06-14-2024 LETTING ITEM 162

INDEX OF SHEETS

STANDARDS: 515001-04
630301-09
631032-10
701901-09
725001-01
BLR 21-9

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM–OFF SYSTEM BRIDGE

CRAWFORD COUNTY
SECTION 22–02117–00–BR
STRUCTURE NO. 017–3283
TR 47 OVER HUTSON CREEK
PROJECT NO. 464S(343)
JOB NO. C–97–080–23
CONTRACT #95959

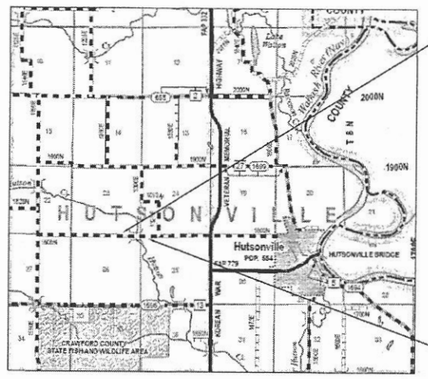
SCALES

PLAN	1 INCH = 50 FEET
CROSS SECTIONS	1 INCH = 5 FEET
PROFILE HORZ.	1 INCH = 50 FEET
PROFILE VERT.	1 INCH = 10 FEET

SECTION 22–02117–00–BR
BEGINS STA. 1+87

R12W, 3RD P.M.

T8N



STA. 3+11
PROPOSED STEEL PLATE GIRDER BRIDGE
WITH CAST IN PLACE CONCRETE DECK
1 SPAN @ 72'–10", 28' RDWY, SKEW= 0°
PROPOSED STR. NO. 017–3283
EXISTING STR. NO. 017–3207

SECTION 22–02117–00–BR
ENDS STA. 4+35

LOCATION MAP

APPROXIMATE SCALE: 1 INCH = 1 MILE
NET LENGTH = 248.00 FT. = 0.047 MILES

ADT = 150
DESIGN SPEED = 30 MPH
ROAD CLASSIFICATION: LOCAL ROAD

JOHN A. STONE
062-055012
LICENSED PROFESSIONAL ENGINEER
STATE OF ILLINOIS

03/06/2024
ILLINOIS REGISTERED PROFESSIONAL ENGINEER # 55012
LICENSE EXPIRES NOVEMBER 30, 2025
PROFESSIONAL DESIGN FIRM #184–009136

ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED: March 21, 2024
CRAWFORD COUNTY ENGINEER

PASSED: 04/09/2024
DISTRICT SEVEN ENGINEER
OF LOCAL ROADS & STREETS

RELEASING FOR BID
BASED ON LIMITED
REVIEW 04/09/2024
REGION FOUR ENGINEER

TOLL FREE JOINT UTILITY LOCATING
INFORMATION FOR EXCAVATORS (J.U.L.I.E.)
TELEPHONE NO. 1–800–892–0123

Stone & Waggoner, PLLC.
210 East Locust Street
P.O. Box 618
Robinson, Illinois 62454

STONE & WAGGONER
Consulting Engineers
Land Surveyors

Phone: (618) 544–8623
Fax: (618) 544–3012
Design Firm #: 184.009136–0010
www.connorengineers.com

PROJECT NAME:
CRAWFORD COUNTY
SEC. 22–02117–00–BR
HUTSONVILLE ROAD DISTRICT

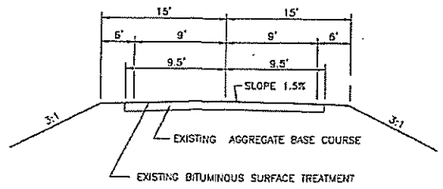
COVER SHEET

SHEET NUMBER: 1 OF 19
CONTRACT NUMBER: 95959

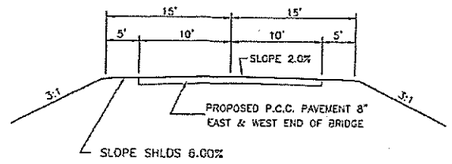
SUMMARY OF QUANTITIES

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY
	X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1
	20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	123
	20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	146
	20300100	CHANNEL EXCAVATION	CU YD	100
	20700110	POROUS GRANULAR EMBANKMENT	TON	125
	28100809	STONE DUMPED RIPRAP, CLASS A5	TON	685
	42000300	PORTLAND CEMENT CONCRETE PAVEMENT 8"	SQ YD	117
	50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
	50200100	STRUCTURE EXCAVATION	CU YD	275
	50300225	CONCRETE STRUCTURES	CU YD	37.4
	50300255	CONCRETE SUPERSTRUCTURES	CU YD	88.2
	50300260	BRIDGE DECK GROOVING	SQ YD	221
	50300300	PROTECTIVE COAT	SQ YD	300
	50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
	50500505	STUD SHEAR CONNECTORS	EACH	885
	50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	26,660
*	50900205	STEEL RAILING, TYPE S1	FOOT	153
	51201600	FURNISHING STEEL PILES HP12X53	FOOT	240
	51202305	DRIVING PILES	FOOT	240
	51203600	TEST PILE STEEL HP12X53	EACH	2
	51500100	NAME PLATES	EACH	1
	52100520	ANCHOR BOLTS, 1"	EACH	20
	59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	70
	60146304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	140
*	63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2
*	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1A SPECIAL (TANGENT)	EACH	2
	67100100	MOBILIZATION	L SUM	1
*	72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4

* SPECIALTY ITEMS



TYPICAL CROSS SECTION OF EXISTING ROADWAY



TYPICAL CROSS SECTION OF PROPOSED ROADWAY

STA. 2+47.75 TO STA. 2+72.75
STA. 3+49.25 TO STA. 3+74.25

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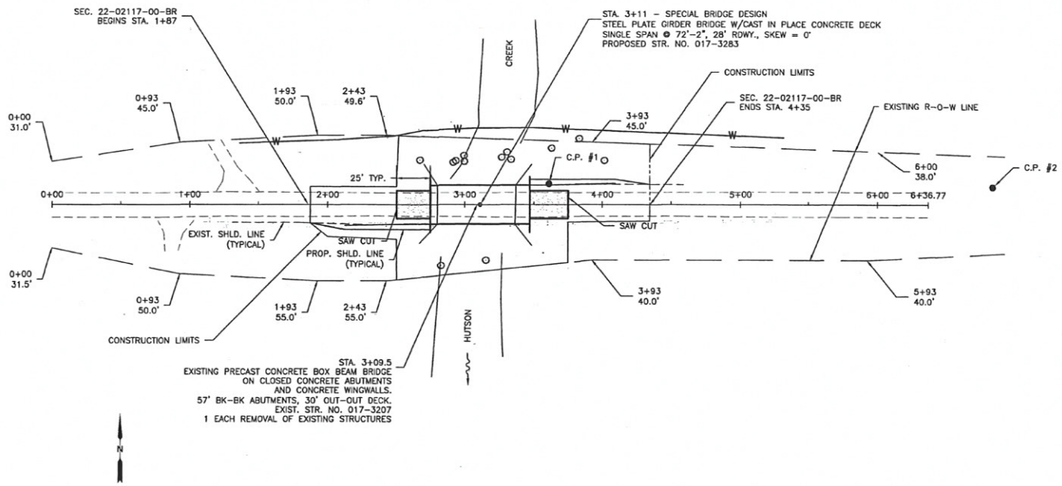
PROJECT NAME:
CRAWFORD COUNTY
SEC. 22-02117-00-BR
HUTSONVILLE ROAD DISTRICT

TYPICAL SECTIONS & SUMMARY OF QUANTITIES

C.P. #1
14.98' LT. STA. 3+61
I. PIN
30.00'
30.00'
I. PIN
I. PIN

MARK & JAMES PRATHER

C.P. #2
12.82' LT. STA. 6+84
I. PIN
30.00'
30.00'
I. PIN
I. PIN



CONTROL POINTS

C.P. #1– I.P. 14.98' LT. STA. 3+61, ELEV. 481.54
C.P. #2– I.P. 12.82' LT. STA. 6+84

WILLIAM E. HEBER TRUST

EARTHWORK SCHEDULE

0	CU YD EARTH EXCAVATION
0	CU YD EARTH EXCAVATION ADJUSTED 25%
26	CU YD EMBANKMENT
100	CU YD CHANNEL EXCAVATION
75	CU YD CHANNEL EXCAVATION ADJUSTED 25%

PCC PAVEMENT 8"

STA. 2+47.75 – STA. 2+72.75 = 55 SQ YD
STA. 3+49.25 – STA. 3+74.25 = 62 SQ YD
TOTAL = 117 SQ YD

POROUS GRANULAR EMBANKMENT

EAST ABUTMENT = 62.5 TON
WEST ABUTMENT = 62.5 TON
TOTAL = 125 TON

TRAFFIC BARRIER TERMINALS, TYPE 5A
N.E. & S.W. CORNERS OF BRIDGE = 2 EACH

TRAFFIC BARRIER TERMINALS, TYPE 1 (SPECIAL) TANGENT
N.E. & S.W. CORNERS OF BRIDGE = 2 EACH

TERMINAL MARKER – DIRECT APPLIED
EACH CORNER OF BRIDGE = 4 EACH

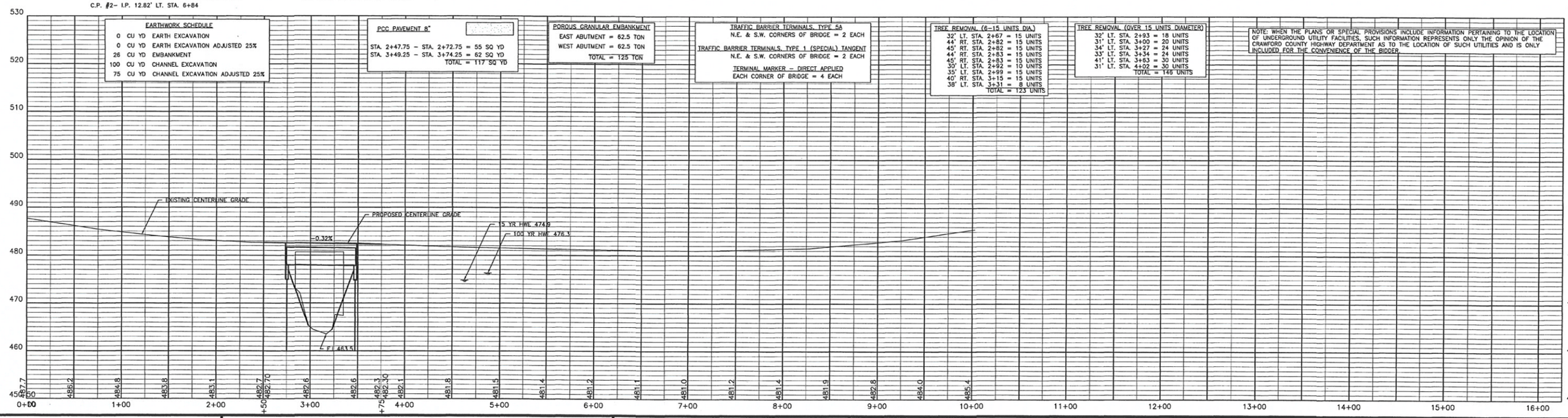
TREE REMOVAL (6–15 UNITS DIA.)

32' LT. STA. 2+67 = 15 UNITS
44' RT. STA. 2+82 = 15 UNITS
45' RT. STA. 2+82 = 15 UNITS
44' RT. STA. 2+83 = 15 UNITS
45' RT. STA. 2+83 = 15 UNITS
30' LT. STA. 2+92 = 10 UNITS
35' LT. STA. 2+99 = 15 UNITS
40' RT. STA. 3+15 = 15 UNITS
38' LT. STA. 3+31 = 8 UNITS
TOTAL = 123 UNITS

TREE REMOVAL (OVER 15 UNITS DIAMETER)

32' LT. STA. 2+93 = 18 UNITS
31' LT. STA. 3+00 = 20 UNITS
34' LT. STA. 3+27 = 24 UNITS
33' LT. STA. 3+34 = 24 UNITS
41' LT. STA. 3+83 = 30 UNITS
31' LT. STA. 4+02 = 30 UNITS
TOTAL = 146 UNITS

NOTE: WHEN THE PLANS OR SPECIAL PROVISIONS INCLUDE INFORMATION PERTAINING TO THE LOCATION OF UNDERGROUND UTILITY FACILITIES, SUCH INFORMATION REPRESENTS ONLY THE OPINION OF THE CRAWFORD COUNTY HIGHWAY DEPARTMENT AS TO THE LOCATION OF SUCH UTILITIES AND IS ONLY INCLUDED FOR THE CONVENIENCE OF THE BIDDER.



