RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	17-00093-00-BR	WASHINGTON	12	1
		CONTRACT NO. 97731		

RAAI JOB NO. 53517

CONTRACT NO. 97731

06-12-2020 LETTING ITEM 126

INDEX OF SHEETS

HIGHWAY STANDARDS (SEE PROPOSAL BOOKLET)

000001-07	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
515001-04	NAME PLATE FOR BRIDGES
630301-09	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
701901-08	TRAFFIC CONTROL DEVICES
725001-01	OBJECT AND TERMINAL MARKERS
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
BLR 27-1	TRAFFIC BARRIER TERMINAL TYPE 5A

SOIL BORINGS (SEE SPECIFICATIONS)

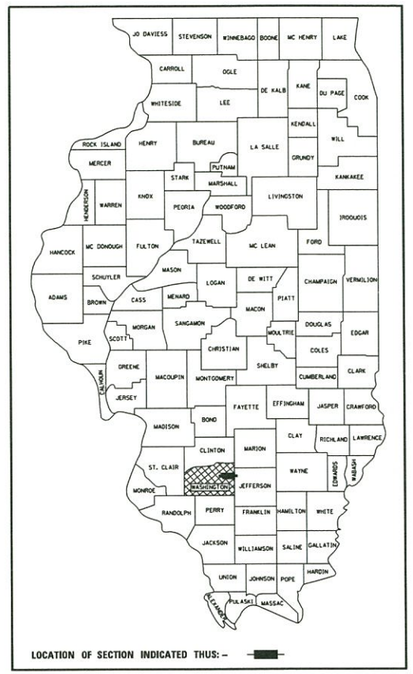
DESIGN CLASSIFICATION: RURAL LOCAL ROAD
ADT_{2015} : 125

DESIGN SPEED: 40 MPH

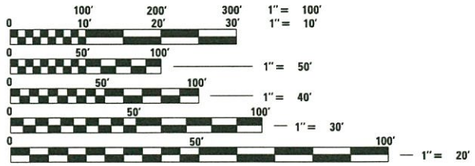
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED
STP OFF-SYSTEM BRIDGE

COUNTY HIGHWAY 5
OVER BRANCH OF RAYSE CREEK
SECTION 17-00093-00-BR
PROJECT NO. 2HCP(815)
WASHINGTON COUNTY
JOB NO. C-98-004-20

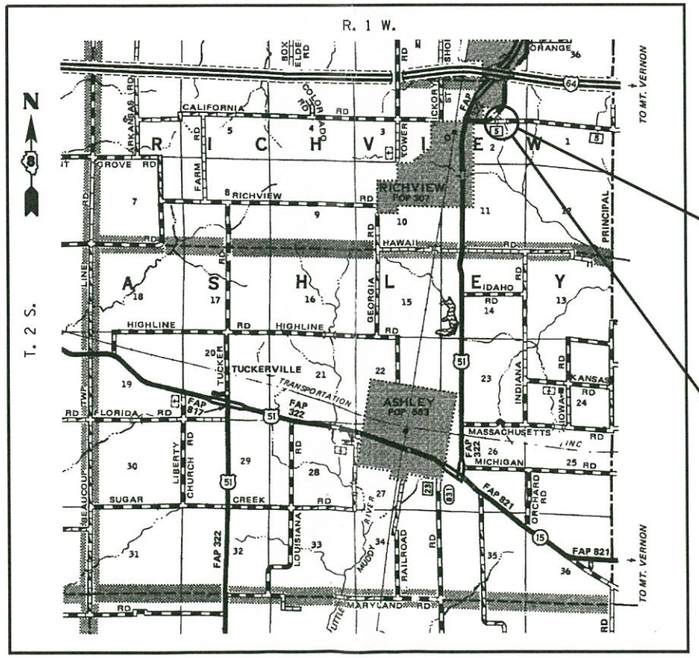


LOCATION OF SECTION INDICATED THUS: –



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES, REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES, IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS
1-800-892-0123 or 811 Website: http://www.illinois1call.com



SECTION 17-00093-00-BR INCLUDES THE CONSTRUCTION OF A SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE CARRYING CH 5 OVER BRANCH OF RAYSE CREEK. 15° AHEAD RIGHT SKEW. 71'-4½" BK. TO BK. ABUTMENTS X 28' WIDE
EXISTING STRUCTURE NO. 095-3008
PROPOSED STRUCTURE NO. 095-3270

NOT TO SCALE

LOCATION: NEAR THE NE CORNER OF THE NW ¼ OF THE SE ¼.
SECTION 2, T2S, R1W, 3RD P.M.
GROSS LENGTH OF PROJECT: 310.00 FT. = 0.059 MI.
NET LENGTH OF PROJECT: 310.00 FT. = 0.059 MI.

APPROVED FEBRUARY 18TH 2020
WASHINGTON COUNTY, COUNTY ENGINEER

PASSED February 21, 2020
DISTRICT EIGHT ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW February 21, 2020
REGION FIVE ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

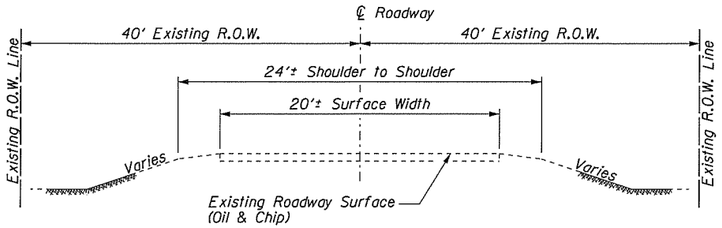
BRENT L. TAYLOR 062-066114 LICENSED PROFESSIONAL ENGINEER STATE OF ILLINOIS

01/31/2020

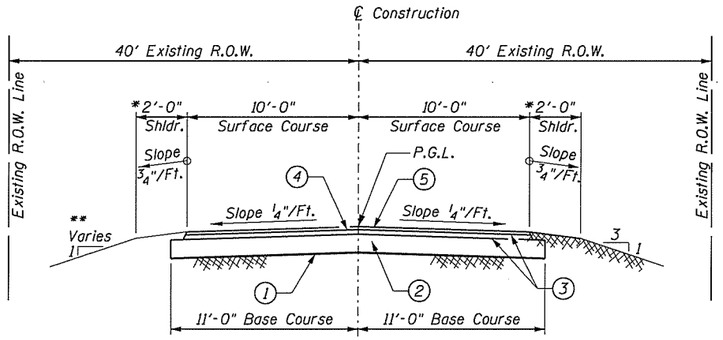
BRENT L. TAYLOR
SALEM, ILLINOIS
ILLINOIS LICENSED PROFESSIONAL ENGINEER NO. 062-066114
EXPIRES NOV. 30, 2021

RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
SALEM, ILLINOIS 618-532-1992
FREEBURG, ILLINOIS 618-539-3178
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

02/17/2020



TYPICAL SECTION EXISTING APPROACH ROADWAY



1. Geotechnical Fabric for Ground Stabilization
2. Aggregate Base Course, Type A, 10" Thickness
3. Bituminous Materials (Prime Coat)
4. Hot-Mix Asphalt Binder Course, IL-19.0, N70, 2 1/4"
5. Hot-Mix Asphalt Surface Course, IL-9.5, Mix "C", N70, 1 1/2"

TYPICAL SECTION PROPOSED APPROACH ROADWAY

Sta. 7+05.98 to Sta. 8+16.64
Sta. 8+88.02 to Sta. 10+15.98
* See Std. 630301 for Shoulder Widening for Type 1 (Special) Guardrail Terminals
** Varies 2H:1V to 3H:1V - See Cross Sections

EXTRA TEST BARS

Bar	No.	Size	Length	Shape
s(E)	1	#4	13'-3"	⊓
v_2(E)	2	#5	6'-6"	——
h(E)	2	#6	8'-10"	——
p(E)	1	#7	30'-2"	——
Reinforcement Bars, Epoxy Coated			Pound	110

The Contractor shall cut test bars as directed by the Engineer (if required for transport, etc.) The cost for cutting the bars shall be included in Reinforcement Bars, Epoxy Coated and no additional compensation will be allowed.

These bars shall be identical to and delivered with the bars of the same mark listed on the bridge sheets. This chart assumes that all bars of the same size on the job will have the same heat numbers. If bars of the same size on the job have different heat numbers, then the Contractor shall supply additional bars from other heat numbers for sampling by the Engineer at no additional cost.

The weight of these extra bars has been included in the Summary of Quantities for the project.

UTILITIES

Design Phase Locate
Dig No.: X3380891-00X
(12/04/2019)

Communications:
Rod Eller
Frontier Communications
801 W. Jackson
Altamont, IL 62411
Phone: 618-483-6205
Email: rod.eller@ftr.com

Note: JULIE has Kalin Hinshaw (815-895-1515) as contact

Electric:
Nathan Hill
Ameren IP (South)
Phone: 618-301-5327
Email: nhill2@ameren.com

GENERAL NOTES

1. This section shall be constructed according to the plans, the Special Provisions, and the "Standard Specifications for Road and Bridge Construction", adopted April 1, 2016.
2. Roadway Centerline profiles refer to the finished surface.
3. Existing utilities shown are located from surface observations or information provided by the respective utilities and must be considered approximate. There may be others, the exact location of which are unknown and not shown. The Contractor will be responsible for notifying the respective utilities before work is begun. Field marking of underground utilities may be obtained by providing a minimum of 48 hours advance notice through the J.U.L.I.E. system by calling 1-800-892-0123, 811, or by direct contact with non-members of J.U.L.I.E.
4. Factors used for quantity calculations are as follows:

Stone Dumped Riprap	130 pounds/cu. ft.
All Aggregates	2.1 tons/cu. yd.
Hot Mix Asphalt	0.056 tons/sq. yd./inch
Bit. Materials (Prime Coat)	0.25 Pound/sq. ft. (on Aggregate)
	0.025 Pound/sq. ft. (between HMA lifts)

COMMITMENTS

1. Existing fence removal and replacement within the limits of construction will be done by others and will be coordinated by Washington County Highway Dept. The removal will be completed prior to the start of construction.
2. The County will notify all emergency, school, and postal services of road closure prior to the start of construction.

