

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
34A	15-15111-00-BR	EFFINGHAM	15	1
		ILLINOIS	CONTRACT NO. 95859	

**INDEX OF SHEETS**

- 1 COVER SHEET
- 2 SUMMARY OF QUANTITIES, SCHEDULES, TYPICAL SECTIONS, & GENERAL NOTES
- 3 PLAN & PROFILE
- 4 EROSION CONTROL PLAN
- 5-14 BRIDGE PLANS
- 15 CROSS SECTIONS

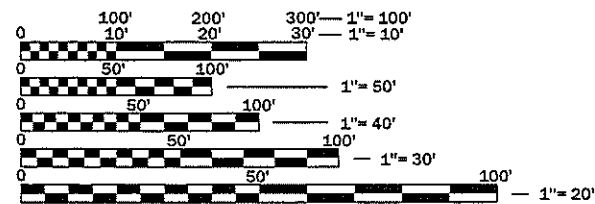
**HIGWAY STANDARDS**

- 000001-07 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 515001-03 NAME PLATE FOR BRIDGES
- 701901-08 TRAFFIC CONTROL DEVICES
- 725001-01 OBJECT AND TERMINAL MARKERS
- B.L.R. 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

**UTILITIES**

- POWER:** SOUTHWESTERN ELECTRIC CO-OP  
525 U.S. ROUTE 40  
GREENVILLE, IL 62246  
(800) 637-8667
- PHONE:** FRONTIER COMMUNICATIONS  
112 SOUTH MAIN STREET  
SULLIVAN, IL 61951  
(217) 892-3330
- WATER:** E J WATER COOPERATIVE, INC.  
108 SOUTH MAIN STREET  
DIETERICH, IL 62424  
(866) 925-5566

FUNCTIONAL CLASSIFICATION = LOCAL ROAD (NON-URBAN)  
DESIGN SPEED = 30 MPH  
DESIGN TRAFFIC = 80 ADT (2018)



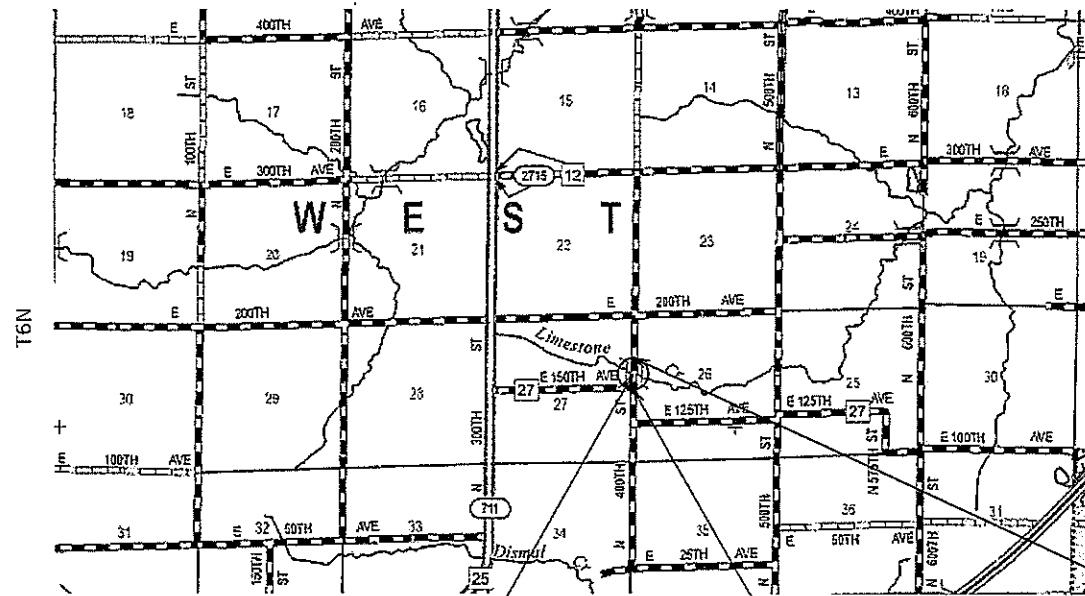
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811

# PLANS FOR PROPOSED BRIDGE REPLACEMENT STP - BRIDGE

TR 34A OVER LIMESTONE CREEK  
SECTION 15-15111-00-BR  
PROJECT AHRF (702)  
WEST TOWNSHIP  
EFFINGHAM COUNTY

C-97-055-18

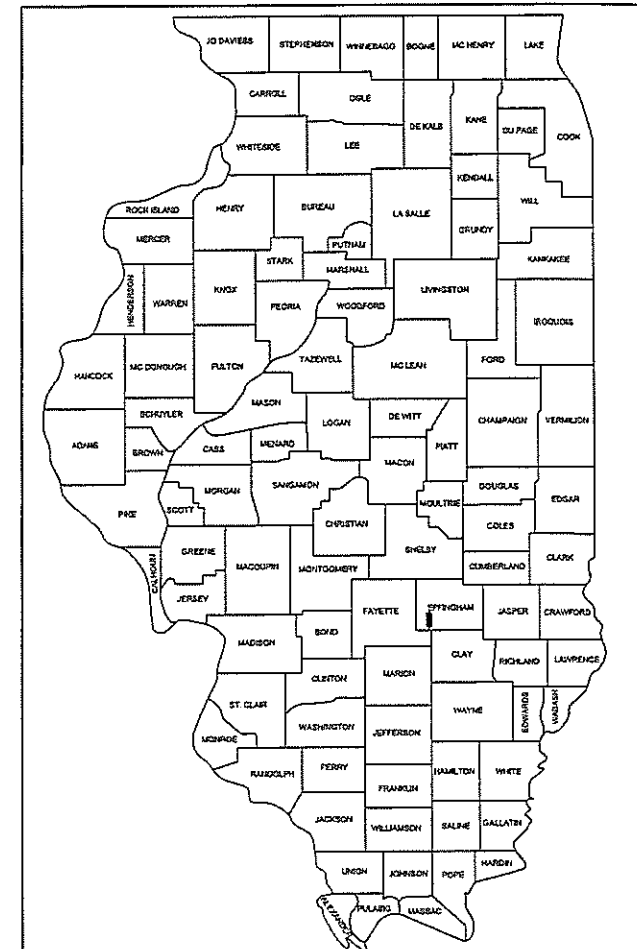


STA. 15+00  
PRECAST PRESTRESSED CONCRETE DECK BEAM  
BRIDGE, (17" DEPTH) SINGLE SPAN, 40'-0" BK-BK ABUT.  
24'-0" WIDTH, SKEW = 0 DEG.  
EXISTING S.N. 025-3059  
PROPOSED S.N. 025-3332

BEGINNING IMPROVEMENTS  
STA. 13+50.00

END IMPROVEMENTS  
STA. 16+50.00

GROSS LENGTH = 300.0 FT. = 0.057 MILE  
NET LENGTH = 300.0 FT. = 0.057 MILE



LOCATION OF SECTION INDICATED THIS: - - -

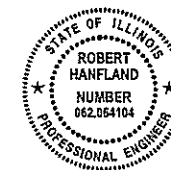
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

APPROVED *May 10, 2019*  
EFFINGHAM COUNTY ENGINEER

APPROVED *May 13, 2019*  
WEST TOWNSHIP ROAD COMMISSIONER

PASSED *May 24, 2019*  
DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS

Released for Bid Based on Limited Review  
*May 24, 2019*  
REGION FOUR ENGINEER



*Robert Hanfland* 5-10-2019  
Robert Hanfland  
Licensed Professional Engineer  
State of Illinois No. 062-064104  
Expires 11-20-2019



**SUMMARY OF QUANTITIES**

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
20100500	TREE REMOVAL, ACRES	ACRE	0.1
20200100	EARTH EXCAVATION	CU YD	125
20300100	CHANNEL EXCAVATION	CU YD	120
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	219
35101500	AGGREGATE BASE COURSE, TYPE B	CU YD	30
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	203
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	56
50300225	CONCRETE STRUCTURES	CU YD	22.8
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	916
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	3000
A 50900205	STEEL RAILING, TYPE S1	FOOT	80
51201600	FURNISHING STEEL PILES HP 12X53	FOOT	224
51202305	DRIVING PILES	FOOT	224
51203600	TEST PILE STEEL HP 12X53	EACH	1
51500100	NAME PLATES	EACH	1
67100100	MOBILIZATION	L SUM	1
A 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.1

Δ SPECIALTY ITEMS

**AGGREGATE SURFACE COURSE, TYPE B**

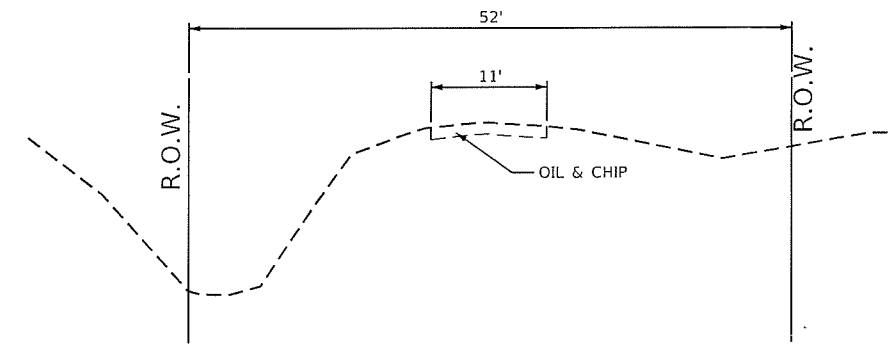
STATION TO STATION	THICKNESS	WIDTH	LENGTH	TONS
13+50.00 TO 14+80.00	8"	VARIES 11' TO 18'	130	102
15+20.00 TO 16+50.00	8"	VARIES 18' TO 11'	130	101
		TOTAL		203

CALCULATED USING 2.05 TONS/CU. YD.

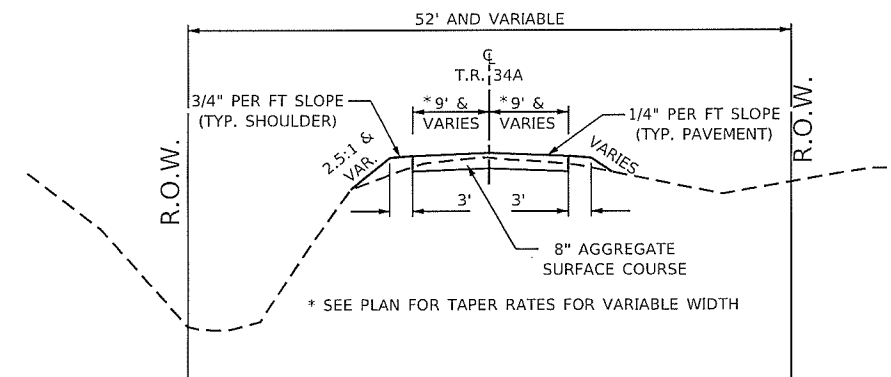
**STONE DUMPED RIP RAP, CLASS A4**

STATION TO STATION	TONS
15+05.00 LT TO 15+30.00 LT	30
14+75.00 RT TO 14+80.00 RT	5
15+20.00 RT TO 15+25.00 RT	5
FROM BRIDGE PLANS	179
TOTAL	219

CALCULATED USING 2.05 TONS/CU. YD.



**EXISTING TYPICAL**



**PROPOSED TYPICAL**

STA. 13+50.00 TO 14+80.00  
STA. 15+20.00 TO 16+50.00

**EARTHWORK SCHEDULE**

1	2	3	4	5	6	7	8	9
LOCATION	EARTH EXCAVATION	STRUCTURE EXCAVATION	CHANNEL EXCAVATION	ESTIMATED UNSUITABLE MATERIAL	ESTIMATED SUITABLE MATERIAL	ESTIMATED SUITABLE MATERIAL ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
STA 13+50.00 TO 14+80.00	19.2	0.0	0.0	0.0	19.2	14.4	55.8	-41.4
STA 14+80.00 TO 15+20.00	0.0	56.0	120.0	52.8	123.2	92.4	0.0	92.4
STA 15+20.00 TO 16+50.00	105.5	0.0	0.0	0.0	105.5	79.1	115.4	-36.3
TOTAL	124.7	56.0	120.0	52.8	247.9	185.9	171.2	14.7

COLUMN 1, 2, & 8 - LOCATION AND QUANTITIES FROM CROSS SECTIONS,  
CUT = EARTH EXCAVATION FILL = EMBANKMENT  
COLUMN 3 - QUANTITIES FOR STRUCTURAL EXCAVATION (CUT) FROM BRIDGE PLANS  
COLUMN 4 - QUANTITY OF CHANNEL EXCAVATION (CUT) FROM BRIDGE PLANS  
COLUMN 5 - ESTIMATED UNSUITABLE MATERIAL (ESTIMATED AT 30% OF STRUCTURE AND CHANNEL EXCAVATION)  
COLUMN 6 - ESTIMATED SUITABLE MATERIAL (ESTIMATED AT 70% OF STRUCTURE AND CHANNEL EXCAVATION)  
COLUMN 7 - QUANTITY OF SUITABLE EARTH EXCAVATION (CUT) ADJUSTED FOR A SHRINKAGE FACTOR OF 25%  
COLUMN 9 - EARTHWORK BALANCE (-) = QUANTITY OF FURNISHED EXCAVATION NEEDED EARTHWORK BALANCE  
(+) = QUANTITY OF EARTH EXCAVATION ADJUSTED FOR SHRINKAGE TO BE WASTED

**GENERAL NOTES**

- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED APRIL 1, 2016, THESE PLANS, AND THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS.
- TEMPORARY EROSION CONTROL TO BE IMPLEMENT PER THE PLANS AND AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES WITHIN THE CONSTRUCTION AREAS AND PREVENT DRAINAGE OR PONDING OF WATER ONTO PRIVATE PROPERTY.
- ALL DISTURBED EARTH SURFACES WITHIN THE LIMITS OF THE R.O.W. AND EASEMENTS SHALL BE SEEDED AS DIRECTED BY THE ENGINEER.
- THE AGGREGATE SURFACE COURSE, TYPE B GRADATION SHALL BE CA6 OR CA10.
- NO PAYMENT FOR OVERHAUL WILL BE MADE FOR THIS SECTION.
- THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THE PLANS ARE BASED ON FIELD INVESTIGATION AND THE BEST INFORMATION AVAILABLE. HOWEVER, THE EXACT LOCATIONS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THEIR EXACT LOCATION FROM THE INDIVIDUAL UTILITY COMPANIES AND BY FIELD INSPECTION.
- TREES WITHIN THE R.O.W. WHICH INTERFERE WITH CONSTRUCTION ACTIVITIES SHALL BE REMOVED ONLY AT THE DIRECTION OF THE ENGINEER.
- ELEVATIONS ARE BASED ON NAVD88. THE PROPOSED GRADE ELEVATIONS SHOWN ON THE PLAN AND PROFILE SHEET AND STATION CROSS SECTIONS ARE THE ELEVATIONS FOR THE FINISHED SURFACE AT THE LOCATIONS INDICATED.

**SUMMARY OF QUANTITIES, TYPICALS SCHEDULES, GENERAL NOTES**

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
34A	15-15111-00-BR	EFFINGHAM	15	2
CONTRACT NO. 95859				
ILLINOIS FED. AID PROJECT				

**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

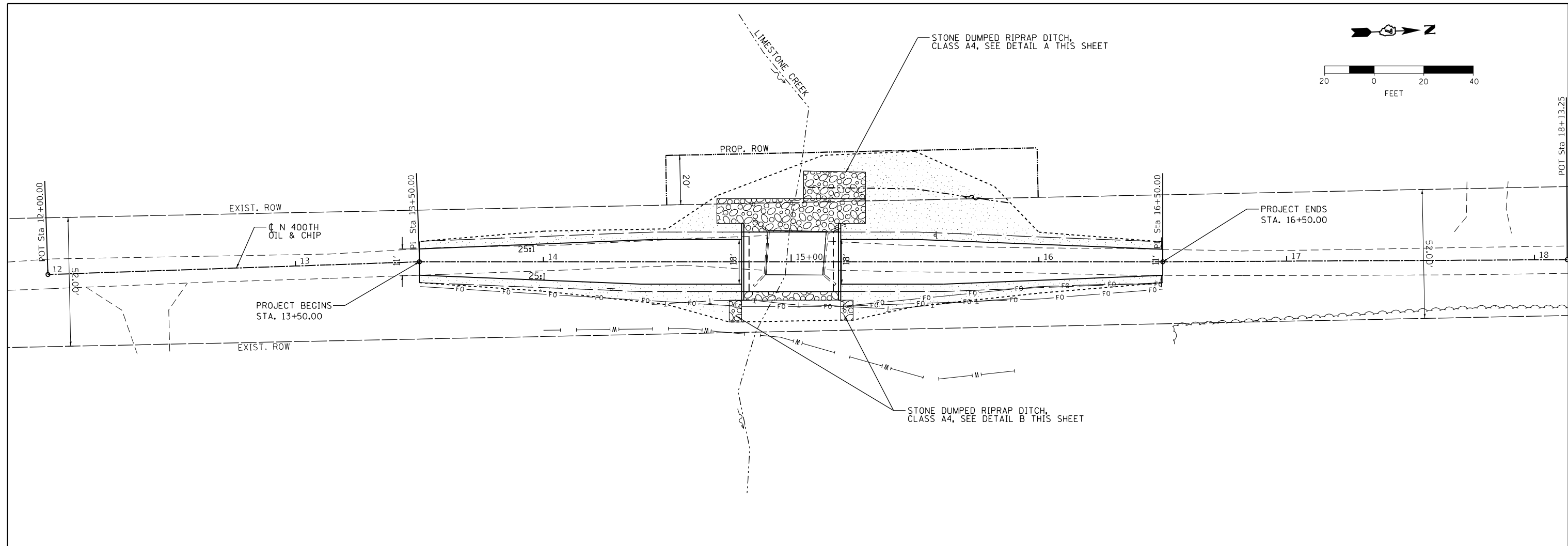
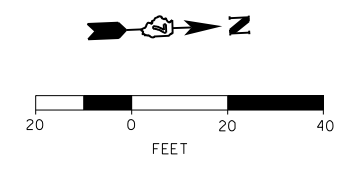
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DRAWN - DMM	REVISED -	
CHECKED - RLH	REVISED -	
DATE - 5 16 2019	REVISED -	

SCALE: 40,000' / in. SHEET 1 OF 1 SHEETS STA. TO STA.

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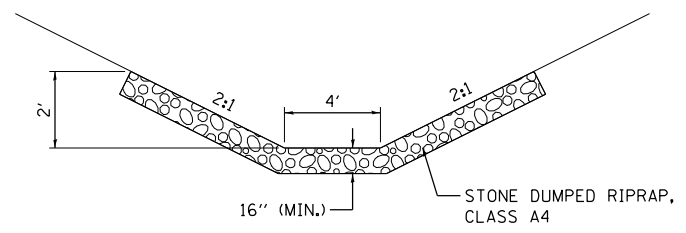




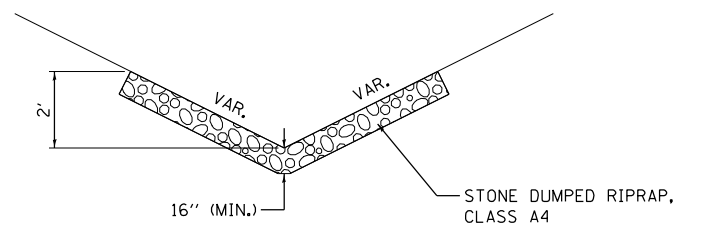


**PERMANENT EROSION CONTROL**

 SEEDING, CLASS 2 WITH FERTILIZER & MULCH



**STONE DUMPED RIP RAP DITCH DETAIL A**



**STONE DUMPED RIP RAP DITCH DETAIL B**

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USER NAME = rhanfland	DESIGNED - DMM	REVISED -
DRAWN - DMM	REVISIONS -	
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PLOT DATE = 5/10/2019	DATE - 5/10/2019	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**EROSION CONTROL PLAN**

SCALE: 20.0000' / in. SHEET 1 OF 1 SHEETS STA. 12+00.00 TO STA. 18+13.25

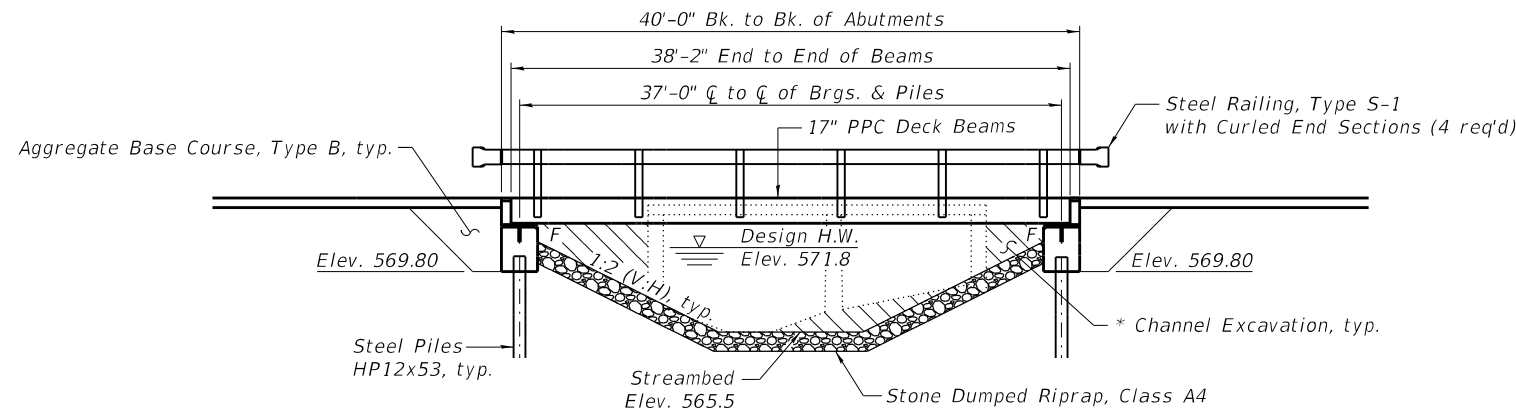
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
34A	15-15111-00-BR	EFFINGHAM	15	4
CONTRACT NO. 95859				
ILLINOIS FED. AID PROJECT				



Bench Mark: RR spike in 24" dia. ash tree at Sta. 15+11.53, 53.3' Rt., Elev. 573.94

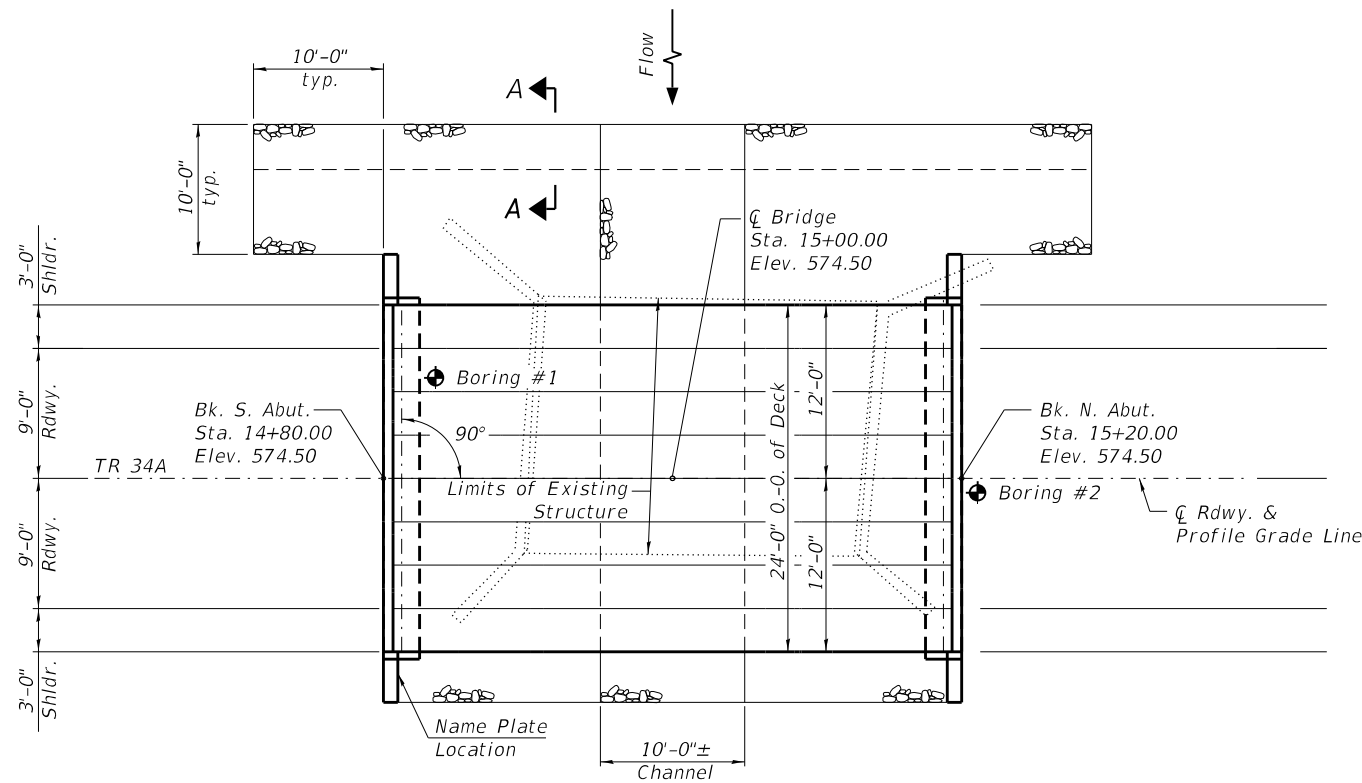
Existing Structure: S.N. 025-3059 was built in 1909. Existing structure is a two-span steel stringer bridge on concrete abutments and solid wall concrete pier. 25'-0" back to back abutments, 17'-8" out to out of deck. Road to be closed to traffic during construction.

No Salvage.

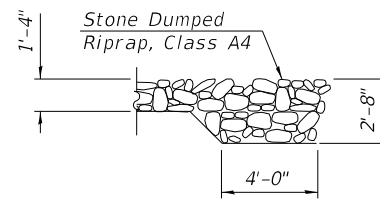


ELEVATION

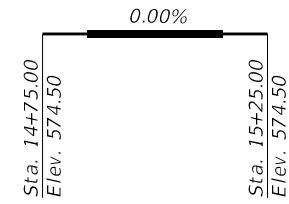
\* Channel shall be excavated as shown with 2:1 slopes within the ROW. Suitable excavated materials may be used in embankments.



PLAN



SECTION A-A



PROFILE GRADE  
 (along C roadway)

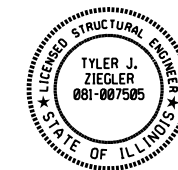
WATERWAY INFORMATION

Drainage Area = 2.10 mi<sup>2</sup>      Exist. Low Grade Elev. 573.63 @ Sta. 12+50  
 Prop. Low Grade Elev. 573.63 @ Sta. 12+50

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	15	600	93	137	571.8	0.9	0.2	572.7	572.0
Ex. Overtop.	40	795	112		572.7	1.0		573.7	
Base	100	981	125	171	573.4	1.2	0.2	574.6	573.6
Pr. Overtop.	120	1000		171	573.5		0.2		573.7

DESIGN SCOUR ELEVATION TABLE

Event/Limit State	Design Scour Elev. (ft.)		Item 113
	S. Abut.	N. Abut.	
Q100	569.8	569.8	8
Q200	569.8	569.8	
Design	569.8	569.8	
Check	569.8	569.8	



*Tyler J. Ziegler*  
 TYLER J. ZIEGLER  
 Licensed Structural Engineer  
 State of Illinois No. 081-007505  
 Expires 11-30-2020  
 Date 5-10-19

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

INDEX OF SHEETS

- 1 General Plan and Elevation
- 2 General Data
- 3-4 PPC Deck Beam Details
- 5 Superstructure Details
- 6 Steel Railing, Type S-1
- 7 Abutment Details
- 8 HP Pile Details
- 9-10 Soil Boring Logs

DESIGN SPECIFICATIONS

2017 AASHTO LRFD Bridge Design Specifications, 8th Edition

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS

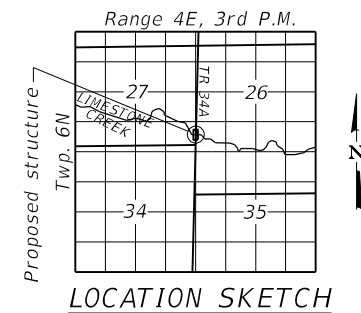
f'c = 3,500 psi  
 fy = 60,000 psi (Reinforcement)

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi  
 f'ci = 5,000 psi  
 fpu = 270,000 psi (1/2" dia. low lax. strands)  
 fpbt = 201,960 psi (1/2" dia. low lax. strands)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2  
 Design Spectral Acceleration at 1.0 sec. (SD1) = 0.166g  
 Design Spectral Acceleration at 0.2 sec. (SDS) = 0.418g  
 Soil Site Class = C



GENERAL PLAN AND ELEVATION  
 T.R. 34A OVER LIMESTONE CREEK  
 SEC. 15-15111-00-BR  
 EFFINGHAM COUNTY  
 STATION 15+00.00  
 STRUCTURE NO. 025-3332

MODEL: 04\_CFD  
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CIVIL DESIGN, INC. WBE / DBE EFFINGHAM, IL LICENSE # 184.003222	USER NAME =	DESIGNED - TJZ	REVISED -
		DRAWN - TJZ	REVISED -
	PLOT SCALE = 0.1 @	CHECKED - ADB	REVISED -
	PLOT DATE = 5 1 01	DATE - 5 16 2019	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION  
 STRUCTURE NO. 025-3332

SHEET 1 OF 10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
34A	15-15111-00-BR	EFFINGHAM	15	5
CONTRACT NO. 95859				

ILLINOIS FED. AID PROJECT

**GENERAL NOTES**

Reinforcement bars designated (E) shall be epoxy coated.

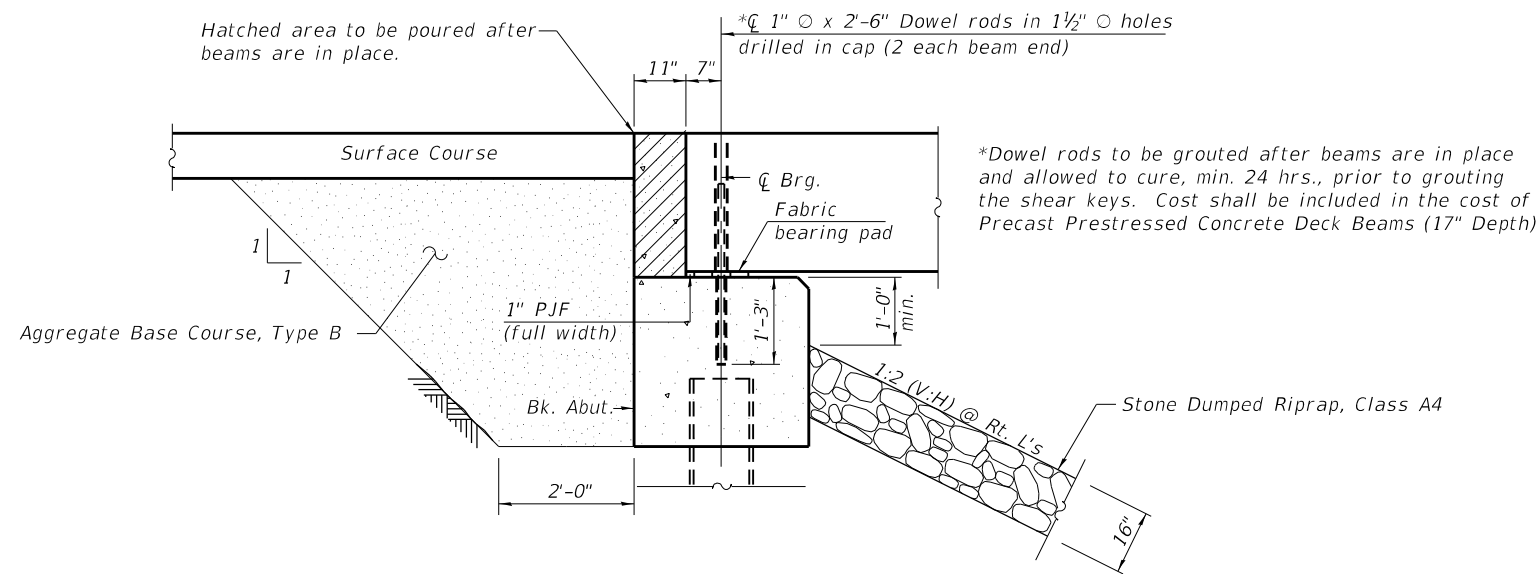
Layout of slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

LIMESTONE CREEK  
 BUILT 20 BY  
 EFFINGHAM COUNTY  
 SEC. 15-15111-00-BR  
 TR 34A STA. 15+00  
 STR. NO. 025-3332 LOADING HL-93

**NAME PLATE**  
 See Std. 515001

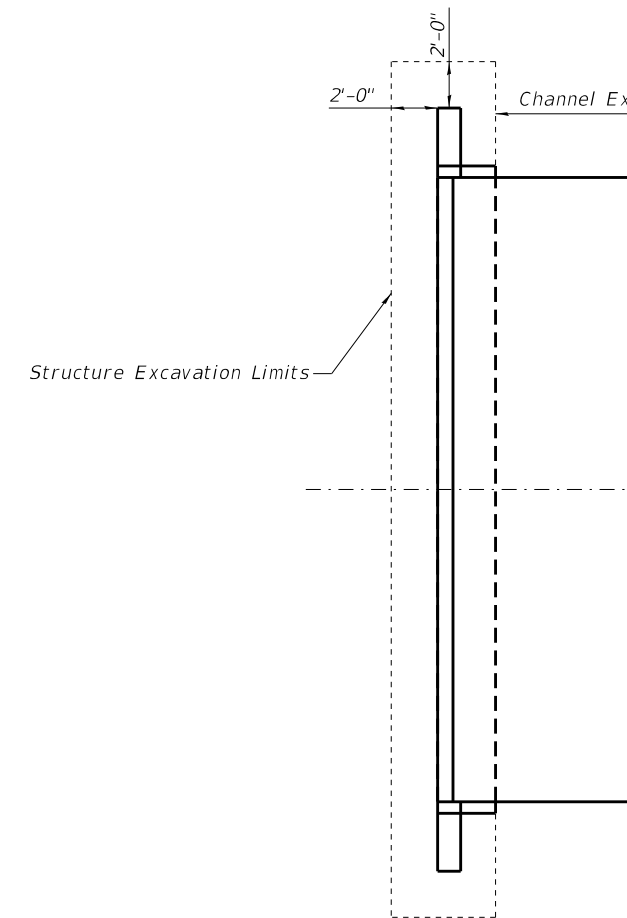
**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			120
Stone Dumped Riprap, Class A4	Ton		179	179
Aggregate Base Course, Type B	Cu. Yd.		30	30
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yd.		56	56
Concrete Structures	Cu. Yd.		22.8	22.8
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	916		916
Reinforcement Bars, Epoxy Coated	Pound		3,000	3,000
Steel Railing, Type S1	Foot	80		80
Furnishing Steel Piles HP12x53	Foot		224	224
Driving Piles	Foot		224	224
Test Pile Steel HP12x53	Each		1	1
Name Plates	Each		1	1
Terminal Marker - Direct Applied	Each	4		4



**SECTION THRU ABUTMENT**

Pay limits of Aggregate Base Course, Type B shall extend from end to end of abutment.  
 Place up to the bottom of Aggregate Surface Course, Type B.



**PARTIAL PLAN**

MODEL OF General Data  
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	DRAWN - TJZ	REVISED -
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PLOT DATE = 5 1 01	DATE - 5 16 2019	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

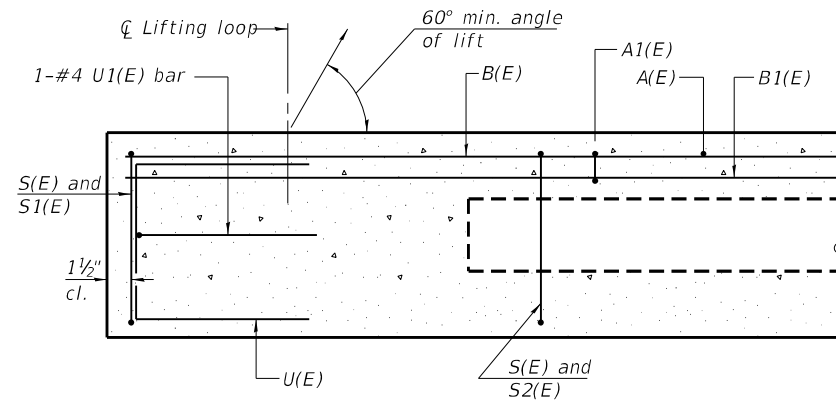
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 STRUCTURE NO. 025-3332**

SHEET 2 OF 10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
34A	15-15111-00-BR	EFFINGHAM	15	6
CONTRACT NO. 95859				

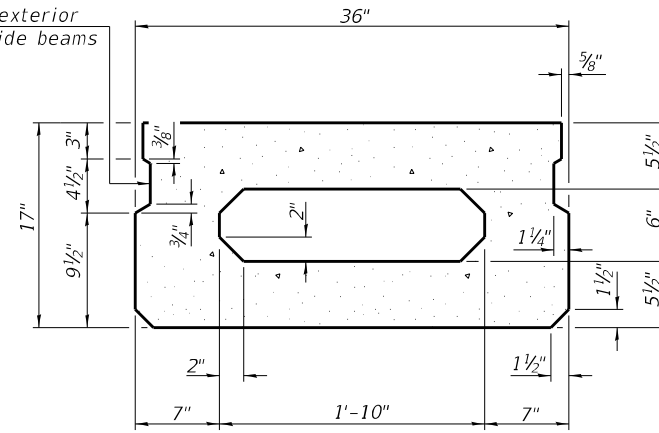
ILLINOIS FED. AID PROJECT

MODEL OF SUPERSTRUCTURE  
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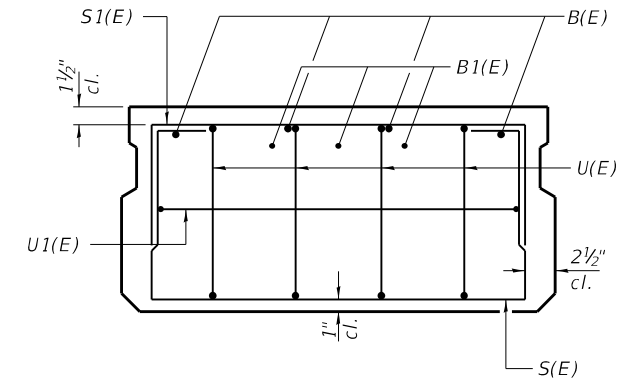


**SECTION A-A**

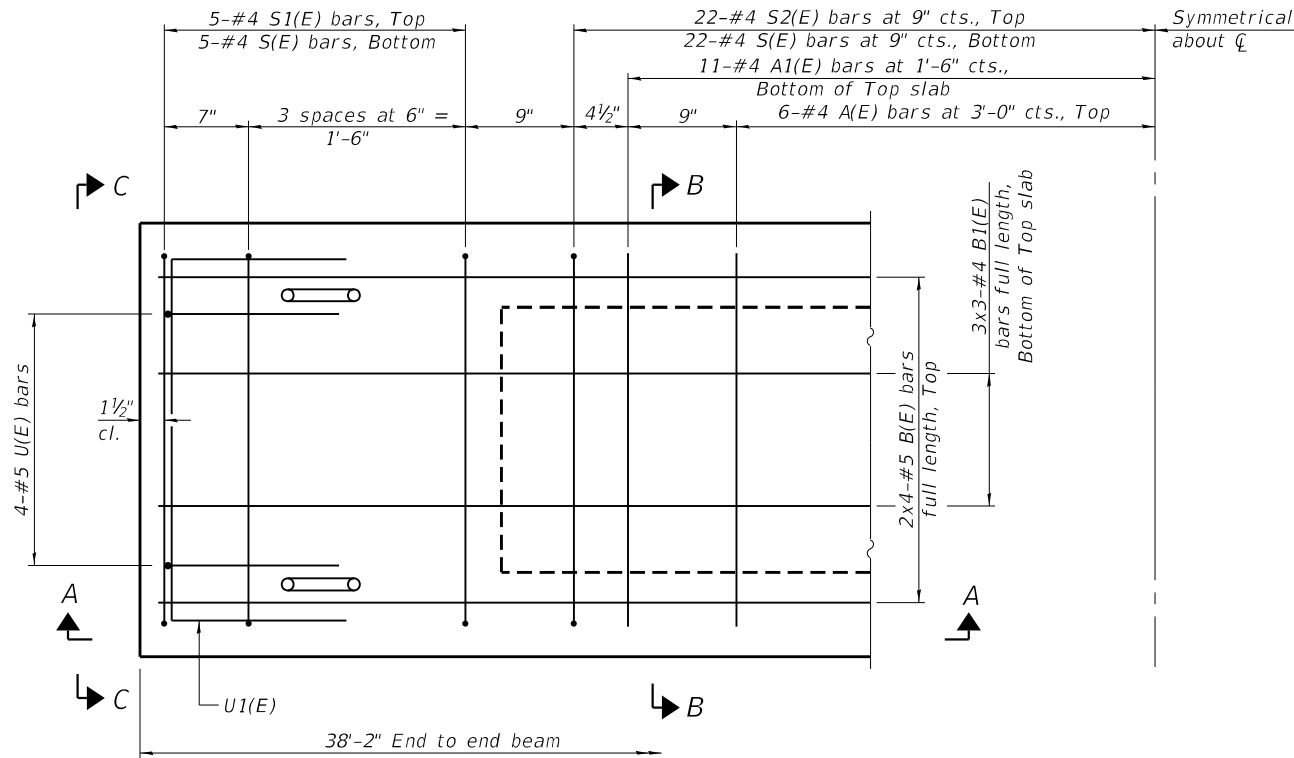
Omit key on exterior face of outside beams



**SECTION B-B**  
(Showing dimensions)

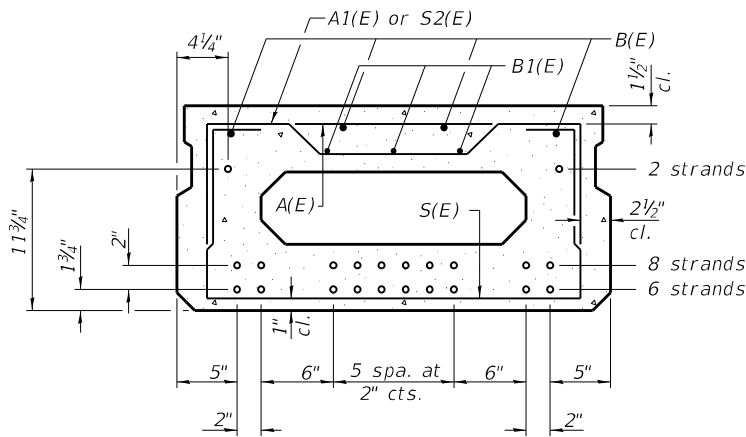


**VIEW C-C**



**PLAN VIEW**

Note: Spacing of S(E) and S2(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.



**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.

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

**BAR LIST**  
**ONE BEAM ONLY**  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	12	#4	2'-7"	—
A1(E)	22	#4	2'-10"	—
B(E)	8	#5	20'-3"	—
B1(E)	9	#4	13'-11"	—
S(E)	54	#4	5'-9"	U
S1(E)	10	#4	4'-3"	U
S2(E)	44	#4	4'-6"	U
U(E)	8	#5	3'-8"	C
U1(E)	2	#4	5'-0"	C

Note: See sheet 4 of 10 for additional details and Bill of Material.

PD-1736-0

2-17-2017



CIVIL DESIGN, INC.  
 WBE / DBE  
 EFFINGHAM, IL  
 LICENSE # 184.003222

USER NAME	DESIGNED	DRAWN	CHECKED	DATE	REVISIONS
rhanfland	TJZ	TJZ	ADB	5/10/2019	-
PLOT SCALE = 0.0830' / in.					
PLOT DATE = 5/10/2019					

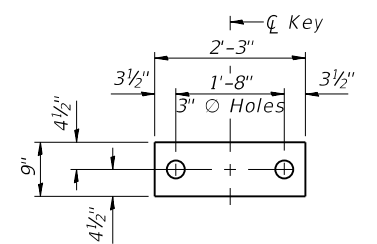
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

17" x 36" DECK BEAM  
 STRUCTURE NO. 025-3332

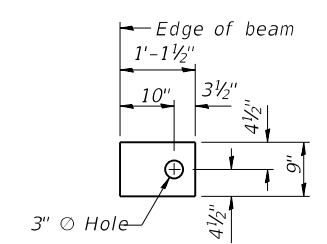
SHEET 3 OF 10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
34A	15-15111-00-BR	EFFINGHAM	15	7
CONTRACT NO. 95859				

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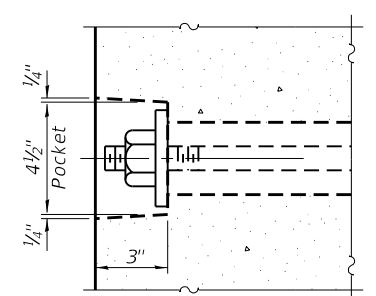
**FABRIC BEARING PAD**  
(Interior)  
(14 required)



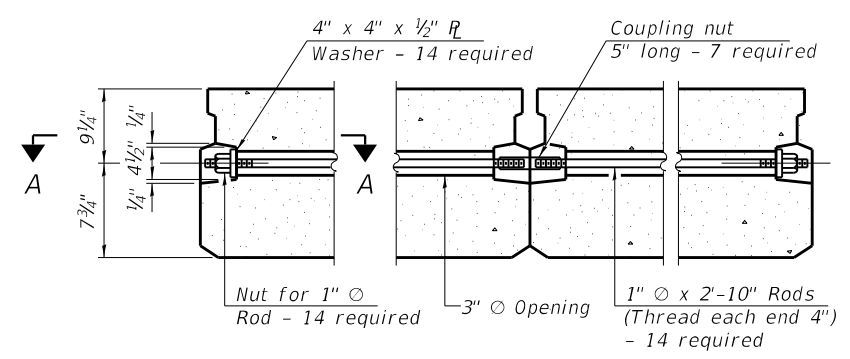
**FABRIC BEARING PAD**  
(Exterior)  
(4 required)

Notes:  
All bearing pads shall be 1" thick.

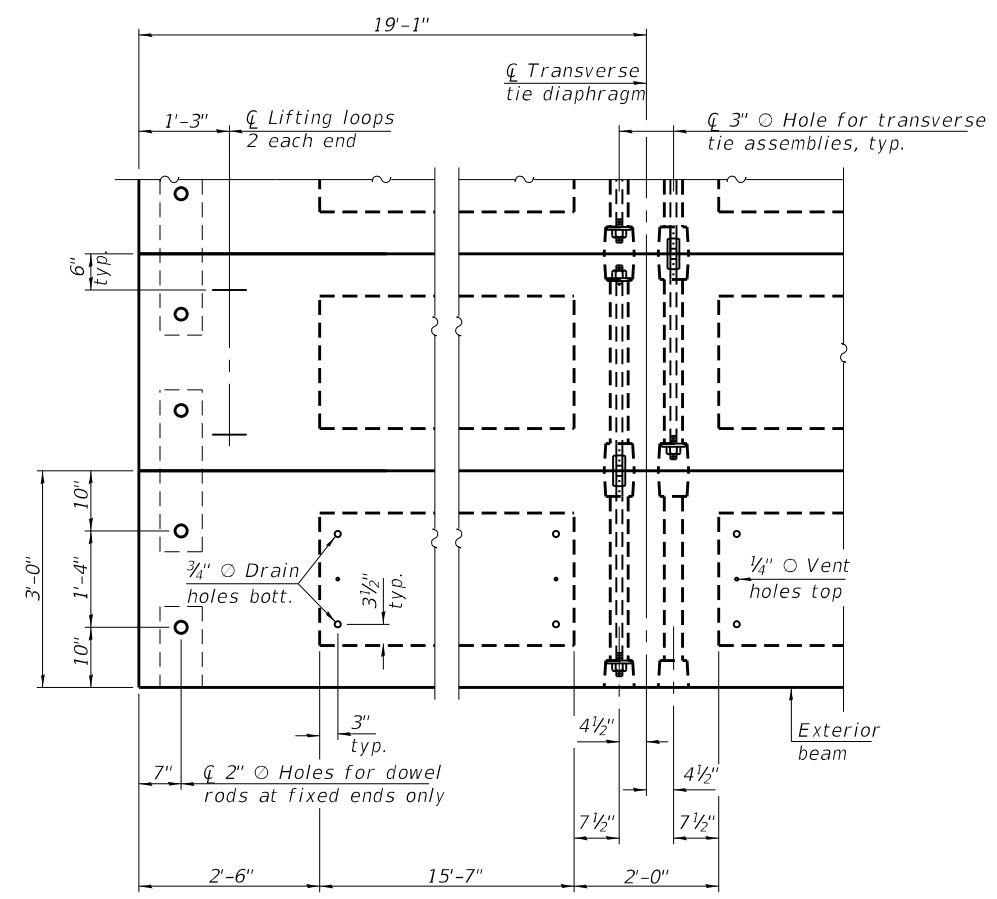
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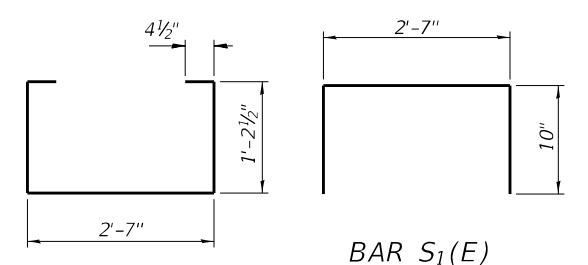
**SECTION A-A**



**TYPICAL TRANSVERSE TIE ASSEMBLY**

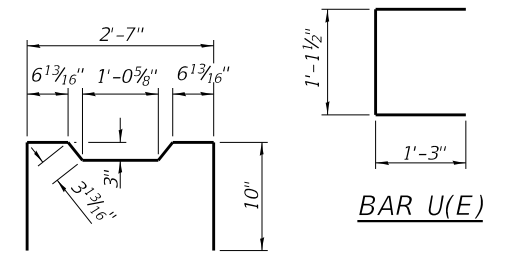


**PLAN VIEW**

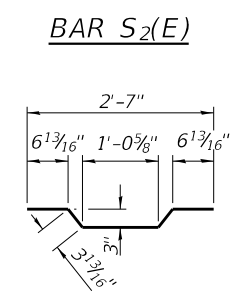


**BAR S(E)**

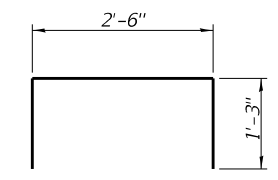
**BAR S<sub>1</sub>(E)**



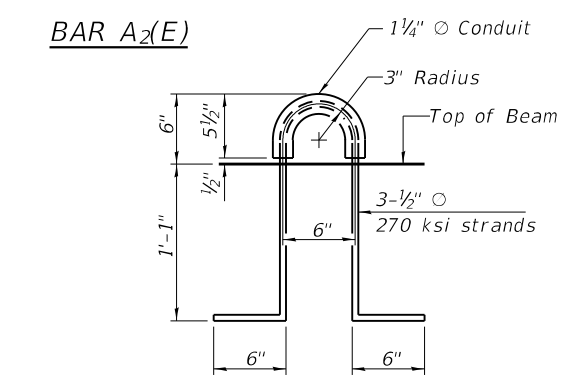
**BAR U(E)**



**BAR S<sub>2</sub>(E)**



**BAR U<sub>1</sub>(E)**



**LIFTING LOOP DETAIL**

**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	916
---	---------	-----

**NOTES**

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" diameter 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 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. A minimum 2 1/2" diameter 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.

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

MODEL: 02 Deck Beam Details FILE NAME: PD1736-00-1732 - Effingham County Bridge - N. 400th St. over Limestone Creek CAD Bridge Drawings 025-3332.dgn

PD-1736-0D 2-17-2017



CIVIL DESIGN, INC.  
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EFFINGHAM, IL  
LICENSE # 184.003222

USER NAME =	DESIGNED - TJZ	REVISED -
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PLOT DATE = 5 1 01	CHECKED - ADB	REVISED -
	DATE - 5 16 2019	REVISED -

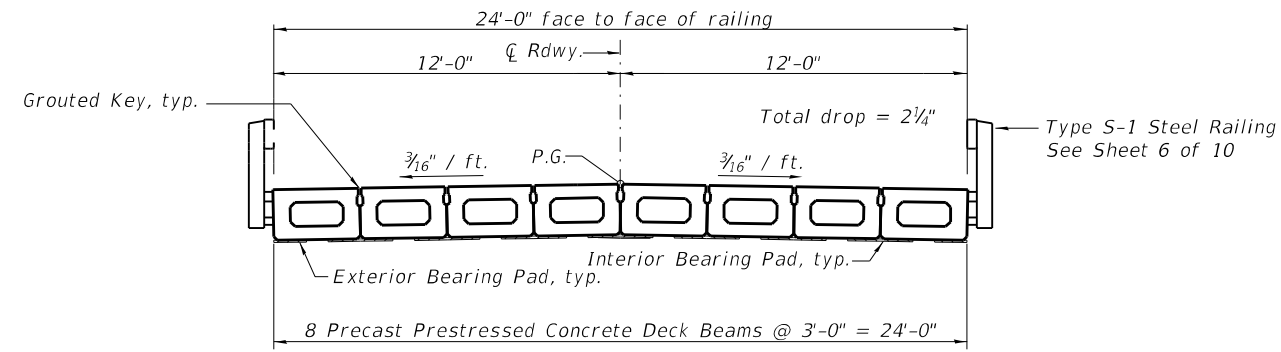
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

17" x 36" PPC DECK BEAM DETAILS  
STRUCTURE NO. 025-3332

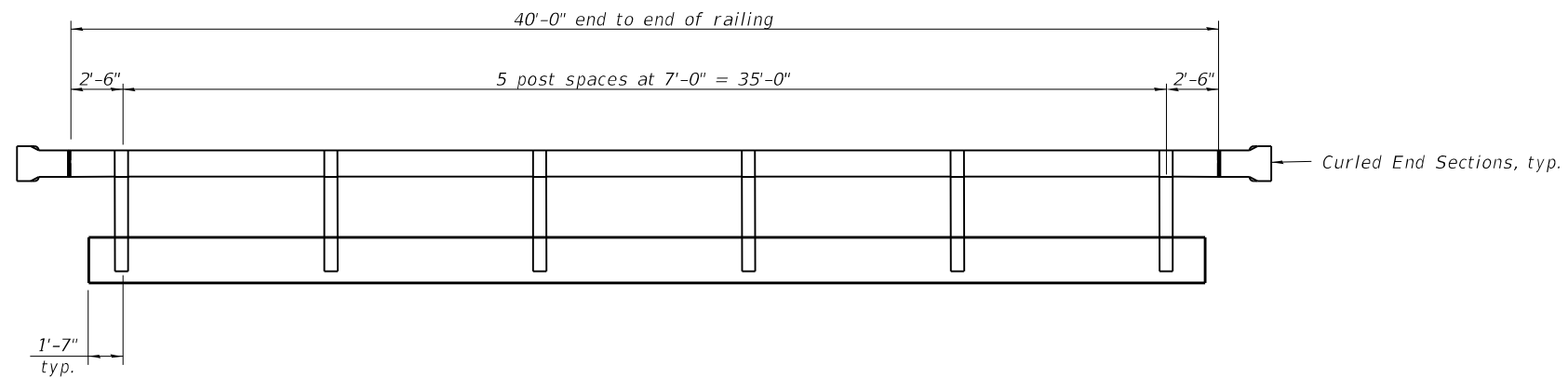
SHEET 4 OF 10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
34A	15-15111-00-BR	EFFINGHAM	15	8
			CONTRACT NO. 95859	

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TYPICAL CROSS SECTION



RAIL POST SPACING

MODEL: 08\_Superstructure\_Details.dwg  
FILE NAME: P:\Effingham\2019 - Effingham County Bridge - N. 400th. St. over Limestone Creek\CAD\Bridges Drawings\025-3332.dgn



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USER NAME = rhanfland	DESIGNED - TJZ	REVISED -
	DRAWN - TJZ	REVISED -
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PLOT DATE = 5/10/2019	DATE - 5/10/2019	REVISED -

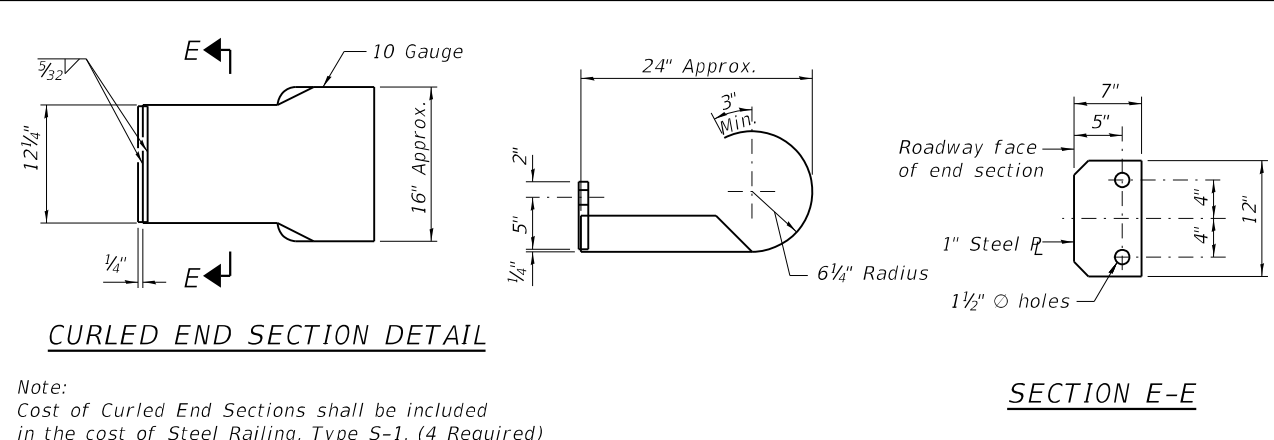
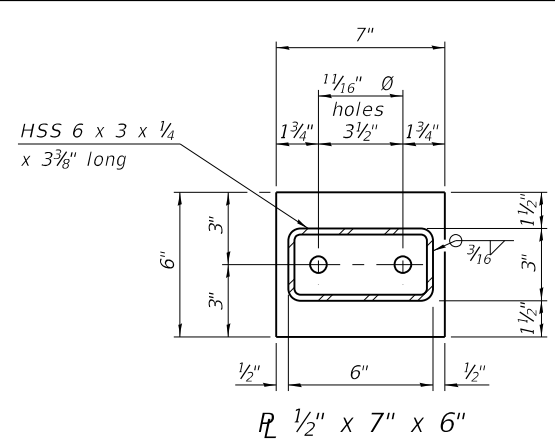
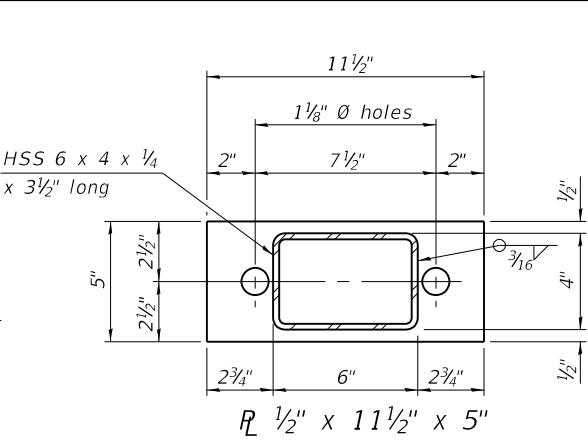
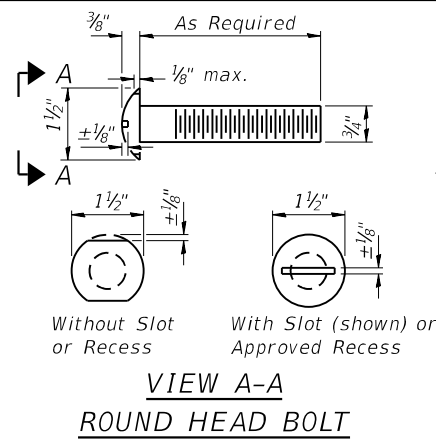
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS  
STRUCTURE NO. 025-3332

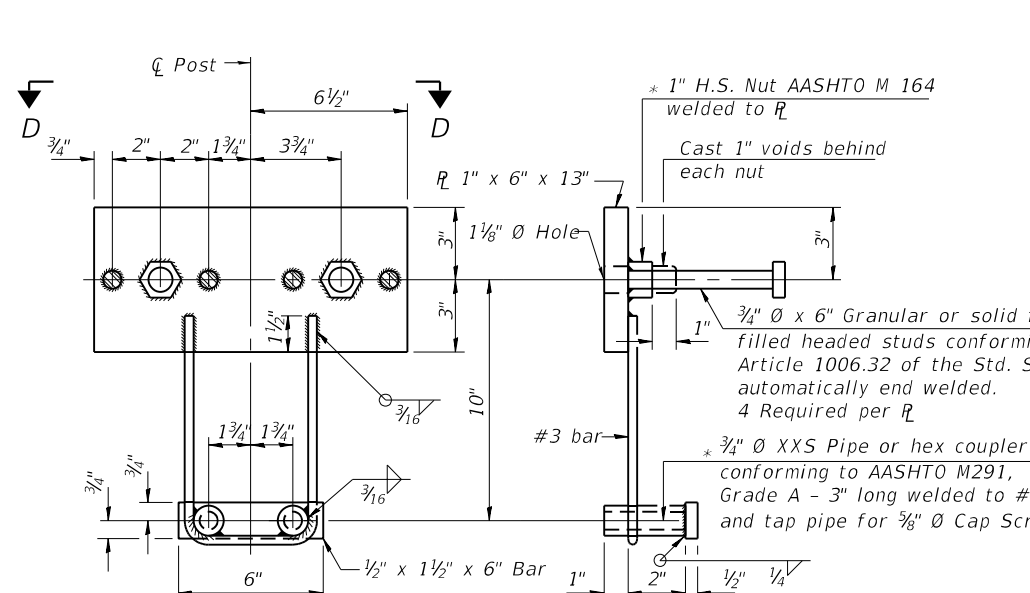
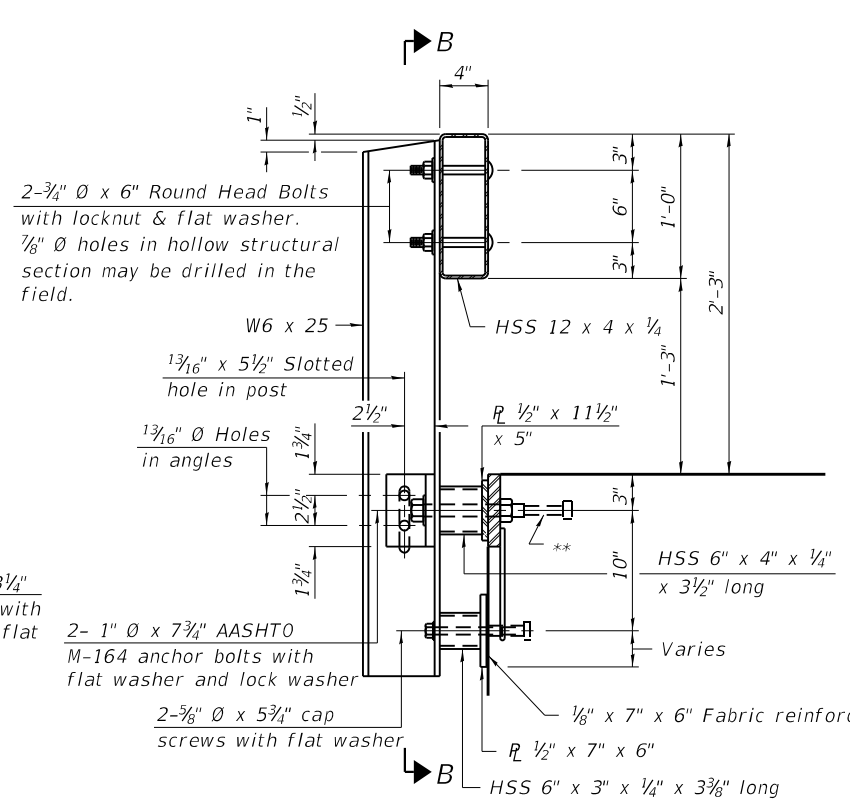
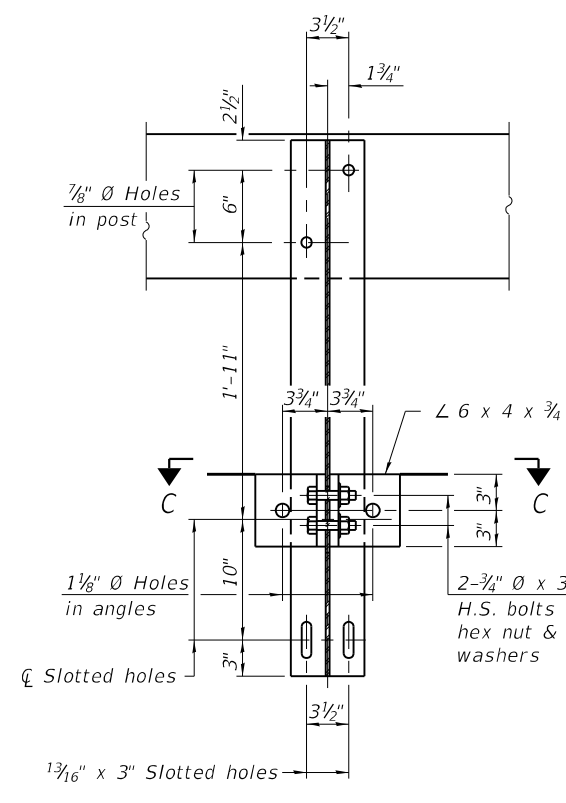
SHEET 5 OF 10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
34A	15-15111-00-BR	EFFINGHAM	15	9
			CONTRACT NO. 95859	

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Note: Cost of Curled End Sections shall be included in the cost of Steel Railing, Type S-1. (4 Required)

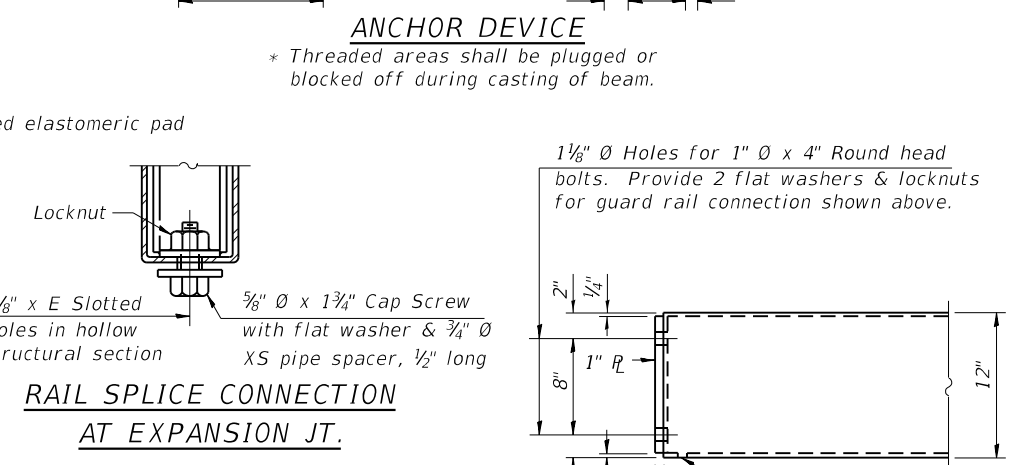
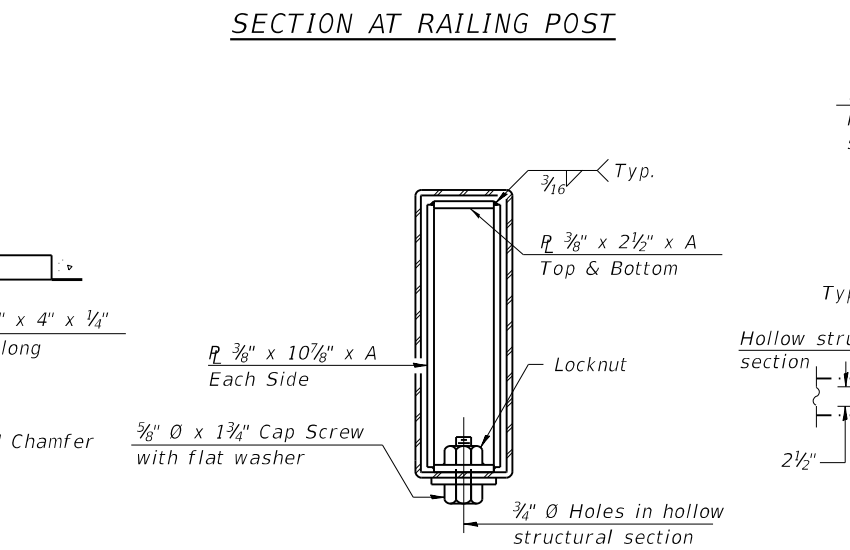
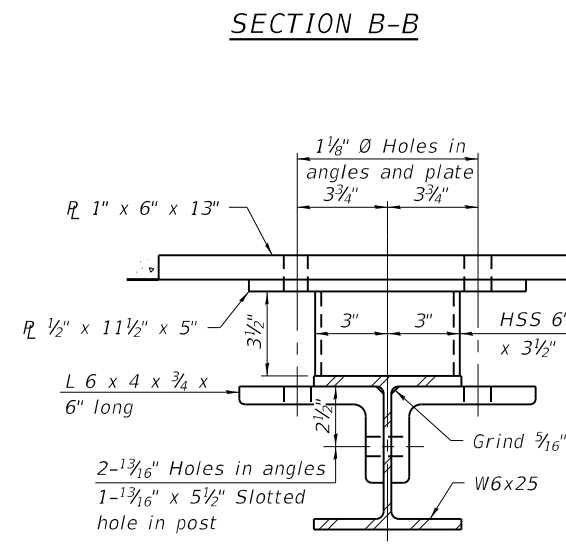


**SPLICE DIMENSIONS**

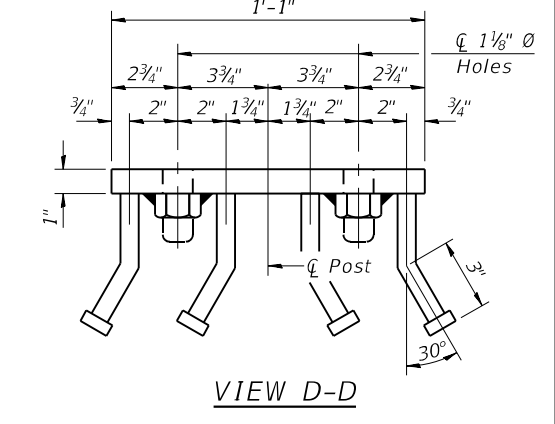
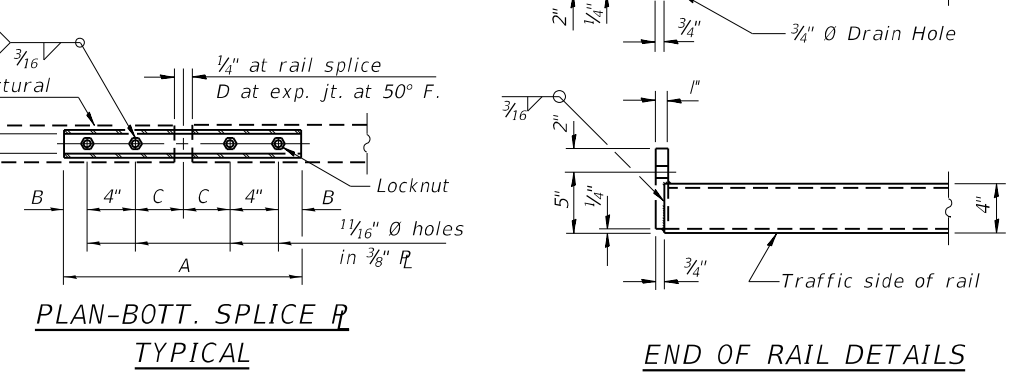
T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	

T = Total movement at expansion joint as shown on the design plans.

Notes:  
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.  
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. The anchorage studs may be bent down 1/2" to accommodate the top reinforcement bar placement.



**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	80

MODEL: 00 Steel Railing - Effingham County Bridge - N. 400th St. over Limestone Creek CAD Bridge Drawings 025-3332.dgn

R-23A 2-17-2017 (10'-9" Maximum Post Spacing)

<p>CIVIL DESIGN, INC. WBE / DBE EFFINGHAM, IL LICENSE # 184.003222</p>	USER NAME = rhanfland	DESIGNED - TJZ	REVISED -
	PLOT SCALE = 0.0030' / in.	DRAWN - TJZ	REVISED -
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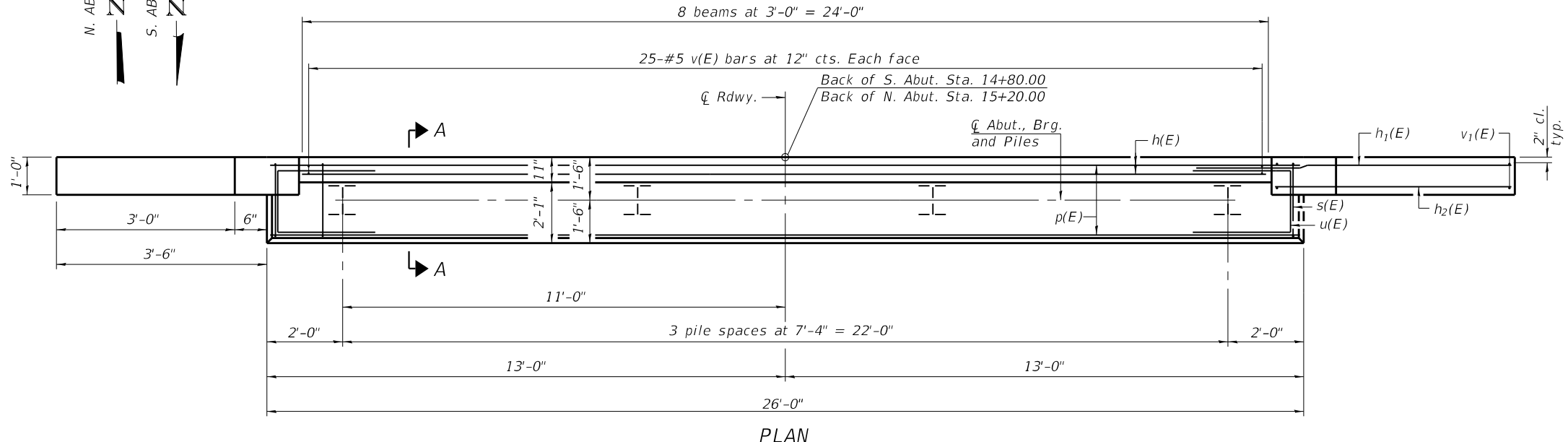
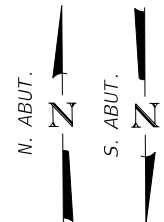
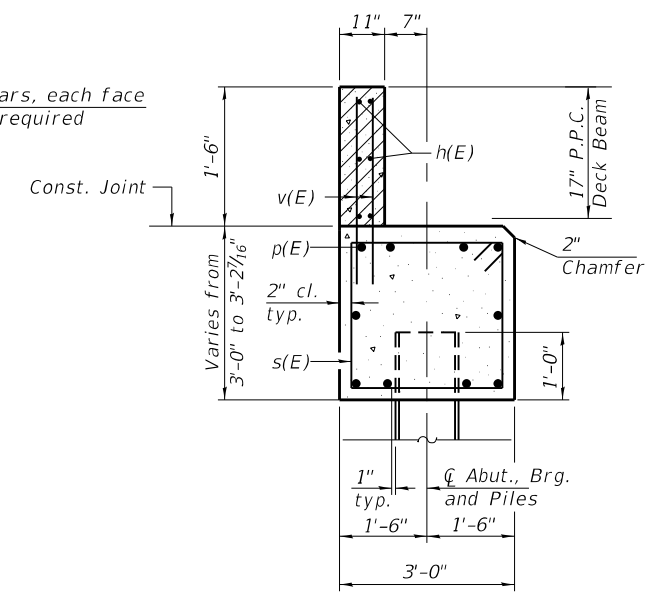
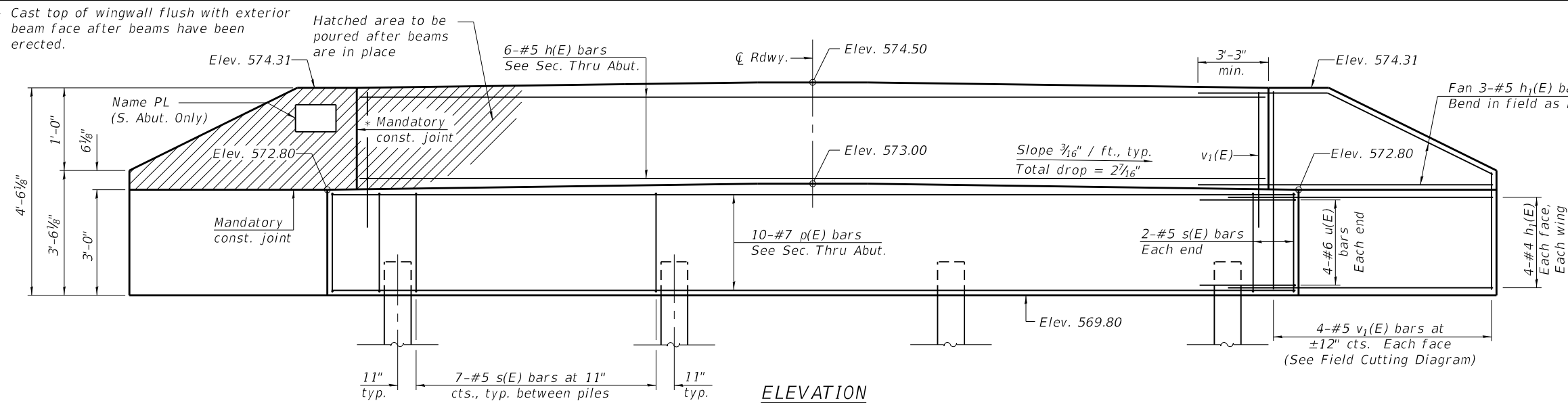
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

STEEL RAILING, TYPE S-1  
STRUCTURE NO. 025-3332  
SHEET 6 OF 10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
34A	15-15111-00-BR	EFFINGHAM	15	10

CONTRACT NO. 95859  
ILLINOIS FED. AID PROJECT

\* Cast top of wingwall flush with exterior beam face after beams have been erected.



**BILL OF MATERIAL - 2 ABUT.**

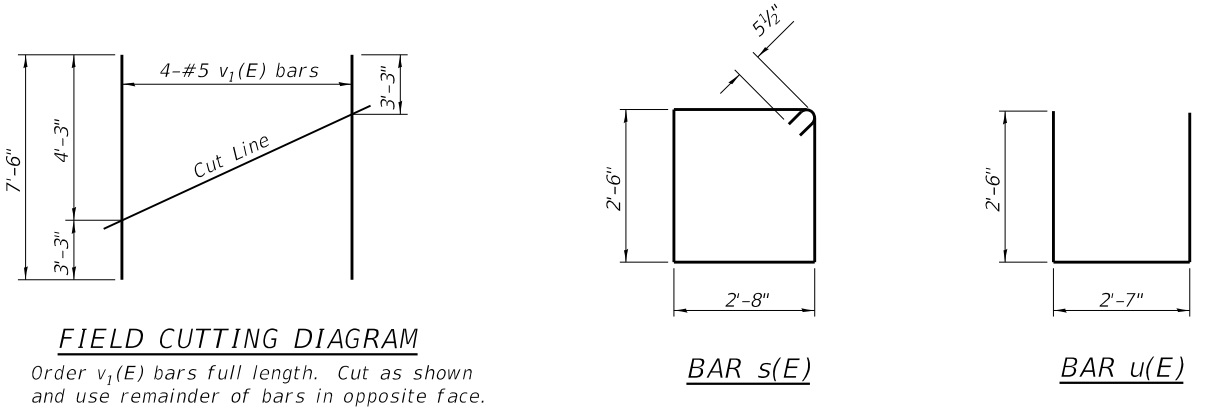
Bar	No.	Size	Length	Shape
h(E)	12	#5	23'-9"	—
h1(E)	56	#5	7'-9"	—
p(E)	20	#7	25'-9"	—
s(E)	50	#5	11'-3"	□
u(E)	16	#6	7'-7"	□
v(E)	100	#5	2'-10"	—
v1(E)	16	#5	7'-6"	—
Structure Excavation		Cu. Yd.	56	
Concrete Structures		Cu. Yd.	22.8	
Reinforcement Bars, Epoxy Coated		Pound	3,000	
Furnishing Steel		Foot	224	
Piles, HP12x53		Foot	224	
Driving Piles		Foot	224	
Test Pile, Steel HP12x53		Each	1	

**S. ABUT. PILE DATA**

Type: HP12x53  
 Nominal Required Bearing: 386 kips  
 Factored Resistance Available: 212 kips  
 Est. Length: 32 ft./pile  
 No. Production Piles: 4  
 No. Test Piles: 0

**N. ABUT. PILE DATA**

Type: HP12x53  
 Nominal Required Bearing: 350 kips  
 Factored Resistance Available: 192 kips  
 Est. Length: 32 ft./pile  
 No. Production Piles: 3  
 No. Test Piles: 1



Notes:  
 For details of piles, see sheet 8 of 10.  
 Cast backwall after beams have been erected.

MODEL: 10 Abutment Details  
 FILE NAME: P:\Effingham\2013 - Effingham County Bridge - N 400th St over Limestone Creek\CAD\Bldge Drawings\025-3332.dgn  
 DATE: 5/16/2019 10:51:01 AM



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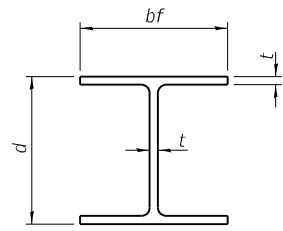
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**ABUTMENT DETAILS  
 STRUCTURE NO. 025-3332**

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
34A	15-15111-00-BR	EFFINGHAM	15	11
CONTRACT NO. 95859				

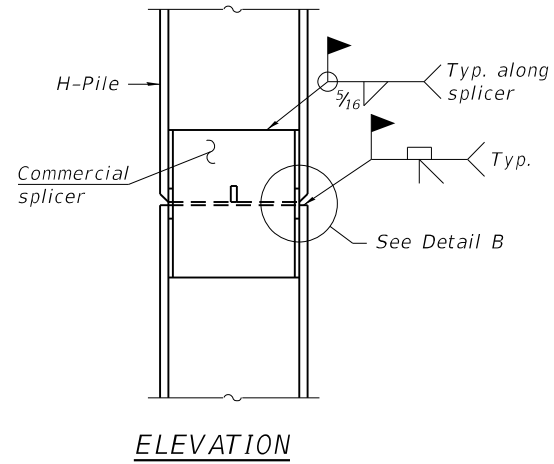
SHEET 7 OF 10 SHEETS

ILLINOIS FED. AID PROJECT

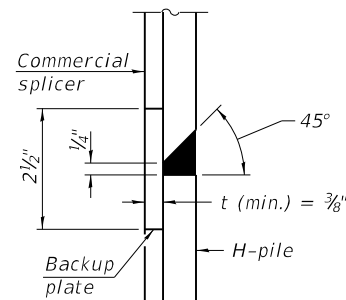


**STEEL PILE TABLE**

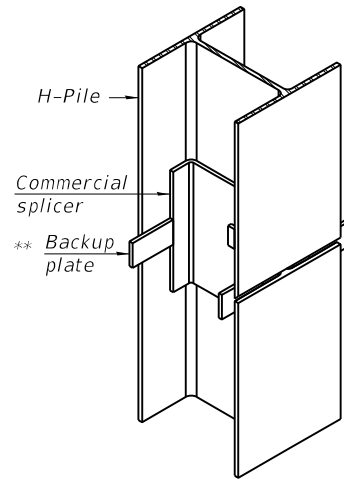
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 3/8"	14 3/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"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

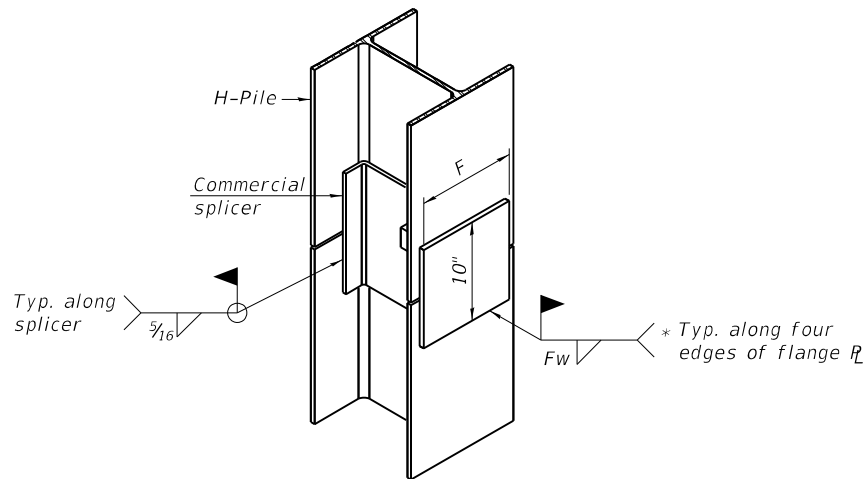


**DETAIL "B"**



**ISOMETRIC VIEW**

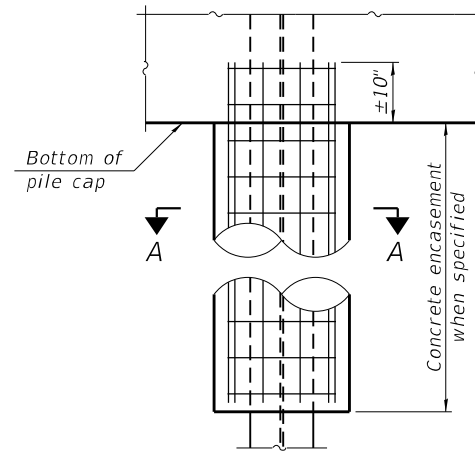
**WELDED COMMERCIAL SPLICE**



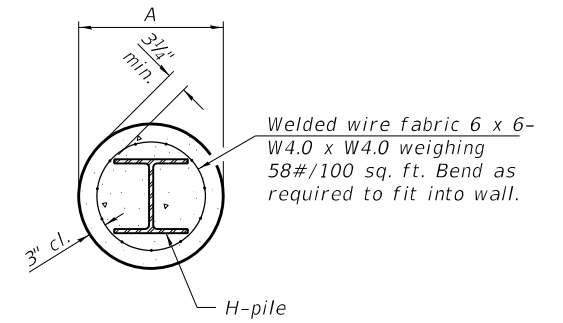
**ISOMETRIC VIEW**

**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.).

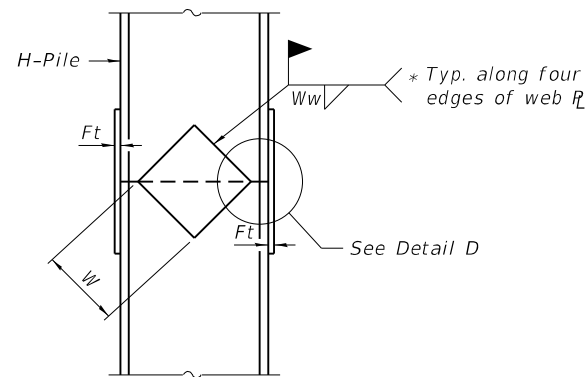


**ELEVATION**

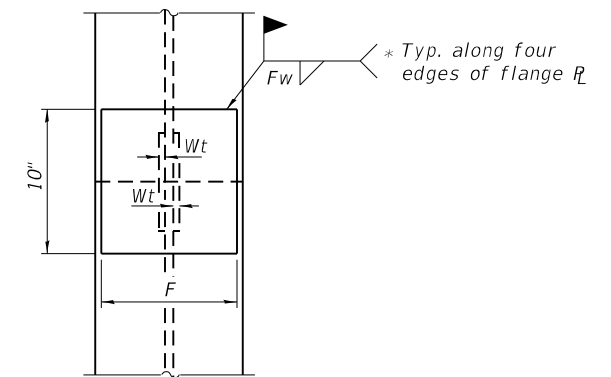


**SECTION A-A**

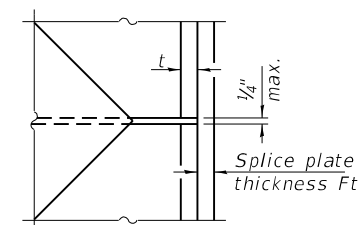
**INDIVIDUAL PILE CONCRETE ENCASUREMENT**  
(Forms for encasement may be omitted when soil conditions permit).



**ELEVATION**



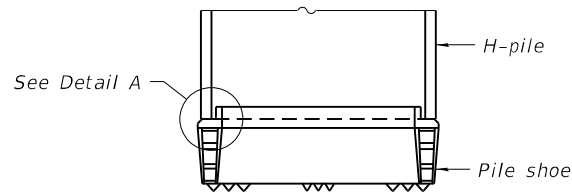
**END VIEW**



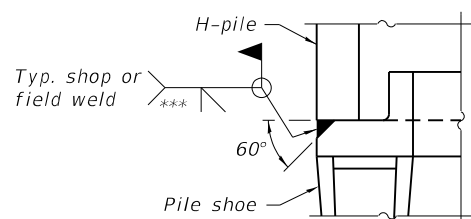
**DETAIL D**

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"	1 1/16"	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"	1 1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1 1/16"	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**



**ELEVATION**



**DETAIL A**

**SHOE ATTACHMENT**

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

F-HP 2-17-2017

MODEL: F-HP.dwg; DATE: 2/17/2017; FILE NAME: P:\Effingham\025-3332.dwg



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EFFINGHAM, IL  
LICENSE # 184.003222

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DESIGNED - TJZ  
DRAWN - TJZ  
PLOT SCALE = 0.0030' / in.  
CHECKED - ADB  
PLOT DATE = 5/10/2019  
DATE - 5/10/2019

REVISIONS  
REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS  
STRUCTURE NO. 025-3332

SHEET 8 OF 10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
34A	15-15111-00-BR	EFFINGHAM	15	12
CONTRACT NO. 95859				

ILLINOIS FED. AID PROJECT



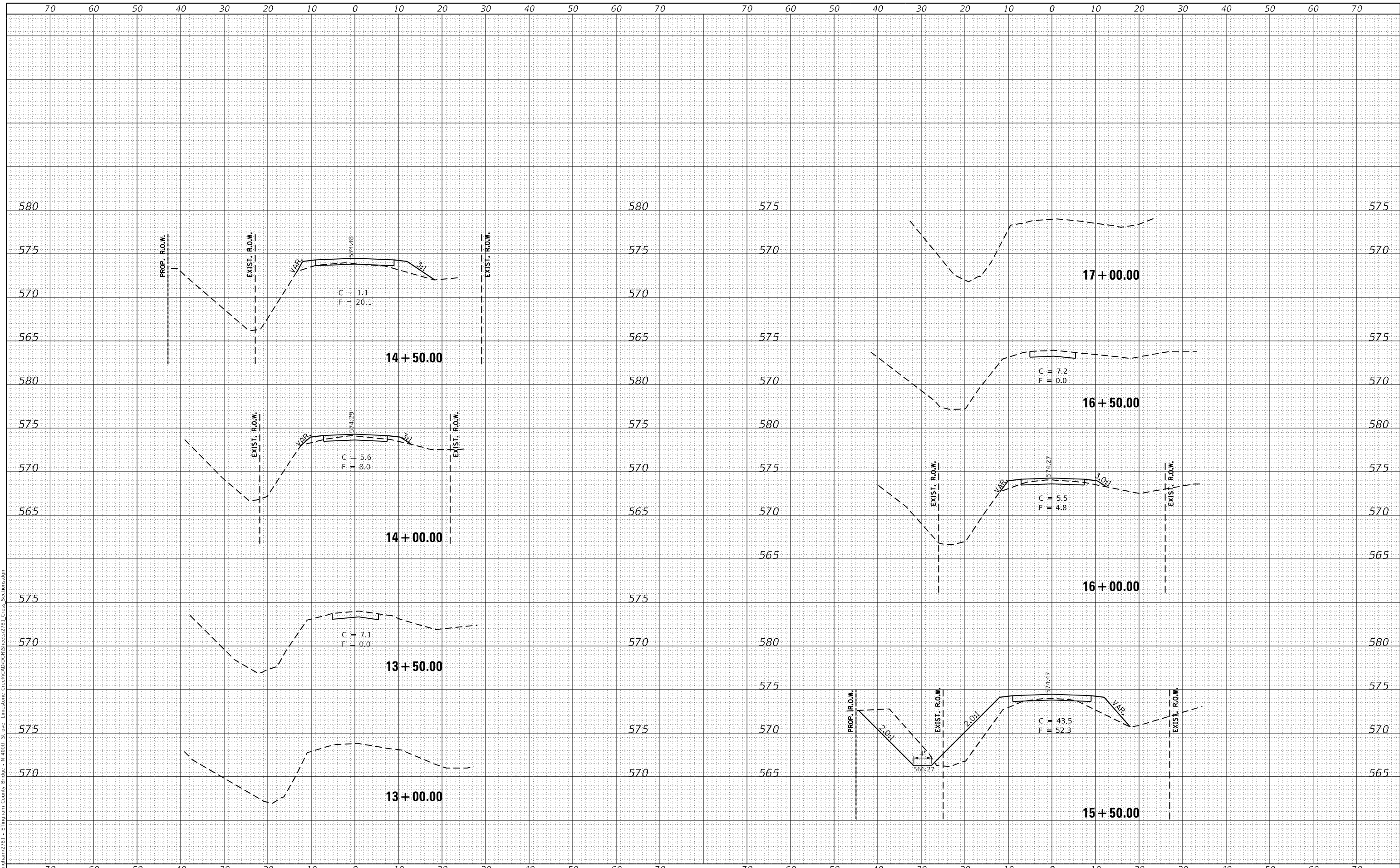




DATE	
BY	
NO.	
FINISH SURVEY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	

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

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 EFFINGHAM, IL  
 LICENSE #184.003222

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	DRAWN - DMM	REVISED -
PLOT SCALE = 10.0000' / in.	CHECKED - RLH	REVISED -
PLOT DATE = 5/10/2019	DATE - 5/10/2019	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS

SCALE: 1"=10'H, 1"=5'V SHEET 1 OF 1 SHEETS STA. 13+00.00 TO STA. 17+00.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
34A	15-1511-00-BR	EFFINGHAM	15	15
CONTRACT NO. 95859				
ILLINOIS FED. AID PROJECT				