SEL

PROJECT ID: 2949-00-70/3947-05-71

COUNTY: WAUKESHA

MAR 2015

ORDER OF SHEETS

TOTAL SHEETS =122

STATE OF WISCONSIN
DEPARTEMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2949-00-70	WISC 2015127	1
3947-05-71	WISC 2015155	1

CTH CW (MAPLETON ROAD)

BRIDGE OVER ASHIPPUN RIVER (P-67-0046)

C.T.H. CW

WAUKESHA COUNTY

PROJECT NUMBER
2949-00-70

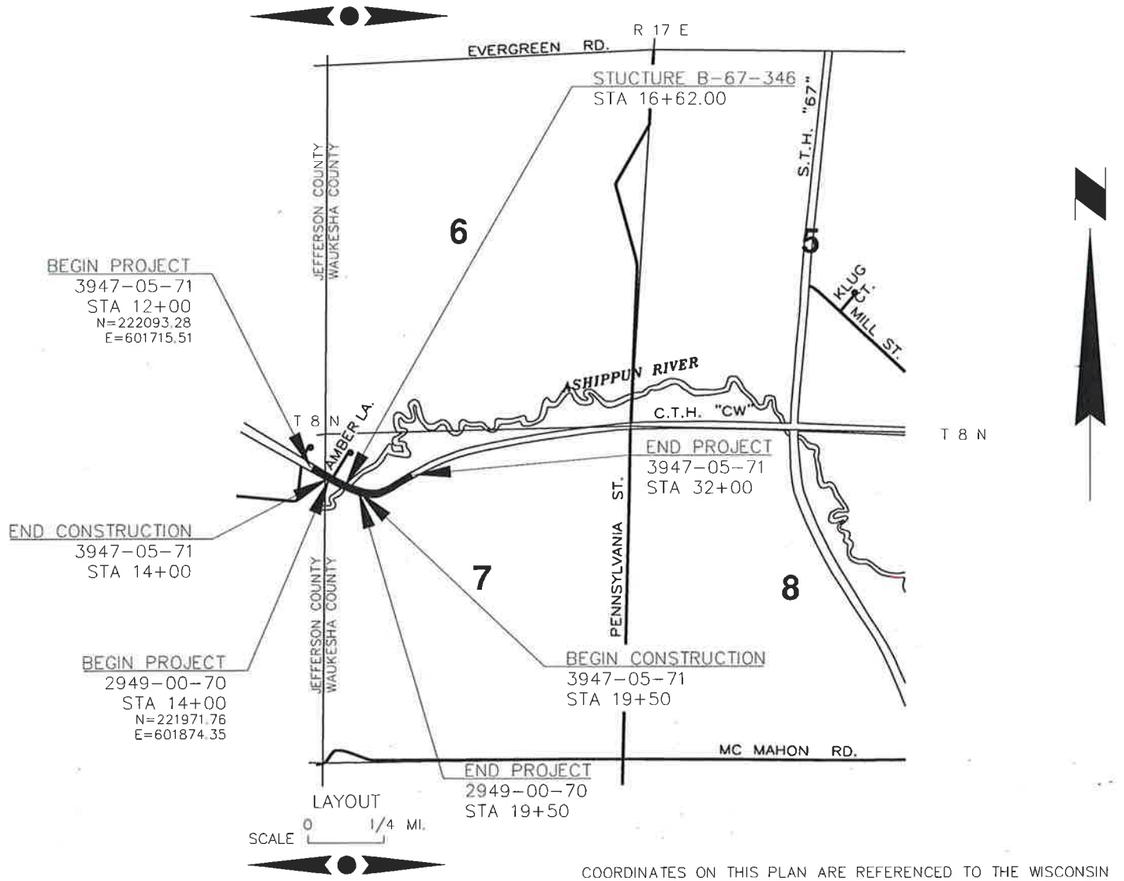
CTH CW

COUNTY LINE TO 1700' EAST OF AMBER LANE

C.T.H. CW

WAUKESHA COUNTY

PROJECT NUMBER
3947-05-71



DESIGN DESIGNATION

A.A.D.T. 2011	=	1,700
A.A.D.T. 2031	=	2,300
D.H.V. 2021	=	2,000
D	=	62/38
T	=	3.4%
DESIGN SPEED	=	55 M.P.H.
ESALS	=	233,600

CONVENTIONAL SIGNS

COUNTY LINE
CORPORATE LIMITS
PROPERTY LINE
LOT LINE
EXISTING RIGHT OF WAY
NEW RIGHT OF WAY
TEMPORARY LIMITED EASEMENT
REFERENCE LINE
SLOPE INTERCEPT
ORIGINAL GROUND
MARSH OR ROCK PROFILE
CULVERT IN PLACE
CULVERT REQUIRED
CULVERT REQUIRED (Profile)

COMBUSTIBLE FLUIDS (UNDER PRESSURE)

UNDERGROUND UTILITIES
GAS — G
ELECTRIC — E
TELEPHONE — T
FIBER OPTIC — FO
CABLE TELEVISION — TV
SERVICE PEDESTAL
CABLE MARKER

POWER POLE
TELEPHONE POLE
RAILROADS
MARSH
WOODED AREA

LENGTH OF CENTERLINE (3947-05-71) = 0.334 MI. (RURAL)
LENGTH OF CENTERLINE (2949-00-70) = 0.048 MI. (RURAL)
TOTAL NET LENGTH OF CENTERLINE = 0.382 MI. (RURAL)

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), WAUKESHA COUNTY NAD83 (2011) ADJUSTMENT. COORDINATES SHOWN ARE TO BE USED AS GRID OR GROUND.

ALL ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NGVD-29-

APPROVED FOR
WAUKESHA COUNTY
DEPARTMENT OF PUBLIC WORKS
10/28/14 Allison Bussler
Date Director
10/28/14 Gary M. Evans
Date Engineering Services Manager

ORIGINAL PLANS PREPARED BY

WISCONSIN
GARY M. EVANS
E-25441
MILWAUKEE
WI
PROFESSIONAL ENGINEER

10/28/14 Gary M. Evans
Date Signature

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor AYRES ASSOCIATES
Designer WAUK. CO. DEPT. OF PUBLIC WORKS
Management Consultant DAAR ENGINEERING, INC.
C.O. Examiner

APPROVED FOR DISTRICT OFFICE
DATE: 10/31/14 Management Consultant Signature

E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\TITLE-CW.DWG

PLOT DATE : 10/28/2014 8:42 AM

PLOT BY : SOEHNER, JIM

2

GENERAL NOTES

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS INDICATED FOR REMOVAL BY THE ENGINEER.

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

EXCAVATION BELOW SUBGRADE (EBS) SHALL NOT BE USED TO BALANCE YARDAGE.

PAVEMENTS ARE TO BE SAWCUT, AS INDICATED ON THE PLANS, TO PROVIDE A BUTT JOINT AT THE PROJECT LIMITS AND AT ALL ASPHALTIC DRIVEWAYS.

SILT FENCE SHALL BE INSTALLED AROUND ALL EXISTING CULVERT INLETS. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN PLACE UNTIL SUCH TIME AS THE ENGINEER DETERMINES THAT THEY ARE NO LONGER REQUIRED.

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

THE CRUSHED AGGREGATE FOR SHOULDERS ADJACENT TO THE HMA PAVEMENT SHALL NOT BE PLACED UNTIL AFTER THE SURFACE LAYER OF THE HMA PAVEMENT HAS BEEN LAID.

ALL HMA PAVEMENT LOWER LAYERS SHALL HAVE A 19.0 mm GRADATION AND ALL HMA PAVEMENT SURFACE LAYERS SHALL HAVE A 12.5 mm GRADATION. ASPHALTIC MATERIAL PG64-28 SHALL BE USED FOR LOWER LAYERS AND ASPHALTIC MATERIAL PG64-28 SHALL BE USED FOR SURFACE LAYERS.

ALL DISTURBED AREAS WITHIN THE RIGHT OF WAY SHALL BE COVERED WITH SALVAGED TOPSOIL OR TOPSOIL, FERTILIZER, SEED, AND MULCH AND EROSION MAT OR SOD LAWN AS NOTED ON THE PLANS OR AS DETERMINED BY THE ENGINEER.

SEED QUANTITIES ARE BASED ON MIXTURE NO. 30.

THE CONTRACTOR SHALL NOTIFY DIGGER'S HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK TO DETERMINE THE LATEST STATUS OF UTILITY RELOCATIONS. ANY LOCAL MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF A ONE-CALL SYSTEM MUST BE CONTACTED SEPARATELY.

DRIVEWAYS SHALL BE CONSTRUCTED WITH ONE 4-INCH LAYER OF 9.5MM ASPHALT SURFACE DRIVEWAY AND FIELD ENTRANCE.

NO SALVAGED MATERIAL SHALL BE PLACED IN WETLAND AREAS.

ASPHALT LAYERS			
LOCATION	THICKNESS	LOWER LAYER	SURFACE COURSE
AMBER LANE	5"	3" (19.0mm)	2" (12.5mm)
CTH CW	6"	4" (19.0mm)	2" (12.5mm)

INDEX OF SECTION 2 DRAWINGS

STANDARD ABBREVIATIONS

A.D.T.	AVERAGE DAILY TRAFFIC
AC.	ACRE(S)
ASPH.	ASPHALT
BM	BENCH MARK
C & G	CURB & GUTTER
CB	CATCH BASIN
C.S.C.P.	CORRUGATED STEEL CULVERT PIPE
C.Y.	CUBIC YARDS
℄	CENTERLINE
CO.	COUNTY
C.T.H.	COUNTY TRUNK HIGHWAY
CWT.	HUNDREDWEIGHT
D	DEGREE OF CURVE
D.H.V.	DESIGN HOURLY VOLUME
DISCH.	DISCHARGE
E	EAST
EA.	EACH
E.B.	EASTBOUND
ESALS	EQUIVALENT SINGLE AXLE LOADS
ESMT.	EASEMENT
F.E.	FIELD ENTRANCE
FT.	FOOT (FEET)
G	GAS
I.P.	IRON PIPE
K	RATE OF VERTICAL CURVATURE
L	LENGTH
LB.	POUND(S)
L.F.	LINEAR FEET
LHF	LEFT HAND FORWARD
LS	LUMP SUM
LT.	LEFT
MH	MANHOLE
N	NORTH
N.B.	NORTHBOUND
NO.	NUMBER
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
P.L.	PROPERTY LINE
P.R.C.	POINT OF REVERSE CURVATURE
P.T.	POINT OF TANGENCY
PAV'T.	PAVEMENT
R	RADIUS
C.P.R.C.	CULVERT PIPE REINFORCED CONCRETE
RHF	RIGHT HAND FORWARD
RT.	RIGHT
R/W	RIGHT OF WAY
S	SOUTH
SAN	SANITARY
S.B.	SOUTHBOUND
S.D.D.	STANDARD DETAIL DRAWING
S.F.	SQUARE FEET
S.S.P.R.C.	STORM SEWER PIPE REINFORCED CONCRETE
STA.	STATION
S.Y.	SQUARE YARDS
T	TANGENT
T	TELEPHONE
T.L.E.	TEMPORARY LIMITED EASEMENT
VAR.	VARIES
V.P.C.	VERTICAL POINT OF CURVATURE
V.P.I.	VERTICAL POINT OF INTERSECTION
V.P.T.	VERTICAL POINT OF TANGENCY
W	WATER MAIN
W	WEST
W.B.	WESTBOUND
WV	WATER VALVE
YD.	YARDS

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(920) 246–3530 CELL
ryan.d.osness@ftr.com

WDNR LIAISON

MR. CRAIG WEBSTER
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(262) 574–2141

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samsalzman@yahoo.com

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IXONIA, WI 53036
PHONE: (920) 261–1588

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141 W WOODCOCK ST
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PHONE: (920) 674–7265
brainu@jeffersoncountywi.gov

PHIL BAIN JR., PE
PROJECT MANAGER – AYRES
AYRES ASSOCIATES
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WAUKESHA, WI 53188
PHONE: (262) 522–4940
bainp@ayresassociates.com

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

Call 811 3 Work Days Before You Dig
Or Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

2

WAUKESHA CO.
JEFFERSON CO.

BEGIN PROJECT
3947-05-71
STA 12+00
N=222093.28
E=601715.51

END CONSTUCTION
3947-05-71
STA 14+00

PC 13+60.67

BEGIN PROJECT
2949-00-70
STA 14+00
N = 221971.76
E = 601874.35

STA 15+39.24 (C.T.H. "CW")
STA 50+00 (AMBER LN)

AMBER LANE

PT 51+15.11

PC 50+47.92

ASHIPPUN RIVER

BM5273

NGS
BM2W13

C.T.H. "CW" (MAPLETON ROAD)

PT 19+11.12

END PROJECT
2949-00-70
STA 19+50

BEGIN CONSTUCTION
3947-05-71
STA 19+50

PT 24+61.57

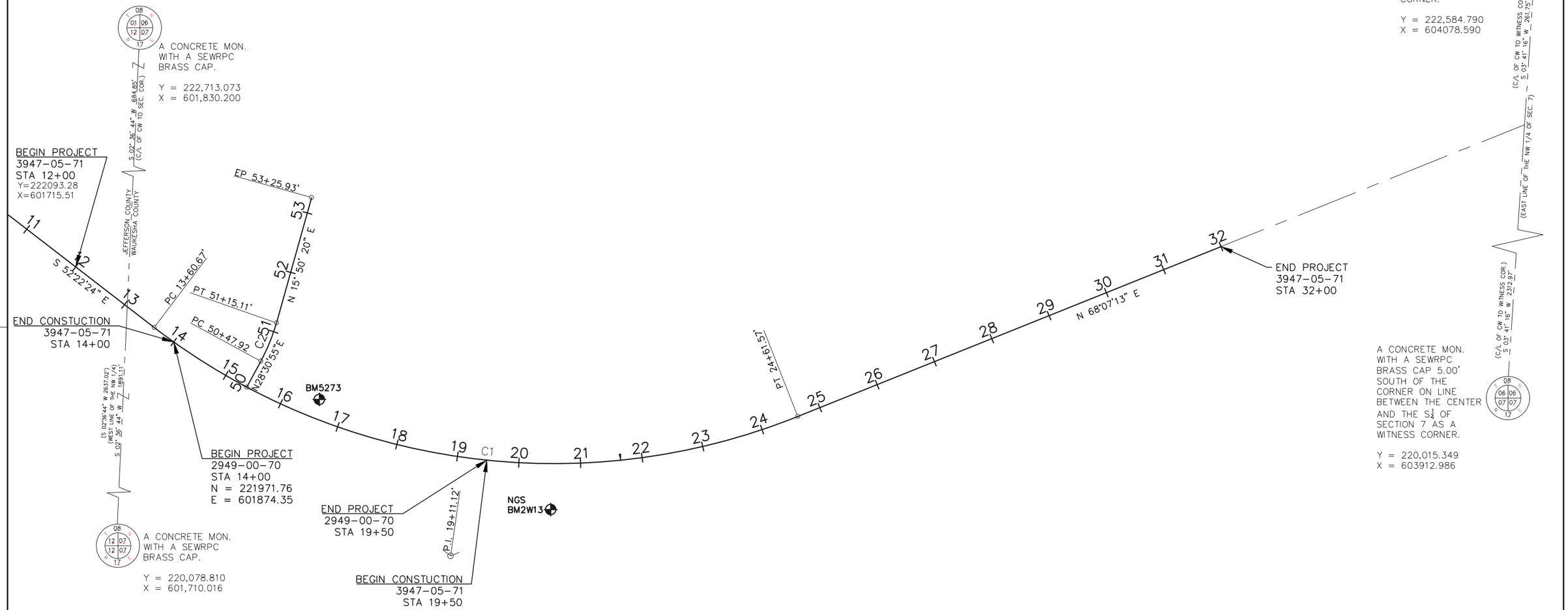
END PROJECT
3947-05-71
STA 32+00

NGS BM2W13	BM5273
NGS MONUMENT	CROSS IN BRIDGE
STA 20+52.16, 74.2' RT	STA 16+56.02, 31.2' LT
N = 221700.57	N = 221878.96
E = 602484.95	E = 602110.43
ELEV. = 856.42	ELEV. = 850.43

PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	PROJECT OVERVIEW	SHEET 4	E

C1
CURVE DATA (C/L "CW")
PI = 19+11.12'
Y = 221,625.27
X = 602,322.65
DELTA = 59°30'22"
D = 5°29'59"
TAN = 605.92'
LCH = 1052.08'
LCB = S82°07'35"E
ARC L = 1100.90'
R = 1060.00'
PC = 13+60.67'
PT = 24+61.57'

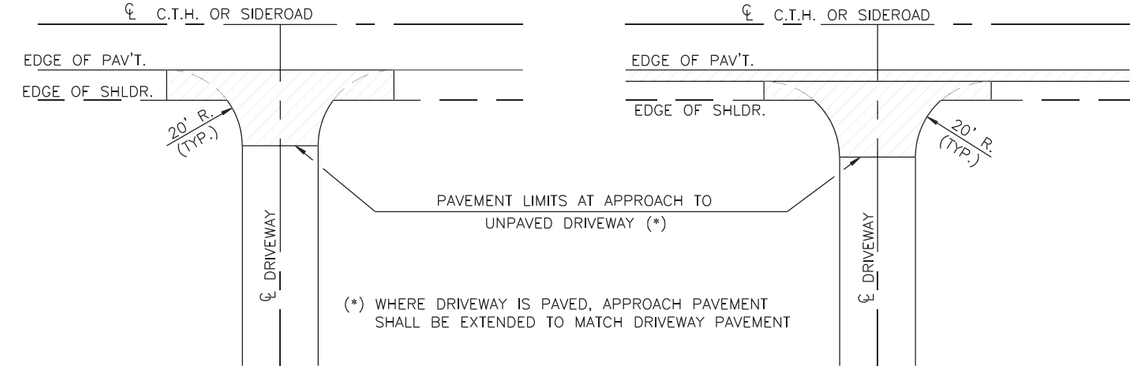
C2
CURVE DATA (C/L AMBER LANE)
ARC LEN. = 67.19'
CHORD LEN. = 67.05'
CH. BR. = N 22°05'58" E
RADIUS = 300.00'
I ANGLE = 12°49'55"



NGS BM2W13
NGS MONUMENT
STA 20+52.16, 74.2' RT
N = 221700.57
E = 602484.95
ELEV. = 856.42

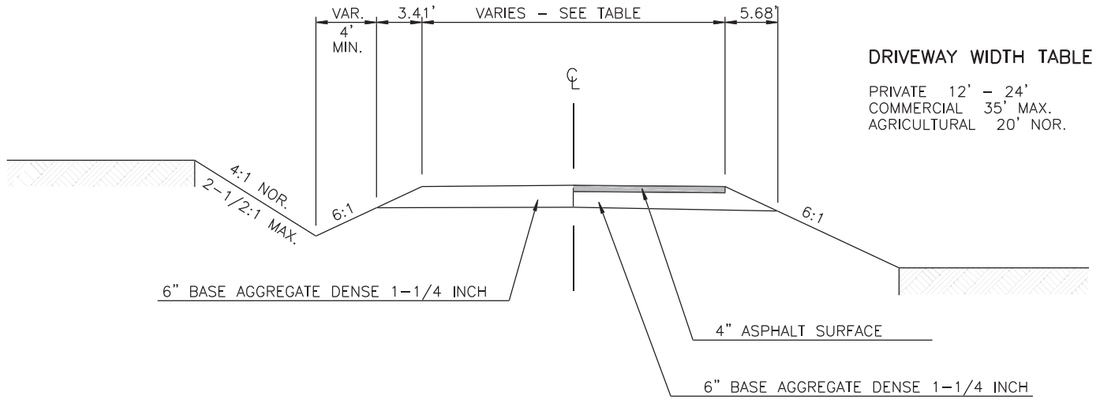
BM5273
CROSS IN BRIDGE
STA 16+56.02, 31.2' LT
N = 221878.96
E = 602110.43
ELEV. = 850.43

PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	ALIGNMENT PLAN	SHEET 5	E



PLAN VIEW

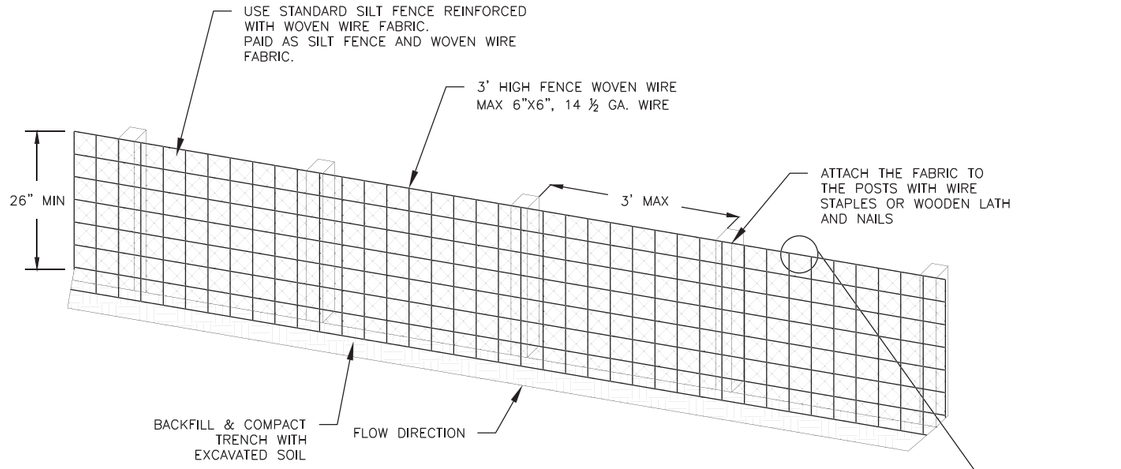
PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

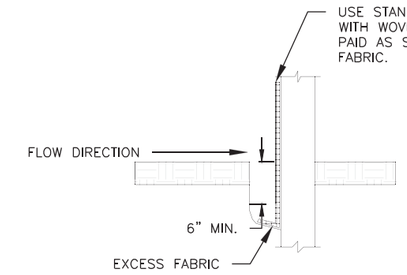


DRIVEWAY WIDTH TABLE

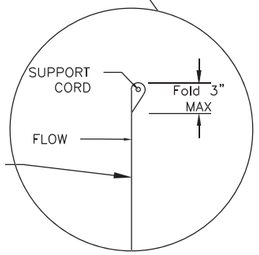
PRIVATE	12' – 24'
COMMERCIAL	35' MAX.
AGRICULTURAL	20' NOR.

TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE

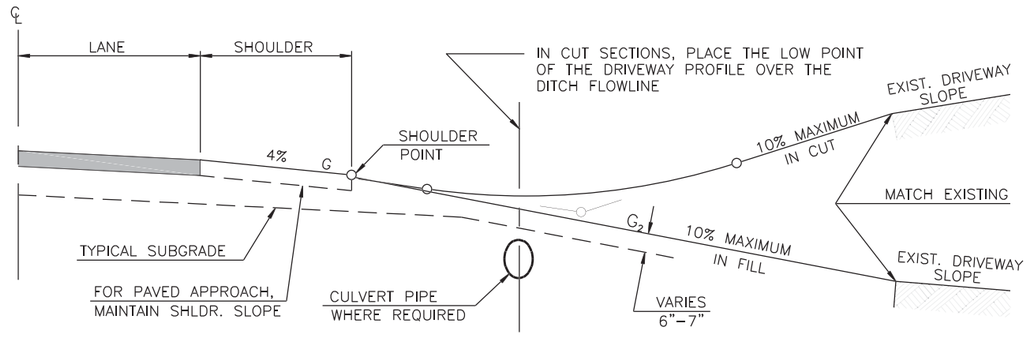




TRENCH DETAIL



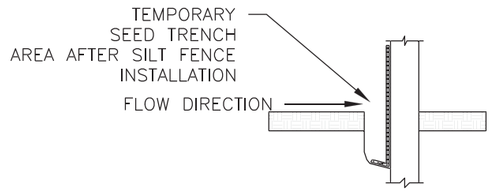
HEAVY DUTY SILT FENCE DETAIL



TYPICAL DRIVEWAY PROFILES

RECOMMENDED MAXIMUM G & G_2 = 15%
DESIRABLE MAXIMUM = 10%
MAXIMUM DIFFERENCE BEWEEEN G AND G_2 IN FILL = 14%

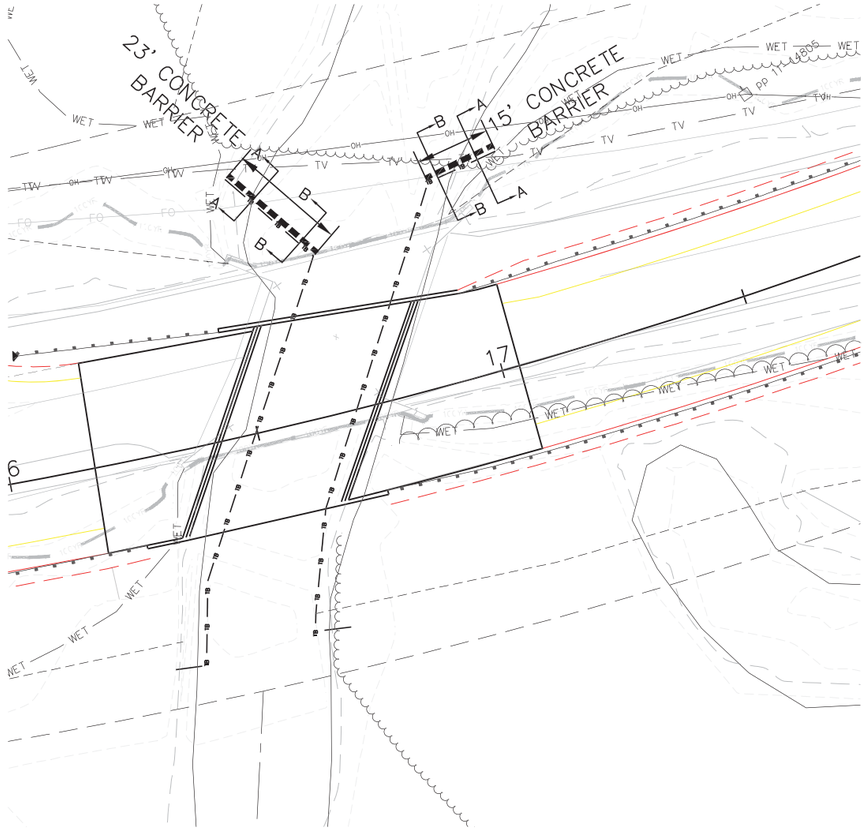
RURAL DRIVEWAY INTERSECTION DETAILS



TEMPARY SEEDING AT SILT FENCE

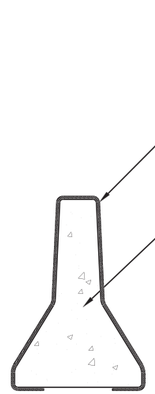
PROJECT NUMBER: 3949-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CONSTRUCTION DETAILS	SHEET NO.: 6	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\DETAIL - CONSTRUCTION - CC.DWG PLOT DATE : 1/12/2015 6:10 AM PLOT BY : SOEHNER, JIM PLOT SCALE :

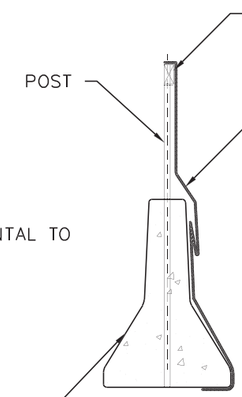


TEMPORARY PRECAST CONCRETE BARRIER

TB TB TB TURBIDITY BARRIER



SECTION A–A



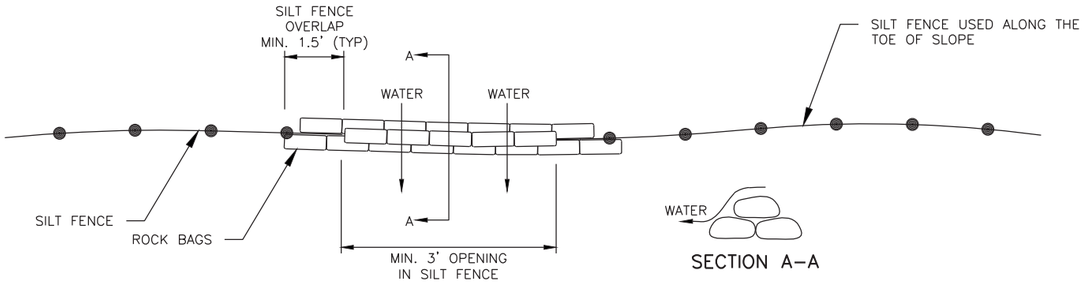
SECTION B–B

PLAN OF TURBIDITY BARRIER

SEE S.D.D. "TURBIDITY BARRIER"
FOR INSTALLATION OF TURBIDITY BARRIER

PROJECT NO: 3949-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CONSTRUCTION DETAIL - TURBIDITY BARRIER	SHEET 7	E

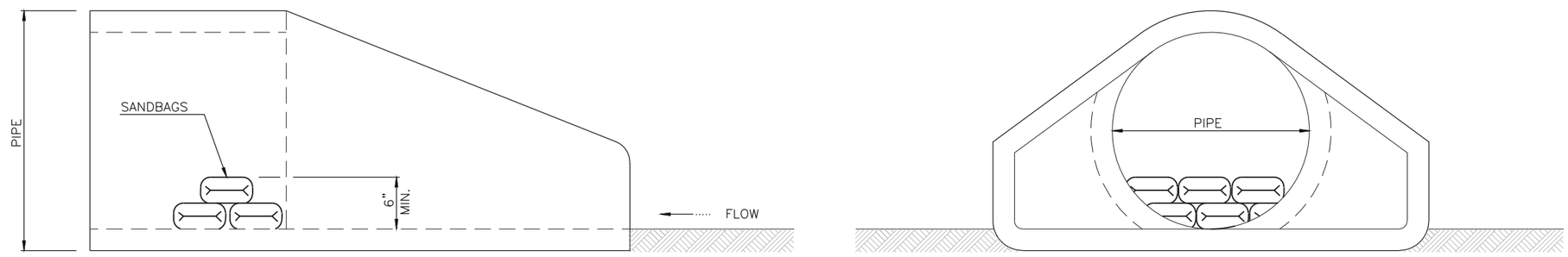
FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\TURBIDITY BARRIER DETAIL - CC.DWG PLOT DATE : 1/8/2015 6:54 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'



TOP VIEW

SECTION A–A

ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL



CULVERT PIPE CHECK DETAILS

PROJECT NUMBER: 3949-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CONSTRUCTION DETAILS	SHEET NO.: 8	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\DETAIL - CONSTRUCTION - CC.DWG PLOT DATE : 10/2/2014 10:31 AM PLOT BY : SOEHNER, JIM PLOT SCALE :

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

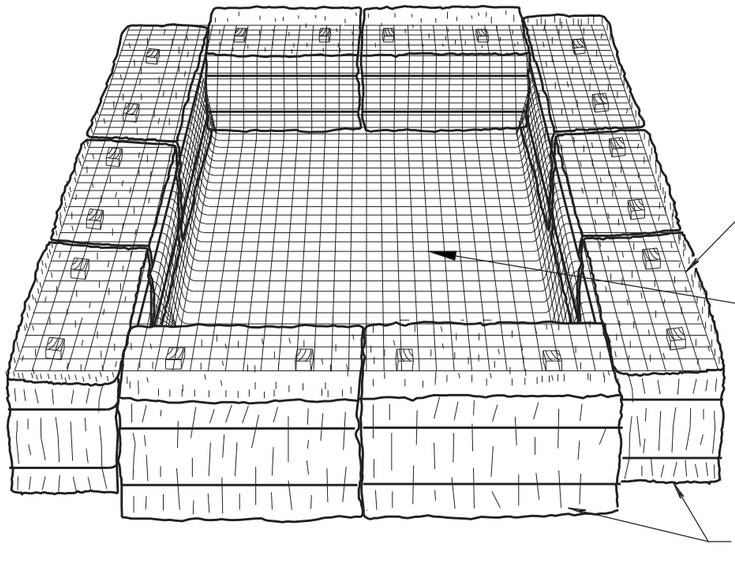
STORAGE VOLUME (C.F.) = 16 X GPM (PUMP RATE)

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

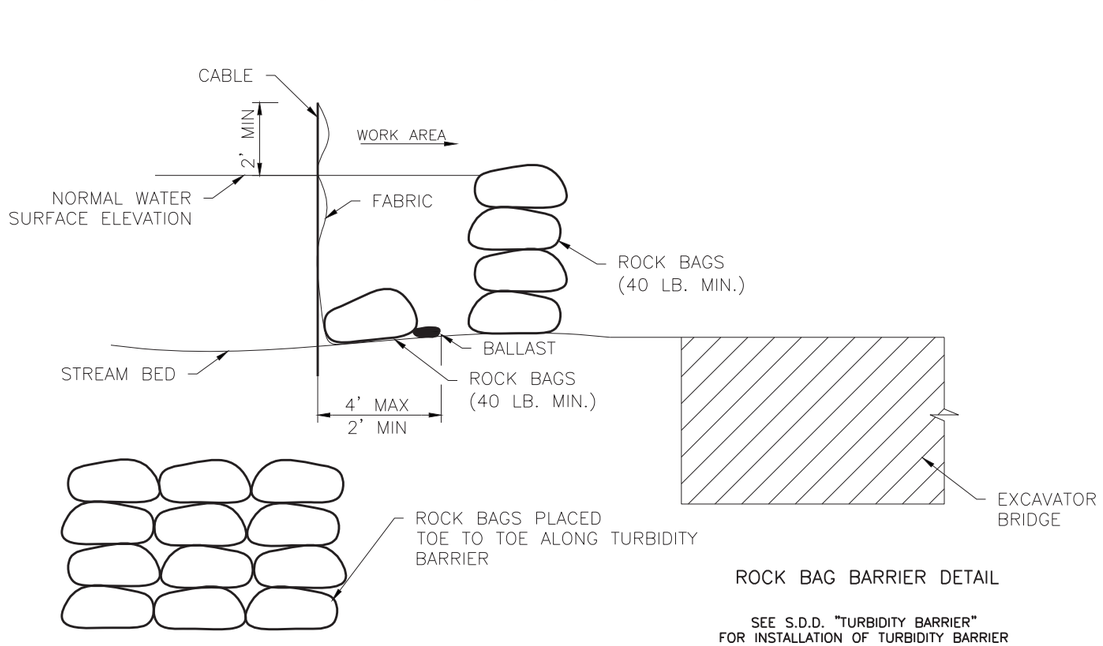
SOLUTION:
SV (C.F.) = 16 X 50
SV = 800 C.F.

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

USE A 20 FT. X 27 FT. BASIN

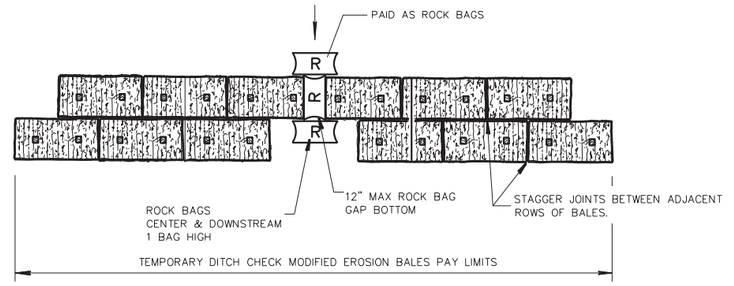


TEMPORARY SETTLING BASIN

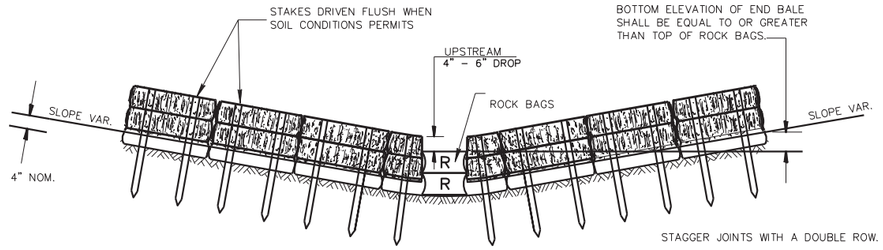


ROCK BAG BARRIER DETAIL

SEE S.D.D. "TURBIDITY BARRIER" FOR INSTALLATION OF TURBIDITY BARRIER



PLAN VIEW



FRONT ELEVATION

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.

TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECKS. ROCK BAGS WILL BE PAID UNDER THE ROCK BAG BID ITEM. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

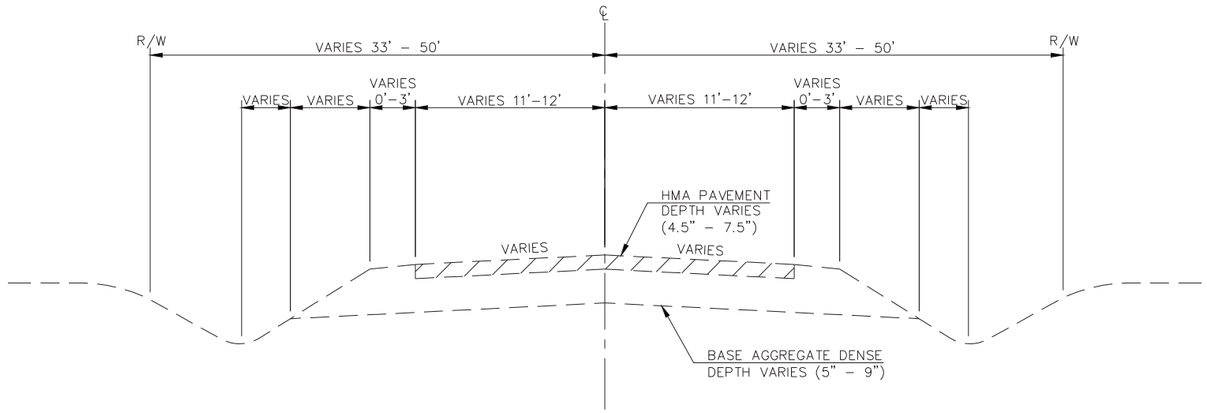
TEMPORARY DITCH CHECK, MODIFIED EROSION BALES

GENERAL NOTES

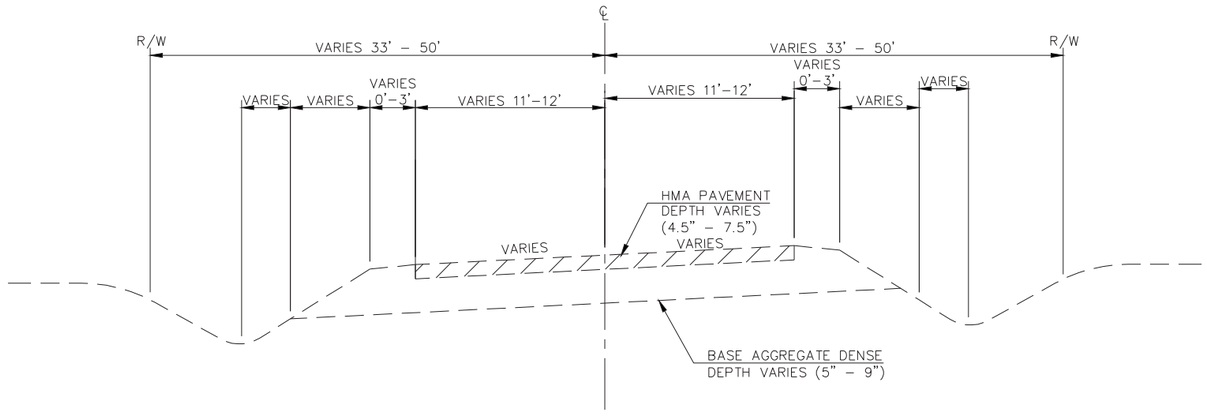
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

ROCK BAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS.

ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.



TYPICAL EXISTING SECTION
STA 10+00 TO STA 16+45.08
STA 16+79.08 TO STA 19+75
STA 23+00 TO STA 32+01.22

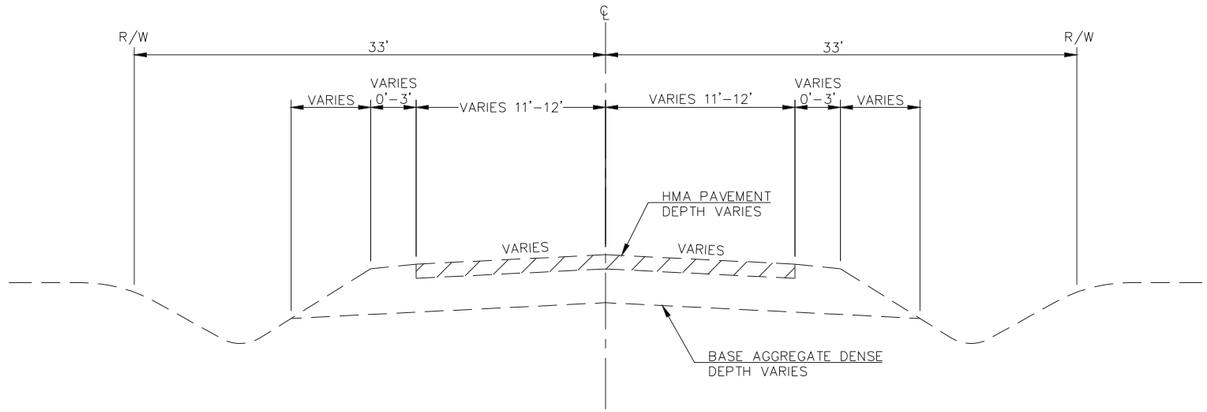


TYPICAL EXISTING SECTION
STA 19+75 STA 23+00

PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	EXISTING TYPICAL SECTION	SHEET 10	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\TYPICALS - CC.DWG PLOT DATE : 9/22/2014 8:05 AM PLOT BY : SOEHNER, JIM PLOT SCALE :

2

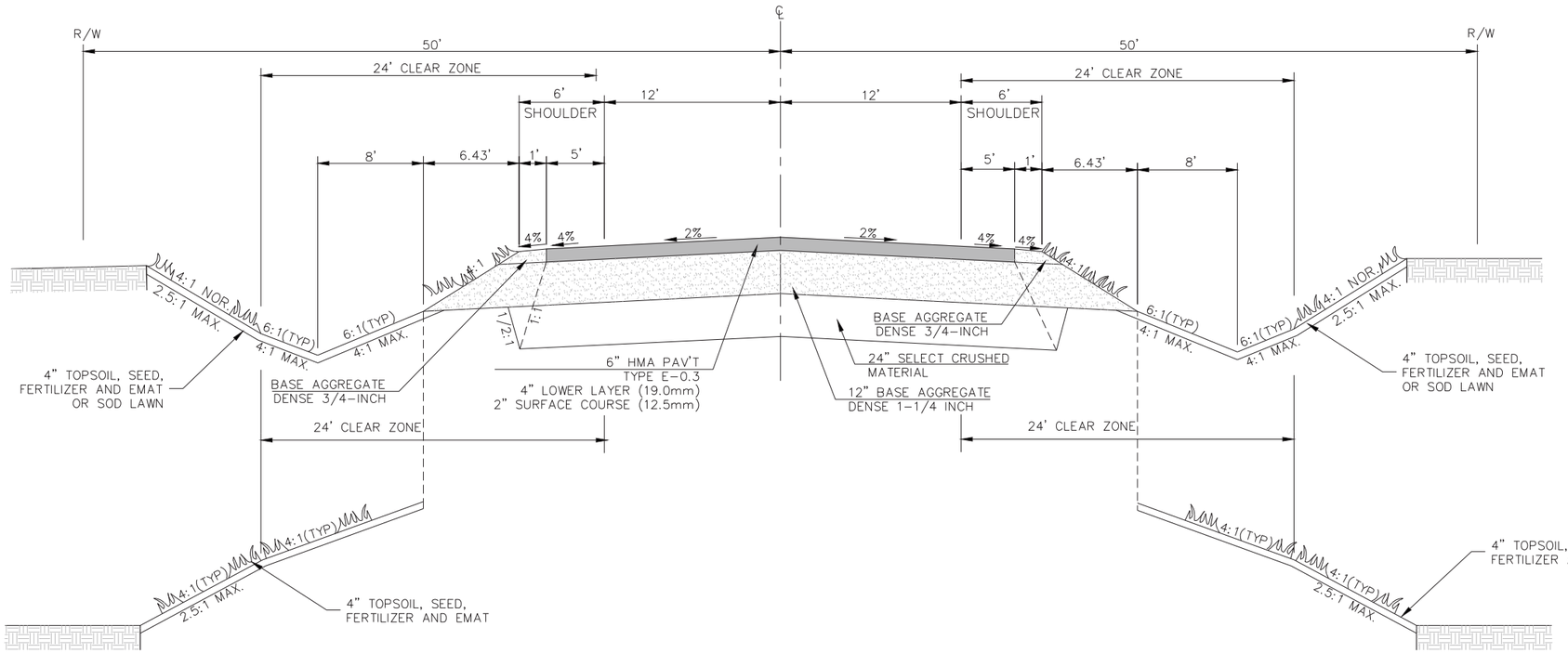


TYPICAL EXISTING SECTION
AMBER LANE

PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	EXISTING TYPICAL SECTION	SHEET 11	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\TYPICALS - CC.DWG PLOT DATE : 9/22/2014 8:05 AM PLOT BY : SOEHNER, JIM PLOT SCALE :

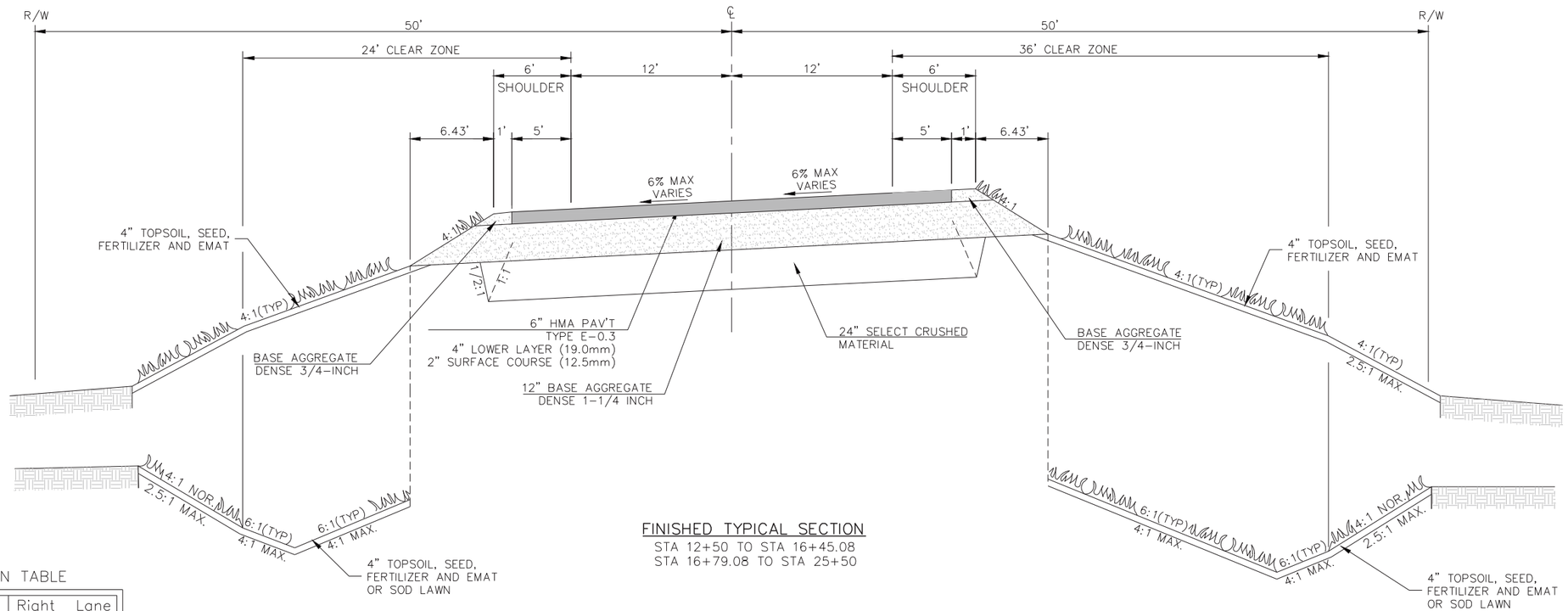
2



FINISHED TYPICAL SECTION
STA 12+00 TO STA 12+50
STA 25+50 TO STA 32+00

FUNCTIONAL CLASSIFICATION:	
DESIGN SPEED:	55 MPH
DESIGN CLASS:	C-3
LANE WIDTH:	2 LANE, 12'
SHOULDER WIDTH:	6'
CROWN SLOPE:	2%
CLEAR ZONE:	24'
BIKE ACCOMMODATIONS:	ON-STREET
PEDESTRIAN ACCOMMODATIONS:	NONE

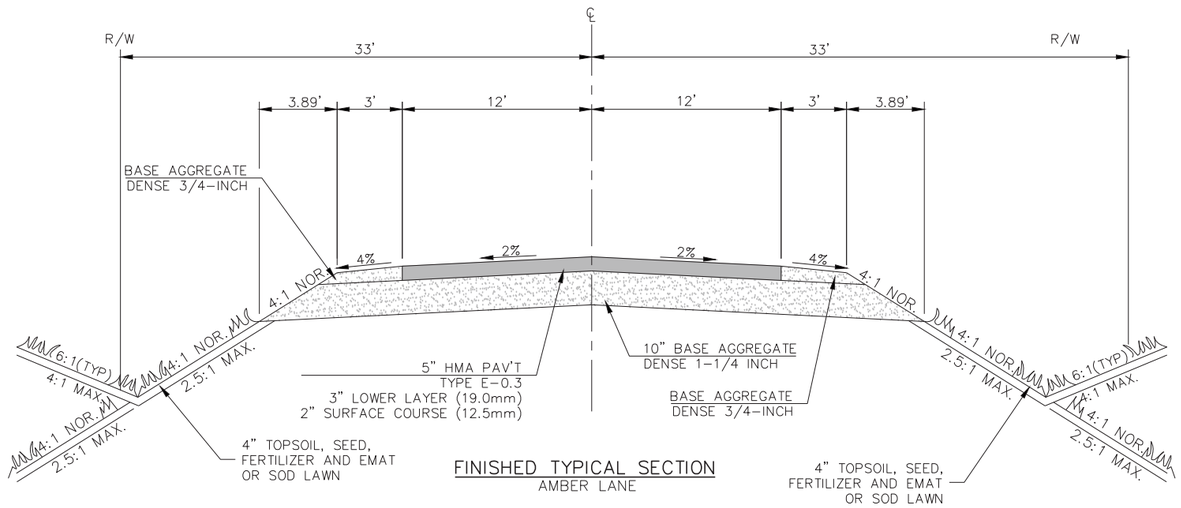
PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	FINISHED TYPICAL SECTIONS	SHEET 12	E



FINISHED TYPICAL SECTION
STA 12+50 TO STA 16+45.08
STA 16+79.08 TO STA 25+50

SUPER ELEVATION TABLE

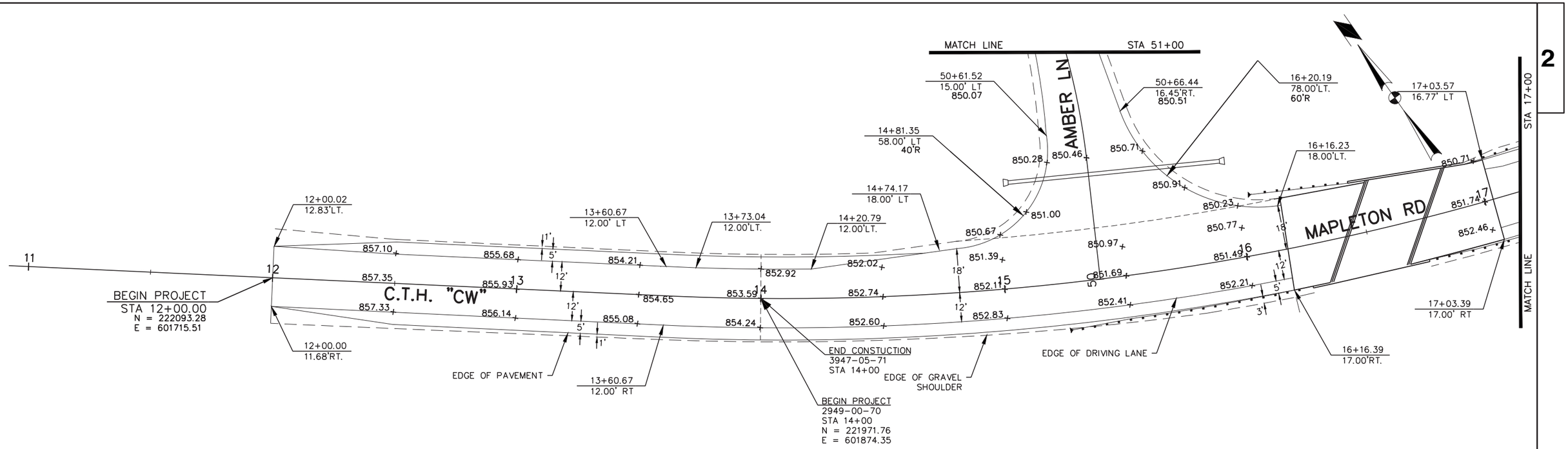
Station	Left Lane	Right Lane
10+00.00'	−2.00%	−2.00%
11+47.34'	−2.00%	−2.00%
12+00.67'	−2.00%	−2.00%
12+54.00'	−2.00%	0.00%
13+07.34'	−2.00%	2.00%
14+14.00'	−6.00%	6.00%
24+08.24'	−6.00%	6.00%
25+14.91'	−2.00%	2.00%
25+68.24'	−2.00%	0.00%
26+21.58'	−2.00%	−2.00%
26+74.91'	−2.00%	−2.00%
33+00.00'	−2.00%	−2.00%



FINISHED TYPICAL SECTION
AMBER LANE

PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	FINISHED TYPICAL SECTIONS	SHEET 14	E

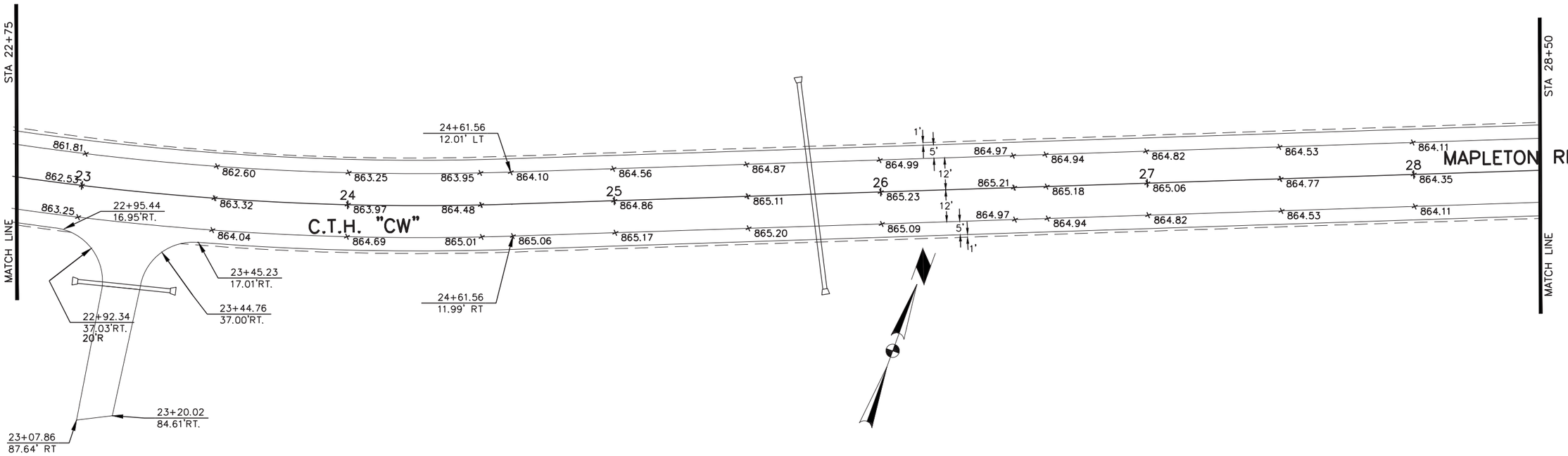
FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\TYPICALS - CC.DWG PLOT DATE : 9/22/2014 8:06 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	PAVING DETAIL PLAN STA 11+50 - TO 22+75	SHEET 15	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\PAVING DETAILS - CC.DWG PLOT DATE : 10/2/2014 10:35 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=40'

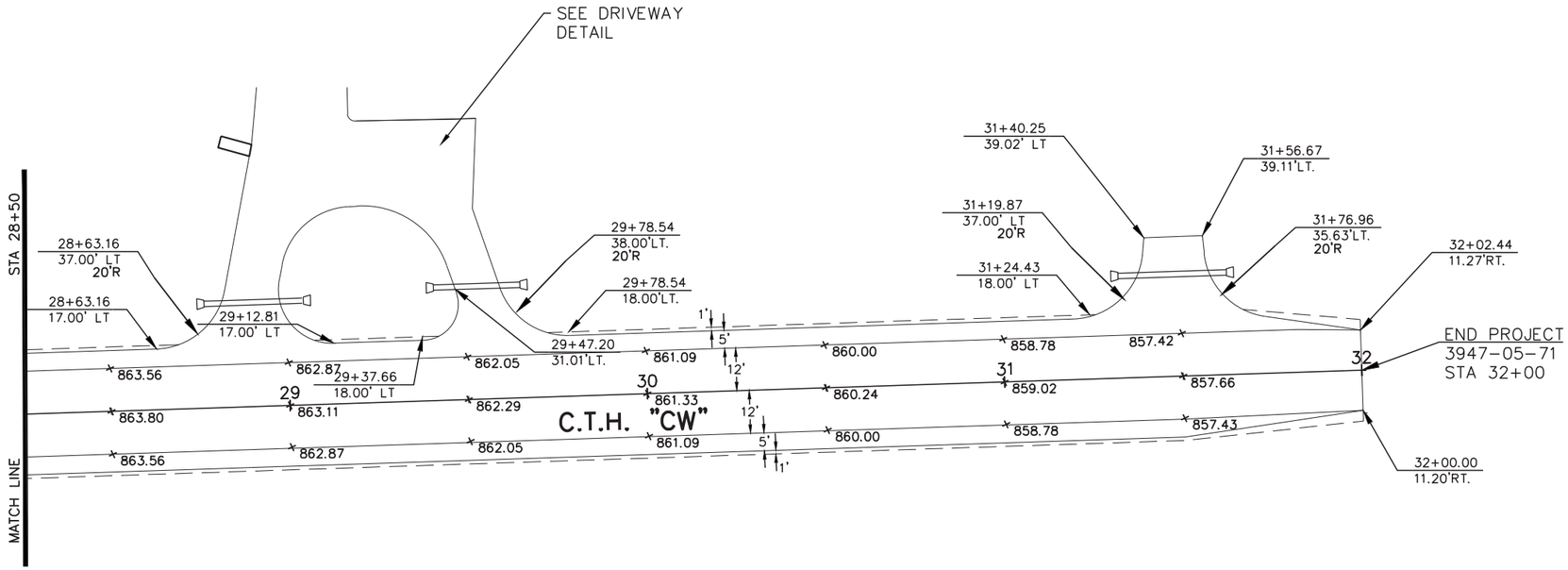
2



PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	PAVING DETAIL PLAN STA 22+75 - 28+50	SHEET 16	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\PAVING DETAILS - CC.DWG PLOT DATE : 10/2/2014 10:35 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=40'

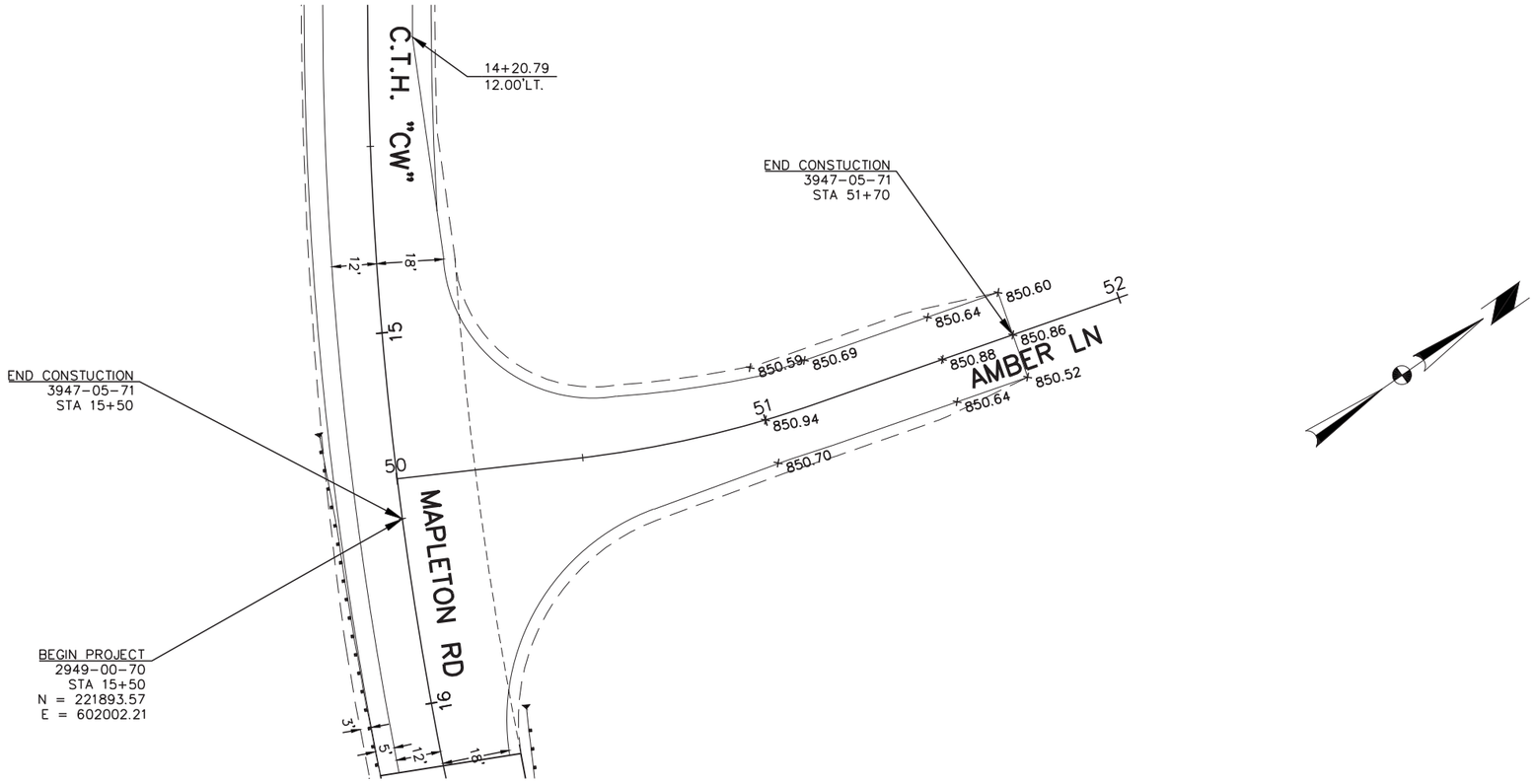
2



PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	PAVING DETAIL PLAN STA 10+50 - TO 17+75	SHEET 17	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\PAVING DETAILS - CC.DWG PLOT DATE : 10/2/2014 10:35 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=40'

2



PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	PAVING DETAIL PLAN AMBER LANE	SHEET 18	E

2

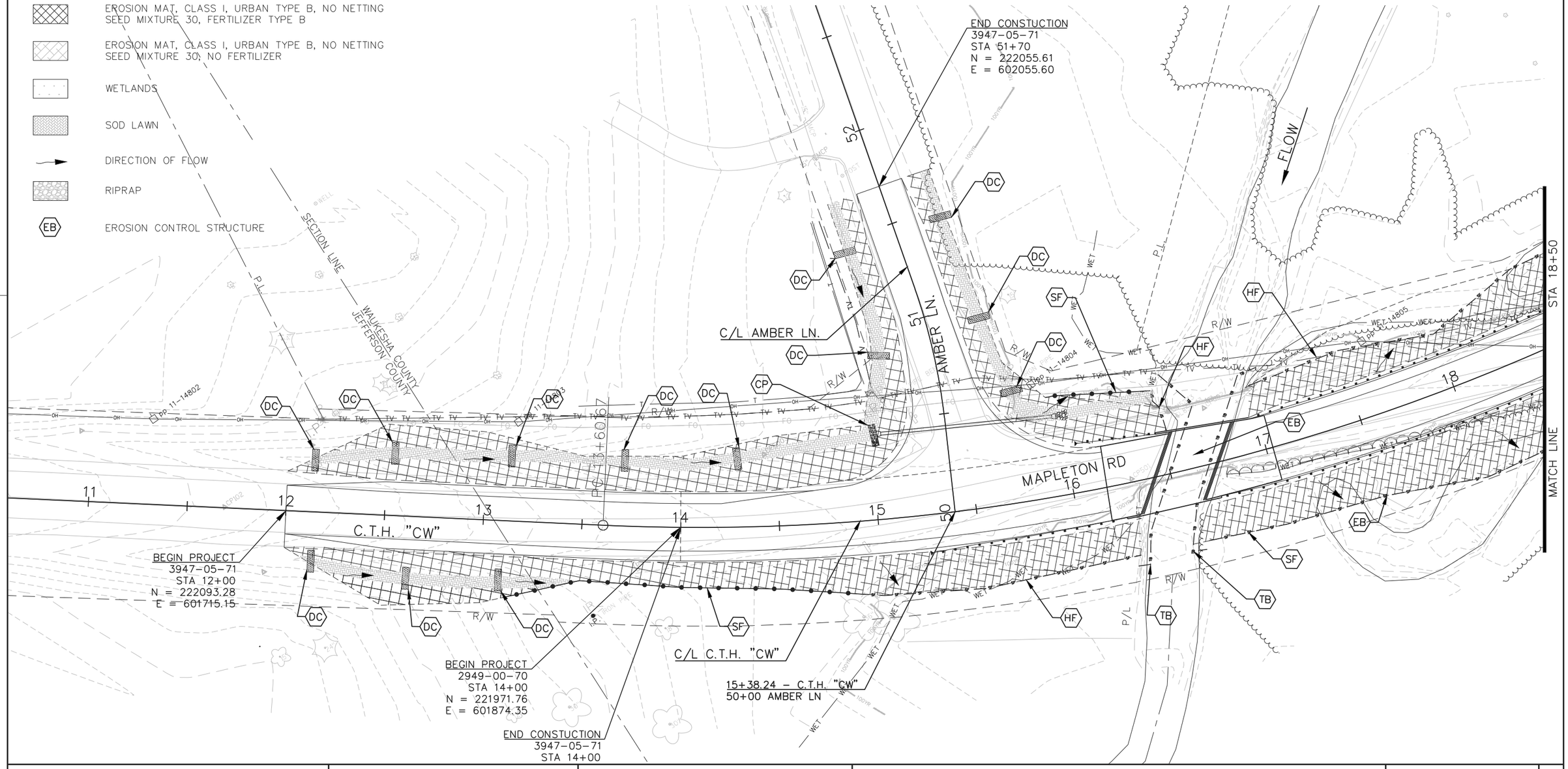
LEGEND

- SILT FENCE (SF)
- HEAVY DUTY SILT FENCE (HF)
- TRIBIDITY BARRIER (TB)
- TEMPORARY DITCH CHECK (DC)
- CULVERT PIPE CHECK (CP)
- EROSION MAT, CLASS I, URBAN TYPE B, NO NETTING SEED MIXTURE 30, FERTILIZER TYPE B
- EROSION MAT, CLASS I, URBAN TYPE B, NO NETTING SEED MIXTURE 30, NO FERTILIZER
- WETLANDS
- SOD LAWN
- DIRECTION OF FLOW
- RIPRAP
- EROSION CONTROL STRUCTURE (EB)

ALL DISTURBED AREAS TO BE RESTORED WITH 4-INCH TOPSOIL, SEED, FERTILIZER AND MULCH UNLESS NOTED AS SOD.