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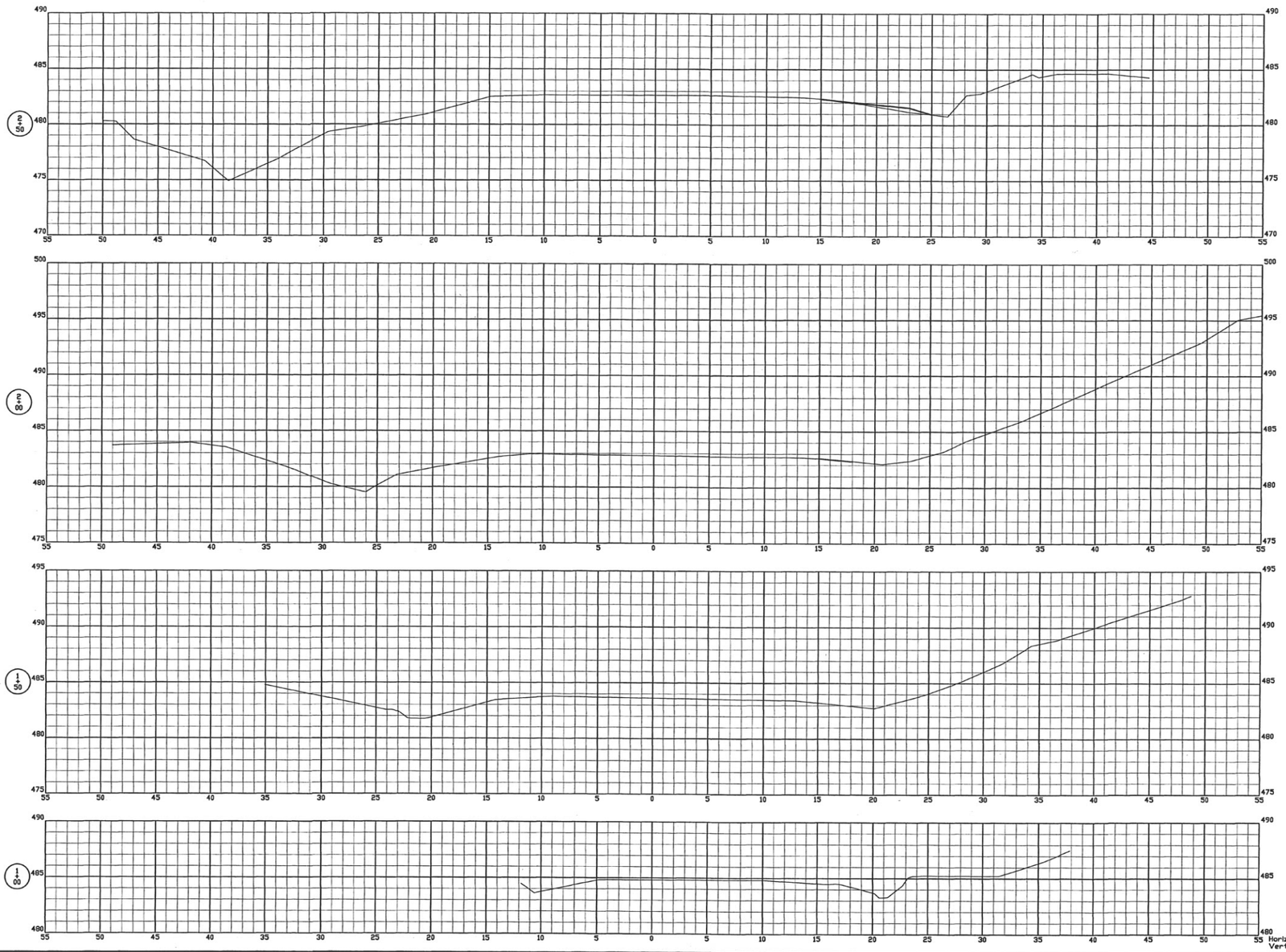
PROJECT NAME:
CRAWFORD COUNTY
SEC. 22-02117-00-BR
HUTSONVILLE ROAD DISTRICT

PLAN – PROFILE SHEET

SHEET NUMBER:
3 OF 19

CONTRACT NO.
95959



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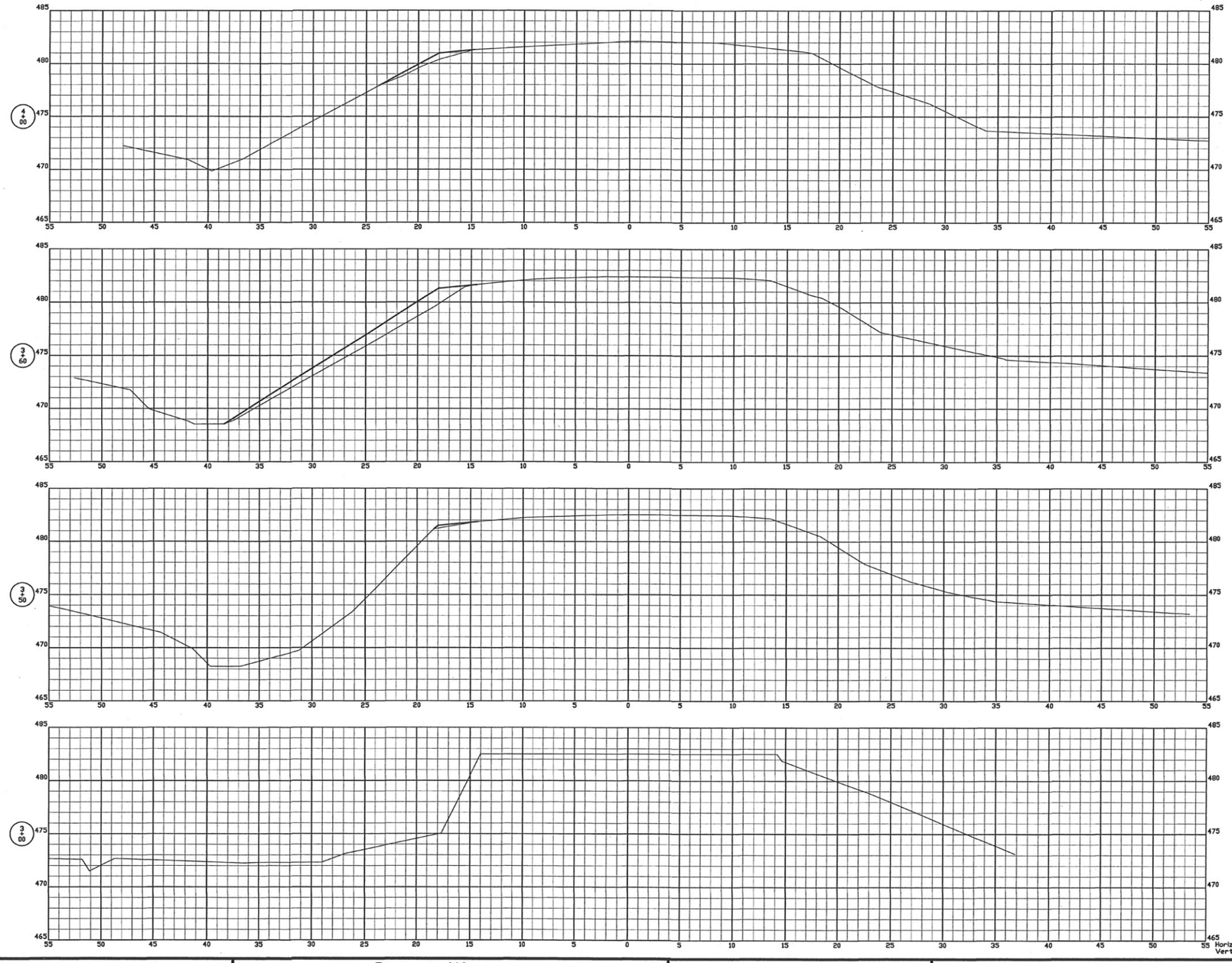
PROJECT NAME:
CRAWFORD COUNTY
SEC. 22-02117-00-BR
HUTSONVILLE ROAD DISTRICT

CROSS SECTIONS STA. 1+00 TO STA. 2+50

SHEET NUMBER: 4 OF 19

CONTRACT NO. 95959



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www.connorengineers.com

PROJECT NAME:
CRAWFORD COUNTY
SEC. 22-02117-00-BR
HUTSONVILLE ROAD DISTRICT

CROSS SECTIONS STA. 3+00 TO STA. 4+00

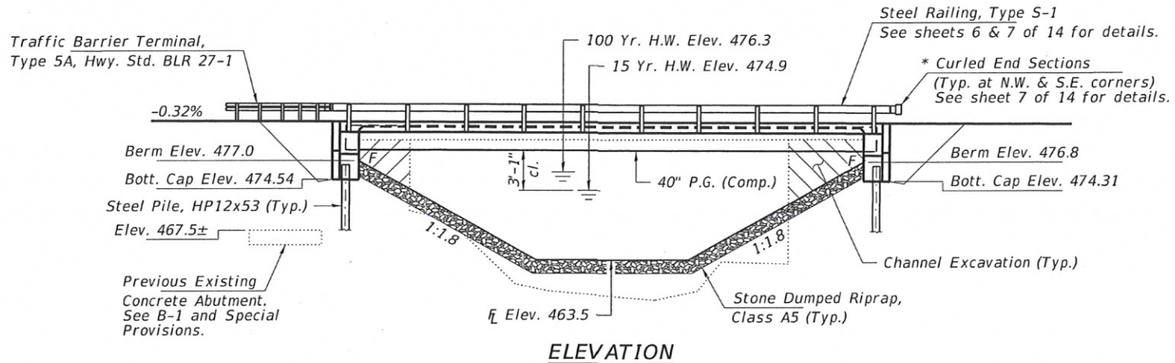
SHEET NUMBER:
5 OF 19

CONTRACT NO.
95959

EXISTING STRUCTURE NO. 017-3207: Sta. 3+09.5 - Precast Concrete Box Beam Bridge on Closed Concrete Abutments and Concrete Wingwalls.

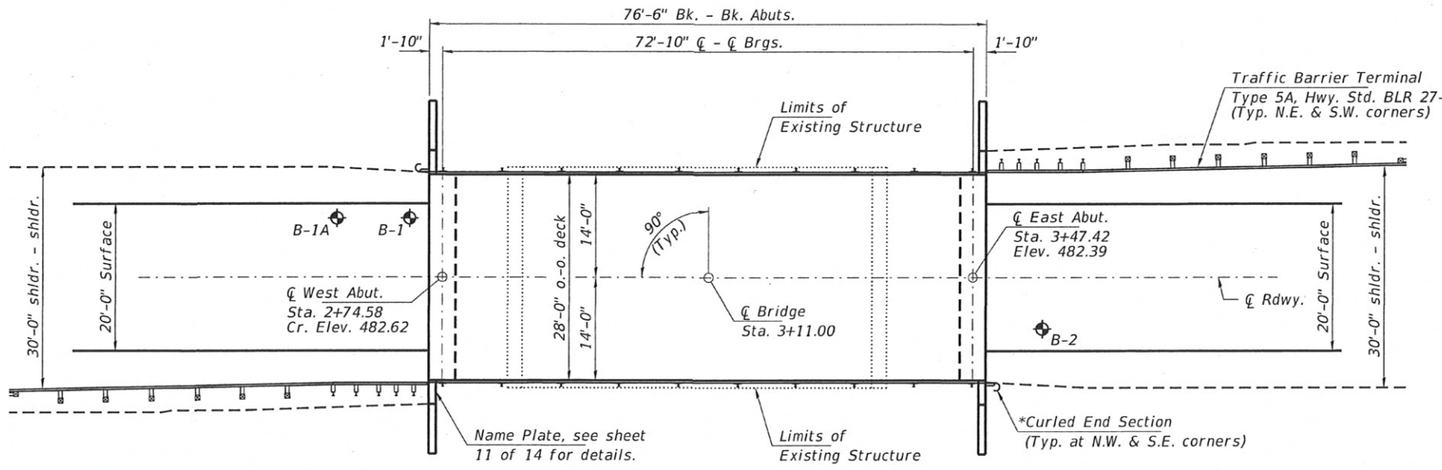
Structure closed to traffic during construction.

No Salvage



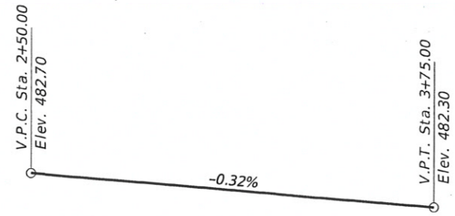
ELEVATION

*Terminal Marker - Direct Applied to be placed on Curled End Sections in accordance with Std. 725001



PLAN

INDEX OF STRUCTURE SHEETS



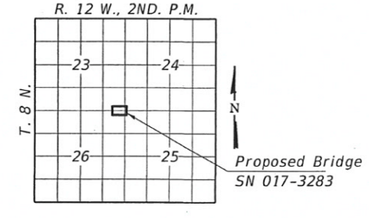
PROFILE GRADE

T.R. 47

HUTSON CREEK
BUILT 202_ BY
CRAWFORD COUNTY
SEC. 22-02117-00-BR
HUTSONVILLE ROAD DISTRICT
STR. NO. 017-3283
LOADING HL-93

NAME PLATE

See Std. 515001



LOCATION SKETCH

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

DESIGN STRESSES

FIELD UNITS

f'c = 5,000 psi (Superstructure)
f'c = 3,500 psi (Substructure)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (Structural steel)
(M270 Gr 50W)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.138
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.327
Soil Site Class = C

WATERWAY INFORMATION

Drainage Area = 8.31 Sq. Mi.
Existing Low Grade Elev. 481.0 at Sta. 7+00
Proposed Low Grade Elev. 481.0 at Sta. 7+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	15	2,010	419	438	474.90	-	0.2	-	475.10
Base	100	3,440	482	512	476.30	0.6	0.7	476.90	477.00

DESIGN SCOUR ELEVATION TABLE

Event/Limit State	Design Scour Elev. (ft.) W. Abut.	Design Scour Elev. (ft.) E. Abut.	Item 113
Q100	474.5	474.3	
Q200	474.5	474.3	8
Design	474.5	474.3	
Check	474.5	474.3	

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "AASHTO LRFD Specifications."