HOT-MIX ASPHALT MIX DESIGN TABLE

Mixture Use(s)	Binder Course	Surface Course
AC/PG	PG 64-22	PG 64-22
RAP % (Max.)	See Special Provision	See Special Provision
Design Air Voids	4.0% @ Ndes = 70	4.0% @ Ndes = 70
Mix Composition (Gradation Mixture)	IL-19.0	IL-9.5
Friction Agg.	N/A	Mixture "C"

SUMMARY OF QUANTITIES

	Code No.	Item	Unit	Quantity
	20200100	EARTH EXCAVATION	CU YD	160
	20300100	CHANNEL EXCAVATION	CU YD	615
	20400800	FURNISHED EXCAVATION	CU YD	170
	21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	585
	35100100	AGGREGATE BASE COURSE, TYPE A	TON	340
	40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	1435
	40603085	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70	TON	67
	40604052	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N70	TON	89
	50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
	50300225	CONCRETE STRUCTURES	CU YD	32.6
	50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	1960
	50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	5140
Δ	50900205	STEEL RAILING, TYPE S1	FOOT	143
	51201600	FURNISHING STEEL PILES HP12X53	FOOT	144
	51500100	NAME PLATES	EACH	1
	58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	222
	58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	420
	59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	76.2
Δ	63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2
Δ	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	2
	63200310	GUARDRAIL REMOVAL	FOOT	98
	67100100	MOBILIZATION	L SUM	1
Δ	72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
	X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.25
***	X2810808	STONE DUMPED RIPRAP, CLASS A4 (SPECIAL)	TON	360
	X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1
	Z0013798	CONSTRUCTION LAYOUT	L SUM	1
	Z0065000	SETTING PILES IN ROCK	EACH	8

*** Stone Dumped Riprap, Class A4 as called out in the plans refers to Stone Dumped Riprap, Class A4 (Special).

Δ SPECIALTY ITEMS

RAAI JOB NO. 53517

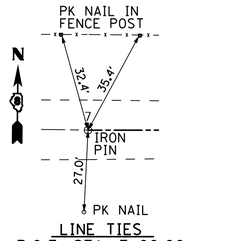
RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
SALEM, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED	BLT	REVISED	-
DRAWN	JN	REVISED	-
CHECKED	GLH	REVISED	-
DATE	02/17/2020	REVISED	-

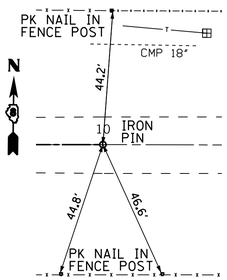
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES, TYPICAL SECTIONS, COMMITMENTS, AND GENERAL NOTES

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	17-00093-00-BR	WASHINGTON	12	2
		CONTRACT NO. 97731		



LINE TIES
P.O.T. STA. 7+00.00



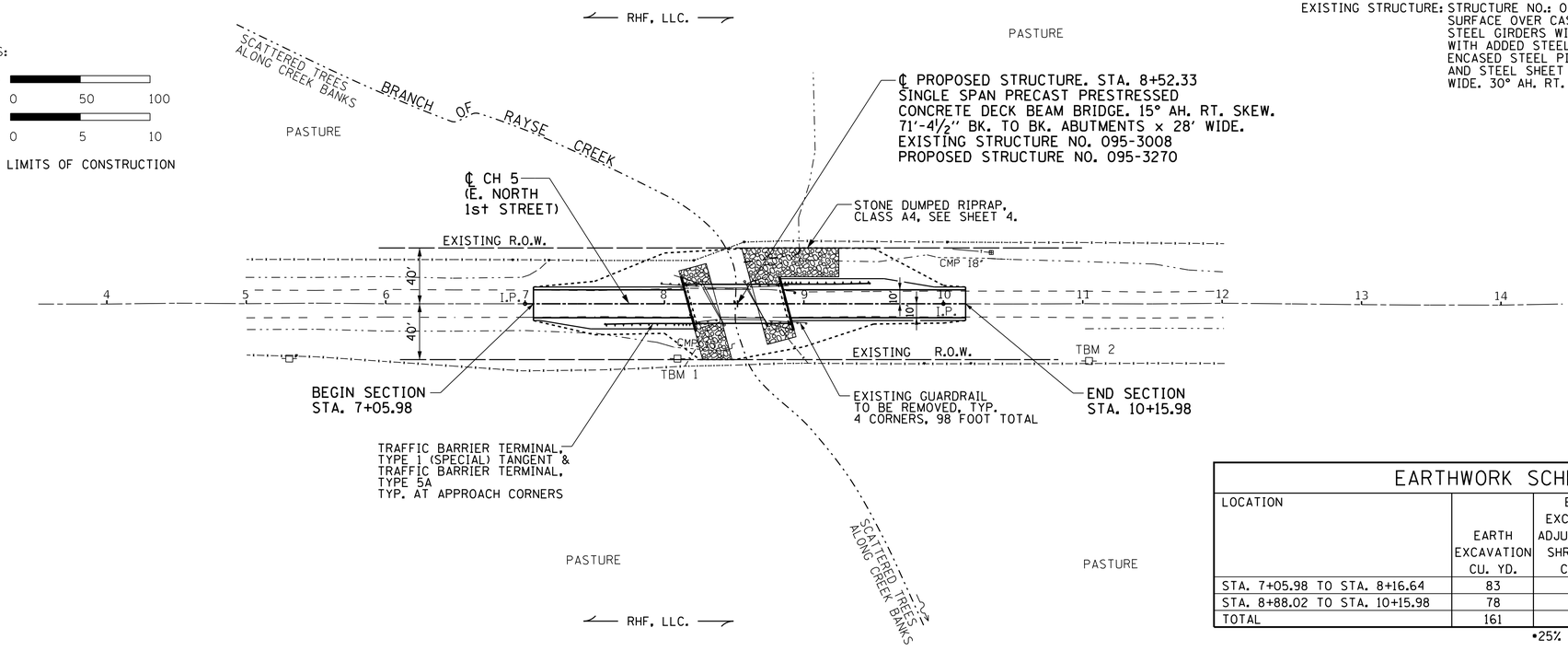
LINE TIES
P.O.T. STA. 10+00.09

THE EXISTING RIGHT OF WAY SHOWN HEREON HAS BEEN PROTRACTED FROM EXISTING RECORDS AND IS TO BE USED FOR REFERENCE PURPOSES ONLY. FURTHERMORE, NO COMPLETE SURVEY OF SAID R.O.W. IS IMPLIED BY THIS DRAWING.

N

SCALES:
HORZ.- 0 50 100
VERT.- 0 5 10

------- LIMITS OF CONSTRUCTION



EXISTING STRUCTURE: STRUCTURE NO.: 095-3008. BUILT-UP OIL AND CHIP SURFACE OVER CAST-IN-PLACE CONCRETE DECK ON STEEL GIRDERS WITH A CLOSED TIMBER ABUTMENT WITH ADDED STEEL BEAM ABUTMENT CAPS, CONCRETE ENCASED STEEL PILES WITH STEEL SHEET PILE BACKING AND STEEL SHEET PILE WINGWALLS. 32' LONG X 23.0' WIDE. 30° AH. RT. SKEW. TO BE REMOVED.

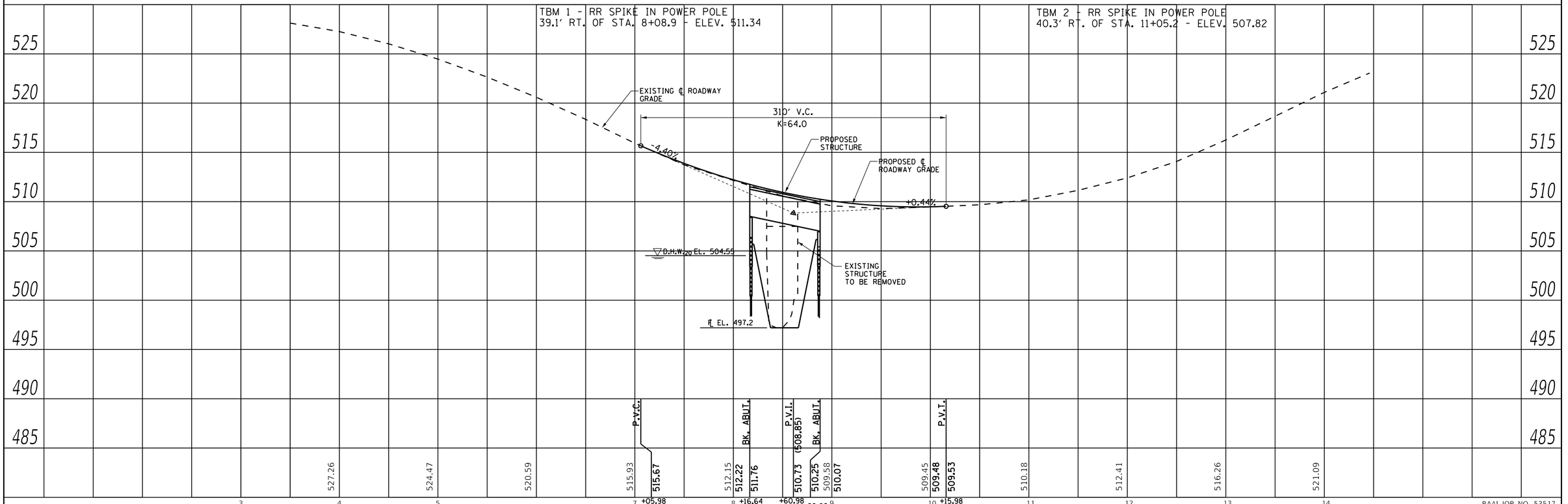
EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION CU. YD.	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE• CU. YD.	EMBANKMENT CU. YD.	EARTHWORK BALANCE•• WASTE (+) OR SHORTAGE (-) CU. YD.
STA. 7+05.98 TO STA. 8+16.64	83	62	64	-2
STA. 8+88.02 TO STA. 10+15.98	78	59	225	-166
TOTAL	161	121	289	-168

•25% SHRINKAGE ••FURNISHED EXCAVATION

PLAN — SURVEYED / PLOTTED / QUANTITIES CHECKED / RT. OF WAY CHECKED / CADD FILE NAME / NOTE BOOK / NO. / BY / DATE

PROFILE — SURVEYED / PLOTTED / CROSS SECTIONS CHECKED / B.M. NOTED / STRUCTURE NOTATNS CHKD / NOTE BOOK / NO. / BY / DATE



RAAI JOB NO. 53517

RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
SALEM, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT	REVISED -	
DRAWN - JN	REVISED -	
CHECKED - GLH	REVISED -	
DATE - 02/17/2020	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