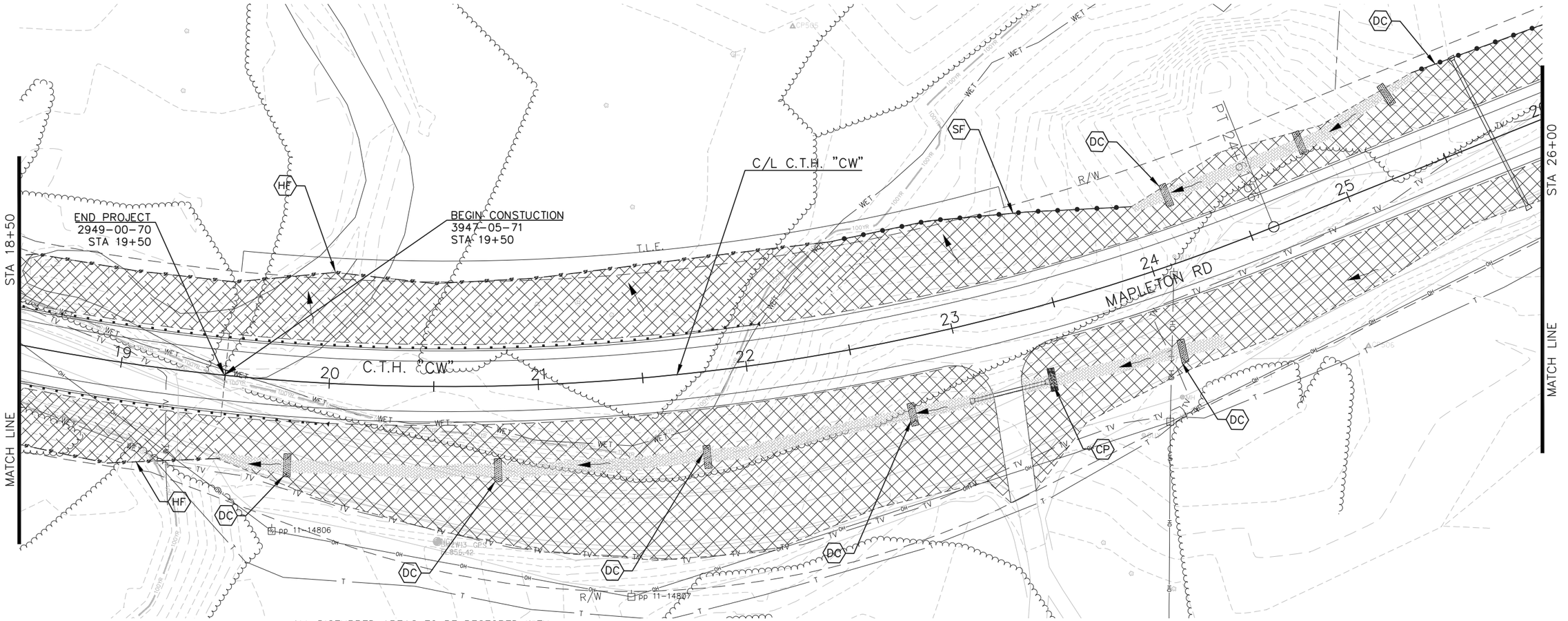
DITCHES TO BE SODDED THE FIRST VERTICAL FOOT FROM DITCH BOTTOM.

NOTE: CONTRACTOR MUST TAKE PROPER MEASURES TO STAY WITHIN THE TEMPORARY EASEMENT AT ALL TIMES INSTALLING OF SILT FENCE NEAR PROPERTY. MAY REQUIRE HAND INSTALLATION.



PROJECT NO: 3949-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	EROSION CONTROL STA 12+00 - 18+50	SHEET 19	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\EROSION CONTOL - CC.DWG PLOT DATE : 10/22/2014 1:10 PM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'



LEGEND

- SILT FENCE (SF)
- HEAVY DUTY SILT FENCE (HF)
- TRIBIDITY BARRIER (TB)
- TEMPORARY DITCH CHECK (DC)
- CULVERT PIPE CHECK (CP)
- EROSION MAT, CLASS I, URBAN TYPE B, NO NETTING SEED MIXTURE 30, FERTILIZER TYPE B
- EROSION MAT, CLASS I, URBAN TYPE B, NO NETTING SEED MIXTURE 30, NO FERTILIZER
- WETLANDS
- SOD LAWN
- DIRECTION OF FLOW

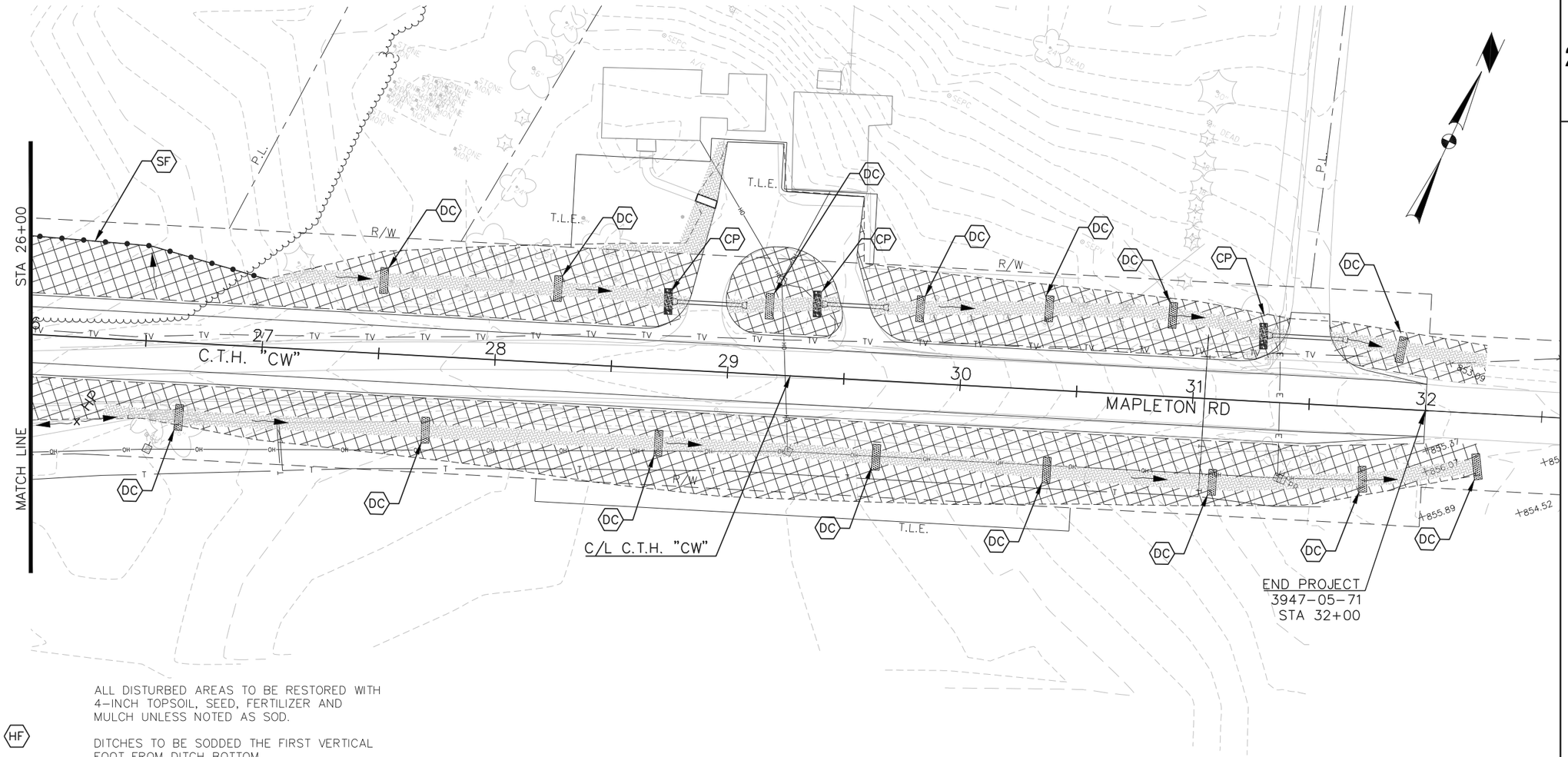
ALL DISTURBED AREAS TO BE RESTORED WITH 4-INCH TOPSOIL, SEED, FERTILIZER AND MULCH UNLESS NOTED AS SOD.

DITCHES TO BE SODDED THE FIRST VERTICAL FOOT FROM DITCH BOTTOM.

NOTE: CONTRACTOR MUST TAKE PROPER MEASURES TO STAY WITHIN THE TEMPORARY EASEMENT AT ALL TIMES INSTALLING OF SILT FENCE NEAR PROPERTY. MAY REQUIRE HAND INSTALLATION.

PROJECT NO: 3949-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	EROSION CONTROL STA 18+50 - 26+00	SHEET 20	E

2



LEGEND

- SILT FENCE (SF)
- HEAVY DUTY SILT FENCE (HF)
- TRIBIDITY BARRIER (TB)
- TEMPORARY DITCH CHECK (DC)
- CULVERT PIPE CHECK (CP)
- EROSION MAT, CLASS I, URBAN TYPE B, NO NETTING SEED MIXTURE 30, FERTILIZER TYPE B
- EROSION MAT, CLASS I, URBAN TYPE B, NO NETTING SEED MIXTURE 30, NO FERTILIZER
- WETLANDS
- SOD LAWN
- DIRECTION OF FLOW
- HP — HIGH POINT

ALL DISTURBED AREAS TO BE RESTORED WITH 4-INCH TOPSOIL, SEED, FERTILIZER AND MULCH UNLESS NOTED AS SOD.

DITCHES TO BE SODDED THE FIRST VERTICAL FOOT FROM DITCH BOTTOM.

NOTE: CONTRACTOR MUST TAKE PROPER MEASURES TO STAY WITHIN THE TEMPORARY EASEMENT AT ALL TIMES INSTALLING OF SILT FENCE NEAR PROPERTY. MAY REQUIRE HAND INSTALLATION.

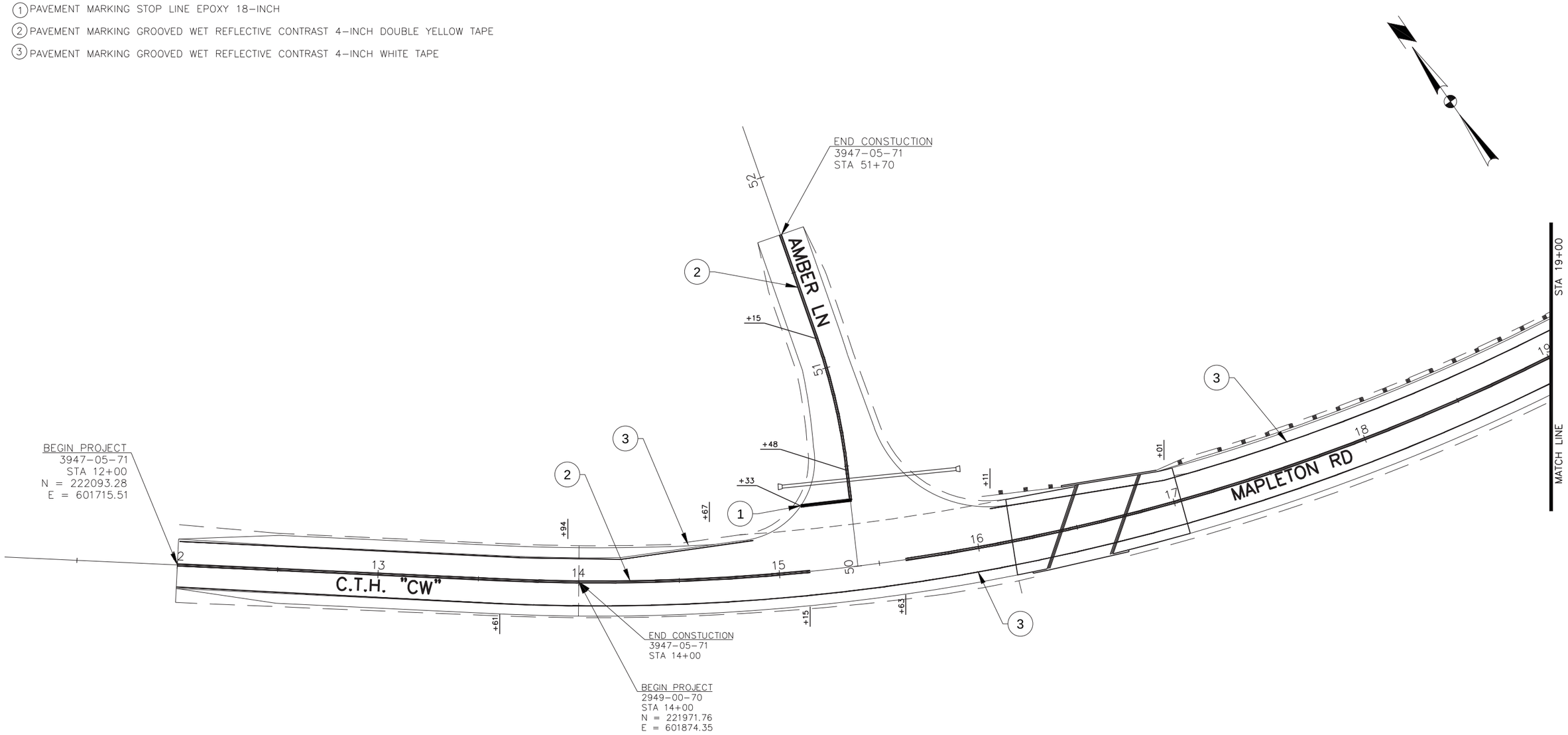
PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	EROSION CONTROL STA 26+00 TO 32+00	SHEET 21	E

LEGEND

(1) PAVEMENT MARKING STOP LINE EPOXY 18–INCH

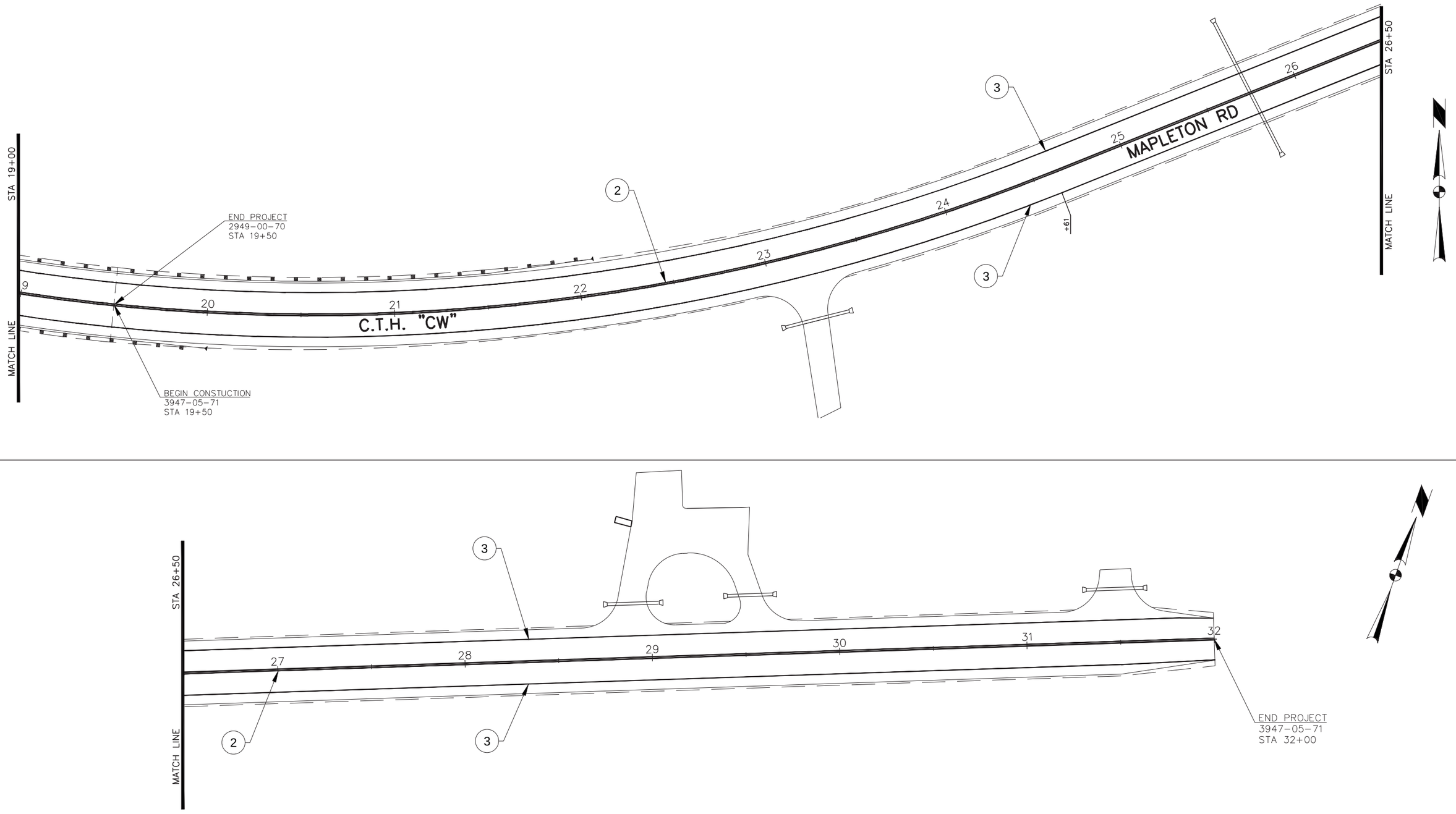
(2) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST 4–INCH DOUBLE YELLOW TAPE

(3) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST 4–INCH WHITE TAPE



PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	PAVEMENT MARKING PLAN	SHEET 22	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\PAVEMENT MARKING - CC.DWG PLOT DATE : 10/2/2014 11:17 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'



LEGEND

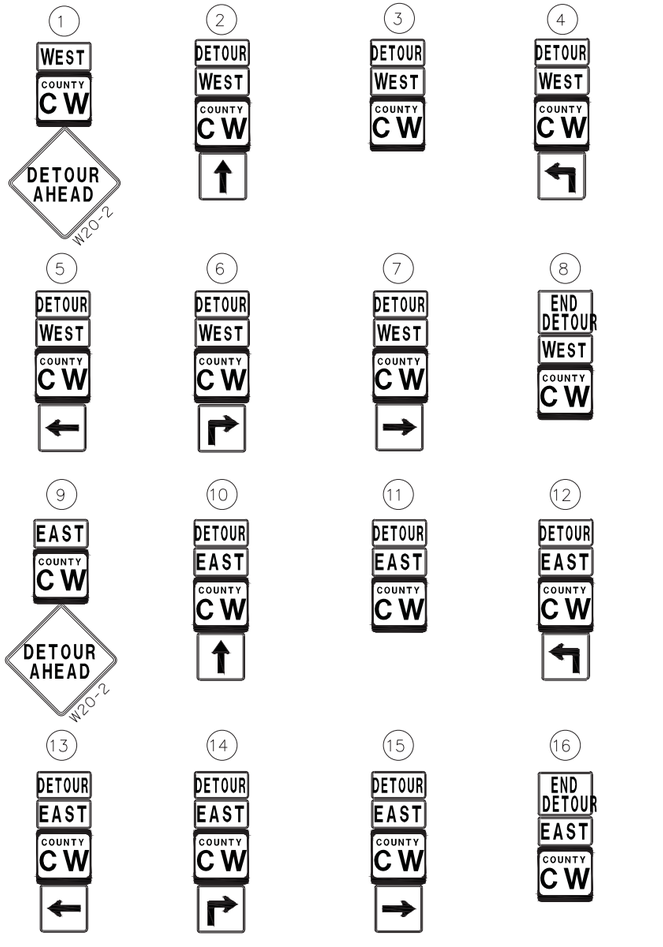
(1) PAVEMENT MARKING STOP LINE EPOXY 18-INCH

(2) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST 4-INCH DOUBLE YELLOW TAPE

(3) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST 4-INCH WHITE TAPE

PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	PAVMENT MARKING PLAN	SHEET 23	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\PAVEMENT MARKING - CC.DWG PLOT DATE : 10/2/2014 11:17 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'



VARIABLE MESSAGE BOARD

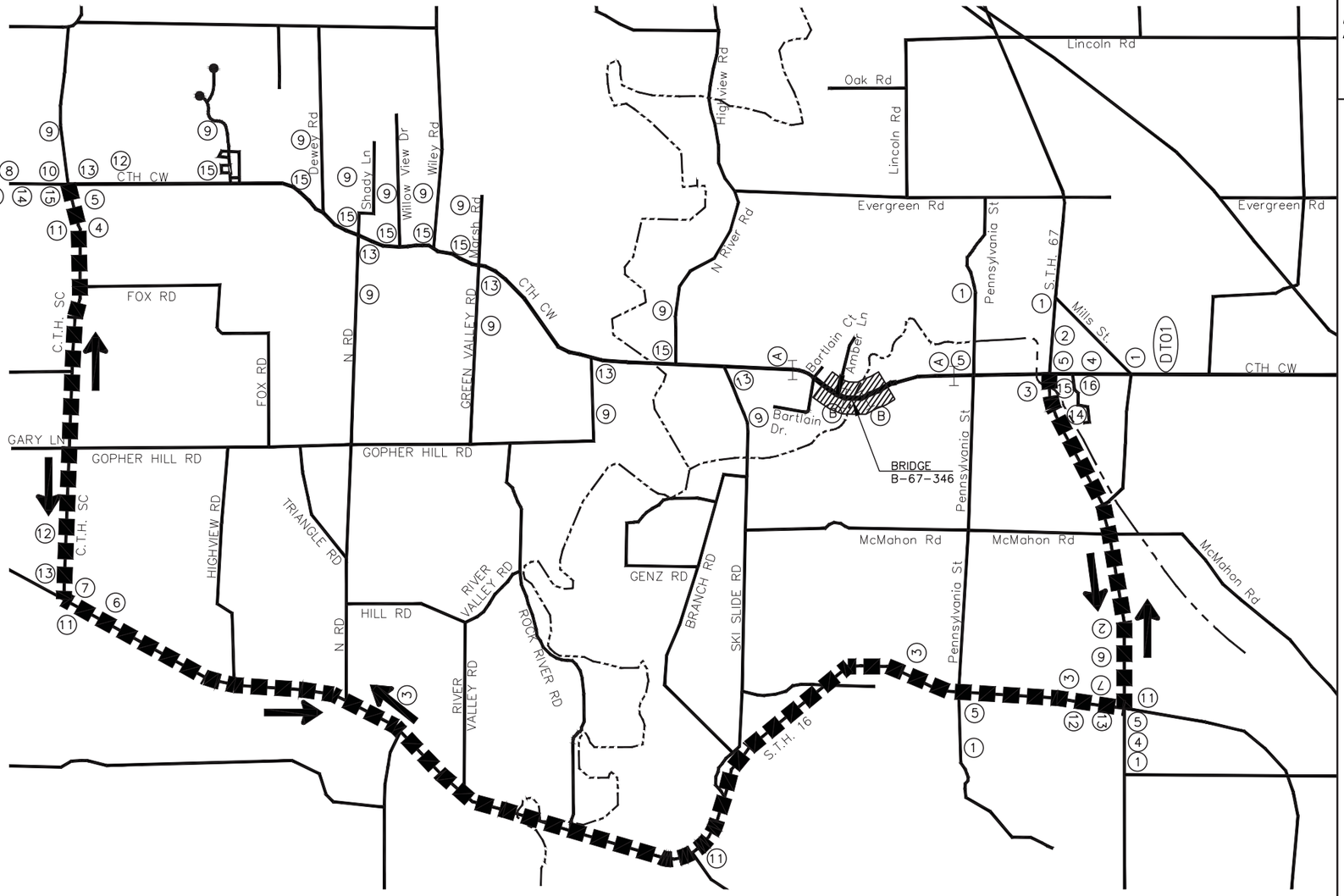
CW CLOSED AT PENNSYLVANIA USE DETOUR

DT01

VARIABLE MESSAGE BOARD

CW CLOSED AT SKI SLIDE RD USE DETOUR

DT02



GENERAL NOTES

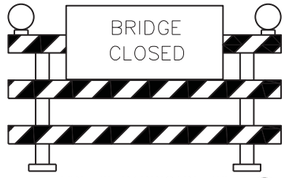
ALL EXISTING SIGN MESSAGES THAT CONFLICT WITH TRAFFIC CONTROL DETOUR SIGNS SHALL BE COVERED OR REMOVED.

SEE SDD "DETOUR SIGNING FOR MAINLINE CLOSURES" FOR SIGN SPACING AND LOCATIONS.

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

ALL M3 SERIES SIGNS WHICH ARE PART OF THE DETOUR ROUTE MARKER SIGNING ASSEMBLY OR ATTACHED TO ANY WARNING SIGN SHALL BE BLACK LETTERING ON A WHITE

VARIABLE MESSAGE BOARDS TO BE USED FOR 7 DAYS PRIOR TO CLOSING, AND 7 DAYS AFTER.



TYPE III BARRICADE WITH (B) ATTACHED SIGN

TYPE III BARRICADE WITH (A) ATTACHED SIGN

PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. CW	COUNTY: WAUKESHA	DETOUR PLAN	SHEET 24	E

DATE 21JAN15 — 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	2949-00-70 QUANTITY	3947-05-71 QUANTITY
0010	201.0105	Clearing	STA	9.000	6.000	3.000
0020	201.0120	Clearing	ID	134.000		134.000
0030	201.0205	Grubbing	STA	9.000	6.000	3.000
0040	201.0220	Grubbing	ID	134.000		134.000
0050	203.0100	Removing Small Pipe Culverts	EACH	3.000		3.000
0060	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 16+56	LS	1.000	1.000	
0070	204.0165	Removing Guardrail	LF	259.000	259.000	
0080	204.0170	Removing Fence	LF	171.000		171.000
0090	205.0100	Excavation Common	CY	15,986.000	1,556.000	14,430.000
0100	205.0400	Excavation Marsh	CY	3,428.000	1,575.000	1,853.000
0110	206.1000	Excavation for Structures Bridges (structure) 01. B-67-0346	LS	1.000	1.000	
0120	208.1100	Select Borrow	CY	17,314.000	5,919.000	11,395.000
0130	209.0100	Backfill Granular	CY	70.000		70.000
0140	209.0200.S	Backfill Controlled Low Strength	CY	345.000	345.000	
0150	213.0100	Finishing Roadway (project) 01. 2949-00-70	EACH	1.000	1.000	
0160	213.0100	Finishing Roadway (project) 02. 3947-05-71	EACH	1.000		1.000
0170	305.0110	Base Aggregate Dense 3/4-Inch	TON	401.000	74.000	327.000
0180	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	6,951.000	1,556.000	5,395.000
0190	312.0110	Select Crushed Material	TON	3,757.000	32.000	3,725.000
0200	415.0410	Concrete Pavement Approach Slab	SY	211.000	211.000	
0210	455.0120	Asphaltic Material PG64-28	TON	144.000	33.000	111.000
0220	455.0605	Tack Coat	GAL	510.000	124.000	386.000
0230	460.1100	HMA Pavement Type E-0.3	TON	2,577.000	558.000	2,019.000
0240	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	78.000		78.000
0250	502.0100	Concrete Masonry Bridges	CY	192.000	192.000	
0260	502.3200	Protective Surface Treatment	SY	195.000	195.000	
0270	505.0605	Bar Steel Reinforcement HS Coated Bridges	LB	27,030.000	27,030.000	
0280	516.0500	Rubberized Membrane Waterproofing	SY	26.000	26.000	
0290	521.0118	Culvert Pipe Corrugated Steel 18-Inch	LF	201.000		201.000
0300	521.0124	Culvert Pipe Corrugated Steel 24-Inch	LF	78.000		78.000
0310	521.1018	Apron Endwalls for Culvert Pipe Steel 18-Inch	EACH	10.000		10.000
0320	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	2.000		2.000
0330	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	980.000	980.000	
0340	602.0410	Concrete Sidewalk 5-Inch	SF	23.000		23.000
0350	606.0100	Riprap Light	CY	2.000	2.000	
0360	606.0300	Riprap Heavy	CY	165.000	165.000	
0370	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	210.000	210.000	
0380	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000	
0390	614.2300	MGS Guardrail 3	LF	813.500	512.500	301.000
0400	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000	
0410	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	2.000	2.000
0420	616.0100	Fence Woven Wire (height) 01. 3-Ft	LF	1,093.000	756.000	337.000
0430	616.0700.S	Fence Safety	LF	500.000	250.000	250.000
0440	619.1000	Mobilization	EACH	1.000	0.500	0.500
0450	625.0100	Topsoil	SY	1,330.000		1,330.000
0460	625.0500	Salvaged Topsoil	SY	10,828.000	2,324.000	8,504.000

3

DATE 21JAN15 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	2949-00-70 QUANTITY	3947-05-71 QUANTITY
0470	628.1504	Silt Fence	LF	1,809.000	1,076.000	733.000
0480	628.1520	Silt Fence Maintenance	LF	1,809.000	1,076.000	733.000
0490	628.1905	Mobilizations Erosion Control	EACH	2.000	1.000	1.000
0500	628.1910	Mobilizations Emergency Erosion Control	EACH	10.000	5.000	5.000
0510	628.2006	Erosion Mat Urban Class I Type A	SY	12,926.000	2,540.000	10,386.000
0520	628.6005	Turbidity Barriers	SY	223.000	223.000	
0530	628.7504	Temporary Ditch Checks	LF	414.000		414.000
0540	628.7555	Culvert Pipe Checks	EACH	20.000		20.000
0550	628.7570	Rock Bags	EACH	658.000	558.000	100.000
0560	629.0210	Fertilizer Type B	CWT	9.400	2.000	7.400
0570	630.0130	Seeding Mixture No. 30	LB	177.000	30.000	147.000
0580	630.0200	Seeding Temporary	LB	158.000	23.000	135.000
0590	631.0300	Sod Water	MGAL	47.000	3.000	44.000
0600	631.1000	Sod Lawn	SY	2,058.000	108.000	1,950.000
0610	633.5200	Markers Culvert End	EACH	2.000		2.000
0620	642.5201	Field Office Type C	EACH	1.000	0.500	0.500
0630	643.0100	Traffic Control (project) 01. 2949-00-70	EACH	1.000	1.000	
0640	643.0100	Traffic Control (project) 02. 3947-05-71	EACH	1.000		1.000
0650	643.0420	Traffic Control Barricades Type III	DAY	1,464.000	732.000	732.000
0660	643.0705	Traffic Control Warning Lights Type A	DAY	2,928.000	1,464.000	1,464.000
0670	643.0900	Traffic Control Signs	DAY	1,464.000	732.000	732.000
0680	643.0920	Traffic Control Covering Signs Type II	EACH	40.000	20.000	20.000
0690	643.1050	Traffic Control Signs PCMS	DAY	732.000	366.000	366.000
0700	643.2000	Traffic Control Detour (project) 01. 2949-00-70	EACH	1.000	1.000	
0710	643.2000	Traffic Control Detour (project) 02. 3947-05-71	EACH	1.000		1.000
0720	643.3000	Traffic Control Detour Signs	DAY	30,500.000	15,250.000	15,250.000
0730	645.0120	Geotextile Fabric Type HR	SY	360.000	360.000	
0740	645.0130	Geotextile Fabric Type R	SY	4.000	4.000	
0750	646.0841.S	Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch	LF	8,129.000	1,980.000	6,149.000
0760	647.0566	Pavement Marking Stop Line Epoxy 18-Inch	LF	38.000		38.000
0770	650.4500	Construction Staking Subgrade	LF	2,049.000	550.000	1,499.000
0780	650.5000	Construction Staking Base	LF	2,049.000	550.000	1,499.000
0790	650.6000	Construction Staking Pipe Culverts	EACH	5.000		5.000
0800	650.6500	Construction Staking Structure Layout (structure) 01. B-67-0346	LS	1.000	1.000	
0810	650.7000	Construction Staking Concrete Pavement	LF	80.000	80.000	
0820	650.9910	Construction Staking Supplemental Control (project) 01. 3947-05-71	LS	1.000		1.000
0830	650.9920	Construction Staking Slope Stakes	LF	2,049.000	550.000	1,499.000
0840	690.0150	Sawing Asphalt	LF	73.000		73.000
0850	715.0415	Incentive Strength Concrete Pavement	DOL	211.000	211.000	
0860	715.0502	Incentive Strength Concrete Structures	DOL	1,152.000	1,152.000	
0870	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	200.000	85.000	115.000
0880	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	600.000	260.000	340.000

3

3

CLEARING AND GRUBBING

PROJECT ID	LOCATION	201.0105 CLEARING STA	201.0120 CLEARING ID	201.0205 GRUBBING STA	201.0220 GRUBBING ID
2949-00-70	CTH CW				
	14+00 – 19+50	6		6	
	TOTAL	6		6	
3947-05-71	CTH CW				
	12+00 – 14+00		8		8
	19+50 – 23+00	3		3	
	23+00 – 32+00		126		126
	TOTAL	3	134	3	134
	PROJECT TOTAL	9	134	9	134

REMOVING CULVERT PIPES

PROJECT	LOCATION	LF	SIZE	MATERIAL	203.0100 REMOVING SMALL PIPE CULVERTS EACH
3947-05-71	15+47, LT	53	18-INCH	CPCS	1
	25+76	36	24-INCH	CPCS	1
	31+53	44	12-INCH	CPCS	1
				TOTAL	3

REMOVING GUARDRAIL

PROJECT	STATION – STATION	LOCATION	204.0165 LF
2949-00-70	CTH "CW"		
	15+84 – 16+55	LT	71
	15+69 – 16+37	RT	68
	16+78 – 17+47	RT	69
	17+00 – 17+51	LT	51
	TOTAL		259

REMOVING FENCE

PROJECT ID	STATION	LOCATION	204.0170 LF
3947-05-71	CTH CW		
	29+58 – 31+30	LT	171
		TOTAL	171

213.0100 FINISHING ROADWAY

PROJECT ID	
2949-00-70	1
3947-05-71	1
TOTAL	2

CONCRETE PAVEMENT APPROACH SLAB

PROJECT ID	LOCATION	415.0410 SY
2949-00-70	16+17 TO 16+54	105
	16+64 TO 17+04	106
	TOTAL	211

AGGREGATE

PROJECT	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1.25-INCH TON	312.0110 SELECT CRUSHED MATERIAL TON
2949-00-70	CTH CW				
	14+00 – 16+17	RT-LT	14	622	25
	17+03.48 – 19+50	RT-LT	60	934	
	UNDISTRIBUTED				7
	TOTAL		74	1556	32
3947-05-71	CTH CW				
	12+00 – 14+00	RT-LT	32	930	1325
	19+50 – 32+00	RT-LT	117	3904	1650
	UNDISTRIBUTED		–	193	750
	AMBER LN				
	50+20.32 – 51+70	RT-LT	30	368	–
	TOTAL		327	5,395	3,725
	PROJECT TOTAL		401	6,951	3,757

ASPHALTIC ITEMS

PROJECT ID	STATION	LOCATION	455.0120 ASPHALTIC MATERIAL PG64-28 TON	455.0605 TACK COAT GAL	460.1100 HMA PAVEMENT TYPE E-0.3 TON	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON
2949-00-70	CTH CW					
	14+00 – 16+17	LT/RT	15	54	268	
	17+03.48 – 19+50	LT/RT	18	70	290	
	TOTAL		33	124	558	
3947-05-71	CTH CW					
	12+00 – 14+00	LT/RT	19	70	359	
	19+50 – 32+00	LT/RT	83	288	1508	
	28+67	17' LT				78
	AMBER LANE					
	50+21 – 51+70	LT/RT	9	28	152	
	TOTAL		111	386	2019	78
	PROJECT TOTAL		144	510	2577	78

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\QUANTITIES.DWG PLOT DATE : 1/8/2015 8:10 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=XX'

EARTH WORKS SUMMARY

	From/To Station	Location	Common Excavation (1)	(item # 205.0100)	Salvaged/Unusable Pavement Material (4)	Available Material (5)	Marsh Excavation (6)	Reduced Marsh in Fill (8)	Reduced EBS in Fill (9)	Expanded Marsh Backfill (10)	Expanded EBS Backfill (11)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/− (14)	Waste	Select Borrow	Comment:
			Cut (2)	EBS Excavation (3)			(item #205.0500)	Factor	Factor	Factor	Factor		Factor				
								0.60	0.80	1.50	1.30		1.25			(item #208.0100)	
1	12+00 − 14+00; 19+50 − 32+00	CTH CW	13183	861	1978	11206	1853	1112	689	2779	1120	18511	20888	−11780	1978		
2	50+50 − 51+70	Amber Lane	385	0	0	385	0	0	0	0	0	0	0	385			
Subtotal			385	0	0	385	0	0	0	0	0	0	0	385		11395	
Grand Total			13569	861	1978	11591	1853	1112	689	2779	1120	18511	20888	−11395	1978	11395	
			Total Common Exc	14430													

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 Select Borrow material
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut − Salvaged/Unusuable Pavement Material
6) Marsh Excavation − to be backfilled with Select Borrow Material.
8) Reduced Marsh in Fill − Excavated Marsh material is usuable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6
9) Reduced EBS in Fill − Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8
10) Expanded Marsh Backfill − This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item number 208.0100
11) Expanded EBS Backfill − This is to be filled with Select Borrow material. EBS Backfill Factor = 1.3. Item number 208.0100
13) Expanded Fill. Factor = 1.25
14) The Mass Ordinate + or − Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.
15) Mass Ordinate = Available Material + Reduced Marsh in Fill + Reduced EBS in Fill − Expanded Marsh Backfill − Expanded EBS Backfill − Expanded Fill
16) Waste = 15% Common Excavation

EARTH WORKS SUMMARY

	From/To Station	Location	Common Excavation (1)	(item # 205.0100)	Salvaged/Unusable Pavement Material (4)	Available Material (5)	Marsh Excavation (6)	Reduced Marsh in Fill (8)	Reduced EBS in Fill (9)	Expanded Marsh Backfill (10)	Expanded EBS Backfill (11)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/− (14)	Waste	Select Borrow	Comment:
			Cut (2)	EBS Excavation (3)			(item #205.0500)	Factor	Factor	Factor	Factor		Factor				
Project ID 2949−00−70								0.60	0.80	1.50	1.30		1.25			(item #208.1100)	
1	14+00 − 19+50	CTH CW	1556	0	233	1322	1575	945	0	2363	0	5604	5824	−5919	233		
Subtotal			0	0	0	0	0	0	0	0	0	0	0	0		5919	
Grand Total			1556	0	233	1322	1575	945	0	2363	0	5604	5824	−5919	233	5919	
			Total Common Exc	1556													

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 Select Borrow material.
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut − Salvaged/Unusuable Pavement Material
6) Marsh Excavation − to be backfilled with Select Borrow Material.
8) Reduced Marsh in Fill − Excavated Marsh material is usuable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6
9) Reduced EBS in Fill − Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8
10) Expanded Marsh Backfill − This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item number 208.0100
11) Expanded EBS Backfill − This is to be filled with Select Borrow material. EBS Backfill Factor = 1.3. Item number 208.0100
13) Expanded Fill. Factor = 1.25
14) The Mass Ordinate + or − Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.
15) Mass Ordinate = Available Material + Reduced Marsh in Fill + Reduced EBS in Fill − Expanded Marsh Backfill − Expanded EBS Backfill − Expanded Fill
16) Waste = 15% Common Excavation

ALL ITEMS ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

3

3

CULVERTS SUMMARY

PROJECT ID	LOCATION	SKEW	521.0118 CULVERT PIPE CORRUGATED STEEL 18-INCH LF	521.0124 CULVERT PIPE CORRUGATED STEEL 24-INCH LF	521.1018 APRON ENDWALLS FOR CULVERT PIPE STEEL 18-INCH EACH	521.1024 APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH EACH	209.0100 BACKFILL GRANULAR CY	633.5200 MARKERS CULVERT END EACH
3947-05-71	15+33	SIDE ROAD CULVERT, LT	87		2		18	
	23+24	DRIVEWAY, RT	34		2		7	
	25+75	CROSS CULVERT, 84 DEG		78		2	24	2
	28+93	DRIVEWAY, LT	26		2		7	
	29+55	DRIVEWAY, LT	24		2		7	
	31+48	DRIVEWAY, LT	30		2		7	
		TOTALS	201	78	10	2	70	2

CONCRETE SIDEWALK 5-INCH

PROJECT ID	STATION TO STATION	LOCATION	602.0410 SF
3947-05-71	28+70 – 28.91	73.5' LT	23
		TOTAL	23

RIPRAP LIGHT

PROJECT	STATION – STATION	LOCATION	606.0100 CY
2949-00-70	15+97 – 16+04	LT	2
	TOTAL		2

FENCE WOVEN WIRE – 3' HIGH

PROJECT ID	LOCATION	RT/LT	616.0100 LF
2949-00-70	CTH CW		
	14+00 – 19+50	RT	483
	14+00 – 19+50	LT	273
	TOTAL		756
3947-05-71	CTH CW		
		LT	337
	TOTAL		337
	PROJECT TOTAL		1093

STEEL PLATE BEAM GUARD

PROJECT ID	STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MSG GUARDRAIL TERMINAL ENERGY ABSORBING TERMINAL EA
2949-00-70	CTH CW				
	14+00 – 16+15	RT	60	40	1
	16+15 – 16+47	LT	–	40	1
	16+72 – 19+50	RT	242.5	40	–
	16+95 – 19+50	LT	210	40	–
	TOTAL		512.5	160	2
3947-05-71	19+50 – 20+00	RT	40	–	1
	19+50 – 22+08	LT	261	–	1
	TOTAL		301		2
	PROJECT TOTAL		813	160	4

MOBILIZATION

PROJECT ID	619.1000 EACH
2949-00-70	0.5
3947-05-71	0.5
TOTAL	1

FENCE SAFETY

PROJECT ID	LOCATION	619.0700.S. LF
2949-00-70	UNDISTIBUTED	250
3947-05-71	UNDISTIBUTED	250
	TOTAL	500

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UNLESS OTHERWISE NOTED

EROSION CONTROL

PROJECT ID	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2006 EROSION MAT URBAN CLASS I TYPE A SY	628.7504 TEMPOARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EA	628.7570 ROCK BAGS EACH
2949-00-70	CTH CW							
	14+00 – 19+50		861	861	2032	–	–	446
	UNDISTRIBUTED		215	215	508	–	–	112
		TOTAL	1076	1076	2540			558
3947-05-71	CTH CW							
	12+00 – 14+00	RT-LT	52	52	982	72	5	30
	19+50 – 32+00	RT-LT	545	545	7,296	240	15	30
	UNDISTRIBUTED		136	136	1824	78		15
	Amber Ln							
	50+20 – 51+70		–	–	227			20
	UNDISTRIBUTED		–	–	57	24		5
		TOTAL	733	733	10,386	414	20	100
		PROJECT TOTAL	1,810	1,810	12,926	414	20	658

EROSION CONTROL MOBILIZATION

PROJECT ID	628.1905 MOBILIZATION EROSION CONTROL	628.1910 MOBILIZATION EMERGENCY EROSION CONTROL
2949-00-70	1	5
3947-05-71	1	5
TOTAL	2	10

TURRBIDITY BARRIERS

PROJECT ID	628.6005 SY
2949-00-70	223
TOTAL	223

GEOTEXTILE FABRIC TYPE R

645.0130

PROJECT ID	STATION	LOCATION	SY
2949-00-70	CTH CW		
	15+75	42.7' LT	4
		TOTAL	4

FINISHING ITEMS

PROJECT ID	STATION – STATION	LOCATION	625.0100 TOPSOIL SY	625.0500 SALVAGED TOPSOIL SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0200 SEEDING TEMPORARY LB	631.0300 SOD WATER MGAL	631.1000 SOD LAWN SY
2949-00-70	CTH CW								
	14+00 – 19+50	LT/RT	–	2,324	2	30	23	3	108
		TOTAL		2,324	2	30	23	3	108
3947-05-71	CTH CW								
	12+00 – 14+00	LT/RT	–	1,183	1.2	13	11	5	256
	19+50 – 32+00	LT/RT	1,330	6,910	5	97	71	25	1107
	AMBER LANE								
	50+20 – 51+70	LT/RT	–	411	0.2	4	3	5	184
	UNDISTRIBUTED		–		1	33	50	9	403
		TOTAL	1,330	8,504	7.4	147	135	44	1,950
		PROJECT TOTAL	1,330	10,828	9.4	177	158	47	2,058

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TRAFFIC CONTROL

STATION TO STATION	643.0100 TRAFFIC CONTROL PROJECT EACH	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAYS	643.0900 TRAFFIC CONTROL SIGNS EACH	643.0900 TRAFFIC CONTROL SIGNS DAYS	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	643.1050 TRAFFIC CONTROL SIGNS PCMS EACH	643.1050 TRAFFIC CONTROL SIGNS PCMS DAYS	643.2000 TRAFFIC CONTROL DETOUR EACH	643.3000 TRAFFIC CONTROL DETOUR SIGNS EACH	643.3000 TRAFFIC CONTROL DETOUR SIGNS DAYS
2949-00-70 (DETOUR 122 DAYS)	1	6	732	12	1464	6	732	20	3	366	1	125	15250
TOTAL	1		732		1464		732			366			15250
3947-05-71 (DETOUR 122 DAYS)	1	6	732	12	1464	6	732	20	3	366	1	125	15250
TOTAL	1		732		1464		732			366		125	15250
PROJECT TOTAL	2		1464		2928		1464	40		732	2	125	30500

PAVEMENT MARKING

PROJECT ID	STATION – STATION	LOCATION	646.0841.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (WHITE) LF	646.0841.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (DOUBLE YELLOW) LF	647.0566 STOP LINE EPOXY 18-INCH LF
2949-00-70	CTH CW				
	14+00 – 19+50	LT/RT	980		
	14+00 – 19+50	CENTER		1000	
		TOTAL	980	1,000	
3947-05-71	CTH CW				
	19+50 – 32+00	LT/RT	2,877		–
	19+50 – 32+00	CENTER		2,998	
	AMBER LANE				
	50+00 – 51+70	–	–	274	38
		TOTAL	2,877	3,272	38
		PROJECT TOTAL	3,857	4,272	38

FIELD OFFICE TYPE C

CATEGORY	PROJECT ID	642.5201 EACH
0010	2949-00-70	0.5
0020	3947-05-71	0.5
	TOTAL	1

SAWING ASPHALT

Project ID	LOCATION	690.0150 LF
3947-05-71	CTH CW	
	12+00	24.5
	32+00	24.5
	AMBER LN	
	51+70	24
	TOTAL	73

CONSTRUCTION STAKING

CATEGORY 0020

PROJECT ID	LOCATION	650.6500 CONSTRUCTION STAKING LAYOUT STRUCTURE LS
2949-00-70	B-67-346	1
	TOTAL	1

CONSTRUCTION STAKING

PROJECT ID	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT LF	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
2949-00-70	CTH CW						
	14+00 – 19+50	550	550		80	1	550
	TOTAL	550	550		80	1	550
3947-05-71	CTH CW						
	12+00 – 14+00	200	200	1		1	200
	19+50 – 32+00	1250	1250	4			1250
	AMBER LANE						
	50+21 – 50+70	49	49				49
	TOTAL	1499	1499	5	0	1	1499
	PROJECT TOTAL	2049	2049	5	80	2	2049

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CONVENTIONAL SIGNS AND ABBREVIATIONS

ACCESS RIGHTS	A.R.
ACCESS POINT	A.P.
ACRES	AC.
AGREEMENT	AGRMT.
AHEAD	AHD.
AND OTHERS	ET. AL.
BACK	BK.
CENTERLINE	℄
CENTRAL ANGLE OR DELTA	Δ
CORNER	COR.
COURT	CT.
DRIVE	DR.
EXTENSIVE (ACRES REMAINING)	EXT.
IRON PIPE	I.P.
LENGTH OF CURVE	L
LONG CHORD (BEARING)	LC(B)
MONUMENT	MON.
PERMANENT	PERM.
PROPERTY LINE	P.L.
RADIUS	R
REMAINING	REM.
RIGHT OF WAY	R/W
ROAD	RD.
SECTION	SEC.
STATION	STA.
TANGENT	T
TEMPORARY	TEMP.
TRANSIT LINE	℄

COUNTY LINE

CORPORATE LIMITS

SECTION LINE

PROPERTY LINE

LOT LINE

EXISTING RIGHT OF WAY

NEW RIGHT OF WAY

NEW CENTERLINE

SLOPE INTERCEPTS

TEMPORARY LIMITED EASEMENT

PERMANENT LIMITED EASEMENT

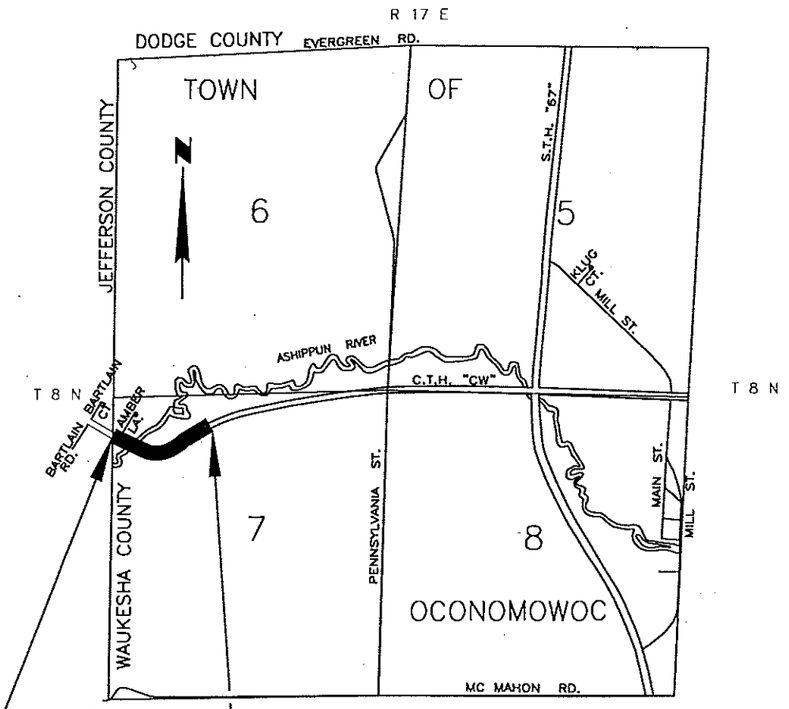
NO ACCESS (ACQUISITION)

EXISTING NO ACCESS

POWER POLE (COMPENSABLE)

TELEPHONE POLE (COMPENSABLE)

LIGHT POLE



BEGIN RELOCATION ORDER
PROJECT I.D. 2949-00-00
STA. 13+05.41
Y = 222028.927
X = 601799.000
684.16' SOUTH OF AND 31.20' WEST OF
THE NORTHWEST CORNER OF SEC. 7,
T 8 N, R 17 E

END RELOCATION ORDER
PROJECT I.D. 2949-00-00
STA. 32+00.00'
Y = 222126.248
X = 603570.166
468.62' SOUTH OF AND 509.11' WEST OF
THE NORTH CORNER OF SEC. 7,
T 8 N, R 17 E

Layout

0 0.25 0.50 MI.

Scale

TOTAL NET LENGTH OF CENTERLINE = 0.359 MI. (RURAL)

NOTES

ALL COORDINATES SHOWN ON THIS PLAT ARE REFERENCED TO THE WAUKESHA COUNTY COORDINATE SYSTEM, (WCCS) WAUKESHA COUNTY, NAD 1983 (2011), COORDINATES SHOWN ON THE PLAT ARE TO BE USED AS GROUND OR GRID.

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD

THE EXISTING HIGHWAY RIGHT OF WAY SHOWN HEREON IS BASED ON THE RIGHT OF WAY PLAT FOR C.T.H. "CW" PROJECT 3583-2-00, EXISTING CERTIFIED SURVEY MAPS, SUBDIVISION PLATS, AND OTHER SURVEYS OF PUBLIC RECORD.

DIMENSIONING TO THE NEW RIGHT OF WAY IS MEASURED ALONG AND PERPENDICULAR TO THE CENTERLINE OF CONSTRUCTION.

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
2949-00-00	4.1	5
FEDERAL PROJECT NUMBER		

PLAT OF RIGHT OF WAY REQUIRED FOR

C.T.H. "CW"

WAUKESHA COUNTY LIMITS TO
1661 FEET EAST OF AMBER LANE

CONSTRUCTION PROJECT NUMBER
3947-05-71/2949-00-70

ORIGINAL PLAT PREPARED BY

WISCONSIN
JASON T. MAYER
S-2844
Menomonee Falls WI
LAND SURVEYOR

4-28-14 Date

Jason T. Mayer Signature

APPROVED FOR
WAUKESHA COUNTY
DEPARTMENT OF PUBLIC WORKS

DATE: 4-28-14 Alison Bussler DIRECTOR

DATE: 4/28/14 Gary A Evans ENGINEERING SERVICES MANAGER

REVISION	DATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED FOR DISTRICT OFFICE:

DATE: N/A SIGNATURE

FILE NAME: N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\ROWTITLE-CW

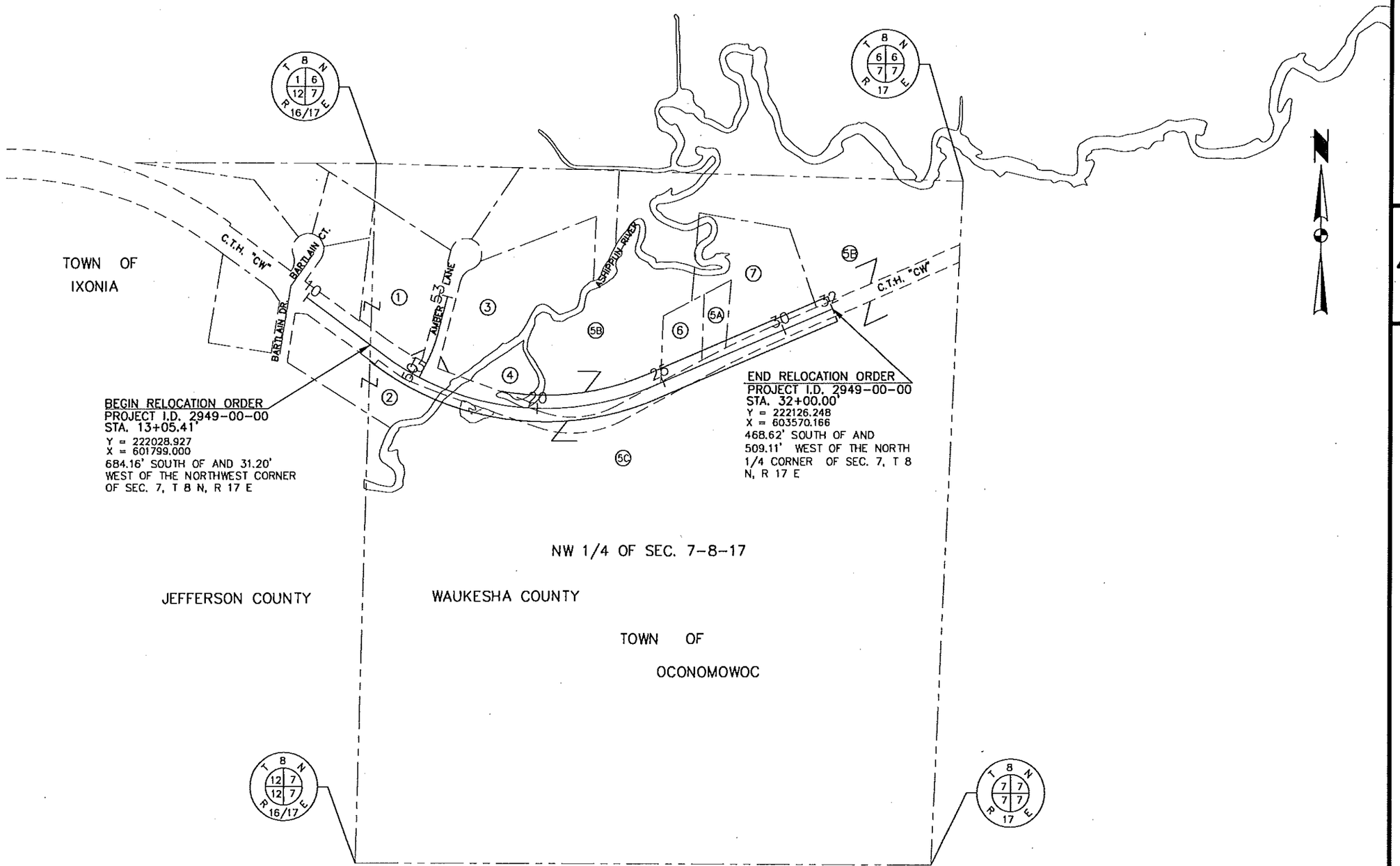
SCHEDULE OF LANDS & INTERESTS REQUIRED

AREAS SHOWN IN THE TOTAL AREA MAY BE APPROXIMATE AND ARE DERIVED FROM TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED.

PARCEL NO.	SHEET NO.	OWNERS	INTEREST REQ'D.	TOTAL AREA ACRES	EASEMENT ACRES REQUIRED		R/W ACRES REQUIRED			TOTAL ACRES REM.
					T.L.E.	P.L.E.	NEW	EXIST.	TOTAL	
1	4.4	PHILIP AND SALLY SALZMAN REVOCABLE TRUST	FEE	3.00	–	–	0.01	–	0.01	2.99
2	4.4	ANN MARIE OLSEN	FEE	1.00	–	–	0.16	–	0.16	0.84
3	4.4	DAVID HOWDEN	FEE	4.00	–	–	0.003	–	0.003	3.997
4	4.4	WAUKESHA COUNTY	FEE, T.L.E.	0.78	0.01	–	0.05	–	0.05	0.73
5A	4.5	PAUL H. WALTER	FEE	0.63	–	–	0.07	0.07	0.14	0.49
5B	4.4, 4.5	PAUL H. WALTER	FEE, T.L.E.	15.64	0.07	–	0.83	0.49	1.32	14.32
5C	4.4, 4.5	PAUL H. WALTER	FEE, T.L.E.	148.52	0.05	–	0.21	1.21	1.42	147.10
6	4.5	METHODIST EPISCOPAL CHURCH	FEE	1.00	–	–	0.15	0.13	0.28	0.72
7	4.5	ANDREW AND RACHEL RICH	FEE, T.L.E.	3.77	0.12	–	0.25	0.29	0.54	3.23
100	4.4, 4.5	WE–ENERGIES – ELECTRIC	CONVEYANCE OF RIGHTS							
101	4.4	AT&T	CONVEYANCE OF RIGHTS							

REVISION DATE:	DATE: 04/28/2014	SCALE, FEET 0 N/A N/A	HWY: C.T.H. "CW"	CONSTRUCTION PROJECT NO.: 3947–05–71/2949–00–70	
			COUNTY: WAUKESHA	R/W PROJECT NO.: 2949–00–00	PLAT SHEET NO: 4.2

FILE NAME: N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\ROW PLAT\ROWSCHEDULE-CW



REVISION DATE:	DATE: 04/28/2014	0 200 400 Scale: 1" = 400'	HWY: C.T.H. "CW"	CONSTRUCTION PROJECT NO.: 3947-05-71/2949-00-70	
	PLAT OVERVIEW		COUNTY: WAUKESHA	R/W PROJECT NO.: 2949-00-00	PLAT SHEET NO: 4.3 34

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\ROW PLAT\ROWOVERVIEW.DWG PLOT DATE : 04/28/2014 PLOT BY : MAYER, JASON

TOWN OF BARTEL'S SUBDIVISION

TOWN OF

A CONCRETE MON. WITH A SEWRPC BRASS CAP.

Y = 222,713.073
X = 601,830.200

CURVE DATA C2
ARC LEN. = 18.85'
CHORD LEN. = 18.85'
CH. BR. = N 67°02'53" W
RADIUS = 962.60'
I ANGLE = 01°07'19"

CURVE DATA C1
ARC LEN. = 38.84'
CHORD LEN. = 38.84'
CH. BR. = S 61°20'43" E
RADIUS = 962.60'
I ANGLE = 02°18'43"

LINE DATA
L1 = N 52°57'45" W 24.09'
L2 = S 37°02'15" W 18.14'
L3 = S 52°22'24" E 20.23'
L4 = N 86°34'29" E 40.12'
L5 = S 15°50'20" W 21.85'
L6 = N 15°50'20" E 14.59'
L7 = S 32°01'32" E 25.22'
L8 = S 21°06'36" W 17.00'
L9 = S 69°13'31" E 74.82'
L10 = N 41°00'30" E 31.56'
L11 = N 69°14'57" W 25.90'

K–P = S 55°12'43" W 63.87'
P–Q = S 69°13'31" E 65.96'
O–P = S 69°13'31" E 8.86'

CURVE DATA (C/L AMBER LANE)
ARC LEN. = 67.19'
CHORD LEN. = 67.05'
CH. BR. = N 22°05'58" E
RADIUS = 300.00'
I ANGLE = 12°49'55"

CURVE DATA (C/L "CW")
PI = 19+11.12'
Y = 221,625.27
X = 602,322.65
DELTA = 59°30'22"
D = 5°29'59"
TAN = 605.92'
LCH = 1052.08'
LCB = S82°07'35"E
ARC L = 1100.90'
R = 1060.00'
PC = 13+60.67'
PT = 24+61.57'

CURVE DATA (N–K)
ARC LEN. = 436.15'
CHORD LEN. = 432.77'
CH. BR. = S 80°29'31" W
RADIUS = 1010.06'
I ANGLE = 24°44'26"

CURVE DATA (K–G)
ARC LEN. = 148.24'
CHORD LEN. = 148.11'
CH. BR. = N 82°56'00" W
RADIUS = 1010.06'
I ANGLE = 08°24'33"

CURVE DATA A–B
ARC LEN. = 292.57'
CHORD LEN. = 291.73'
CH. BR. = S 59°55'27" E
RADIUS = 1109.99'
I ANGLE = 15°06'08"

CURVE DATA B–F
ARC LEN. = 293.62'
CHORD LEN. = 292.77'
CH. BR. = S 75°03'12" E
RADIUS = 1109.99'
I ANGLE = 15°17'17"

CURVE DATA C3
ARC LENGTH = 294.16'
CHORD LENGTH = 285.84'
CH. BEARING = N 87°12'12" E
RADIUS = 355.47'
I ANGLE = 47°24'53"

MARGARET RAMSTACK
DOC. NO. 732425
TAX KEY NO. 012.0816.1211.010
1.03 AC.

LOT 1, C.S.M. 2637 VOL. 19, P. 170 ,171 AND 172

(1) PHILIP & SALLY SALZMAN TRUST
DOC. NO. 732425
TAX KEY NO. OCOT 458.998
0.01 AC.
2.99 REM.