Steven W. Megginson 03/14/2024
ILLINOIS STRUCTURAL ENGR. NO. 081-6064

LICENSED STRUCTURAL ENGINEER * STEVEN W. MEGGINSON 081-6064 SPRINGFIELD, IL * STATE OF ILLINOIS

Expires 11-30-2024

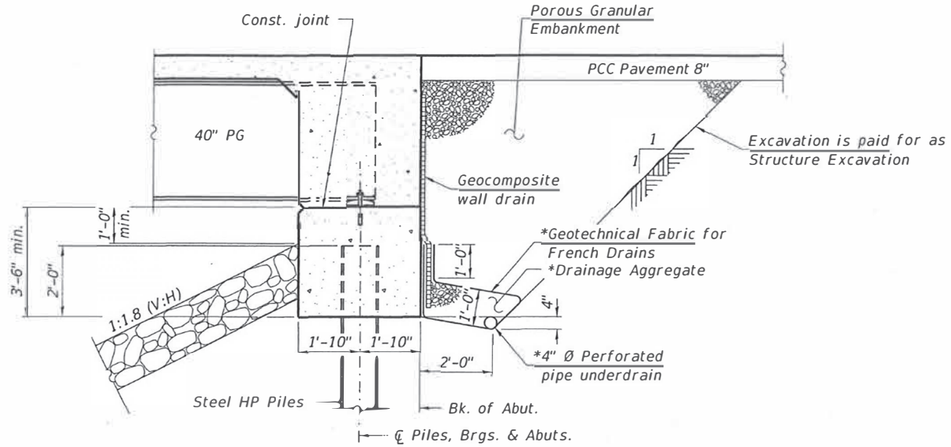
GENERAL PLAN & ELEVATION
TOWNSHIP ROAD 47
SECTION 22-02117-00-BR
CRAWFORD COUNTY
STATION 3+11.00
STRUCTURE NO. 017-3283

FILE NAME = 220467-sht-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.T.M.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3088 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM L.S / P.E / S.E CORP. 184.005959	PLOT SCALE =	DRAWN - G.D.M.	REVISED -
	PLOT DATE = 3/14/2024	CHECKED - S.T.M./S.W.M.	REVISED -

STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 017-3283
SHEET NO. 1 OF 14 SHEETS

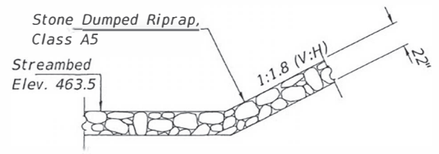
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	22-02117-00-BR	CRAWFORD	19	6
HUTSONVILLE ROAD DISTRICT		CONTRACT NO. 95959		
ILLINOIS	FED. AID PROJECT			



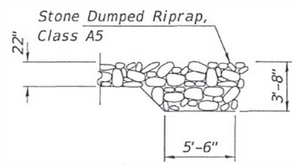
SECTION THRU INTEGRAL ABUTMENT

*Included in the cost of Pipe Underdrains for Structures 4"

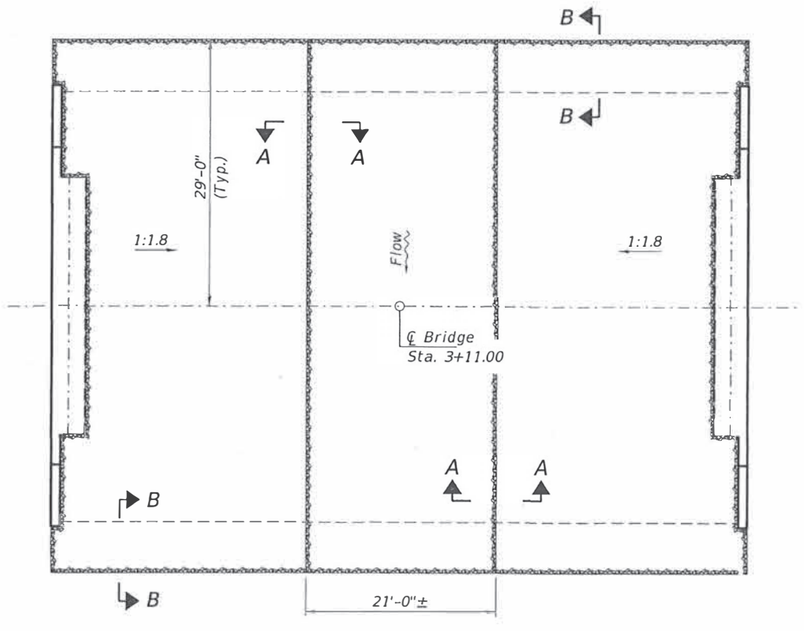
All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101). Concrete headwalls shall be included in the cost of Pipe Underdrains for Structures 4".



SECTION A-A



SECTION B-B



RIPRAP LAYOUT

GENERAL NOTES

Fasteners shall be ASTM F 3125 Grade A325 Type 1, mechanically galvanized bolts in painted or coated metalized areas. Fasteners shall be ASTM F 3125 Grade A325 Type 1, hot-dipped galvanized in uncoated areas. Fastners shall be ASTM F 3125 Grade A325 Type 3 weathering steel bolts in unpainted areas. Bolts 3#4"Ø, holes15#16"Ø, unless otherwise noted.

Calculated weight of Structural Steel = 56,792 lbs.

All structural steel shall be AASHTO M 270 Grade 50W.

No field welding is permitted except as specified in the contract documents.

The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at each abutment. or approved by the Engineer before ordering the remainder of piles.

Reinforcement bars designated (E) shall be epoxy coated.

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

Structural steel shall only be painted from distance equal to the depth of embedment into the concrete cap plus 18 inches. Painted areas shall be primed in the shop with a Department approved zinc rich primer. Field painting will not be required.

Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure.

Bridge Deck Grooving is figured 1'-0" from the face of the rail. It shall be applied to the bridge deck.

Protective coat shall be applied to the top surface and facia of the concrete deck and wingwalls.

TOTAL BILL OF MATERIAL

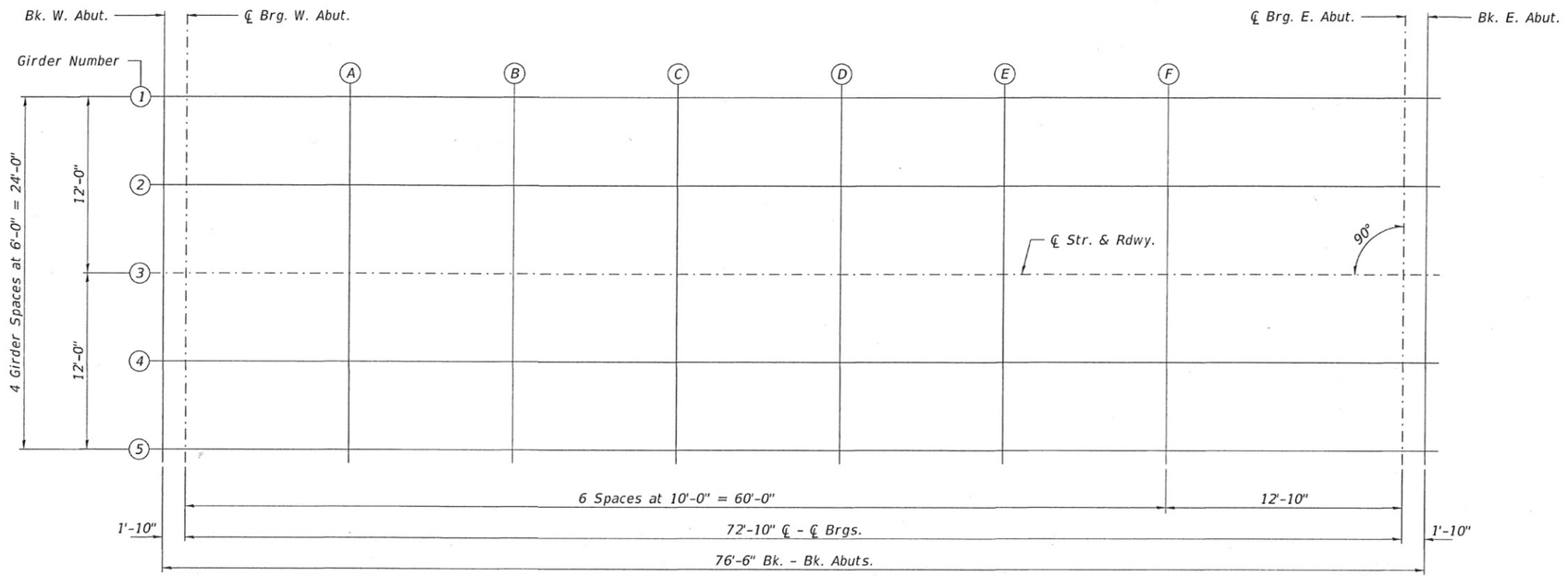
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.		100	100
Porous Granular Embankment	Cu. Yd.		125	125
Stone Dumped Riprap, Class A5	Ton		685	685
Removal of Existing Structures	Each		1	1
Structure Excavation	Cu. Yd.		275	275
Concrete Structures	Cu. Yd.		37.4	37.4
Concrete Superstructure	Cu. Yd.	88.2		88.2
Bridge Deck Grooving	Sq. Yd.	221		221
Protective Coat	Sq. Yd.	265	35	300
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	885		885
Reinforcement Bars, Epoxy Coated	Pound	16,390	10,270	26,660
Steel Railing, Type S-1	Foot	153		153
Furnishing Steel Piles HP12x53	Foot		240	240
Driving Piles	Foot		240	240
Test Pile Steel HP12x53	Each		2	2
Name Plates	Each		1	1
Anchor Bolts, 1"	Each		20	20
Geocomposite Wall Drain	Sq. Yd.		70	70
Pipe Underdrains for Structures 4"	Foot		140	140
Terminal Marker - Direct Applied	Each	4		4

FILE NAME = 220467-d21-bridge.dgn	USER NAME = gmelcalf	DESIGNED - S.T.M.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000153		CHECKED - S.W.M.	REVISED -
	PLOT SCALE =	DRAWN - G.D.M.	REVISED -
	PLOT DATE = 3/14/2024	CHECKED - S.T.M./S.W.M.	REVISED -

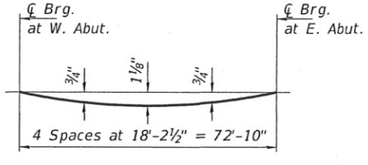
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

GENERAL DETAILS
STRUCTURE NO. 017-3283
SHEET NO. 2 OF 14 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	22-02117-00-BR	CRAWFORD	19	7
HUTSONVILLE ROAD DISTRICT		CONTRACT NO. 95959		
		ILLINOIS	FED. AID PROJECT	



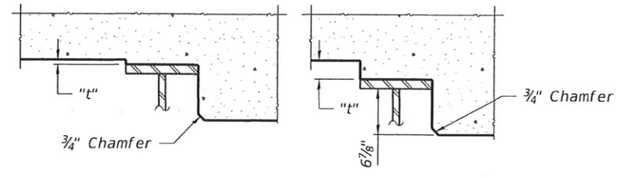
PLAN



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheet 4 of 14.



At Minimum Fillet At Maximum Fillet

To determine "t": After all structural steel has been erected, elevations of the top flanges of the girders shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheet 4 of 14, minus slab thickness, equals the fillet heights "t" above top flange of girders.