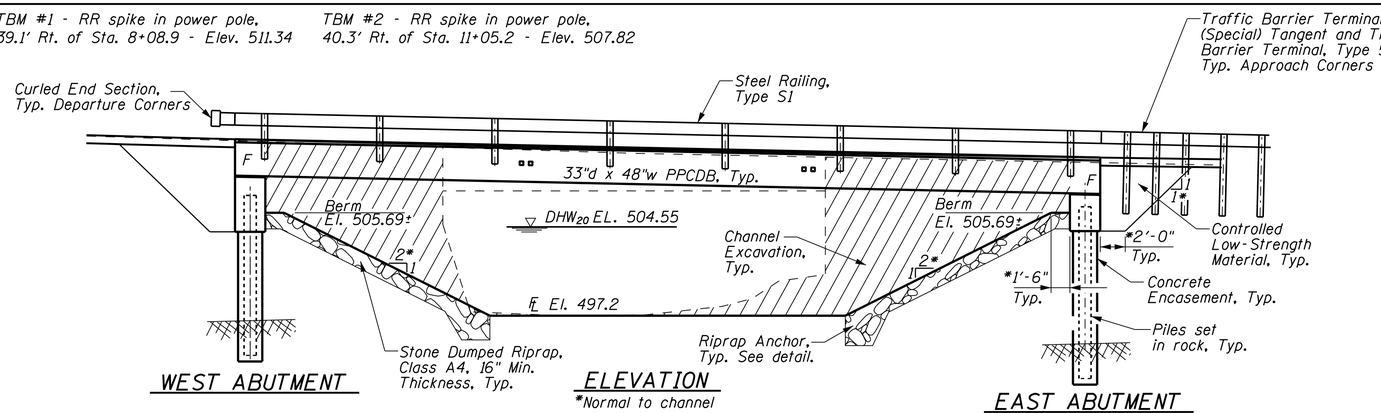
PLAN AND PROFILE OF ROADWAY

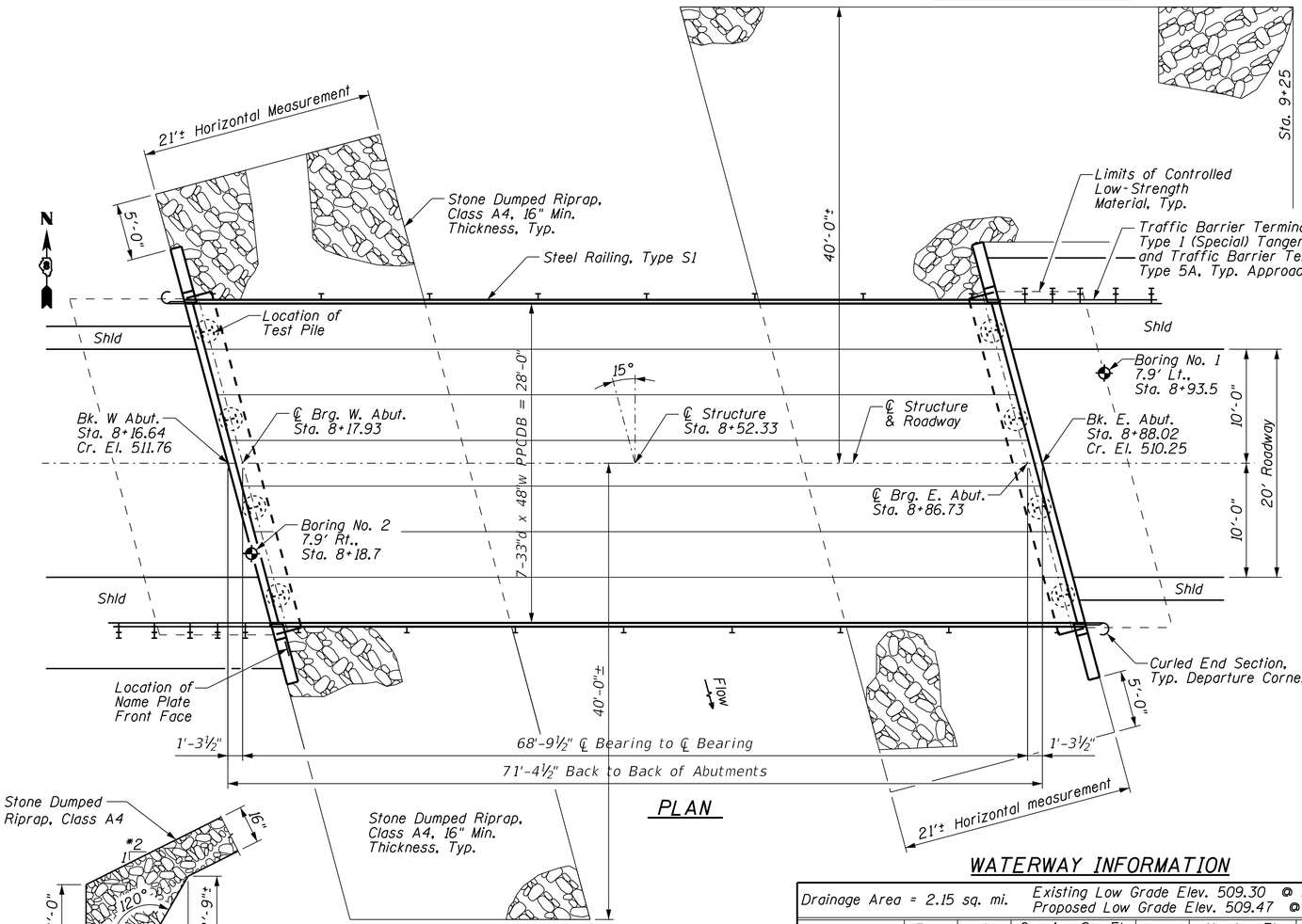
STA. 4+00.00 TO STA. 14+00

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	17-00093-00-BR	WASHINGTON	12	3
		CONTRACT NO. 97731		

TBM #1 - RR spike in power pole.
39.1' Rt. of Sta. 8+08.9 - Elev. 511.34

TBM #2 - RR spike in power pole.
40.3' Rt. of Sta. 11+05.2 - Elev. 507.82





RIPRAP ANCHOR DETAIL

LOADING HL-93

50#/sq. ft. included in dead load for future wearing surface.

DESIGN SPECIFICATIONS

2014 (7th ED.) w/2015 & 2016 Revisions
AASHTO LRFD Bridge Design Specifications.

DESIGN STRESSES

FIELD UNITS

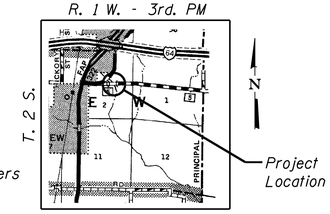
f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)

PRECAST PRESTRESSED UNITS

f'_c = 6,000 psi
f'_{ci} = 5,000 psi
f_{pu} = 270,000 psi (½" ϕ low lax. strands)
f_{pbt} = 201,960 psi (½" ϕ low lax. strands)
f_y = 60,000 psi (reinforcement)

SEISMIC DATA

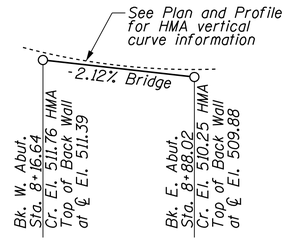
Seismic Performance Zone (SPZ) = 2
Soil Site Classification = C
S_{D1} = 0.209 S_{DS} = 0.570



LOCATION SKETCH

DESIGN SCOUR TABLE

Event/Limit State	Design Scour Elev. (ft.) West Abut.	East Abut.	Item 113
Q_{100}	NA	NA	
$Q_{Overtopping}$	NA	NA	8
Design	503.65	503.20	
Check	503.65	503.20	



GRADE ON STRUCTURE
(along ℄ CH 5)

WATERWAY INFORMATION

Drainage Area = 2.15 sq. mi.
Existing Low Grade Elev. 509.30 @ Sta. 9+50
Proposed Low Grade Elev. 509.47 @ Sta. 9+87.80

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Prop.	Nat. H.W.E.	Head - Ft. Exist.	Prop.	Headwater El. Exist.	Prop.
Design	20	1000	200	317	504.55	0.14	0.24	504.69	504.79
Base	100	1540	218	351	505.14	1.03	0.96	506.17	506.10
Max. Calc.	500	2140	236	386	505.70	1.82	1.29	507.52	506.99

BRANCH OF RAYSE CREEK
BUILT 20__ BY
WASHINGTON COUNTY
SEC. 17-00093-00-BR
CH 5 STA. 8+52.33
LOADING HL-93
STRUCTURE NO. 095-3270

NAME PLATE
See Std. 515001

Existing Structure: Structure No. 095-3008. built-up oil and chip surface over cast-in-place concrete deck on steel girders with a closed timber abutment with added steel beam abutment caps, concrete encased steel piles with steel sheet pile backing and steel sheet pile wingwalls. 32' long x 23.0' wide. 30° ah. rt. skew. To be removed.

BILL OF MATERIALS (BRIDGE ONLY)

	ITEM	UNIT	TOTAL
	Channel Excavation	Cu Yd	615
	Hot-mix Asphalt Surface Course, IL-9.5, Mix "C", N70	Ton	44
	Removal of Existing Structures	Each	1
	Concrete Structures	Cu Yd	32.6
	PPCDB (33" Depth)	Sq Ft	1960
*	Reinforcement Bars, Epoxy Coated	Pound	5140
	Steel Railing, Type S1	Foot	143
	Furnishing Steel Piles HP12x53	Foot	144
	Name Plates	Each	1
	Waterproofing Membrane System	Sq Ft	222
	Portland Cement Mortar Fairing Course	Foot	420
	Controlled Low-Strength Material	Cu Yd	76.2
**	Stone Dumped Riprap, Class A4 (Special)	Ton	360
	Setting Piles in Rock	Each	8

* Includes Test Bars. See Sheet 2.
** Stone Dumped Riprap, Class A4 as called out in the plans refers to Stone Dumped Riprap, Class A4 (Special).

GENERAL NOTES

Do not scale these drawings.

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

Channel excavation shall be excavated as shown within the limits of the proposed bridge, then tapered to the existing channel within 40' of the centerline of proposed roadway. If the Engineer deems the material satisfactory, it may be used to construct the roadway embankment.

See Section 502 of the Standard Specifications for Structural Excavation.

See Special Provisions for Soil Borings.

The abutment bearing seat surfaces for the precast prestressed concrete deck beams shall be adjusted by shimming to assure firm and even bearing. As required, ⅛" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing. The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.

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 Standard Specifications for Highway Bridges.

GARY L. HAHN 81-4853 LICENSED STRUCTURAL ENGINEER STATE OF ILLINOIS

Gary L. Hahn 01/31/2020
Gary L. Hahn

11/30/2020
Date of License Expiration

RAAI JOB NO. 53517

RAAI JOB NO. 53517

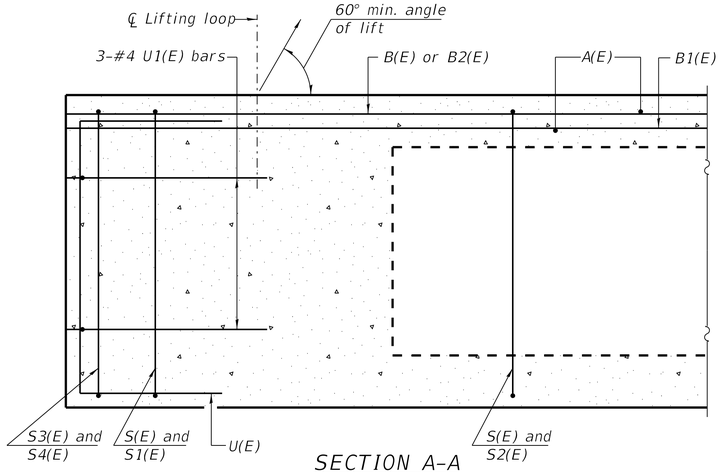
RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
SALEM, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED -	BLT	REVISED -
DRAWN -	JN	REVISED -
CHECKED -	GLH	REVISED -
DATE -	02/17/2020	REVISED -

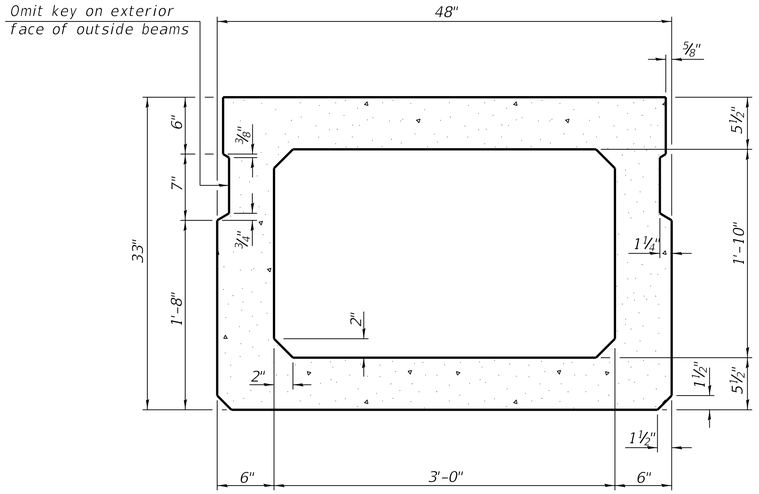
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 095-3270