LOT 4 C.S.M. 2637
VOL. 19, P. 170,171 AND 172

(3) DAVID HOWDEN
DOC. NO. 732425
TAX KEY NO. OCOT 457.998.004
0.003 AC.
3.997 REM.

(4) WAUKESHA COUNTY
LOT 4, CSM 2637
0.05 AC.
0.73 REM.

(58) PAUL H. WALTER
DOC. NO. 3037632
TAX KEY NO. OCOT 458.997.001
1.32 AC.
14.32 REM.

(5C) PAUL H. WALTER
DOC. NO. 3037632
TAX KEY NO. OCOT 458.997.001
1.42 AC.
147.10 REM.

ANN MARIE OLSON DOC. NO. 3678123
TAX KEY NO. 012–0816–1211–00904 1.48 AC.
LOT 1 C.S.M. 299 VOL. 2, P. 34

(2) ANN MARIE OLSON DOC. NO. 3678123
TAX KEY NO. OCOT 0458–996
0.16 AC.
0.84 REM.
LOT 1 C.S.M. 299 VOL. 2, P. 34

EASEMENT TO WAUKESHA COUNTY R. 190, I. 143, DOC. NO. 960309

℄ C.T.H. "CW" ℄ BARTLAIN COURT
N 36° 36' 31" E

℄ BARTLAIN ROAD
S 10° 11' 11" W

JEFFERSON COUNTY
WAUKESHA COUNTY

ASHIPPUN RIVER

℄ AMBER LANE
N 15° 50' 20" E

WE ENERGIES R.238, I.996
V.15, P.462

AT&T

METHODIST
VOL.
TAX KEY

S 02° 36' 44" W 684.85'
(℄ OF CW TO SEC. COR.)

(S 02°36'44" W 2637.02')
(WEST LINE OF THE NW 1/4)
S 02° 36' 44" W 1891.11'

EP 53+25.93'

PC 13+60.67'
PT 51+15.11'
PC 50+47.92'
PI 19+11.12'
PT 24+61.57'

S 52°22'24" E

N 53°09'49" W 121.29'
N 67°27'49" W 148.96'
N 69°14'57" W 280.34'
S 68°53'24" E 213.43'
S 68°53'24" E 99.02'
S 63°36'37" W 197.99'
N 51.65'

STA. 15+39.24 C.T.H. "CW"
STA. 50+00.00 AMBER LN.

BEGIN RELOCATION ORDER
PROJECT I.D. 2949–00–00
STA. 13+05.41
Y = 222028.927
X = 601799.000
684.16' SOUTH OF AND 31.20' WEST OF
THE NORTHWEST CORNER OF
SEC. 7, T 8 N, R 17 E

A CONCRETE MON. WITH A SEWRPC BRASS CAP.
Y = 220,078.810
X = 601,710.016

SLOPE INTERCEPT

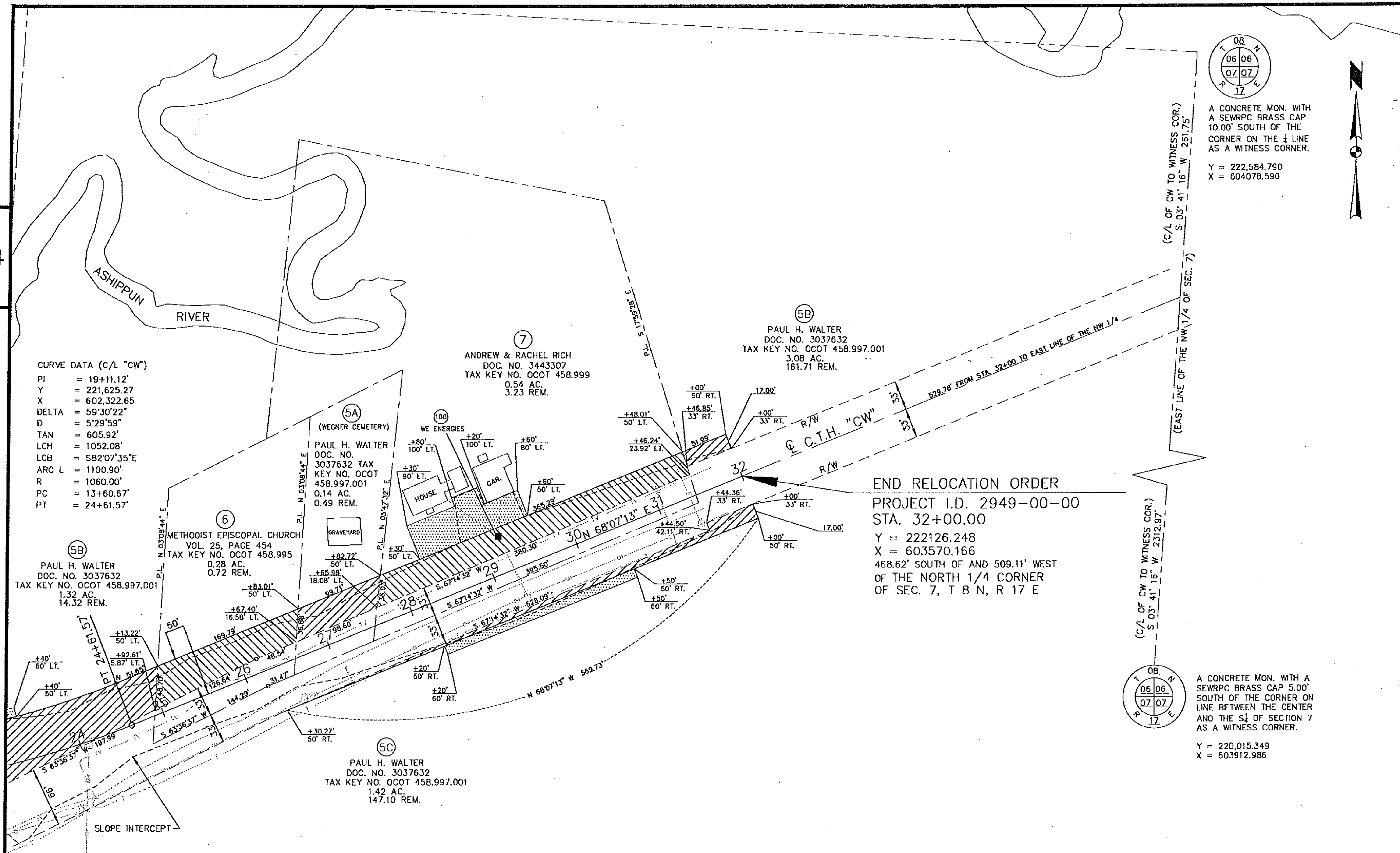
IXONIA

OCONOMOWOC

REVISION DATE	DATE: 04/28/2014	SCALE, FEET 0 50 100	HWY: C.T.H."CW"	CONSTRUCTION PROJECT NO.: 3947–05–71/2949–00–70	
			COUNTY: WAUKESHA	R/W PROJECT NO.: 2949–00–00	PLAT SHEET NO.: 4.4 35

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\ROW PLAT\ROWBASE–CW–COUNTY COORD.DWG

PLOT BY : MAYER, JASON



REVISION DATE	DATE: 04/28/2014	SCALE, FEET 0 50 100	HWY: C.T.H."CW"	CONSTRUCTION PROJECT NO.: 3947-05-71/2949-00-70	
			COUNTY: WAUKESHA	R/W PROJECT NO.: 2949-00-00	PLAT SHEET NO.: 4.5

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\ROW PLAT\ROWBASE-CW-COUNTY COORD.DWG

PLOT BY : MAYER, JASON

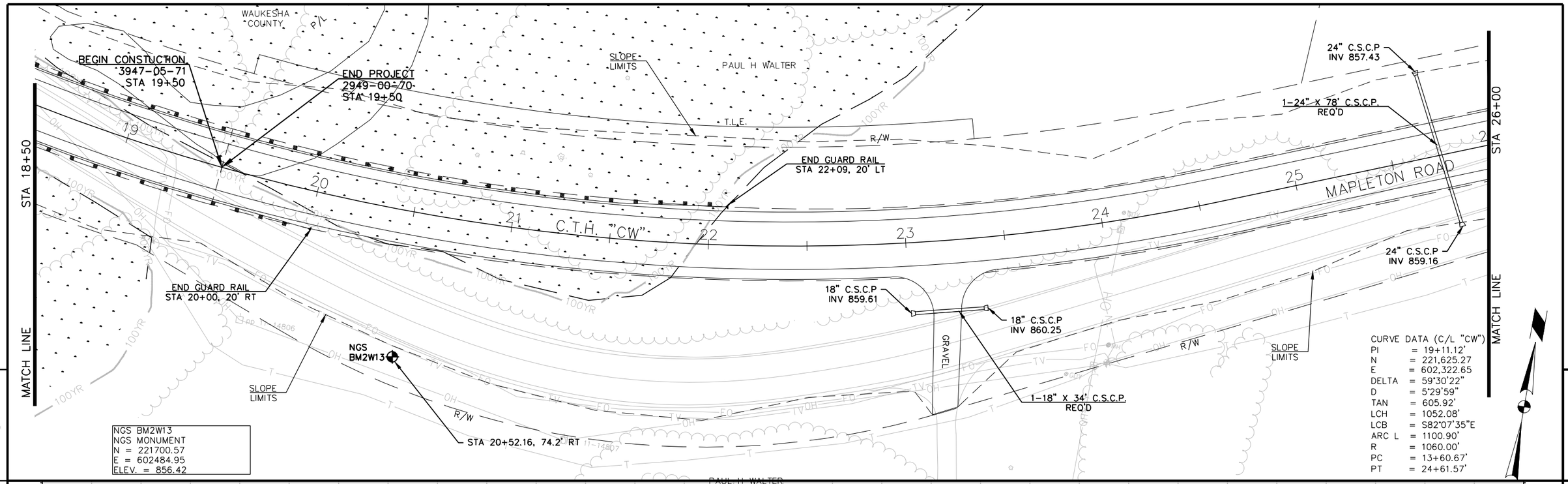
CURVE DATA (C/L "CW")
PI = 19+11.12'
N = 221,625.27
E = 602,322.65
DELTA = 59°30'22"
D = 5°29'59"
TAN = 605.92'
LCH = 1052.08'
LCB = S82°07'35"E
ARC L = 1100.90'
R = 1060.00'
PC = 13+60.67'
PT = 24+61.57'

STA 16+62
STR. NO. B-67-346 REQ'D
1-SPAN CONCRETE SLAB
SEE DRAWINGS
REMOVE EXISTING STRUCTURE B-67-0046
1-SPAN CONCRETE SLAB.

11+00	861.2	
	860.7	
	860.1	
	859.5	
12+00	858.8	858.77
	858.1	858.06
	857.3	857.35
	856.6	856.64
13+00	855.7	855.93
	855.1	855.27
	854.2	854.65
	853.7	854.09
14+00	853.3	853.59
	852.9	853.14
	852.5	852.74
	852.1	852.40
15+00	851.8	852.11
	851.5	851.87
	851.2	851.69
	850.8	851.57
16+00	850.6	851.49
	850.5	851.48
	850.6	851.51
	850.6	851.60
17+00	850.6	851.74
	850.5	851.94
	850.7	852.19
	850.8	852.50
18+00	851.0	852.86
	851.2	853.28
18+50	851.4	853.74

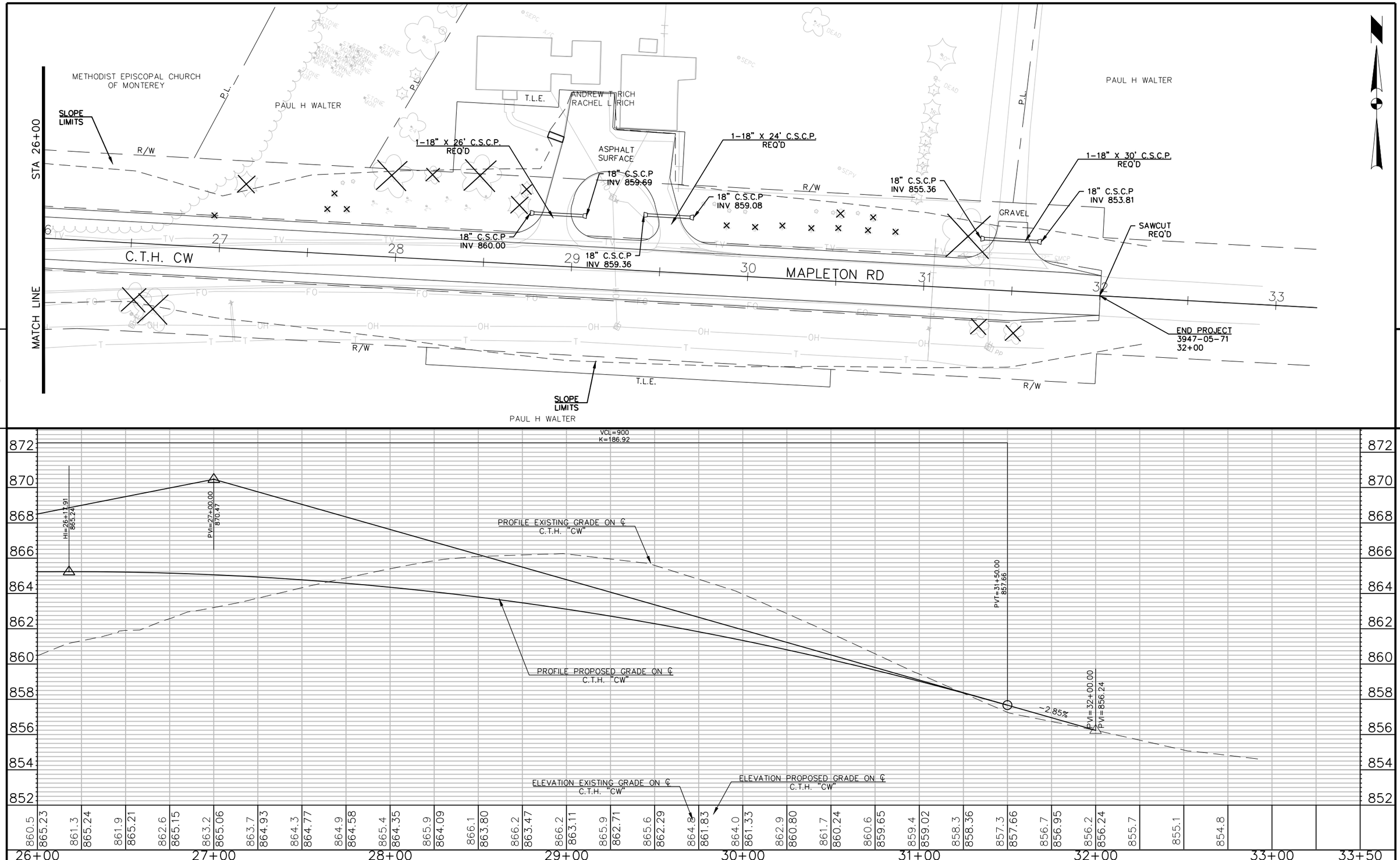
PROJECT NO: 3947-05-71/2949-00-70 | **HWY:** C.T.H. "CW" | **COUNTY:** WAUKESHA | PLAN AND PROFILE STA 11+00 - 18+50 | **SHEET** 37 | **E**

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\PLAN AND PROFILE.DWG PLOT DATE : 10/22/2014 2:12 PM PLOT BY : SOEHNER, JIM PLOT SCALE :1"=50'



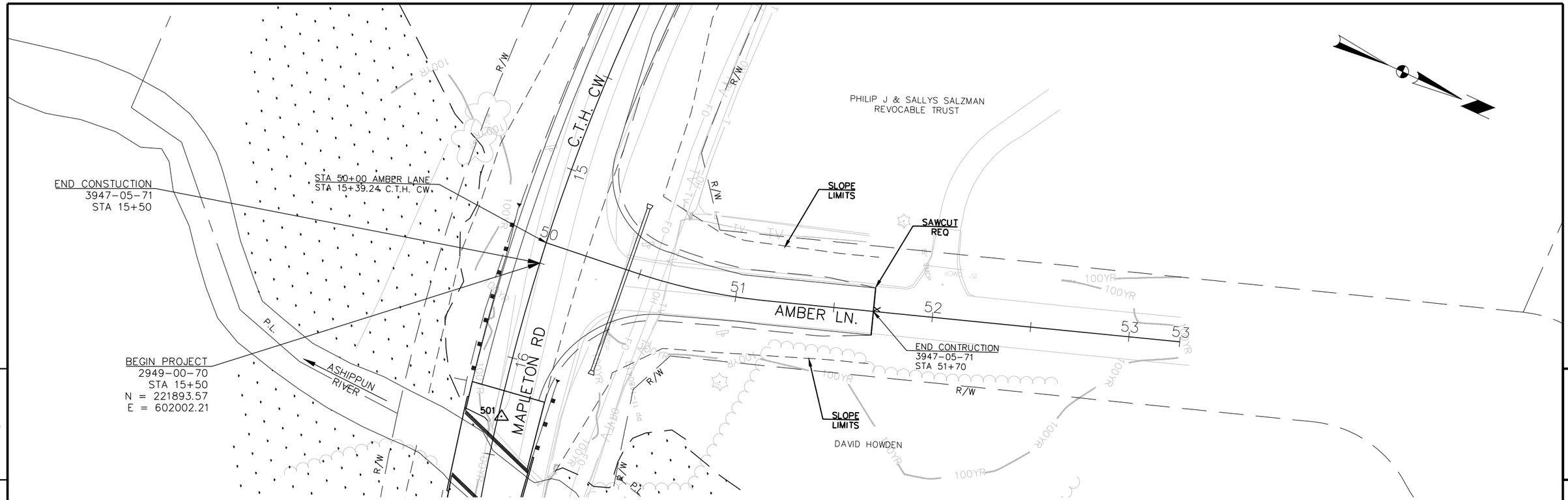
PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	PLAN AND PROFILE STA 18+50 - 26+00	SHEET 38	E

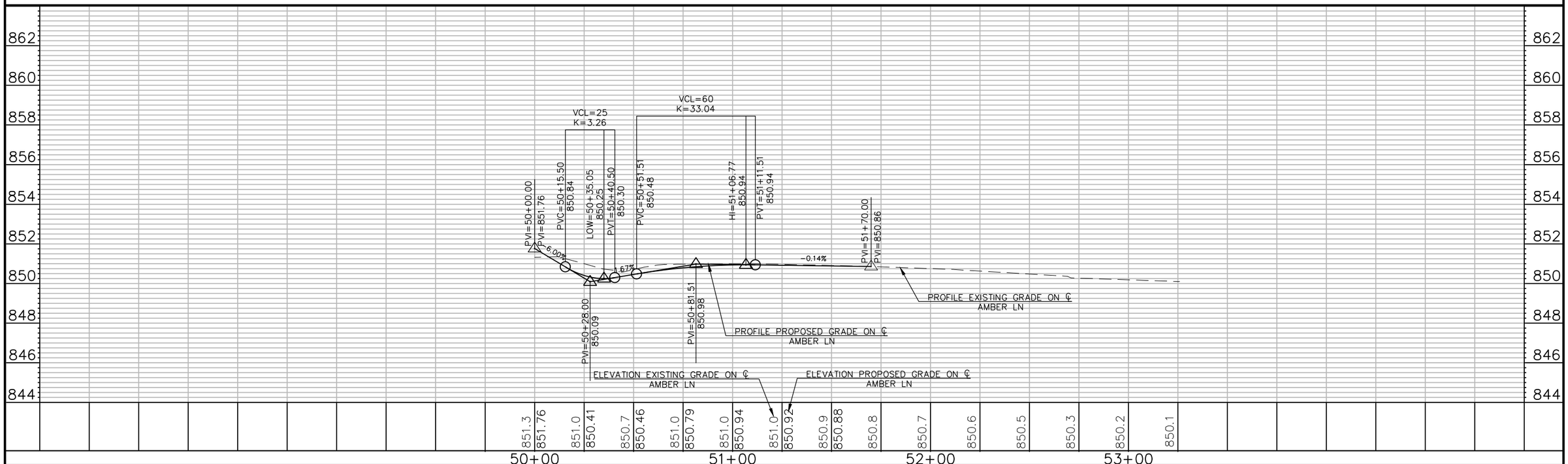
FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\PLAN AND PROFILE.DWG PLOT DATE : 10/22/2014 2:12 PM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=XX'



PROJECT NO: 3947-05-71/2949-00-70	**HWY:** C.T.H. "CW"	**COUNTY: WAUKESHA**	PLAN AND PROFILE STA 25+00 - 32+01.22	**SHEET** 39 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\PLAN AND PROFILE.DWG PLOT DATE : 10/22/2014 2:12 PM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'



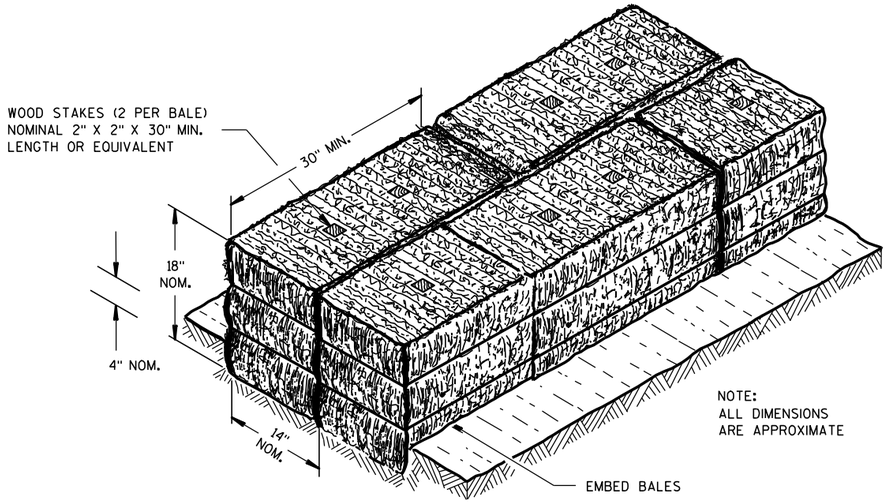


PROJECT NO: 3947-05-71/2949-00-70	**HWY:** C.T.H. "CW"	**COUNTY: WAUKESHA**	PLAN AND PROFILE AMBER LN STA 50+00 - 53+24.62	**SHEET** 40 E

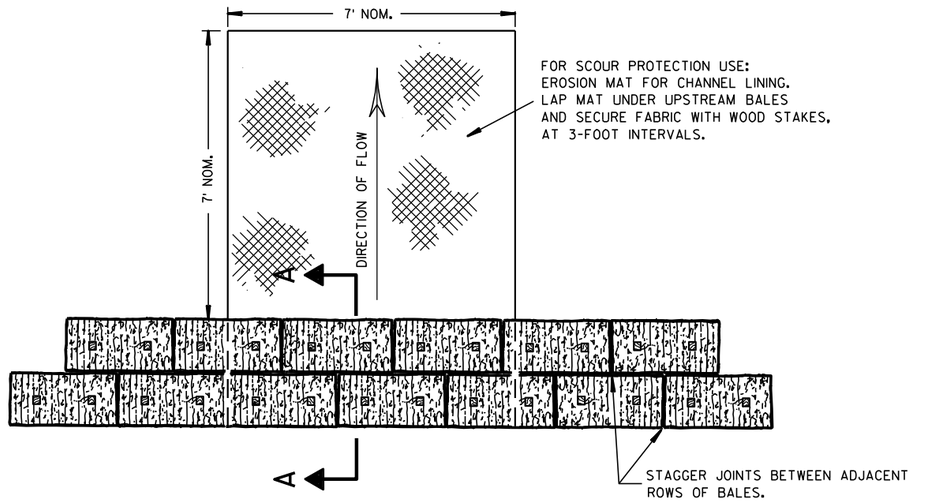
FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\PLAN AND PROFILE.DWG PLOT DATE : 10/22/2014 2:12 PM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'

Standard Detail Drawing List

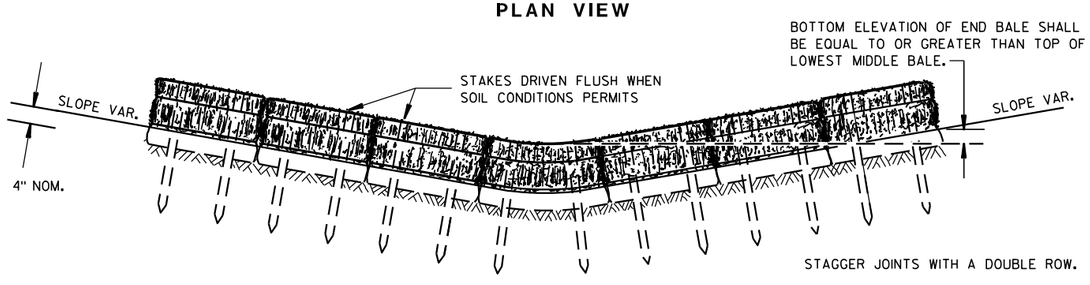
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
12A03-10	NAME PLATE (STRUCTURES)
13B02-07A	CONCRETE BRIDGE APPROACH
13B02-07B	STRUCTURAL APPROACH SLAB AND CONCRETE BRIDGE APPROACH
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-07	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING



SECTION A-A



PLAN VIEW



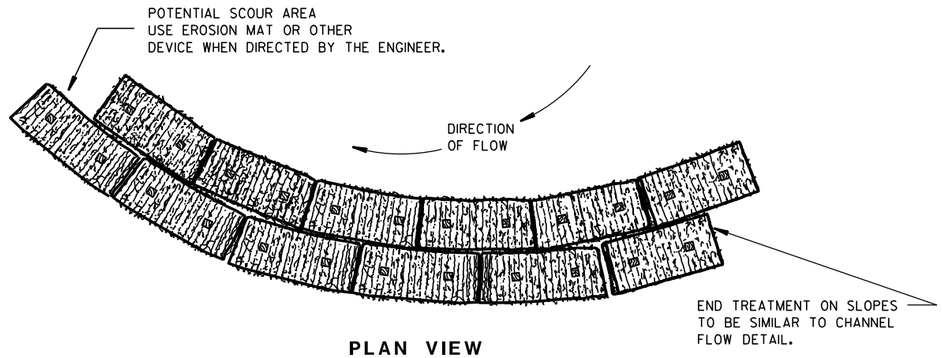
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

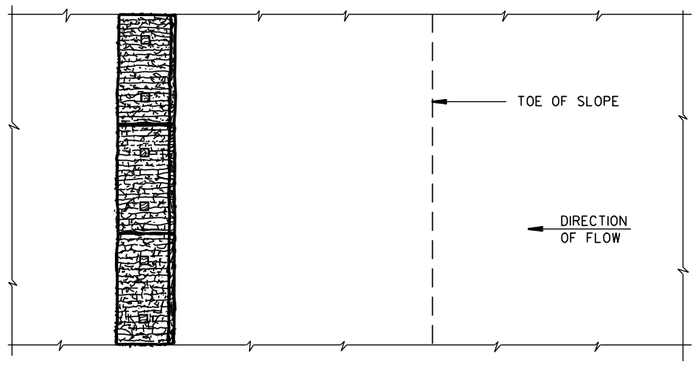
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

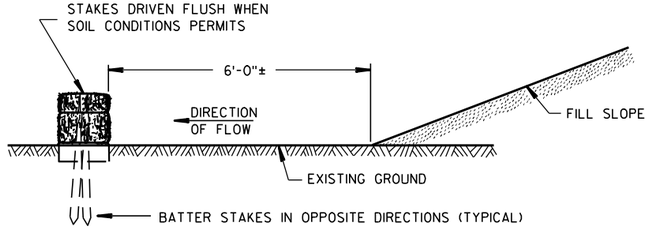


PLAN VIEW

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

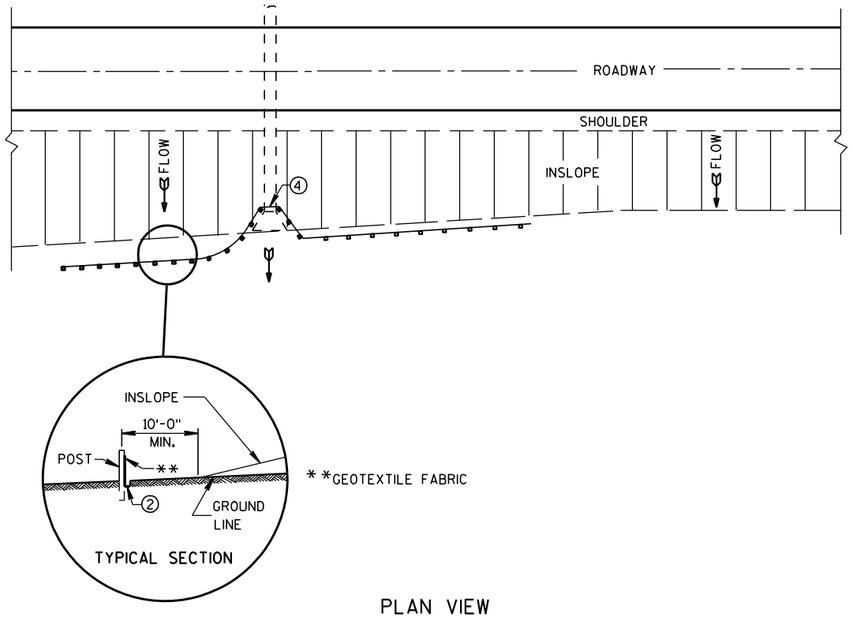
FHWA

6

S.D.D. 8 E 8-3

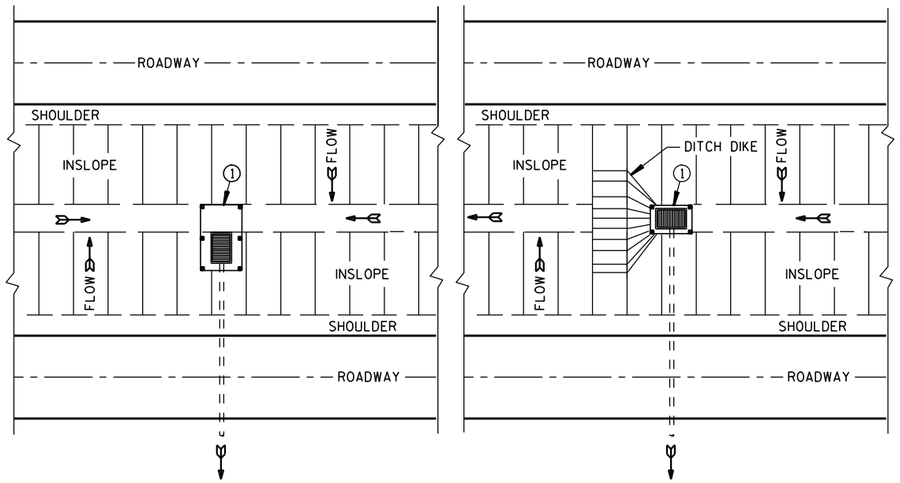
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



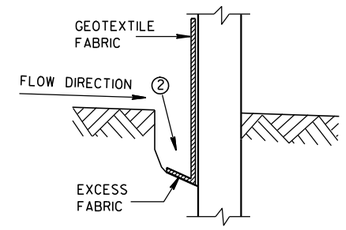
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

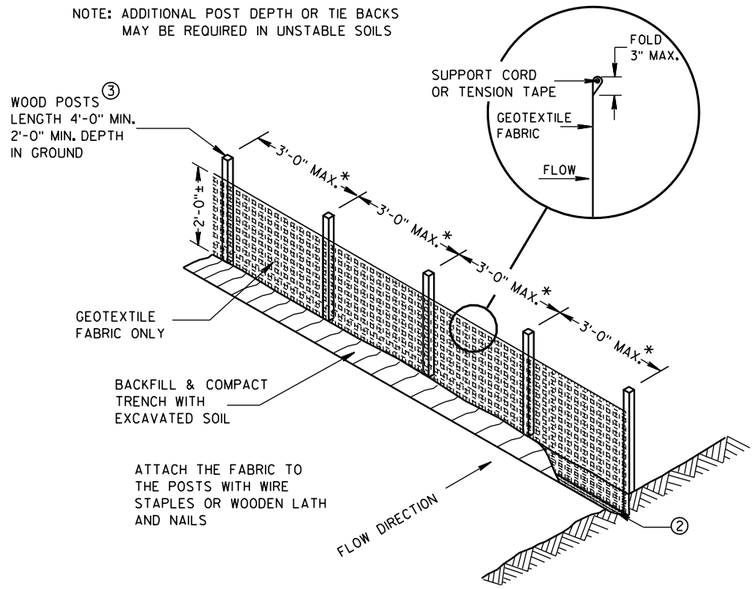
GENERAL NOTES

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

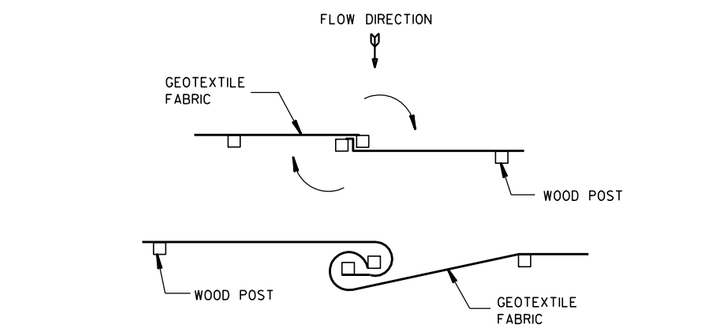
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL 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.



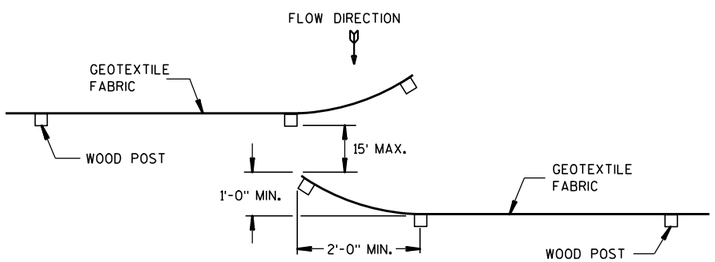
TRENCH DETAIL



SILT FENCE

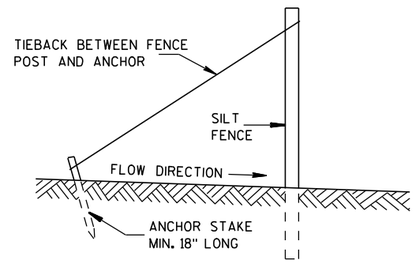


TWIST METHOD



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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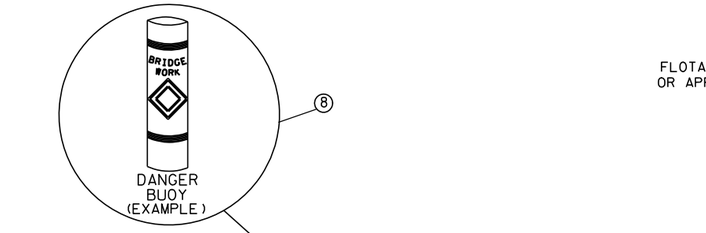
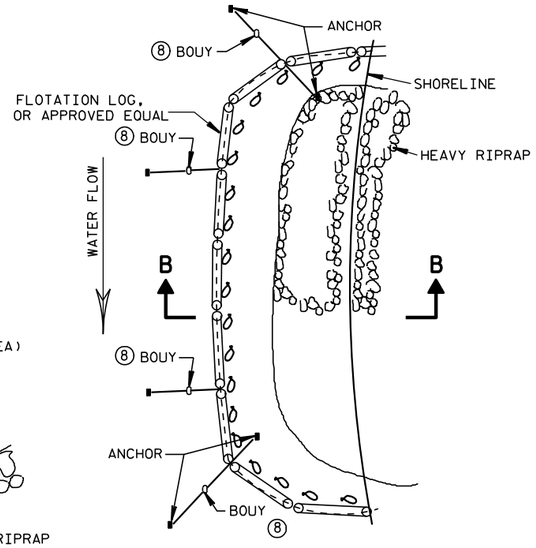
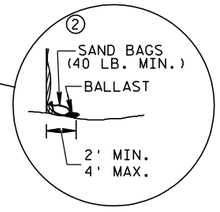
S.D.D. 8 E 9-6

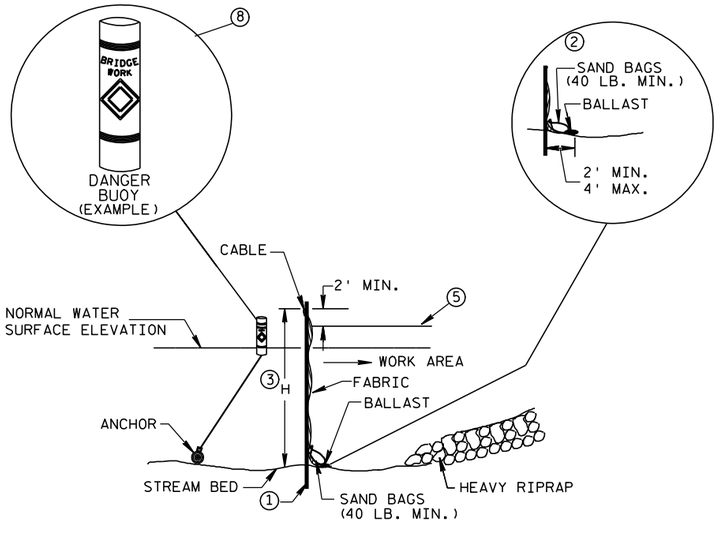


SECTION B-B

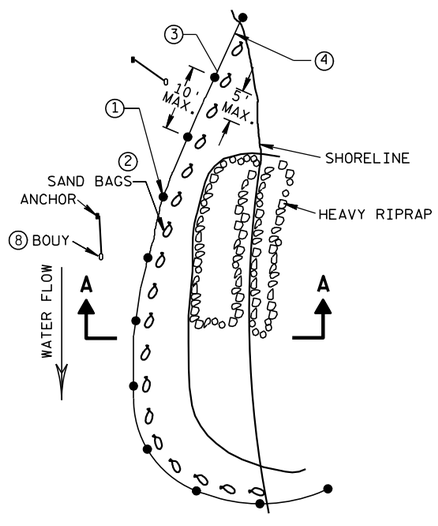




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

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.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

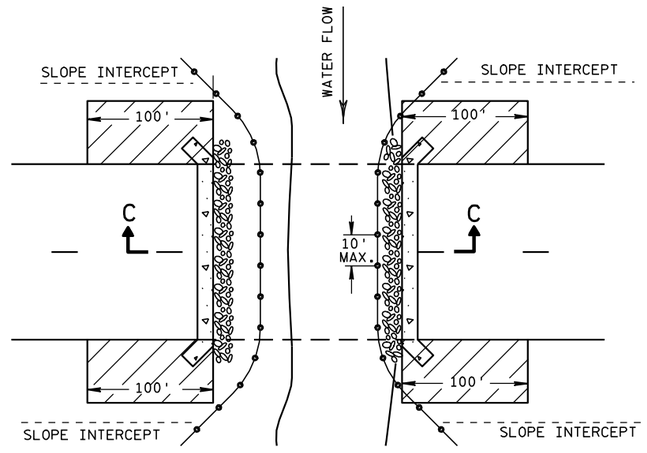
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

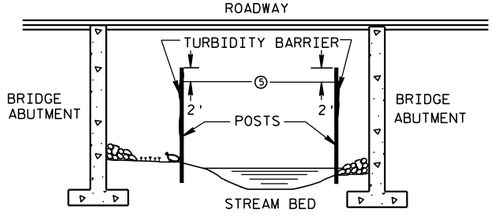
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 8 E 11-2

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S.D.D. 8 E 11-2

METAL APRON ENDWALLS

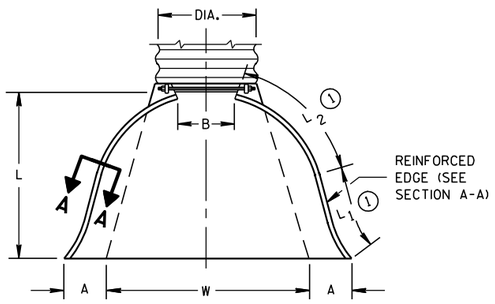
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	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

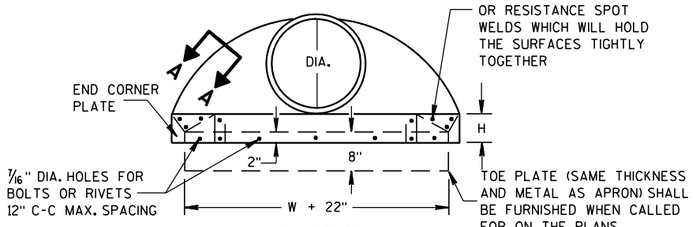
REINFORCED CONCRETE APRON ENDWALLS

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

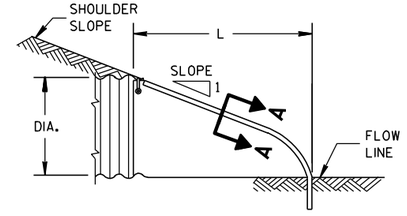
*MINIMUM
**MAXIMUM



PLAN VIEW

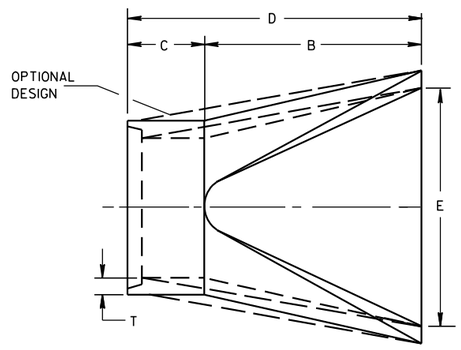


END VIEW

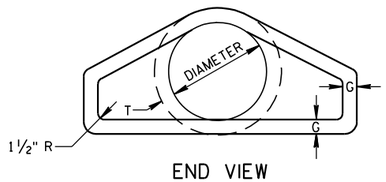


SIDE ELEVATION

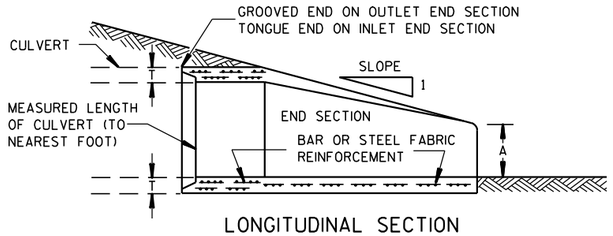
METAL ENDWALLS



PLAN

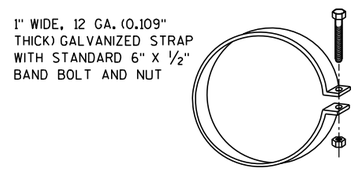


END VIEW



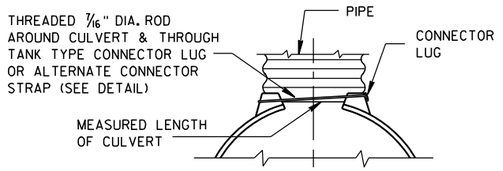
LONGITUDINAL SECTION

CONCRETE ENDWALLS

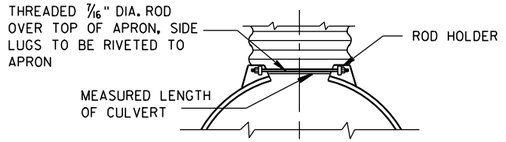


ALTERNATE FOR TYPE 1 CONNECTION

END SECTION CONNECTOR STRAP

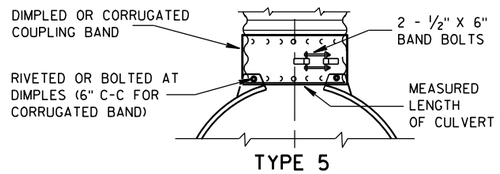


TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

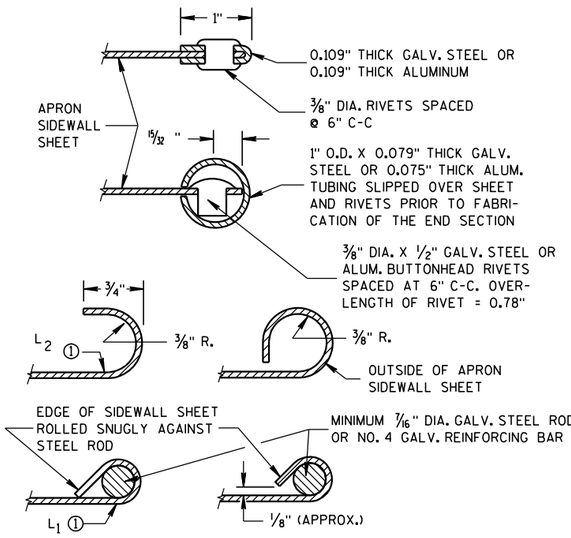
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

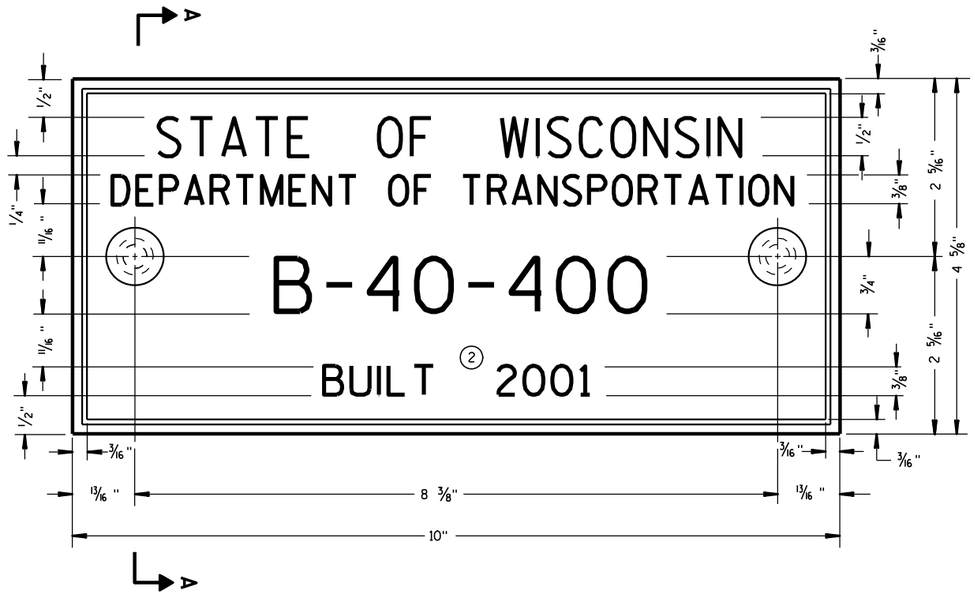
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)

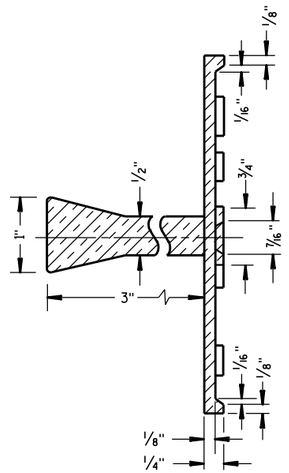
GENERAL NOTES

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.

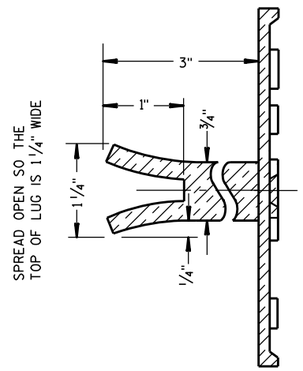
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

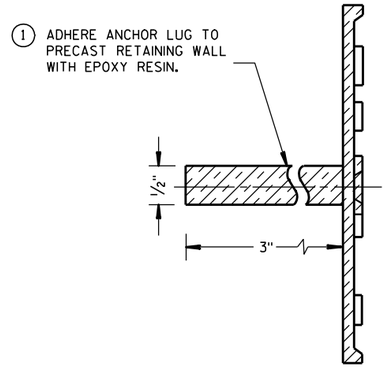
COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION MULTI-UNIT STRUCTURES



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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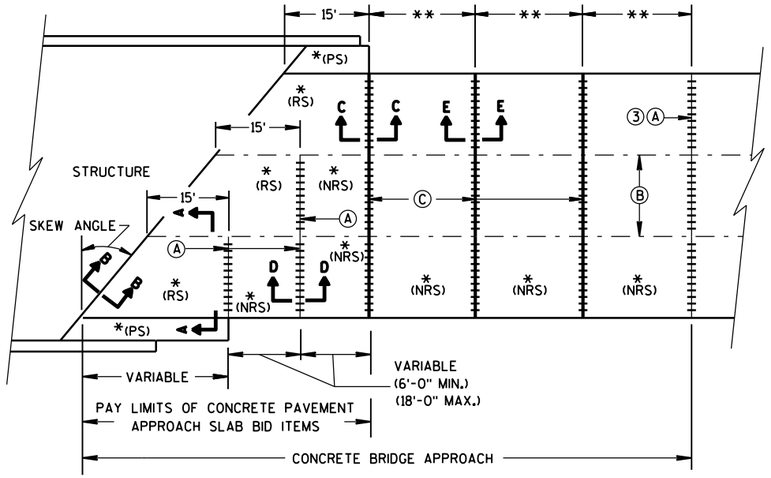
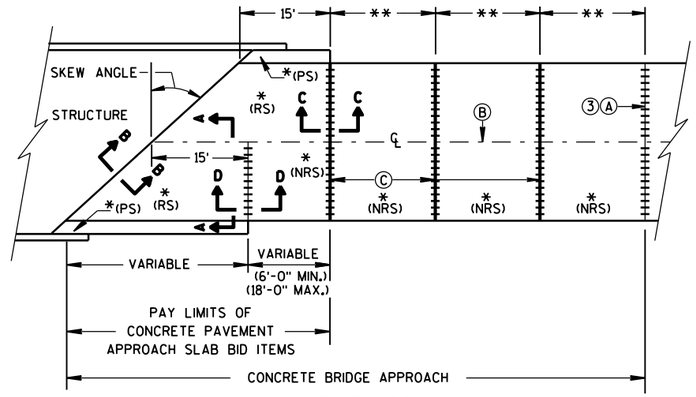
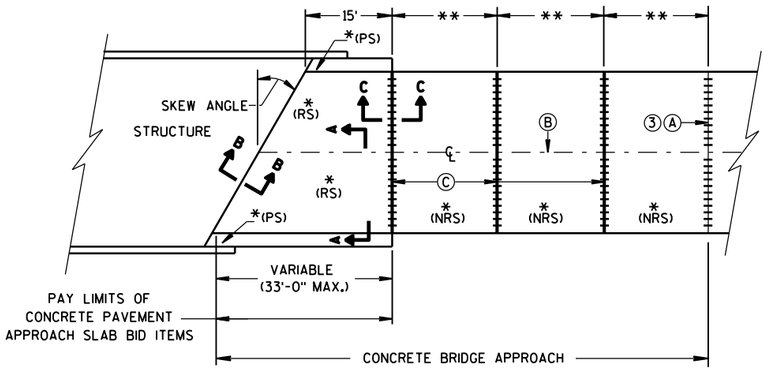
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



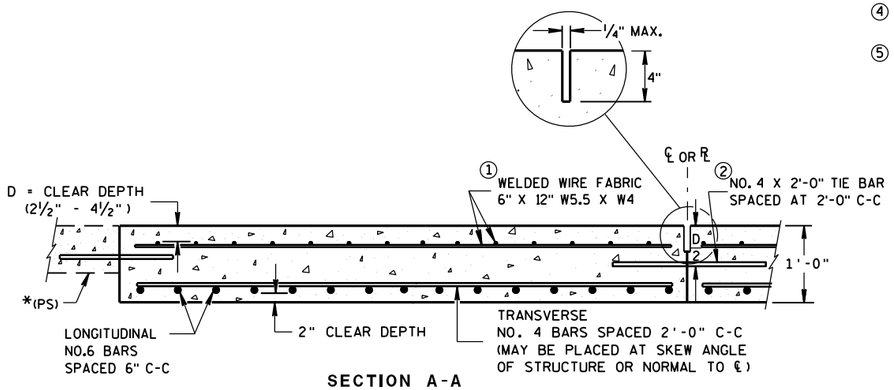
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

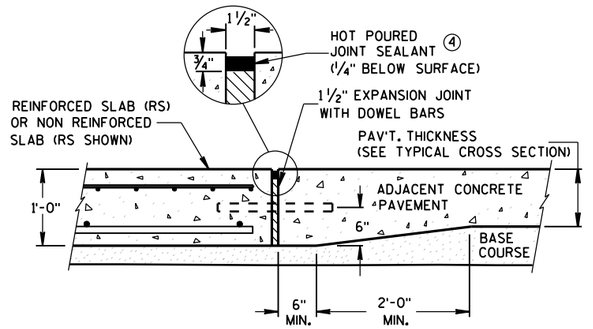
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN (SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

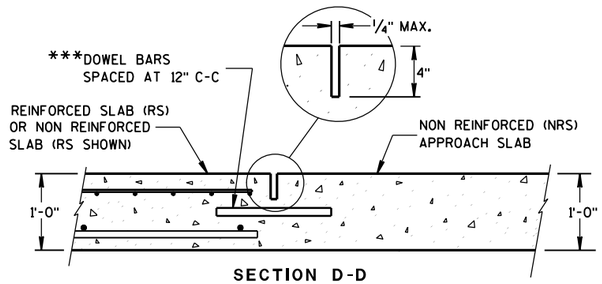
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) STANDARD LONGITUDINAL JOINT AND TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



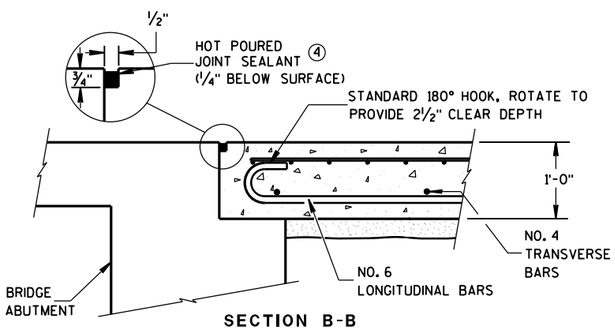
SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

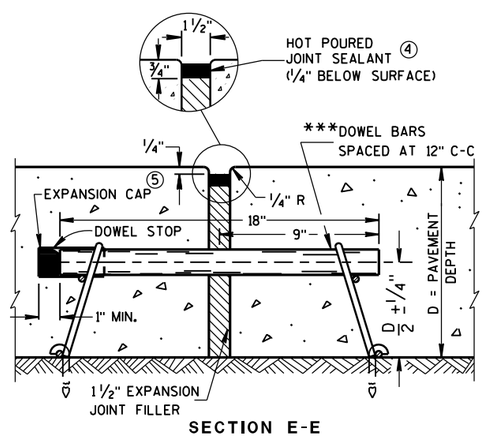
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

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
EER
FHWA

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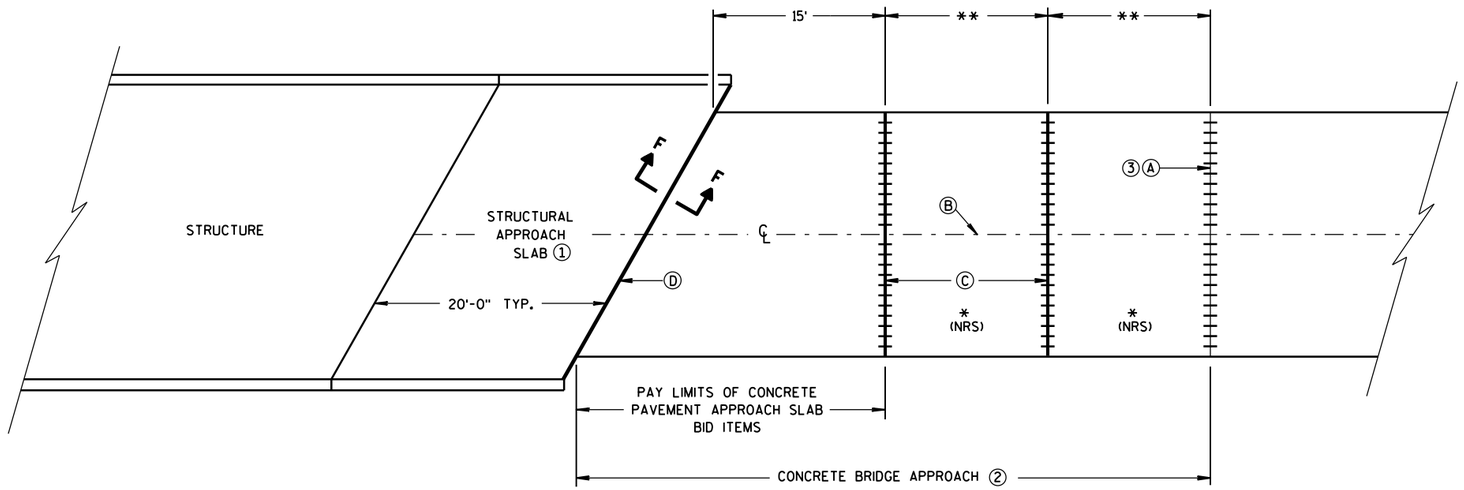
S.D.D. 13 B 2-7a



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

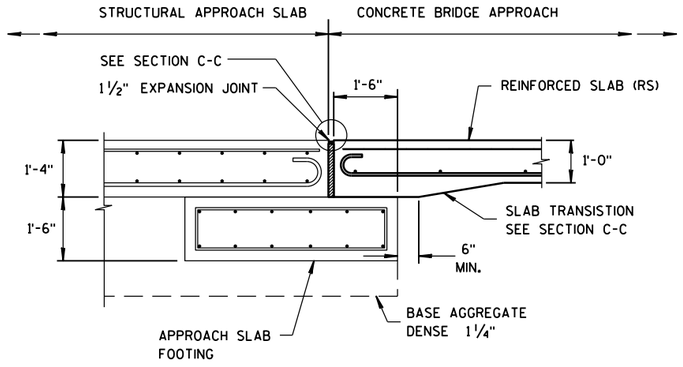
**STANDARD TRANSVERSE JOINT SPACING (SEE SDD 13C4, SDD 13C11, & SDD 13C13)

Ⓐ 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
EER
FHWA

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

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.

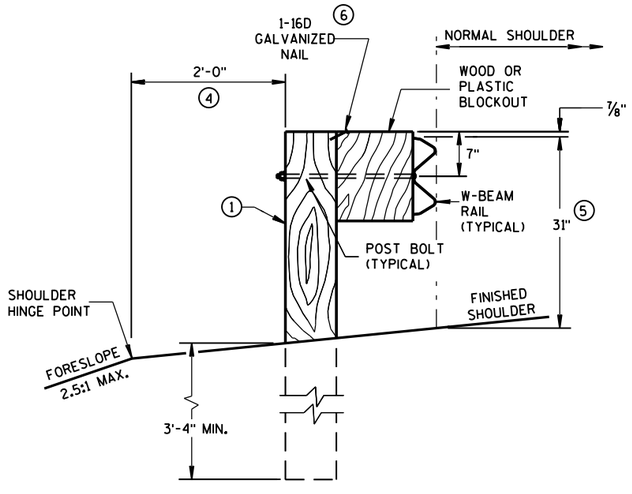
(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

(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).

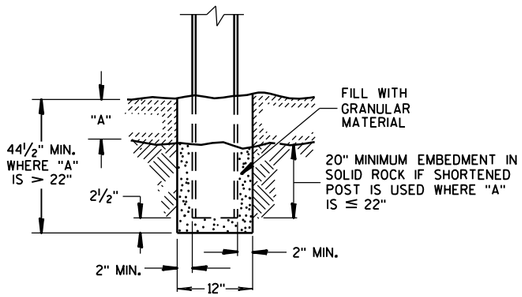
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

(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.