FILLET HEIGHTS

FILE NAME = 220467-sht-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.T.M.	REVISED -	STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT	TOP OF SLAB ELEVATIONS STRUCTURE NO. 017-3283 SHEET NO. 3 OF 14 SHEETS
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -		
	PLOT SCALE =	DRAWN - G.D.M.	REVISED -		
	PLOT DATE = 3/14/2024	CHECKED - S.T.M./S.W.M.	REVISED -		

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	22-02117-00-BR	CRAWFORD	19	8
HUTSONVILLE ROAD DISTRICT		CONTRACT NO. 95959		
	ILLINOIS	FED. AID PROJECT		

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	2+72.75	-12.00	482.44	482.44
℄ Brg. W. Abut.	2+74.58	-12.00	482.43	482.43
A	2+84.58	-12.00	482.40	482.44
B	2+94.58	-12.00	482.37	482.45
C	3+04.58	-12.00	482.34	482.43
D	3+14.58	-12.00	482.31	482.40
E	3+24.58	-12.00	482.27	482.36
F	3+34.58	-12.00	482.24	482.29
℄ Brg. E. Abut.	3+47.42	-12.00	482.20	482.20
Bk. E. Abut.	3+49.25	-12.00	482.19	482.19

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	2+72.75	-6.00	482.53	482.53
℄ Brg. W. Abut.	2+74.58	-6.00	482.53	482.53
A	2+84.58	-6.00	482.50	482.54
B	2+94.58	-6.00	482.46	482.54
C	3+04.58	-6.00	482.43	482.53
D	3+14.58	-6.00	482.40	482.50
E	3+24.58	-6.00	482.37	482.45
F	3+34.58	-6.00	482.34	482.39
℄ Brg. E. Abut.	3+47.42	-6.00	482.29	482.29
Bk. E. Abut.	3+49.25	-6.00	482.29	482.29

℄ STRUCTURE & GIRDER 3

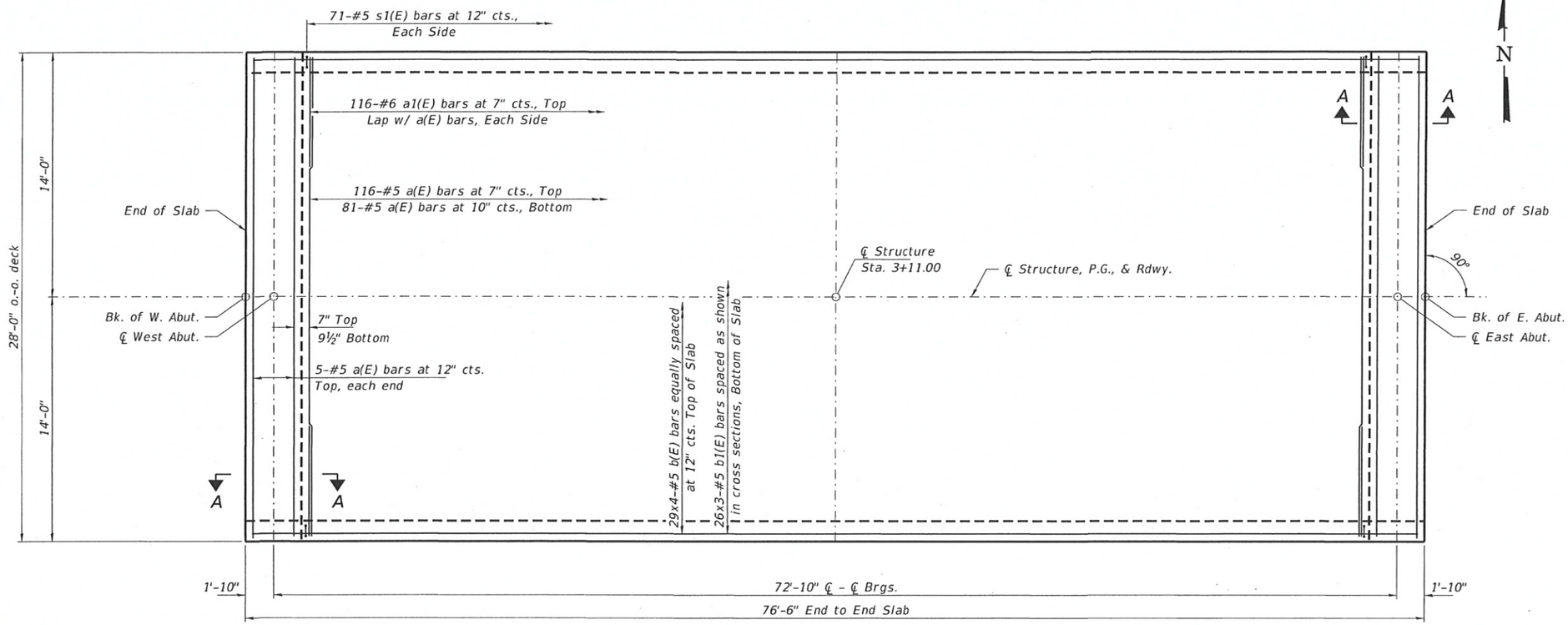
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	2+72.75	0.00	482.63	482.63
℄ Brg. W. Abut.	2+74.58	0.00	482.62	482.62
A	2+84.58	0.00	482.59	482.63
B	2+94.58	0.00	482.56	482.63
C	3+04.58	0.00	482.53	482.62
D	3+14.58	0.00	482.49	482.59
E	3+24.58	0.00	482.46	482.54
F	3+34.58	0.00	482.43	482.48
℄ Brg. E. Abut.	3+47.42	0.00	482.39	482.39
Bk. E. Abut.	3+49.25	0.00	482.38	482.38

GIRDER 4

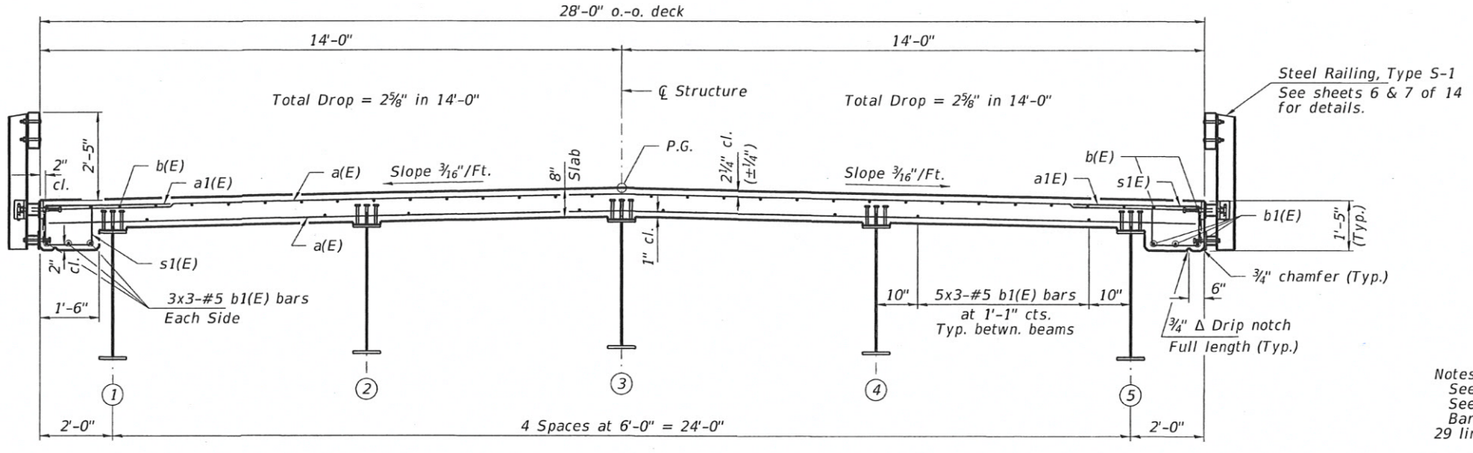
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	2+72.75	6.00	482.53	482.53
℄ Brg. W. Abut.	2+74.58	6.00	482.53	482.53
A	2+84.58	6.00	482.50	482.54
B	2+94.58	6.00	482.46	482.54
C	3+04.58	6.00	482.43	482.53
D	3+14.58	6.00	482.40	482.50
E	3+24.58	6.00	482.37	482.45
F	3+34.58	6.00	482.34	482.39
℄ Brg. E. Abut.	3+47.42	6.00	482.29	482.29
Bk. E. Abut.	3+49.25	6.00	482.29	482.29

GIRDER 5

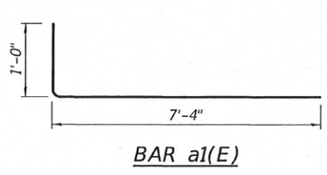
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	2+72.75	12.00	482.44	482.44
℄ Brg. W. Abut.	2+74.58	12.00	482.43	482.43
A	2+84.58	12.00	482.40	482.44
B	2+94.58	12.00	482.37	482.45
C	3+04.58	12.00	482.34	482.43
D	3+14.58	12.00	482.31	482.40
E	3+24.58	12.00	482.27	482.36
F	3+34.58	12.00	482.24	482.29
℄ Brg. E. Abut.	3+47.42	12.00	482.20	482.20
Bk. E. Abut.	3+49.25	12.00	482.19	482.19



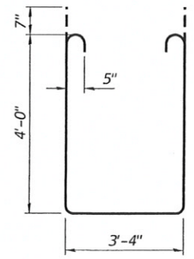
PLAN



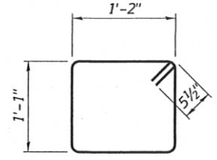
CROSS SECTION
(Looking East)



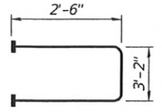
BAR a1(E)



BAR s(E)



BAR s1E)



BAR s2(E)
(Headed)

SUPERSTRUCTURE BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	207	#5	27'-8"	
a1(E)	232	#6	8'-4"	
b(E)	116	#5	21'-8"	
b1(E)	78	#5	27'-9"	
m(E)	10	#6	27'-8"	
m1(E)	32	#6	5'-8"	
m2(E)	16	#6	1'-8"	
s(E)	48	#5	12'-6"	
s1(E)	154	#5	5'-5"	
s2(E)	48	#5	8'-2"	
Concrete Superstructure		Cu. Yd.	88.2	
Bridge Deck Grooving		Sq. Yd.	221	
Protective Coat		Sq. Yd.	265	
Reinforcment Bars, Epoxy Coated		Pound	16,390	

MIN. BAR LAP
#5 bars = 3'-6"

Notes:
See sheet 6 of 14 for Superstructure Details.
See sheet 6 of 14 for SECTION A-A.
Bars indicated thus 29x4-#5 etc. indicates 29 lines of bars with 4 lengths per line.

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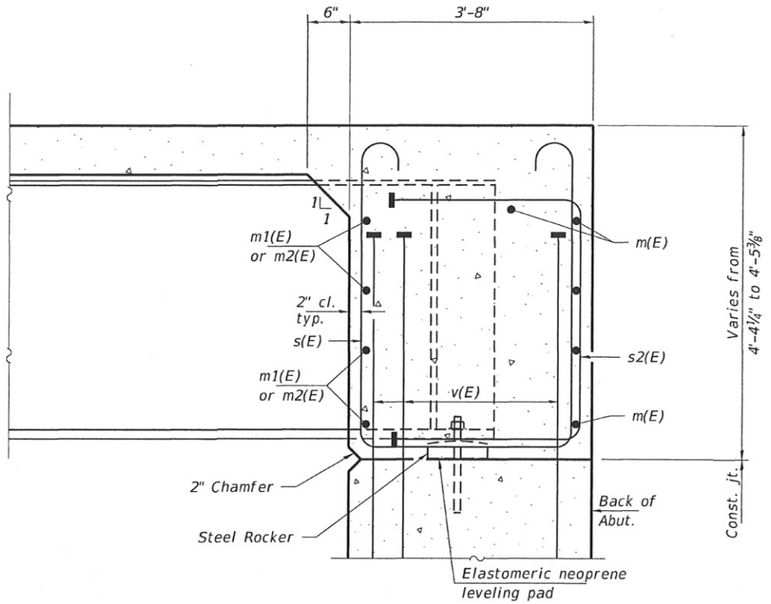
HAMPTON, LENZINI AND RENWICK, INC. 3065 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -	
	PLOT SCALE =	DRAWN - G.D.M.	REVISED -	
	PLOT DATE = 3/14/2024	CHECKED - S.T.M./S.W.M.	REVISED -	

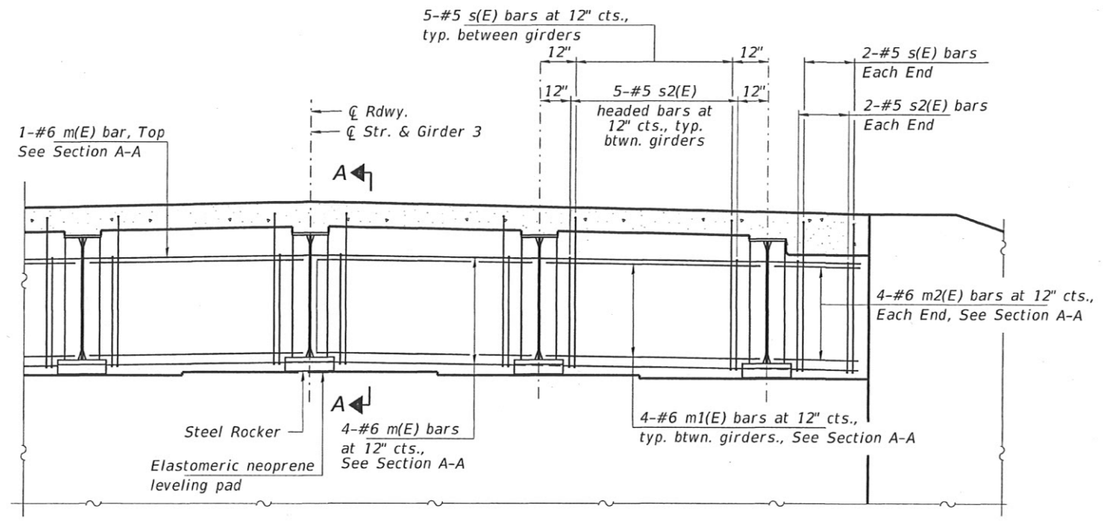
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

SUPERSTRUCTURE
STRUCTURE NO. 017-3283
SHEET NO. 5 OF 14 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	22-02117-00-BR	CRAWFORD	19	10
HUTSONVILLE ROAD DISTRICT		CONTRACT NO. 95959		
	ILLINOIS	FED. AID PROJECT		

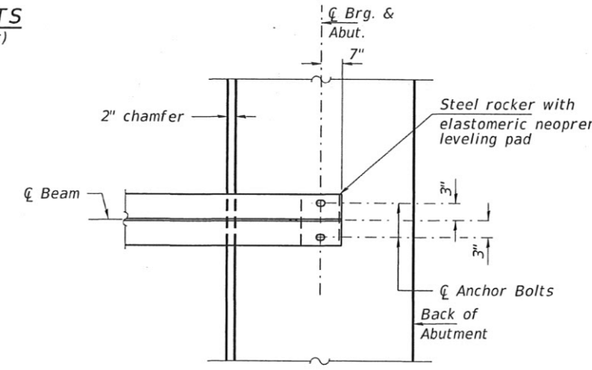


SECTION A-A



DIAPHRAGM AT ABUTMENTS

(West Abut. shown, East Abut. similar)



PARTIAL PLAN AT ABUTMENT

(Showing bottom flange of girder)

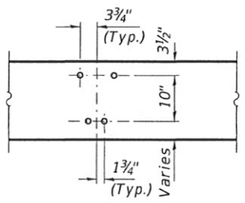
Notes:

Reinforcement bars in diaphragm are billed with Superstructure on sheet 5 of 14.