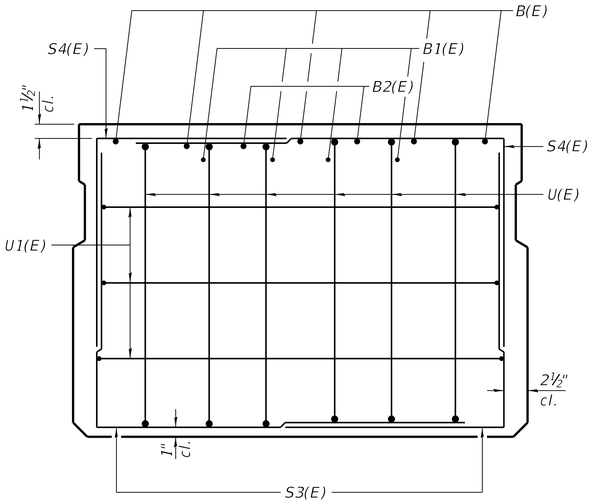
RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	17-00093-00-BR	WASHINGTON	12	4
		CONTRACT NO. 97731		



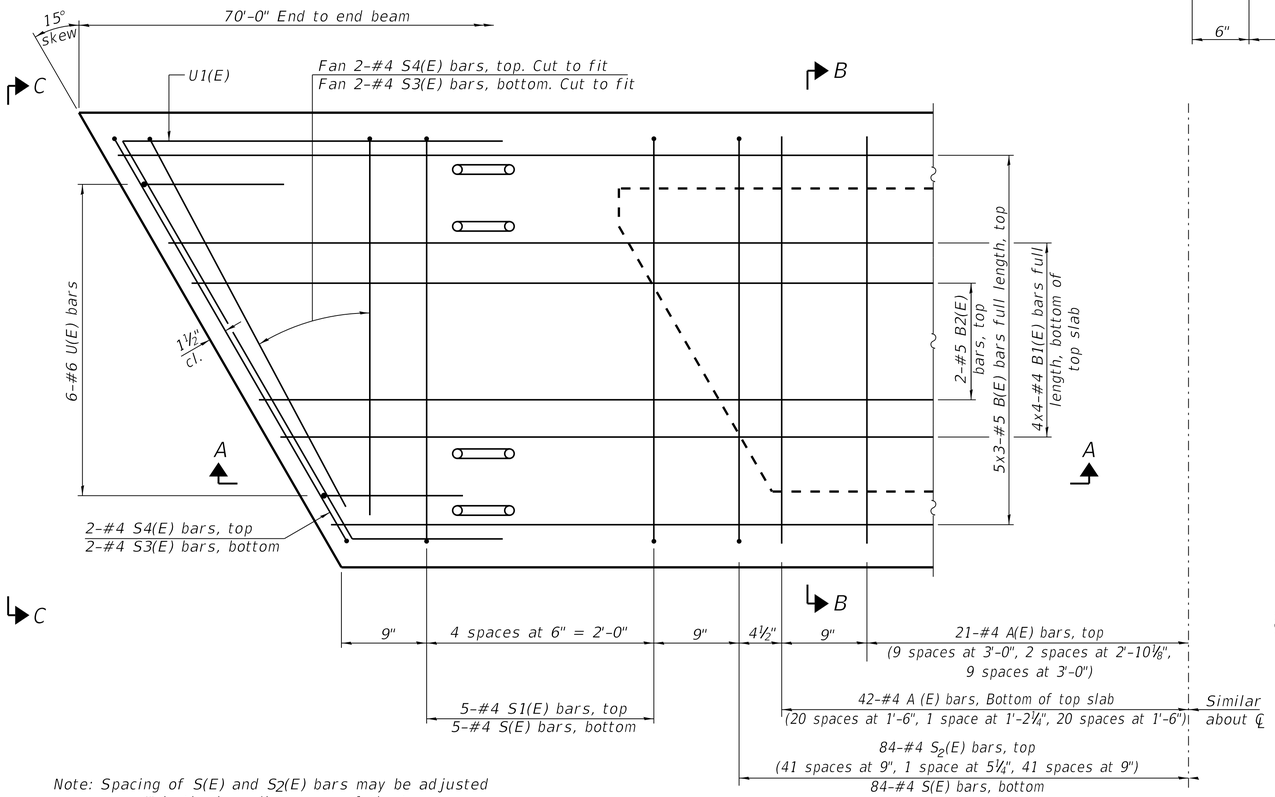
SECTION A-A



SECTION B-B
(Showing dimensions)



VIEW C-C



PLAN VIEW

Note: Spacing of S(E) and S_2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

Bars indicated thus: 4x3-#5 etc. indicates 4 lines of bars with 3 lengths per line.

SECTION B-B
(Showing reinforcement and permissible strand locations)

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	63	#4	3'-7"	—
B(E)	15	#5	24'-11"	—
B1(E)	16	#4	18'-11"	—
B2(E)	4	#5	10'-0"	—
S(E)	94	#4	8'-8"	⊔
S1(E)	10	#4	7'-5"	⊓
S2(E)	84	#4	7'-8"	⊓
S3(E)	8	#4	5'-4"	⊔
S4(E)	8	#4	4'-9"	⊔
U(E)	12	#6	5'-0"	⊏
U1(E)	6	#4	7'-1"	⊐

Note:
See sheet 6 for additional details and Bill of Material.

MINIMUM BAR LAP
#4 bar = 1'-11"
#5 bar = 2'-6"

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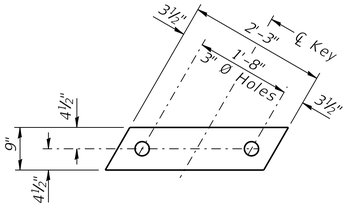
DESIGNED - BLT	REVISED -	
DRAWN - JN	REVISED -	
CHECKED - GLH	REVISED -	
DATE - 02/17/2020	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

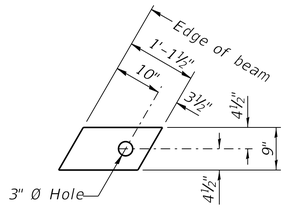
PRECAST PRESTRESSED CONCRETE DECK BEAM DETAILS

RAAI JOB NO. 53517

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	17-00093-00-BR	WASHINGTON	12	5
		CONTRACT NO. 97731		



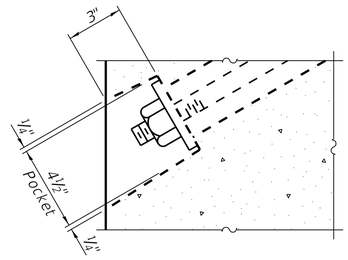
FABRIC BEARING PAD
(Interior)



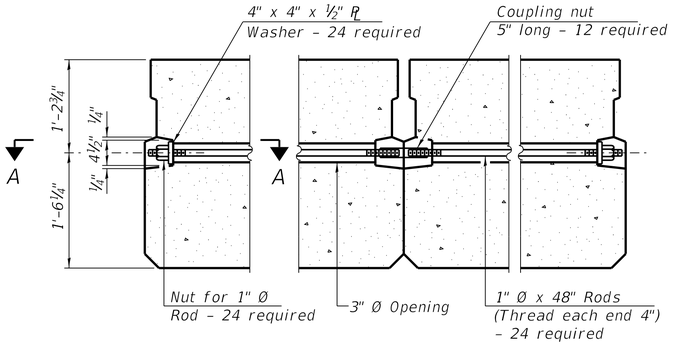
FABRIC BEARING PAD
(Exterior)

FIXED

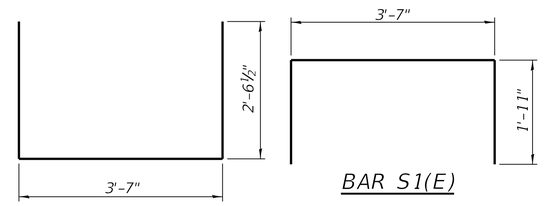
Notes: All bearing pads shall be 1" thick.



SECTION A-A

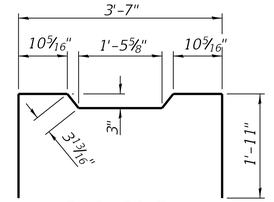


TYPICAL TRANSVERSE TIE ASSEMBLY

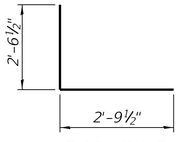


BAR S1(E)

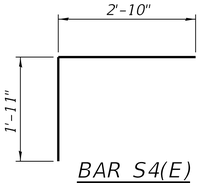
BAR S(E)



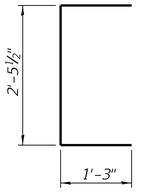
BAR S2(E)



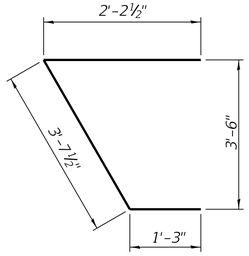
BAR S3(E)



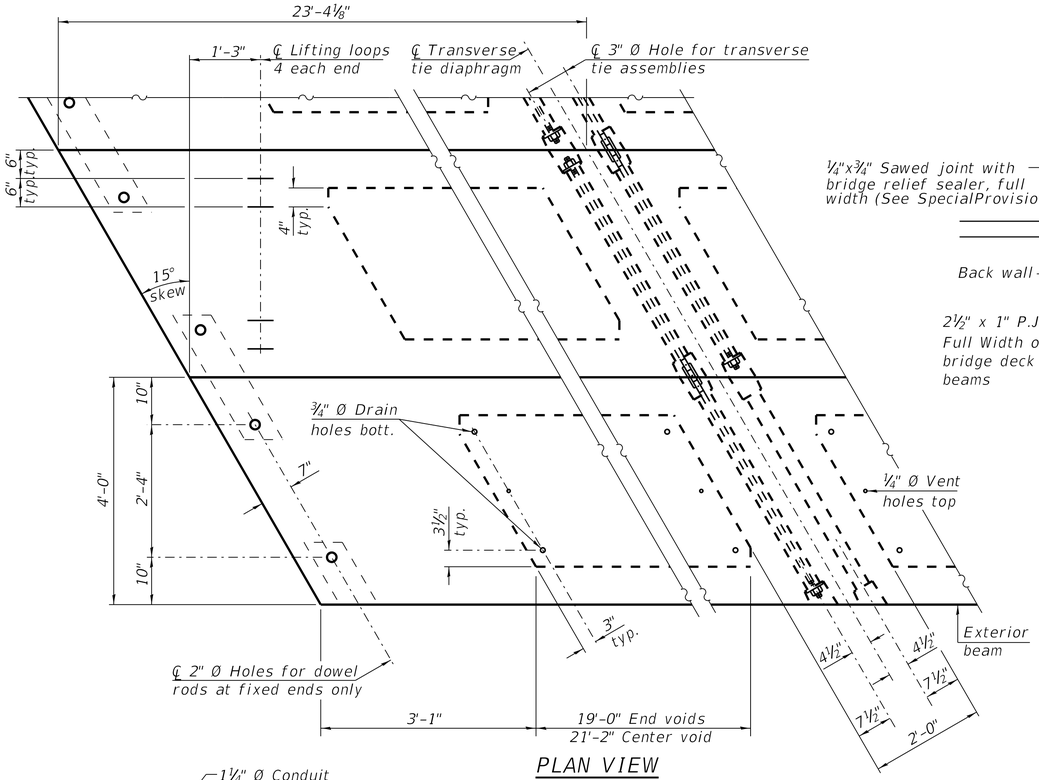
BAR S4(E)



