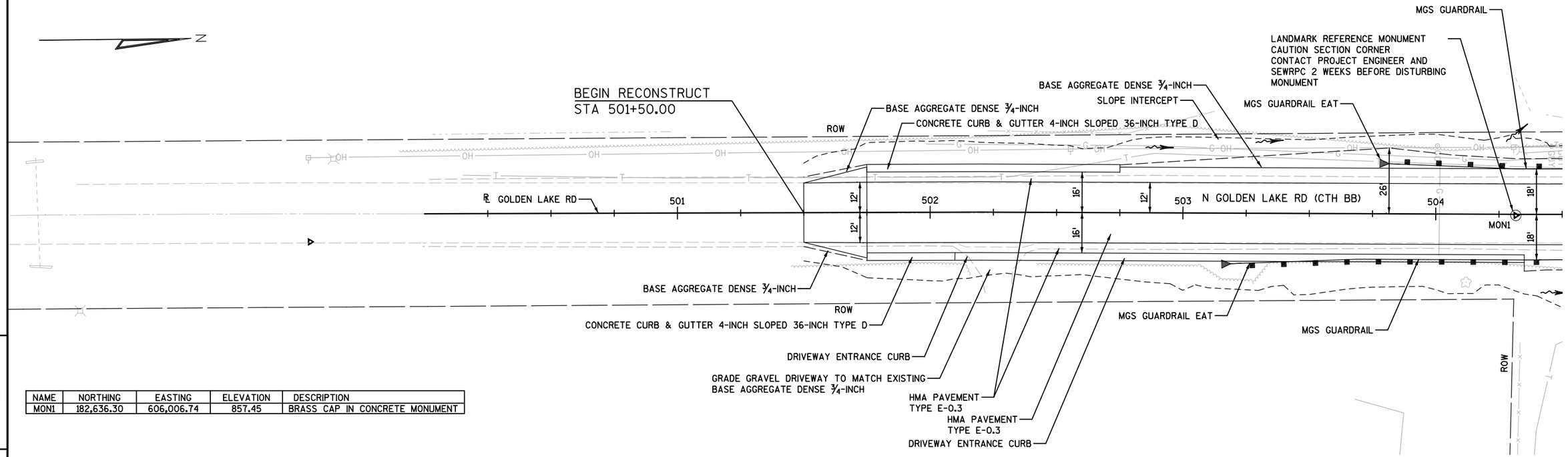
WISDOT/CADDS SHEET 30



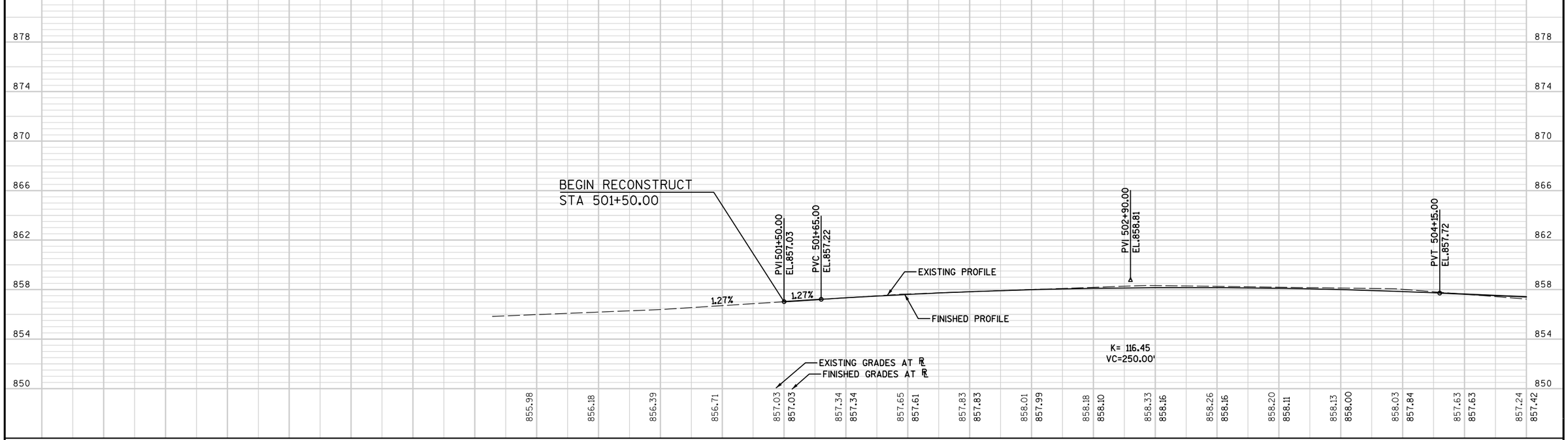
NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
MON1	182,636.30	606,006.74	857.45	BRASS CAP IN CONCRETE MONUMENT
BM1	182,775.01	605,959.83	874.64	ALUMINUM DISK IN PARAPET
BM2	182,819.60	606,055.22	875.00	ALUMINUM DISK IN PARAPET



PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PLAN PROFILE: IH-94 WESTBOUND	SHEET 99	E



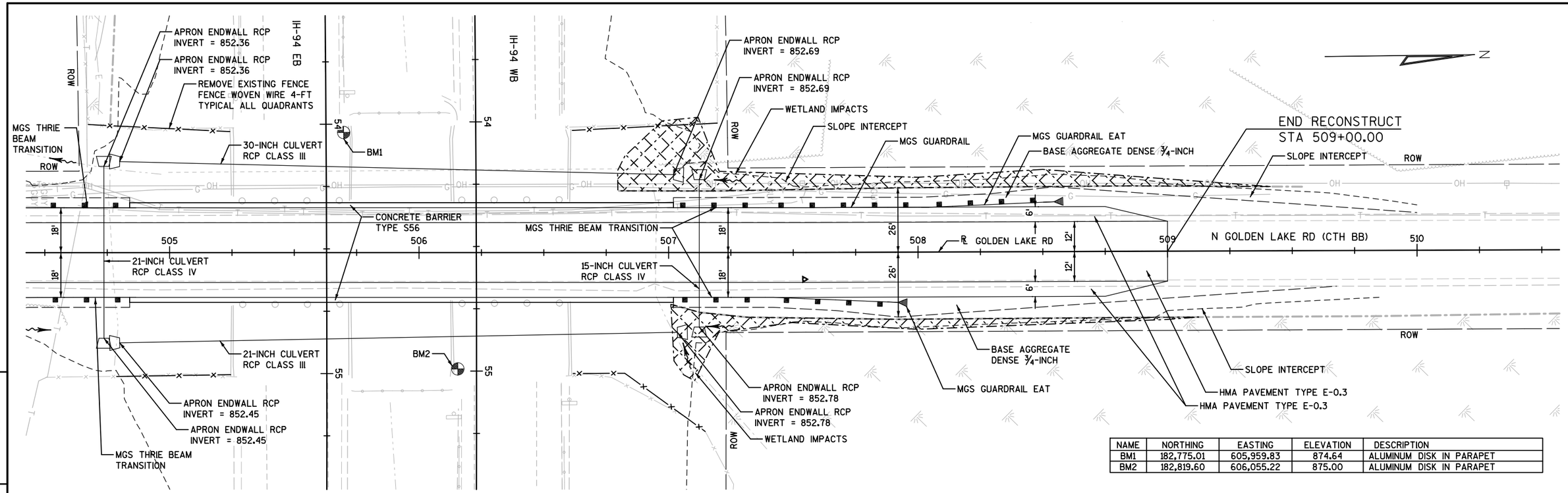
NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
MON1	182,636.30	606,006.74	857.45	BRASS CAP IN CONCRETE MONUMENT



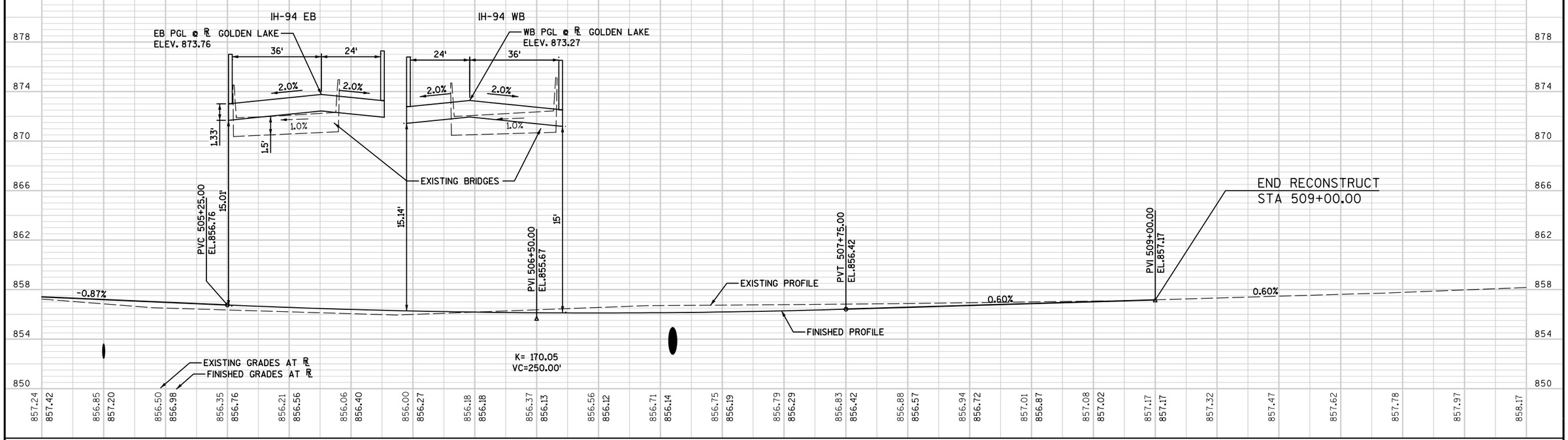
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PLAN PROFILE : N GOLDEN LAKE RD (CTH BB)	SHEET 100	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\050130_pp.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:40

WISDOT/CADDS SHEET 30



NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM1	182,775.01	605,959.83	874.64	ALUMINUM DISK IN PARAPET
BM2	182,819.60	606,055.22	875.00	ALUMINUM DISK IN PARAPET



PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	PLAN PROFILE : N GOLDEN LAKE RD (CTH BB)	SHEET 101	E

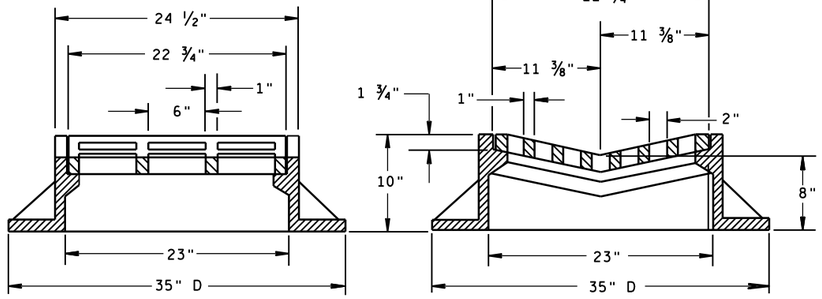
Standard Detail Drawing List

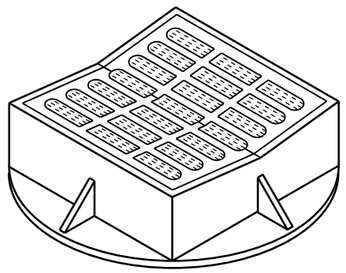
08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08B09-01	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C09-01	INLETS MEDIAN 3 AND 4 GRATE
08D01-18	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D02-06	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D13-01	SLOTTED CORRUGATED METAL PIPE SURFACE DRAINS
08E04-02	SOD OR MASONRY AND SOD DITCH CHECKS
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F05-01	CLASS "B" BEDDING FOR CULVERT PIPE OR STORM SEWER
08F06-04	REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN
11A01-05	MAINTENANCE CROSSOVER FOR FREEWAYS
12A03-10	NAME PLATE (STRUCTURES)
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13B02-07A	CONCRETE BRIDGE APPROACH
13B02-07B	STRUCTURAL APPROACH SLAB AND CONCRETE BRIDGE APPROACH
13C01-18	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C11-11A	RURAL DOWELED CONCRETE PAVEMENT
13C11-11B	RURAL DOWELED CONCRETE PAVEMENT
13C15-06A	CONCRETE BASE
13C15-06B	CONCRETE BASE
13C18-03A	CONCRETE PAVEMENT JOINTING
13C18-03B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-03C	CONCRETE PAVEMENT JOINT TIES
13C18-03D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B32-03A	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-03B	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-03C	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-03D	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-03E	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B33-01H	CONCRETE BARRIER SINGLE SLOPE 42" THRIE BEAM ANCHOR
14B39-01E	42-INCH SSCB TO 56-INCH SSCB HEIGHT TRANSITION
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B47-02A	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-02B	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-02C	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
15B01-08A	FENCE WOVEN WIRE
15B01-08B	FENCE WOVEN WIRE
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES

6

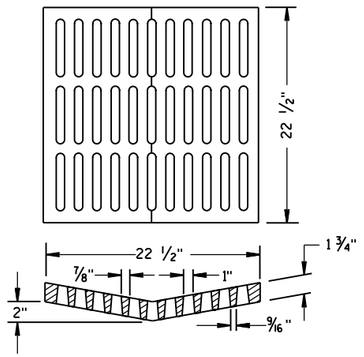
Standard Detail Drawing List

15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-02	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15D03-02	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER
15D12-05B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D27-02	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
16A01-06	LANDMARK REFERENCE MONUMENTS AND COVERS



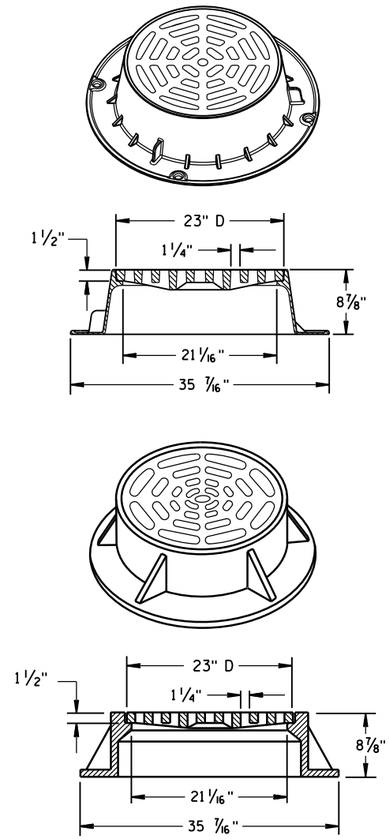


TYPE "B"



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"

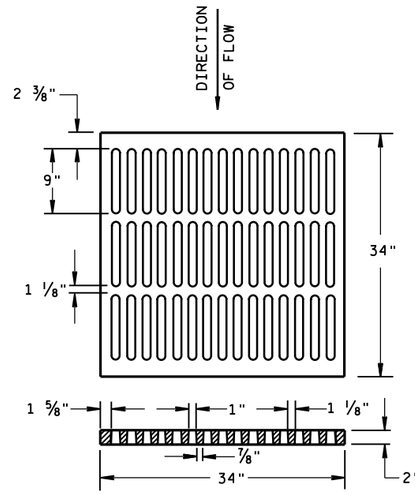
NOTE: EITHER CASTING IS ACCEPTABLE

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.

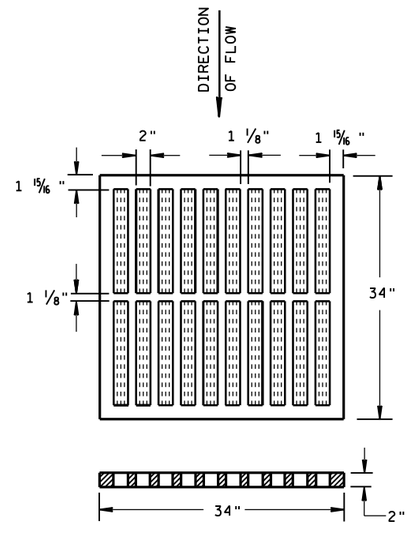
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



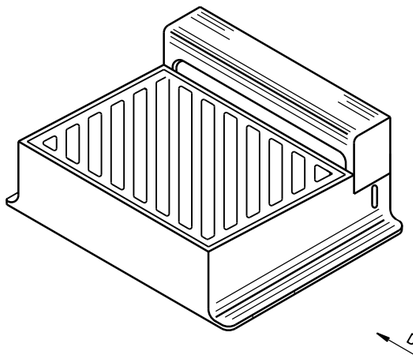
ALTERNATIVE TYPE "MS"

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



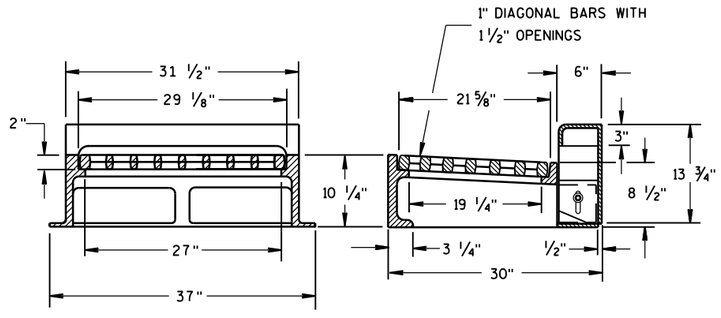
TYPE "MS"

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



DIRECTION OF FLOW

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



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

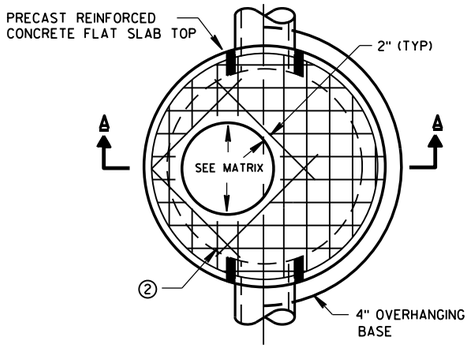
INLET COVERS
TYPE B, B-A, C,
MS, MS-A, & WM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

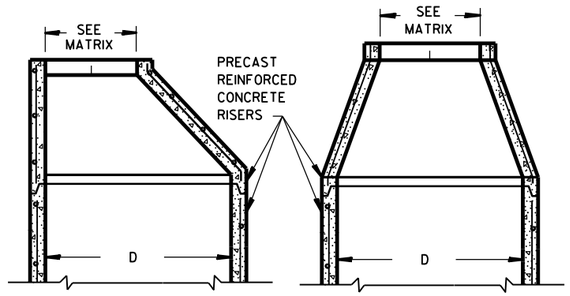
APPROVED
11/27/2013
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 A 5-19b

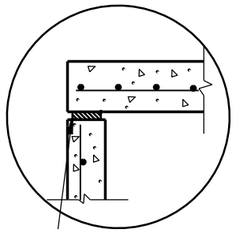


PLAN VIEW CIRCULAR OPENING

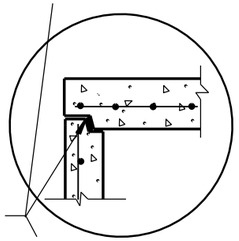


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

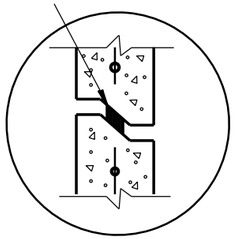


TOP WITH PLAIN END JOINT



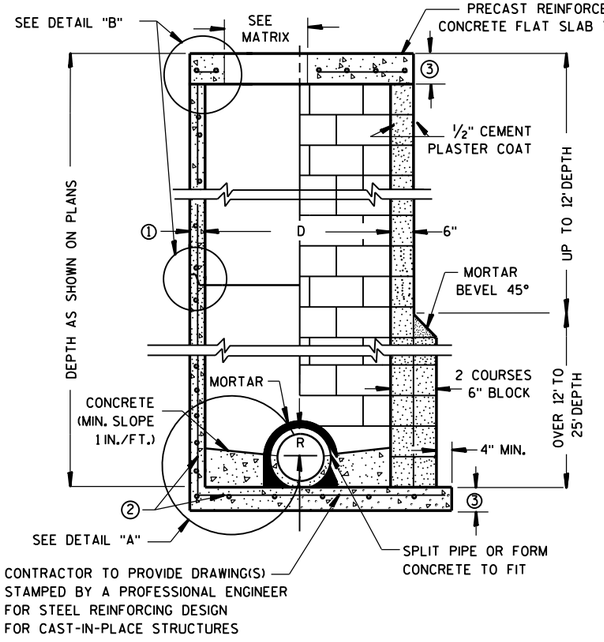
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



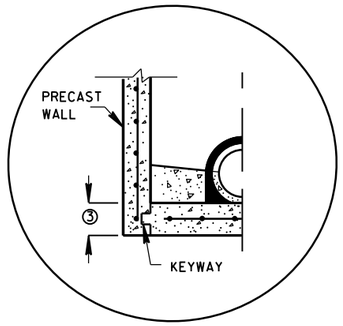
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

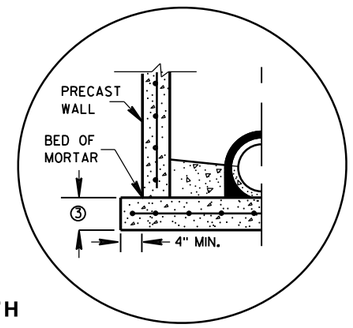


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

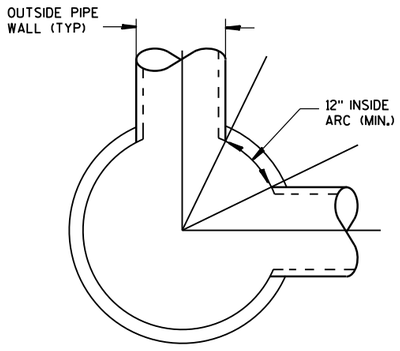


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE CONE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

CONCRETE BLOCK WILL NOT BE PERMITED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.

② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

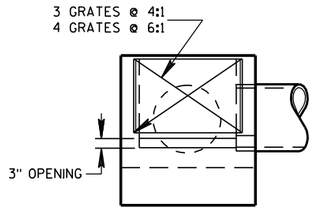
MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

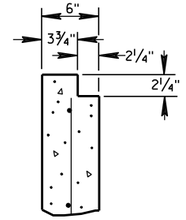
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6
S.D.D. 8 B 9-1



SECTION B-B



SECTION C-C

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.

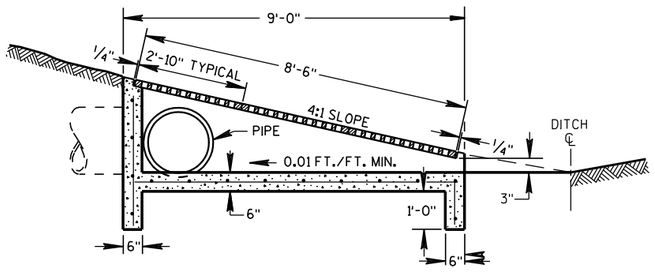
UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

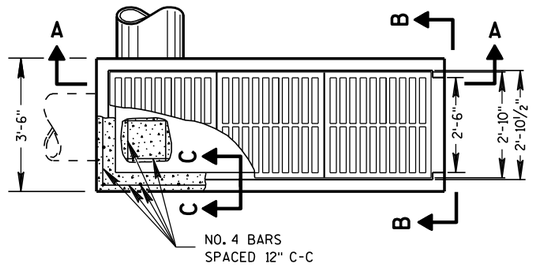
ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, 3G-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

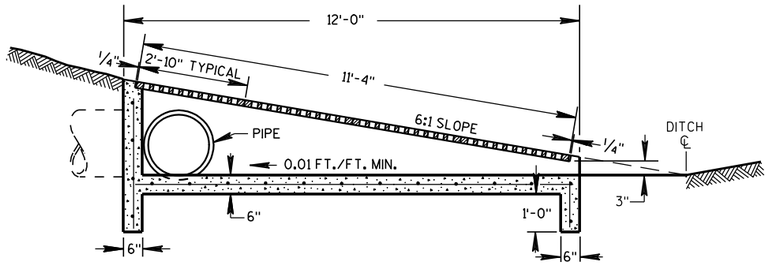


SECTION A-A

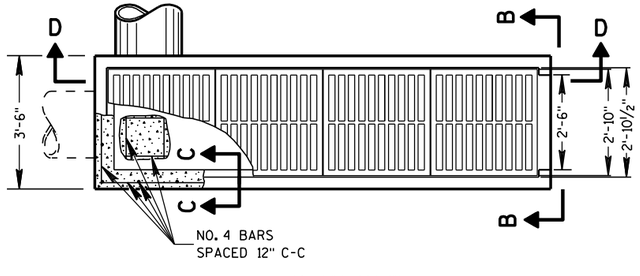


PLAN VIEW

INLETS MEDIAN 3 GRATE



SECTION D-D



PLAN VIEW

INLETS MEDIAN 4 GRATE

INLETS MEDIAN 3 AND 4 GRATE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 6/5/2012 DATE FHWA	/S/ Jerry H. Zogg ROADWAY STANDARDS DEV ENGINEER

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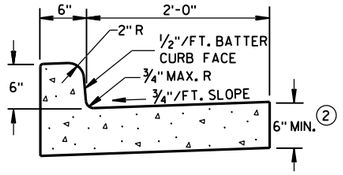
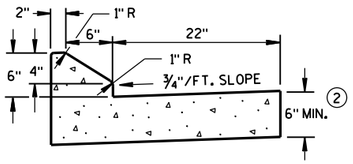
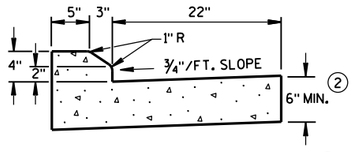


TYPES A & D ①

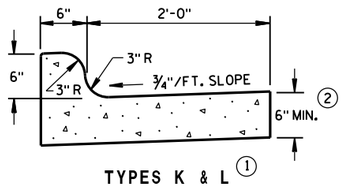


6" SLOPED CURB TYPES G & J ①

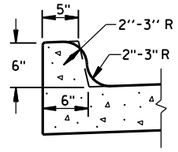


4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"

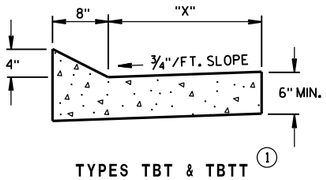


TYPES K & L ①



OPTIONAL CURB SHAPE FOR TYPES K & L ①

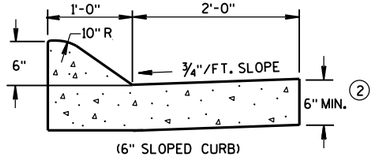
CONCRETE CURB & GUTTER 30"



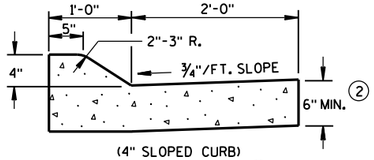
TYPES TBT & TBTT ①

CONCRETE CURB & GUTTER

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

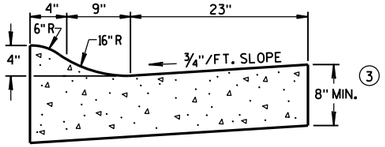


(6" SLOPED CURB)



(4" SLOPED CURB)

TYPES A & D ①



4" SLOPED CURB TYPES R & T ① ④

CONCRETE CURB & GUTTER 36"

GENERAL NOTES

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

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

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

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

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

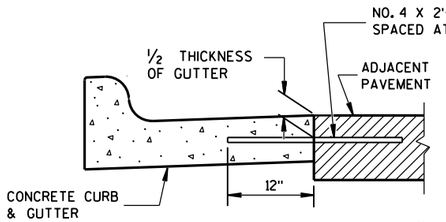
① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.

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.

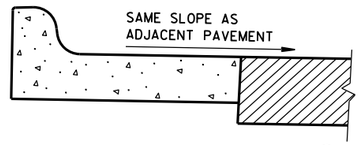
③ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

④ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

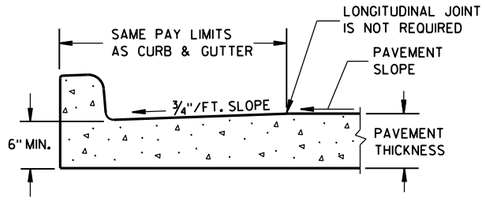
⑤ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



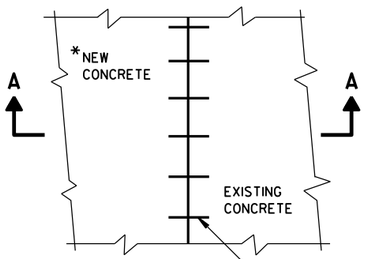
TYPICAL TIE BAR LOCATION ①



REVERSE SLOPE GUTTER ⑤
(TYPICAL FOR ALL CURB & GUTTER TYPES)

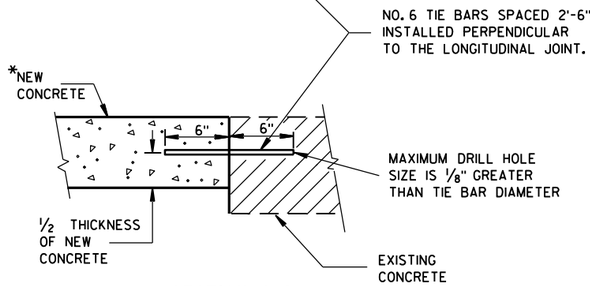


PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



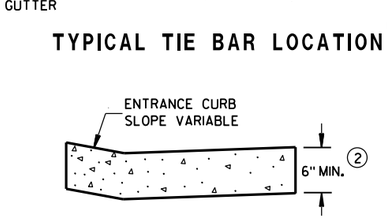
PLAN VIEW

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

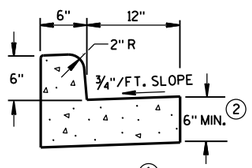


SECTION A-A

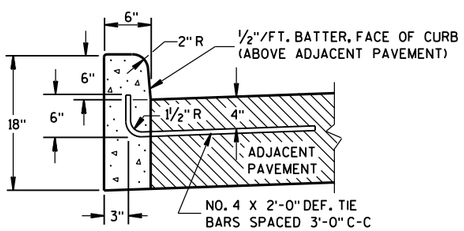
TIE BARS DRILLED
INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

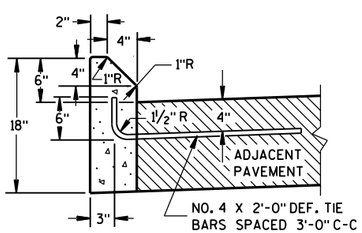


①
TYPES A & D
CONCRETE CURB & GUTTER 18"

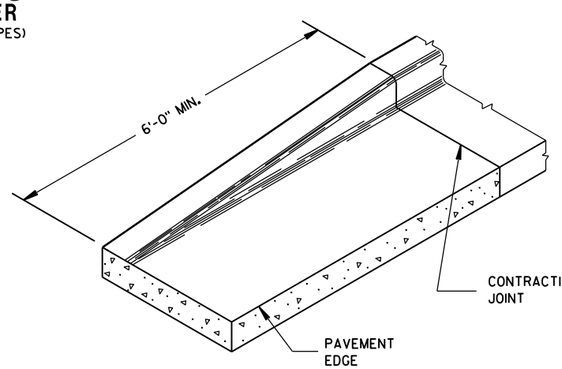


①
TYPES A & D

CONCRETE CURB



①
TYPES G & J



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 8 D 1-18

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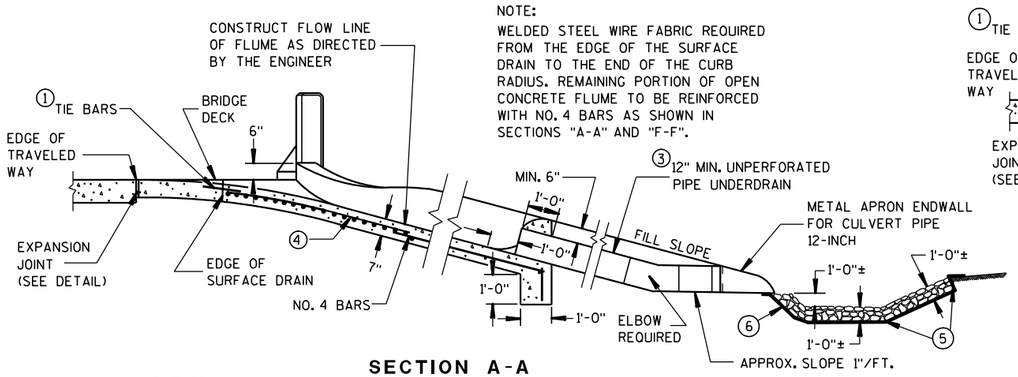
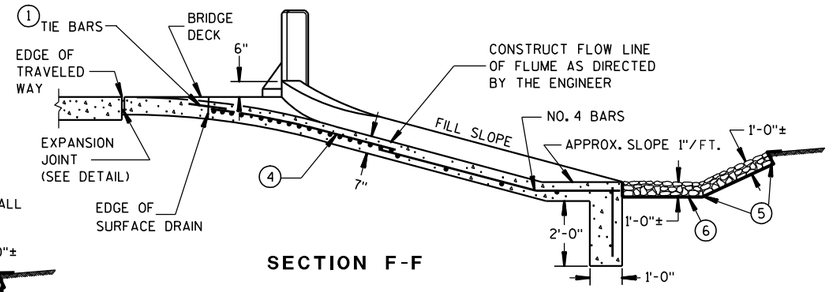


SECTION A-A



SECTION F-F

GENERAL NOTES

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

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

(1) NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.

(2) NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.

(3) PIPE UNDERDRAIN MAY BE ANY OF THE MATERIALS LISTED IN SECTION 612.2 OF THE STANDARD SPECIFICATIONS EXCEPT DRAIN TILE.

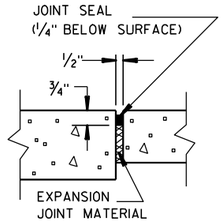
(4) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.

(5) LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.

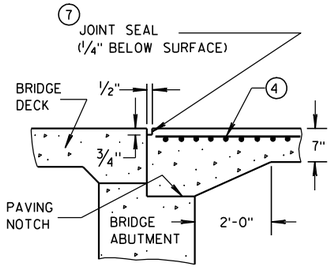
(6) GEOTEXTILE FABRIC, TYPE 'R"

(7) HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.

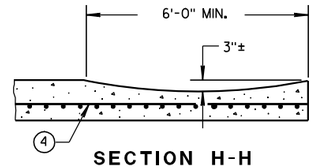
(8) THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1½".



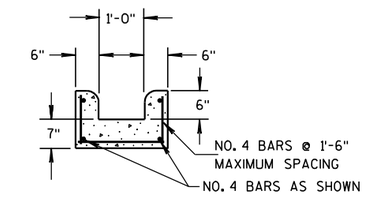
EXPANSION JOINT DETAIL



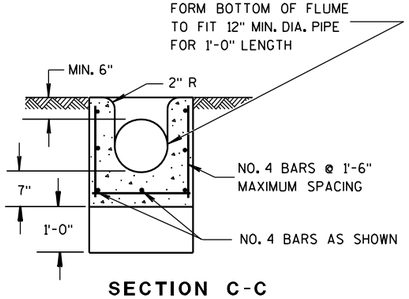
SECTION D-D



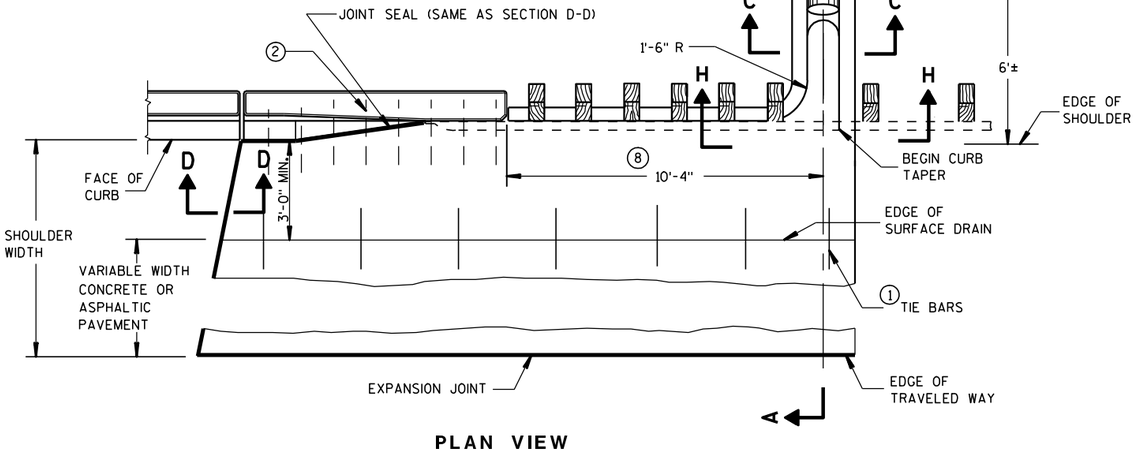
SECTION H-H



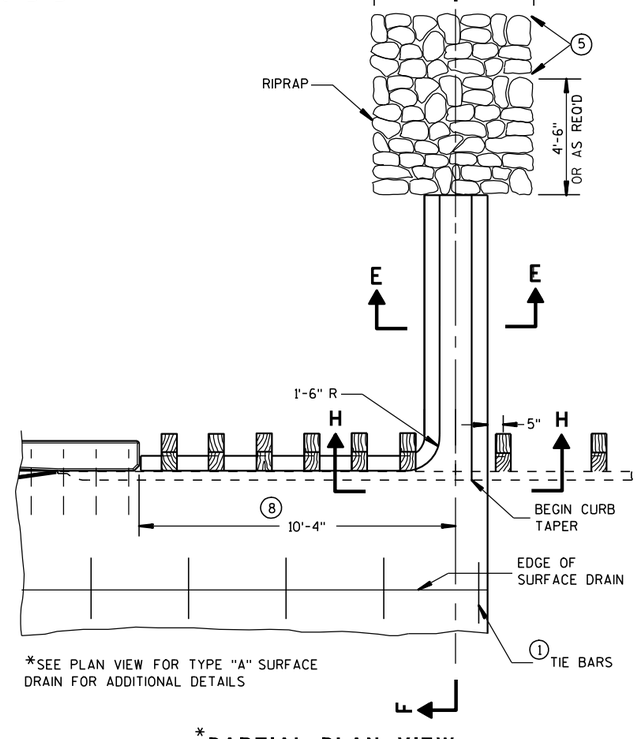
SECTION E-E



SECTION C-C

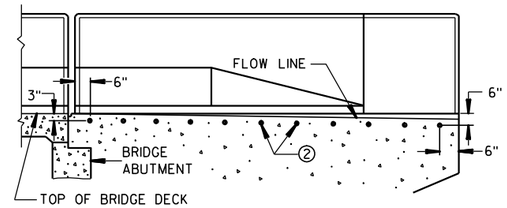


PLAN VIEW
SURFACE DRAIN WITH PIPE
TYPE "A"



*SEE PLAN VIEW FOR TYPE "A" SURFACE DRAIN FOR ADDITIONAL DETAILS

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



LOCATION OF
TIE BARS IN WINGWALL

CONCRETE SURFACE DRAINS
FLUME TYPE
AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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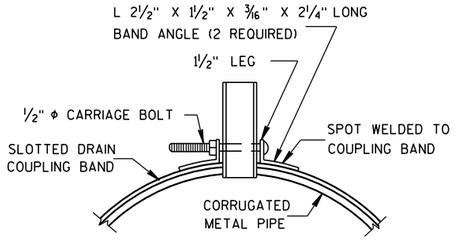
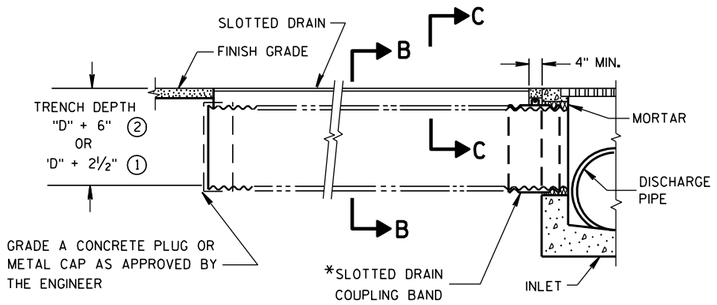
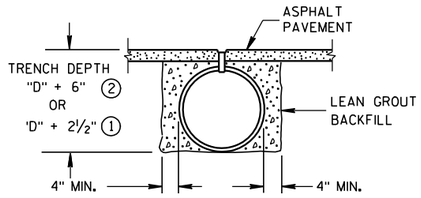
S.D.D. 8 D 2-6



SECTION A-A



SLOTTED DRAIN INSTALLATION TYPE "A"



SECTION B-B

GENERAL NOTES

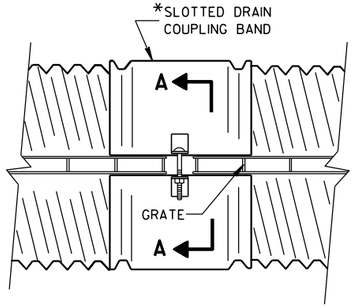
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

BACKFILL MATERIAL

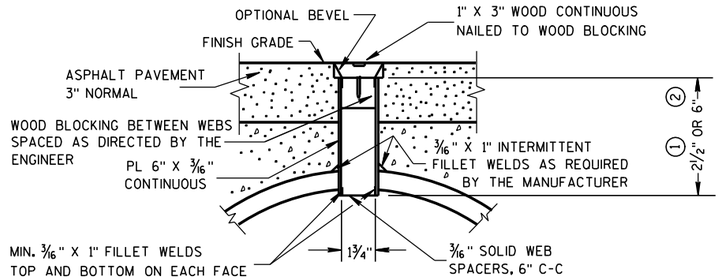
THE LEAN GROUT BACKFILL MATERIAL SHALL BE A FINE AGGREGATE, IN ACCORDANCE WITH SUBSECTION 501.3.6.3.6 OF THE STANDARD SPECIFICATIONS, MIXED WITH 150 POUNDS OF CEMENT AND APPROXIMATELY 30 GALLONS OF WATER FOR EACH 3000 POUNDS OF FINE AGGREGATE.

THE PIPE FOR THE SLOTTED DRAIN SHALL MEET AASHTO DESIGNATION M-36, AND THE GRATE ASSEMBLIES SHALL BE MADE FROM STRUCTURAL STEEL SUITABLY WELDED TO FORM THE OPEN SLOT AND HOT-DIP GALVANIZED TO MEET THE PROVISIONS OF AASHTO DESIGNATION M-111.

NORMAL PIPE SIZES ARE 12-INCH THROUGH 24-INCH DIAMETER IN 0.064 INCH THICKNESS, AND 30-INCH DIAMETER PIPE IN 0.079 INCH THICKNESS.

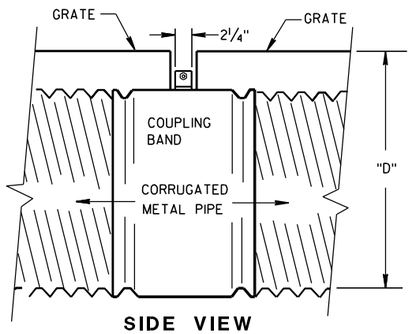


PLAN VIEW



SECTION C-C

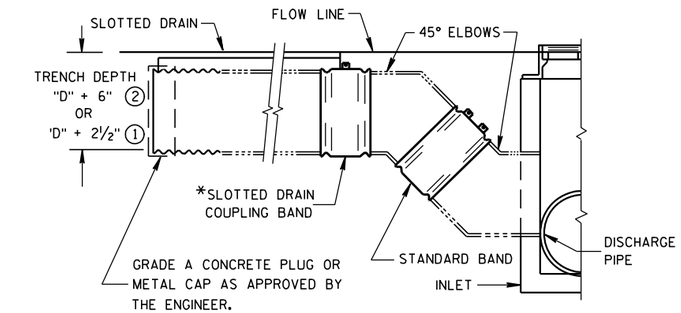
GRATE SLOT DETAIL



SIDE VIEW

*TYPICAL COUPLING BAND FOR SLOTTED DRAIN

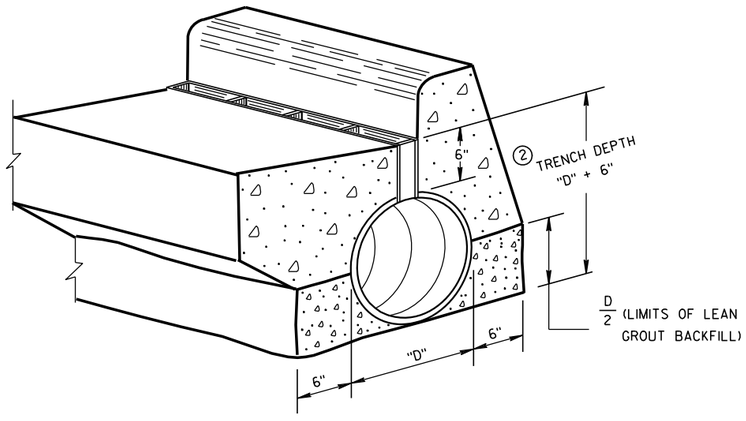
(ALTERNATES PERMITTED AS APPROVED BY THE ENGINEER)



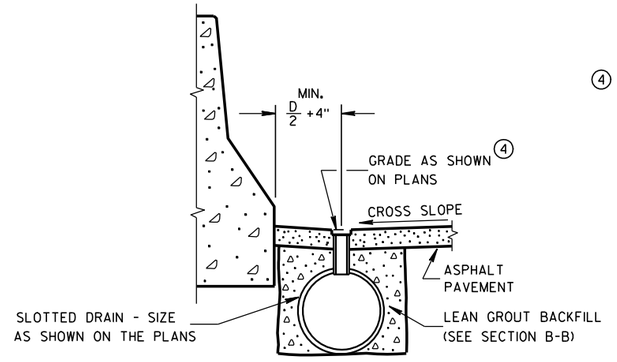
SLOTTED DRAIN INSTALLATION TYPE "B"

NOTE:

TO PREVENT "FLOATING" OF THE SLOTTED DRAIN DURING BACKFILL OPERATIONS PROVIDE ADEQUATE WEDGES, OR POUR THE LEAN GROUT ON TOP OF THE PLUGGED SLOT ALLOWING IT TO SLOUGH TO THE SIDES OF THE PIPE. THIS WILL PROVIDE ENOUGH WEIGHT ON TOP TO KEEP THE PIPE FROM FLOATING.



SLOTTED DRAIN INSTALLATION IN FLOW LINE OF CURB & GUTTER TYPE "C"



SLOTTED DRAIN INSTALLATION AT MEDIAN BARRIER TYPE "D"

① 2½" NORMAL GRATE DEPTH.

② 6" SPECIAL GRATE DEPTH, WHEN SPECIFIED ON THE PLANS.

③ FOR SCREEDING DIRECTLY OVER THE SLOTTED DRAIN WITH ASPHALT PAVER. FOR CONCRETE SURFACE USE 3" WIDE TAPE OVER THE SLOT TO KEEP MATERIAL OUT OF THE PIPE.

④ WHEN THE SURFACE IS CONCRETE PAVEMENT THE GRADE AS SHOWN ON THE PLANS WILL BE FLUSH WITH THE TOP OF THE SLOTTED DRAIN.

SLOTTED CORRUGATED METAL PIPE SURFACE DRAINS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/30/79 DATE

/S/ D. L. Strand
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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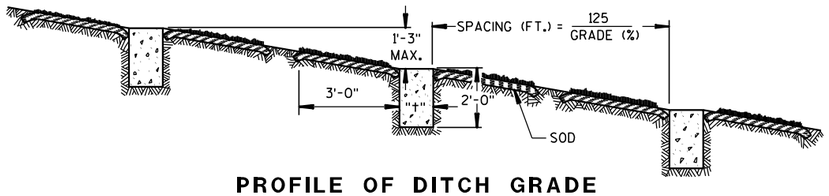
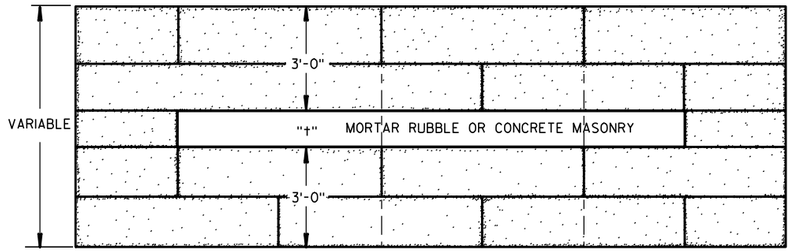
S.D.D. 13 D 13-1

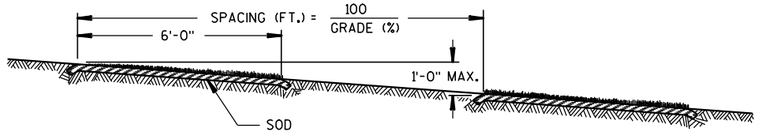


PROFILE OF DITCH GRADE

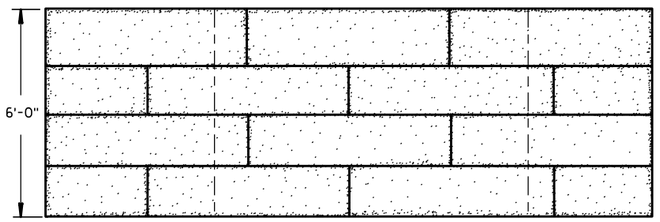


PLAN VIEW SHOWING MASONRY AND SOD

"+" - MASONRY THICKNESS SHALL BE 0'-9" FOR CONCRETE AND 1'-0" FOR MORTAR RUBBLE.



PROFILE OF DITCH GRADE



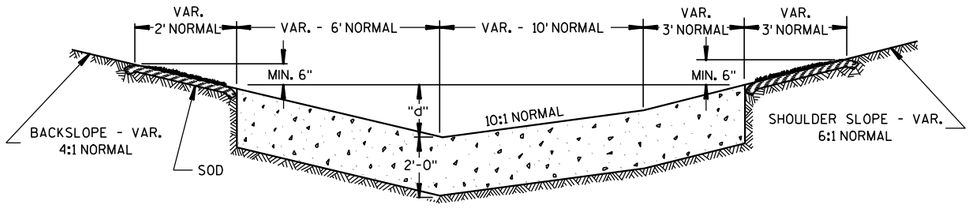
PLAN VIEW SHOWING SOD

GENERAL NOTES

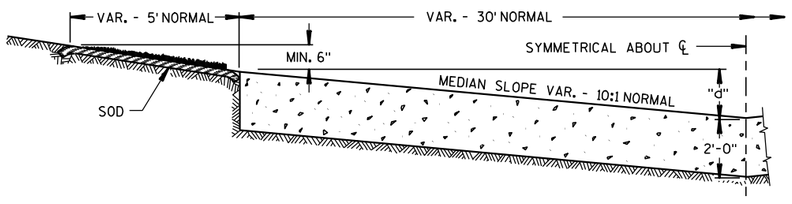
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

ALTERNATE DESIGNS FOR DITCH CHECKS, OF THE MATERIAL OR COMBINATION OF MATERIALS SHOWN HEREON, MAY BE USED UPON WRITTEN PERMISSION OF THE ENGINEER.

SOD STRIPS FOR DITCH CHECKS MAY BE PLACED EITHER TRANSVERSELY OR LONGITUDINALLY TO THE DIRECTION OF WATER FLOW.



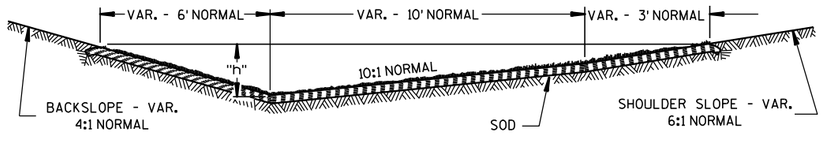
SIDE DITCH CROSS SECTION



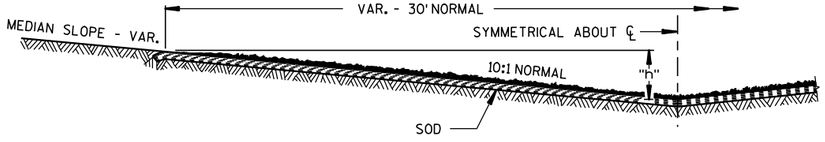
MEDIAN DITCH CROSS SECTION

"d" - THE MINIMUM DEPTH OF THE MASONRY PORTION OF THE DITCH CHECKS SHALL BE EQUAL TO THE MAXIMUM DEPTH OF FLOW. THE NORMAL "d" WILL BE 1'-6".

MASONRY AND SOD DITCH CHECKS



SIDE DITCH CROSS SECTION



MEDIAN DITCH CROSS SECTION

"h" - THE MINIMUM HEIGHT OF DITCH TO BE SODDED SHALL BE EQUAL TO THE MAXIMUM DEPTH OF FLOW PLUS 6". THE NORMAL "h" WILL BE 1'-6".

SOD DITCH CHECKS

SOD OR MASONRY AND SOD DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/7/71 — DATE

/S/ L.C. Harris — ACTING CHIEF DESIG

FHWA

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S.D.D. 8 E 4-2

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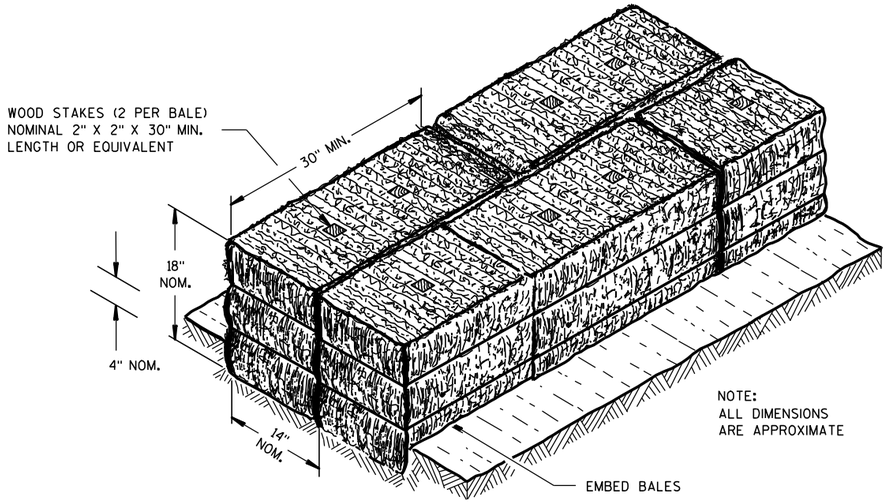
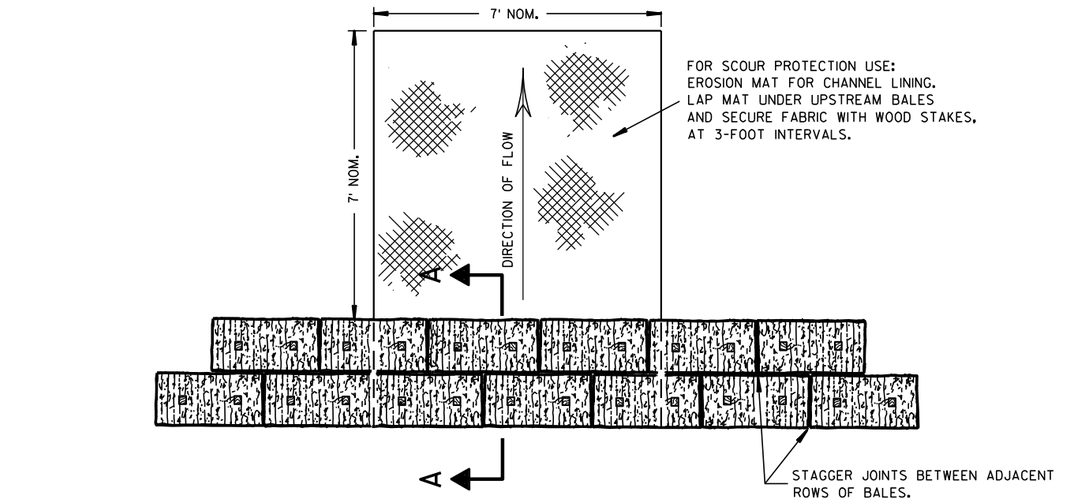
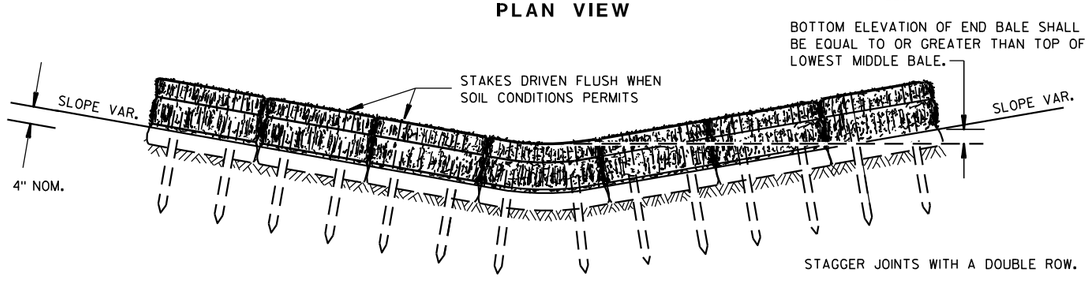
S.D.D. 8 E 4-2



SECTION A-A



PLAN VIEW



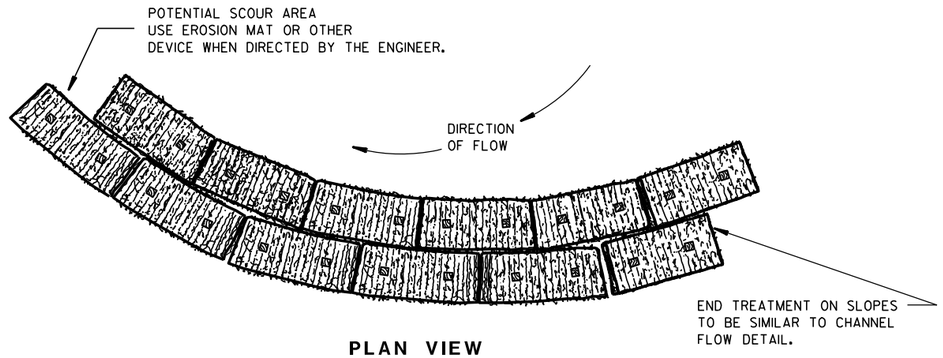
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

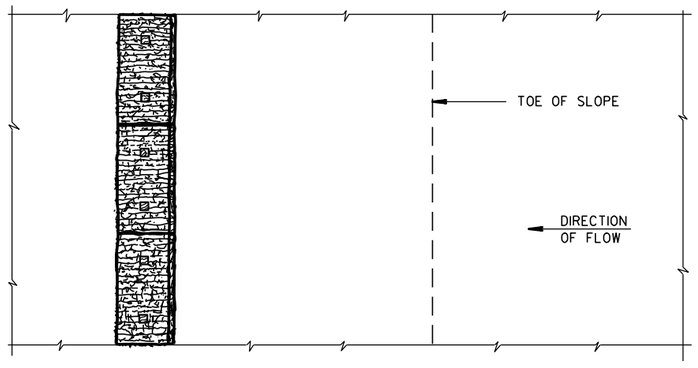
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

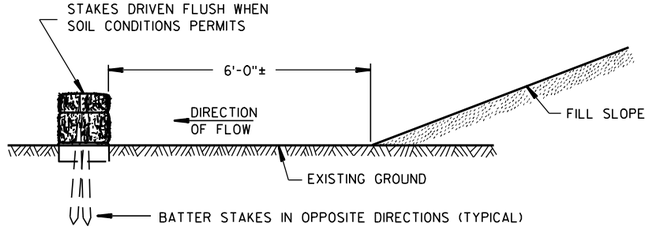


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

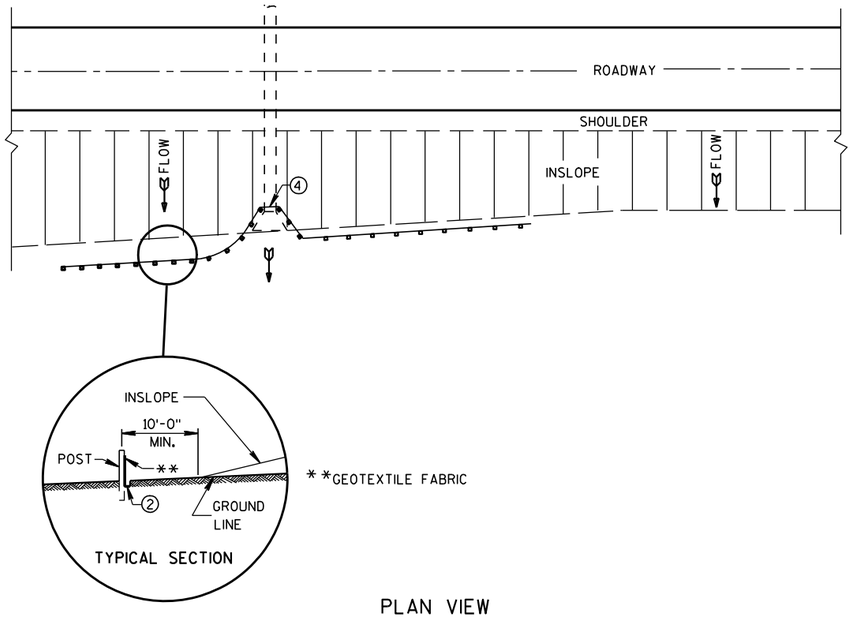
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02 DATE — /S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

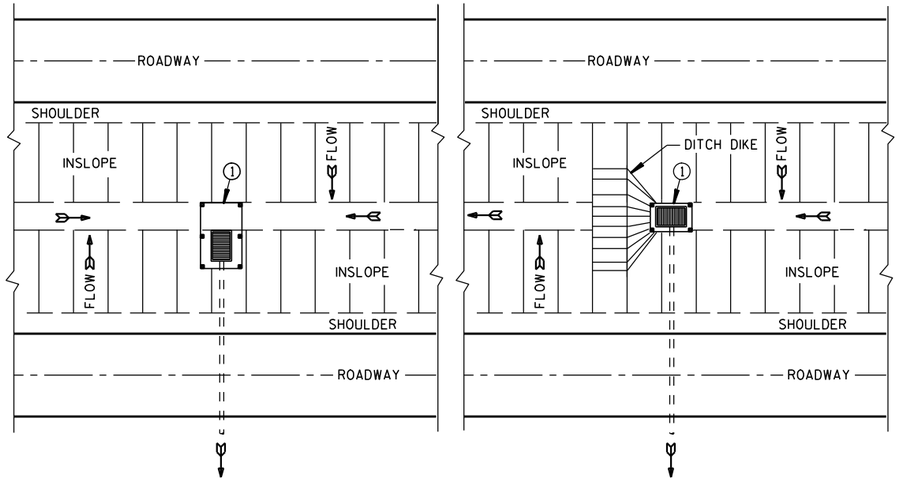
FHWA

6
S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

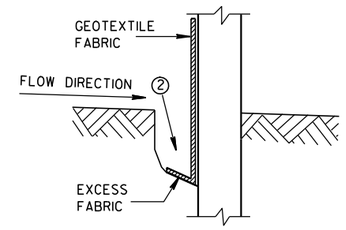
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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.

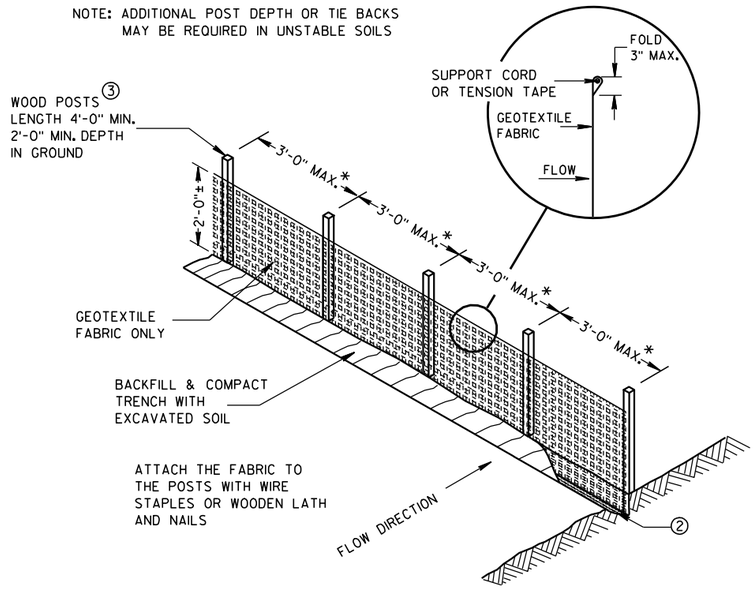
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

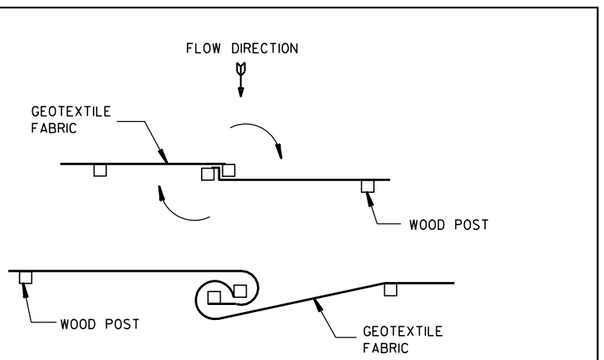
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



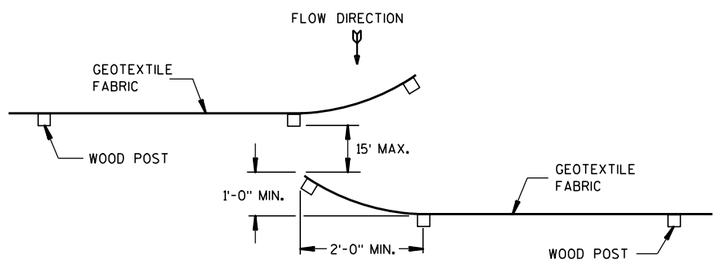
TRENCH DETAIL



SILT FENCE

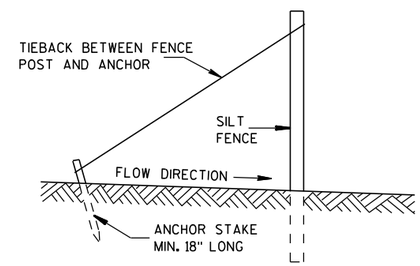


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 9-6

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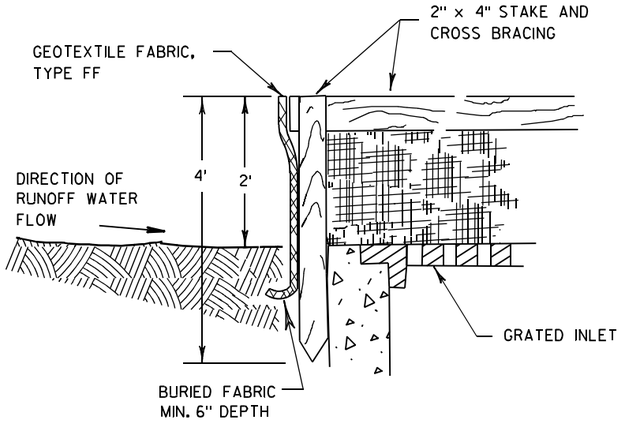
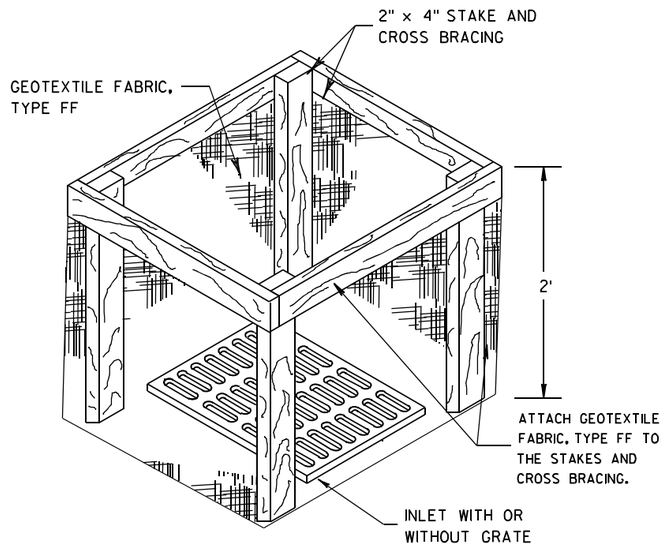
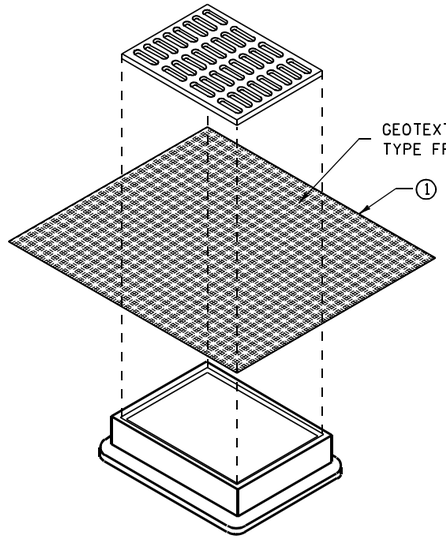
S.D.D. 8 E 9-6



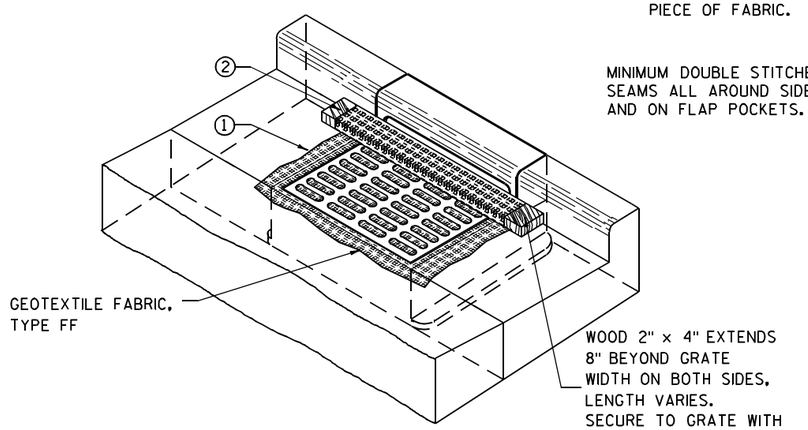


INLET PROTECTION, TYPE A

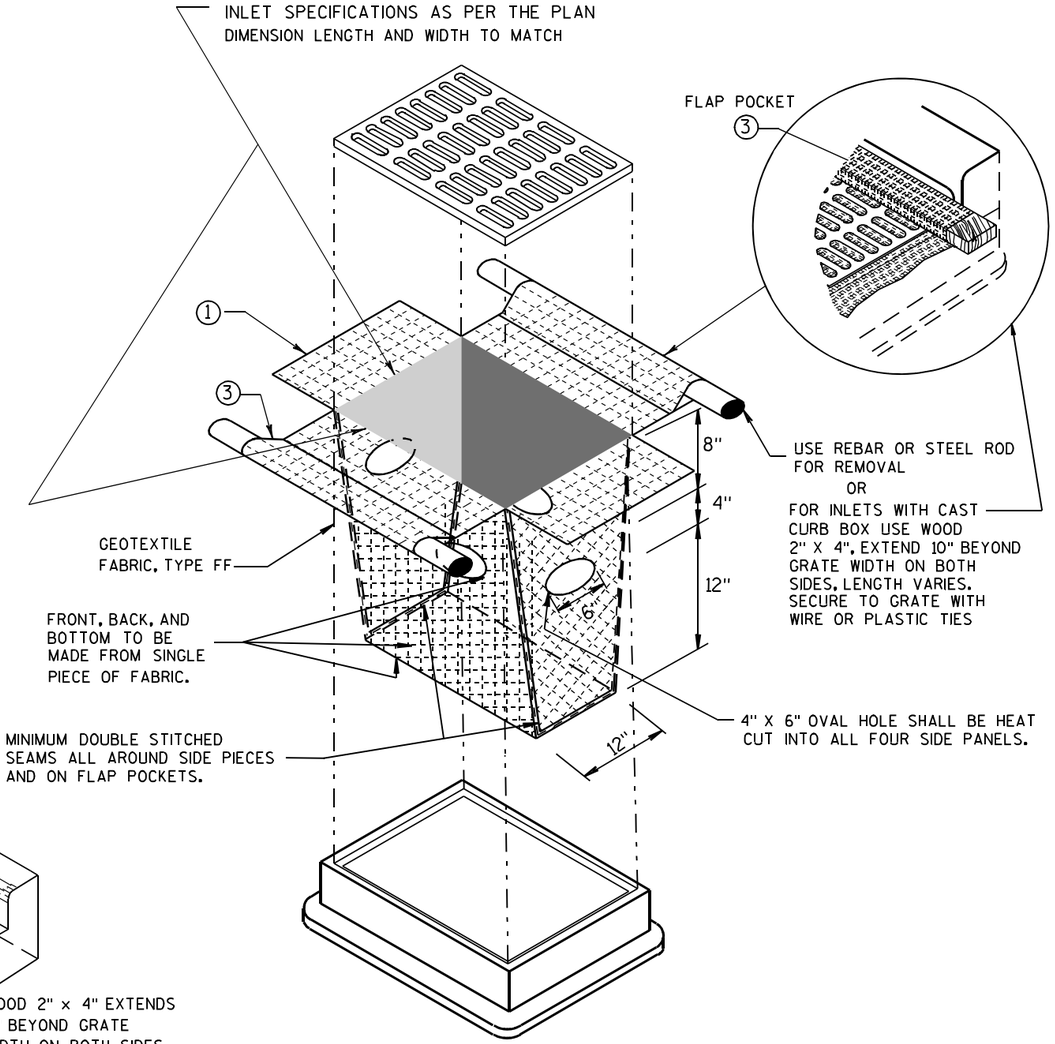


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

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.

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 A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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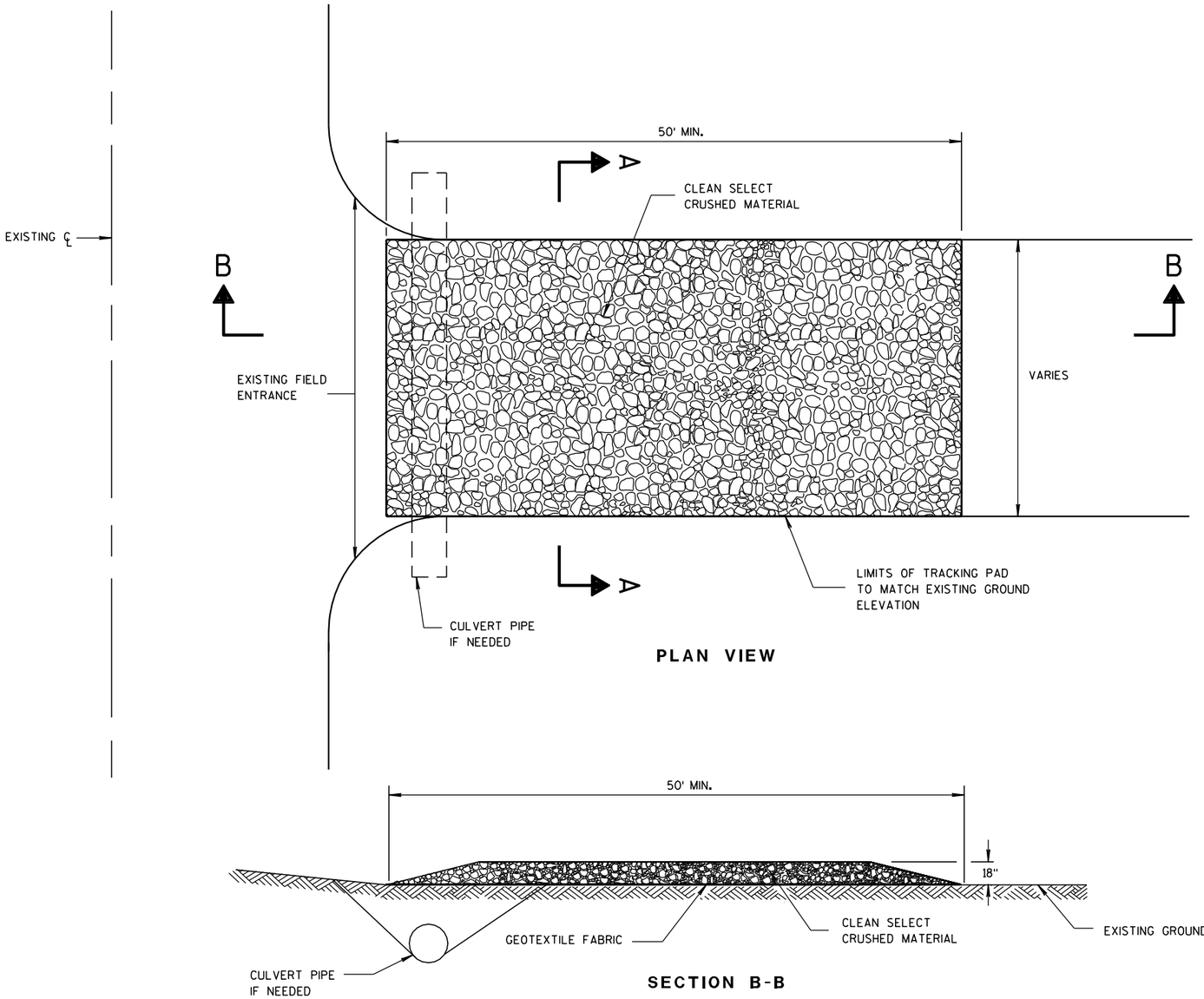
S.D.D. 8 E 10-2



PLAN VIEW

SECTION B-B

GENERAL NOTES

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

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

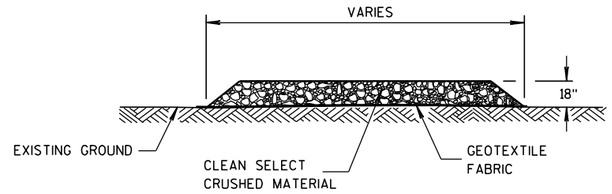
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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

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

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

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



SECTION A-A

TRACKING PAD

6

S.D.D. 8 E 14-1

TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/24/2011	/S/ Jerry H. Zoda	
DATE	ROADWAY STANDARDS ENGINEER	ENT

FHWA

6

S.D.D. 8 E 14-1

METAL APRON ENDWALLS

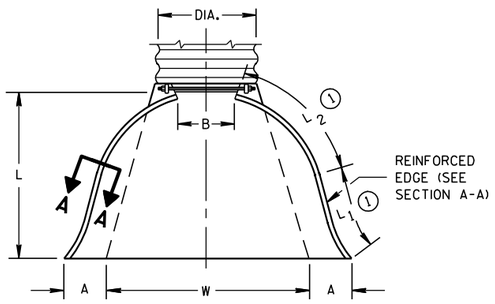
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

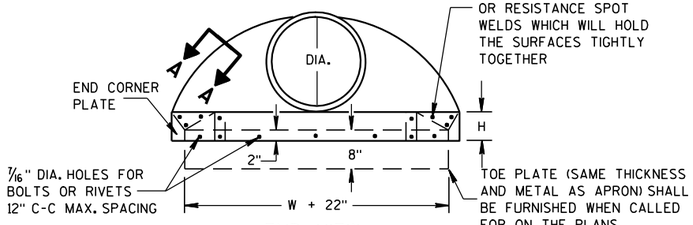
REINFORCED CONCRETE APRON ENDWALLS

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

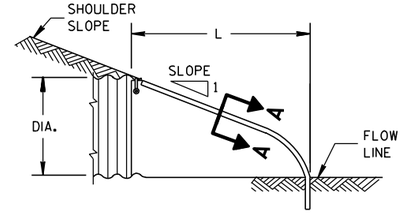
* MINIMUM
** MAXIMUM



PLAN VIEW

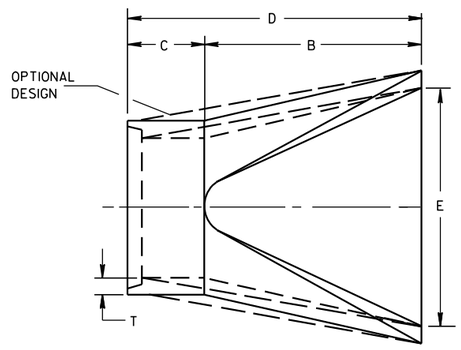


END VIEW

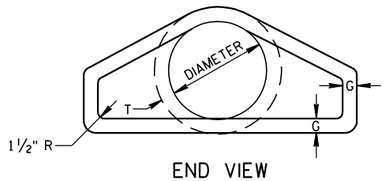


SIDE ELEVATION

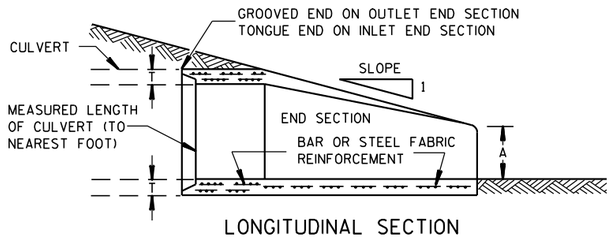
METAL ENDWALLS



PLAN

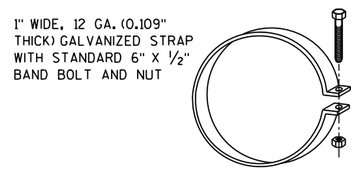


END VIEW



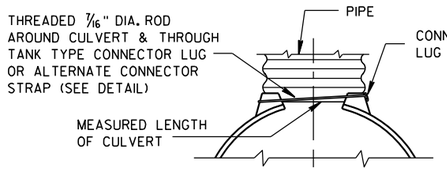
LONGITUDINAL SECTION

CONCRETE ENDWALLS

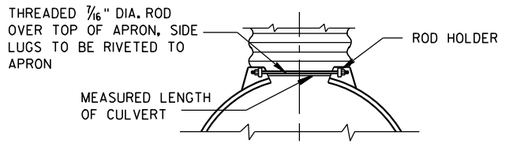


ALTERNATE FOR TYPE 1 CONNECTION

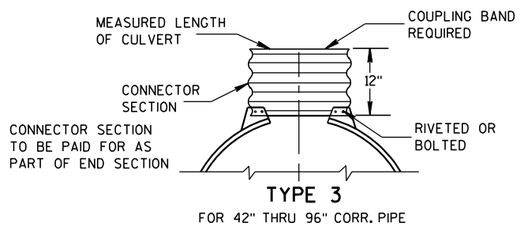
END SECTION CONNECTOR STRAP



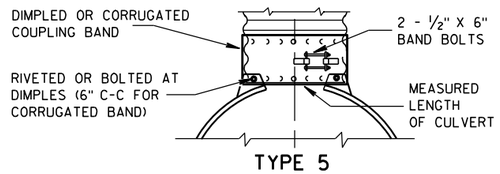
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

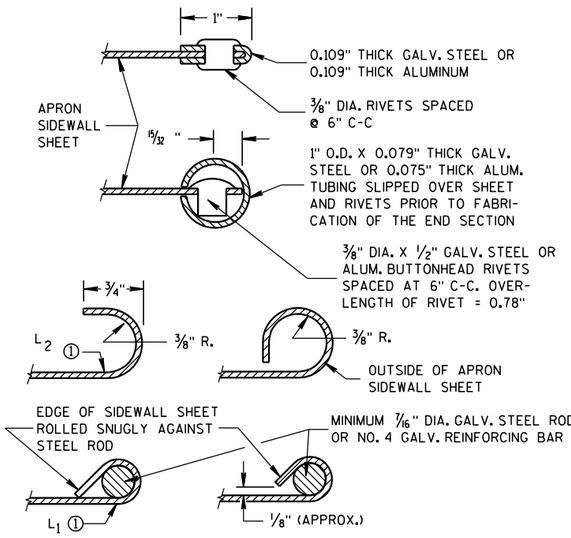
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

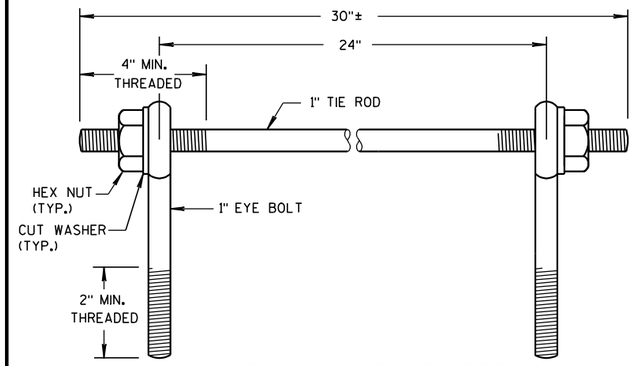
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

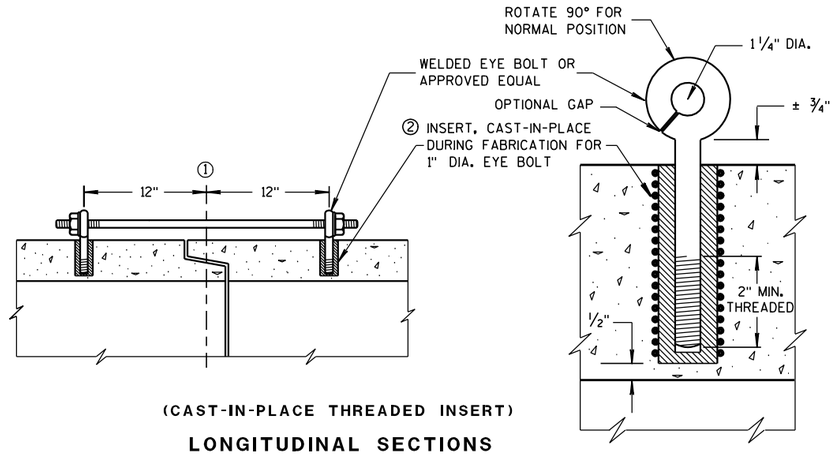
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

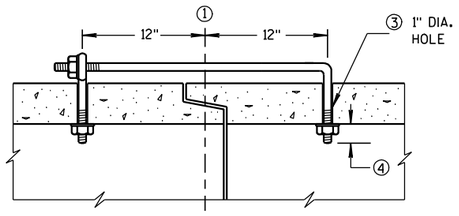
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

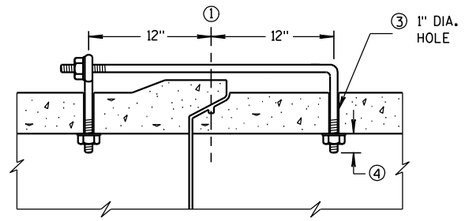
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

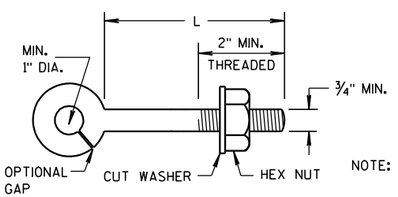


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

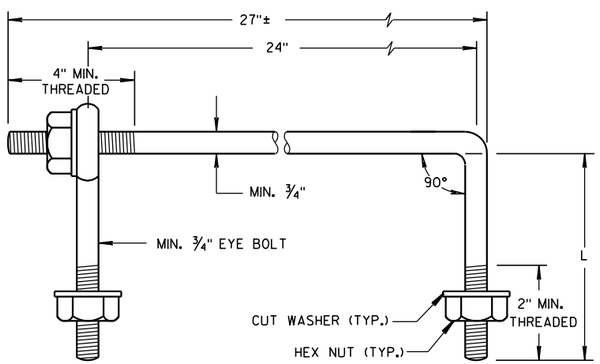
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

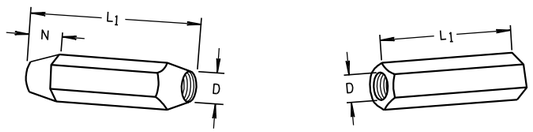
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

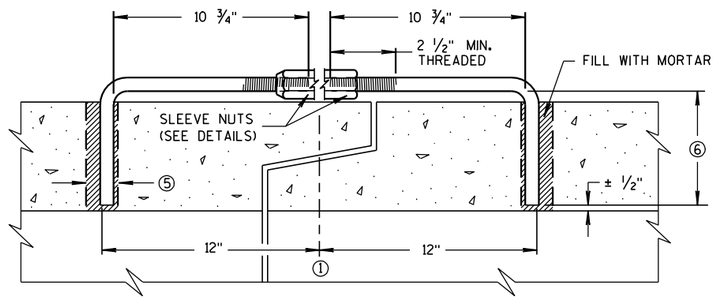
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

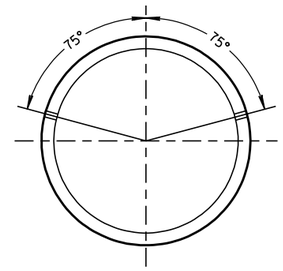
SLEEVE NUTS



LONGITUDINAL SECTION

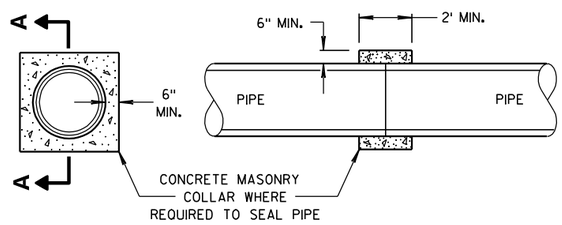
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 8 F 4-7

6

S.D.D. 8 F 4-7

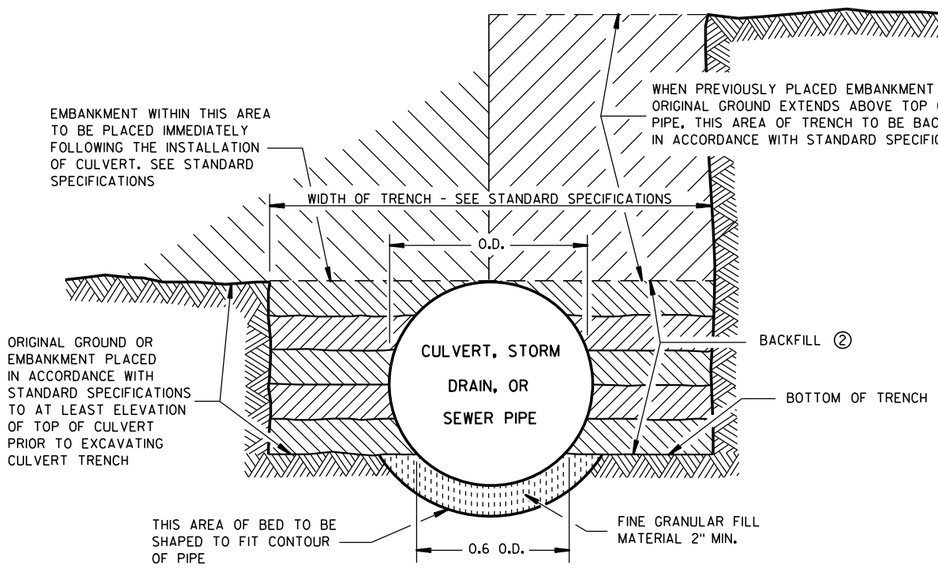
GENERAL NOTES

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

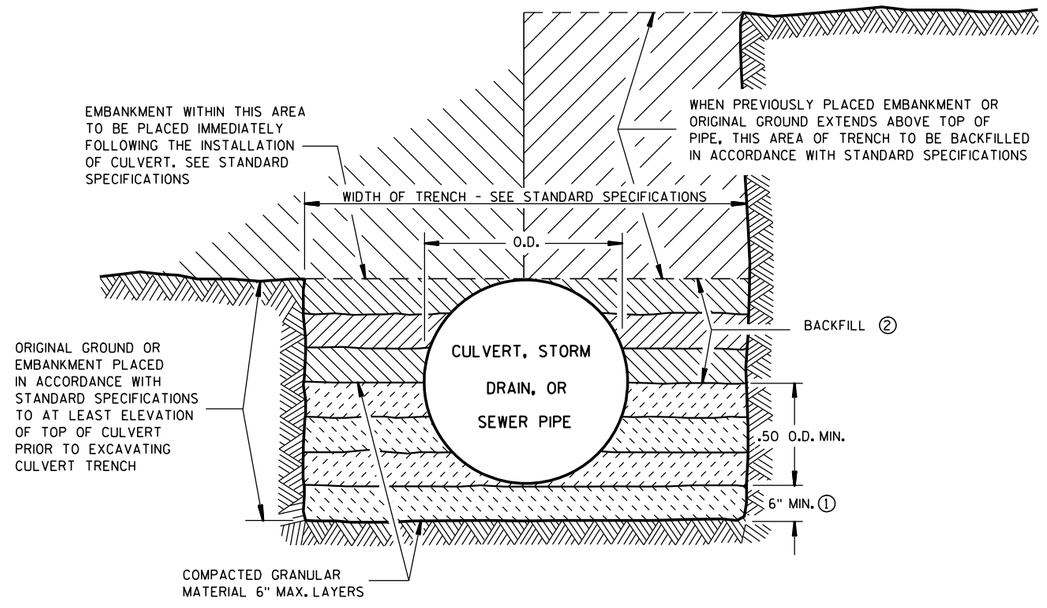
THE SHAPED SUBGRADE WITH GRANULAR FOUNDATION IS AN EQUAL ALTERNATE TO THE GRANULAR FOUNDATION EXCEPT WHERE ROCK IS ENCOUNTERED.

① WHERE ROCK, HARD PAN OR FRAGMENTED MATERIAL IS ENCOUNTERED, THE TRENCH SHALL BE EXCAVATED BELOW THE BOTTOM OF THE PIPE AN AMOUNT EQUAL TO ½ INCH PER FOOT OF PROPOSED EMBANKMENT ABOVE THE TOP OF THE PIPE, BUT NOT LESS THAN 6 INCHES.

② TRENCH SHALL BE BACKFILLED AS REQUIRED BY STANDARD SPECIFICATIONS; SECTION 520 FOR PIPE CULVERTS AND SECTION 607 FOR STORM SEWERS.



SHAPED SUBGRADE WITH GRANULAR FOUNDATION



GRANULAR FOUNDATION

CLASS "B" BEDDING

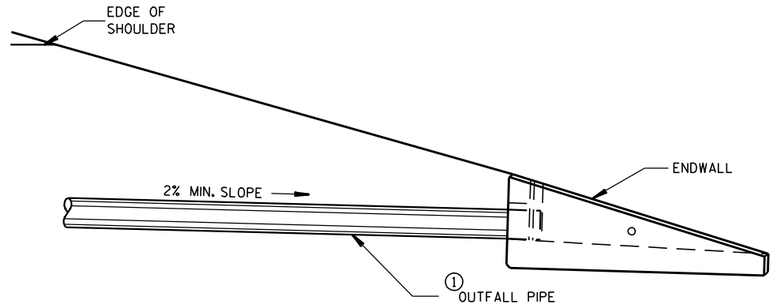
CLASS "B" BEDDING FOR CULVERT PIPE OR STORM SEWER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
4/7/83 DATE	/S/ D. L. Strand STATE DESIGN ENGINEER
FHWA	HWYS

6

S.D.D. 8 F 5-1

DIMENSIONS IN INCHES											
PIPE DIA.	A	B	C	D	E	F	G	H	J	L	Z
**4	6	12	5 1/4	9	8	32	36	11	2 3/8	6 1/2	4
6	8	14	7 1/4	11	10	42	44	13	3 5/8	8 1/2	6

**APRON ENDWALL FOR 6 INCH DIAMETER PIPE MAY BE SUBSTITUTED FOR THIS SIZE PROVIDED THE HOLE IN THE HEADWALL IS SIZED AND LOCATED TO CONFORM TO THE 4 INCH DIAMETER PIPE DIMENSIONS (C & J)



INSTALLATION DETAIL

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.

ALTERNATIVE DESIGNS WHICH PROVIDE EQUIVALENT CAPACITY AND STRENGTH MAY BE USED WHEN APPROVED BY THE ENGINEER. ENDWALL MAY BE EITHER PRECAST OR CAST-IN-PLACE CONCRETE.

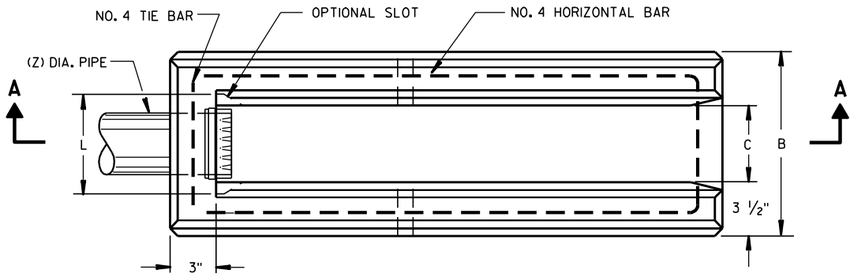
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

THE UPPERMOST POINT OF THE ENDWALL SHALL BE PLACED FLUSH WITH THE ROADWAY SLOPE. ADJACENT EMBANKMENT SLOPES SHALL BE SHAPED TO FIT THE SIDES AND TOE OF THE ENDWALL. EXACT PLACEMENT OF THE OUTFALL PIPE AND ENDWALL SHALL BE DETERMINED BY THE ENGINEER TO MATCH THE ELEVATIONS AND FLOW DIRECTION OF THE ROADSIDE DITCH.

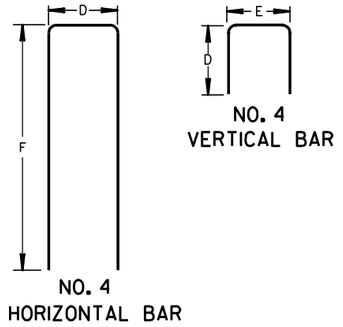
① THE OUTFALL PIPE UNDERDRAIN AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION FOR POLY (VINYL CHORIDE) (PVC) PLASTIC DRAIN, WASTE AND VENT PIPE AND FITTINGS, ASTM DESIGNATION: D 2665, SCHEDULE 40 PVC OR THE STANDARD SPECIFICATION FOR TYPE PSM POLY (VINYL CHORIDE) (PVC) SEWER PIPE AND FITTINGS, ASTM DESIGNATION: D 3034, TYPE PSM SDR 23.5 PVC SEWER PIPE, ALL JOINTS SHALL BE SOLVENT WELDED.

THE OUTFALL PIPE INCLUDING ALL FITTINGS AND THE RODENT SHIELD SHALL BE MEASURED AND PAID FOR AS PIPE UNDERDRAIN UNPERFORATED.

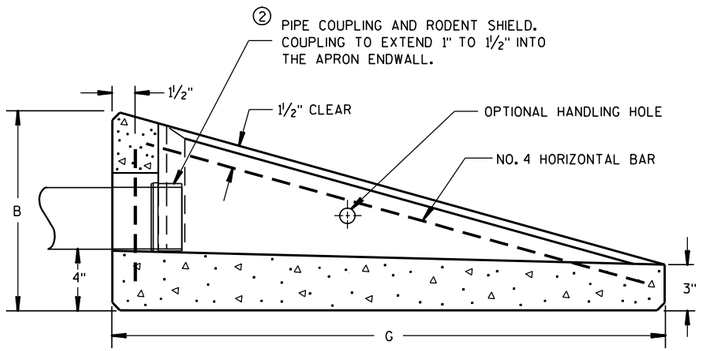
② THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



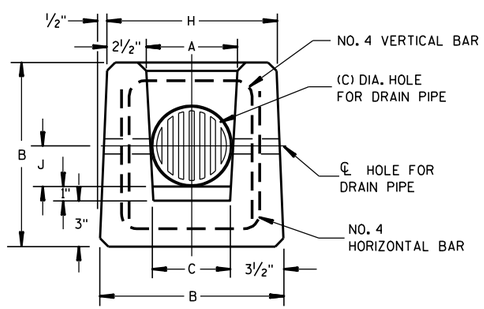
PLAN VIEW



BAR STEEL REINFORCEMENT DETAILS

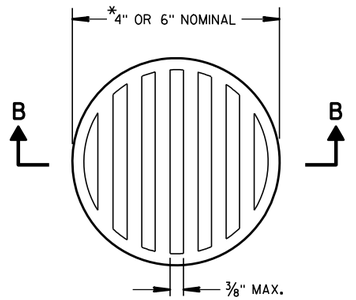


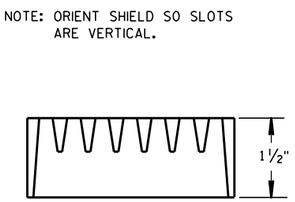
SECTION A-A



END VIEW

CONCRETE APRON ENDWALL FOR UNDERDRAIN





SECTION B-B

② RODENT SHIELD

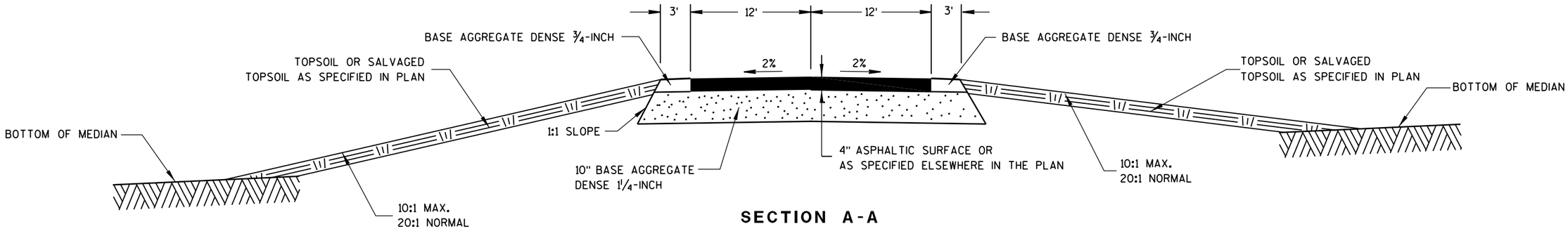
*NOTE: DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN

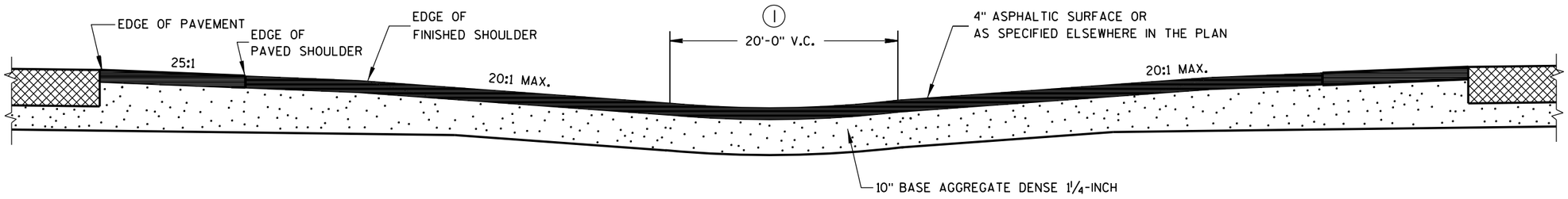
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/10/98 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

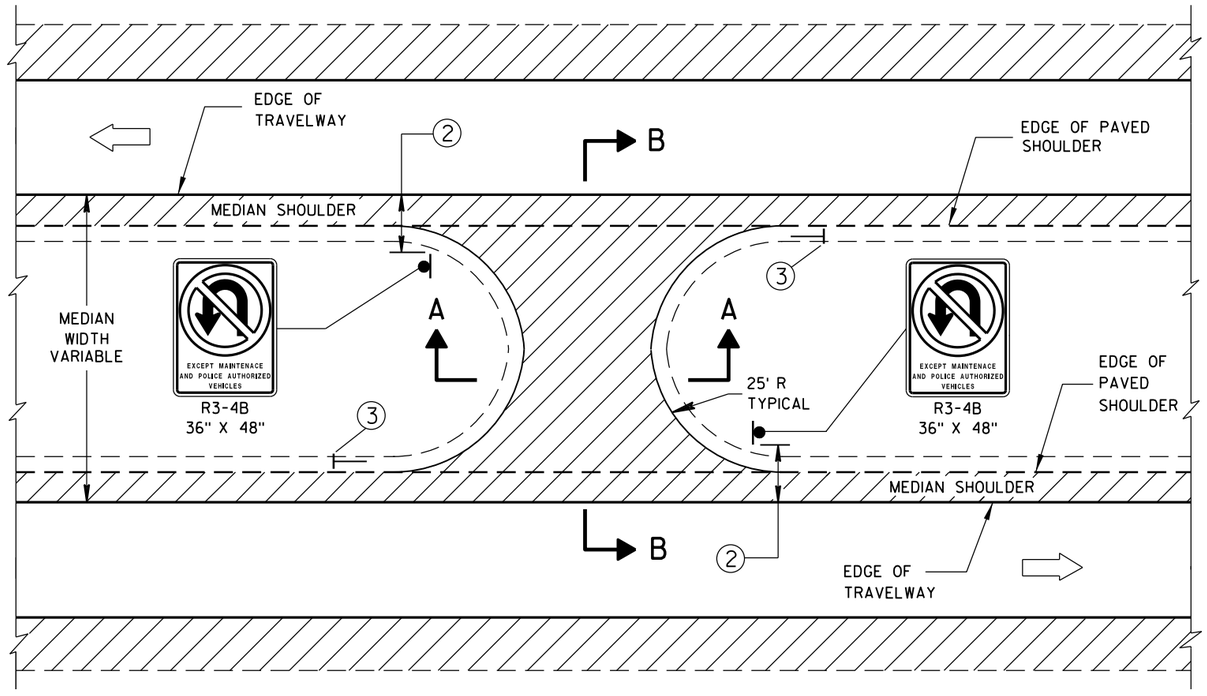
6
S.D.D. 8 F 6-4



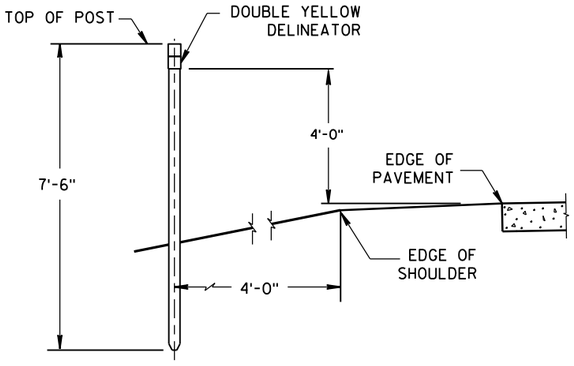
SECTION A-A



SECTION B-B



PLAN VIEW



DOUBLE YELLOW DELINEATOR INSTALLATION

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

/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

6

S.D.D. 11 A 1-5

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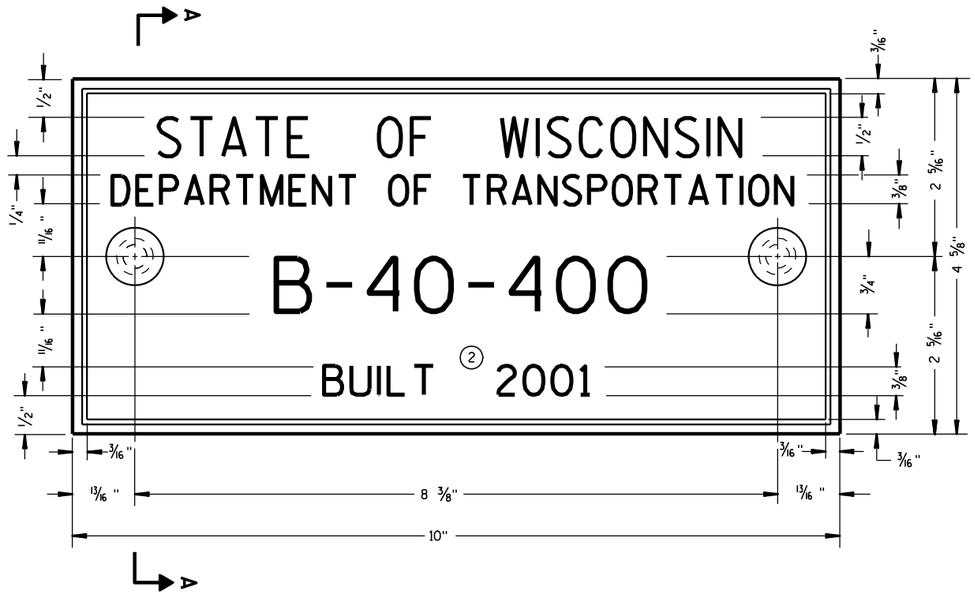
S.D.D. 11 A 1-5



TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

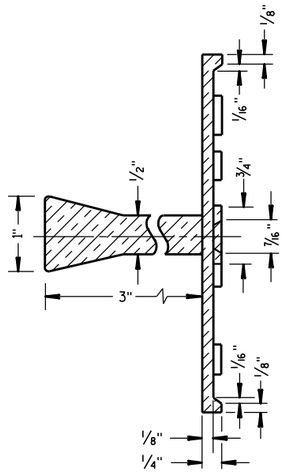
GENERAL NOTES

NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

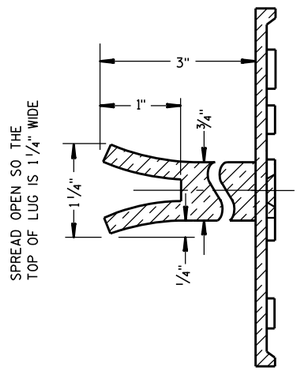
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

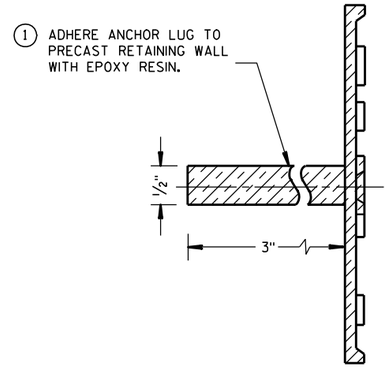
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

FHWA

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S.D.D. 12 A 3-10

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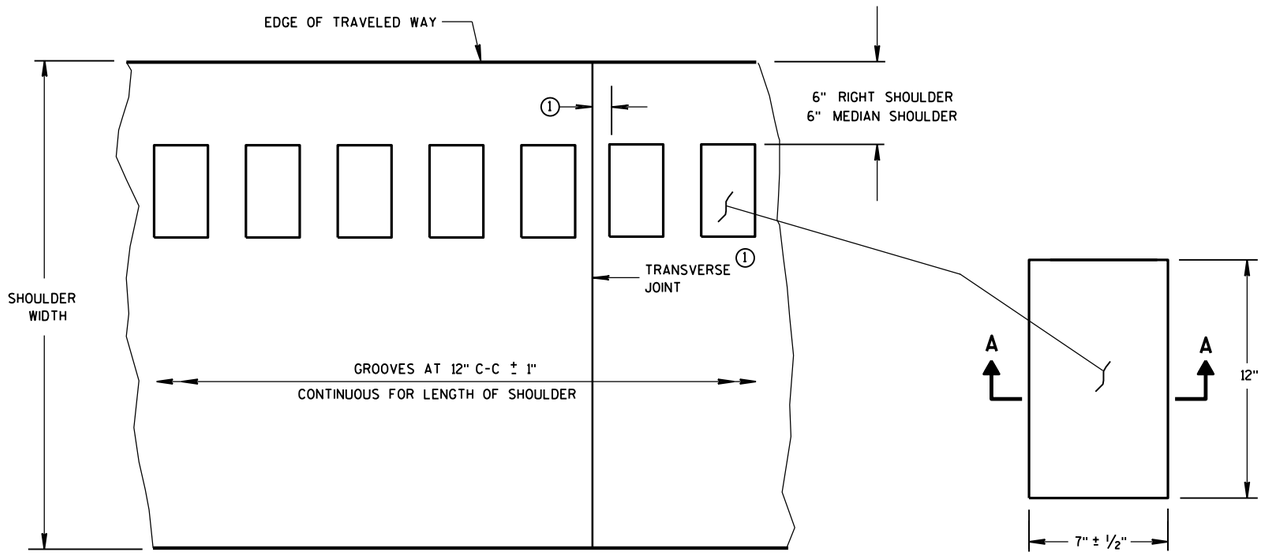
S.D.D. 12 A 3-10



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

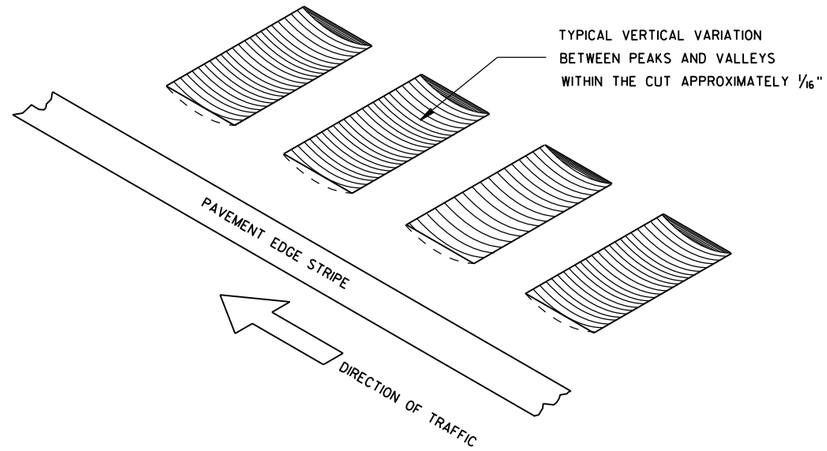
GENERAL NOTES

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

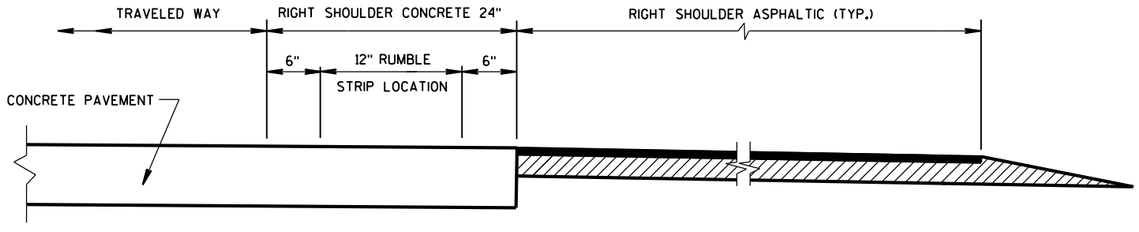
RUMBLE STRIPS ON EXPRESSWAYS

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

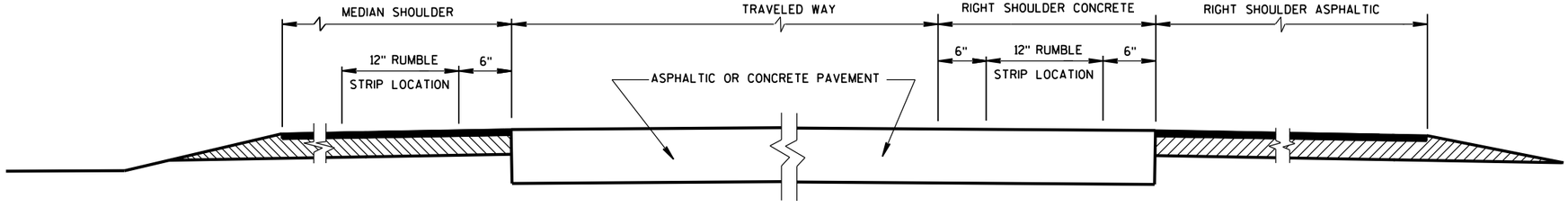
(1) CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



ISOMETRIC



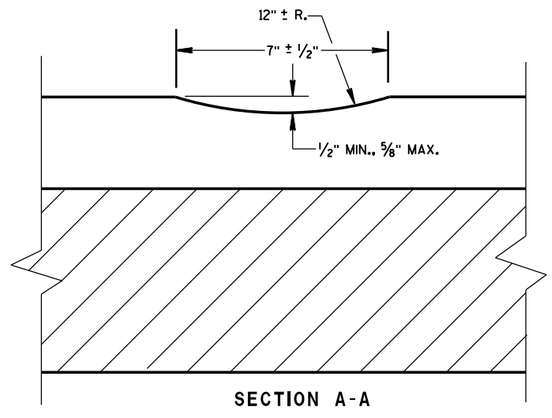
SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION VIEW

TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS IN RURAL DIVIDED HIGHWAYS

(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 13 A 5-5a

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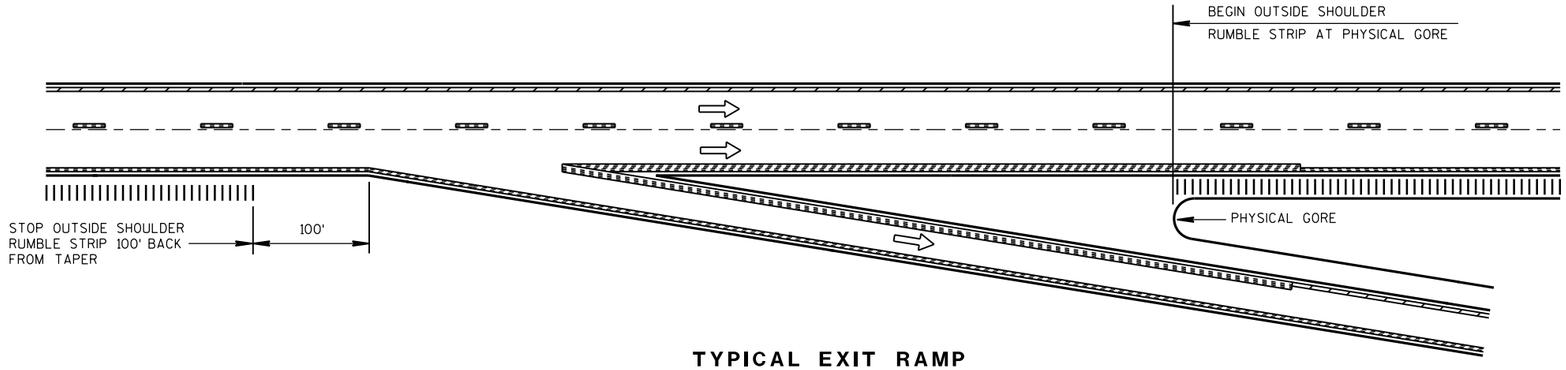
S.D.D. 13 A 5-5a



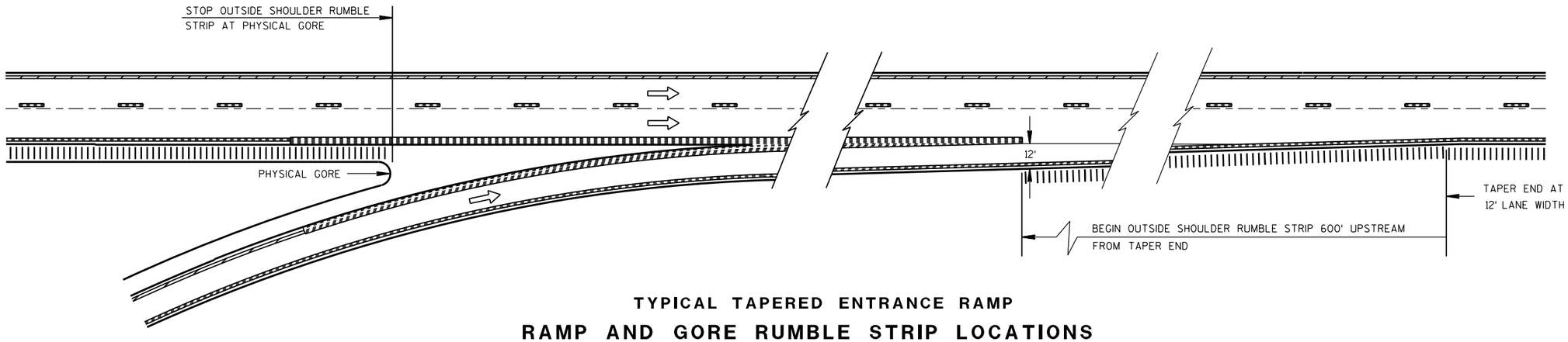
TYPICAL EXIT RAMP

NOTES:

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

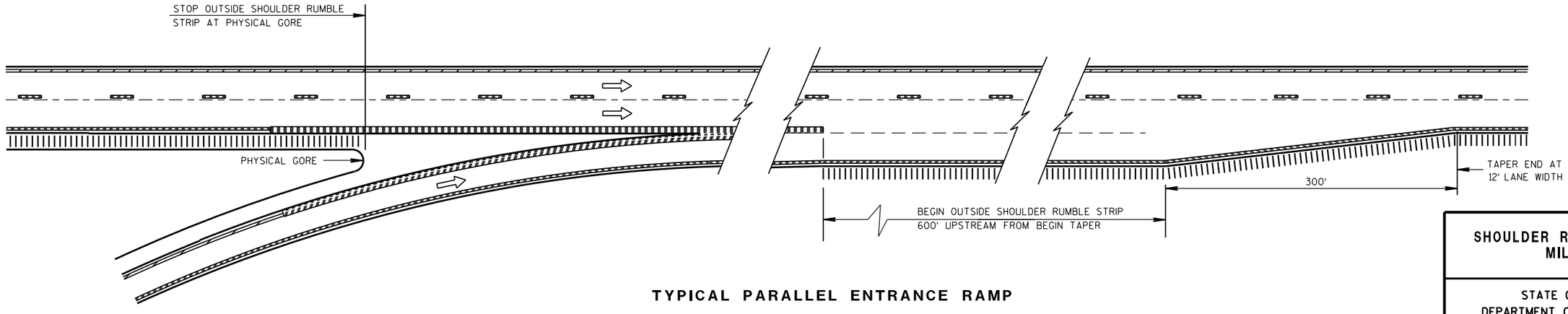
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS

SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12/17/2012
DATE

/S/ Jerry H. Zoga
ROADWAY STANDARDS ENGINEER

FHWA

6

S.D.D. 13 A 5-5b

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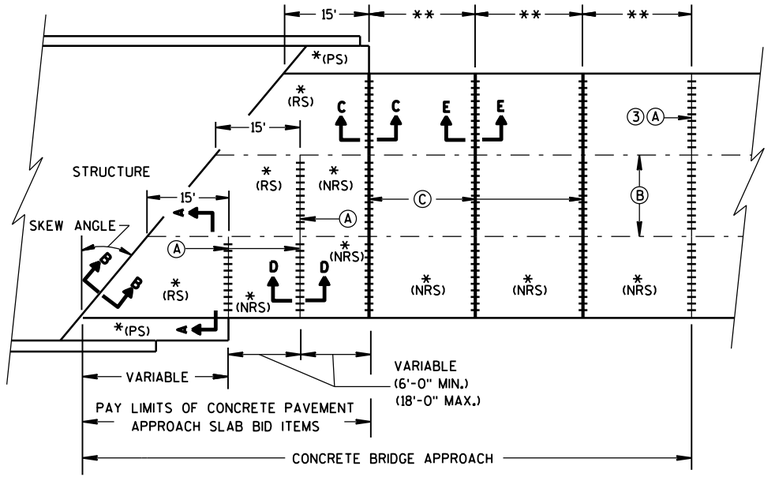
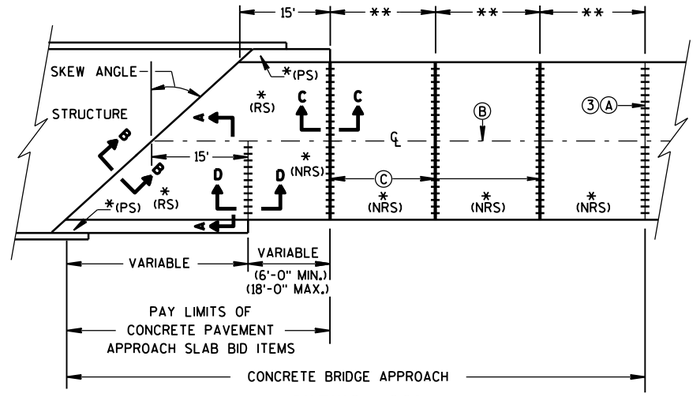
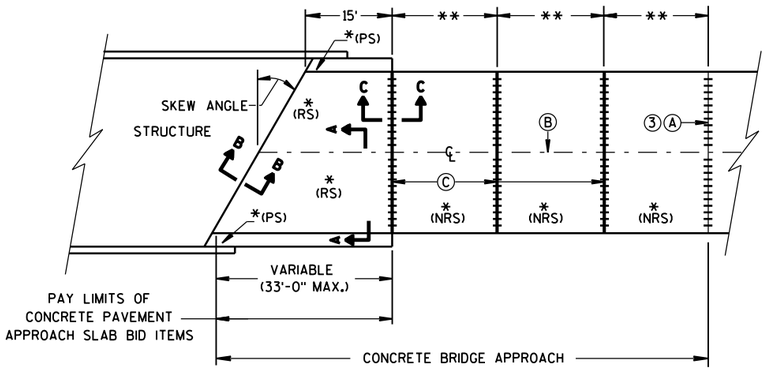
S.D.D. 13 A 5-5b



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



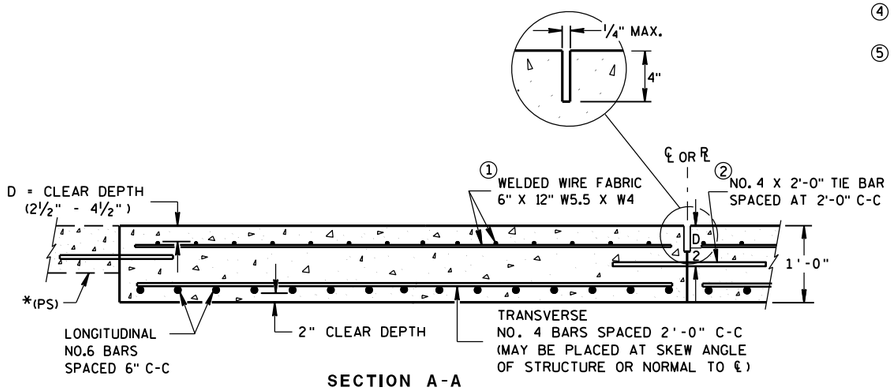
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

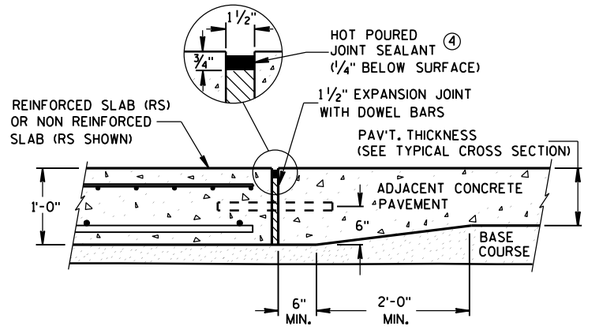
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN (SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

**STANDARD TRANSVERSE JOINT SPACING (SEE SDD 13C4, SDD 13C11, & SDD 13C13)
***STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11, & SDD 13C13)

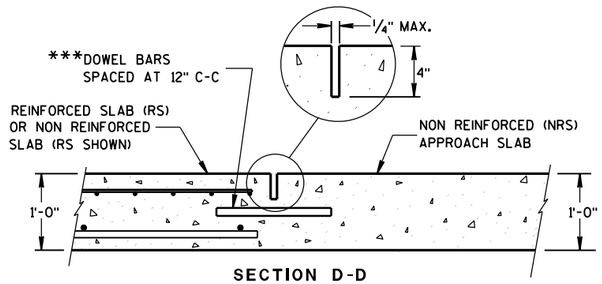
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) STANDARD LONGITUDINAL JOINT AND TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



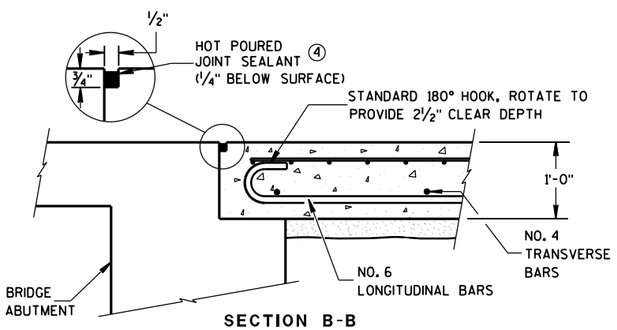
SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

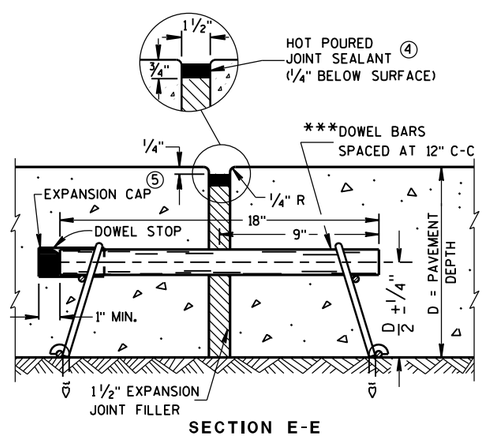
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

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



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



SECTION E-E
EXPANSION JOINT

CONCRETE BRIDGE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2014 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE
FHWA

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S.D.D. 13 B 2-7a

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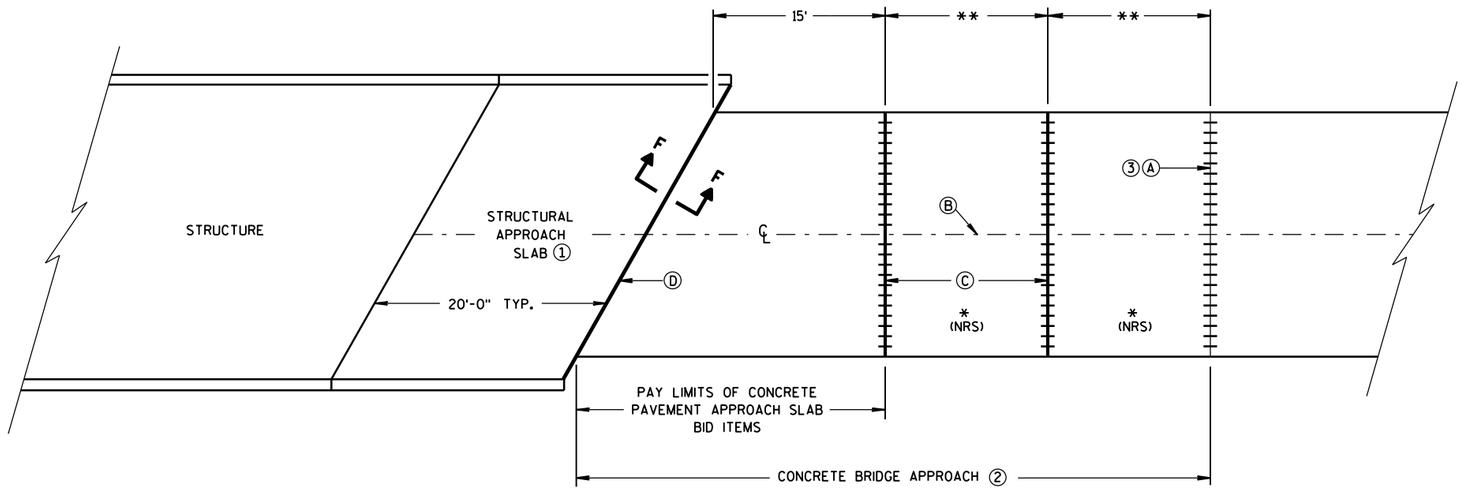
S.D.D. 13 B 2-7a



BRIDGE APPROACHES

GENERAL NOTES

ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE BRIDGE APPROACH.

① CONFORM TO APPLICABLE BRIDGE MANUAL STANDARD DRAWINGS FOR *STRUCTURAL APPROACH SLABS* (SEE CHAPTER 12 - ABUTMENTS).

② CONFORM TO SHEET (a) OF THIS SET FOR *CONCRETE BRIDGE APPROACH* DETAILS, WITH ONE EXCEPTION — WHEN CONSTRUCTING A *CONCRETE BRIDGE APPROACH* NEXT TO A *STRUCTURAL APPROACH SLAB*, AS SHOWN IN THE DETAIL DRAWING, THE *CONCRETE BRIDGE APPROACH* WILL ONLY HAVE TWO EXPANSION JOINTS; THE THIRD EXPANSION JOINT IS AT THE END OF THE *STRUCTURAL APPROACH SLAB*.

③ DO NOT DOWEL A CONTRACTION JOINT THAT ABUTS AN HMA PAVEMENT.

*(NRS) = NON-REINFORCED CONCRETE SLAB

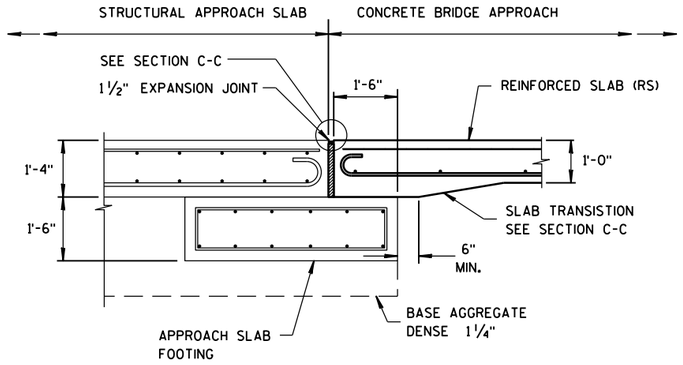
**STANDARD TRANSVERSE JOINT SPACING (SEE SDD 13C4, SDD 13C11, & SDD 13C13)

Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄

Ⓑ STANDARD LONGITUDINAL JOINT AND TIE BARS.

Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄

Ⓓ 1½" EXPANSION JOINT (NO DOWELS)



SECTION F-F

FOOTING DETAIL

STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

STRUCTURAL APPROACH SLAB AND CONCRETE BRIDGE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2014 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE
FHWA
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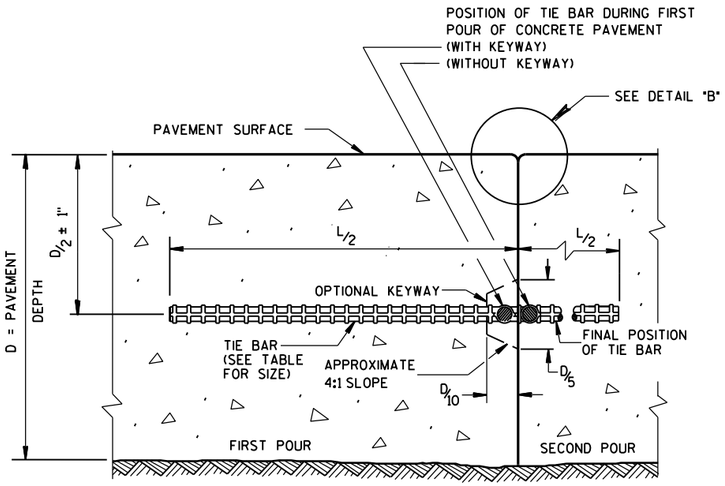
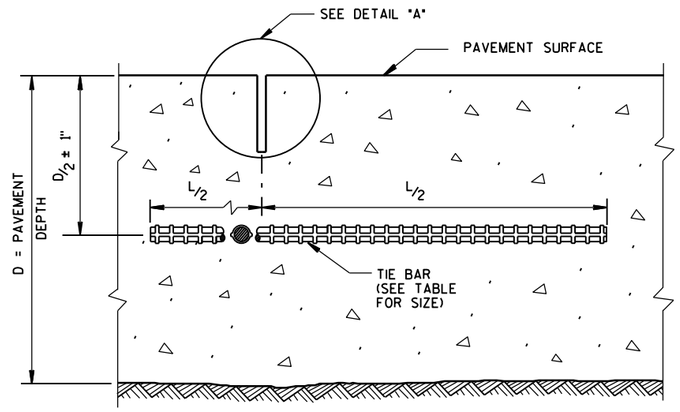
S.D.D. 13 B 2-7b



CONSTRUCTION JOINT



SAWED JOINT

GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

PLAN VIEW

SECTION A-A

LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT

DETAIL "A"

DETAIL "B"

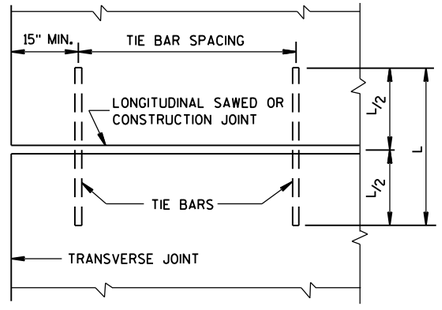
DETAIL "C"

TIE BAR TABLE

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

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

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



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE

/S/ Peter Kemp, P.E.
PAVEMENT SUPER

FHWA

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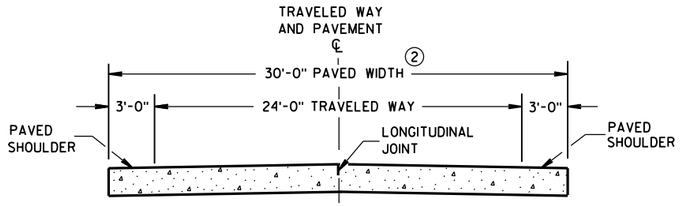
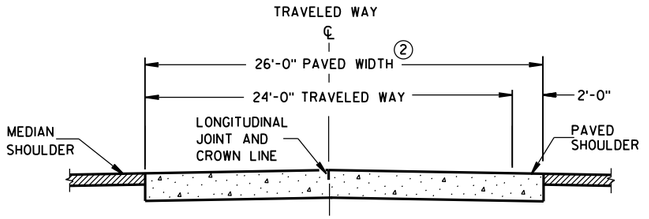
S.D.D. 13 C 1-18

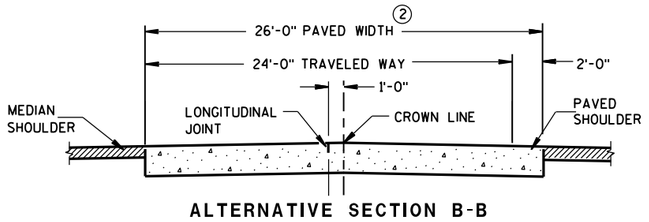


SECTION A-A ①

TWO-LANE TWO-WAY HIGHWAY



SECTION B-B



ALTERNATIVE SECTION B-B ①

DIVIDED HIGHWAY

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT SEAL OR FILL CONTRACTION JOINTS.

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

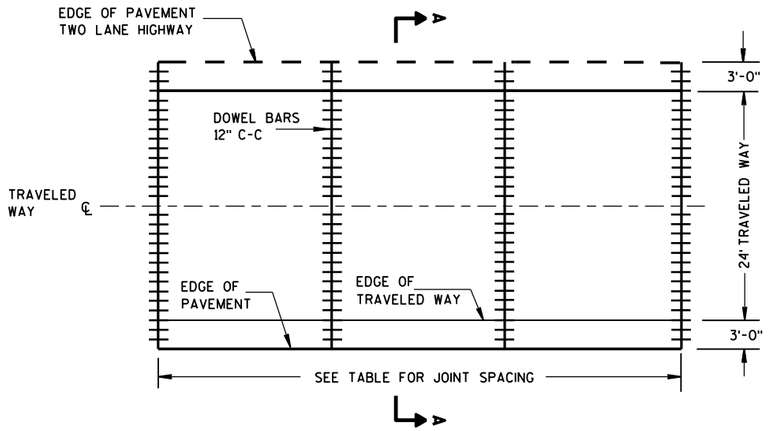
LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

① REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.

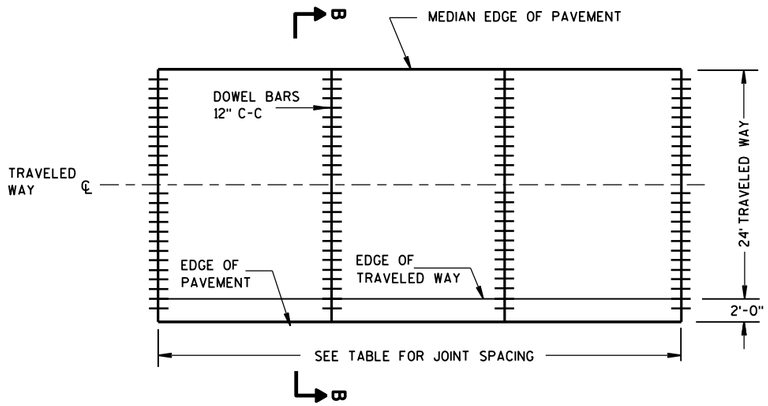
② MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'



CONTRACTION JOINT LAYOUT
FOR TWO-LANE TWO-WAY HIGHWAY



CONTRACTION JOINT LAYOUT
FOR DIVIDED HIGHWAY

RURAL DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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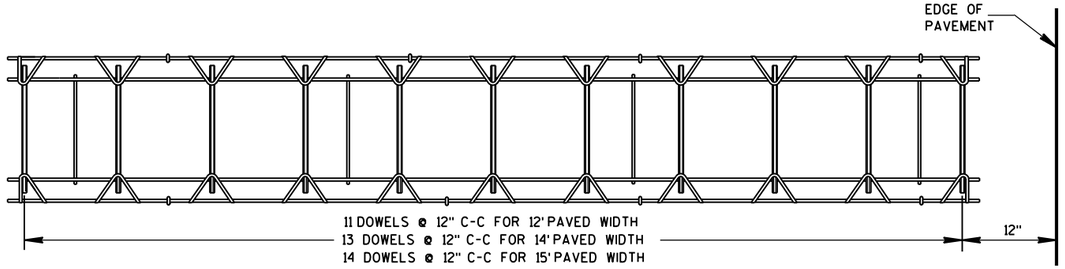
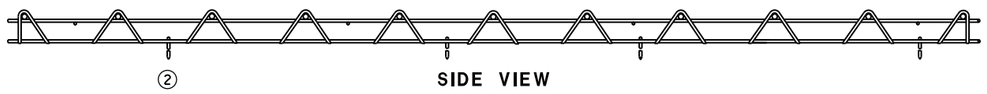
S.D.D. 13 C 11-11a



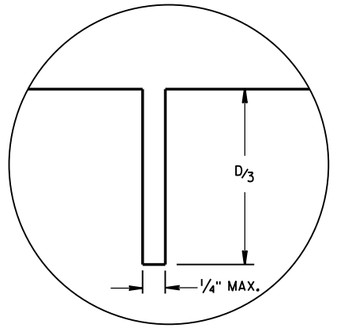
PLAN VIEW



SIDE VIEW

(NORMAL TO CENTERLINE)

CONTRACTION JOINT DOWEL ASSEMBLY ①



JOINT DETAIL

GENERAL NOTES

① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.

② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

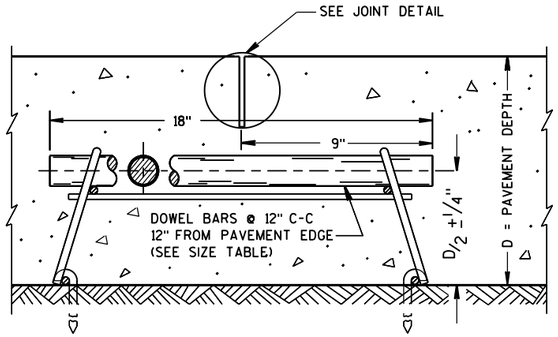
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.

④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

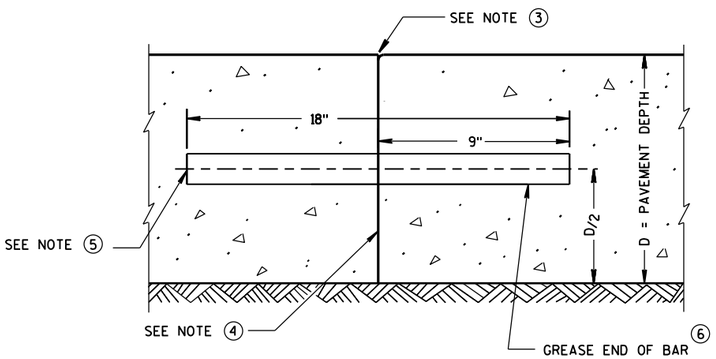
⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.

⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

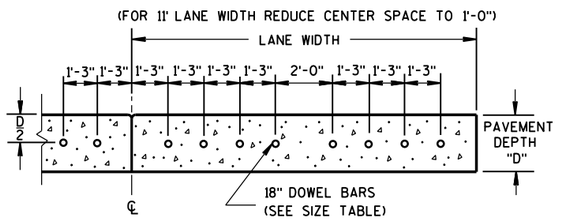
⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS 1/8-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦

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S.D.D. 13 C 11-11b

RURAL DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/3/2013 DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DE ...NEER

FHWA

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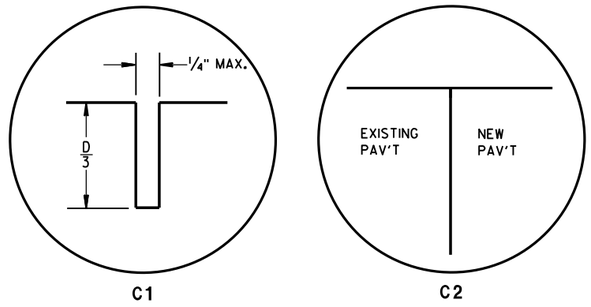
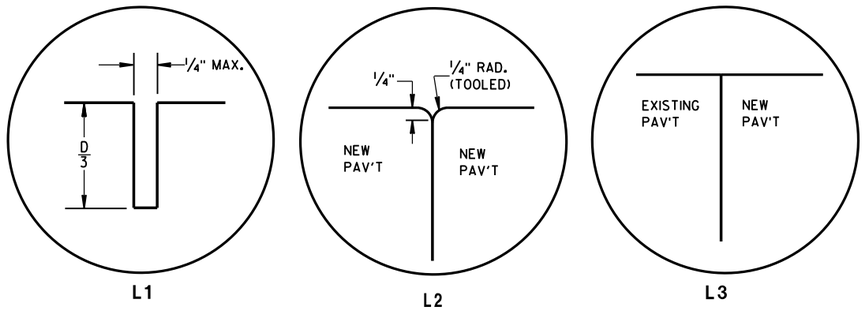
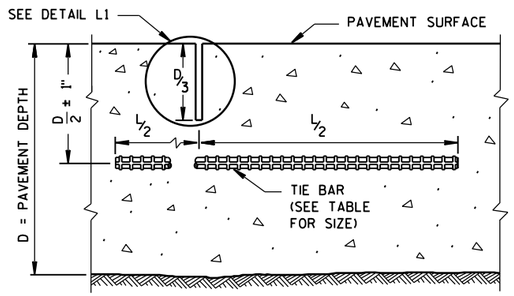
S.D.D. 13 C 11-11b



TRANSVERSE JOINTS

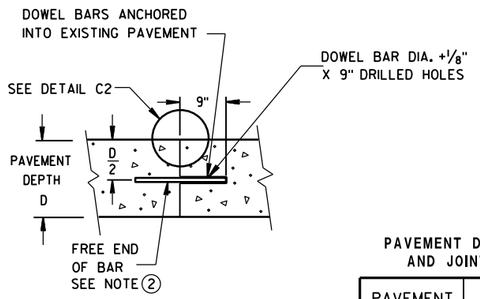


LONGITUDINAL JOINTS



SECTION C-C

SAWED JOINT



SECTION D-D

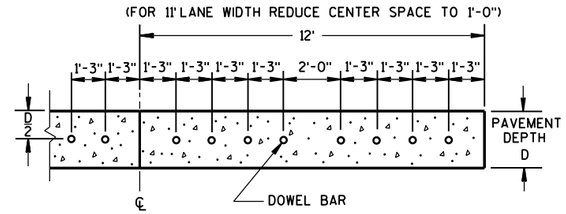
GENERAL NOTES

ANCHOR TIE BARS AND DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY.

PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM AN EXISTING TRANSVERSE JOINT OR THE EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

(1) INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

(2) APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



SECTION E-E

SPACING OF DOWEL BARS ANCHORED INTO EXISTING PAVEMENT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

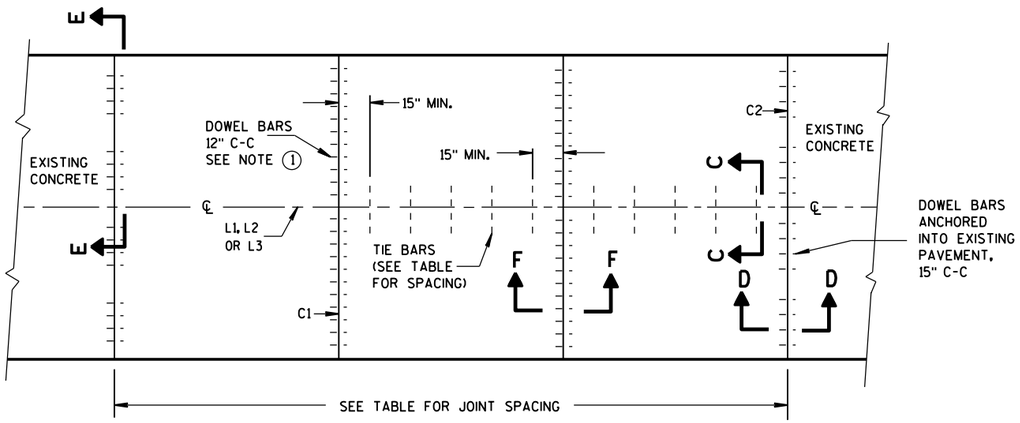
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5½", 6, 6 ½"	NONE	12'
7, 7 ½"	1"	14'
8, 8 ½"	1 ¼"	15'
9, 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

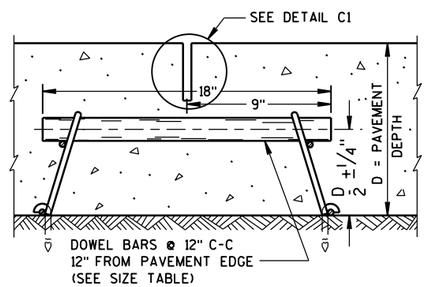
* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

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



PLAN VIEW

CONCRETE BASE CONTRACTION JOINT LOCATIONS



SECTION F-F

CONTRACTION JOINT

CONCRETE BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

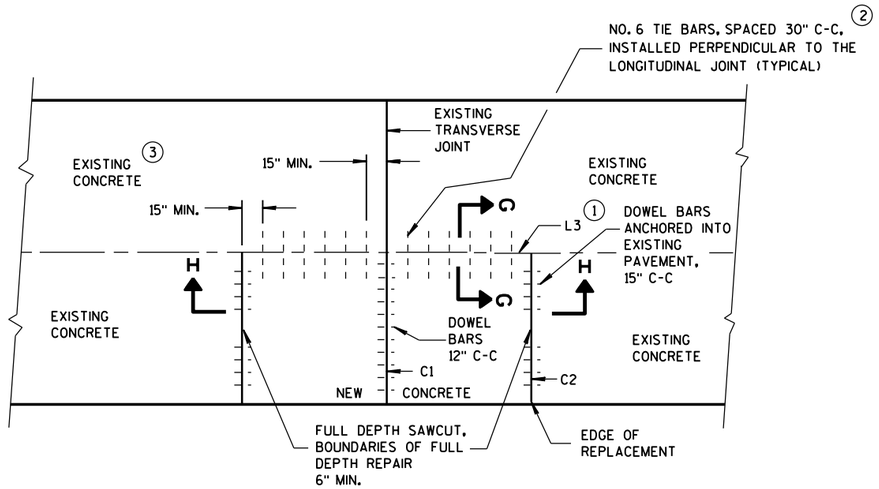
6
S.D.D. 13 C 15-6a

GENERAL NOTES

(1) USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) AT THE LONGITUDINAL JOINT IN LIEU OF TIE BARS FOR SINGLE LANE CONCRETE BASE REPAIRS UP TO 15 FEET IN LENGTH.

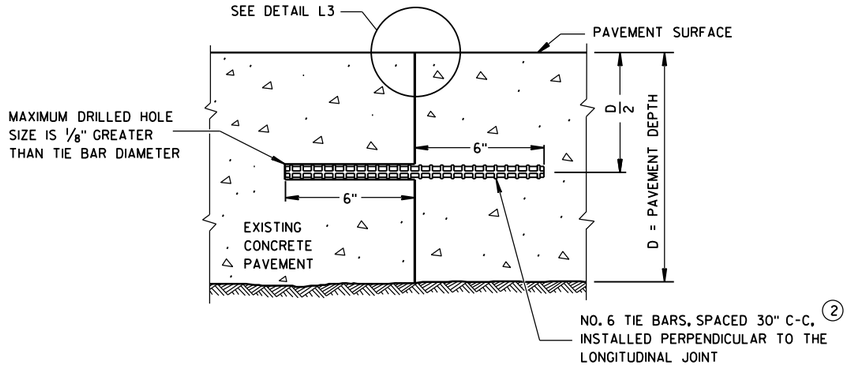
(2) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(3) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.