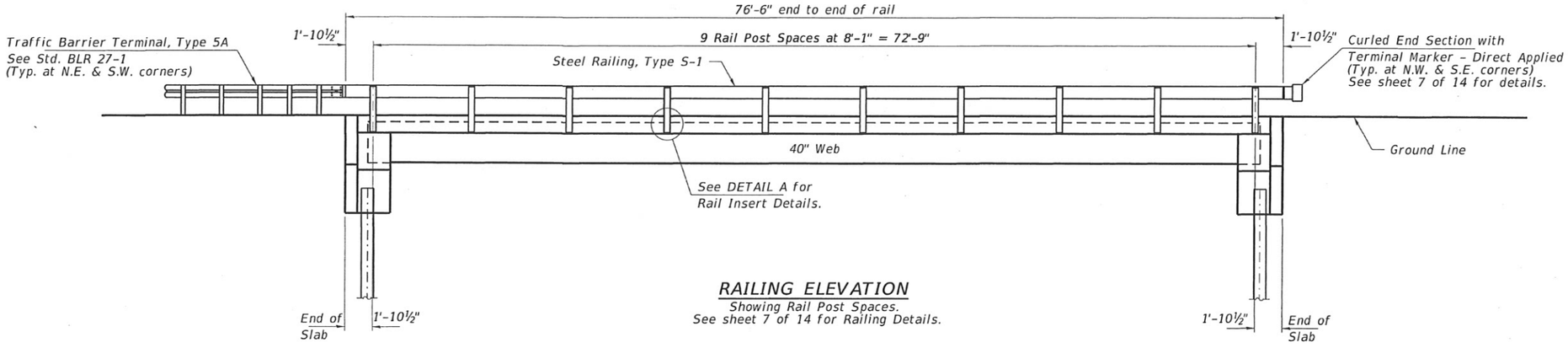
Concrete in diaphragm is included with Concrete Superstructure on sheet 5 of 14.

The s(E) and s2(E) bars shall be placed parallel to the girders. Spacing for these bars shall be at right angles to the girders.

Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.



DETAIL A



RAILING ELEVATION

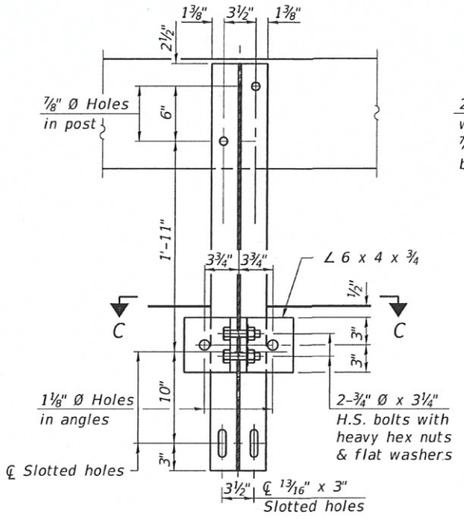
Showing Rail Post Spaces.
See sheet 7 of 14 for Railing Details.

FILE NAME = 220467-sht-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.T.M.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3365 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE =	DRAWN - G.D.M.	REVISED -
	PLOT DATE = 3/14/2024	CHECKED - S.T.M./S.W.M.	REVISED -

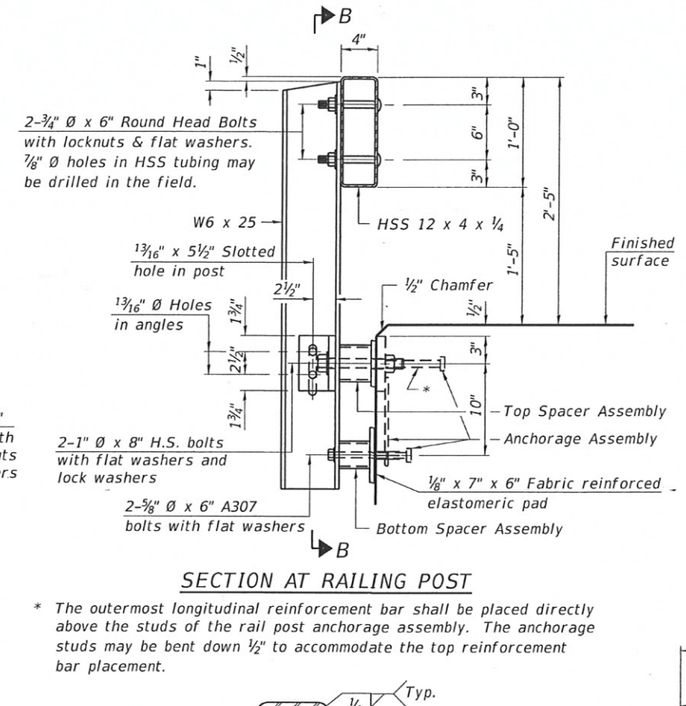
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 017-3283
SHEET NO. 6 OF 14 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	22-02117-00-BR	CRAWFORD	19	11
HUTSONVILLE ROAD DISTRICT		CONTRACT NO. 95959		
	ILLINOIS	FED. AID PROJECT		

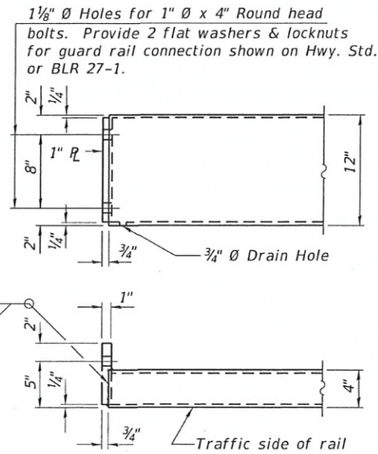


SECTION B-B



SECTION AT RAILING POST

* The outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchorage assembly. The anchorage studs may be bent down ½" to accommodate the top reinforcement bar placement.



END OF RAIL DETAILS

Notes:

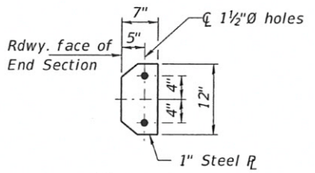
A sufficient number of shims of various thicknesses, sized to fit behind the top spacer assembly, 5" x 11½", and bottom spacer assembly, 6" x 7", shall be provided to adjust posts for proper alignment. If the summation of shims is greater than ¼" (top) or ½" (bottom), longer bolts are required. Cost included with Steel Railing, Type S-1.

All steel rail elements including shims shall be galvanized according to Article 509.05 of the Standard Specifications.

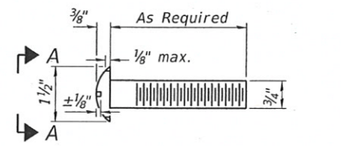
All HSS tubing serving as railing shall be CVN tested according to Article 1006.34(b) of the Standard Specifications.

Rail splice inserts may be built out of 2 -⅜" bent plates in lieu of the 4 plate rail splice inserts shown, provided the outside dimensions are matched.

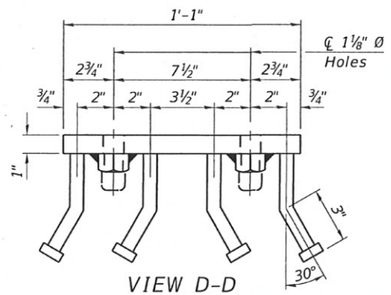
All round head bolts shall be ASTM A307 with locknuts according to ASTM A563 grade A.



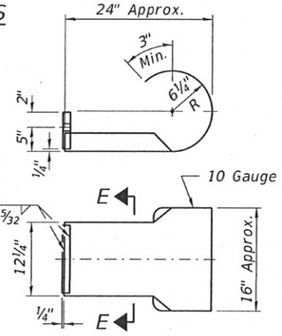
SECTION E-E



ROUND HEAD BOLT DETAIL

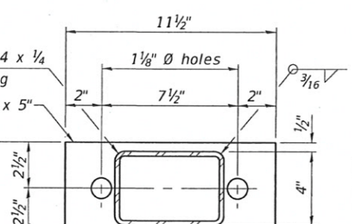


VIEW D-D



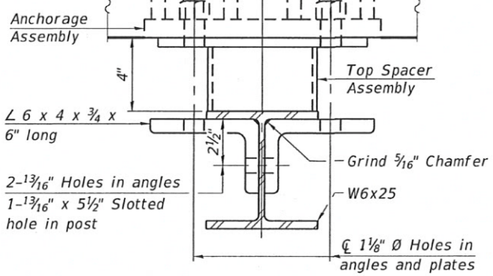
CURLED END SECTION DETAILS

Cost included with Steel Railing, Type S-1. Terminal Markers - Direct Applied shall be placed on end of each Curled End Section. (Typ. at N.W. & S.E. Corners - 2 Required)

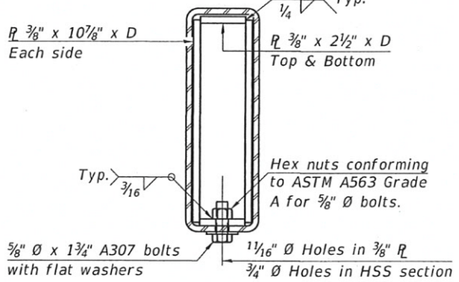


VIEW A-A

TOP SPACER ASSEMBLY



SECTION C-C



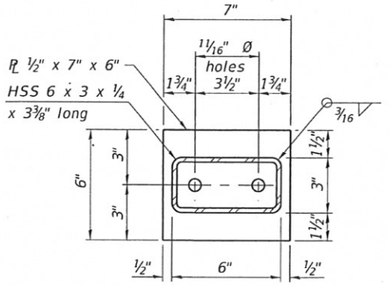
ANCHORAGE ASSEMBLY

** Threaded areas shall be plugged or blocked off during casting of concrete.

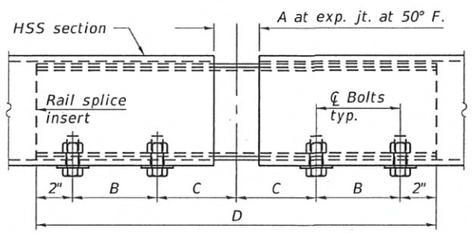
**Heavy hex nuts conforming to ASTM A563 Grade DH for 1" Ø bolts. Cast 1" voids behind each nut

¾" Ø x 6" Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs. automatically end welded. 4 Required per ℄

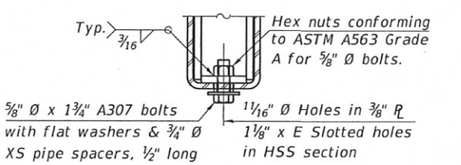
**3" long hex coupling nuts conforming to ASTM A563 Grade A for ⅝" Ø bolts.



BOTTOM SPACER ASSEMBLY



RAIL SPLICE ELEVATION



RAIL SPLICE CONNECTION AT EXPANSION JT.

SPLICE DIMENSIONS

Location	T	A	B	C	D	E
All locs. not over exp. jts.	0	¼"	4"	4"	1'-8"	-
Over Strip Seal Jt.	≤4"	2½"	4⅝"	4⅜"	1'-10"	3 1/16"
Over Finger or Modular Jt.	≤9½"	5½"	7⅜"	7¼"	2'-9¼"	5 13/16"
Over Finger or Modular Jt.	≤15"	8¼"	10⅛"	10"	3'-8¼"	8 9/16"

T = ; total movement along centerline of roadway at expansion joint.