BAR U(E)

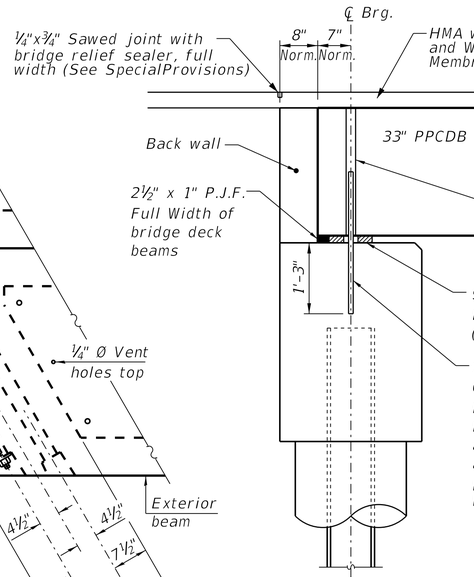


BAR U1(E)

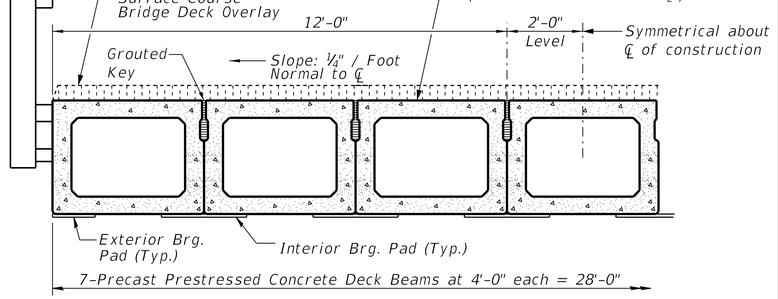


PLAN VIEW

Note: Connect beams in pairs with the transverse tie configuration shown.

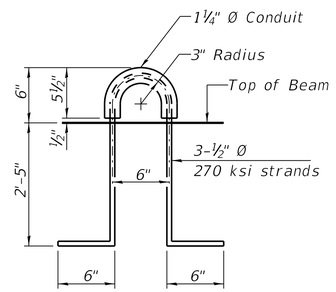


FIXED BEARING
ABUTMENT
(Normal to ℄)



HALF CROSS SECTION

See Sheet 7 for the details showing the spacing and mounting of posts and rails to the PPCDB.



LIFTING LOOP DETAIL

NOTES

Reinforcement bars shall conform to ASTM A 706, Grade 60. (IL Mod.)

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

The 1" Ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.

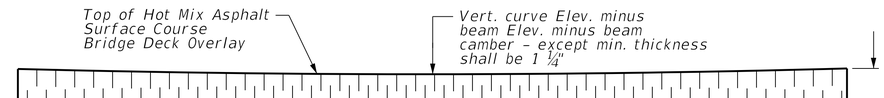
Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2½" Ø lifting pin shall be used to engage the lifting loops during handling.

Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f'c, shall be 6000 psi.

Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.



PROFILE OF OVERLAY

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (33" depth)	Sq. Ft.	1960

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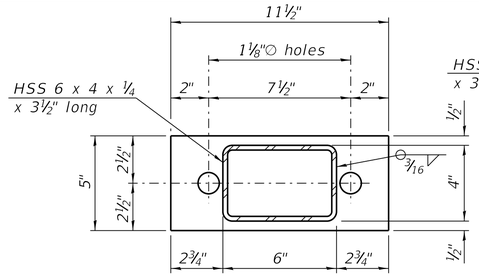
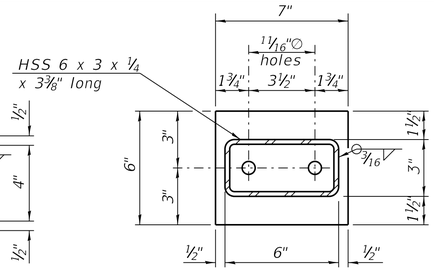
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST PRESTRESSED CONCRETE DECK BEAM DETAILS

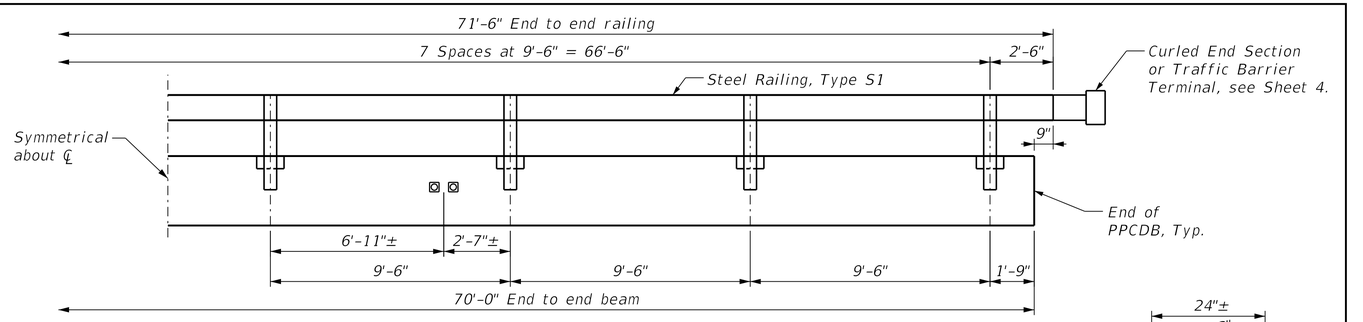
RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	17-00093-00-BR	WASHINGTON	12	6
		CONTRACT NO. 97731		



PL ½" x 11½" x 5"

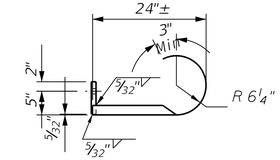


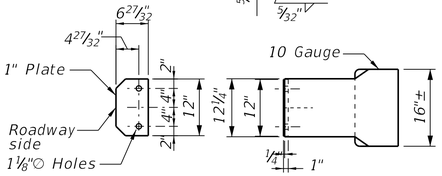
PL ½" x 7" x 6"



ELEVATION

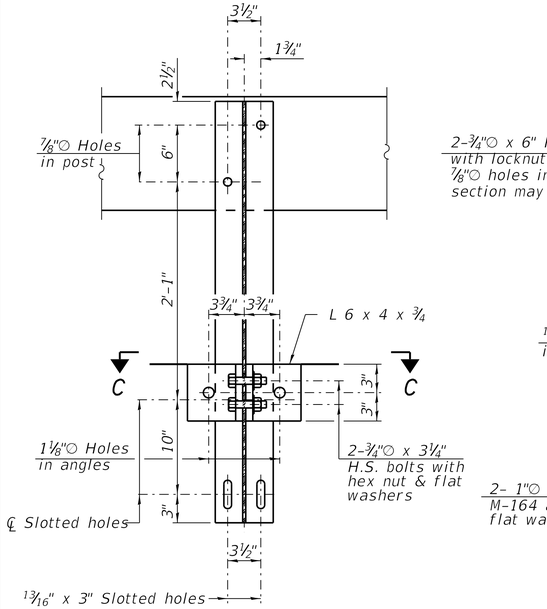
Note: The cost of the Curled End Sections shall be included in the contract unit price per foot for "STEEL RAILING TYPE S1", and no additional compensation will be allowed.



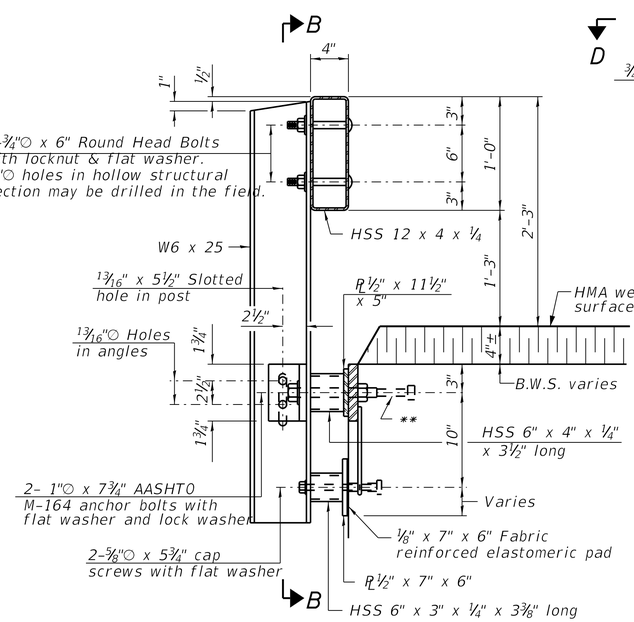


CURLED END SECTION DETAILS

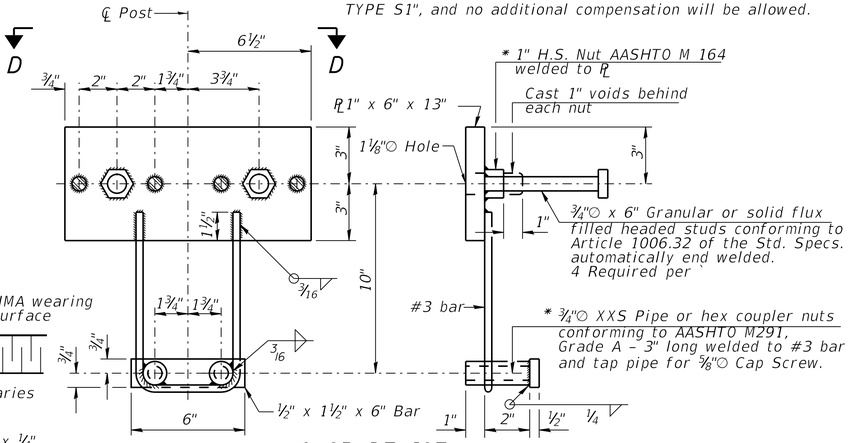
2 Each Required



SECTION B-B



SECTION AT RAILING POST



ANCHOR DEVICE

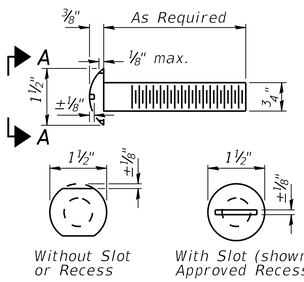
* Threaded areas shall be plugged or blocked off during casting of beam.

Notes:

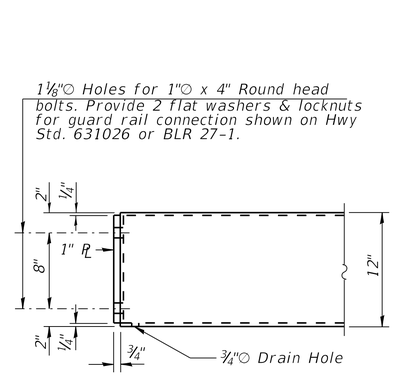
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

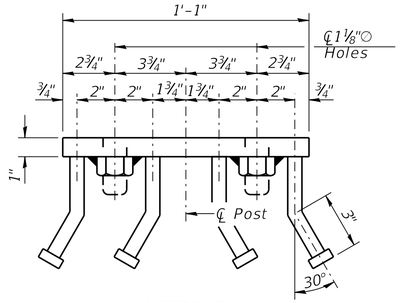
** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

All field drilled holes shall be coated with an approved zinc rich paint before erection.