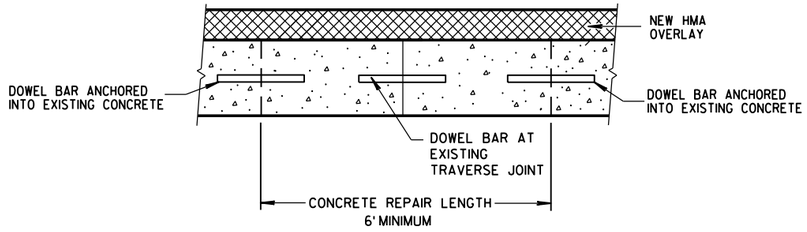
PLAN VIEW

SINGLE LANE CONCRETE BASE REPAIR



SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT



SECTION H-H

CONCRETE BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPEI
FHWA

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S.D.D. 13 C 15-6b

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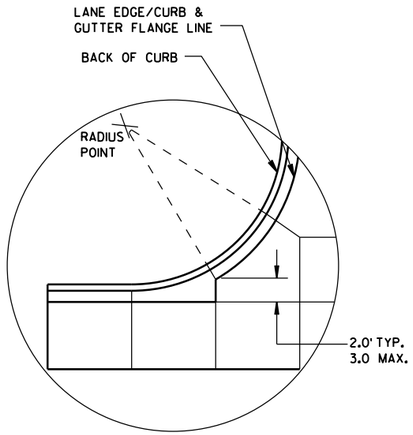
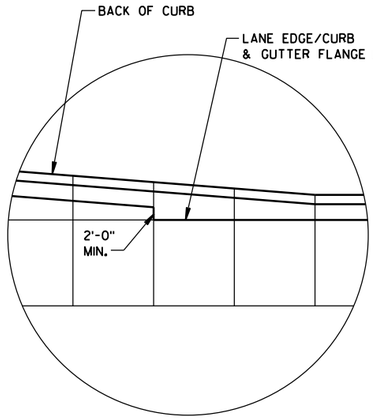
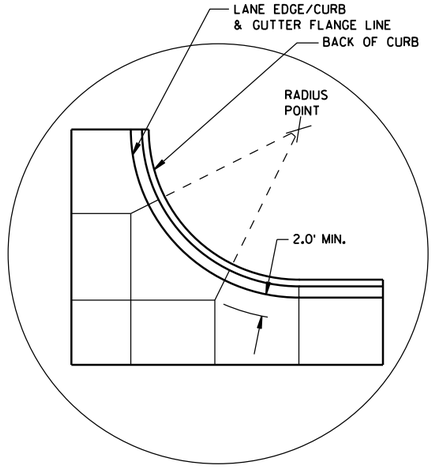
S.D.D. 13 C 15-6b



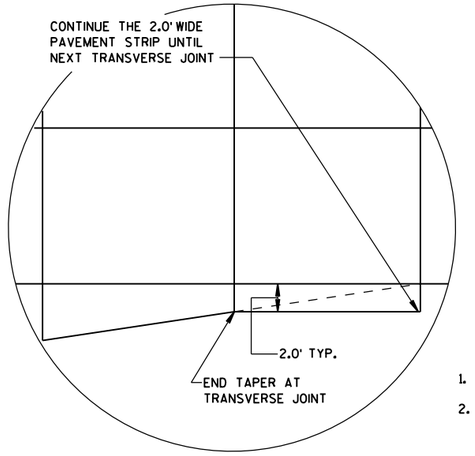
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G. MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.

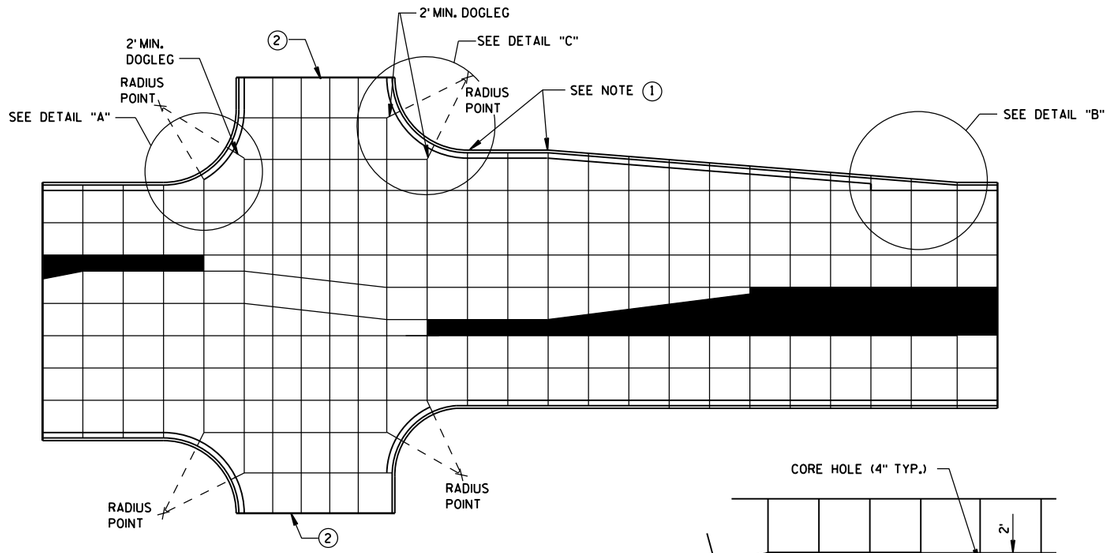
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.

AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

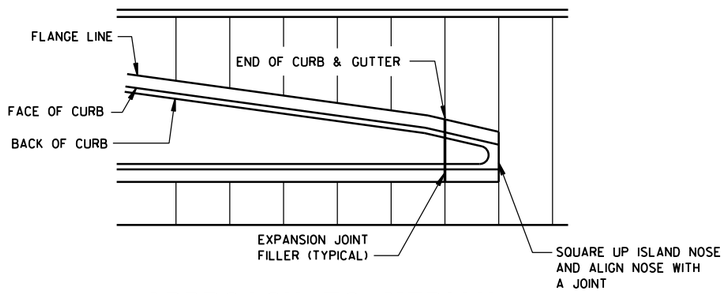
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



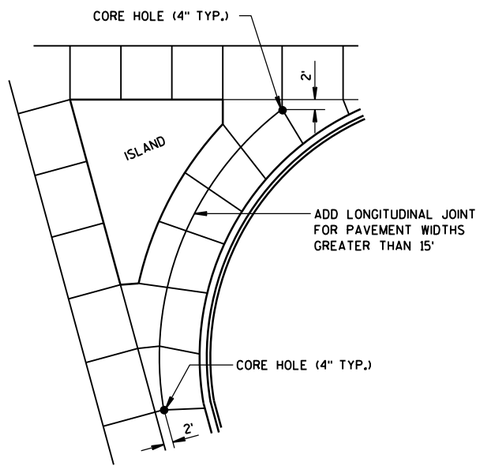
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

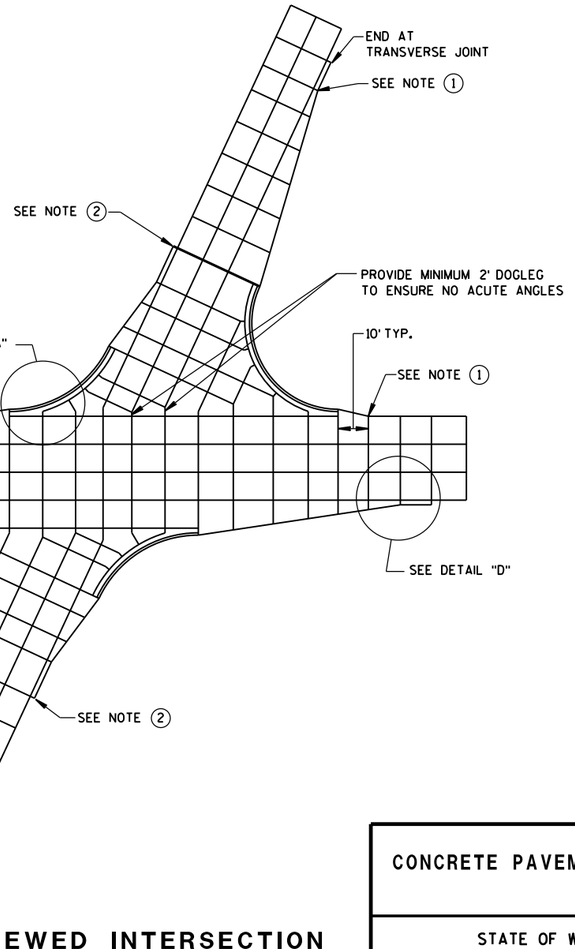
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'



APPROACH TO MEDIAN



LARGE RIGHT TURN



SKEWED INTERSECTION

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 130

6

S.D.D. 13 C 18-3a

6

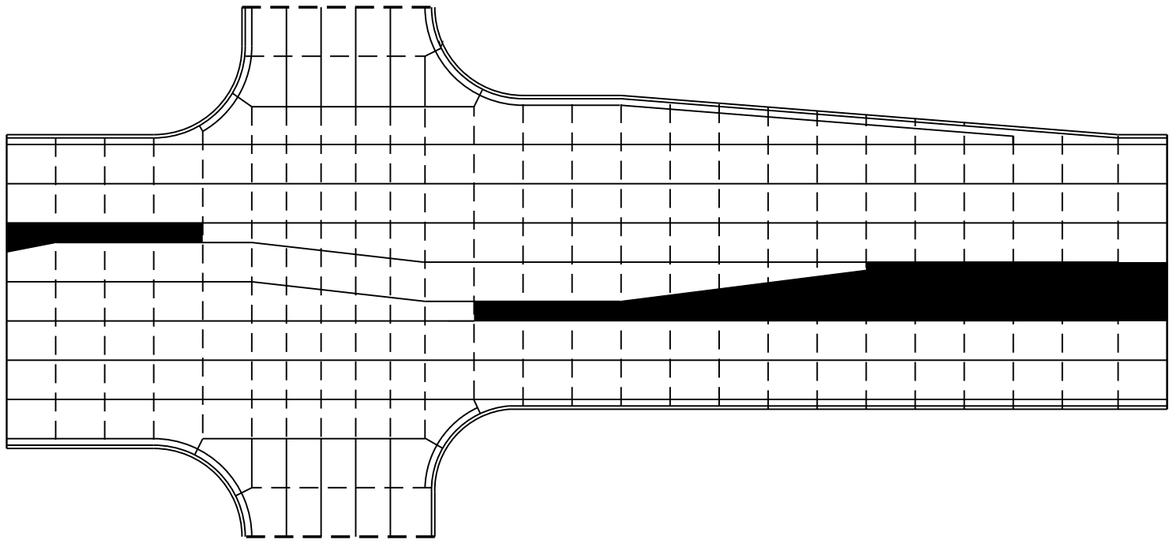
S.D.D. 13 C 18-3a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

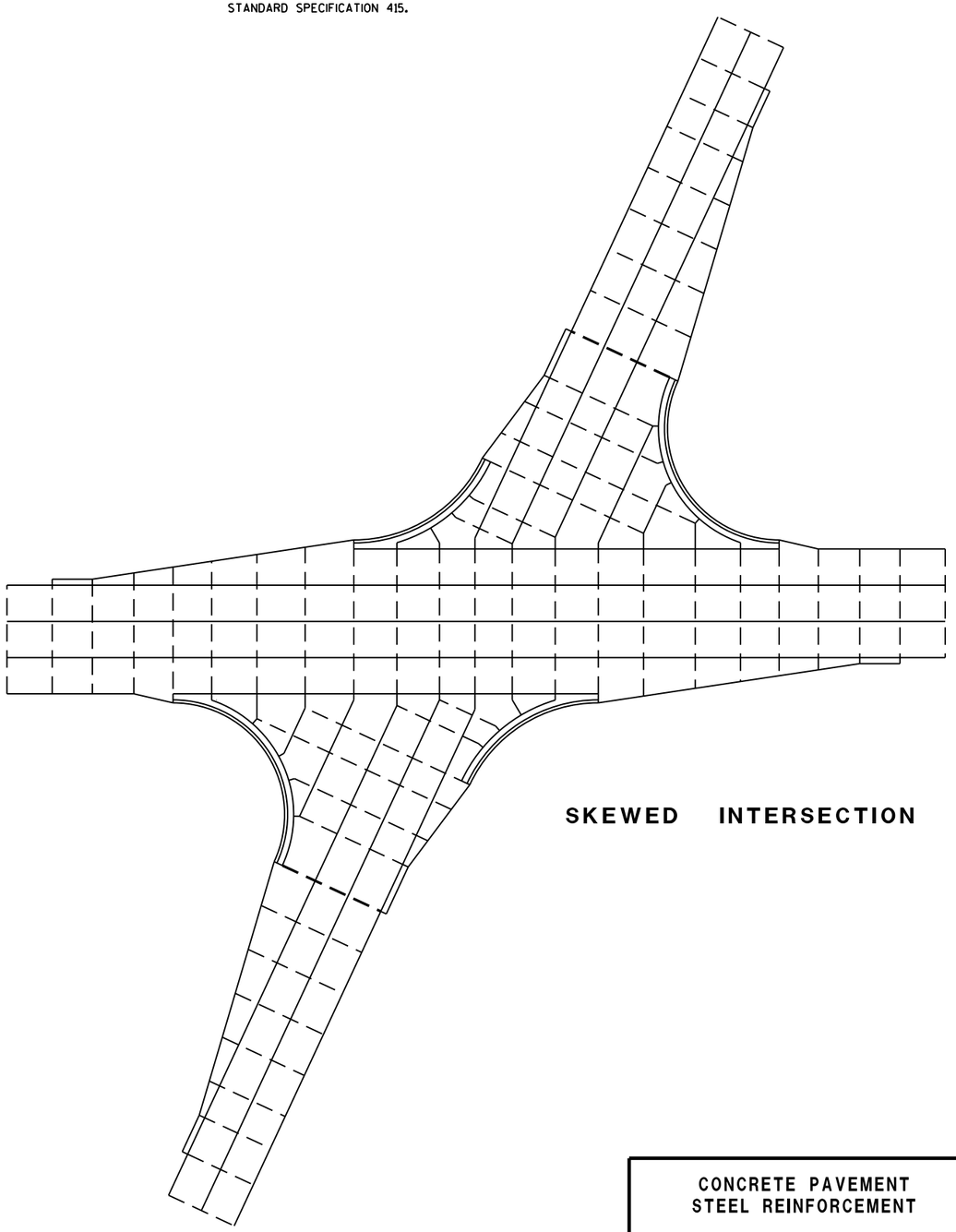
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 13 C 18-3b

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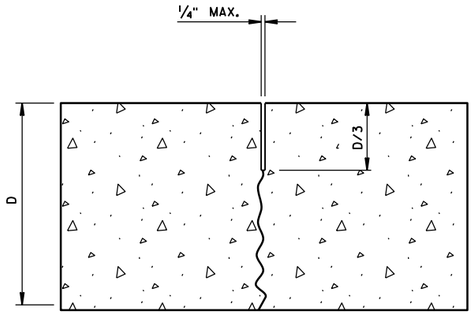
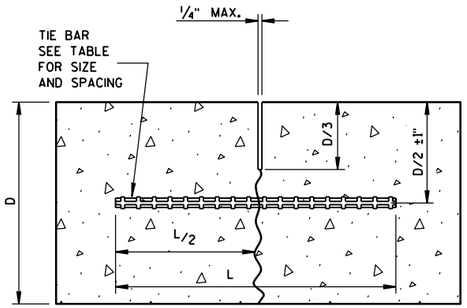
S.D.D. 13 C 18-3b



UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

TIE BAR TABLE

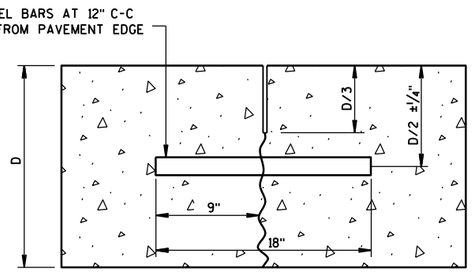
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4*	30"	24"**

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

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

GENERAL NOTES

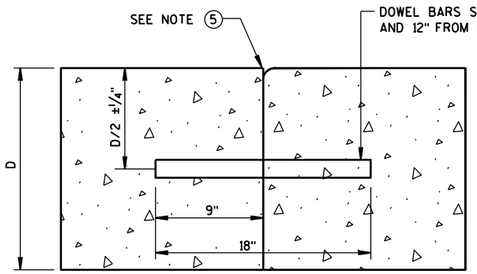
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
5. IF JOINT IS FORMED, PROVIDE A 1/4-INCH RADIUS.
6. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



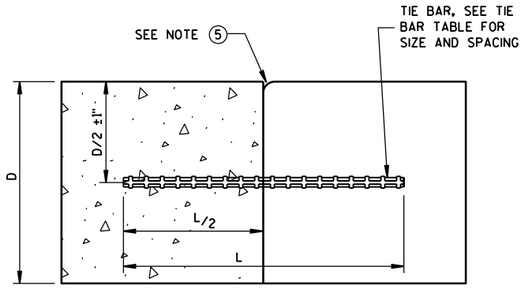
DOWELED-TRANSVERSE

CONTRACTION JOINTS

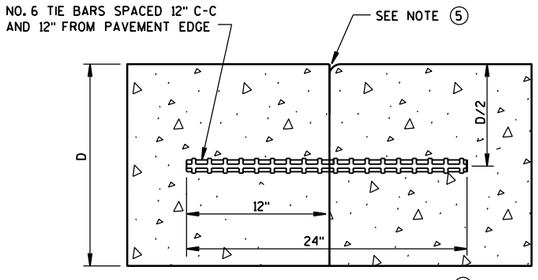
SEE NOTE (2)



DOWELED TRANSVERSE (3)

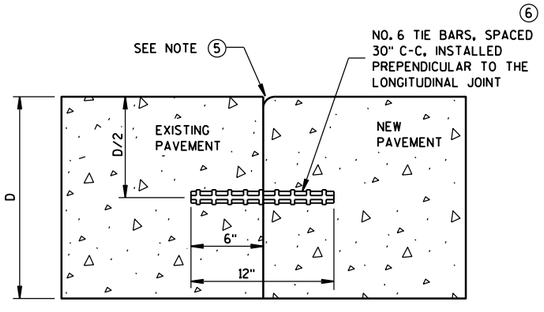


TIED LONGITUDINAL



TIED TRANSVERSE (3)

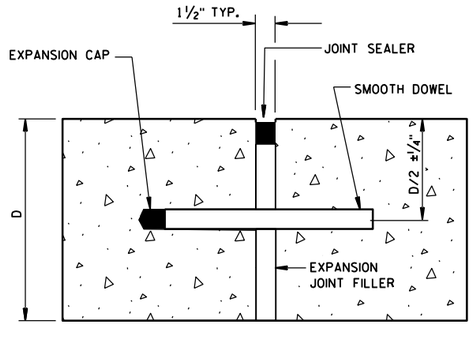
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

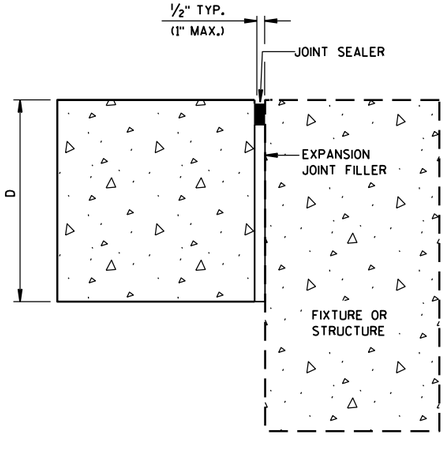
CONSTRUCTION JOINTS

SEE NOTE (4)



DOWELED-TRANSVERSE

SEE NOTE (1)



UNTIED-LONGITUDINAL

EXPANSION JOINTS

6

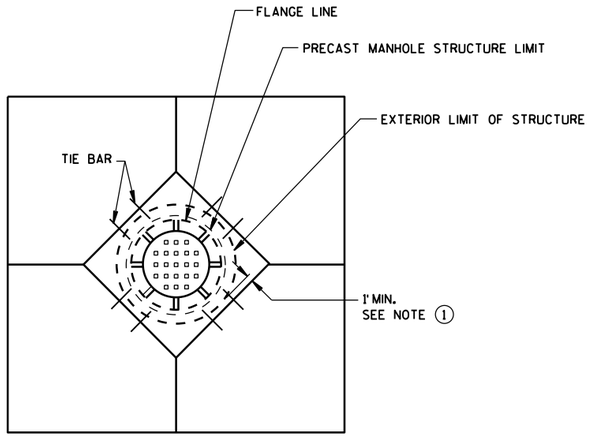
6

S.D.D. 13 C 18-3c

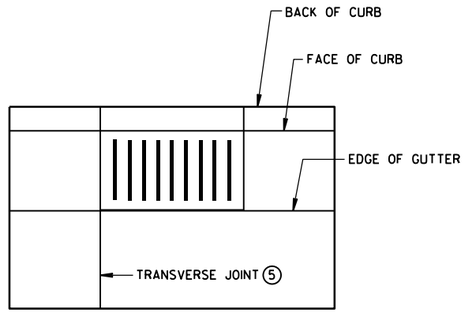
S.D.D. 13 C 18-3c

CONCRETE PAVEMENT
JOINT TYPES

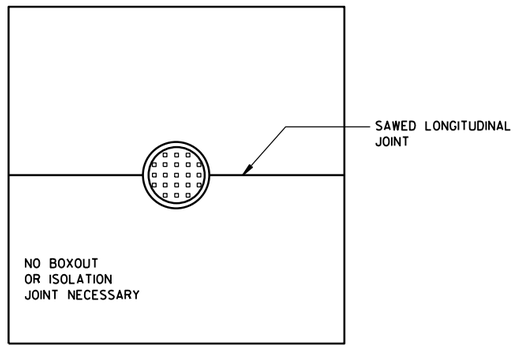
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



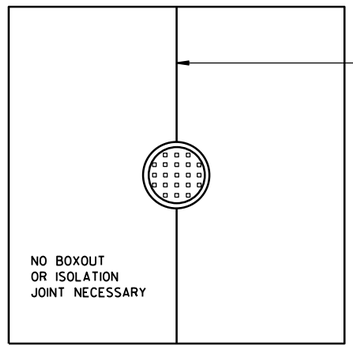
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



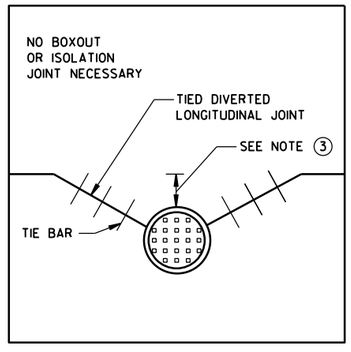
INLET WITH TRANSVERSE JOINT



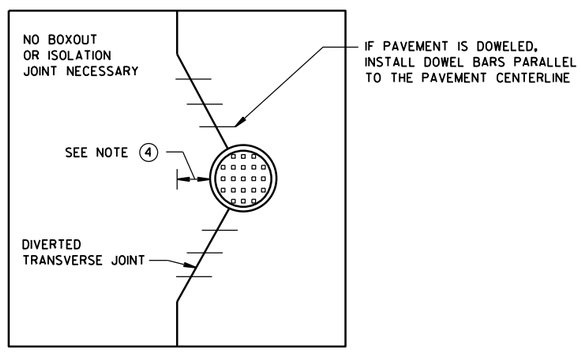
MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

GENERAL NOTES

(1) USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.

(2) ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.

(3) IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDIAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(4) IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(5) ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

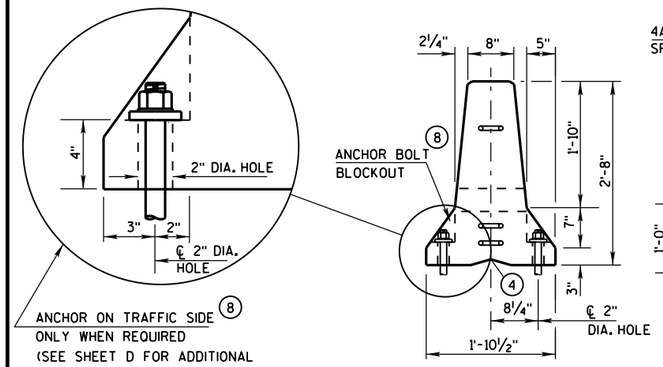
CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

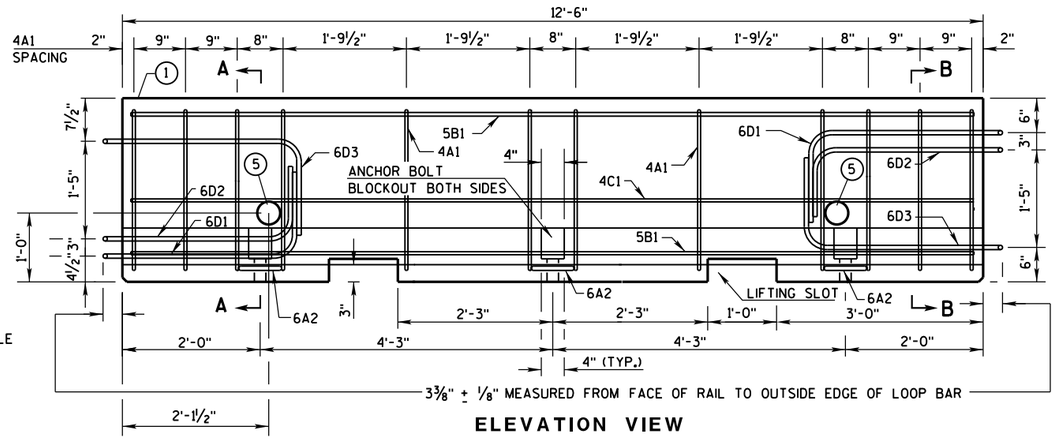
APPROVED
June, 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPER
FHWA

6

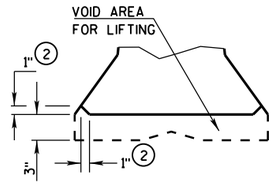
S.D.D. 13 C 18-3d



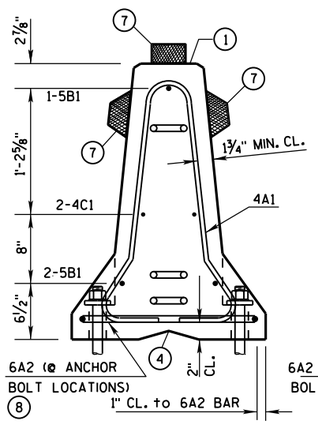
END VIEW



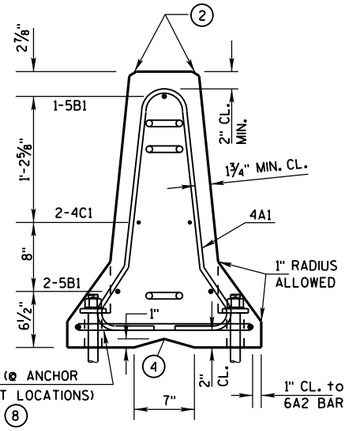
ELEVATION VIEW



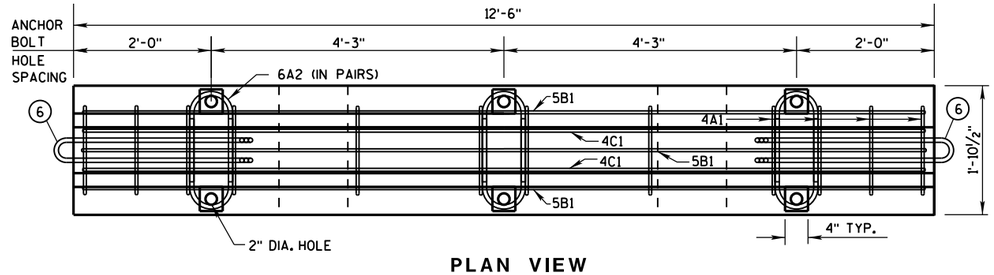
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

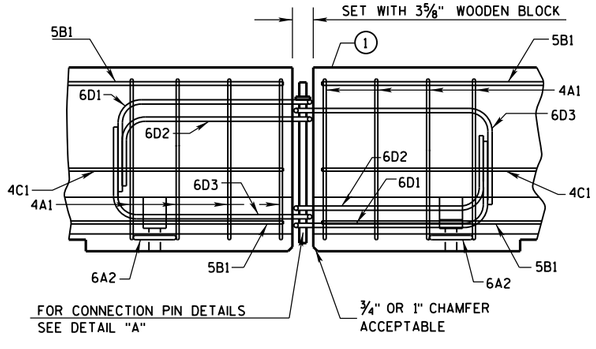


SECTION B-B
(STIRRUP PLACEMENT)

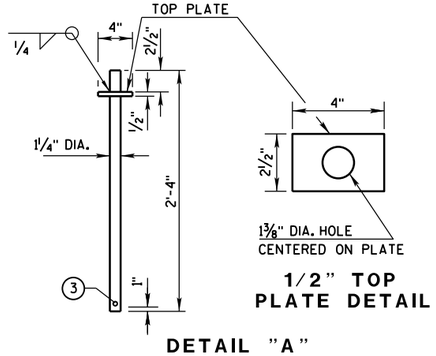


PLAN VIEW

DETAILS OF BARRIER SECTION

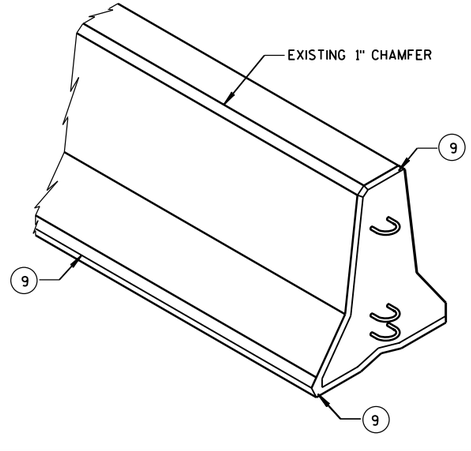


DETAILS OF BARRIER CONNECTION



1/2" TOP
PLATE DETAIL

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



GENERAL NOTES

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

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

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

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE ¾" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" OF THE PLAN DIMENSION.

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

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

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

(1) MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
- a. TYPE: WI CBTP
- b. MANUFACTURER
- c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..

(4) "V" NOTCH IS OPTIONAL.

(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

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

(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

(8) SEE SHEET D FOR ANCHORING CRITERIA.

(9) 1" CHAMFER OPTIONAL.

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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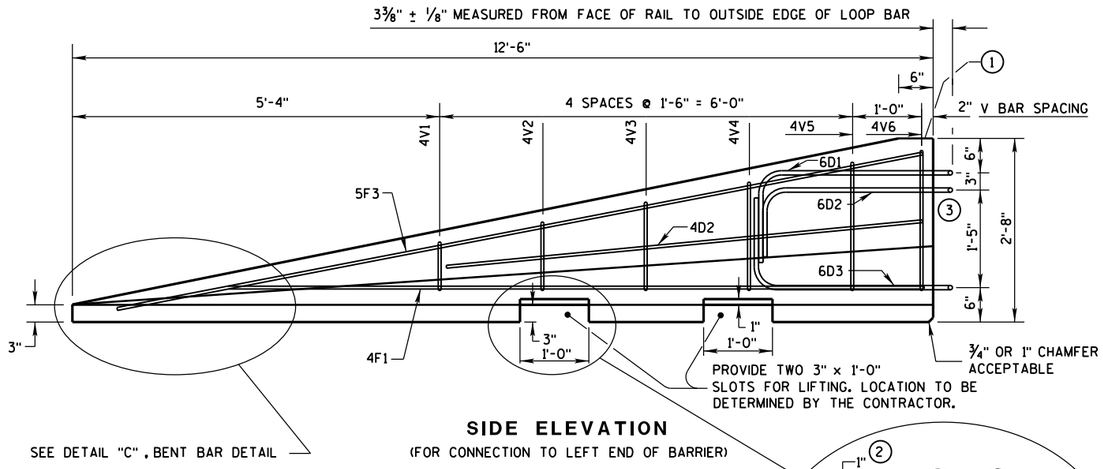
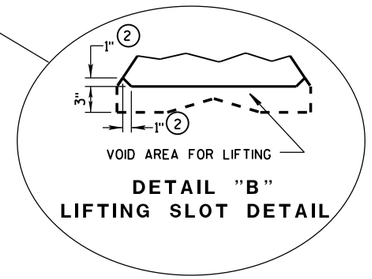
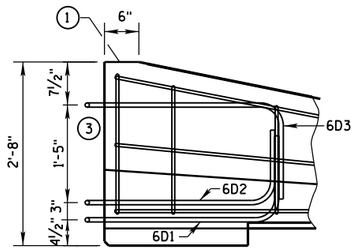
S.D.D. 14 B 7-14a



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



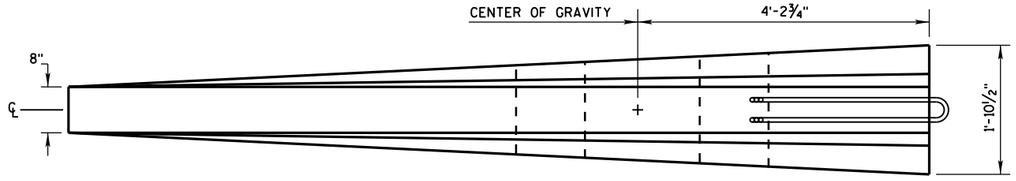
DETAIL "B"
LIFTING SLOT DETAIL



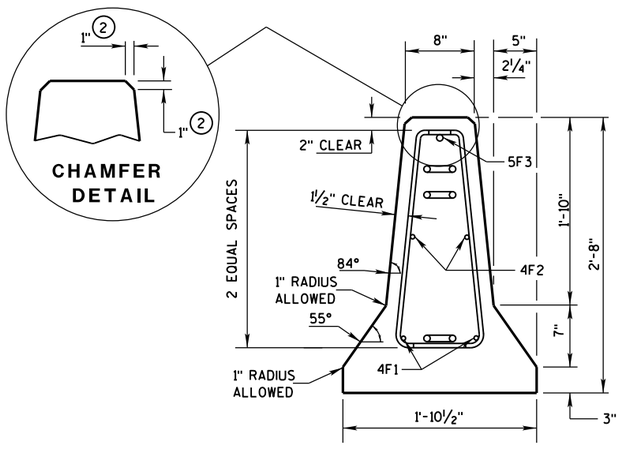
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

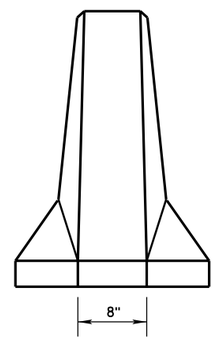
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



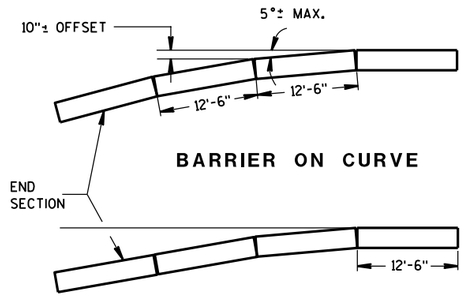
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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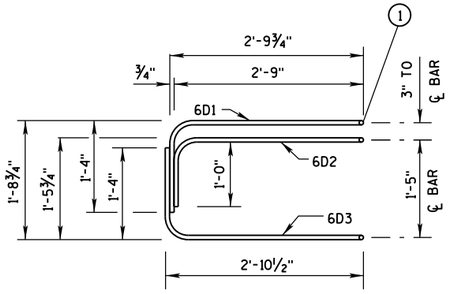
S.D.D. 14 B 7-14b

BARRIER TAPER SECTION BILL OF MATERIALS

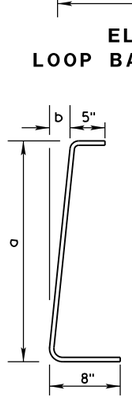
(PER 12'-6" BARRIER TAPER SECTION)

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



ELEVATION
LOOP BAR ASSEMBLY

DETAIL "C"
BENT BAR DETAIL



BAR	a	b
V1	10"	1"
V2	1'-1"	1¼"
V3	1'-5"	1⅝"
V4	1'-8"	1⅞"
V5	2'-0½"	2⅜"
V6	2'-3"	2¾"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

GENERAL NOTES

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

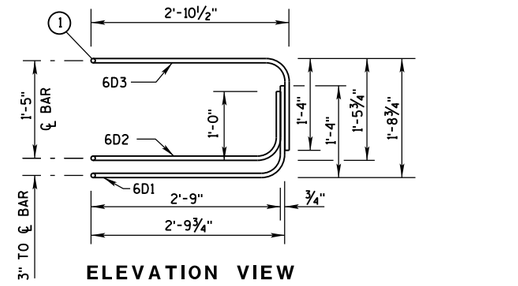
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

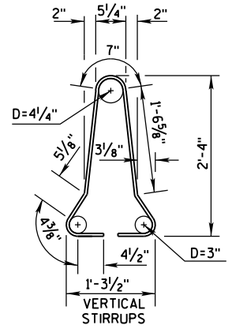
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"

PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)

6A2



ELEVATION VIEW



4A1

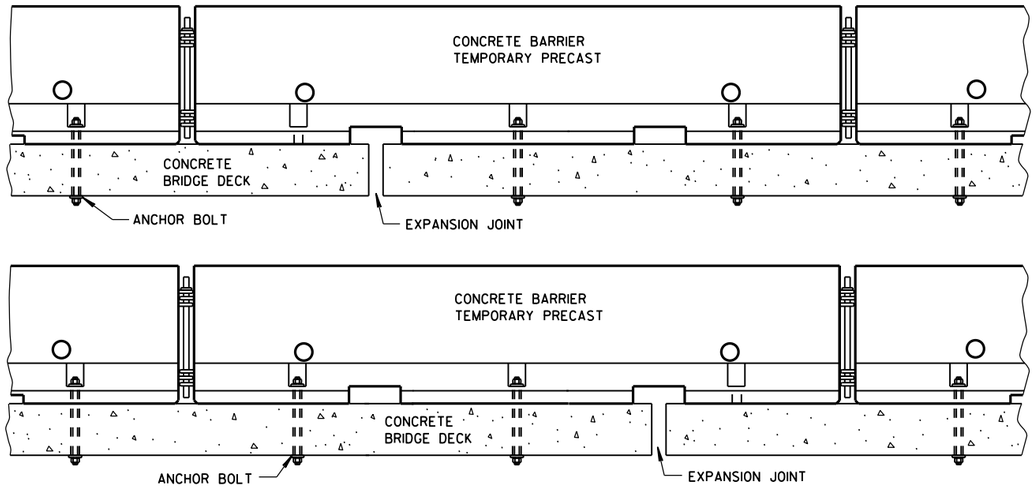
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

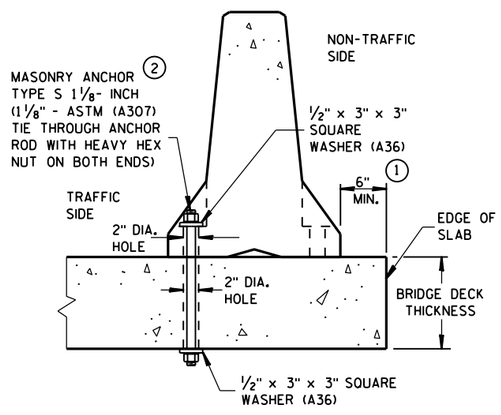
6

S.D.D. 14 B 7-14c



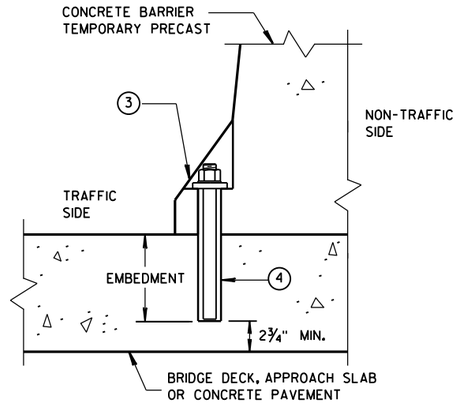
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

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



THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT ②

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

GENERAL NOTES

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

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

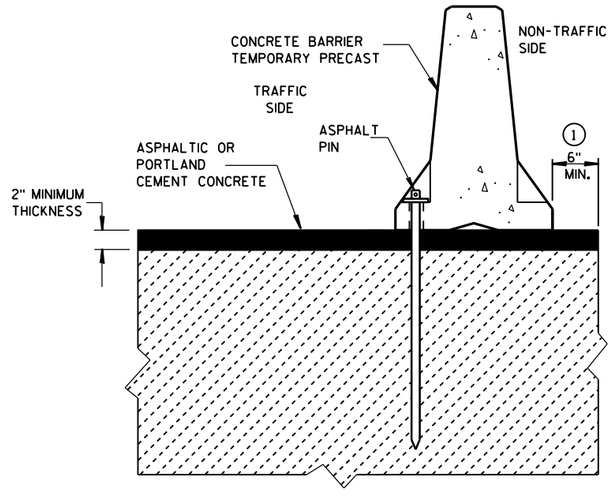
② ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1⅛-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALL ANCHOR BOLTS AND COMPLETELY FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERICAL GROUT OR MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.

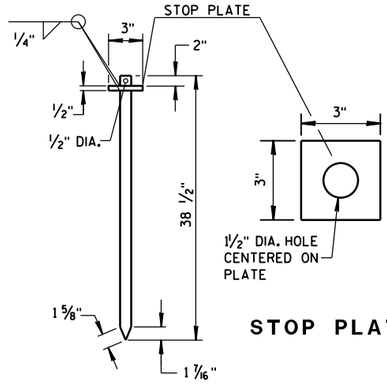
③ 1⅛" DIAMENTER A307 THREADED ROD, ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.

④ ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

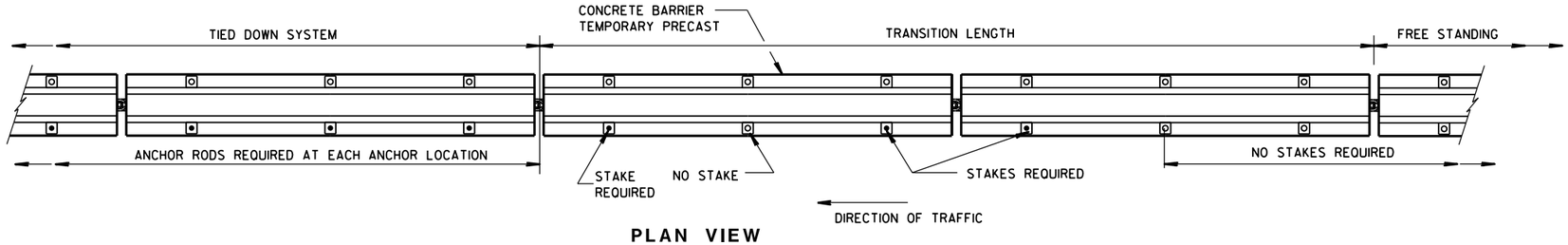
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT PIN

(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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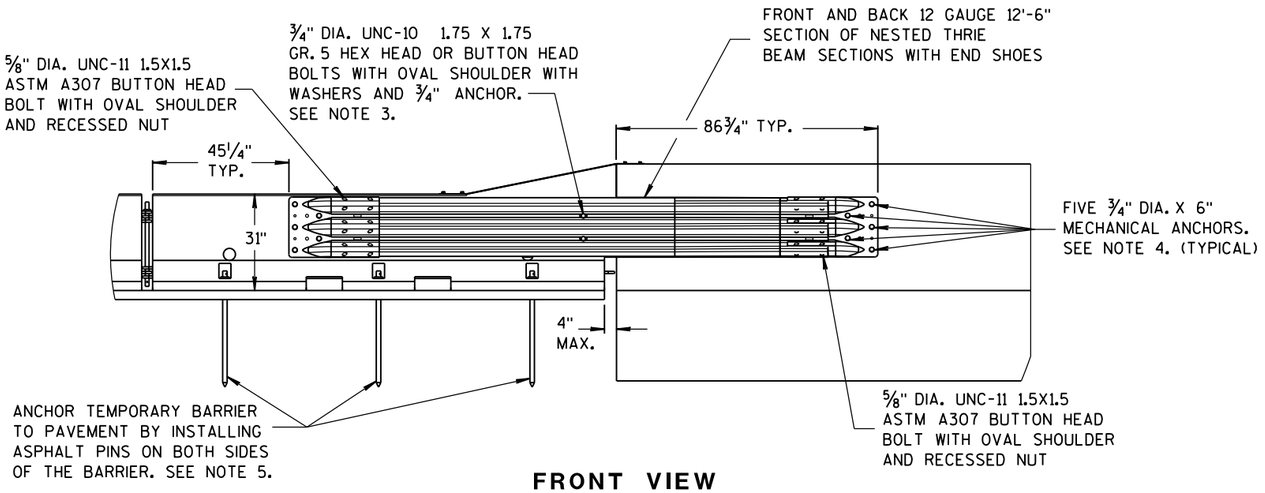
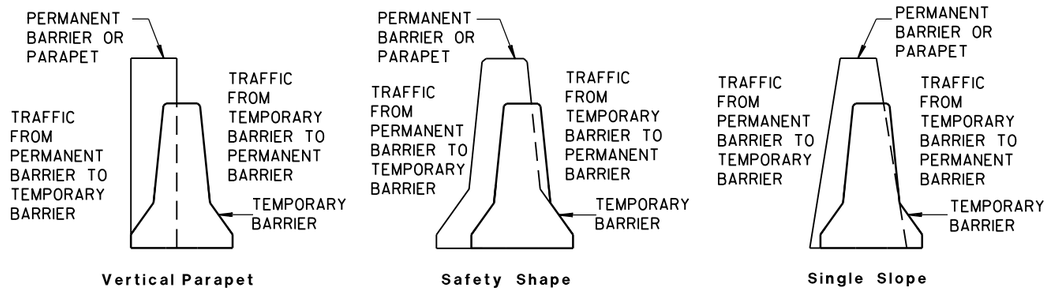
S.D.D. 14 B 7-14d



FRONT VIEW

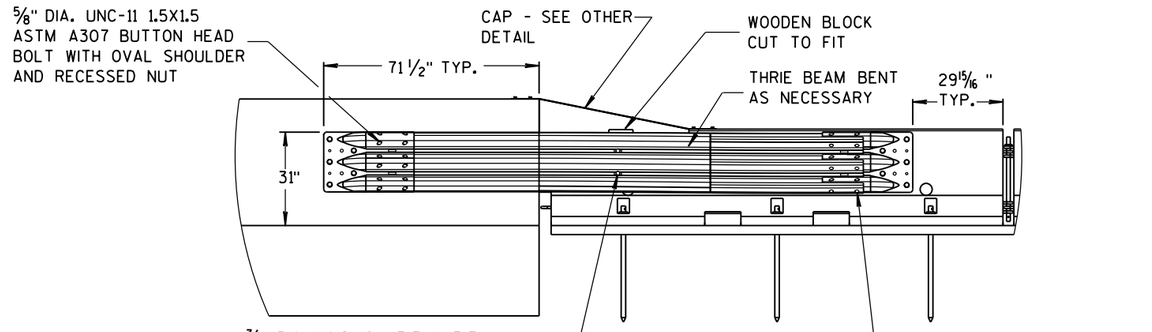


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

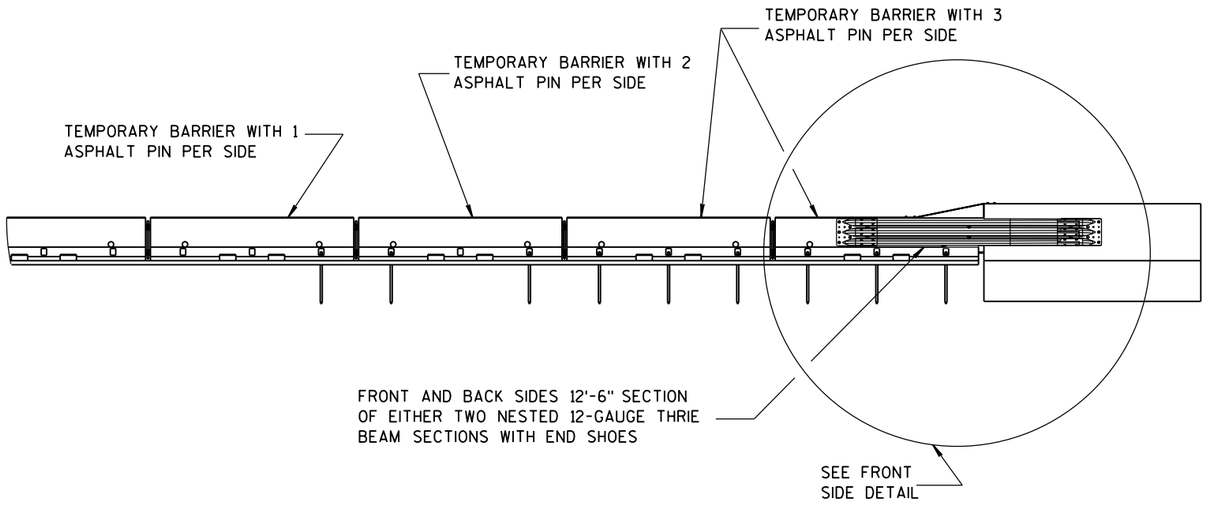
NOTES

NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS.

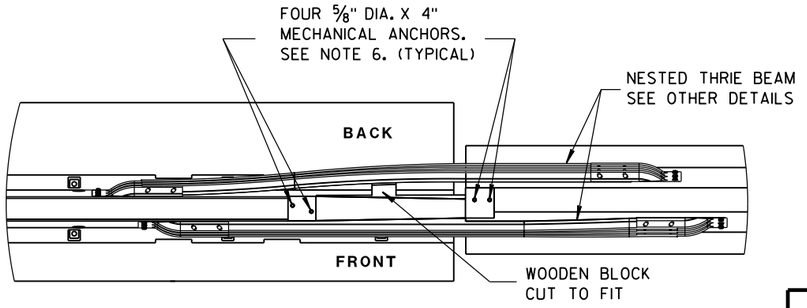
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD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



BACK VIEW



FRONT VIEW



PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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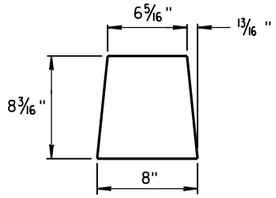
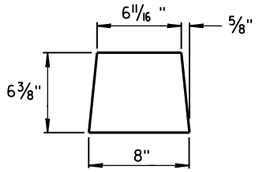
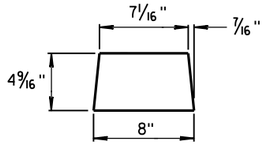
S.D.D. 14 B 7-14e



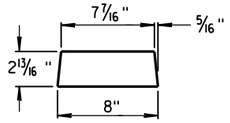
GUSSET 1



GUSSET 2

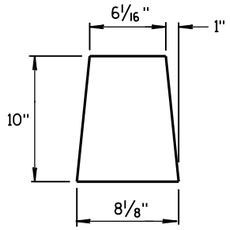


GUSSET 3

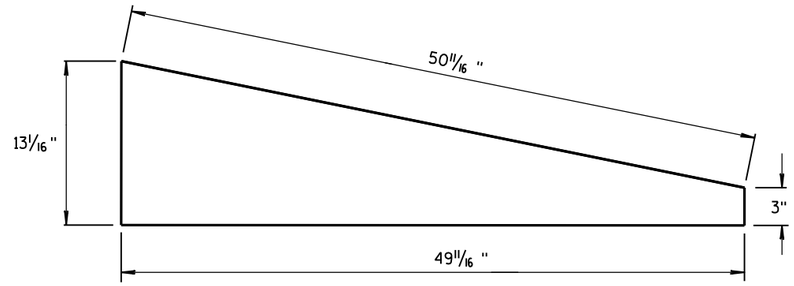


GUSSET 4

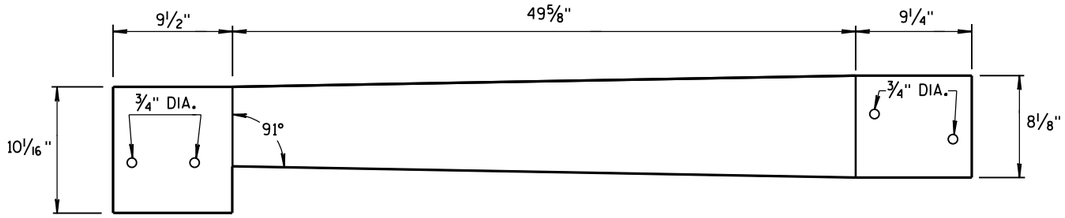
GUSSETS

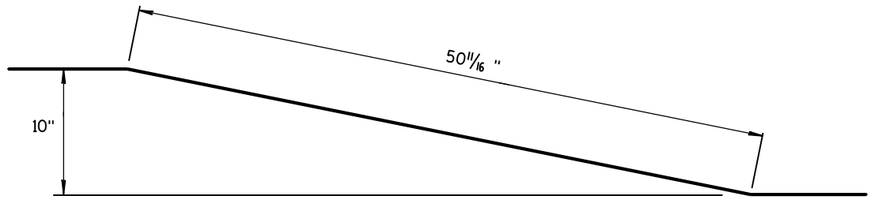


END PLATE



SIDE PLATE

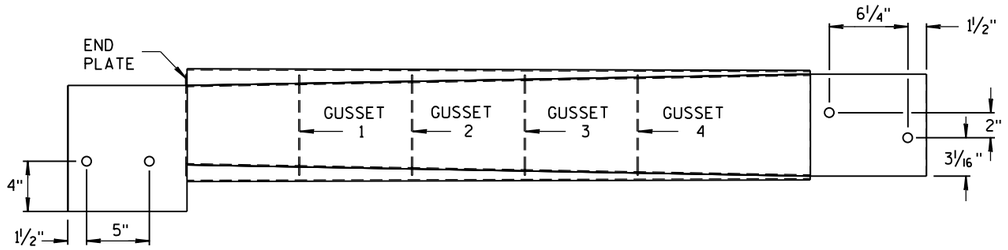


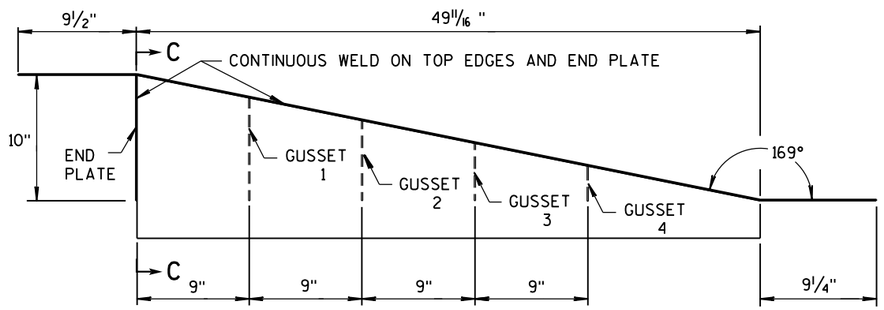


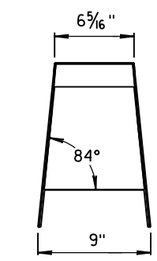
TOP PLATE

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

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







SECTION C-C

NOTES

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

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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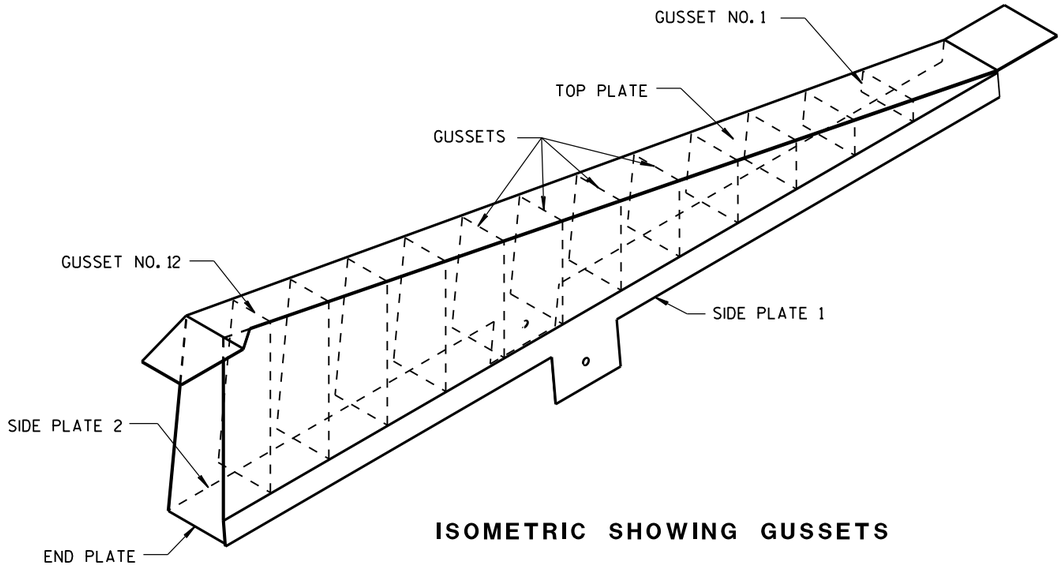
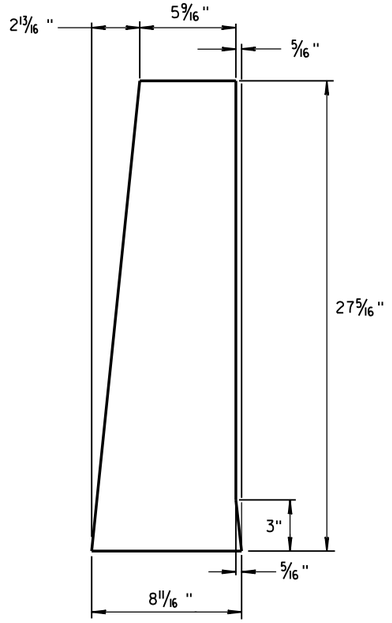
S.D.D. 14 B 7-14f

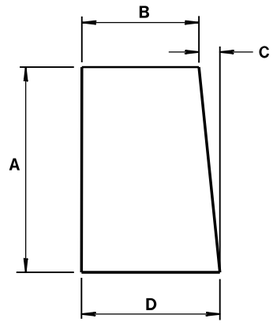


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



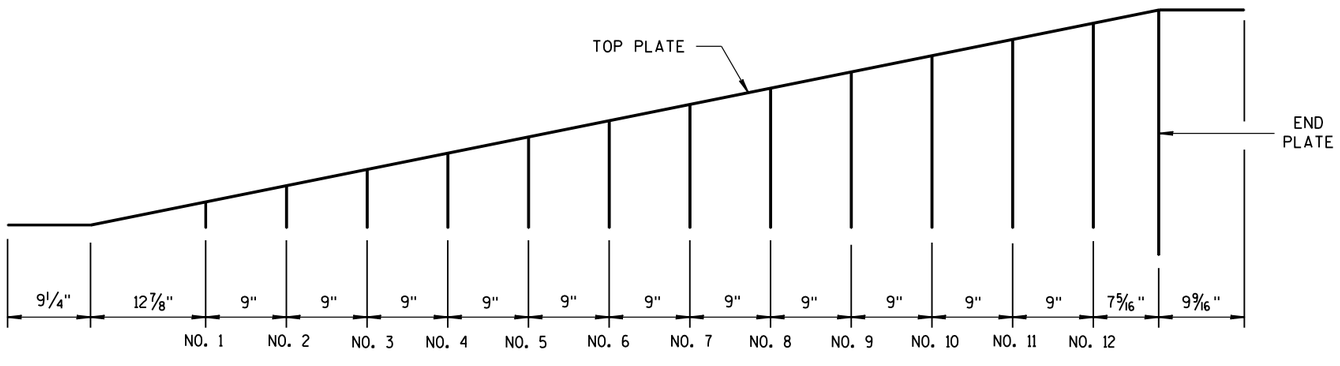
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

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

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

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



GUSSET LOCATION

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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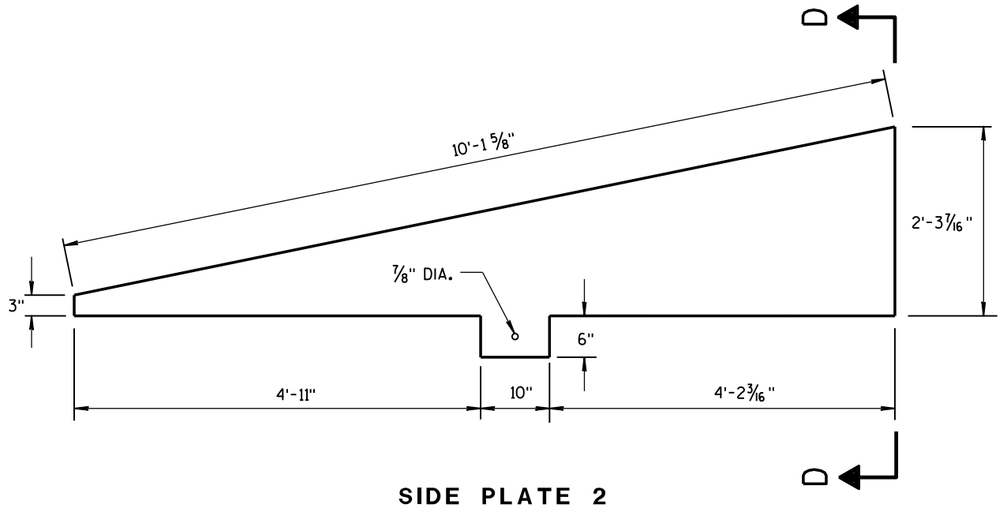
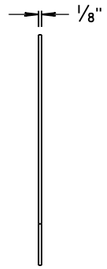
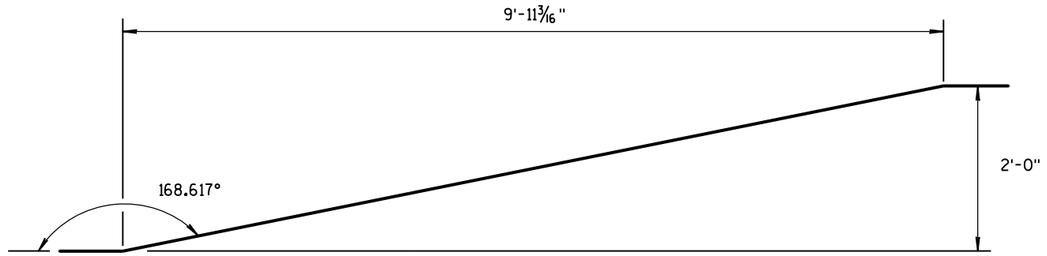


SIDE PLATE 2

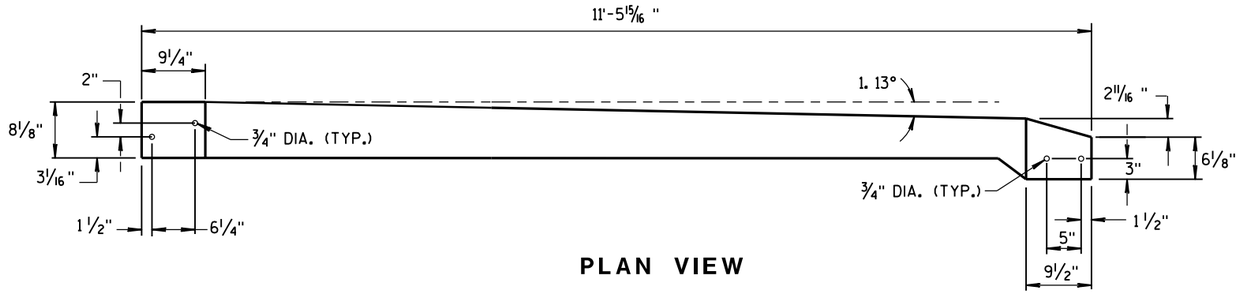


END VIEW



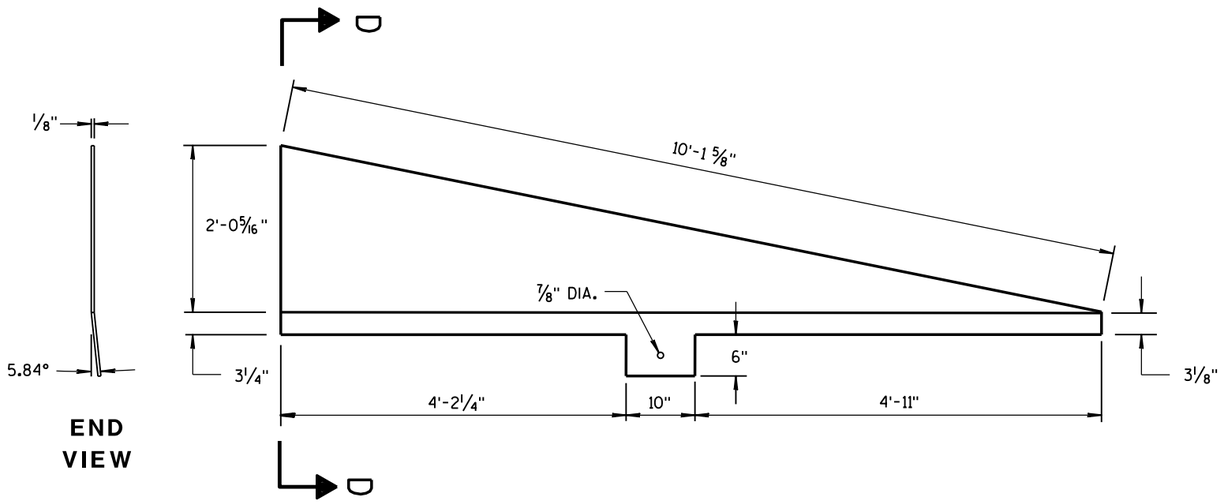
SIDE VIEW

TOP PLATE



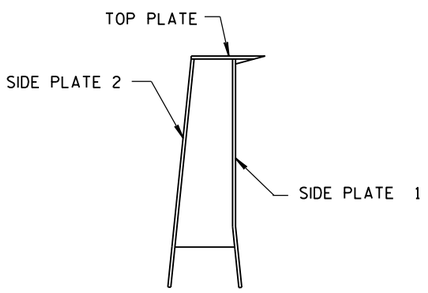
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARD DEVELOPMENT ENGINEER
FHWA

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S.D.D. 14 B 7-14h

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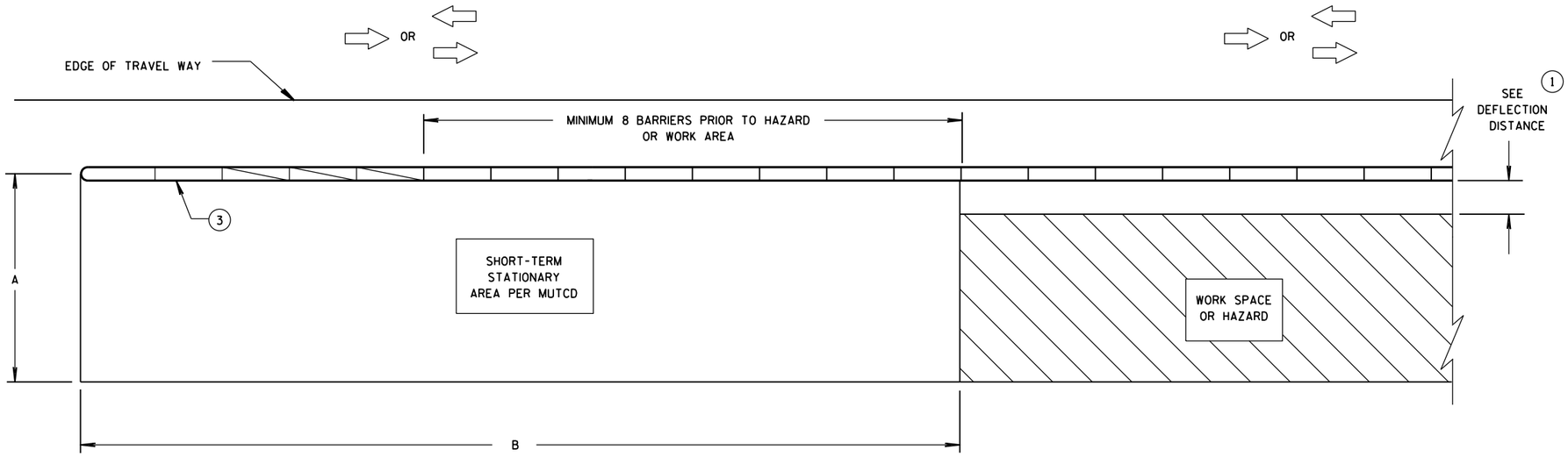
S.D.D. 14 B 7-14h



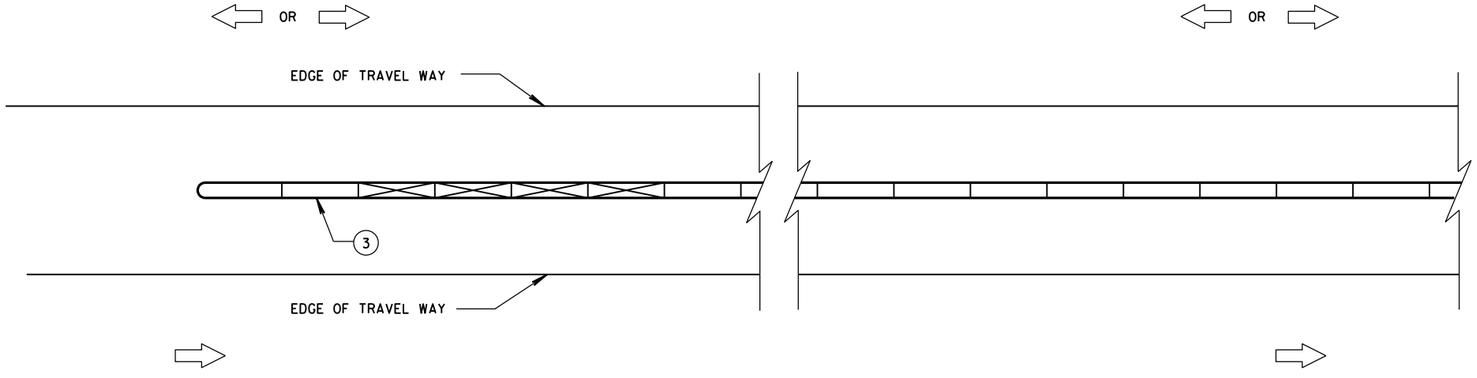
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE (2)

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

DIMENSION B TABLE (2)

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



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

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

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

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

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

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

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

(1) FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.

(2) VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

(3) ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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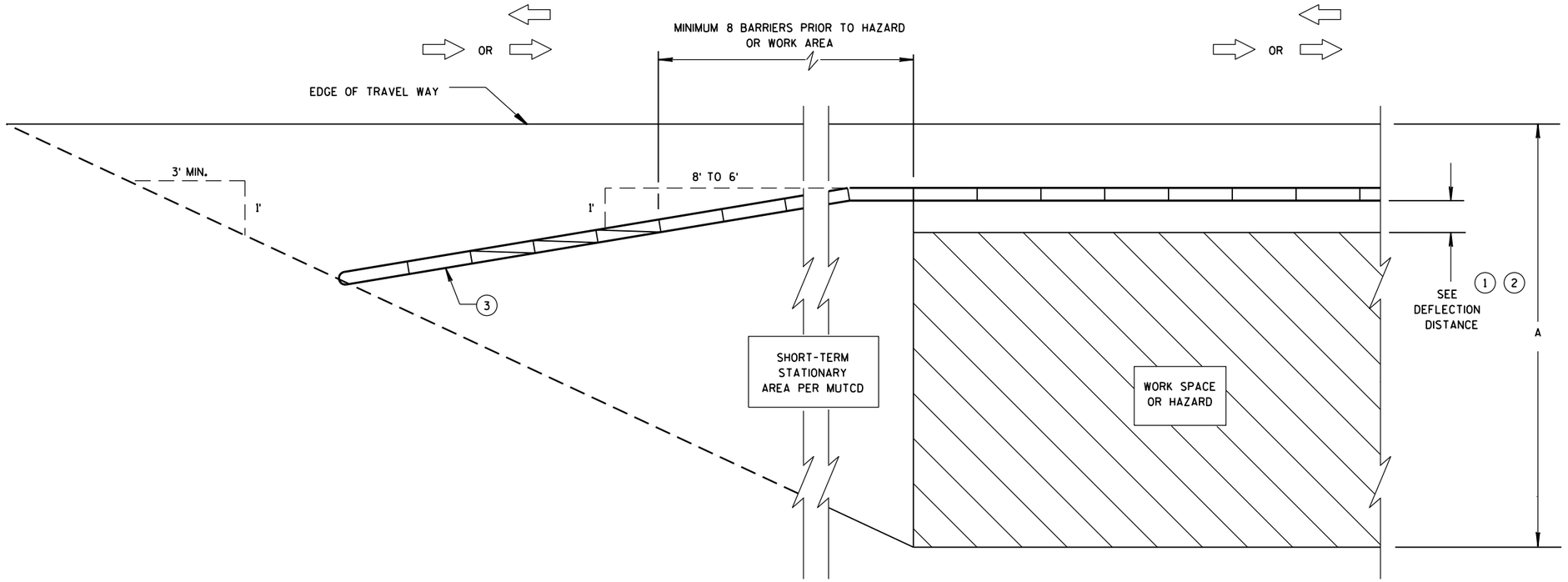
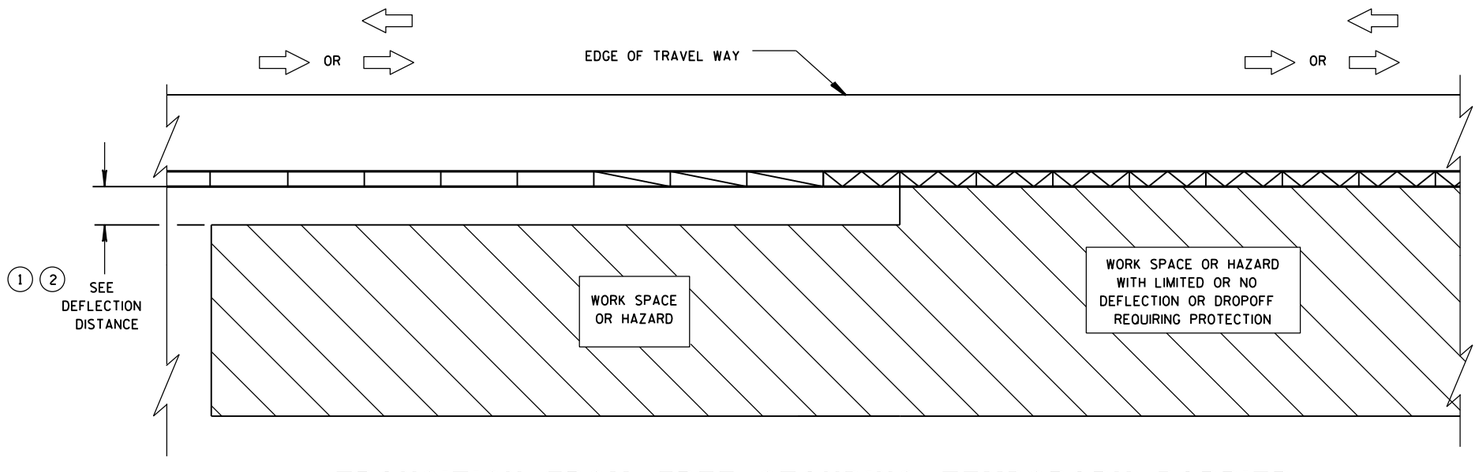


CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION



TRANSITION FROM FREE STANDING TEMPORARY BARRIER TO ANCHORED BARRIER

LEGEND

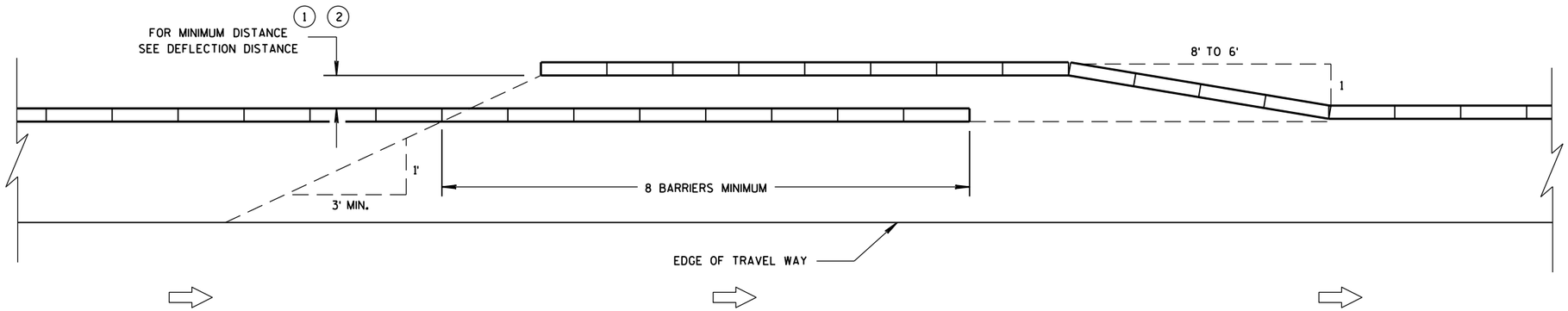
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

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

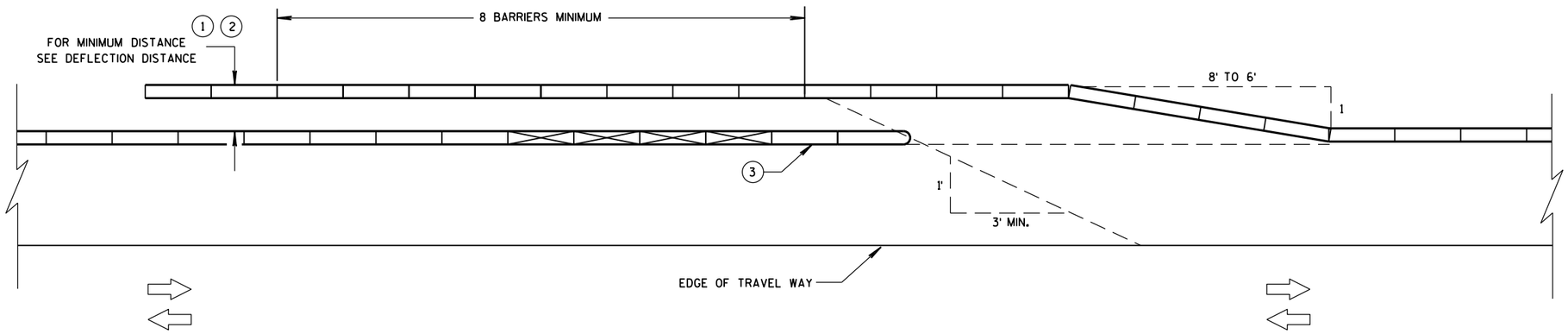
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

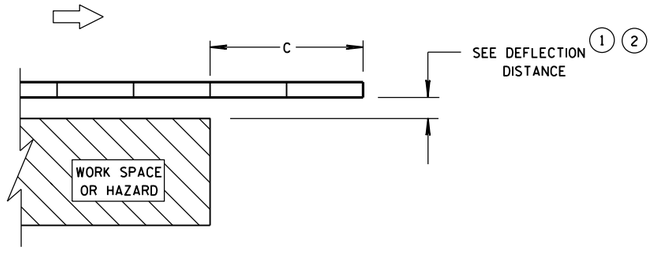
S.D.D. 14 B 8-2b



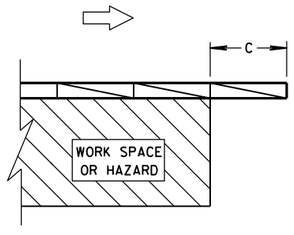
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

LEGEND

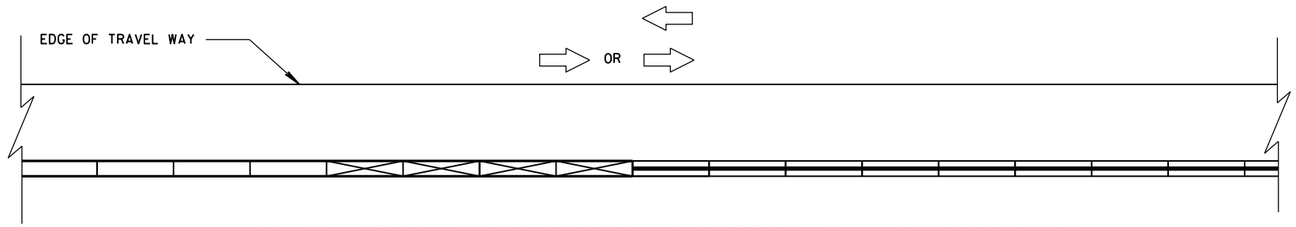
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

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

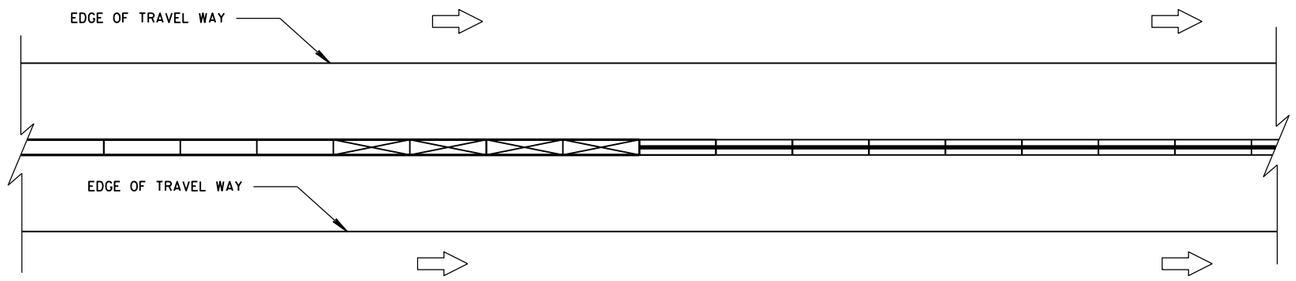
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 8-2c



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



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

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR
SAND BARREL ARRAY

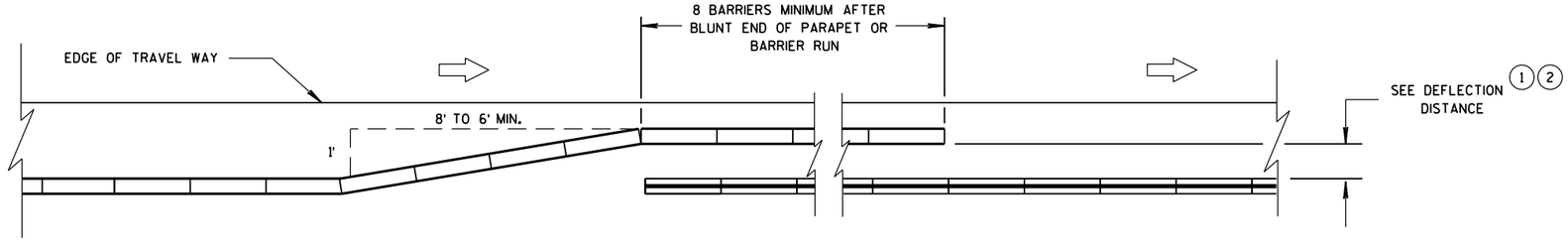
SEE FREE STANDING TRANSITION
TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION
TO TIED-DOWN SYSTEM DETAILS

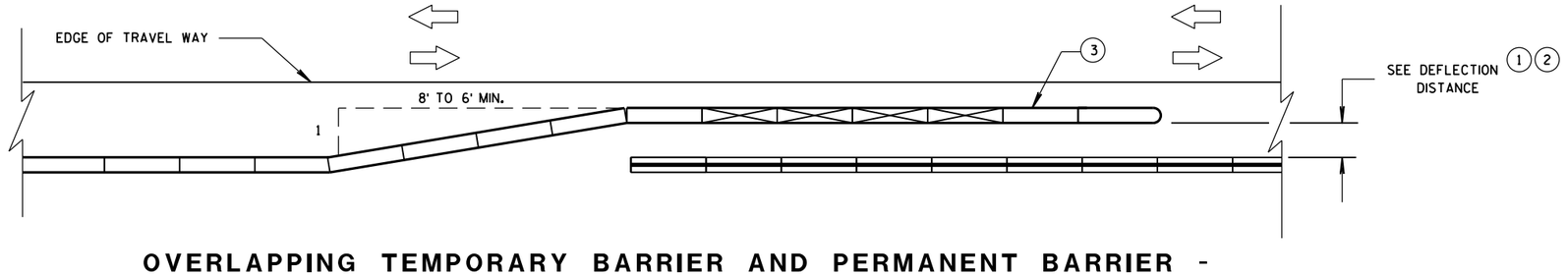
3 PINS PLACED ON
TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER
OR CONCRETE PARAPET

FREE STANDING TEMPORARY
BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 14 B 8-2d

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

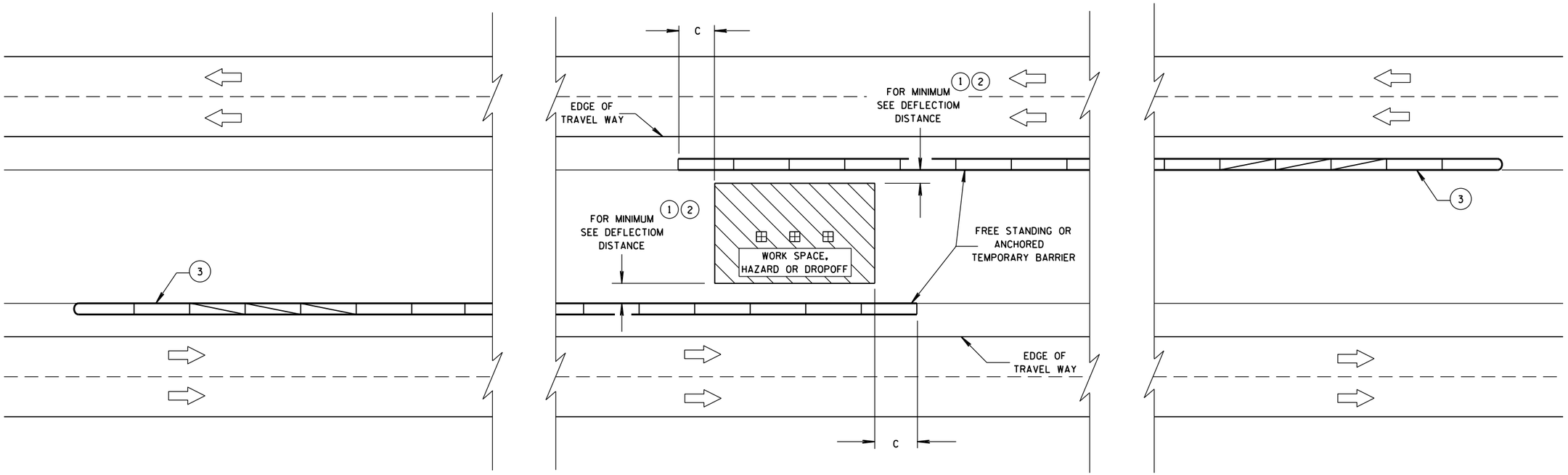
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

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



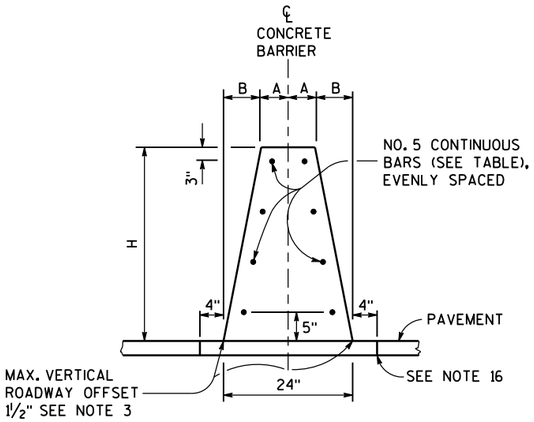
CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

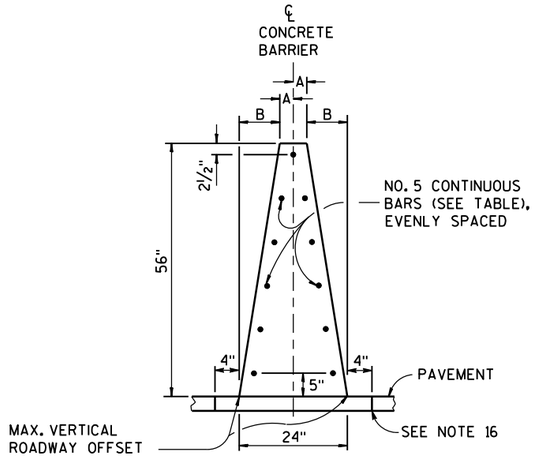
APPROVED
June, 2015
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINNER
FHWA

6

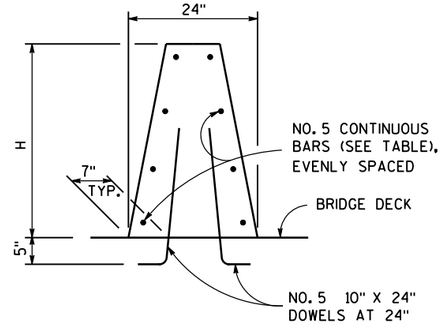
S.D.D. 14 B 8-2e



32-INCH, 36-INCH OR 42-INCH SINGLE SLOPE CONCRETE BARRIER (TYPE S32, TYPE S36, AND TYPE S42)



56-INCH SINGLE SLOPE CONCRETE BARRIER (TYPE S56)



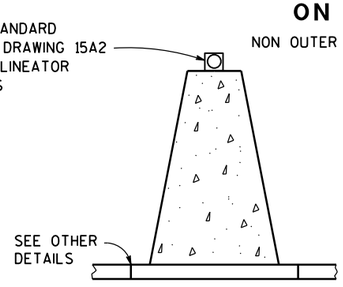
SINGLE SLOPE CONCRETE BARRIER ON BRIDGE

NON OUTER PARAPET APPLICATION

GENERAL NOTES

1. WHERE THE CONCRETE BARRIER IS ADDED TO THE FACE OF EXISTING CONCRETE STRUCTURE, MATCH EXISTING WEEP HOLES.
2. EXPANSION JOINTS IN CONCRETE BARRIER SHALL BE LOCATED AT ALL DECK, AND PRINCIPAL WALL JOINTS. EXPANSION JOINT FILLER MATERIAL SHALL BE THE SAME SIZE AS JOINT OR ½" MINIMUM.
3. WHERE VERTICAL ROADWAY OFFSET IS GREATER THAN 1½", USE TYPE A
4. PLACE BARRIER PERPENDICULAR TO SHOULDER GRADE, UNLESS INDICATED IN PLAN.
5. EXCEPT IN ANCHORS, VERTICAL REINFORCING STIRRUP NOT REQUIRED FOR ROADWAY OFFSETS LESS THAN 1'-0".
6. FOR TYPE S32, TYPE S36, TYPE S42, AND S56 MONOLITHIC FOOTING OR DOWELED FOOTING WITH 2-#8 x 8" @ 2'-0".
7. STAGGER LAPPING OF LONGITUDINAL STEEL. MINIMUM OVERLAP OF STEEL 2 FEET. BARS AT LAPS TO BE FIRMLY TIED OR CONNECTED.
8. 4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATION 501.
9. WHEN SWITCHING BETWEEN SLIP FORM AND CAST-IN-PLACE OPERATIONS, EXTEND LONGITUDINAL STEEL 3 FEET BEYOND SLIP-FORMING CUT OFF POINT. EXPOSED STEEL INTO NEXT POURS REINFORCEMENT. LAPS TO BE FIRMLY TIED.
10. USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.
11. 2" CLEAR COVER TYPICAL.
12. COLD-JOINTS MAY BE USED BETWEEN ANCHOR INSTALLATIONS. WHEN A COLD JOINT IS NEEDED, 3 FEET OF LAP OF LONGITUDINAL STEEL IS REQUIRED. LAPS TO BE FIRMLY TIED.
13. IN TYPE S32, TYPE S36, TYPE S42 AND TYPE S56 NO ADDITIONAL VERTICAL STEEL NEEDED. IN TYPE S32A, TYPE S36A, TYPE S42A AND TYPE S56A REQUIRES VERTICAL STEEL. SEE OTHER DETAIL.
14. IN TYPE S32, TYPE S36, TYPE S42 AND TYPE S56 DEPTH OF FOOTING 10". IN TYPE S32A, TYPE S36A, TYPE S42A AND TYPE S56A MATCH TOTAL HEIGHT OF SINGLE SLOPE BARRIER RETAINING WALL.
15. FOR ALL BARRIER TYPES SHOWN, ANCHOR IS REQUIRED AT CONCRETE BARRIER ENDS AND AT INTERRUPTIONS IN CONCRETE BARRIER. ANCHOR MAY BE AS SHOWN ON DRAWING OR DETAILS SHOWN ON S.D.D. 14B33. ANCHORS INCIDENTAL TO CBSS.
16. CONCRETE PAD UNDER CBSS MAY BE PLACED INTEGRAL WITH BARRIER, PLACED SEPARATELY OR PLACED WITH CONCRETE SHOULDER AND SAWED FULL DEPTH. CONCRETE PAD MINIMUM DEPTH IS 6 INCHES, OR EQUAL TO THE DEPTH OF THE CONCRETE SHOULDER.

BARRIER HEIGHT H INCHES	A INCHES	B INCHES	NUMBER OF NO. 5 BARS EACH
32	7	5	8
36	6¼	5¾	8
42	5¼	6¾	10
56	3	9	11



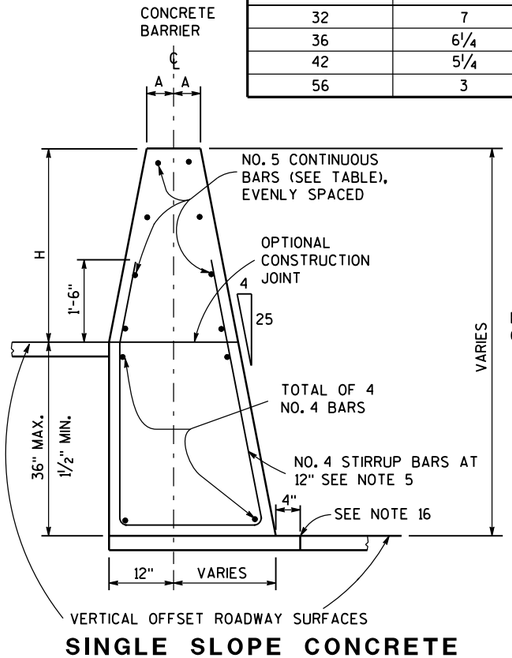
DELINEATION

DELINEATOR SPACING ON HORIZONTAL CURVES

RADIUS OF CURVE	APPROXIMATE SPACING ON CURVE
50 FEET	20 FEET
115 FEET	25 FEET
180 FEET	35 FEET
250 FEET	40 FEET
300 FEET	50 FEET
400 FEET	55 FEET
500 FEET	65 FEET
600 FEET	70 FEET
700 FEET	75 FEET
800 FEET	80 FEET
900 FEET	85 FEET
1000 FEET	90 FEET

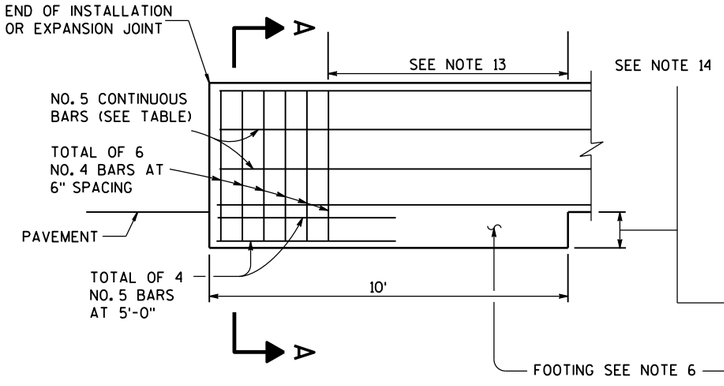
DELINEATOR SPACING ON RADIUS GREATER THAN 1000 FEET OR TANGENT SECTIONS

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



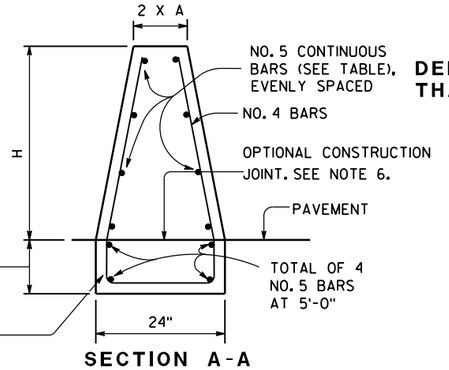
SINGLE SLOPE CONCRETE BARRIER AND RETAINING WALL (TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)

(BETWEEN ADJACENT ROADWAYS)



END ANCHOR SINGLE SLOPE CONCRETE BARRIER

AT CONSTRUCTION JOINT



SECTION A-A

CONCRETE BARRIER SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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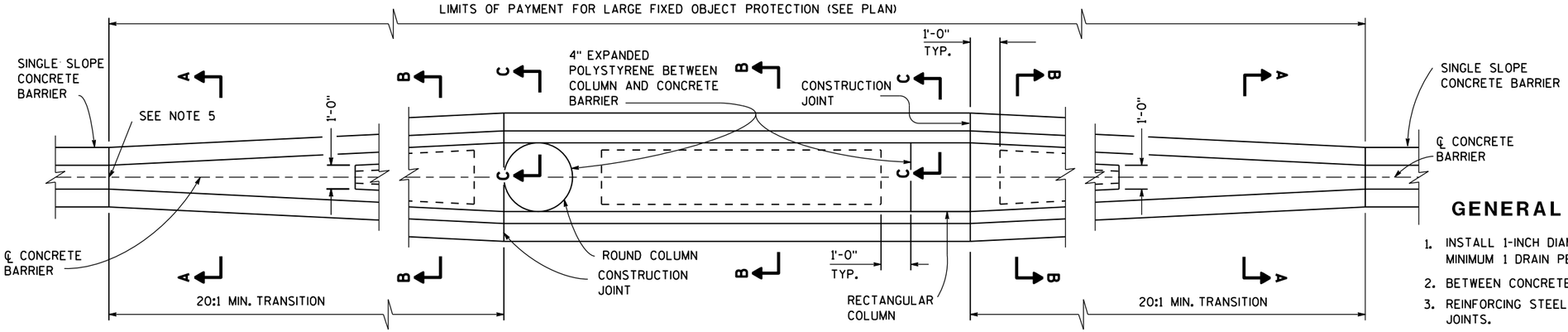
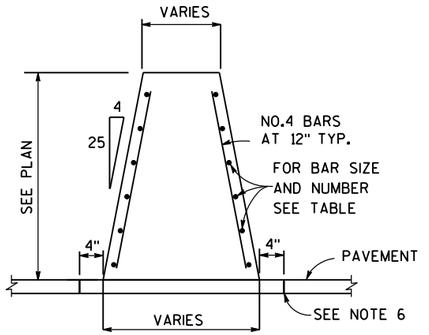
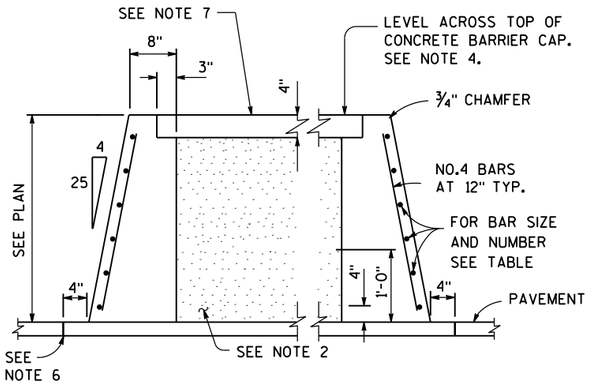
S.D.D. 14 B 32-3a



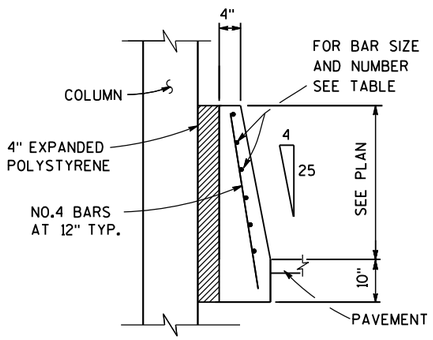
LARGE FIXED OBJECTS PROTECTION
TYPE S32, TYPE S36, TYPE S42, TYPE S56



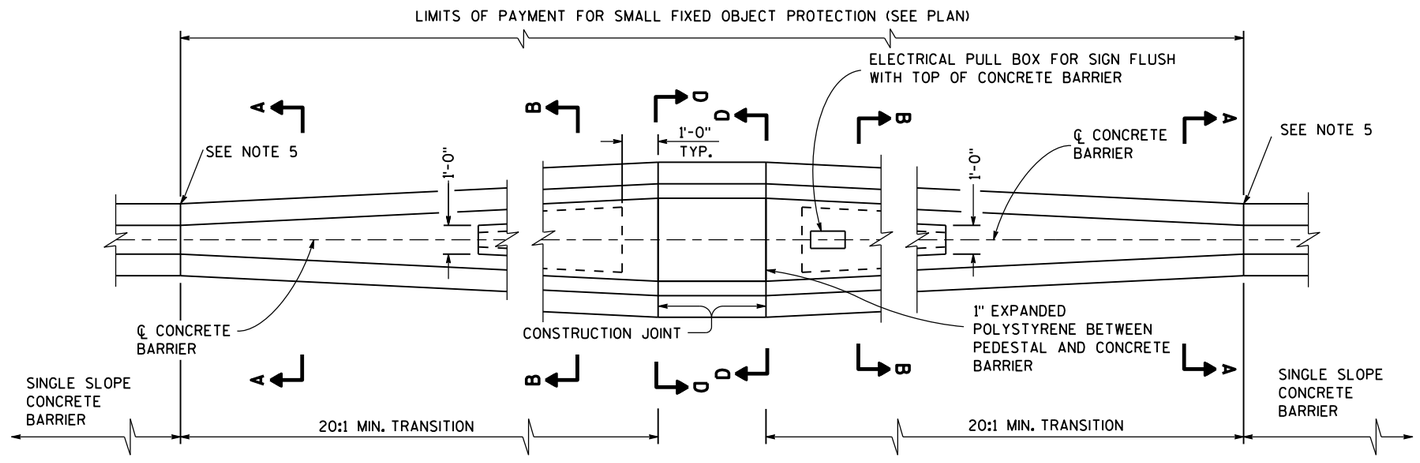
SECTION A-A



SECTION B-B



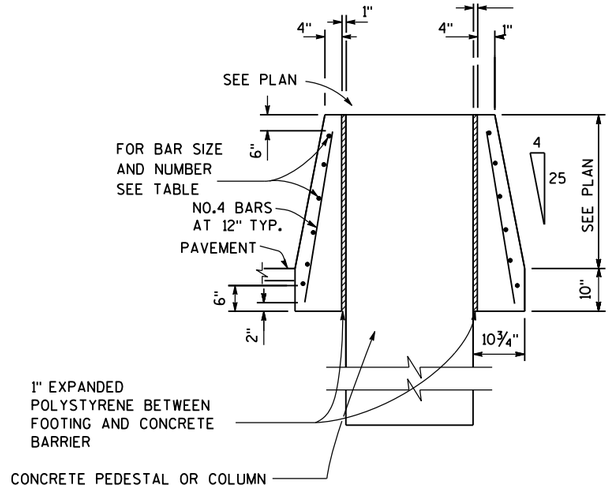
SECTION C-C



SMALL FIXED OBJECTS PROTECTION
TYPE S32, TYPE S36, TYPE S42, TYPE S56

GENERAL NOTES

1. INSTALL 1-INCH DIAMETER DRAIN PIPE EVERY 20 FEET OF CROSS SECTION B-B. MINIMUM 1 DRAIN PER CAVITY.
2. BETWEEN CONCRETE BARRIER WALLS FILL WITH GRANULAR BACKFILL GRADE 2
3. REINFORCING STEEL SHALL EXTEND CONTINUOUS THROUGH CONSTRUCTION JOINTS.
4. ADJUST HEIGHT OF CONCRETE BARRIER WALL ON LOW SIDE OF OFFSET OR SUPERELEVATED ROADWAYS TO PROVIDE LEVEL GRADE ACROSS TOP OF CONCRETE CAP.
5. IF FIXED OBJECT PROTECTION IS INSTALLED FIRST, USE COLD JOINTS. IF CBSS PLACED FIRST, USE EXPANSION JOINT.
6. CONCRETE PAD UNDER CBSS MAY BE PLACED INTEGRAL WITH BARRIER, PLACED SEPARATELY OR PLACED WITH CONCRETE SHOULDER AND SAWED FULL DEPTH. SAWING OF CONCRETE SHOULDER IS INCIDENTAL TO CONCRETE BARRIER BID ITEM. CONCRETE PAD MINIMUM DEPTH IS 6 INCHES, OR EQUAL TO THE DEPTH OF THE CONCRETE SHOULDER.
7. USE NO. 3 BAR SPACED 12 INCHES CENTER TO CENTER (PLACED IN EACH DIRECTION) OR EQUIVALENT WIRE MESH.



SECTION D-D

BARRIER HEIGHT H INCHES	BAR SIZE	NUMBER OF BARS EACH
32	4	6
36	4	6
42	5	6
56	5	9

CONCRETE BARRIER SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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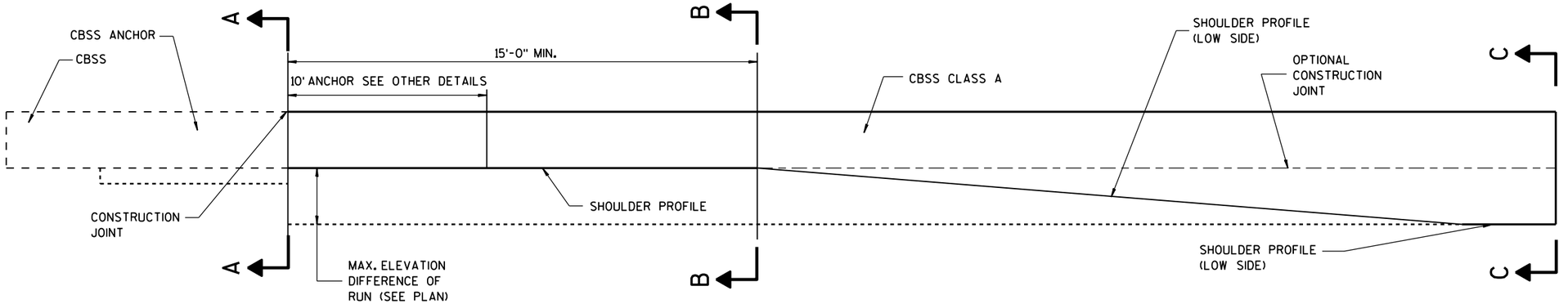
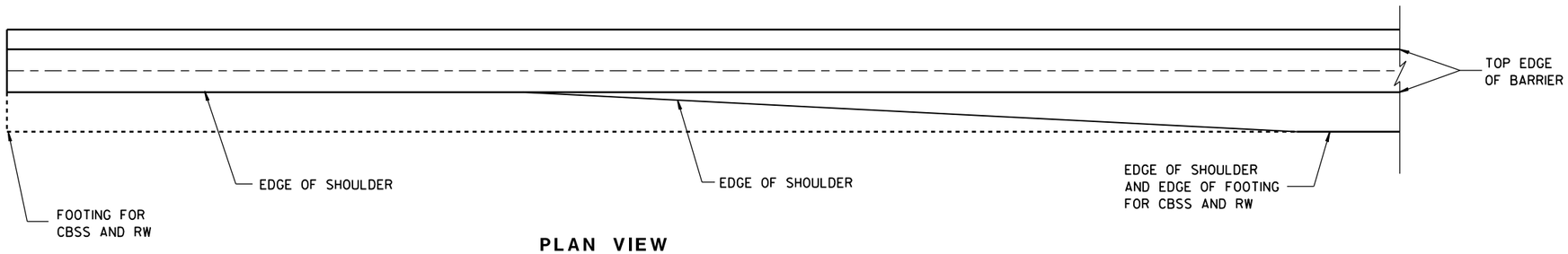
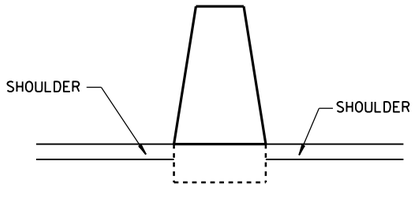
S.D.D. 14 B 32-3b



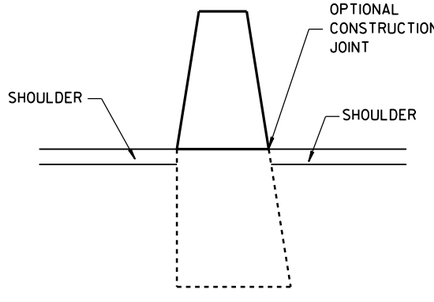
ELEVATION VIEW
TRANSITION TO CBSS CLASS A
(TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)



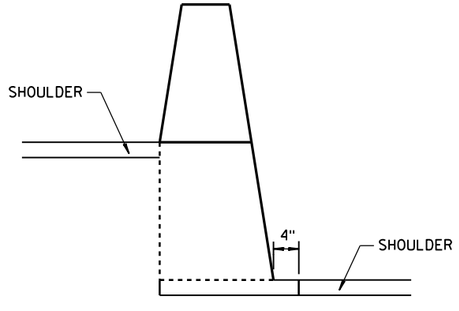
PLAN VIEW
TRANSITION TO CBSS CLASS A
(TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)



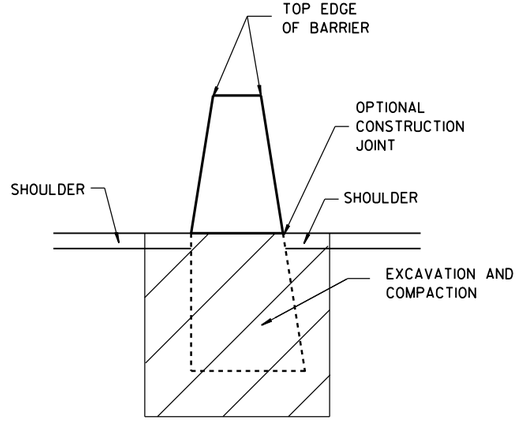
SECTION A-A



SECTION B-B



SECTION C-C



CONCRETE BARRIER SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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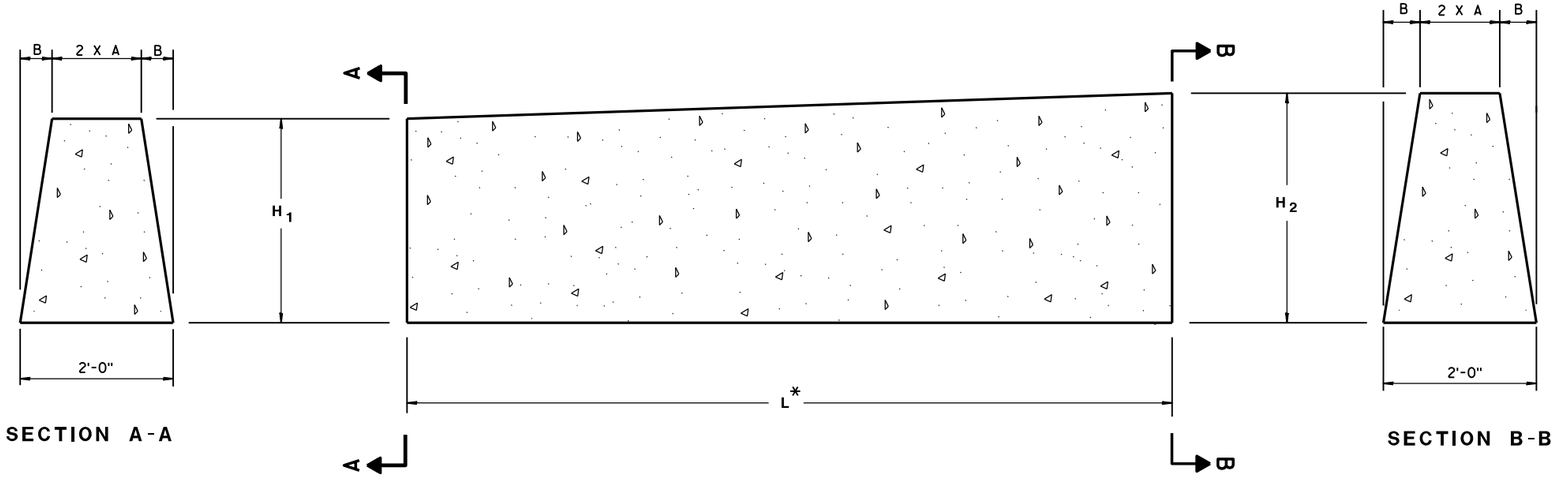
S.D.D. 14 B 32-3c



SECTION A-A

SECTION B-B

DOUBLE COLD JOINT HEIGHT TRANSITION

BARRIER DIMENSIONS

BARRIER HEIGHT INCHES	A INCHES	B INCHES
32	7	5
36	6 1/4	5 3/4
42	5 1/4	6 3/4
56	3	9

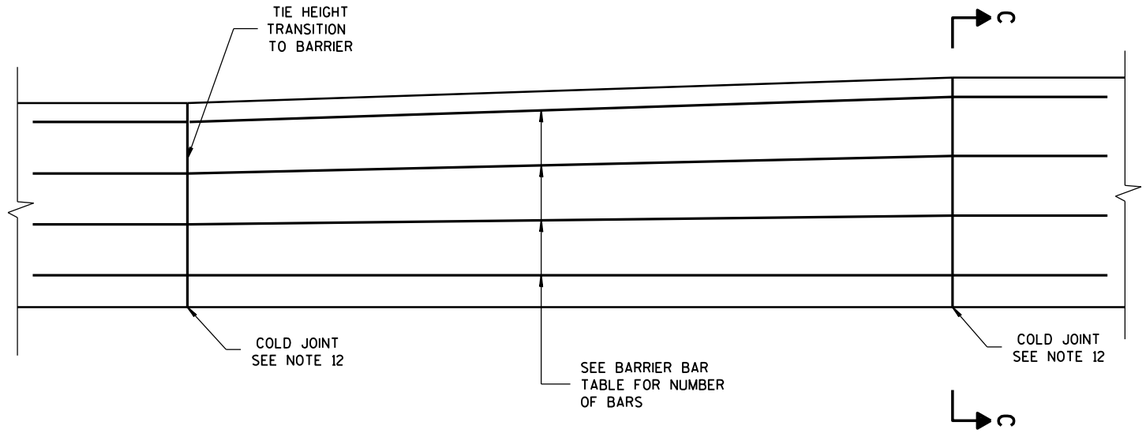
MULTIPLE HEIGHT TRANSITIONS MAY BE USED IN SEQUENCE TO GET TO APPROPRIATE HEIGHT.

USE COLD JOINT TO CONNECT MULTIPLE HEIGHT TRANSITIONS.

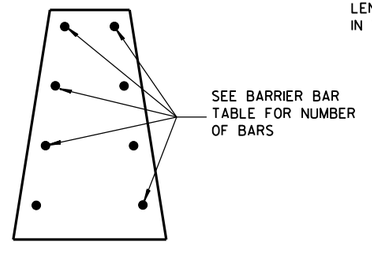
BARRIER BARS

H_1	H_2	L*	NUMBER OF NO. 5 BARS
32"	36"	10'-0"	8
36"	42"	10'-6"	10
42"	56"	24'-6"	11

* LENGTH OF DOUBLE COLD JOINT INCLUDED IN THE TOTAL LENGTH OF CBSS.



STEEL REINFORCEMENT DETAIL



SECTION C-C

CONCRETE BARRIER SINGLE SLOPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2014 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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S.D.D. 14 B 32-3d

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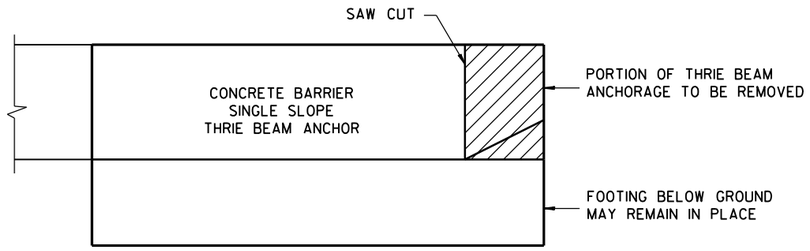
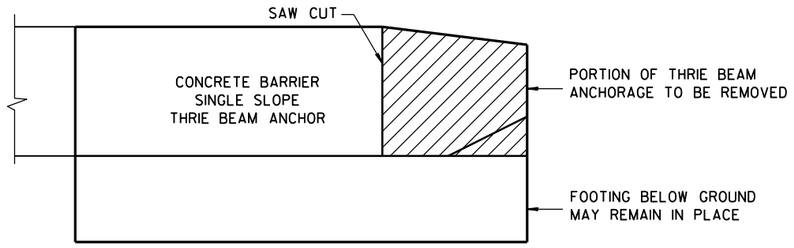
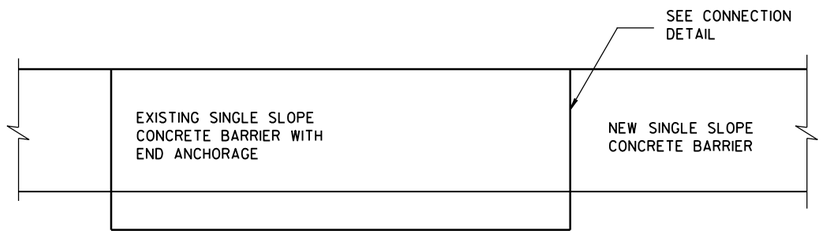
S.D.D. 14 B 32-3d



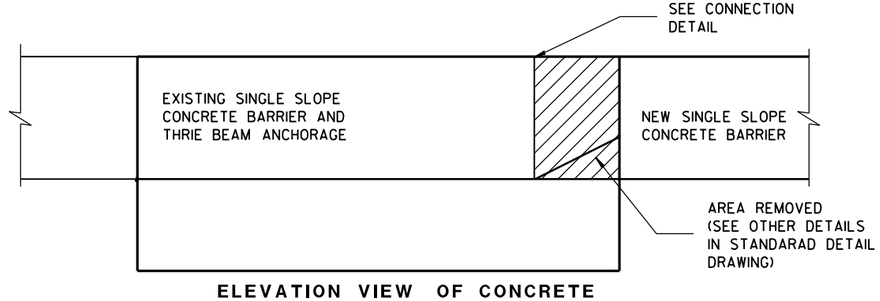
REMOVAL AREA OF
32" CONCRETE THRIE BEAM ANCHORAGE



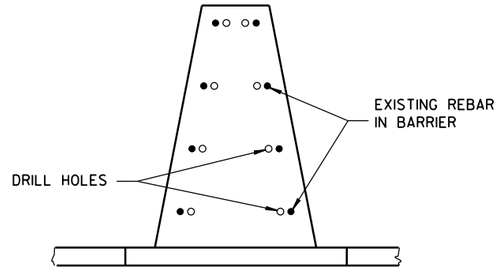
REMOVAL AREA OF CONCRETE THRIE BEAM
ANCHORAGE WITH HEIGHT GREATER THAN 32"



ELEVATION VIEW OF CONCRETE
BARRIER EXTENSION NEAR END ANCHORAGE



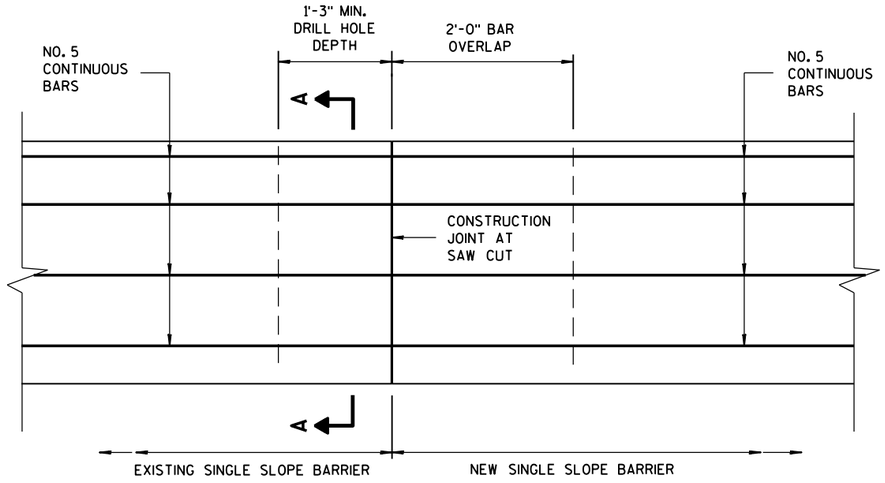
ELEVATION VIEW OF CONCRETE
BARRIER EXTENSION NEAR THRIE BEAM TERMINAL



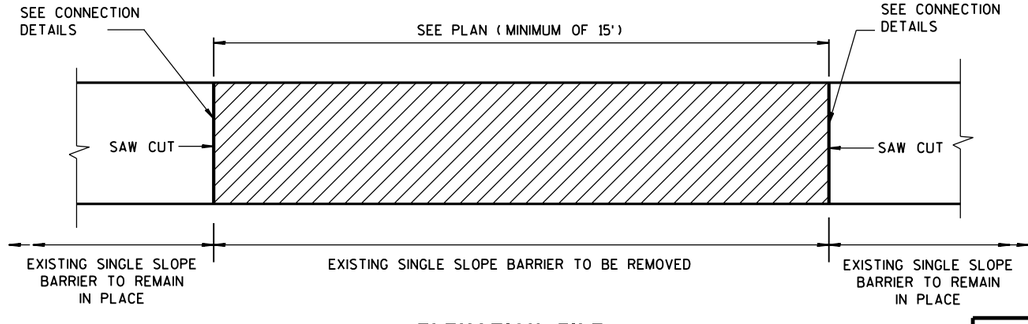
SECTION A-A

GENERAL NOTES

1. THE NUMBER OF DRILL HOLES IS EQUAL TO THE NUMBER OF REBAR IN BARRIER (SEE OTHER DETAILS).
2. MINIMUM DEPTH OF DRILL HOLES IS 1'-3".
3. DRILL HOLES TO BE A MINIMUM OF 4 INCHES FROM THE EDGE OF CONCRETE.
4. INSTALL EPOXY COATED NO. 5 BARS IN DRILL HOLES.
5. END ANCHORAGE MAY OR MAY NOT BE PRESENT ON EXISTING BARRIER.
6. REMOVE THRIE BEAM ANCHORAGE AS SHOWN.



CONNECTION OF EXISTING SINGLE SLOPE CONCRETE BARRIER TO
NEW SINGLE SLOPE CONCRETE BARRIER



ELEVATION FILE
BARRIER REMOVAL AND REPLACEMENT

CONCRETE BARRIER
SINGLE SLOPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

RETROFIT OR REPAIR SINGLE SLOPE CONCRETE BARRIER

6

S.D.D. 14 B 32-3e

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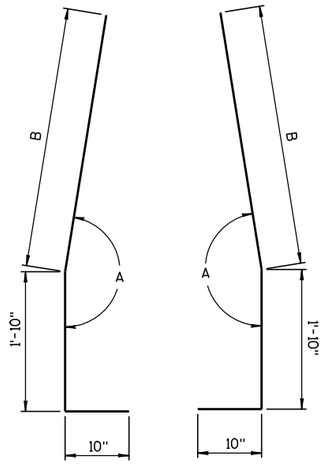
S.D.D. 14 B 32-3e

BAR CHART
SECTIONS V1 - V11

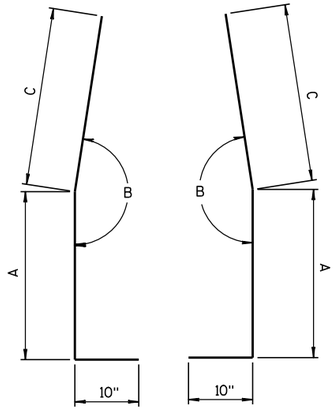
BAR	A	B
V1	170°-50'	3'-4½"
V2	171°-20'	3'-4½"
V3	171°-30'	3'-2½"
V4	171°-25'	3'-1½"
V5	171°-15'	3'-0"
V6	171°-15'	2'-11"
V7	171°-20'	2'-10½"
V8	171°-10'	2'-9½"
V9	171°-10'	2'-9"
V10	171°-05'	2'-8½"
V11	171°-10'	2'-8"



BAR BENDING DETAIL
FOR BARS V1 - V11

BAR CHART
SECTIONS V12 - V13

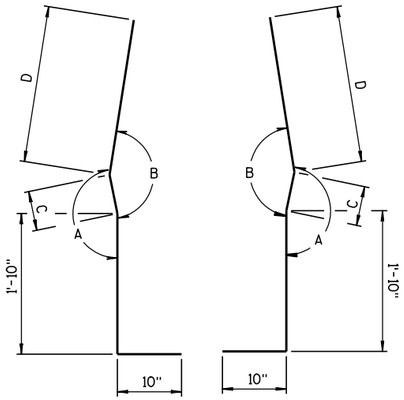
BAR	A	B	C
V12	2'-2"	171°-15'	2'-3½"
V13	2'-7"	171°-05'	1'-10"



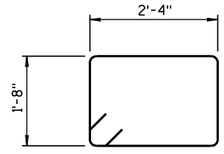
BAR BENDING DETAIL
FOR BARS V12 - V13

BAR CHART
SECTIONS V14 - V16

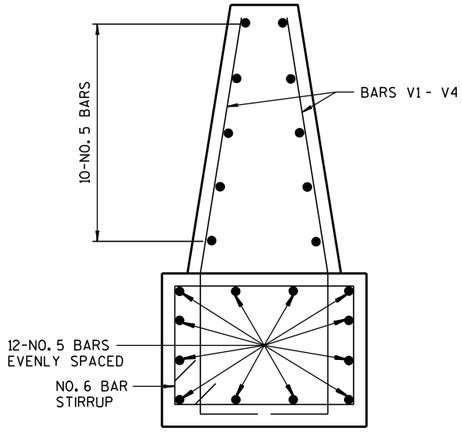
BAR	A	B	C	D
V14	168°-15'	159°-15'	6"	2'-0"
V15	169°-20'	161°-00'	8"	1'-10"
V16	168°-40'	160°-10'	10"	1'-8"



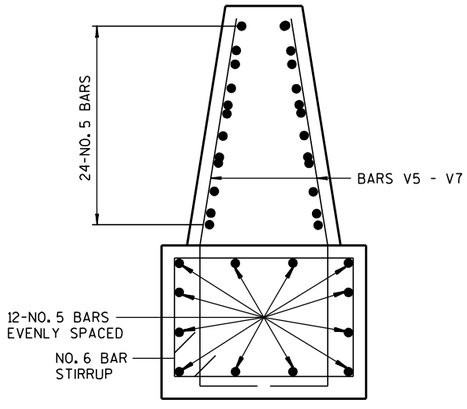
BAR BENDING DETAIL
FOR BARS V14 - V16



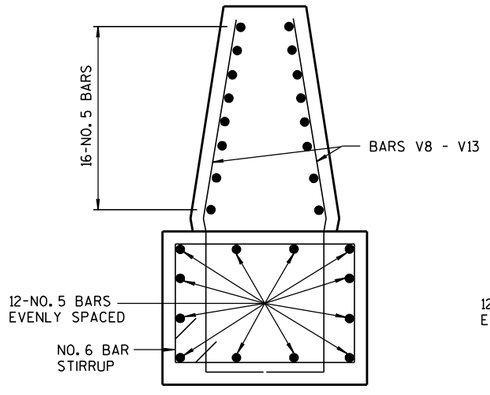
STIRRUP BAR
BENDING DETAIL



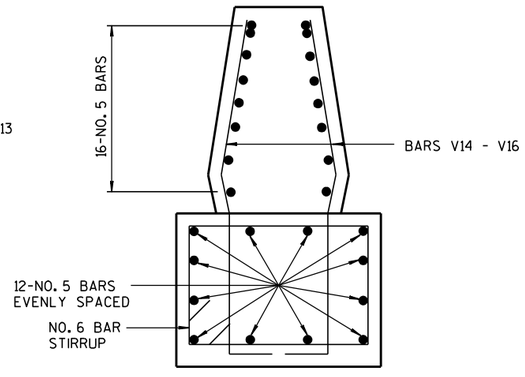
BAR DETAIL
SECTIONS V1 - V4



BAR DETAIL
SECTIONS V5 - V7



BAR DETAIL
SECTIONS V8 - V13



BAR DETAIL
SECTIONS V14 - V16

CONCRETE BARRIER
SINGLE SLOPE 42"
THRIE BEAM ANCHOR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6-3-2010
DATE

/S/ Jerry H. Z---
ROADWAY STANDARDS ENGINEER

FHWA

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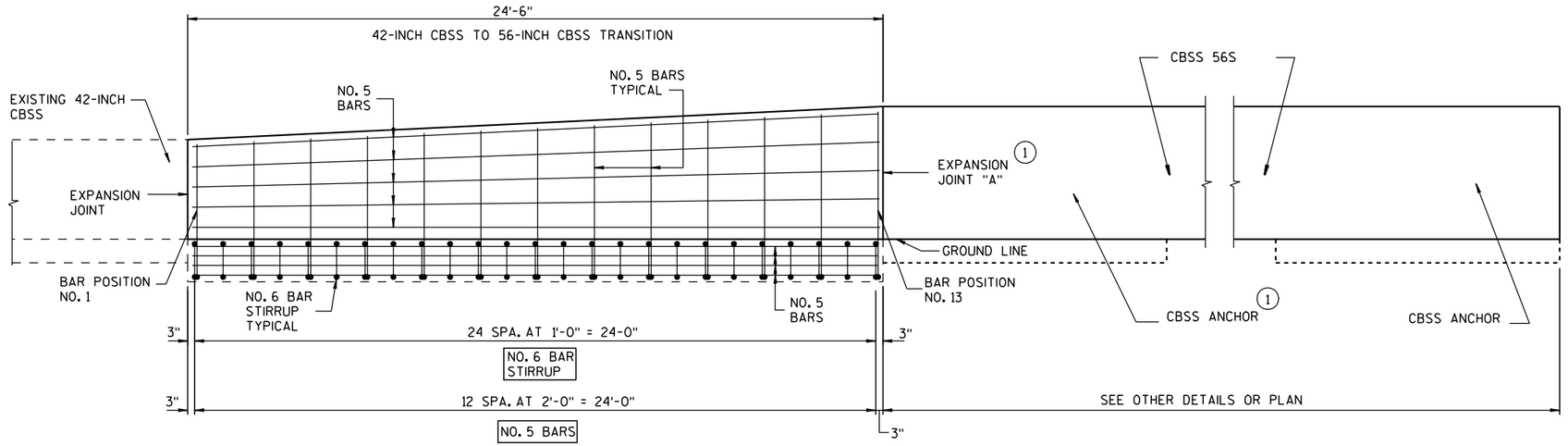
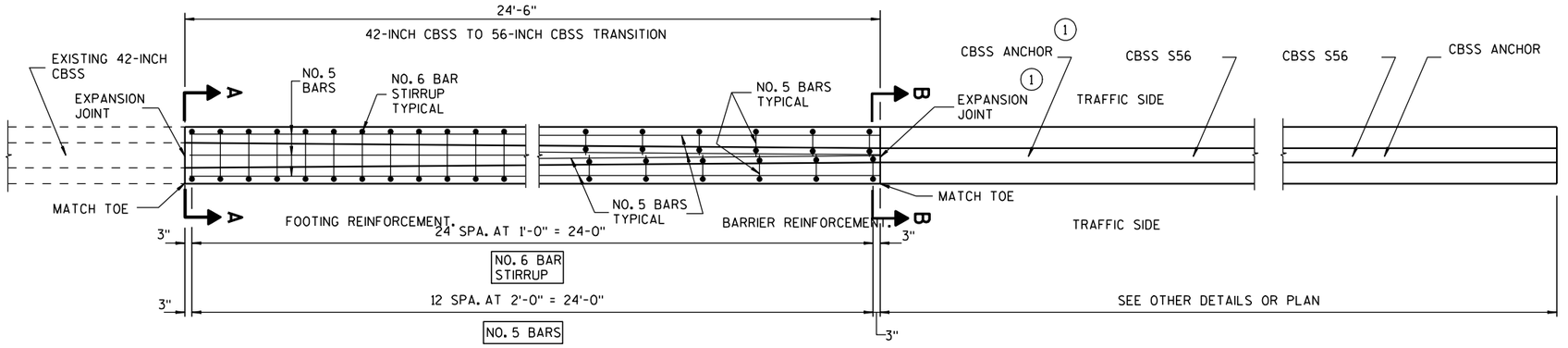
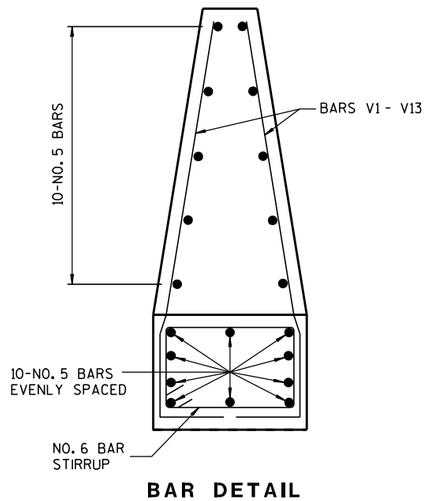
S.D.D. 14 B 33-1h



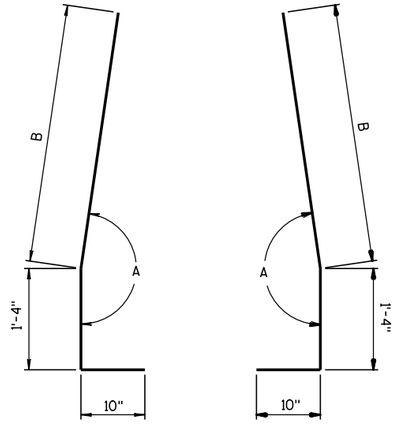
ELEVATION VIEW



PLAN VIEW



BAR DETAIL
BAR POSITION NO. 1 - NO. 13



BAR BENDING DETAIL
FOR BARS V1 - V13

BAR CHART SECTIONS V1 - V13

BAR	A	B
V1	170°-50'	3'-4½"
V2	170°-50'	3'-6"
V3	170°-55'	3'-7"
V4	171°	3'-8"
V5	170°-55'	3'-9½"
V6	170°-50'	3'-10½"
V7	170°-50'	3'-11½"

BAR	A	B
V8	170°-55'	4'-0½"
V9	170°-50'	4'-2"
V10	170°-50'	4'-3"
V11	170°-50'	4'-4½"
V12	170°-55'	4'-5½"
V13	170°-50'	4'-6½"

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2'LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.

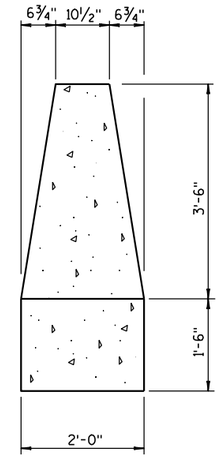
4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS 501.

USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.

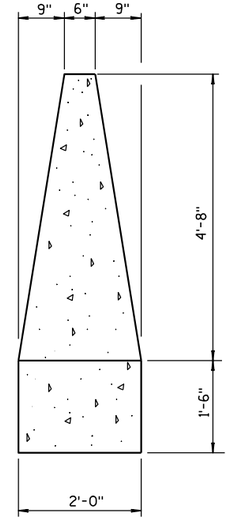
THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

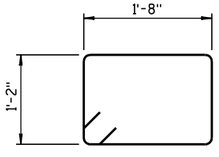
(1) EXPANSION JOINT "A" MAY BE REPLACED WITH A COLD-JOINT PROVIDED THAT 3 FEET OF LAP OF LONGITUDINAL STEEL IS PROVIDED. IF COLD-JOINT IS USED ANCHOR NOT REQUIRED.



SECTION A-A



SECTION B-B



STIRRUP BAR
BENDING DETAIL

42-INCH SINGLE SLOPE CONCRETE BARRIER TO 56-INCH SINGLE SLOPE CONCRETE BARRIER HEIGHT TRANSITION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6-3-2010 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
FHWA

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S.D.D. 14 B 39-1e

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S.D.D. 14 B 39-1e

GENERAL NOTES

1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

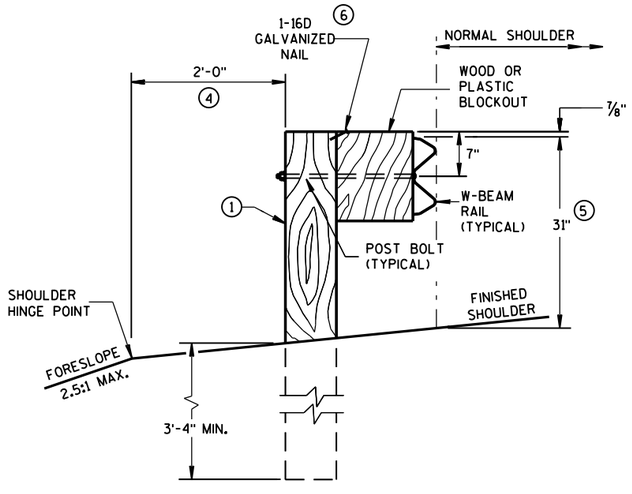
2. USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

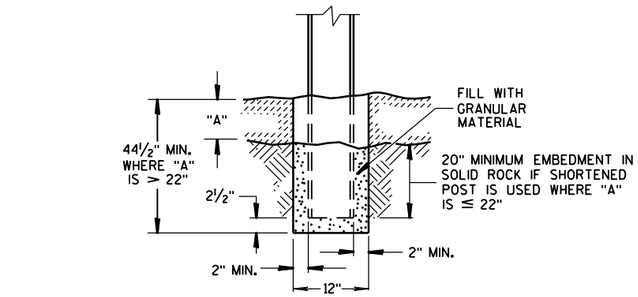
5. FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

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



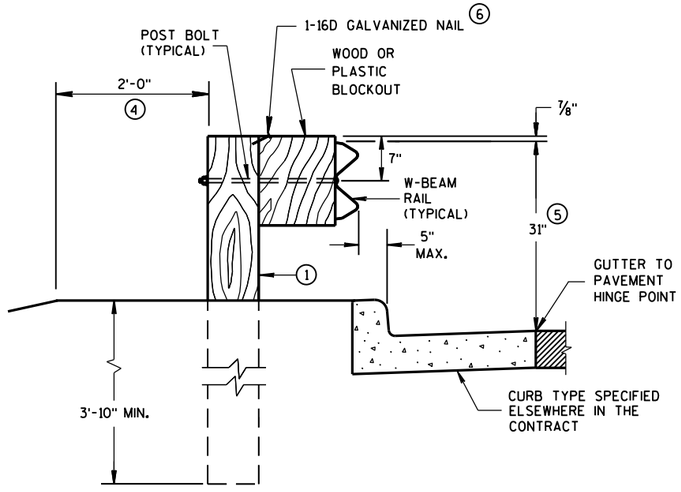
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



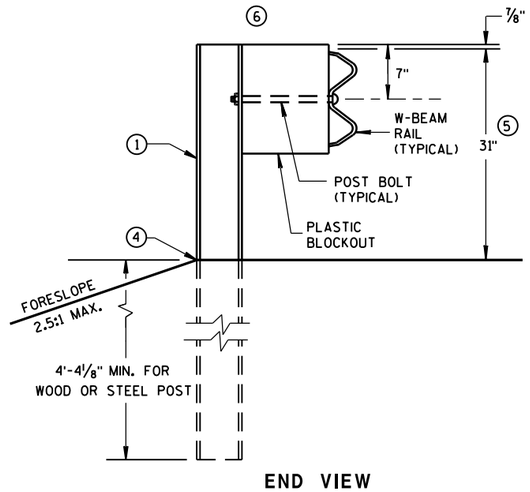
END VIEW

SETTING STEEL OR WOOD POST IN ROCK 3



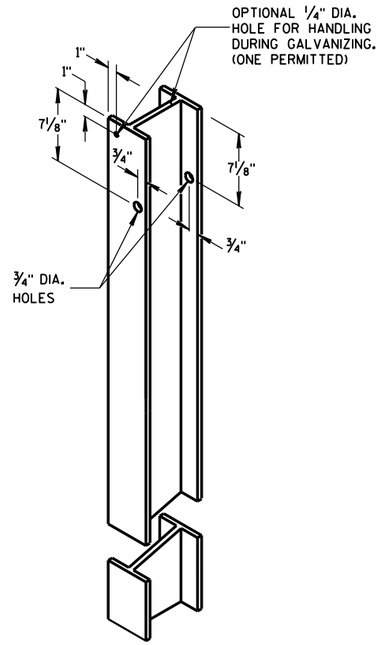
END VIEW

LOCATED ALONG A CURBED ROADWAY

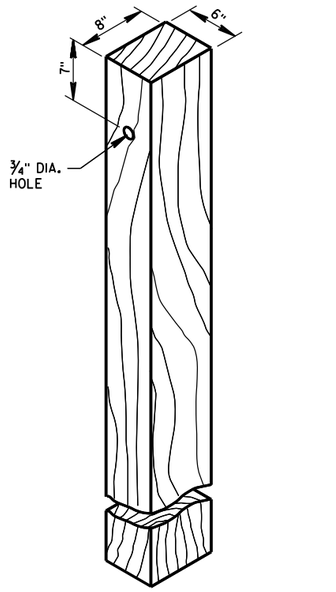


END VIEW

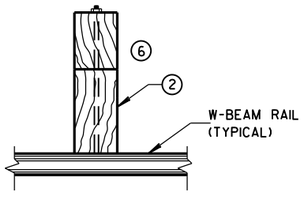
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



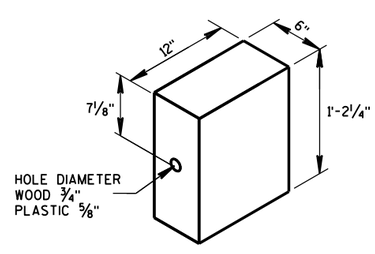
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) 1



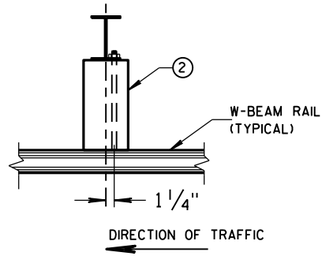
WOOD POST
(6" X 8") NOMINAL 1



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT 2

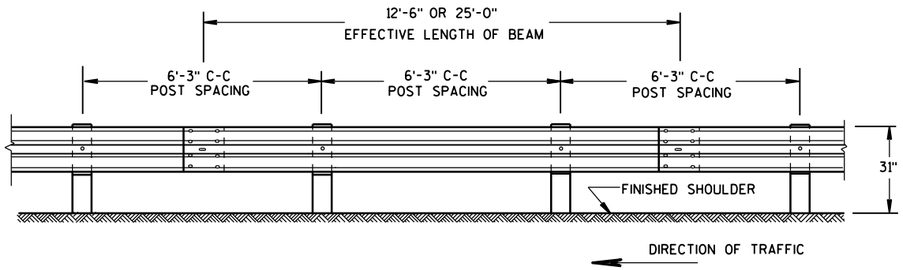


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

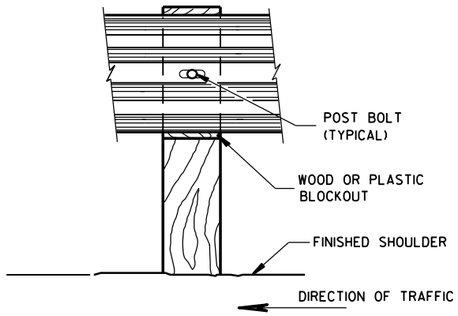
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 14 B 42-3a



FRONT VIEW

POST SPACING STANDARD INSTALLATION



FRONT VIEW AT WOOD POST

GENERAL NOTES

(7) PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.

(8) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

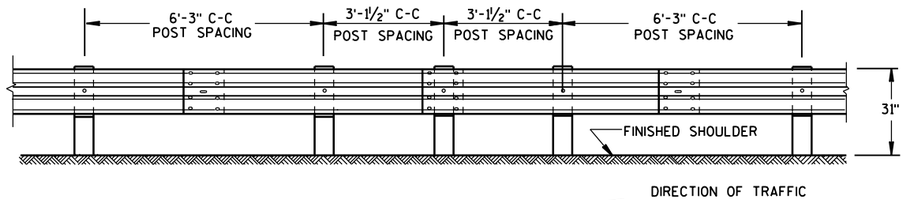
(9) REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

(10) PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

(11) 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

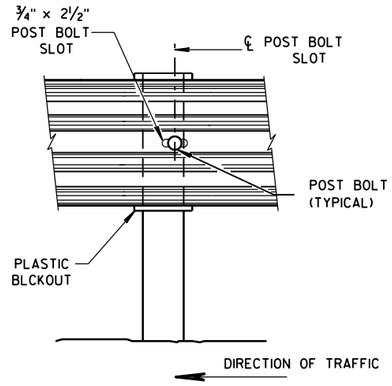
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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.

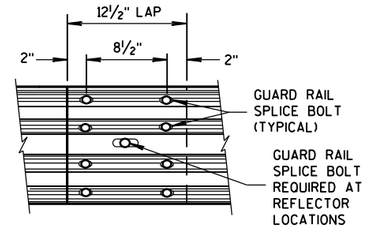


FRONT VIEW

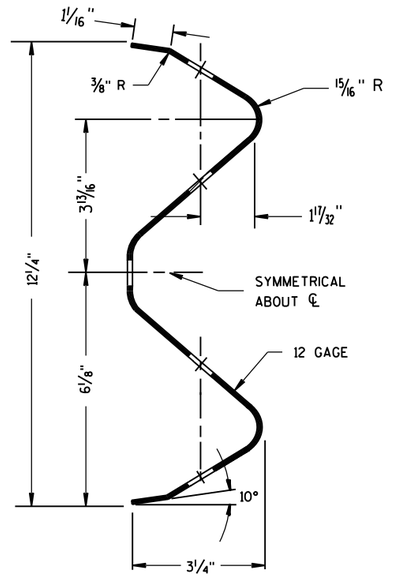
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



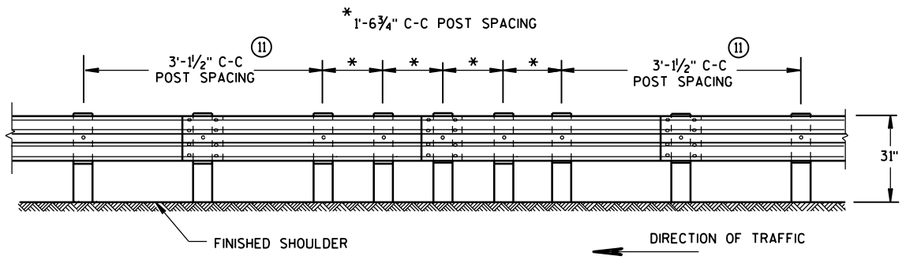
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE

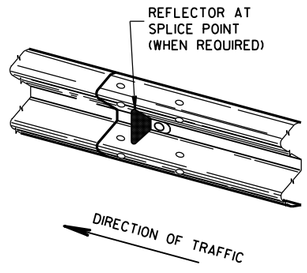


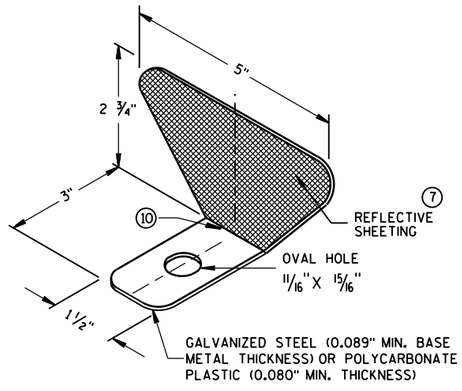
SECTION THRU W-BEAM RAIL



FRONT VIEW

QUARTER POST SPACING (QS)





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (7)

REFLECTOR SPACING (8)

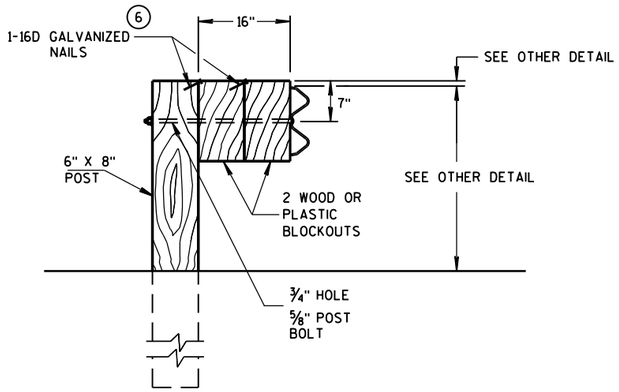
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 (9)	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2 (10)	

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

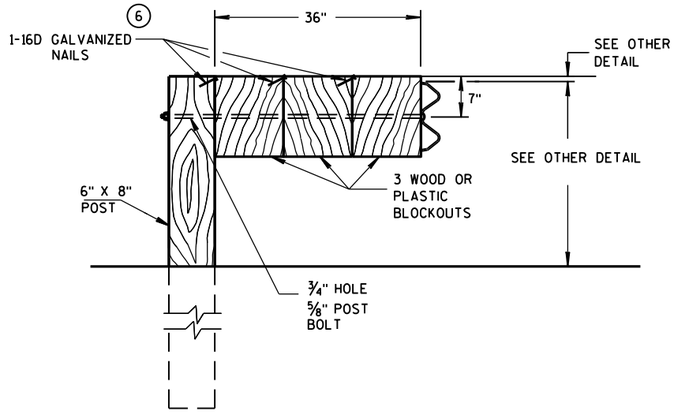
6

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



DETAIL FOR 16" BLOCKOUT DEPTH

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

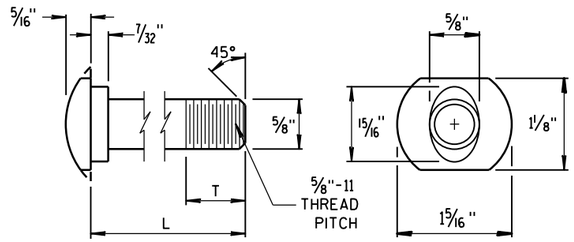


DETAIL FOR 36" BLOCKOUT DEPTH

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

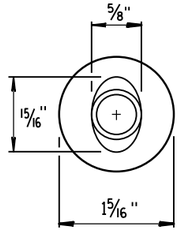
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

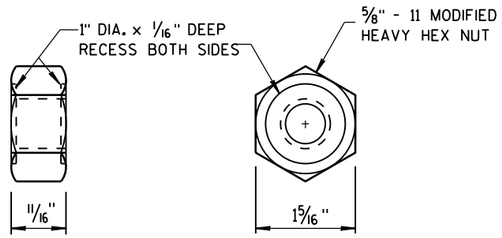


POST BOLT TABLE

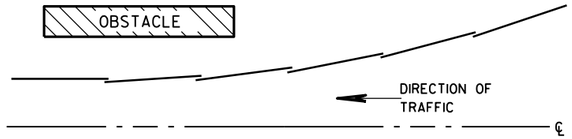
L	T (MIN.)
1¼"	1⅛"
2"	1¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

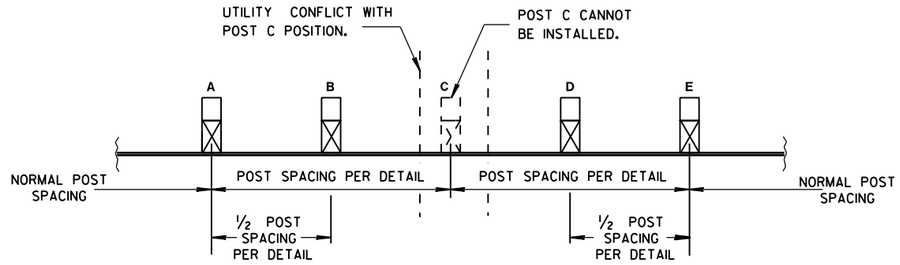


POST BOLT AND RECESS NUT

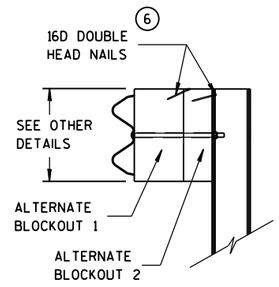


PLAN VIEW

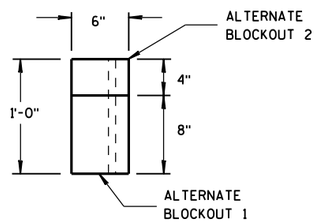
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

6

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

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

(D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

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

(G) ½" DIAMETER X 3" LONG LAG BOLT AND WASHER.

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

(I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

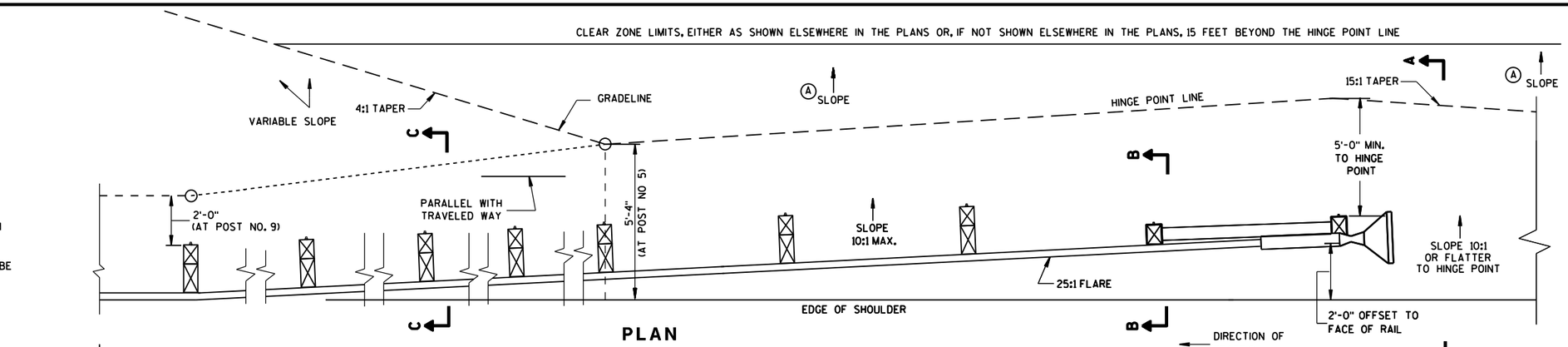
SEE SDD 14B42 FOR MORE INFORMATION.