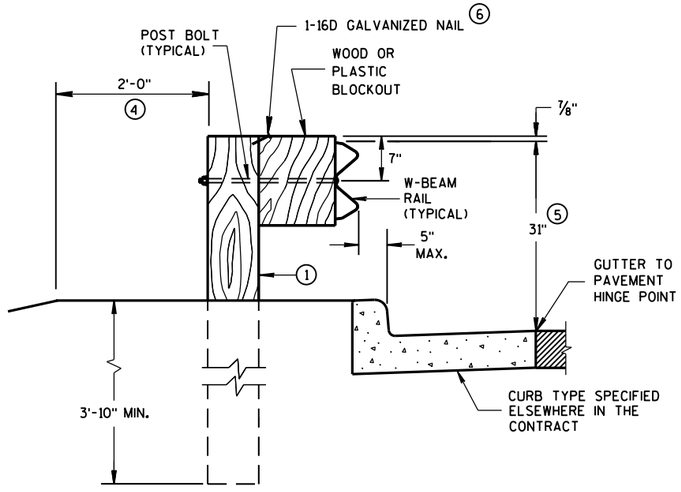
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



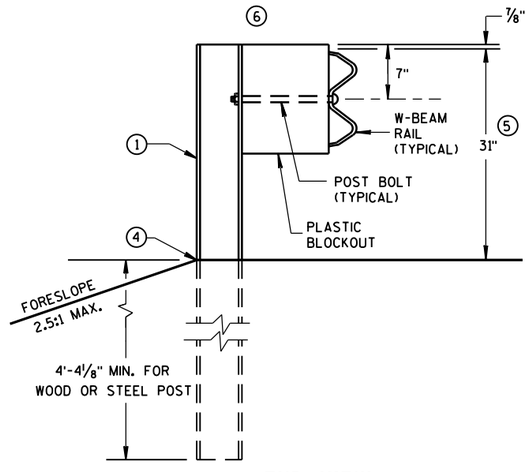
END VIEW

SETTING STEEL OR WOOD POST IN ROCK (3)



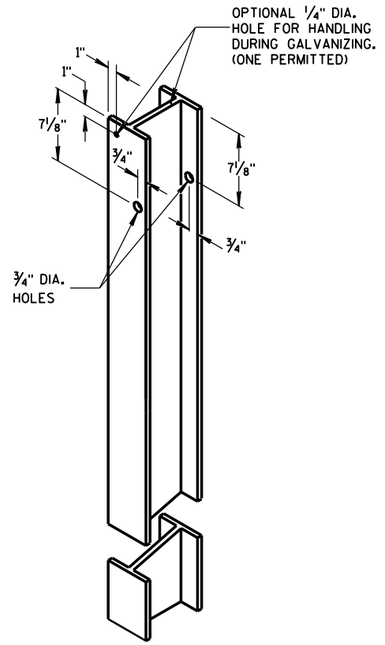
END VIEW

LOCATED ALONG A CURBED ROADWAY

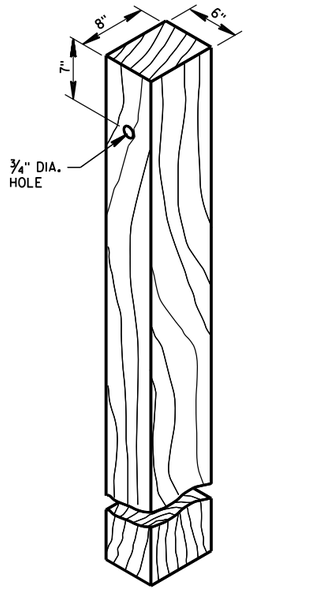


END VIEW

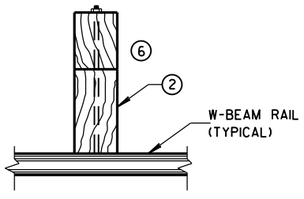
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



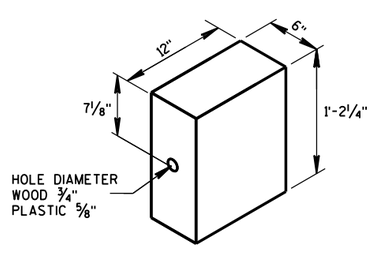
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



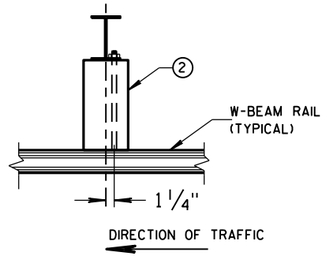
WOOD POST
(6" X 8") NOMINAL (1)



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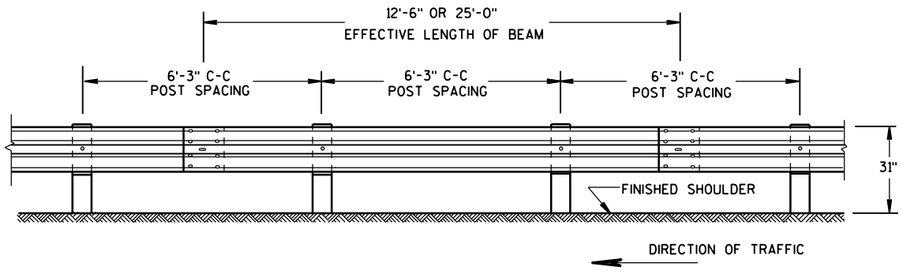
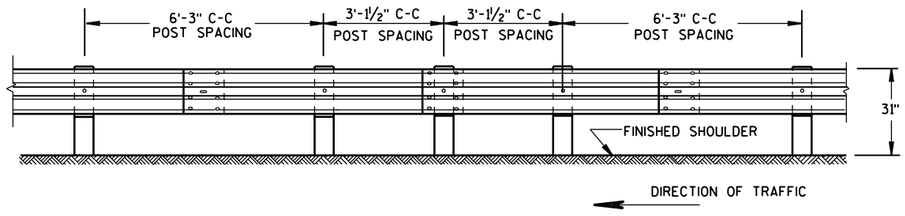
S.D.D. 14 B 42-3a



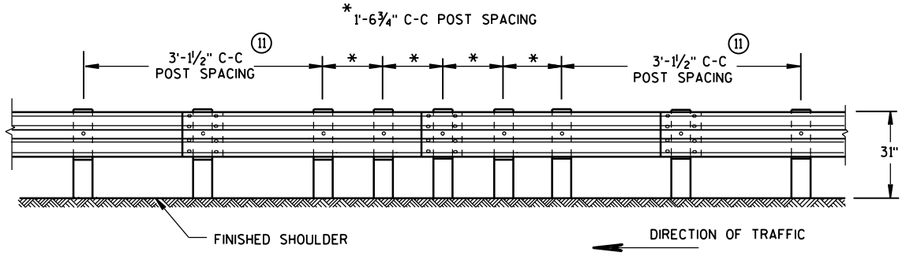
FRONT VIEW

POST SPACING STANDARD INSTALLATION



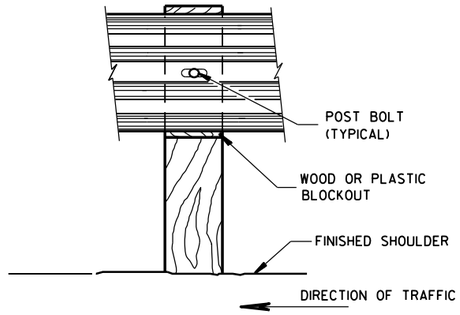
FRONT VIEW

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

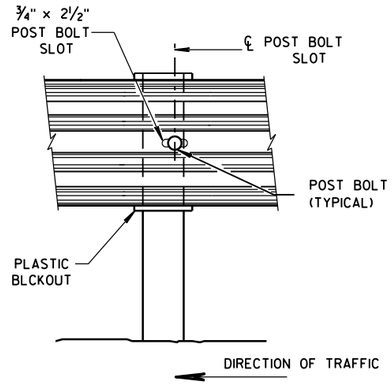


FRONT VIEW

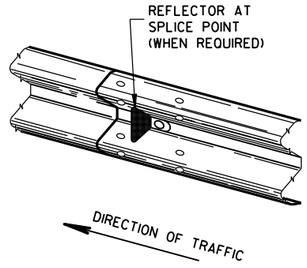
QUARTER POST SPACING (QS)

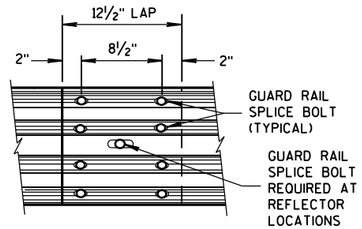


FRONT VIEW AT WOOD POST



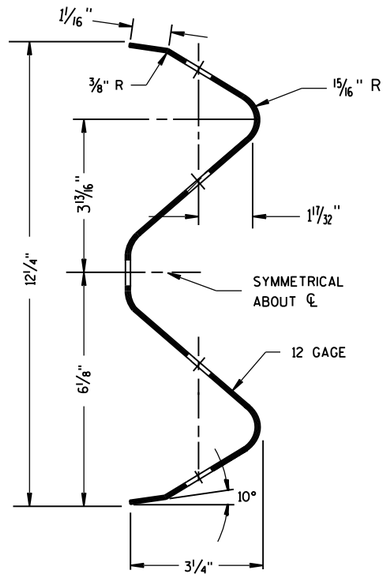
FRONT VIEW AT STEEL POST



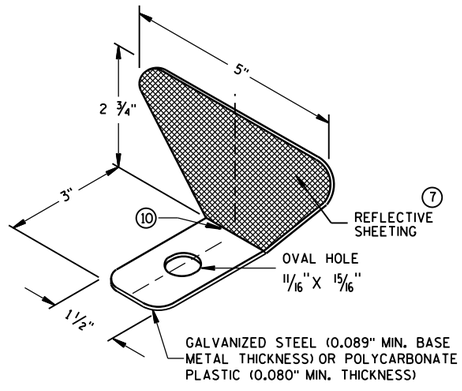


FRONT VIEW

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' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 ⑨ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2 ⑩	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO 50

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

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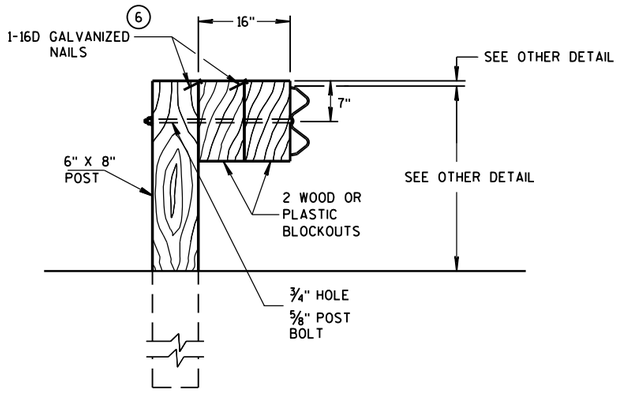
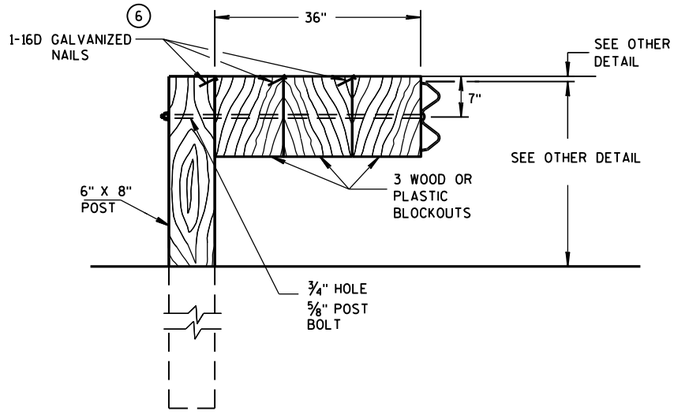


DETAIL FOR 16" BLOCKOUT DEPTH

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.

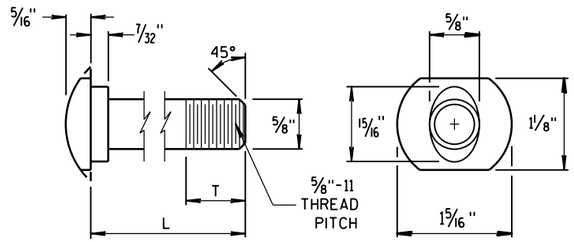


DETAIL FOR 36" BLOCKOUT DEPTH

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.

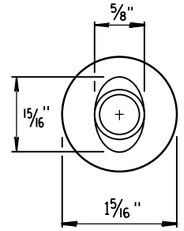
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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.

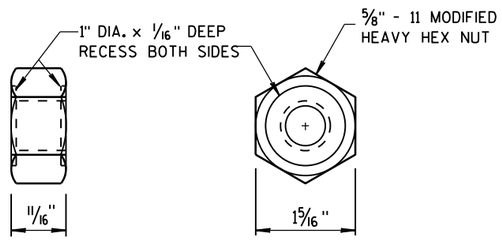


POST BOLT TABLE

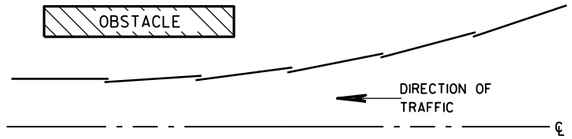
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

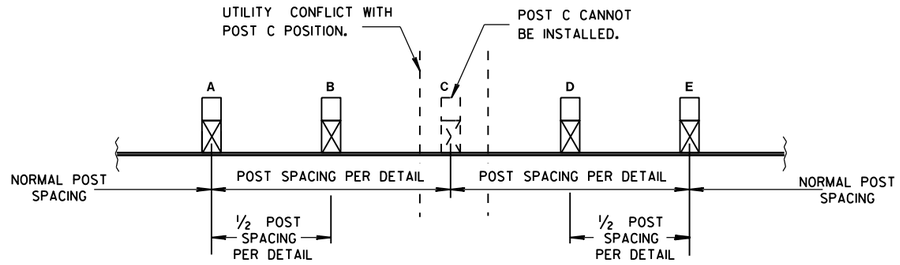


POST BOLT AND RECESS NUT

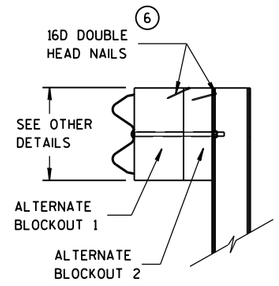


PLAN VIEW

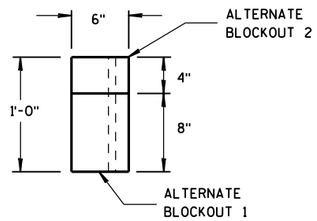
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

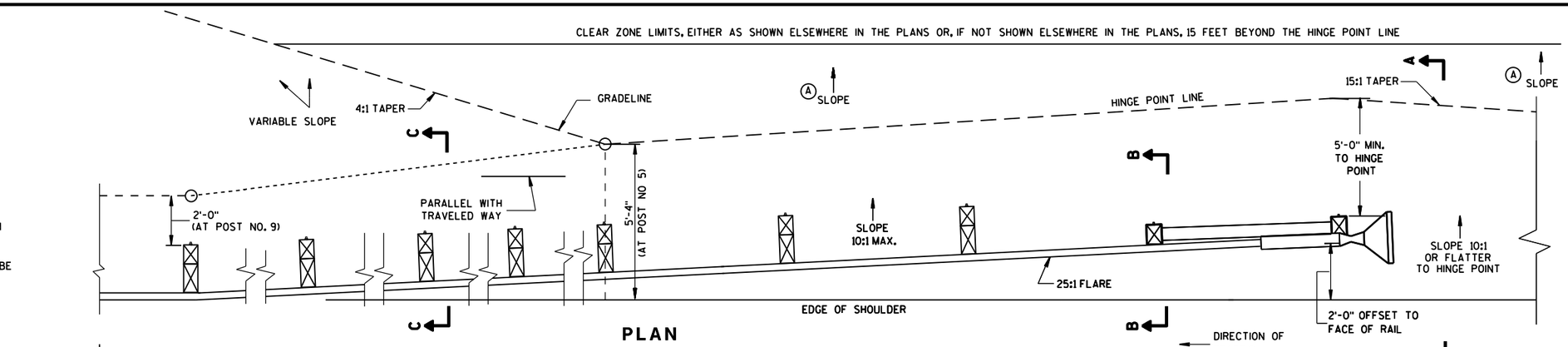
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

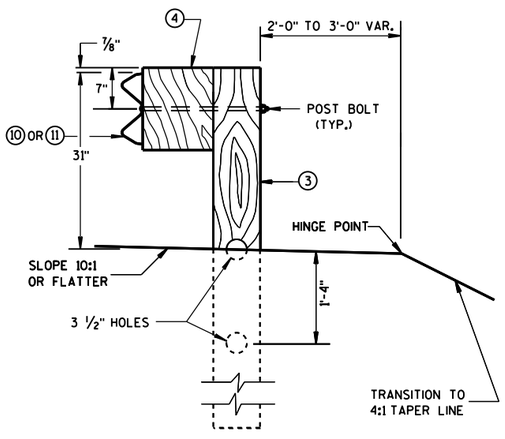
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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.

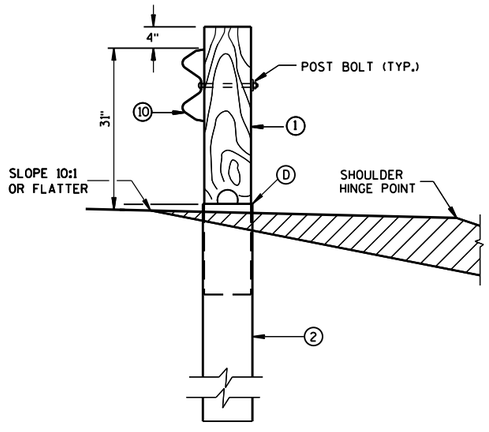
THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



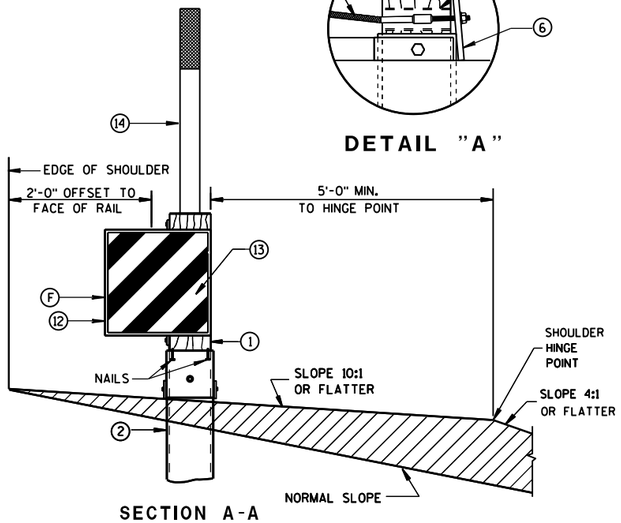
ELEVATION



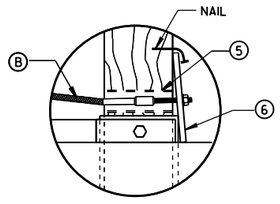
SECTION C-C
TYPICAL AT POST NOS. 3-9



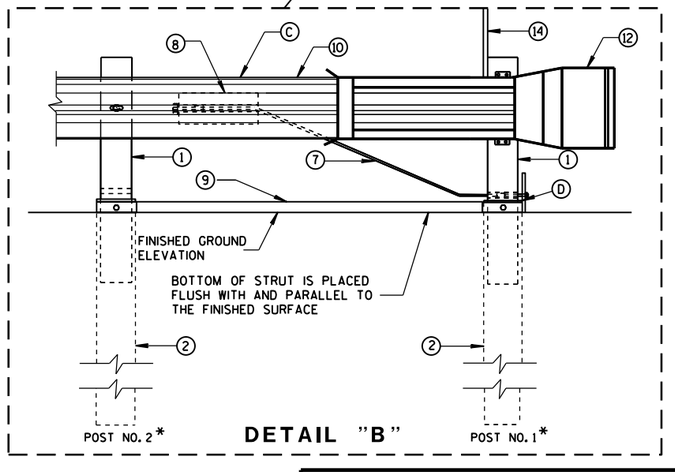
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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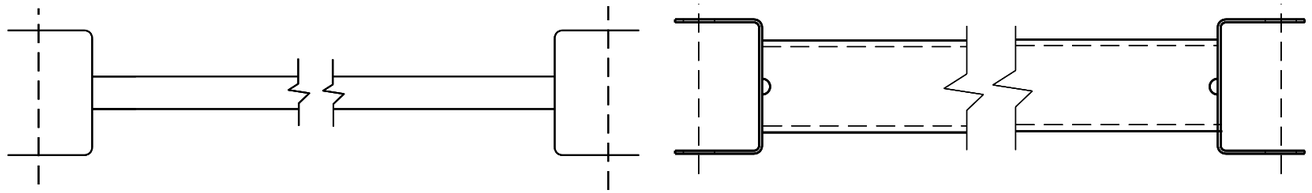
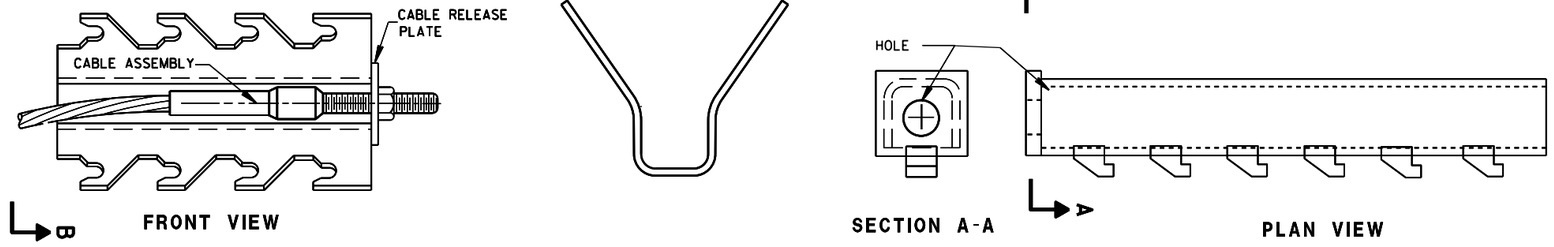


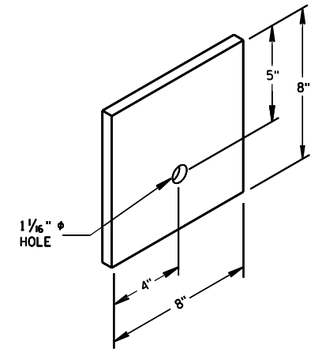
GENERIC GROUND STRUT (9) (H)

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)



GENERIC ANCHOR CABLE BOX (8) (H)



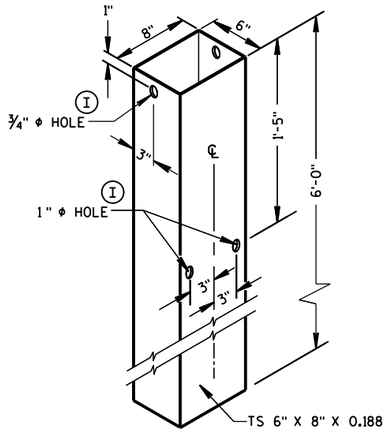
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

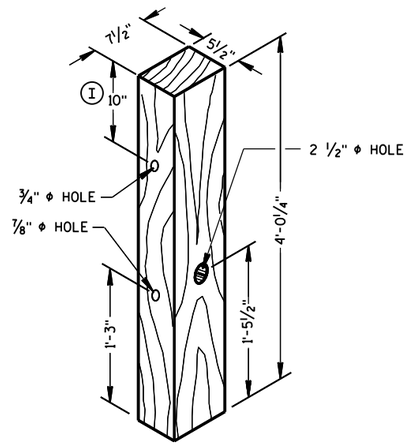
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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

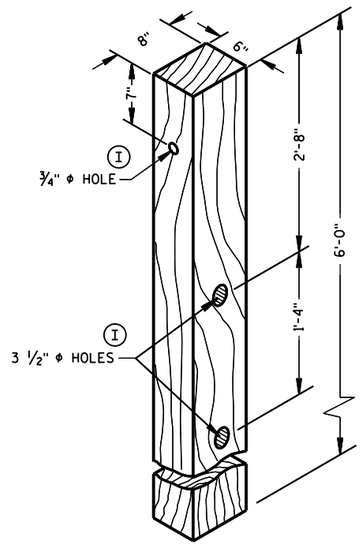


FOUNDATION TUBE (2)



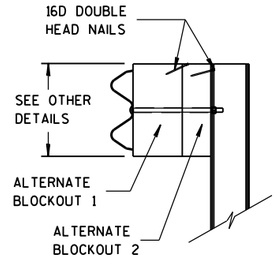
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

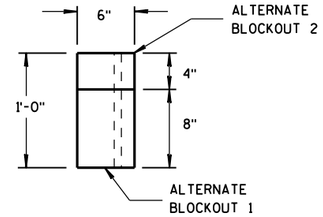


POSTS NUMBER 3-9

WOOD CRT POST (3)

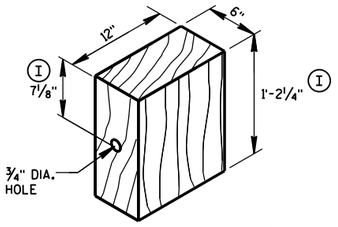


SIDE VIEW



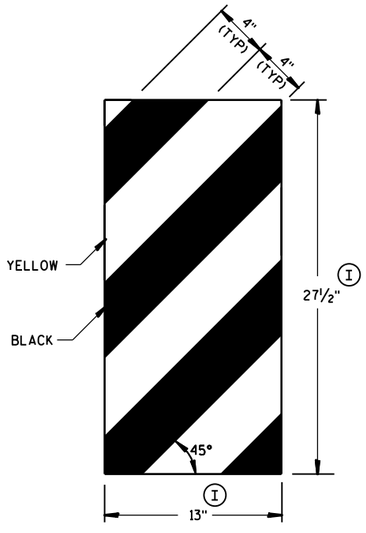
TOP VIEW

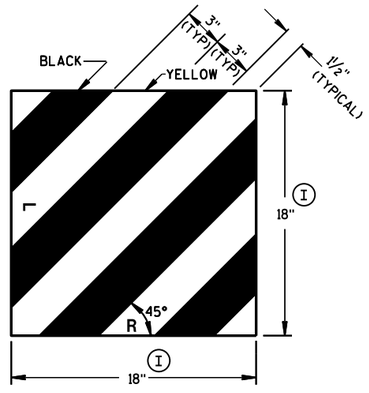
ALTERNATE WOOD BLOCKOUT DETAIL



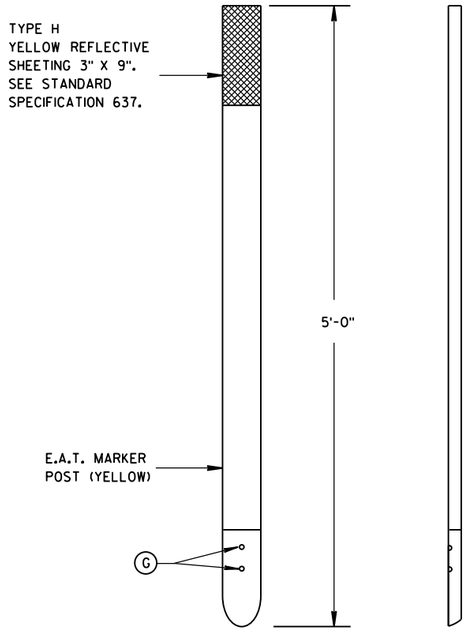
WOOD BLOCKOUT (4)

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





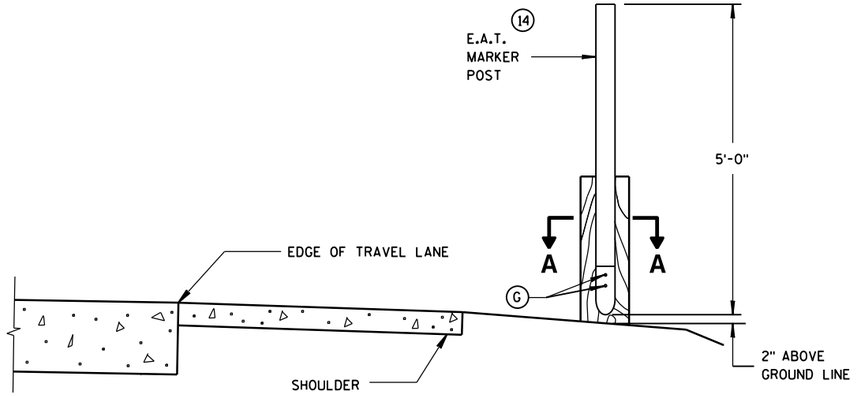
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

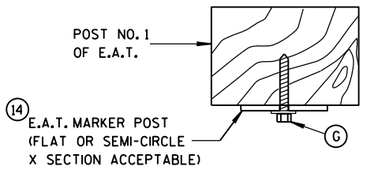
SIDE VIEW

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

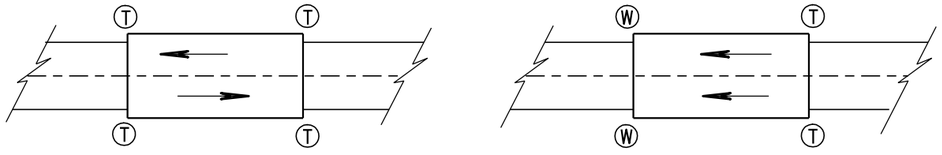
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

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

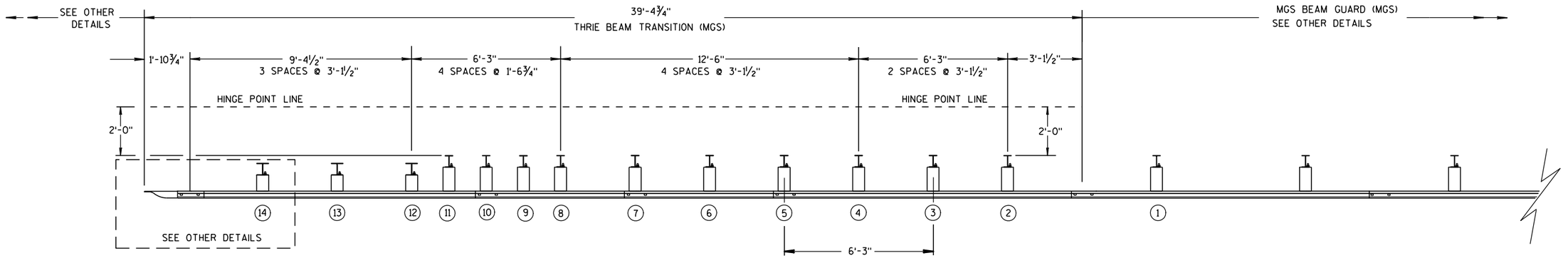
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

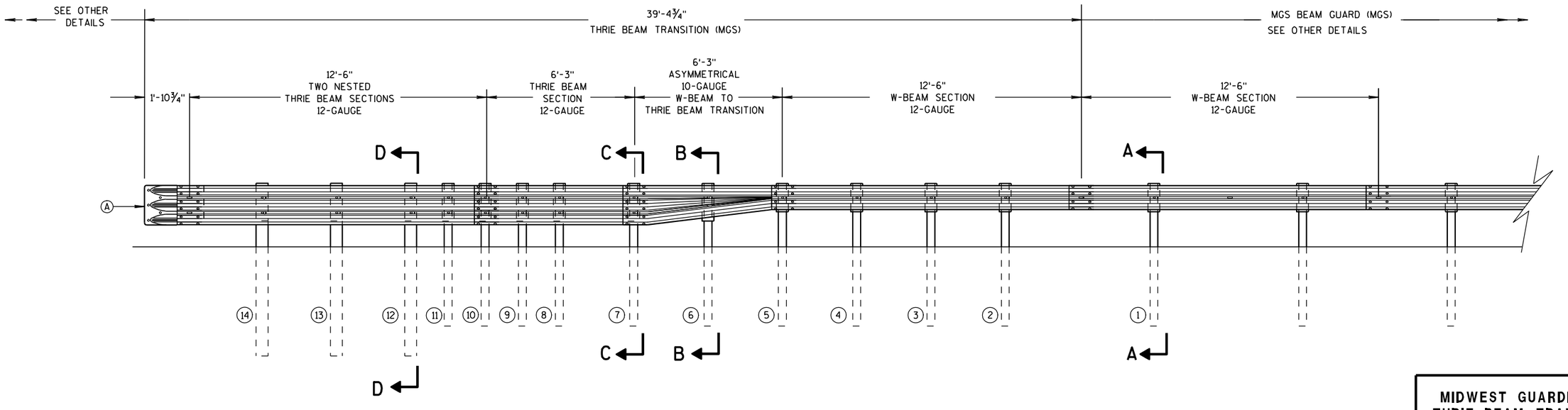
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

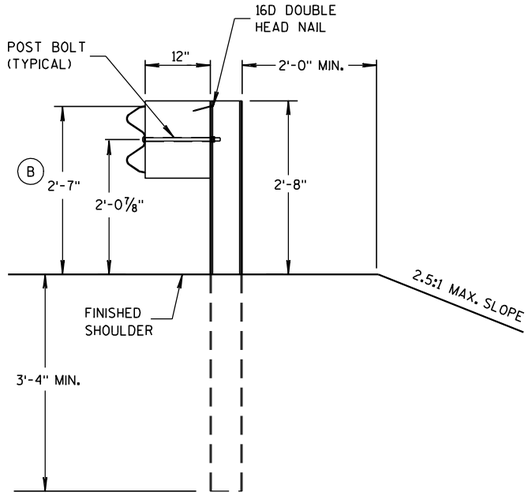
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 45-3a

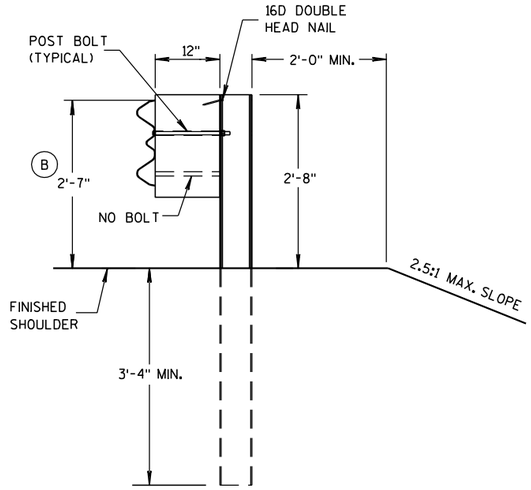
GENERAL NOTES

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



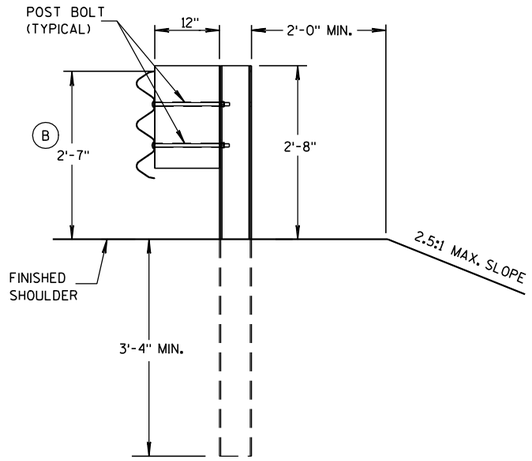
SECTION A-A

POSTS 1-5



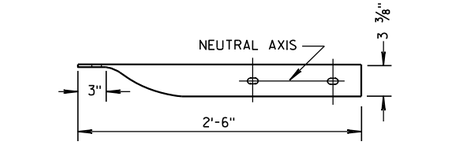
SECTION B-B

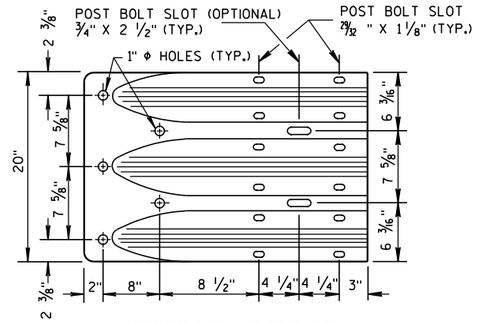
POST 6



SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR

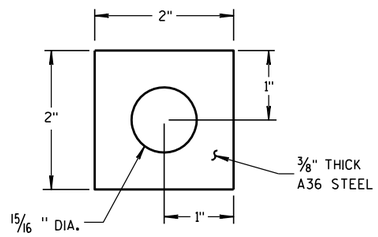
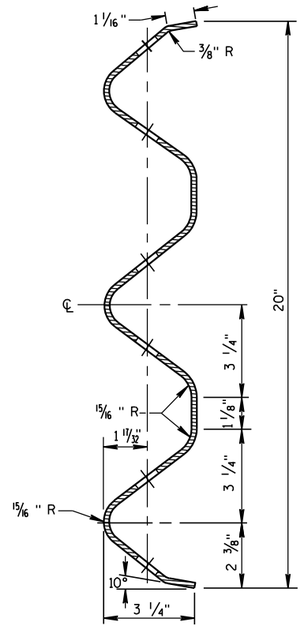
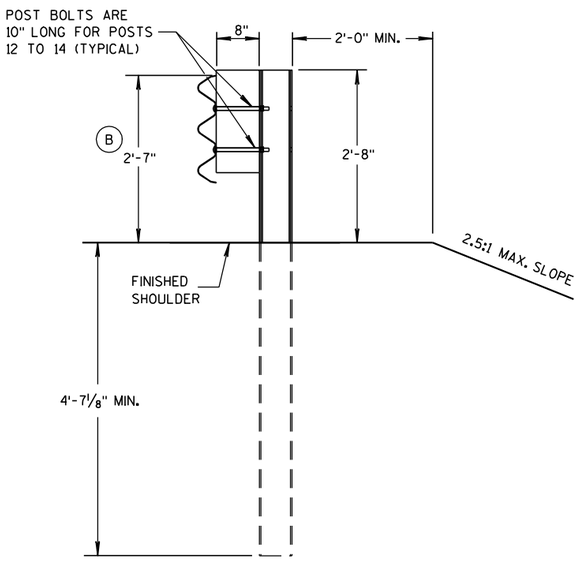


PLATE WASHER DETAIL

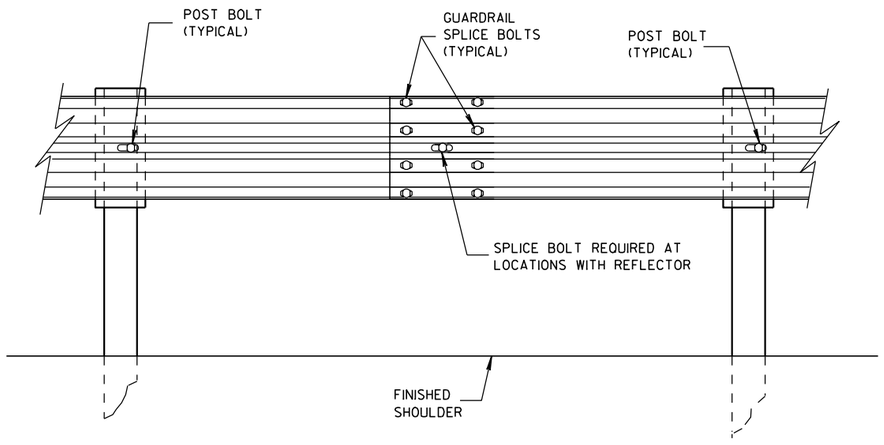


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-14



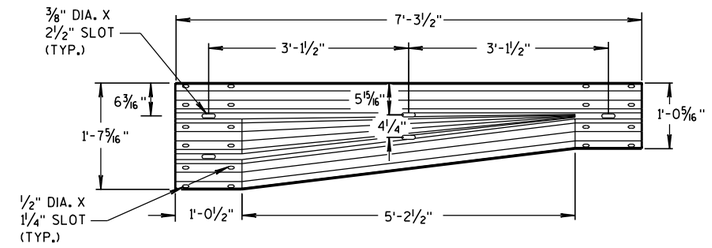
SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

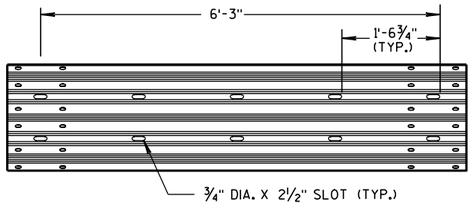
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

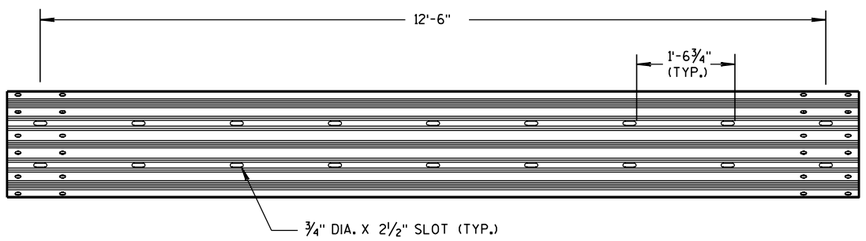
S.D.D. 14 B 45-3b



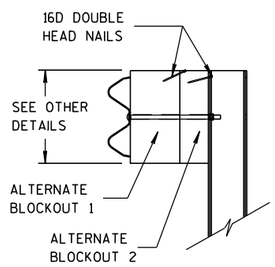
W-BEAM TO THRIE BEAM TRANSITION SECTION



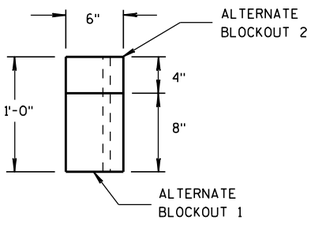
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

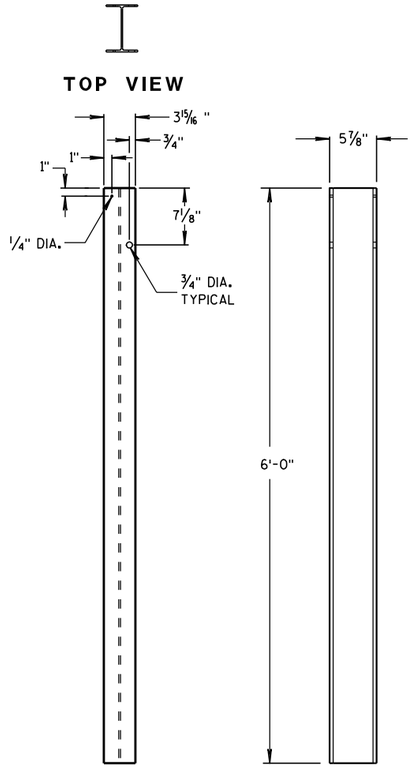


SIDE VIEW

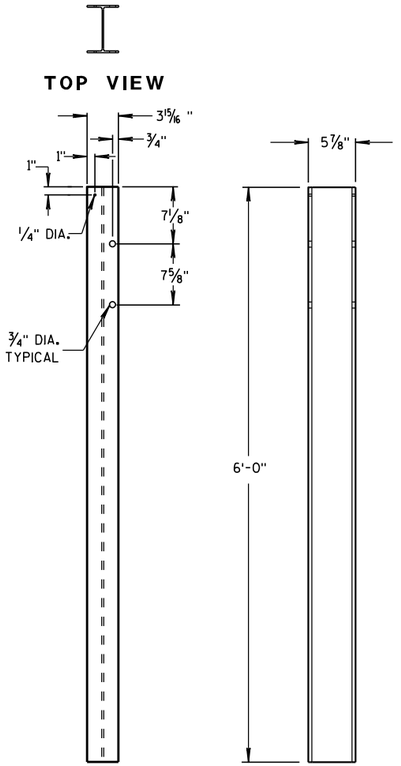


TOP VIEW

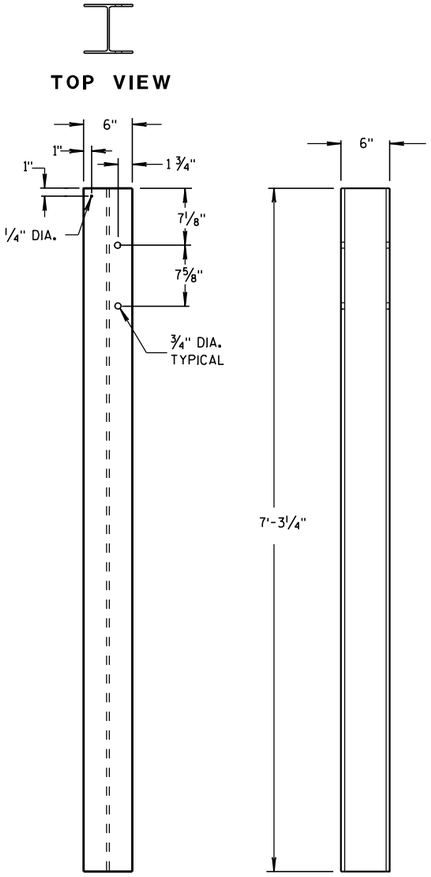
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

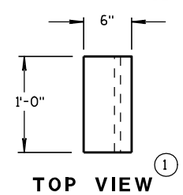


STEEL POSTS 6-11

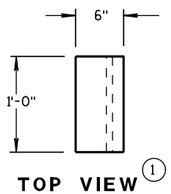


STEEL POSTS 12-14

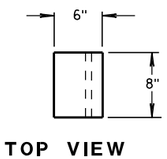
① WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



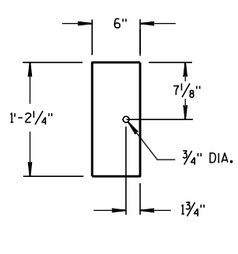
TOP VIEW ①



TOP VIEW ①

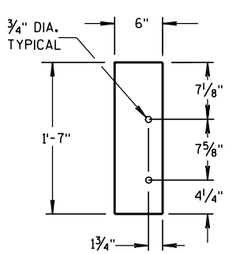


TOP VIEW



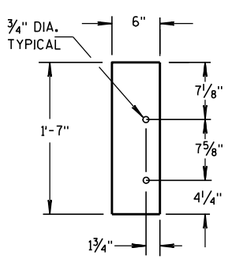
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

STEEL POST SIZES

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

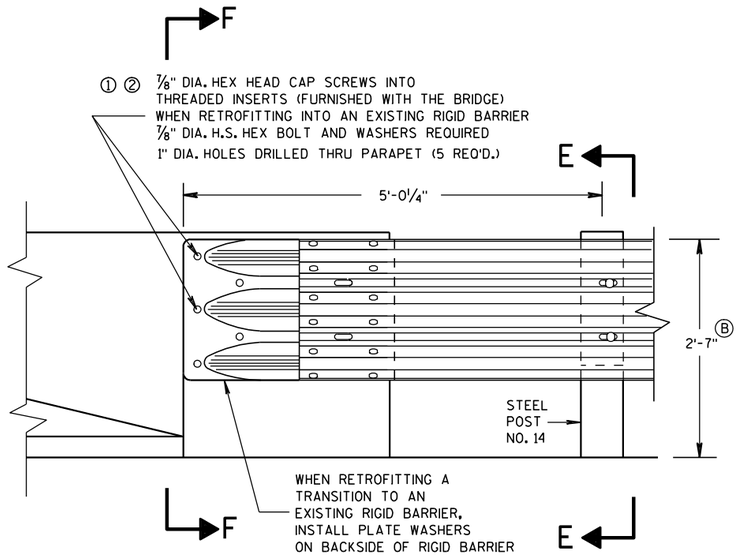
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

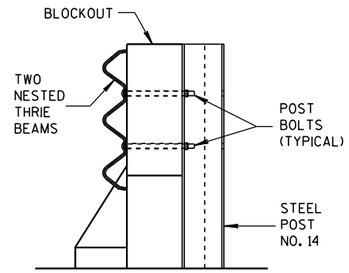
S.D.D. 14 B 45-3c

6

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



FRONT VIEW



SECTION E-E

GENERAL NOTES

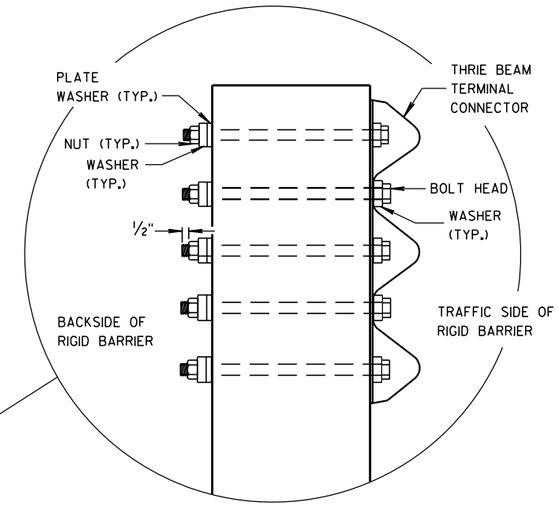
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

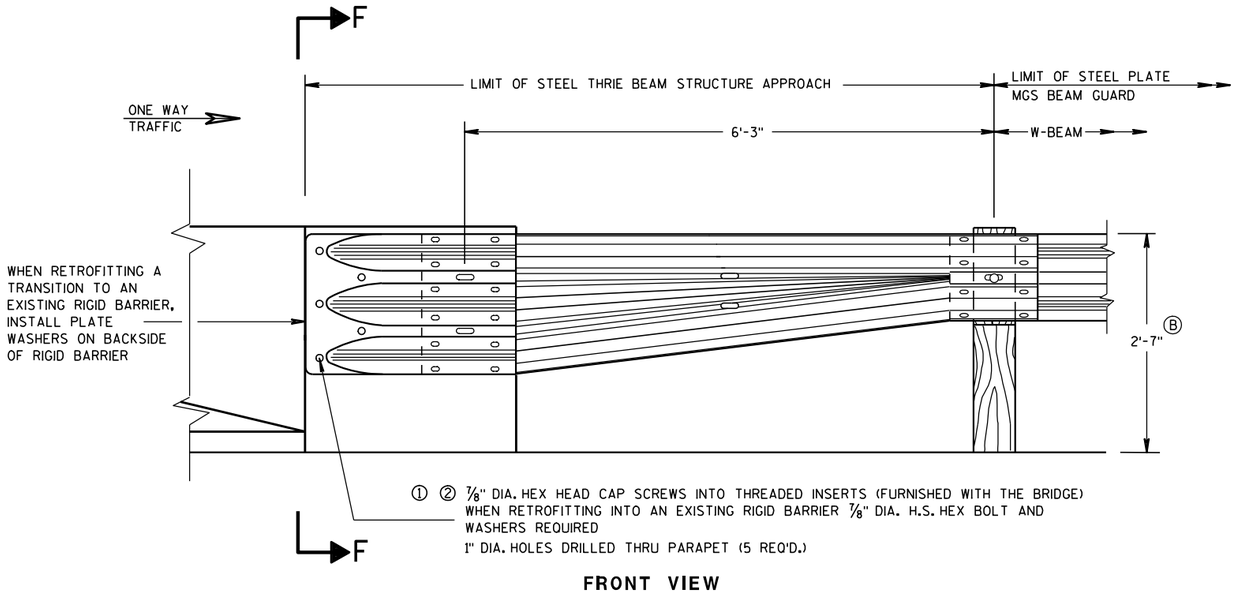
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

③ 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".

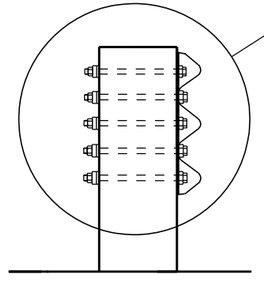
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



FRONT VIEW



SECTION F-F

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

8/31/2012 — DATE

/S/ Jerry H. [illegible] — ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

6
S.D.D. 14 B 45-3d

GENERAL NOTES

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

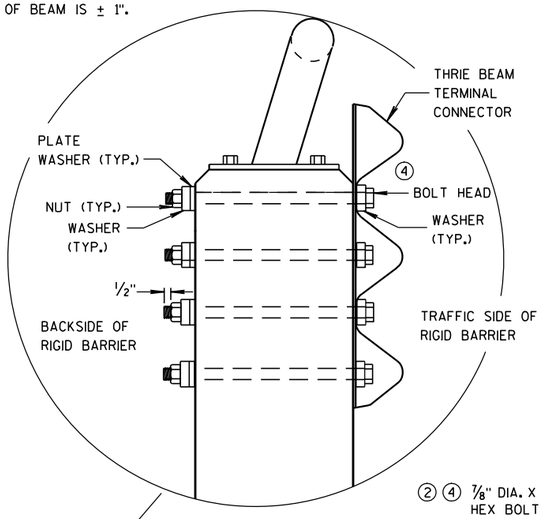
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

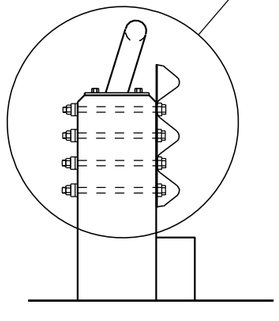
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

③ 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". BLOCK IS INCIDENTAL TO THE CONTRACT.

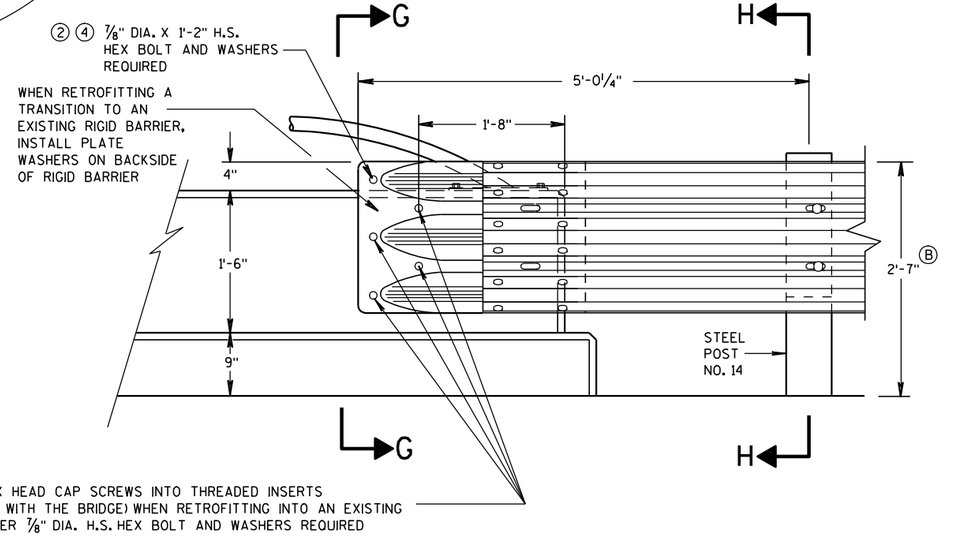
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

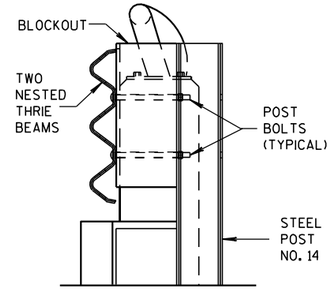




SECTION G-G

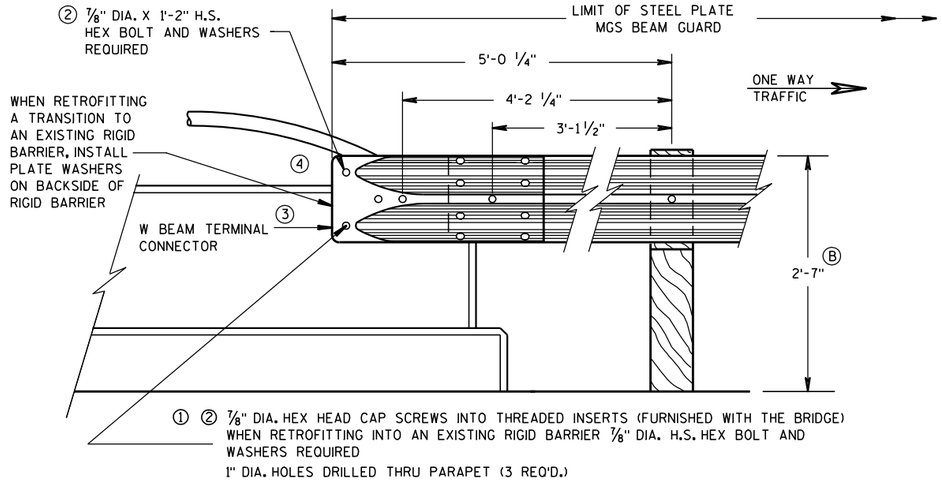


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-31-2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

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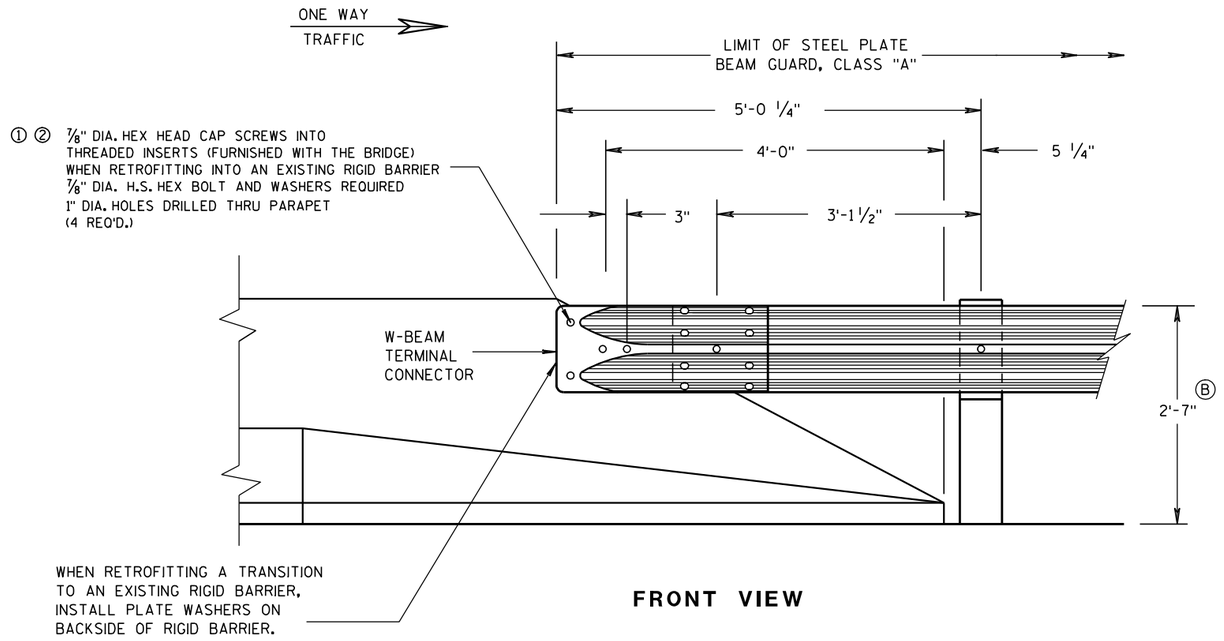


FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

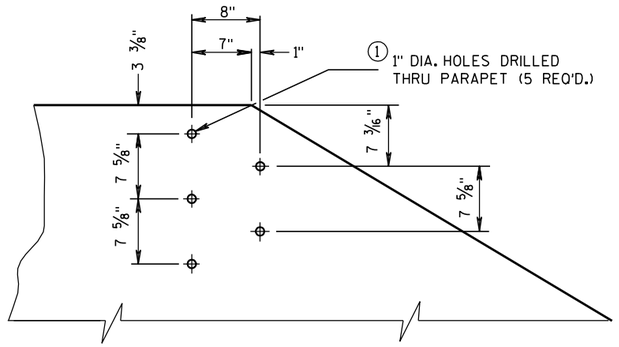
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

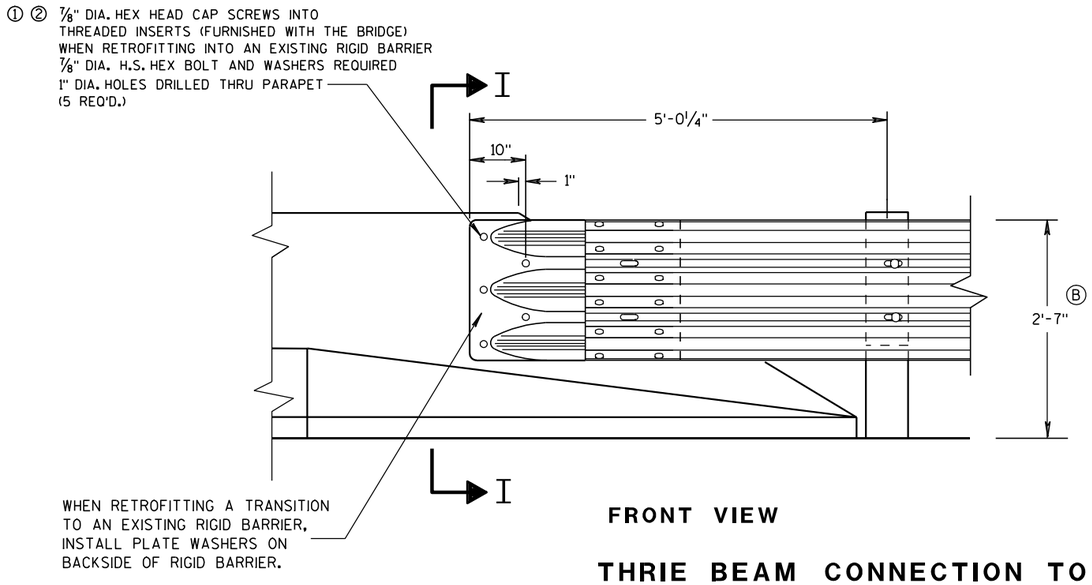
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

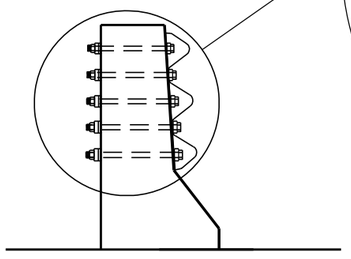
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



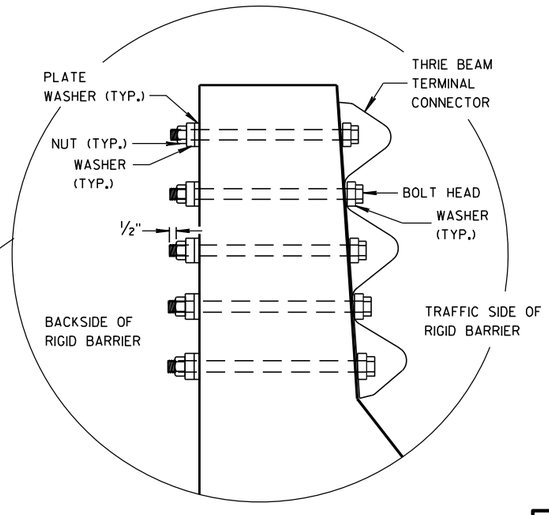
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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8/31/2012 — DATE

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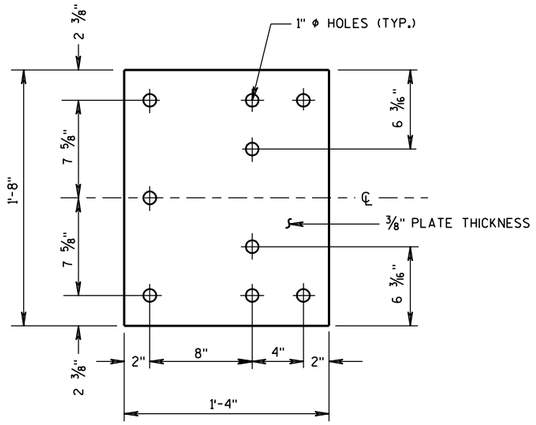
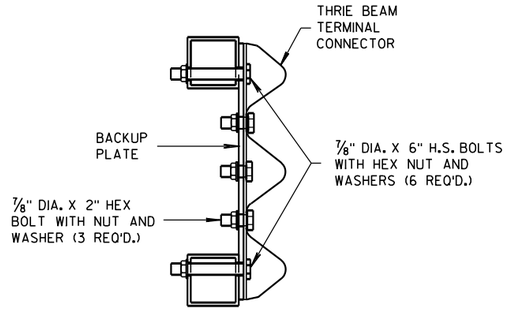


BACK-UP PLATE DETAIL

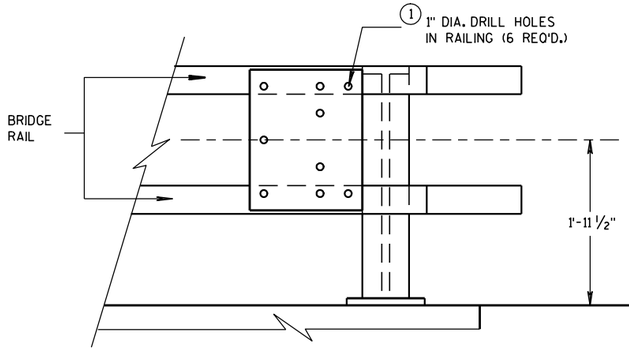


SECTION J-J

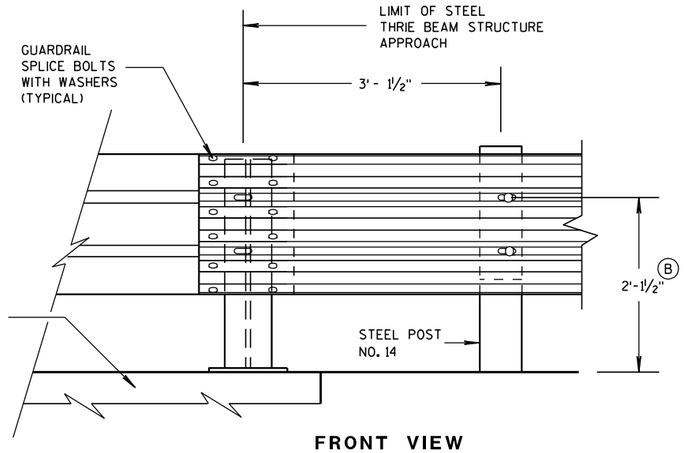
GENERAL NOTES

(1) DRILLING HOLES THROUGH THE PAPRPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(B) TOLERANCE FOR TOP OF BEAM IS ± 1".

