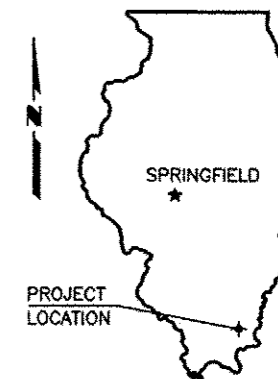




06-10-2016 LETTING ITEM 197

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR PROPOSED  
**SURFACE TRANSPORTATION PROGRAM**  
**OFF SYSTEM BRIDGE**  
COUNTY HIGHWAY 17 (HORSESHOE ROAD)  
COTTAGE TOWNSHIP

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 17	12-00153-00-BR	SALINE	16	1
PROJECT NO. BROS-0165(040)			CONTRACT NO. 99536	



SECTION 12-00153-00-BR  
PROJECT NO. BROS-0165(040)  
JOB NO. C-99-520-13  
BACKWATER CREEK

**SALINE COUNTY**

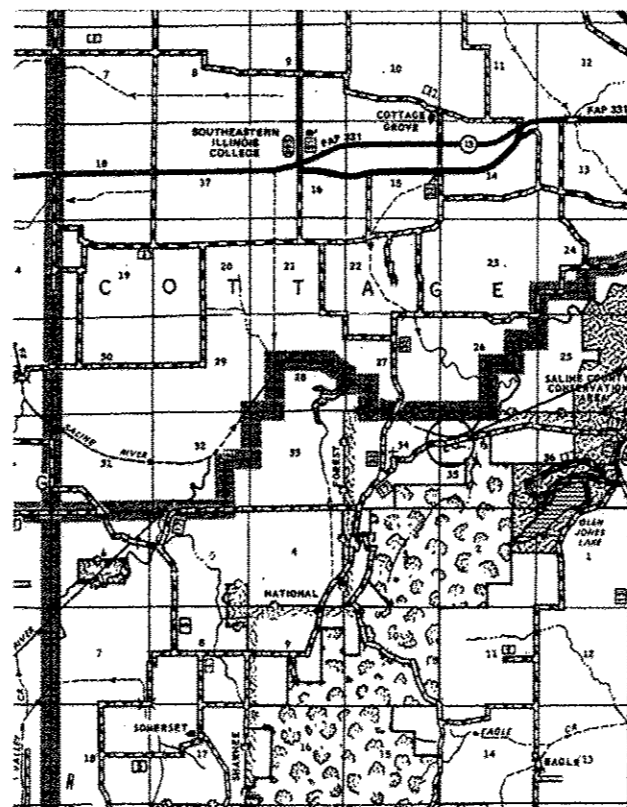
INDEX OF SHEETS

1. COVER SHEET
  2. PLAN & PROFILE
  3. GENERAL PLAN & ELEVATION
  4. 27" X 36" PPC DECK BEAM
  5. 27" X 36" PPC DECK BEAM DETAILS
  6. 27" X 48" PPC DECK BEAM
  7. 27" X 48" PPC DECK BEAM DETAILS
  8. ABUTMENT
  9. STEEL RAILING, TYPE S1
  10. NAME PLATES
  11. PILING DETAILS
  - 12.-16. CROSS SECTIONS
- STANDARDS
- |           |  |
|-----------|--|
| 000001-06 | STD SYMBOLS, ABBREVIATIONS & PATTERNS  |
| 280001-07 | TEMPORARY EROSION CONTROL SYSTEMS      |
| 630001-10 | STEEL PLATE BEAM GUARDRAIL             |
| 630301-06 | SHLDR WIDENING FOR TY 1 (SP) TERMINALS |
| 635001-02 | DELINEATORS                            |
| 701901-05 | TRAFFIC CONTROL DEVICES                |
| 725001    | OBJECT AND TERMINAL MARKERS            |
| 782006    | GR & BARR WALL REFLECTOR MNTG DETAILS  |
| BLR 21-9  | TYP APPLICATION OF TRAF CONTR DEVICES  |
| BLR 27-1  | TRAFFIC BARRIER TERMINAL, TYPE 5A      |

SUMMARY OF QUANTITIES

CODE NO.	PAY ITEM	UNIT	TOTAL
* X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.7
20200100	EARTH EXCAVATION	CU YD	5
* 20300100	CHANNEL EXCAVATION	CU YD	17
* 20400100	BORROW EXCAVATION	CU YD	3,890
25100630	EROSION CONTROL BLANKET	SQ YD	2,307
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	70
28000305	TEMPORARY DITCH CHECKS	FOOT	10
28000400	PERIMETER EROSION BARRIER	FOOT	1,752
* 28100809	STONE DUMPED RIPRAP, CLASS A5	TON	280
* 40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	1,080
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	29
50300225	CONCRETE STRUCTURES	CU YD	22.4
50300280	CONCRETE ENCASEMENT	CU YD	2.7
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1,684
50800105	REINFORCEMENT BARS	POUND	2,670
△ 50900205	STEEL RAILING, TYPE S1	FOOT	142
51201400	FURNISHING STEEL PILES HP10X42	FOOT	452
51202305	DRIVING PILES	FOOT	452
51500100	NAME PLATES	EACH	1
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	18
△ 63000003	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	FOOT	625
△ 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	4
△ 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
67100100	MOBILIZATION	LSUM	1
△ 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
△ 78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	13

\* SEE SPECIAL PROVISIONS  
△ SPECIALTY ITEMS



**LOCATION MAP**

SCALE: 1" = 2 MILES

NET LENGTH OF IMPROVEMENT = 950.00 FT. = 0.1799 MILES

CLASSIFICATION : LOCAL ROAD (RURAL)  
ADT : 175  
DESIGN SPEED : 40 MPH

CONTRACT NO. 99536



*John S. Peradotti 3/9/16*  
John S. Peradotti  
PROFESSIONAL ENGINEER  
#062-050510  
EXPIRES NOV. 30, 2017

**E. MILLER ENGINEERING, INC.**  
CONSULTING ENGINEERS  
HARRISBURG, ILLINOIS

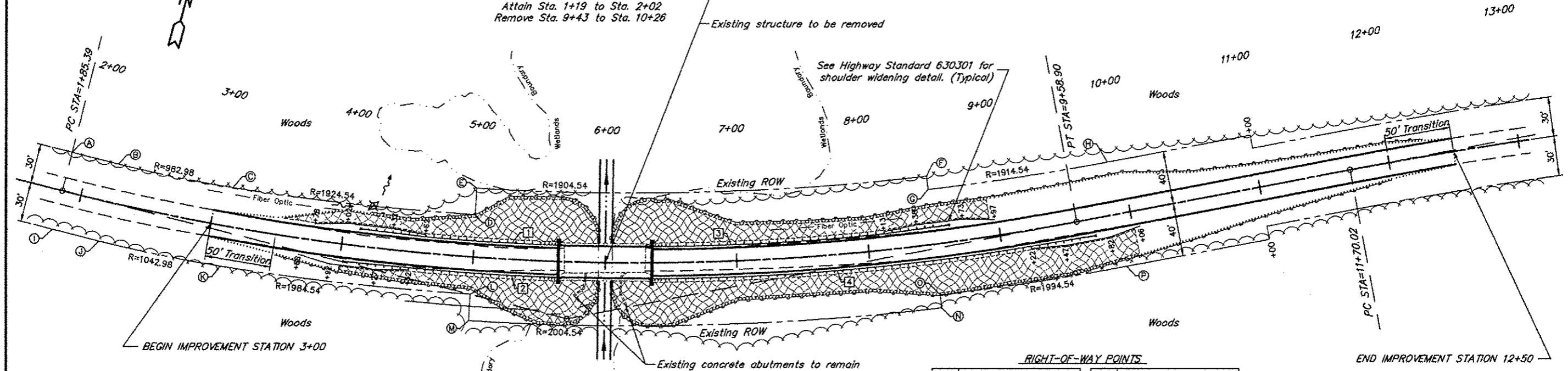
ILLINOIS DEPARTMENT OF TRANSPORTATION	
Approved	03-11-16 <i>[Signature]</i> Saline County Engineer
Passed	3/28/2016 <i>[Signature]</i> District 9 Engineer of Local Roads and Streets
Releasing for Bid Based on Limited Review	3/28/2016 <i>[Signature]</i> Jeffrey L. Keirn, P.E. Region Five Engineer

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
CH 17	12-00153-00-BR	SALINE	16	2
PROJECT NO. BROS-165(40)			CONTRACT NO. 99536	

BM - Iron Pin  
@ Sta. 10+00.02  
El. 359.12

**CURVE DATA**  
PI Sta. 5+78.39  
Δ = 24°58'53" T = 393.00'  
D = 3°13'47" L = 773.51'  
R = 1774.08' E = 43.01'  
S.E. = 0.028'/ft.  
Attain Sta. 1+19 to Sta. 2+02  
Remove Sta. 9+43 to Sta. 10+26

Station 6+00 - Single span precast prestressed concrete deck beam bridge  
71'-9" bk-bk Abutments



**EROSION CONTROL LEGEND**

- Clearing & Grading Limits
- Perimeter Erosion Barrier
- Temporary Ditch Check
- Flow Indicator
- Erosion Control Blanket

SCALES:  
1" = 80' HOR  
1" = 10' VER

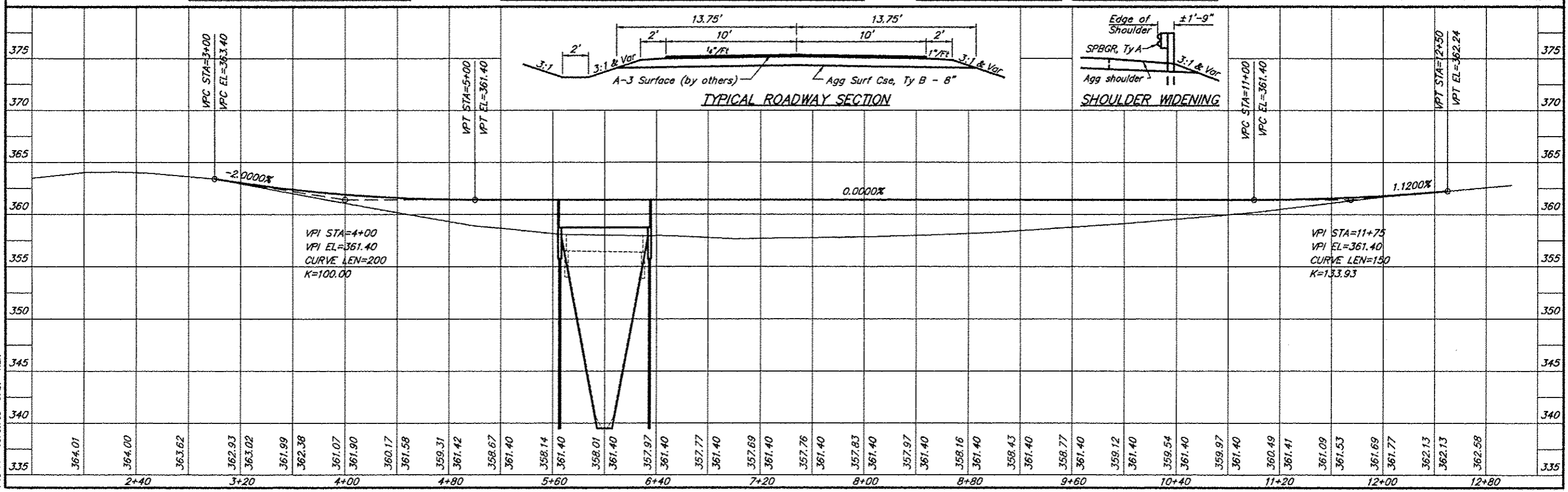
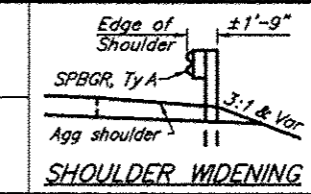
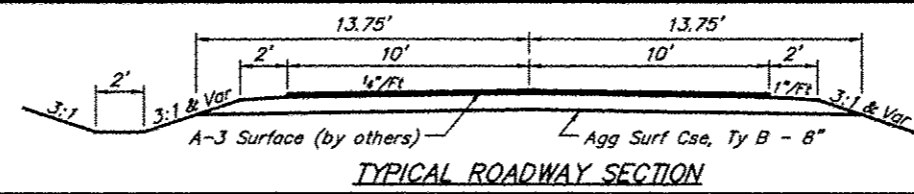
**GUARDRAIL**

ITEM	KEY			
	1	2	3	4
TRAF BAR TERMINAL, TY 5A	1 EA	1 EA	1 EA	1 EA
SPBGR, TY A, 8 FT POSTS	87.5 FT	100.0 FT	162.5 FT	275.0 FT
TRAF BAR TERM, TY 1 SP (TAN)	1 EA	1 EA	1 EA	1 EA