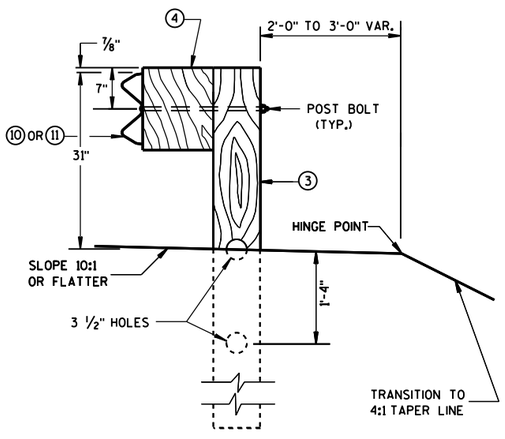
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

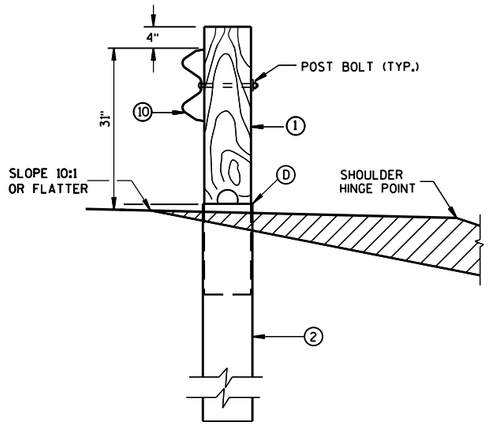
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3½" 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.

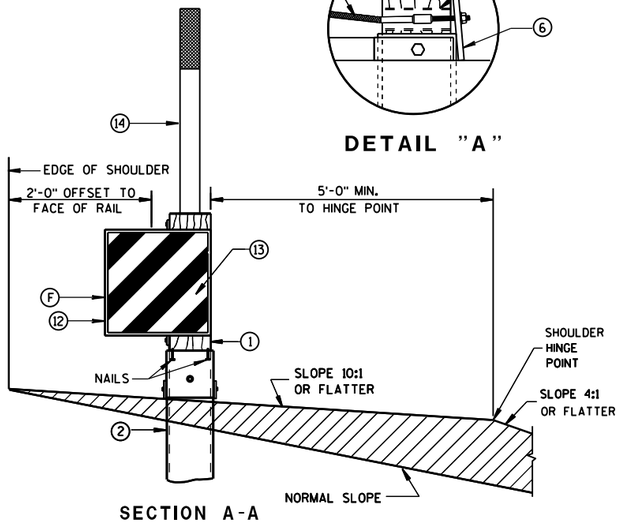




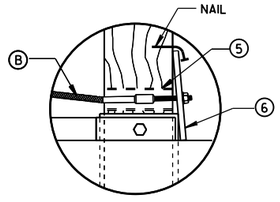
SECTION C-C
TYPICAL AT POST NOS. 3-9



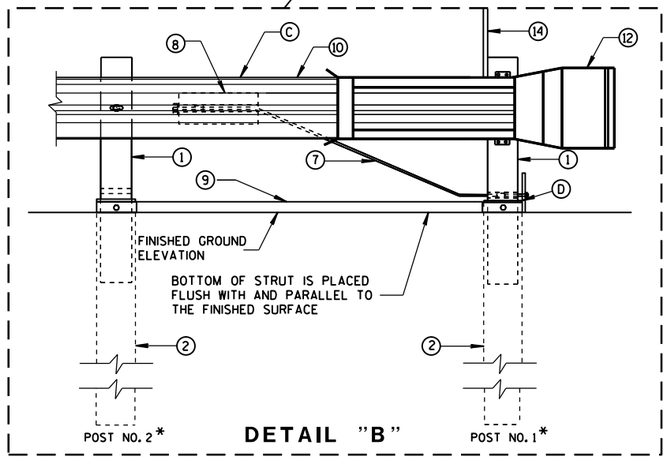
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



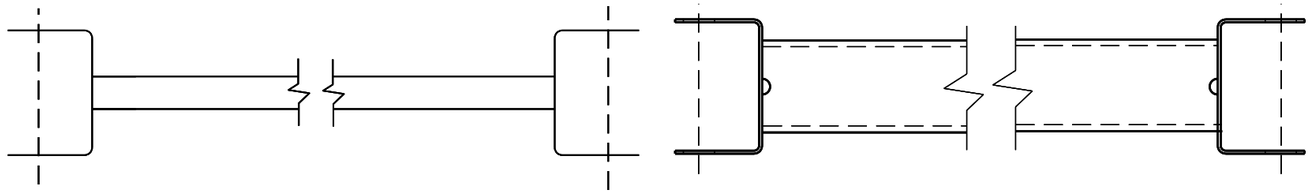
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

S.D.D. 14 B 44-2a

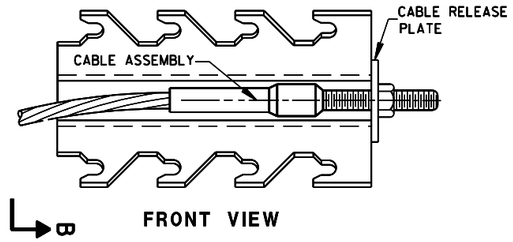
S.D.D. 14 B 44-2a



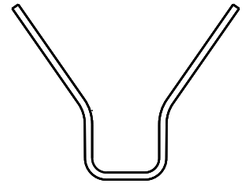
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

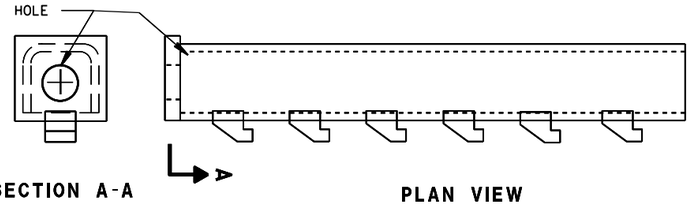
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR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



FRONT VIEW



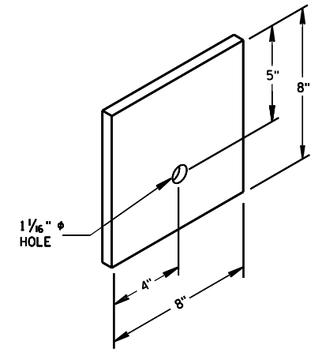
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



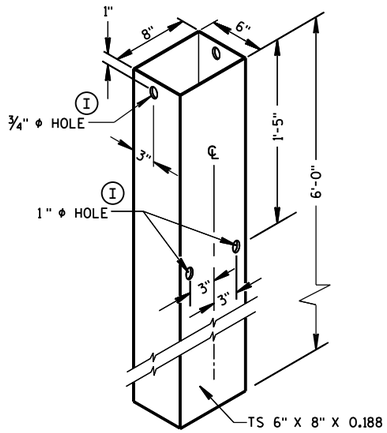
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

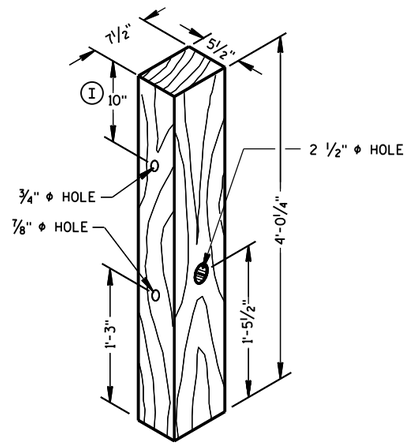
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 44-2b

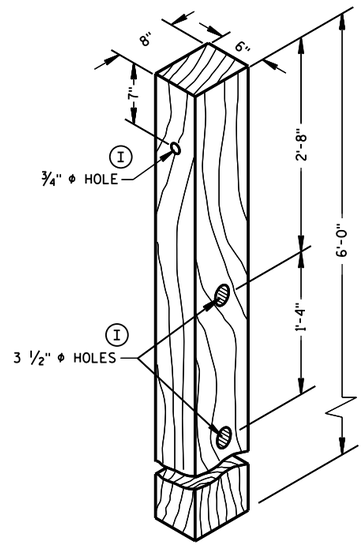


FOUNDATION TUBE (2)



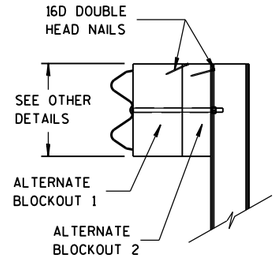
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

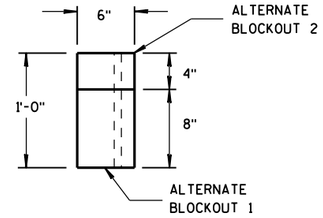


POSTS NUMBER 3-9

WOOD CRT POST (3)

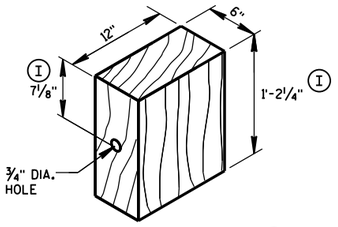


SIDE VIEW



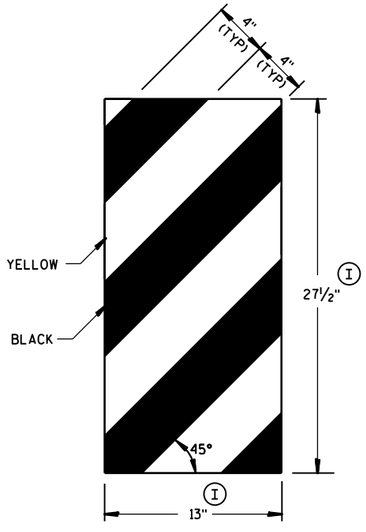
TOP VIEW

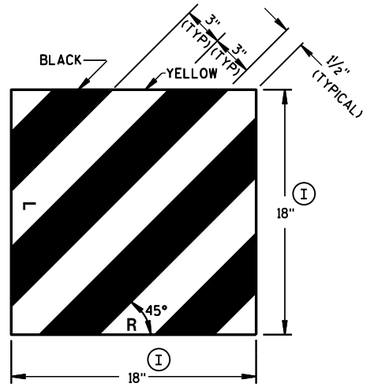
ALTERNATE WOOD BLOCKOUT DETAIL



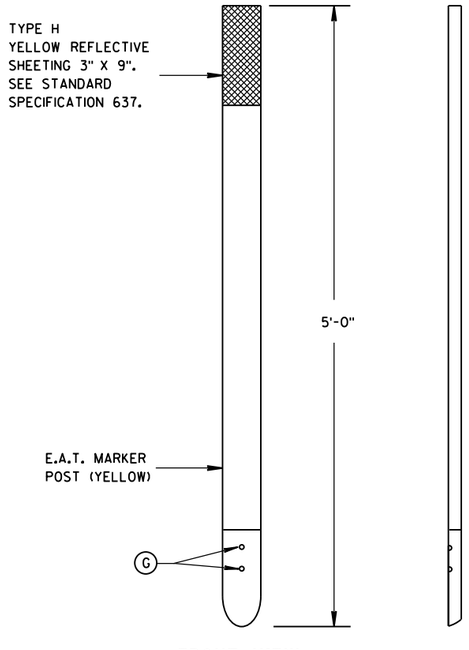
WOOD BLOCKOUT (4)

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





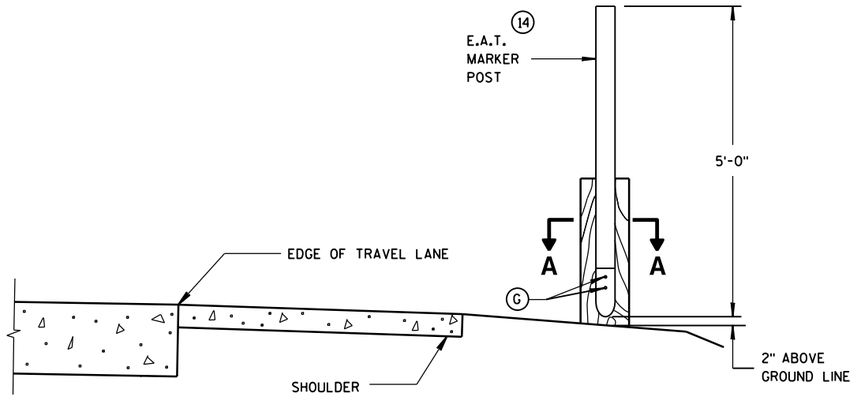
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

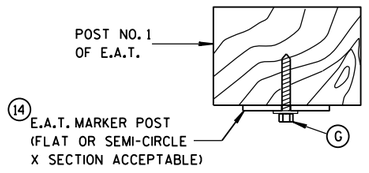
SIDE VIEW

E.A.T. MARKER POST (14)



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1

(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

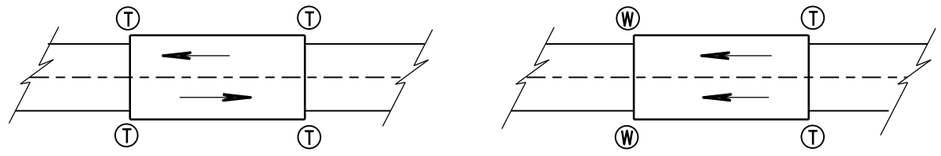
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 14 B 44-2c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

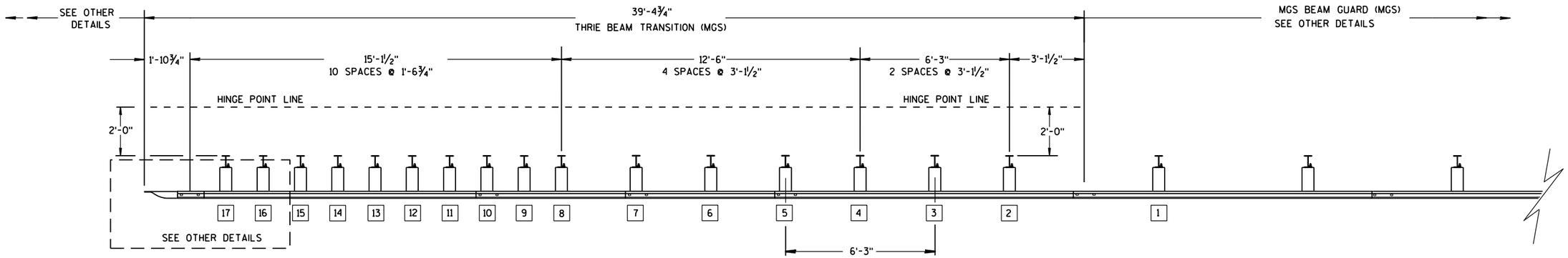
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

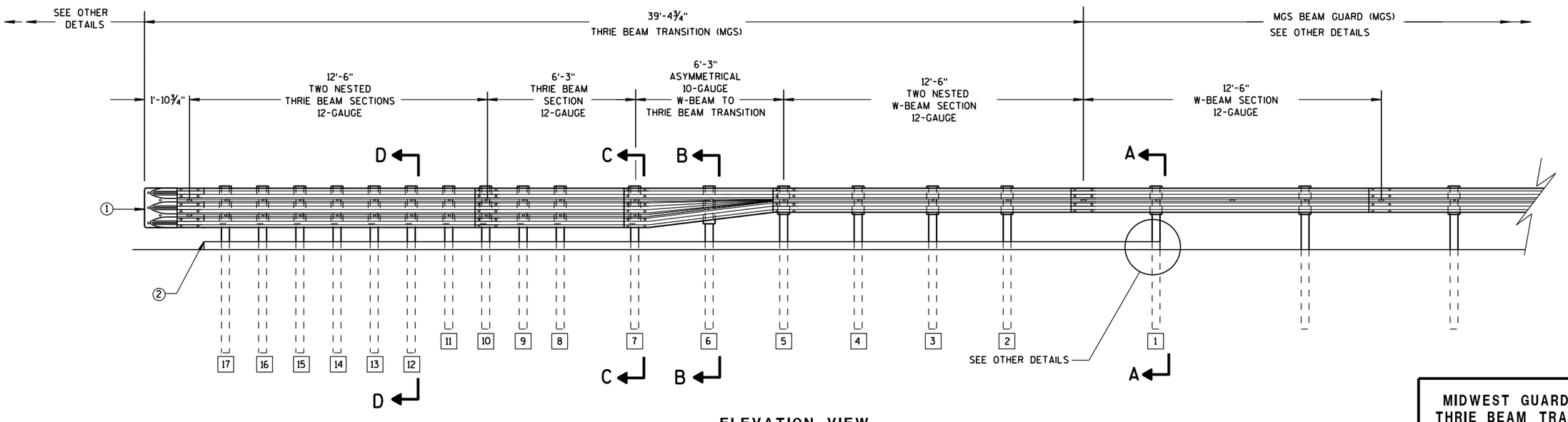
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 45-4a

6

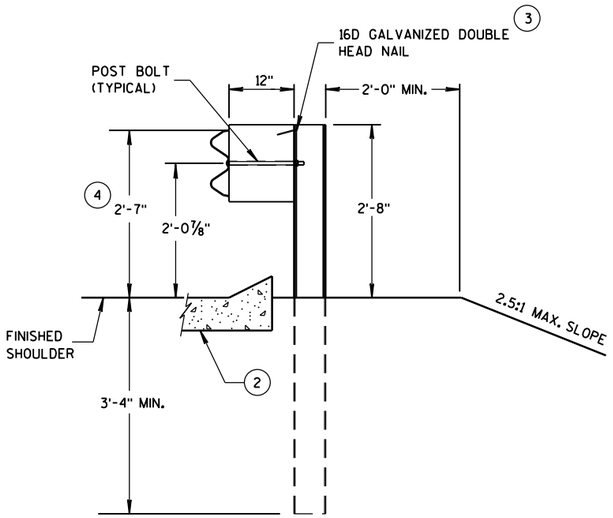
S.D.D. 14 B 45-4a

GENERAL NOTES

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE_FEATURE SEE PLAN FOR INFORMATION.

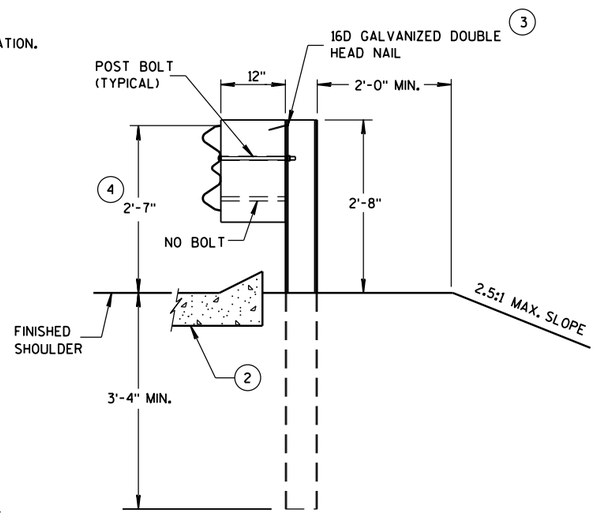
(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



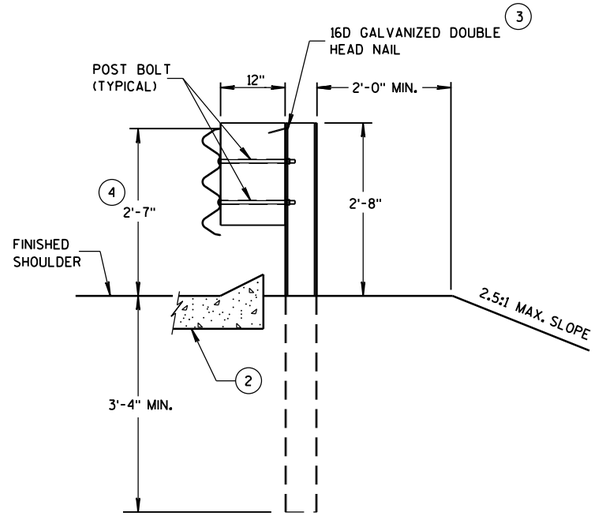
SECTION A-A

POSTS 1-5



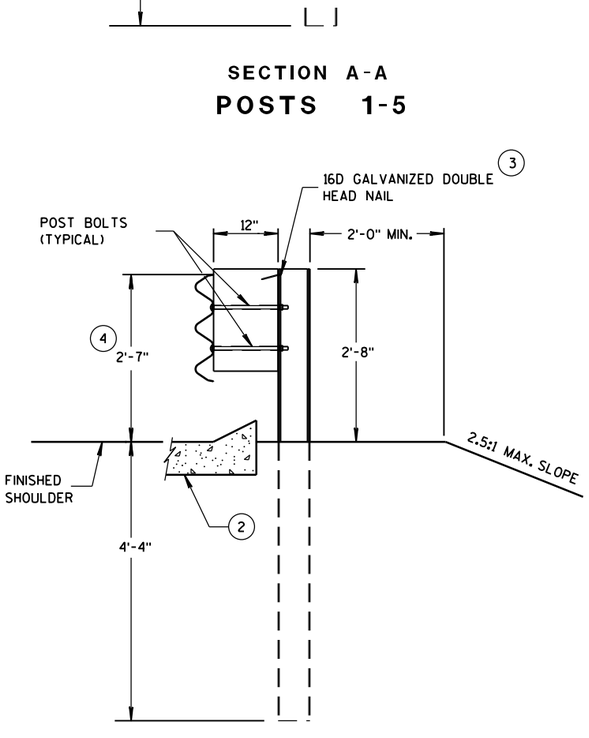
SECTION B-B

POST 6



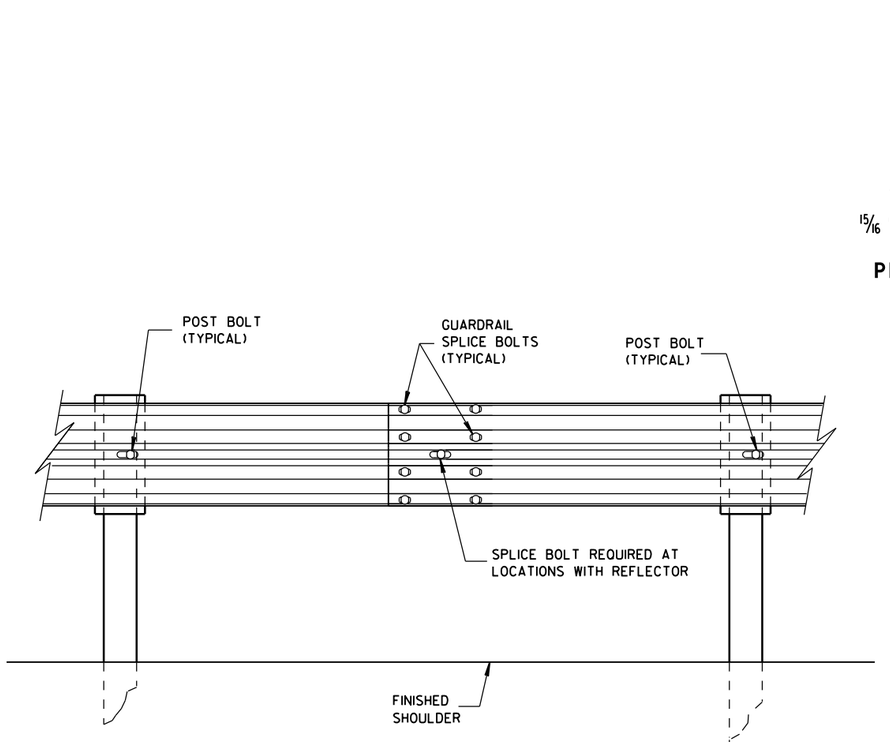
SECTION C-C

POSTS 7-11



SECTION D-D

POSTS 12-17



SPLICE DETAIL

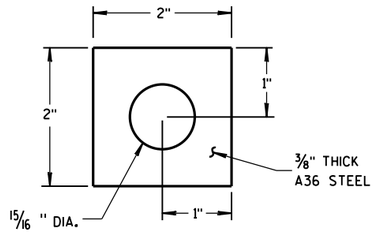
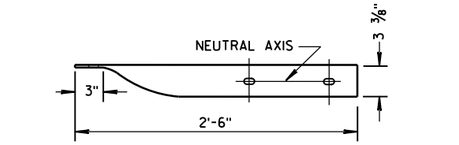
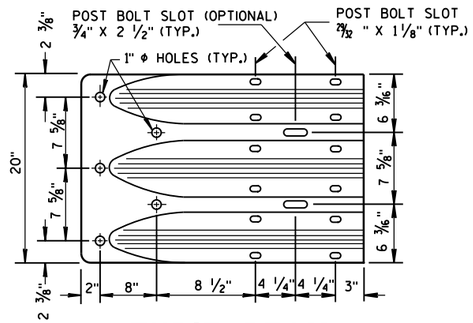
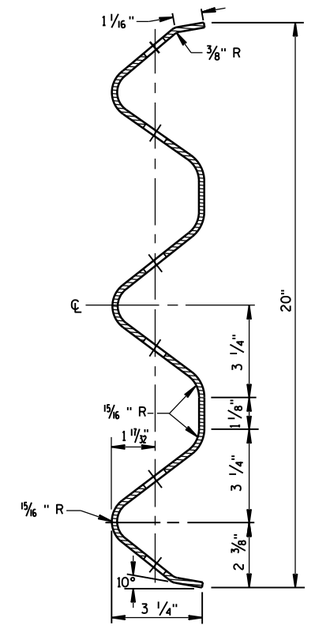


PLATE WASHER DETAIL





THRIE BEAM TERMINAL CONNECTOR



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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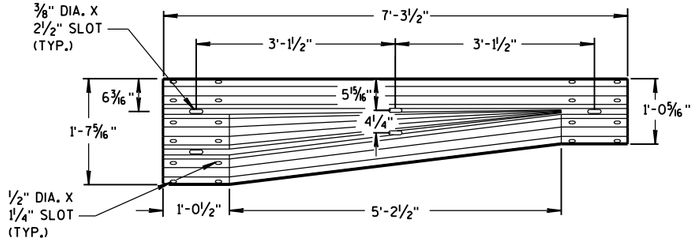
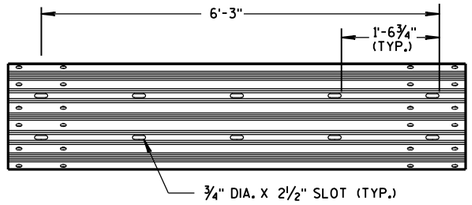
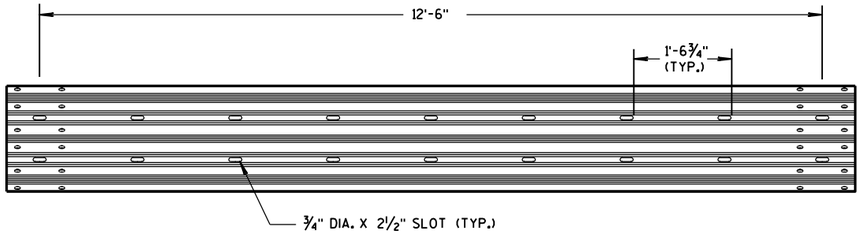
S.D.D. 14 B 45-4b



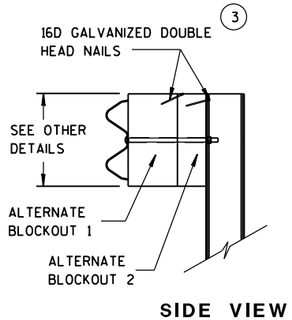
W-BEAM TO THRIE BEAM TRANSITION SECTION



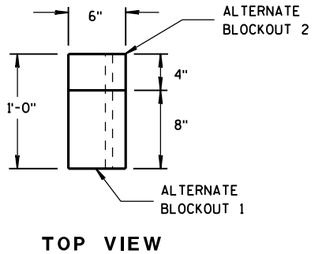
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

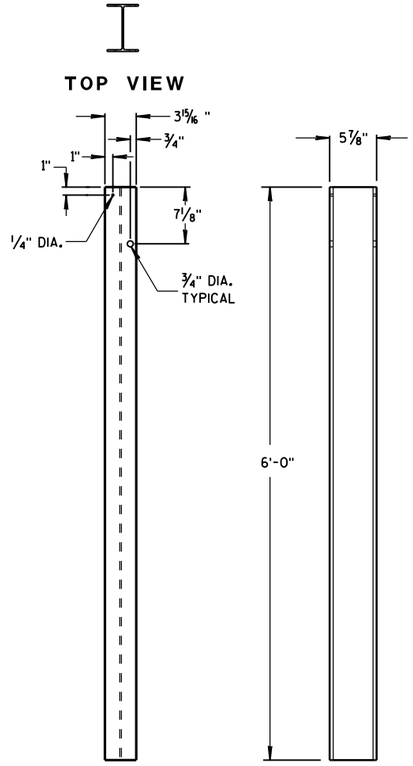


SIDE VIEW



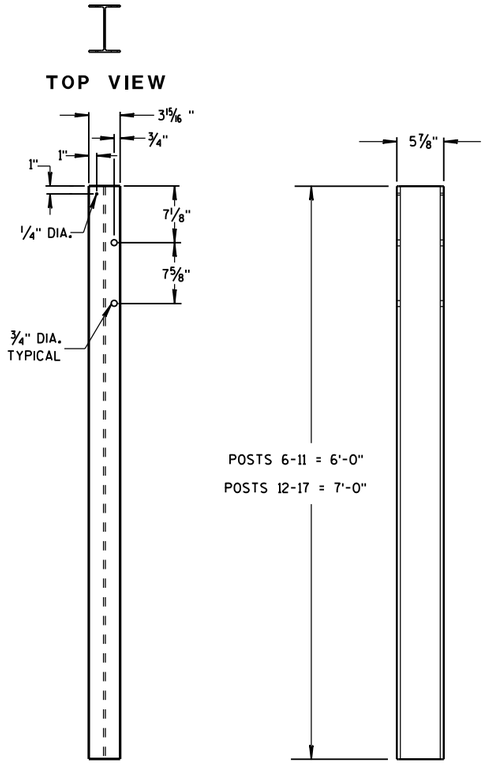
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



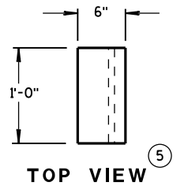
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5

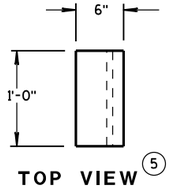


FRONT VIEW SIDE VIEW

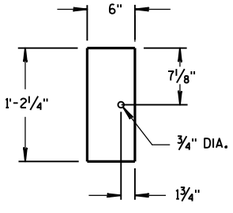
STEEL POSTS 6-17



TOP VIEW

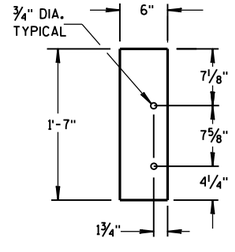


TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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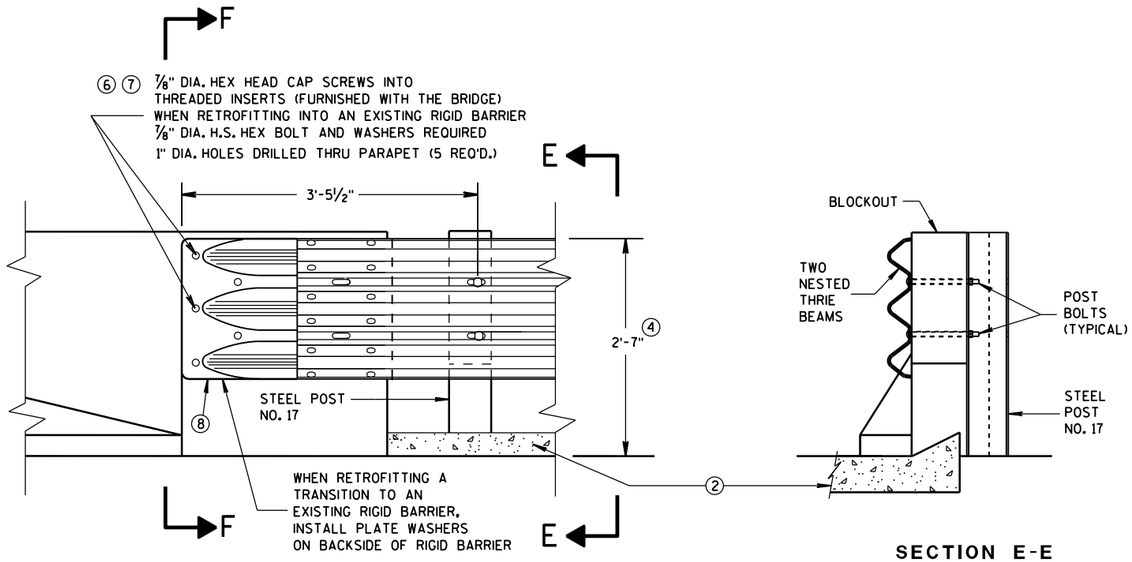
S.D.D. 14 B 45-4c
S.D.D. 14 B 45-4c



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

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

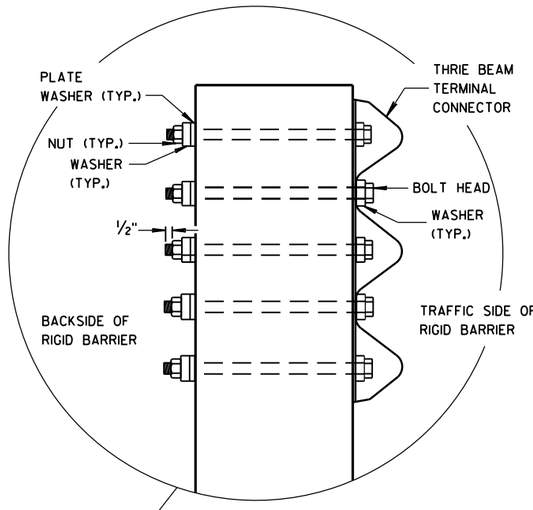
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

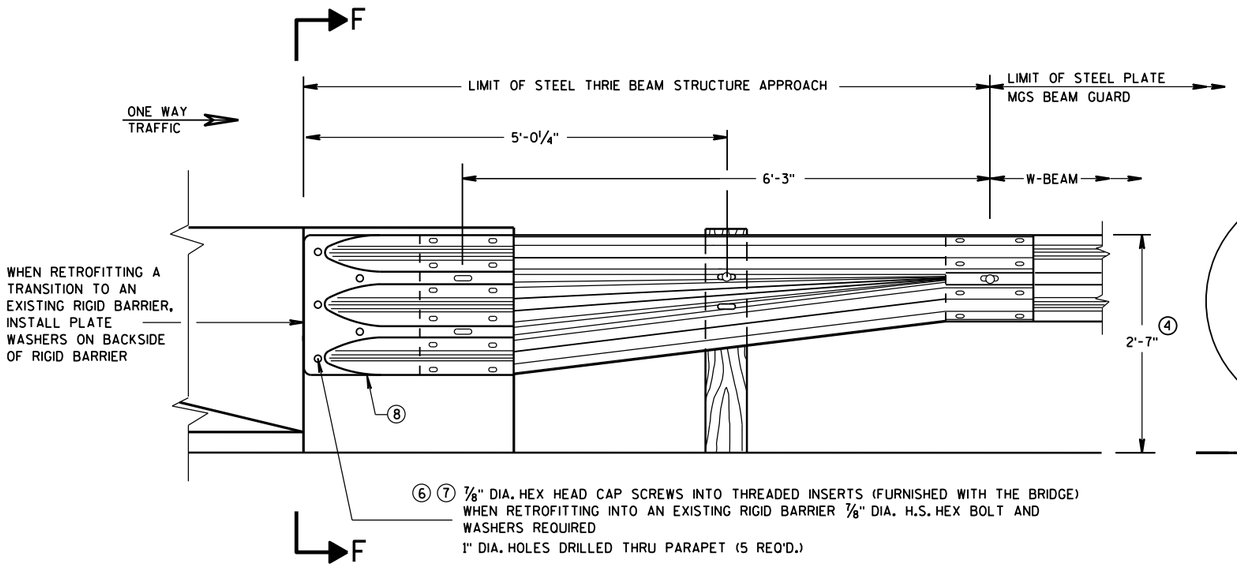
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

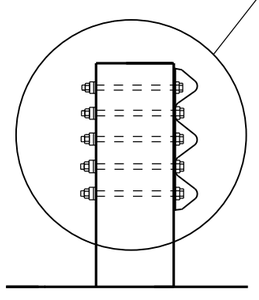
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

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

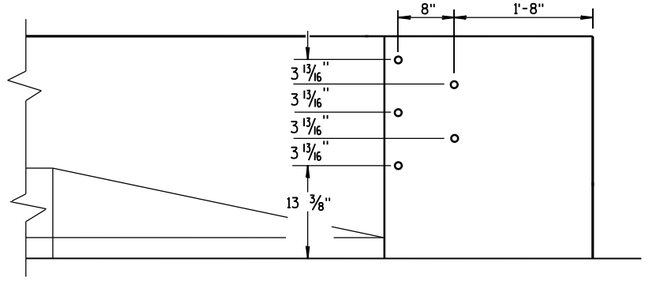




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(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
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS D ENGINEER

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S.D.D. 14 B 45-4d

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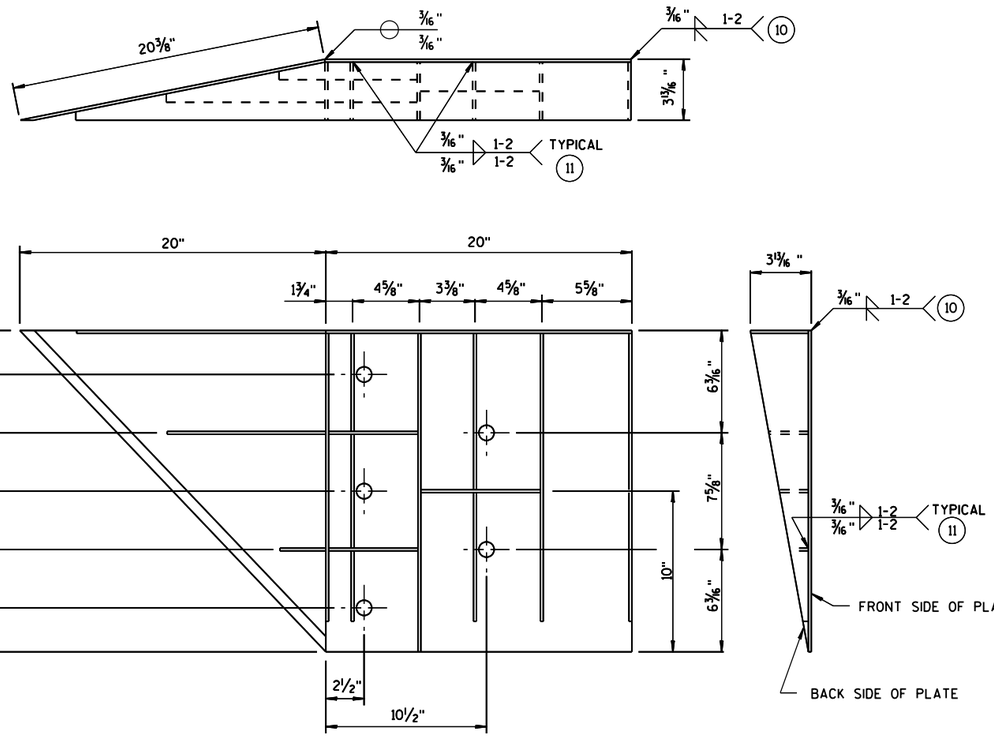

WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

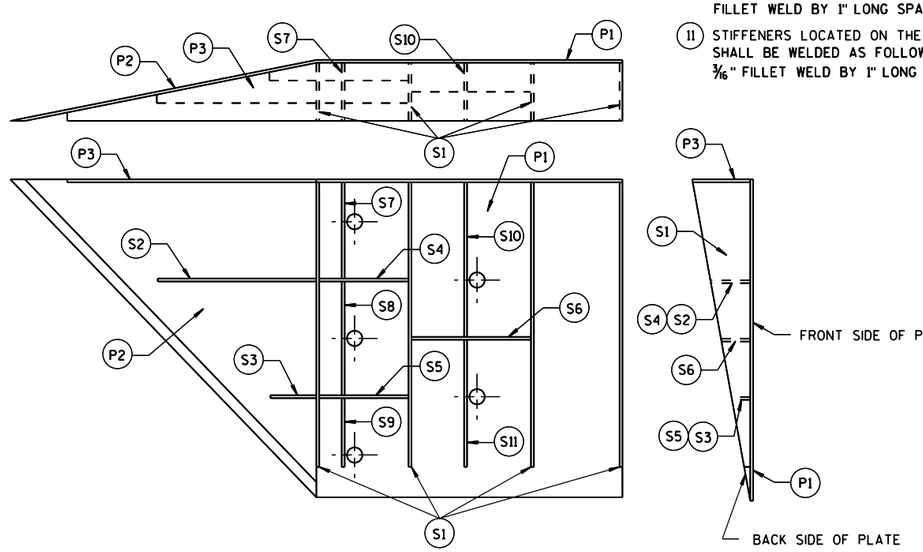

PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

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

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

(11) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

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 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 3/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" 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 1/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
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FHWA

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S.D.D. 14 B 45-4i

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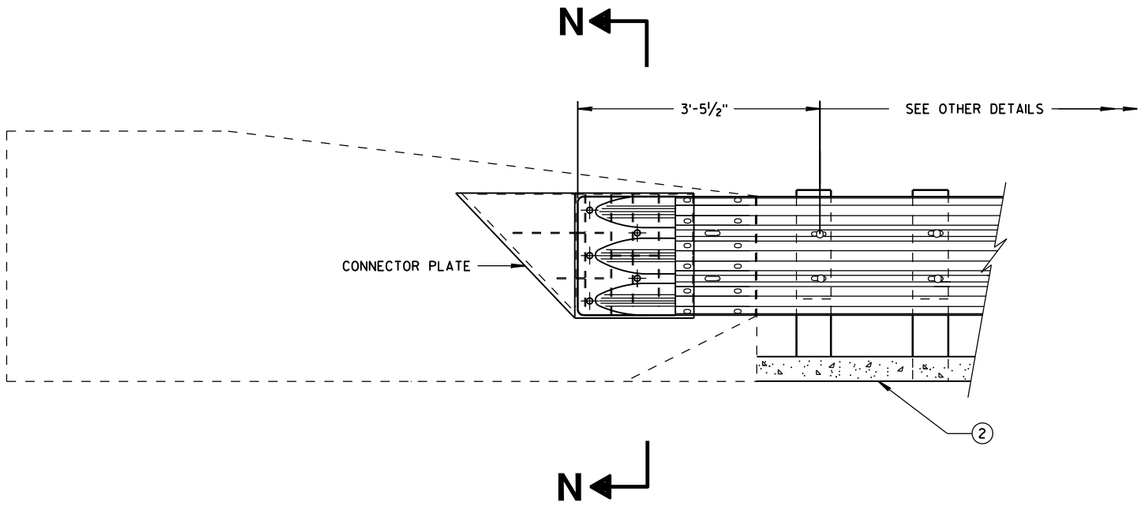
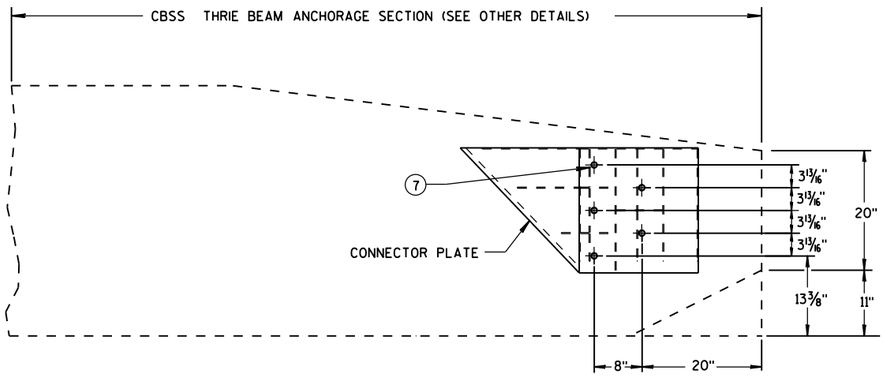


THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



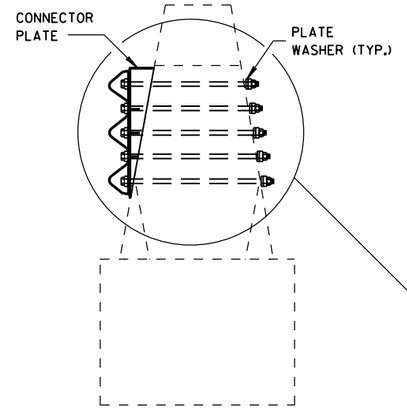
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

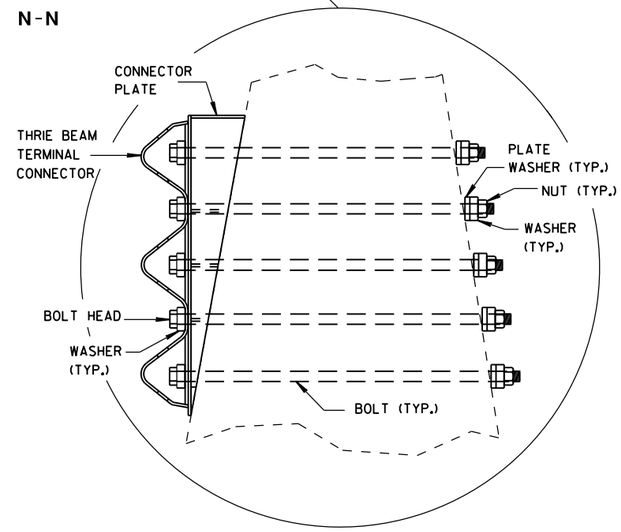
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

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



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Jerry H. Zoga — ROADWAY STANDARDS DEVELOPMENT ENGINEER
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S.D.D. 14 B 45-4j

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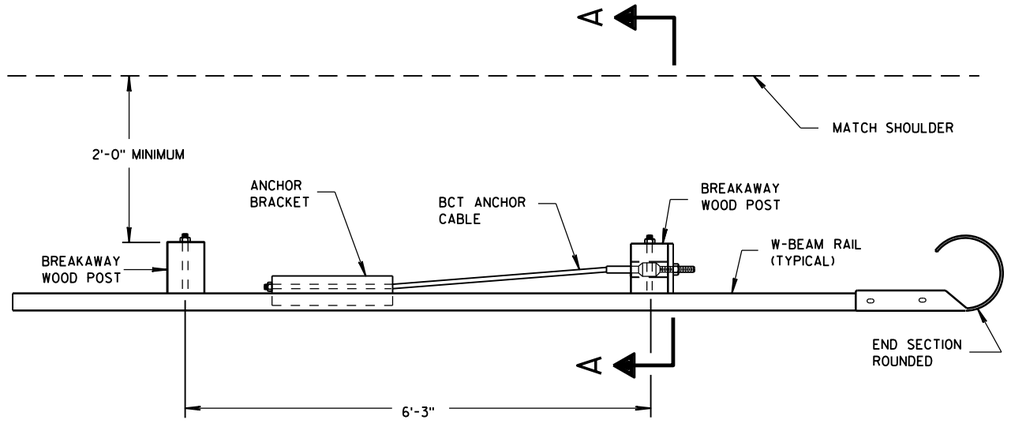
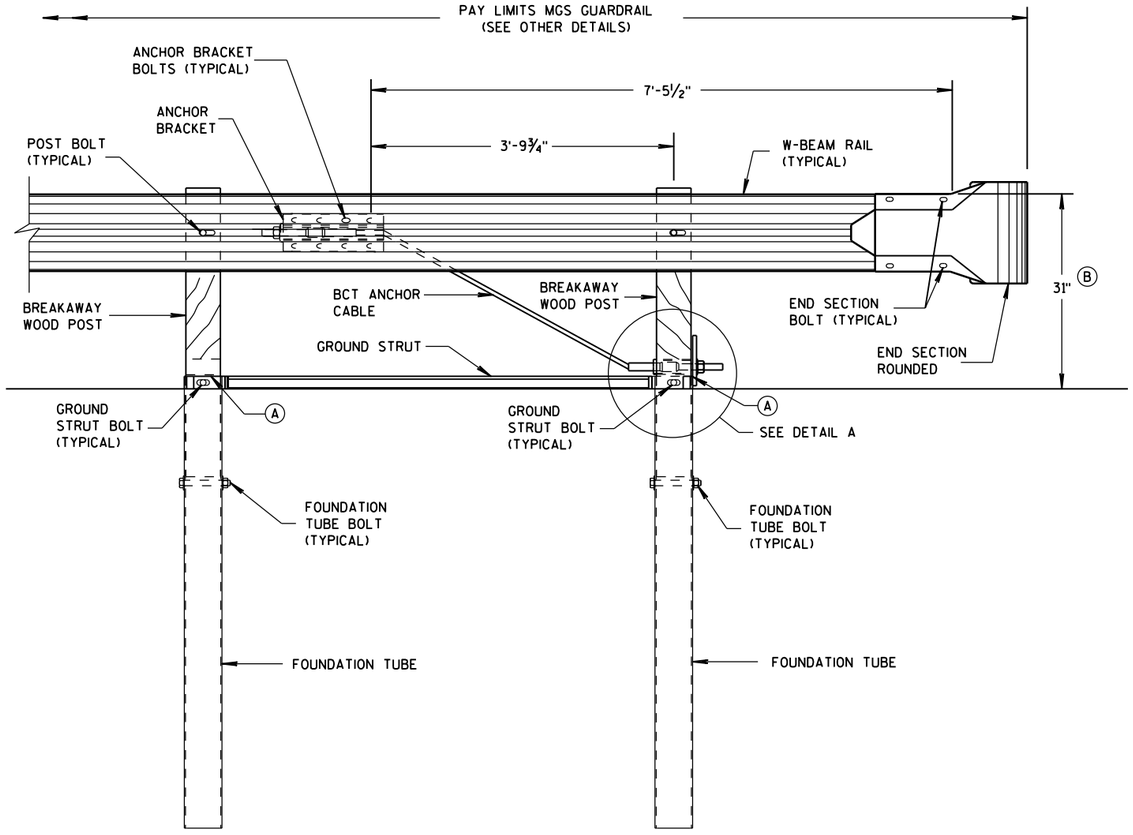
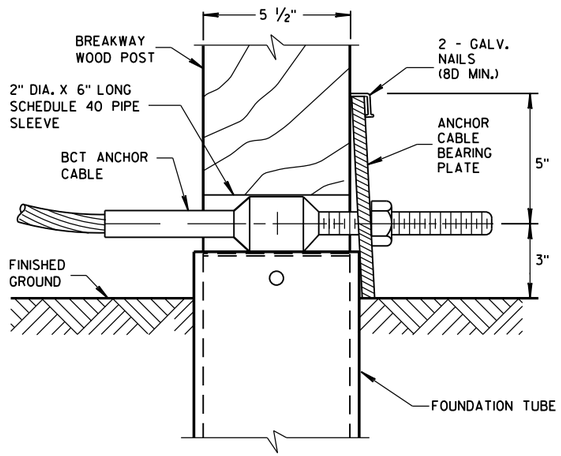


PLAN VIEW



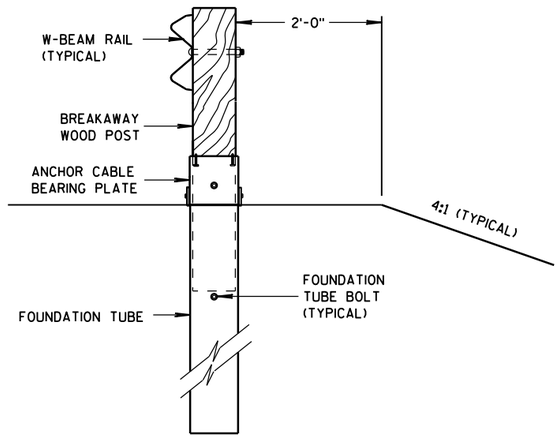
FRONT VIEW

END RAIL DETAIL



DETAIL A

POST NO. 1
GROUNG STRUT NOT SHOWN FOR CLARITY.



SECTION A-A

GENERAL NOTES

SEE SDD 14 B 42 FOR MORE INFORMATION.

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

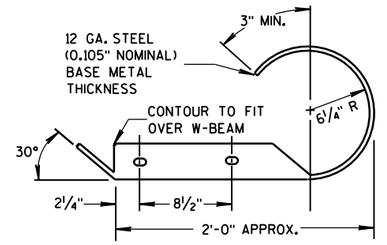
FOUNDATION TUBE BOLTS ARE ⅞" DIAMETER ASTM A307 HEX HEAD BOLT. FOUNDATION TUBE BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 ⅞" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

ANCHOR BRACKET AND GROUND STRUT BOLTS ARE A ⅝" DIAMETER ASTM A307 HEX HEAD BOLT. ANCHOR BRACKET BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 ⅝" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

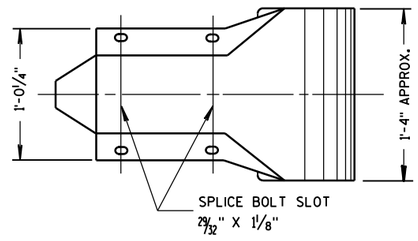
W-BEAM END SECTION ROUNDED HAS THE SAME MATERIAL PROPERTIES AS STANDARD STEEL RAIL.

(A) TOP OF FOUNDATION TUBE SHALL BE NO MORE THAN 3" ABOVE FINISHED GROUND.

(B) FOR NEW CONSTRUCTION TOP OF RAIL IS 31" ± 1".
FOR EXISTING INSTALLATIONS TOP OF RAIL IS BETWEEN 27¾" TO 32" ± 1".



PLAN VIEW



FRONT VIEW

W BEAM END SECTION ROUNDED

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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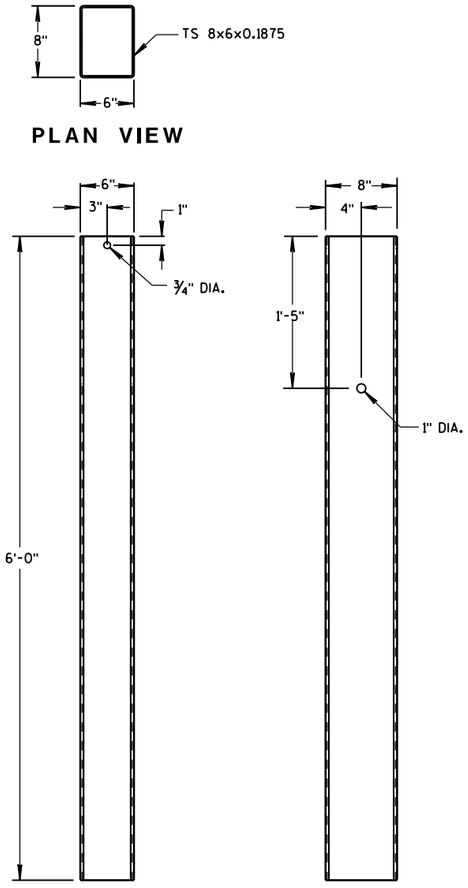
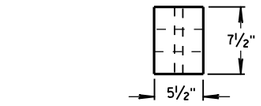
S.D.D. 14 B 47-2a



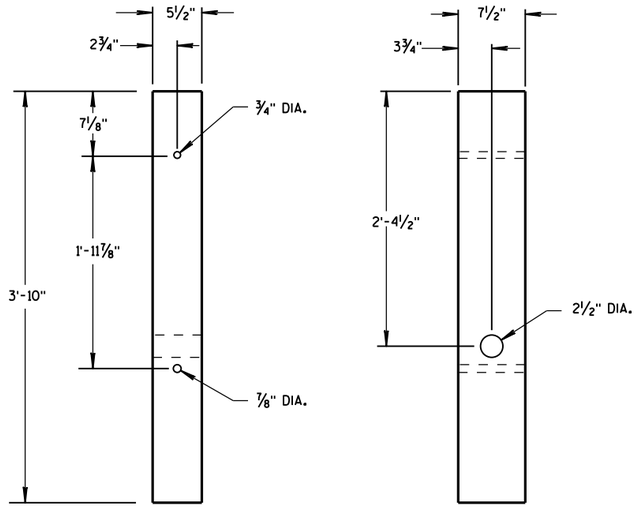
PLAN VIEW

FRONT VIEW SIDE VIEW

FOUNDATION TUBE



PLAN VIEW



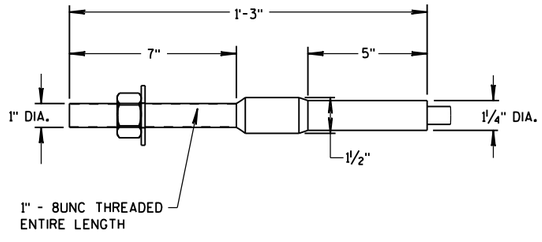
FRONT VIEW SIDE VIEW

BREAKAWAY WOOD POST

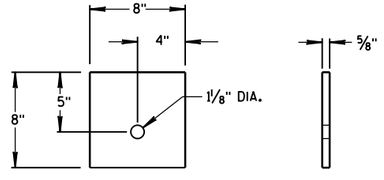
GENERAL NOTES

BCT ANCHOR CABLE IS A ¾" 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.

BCT ANCHOR CABLE



DETAIL B



SIDE VIEW FRONT VIEW

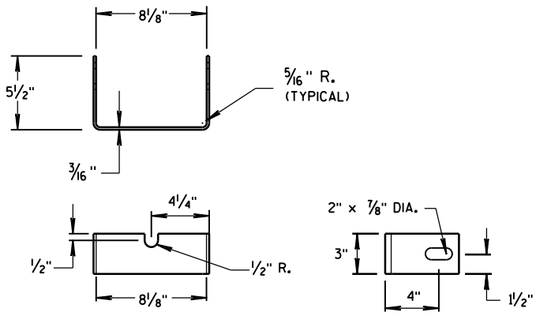
ANCHOR CABLE
BEARING PLATE

MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

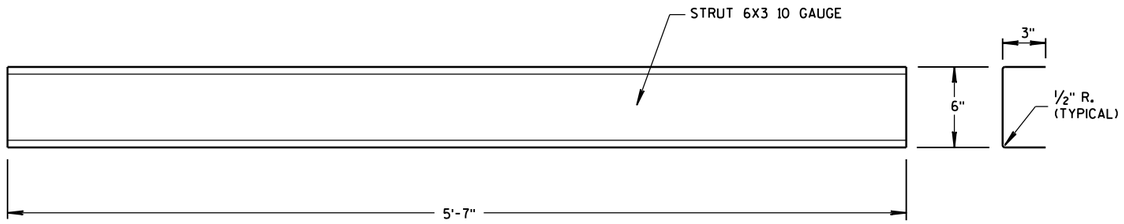
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

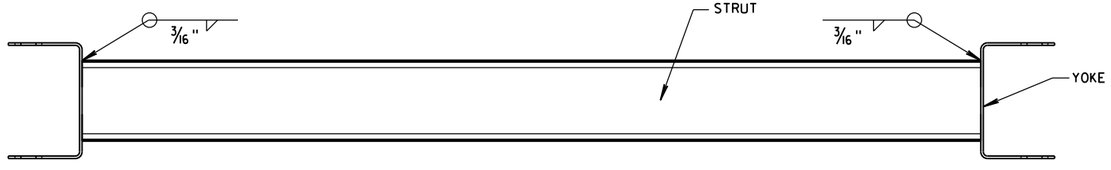
S.D.D. 14 B 47-2b



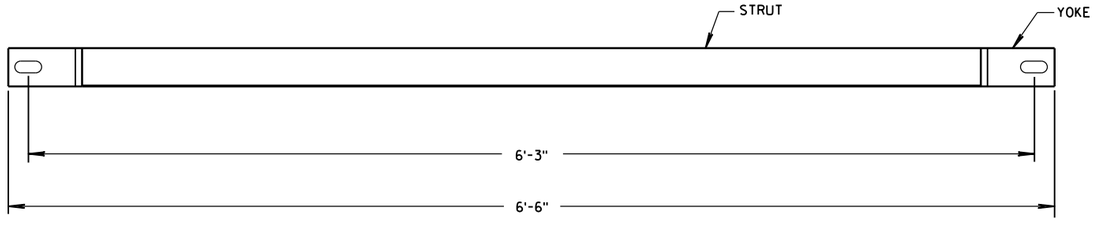
YOKE DETAIL



STRUT DETAIL

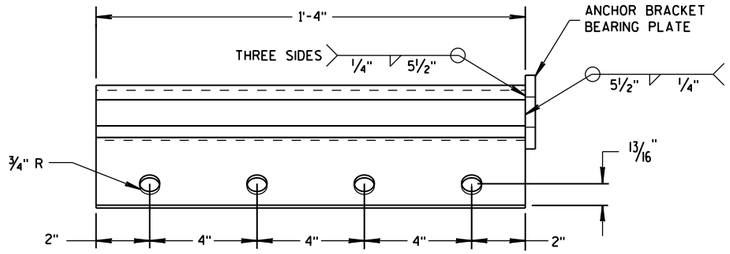


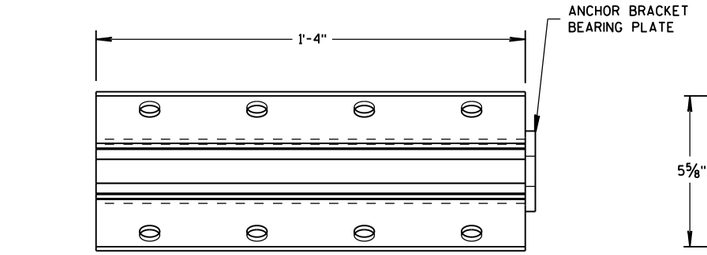
PLAN VIEW

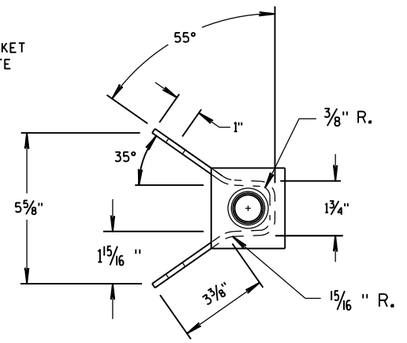


FRONT VIEW

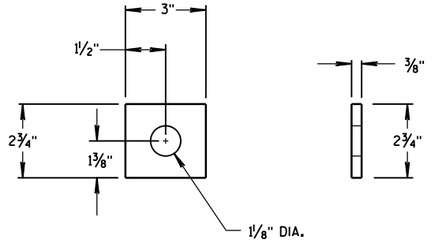
GROUND STRUT DETAIL







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 ENGINEER

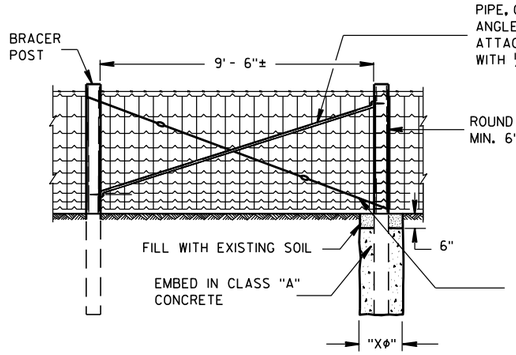
FHWA

6

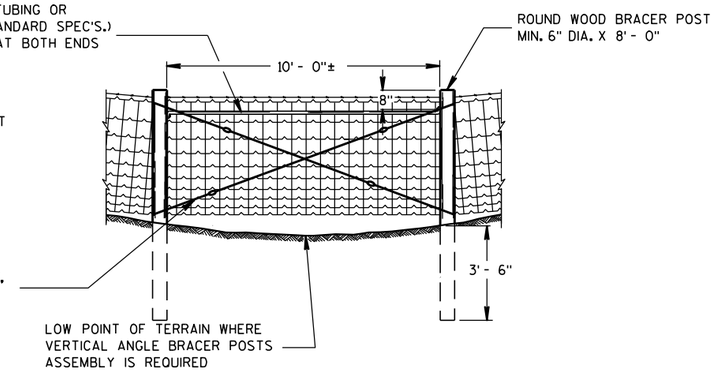
S.D.D. 14 B 47-2c

NOTE: PULL OR STRETCHER POST ASSEMBLIES SHALL BE PLACED MIDWAY BETWEEN END POSTS AND CORNER POSTS WHERE A RUN OF FENCE EXCEEDS 660' BUT IS LESS THAN 1,320'. FOR RUNS OF FENCE IN EXCESS OF 1,320' MAXIMUM SPACING OF PULL OR STRETCHER POST ASSEMBLIES SHALL BE 660'± C-C.

ILLUSTRATION SHOWS POSITION OF STANDARD STEEL BRACE, DOUBLE STRAND GALVANIZED WIRE, AND THE POST TO BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM LEFT TO RIGHT. THE BRACES SHALL BE POSITIONED ON THE OPPOSITE DIAGONALS AND THE OPPOSITE POST SHALL BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM RIGHT TO LEFT.



PULL OR STRETCHER POSTS ASSEMBLY



VERTICAL ANGLE BRACER POSTS ASSEMBLY

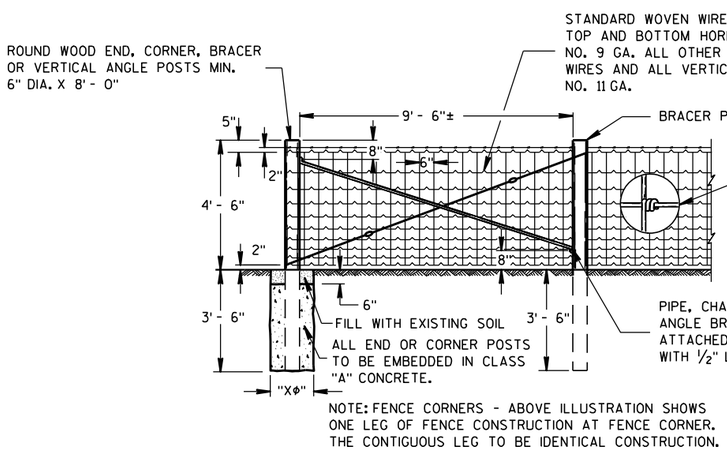
GENERAL NOTES

"XΦ" = DIAMETER OF THE POST PLUS 12".

FENCE STAPLES SHOULD NEVER BE DRIVEN VERTICALLY INTO WOOD POSTS (WITH BOTH LEGS PARALLEL WITH THE WOOD GRAIN). DOING SO CAN SEPARATE THE GRAIN AND SIGNIFICANTLY REDUCE THE HOLDING POWER. ROTATING THE STAPLES SLIGHTLY OFF VERTICAL STRADDLES THE GRAIN AND PROVIDES MORE RESISTANCE TO PULL-OUT.

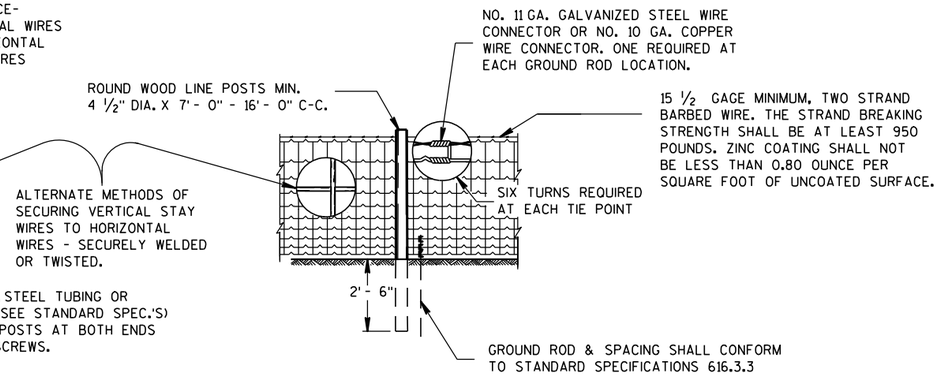
DO NOT STAPLE WIRE TIGHT TO THE LINE POSTS. ALLOW MOVEMENT OF WIRE FOR EXPANSION AND CONTRACTION. STAPLE ARRANGEMENT SHALL BE THE SAME FOR ALL OTHER POSTS EXCEPT THAT THEY SHALL BE DRIVEN TIGHT TO POSTS. ALL STAPLES SHALL BE 2" X 9 GAGE AND SHALL BE MANUFACTURED FROM GALVANIZED WIRE OR HOT DIP GALVANIZED AFTER FORMING. STAPLES SHALL HAVE SLASH-CUT POINTS.

FENCE SHALL BE LOCATED 3'-0" INSIDE THE RIGHT OF WAY LINE UNLESS OTHERWISE INDICATED ON THE PLANS.



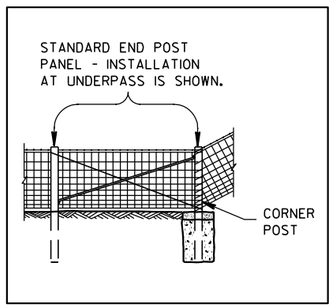
NOTE: FENCE CORNERS - ABOVE ILLUSTRATION SHOWS ONE LEG OF FENCE CONSTRUCTION AT FENCE CORNER. THE CONTIGUOUS LEG TO BE IDENTICAL CONSTRUCTION.

END OR CORNER POSTS ASSEMBLY

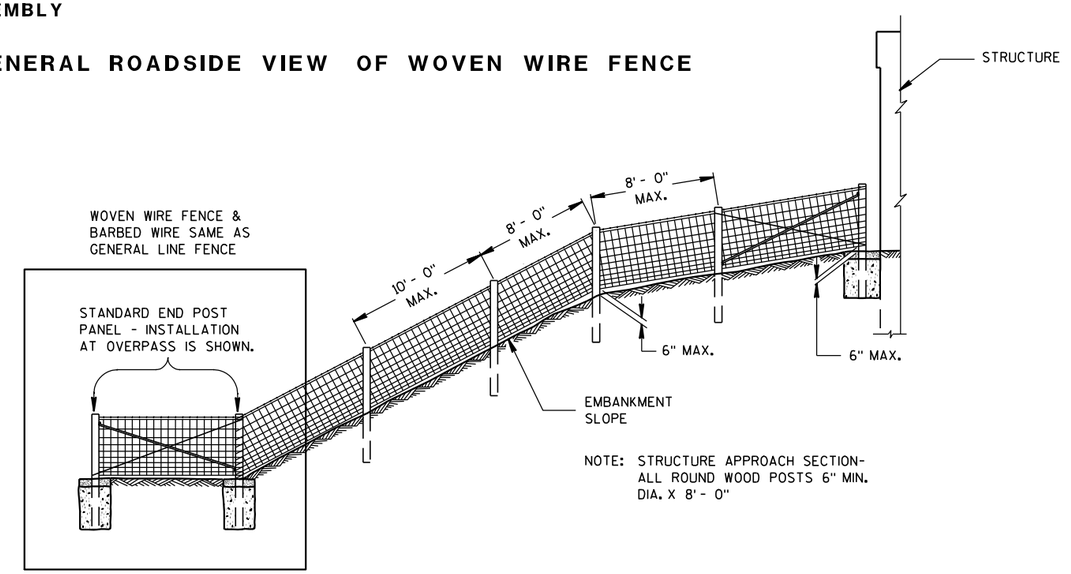


LINE FENCE CONSTRUCTION

GENERAL ROADSIDE VIEW OF WOVEN WIRE FENCE



ALTERNATE FENCE DESIGN AT STRUCTURE



NOTE: STRUCTURE APPROACH SECTION- ALL ROUND WOOD POSTS 6" MIN. DIA. X 8' - 0"

FENCE DESIGN AT STRUCTURE APPROACH

FENCE WOVEN WIRE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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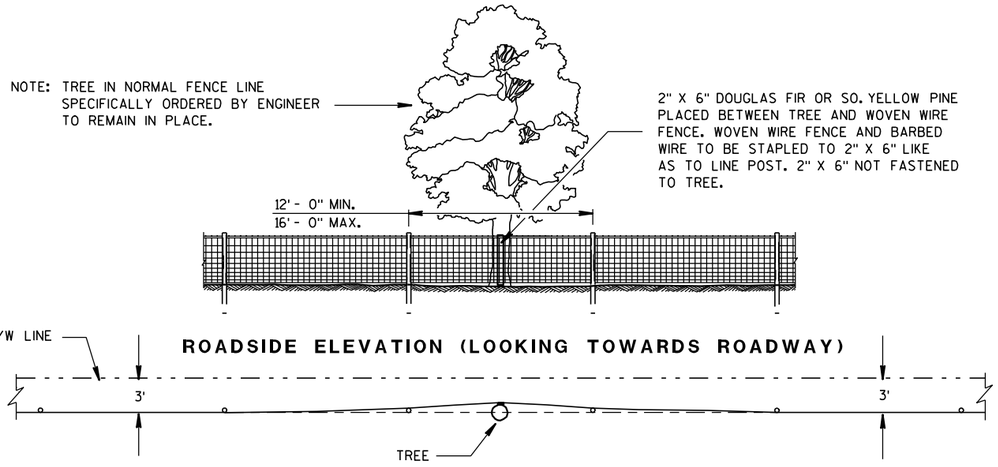
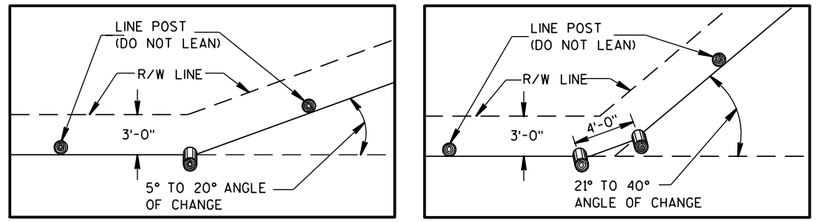
S.D.D. 15 B 1-8a



PLAN VIEW

FENCE DESIGN AT TREES REMAINING IN NORMAL FENCE LINE



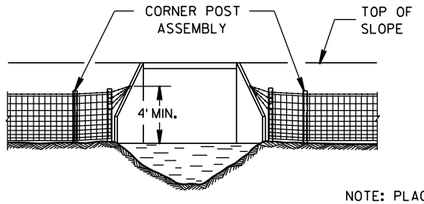
PLAN VIEW
SINGLE POST CORNER

PLAN VIEW
DOUBLE POST CORNER

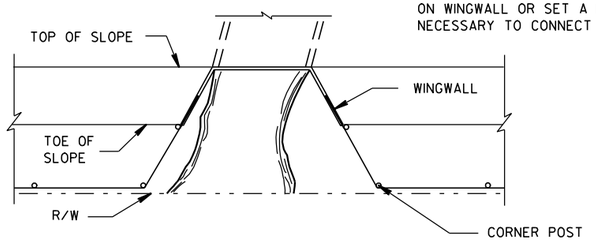
RIGHT OF WAY LINE CHANGE 40° AND LESS

NOTE: SINGLE AND DOUBLE POSTS SHALL BE A MIN. 6" DIA. X 8'-0" WITH A LEAN OF 4" TOWARD THE OUTSIDE OF THE CURVE.

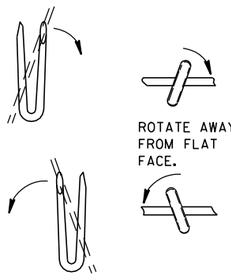
WHEN THE RIGHT OF WAY LINE CHANGE IS MORE THAN 40° USE THE CORNER OR STRETCHER POSTS ASSEMBLY.



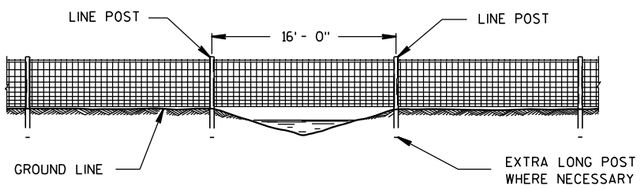
NOTE: PLACE A MINIMUM OF 4 STRANDS OF BARBED WIRE, 6" MAXIMUM CENTERS IN FAN SHAPE CONNECTED TO AN EYE BOLT ON WINGWALL OR SET A LONE POST WHEN NECESSARY TO CONNECT BARBED WIRE.



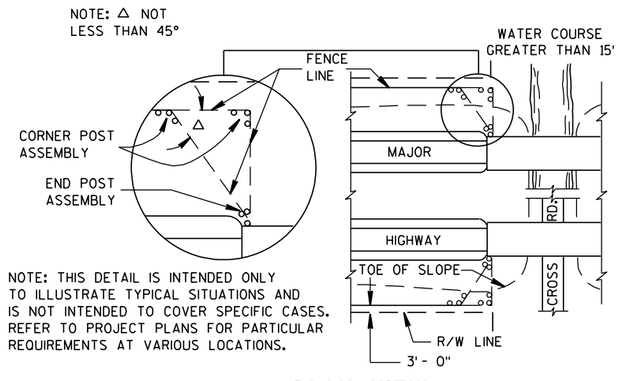
FENCE INSTALLATION TO WINGWALLS



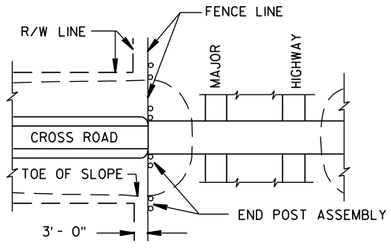
LINE POST



FENCE CONSTRUCTION OVER STREAM COURSES OF 15 FT. OR LESS IN WIDTH

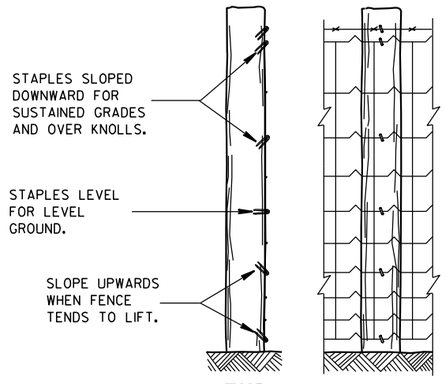


PLAN VIEW
MAJOR HIGHWAY OVERPASS OR STREAM COURSE CROSSING OF GREATER THAN 15 FT. IN WIDTH



PLAN VIEW
MAJOR HIGHWAY UNDERPASS

NOTE: WHEN POSTS ARE DRIVEN THE SMALL END SHALL BE DOWN.



END ELEVATION **FARM SIDE ELEVATION**

FENCE MOUNTING DETAIL

FENCE LOCATION AT STRUCTURES

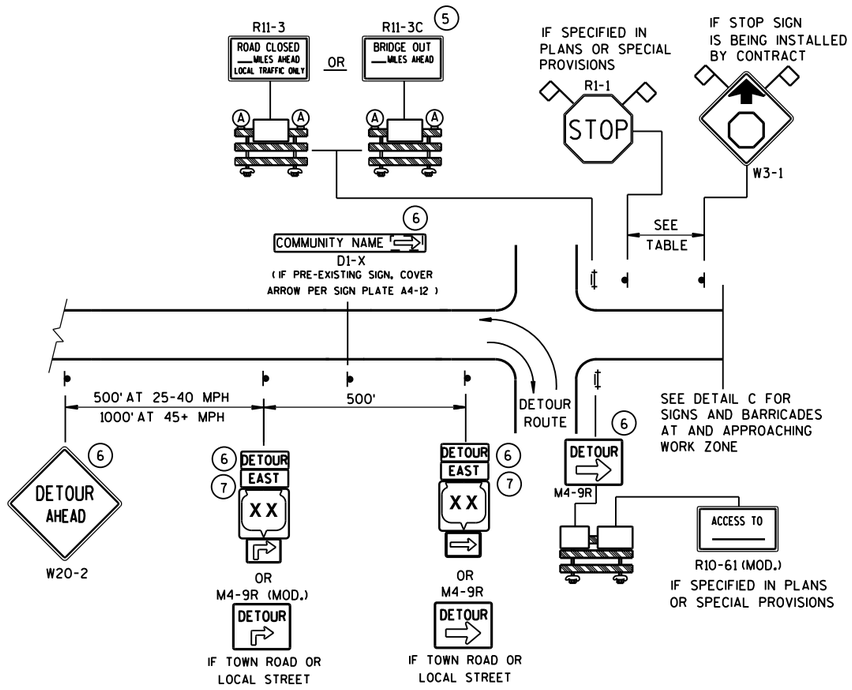
FENCE WOVEN WIRE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/4/2008 DATE
/S/ Jerry H. [illegible] ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

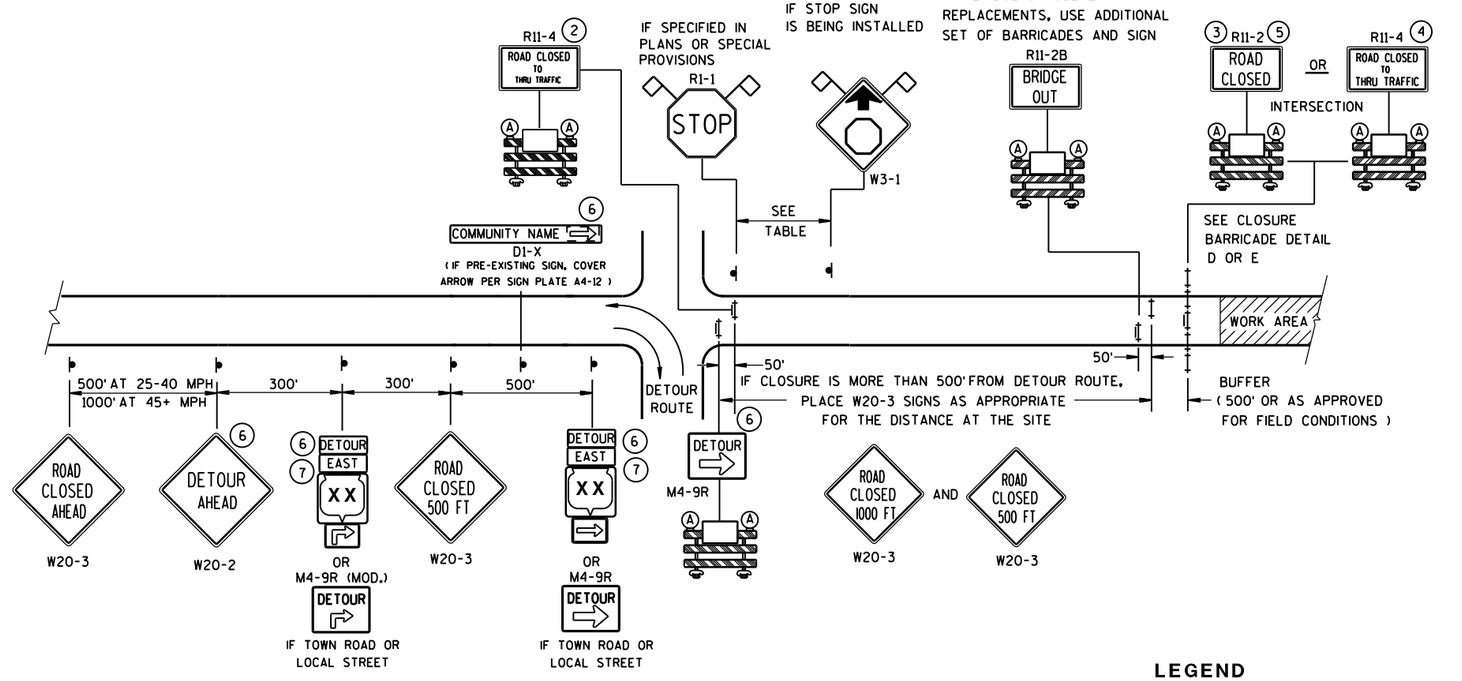
6

S.D.D. 15 B 1-8b



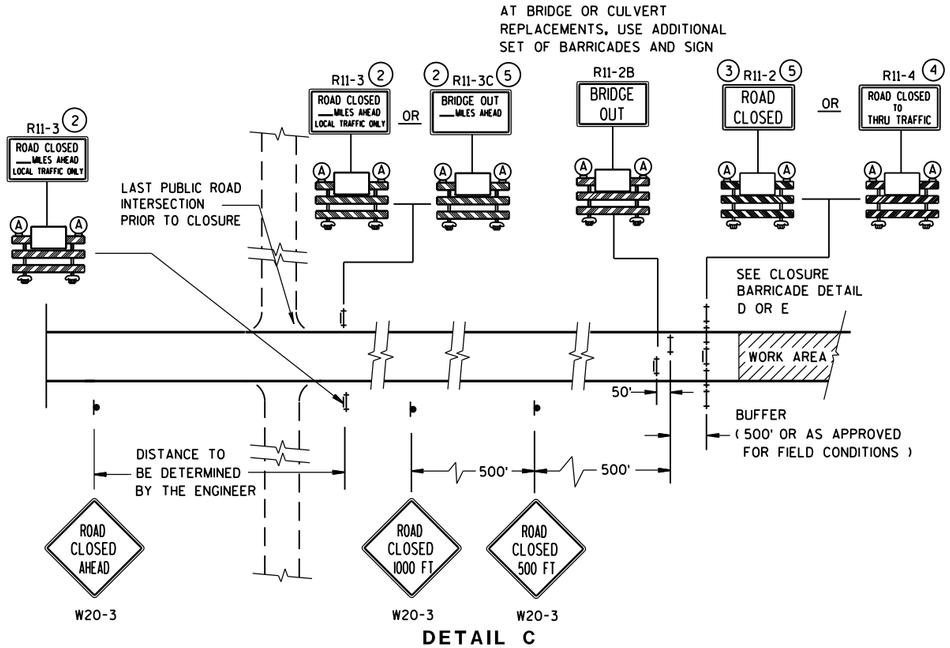
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

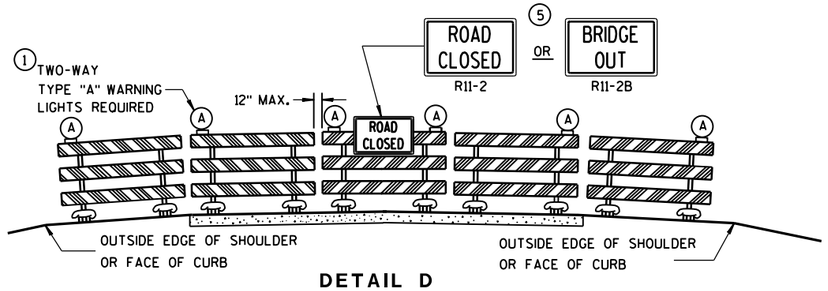
8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

6

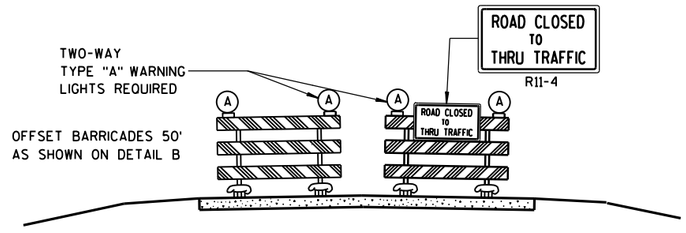
S.D.D. 15 C 2-5a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

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S.D.D. 15 C 2-5b

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

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

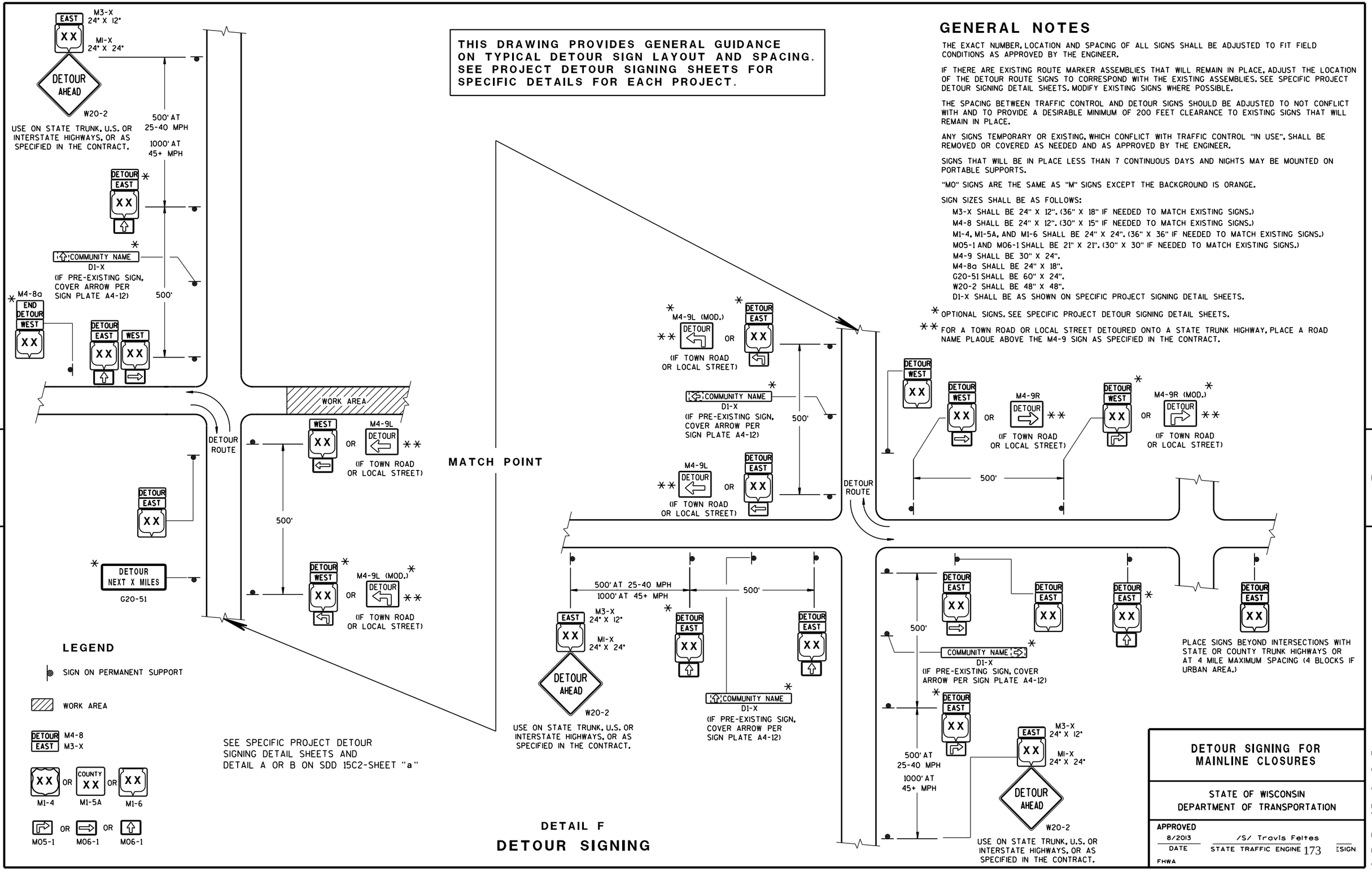
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR EAST — M4-8 / M3-X
- XX OR COUNTY XX OR XX — M1-4 / M1-5A / M1-6
- M05-1 OR M06-1 OR M06-1

SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD 15C2-SHEET "a"

DETAIL F

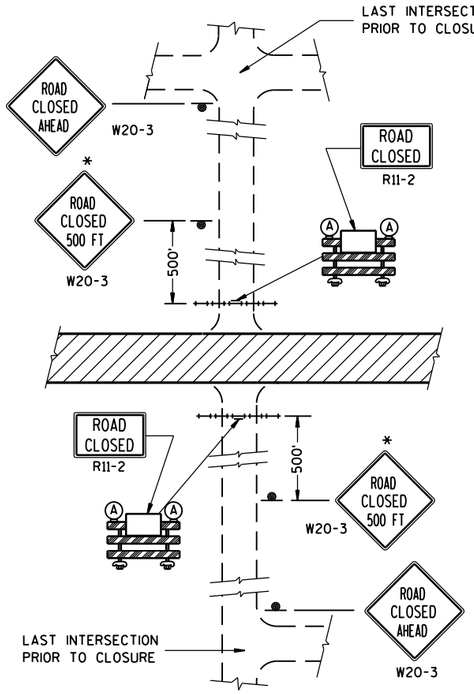
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

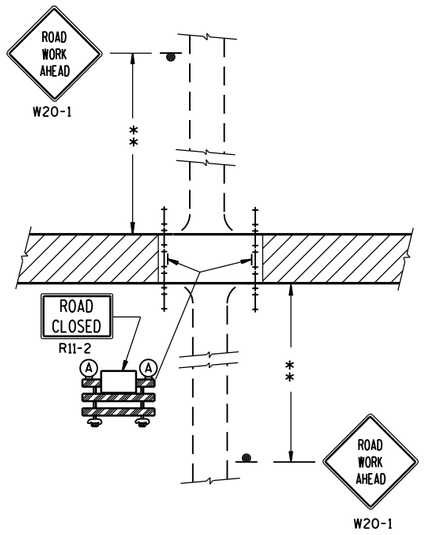
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

S.D.D. 15 C 2-5c



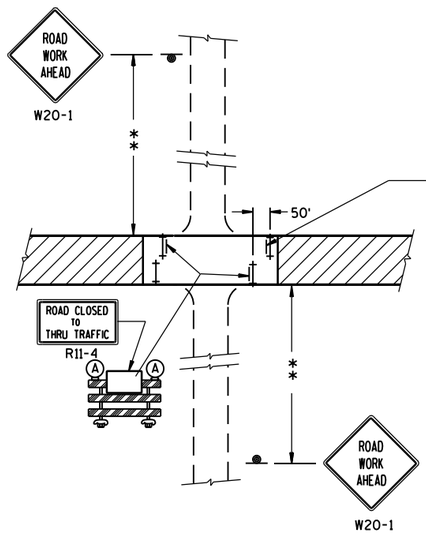
DETAIL 1

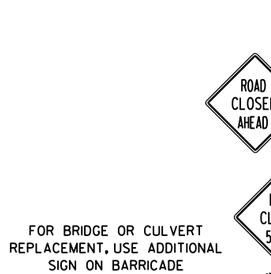
(NO ACCESS TO PROJECT)



DETAIL 2

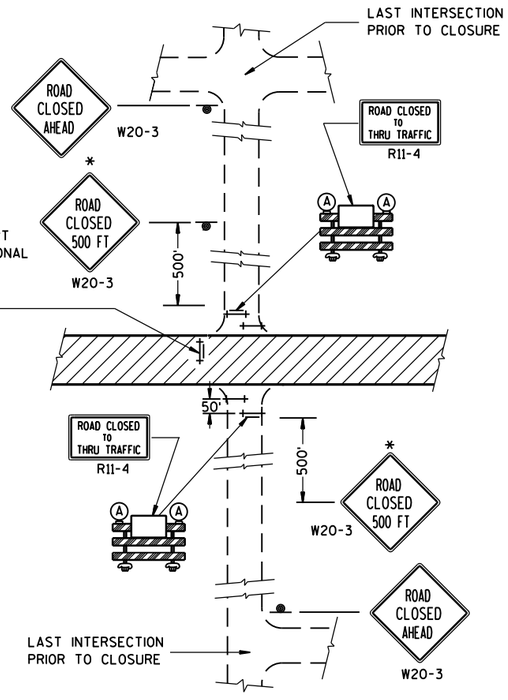
(PUBLIC CROSS-TRAFFIC MAINTAINED. NO ACCESS TO PROJECT).





DETAIL 3

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



DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

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

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

LEGEND

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 C 3-2

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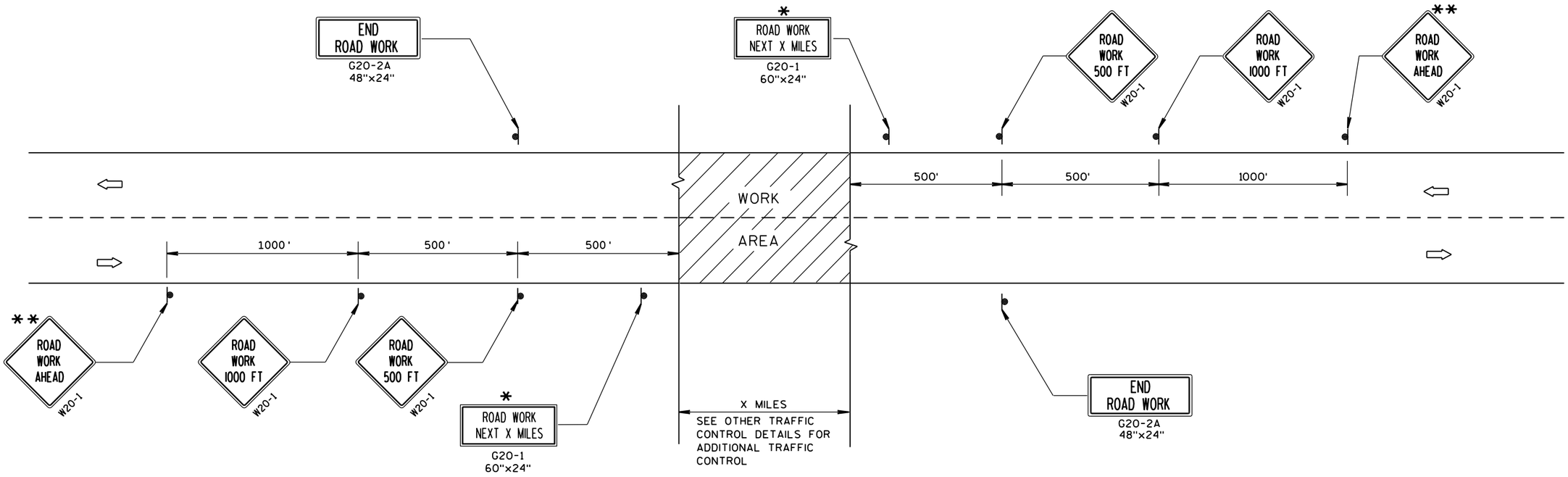
S.D.D. 15 C 3-2



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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

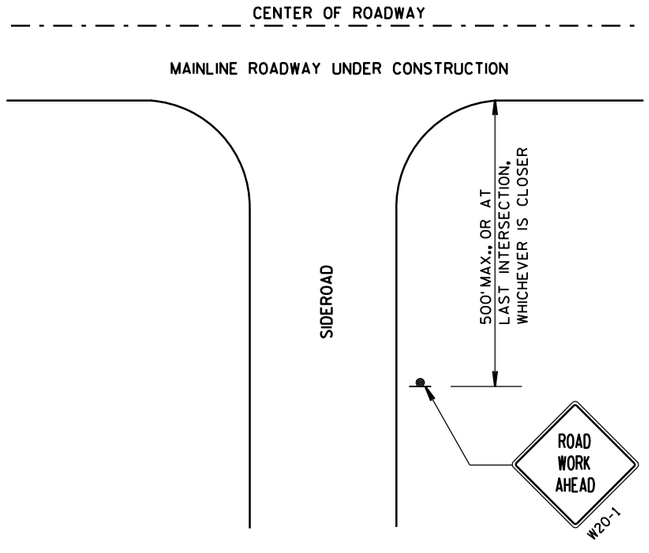
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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



LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

SIGN

FHWA

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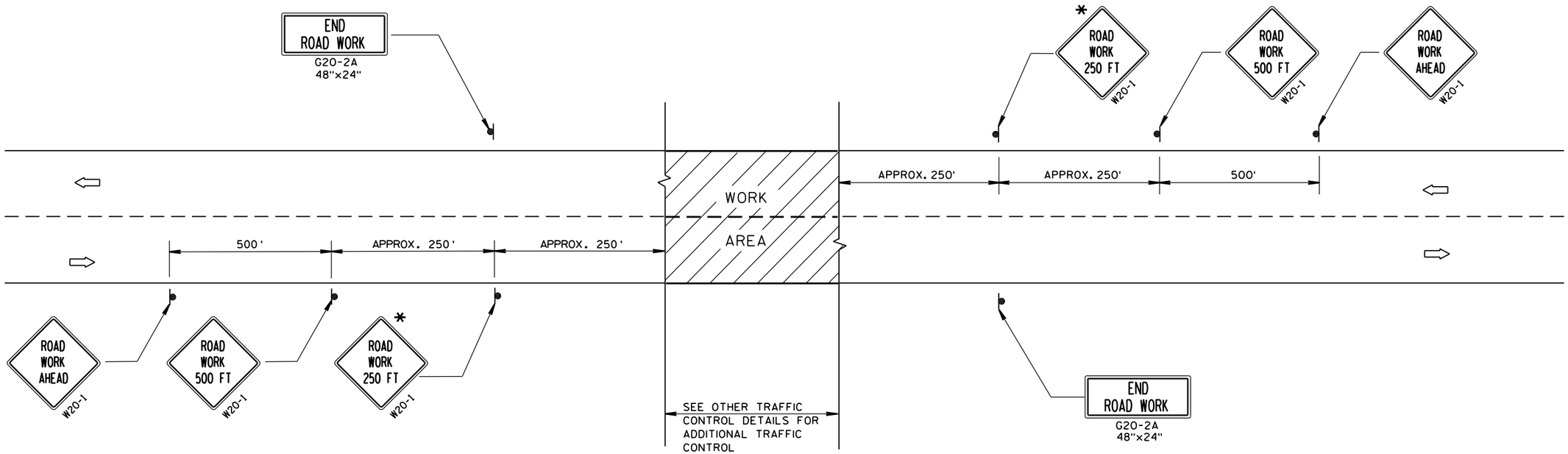
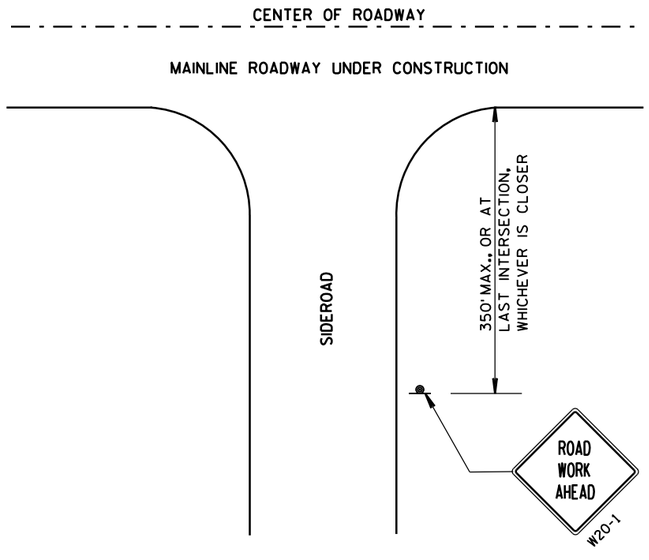
S.D.D. 15 C 4-2



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL



GENERAL NOTES

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS.

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

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

* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

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

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 DATE — /S/ Travis Feltes STATE TRAFFIC ENGINEER — SIGN

FHWA

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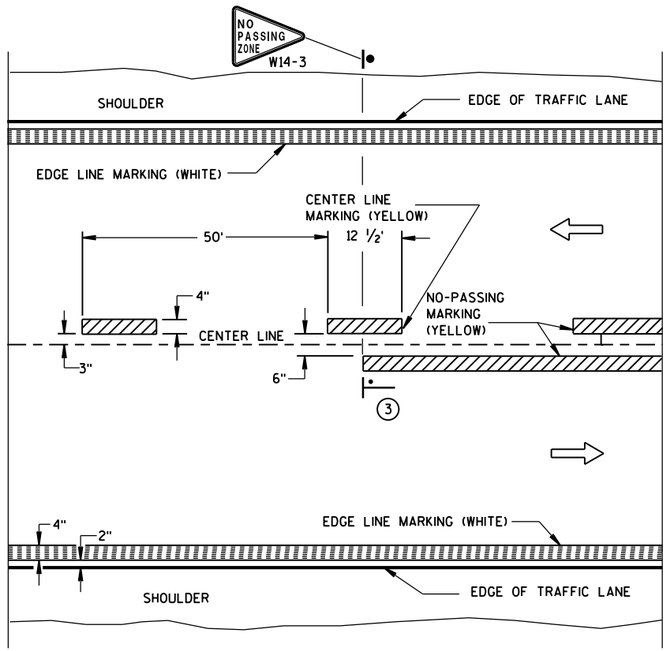
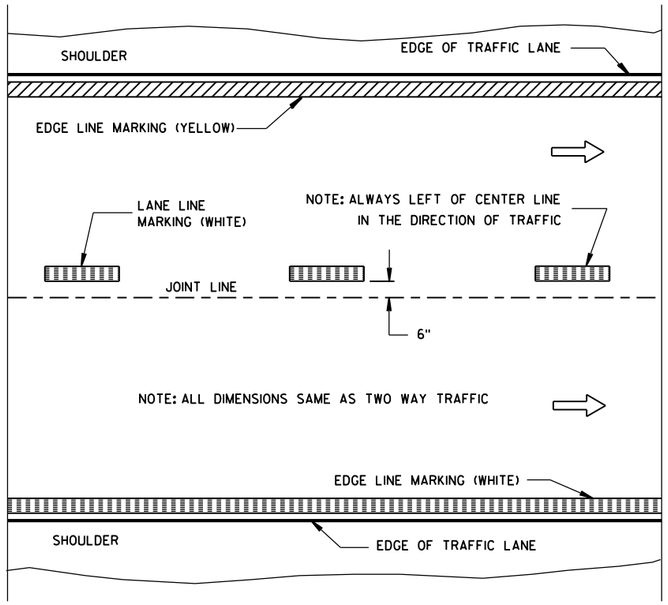
S.D.D. 15 C 5-2



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

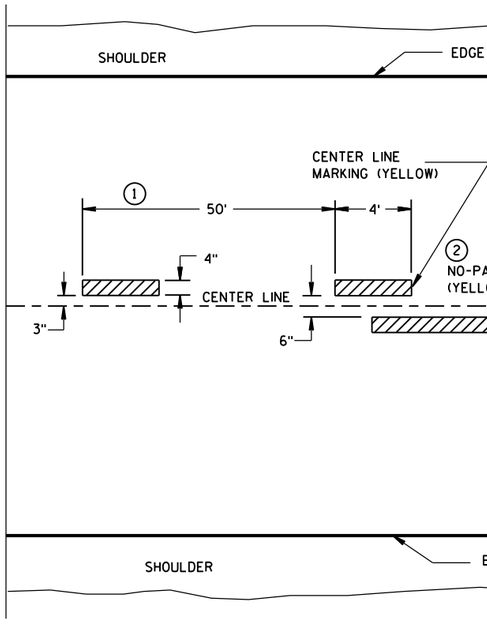
GENERAL NOTES

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

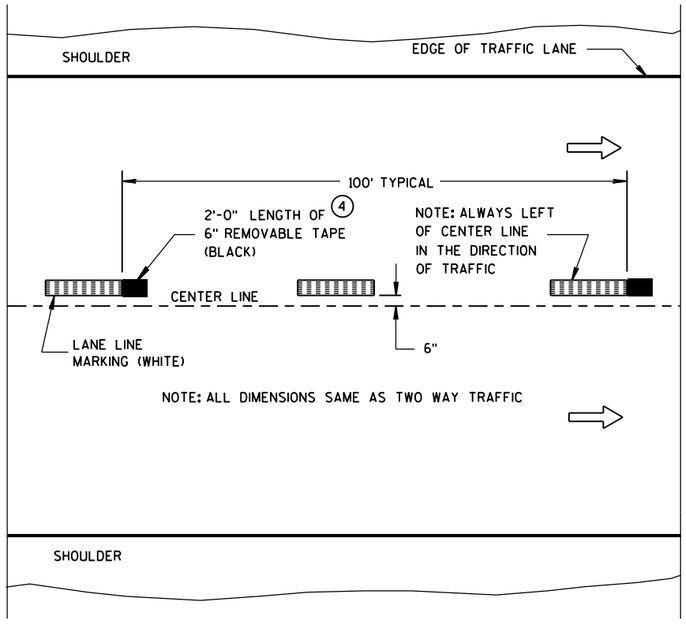
1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING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

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



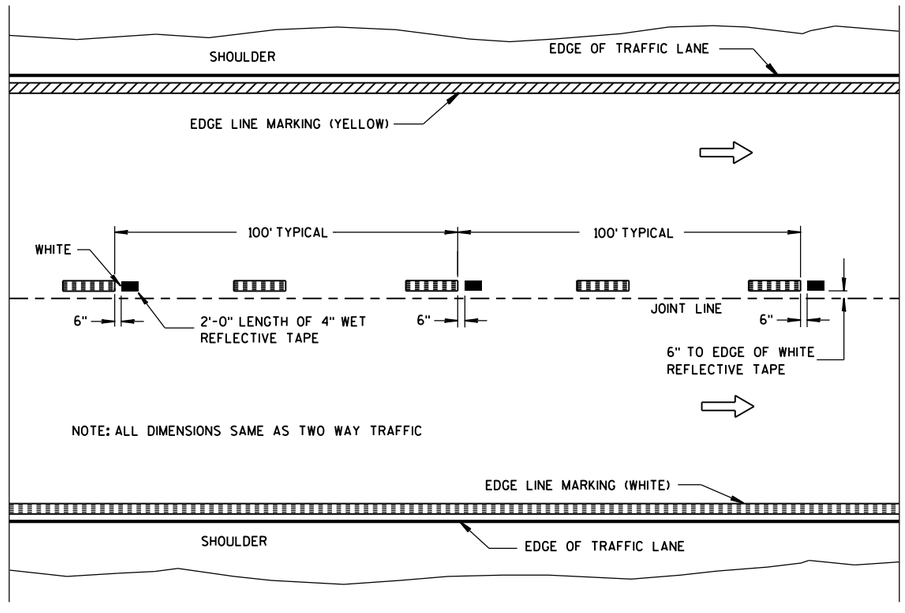
TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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



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

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC E

FHWA

6

S.D.D. 15 C 8-16a

6

S.D.D. 15 C 8-16a

LEGEND

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

W057-52
36"x24"

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

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

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

IF THE REGULATORY SPEED HAS BEEN REDUCED, A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES.

* INCLUDE RESUME SPEED LIMIT SIGN A MINIMUM OF 200 FEET (500 FEET DESIRABLE) AFTER END ROAD WORK SIGNS.

GENERAL NOTES

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

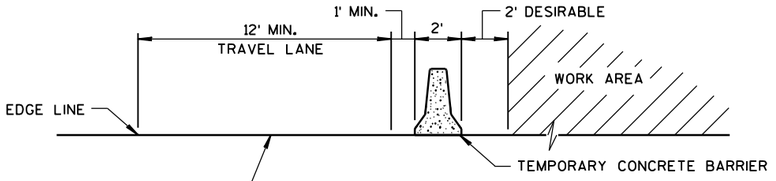
(1) CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUM TAPER.

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

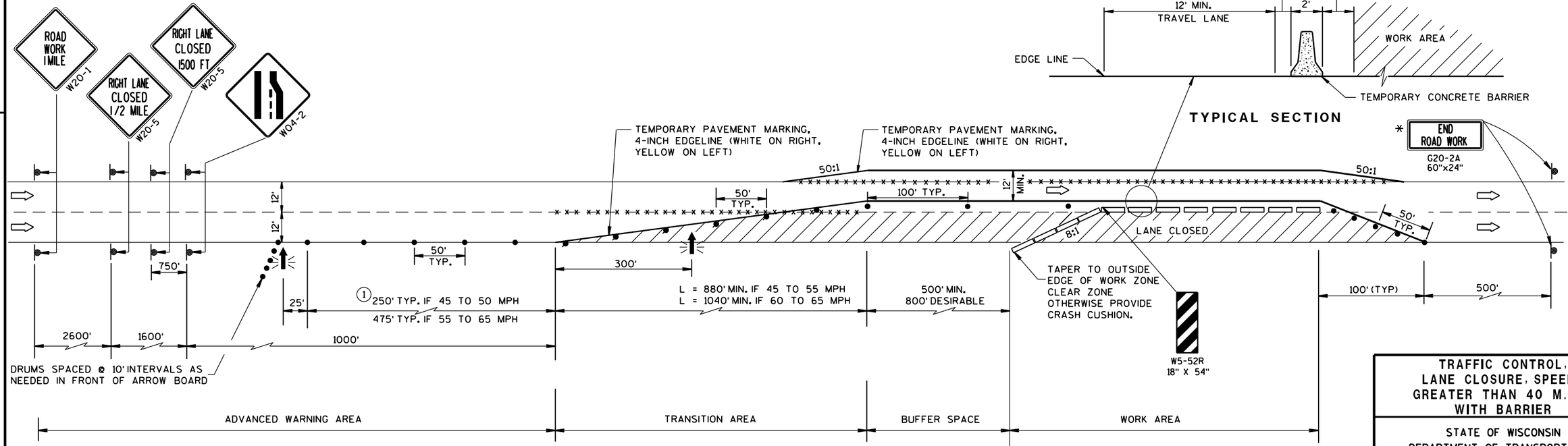
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

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



TYPICAL SECTION



TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER — SIGN
FHWA

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S.D.D. 15 D 3-2

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S.D.D. 15 D 3-2

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

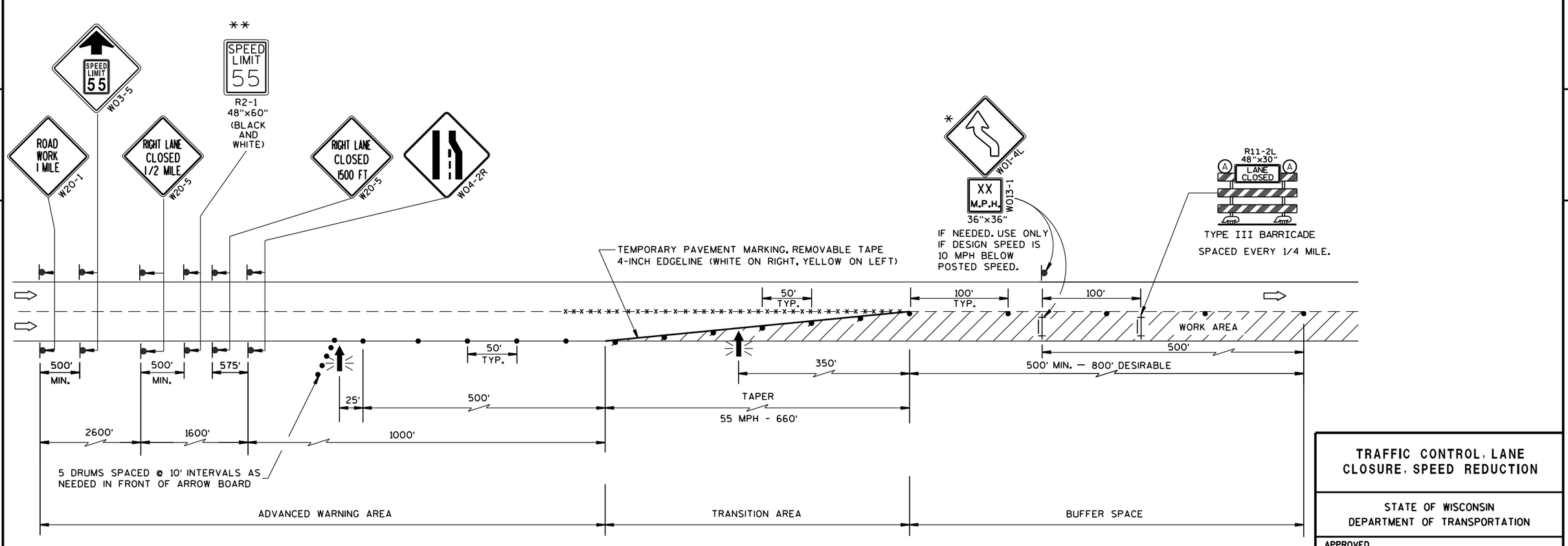
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

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

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

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



TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Feb. 2015 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

S.D.D. 15 D 12-5b

S.D.D. 15 D 12-5b

LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- WORK AREA

GENERAL NOTES

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

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

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

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

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

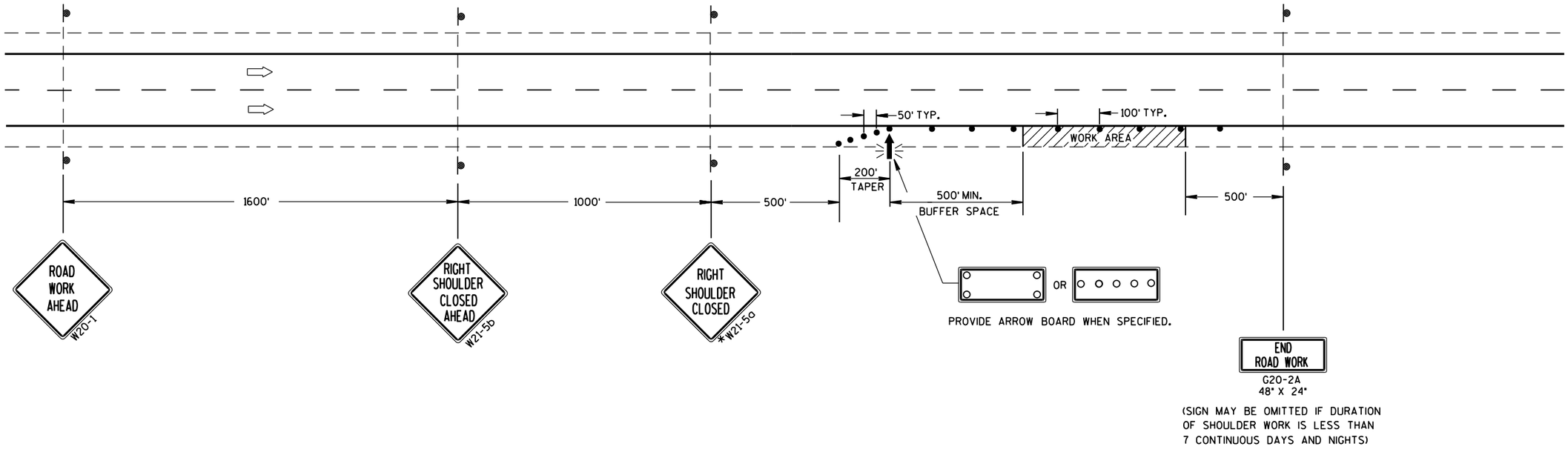
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

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



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

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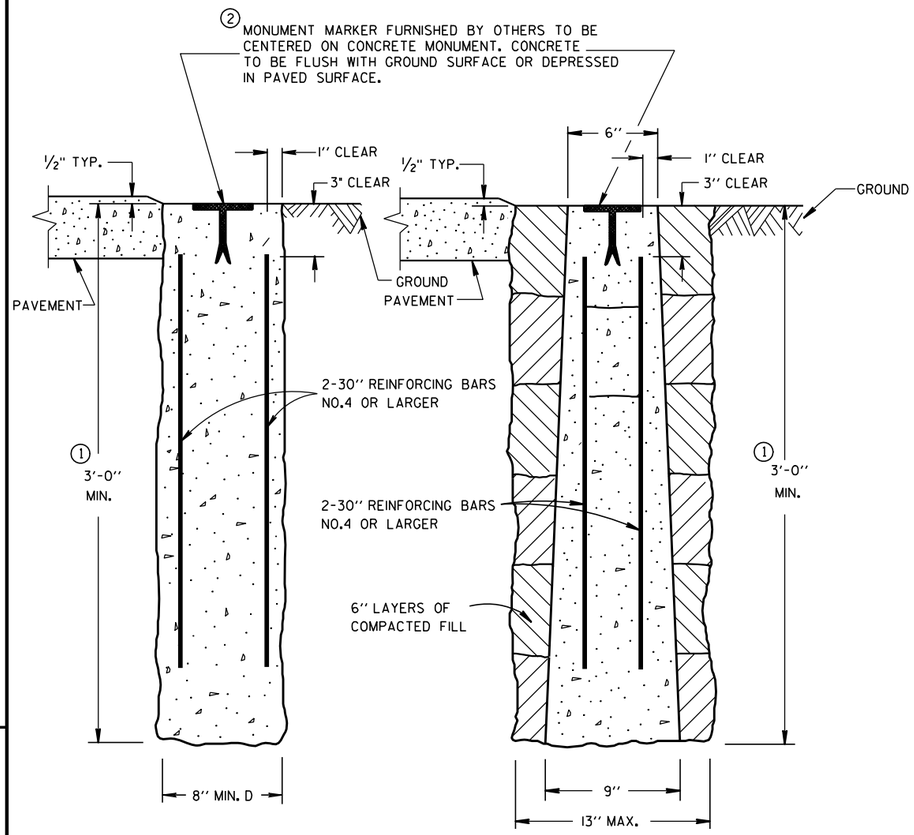
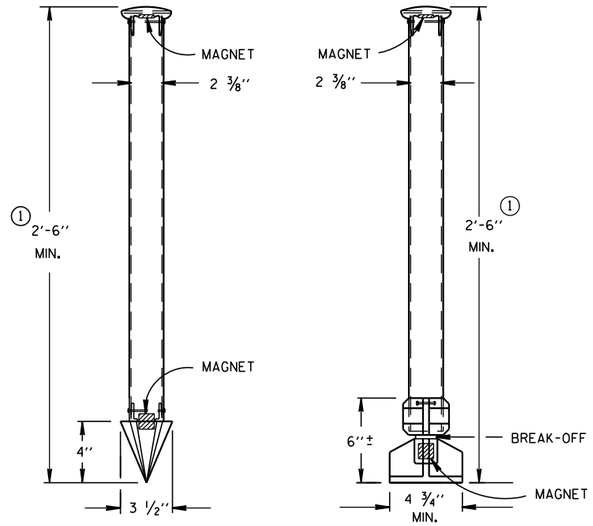


CAST-IN-PLACE PRECAST

CONCRETE MONUMENTS

TYPE A



TYPE C DRIVE-IN MONUMENT

TYPE D BREAK-OFF MONUMENT

ALUMINUM MONUMENTS

(INCLUDES MARKER)

GENERAL NOTES

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

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

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

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

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

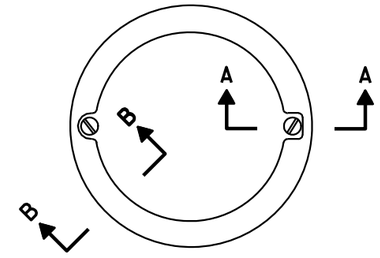
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

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

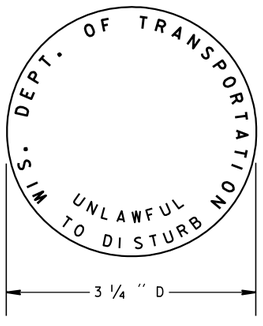
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

① MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.

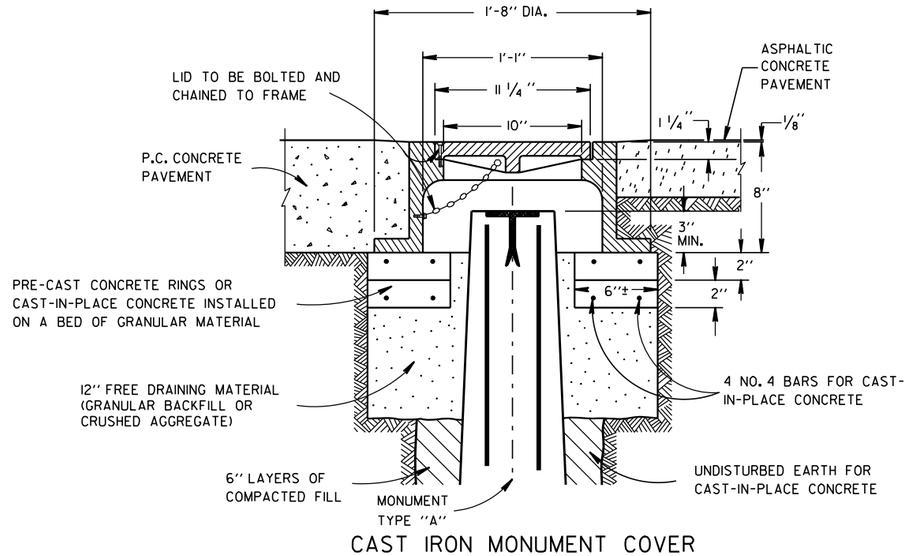
② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.



TOP VIEW

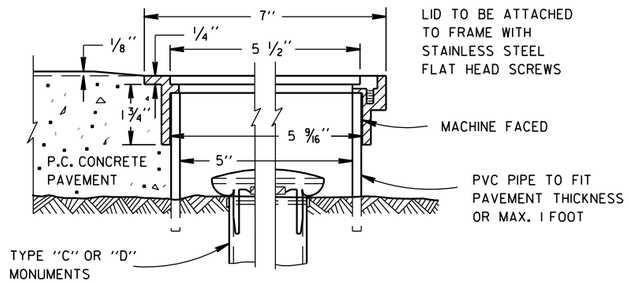


② WIS DOT MONUMENT MARKER LOGO FOR TYPES "A", "C" & "D"



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT - 95 LBS.)



SECTION B-B SECTION A-A

ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)

(FOR CONCRETE PAVEMENT ONLY)

LANDMARK REFERENCE MOUNMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

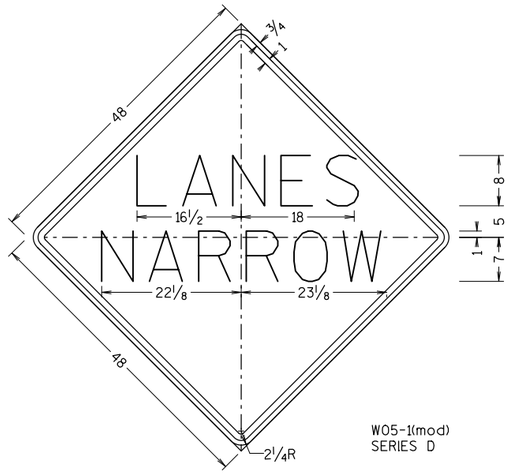
APPROVED
9/22/1999 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 16 A 1-6

6

S.D.D. 16 A 1-6



TYPE II
ORANGE-BACKGROUND
BLACK-COPY

7

7

SHEET 1 OF 1

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	SIGNING DETAIL - WORK ZONE	SCALE: 0 ½" 1"	SHEET 182	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\070101_sd.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:48.125

WISDOT/CADDS SHEET 47

GENERAL NOTES:

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

2. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET ARE "SIGNS, TYPE II".

3. UNLESS OTHERWISE NOTED, TYPE II SIGNS ON THIS SHEET SHALL HAVE "TYPE H REFLECTIVE SHEETING" AND, "TYPE H MESSAGE MATERIAL". TYPE I SIGNS SHALL HAVE TYPE SH REFLECTIVE SHEETING.

4. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE A GREEN BACKGROUND AND WHITE MESSAGE.

5. TYPE II SIGNS ALL UPPER CASE MESSAGE (EXCEPT ON SHIELDS OR WHERE OTHERWISE NOTED) SHALL BE "SERIES E. ALL LOWER CASE MESSAGE WITH AN INITIAL UPPER CASE LETTER SHALL BE "SERIES E.

6. TYPE I SIGNS - ALL UPPER CASE MESSAGE (EXCEPT ON SHIELDS OR WHERE OTHERWISE NOTED) SHALL BE SERIES "E" MODIFIED. ALL LOWER CASE MESSAGE WITH AN INITIAL UPPER CASE LETTER SHALL BE SERIES "E" MODIFIED. ALL CAP WORDS ARE "SERIES E"

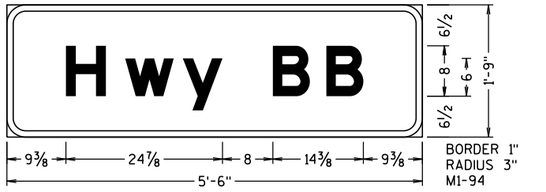
7. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE "TYPE A" OR "TYPE C" ARROWS AS SHOWN. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS.

8. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS ON ROUTE MARKER SHIELDS.

9. THE SIGN NUMBER IS DENOTED IN THE CIRCLE NEAR EACH DETAIL.

10. NUMBER FRACTIONS FOR INTERCHANGE SEQUENCE SIGNS SHALL BE SERIES "E" PER PLATES ALL-7 AND ALL-10

11. DO NOT SCALE.



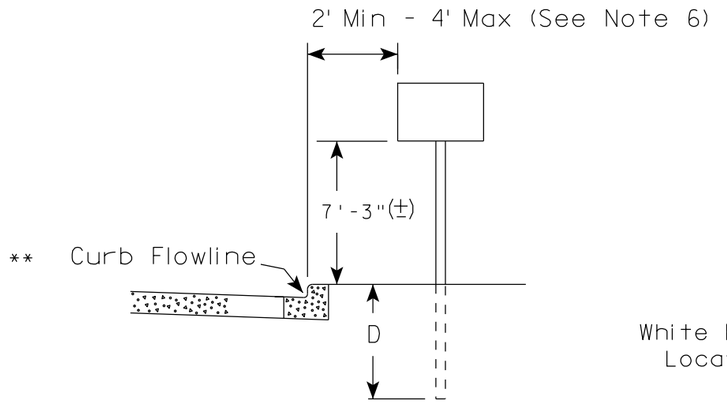
SHEET 1 OF 1

PROJECT NO: 1060-38-71	HWY: IH 94	COUNTY: MILWAUKEE	SIGNING DETAIL - TYPE II SIGNS	SCALE: 0 ½" 1"	SHEET 183	E

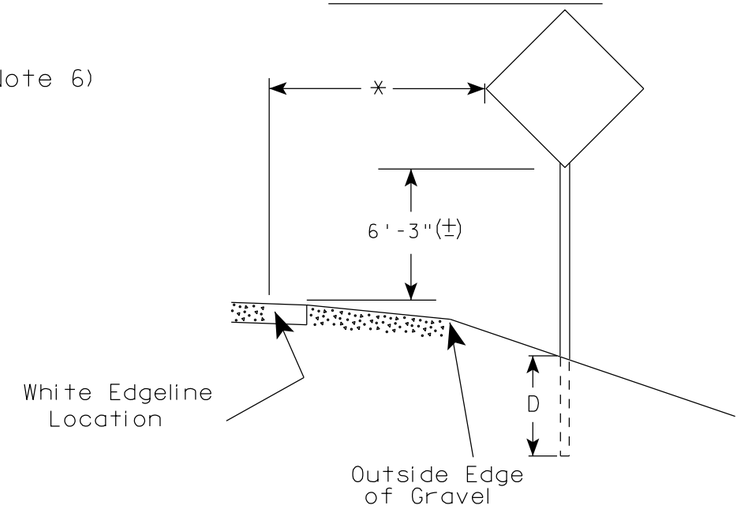
FILE NAME : J:\projects\d2_10603894\71\070101_ms.dgn PLOT DATE : 10-JUN-2014 09:58 PLOT BY : mscppl PLOT NAME : PLOT SCALE : 48.125:1

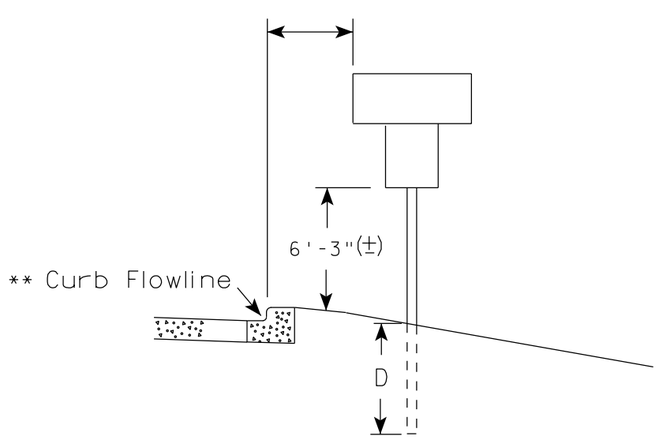
WISDOT/CADDS SHEET 47

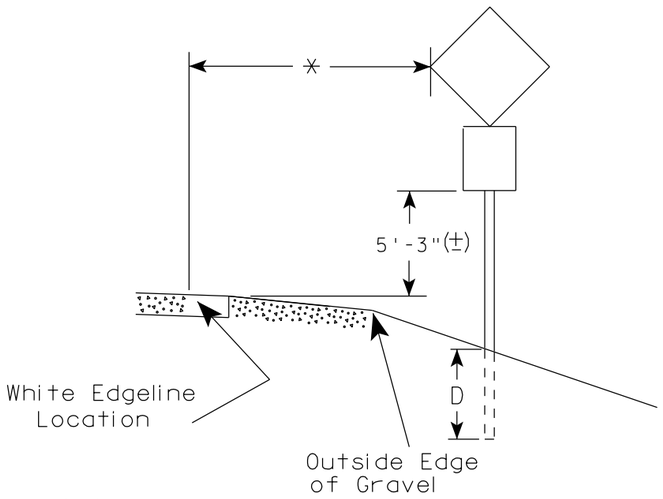
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

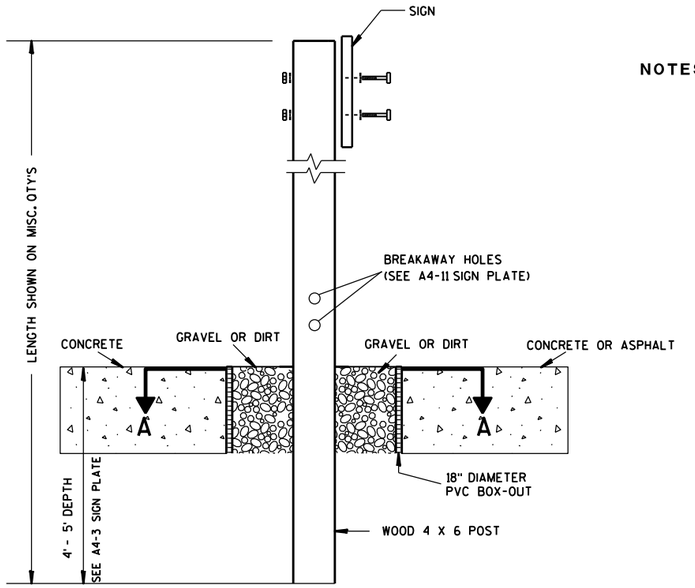
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

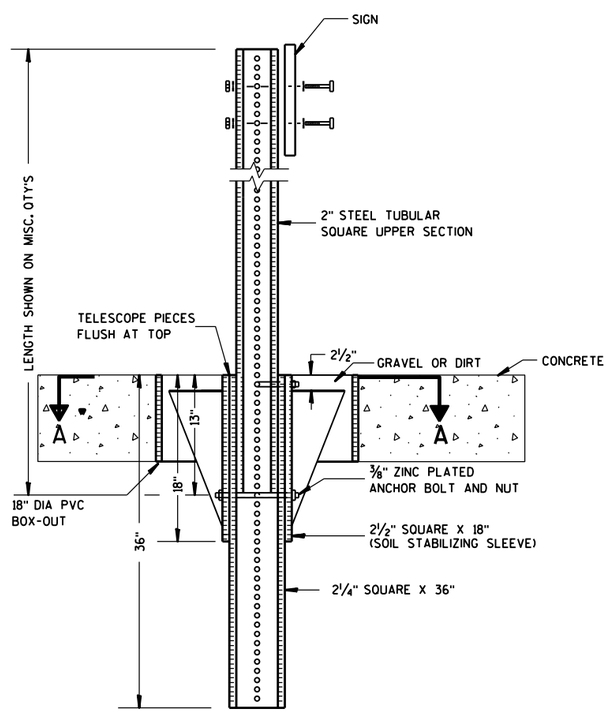
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



ELEVATION VIEW

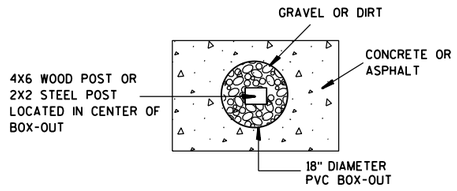
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

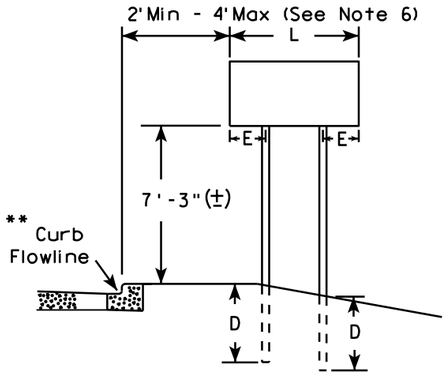
APPROVED Matthew R Rauch
for State Traffic Engineer

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

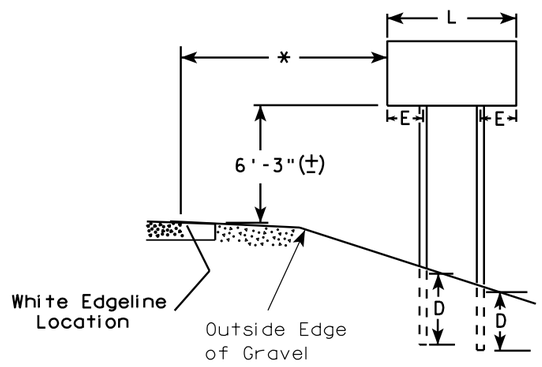
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

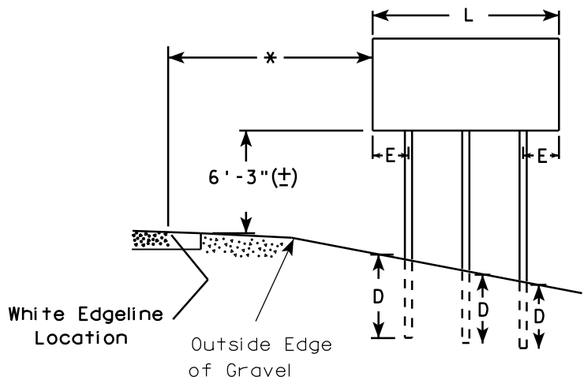
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

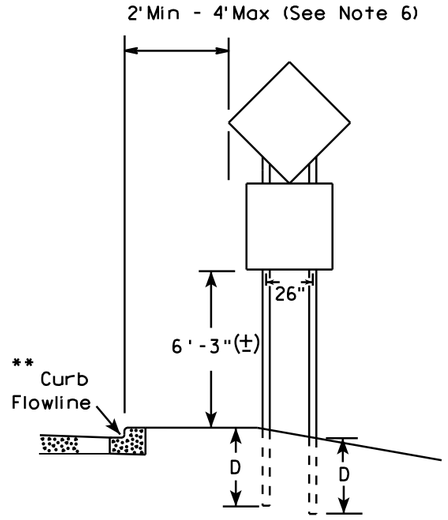
URBAN AREA



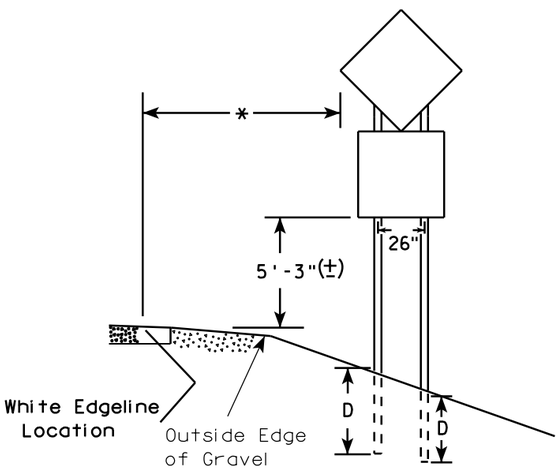
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

GENERAL NOTES

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

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

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

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

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

***

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

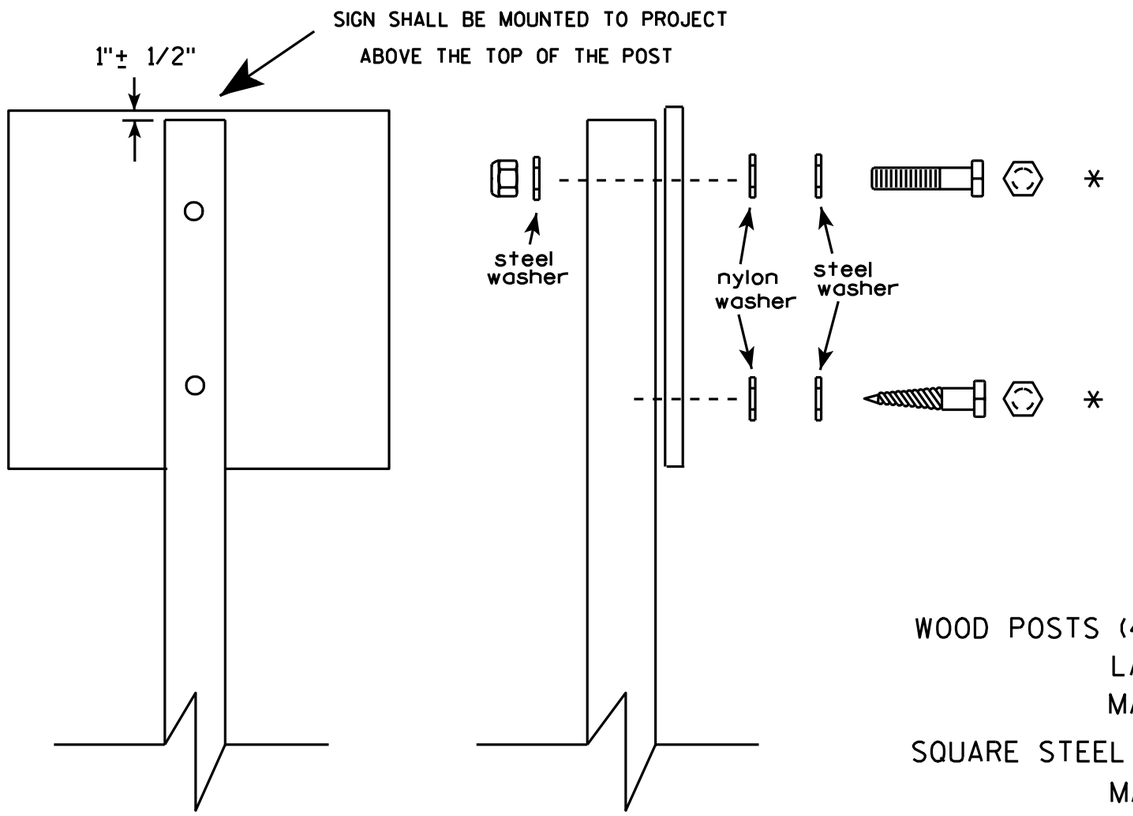
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-4 14

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A44.DGN PLOT DATE : 23-JUL-2015 15:23 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 107.021305:1.000000 WISDOT/CADDS SHEET 42



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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

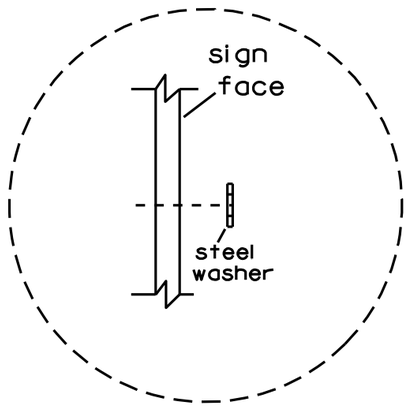
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/23/10 PLATE NO. A4-8.7

7

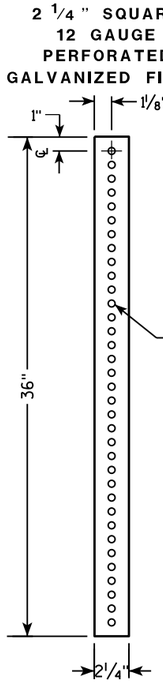
7

PROJECT NO:

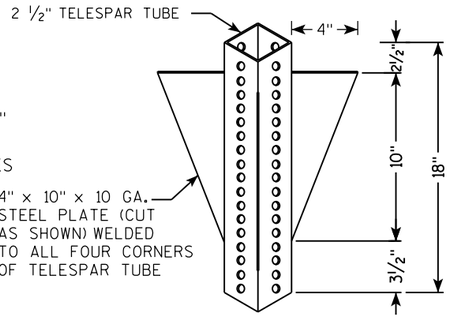
SHEET NO: 187 E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

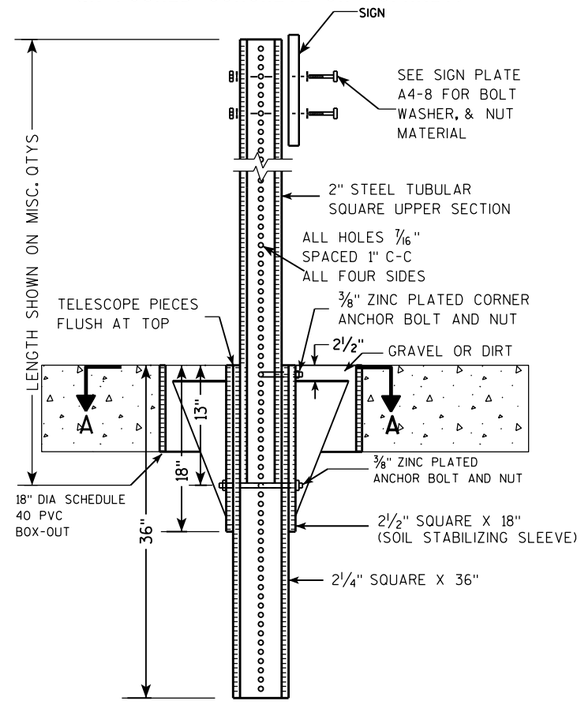
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



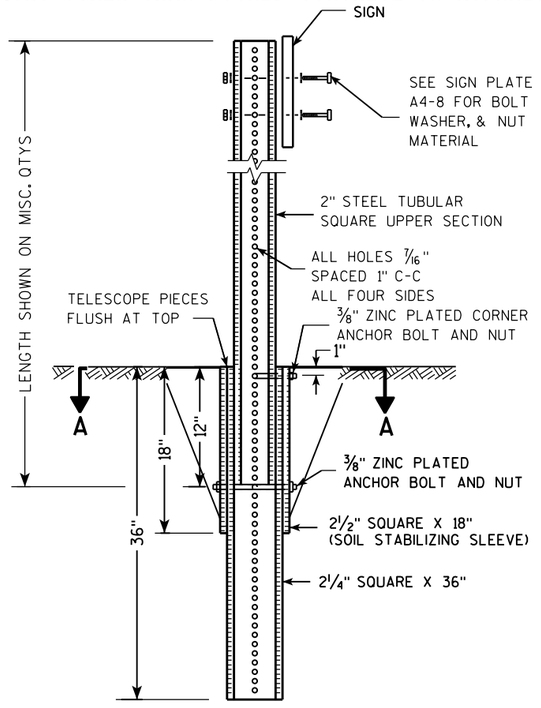
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

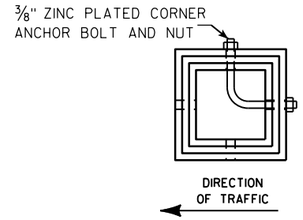


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

TUBULAR STEEL
SIGN POST
A4-9

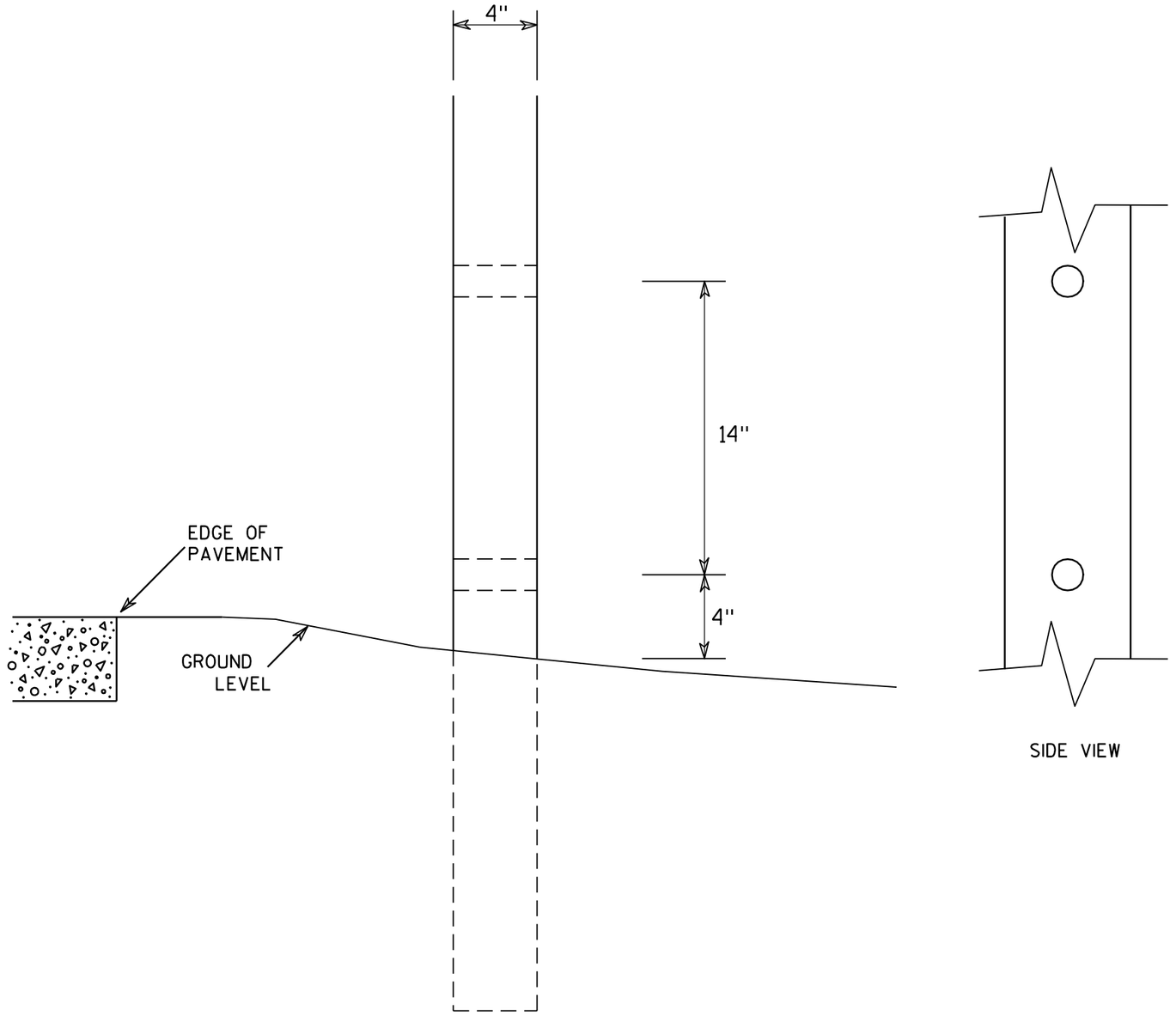
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

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

7

7

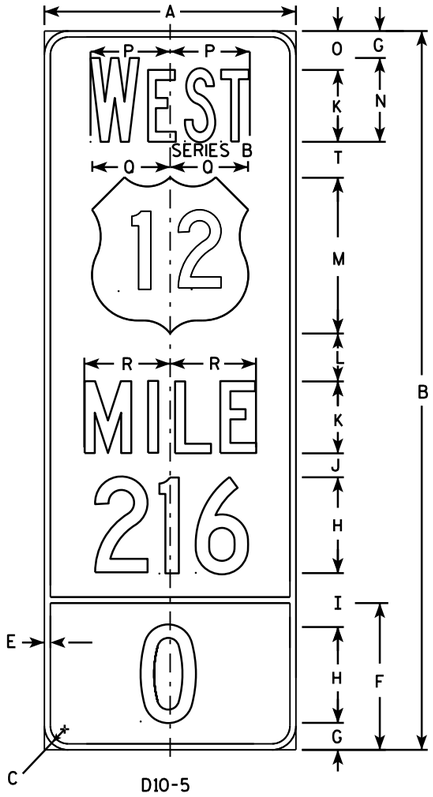
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

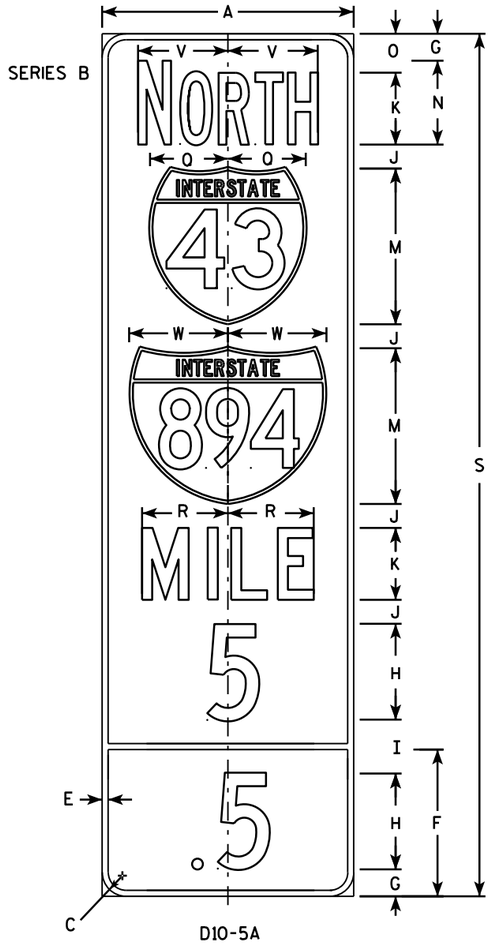
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

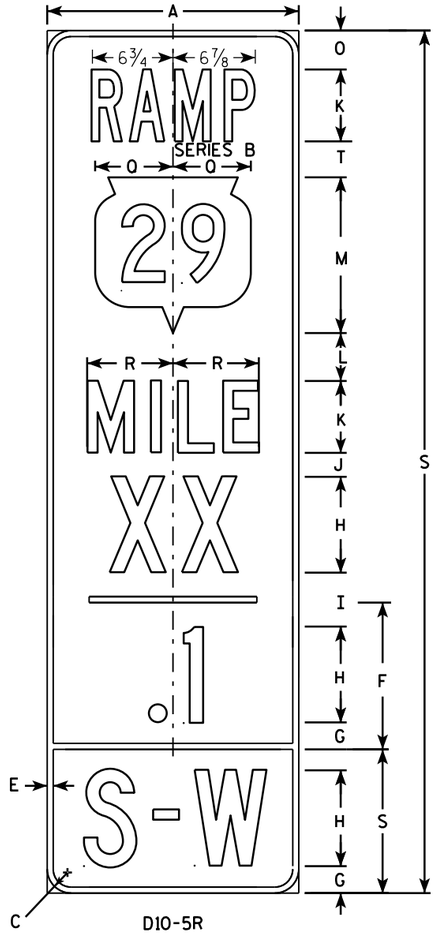
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 189	E



D10-5



D10-5A



D10-5R

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - BLUE
   Message - WHITE
3. Interstate Shield Color
   Background - Top Red
   - Bottom Blue
   Message - White
4. Message Series - C or as noted on the Sign.
5. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
6. The decimal point is required for all digits except "0".
7. Optically adjust mileage numbers about the centerline of the sign to achieve proper balance.
8. Optically adjust Ramp direction letters about the centerline of the sign to achieve proper balance.