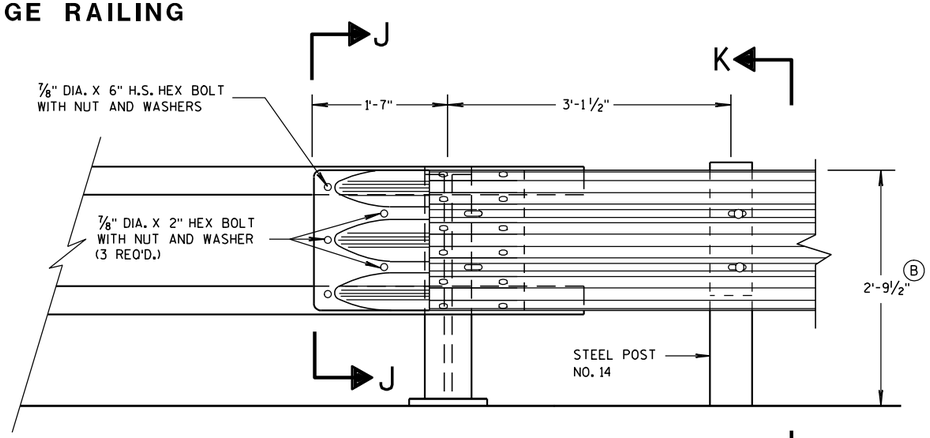


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

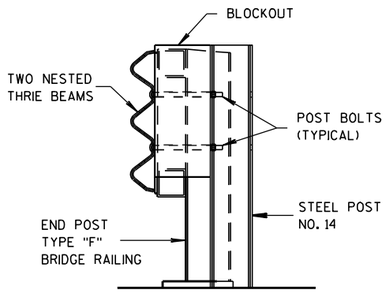


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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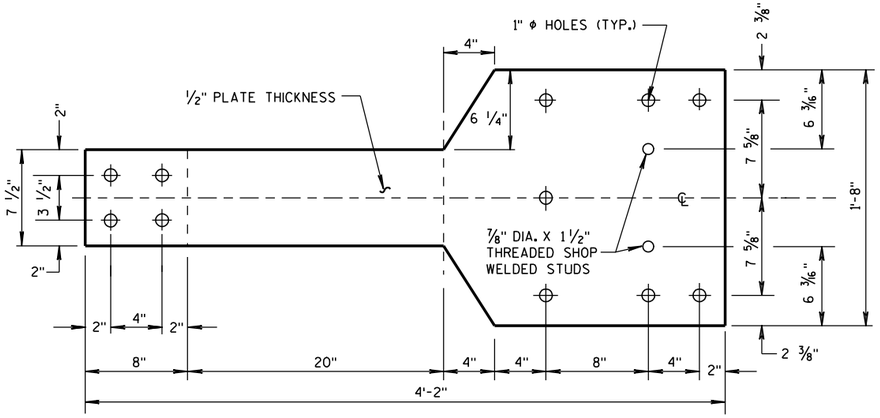
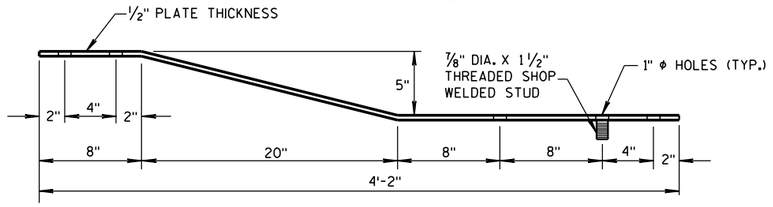
GENERAL NOTES

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

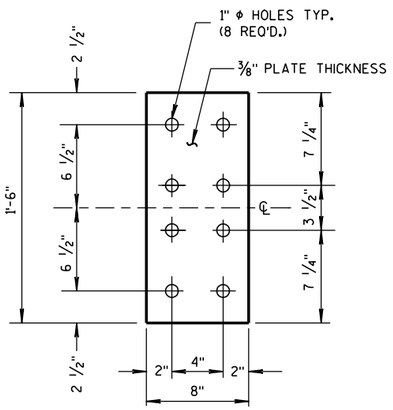


FRONT VIEW



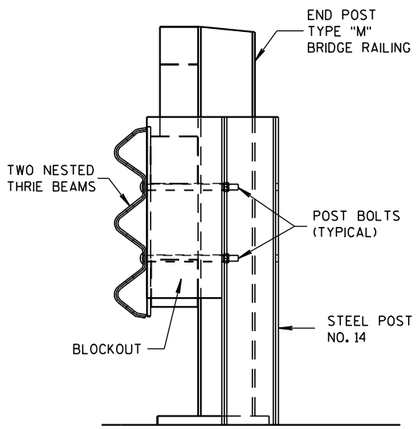
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

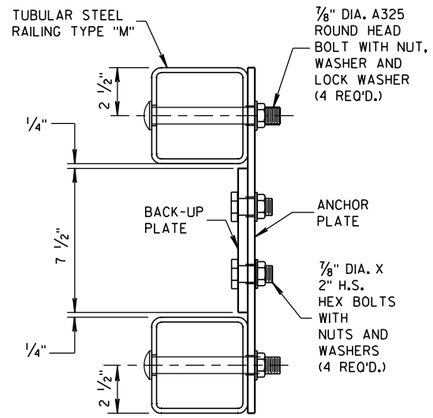


FRONT VIEW

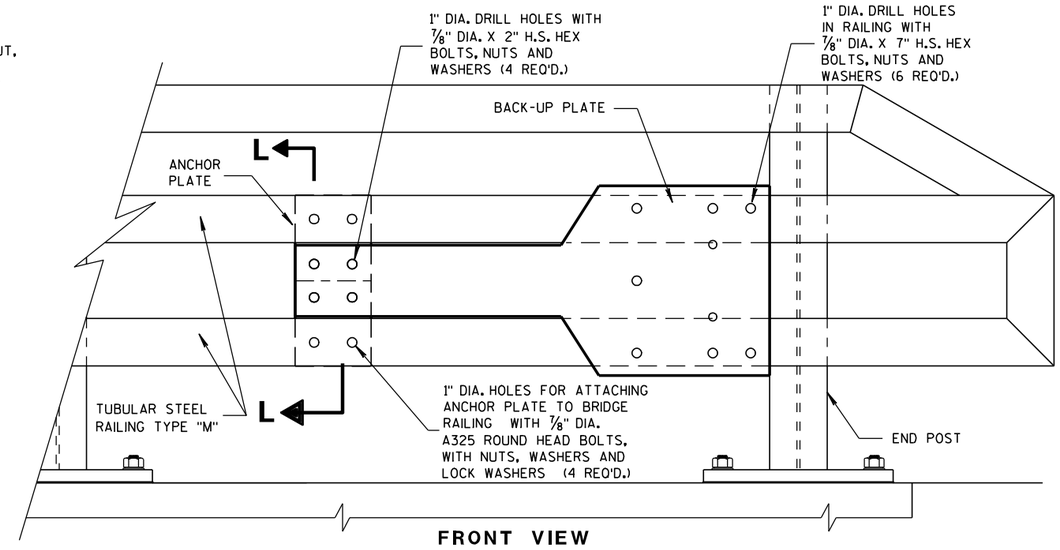
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

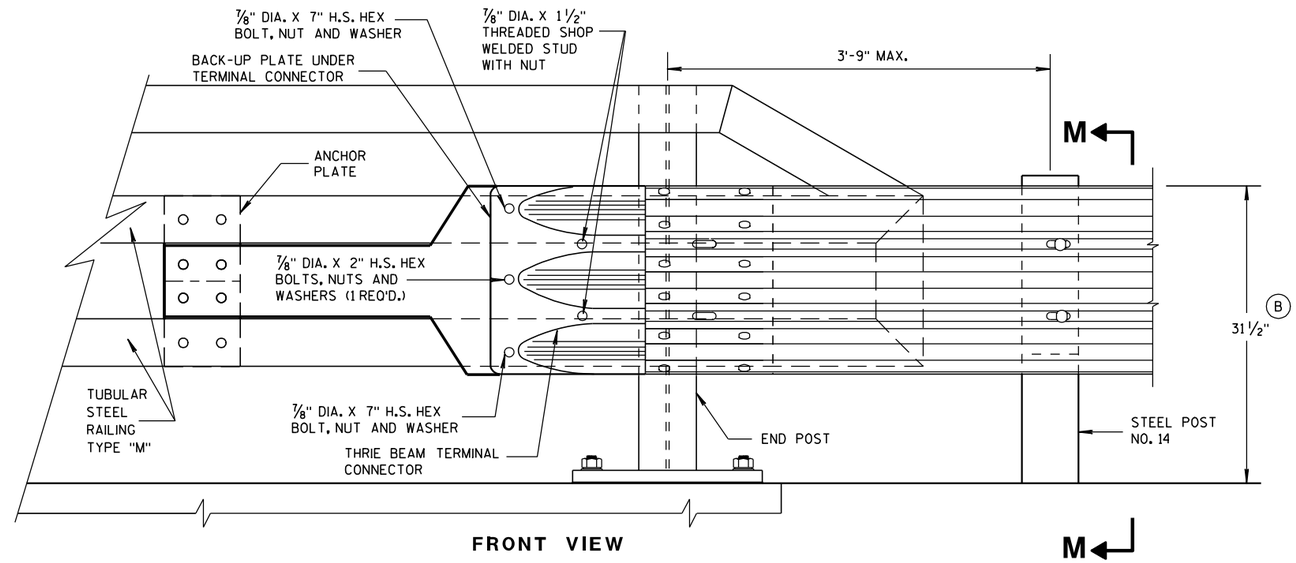


SECTION L-L

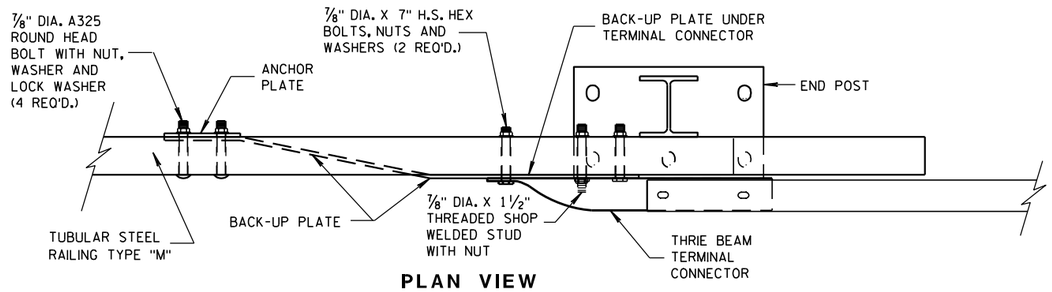


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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8-31-2012 DATE — /S/ Jerry H. [illegible] ROADWAY STANDARDS ENGINEER — ENT

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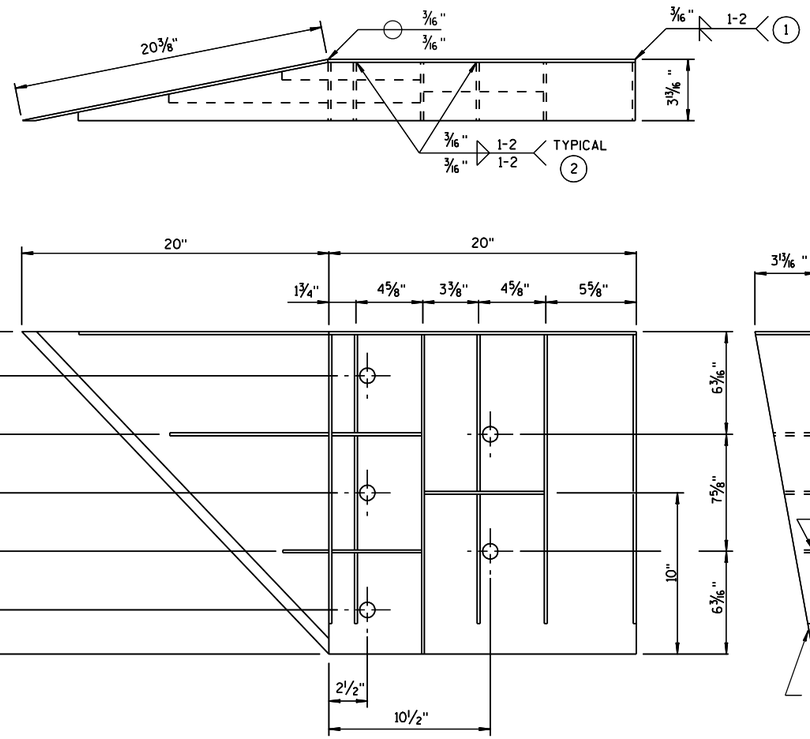

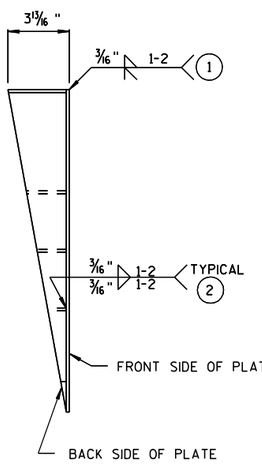

WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

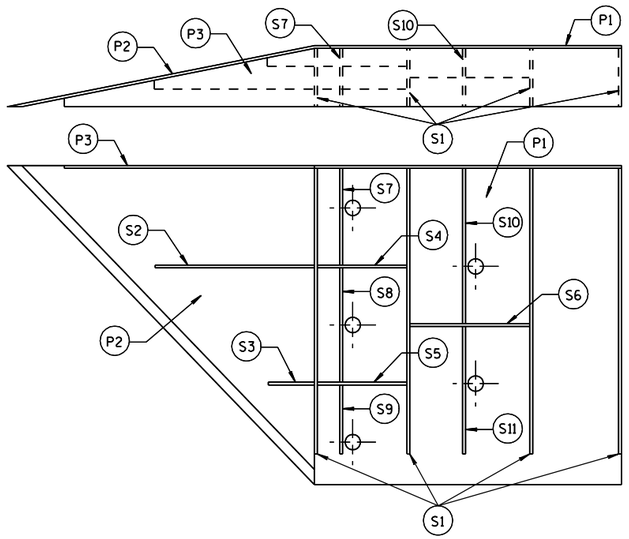

PLATE AND STIFFENER IDENTIFICATION

(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.

(1) 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.

(2) 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 5/8" 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 3/32"	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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/S/ Jerry H ---- ROADWAY STANDARDS ENGINEER
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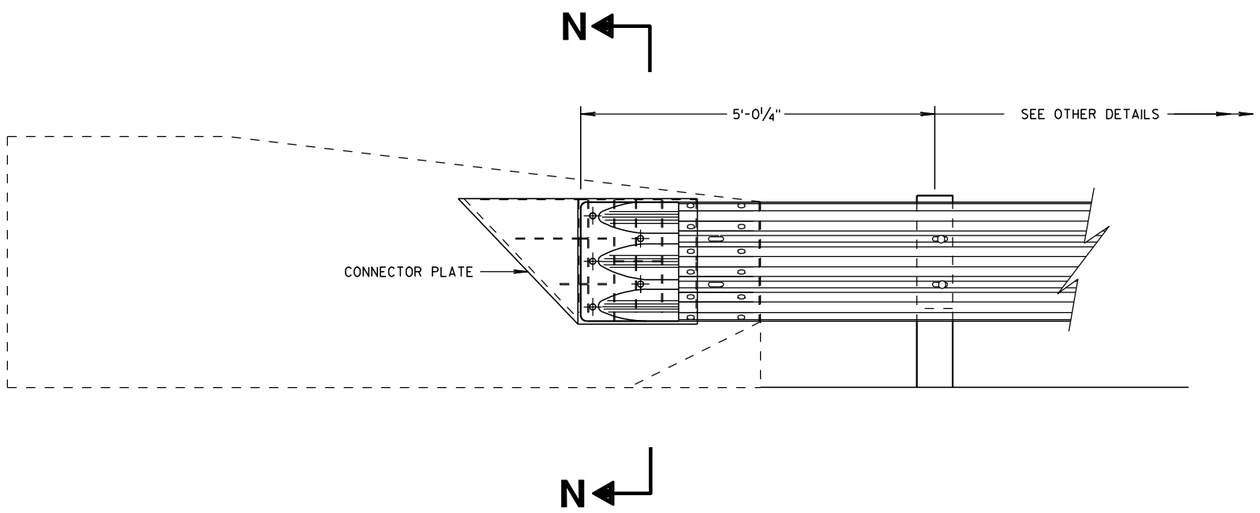
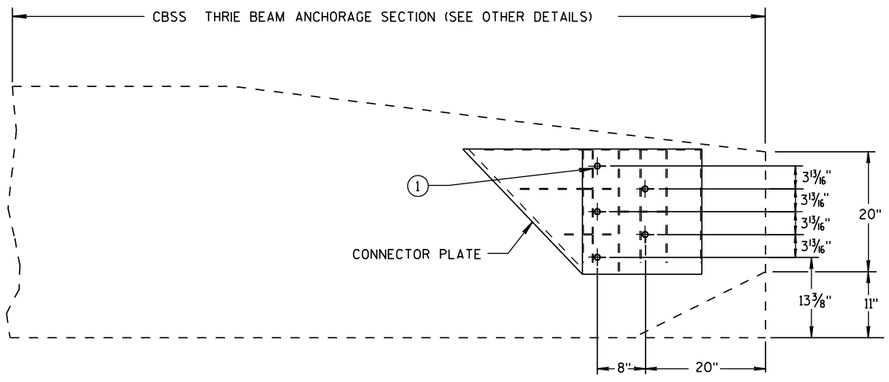


THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

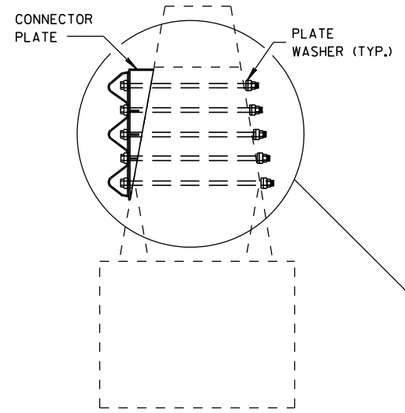


SINGLE SLOPE CONNECTION PLATE PLACEMENT

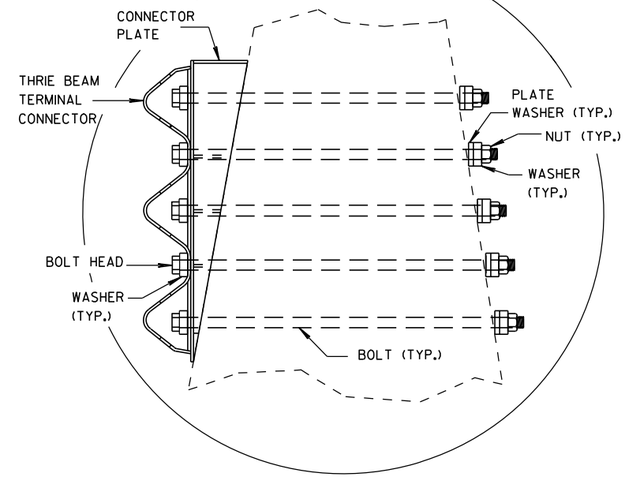
GENERAL NOTES

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

(1) 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 ⅝" 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

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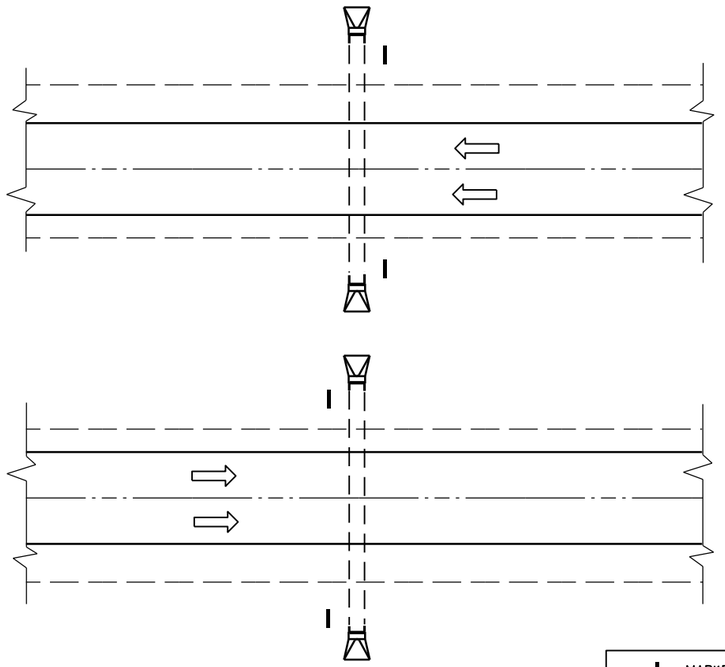
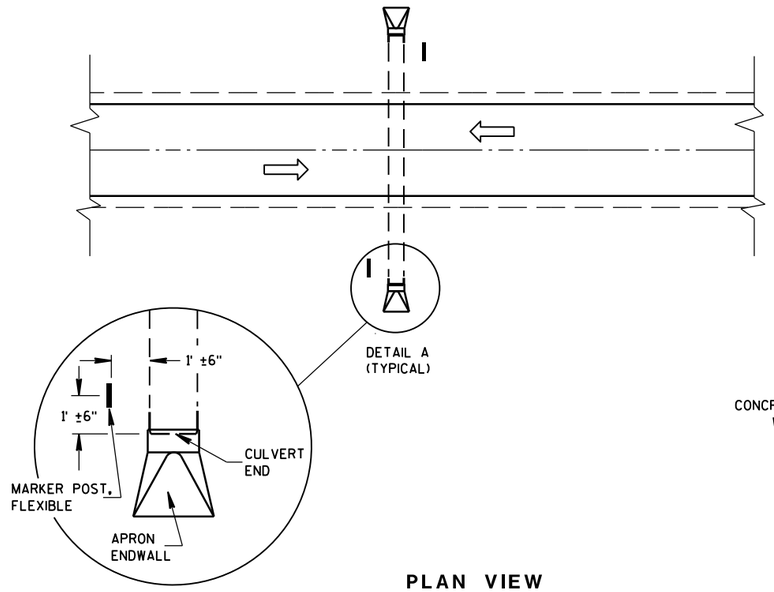


PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

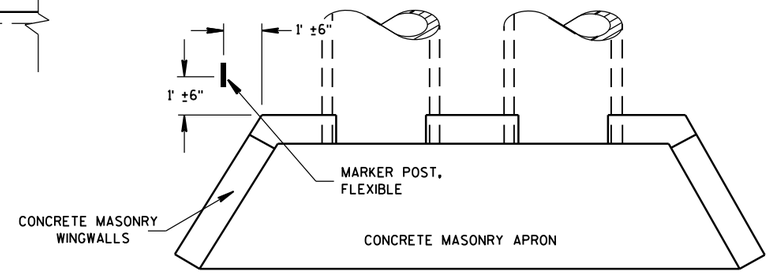
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

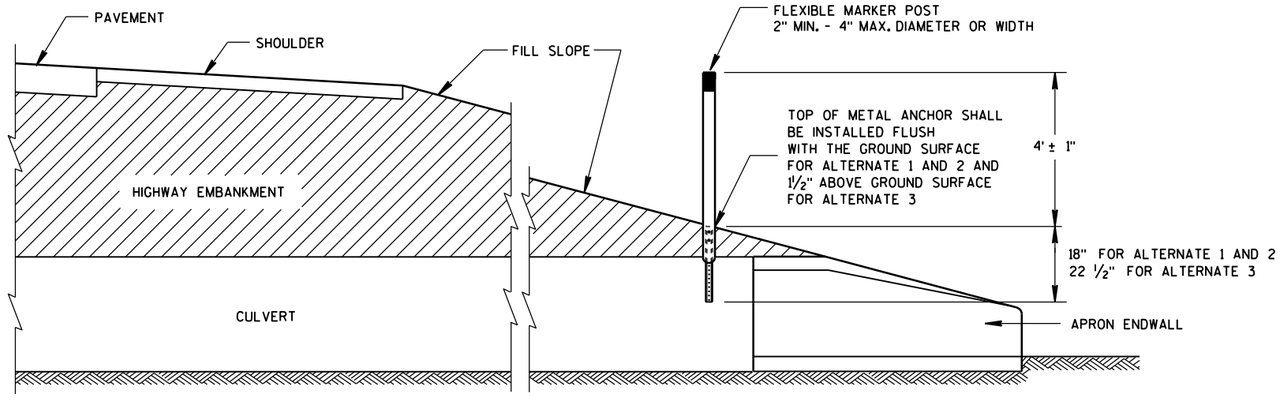
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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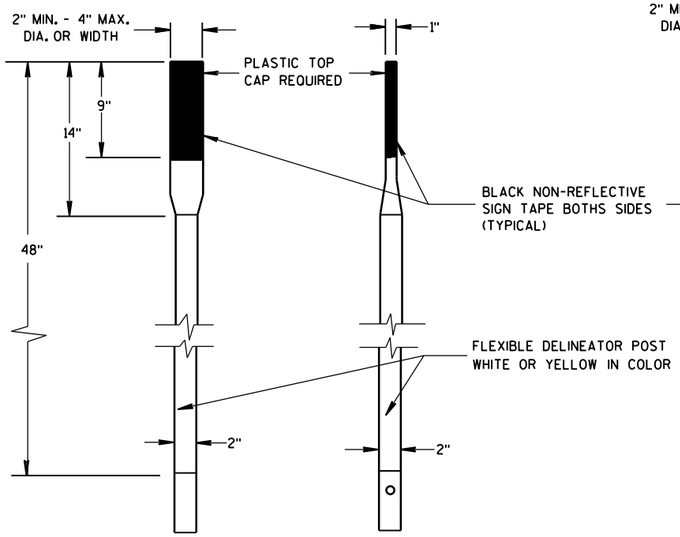
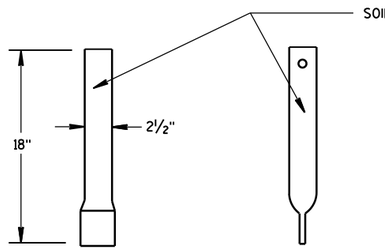
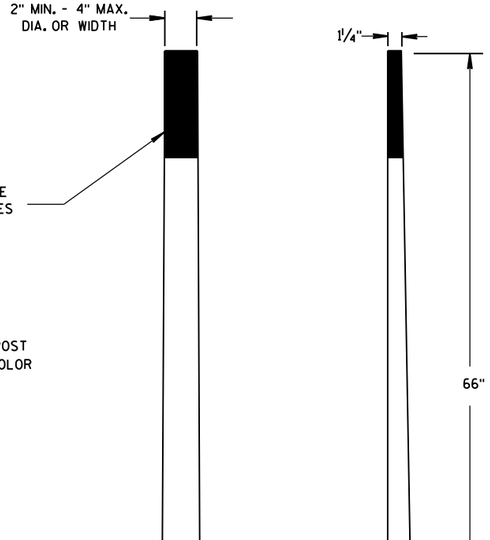
S.D.D. 15 A 3-2a





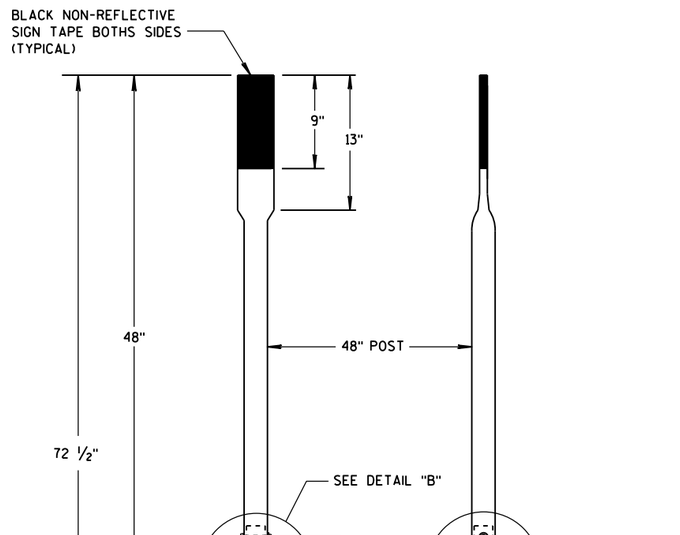
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

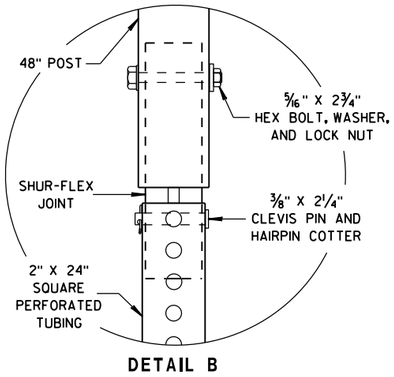
ALTERNATE 2



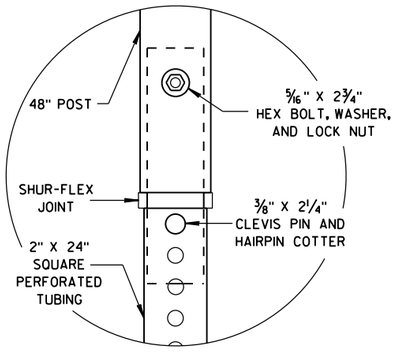
FRONT VIEW SIDE VIEW

ALTERNATE 3

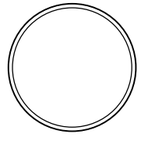
FLEXIBLE MARKER POSTS



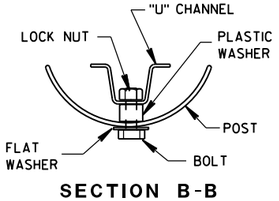
DETAIL B



DETAIL C



SECTION A-A



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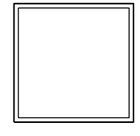

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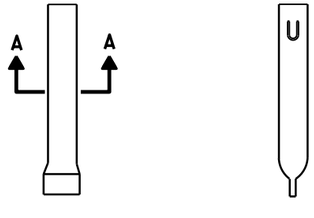
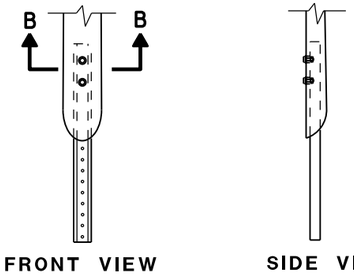


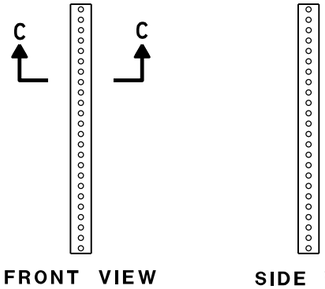
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

ALTERNATE 2



FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS

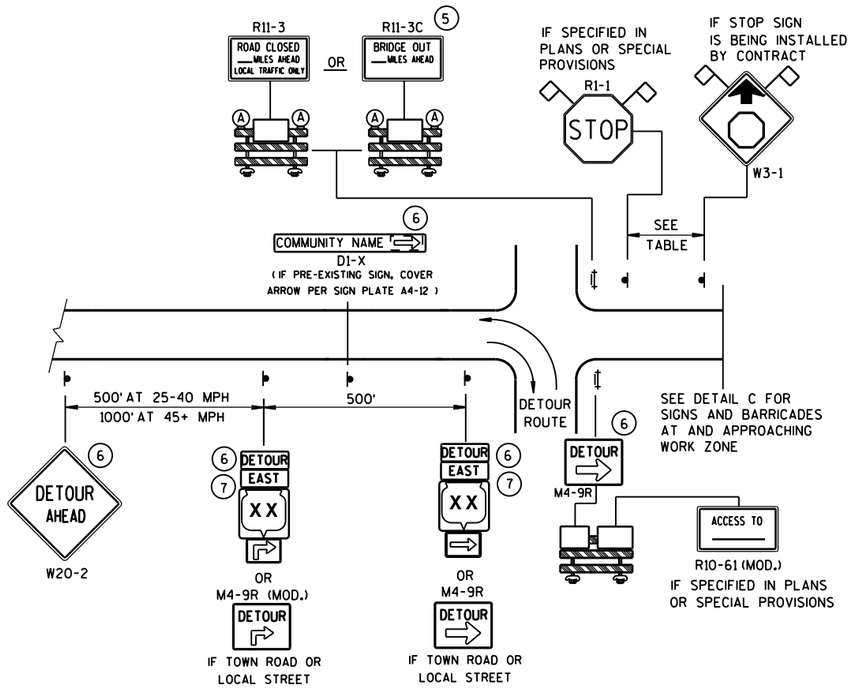
FLEXIBLE MARKER POST FOR CULVERT END	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER
FHWA	IGN

6

S.D.D. 15 A 3-2b

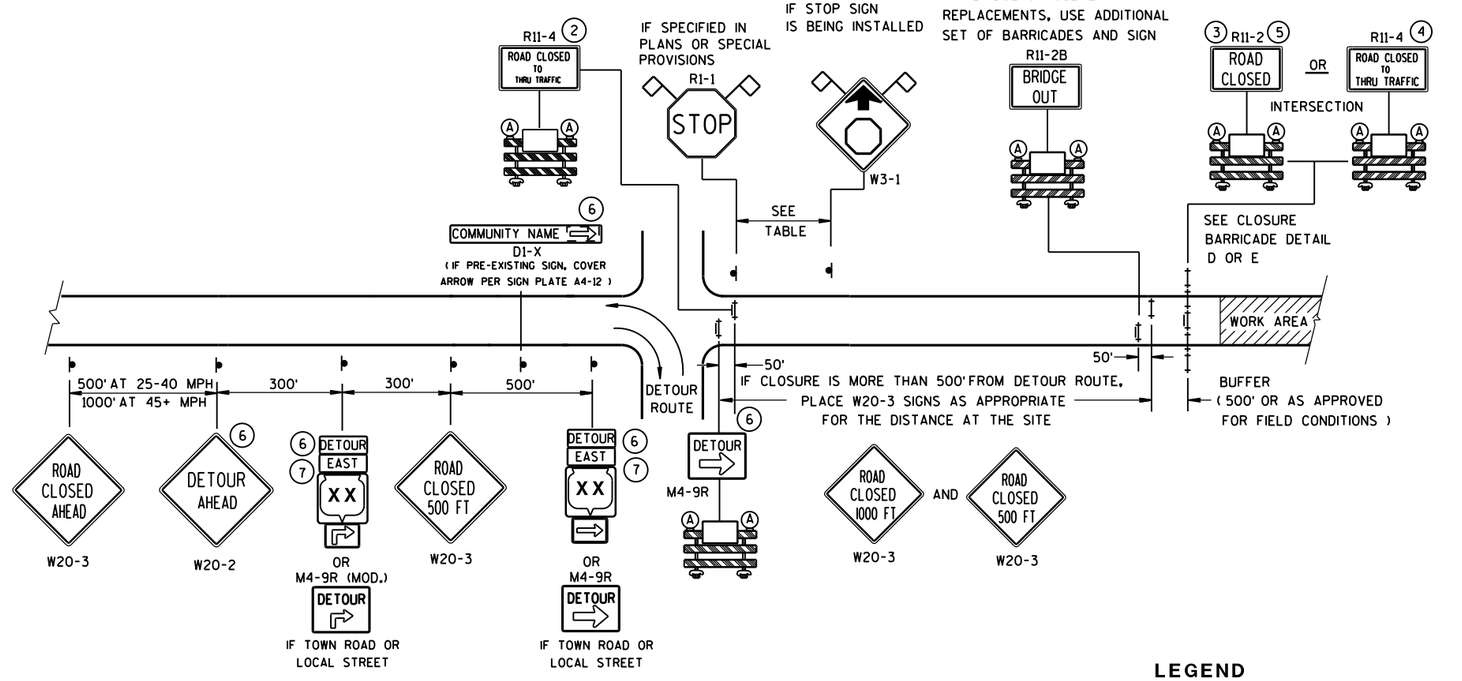
6

S.D.D. 15 A 3-2b



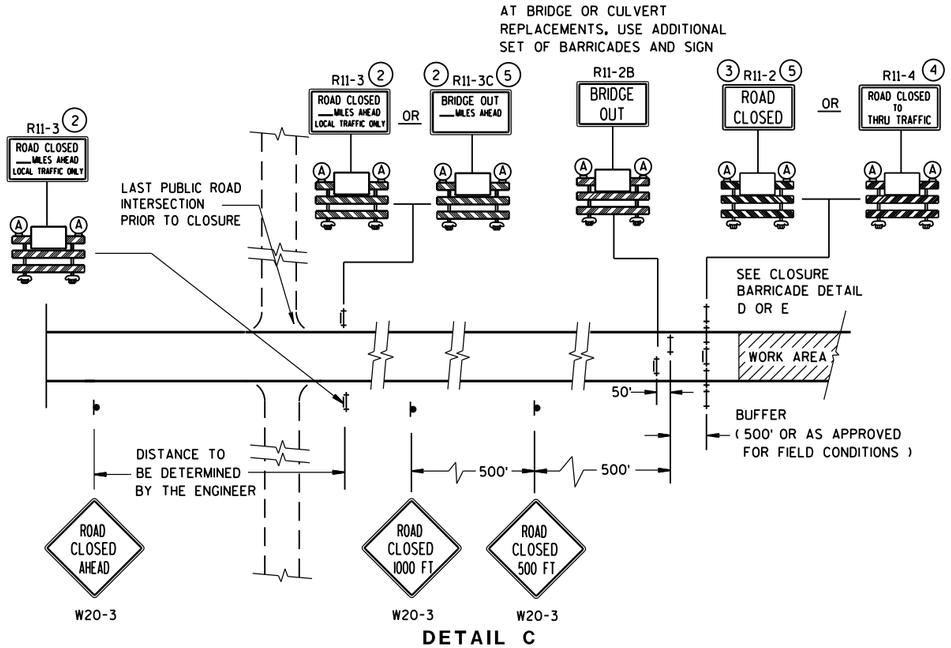
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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)

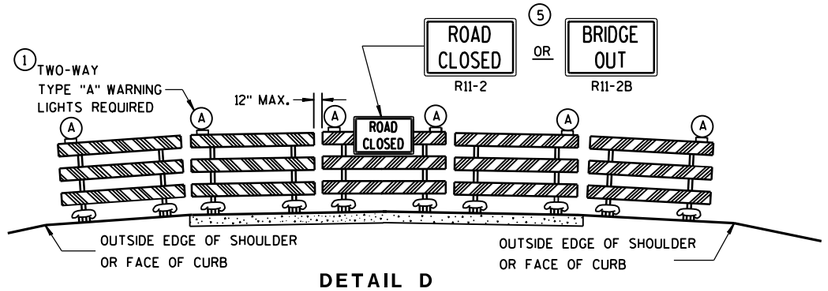
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE — /S/ Travis Feltes STATE TRAFFIC ENGINEER — DESIGN

FHWA

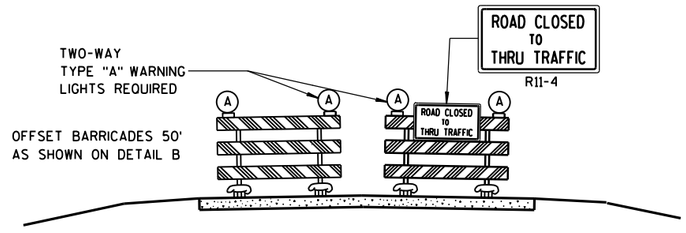
6
S.D.D. 15 C 2-5a



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 — DESIGN

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.

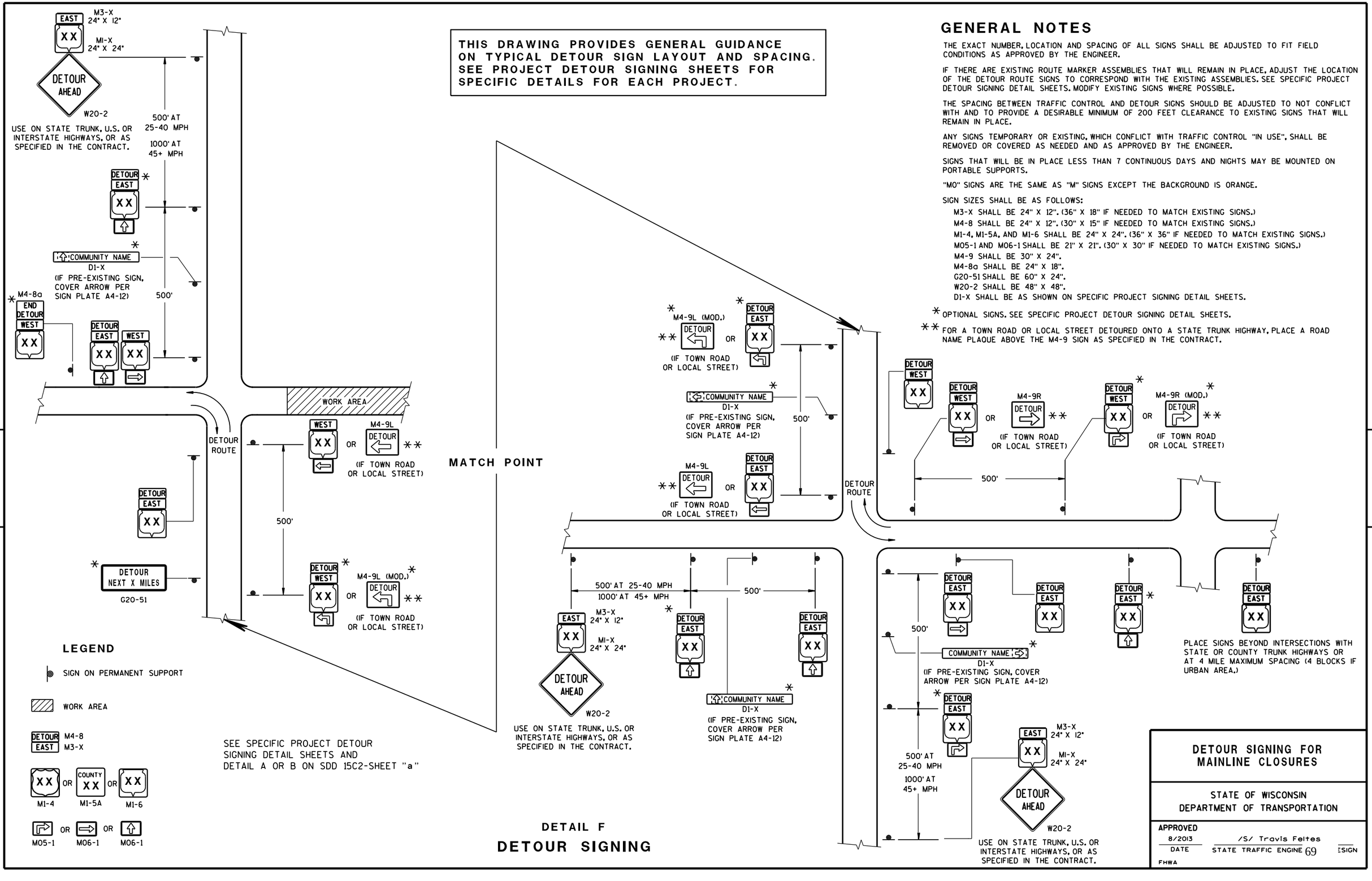
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.)
- MO5-1 AND MO6-1 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
- MO5-1 OR MO6-1 OR MO6-1

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

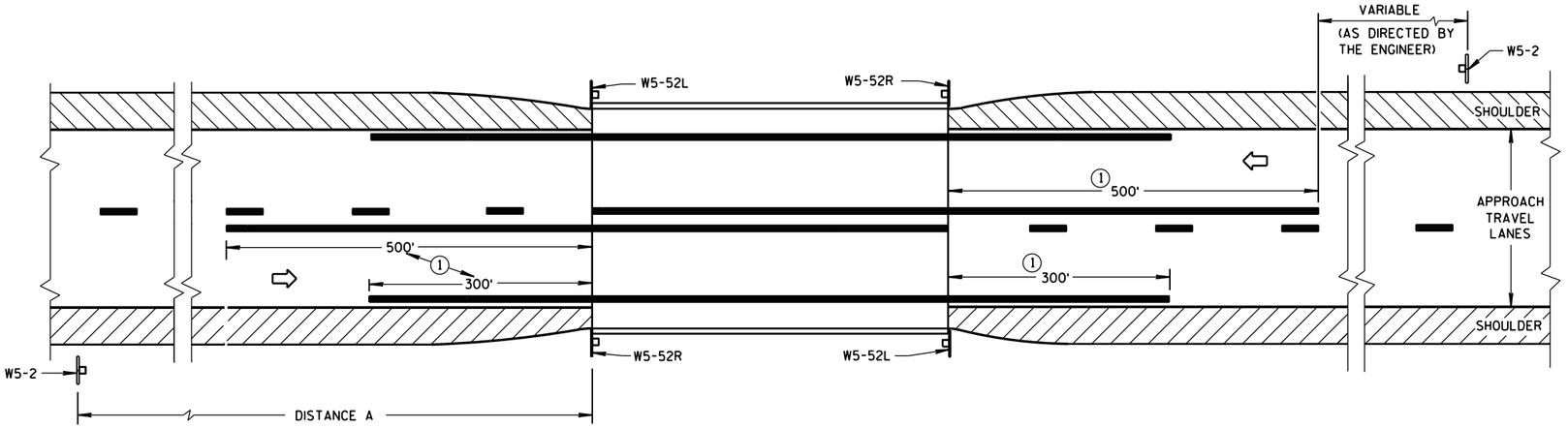
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

S.D.D. 15 C 2-5c

S.D.D. 15 C 2-5c



GENERAL NOTES

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

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

(1) MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.

(2) FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.

(3) LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.

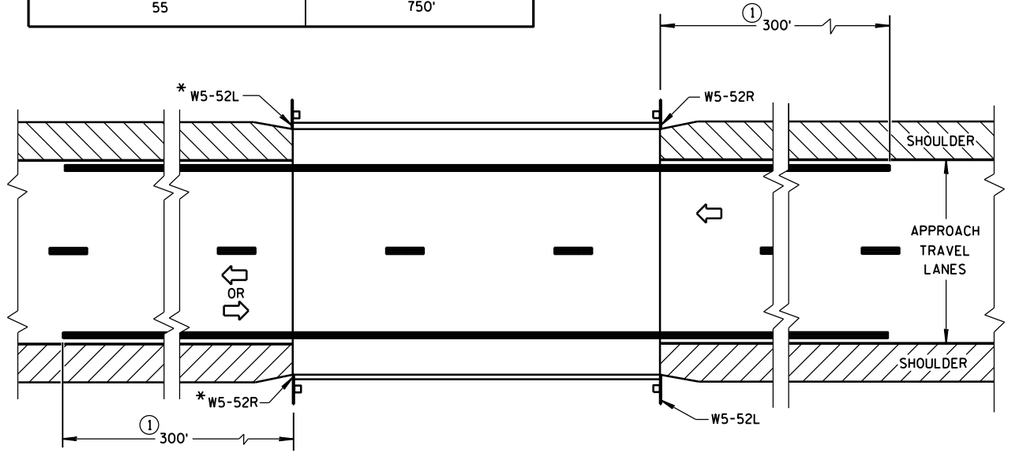
DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET

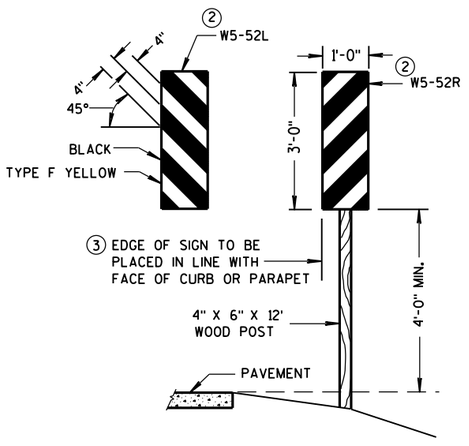


*OMIT ON ONE-WAY TRAVELLED WAYS

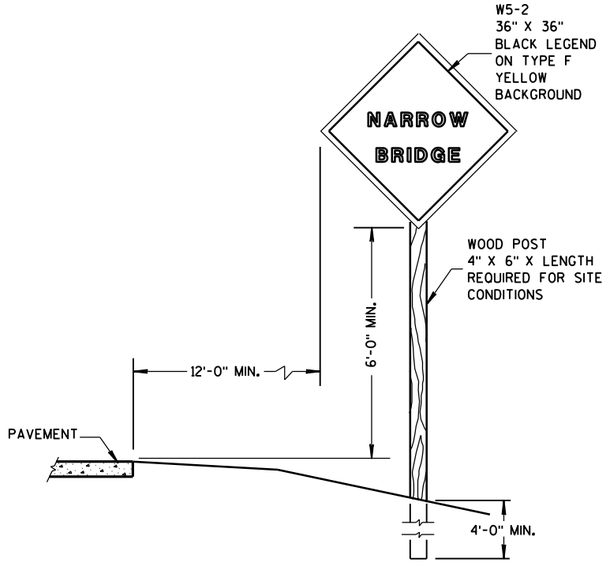
SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.



OBJECT MARKER PLACEMENT



SIGN PLACEMENT

SIGNING & MARKING
FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

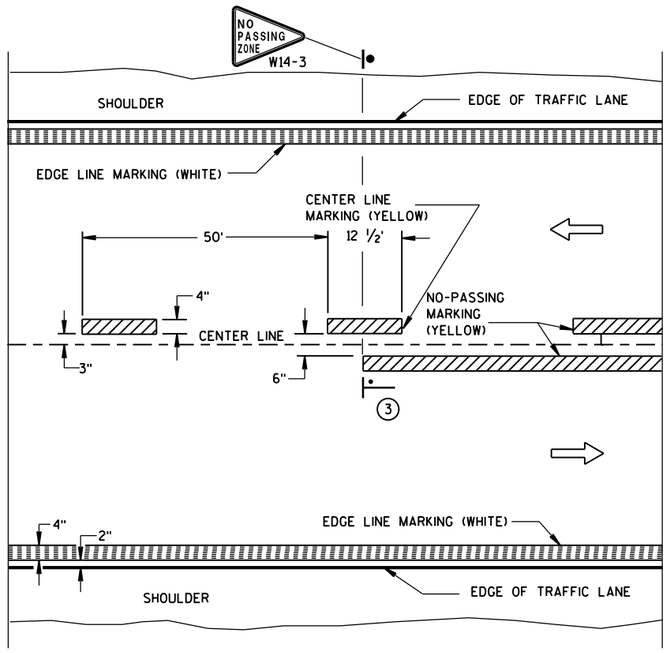
3-2014 DATE

/S/ Travis Feltes STATE TRAFFIC ENGINEER

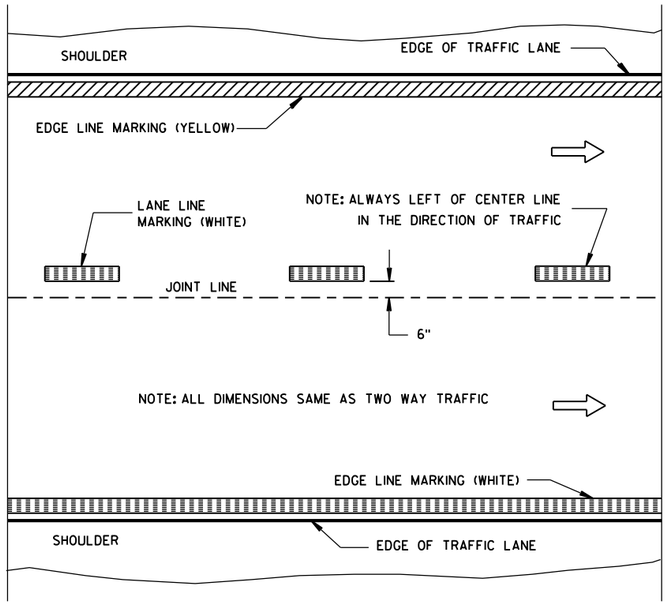
FHWA

6

S.D.D. 15 C 6-7

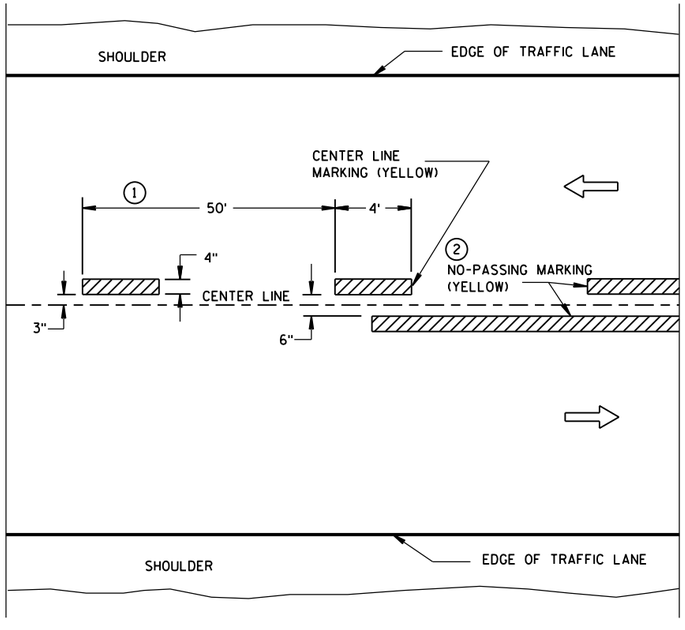


TWO WAY TRAFFIC

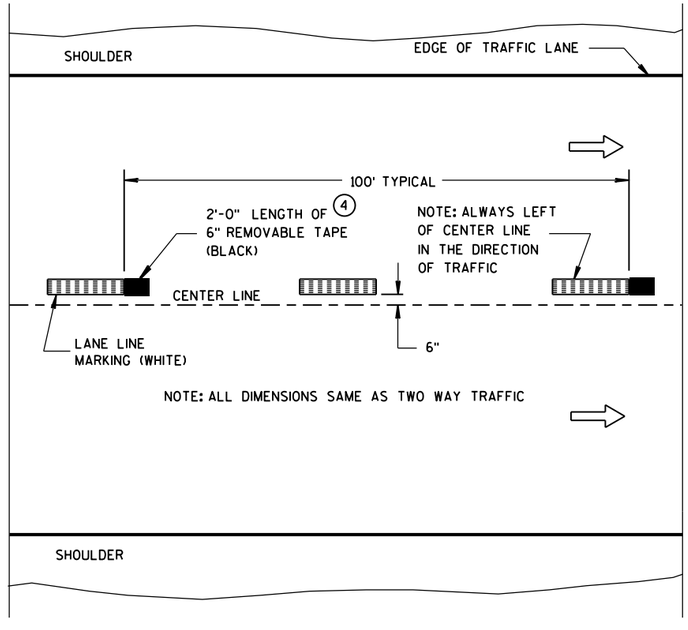


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

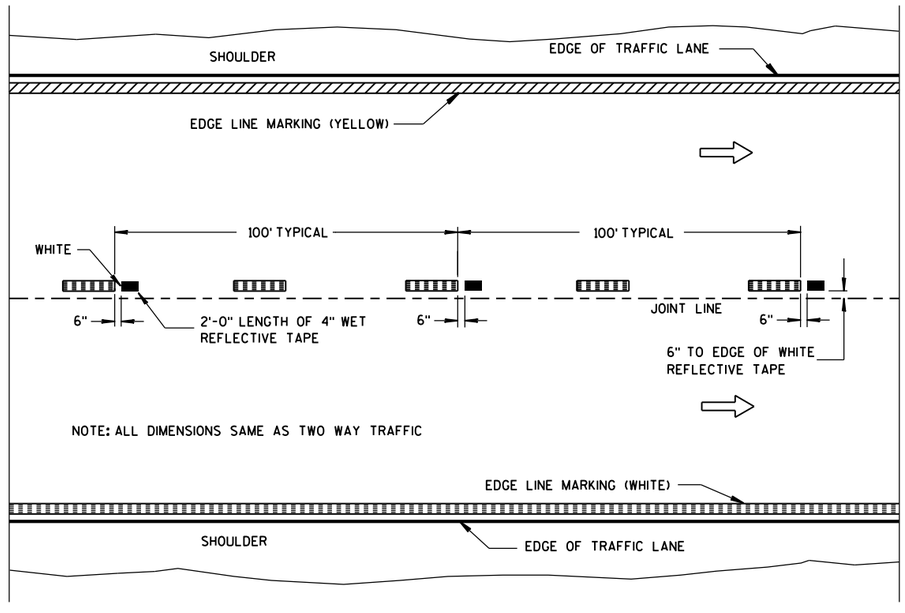
GENERAL NOTES

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

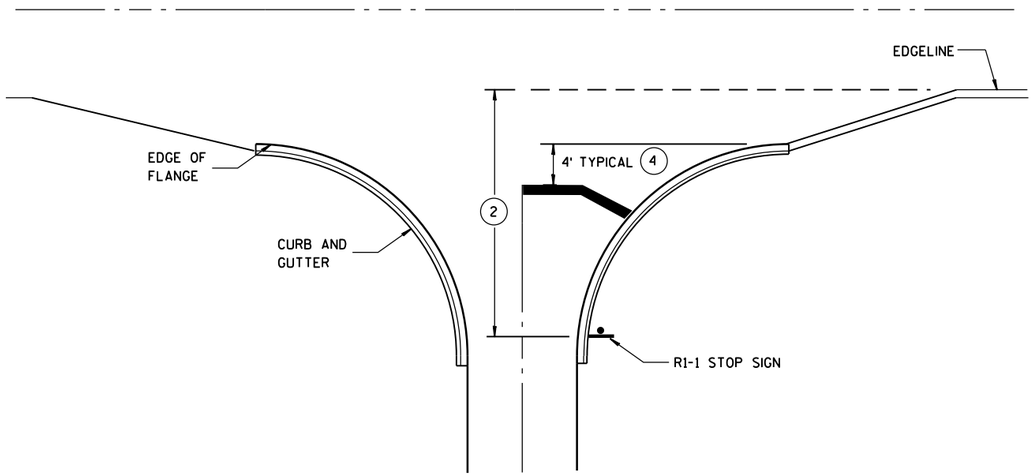
FHWA

6

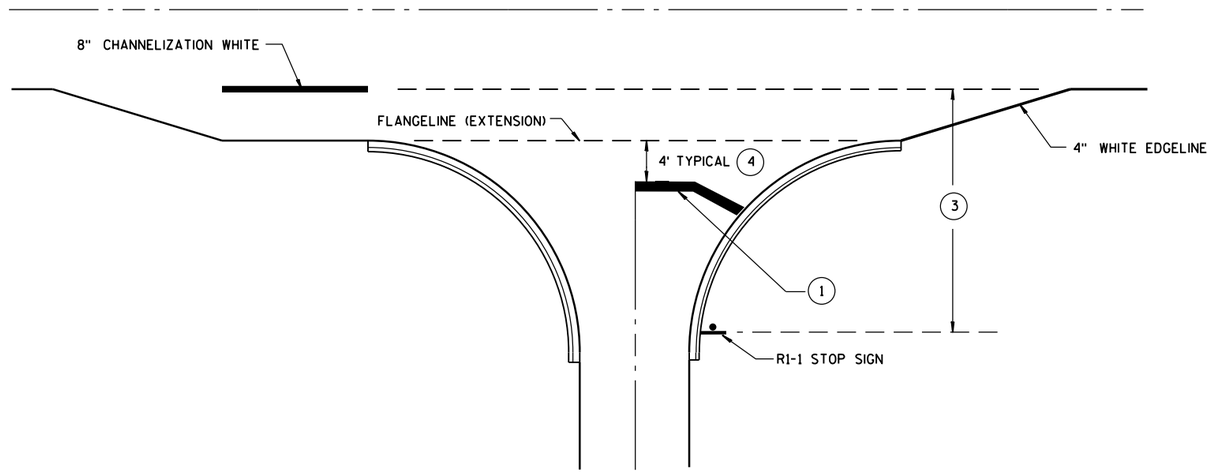
S.D.D. 15 C 8-16a

6

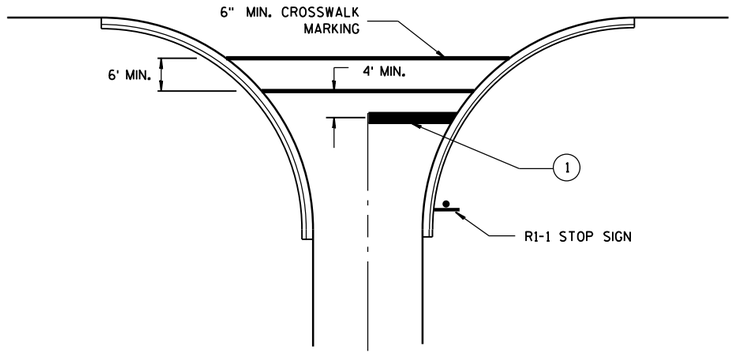
S.D.D. 15 C 8-16a



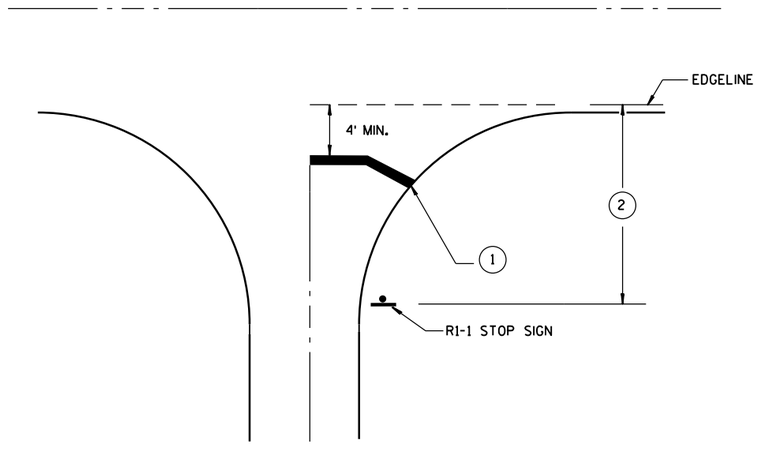
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

GENERAL NOTES

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

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4/30/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E

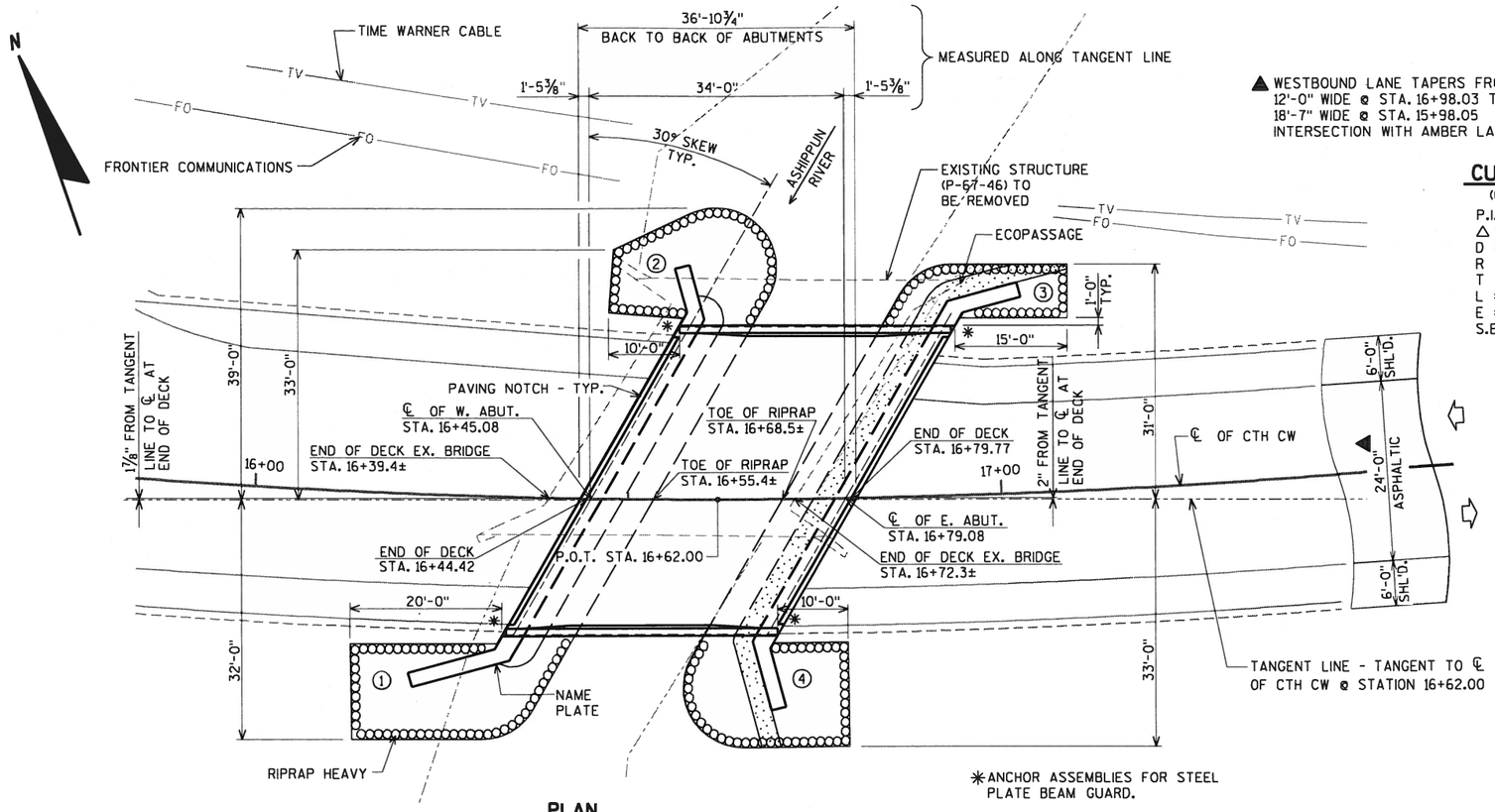
FHWA

6

S.D.D. 15 C 33-1

STATE PROJECT NUMBER

2949-00-70

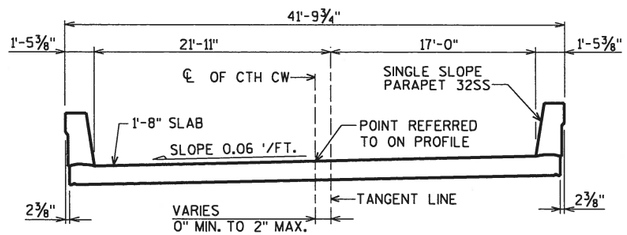


▲ WESTBOUND LANE TAPERS FROM 12'-0" WIDE @ STA. 16+98.03 TO 18'-7" WIDE @ STA. 15+98.05 FOR INTERSECTION WITH AMBER LANE.

CURVE DATA

(CTH CW)

P.I. STA. 19+11.12
△ = 59°30'22"
D = 5°29'59"
R = 1,060.00'
T = 605.92'
L = 1,100.90'
E = 160.96'
S.E. = 0.06'/'



CROSS SECTION THRU ROADWAY

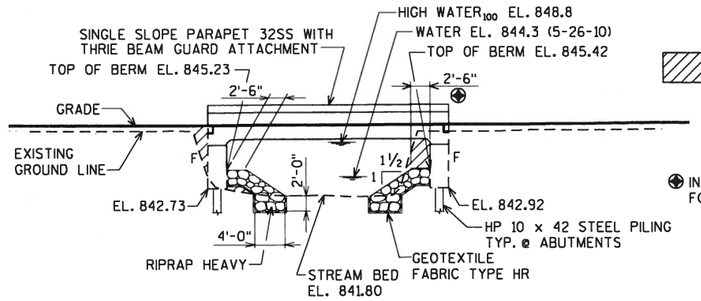
(LOOKING EAST)

PLAN

SINGLE SPAN CONCRETE FLAT SLAB

✱ ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD.

◯ DENOTES WING NUMBER.

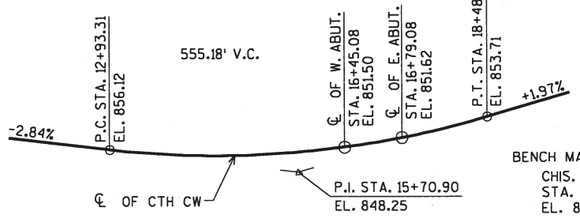


ELEVATION

(NORMAL TO ℄ OF RIVER)

COST OF EXCAVATION AND FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-67-346".

⊕ INTEGRAL, AT-GRADE ECOPASSAGE FOR DETAIL SEE SHEET 2.



PROFILE GRADE LINE

(CTH CW)

BENCH MARK:
CHIS. 'X' IN NW CORNER OF BRIDGE
STA. 16+51, 29' LT.
EL. 850.43

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.05
OPERATING RATING FACTOR : 1.36
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 240 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 #/S.F.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY { SLAB f'c = 4,000 p.s.i. / ALL OTHER f'c = 3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) fy = 60,000 p.s.i.

HYDRAULIC DATA:

100 YEAR FLOOD
DRAINAGE AREA = 37.9 sq. mi.
WATERWAY AREA = 131 sq. ft.
V = 4.4 f.p.s.
Q_{100} = 579 c.f.s.
HIGH $WATER_{100}$ EL. 848.8
HIGH $WATER_{2}$ EL. 845.9
RDWY. OVERFLOW = N/A
SCOUR CRITICAL CODE = 8

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 130 TONS ‡ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 70'-0".

‡ 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.

TRAFFIC DATA:

A.D.T. = 1,800 (2015)
A.D.T. = 2,300 (2035)
R.D.S. = 55 M.P.H.

LIST OF DRAWINGS

WISCONSIN
CHRISTOPHER B. McMAHON
E-29454
EAU CLAIRE
WI
PROFESSIONAL ENGINEER
9/2/14

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

CONSULTANT CONTACT:
CHRIS MCMAHON
(715)-834-3161

NO.	DATE	REVISION	BY

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher KAR 11/28/14
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-67-346

CTH CW (MAPLETON ROAD) OVER ASHIPPUN RIVER

COUNTY	TOWN/~~CITY/VILLAGE~~
WAUKESHA	OCONOMOWOC

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JCK	JWZ	KAZ/CLS	CBM

GENERAL PLAN

SHEET 1 OF 14
73

11X17-5200.plt
420789 gp.dgn

DATE:
DATE:
DATE:
CHECKED BY:
BACK CHECKED BY:
CORRECTED BY:

8

8

9/2/2014 black.tbl DATE:

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	E. ABUT.	SUPER.	TOTAL
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 16+56	LS	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-67-346	LS	-----	-----	-----	1
209.0200.S	BACKFILL CONTROLLED LOW STRENGTH	CY	175	170	-----	345
502.0100	CONCRETE MASONRY BRIDGES	CY	43	41	108	192
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	195	195
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	5,190	4,980	16,860	27,030
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	13	13	-----	26
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	490	490	-----	980
606.0300	RIPRAP HEAVY	CY	90	75	-----	165
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	105	105	-----	210
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	-----	-----	4	4
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	195	165	-----	360
	NON-BID ITEMS					
	FILLER	SIZE	-----	-----	-----	1/2" & 3/4"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE FABRIC TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

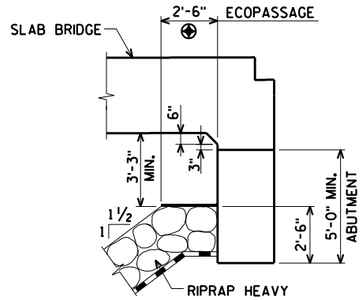
THE EXISTING GROUND LINE SHALL BE THE UPPER LIMIT FOR EXCAVATION FOR STRUCTURES.