**RIGHT-OF-WAY POINTS**

KEY	LOCATION	KEY	LOCATION
A	30.00' LT STA 1+89.39	I	30.00' RT STA 1+89.39
B	29.63' LT STA 2+22.15	J	30.36' RT STA 2+20.92
C	29.52' LT STA 3+11.65	K	30.47' RT STA 3+12.74
D	32.00' LT STA 4+99.23	L	28.00' RT STA 4+99.73
E	52.00' LT STA 4+99.08	M	48.00' RT STA 4+99.89
F	51.66' LT STA 8+50.47	N	48.33' RT STA 8+49.45
G	41.66' LT STA 8+50.36	O	38.33' RT STA 8+49.55
H	40.00' LT STA 9+89.94	P	40.00' RT STA 9+89.94

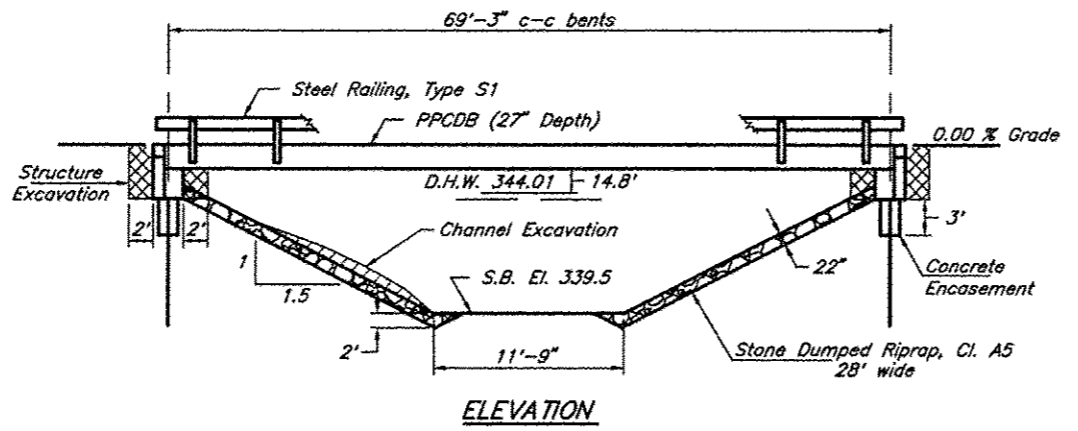
**CURVE DATA**  
R=3179.56  
D=1°48'07"  
S.E. = 0.020'/ft.  
Attain Sta. 11+13 to Sta. 11+82



746 PP 03/10/16 1029 RLH

B.M. - Iron Pin  
 @ Station 10+00.02  
 El. 359.12

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
CH 17	12-00153-00-BR	SALINE	16	3
PROJECT NO. BR05-0165(040)			CONTRACT NO. 99536	



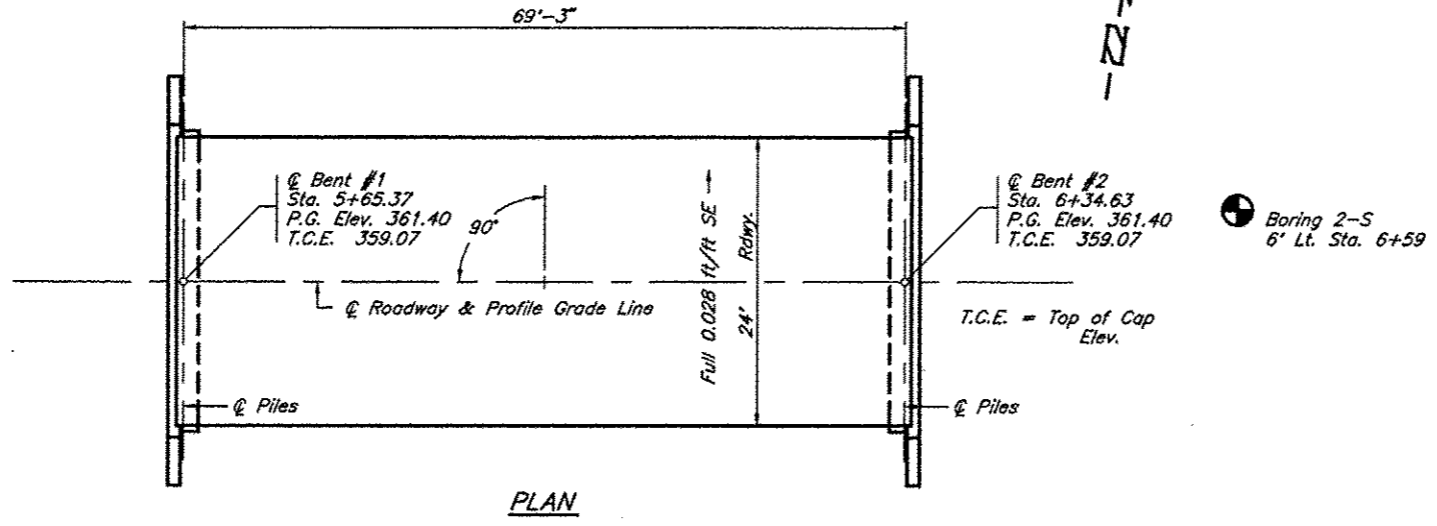
Existing Structure - 3 Span timber deck with steel stringers on timber spill-thru pile bent piers and abutments. 22.0' Wide x 68.0' Long.

**GENERAL NOTES**

- Steel H piles shall meet AASHTO M270 Grade 50 specifications.
- See special provisions for boring logs.
- A Corrosion inhibitor, as covered in the Standard Specifications, shall be used in the precast prestressed concrete deck beams.

**TOTAL BILL OF MATERIAL**

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Channel Excavation	Cu. Yds.			17	17
Stone Dumped Riprap, Cl. A5	Tons			280	280
Removal of Existing Structures	Each			1	1
Structure Excavation	Cu. Yds.			29	29
Concrete Structures	Cu. Yds.			22.4	22.4
Concrete Encasement	Cu. Yds.			2.7	2.7
P.P. Conc. Dk. Bm. 27" Dp.	Sq. Ft.	1,684			1,684
Reinforcement Bars	Pound			2,670	2,670
Steel Railing, Type S1	Foot	142			142
Furnishing Steel Piles HP10x42	Foot			452	452
Driving Piles	Foot			452	452
Name Plates	Each			1	1



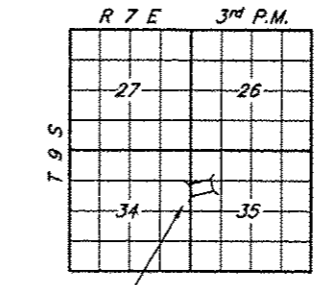
Boring 1-S  
 8' Rt. Sta. 5+32

Boring 2-S  
 6' Lt. Sta. 6+59

BACKWATER CREEK  
 SEC. 12-00153-00-BR BUILT 20\_\_\_\_  
 SALINE COUNTY  
 LOADING HL-93  
 STR. NO. 083-3247

**LETTERING FOR NAME PLATE**

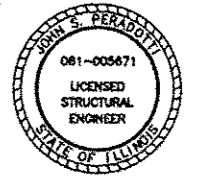
Locate Name Plate at southwest Corner of Bridge (See Sheet 10)



**LOCATION SKETCH**

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

John S. Peradotti 3/9/16  
 John S. Peradotti  
 S.E. #81-5671  
 Expires Nov. 30, 2016



**PILE DATA (2-ABUTS.)**

Type & Size : HP10x42  
 Nominal Required Bearing : 329 kips  
 Factored Resistance Available : Refusal  
 Estimated Length : 53 Ft. Bent #1, 60 Ft. Bent #2  
 Number Required : 8

**DESIGN SPECIFICATIONS**

2014 AASHTO LRFD Bridge Design Specifications and all applicable interims.

**LOADING HL-93**

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

**SEISMIC DATA**

Soil Site Class = C  
 Design Spectral Acceleration at 0.2 sec. (S<sub>DS</sub>) = 0.686  
 Design Spectral Acceleration at 1.0 sec. (S<sub>D1</sub>) = 0.250  
 Seismic Performance Zone (SPZ) = 2

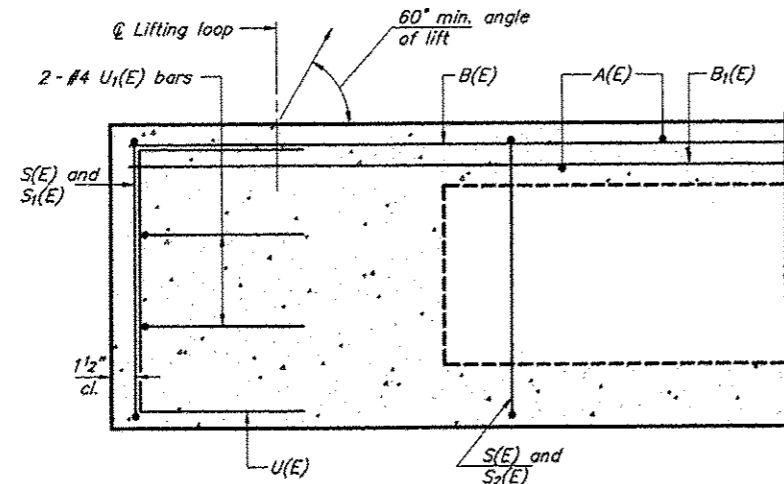
**WATERWAY INFORMATION**

Drainage Area = 0.56 Sq. Mi.		Low Grade Elev. = 361.40		At Sta. 6+00					
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural H.W.E.	Head-Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	20	1405	82.0	83.5	344.01				
Base	100	2740	115.4	117.7	345.27				
Overtopping									
Max. Calc.	500	3410	129.5	132.6	345.77				

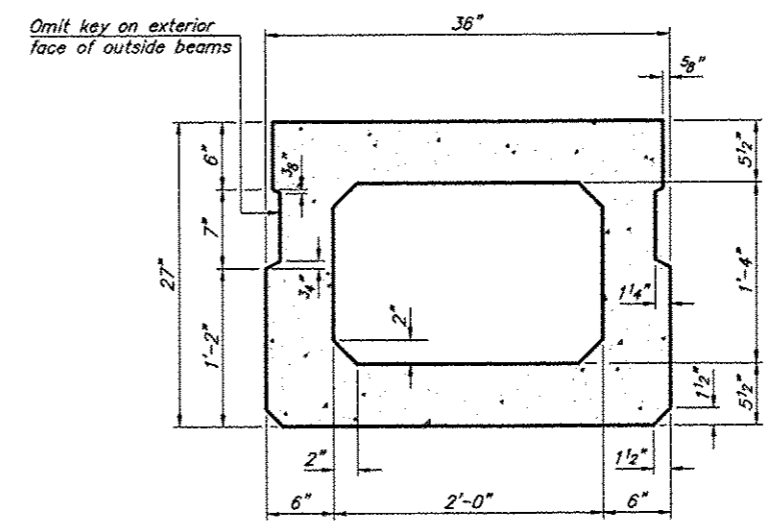
Note: Backwater from the Saline and Ohio Rivers controls the flow through the bridge at levels above minimal stream flows.

GENERAL PLAN & ELEVATION  
 COUNTY HIGHWAY 17 (HORSESHOE ROAD)  
 BACKWATER CREEK  
 SECTION 12-00153-00-BR  
 SALINE COUNTY  
 STRUCTURE NO. 083-3247

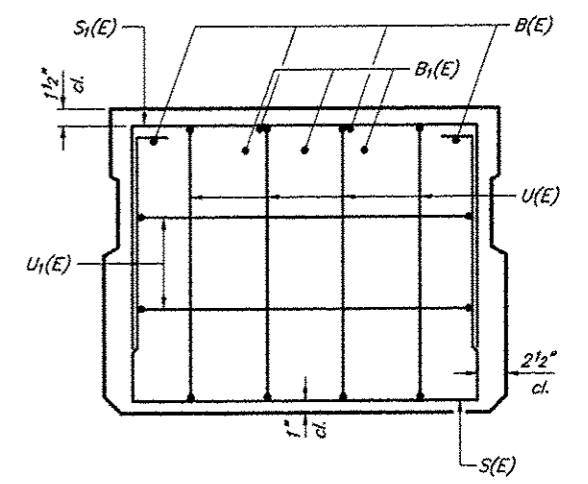
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 17	12-00153-00-BR	SALINE	16	4
PROJECT NO. BROS-0165(040)			CONTRACT NO. 99536	



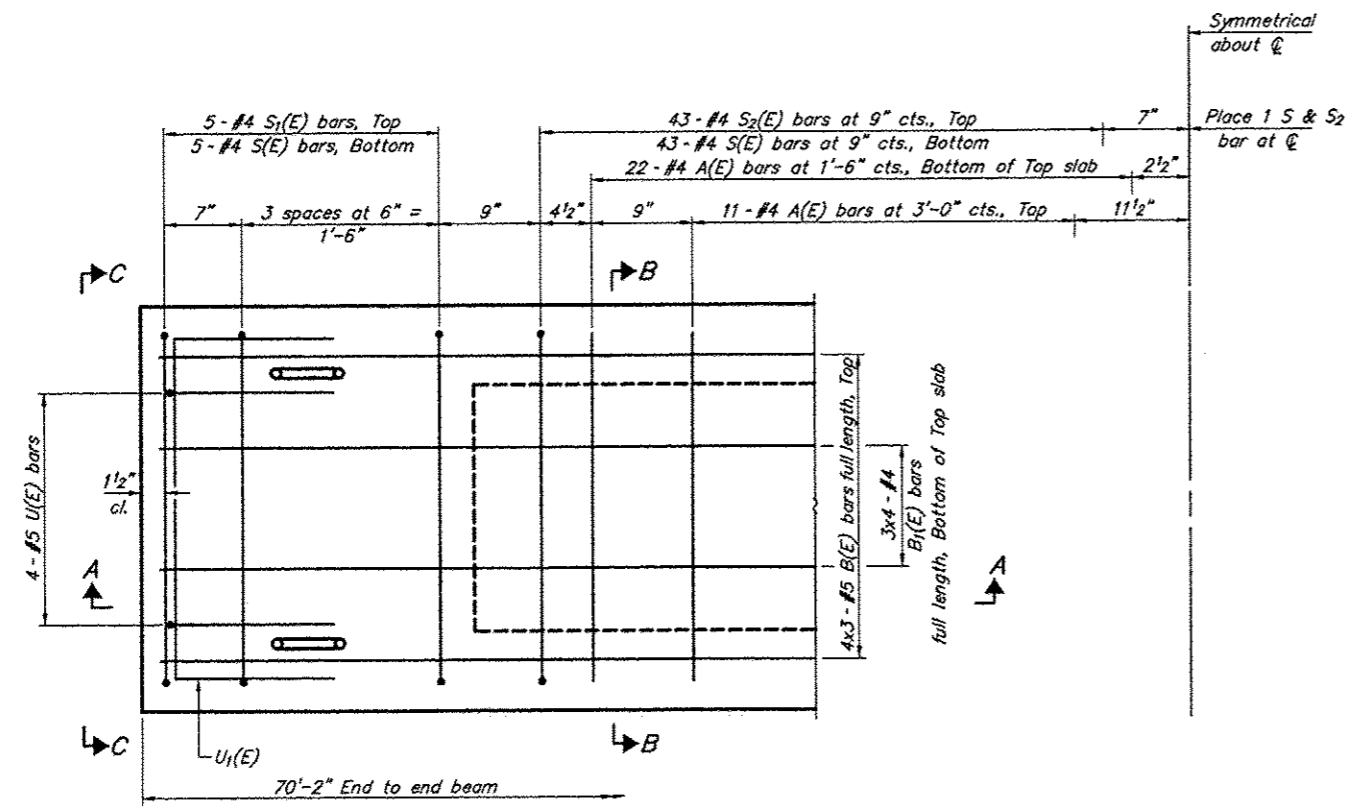
SECTION A-A



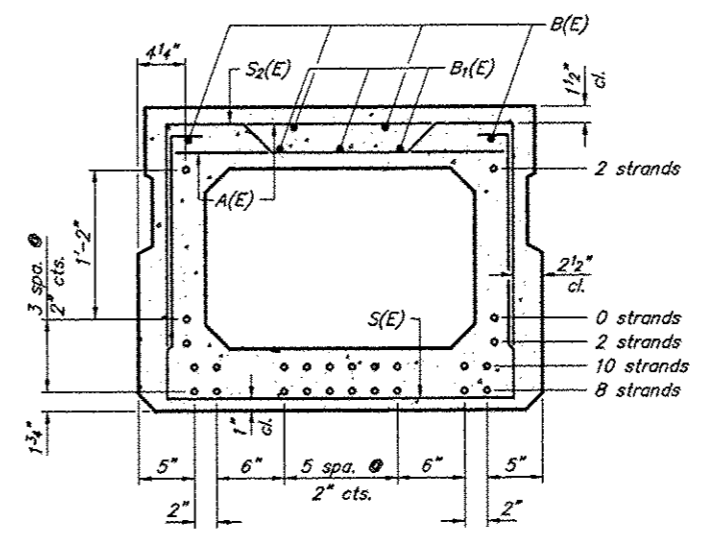
SECTION B-B  
(Showing dimensions)



VIEW C-C



PLAN VIEW



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

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

Bar	No.	Size	Length	Shape
A(E)	66	#4	2'-7"	—
B(E)	12	#5	25'-0"	—
B1(E)	12	#4	19'-0"	—
S(E)	97	#4	7'-5"	□
S1(E)	10	#4	5'-11"	□
S2(E)	87	#4	6'-2"	□
U(E)	8	#5	4'-6"	□
U1(E)	4	#4	5'-0"	□

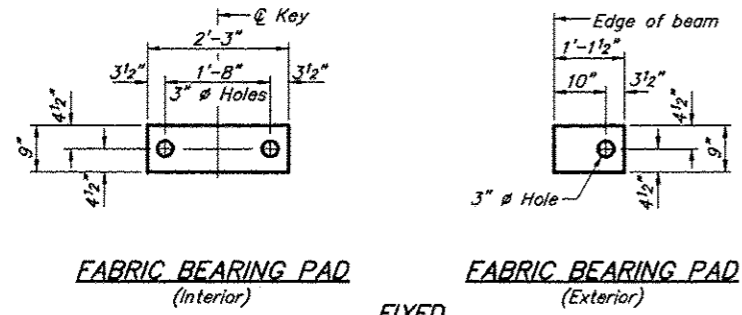
Notes:  
See sheet 5 of 16 for additional details and Bill of Materials.  
Bars noted thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.

Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

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

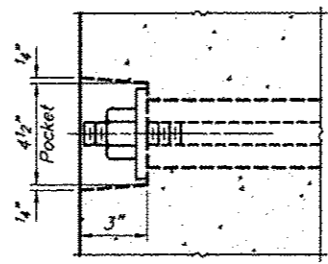
27" X 36" PPC DECK BEAM  
COUNTY HIGHWAY 17 (HORSESHOE ROAD)  
BACKWATER CREEK  
SECTION 12-00153-00-BR  
SALINE COUNTY  
STRUCTURE NO. 083-3247

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
CH 17	12-00153-00-BR	SALINE	16	5
PROJECT NO. BROS-0165(040)			CONTRACT NO. 99536	

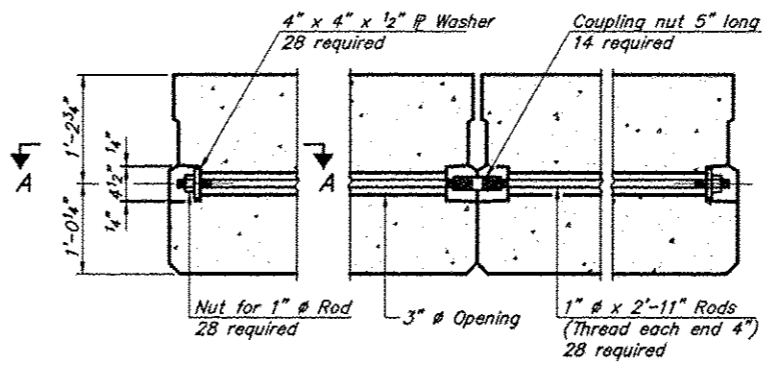


**FABRIC BEARING PAD (Interior)**  
**FABRIC BEARING PAD (Exterior)**

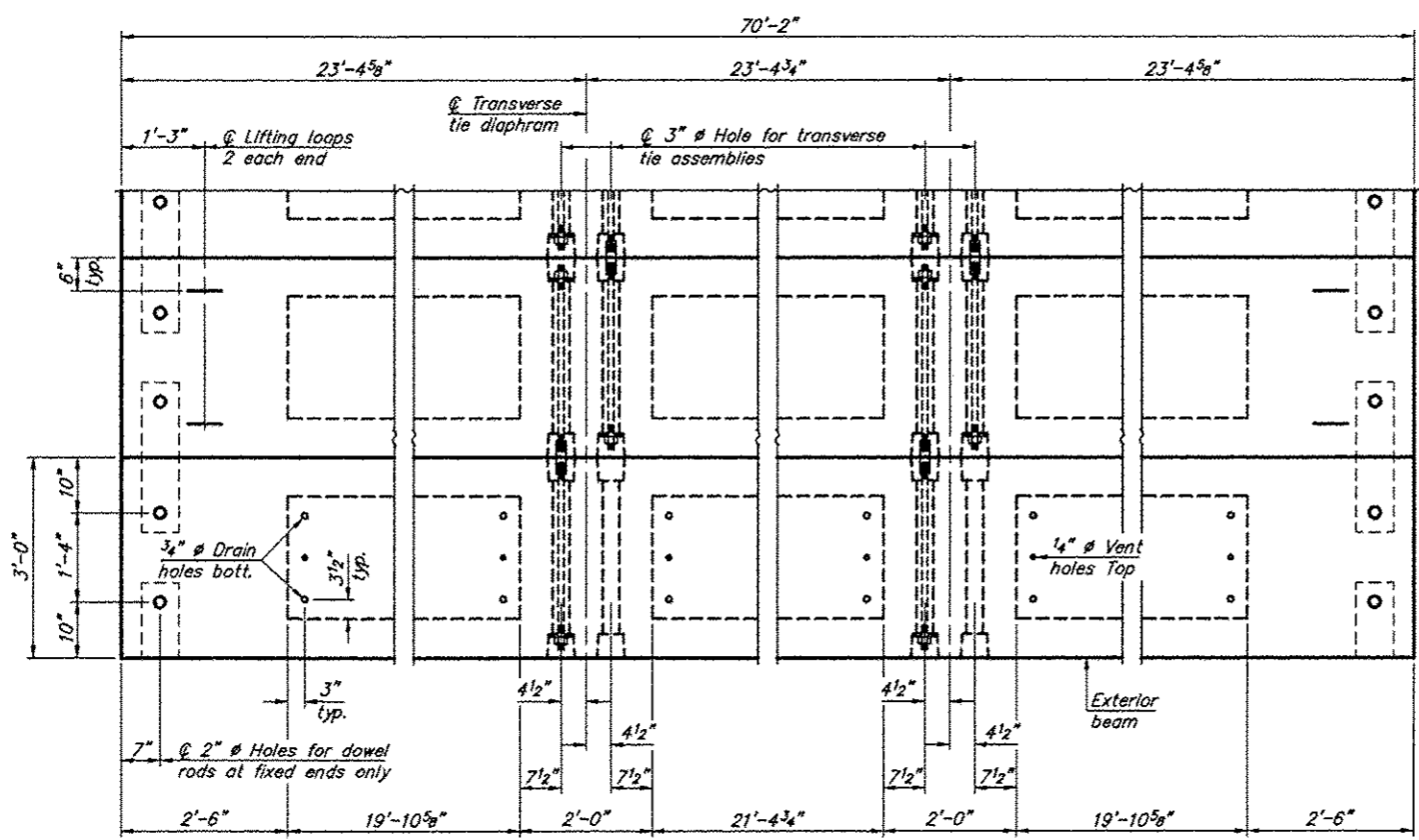
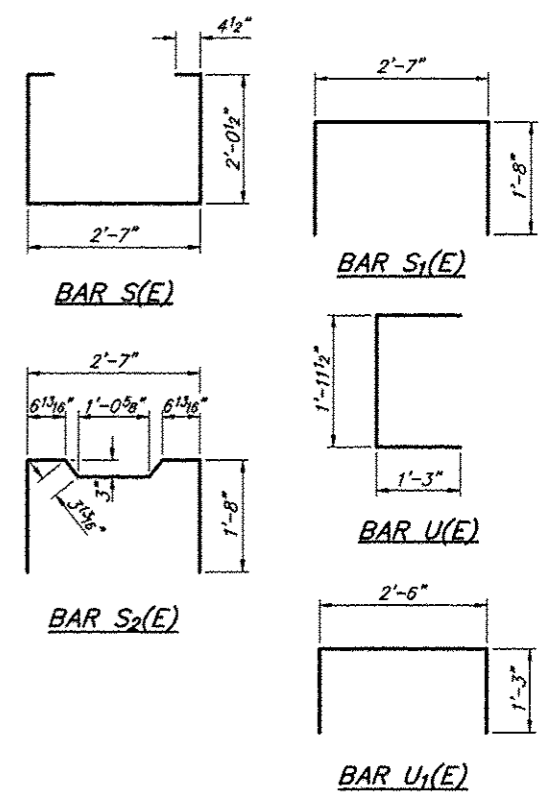
**Notes:**  
All bearing pads shall be 1" thick.  
Omit holes when using expansion bearings.  
Expansion bearing pads shall be bonded to the substructure.



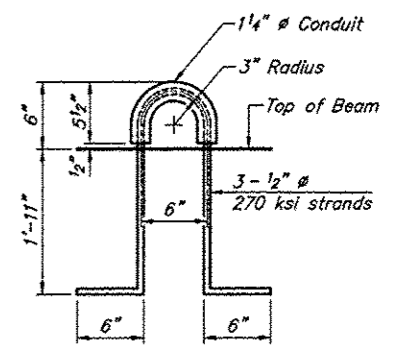
**SECTION A-A**



**TYPICAL TRANSVERSE TIE ASSEMBLY**



**PLAN VIEW**

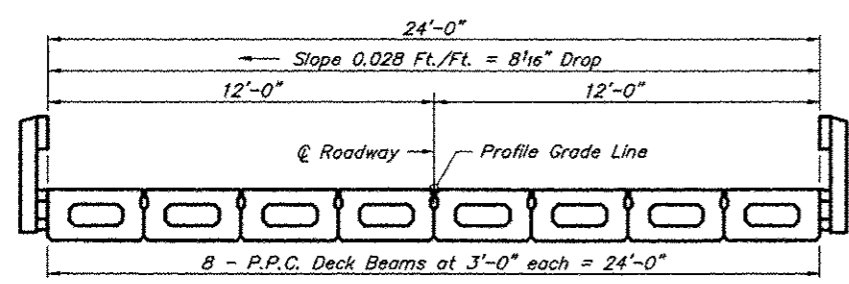


**LIFTING LOOP DETAIL**

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

**NOTES**

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" diameter rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.  
Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).  
Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.  
A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling.  
Corrosion inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.  
Compressive strength of prestressed concrete, f'c, shall be 6000 psi.  
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.



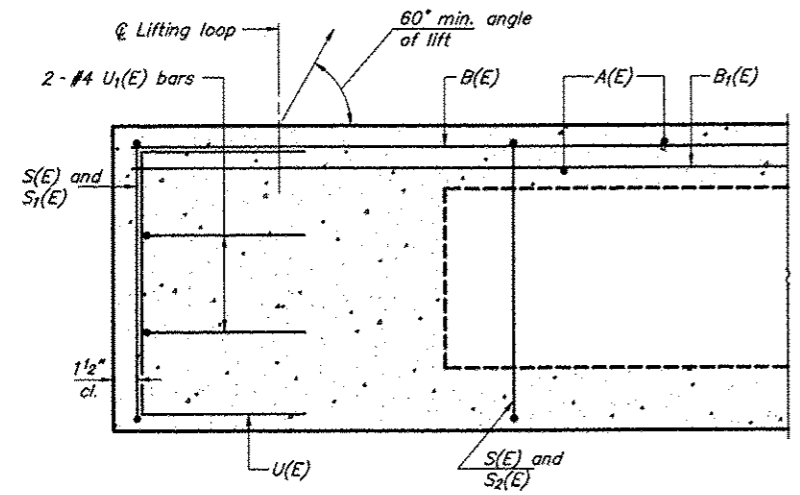
**CROSS SECTION**

**BILL OF MATERIAL**

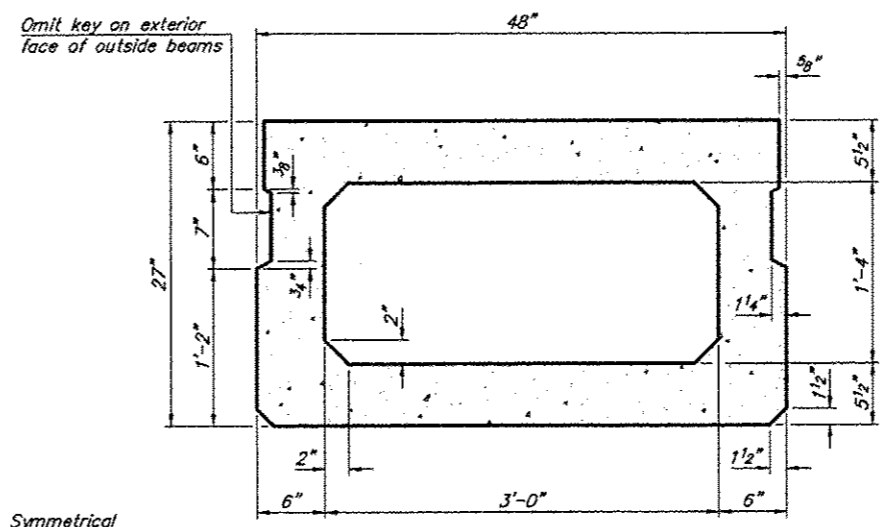
Precast Prestressed Concrete Deck Beams (27" depth)	Sq. Ft. 1,694
---	---------------

**27" X 36" PPC DECK BEAM DETAILS**  
**COUNTY HIGHWAY 17 (HORSESHOE ROAD)**  
**BACKWATER CREEK**  
**SECTION 12-00153-00-BR**  
**SALINE COUNTY**  
**STRUCTURE NO. 083-3247**

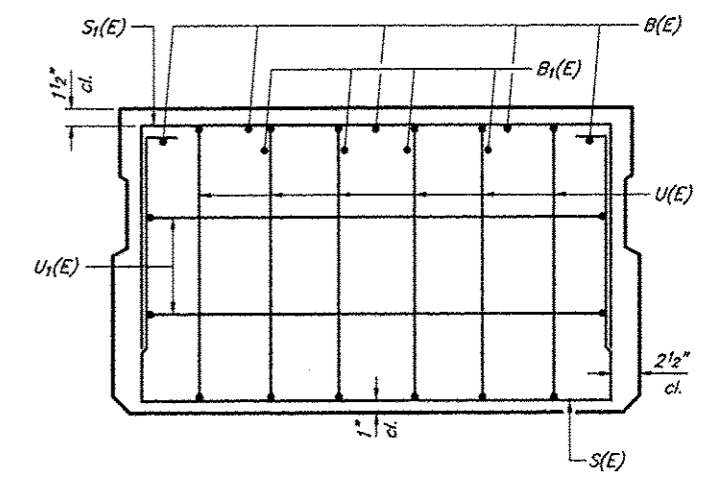
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
CH 17	12-00153-00-BR	SALINE	16	6
PROJECT NO. BROS-0165(040)			CONTRACT NO. 98536	



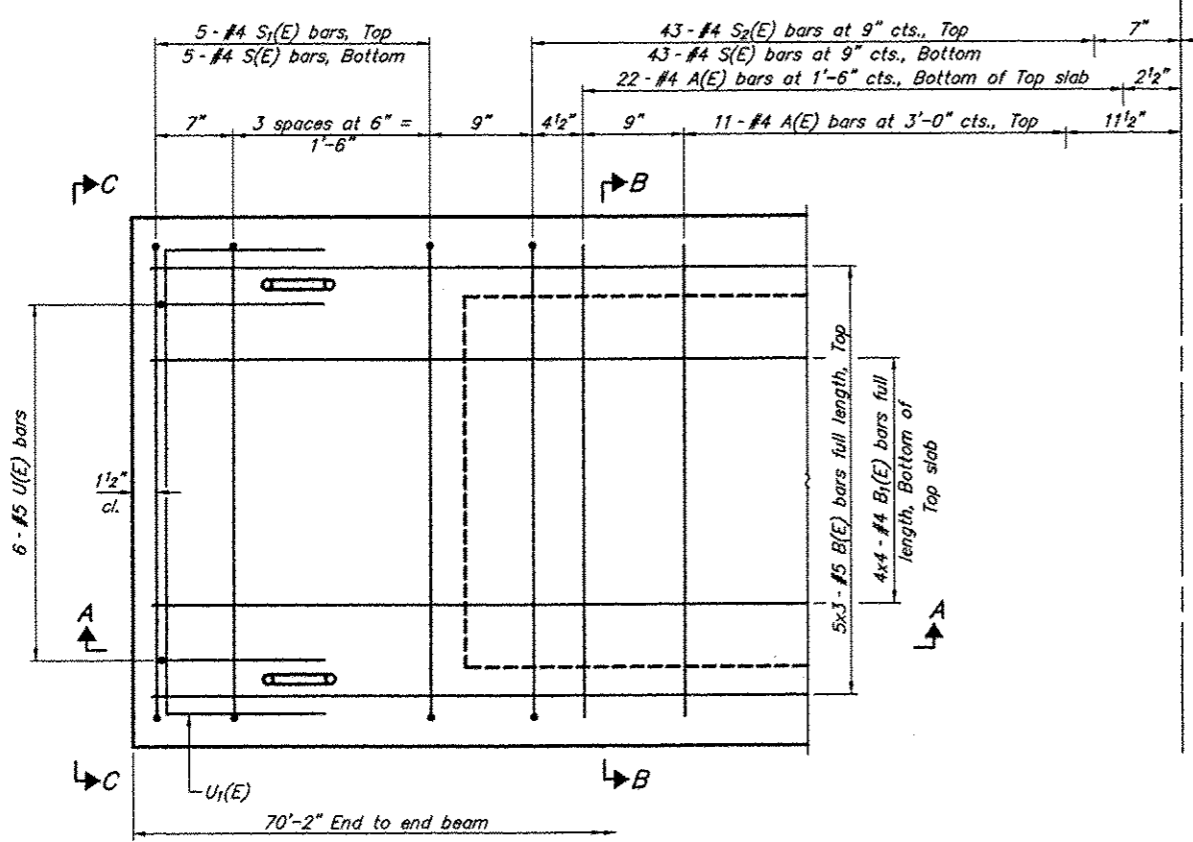
SECTION A-A



SECTION B-B  
(Showing dimensions)

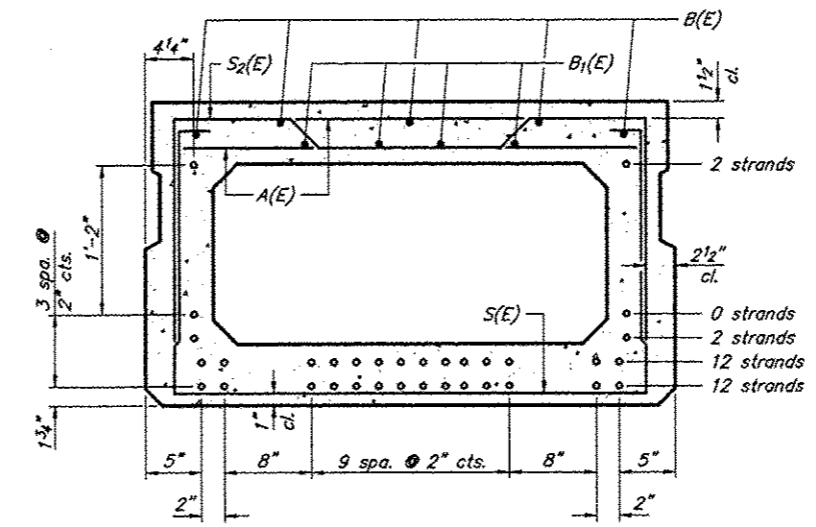


VIEW C-C



PLAN VIEW

Symmetrical about  $\bar{C}$   
Place 1 S & S<sub>2</sub> bar at  $\bar{C}$



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

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

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

Bar	No.	Size	Length	Shape
A(E)	66	#4	3'-7"	—
B(E)	15	#5	25'-0"	—
B1(E)	16	#4	19'-0"	—
S(E)	97	#4	8'-5"	□
S1(E)	10	#4	6'-11"	□
S2(E)	87	#4	7'-2"	□
U(E)	12	#5	4'-6"	□
U1(E)	4	#4	6'-0"	□

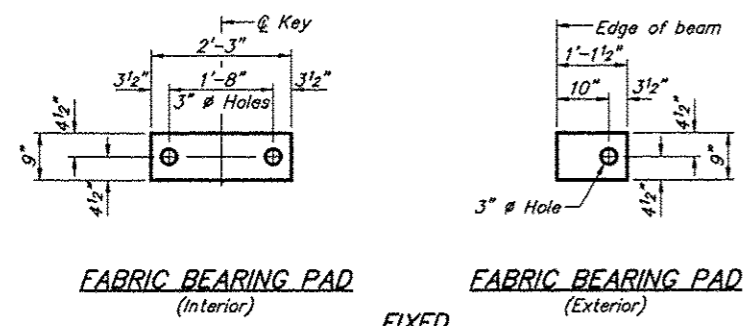
Notes:  
See sheet 7 of 16 for additional details and Bill of Materials.  
Bars noted thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.

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

Note: Spacing of S(E) and S<sub>2</sub>(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

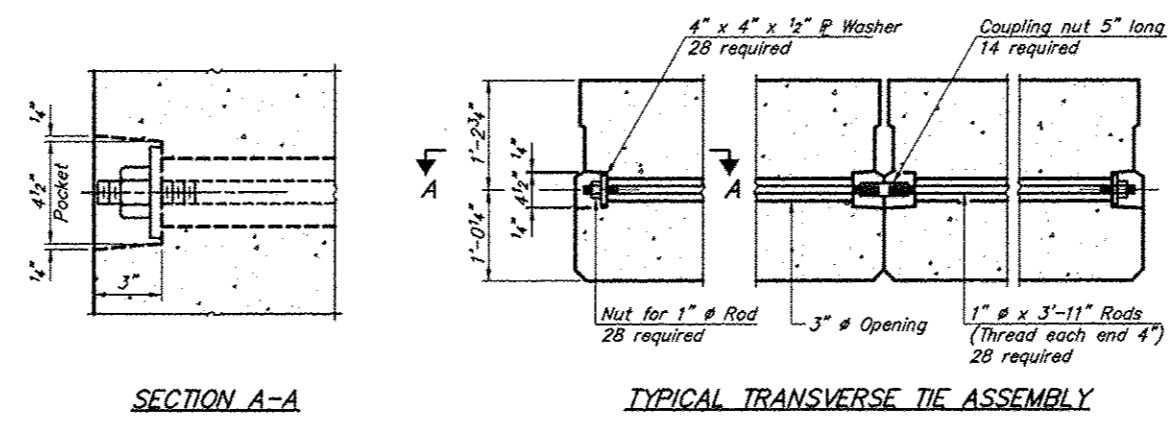
27" X 48" PPC DECK BEAM  
COUNTY HIGHWAY 17 (HORSESHOE ROAD)  
BACKWATER CREEK  
SECTION 12-00153-00-BR  
SALINE COUNTY  
STRUCTURE NO. 083-3247

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
CH 17	12-00153-00-BR	SALINE	16	7
PROJECT NO. BROS-0165(040)			CONTRACT NO. 99536	

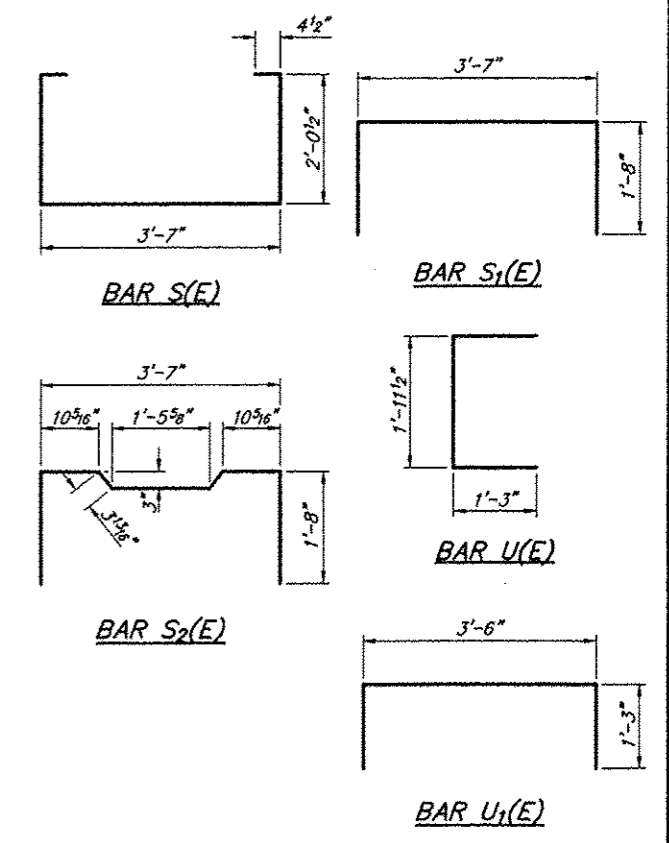


**FABRIC BEARING PAD**  
(Interior) **FIXED**  
**FABRIC BEARING PAD**  
(Exterior)

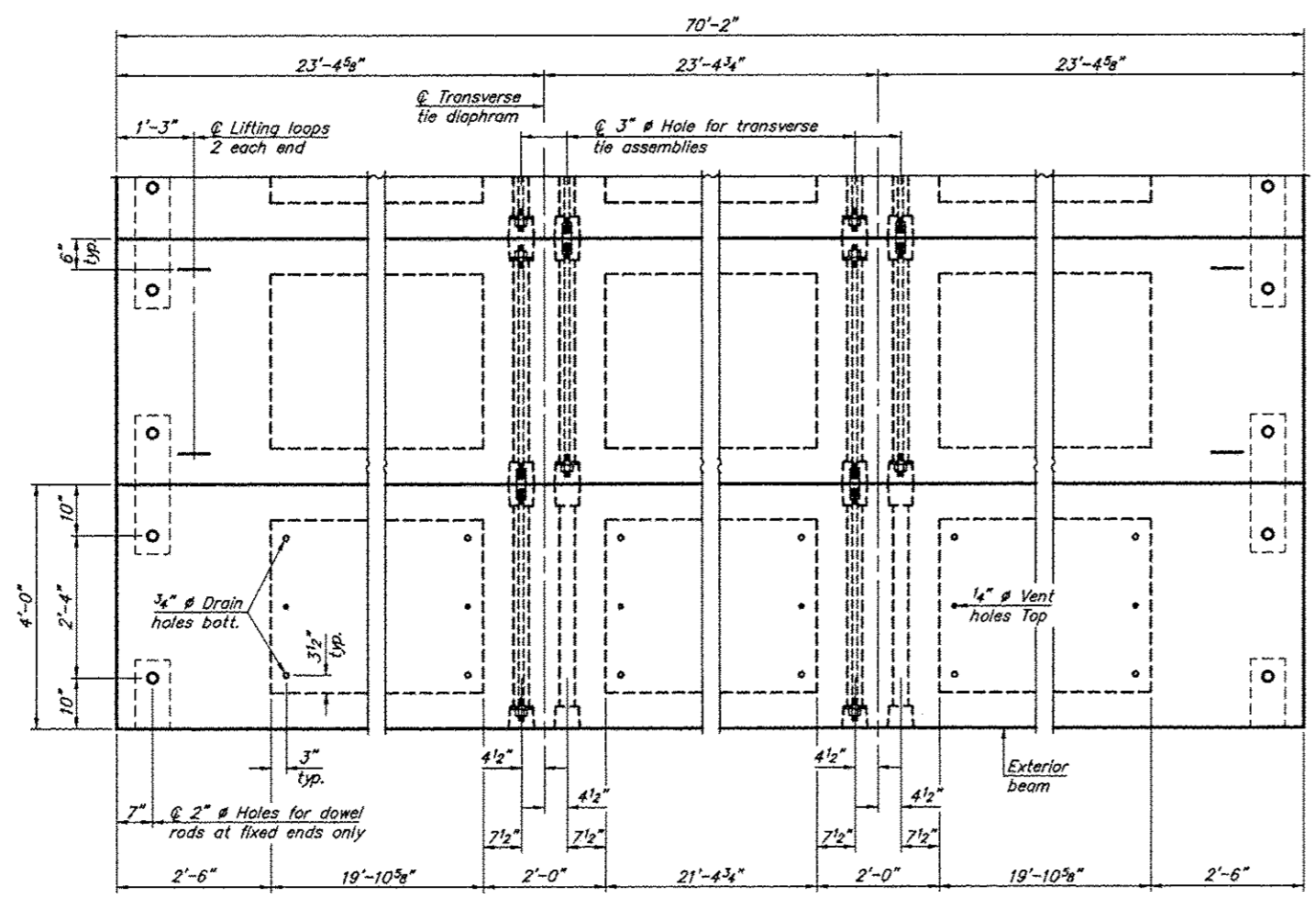
Notes:  
All bearing pads shall be 1" thick.  
Omit holes when using expansion bearings.  
Expansion bearing pads shall be bonded to the substructure.



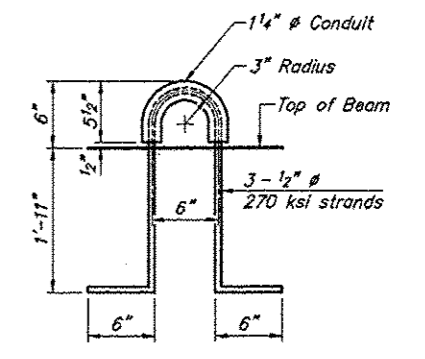
**SECTION A-A** **TYPICAL TRANSVERSE TIE ASSEMBLY**



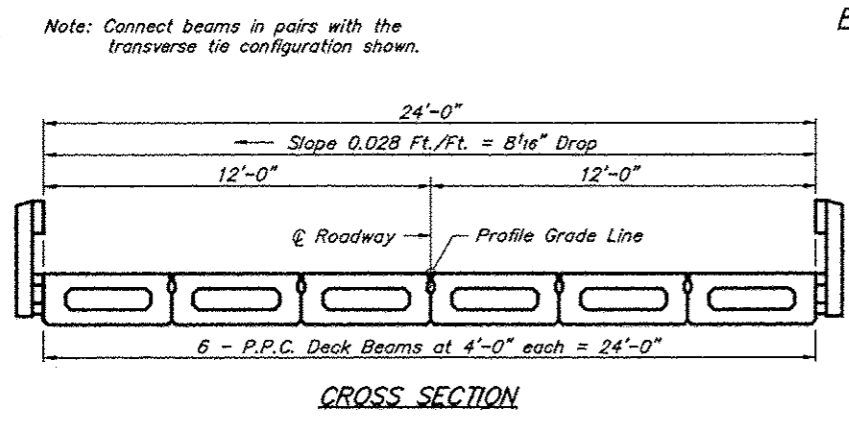
**BAR S1(E)**  
**BAR S2(E)**  
**BAR U1(E)**  
**BAR U2(E)**



**PLAN VIEW**



**LIFTING LOOP DETAIL**



**CROSS SECTION**

**NOTES**

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.

Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2 1/2" lifting pin shall be used to engage the lifting loops during handling. Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f<sub>c</sub>, shall be 6000 psi.

Compressive strength of prestressed concrete at release, f<sub>ci</sub>, shall be 5000 psi.

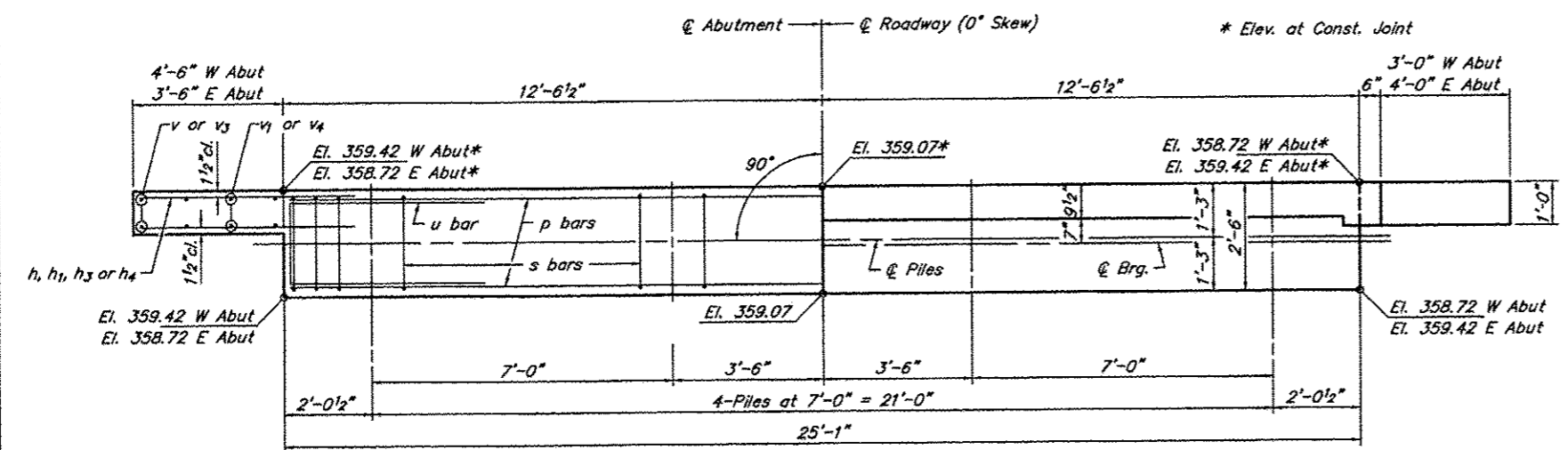
**BILL OF MATERIAL**

Precast Prestressed Concrete Deck Beams (27" depth)	Sq. Ft.	1,684
---	---------	-------

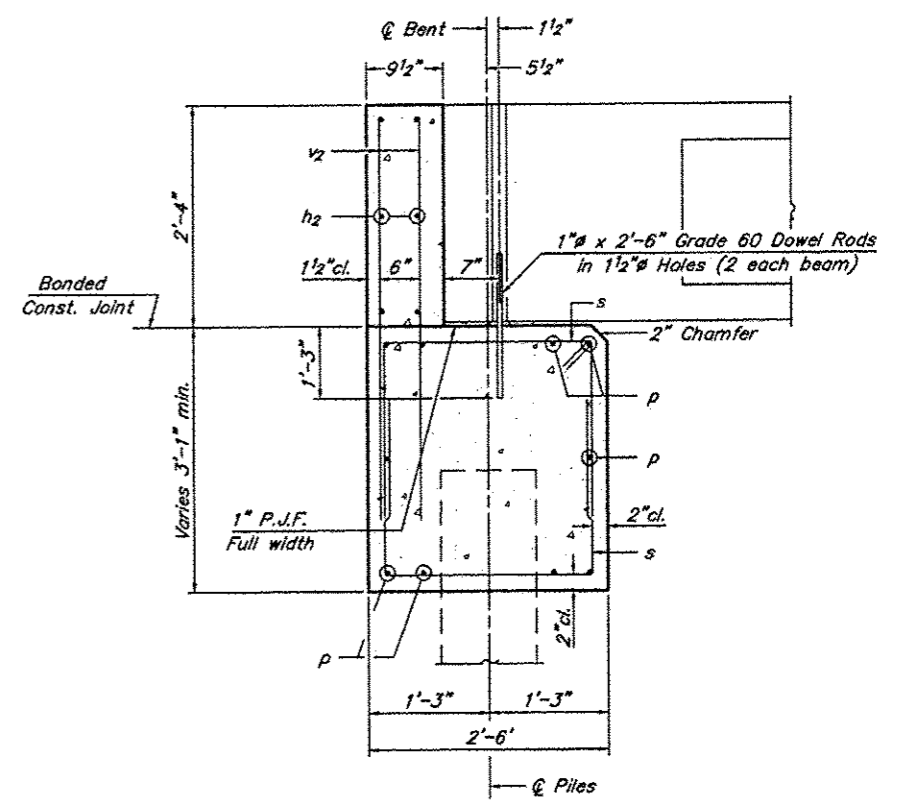
**27" X 48" PPC DECK BEAM DETAILS**  
**COUNTY HIGHWAY 17 (HORSESHOE ROAD)**  
**BACKWATER CREEK**  
**SECTION 12-00153-00-BR**  
**SALINE COUNTY**  
**STRUCTURE NO. 083-3247**

746 Beam Details 48 01/18/76 15:45 RLM

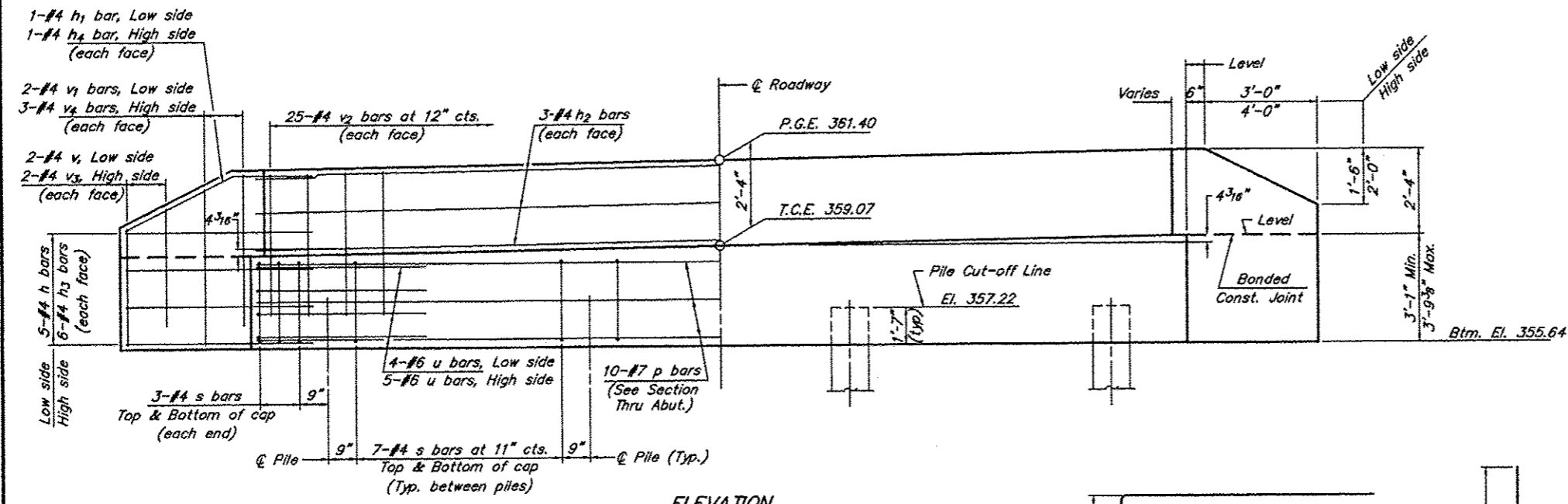
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
CH 17	12-00153-00-BR	SALINE	16	8
PROJECT NO. BROS-0165(040)			CONTRACT NO. 99536	



PLAN



SECTION THRU ABUT.  
(At Right Angles)



ELEVATION

(East abutment shown. Reverse cross slope for West abutment.)

BILL OF MATERIAL FOR ONE ABUTMENT

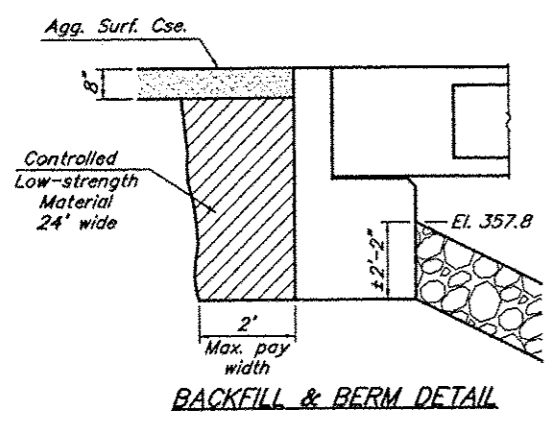
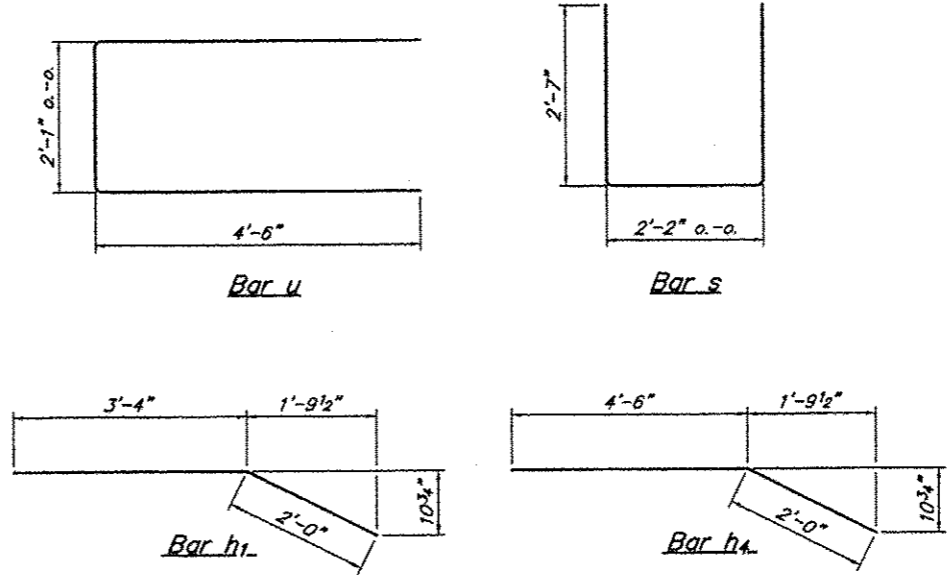
Bar	No.	Size	Length	Shape
h	10	#4	5'-0"	—
h1	2	#4	5'-4"	↘
h2	6	#4	24'-9"	—
h3	12	#4	6'-0"	—
h4	2	#4	6'-6"	↘
p	10	#7	24'-9"	—
s	54	#4	7'-4"	⊥
u	11	#6	11'-1"	⊥
v	4	#4	3'-9"	—
v1	4	#4	4'-10"	—
v2	50	#4	3'-11"	—
v3	4	#4	4'-5"	—
v4	5	#4	5'-6"	—
Concrete Structures			11.2	Cu. Yds.
Reinforcement Bars			1334	Lbs.

NOTES

- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to A.A.S.H.T.O. M-31, M-42 or M-53, Grade 60.

DESIGN STRESSES

$f_c = 3,500 \text{ psi}$   
 $f_y = 60,000 \text{ psi}$



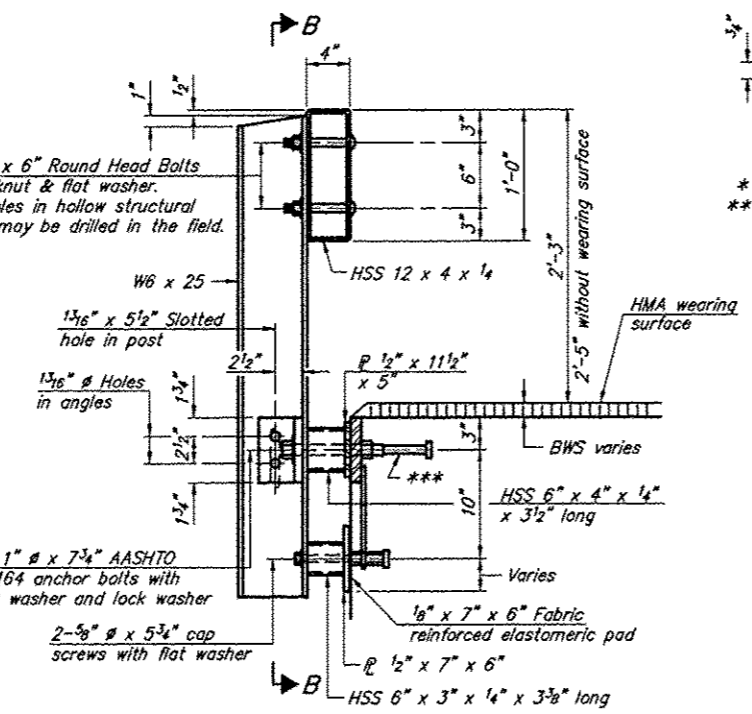
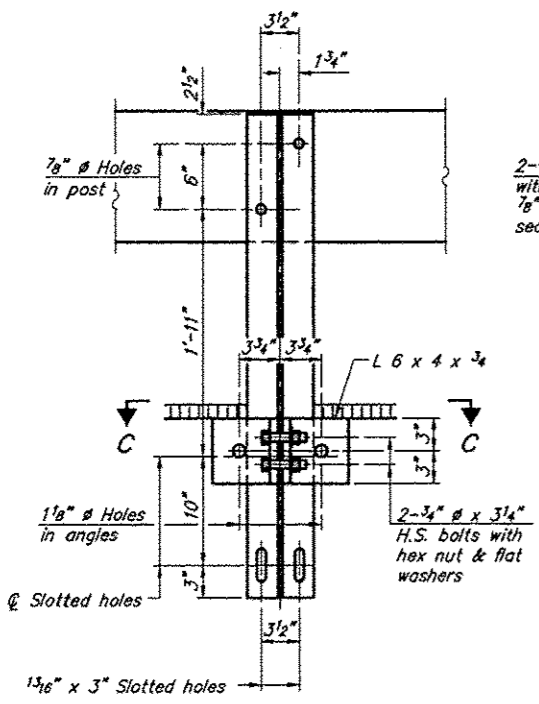
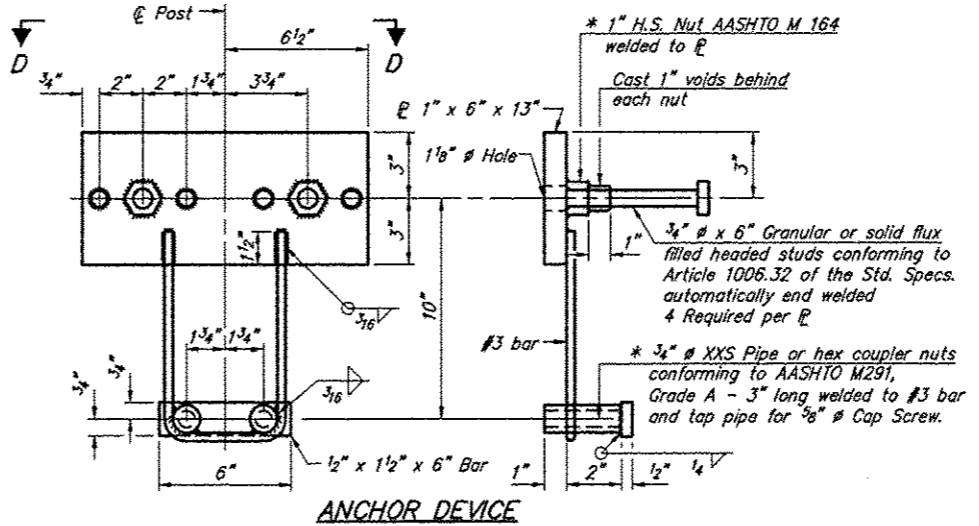
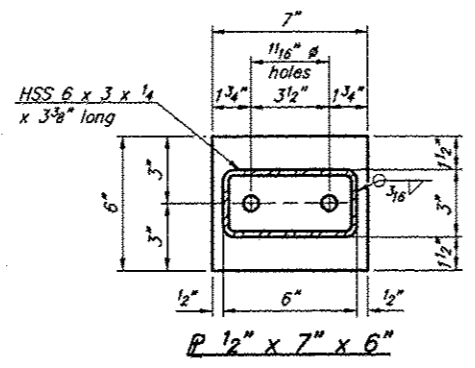
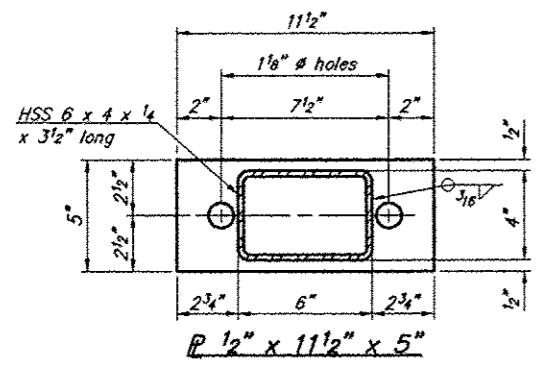
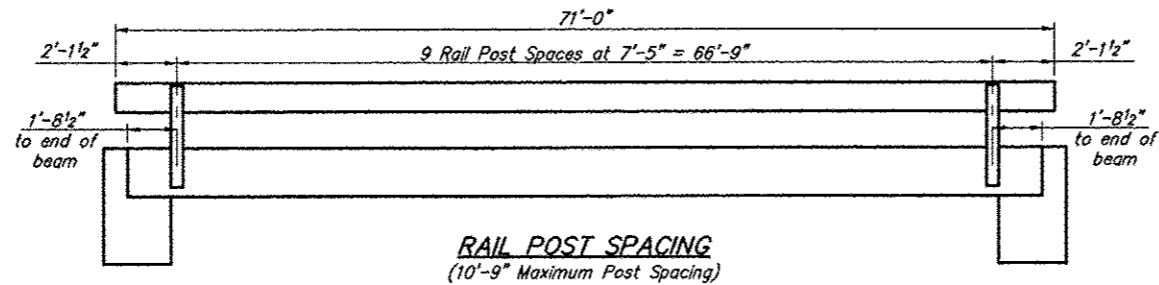
BACKFILL & BERM DETAIL

ABUTMENT  
COUNTY HIGHWAY 17 (HORSESHOE ROAD)  
BACKWATER CREEK  
SECTION 12-00153-00-BR  
SALINE COUNTY  
STRUCTURE NO. 083-3247

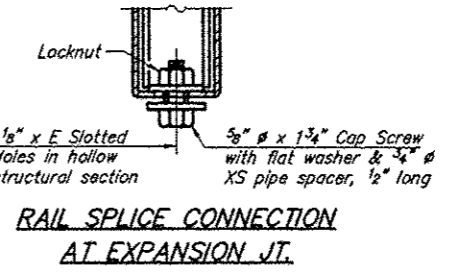
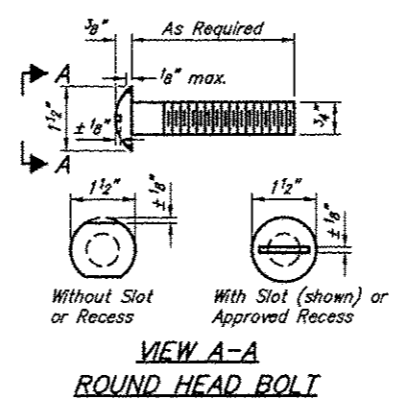
745 Abutment 02/18/16 17:04 RLM



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
CH 17	12-00153-00-BR	SALINE	16	9
PROJECT NO. BROS-0165(040)			CONTRACT NO. 99536	



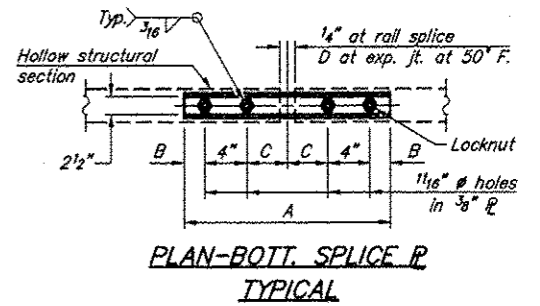
\* Threaded areas shall be plugged or blocked off during casting of beam.  
\*\* Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted to allow raising or lowering of the lower inserts. Max. adjustment not to exceed 1/2".



**SPLICE DIMENSIONS**

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

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



Notes:  
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.  
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
\*\*\* The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

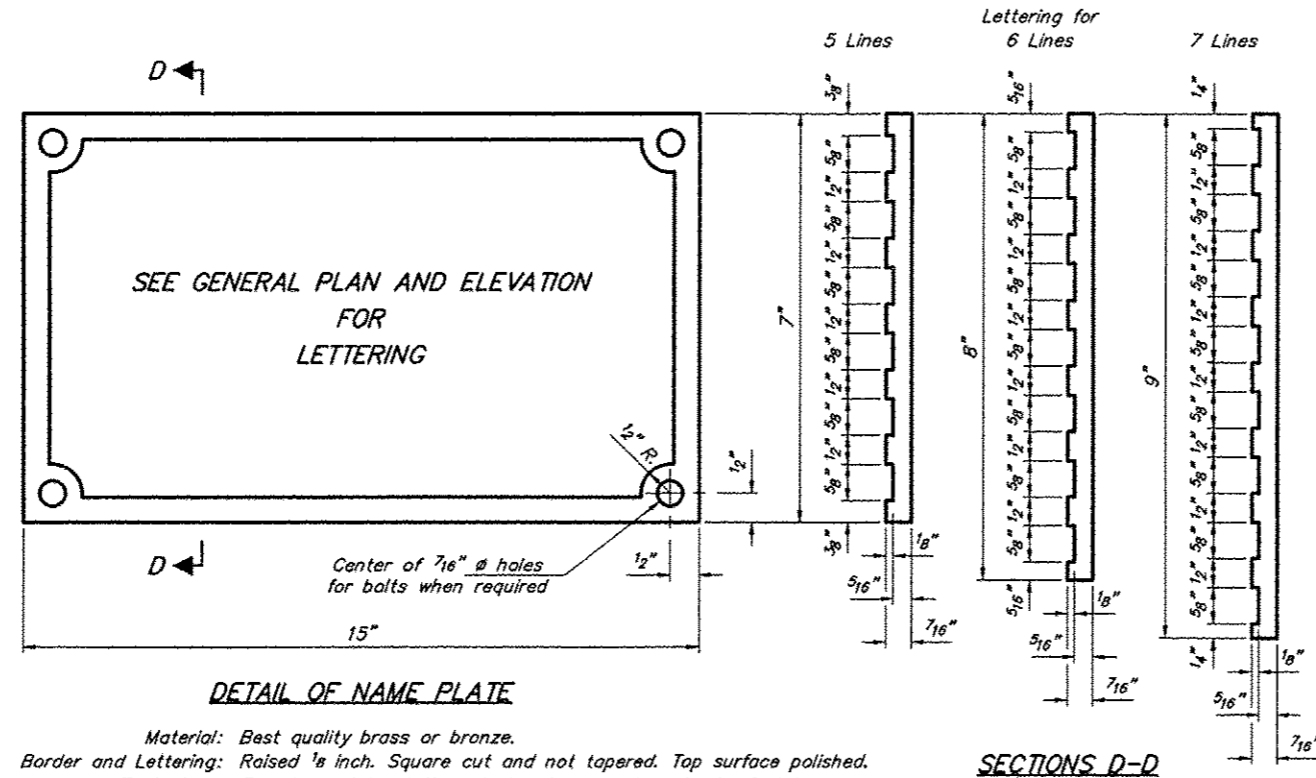
**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	142

**STEEL RAILING, TYPE S-1**  
COUNTY HIGHWAY 17 (HORSESHOE ROAD)  
BACKWATER CREEK  
SECTION 12-00153-00-BR  
SALINE COUNTY  
STRUCTURE NO. 083-3247

746 Steel Railing 01/18/16 15:48 RLM

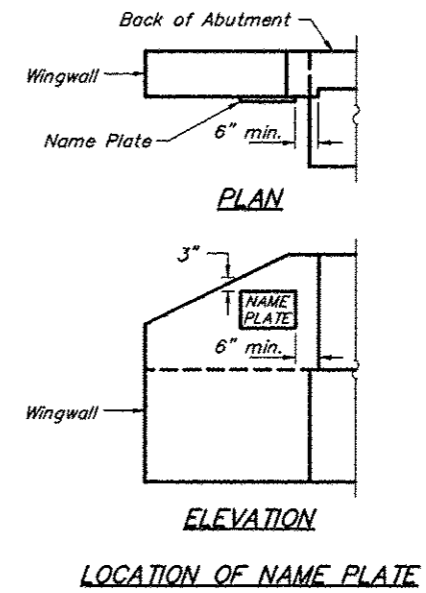
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
CH 17	12-00153-00-BR	SALINE	16	10
PROJECT NO. BROS-0165(040)			CONTRACT NO. 99536	



**DETAIL OF NAME PLATE**

Material: Best quality brass or bronze.  
 Border and Lettering: Raised 1/8 inch. Square cut and not tapered. Top surface polished.  
 Fastenings: Four lugs at least three inches long, cast on back of plate.

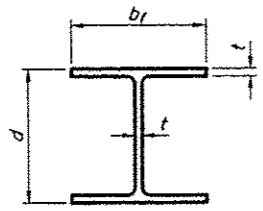
**SECTIONS D-D**



746 Name Plate 01/18/16 1548 RLM

**NAME PLATE**  
 COUNTY HIGHWAY 17 (HORSESHOE ROAD)  
 BACKWATER CREEK  
 SECTION 12-00153-00-BR  
 SALINE COUNTY  
 STRUCTURE NO. 083-3247

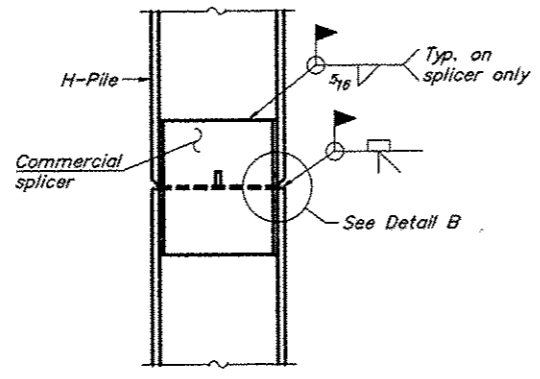
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 17	12-00153-00-BR	SALINE	16	11
PROJECT NO. BROS-0165(040)			CONTRACT NO. 99536	



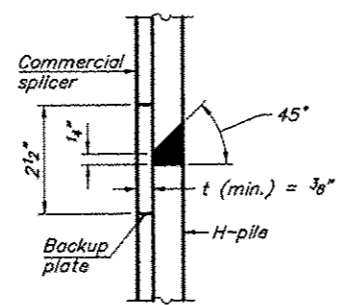
STEEL PILE TABLE

Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A	Encasement Quantity/Ft. C.Y.
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"	0.173
x102	14"	14 3/4"	1 1/8"	30"	0.174
x89	13 7/8"	14 3/4"	5/8"	30"	0.175
x73	13 5/8"	14 5/8"	1/2"	30"	0.176
HP 12x84	12 1/4"	12 1/4"	1 1/8"	24"	0.110
x74	12 1/8"	12 1/4"	5/8"	24"	0.111
x63	12"	12 1/8"	1/2"	24"	0.112
x53	11 3/4"	12"	7/16"	24"	0.112
HP 10x57	10"	10 1/4"	9/16"	24"	0.112
x42	9 3/4"	10 1/8"	7/16"	24"	0.113
HP 8x36	8"	8 1/8"	7/16"	18"	0.063