SERIES B

SERIES B

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	D10-5 Area sq. ft.	D10-5A Area sq. ft.	D10-5R Area sq. ft.
1																													
2																													
3																													
4	21	60	1 ½		½	12 ¼	2 ¼	8	4 ½	2	6	4	13	7	3 ¼	6 ⅝	6 ½	7 ⅛	72	3		7 ½	8 ¼				8.75	10.5	10.5
5	21	60	1 ½		½	12 ¼	2 ¼	8	4 ½	2	6	4	13	7	3 ¼	6 ⅝	6 ½	7 ⅛	72	3		7 ½	8 ¼				8.75	10.5	10.5

STANDARD SIGN
D10-5

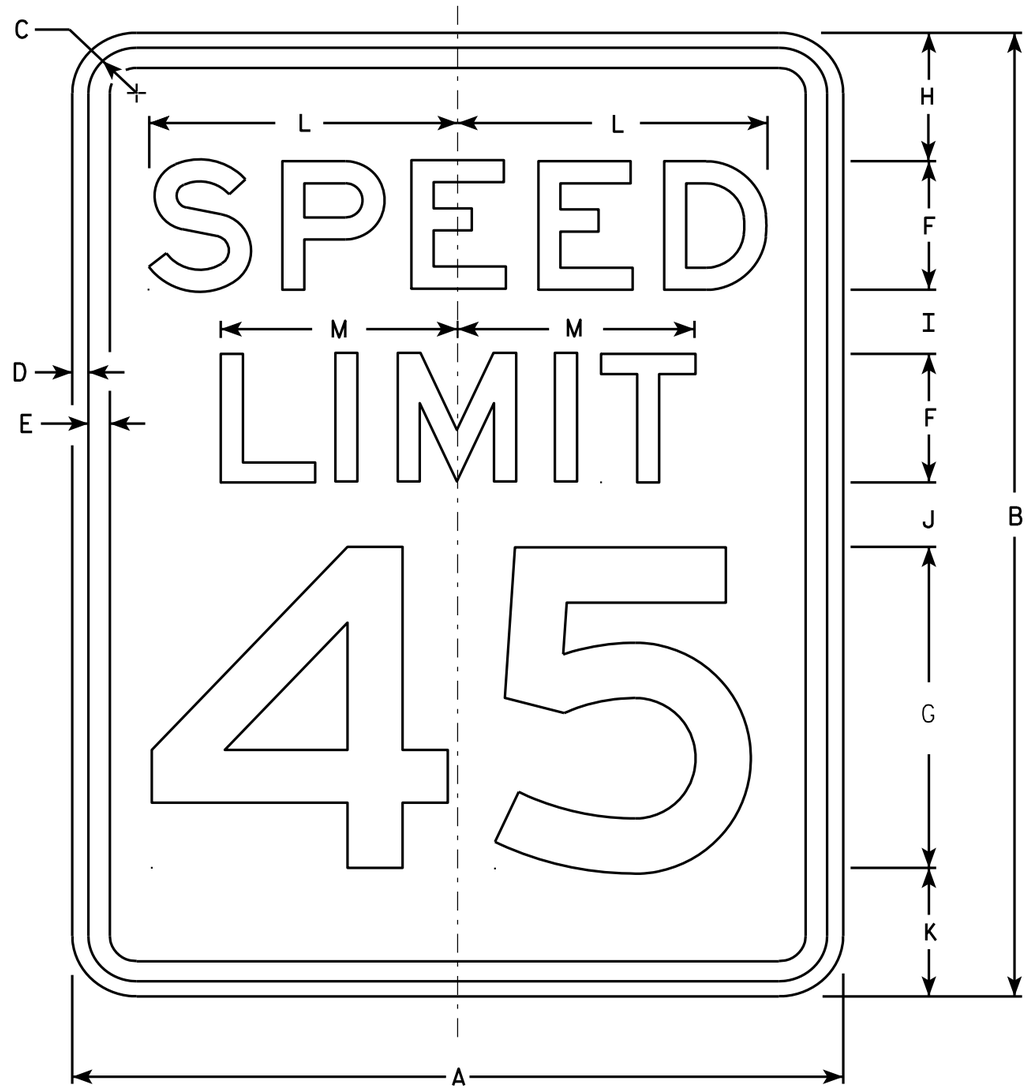
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/26/14 PL 190 D10-5.2

PROJECT NO:

SHEET NO: E



R2-1

NOTES

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

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

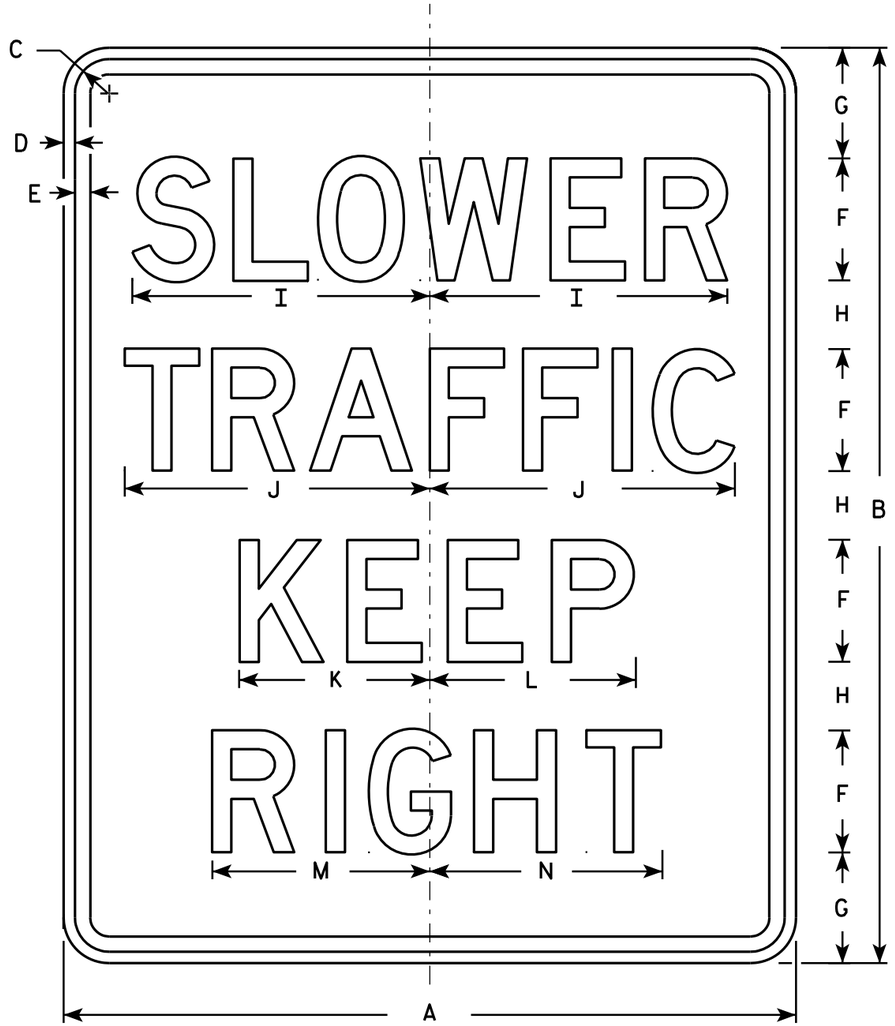
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 191 | E



R4-3

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	30	1 1/8	3/8	1/2	4	3 5/8	2 1/4	9 3/4	10	6 1/4	6 3/4	7 1/8	7 5/8													5.0
2M	24	30	1 1/8	3/8	1/2	4	3 5/8	2 1/4	9 3/4	10	6 1/4	6 3/4	7 1/8	7 5/8													5.0
3	36	48	1 5/8	5/8	3/4	6	6	4	14 5/8	15	9 3/8	10	10 3/4	11 3/8													12.0
4	36	48	1 5/8	5/8	3/4	6	6	4	14 5/8	15	9 3/8	10	10 3/4	11 3/8													12.0
5	48	60	2 1/4	3/4	1	8	7 1/4	4 1/2	19 1/2	20	12 1/2	13 1/2	14 1/4	15 1/4													20.0

STANDARD SIGN
R4-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-3.8

PROJECT NO:

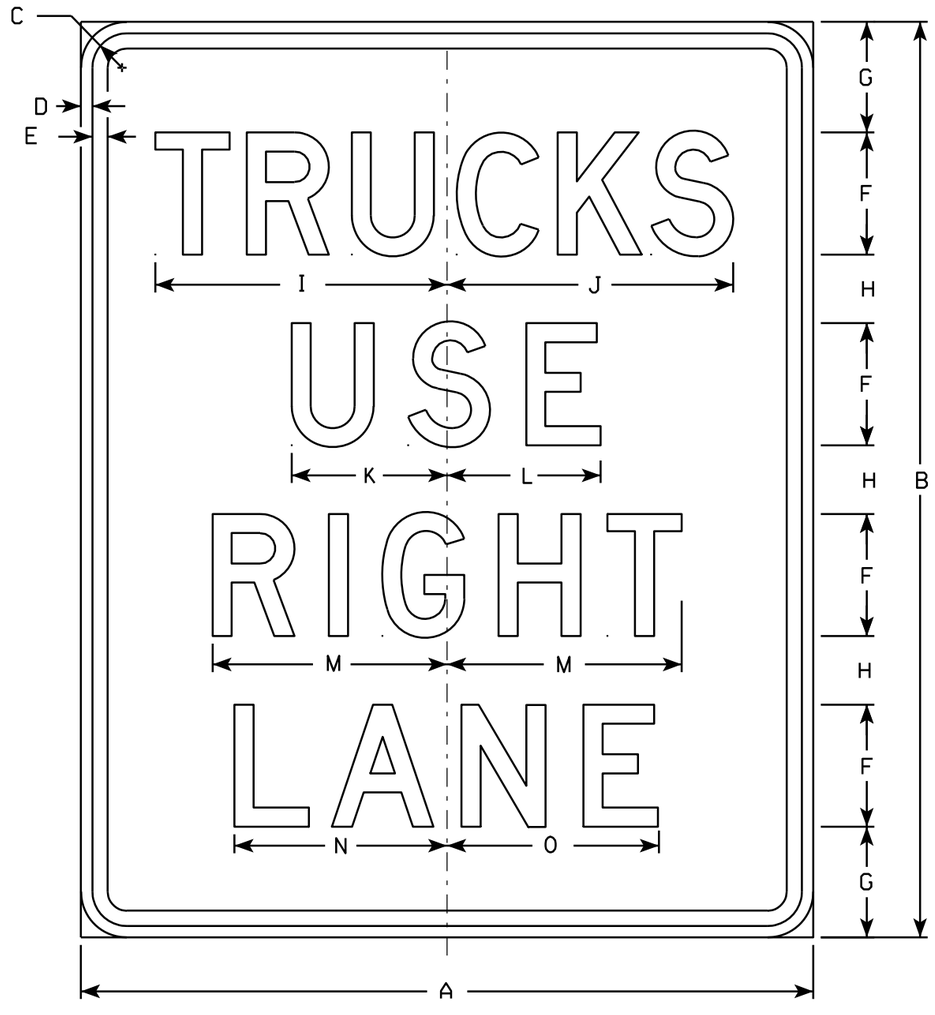
SHEET NO: 192 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R43.DGN PLOT DATE : 25-MAR-2011 13:40 PLOT BY : mscsja

WISDOT/CADDS SHEET 42

7

7

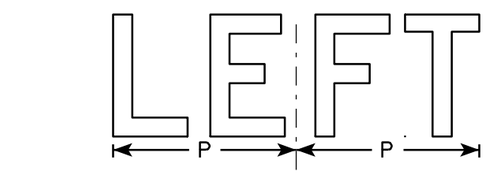


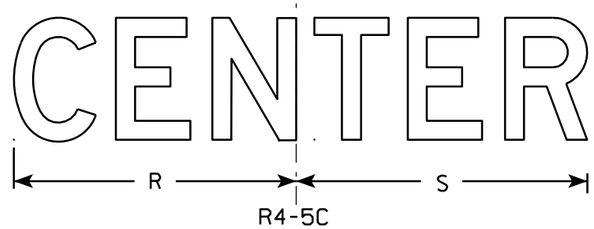
R4-5

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R4-5L & R4-5C are the same as R4-5 except LEFT or CENTER replaces RIGHT as order by code.

R4-5L





R4-5C

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	30	1 1/8	3/8	1/2	4	3 5/8	2 1/4	9 5/8	9 3/8	5 1/8	5 1/8	7 3/4	7 1/4	7	6		9 1/4	9 1/2								5.0
2M	24	30	1 1/8	3/8	1/2	4	3 5/8	2 1/4	9 5/8	9 3/8	5 1/8	5 1/8	7 3/4	7 1/4	7	6		9 1/4	9 1/2								5.0
3																											
4	36	48	2 1/4	5/8	3/4	6	6	4	14 3/8	14 1/8	7 7/8	7 7/8	12 1/4	10 3/4	10 1/2	9 5/8		13 7/8	14 1/4								12.0
5	48	60	2 1/4	3/4	1	8	7 1/4	4 1/2	19 1/8	18 3/4	10 1/4	10 1/8	15 3/8	14	13 7/8	12		18 1/2	19 1/8								20.0

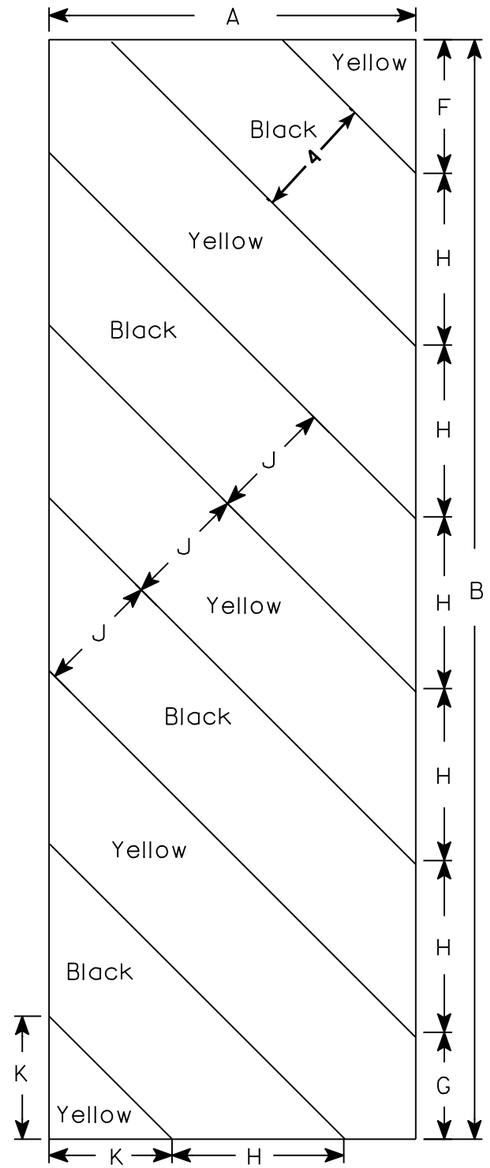
STANDARD SIGN
R4-5

WISCONSIN DEPT OF TRANSPORTATION

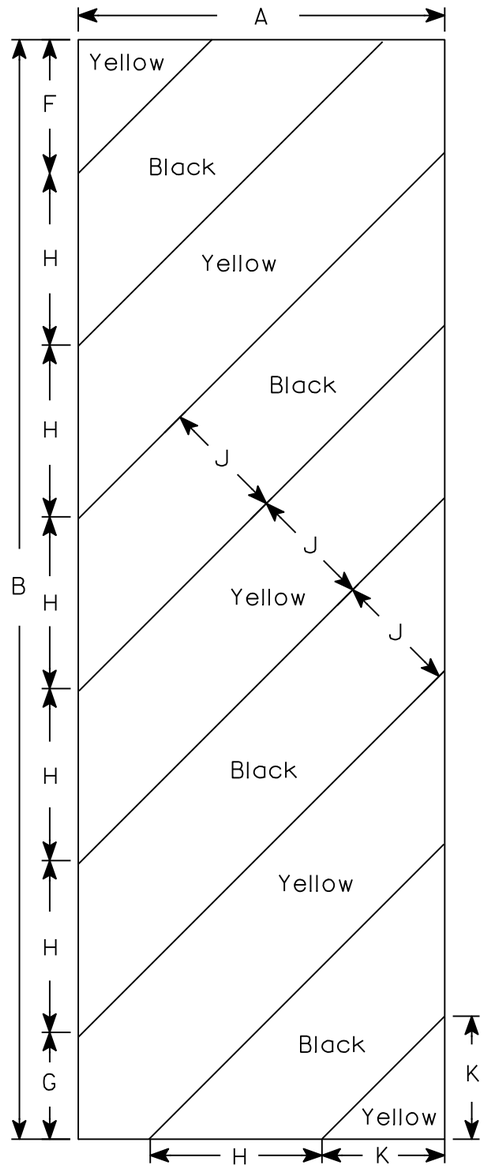
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-5.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 193	E



W5-52L



W5-52R

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN

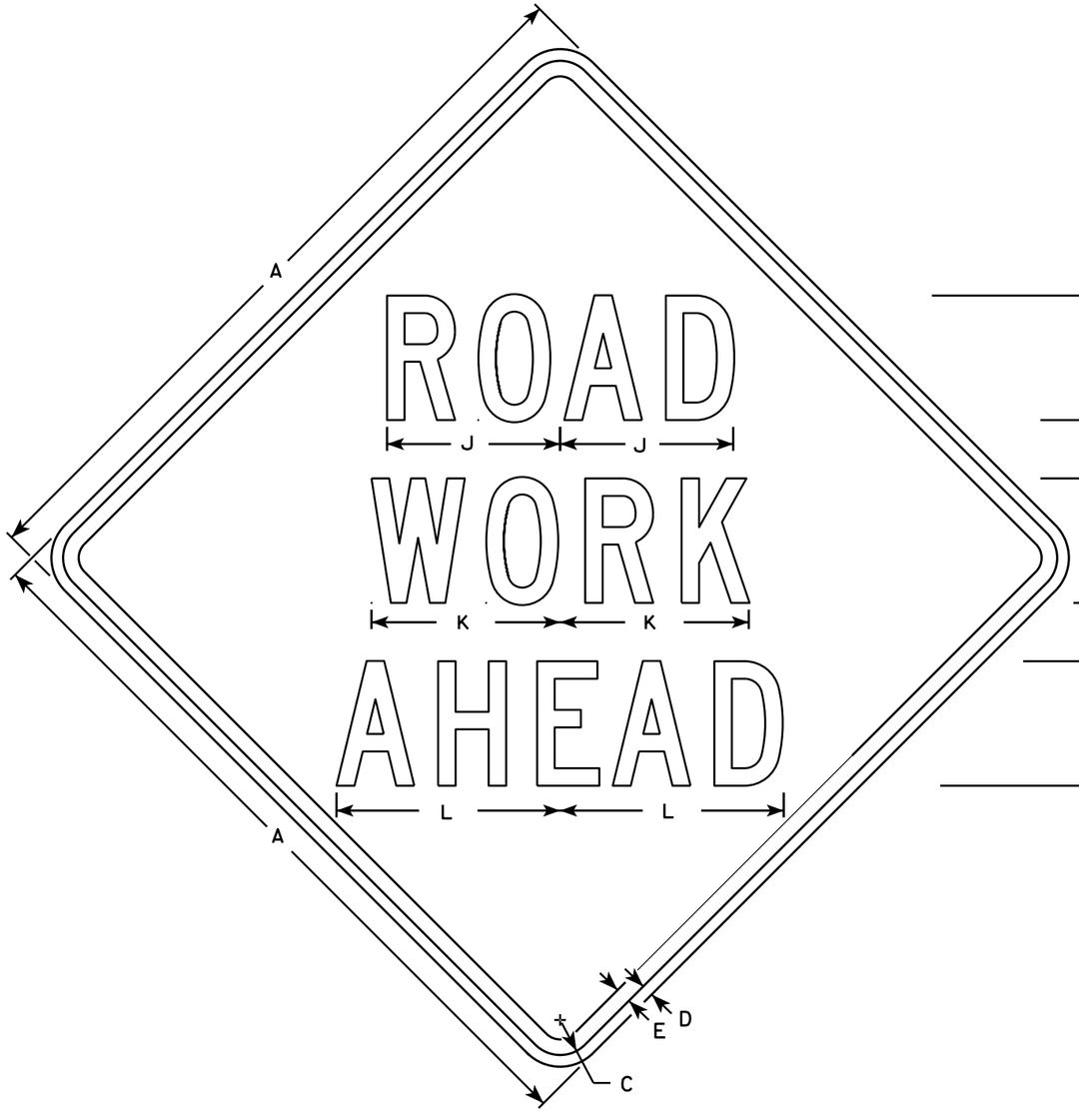
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

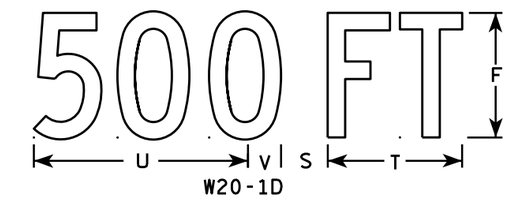
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

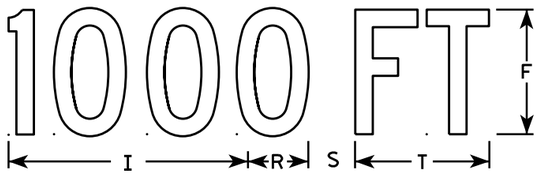
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 194	E



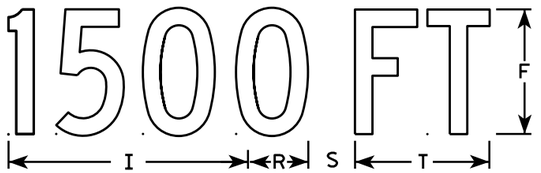
W20-1A



W20-1D



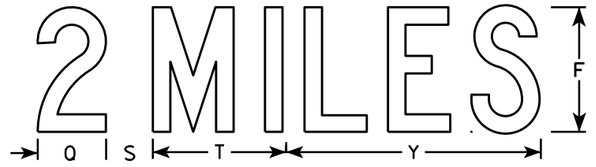
W20-1C



W20-1B

W20-1G

W20-1F



W20-1E

NOTES

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

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

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

WISCONSIN DEPT OF TRANSPORTATION

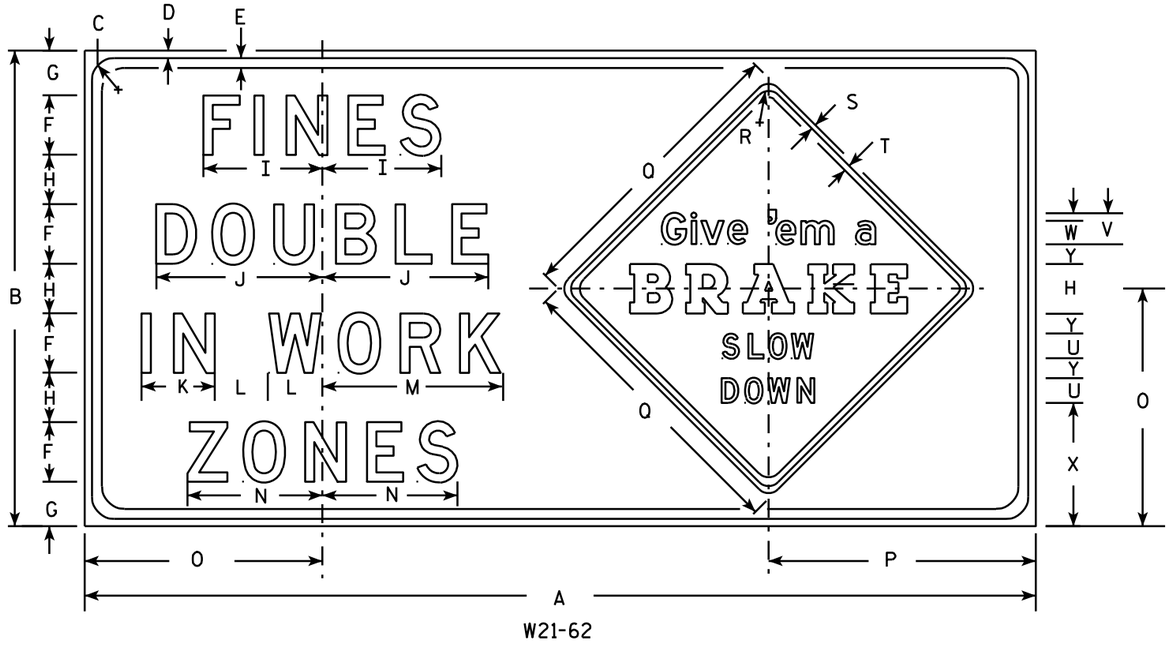
APPROVED

State Traffic Engineer

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

PROJECT NO:

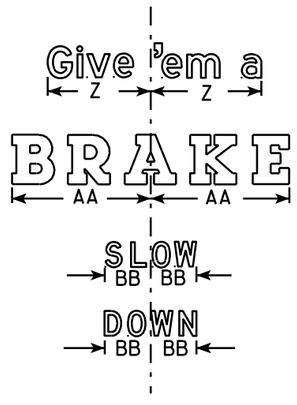
SHEET NO: E



W21-62

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White - (See Note 5)
   Message - Black
3. Message Series -
   Fines Double Message - All lines are Series D
   Give 'em a Brake -
   Line one is Series E, line two is a Special Graphic Series and lines three and four are Series D.
4. The base material shall be plywood. Corners may be square or rounded, but borders shall be rounded as shown. The base material for Give 'em a Brake sign can be a seperate sheet of aluminum with the corners and borders rounded as shown. This seperate panel shall then be attached to the plywood with aluminum or stainless steel sheet metal screws.
5. Background for the Give 'em a Brake sign shall be Type F reflective orange.



W21-62P

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	Area sq. ft.
1																															
2S																															
2M																															
3	96	48	2 1/4	3/4	1	6	4 1/2	5	12	16 3/4	7 3/8	5 1/2	18 1/4	13 5/8	24	27	30	1 3/8	1/2	5/8	2 1/2	3 1/8	2 3/8	12 1/2	2	10 3/4	14	4 5/8	34 1/2	4	32.0
4																															
5																															

STANDARD SIGN
W21-62

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-62.5

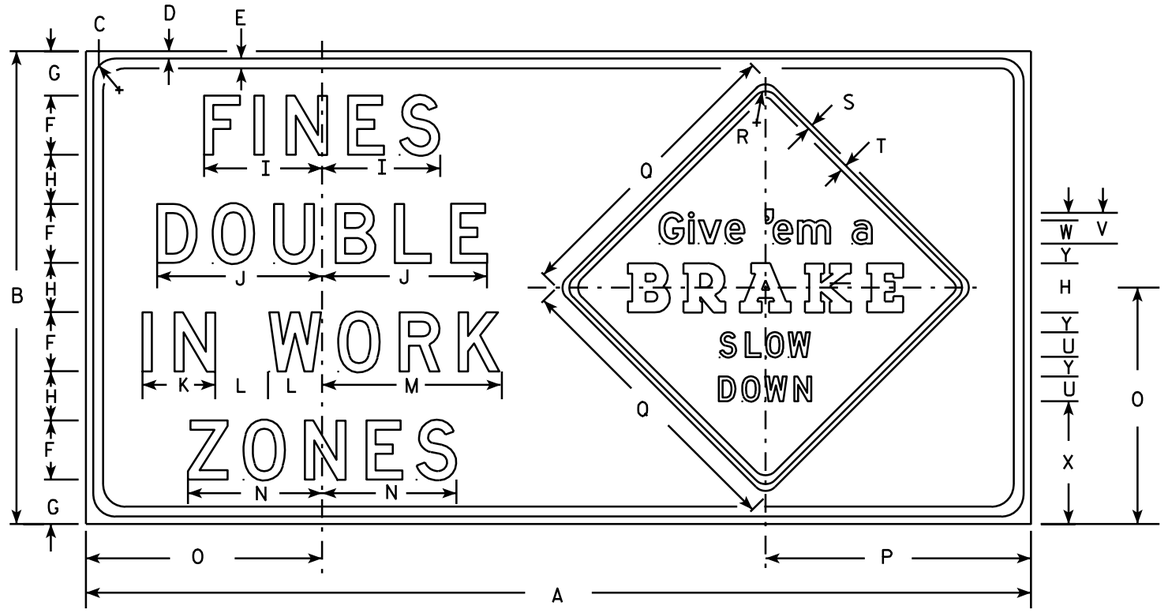
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 196	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W2162.DGN PLOT DATE : 21-MAR-2011 10:25 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 15.294877:1.000000

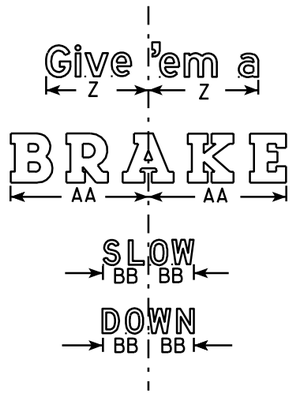
WISDOT/CADDS SHEET 42

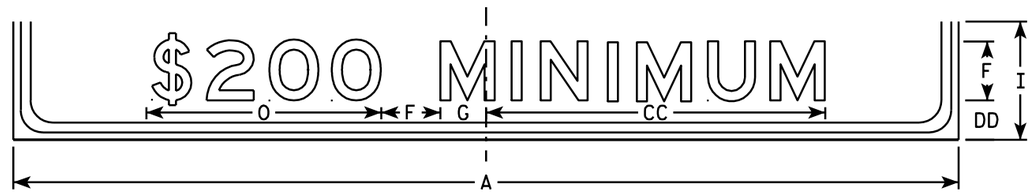
7

7



W21-62





W21-62P

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White - (See Note 5)
   Message - Black
3. Message Series -
   Fines Double Message - All lines are Series D
   Give 'em a Brake -
   Line one is Series E, line two is a Special Graphic Series and lines three and four are Series D.
4. The base material shall be plywood. Corners may be square or rounded, but borders shall be rounded as shown. The base material for Give 'em a Brake sign can be a seperate sheet of aluminum with the corners and borders rounded as shown. This seperate panel shall then be attached to the plywood with aluminum or stainless steel sheet metal screws.
5. Background for the Give 'em a Brake sign shall be Type F reflective orange.

Metric equivalent for this sign is:

SIZE	
1	
2	
3	2400 mm X 1200 mm
4	
5	

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	Area sq. ft.	Area m2
1																																
2																																
3	96	48	2 1/4	3/4	1	6	4 1/2	5	12	16 3/4	7 3/8	5 1/2	18 1/4	13 5/8	24	27	30	1 3/8	1/2	5/8	2 1/2	3 1/8	2 3/8	12 1/2	2	10 3/4	14	4 5/8	34 1/2	4	32.0	2.88
4																																
5																																

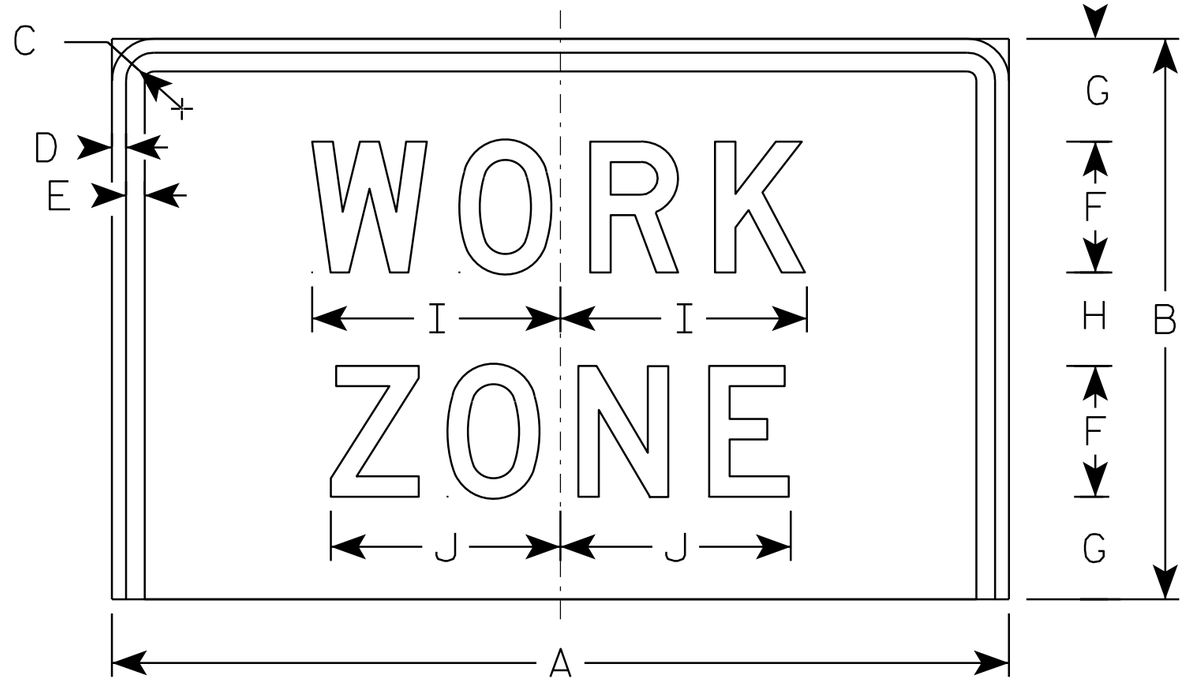
STANDARD SIGN
W21-62

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/16/07 PLATE NO. W21-62.4

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 197 | E



W21-620

NOTES

1. Sign is Type II - Type F - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	2 1/4	3/4	1	7	5 1/2	5	13 1/4	12 1/4																	10.0
2M	48	30	2 1/4	3/4	1	7	5 1/2	5	13 1/4	12 1/4																	10.0
3																											
4																											
5																											

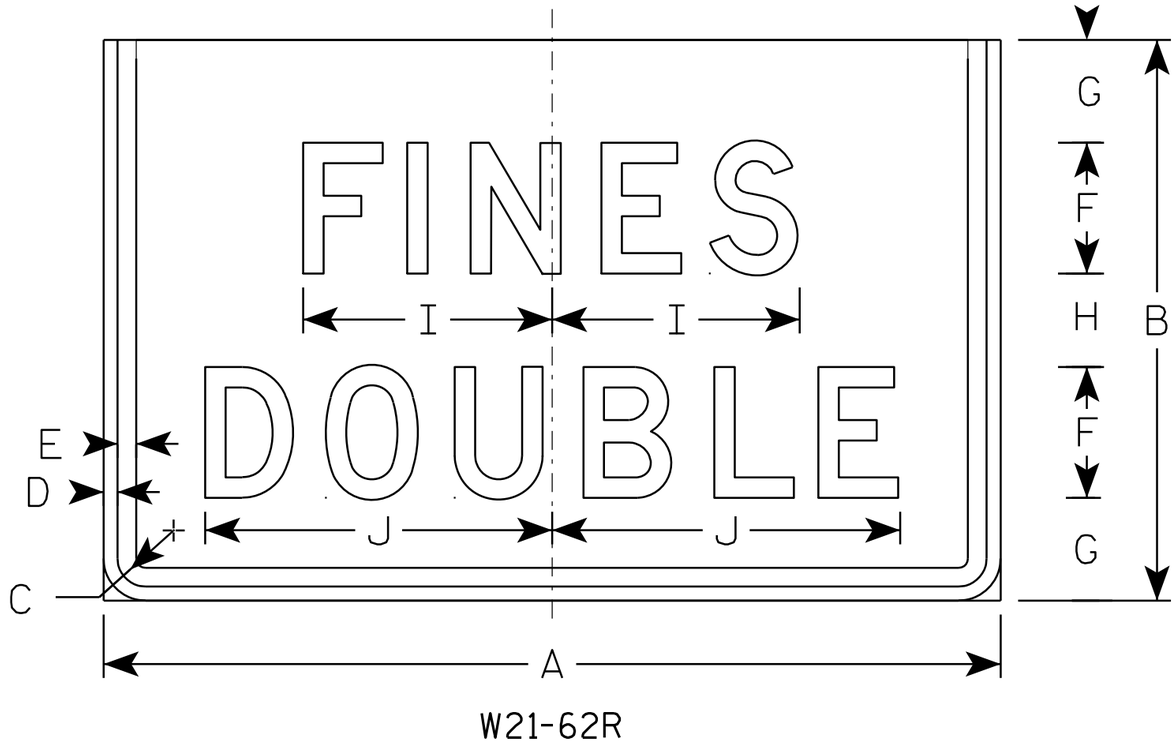
STANDARD SIGN
W21-620

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-620.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 198	E



W21-62R

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	2 1/4	3/4	1	7	5 1/2	5	13 1/4	18 5/8																	10.0
2M	48	30	2 1/4	3/4	1	7	5 1/2	5	13 1/4	18 5/8																	10.0
3																											
4																											
5																											

STANDARD SIGN
W21-62R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-62R.2

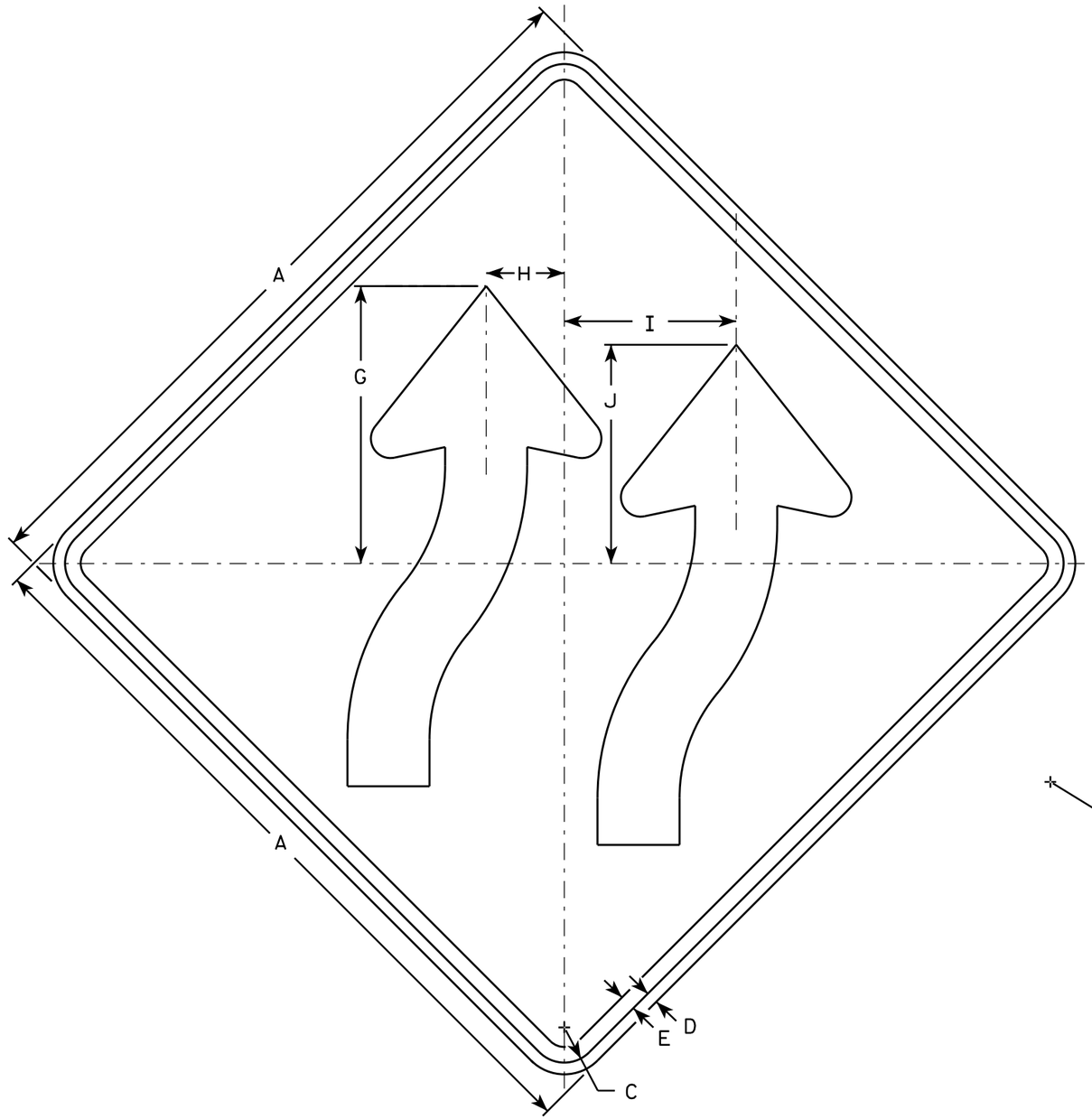
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 199	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W2162R.DGN PLOT DATE : 21-MAR-2011 10:51 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 8.108332:1.000000

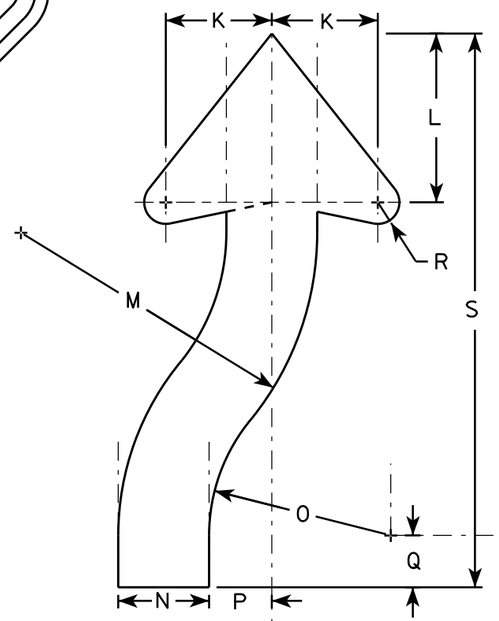
WISDOT/CADDS SHEET 42

7

7



W01-4bR



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W01-4bL is the same as W014-bR exept arrows are reversed along the vertical centerline

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4		13 3/8	3 3/4	8 1/4	10 1/2	4 5/8	7 3/8	12 7/8	3 7/8	7 7/8	2 3/4	2 1/4	7/8	24								9.0
2S	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
2M	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
3	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
4	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
5	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0

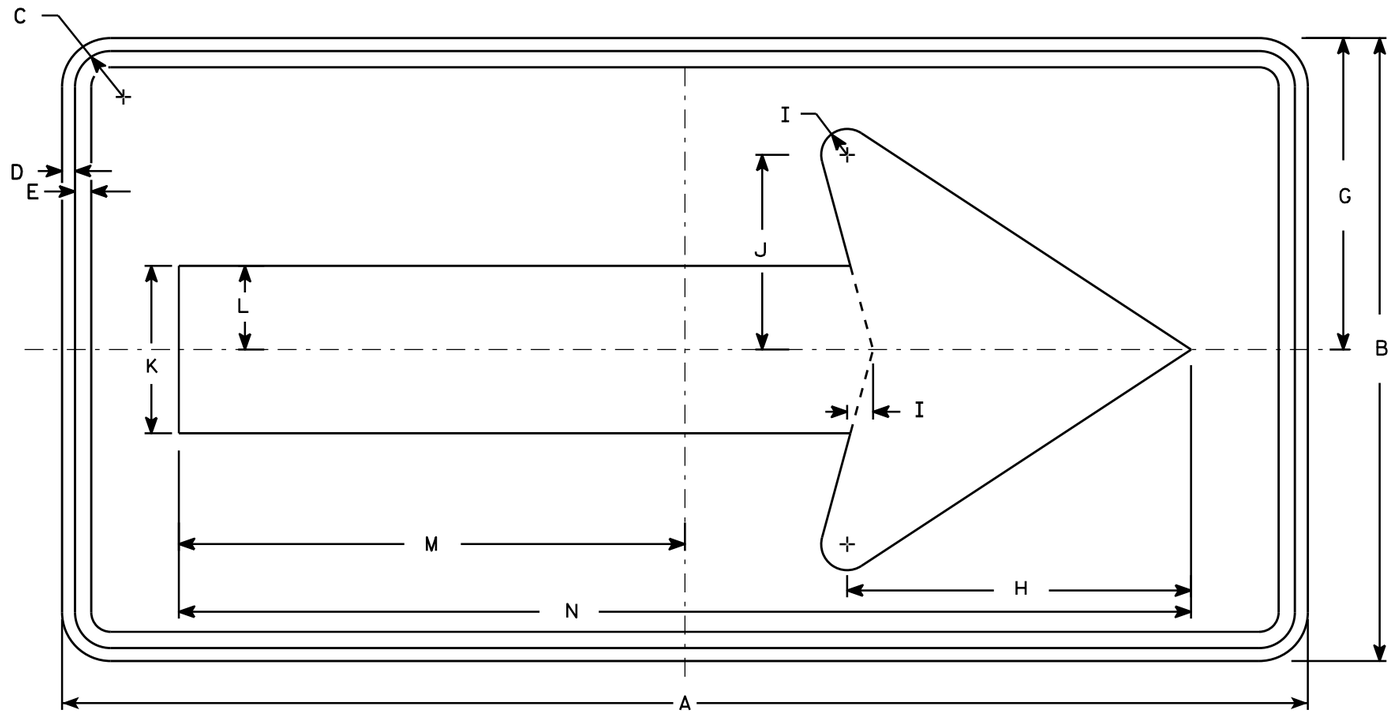
STANDARD SIGN
W01-4b

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-4b.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



W01-6

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

STANDARD SIGN
W01-6

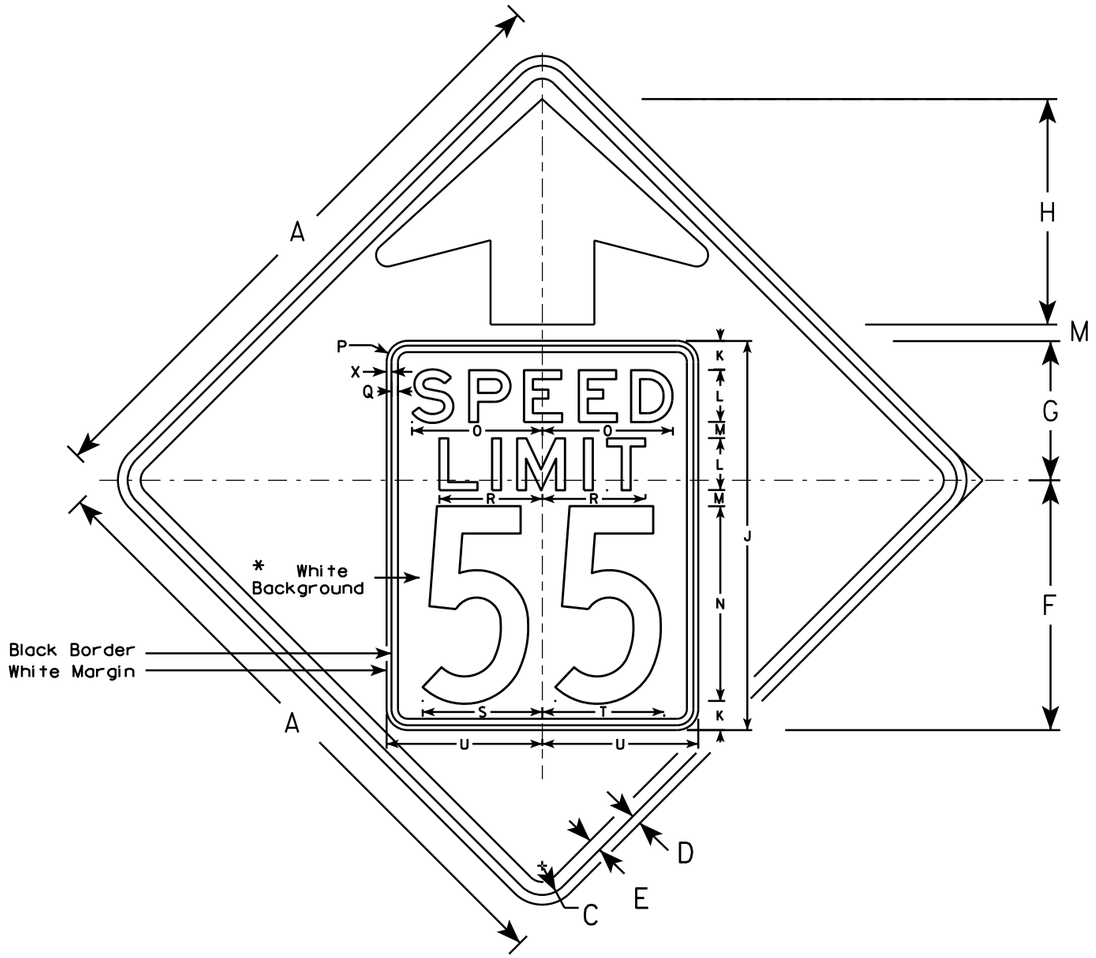
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-6.1

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W016.DGN PLOT DATE : 28-FEB-2014 11:37 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 5.837526:1.000000
WISDOT/CADDS SHEET 42

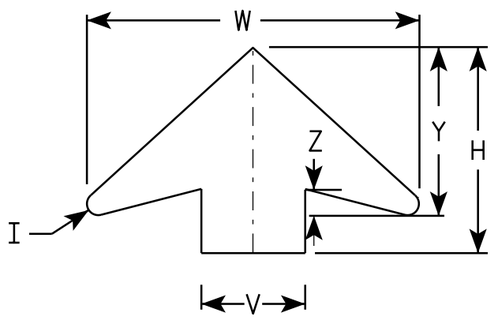


W03-5

NOTES

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

*Speed Limit Sign shall have a White Background



ARROW DETAIL

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

STANDARD SIGN
W03-5

WISCONSIN DEPT OF TRANSPORTATION

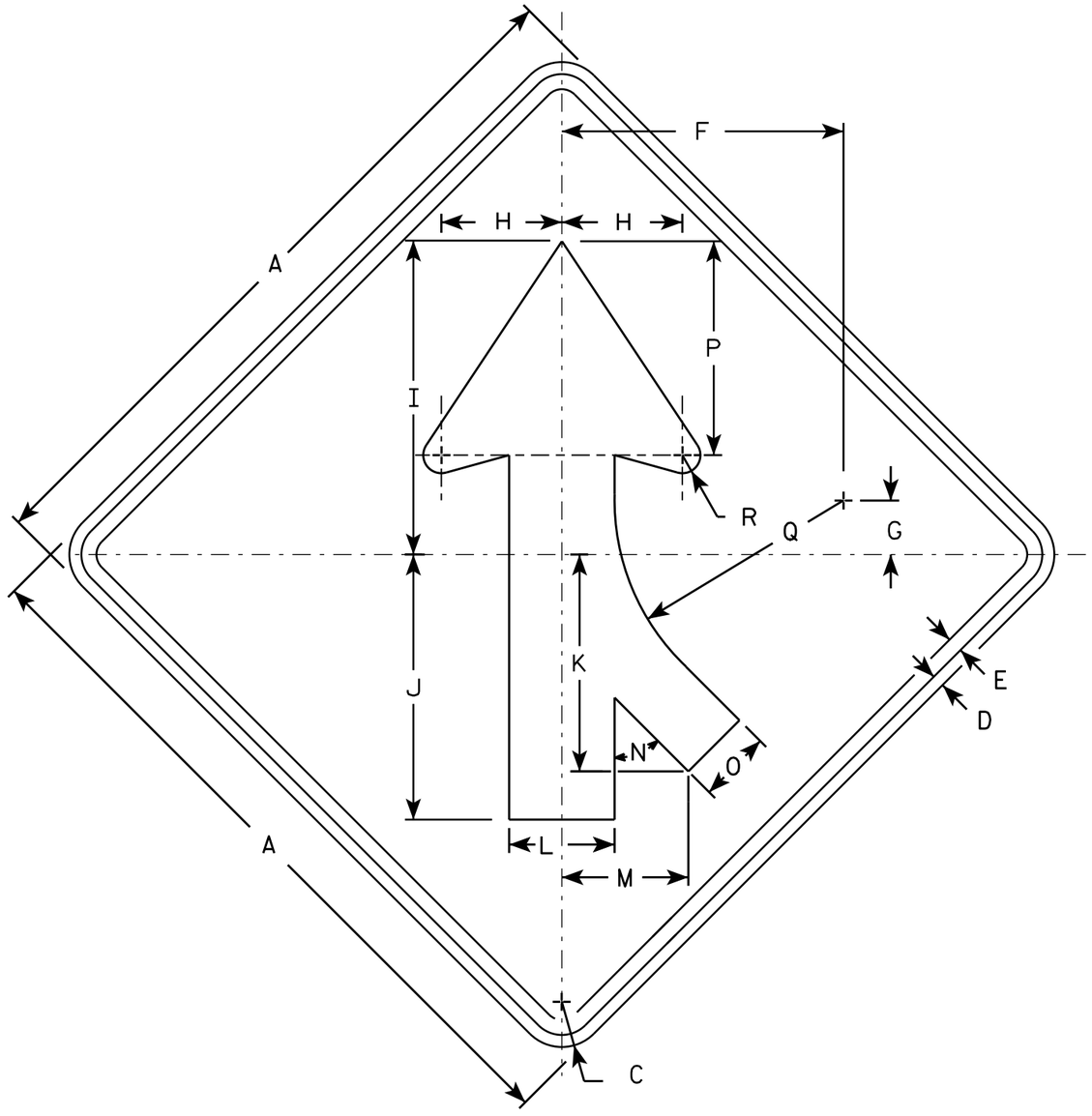
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE W03-5.1

PROJECT NO: SHEET NO: E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W035.DGN PLOT DATE : 20-NOV-2013 11:32 PLOT BY : mscsja

WISDOT/CADDS SHEET 42



W04-1R

NOTES

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

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

STANDARD SIGN
W04-1

WISCONSIN DEPT OF TRANSPORTATION

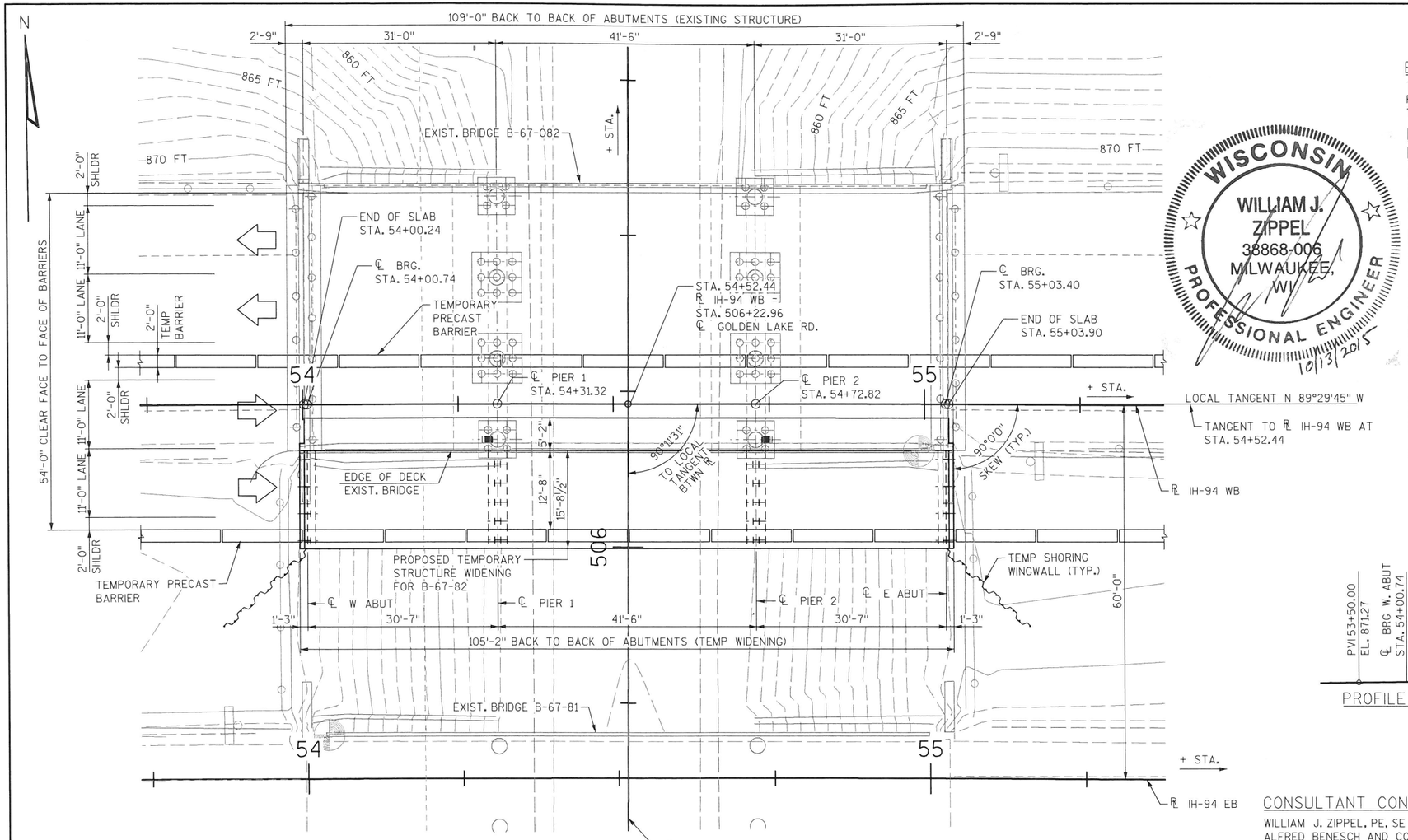
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE NO W04-1.1

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

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W041.DGN PLOT DATE : 20-NOV-2013 11:38 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 6.080757:1.000000
WISDOT/CADDS SHEET 42

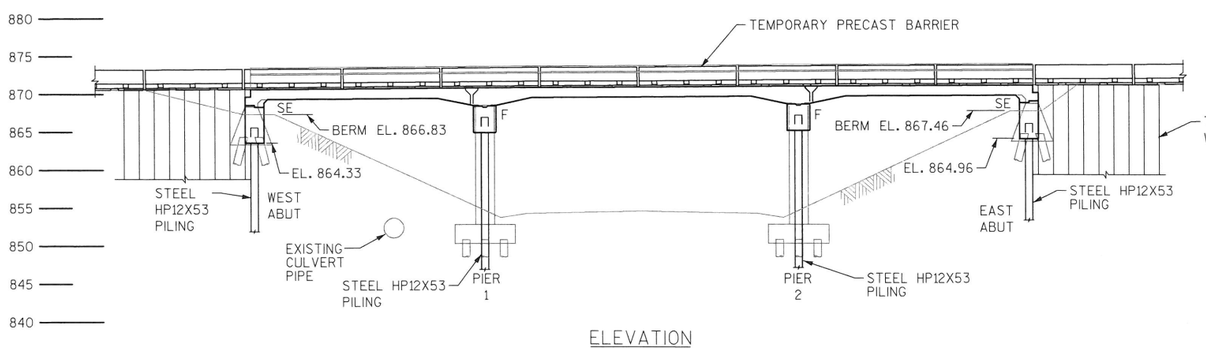
STATE PROJECT NUMBER
1060-38-71



PLAN

EXISTING C.I.P. CONCRETE SLAB BRIDGE WITH C.I.P. CONCRETE ABUTMENTS AND MULTI-COLUMNED PIERS WITH TEMPORARY WIDENING TO THE SOUTH

NOTE:
STATIONS SHOWN ON THE PLAN ARE ALONG THE LOCAL TANGENT



ELEVATION

EXISTING STRUCTURE:

THE EXISTING BRIDGE (B-67-0082) IS A THREE SPAN CONCRETE SLAB BRIDGE FOUNDED ON MULTICOLUMN CONCRETE PIERS AND CONCRETE STUB ABUTMENTS. THE FOUNDATIONS ARE SUPPORTED ON TIMBER PILING.

DESIGN DATA

LIVE LOAD:

DESIGN LOADING HL-93
INVENTORY RATING FACTOR 1.25
OPERATING RATING FACTOR 1.62
WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV) = 250 KIPS

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SUPERSTRUCTURE	fc'= 4000 PSI
ALL OTHER	fc'= 3500 PSI
STEEL REINFORCEMENT HIGH STRENGTH BAR, GRADE 60	fy = 60 KSI

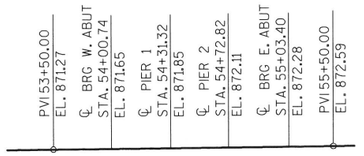
FOUNDATION DATA:

PLACE PIERS AND ABUTMENTS ON STEEL HP12X53 PILING WITH A REQUIRED DRIVING RESISTANCE OF 100 TONS/PILE* AT PIERS AND 60 TONS/PILE* AT ABUTMENTS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

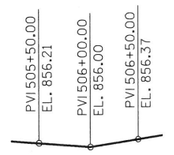
* THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

EST. PILE LENGTHS: 45 FT AT W. ABUT.
60 FT AT PIER 1
60 FT AT PIER 2
45 FT AT E. ABUT.

WISCONSIN
WILLIAM J. ZIPPEL
38868-006
MILWAUKEE, WI
PROFESSIONAL ENGINEER
10/13/2015



PROFILE GRADE LINE IH-94 WB



PROFILE GRADE LINE GOLDEN LAKE

CONSULTANT CONTACT:

WILLIAM J. ZIPPEL, PE, SE
ALFRED BENESCH AND CO.
1300 WEST CANAL STREET, SUITE 150
MILWAUKEE, WI 53233
PHONE: 414-308-1321

BRIDGE OFFICE CONTACT:

WILLIAM DREHER, PE
(608) 266-8489

BENCHMARKS

NAME	ELEVATION	DESCRIPTION
BM1	874.64	ALUMINUM DISK IN PARAPET - EB
BM2	875.00	ALUMINUM DISK IN PARAPET - WB

LIST OF DRAWINGS:

1. GENERAL PLAN AND ELEVATION
2. CROSS SECTION
3. QUANTITIES & GENERAL NOTES
4. SUBSURFACE EXPLORATION
5. ABUTMENTS
6. PIERS
7. SUPERSTRUCTURE
8. SUPERSTRUCTURE DETAILS

IH-94 WB CURVE DATA

PC = 52+34.04
PI = 62+10.24
PT = 71+84.36
△ = 6°28'42" RT
D = 0°19'56"
R = 17248.76
T = 976.20
L = 1950.32
E = 27.60
S.E. = N.C.

TRAFFIC DATA IH-94:

AADT (2015) = 43100
AADT (2035) = 46500
TRUCK % = 16.2%
D = 60/40
DESIGN SPEED = 70 MPH.

TRAFFIC DATA N. GOLDEN LAKE RD.:

AADT (2015) = 1500
AADT (2035) = 1800
DESIGN SPEED = 50 MPH.

NO.	DATE	REVISION	BY

benesch
Alfred Benesch & Company
1300 West Canal Street, Suite 150
Milwaukee, Wisconsin 53233
414-308-1310 Job No. 20103.00

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 10/14/15
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-67-82

IH-94 WB OVER N. GOLDEN LAKE RD.

COUNTY		~~TOWN/CITY~~/VILLAGE	
WAUKESHA		SUMMIT	

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY WMN	PLANS CK'D. WJZ

GENERAL PLAN AND ELEVATION

SHEET 1 OF 8

204

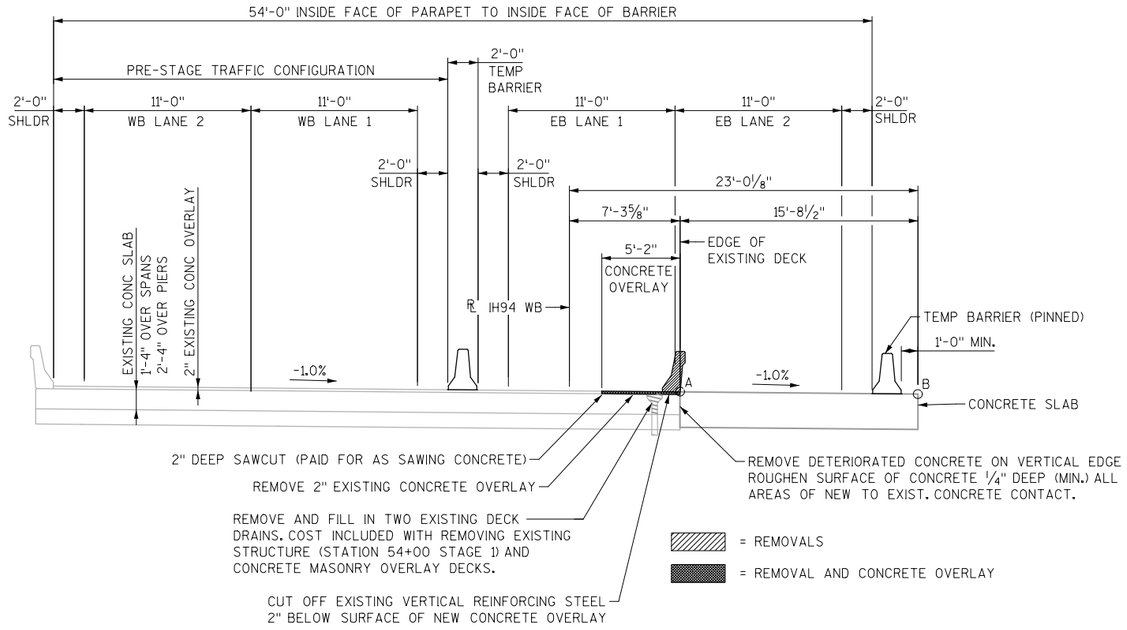
FILE = 086001.B670082_GP&E.DGN
SCALE = 1:20

8

8

STATE PROJECT NUMBER

1060-38-71

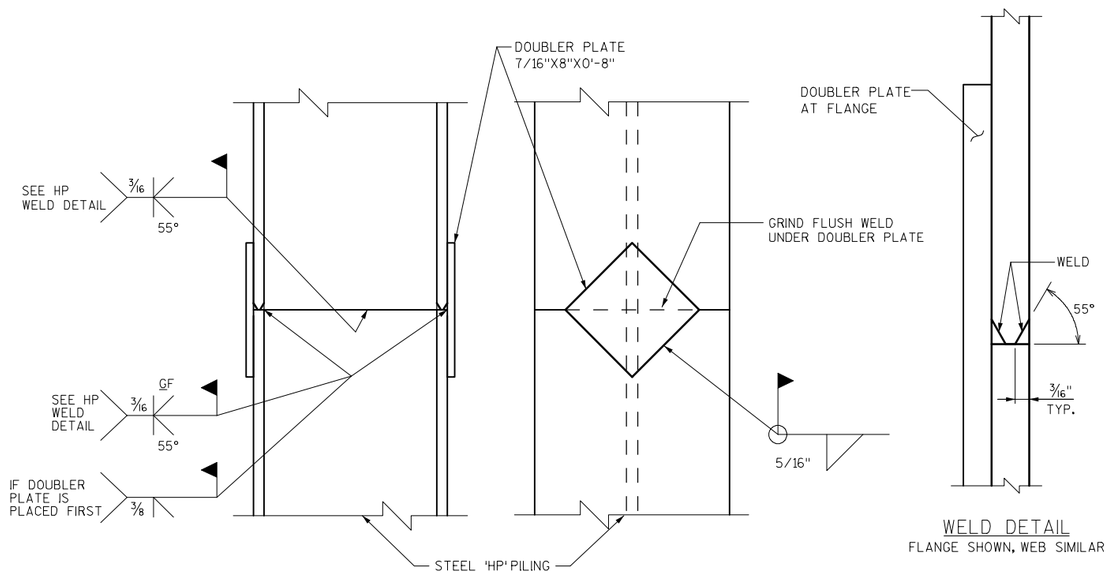


TYPICAL SECTION

TOP OF DECK ELEVATIONS

MATCH EXISTING DECK ELEVATIONS AND CROSS SLOPE.

LOCATION	STATION	PT. A (NORTH EDGE)	PT. B (SOUTH EDGE)
END OF SLAB	54+00.24	871.58	871.42
CL BRG. WEST ABUT.	54+00.74	871.58	871.42
0.1	54+03.80	871.61	871.45
0.2	54+06.85	871.64	871.48
0.3	54+09.91	871.67	871.51
0.4	54+12.97	871.68	871.52
0.5	54+16.03	871.70	871.54
0.6	54+19.09	871.71	871.55
0.7	54+22.15	871.73	871.57
0.8	54+25.20	871.75	871.59
0.9	54+28.26	871.77	871.61
CL PIER 1	54+31.32	871.78	871.62
0.1	54+35.47	871.80	871.64
0.2	54+39.62	871.82	871.66
0.3	54+43.77	871.85	871.69
0.4	54+47.92	871.87	871.71
0.5	54+52.07	871.89	871.73
0.6	54+56.22	871.92	871.76
0.7	54+60.37	871.95	871.79
0.8	54+64.52	871.98	871.82
0.9	54+68.67	872.01	871.85
CL PIER 2	54+72.82	872.04	871.88
0.1	54+75.88	872.06	871.90
0.2	54+78.94	872.08	871.92
0.3	54+81.99	872.11	871.95
0.4	54+85.05	872.13	871.97
0.5	54+88.11	872.15	871.99
0.6	54+91.17	872.16	872.00
0.7	54+94.23	872.18	872.02
0.8	54+97.29	872.19	872.03
0.9	55+00.34	872.21	872.05
CL BRG. EAST ABUT.	55+03.40	872.21	872.05
END OF SLAB	55+03.90	872.21	872.05



STEEL PILING SPLICE DETAILS

WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-82

DRAWN BY WMN | PLANS CK'D. WJZ

CROSS-SECTION

SHEET 2 OF 8

205

FILE= 086002_B67C082_XSEC.DGN
SCALE = 1:10

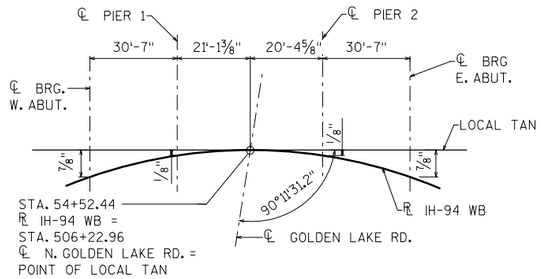
STATE PROJECT NUMBER
1060-38-71

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	PIER 1	PIER 2	E. ABUT.	SUPER	TOTAL
203.0200	REMOVING OLD STRUCTURE (STATION 54+00 WB STAGE 1)	LS	----	----	----	----	1	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES (B-67-82)	LS	0.5	----	----	0.5	----	1
210.0100	BACKFILL STRUCTURE	CY	22	----	----	22	----	44
501.1000.S	ICE HOT WEATHER CONCRETING	LB	60	53	53	60	698	924
502.0100	CONCRETE MASONRY BRIDGES	CY	8	7	7	8	93	123
502.5005	MASONRY ANCHORS TYPE L NO.5 BARS	EACH	10	----	----	10	70	90
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	769	575	575	769	22650	25338
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	----	----	----	----	5	5
511.1200	TEMPORARY SHORING (STRUCTURE B-67-82)	SF	30	----	----	30	----	60
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	3	----	----	3	----	6
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	180	300	300	180	----	960
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	35	----	----	35	----	70
690.0250	SAWING CONCRETE	LF	----	----	----	----	104	104
	NON-BID ITEMS							
	JOINT FILLER							
	NON-BITUMINOUS JOINT SEALER							
	POLYETHYLENE SHEETS							

GENERAL NOTES:

1. DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.
2. DRAWINGS SHALL NOT BE SCALED. BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
3. SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
4. THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
5. THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES FOR THE ABUTMENTS SHALL BE THE BOTTOM OF SLOPE PROTECTION.
6. AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.
7. THE QUANTITY FOR BACKFILL STRUCTURE, BID ITEM 210.0100, IS CALCULATED BASED ON THE APPLICABLE FIGURES 12.6-1 AND 12.6-2 IN THE WISCONSIN DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL.
8. TEMPORARY BRIDGE DECK SUFACE SHALL MATCH EXISTING DECK PROFILE AND CROSS-SLOPE.
9. OPEN LONGITUDINAL JOINTS SHALL NOT BE USED.
10. ALL TEMPORARY STRUCTURE COMPONENTS TO BE REMOVED AFTER COMPLETION OF STAGE. COST OF REMOVAL IS INCLUDED IN COST OF REMOVING OLD STRUCTURE (STA. 54+00 WB).



LAYOUT SKETCH

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-82

DRAWN BY WMN | PLANS CK'D. WJZ

QUANTITIES & GENERAL NOTES

SHEET 3 OF 8

206

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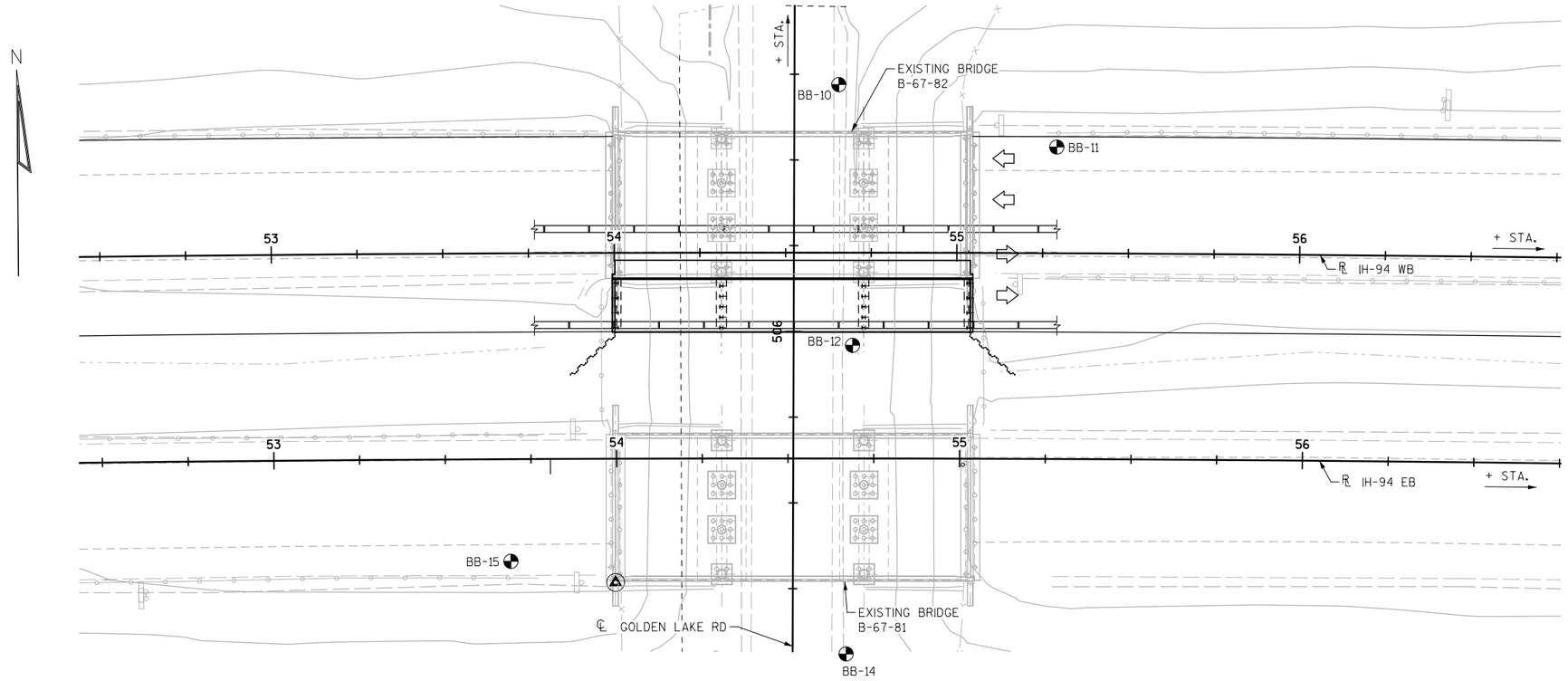
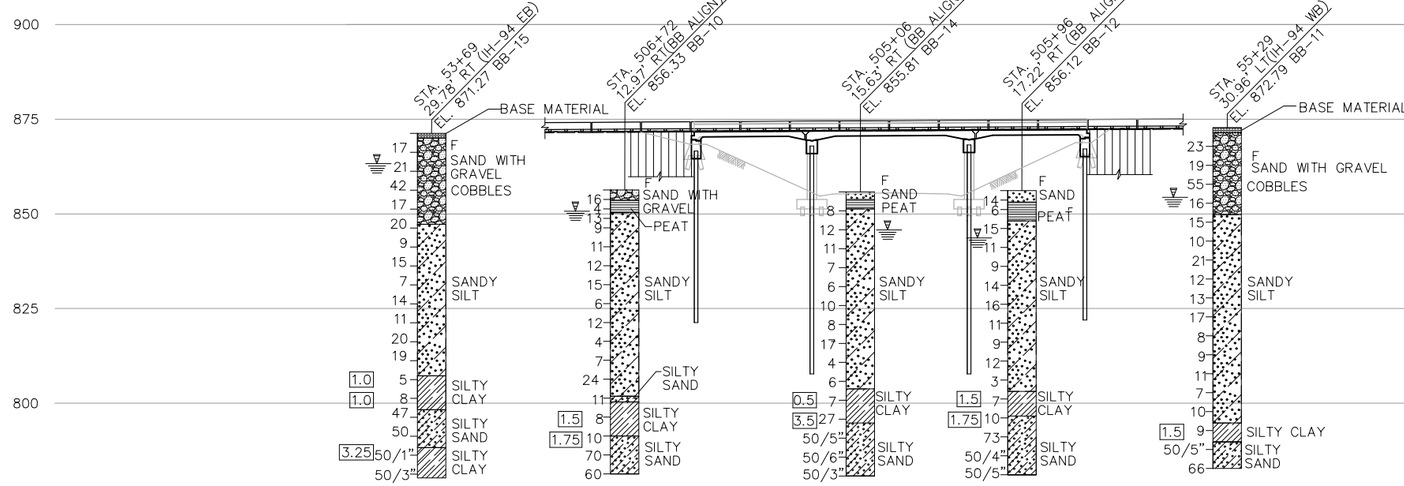
SCALE = 1:10





NOTES:

FOUNDATION DESIGN PARAMETERS ARE BASED ON RECOMMODATIONS FROM THE GEOTECHNICAL EXPLORATION REPORT DATED JULY, 2013 BY HIMALAYAN CONSULTANTS, LLC, AVAILABLE FROM WISDOT.

REFER TO THE GEOTECHNICAL REPORT FOR FULL SOIL DESCRIPTIONS AND DETAILS OF BORING LOGS.

HISTORIC BORINGS ARE AVAILABLE UPON REQUEST FROM WISDOT.

CONTACT THE WISCONSIN DEPARTMENT OF TRANSPORTATION FOR THE GEOTECHNICAL REPORT AND BORING LOGS.

EXISTING FOOTINGS ARE SHOWN FOR EXISTING STRUCTURES. ACTUAL LOCATIONS MAY VARY. CONTRACTOR SHALL VERIFY LOCATIONS IN THE FIELD.

STATE PROJECT NUMBER

1060-38-71

ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE, SAND, PEAT, LIMESTONE, GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.
STA.
ELEVATION
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

95/6=95 BLOWS FOR 6" PENETRATION PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

LEGEND OF BORING

BORING NO.
ELEV.
STA.
UNCONFINED STRENGTH
7.7 7
SANDY GRAVEL
BLOWS PER FT. USING 140# WT. FALLING 30"
WASH SAMPLE
F. BOULDERS OR COBBLES
SHELBY TUBE — S.T.
SAND
GROUND WATER ELEVATION
SILTY CLAY
NO GROUND WATER OBSERVED ABOVE THIS ELEVATION
SO LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-82

DRAWN BY WMN | PLANS CK'D. WJZ

SUBSURFACE EXPLORATION

SHEET 4 OF 8

207

8

8

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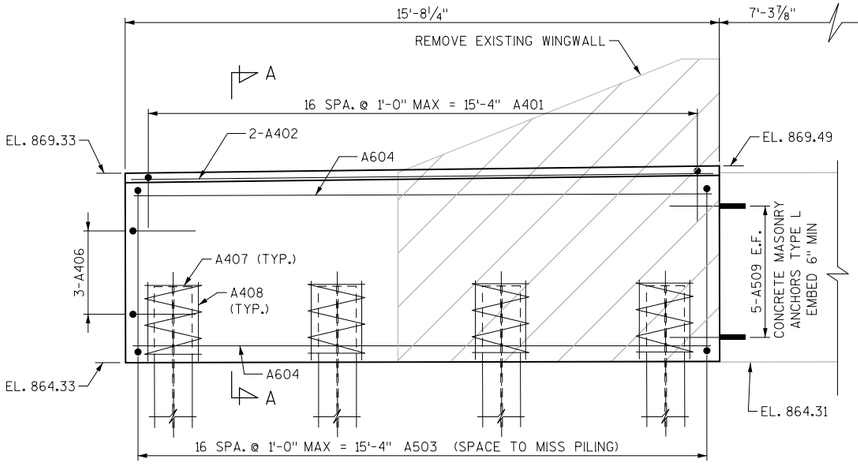
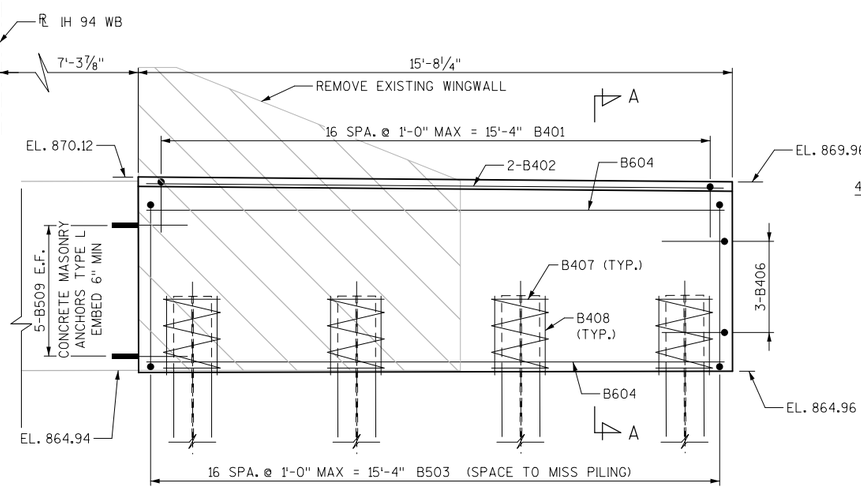
STATE PROJECT NUMBER

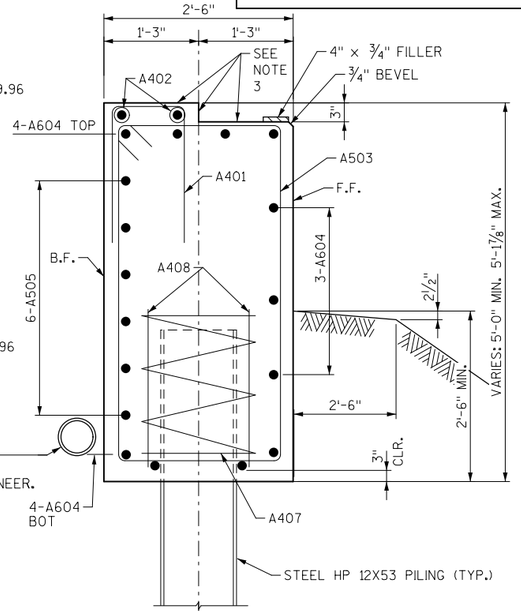
1060-38-71



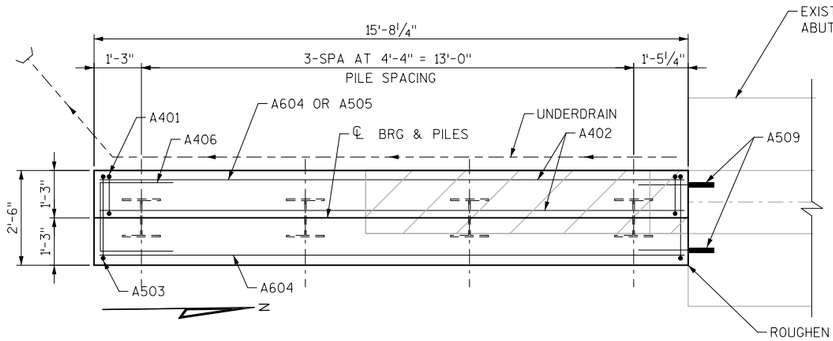
ELEVATION (W. ABUT)



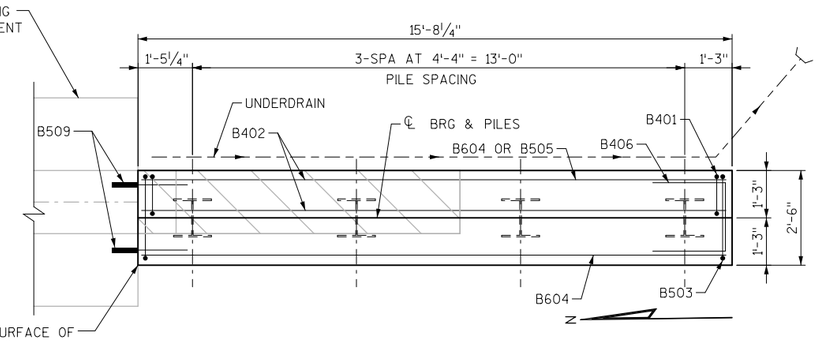
ELEVATION (E. ABUT)



PIPE UNDERDRAIN WRAPPED 6". SLOPE 0.5% MIN. EXIT TO SUITABLE LOCATION AS DIRECTED BY THE ENGINEER.



PLAN (W. ABUT)



PLAN (E. ABUT)

BAR NUMBERS FOR E ABUT BARS ARE THE SAME AS W ABUT BARS EXCEPT "A" CALLOUT IS REPLACED WITH "B".

SECTION A-A

PLACE ABUTMENTS ON STEEL HP 12x53 PILING WITH A REQUIRED DRIVING RESISTANCE OF 60 TONS/PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

NOTES

1. EXCAVATE TO BOTTOM OF ABUTMENTS BEFORE DRIVING PILES.
2. DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF ABUTMENT, UNTIL SUPERSTRUCTURE IS IN PLACE.
3. STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEET OVER ENTIRE ABUTMENT BEFORE PLACING SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".
4. WINGWALLS NOT SHOWN FOR CLARITY.

LEGEND

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

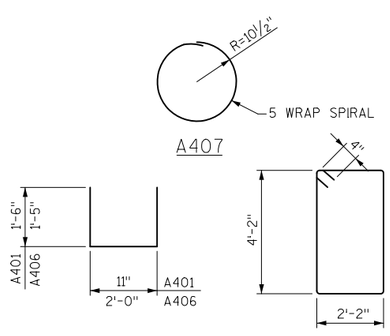
= REMOVALS

BILL OF BARS (W. ABUT)

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	0# COATED 769# UNCOATED LOCATION
A401		17	3'-9"	X			TOP VERTICAL-U
A402		2	15'-4"				TOP HORIZONTAL
A503		17	13'-4"	X			MAIN STIRRUP
A604		11	15'-4"				MAIN HORIZONTAL
A505		6	15'-4"				MAIN HORIZONTAL
A406		3	4'-8"	X			END OF ABUTMENT-U
A407		4	28'-0"	X			PILE SPIRAL
A408		8	2'-3"				PILE VERTICAL
A509		10	2'-3"				ABUTMENT TIE

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

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



A407

A401 & A406

A503

BILL OF BARS (E. ABUT)

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	0# COATED 769# UNCOATED LOCATION
B401		17	3'-9"	X			TOP VERTICAL-U
B402		2	15'-4"				TOP HORIZONTAL
B503		17	13'-4"	X			MAIN STIRRUP
B604		11	15'-4"				MAIN HORIZONTAL
B505		6	15'-4"				MAIN HORIZONTAL
B406		3	4'-8"	X			END OF ABUTMENT-U
B407		4	28'-0"	X			PILE SPIRAL
B408		8	2'-3"				PILE VERTICAL
B509		10	2'-3"				ABUTMENT TIE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-82

DRAWN BY WMN | PLANS CK'D. WJZ

ABUTMENTS

SHEET 5 OF 8

208

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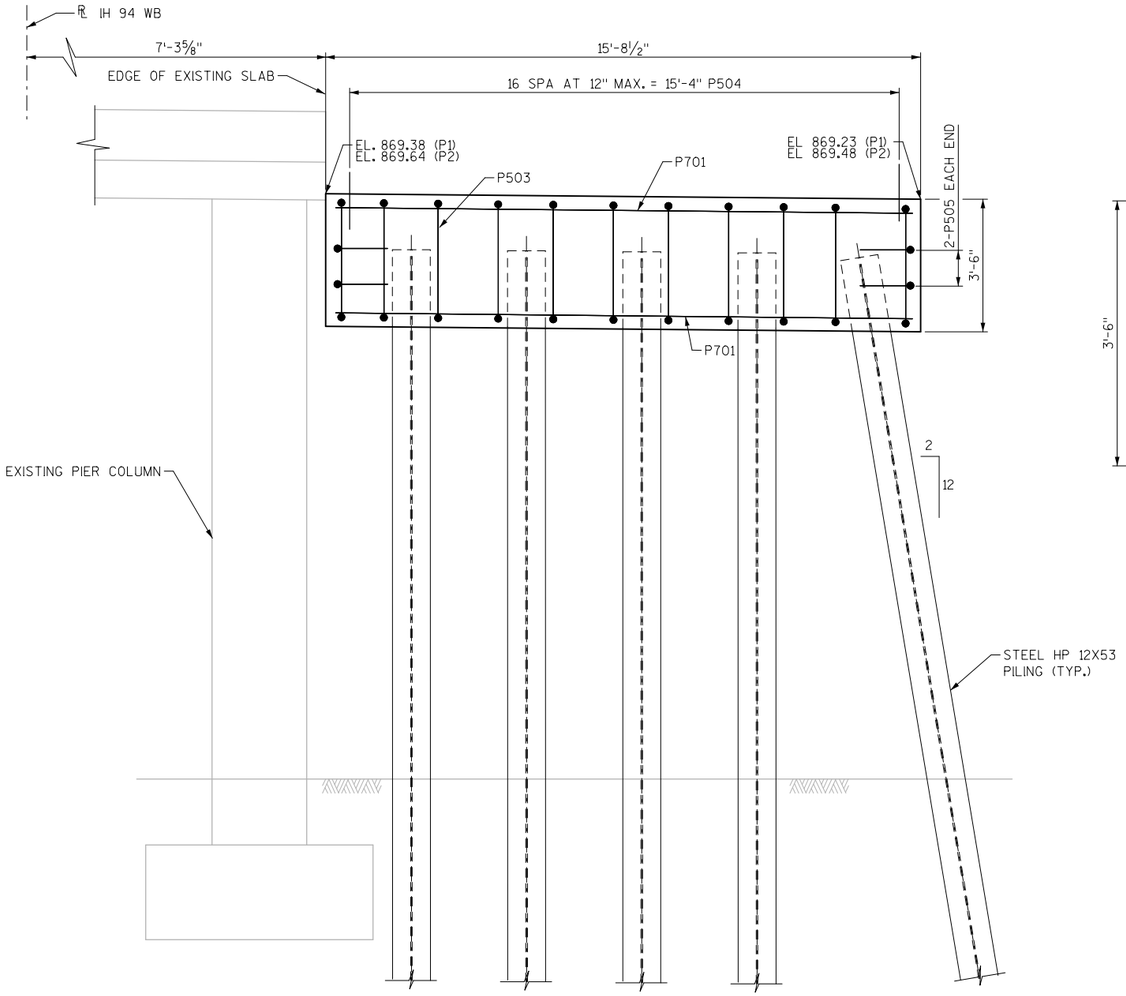
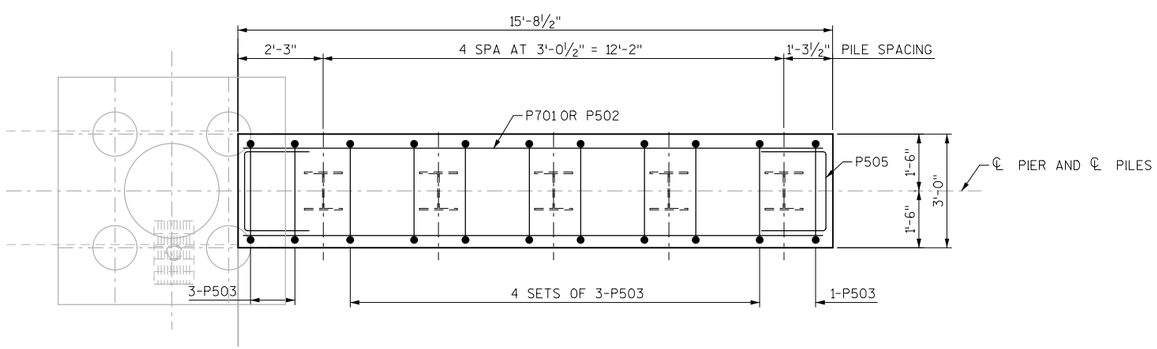
8

STATE PROJECT NUMBER

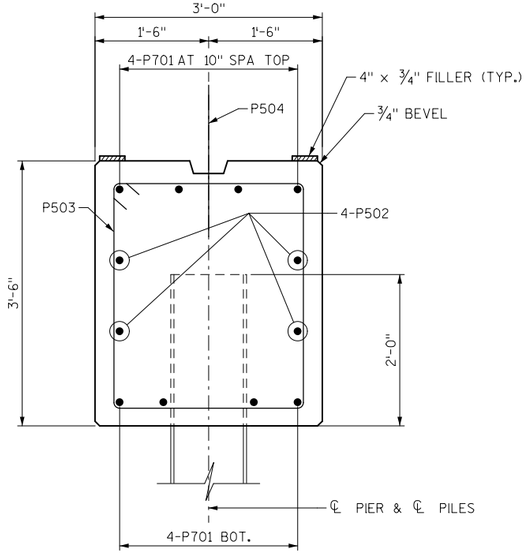
1060-38-71



ELEVATION
(LOOKING EAST)



PLAN



CAP SECTION

BILL OF BARS - PIER 1

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	0 # COATED 575 # UNCOATED LOCATION
P701		8	15'-4"				TOP AND BOTTOM
P502		4	15'-4"				SIDES
P503		16	12'-2"	X			STIRRUP
P504		17	2'-0"				DOWEL
P505		4	5'-1"	X			END U-BARS

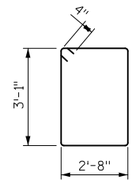
BILL OF BARS - PIER 2

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	0 # COATED 575 # UNCOATED LOCATION
C701		8	15'-4"				TOP AND BOTTOM
C502		4	15'-4"				SIDES
C503		16	12'-2"	X			STIRRUP
C504		17	2'-0"				DOWEL
C505		4	5'-1"	X			END U-BARS

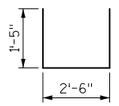
PLACE PIERS ON STEEL HP 12x53 PILING WITH A REQUIRED DRIVING RESISTANCE OF 100 TONS/PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

NOTES

1. THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
2. BENDING DIMENSIONS ARE OUT TO OUT OF BARS.
3. BAR NUMBERS FOR PIER 1 BARS ARE THE SAME AS PIER 2 BARS EXCEPT "P" CALLOUT IS REPLACED WITH "C".



P503



P505

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8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-82

DRAWN BY WMN | PLANS CK'D. WJZ

PIERS

SHEET 6 OF 8

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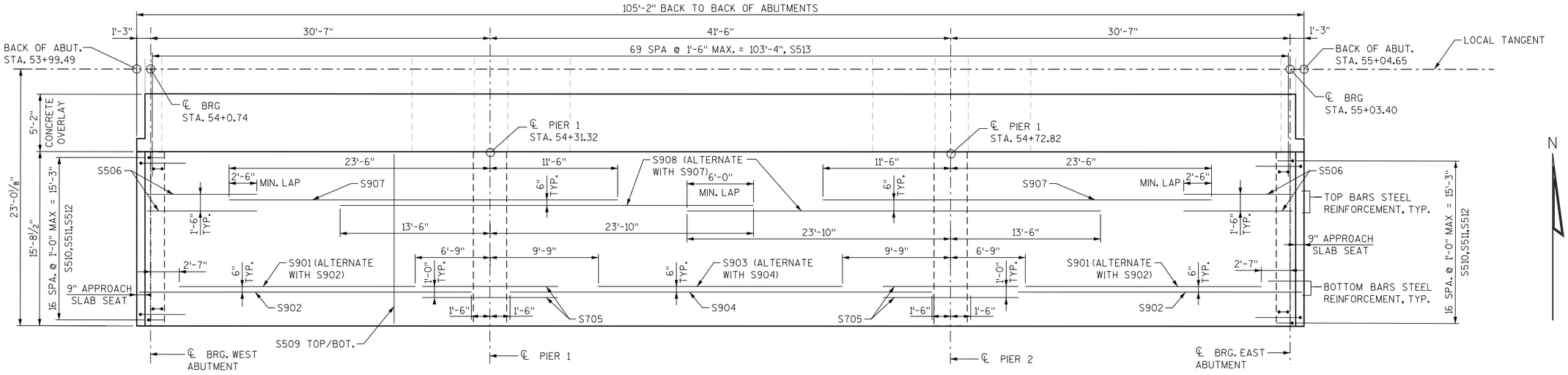
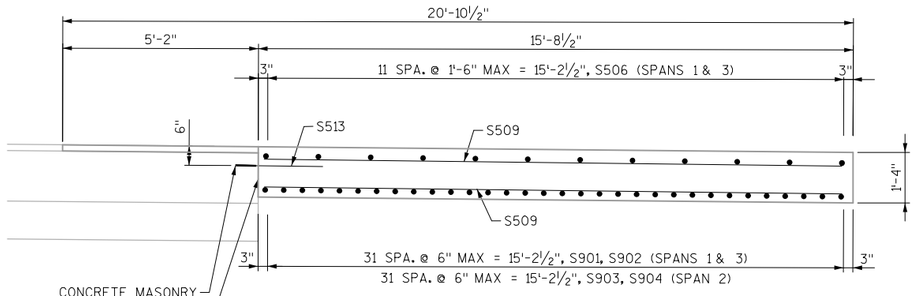
STATE PROJECT NUMBER

1060-38-71

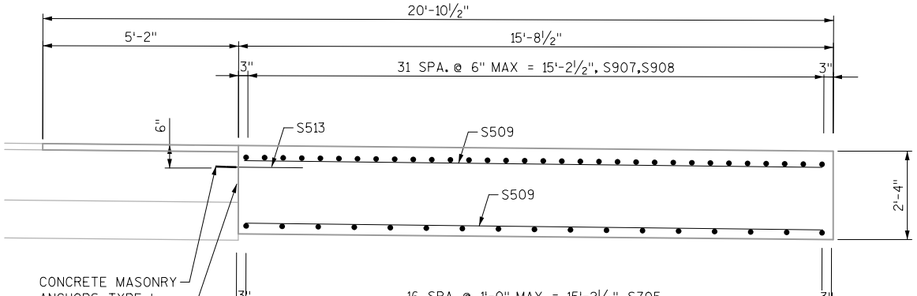


SLAB PLAN



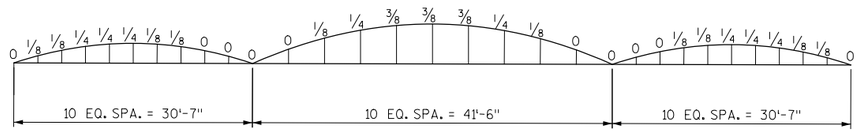
CROSS SECTION THRU ROADWAY - IN SPAN

(LOOKING EAST)



CROSS SECTION THRU ROADWAY - AT PIER

(LOOKING EAST)



CAMBER DIAGRAM

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEADLOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-82

DRAWN BY WMN | PLANS CK'D. WJZ

SUPERSTRUCTURE

SHEET 7 OF 8

210

8

8

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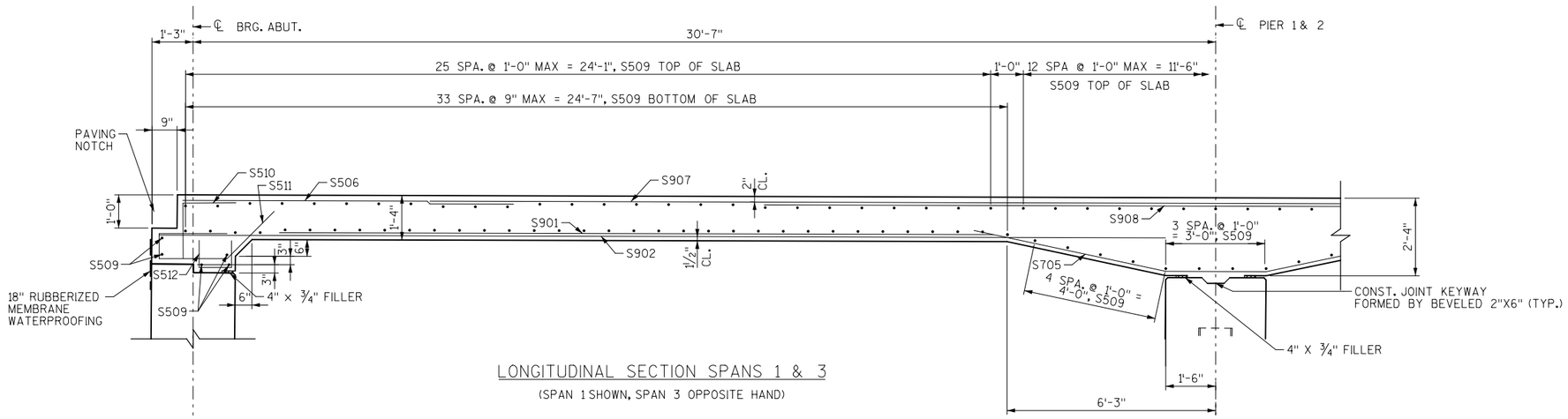
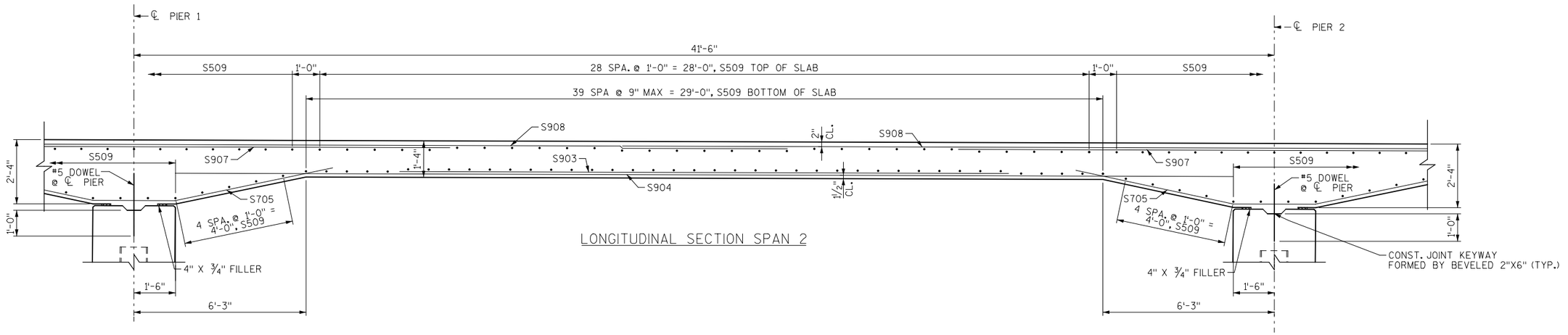
STATE PROJECT NUMBER
1060-38-71



LONGITUDINAL SECTION SPANS 1 & 3

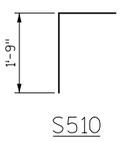
(SPAN 1 SHOWN, SPAN 3 OPPOSITE HAND)



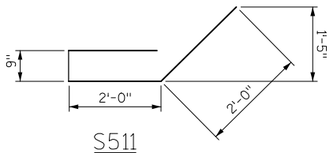
LONGITUDINAL SECTION SPAN 2

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	0 = COATED 22650 = UNCOATED LOCATION
S901		32	21'-3"				SLAB LONG. BOT, SPAN 1& 3
S902		32	30'-2"				SLAB LONG. BOT, SPAN 1& 3
S903		16	22'-0"				SLAB LONG. BOT, SPAN 2
S904		16	38'-6"				SLAB LONG. BOT, SPAN 2
S705		34	14'-6"	X			SLAB LONG BOT, PIER
S506		24	9'-11"				SLAB LONG. TOP , SPAN 1& 3
S907		32	35'-0"				SLAB LONG. TOP, PIER
S908		32	37'-4"				SLAB LONG. TOP, PIER
S509		249	15'-3"				SLAB TRANS.
S510		34	3'-4"	X			SLAB @ ABUT. HAUNCH
S511		34	6'-6"	X			SLAB @ ABUT. HAUNCH
S512		34	2'-7"	X			SLAB @ ABUT. HAUNCH
S513		70	3'-3"				DECK TIE



S510



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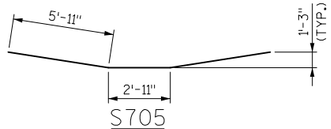

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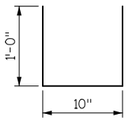

S512

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

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-82

DRAWN BY	WMN	PLANS CK'D.	WJZ

SUPERSTRUCTURE DETAILS

SHEET 8 OF 8

211

8

8

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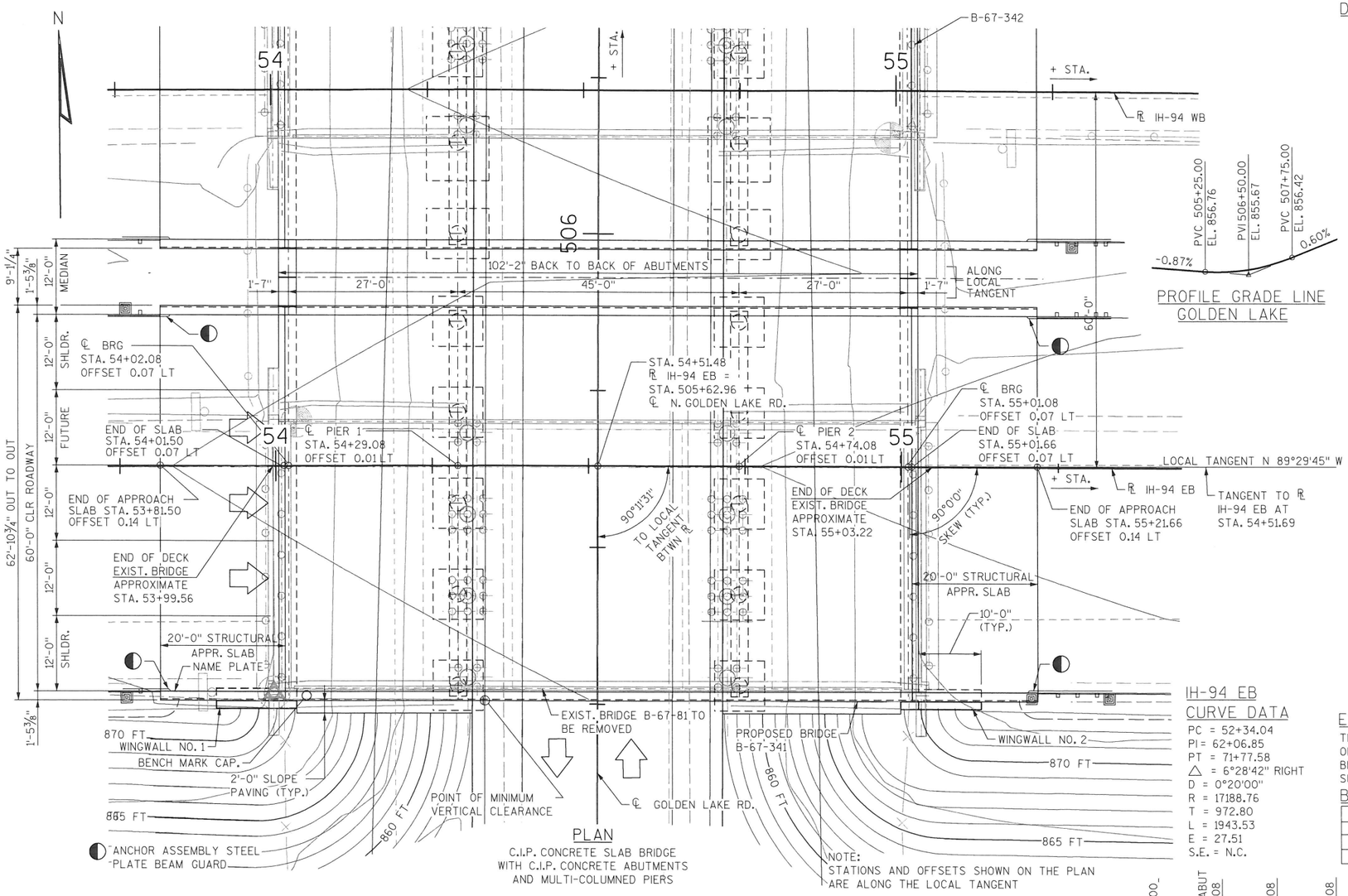
STATE PROJECT NUMBER
1060-38-71

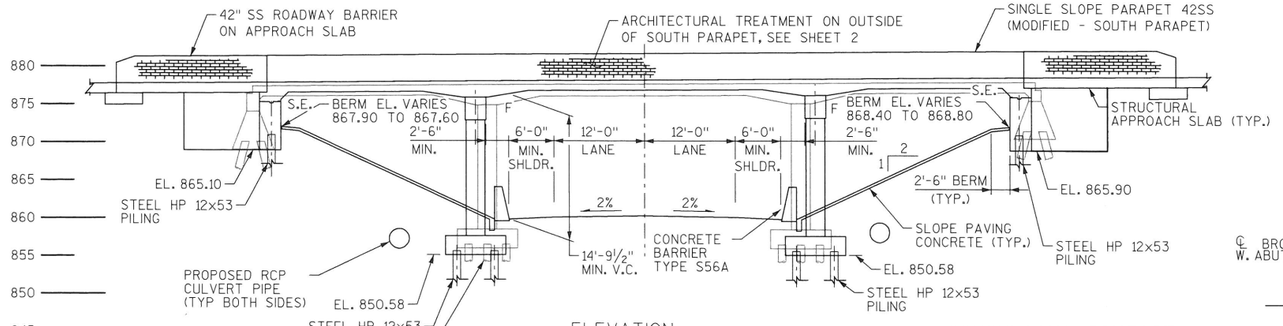


PLAN

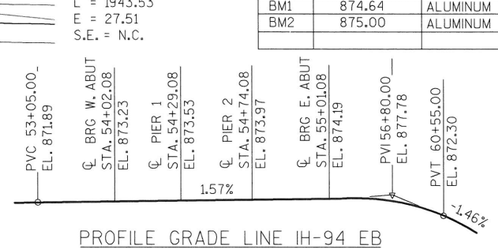
C.I.P. CONCRETE SLAB BRIDGE WITH C.I.P. CONCRETE ABUTMENTS AND MULTI-COLUMNED PIERS

NOTE: STATIONS AND OFFSETS SHOWN ON THE PLAN ARE ALONG THE LOCAL TANGENT

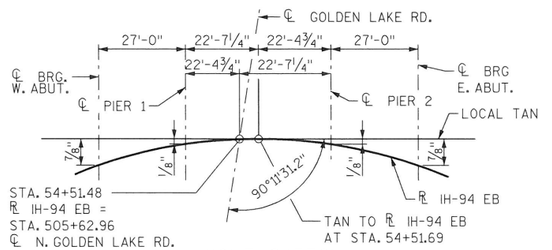
PROFILE GRADE LINE GOLDEN LAKE



ELEVATION



PROFILE GRADE LINE IH-94 EB



LAYOUT SKETCH

DESIGN DATA

LIVE LOAD:

DESIGN LOADING HL-93
INVENTORY RATING FACTOR 1.13
OPERATING RATING FACTOR 1.47
WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV) = 250 KIPS
DESIGN ACCOUNTS FOR FUTURE WEARING SURFACE = 20 PSF

MATERIAL PROPERTIES:

CONCRETE MASONRY SUPERSTRUCTURE (HPC) — f'_c = 4000 PSI
ALL OTHER — f'_c = 3500 PSI
STEEL REINFORCEMENT HIGH STRENGTH BAR, GRADE 60 — f_y = 60 KSI

FOUNDATION DATA:

PLACE PIERS AND ABUTMENTS ON STEEL HP 12x53 PILING WITH PILE POINTS WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS/PILE* AT PIERS AND 90 TONS/PILE* AT ABUTMENTS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

* THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

EST. PILE LENGTHS:
65 FT AT W. ABUT.
65 FT AT PIER 1
65 FT AT PIER 2
65 FT AT E. ABUT.

TRAFFIC DATA N. GOLDEN LAKE RD.:

AADT (2015) = 1500
AADT (2035) = 1800
DESIGN SPEED = 50 MPH.

TRAFFIC DATA IH-94:

AADT (2015) = 43100
AADT (2035) = 46500
TRUCK % = 16.2%
D = 60/40
DESIGN SPEED = 70 MPH.

LIST OF DRAWINGS:

1. GENERAL PLAN AND ELEVATION
2. CROSS-SECTION
3. QUANTITIES & GENERAL NOTES
4. SUBSURFACE EXPLORATION
5. WEST ABUTMENT PLAN & ELEVATION
6. EAST ABUTMENT PLAN & ELEVATION
7. WEST ABUTMENT DETAILS
8. EAST ABUTMENT DETAILS
9. PIERS 1 & 2
10. PIERS 1 & 2 DETAILS
11. SUPERSTRUCTURE
12. SUPERSTRUCTURE PLAN
13. SUPERSTRUCTURE DETAILS
14. STRUCTURAL APPROACH SLABS
15. STRUCTURAL APPROACH SLAB DETAILS
16. SINGLE SLOPE PARAPET SS42 MODIFIED
17. ALTERNATE CONSTRUCTION JOINT

WISCONSIN
WILLIAM J. ZIPPEL
38868-006
MILWAUKEE
WI
PROFESSIONAL ENGINEER
10/13/2015

IH-94 EB CURVE DATA

PC = 52+34.04
PI = 62+06.85
PT = 71+77.58
△ = 6°28'42" RIGHT
D = 0°20'00"
R = 17188.76
T = 972.80
L = 1943.53
E = 27.51
S.E. = N.C.

EXISTING STRUCTURE:

THE EXISTING BRIDGE (B-67-81) IS A THREE SPAN CONCRETE SLAB BRIDGE FOUNDED ON MULTICOLUMN CONCRETE PIERS AND CONCRETE STUB ABUTMENTS. THE EXISTING BRIDGE IS 105'-2" LONG AND THE DECK IS 42'-6" WIDE. THE FOUNDATIONS ARE SUPPORTED ON TIMBER PILING.

BENCHMARKS

NAME	ELEVATION	DESCRIPTION
BM1	874.64	ALUMINUM DISK IN PARAPET - EB
BM2	875.00	ALUMINUM DISK IN PARAPET - WB

BRIDGE OFFICE CONTACT:

WILLIAM DREHER, PE
(608) 266-8489

CONSULTANT CONTACT:

WILLIAM J. ZIPPEL, PE, SE
ALFRED BENESCH AND CO.
1300 WEST CANAL STREET, SUITE 150
MILWAUKEE, WI 53233
PHONE: 414-308-1321

NO.	DATE	REVISION	BY

benesch engineers · scientists · planners
Alfred Benesch & Company
1300 West Canal Street, Suite 150
Milwaukee, Wisconsin 53233
414-308-1310 Job No. 20103.00

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 10/14/15
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-67-341

IH-94 EB OVER N. GOLDEN LAKE RD.

COUNTY	~~TOWN/CITY~~/VILLAGE
WAUKESHA	SUMMIT

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY WMN	PLANS CK'D. WJZ

GENERAL PLAN AND ELEVATION

SHEET 1 OF 17

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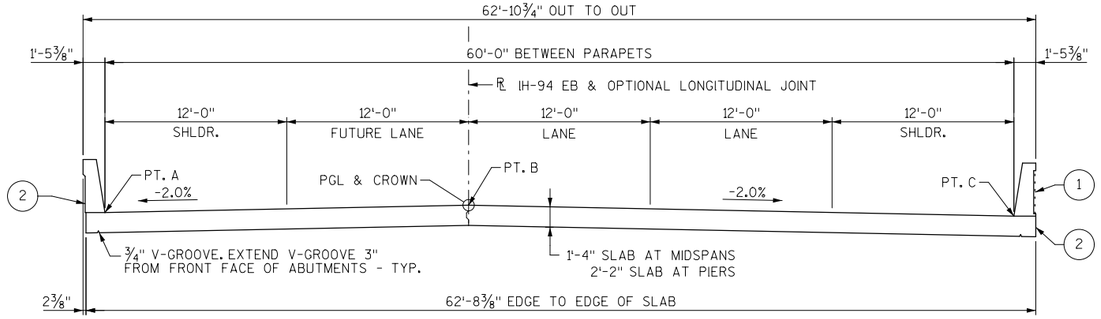
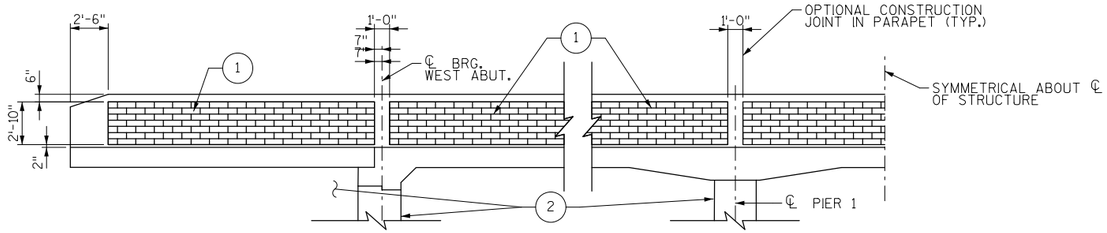


TYPICAL CROSS SECTION

(LOOKING EAST)

(1) FINISH OF ARCHITECTURAL SURFACE TREATMENT AT THE BACK FACE OF THE PARAPET SHALL ACHIEVE THE LOOK OF "NEW BRICK" WITH MAXIMUM RELIEF OF 3/16". SEE SPECIAL PROVISION FOR "ARCHITECTURAL SURFACE TREATMENT, B-67-341" AND "CONCRETE STAINING MULTI-COLOR, B-67-341".

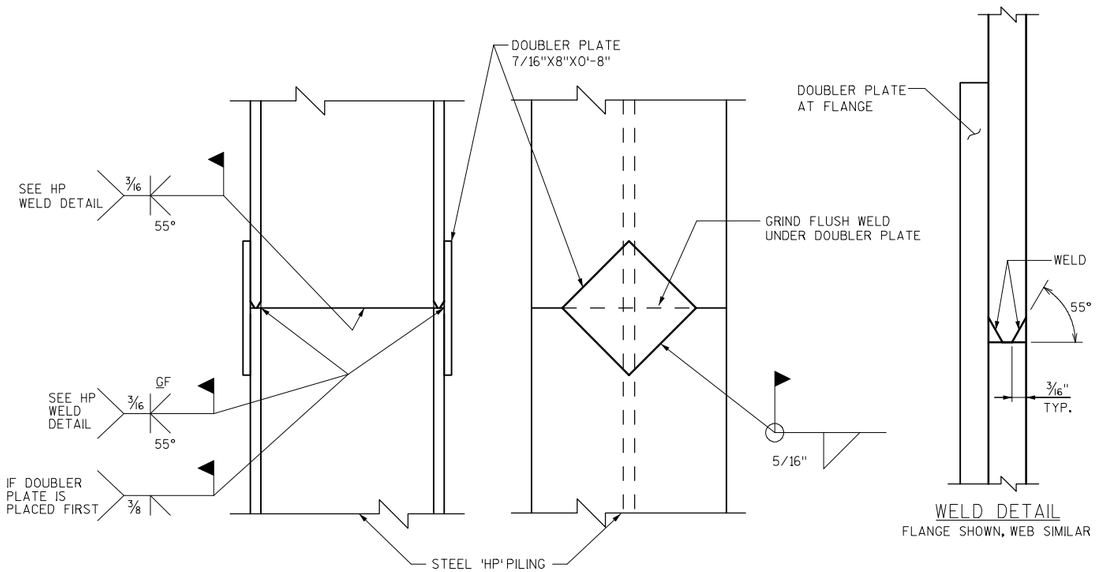
(2) CONCRETE STAINING B-67-341 APPLIED TO SURFACES NOT RECIEVING ARCHITECTURAL SURFACE TREATMENT OF WINGWALLS, FRONT FACE OF ABUTMENT, PIER COLUMNS AND CAPS, OUTSIDE FACE OF NORTH PARAPET. APPLY STAIN TO 12" BELOW FINISHED GRADE.



NOTE: COLOR AND APPEARANCE SHALL MATCH I-94 OVER CTH-P BRIDGES AND WALLS NEAR PABST FARMS.

ELEVATION - SOUTH FACE OF SOUTH PARAPET

(SHOWING PARAPET DIMENSIONS AND ARCHITECTURAL SURFACE TREATMENT LIMITS)



STEEL PILING SPLICE DETAILS

WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

TOP OF DECK ELEVATIONS

LOCATION	STATION	PT. A (EDGE OF DECK)	PT. B (PGL/CONSTR. JT.)	PT. C (EDGE OF DECK)
END OF SLAB	54+01.50	872.74	873.22	872.50
CL BRG. WEST ABUT.	54+02.08	872.75	873.23	872.51
0.1	54+04.78	872.78	873.26	872.54
0.2	54+07.48	872.81	873.29	872.57
0.3	54+10.18	872.84	873.32	872.60
0.4	54+12.88	872.87	873.35	872.63
0.5	54+15.58	872.90	873.38	872.66
0.6	54+18.28	872.93	873.41	872.69
0.7	54+20.98	872.96	873.44	872.72
0.8	54+23.68	872.99	873.47	872.75
0.9	54+26.38	873.02	873.50	872.78
CL PIER 1	54+29.08	873.05	873.53	872.81
0.1	54+33.58	873.10	873.58	872.86
0.2	54+38.08	873.14	873.62	872.90
0.3	54+42.58	873.19	873.67	872.95
0.4	54+47.08	873.24	873.72	873.00
0.5	54+51.58	873.28	873.76	873.04
0.6	54+56.08	873.32	873.80	873.08
0.7	54+60.58	873.37	873.85	873.13
0.8	54+65.08	873.41	873.89	873.17
0.9	54+69.58	873.45	873.93	873.21
CL PIER 2	54+74.08	873.49	873.97	873.25
0.1	54+76.78	873.51	873.99	873.27
0.2	54+79.48	873.54	874.02	873.30
0.3	54+82.18	873.56	874.04	873.32
0.4	54+84.88	873.58	874.06	873.34
0.5	54+87.58	873.61	874.09	873.37
0.6	54+90.28	873.63	874.11	873.39
0.7	54+92.98	873.65	874.13	873.41
0.8	54+95.68	873.67	874.15	873.43
0.9	54+98.38	873.69	874.17	873.45
CL BRG. EAST ABUT.	55+01.08	873.71	874.19	873.47
END OF SLAB	55+01.66	873.72	874.20	873.48

STATE PROJECT NUMBER

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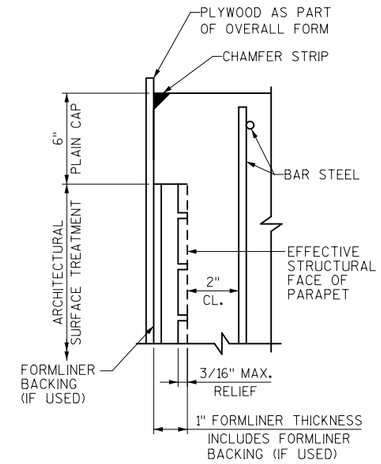

SECTION THRU FORMLINER

NOTE

FORMLINER COURSING ON PARAPETS SHALL BE PARALLEL TO TOP OF PARAPET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-341

DRAWN BY WMN | PLANS CK'D. WJZ

CROSS-SECTIONS

SHEET 2 OF 17

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TOTAL ESTIMATED QUANTITIES

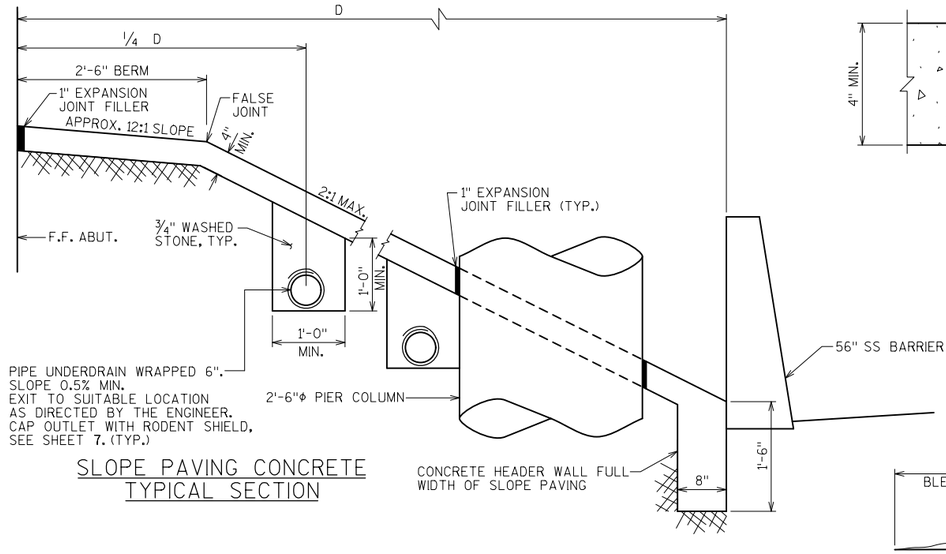
BID ITEM NUMBER	BID ITEMS	UNIT	WEST APPR. SLAB	W. ABUT.	PIER 1	PIER 2	E. ABUT.	EAST APPR. SLAB	SUPER	TOTAL
203.0200	REMOVING OLD STRUCTURE (STATION 54+00 EB)	LS	----	----	----	----	----	----	1	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES (B-67-341)	LS	----	0.5	----	----	0.5	----	----	1
210.0100	BACKFILL STRUCTURE	CY	----	101	----	----	107	----	----	208
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	----	218	----	----	218	----	----	436
501.1000.S	ICE HOT WEATHER CONCRETING	LB	634	368	510	510	383	634	2880	5919
502.0100	CONCRETE MASONRY BRIDGES	CY	17	49	68	68	51	17	----	269
502.3200	PROTECTIVE SURFACE TREATMENT	SY	134	----	----	----	----	134	668	936
502.3210	PIGMENTED SURFACE SEALER	SY	19	----	----	----	----	19	99	137
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	----	5156	4299	4298	5186	----	----	18939
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	14189	737	10563	10657	743	14189	85228	136305
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STEEL STRUCTURES	LB	1088	----	----	----	----	1088	----	2176
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	----	15	----	----	15	----	----	30
517.1010.S.03	CONCRETE STAINING, B-67-341	SF	67	316	1103	1120	325	67	634	3632
517.1015.S.03	CONCRETE STAINING MULTI-COLOR BRICK, B-67-341	SF	----	----	----	----	----	----	378	378
517.1050.S.03	ARCHITECTUAL SURFACE TREATMENT BRICK, B-67-341	SF	----	----	----	----	----	----	378	378
550.0500	PILE POINTS	EACH	----	10	30	30	10	----	----	80
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	----	650	1950	1950	650	----	----	5200
604.0400	SLOPE PAVING CONCRETE	SY	----	260	----	----	260	----	----	520
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	----	240	----	----	240	----	----	480
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	----	----	----	----	2	----	4
SPV.0035.01	HPC MASONRY SUPERSTRUCTURES	CY	68	----	----	----	----	68	384	520
SPV.0090.01	REMOVING EXISTING TIMBER PILING	LF	----	140	560	560	140	----	----	1400
SPV.0165.01	LONGITUDINAL GROOVING BRIDGE DECK	SF	1140	----	----	----	----	1140	5710	7990
	NON-BID ITEMS									
	JOINT FILLER									
	NAME PLATE									
	NON-BITUMINOUS JOINT SEALER									
	POLYETHYLENE SHEETS									

GENERAL NOTES:

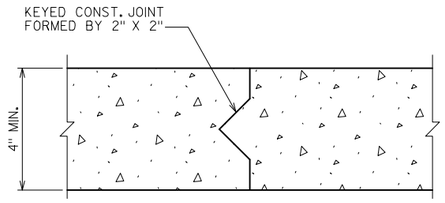
1. DRAWINGS SHALL NOT BE SCALED. BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
2. SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
3. THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
4. THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING CONCRETE TO THE EXTENT SHOWN.
5. THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.
6. THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES FOR THE ABUTMENTS SHALL BE THE BOTTOM OF SLOPE PROTECTION.
7. AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.
8. THE QUANTITY FOR BACKFILL STRUCTURE, BID ITEM 210.0100, IS CALCULATED BASED ON THE APPLICABLE FIGURES 12.6-1 AND 12.6-2 IN THE WISCONSIN DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL.

STATE PROJECT NUMBER

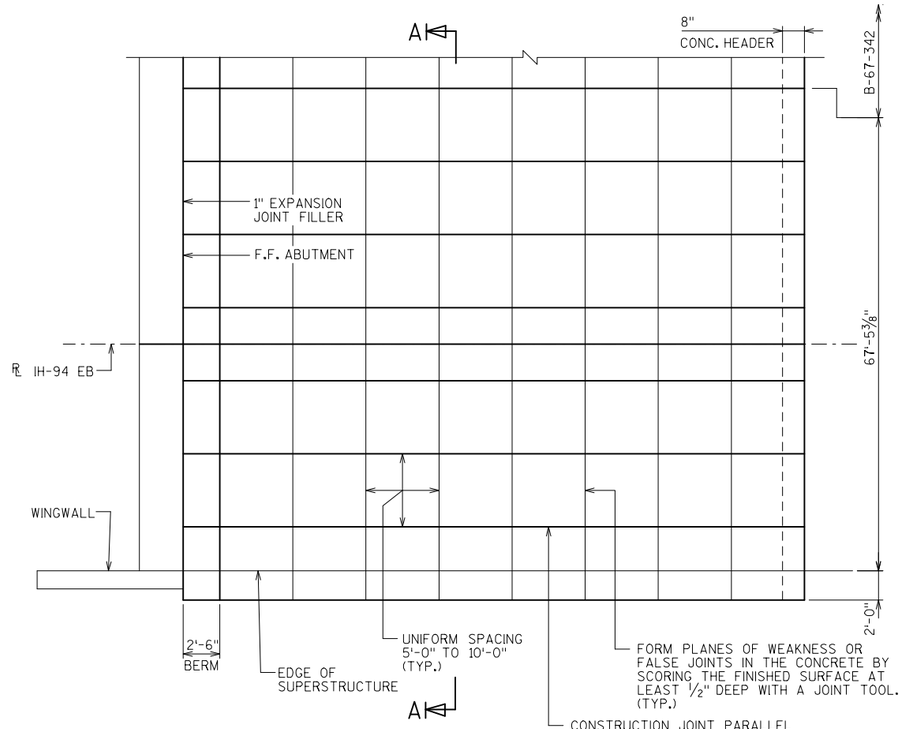
1060-38-71



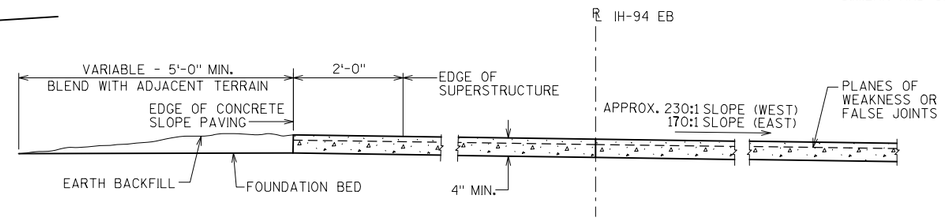
SLOPE PAVING CONCRETE TYPICAL SECTION



CONSTRUCTION JOINT



SLOPE PAVING CONCRETE - PLAN
(WEST ABUTMENT SLOPE SHOWN; EAST ABUTMENT SLOPE SIMILAR AND OPPOSITE HAND)



SECTION A-A

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-341

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QUANTITIES & GENERAL NOTES

SHEET 3 OF 17

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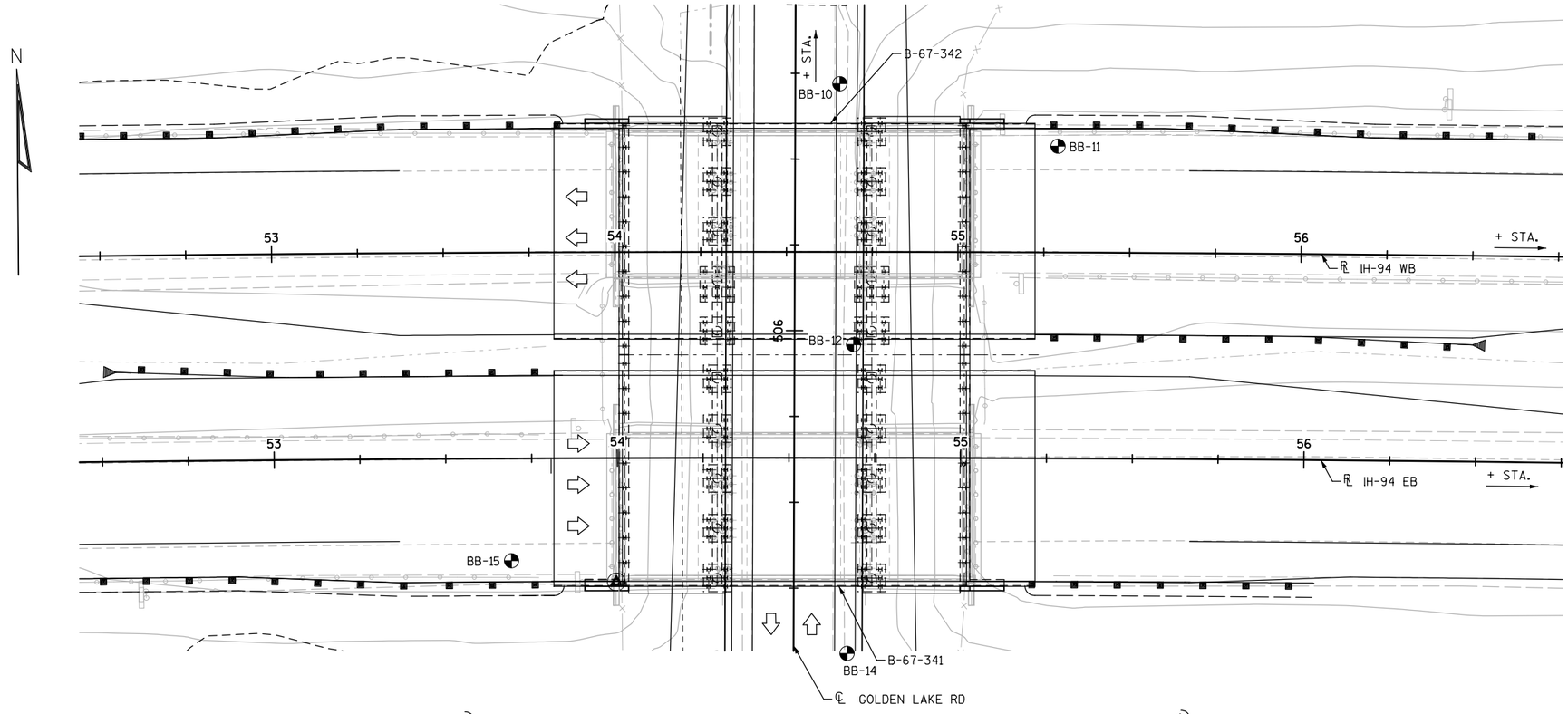

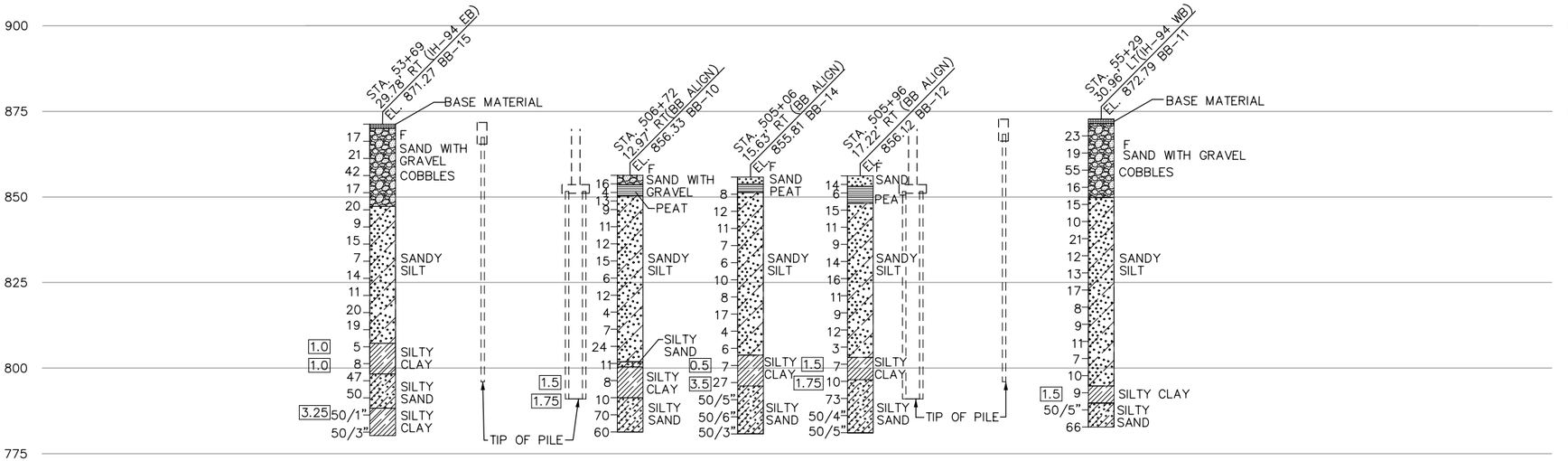

NOTES:

FOUNDATION DESIGN PARAMETERS ARE BASED ON RECOMMODATIONS FROM THE GEOTECHNICAL EXPLORATION REPORT DATED JULY, 2013 BY HIMALAYAN CONSULTANTS, LLC, AVAILABLE FROM WISDOT.

REFER TO THE GEOTECHNICAL REPORT FOR FULL SOIL DESCRIPTIONS AND DETAILS OF BORING LOGS.

HISTORIC BORINGS ARE AVAILABLE UPON REQUEST FROM WISDOT.

CONTACT THE WISCONSIN DEPARTMENT OF TRANSPORTATION FOR THE GEOTECHNICAL REPORT AND BORING LOGS.

EXISTING FOOTINGS ARE SHOWN FOR EXISTING STRUCTURES. ACTUAL LOCATIONS MAY VARY. CONTRACTOR SHALL VERIFY LOCATIONS IN THE FIELD.

STATE PROJECT NUMBER

1060-38-71

ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE, SAND, PEAT, LIMESTONE, GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.
STA.
ELEVATION
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

95/6=95 BLOWS FOR 6" PENETRATION PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

LEGEND OF BORING

BORING NO.
ELEV.
STA.
UNCONFINED STRENGTH
7.7 7
SANDY GRAVEL
BLOWS PER FT. USING 140# WT. FALLING 30"
WASH SAMPLE
F. BOULDERS OR COBBLES
SHELBY TUBE — S.T.
SAND
GROUND WATER ELEVATION
SILTY CLAY
NO GROUND WATER OBSERVED ABOVE THIS ELEVATION
SO LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-341

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SUBSURFACE EXPLORATION

SHEET 4 OF 17

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STATE PROJECT NUMBER
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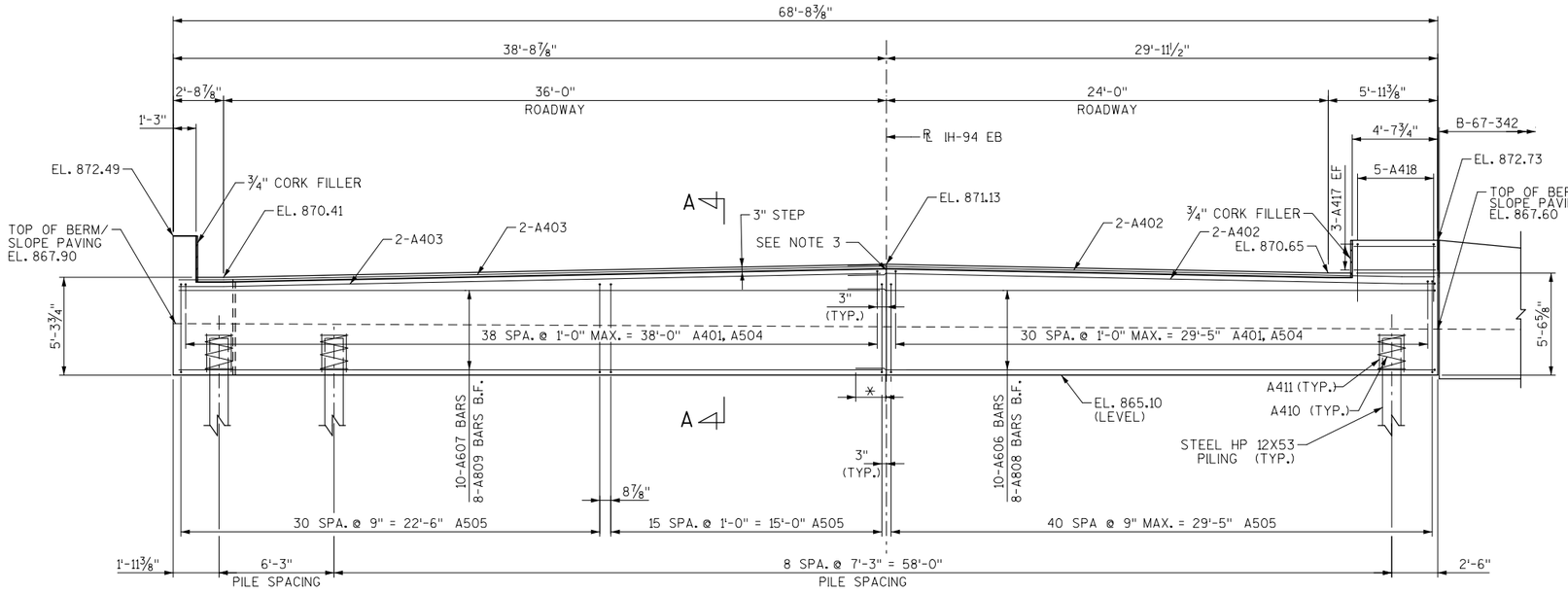
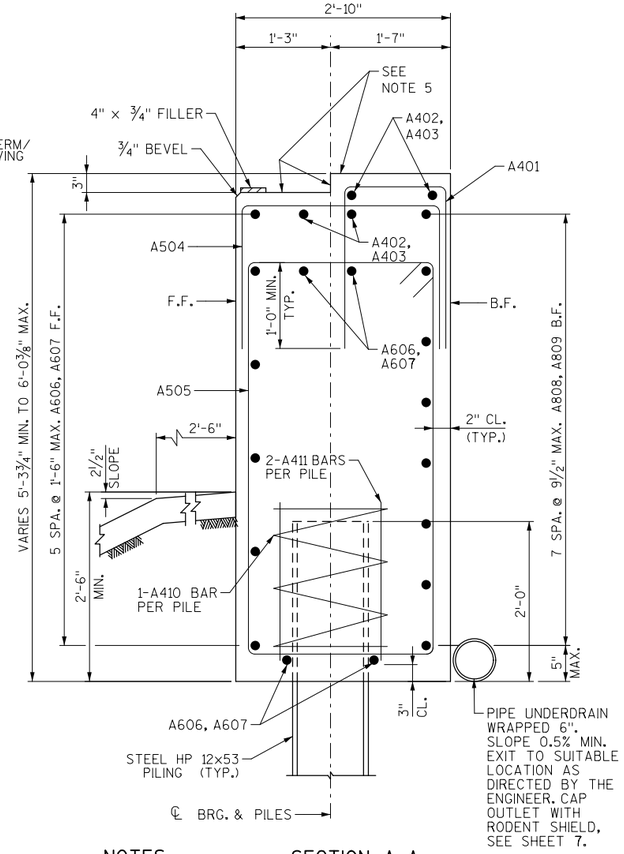


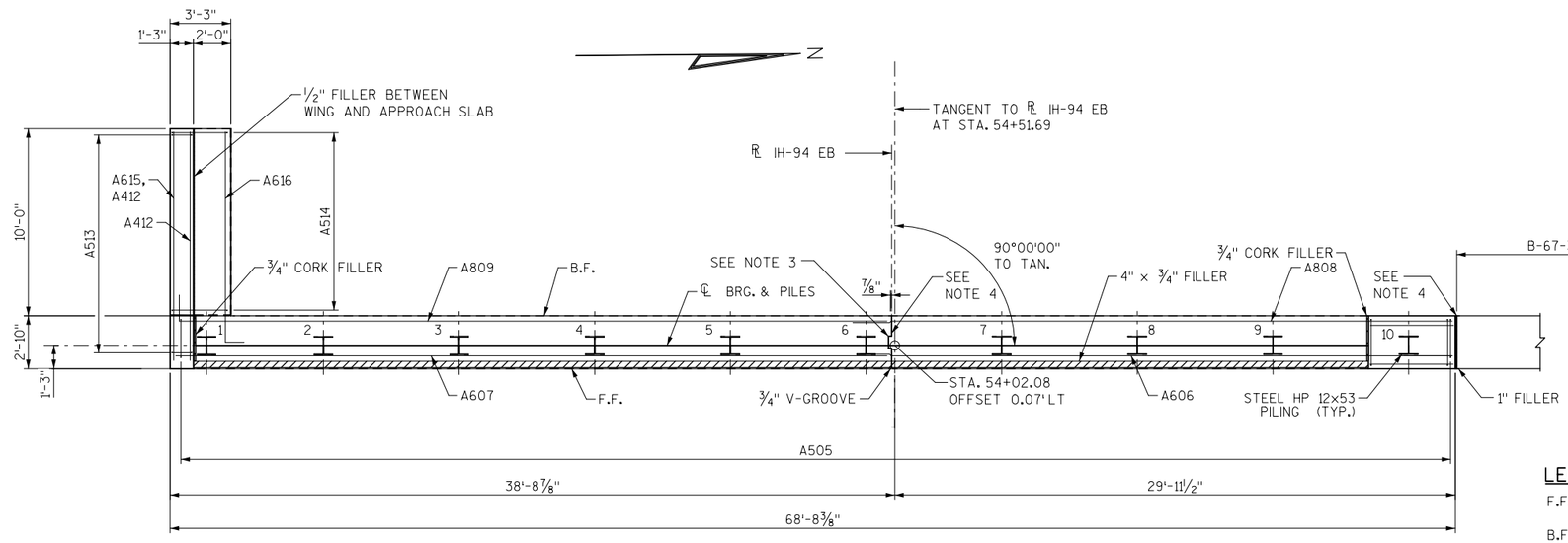
ELEVATION
(LOOKING WEST)

PLACE ABUTMENTS ON STEEL HP 12x53 PILING WITH PILE POINTS WITH A REQUIRED DRIVING RESISTANCE OF 90 TONS/PILE AT ABUTMENTS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

* LAP LENGTHS
- #4 BARS - 1'-11"
- #6 BARS - 2'-11"
- #8 BARS - 5'-1"



SECTION A-A



PLAN & PILE LAYOUT

NOTES

1. EXCAVATE TO BOTTOM OF ABUTMENTS BEFORE DRIVING PILES.
2. DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF ABUTMENT, UNTIL SUPERSTRUCTURE IS IN PLACE.
3. VERT. CONST. JOINT KEYWAY FORMED BY BEVELED 2x8.
4. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON THE BACK FACE OF THE ABUTMENT AND WING.
5. STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEET OVER ENTIRE ABUTMENT BEFORE PLACING SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03"

LEGEND

F.F. - DENOTES FRONT FACE

B.F. - DENOTES BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-341

DRAWN BY	WMN	PLANS CK'D.	WJZ

WEST ABUTMENT PLAN & ELEVATION

SHEET 5 OF 17

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STATE PROJECT NUMBER
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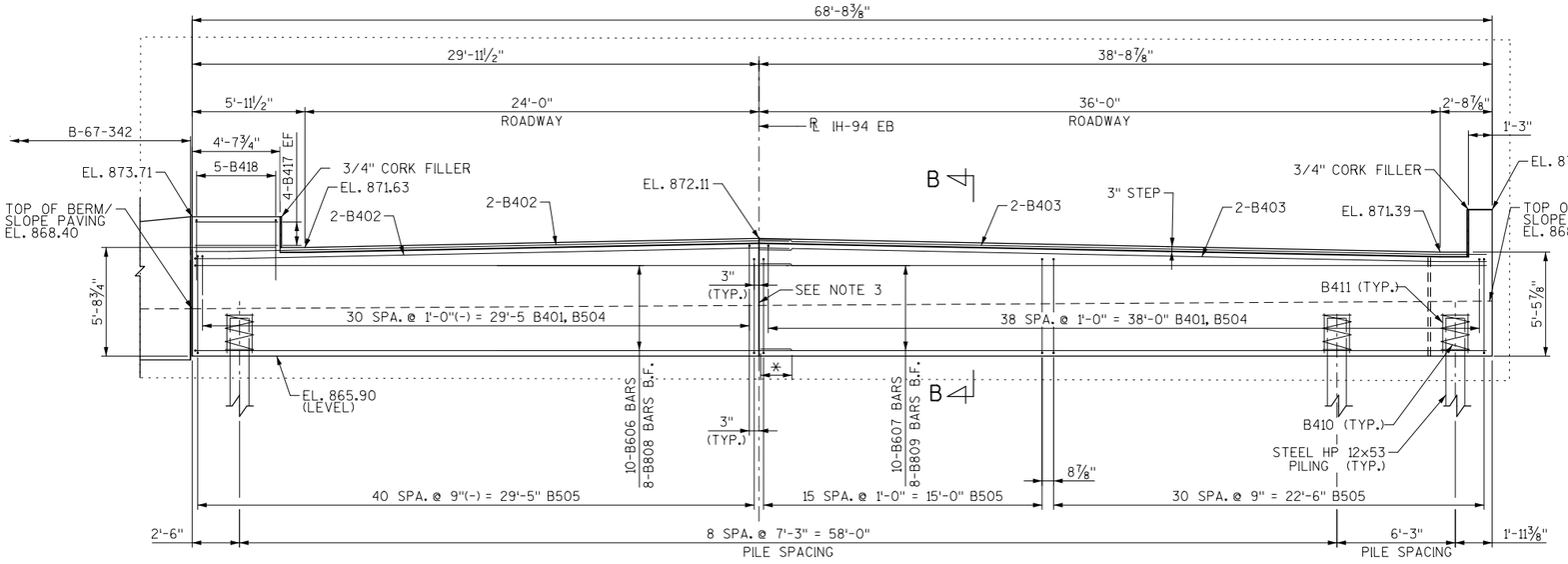
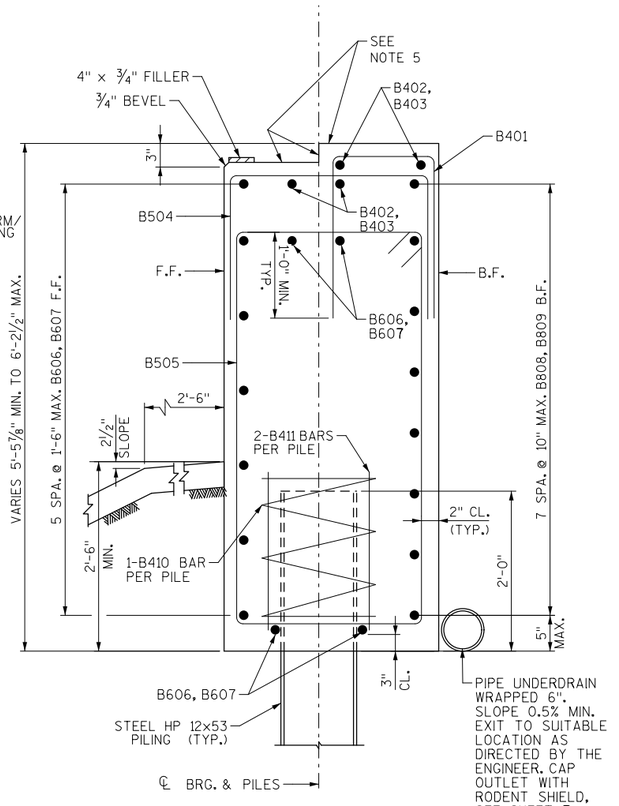


PLACE ABUTMENTS ON STEEL HP 12x53 PILING WITH PILE POINTS WITH A REQUIRED DRIVING RESISTANCE OF 90 TONS/PILE AT ABUTMENTS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

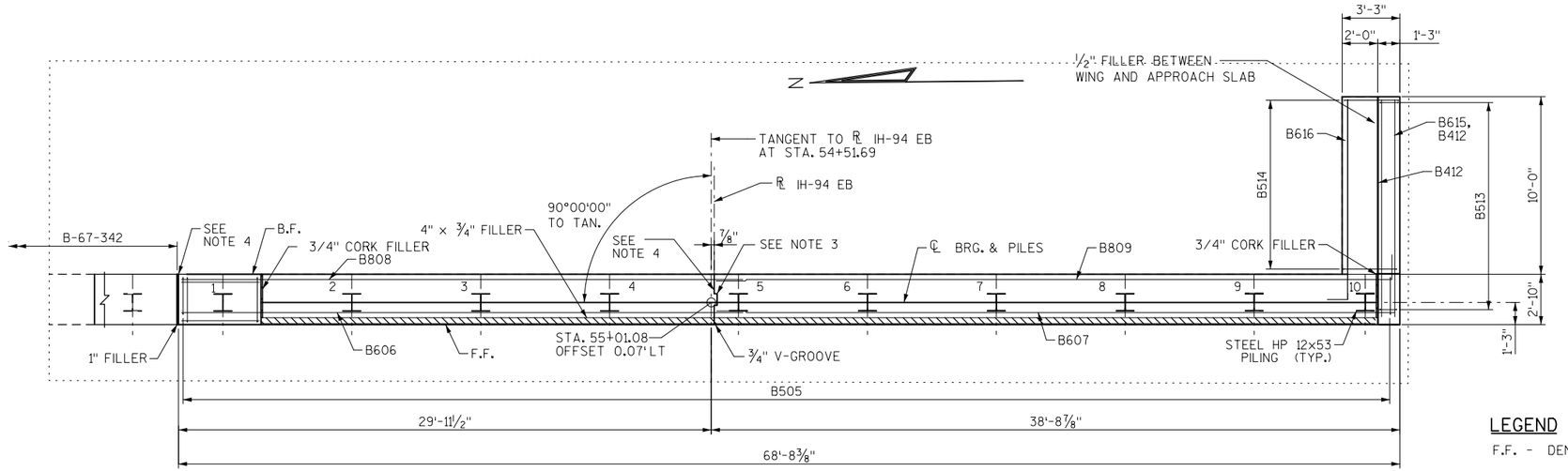
ELEVATION

(LOOKING EAST)

* LAP LENGTHS
#4 BARS - 1'-11"
#6 BARS - 2'-11"
#8 BARS - 5'-1"



SECTION B-B



PLAN & PILE LAYOUT

NOTES

1. EXCAVATE TO BOTTOM OF ABUTMENTS BEFORE DRIVING PILES.
2. DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF ABUTMENT, UNTIL SUPERSTRUCTURE IS IN PLACE.
3. VERT. CONST. JOINT KEYWAY FORMED BY BEVELED 2x8.
4. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON THE BACK FACE OF THE ABUTMENT AND WING.
5. STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEET OVER ENTIRE ABUTMENT BEFORE PLACING SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03"

LEGEND

F.F. - DENOTES FRONT FACE

B.F. - DENOTES BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-341

DRAWN BY WMN | PLANS CK'D. WJZ

EAST ABUTMENT
PLAN & ELEVATION

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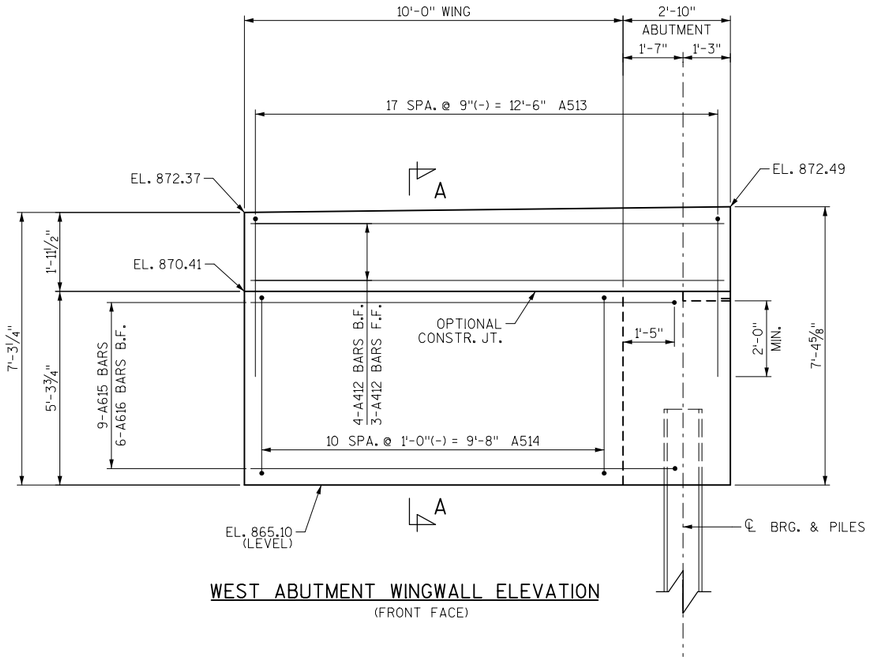
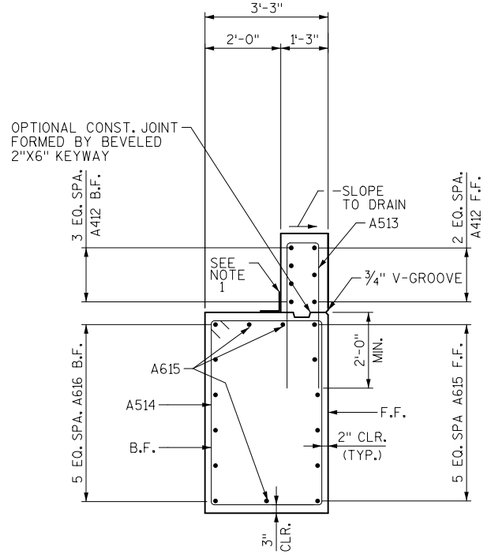


WEST ABUTMENT WINGWALL ELEVATION
(FRONT FACE)



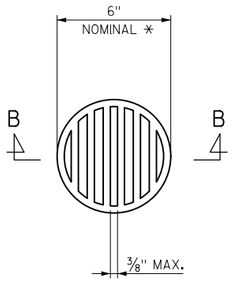
SECTION A-A

BILL OF BARS

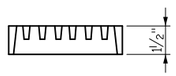
BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	737# COATED 5156# UNCOATED LOCATION
A401		70	5'-9"	X			TOP VERTICAL-U
A402		4	31'-8"				TOP HORIZONTAL
A403		4	38'-6"				TOP HORIZONTAL
A504		70	6'-5"	X			TOP VERTICAL-U
A505		88	14'-9"	X			MAIN STIRRUP
A606		10	32'-8"				MAIN HORIZONTAL
A607		10	38'-6"				MAIN HORIZONTAL
A808		8	34'-10"				MAIN HORIZONTAL
A809		8	39'-8"	X			MAIN HORIZONTAL
A410		10	28'-0"	X			PILE SPIRAL
A411		20	2'-3"				PILE VERTICAL
A412	X	7	12'-6"				WING TOP HORIZONTAL
A513	X	18	9'-0"	X			WING VERTICAL-U
A514	X	11	16'-0"	X			WING STIRRUP
A615	X	9	12'-6"				WING HORIZONTAL
A616	X	6	12'-1"	X			WING HORIZONTAL
A417	X	6	4'-4"				MEDIAN HORIZONTAL
A418	X	5	9'-0"	X			MEDIAN VERTICAL-U

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

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



NOTE: ORIENT SHIELD SO SLOTS ARE VERTICAL.