RAILING CRITERIA

NCHRP 350 Test Level	2
Railing Weight (plf)	50
Max Post Spacing	10'-9"
HMA thickness range (in)	1¼ - 3⅛

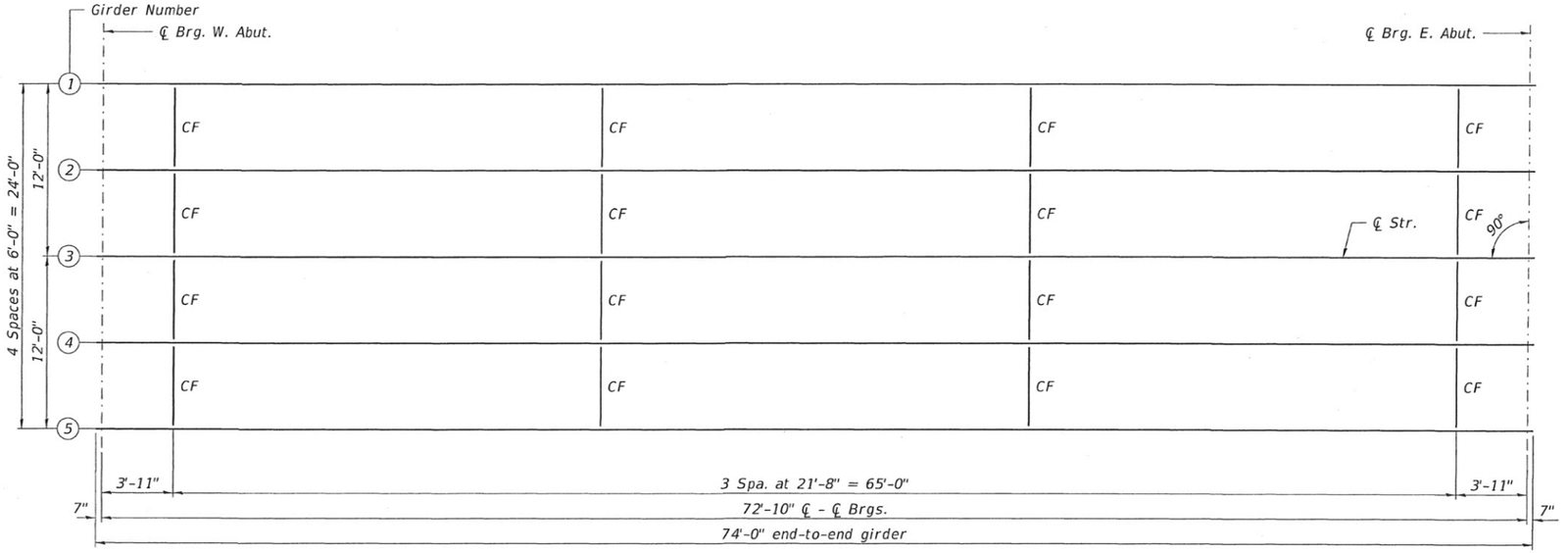
BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	153

R-23A 10-12-2021

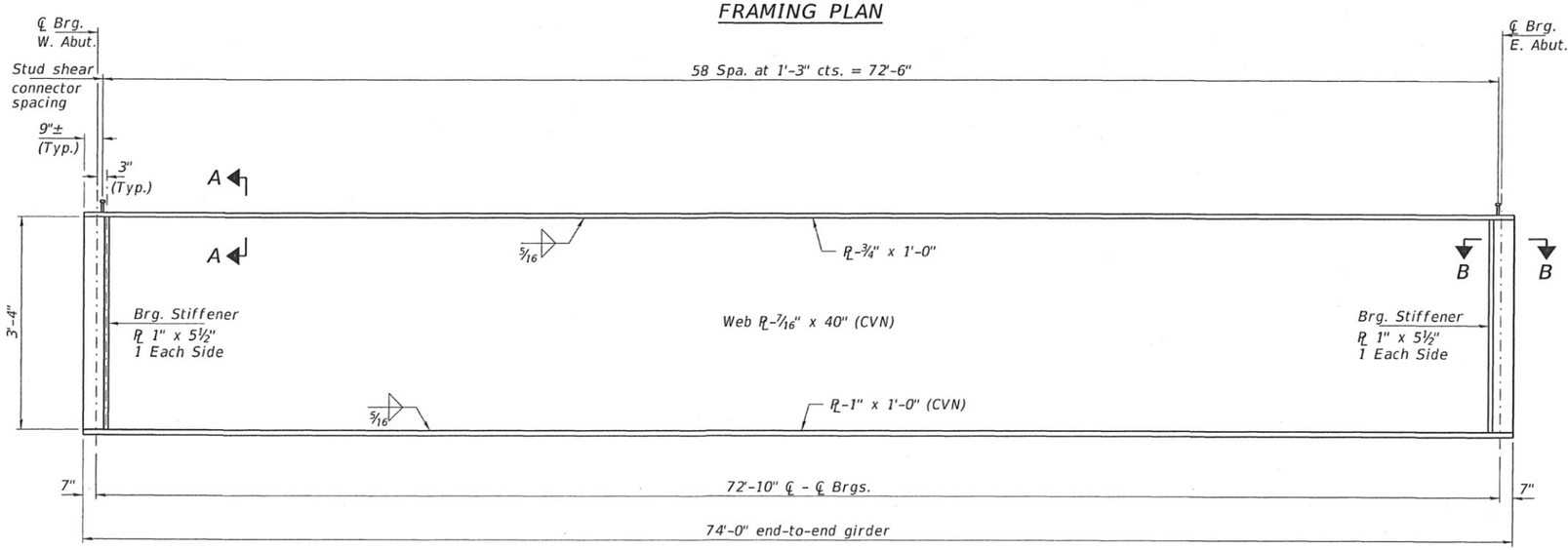
FILE NAME = 220467-sht-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.T.M.	REVISED -	STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT
HAMPTON, LENZINI AND RENWICK, INC. 3065 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -	STEEL RAILING, TYPE S-1 STRUCTURE NO. 017-3283
ILLINOIS PROFESSIONAL DESIGN FIRM LB / PE / SE CORP. 184.002959	PLOT SCALE =	DRAWN - G.D.M.	REVISED -	SHEET NO. 7 OF 14 SHEETS
	PLOT DATE = 3/14/2024	CHECKED - S.T.M./S.W.M.	REVISED -	

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	22-02117-00-BR	CRAWFORD	19	12
HUTSONVILLE ROAD DISTRICT		CONTRACT NO. 95959		
ILLINOIS	FED. AID PROJECT			

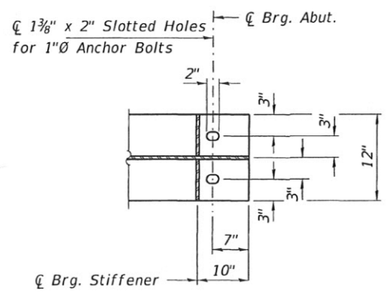


FRAMING PLAN

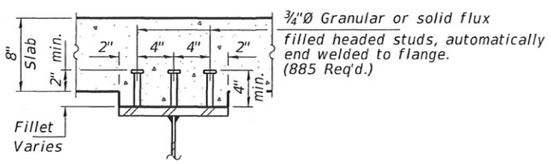
N



GIRDER ELEVATION



SECTION B-B



SECTION A-A

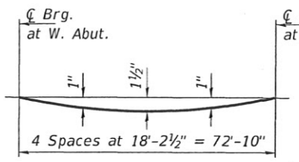
Notes:

Load carrying components designated "CVN" shall conform to the Charpy-V-Notch Impact Energy Requirement, Zone 2.

All girders and splices, including bearing stiffeners and diaphragms shall be AASHTO M270, Grade 50W.

For additional structural steel details see sheets 9 & 10 of 14.

All cross frames and diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.



CAMBER DIAGRAM

Location	℄ Brg. W. Abut.	℄ Brg. E. Abut.
GIRDER 1	481.63	481.40
GIRDER 2	481.73	481.50
GIRDER 3	481.82	481.59
GIRDER 4	481.73	481.50
GIRDER 5	481.63	481.40

TOP OF WEB ELEVATIONS

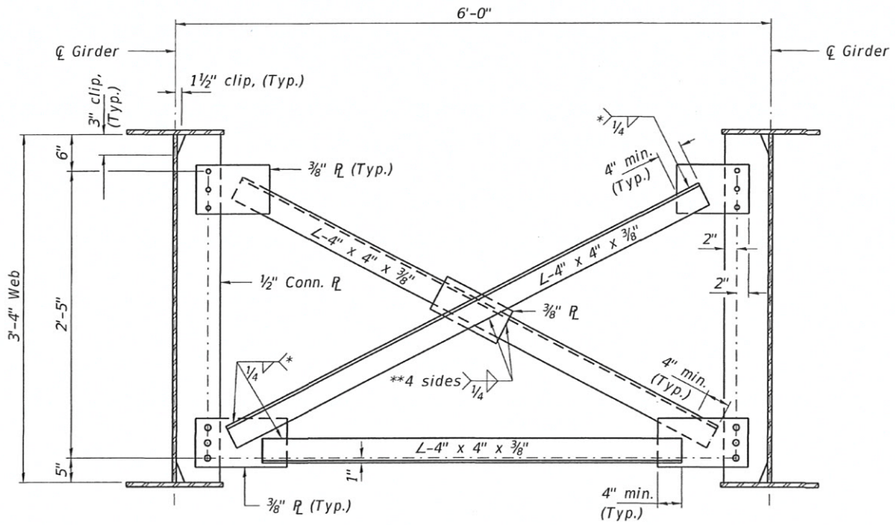
(For fabrication only)
(Does not include Dead Load Deflections)

FILE NAME = 220467-sht-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.T.M.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3095 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -	
	PLOT SCALE =	DRAWN - G.D.M.	REVISED -	
	PLOT DATE = 3/14/2024	CHECKED - S.T.M./S.W.M.	REVISED -	

STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

STRUCTURAL STEEL
STRUCTURE NO. 017-3283
SHEET NO. 8 OF 14 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	22-02117-00-BR	CRAWFORD	19	13
HUTSONVILLE ROAD DISTRICT		CONTRACT NO. 95959		
	ILLINOIS	FED. AID PROJECT		



INTERIOR CROSS-FRAME

(16-required)

* Fillet weld angles along 3 sides on one face of gusset plate.

**If cross-frames are galvanized, weld all-around.

Notes:
Bolts for cross frames shall use $^{15}/_{16}$" Ø holes for all ¾" Ø bolts.
Two hardened washers required for each set of oversized holes.

INTERIOR GIRDER MOMENT TABLE		
		0.5 Sp. 1
Is	(in^4)	11,012
Ic(n)	(in^4)	30,982
Ic(3n)	(in^4)	23,193
Ic(cr)	(in^4)	–
Ss	(in^3)	568
Sc(n)	(in^3)	814
Sc(3n)	(in^3)	751
Sc(cr)	(in^3)	–
Sx	(in^3)	744
DC1	(k/')	0.740
MDC1	('k)	490
DC2	(k/')	0.040
MDC2	('k)	27
DW	(k/')	0.300
MDW	('k)	199
LLDF		0.545
M_{L+IM}	('k)	978
fl (Strength I)	(ksi)	0
$M_u + \frac{1}{3}flSx$	('k)	2,657
Øf Mn	('k)	4,328
fs DC1	(ksi)	10.4
fs DC2	(ksi)	0.4
fs DW	(ksi)	3.2
fs (L+IM)	(ksi)	14.4
fl (Service II)	(ksi)	0.0
fs+fl/2 (Service II)	(ksi)	32.7
Service II Resistance	(ksi)	47.5
fs+fl/3 (Strength I)	(ksi)	–
Øf Fn	(ksi)	–
Vf	(k)	24.80

INTERIOR GIRDER REACTION TABLE		
		Abutment
LLDF		0.671
OCF		1.0
RDC1	(k)	26.9
RDC2	(k)	1.5
RDW	(k)	10.9
RL	(k)	57.7
R IM	(k)	13.9
RTotal (Strength I)(Impact)	(k)	177.1
RTotal (Strength I)(No Impact)	(k)	152.8

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s(Total-Strength I, and Service II) due to non-composite dead loads (in.⁴ and in.³).

$I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s(Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads (in.⁴ and in.³).

$I_c(3n)$, $S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s(Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in.⁴ and in.³).

$I_c(cr)$, $S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in.⁴ and in.³).

S_x : Section modulus about the major axis of a section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange (in.³).

DC1: Un-factored non-composite dead load (kips/ft.).

MDC1: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

MDC2: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

LLDF: Live Load Distribution Factor for moment and shear computed according to Article 4.6.2.2 and further IDOT provisions.

M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

M_u : Strength I load combination of factored design moments (kip-ft.). 1.25 (MDC1 + MDC2) + 1.5 MDW + 1.75 M_{L+IM}

f_l : Factored calculated flange lateral bending stress as calculated using Article 6.10.1.6 and as further simplified by IDOT provisions (ksi).

$\phi_f M_n$: Factored nominal flexural resistance of the section determined as specified in Article 6.10.7.1 or A6 as applicable (kip-ft.).

f_s DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
M_{DC1} / S_s

f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
$M_{DC2} / S_c(3n)$ or $M_{DC2} / S_c(cr)$ as applicable.

f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
$M_{DW} / S_c(3n)$ or $M_{DW} / S_c(cr)$ as applicable.

f_s (L + IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).
$M_{L+IM} / S_c(n)$ or $M_{L+IM} / S_c(cr)$ as applicable.

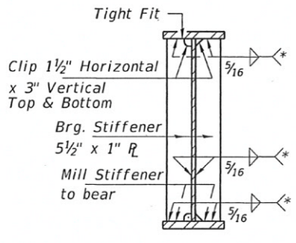
$f_s + f_l/2$ (Service II): Sum of stresses as computed below (ksi).
f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s (L + IM) + $f_l/2$

Service II Resistance: Composite ($0.95R_hF_{yf}$) or noncomposite ($0.80R_hF_{yf}$) stress capacity according to Article 6.10.4.2 (ksi).

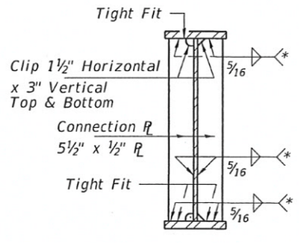
$f_s + f_l/3$ (Strength I): Sum of stresses as computed below on non-compact sections (ksi).
1.25 (f_s DC1 + f_s DC2) + 1.5 f_s DW + 1.75 f_s (L + IM) + $f_l/3$

$\phi_f F_n$: Factored nominal flexural resistance of the section as specified in Article 6.10.7.2 or 6.10.8 as applicable (ksi).

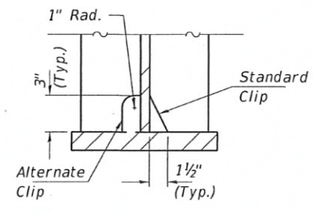
V_f: Maximum factored shear range in span computed according to Article 6.10.10.