THE EXISTING STRUCTURE, P-67-46, TO BE REMOVED, IS A SINGLE SPAN STEEL DECK GIRDER BRIDGE 32.9 FT. OVERALL LENGTH WITH A 32.2 FT. CLEAR ROADWAY WIDTH.

AT BACKFACE OF ABUTMENTS ALL EXCAVATED VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL CONTROLLED LOW STRENGTH.

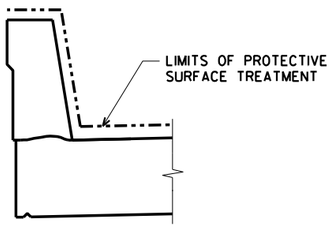
PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

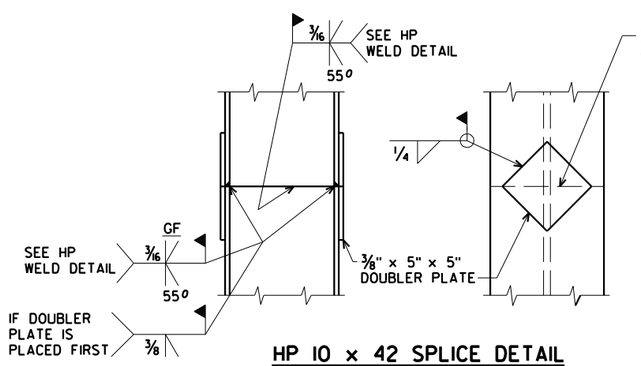


INTEGRAL, AT-GRADE ECOPASSAGE DETAIL

FILL VOIDS IN RIPRAP HEAVY WITH BASE AGGREGATE DENSE 1 1/4-INCH TO FULLY FILL ALL VOIDS AND LEAVE ON AVERAGE 2" ABOVE THE LOW ROCK POINTS WHERE THEY ABUT EACH OTHER. PROVIDE LEVEL SURFACE OF THE INTEGRAL, AT-GRADE ECOPASSAGE. BASE AGGREGATE DENSE 1 1/4-INCH SHALL BE COMPACTED ONCE IN PLACE. BASE AGGREGATE DENSE 1 1/4-INCH SHALL BE INCIDENTAL TO BID ITEM "RIPRAP HEAVY".



PROTECTIVE SURFACE TREATMENT DETAIL



HP 10 x 42 SPLICE DETAIL

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-346

DRAWN BY CLS | PLANS CK'D. JCK

QUANTITIES AND NOTES

SHEET 2 OF 14
74

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STATE PROJECT NUMBER

2949-00-70

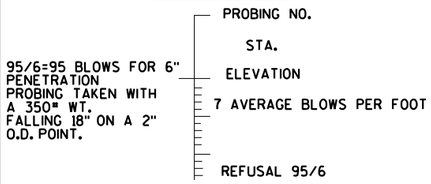
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

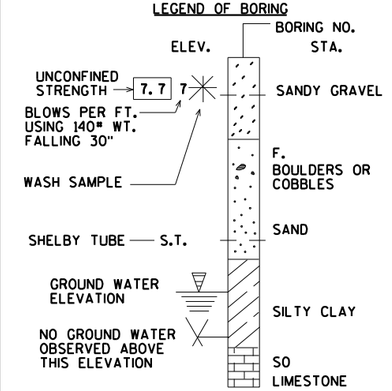
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



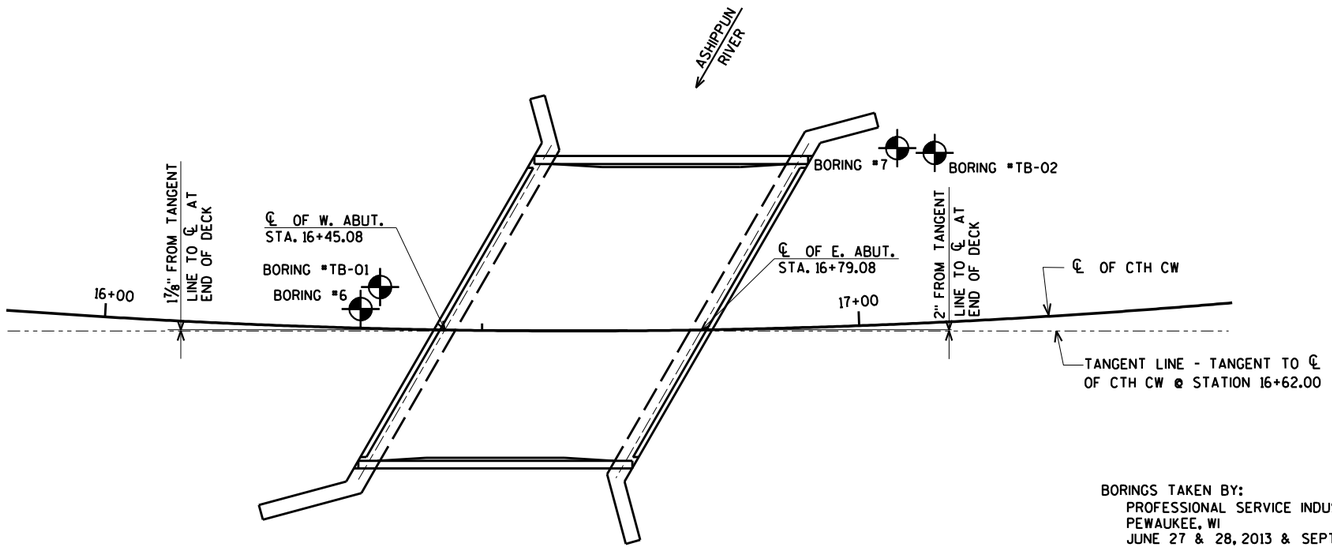
LEGEND OF BORING



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.

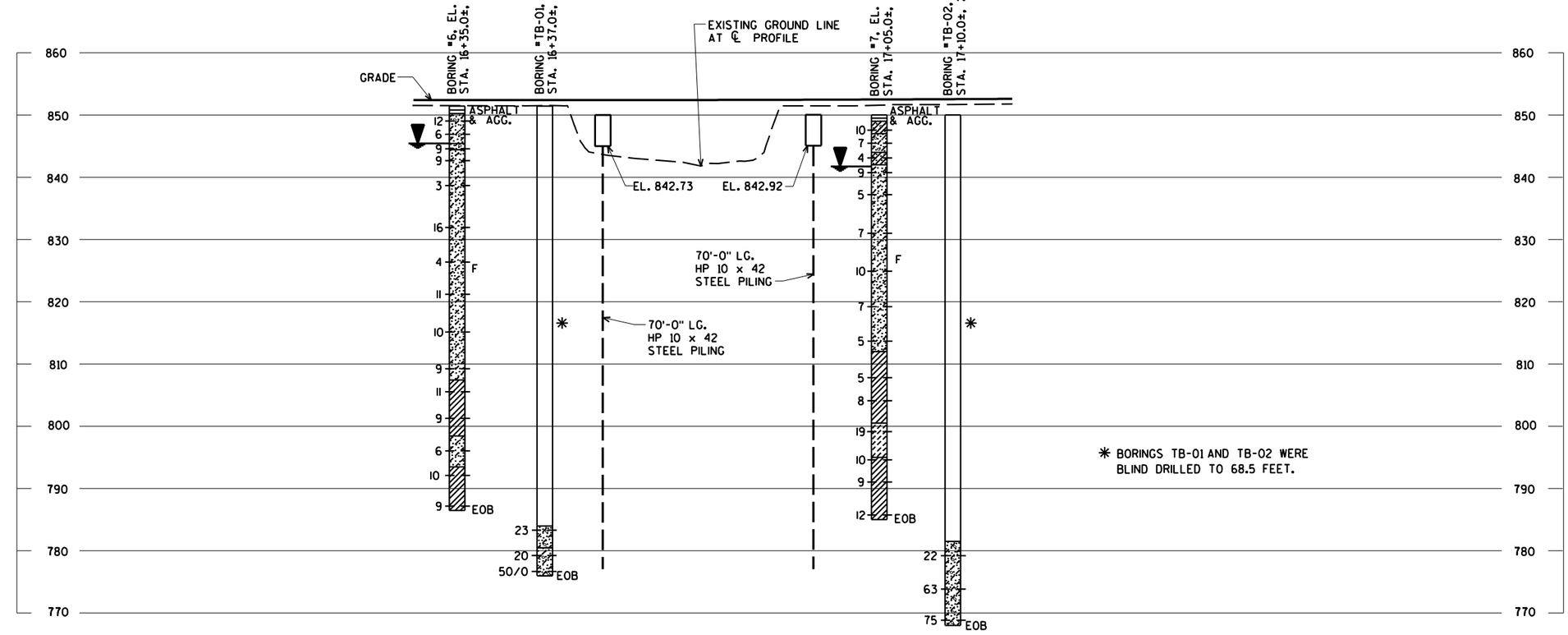
SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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.



BORINGS TAKEN BY:
PROFESSIONAL SERVICE INDUSTRIES, INC.
PEWAUKEE, WI
JUNE 27 & 28, 2013 & SEPTEMBER 16 & 17, 2013

GEOTECHNICAL REPORT BY:
PROFESSIONAL SERVICE INDUSTRIES, INC.
PEWAUKEE, WI
DECEMBER 20, 2013



* BORINGS TB-01 AND TB-02 WERE BLIND DRILLED TO 68.5 FEET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-346

DRAWN BY KAZ | PLANS CK'D. JCK

SUBSURFACE EXPLORATION

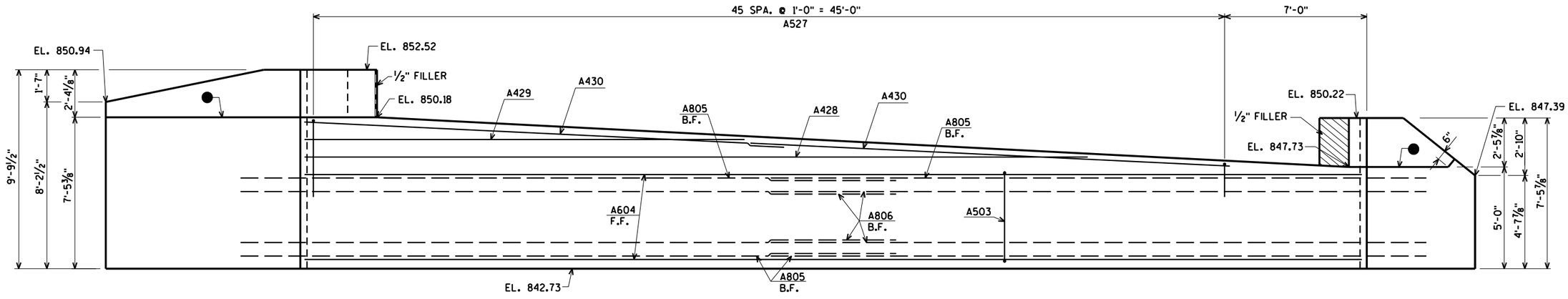
SHEET 3 OF 14
75

8

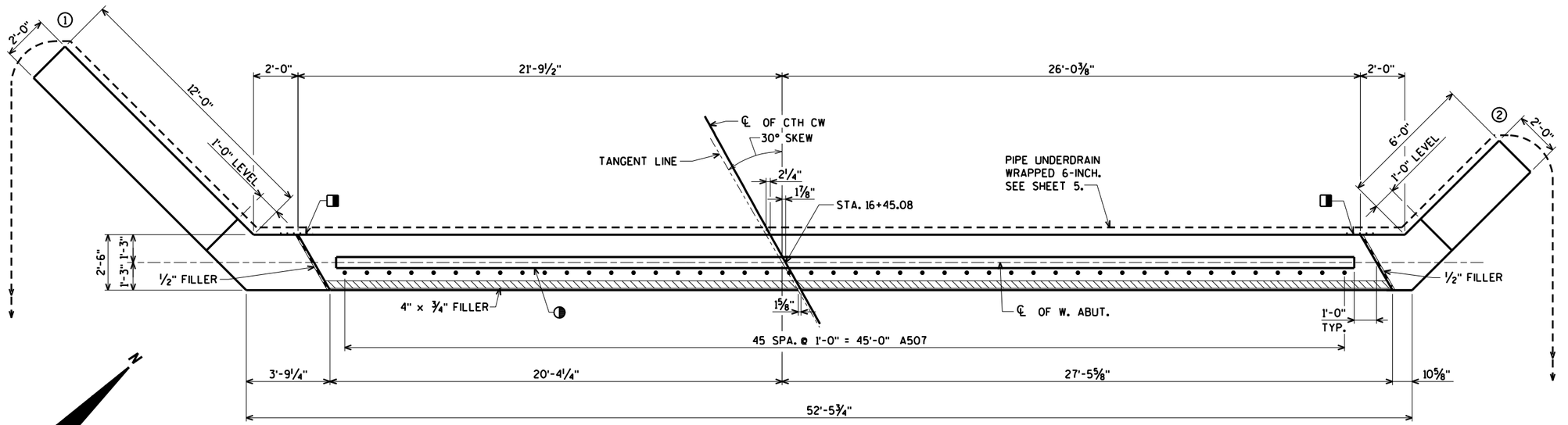
8

STATE PROJECT NUMBER
2949-00-70

NOTE: 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.)



ELEVATION
(LOOKING WEST)



PLAN

- ● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
- ◑ KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
- ◨ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

B.F. DENOTES BACK FACE

F.F. DENOTES FRONT FACE

WORK THIS SHEET WITH SHEETS 5 THRU 7

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-346

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WEST ABUTMENT

SHEET 4 OF 14
76

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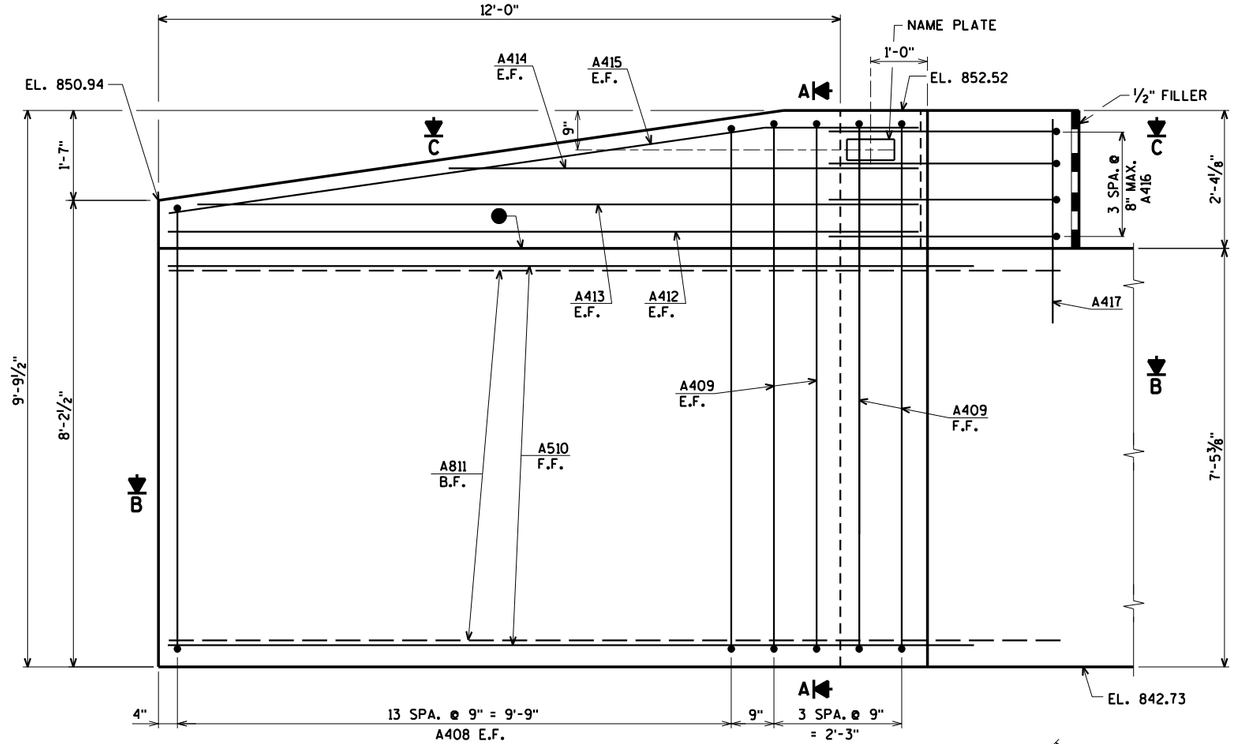
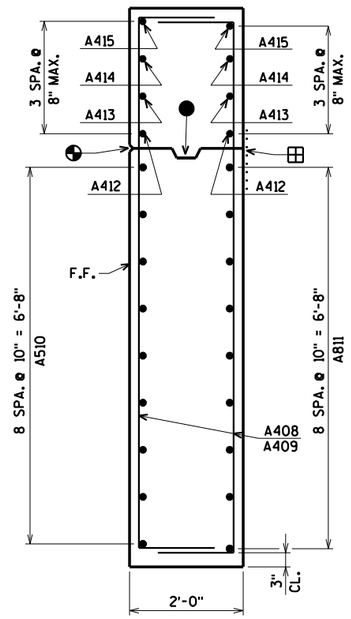
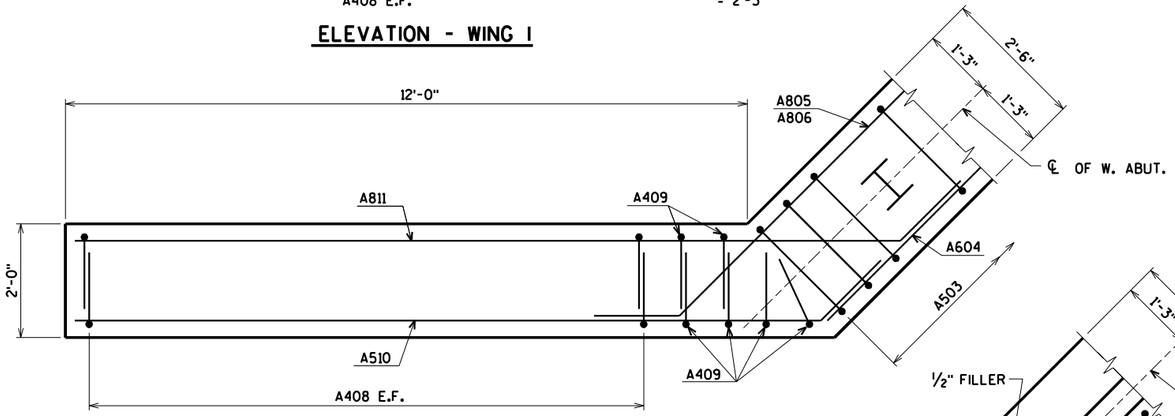


ELEVATION - WING 1

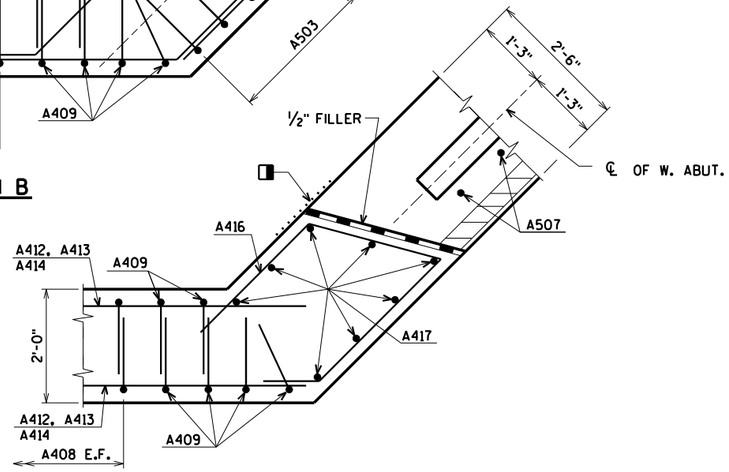


SECTION A

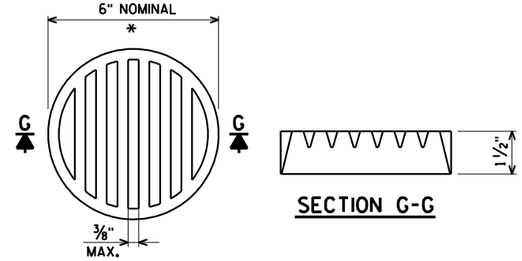
- ⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.
- ● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
- ⊕ ¾" 'V' GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.
- ◨ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.



SECTION B



SECTION C



SECTION G-G

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE 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 SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH SHEET METAL SCREWS.

RODENT SHIELD DETAIL

WORK THIS SHEET WITH SHEETS 4, 6 & 7

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-346

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WEST ABUTMENT WING 1 DETAILS

SHEET 5 OF 14
77

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8

8

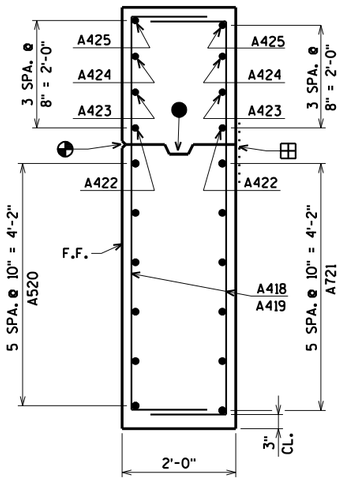
$PRFNAME$
U:\42-0789.00 - Waukesha County - CTH CW\BRIDGE\420789 wa.dgn

8/28/2014

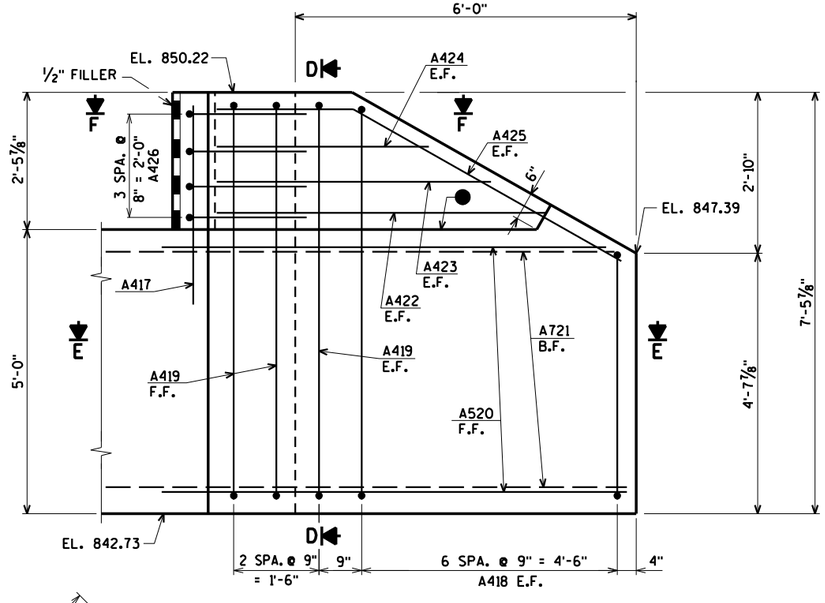
PENTABLE:BReau_shd_util.tbl

STATE PROJECT NUMBER

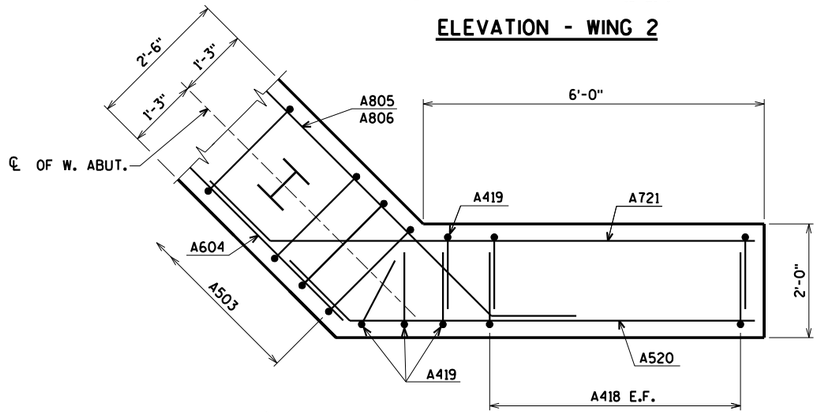
2949-00-70



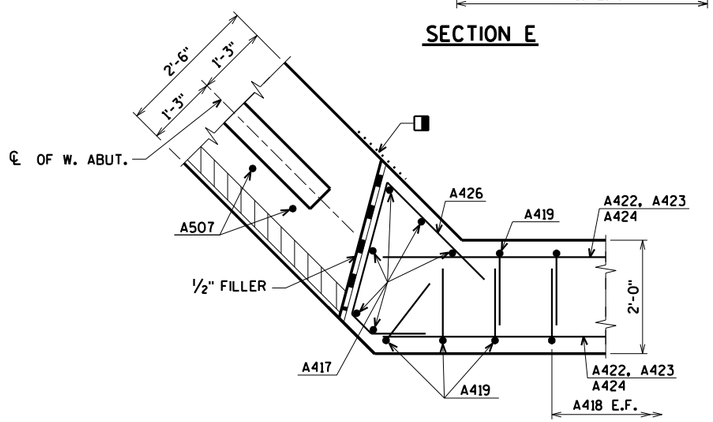
SECTION D



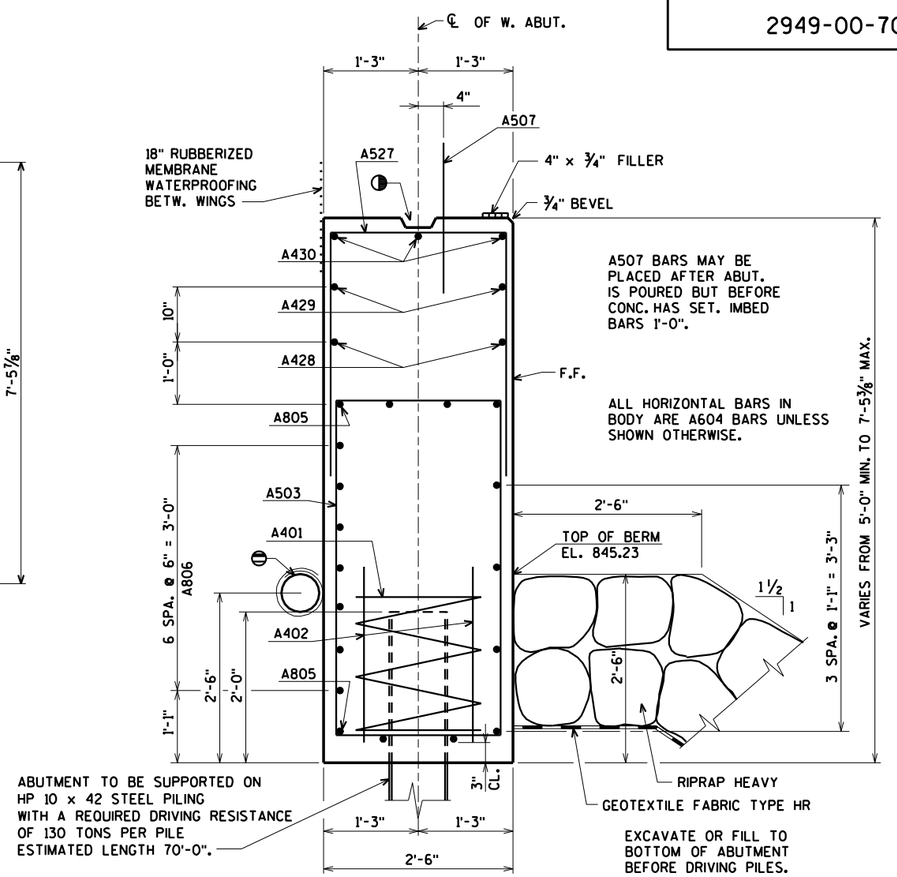
ELEVATION - WING 2



SECTION E



SECTION F



TYPICAL SECTION THRU BODY

- PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 5. RODENT SHIELD TO BE INCLUDED IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".
- KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
- 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.
- OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
- ¾" 'V' GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.
- VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

WORK THIS SHEET WITH SHEETS 4, 5 & 7

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-346

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WEST ABUTMENT WING 2 DETAILS

SHEET 6 OF 14
78

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STATE PROJECT NUMBER

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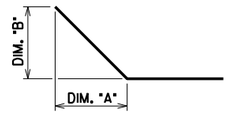
BILL OF BARS

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	5,190# COATED LOCATION
A401	X	7	28-0	X			BODY @ PILES
A402	X	14	2-3				BODY @ PILES
A503	X	65	13-8	X			BODY VERT.
A604	X	9	52-3				BODY HORIZ. F.F.
A805	X	4	32-10	X			BODY HORIZ. B.F.
A806	X	14	32-10	X			BODY HORIZ. B.F.
A507	X	46	2-0				BODY DOWELS
A408	X	28	11-0	X		⊗	WING 1 VERT. E.F.
A409	X	6	11-10	X			WING 1 VERT. E.F.
A510	X	9	14-9	X			WING 1 HORIZ. F.F.
A811	X	9	16-4	X			WING 1 HORIZ. B.F.
A412	X	2	13-3				WING 1 HORIZ. E.F.
A413	X	2	11-6				WING 1 HORIZ. E.F.
A414	X	2	7-3				WING 1 HORIZ. E.F.
A415	X	2	13-3	X			WING 1 DIAG. E.F.
A416	X	4	9-6	X			WING 1 HORIZ.
A417	X	14	3-8				WINGS 1 & 2 VERT.
A418	X	14	8-2	X		⊗	WING 2 VERT. E.F.
A419	X	4	9-6	X			WING 2 VERT. E.F.
A520	X	6	8-9	X			WING 2 HORIZ. F.F.
A721	X	6	10-4	X			WING 2 HORIZ. B.F.
A422	X	2	7-3				WING 2 HORIZ. E.F.
A423	X	2	6-1				WING 2 HORIZ. E.F.
A424	X	2	4-11				WING 2 HORIZ. E.F.
A425	X	2	7-8	X			WING 2 DIAG. E.F.
A426	X	4	6-7	X			WING 2 HORIZ.
A527	X	46	6-9	X		⊗	BODY VERT.
A428	X	2	35-7				BODY HORIZ.
A429	X	2	19-4				BODY HORIZ.
A430	X	6	23-9				BODY HORIZ.



BAR NO.	DIM. "A"	DIM. "B"
A805	1'-0¾"	1'-0¾"
A806	1'-0¾"	1'-0¾"
A510	1'-0¾"	1'-0¾"
A811	1'-0¾"	1'-0¾"
A415	10'-9"	1'-6"
A520	1'-0¾"	1'-0¾"
A721	1'-0¾"	1'-0¾"
A425	4'-9"	2'-9"

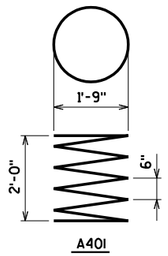
BAR SERIES TABLE

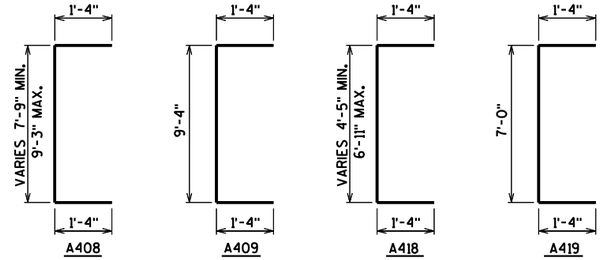
BAR MARK	NO REQ'D.	LENGTH
A408	2 SERIES OF 14	10'-3" TO 11'-9"
A418	2 SERIES OF 7	6'-11" TO 9'-5"
A527	1 SERIES OF 46	4'-7" TO 8'-11"

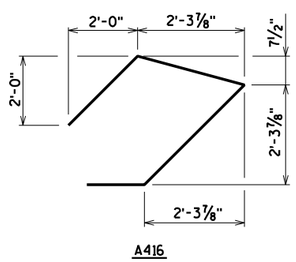
BUNDLE AND TAG EACH SERIES SEPARATELY.

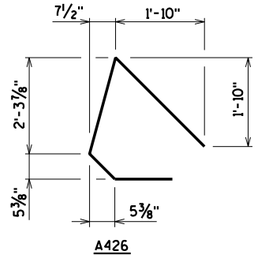
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

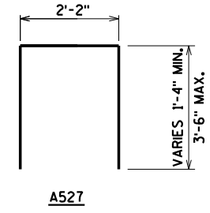
⊗ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

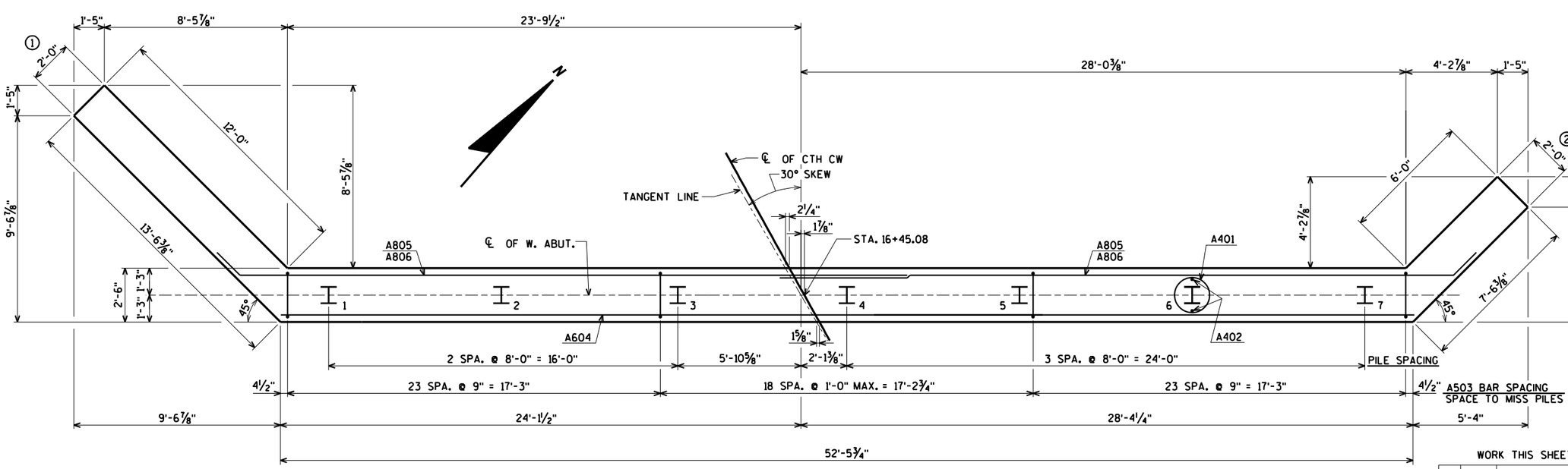












PILE LAYOUT

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

WORK THIS SHEET WITH SHEETS 4 THRU 6

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-346

DRAWN BY CLS | PLANS CK'D. JCK

WEST ABUTMENT PILE LAYOUT & BILL OF BARS

SHEET 7 OF 14
79

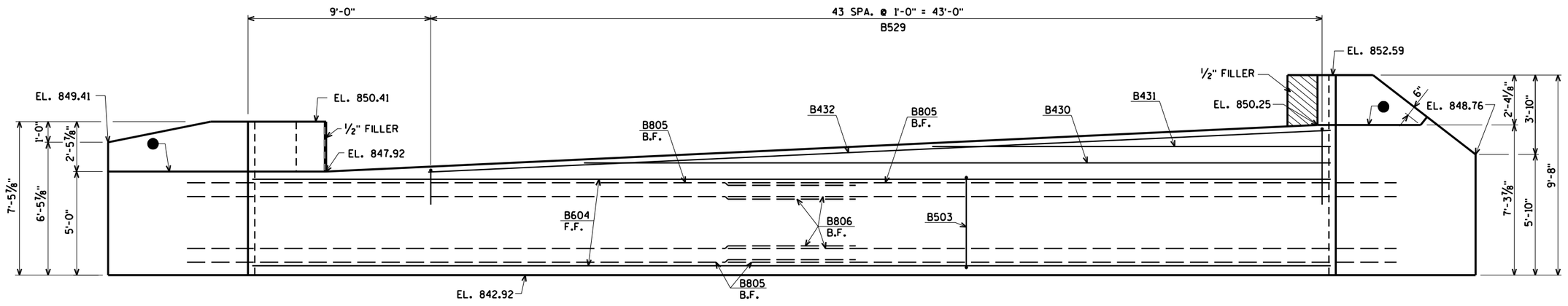
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

8/28/2014

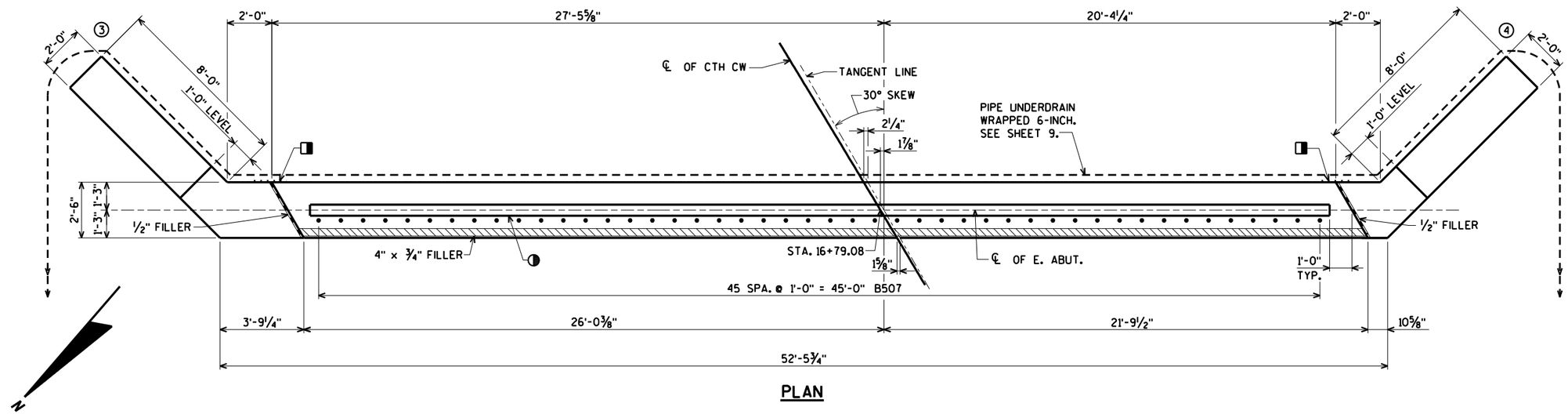
PENTABLE:BReau_shd_util.tbl

STATE PROJECT NUMBER
2949-00-70

NOTE: 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.)



ELEVATION
(LOOKING EAST)



PLAN

- ● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
- ◑ KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
- ◨ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

B.F. DENOTES BACK FACE

F.F. DENOTES FRONT FACE

WORK THIS SHEET WITH SHEETS 9 THRU 11

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-346

DRAWN BY	CLS	PLANS CK'D.	JCK

EAST ABUTMENT

SHEET 8 OF 14
80

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
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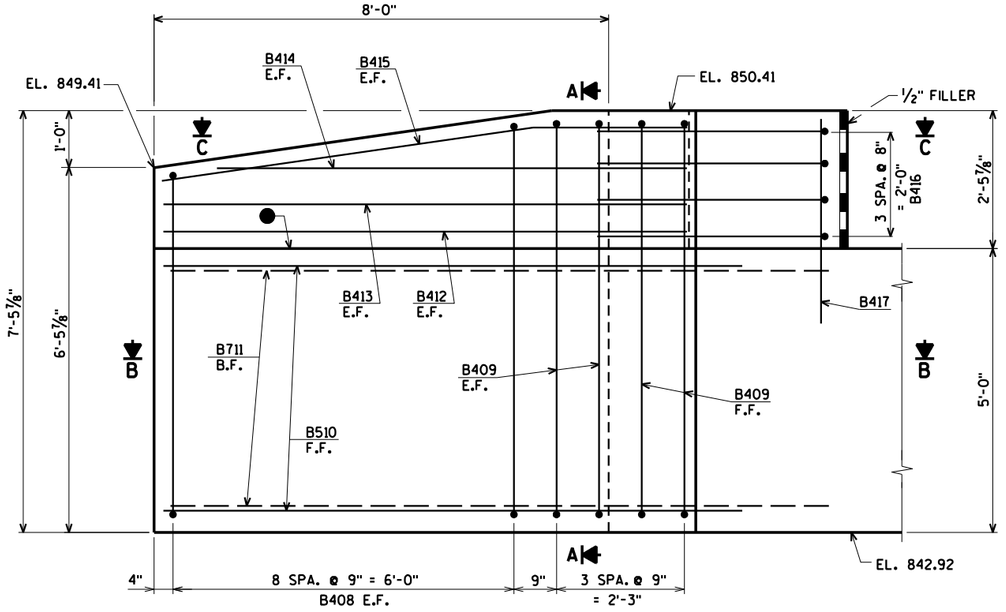
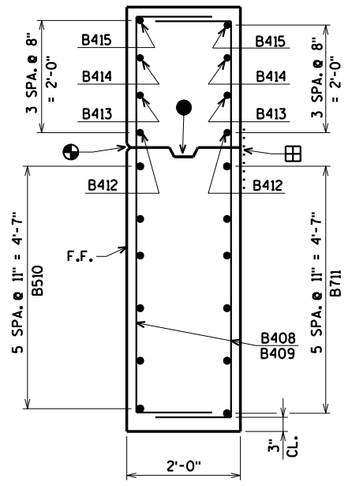
Eau Claire, WI 54701
www.AyresAssociates.com

STATE PROJECT NUMBER
2949-00-70



ELEVATION - WING 3



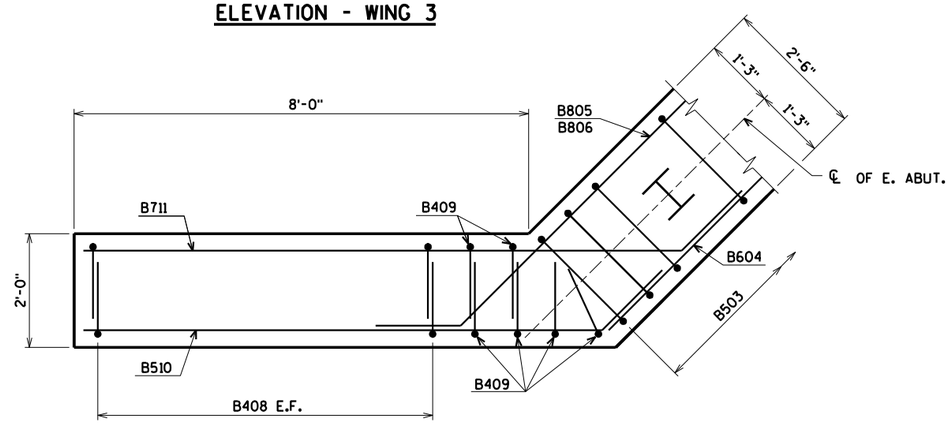
SECTION A

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

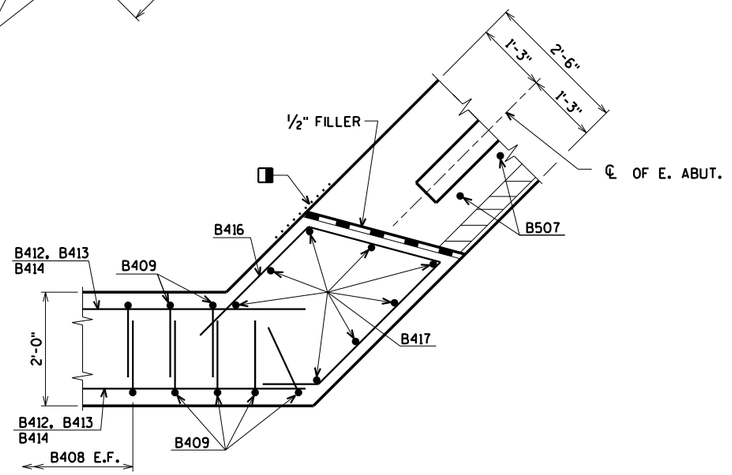
● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.

⊕ ¾" 'V' GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.

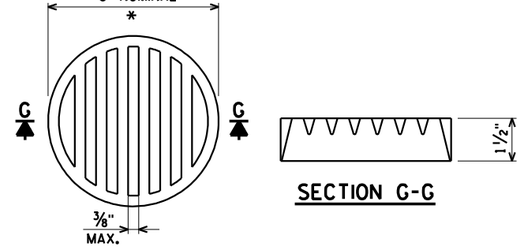
◨ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.



SECTION B



SECTION C



SECTION G-G

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE 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 SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH SHEET METAL SCREWS.

RODENT SHIELD DETAIL

WORK THIS SHEET WITH SHEETS 8, 10 & 11

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-346

DRAWN BY CLS | PLANS CK'D. JCK

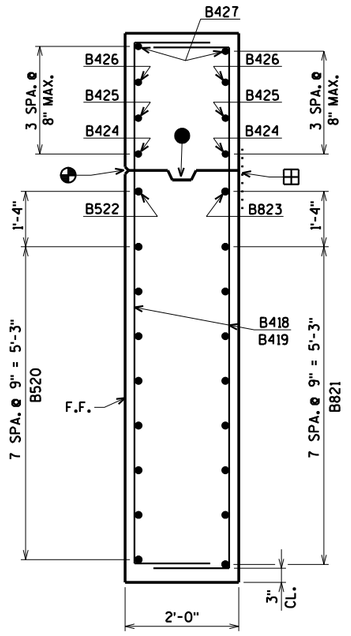
EAST ABUTMENT
WING 3 DETAILS

SHEET 9 OF 14
81

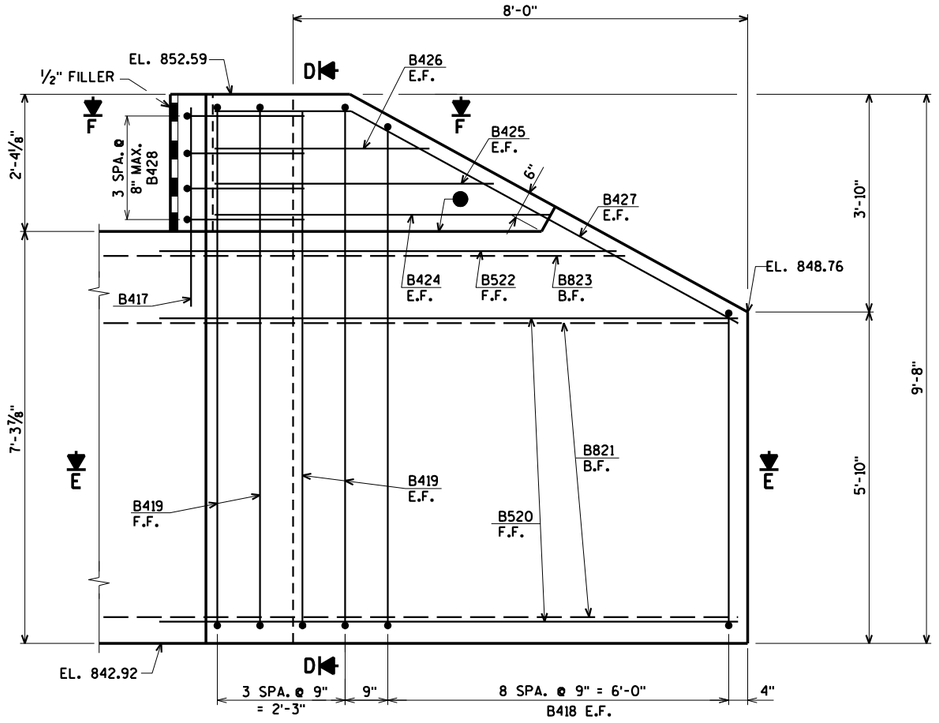
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

STATE PROJECT NUMBER

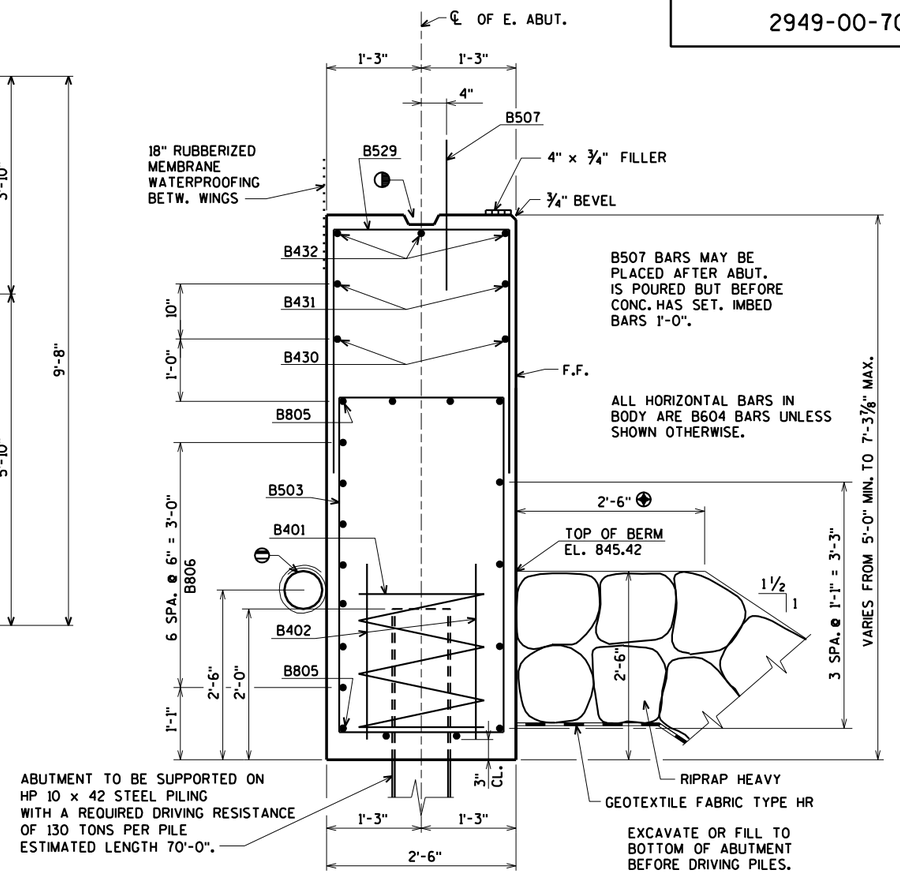
2949-00-70



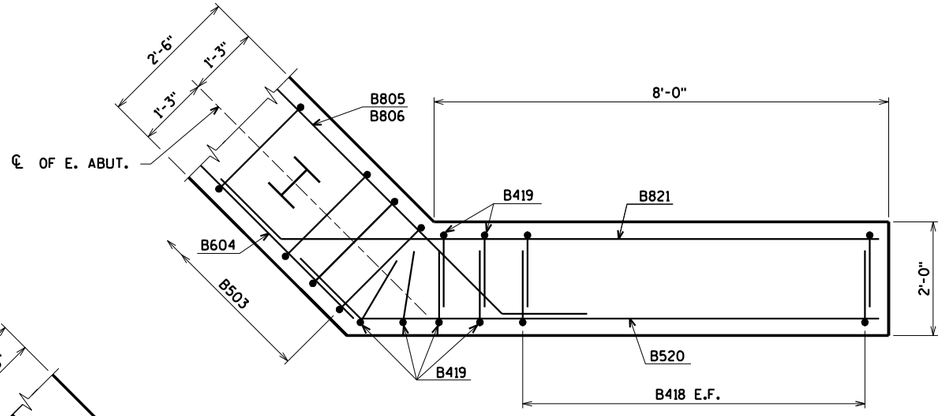
SECTION D



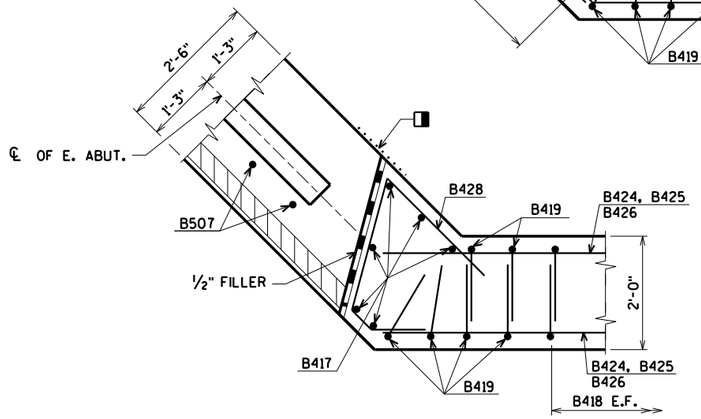
ELEVATION - WING 4



TYPICAL SECTION THRU BODY



SECTION E



SECTION F

- PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 5. RODENT SHIELD TO BE INCLUDED IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".
- KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
- 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.
- OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
- ¾" 'V' GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.
- VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

- INTEGRAL, AT-GRADE ECOPASSAGE. FOR DETAILS SEE SHEET 2.

WORK THIS SHEET WITH SHEETS 8, 9 & 11

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-346

DRAWN BY CLS | PLANS CK'D. JCK

EAST ABUTMENT WING 4 DETAILS

SHEET 10 OF 14
82

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

8

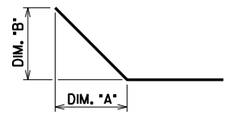
8

STATE PROJECT NUMBER

2949-00-70

BILL OF BARS

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	4,980# COATED LOCATION
B401	X	7	28-0	X		BODY @ PILES
B402	X	14	2-3			BODY @ PILES
B503	X	65	13-8	X		BODY VERT.
B604	X	9	52-3			BODY HORIZ. F.F.
B805	X	4	32-10	X		BODY HORIZ. B.F.
B806	X	14	32-10	X		BODY HORIZ. B.F.
B507	X	46	2-0			BODY DOWELS
B408	X	18	8-11	X	⊗	WING 3 VERT. E.F.
B409	X	6	9-6	X		WING 3 VERT. E.F.
B510	X	6	10-9	X		WING 3 HORIZ. F.F.
B711	X	6	12-4	X		WING 3 HORIZ. B.F.
B412	X	2	9-3			WING 3 HORIZ. E.F.
B413	X	2	9-3			WING 3 HORIZ. E.F.
B414	X	2	7-6			WING 3 HORIZ. E.F.
B415	X	2	9-3	X		WING 3 DIAG. E.F.
B416	X	4	9-6	X		WING 3 HORIZ.
B417	X	14	3-8			WINGS 3 & 4 VERT.
B418	X	18	9-9	X	⊗	WING 4 VERT. E.F.
B419	X	6	11-9	X		WING 4 VERT. E.F.
B520	X	8	10-9	X		WING 4 HORIZ. F.F.
B821	X	8	12-4	X		WING 4 HORIZ. B.F.
B522	X	1	8-6	X		WING 4 HORIZ. F.F.
B823	X	1	10-1	X		WING 4 HORIZ. B.F.
B424	X	2	6-0			WING 4 HORIZ. E.F.
B425	X	2	4-10			WING 4 HORIZ. E.F.
B426	X	2	3-8			WING 4 HORIZ. E.F.
B427	X	2	9-11	X		WING 4 DIAG. E.F.
B428	X	4	6-7			WING 4 HORIZ.
B529	X	44	6-7	X	⊗	BODY VERT.
B430	X	2	30-7			BODY HORIZ.
B431	X	2	13-6			BODY HORIZ.
B432	X	3	43-0			BODY HORIZ.



BAR NO.	DIM. "A"	DIM. "B"
B805	1'-0¾"	1'-0¾"
B806	1'-0¾"	1'-0¾"
B510	1'-0¾"	1'-0¾"
B711	1'-0¾"	1'-0¾"
B415	6'-9"	11"
B520	1'-0¾"	1'-0¾"
B821	1'-0¾"	1'-0¾"
B522	1'-0¾"	1'-0¾"
B823	1'-0¾"	1'-0¾"
B427	6'-9"	3'-9"

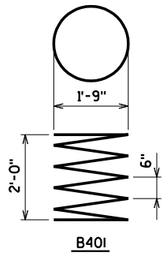
BAR SERIES TABLE

BAR MARK	NO REQ'D.	LENGTH
B408	2 SERIES OF 9	8'-6" TO 9'-4"
B418	2 SERIES OF 9	8'-1" TO 11'-5"
B529	1 SERIES OF 44	4'-7" TO 8'-7"

BUNDLE AND TAG EACH SERIES SEPARATELY.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

⊗ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.



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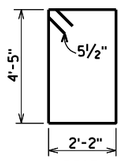

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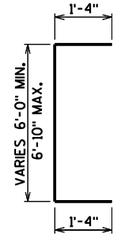

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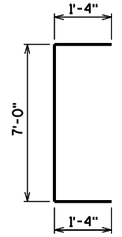

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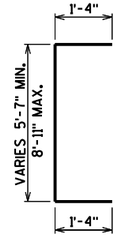

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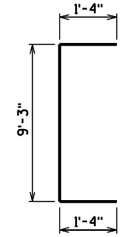

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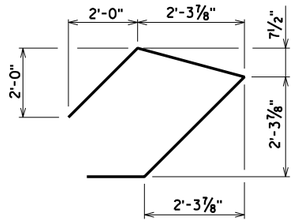

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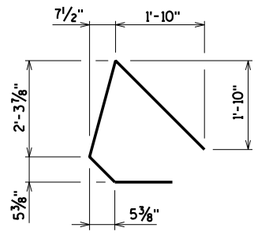

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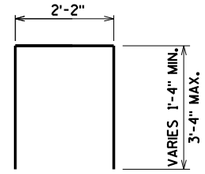


B529

PILE LAYOUT

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

WORK THIS SHEET WITH SHEETS 8 THRU 10

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-346

DRAWN BY CLS | PLANS CK'D. JCK

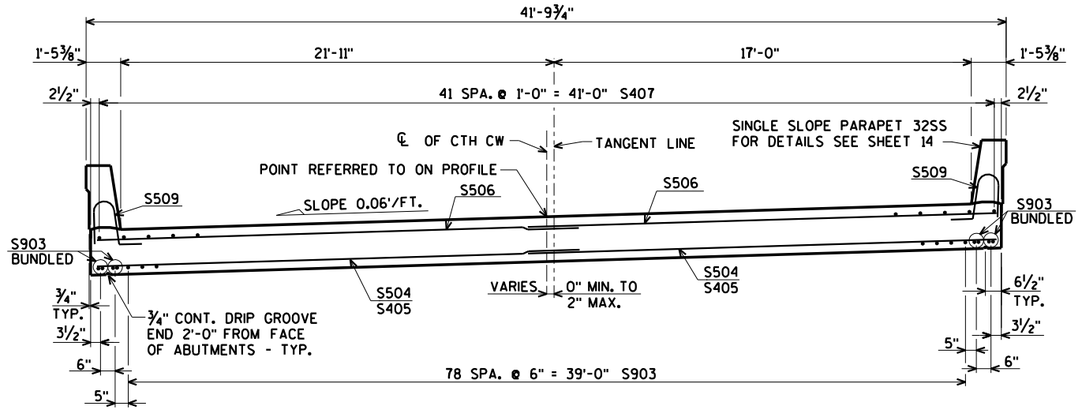
EAST ABUTMENT PILE LAYOUT & BILL OF BARS

SHEET 11 OF 14
83

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

8

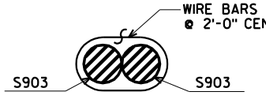
8



CROSS SECTION THRU ROADWAY
(LOOKING EAST)

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

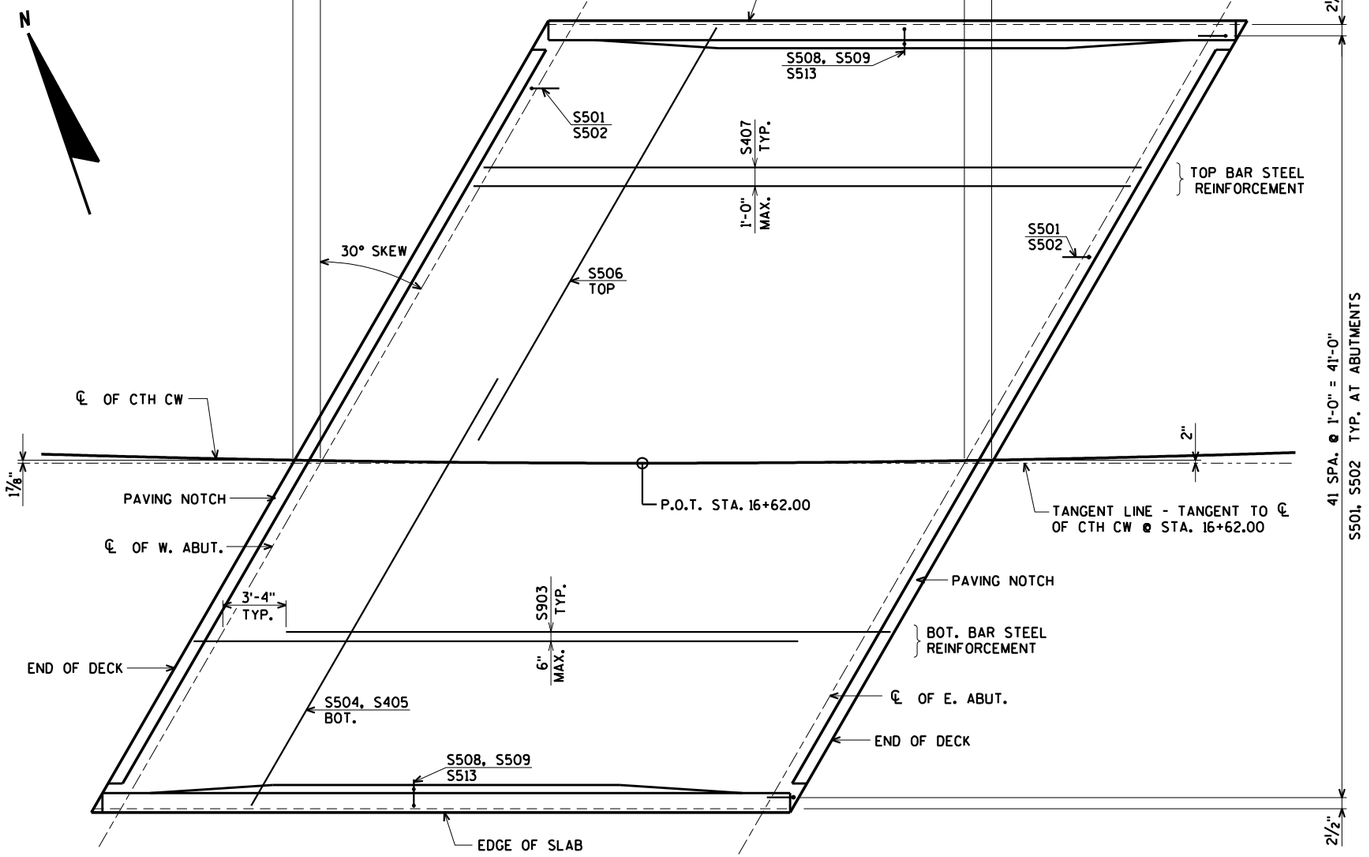


BUNDLING DETAIL

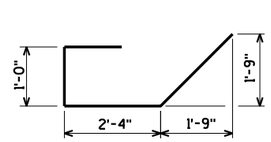
BILL OF BARS

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR	SERIES	16,860# COATED LOCATION
S501	X	84	7-1	X			SLAB @ ABUT.
S502	X	84	3-5	X			SLAB @ ABUT.
S903	X	87	31-11		X		SLAB LONG. BOT.
S504	X	44	25-0				SLAB TRANS. BOT.
S405	X	44	24-7				SLAB TRANS. BOT.
S506	X	70	25-2				SLAB TRANS. TOP
S407	X	42	34-11				SLAB LONG. TOP
S508	X	68	4-4	X			SLAB @ PARAPET VERT.
S509	X	58	4-5	X			SLAB @ PARAPET VERT.
S510	X	58	5-0	X			PARAPET VERT.
S511	X	10	36-0				PARAPET HORIZ.
S512	X	4	19-6	X			PARAPET HORIZ.
S513	X	48	2-9	X			PARAPET VERT.
S514	X	44	4-9	X			PARAPET VERT.
S515	X	24	4-10	X			PARAPET VERT.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



PLAN



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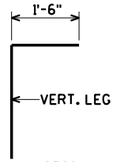
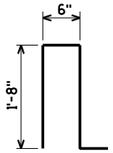


S502



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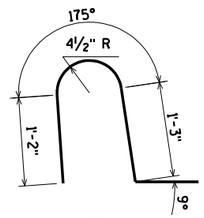

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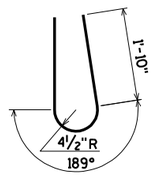

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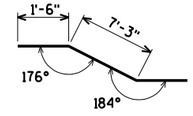

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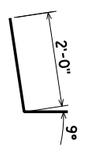

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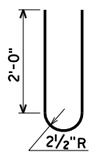

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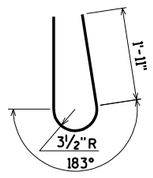


S515

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-346

DRAWN BY CLS | PLANS CK'D. JCK

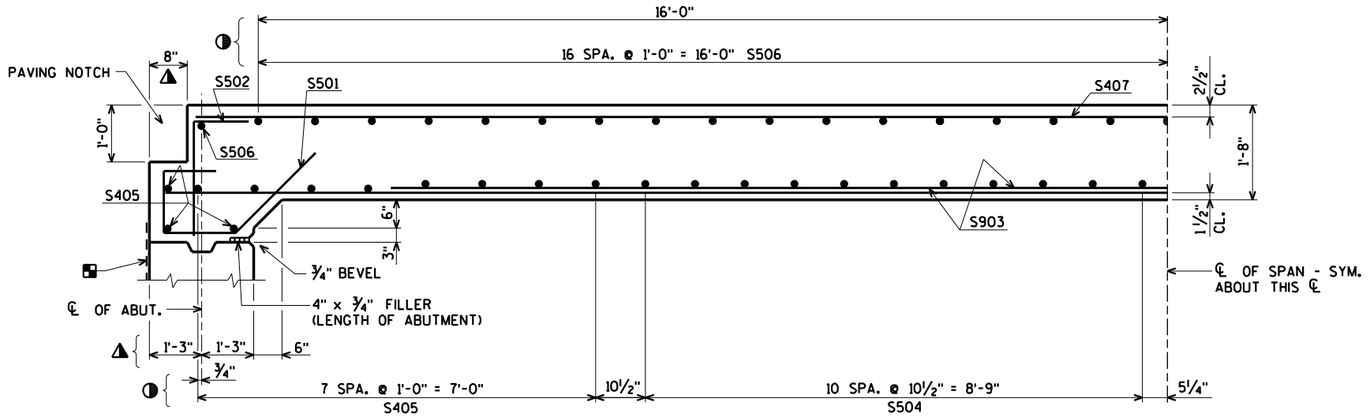
SUPERSTRUCTURE

SHEET 12 OF 14
84

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

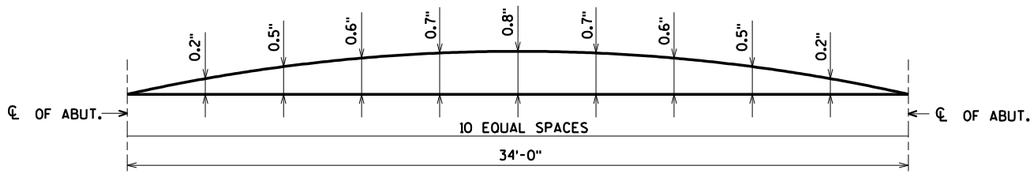
STATE PROJECT NUMBER

2949-00-70



PART LONGITUDINAL SECTION

- ■ 18" RUBBERIZED MEMBRANE WATERPROOFING
- ◑ DIMENSIONS MEASURED ALONG TANGENT LINE.
- ◭ DIMENSIONS MEASURED NORMAL TO ℄ OF SUBSTRUCTURE.