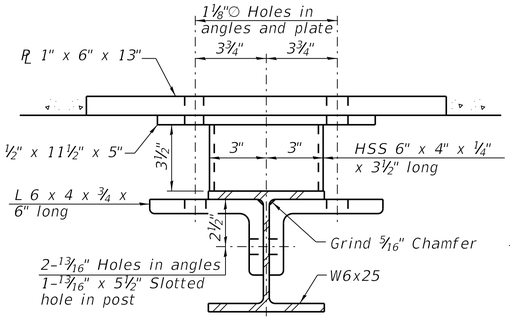


VIEW A-A ROUND HEAD BOLT

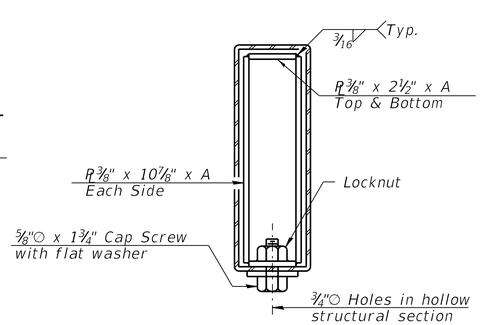




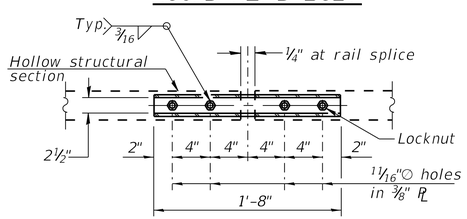
VIEW D-D



SECTION C-C



SECTIONS AT RAIL SPLICE



PLAN-BOTT. SPLICE PL TYPICAL

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S1	Foot	143

RAAI JOB NO 53517

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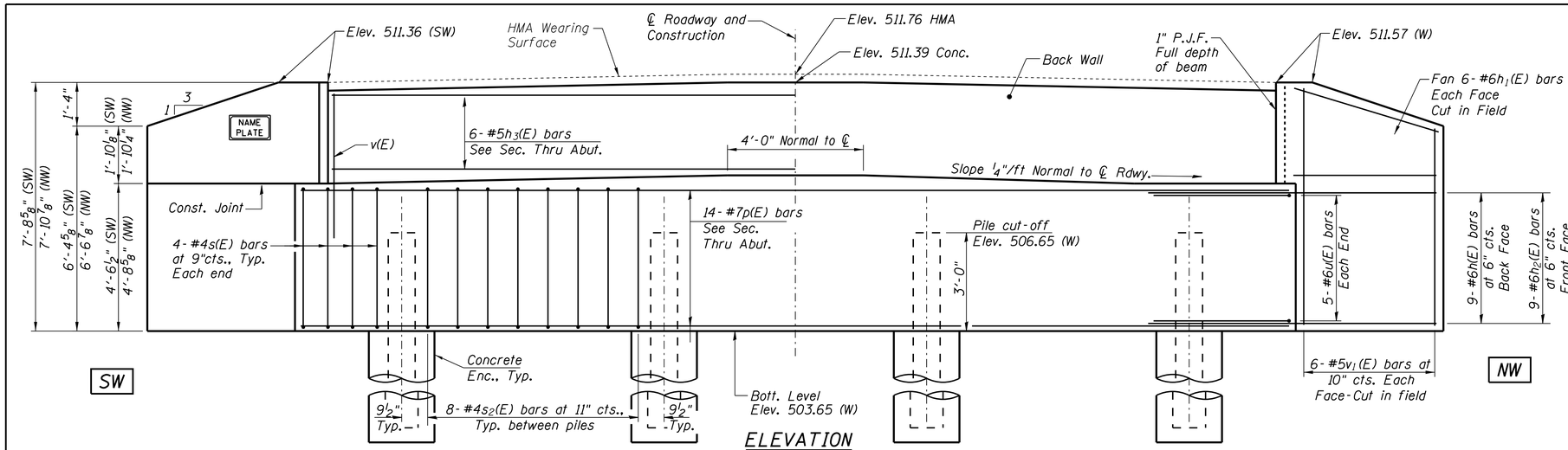
DATE	-	02/17/2020	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

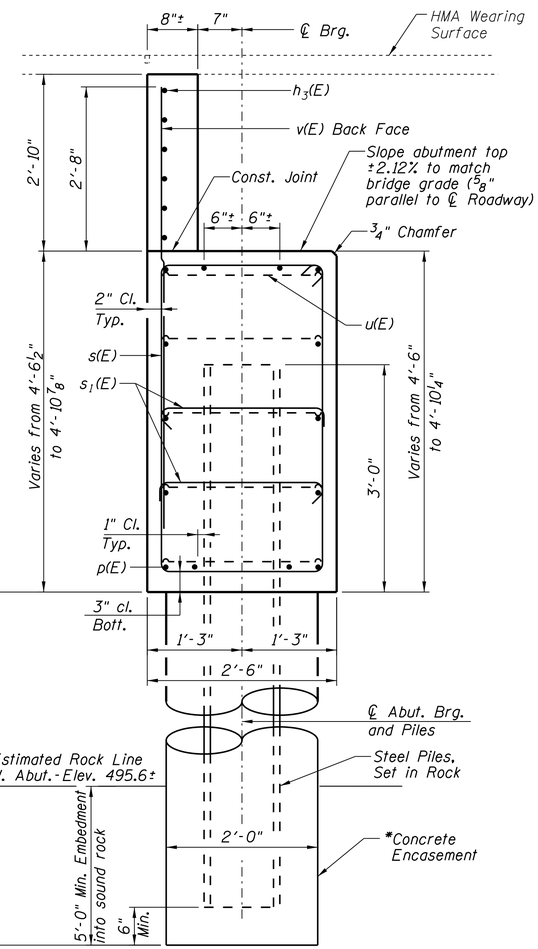
STEEL RAILING, TYPE S1 DETAILS

RAAI JOB NO. 53517

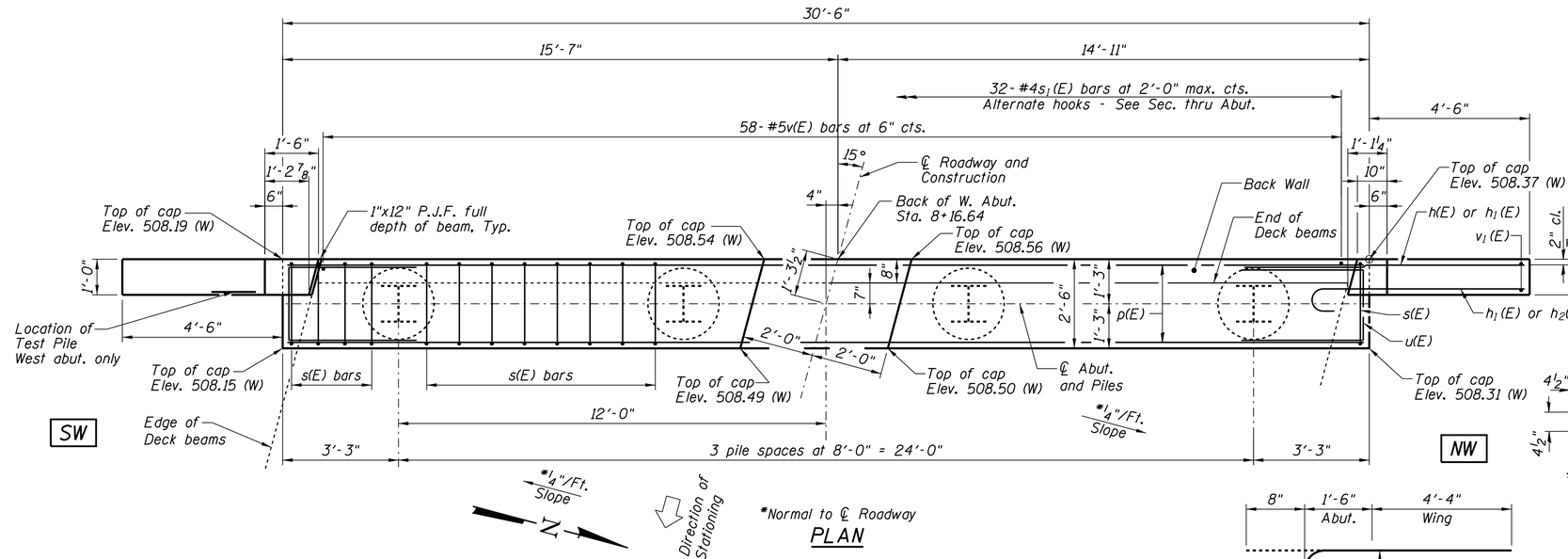
RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	17-00093-00-BR	WASHINGTON	12	7
		CONTRACT NO. 97731		



ELEVATION

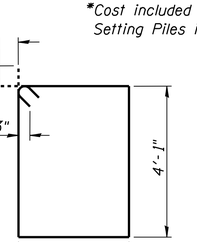


SEC. THRU ABUT.
(Normal to ℄)

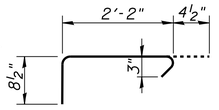


PLAN

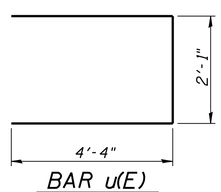
BAR $h_2(E)$



BAR $s(E)$



BAR $s_1(E)$



BAR u(E)

PILE DATA
WEST ABUTMENT

Type:	Steel HP12x53
Nominal Required Bearing: Piles set in Rock	
Factored Resistance Available:	426 kips
Estimated Length:	17'/pile
No. Production Piles	4
No. Test Piles	0

GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60 (IL Modified).

All reinforcement bars shall be Epoxy Coated.

All exposed edges shall have standard 3/4" chamfer, unless otherwise noted or as directed by the Engineer.

All clearances between rebar and form surface shall be 2", unless otherwise noted.

Space reinforcement in cap to miss PPCDB dowel rods.

The Steel H-piles shall be according to AASHTO M270 Grade 50.

The back wall and portion of the wingwalls above the construction joint shall be cast against the in-place deck beams.

The position of the 90° & 135° hooked ends of the $s_1(E)$ bar shall be alternated horizontally and vertically between adjacent bars.

BILL OF MATERIAL
FOR WEST ABUTMENT

Bar	No.	Size	Length	Shape
h(E)	18	#6	8'-10"	
$h_1(E)$	24	#6	5'-0"	CUT IN FIELD
$h_2(E)$	18	#6	6'-6"	
$h_3(E)$	6	#5	28'-8"	
p(E)	14	#7	30'-2"	
s(E)	32	#4	13'-3"	
$s_1(E)$	32	#4	3'-3"	
u(E)	10	#6	10'-9"	
v(E)	58	#5	5'-10"	
$v_1(E)$	24	#5	7'-7"	CUT IN FIELD
Concrete Structures			Cu. Yd.	17.9
Reinforcement Bars, Epoxy Coated			Pound	2690
Furnishing Steel Piles, HP12x53			Foot	68
Piles Set in Rock			Each	4

For details of piles and Concrete Encasement, see HP Pile Details sheet.

