ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 367	18-15135-00-BR	SHELBY	11	1
		CONTRACT NO. 95865		

RAAI JOB NO. 53118

CONTRACT NO. 95865

06-12-2020 LETTING ITEM 121

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
STP OFF-SYSTEM BRIDGE FUNDING

TR 367 (500N)
OVER BRUSH CREEK
SECTION 18-15135-00-BR
PRAIRIE TOWNSHIP
PROJECT NO. 89RK(642)
SHELBY COUNTY
JOB NO. C-97-065-19

INDEX OF SHEETS

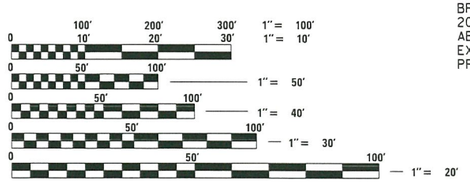
HIGHWAY STANDARDS (SEE PROPOSAL BOOKLET)

000001-07	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-04	NAME PLATE FOR BRIDGES
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

SOIL BORINGS (SEE PROPOSAL BOOKLET)

DESIGN CLASSIFICATION: RURAL LOCAL ROAD
ADT_{2019} : 100

DESIGN SPEED: 30 MPH



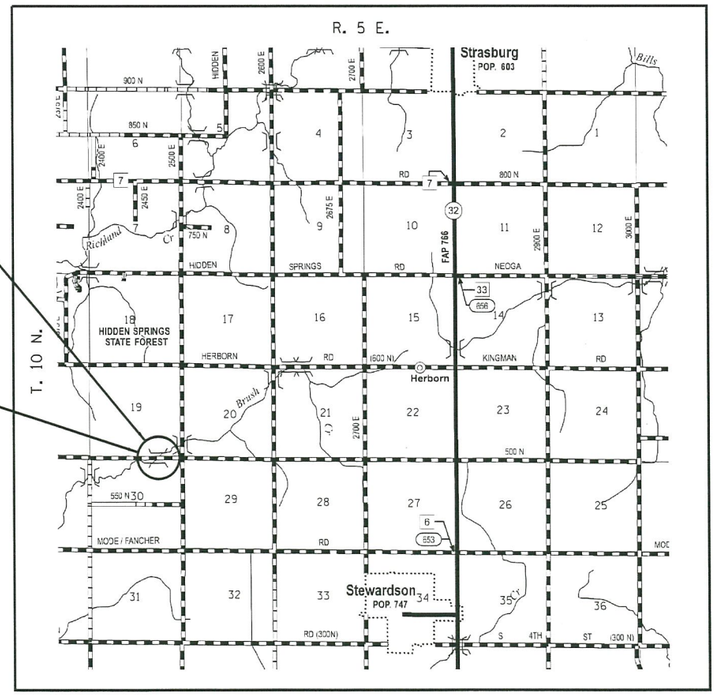
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES, REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES, IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

SECTION BEGINS
STA. 8+57.75

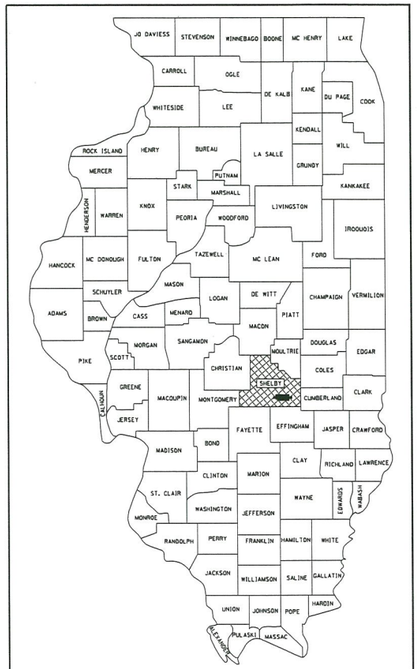
SECTION 18-15135-00-BR INCLUDES THE CONSTRUCTION OF A SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE CARRYING TR 367 OVER BRUSH CREEK. 20° AHEAD LEFT SKEW. 75'-5" BK. TO BK. ABUTMENTS X 24' WIDE
EXISTING STRUCTURE NO. 087-3335
PROPOSED STRUCTURE NO. 087-3593

SECTION ENDS
STA. 14+17.75



N

LOCATION: NEAR THE NW CORNER OF THE NE¼, NE¼, SECTION 30, T10N, R5E, 3RD P.M.
NET LENGTH OF PROJECT: 560.00 FT. = 0.106 MI.
NOT TO SCALE



LOCATION OF SECTION INDICATED THUS:- ▬

APPROVED January 10, 2020
SHELBY COUNTY, COUNTY ENGINEER

PASSED 4-8-2020
DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW 4-8-2020
REGION FOUR ENGINEER

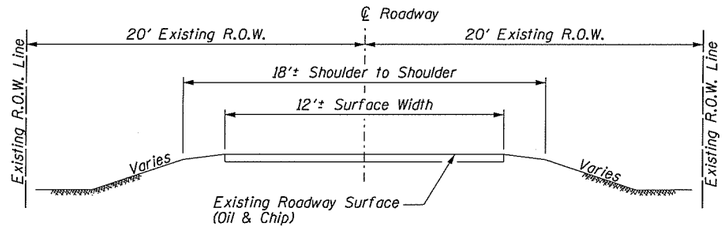
PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

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

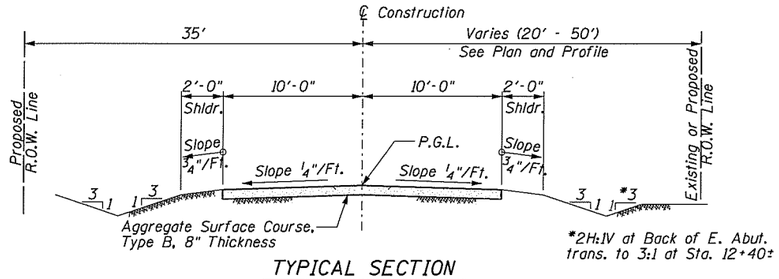
01/13/2020
BRENT L. TAYLOR
SALEM, ILLINOIS
ILLINOIS LICENSED PROFESSIONAL ENGINEER NO. 062-066114
EXPIRES NOV. 30, 2021

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

01/13/2020



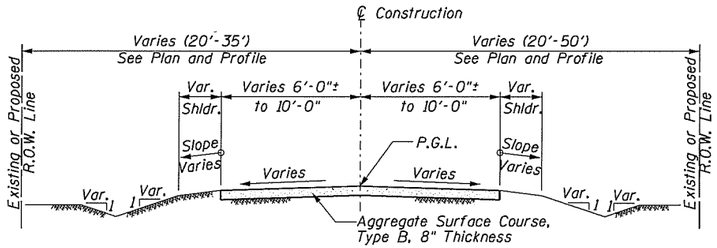
TYPICAL SECTION
EXISTING APPROACH ROADWAY



*2H:1V at Back of E. Abut. trans. to 3:1 at Sta. 12+40±

TYPICAL SECTION
PROPOSED APPROACH ROADWAY

Sta. 9+77.75 to Sta. 10+80.04
Sta. 11+55.46 to Sta. 12+97.75



TYPICAL TRANSITION SECTION
PROPOSED APPROACH ROADWAY

Sta. 8+57.75 to Sta. 9+77.75
Sta. 12+97.75 to Sta. 14+17.75

UTILITIES

Design Phase Locate
Dig No.: A2181472-00A

WATER:
EJ Water Cooperative, Inc.
Milano & Grunloh Engineers, LLC
114 West Washington Avenue
P.O. Box 897
Effingham, IL 62401
Mr. Lee Beckman, P.E., P.L.S.
Phone: 217-347-7262

TELEPHONE:
Consolidated Communications
121 South 17th Street
Mattoon, IL 61938
Mr. Wes Chambers
Phone: 217-235-3355

ELECTRIC:
Shelby County Electric
P.O. Box 590
Shelbyville, IL 62565
Mr. James Matlock
Phone: 217-774-3986

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 and are only included for the convenience of the bidder. 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 Riprap	130 pounds/cu. ft.
Aggregate Surface Course	2.1 tons/cu. yd.
Fertilizer Nutrients, Each	90 lbs./Acre
Temp. Erosion Control Seeding	100 lbs./Acre
Mulch, Method 2	2 ton/Acre

5. Areas to be seeded shall consist of all disturbed earth surfaces within the Right-of-way as directed by the Engineer.
6. Commitments:
   No tree clearing will be allowed or performed from April 1 through September 30, to prevent any adverse effects to the federally threatened Northern Long-eared bat or federally endangered Indiana bat.

   Existing fence replacement within the limits of construction will be done by others and will be coordinated by the Township.

   Impacts to trees will be mitigated by the County Highway Department per IDOT policy DE 18 Preservation and Replacement of trees

   The County Engineer will notify public service providers prior to the start of construction.

SUMMARY OF QUANTITIES

	Code No.	Item	Unit	Quantity
	20100500	Tree Removal, Acres	Acre	0.2
	20200100	Earth Excavation	Cu Yd	407
	20300100	Channel Excavation	Cu Yd	260
	20400800	Furnished Excavation	Cu Yd	449
	25000200	Seeding, Class 2	Acre	0.4
	25000400	Nitrogen Fertilizer Nutrient	Pound	36
	25000500	Phosphorus Fertilizer Nutrient	Pound	36
	25000600	Potassium Fertilizer Nutrient	Pound	36
	25100115	Mulch, Method 2	Acre	0.4
	28000250	Temporary Erosion Control Seeding	Pound	40
	28000305	Temporary Ditch Checks	Foot	60
	28000400	Perimeter Erosion Barrier	Foot	220
	28100207	Stone Riprap, Class A4	Ton	146
	28200200	Filter Fabric	Sq Yd	170
	40200800	Aggregate Surface Course, Type B	Ton	453
	50100100	Removal of Existing Structures	Each	1
	50200100	Structure Excavation	Cu Yd	88
	50300225	Concrete Structures	Cu Yd	26.4
	50300280	Concrete Encasement	Cu Yd	2.8
	50400605	Precast Prestressed Concrete Deck Beams (33" Depth)	Sq Ft	1776
	50800205	Reinforcement Bars, Epoxy Coated	Pound	4260
*	50900205	Steel Railing, Type S1	Foot	151
	51201600	Furnishing Steel Piles HP12x53	Foot	147
	51202305	Driving Piles	Foot	147
	51203600	Test Pile Steel HP12x53	Each	2
	51204650	Pile Shoes	Each	8
	51500100	Name Plates	Each	1
	67100100	Mobilization	L Sum	1
*	72501000	Terminal Marker - Direct Applied	Each	4

* Specialty Item

RAAI JOB NO. 53118

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

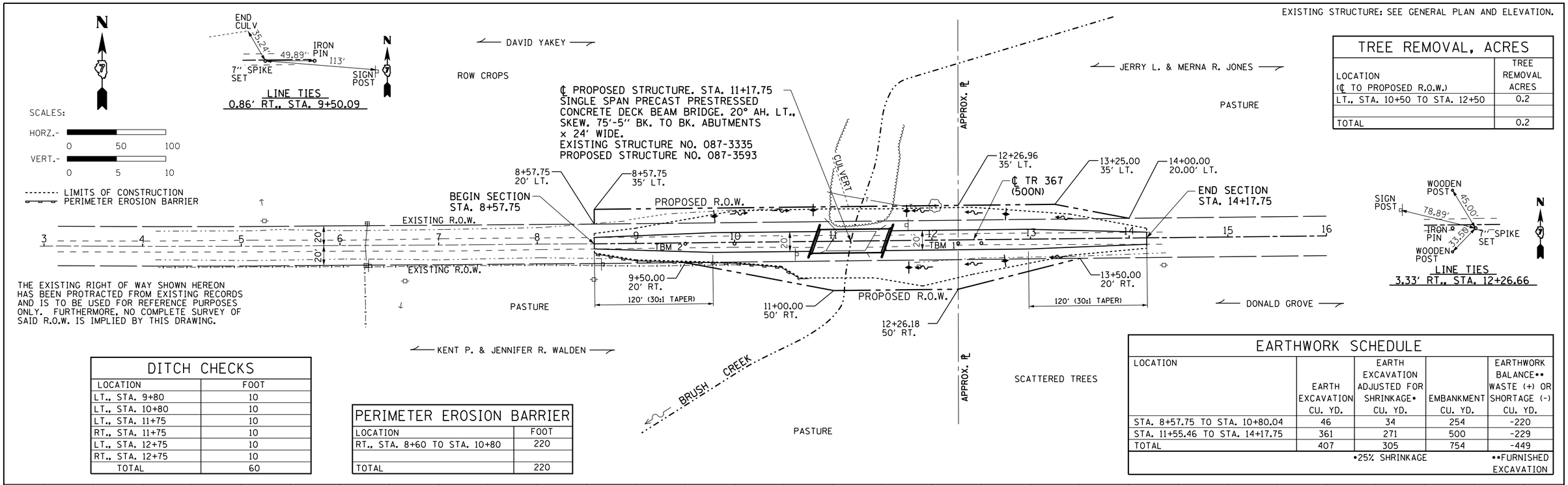
DESIGNED - BLT	REVISED -	
DRAWN - JN	REVISED -	
CHECKED - GLH	REVISED -	
DATE - 01/13/2020	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES, TYPICAL SECTIONS, AND GENERAL NOTES

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 367	18-15135-00-BR	SHELBY	11	2
		CONTRACT NO. 95865		

EXISTING STRUCTURE: SEE GENERAL PLAN AND ELEVATION.



TREE REMOVAL, ACRES

LOCATION (℄ TO PROPOSED R.O.W.)	TREE REMOVAL ACRES
LT., STA. 10+50 TO STA. 12+50	0.2
TOTAL	0.2

DITCH CHECKS

LOCATION	FOOT
LT., STA. 9+80	10
LT., STA. 10+80	10
LT., STA. 11+75	10
RT., STA. 11+75	10
LT., STA. 12+75	10
RT., STA. 12+75	10
TOTAL	60

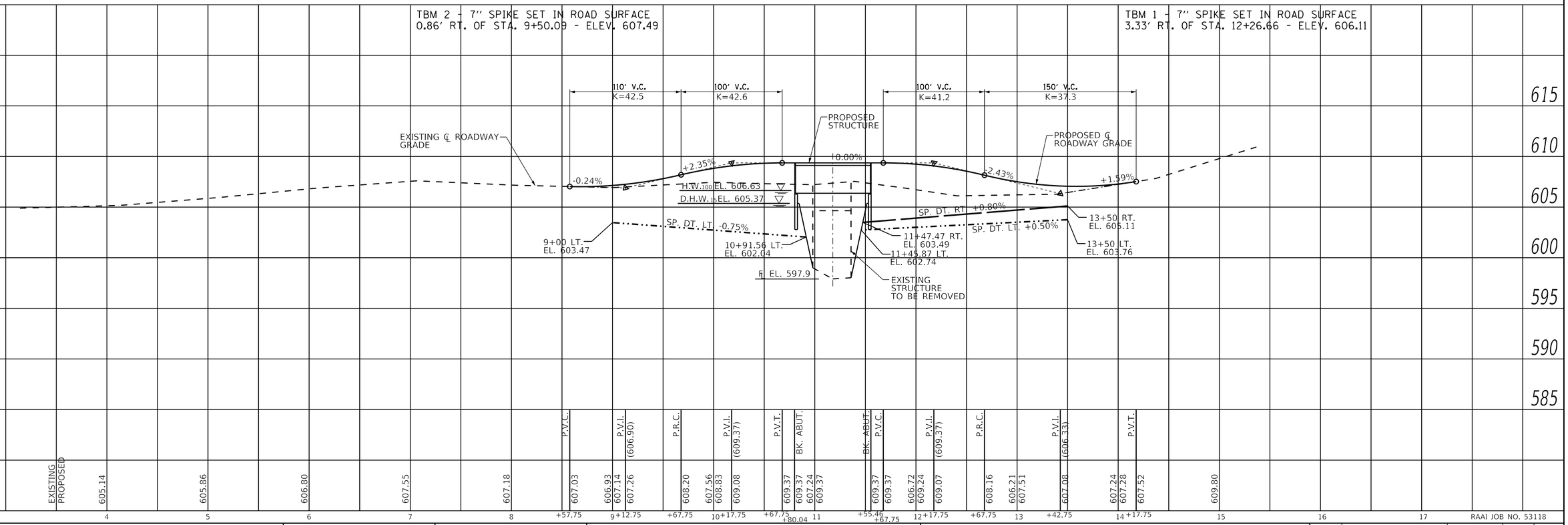
PERIMETER EROSION BARRIER

LOCATION	FOOT
RT., STA. 8+60 TO STA. 10+80	220
TOTAL	220

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. 8+57.75 TO STA. 10+80.04	46	34	254	-220
STA. 11+55.46 TO STA. 14+17.75	361	271	500	-229
TOTAL	407	305	754	-449

•25% SHRINKAGE ••FURNISHED EXCAVATION



RAAI JOB NO. 53118

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 - 01/13/2020	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF ROADWAY

STA. 4+00 TO STA. 15+00

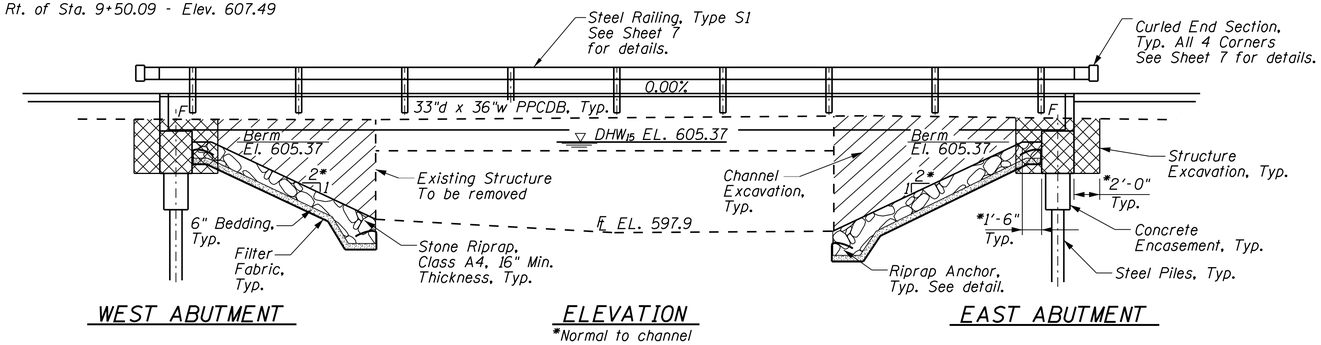
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 367	18-15135-00-BR	SHELBY	11	3
		CONTRACT NO. 95865		

PLAN — DATE / BY / SURVEYED / PLOTTED / DRAWN / CHECKED / B.M. NOTED / STRUCTURE NO. / RT. OF WAY CHECKED / CADD FILE NAME / NOTATNS CHKD / NOTE BOOK / NO.

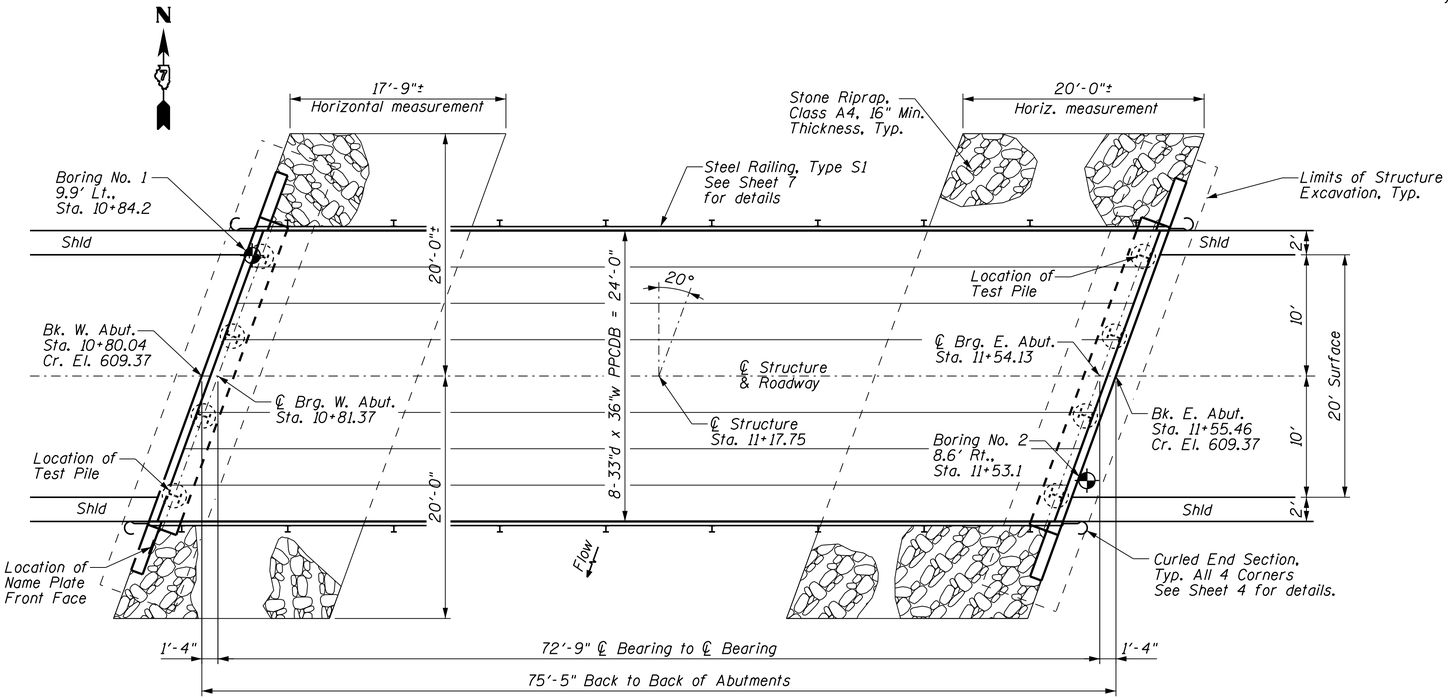
PROFILE — DATE / BY / SURVEYED / PLOTTED / DRAWN / CHECKED / B.M. NOTED / STRUCTURE NO. / NOTATNS CHKD / NOTE BOOK / NO.

TBM 1 - 7" Spike set in road surface
3.33' Rt. of Sta. 12+26.66 - Elev. 606.11

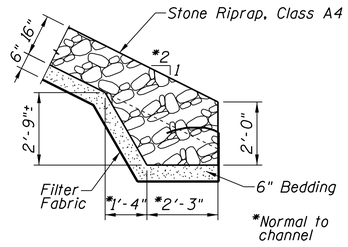
TBM 2 - 7" Spike set in road surface
0.86' Rt. of Sta. 9+50.09 - Elev. 607.49



WEST ABUTMENT — ELEVATION *Normal to channel — EAST ABUTMENT



PLAN



RIPRAP ANCHOR DETAIL

WATERWAY INFORMATION

Drainage Area = 6.81 sq. mi. — Existing Low Grade Elev. 606.11 @ Sta. 12+40 — Proposed Low Grade Elev. 607.02 @ Sta. 8+67.94

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	1440	243	371	605.37	0.49	0.04	605.86	605.41
Base	100	2250	243	442	606.63	1.39	0.17	608.02	606.80
Max. Calc.	500	3010	243	442	607.47	2.60	0.60	610.07	608.07

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

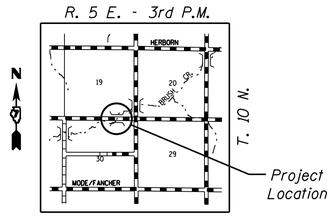
f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)

PRECAST PRESTRESSED UNITS

f'_c = 6,000 psi
f'_{ci} = 5,000 psi
f_{pu} = 270,000 psi ($\frac{1}{2}$" ϕ low lax. strands)
f_{pbt} = 201,960 psi ($\frac{1}{2}$" ϕ low lax. strands)
f_y = 60,000 psi (reinforcement)

SEISMIC DATA

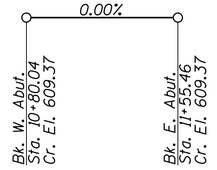
Seismic Performance Zone (SPZ) = 1
Soil Site Classification = C
S_{D1} = 0.138 S_{DS} = 0.318



LOCATION SKETCH

BRUSH CREEK
BUILT 20__ BY
SHELBY COUNTY
SEC. 18–15135–00–BR
TR 367 STATION 11+17.75
LOADING HL–93
STRUCTURE NO. 087–3593

NAME PLATE
See Std. 515001



GRADE ON STRUCTURE
(along ℄ TR 367)

Existing Structure: Structure No. 087-3335. Single span bridge with concrete deck on a steel girder and floor beam system on steel abutment caps on timber and steel piles with timber wingwalls. 40'± L. x 20.9'± W. To be removed.

BILL OF MATERIALS (BRIDGE ONLY)

ITEM	UNIT	TOTAL
Channel Excavation	Cu Yd	260
Stone Riprap, Class A4	Ton	146
Filter Fabric	Sq Yd	170
Removal of Existing Structures	Each	1
Structure Excavation	Cu Yd	88
Concrete Structures	Cu Yd	26.4
Concrete Encasement	Cu Yd	2.8
PPCDB (33" Depth)	Sq Ft	1776
Reinforcement Bars, Epoxy Coated	Pound	4260
Steel Railing, Type S1	Foot	151
Furnishing Steel Piles HP12x53	Foot	147
Driving Piles	Foot	147
Test Pile Steel HP12x53	Each	2
Pile Shoes	Each	8
Name Plates	Each	1
Terminal Marker - Direct Applied	Each	4

GENERAL NOTES

Do not scale these drawings.

Channel excavation shall be excavated as shown within the limits of the proposed bridge, then tapered to the existing channel at 35' Lt. and Rt. (from ℄) of the bridge. If the Engineer deems the material satisfactory, it may be used to construct the roadway embankment. See Roadway Plans.

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

The cost of the bedding material shall be included in the cost of the Stone Riprap, Class A4 (per the Standard Specifications) and no additional compensation will be allowed. The estimated quantity for the bedding material is 65 tons (For information only).

See Specifications 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, $\frac{1}{8}$" 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.

Do not scale these drawings.

All reinforcement shall be epoxy coated (E).

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 01·13·2020
Gary L. Hahn

11/30/2020
Date of License Expiration

RAAI JOB NO. 53118

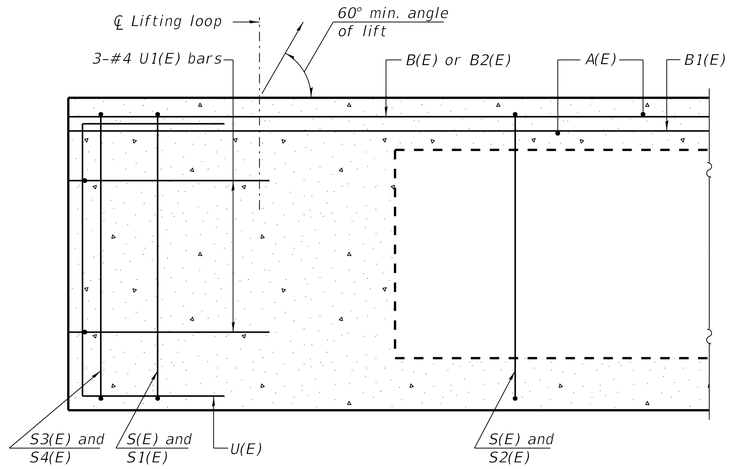
RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS LAND SURVEYORS
SALEM, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

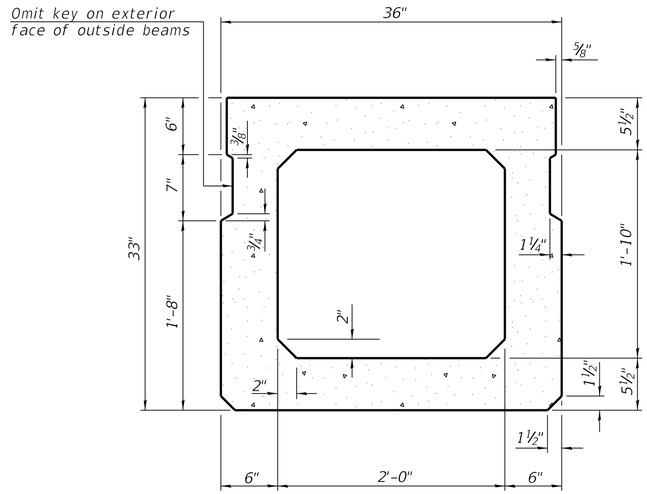
DESIGNED	BLT	REVISED -
DRAWN	JN	REVISED -
CHECKED	GLH	REVISED -
DATE	01/13/2020	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

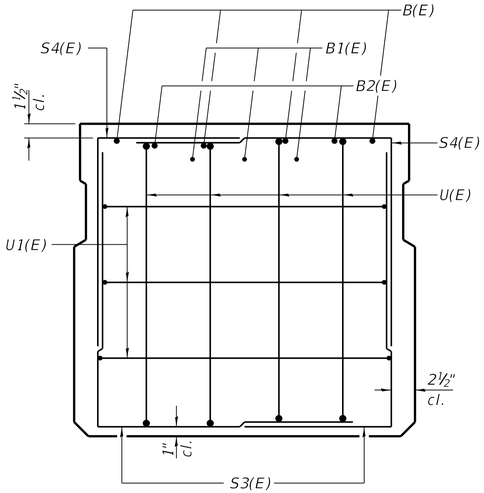
GENERAL PLAN AND ELEVATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 367	18-15135-00-BR	SHELBY	11	4
		CONTRACT NO. 95865		



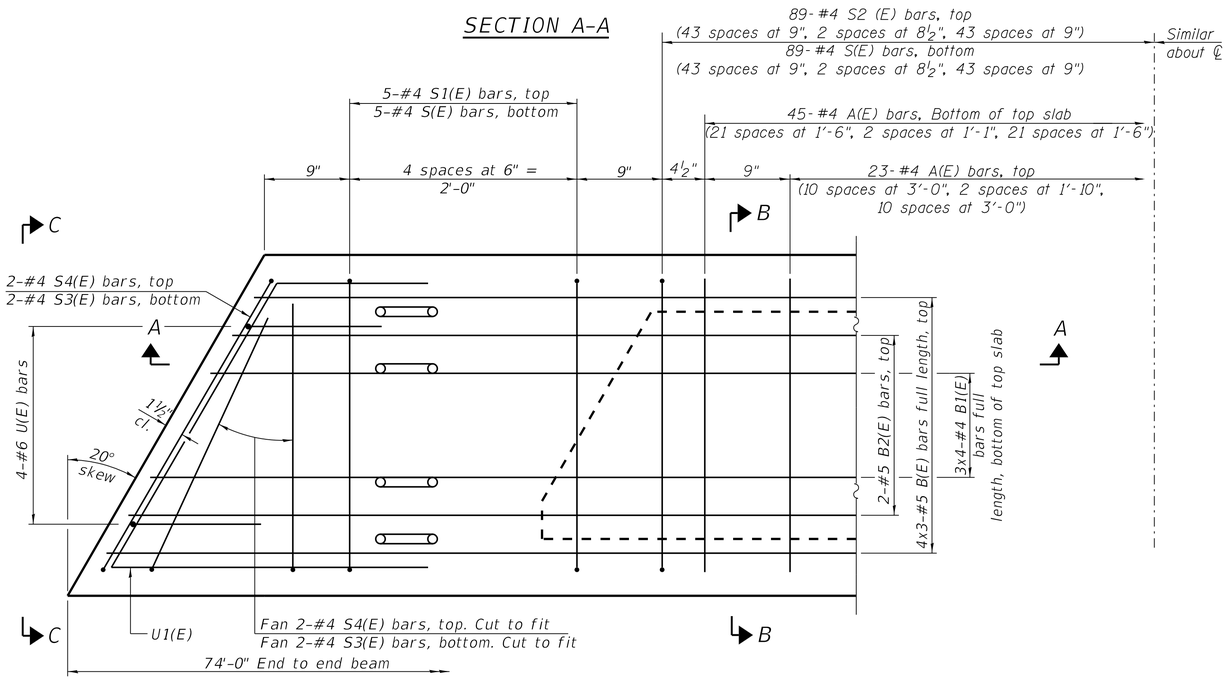


SECTION B-B
(Showing dimensions)



VIEW C-C

SECTION A-A



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.

24 total strands

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)	68	#4	2'-7"	—
B(E)	12	#5	26'-3"	—
B1(E)	12	#4	20'-0"	—
B2(E)	4	#5	10'-0"	—
S(E)	99	#4	7'-8"	⊔
S1(E)	10	#4	6'-5"	⊓
S2(E)	89	#4	6'-8"	⊓
S3(E)	8	#4	5'-1"	⌋
S4(E)	8	#4	4'-6"	⌋
U(E)	8	#6	5'-0"	⊏
U1(E)	6	#4	6'-1"	⊏

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

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

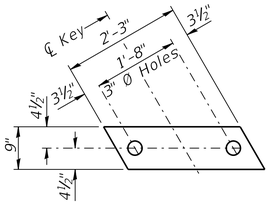
RAAI JOB NO. 53118

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

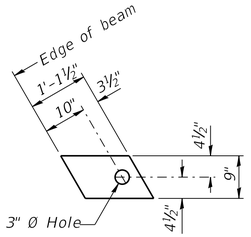
DESIGNED - BLT	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
DRAWN - JN	REVISED -	
CHECKED - GLH	REVISED -	
DATE - 01/13/2020	REVISED -	

PRECAST PRESTRESSED CONCRETE DECK BEAM DETAILS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 367	18-15135-00-BR	SHELBY	11	5
		CONTRACT NO. 95865		



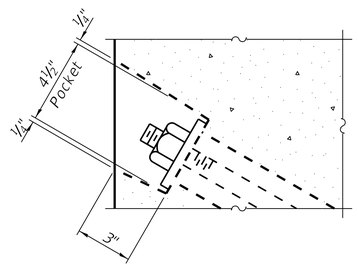
FABRIC BEARING PAD
(Interior)



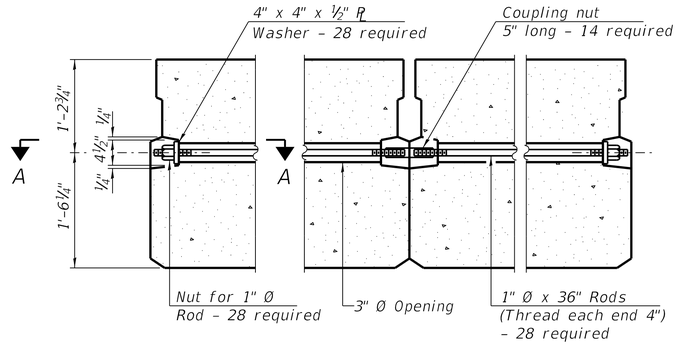
FABRIC BEARING PAD
(Exterior)

FIXED

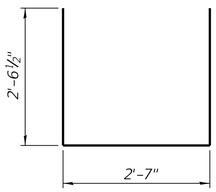
Notes: All bearing pads shall be 1" thick.



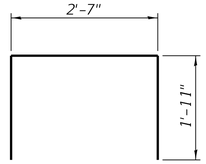
SECTION A-A



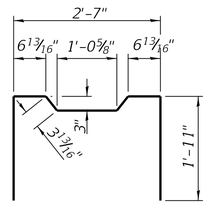
TYPICAL TRANSVERSE TIE ASSEMBLY



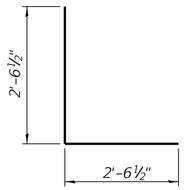
BAR S(E)



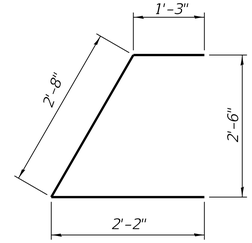
BAR S1(E)



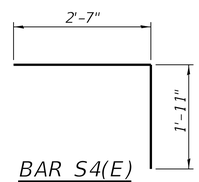
BAR S2(E)



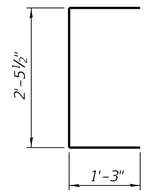
BAR S3(E)



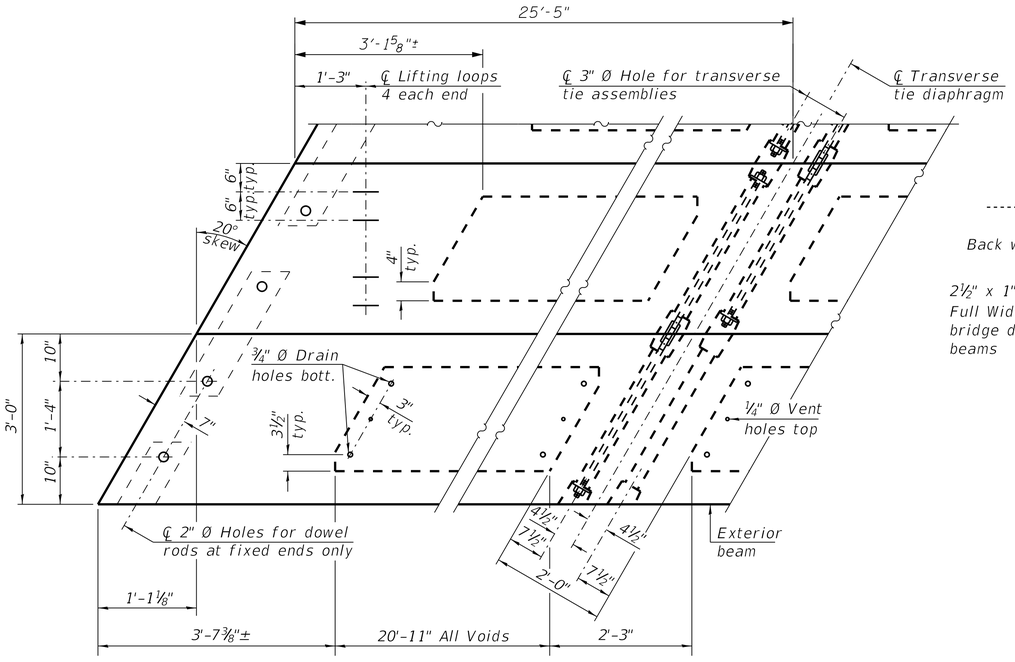
BAR U1(E)



BAR S4(E)

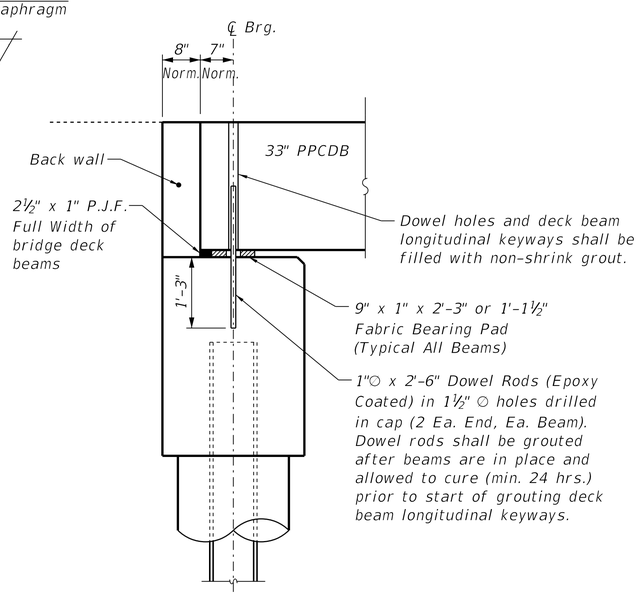


BAR U(E)

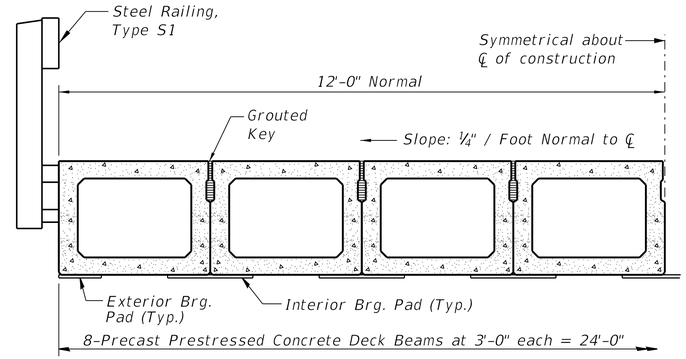


PLAN VIEW

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

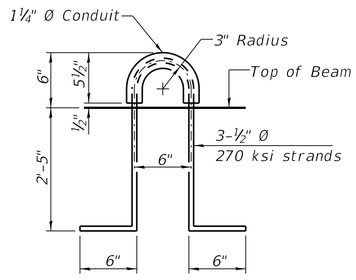


FIXED BEARING
ABUTMENT



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

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.

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

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (33" depth)	Sq. Ft.	1776

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DESIGNED - BLT		REVISED -
DRAWN - JN		REVISED -
CHECKED - GLH		REVISED -
DATE - 01/13/2020		REVISED -

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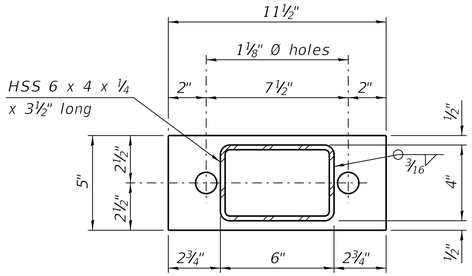
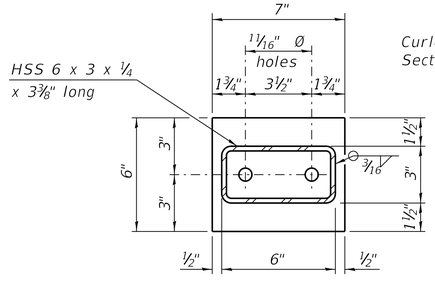
DEPARTMENT OF TRANSPORTATION

PRECAST PRESTRESSED CONCRETE DECK BEAM DETAILS

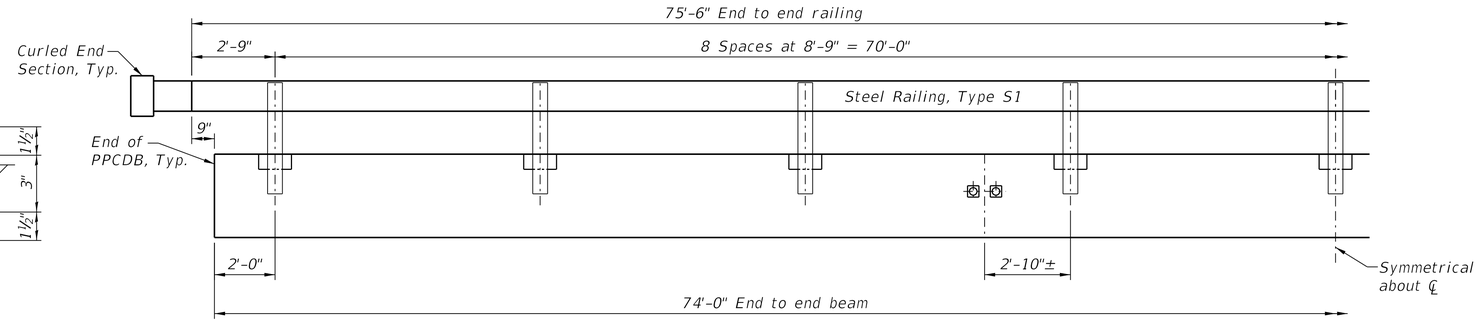
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 367	18-15135-00-BR	SHELBY	11	6
		CONTRACT NO. 95865		



PL ½" x 11½" x 5"

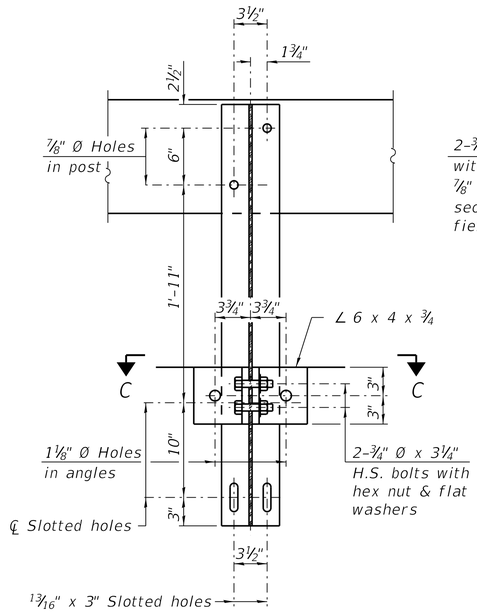


PL ½" x 7" x 6"

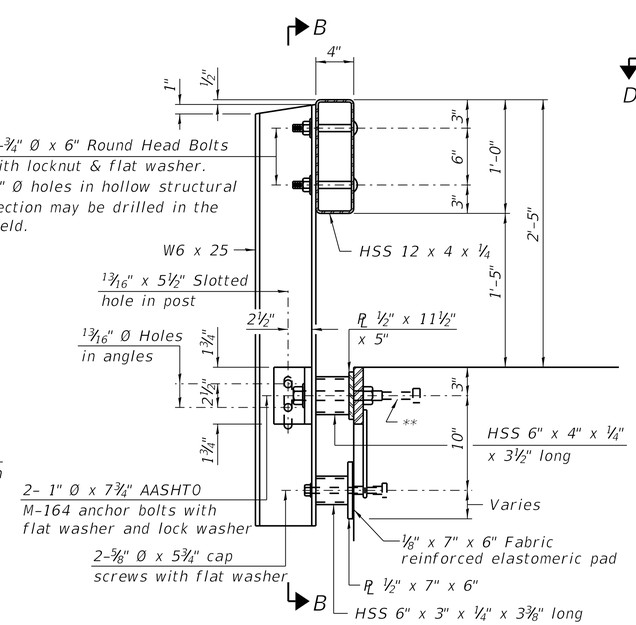


HALF ELEVATION

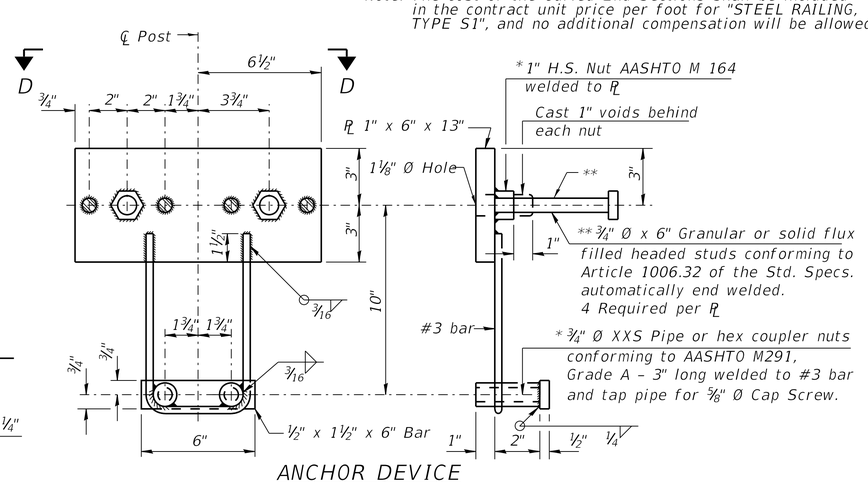
Note: The cost of the Curled End Sections shall be included in the contract unit price per foot for "STEEL RAILING, TYPE S1", and no additional compensation will be allowed.



SECTION B-B



SECTION AT RAILING POST



ANCHOR DEVICE

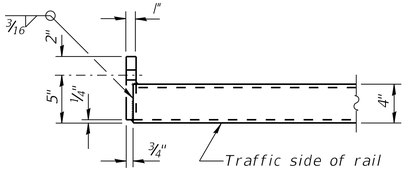
* Threaded areas shall be plugged or blocked off during casting of beam.

Notes:

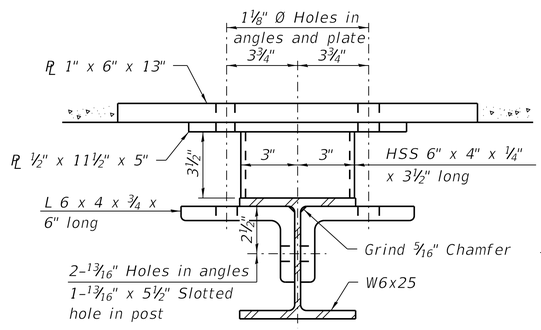
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

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

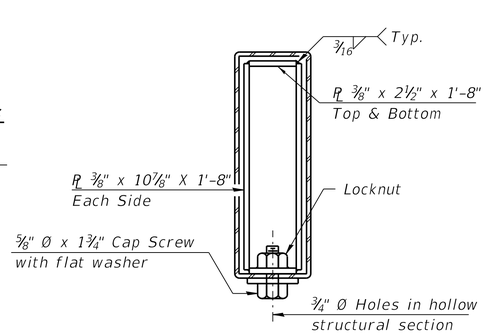
** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device. The anchorage studs may be bent down ½" to accommodate the top reinforcement bar placement.



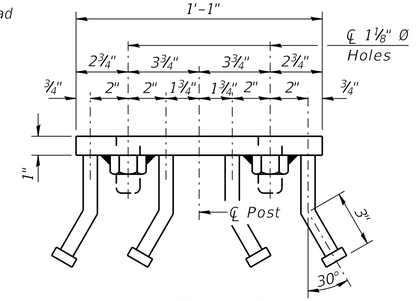
END OF RAIL DETAILS



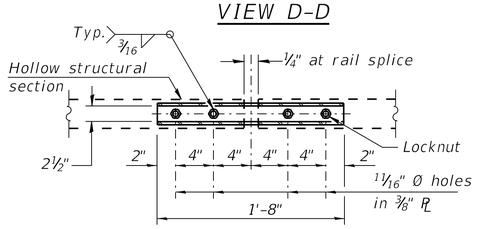
SECTION C-C



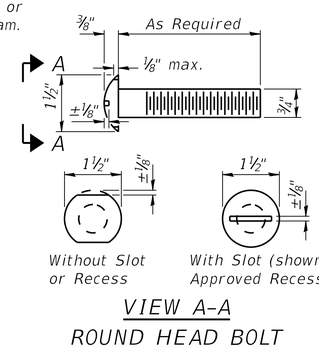
SECTIONS AT RAIL SPLICE



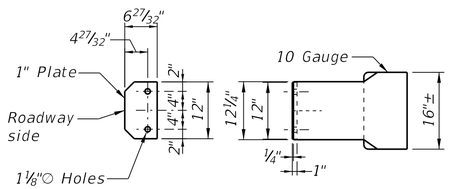
VIEW D-D



PLAN-BOTT. SPLICE PL
TYPICAL



VIEW A-A
ROUND HEAD BOLT



CURLED END SECTION DETAILS

4 Each Req'd

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S1	Foot	151

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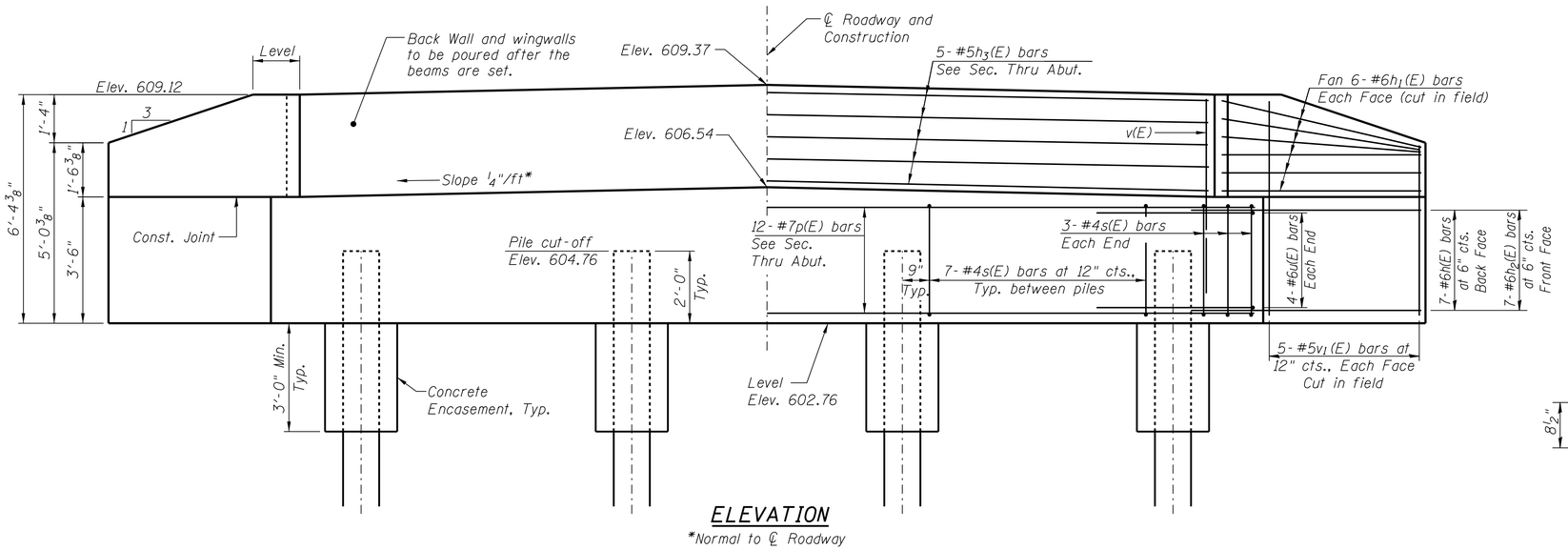
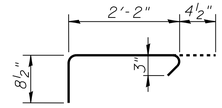
STEEL RAILING, TYPE S1 DETAILS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 367	18-15135-00-BR	SHELBY	11	7
		CONTRACT NO. 95865		

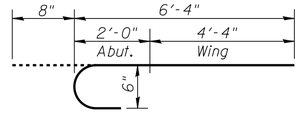


ELEVATION

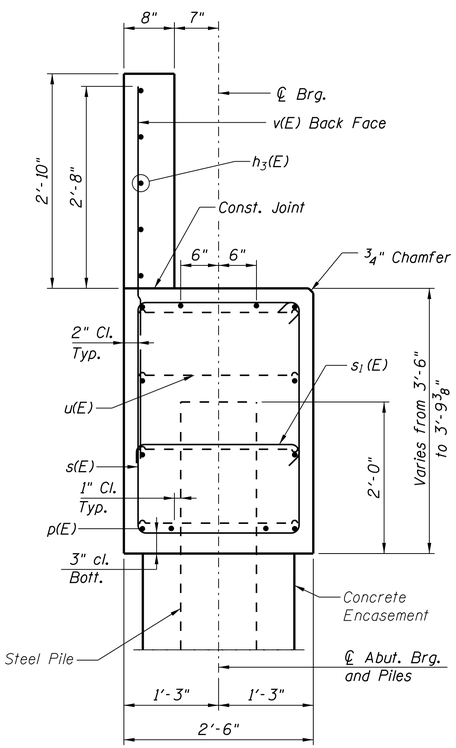
*Normal to ℄ Roadway



BAR $s_1(E)$

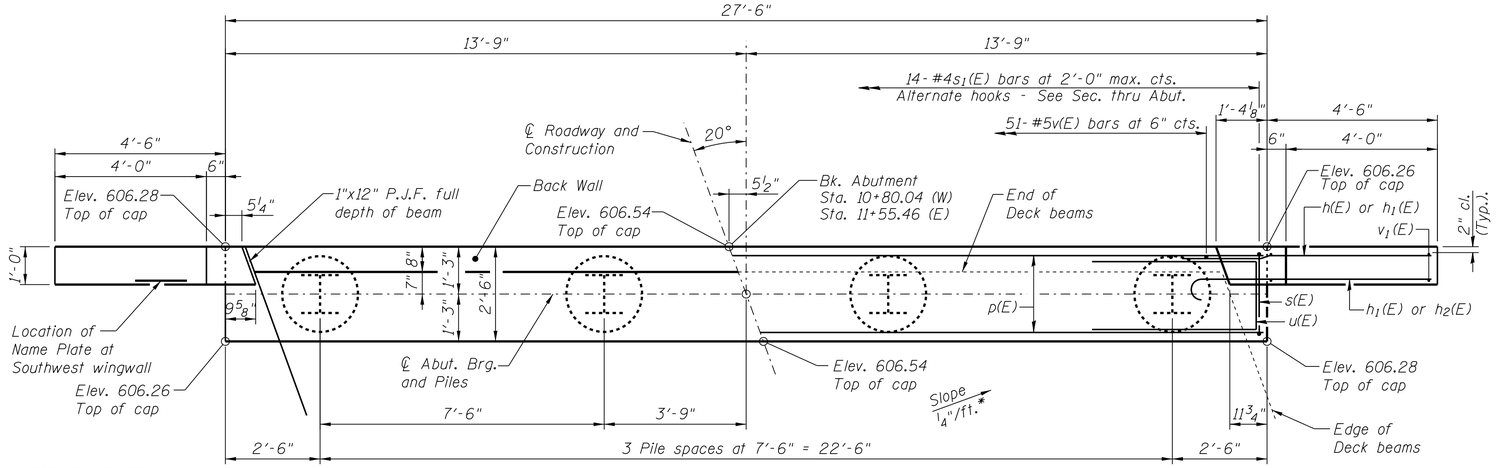


BAR $h_2(E)$

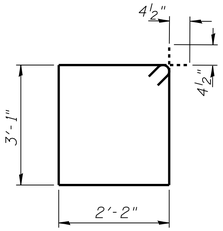


SEC. THRU ABUT.

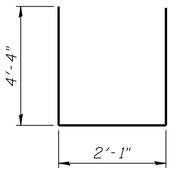
(Normal to ℄)



PLAN



BAR s(E)



BAR u (E)

BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h(E)	14	#6	8'-9"	
$h_1(E)$	24	#6	5'-6"	CUT IN FIELD
$h_2(E)$	14	#6	7'-0"	
$h_3(E)$	5	#5	25'-2"	
p(E)	12	#7	27'-2"	
s(E)	27	#4	11'-3"	
$s_1(E)$	14	#4	3'-3"	
u(E)	8	#6	10'-9"	
v(E)	51	#5	5'-11	
$v_1(E)$	20	#5	6'-0"	CUT IN FIELD
Concrete Structures			Cu Yd	13.2
Concrete Encasement			Cu Yd	1.4
Reinforcement Bars, Epoxy Coated			Pound	2130
Furnishing Steel Piles, HP12x53	Foot		W. Abut.	72
			E. Abut.	75
Driving Piles	Foot		W. Abut.	72
			E. Abut.	75
Test Pile, Steel HP12x53	Each		W. Abut.	1
			E. Abut.	1
Pile Shoes			Each	8

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

PILE DATA WEST ABUTMENT

Type:	Steel HP 12x53
Nominal Required Bearing:	418kips
Factored Resistance Available:	230 kips
Estimated Length:	24'/pile
No. Production Piles: w/Pile Shoes	3
No. Test Piles: w/Pile Shoes	1

PILE DATA EAST ABUTMENT

Type:	Steel HP 12x53
Nominal Required Bearing:	418 kips
Factored Resistance Available:	230 kips
Estimated Length:	25'/pile
No. Production Piles: w/Pile Shoes	3
No. Test Piles: w/Pile Shoes	1

GENERAL NOTES

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

The Contractor shall drive Test Pile(s) of the size and location as indicated on the plans and as directed by the Engineer before ordering the remainder of the piles.

The Test Pile(s) shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

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

Reinforcement designated (E) shall be epoxy coated.

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

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

Space reinforcement in cap to miss PPCDB dowel rods.

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

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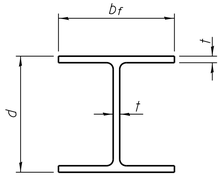
DRAWN	JN	REVISED	-
CHECKED	GLH	REVISED	-
DATE	01/13/2020	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

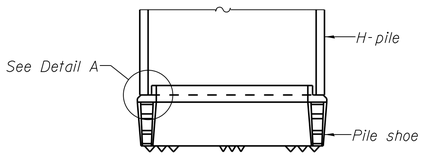
ABUTMENT DETAILS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 367	18-15135-00-BR	SHELBY	11	8
		CONTRACT NO. 95865		

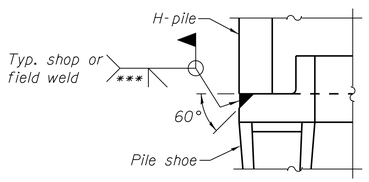


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	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"

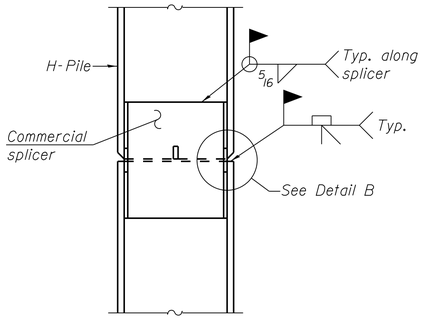


ELEVATION

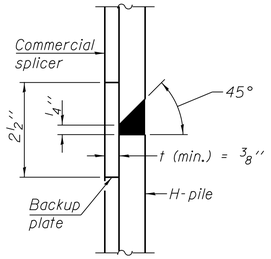


DETAIL A

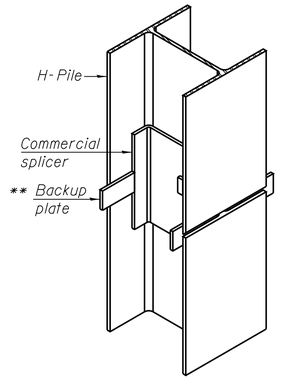
H-PILE SHOE ATTACHMENT



ELEVATION

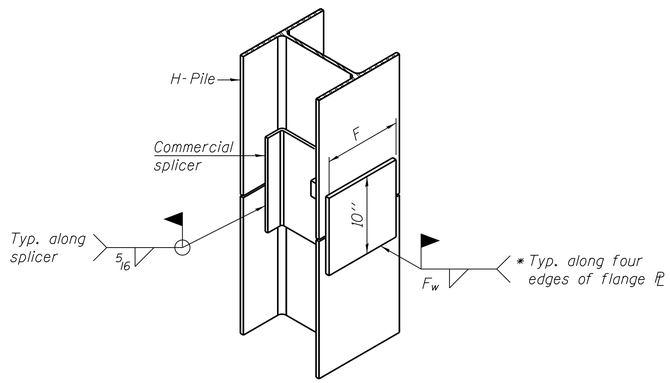


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



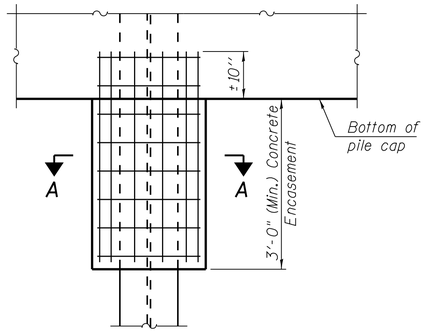
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

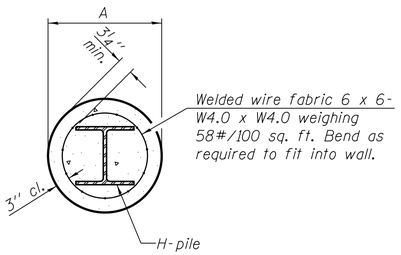
* Interrupt welds 1/4" from end of web and/or each flange.

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

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



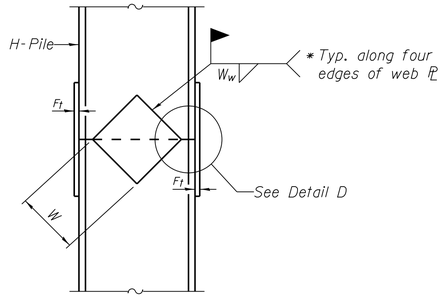
ELEVATION



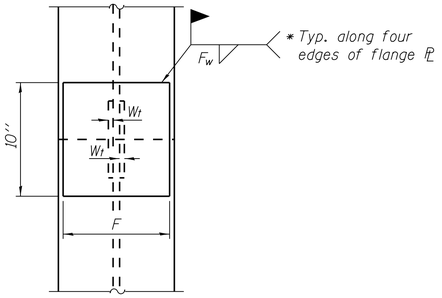
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

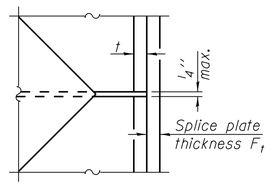
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

Designation	F	F_t	F_w	W	W_f	W_w
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

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

RAAI JOB NO. 53118

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

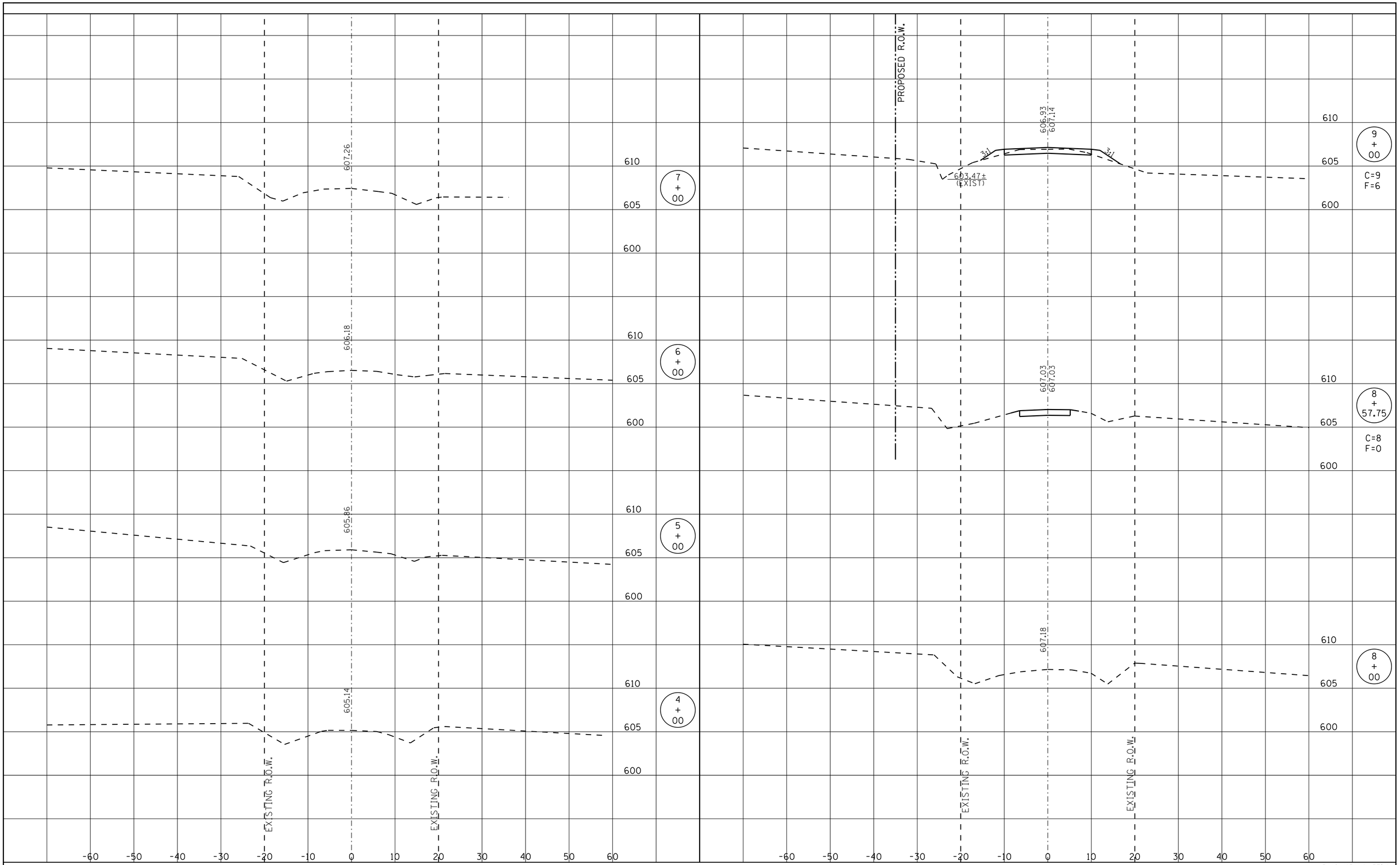
DESIGNED - BLT	REVISED -	
DRAWN - JN	REVISED -	
CHECKED - GLH	REVISED -	
DATE - 01/13/2020	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 367	18-15135-00-BR	SHELBY	11	9
		CONTRACT NO. 95865		

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



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

RAAI JOB NO. 53118

RHUTASEL and ASSOCIATES, INC.
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DESIGNED - BLT	REVISED -	
DRAWN - JN	REVISED -	
CHECKED - GLH	REVISED -	
DATE - 01/13/2020	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

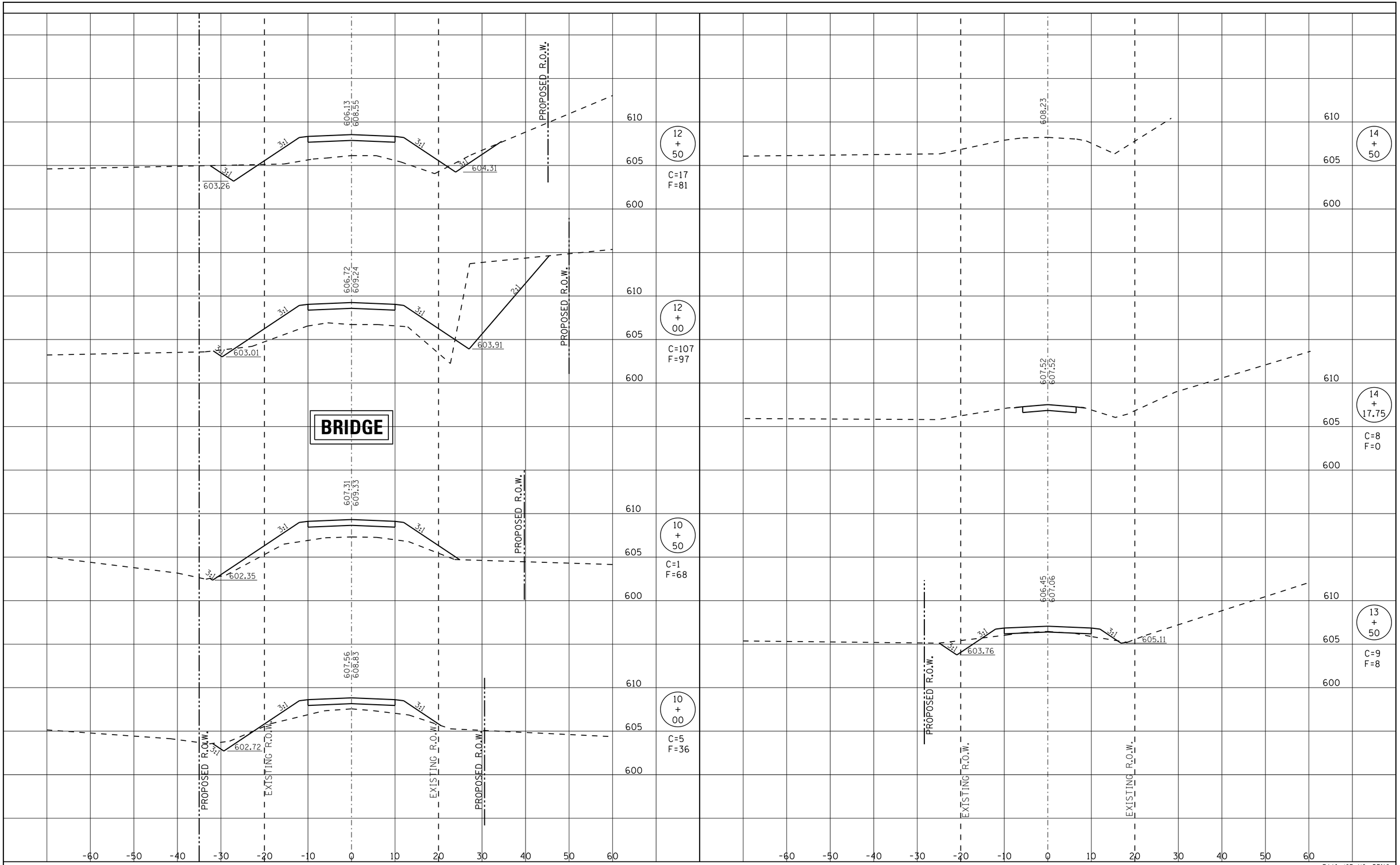
CROSS SECTIONS OF ROADWAY

STA. 4+13 TO STA. 9+00

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 367	18-15135-00-BR	SHELBY	11	10
		CONTRACT NO. 95865		

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

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



BRIDGE

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 - 01/13/2020	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS OF ROADWAY

STA. 10+00 TO STA. 14+37

RAAI JOB NO. 53118

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 367	18-15135-00-BR	SHELBY	11	11
		CONTRACT NO. 95865		