SECTION AT ABUTMENTS BEARING STIFFENER PL'S



SECTION AT CROSS-FRAME CONNECTION PL'S



CLIP DETAIL

Use Standard Clip or Alternate Clips in all locations. Do not combine use of different clip type.

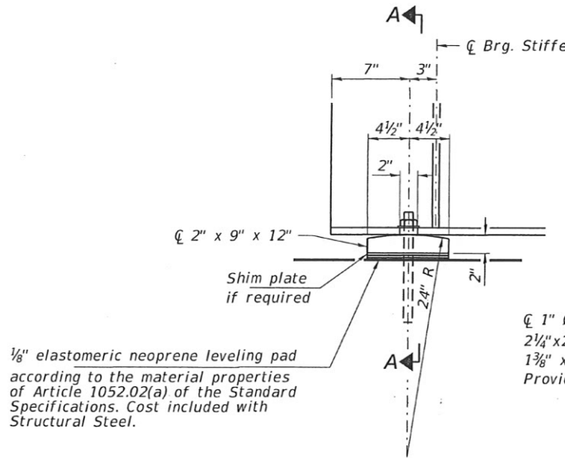
Notes:
For additional structural steel details see sheets 8 & 10 of 14.
All splices and diaphragms, including stiffeners and diaphragms shall be AASHTO M270, Grade 50W.
Terminate ¼" (±⅛") from the end of plate intersects

FILE NAME = 220487-sht-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.T.M.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE =	DRAWN - G.D.M.	REVISED -
	PLOT DATE = 3/14/2024	CHECKED - S.T.M./S.W.M.	REVISED -

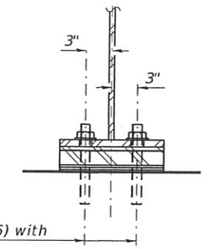
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 017-3283
SHEET NO. 9 OF 14 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	22-02117-00-BR	CRAWFORD	19	14
HUTSONVILLE ROAD DISTRICT		CONTRACT NO. 95959		
	ILLINOIS	FED. AID PROJECT		

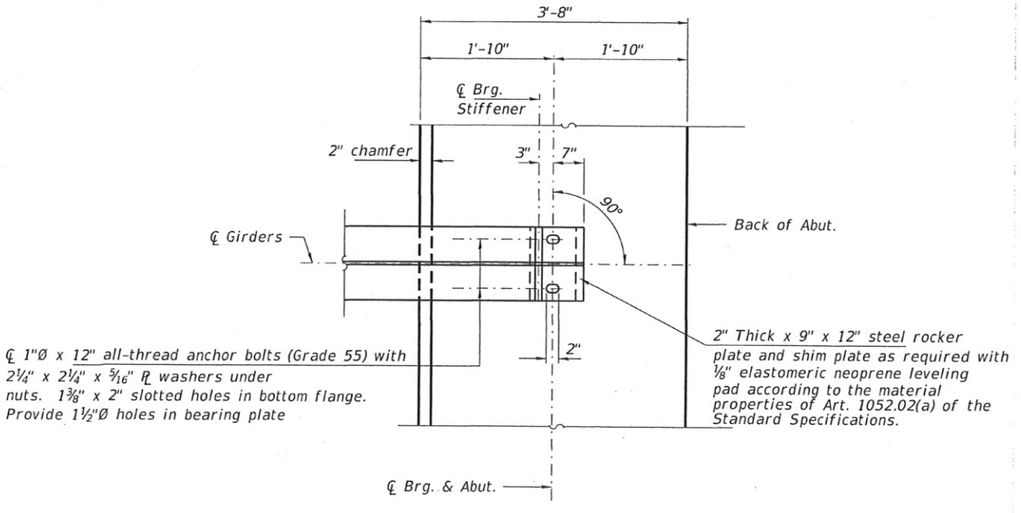


ELEVATION



SECTION A-A

FIXED BEARING AT ABUTMENTS
(10 required)



PLAN
(Showing bottom flange of steel girder at abutments)

Notes:
Two ⅛" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
Anchor bolts shall be according to Article 521.06 of the Standard Specifications.
Girders shall be braced for stability during erection and remain braced until deck is poured and cured.
See sheet 9 of 14 for bearing stiffener dimensions and details.
Anchor bolts at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.
All steel plates of the bearing assembly shall be M270 Grade 50W.

BILL OF MATERIAL

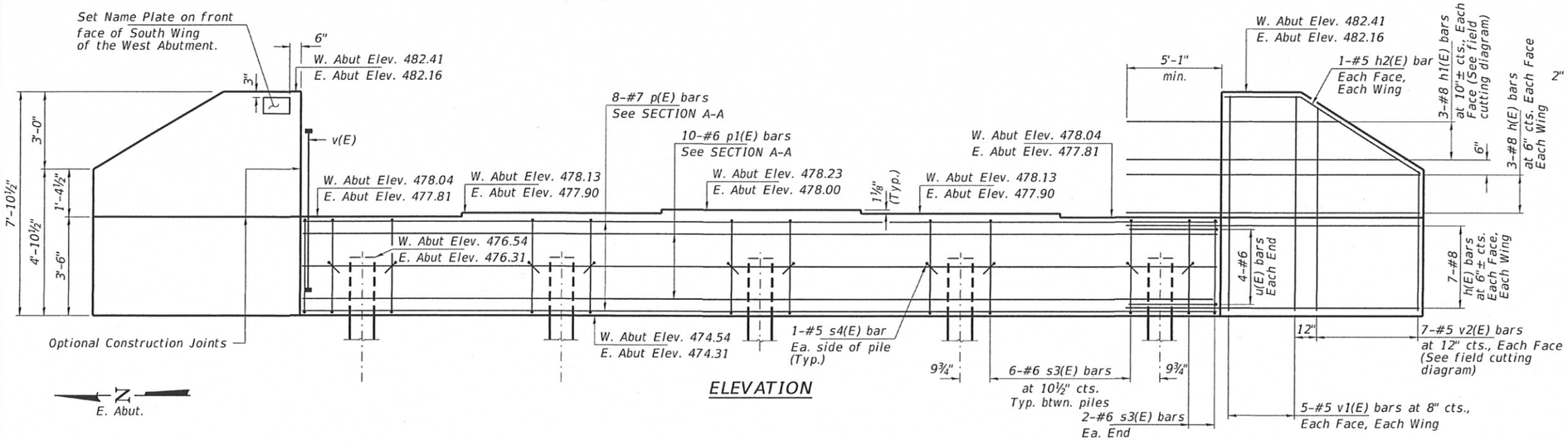
Item	Unit	Quantity
Anchor Bolts, 1"	Each	20

FILE NAME = 220467-shl-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.T.M.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3555 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -
	PLOT SCALE =	DRAWN - G.D.M.	REVISED -
	PLOT DATE = 3/14/2024	CHECKED - S.T.M./S.W.M.	REVISED -

STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 017-3283
SHEET NO. 10 OF 14 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	22-02117-00-BR	CRAWFORD	19	15
HUTSONVILLE ROAD DISTRICT		CONTRACT NO. 95959		
	ILLINOIS	FED. AID PROJECT		



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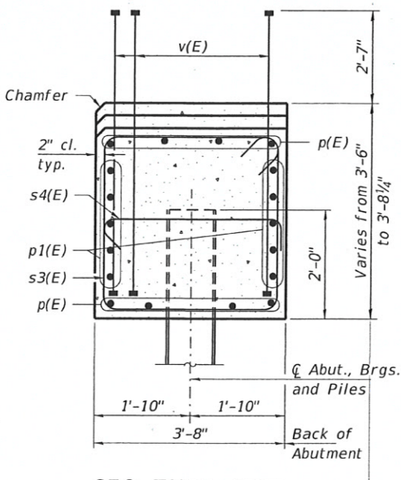
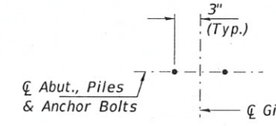
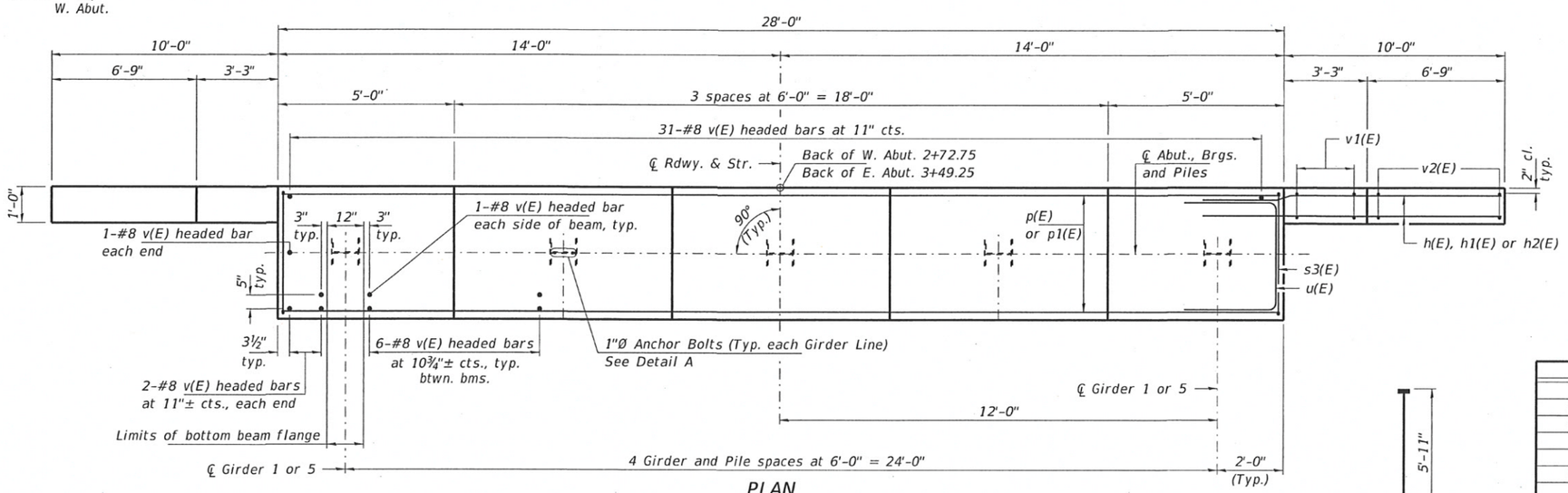


SEC. THRU ABUT.



DETAIL A



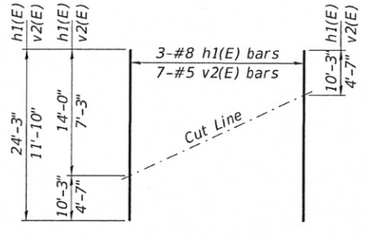
PLAN

Notes:
Pour steps monolithically with cap.
Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
For details of piles see sheet 12 of 14.
Protective coat shall be applied to the top and front face of wingwalls.

PILE DATA

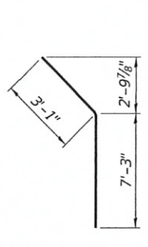
Type: Steel HP12x53
Nominal Required Bearing: 320 Kips/Pile
Factored Resistance Available: 175 Kips/Pile
Est. Length: 30 Ft/Pile
No. Production Piles: 8
No. Test Piles: 2

Notes: One test pile shall be driven in a permanent location at each abutment.

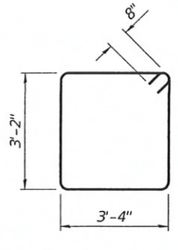


FIELD CUTTING DIAGRAM

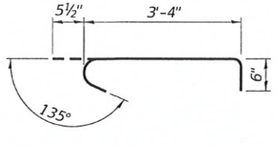
Order h1(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite face.



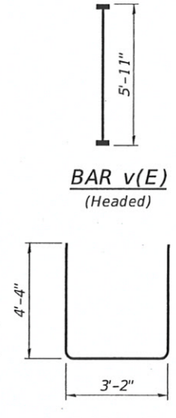
BAR h2(E)



BAR s3(E)



BAR s4(E)

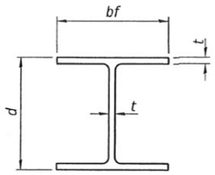


BAR v(E)
(Headed)

BAR u(E)

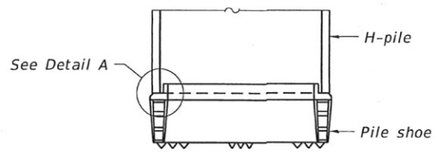
BILL OF MATERIAL - 2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	80	#8	14'-11"	
h1(E)	12	#8	24'-3"	
h2(E)	8	#5	10'-4"	
p(E)	16	#7	27'-8"	
p1(E)	20	#6	27'-8"	
s3(E)	56	#6	14'-4"	
s4(E)	20	#5	4'-4"	
u(E)	16	#6	11'-10"	
v(E)	142	#8	5'-11"	
v1(E)	40	#5	7'-6"	
v2(E)	28	#5	11'-10"	
Structure Excavation			Cu. Yd.	275
Concrete Structures			Cu. Yd.	37.4
Protective Coat			Sq. Yd.	35
Reinf. Bars, Epoxy Coated			Pound	10,270
Furnishing Steel Piles HP12x53			Foot	240
Driving Piles			Foot	240
Test Pile Steel HP12x53			Each	2
Name Plates			Each	1



STEEL PILE TABLE

Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14¼"	14⅞"	13/16"	30"
x102	14"	14¾"	11/16"	30"
x89	13⅞"	14¾"	⅝"	30"
x73	13⅝"	14⅝"	½"	30"
HP 12x84	12¼"	12¼"	11/16"	24"
x74	12⅛"	12¼"	⅜"	24"
x63	12"	12⅛"	½"	24"
x53	11¾"	12"	7/16"	24"
HP 10x57	10"	10¼"	9/16"	24"
x42	9¾"	10⅛"	7/16"	24"
HP 8x36	8"	8⅛"	7/16"	18"



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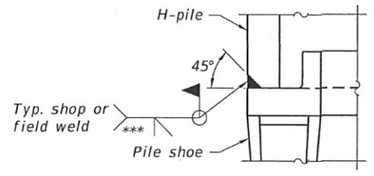
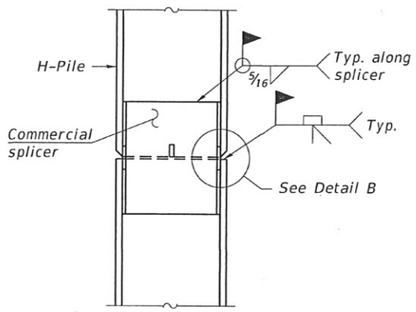


DETAIL A

SHOE ATTACHMENT

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.



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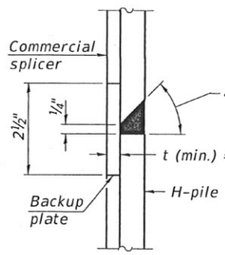
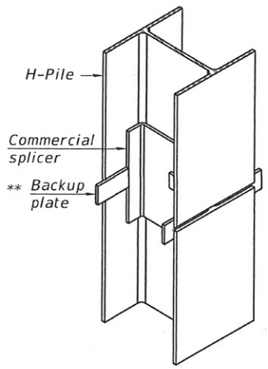
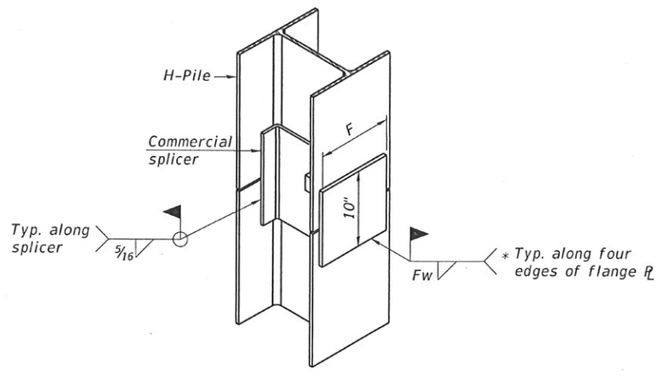


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



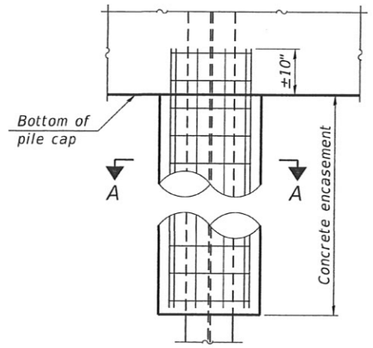
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

* Interrupt welds ¼" from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer (5/16" min.).



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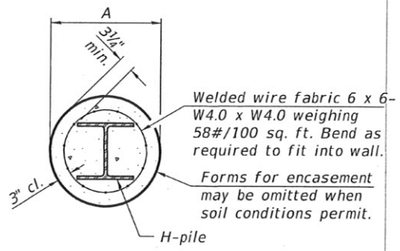
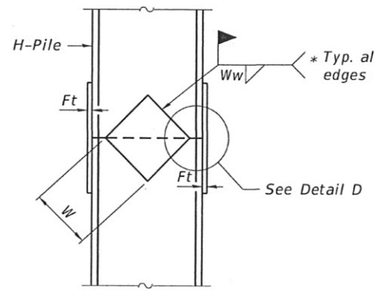


SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASEMENT

(when specified)



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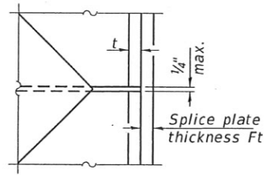
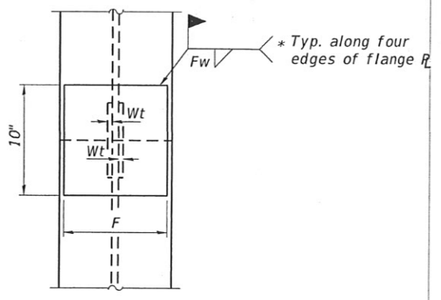


DETAIL D



END VIEW

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12½"	1"	⅞"	7¾"	⅝"	½"
x102	12½"	⅞"	¾"	7¾"	⅝"	½"
x89	12½"	¾"	11/16"	7¾"	⅝"	½"
x73	12½"	⅝"	9/16"	7¾"	⅝"	½"
HP 12x84	10"	⅞"	11/16"	6½"	⅝"	½"
x74	10"	⅞"	11/16"	6½"	⅝"	½"
x63	10"	⅝"	½"	6½"	½"	⅜"
x53	10"	⅝"	½"	6½"	½"	⅜"
HP 10x57	8"	¾"	9/16"	5¼"	½"	⅜"
x42	8"	⅝"	9/16"	5¼"	½"	⅜"
HP 8x36	7"	⅝"	7/16"	4¼"	½"	⅜"

WELDED PLATE FIELD SPLICE

F-HP 5-15-2023

FILE NAME = 220467-shl-bridge.dgn	USER NAME = gmelcalf	DESIGNED - S.T.M.	REVISED -	STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT	STEEL HP PILE DETAILS STRUCTURE NO. 017-3283
HAMPTON, LENZINI AND RENWICK, INC. 3045 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -		SHEET NO. 12 OF 14 SHEETS
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE =	DRAWN - G.D.M.	REVISED -		
	PLOT DATE = 3/14/2024	CHECKED - S.T.M./S.W.M.	REVISED -		

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	22-02117-00-BR	CRAWFORD	19	17
HUTSONVILLE ROAD DISTRICT		CONTRACT NO. 95959		
	ILLINOIS	FED. AID PROJECT		

HOLCOMB FOUNDATION ENGINEERING INC. Page 1 of 1
393 Wood Road 618-529-5262
Carbondale, Il. 62901 618-457-8991 fax

Bridge Foundation Boring Log

Project: H-22025 Bridge TR 41B Date: 4/4/2022
Section: 22-02117-00-BR Station 3+08.5
Structure: Bored by: J. Carter
County: Crowford Checked By: T. Holcomb

Boring No: 1
Station: 2+70
Offset: 8' LT

Surface Water Elev.
Ground Water Elev. During Drilling Dry
Upon Completion 471.3

Elevation		N	Qu tsf	w %
482.3	Ground Surface 0 4" A-3 Surface over 7" Crushed Stone Brown Mottled Gray Silty CLAY (A-6)			
		9	2.5B	21
	-5	4	0.9S	23
473.8		1	0.3B	29
	Brown Mottled Gray Silty CLAY (A-6) with sand			
471.3	-10	2	0.2B	22
	Brown Mottled Gray Silty CLAY (A-6) with sand and gravel			
468.8		9	1.1S	10
	Gray Silty CLAY (A-6) with sand, gravel and limestone			
467.3	-15	100/3"	0.9B	24
	End of Boring @ -15.0' Encountered Concrete @ -15.0' Unable to Penetrate			
	-20			

Elevation	N	Qu tsf	w %
-25			
-30			
-35			
-40			

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
Qu-Unconfined Compressive Strength in tons/sq.ft.
w-Water Content-percentage of oven dry weight-%
B = Bulge Failure
S = Shear Failure
E = Estimated Value
P = Penetrometer

BORING-1

HOLCOMB FOUNDATION ENGINEERING INC. Page 1 of 1
393 Wood Road 618-529-5262
Carbondale, Il. 62901 618-457-8991 fax

Bridge Foundation Boring Log

Project: H-22025 Bridge TR 47 Date: 4/6/2022
Section: 22-02117-00-BR Station 3+08.5
Structure: Bored by: J. Carter
County: Crowford Checked By: T. Holcomb

Boring No: 1-A
Station: 2+60
Offset: 8' LT

Surface Water Elev.
Ground Water Elev. During Drilling 470.9
Upon Completion 451.9

Elevation		N	Qu tsf	w %
481.9	Ground Surface 0 4" A-3 Surface over 8" Crushed Stone Brown Mottled Gray Silty CLAY (A-6)			
		6	1.2B	20
478.4				
	Brown Sandy CLAY (A-6) with gravel			
	-5	3	--	21
475.9				
	Brown Silty CLAY (A-6) with sand and gravel			
		12	0.7B	19
	-10	56	--	10
470.9				
	Gray Silty CLAY (A-6) with sand and gravel			
		110	4.2S	17
	-15	49	4.4B	7
		61	3.6S	7
	-20	67	4.6S	7
		54	7.3S	6

Elevation		N	Qu tsf	w %
	silty clay with sand and gravel (continued)			
-25		49	4.4S	7
		58	5.2S	7
-30		57	8.1S	7
-35		48	7.4S	7
441.9	-40	46	5.3S	8
	End of Boring @ -40.0'			

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
Qu-Unconfined Compressive Strength in tons/sq.ft.
w-Water Content-percentage of oven dry weight-%
B = Bulge Failure
S = Shear Failure
E = Estimated Value
P = Penetrometer

BORING-1A

FILE NAME = 220467-sht-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.T.M.	REVISED -	STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT	BORINGS STRUCTURE NO. 017-3283 SHEET NO. 13 OF 14 SHEETS
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -		
	PLOT SCALE =	DRAWN - G.D.M.	REVISED -		
	PLOT DATE = 3/14/2024	CHECKED - S.T.M./S.W.M.	REVISED -		

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	22-02117-00-BR	CRAWFORD	19	18
HUTSONVILLE ROAD DISTRICT		CONTRACT NO. 95959		
	ILLINOIS	FED. AID PROJECT		

HOLCOMB FOUNDATION ENGINEERING INC.
393 Wood Road 618-529-5262
Carbondale, Il. 62901 618-457-8991 fax

Bridge Foundation Boring Log

Project: H-22025 Bridge TR 47 Date: 4/4/2022
Section: 22-02117-00-BR Station 3+08.5
Structure: Bored by: J. Carter
County: Crawford Checked By: T. Holcomb

Boring No: 2
Station: 3+57
Offset: 7' RT

Surface Water Elev.
Ground Water Elev. During Drilling 463.5
Upon Completion 461.5

Elevation	N	Qu tsf	w %
Ground Surface 481.5 (0)			
4" A-3 Surface over 8" Crushed Stone			
Brown Mottled Gray Silty CLAY (A-6)			
	19	4.5B	15
478.0			
Brown Mottled Gray Silty CLAY (A-6) with limestone			
-5	7	1.1S	13
	6	2.2S	14
473.0			
Brown Silty CLAY (A-6)			
-10	3	0.6B	22
470.5			
Brown Silty CLAY (A-6) with sand			
	4	0.5B	24
468.0			
Gray Mottled Brown Silty CLAY (A-6) with sand			
-15	3	0.5B	29
465.5			
Brown to Gray Fine SAND (A-2-4)			
	7	--	19
463.0			
Gray Mottled Brown Sandy CLAY (A-6) with gravel			
-20	17	1.9S	12
460.5			
Gray Silty CLAY (A-6) with sand and gravel			
	77	2.7B	9

silty clay with sand and gravel (continued)

Elevation	N	Qu tsf	w %
-25	69	5.5S	7
	76	6.5S	7
-30	78	6.8S	8
-35	60	7.1S	8
-40	70	6.8S	9
	30	3.1B	17

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
Qu-Unconfined Compressive Strength in tons/sq.ft.
w-Water Content-percentage of oven dry weight-%
B = Bulge Failure
S = Shear Failure
E = Estimated Value
P = Penetrometer

BORING-2

HOLCOMB FOUNDATION ENGINEERING INC.
393 Wood Road 618-529-5262
Carbondale, Il. 62901 618-457-8991 fax

Bridge Foundation Boring Log

Project: H-22025 Bridge TR 47 Date: 4/4/2022
Section: 22-02117-00-BR Station 3+08.5
Structure: Bored by: J. Carter
County: Crawford Checked By: T. Holcomb

Boring No: 2
Station: 3+57
Offset: 7' RT

Surface Water Elev.
Ground Water Elev. During Drilling 463.5
Upon Completion 461.5

Elevation	N	Qu tsf	w %
silty clay with sand and gravel (continued)			
-45			
-50	24	2.9B	18
-55	33	4.6B	15
421.5			
-60 End of Boring @ -60.0'	24	2.6B	20

Elevation	N	Qu tsf	w %
-70			
-75			
-80			
-85			

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
Qu-Unconfined Compressive Strength in tons/sq.ft.
w-Water Content-percentage of oven dry weight-%
B = Bulge Failure
S = Shear Failure
E = Estimated Value
P = Penetrometer

BORING-2

FILE NAME = 220467-sht-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.T.M.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3055 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -	
	PLOT SCALE =	DRAWN - G.D.M.	REVISED -	
	PLOT DATE = 3/14/2024	CHECKED - S.T.M./S.W.M.	REVISED -	

STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

BORINGS
STRUCTURE NO. 017-3283
SHEET NO. 14 OF 14 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	22-02117-00-BR	CRAWFORD	19	19
HUTSONVILLE ROAD DISTRICT		CONTRACT NO. 95959		
	ILLINOIS	FED. AID PROJECT		