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DATE - 02/17/2020	REVISED -	

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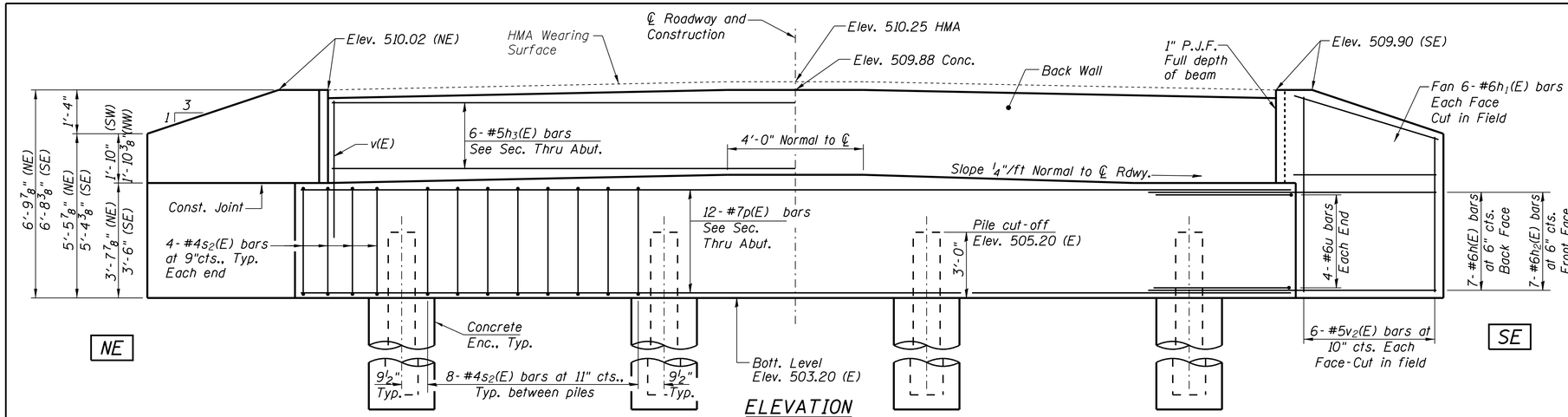
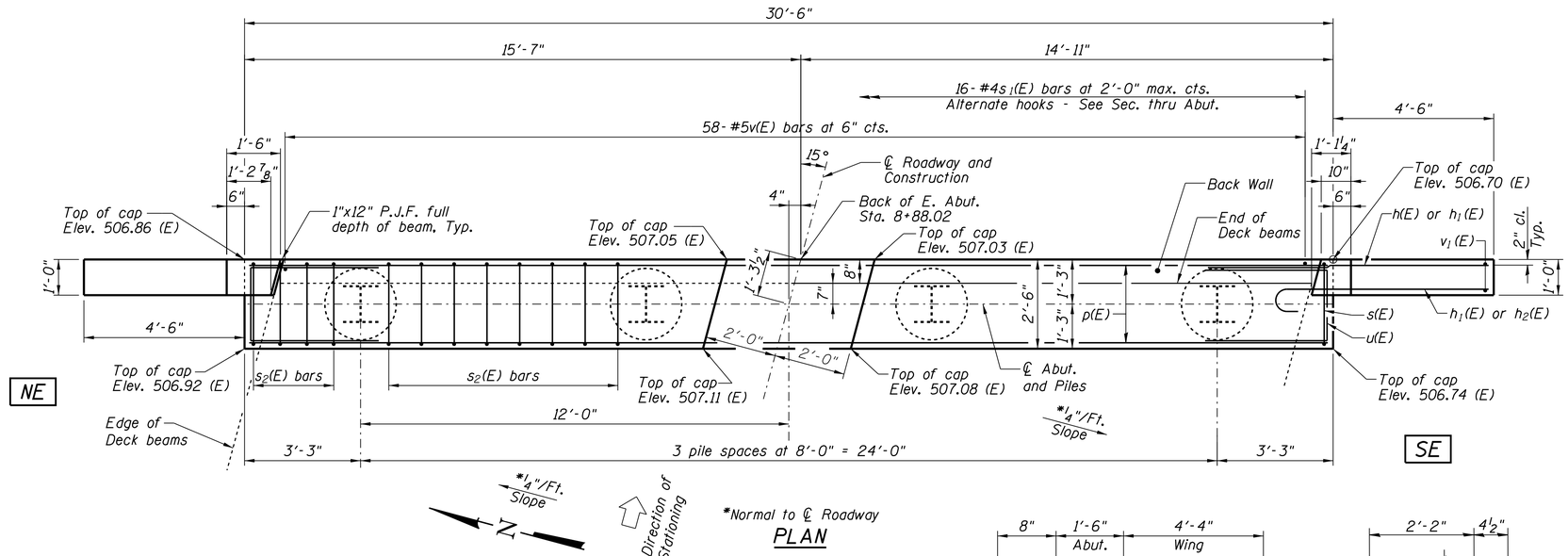
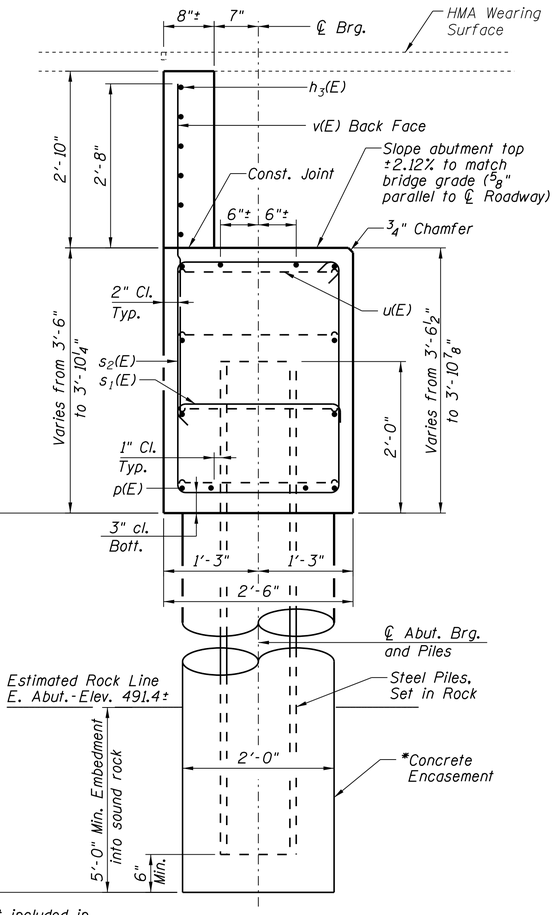
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT DETAILS

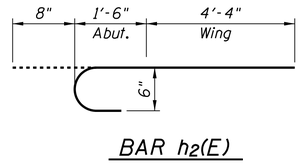
RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	17-00093-00-BR	WASHINGTON	12	8
		CONTRACT NO. 97731		



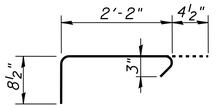




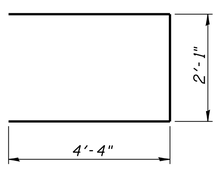
SEC. THRU ABUT.
(Normal to ℄)



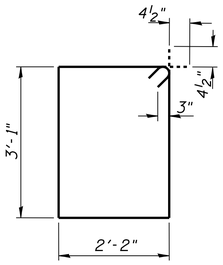
BAR $h_2(E)$



BAR $s_1(E)$



BAR u(E)



BAR $s_2(E)$

PILE DATA
EAST ABUTMENT

Type:	Steel HP12x53
Nominal Required Bearing:	Piles set in rock
Factored Resistance Available:	426 kips
Estimated Length:	19'/pile
No. Production Piles	4
No. Test Piles	0

GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60 (IL Modified).

All reinforcement bars shall be Epoxy Coated.

All exposed edges shall have standard 3/4" chamfer, unless otherwise noted or as directed by the Engineer.

All clearances between rebar and form surface shall be 2", unless otherwise noted.

Space reinforcement in cap to miss PPCDB dowel rods.

The Steel H-piles shall be according to AASHTO M270 Grade 50.

The back wall and portion of the wingwalls above the construction joint shall be cast against the in-place deck beams.

The position of the 90° & 135° hooked ends of the $s_1(E)$ bar shall be alternated between adjacent bars.

BILL OF MATERIAL
FOR EAST ABUTMENT

Bar	No.	Size	Length	Shape
h(E)	14	#6	8'-10"	
$h_1(E)$	24	#6	5'-0"	CUT IN FIELD
$h_2(E)$	14	#6	6'-6"	
$h_3(E)$	6	#5	28'-8"	
p(E)	12	#7	30'-2"	
$s_1(E)$	16	#4	3'-3"	
$s_2(E)$	32	#4	11'-3"	
u(E)	8	#6	10'-9"	
v(E)	58	#5	5'-10"	
$v_2(E)$	24	#5	6'-6"	CUT IN FIELD
Concrete Structures		Cu. Yd.	14.7	
Reinforcement Bars, Epoxy Coated		Pound	2340	
Furnishing Steel Piles, HP12x53		Foot	76	
Piles Set in Rock		Each	4	

For details of piles and Concrete Encasement, see HP Pile Details Sheet.

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ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

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DRAWN - JN	REVISED -	
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DATE - 02/17/2020	REVISED -	

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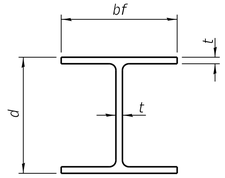
DEPARTMENT OF TRANSPORTATION

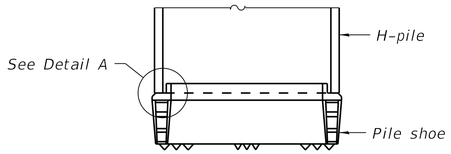
EAST ABUTMENT DETAILS

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	17-00093-00-BR	WASHINGTON	12	9
		CONTRACT NO. 97731		

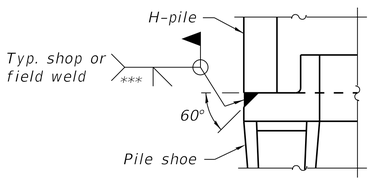


STEEL PILE TABLE

Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



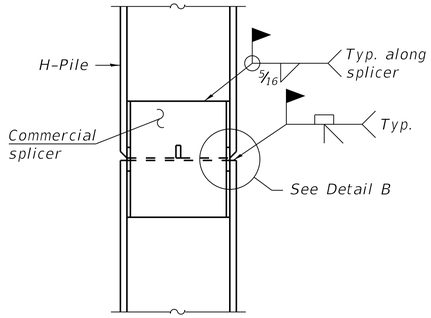
ELEVATION



DETAIL A

SHOE ATTACHMENT

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



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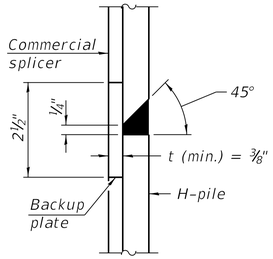
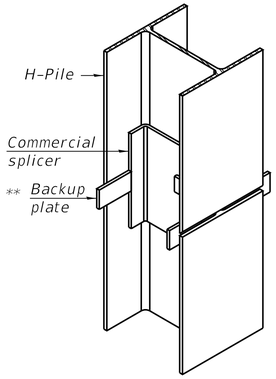
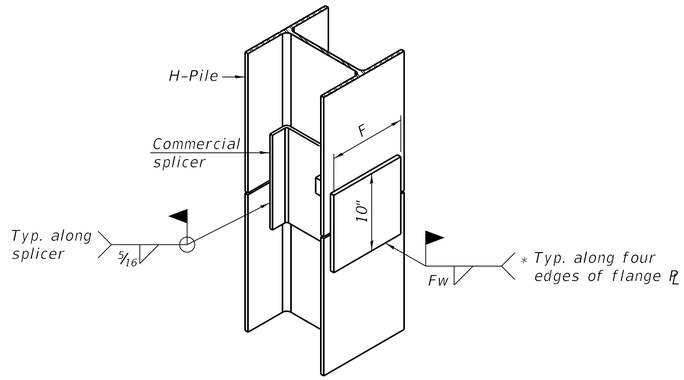