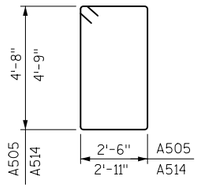
SECTION B-B

* NOTE: DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

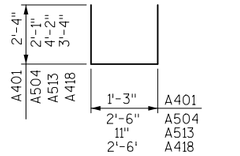
THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THE SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

COST OF RODENT SHIELD IS INCLUDED IN THE COST OF PIPE-UNDERDRAIN WRAPPED 6-INCH.

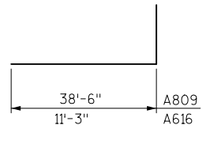
RODENT SHIELD



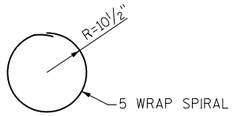
A505, A514



A401, A504, A513, A418



A809, A616



A410

NOTES

1. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON THE BACK FACE OF THE ABUTMENT AND WING.

LEGEND

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-341

DRAWN BY WMN | PLANS CK'D. WJZ

WEST ABUTMENT DETAILS

SHEET 7 OF 17

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STATE PROJECT NUMBER

1060-38-71

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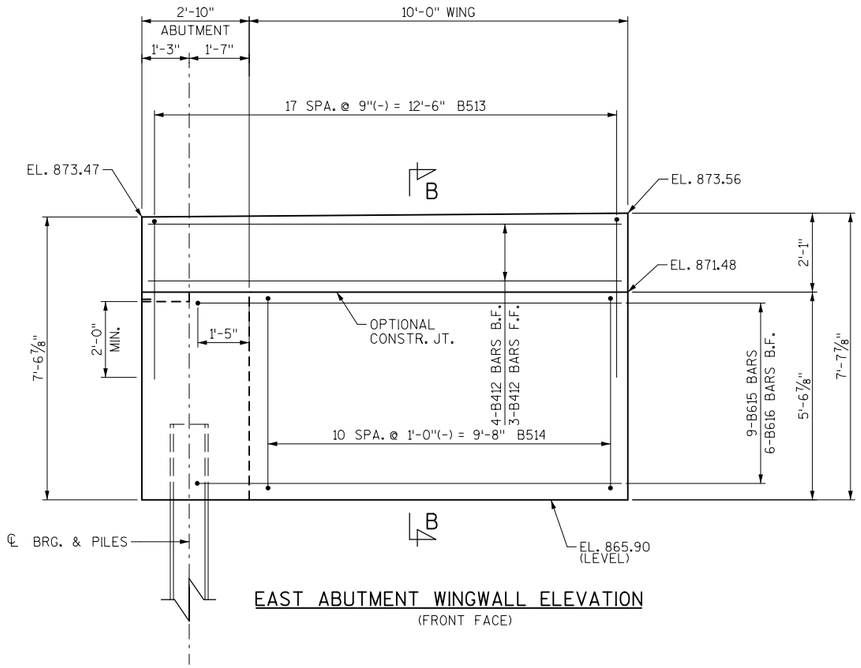
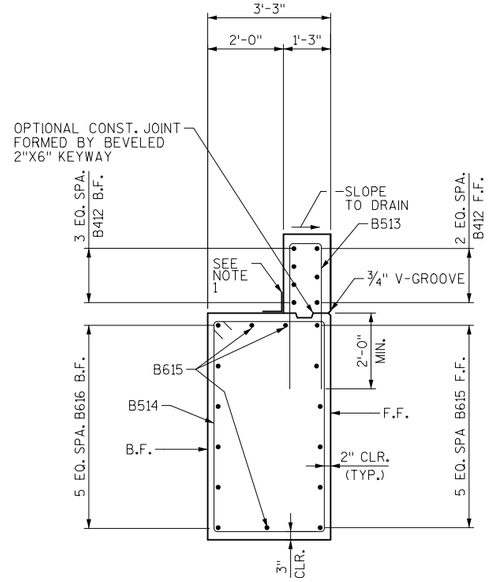
STATE PROJECT NUMBER

1060-38-71



EAST ABUTMENT WINGWALL ELEVATION

(FRONT FACE)



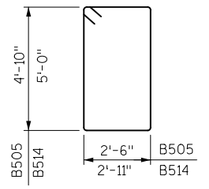
SECTION B-B

BILL OF BARS

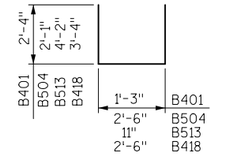
BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED CUT BARS	743# COATED 5186# UNCOATED LOCATION
B401		70	5'-9"	X		TOP VERTICAL-U
B402		4	31'-8"			TOP HORIZONTAL
B403		4	38'-6"			TOP HORIZONTAL
B504		70	6'-5"	X		TOP VERTICAL-U
B505		88	15'-1"	X		MAIN STIRRUP
B606		10	32'-8"			MAIN HORIZONTAL
B607		10	38'-6"			MAIN HORIZONTAL
B808		8	34'-10"			MAIN HORIZONTAL
B809		8	39'-8"	X		MAIN HORIZONTAL
B410		10	28'-0"	X		PILE SPIRAL
B411		20	2'-3"			PILE VERTICAL
B412	X	7	12'-6"			WING TOP HORIZONTAL
B513	X	18	9'-0"	X		WING VERTICAL-U
B514	X	11	16'-6"	X		WING STIRRUP
B615	X	9	12'-6"			WING HORIZONTAL
B616	X	6	12'-1"	X		WING HORIZONTAL
B417	X	6	4'-4"			MEDIAN HORIZONTAL
B418	X	5	9'-0"	X		MEDIAN VERTICAL-U

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

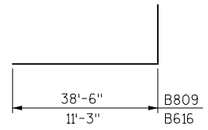
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



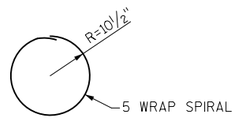
B505, B514



B401, B504, B513, B418



B809, B616



B410

NOTES

1. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON THE BACK FACE OF THE ABUTMENT AND WING.

LEGEND

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-341

DRAWN BY WMN | PLANS CK'D. WJZ

EAST ABUTMENT DETAILS

SHEET 8 OF 17

219

8

8

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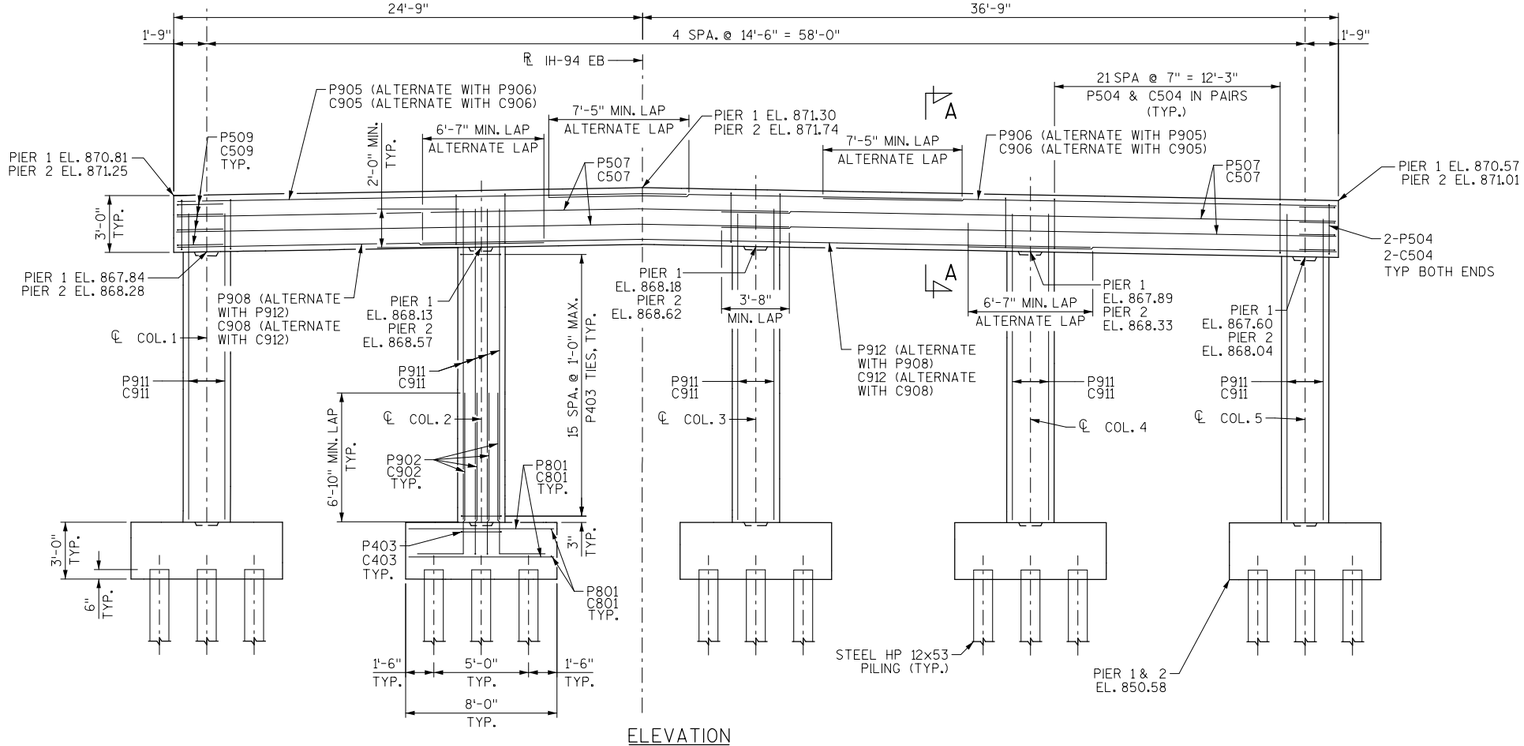
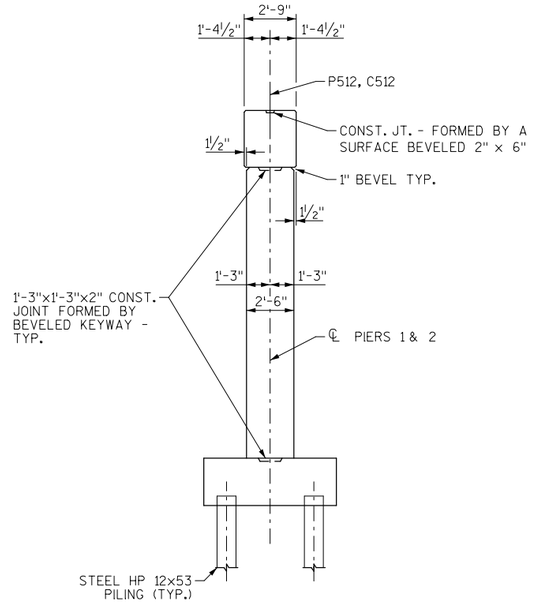
STATE PROJECT NUMBER

1060-38-71



ELEVATION

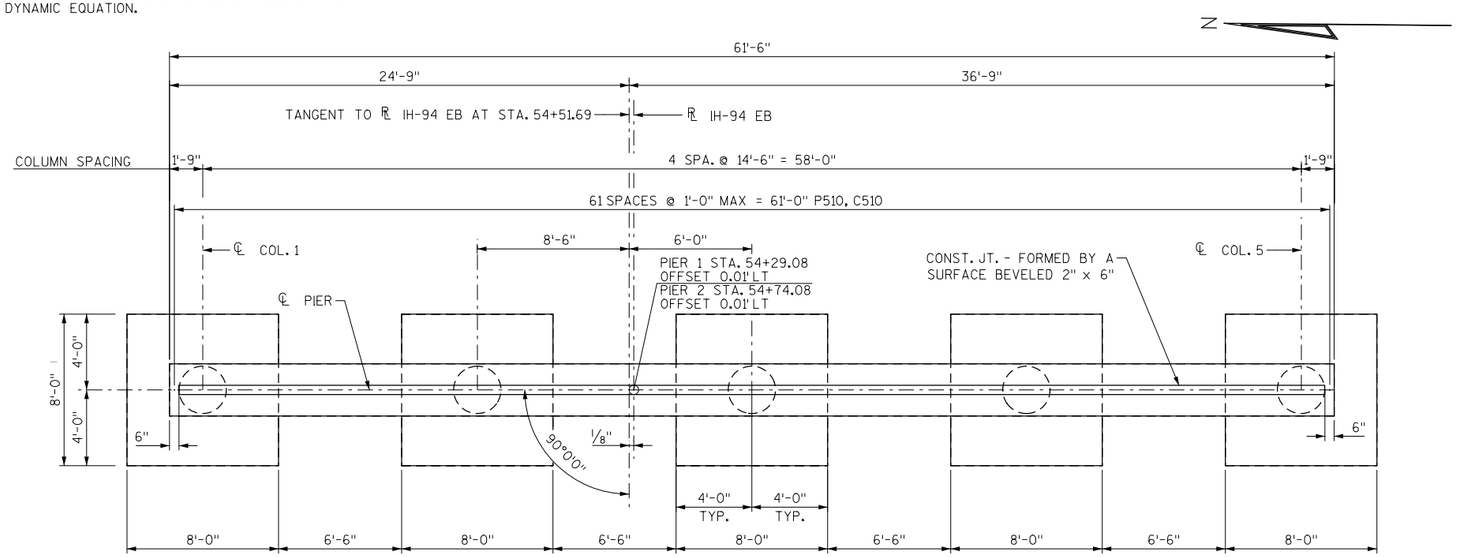
(LOOKING EAST)



END VIEW

(LOOKING NORTH)

PLACE PIERS ON STEEL HP 12x53 PILING WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS/PILE AT PIERS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.



PLAN

NOTES: PXXX BARS DENOTE PIER 1 BARS.

CXXX BARS DENOTE PIER 2 BARS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-341

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PIERS 1 & 2

SHEET 9 OF 17

220

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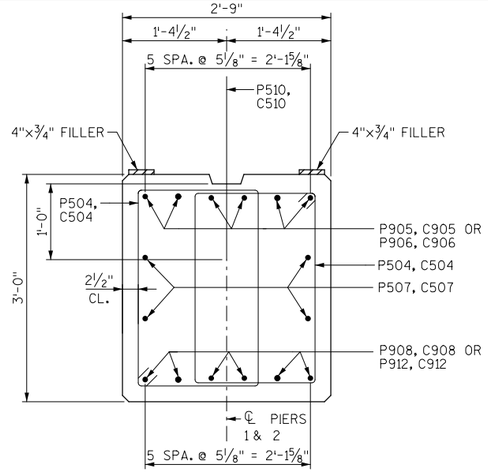
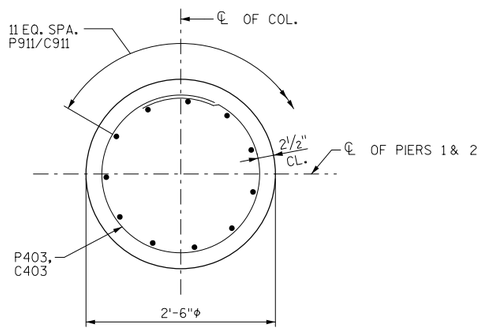
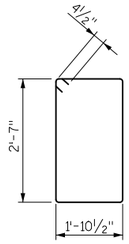
8



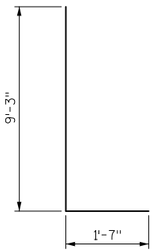
SECTION A-A



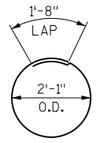
TYPICAL SECTION THRU COLUMN



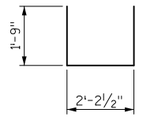
P504 & C504



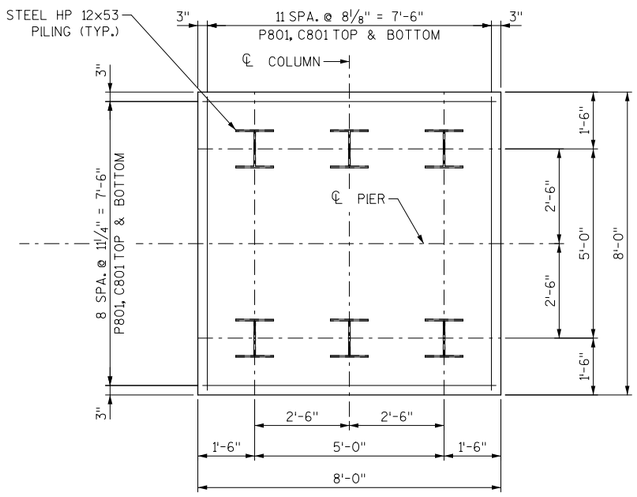
P902 & C902



P403 & C403



P509 & C509



FOOTING PLAN

STATE PROJECT NUMBER
1060-38-71

BILL OF BARS - PIER 1

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	10,563# COATED 4,299# UNCOATED LOCATION
P801		210	7'-8"				FOOTING-HORIZ.
P902	X	55	10'-7"	X			FOOTING DOWELS - COLUMN VERT
P403	X	85	8'-3"	X			COLUMN STIRRUPS
P504	X	180	9'-8"	X			CAP STIRRUPS
P905	X	6	27'-1"				CAP-HORIZ-TOP
P906	X	6	41'-7"				CAP-HORIZ-TOP
P507	X	8	32'-5"				CAP-HORIZ-SIDES
P908	X	6	19'-5"				CAP-HORIZ-BTM
P509	X	8	5'-6"	X			CAP-HORIZ-ENDS
P510	X	62	2'-0"				CAP DOWELS
P911	X	55	16'-5"				COLUMN VERT
P912	X	6	48'-5"				CAP-HORIZ-BTM

BILL OF BARS - PIER 2

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	10,657 # COATED 4,298 # UNCOATED LOCATION
C801		210	7'-8"				FOOTING-HORIZ.
C902	X	55	10'-7"	X			FOOTING DOWELS - COLUMN VERT
C403	X	85	8'-3"	X			COLUMN STIRRUPS
C504	X	180	9'-8"	X			CAP STIRRUPS
C905	X	6	27'-1"				CAP-HORIZ-TOP
C906	X	6	41'-7"				CAP-HORIZ-TOP
C507	X	8	32'-5"				CAP-HORIZ-SIDES
C908	X	6	19'-5"				CAP-HORIZ-BTM
C509	X	8	5'-6"	X			CAP-HORIZ-ENDS
C510	X	62	2'-0"				CAP DOWELS
C911	X	55	16'-11"				COLUMN VERT
C912	X	6	48'-5"				CAP-HORIZ-BTM

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

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-341

DRAWN BY WMN | PLANS CK'D. WJZ

PIERS 1 & 2 DETAILS

SHEET 10 OF 17

221

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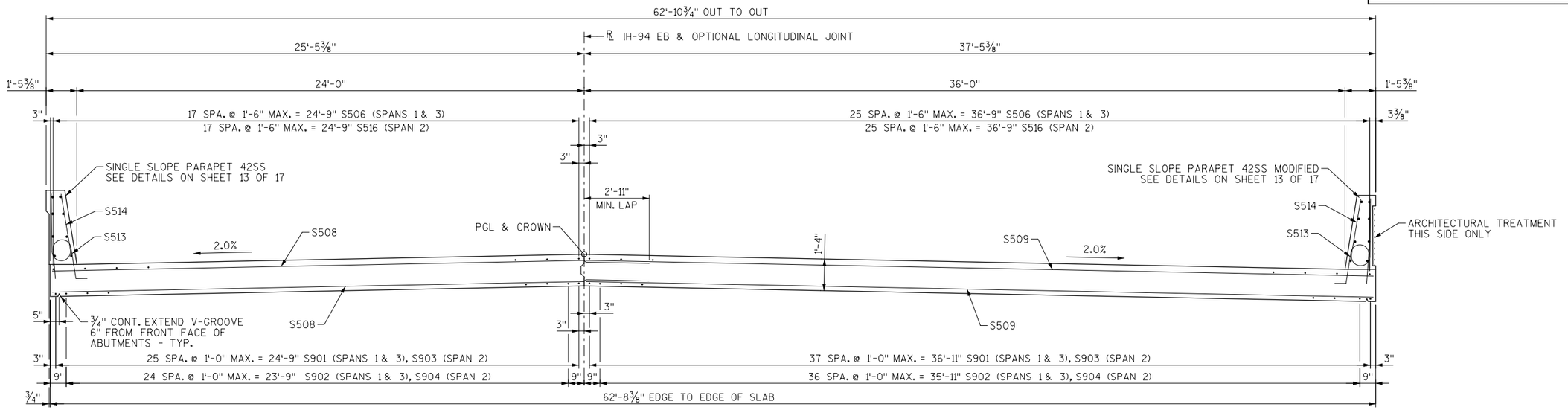
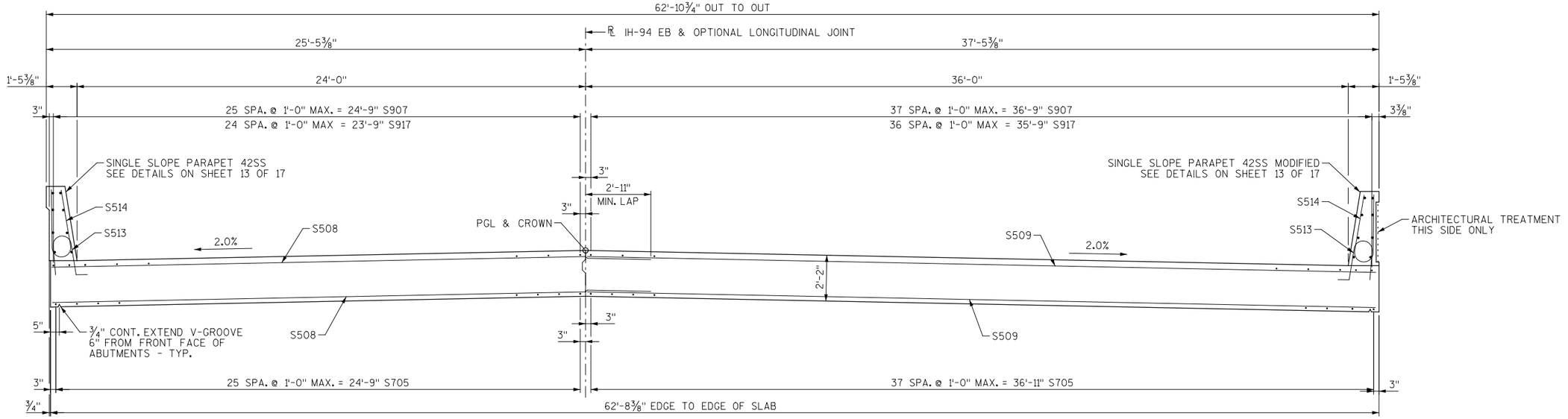
STATE PROJECT NUMBER
1060-38-71



CROSS SECTION THRU ROADWAY - IN SPAN

(LOOKING EAST)



CROSS SECTION THRU ROADWAY - AT PIER

(LOOKING EAST)

NOTES:

1. TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BARS CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.
2. ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).
3. PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS, THE ℄ OF PIERS AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND CROWN OR ℄.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-341

DRAWN BY WMN | PLANS CK'D. WJZ

SUPERSTRUCTURE

SHEET 11 OF 17

222

8

8

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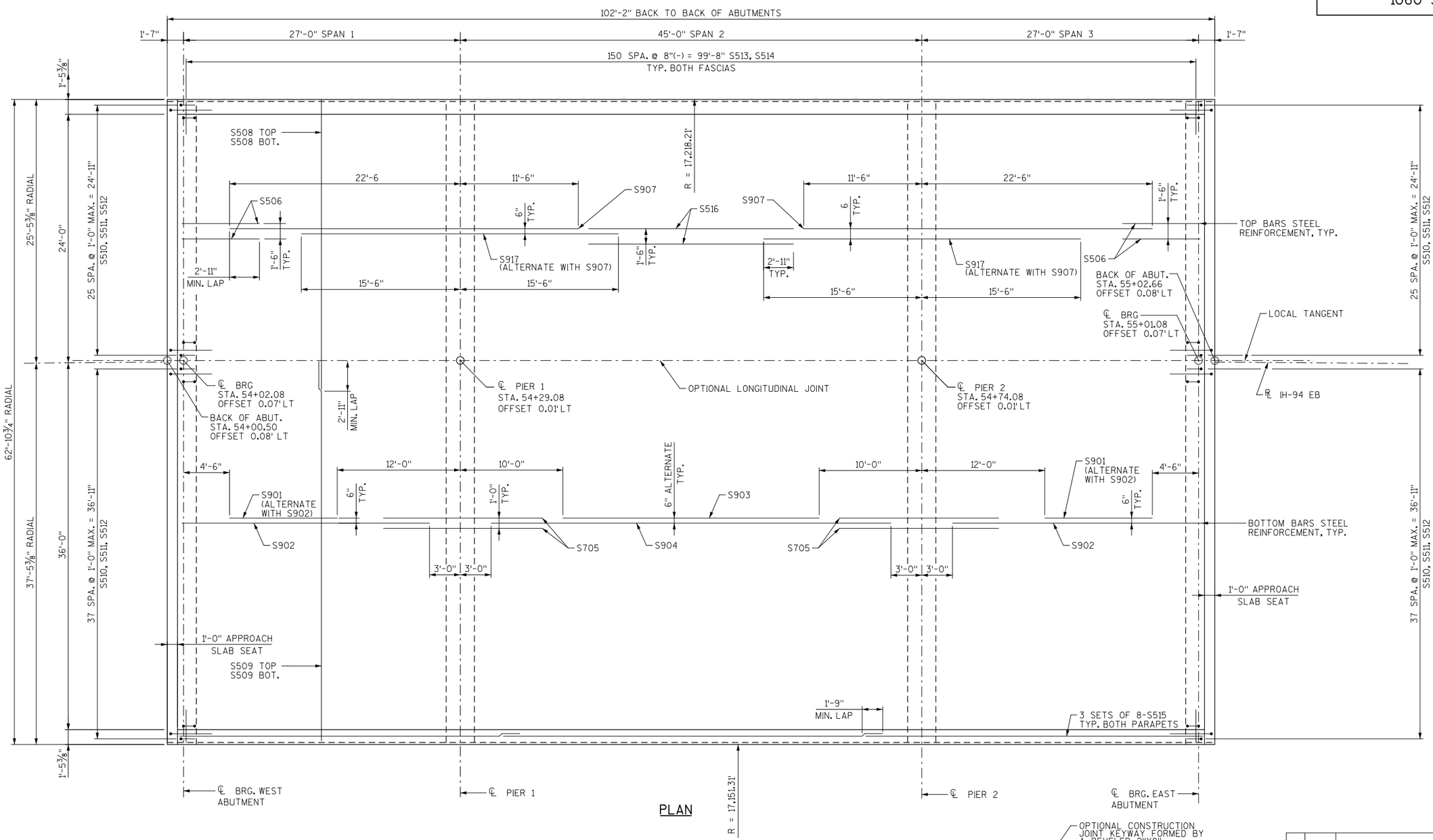
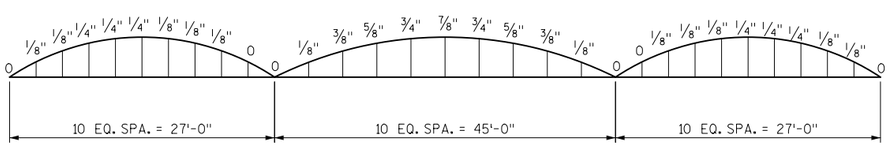
STATE PROJECT NUMBER
1060-38-71

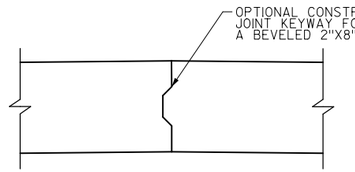


PLAN



CAMBER DIAGRAM

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEADLOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.



OPTIONAL LONGITUDINAL CONSTRUCTION JOINT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-341

DRAWN BY WMN | PLANS CK'D. WJZ

SUPERSTRUCTURE PLAN

SHEET 12 OF 17

223

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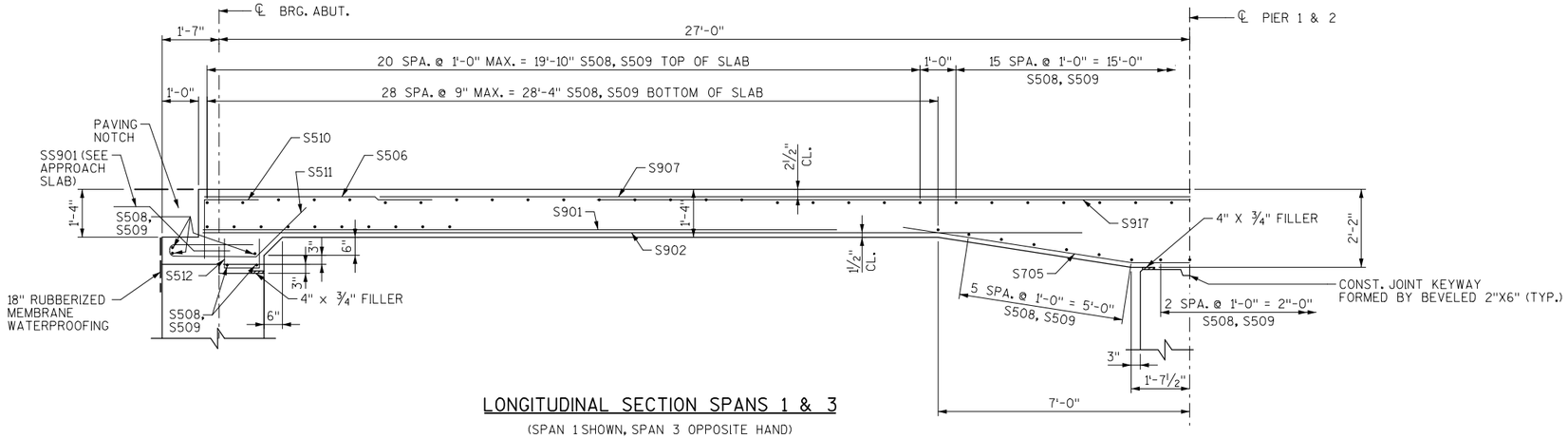
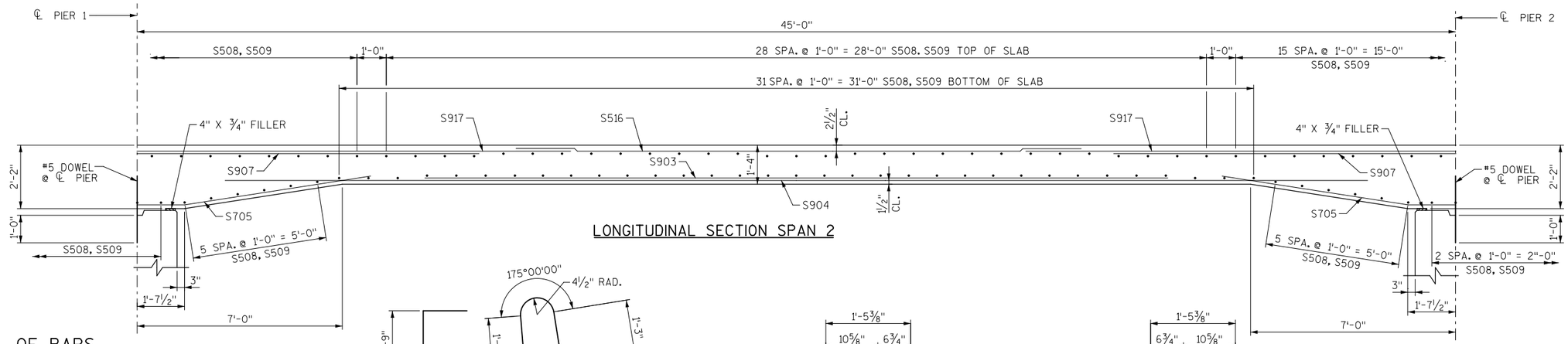
STATE PROJECT NUMBER
1060-38-71



LONGITUDINAL SECTION SPANS 1 & 3

(SPAN 1 SHOWN, SPAN 3 OPPOSITE HAND)



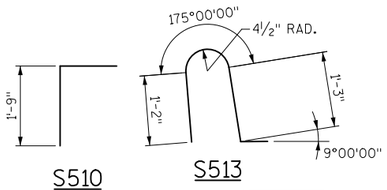
LONGITUDINAL SECTION SPAN 2

BILL OF BARS

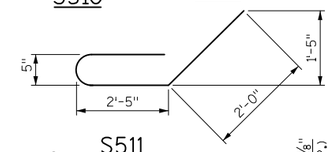
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR BUNDLED CUT BARS	85228# COATED 0# UNCOATED LOCATION
S901	X	128	10'-6"		SLAB LONG. BOT. SPAN 1 & 3
S902	X	124	24'-5"		SLAB LONG. BOT. SPAN 1 & 3
S903	X	64	25'-0"		SLAB LONG. BOT. SPAN 2
S904	X	62	39'-0"		SLAB LONG. BOT. SPAN 2
S705	X	128	16'-9"	X	SLAB LONG BOT. PIER
S506	X	88	7'-10"		SLAB LONG. TOP , SPAN 1 & 3
S907	X	128	34'-0"		SLAB LONG. TOP, PIER
S508	X	233	28'-1"		SLAB TRANS.
S509	X	233	37'-2"		SLAB TRANS.
S510	X	128	3'-4"	X	SLAB @ ABUT. HAUNCH
S511	X	128	7'-0"	X	SLAB @ ABUT. HAUNCH
S512	X	128	2'-7"	X	SLAB @ ABUT. HAUNCH
S513	X	302	4'-5"	X	PARAPET VERTICAL
S514	X	302	6'-8"	X	PARAPET VERTICAL
S515	X	48	35'-0"		PARAPET HORIZONTAL
S516	X	44	19'-10"		SLAB LONG. TOP , SPAN 2
S917	X	124	31'-0"		SLAB LONG. TOP, PIER

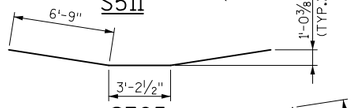
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.



S510 S513



S511



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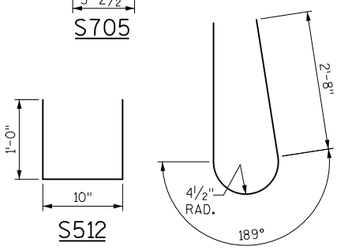
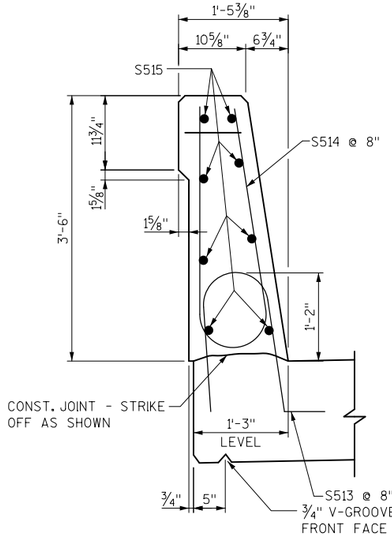
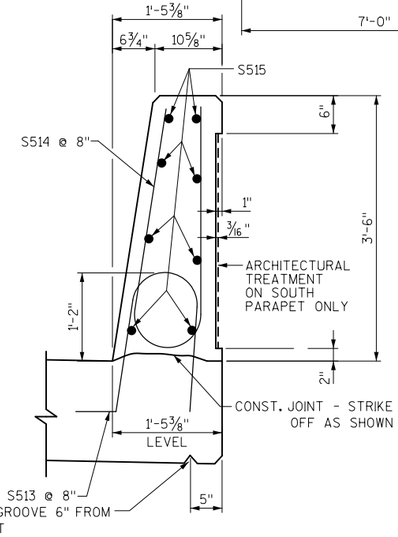


S512 S514



SECTION THRU NORTH PARAPET ON BRIDGE

(SINGLE SLOPE PARAPET 42SS)



SECTION THRU SOUTH PARAPET ON BRIDGE

(SINGLE SLOPE PARAPET 42SS MODIFIED)

NOTES:

1. FOR SS901 BAR LOCATION AND BILL OF BARS, SEE SHEET 15.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-341

DRAWN BY WMN | PLANS CK'D. WJZ

SUPERSTRUCTURE DETAILS

SHEET 13 OF 17

224

8

8

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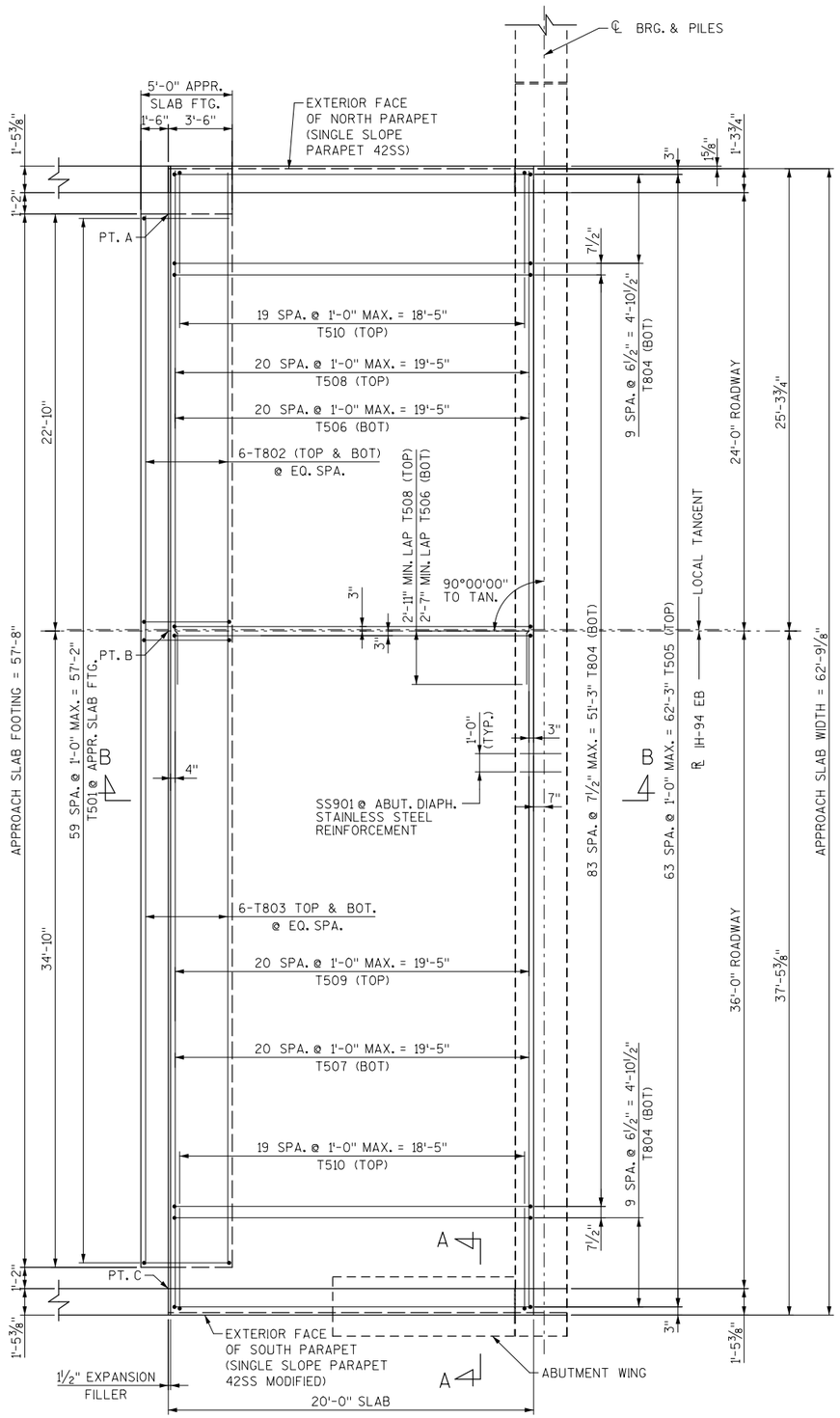


APPROACH SLAB PLAN

(WEST ABUTMENT SHOWN, EAST ABUTMENT OPPOSITE HAND)

STATE PROJECT NUMBER

1060-38-71

BILL OF BARS

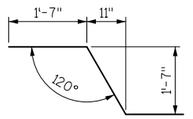
STAINLESS STEEL →

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	0# COATED 2,176# UNCOATED STAINLESS STEEL LOCATION
SS901		128	5'-0"	X			ABUT. DIAPH. TO APPROACH SLAB

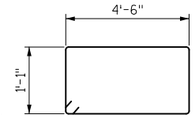
BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	25689# COATED 0# UNCOATED LOCATION
T501	X	120	11'-10"	X			FOOTING STIRRUP
T802	X	24	57'-4"				FOOTING HORIZONTAL
T804	X	208	21'-5"	X			BOTTOM LONGITUDINAL
T505	X	128	19'-7"				TOP LONGITUDINAL
T506	X	42	27'-10"				BOTTOM TRANSVERSE
T507	X	42	37'-2"				BOTTOM TRANSVERSE
T508	X	42	28'-2"				TOP TRANSVERSE
T509	X	42	37'-2"				TOP TRANSVERSE
T510	X	80	4'-1"	X			TOP TRANSVERSE

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

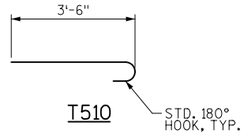
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



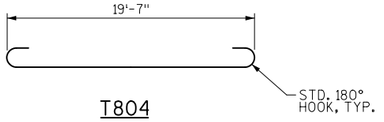
SS901



T501



T510



T804

POINT	WEST ABUT. APPROACH SLAB STATION	WEST ABUT. APPROACH SLAB ELEVATION	EAST ABUT. APPROACH SLAB STATION	EAST ABUT. APPROACH SLAB ELEVATION
A	53+81.50	872.50	55+21.66	873.87
B	53+81.50	872.98	55+21.66	874.35
C	53+81.50	872.26	55+21.66	873.63

NOTES:

1. FOR NORTH PARAPET DETAILS ON APPROACH SLAB (SINGLE SLOPE PARAPET 42SS), SEE SHEET 15.
2. FOR SOUTH PARAPET DETAILS ON APPROACH SLAB (SINGLE SLOPE PARAPET 42SS MODIFIED), SEE SHEET 16.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-341

DRAWN BY WMN | PLANS CK'D. WJZ

STRUCTURAL APPROACH SLABS

SHEET 14 OF 17

225

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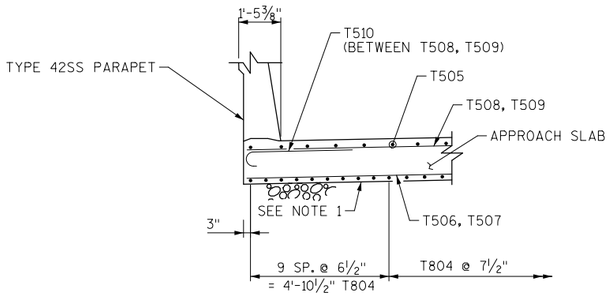
8

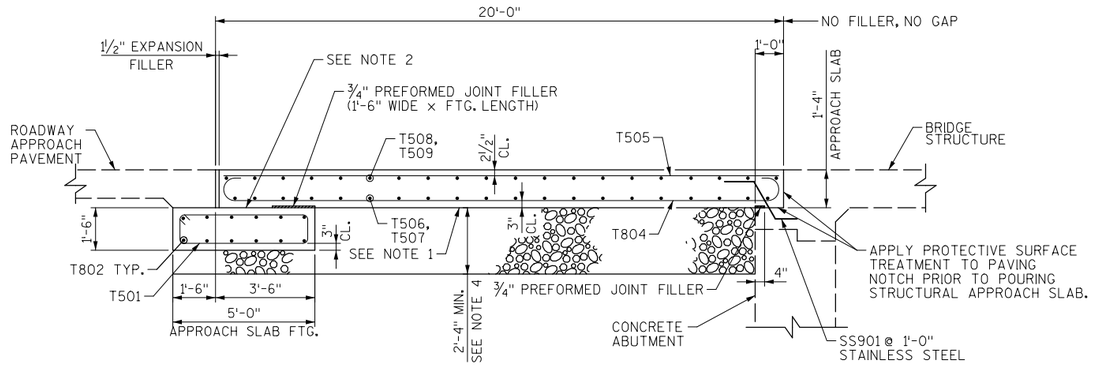
8

STATE PROJECT NUMBER

1060-38-71

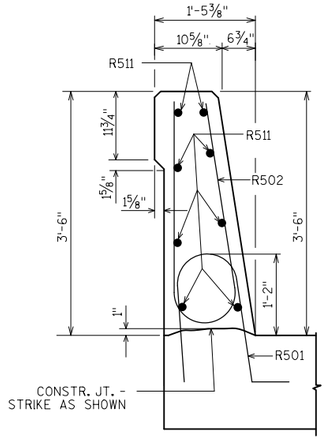


SECTION A-A



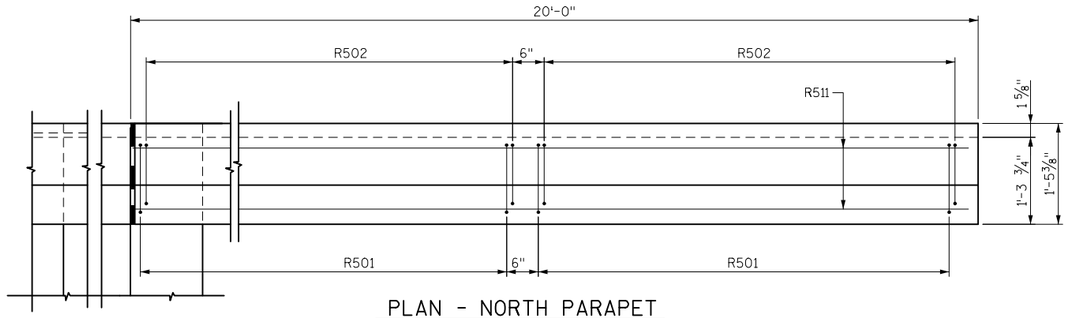
SECTION B-B THRU APPROACH SLAB

NOTES:
1. PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE, BENEATH SLAB.
2. STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER ENTIRE TOP OF FOOTING.
3. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTERLINE AT INSIDE FACE.
4. BELOW THE APPROACH SLAB FOOTING AND APPROACH SLAB, PLACE BASE AGGREGATE DENSE 1-1/4 INCH.



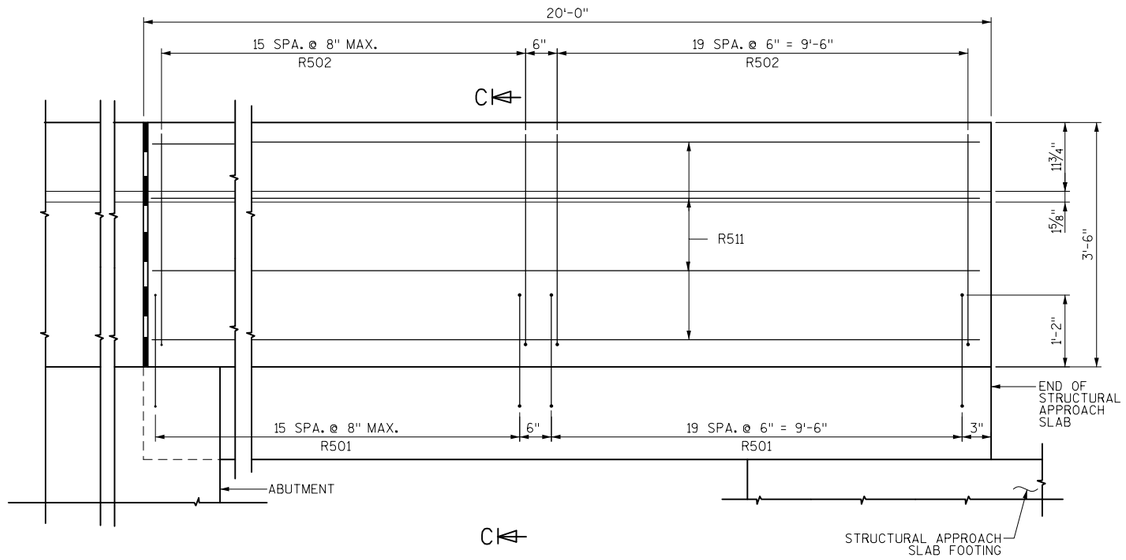
SECTION C-C

(SINGLE SLOPE PARAPET 42SS)



PLAN - NORTH PARAPET

(SINGLE SLOPE PARAPET 42SS ON APPROACH SLAB)



TYPICAL OUTSIDE ELEVATION - NORTH PARAPET

(SINGLE SLOPE PARAPET 42SS ON APPROACH SLAB)

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-341

DRAWN BY WMN | PLANS CK'D. WJZ

STRUCTURAL APPROACH SLAB DETAILS

SHEET 15 OF 17

226

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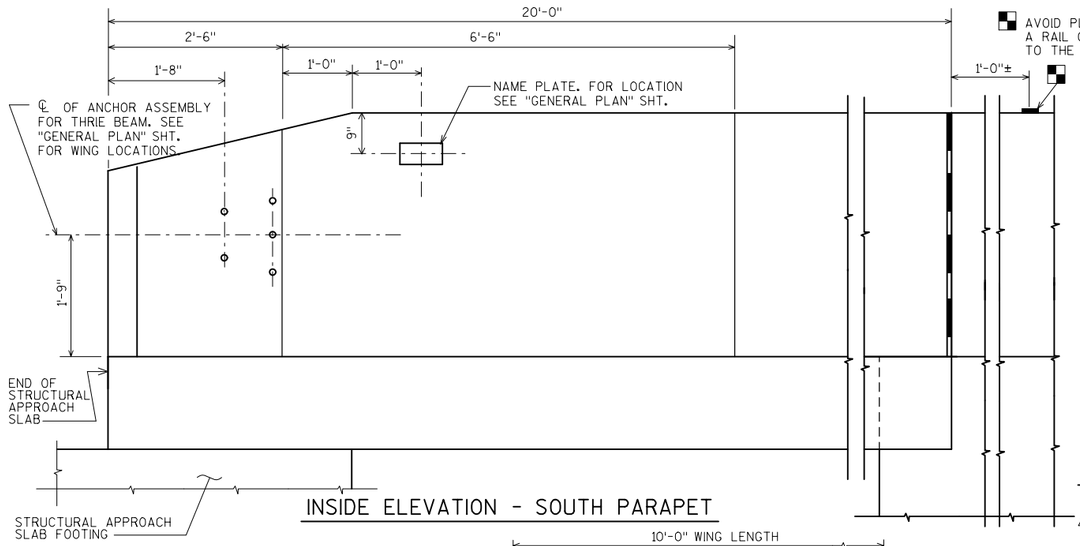
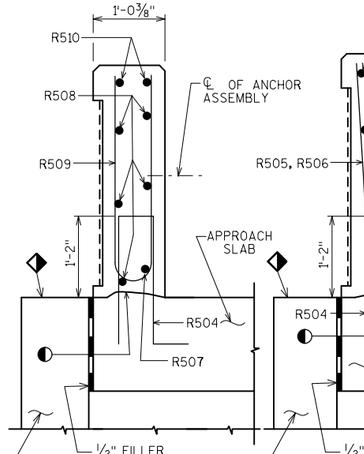
STATE PROJECT NUMBER

1060-38-71



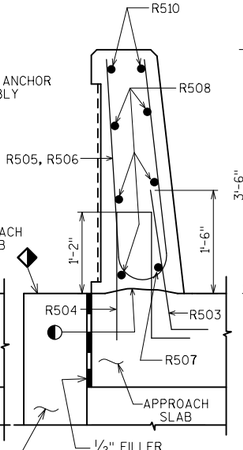
INSIDE ELEVATION - SOUTH PARAPET

AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.



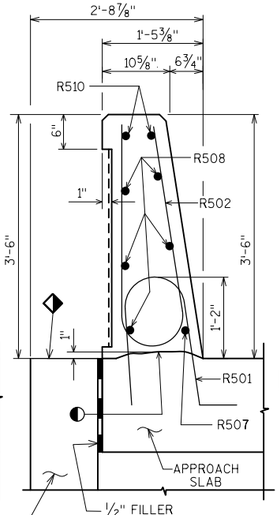
SECTION A-A

(SOUTH PARAPET TRANSITION)



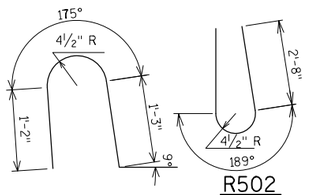
SECTION B-B

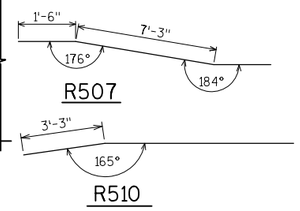
(SOUTH PARAPET TRANSITION)

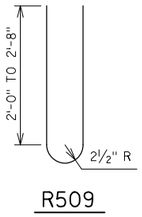


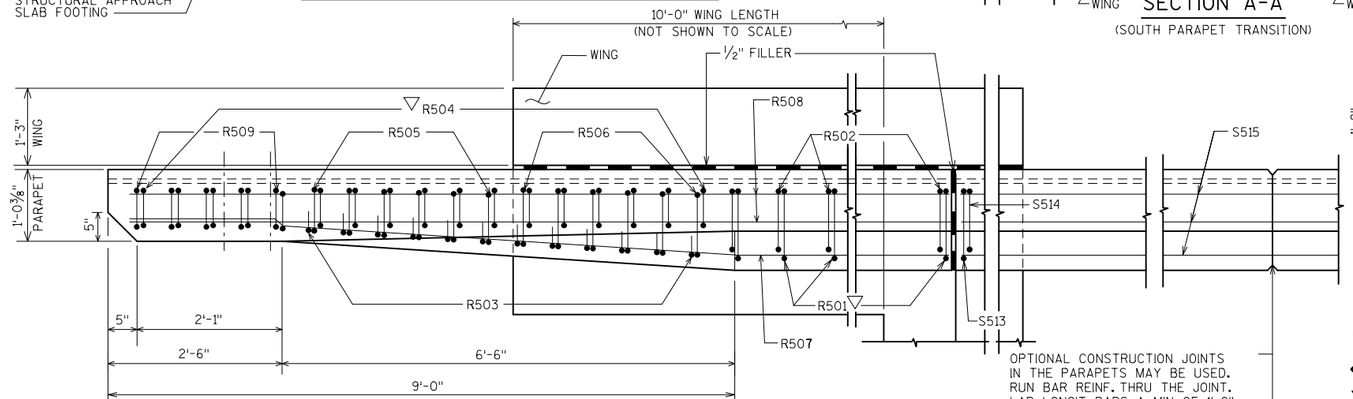
SECTION C-C

(SOUTH PARAPET TRANSITION)



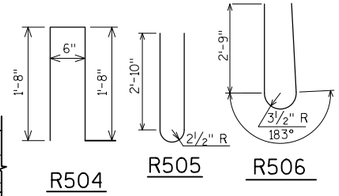






PLAN - SOUTH PARAPET

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A ¾" - 'V' GROOVE. SEE ARCHITECTURAL DETAIL FOR ALLOWABLE JOINT LOCATIONS.



◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◆ SLOPE FOR DRAINAGE

▽ R501 AND R504 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.

BILL OF BARS

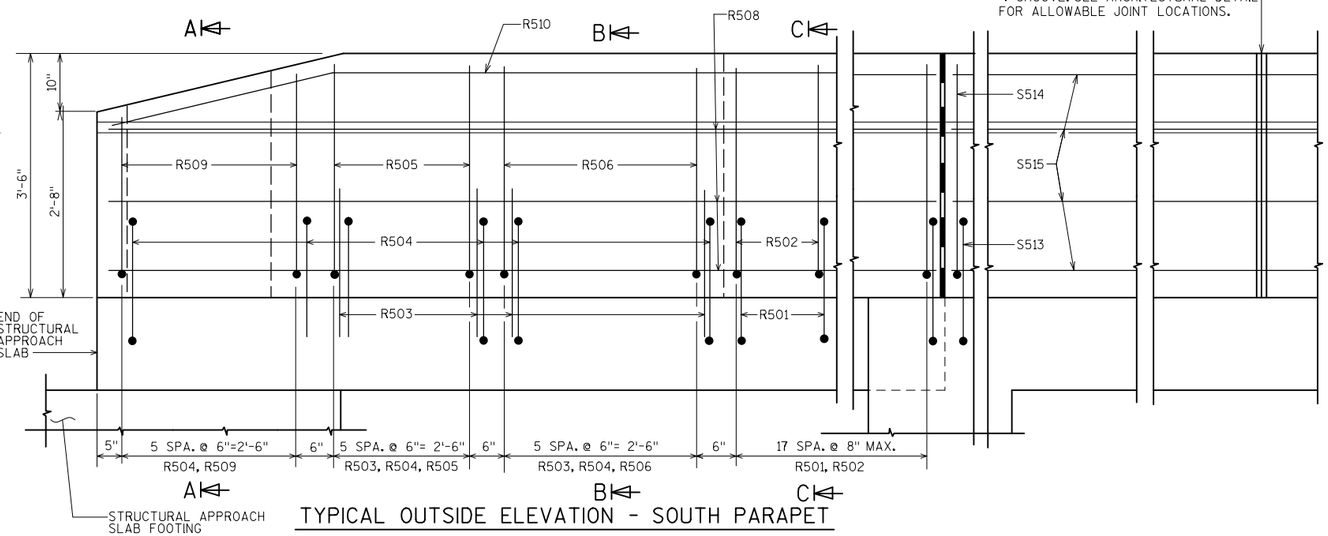
FOR STRUCTURAL APPROACH SLAB PARAPETS

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	2,688# COATED 0# UNCOATED LOCATION
R501	X	108	4'-5"	X			PARAPET VERTICAL
R502	X	108	6'-8"	X			PARAPET VERTICAL
R503	X	24	2'-9"	X			PARAPET VERTICAL
R504	X	36	4'-4"	X			PARAPET VERTICAL
R505	X	12	6'-5"	X			PARAPET VERTICAL
R506	X	12	6'-6"	X			PARAPET VERTICAL
R507	X	2	19'-6"	X			PARAPET HORIZONTAL
R508	X	26	19'-6"				PARAPET HORIZONTAL
R509	X	12	5'-5"	X		X	PARAPET VERTICAL
R510	X	4	19'-6"	X			PARAPET HORIZONTAL
R511	X	16	19'-7"				PARAPET HORIZONTAL

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

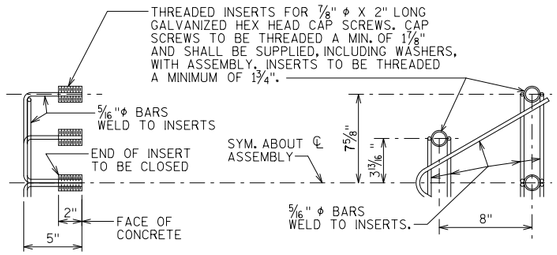
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

LENGTH SHOWN FOR CUT BARS IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.



TYPICAL OUTSIDE ELEVATION - SOUTH PARAPET

(WING NOT SHOWN FOR CLARITY)



DETAIL OF ANCHOR ASSEMBLY

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

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

BAR SERIES TABLE

MARK	NO. REQ'D.	LENGTH
R509	2 SERIES OF 6	4'-9" TO 6'-1"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-341

DRAWN BY WMN | PLANS CK'D. WJZ

SINGLE SLOPE PARAPET 42SS MODIFIED

SHEET 16 OF 17

227

8

8

12 6 1 2 3 4

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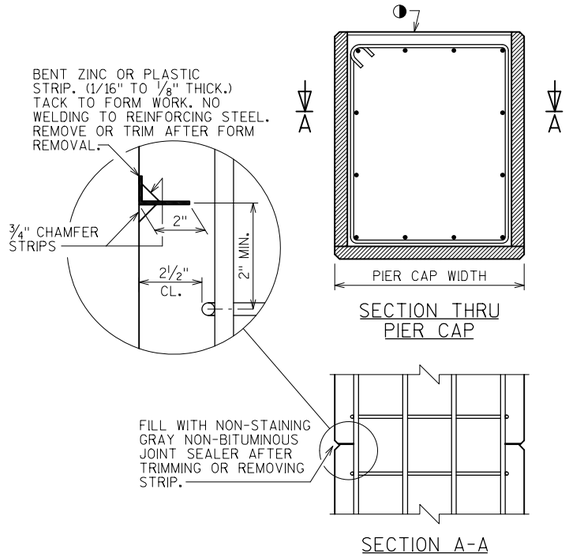
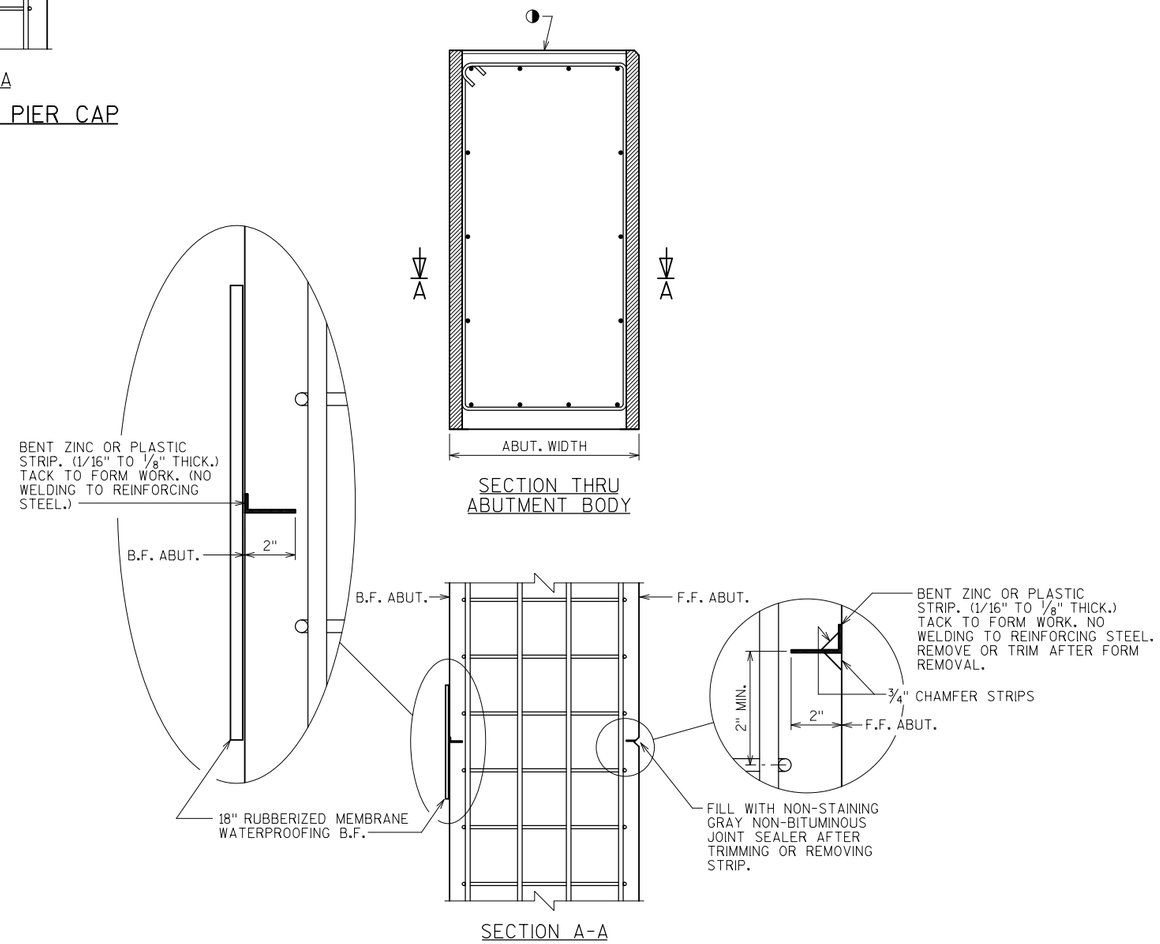
STATE PROJECT NUMBER
1060-38-71



SECTION THRU PIER CAP

SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT PIER CAP



SECTION THRU ABUTMENT BODY

SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

SAWCUTTING THE CONSTRUCTION JOINT IS NOT ALLOWED

◑ USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-341

DRAWN BY WMN | PLANS CK'D. WJZ

ALTERNATE CONSTRUCTION JOINT

SHEET 17 OF 17

228

ALTJOINT
10-08

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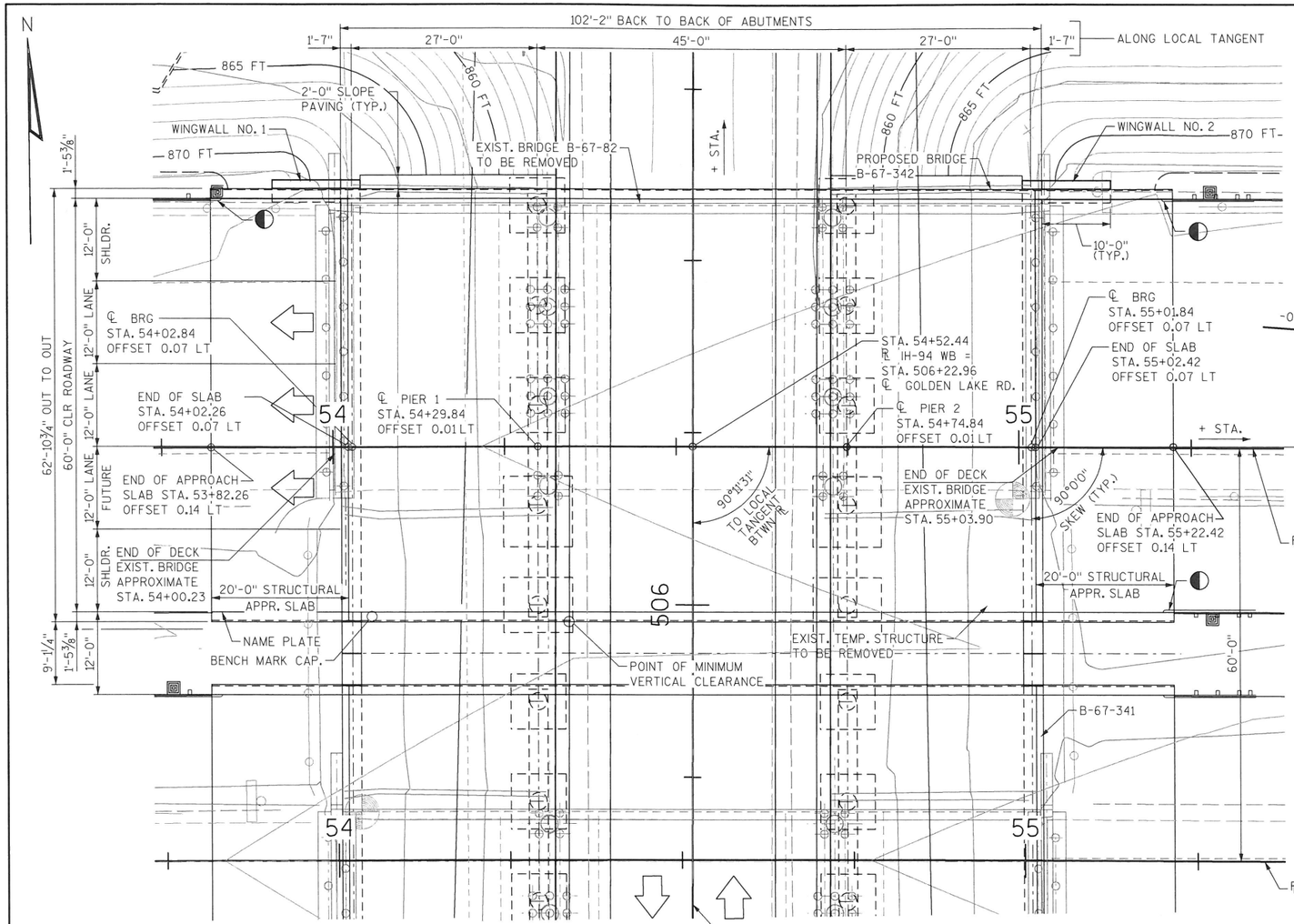
1 2 3 6

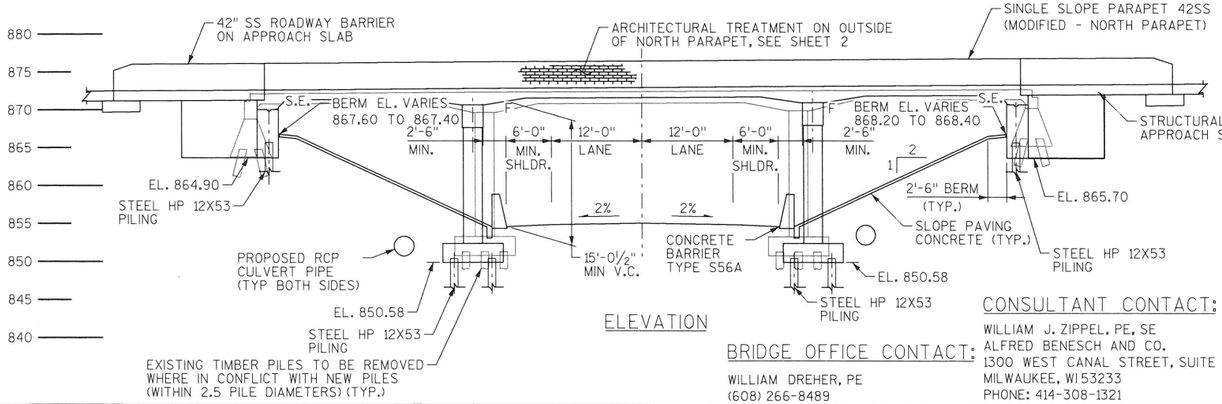


◐ ANCHOR ASSEMBLY STEEL PLATE BEAM GUARD

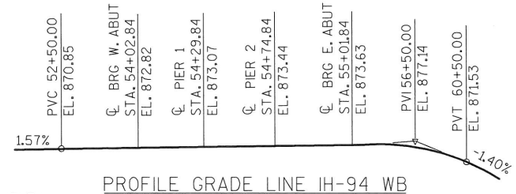
PLAN

C.I.P. CONCRETE SLAB BRIDGE WITH C.I.P. CONCRETE ABUTMENTS AND MULTI-COLUMNED PIERS

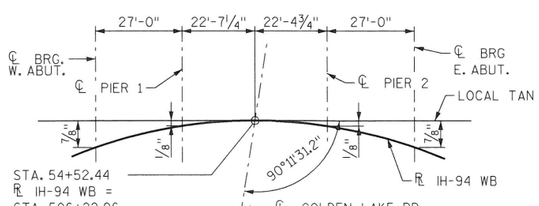
NOTE:
STATIONS AND OFFSETS SHOWN ON THE PLAN ARE ALONG THE LOCAL TANGENT



ELEVATION



PROFILE GRADE LINE IH-94 WB



LAYOUT SKETCH

BRIDGE OFFICE CONTACT:

WILLIAM DREHER, PE
(608) 266-8489

CONSULTANT CONTACT:

WILLIAM J. ZIPPEL, PE, SE
ALFRED BENESCH AND CO.
1300 WEST CANAL STREET, SUITE 150
MILWAUKEE, WI 53233
PHONE: 414-308-1321

DESIGN DATA

LIVE LOAD:

DESIGN LOADING HL-93
INVENTORY RATING FACTOR 1.13
OPERATING RATING FACTOR 1.47
WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV)= 250 KIPS
DESIGN ACCOUNTS FOR FUTURE WEARING SURFACE = 20 PSF

MATERIAL PROPERTIES:

CONCRETE MASONRY SUPERSTRUCTURE (HPC) fc' = 4000 PSI
ALL OTHER fc' = 3500 PSI
STEEL REINFORCEMENT HIGH STRENGTH BAR, GRADE 60 fy = 60 KSI

FOUNDATION DATA:

PLACE PIERS AND ABUTMENTS ON STEEL HP 12X53 PILING WITH PILE POINTS WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS/PILE* AT PIERS AND 90 TONS/PILE* AT ABUTMENTS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

* THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

EST. PILE LENGTHS: 65 FT AT W. ABUT.
65 FT AT PIER 1
65 FT AT PIER 2
65 FT AT E. ABUT.

TRAFFIC DATA N. GOLDEN LAKE RD.:

AADT (2015) = 1500
AADT (2035) = 1800
DESIGN SPEED = 50 MPH.

TRAFFIC DATA IH-94:

AADT (2015) = 43100
AADT (2035) = 46500
TRUCK % = 16.2%
D = 60/40
DESIGN SPEED = 70 MPH.

IH-94 WB CURVE DATA

PC = 52+34.04
PI = 62+10.24
PT = 71+84.36
△ = 6°28'42" RT
D = 0°19'56"
R = 17248.76
T = 976.20
L = 1950.32
E = 27.60
S.E. = N.C.

LIST OF DRAWINGS:

1. GENERAL PLAN AND ELEVATION
2. CROSS-SECTION
3. QUANTITIES & GENERAL NOTES
4. SUBSURFACE EXPLORATION
5. WEST ABUTMENT PLAN & ELEVATION
6. EAST ABUTMENT PLAN & ELEVATION
7. WEST ABUTMENT DETAILS
8. EAST ABUTMENT DETAILS
9. PIERS 1 & 2
10. PIERS 1 & 2 DETAILS
11. SUPERSTRUCTURE
12. SUPERSTRUCTURE PLAN
13. SUPERSTRUCTURE DETAILS
14. STRUCTURAL APPROACH SLABS
15. STRUCTURAL APPROACH SLAB DETAILS
16. SINGLE SLOPE PARAPET 42SS MODIFIED
17. ALTENATE CONSTRUCTION JOINT

EXISTING STRUCTURES:

THE EXISTING BRIDGE (B-67-82) IS A THREE SPAN CONCRETE SLAB BRIDGE FOUNDED ON MULTI COLUMN CONCRETE PIERS AND CONCRETE STUB ABUTMENTS. THE EXISTING BRIDGE IS 105'-2" LONG AND THE DECK IS 42'-6" WIDE WITH TEMPORARY WIDENING TO THE SOUTH. THE FOUNDATIONS ARE SUPPORTED ON TIMBER PILING.

BENCHMARKS

NAME	ELEVATION	DESCRIPTION
BM1	874.64	ALUMINUM DISK IN PARAPET - EB
BM2	875.00	ALUMINUM DISK IN PARAPET - WB

STATE PROJECT NUMBER
1060-38-71

WISCONSIN
WILLIAM J. ZIPPEL
38868-006
MILWAUKEE, WI
PROFESSIONAL ENGINEER
10/13/2015

NO.	DATE	REVISION	BY

benesch engineers · scientists · planners
Alfred Benesch & Company
1300 West Canal Street, Suite 150
Milwaukee, Wisconsin 53233
414-308-1310 Job No. 20103.00

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 10/14/15
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-67-342

IH-94 WB OVER N. GOLDEN LAKE RD.

COUNTY	TOWN/CITY/VILLAGE
WAUKESHA	SUMMIT

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY WMN	PLANS CK'D. WJZ

GENERAL PLAN AND ELEVATION

SHEET 1 OF 17
229

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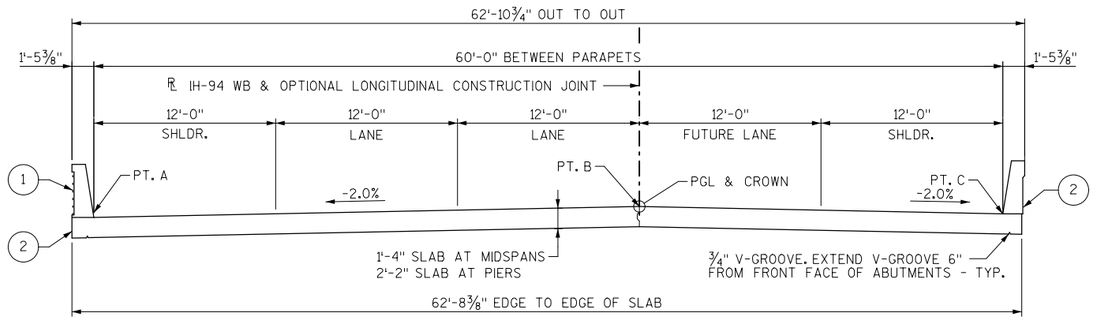
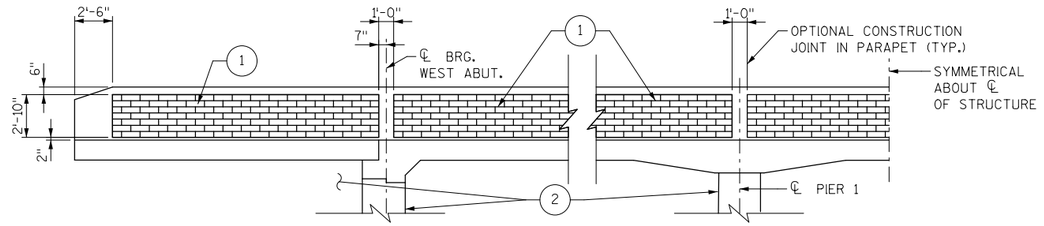


TYPICAL CROSS SECTION

(LOOKING EAST)

(1) FINISH OF ARCHITECTURAL SURFACE TREATMENT AT THE BACK FACE OF THE PARAPET SHALL ACHIEVE THE LOOK OF "NEW BRICK" WITH MAXIMUM RELIEF OF ⅜". SEE SPECIAL PROVISION FOR "ARCHITECTURAL SURFACE TREATMENT, B-67-342" AND "CONCRETE STAINING MULTI-COLOR, B-67-342".

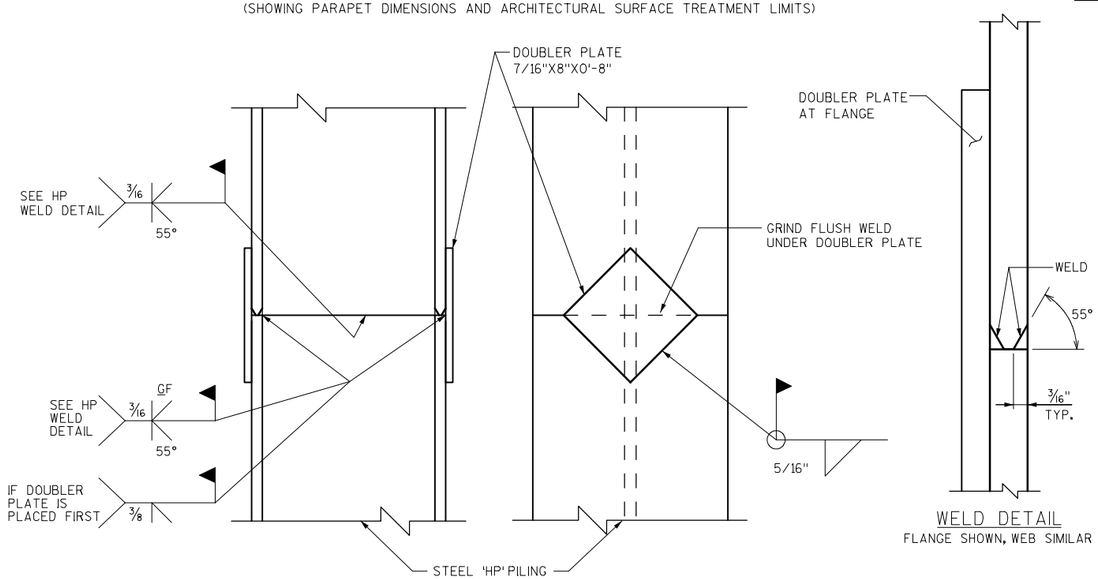
(2) CONCRETE STAINING B-67-342 APPLIED TO SURFACES NOT RECIEVING ARCHITECTURAL SURFACE TREATMENT OF WINGWALLS, FRONT FACE OF ABUTMENT, PIER COLUMNS AND CAPS, AND OUTSIDE FACE OF SOUTH PARAPET. APPLY STAIN TO 12" BELOW FINISHED GRADE.



NOTE: COLOR AND APPEARANCE SHALL MATCH I-94 OVER CTH-P BRIDGES AND WALLS NEAR PABST FARMS.

ELEVATION - NORTH FACE OF NORTH PARAPET

(SHOWING PARAPET DIMENSIONS AND ARCHITECTURAL SURFACE TREATMENT LIMITS)



STEEL PILING SPLICE DETAILS

WELD DETAIL

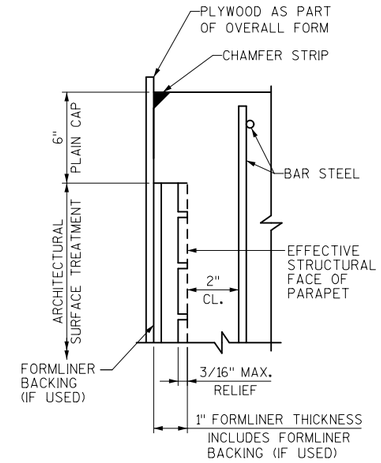
FLANGE SHOWN, WEB SIMILAR

TOP OF DECK ELEVATIONS

LOCATION	STATION	PT. A (EDGE OF DECK)	PT. B (PGL/CONSTR. JT.)	PT. C (EDGE OF DECK)
END OF SLAB	54+02.26	872.09	872.81	872.33
CL BRG. WEST ABUT.	54+02.84	872.10	872.82	872.34
0.1	54+05.54	872.12	872.84	872.36
0.2	54+08.24	872.15	872.87	872.39
0.3	54+10.94	872.18	872.90	872.42
0.4	54+13.64	872.20	872.92	872.44
0.5	54+16.34	872.23	872.95	872.47
0.6	54+19.04	872.25	872.97	872.49
0.7	54+21.74	872.28	873.00	872.52
0.8	54+24.44	872.31	873.03	872.55
0.9	54+27.14	872.33	873.05	872.57
CL PIER 1	54+29.84	872.35	873.07	872.59
0.1	54+34.34	872.39	873.11	872.63
0.2	54+38.84	872.43	873.15	872.67
0.3	54+43.34	872.47	873.19	872.71
0.4	54+47.84	872.51	873.23	872.75
0.5	54+52.34	872.55	873.27	872.79
0.6	54+56.84	872.59	873.31	872.83
0.7	54+61.34	872.62	873.34	872.86
0.8	54+65.84	872.66	873.38	872.90
0.9	54+70.34	872.69	873.41	872.93
CL PIER 2	54+74.84	872.72	873.44	872.96
0.1	54+77.54	872.74	873.46	872.98
0.2	54+80.24	872.76	873.48	873.00
0.3	54+82.94	872.78	873.50	873.02
0.4	54+85.64	872.80	873.52	873.04
0.5	54+88.34	872.82	873.54	873.06
0.6	54+91.04	872.84	873.56	873.08
0.7	54+93.74	872.86	873.58	873.10
0.8	54+96.44	872.87	873.59	873.11
0.9	54+99.14	872.89	873.61	873.13
CL BRG. EAST ABUT.	55+01.84	872.91	873.63	873.15
END OF SLAB	55+02.42	872.91	873.63	873.15

STATE PROJECT NUMBER

1060-38-71



SECTION THRU FORMLINER

NOTE

FORMLINER COURSING ON PARAPETS SHALL BE PARALLEL TO TOP OF PARAPET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-342

DRAWN BY WMN | PLANS CK'D. WJZ

CROSS-SECTION

SHEET 2 OF 17

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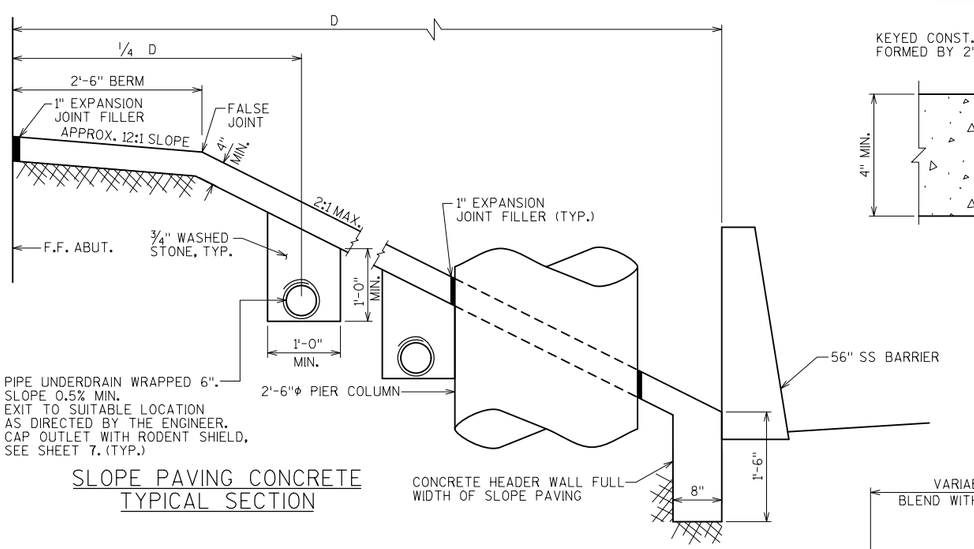
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	WEST APPR. SLAB	W. ABUT.	PIER 1	PIER 2	E. ABUT.	EAST APPR. SLAB	SUPER	TOTAL
203.0200	REMOVING OLD STRUCTURE (STATION 54+00 WB)	LS	----	----	----	----	----	----	1	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES (B-67-342)	LS	----	0.5	----	----	0.5	----	----	1
210.0100	BACKFILL STRUCTURE	CY	----	95	----	----	95	----	----	190
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	----	218	----	----	218	----	----	436
501.1000.S	ICE HOT WEATHER CONCRETING	LB	634	353	503	510	353	634	2880	5867
502.0100	CONCRETE MASONRY BRIDGES	CY	17	47	67	68	47	17	----	262
502.3200	PROTECTIVE SURFACE TREATMENT	SY	134	----	----	----	----	134	668	936
502.3210	PIGMENTED SURFACE SEALER	SY	19	----	----	----	----	19	99	137
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	----	4492	4299	4299	5155	----	----	18245
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	14189	742	10485	10547	744	14189	85228	136123
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STEEL STRUCTURES	LB	1088	----	----	----	----	1088	----	2176
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	----	15	----	----	15	----	----	30
517.1010.S.04	CONCRETE STAINING, B-67-342	SF	67	307	1085	1100	309	67	634	3569
517.1015.S.04	CONCRETE STAINING MULTI-COLOR BRICK, B-67-342	SF	----	----	----	----	----	----	378	378
517.1050.S.04	ARCHITECTUAL SURFACE TREATMENT BRICK, B-67-342	SF	----	----	----	----	----	----	378	378
550.0500	PILE POINTS	EACH	----	10	30	30	10	----	----	80
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	----	650	1950	1950	650	----	----	5200
604.0400	SLOPE PAVING CONCRETE	SY	----	260	----	----	260	----	----	520
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	----	240	----	----	240	----	----	480
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	----	----	----	----	2	----	4
SPV.0035.01	HPC MASONRY SUPERSTRUCTURES	CY	68	----	----	----	----	68	384	520
SPV.0090.01	REMOVING EXISTING TIMBER PILING	LF	----	140	560	560	140	----	----	1400
SPV.0165.01	LONGITUDINAL GROOVING BRIDGE DECK	SF	1140	----	----	----	----	1140	5710	7990
	NON-BID ITEMS									
	JOINT FILLER									
	NAME PLATE									
	NON-BITUMINOUS JOINT SEALER									
	POLYETHYLENE SHEETS									

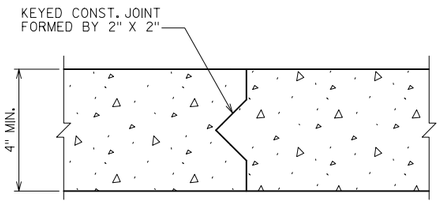
GENERAL NOTES:

1. DRAWINGS SHALL NOT BE SCALED. BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
2. SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
3. THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
4. THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING CONCRETE TO THE EXTENT SHOWN.
5. THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.
6. THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES FOR THE ABUTMENTS SHALL BE THE BOTTOM OF SLOPE PROTECTION.
7. AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.
8. THE QUANTITY FOR BACKFILL STRUCTURE, BID ITEM 210.0100, IS CALCULATED BASED ON THE APPLICABLE FIGURES 12.6-1 AND 12.6-2 IN THE WISCONSIN DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL.

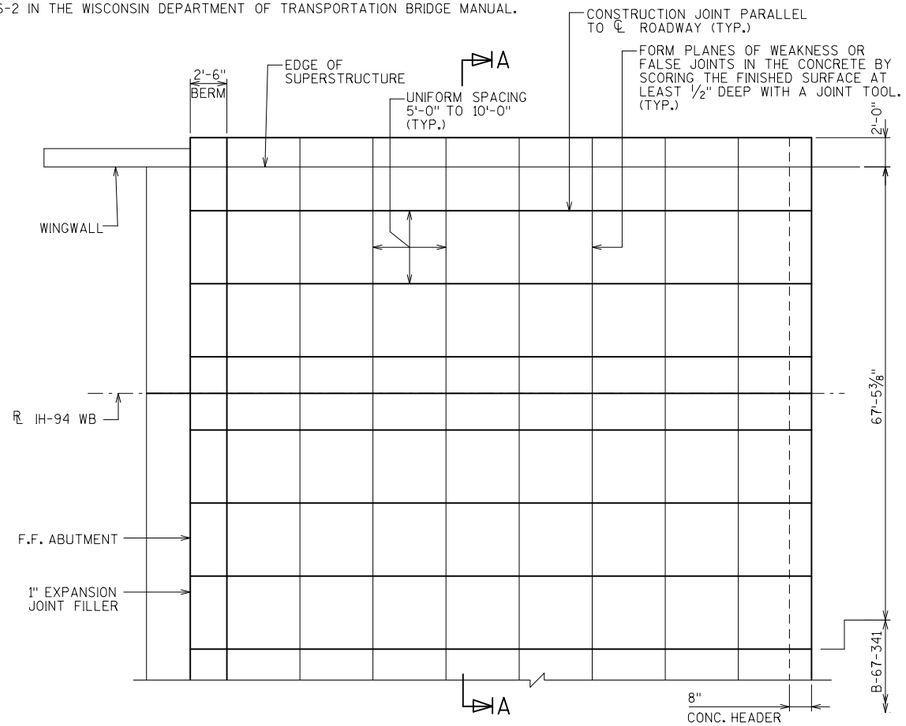
STATE PROJECT NUMBER
1060-38-71



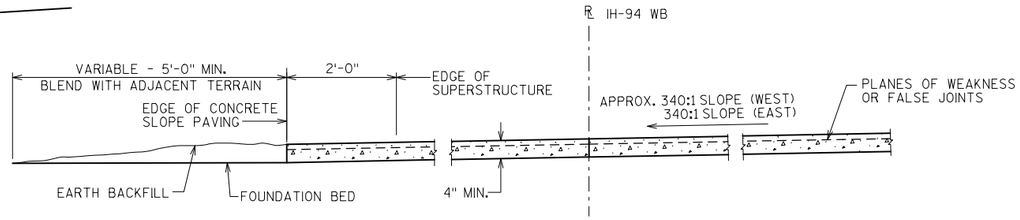
SLOPE PAVING CONCRETE TYPICAL SECTION



CONSTRUCTION JOINT



SLOPE PAVING CONCRETE - PLAN
(WEST ABUTMENT SLOPE SHOWN; EAST ABUTMENT SLOPE SIMILAR AND OPPOSITE HAND)



SECTION A-A

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-342

DRAWN BY WMN | PLANS CK'D. WJZ

QUANTITIES & GENERAL NOTES

SHEET 3 OF 17

231

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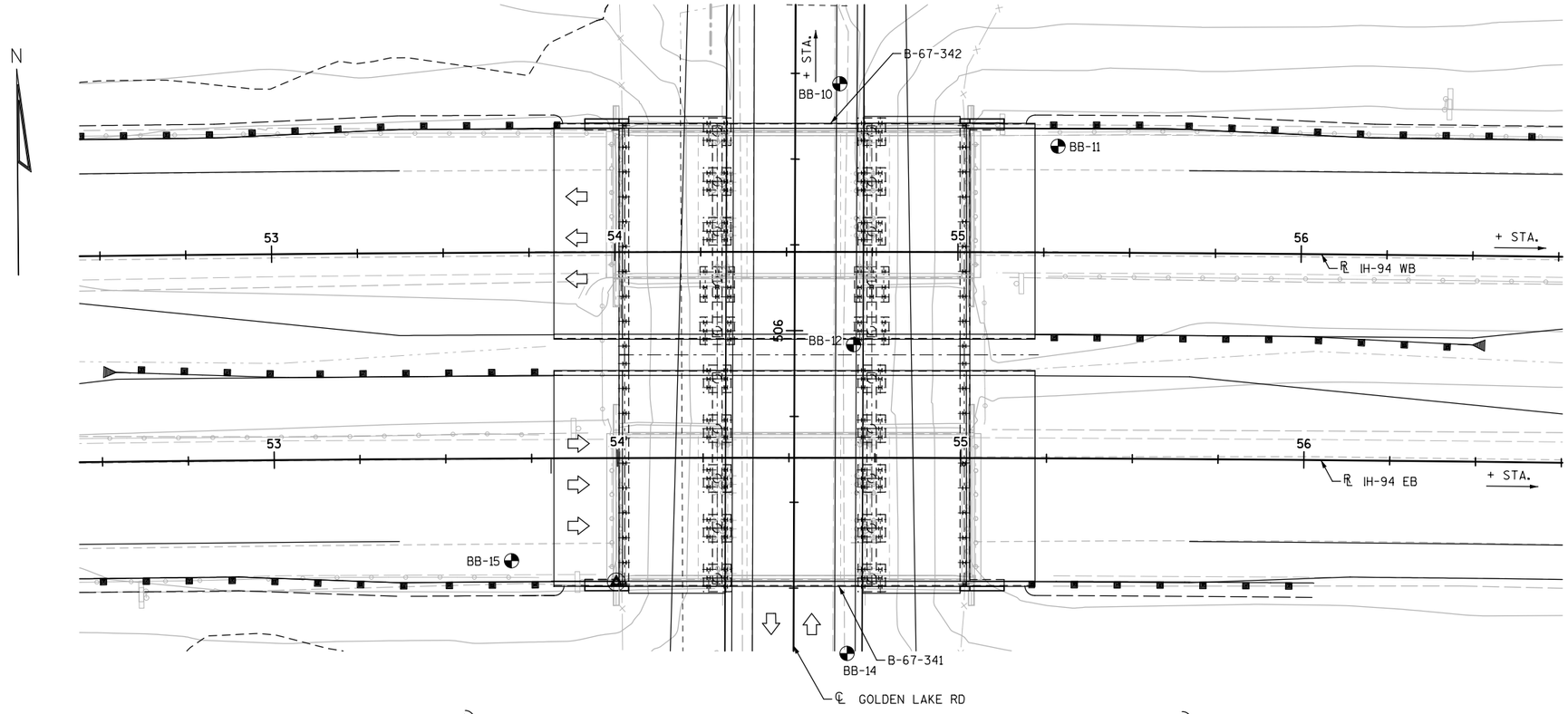

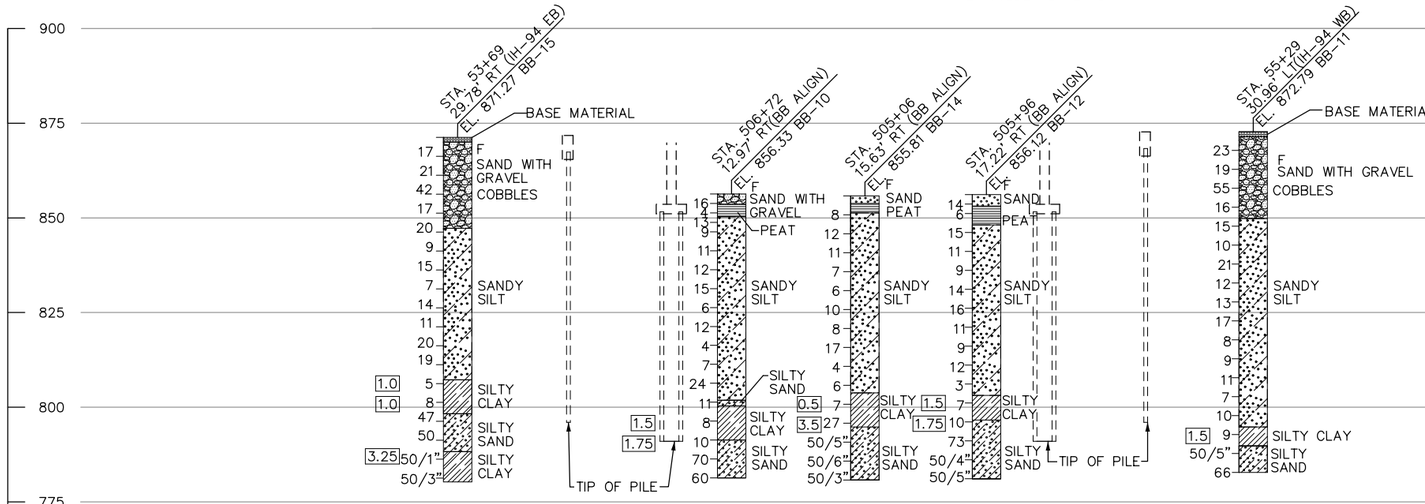

NOTES:

FOUNDATION DESIGN PARAMETERS ARE BASED ON RECOMMODATIONS FROM THE GEOTECHNICAL EXPLORATION REPORT DATED JULY, 2013 BY HIMALAYAN CONSULTANTS, LLC, AVAILABLE FROM WISDOT.

REFER TO THE GEOTECHNICAL REPORT FOR FULL SOIL DESCRIPTIONS AND DETAILS OF BORING LOGS.

HISTORIC BORINGS ARE AVAILABLE UPON REQUEST FROM WISDOT.

CONTACT THE WISCONSIN DEPARTMENT OF TRANSPORTATION FOR THE GEOTECHNICAL REPORT AND BORING LOGS.

EXISTING FOOTINGS ARE SHOWN FOR EXISTING STRUCTURES. ACTUAL LOCATIONS MAY VARY. CONTRACTOR SHALL VERIFY LOCATIONS IN THE FIELD.

STATE PROJECT NUMBER

1060-38-71

ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE, SAND, PEAT, LIMESTONE, GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.
STA.
ELEVATION
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

95/6=95 BLOWS FOR 6" PENETRATION PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

LEGEND OF BORING

BORING NO.
ELEV.
STA.
UNCONFINED STRENGTH
7.7 7
BLOWS PER FT. USING 140# WT. FALLING 30"
WASH SAMPLE
SHELBY TUBE — S.T.
GROUND WATER ELEVATION
NO GROUND WATER OBSERVED ABOVE THIS ELEVATION
SANDY GRAVEL
F. BOULDERS OR COBBLES
SAND
SILTY CLAY
SO LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-342

DRAWN BY WMN | PLANS CK'D. WJZ

SUBSURFACE EXPLORATION

SHEET 4 OF 17

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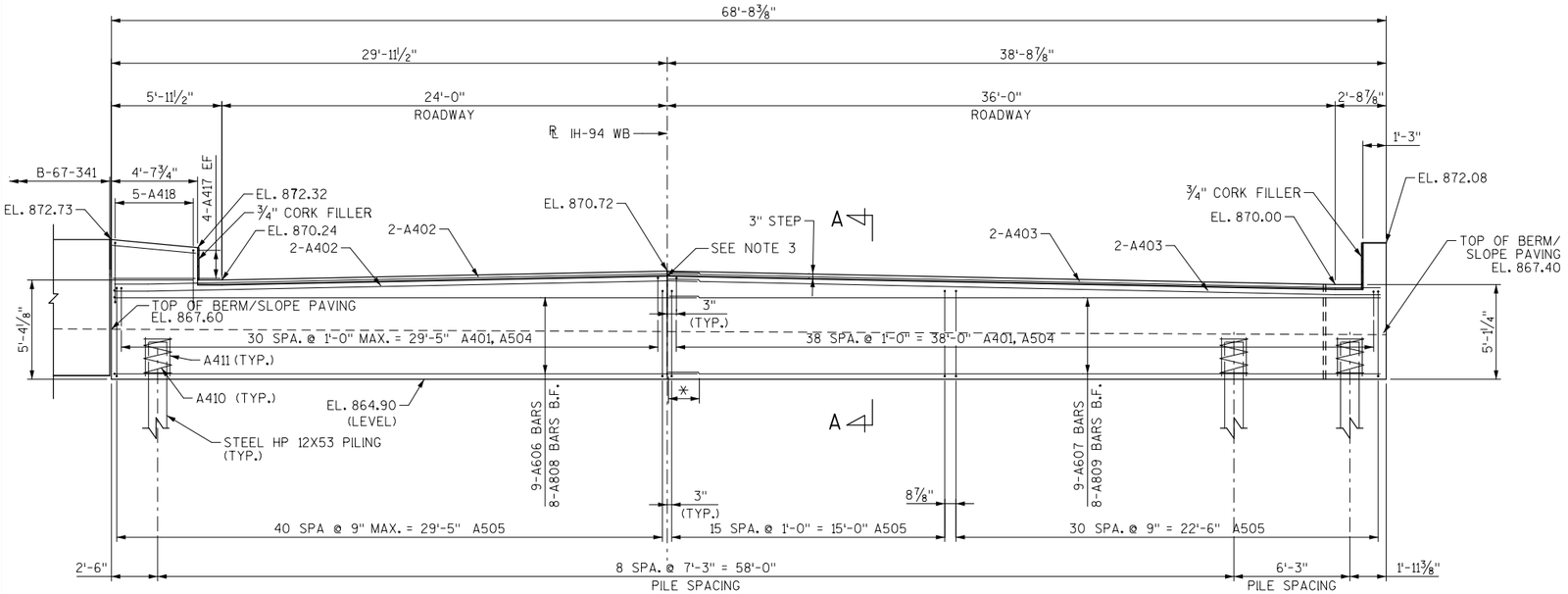
STATE PROJECT NUMBER

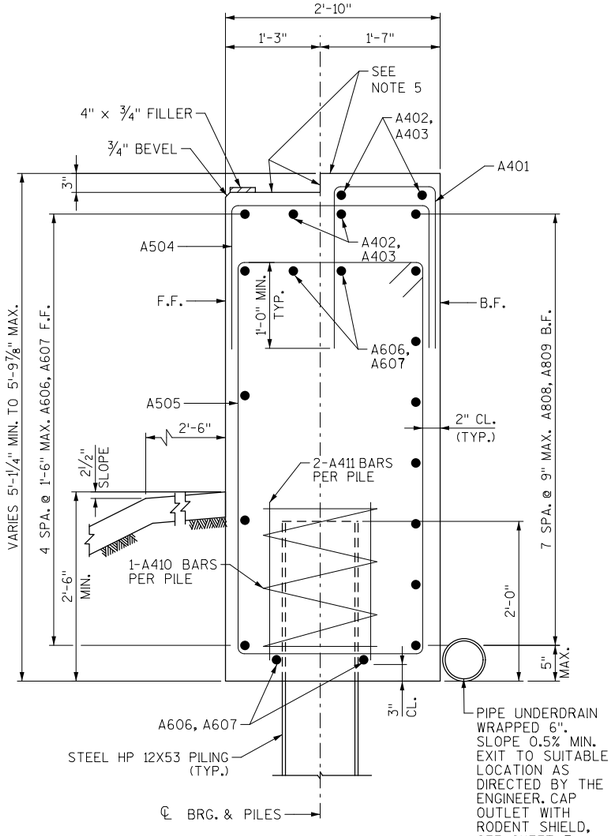
1060-38-71



ELEVATION
(LOOKING WEST)

PLACE ABUTMENTS ON STEEL HP 12X53 PILING WITH PILE POINTS WITH A REQUIRED DRIVING RESISTANCE OF 90 TONS/PILE AT ABUTMENTS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

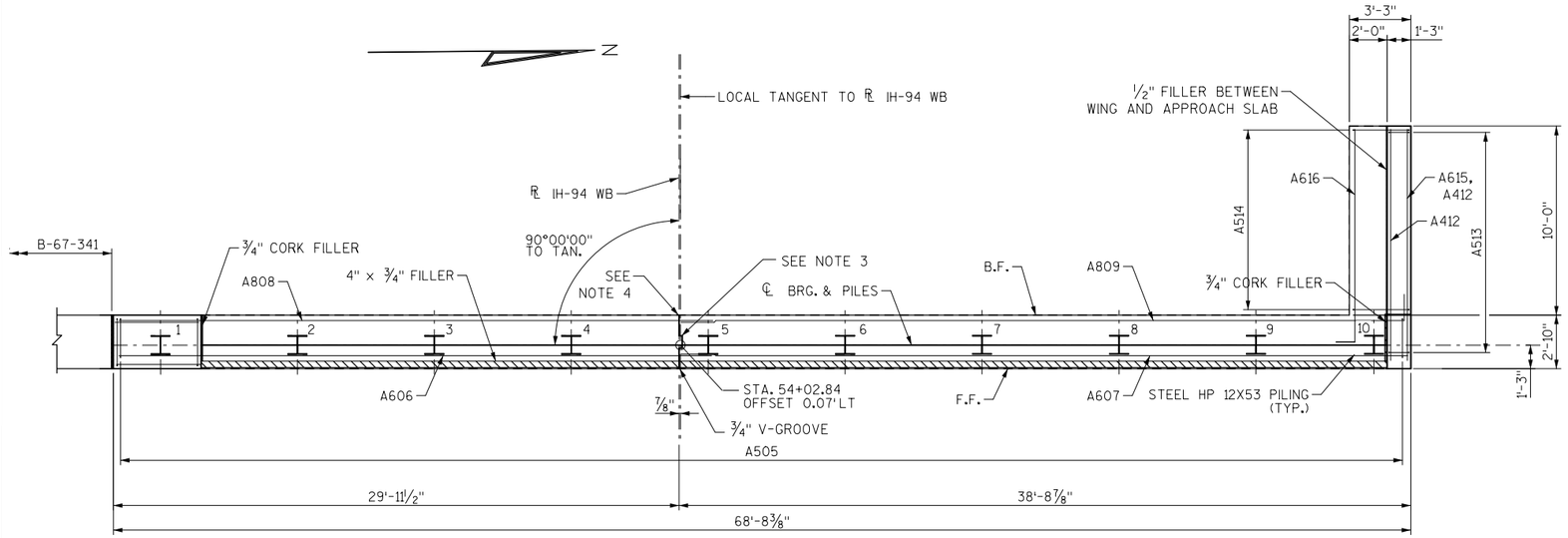
* LAP LENGTHS
#4 BARS - 1'-11"
#6 BARS - 2'-11"
#8 BARS - 5'-1"



NOTES

SECTION A-A

1. EXCAVATE TO BOTTOM OF ABUTMENTS BEFORE DRIVING PILES.
2. DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF ABUTMENT, UNTIL SUPERSTRUCTURE IS IN PLACE.
3. VERT. CONST. JOINT KEYWAY FORMED BY BEVELED 2x8.
4. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON THE BACK FACE OF THE ABUTMENT AND WING.
5. STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEET OVER ENTIRE ABUTMENT BEFORE PLACING SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".



PLAN & PILE LAYOUT

LEGEND

F.F. - DENOTES FRONT FACE

B.F. - DENOTES BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-342

DRAWN BY WMN | PLANS CK'D. WJZ

WEST ABUTMENT PLAN & ELEVATION

SHEET 5 OF 17

233

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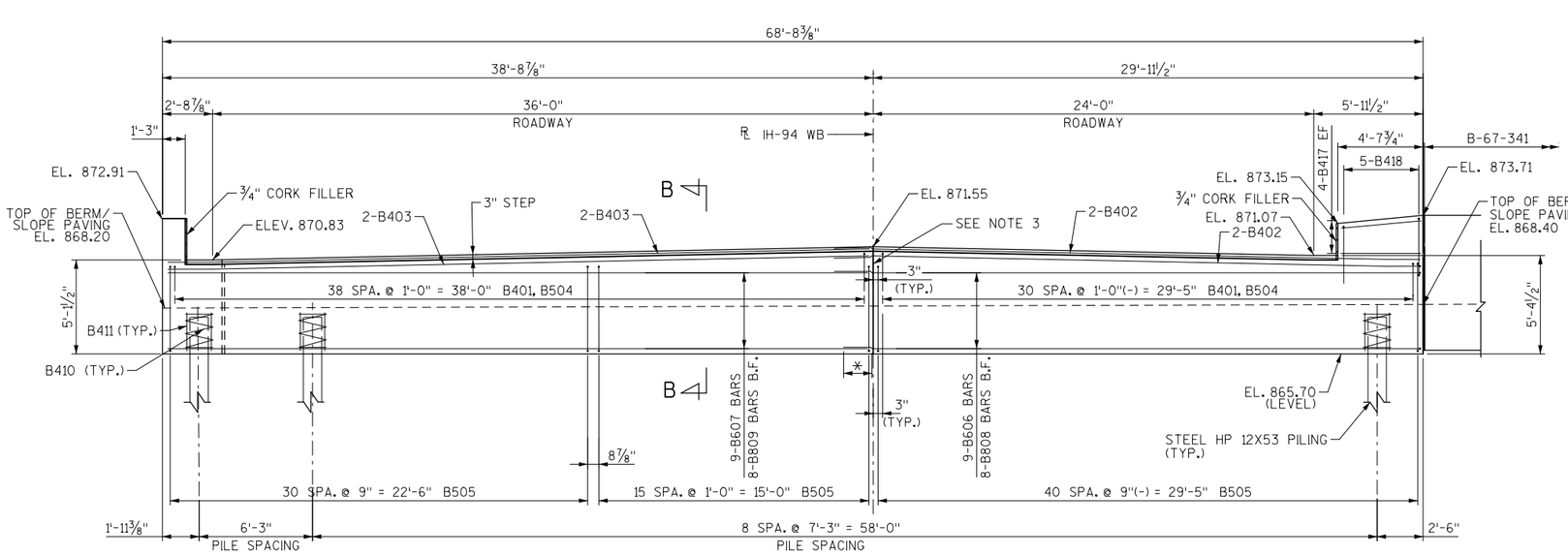
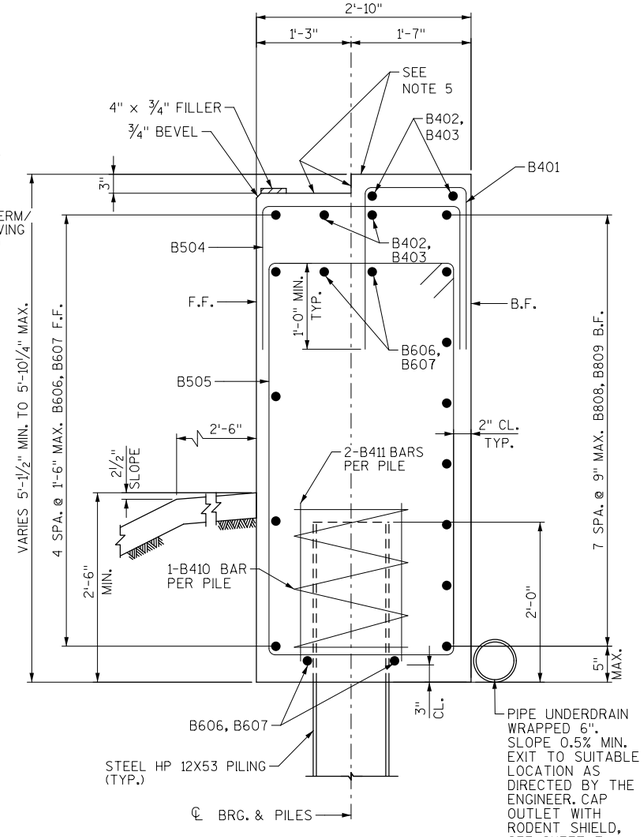
STATE PROJECT NUMBER
1060-38-71



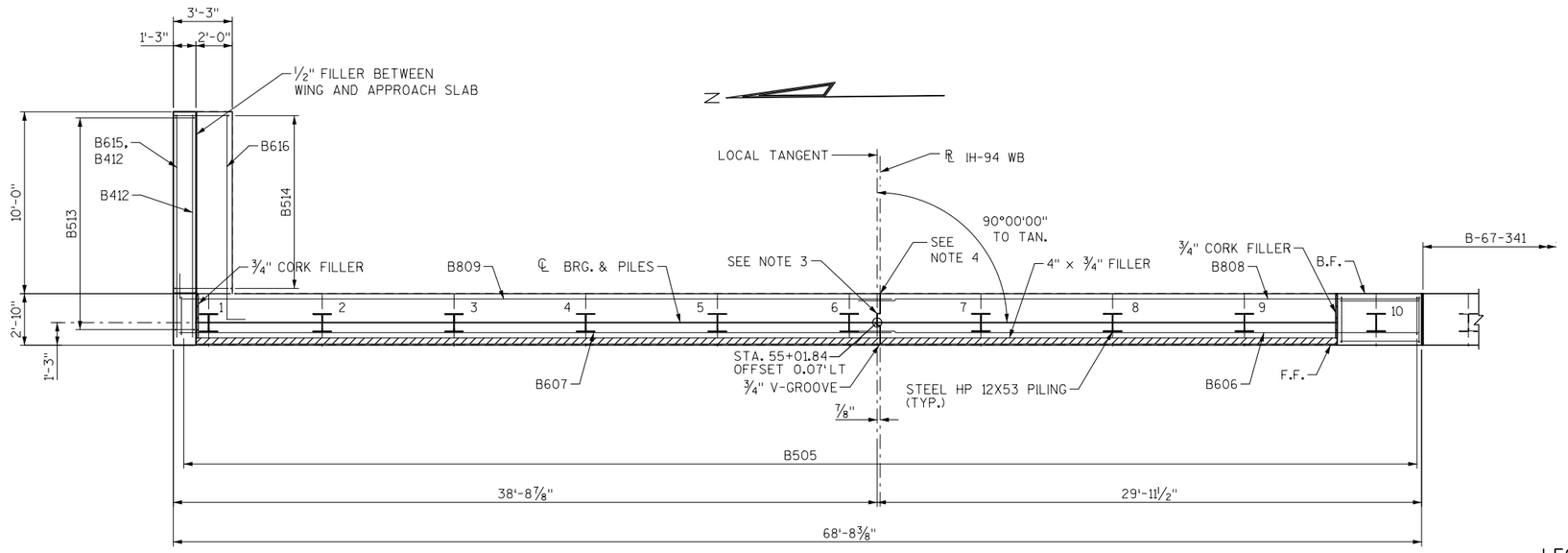
PLACE ABUTMENTS ON STEEL HP 12X53 PILING WITH PILE POINTS WITH A REQUIRED DRIVING RESISTANCE OF 90 TONS/PILE AT ABUTMENTS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

ELEVATION
(LOOKING EAST)

* LAP LENGTHS
#4 BARS - 1'-11"
#6 BARS - 2'-11"
#8 BARS - 5'-1"



SECTION B-B



PLAN & PILE LAYOUT

NOTES

1. EXCAVATE TO BOTTOM OF ABUTMENTS BEFORE DRIVING PILES.
2. DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF ABUTMENT, UNTIL SUPERSTRUCTURE IS IN PLACE.
3. VERT. CONST. JOINT KEYWAY FORMED BY BEVELED 2x8.
4. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON THE BACK FACE OF THE ABUTMENT AND WING.
5. STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEET OVER ENTIRE ABUTMENT BEFORE PLACING SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03"

LEGEND

F.F. - DENOTES FRONT FACE

B.F. - DENOTES BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-342

DRAWN BY	WMN	PLANS CK'D.	WHZ RMM

EAST ABUTMENT
PLAN & ELEVATION

SHEET 6 OF 17

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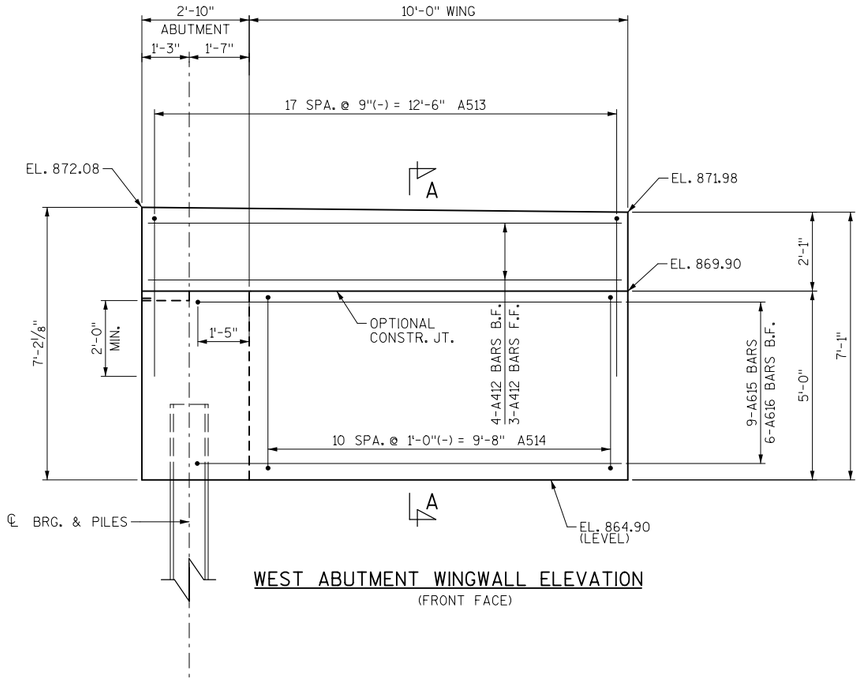
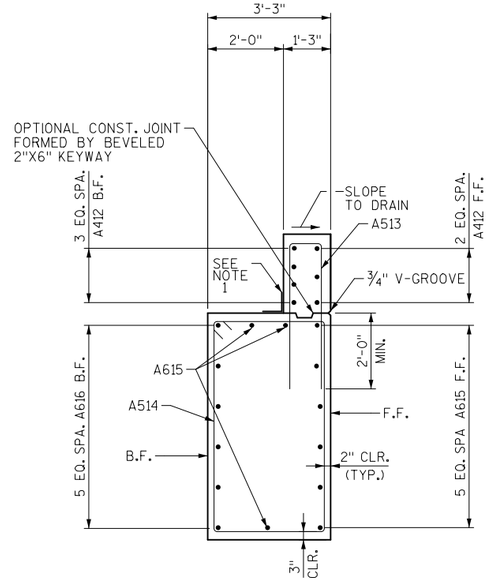
STATE PROJECT NUMBER

1060-38-71



WEST ABUTMENT WINGWALL ELEVATION

(FRONT FACE)



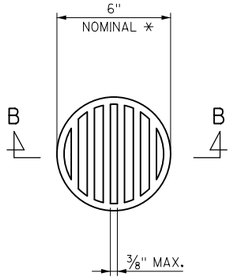
SECTION A-A

BILL OF BARS

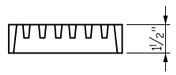
BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	742# COATED 4492# UNCOATED LOCATION
A401		70	5'-9"	X			TOP VERTICAL-U
A402		4	31'-8"				TOP HORIZONTAL
A403		4	38'-6"				TOP HORIZONTAL
A504		70	6'-5"	X			TOP VERTICAL-U
A505		88	14'-6"	X			MAIN STIRRUP
A606		4	32'-8"				TOP HORIZONTAL
A607		4	38'-6"				TOP HORIZONTAL
A808		8	34'-10"				MAIN HORIZONTAL
A809		8	39'-8"	X			MAIN HORIZONTAL
A410		10	28'-0"	X			PILE SPIRAL
A411		20	2'-3"				PILE VERTICAL
A412	X	7	12'-6"				WING TOP HORIZONTAL
A513	X	18	9'-0"	X			WING VERTICAL-U
A514	X	11	15'-8"	X			WING STIRRUP
A615	X	9	12'-6"				WING HORIZONTAL
A616	X	6	12'-1"	X			WING HORIZONTAL
A417	X	8	4'-4"				MEDIAN HORIZONTAL
A418	X	5	10'-0"	X			MEDIAL VERTCAL-U

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

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



NOTE: ORIENT SHIELD SO SLOTS ARE VERTICAL.



SECTION B-B

* NOTE: DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THE SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

COST OF RODENT SHIELD IS INCLUDED IN THE COST OF PIPE-UNDERDRAIN WRAPPED 6-INCH.

RODENT SHIELD

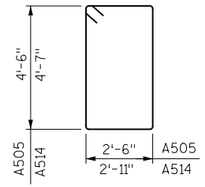
NOTES

1. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON THE BACK FACE OF THE ABUTMENT AND WING.

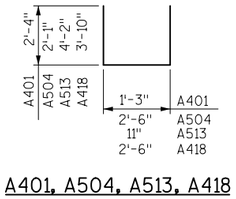
LEGEND

F.F. DENOTES FRONT FACE

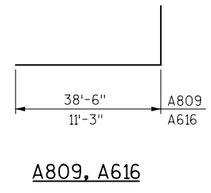
B.F. DENOTES BACK FACE



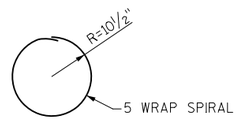
A505, A514



A401, A504, A513, A418



A809, A616



A410

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-342

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WEST ABUTMENT DETAILS

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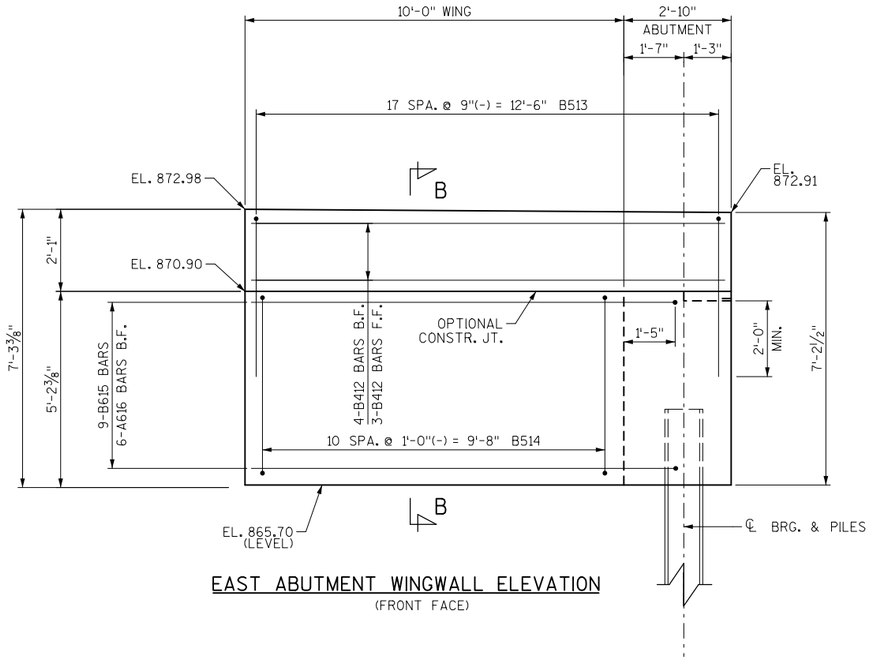
FILE= 084040_B67O342_07WESTABDT.DGN

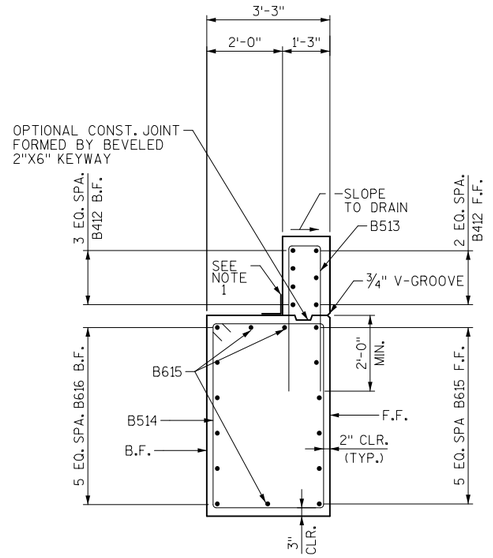
SCALE = 1:4

STATE PROJECT NUMBER

1060-38-71



EAST ABUTMENT WINGWALL ELEVATION
(FRONT FACE)



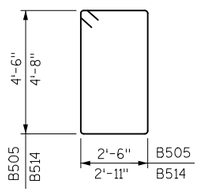
SECTION B-B

BILL OF BARS

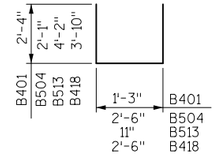
BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	744 # COATED 5155 # UNCOATED LOCATION
B401		70	5'-9"	X			TOP VERTICAL-U
B402		4	31'-8"				TOP HORIZONTAL
B403		4	38'-8"				TOP HORIZONTAL
B504		70	6'-5"	X			TOP VERTICAL-U
B505		88	14'-6"	X			MAIN STIRRUP
B606		10	32'-8"				TOP HORIZONTAL
B607		10	38'-6"				TOP HORIZONTAL
B808		8	34'-10"				MAIN HORIZONTAL
B809		8	39'-8"	X			MAIN HORIZONTAL
B410		11	28'-0"	X			PILE SPIRAL
B411		22	2'-3"				PILE VERTICAL
B412	X	7	12'-6"				WING TOP HORIZONTAL
B513	X	18	9'-0"	X			WING VERTICAL-U
B514	X	11	15'-10"	X			WING STIRRUP
B615	X	9	12'-6"				WING HORIZONTAL
B616	X	6	12'-1"	X			WING HORIZONTAL
B417	X	8	4'-4"				MEDIAN HORIZONTAL
B418	X	5	10'-0"	X			MEDIAL VERTCAL-U

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

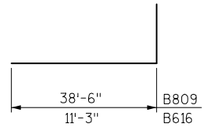
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



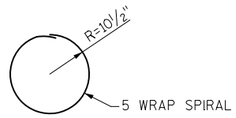
B505, B514



B401, B504, B513, B418



B809, B616



B410

NOTES

1. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON THE BACK FACE OF THE ABUTMENT AND WING.

LEGEND

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-342

DRAWN BY WMN | PLANS CK'D. WJZ

EAST ABUTMENT DETAILS

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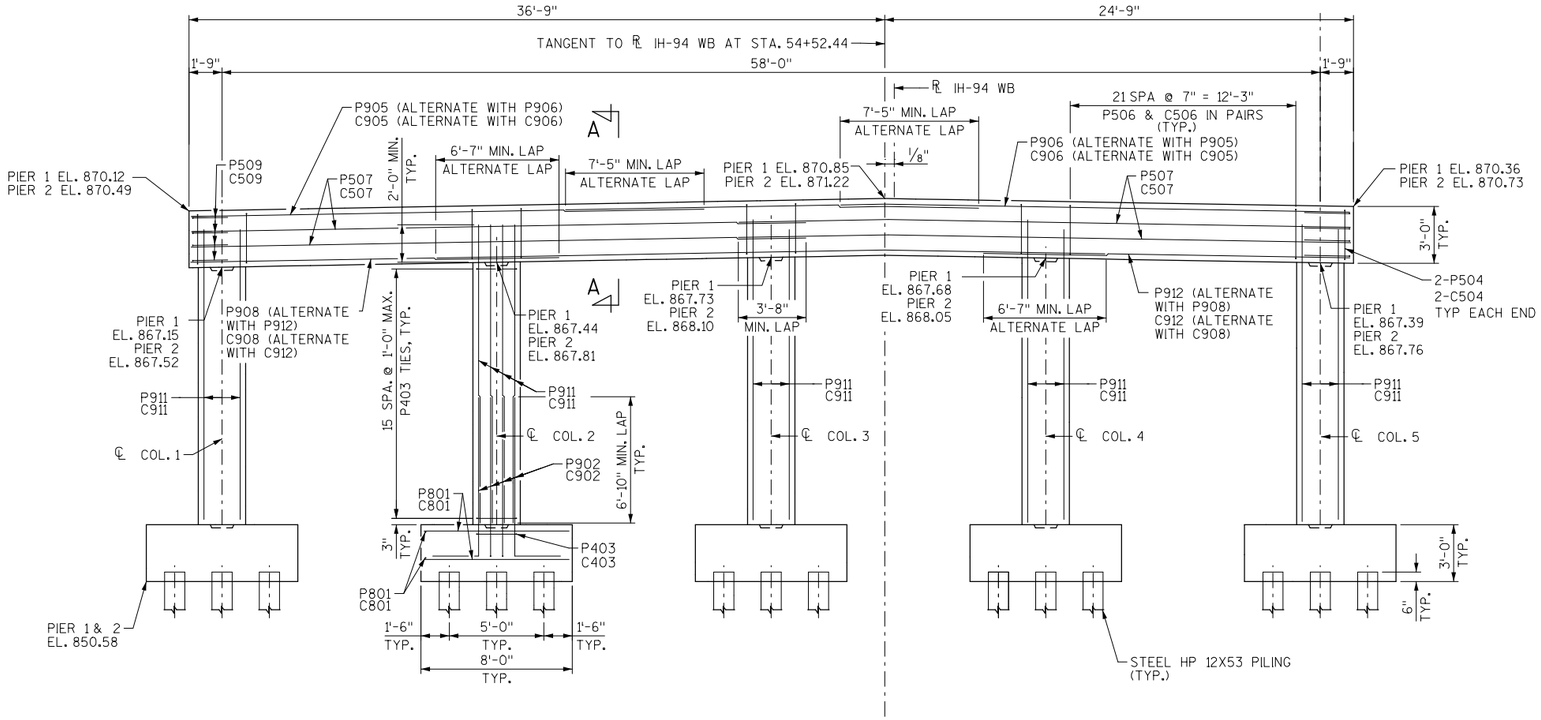
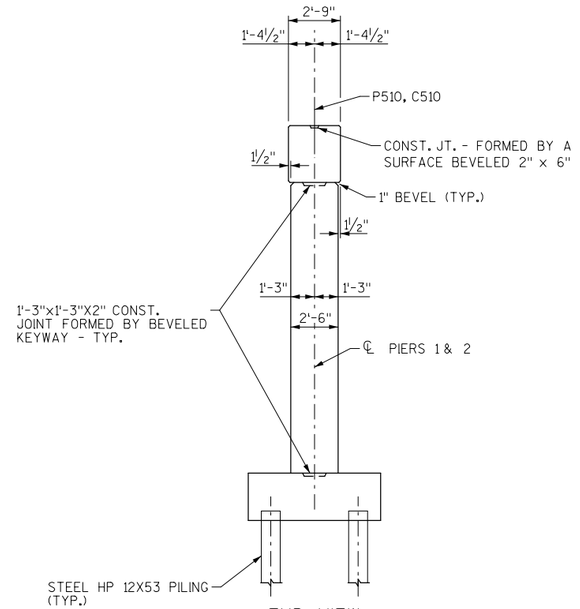
STATE PROJECT NUMBER

1060-38-71



ELEVATION

(LOOKING EAST)

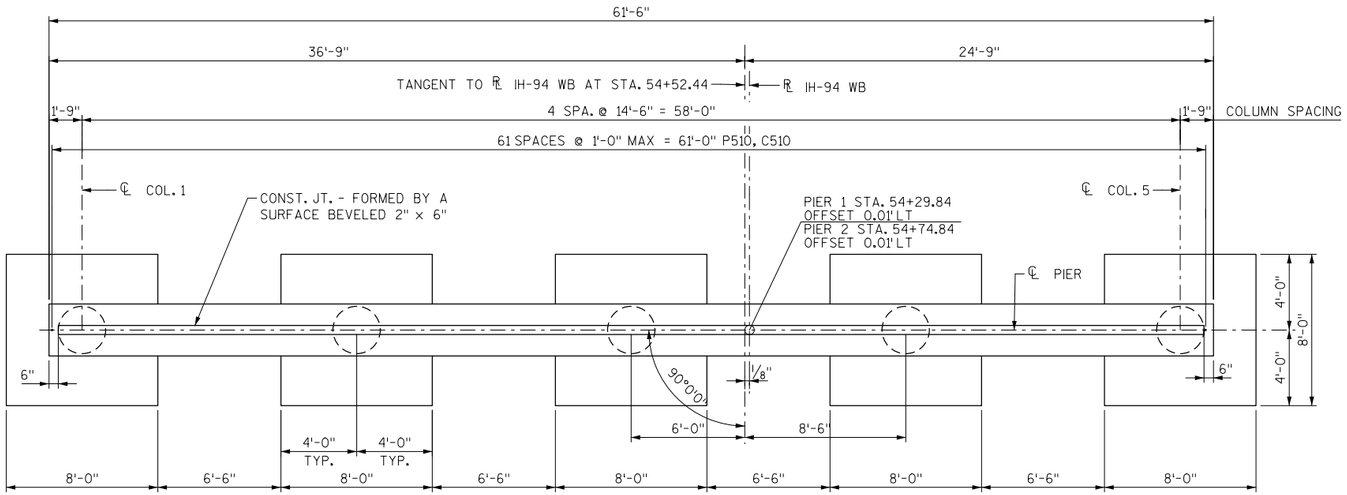


END VIEW

(LOOKING NORTH)

PLACE PIERS ON STEEL HP 12X53 PILING WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS/PILE AT PIERS AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

N



PLAN

NOTES: PXXX BARS DENOTE PIER 1 BARS.

CXXX BARS DENOTE PIER 2 BARS.

8

8

NO.	DATE	REVISION	BY

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STRUCTURE B-67-342

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PIERS 1 & 2

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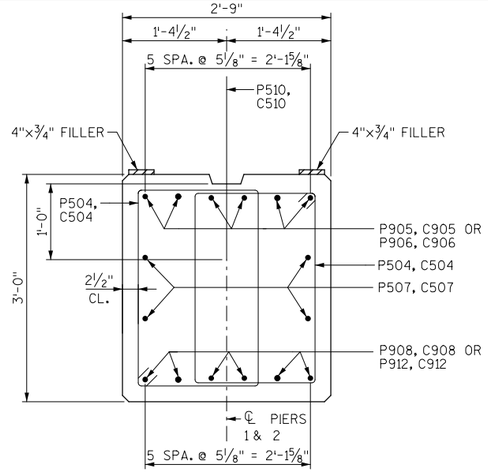
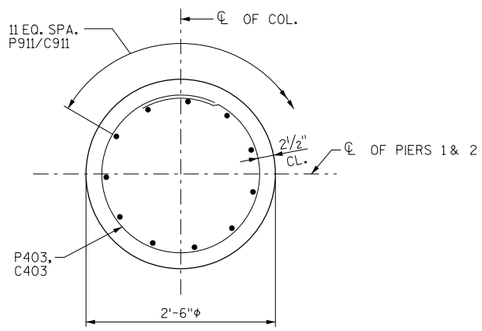
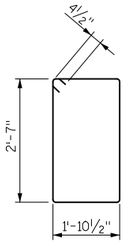


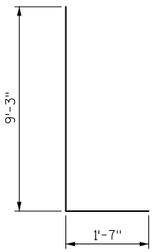
SECTION A-A



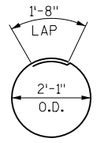
TYPICAL SECTION THRU COLUMN



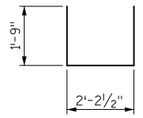
P504 & C504



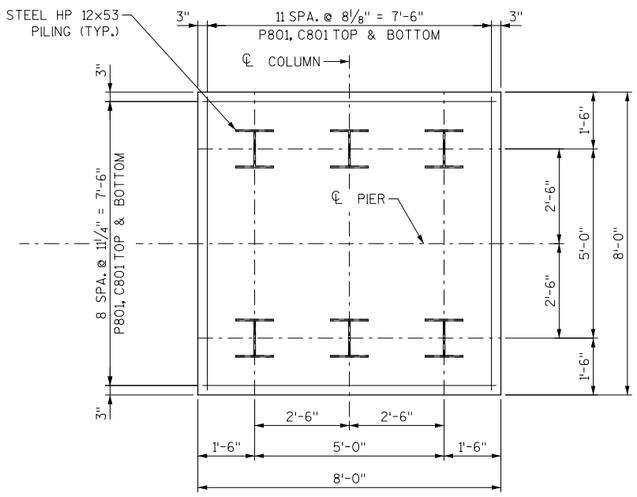
P902 & C902



P403 & C403



P509 & C509



FOOTING PLAN

BILL OF BARS - PIER 1

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	10,485 # COATED 4,299 # UNCOATED LOCATION
P801		210	7'-8"				FOOTING-HORIZ.
P902	X	55	10'-7"	X			FOOTING DOWELS - COLUMN VERT
P403	X	85	8'-3"	X			COLUMN STIRRUPS
P504	X	180	9'-8"	X			CAP STIRRUPS
P905	X	6	27'-1"				CAP-HORIZ-TOP
P906	X	6	41'-7"				CAP-HORIZ-TOP
P507	X	8	32'-5"				CAP-HORIZ-SIDES
P908	X	6	19'-5"				CAP-HORIZ-BTM
P509	X	8	5'-6"	X			CAP-HORIZ-ENDS
P510	X	62	2'-0"				CAP DOWELS
P911	X	55	16'-0"				COLUMN VERT
P912	X	6	48'-5"				CAP-HORIZ-BTM

BILL OF BARS - PIER 2

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	10,547 # COATED 4,299 # UNCOATED LOCATION
C801		210	7'-8"				FOOTING-HORIZ.
C902	X	55	10'-7"	X			FOOTING DOWELS - COLUMN VERT
C403	X	85	8'-3"	X			COLUMN STIRRUPS
C504	X	180	9'-8"	X			CAP STIRRUPS
C905	X	6	27'-1"				CAP-HORIZ-TOP
C906	X	6	41'-7"				CAP-HORIZ-TOP
C507	X	8	32'-5"				CAP-HORIZ-SIDES
C908	X	6	19'-5"				CAP-HORIZ-BTM
C509	X	8	5'-6"	X			CAP-HORIZ-ENDS
C510	X	62	2'-0"				CAP DOWELS
C911	X	55	16'-4"				COLUMN VERT
C912	X	6	48'-5"				CAP-HORIZ-BTM

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

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

STATE PROJECT NUMBER

1060-38-71

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-342

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PIERS 1 & 2 DETAILS

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238

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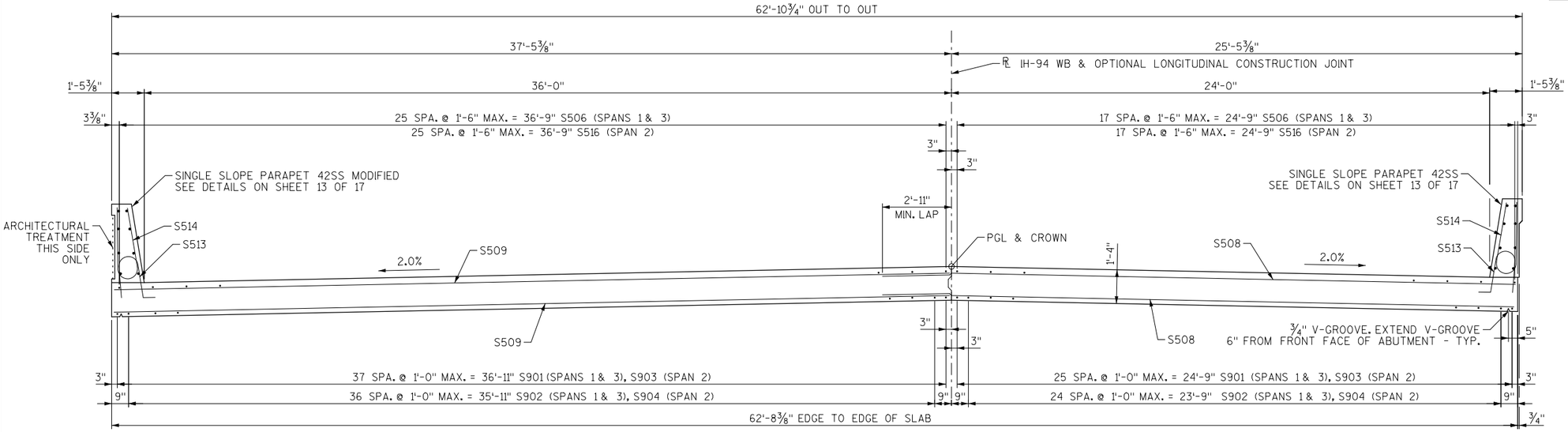
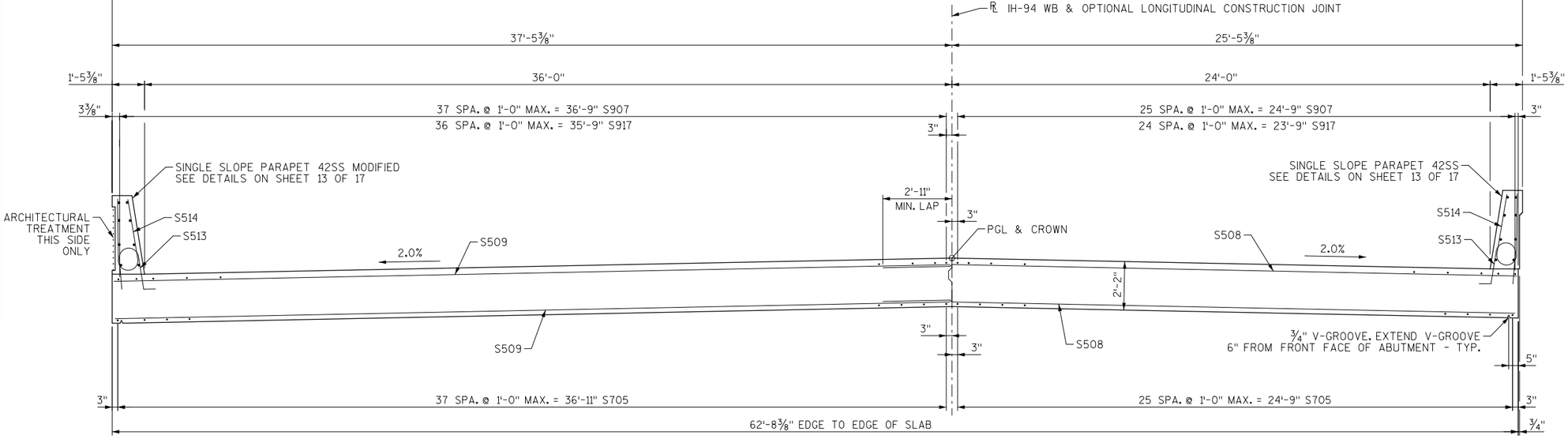
STATE PROJECT NUMBER

1060-38-71



CROSS SECTION THRU ROADWAY - IN SPAN

(LOOKING EAST)



CROSS SECTION THRU ROADWAY - AT PIER

(LOOKING EAST)

NOTES:

1. TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BARS CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.
2. ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).
3. PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS, THE ℄ OF PIERS AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND CROWN OR ℄.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-342

DRAWN BY WMN | PLANS CK'D. WJZ

SUPERSTRUCTURE

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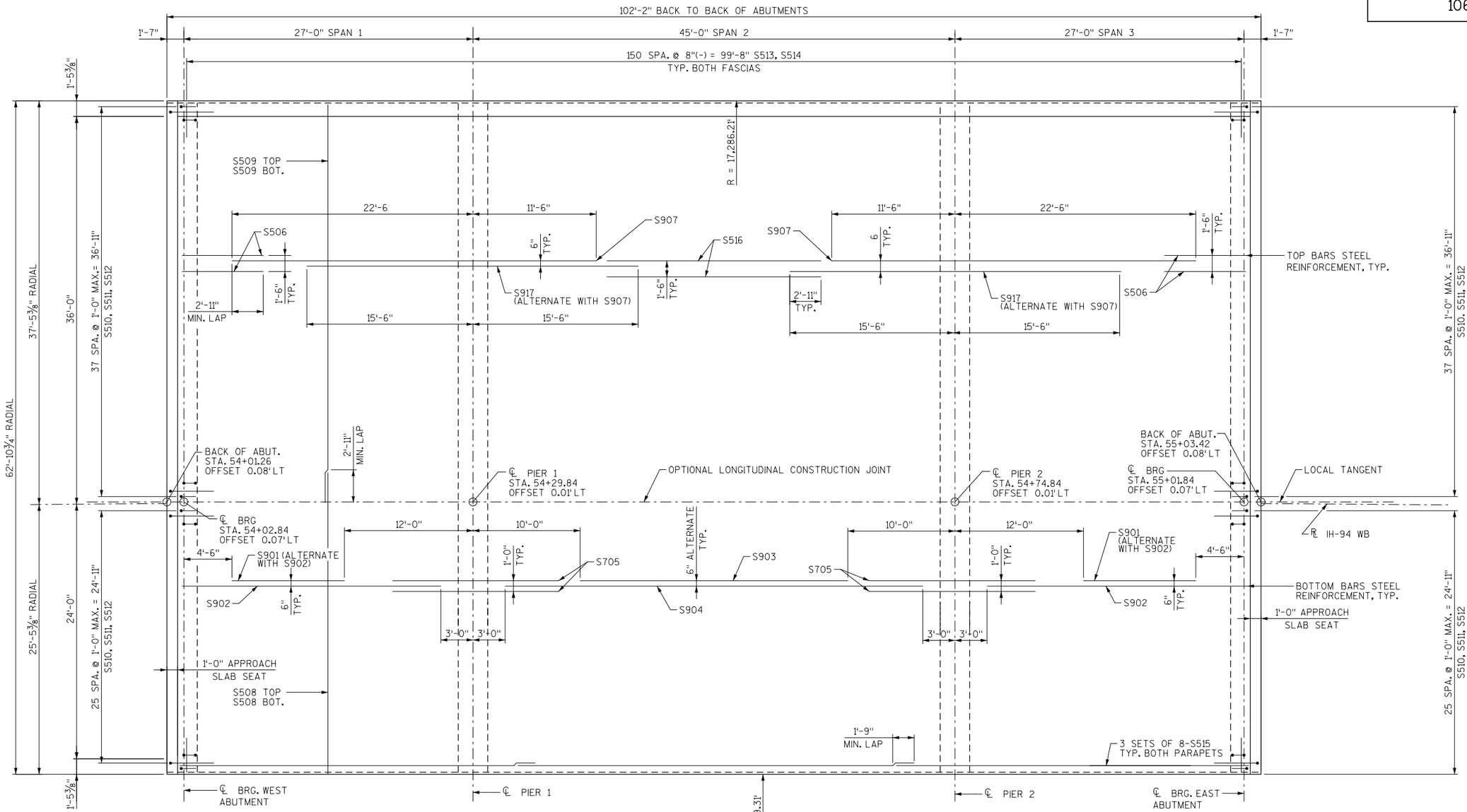
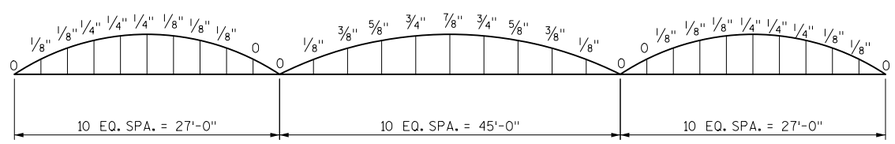
STATE PROJECT NUMBER
1060-38-71

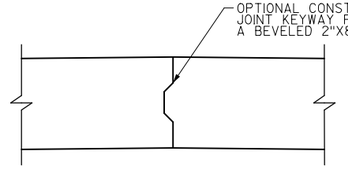


PLAN



CAMBER DIAGRAM

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEADLOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.