CAMBER DIAGRAM

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS AND 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND TANGENT LINE.

TOP OF DECK ELEVATIONS

LOCATION	℄ OF W. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ OF E. ABUT.
S. EDGE OF SLAB	850.22	850.23	850.24	850.26	850.27	850.29	850.31	850.33	850.36	850.38	850.41
TANGENT LINE	851.51	851.51	851.52	851.53	851.54	851.55	851.56	851.57	851.59	851.61	851.63
N. EDGE OF SLAB	852.52	852.52	852.52	852.53	852.53	852.54	852.54	852.55	852.57	852.58	852.59

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-346

DRAWN BY CLS | PLANS CK'D. JCK

SUPERSTRUCTURE DETAILS

SHEET 13 OF 14
85

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
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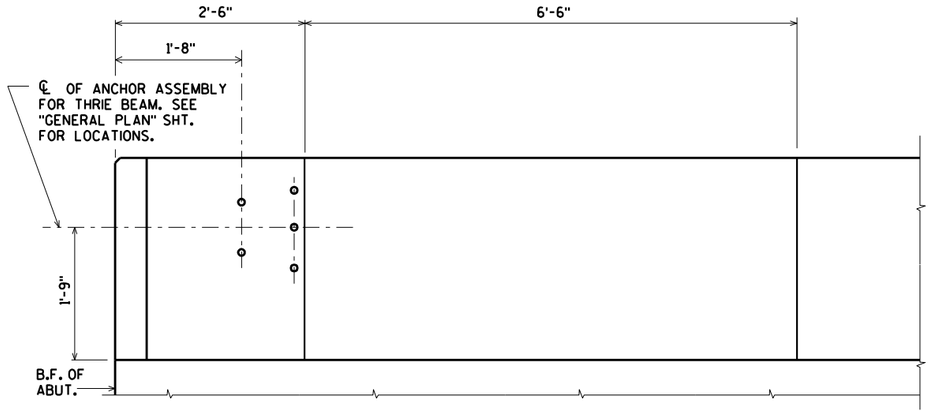
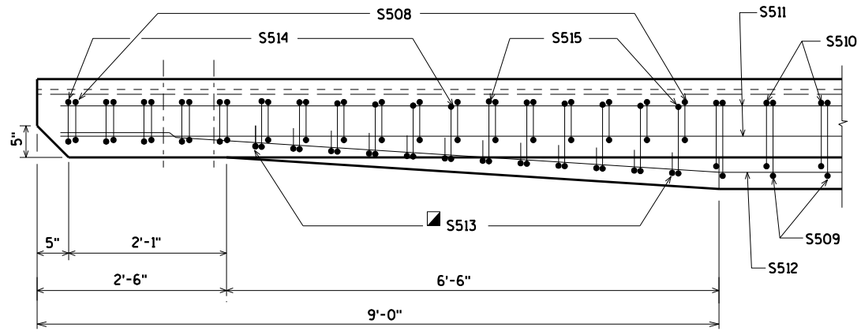
STATE PROJECT NUMBER

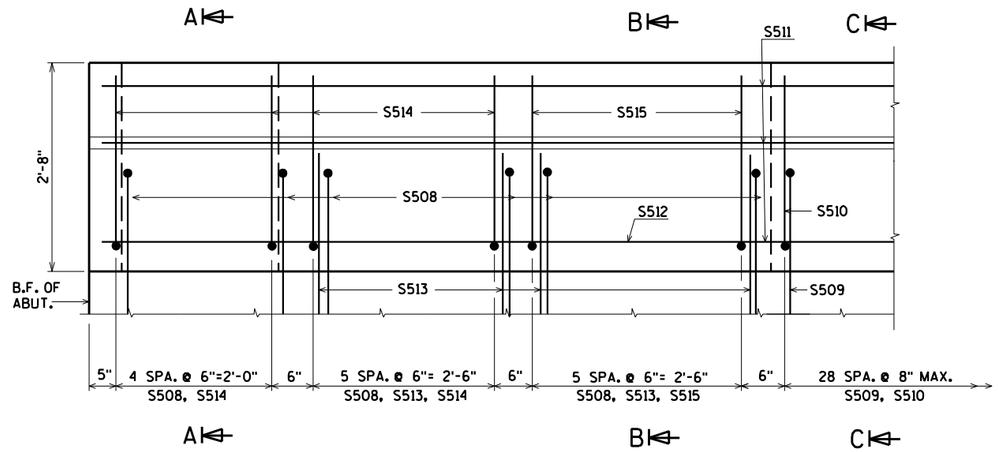
2949-00-70



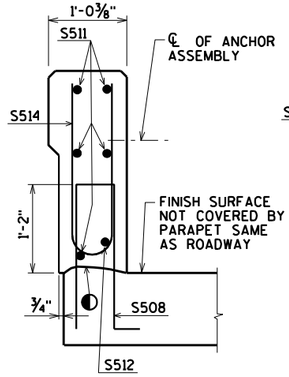
INSIDE ELEVATION



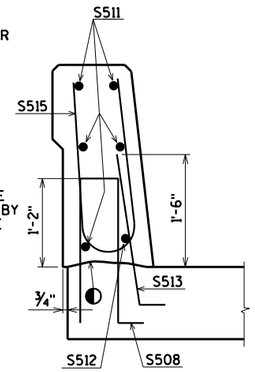
PLAN



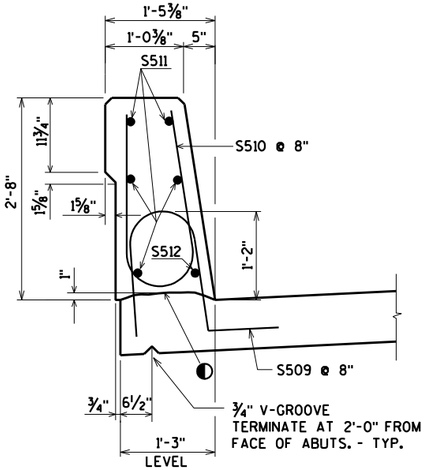
OUTSIDE ELEVATION



SECTION A



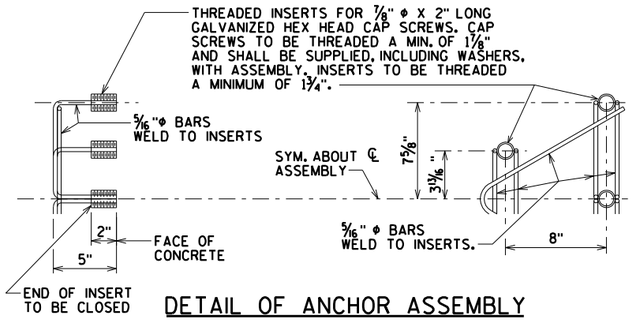
SECTION B



SECTION THRU PARAPET ON BRIDGE
SECTION C

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◪ S513 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE S513 BARS CORRECTLY ALONG TRANSITION OF PARAPET.



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-67-346

DRAWN BY CLS | PLANS CK'D. JCK

SINGLE SLOPE PARAPET 32SS

SHEET 14 OF 14
86

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

8

8

EARTHWORK TABLE FOR CTH CW 3947-05-71

3947-05-71 STATION	Real Station	Distance	AREA (SF) Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Incremental Vol (CY) (Unadjusted) Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cumulative Vol (CY) Cut 1.00	Expanded Fill 1.25	Expanded Marsh Backfill 1.50	Expanded Rock 1.10	Expanded EBS Backfill 1.30	Reduced Marsh in Fill 0.60	Reduced EBS In Fill 0.80	Mass Ordinate
									Note 1	Note 2	Note 3				Note 1		Note 4		Note 5	Note 6	Note 7	Note 8
12+50	1250		179	0	0	0	0	155	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13+00	1300	50	182	0	4	0	0	155	334	0	4	0	0	287	334	−282	0	0	373	0	230	617
13+50	1350	50	92	0	16	0	0	155	254	0	19	0	0	287	588	−546	0	0	746	0	459	1134
14+00	1400	50	117	0	29	0	0	155	194	0	42	0	0	287	781	−781	0	0	1119	0	689	1563
19+50	1950	0	0	0	857	234	0	0	0	0	0	0	0	0	781	−781	0	0	1119	0	689	1563
20+00	2000	50	15	0	1084	335	0	0	14	0	1797	527	0	0	781	1070	790	0	1119	316	689	−275
20+50	2050	50	60	0	1223	514	0	0	69	0	2136	786	0	0	851	3151	1969	0	1119	788	689	−2286
21+00	2100	50	82	0	1569	319	0	0	131	0	2585	771	0	0	982	5804	3126	0	1120	1251	689	−4807
21+50	2150	50	66	0	1879	0	0	0	137	0	3193	295	0	0	1119	9573	3569	0	1120	1428	689	−8439
22+00	2200	50	120	0	1401	0	0	0	172	0	3037	0	0	0	1292	13369	3569	0	1120	1428	689	−12064
22+50	2250	50	200	0	455	0	0	0	296	0	1719	0	0	0	1588	15517	3569	0	1120	1428	689	−13915
23+00	2300	50	187	0	516	0	0	0	358	0	899	0	0	0	1946	16641	3569	0	1120	1428	689	−14681
23+50	2350	50	80	0	590	0	0	0	247	0	1024	0	0	0	2194	17921	3569	0	1120	1428	689	−15714
24+00	2400	50	14	0	369	0	0	0	87	0	888	0	0	0	2281	19031	3569	0	1120	1428	689	−16737
24+50	2450	50	185	0	104	0	0	0	184	0	438	0	0	0	2465	19579	3569	0	1120	1428	689	−17100
25+00	2500	50	54	0	136	0	0	0	221	0	222	0	0	0	2686	19856	3569	0	1120	1428	689	−17156
25+50	2550	50	0	0	429	0	0	0	50	0	523	0	0	0	2736	20510	3569	0	1120	1428	689	−17760
26+00	2600	50	0	0	436	0	0	0	0	0	801	0	0	0	2736	21511	3569	0	1120	1428	689	−18761
26+50	2650	50	1	0	240	0	0	0	1	0	626	0	0	0	2737	22294	3569	0	1120	1428	689	−19543
27+00	2700	50	37	0	70	0	0	0	35	0	287	0	0	0	2772	22653	3569	0	1120	1428	689	−19867
27+50	2750	50	297	0	0	0	0	0	309	0	65	0	0	0	3081	22734	3569	0	1120	1428	689	−19638
28+00	2800	50	554	0	0	0	0	0	788	0	0	0	0	0	3869	22734	3569	0	1120	1428	689	−18850
28+50	2850	50	826	0	0	0	0	0	1278	0	0	0	0	0	5147	22734	3569	0	1120	1428	689	−17573
29+00	2900	50	1058	0	0	0	0	0	1744	0	0	0	0	0	6892	22734	3569	0	1120	1428	689	−15828
29+50	2950	50	916	0	0	0	0	0	1828	0	0	0	0	0	8719	22734	3569	0	1120	1428	689	−14000
30+00	3000	50	833	0	0	0	0	0	1619	0	0	0	0	0	10339	22734	3569	0	1120	1428	689	−12381
30+50	3050	50	614	0	0	0	0	0	1340	0	0	0	0	0	11679	22734	3569	0	1120	1428	689	−11041
31+00	3100	50	387	0	0	0	0	0	927	0	0	0	0	0	12606	22734	3569	0	1120	1428	689	−10114
31+50	3150	50	237	0	5	0	0	0	578	0	5	0	0	0	13183	22739	3569	0	1120	1428	689	−9542
							Column totals		13197	0	20308	2380	0	861								

Notes:	
1 – Cut	Cut includes Salvaged/Unusable Pavement material
2 – Salvaged/Unusable Pavement Material	This does not show up in cross sections
3 – Fill	Does not include Unusable Pavement Exc volume
4 – Expanded Marsh Backfill	Will be backfilled with Granular Backfill (or Cut, or Borrow)
5 – Expanded EBS	Will be backfilled with Granular Backfill (or Cut, or Borrow)
6 – Reduced Marsh in Fill	Reduced Marsh Excavation that can be used in Fill
7 – Reduced EBS in Fill	Reduced EBS Excavation that can be used in Fill
8 – Mass Ordinate	If Marsh or EBS to be backfilled with Cut or Borrow: [(Cut + Marsh Exc + EBS) – ((Fill – Reduced Marsh in Fill) – (Reduced EBS in Fill) – Expanded Rock) * Fill Factor)]

EARTHWORK TABLE FOR CTH CW 2949-00-70

2949-00-70 Real Station			AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)							Mass Ordinate
STATION		Distance	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Expanded Fill	Expanded Marsh Backfill	Expanded Rock	Expanded EBS Backfill	Reduced Marsh in Fill	Reduced EBS In Fill	
															1.00	1.25	1.50	1.10	1.30	0.60	0.80	
									Note 1	Note 2	Note 3				Note 1		Note 4		Note 5	Note 6	Note 7	Note 8
14+50	1450	0	126	0	36	0	0	178	0	0	0	0	0	0	387	0	0	0	0	0	0	0
15+00	1500	50	126	0	78	0	0	0	233	0	106	0	0	165	365	−33	0	0	214	0	132	266
15+50	1550	50	209	0	94	0	0	0	387	0	174	0	0	0	752	218	0	0	0	0	0	169
16+00	1600	50	185	0	143	0	0	0	365	0	219	0	0	0	1013	492	0	0	0	0	0	260
16+45	1645	45	129	0	383	0	0	0	261	0	438	0	0	0	1275	1040	0	0	0	0	0	−27
16+80	1680	0	111	0	288	0	0	0	0	0	0	0	0	0	1275	1040	0	0	0	0	0	−27
17+00	1700	20	94	0	251	0	0	0	82	0	228	0	0	0	1357	1325	0	0	0	0	0	−229
17+50	1750	50	70	0	271	116	0	0	152	0	483	107	0	0	1509	1848	161	0	0	64	0	−601
18+00	1800	50	11	0	357	91	0	0	75	0	581	192	0	0	1584	2431	449	0	0	179	0	−1109
18+50	1850	50	0	0	438	173	0	0	0	0	811	320	0	0	1584	3205	929	0	0	372	0	−1872
19+00	1900	50	0	0	616	391	0	0	0	0	976	522	0	0	1584	4033	1713	0	0	685	0	−2700
19+50	1950	50	0	0	857	234	0	0	0	0	1587	433	0	0	1584	5692	2363	0	0	945	0	−4359
								Column totals	1556	0	5604	1575	0	165								

Notes:	
1 – Cut	Cut includes Salvaged/Unusable Pavement material
2 – Salvaged/Unusable Pavement Material	This does not show up in cross sections
3 – Fill	Does not include Unusable Pavement Exc volume
4 – Expanded Marsh Backfill	Will be backfilled with Granular Backfill (or Cut, or Borrow)
5 – Expanded EBS	Will be backfilled with Granular Backfill (or Cut, or Borrow)
6 – Reduced Marsh in Fill	Reduced Marsh Excavation that can be used in Fill
7 – Reduced EBS in Fill	Reduced EBS Excavation that can be used in Fill
8 – Mass Ordinate	If Marsh or EBS to be backfilled with Cut or Borrow: [(Cut + Marsh Exc + EBS) – ((Fill – Reduced Marsh in Fill) – (Reduced EBS in Fill) – Expanded Rock) * Fill Factor)]

STATION	Real Station	Distance	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)							
			Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Expanded Fill	Expanded Marsh Backfill	Expanded Rock	Expanded EBS Backfill	Reduced Marsh in Fill	Reduced EBS In Fill	Mass Ordinate
															1.00	1.25	1.50	1.10	1.30	0.60	0.80	
									Note 1	Note 2	Note 3				Note 1		Note 4		Note 5	Note 6	Note 7	Note 8
50+50	5050		129.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51+00	5100	50	89.0	0.0	0.0	0.0	0.0	0.0	202	0	0	0	0	0	202	0	0	0	0	0	0	202
51+50	5150	50	78.0	0.0	0.0	0.0	0.0	0.0	155	0	0	0	0	0	356	0	0	0	0	0	0	356
51+70	5170	20	0.0	0.0	0.0	0.0	0.0	0.0	29	0	0	0	0	0	385	0	0	0	0	0	0	385
							COLUMN TOTALS		385	0	0	0	0	0								

Notes:	
1 – Cut	Cut includes Salvaged/Unusable Pavement material
2 – Salvaged/Unusable Pavement Material	This does not show up in cross sections
3 – Fill	Does not include Unusable Pavement Exc volume
4 – Expanded Marsh Backfill	Will be backfilled with Granular Backfill (or Cut, or Borrow)
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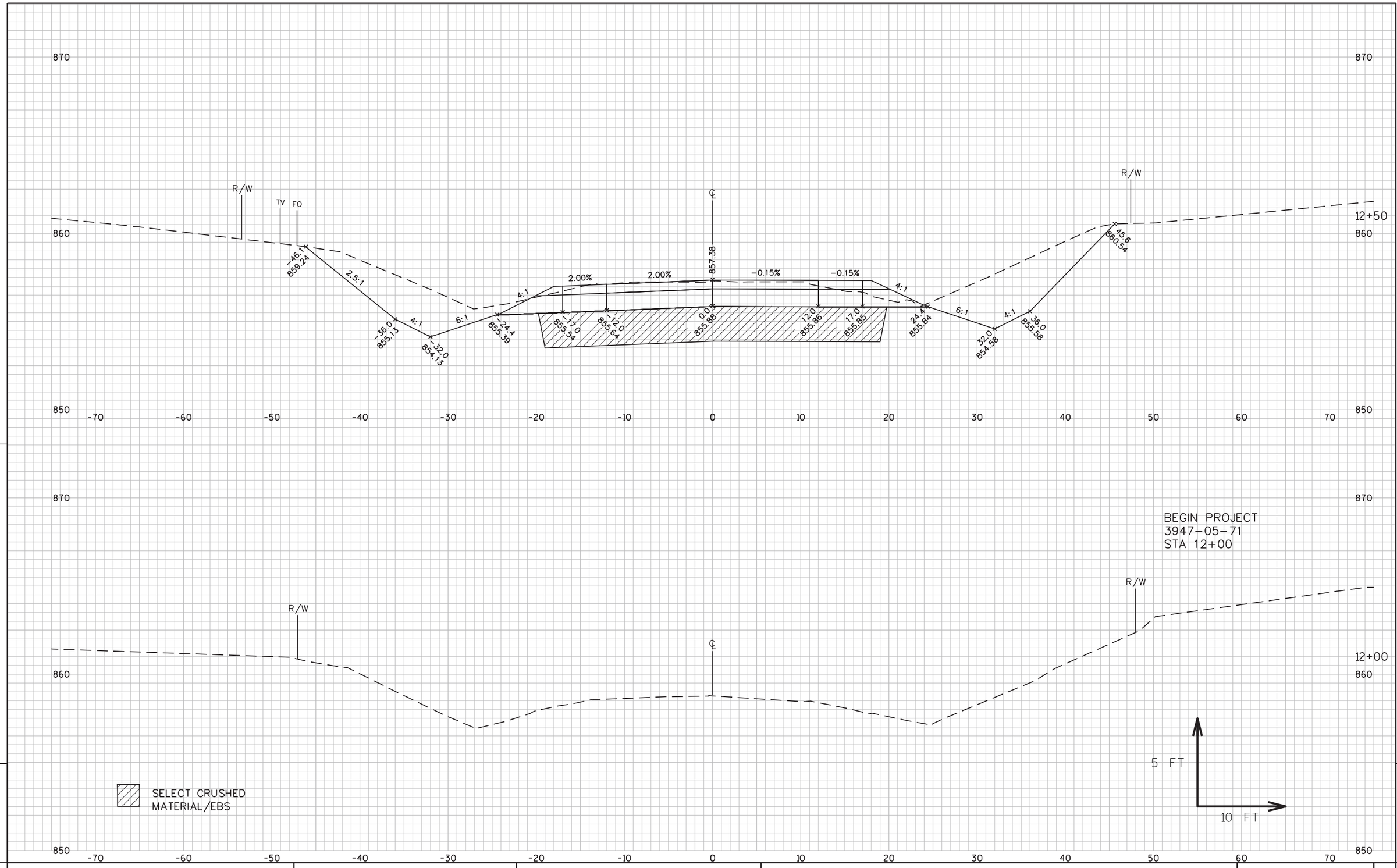
7 – Reduced EBS in Fill	Reduced EBS Excavation that can be used in Fill
8 – Mass Ordinate	If Marsh or EBS to be backfilled with Cut or Borrow: [(Cut + Marsh Exc + EBS) – ((Fill – Reduced Marsh in Fill) – (Reduced EBS in Fill) – Expanded Rock) * Fill Factor)]



PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 90	E

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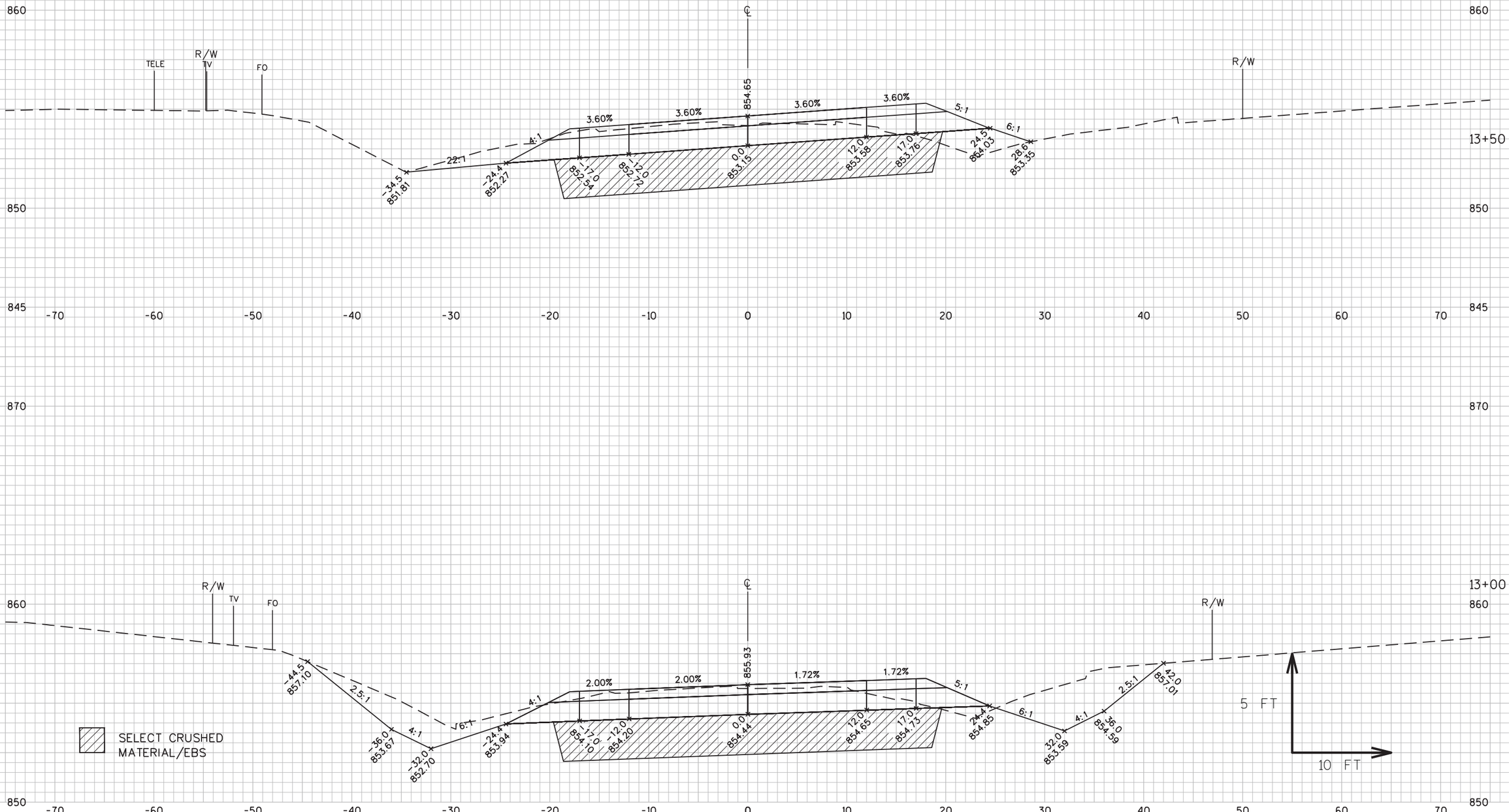
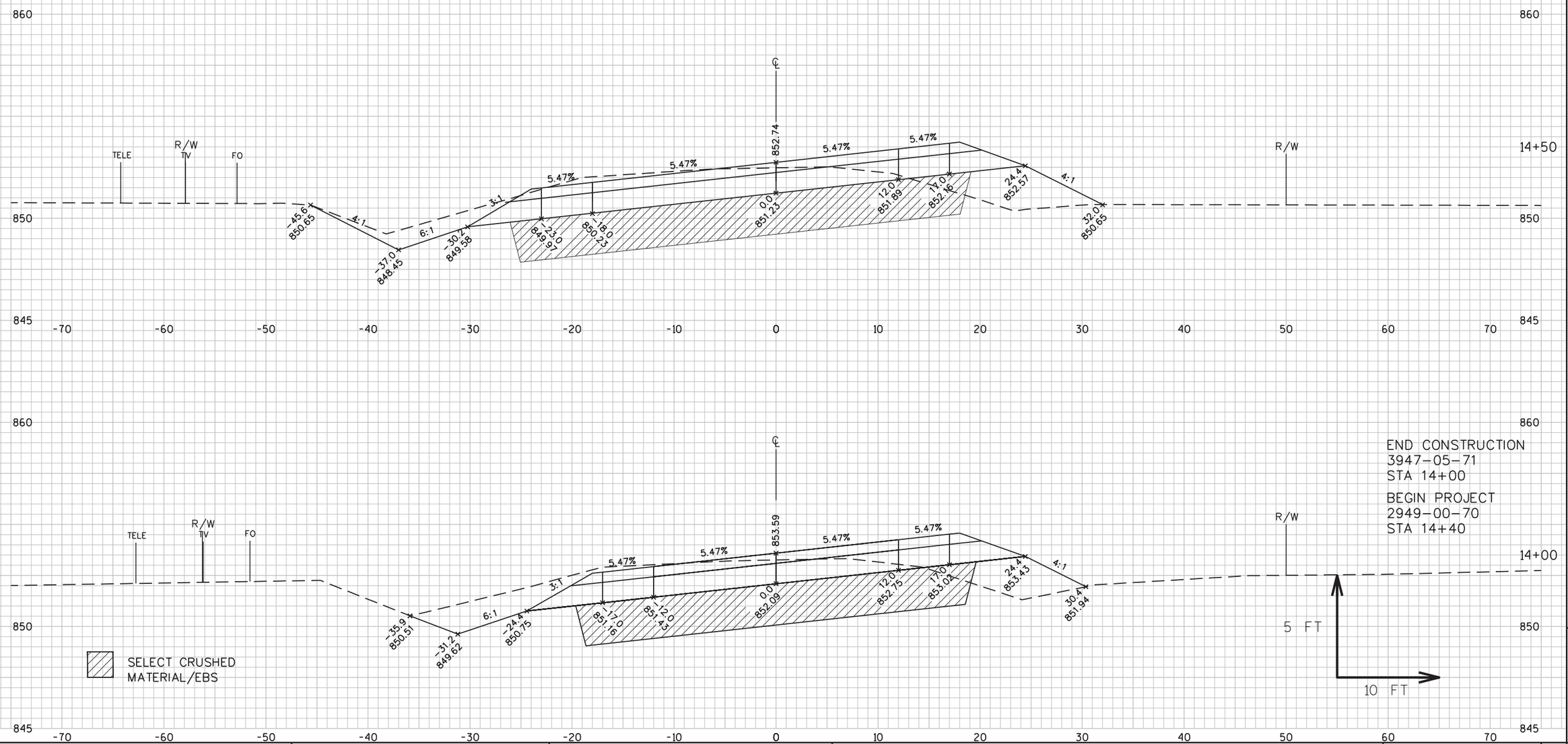


PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 91	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:24 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 92 E

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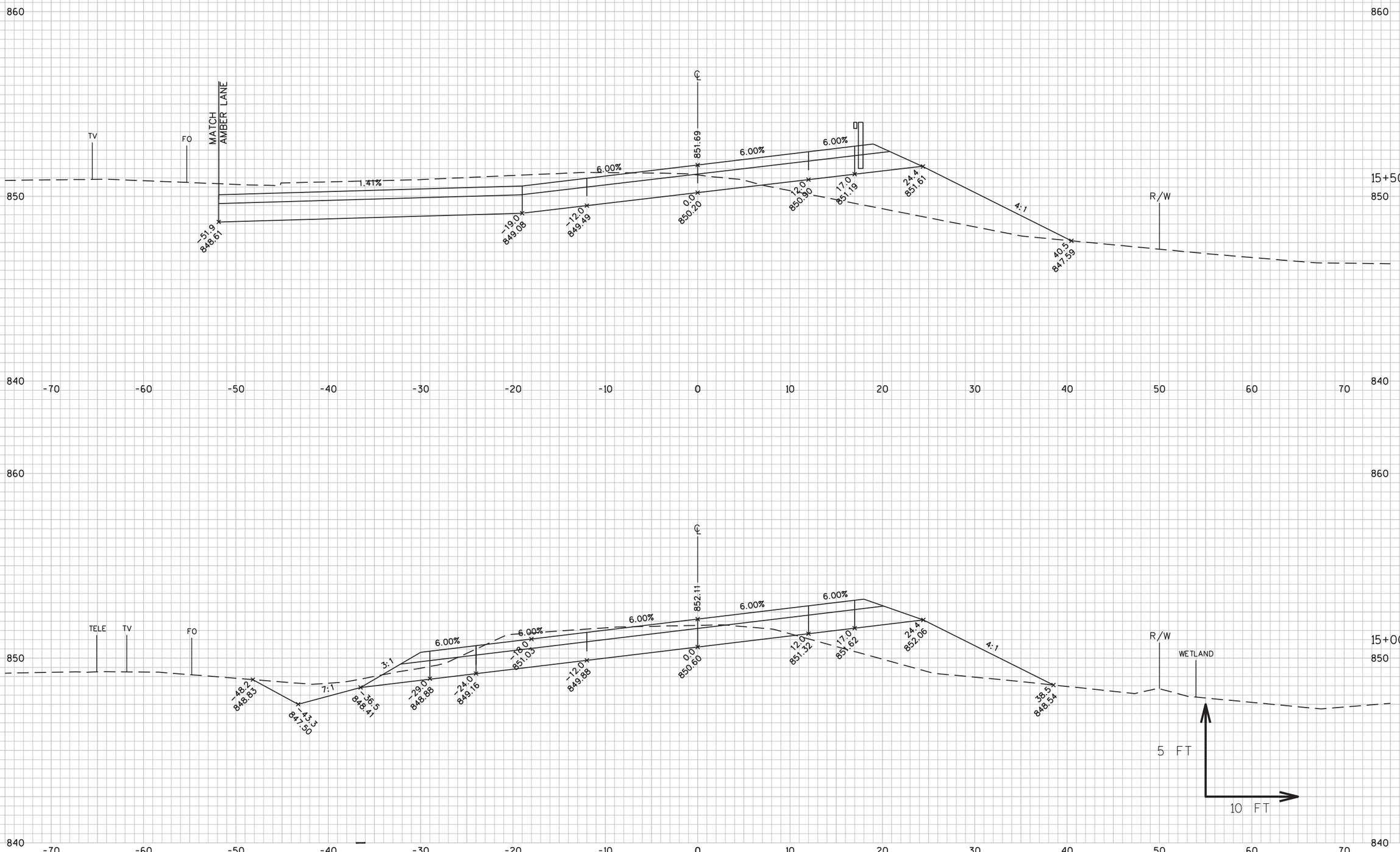
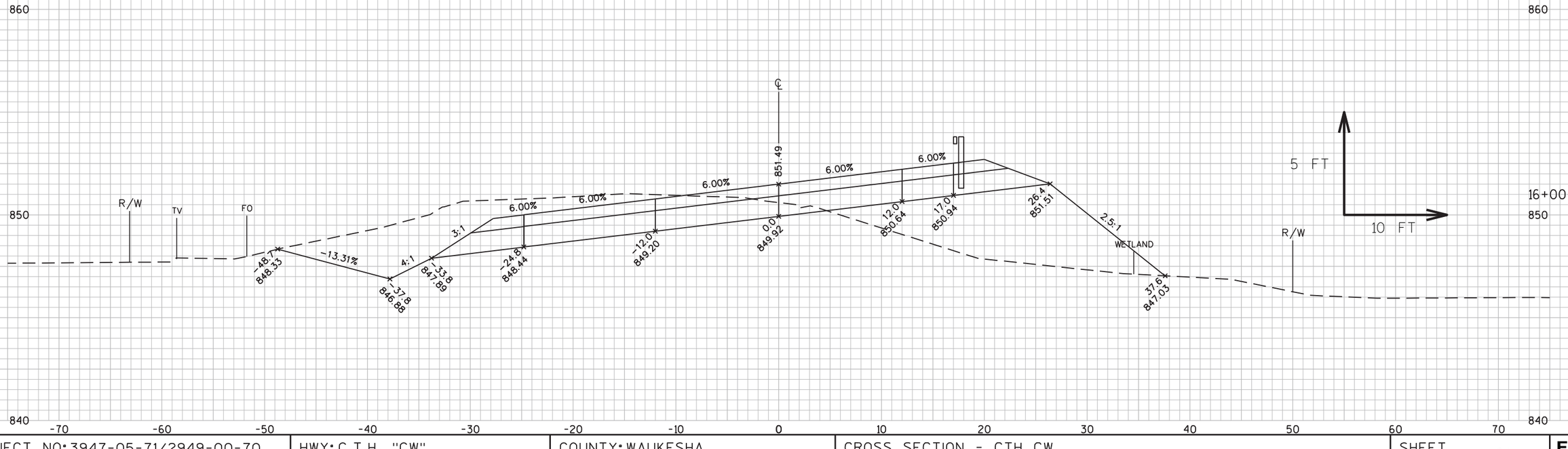


PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 93 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:25 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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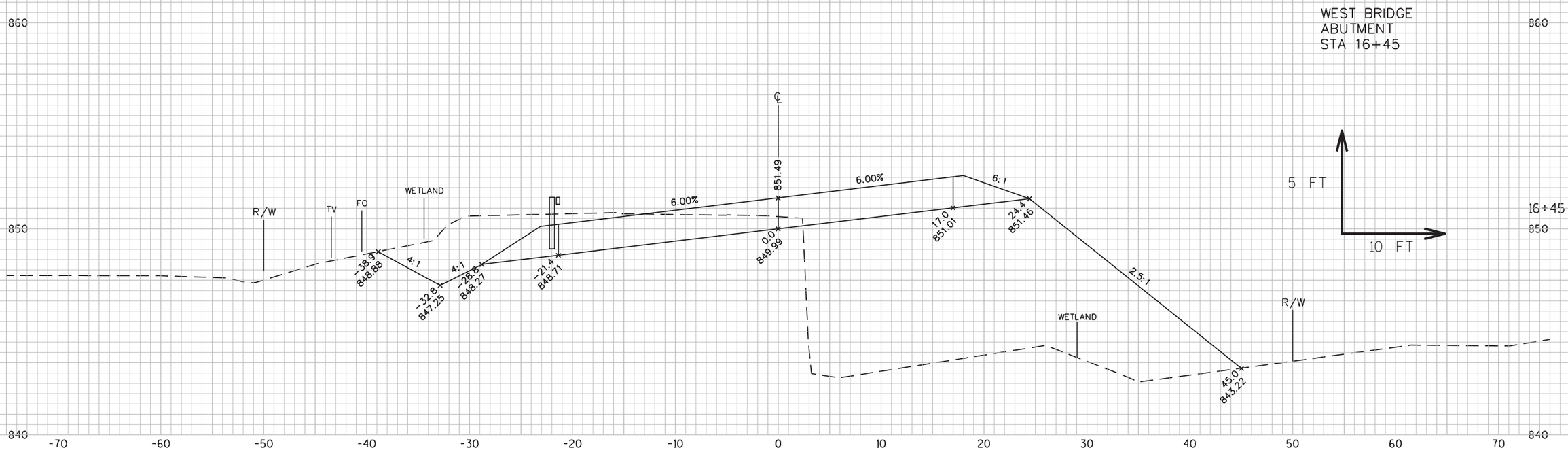
PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 94	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:25 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 95	E

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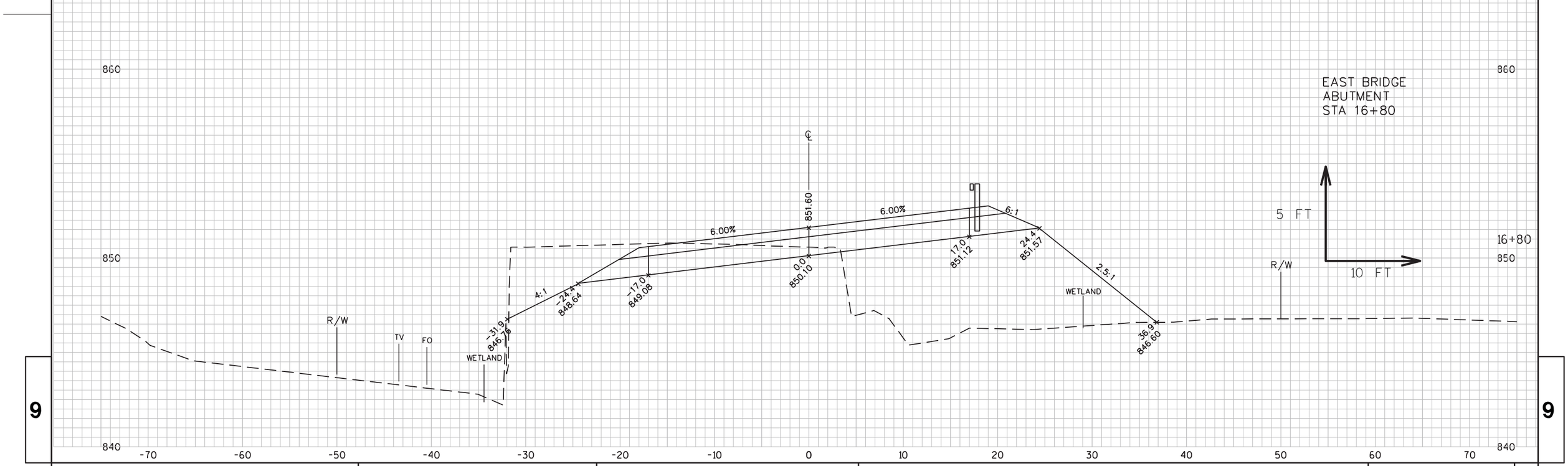
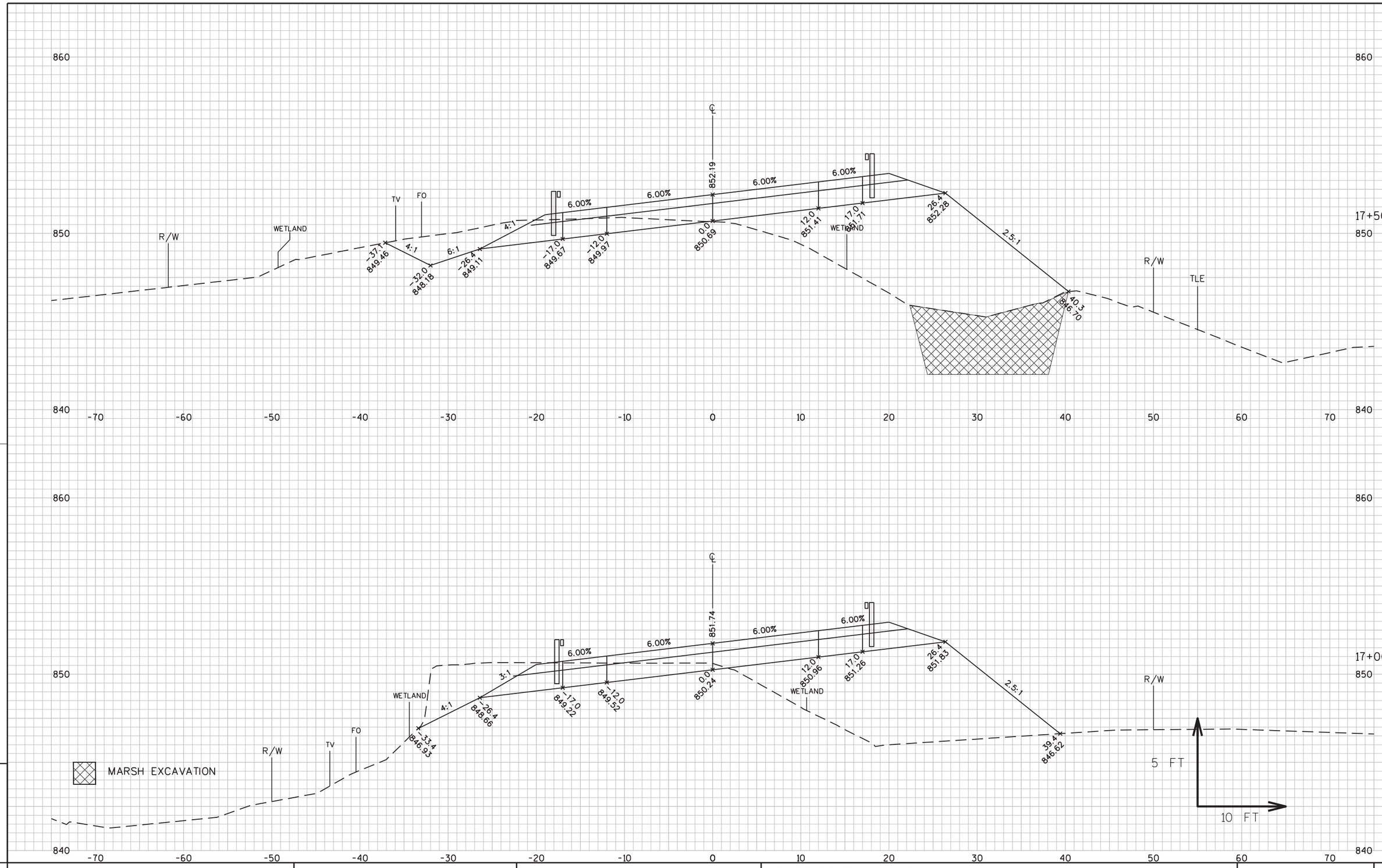


PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 96 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:25 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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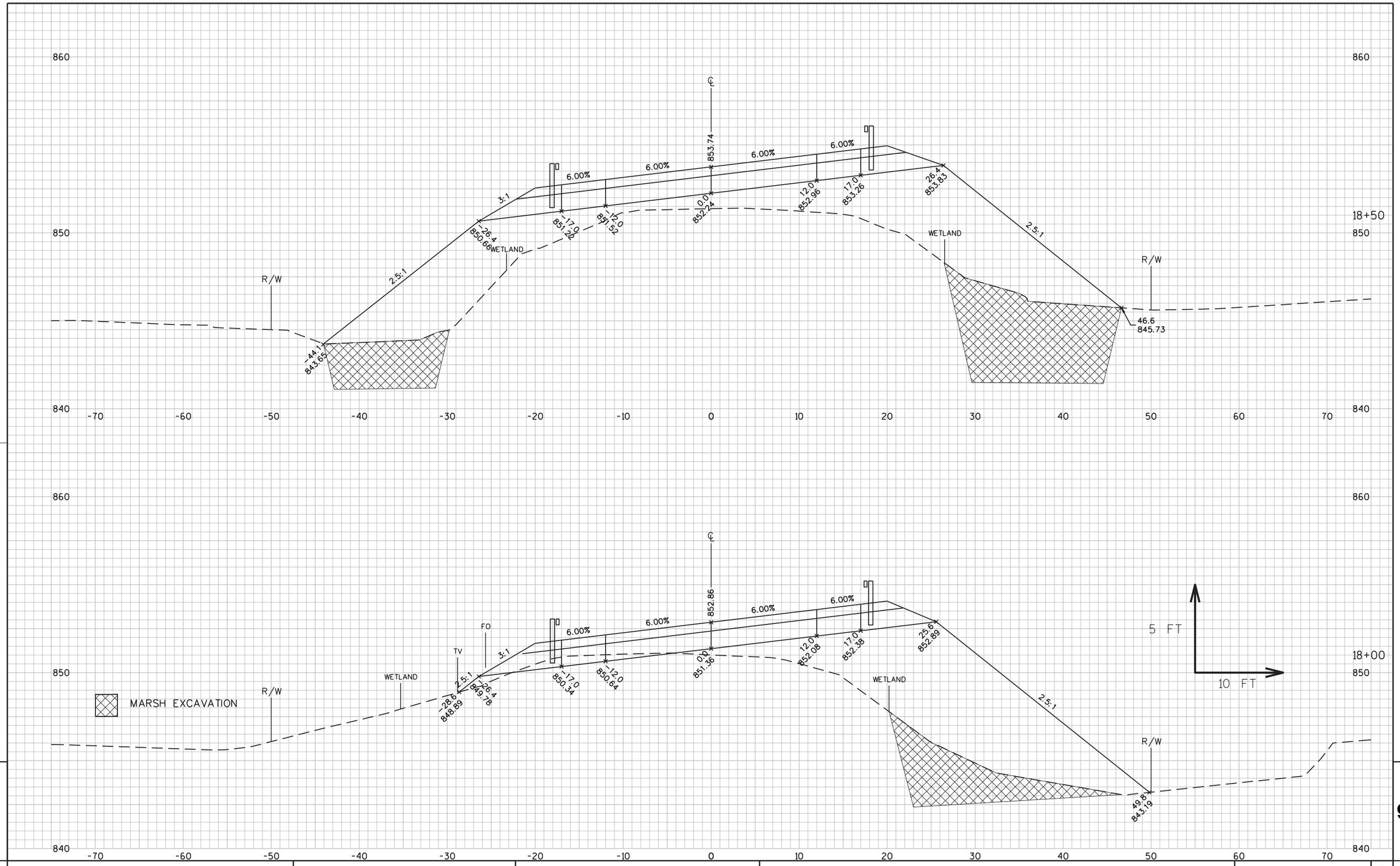
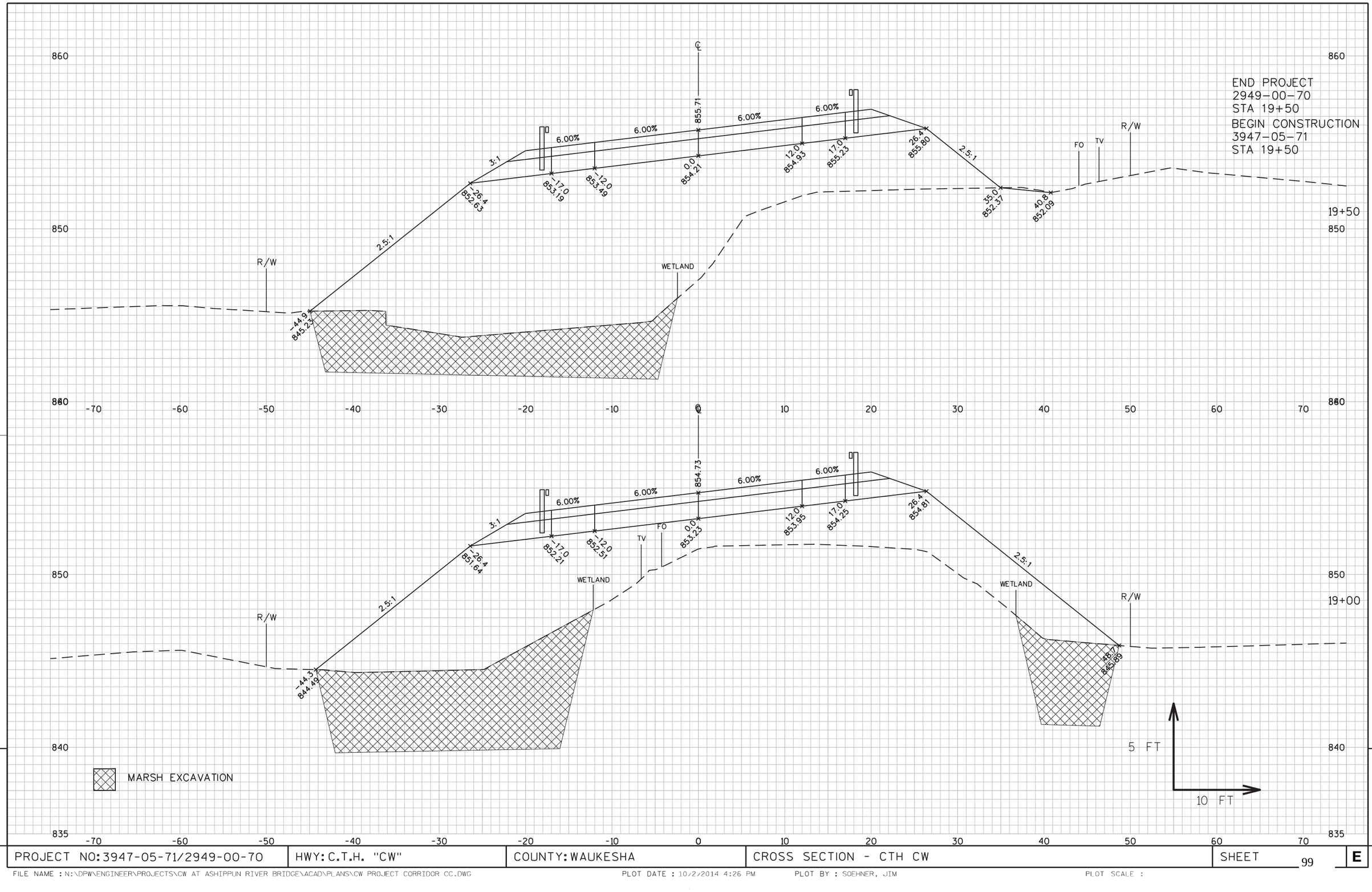
PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 97	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:25 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



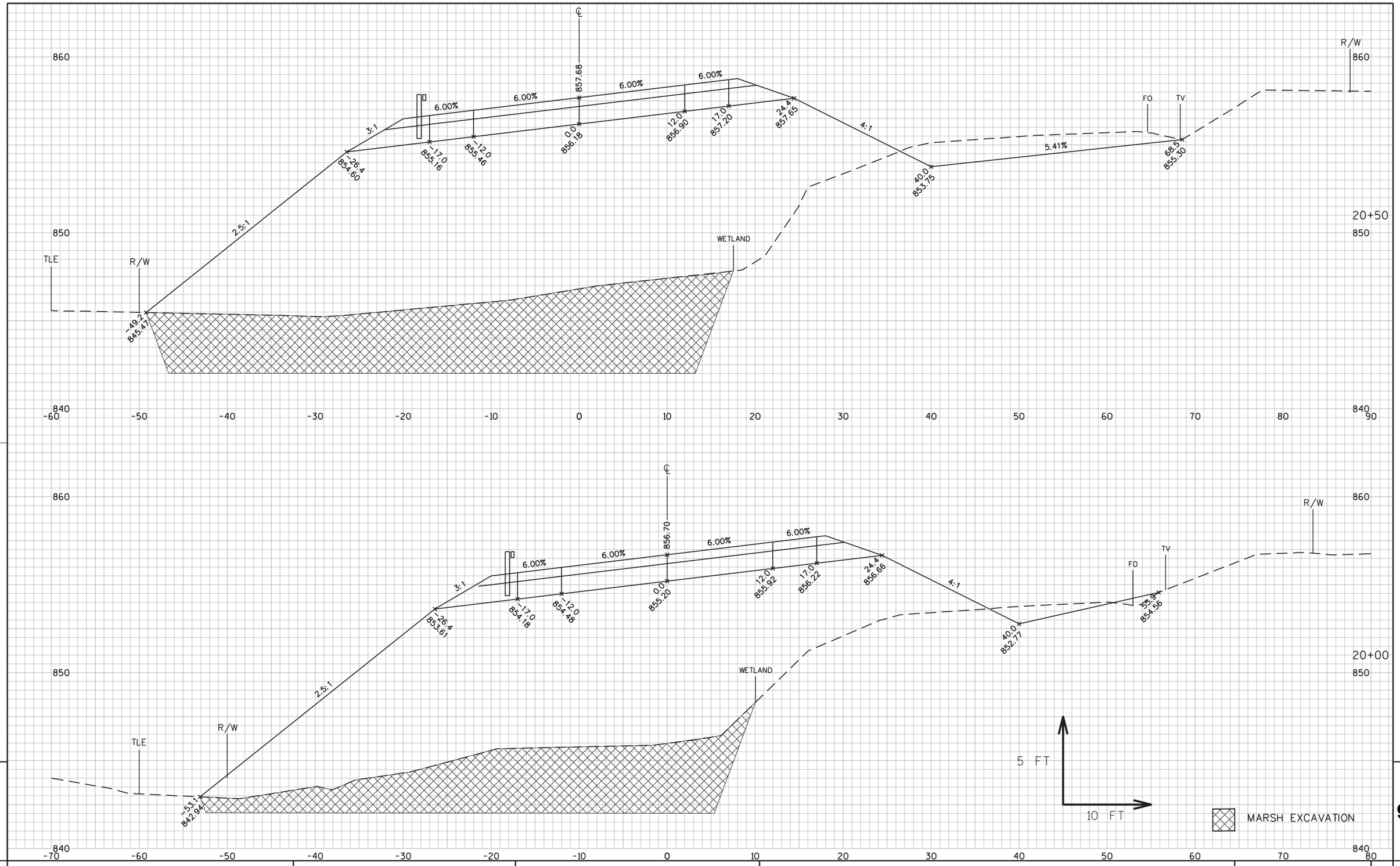
PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 98 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:26 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



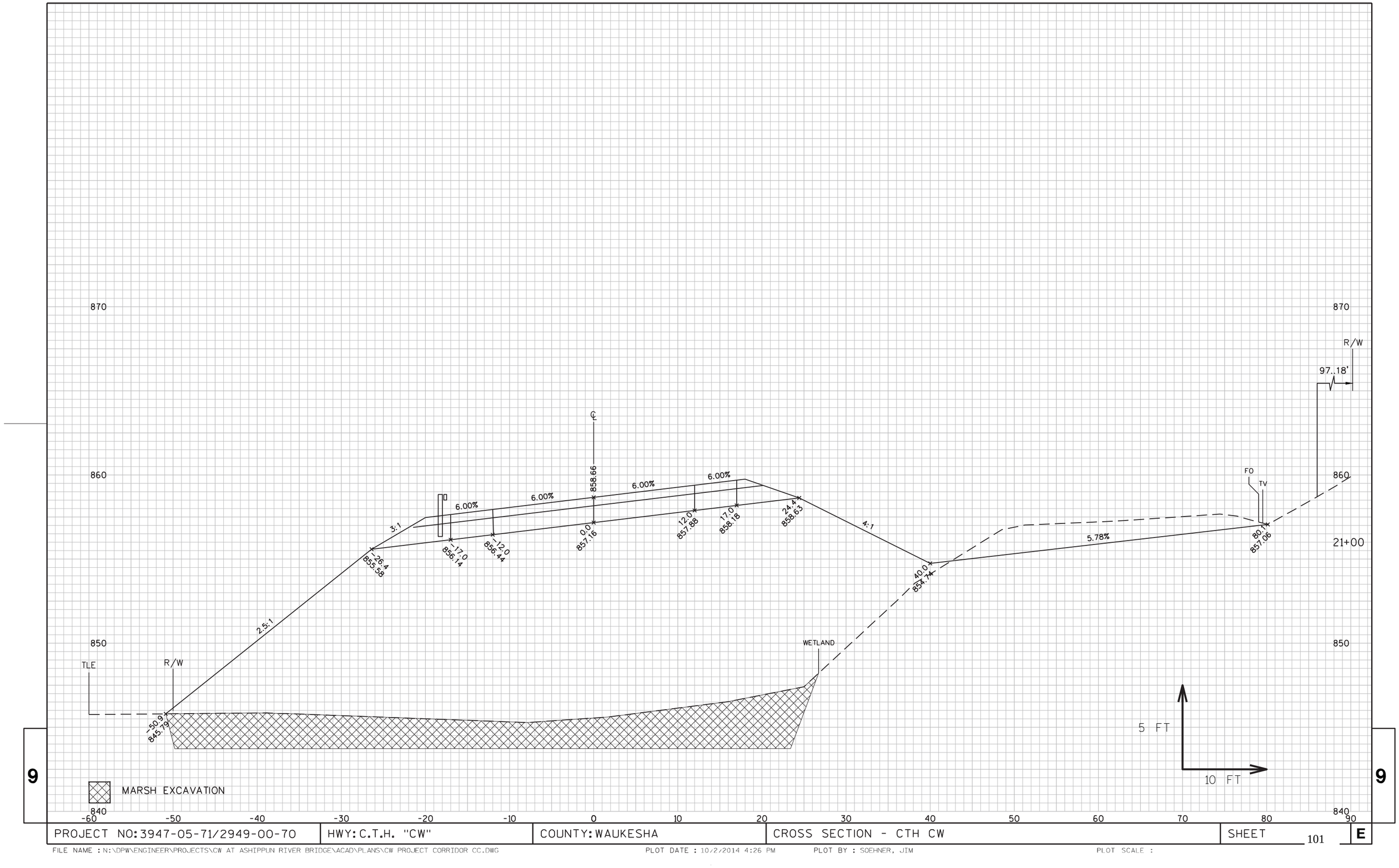
PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 99 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:26 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