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



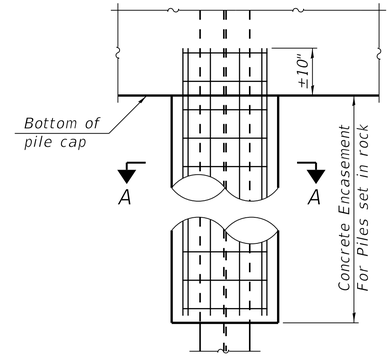
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

* Interrupt welds 1/4" 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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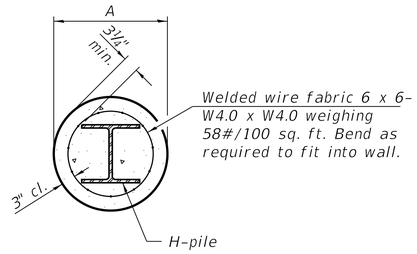
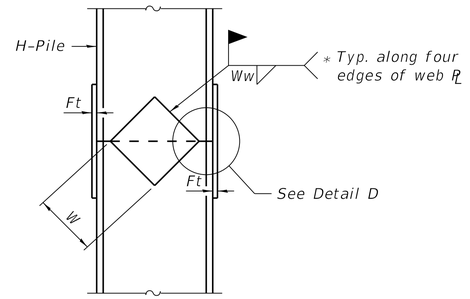


SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASEMENT

(Forms for encasement may be omitted when soil conditions permit).



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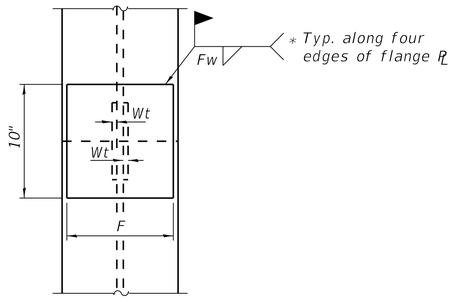
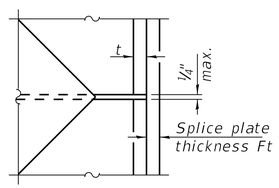


END VIEW



DETAIL D

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE

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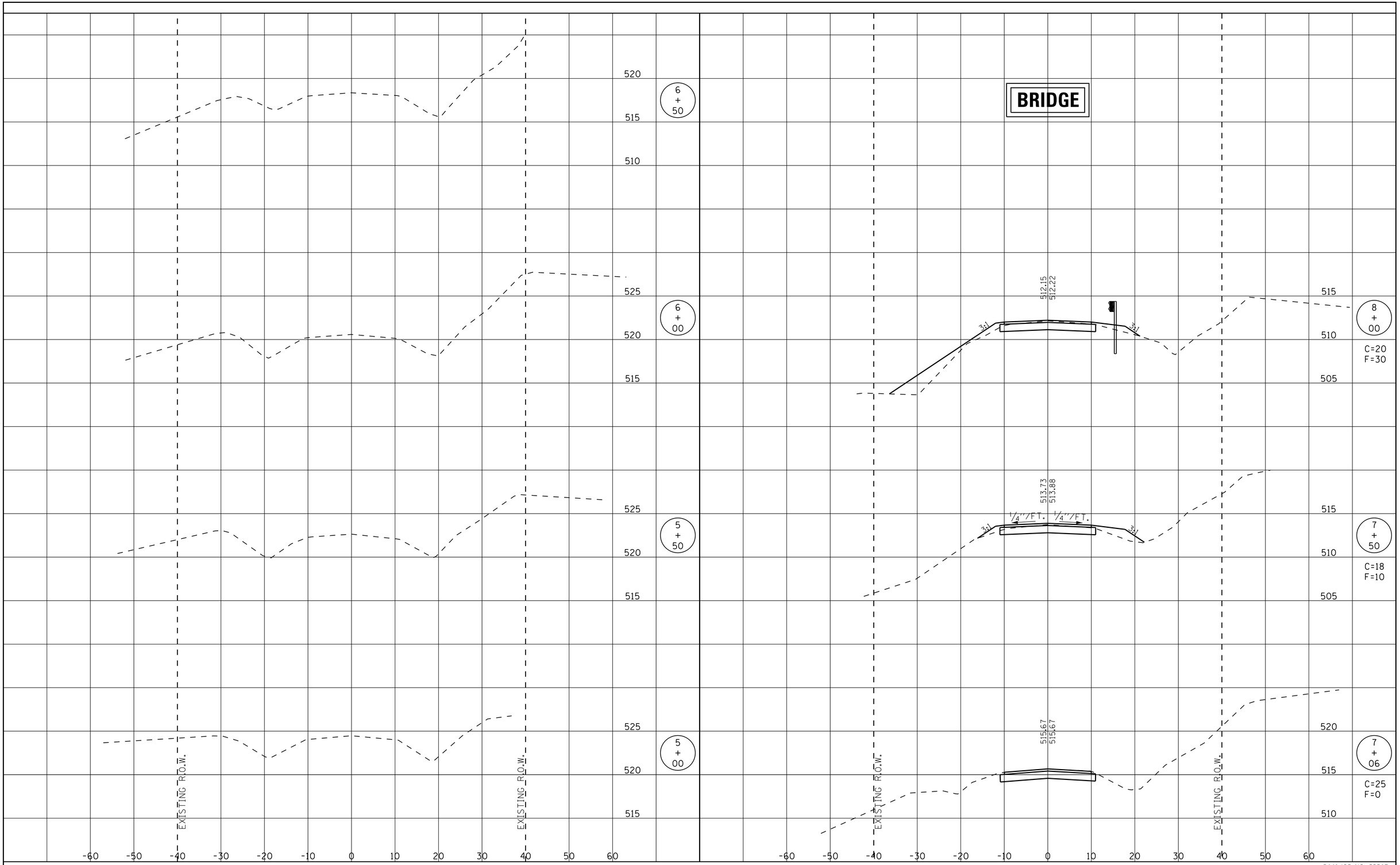
HP PILE DETAILS

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	17-00093-00-BR	WASHINGTON	12	10
		CONTRACT NO. 97731		

RAAI JOB NO. 53517

FINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
	TEMPLATE		
NOTE BOOK	AREAS		
NO.	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
	TEMPLATE		
NOTE BOOK	AREAS		
NO.	AREAS CHECKED		



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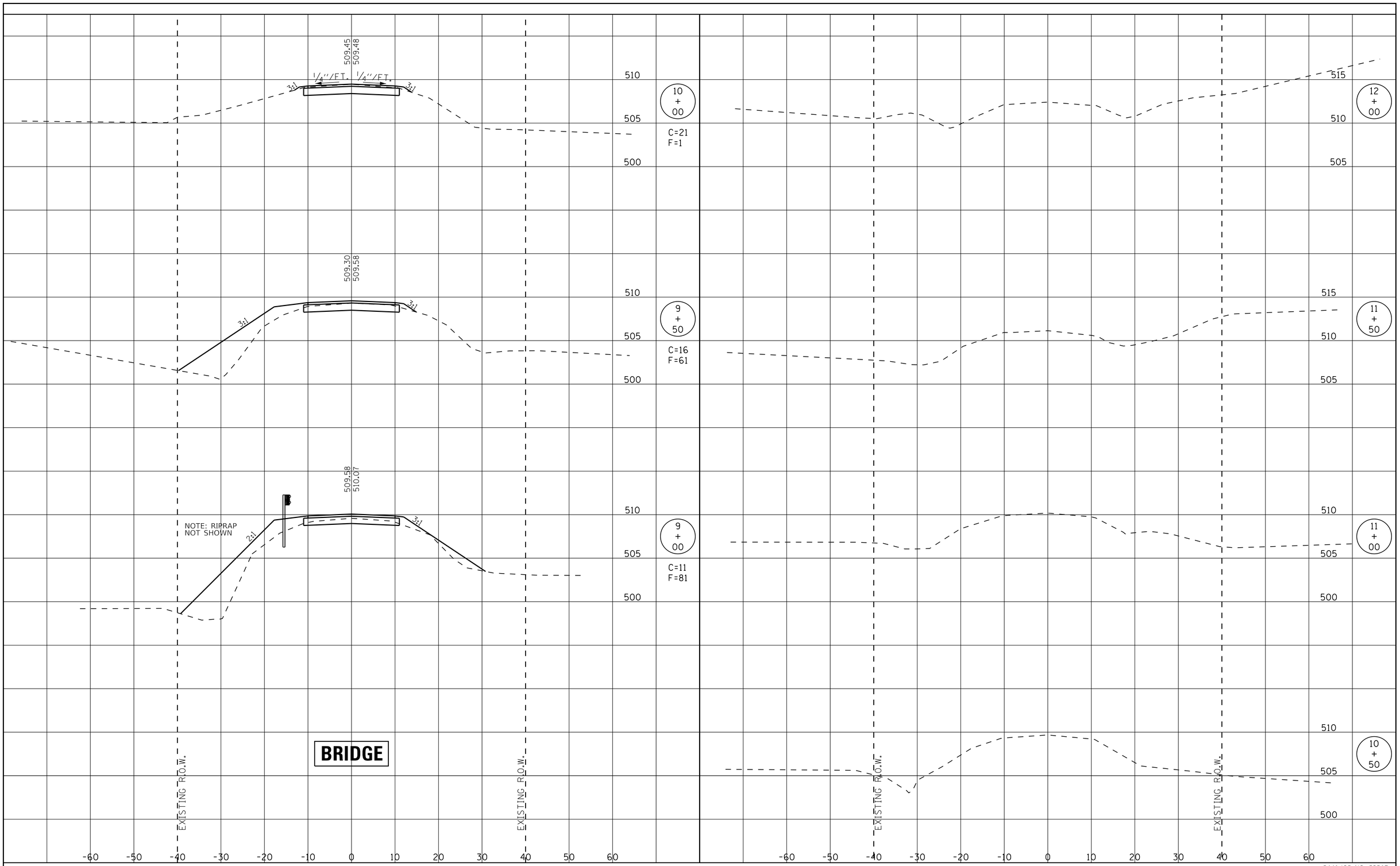
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS OF ROADWAY

STA. 5+00 TO STA. 8+00

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	17-00093-00-BR	WASHINGTON	12	11
		CONTRACT NO. 97731		



FINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

ORIGINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

RAAI JOB NO. 53517

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DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS OF ROADWAY

STA. 9+00 TO STA. 12+00

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 5	17-00093-00-BR	WASHINGTON	12	12
		CONTRACT NO. 97731		