OPTIONAL LONGITUDINAL CONSTRUCTION JOINT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-342

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SUPERSTRUCTURE PLAN

SHEET 12 OF 17

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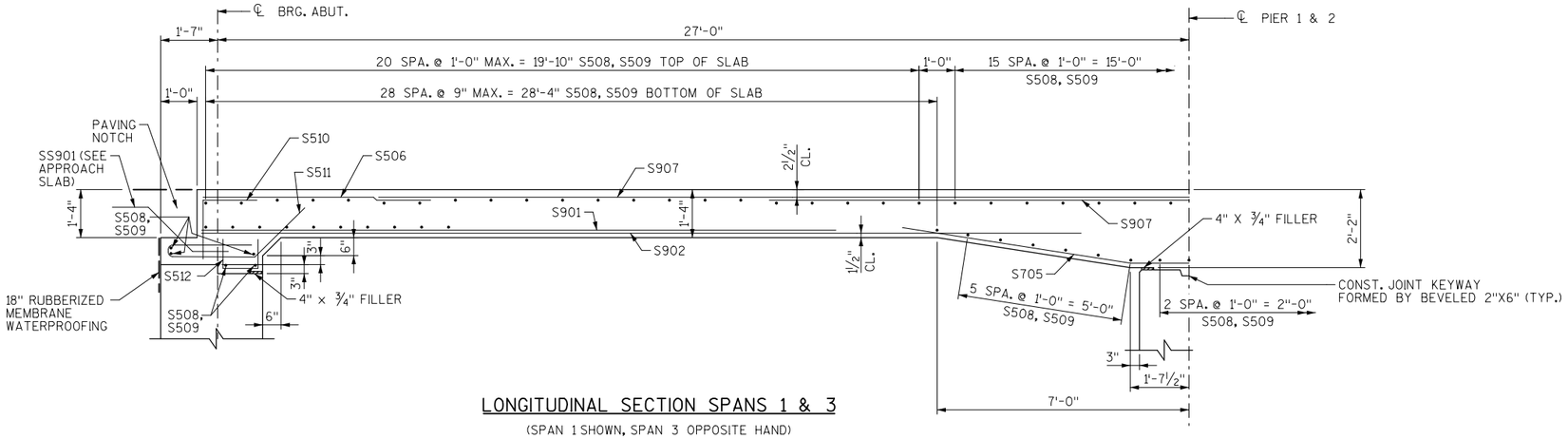
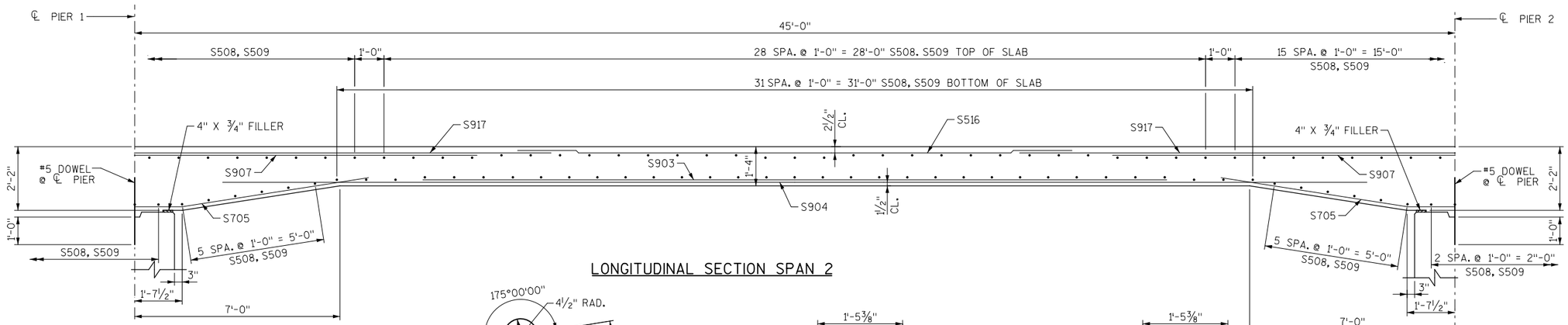


LONGITUDINAL SECTION SPANS 1 & 3

(SPAN 1 SHOWN, SPAN 3 OPPOSITE HAND)



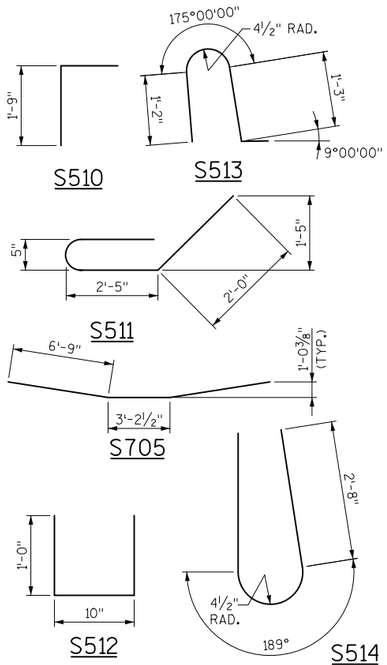
LONGITUDINAL SECTION SPAN 2

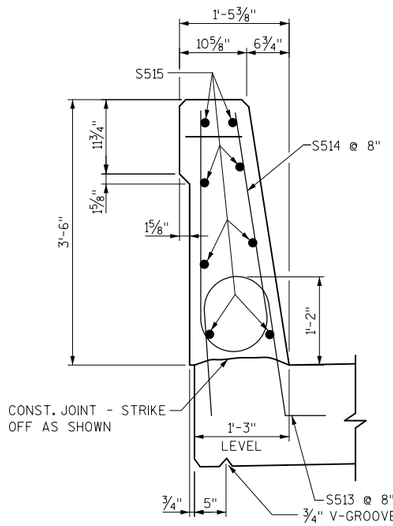
BILL OF BARS

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

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	85228# COATED 0# UNCOATED LOCATION
S901	X	128	10'-6"				SLAB LONG. BOT, SPAN 1& 3
S902	X	124	24'-5"				SLAB LONG. BOT, SPAN 1& 3
S903	X	64	25'-0"				SLAB LONG. BOT, SPAN 2
S904	X	62	39'-0"				SLAB LONG. BOT, SPAN 2
S705	X	128	16'-9"	X			SLAB LONG BOT, PIER
S506	X	88	7'-10"				SLAB LONG. TOP , SPAN 1& 3
S907	X	128	34'-0"				SLAB LONG. TOP, PIER
S508	X	233	28'-1"				SLAB TRANS.
S509	X	233	37'-2"				SLAB TRANS.
S510	X	128	3'-4"	X			SLAB @ ABUT. HAUNCH
S511	X	128	7'-0"	X			SLAB @ ABUT. HAUNCH
S512	X	128	2'-7"	X			SLAB @ ABUT. HAUNCH
S513	X	302	4'-5"	X			PARAPET VERTICAL
S514	X	302	6'-8"	X			PARAPET VERTICAL
S515	X	48	35'-0"				PARAPET HORIZONTAL
S516	X	44	19'-10"				SLAB LONG. TOP , SPAN 2
S917	X	124	31'-0"				SLAB LONG. TOP, PIER

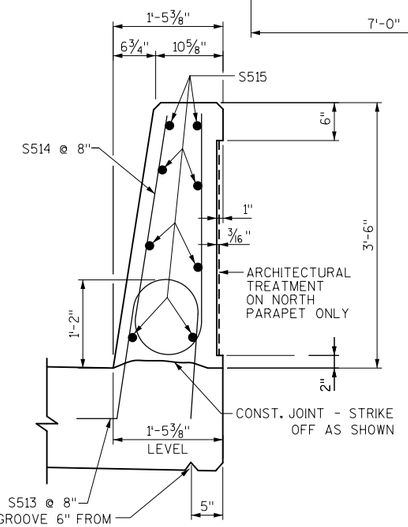
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.





SECTION THRU SOUTH PARAPET ON BRIDGE

(SINGLE SLOPE PARAPET 42SS)



SECTION THRU NORTH PARAPET ON BRIDGE

(SINGLE SLOPE PARAPET 42SS MODIFIED)

NOTES:

1. FOR SS901 BAR LOCATION AND BILL OF BARS, SEE SHEET 15.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-342

DRAWN BY WMN | PLANS CK'D. WJZ

SUPERSTRUCTURE DETAILS

SHEET 13 OF 17

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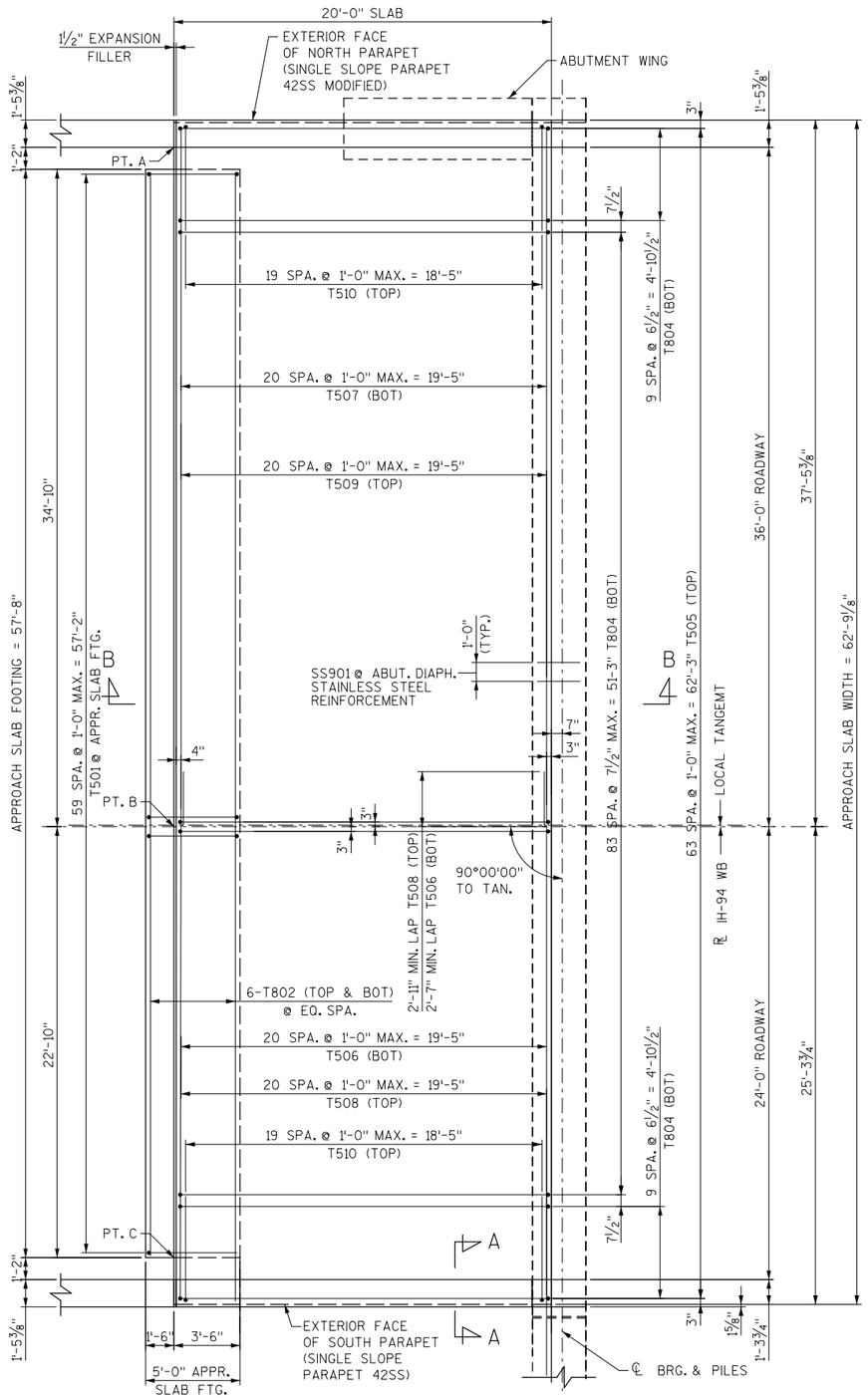


APPROACH SLAB PLAN

(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR OPPOSITE HAND)

N

BILL OF BARS

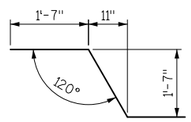
STAINLESS STEEL →

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	0# COATED 2,176# UNCOATED STAINLESS STEEL — LOCATION
SS901		128	5'-0"	X			ABUT. DIAPH. TO APPROACH SLAB

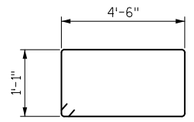
BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	25689# COATED 0# UNCOATED — LOCATION
T501	X	120	11'-10"	X			FOOTING STIRRUP
T802	X	24	57'-4"				FOOTING HORIZONTAL
T804	X	208	21'-5"	X			BOTTOM LONGITUDINAL
T505	X	128	19'-7"				TOP LONGITUDINAL
T506	X	42	27'-10"				BOTTOM TRANSVERSE
T507	X	42	37'-2"				BOTTOM TRANSVERSE
T508	X	42	28'-2"				TOP TRANSVERSE
T509	X	42	37'-2"				TOP TRANSVERSE
T510	X	80	4'-1"	X			TOP TRANSVERSE

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

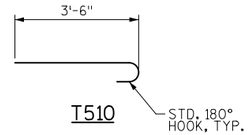
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



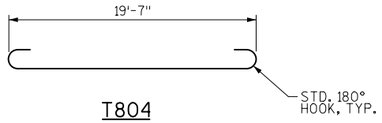
SS901



T501



T510



T804

POINT	WEST ABUT. APPROACH SLAB STATION	WEST ABUT. APPROACH SLAB ELEVATION	EAST ABUT. APPROACH SLAB STATION	EAST ABUT. APPROACH SLAB ELEVATION
A	53+82.26	871.88	55+22.42	873.03
B	53+82.26	872.60	55+22.42	873.75
C	53+82.26	872.12	55+22.42	873.27

NOTES:

1. FOR SOUTH PARAPET DETAILS ON APPROACH SLAB (SINGLE SLOPE PARAPET 42SS), SEE SHEET 15.
2. FOR NORTH PARAPET DETAILS ON APPROACH SLAB (SINGLE SLOPE PARAPET 42SS MODIFIED), SEE SHEET 16.

STATE PROJECT NUMBER

1060-38-71

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-342

DRAWN BY WMN | PLANS CK'D. WJZ

STRUCTURAL APPROACH SLABS

SHEET 14 OF 17

242

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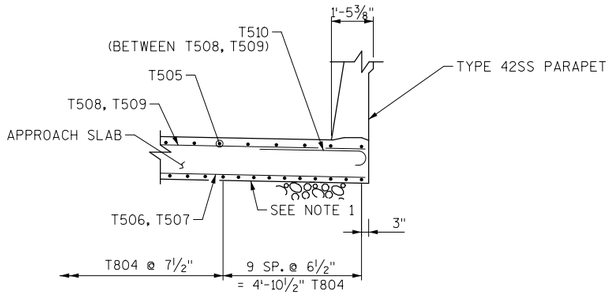
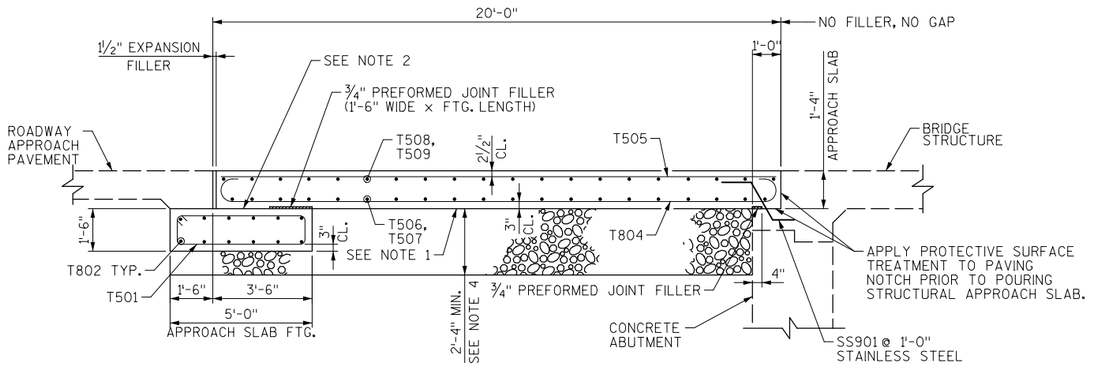
STATE PROJECT NUMBER

1060-38-71



SECTION A-A



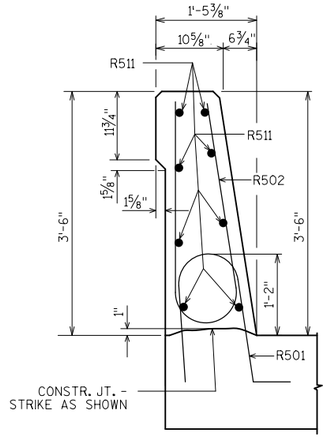
SECTION B-B THRU APPROACH SLAB

NOTES:
1. PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE, BENEATH SLAB.

2. STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER ENTIRE TOP OF FOOTING.

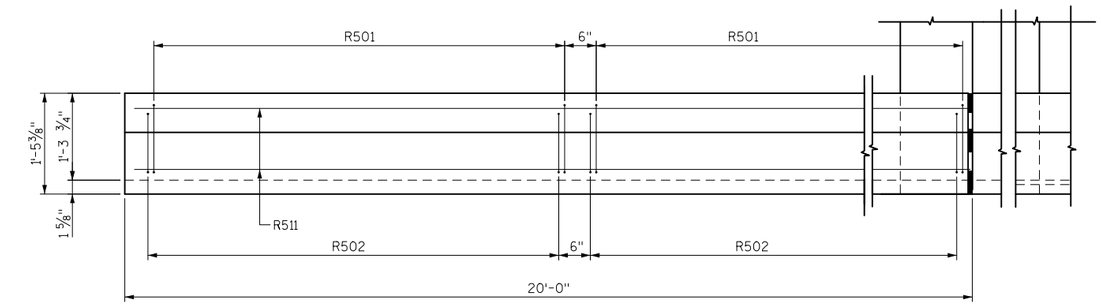
3. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTERLINE AT INSIDE FACE.

4. BELOW THE APPROACH SLAB FOOTING AND APPROACH SLAB, PLACE BASE AGGREGATE DENSE 1-1/4 INCH.



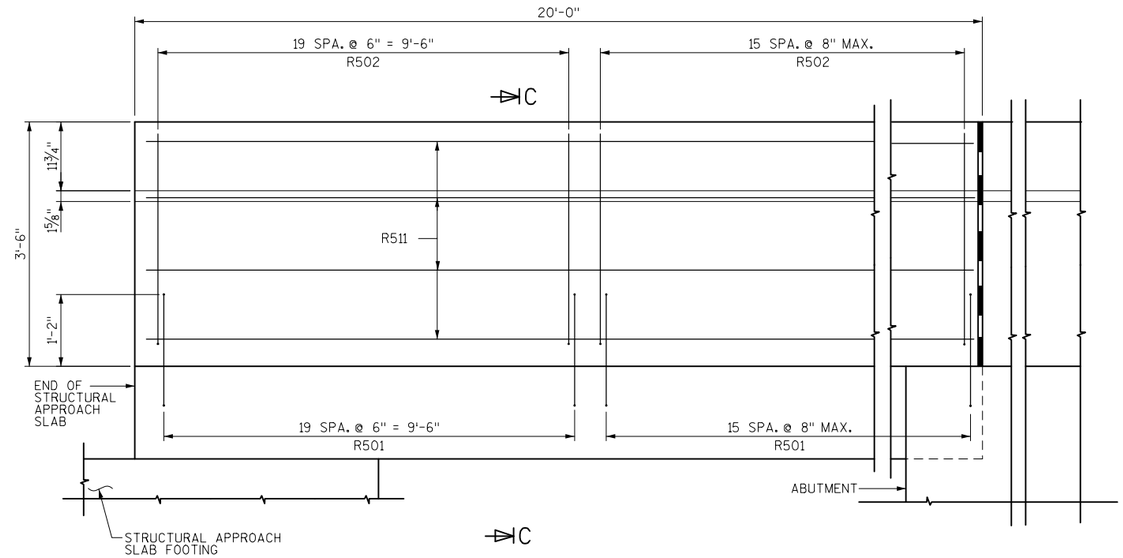
SECTION C-C

(SINGLE SLOPE PARAPET 42SS)



PLAN - SOUTH PARAPET

(SINGLE SLOPE PARAPET 42SS ON APPROACH SLAB)



TYPICAL OUTSIDE ELEVATION - SOUTH PARAPET

(SINGLE SLOPE PARAPET 42SS ON APPROACH SLAB)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-342

DRAWN BY WMN | PLANS CK'D. WJZ

STRUCTURAL APPROACH SLAB DETAILS

SHEET 15 OF 17

243

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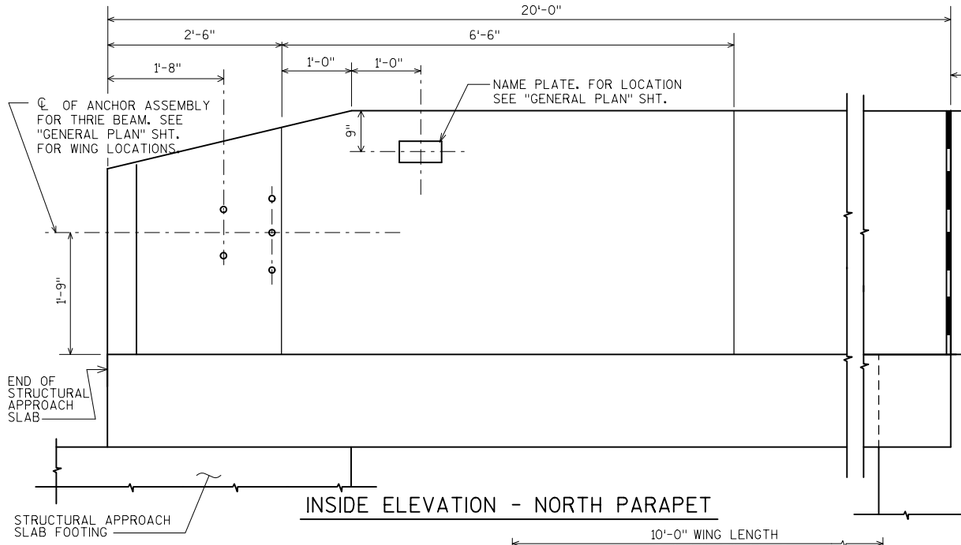
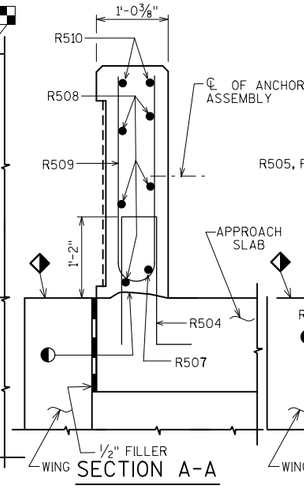
STATE PROJECT NUMBER

1060-38-71

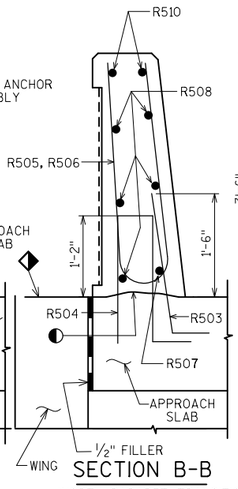


INSIDE ELEVATION - NORTH PARAPET



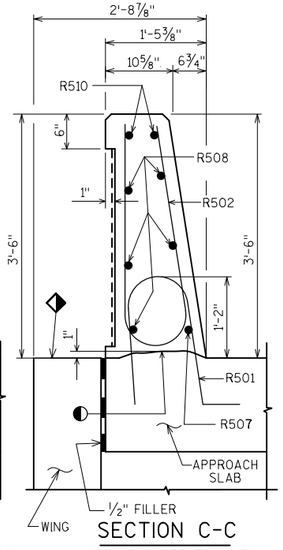
SECTION A-A

(NORTH PARAPET TRANSITION)



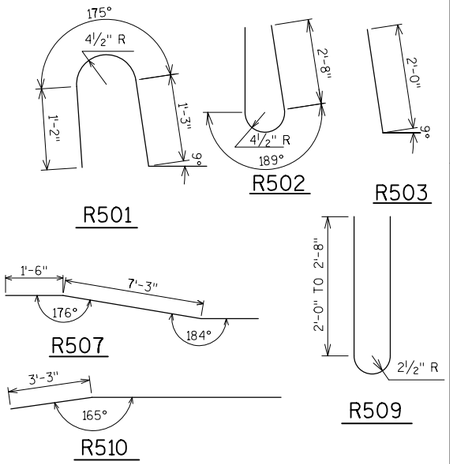
SECTION B-B

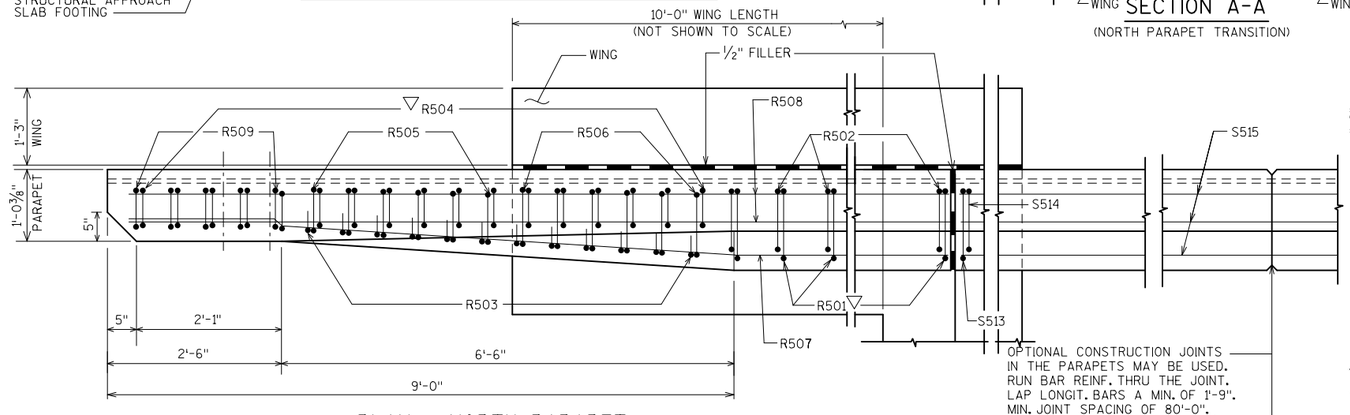
(NORTH PARAPET TRANSITION)



SECTION C-C

(NORTH PARAPET TRANSITION)





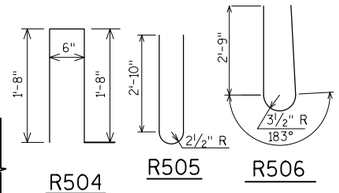
PLAN - NORTH PARAPET

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A ¾" - 'V' GROOVE. SEE ARCHITECTURAL DETAIL FOR ALLOWABLE JOINT LOCATIONS.

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◆ SLOPE FOR DRAINAGE

▽ R501 AND R504 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.



BILL OF BARS

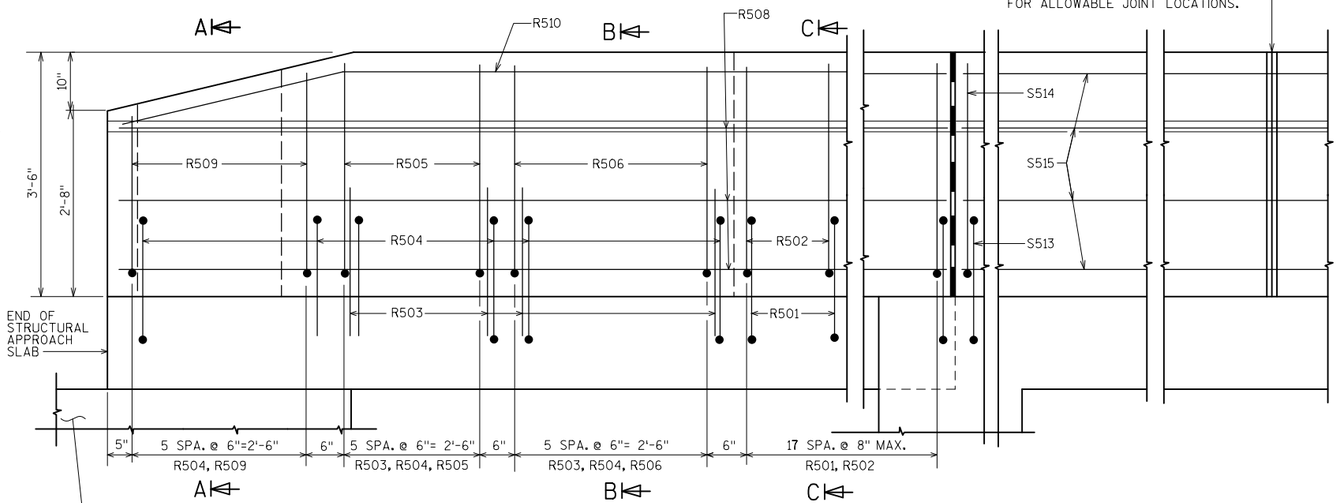
FOR STRUCTURAL APPROACH SLAB PARAPETS

BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BUNDLED	CUT BARS	2,688# COATED 0# UNCOATED LOCATION
R501	X	108	4'-5"	X			PARAPET VERTICAL
R502	X	108	6'-8"	X			PARAPET VERTICAL
R503	X	24	2'-9"	X			PARAPET VERTICAL
R504	X	36	4'-4"	X			PARAPET VERTICAL
R505	X	12	6'-5"	X			PARAPET VERTICAL
R506	X	12	6'-6"	X			PARAPET VERTICAL
R507	X	2	19'-6"	X			PARAPET HORIZONTAL
R508	X	26	19'-6"				PARAPET HORIZONTAL
R509	X	12	5'-5"	X		X	PARAPET VERTICAL
R510	X	4	19'-6"	X			PARAPET HORIZONTAL
R511	X	16	19'-7"				PARAPET HORIZONTAL

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

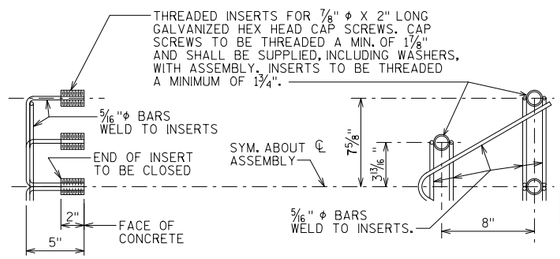
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

LENGTH SHOWN FOR CUT BARS IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.



TYPICAL OUTSIDE ELEVATION - NORTH PARAPET

(WING NOT SHOWN FOR CLARITY)



DETAIL OF ANCHOR ASSEMBLY

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

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

BAR SERIES TABLE

MARK	NO. REQ'D.	LENGTH
R509	2 SERIES OF 6	4'-9" TO 6'-1"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-342

DRAWN BY WMN | PLANS CK'D. WJZ

SINGLE SLOPE PARAPET 42SS MODIFIED

SHEET 16 OF 17

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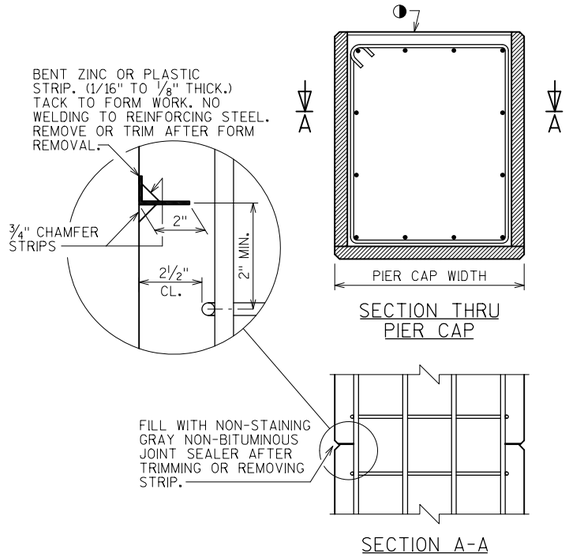
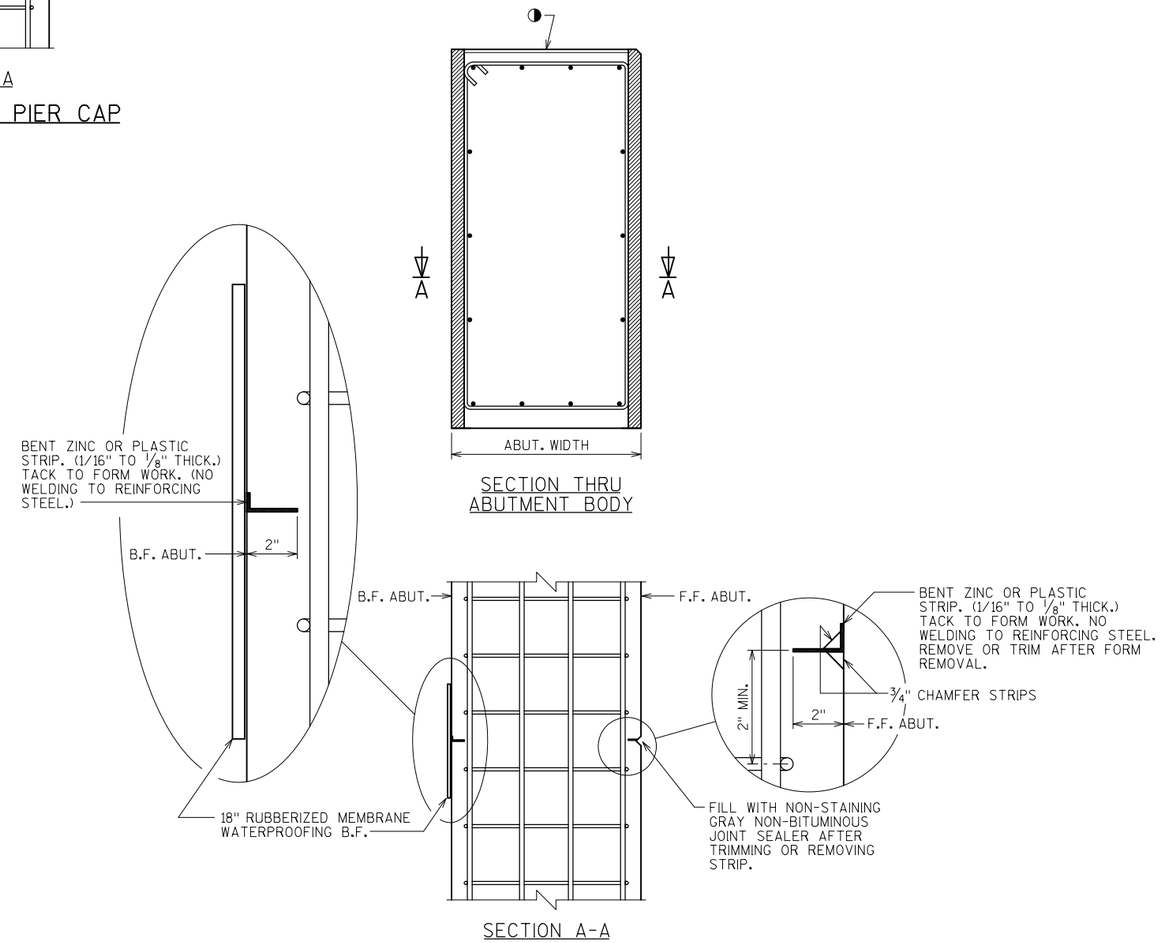
STATE PROJECT NUMBER
1060-38-71



SECTION THRU PIER CAP

SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT PIER CAP



SECTION THRU ABUTMENT BODY

SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

SAWCUTTING THE CONSTRUCTION JOINT IS NOT ALLOWED

◑ USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-342

DRAWN BY WMN | PLANS CK'D. WJZ

ALTERNATE CONSTRUCTION JOINT

SHEET 17 OF 17

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ALTJOINT
10-08

FILE= 084040_B670342_17ALTJOINT.DGN
SCALE = 1:2

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1 2 3 6

I-94 MEDIAN, STAGE 1, PART I

STATION	Real Station	Distance	AREA (SF) Cut	Salvaged/ Unusable Pavement Material	Fill	EBS	Incremental Vol (CY) (Unadjusted) Cut Note 1	Salvaged/ Unusable Pavement Material Note 2	FILL Note 3	EBS	Cumulative Vol (CY) Cut 1.00 Note 1	Expanded Fill 1.30	Expanded EBS Backfill 1.30 Note 5	Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
35+15.16	3515		26	19	33	3	-	-	-	-	-	-	-	-	-
35+50.00	3550	35	26	19	34	3	34	25	43	3	34	53	4	3	-44
36+00.00	3600	50	26	19	33	3	48	35	62	5	81	128	11	7	-106
36+50.00	3650	50	27	19	27	3	49	35	56	5	130	195	17	10	-160
37+00.00	3700	50	29	20	24	3	52	37	48	5	182	253	24	15	-203
37+50.00	3750	50	30	21	29	3	55	38	49	5	236	311	31	19	-245
38+00.00	3800	50	31	22	32	3	57	40	56	6	293	378	38	23	-295
38+50.00	3850	50	33	22	38	3	59	41	65	6	353	457	46	28	-355
39+00.00	3900	50	34	23	45	3	61	42	77	6	414	551	54	33	-429
39+50.00	3950	50	35	24	43	4	64	43	81	6	478	649	62	38	-507
40+00.00	4000	50	37	24	40	4	67	44	76	7	544	741	71	44	-577
40+50.00	4050	50	36	24	48	4	67	45	81	7	612	840	80	49	-652
41+00.00	4100	50	35	24	22	4	66	44	65	7	678	917	88	54	-708
41+50.00	4150	50	38	25	16	4	68	45	36	7	746	956	97	60	-725
42+00.00	4200	50	42	27	11	4	75	48	25	7	820	981	107	66	-723
42+50.00	4250	50	43	27	8	4	79	50	17	8	899	995	117	72	-709
43+00.00	4300	50	42	27	5	4	78	50	12	8	977	1002	127	78	-688
43+50.00	4350	50	42	27	4	4	77	50	8	8	1054	1004	137	84	-663
44+00.00	4400	50	39	26	5	4	75	49	8	7	1129	1007	147	90	-639
44+50.00	4450	50	39	26	10	4	72	47	14	7	1202	1019	156	96	-625
45+00.00	4500	50	39	26	11	4	73	47	20	7	1274	1037	166	102	-619
45+50.00	4550	50	40	26	13	4	73	48	22	7	1347	1058	175	108	-615
46+00.00	4600	50	40	26	14	4	73	48	25	7	1421	1083	185	114	-614
46+50.00	4650	50	40	26	15	4	74	48	27	7	1495	1110	194	120	-615
47+00.00	4700	50	41	27	15	4	75	49	28	8	1570	1139	204	126	-617
47+50.00	4750	50	40	26	17	4	75	49	30	8	1645	1170	214	132	-622
48+00.00	4800	50	40	26	18	4	74	48	33	7	1719	1205	224	138	-631
48+50.00	4850	50	42	27	34	4	75	49	49	8	1795	1260	233	144	-660
49+00.00	4900	50	43	28	34	4	79	50	63	8	1873	1334	244	150	-705
49+50.00	4950	50	49	30	29	5	85	54	58	9	1958	1400	255	157	-740
49+65.65	4966	16	51	31	27	5	29	18	16	3	1987	1418	258	159	-747
49+90.65	4991	25	54	33	23	5	49	30	23	5	2036	1444	265	163	-754
50+00.00	5000	9	26	19	26	3	14	9	9	1	2050	1453	266	164	-758
50+15.65	5016	16	26	19	26	3	15	11	15	2	2065	1471	268	165	-772
50+50.00	5050	34	27	19	27	3	34	24	33	3	2099	1511	273	168	-803
51+00.00	5100	50	26	16	32	3	49	33	54	5	2148	1576	279	172	-852
51+50.00	5150	50	27	16	36	3	49	30	63	5	2197	1653	286	176	-910
52+00.00	5200	50	27	16	40	3	49	30	70	5	2246	1739	292	180	-976
52+50.00	5250	50	26	16	45	3	49	30	78	5	2295	1835	298	184	-1053
52+54.28	5254	4	26	16	45	3	4	3	7	0	2299	1844	299	184	-1061
52+79.28	5279	25	25	16	48	3	24	15	43	2	2323	1897	302	186	-1105
53+00.00	5300	21	25	16	50	3	19	12	37	2	2342	1943	305	187	-1144
53+04.28	5304	4	25	16	50	3	4	2	8	0	2346	1953	305	188	-1152
53+36.49	5336	32	27	17	46	3	31	19	57	3	2378	2025	309	190	-1212
53+50.00	5350	14	28	17	45	3	14	8	23	1	2391	2053	311	191	-1235
53+81.34	5381	31	30	18	43	3	33	20	51	3	2425	2116	315	194	-1284
54+00.00	5400	19		BEGIN STRUCTURE			-	-	-	2	2425	2114	318	196	-1282
54+50.00	5450	50	-	-		-	-	-	-	-	2425	2114	318	196	-1282
55+00.00	5500	50		END STRUCTURE			-	-	-	-	2425	2114	318	196	-1282

I-94 MEDIAN, STAGE 1, PART II

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)				Mass Ordinate
			Cut		Fill	EBS	Cut	Salvaged/ Unusable Pavement Material	FILL	EBS	Cut	Expanded Fill	Expanded EBS Backfill	Reduced EBS In Fill	
			Salvaged/ Unusable Pavement Material				Note 1	Note 2	Note 3		1.00 Note 1	1.30	1.30 Note 5	0.80 Note 7	Note 8
55+21.81	5522	22	27	16	47	3	-	-	-	2	2425	2112	321	197	-1280
55+50.00	5550	28	24	15	51	2	27	16	51	3	2451	2175	324	199	-1333
55+66.83	5567	17	24	15	52	2	15	9	32	1	2466	2215	326	201	-1368
55+98.70	5599	32	23	15	54	2	28	17	63	3	2494	2294	330	203	-1436
56+00.00	5600	1	23	15	54	2	1	1	3	0	2495	2297	330	203	-1439
56+23.70	5624	24	23	14	53	2	20	13	47	2	2515	2356	332	205	-1490
56+48.70	5649	25	23	14	52	2	21	13	49	2	2536	2417	335	206	-1544
56+50.00	5650	1	23	14	52	2	1	1	3	0	2537	2420	335	206	-1547
57+00.00	5700	50	22	14	49	2	42	26	94	4	2579	2537	341	210	-1648
57+50.00	5750	50	21	13	54	2	40	26	95	4	2619	2657	346	213	-1754
58+00.00	5800	50	21	14	56	2	39	25	102	4	2658	2785	351	216	-1868
58+50.00	5850	50	22	14	58	2	40	26	106	4	2698	2918	356	219	-1987
59+00.00	5900	50	25	16	59	3	44	28	108	4	2742	3054	362	223	-2106
59+50.00	5950	50	24	15	61	2	46	29	111	5	2788	3194	368	226	-2229
60+00.00	6000	50	23	14	64	2	44	27	116	4	2832	3341	374	230	-2359
60+50.00	6050	50	23	14	58	2	42	27	113	4	2874	3484	379	233	-2486
61+00.00	6100	50	22	14	52	2	42	26	102	4	2915	3612	384	237	-2599
61+50.00	6150	50	22	14	50	2	41	26	95	4	2956	3731	390	240	-2703
62+00.00	6200	50	39	26	38	4	57	37	82	6	3013	3831	397	244	-2784
62+50.00	6250	50	39	25	34	4	72	47	67	7	3085	3911	407	250	-2838
63+00.00	6300	50	38	25	31	4	71	47	60	7	3156	3982	416	256	-2885
63+50.00	6350	50	39	25	27	4	71	46	54	7	3227	4045	425	261	-2924
64+00.00	6400	50	40	26	8	4	73	48	33	7	3300	4080	434	267	-2934
64+50.00	6450	50	41	27	8	4	76	49	15	8	3375	4092	444	273	-2919
65+00.00	6500	50	44	28	6	4	79	50	13	8	3454	4101	455	280	-2899
65+50.00	6550	50	43	28	3	4	81	51	8	8	3535	4104	465	286	-2873
66+00.00	6600	50	45	29	0	5	82	52	3	8	3617	4099	476	293	-2838
66+50.00	6650	50	44	28	1	4	82	52	1	8	3699	4091	486	299	-2800
67+00.00	6700	50	44	28	2	4	81	51	3	8	3780	4087	497	306	-2767
67+50.00	6750	50	41	27	4	4	78	50	6	8	3858	4086	507	312	-2738
68+00.00	6800	50	40	26	6	4	75	49	9	7	3933	4090	517	318	-2715
68+50.00	6850	50	38	25	7	4	72	47	12	7	4005	4097	526	324	-2698
69+00.00	6900	50	38	25	7	4	71	46	13	7	4075	4106	535	329	-2683
69+50.00	6950	50	38	25	7	4	70	46	13	7	4145	4115	544	335	-2668
70+00.00	7000	50	37	25	7	4	70	46	13	7	4215	4125	553	341	-2654
70+50.00	7050	50	36	24	11	4	68	45	17	7	4283	4140	562	346	-2646
71+00.00	7100	50	37	24	14	4	67	45	24	7	4350	4163	571	351	-2647
71+50.00	7150	50	36	24	17	4	67	45	29	7	4417	4194	580	357	-2656
72+00.00	7200	50	35	24	54	4	66	44	66	7	4483	4273	588	362	-2712
72+50.00	7250	50	36	24	33	4	66	44	80	7	4548	4370	597	367	-2788
73+00.00	7300	50	36	24	36	4	66	44	63	7	4615	4446	605	373	-2842
73+50.00	7350	50	37	24	34	4	67	45	65	7	4682	4523	614	378	-2896
74+00.00	7400	50	36	24	34	4	68	45	63	7	4749	4598	623	383	-2949
74+50.00	7450	50	34	23	33	3	65	44	62	7	4815	4671	631	389	-3000
75+00.00	7500	50	32	22	33	3	61	42	61	6	4876	4744	639	393	-3054
75+50.00	7550	50	30	21	32	3	57	40	60	6	4933	4816	647	398	-3108
76+00.00	7600	50	28	20	31	3	54	38	58	5	4988	4886	654	402	-3162
76+50.00	7650	50	27	19	32	3	51	37	58	5	5039	4957	660	406	-3219
77+00.00	7700	50	26	19	32	3	49	36	60	5	5088	5029	667	410	-3278
77+50.00	7750	50	26	19	33	3	48	35	61	5	5136	5103	673	414	-3339
78+00.00	7800	50	20	16	31	2	42	32	59	4	5178	5176	679	418	-3401
78+29.01	7829	29	20	16	31	2	21	17	33	2	5199	5217	681	419	-3438
						Column totals	5199	3420	4432	524					

I-94 EB, STAGE 2

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)				Mass Ordinate
			Cut	Salvaged / Unusable Pavement Material	Fill	EBS	Cut	Salvaged / Unusable Pavement Material	FILL	EBS	Cut	Expanded Fill	Expanded EBS Backfill	Reduced EBS In Fill	
							Note 1	Note 2	Note 3		1.00 Note 1	1.30	1.30 Note 5	0.80 Note 7	Note 8
48+45.65	4846		-	-	-	-	-	-	-	-	-	-	-	-	-
48+50.00	4850	4	9	-	-	-	1	-	-	-	1	-	-	-	1
49+00.00	4900	50	4	-	13	-	12	-	12	-	12	16	-	-	-4
49+50.00	4950	50	4	-	51	-	7	-	59	-	19	93	-	-	-74
49+65.65	4966	16	3	-	60	-	2	-	32	-	21	135	-	-	-113
49+90.65	4991	25	3	-	44	-	3	-	48	-	24	197	-	-	-173
50+00.00	5000	9	38	19	10	4	7	3	9	1	31	209	1	1	-181
50+15.65	5016	16	38	19	8	4	22	11	5	2	53	213	4	2	-174
50+50.00	5050	34	36	18	10	4	47	23	12	5	100	223	10	6	-161
51+00.00	5100	50	85	46	8	9	112	59	17	11	212	234	24	15	-119
51+50.00	5150	50	88	47	6	9	160	86	13	16	372	235	45	28	-45
52+00.00	5200	50	79	42	7	8	154	83	12	15	526	234	65	40	28
52+50.00	5250	50	71	39	15	7	139	75	20	14	664	246	83	51	79
52+54.28	5254	4	70	38	15	7	11	6	2	1	676	248	85	52	83
52+79.28	5279	25	67	36	10	7	63	34	12	6	739	256	93	57	103
53+00.00	5300	21	63	34	12	6	50	27	8	5	789	262	99	61	120
53+04.28	5304	4	62	34	13	6	10	5	2	1	799	263	101	62	123
53+36.58	5337	32	41	24	37	4	62	35	30	6	860	296	109	67	117
53+50.00	5350	13	38	22	43	4	20	11	20	2	880	320	111	68	102
53+81.60	5382	32	13	10	40	1	30	19	49	3	910	380	115	71	53
54+00.00	5400	18		BEGIN STRUCTURE			-	-	-	1	910	379	116	72	54
54+50.00	5450	50	-	-		-	-	-	-	-	910	379	116	72	54
55+00.00	5500	50		END STRUCTURE			-	-	-	-	910	379	116	72	54
55+21.56	5522	22	-	-	175	-	-	-	-	-	910	379	116	72	54
55+50.00	5550	28	10	8	60	1	5	4	124	1	916	540	117	72	-105
55+66.58	5567	17	11	8	60	1	7	5	37	1	922	587	118	73	-151
56+00.00	5600	33	40	23	64	4	32	20	77	3	954	683	122	75	-235
56+50.00	5650	50	38	22	85	4	72	42	138	7	1026	855	131	81	-376
57+00.00	5700	50	37	22	75	4	70	40	147	7	1096	1039	140	86	-531
57+50.00	5750	50	37	22	66	4	69	40	130	7	1165	1201	149	92	-664
58+00.00	5800	50	38	22	52	4	70	40	109	7	1234	1335	158	98	-769
58+50.00	5850	50	39	23	42	4	72	41	87	7	1306	1440	168	103	-844
59+00.00	5900	50	43	24	31	4	76	44	68	8	1382	1520	178	109	-891
59+50.00	5950	50	46	26	27	5	82	47	54	8	1465	1581	188	116	-917
60+00.00	6000	50	53	29	28	5	92	51	51	9	1556	1638	200	123	-933
60+50.00	6050	50	59	33	24	6	104	57	48	10	1660	1689	214	132	-938
61+00.00	6100	50	67	37	7	7	117	64	29	12	1777	1715	229	141	-911
61+50.00	6150	50	72	39	7	7	128	70	13	13	1905	1719	246	151	-856
62+00.00	6200	50	106	56	0	11	165	88	7	16	2070	1711	267	164	-772
					Column totals		2070	1131	1481	205					

I-94 WB, STAGE 3

STATION	Real Station	Distance	AREA (SF) Cut	Salvaged/ Unusable Pavement Material	Fill	EBS	Incremental Vol (CY) (Unadjusted) Cut Note 1	Salvaged/ Unusable Pavement Material Note 2	FILL Note 3	EBS	Cumulative Vol (CY) Cut 1.00 Note 1	Expanded Fill 1.30	Expanded EBS Backfill 1.30 Note 5	Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
51+00.00	5100		73	-	1	-	-	-	-	-	-	-	-	-	-
51+50.00	5150	50	71	-	8	-	133	-	8	-	133	10	-	-	123
52+00.00	5200	50	70	-	3	-	130	-	10	-	264	24	-	-	240
52+50.00	5250	50	62	-	6	-	122	-	9	-	386	35	-	-	351
53+00.00	5300	50	57		5		110	-	10	-	495	48	-	-	447
53+37.42	5337	37	45	-	29	-	70	-	24	-	566	79	-	-	486
53+50.00	5350	13	40	-	28	-	20	-	13	-	586	97	-	-	489
53+82.15	5382	32	-	-	67	-	24	-	56	-	610	170	-	-	440
54+00.00	5400	18		BEGIN STRUCTURE			-	-	-	-	610	170	-	-	440
54+50.00	5450	50	-	-		-	-	-	-	-	610	170	-	-	440
55+00.00	5500	50		END STRUCTURE			-	-	-	-	610	170	-	-	440
55+22.52	5523	23	22	-	100	-	-	-	-	-	610	170	-	-	440
55+50.00	5550	27	22	-	112	-	23	-	108	-	632	310	-	-	322
55+67.51	5568	18	40	-	84	-	20	-	64	-	652	393	-	-	259
56+00.00	5600	32	42	-	74	-	49	-	96	-	702	517	-	-	184
56+25.15	5625	25	41	-	66	-	39	-	65	-	740	602	-	-	138
56+50.00	5650	25	40	-	71	-	38	-	63	-	778	684	-	-	94
57+00.00	5700	50	40	-	31	-	74	-	94	-	852	806	-	-	46
57+50.00	5750	50	42	-	30	-	76	-	56	-	928	879	-	-	49
58+00.00	5800	50	48	-	10	-	83	-	37	-	1011	927	-	-	84
58+50.00	5850	50	49	-	10	-	90	-	18	-	1101	950	-	-	150
59+00.00	5900	50	53	-	5	-	94	-	14	-	1194	969	-	-	226
59+50.00	5950	50	57	-	4	-	101	-	9	-	1296	980	-	-	315
59+50.46	5950	0	57	-	4	-	1	-	0	-	1297	980	-	-	316
59+75.46	5975	25	61	-	3	-	54	-	3	-	1351	984	-	-	367
60+00.00	6000	25	65	-	5	-	57	-	3	-	1408	989	-	-	419
60+50.00	6050	50	72	-	1	-	127	-	5	-	1535	996	-	-	539
61+00.00	6100	50	72	-	0	-	133	-	1	-	1668	997	-	-	671
61+20.46	6120	20	71	-	0	-	54	-	0	-	1723	997	-	-	725
61+50.00	6150	30	71	-	0	-	78	-	0	-	1801	997	-	-	803
61+75.00	6175	25	71	-	-	-	66	-	0	-	1867	997	-	-	869
					Column totals		1867	0	767	0					

I-94 MEDIAN, STAGE 4, PART I

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Salvaged / Unusable Pavement Material	AREA (SF) Fill	AREA (SF) EBS	Incremental Vol (CY) (Unadjusted) Cut Note 1	Incremental Vol (CY) (Unadjusted) Salvaged / Unusable Pavement Material Note 2	Incremental Vol (CY) (Unadjusted) FILL Note 3	Incremental Vol (CY) (Unadjusted) EBS	Cumulative Vol (CY) Cut 1.00 Note 1	Cumulative Vol (CY) Expanded Fill 1.30	Cumulative Vol (CY) Expanded EBS Backfill 1.30 Note 5	Cumulative Vol (CY) Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
35+15.16	3515		-	-	-	-	-	-	-	-	-	-	-	-	-
35+50.00	3550	35	18	-	-	-	11	-	-	-	11	-	-	-	11
36+00.00	3600	50	17	-	2	-	32	-	1	-	44	2	-	-	42
36+50.00	3650	50	16	-	10	-	30	-	10	-	74	15	-	-	59
37+00.00	3700	50	16	-	17	-	29	-	25	-	104	48	-	-	56
37+50.00	3750	50	16	-	19	-	30	-	34	-	133	92	-	-	42
38+00.00	3800	50	18	-	18	-	32	-	35	-	165	137	-	-	28
38+50.00	3850	50	20	-	16	-	35	-	32	-	200	178	-	-	22
39+00.00	3900	50	23	-	13	-	39	-	26	-	239	212	-	-	27
39+50.00	3950	50	28	-	10	-	47	-	21	-	286	240	-	-	46
40+00.00	4000	50	33	-	8	-	56	-	17	-	342	262	-	-	80
40+50.00	4050	50	44	-	0	-	71	-	8	-	414	272	-	-	142
41+00.00	4100	50	70	-	-	-	106	-	0	-	519	272	-	-	247
41+50.00	4150	50	67	-	-	-	127	-	-	-	646	272	-	-	374
42+00.00	4200	50	63	-	-	-	121	-	-	-	767	272	-	-	494
42+50.00	4250	50	62	-	-	-	116	-	-	-	883	272	-	-	611
43+00.00	4300	50	62	-	-	-	115	-	-	-	998	272	-	-	725
43+50.00	4350	50	62	-	-	-	114	-	-	-	1112	272	-	-	840
44+00.00	4400	50	62	-	-	-	115	-	-	-	1227	272	-	-	954
44+50.00	4450	50	63	-	-	-	116	-	-	-	1342	272	-	-	1070
45+00.00	4500	50	64	-	-	-	117	-	-	-	1460	272	-	-	1187
45+50.00	4550	50	66	-	-	-	120	-	-	-	1580	272	-	-	1308
46+00.00	4600	50	69	-	-	-	125	-	-	-	1704	272	-	-	1432
46+50.00	4650	50	72	-	-	-	130	-	-	-	1835	272	-	-	1563
47+00.00	4700	50	77	-	-	-	138	-	-	-	1973	272	-	-	1700
47+50.00	4750	50	83	-	-	-	147	-	-	-	2120	272	-	-	1848
48+00.00	4800	50	83	-	-	-	153	-	-	-	2274	272	-	-	2001
48+50.00	4850	50	80	-	-	-	151	-	-	-	2425	272	-	-	2153
49+00.00	4900	50	75	-	-	-	144	-	-	-	2569	272	-	-	2297
49+50.00	4950	50	66	-	-	-	130	-	-	-	2699	272	-	-	2427
49+65.65	4966	16	63	-	-	-	37	-	-	-	2737	272	-	-	2464
49+90.65	4991	25	58	-	-	-	56	-	-	-	2792	272	-	-	2520
50+00.00	5000	9	57	-	-	-	20	-	-	-	2812	272	-	-	2540
50+15.65	5016	16	56	-	-	-	33	-	-	-	2845	272	-	-	2573
50+50.00	5050	34	54	-	0	-	70	-	0	-	2915	273	-	-	2642
51+00.00	5100	50	32	-	2	-	79	-	2	-	2994	275	-	-	2719
51+50.00	5150	50	23	-	4	-	51	-	6	-	3045	283	-	-	2762
52+00.00	5200	50	13	-	5	-	34	-	9	-	3079	294	-	-	2785
52+50.00	5250	50	-	-	19	-	12	-	22	-	3092	323	-	-	2768
52+54.28	5254	4	-	-	19	-	-	-	3	-	3092	327	-	-	2765
52+79.28	5279	25	-	-	17	-	-	-	16	-	3092	348	-	-	2743
53+00.00	5300	21	-	-	15	-	-	-	12	-	3092	364	-	-	2727
53+04.28	5304	4	-	-	15	-	-	-	2	-	3092	368	-	-	2724
53+36.49	5336	32	-	-	11	-	-	-	16	-	3092	388	-	-	2703
53+50.00	5350	14	-	-	11	-	-	-	6	-	3092	395	-	-	2696
53+81.34	5381	31	0	-	8	-	0	-	11	-	3092	410	-	-	2682
54+00.00	5400	19		BEGIN STRUCTURE			-	-	-	-	3092	410	-	-	2682
54+50.00	5450	50	-	-		-	-	-	-	-	3092	410	-	-	2682
55+00.00	5500	50		END STRUCTURE			-	-	-	-	3092	410	-	-	2682

I-94 MEDIAN, STAGE 4, PART II

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)				Mass Ordinate
			Cut	Salvaged / Unusable Pavement Material	Fill	EBS	Cut	Salvaged / Unusable Pavement Material	FILL	EBS	Cut	Expanded Fill	Expanded EBS Backfill	Reduced EBS In Fill	
							Note 1	Note 2	Note 3		1.00 Note 1	1.30	1.30 Note 5	0.80 Note 7	Note 8
55+21.81	5522	22	-	-	11	-	-	-	-	-	3092	410	-	-	2682
55+50.00	5550	28	-	-	11	-	-	-	11	-	3092	424	-	-	2667
55+66.83	5567	17	-	-	12	-	-	-	7	-	3092	433	-	-	2658
55+98.70	5599	32	0	-	9	-	0	-	13	-	3092	450	-	-	2642
56+00.00	5600	1	0	-	9	-	0	-	0	-	3092	450	-	-	2641
56+23.70	5624	24	0	-	9	-	0	-	8	-	3092	461	-	-	2631
56+48.70	5649	25	2	-	9	-	1	-	9	-	3093	472	-	-	2621
56+50.00	5650	1	2	-	9	-	0	-	0	-	3093	473	-	-	2620
57+00.00	5700	50	8	-	14	-	9	-	22	-	3102	501	-	-	2601
57+50.00	5750	50	28	-	6	-	33	-	18	-	3135	525	-	-	2610
58+00.00	5800	50	35	-	6	-	58	-	11	-	3193	539	-	-	2654
58+50.00	5850	50	35	-	4	-	64	-	9	-	3257	551	-	-	2706
59+00.00	5900	50	37	-	0	-	67	-	3	-	3324	555	-	-	2769
59+50.00	5950	50	45	-	-	-	76	-	0	-	3400	555	-	-	2844
60+00.00	6000	50	50	-	-	-	87	-	-	-	3487	555	-	-	2932
60+50.00	6050	50	48	-	-	-	91	-	-	-	3578	555	-	-	3023
61+00.00	6100	50	48	-	-	-	89	-	-	-	3667	555	-	-	3111
61+50.00	6150	50	47	-	-	-	87	-	-	-	3754	555	-	-	3199
62+00.00	6200	50	33	-	-	-	74	-	-	-	3828	555	-	-	3273
62+50.00	6250	50	63	-	-	-	89	-	-	-	3917	555	-	-	3362
63+00.00	6300	50	61	-	-	-	115	-	-	-	4032	555	-	-	3477
63+50.00	6350	50	61	-	-	-	113	-	-	-	4145	555	-	-	3589
64+00.00	6400	50	75	-	-	-	126	-	-	-	4271	555	-	-	3715
64+50.00	6450	50	75	-	-	-	139	-	-	-	4410	555	-	-	3855
65+00.00	6500	50	74	-	-	-	138	-	-	-	4548	555	-	-	3993
65+50.00	6550	50	75	-	-	-	138	-	-	-	4686	555	-	-	4130
66+00.00	6600	50	77	-	-	-	141	-	-	-	4826	555	-	-	4271
66+50.00	6650	50	78	-	-	-	143	-	-	-	4970	555	-	-	4414
67+00.00	6700	50	78	-	-	-	145	-	-	-	5114	555	-	-	4559
67+50.00	6750	50	74	-	-	-	141	-	-	-	5255	555	-	-	4700
68+00.00	6800	50	71	-	-	-	134	-	-	-	5389	555	-	-	4834
68+50.00	6850	50	71	-	-	-	131	-	-	-	5520	555	-	-	4965
69+00.00	6900	50	68	-	-	-	128	-	-	-	5648	555	-	-	5093
69+50.00	6950	50	65	-	-	-	122	-	-	-	5771	555	-	-	5215
70+00.00	7000	50	62	-	-	-	117	-	-	-	5888	555	-	-	5332
70+50.00	7050	50	62	-	-	-	115	-	-	-	6003	555	-	-	5447
71+00.00	7100	50	63	-	-	-	115	-	-	-	6118	555	-	-	5562
71+50.00	7150	50	67	-	-	-	120	-	-	-	6237	555	-	-	5682
72+00.00	7200	50	71	-	-	-	128	-	-	-	6365	555	-	-	5810
72+50.00	7250	50	42	-	6	-	105	-	6	-	6470	563	-	-	5907
73+00.00	7300	50	35	-	10	-	71	-	14	-	6541	582	-	-	5959
73+50.00	7350	50	28	-	13	-	58	-	21	-	6599	609	-	-	5990
74+00.00	7400	50	23	-	17	-	47	-	27	-	6646	644	-	-	6002
74+50.00	7450	50	20	-	20	-	39	-	34	-	6685	688	-	-	5997
75+00.00	7500	50	17	-	23	-	34	-	40	-	6719	740	-	-	5979
75+50.00	7550	50	15	-	25	-	30	-	44	-	6749	798	-	-	5951
76+00.00	7600	50	14	-	26	-	27	-	48	-	6776	860	-	-	5916
76+50.00	7650	50	13	-	27	-	25	-	50	-	6801	924	-	-	5877
77+00.00	7700	50	13	-	27	-	24	-	50	-	6826	989	-	-	5836
77+50.00	7750	50	13	-	27	-	24	-	50	-	6850	1054	-	-	5796
78+00.00	7800	50	10	-	25	-	22	-	48	-	6871	1116	-	-	5756
78+29.01	7829	29	-	-	-	-	5	-	13	-	6877	1133	-	-	5744
						Column totals	6877	0	872	0					

GOLDEN LAKES ROAD, STAGE 3

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)				Mass Ordinate
			Cut	Salvaged / Unusable Pavement Material	FILL	EBS	Cut	Salvaged / Unusable Pavement	FILL	EBS	Cut	Expanded Fill	Expanded EBS Backfill	Reduced EBS In Fill	
							Note 1	Note 2	Note 3		1.00 Note 1	1.30	1.30 Note 5	0.80 Note 7	Note 8
501+50.00	50150	0	73	73	0	116	0	0	0	0	0	0	0	0	0
502+00.00	50200	50	92	92	13	116	153	153	12	215	153	-207	279	172	207
502+27.00	50227	27	97	97	8	116	95	95	11	116	248	-314	430	265	314
502+50.00	50250	23	95	95	7	116	82	82	6	99	329	-409	559	344	409
503+00.00	50300	50	104	104	5	116	184	184	11	215	513	-618	838	516	618
503+18.98	50319	19	103	103	0	116	73	73	2	82	586	-701	944	581	701
503+43.98	50344	25	107	107	1	116	97	97	1	107	683	-812	1083	667	812
503+50.00	50350	6	107	107	2	116	24	24	0	26	707	-838	1117	687	838
503+68.98	50369	19	106	106	4	116	75	75	2	82	782	-920	1223	753	920
503+93.98	50394	25	105	105	6	116	98	98	4	107	879	-1026	1363	839	1026
504+00.00	50400	6	106	106	6	116	24	24	1	26	903	-1051	1396	859	1051
504+18.98	50419	19	97	97	6	116	71	71	4	82	974	-1130	1502	924	1130
504+43.98	50444	25	102	102	1	116	92	92	4	107	1067	-1237	1642	1010	1237
504+50.00	50450	6	105	105	2	116	23	23	0	26	1090	-1264	1676	1031	1264
504+73.70	50474	24	113	113	26	116	96	96	12	102	1186	-1354	1808	1113	1354
505+00.00	50500	26	79	79	0	116	93	93	13	113	1279	-1455	1955	1203	1455
505+50.00	50550	50	86	86	74	116	153	153	69	215	1432	-1589	2234	1375	1589
506+00.00	50600	50	92	92	47	116	165	165	112	215	1596	-1667	2513	1547	1667
506+50.00	50650	50	107	107	59	116	184	184	98	215	1780	-1763	2793	1719	1763
507+00.00	50700	50	117	117	6	116	207	207	60	215	1987	-1908	3072	1890	1908
507+12.30	50712	12	136	136	1	116	58	58	2	53	2045	-1961	3141	1933	1961
507+42.02	50742	30	121	121	1	116	142	142	1	128	2186	-2092	3307	2035	2092
507+50.00	50750	8	120	120	1	116	36	36	0	34	2222	-2127	3351	2062	2127
507+67.02	50767	17	119	119	2	116	75	75	1	73	2297	-2201	3446	2121	2201
507+92.02	50792	25	115	115	4	116	109	109	3	107	2406	-2309	3586	2207	2309
508+00.00	50800	8	113	113	5	116	34	34	1	34	2440	-2343	3630	2234	2343
508+04.52	50805	5	112	112	5	116	19	19	1	19	2459	-2362	3656	2250	2362
508+29.52	50830	25	106	106	7	116	101	101	5	107	2560	-2467	3795	2336	2467
508+50.00	50850	20	102	102	7	116	79	79	5	88	2639	-2552	3910	2406	2552
508+54.52	50855	5	101	101	7	116	17	17	1	19	2656	-2571	3935	2421	2571
509+00.00	50900	45	90	90	7	116	161	161	12	195	2816	-2759	4189	2578	2759
509+50.00	50950	50	5	5	4	116	88	88	10	215	2904	-2969	4468	2750	2969
510+00.00	51000	50	5	5	0	116	9	9	4	215	2914	-3187	4747	2921	3187
						Column totals	2914	2914	470	3652					

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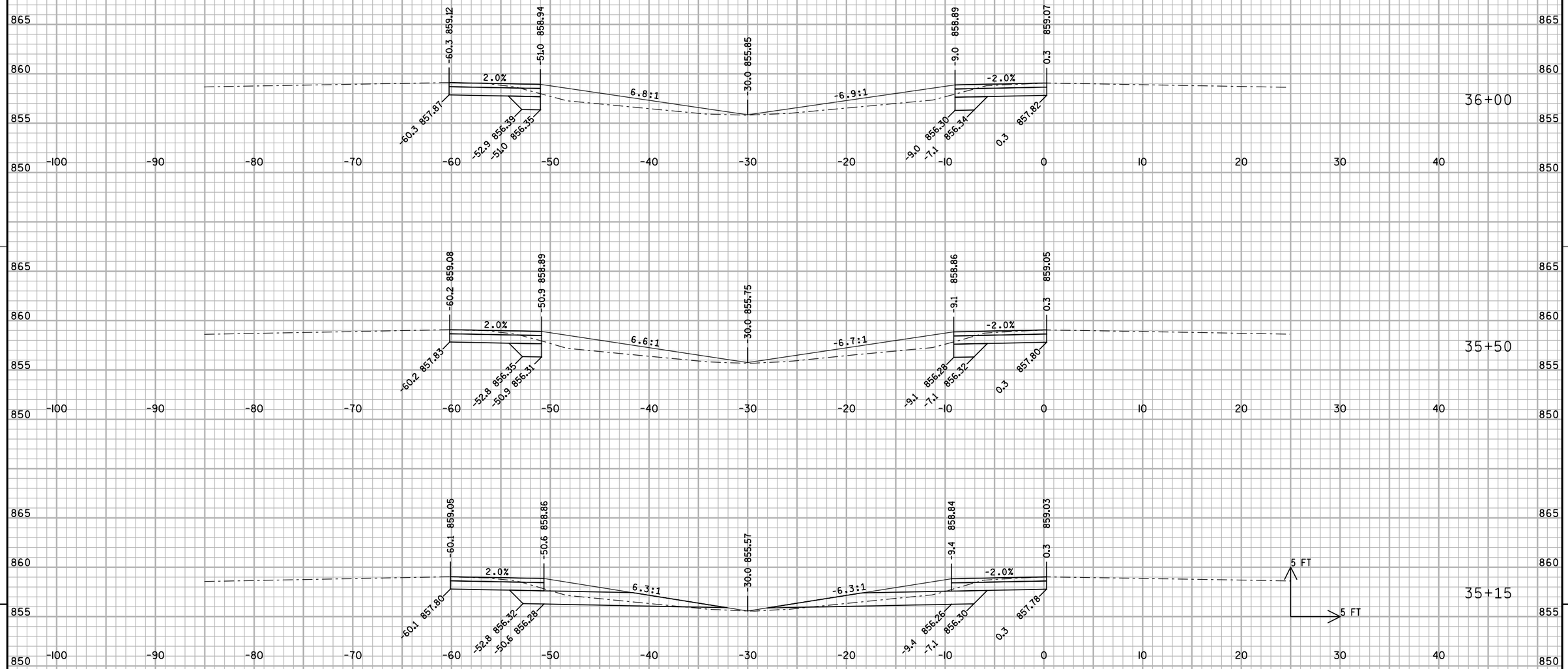
EB I-94

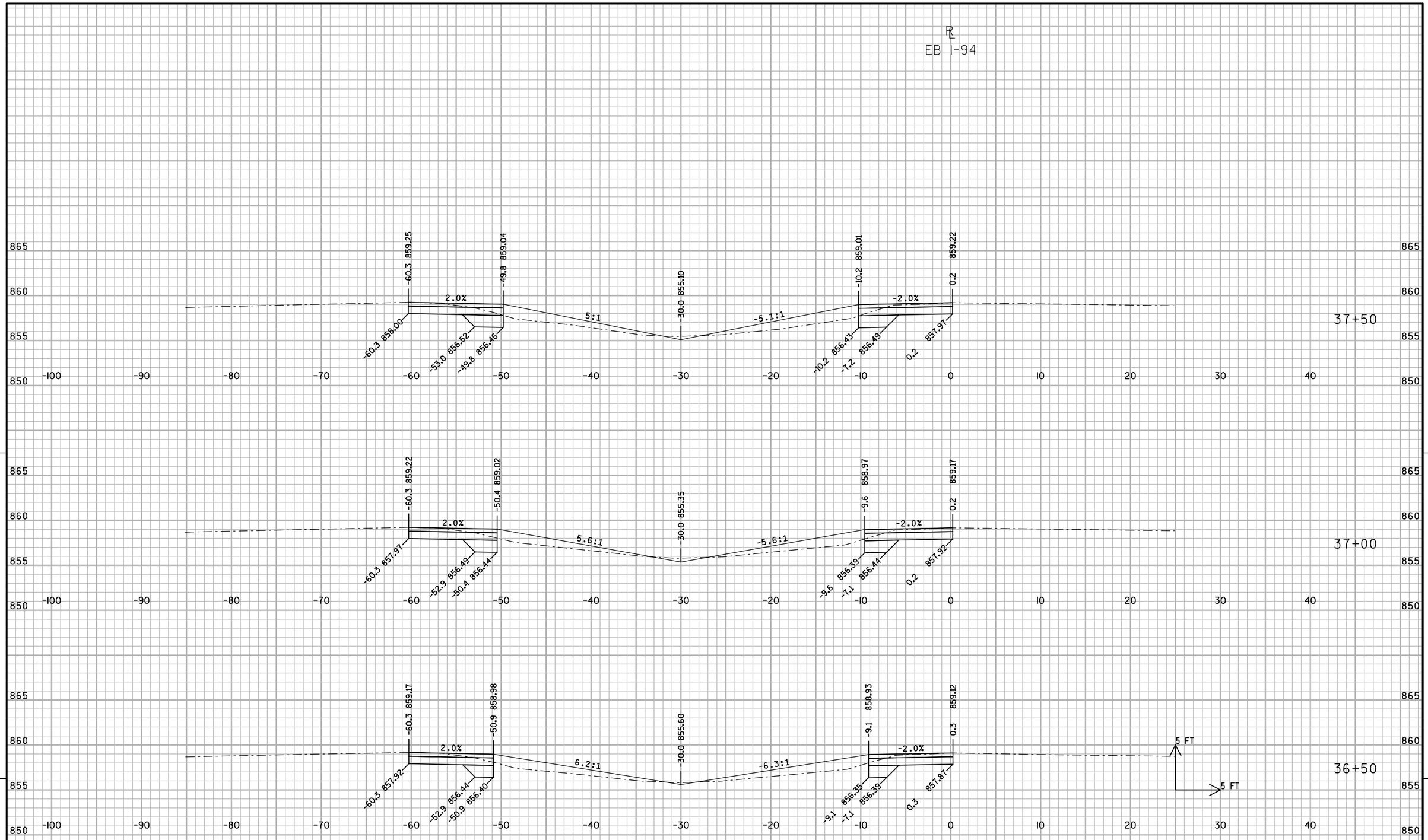


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 253	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090221_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 254	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090221_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

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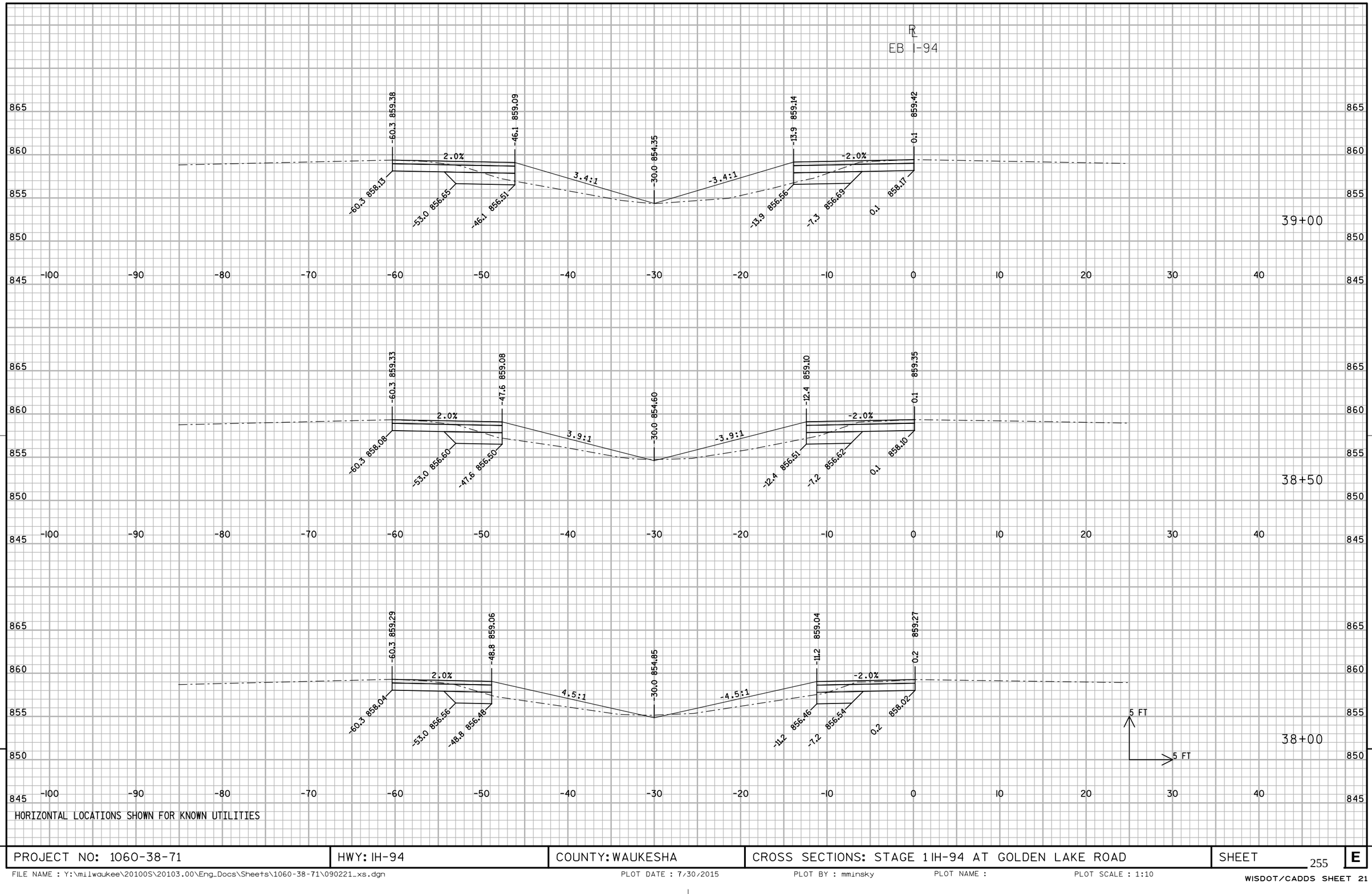

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 255	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090221_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

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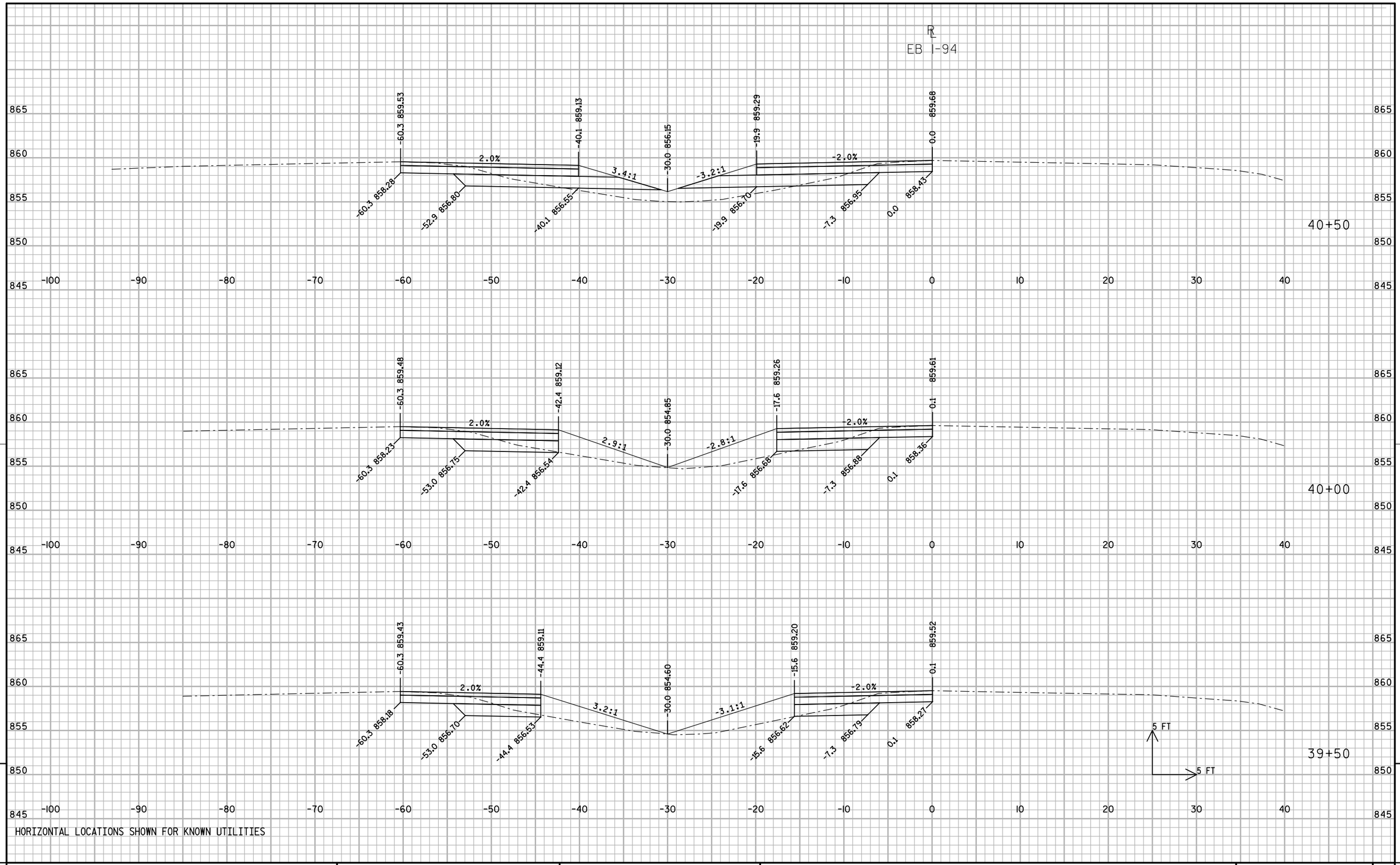

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

9

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 256	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090221_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

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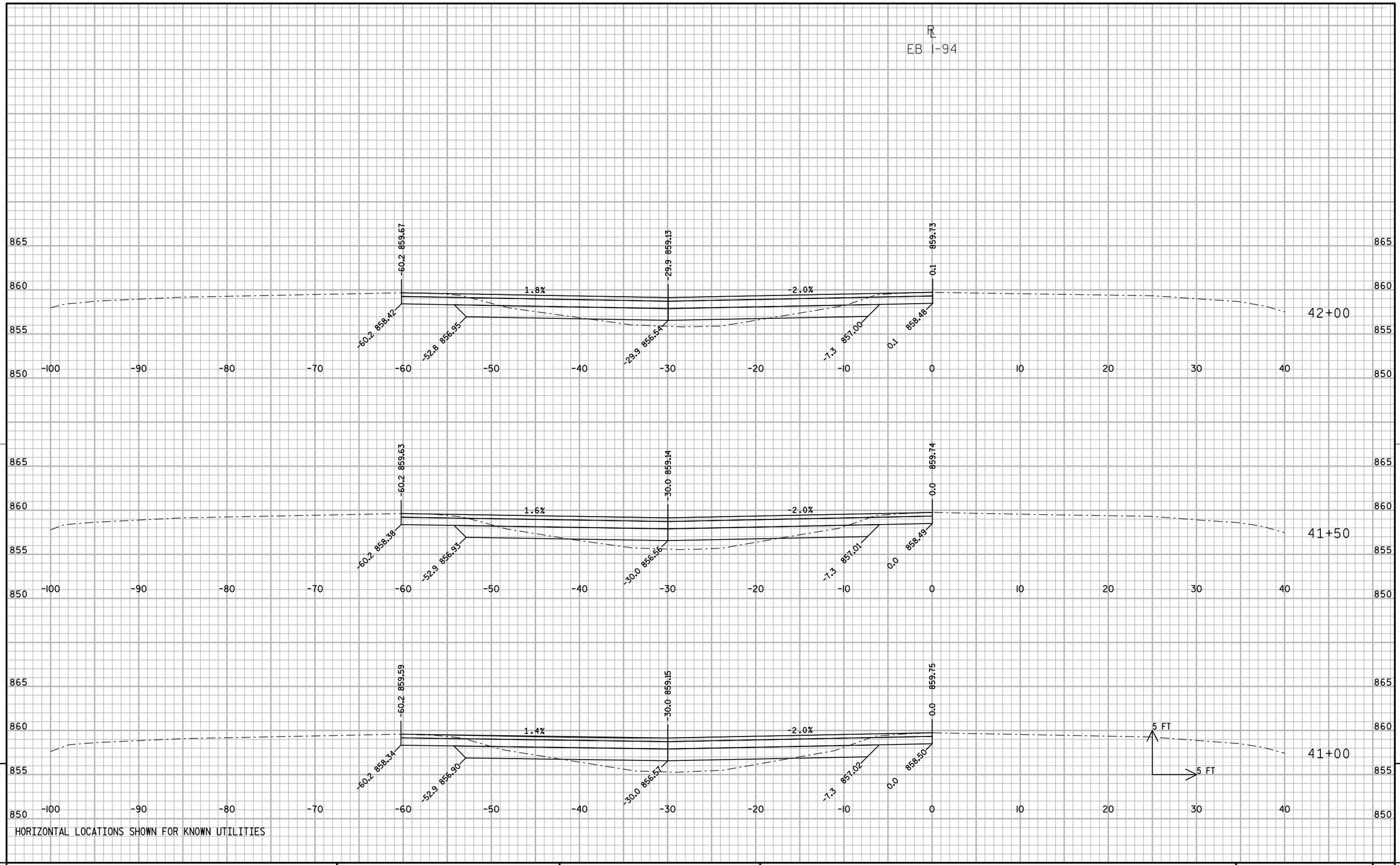

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 257	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090221_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

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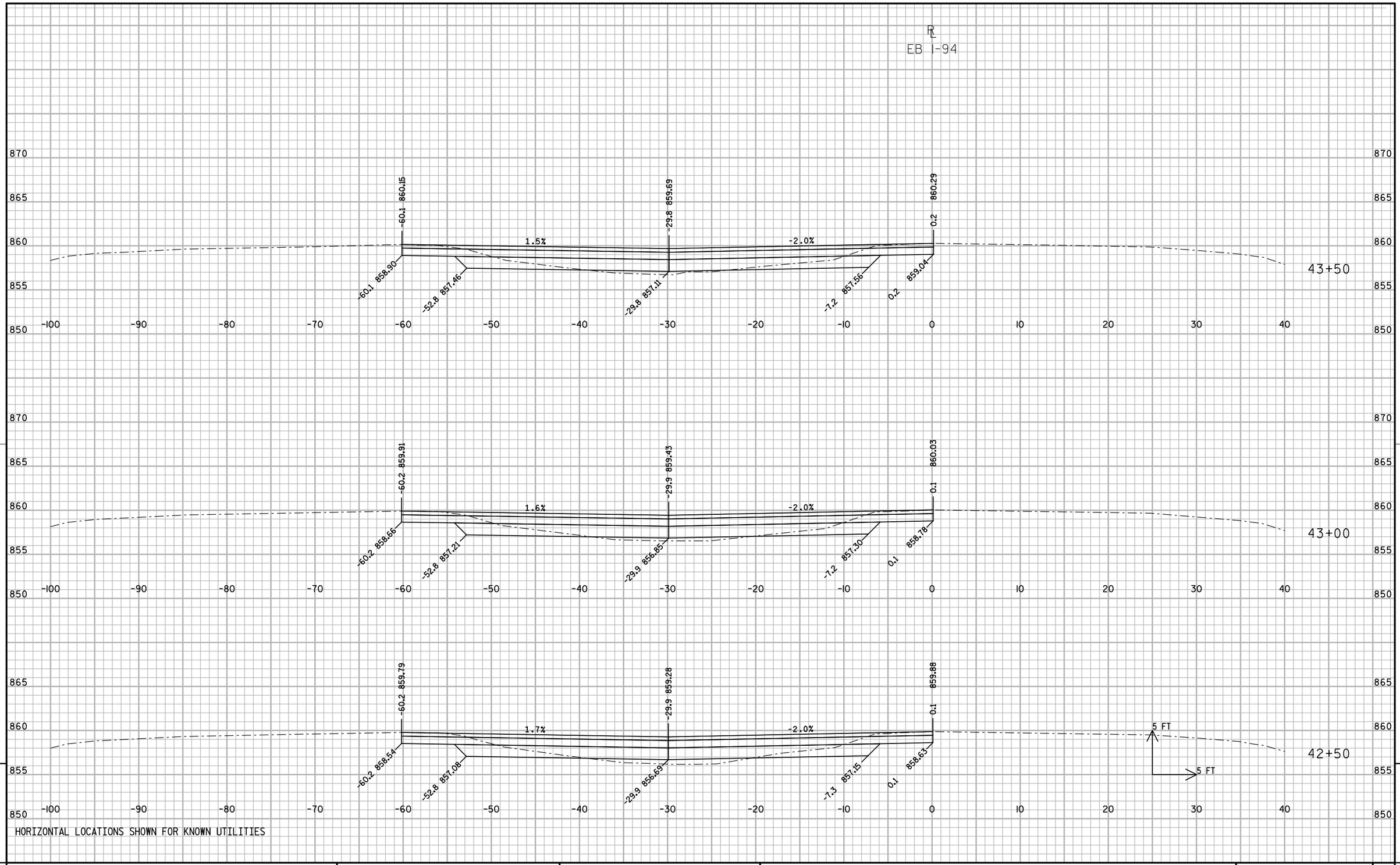

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 258	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090221_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 259	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090221_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

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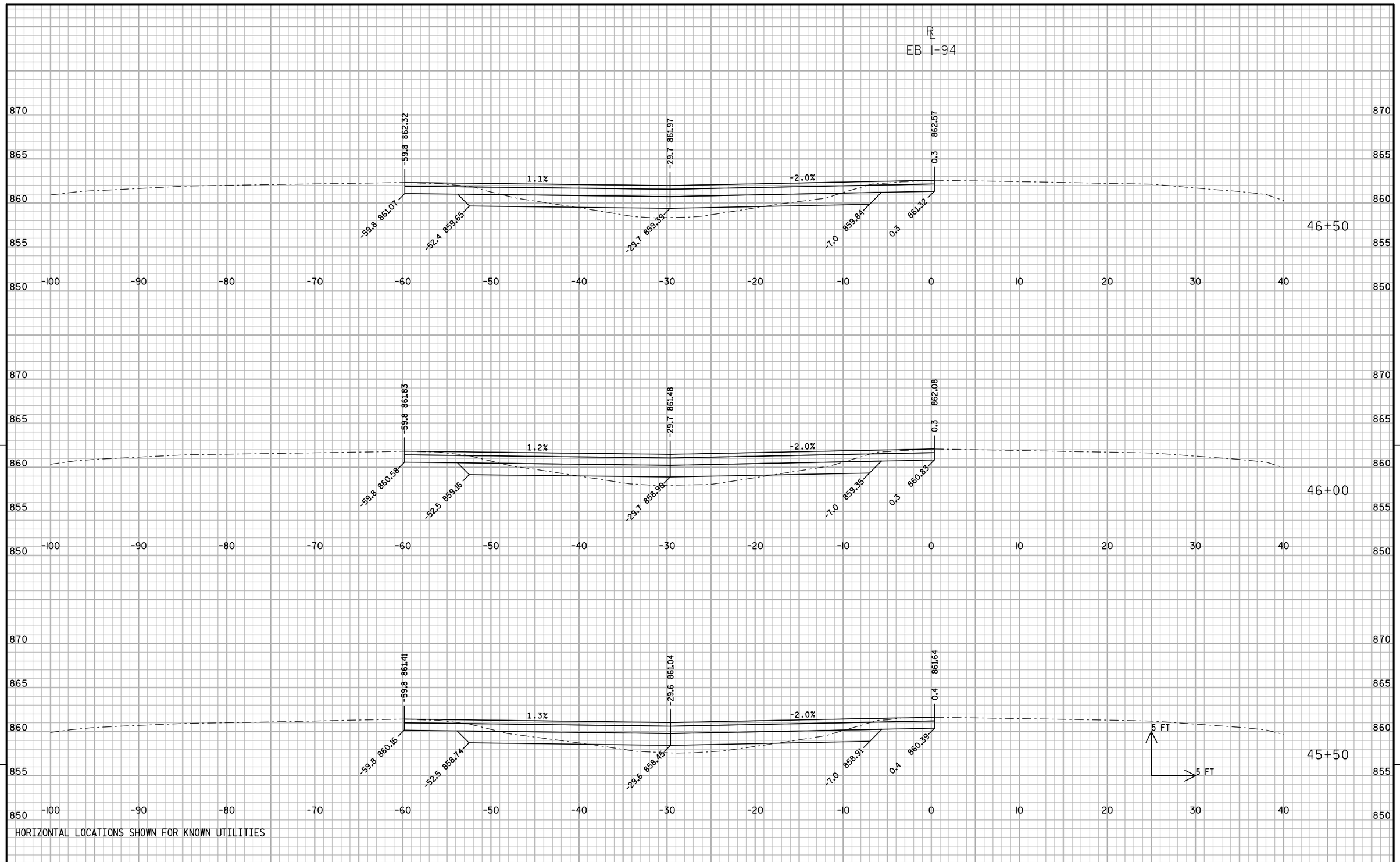

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

9

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 260	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090221_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

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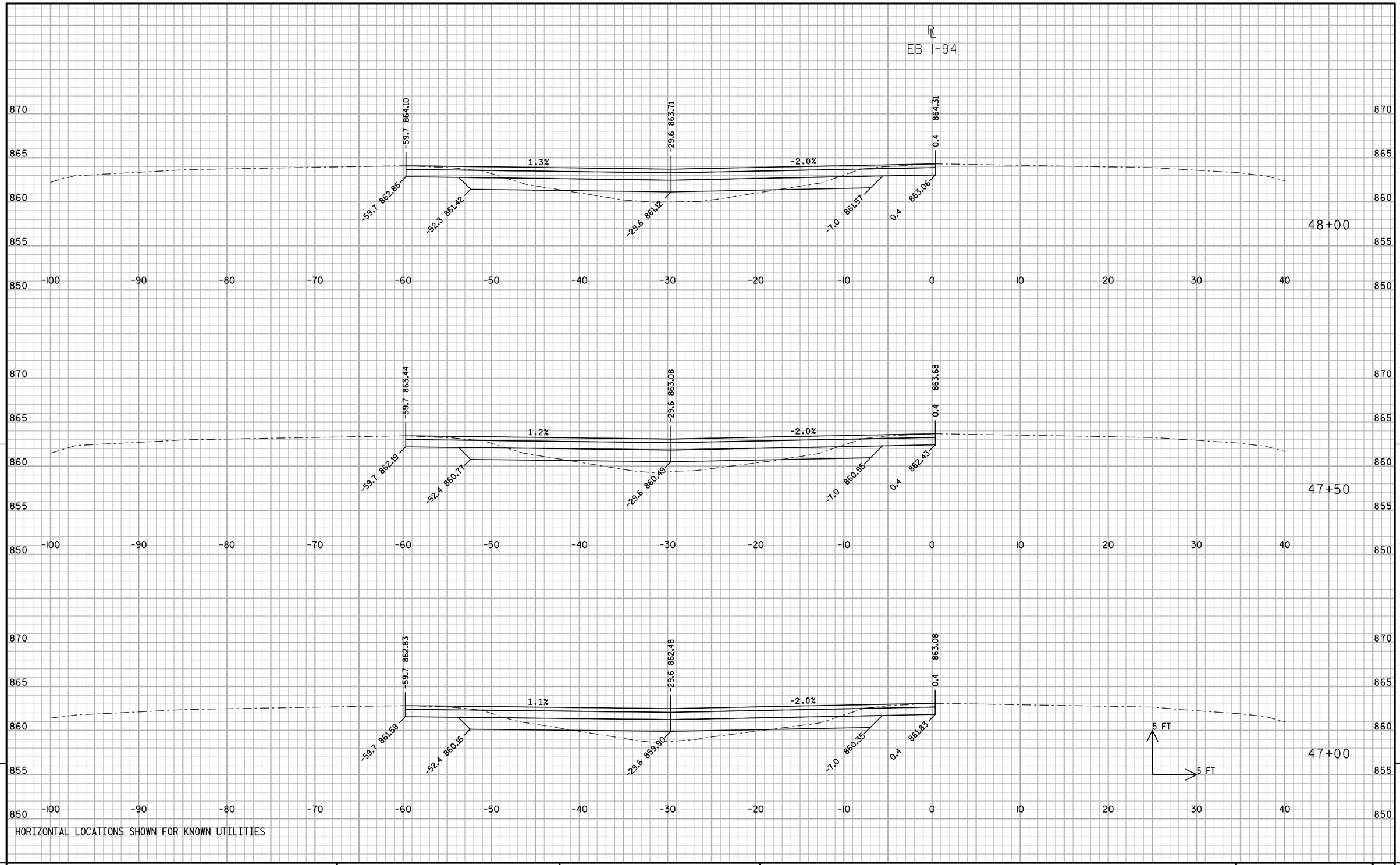

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 261	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090221_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 262	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090221_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

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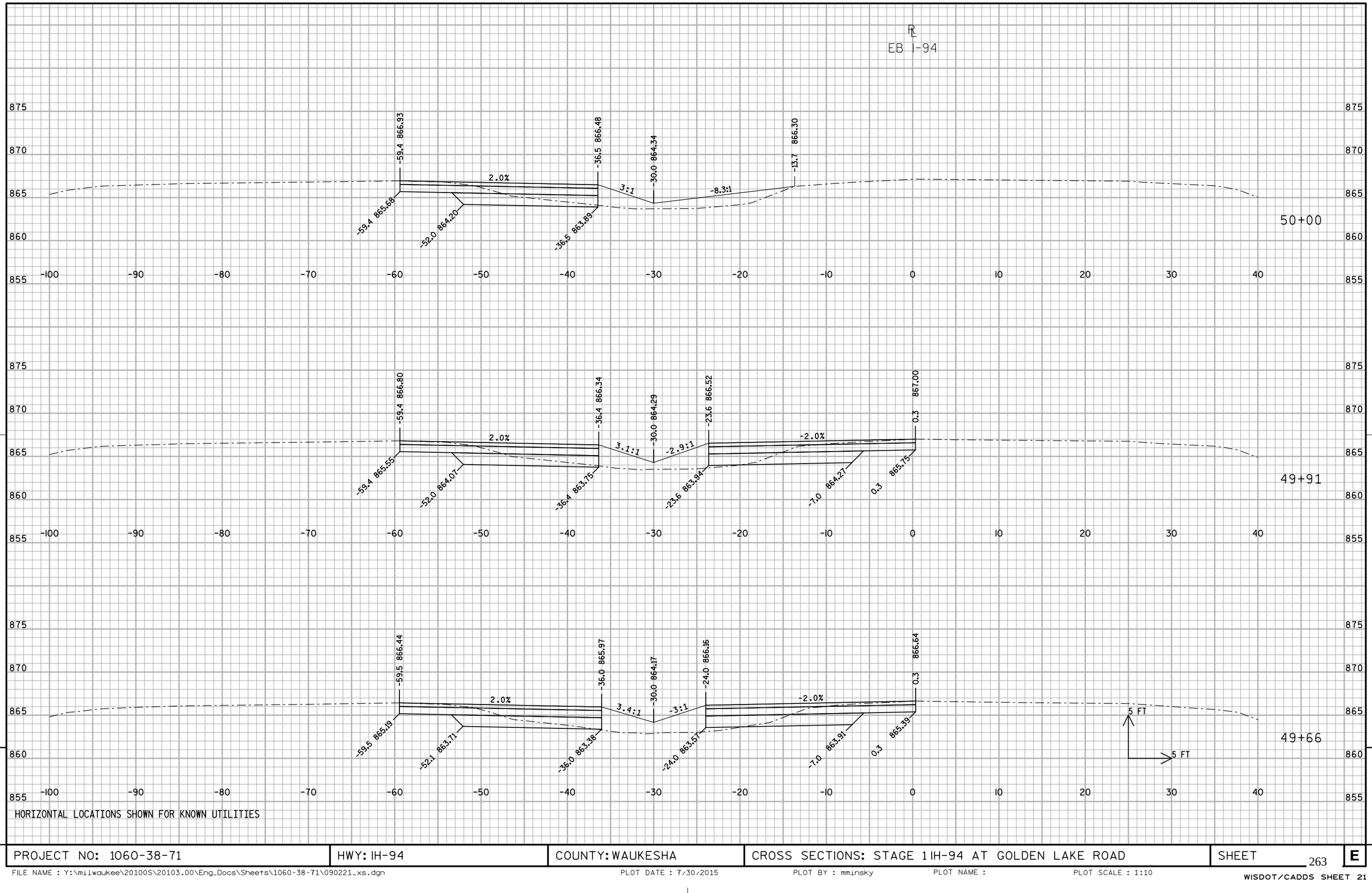

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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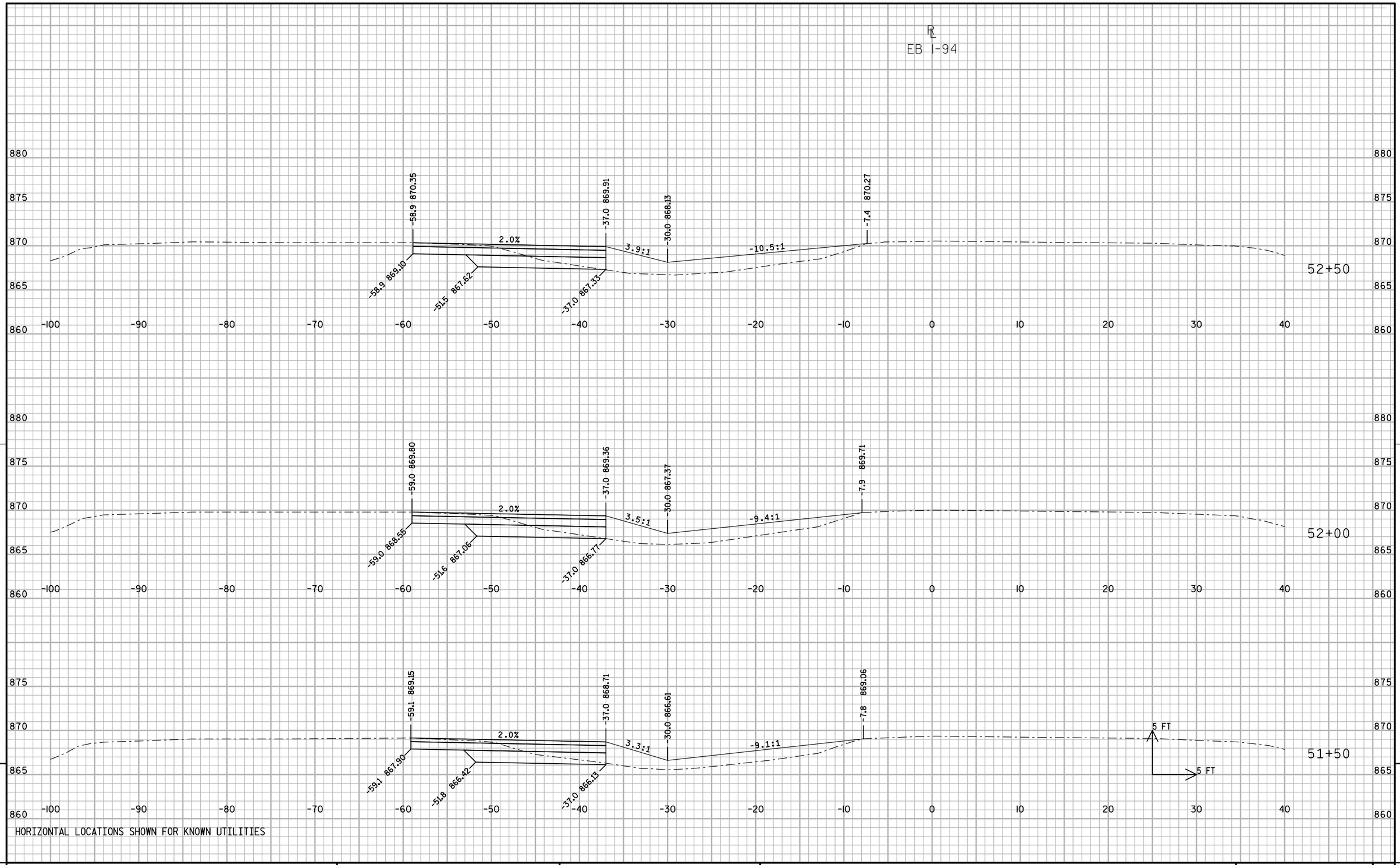
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 263	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090221_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 264	E



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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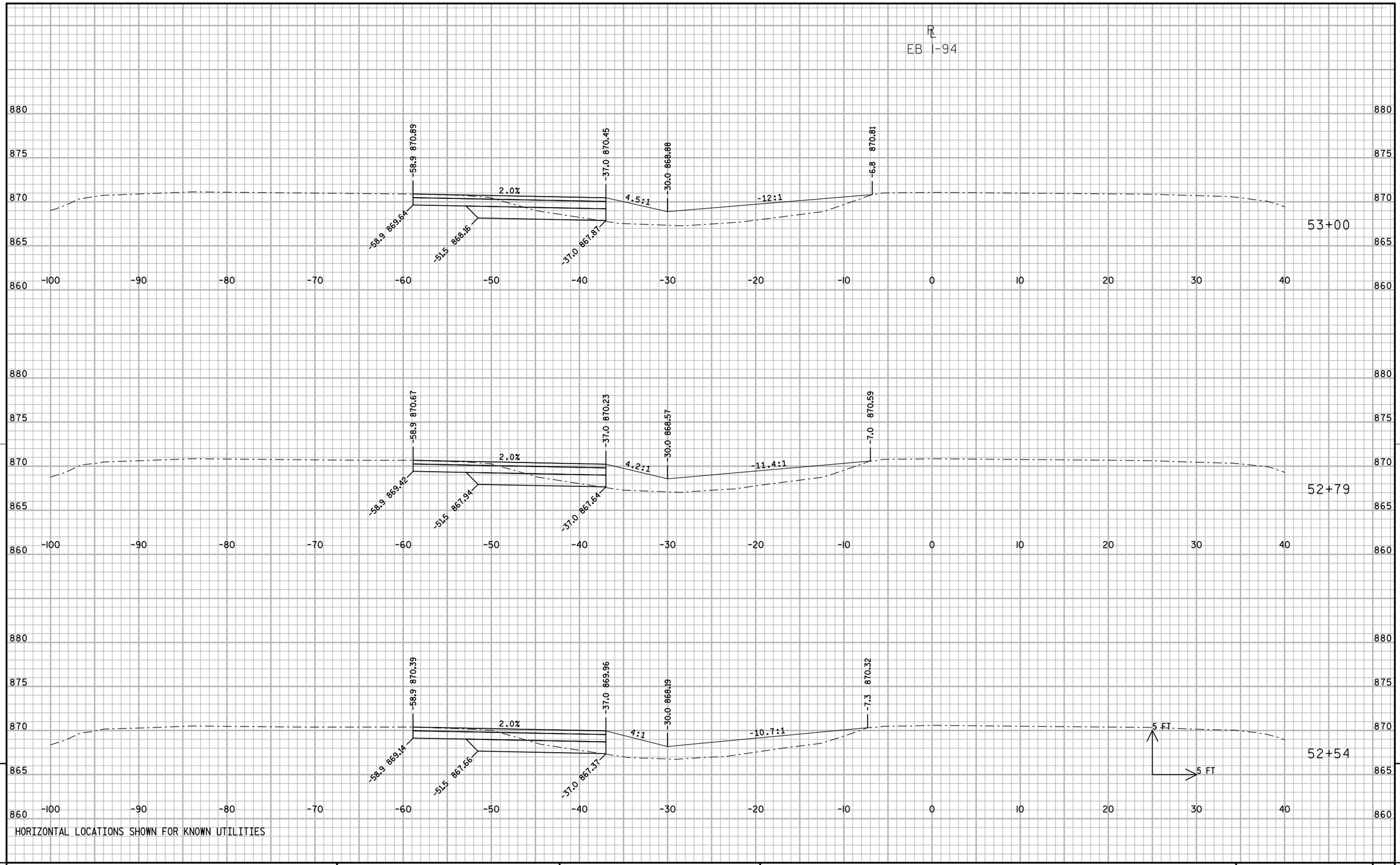
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 265	E



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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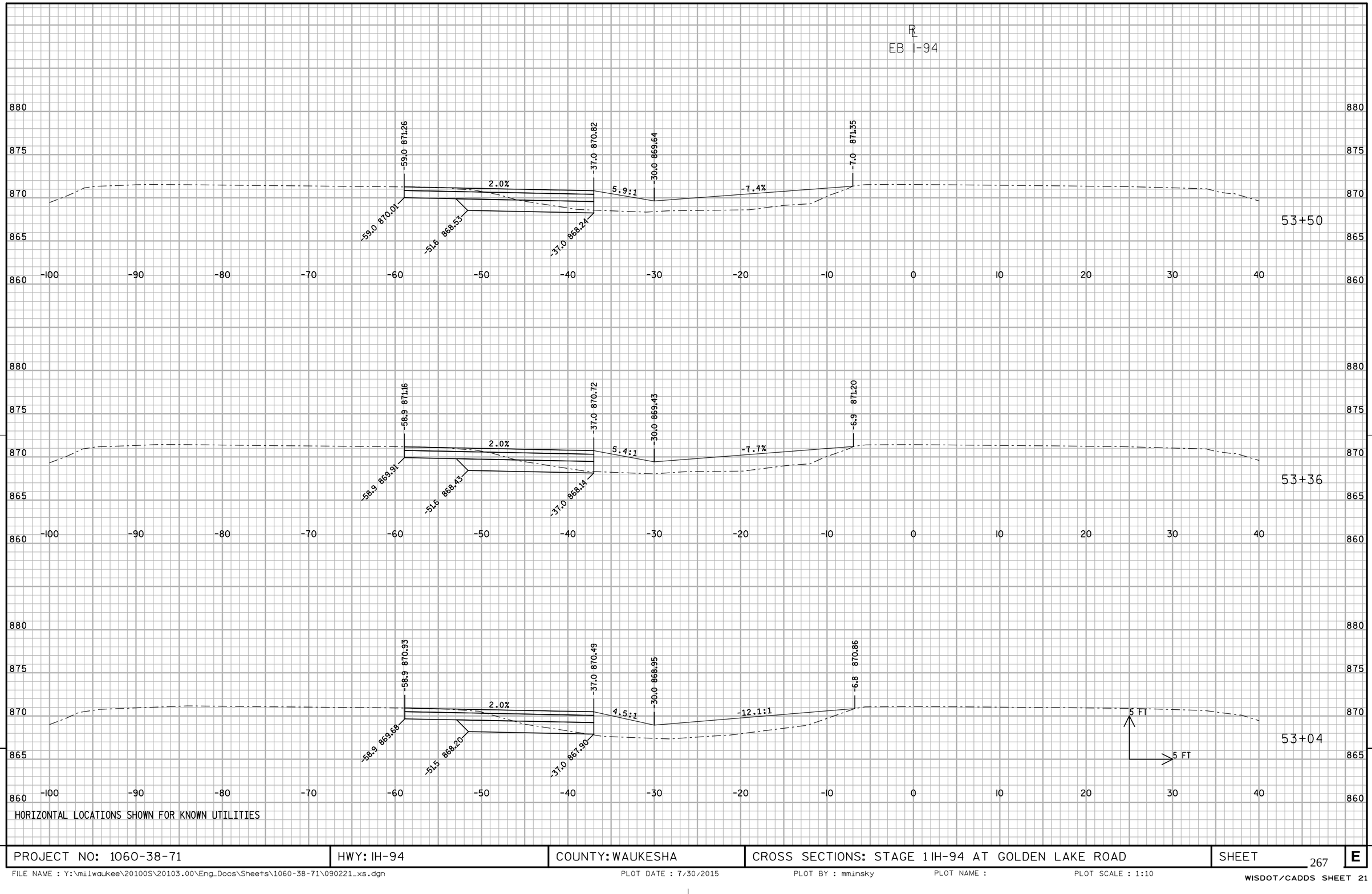
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 266	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090221_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 267	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090221_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

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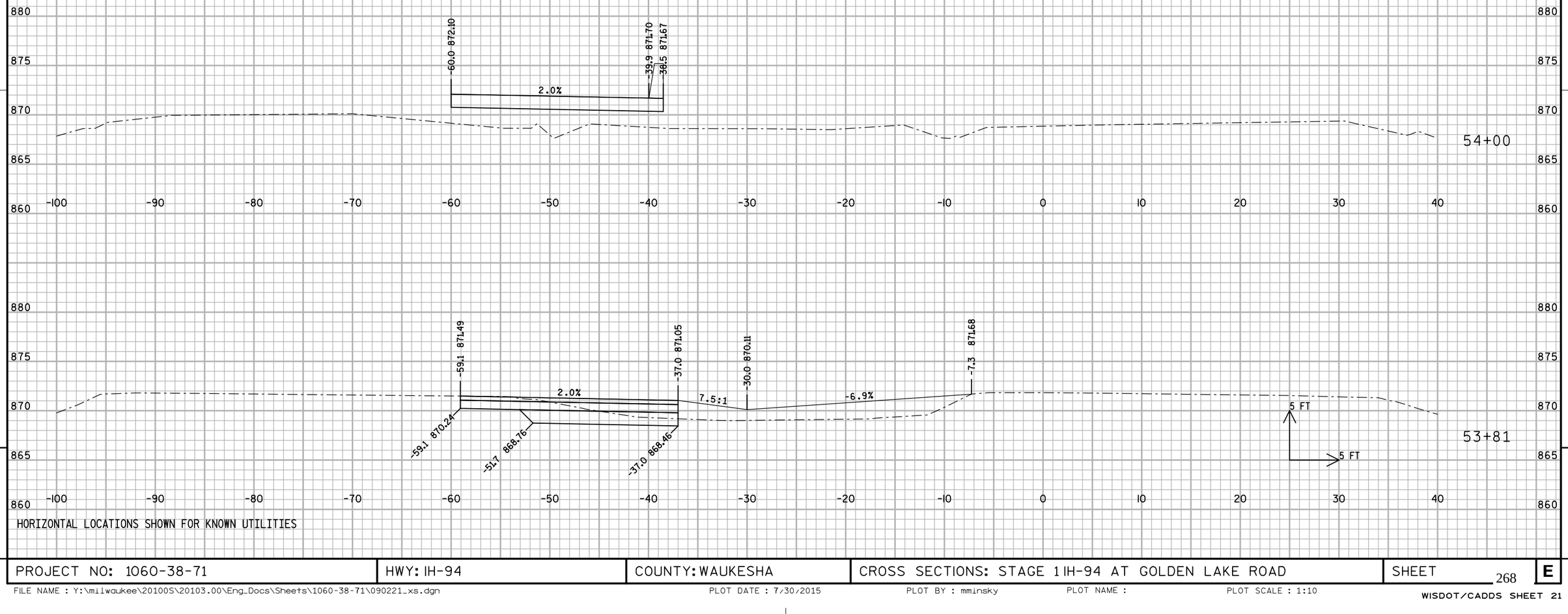
EB I-94



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 268	E

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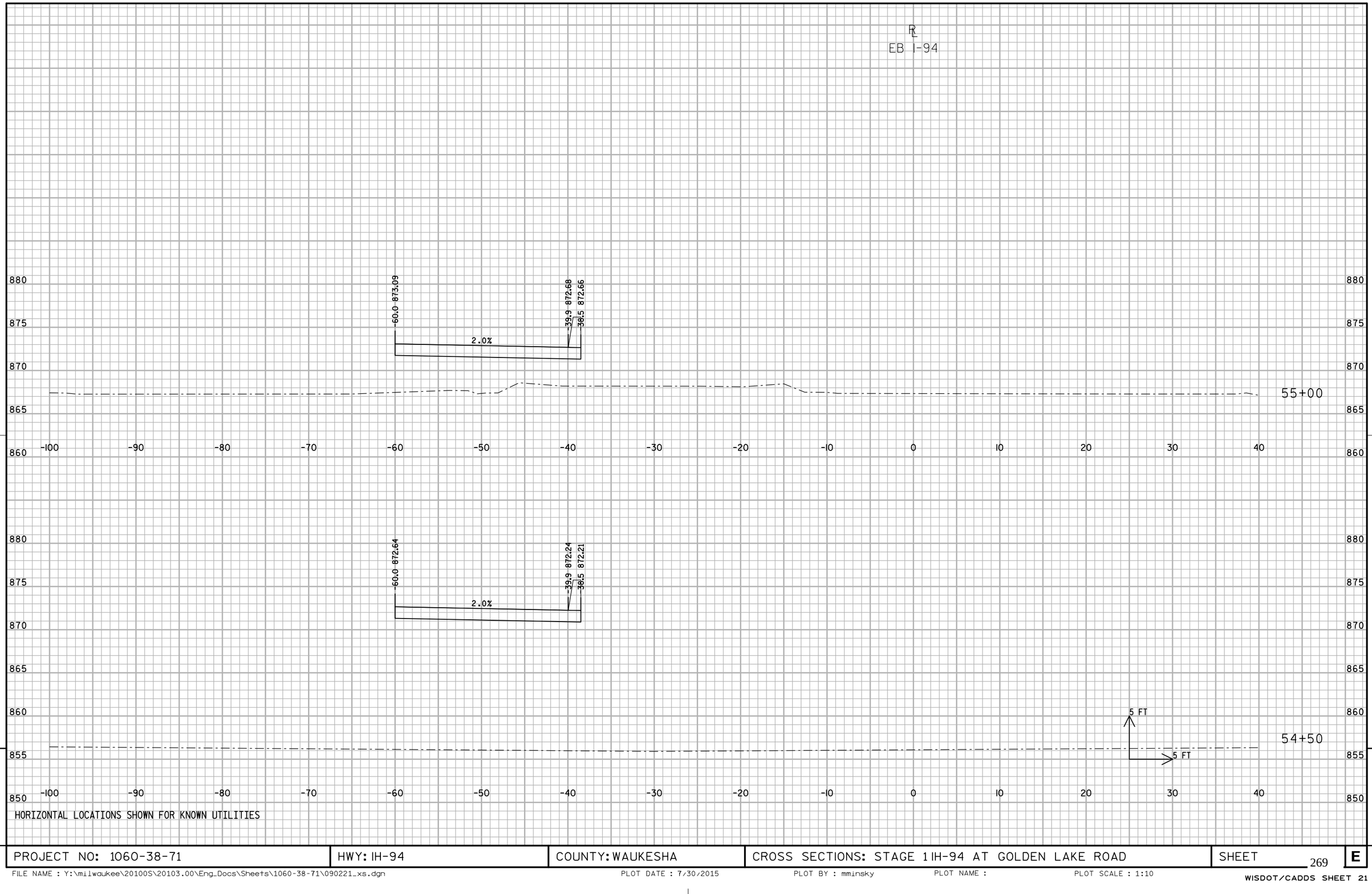
EB I-94



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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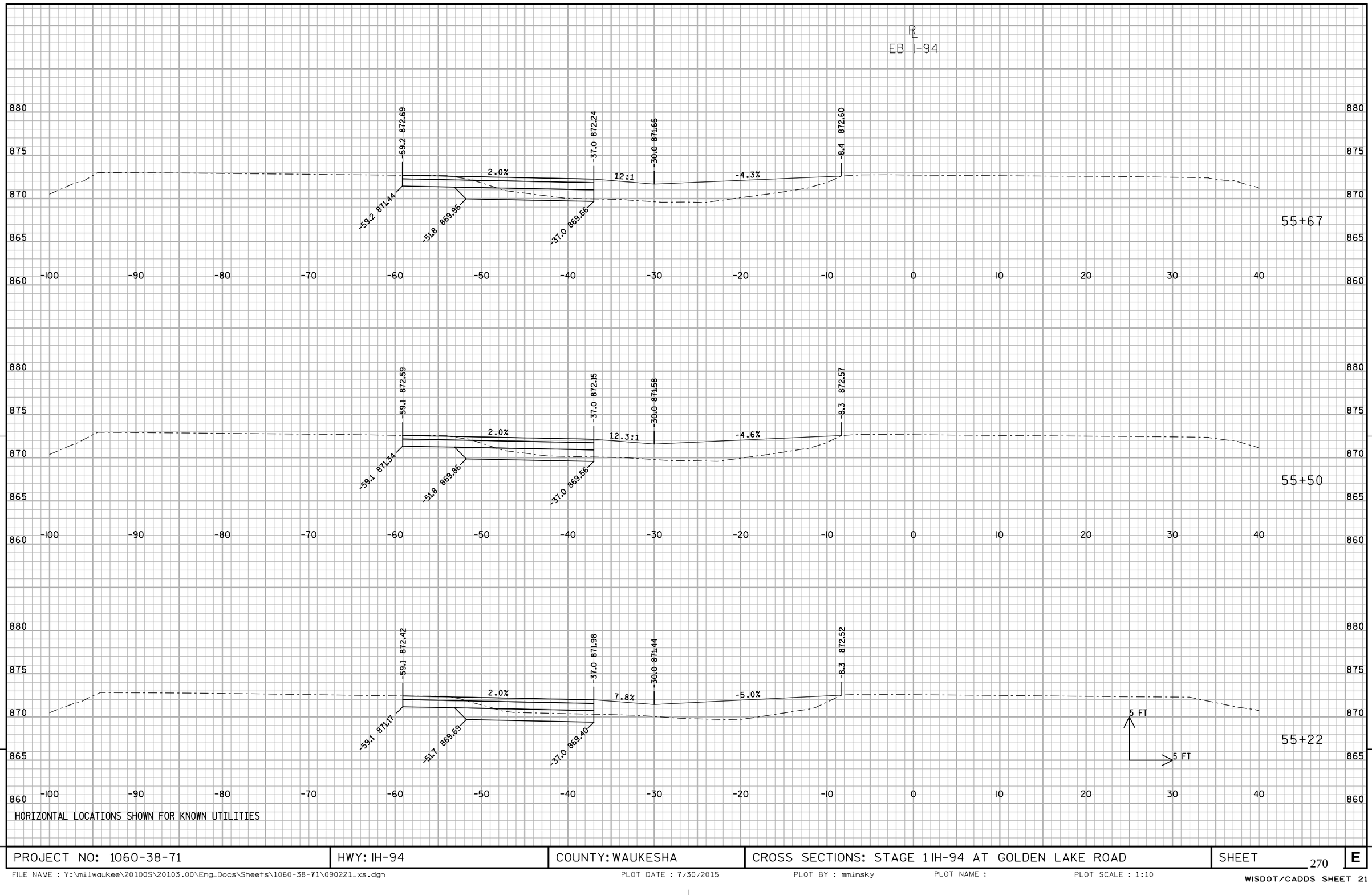


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

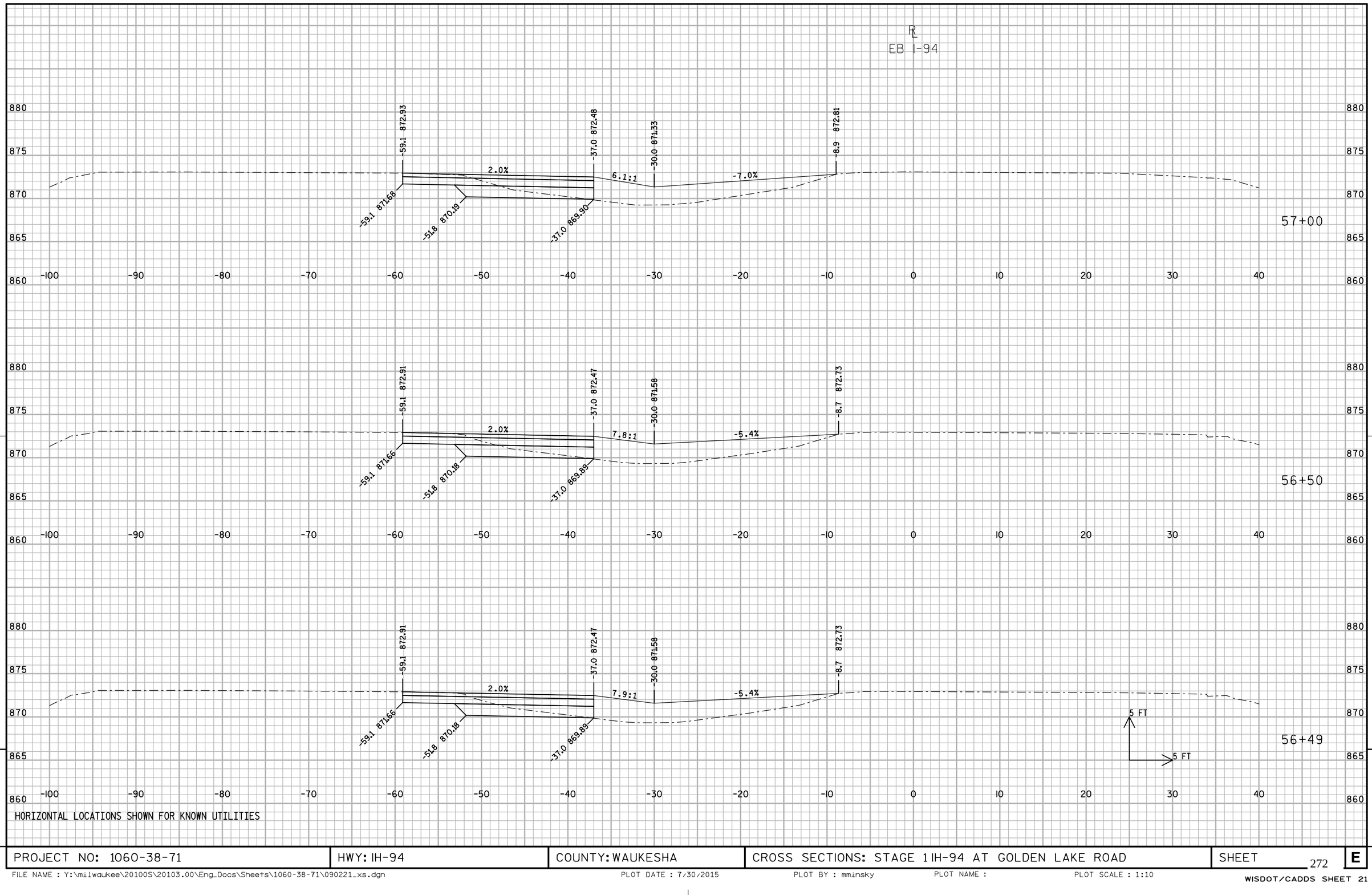
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 270	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090221_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 271	E



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 272	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090221_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

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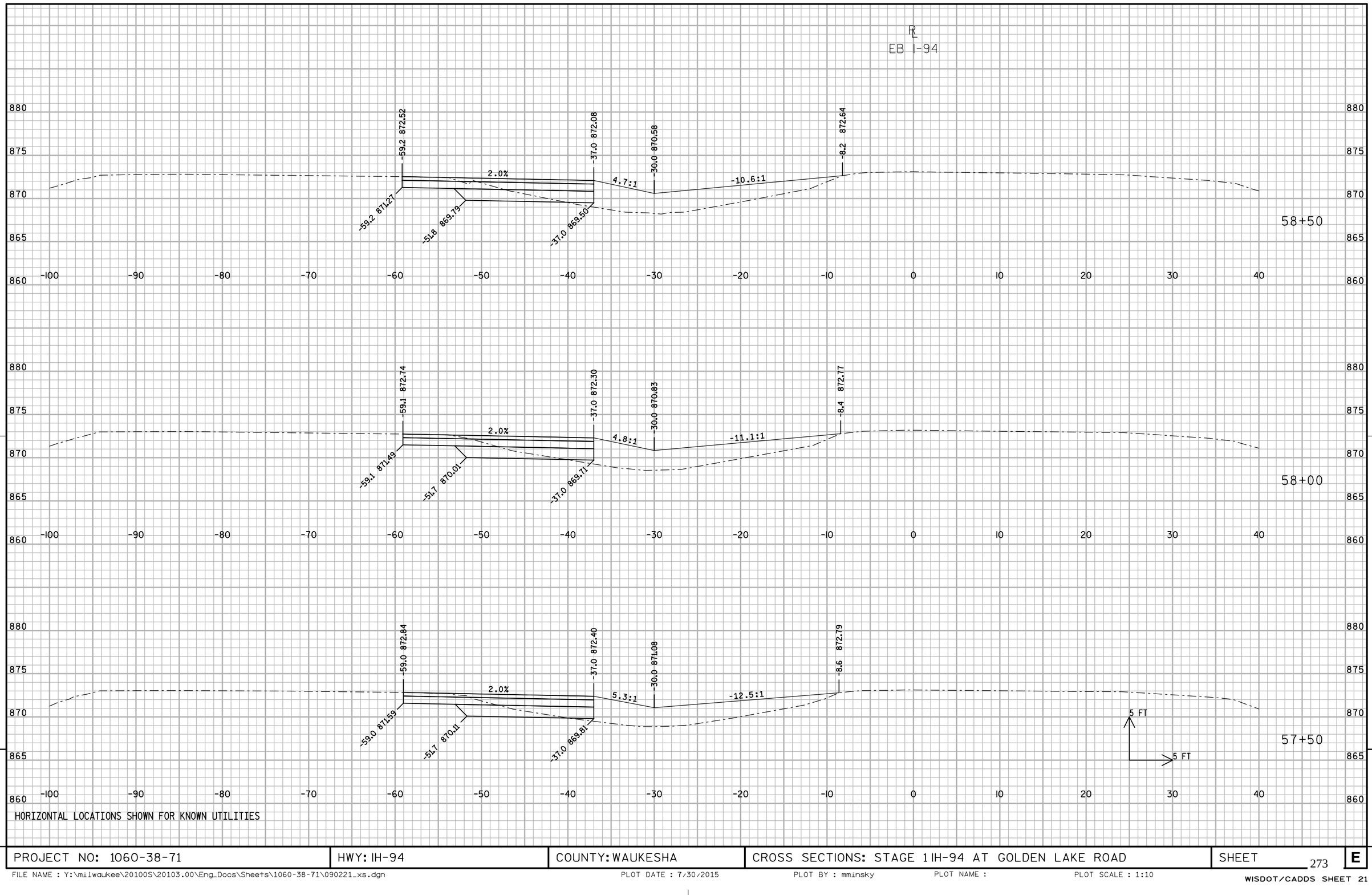
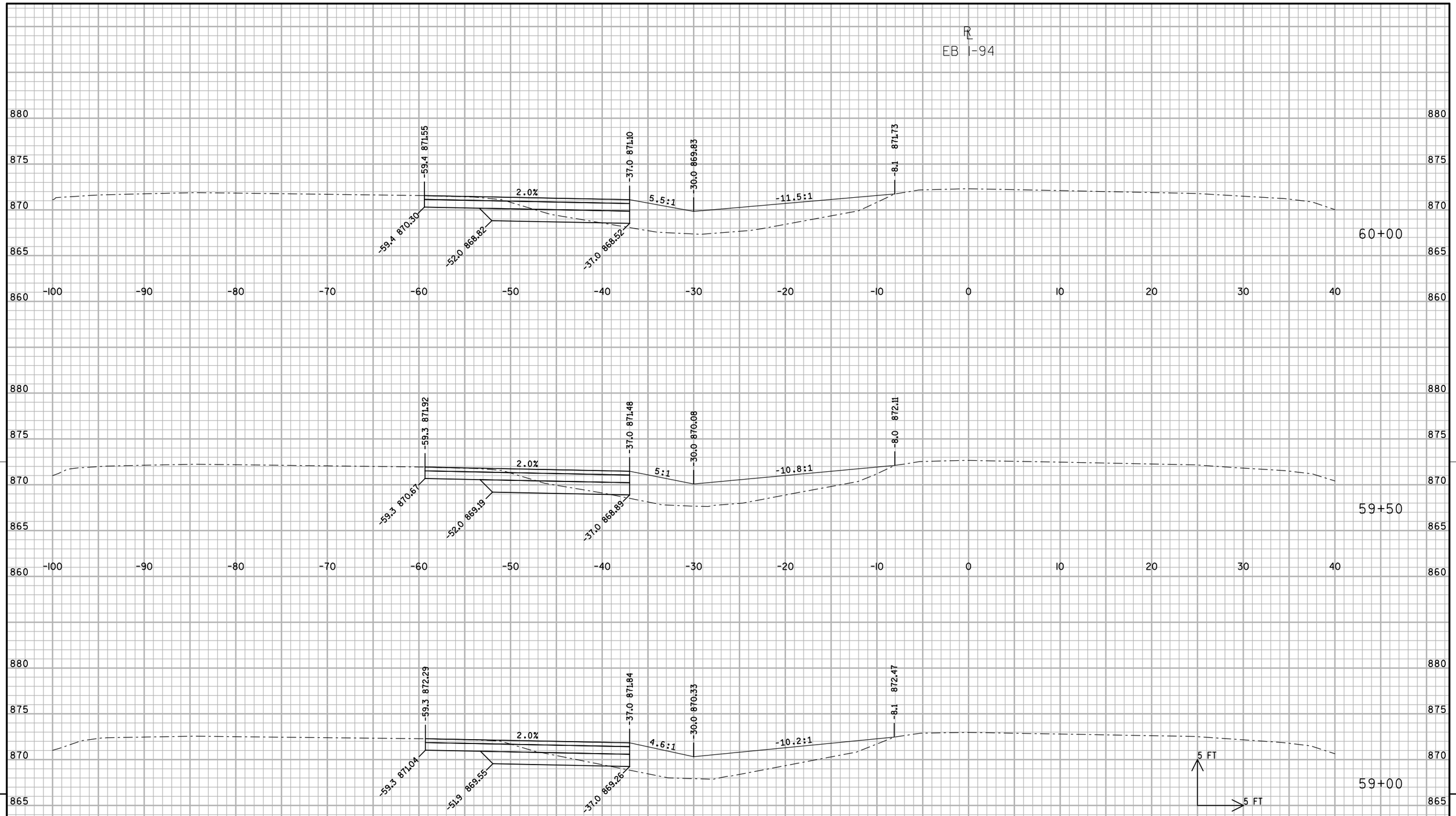


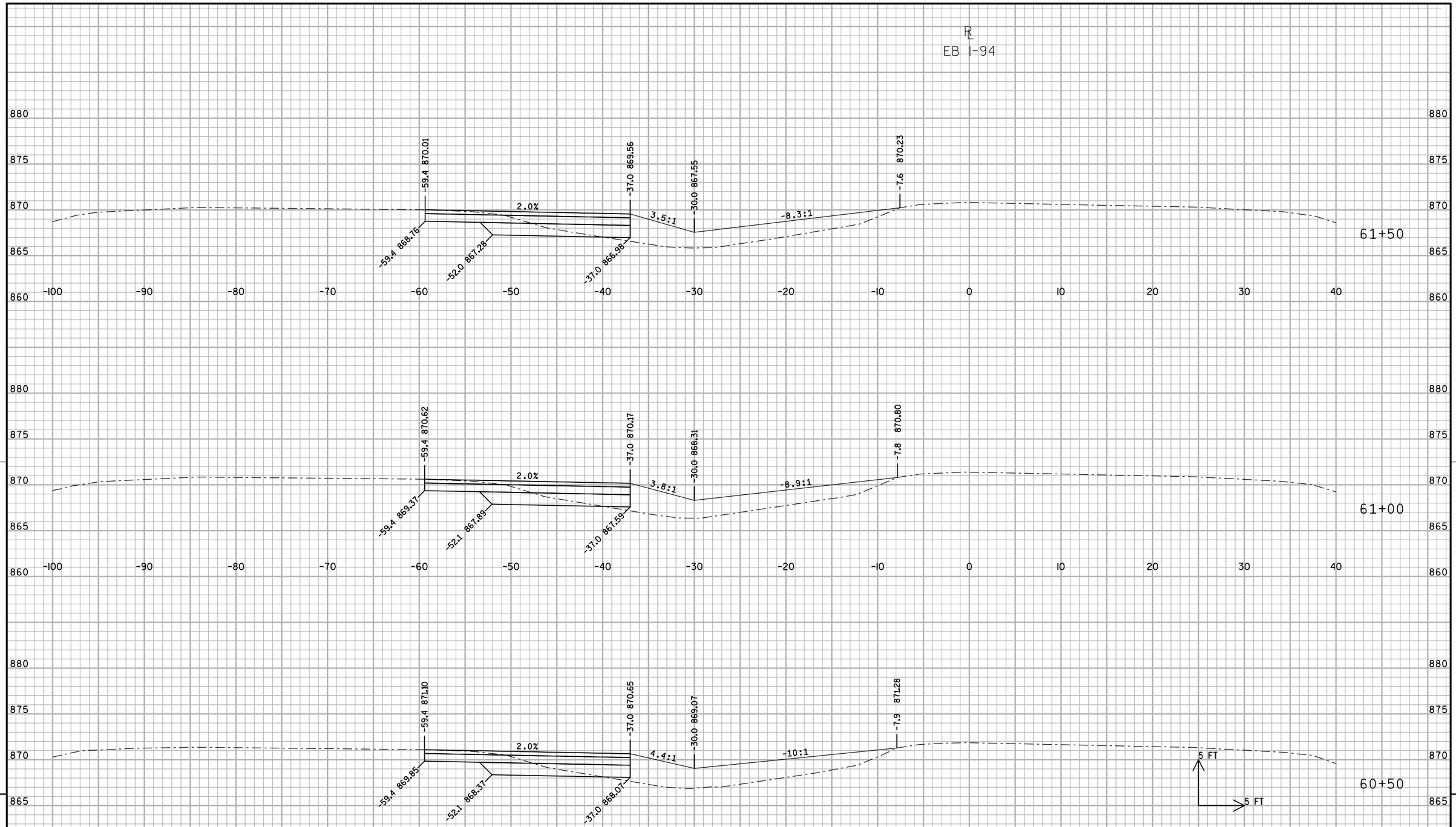
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 273	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 274	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 275	E

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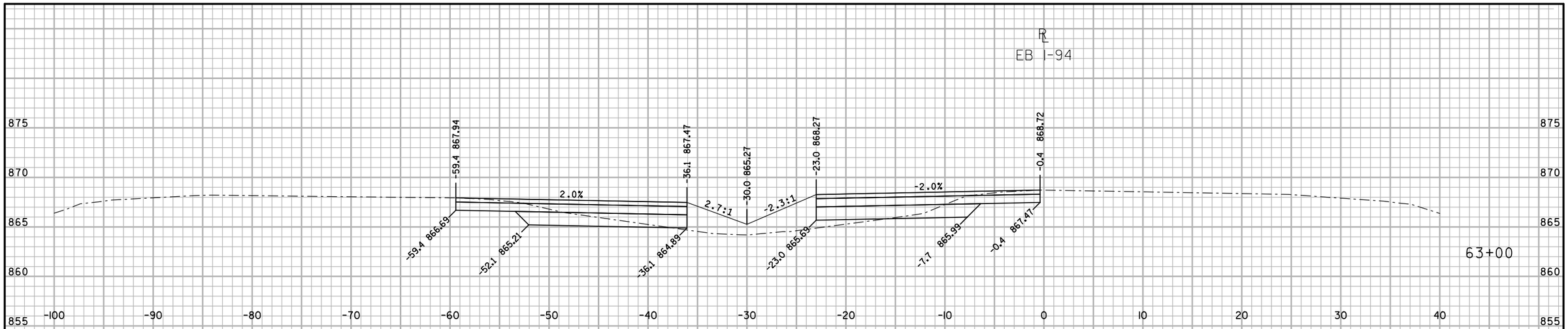
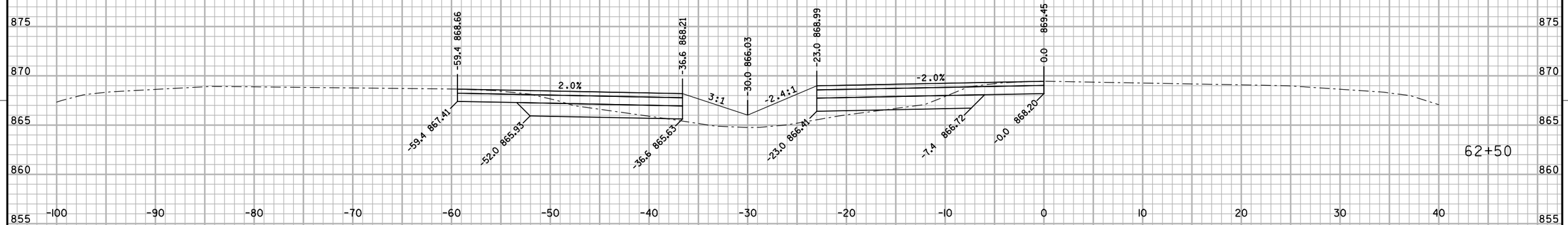
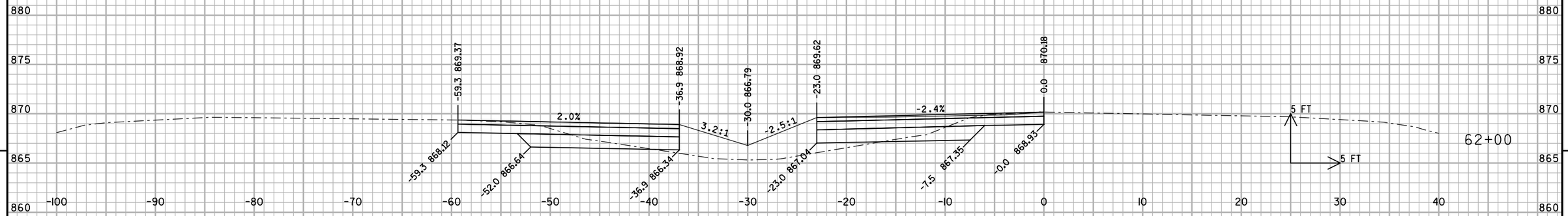
WISDOT/CADDS SHEET 21







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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 276	E

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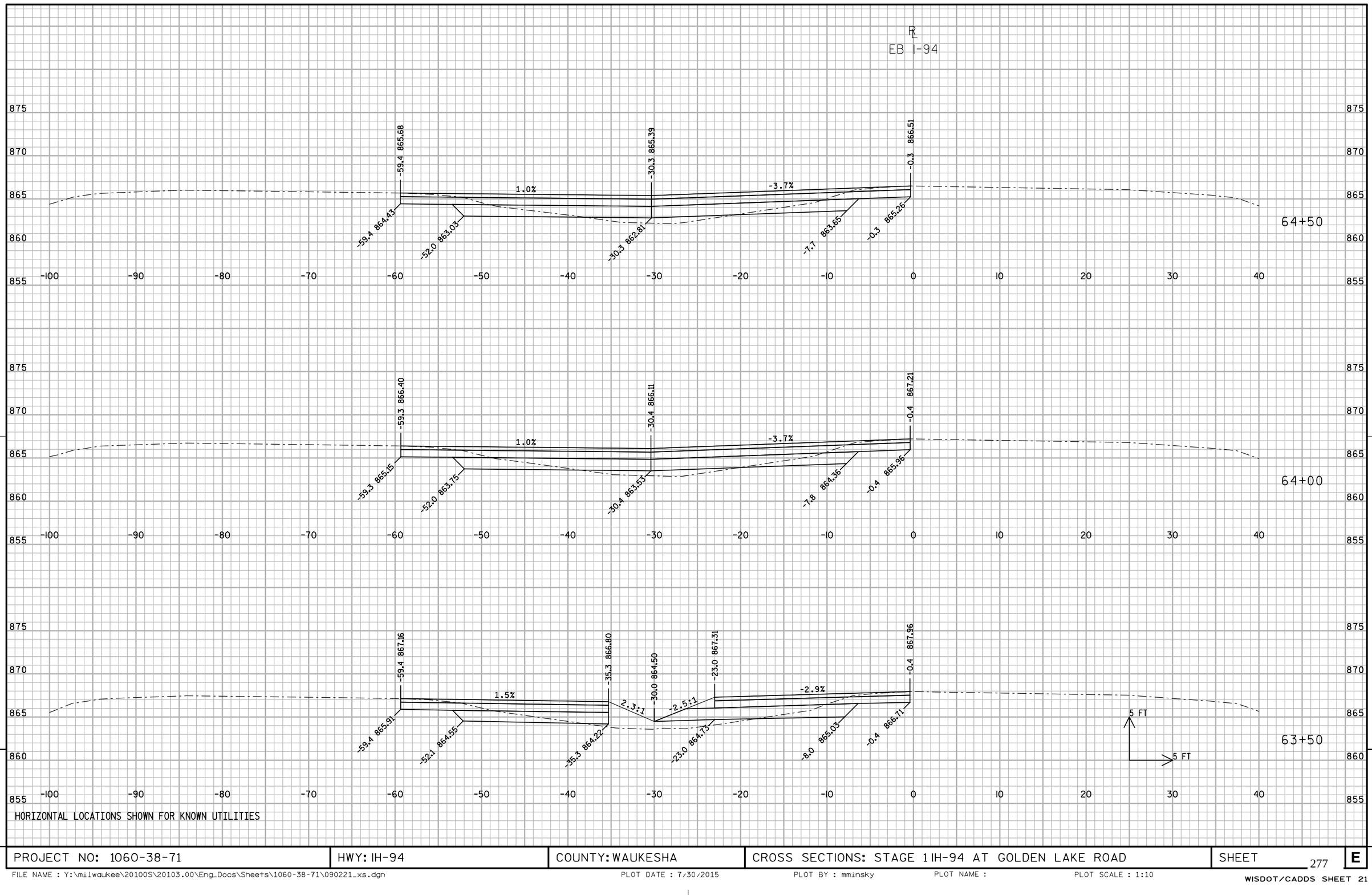

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 277	E

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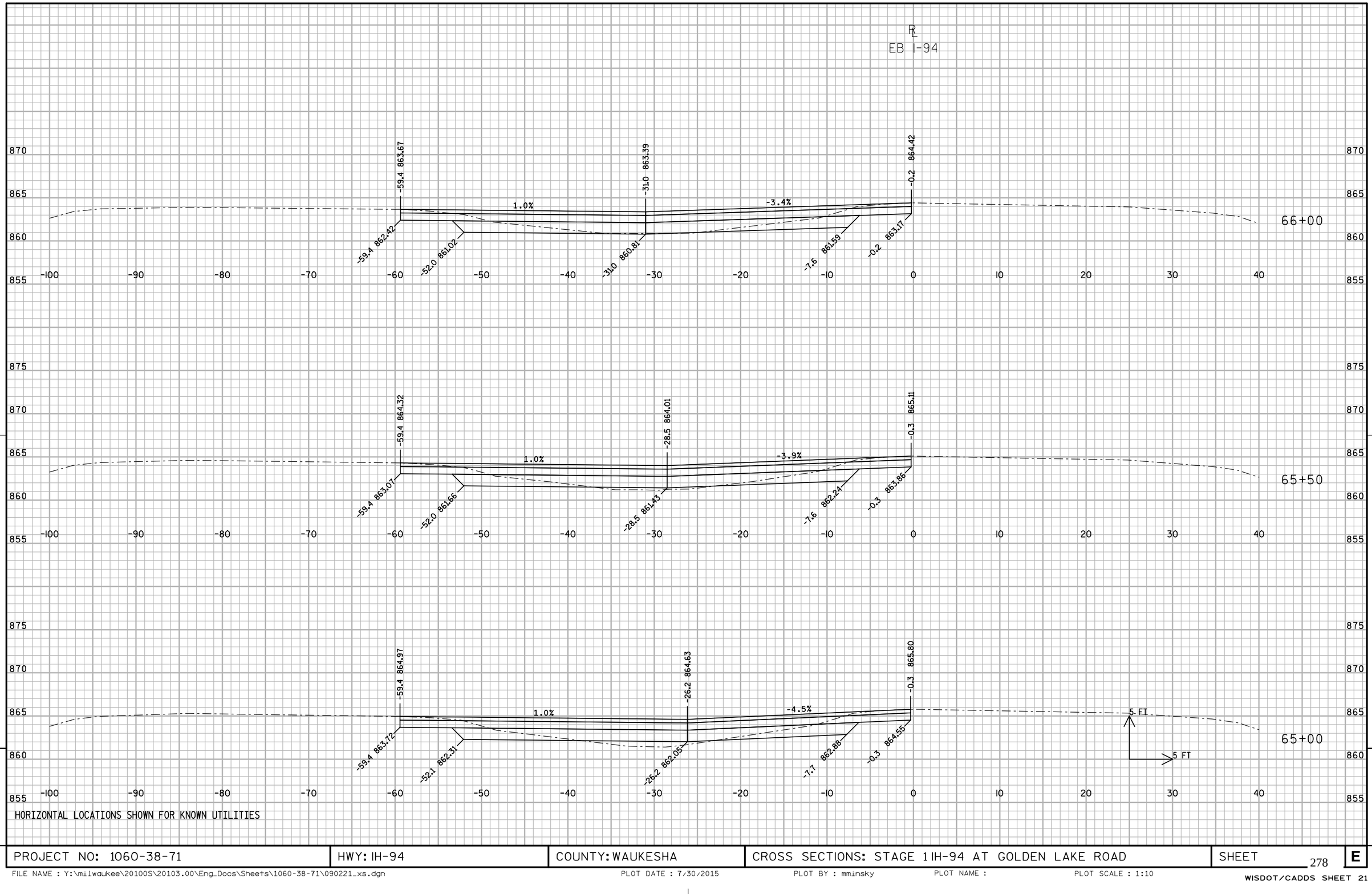

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 278	E

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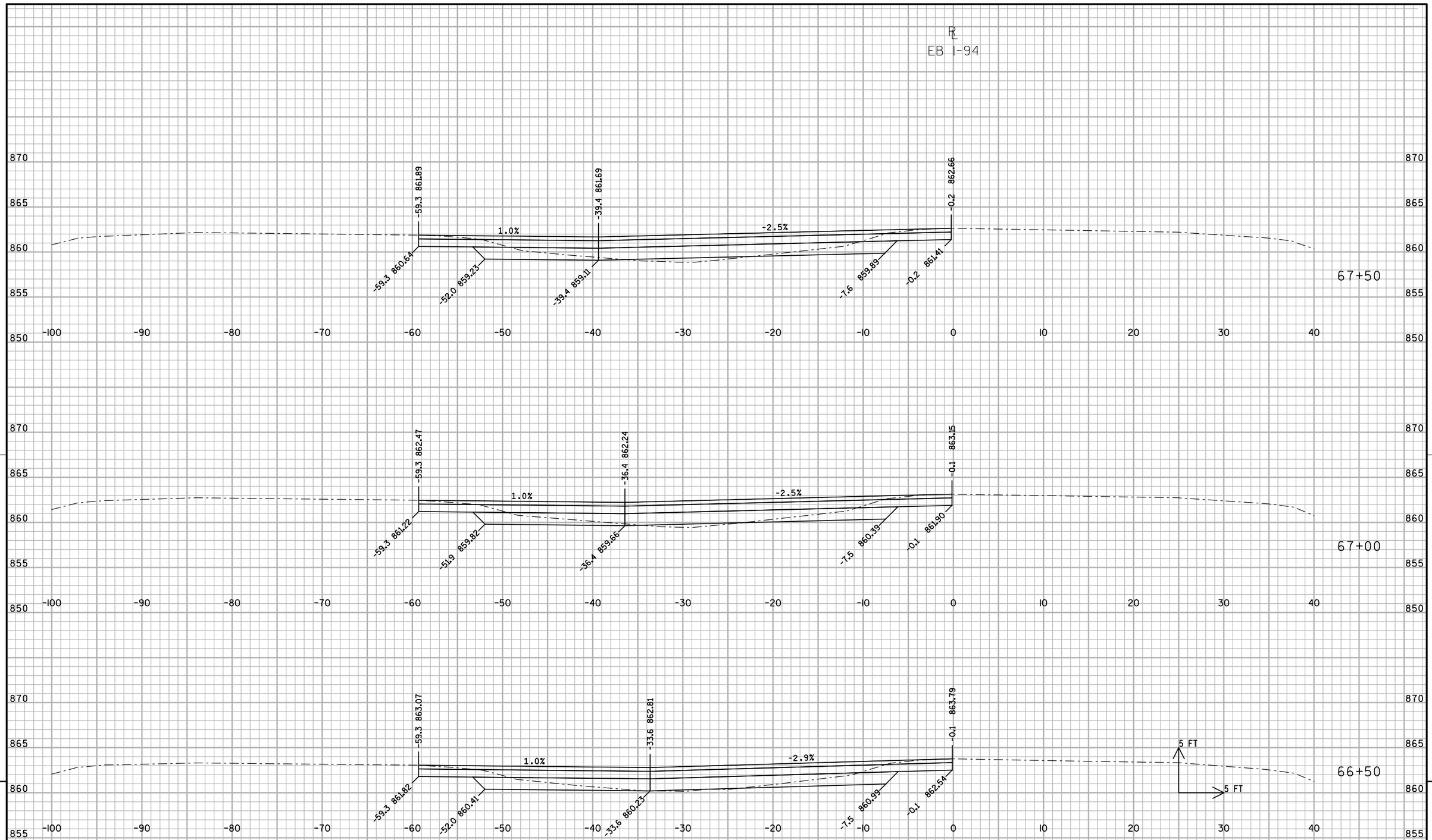
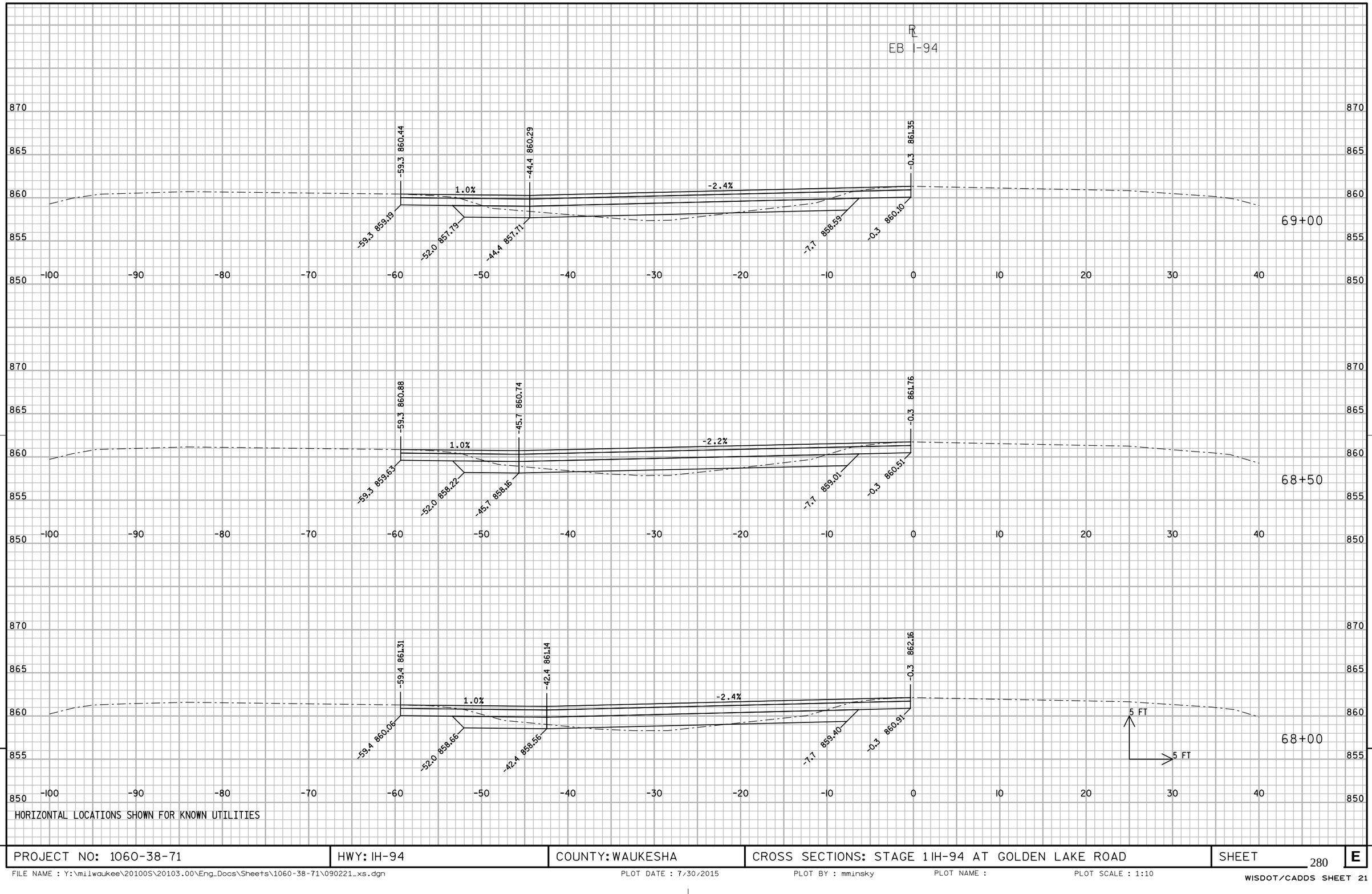
WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 279	E