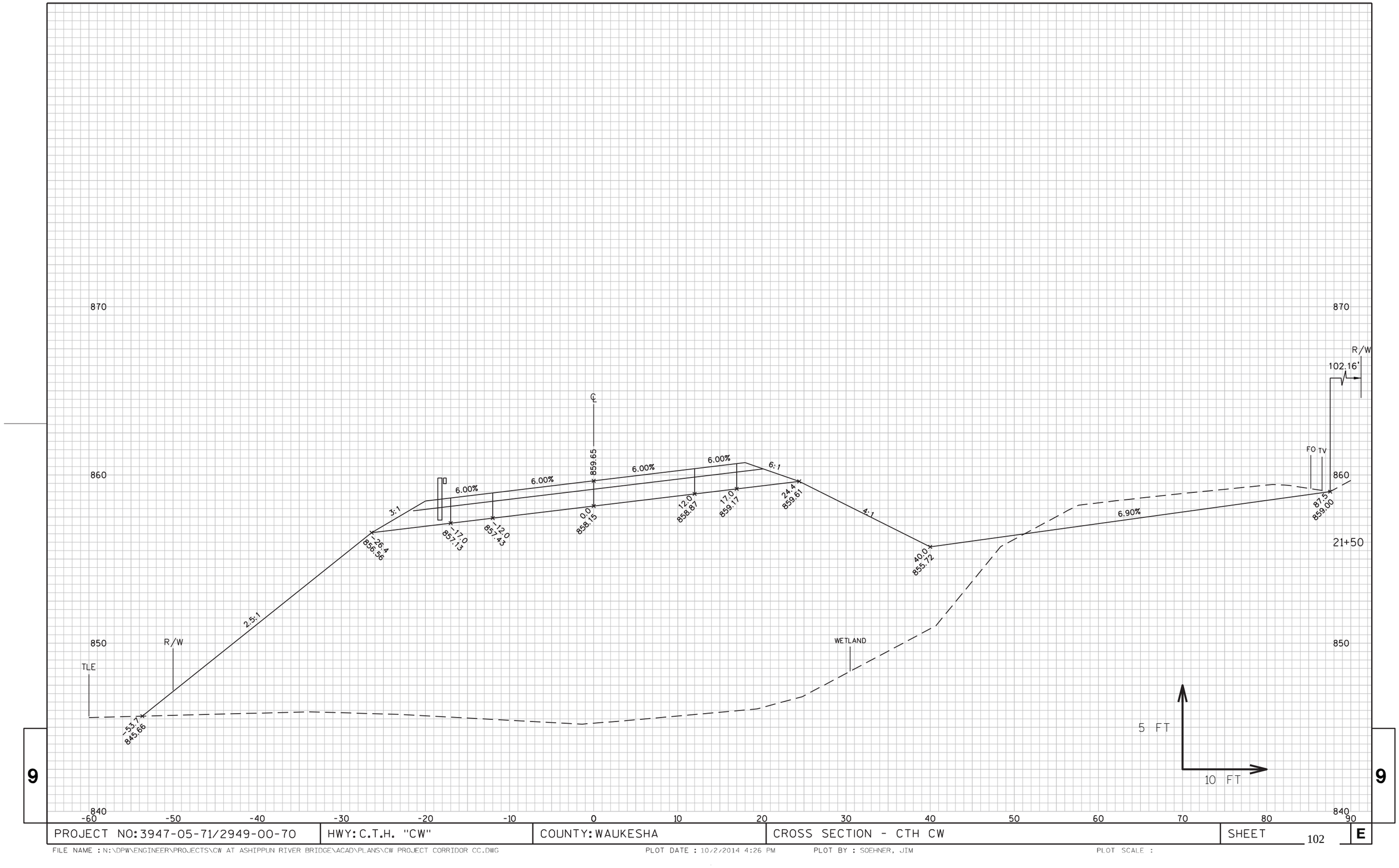
PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 100 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:26 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 101 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:26 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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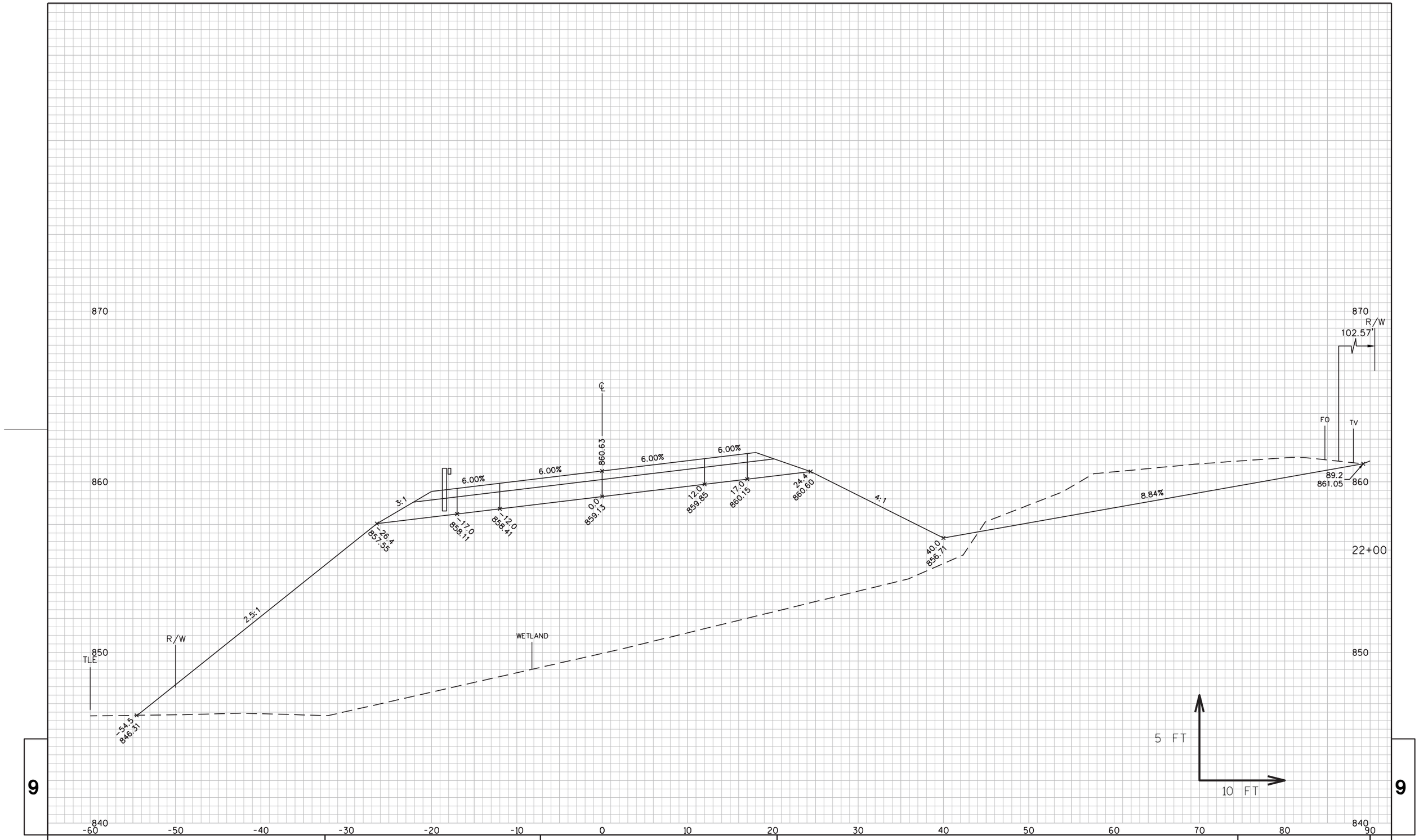
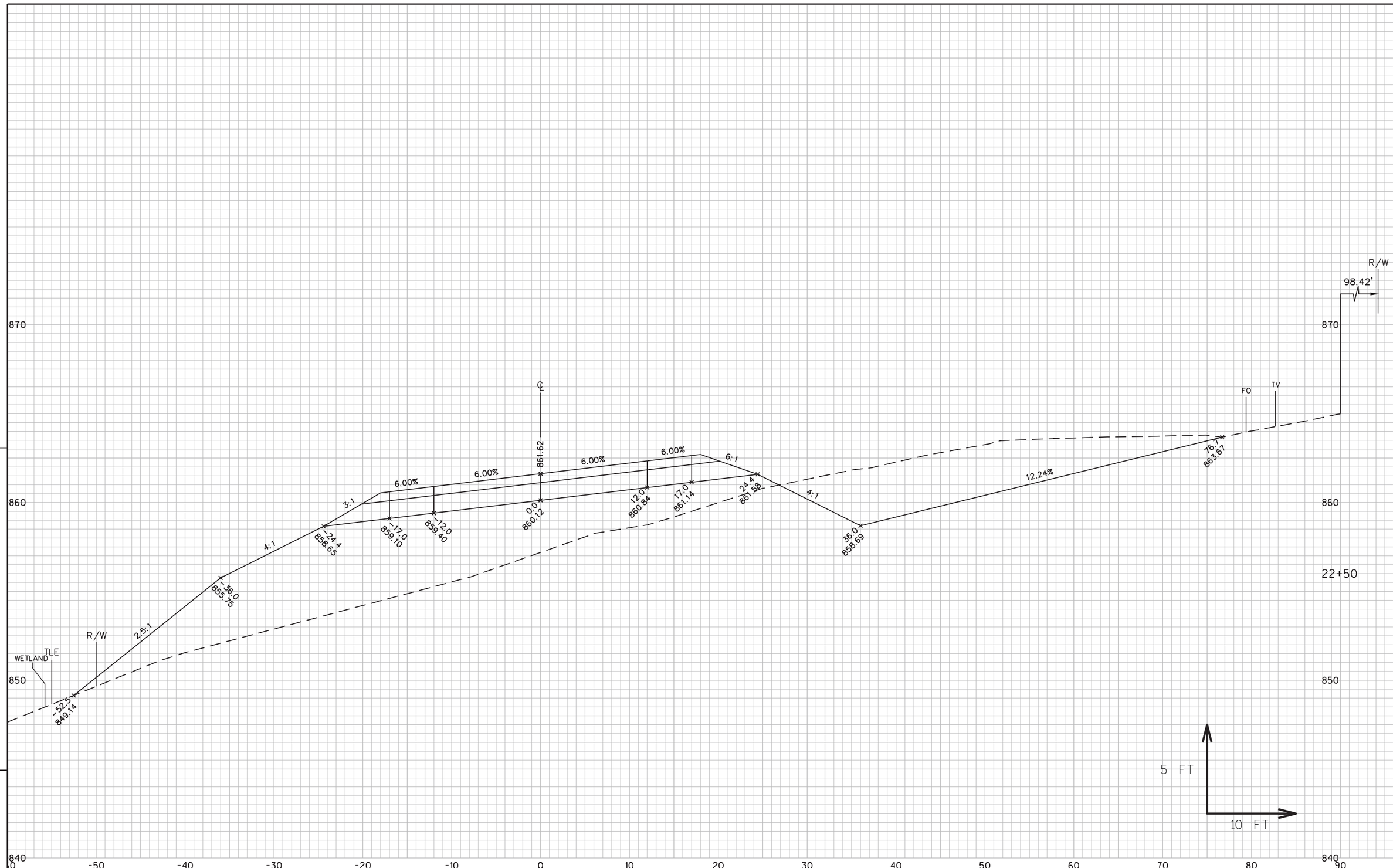
PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 102	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:26 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 103	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:26 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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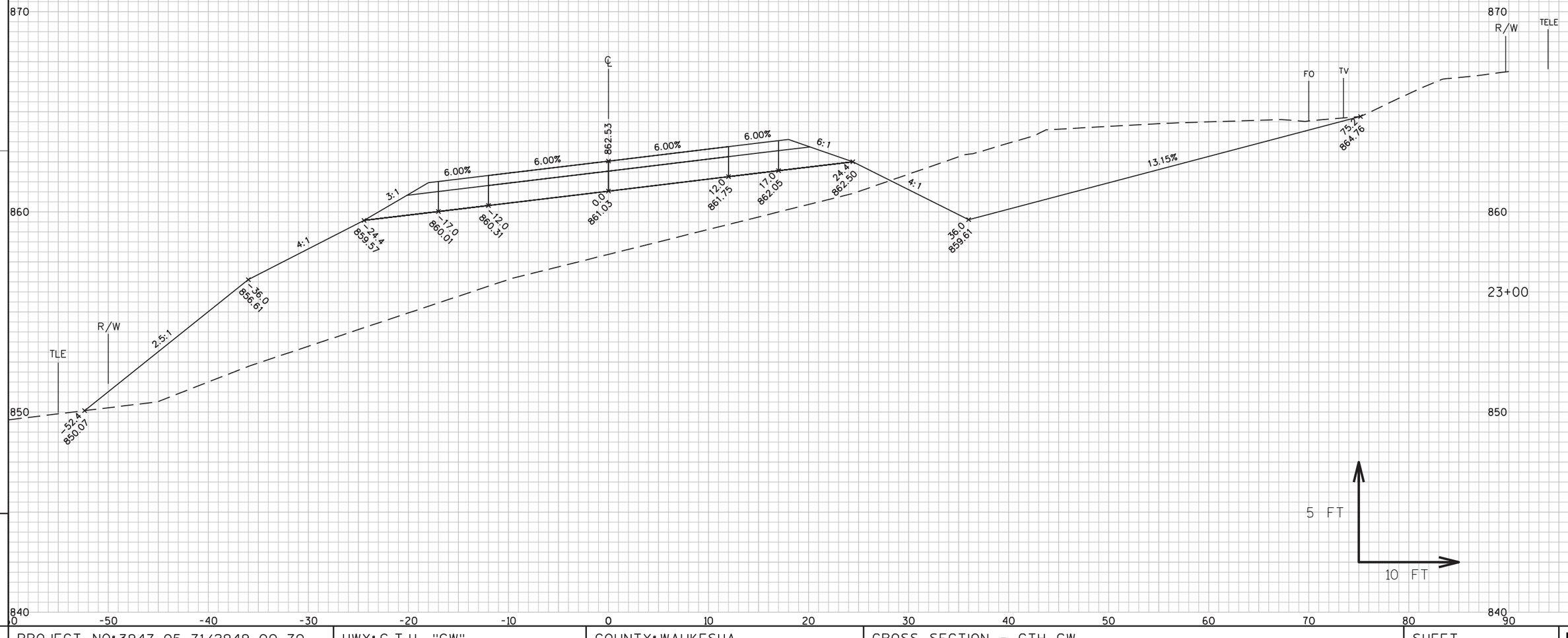
PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 104	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:27 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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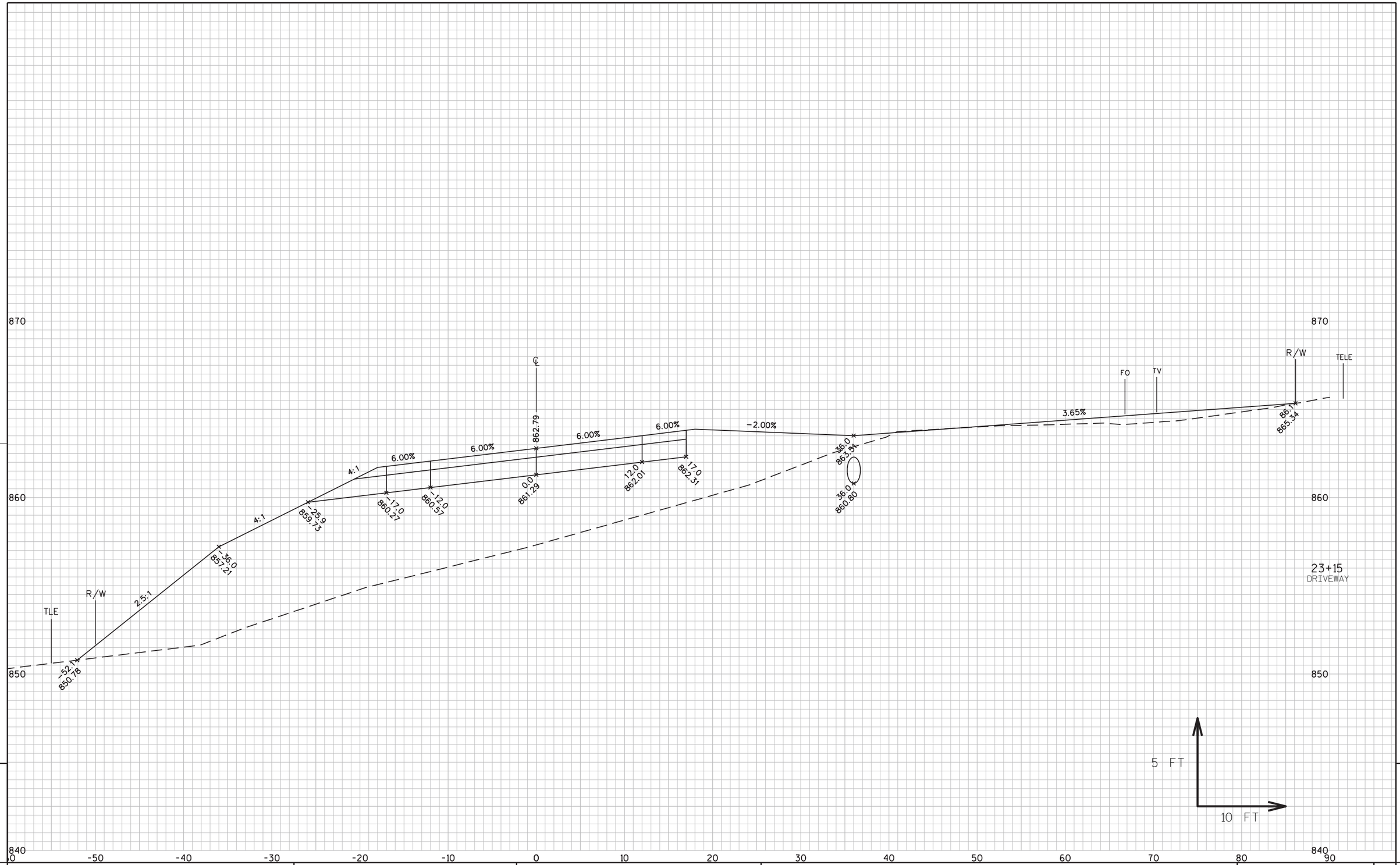
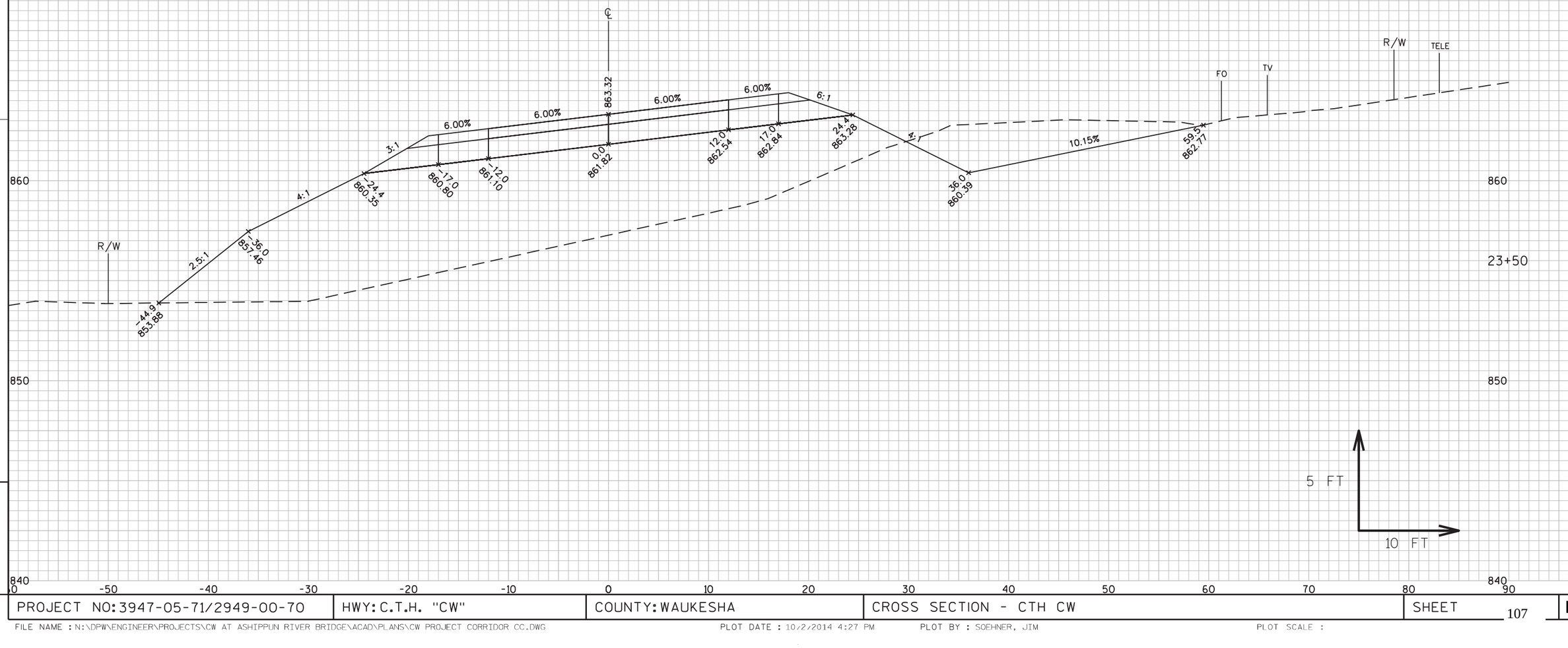
PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 105	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:27 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 106 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:27 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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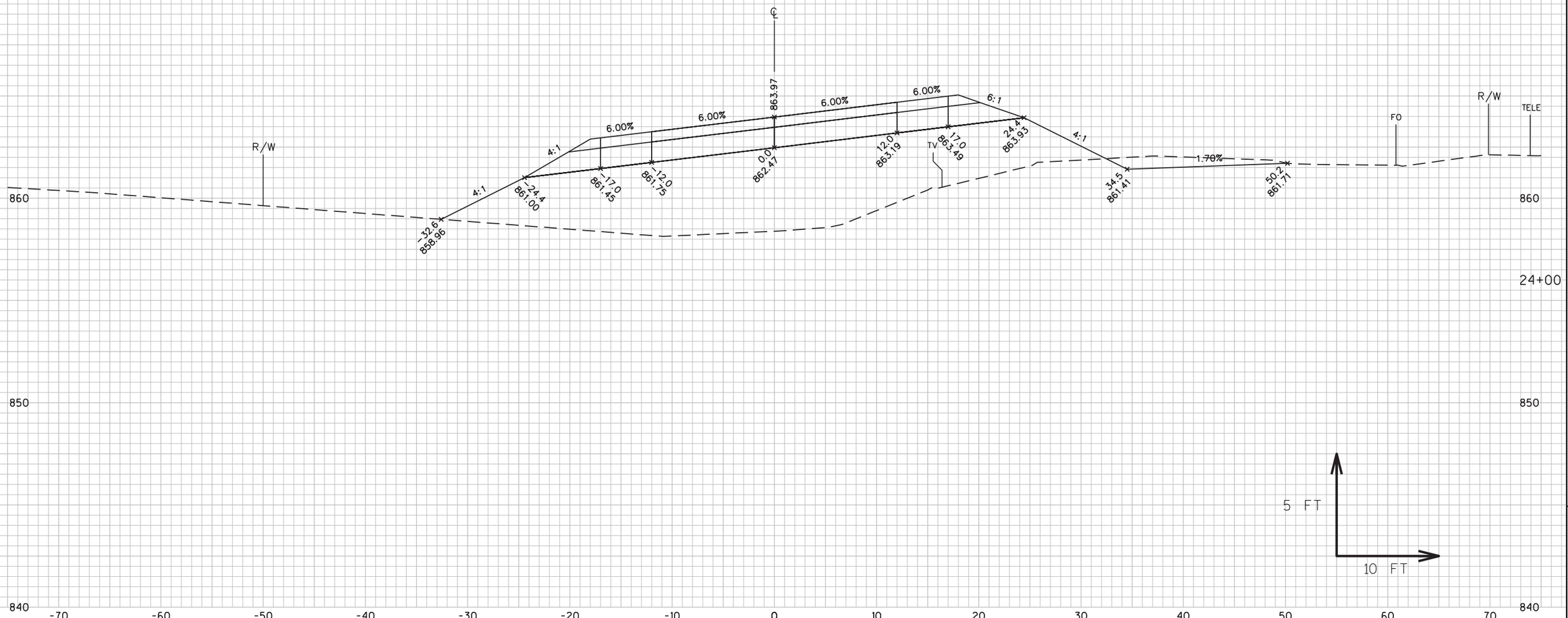
PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 107	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:27 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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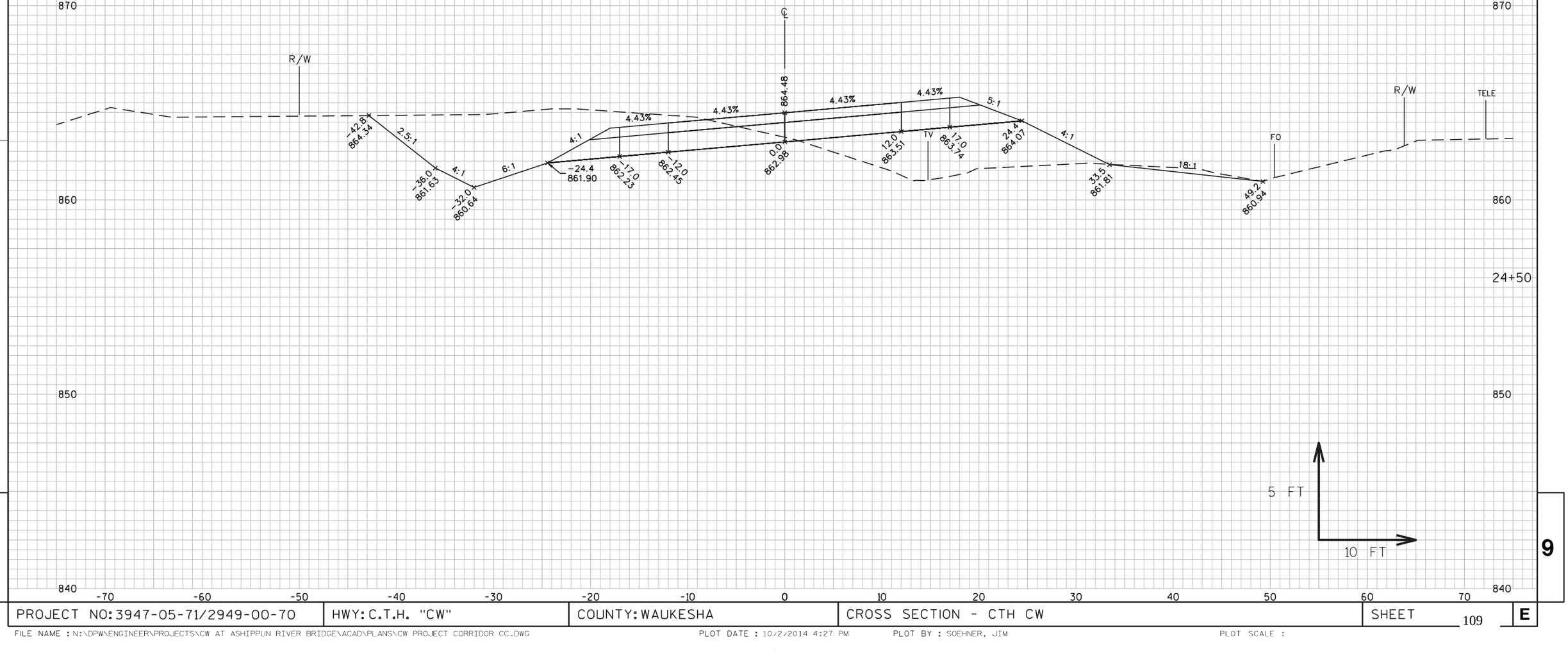
PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 108	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:27 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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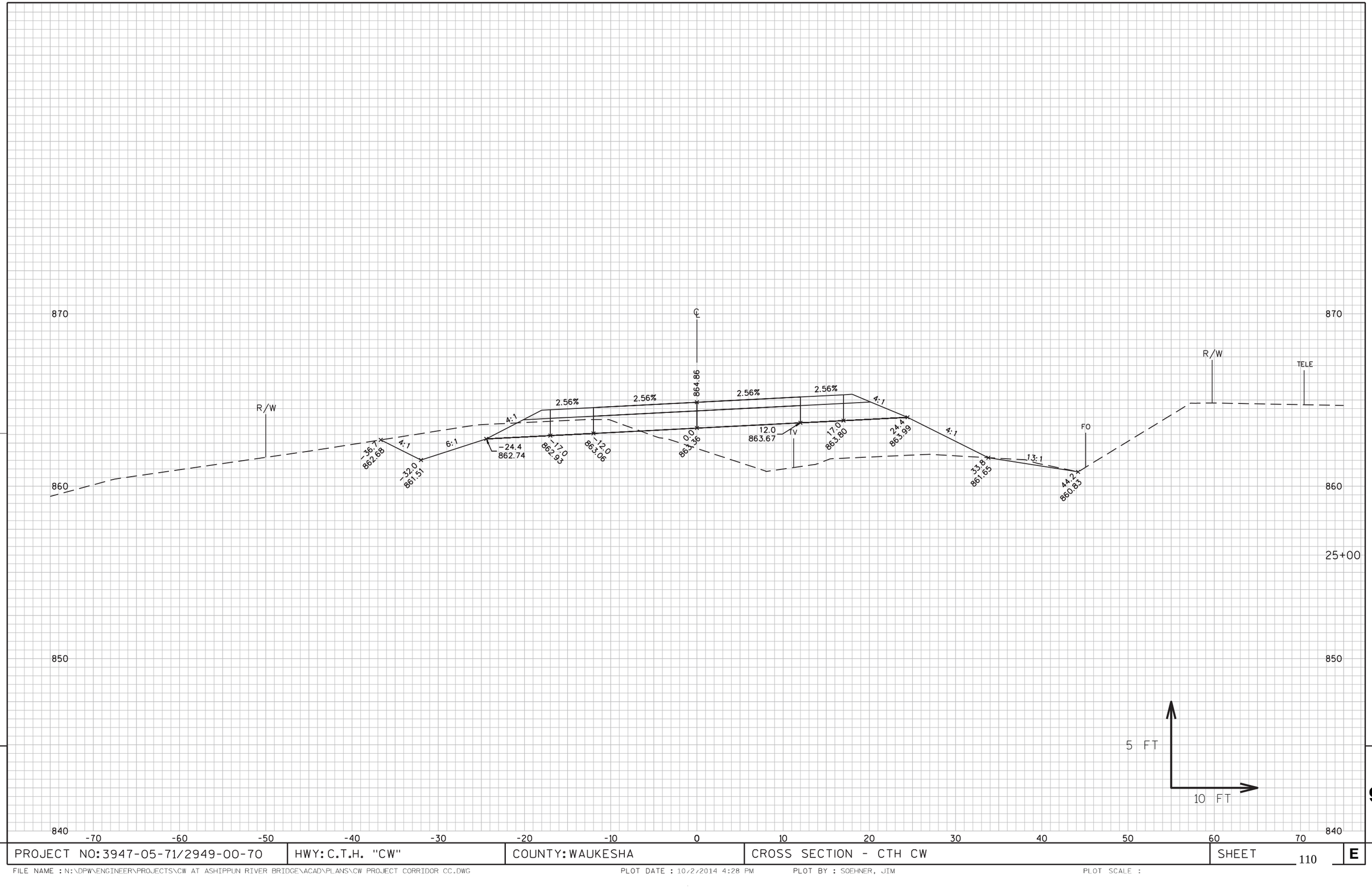
PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 109 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:27 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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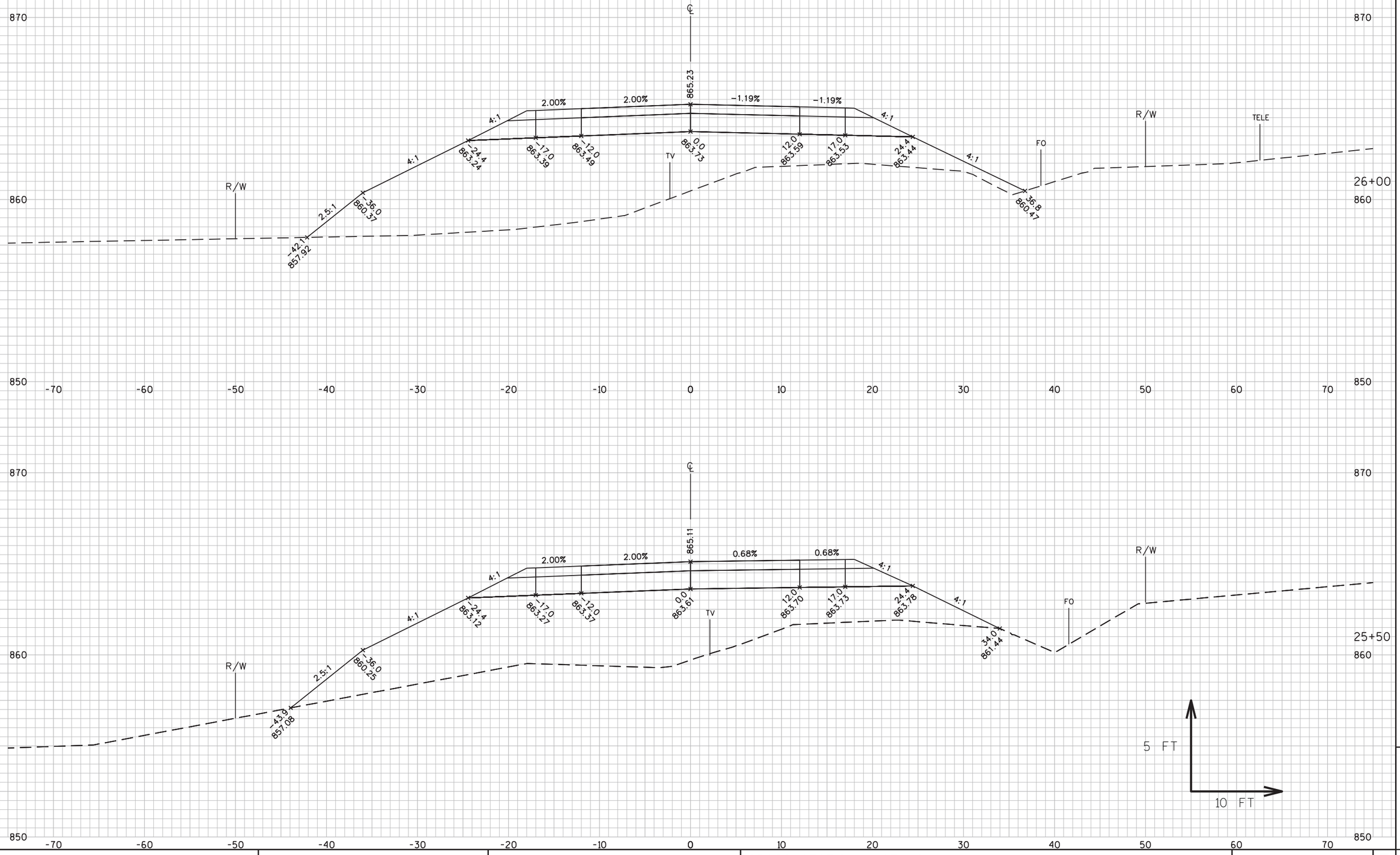

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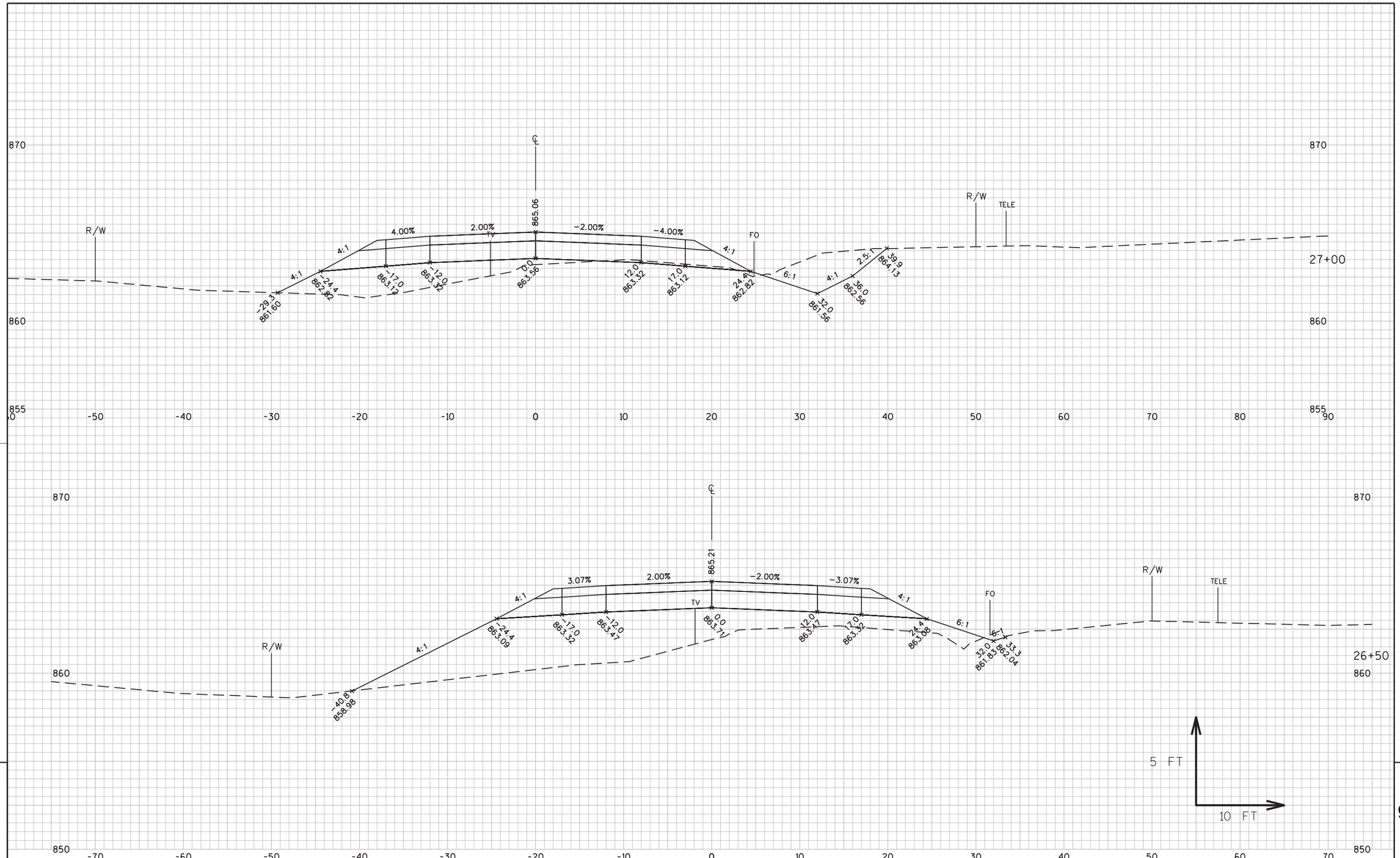

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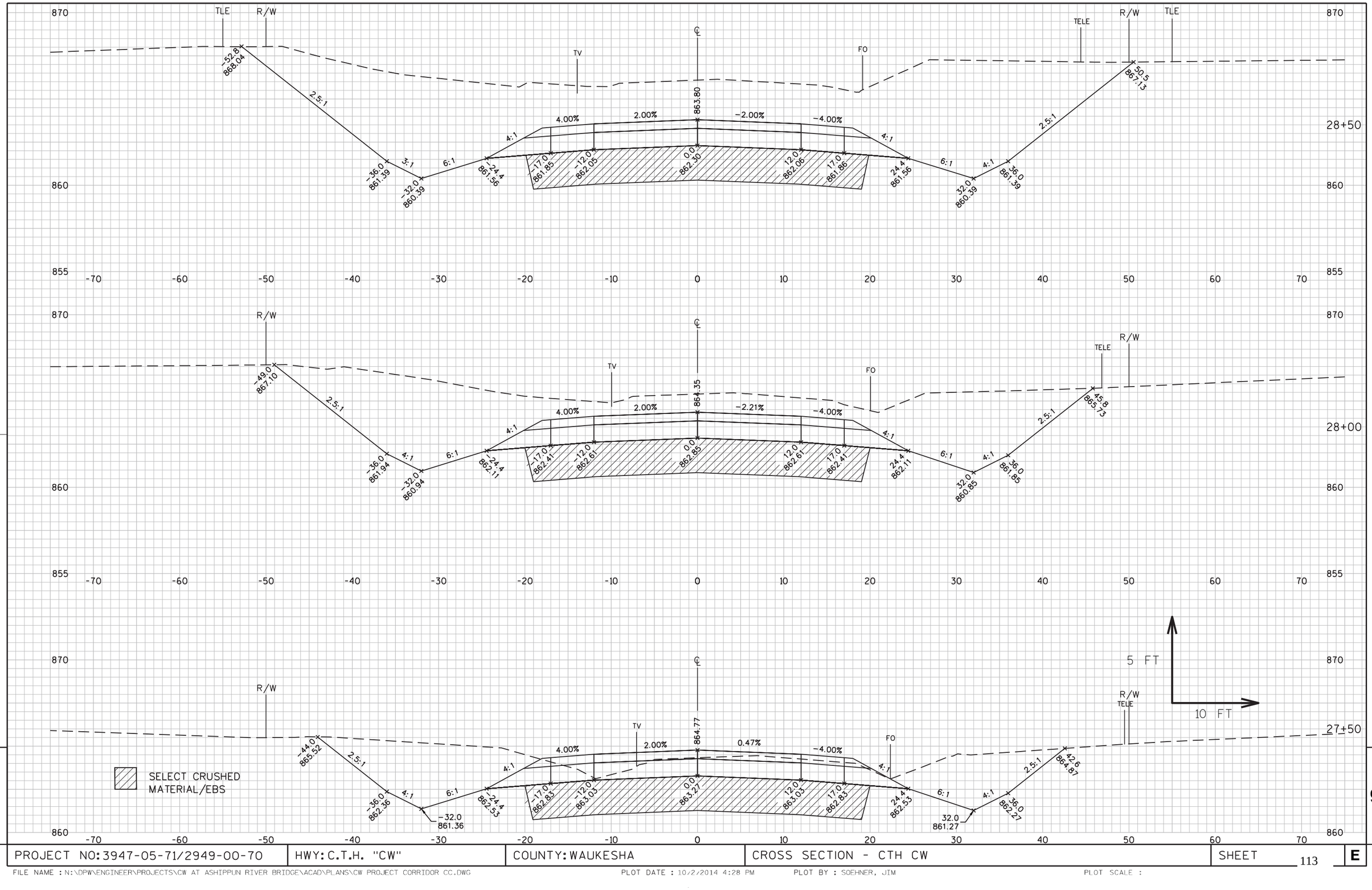

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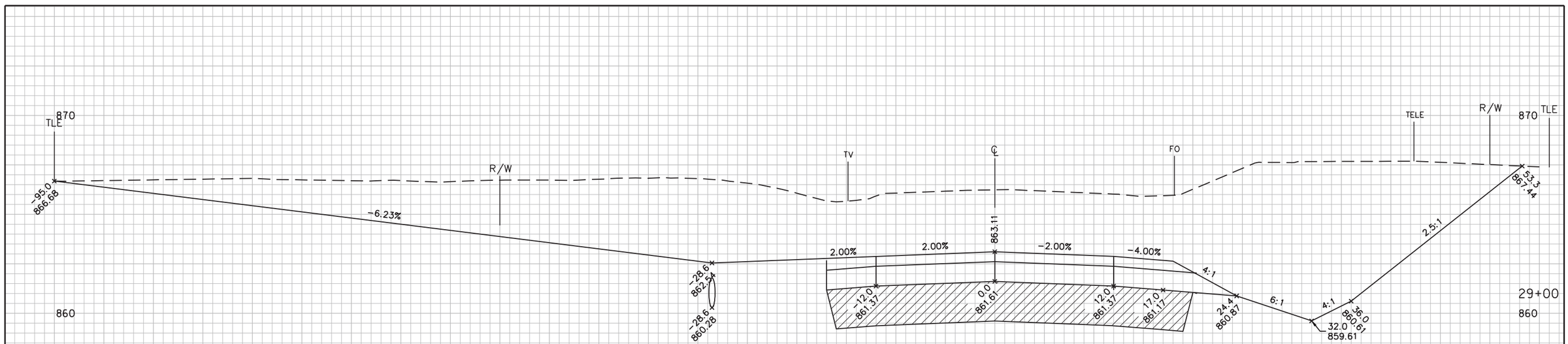

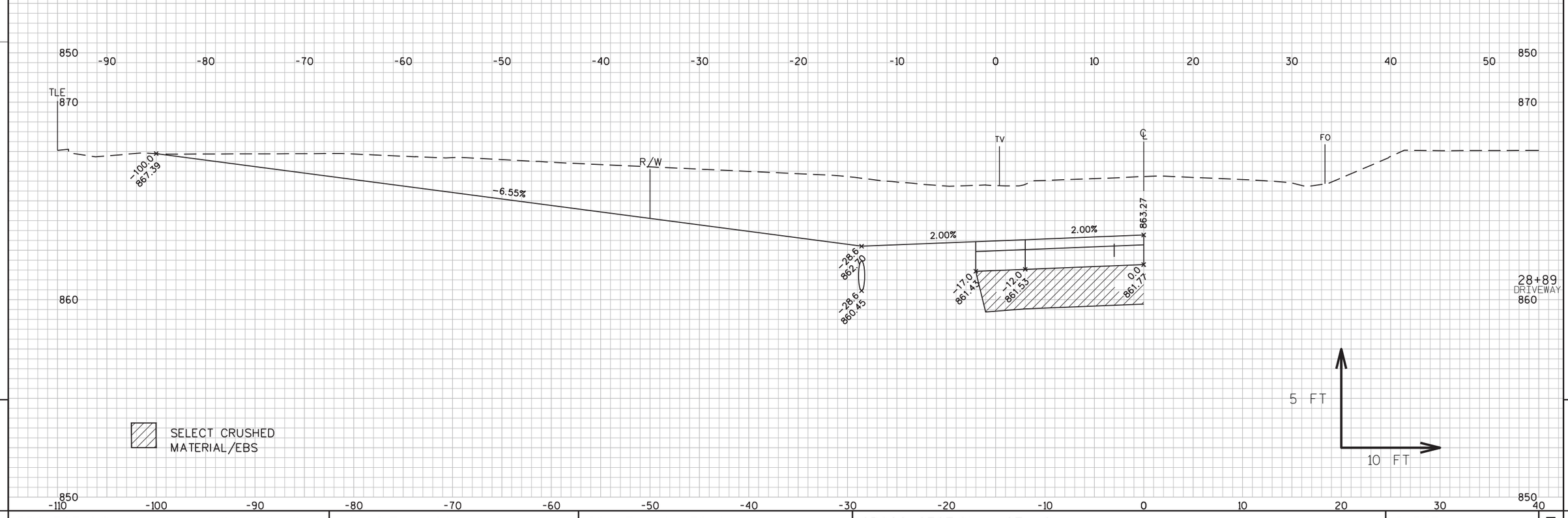

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PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 114	E

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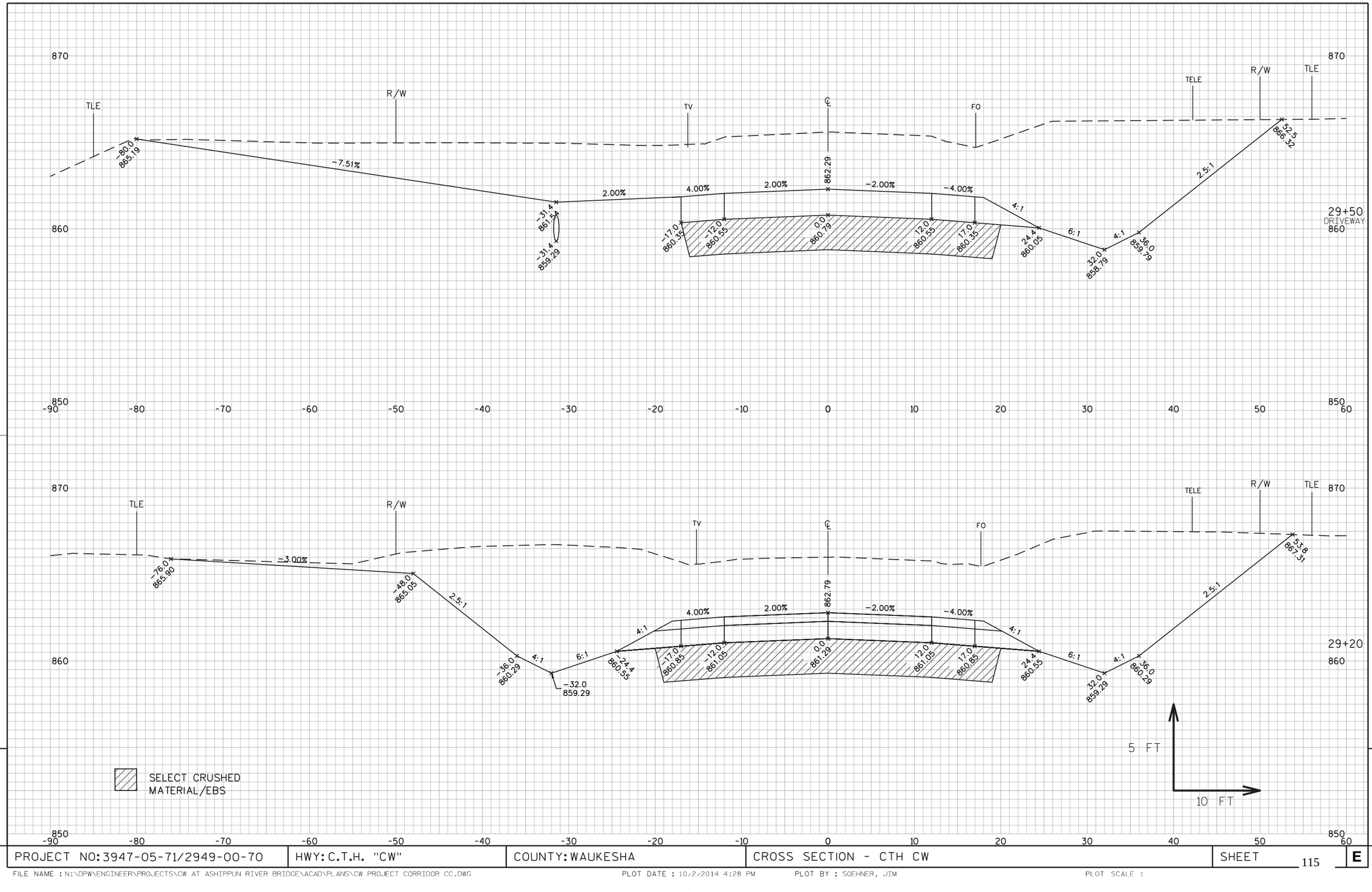

PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 115 E

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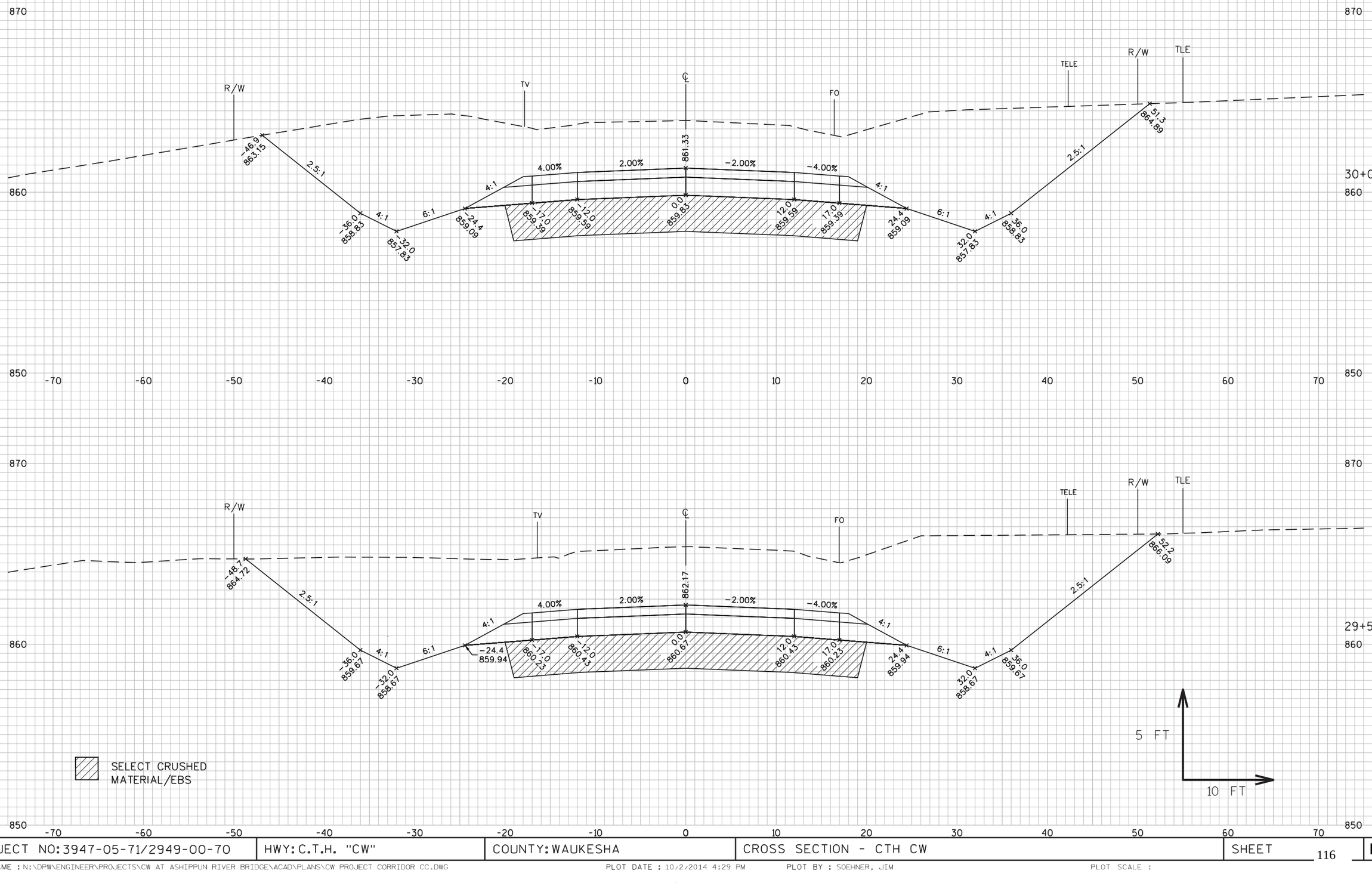

PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - CTH CW	SHEET 116 E

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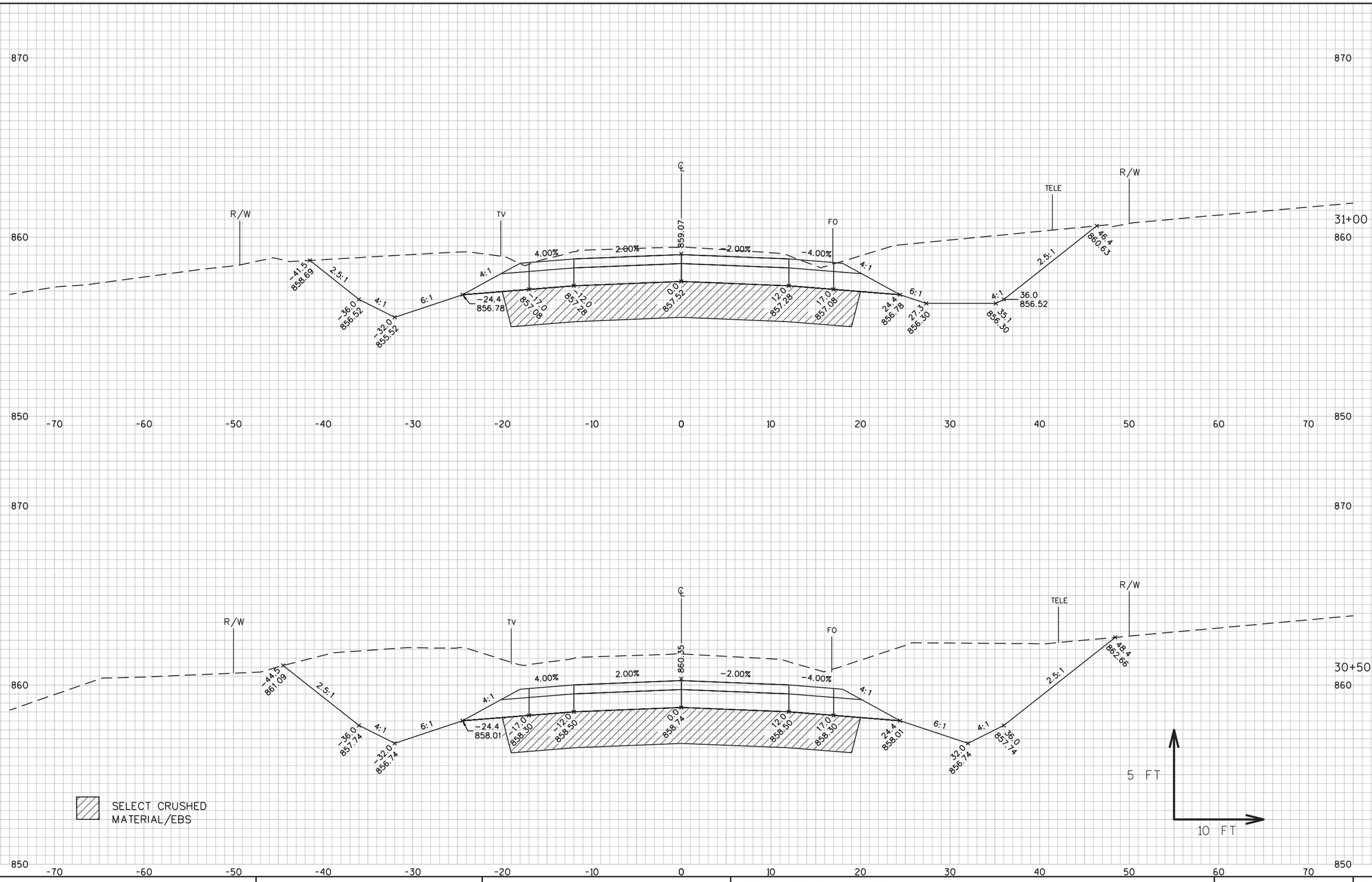

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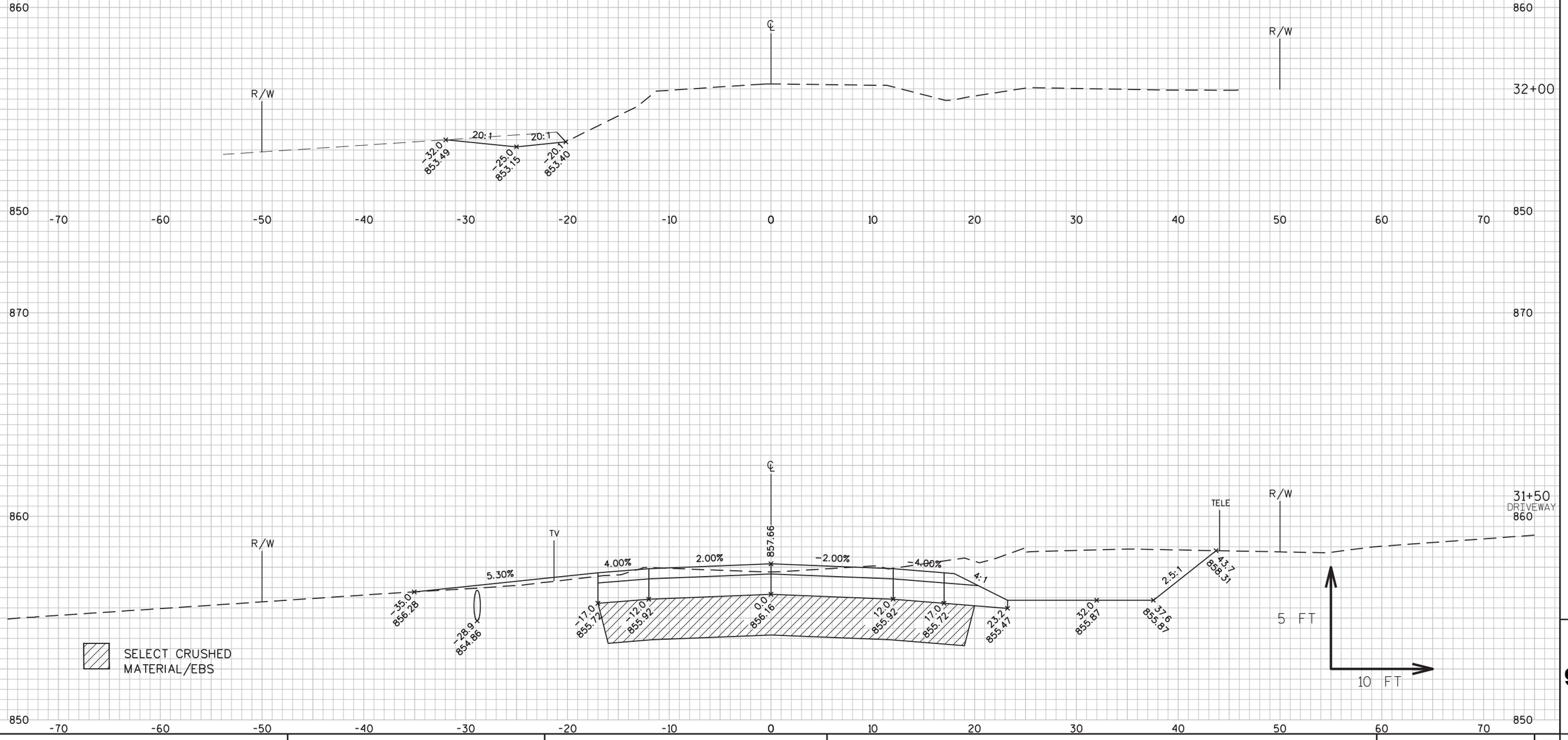
FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:29 PM PLOT BY : SOEHNER, JIM PLOT SCALE :

END CONSTRUCTION
STA 32+25



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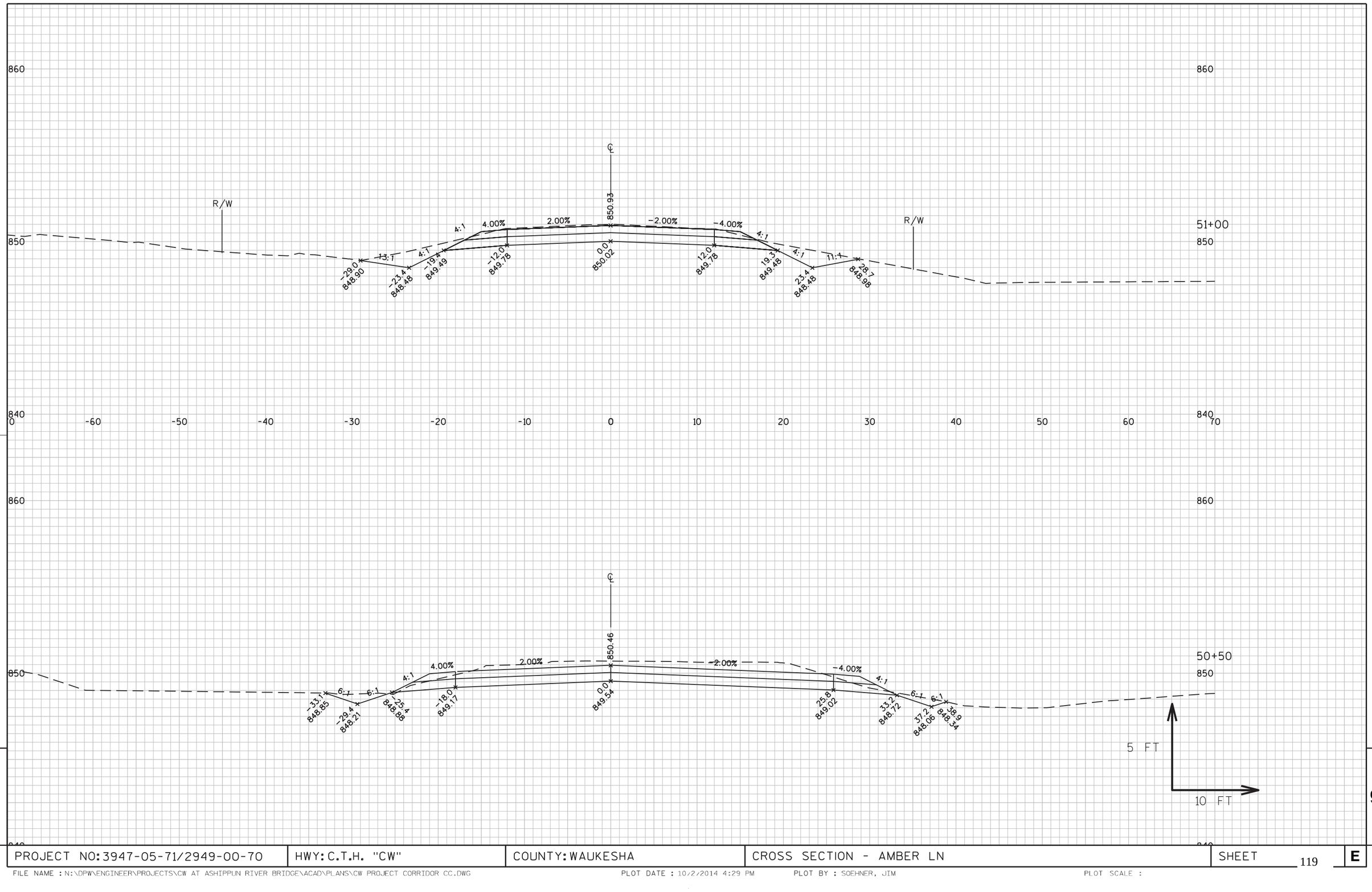

PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - AMBER LN	SHEET 119 E

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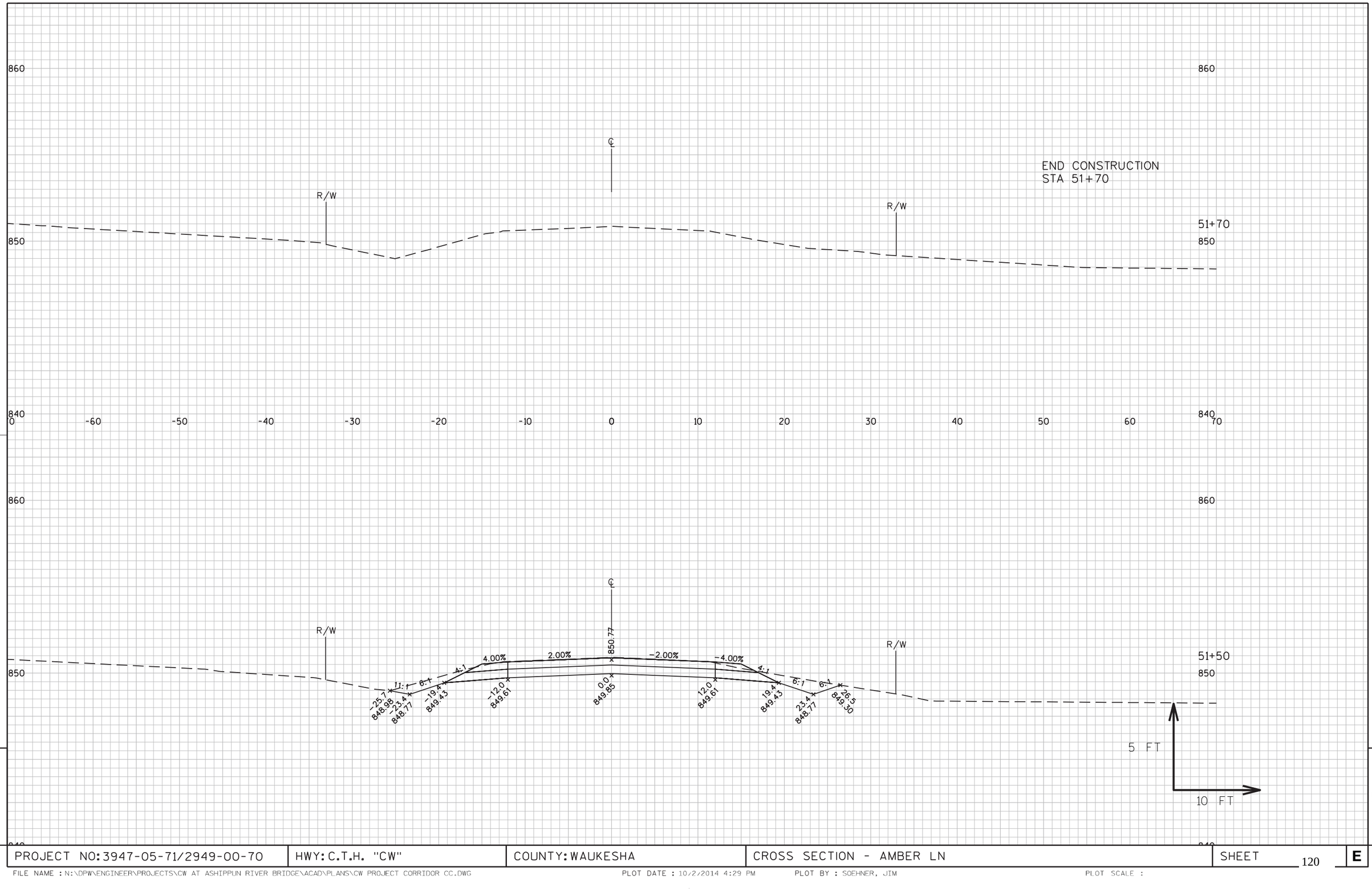

PROJECT NO: 3947-05-71/2949-00-70	HWY: C.T.H. "CW"	COUNTY: WAUKESHA	CROSS SECTION - AMBER LN	SHEET 120	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\CW AT ASHIPPUN RIVER BRIDGE\ACAD\PLANS\CW PROJECT CORRIDOR CC.DWG PLOT DATE : 10/2/2014 4:29 PM PLOT BY : SOEHNER, JIM PLOT SCALE :

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov