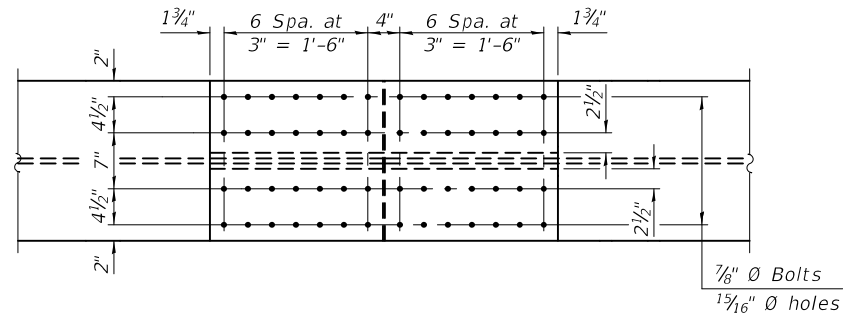
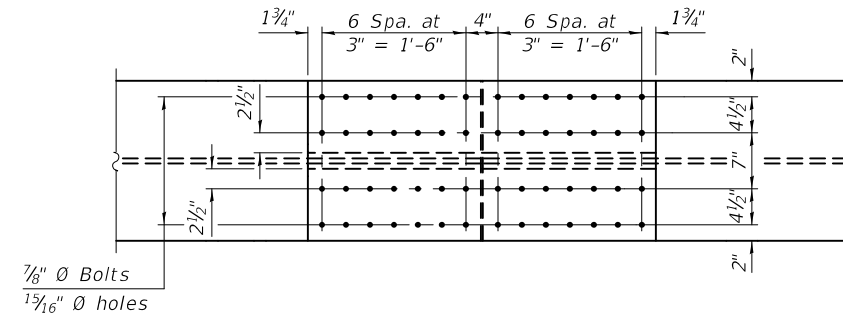


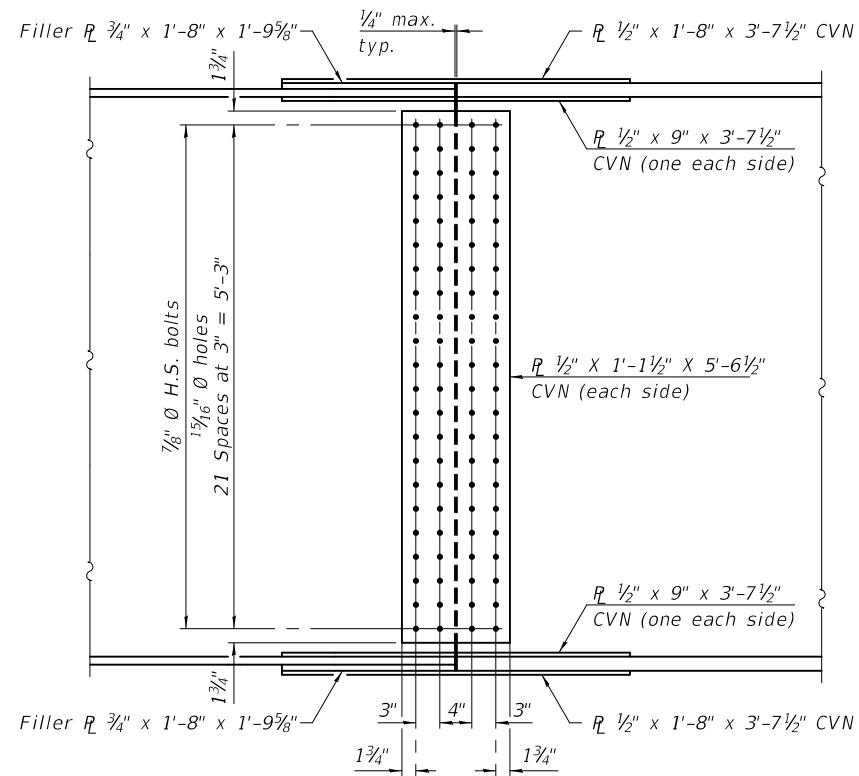
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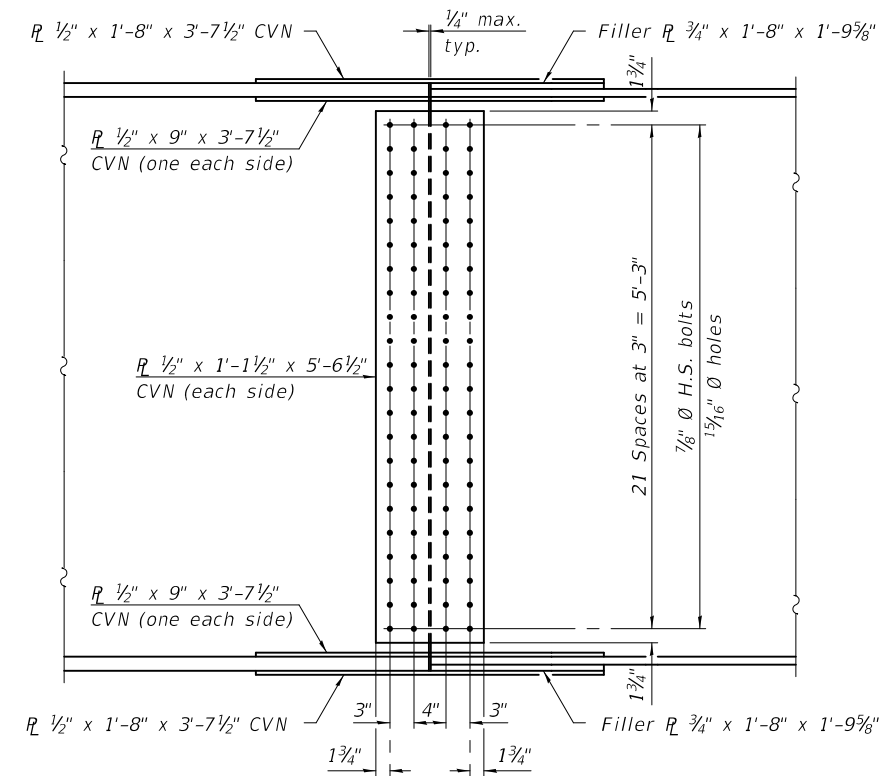
**SPLICES 1, 3, & 5  
TOP VIEW**



**SPLICES 2, 4, & 6  
TOP VIEW**

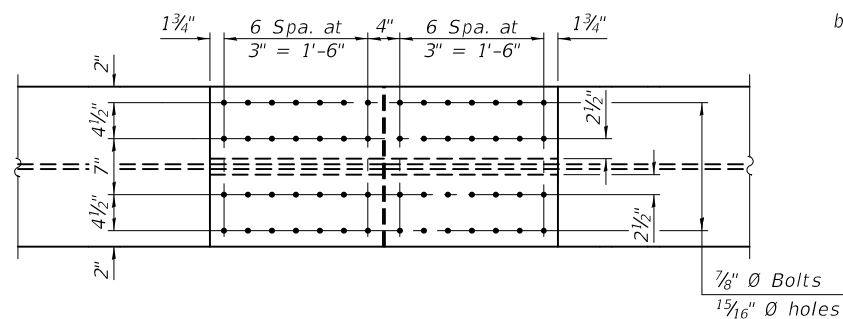


**SPLICES 1, 3, & 5  
ELEVATION**

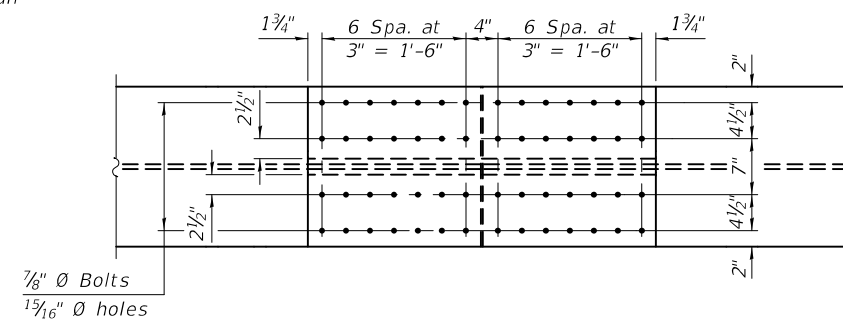


**SPLICES 2, 4, & 6  
ELEVATION**

Notes:  
 "CVN" denotes Charpy-V-Notch impact energy requirements, zone 2.  
 All splice plates, except filler plates, shall be AASHTO M270, Grade 50.



**SPLICES 1, 3, & 5  
BOTTOM VIEW**



**SPLICES 2, 4, & 6  
BOTTOM VIEW**

DESIGNED - ZACHARY T. BULVA	EXAMINED
CHECKED - JOSUE D. ORTIZ-VARELA	PASSED
DRAWN - MICHAEL B. MOSSMAN	
CHECKED - J.O.V. / P.G. / G.R.A.	

10/15/2018 8:58:20 AM  
*Joanne F. Bulva*  
 ENGINEER OF BRIDGE DESIGN  
*Carl Perry*  
 ENGINEER OF BRIDGES AND STRUCTURES

DATE - OCTOBER 15, 2018
REVISED -
REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STRUCTURAL STEEL DETAILS (UNIT 1)  
STRUCTURE NO. 014 - 0080**

SHEET 37 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	101
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

MODEL: 0140080-76887-038  
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INTERIOR GIRDER MOMENT TABLE								
	0.4 Span 1	Pier 1	0.5 Span 2	Pier 2	0.5 Span 3	Pier 3	0.6 Span 4	
$I_s$	(in <sup>4</sup> )	68,278	107,974	68,278	107,974	68,278	107,974	68,278
$I_c(n)$	(in <sup>4</sup> )	143,348	198,546	143,348	198,546	143,348	198,546	143,348
$I_c(3n)$	(in <sup>4</sup> )	107,122	151,429	107,122	151,429	107,122	151,429	107,122
$I_c(cr)$	(in <sup>4</sup> )	-	120,193	-	120,193	-	120,193	-
$S_s$	(in <sup>3</sup> )	1,897	2,938	1,897	2,938	1,897	2,938	1,897
$S_c(n)$	(in <sup>3</sup> )	2,478	3,556	2,478	3,556	2,478	3,556	2,478
$S_c(3n)$	(in <sup>3</sup> )	2,263	3,298	2,263	3,298	2,263	3,298	2,263
$S_c(cr)$	(in <sup>3</sup> )	-	3,055	-	3,055	-	3,055	-
DC1	(k/')	1,100	1,217	1,100	1,217	1,100	1,217	1,100
M <sub>DC1</sub>	(k)	1,222.5	2,467.3	791.7	3,401.2	1,684.0	3,386.1	826.4
DC2	(k/')	0.150	0.150	0.150	0.150	0.150	0.150	0.150
M <sub>DC2</sub>	(k)	173.6	326.6	118.0	450.1	243.9	444.4	119.6
DW	(k/')	0.367	0.367	0.367	0.367	0.367	0.367	0.367
M <sub>DW</sub>	(k)	424.7	799.0	288.7	1,101.3	596.8	1,087.4	292.6
LLDF		0.566	0.555	0.544	0.537	0.530	0.549	0.567
M <sub>ℓ + IM</sub>	(k)	1,914.0	2,290.1	1,893.7	2,629.0	2,155.8	2,568.5	1,896.4
M <sub>u</sub> (Strength I)	(k)	5,731.7	8,698.6	4,884.2	11,066.8	7,077.7	10,914.1	4,940.1
φ <sub>r</sub> M <sub>n</sub>	(k)	12,280.8	-	12,280.78	-	12,280.78	-	12,280.78
f <sub>s</sub> DC1	(ksi)	7.73	10.08	5.01	13.89	10.65	13.83	5.23
f <sub>s</sub> DC2	(ksi)	0.92	1.28	0.63	1.77	1.29	1.75	0.63
f <sub>s</sub> DW	(ksi)	2.25	3.14	1.53	4.33	3.16	4.27	1.55
f <sub>s</sub> (ℓ + IM)	(ksi)	9.27	9.00	9.17	10.33	10.44	10.09	9.18
f <sub>s</sub> (Service II)	(ksi)	22.96	26.20	19.09	33.41	28.68	32.97	19.35
0.95R <sub>h</sub> F <sub>yf</sub>	(ksi)	47.50	47.50	47.50	47.50	47.50	47.50	47.50
f <sub>s</sub> (Total)(Strength I)	(ksi)	30.42	34.65	25.39	44.14	37.95	43.54	25.73
φ <sub>r</sub> F <sub>n</sub>	(ksi)	-	50.00	-	50.00	-	50.00	-
V <sub>f</sub>	(k)	35.50	35.70	29.10	33.80	27.40	34.50	36.70

GIRDER REACTION TABLE											
	West Abutment		Pier 1		Pier 2		Pier 3		West Brg. Pier 4		
	Interior	Exterior	Interior	Exterior	Interior	Exterior	Interior	Exterior	Interior	Exterior	
LLDF	0.767	0.684	0.767	0.684	0.767	0.684	0.767	0.684	0.767	0.684	
OCF	-	1.092	-	-	-	-	-	-	-	1.091	
R <sub>DC1</sub>	(k)	51.5	48.7	179.5	170.2	207.8	197.0	208.4	197.5	43.7	41.5
R <sub>DC2</sub>	(k)	7.2	7.2	23.8	23.8	27.5	27.5	27.5	27.5	6.2	6.2
R <sub>DW</sub>	(k)	17.7	12.9	58.3	42.4	67.3	48.9	67.2	48.8	15.1	11.0
R <sub>ℓ</sub>	(k)	80.5	78.3	169.3	150.9	180.8	161.1	177.8	158.5	79.8	77.7
R <sub>IM</sub>	(k)	16.5	16.2	29.3	26.2	30.0	26.7	30.0	26.7	16.6	16.1
R <sub>TOTAL</sub>	(k)	173.4	163.3	460.2	413.5	513.3	461.2	510.9	459.0	161.4	152.5

**\*TOP OF WEB ELEVATIONS**

Location	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6
℄ Brg. West Abut.	457.09	457.17	457.22	457.15	456.98	456.77
℄ Splice 1	458.24	458.34	458.41	458.36	458.21	458.02
℄ Brg. Pier 1	458.47	458.59	458.66	458.63	458.48	458.30
℄ Splice 2	458.71	458.83	458.92	458.89	458.75	458.59
℄ Splice 3	459.08	459.20	459.29	459.27	459.14	458.97
℄ Brg. Pier 2	459.38	459.50	459.59	459.57	459.44	459.27
℄ Splice 4	459.67	459.79	459.88	459.86	459.73	459.57
℄ Splice 5	460.26	460.38	460.47	460.44	460.31	460.15
℄ Brg. Pier 3	460.27	460.40	460.50	460.49	460.37	460.21
℄ Splice 6	460.28	460.42	460.53	460.53	460.42	460.28
℄ West Brg. Pier 4	460.09	460.26	460.39	460.41	460.32	460.20

\* For fabrication only.

- $I_s, S_s$  : Non-composite moment of inertia and section modulus of the steel section used for computing  $f_s$ (Total-Strength I, and Service II) due to non-composite dead loads (in<sup>4</sup> and in<sup>3</sup>).
- $I_c(n), S_c(n)$ : Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing  $f_s$ (Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads (in<sup>4</sup> and in<sup>3</sup>).
- $I_c(3n), S_c(3n)$ : Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing  $f_s$ (Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in<sup>4</sup> and in<sup>3</sup>).
- $I_c(cr), S_c(cr)$ : Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing  $f_s$  (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in<sup>4</sup> and in<sup>3</sup>).
- DC1: Un-factored non-composite dead load (kips/ft.).
- M<sub>DC1</sub>: Un-factored moment due to non-composite dead load (kip-ft.).
- DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
- M<sub>DC2</sub>: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
- DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
- M<sub>DW</sub>: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
- LLDF: Live Load Distribution Factor for moment and shear computed according to Article 4.6.2.2 and further IDOT provisions.
- M<sub>ℓ + IM</sub>: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
- M<sub>u</sub> (Strength I): Factored design moment (kip-ft.).  
1.25 (M<sub>DC1</sub> + M<sub>DC2</sub>) + 1.5 M<sub>DW</sub> + 1.75 M<sub>ℓ + IM</sub>
- φ<sub>r</sub>M<sub>n</sub>: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).
- f<sub>s</sub> DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).  
M<sub>DC1</sub> / S<sub>nc</sub>
- f<sub>s</sub> DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).  
M<sub>DC2</sub> / S<sub>c(3n)</sub> or M<sub>DC2</sub> / S<sub>c(cr)</sub> as applicable.
- f<sub>s</sub> DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).  
M<sub>DW</sub> / S<sub>c(3n)</sub> or M<sub>DW</sub> / S<sub>c(cr)</sub> as applicable.
- f<sub>s</sub> (ℓ + IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).  
M<sub>ℓ + IM</sub> / S<sub>c(n)</sub> or M<sub>ℓ + IM</sub> / S<sub>c(cr)</sub> as applicable.
- f<sub>s</sub> (Service II): Sum of stresses as computed below (ksi).  
f<sub>s</sub>DC1 + f<sub>s</sub>DC2 + f<sub>s</sub>DW + 1.3 f<sub>s</sub>(ℓ + IM)
- 0.95R<sub>h</sub>F<sub>yf</sub>: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).
- f<sub>s</sub> (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).  
1.25 (f<sub>s</sub>DC1 + f<sub>s</sub>DC2) + 1.5 f<sub>s</sub>DW + 1.75 f<sub>s</sub>(ℓ + IM)
- φ<sub>r</sub>F<sub>n</sub>: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).
- V<sub>r</sub>: Maximum factored shear range in span computed according to Article 6.10.10.
- OCF: Obtuse Correction Factor applied to non-continuous exterior beam ends and computed according to Article 4.6.2.2.3c-1 or as further simplified by IDOT provisions.
- R<sub>DC1</sub>: Un-factored reaction due to non-composite dead load (kip).
- R<sub>DC2</sub>: Un-factored reaction due to long-term composite (superimposed excluding future wearing surface) dead load (kip).
- R<sub>DW</sub>: Un-factored reaction due to long-term composite (superimposed future wearing surface only) dead load (kip).
- R<sub>ℓ</sub>: Un-factored live load reaction (kip).
- R<sub>IM</sub>: Un-factored dynamic load allowance (impact) (kip).

DESIGNED -	ZACHARY T. BULVA
CHECKED -	JOSUE D. ORTIZ-VARELA
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	J.O.V. / P.G. / G.R.A.

EXAMINED \_\_\_\_\_  
 PASSED \_\_\_\_\_  
  
 ENGINEER OF BRIDGES AND STRUCTURES

DATE - OCTOBER 15, 2018  
 REVISED -  
 REVISED -

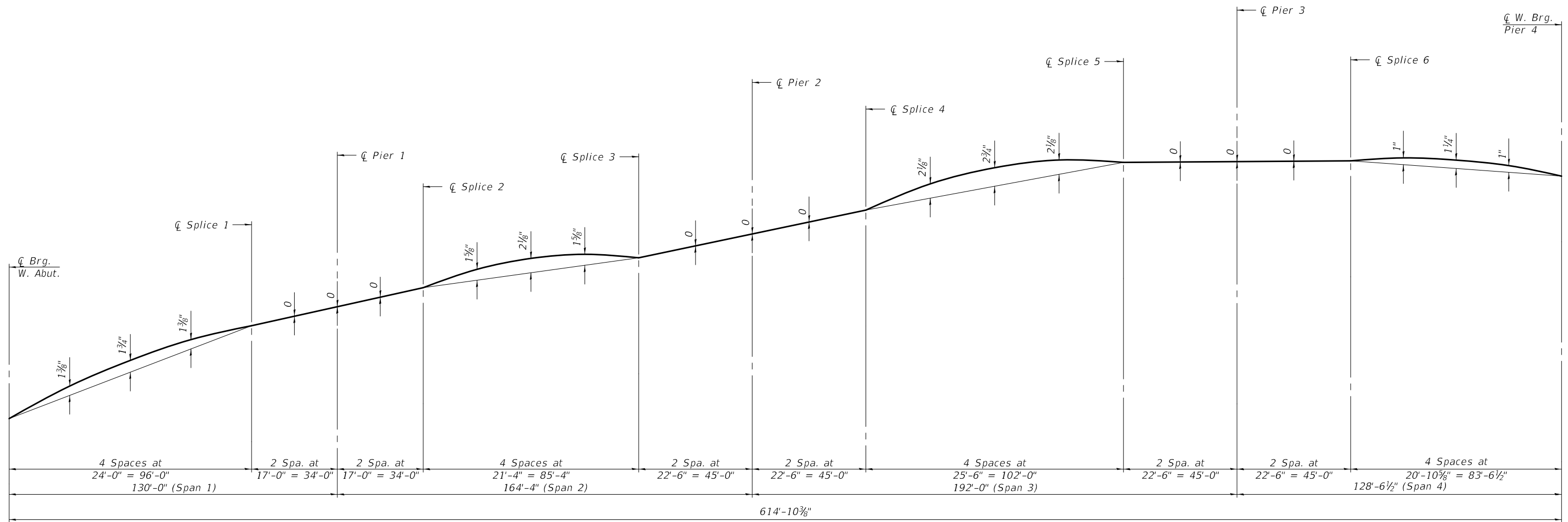
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**STRUCTURAL STEEL DETAILS (UNIT 1)**  
**STRUCTURE NO. 014 - 0080**

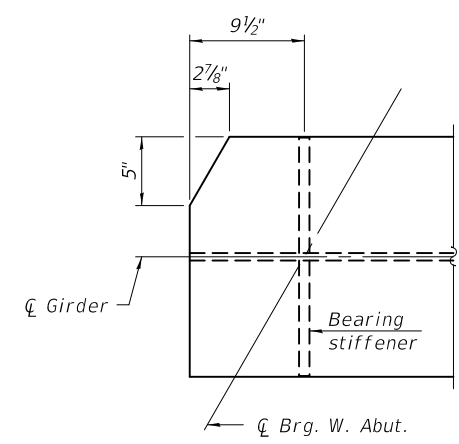
SHEET 38 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	102
CONTRACT NO. 76887				
ILLINOIS		FED. AID PROJECT		

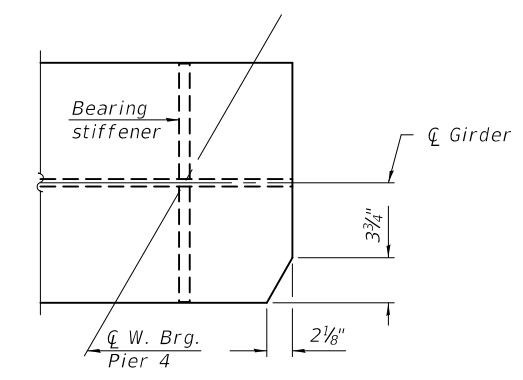
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CAMBER DIAGRAM



GIRDER FLANGE CLIPPING DETAIL



GIRDER FLANGE CLIPPING DETAIL

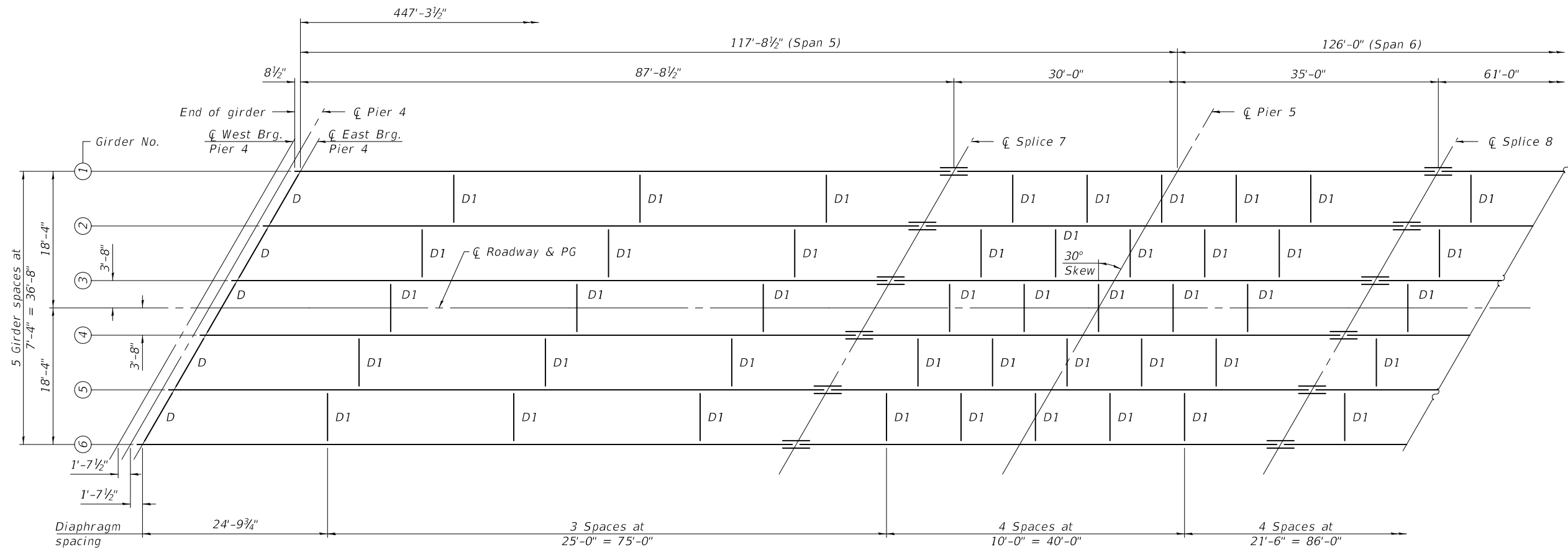
DESIGNED - ZACHARY T. BULVA	EXAMINED - <i>Jaime F. Joffe</i>	DATE - OCTOBER 15, 2018
CHECKED - JOSUE D. ORTIZ-VARELA	PASSED - <i>Carl Kasper</i>	REVISIONS
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGE DESIGN	REVISOR
CHECKED - J.O.V. / P.G. / G.R.A.	ENGINEER OF BRIDGES AND STRUCTURES	REVISION

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STRUCTURAL STEEL DETAILS (UNIT 1)  
STRUCTURE NO. 014 - 0080**

SHEET 39 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	103
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				



PLAN

Notes:  
See sheets 44 thru 47 of 96 for structural steel details, notes, and tables.

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FILE NAME: p:\v\084EBID\INTEG\illinois.gov\PWIDOT\Documents\DOT Offices\Bureau of Bridges and Structures\Projects\0140080-76887.dgn

DESIGNED -	JOSUE D. ORTIZ-VARELA
CHECKED -	ZACHARY T. BULVA
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	J.O.V. / P.G. / G.R.A.

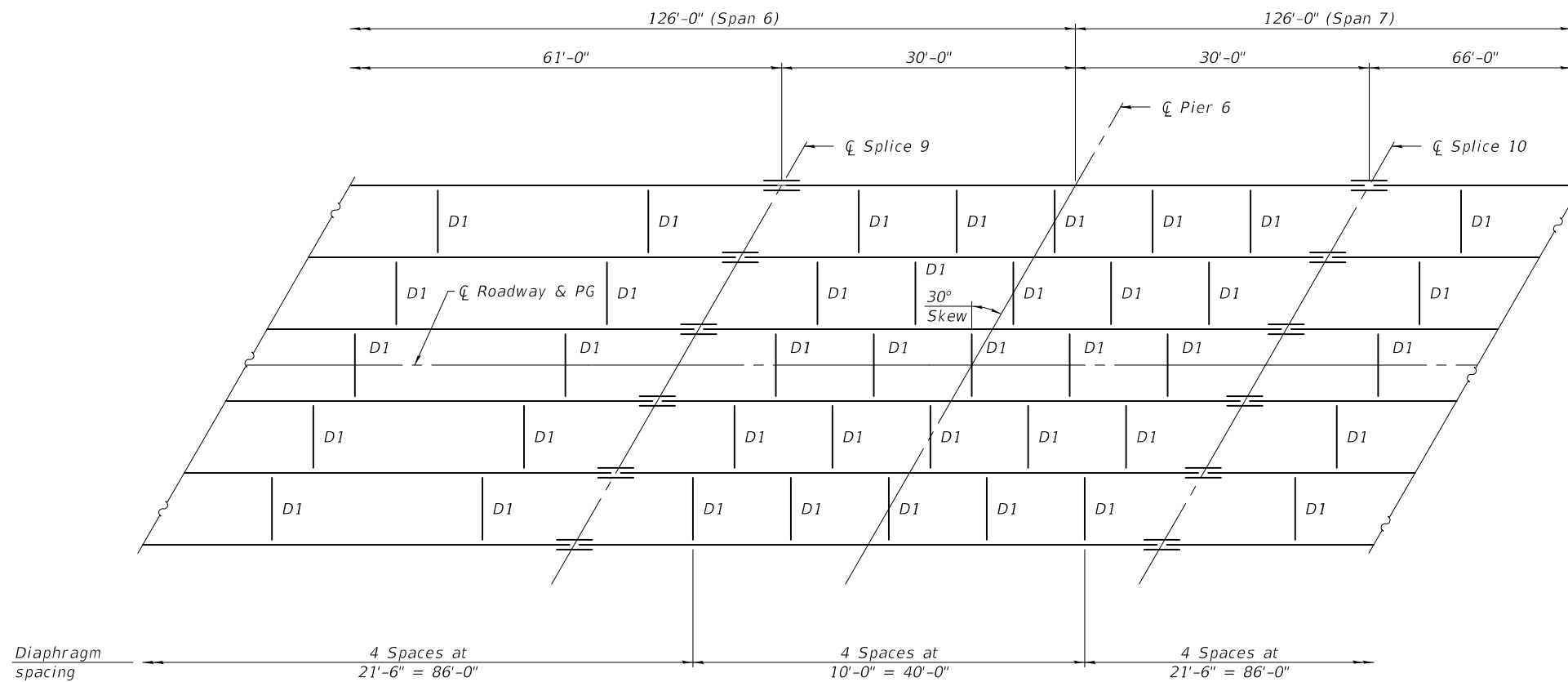
EXAMINED		DATE -	OCTOBER 15, 2018
PASSED		REVISED -	
	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -	

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DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL (UNIT 2)  
STRUCTURE NO. 014 - 0080

SHEET 40 OF 96 SHEETS

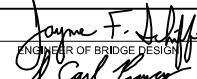

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	104
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				



PLAN

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DESIGNED -	JOSUE D. ORTIZ-VARELA
CHECKED -	ZACHARY T. BULVA
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	J.O.V. / P.G. / G.R.A.

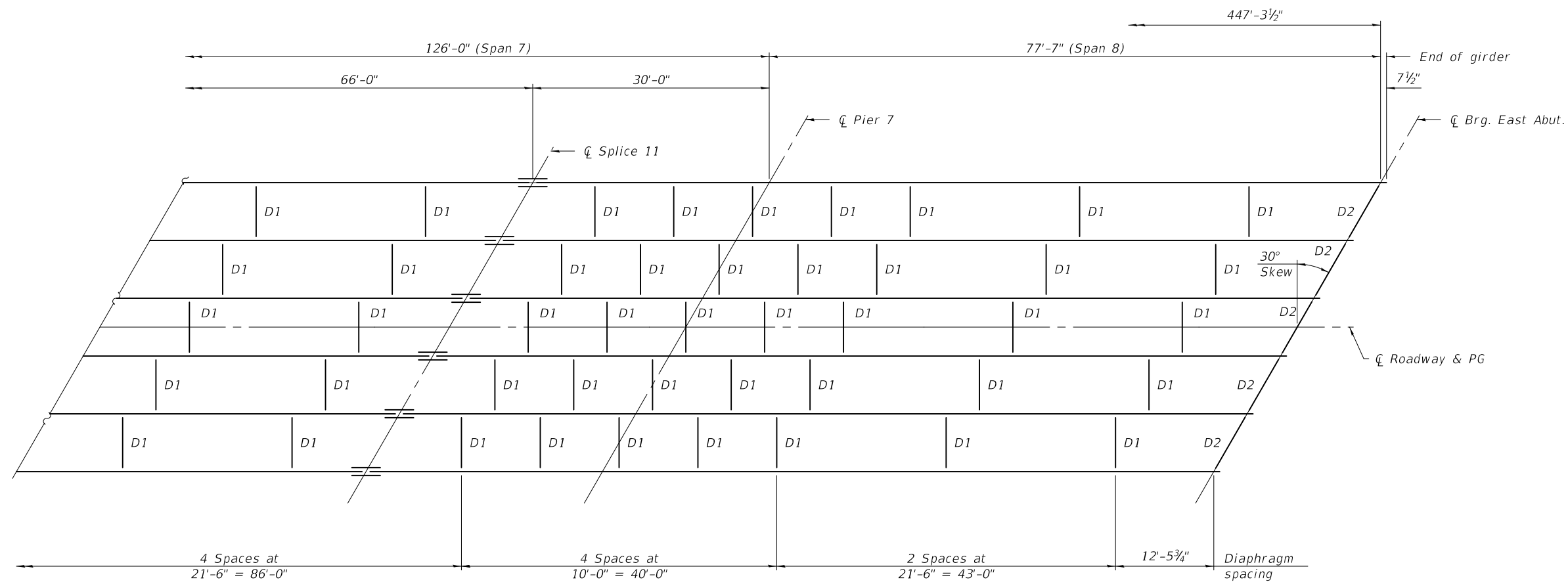
EXAMINED		DATE -	OCTOBER 15, 2018
PASSED		REVISD -	
	ENGINEER OF BRIDGES AND STRUCTURES	REVISD -	

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STRUCTURAL STEEL (UNIT 2)  
STRUCTURE NO. 014 - 0080**

SHEET 41 OF 96 SHEETS

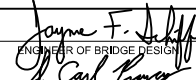

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	105
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				



PLAN

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DESIGNED -	JOSUE D. ORTIZ-VARELA
CHECKED -	ZACHARY T. BULVA
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	J.O.V. / P.G. / G.R.A.

EXAMINED	
PASSED	
ENGINEER OF BRIDGES AND STRUCTURES	

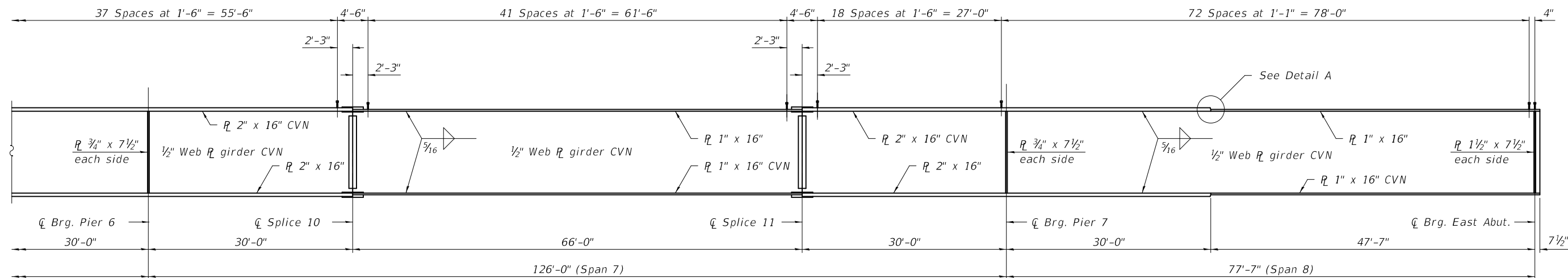
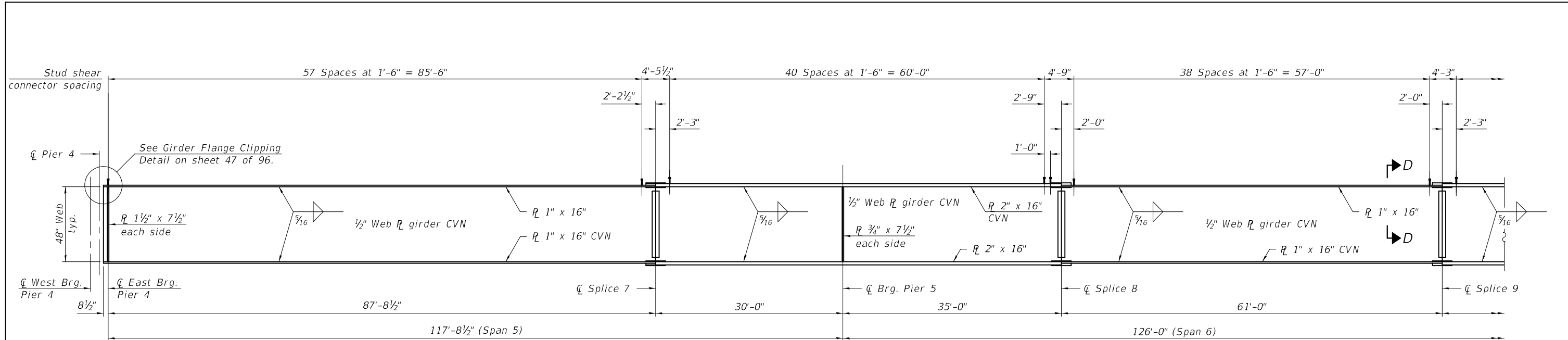
DATE -	OCTOBER 15, 2018
REVISED -	
REVISED -	

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STRUCTURAL STEEL (UNIT 2)  
STRUCTURE NO. 014 - 0080**

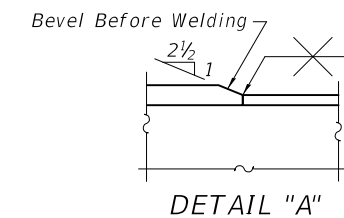
SHEET 42 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	106
CONTRACT NO. 76887				
		ILLINOIS	FED. AID PROJECT	



**GIRDER ELEVATION**  
(Looking North)

Note:  
"CVN" denotes Charpy-V-  
Notch impact energy  
requirements, zone 2.  
All girder plates, including  
bearing stiffeners, shall  
be AASHTO M270, Grade 50.



MODEL: 0140080-76887-043  
FILE NAME: p:\v\084EBID\INTEG\ilindm\gov\p\WIDOT\Documents\Bureau of Bridges and Structures\Projects\0140080\CADD Plans\0140080-76887.dgn

DESIGNED -	JOSUE D. ORTIZ-VARELA
CHECKED -	ZACHARY T. BULVA
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	J.O.V. / P.G. / G.R.A.

EXAMINED	<i>Joanne F. Joffe</i>	DATE -	OCTOBER 15, 2018
PASSED	<i>Carl Kasper</i>	REVISOR -	
	ENGINEER OF BRIDGES AND STRUCTURES	REVISOR -	

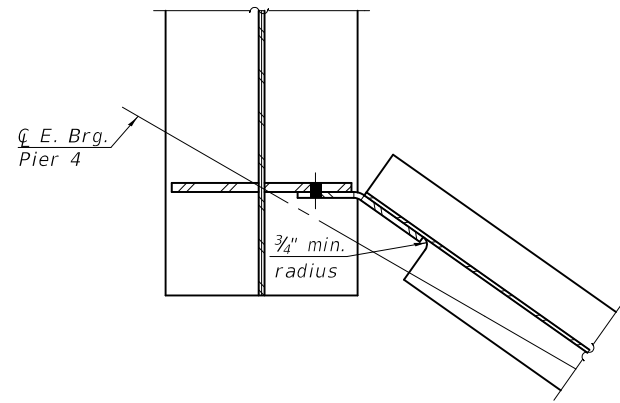
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STRUCTURAL STEEL (UNIT 2)  
STRUCTURE NO. 014 - 0080**

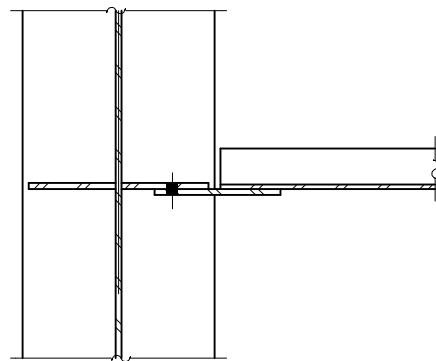
SHEET 43 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	107
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

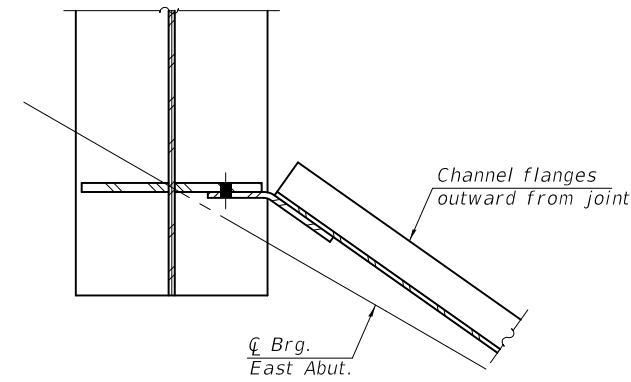
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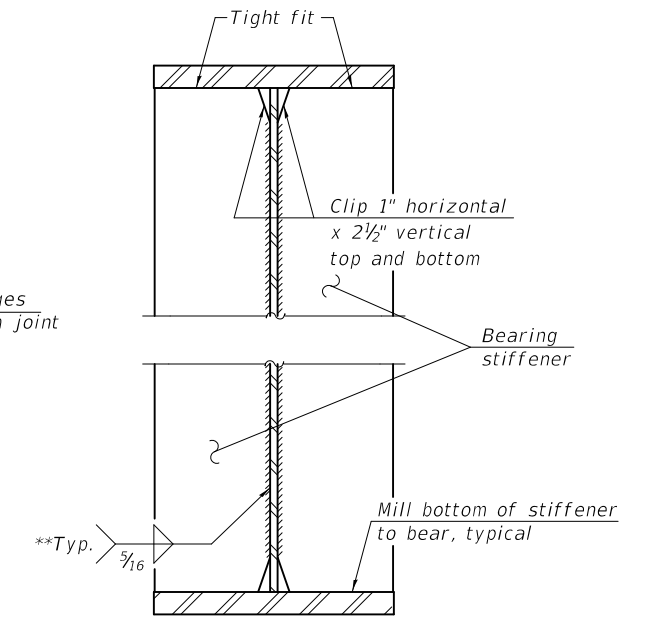
SECTION A-A



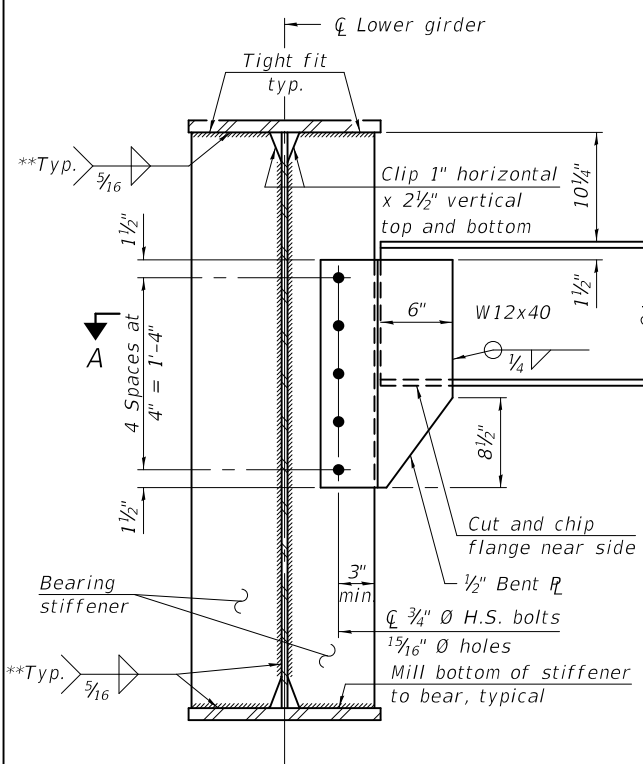
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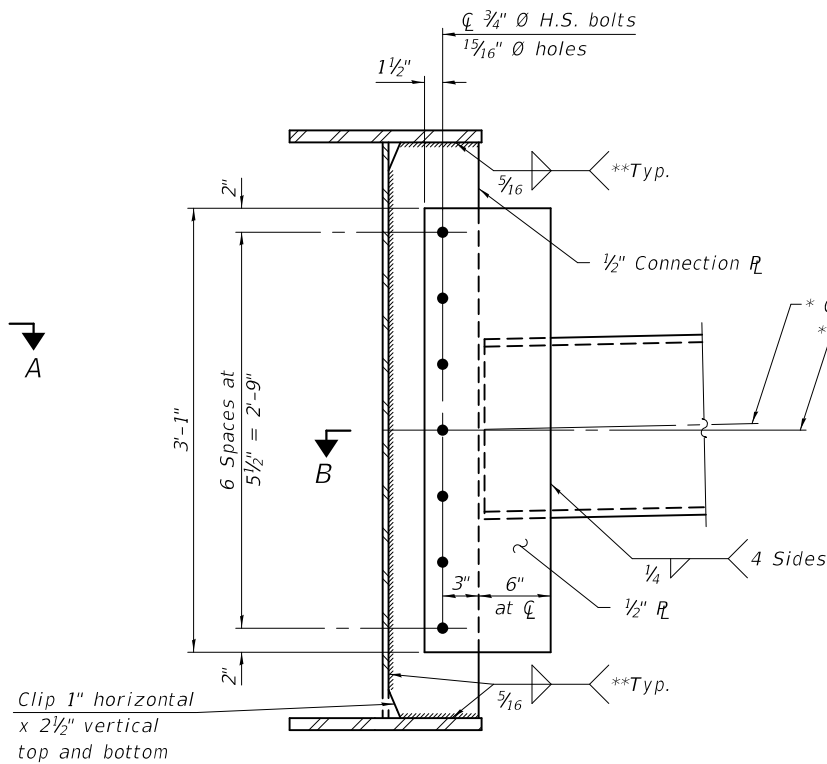
SECTION C-C



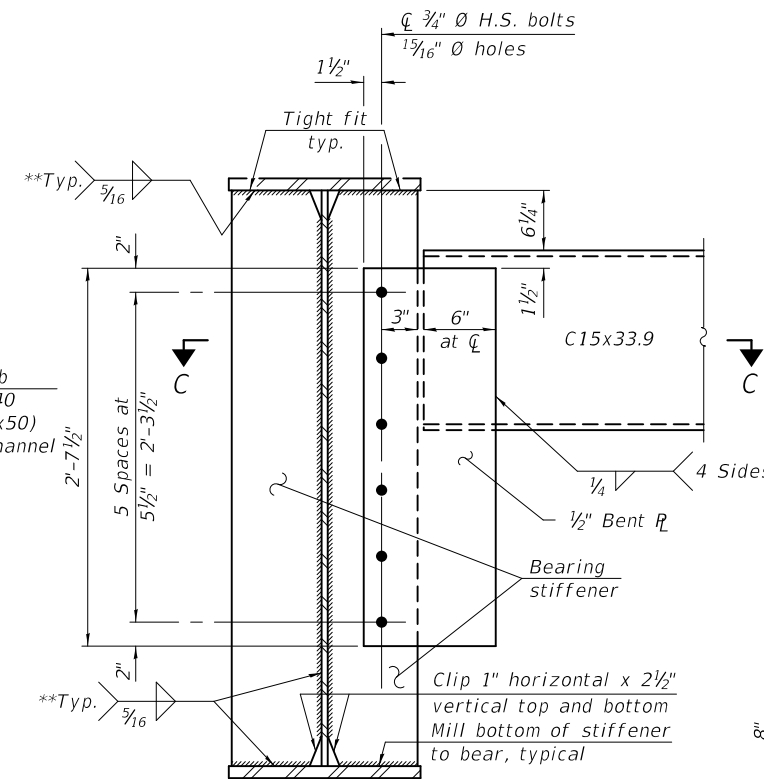
BEARING STIFFENER  
(At Piers 5, 6, and 7)



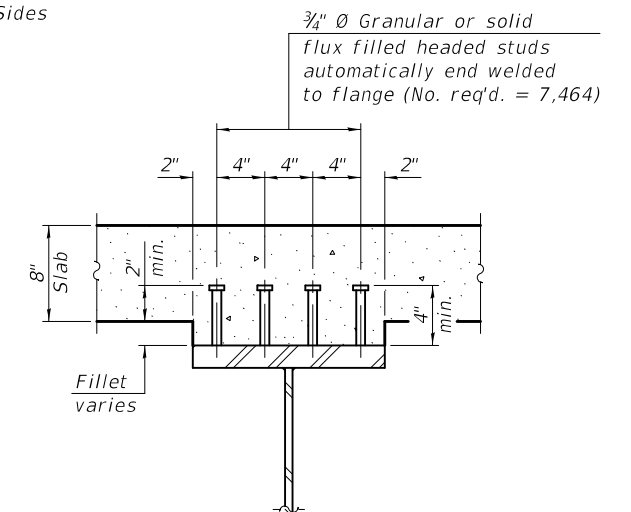
END DIAPHRAGM D  
(5 Required)



DIAPHRAGM D1  
(130 Required)



END DIAPHRAGM D2  
(5 Required)



SECTION D-D

Note:  
Two hardened washers are required for each set of oversized holes.  
All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.  
The alternate, if utilized, shall be provided at no additional cost to the Department.

\* Alternate C15x50 channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section.

\*\* Terminate 1/4" (±1/8") from the end of plate intersects.

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DESIGNED -	JOSUE D. ORTIZ-VARELA
CHECKED -	ZACHARY T. BULVA
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	J.O.V. / P.G. / G.R.A.

EXAMINED	<i>Joanne F. Joffe</i>
PASSED	<i>Carl R. Rupp</i>
ENGINEER OF BRIDGES AND STRUCTURES	

DATE -	OCTOBER 15, 2018
REVISED -	
REVISED -	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

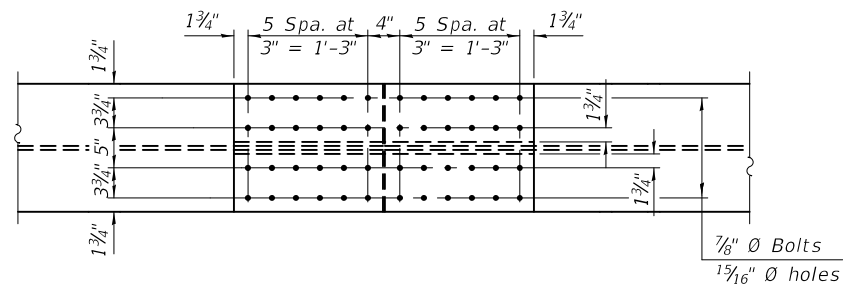
STRUCTURAL STEEL DETAILS (UNIT 2)  
STRUCTURE NO. 014 - 0080

SHEET 44 OF 96 SHEETS

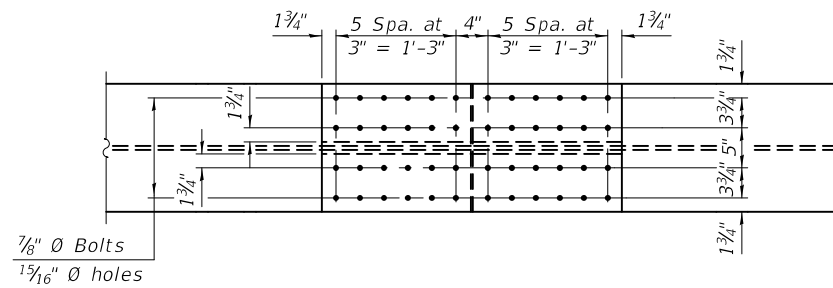
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	108
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				



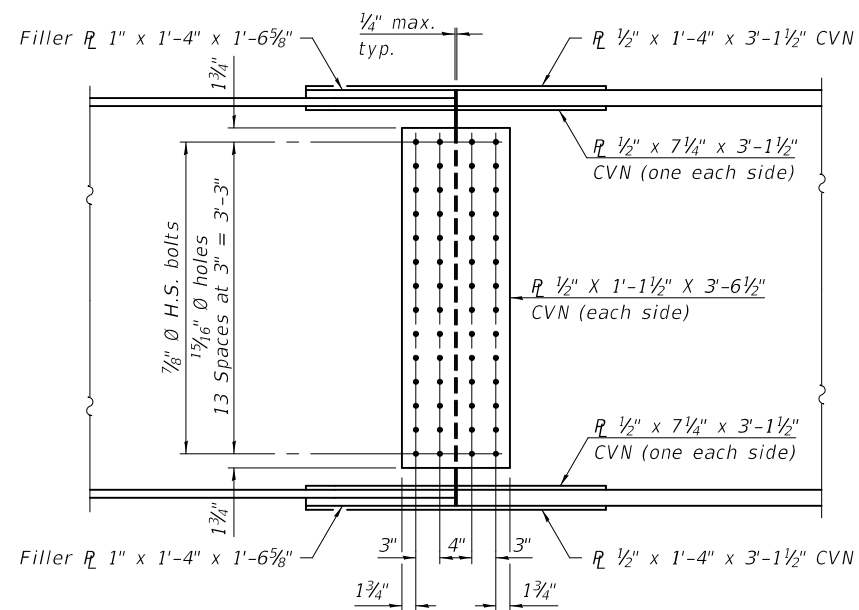
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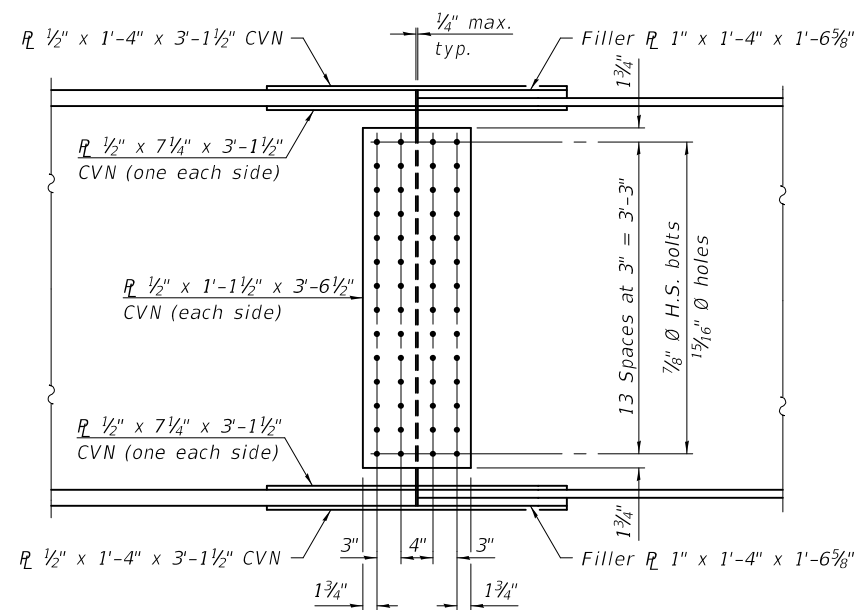
**SPLICES 7, 9, & 11**  
**TOP VIEW**



**SPLICES 8 & 10**  
**TOP VIEW**

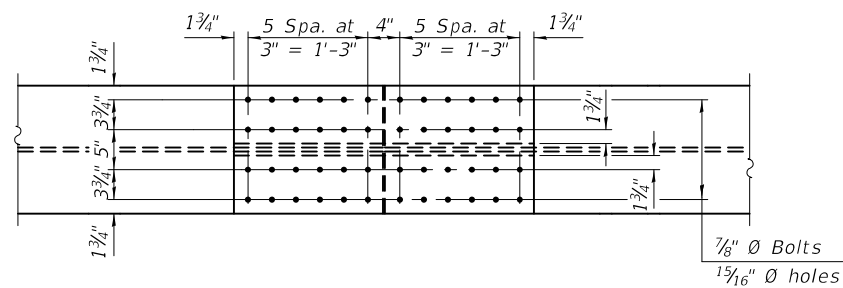


**SPLICES 7, 9, & 11**  
**ELEVATION**

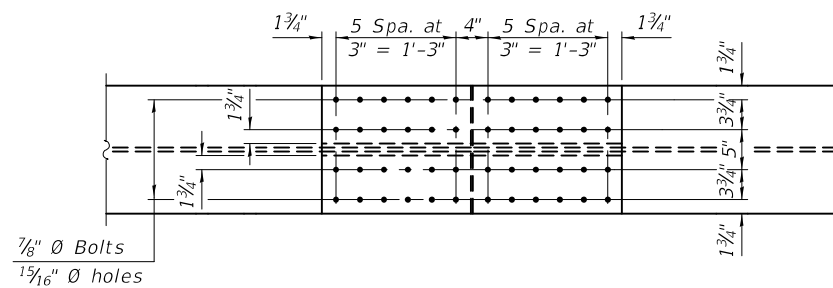


**SPLICES 8 & 10**  
**ELEVATION**

Notes:  
 "CVN" denotes Charpy-V-Notch impact energy requirements, zone 2.  
 All splice plates, except filler plates, shall be AASHTO M270, Grade 50.



**SPLICES 7, 9, & 11**  
**BOTTOM VIEW**



**SPLICES 8 & 10**  
**BOTTOM VIEW**

DESIGNED -	JOSUE D. ORTIZ-VARELA
CHECKED -	ZACHARY T. BULVA
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	J.O.V. / P.G. / G.R.A.

EXAMINED \_\_\_\_\_  
 PASSED \_\_\_\_\_  
*Jaime F. Joffe*  
 ENGINEER OF BRIDGE DESIGN  
*Carl Perry*  
 ENGINEER OF BRIDGES AND STRUCTURES

DATE -	OCTOBER 15, 2018
REVISED -	
REVISED -	

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**STRUCTURAL STEEL DETAILS (UNIT 2)**  
**STRUCTURE NO. 014 - 0080**

SHEET 45 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	109
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

INTERIOR GIRDER MOMENT TABLE								
		0.4 Span 5	Pier 5	0.5 Span 6	Pier 6	0.5 Span 7	Pier 7	0.6 Span 8
$I_s$	(in <sup>4</sup> )	23,819	44,629	23,819	44,629	23,819	44,629	23,819
$I_c(n)$	(in <sup>4</sup> )	55,731	88,726	55,731	88,726	55,731	88,726	55,731
$I_c(3n)$	(in <sup>4</sup> )	42,106	67,122	42,106	67,122	42,106	67,122	42,106
$I_c(cr)$	(in <sup>4</sup> )	-	51,199	-	51,199	-	51,199	-
$S_s$	(in <sup>3</sup> )	953	1,717	953	1,717	953	1,717	953
$S_c(n)$	(in <sup>3</sup> )	1,271	2,107	1,271	2,107	1,271	2,107	1,271
$S_c(3n)$	(in <sup>3</sup> )	1,174	1,960	1,174	1,960	1,174	1,960	1,174
$S_c(cr)$	(in <sup>3</sup> )	-	1,800	-	1,800	-	1,800	-
DC1	(k/')	0.988	1.113	0.988	1.113	0.988	1.113	0.988
$M_{DC1}$	(k)	941.4	1,810.9	386.5	1,474.4	627.7	1,308.9	212.8
DC2	(k/')	0.150	0.150	0.150	0.150	0.150	0.150	0.150
$M_{DC2}$	(k)	146.8	256.3	63.7	211.6	99.4	184.8	34.4
DW	(k/')	0.367	0.367	0.367	0.367	0.367	0.367	0.367
$M_{DW}$	(k)	359.3	627.0	155.9	517.8	243.3	452.2	84.2
LLDF		0.576	0.573	0.569	0.569	0.569	0.595	0.620
$M_{\ell + IM}$	(k)	1,577.2	1,859.9	1,314.6	1,750.4	1,261.1	1,591.3	1,040.3
$M_u$ (Strength I)	(k)	4,659.3	6,779.3	3,097.2	5,947.4	3,480.8	5,330.2	2,255.8
$\phi_r M_n$	(k)	6,073.7	-	6,073.7	-	6,073.7	-	6,073.7
$f_s$ DC1	(ksi)	11.9	12.7	4.9	10.3	7.9	9.2	2.7
$f_s$ DC2	(ksi)	1.5	1.7	0.7	1.4	1.0	1.2	0.4
$f_s$ DW	(ksi)	3.7	4.2	1.6	3.5	2.5	3.0	0.9
$f_s$ ( $\ell + IM$ )	(ksi)	14.9	12.4	12.4	11.7	11.9	10.6	9.8
$f_s$ (Service II)	(ksi)	36.4	34.7	23.2	30.3	26.9	27.2	16.7
$0.95R_n F_{yf}$	(ksi)	47.5	47.5	47.5	47.5	47.5	47.5	47.5
$f_s$ (Total)(Strength I)	(ksi)	48.3	45.9	31.0	40.2	35.7	36.1	22.3
$\phi_r F_n$	(ksi)	-	50.0	-	50.0	-	50.0	-
$V_f$	(k)	33.3	33.0	26.2	34.2	26.4	34.2	33.5

GIRDER REACTION TABLE										
	East Brg. Pier 4		Pier 5		Pier 6		Pier 7		East Abutment	
	Interior	Exterior	Interior	Exterior	Interior	Exterior	Interior	Exterior	Interior	Exterior
LLDF	0.767	0.684	0.767	0.684	0.767	0.684	0.767	0.684	0.767	0.684
OCF	-	1.120	-	-	-	-	-	-	-	1.103
$R_{DC1}$	(k)	43.3	39.7	145.9	134.5	130.8	120.6	122.9	113.3	22.2
$R_{DC2}$	(k)	6.7	6.7	20.8	20.8	18.8	18.8	17.4	17.4	3.4
$R_{DW}$	(k)	16.3	11.8	50.9	37.0	45.9	33.4	42.7	31.0	8.4
$R_{\ell}$	(k)	74.9	74.9	151.4	135.0	146.6	130.7	138.1	123.1	66.1
$R_{IM}$	(k)	16.4	16.3	28.1	25.0	27.3	24.4	26.4	23.6	15.6
$R_{TOTAL}$	(k)	157.6	149.4	397.1	352.3	369.4	327.9	347.5	308.4	110.2

**\*TOP OF WEB ELEVATIONS**

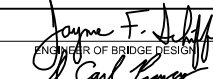
Location	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6
☉ East Brg. Pier 4	460.08	460.24	460.37	460.39	460.30	460.18
☉ Splice 7	459.57	459.73	459.86	459.88	459.79	459.67
☉ Brg. Pier 5	459.40	459.56	459.69	459.71	459.62	459.50
☉ Splice 8	459.20	459.37	459.50	459.52	459.43	459.31
☉ Splice 9	458.90	459.06	459.19	459.21	459.12	459.00
☉ Brg. Pier 6	458.76	458.93	459.06	459.08	458.99	458.87
☉ Splice 10	458.62	458.79	458.92	458.95	458.86	458.74
☉ Splice 11	458.13	458.31	458.47	458.50	458.43	458.33
☉ Brg. Pier 7	457.75	457.94	458.10	458.14	458.08	457.99
☉ Brg. East Abut.	456.78	456.99	457.16	457.22	457.18	457.10

\* For fabrication only.

- $I_s, S_s$  : Non-composite moment of inertia and section modulus of the steel section used for computing  $f_s$ (Total-Strength I, and Service II) due to non-composite dead loads (in.<sup>4</sup> and in.<sup>3</sup>).
- $I_c(n), S_c(n)$ : Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing  $f_s$ (Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads (in.<sup>4</sup> and in.<sup>3</sup>).
- $I_c(3n), S_c(3n)$ : Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing  $f_s$ (Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in.<sup>4</sup> and in.<sup>3</sup>).
- $I_c(cr), S_c(cr)$ : Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing  $f_s$  (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in.<sup>4</sup> and in.<sup>3</sup>).
- DC1: Un-factored non-composite dead load (kips/ft.).
- $M_{DC1}$ : Un-factored moment due to non-composite dead load (kip-ft.).
- DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
- $M_{DC2}$ : Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
- DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
- $M_{DW}$ : Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
- LLDF: Live Load Distribution Factor for moment and shear computed according to Article 4.6.2.2 and further IDOT provisions.
- $M_{\ell + IM}$ : Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
- $M_u$  (Strength I): Factored design moment (kip-ft.).  
1.25 ( $M_{DC1} + M_{DC2}$ ) + 1.5  $M_{DW}$  + 1.75  $M_{\ell + IM}$
- $\phi_r M_n$ : Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).
- $f_s$  DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).  
 $M_{DC1} / S_{nc}$
- $f_s$  DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).  
 $M_{DC2} / S_c(3n)$  or  $M_{DC2} / S_c(cr)$  as applicable.
- $f_s$  DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).  
 $M_{DW} / S_c(3n)$  or  $M_{DW} / S_c(cr)$  as applicable.
- $f_s$  ( $\ell + IM$ ): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).  
 $M_{\ell + IM} / S_c(n)$  or  $M_{\ell + IM} / S_c(cr)$  as applicable.
- $f_s$  (Service II): Sum of stresses as computed below (ksi).  
 $f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s(\ell + IM)$
- $0.95R_n F_{yf}$ : Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).
- $f_s$  (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).  
1.25 ( $f_s DC1 + f_s DC2$ ) + 1.5  $f_s DW$  + 1.75  $f_s(\ell + IM)$
- $\phi_r F_n$ : Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).
- $V_r$ : Maximum factored shear range in span computed according to Article 6.10.10.
- OCF: Obtuse Correction Factor applied to non-continuous exterior beam ends and computed according to Article 4.6.2.2.3c-1 or as further simplified by IDOT provisions.
- $R_{DC1}$ : Un-factored reaction due to non-composite dead load (kip).
- $R_{DC2}$ : Un-factored reaction due to long-term composite (superimposed excluding future wearing surface) dead load (kip).
- $R_{DW}$ : Un-factored reaction due to long-term composite (superimposed future wearing surface only) dead load (kip).
- $R_{\ell}$ : Un-factored live load reaction (kip).
- $R_{IM}$ : Un-factored dynamic load allowance (impact) (kip).

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DESIGNED -	JOSUE D. ORTIZ-VARELA
CHECKED -	ZACHARY T. BULVA
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	J.O.V. / P.G. / G.R.A.

EXAMINED \_\_\_\_\_  
PASSED \_\_\_\_\_  
  
 ENGINEER OF BRIDGES AND STRUCTURES

DATE -	OCTOBER 15, 2018
REVISED -	
REVISED -	

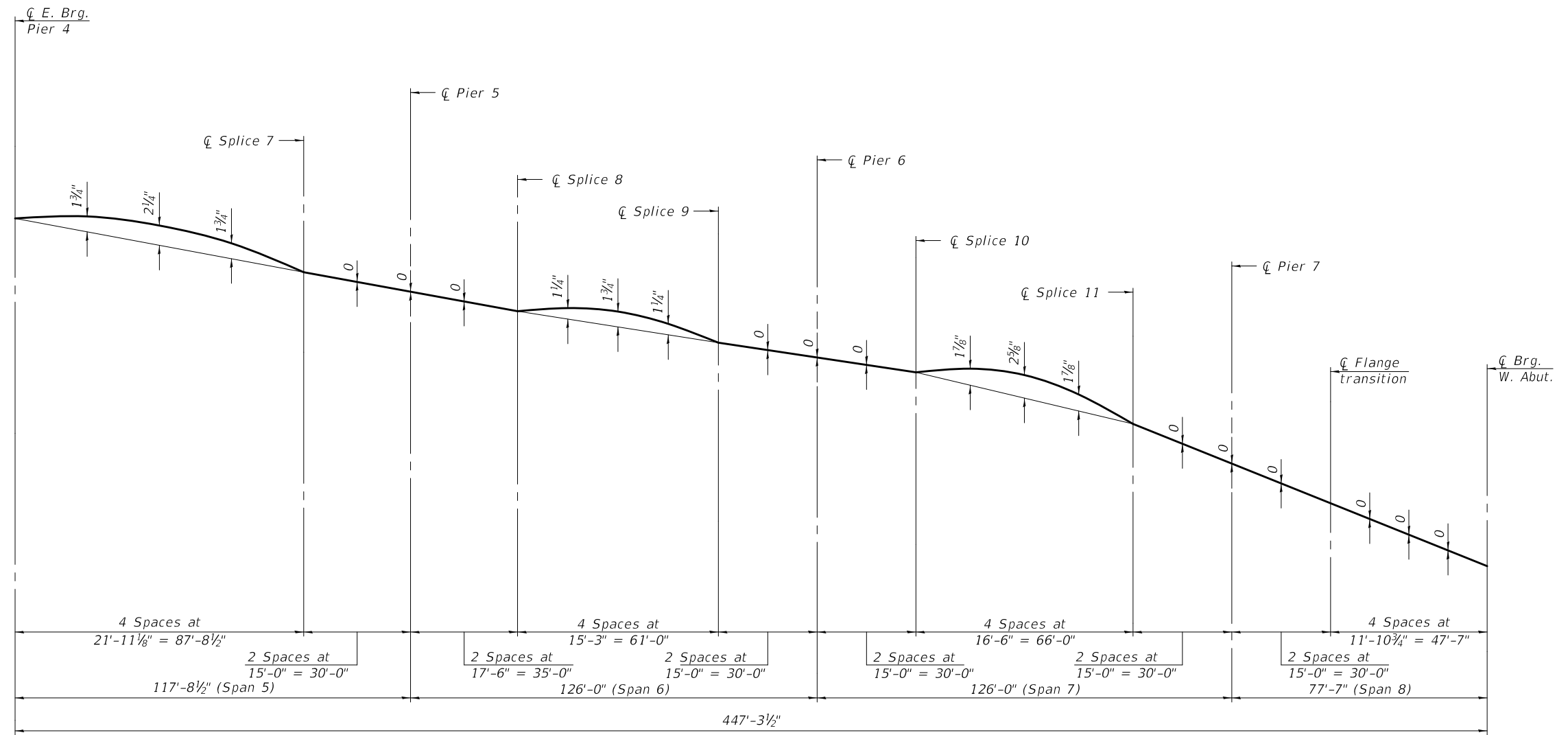
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STRUCTURAL STEEL DETAILS (UNIT 2)  
STRUCTURE NO. 014 - 0080**

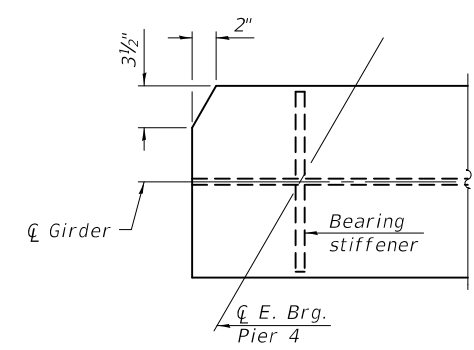
SHEET 46 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	110
CONTRACT NO. 76887				
		ILLINOIS	FED. AID PROJECT	

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CAMBER DIAGRAM



GIRDER FLANGE CLIPPING DETAIL

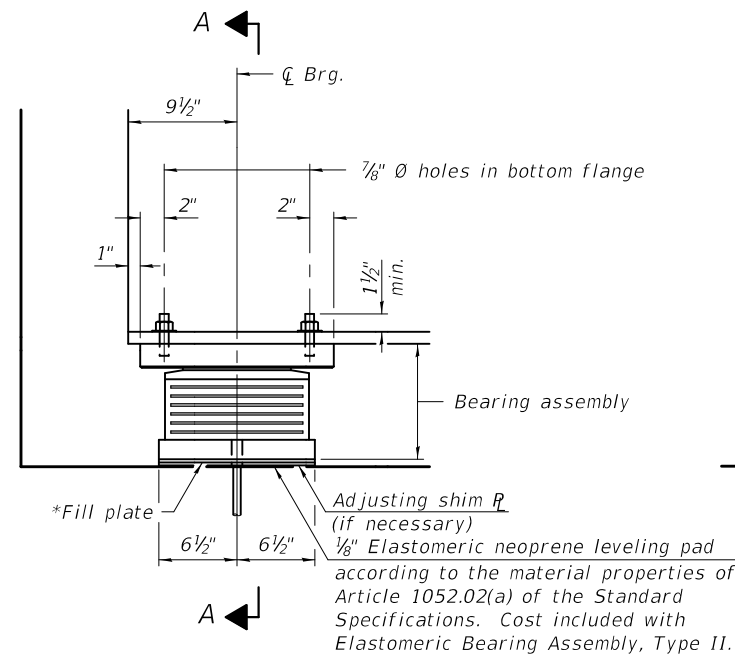
DESIGNED - JOSUE D. ORTIZ-VARELA	EXAMINED - <i>Jaime F. Salas</i>	DATE - OCTOBER 15, 2018
CHECKED - ZACHARY T. BULVA	PASSED - <i>Carl Kasper</i>	REVISOR -
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	REVISOR -
CHECKED - J.O.V. / P.G. / G.R.A.		

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

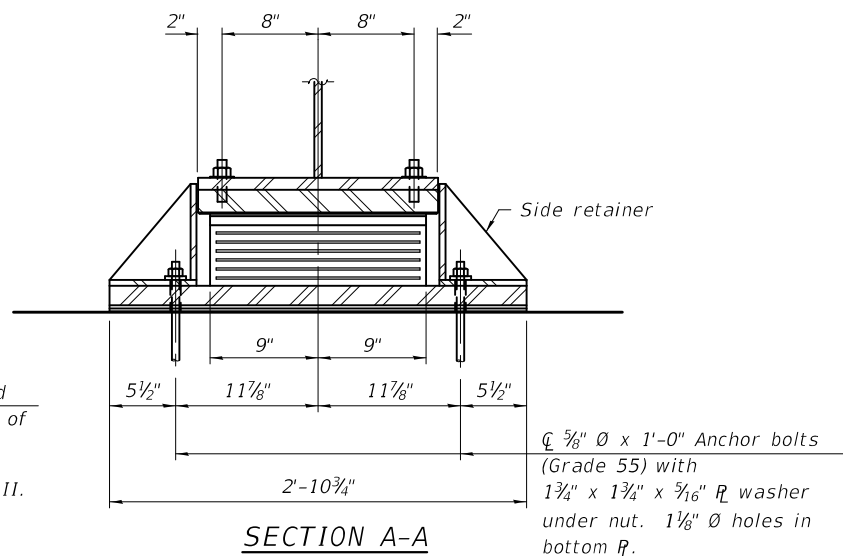
**STRUCTURAL STEEL DETAILS (UNIT 2)  
 STRUCTURE NO. 014 - 0080**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	111
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

SHEET 47 OF 96 SHEETS



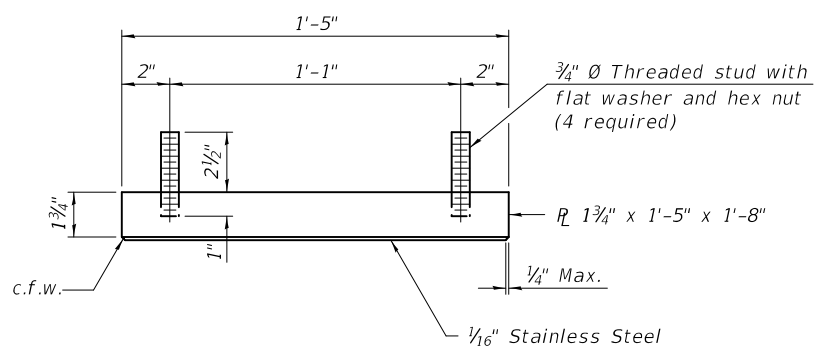
ELEVATION AT WEST ABUTMENT



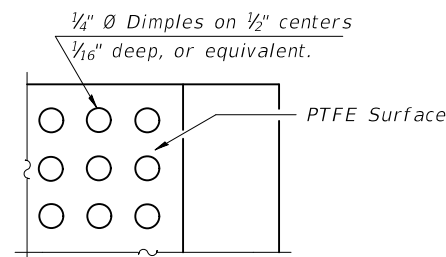
SECTION A-A

Notes:  
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
 Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.  
 The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.  
 Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.  
 Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.  
 The anchor bolt size and grade shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.  
 All structural steel plates of the elastomeric bearing assembly, except adjusting shims and fill plates, shall conform to the requirements of AASHTO M270, Grade 50.  
 Two 1/8 inch adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

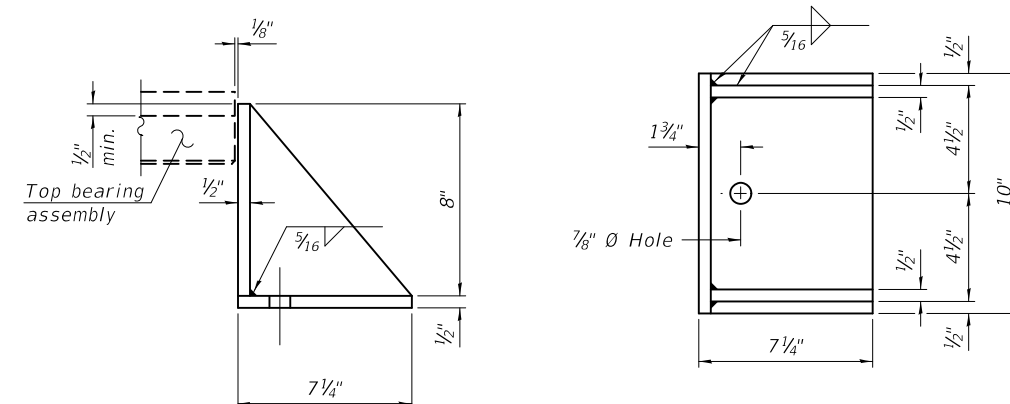
TYPE II ELASTOMERIC EXP. BRG.



TOP BEARING ASSEMBLY



PLAN-PTFE SURFACE

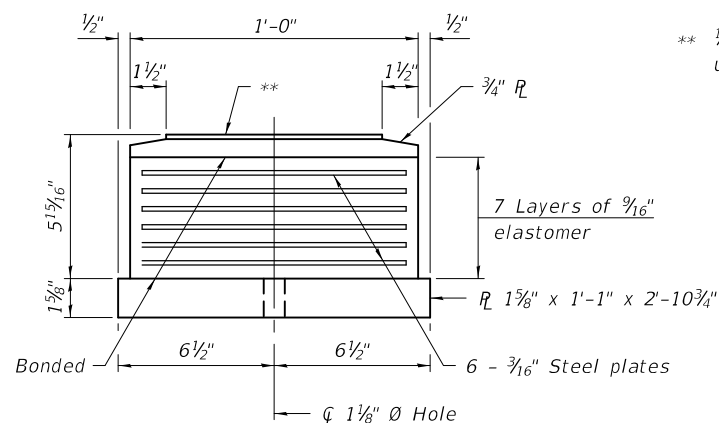


SIDE RETAINER

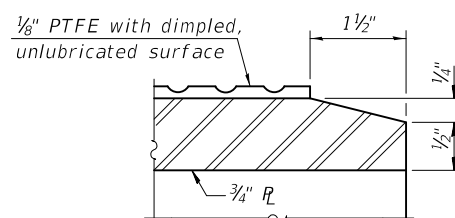
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

\* See Fill Plate Thickness Table on sheet 50 of 96.

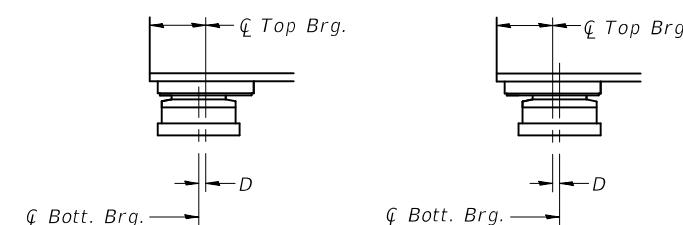
\*\* 1/8" PTFE dimpled, unlubricated



BOTTOM BEARING ASSEMBLY



SECTION THRU PTFE



BELOW 50°F.  
 D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

EXPANSION BEARING ORIENTATION

The above diagrams are for informational purposes only to show the amount of expected offset "D" for the current temperature in the field.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type II	Each	6
Anchor Bolts, 5/8"	Each	12

MODEL: 0140080-76887-048  
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DESIGNED - ZACHARY T. BULVA  
 CHECKED - JOSUE D. ORTIZ-VARELA  
 DRAWN - MICHAEL B. MOSSMAN  
 CHECKED - P.G. / Z.T.B. / G.R.A.

EXAMINED  
 PASSED  
 ENGINEER OF BRIDGES AND STRUCTURES

DATE - OCTOBER 15, 2018  
 REVISED -  
 REVISED -

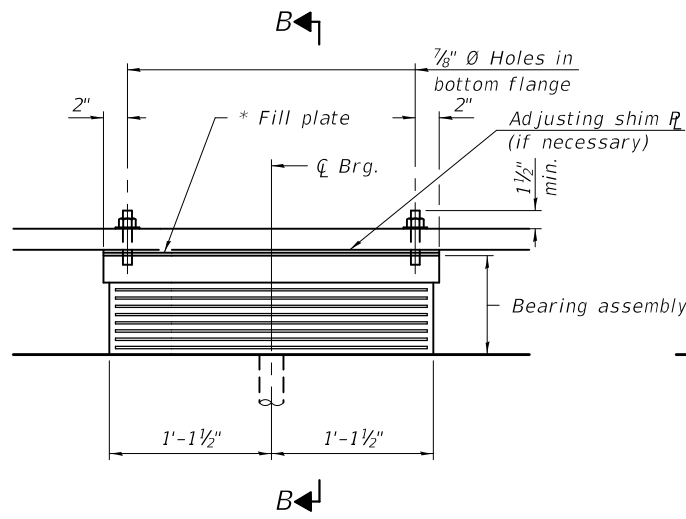
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BEARING DETAILS (UNIT 1)  
 STRUCTURE NO. 014 - 0080

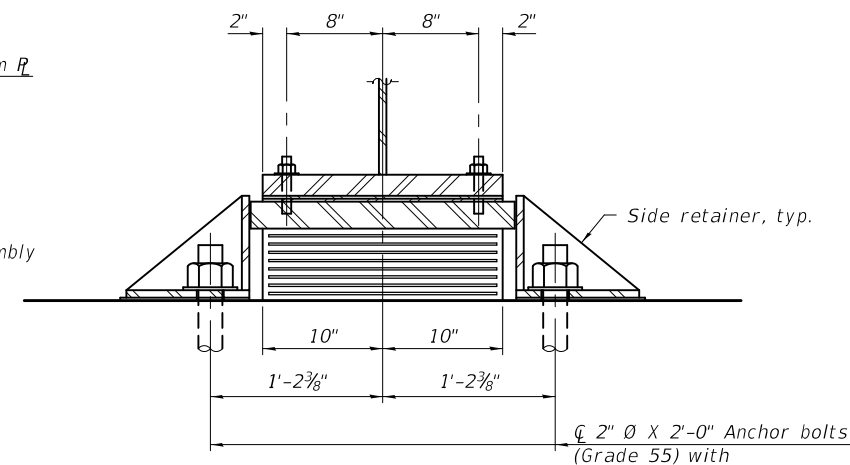
SHEET 48 OF 96 SHEETS

F.A.P. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.  
 805 7BR, 7BR-1 CLINTON 259 112  
 CONTRACT NO. 76887  
 ILLINOIS FED. AID PROJECT

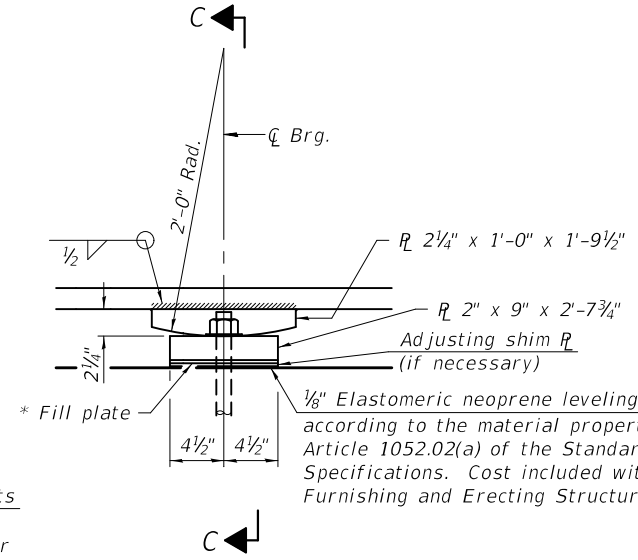
10/15/2018 8:58:25 AM



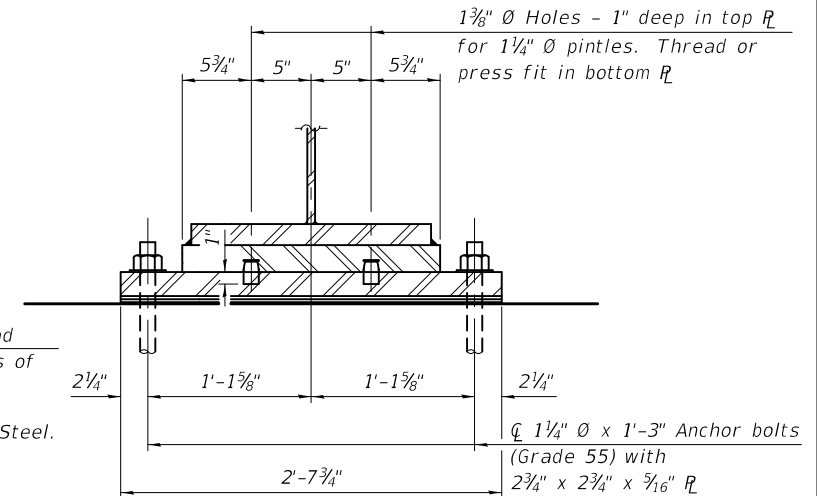
ELEVATION AT PIER 1



SECTION B-B



ELEVATION AT PIERS 2 & 3

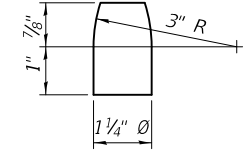


SECTION C-C

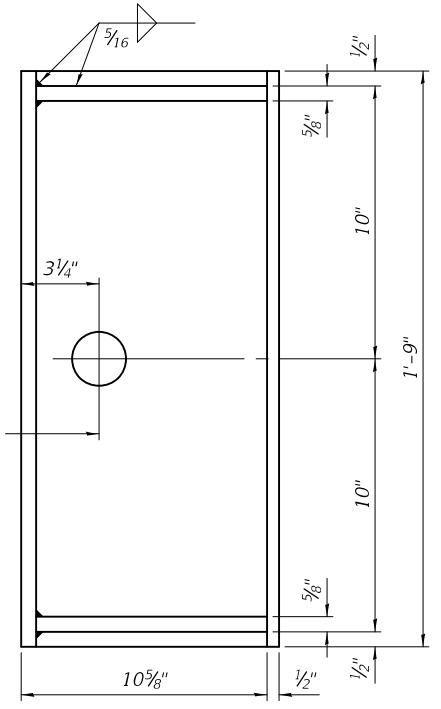
TYPE I ELASTOMERIC EXP. BRG.

\* See Fill Plate Thickness Table on sheet 50 of 96.

FIXED BEARING

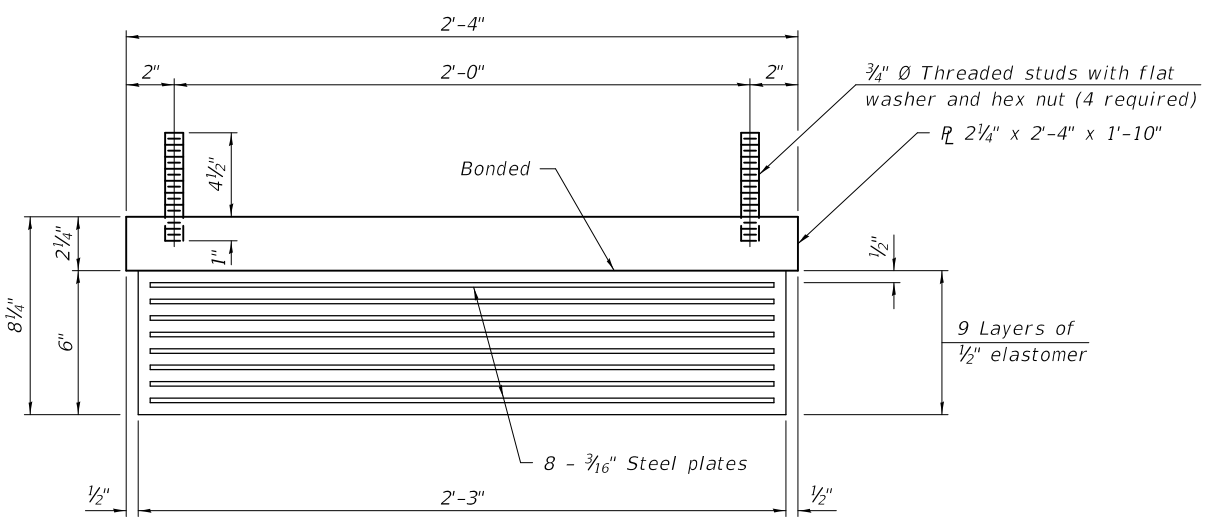


PINTLE

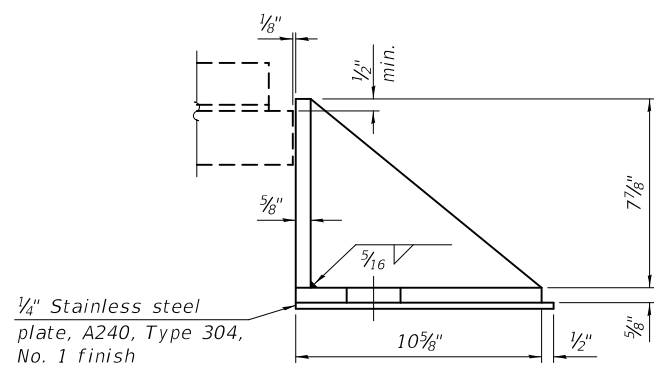


SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



BEARING ASSEMBLY



1/4" Stainless steel plate, A240, Type 304, No. 1 finish

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
 Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.  
 Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.  
 Shim plates shall not be placed under elastomeric bearing assembly.

The anchor bolt size and grade shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.  
 All structural steel plates of the fixed bearing and elastomeric bearing assembly, except adjusting shims and fill plates, shall conform to the requirements of AASHTO M270, Grade 50.  
 Two 1/8 inch adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	6
Anchor Bolts, 1 1/4"	Each	24
Anchor Bolts, 2"	Each	12

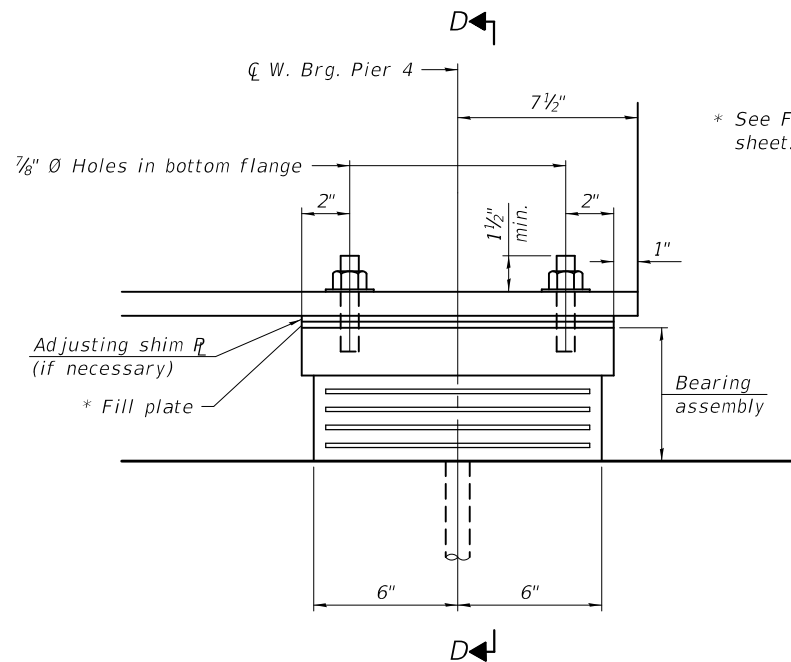
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DESIGNED - ZACHARY T. BULVA	EXAMINED - <i>Joanne F. Joffe</i>	DATE - OCTOBER 15, 2018
CHECKED - JOSUE D. ORTIZ-VARELA	PASSED - <i>Carl Berger</i>	REVISOR -
DRAWN - MICHAEL B. MOSSMAN		REVISION -
CHECKED - P.G. / Z.T.B. / G.R.A.		

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

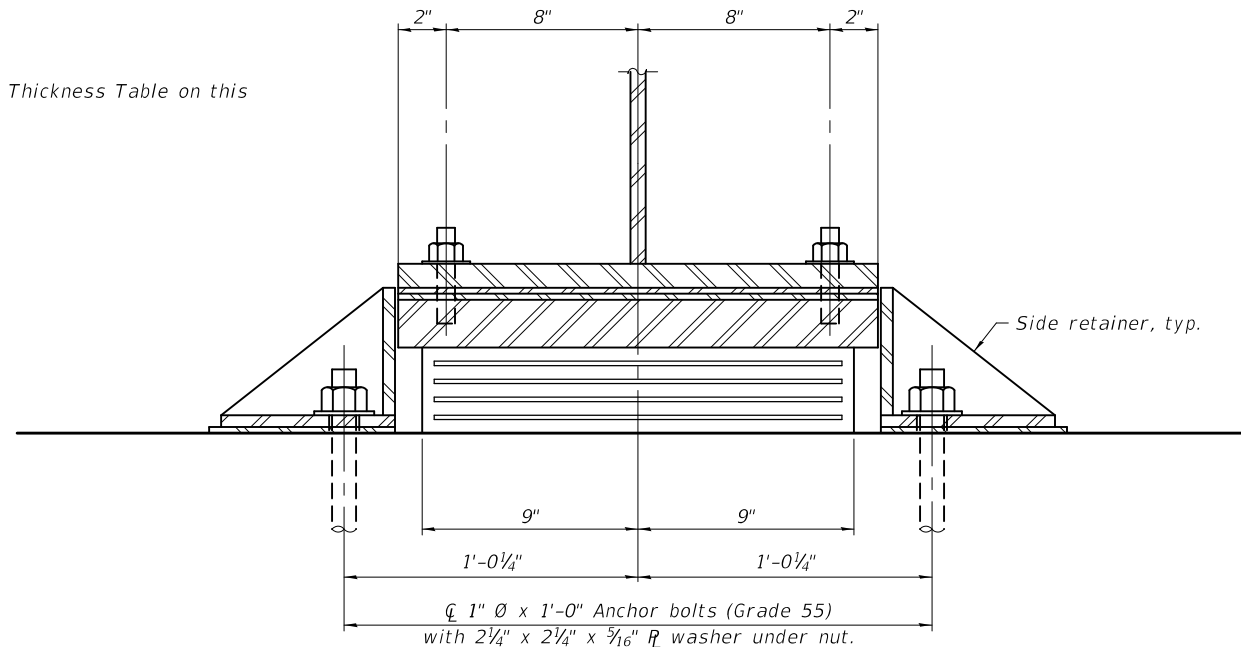
BEARING DETAILS (UNIT 1)  
 STRUCTURE NO. 014 - 0080

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	113
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				



ELEVATION AT WEST BEARING, PIER 4

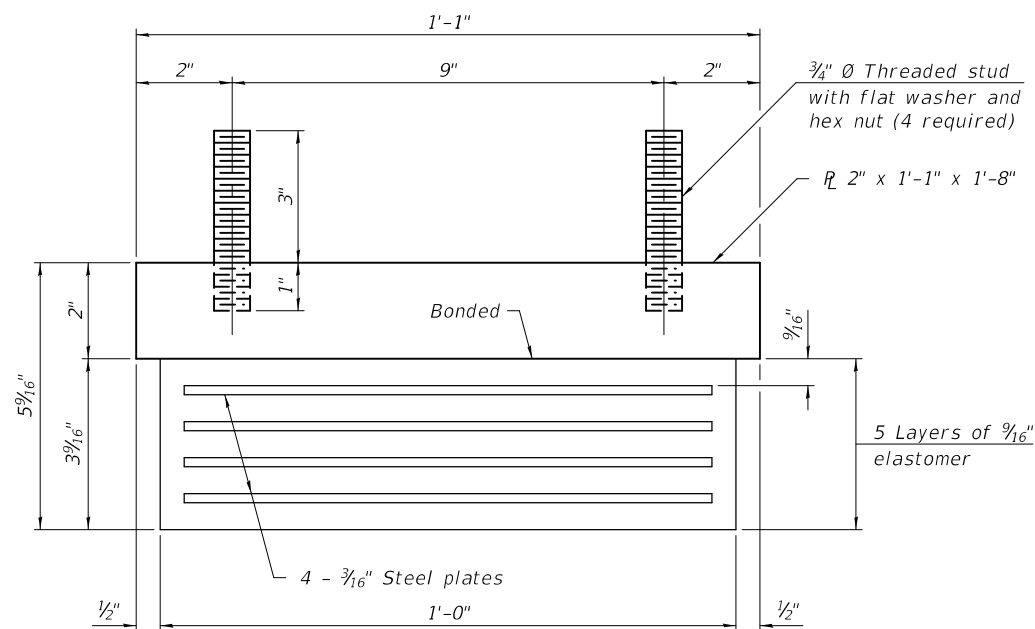
\* See Fill Plate Thickness Table on this sheet.



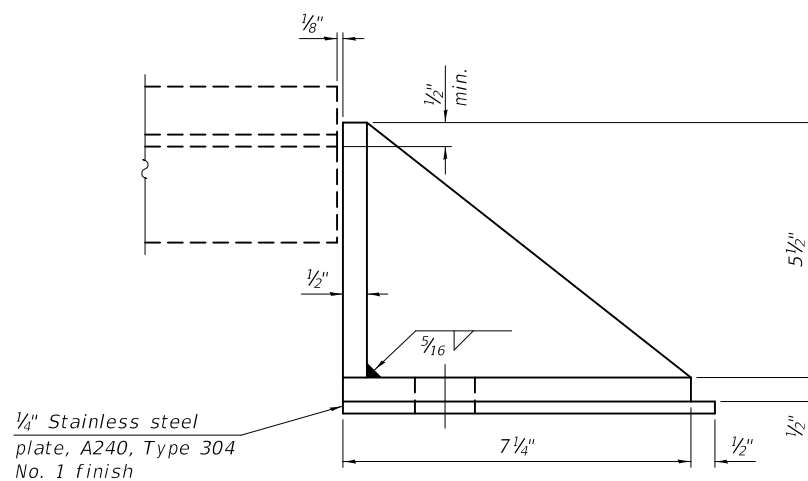
SECTION D-D

Notes:  
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
 Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.  
 Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.  
 Shim plates shall not be placed under elastomeric bearing assembly. The anchor bolt size and grade shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.  
 All structural steel plates of the elastomeric bearing assembly, except adjusting shims and fill plates, shall conform to the requirements of AASHTO M270, Grade 50.  
 Two 1/8 inch adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

TYPE I ELASTOMERIC EXP. BRG.

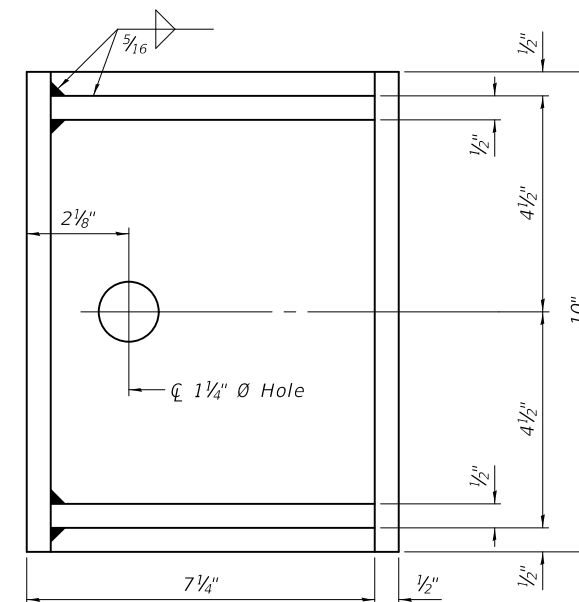


BEARING ASSEMBLY



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



FILL PLATE THICKNESS TABLE (UNIT 1)

Location	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6
West Abutment	0	1/4"	7/8"	0	0	0
Pier 1	0	0	1"	1/2"	0	0
Pier 2	0	1/8"	1/4"	0	1/8"	0
Pier 3	0	1/8"	1/4"	0	0	0
Pier 4, West Brg.	0	0	0	1/4"	0	0

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	6
Anchor Bolts, 1"	Each	12

MODEL: 0140080-76887-050  
 FILE NAME: pw:\VIL084EBID\INTEG.sil\m05.gov\PWIDOT\Documents\DOT Offices\Bureau of Bridges and Structures\Projects\0140080\CADD Plans\0140080-76887.dgn

DESIGNED - ZACHARY T. BULVA  
 CHECKED - JOSUE D. ORTIZ-VARELA  
 DRAWN - MICHAEL B. MOSSMAN  
 CHECKED - P.G. / Z.T.B. / G.R.A.

EXAMINED  
 PASSED  
 ENGINEER OF BRIDGE DESIGN  
 ENGINEER OF BRIDGES AND STRUCTURES

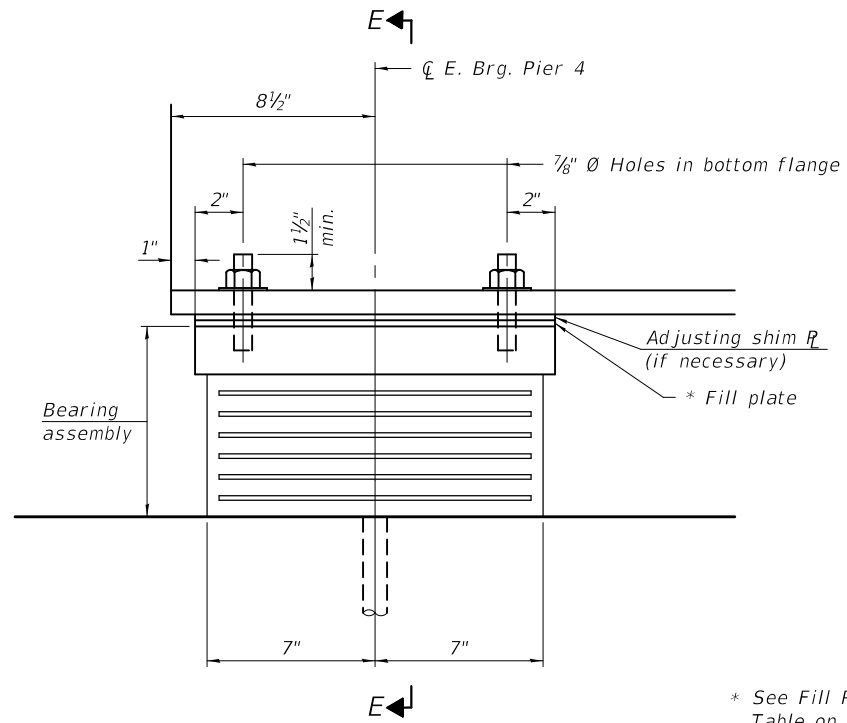
DATE - OCTOBER 15, 2018  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

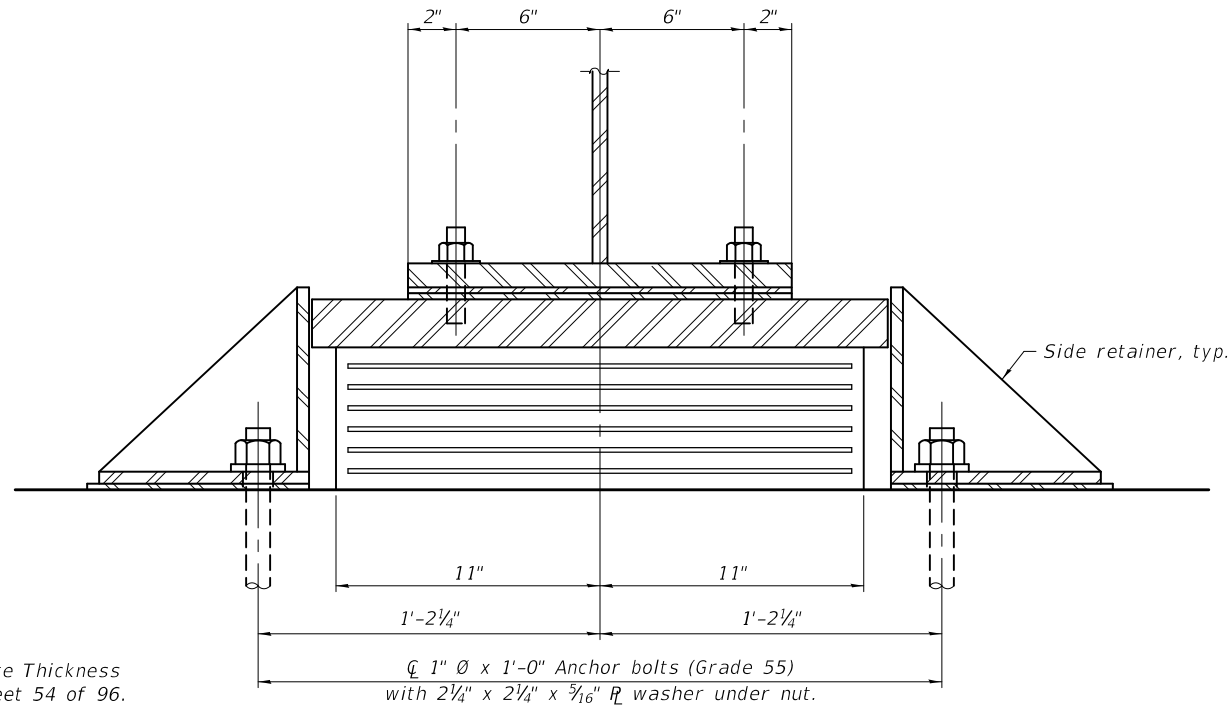
BEARING DETAILS (UNIT 1)  
 STRUCTURE NO. 014 - 0080

SHEET 50 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	114
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				



ELEVATION AT EAST  
BEARING, PIER 4



SECTION E-E

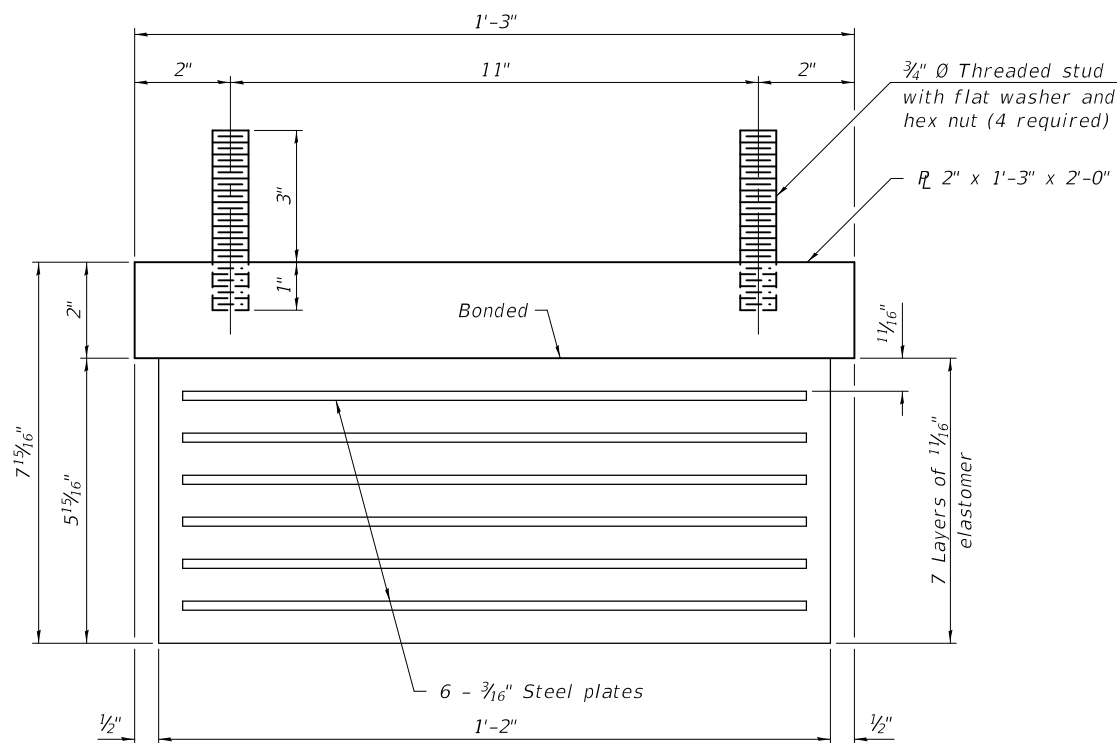
\* See Fill Plate Thickness  
Table on sheet 54 of 96.

Notes:  
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.  
Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.  
Shim plates shall not be placed under bearing assembly.  
The anchor bolt size and grade shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.  
All structural steel plates of the elastomeric bearing assembly, except adjusting shims and fill plates, shall conform to the requirements of AASHTO M270, Grade 50.  
Two 1/8 inch adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

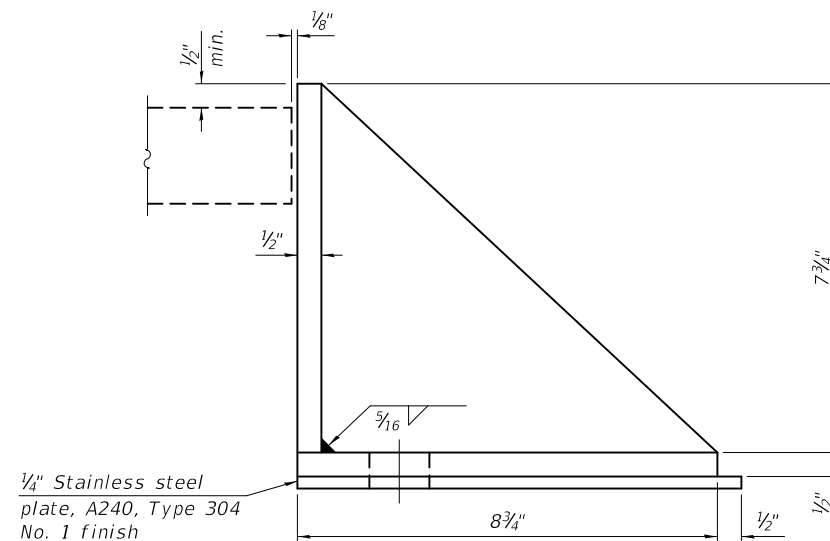
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	6
Anchor Bolts, 1"	Each	12

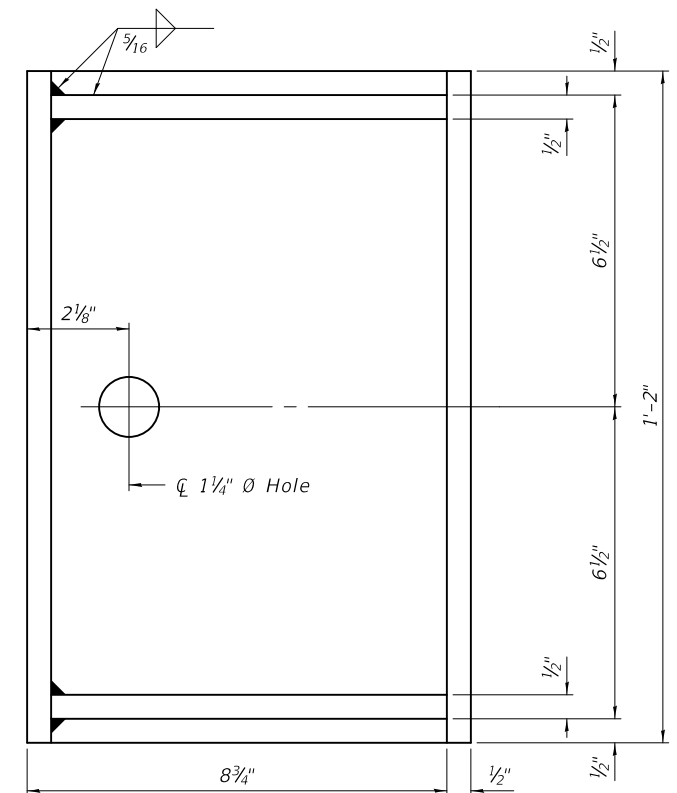
TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY



SIDE RETAINER  
Equivalent rolled angle with stiffeners  
will be allowed in lieu of welded plates.



MODEL: 0140080-76887-051  
FILE NAME: pw:\VIL084EBID\INTEG\Illinois.gov\PWIDOT\Documents\Bureau of Bridges and Structures\Projects\0140080\CADD Plans\0140080-76887.dgn

DESIGNED - JOSUE D. ORTIZ-VARELA  
CHECKED - ZACHARY T. BULVA  
DRAWN - MICHAEL B. MOSSMAN  
CHECKED - P.G. / Z.T.B. / G.R.A.

EXAMINED  
PASSED

Jaime F. Joffe  
ENGINEER OF BRIDGE DESIGN  
Paul R. Roper  
ENGINEER OF BRIDGES AND STRUCTURES

DATE - OCTOBER 15, 2018

REVISED -  
REVISED -

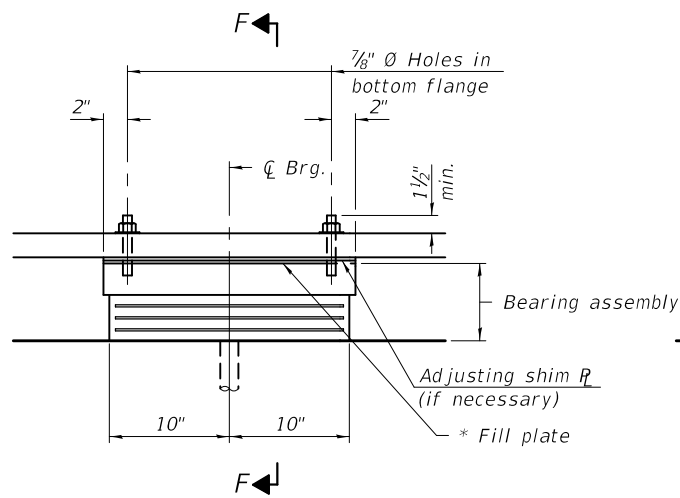
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS (UNIT 2)  
STRUCTURE NO. 014 - 0080

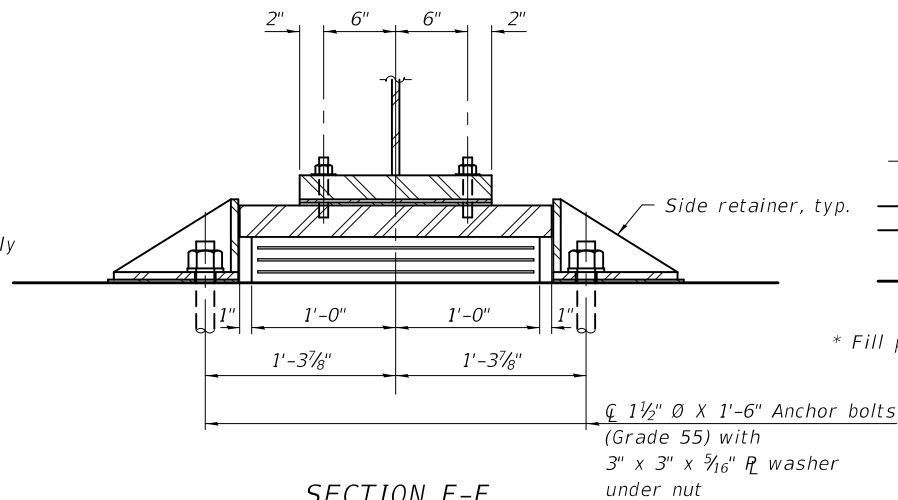
SHEET 51 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	115
CONTRACT NO. 76887				

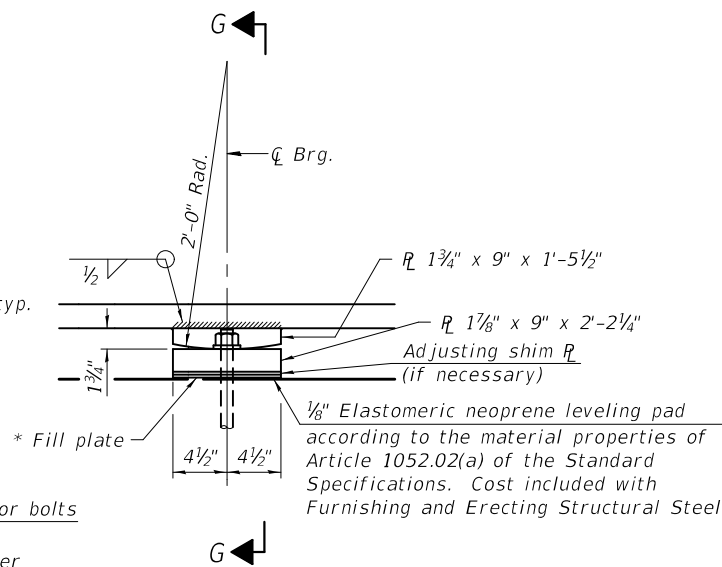
ILLINOIS FED. AID PROJECT



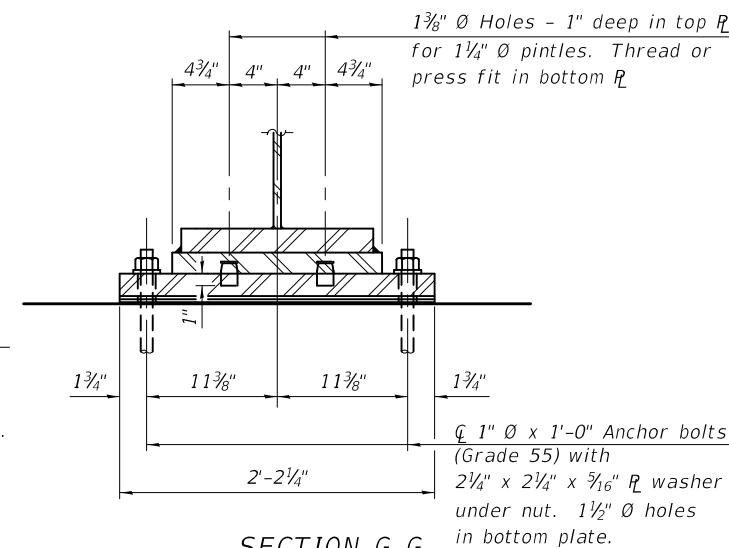
ELEVATION AT PIER 5



SECTION F-F



ELEVATION AT PIER 6

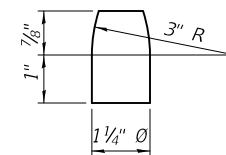


SECTION G-G

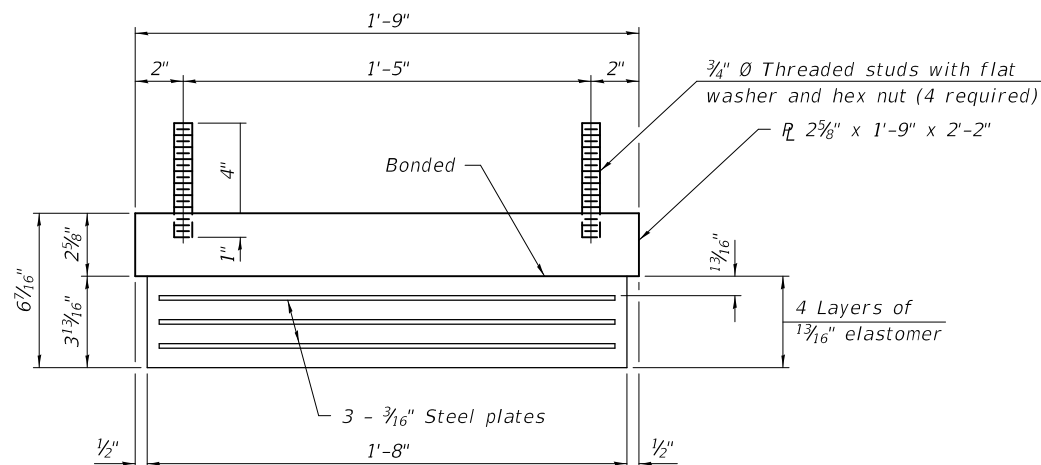
TYPE I ELASTOMERIC EXP. BRG.

FIXED BEARING

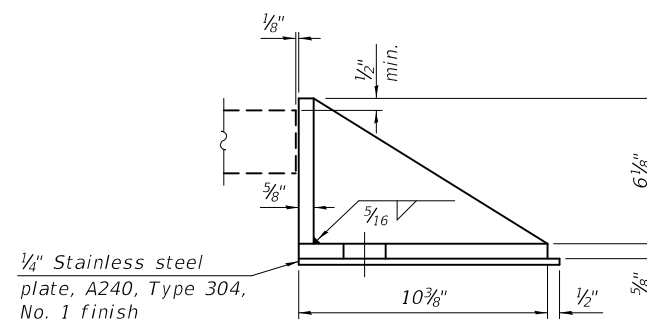
\* See Fill Plate Thickness Table on sheet 54 of 96.



PINTLE

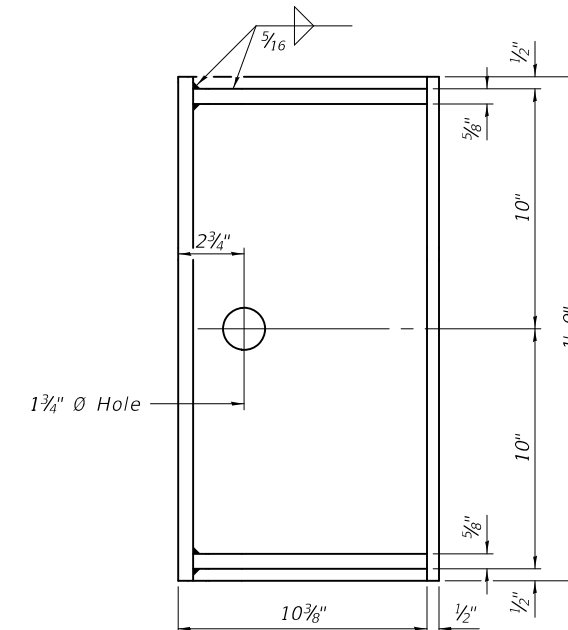


BEARING ASSEMBLY



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	6
Anchor Bolts, 1"	Each	12
Anchor Bolts, 1 1/2"	Each	12

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

Shim plates shall not be placed under elastomeric bearing assembly.

The anchor bolt size and grade shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.

All structural steel plates of the fixed bearing and elastomeric bearing assembly, except adjusting shims and fill plates, shall conform to the requirements of AASHTO M270, Grade 50.

Two 1/8 inch adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

MODEL: 0140080-76887-052  
FILE NAME: p:\v\084EBID\INTEG\ilmod\gov\PWIDOT\Documents\Projects\0140080\CADD Plans\0140080-76887.dgn

DESIGNED -	JOSUE D. ORTIZ-VARELA
CHECKED -	ZACHARY T. BULVA
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	P.G. / Z.T.B. / G.R.A.

EXAMINED	<i>Joanne F. Joffe</i>
PASSED	<i>Carl Kasper</i>

DATE -	OCTOBER 15, 2018
REVISED -	
REVISED -	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

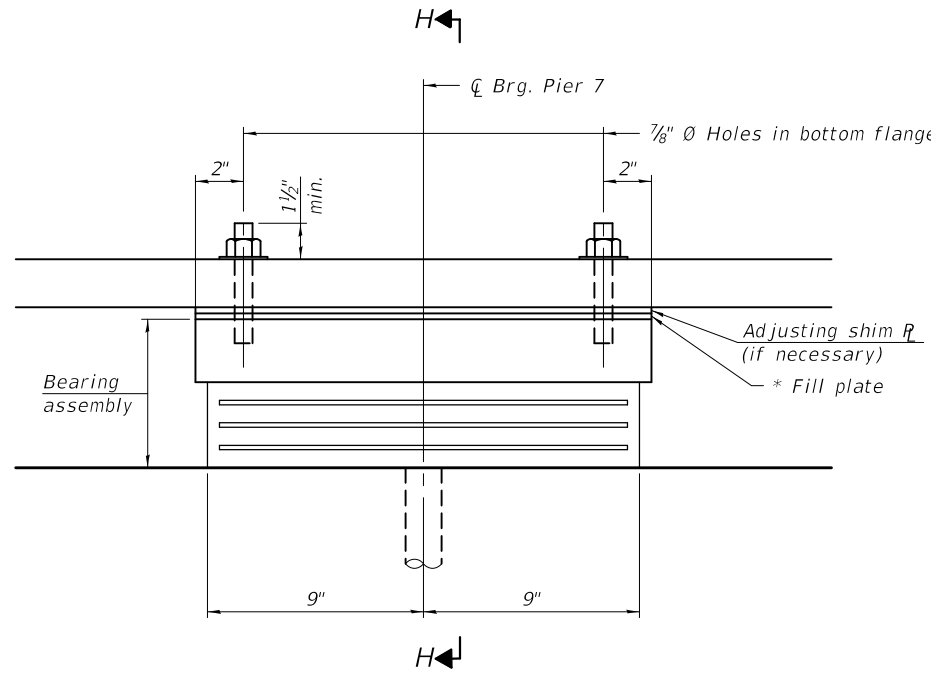
BEARING DETAILS (UNIT 2)  
STRUCTURE NO. 014 - 0080

SHEET 52 OF 96 SHEETS

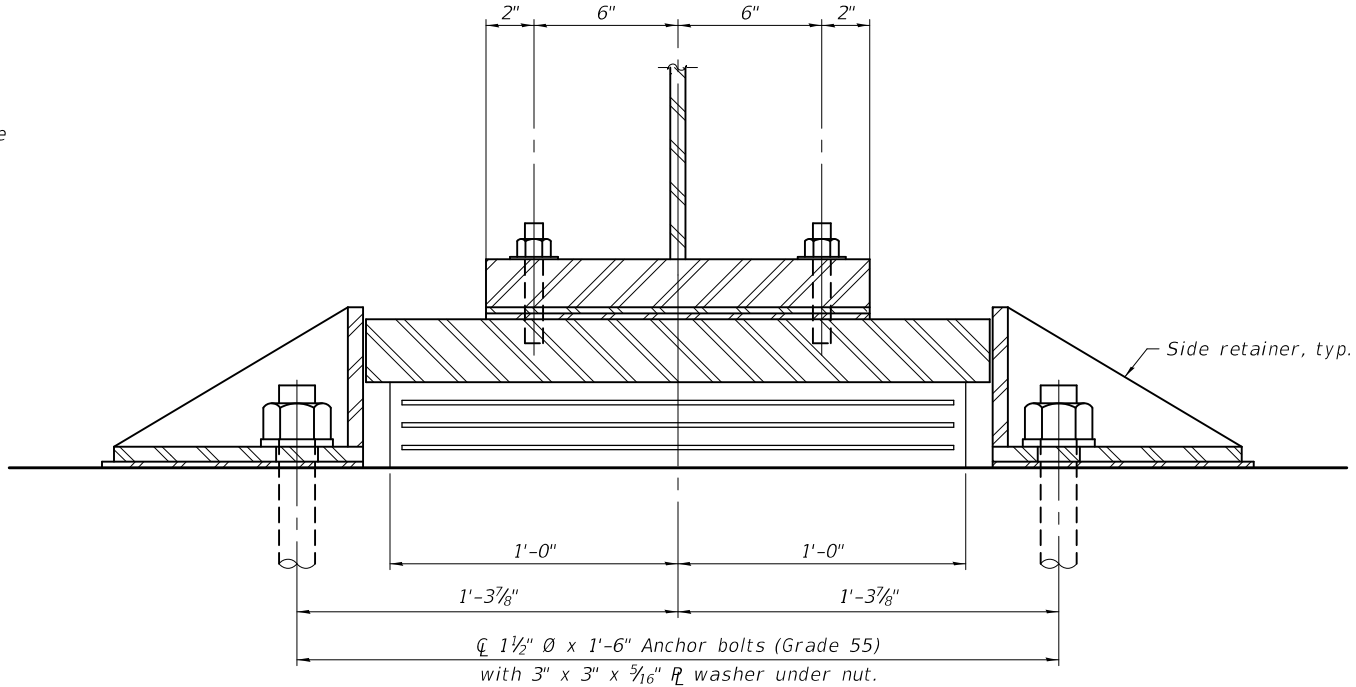
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	116
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

10/15/2018 8:58:28 AM





ELEVATION AT PIER 7



SECTION H-H

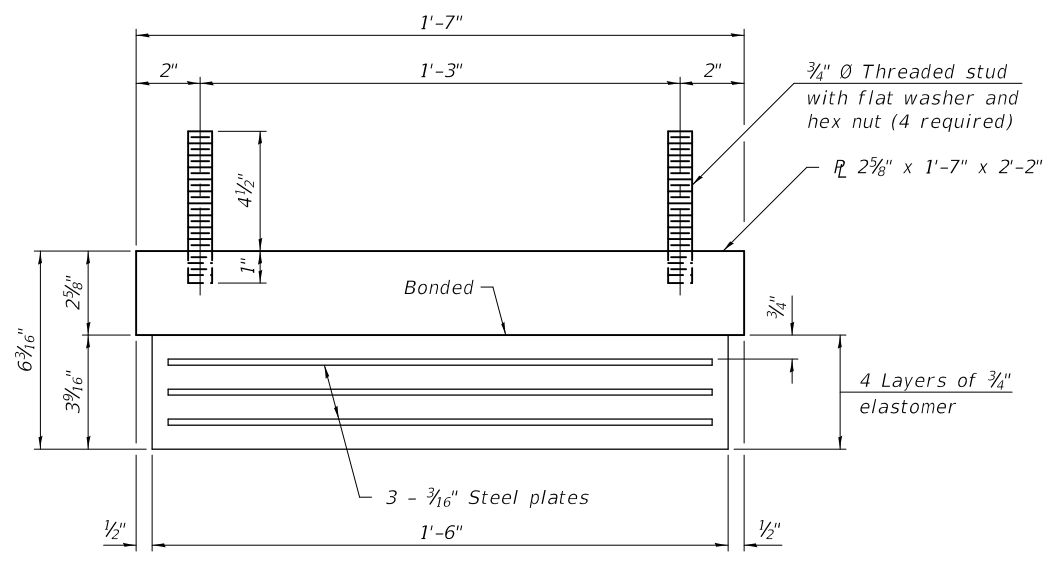
Notes:  
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
 Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type 1.  
 Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.  
 Shim plates shall not be placed under bearing assembly.  
 The anchor bolt size and grade shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.  
 All structural steel plates of the elastomeric bearing assembly, except adjusting shims and fill plates, shall conform to the requirements of AASHTO M270, Grade 50.  
 Two 1/8 inch adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

BILL OF MATERIAL

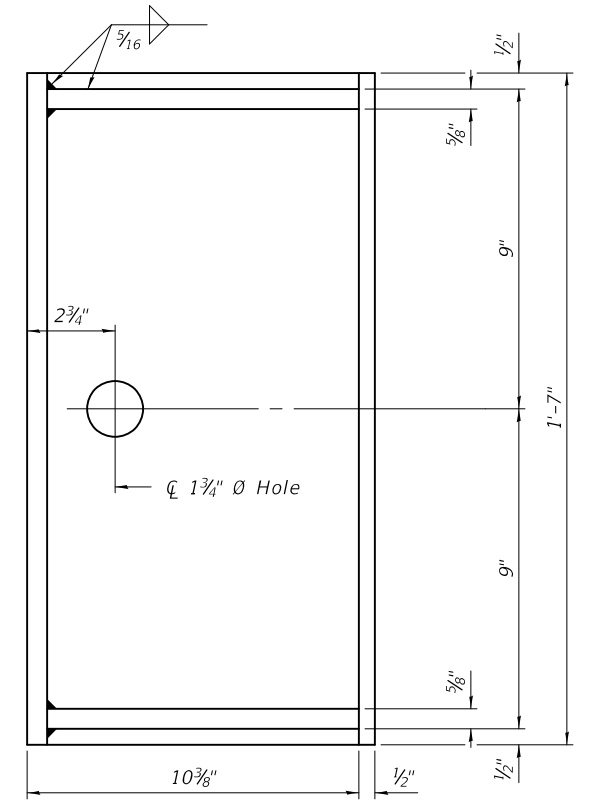
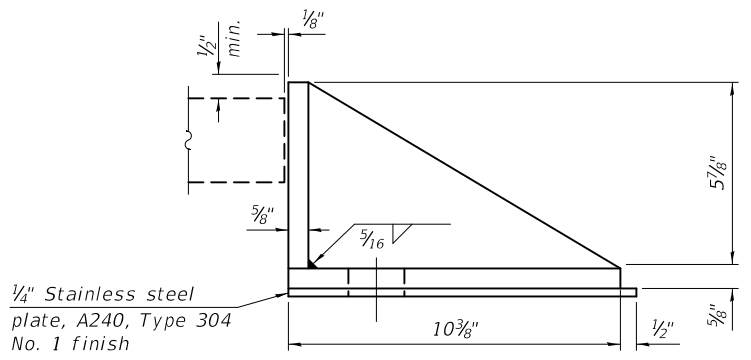
Item	Unit	Total
Elastomeric Bearing Assembly, Type 1	Each	6
Anchor Bolts, 1 1/2"	Each	12

\* See Fill Plate Thickness Table on sheet 54 of 96.

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

MODEL: 0140080-76887-053  
 FILE NAME: pw:\VIL084EBID\INTEG\illmo5.gov\PWIDOT\Documents\DOT Offices\Bureau of Bridges and Structures\Projects\0140080\CADD Plans\0140080-76887.dgn

DESIGNED - JOSUE D. ORTIZ-VARELA	EXAMINED - <i>Joanne F. DeLuca</i>	DATE - OCTOBER 15, 2018
CHECKED - ZACHARY T. BULVA	PASSED - <i>Carl Ringer</i>	REVISOR -
DRAWN - MICHAEL B. MOSSMAN		REVISION -
CHECKED - P.G. / Z.T.B. / G.R.A.		

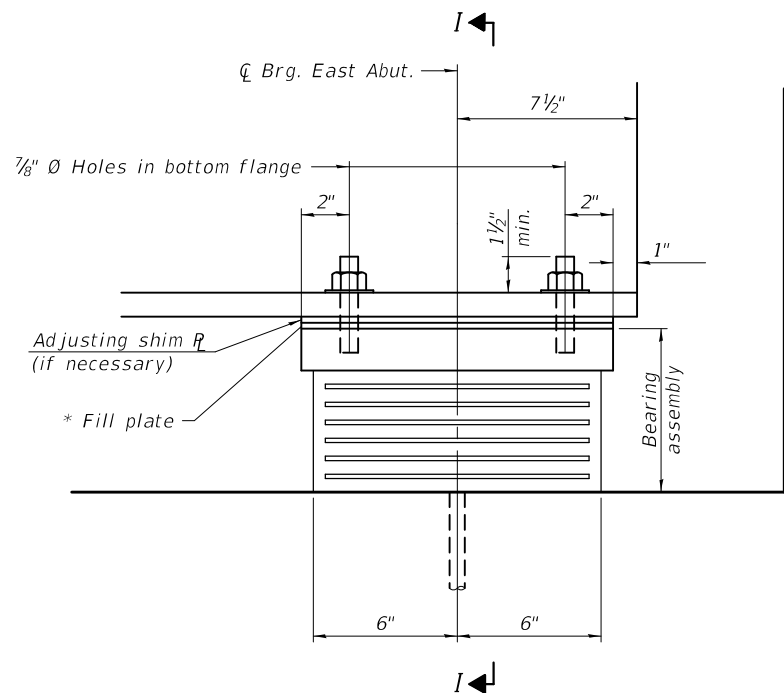
ENGINEER OF BRIDGE DESIGN  
 ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

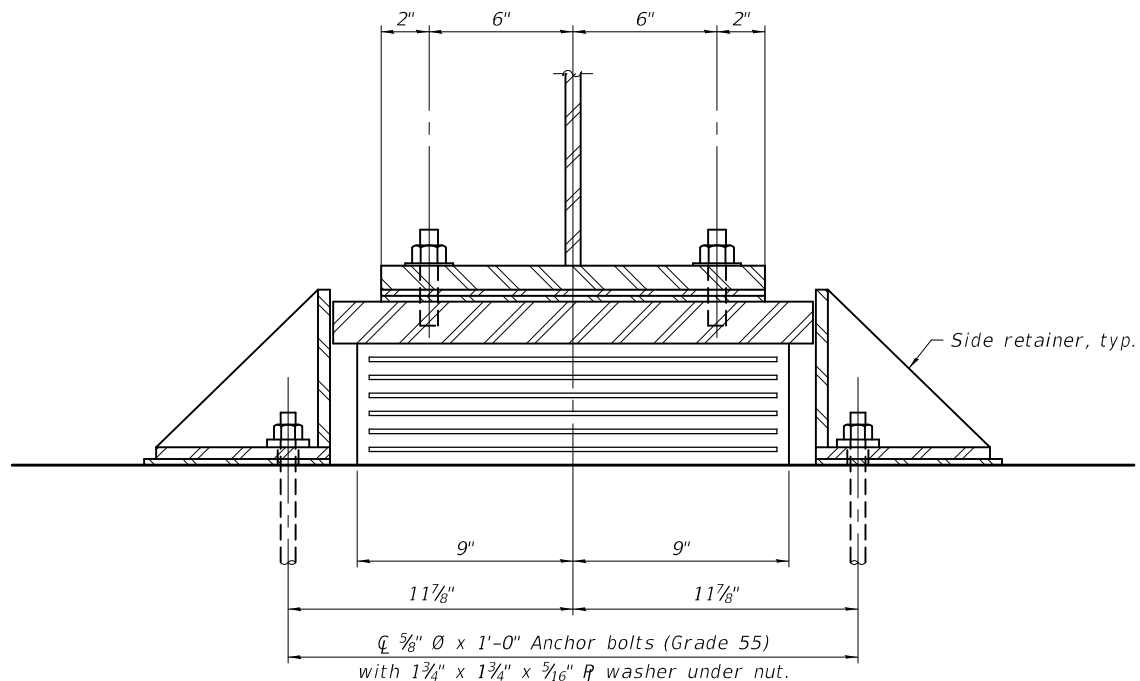
BEARING DETAILS (UNIT 2)  
 STRUCTURE NO. 014 - 0080

SHEET 53 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	117
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				



**ELEVATION AT EAST ABUTMENT**

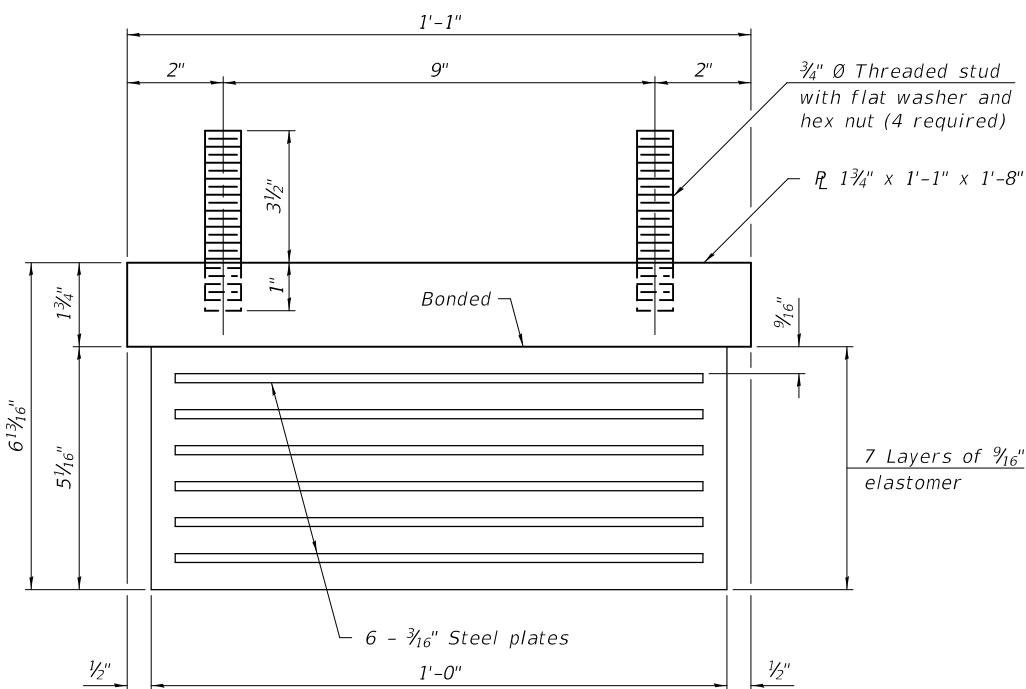


**SECTION I-I**

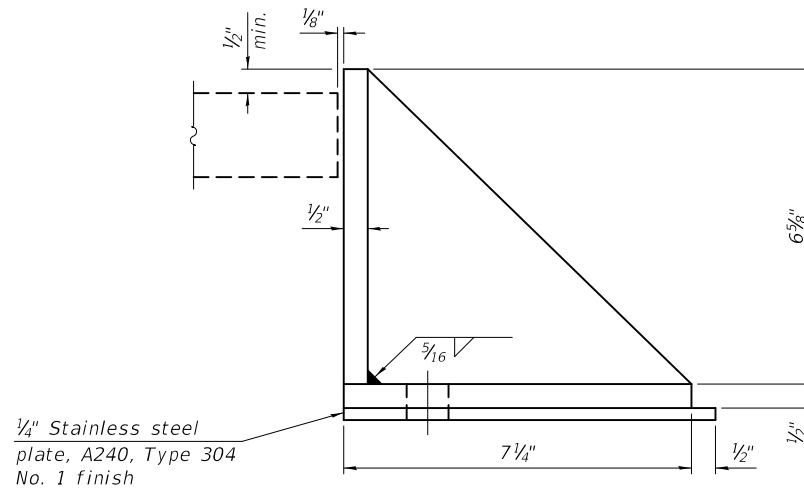
**Notes:**  
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
 Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.  
 Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.  
 Shim plates shall not be placed under elastomeric bearing assembly.  
 The anchor bolt size and grade shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.  
 All structural steel plates of the elastomeric bearing assembly, except adjusting shims and fill plates, shall conform to the requirements of AASHTO M270, Grade 50.  
 Two 1/8 inch adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

**TYPE I ELASTOMERIC EXP. BRG.**

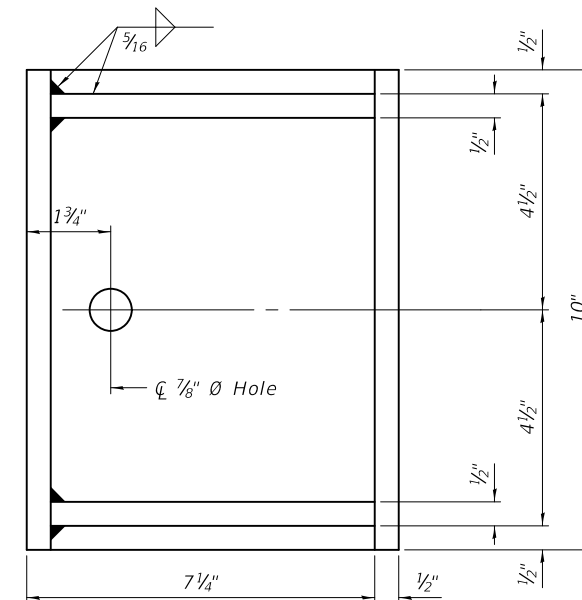
\* See Fill Plate Thickness Table on this sheet.



**BEARING ASSEMBLY**



**SIDE RETAINER**  
 Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



**FILL PLATE THICKNESS TABLE (UNIT 2)**

Location	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6
Pier 4, East Brg.	0	0	0	1/4"	0	0
Pier 5	0	0	0	1/4"	0	0
Pier 6	0	0	0	1/4"	0	0
Pier 7	0	0	1/4"	3/4"	0	0
East Abutment	0	0	0	3/4"	1/4"	0

**BILL OF MATERIAL**

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	6
Anchor Bolts, 5/8"	Each	12

MODEL: 0140080-76887-054  
 FILE NAME: pw:\VIL084EBIDINTEG.silmod5.gov\PWIDOT\Documents\DOT Offices\Bureau of Bridges and Structures\Projects\0140080\CADD Plans\0140080-76887.dgn

DESIGNED - JOSUE D. ORTIZ-VARELA  
 CHECKED - ZACHARY T. BULVA  
 DRAWN - MICHAEL B. MOSSMAN  
 CHECKED - P.G. / Z.T.B. / G.R.A.

EXAMINED  
 PASSED  
  
 ENGINEER OF BRIDGE DESIGN  
  
 ENGINEER OF BRIDGES AND STRUCTURES

DATE - OCTOBER 15, 2018  
 REVISED -  
 REVISED -

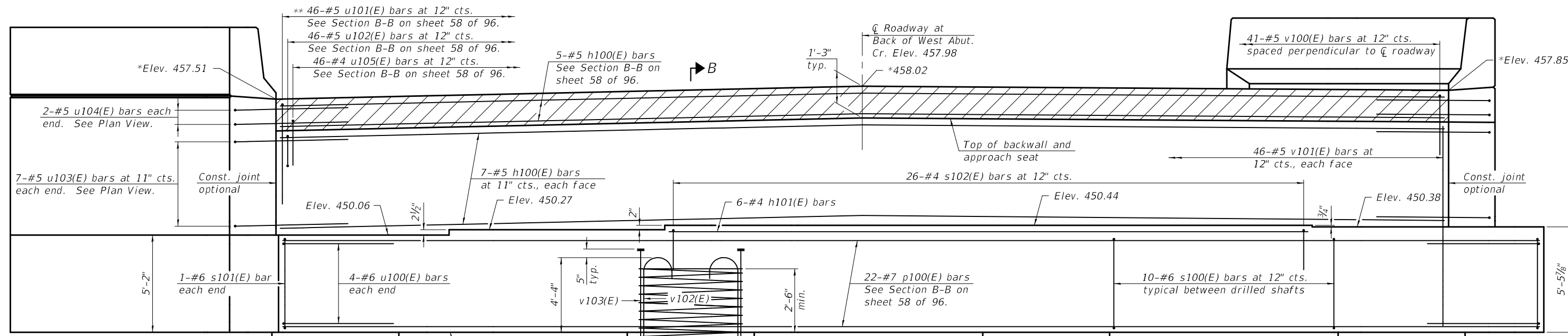
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**BEARING DETAILS (UNIT 2)**  
**STRUCTURE NO. 014 - 0080**

SHEET 54 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	118
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

MODEL: 0140080-76887-055  
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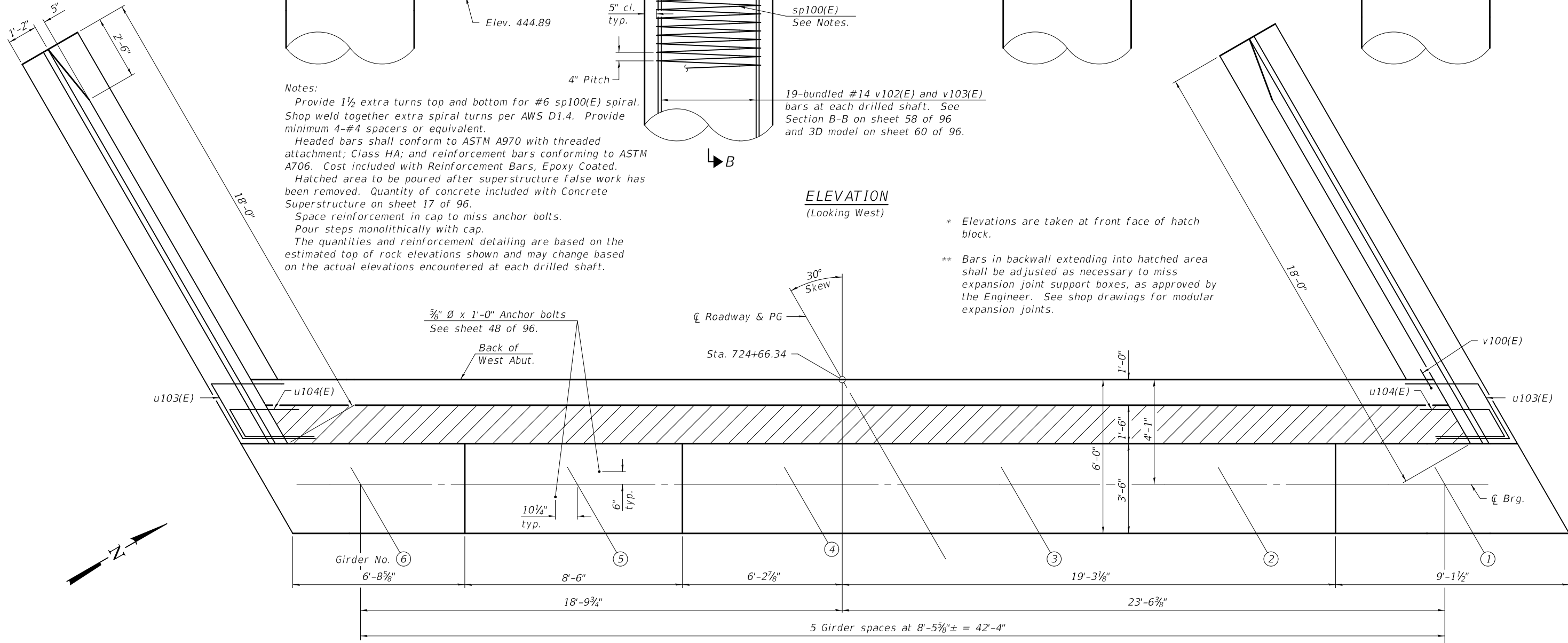


**Notes:**

Provide 1 1/2 extra turns top and bottom for #6 sp100(E) spiral. Shop weld together extra spiral turns per AWS D1.4. Provide minimum 4-#4 spacers or equivalent.  
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.  
 Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure on sheet 17 of 96.  
 Space reinforcement in cap to miss anchor bolts.  
 Pour steps monolithically with cap.  
 The quantities and reinforcement detailing are based on the estimated top of rock elevations shown and may change based on the actual elevations encountered at each drilled shaft.

**ELEVATION**  
 (Looking West)

- \* Elevations are taken at front face of hatch block.
- \*\* Bars in backwall extending into hatched area shall be adjusted as necessary to miss expansion joint support boxes, as approved by the Engineer. See shop drawings for modular expansion joints.



**PLAN**

DESIGNED -	ZACHARY T. BULVA
CHECKED -	JOSUE D. ORTIZ-VARELA
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	P.G. / Z.T.B. / G.R.A.

EXAMINED  
 PASSED  
 ENGINEER OF BRIDGES AND STRUCTURES

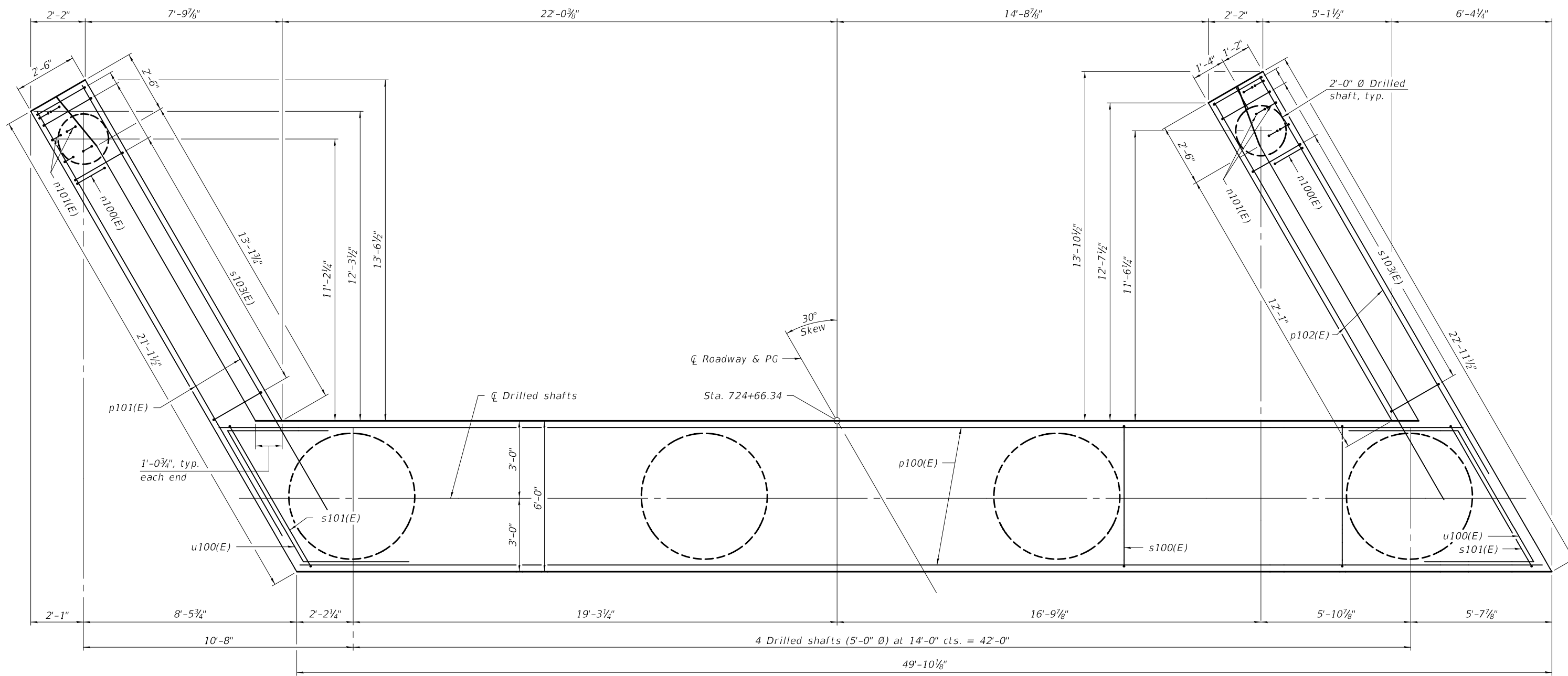
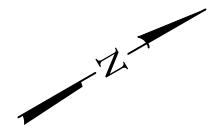
DATE -	OCTOBER 15, 2018
REVISED -	
REVISED -	

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT (UNIT 1)**  
**STRUCTURE NO. 014 - 0080**

SHEET 55 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	119
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				



PLAN-PILE CAP

MODEL: 0140080-76887-056  
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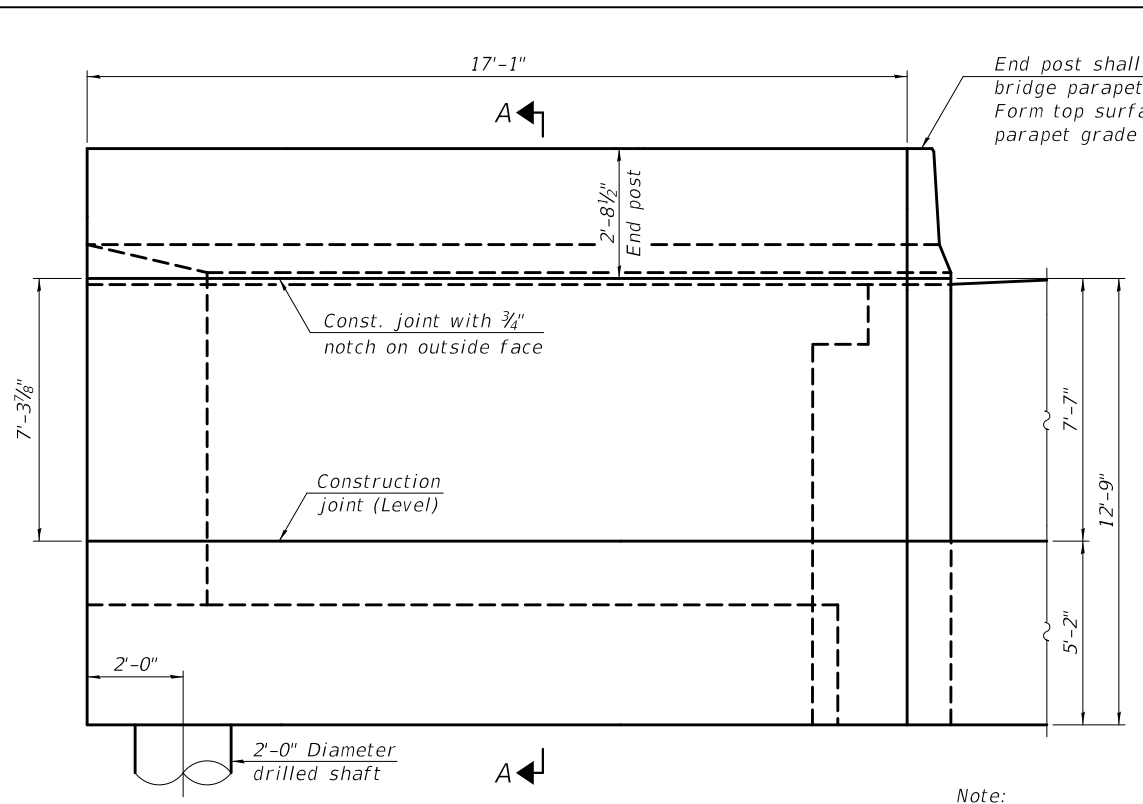
DESIGNED - ZACHARY T. BULVA	EXAMINED - <i>Jaime F. Salas</i>	DATE - OCTOBER 15, 2018
CHECKED - JOSUE D. ORTIZ-VARELA	PASSED - <i>Carl Kreyer</i>	REVISOR -
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	REVISOR -
CHECKED - P.G. / Z.T.B. / G.R.A.		

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

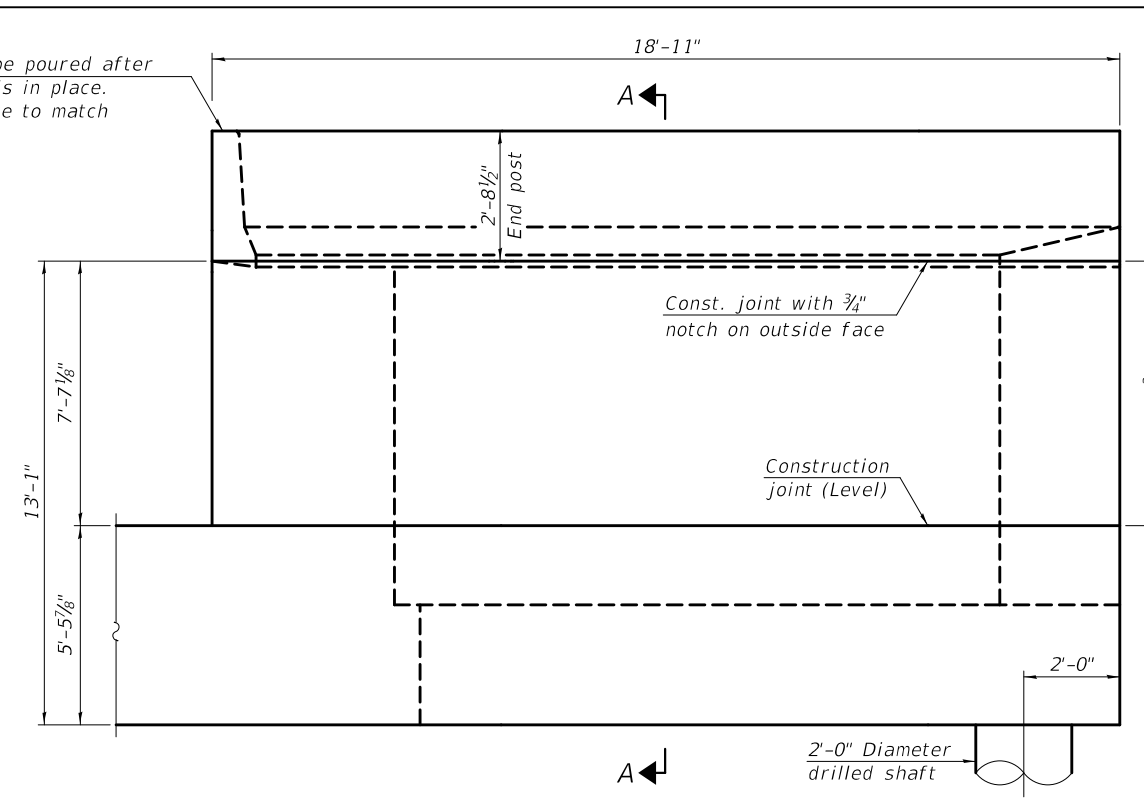
**WEST ABUTMENT (UNIT 1)**  
**STRUCTURE NO. 014 - 0080**

SHEET 56 OF 96 SHEETS

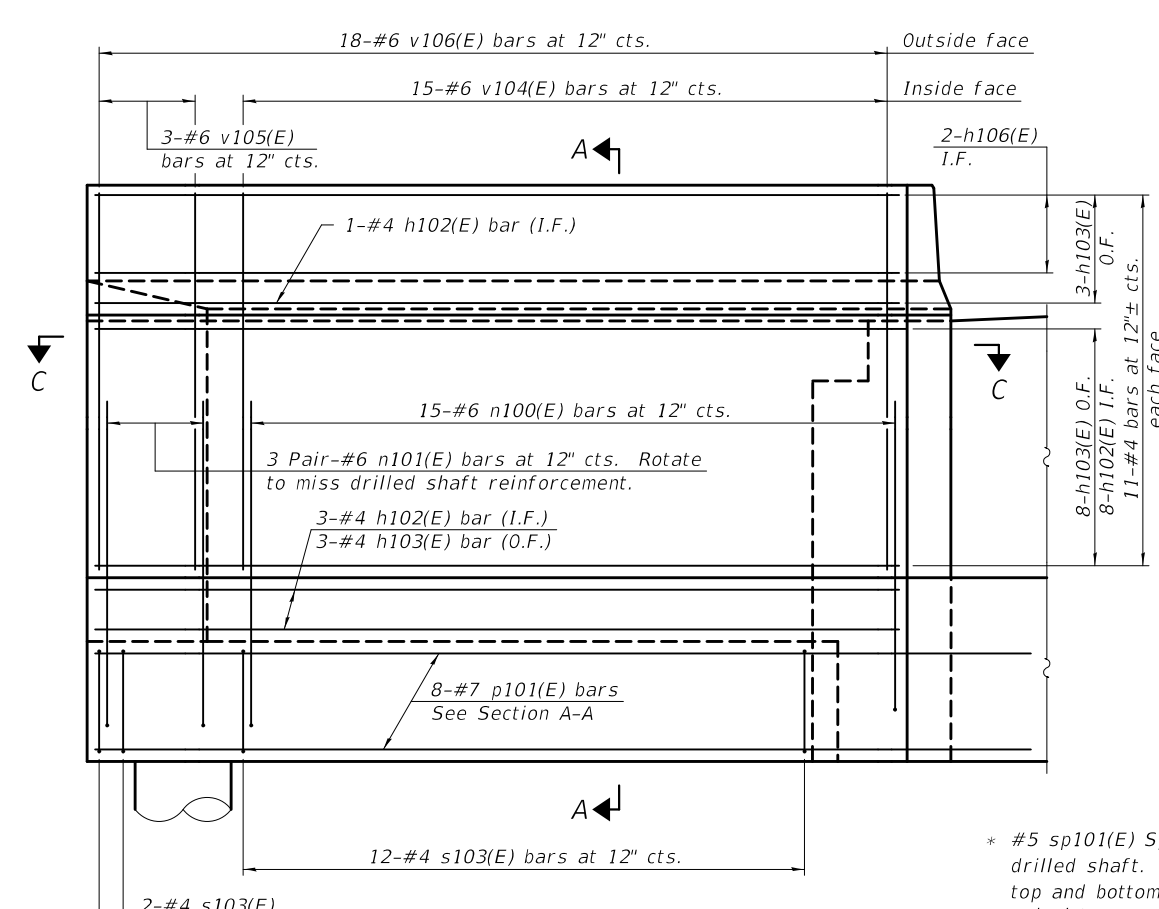
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	120
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				



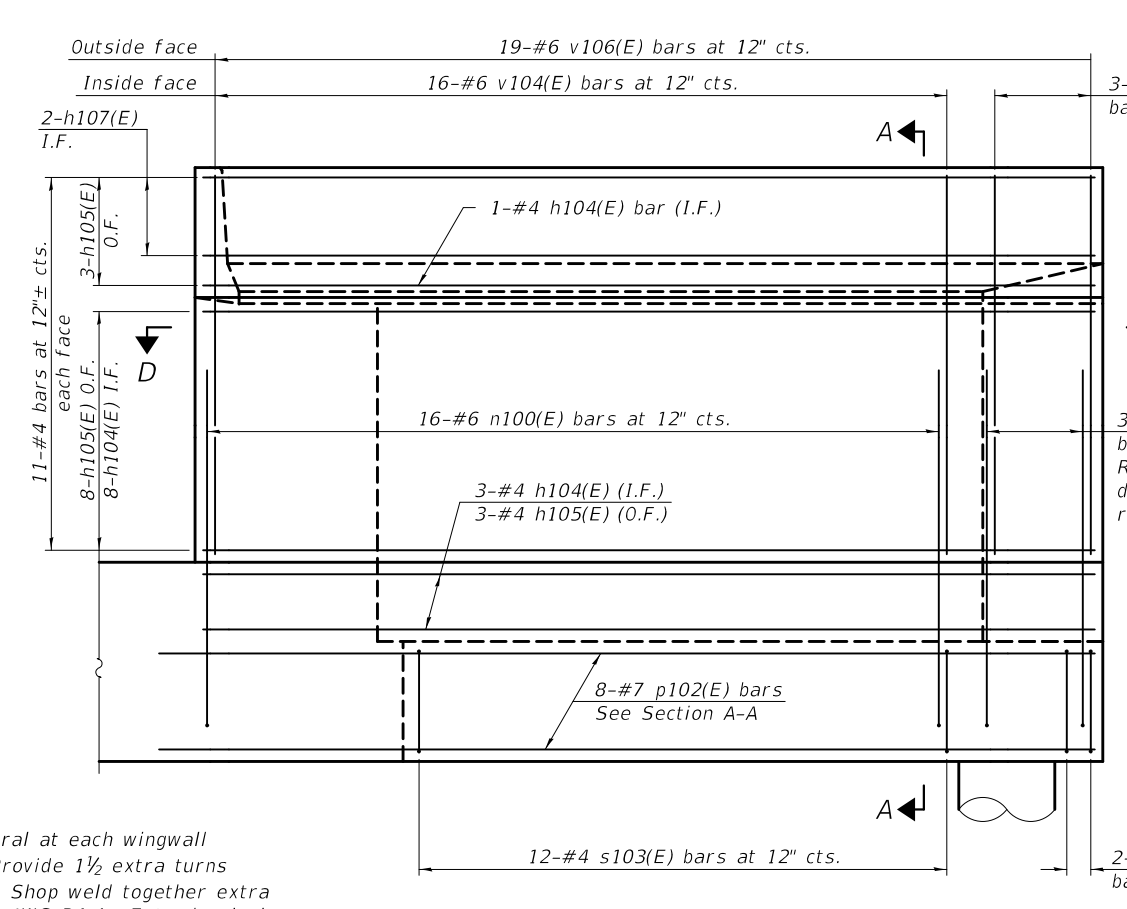
**WINGWALL ELEVATION**  
(Showing dimensions, South wingwall, looking North)



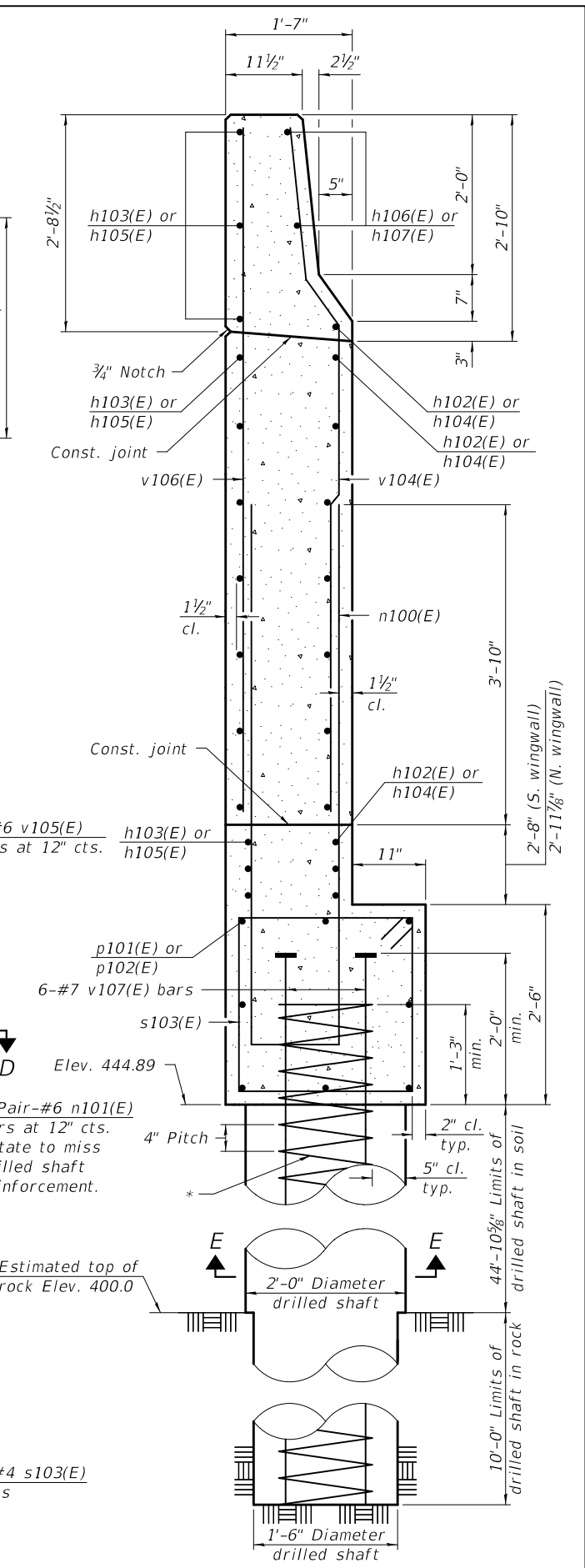
**WINGWALL ELEVATION**  
(Showing dimensions, North wingwall, looking South)



**WINGWALL ELEVATION**  
(Showing reinforcement, South wingwall)



**WINGWALL ELEVATION**  
(Showing reinforcement, North wingwall)



**SECTION A-A**

\* #5 sp101(E) Spiral at each wingwall drilled shaft. Provide 1/2 extra turns top and bottom. Shop weld together extra spiral turns per AWS D1.4. Extend spiral 1'-3" into wingwall footing. Provide 4-#4 spacers or equivalent.

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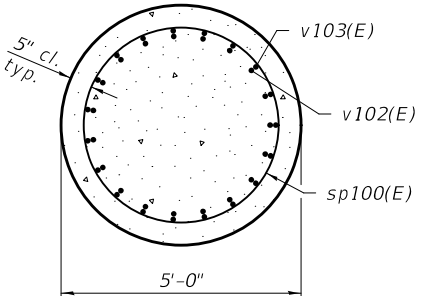
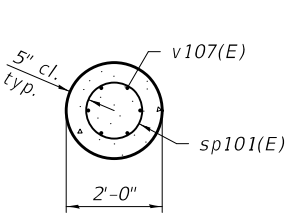
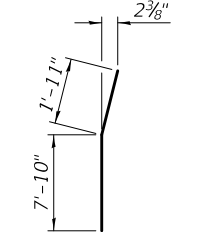
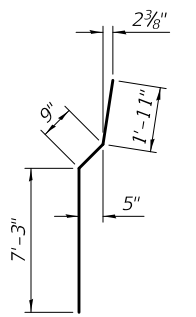
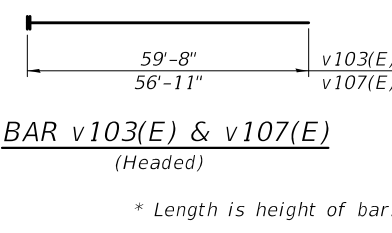
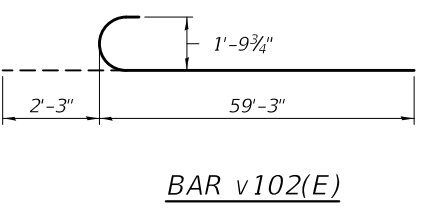
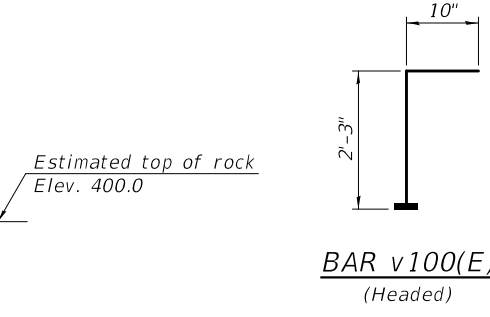
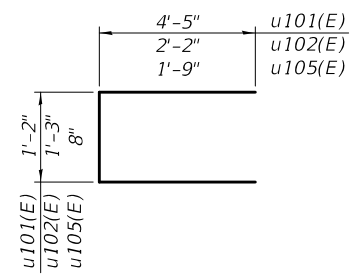
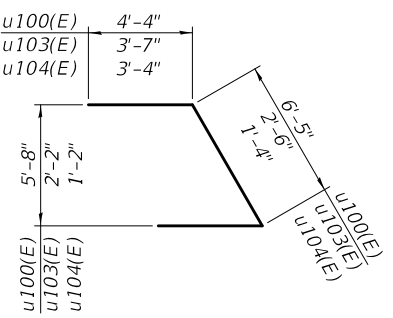
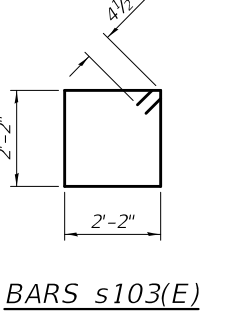
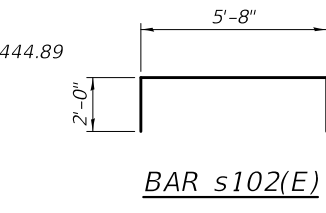
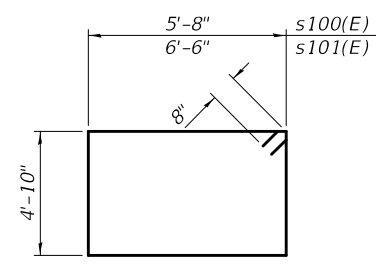
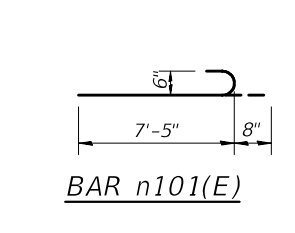
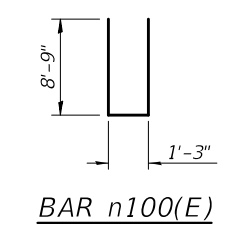
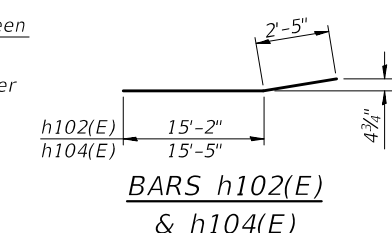
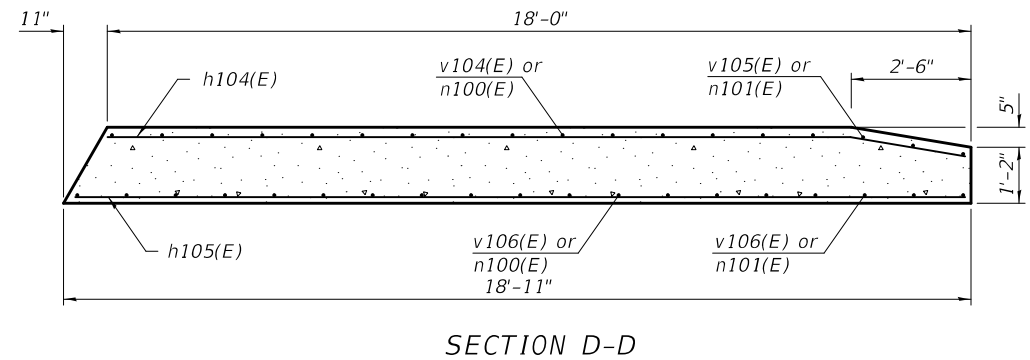
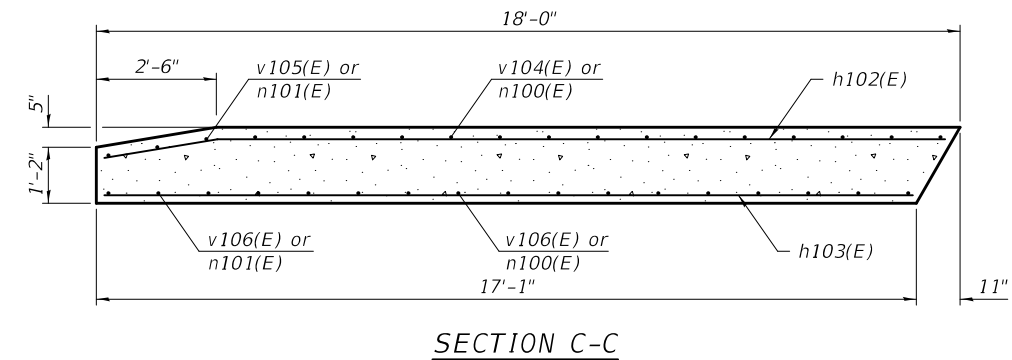
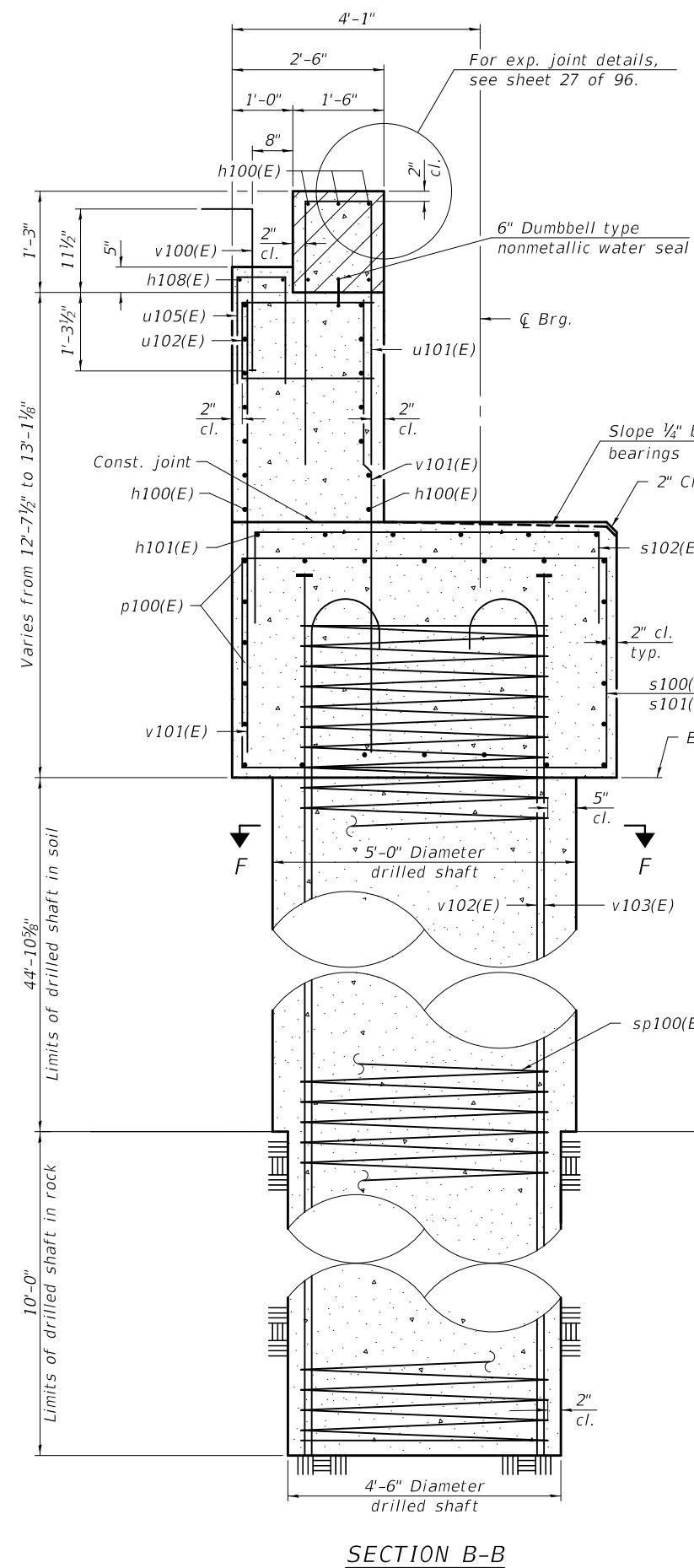
DESIGNED - ZACHARY T. BULVA	EXAMINED - <i>Joanne F. J...</i>	DATE - OCTOBER 15, 2018
CHECKED - JOSUE D. ORTIZ-VARELA	PASSED - <i>Carl...</i>	REVISOR -
DRAWN - MICHAEL B. MOSSMAN		REVISOR -
CHECKED - P.G. / Z.T.B. / G.R.A.		

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT (UNIT 1)**  
**STRUCTURE NO. 014 - 0080**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	121
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

MODEL: 0140080-76887-058  
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**WEST ABUTMENT  
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h100(E)	19	#5	45'-9"	
h101(E)	6	#4	25'-2"	
h102(E)	12	#4	17'-7"	
h103(E)	14	#4	16'-10"	
h104(E)	12	#4	17'-10"	
h105(E)	14	#4	18'-6"	
h106(E)	2	#4	17'-2"	
h107(E)	2	#4	18'-2"	
h108(E)	2	#4	49'-9"	
n100(E)	31	#6	18'-9"	
n101(E)	12	#6	8'-1"	
p100(E)	22	#7	49'-6"	
p101(E)	8	#7	19'-3"	
p102(E)	8	#7	19'-7"	
s100(E)	30	#6	22'-4"	
s101(E)	2	#6	24'-0"	
s102(E)	26	#4	9'-8"	
s103(E)	28	#4	9'-5"	
sp100(E)	4	#6	56'-4"	
sp101(E)	2	#5	56'-9"	
u100(E)	8	#6	15'-1"	
u101(E)	46	#5	10'-0"	
u102(E)	46	#5	5'-7"	
u103(E)	14	#5	9'-8"	
u104(E)	4	#5	8'-0"	
u105(E)	46	#4	4'-2"	
v100(E)	41	#5	3'-1"	
v101(E)	92	#5	11'-0"	
v102(E)	76	#14	61'-6"	
v103(E)	76	#14	59'-8"	
v104(E)	31	#6	9'-11"	
v105(E)	6	#6	9'-9"	
v106(E)	37	#6	9'-9"	
v107(E)	12	#7	56'-11"	
Structure Excavation		Cu. Yd.	101	
Concrete Structures		Cu. Yd.	115	
Reinforcement Bars, Epoxy Coated		Pound	96,990	
Drilled Shaft in Soil		Cu. Yd.	141.1	
Drilled Shaft in Rock		Cu. Yd.	24.9	
Concrete Sealer		Sq. Ft.	818	
Crosshole Sonic Logging Access Ducts		Foot	879	
Crosshole Sonic Logging Testing		Each	1	

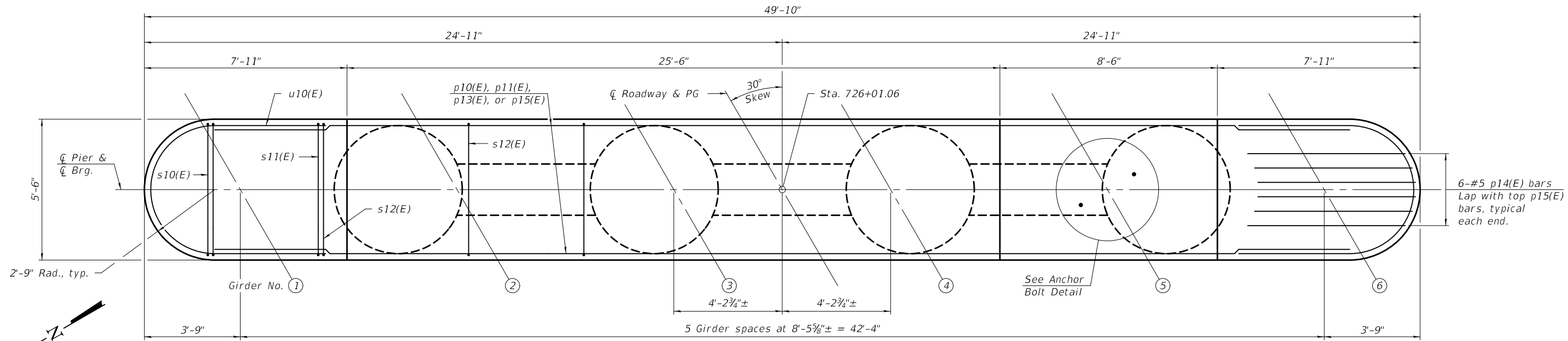
\* Length is height of bar.  
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.  
 Crosshole sonic logging access ducts are not required for drilled shafts located at the wingwalls.

DESIGNED - ZACHARY T. BULVA	EXAMINED - <i>Joanne F. [Signature]</i>	DATE - OCTOBER 15, 2018
CHECKED - JOSUE D. ORTIZ-VARELA	PASSED - <i>Carl [Signature]</i>	REVISIONS -
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	
CHECKED - P.G. / Z.T.B. / G.R.A.		

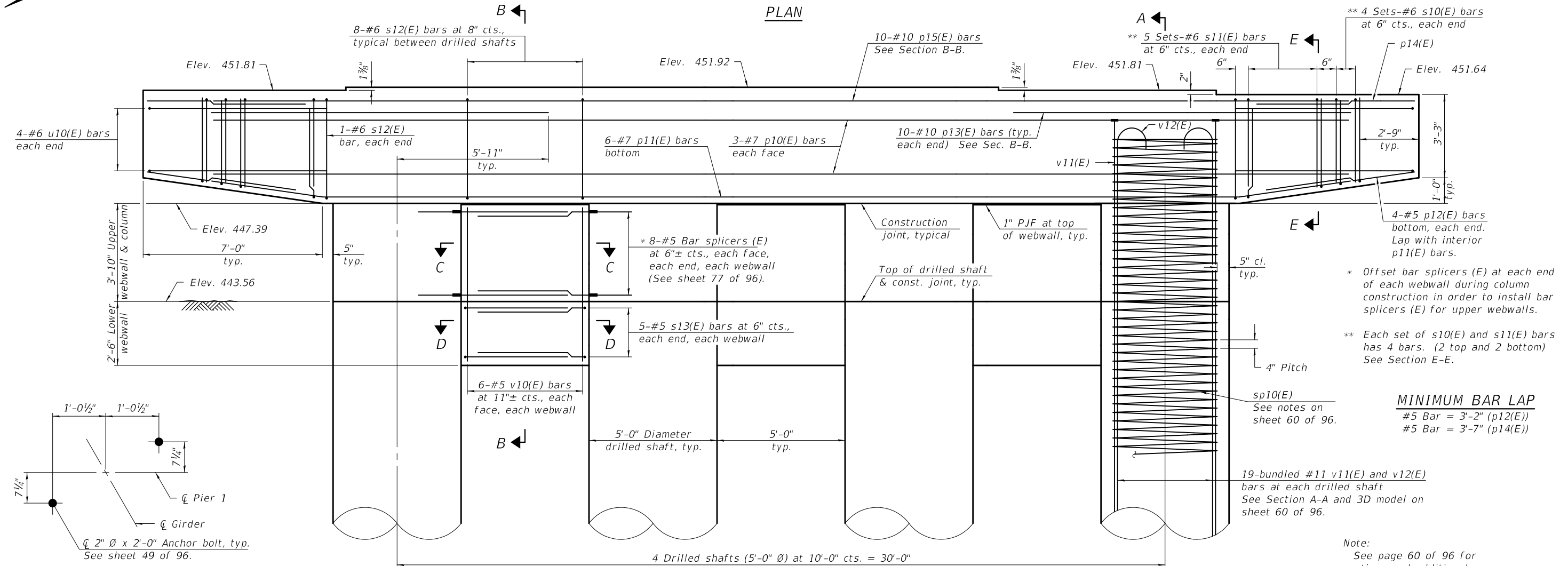
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT (UNIT 1)  
STRUCTURE NO. 014 - 0080**

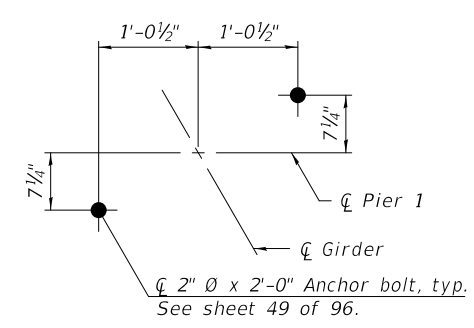
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	122
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				



PLAN



ELEVATION



ANCHOR BOLT DETAIL  
(Typical at each bearing location)

**MINIMUM BAR LAP**  
 #5 Bar = 3'-2" (p12(E))  
 #5 Bar = 3'-7" (p14(E))

Note:  
 See page 60 of 96 for sections and additional details.  
 Cost of preformed joint filler is included with Concrete Structures.

MODEL: 0140080-76887-059  
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 10/15/2018 8:58:32 AM

DESIGNED - ZACHARY T. BULVA	EXAMINED - <i>Joanne F. [Signature]</i>	DATE - OCTOBER 15, 2018
CHECKED - JOSUE D. ORTIZ-VARELA	PASSED - <i>Carl [Signature]</i>	REVISIONS
DRAWN - MICHAEL B. MOSSMAN		
CHECKED - P.G. / Z.T.B. / G.R.A.		

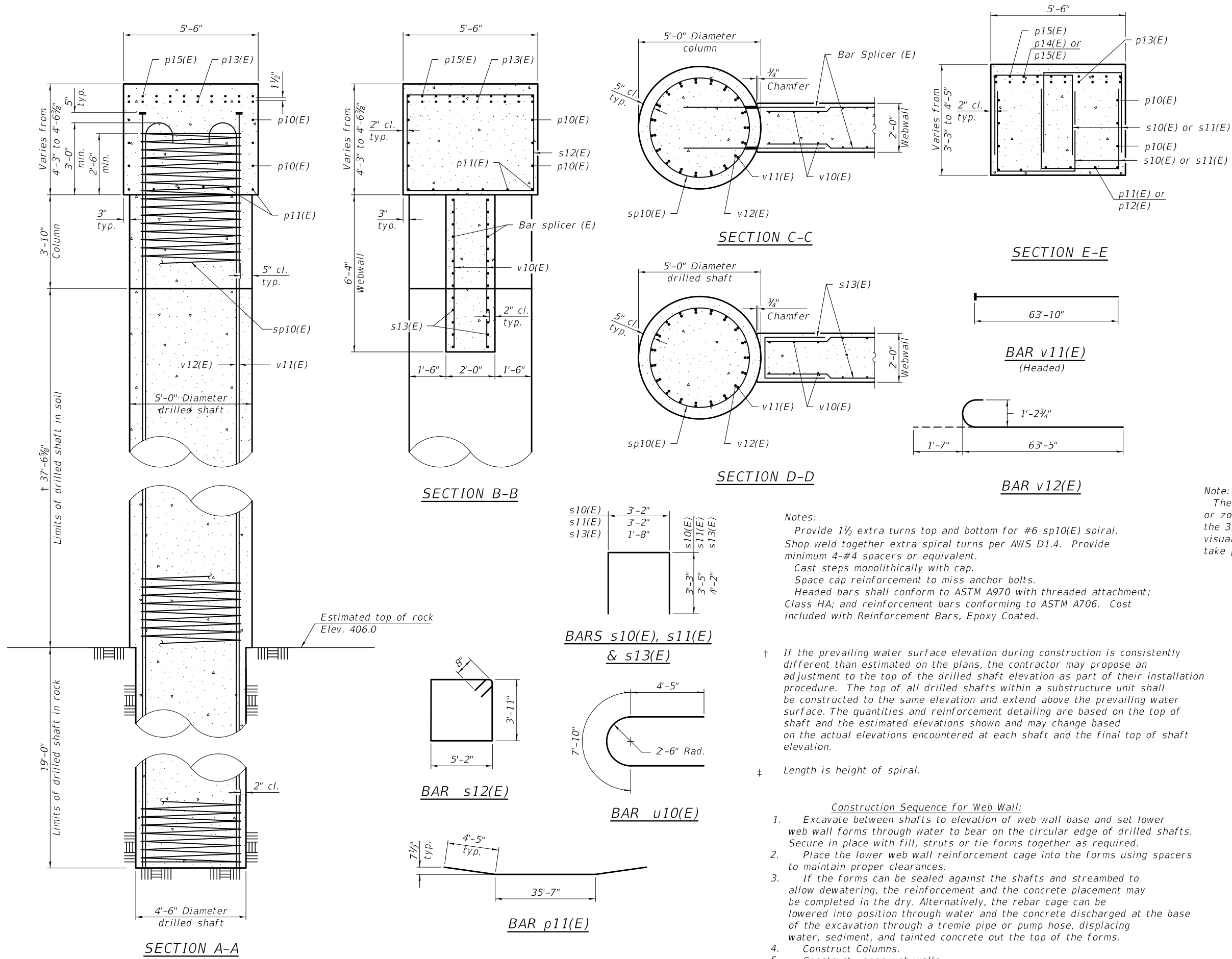
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PIER 1 (UNIT 1)  
 STRUCTURE NO. 014 - 0080

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	123
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

SHEET 59 OF 96 SHEETS

MODEL: 0140080-76887-060  
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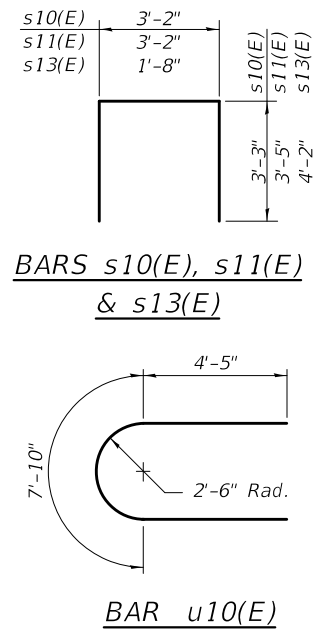
**3D COLUMN MODEL**

Note:  
 The above Embedded 3D Model may be panned, rotated, or zoomed into from within the pdf file. The contents of the 3D model is intended only to be used for information/visualization purposes. The 2D plan details and dimensions take precedence over any content of the 3D model.

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
p10(E)	6	#7	44'-4"	—
p11(E)	6	#7	44'-5"	—
p12(E)	8	#5	5'-10"	—
p13(E)	20	#10	13'-1"	—
p14(E)	12	#5	6'-2"	—
p15(E)	10	#10	44'-4"	—
s10(E)	32	#6	9'-8"	□
s11(E)	40	#6	10'-0"	□
s12(E)	26	#6	19'-6"	□
s13(E)	30	#5	10'-0"	□
sp10(E)	4	#6	62'-11"	⋈
u10(E)	8	#6	16'-8"	⊂
v10(E)	36	#5	6'-0"	—
v11(E)	76	#11	63'-10"	—
v12(E)	76	#11	65'-0"	—
Structure Excavation			Cu. Yd.	12
Concrete Structures			Cu. Yd.	61.3
Reinforcement Bars, Epoxy Coated			Pound	73,690
Bar Splicers			Each	96
Drilled Shaft in Soil			Cu. Yd.	109.3
Drilled Shaft in Rock			Cu. Yd.	44.8
Crosshole Sonic Logging Access Ducts			Foot	905
Crosshole Sonic Logging Testing			Each	1

- Notes:  
 Provide 1 1/2 extra turns top and bottom for #6 sp10(E) spiral. Shop weld together extra spiral turns per AWS D1.4. Provide minimum 4-#4 spacers or equivalent. Cast steps monolithically with cap. Space cap reinforcement to miss anchor bolts. Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
- † If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.
- ‡ Length is height of spiral.
- Construction Sequence for Web Wall:**
- Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms together as required.
  - Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
  - If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
  - Construct Columns.
  - Construct upper web walls.



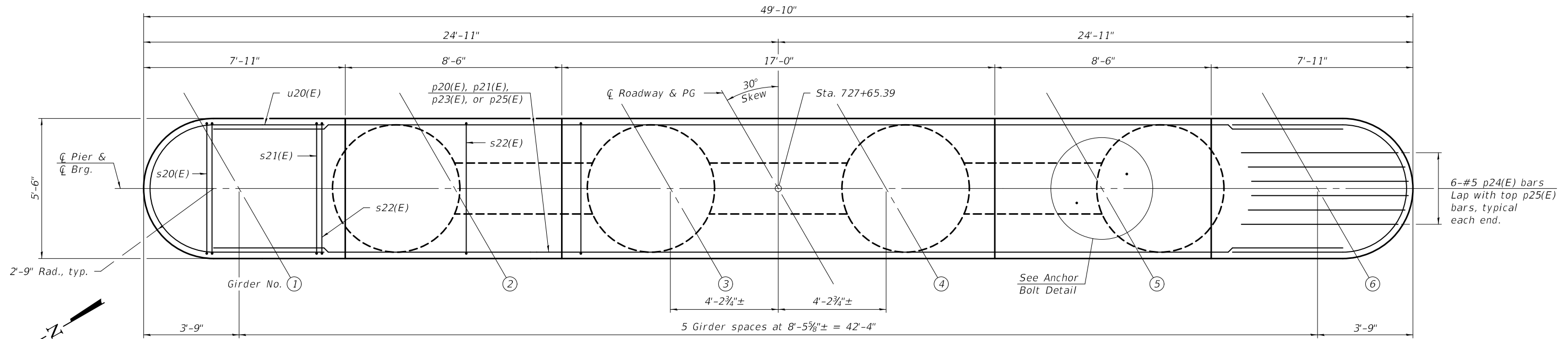
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PIER 1 (UNIT 1)  
 STRUCTURE NO. 014 - 0080

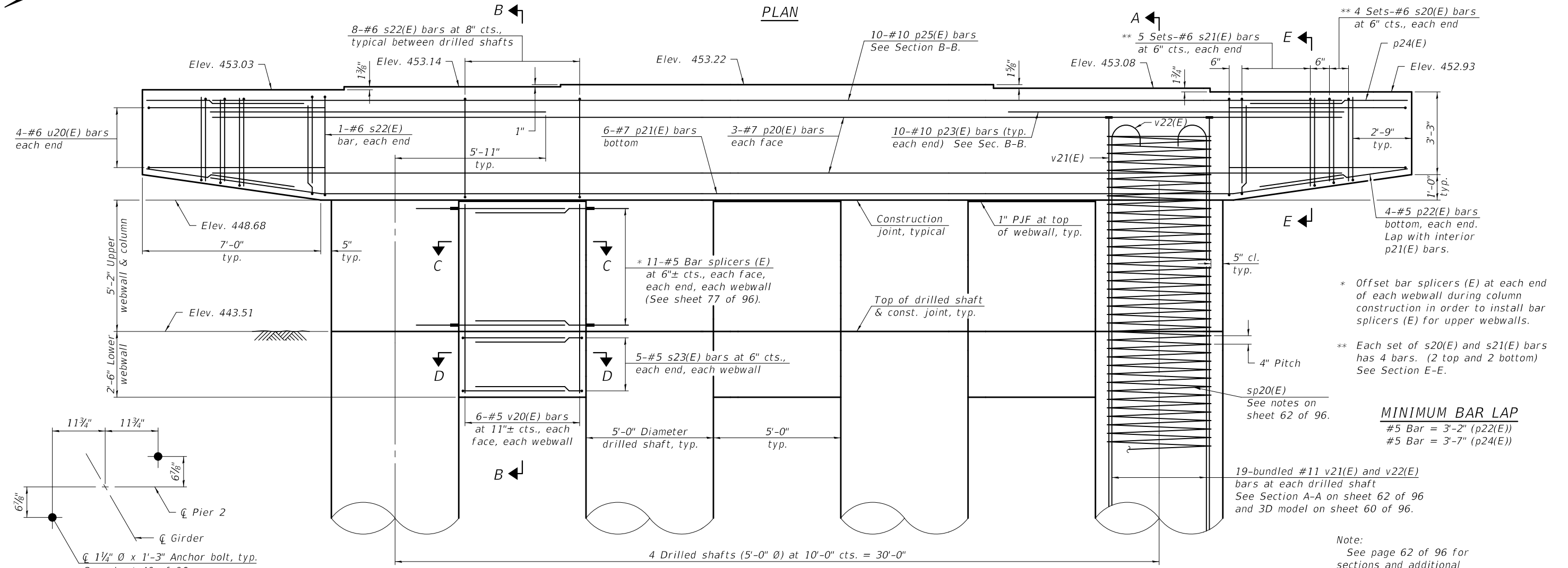
DESIGNED - ZACHARY T. BULVA	EXAMINED - <i>Joanne F. [Signature]</i>	DATE - OCTOBER 15, 2018
CHECKED - JOSUE D. ORTIZ-VARELA	PASSED - <i>Carl [Signature]</i>	REVISIONS -
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	REVISIONS -
CHECKED - P.G. / Z.T.B. / G.R.A.		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	124
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				





PLAN



ELEVATION



ANCHOR BOLT DETAIL  
(Typical at each bearing location)

**MINIMUM BAR LAP**  
 #5 Bar = 3'-2" (p22(E))  
 #5 Bar = 3'-7" (p24(E))

Note:  
 See page 62 of 96 for sections and additional details.  
 Cost of preformed joint filler is included with Concrete Structures.

MODEL: 0140080-76887-061  
 FILE NAME: pw:\VIL084EBID\INTEG\Illinois.gov\PWIDOT\Documents\DOT Offices\Bureau of Bridges and Structures\Projects\0140080\CADD Plans\0140080-76887.dgn

DESIGNED -	ZACHARY T. BULVA
CHECKED -	JOSUE D. ORTIZ-VARELA
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	P.G. / Z.T.B. / G.R.A.

EXAMINED	 Joanne F. Joffe ENGINEER OF BRIDGE DESIGN	DATE -	OCTOBER 15, 2018
PASSED		REVISOR -	

REVISOR -	
REVISION -	

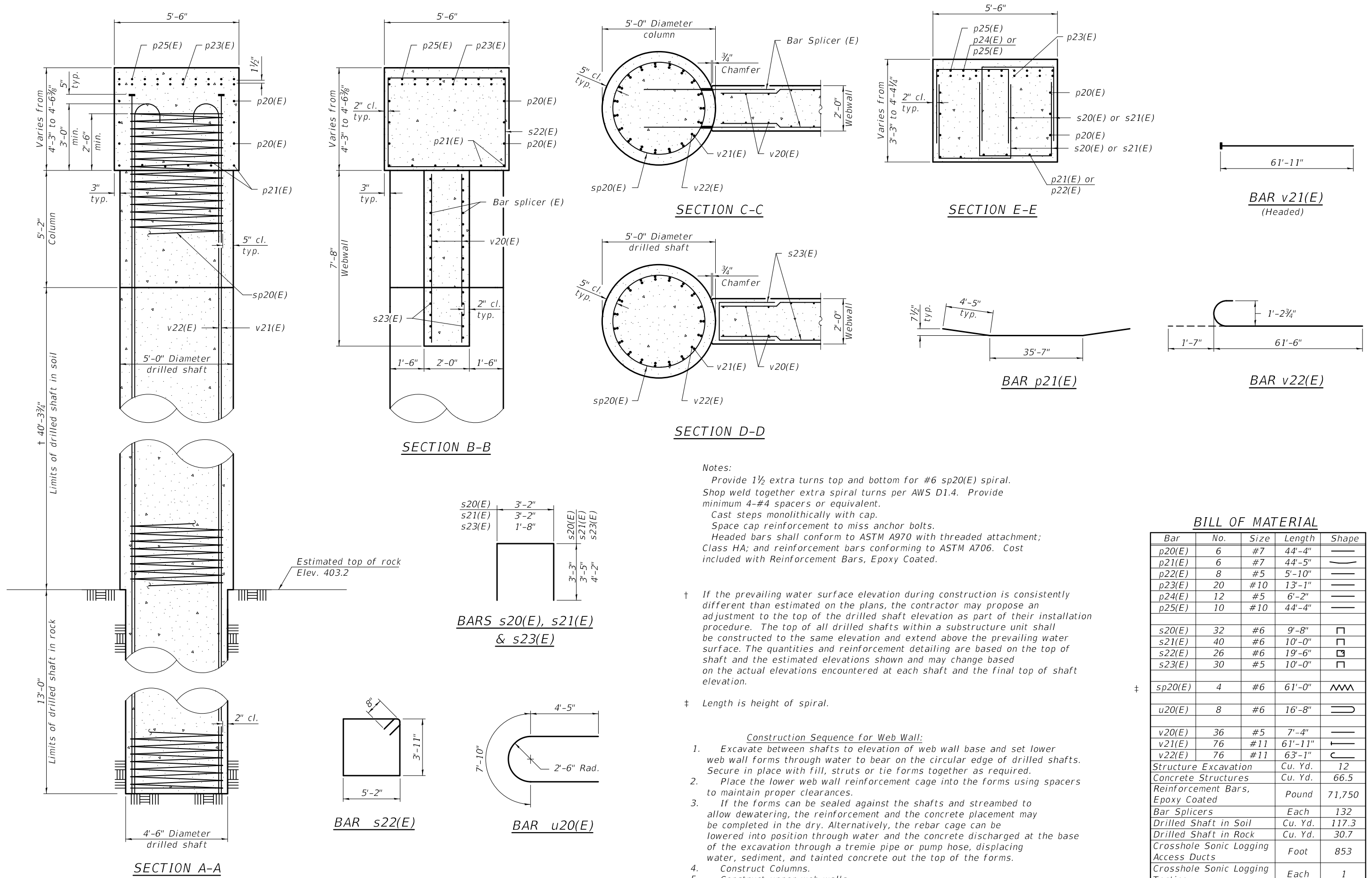
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PIER 2 (UNIT 1)  
 STRUCTURE NO. 014 - 0080

SHEET 61 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	125
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

MODEL: 0140080-76887-062  
 FILE NAME: p:\v\084848\ID\TEG\illmod5.gov\PWIDOT\Documents\DOT Offices\Bureau of Bridges and Structures\Projects\0140080\CADD Plans\0140080-76887.dgn



Notes:  
 Provide 1 1/2 extra turns top and bottom for #6 sp20(E) spiral.  
 Shop weld together extra spiral turns per AWS D1.4. Provide minimum 4-#4 spacers or equivalent.  
 Cast steps monolithically with cap.  
 Space cap reinforcement to miss anchor bolts.  
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.

† If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

‡ Length is height of spiral.

- Construction Sequence for Web Wall:
- Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms as required.
  - Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
  - If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
  - Construct Columns.
  - Construct upper web walls.

**BILL OF MATERIAL**

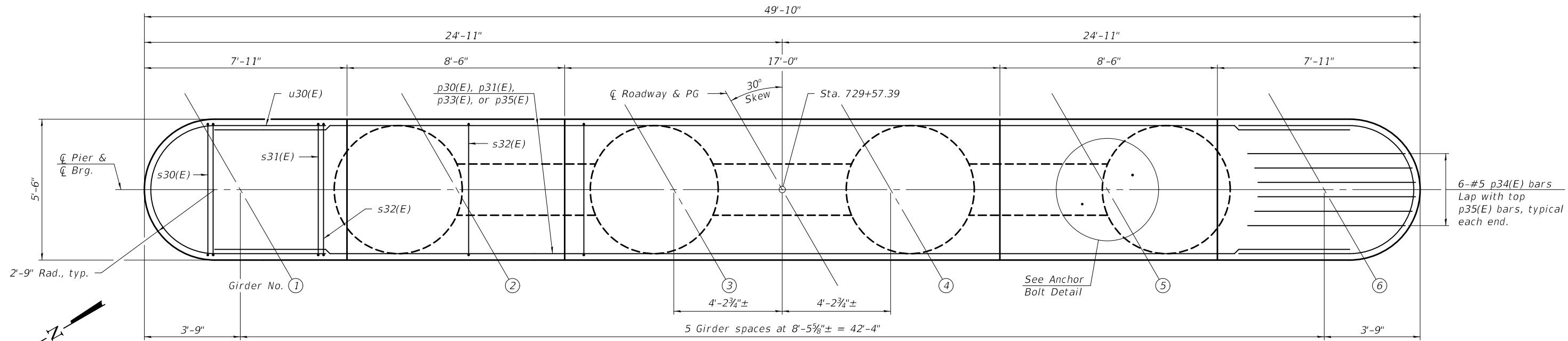
Bar	No.	Size	Length	Shape
p20(E)	6	#7	44'-4"	—
p21(E)	6	#7	44'-5"	—
p22(E)	8	#5	5'-10"	—
p23(E)	20	#10	13'-1"	—
p24(E)	12	#5	6'-2"	—
p25(E)	10	#10	44'-4"	—
s20(E)	32	#6	9'-8"	□
s21(E)	40	#6	10'-0"	□
s22(E)	26	#6	19'-6"	□
s23(E)	30	#5	10'-0"	□
sp20(E)	4	#6	61'-0"	⌘
u20(E)	8	#6	16'-8"	⌘
v20(E)	36	#5	7'-4"	—
v21(E)	76	#11	61'-11"	—
v22(E)	76	#11	63'-1"	—
Structure Excavation		Cu. Yd.	12	
Concrete Structures		Cu. Yd.	66.5	
Reinforcement Bars, Epoxy Coated		Pound	71,750	
Bar Splicers		Each	132	
Drilled Shaft in Soil		Cu. Yd.	117.3	
Drilled Shaft in Rock		Cu. Yd.	30.7	
Crosshole Sonic Logging Access Ducts		Foot	853	
Crosshole Sonic Logging Testing		Each	1	

DESIGNED - ZACHARY T. BULVA	EXAMINED - <i>Joanne F. J. [Signature]</i>	DATE - OCTOBER 15, 2018
CHECKED - JOSUE D. ORTIZ-VARELA	PASSED - <i>Carl [Signature]</i>	REVISOR -
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	REVISOR -
CHECKED - P.G. / Z.T.B. / G.R.A.		

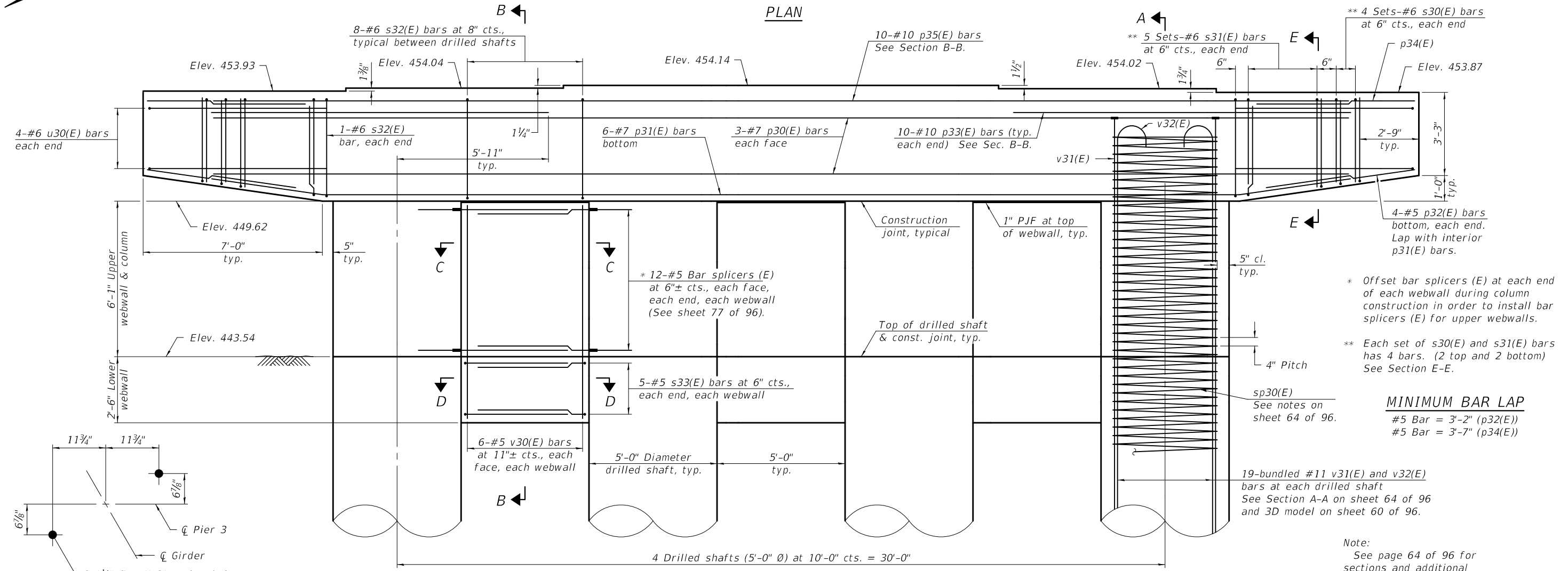
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PIER 2 (UNIT 1)  
 STRUCTURE NO. 014 - 0080

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	126
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

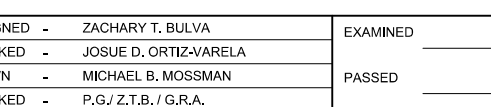


PLAN



ELEVATION

**ANCHOR BOLT DETAIL**  
(Typical at each bearing location)



Note:  
See page 64 of 96 for sections and additional details.  
Cost of preformed joint filler is included with Concrete Structures.

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DESIGNED -	ZACHARY T. BULVA
CHECKED -	JOSUE D. ORTIZ-VARELA
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	P.G./Z.T.B./G.R.A.

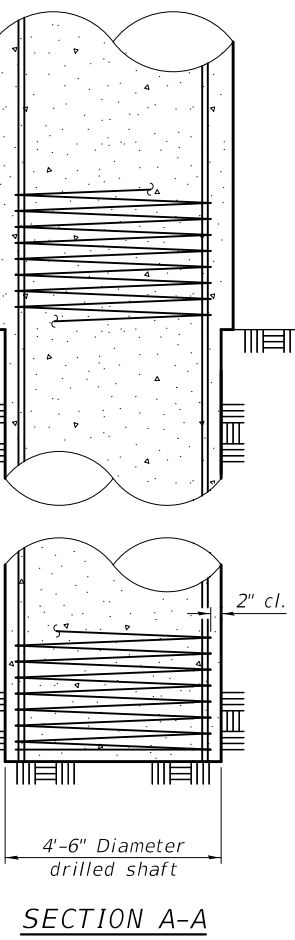
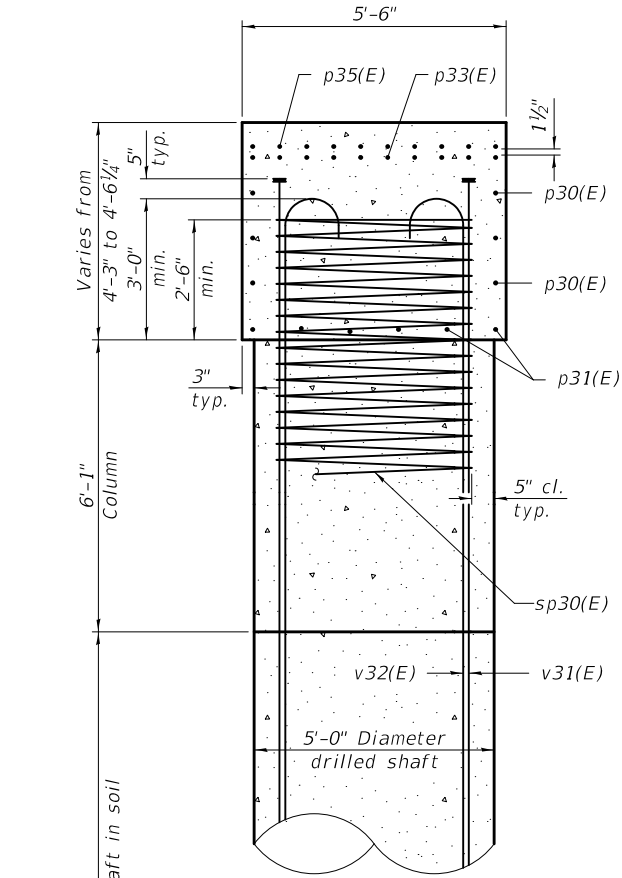
EXAMINED	<i>Joanne F. Joffe</i> ENGINEER OF BRIDGE DESIGN	DATE -	OCTOBER 15, 2018
PASSED		REVISOR -	
	<i>Carl Kasper</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISOR -	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

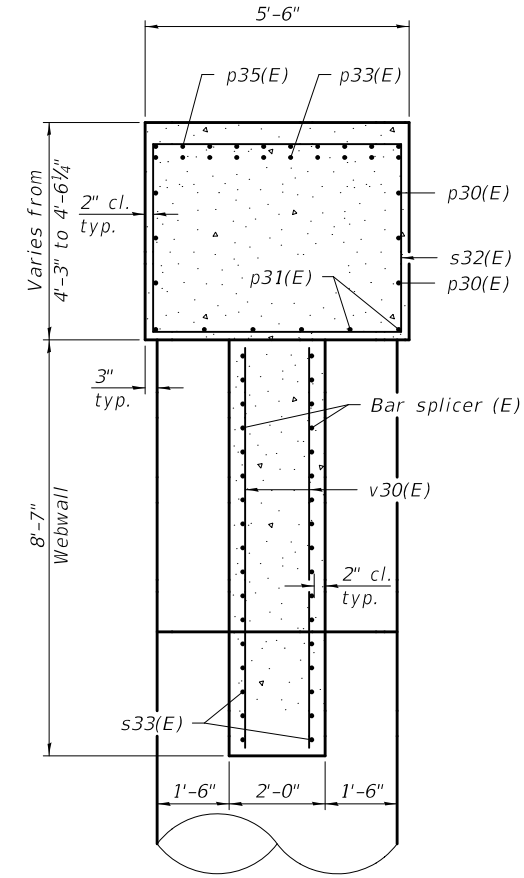
PIER 3 (UNIT 1)  
STRUCTURE NO. 014 - 0080

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

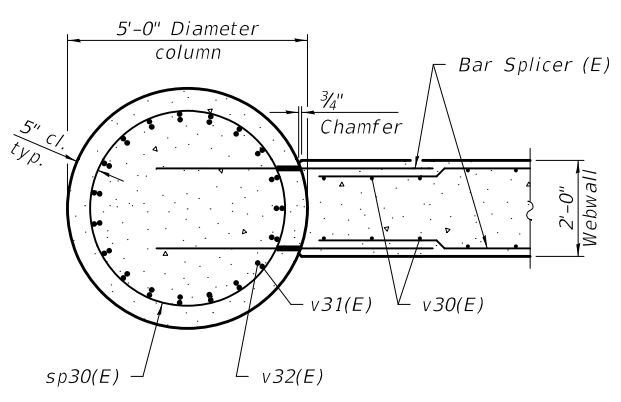
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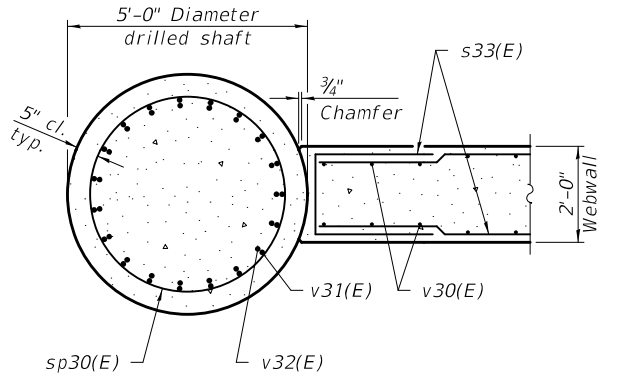
SECTION A-A



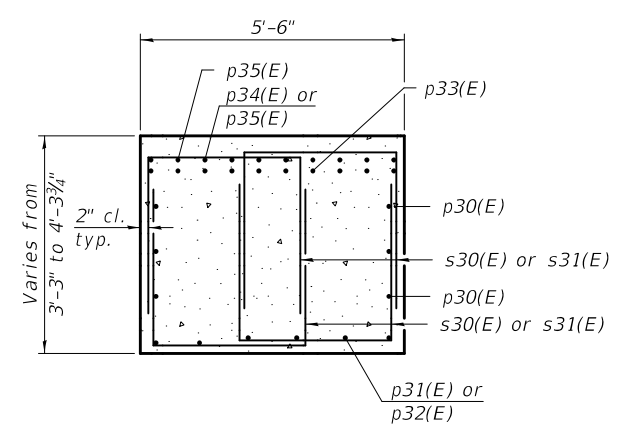
SECTION B-B



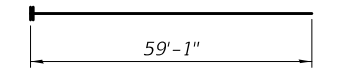
SECTION C-C



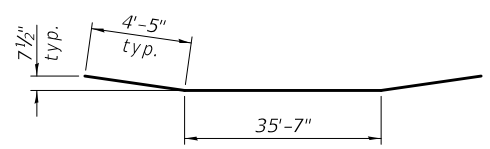
SECTION D-D



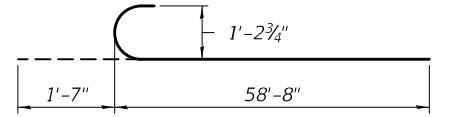
SECTION E-E



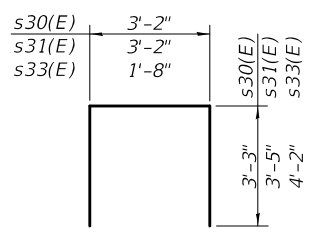
BAR v31(E)  
(Headed)



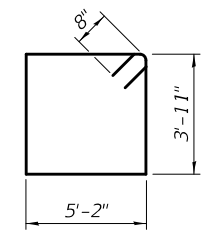
BAR p31(E)



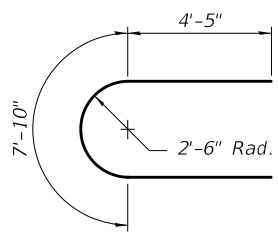
BAR v32(E)



BARS s30(E), s31(E)  
& s33(E)



BAR s32(E)



BAR u30(E)

Notes:  
 Provide 1 1/2 extra turns top and bottom for #6 sp30(E) spiral.  
 Shop weld together extra spiral turns per AWS D1.4. Provide minimum 4-#4 spacers or equivalent.  
 Cast steps monolithically with cap.  
 Space cap reinforcement to miss anchor bolts.  
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.

† If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

‡ Length is height of spiral.

- Construction Sequence for Web Wall:
- Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms together as required.
  - Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
  - If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
  - Construct Columns.
  - Construct upper web walls.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
p30(E)	6	#7	44'-4"	—
p31(E)	6	#7	44'-5"	—
p32(E)	8	#5	5'-10"	—
p33(E)	20	#10	13'-1"	—
p34(E)	12	#5	6'-2"	—
p35(E)	10	#10	44'-4"	—
s30(E)	32	#6	9'-8"	□
s31(E)	40	#6	10'-0"	□
s32(E)	26	#6	19'-6"	□
s33(E)	30	#5	10'-0"	□
sp30(E)	4	#6	58'-2"	⋈
u30(E)	8	#6	16'-8"	U
v30(E)	36	#5	8'-3"	—
v31(E)	76	#11	59'-1"	—
v32(E)	76	#11	60'-3"	—
Structure Excavation		Cu. Yd.	12	
Concrete Structures		Cu. Yd.	70.0	
Reinforcement Bars, Epoxy Coated		Pound	68,840	
Bar Splicers		Each	144	
Drilled Shaft in Soil		Cu. Yd.	109.2	
Drilled Shaft in Rock		Cu. Yd.	28.3	
Crosshole Sonic Logging Access Ducts		Foot	793	
Crosshole Sonic Logging Testing		Each	1	

DESIGNED - ZACHARY T. BULVA  
 CHECKED - JOSUE D. ORTIZ-VARELA  
 DRAWN - MICHAEL B. MOSSMAN  
 CHECKED - P.G. / Z.T.B. / G.R.A.

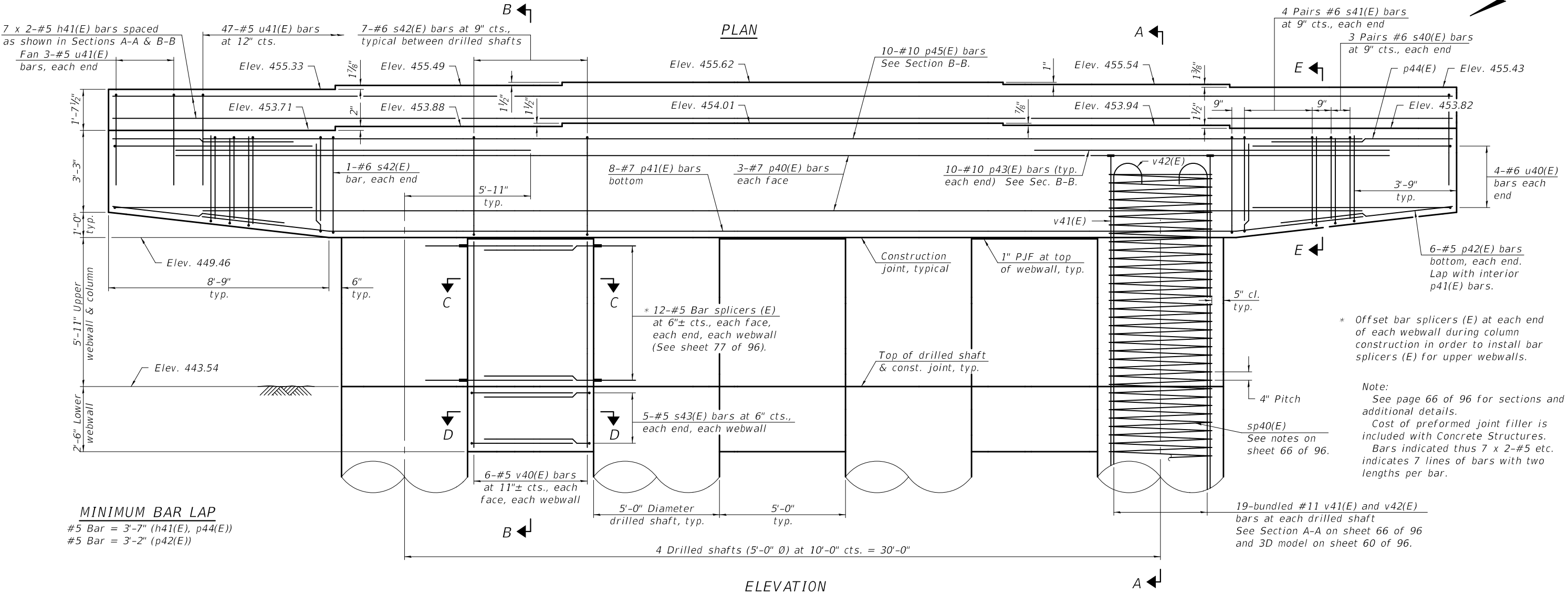
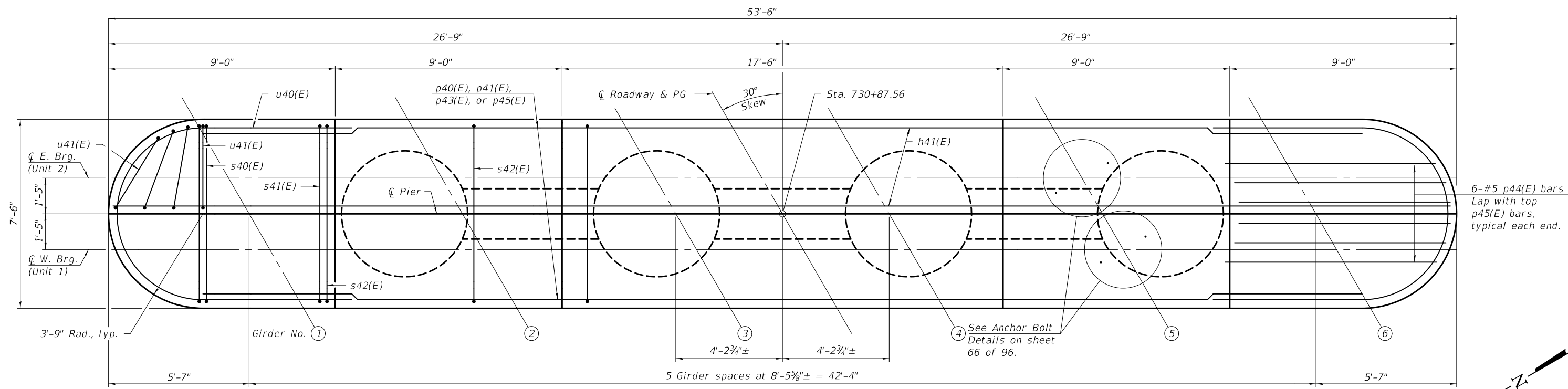
EXAMINED  
 PASSED  
 ENGINEER OF BRIDGES AND STRUCTURES

DATE - OCTOBER 15, 2018  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PIER 3 (UNIT 1)  
 STRUCTURE NO. 014 - 0080  
 SHEET 64 OF 96 SHEETS

F.A.P. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.  
 805 7BR, 7BR-1 CLINTON 259 128  
 CONTRACT NO. 76887  
 ILLINOIS FED. AID PROJECT



**MINIMUM BAR LAP**  
 #5 Bar = 3'-7" (h41(E), p44(E))  
 #5 Bar = 3'-2" (p42(E))

\* Offset bar splicers (E) at each end of each webwall during column construction in order to install bar splicers (E) for upper webwalls.

Note:  
 See page 66 of 96 for sections and additional details.  
 Cost of preformed joint filler is included with Concrete Structures.  
 Bars indicated thus 7 x 2-#5 etc. indicates 7 lines of bars with two lengths per bar.

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DESIGNED - ZACHARY T. BULVA	EXAMINED - <i>Joanne F. J...</i>	DATE - OCTOBER 15, 2018
CHECKED - JOSUE D. ORTIZ-VARELA	PASSED - <i>Carl...</i>	REVISOR -
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	REVISOR -
CHECKED - P.G. / Z.T.B. / G.R.A.		

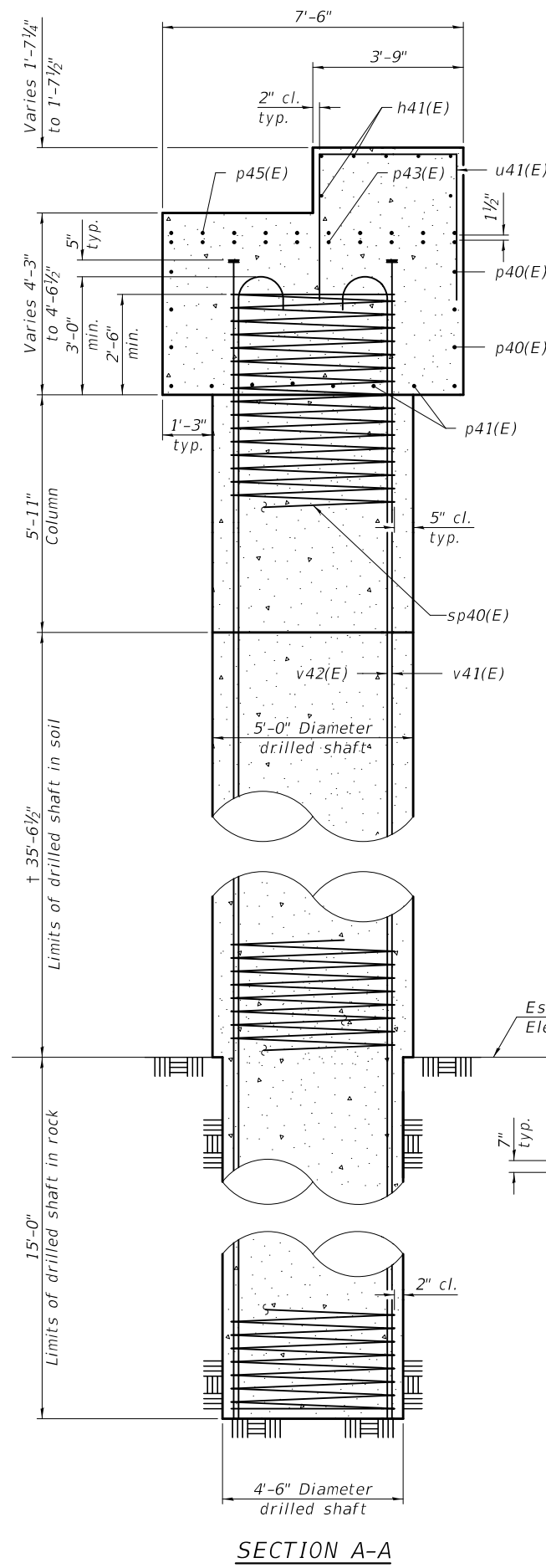
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**PIER 4 (UNITS 1 & 2)  
 STRUCTURE NO. 014 - 0080**

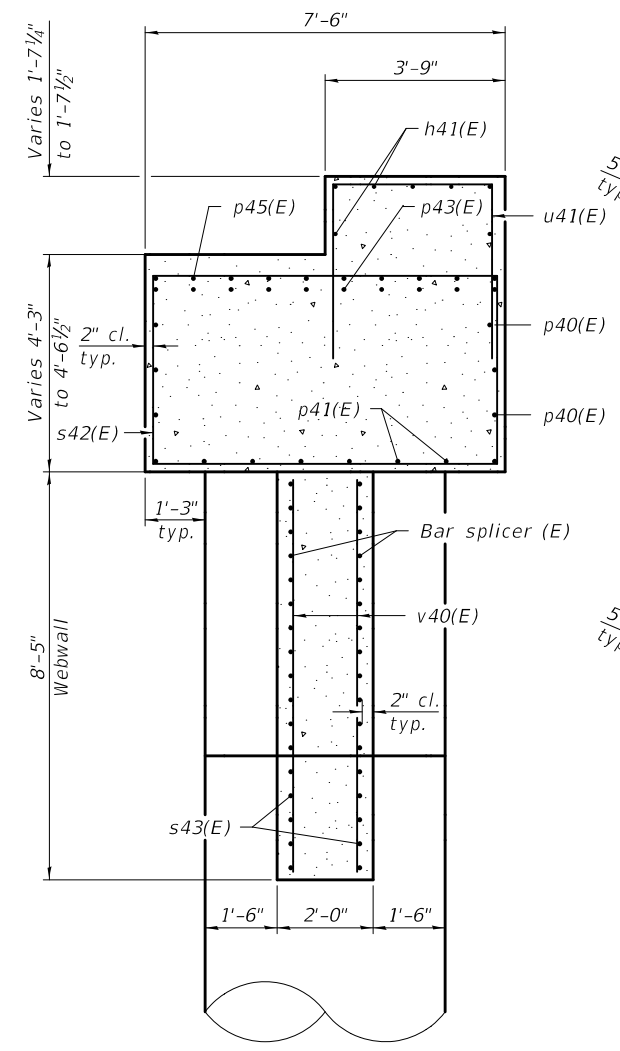
SHEET 65 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	129
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

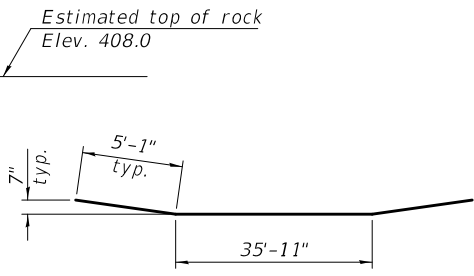
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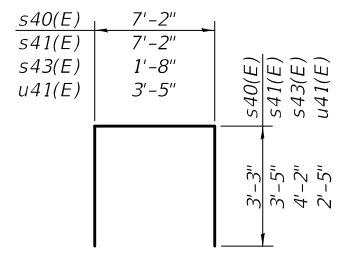
SECTION A-A



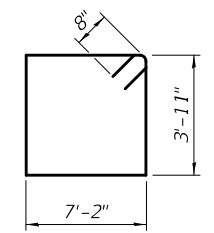
SECTION B-B



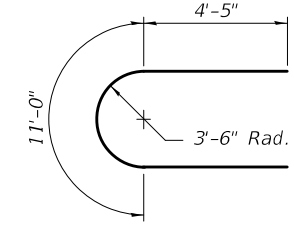
BAR p41(E)



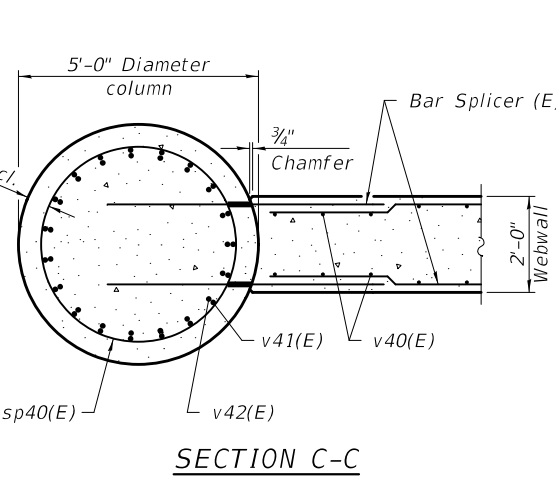
BARS s40(E), s41(E), s43(E) & u41(E)



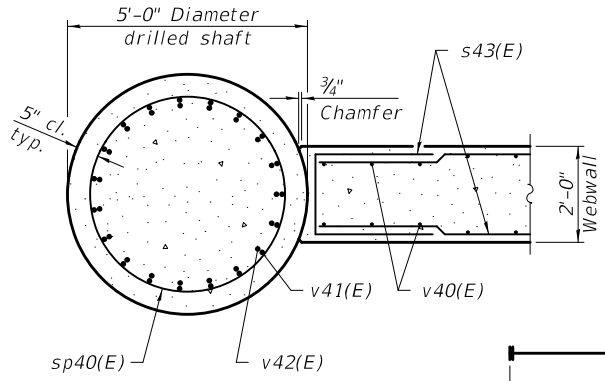
BAR s42(E)



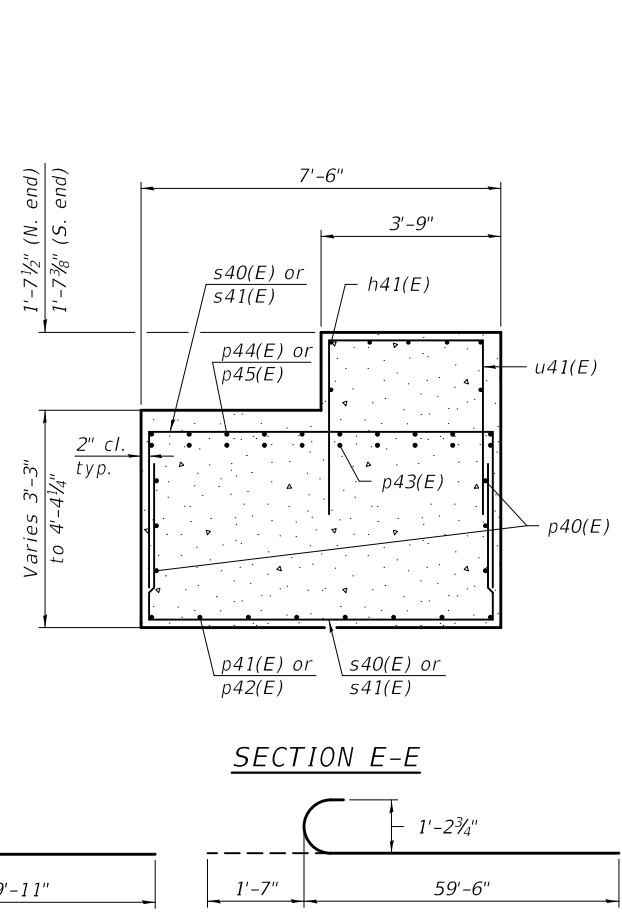
BAR u40(E)



SECTION C-C



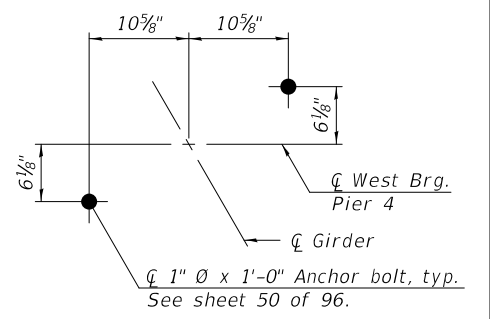
SECTION D-D



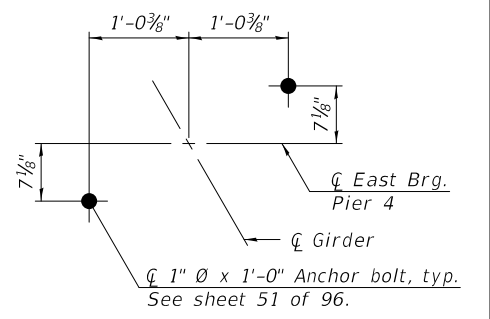
SECTION E-E

BAR v41(E)  
(Headed)

BAR v42(E)



UNIT 1 ANCHOR BOLT DETAIL  
(Typical at each bearing location)



UNIT 2 ANCHOR BOLT DETAIL  
(Typical at each bearing location)

**Notes:**  
 Provide 1 1/2 extra turns top and bottom for #6 sp40(E) spiral.  
 Shop weld together extra spiral turns per AWS D1.4. Provide minimum 4-#4 spacers or equivalent.  
 Cast steps monolithically with cap.  
 Space cap reinforcement to miss anchor bolts.  
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.

† If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

‡ Length is height of spiral.

- Construction Sequence for Web Wall:**
- Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms together as required.
  - Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
  - If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
  - Construct Columns.
  - Construct upper web walls.

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h41(E)	14	#5	28'-5"	—
p40(E)	6	#7	46'-0"	—
p41(E)	8	#7	46'-1"	—
p42(E)	12	#5	6'-10"	—
p43(E)	20	#10	13'-11"	—
p44(E)	12	#5	7'-2"	—
p45(E)	10	#10	46'-0"	—
s40(E)	12	#6	13'-8"	□
s41(E)	16	#6	14'-0"	□
s42(E)	23	#6	23'-6"	▣
s43(E)	30	#5	10'-0"	□
sp40(E)	4	#6	59'-0"	⋈
u40(E)	8	#6	19'-10"	U
u41(E)	53	#5	8'-3"	□
v40(E)	36	#5	8'-1"	—
v41(E)	76	#11	59'-11"	—
v42(E)	76	#11	61'-1"	—
Structure Excavation			Cu. Yd.	12
Concrete Structures			Cu. Yd.	100.3
Reinforcement Bars, Epoxy Coated			Pound	70,600
Bar Splicers			Each	144
Drilled Shaft in Soil			Cu. Yd.	103.4
Drilled Shaft in Rock			Cu. Yd.	35.4
Concrete Sealer			Sq. Ft.	1056
Crosshole Sonic Logging Access Ducts			Foot	809
Crosshole Sonic Logging Testing			Each	1

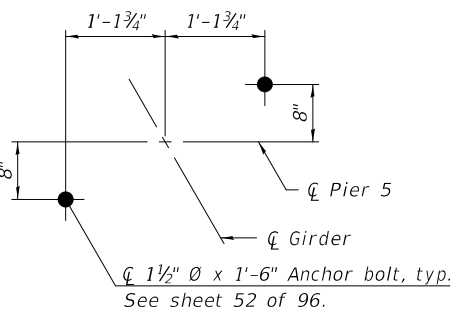
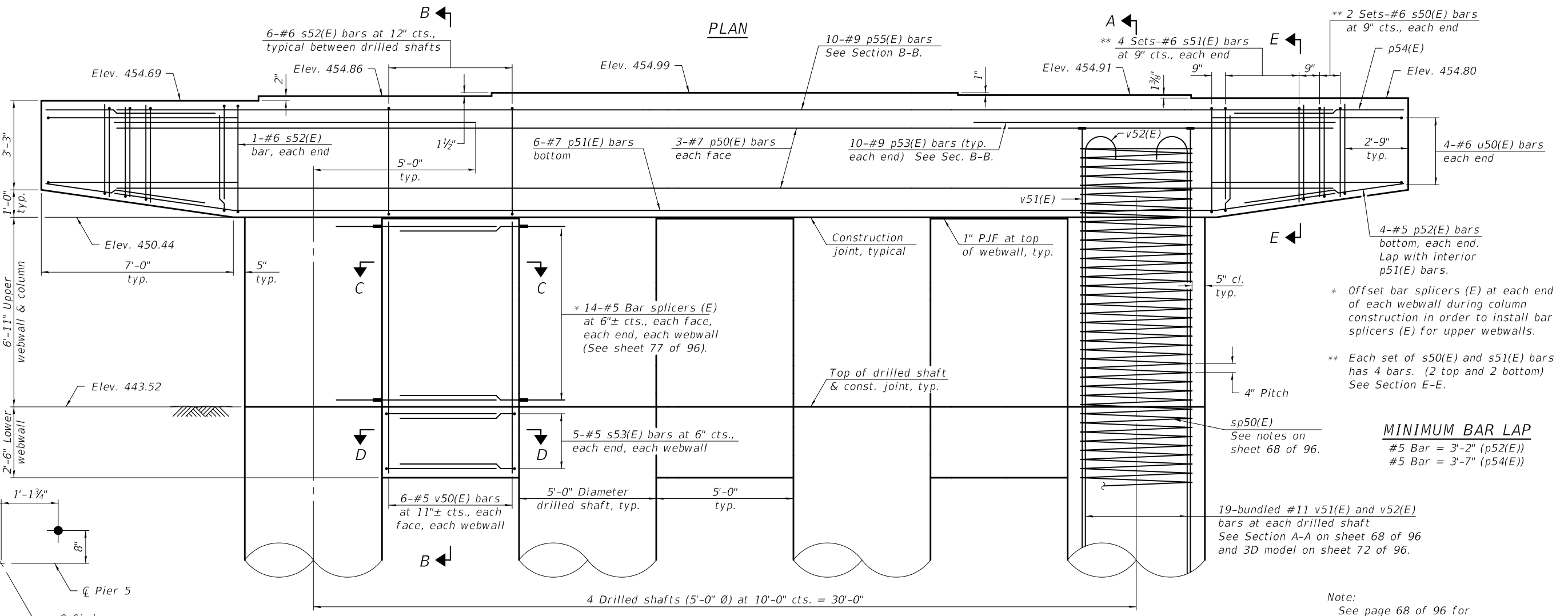
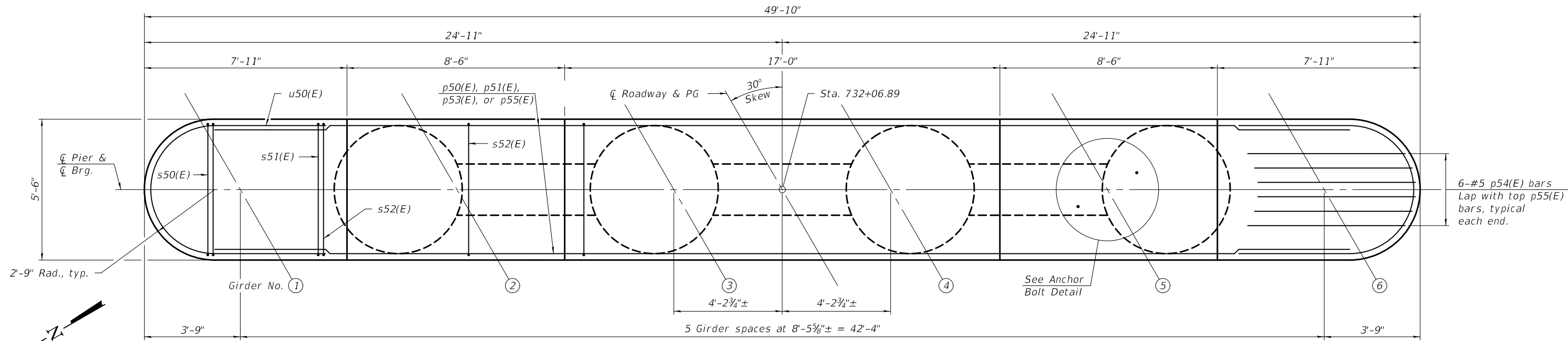
DESIGNED - ZACHARY T. BULVA	EXAMINED - <i>Jaime F. Salas</i>
CHECKED - JOSUE D. ORTIZ-VARELA	PASSED - <i>Carl Kasper</i>
DRAWN - MICHAEL B. MOSSMAN	
CHECKED - P.G. / Z.T.B. / G.R.A.	

DATE - OCTOBER 15, 2018
REVISIONS
REVISIONS
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STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PIER 4 (UNITS 1 & 2)  
 STRUCTURE NO. 014 - 0080  
 SHEET 66 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	130
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				



**ANCHOR BOLT DETAIL**  
(Typical at each bearing location)

- \*\* 2 Sets-#6 s50(E) bars at 9" cts., each end
  - \*\* 4 Sets-#6 s51(E) bars at 9" cts., each end
  - 10-#9 p55(E) bars See Section B-B.
  - 6-#6 s52(E) bars at 12" cts., typical between drilled shafts
  - 1-#6 s52(E) bar, each end
  - 6-#7 p51(E) bars bottom
  - 3-#7 p50(E) bars each face
  - 10-#9 p53(E) bars (typ. each end) See Sec. B-B.
  - 4-#6 u50(E) bars each end
  - 4-#5 p52(E) bars bottom, each end. Lap with interior p51(E) bars.
  - \* Offset bar splicers (E) at each end of each webwall during column construction in order to install bar splicers (E) for upper webwalls.
  - \*\* Each set of s50(E) and s51(E) bars has 4 bars. (2 top and 2 bottom) See Section E-E.
- MINIMUM BAR LAP**  
#5 Bar = 3'-2" (p52(E))  
#5 Bar = 3'-7" (p54(E))
- 19-bundled #11 v51(E) and v52(E) bars at each drilled shaft See Section A-A on sheet 68 of 96 and 3D model on sheet 72 of 96.

Note:  
See page 68 of 96 for sections and additional details.  
Cast of preformed joint filler is included with Concrete Structures.

MODEL: 0140080-76887-067  
FILE NAME: p:\v\084848\DOT Documents\DOT Offices\Bureau of Bridges and Structures\Projects\0140080\CADD Plans\0140080-76887.dgn

DESIGNED -	JOSUE D. ORTIZ-VARELA
CHECKED -	ZACHARY T. BULVA
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	P.G. / Z.T.B. / G.R.A.

EXAMINED  
PASSED

*Joanne F. Joffe*  
ENGINEER OF BRIDGE DESIGN

*Carl Kasper*  
ENGINEER OF BRIDGES AND STRUCTURES

DATE -	OCTOBER 15, 2018
REVISED -	
REVISED -	

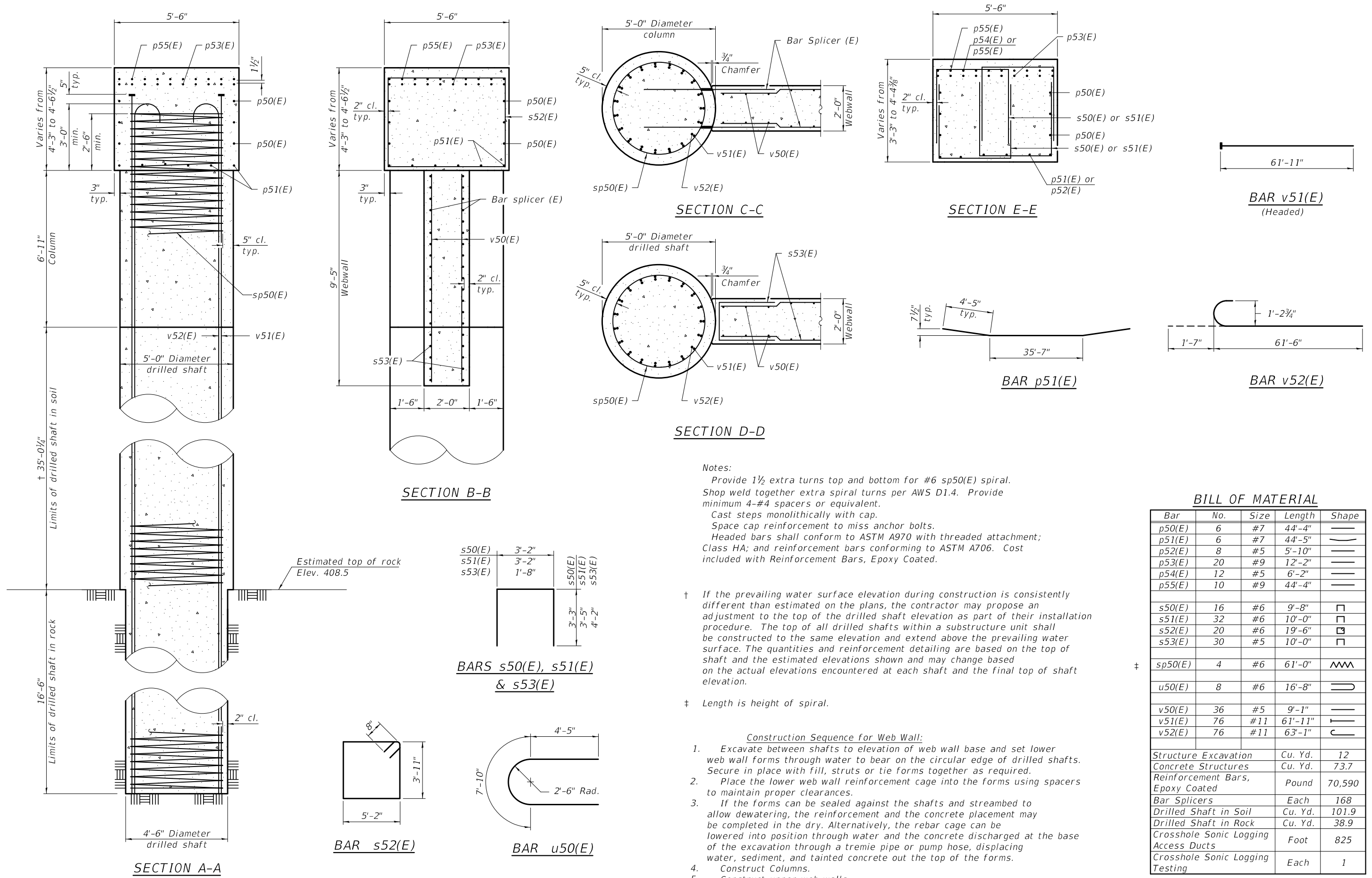
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PIER 5 (UNIT 2)**  
**STRUCTURE NO. 014 - 0080**

SHEET 67 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	131
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

MODEL: 0140080-76887-068  
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**Notes:**  
 Provide 1 1/2 extra turns top and bottom for #6 sp50(E) spiral.  
 Shop weld together extra spiral turns per AWS D1.4. Provide minimum 4-#4 spacers or equivalent.  
 Cast steps monolithically with cap.  
 Space cap reinforcement to miss anchor bolts.  
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.

† If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

‡ Length is height of spiral.

- Construction Sequence for Web Wall:**
- Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms together as required.
  - Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
  - If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
  - Construct Columns.
  - Construct upper web walls.

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
p50(E)	6	#7	44'-4"	—
p51(E)	6	#7	44'-5"	—
p52(E)	8	#5	5'-10"	—
p53(E)	20	#9	12'-2"	—
p54(E)	12	#5	6'-2"	—
p55(E)	10	#9	44'-4"	—
s50(E)	16	#6	9'-8"	□
s51(E)	32	#6	10'-0"	□
s52(E)	20	#6	19'-6"	□
s53(E)	30	#5	10'-0"	□
sp50(E)	4	#6	61'-0"	⋈
u50(E)	8	#6	16'-8"	U
v50(E)	36	#5	9'-1"	—
v51(E)	76	#11	61'-11"	—
v52(E)	76	#11	63'-1"	—
Structure Excavation		Cu. Yd.	12	
Concrete Structures		Cu. Yd.	73.7	
Reinforcement Bars, Epoxy Coated		Pound	70,590	
Bar Splicers		Each	168	
Drilled Shaft in Soil		Cu. Yd.	101.9	
Drilled Shaft in Rock		Cu. Yd.	38.9	
Crosshole Sonic Logging Access Ducts		Foot	825	
Crosshole Sonic Logging Testing		Each	1	

DESIGNED - JOSUE D. ORTIZ-VARELA  
 CHECKED - ZACHARY T. BULVA  
 DRAWN - MICHAEL B. MOSSMAN  
 CHECKED - P.G. / Z.T.B. / G.R.A.

EXAMINED - *Jaime F. Salas*  
 PASSED - *Carl Kasper*  
 ENGINEER OF BRIDGES AND STRUCTURES

DATE - OCTOBER 15, 2018

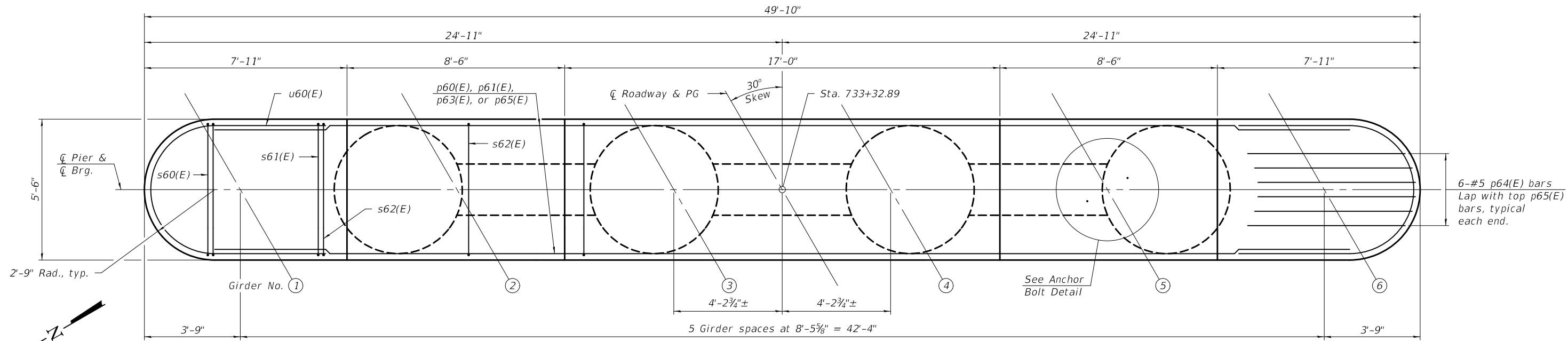
REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

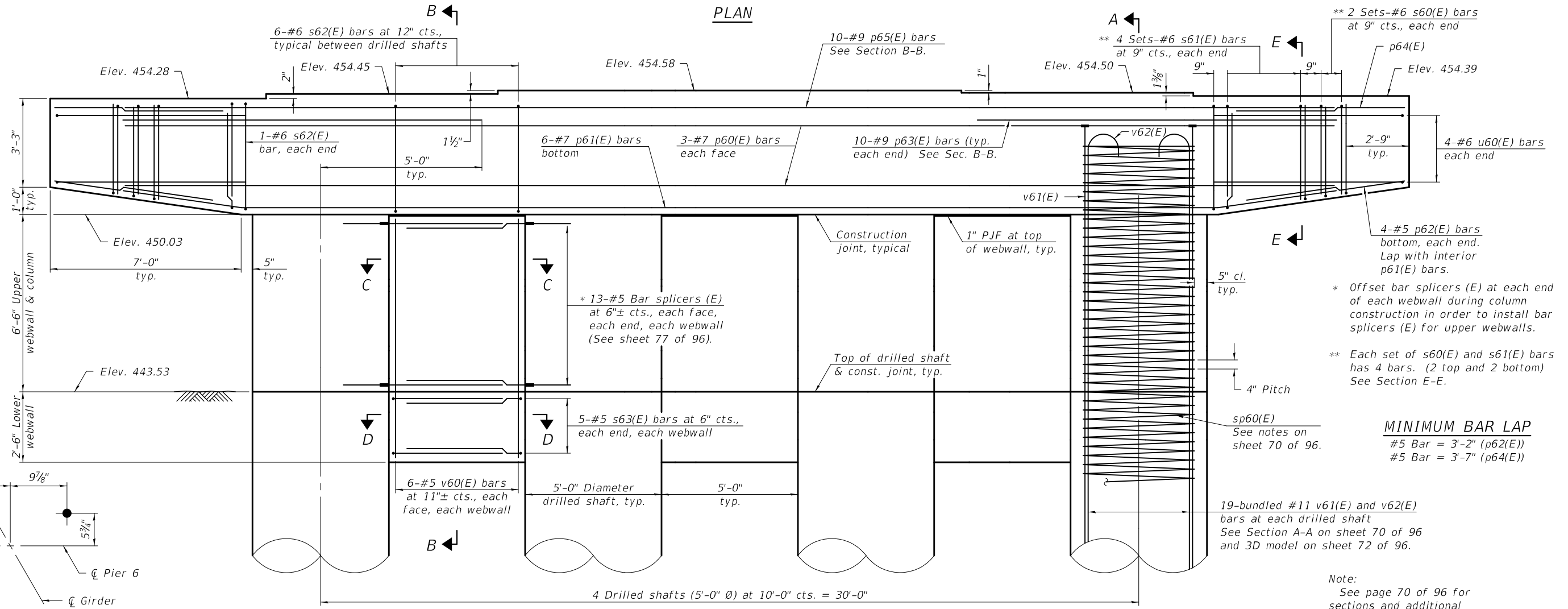
PIER 5 (UNIT 2)  
 STRUCTURE NO. 014 - 0080

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	132
CONTRACT NO. 76887				
ILLINOIS		FED. AID PROJECT		

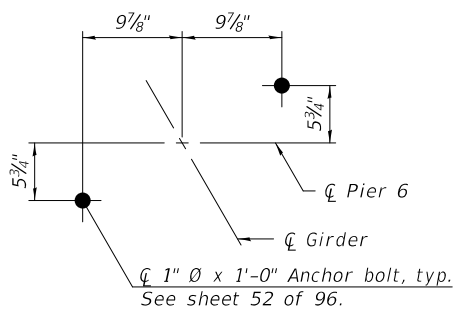




PLAN



ELEVATION



ANCHOR BOLT DETAIL  
(Typical at each bearing location)

**MINIMUM BAR LAP**  
 #5 Bar = 3'-2" (p62(E))  
 #5 Bar = 3'-7" (p64(E))

**Note:**  
 See page 70 of 96 for sections and additional details.  
 Cost of preformed joint filler is included with Concrete Structures.

MODEL: 0140080-76887-069  
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DESIGNED -	JOSUE D. ORTIZ-VARELA
CHECKED -	ZACHARY T. BULVA
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	P.G. / Z.T.B. / G.R.A.

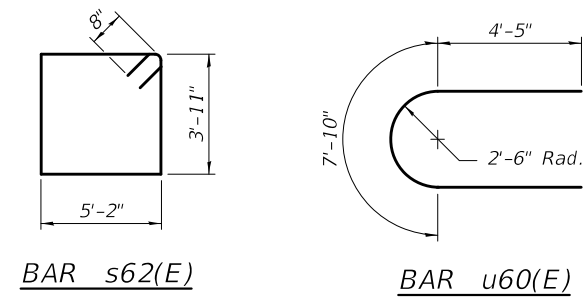
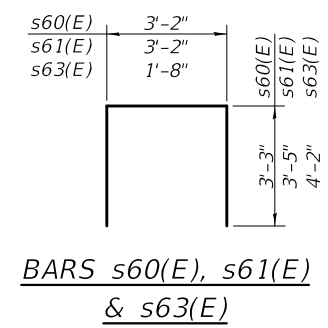
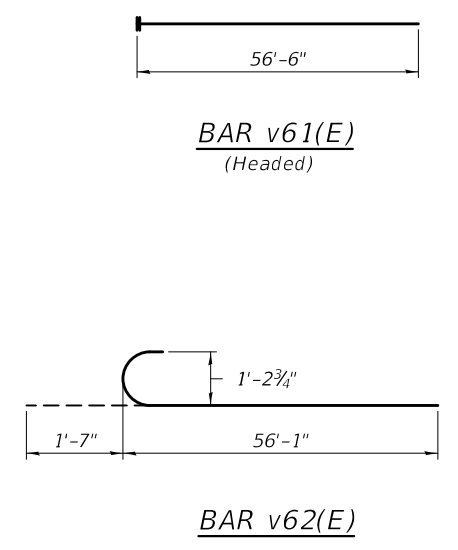
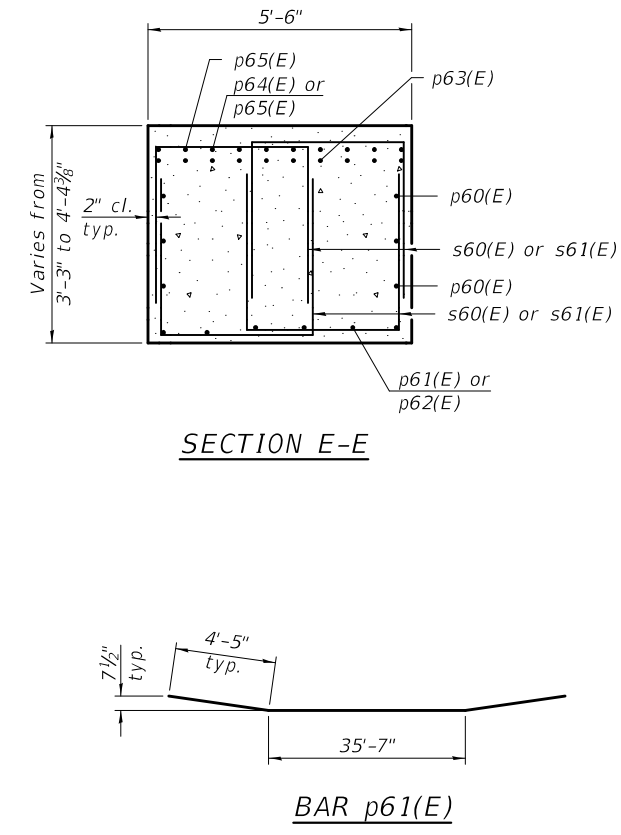
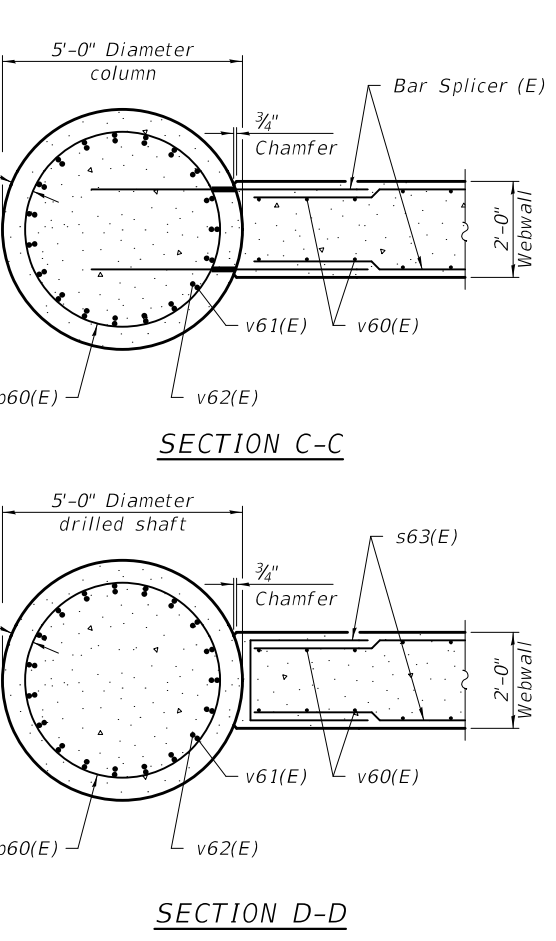
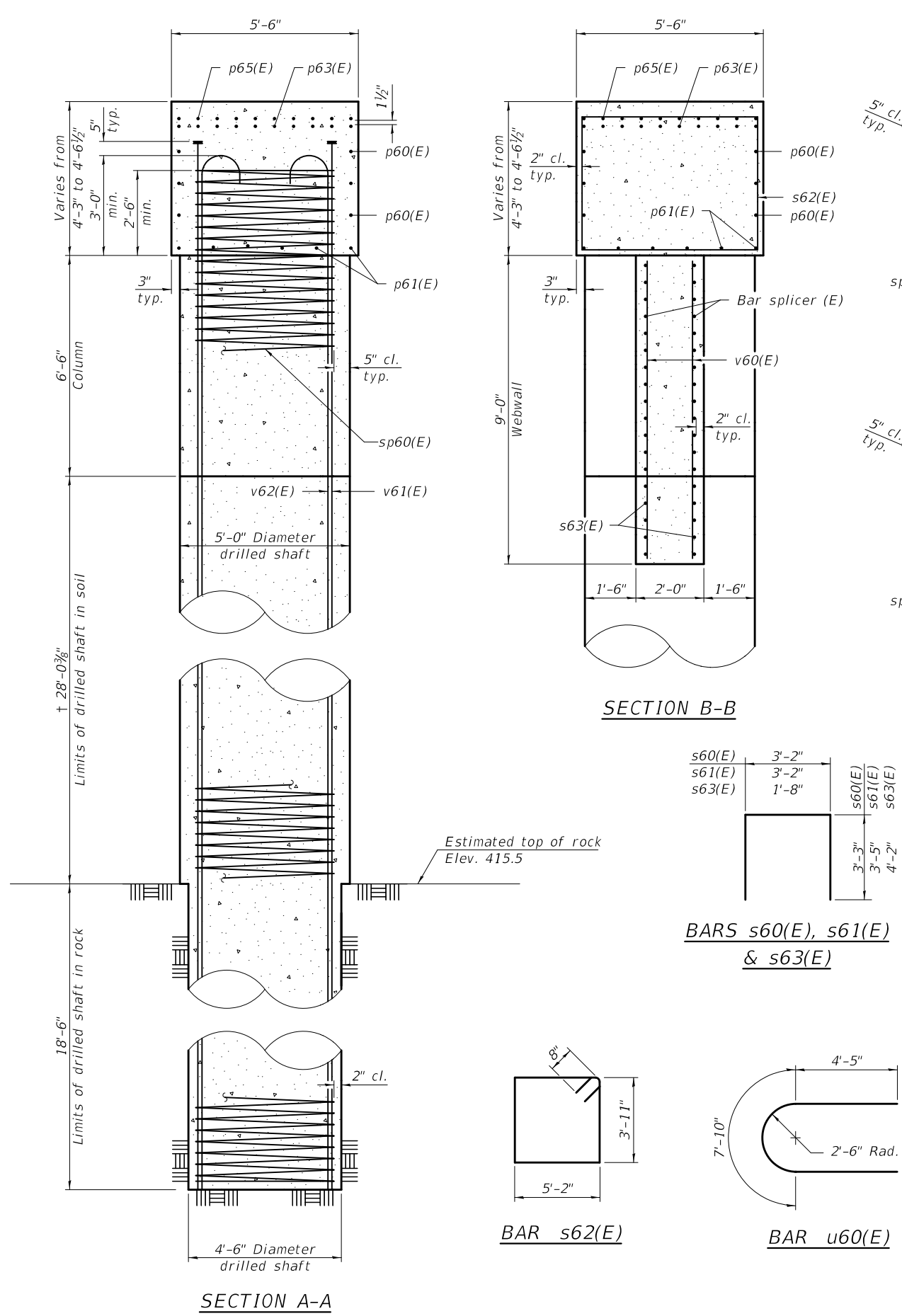
EXAMINED	<i>Joanne F. Joffe</i>	DATE -	OCTOBER 15, 2018
PASSED	<i>Carl Kasper</i>	REVISOR -	
	ENGINEER OF BRIDGES AND STRUCTURES	REVISOR -	

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PIER 6 (UNIT 2)  
 STRUCTURE NO. 014 - 0080

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	133
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

MODEL: 0140080-76887-070  
 FILE NAME: pw:\VIL084EBID\INTEG\illmod\p\WIDOT\Documents\Projects\0140080\CADD\Plans\0140080-76887.dgn



**Notes:**  
 Provide 1 1/2 extra turns top and bottom for #6 sp60(E) spiral.  
 Shop weld together extra spiral turns per AWS D1.4. Provide minimum 4-#4 spacers or equivalent.  
 Cast steps monolithically with cap.  
 Space cap reinforcement to miss anchor bolts.  
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.

† If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

‡ Length is height of spiral.

**Construction Sequence for Web Wall:**

- Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms as required.
- Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
- If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
- Construct Columns.
- Construct upper web walls.

**BILL OF MATERIAL**

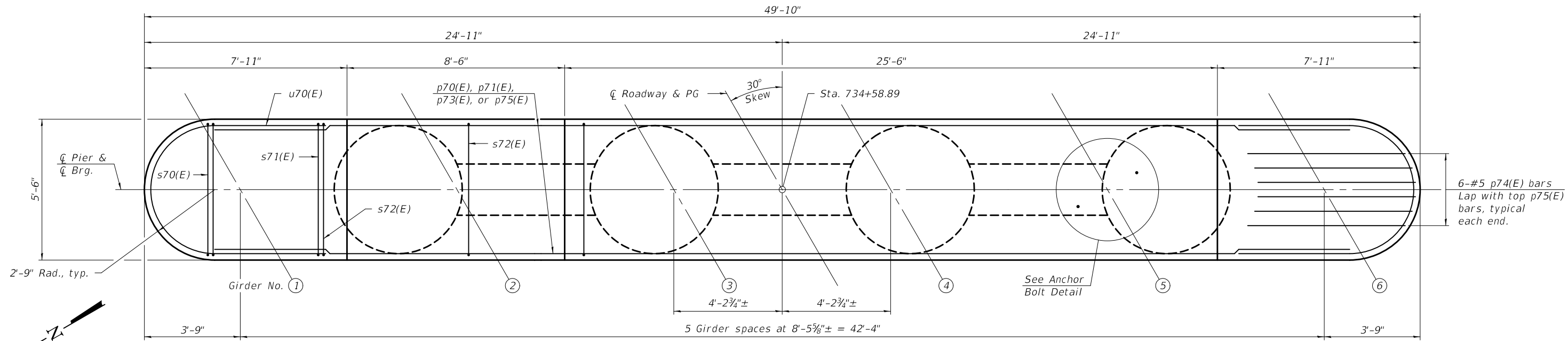
Bar	No.	Size	Length	Shape
p60(E)	6	#7	44'-4"	—
p61(E)	6	#7	44'-5"	—
p62(E)	8	#5	5'-10"	—
p63(E)	20	#9	12'-2"	—
p64(E)	12	#5	6'-2"	—
p65(E)	10	#9	44'-4"	—
s60(E)	16	#6	9'-8"	□
s61(E)	32	#6	10'-0"	□
s62(E)	20	#6	19'-6"	□
s63(E)	30	#5	10'-0"	□
sp60(E)	4	#6	55'-7"	⋈
u60(E)	8	#6	16'-8"	U
v60(E)	36	#5	8'-8"	—
v61(E)	76	#11	56'-6"	—
v62(E)	76	#11	57'-8"	—
Structure Excavation		Cu. Yd.	12	
Concrete Structures		Cu. Yd.	72.0	
Reinforcement Bars, Epoxy Coated		Pound	64,940	
Bar Splicers		Each	156	
Drilled Shaft in Soil		Cu. Yd.	81.6	
Drilled Shaft in Rock		Cu. Yd.	43.6	
Crosshole Sonic Logging Access Ducts		Foot	745	
Crosshole Sonic Logging Testing		Each	1	

DESIGNED - JOSUE D. ORTIZ-VARELA	EXAMINED - <i>Jaime F. Salas</i>	DATE - OCTOBER 15, 2018
CHECKED - ZACHARY T. BULVA	PASSED - <i>Carl Kasper</i>	REVISIONS -
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	REVISIONS -
CHECKED - P.G. / Z.T.B. / G.R.A.		

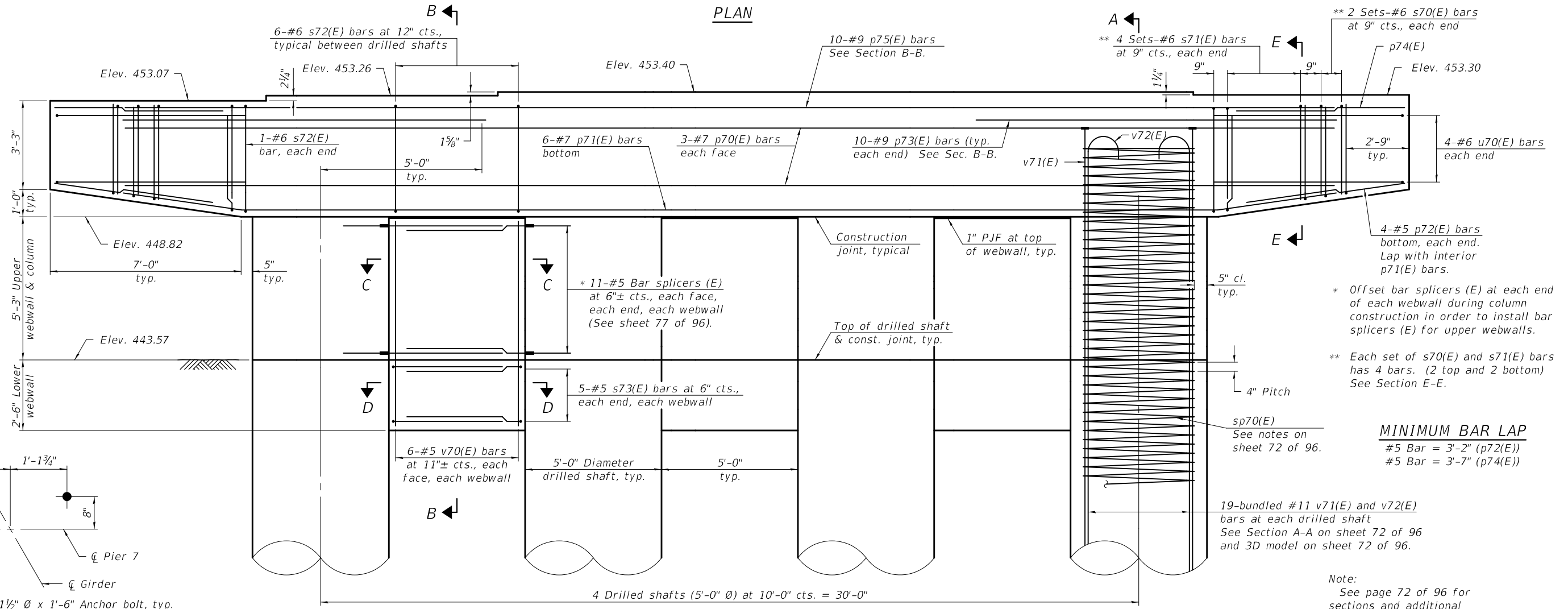
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PIER 6 (UNIT 2)  
 STRUCTURE NO. 014 - 0080

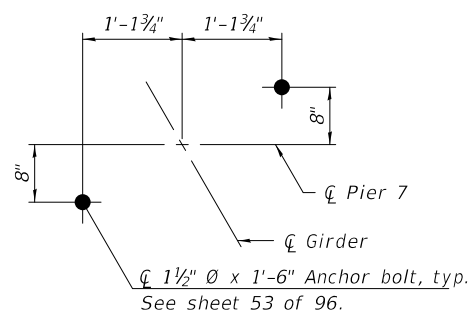
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	134
CONTRACT NO. 76887				



PLAN



ELEVATION



ANCHOR BOLT DETAIL  
(Typical at each bearing location)

6-#5 p74(E) bars  
Lap with top p75(E)  
bars, typical  
each end.

\*\* 2 Sets-#6 s70(E) bars  
at 9" cts., each end

\*\* 4 Sets-#6 s71(E) bars  
at 9" cts., each end

4-#6 u70(E) bars  
each end

4-#5 p72(E) bars  
bottom, each end.  
Lap with interior  
p71(E) bars.

\* Offset bar splicers (E) at each end  
of each webwall during column  
construction in order to install bar  
splicers (E) for upper webwalls.

\*\* Each set of s70(E) and s71(E) bars  
has 4 bars. (2 top and 2 bottom)  
See Section E-E.

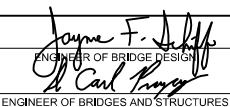
**MINIMUM BAR LAP**  
#5 Bar = 3'-2" (p72(E))  
#5 Bar = 3'-7" (p74(E))

19-bundled #11 v71(E) and v72(E)  
bars at each drilled shaft  
See Section A-A on sheet 72 of 96  
and 3D model on sheet 72 of 96.

Note:  
See page 72 of 96 for  
sections and additional  
details.  
Cost of preformed joint  
filler is included with  
Concrete Structures.

MODEL: 0140080-76887-071  
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DESIGNED -	JOSUE D. ORTIZ-VARELA
CHECKED -	ZACHARY T. BULVA
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	P.G. / Z.T.B. / G.R.A.

EXAMINED \_\_\_\_\_  
PASSED \_\_\_\_\_  
  
 ENGINEER OF BRIDGES AND STRUCTURES

DATE -	OCTOBER 15, 2018
REVISED -	
REVISED -	

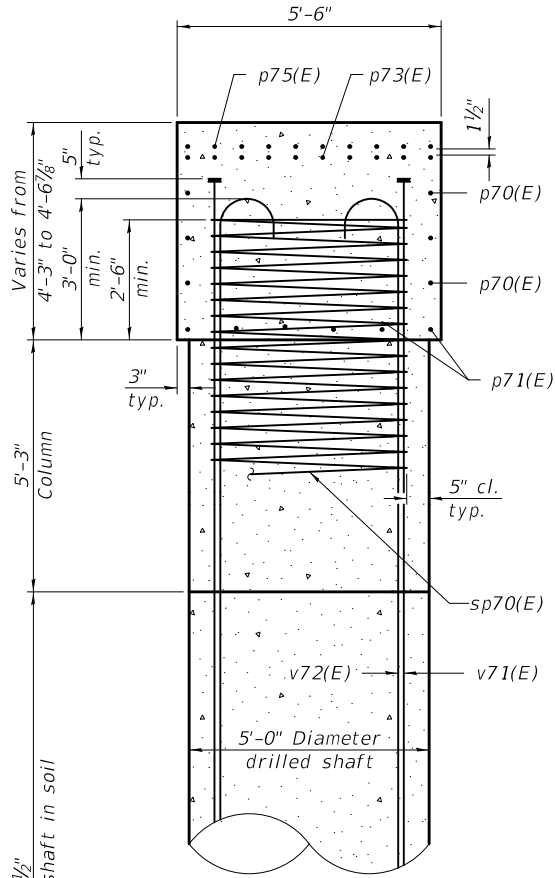
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PIER 7 (UNIT 2)  
STRUCTURE NO. 014 - 0080

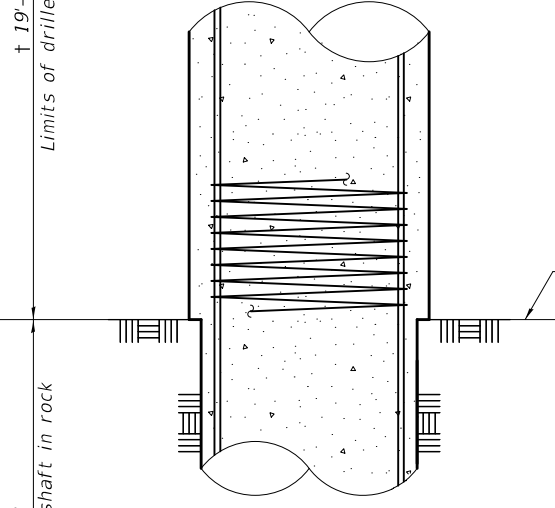
SHEET 71 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	135
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

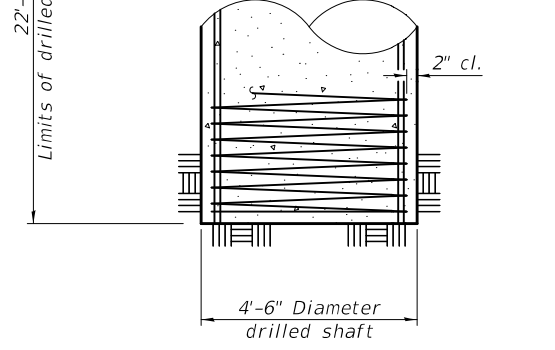
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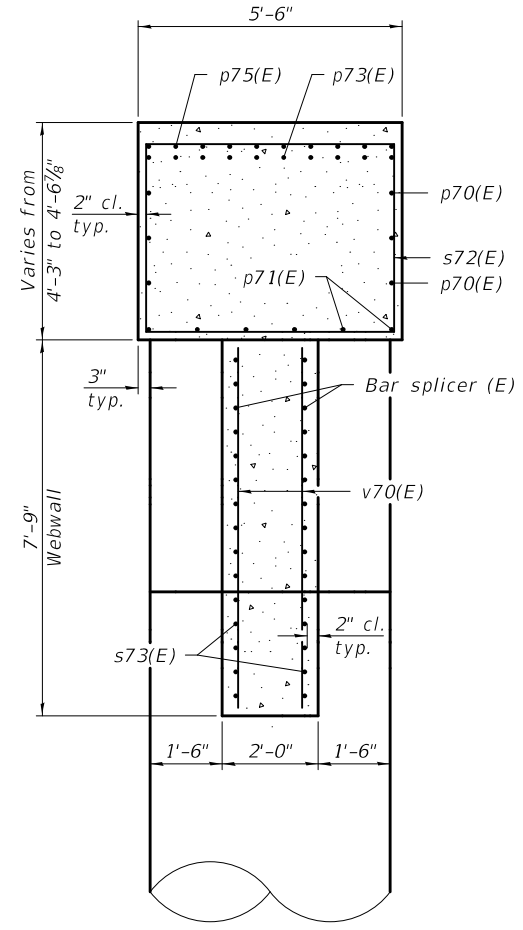
SECTION A-A



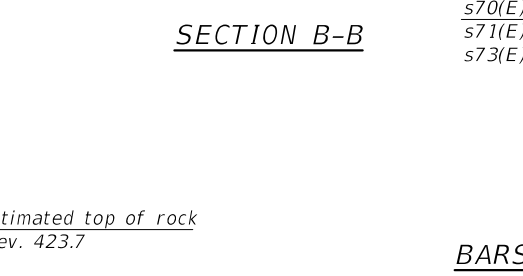
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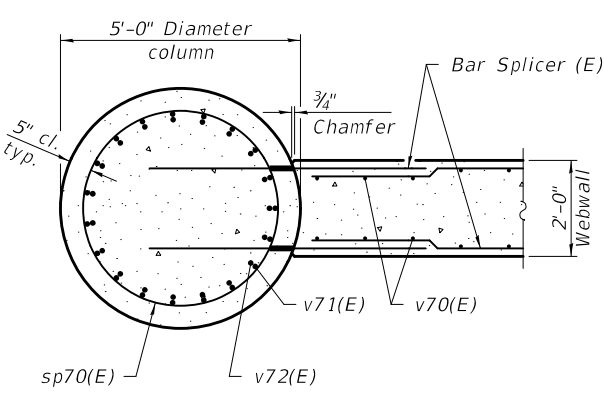
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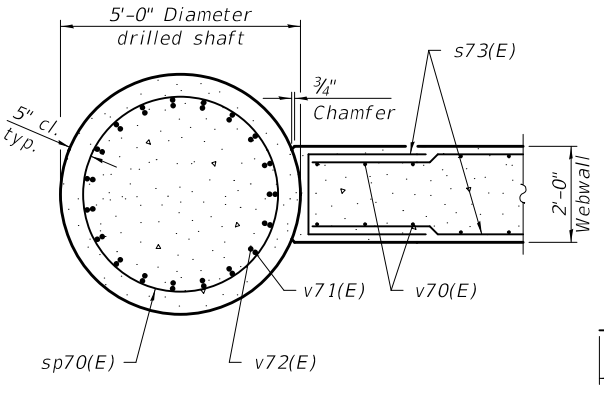
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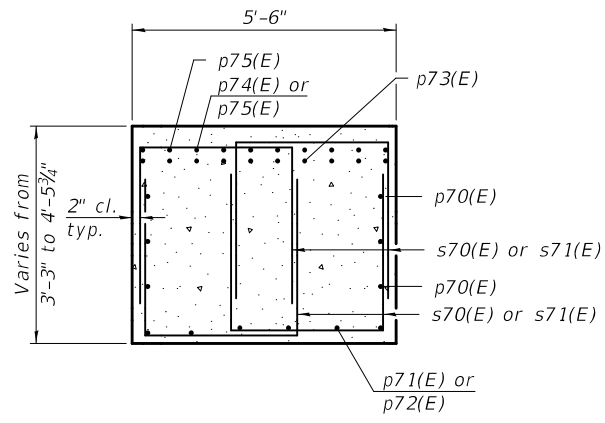
SECTION E-E



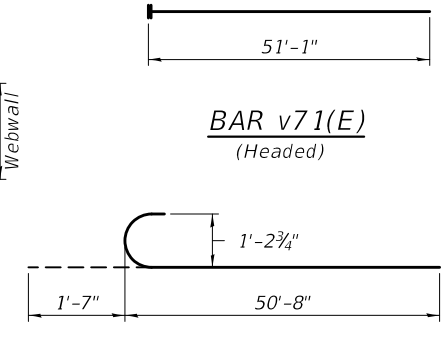
SECTION C-C



SECTION D-D



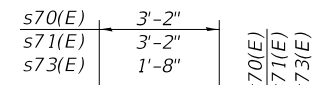
SECTION E-E



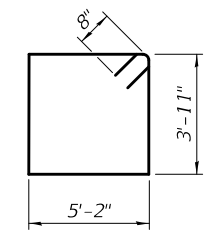
BAR v71(E)  
(Headed)



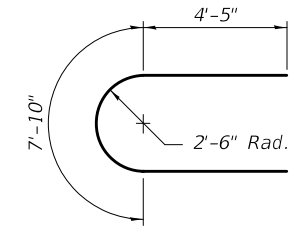
BAR v72(E)



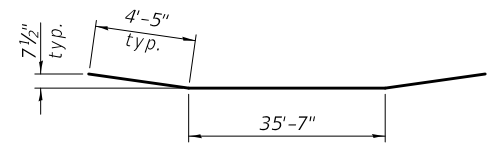
BARS s70(E), s71(E)  
& s73(E)



BAR s72(E)



BAR u70(E)



BAR p71(E)

- Notes:
- Provide 1 1/2 extra turns top and bottom for #6 sp70(E) spiral. Shop weld together extra spiral turns per AWS D1.4. Provide minimum 4-#4 spacers or equivalent. Cast steps monolithically with cap. Space cap reinforcement to miss anchor bolts. Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
  - † If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.
  - ‡ Length is height of spiral.

- Construction Sequence for Web Wall:
- Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms together as required.
  - Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
  - If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
  - Construct Columns.
  - Construct upper web walls.

3D COLUMN MODEL

Note:  
 The above Embedded 3D Model may be panned, rotated, or zoomed into from within the pdf file. The contents of the 3D model is intended only to be used for information/visualization purposes. The 2D plan details and dimensions take precedence over any content of the 3D model.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
p70(E)	6	#7	44'-4"	—
p71(E)	6	#7	44'-5"	—
p72(E)	8	#5	5'-10"	—
p73(E)	20	#9	12'-2"	—
p74(E)	12	#5	6'-2"	—
p75(E)	10	#9	44'-4"	—
s70(E)	16	#6	9'-8"	□
s71(E)	32	#6	10'-0"	□
s72(E)	20	#6	19'-6"	□
s73(E)	30	#5	10'-0"	□
sp70(E)	4	#6	50'-2"	⋈
u70(E)	8	#6	16'-8"	U
v70(E)	36	#5	7'-5"	—
v71(E)	76	#11	51'-1"	—
v72(E)	76	#11	52'-3"	—
Structure Excavation		Cu. Yd.	12	
Concrete Structures		Cu. Yd.	67.4	
Reinforcement Bars, Epoxy Coated		Pound	59,260	
Bar Splicers		Each	132	
Drilled Shaft in Soil		Cu. Yd.	57.9	
Drilled Shaft in Rock		Cu. Yd.	53.1	
Crosshole Sonic Logging Access Ducts		Foot	678	
Crosshole Sonic Logging Testing		Each	1	

DESIGNED - JOSUE D. ORTIZ-VARELA  
 CHECKED - ZACHARY T. BULVA  
 DRAWN - MICHAEL B. MOSSMAN  
 CHECKED - P.G. / Z.T.B. / G.R.A.

EXAMINED  
 PASSED  
 ENGINEER OF BRIDGES AND STRUCTURES

DATE - OCTOBER 15, 2018  
 REVISED -  
 REVISED -

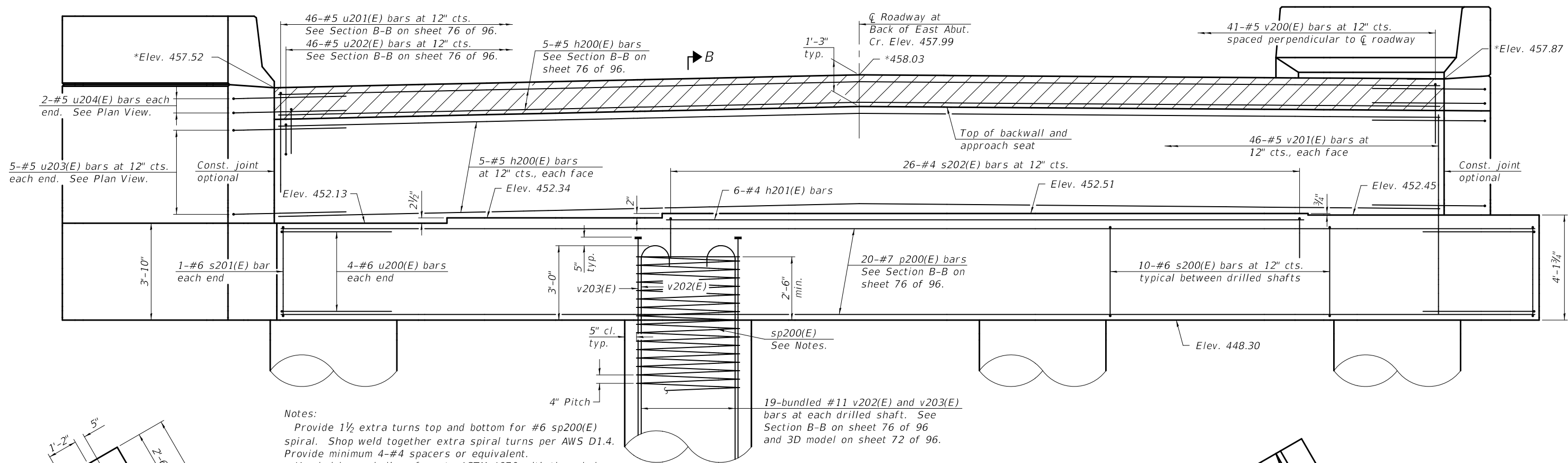
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PIER 7 (UNIT 2)  
 STRUCTURE NO. 014 - 0080

SHEET 72 OF 96 SHEETS

F.A.P. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.  
 805 7BR, 7BR-1 CLINTON 259 136  
 CONTRACT NO. 76887  
 ILLINOIS FED. AID PROJECT

MODEL: 0140080-76887-073  
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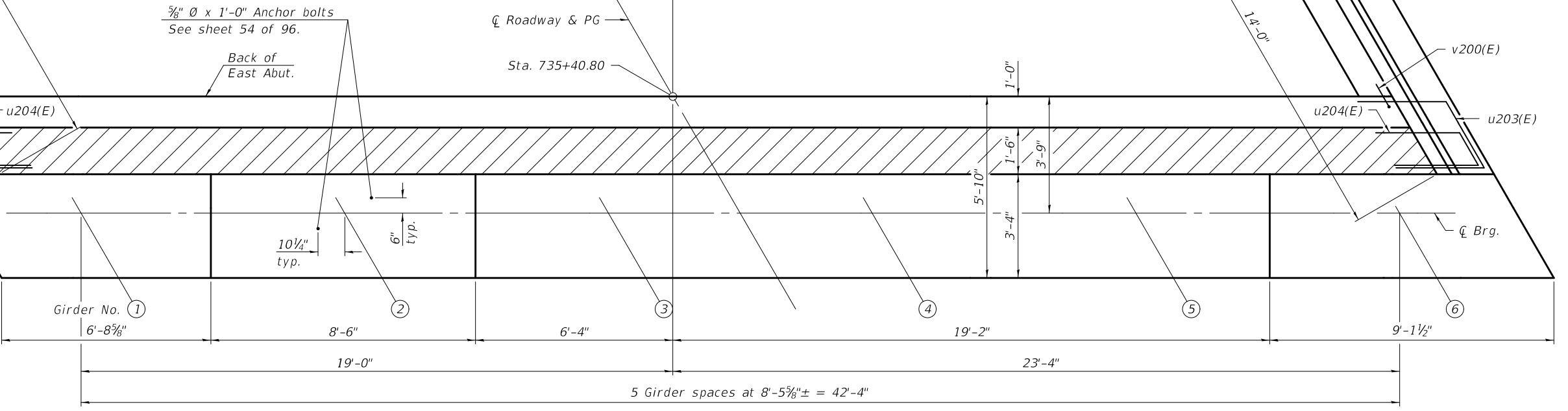
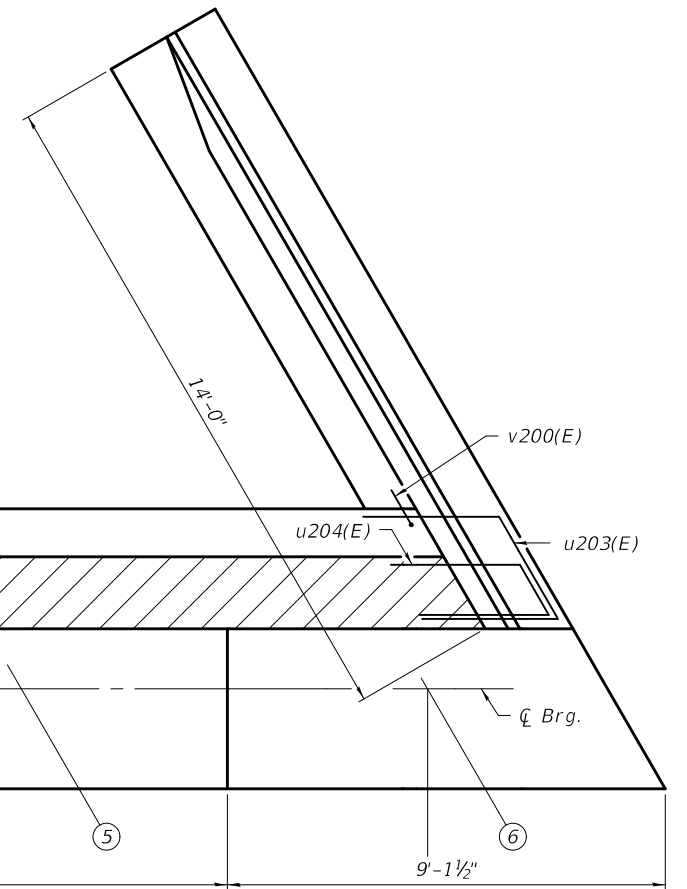
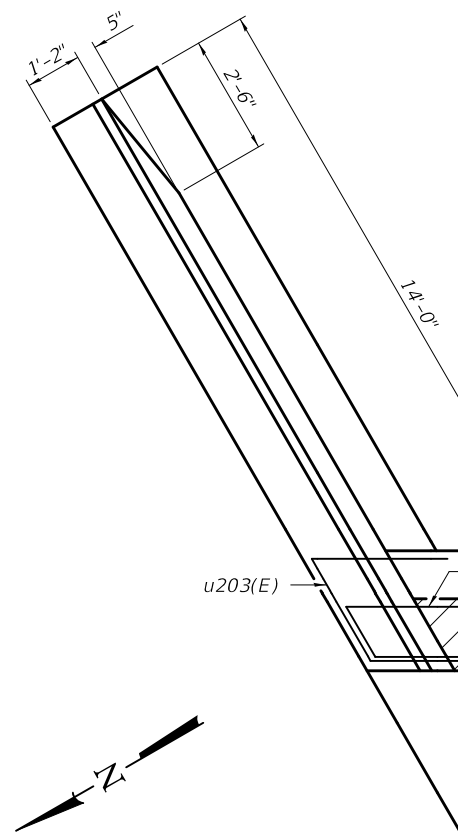


**Notes:**

- Provide 1/2 extra turns top and bottom for #6 sp200(E) spiral. Shop weld together extra spiral turns per AWS D1.4. Provide minimum 4-#4 spacers or equivalent.
- Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
- Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure on sheet 22 of 96.
- Space reinforcement in cap to miss anchor bolts.
- Pour steps monolithically with cap.
- The quantities and reinforcement detailing are based on the estimated top of rock elevations shown and may change based on the actual elevations encountered at each drilled shaft.

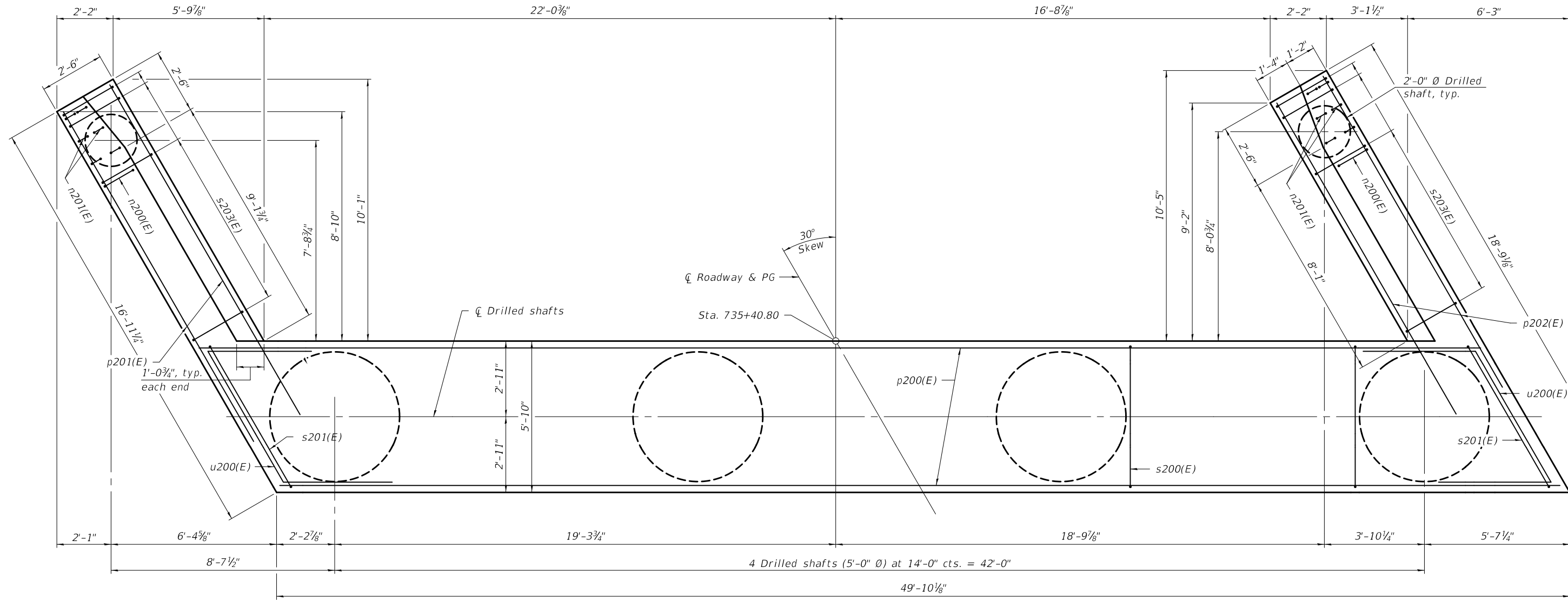
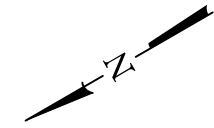
**ELEVATION**  
(Looking East)

\* Elevations are taken at front face of hatch block.



**PLAN**

DESIGNED - JOSUE D. ORTIZ-VARELA	EXAMINED - <i>Joanne F. [Signature]</i>	DATE - OCTOBER 15, 2018	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>EAST ABUTMENT (UNIT 2) STRUCTURE NO. 014 - 0080</b>	F.A.P. RTE. 805	SECTION 7BR, 7BR-1	COUNTY CLINTON	TOTAL SHEETS 259	SHEET NO. 137	
CHECKED - ZACHARY T. BULVA	PASSED - <i>Carl [Signature]</i>	REVISER -			CONTRACT NO. 76887					
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	REVISER -			SHEET 73 OF 96 SHEETS					
CHECKED - P.G. / Z.T.B. / G.R.A.					ILLINOIS FED. AID PROJECT					



PLAN-PILE CAP

MODEL: 0140080-76887-074  
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DESIGNED - JOSUE D. ORTIZ-VARELA	EXAMINED - <i>Jaime F. Joffe</i>	DATE - OCTOBER 15, 2018
CHECKED - ZACHARY T. BULVA	PASSED - <i>Carl Kreyer</i>	REVISOR -
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	REVISION -
CHECKED - P.G. / Z.T.B. / G.R.A.		

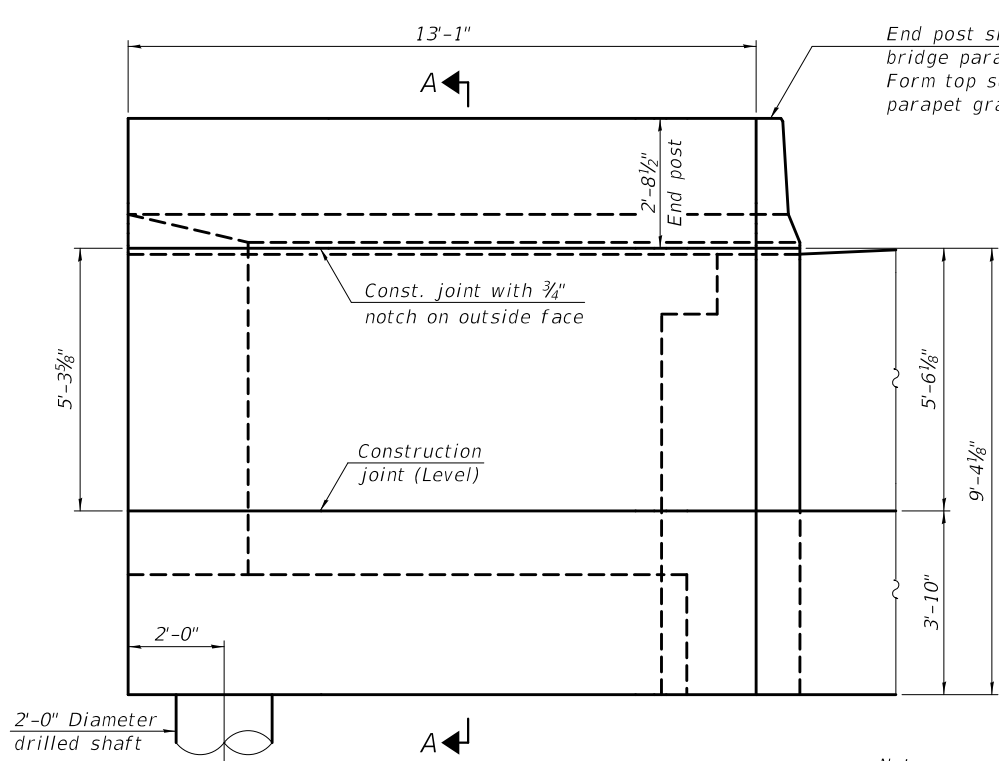
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT (UNIT 2)  
STRUCTURE NO. 014 - 0080

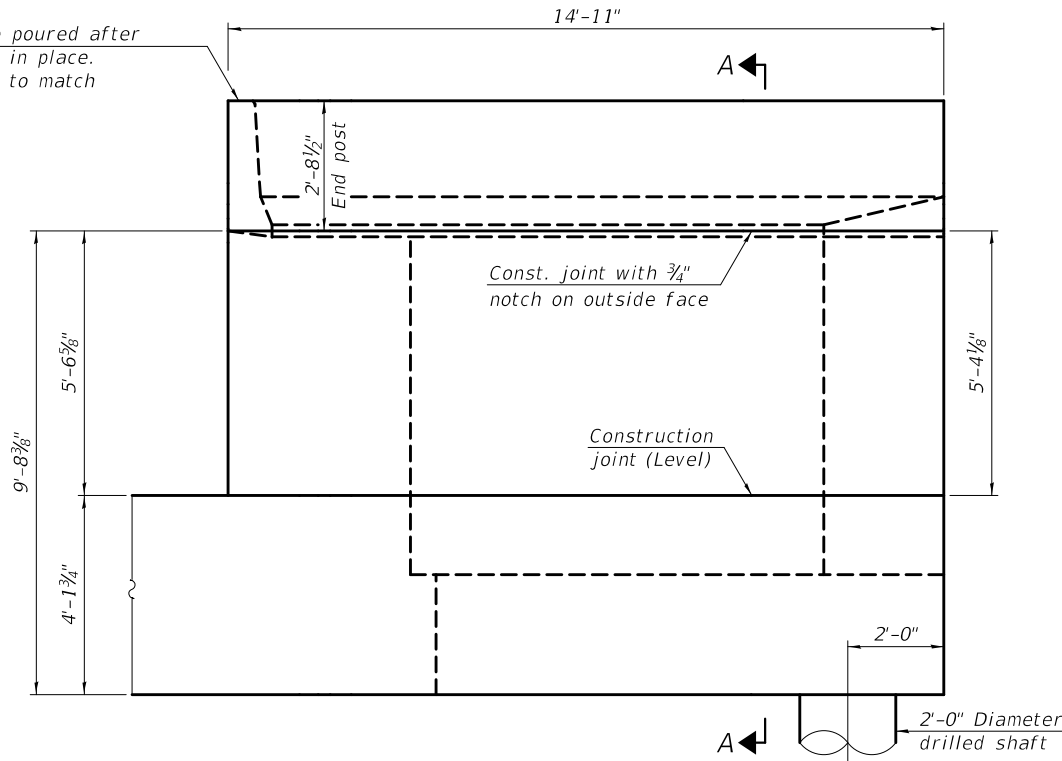
SHEET 74 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	138
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

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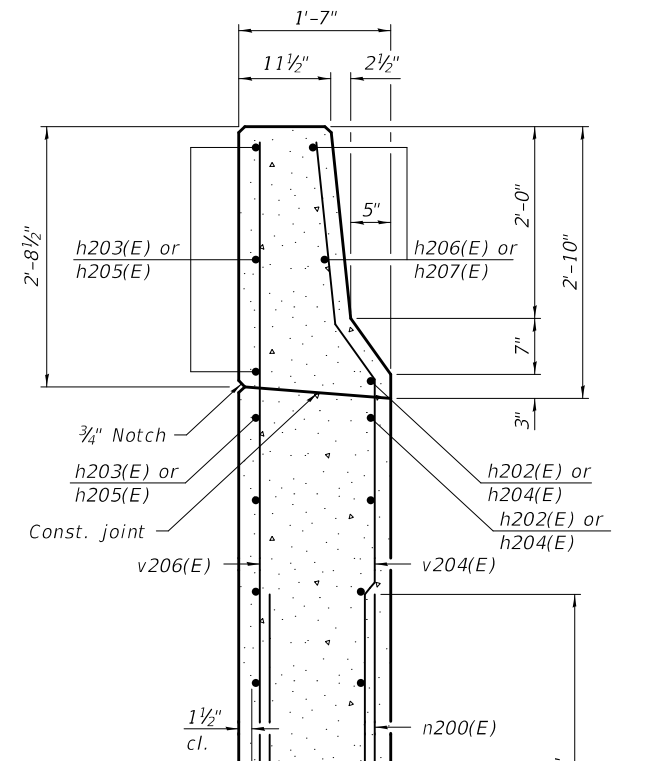


**WINGWALL ELEVATION**  
(Showing dimensions, North wingwall, looking South)

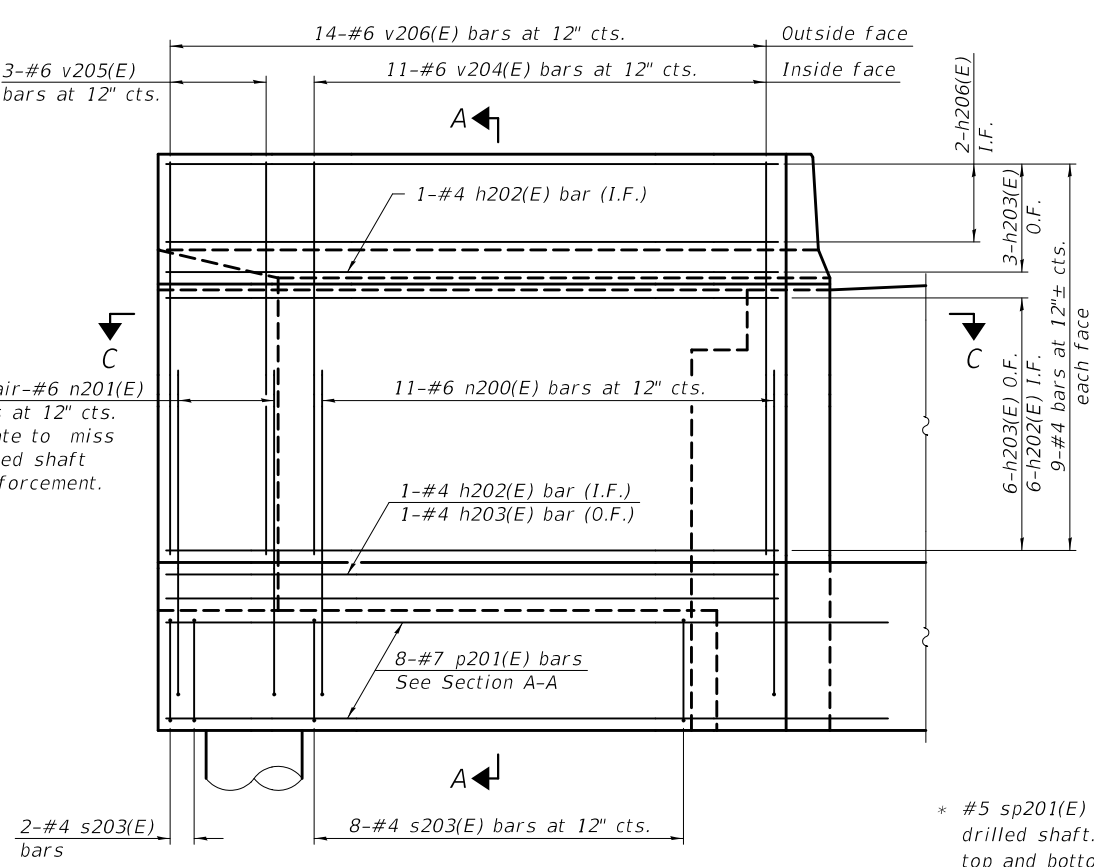


**WINGWALL ELEVATION**  
(Showing dimensions, South wingwall, looking North)

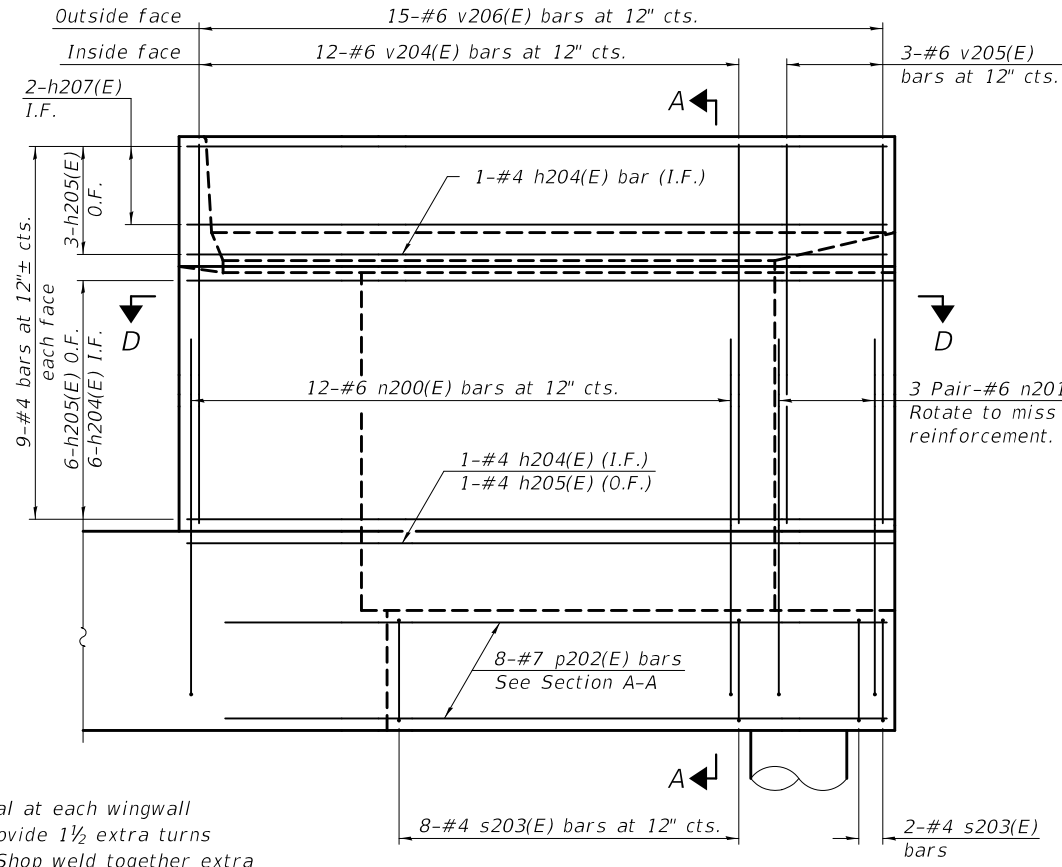
Note:  
Quantity of concrete in end post included with Concrete Superstructure on sheet 26 of 96.



**SECTION A-A**

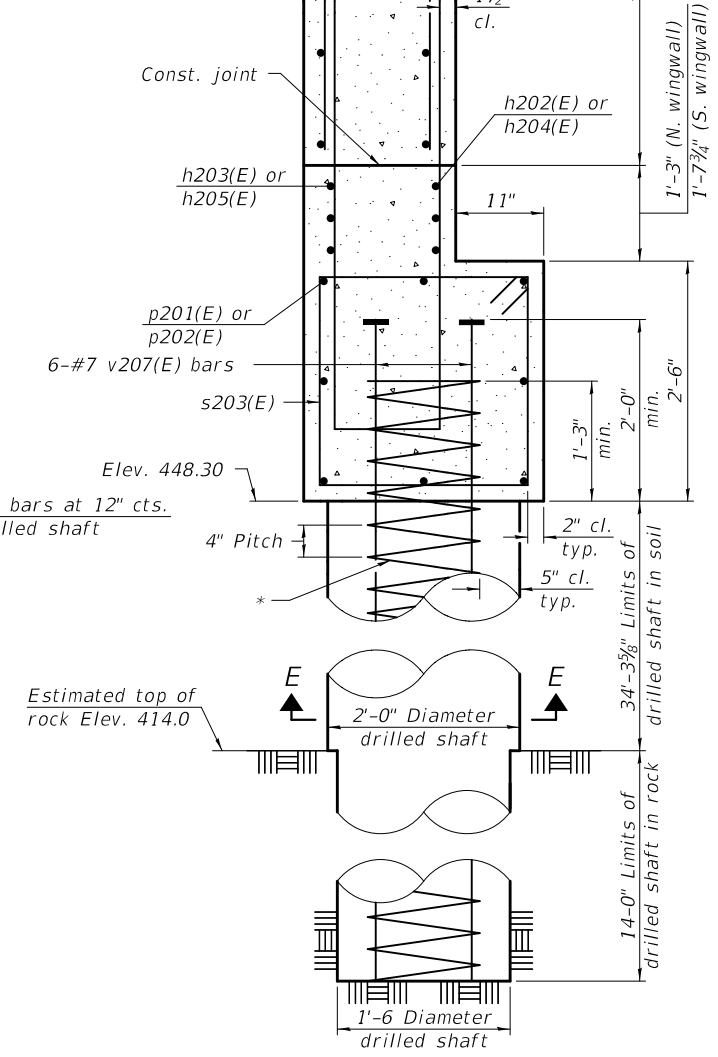


**WINGWALL ELEVATION**  
(Showing reinforcement, North wingwall)



**WINGWALL ELEVATION**  
(Showing reinforcement, South wingwall)

\* #5 sp201(E) Spiral at each wingwall drilled shaft. Provide 1 1/2 extra turns top and bottom. Shop weld together extra spiral turns per AWS D1.4. Extend spiral 1'-3" into wingwall footing. Provide 4-#4 spacers or equivalent.



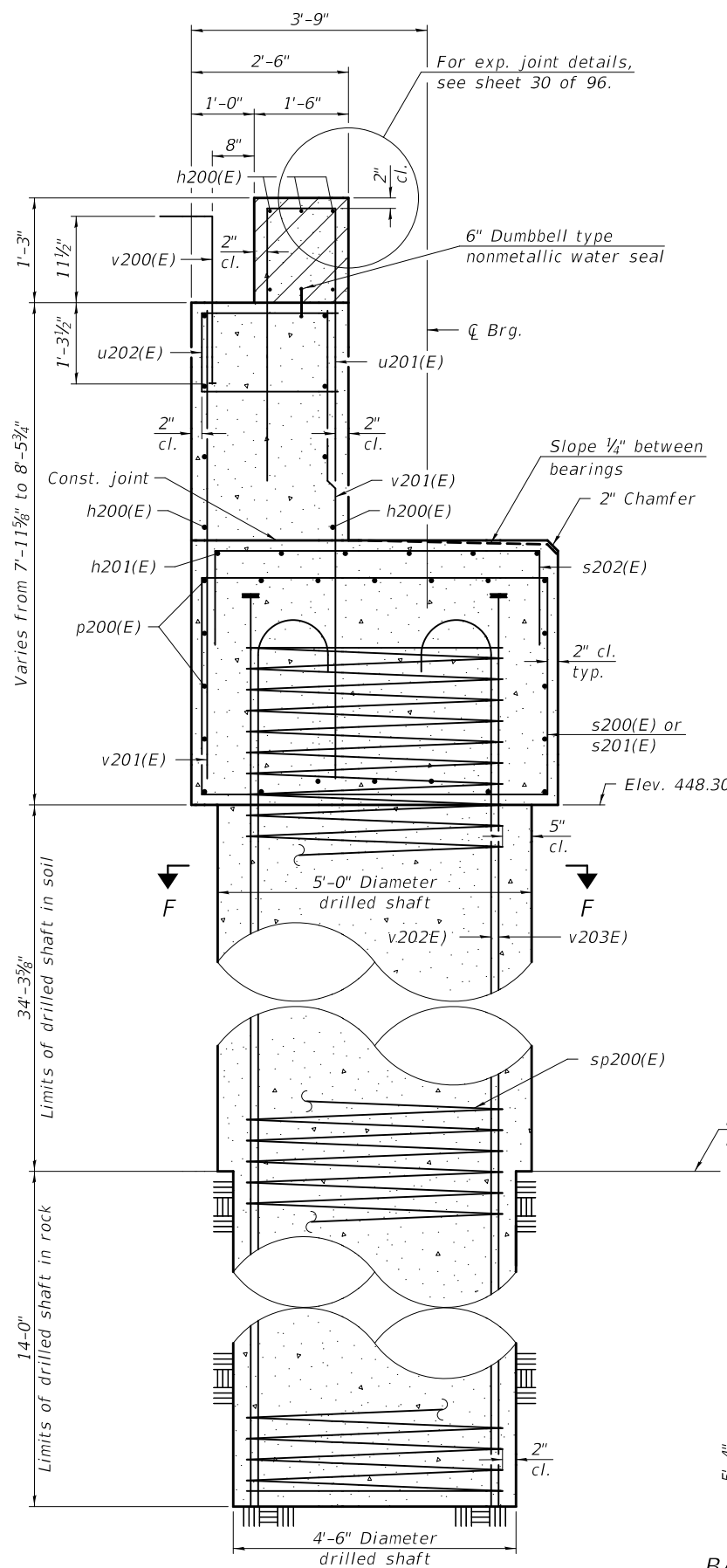
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FILE NAME: pw:\VIL084EBID\INTEG.jil\mde.gov\PWIDOT\Documents\DOT Offices\Bureau of Structures\Projects\0140080\CADD Plans\0140080-76887.dgn

DESIGNED - JOSUE D. ORTIZ-VARELA	EXAMINED - <i>Joanne F. [Signature]</i>	DATE - OCTOBER 15, 2018
CHECKED - ZACHARY T. BULVA	PASSED - <i>Carl [Signature]</i>	REVISIONS -
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	REVISIONS -
CHECKED - P.G. / Z.T.B. / G.R.A.		

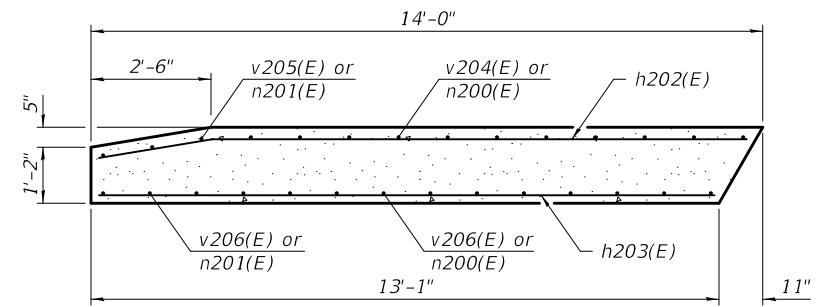
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**EAST ABUTMENT (UNIT 2)**  
**STRUCTURE NO. 014 - 0080**

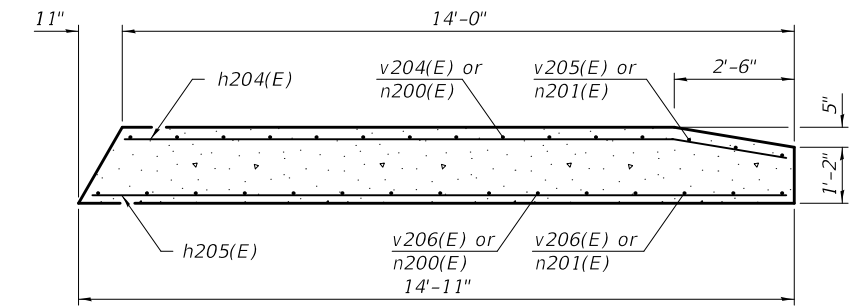
F.A.P. RTE. 805	SECTION 7BR, 7BR-1	COUNTY CLINTON	TOTAL SHEETS 259	SHEET NO. 139
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				



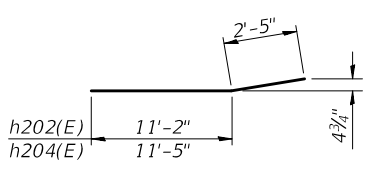
SECTION B-B



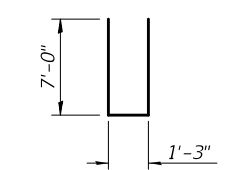
SECTION C-C



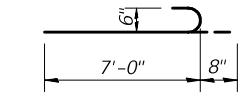
SECTION D-D



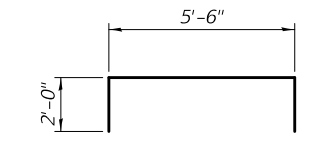
BARS h202(E) & h204(E)



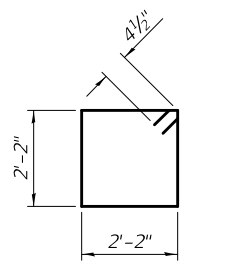
BAR n200(E)



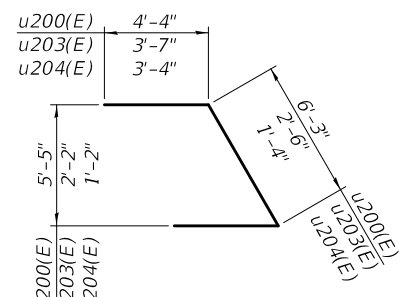
BAR n201(E)



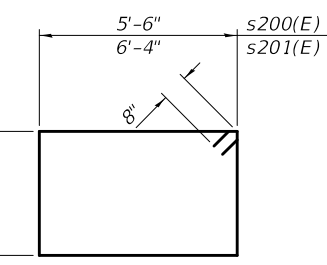
BAR s202(E)



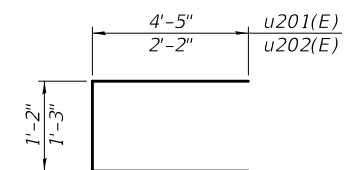
BARS s203(E)



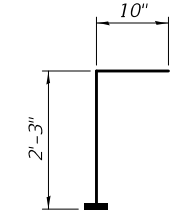
BARS u200(E) u203(E) & u204(E)



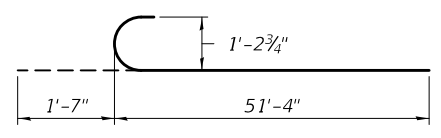
BARS s200(E) & s201(E)



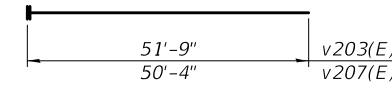
BARS u201(E) & u202(E)



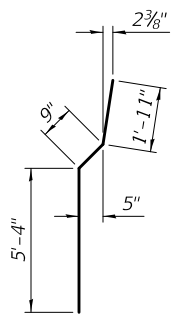
BAR v200(E) (Headed)



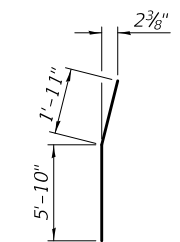
BAR v202(E)



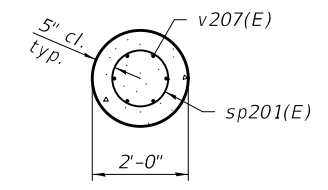
BAR v203(E) & v207(E) (Headed)



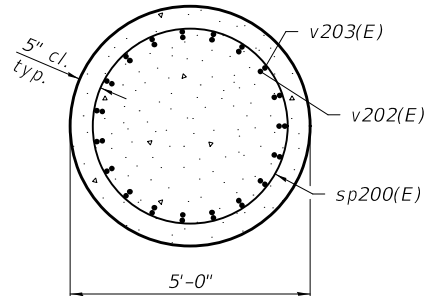
BAR v204(E)



BAR v205(E)



SECTION E-E



SECTION F-F

EAST ABUTMENT  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h200(E)	15	#5	45'-9"	▬
h201(E)	6	#4	25'-2"	▬
h202(E)	8	#4	13'-7"	▬
h203(E)	10	#4	12'-10"	▬
h204(E)	8	#4	13'-10"	▬
h205(E)	10	#4	14'-8"	▬
h206(E)	2	#4	13'-2"	▬
h207(E)	2	#4	14'-2"	▬
n200(E)	23	#6	15'-4"	▬
n201(E)	12	#6	7'-8"	▬
p200(E)	20	#7	49'-5"	▬
p201(E)	8	#7	14'-8"	▬
p202(E)	8	#7	15'-0"	▬
s200(E)	30	#6	19'-4"	▬
s201(E)	2	#6	21'-0"	▬
s202(E)	26	#4	9'-6"	▬
s203(E)	20	#4	9'-5"	▬
sp200(E)	4	#6	50'-10"	▬
sp201(E)	2	#5	49'-7"	▬
u200(E)	8	#6	14'-11"	▬
u201(E)	46	#5	10'-0"	▬
u202(E)	46	#5	5'-7"	▬
u203(E)	10	#5	9'-8"	▬
u204(E)	4	#5	8'-0"	▬
v200(E)	41	#5	3'-1"	▬
v201(E)	92	#5	7'-7"	▬
v202(E)	76	#11	52'-11"	▬
v203(E)	76	#11	51'-9"	▬
v204(E)	23	#6	8'-0"	▬
v205(E)	6	#6	7'-9"	▬
v206(E)	29	#6	7'-9"	▬
v207(E)	12	#7	50'-4"	▬
Structure Excavation		Cu. Yd.	75	
Concrete Structures		Cu. Yd.	78.3	
Reinforcement Bars, Epoxy Coated		Pound	64,840	
Drilled Shaft in Soil		Cu. Yd.	107.8	
Drilled Shaft in Rock		Cu. Yd.	34.9	
Concrete Sealer		Sq. Ft.	643	
Crosshole Sonic Logging Access Ducts		Foot	773	
Crosshole Sonic Logging Testing		Each	1	

\* Length is height of bar.  
Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.  
Crosshole sonic logging access ducts are not required for drilled shafts located at the wingwalls.

MODEL: 0140080-76887-076  
FILE NAME: pw:\VIL084EBID\INTEG\illmod5.gov\PWIDOT\Documents\DOT Offices\Bureau of Bridges and Structures\Projects\0140080\CADD Plans\0140080-76887.dgn  
10/15/2018 8:58:43 AM

DESIGNED - JOSUE D. ORTIZ-VARELA	EXAMINED - <i>Jaime F. [Signature]</i>	DATE - OCTOBER 15, 2018
CHECKED - ZACHARY T. BULVA	PASSED - <i>Carl [Signature]</i>	REVISIONS -
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	
CHECKED - P.G. / Z.T.B. / G.R.A.		

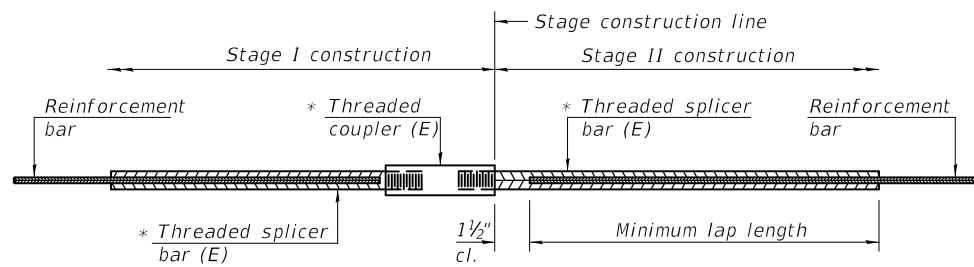
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT (UNIT 2)  
STRUCTURE NO. 014 - 0080

SHEET 76 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	140
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

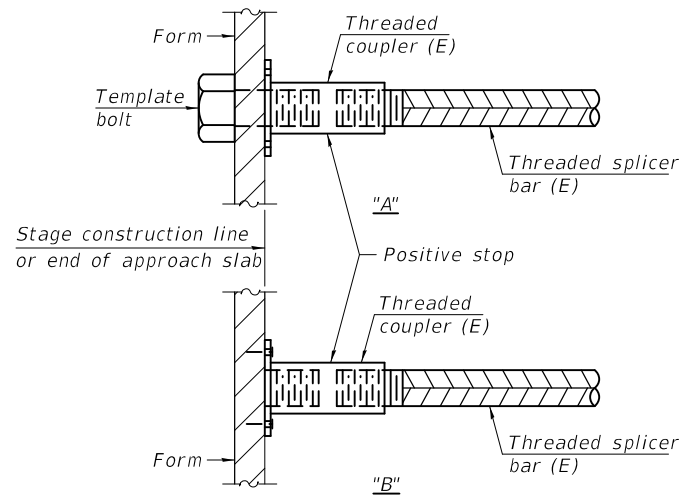




**STANDARD BAR SPLICER ASSEMBLY**

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

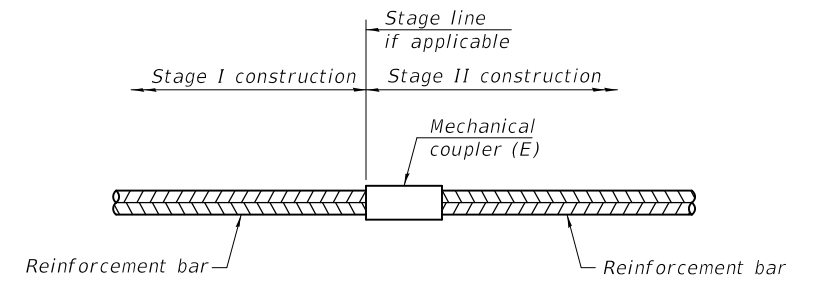


**INSTALLATION AND SETTING METHODS**

"A" : Set bar splicer assembly by means of a template bolt.

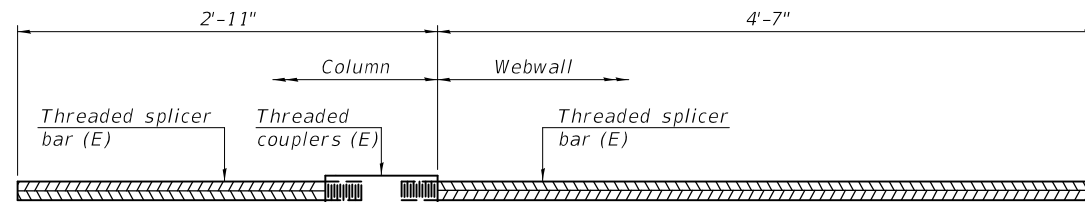
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

(E) : Indicates epoxy coating.



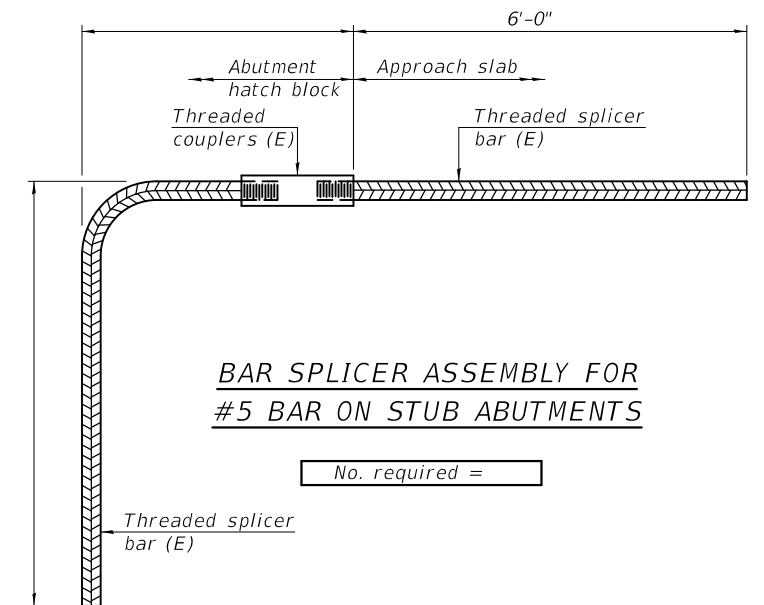
**STANDARD MECHANICAL SPLICER**

Location	Bar size	No. assemblies required



**PIER COLUMN TO WEBWALL BAR SPLICER ASSEMBLY**

Location	Bar size	No. assemblies required	Minimum lap length
Pier 1	#5	96	3'-9"
Pier 2	#5	132	3'-9"
Pier 3	#5	144	3'-9"
Pier 4	#5	144	3'-9"
Pier 5	#5	168	3'-9"
Pier 6	#5	156	3'-9"
Pier 7	#5	132	3'-9"



**BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS**

No. required =

**NOTES**

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars. Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

MODEL: 0140080-76887-077  
FILE NAME: p:\w\1084848\INTEG\illinois.gov\PW\DOT\Documents\DOT Offices\Bureau of Bridges and Structures\Projects\0140080\CADD Plans\0140080-76887.dgn

DESIGNED -	J.O.V. / Z.T.B.
CHECKED -	J.O.V. / Z.T.B.
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	P.G. / Z.T.B. / G.R.A.

EXAMINED		DATE -	OCTOBER 15, 2018
PASSED		REVISIONS	

REVISIONS	
REVISIONS	

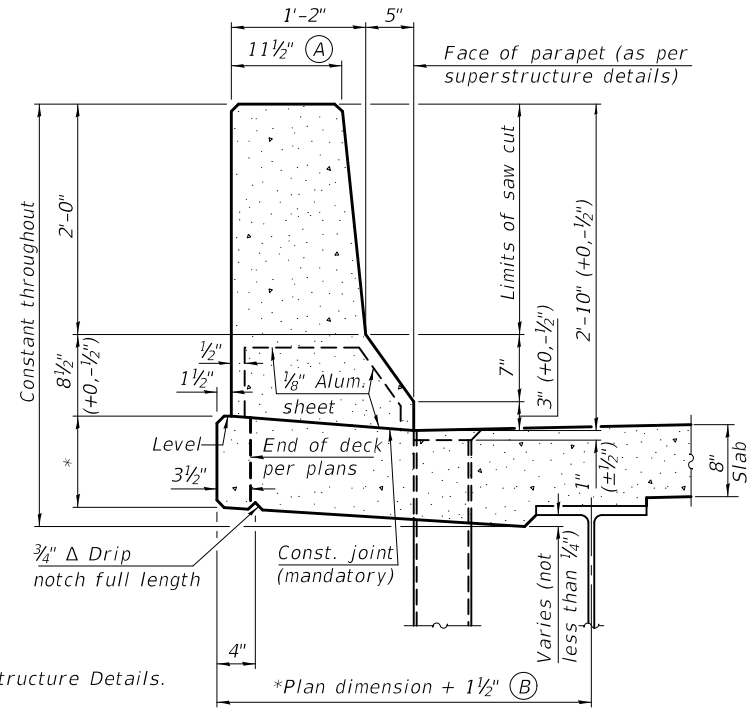
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS  
STRUCTURE NO. 014 - 0080**

SHEET 77 OF 96 SHEETS

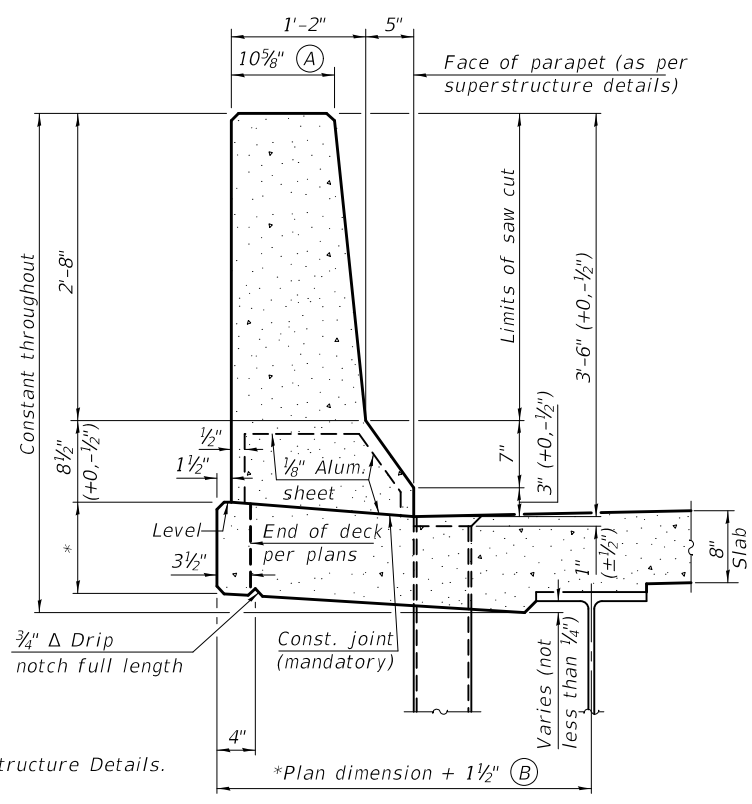
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	141
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

MODEL: 0140080-76887-078  
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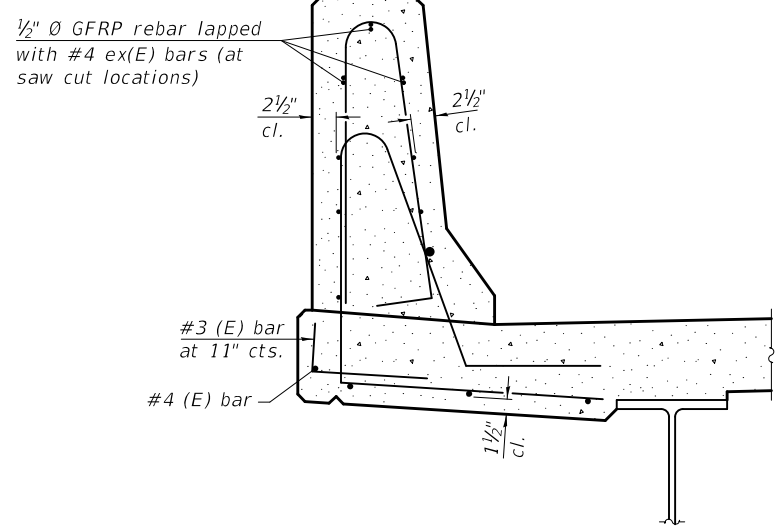
**34" F SHAPE PARAPET SECTION**  
 (Showing dimensions)

\*See Superstructure Details.



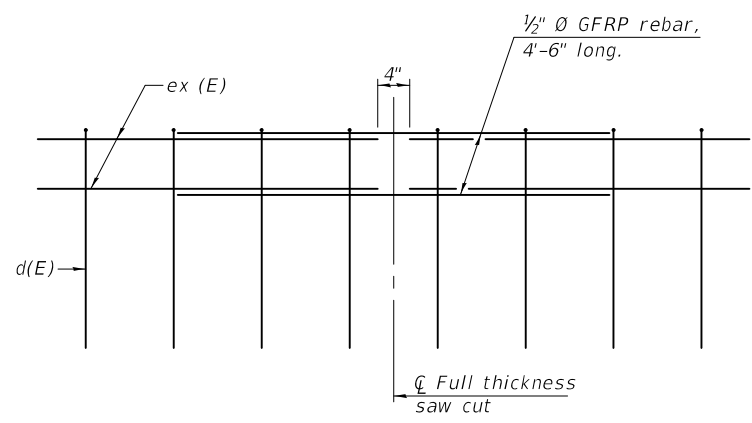
**42" F SHAPE PARAPET SECTION**  
 (Showing dimensions)

\*See Superstructure Details.



**SECTION**

(34" parapet shown - 42" parapet similar)  
 (Showing reinforcement clearances for slip forming and additional reinforcement bars)

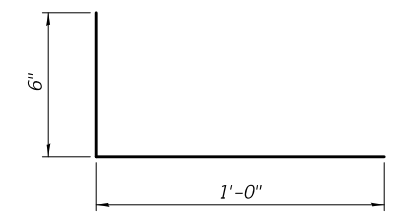


**GFRP REBAR STIFFENING DETAIL**

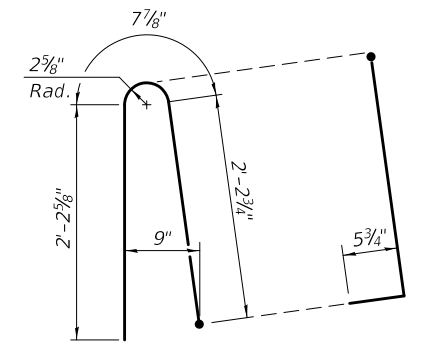
(Place as shown in parapet section at each parapet joint location.)

**GENERAL NOTES**

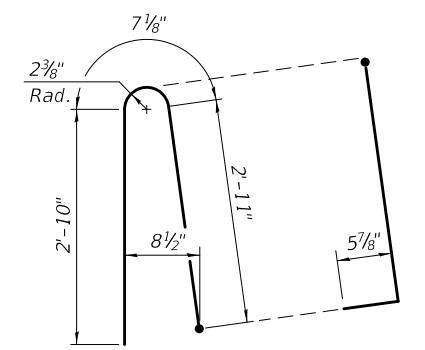
All dimensions shall remain the same as shown on superstructure details, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B = 0.0165 cu. yds./ft. for 34" parapet or = 0.0223 cu. yds./ft. for 42" parapet.  
 Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all joint locations in lieu of cork joint filler.  
 Steel superstructure shown. Other superstructure types similar.



**#3 (E) BAR**



**ALTERNATE BAR d(E)**  
 (For 34" parapet when conduit is present)



**ALTERNATE BAR d(E)**  
 (For 42" parapet when conduit is present)

SFP 34-42

2-17-2017

DESIGNED - J.O.V. / Z.T.B.	EXAMINED - <i>Joanne F. J...</i>	DATE - OCTOBER 15, 2018
CHECKED - J.O.V. / Z.T.B.	PASSED - <i>Carl...</i>	REVISOR -
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGE DESIGN	REVISOR -
CHECKED - P.G. / Z.T.B. / G.R.A.	ENGINEER OF BRIDGES AND STRUCTURES	

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CONCRETE PARAPET SLIPFORMING OPTION  
 STRUCTURE NO. 014 - 0080**

SHEET 78 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	142
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

10/15/2018 8:58:44 AM

Page 1 of 4

Date 10/10/17

**Illinois Department of Transportation**  
Division of Highways  
Illinois Department of Transportation

## SOIL BORING LOG

ROUTE FAP 805 DESCRIPTION IL 161 over Crooked Creek LOGGED BY CWG (TSi)

SECTION 7BR, 7BR-1 LOCATION NW 1/4, SEC. 15, TWP. 1N, RNG. 1W, 3 PM

COUNTY Clinton DRILLING METHOD 3.25" HSA HAMMER TYPE Automatic

STRUCT. NO. 014-0025 (E) / 014-0080 (P)

BORING NO. P-2

Station 724+49

Offset 15.00ft Right

Ground Surface Elev. 454.0 ft

Description	Depth (ft)	Blow Count (6")	UCS (tsf)	Moisture (%)	Surface Water Elev. ft	Stream Bed Elev. ft	Groundwater Elev. ft	First Encounter ft	Upon Completion ft	After ** Hrs. ft	Depth (ft)	Blow Count (6")	UCS (tsf)	Moisture (%)
Asphalt (4") and Concrete (8")	453.0													
Brown and Gray Silt LOAM A-4(2) See Class @ 1.5 ft	5 7 7			2.83 18								2 2 3	0.25 P	23
Gray	4 6 6		0.87 17									2 2 1	0.20 B	22
Trace Fine Sand														
Gray Sandy LOAM A-2-4(0) See Class @ 26.5 ft	4 5 5		2.50 17									1 3 3	0.75 P	21
Trace Wood and Gravel	3 3 2		1.25 21									1 1 2	0.61 B	24
Trace Gravel	3 4 5		1.09 21											
	3 3 4		0.61 19									2 3 3	0.61 S	22
Brown and Gray Silty CLAY	3 3 4		0.41 22											
Brown and Gray CLAY	2 2 2		0.44 23									0 1 3	0.61 B	22

The Unconfined Compressive Strength (UCS) Failure Mode is Indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, form 137 (Rev. 8-99)

Date 10/10/17

**Illinois Department of Transportation**  
Division of Highways  
Illinois Department of Transportation

## SOIL BORING LOG

ROUTE FAP 805 DESCRIPTION IL 161 over Crooked Creek LOGGED BY CWG (TSi)

SECTION 7BR, 7BR-1 LOCATION NW 1/4, SEC. 15, TWP. 1N, RNG. 1W, 3 PM

COUNTY Clinton DRILLING METHOD 3.25" HSA HAMMER TYPE Automatic

STRUCT. NO. 014-0025 (E) / 014-0080 (P)

BORING NO. P-2

Station 724+49

Offset 15.00ft Right

Ground Surface Elev. 454.0 ft

Description	Depth (ft)	Blow Count (6")	UCS (tsf)	Moisture (%)	Surface Water Elev. ft	Stream Bed Elev. ft	Groundwater Elev. ft	First Encounter ft	Upon Completion ft	After ** Hrs. ft	Depth (ft)	Blow Count (6")	UCS (tsf)	Moisture (%)
Gray CLAY with Trace Sand (continued)	412.5													
Gray and Brown Fine to Coarse SAND with Some Gravel See Gradation @ 44 ft	7 3 4		NC 18											
Gray	12 12 4		NC 17											
Gray	9 7 6		NC 15											
Gray SHALE	399.5													
Borehole continued with rock coring.	395.0	50/3	-	-										

The Unconfined Compressive Strength (UCS) Failure Mode is Indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, form 137 (Rev. 8-99)

MODEL: 0140080-76887-079  
FILE NAME: p:\w\1084EBID\INTEG\Illinois\Documents\Projects\0140080\CADD Plans\0140080-76887.dgn

DESIGNED - J.O.V. / Z.T.B.	EXAMINED - <i>Joanne F. Joffe</i>	DATE - OCTOBER 15, 2018
CHECKED - J.O.V. / Z.T.B.	PASSED - <i>Michael B. Mossman</i>	REVISOR -
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	REVISOR -
CHECKED - P.G. / Z.T.B. / G.R.A.		

 ENGINEER OF BRIDGES AND STRUCTURES	DATE - OCTOBER 15, 2018 REVISOR - REVISOR -
---	---

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SOIL BORING LOGS  
STRUCTURE NO. 014 - 0080**

SHEET 79 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	143
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				









Page 1 of 2

**Illinois Department of Transportation**  
Division of Highways  
Illinois Department of Transportation

## SOIL BORING LOG

Date 5/16/17

ROUTE FAP 805 DESCRIPTION IL 161 over Crooked Creek LOGGED BY ACE (TSi)

SECTION 7BR, 7BR-1 LOCATION NW 1/4, SEC. 15, TWP. 1N, RNG. 1W, 3 PM

COUNTY Clinton DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 014-0025 (E) / 014-0080 (P)

BORING NO. SB A

Station 724+72

Offset 15.00ft Right

Ground Surface Elev. 452.0 ft

DEPTH (ft)	BLOW COUNT	UCS (tsf)	MOISTURE (%)	Soil Description			
				Surface Water Elev. (ft)	Stream Bed Elev. (ft)	Groundwater Elev. (ft)	Notes
5							Brown and Gray Silt LOAM A-4(4) See Class @ 4 ft (continued)
6							Brown
8							Gray Loamy SAND
449.0							
3							Brown and Gray Sandy CLAY
3	3,00	20					
5	P						
-5							
3							Gray
5	0.25	23					
4	B						Trace Gravel
424.0							
1							Gray Sandy LOAM
2	0.16	24					
2	B						
-10							
3							Gray Sandy Clay LOAM
3	1.02	24					
5	B						
-15							
3							
3	1.00	23					
5	S						
-15							
2							
3	0.37	23					
2	B						
1							
2	0.16	24					
2	B						
-20							

The Unconfined Compressive Strength (UCS) Failure Mode is Indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, form 137 (Rev. 8-99)

Page 2 of 2

**Illinois Department of Transportation**  
Division of Highways  
Illinois Department of Transportation

## SOIL BORING LOG

Date 5/16/17

ROUTE FAP 805 DESCRIPTION IL 161 over Crooked Creek LOGGED BY ACE (TSi)

SECTION 7BR, 7BR-1 LOCATION NW 1/4, SEC. 15, TWP. 1N, RNG. 1W, 3 PM

COUNTY Clinton DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 014-0025 (E) / 014-0080 (P)

BORING NO. SB A

Station 724+72

Offset 15.00ft Right

Ground Surface Elev. 452.0 ft

DEPTH (ft)	BLOW COUNT	UCS (tsf)	MOISTURE (%)	Soil Description			
				Surface Water Elev. (ft)	Stream Bed Elev. (ft)	Groundwater Elev. (ft)	Notes
							Gray Sandy Clay LOAM (continued)
410.0							
							Dark Gray SAND with Some Gravel See Gradation @ 44 ft
8							
8	NC	16					
8							
-45							
405.0							
							Brown and Gray CLAY with Trace Gravel
7							
13	4.83	22					
15	B						
-50							
400.0							
							Dark Gray SHALE
50/4*							
-	4.50	15					
-55	P						
50/2*							
-							
-							
-60							

The Unconfined Compressive Strength (UCS) Failure Mode is Indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, form 137 (Rev. 8-99)

MODEL: 0140080-76887-084  
FILE NAME: p:\w\1084EBID\INTEG\Illinois.gov\PWIDOT\Documents\Projects\0140080\CADD Plans\0140080-76887.dgn

DESIGNED - J.O.V. / Z.T.B.	EXAMINED - <i>Joanne F. Joffe</i>	DATE - OCTOBER 15, 2018	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SOIL BORING LOGS STRUCTURE NO. 014 - 0080</b>	F.A.P. RTE. 805	SECTION 7BR, 7BR-1	COUNTY CLINTON	TOTAL SHEETS 259	SHEET NO. 148	
CHECKED - J.O.V. / Z.T.B.	PASSED - <i>Carl Berger</i>	REVISER -			CONTRACT NO. 76887					
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	REVISER -			SHEET 84 OF 96 SHEETS					
CHECKED - P.G. / Z.T.B. / G.R.A.					ILLINOIS FED. AID PROJECT					

10/15/2018 8:58:46 AM





Page 1 of 2

**Illinois Department of Transportation**  
Division of Highways  
Illinois Department of Transportation

## SOIL BORING LOG

Date 5/18/17

ROUTE FAP 805 DESCRIPTION IL 161 over Crooked Creek LOGGED BY ACE (TSi)

SECTION 7BR, 7BR-1 LOCATION NW 1/4, SEC. 15, TWP. 1N, RNG. 1W, 3 PM

COUNTY Clinton DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 014-0025 (E) / 014-0080 (P)

BORING NO. SB C

Station 726+37

Offset 15.00ft Right

Ground Surface Elev. 453.5 ft

Description	Depth (ft)	Blow Count (6")	UCS (tsf)	Moisture (%)	Soil Description			
					Surface Water Elev. ft	Stream Bed Elev. ft	Groundwater Elev. ft	Notes
Brown CLAY with Asphalt Fragments	452.0	4						
Brown and Gray Silt LOAM A-4(1) See Class @ 4 ft		6	2.44	17				
Gray	448.0	6	3.50	18				
Gray Silt LOAM A-4(2) See Class @ 6.5 ft		2	1.42	19				
		3						
		4	1.57	21				
	442.0	4						
Gray Silt LOAM	440.5	2	0.65	25				
Gray Silty CLAY		2	0.86	26				
	438.0	2						
Brown and Gray Silt LOAM		1	0.41	27				
		2						
		2						
		WH						
		1	1.25	29				
		3						
		3						

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, form 137 (Rev. 8-99)

Page 2 of 2

**Illinois Department of Transportation**  
Division of Highways  
Illinois Department of Transportation

## SOIL BORING LOG

Date 5/18/17

ROUTE FAP 805 DESCRIPTION IL 161 over Crooked Creek LOGGED BY ACE (TSi)

SECTION 7BR, 7BR-1 LOCATION NW 1/4, SEC. 15, TWP. 1N, RNG. 1W, 3 PM

COUNTY Clinton DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 014-0025 (E) / 014-0080 (P)

BORING NO. SB C

Station 726+37

Offset 15.00ft Right

Ground Surface Elev. 453.5 ft

Description	Depth (ft)	Blow Count (6")	UCS (tsf)	Moisture (%)	Soil Description			
					Surface Water Elev. ft	Stream Bed Elev. ft	Groundwater Elev. ft	Notes
Gray Sandy Clay LOAM (continued)								
		4						
		3	0.70	23				
		6						
	407.0	6						
Gray SHALE								
		50/4"						
		-	4.50	13				
		-						
		50/3"						
		-	1.60	15				
		-						
		50/2"		20				
	394.8	2						
END OF BORING								
** Hole Filled Upon Completion	-60							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, form 137 (Rev. 8-99)

MODEL: 0140080-76887-086  
FILE NAME: p:\w\1084EBID\INTEG\Illinois.gov\PWIDOT\Documents\Projects\0140080\CADD Plans\0140080-76887.dgn

DESIGNED - J.O.V. / Z.T.B.	EXAMINED - <i>Joanne F. Joffe</i>	DATE - OCTOBER 15, 2018
CHECKED - J.O.V. / Z.T.B.	PASSED - <i>Michael B. Mossman</i>	REVISER -
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	REVISER -
CHECKED - P.G. / Z.T.B. / G.R.A.		

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SOIL BORING LOGS  
STRUCTURE NO. 014 - 0080**

SHEET 86 OF 96 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	150
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

**Illinois Department of Transportation**  
Division of Highways  
Illinois Department of Transportation

## SOIL BORING LOG

Page 1 of 2  
Date 5/22/17

ROUTE FAP 805 DESCRIPTION IL 161 over Crooked Creek LOGGED BY ACE (TSI)  
SECTION 7BR, 7BR-1 LOCATION SW 1/4, SEC. 10, TWP. 1N, RNG. 1W, 3 PM  
COUNTY Clinton DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 014-0025 (E) / 014-0080 (P)  
Station \_\_\_\_\_  
BORING NO. SB D  
Station 729+23  
Offset 23.00ft Left  
Ground Surface Elev. 454.5 ft

DEPTH (ft)	BLOW COUNT (blows/6")	UCS (tsf)	MOISTURE (%)	SOIL DESCRIPTION			
				DEPTH (ft)	BLOW COUNT (blows/6")	UCS (tsf)	MOISTURE (%)
454.0				Asphalt			
453.0				Concrete PCC			
449.0				Brown and Gray Silty CLAY (continued)			
				Brown and Gray Clay LOAM			
	6		18				
	7	2.70	18				
	9	S					
	4						
	5	2.75	20				
	3	P					
429.0				Brown and Gray CLAY with Trace Gravel			
	1	0.82	26				
	1	B					
				Brown and Gray Clay LOAM			
	WH						
	WH	0.25	26				
	WH	B					
444.0				Brown and Gray CLAY			
	2	1.61	21				
	2	S					
	2						
	3	1.15	23				
	3	B					
				Gray Sandy Clay LOAM			
	2						
	2	0.92	23				
	2	S					
436.5				Brown and Gray Silty CLAY			
	2	0.61	22				
	2	B					
	3						

Surface Water Elev. \_\_\_\_\_ ft  
Stream Bed Elev. \_\_\_\_\_ ft  
Groundwater Elev.:  
First Encounter 439.0 ft  
Upon Completion Not Taken ft  
After \*\* Hrs. Not Taken ft

The Unconfined Compressive Strength (UCS) Failure Mode is Indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, form 137 (Rev. 8-99)

**Illinois Department of Transportation**  
Division of Highways  
Illinois Department of Transportation

## SOIL BORING LOG

Page 2 of 2  
Date 5/22/17

ROUTE FAP 805 DESCRIPTION IL 161 over Crooked Creek LOGGED BY ACE (TSI)  
SECTION 7BR, 7BR-1 LOCATION SW 1/4, SEC. 10, TWP. 1N, RNG. 1W, 3 PM  
COUNTY Clinton DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 014-0025 (E) / 014-0080 (P)  
Station \_\_\_\_\_  
BORING NO. SB D  
Station 729+23  
Offset 23.00ft Left  
Ground Surface Elev. 454.5 ft

DEPTH (ft)	BLOW COUNT (blows/6")	UCS (tsf)	MOISTURE (%)	SOIL DESCRIPTION			
				DEPTH (ft)	BLOW COUNT (blows/6")	UCS (tsf)	MOISTURE (%)
413.0				Gray Sandy Clay LOAM (continued)			
				Gray Loamy SAND with Trace Gravel			
	7						
	7	0.75	19				
	8	P					
407.0				Gray SHALE			
	35						
	50/3	3.91	14				
		S					
400.7				END OF BORING			
	50/4	3.00	21				
		P					
-55				** Hole Filled Upon Completion			
-60							

Surface Water Elev. \_\_\_\_\_ ft  
Stream Bed Elev. \_\_\_\_\_ ft  
Groundwater Elev.:  
First Encounter 439.0 ft  
Upon Completion Not Taken ft  
After \*\* Hrs. Not Taken ft

The Unconfined Compressive Strength (UCS) Failure Mode is Indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, form 137 (Rev. 8-99)

MODEL: 0140080-76887-087  
FILE NAME: p:\w\1084EBID\INTEG\Illinois.gov\PWIDOT\Documents\Projects\0140080\CADD Plans\0140080-76887.dgn

DESIGNED - J.O.V. / Z.T.B.	EXAMINED - <i>Joanne F. Joffe</i>	DATE - OCTOBER 15, 2018
CHECKED - J.O.V. / Z.T.B.	PASSED - <i>Michael B. Mossman</i>	REVISOR -
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	REVISOR -
CHECKED - P.G. / Z.T.B. / G.R.A.		

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SOIL BORING LOGS  
STRUCTURE NO. 014 - 0080**

F.A.P. RTE. <u>805</u>	SECTION <u>7BR, 7BR-1</u>	COUNTY <u>CLINTON</u>	TOTAL SHEETS <u>259</u>	SHEET NO. <u>151</u>
			CONTRACT NO. <u>76887</u>	
ILLINOIS FED. AID PROJECT				



Page 1 of 2

**Illinois Department of Transportation**  
Division of Highways  
Illinois Department of Transportation

## SOIL BORING LOG

Date 5/24/17

ROUTE FAP 805 DESCRIPTION IL 161 over Crooked Creek LOGGED BY ACE (TSi)

SECTION 7BR, 7BR-1 LOCATION SW 1/4, SEC. 10, TWP. 1N, RNG. 1W, 3 PM

COUNTY Clinton DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 014-0025 (E) / 014-0080 (P)

BORING NO. SB F

Station 732+00

Offset 23.00ft Left

Ground Surface Elev. 455.0 ft

DEPTH (ft)	BLOW COUNT	UCS (tsf)	MOISTURE (%)	Soil Description			
				Surface Water Elev. (ft)	Stream Bed Elev. (ft)	Groundwater Elev. (ft)	Notes
454.5							Concrete PCC
433.0							Suspended Augers
432.0							Gray Loamy SAND
429.5							Brown and Gray Sandy Clay LOAM
424.5							Gray Loamy SAND with Trace Gravel See Gradation @ 26.5 ft
445.0							Brown and Gray Silt LOAM A-4(4) See Class @ 11.5 ft
439.5							Gray Sandy LOAM
419.5							Brown and Gray Silt LOAM A-4(1) See Class @ 16.5 ft
401.3							Gray SAND with Some Gravel See Gradation @ 36.5 ft
401.3							END OF BORING
401.3							** Hole Filled Upon Completion

The Unconfined Compressive Strength (UCS) Failure Mode is Indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, form 137 (Rev. 8-99)

Page 2 of 2

**Illinois Department of Transportation**  
Division of Highways  
Illinois Department of Transportation

## SOIL BORING LOG

Date 5/24/17

ROUTE FAP 805 DESCRIPTION IL 161 over Crooked Creek LOGGED BY ACE (TSi)

SECTION 7BR, 7BR-1 LOCATION SW 1/4, SEC. 10, TWP. 1N, RNG. 1W, 3 PM

COUNTY Clinton DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 014-0025 (E) / 014-0080 (P)

BORING NO. SB F

Station 732+00

Offset 23.00ft Left

Ground Surface Elev. 455.0 ft

DEPTH (ft)	BLOW COUNT	UCS (tsf)	MOISTURE (%)	Soil Description			
				Surface Water Elev. (ft)	Stream Bed Elev. (ft)	Groundwater Elev. (ft)	Notes
408.5							Gray SAND with Some Gravel See Gradation @ 36.5 ft (continued)
408.5							Dark Gray SHALE
401.3							Black Coal
401.3							END OF BORING
401.3							** Hole Filled Upon Completion

The Unconfined Compressive Strength (UCS) Failure Mode is Indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, form 137 (Rev. 8-99)

MODEL: 0140080-76887-089  
FILE NAME: p:\w\1084EBID\INTEG\Illinois.gov\PWIDOT\Documents\Projects\0140080\CADD Plans\0140080-76887.dgn

DESIGNED - J.O.V. / Z.T.B.	EXAMINED - <i>Joanne F. Joffe</i>	DATE - OCTOBER 15, 2018
CHECKED - J.O.V. / Z.T.B.	PASSED - <i>Michael B. Mossman</i>	REVISIONS -
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	REVISIONS -
CHECKED - P.G. / Z.T.B. / G.R.A.		

 <b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>
--

<b>SOIL BORING LOGS</b> <b>STRUCTURE NO. 014 - 0080</b>
SHEET 89 OF 96 SHEETS

F.A.P. RTE. 805	SECTION 7BR, 7BR-1	COUNTY CLINTON	TOTAL SHEETS 259	SHEET NO. 153
CONTRACT NO. 76887				

ILLINOIS	FED. AID PROJECT
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Benchmark: Chiseled box set in the center of the headwall on the south side of IL 161 S.N. 014-2001, Elev = 451.11

Existing Structure: S.N. 014-2001 was built in 1940 as F.A. Route 150 - Section 7A at Station 748+35 as a cast-in-place 26'-10" W x 13'-0" H x 47'-11" L box culvert with a 30° skew. Existing structure is to be removed and replaced with traffic maintained utilizing a marked detour route.

No Salvage

**INDEX OF SHEETS**

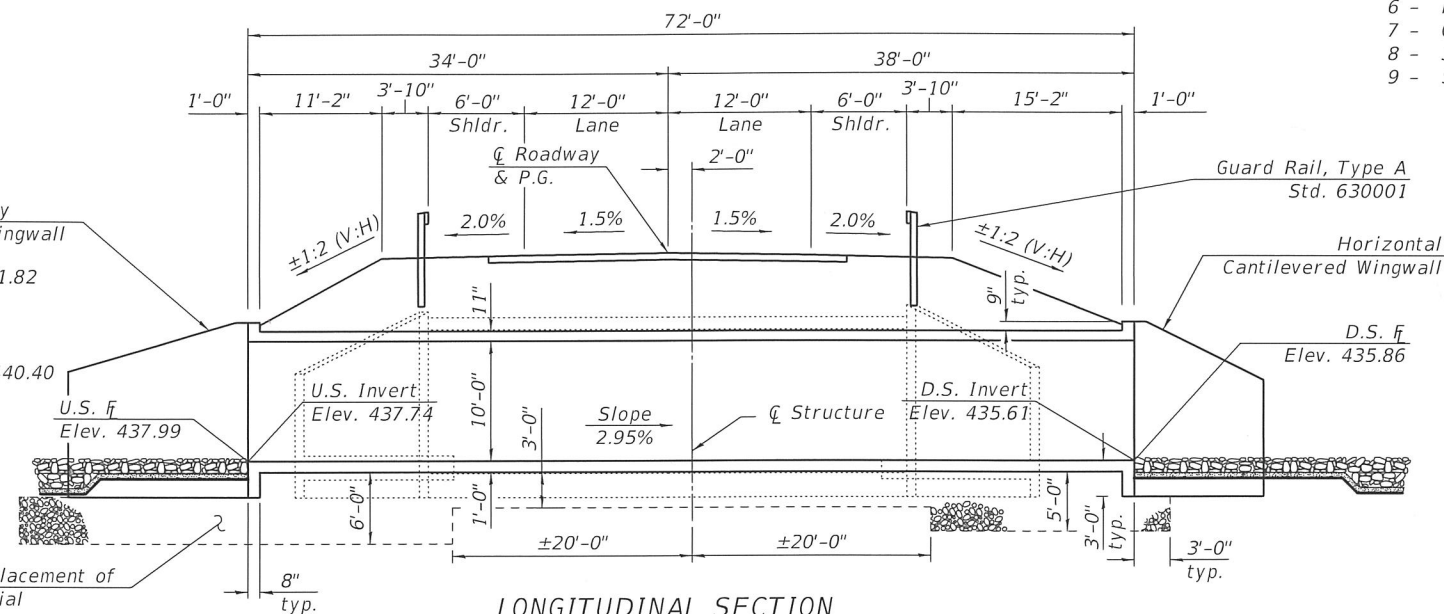
- 1 - General Plan & Elevation
- 2 - Culvert Top Slab
- 3 - Culvert Bottom Slab
- 4 - Culvert Sections
- 5 - L-Type Two-Way Cantilevered Wingwall
- 6 - Horizontal Cantilever Wingwall
- 7 - Culvert Details
- 8 - 3D Culvert Model
- 9 - Soil Boring Logs

**GENERAL NOTES**

Reinforcement bars designated (E) shall be epoxy coated.  
 Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.  
 Precast alternate not allowed.  
 A distance of half the length of the wingwall, but not less than six feet of the barrel, shall be poured monolithically with the Northwest and Southeast wingwalls.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Removal and Disposal of Unsuitable Material	Cu. Yd.	694
Stone Riprap, Class A4	Sq. Yd.	326
Filter Fabric	Sq. Yd.	326
Removal of Existing Structures No. 4	Each	1
Reinforcement Bars	Pound	70,590
Reinforcement Bars, Epoxy Coated	Pound	2,420
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	358.5
Rock Fill - Replacement	Cu. Yd.	694



**LONGITUDINAL SECTION**  
 (Looking East)  
 Dimensions at Rt. Ls to Roadway

STATION 748+35.00  
 BUILT 20 BY  
 STATE OF ILLINOIS  
 F.A.P. RTE. 805 - SEC. 7BR, 7BR-1  
 LOADING HL-93  
 STRUCTURE NO. 014-2025

**NAME PLATE**  
 See Std. 515001

**DESIGN STRESSES**  
 FIELD UNITS

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

**DESIGN SPECIFICATIONS**

2014 AASHTO LRFD Bridge Design Specifications,  
 7th Edition with 2015 & 2016 Interims

**LOADING HL-93**

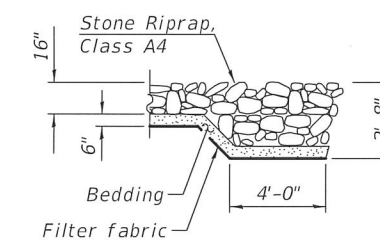
Allow 50#/sq. ft. for  
 future wearing surface.

**WATERWAY INFORMATION**

Drainage Area = 178.247 sq. mi. Existing Low Grade Elev. (014-0025) 451.04 @ Sta. 741+32.84  
 Proposed Low Grade Elev. (014-0080) 454.32 @ Sta. 695+20.48 to 721+22.20 & 738+85.37 to 764+03.26

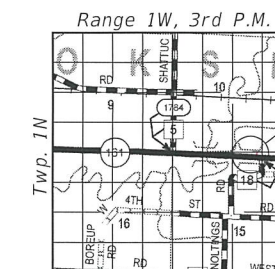
Flood	Freq. Yr.	Q C.F.S.	Opening Ft <sup>2</sup>		Nat. H.W.E.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	10	938	264	300	450.8	450.8	1.52	1.24	452.32	452.04
Base	50	1161	264	300	451.82	451.82	1.84	1.70	453.66	453.52
Existing O.T.	100	1243	264	300	452.2	452.2	2.24	1.88	454.44	454.08
Proposed O.T.	2	873	264	300	450.51	450.51	0.35	--	450.86	--
Max. Calc.	100	1243	--	300	452.2	452.2	--	1.88	--	454.08
	500	894	264	300	456.47	456.47	0.23	0.15	456.7	456.62

10-Year Outlet Velocity From Existing Structure = 3.97 fps  
 10-Year Outlet Velocity From Proposed Structure = 3.13 fps



**SECTION A-A**

**PROFILE GRADE**  
 (along C.F.A.P. Rte. 805)



**LOCATION SKETCH**

**GENERAL PLAN & ELEVATION**  
**ILLINOIS ROUTE 161 OVER**  
**CROOKED CREEK OVERFLOW**  
 F.A.P. RTE. 805 - SEC. 7BR, 7BR-1  
 CLINTON COUNTY  
 STATION 748+35.00  
 STRUCTURE NO. 014-2025

MODEL: 0142025-76887-001  
 FILE NAME: p:\w\1108\HEIDIM\B2B\BANKS.gov\PIV\DOT\Documents\DOT Offices\Bureau of Bridges and Structures\Projects\0142025\CADD Plans\0142025-76887.dgn



DESIGNED - *[Signature]*  
 CHECKED - *[Signature]* ALEX RUSH  
 DRAWN - MICHAEL B. MOSSMAN  
 CHECKED - *[Signature]*

EXAMINED - *[Signature]*  
 PASSED - *[Signature]*

DATE - 10-15-2018  
 REVISED -  
 REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

SHEET 1 OF 9 SHEETS

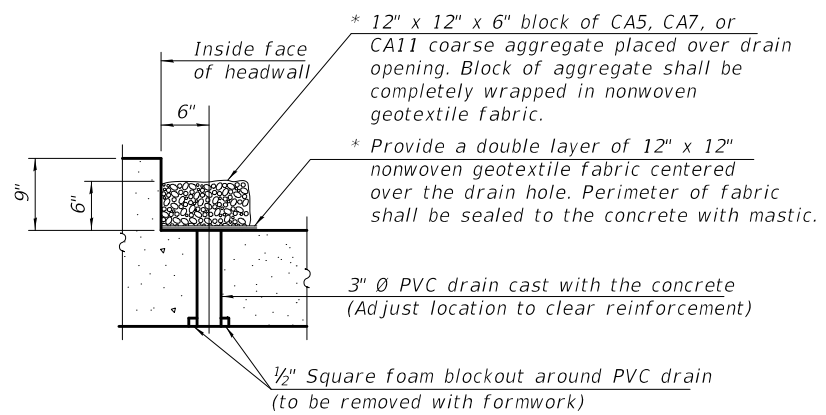
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	161

CONTRACT NO. 76887  
 ILLINOIS FED. AID PROJECT

MODEL: 0142025-76887-002  
 FILE NAME: p:\w\1084EED\1084EED.dwg

See sheet 5 of 9 for L-type counterfort wingwall details

**MINIMUM BAR LAP**  
#5 Bar = 2'-9"



**DRAIN DETAIL**

(All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)

See sheet 6 of 9 for horizontal cantilever wingwall details

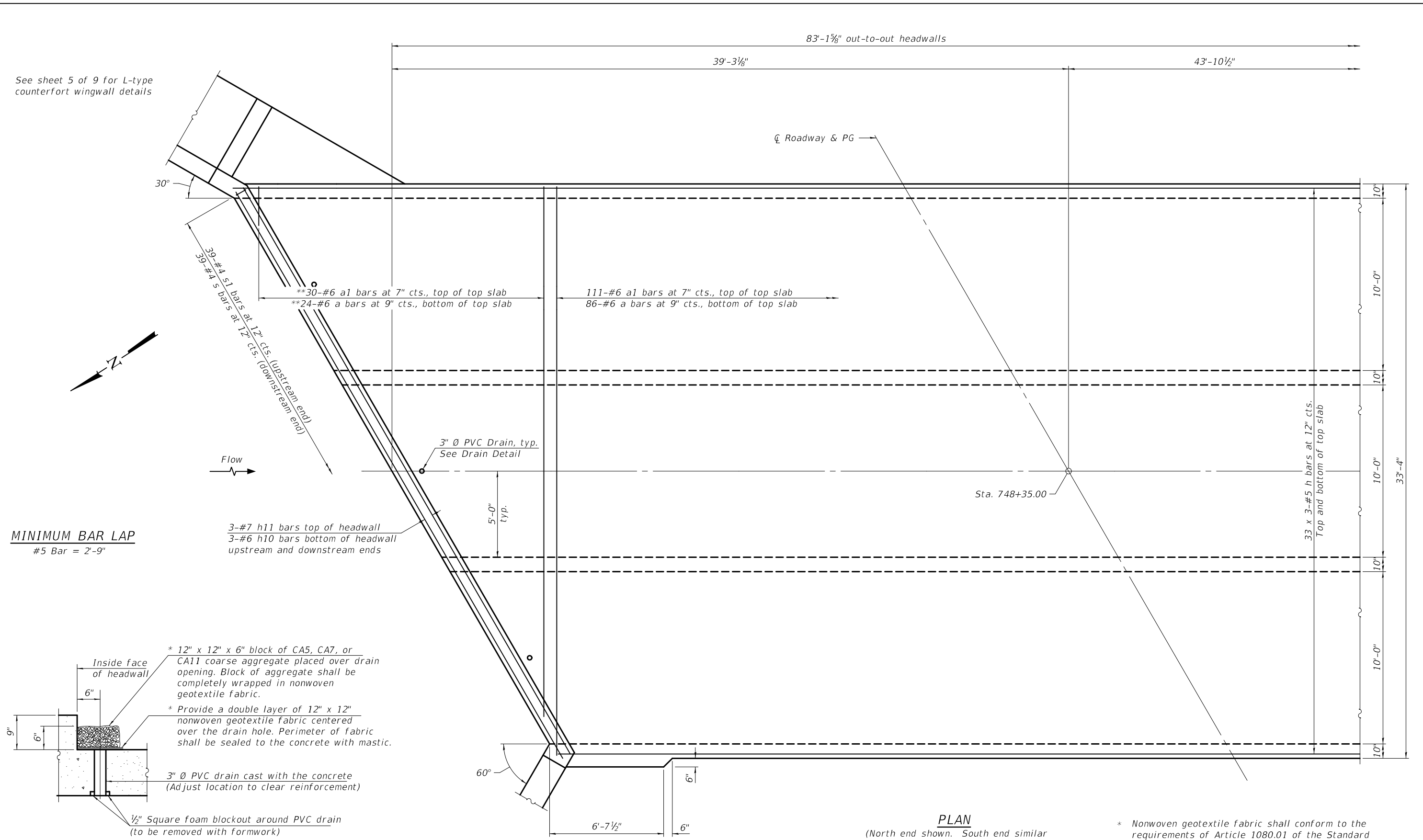
Note:  
Bars indicated thus 33 x 3-#5 etc. indicates 33 lines of bars with 3 lengths per line.

**PLAN**

(North end shown. South end similar by 180° rotation except as shown).

\* Nonwoven geotextile fabric shall conform to the requirements of Article 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.

\*\* a and a1 bars in skew portion of slab shall be ordered full length and cut to fit. Balance of bar to be used in opposite end of culvert.



DESIGNED - JOSEPH G. YOUNG	EXAMINED
CHECKED - RAY AHANCHI / ALEX RUSH	PASSED
DRAWN - MICHAEL B. MOSSMAN	
CHECKED - J.G.Y. / G.R.A. / A.J.R.	

Signature: *Joseph F. DeLuca*  
 ENGINEER OF BRIDGE DESIGN  
 Signature: *Carl R. ...*  
 ENGINEER OF BRIDGES AND STRUCTURES

DATE - OCTOBER 15, 2018
REVISED -
REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

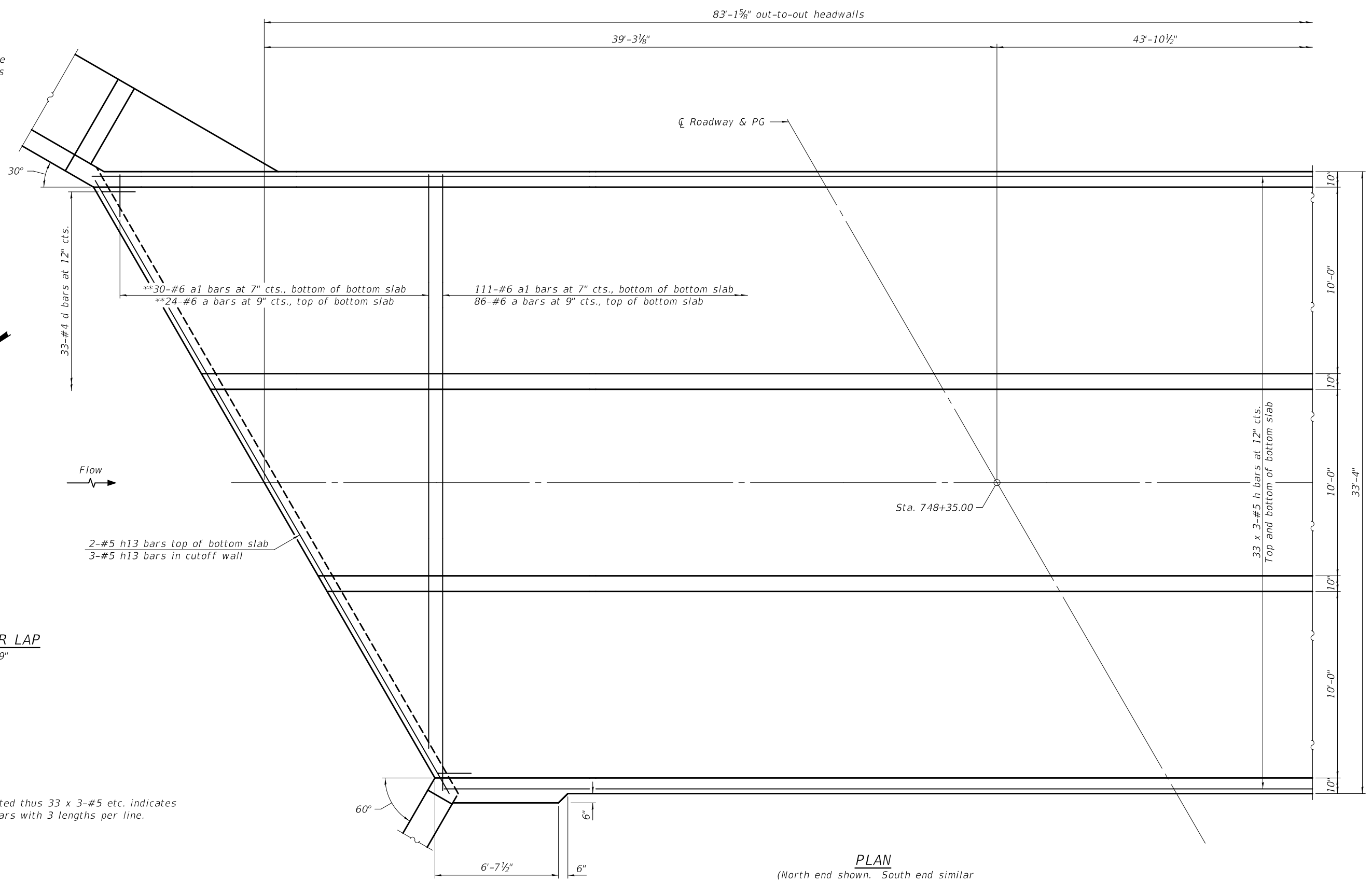
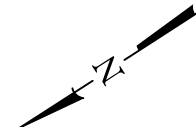
**CULVERT TOP SLAB  
STRUCTURE NO. 014 - 2025**

SHEET 2 OF 9 SHEETS

F.A.P. RTE. 805	SECTION 7BR, 7BR-1	COUNTY CLINTON	TOTAL SHEETS 259	SHEET NO. 162
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

MODEL: 0142025-76887-003  
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See sheet 5 of 9 for L-type counterfort wingwall details



**MINIMUM BAR LAP**  
 #5 Bar = 2'-9"

Note:  
 Bars indicated thus 33 x 3-#5 etc. indicates 33 lines of bars with 3 lengths per line.

See sheet 6 of 9 for horizontal cantilever wingwall details

**PLAN**  
 (North end shown. South end similar by 180° rotation except as shown).

\*\* a and a1 bars in skew portion of slab shall be ordered full length and cut to fit. Balance of bar to be used in opposite end of culvert.

DESIGNED - JOSEPH G. YOUNG	EXAMINED
CHECKED - RAY AHANCHI / ALEX RUSH	PASSED
DRAWN - MICHAEL B. MOSSMAN	
CHECKED - J.G.Y. / G.R.A. / A.J.R.	

Signature: *Joseph F. J...*  
 ENGINEER OF BRIDGE DESIGN  
 Signature: *Carl...*  
 ENGINEER OF BRIDGES AND STRUCTURES

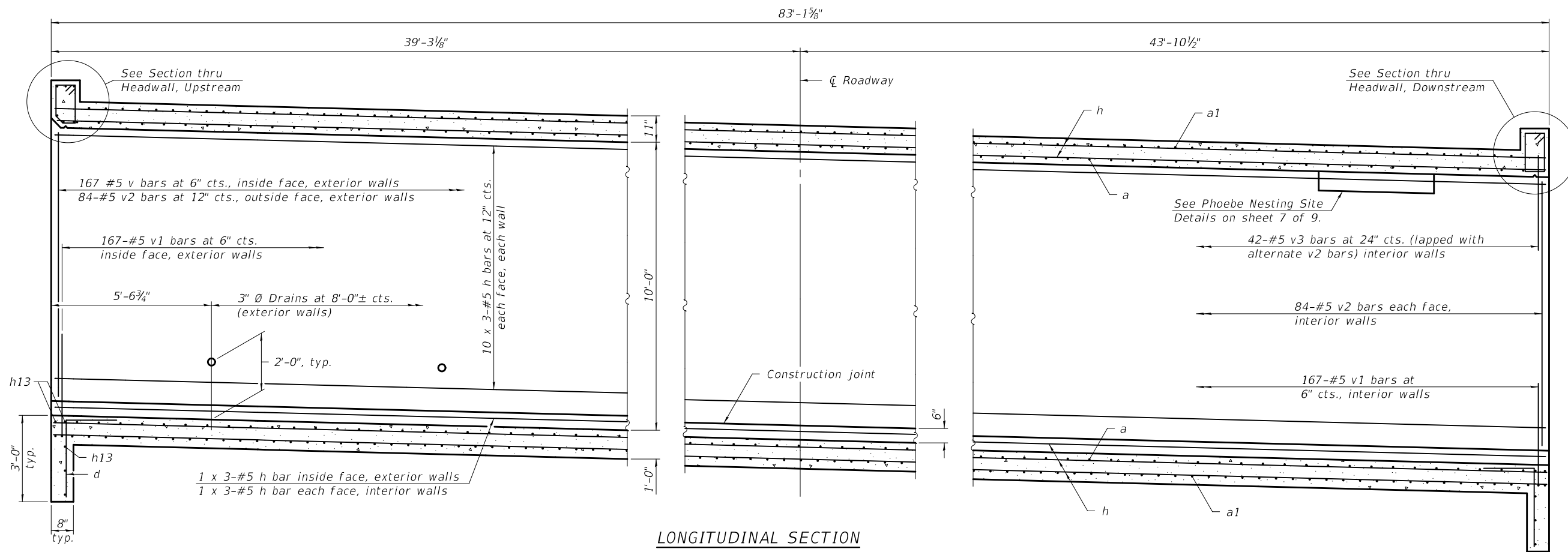
DATE - OCTOBER 15, 2018
REVISED -
REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**CULVERT BOTTOM SLAB**  
**STRUCTURE NO. 014 - 2025**

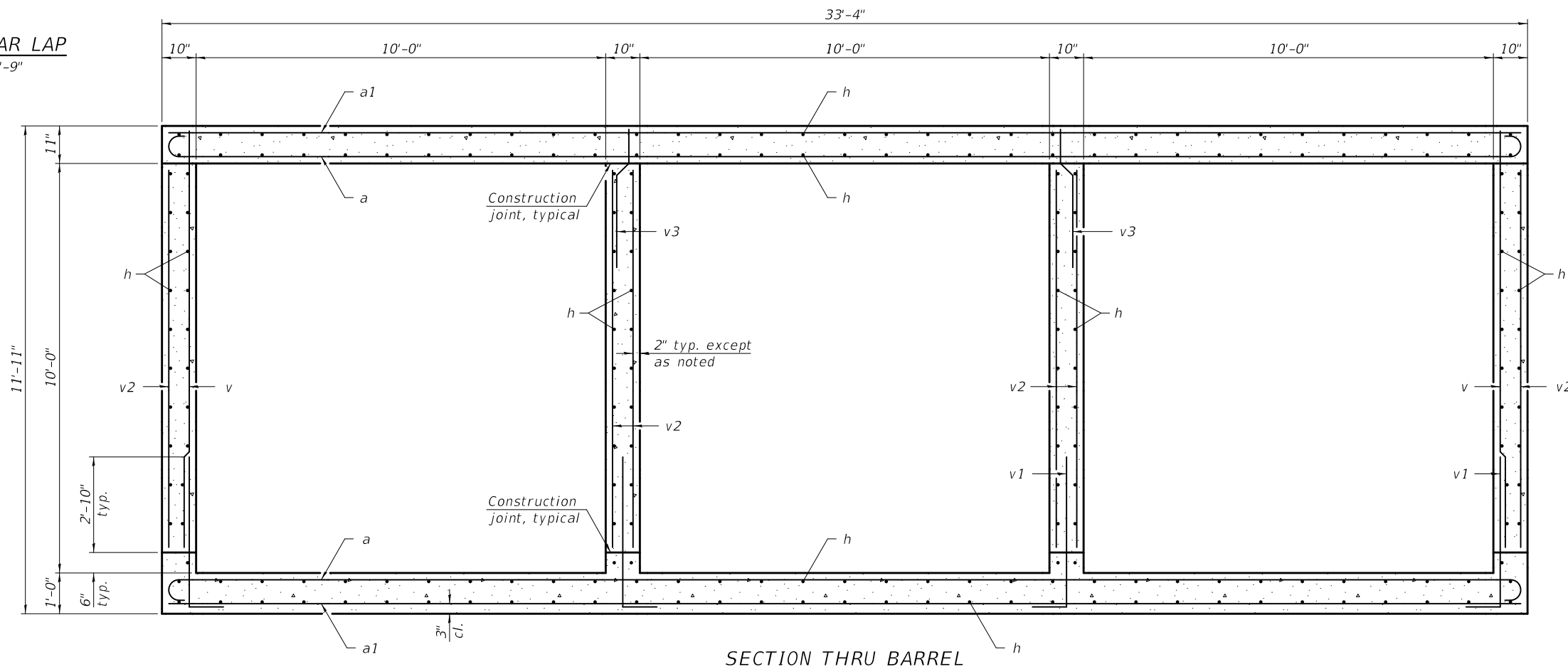
SHEET 3 OF 9 SHEETS

F.A.P. RTE. 805	SECTION 7BR, 7BR-1	COUNTY CLINTON	TOTAL SHEETS 259	SHEET NO. 163
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

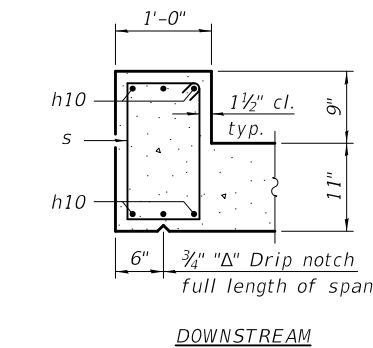
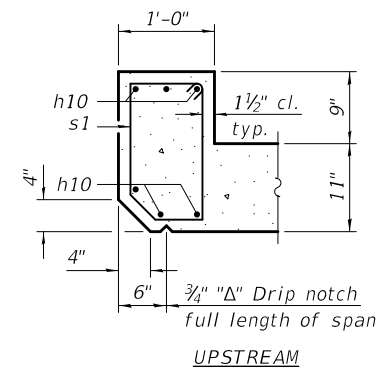


LONGITUDINAL SECTION

MINIMUM BAR LAP  
#5 Bar = 2'-9"



SECTION THRU BARREL



SECTION THRU HEADWALL

MODEL: 0142025-76887-004  
FILE NAME: p:\v\1084EBID\8224\KMS\15\gov\PIWIDOT\Documents\DOT Offices\Bureau of Bridges and Structures\Projects\0142025\CADD Plans\0142025-76887.dgn  
10/15/2018 9:37:24 AM

DESIGNED - JOSEPH G. YOUNG  
CHECKED - RAY AHANCHI / ALEX RUSH  
DRAWN - MICHAEL B. MOSSMAN  
CHECKED - J.G.Y. / G.R.A. / A.J.R.

EXAMINED  
PASSED

*Joanne F. Joffe*  
ENGINEER OF BRIDGE DESIGN  
*Carl Kasper*  
ENGINEER OF BRIDGES AND STRUCTURES

DATE - OCTOBER 15, 2018  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

CULVERT SECTIONS  
STRUCTURE NO. 014 - 2025

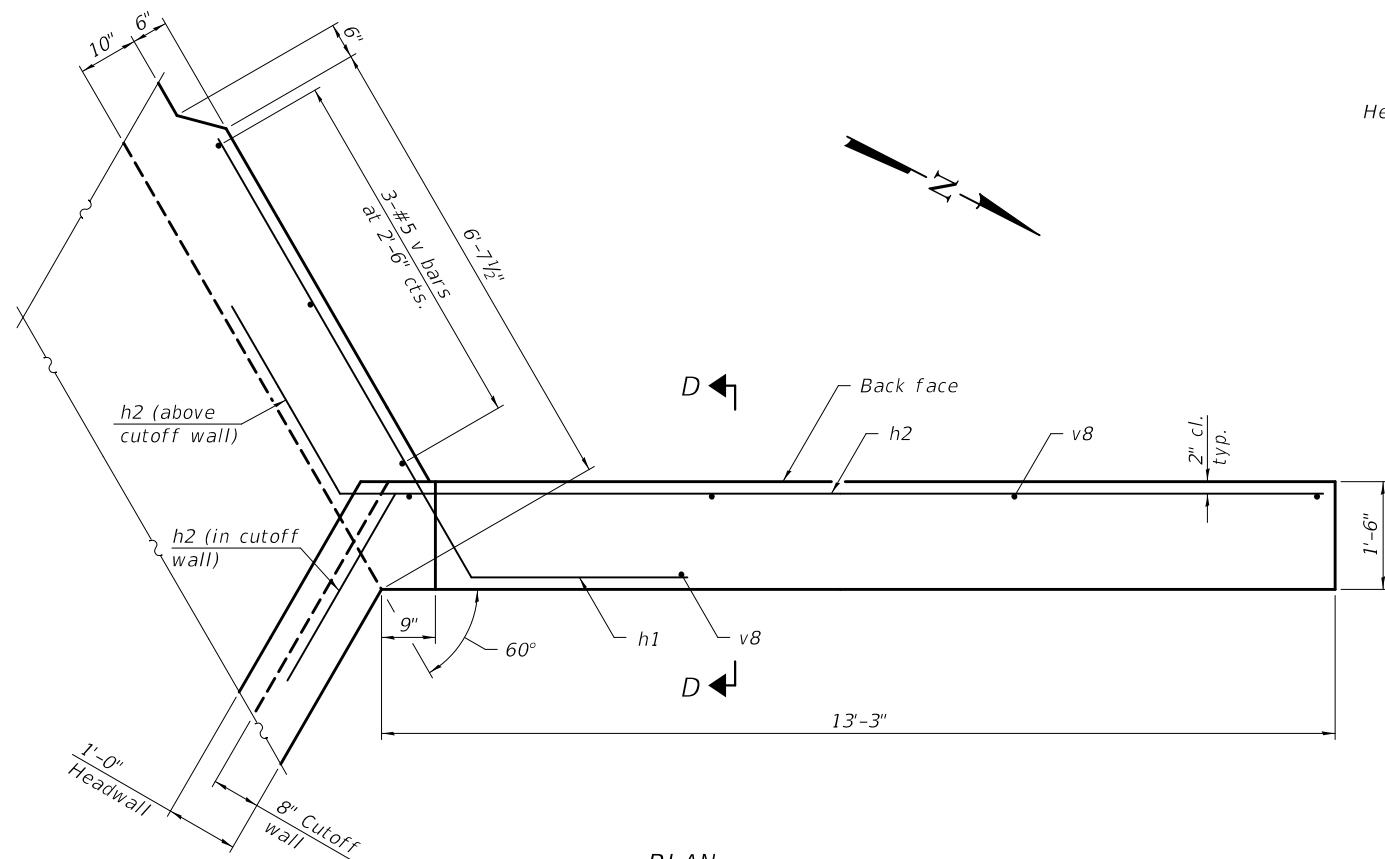
SHEET 4 OF 9 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	164
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

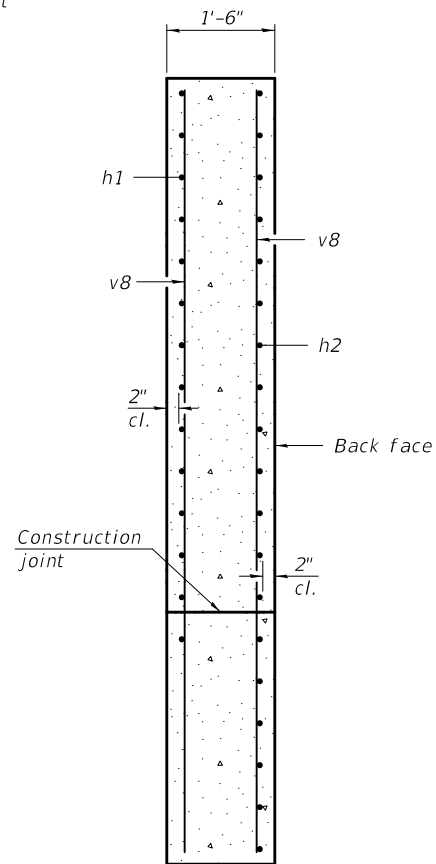




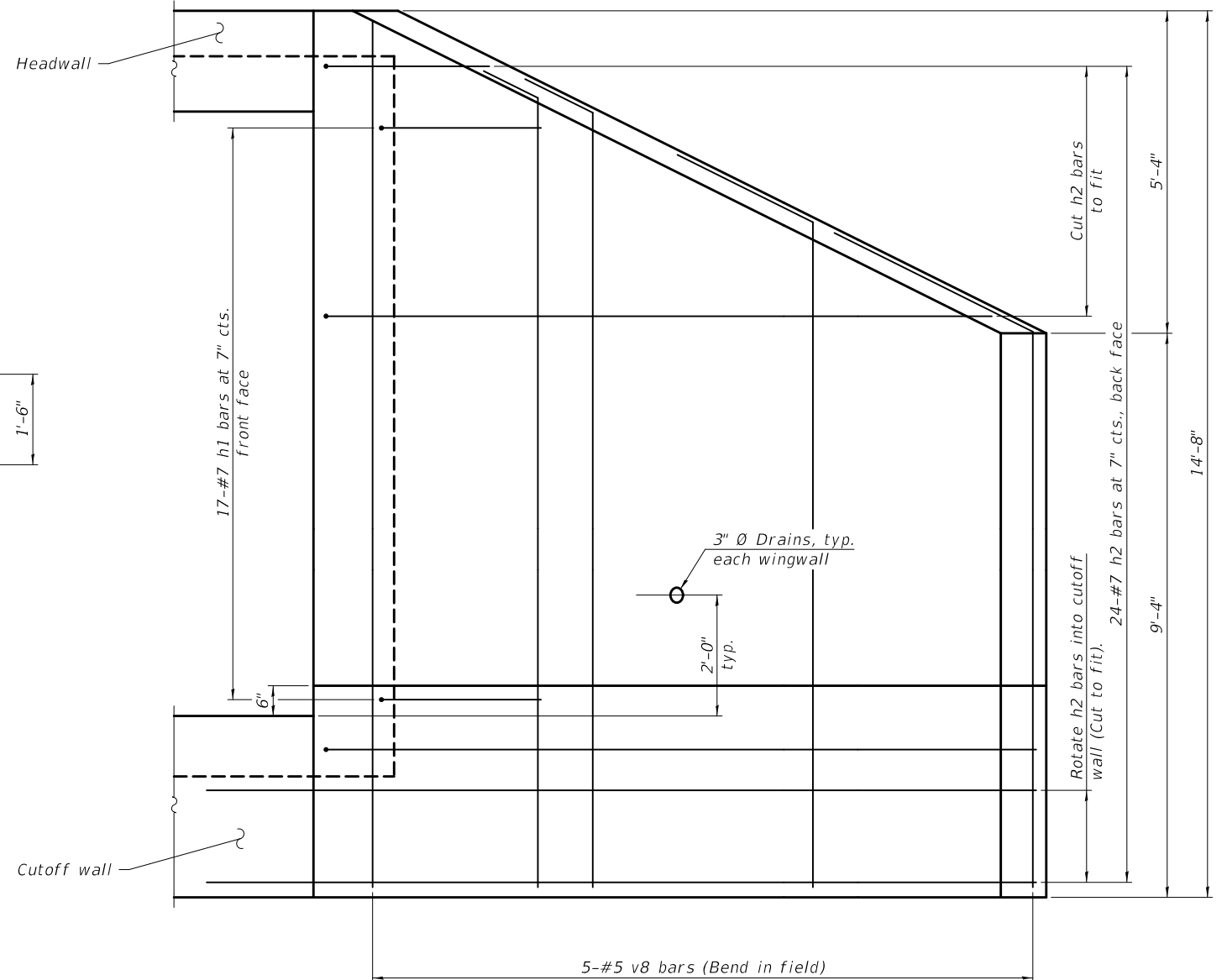
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 FILE NAME: p:\w\1084EBID\82228\142025\Bureau of Bridges and Structures\Projects\0142025\CADD Plans\0142025-76887.dgn



**PLAN**  
 (Northwest wingwall shown; Southeast wingwall similar by 180° rotation)

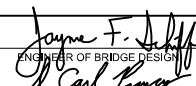



**SECTION D-D**



**ELEVATION**

DESIGNED - JOSEPH G. YOUNG	EXAMINED
CHECKED - RAY AHANCHI / ALEX RUSH	PASSED
DRAWN - MICHAEL B. MOSSMAN	
CHECKED - J.G.Y. / G.R.A. / A.J.R.	

  
 ENGINEER OF BRIDGE DESIGN  
  
 ENGINEER OF BRIDGES AND STRUCTURES

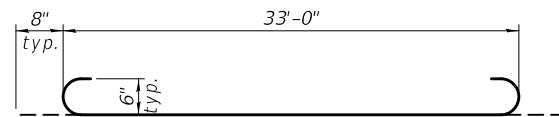
DATE - OCTOBER 15, 2018
REVISED -
REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

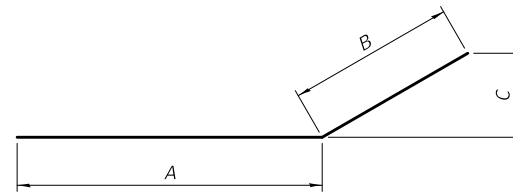
**HORIZONTAL CANTILEVER WINGWALLS  
 STRUCTURE NO. 014 - 2025**

SHEET 6 OF 9 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	166
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

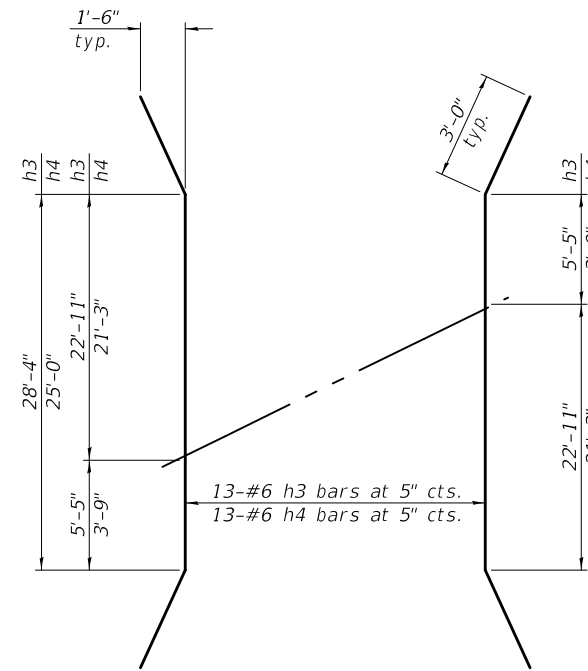


BAR a



BARS h1, h2, h5, h6, h7, h8, & h12

Bar	A	B	C
h1	7'-0"	3'-0"	2'-7 <sup>1</sup> / <sub>8</sub> "
h2	13'-7"	3'-0"	2'-7 <sup>1</sup> / <sub>8</sub> "
h5	22'-11"	3'-0"	1'-6"
h6	21'-3"	3'-0"	1'-6"
h7	21'-8"	3'-0"	1'-6"
h8	22'-0"	3'-0"	1'-6"
h12	21'-3"	1'-6"	5 <sup>1</sup> / <sub>2</sub> "

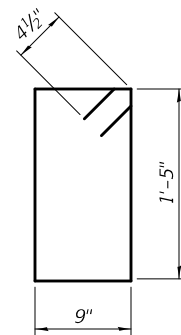


FIELD CUTTING DIAGRAM 2

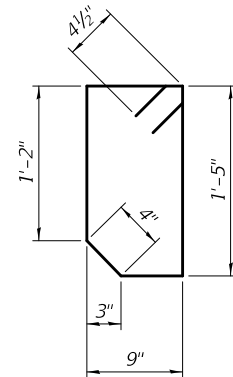
Order bars shown full length. Cut as shown and use remainder of bars in opposite wingwall.

BILL OF MATERIAL

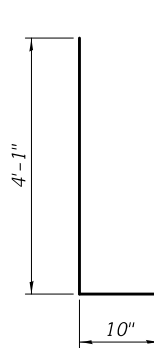
Bar	No.	Size	Length	Shape
a	220	#6	34'-4"	
a1	282	#6	33'-0"	
d	66	#4	4'-5"	
h	654	#5	29'-6"	
h1	34	#7	10'-0"	
h2	48	#7	16'-7"	
h3	13	#6	34'-4"	
h4	13	#6	31'-0"	
h5	26	#6	25'-11"	
h6	26	#6	24'-3"	
h7	14	#6	24'-8"	
h8	14	#6	25'-0"	
h9	40	#4	5'-4"	
h10	6	#6	37'-11"	
h11	6	#7	37'-11"	
h12	4	#5	22'-9"	
h13	10	#5	39'-0"	
s	39	#4	5'-1"	
s1	39	#4	4'-11"	
t	36	#4	5'-4"	
v	334	#5	10'-1"	
v1	668	#5	4'-11"	
v2	504	#5	9'-2"	
v3	84	#5	3'-6"	
v4(E)	156	#6	5'-10"	
v5(E)	108	#6	6'-6"	
v6	16	#4	11'-4"	
v7	100	#4	16'-4"	
v8	10	#5	14'-4"	
v9	48	#4	10'-1"	
w	12	#5	59'-0"	
z	98	#6	8'-0"	
z1	98	#6	5'-4"	
Concrete Box Culverts			Cu. Yd.	358.5
Reinforcement Bars			Pound	70,590
Reinforcement Bars, Epoxy Coated			Pound	2,420



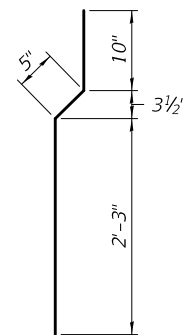
BAR s



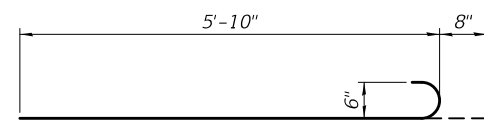
BAR s1



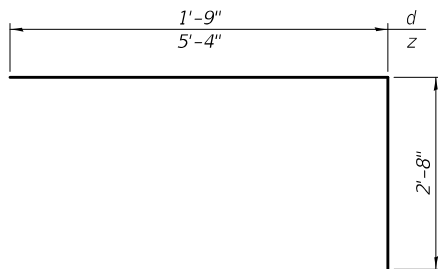
BAR v1



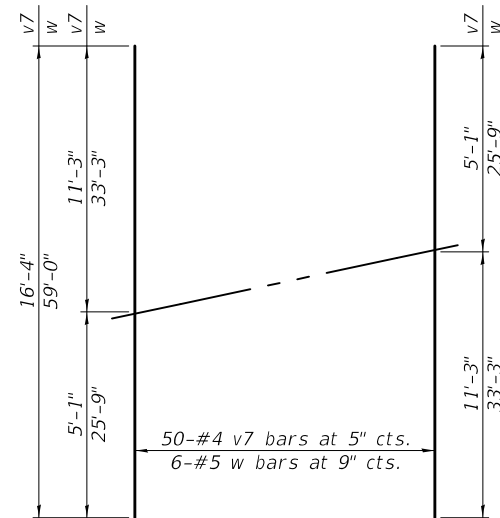
BAR v3



BAR v5

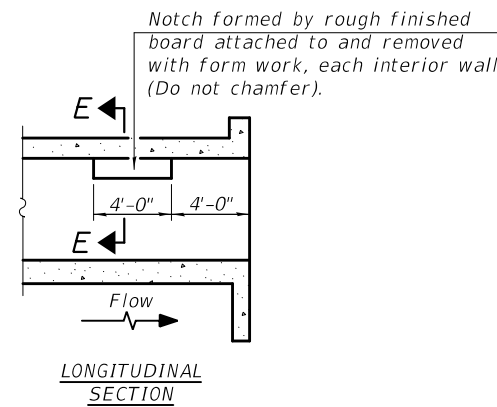


BARS d & z

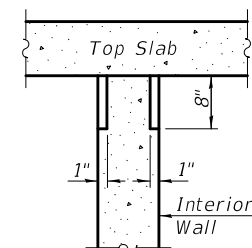


FIELD CUTTING DIAGRAM 1

Order bars shown full length. Cut as shown and use remainder of bars in opposite wingwall.



LONGITUDINAL SECTION



SECTION E-E

PHOEBE NESTING

SITE DETAILS

(Downstream End Only)

MODEL: 0142025-76887-007  
 FILE NAME: p:\w\1084EBID\82228\142025\Bureau of Bridges and Structures\Projects\0142025\CADD Plans\0142025-76887.dgn

DESIGNED -	JOSEPH G. YOUNG
CHECKED -	RAY AHANCHI / ALEX RUSH
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	J.G.Y. / G.R.A. / A.J.R.

EXAMINED		DATE -	OCTOBER 15, 2018
PASSED		REVISOR -	
	ENGINEER OF BRIDGES AND STRUCTURES	REVISOR -	

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS  
 STRUCTURE NO. 014 - 2025

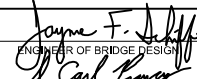

SHEET 7 OF 9 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	167
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

MODEL: 0142025-76887-008  
 FILE NAME: P:\V\084EBID\841688\IOWE.gov\PI\DOT\Documents\DOT Offices\Bureau of Bridges and Structures\Projects\0142025\CADD Plans\0142025-76887.dgn

*Note:*  
 The above Embedded 3D Model may be panned, rotated, or zoomed into from within the pdf file. The contents of the 3D model is intended only to be used for information/ visualization purposes. The 2D plan details and dimensions take precedence over any content of the 3D model.

DESIGNED -	JOSEPH G. YOUNG
CHECKED -	RAY AHANCHI / ALEX RUSH
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	J.G.Y. / G.R.A. / A.J.R.

EXAMINED	 ENGINEER OF BRIDGE DESIGN
PASSED	 ENGINEER OF BRIDGES AND STRUCTURES

DATE -	OCTOBER 15, 2018
REVISED -	_____
REVISED -	_____

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**3D CULVERT MODEL  
 STRUCTURE NO. 014 - 2025**

SHEET 8 OF 9 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	168
CONTRACT NO. 76887				
		ILLINOIS	FED. AID PROJECT	

Page 1 of 1

Date 9/4/12

**Illinois Department of Transportation**  
Division of Highways  
IDOT

## SOIL BORING LOG

ROUTE FAP 805 DESCRIPTION IL 161 over Crooked Creek Overflow LOGGED BY JAS (TSj)

SECTION 7BR, 7BR-1 LONGITUDE -89.18670961 LATITUDE 38.53454946

COUNTY Clinton DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 014-2001 (E) / 014-2025 (P)  
Station 748+35

BORING NO. 1 SE Wingwall  
Station 748+40  
Offset 12.50ft Right  
Ground Surface Elev. 451.2 ft

DEPTH (ft)	BLOW COUNT (blows/6")	UCS (tsf)	MOISTURE (%)	Surface Water Elev.		Stream Bed Elev.		DEPTH (ft)	BLOW COUNT (blows/6")	UCS (tsf)	MOISTURE (%)
				ft		ft					
Asphalt & Base Course	450.45										
Brown and Gray (Soft, Moist) CLAY (Fill) A-7-6(19) See Class @ 5 ft	3 2 2	1.26 S						WH 2 3		0.50 P	
	1 2							2 3			
	-5	1	NS					3		NC	
	1 2 2	1.68 S						7 11 14			NC
	-							5			
Gray	2 2	0.20 B						13 16	2.00 P		
	-10										
Gray (Medium Stiff, Moist) CLAY (Alluvial)	1 2 3	1.14 S						10 19 8			NR
Gray (Soft, Moist) Silty CLAY (Alluvial)	1 3	2.04 S						3 10 13	4.00 P		
	-15										
Brown and Gray	1 2 2	0.20 S						26 15			
Wet	1 1	0.25 P						50/3			
	-20										

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 11-11)

Page 1 of 1

Date 9/5/12

**Illinois Department of Transportation**  
Division of Highways  
IDOT

## SOIL BORING LOG

ROUTE FAP 805 DESCRIPTION IL 161 over Crooked Creek Overflow LOGGED BY JAS (TSj)

SECTION 7BR, 7BR-1 LONGITUDE -89.18670961 LATITUDE 38.53454946

COUNTY Clinton DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 014-2001 (E) / 014-2025 (P)  
Station 748+35

BORING NO. 2 NW Wingwall  
Station 748+30  
Offset 12.50ft Left  
Ground Surface Elev. 451.2 ft

DEPTH (ft)	BLOW COUNT (blows/6")	UCS (tsf)	MOISTURE (%)	Surface Water Elev.		Stream Bed Elev.		DEPTH (ft)	BLOW COUNT (blows/6")	UCS (tsf)	MOISTURE (%)
				ft		ft					
Brown (Medium Stiff, Moist) Clay LOAM with Trace Limestone Gravel (Fill) A-6(9) See Class @ 3 ft	1 3 5	2.58 S									
Brown and Gray	1 2	1.23 S						2 3			WH 0.25 P
	-5										
	1 2 3	1.43 S						7 11 14			NC
	-							5			
Brown and Gray (Soft, Moist) CLAY with Trace Limestone Pieces (Fill)	1 1	0.16 S						13 16	2.00 P		
	-10										
Gray (Soft, Moist) Silty CLAY with Trace Roots (Alluvial)	1 1 2	0.16 S						10 19 8			NR
Brown and Gray	1 1 1	0.12 S						3 10 13	4.00 P		
	-15										
Gray (Soft, Wet) LOAM (Alluvial) A-4(1) See Class @ 20 ft	1 1 3							3 10 13			
	-20										

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 11-11)

MODEL: 0142025-76887-009  
FILE NAME: p:\w\1084EBID\1084EBID\Documents\Projects\142025\CADD Plans\0142025-76887.dgn

DESIGNED - JOSEPH G. YOUNG	EXAMINED - <i>Joanne F. [Signature]</i>	DATE - OCTOBER 15, 2018
CHECKED - RAY AHANCHI / ALEX RUSH	PASSED - <i>Carl [Signature]</i>	REVISIONS -
DRAWN - MICHAEL B. MOSSMAN	ENGINEER OF BRIDGES AND STRUCTURES	REVISIONS -
CHECKED - J.G.Y. / G.R.A. / A.J.R.		

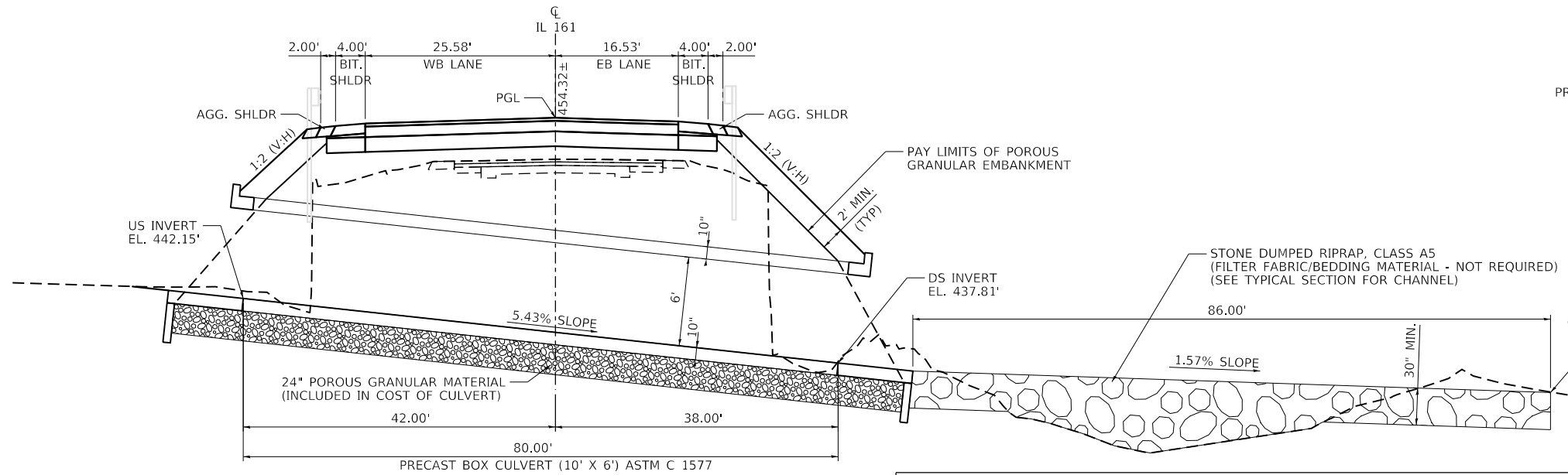
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SOIL BORING LOGS  
STRUCTURE NO. 014 - 2025**

SHEET 9 OF 9 SHEETS

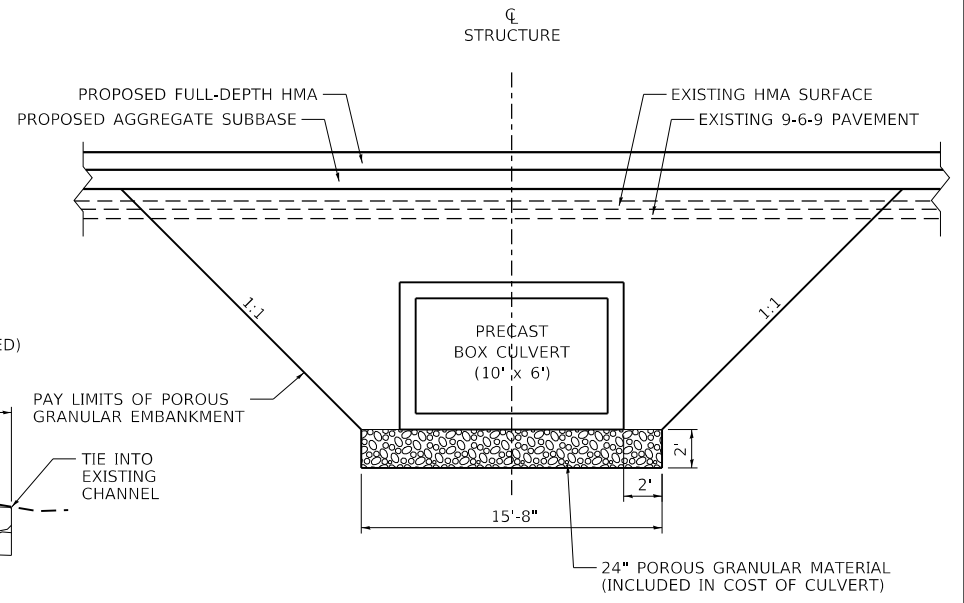
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	169
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				



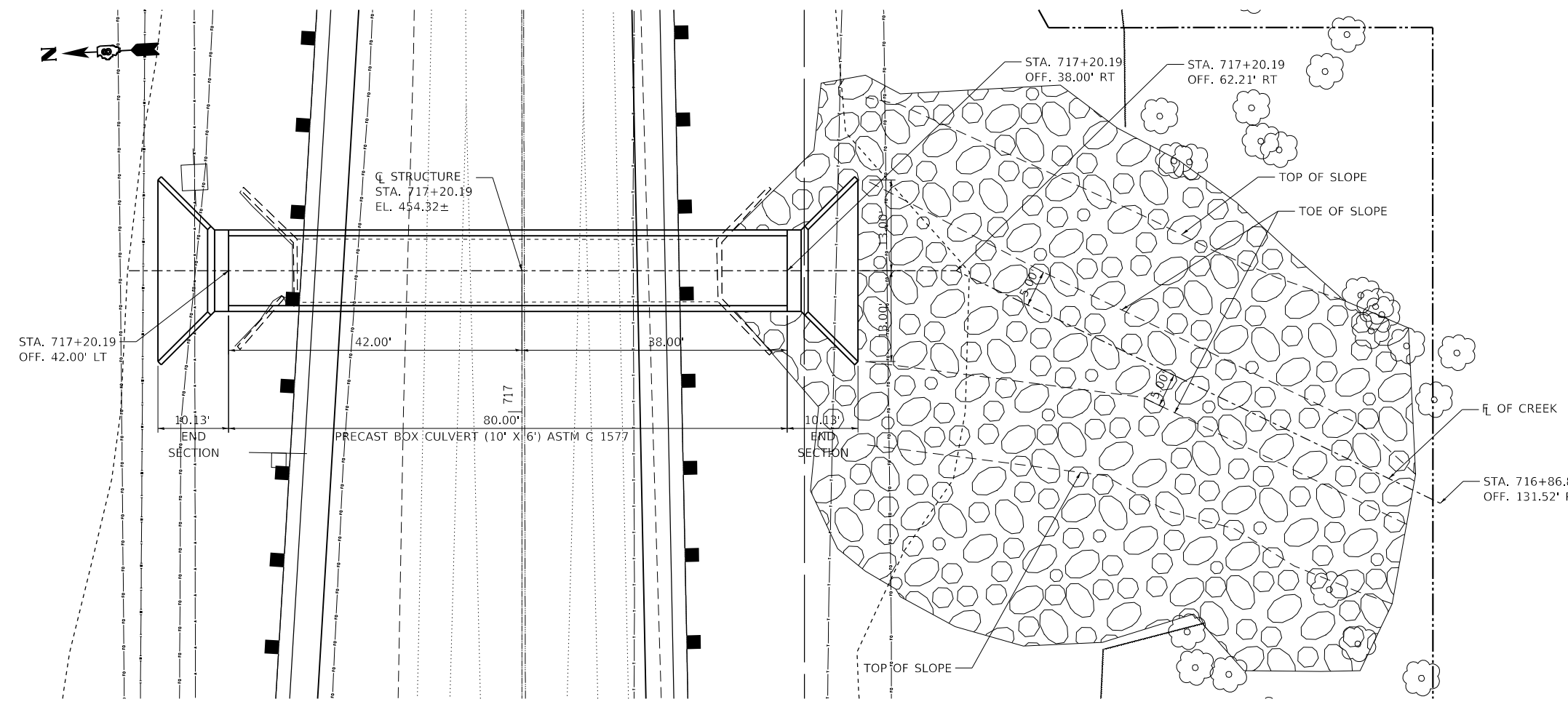


**LONGITUDINAL SECTION**  
(LOOKING EAST)

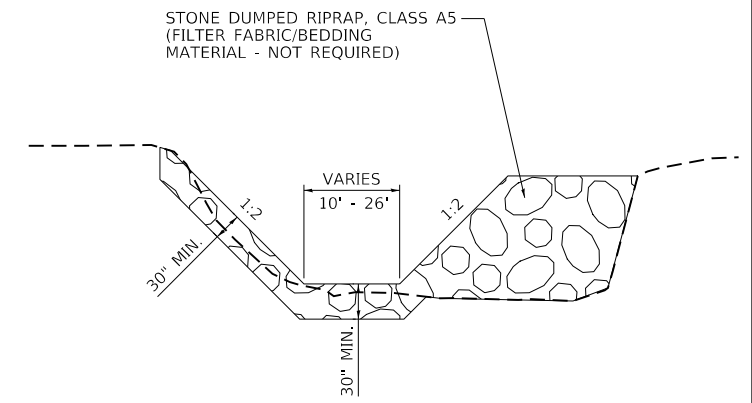
PRECAST BOX CULVERT SCHEDULE (ASTM C 1577)					
STATION	SIZE (SPAN x HEIGHT)	SKEW	DESIGN FILL (FT)		PGE BACKFILL REQUIRED
			EDGE OF SHLDR. (MINIMUM)	MAXIMUM	
717+20.19	10' x 6'	0°0'0"	5.4'	8.3'	1556 TON



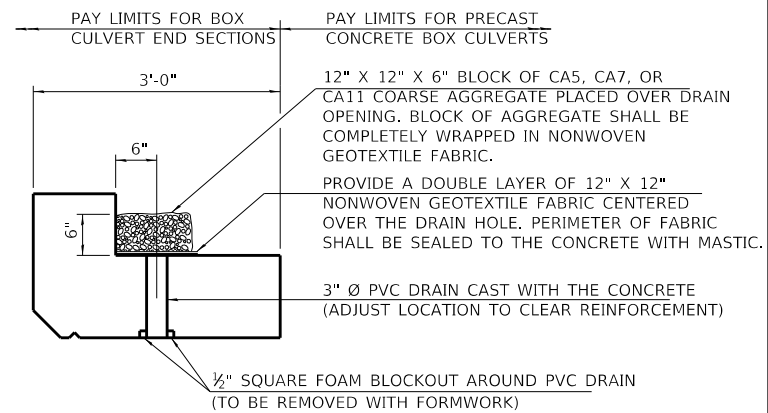
**CROSS SECTION OF CULVERT**  
(LOOKING NORTH)



**PLAN**



**TYPICAL SECTION FOR CHANNEL**  
(NOT TO SCALE)



**DRAIN DETAIL**

(ALL COSTS ASSOCIATED WITH FURNISHING AND CONSTRUCTING THE ABOVE DRAIN DETAIL WILL NOT BE MEASURED FOR PAYMENT BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE ASSOCIATED WORK.)

MODEL: Default  
 FILE: \\mspc-pw\ulb\B&E\BID\ITEC\Illinois\pwr\PW\DOT\Documents\BID\Office\BIDirect\B\Projects\0876887\CADD\DATA\CAD\References\0876887-rhe-draft.dgn

USER NAME = freimuthpd	DESIGNED -	REVISED -
PLOT SCALE = 20.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 10/1/2018	CHECKED -	REVISED -
	DATE -	REVISED -

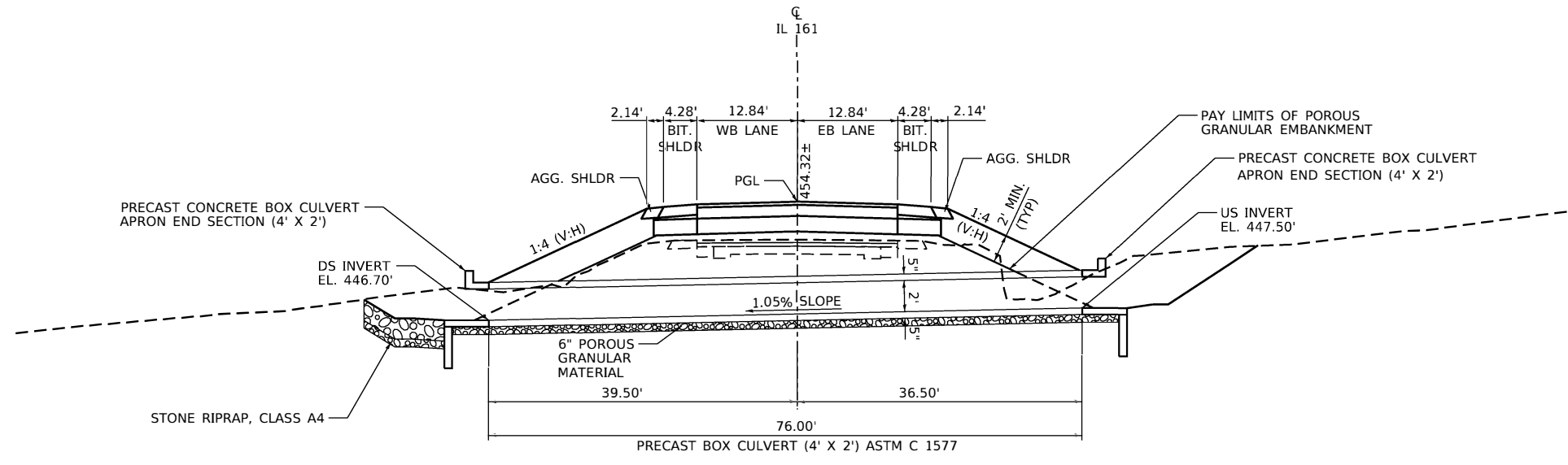
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**BOX CULVERT DETAILS**  
**STA. 717 + 20.20 (PROPOSED S.N. 014-2454)**

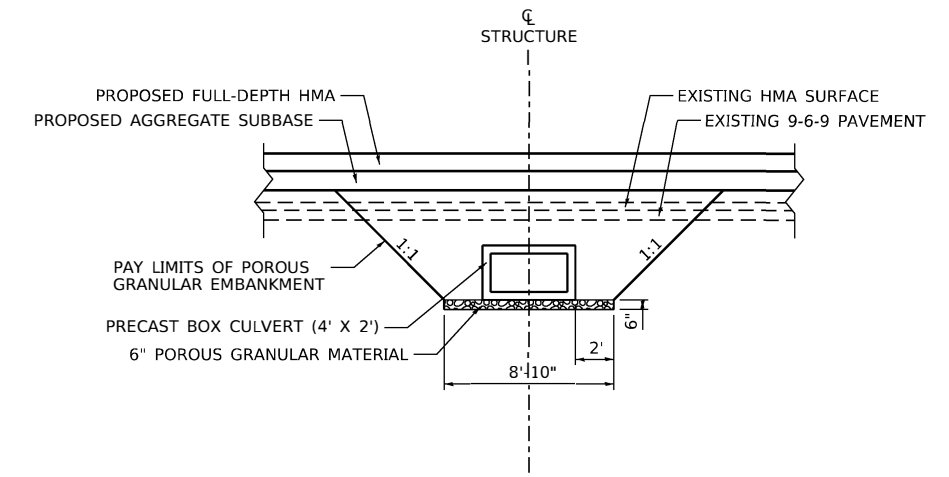
SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	171
CONTRACT NO. 76887				

ILLINOIS FED. AID PROJECT

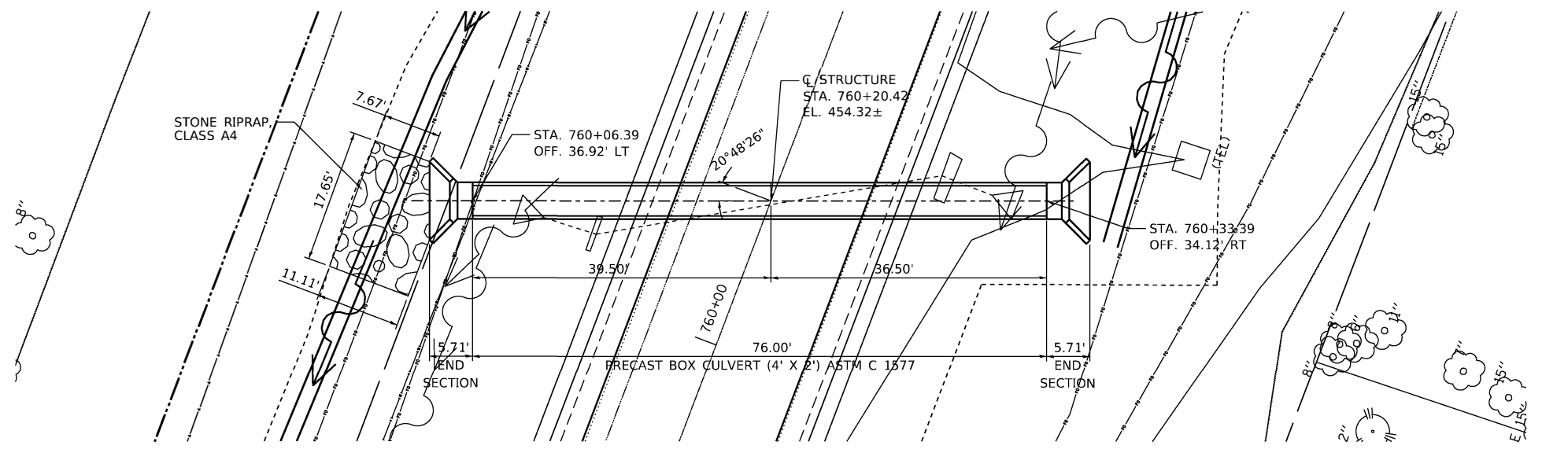


**LONGITUDINAL SECTION**  
(LOOKING EAST)

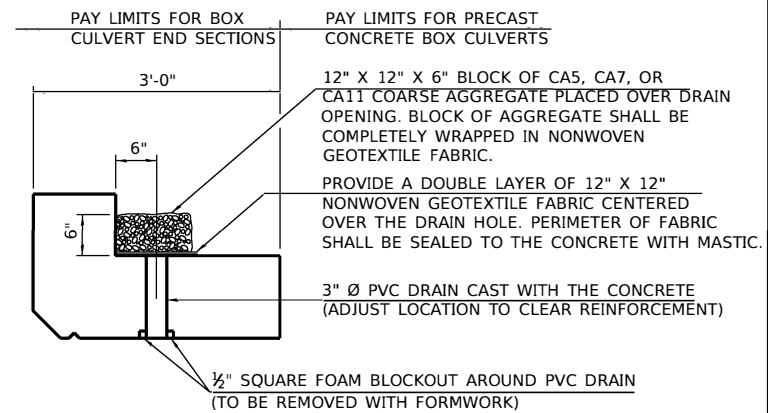


**CROSS SECTION**  
(LOOKING NORTH)

PRECAST BOX CULVERT SCHEDULE (ASTM C 1577)					
STATION	SIZE (SPAN x HEIGHT)	SKEW	DESIGN FILL (FT)		PGE BACKFILL REQUIRED
			EDGE OF SHLDR. (MINIMUM)	MAXIMUM	
760+20.42	4' x 2'	20°48'26"	4.2'	4.8'	258 TON



**PLAN**



**DRAIN DETAIL**

(ALL COSTS ASSOCIATED WITH FURNISHING AND CONSTRUCTING THE ABOVE DRAIN DETAIL WILL NOT BE MEASURED FOR PAYMENT BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE ASSOCIATED WORK.)

MODEL: D:\p\it...  
 FILE NAME: ...  
 PROJECT: ...  
 DATE: 10/11/2018

USER NAME = freimthpd	DESIGNED -	REVISED -
DRAWN -	REVISOR -	REVISION -
PLOT SCALE = 20.0000' / in.	CHECKED -	REVISOR -
PLOT DATE = 10/11/2018	DATE -	REVISION -

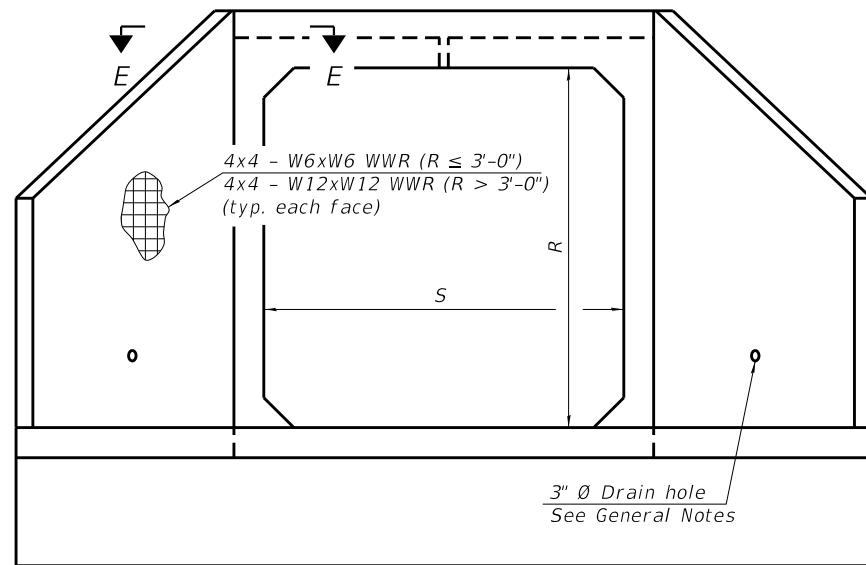
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**BOX CULVERT DETAILS**  
**STA. 760 + 20.43**

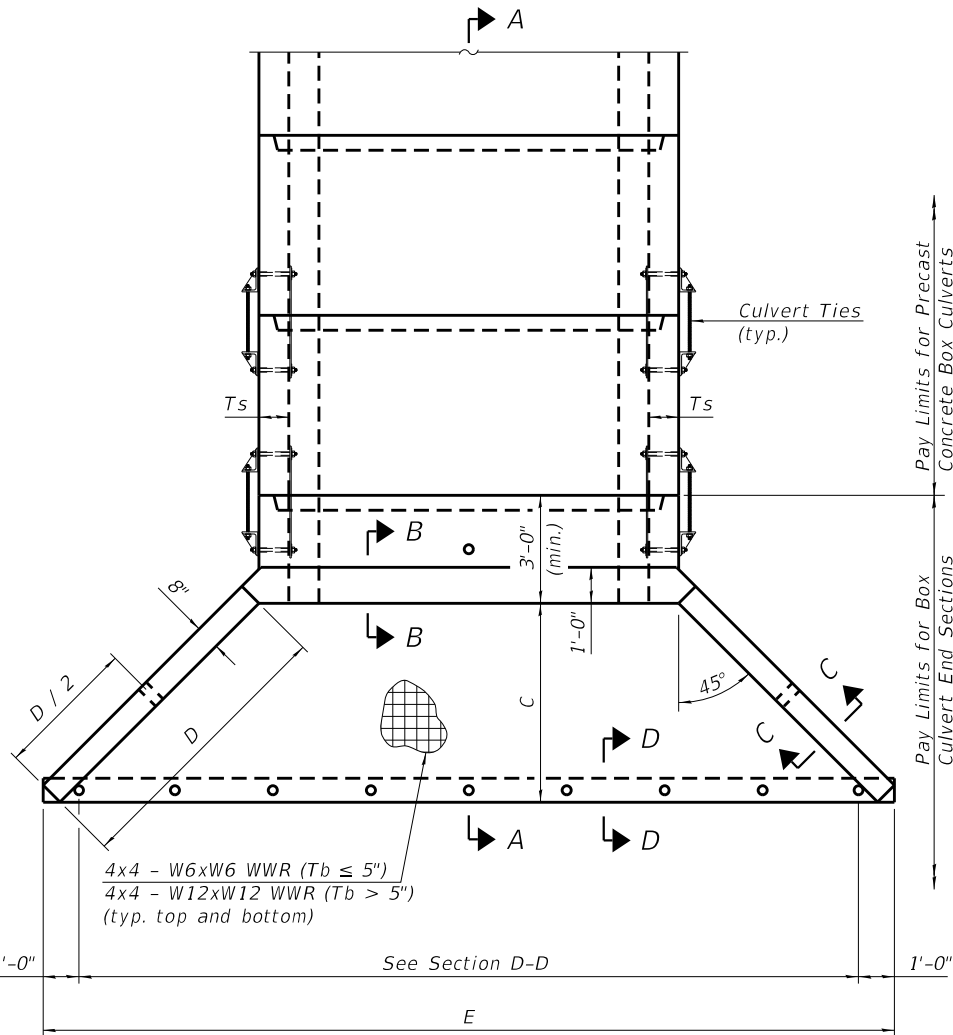
SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	172
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

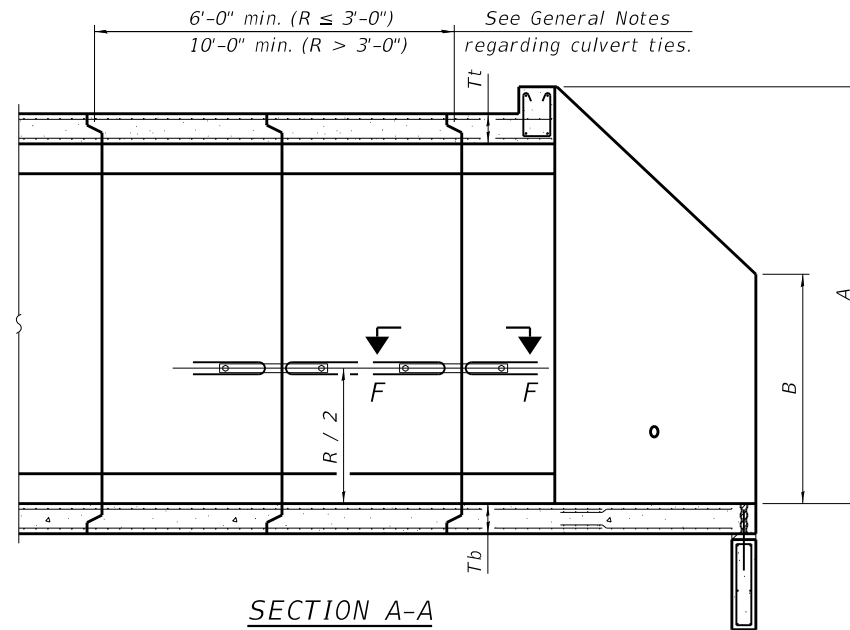




END VIEW



PLAN



SECTION A-A

GENERAL NOTES

Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. End sections will be paid for at the contract unit price per each for Box Culvert End Sections.

The Contractor may furnish the end section as a single precast concrete piece or construct the end section in the field using cast-in-place (CIP) construction. For CIP construction, the bottom slab thickness shall be increased by 2" and the clear cover to the bottom mat of reinforcement shall be increased to 3".

Box section dimensions, materials, and reinforcement details for Box Culvert End Sections shall be according to the requirements for ASTM C 1577 as required for the design of the portion of the culvert within the limits of Precast Concrete Box Culverts except as modified herein.

The number of culvert ties shall be sufficient to engage the minimum length of culvert barrel within the pay limits for Precast Concrete Box Culverts and will be dependent upon the length of box culvert segments furnished by the Contractor. Culvert ties are not required for box culverts having a rise (R) less than or equal to 3 ft and a span (S) greater than or equal to 10 ft.

All costs associated with furnishing and installing or constructing the toewall and culvert ties will not be measured for payment but shall be included in the unit price for Box Culvert End Sections of the culvert number specified.

Shop drawings that detail slab thickness and reinforcement layout for the Box Culvert End Sections shall be provided to the Engineer for review and approval. Reinforcement bars not detailed herein shall be detailed with a clear distance at the end of the reinforcement not less than 1/2" nor more than 2". For the precast option, it shall be the Contractor's responsibility for determining a method of handling and a construction procedure shall be included on the shop drawings. The Contractor shall determine and detail in the shop drawings any necessary strengthening or stiffening provisions necessary to handle the precast segment. Any required modifications shall be at no extra charge.

The Contractor may use reinforcement bars in lieu of welded wire reinforcement (WWR). Reinforcement bars shall be limited to the sizes of #3 through #5 bars, a maximum spacing of the lesser of 8" or the member thickness, and shall result in an area of reinforcement equal to or greater than that provided by the WWR. Minimum lap lengths detailed herein are applicable to WWR and reinforcement bars.

Reinforcement (circumferential and longitudinal) in the culvert barrel portion of the end section being lapped with reinforcement from the wingwalls or bottom slab of the end section shall not be less than that required by ASTM C 1577 for the design fill height or the reinforcement detailed for the end section, whichever is greater.

One drain hole shall be provided in each wingwall for end sections of box culverts having an opening with a clear rise greater than 3 ft. The drain hole shall be located within the lower 1/3 of the clear rise of the box culvert and shall conform to the requirements of Article 503.11 of the Standard Specifications.

APRON END SECTION DIMENSIONS

Span (S)	Rise (R)	Tt	Tb	Ts	A	B	C	D	E	Concrete Cu. Yd.	Culvert Ties Required
3'-0"	2'-0"	7"	6"	4"	3'-4"	2'-2"	2'-10 5/8"	4'-1"	10'-4 7/8"	2.8	Yes
3'-0"	2'-0"	4"	4"	4"	3'-1"	2'-1"	2'-7 7/8"	3'-9"	9'-11"	2.3	Yes
3'-0"	3'-0"	7"	6"	4"	4'-4"	2'-8"	3'-10 3/8"	5'-6"	12'-4 3/8"	3.7	Yes
3'-0"	3'-0"	4"	4"	4"	4'-1"	2'-7"	3'-7 7/8"	5'-2"	11'-11"	3.1	Yes
4'-0"	2'-0"	7.5"	6"	5"	3'-4 1/2"	2'-2 1/2"	2'-11 3/8"	4'-2"	11'-8"	3.3	Yes
4'-0"	2'-0"	5"	5"	5"	3'-2"	2'-1"	2'-8 1/2"	3'-10"	11'-2 3/8"	2.8	Yes
4'-0"	3'-0"	7.5"	6"	5"	4'-4 1/2"	2'-8 1/2"	3'-11 3/8"	5'-7"	13'-8 1/8"	4.2	Yes
4'-0"	3'-0"	5"	5"	5"	4'-2"	2'-7"	3'-8 1/2"	5'-3"	13'-2 3/8"	3.7	Yes
4'-0"	4'-0"	7.5"	6"	5"	5'-4 1/2"	3'-2 1/2"	4'-11 3/8"	7'-0"	15'-8 1/8"	5.3	Yes
4'-0"	4'-0"	5"	5"	5"	5'-2"	3'-1"	4'-8 3/8"	6'-8"	15'-2 1/2"	4.7	Yes
5'-0"	2'-0"	8"	7"	6"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	12'-10"	3.9	Yes
5'-0"	2'-0"	6"	6"	6"	3'-3"	2'-2"	2'-10"	4'-0"	12'-7 1/4"	3.5	Yes
5'-0"	3'-0"	8"	7"	6"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	14'-10 1/8"	4.9	Yes
5'-0"	3'-0"	6"	6"	6"	4'-3"	2'-8"	3'-10"	5'-5"	14'-7 1/4"	4.5	Yes
5'-0"	4'-0"	8"	7"	6"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	16'-10 1/8"	6.1	Yes
5'-0"	4'-0"	6"	6"	6"	5'-3"	3'-2"	4'-9 1/4"	6'-9"	16'-5 5/8"	5.5	Yes
5'-0"	5'-0"	8"	7"	6"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	18'-10 1/8"	7.4	Yes
5'-0"	5'-0"	6"	6"	6"	6'-3"	3'-8"	5'-9 1/4"	8'-2"	18'-5 7/8"	6.8	Yes
6'-0"	2'-0"	8"	7"	7"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	14'-0"	4.3	Yes
6'-0"	2'-0"	7"	7"	7"	3'-4"	2'-2"	2'-10 3/8"	4'-1"	13'-10 3/8"	4.2	Yes
6'-0"	3'-0"	8"	7"	7"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	16'-0 1/8"	5.4	Yes
6'-0"	3'-0"	7"	7"	7"	4'-4"	2'-8"	3'-10 5/8"	5'-6"	15'-10 5/8"	5.2	Yes
6'-0"	4'-0"	8"	7"	7"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	18'-0 1/8"	6.5	Yes
6'-0"	4'-0"	7"	7"	7"	5'-4"	3'-2"	4'-10 3/8"	6'-11"	17'-10 3/4"	6.5	Yes
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6'-0"	5'-0"	7"	7"	7"	6'-4"	3'-8"	5'-10 3/4"	8'-4"	19'-10 3/4"	7.8	Yes
6'-0"	6'-0"	8"	7"	7"	7'-5"	4'-3"	6'-11 1/2"	9'-10"	22'-0 1/4"	9.5	Yes
6'-0"	6'-0"	7"	7"	7"	7'-4"	4'-2"	6'-10 3/4"	9'-9"	21'-10 3/4"	9.3	Yes
7'-0"	2'-0"	8"	8"	8"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	15'-2"	4.9	Yes
7'-0"	3'-0"	8"	8"	8"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	17'-2 1/8"	6.1	Yes
7'-0"	4'-0"	8"	8"	8"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	19'-2 1/8"	7.4	Yes
7'-0"	5'-0"	8"	8"	8"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	21'-2 1/8"	8.9	Yes
7'-0"	6'-0"	8"	8"	8"	7'-5"	4'-3"	6'-11 1/2"	9'-10"	23'-2 1/4"	10.6	Yes
8'-0"	2'-0"	8"	8"	8"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	16'-2"	5.3	Yes
8'-0"	3'-0"	8"	8"	8"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	18'-2 1/8"	6.5	Yes
8'-0"	4'-0"	8"	8"	8"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	20'-2 1/8"	7.8	Yes
8'-0"	5'-0"	8"	8"	8"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	22'-2 1/8"	9.3	Yes
8'-0"	6'-0"	8"	8"	8"	7'-5"	4'-3"	6'-11 1/2"	9'-10"	24'-2 1/4"	11.0	Yes
9'-0"	2'-0"	9"	9"	9"	3'-6"	2'-3"	3'-0 3/4"	4'-4"	17'-6 7/8"	6.2	Yes
9'-0"	3'-0"	9"	9"	9"	4'-6"	2'-9"	4'-0 3/4"	5'-9"	19'-6 7/8"	7.5	Yes
9'-0"	4'-0"	9"	9"	9"	5'-6"	3'-3"	5'-0 3/4"	7'-2"	21'-6 7/8"	9.0	Yes
9'-0"	5'-0"	9"	9"	9"	6'-6"	3'-9"	6'-0 7/8"	8'-7"	23'-7"	10.6	Yes
9'-0"	6'-0"	9"	9"	9"	7'-6"	4'-3"	7'-0 1/8"	9'-11"	25'-5 5/8"	12.4	Yes
10'-0"	2'-0"	10"	10"	10"	3'-7"	2'-4"	3'-1 1/2"	4'-5"	18'-10 1/4"	7.1	No
10'-0"	3'-0"	10"	10"	10"	4'-7"	2'-10"	4'-1 1/2"	5'-10"	20'-10 1/4"	8.6	No
10'-0"	4'-0"	10"	10"	10"	5'-7"	3'-4"	5'-1 1/2"	7'-3"	22'-10 3/8"	10.2	Yes
10'-0"	5'-0"	10"	10"	10"	6'-7"	3'-10"	6'-1 1/2"	8'-8"	24'-10 3/8"	12.0	Yes
10'-0"	6'-0"	10"	10"	10"	7'-7"	4'-4"	7'-1 1/2"	10'-1"	26'-10 3/8"	13.9	Yes
11'-0"	2'-0"	11"	11"	11"	3'-8"	2'-4"	3'-2 7/8"	4'-7"	20'-3 3/8"	8.2	No
11'-0"	3'-0"	11"	11"	11"	4'-8"	2'-10"	4'-2 7/8"	6'-0"	22'-3 3/8"	9.8	No
11'-0"	4'-0"	11"	11"	11"	5'-8"	3'-4"	5'-2 1/4"	7'-4"	24'-1 3/4"	11.5	Yes
11'-0"	5'-0"	11"	11"	11"	6'-8"	3'-10"	6'-2 1/4"	8'-9"	26'-1 3/4"	13.3	Yes
11'-0"	6'-0"	11"	11"	11"	7'-8"	4'-4"	7'-2 1/4"	10'-2"	28'-1 3/8"	15.5	Yes
12'-0"	2'-0"	12"	12"	12"	3'-9"	2'-5"	3'-3 3/8"	4'-8"	21'-6 1/2"	9.3	No
12'-0"	3'-0"	12"	12"	12"	4'-9"	2'-11"	4'-3 3/8"	6'-1"	23'-6 1/2"	11.1	No
12'-0"	4'-0"	12"	12"	12"	5'-9"	3'-5"	5'-3 3/8"	7'-6"	25'-6 5/8"	13.0	Yes
12'-0"	5'-0"	12"	12"	12"	6'-9"	3'-11"	6'-3 3/8"	8'-11"	27'-6 5/8"	14.1	Yes
12'-0"	6'-0"	12"	12"	12"	7'-9"	4'-5"	7'-3 3/8"	10'-4"	29'-6 5/8"	17.4	Yes

Note:

Two sets of apron end section dimensions are shown above for some box culvert sizes due to the top and bottom slabs having different thicknesses per ASTM C 1577 for design fill heights less than 2 ft. (Sheet 1 of 2)

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 SHEET: 259 OF 173  
 DATE: 8/10/2018

SCB-AES

2-17-2017

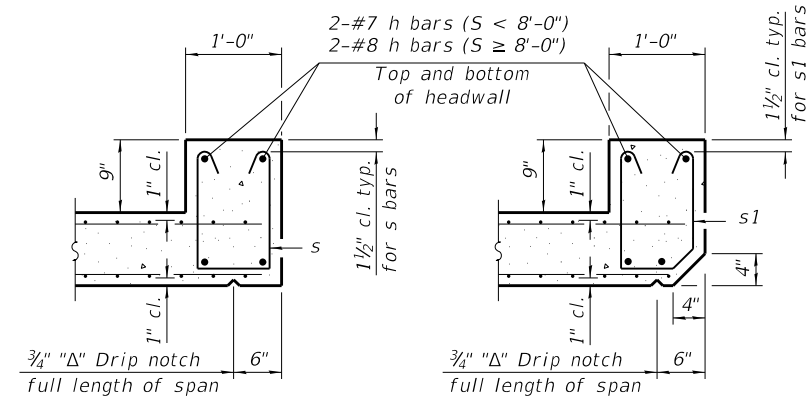
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PRECAST CONCRETE BOX CULVERT APRON END  
SECTION DETAILS**

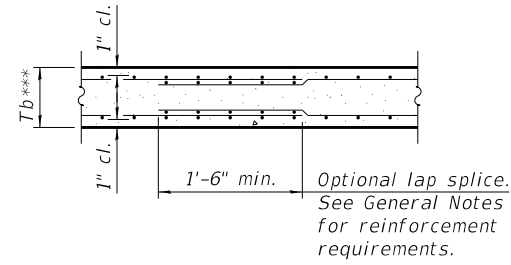
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CONTRACT NO. 76887				
ILLINOIS		FED. AID PROJECT		

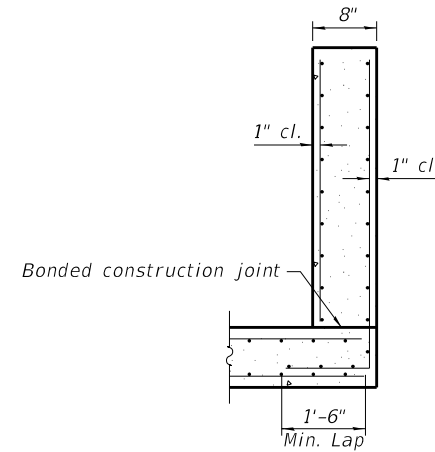


**SECTION B-B**  
(Top slab at downstream end)

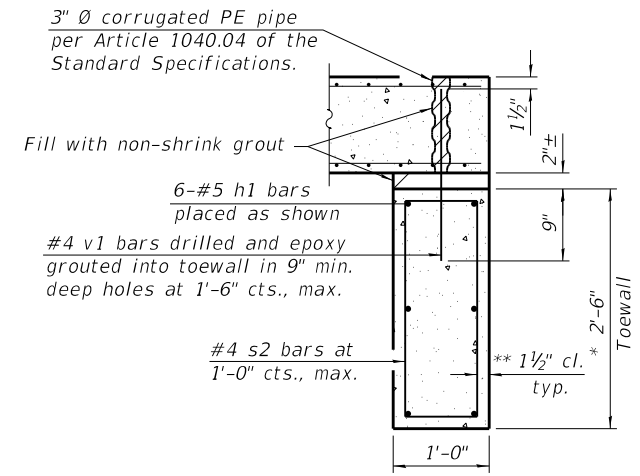
**SECTION B-B**  
(Top slab at upstream end)



**SECTION B-B**  
(Bottom Slab)

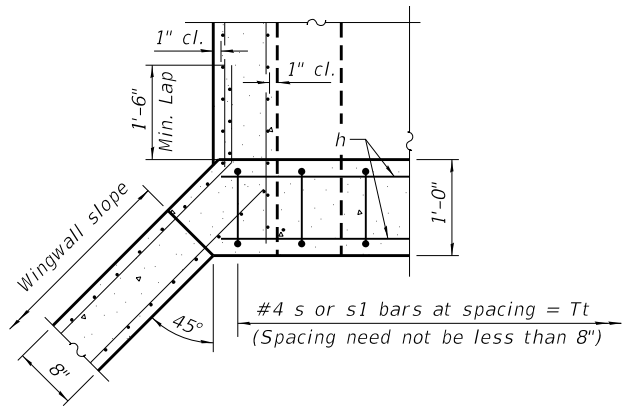


**SECTION C-C**

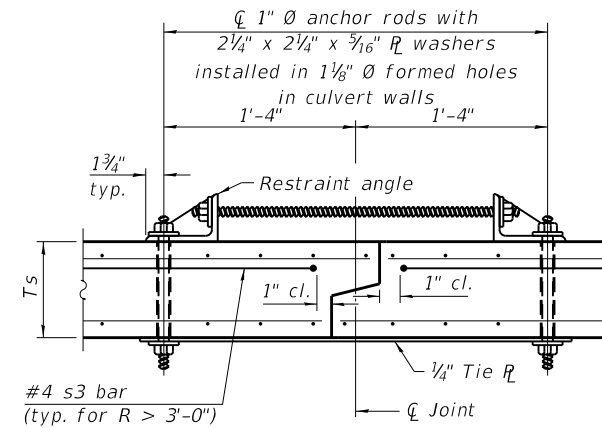


**SECTION D-D**

\*\*\* This dimension shall be increased by 2" for CIP construction.



**SECTION E-E**



**SECTION F-F**  
(Showing culvert tie details)

**TOEWALL CONSTRUCTION SEQUENCE**

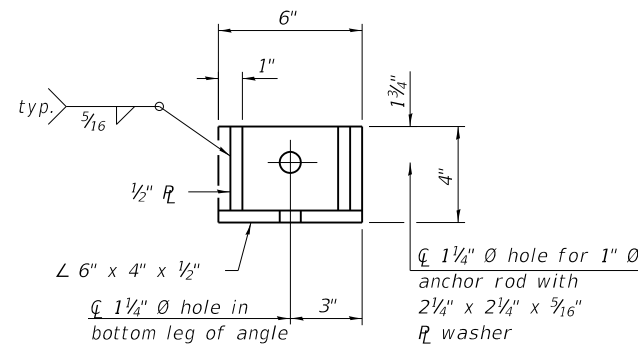
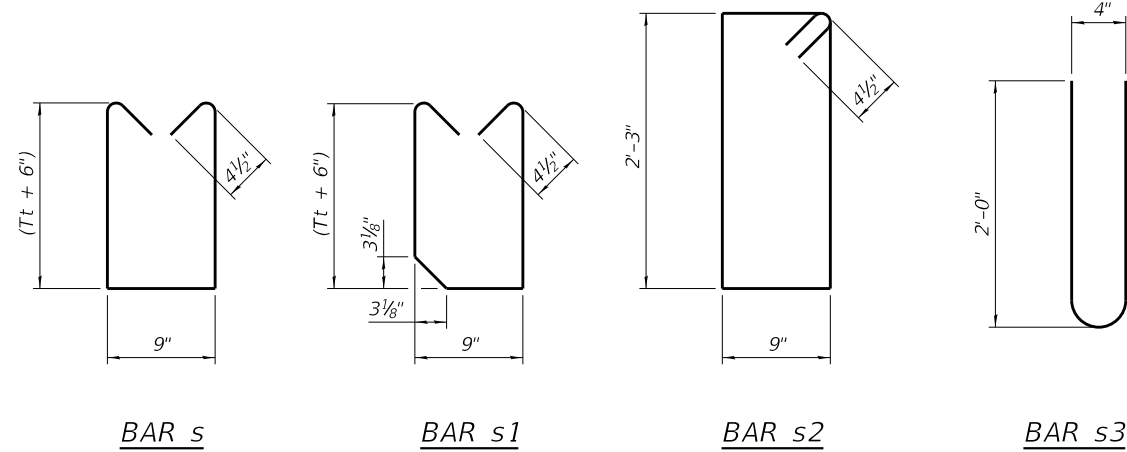
1. Perform excavation and construct toewall.
2. Backfill accordingly and place bedding for precast box culvert end sections.
3. Set precast box culvert end section.
4. Drill and epoxy grout reinforcement in toewall in accordance with Section 584 of the Standard Specifications.
5. Pressure grout voids using non-shrink grout conforming to Section 1024 of the Standard Specifications.

\* The Contractor may furnish a precast or cast-in-place toewall. The Contractor shall be responsible for the strength and stability of the precast toewall during handling. Additional lifting points may be required depending upon the length of the toewall or the Contractor may need to modify the design of the toewall for the proposed handling method.

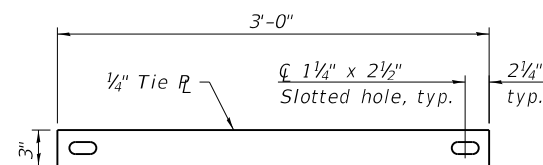
\*\* If soil conditions permit, the sides of the toewall may be poured directly against the soil. The clear cover on the sides of the toewall shall be increased to 3" by increasing the thickness of the toewall.

**Notes:**

1" diameter anchor rods for the culvert ties shall conform to the requirements of ASTM F1554, Grade 105. Structural steel for the tie plate and restraint angle shall conform to the requirements of Article 1006.04 of the Standard Specifications. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable. 2 1/4" x 2 1/4" x 3/16" plate washers shall be provided under each nut required for the anchor rods. Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional 1/2 turn on one of the nuts for anchor rods installed in the walls. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut. Holes in the walls for the culvert tie assembly may be drilled using core bits in lieu of using formed holes.



**RESTRAINT ANGLE DETAIL**



**TIE PLATE DETAIL**

(Sheet 2 of 2)

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2-17-2017

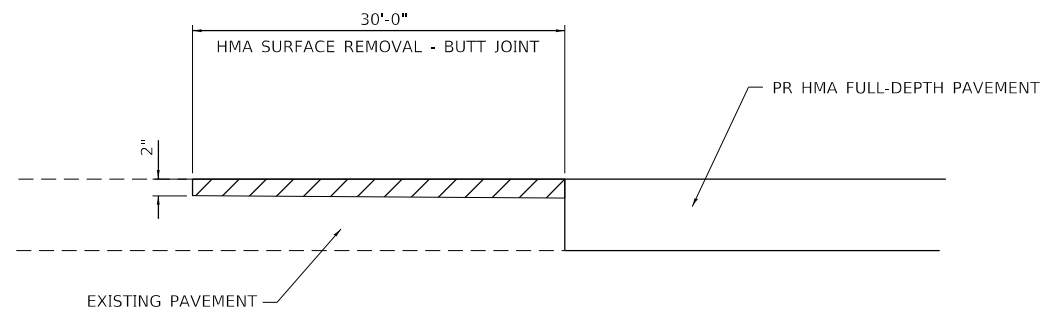
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PRECAST CONCRETE BOX CULVERT APRON END  
SECTION DETAILS**

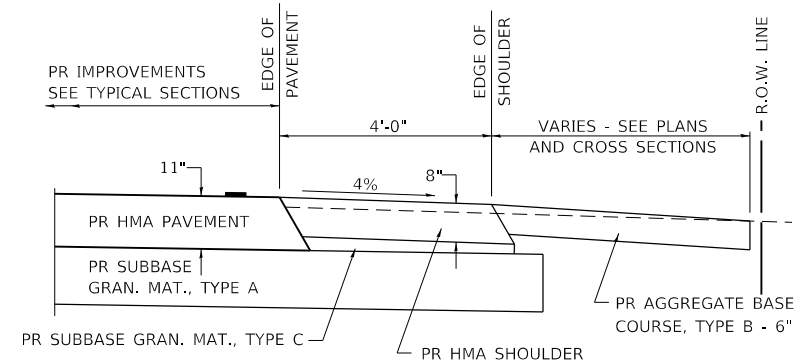
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CONTRACT NO. 76887				

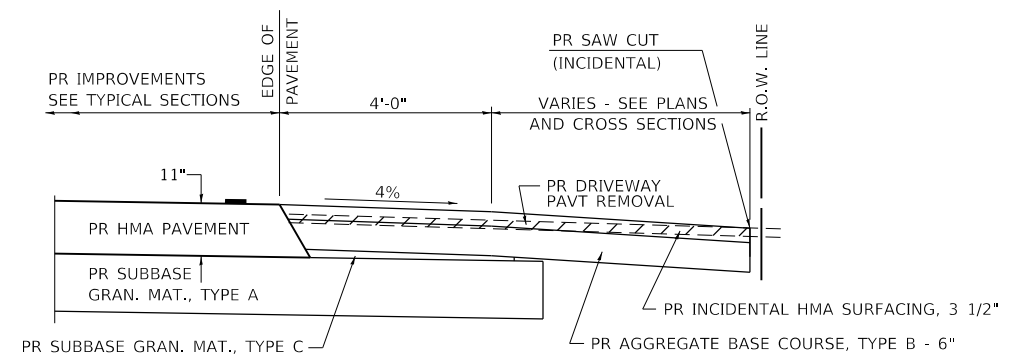
ILLINOIS FED. AID PROJECT



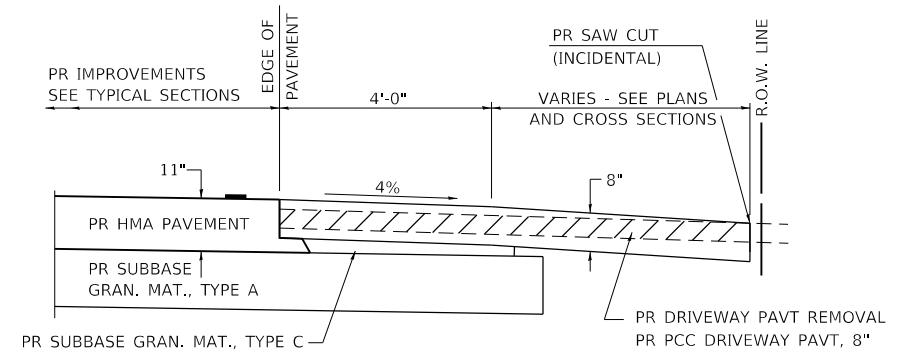
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(ELEVATION VIEW)  
NOT TO SCALE



**ENTRANCE DETAIL FOR EX EARTH/AGGREGATE FE & PE**  
NOT TO SCALE



**ENTRANCE DETAIL FOR EX HMA PE**  
NOT TO SCALE



**ENTRANCE DETAIL FOR EX P.C. CONC. CE**  
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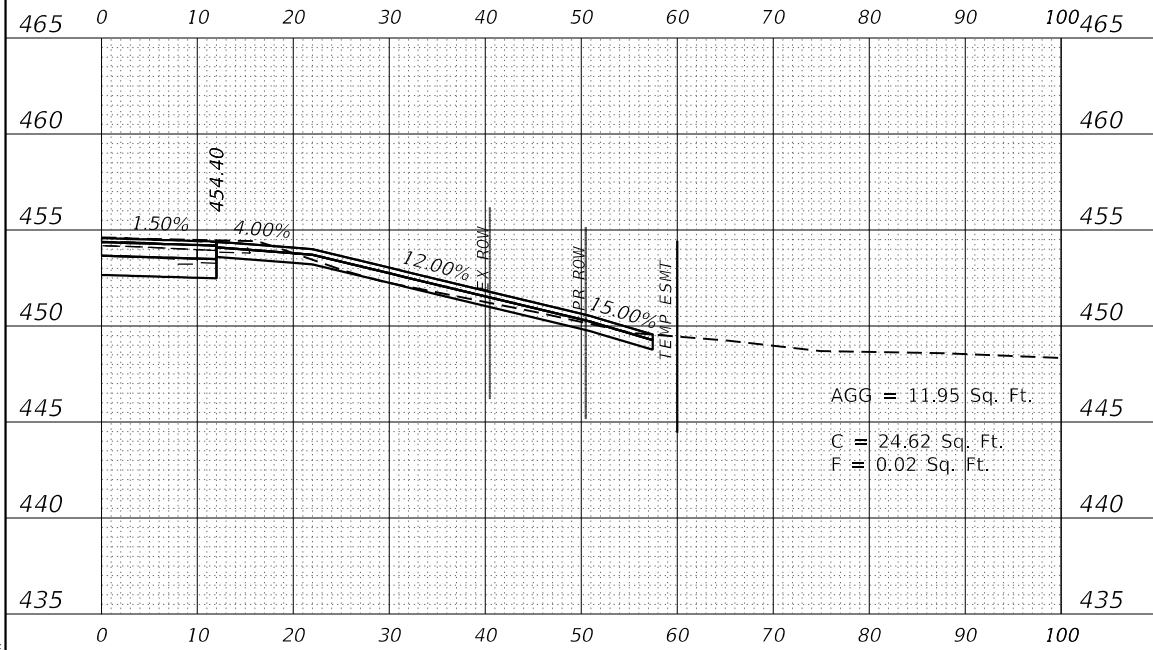
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**DISTRICT DETAILS**

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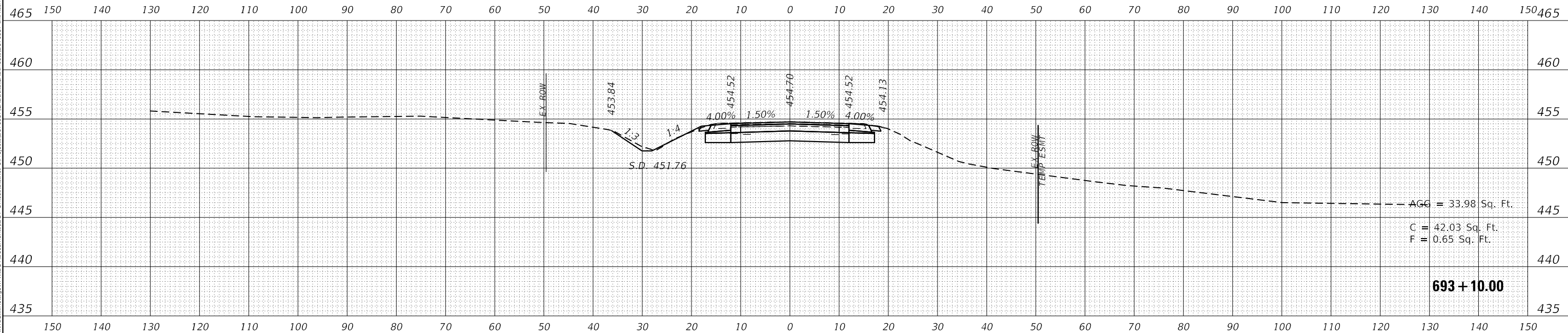
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CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

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



**693 + 46.88**

ORIGINAL SURVEY NO.	SURVEYED	DATE
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**693 + 10.00**

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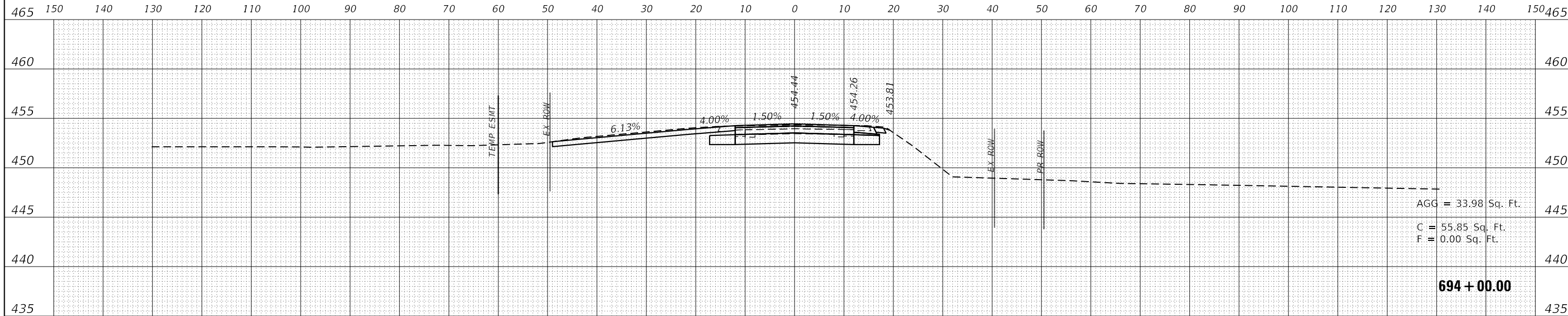
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
(IL ROUTE 161)**

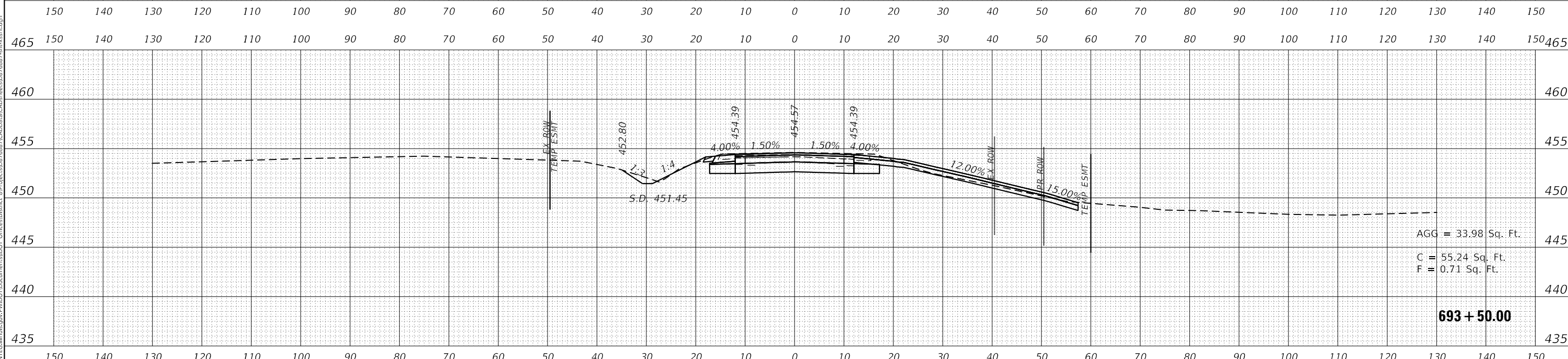
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805	7BR, 7BR-1	CLINTON	259	176
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

FINAL SURVEY NO.	
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TEMPLATE	
NOTE BOOK	
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ORIGINAL SURVEY NO.	
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DATE	



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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

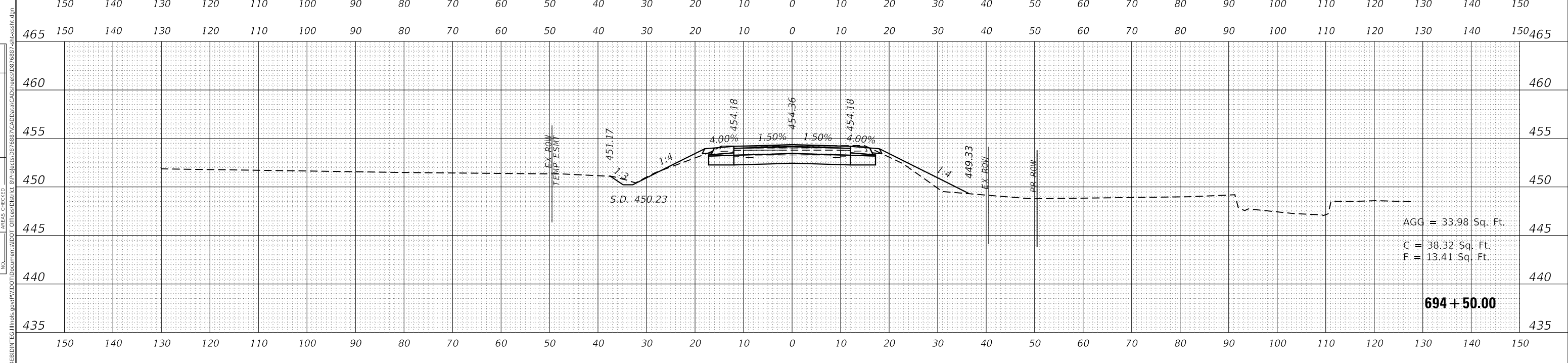
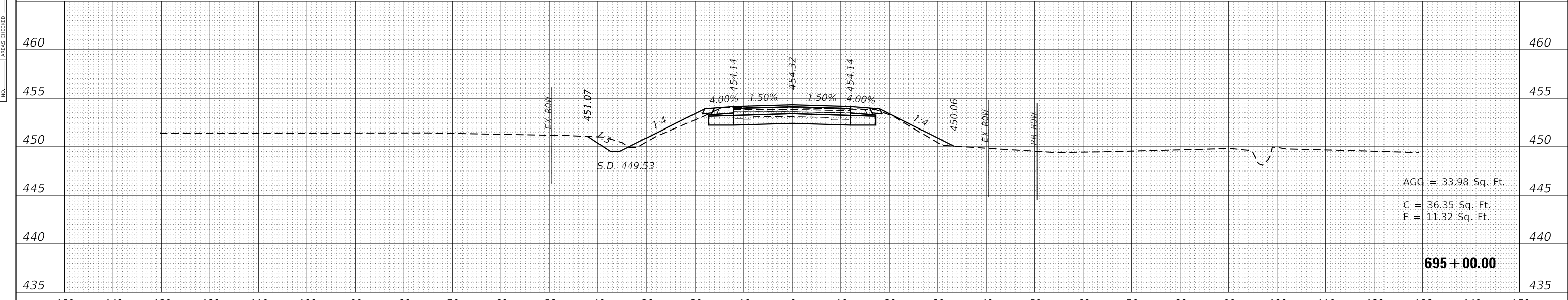
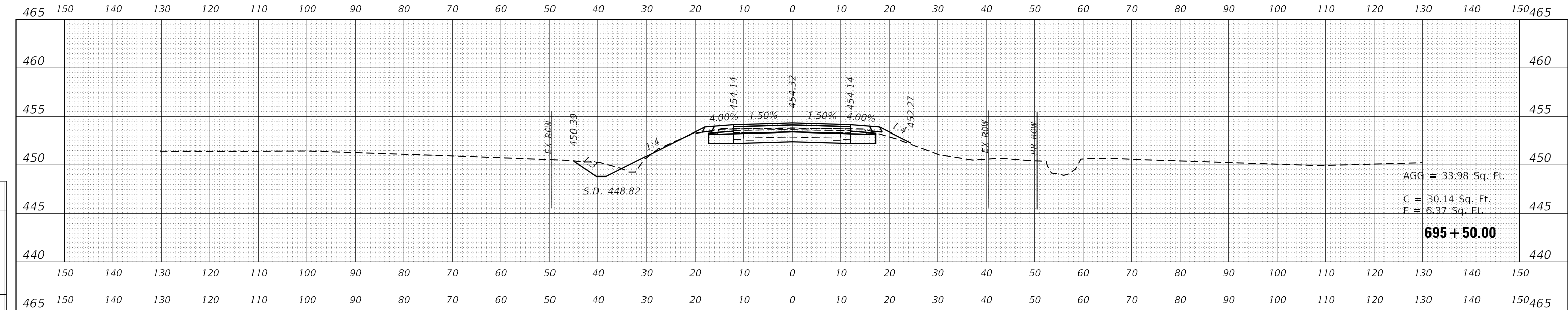
**CROSS SECTIONS  
(IL ROUTE 161)**

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805	7BR, 7BR-1	CLINTON	259	177
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

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

DATE	
BY	
ORIGINAL SURVEY	
NOTE BOOK	
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PLOTTED	
TEMPLATE	
AREAS CHECKED	



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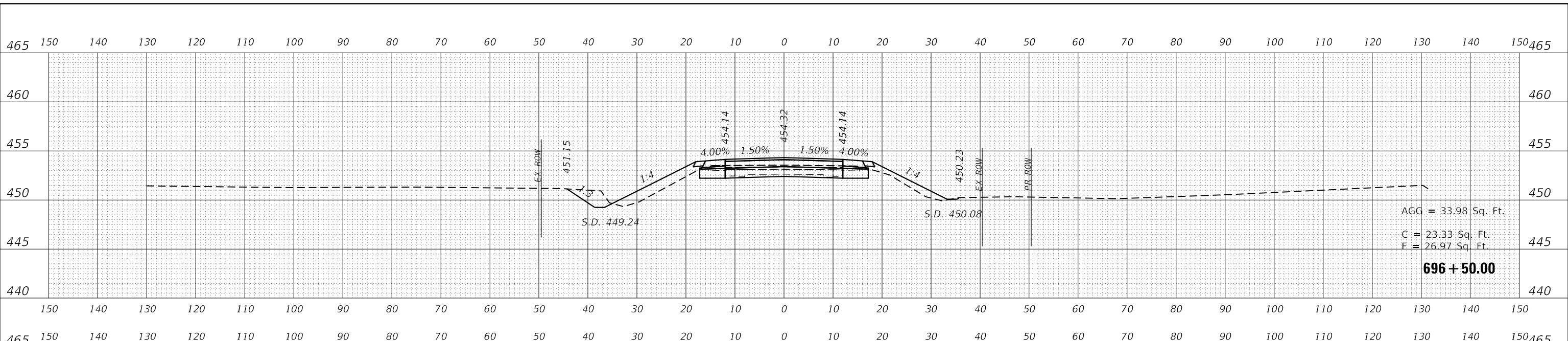
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
(IL ROUTE 161)**

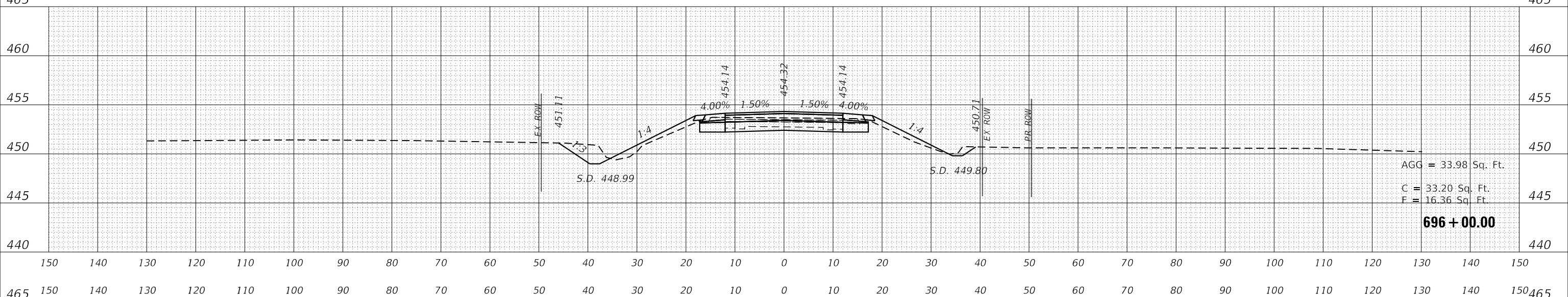
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	178
CONTRACT NO. 76887				
ILLINOIS		FED. AID PROJECT		

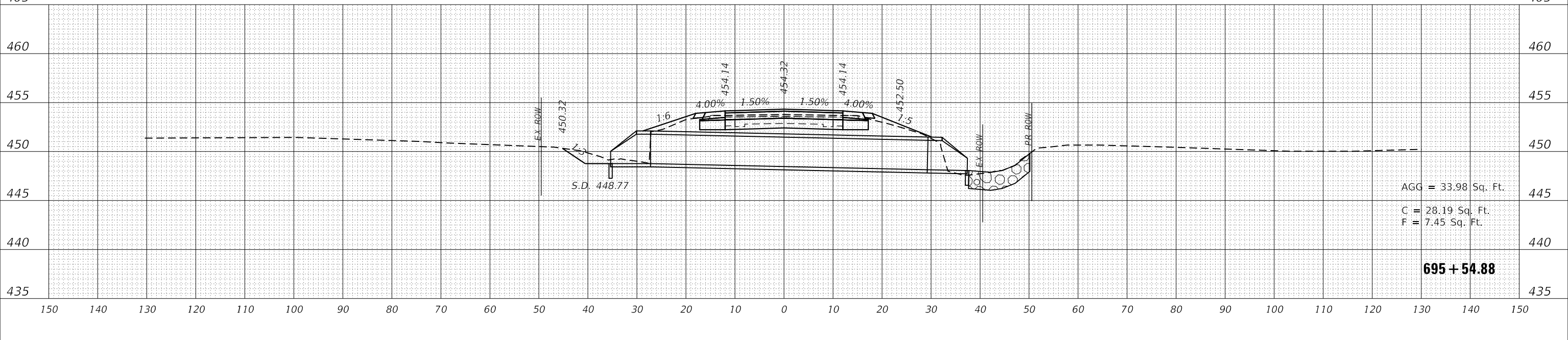
DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
FINAL SURVEY	
NOTE BOOK	
NO.	



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



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



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USER NAME = freimuthpd	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 9/10/2018	DATE -	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

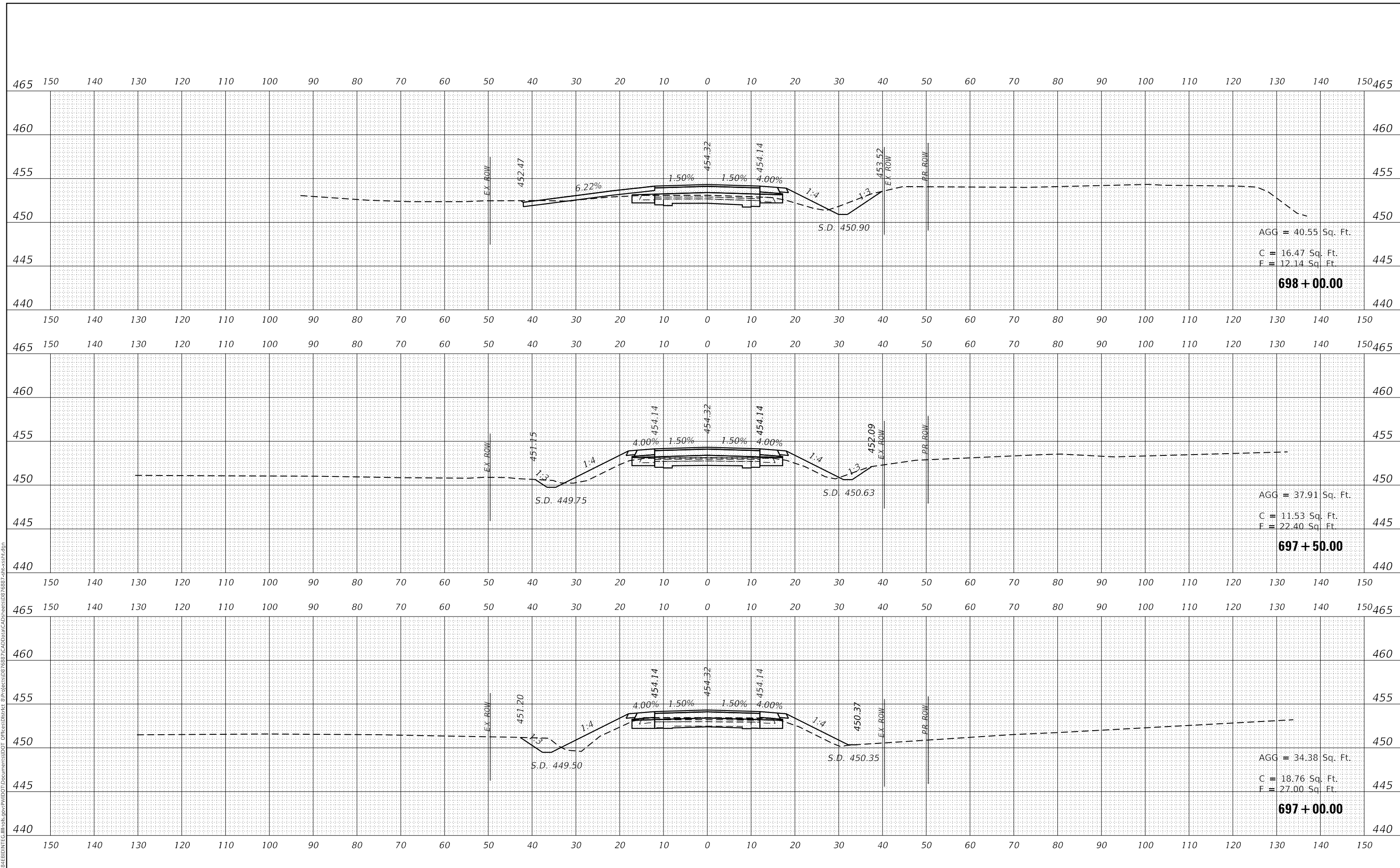
<b>CROSS SECTIONS (IL ROUTE 161)</b>			
SCALE:	SHEET	OF	SHEETS
STA. 695+54.88 TO STA. 696+50.00			

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	179
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

DATE	BY
SURVEYED	PLOTTED
NOTE BOOK	TEMPLATE
NO.	AREAS CHECKED

DATE	BY
SURVEYED	PLOTTED
NOTE BOOK	TEMPLATE
NO.	AREAS CHECKED

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	DRAWN -	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 8/10/2018	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

<b>CROSS SECTIONS (IL ROUTE 161)</b>	
SCALE:	SHEET OF SHEETS STA. 697+00.00 TO STA. 698+00.00

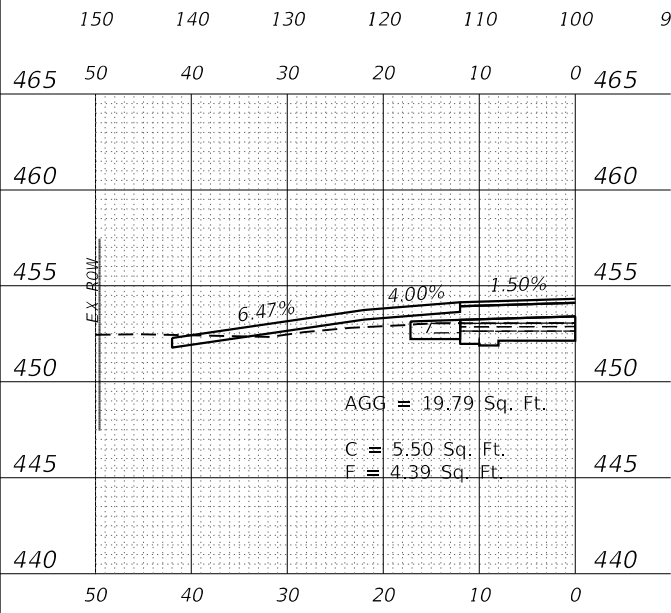
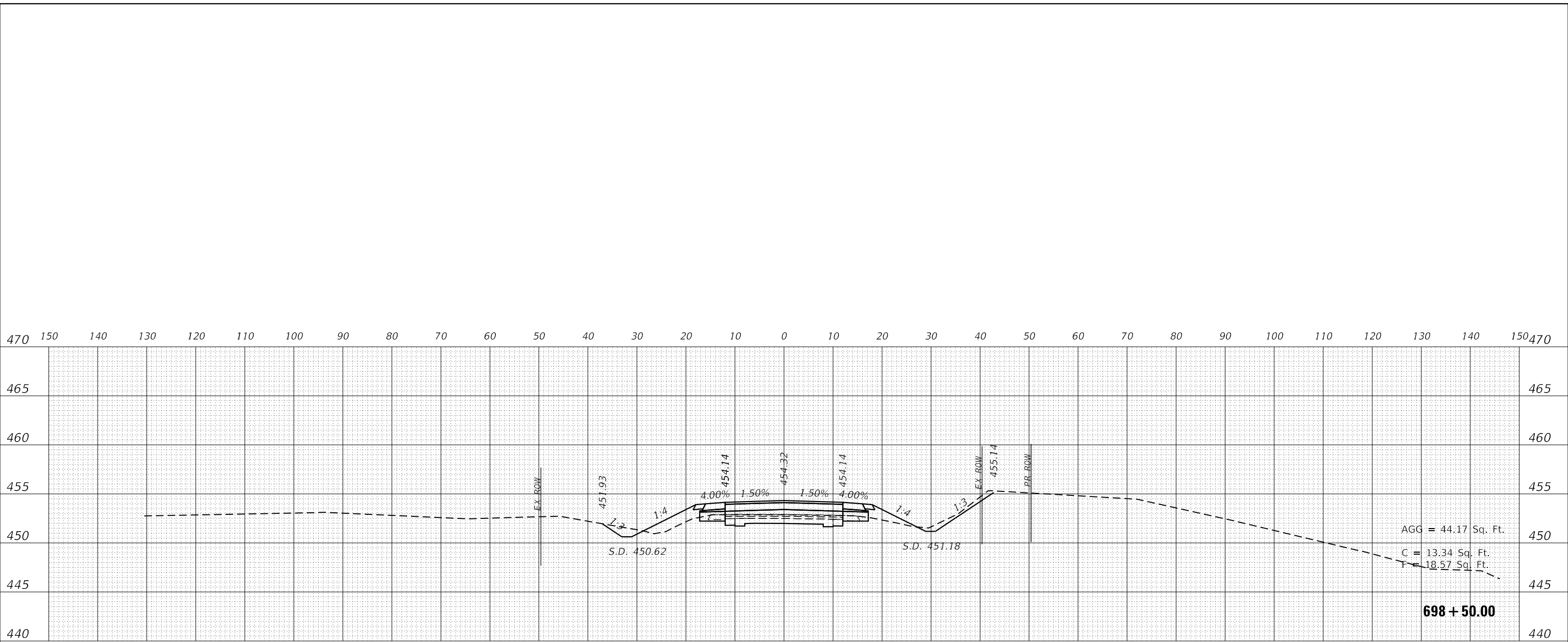
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	180
CONTRACT NO. 76887				
ILLINOIS		FED. AID PROJECT		



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

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

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USER NAME = freimuthpd	DESIGNED -	REVISED -
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PLOT SCALE = 20.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 8/10/2018	DATE -	REVISED -

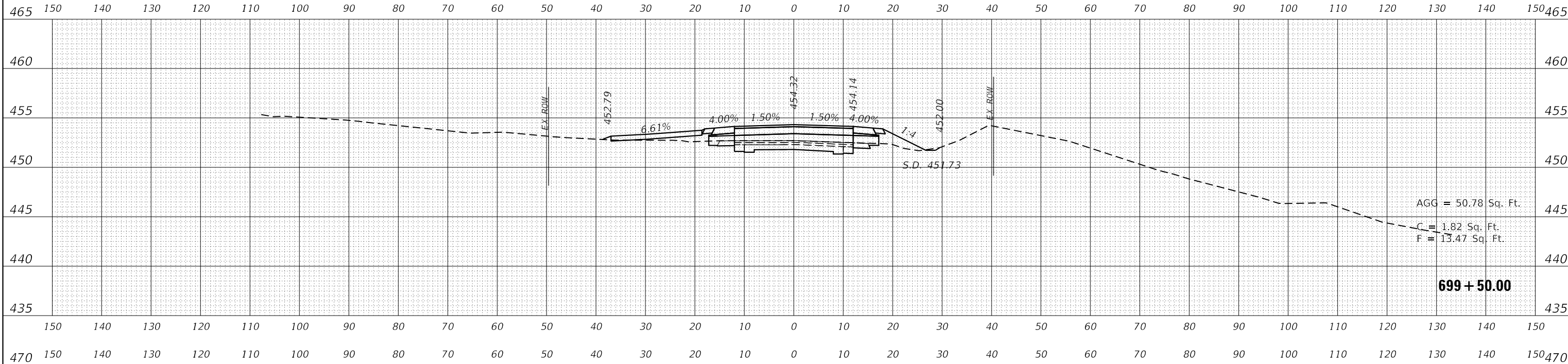
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
(IL ROUTE 161)**

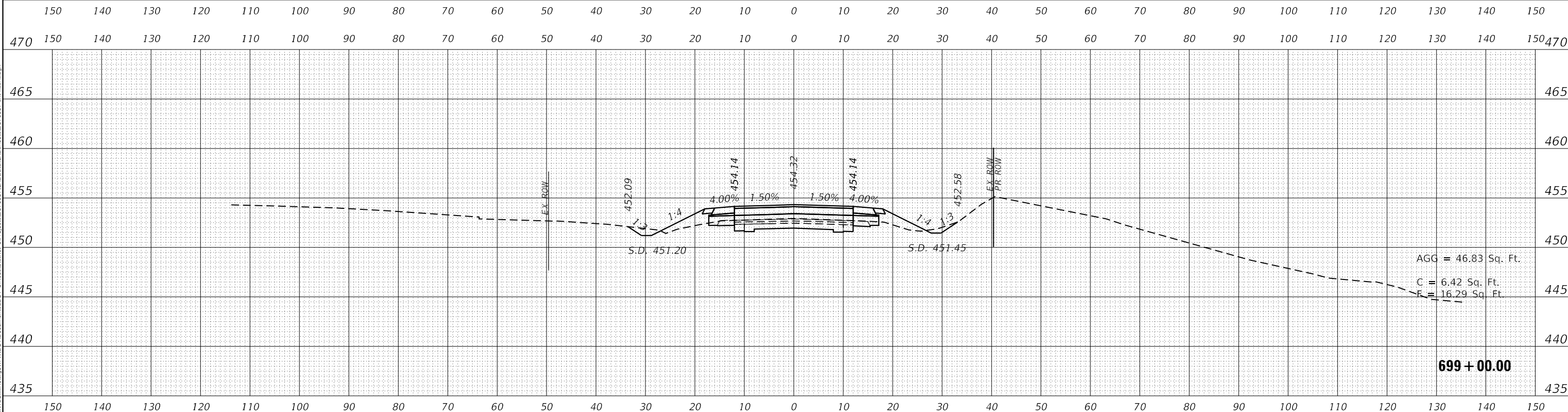
SCALE: SHEET OF SHEETS STA. 698+06.03 TO STA. 698+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	181
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

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



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



MODEL: Defnair  
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USER NAME = freimuthpd	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 8/10/2018	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
(IL ROUTE 161)**

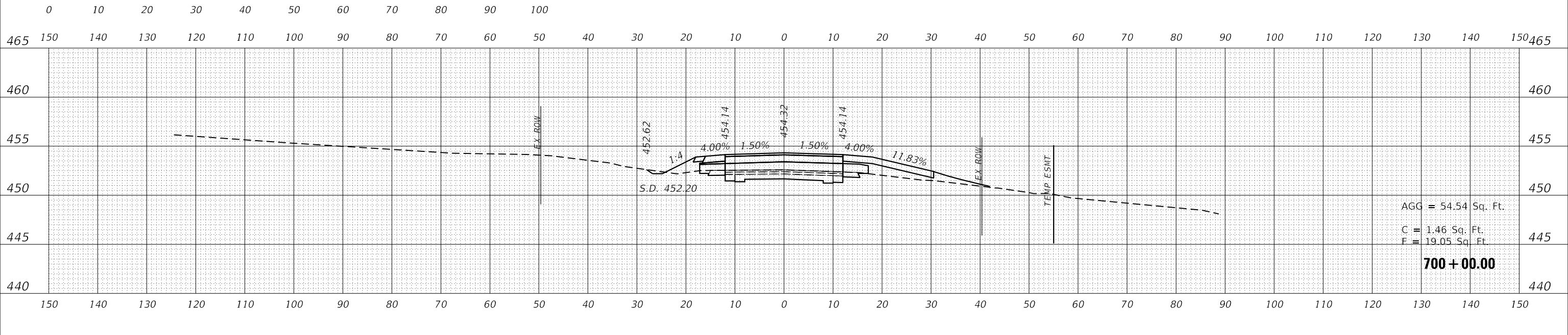
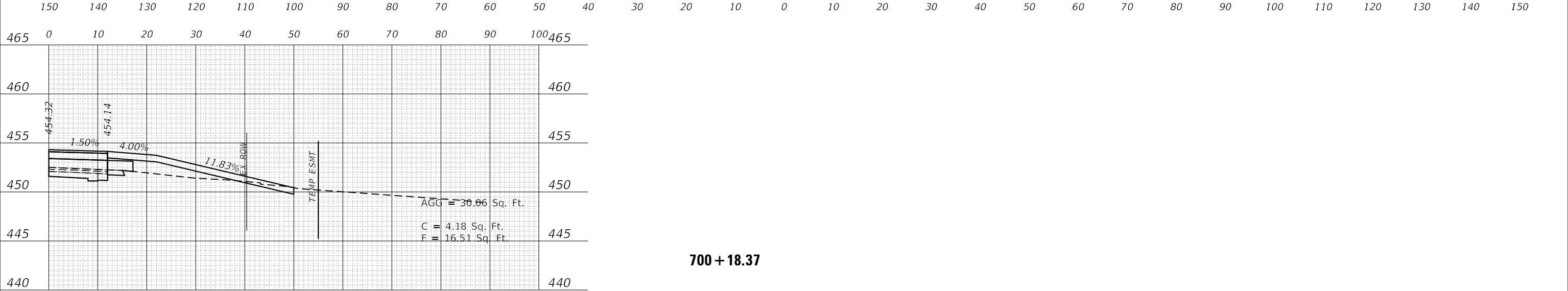
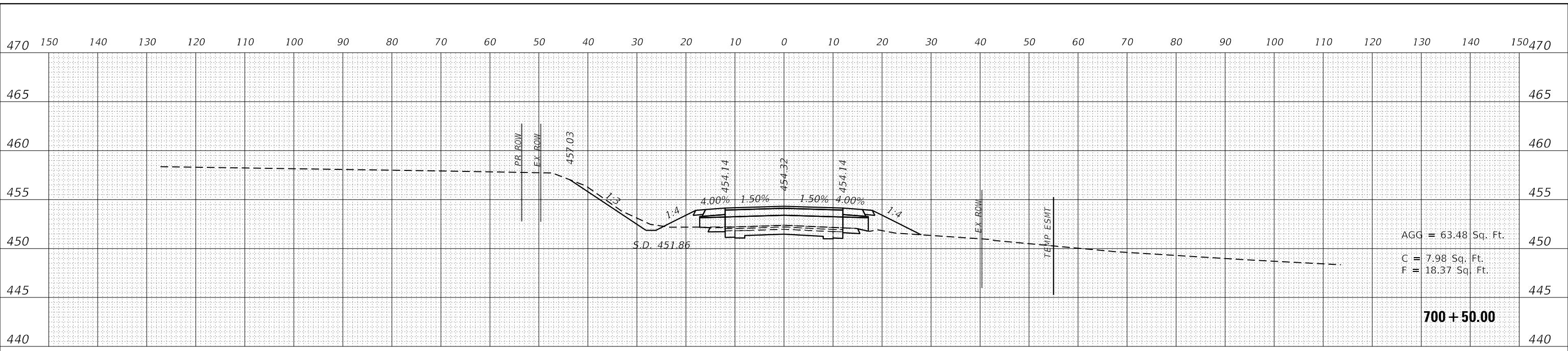
SCALE: SHEET OF SHEETS STA. 699+00.00 TO STA. 699+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	182
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

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

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

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USER NAME = freimutpd	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 8/10/2018	DATE -	REVISED -

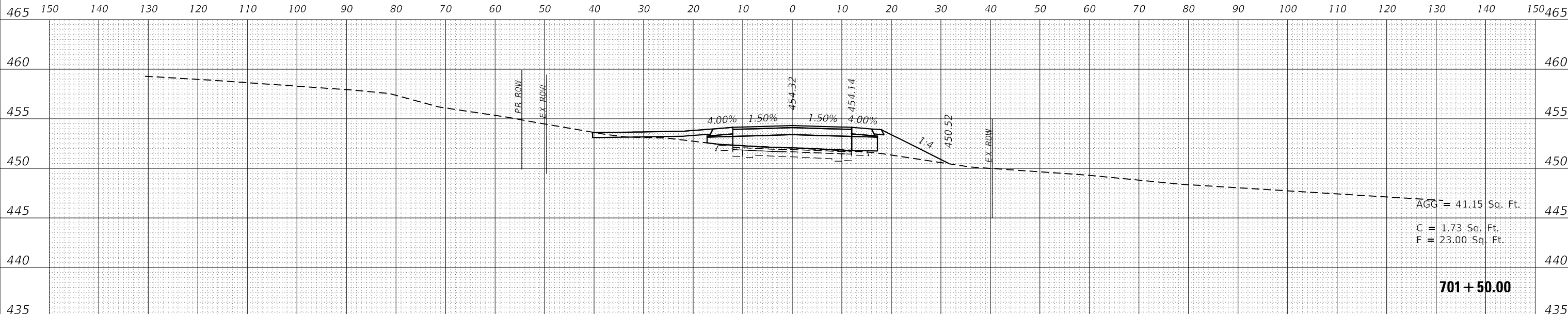
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
 (IL ROUTE 161)**

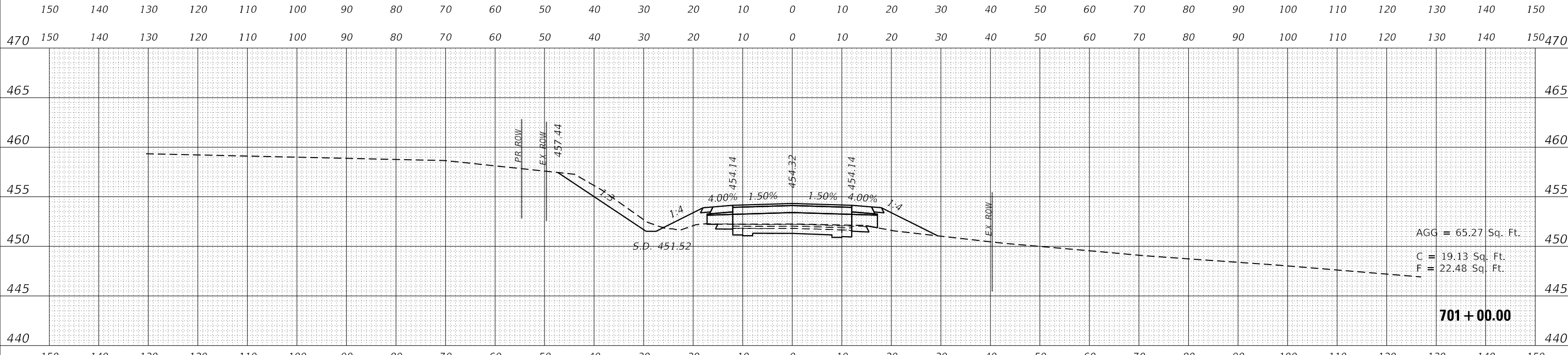
SCALE: SHEET OF SHEETS STA. 700+00.00 TO STA. 700+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	183
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

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



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



MODEL: Defn.rur  
FILE NAME: D:\ILLINOIS\BID\BID\TEC\Illinois\pwr\pwr\DOT\Documents\DOT\Office\District 8\Projects\0776887\CAD\Drawings\0776887-5m-crossh.dgn

USER NAME = freimuthpd	DESIGNED -	REVISED -
	DRAWN -	REVISED -
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PLOT DATE = 8/10/2018	DATE -	REVISED -

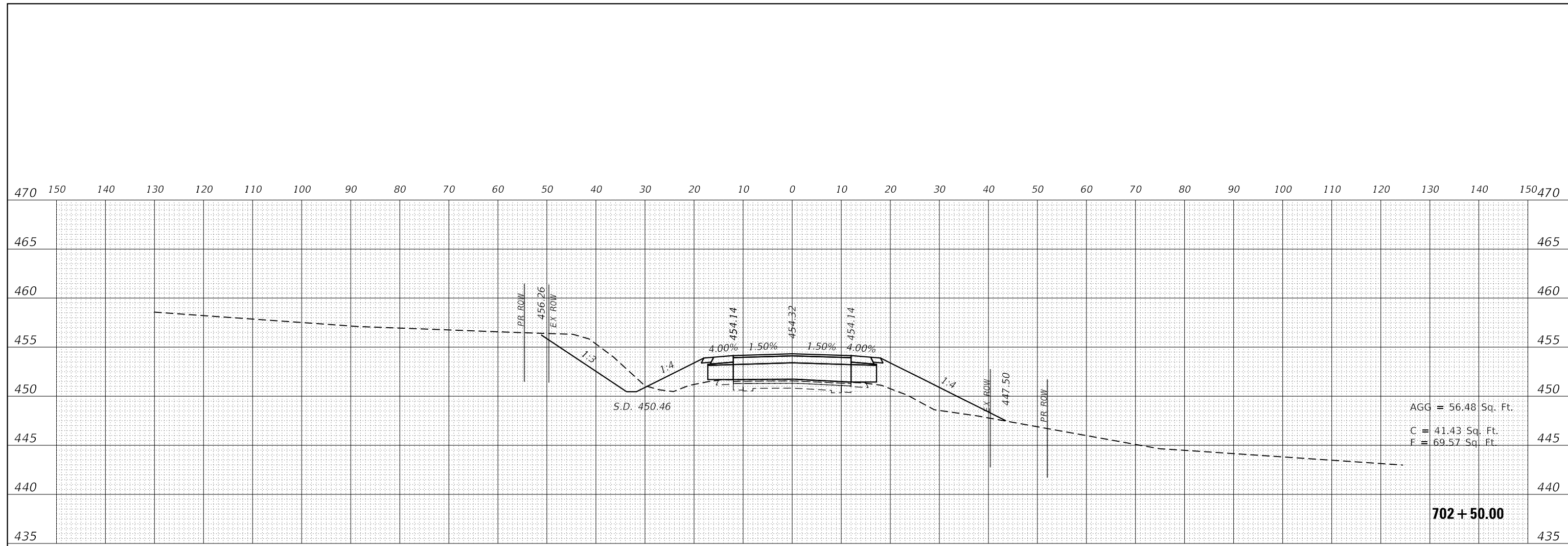
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
(IL ROUTE 161)**

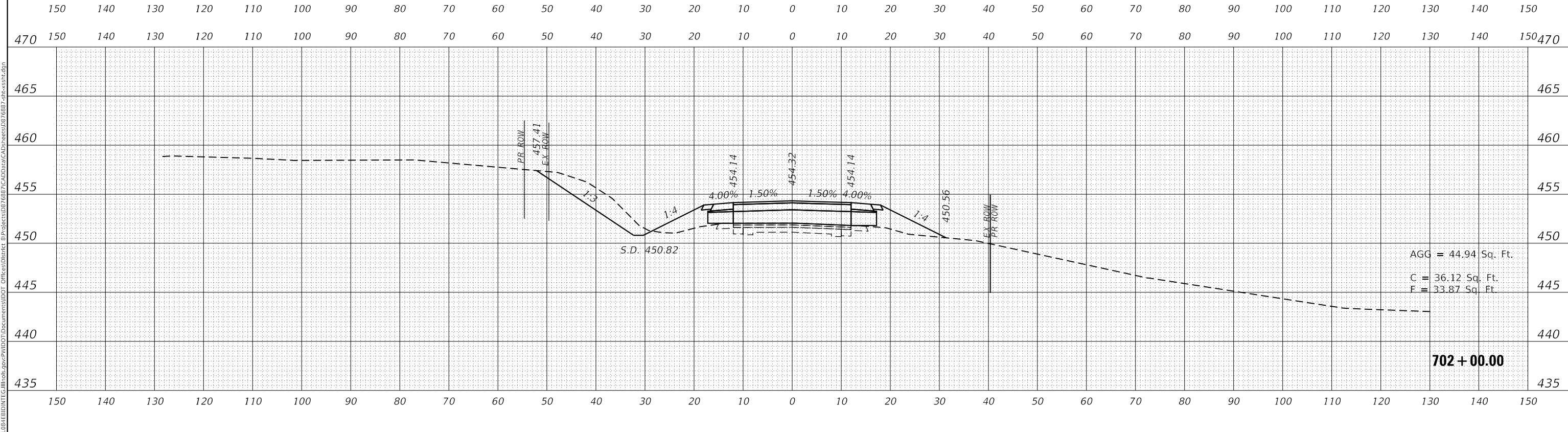
SCALE: SHEET OF SHEETS STA. 701+00.00 TO STA. 701+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	184
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

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



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



MODEL: Defn.rur  
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USER NAME = freimuthpd	DESIGNED -	REVISED -
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PLOT DATE = 8/10/2018	DATE -	REVISED -

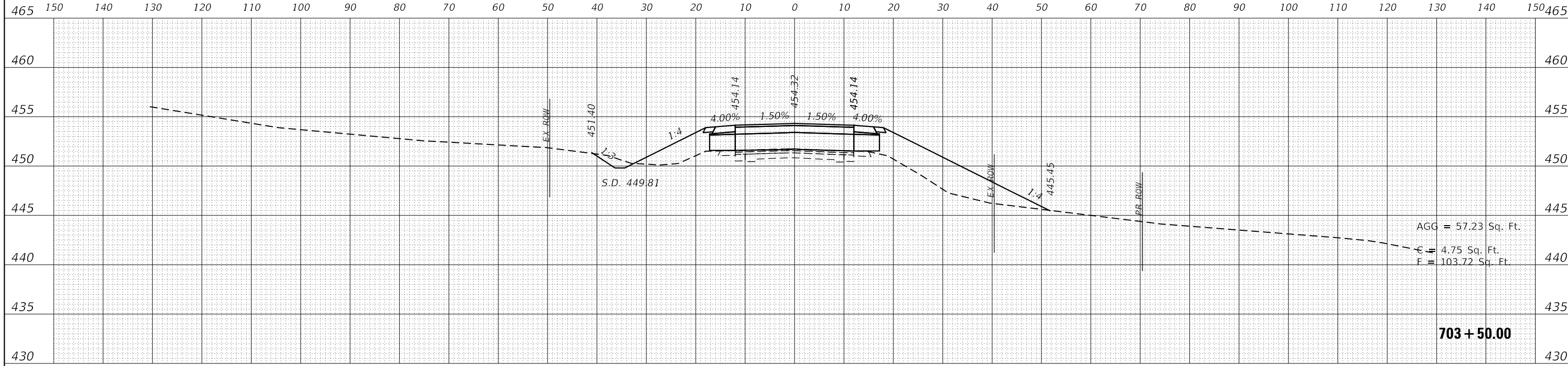
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

SCALE:	SHEET	OF	SHEETS	STA. 702+00.00 TO STA. 702+50.00
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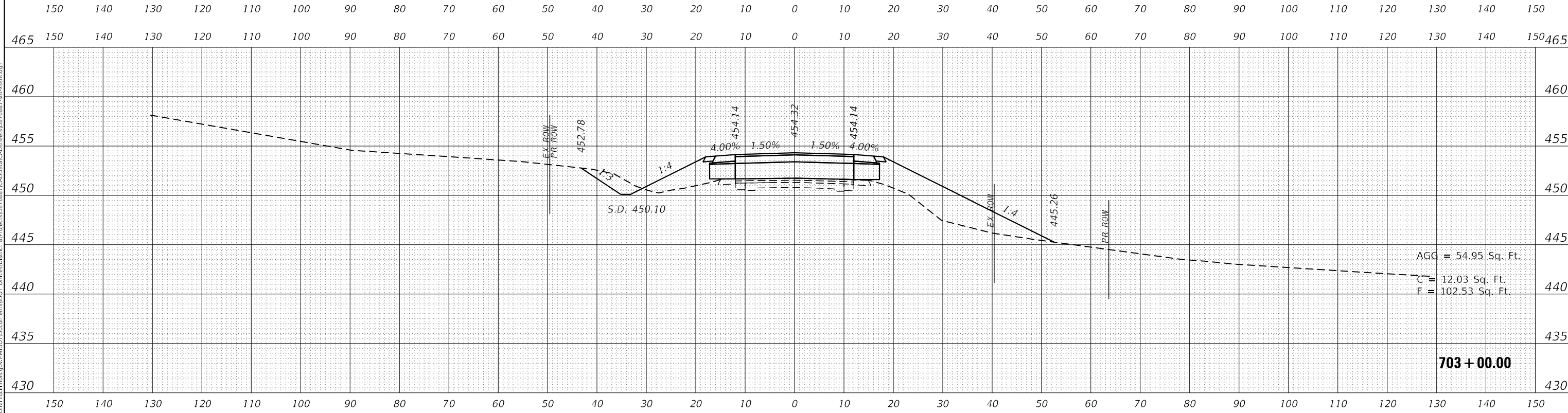
**CROSS SECTIONS  
(IL ROUTE 161)**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	185
CONTRACT NO. 76887				
ILLINOIS		FED. AID PROJECT		

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



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



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PLOT DATE = 8/10/2018	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
(IL ROUTE 161)**

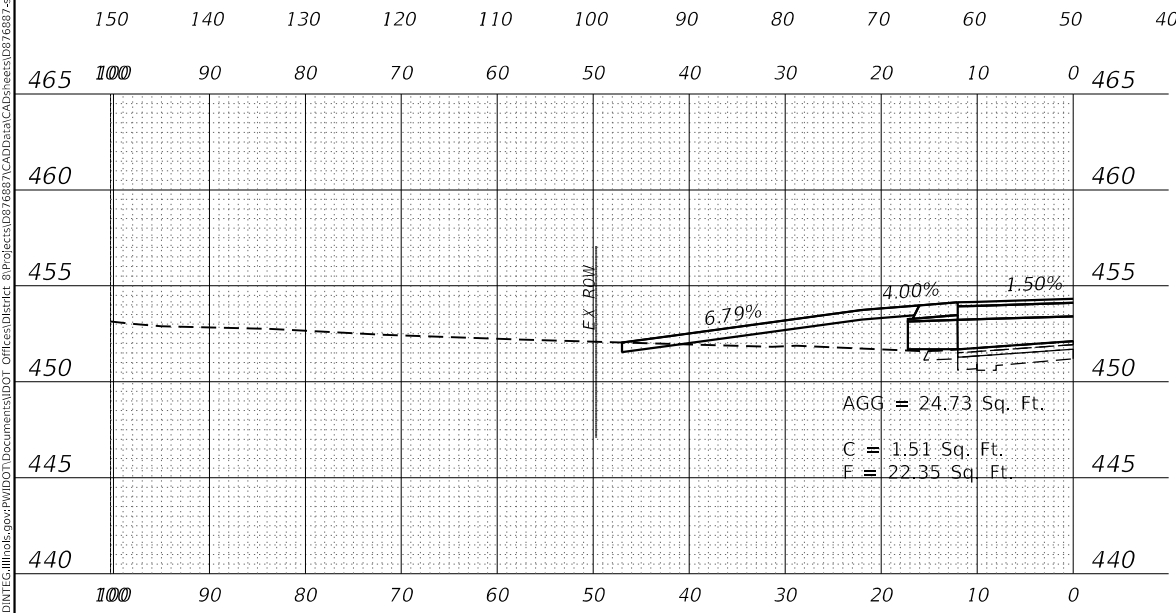
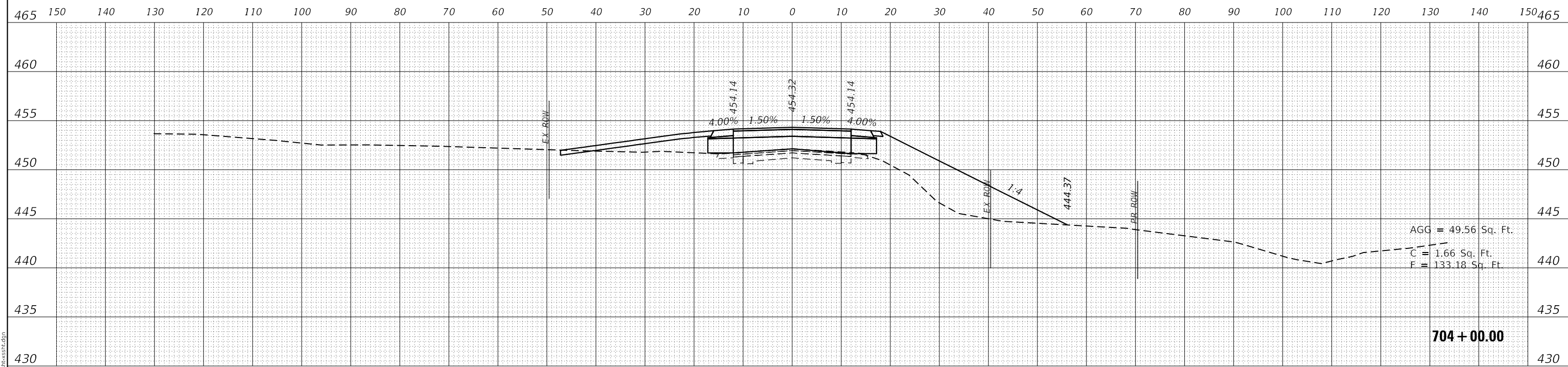
SCALE: SHEET OF SHEETS STA. 703+00.00 TO STA. 703+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	186
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

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

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

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USER NAME = freimthpd	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 8/10/2018	DATE -	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SCALE:		SHEET	OF	SHEETS	STA. 703+98.76 TO STA. 704+00.00
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CROSS SECTIONS  
 (IL ROUTE 161)

F.A.P. RTE. 805	SECTION 7BR, 7BR-1	COUNTY CLINTON	TOTAL SHEETS 259	SHEET NO. 187
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

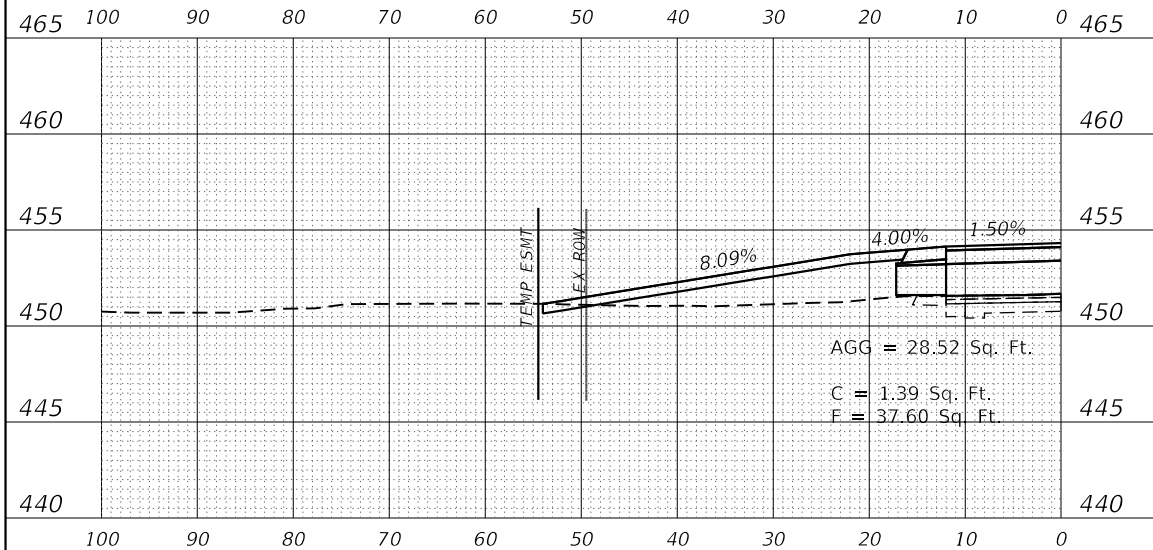




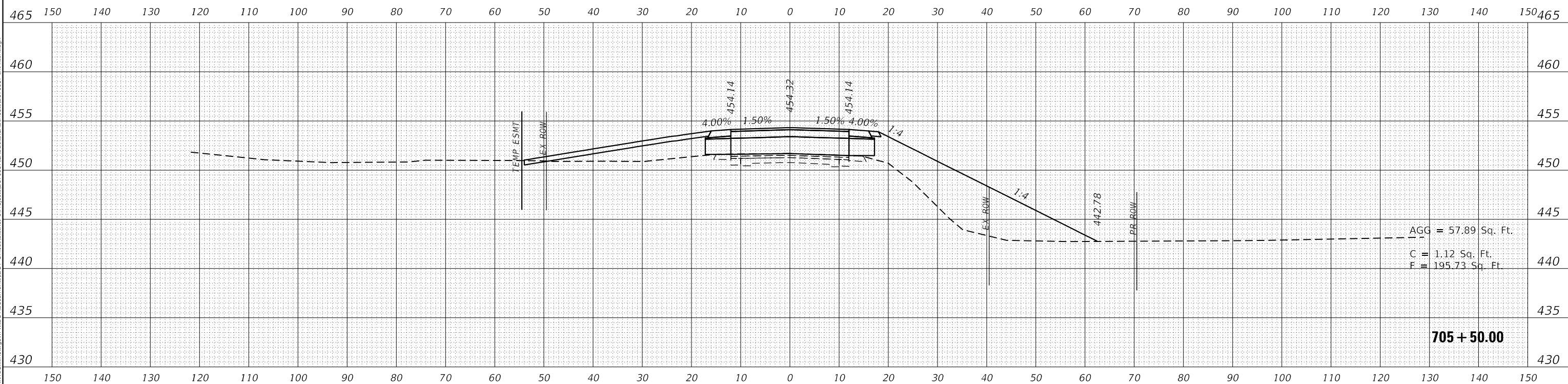
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SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	

ORIGINAL SURVEY NO.	DATE
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	

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**705 + 58.59**



**705 + 50.00**

USER NAME = freimuthpd	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 8/10/2018	DATE -	REVISED -

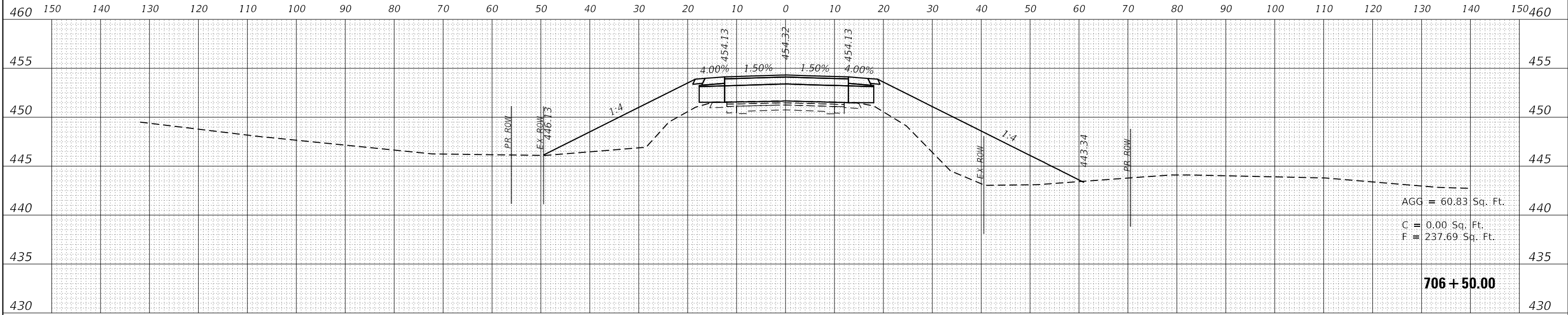
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
(IL ROUTE 161)**

SCALE: SHEET OF SHEETS STA. 705+50.00 TO STA. 705+58.59

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	189
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

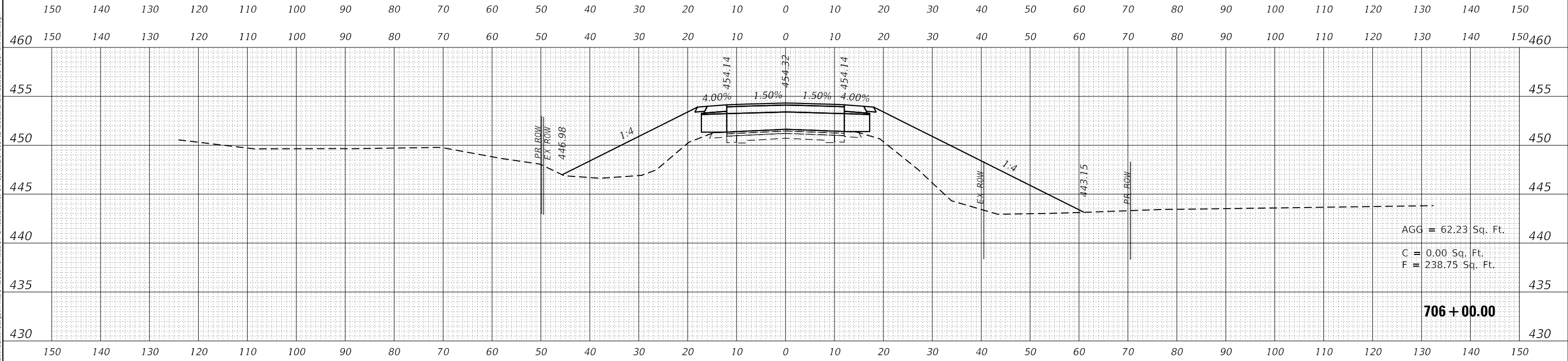
DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



AGG = 60.83 Sq. Ft.  
 C = 0.00 Sq. Ft.  
 F = 237.69 Sq. Ft.

**706 + 50.00**

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



AGG = 62.23 Sq. Ft.  
 C = 0.00 Sq. Ft.  
 F = 238.75 Sq. Ft.

**706 + 00.00**

MODEL: Defn.rur

FILE NAME: D:\ILLINOIS\BID\BID\TEC\Illinois\pwr\pwr\DOT\Documents\DOT\Office\District 8\Projects\0776887\CAD\Drawings\0776887-5-2018.rvt

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	DRAWN -	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 8/10/2018	DATE -	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

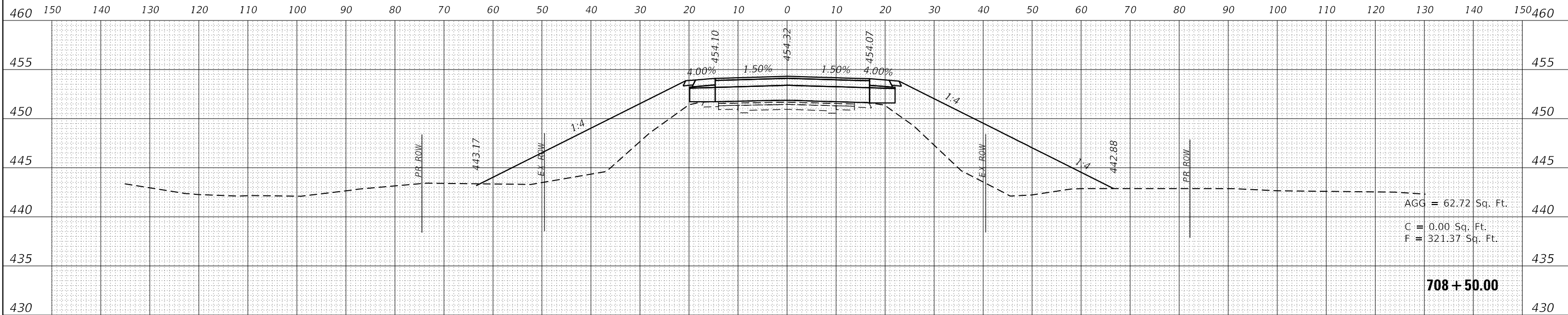
**CROSS SECTIONS  
 (IL ROUTE 161)**

SCALE: SHEET OF SHEETS STA. 706+00.00 TO STA. 706+50.00

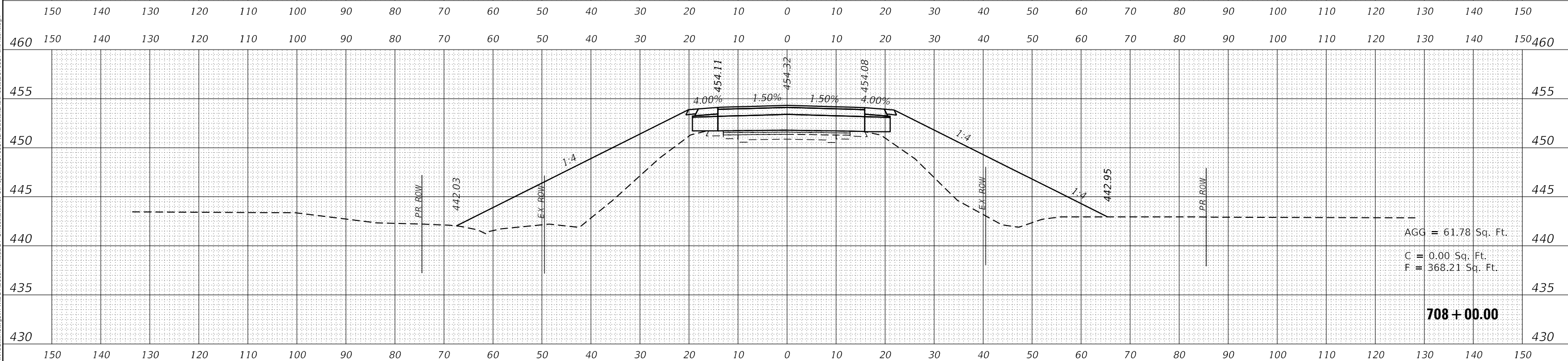
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	190
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				



DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



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	DRAWN -	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 8/10/2018	DATE -	REVISED -

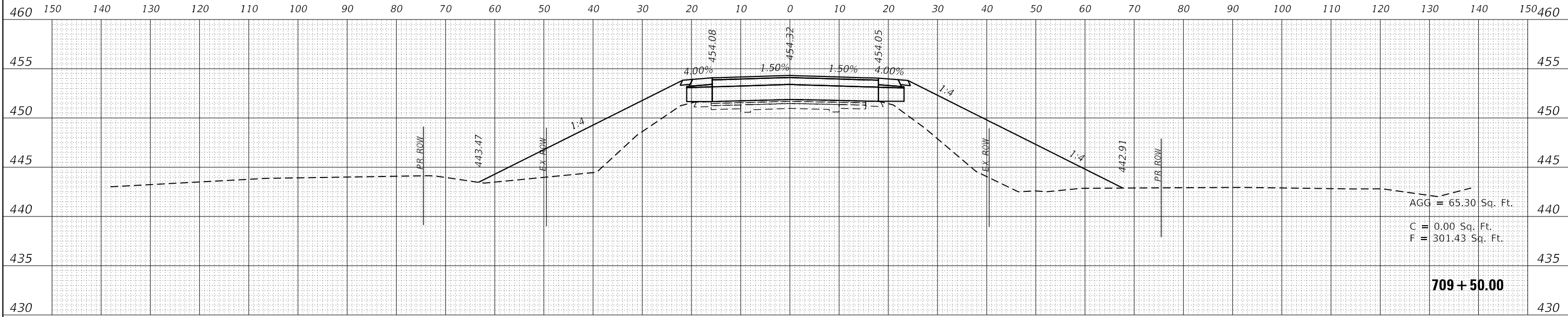
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
(IL ROUTE 161)**

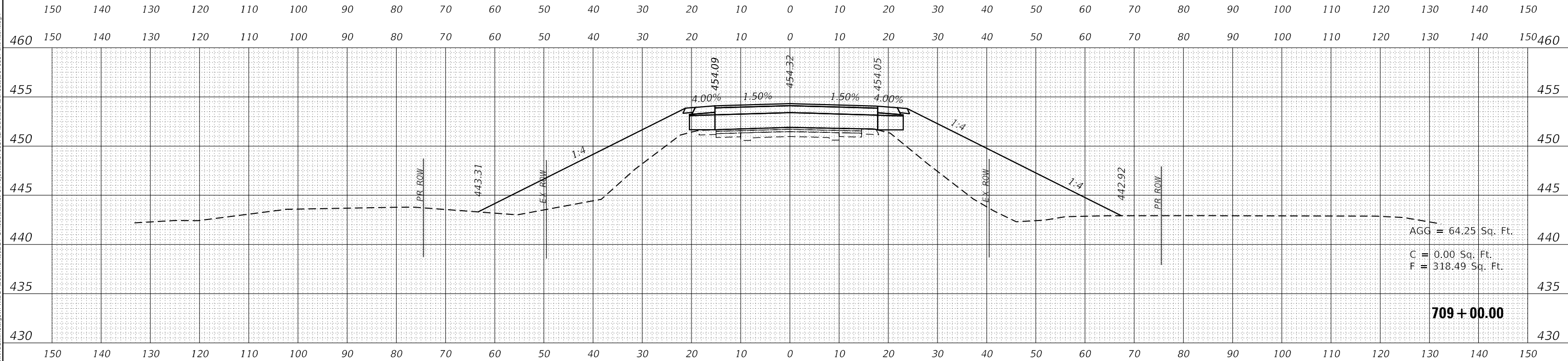
SCALE: SHEET OF SHEETS STA. 708+00.00 TO STA. 708+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	192
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



MODEL: Defn.rur

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	DRAWN -	REVISED -
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PLOT DATE = 8/10/2018	DATE -	REVISED -

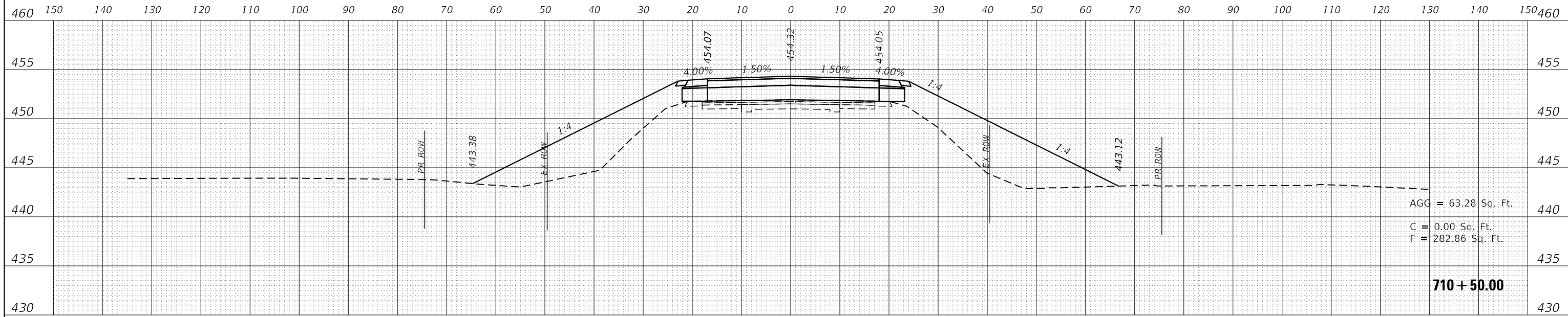
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
(IL ROUTE 161)**

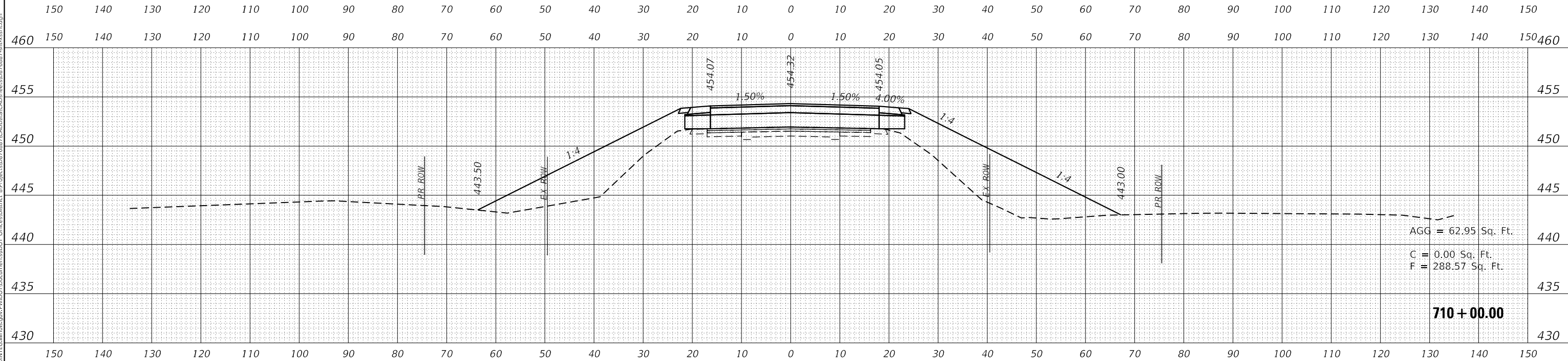
SCALE: SHEET OF SHEETS STA. 709+00.00 TO STA. 709+50.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	193
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

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



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



MODEL: Defnair  
 FILE NAME: D:\wul\84EB\BID\TEC\Illinois\pwr\WIDOT\Documents\IDOT\Office\District 8\Projects\0776887\CAD\Draws\0876887-5pvcxsect.dgn

USER NAME = freimuthpd	DESIGNED -	REVISED -
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PLOT DATE = 8/10/2018	CHECKED -	REVISED -
	DATE -	REVISED -

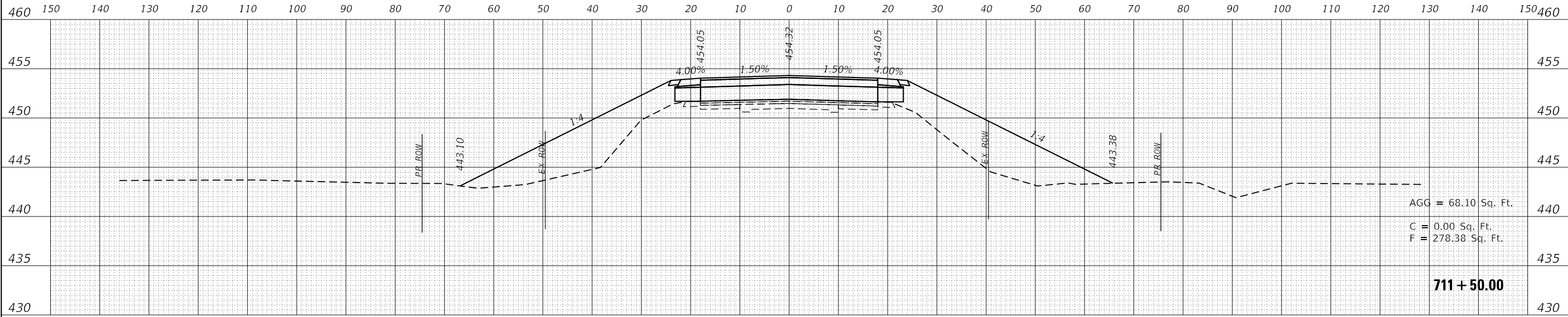
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
 (IL ROUTE 161)**

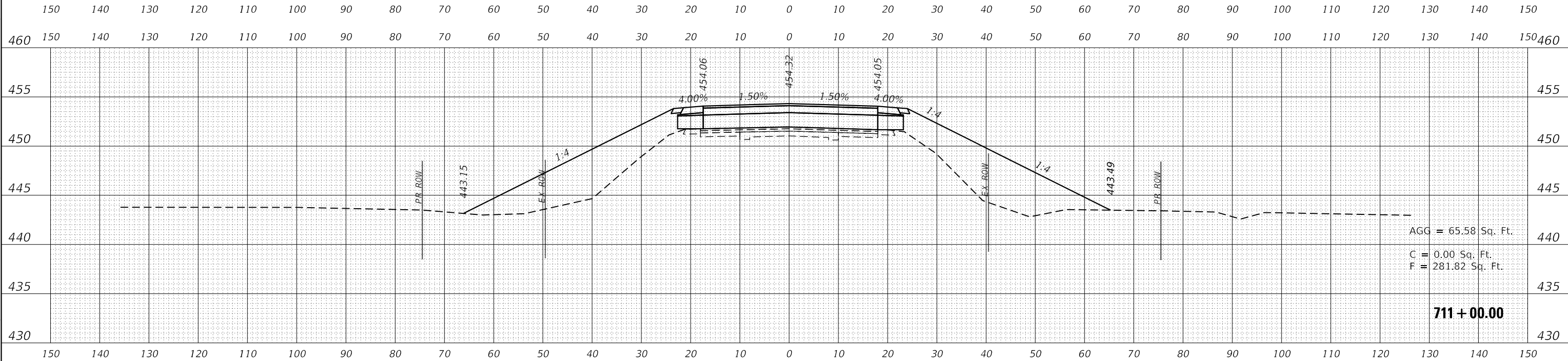
SCALE: SHEET OF SHEETS STA. 710+00.00 TO STA. 710+50.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	194
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

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



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



MODEL: Defn.rur  
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PLOT DATE = 8/10/2018	DATE -	REVISED -

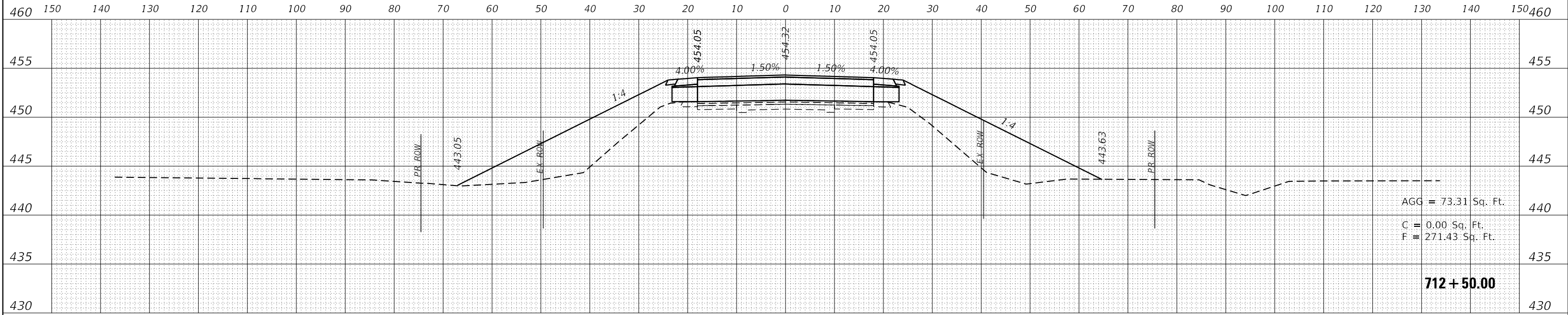
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
(IL ROUTE 161)**

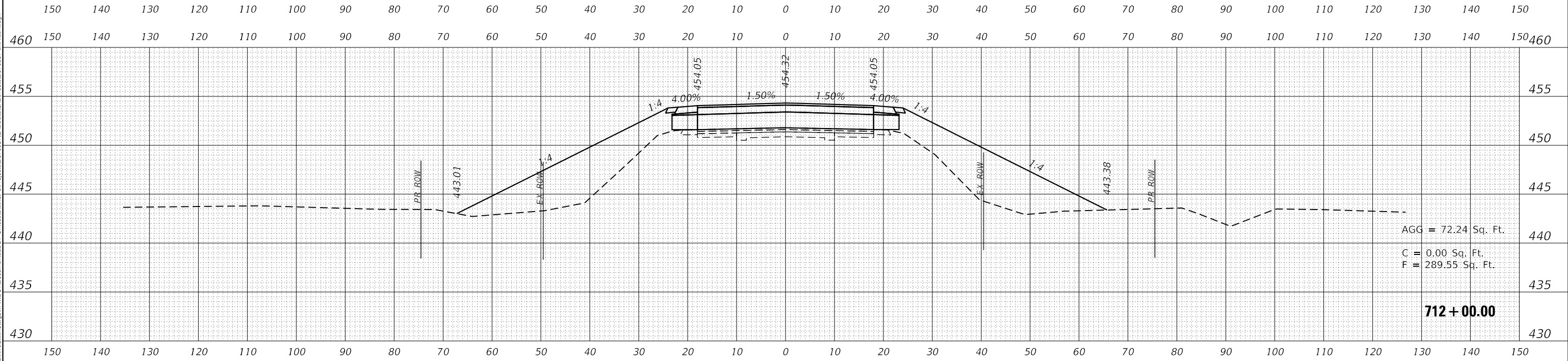
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F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	195
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

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



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



MODEL: Defn.rur

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	DRAWN -	REVISED -
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PLOT DATE = 8/10/2018	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

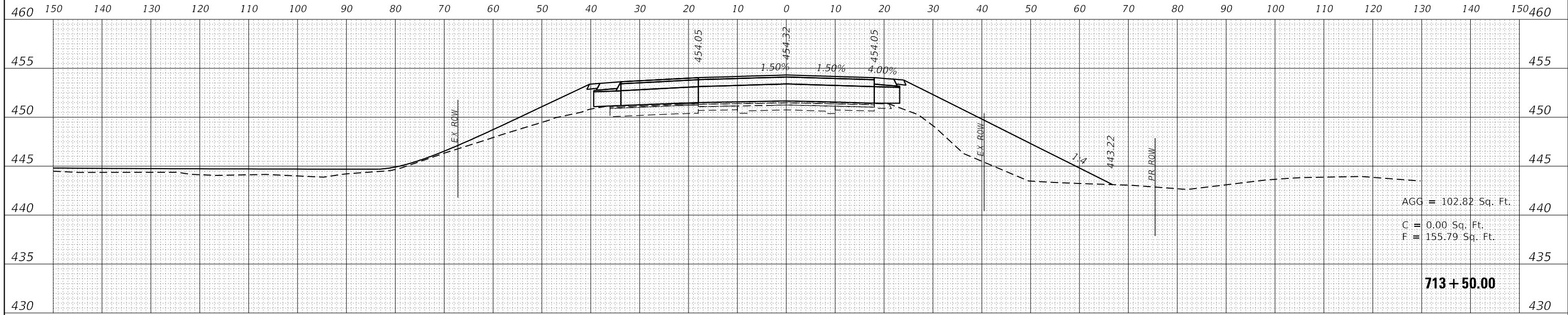
**CROSS SECTIONS  
(IL ROUTE 161)**

SCALE: SHEET OF SHEETS STA. 712+00.00 TO STA. 712+50.00

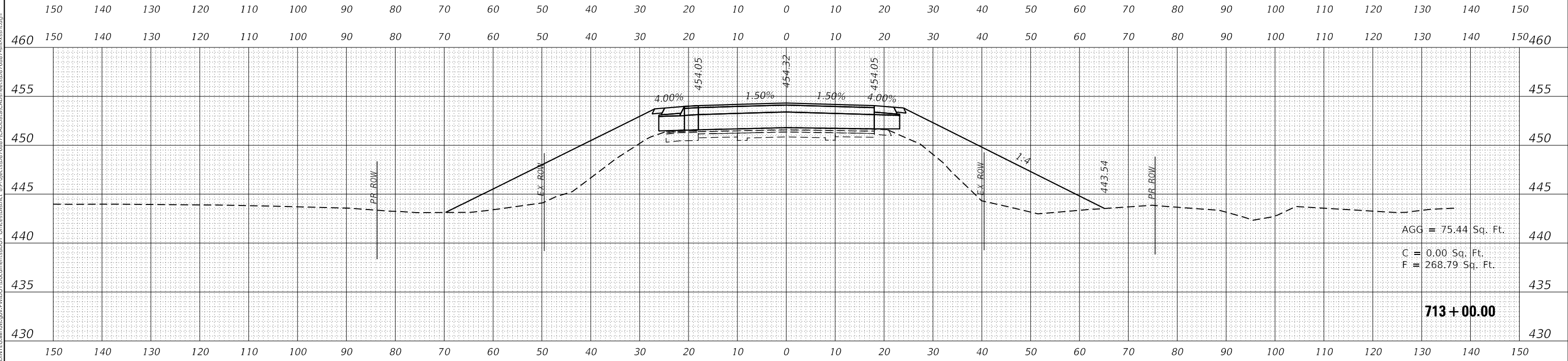
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	196
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				



DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



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		DRAWN -	REVISED -
PLOT SCALE =	20.0000' / in.	CHECKED -	REVISED -
PLOT DATE =	8/10/2018	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

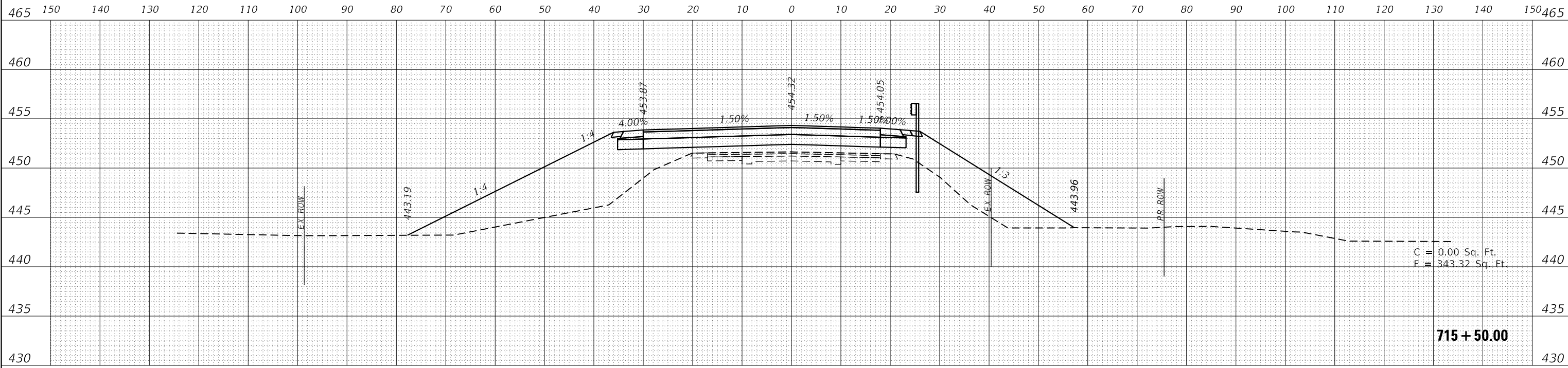
**CROSS SECTIONS  
(IL ROUTE 161)**

SCALE: SHEET OF SHEETS STA. 713+00.00 TO STA. 713+50.00

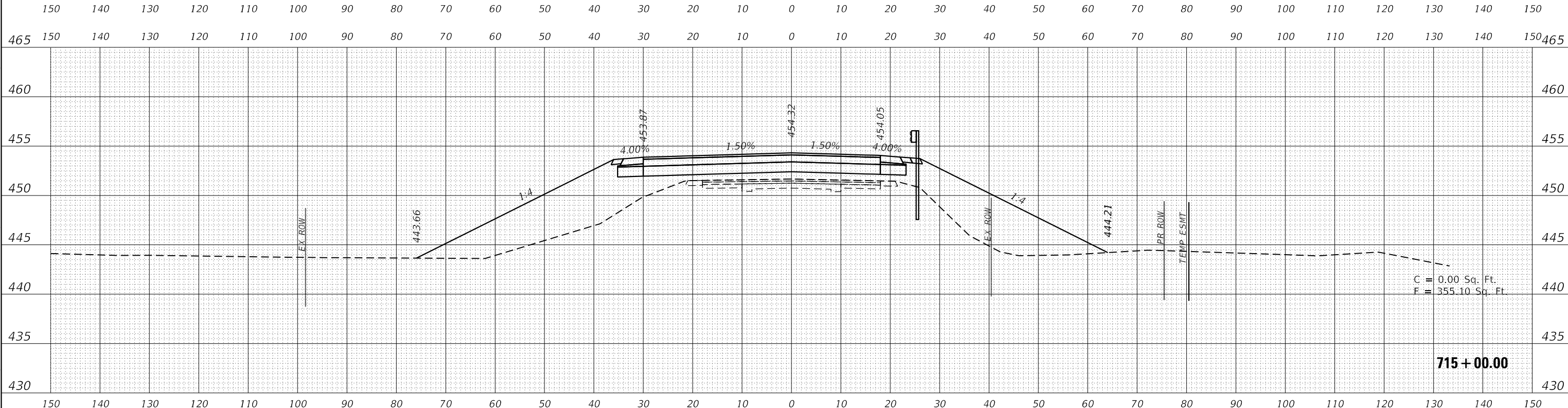
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	197
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				



DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



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



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PLOT SCALE = 20.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 8/10/2018	DATE -	REVISED -

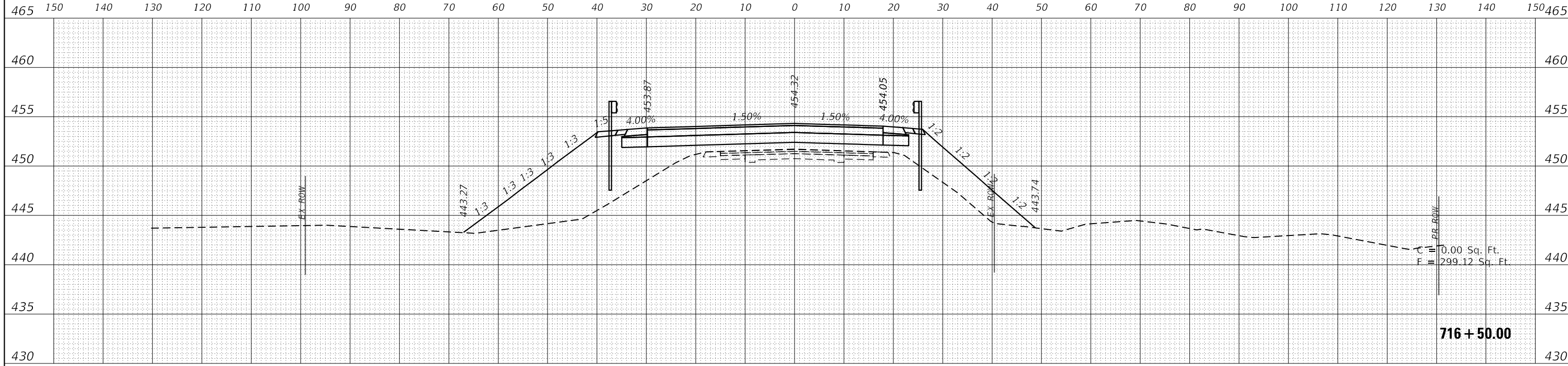
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
(IL ROUTE 161)**

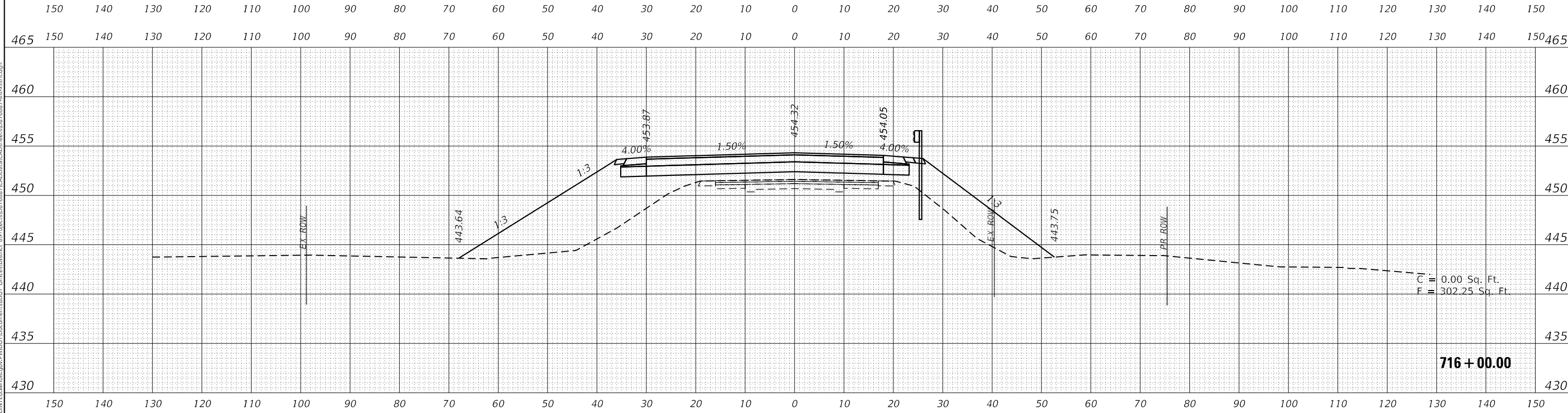
SCALE: SHEET OF SHEETS STA. 715+00.00 TO STA. 715+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	199
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



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



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USER NAME = freimuthpd	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 8/10/2018	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
(IL ROUTE 161)**

SCALE: SHEET OF SHEETS STA. 716+00.00 TO STA. 716+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
805	7BR, 7BR-1	CLINTON	259	200
CONTRACT NO. 76887				
ILLINOIS FED. AID PROJECT				