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 280	E

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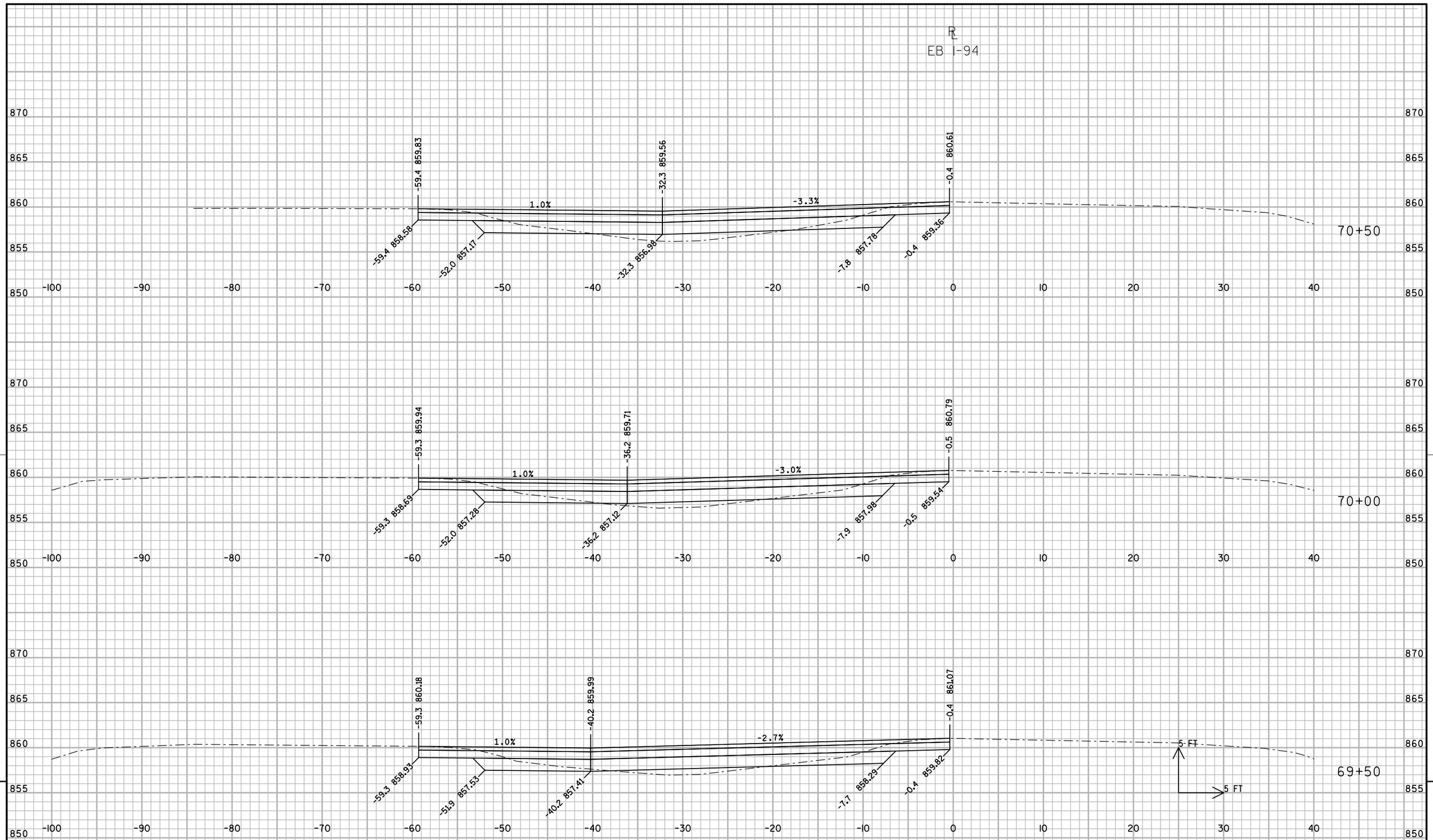


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

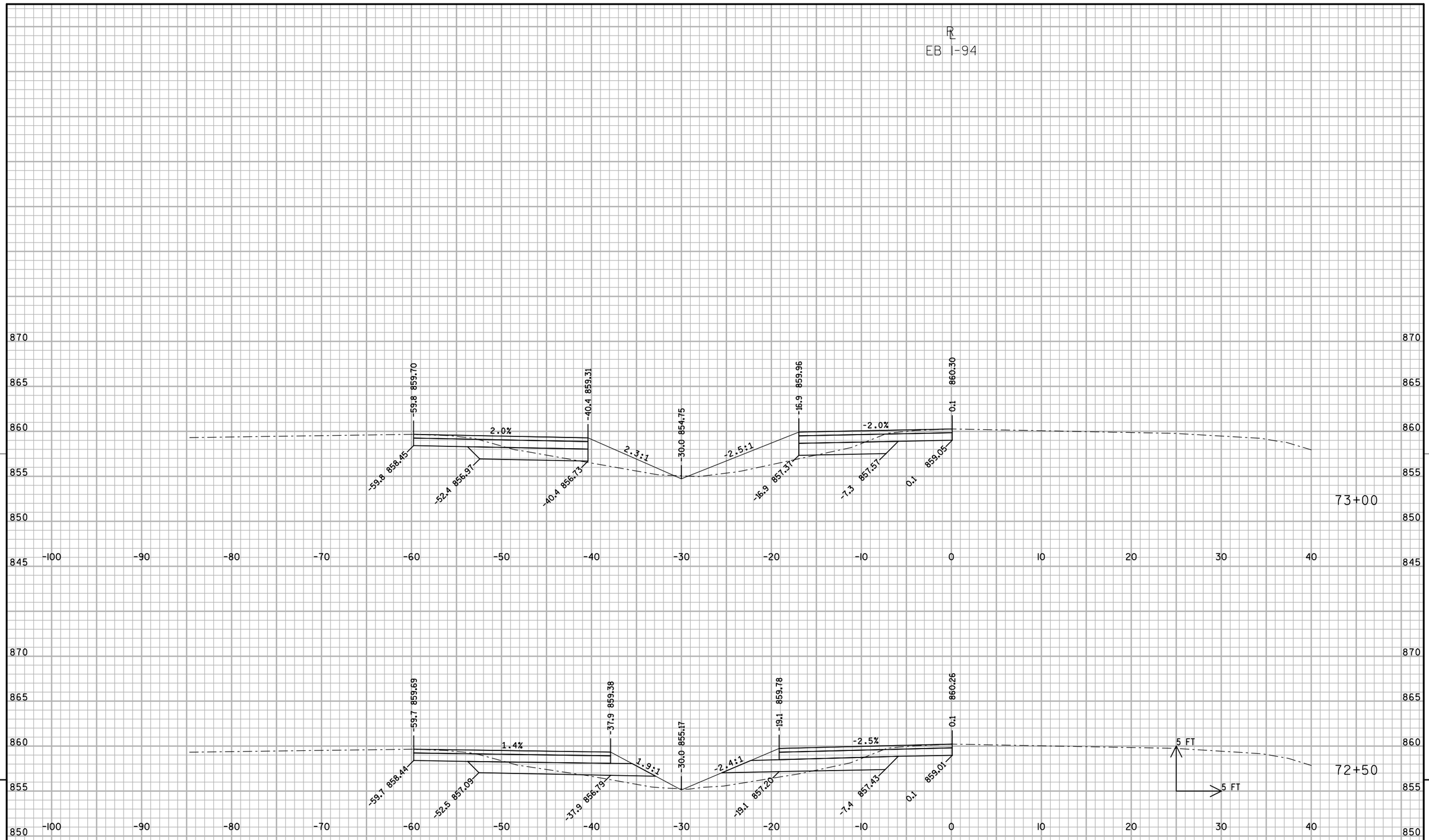
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 281	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090221_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 282	E



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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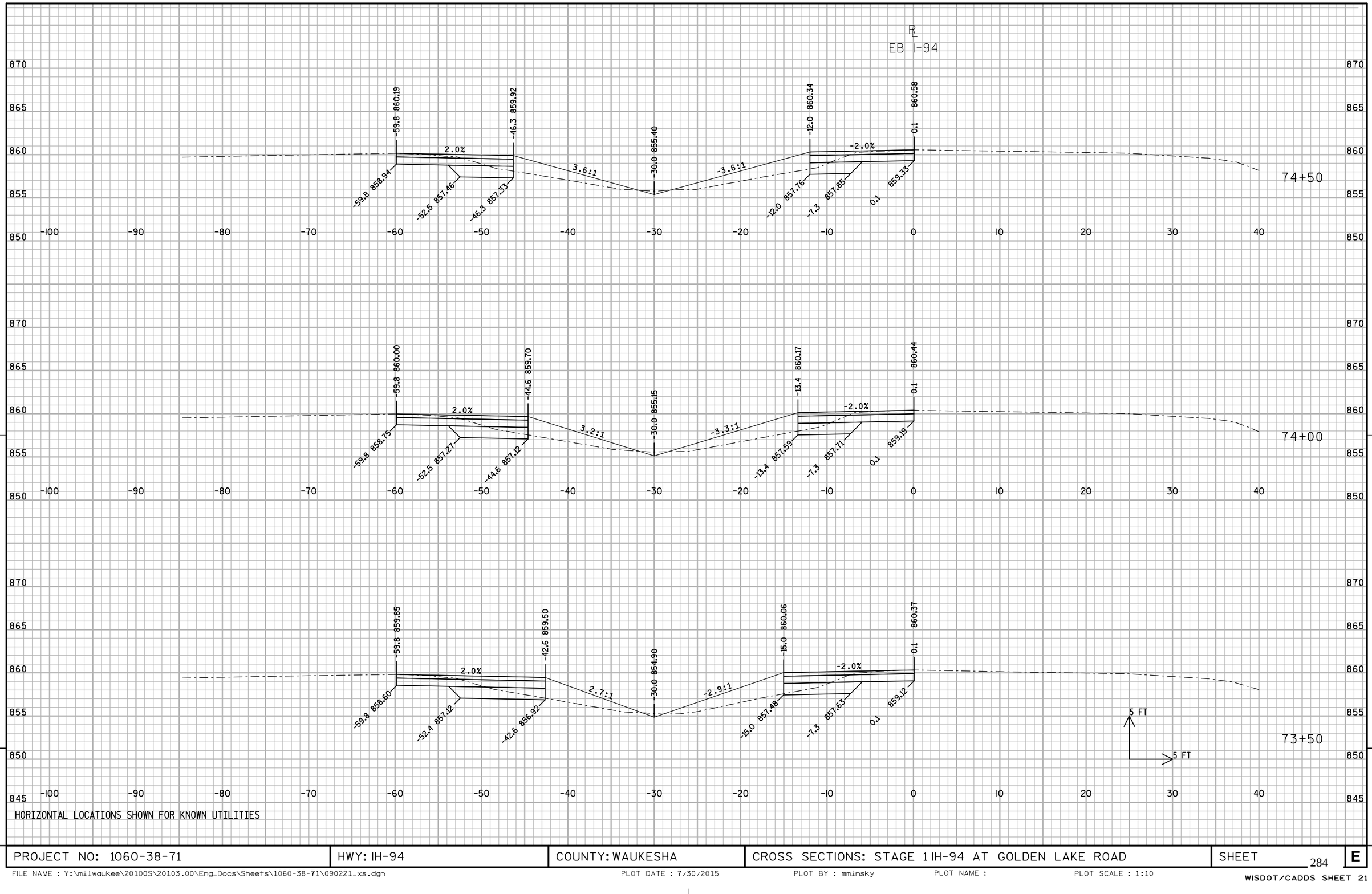
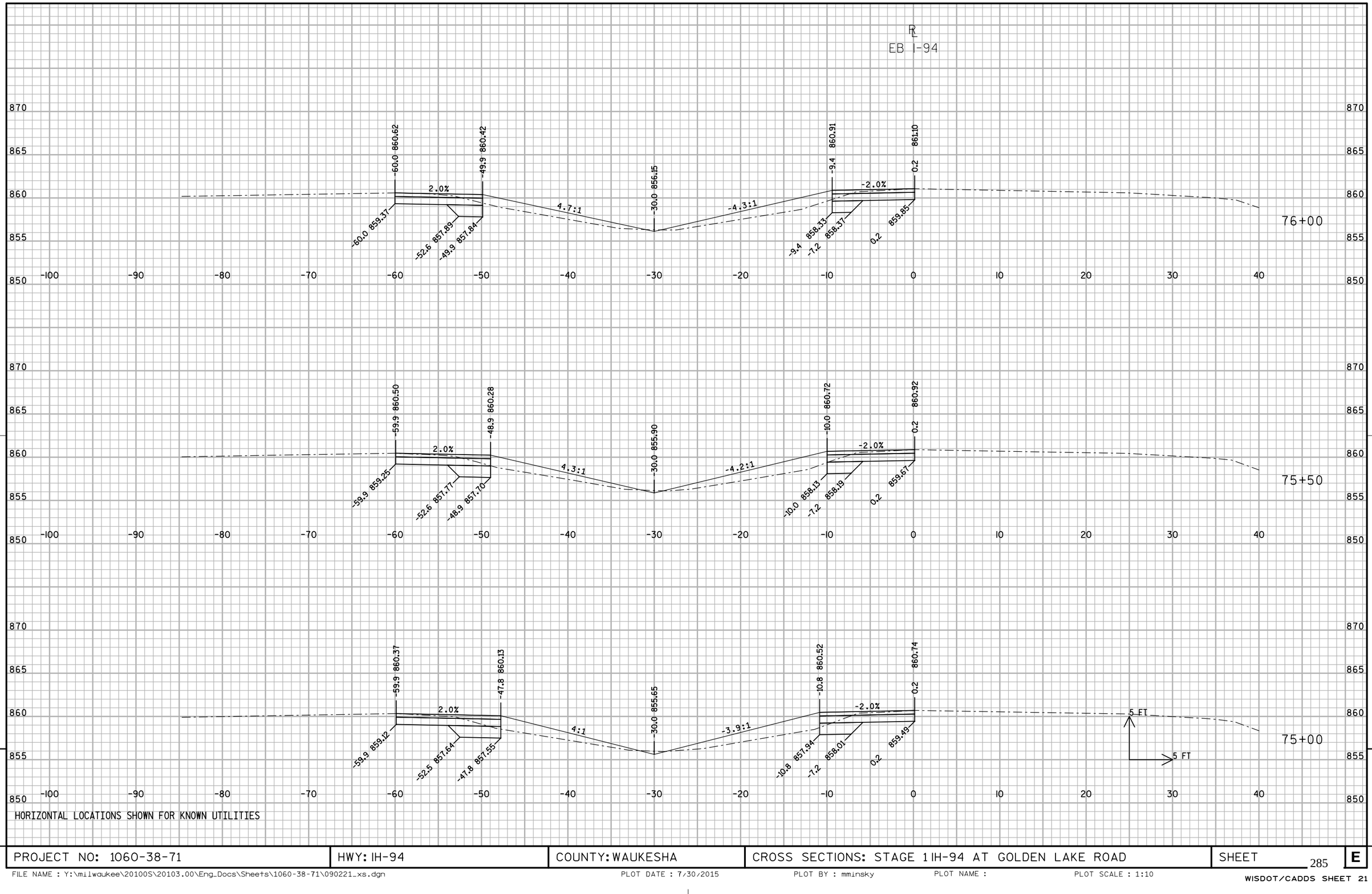


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 284	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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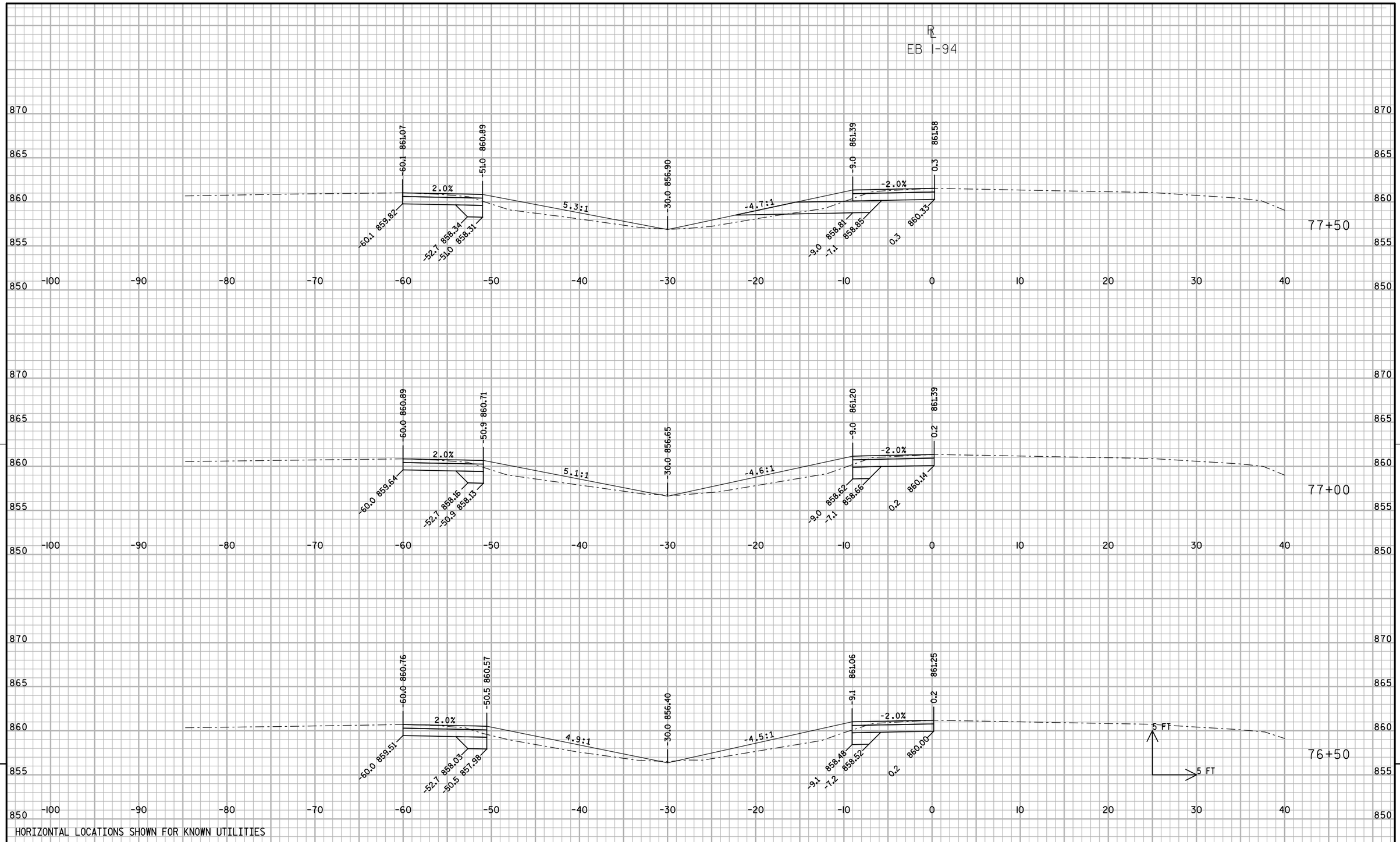
WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 286	E

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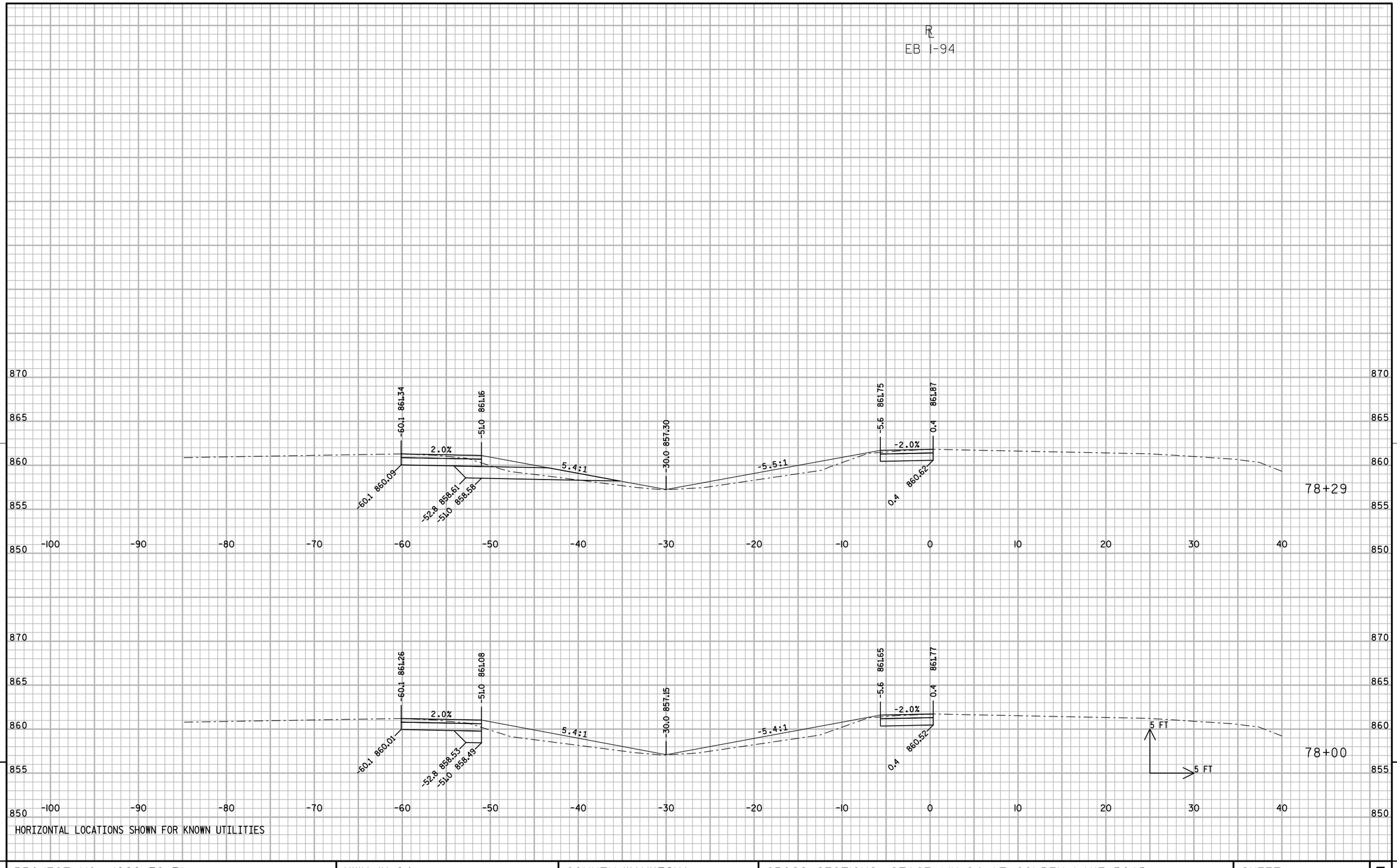

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 1 IH-94 AT GOLDEN LAKE ROAD	SHEET 287	E

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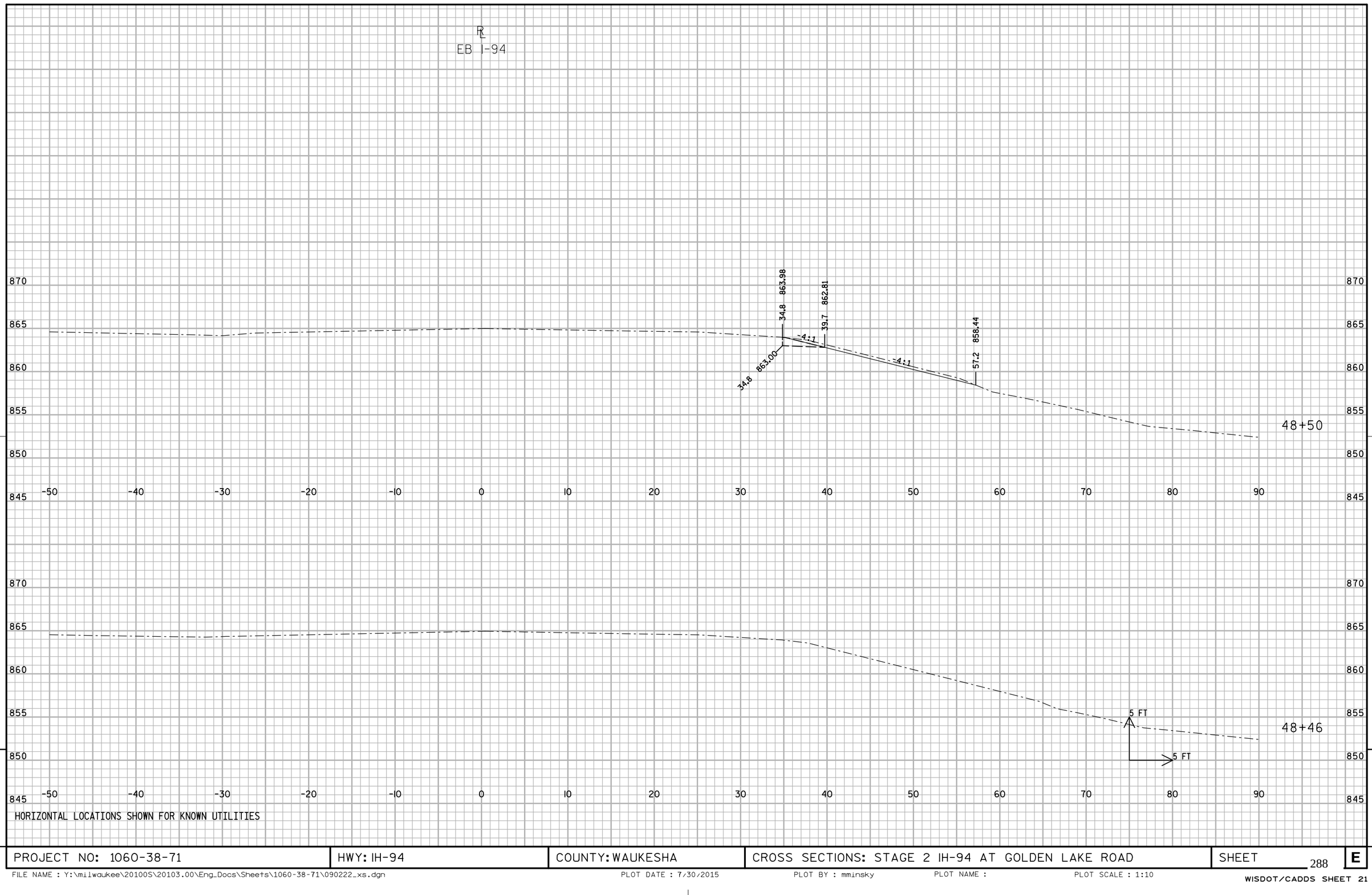

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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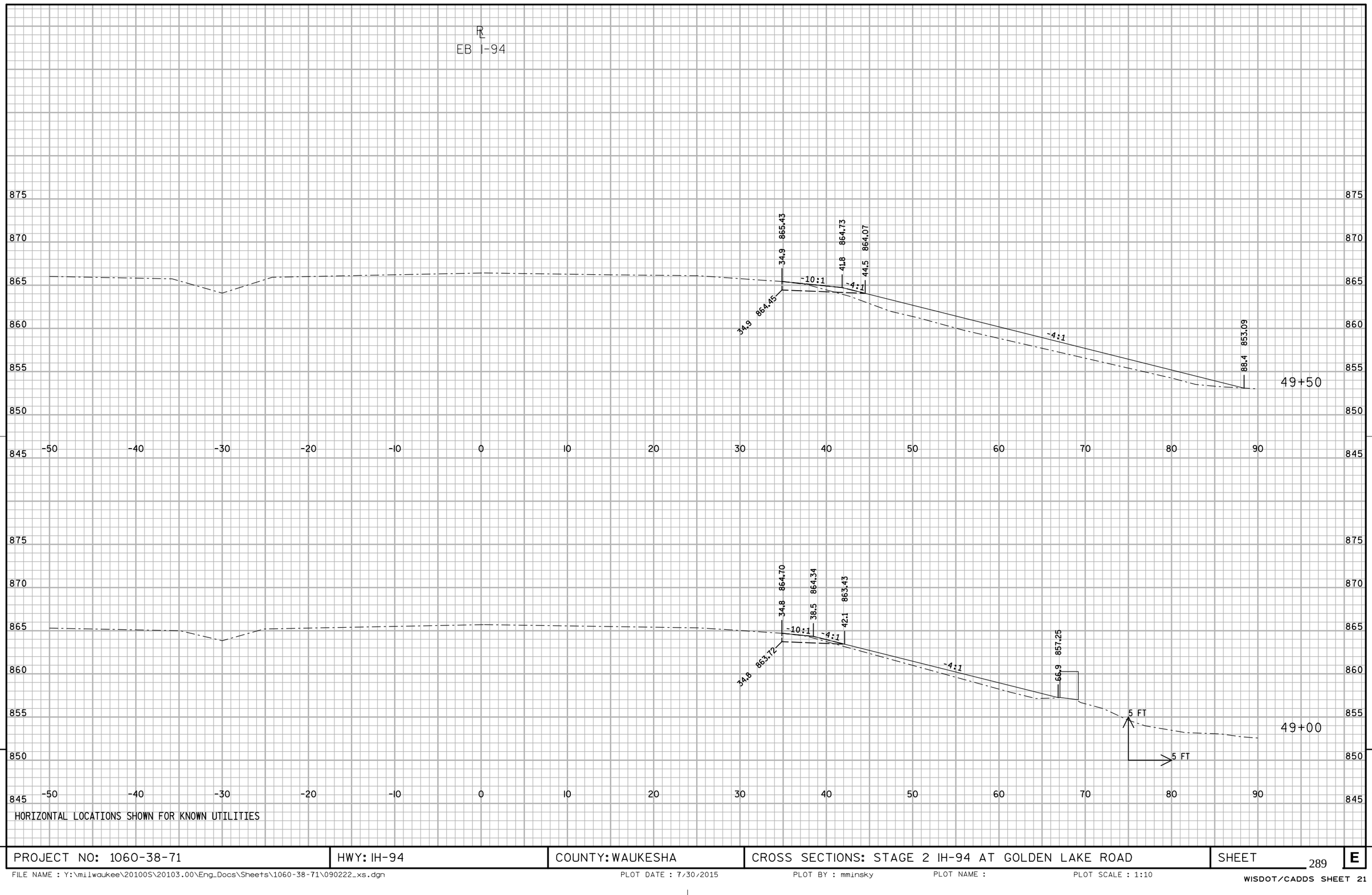

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT GOLDEN LAKE ROAD	SHEET 289	E

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WISDOT/CADDS SHEET 21

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EB I-94

875
870
865
860
855
850
845

-50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90

34.9 866.18
40.2 865.65
43.4 864.87
-10:1
-4:1
34.9 865.20

49+91

34.9 865.69
42.8 864.90
45.2 864.30
-10:1
-4:1
34.9 864.71
-4:1
89.1 853.33
5 FT
5 FT

49+66

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT GOLDEN LAKE ROAD	SHEET 290	E

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WISDOT/CADDS SHEET 21

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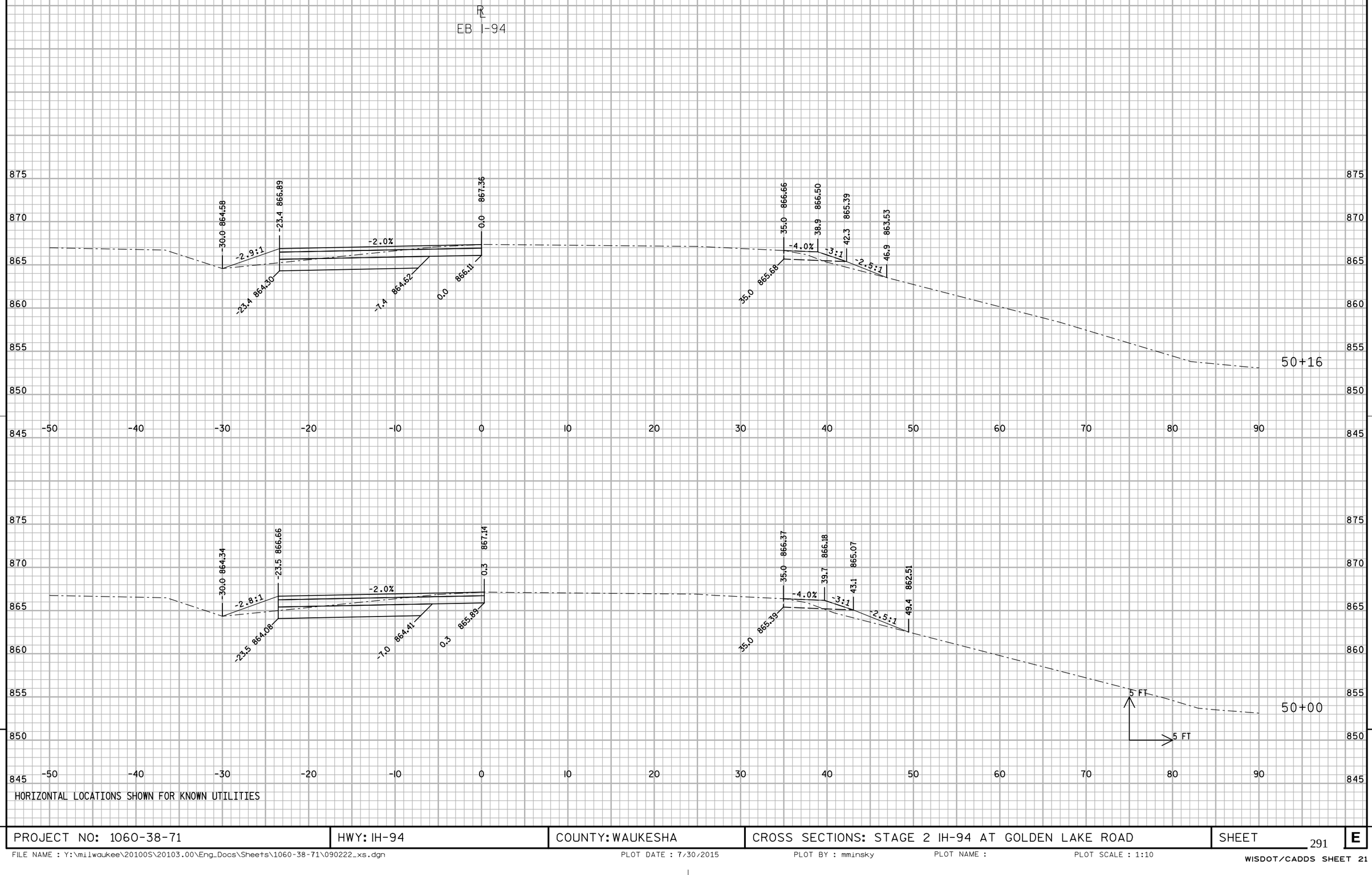
EB I-94



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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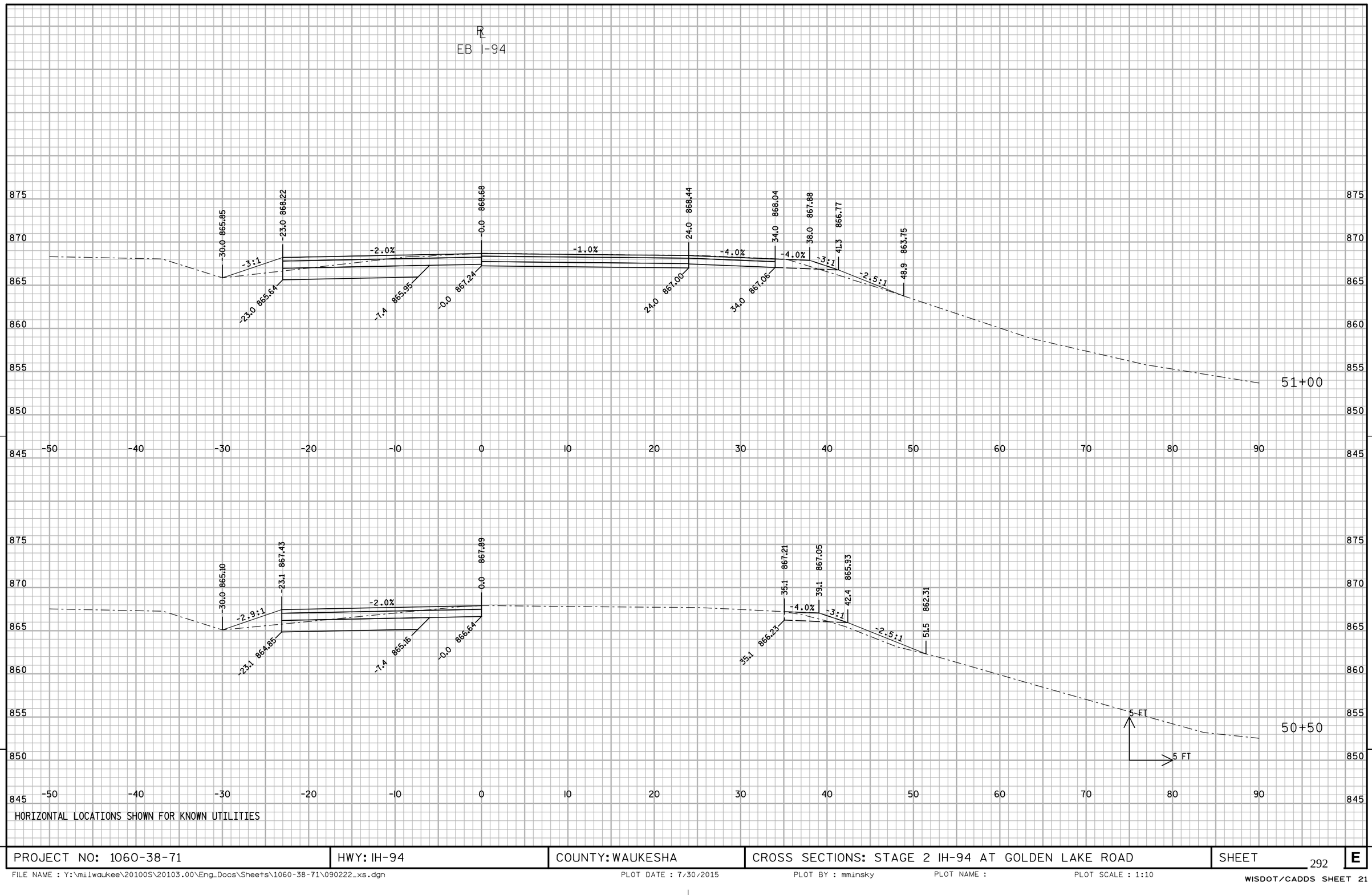

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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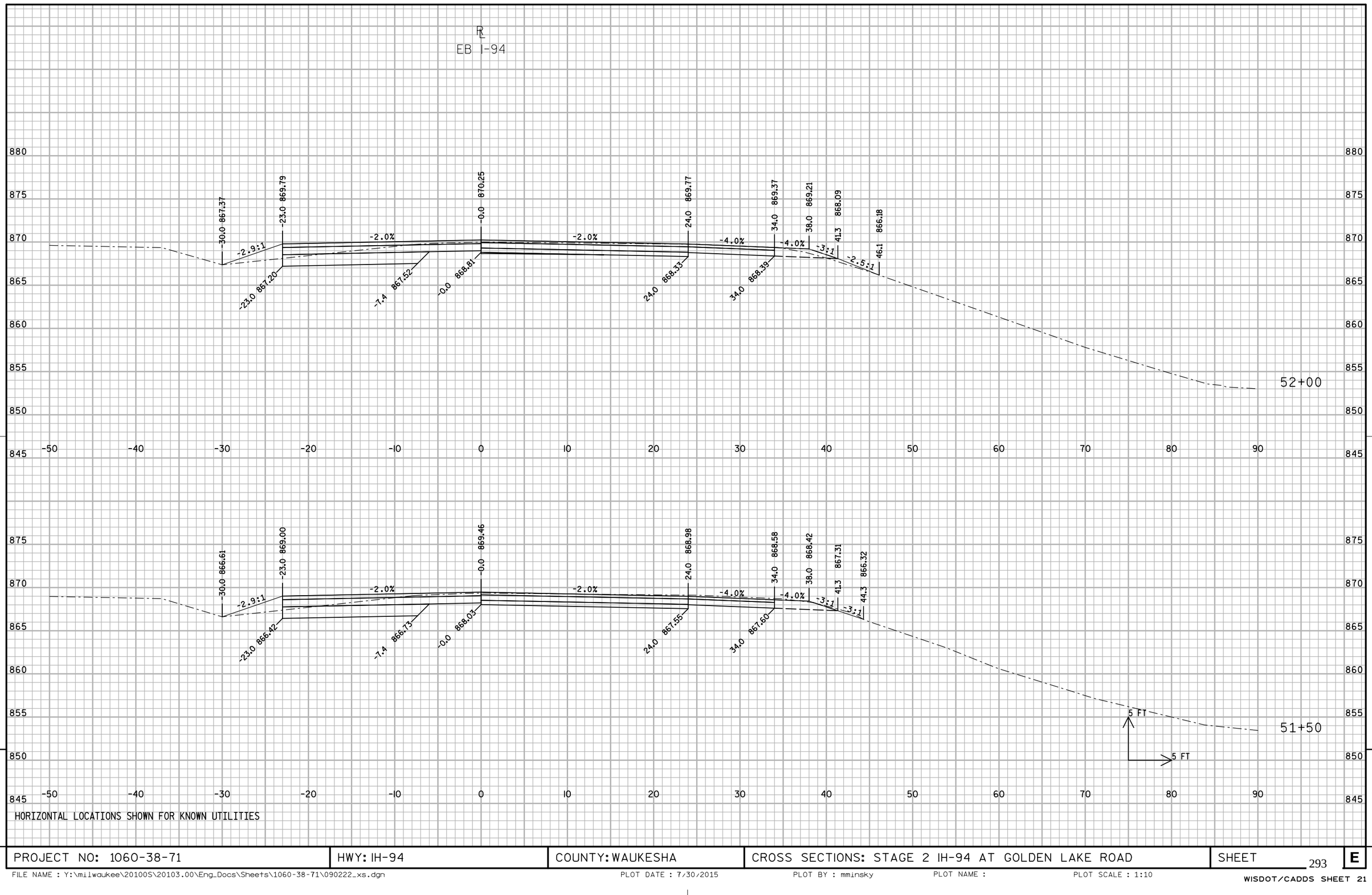
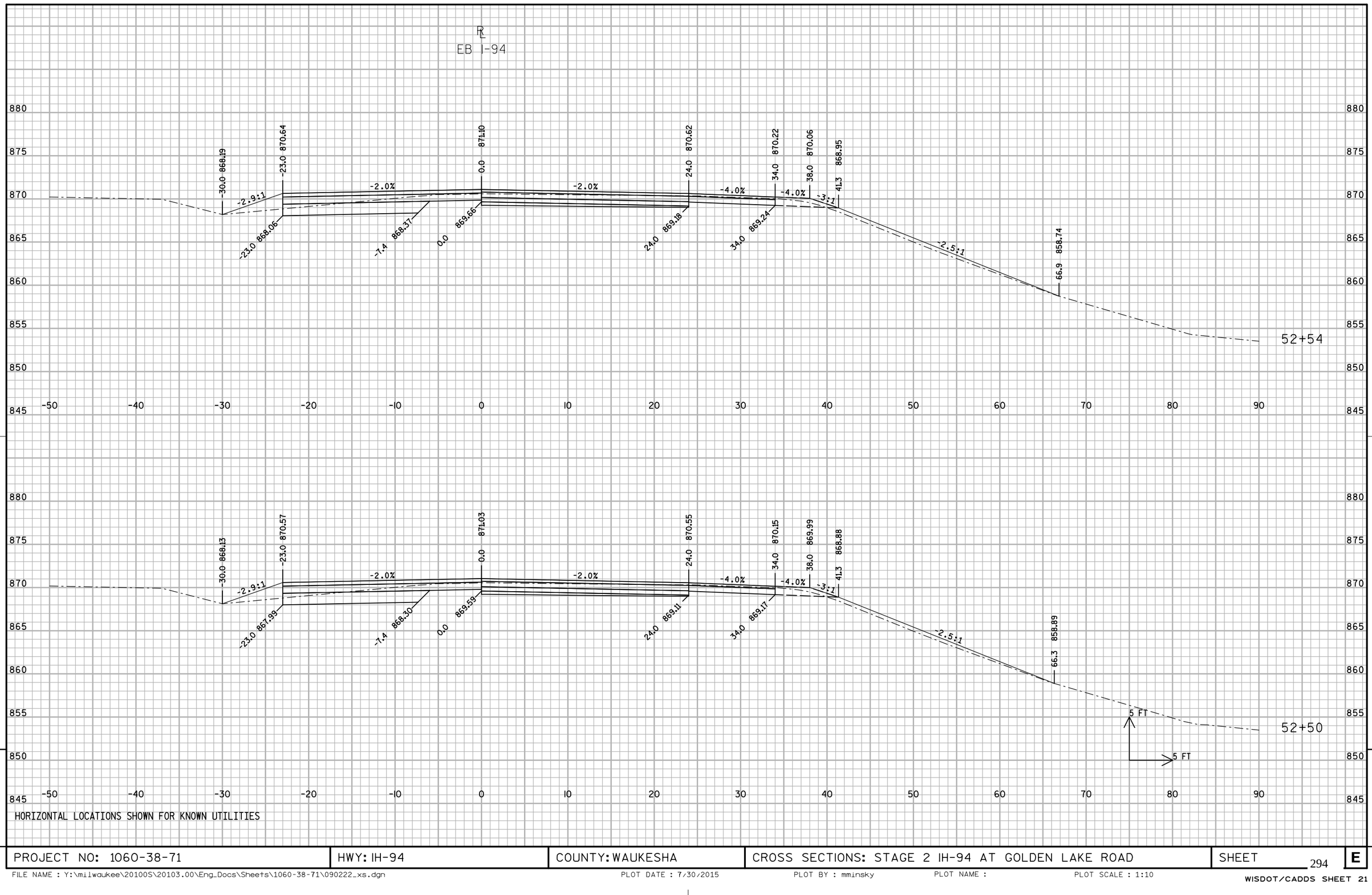


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT GOLDEN LAKE ROAD	SHEET 293	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090222_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT GOLDEN LAKE ROAD	SHEET 294	E

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WISDOT/CADDS SHEET 21

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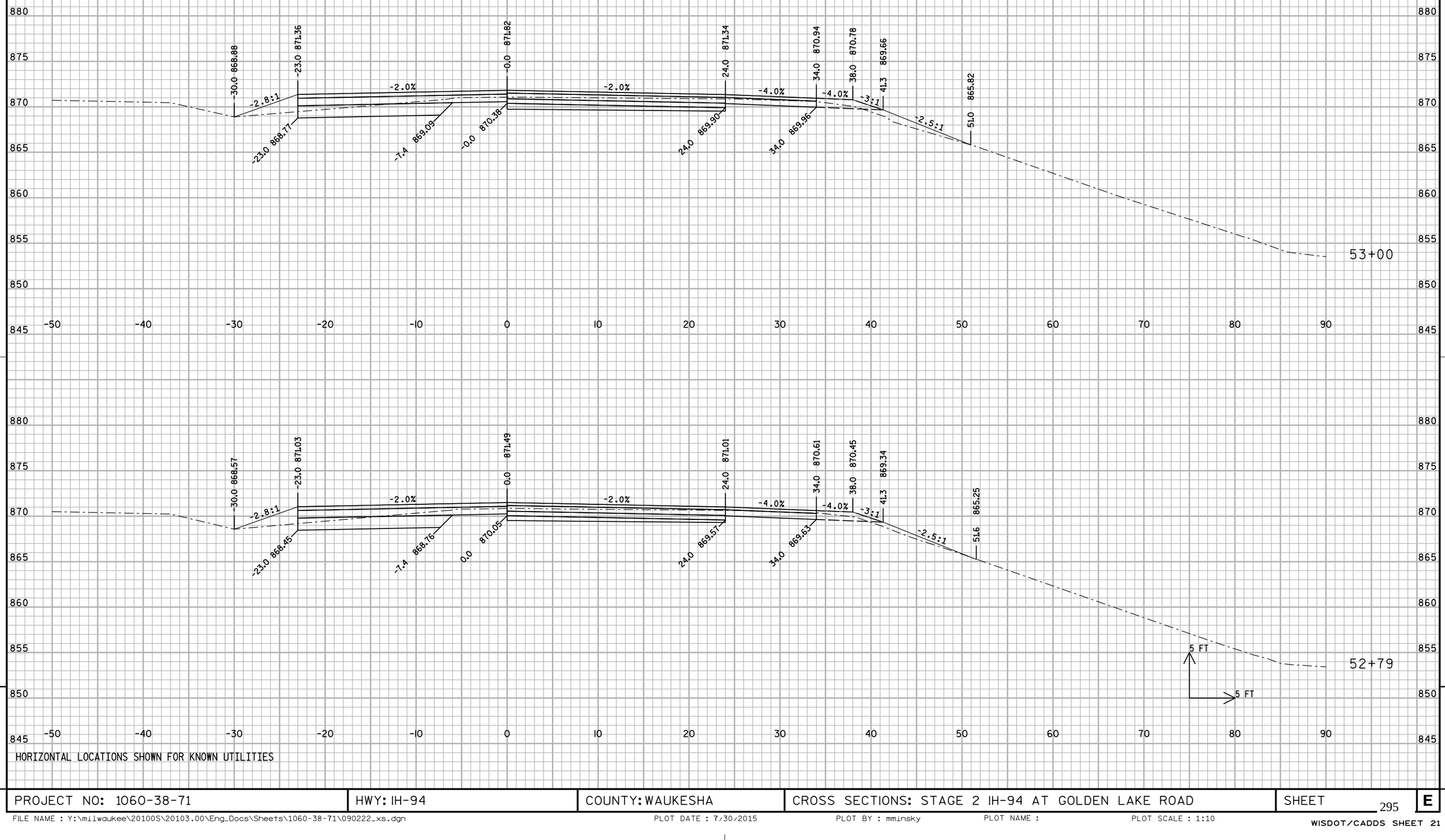
EB I-94



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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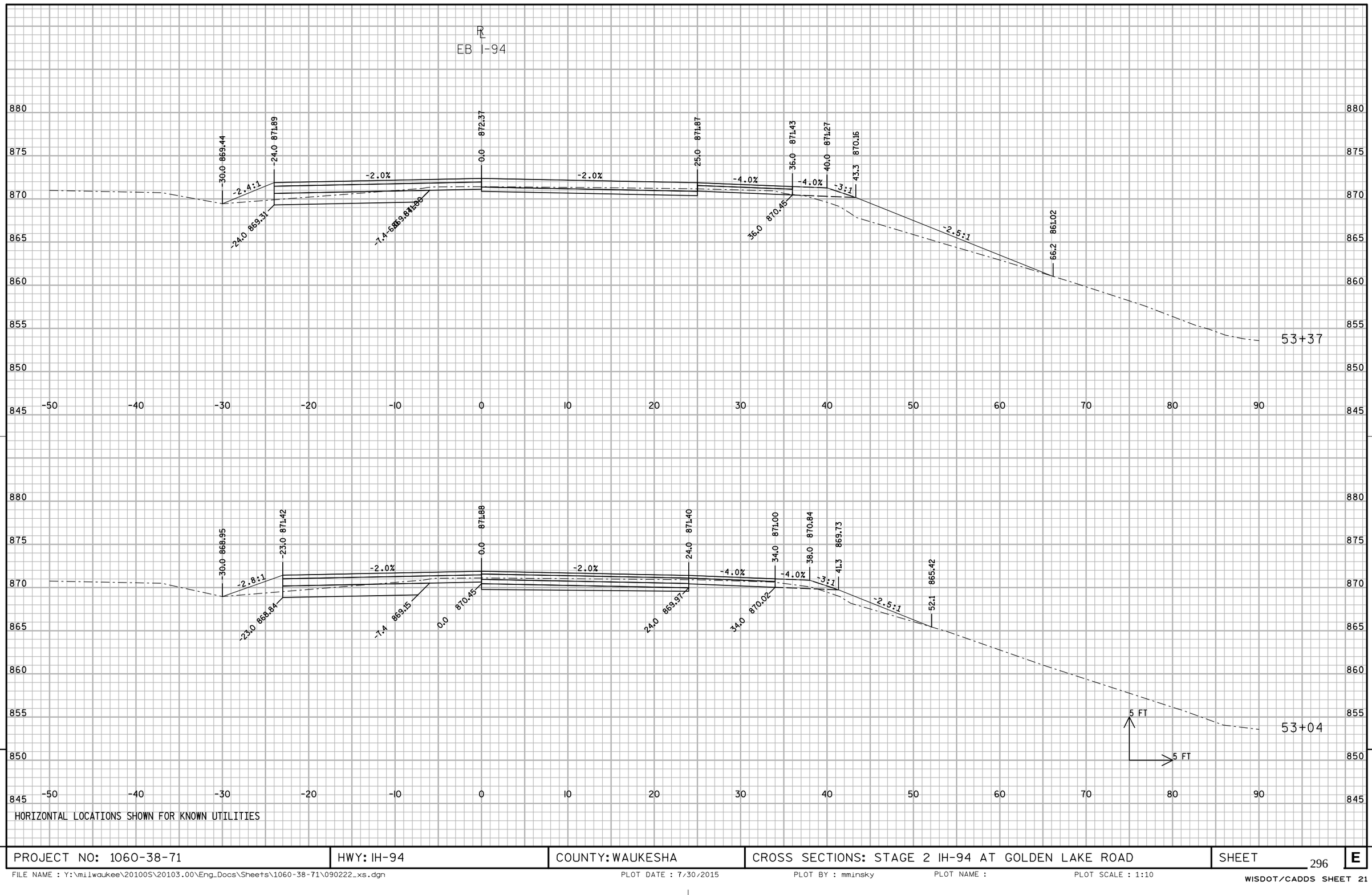

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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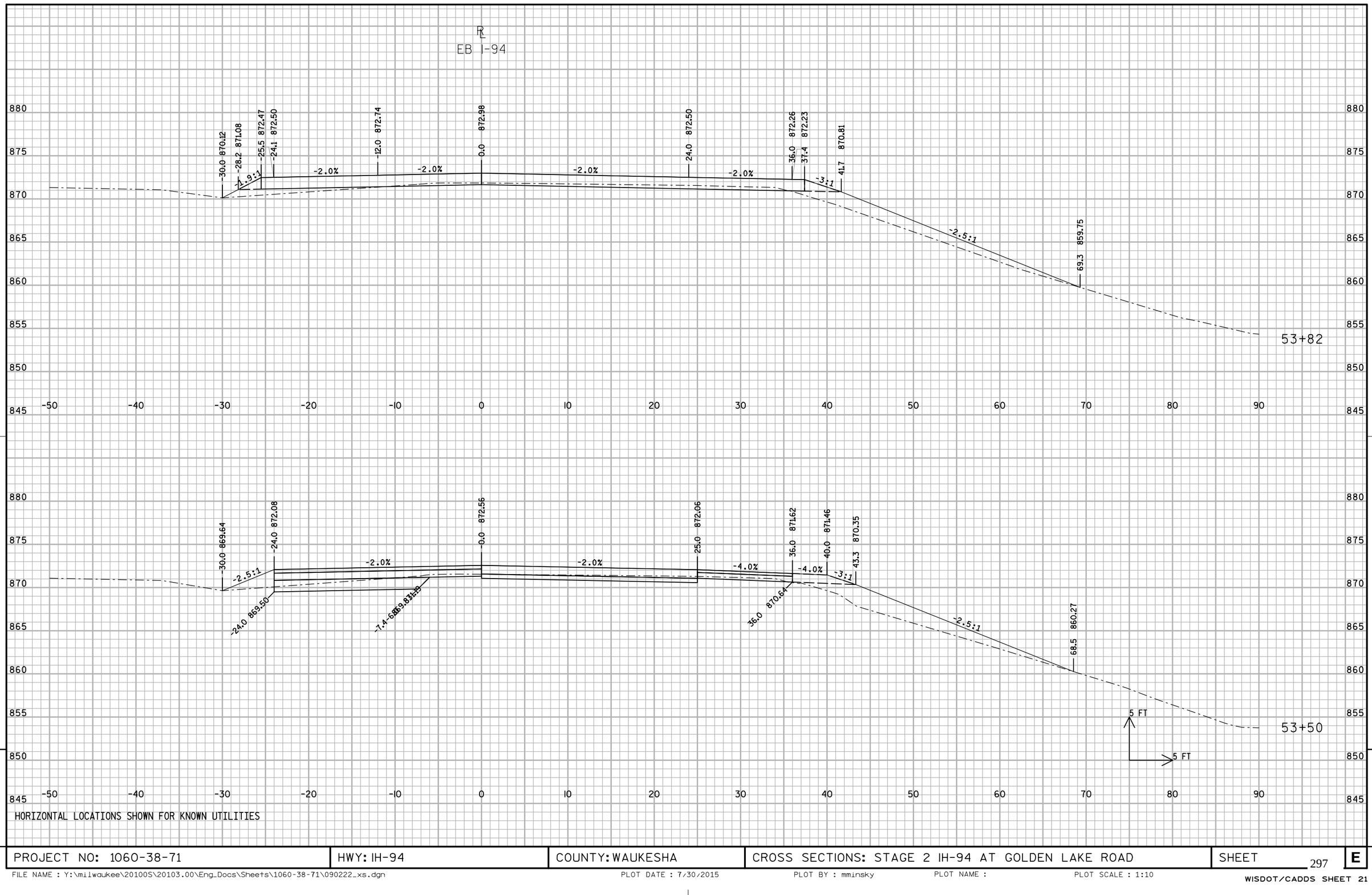
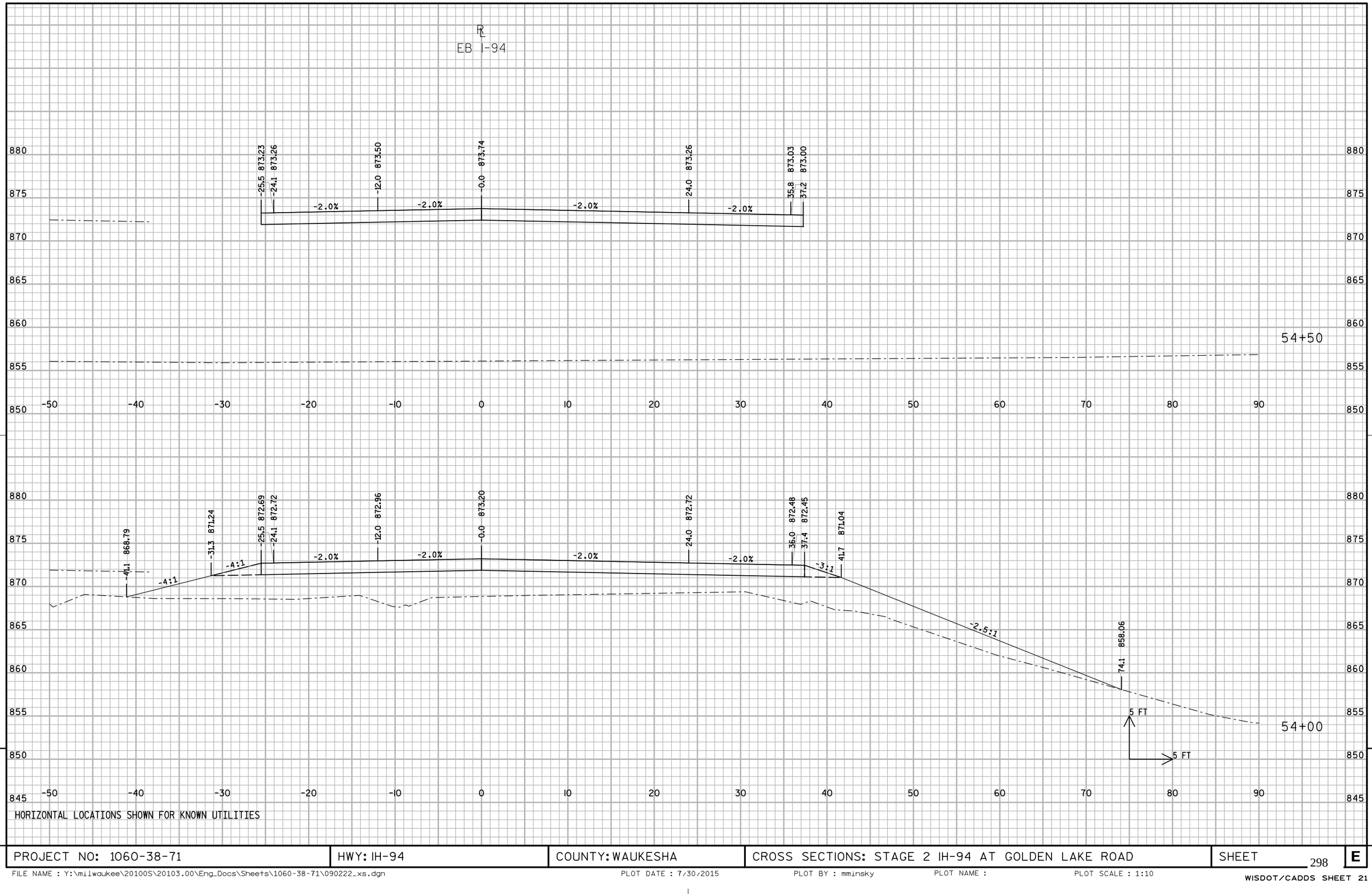


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT GOLDEN LAKE ROAD	SHEET 297	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090222_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

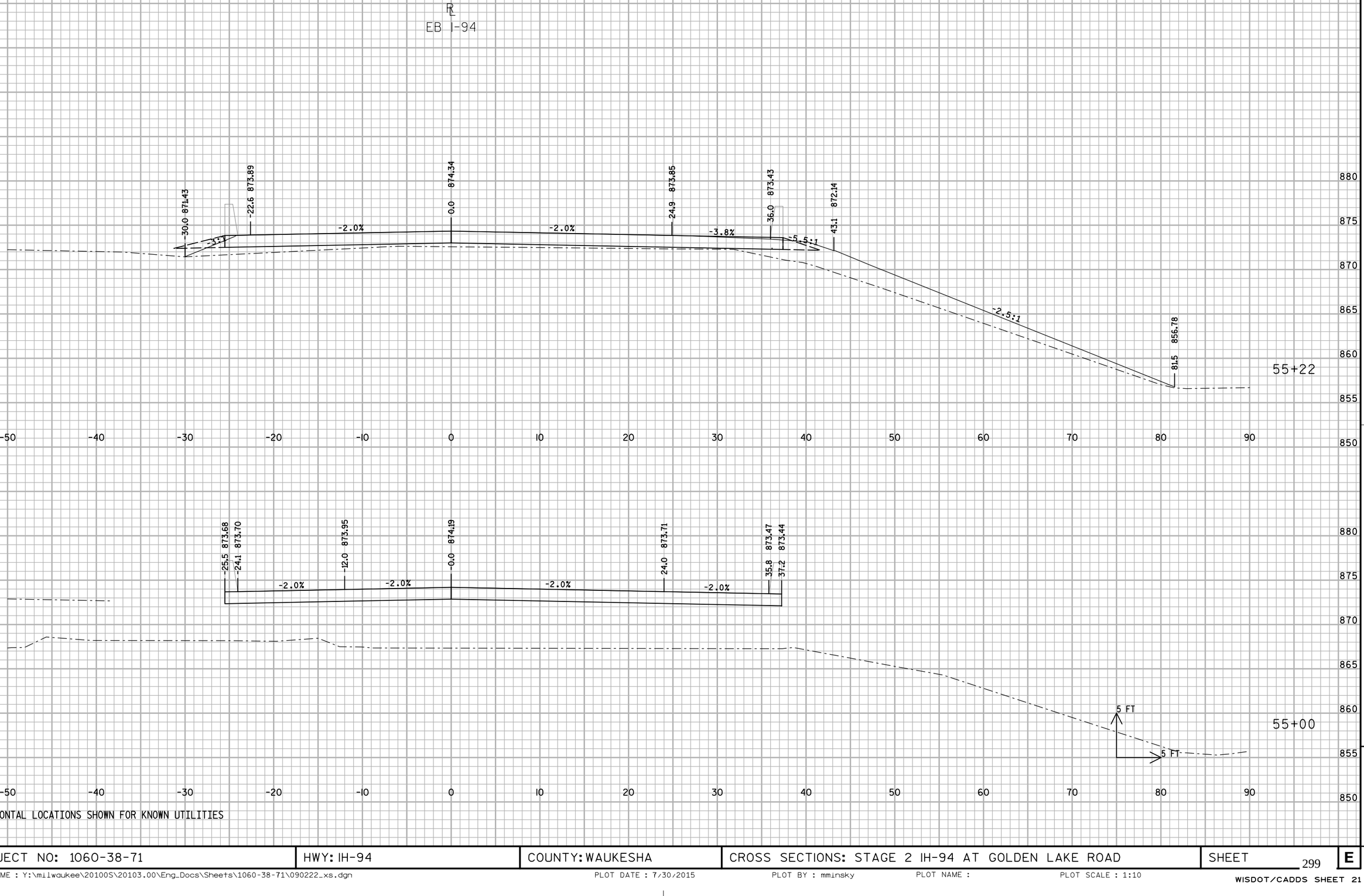
WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT GOLDEN LAKE ROAD	SHEET 298	E

EB I-94

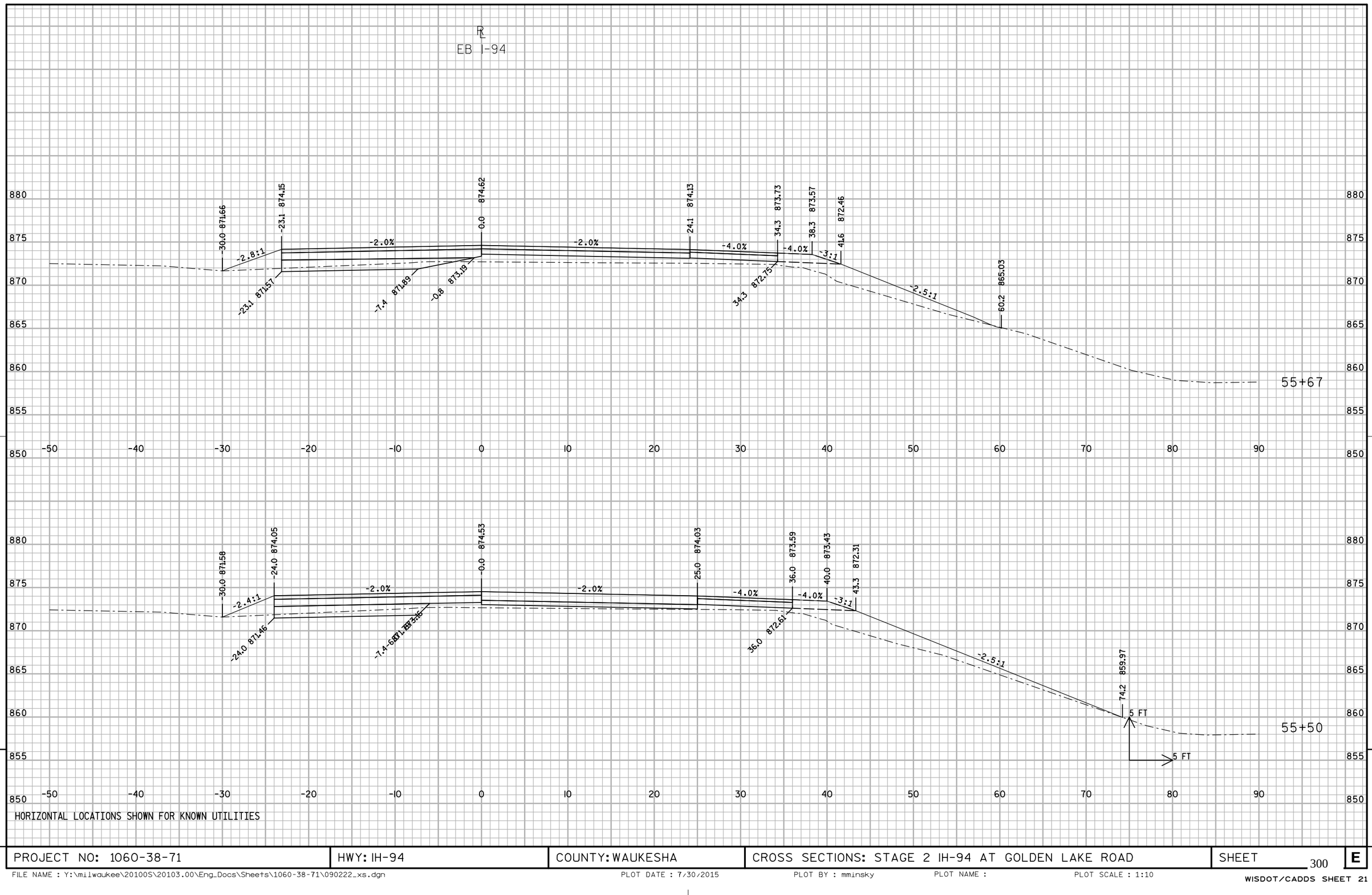


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT GOLDEN LAKE ROAD	SHEET 299	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090222_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT GOLDEN LAKE ROAD	SHEET 300	E

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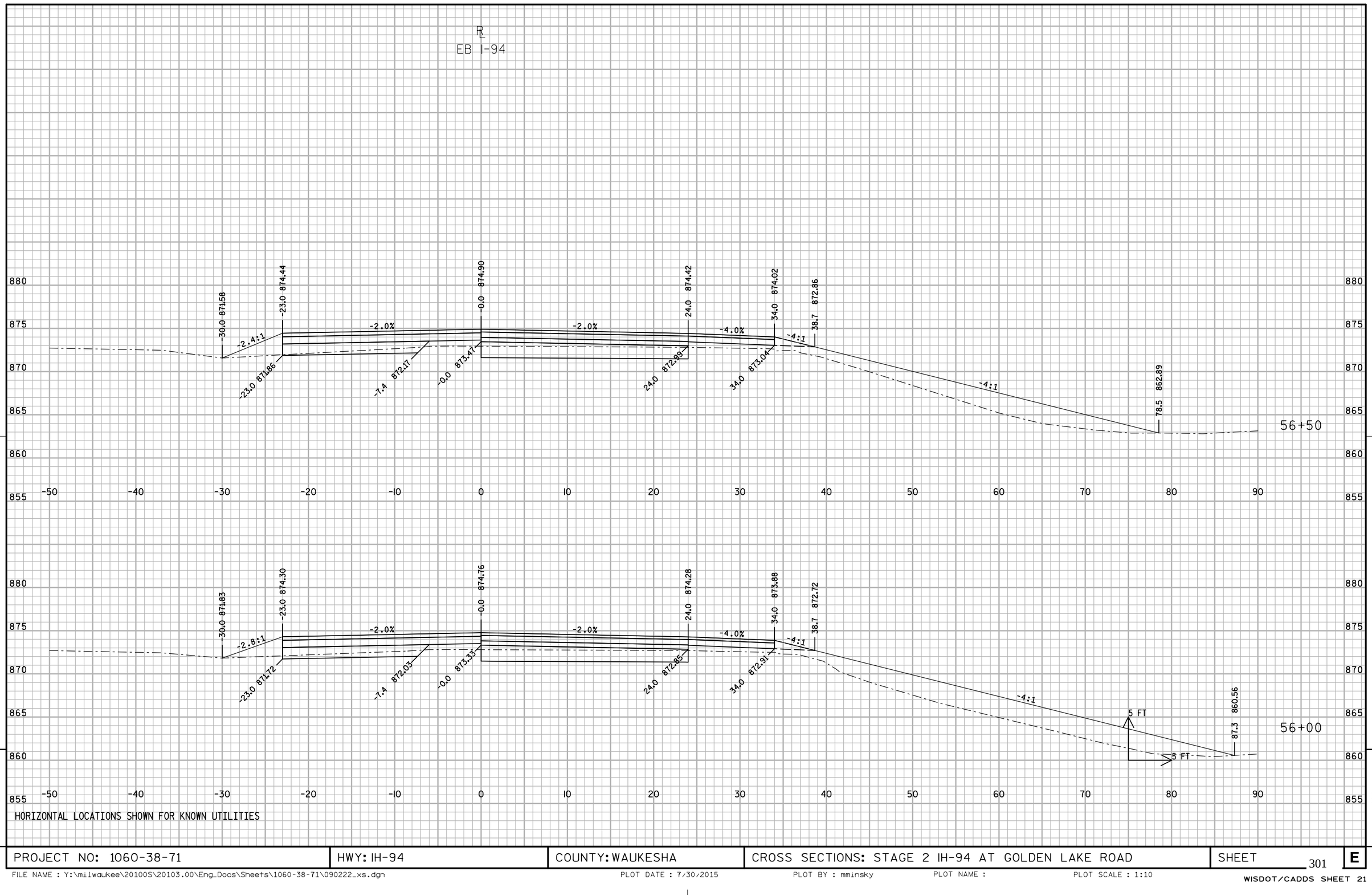
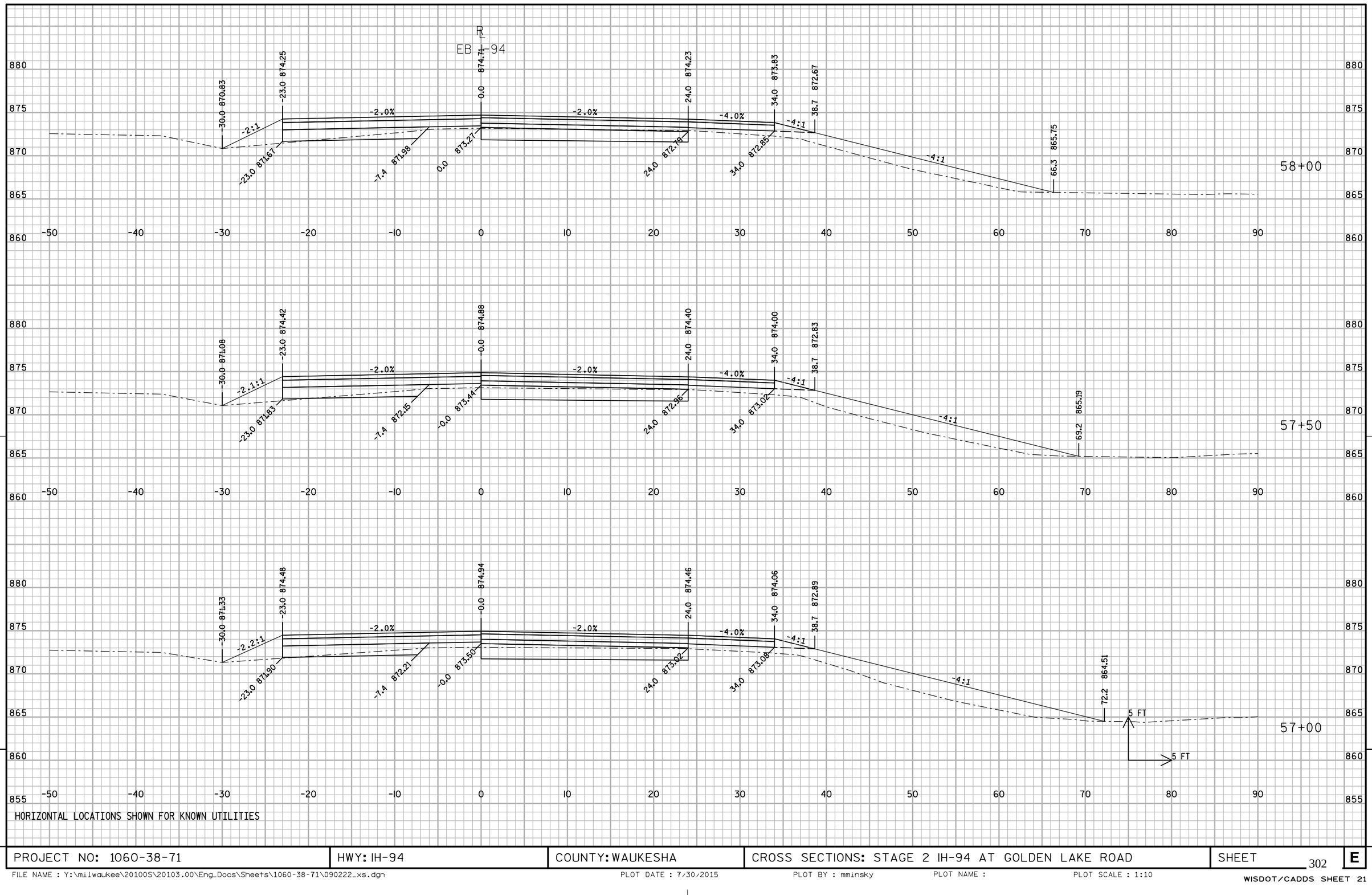
WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT GOLDEN LAKE ROAD	SHEET 301	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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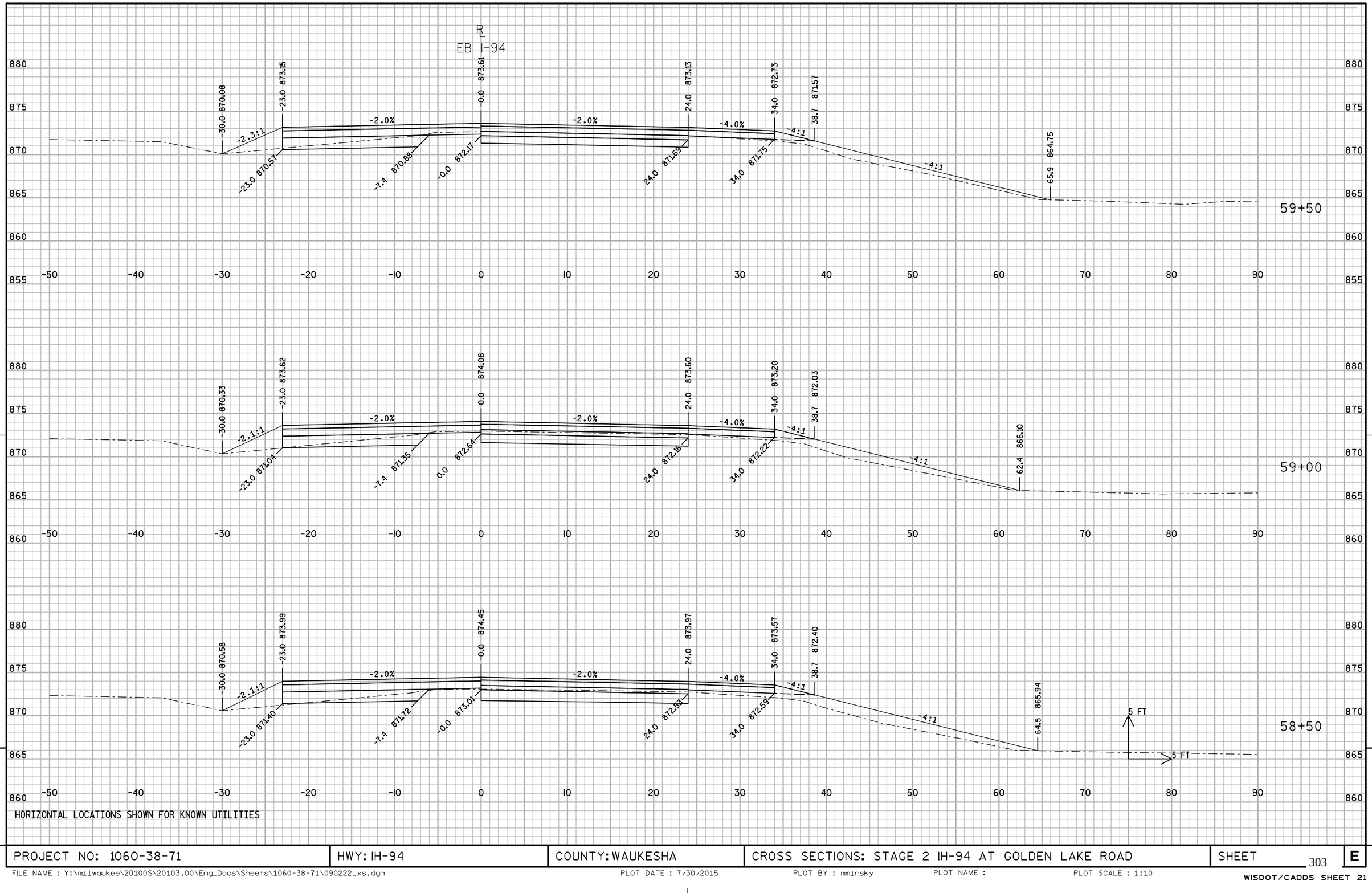

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT GOLDEN LAKE ROAD	SHEET 303	E

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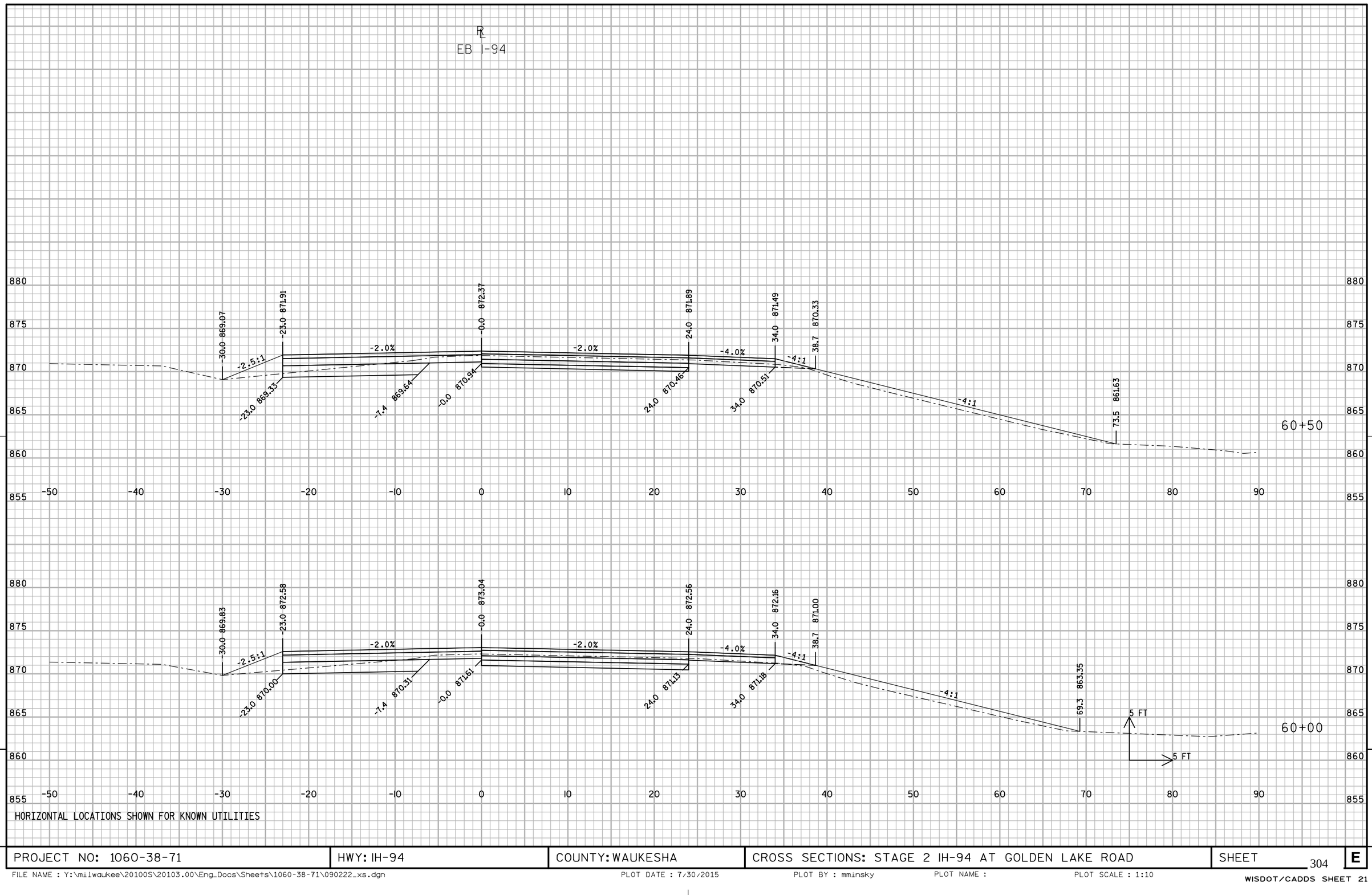
WISDOT/CADDS SHEET 21

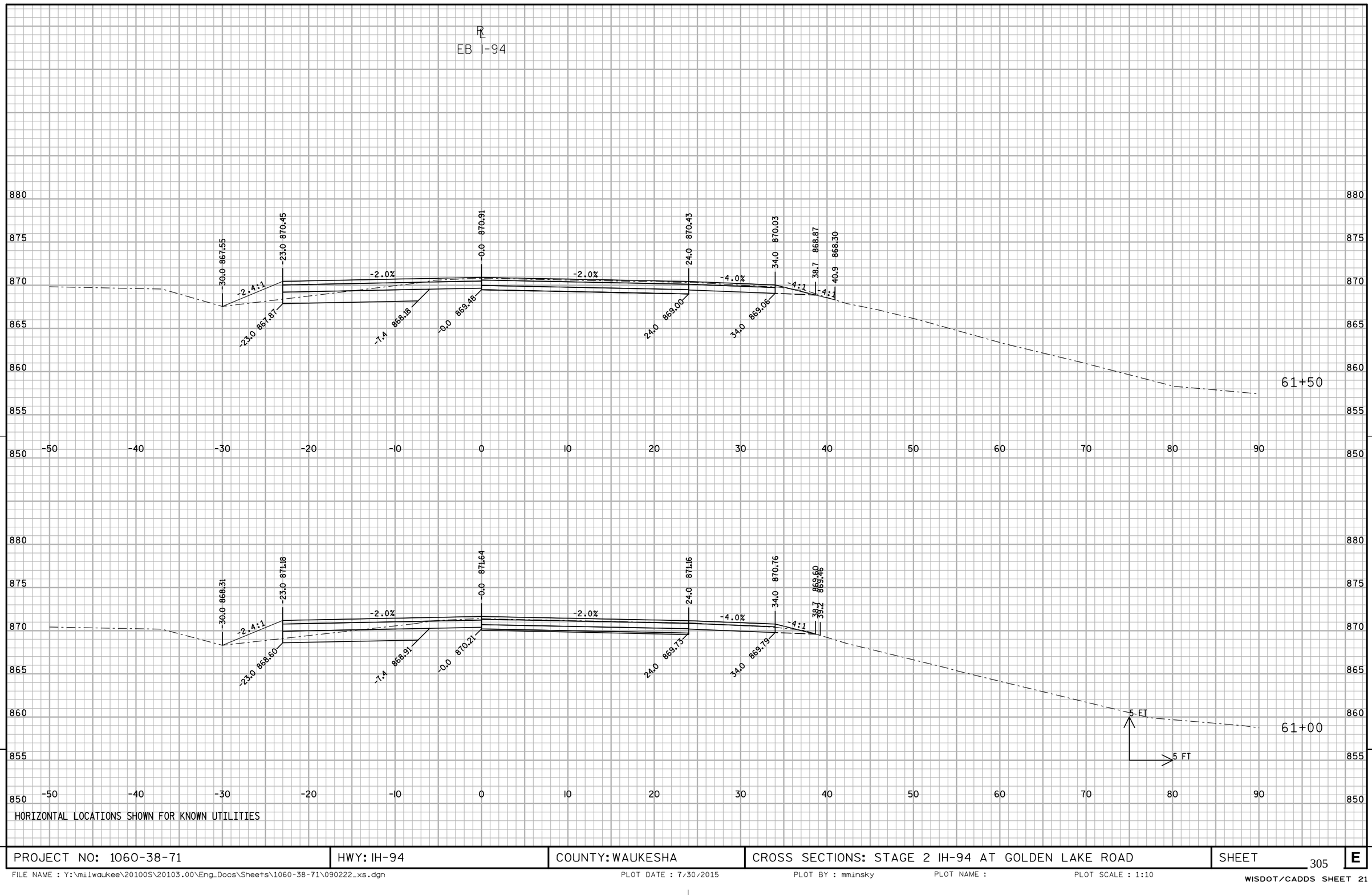


9

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

9

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT GOLDEN LAKE ROAD	SHEET 304	E



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

9

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT GOLDEN LAKE ROAD	SHEET 305	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090222_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

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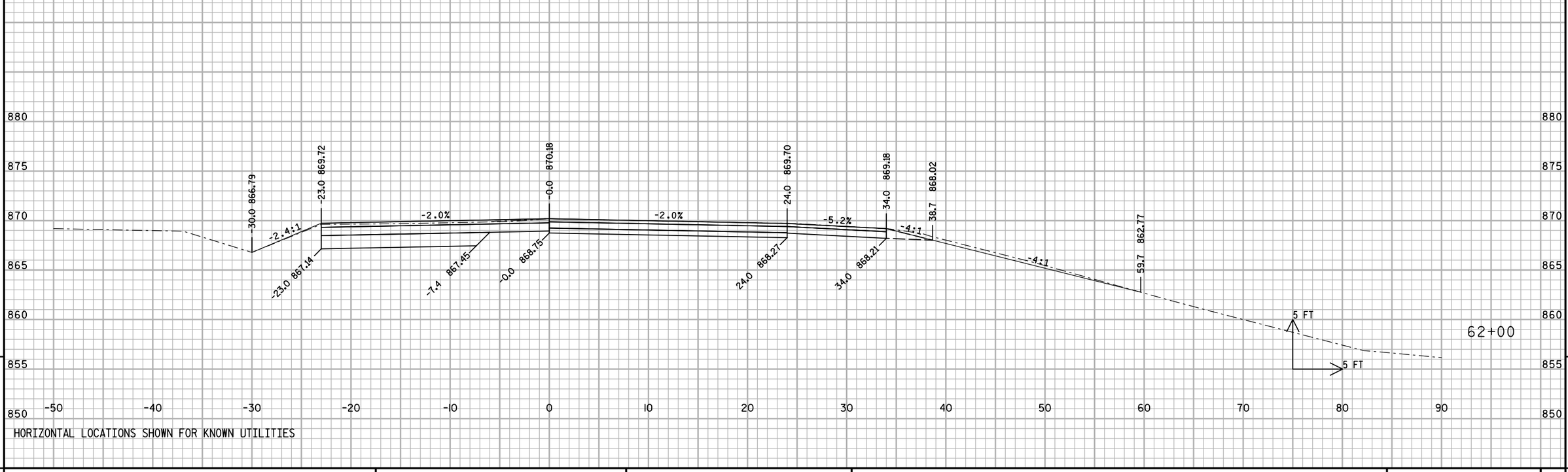
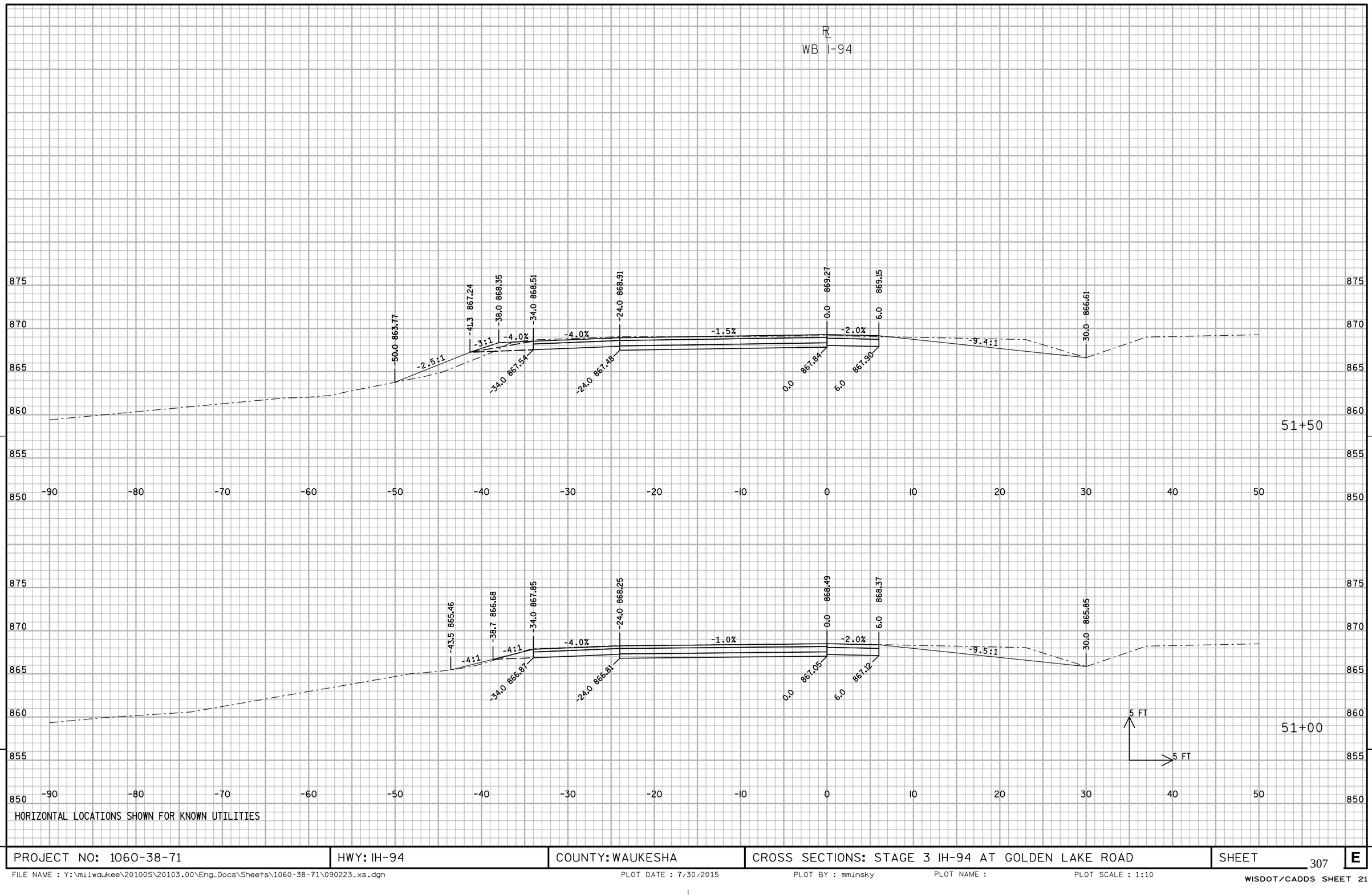
EB I-94



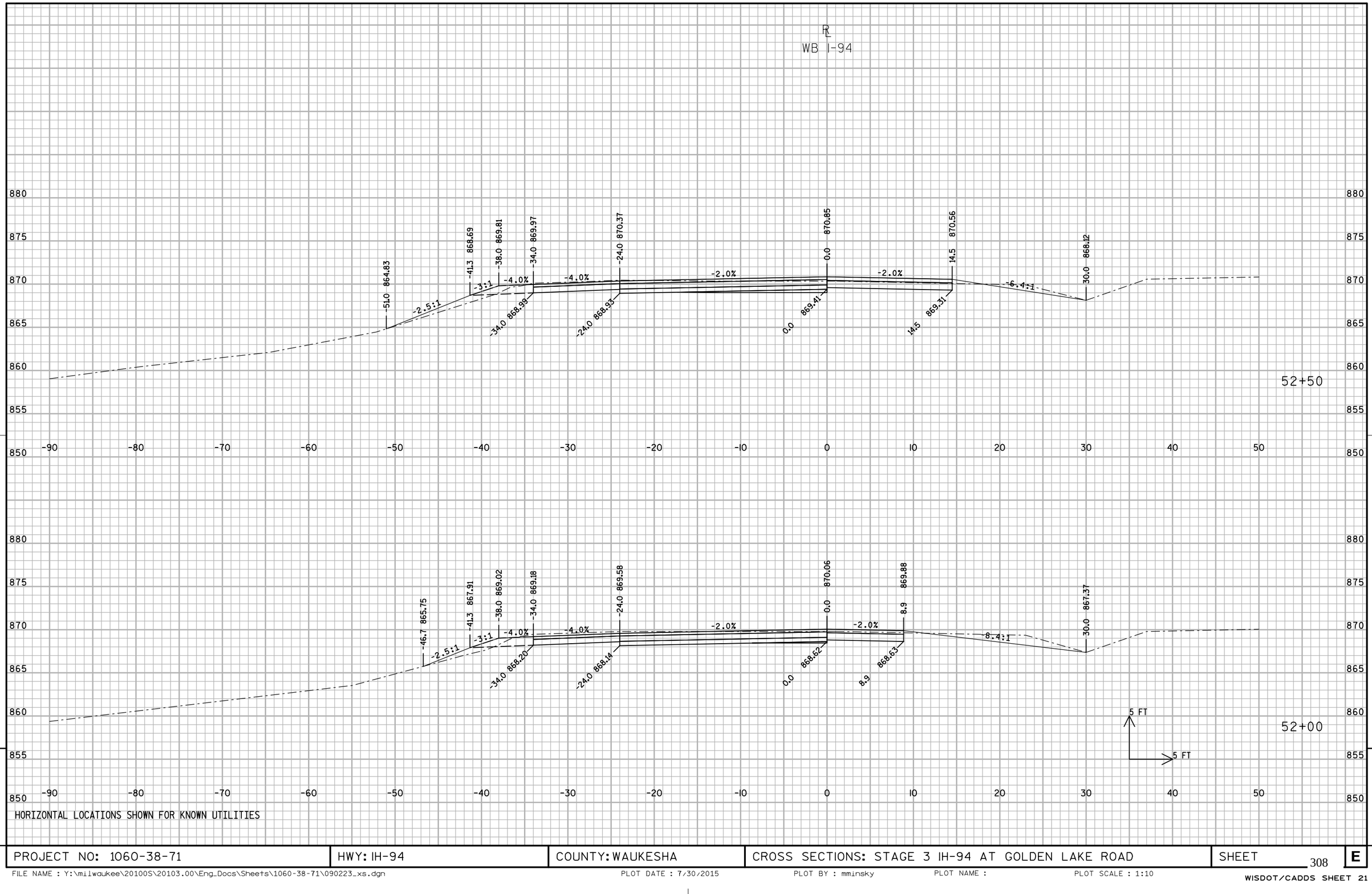
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 2 IH-94 AT GOLDEN LAKE ROAD	SHEET 306	E



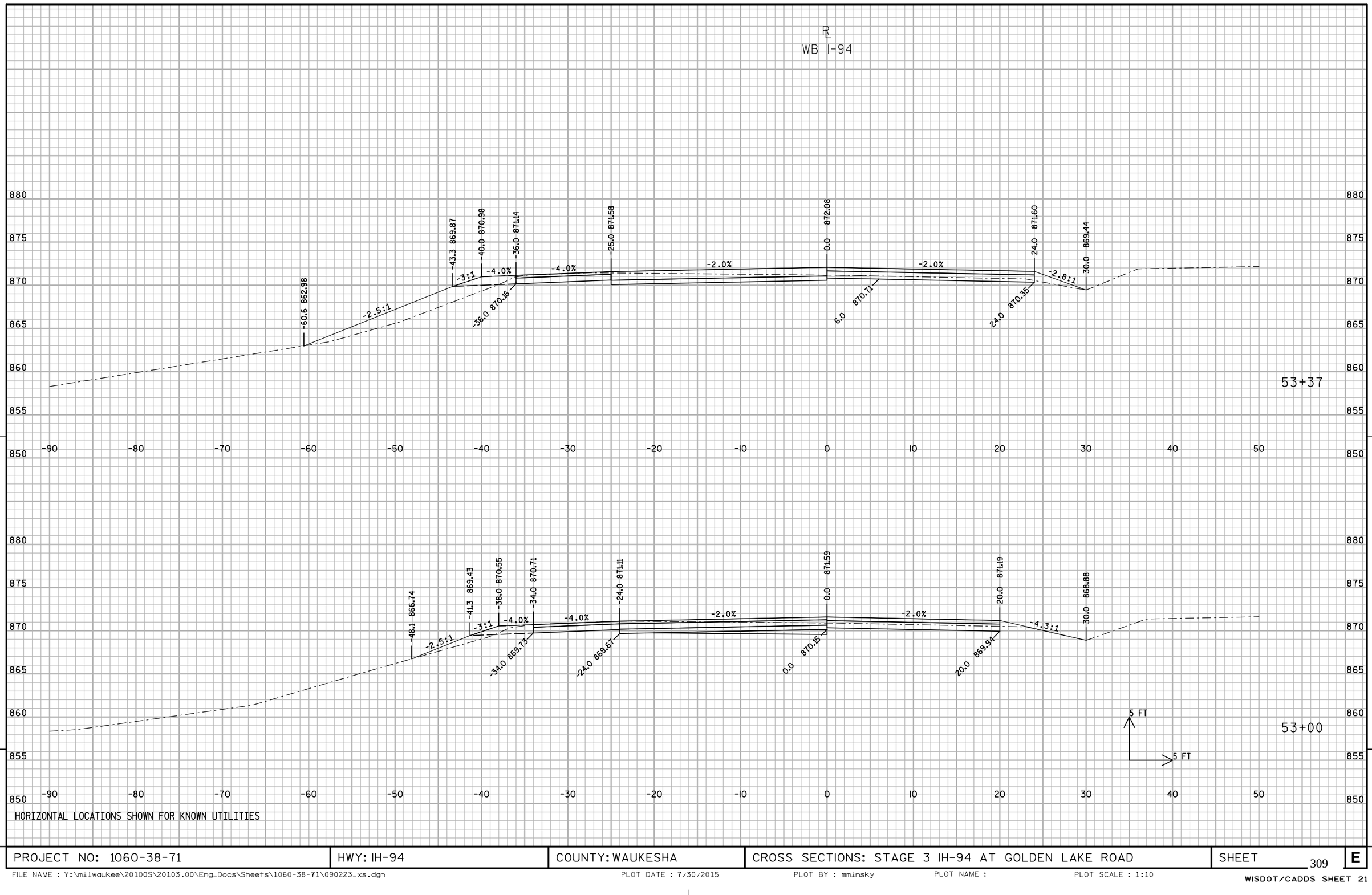
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT GOLDEN LAKE ROAD	SHEET 307	E



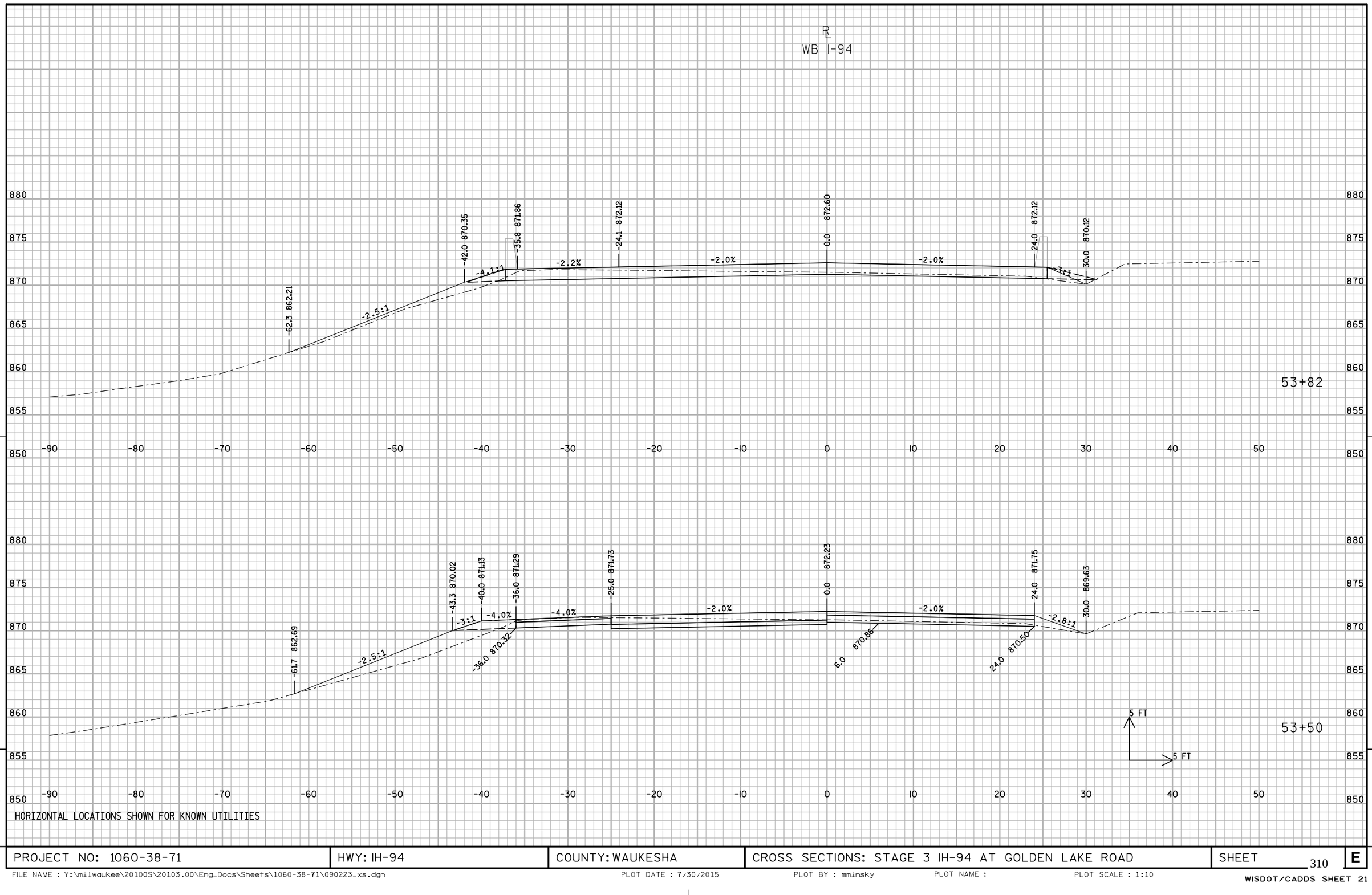
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT GOLDEN LAKE ROAD	SHEET 308	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT GOLDEN LAKE ROAD	SHEET 309	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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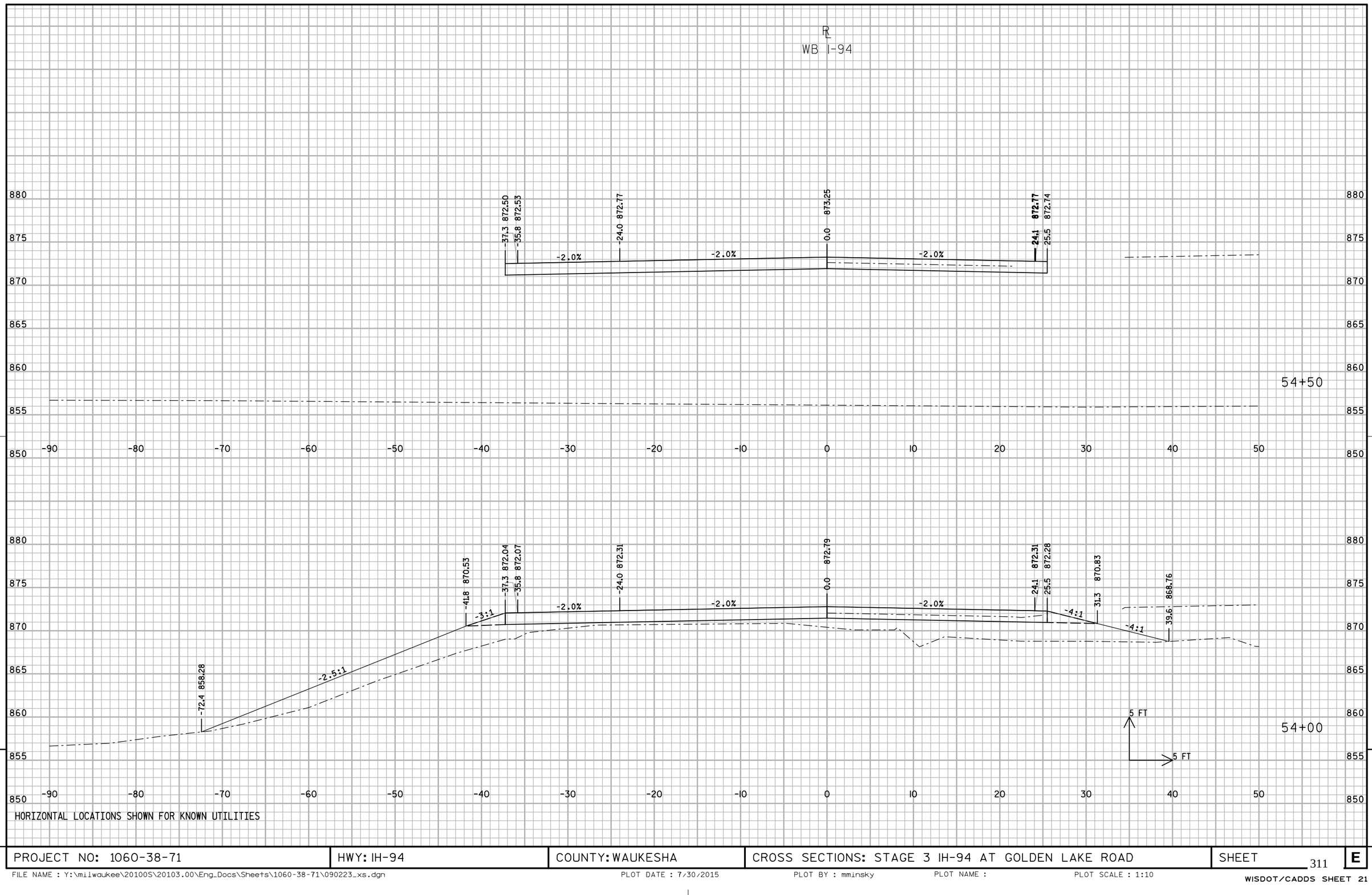
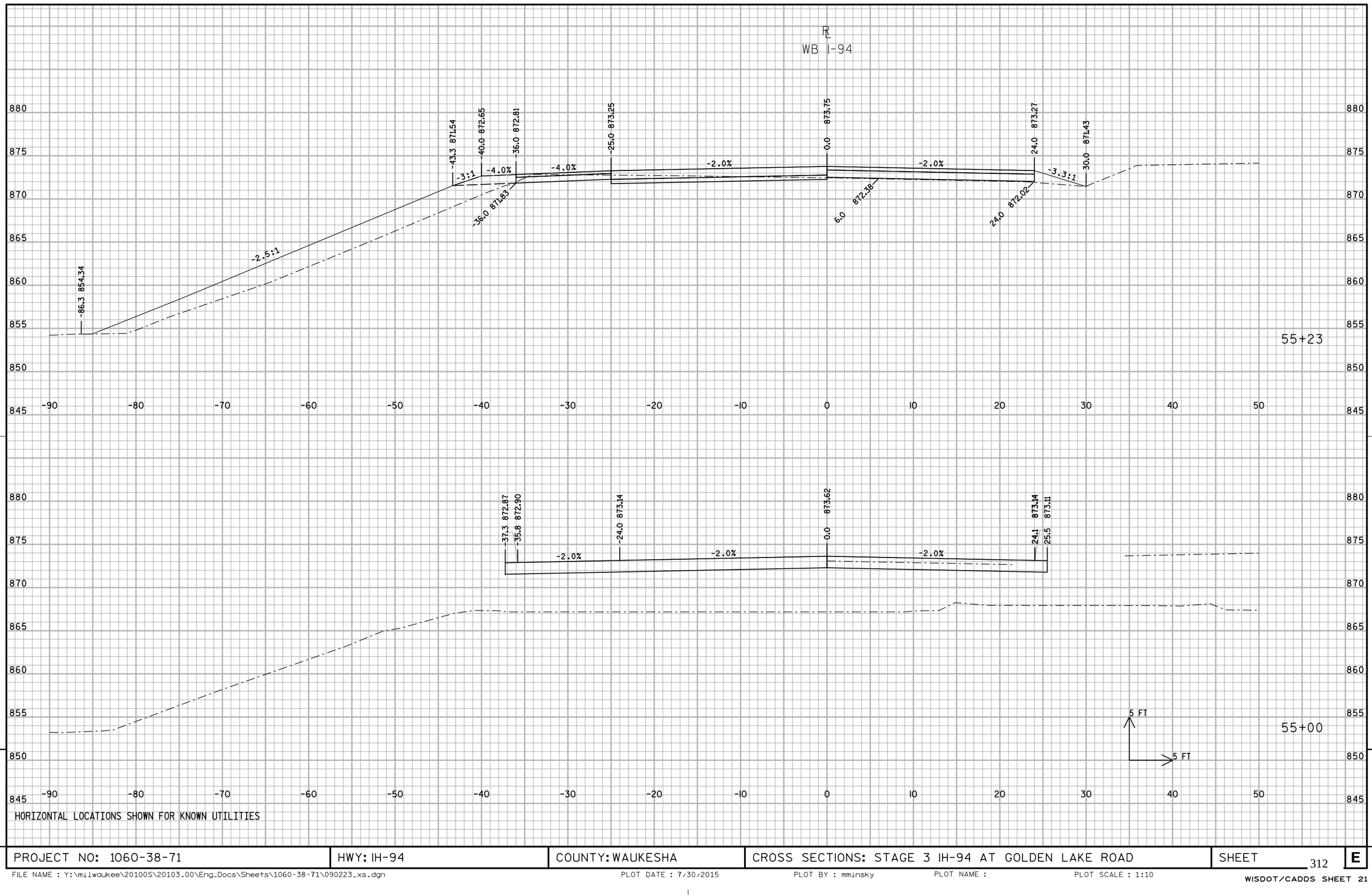


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT GOLDEN LAKE ROAD	SHEET 311	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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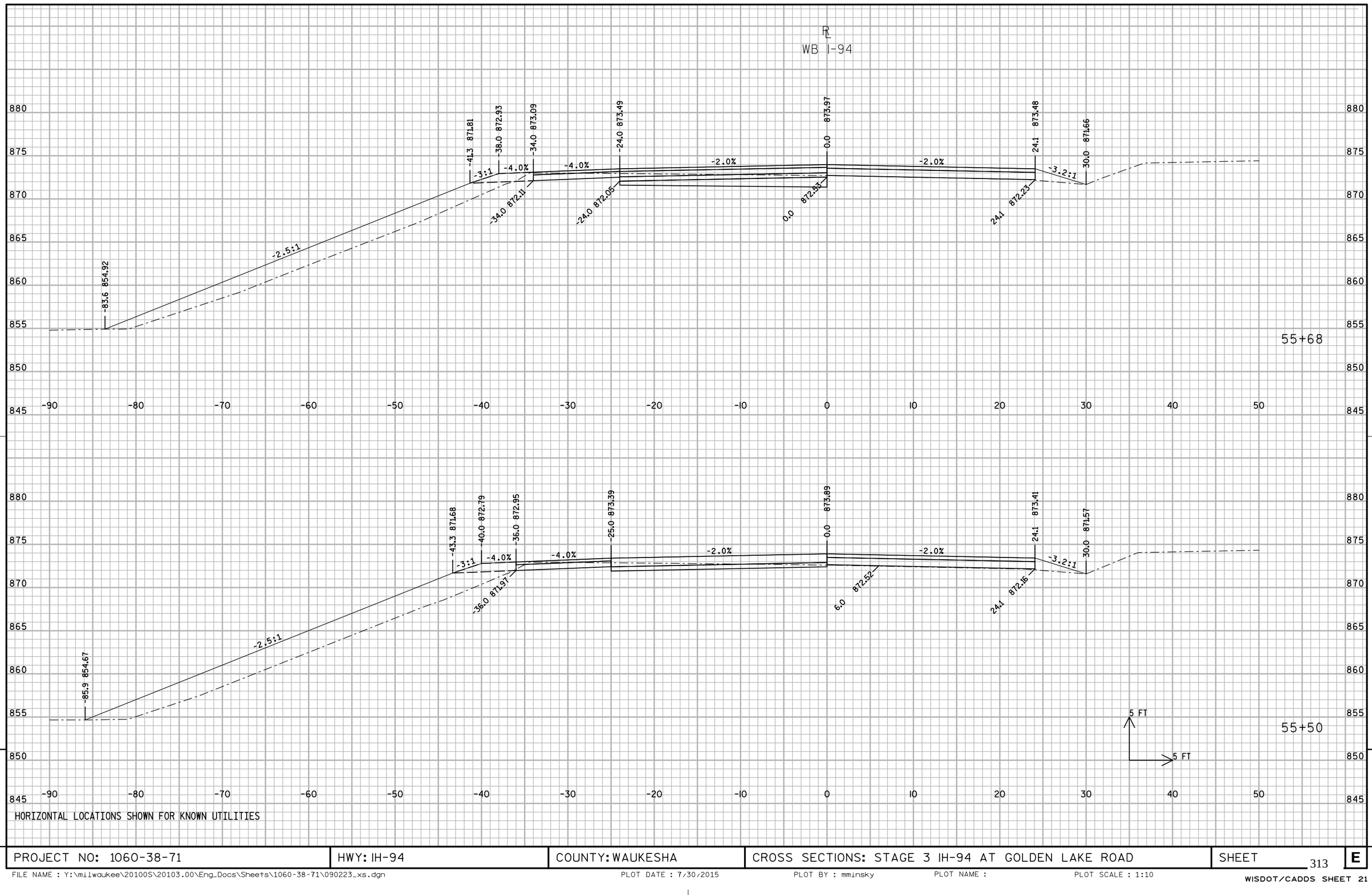

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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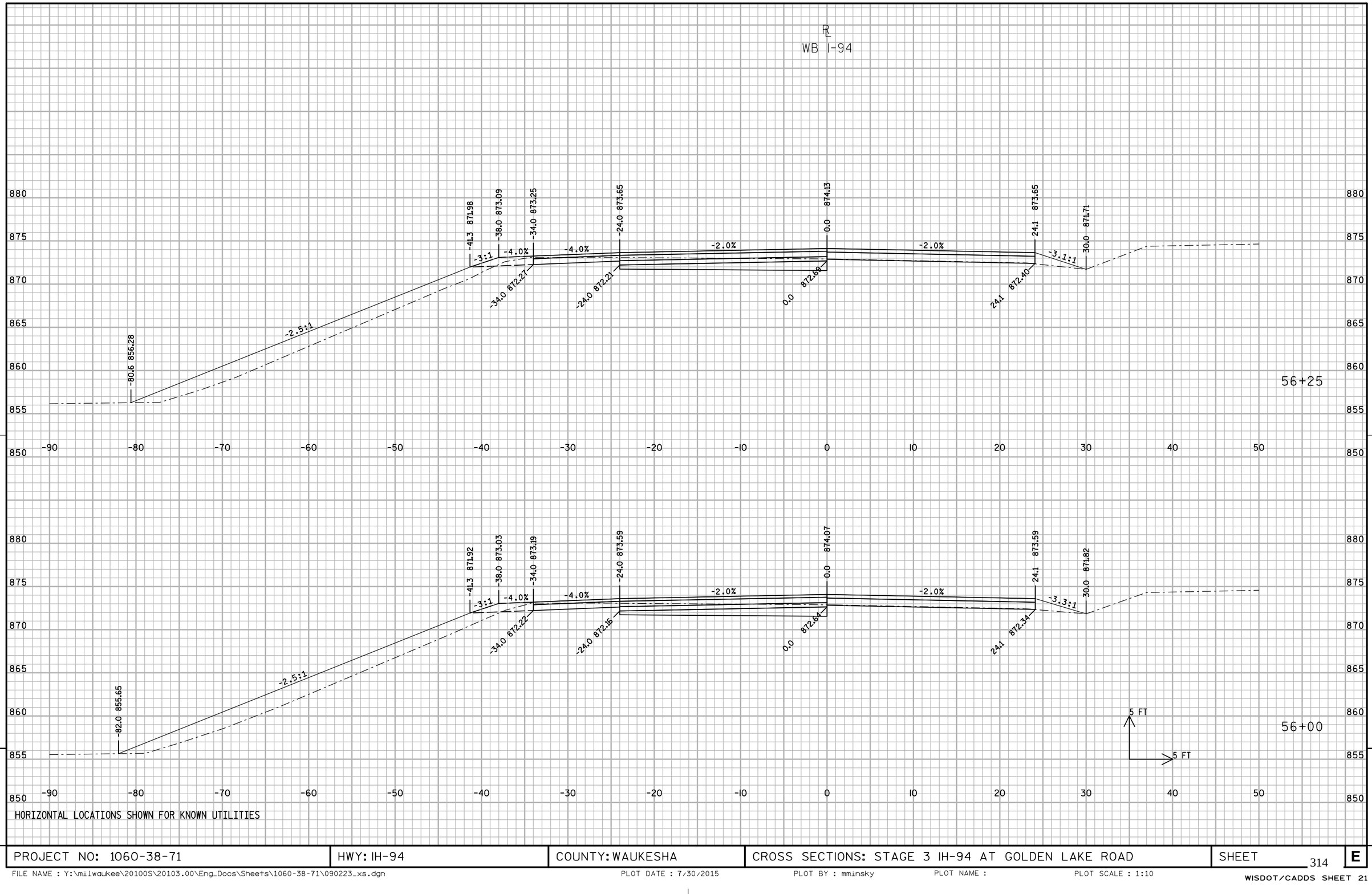

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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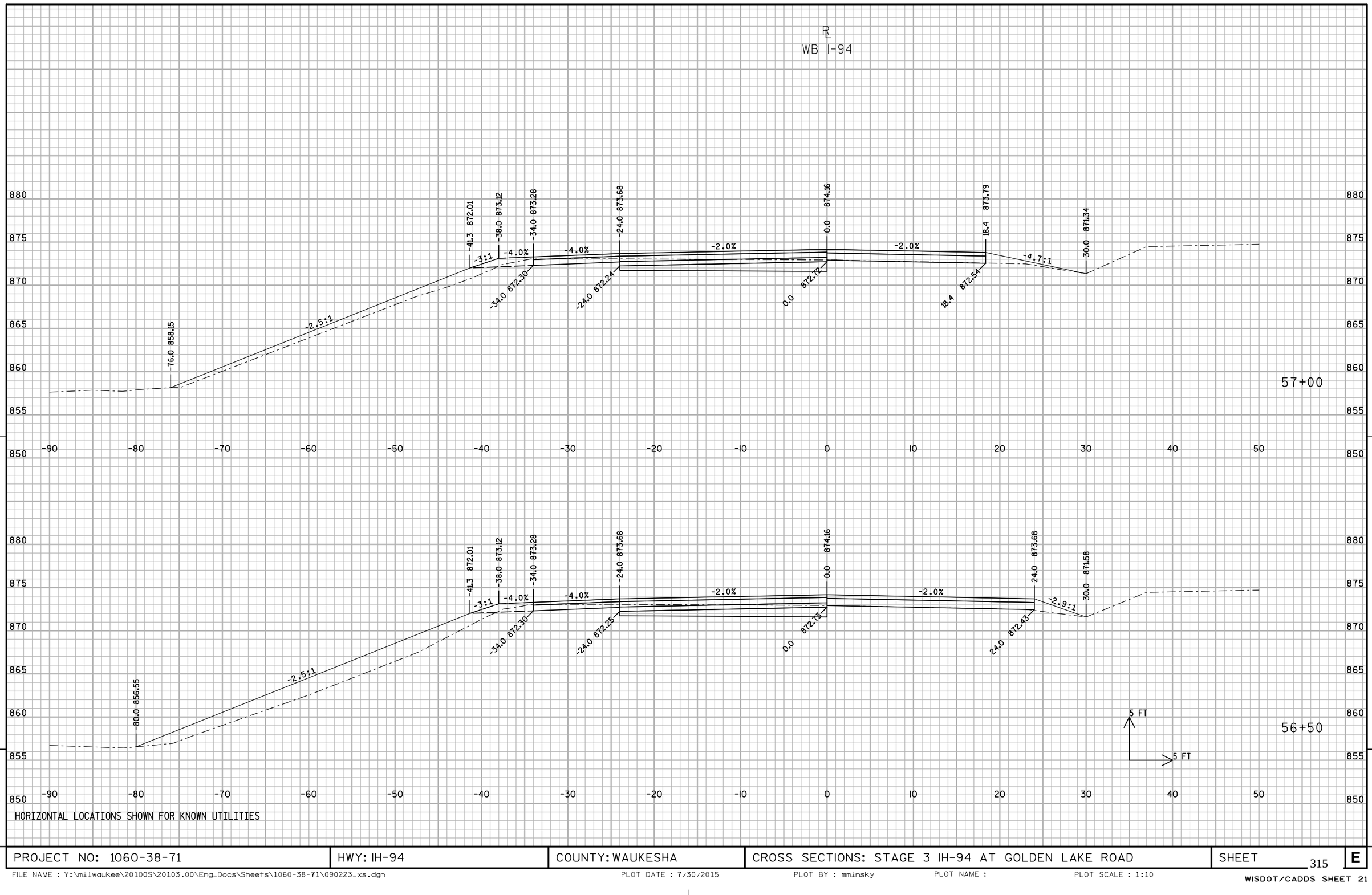

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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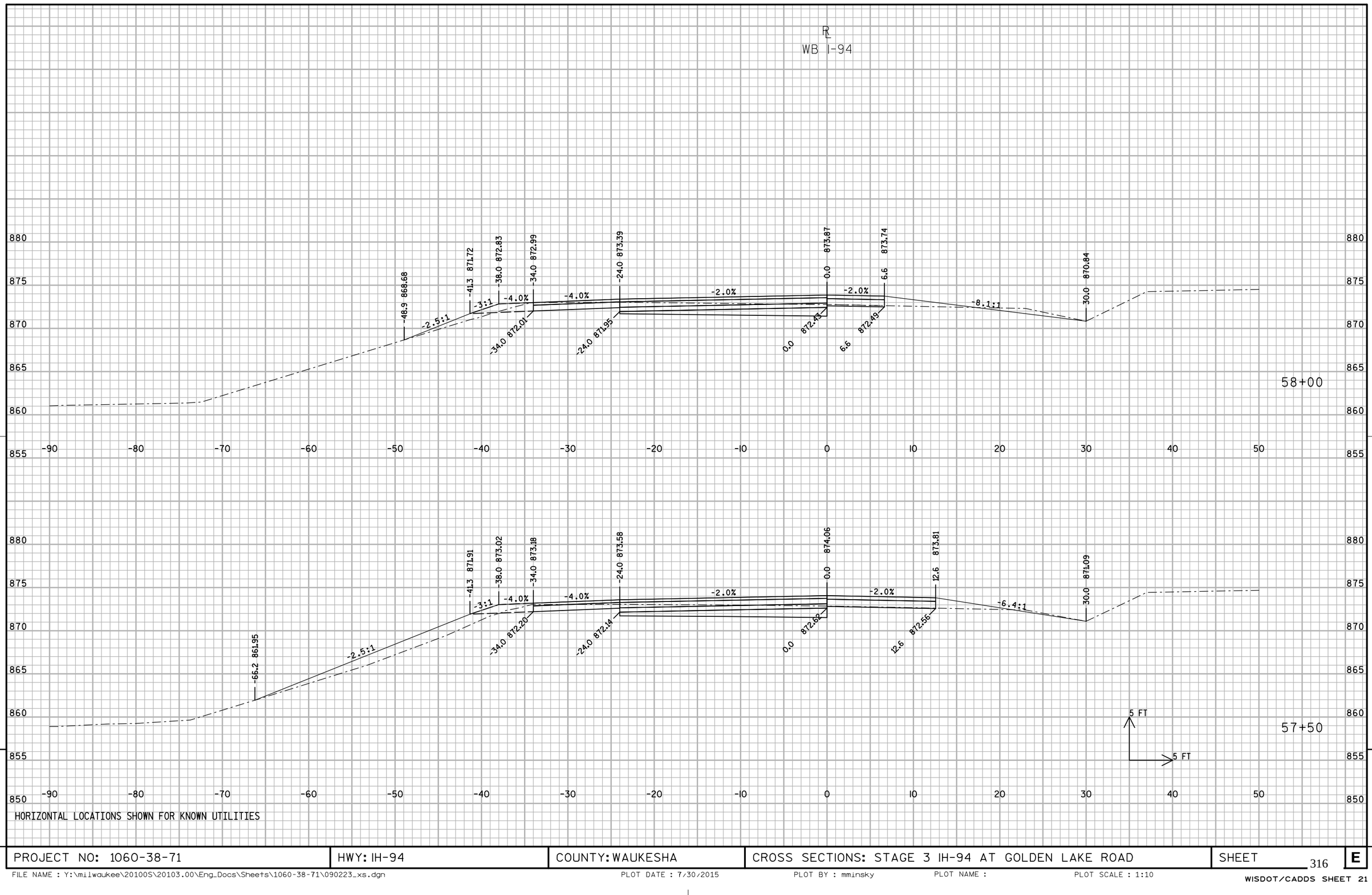
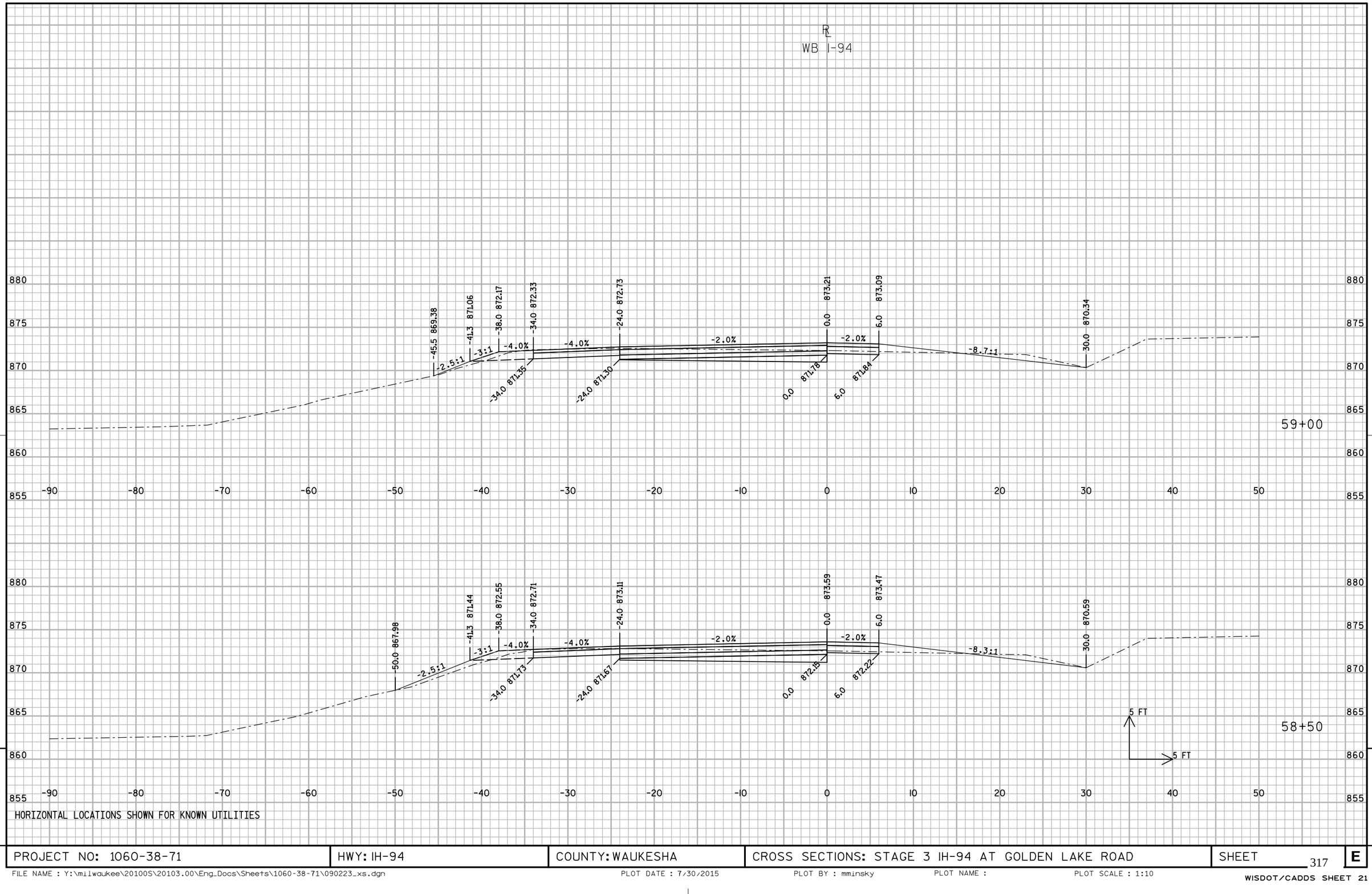
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT GOLDEN LAKE ROAD	SHEET 315	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT GOLDEN LAKE ROAD	SHEET 316	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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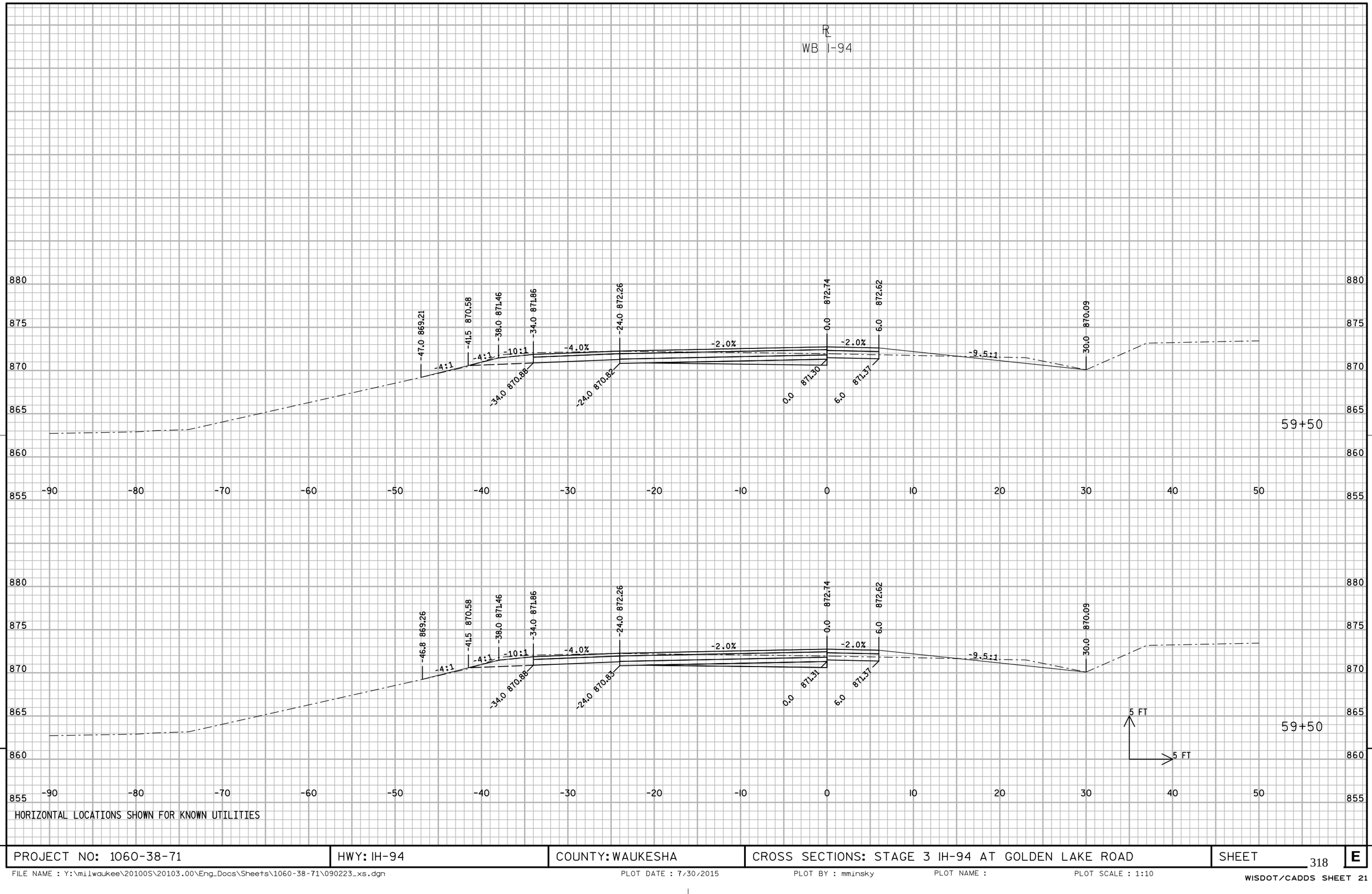

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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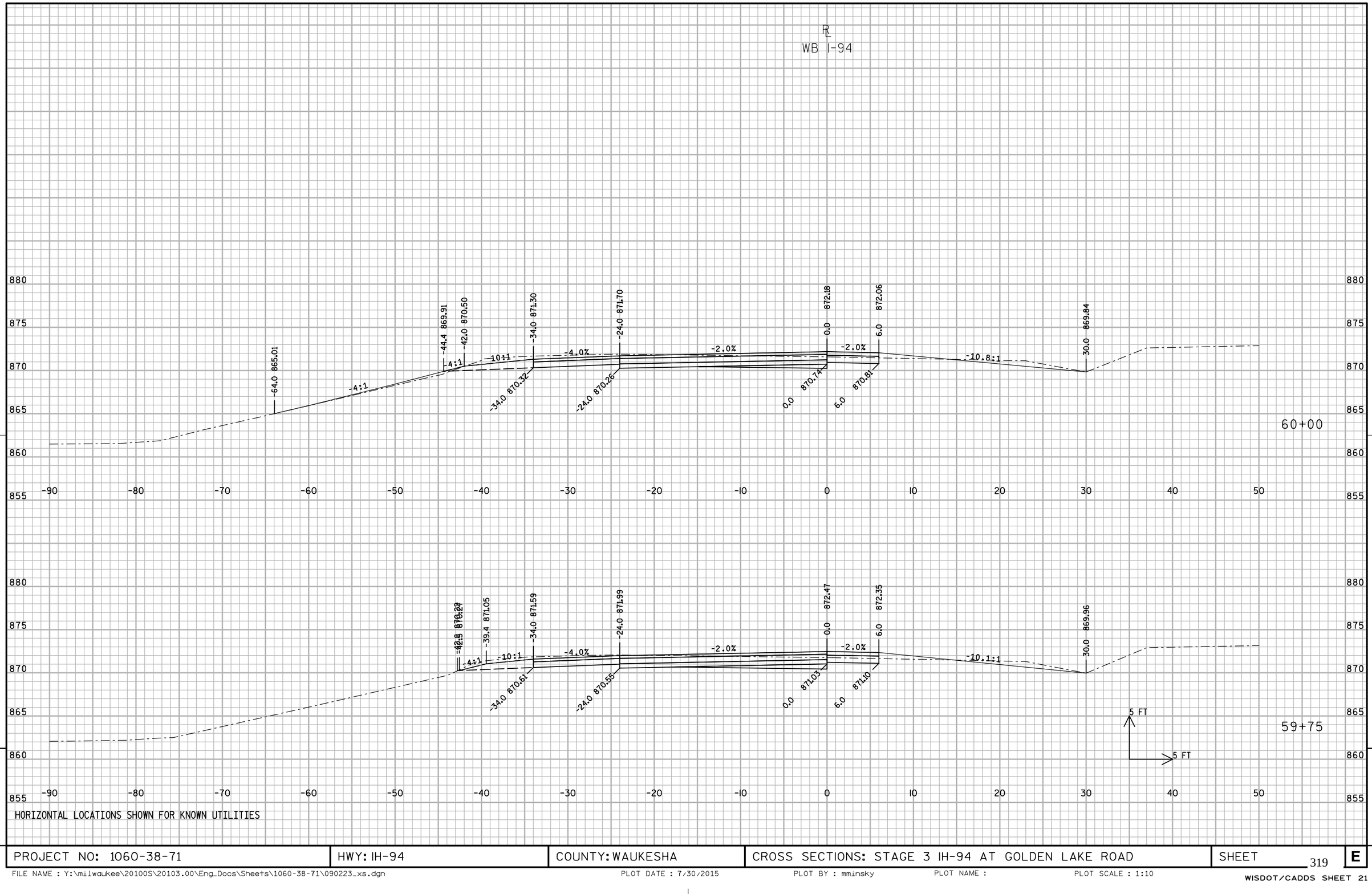

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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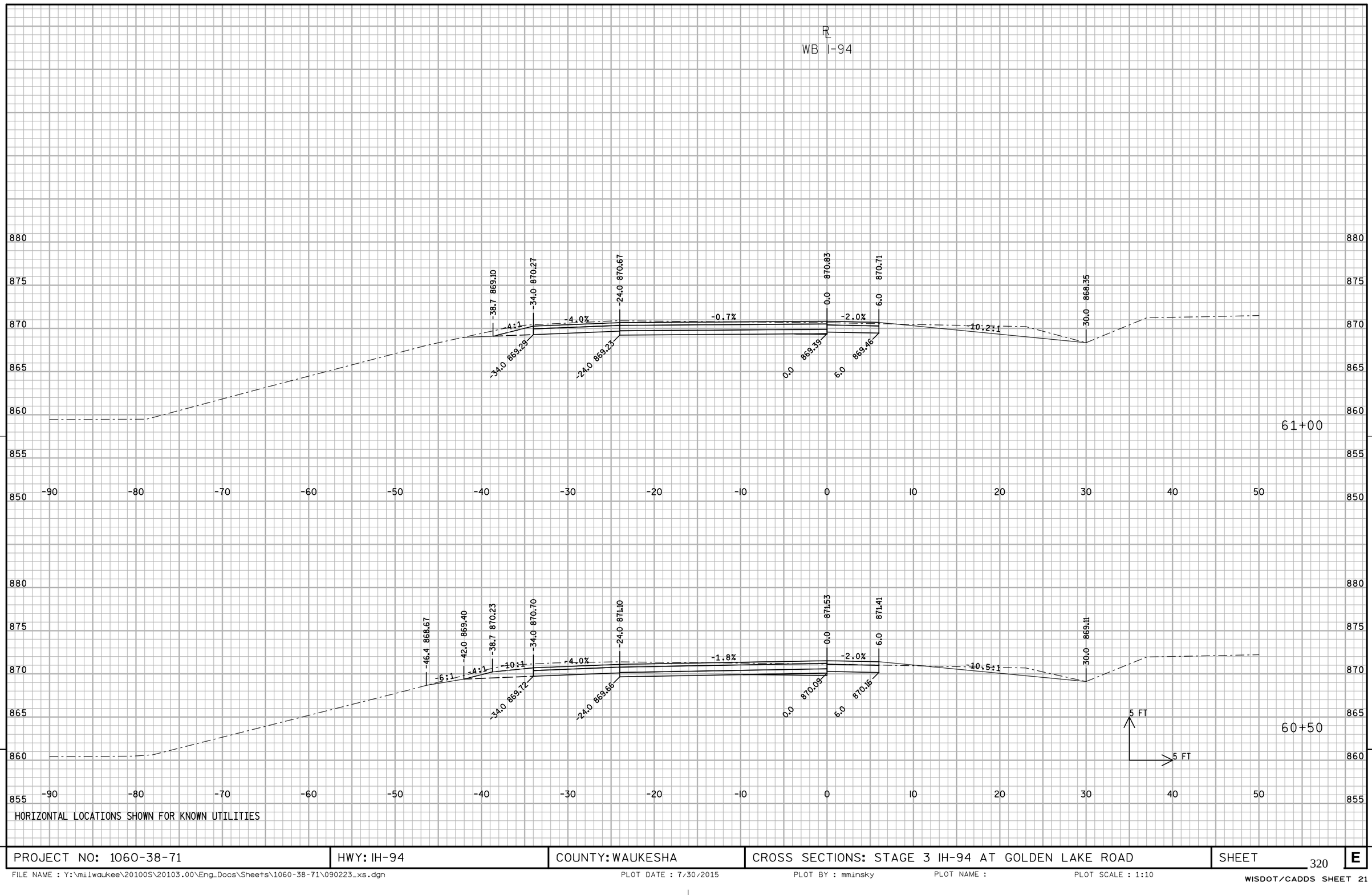
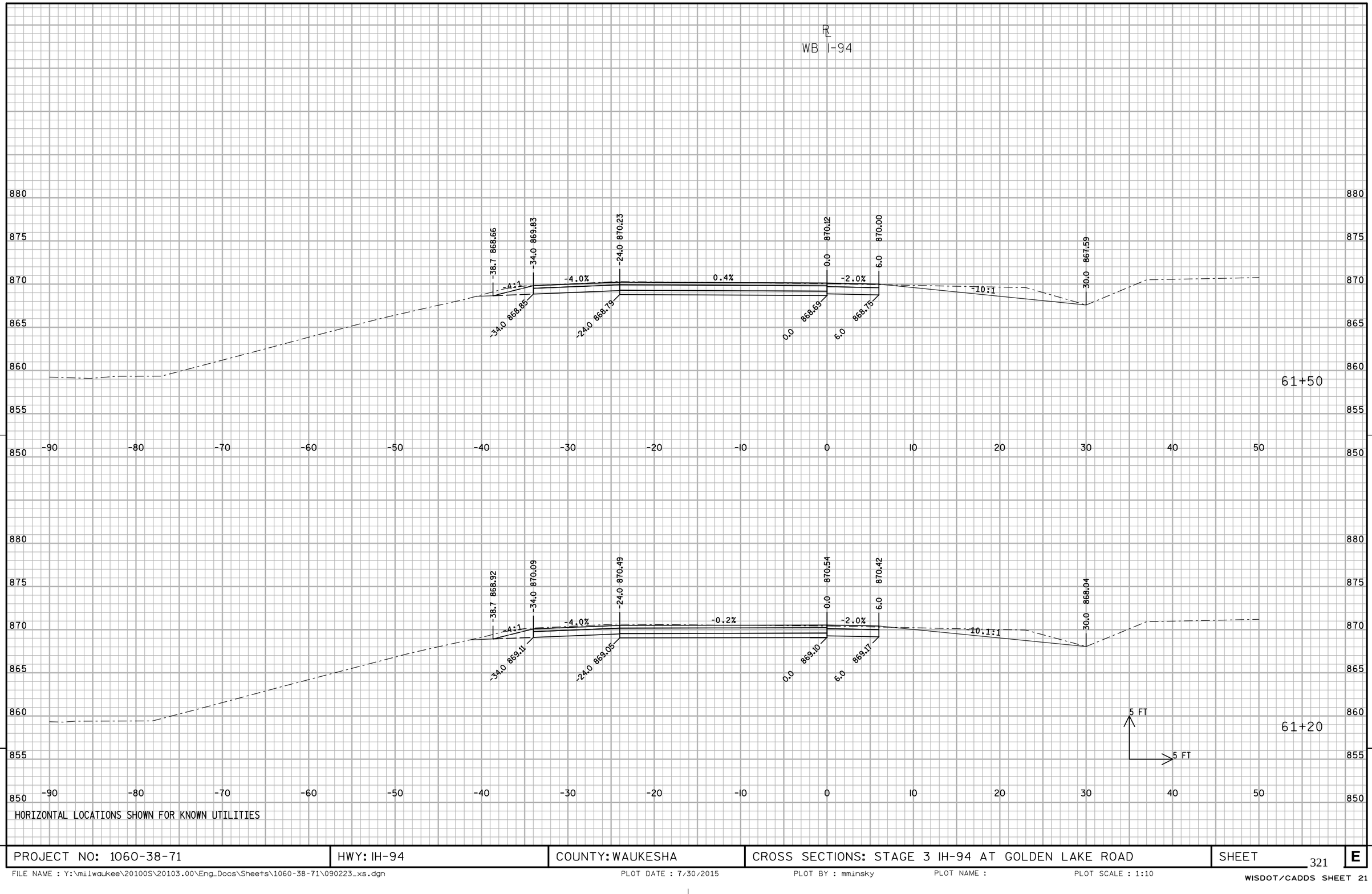


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT GOLDEN LAKE ROAD	SHEET 320	E

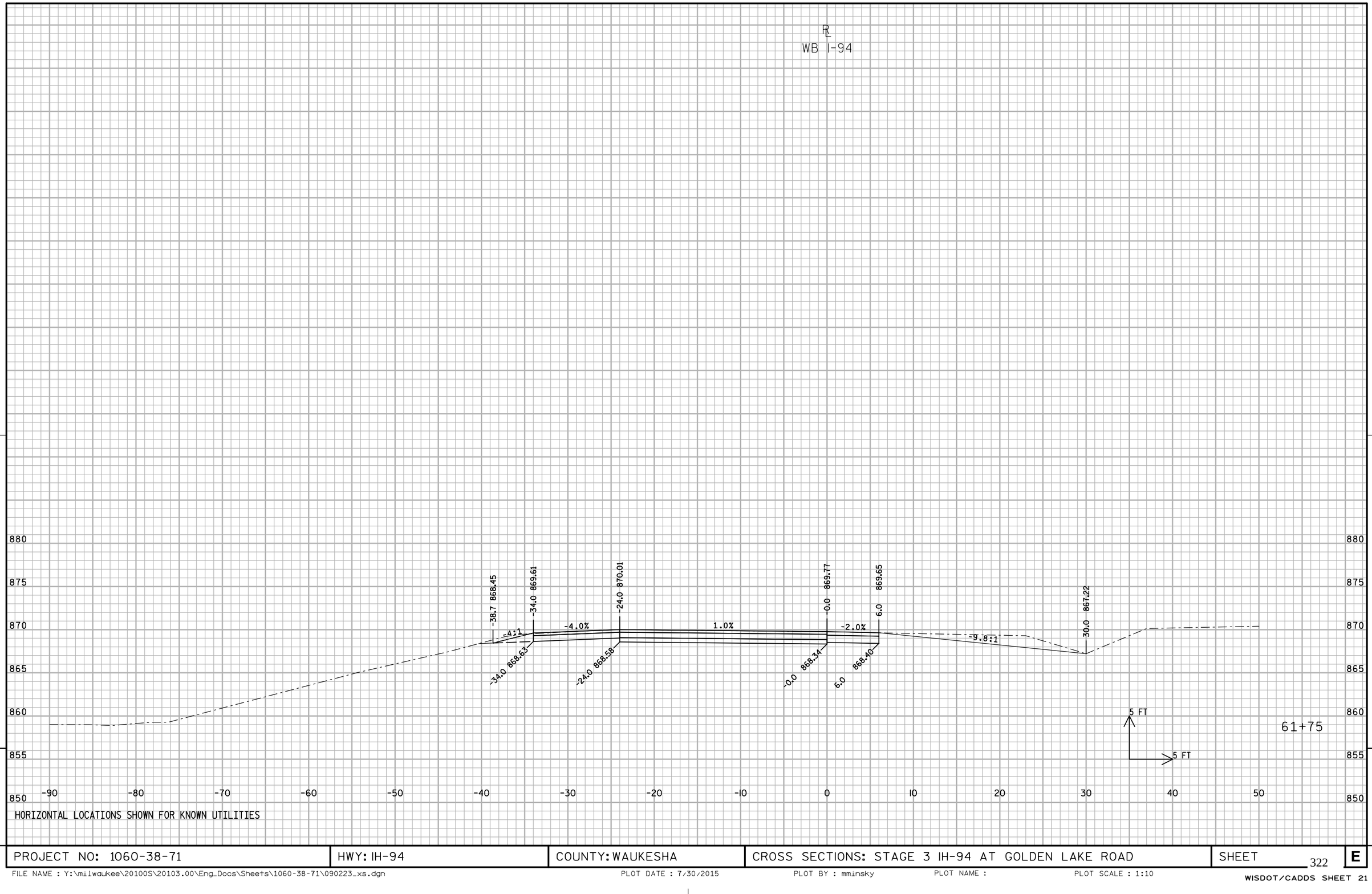


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 3 IH-94 AT GOLDEN LAKE ROAD	SHEET 321	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090223_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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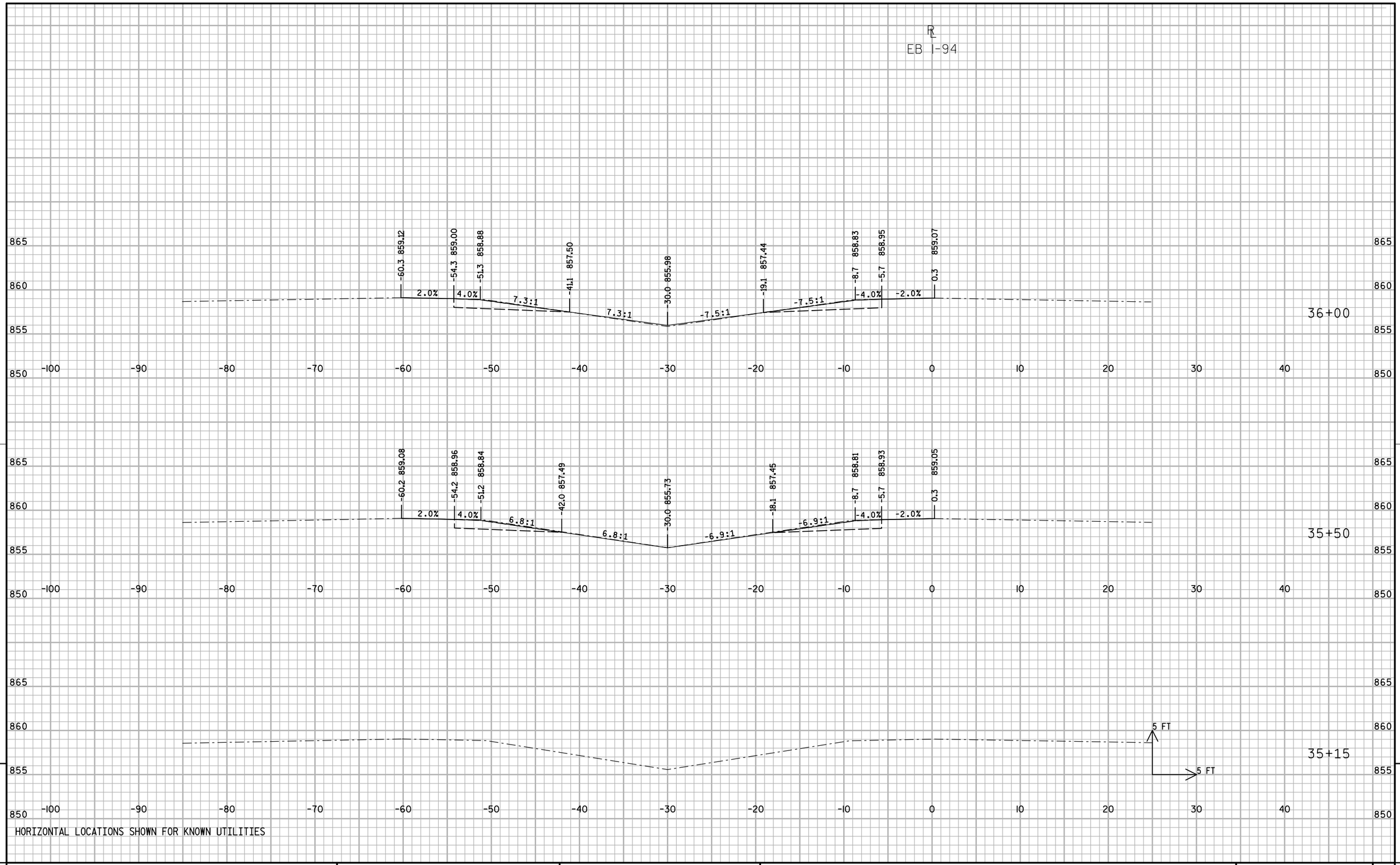

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 323	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090224_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

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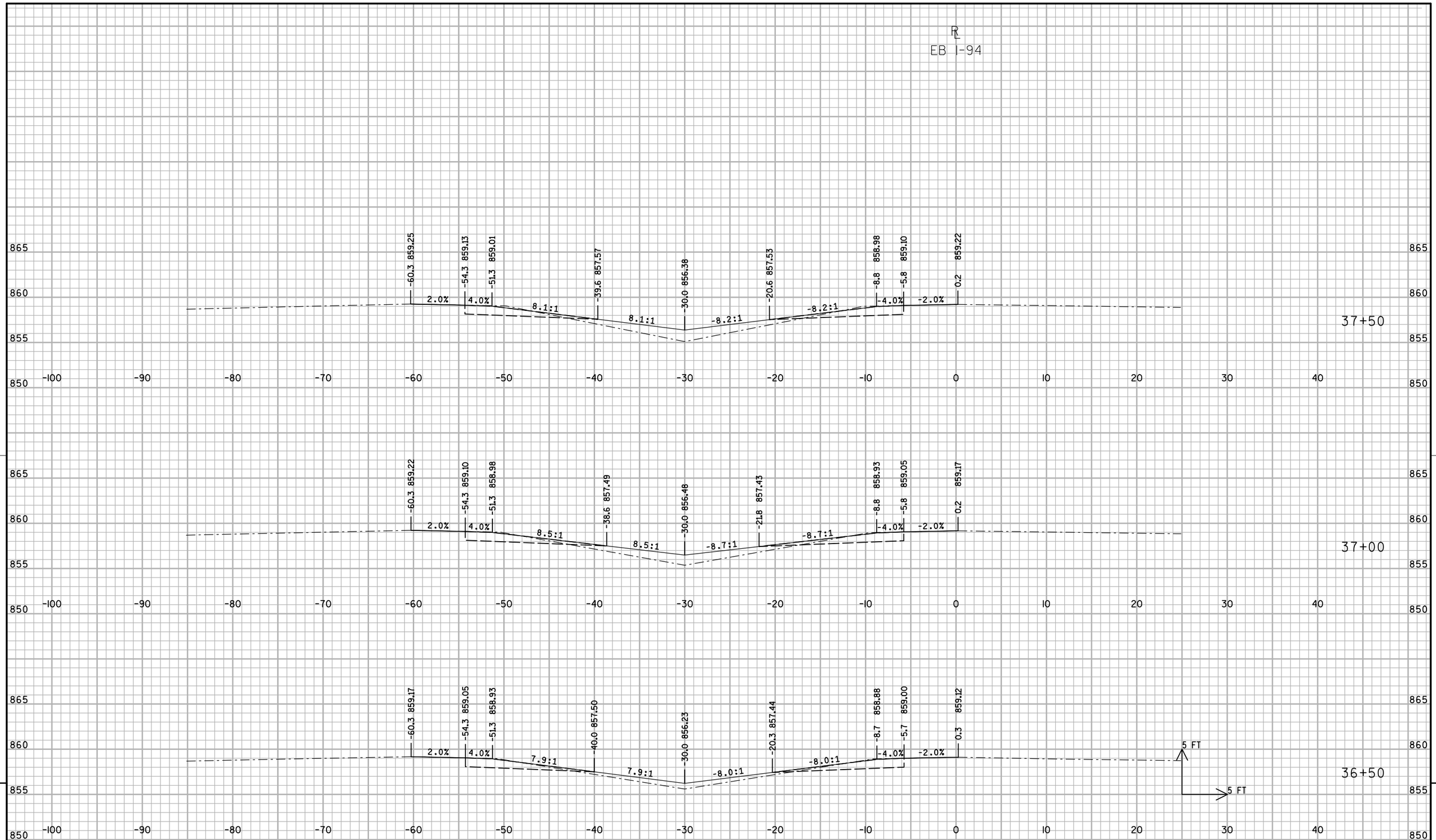

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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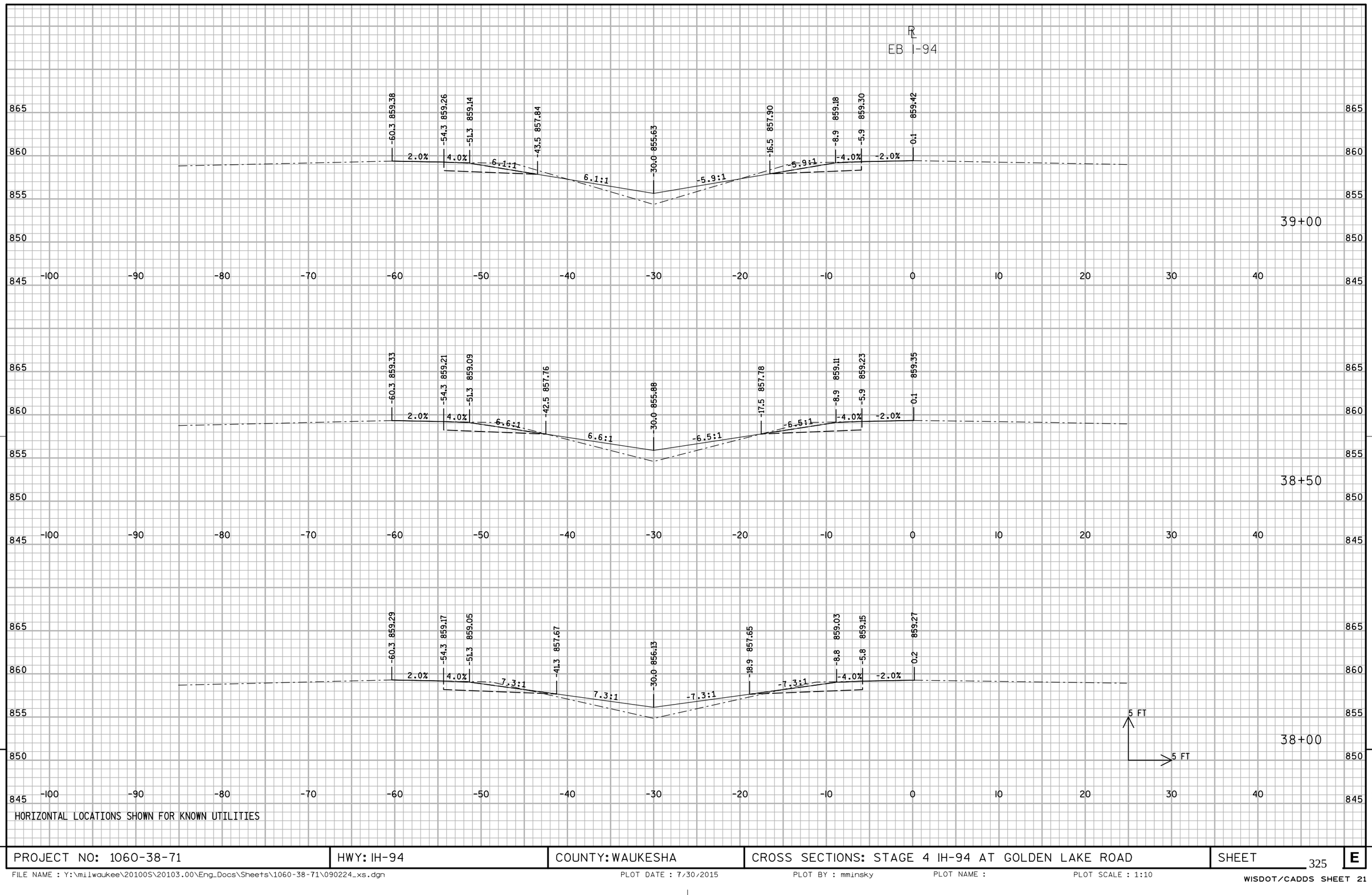
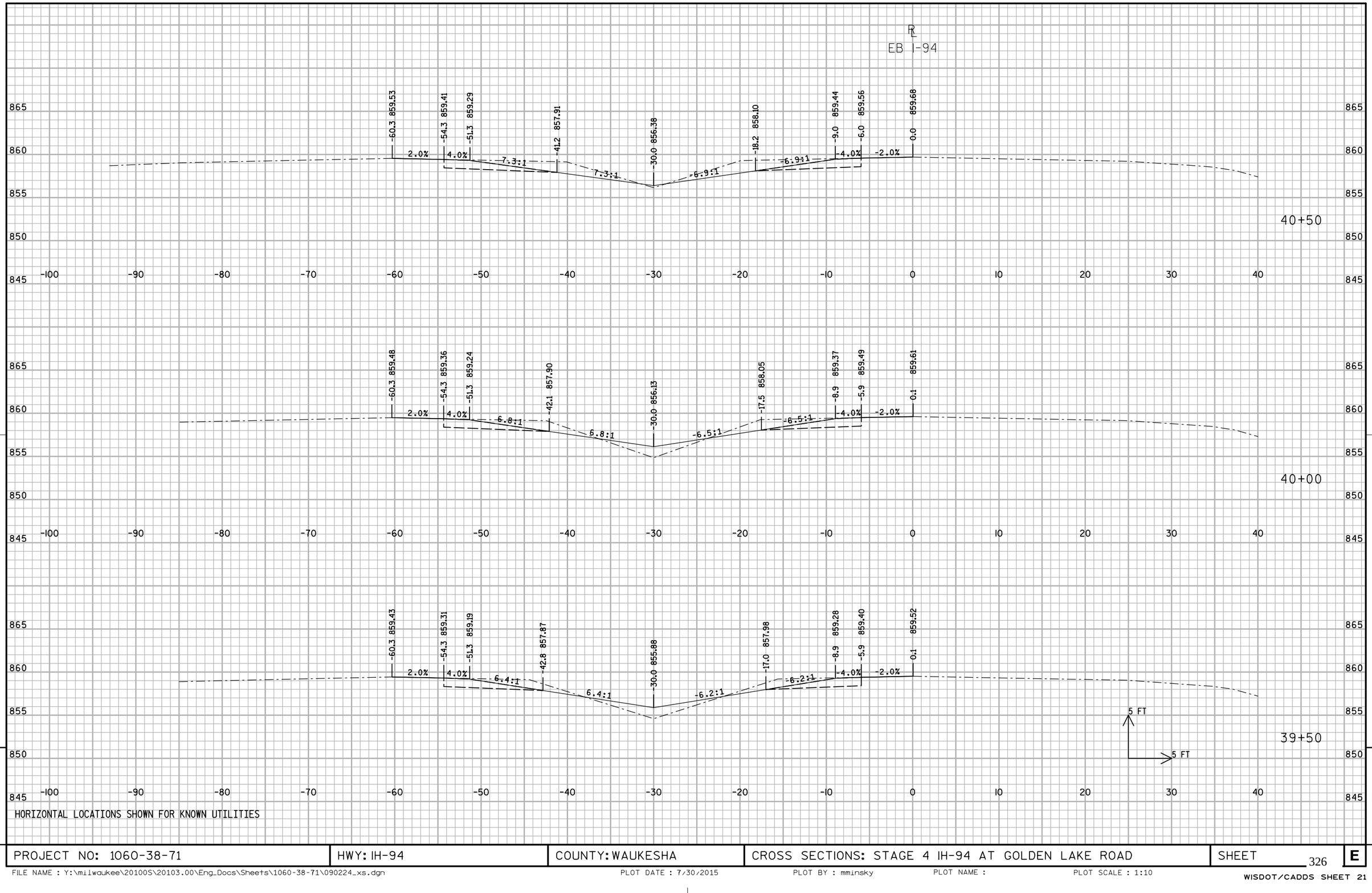


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 325	E



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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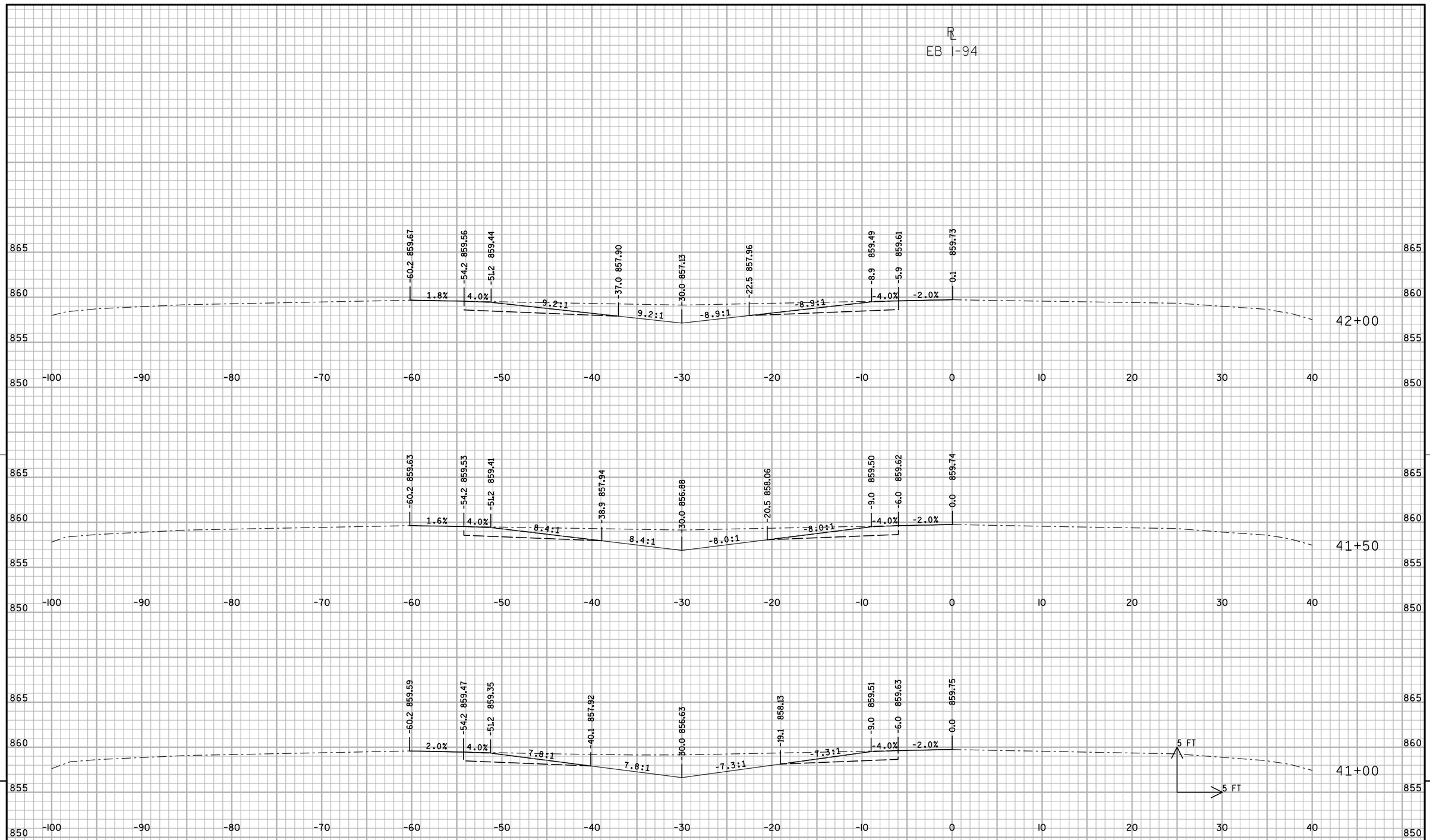
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 326	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 327	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090224_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 328	E

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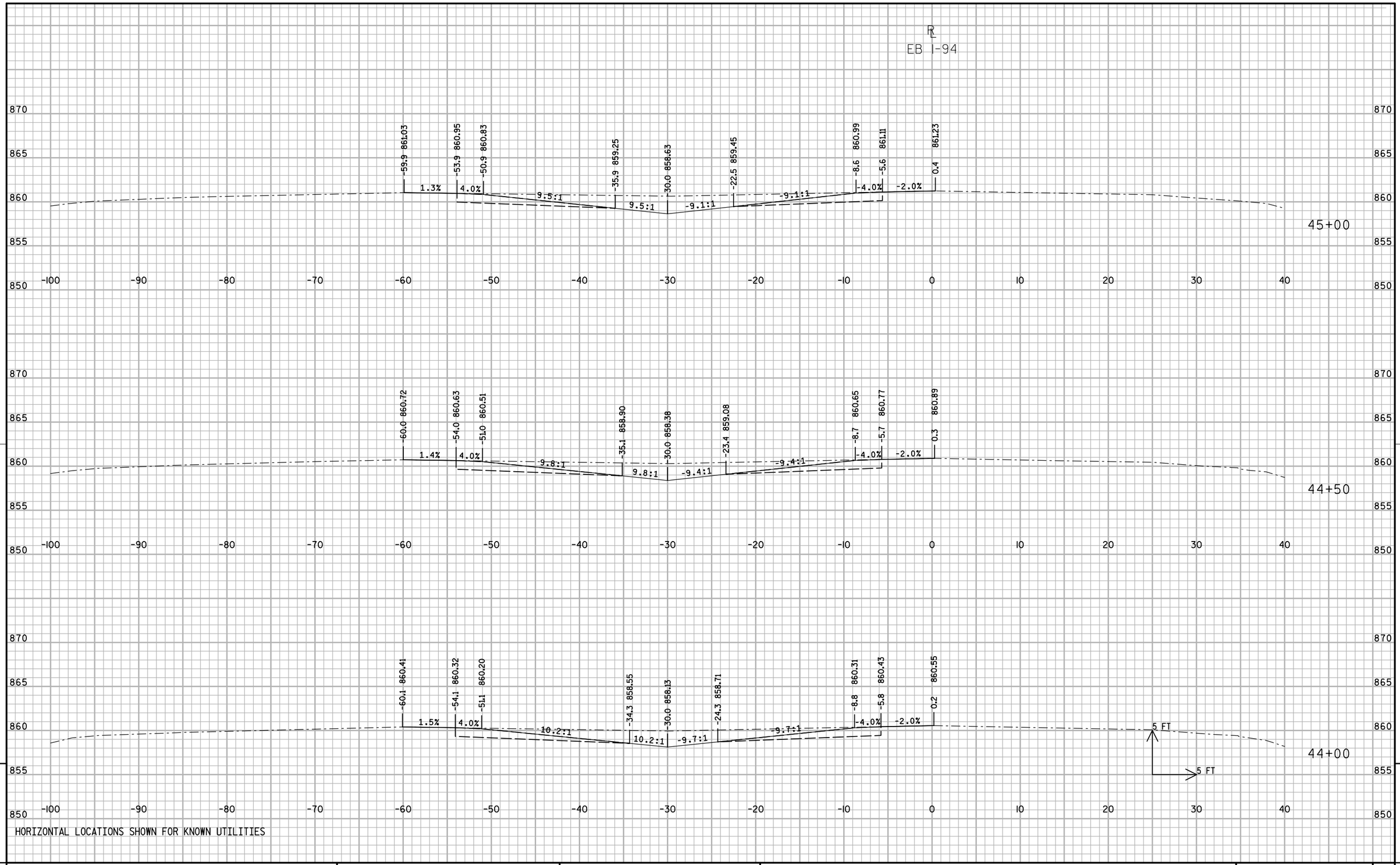
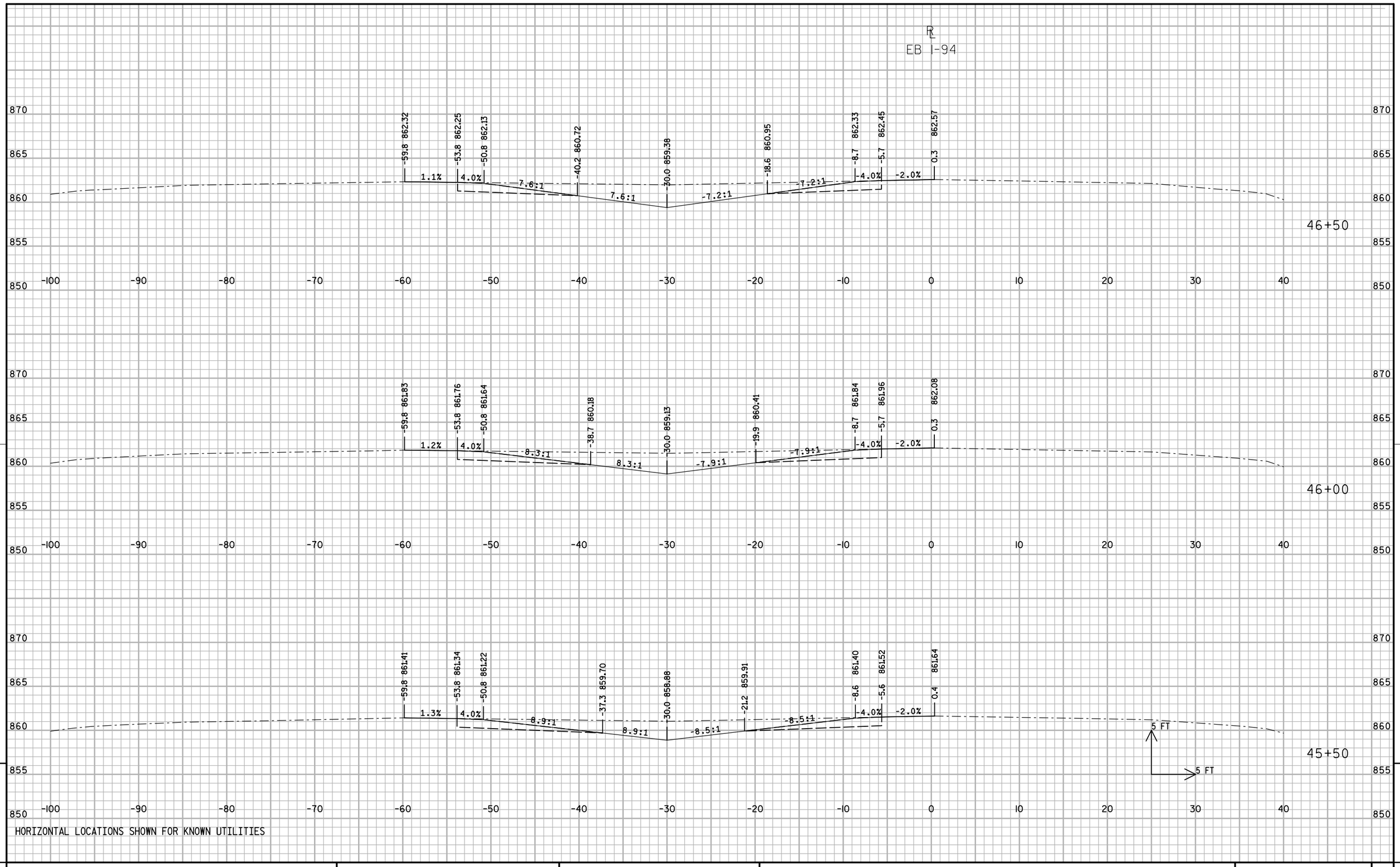
WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 329	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 330	E

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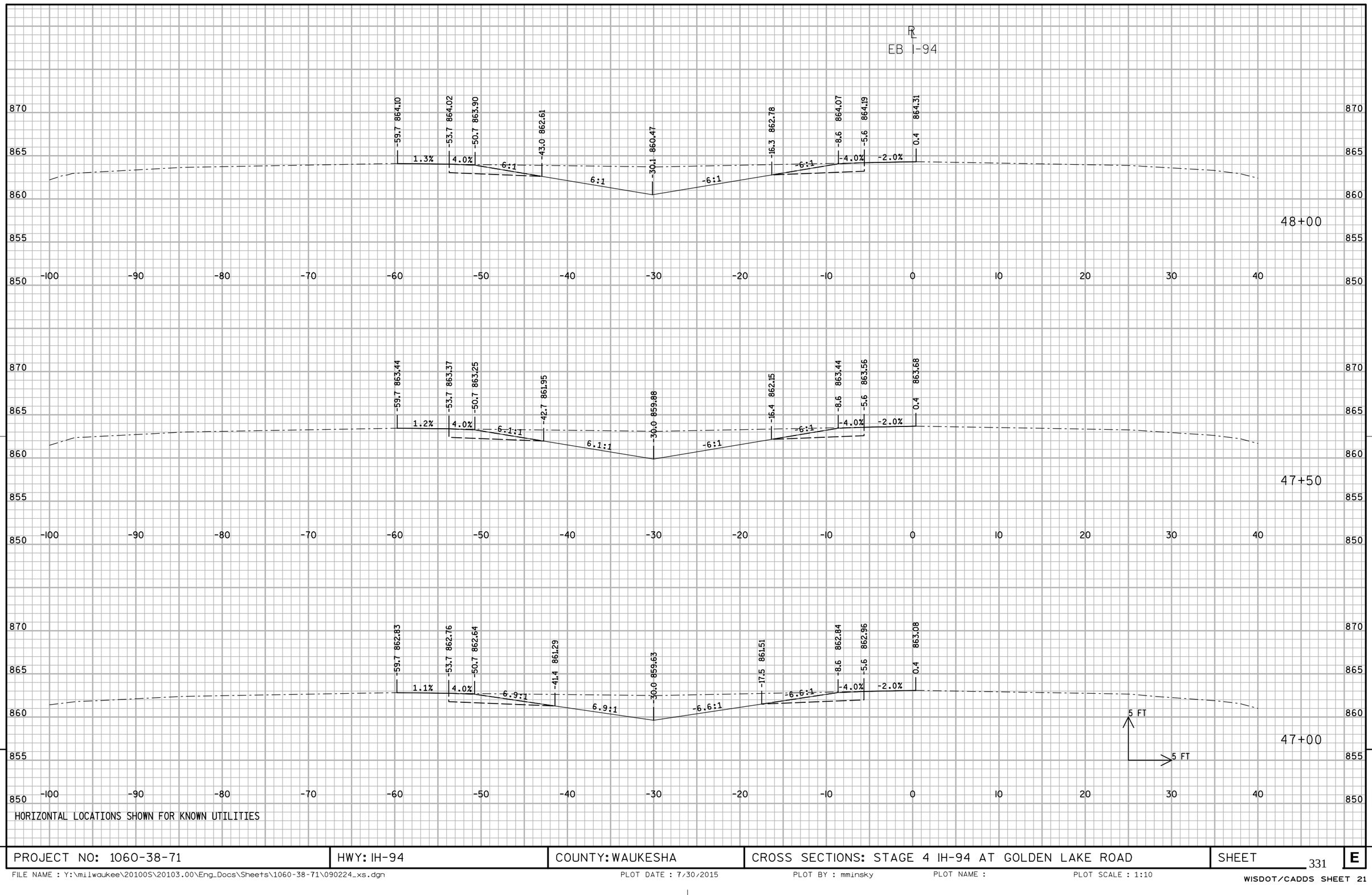
WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 331	E

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 332	E

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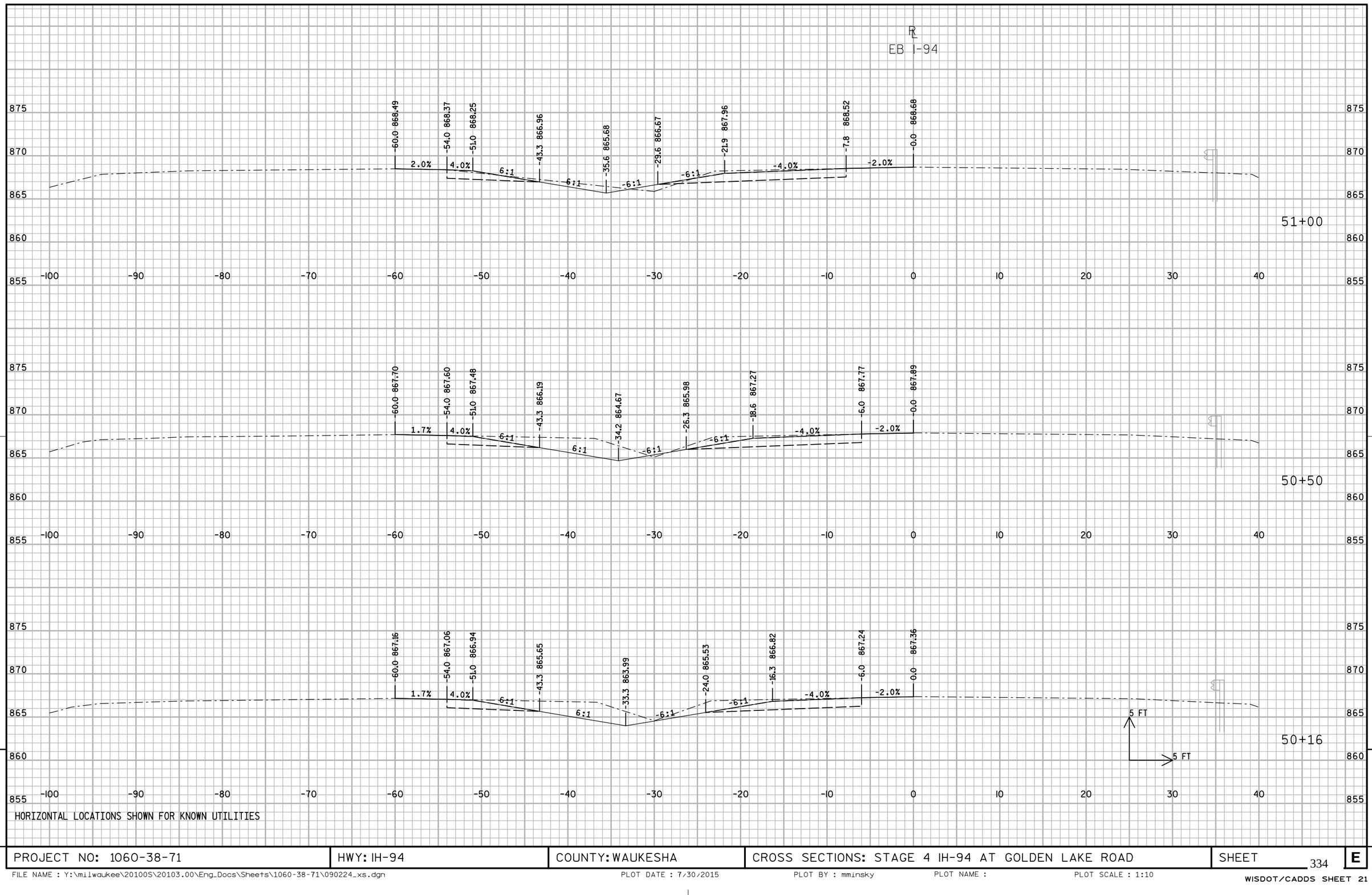
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

9

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 333	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090224_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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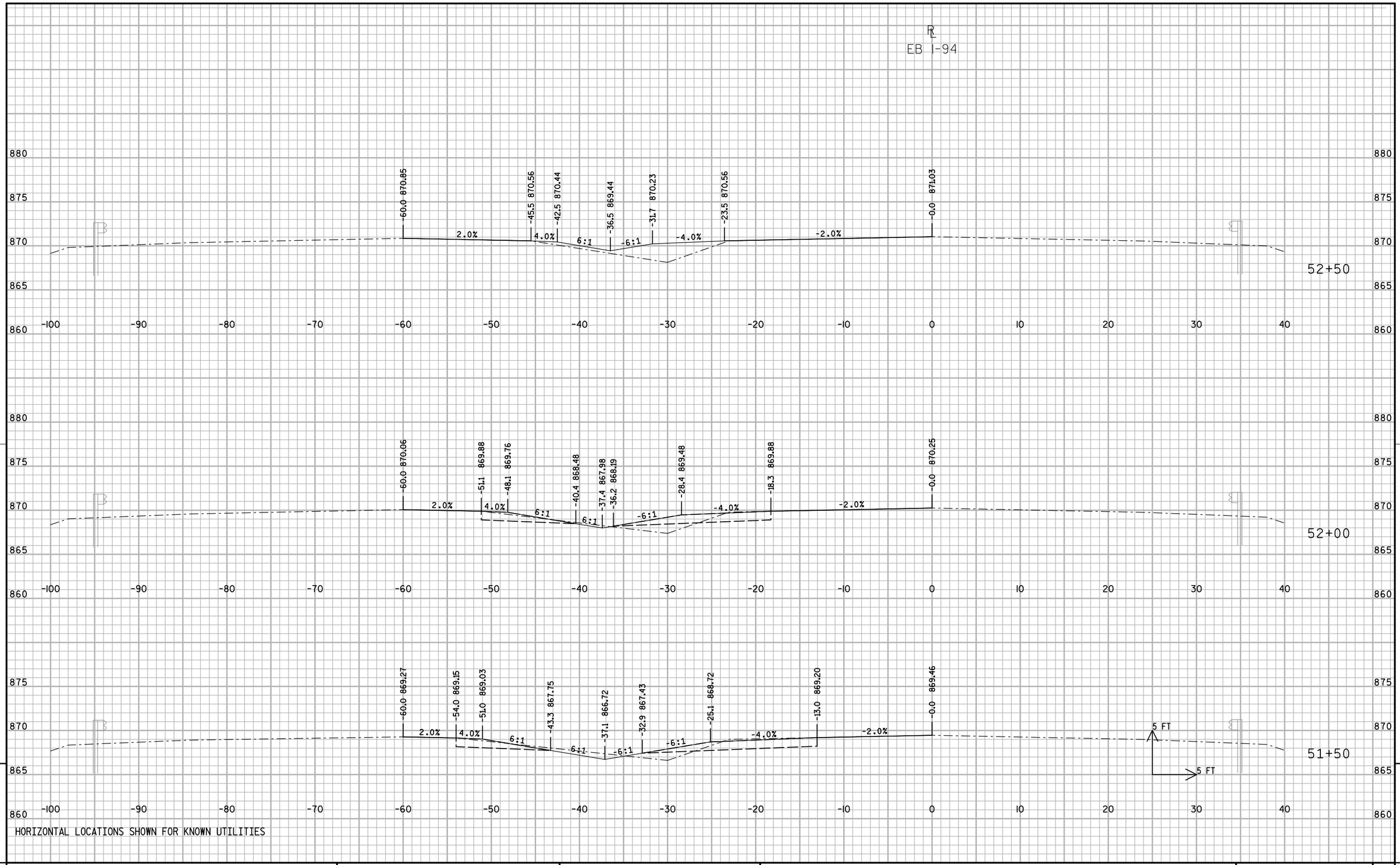

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 335	E

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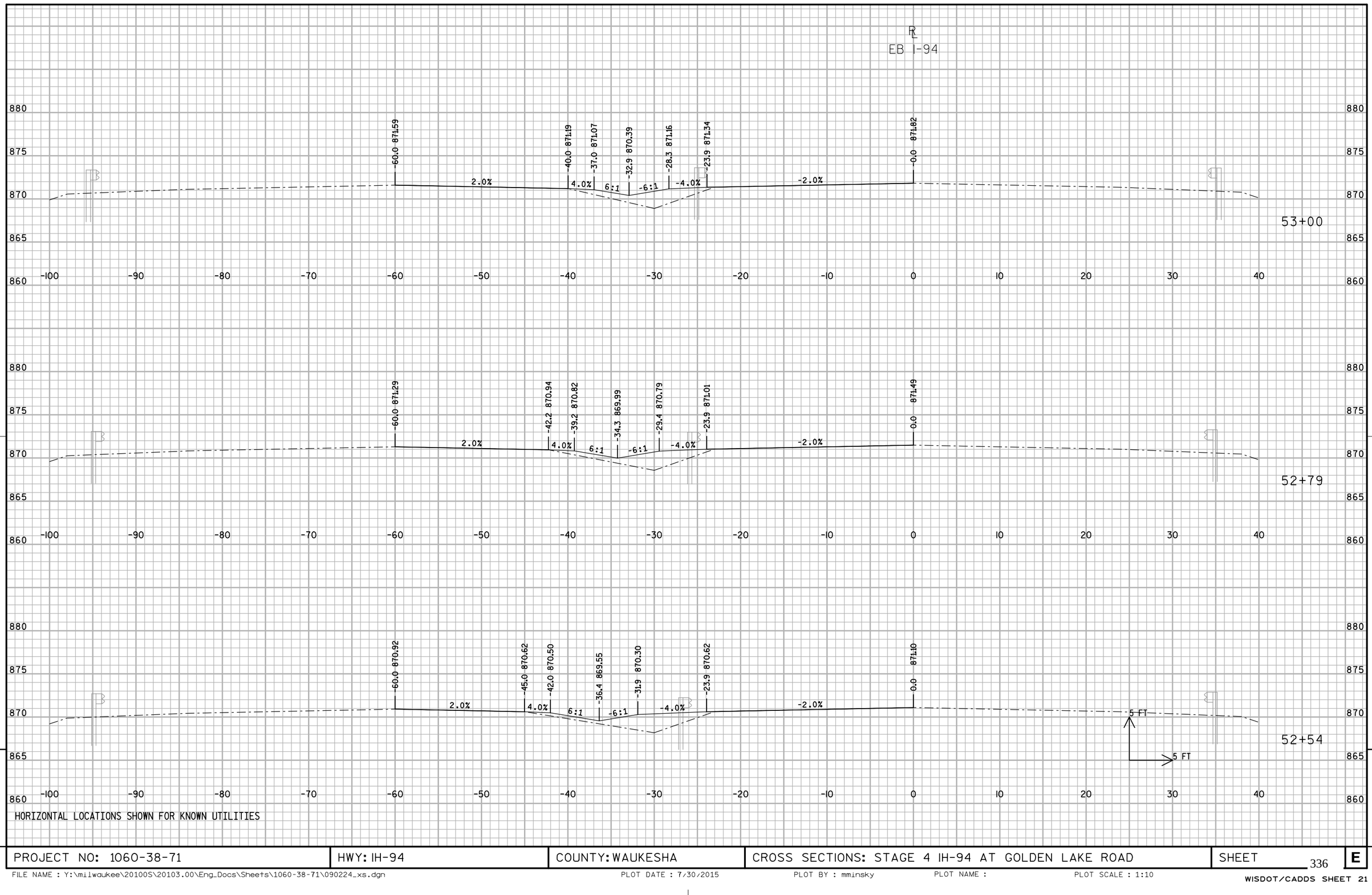
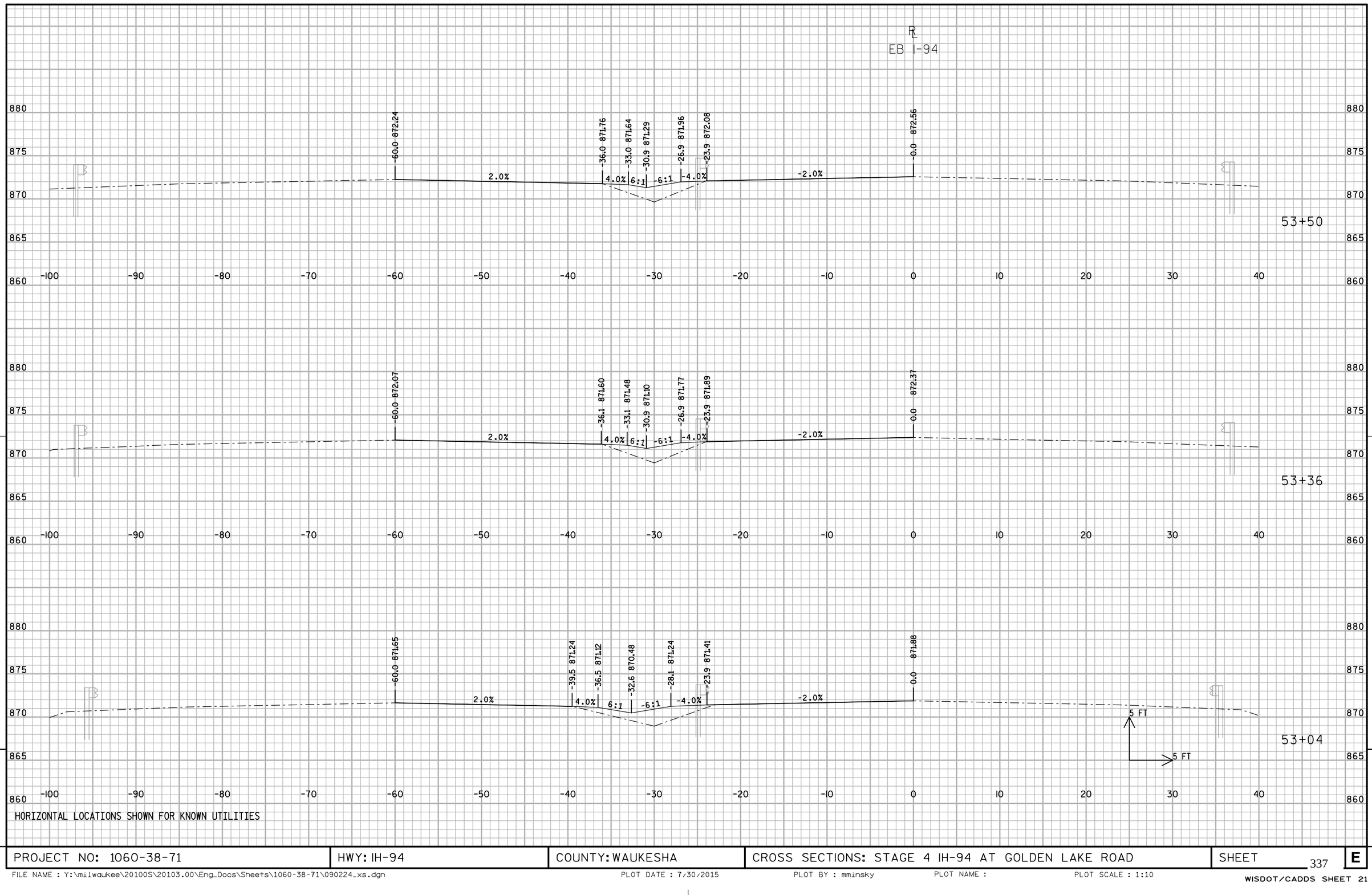


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 336	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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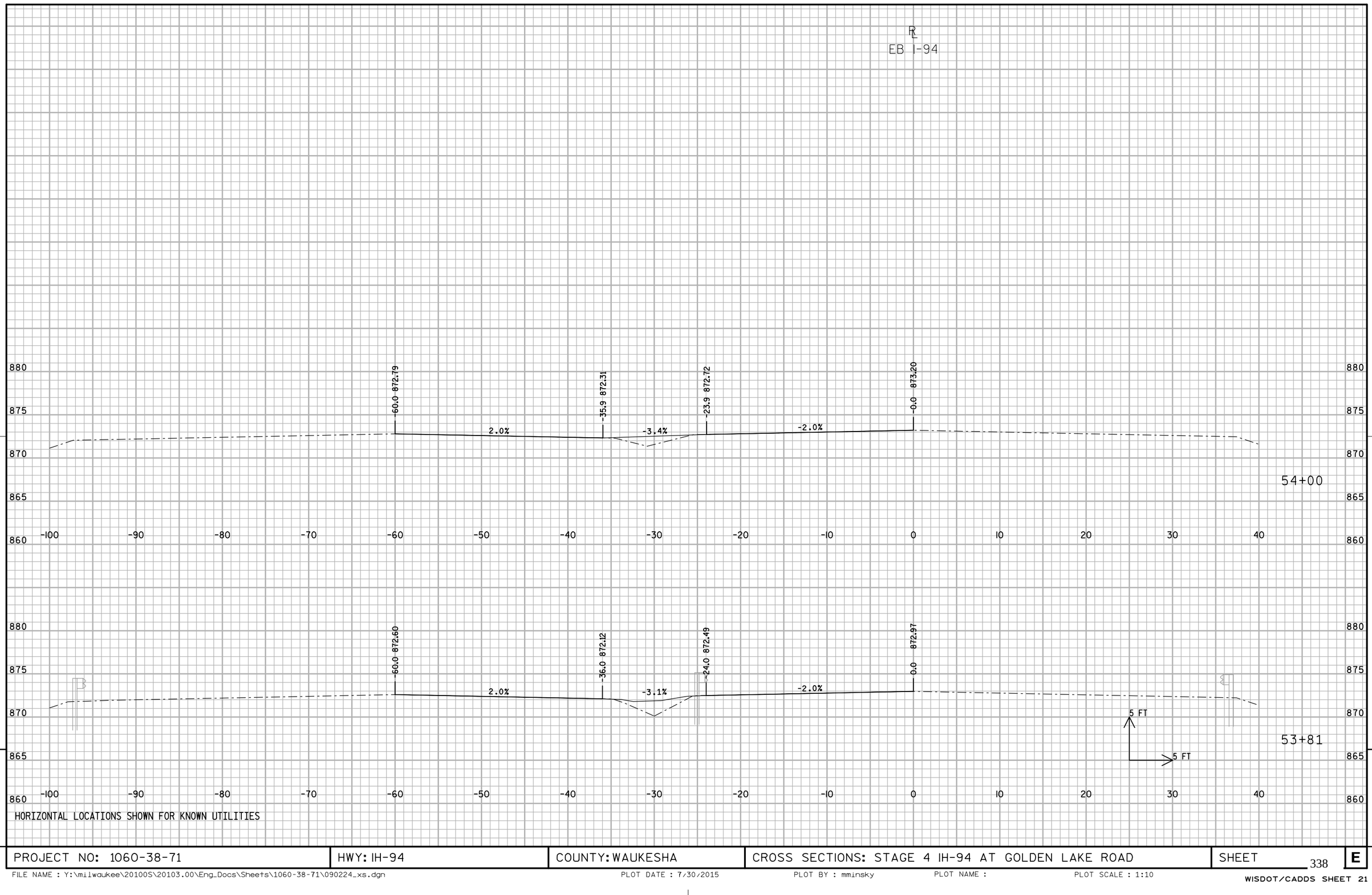

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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 338	E

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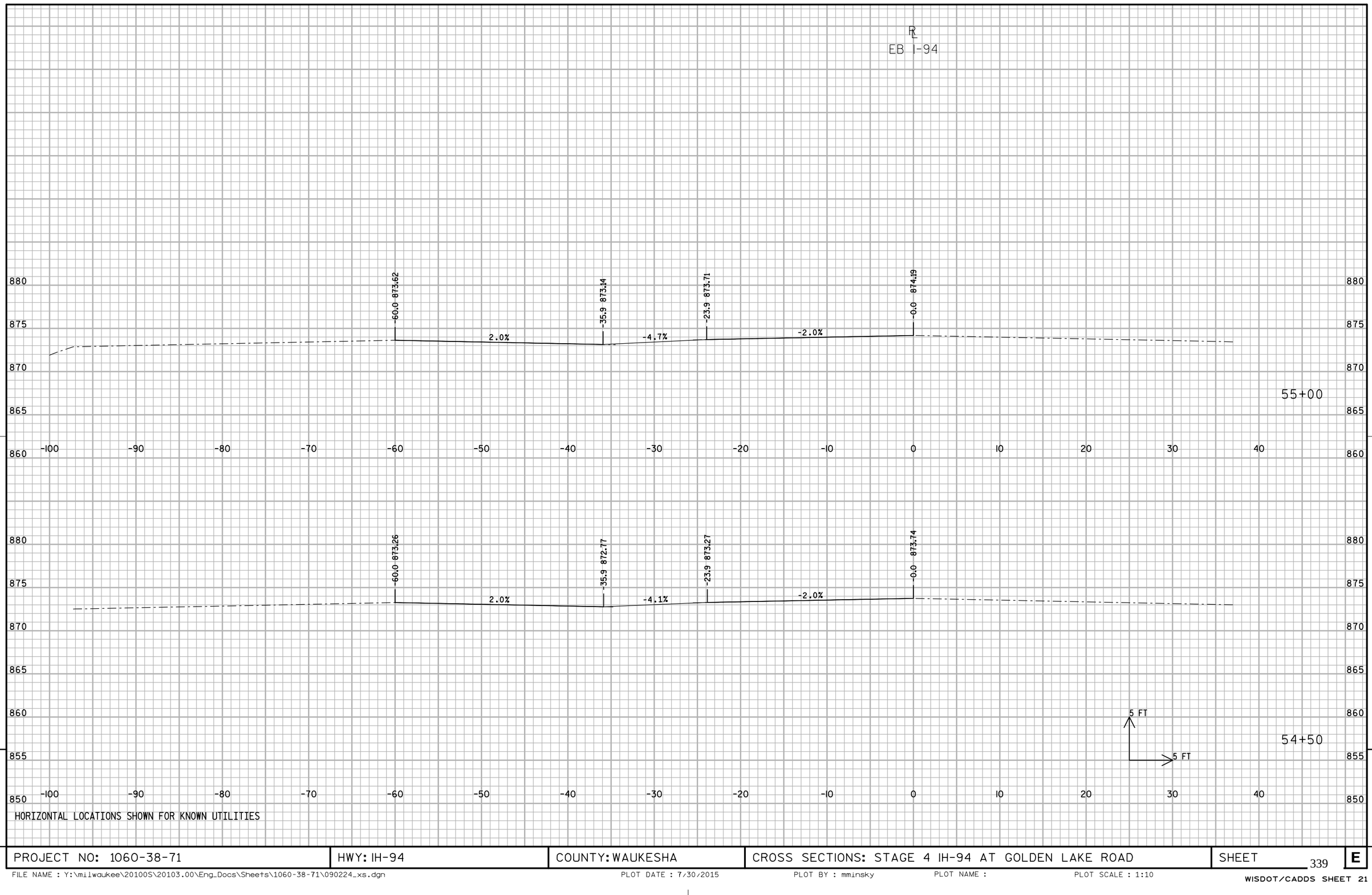
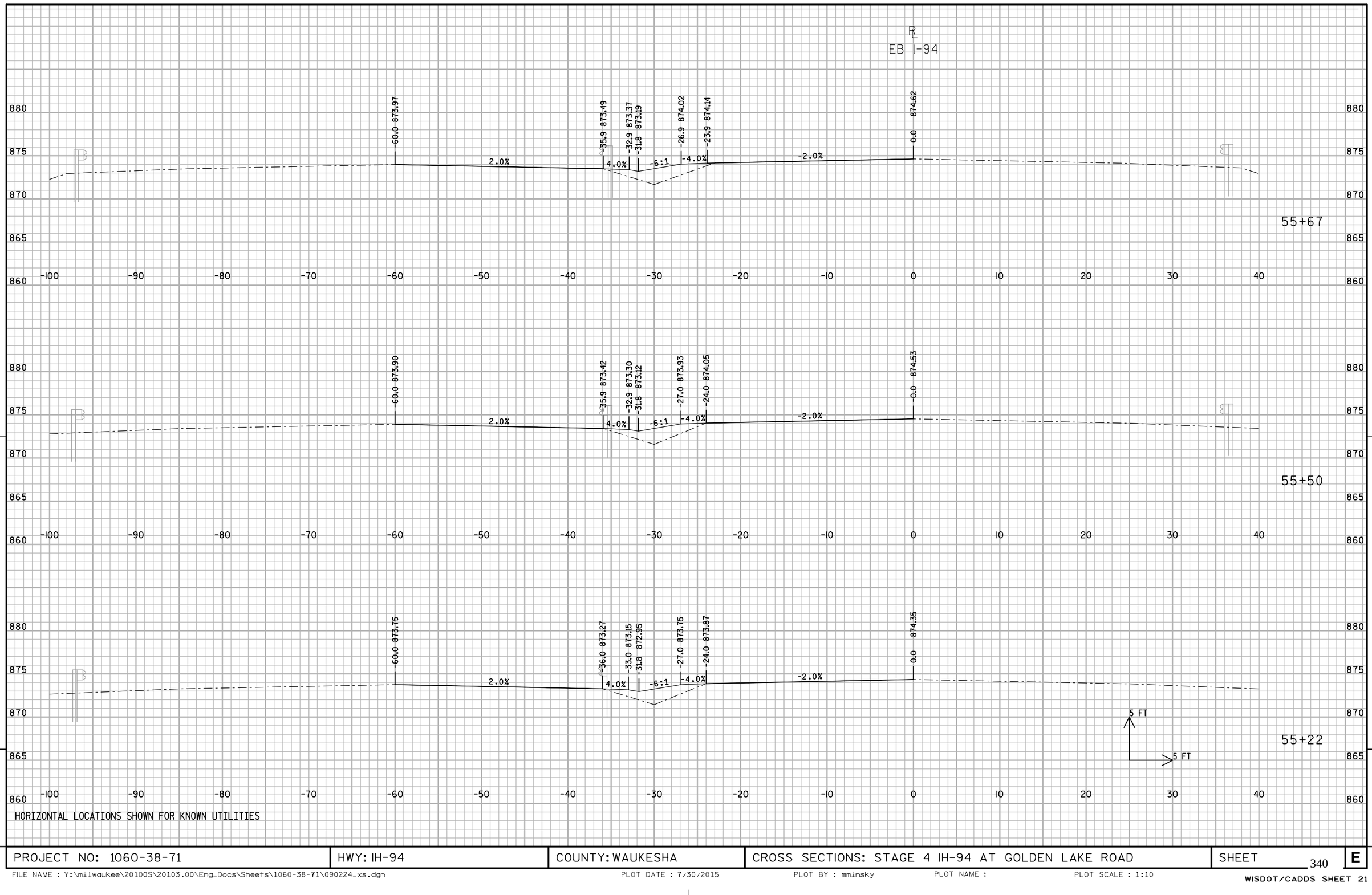


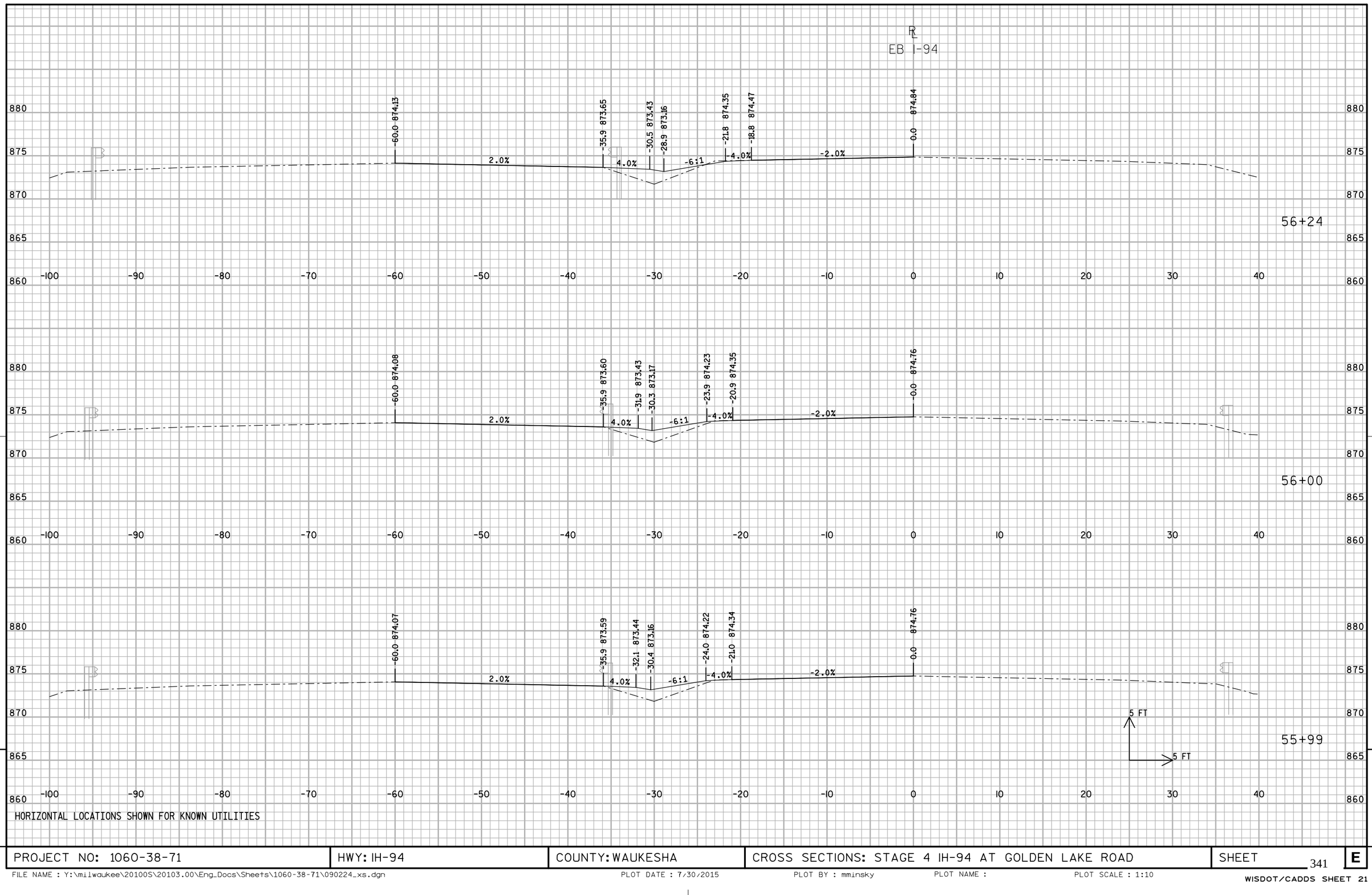
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 339	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 340	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 341	E

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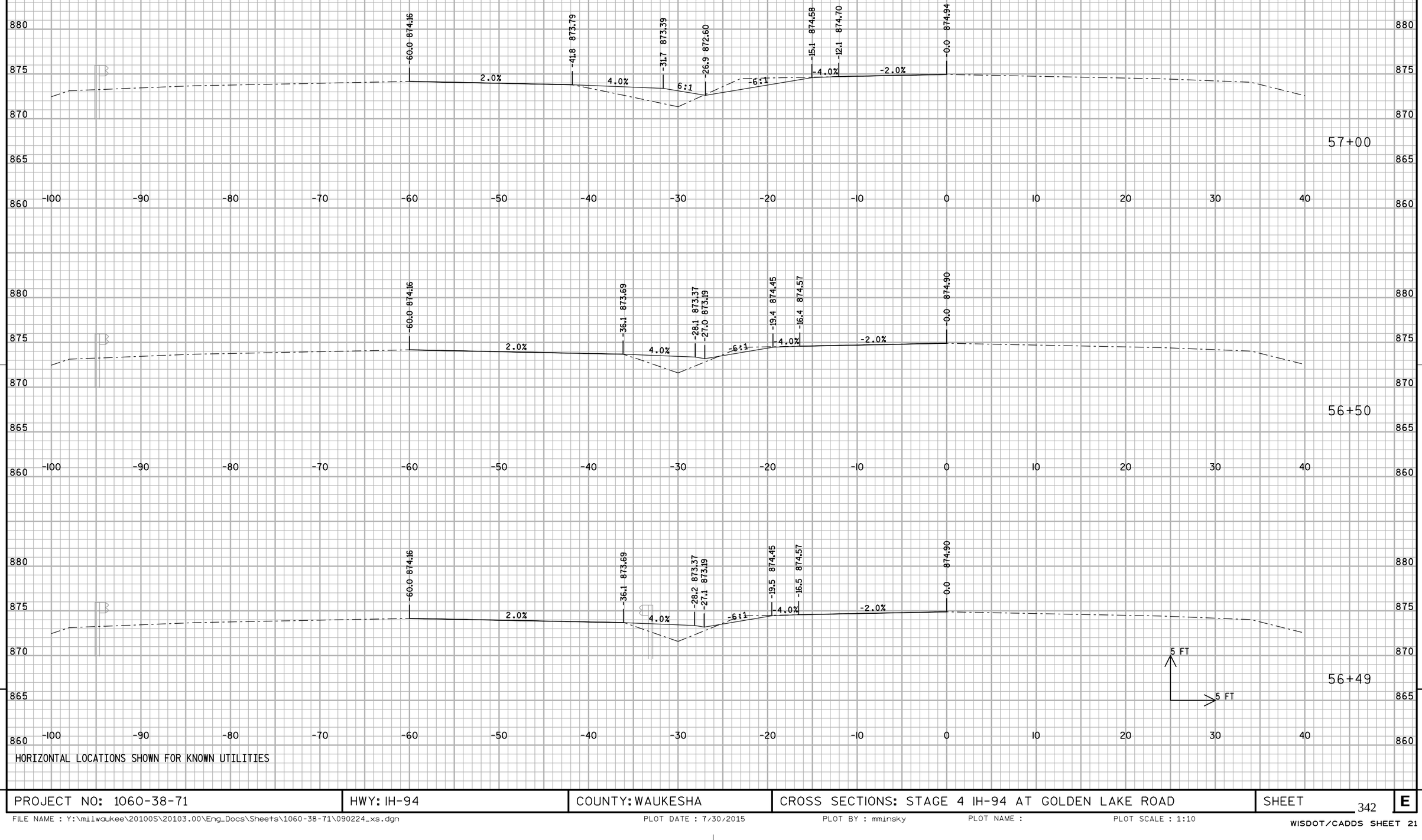
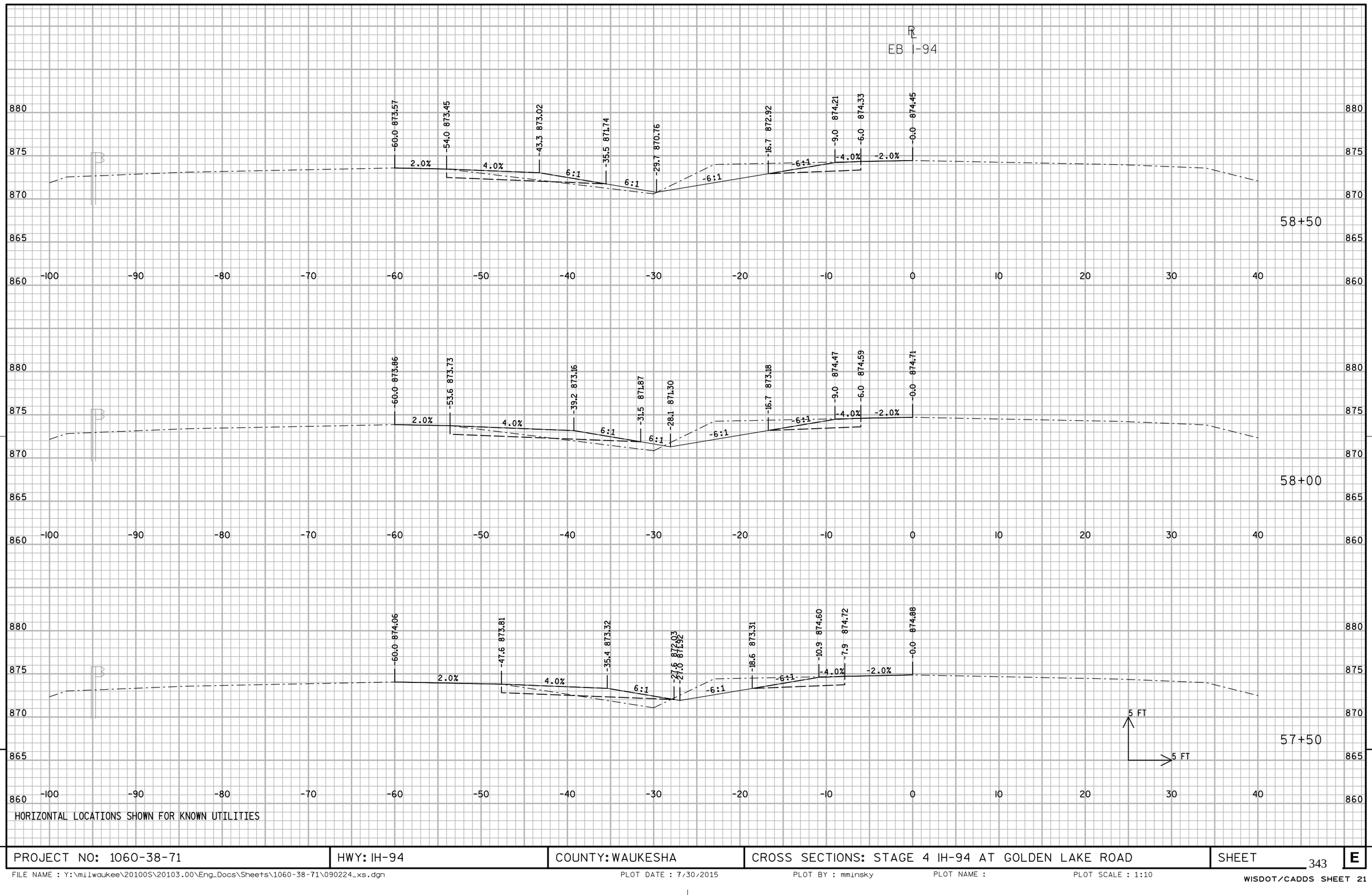
EB I-94



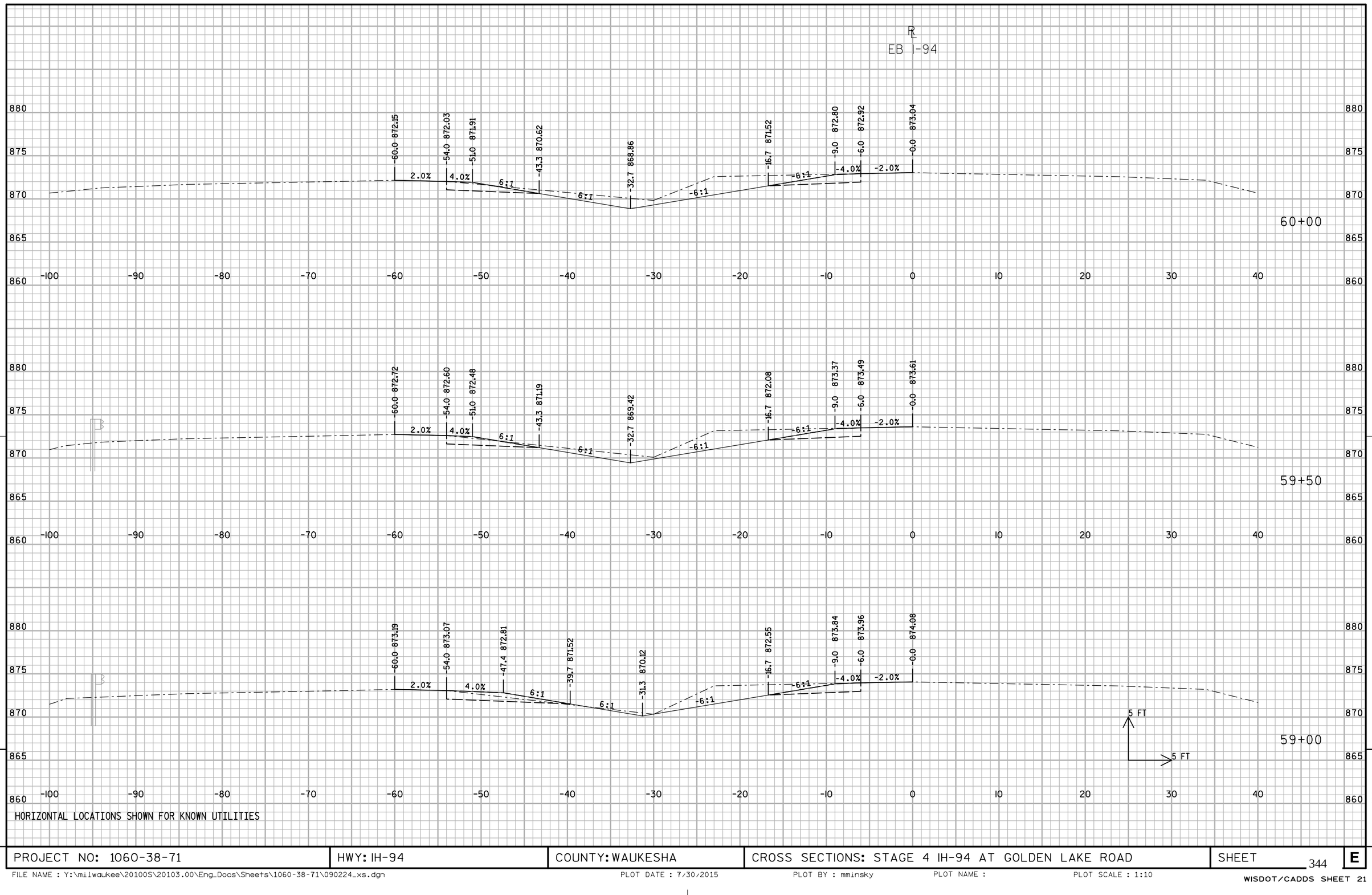
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 342	E



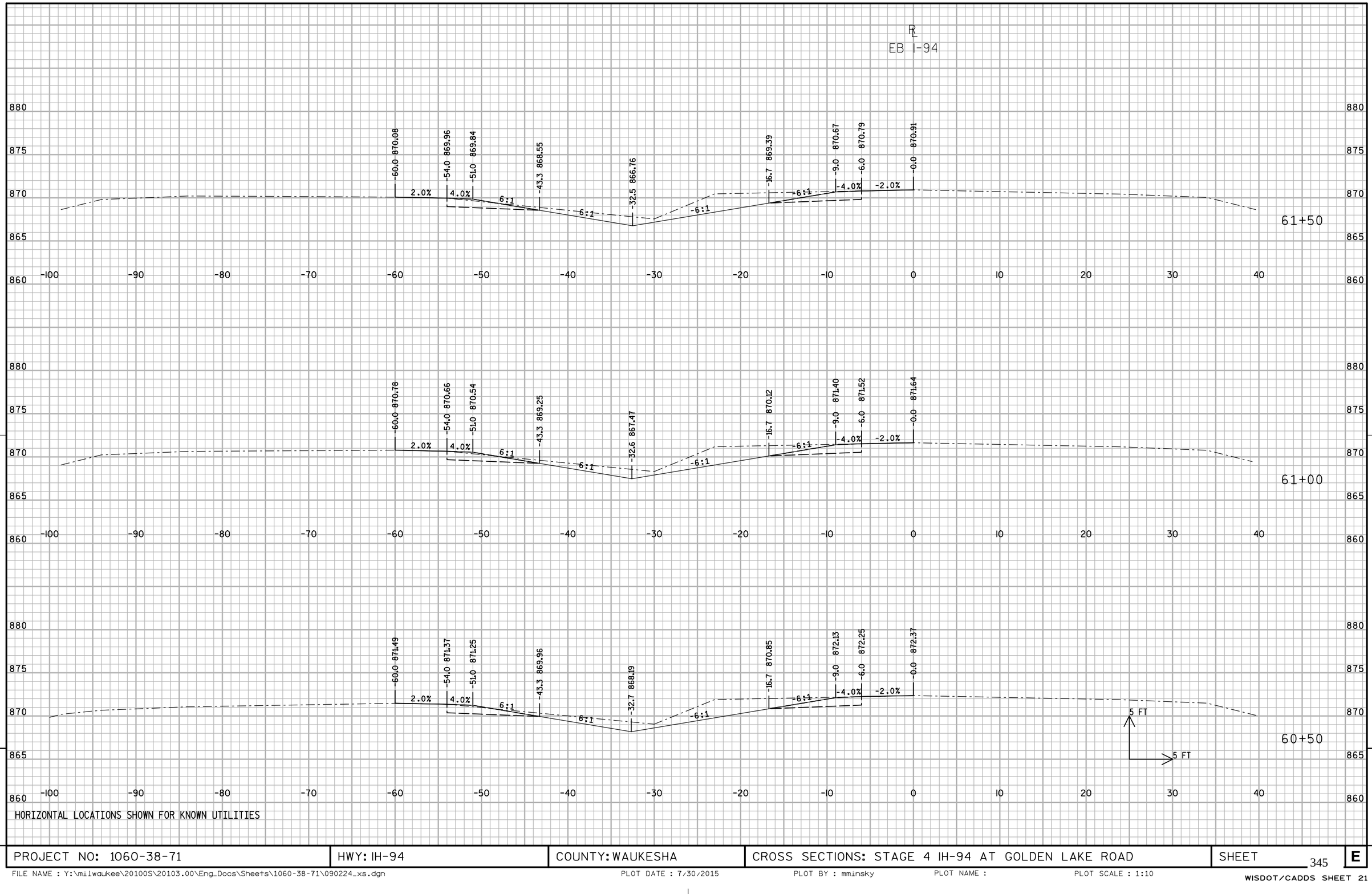
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 343	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 344	E



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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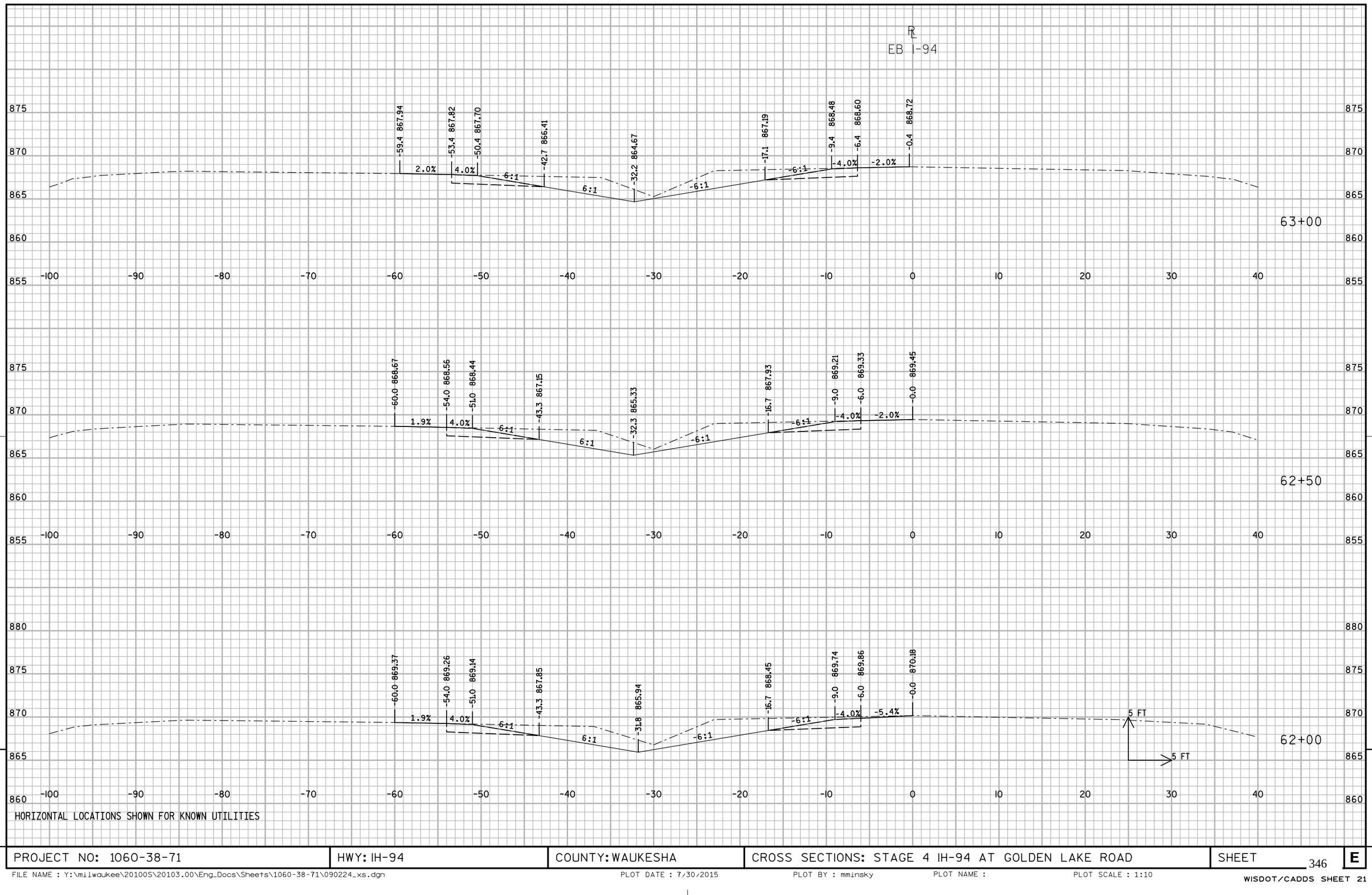
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 345	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090224_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 346	E

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

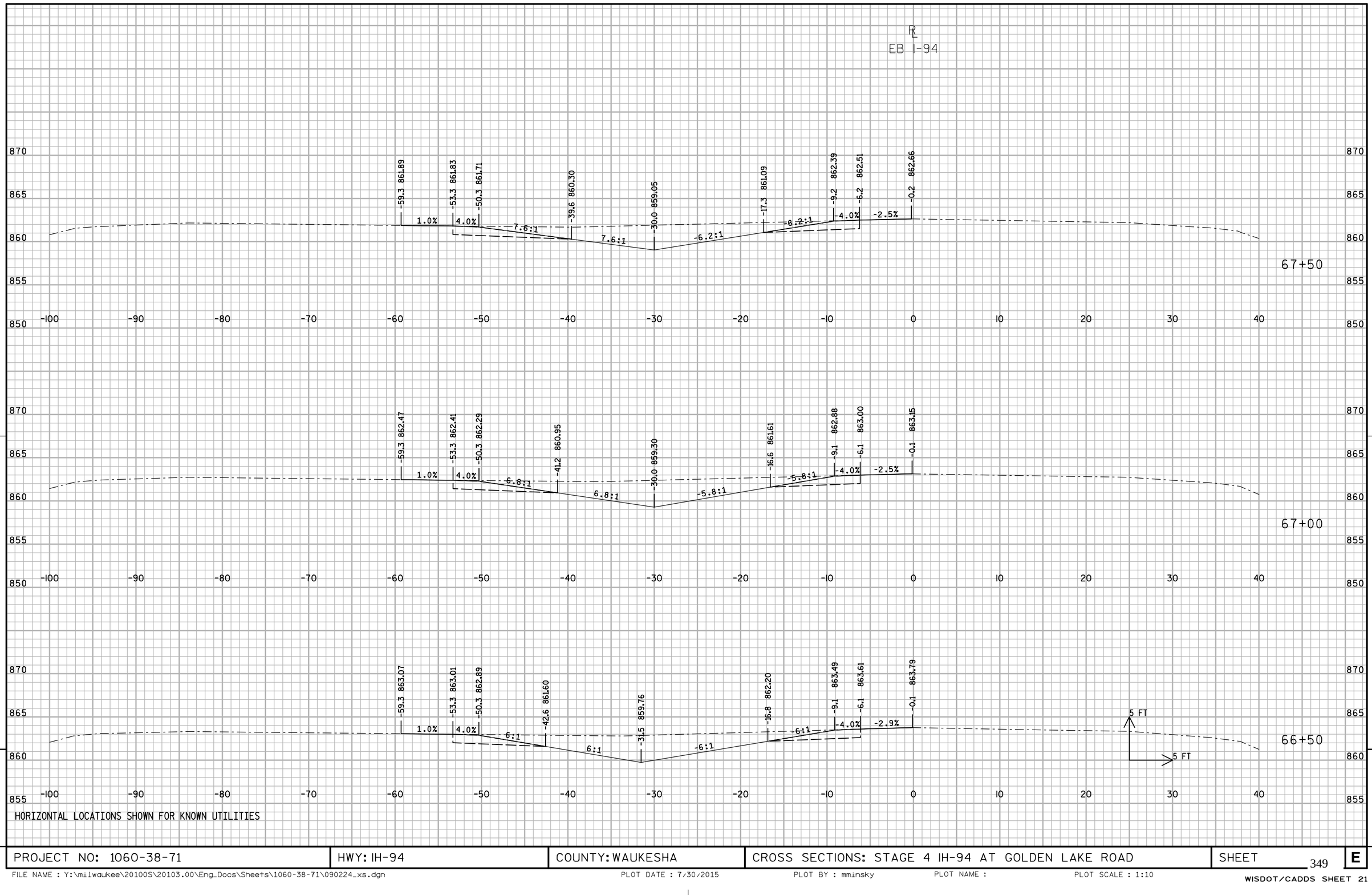
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 347	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090224_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

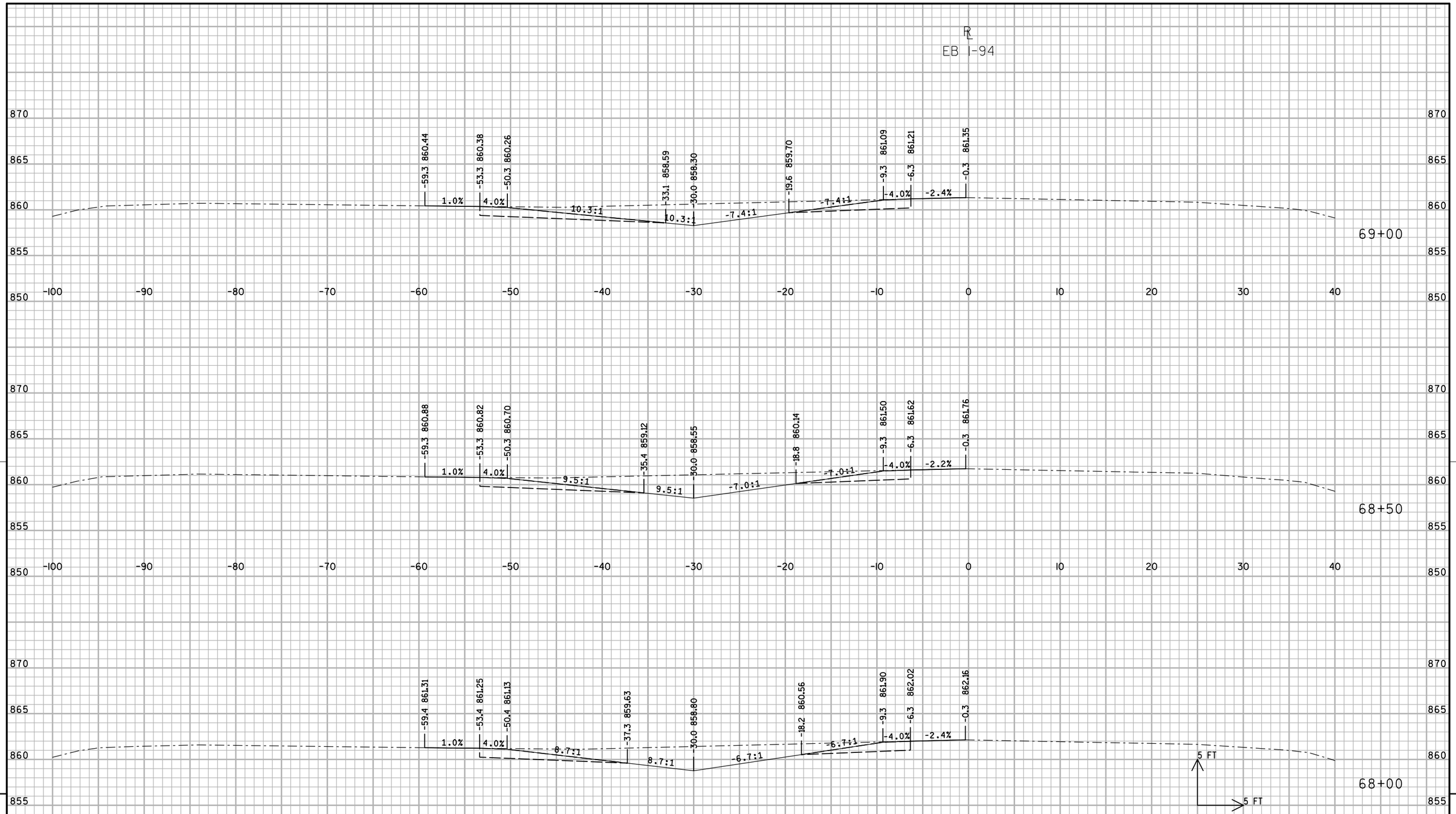
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 348	E



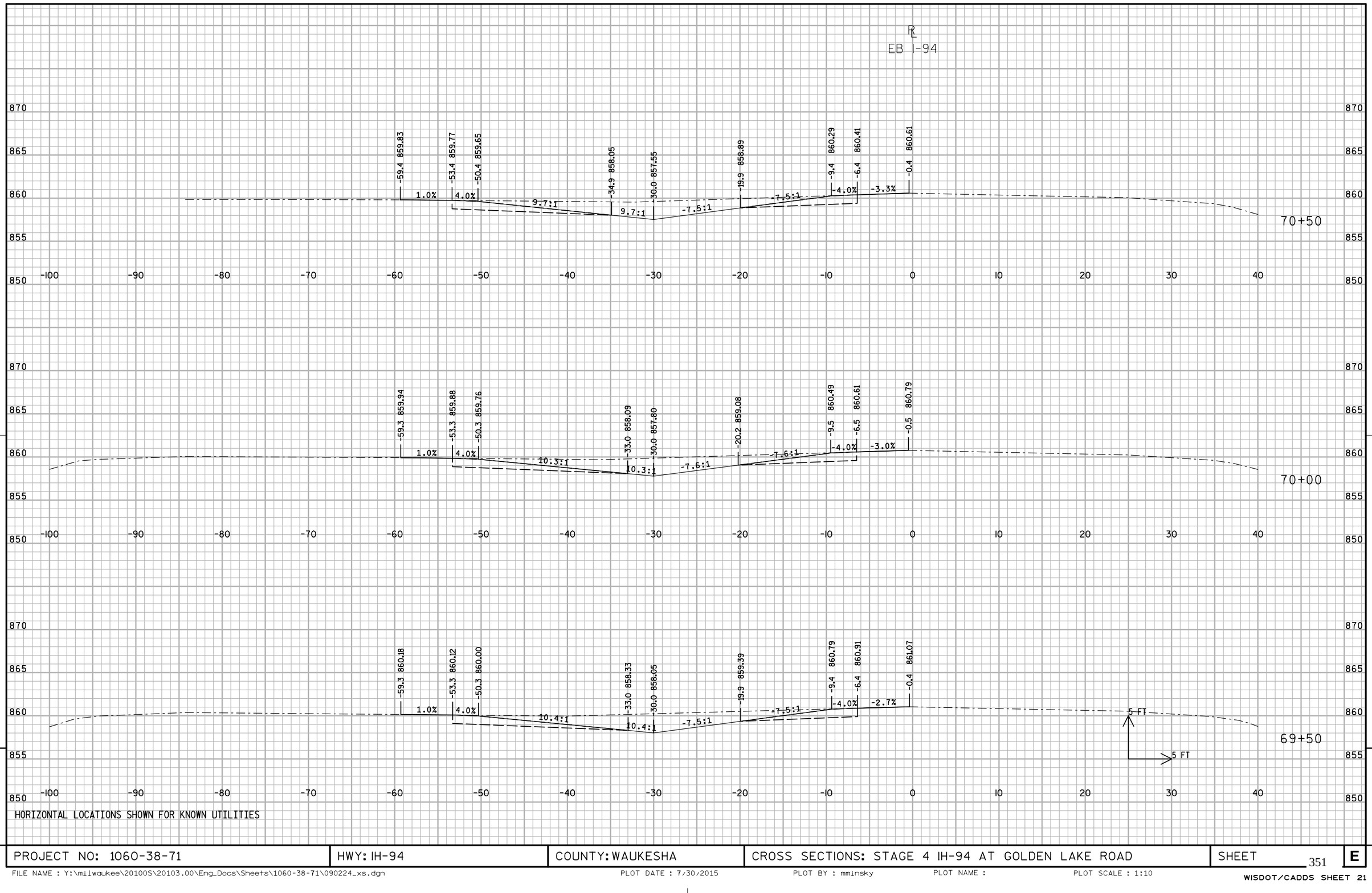
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 349	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 350	E

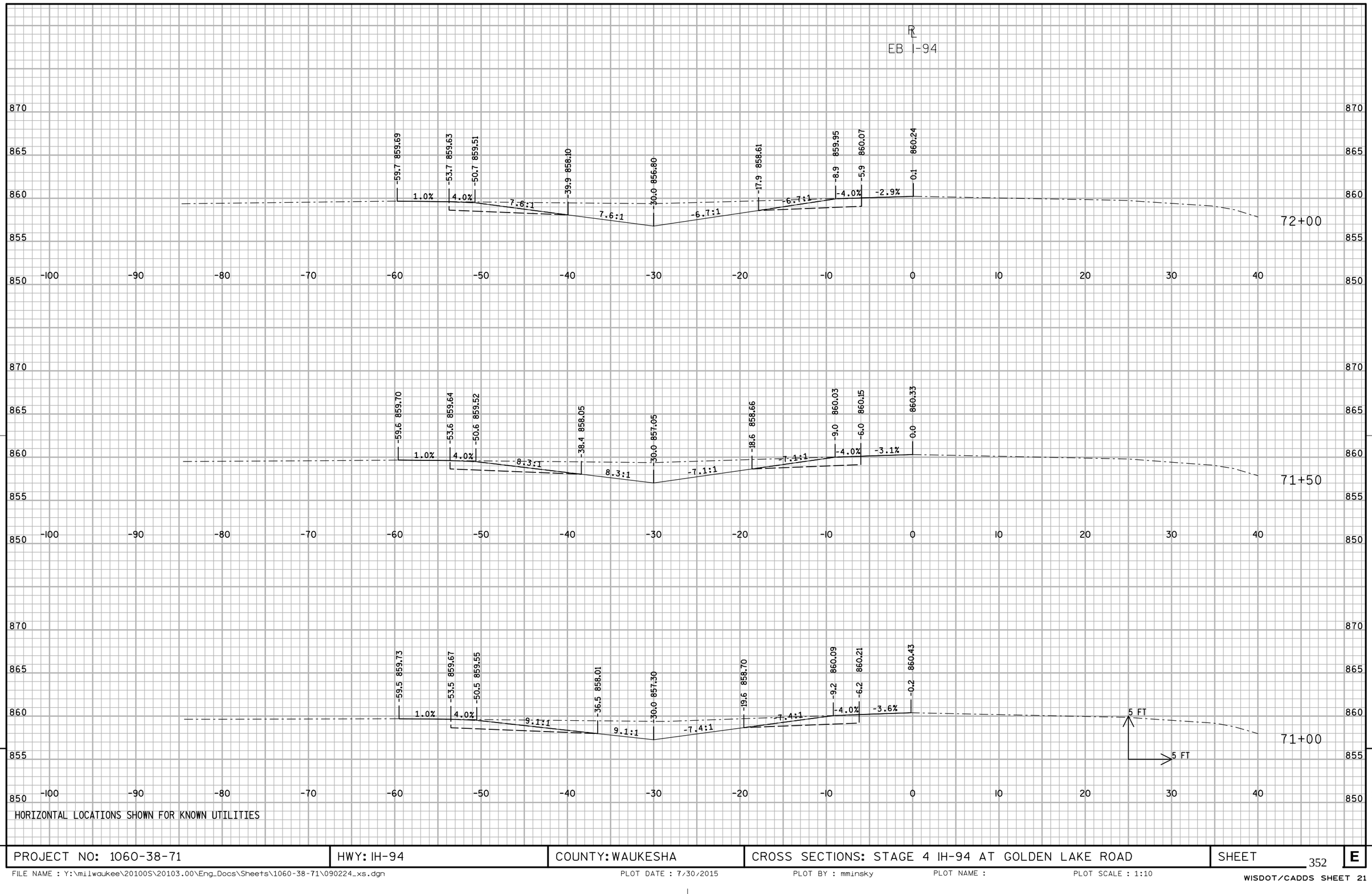


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 351	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090224_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

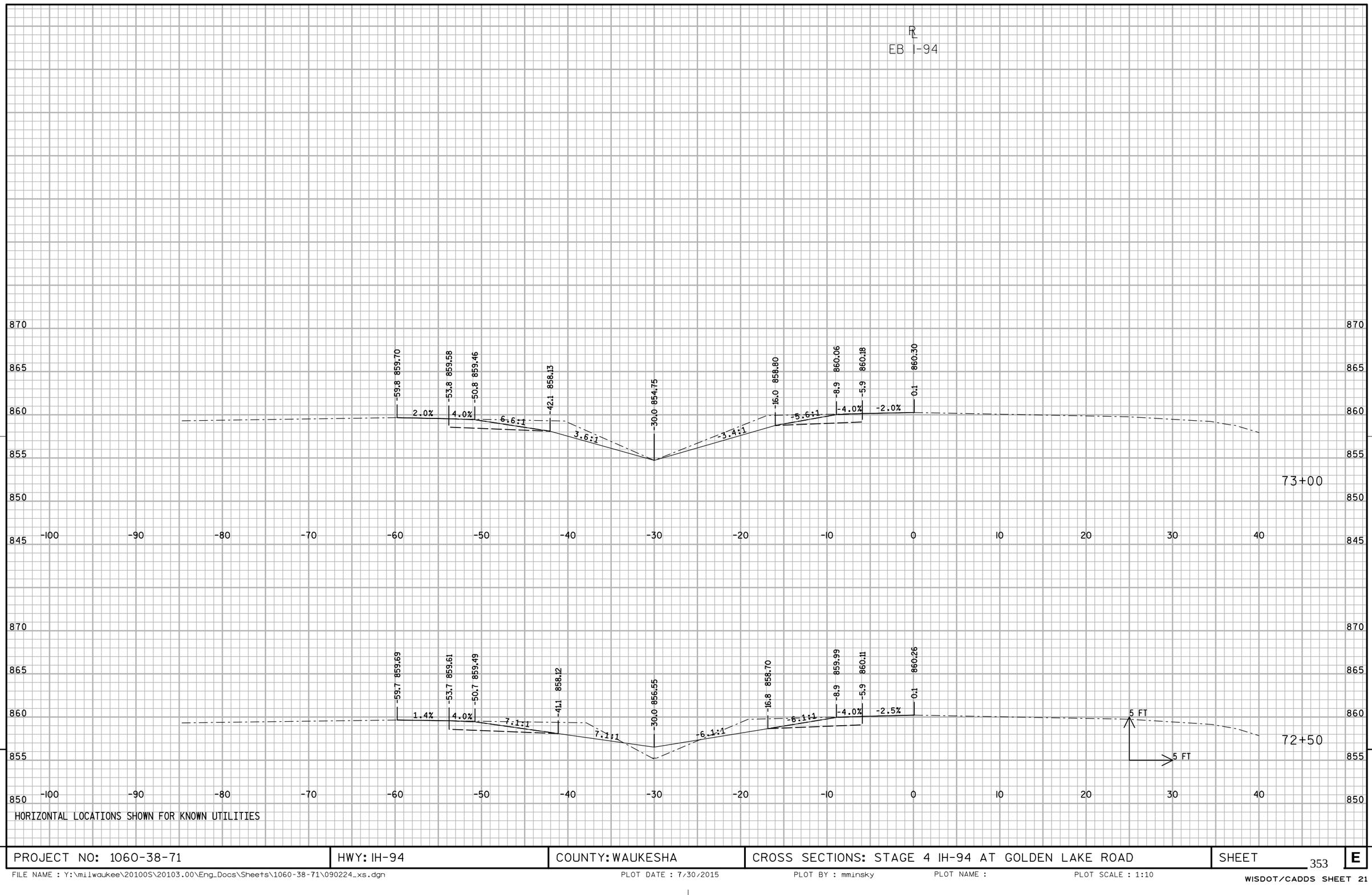


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 352	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090224_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

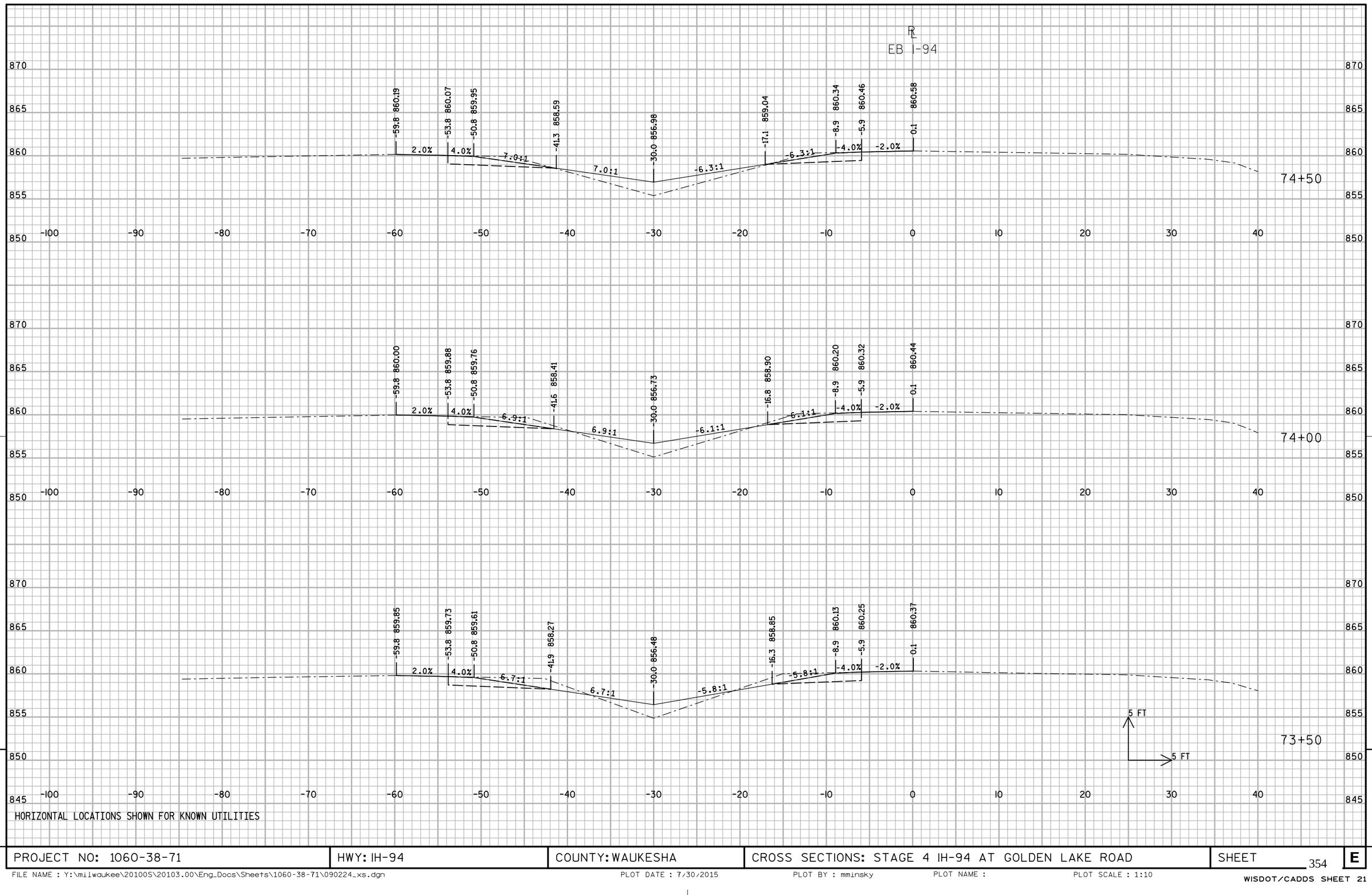


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 353	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090224_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 354	E

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EB I-94

-60.0 860.62
-54.0 860.50
-51.0 860.38
-39.7 858.95
-30.0 857.73
-17.9 859.52
-8.8 860.86
-5.8 860.98
0.2 861.10

2.0% 4.0% 7.9:1 7.9:1 -6.8:1 -6.8:1 -4.0% -2.0%

76+00

-59.9 860.50
-53.9 860.38
-50.9 860.26
-40.4 858.86
-30.0 857.48
-17.6 859.35
-8.8 860.68
-5.8 860.80
0.2 860.92

2.0% 4.0% 7.5:1 7.5:1 -6.6:1 -6.6:1 -4.0% -2.0%

75+50

-59.9 860.37
-53.9 860.25
-50.9 860.13
-41.0 858.76
-30.0 857.23
-17.4 859.18
-8.8 860.50
-5.8 860.62
0.2 860.74

2.0% 4.0% 7.2:1 7.2:1 -6.5:1 -6.5:1 -4.0% -2.0%

5 FT
5 FT

75+00

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 355	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090224_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

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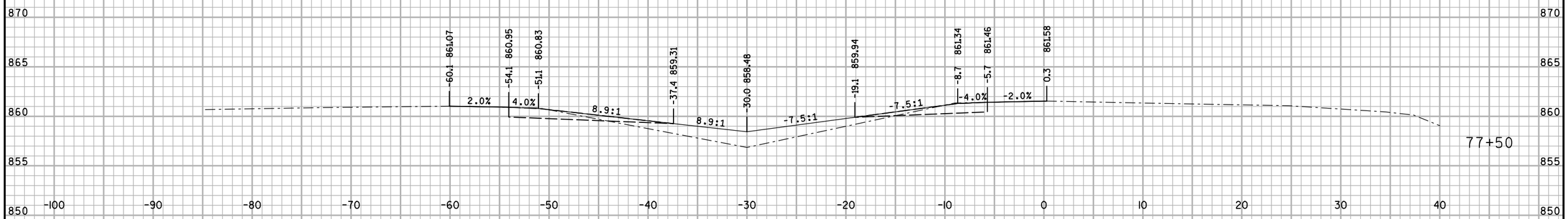
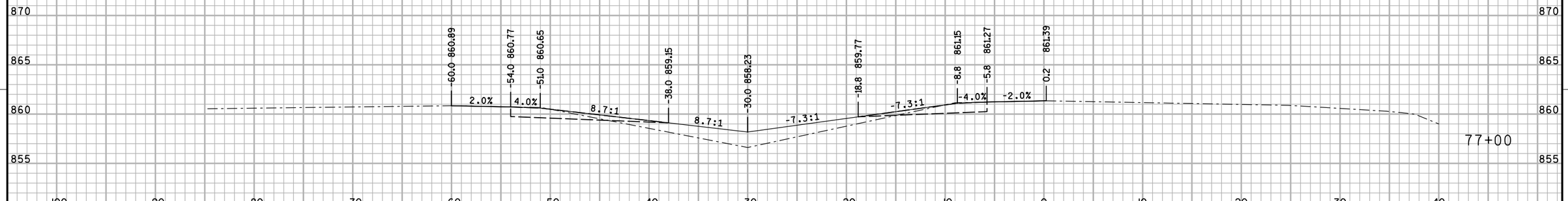
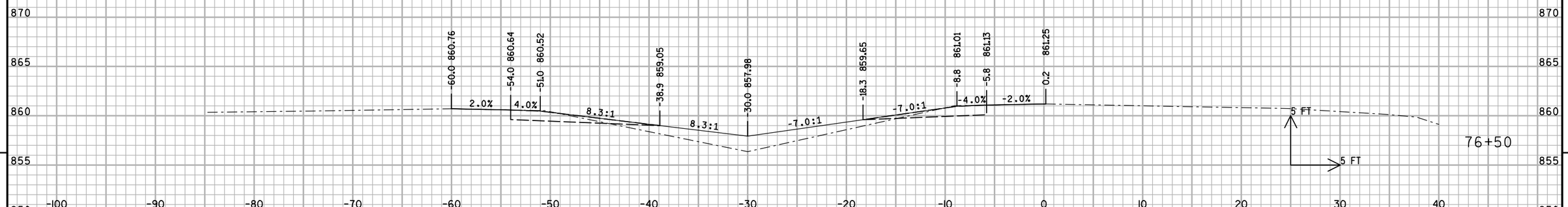
EB I-94







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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

9

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 356	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090224_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

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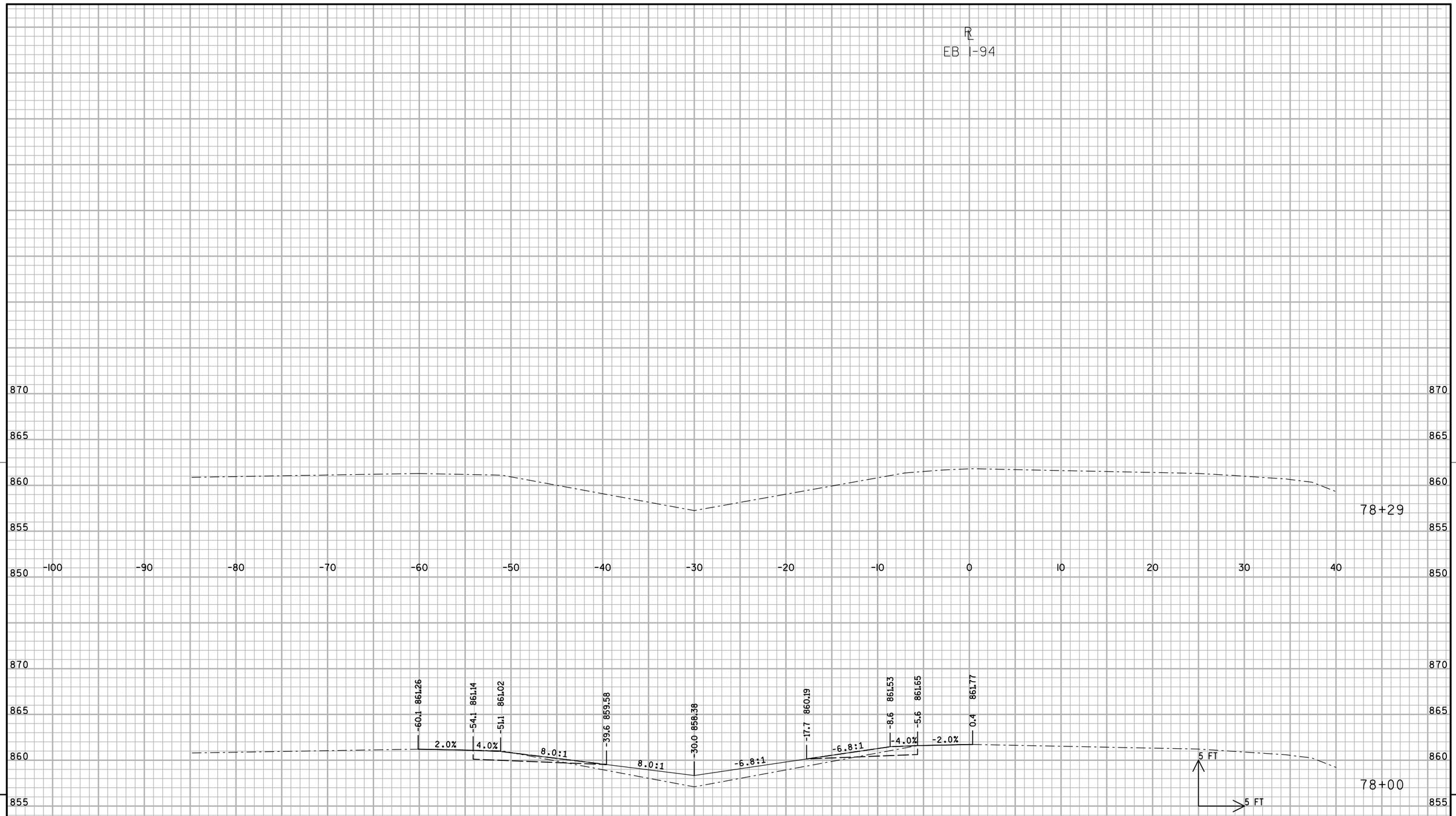
EB I-94

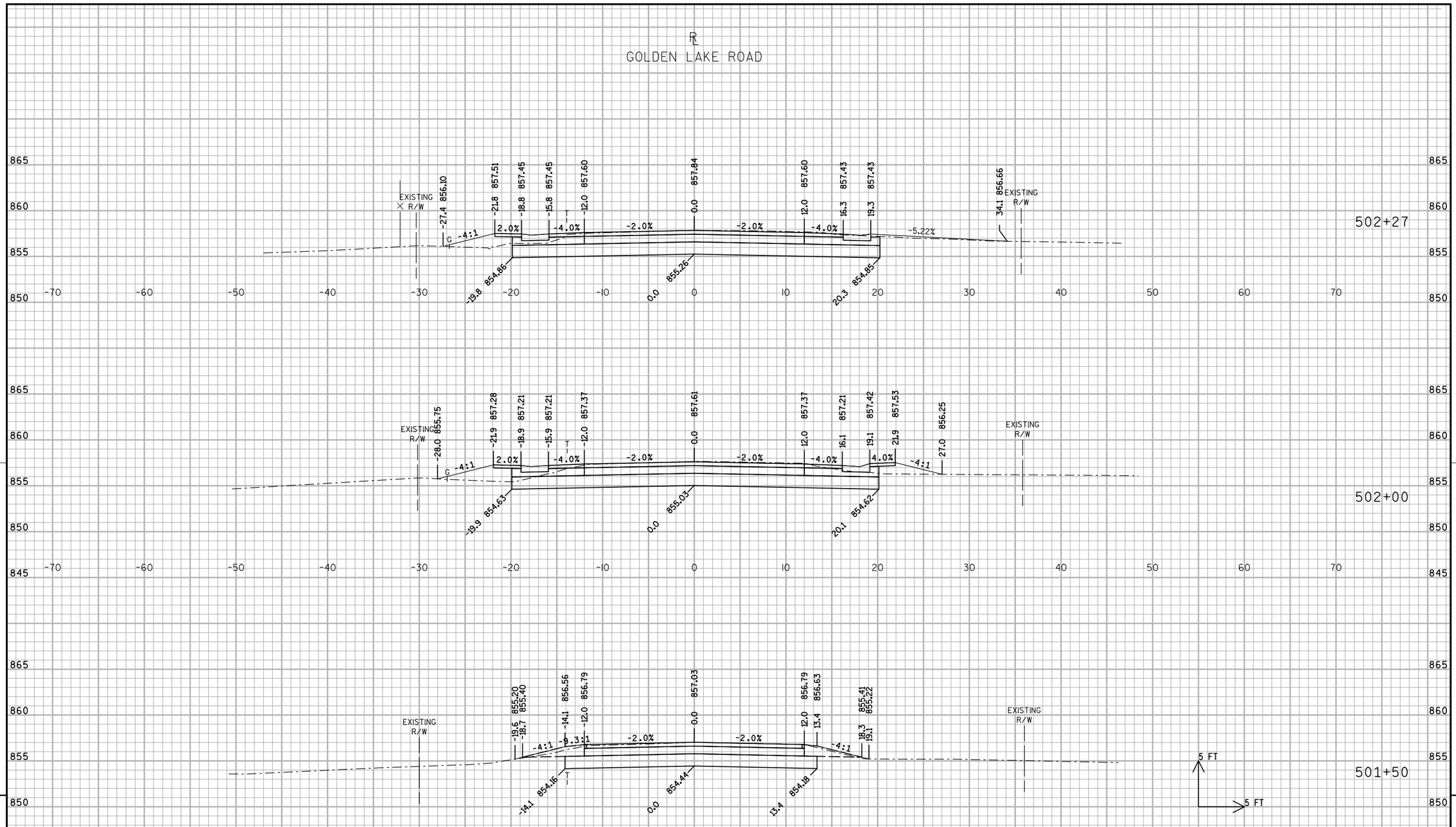


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: STAGE 4 IH-94 AT GOLDEN LAKE ROAD	SHEET 357	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090224_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: GOLDEN LAKE ROAD	SHEET 358	E

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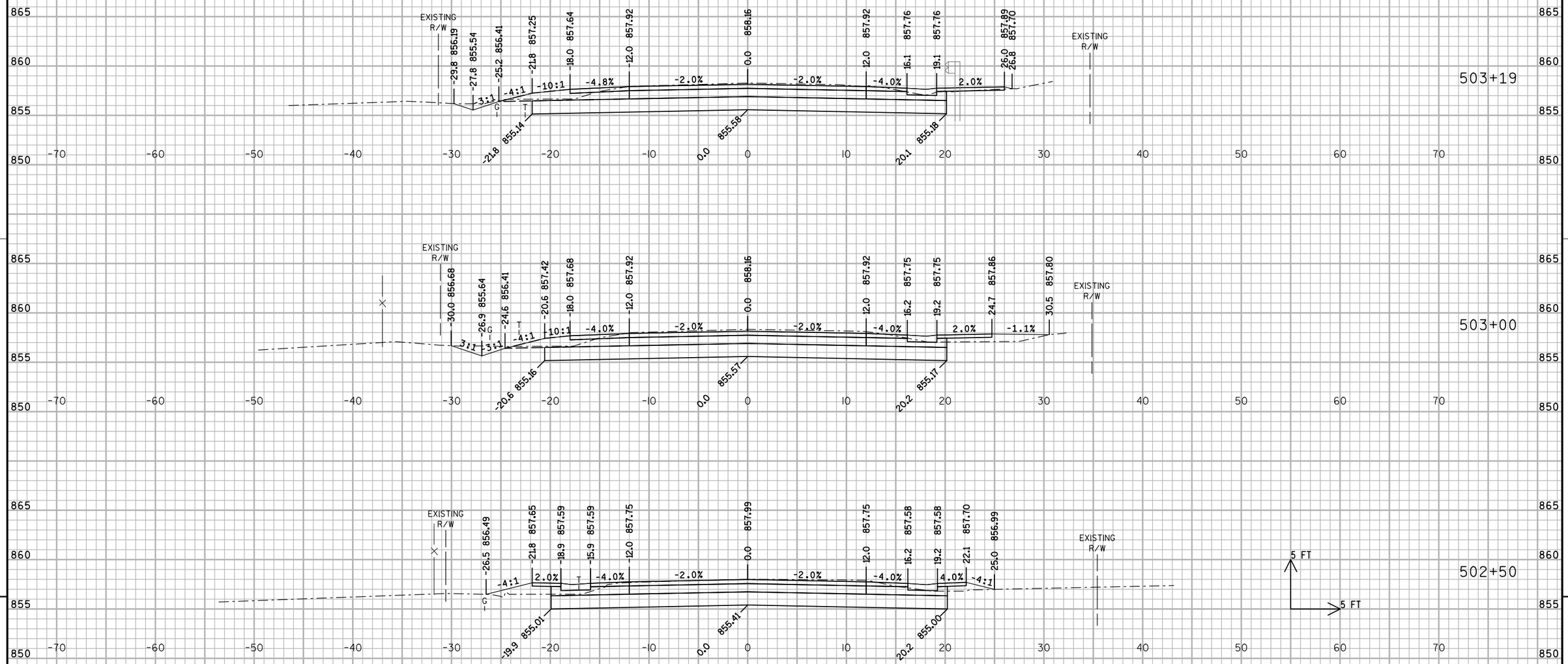
GOLDEN LAKE ROAD



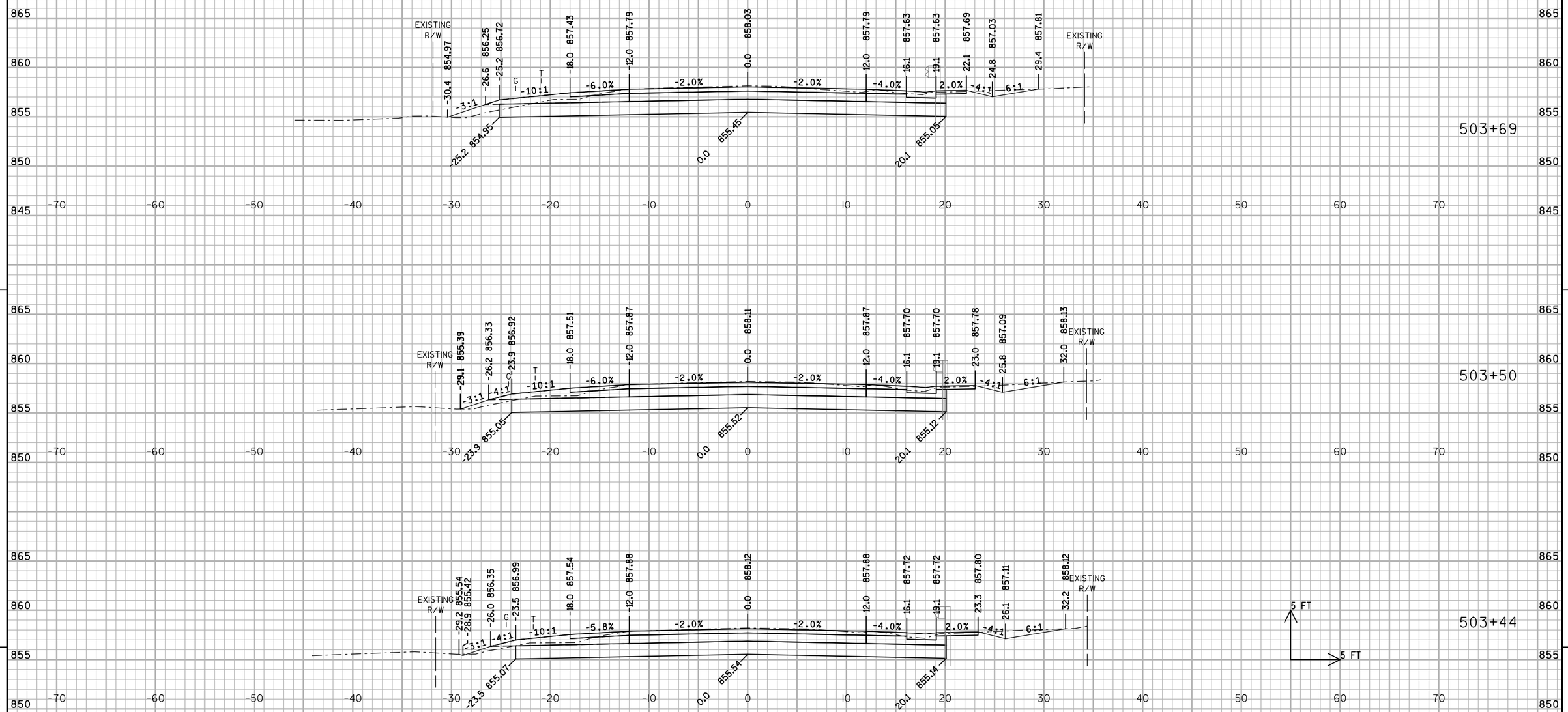
HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: GOLDEN LAKE ROAD	SHEET 359	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090230_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

GOLDEN LAKE ROAD



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: GOLDEN LAKE ROAD	SHEET 360	E

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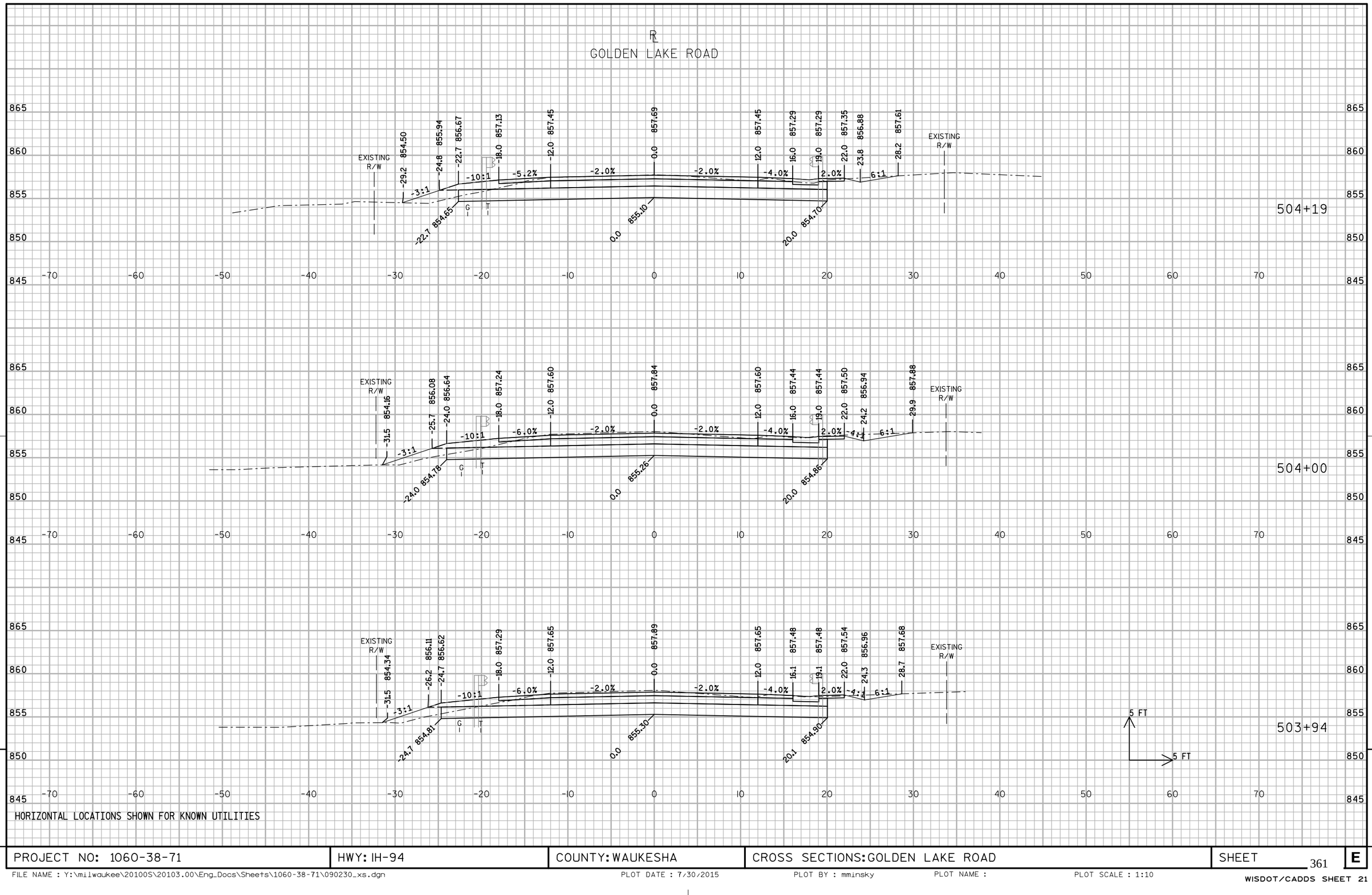
WISDOT/CADDS SHEET 21



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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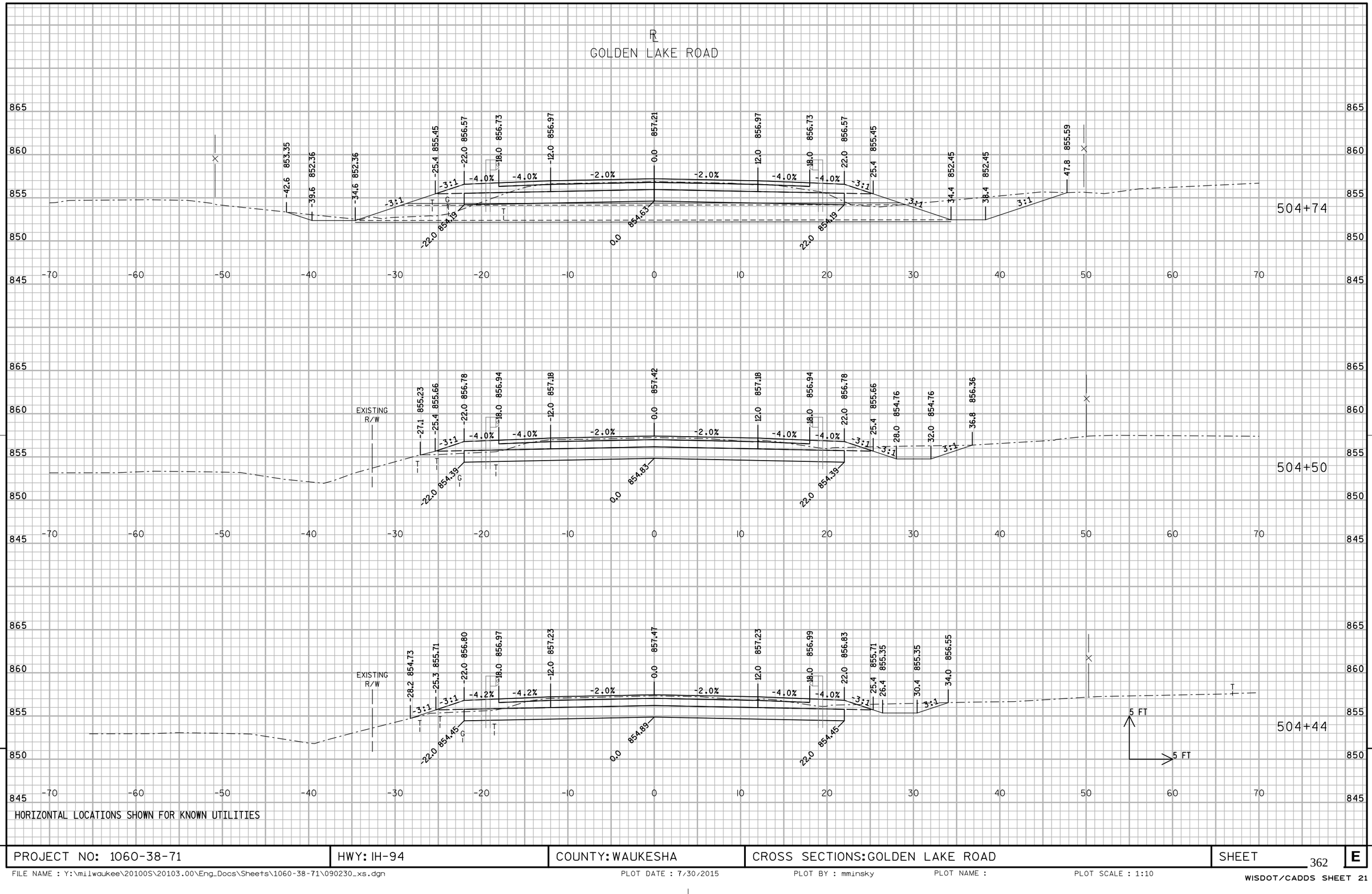
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: GOLDEN LAKE ROAD	SHEET 361	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: GOLDEN LAKE ROAD	SHEET 362	E

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GOLDEN LAKE ROAD

505+50

505+00

880 875 870 865 860 855 850

-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

-45.6 867.78
-43.1 867.58
12:1
2:1
2:1
12:1
43.4 868.44
45.9 868.65

-19.9 856.58
-18.0 856.08
-12.0 856.32
0.0 856.56
12.0 856.32
18.0 856.08
19.9 856.58

-4.0% -2.0% -2.0% -4.0%

-20.3 853.57
0.0 853.98
20.3 853.57

-20.0 856.51
-18.0 856.51
-12.0 856.74
0.0 856.98
12.0 856.74
18.0 856.51
20.0 856.51

-20.3 853.99
0.0 854.40
20.3 853.99

5 FT
5 FT

HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: GOLDEN LAKE ROAD	SHEET 363	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090230_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

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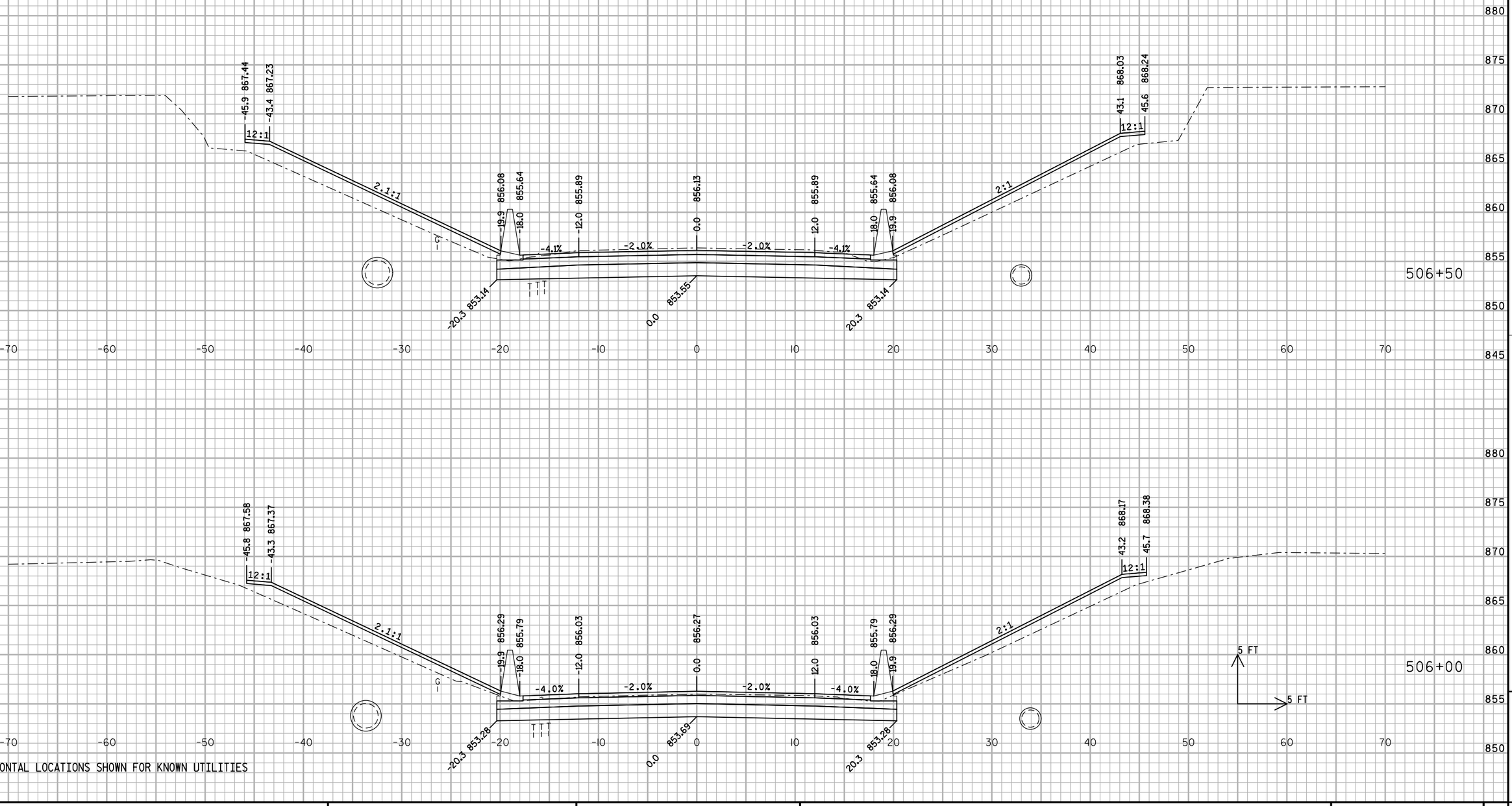
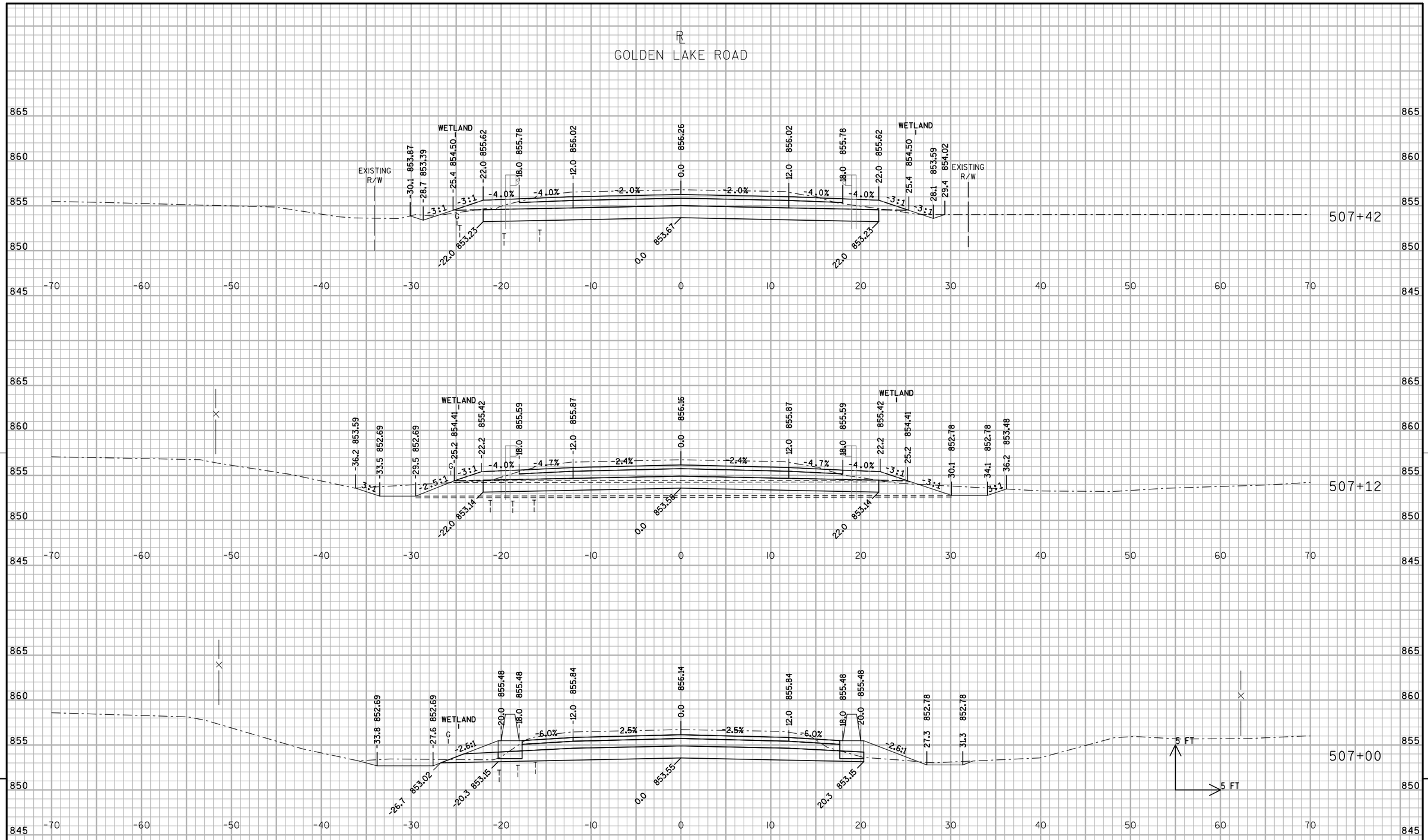
GOLDEN LAKE ROAD



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

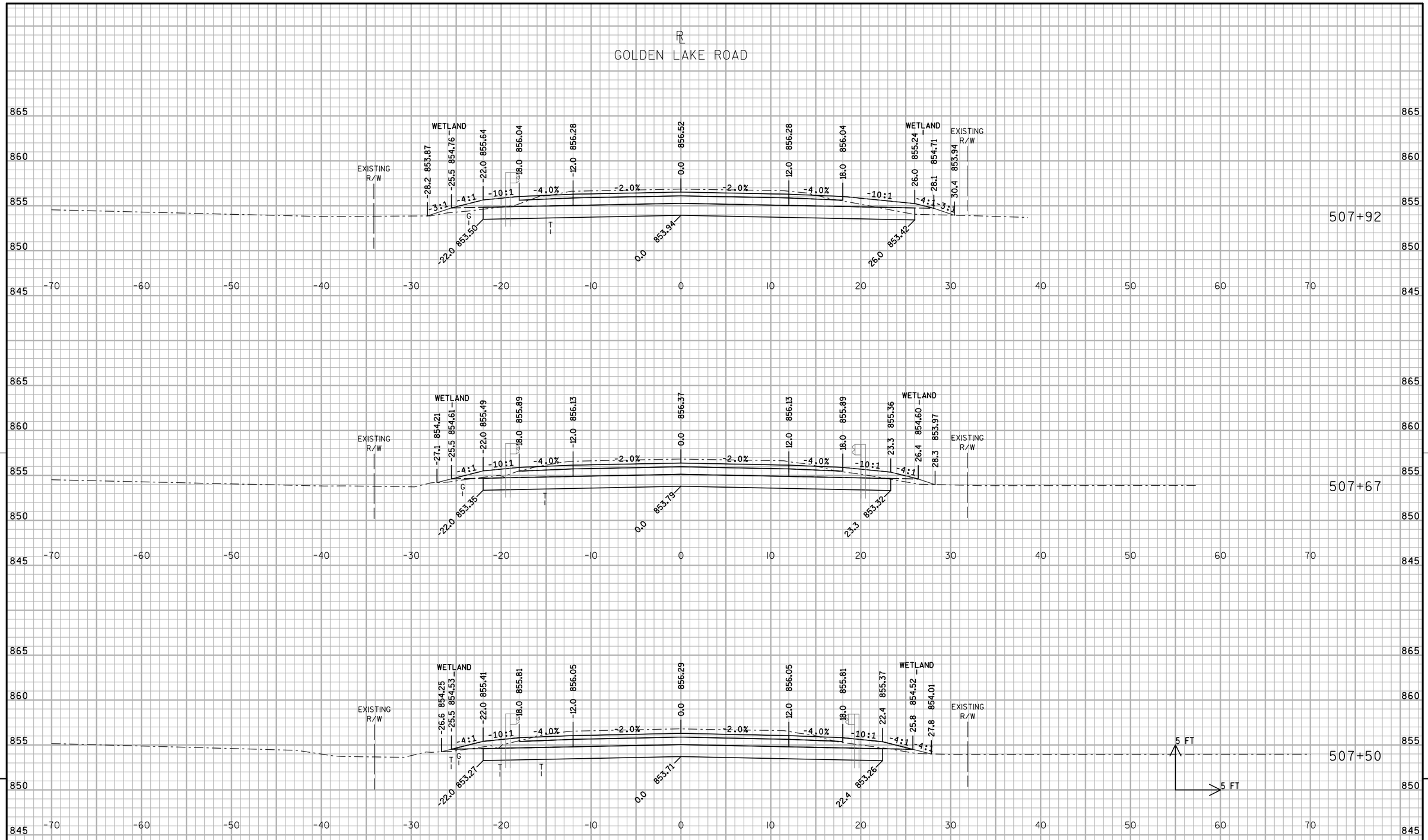
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: GOLDEN LAKE ROAD	SHEET 364	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: GOLDEN LAKE ROAD	SHEET 365	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090230_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

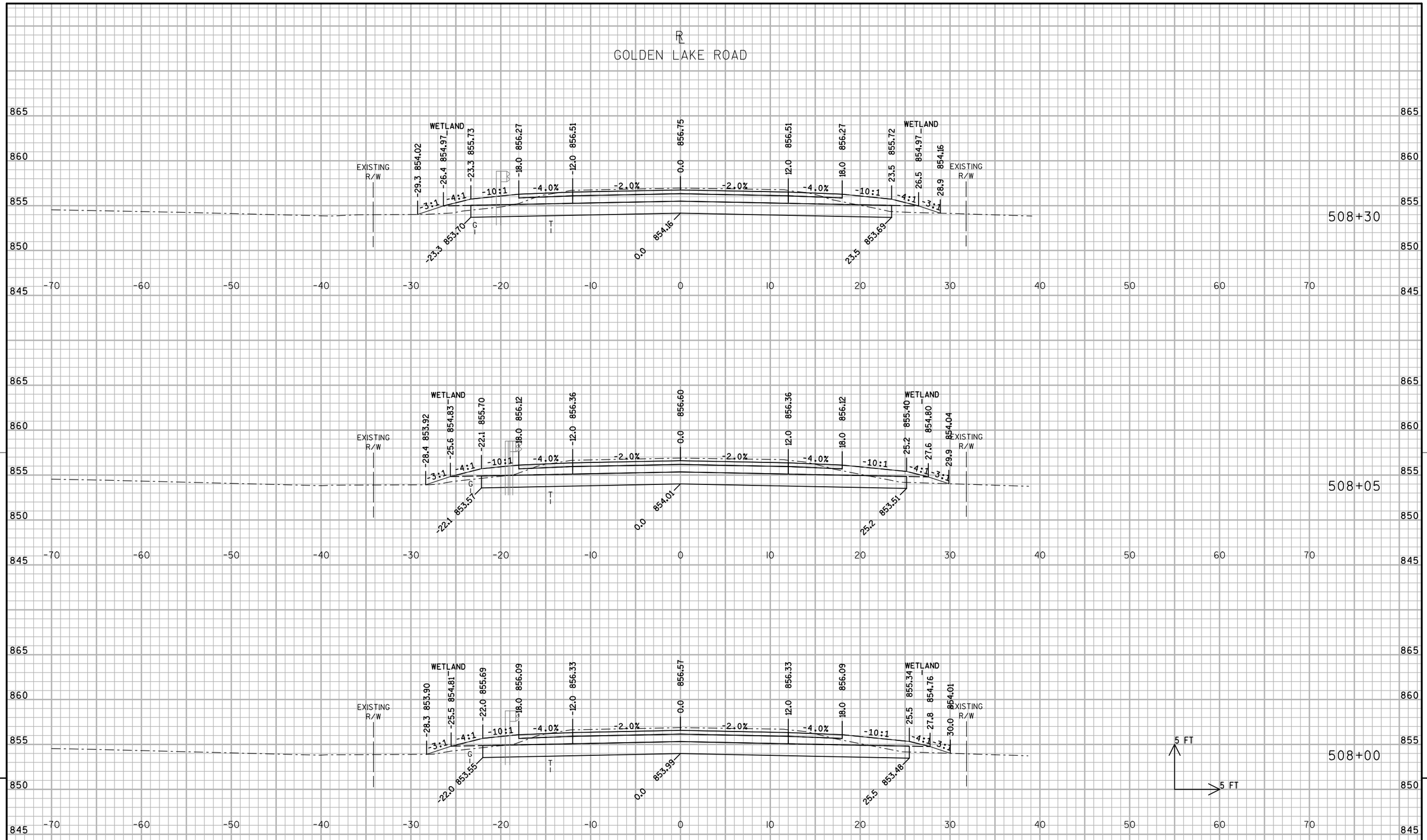


HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: GOLDEN LAKE ROAD	SHEET 366	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090230_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21



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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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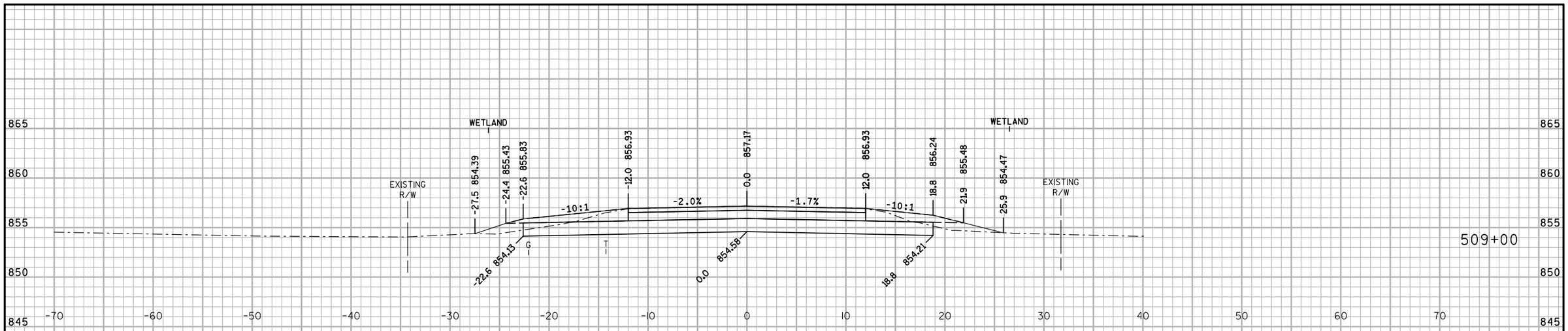
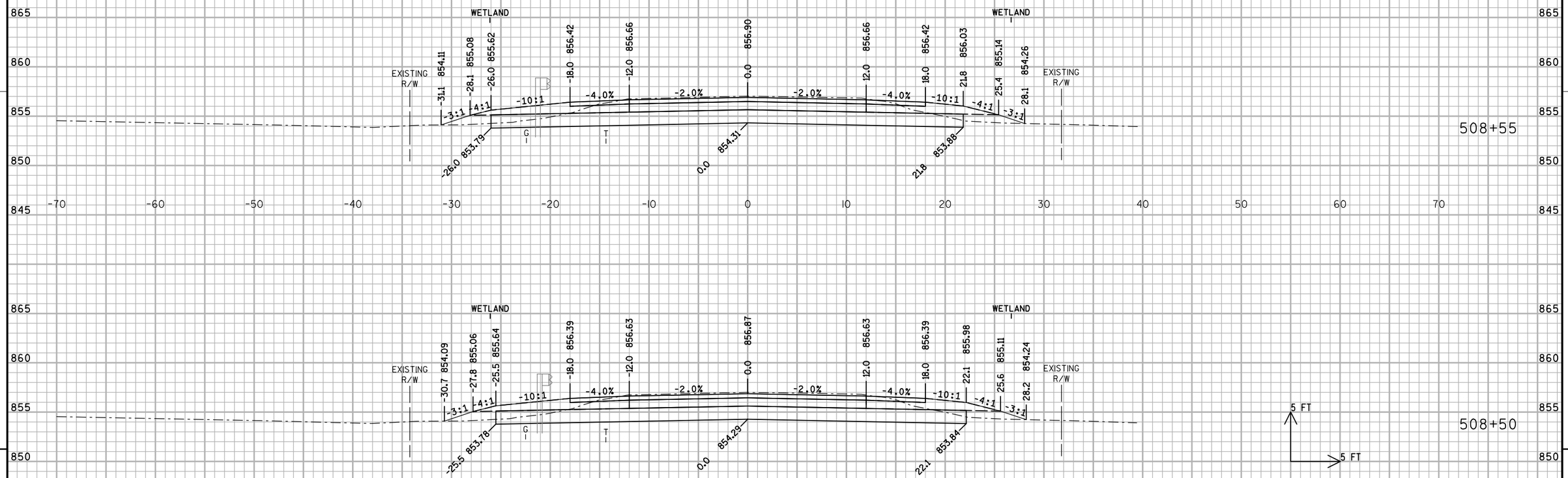
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: GOLDEN LAKE ROAD	SHEET 367	E

FILE NAME : Y:\milwaukee\20100S\20103.00\Eng_Docs\Sheets\1060-38-71\090230_xs.dgn PLOT DATE : 7/30/2015 PLOT BY : mminsky PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21





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HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

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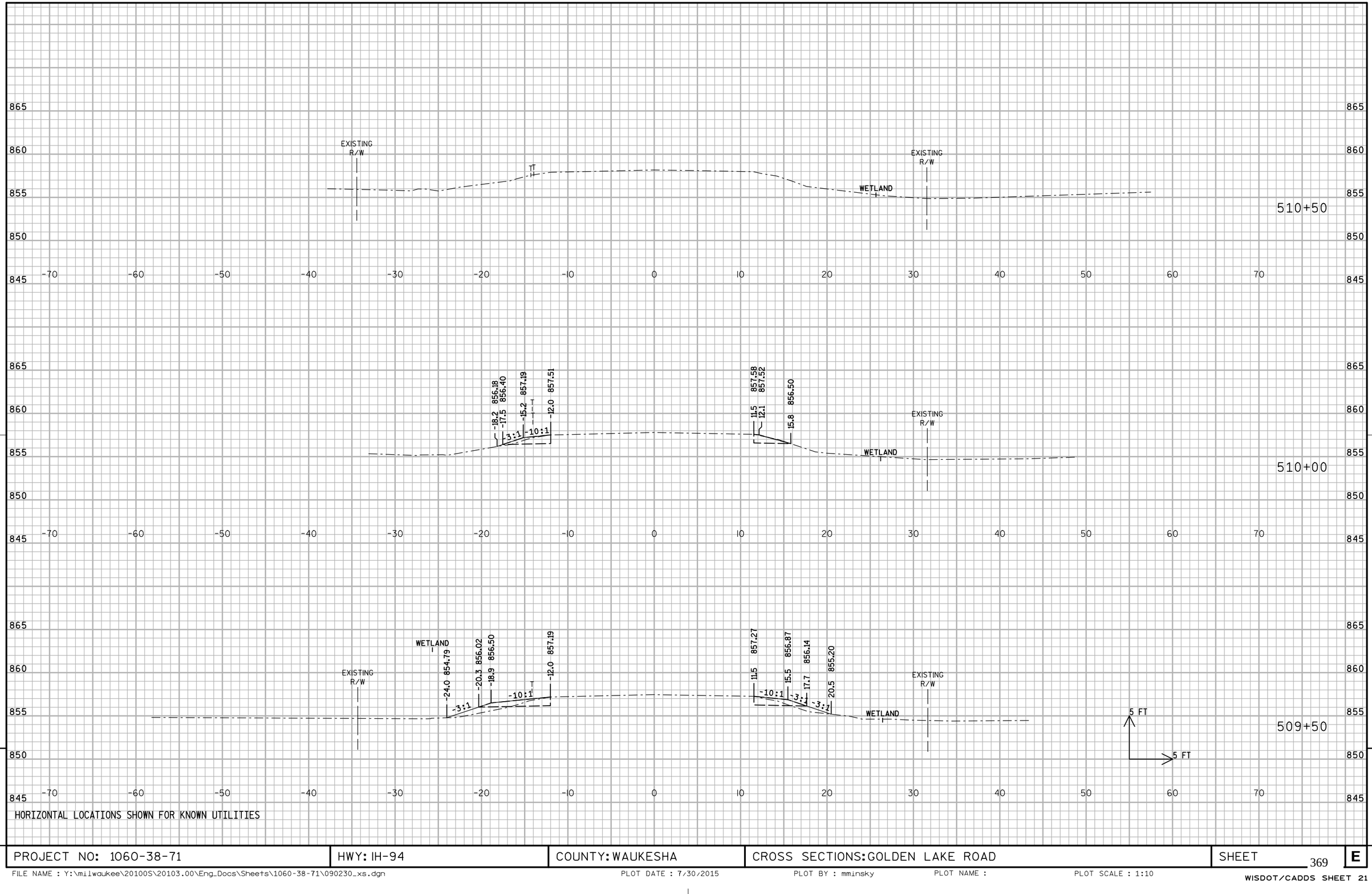
PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: GOLDEN LAKE ROAD	SHEET 368	E



HORIZONTAL LOCATIONS SHOWN FOR KNOWN UTILITIES

PROJECT NO: 1060-38-71	HWY: IH-94	COUNTY: WAUKESHA	CROSS SECTIONS: GOLDEN LAKE ROAD	SHEET 369	E

Wisconsin Department of Transportation

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