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

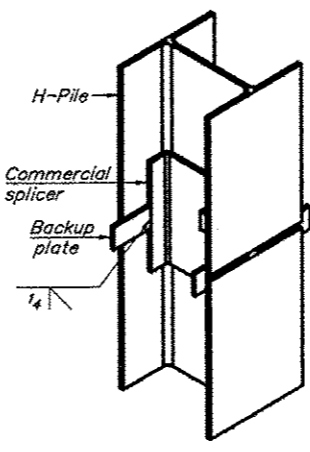


ELEVATION

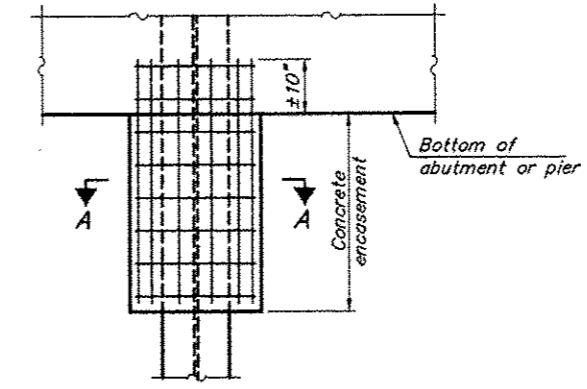


DETAIL "B"

WELDED COMMERCIAL SPLICE

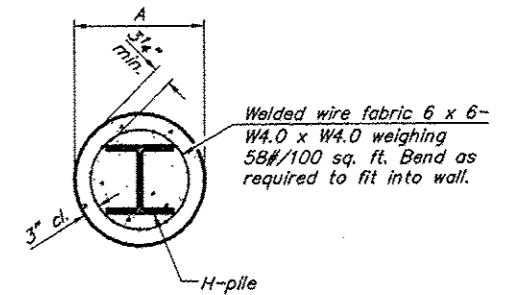


ISOMETRIC VIEW



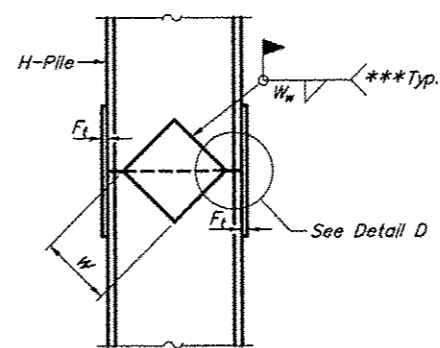
ELEVATION

PILE ENCASEMENT

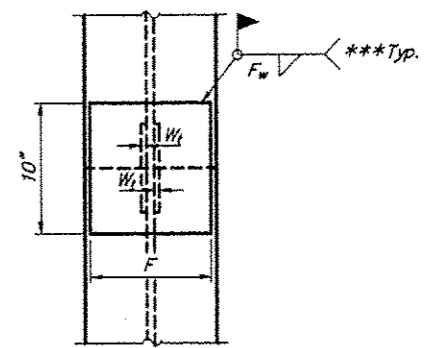


SECTION A-A

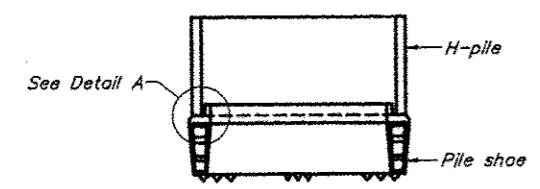
Note: Forms for encasement may be omitted when soil conditions permit.



ELEVATION

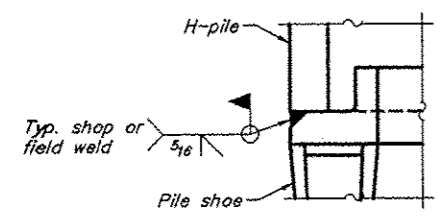


END VIEW

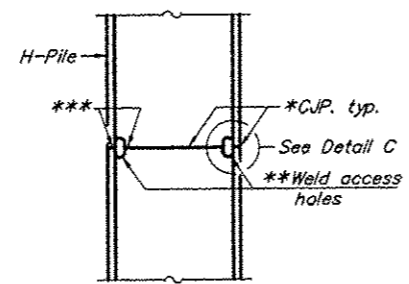


ELEVATION

H-PILE SHOE ATTACHMENT

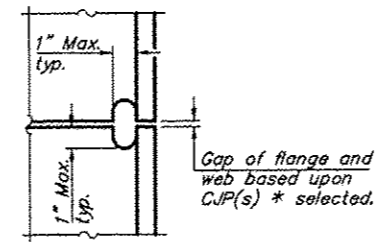


DETAIL A

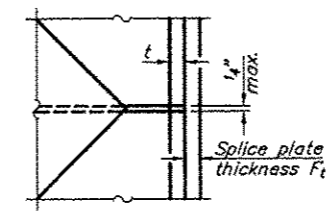


ELEVATION

COMPLETE PENETRATION WELD SPLICE



DETAIL C



DETAIL D

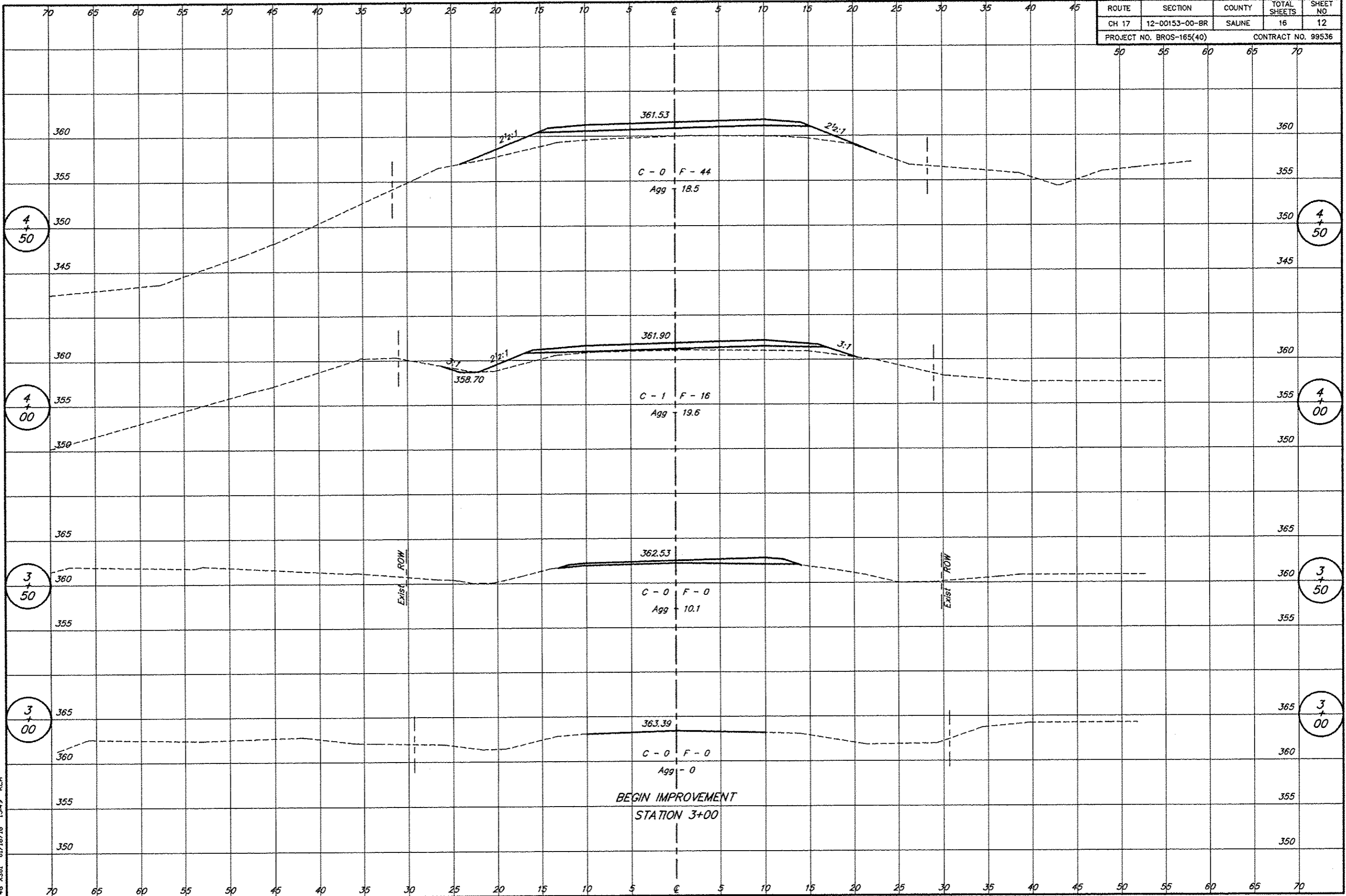
WELDED PLATE FIELD SPLICE

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

\* Use joint conforming to Fig. 3.4 in AWS D1.1. Structure Welding Code - Steel.  
 \*\* Preparation per Fig. 5.2 in AWS D1.1. Structure Welding Code - Steel.  
 \*\*\* Interrupt welds 1/4" from end of each pile.

PILING DETAILS  
 COUNTY HIGHWAY 17 (HORSESHOE ROAD)  
 BACKWATER CREEK  
 SECTION 12-00153-00-BR  
 SALINE COUNTY  
 STRUCTURE NO. 083-3247

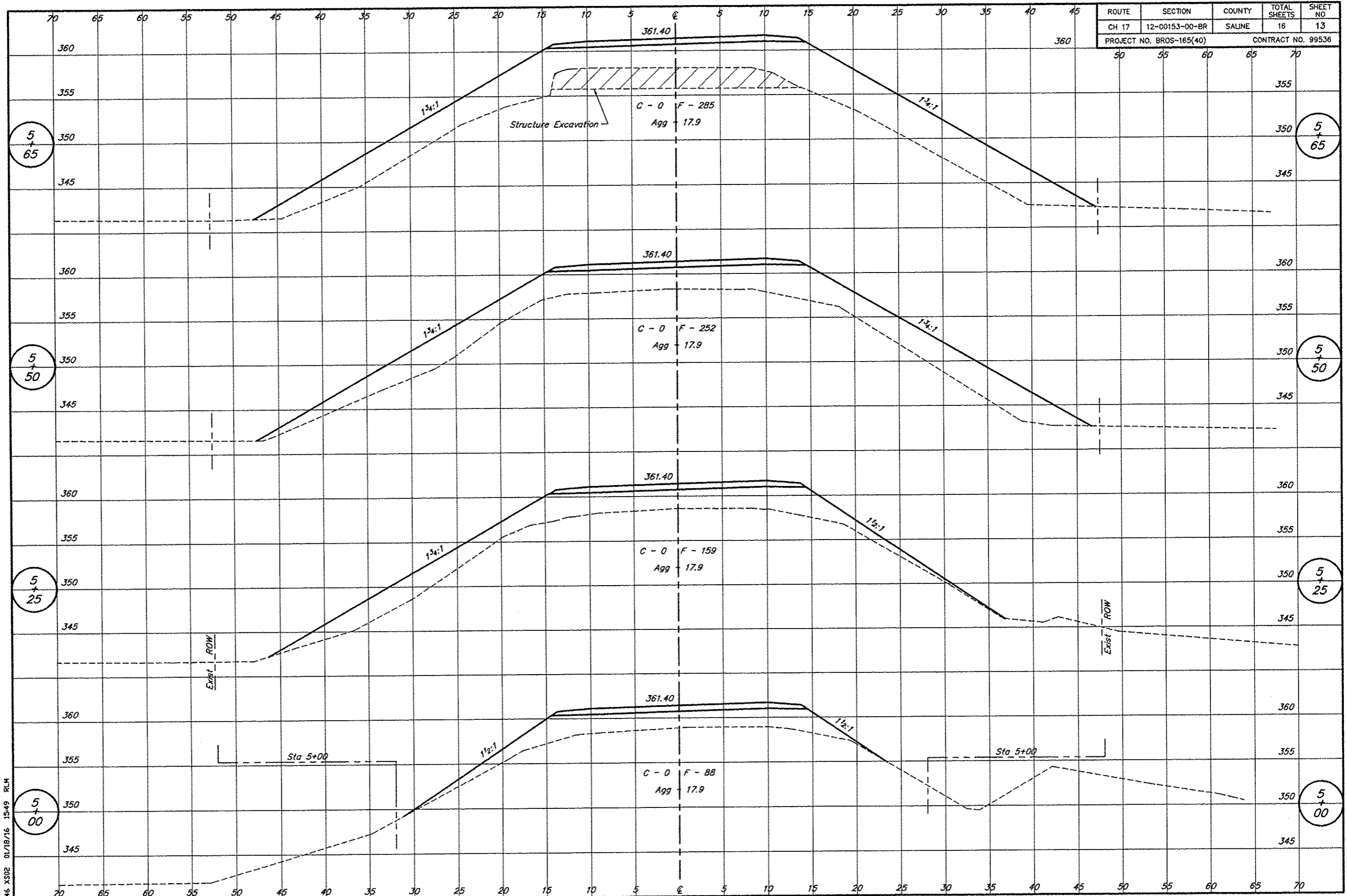
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
CH 17	12-00153-00-BR	SALINE	16	12
PROJECT NO. BROS-165(40)			CONTRACT NO. 99536	



BEGIN IMPROVEMENT  
STATION 3+00

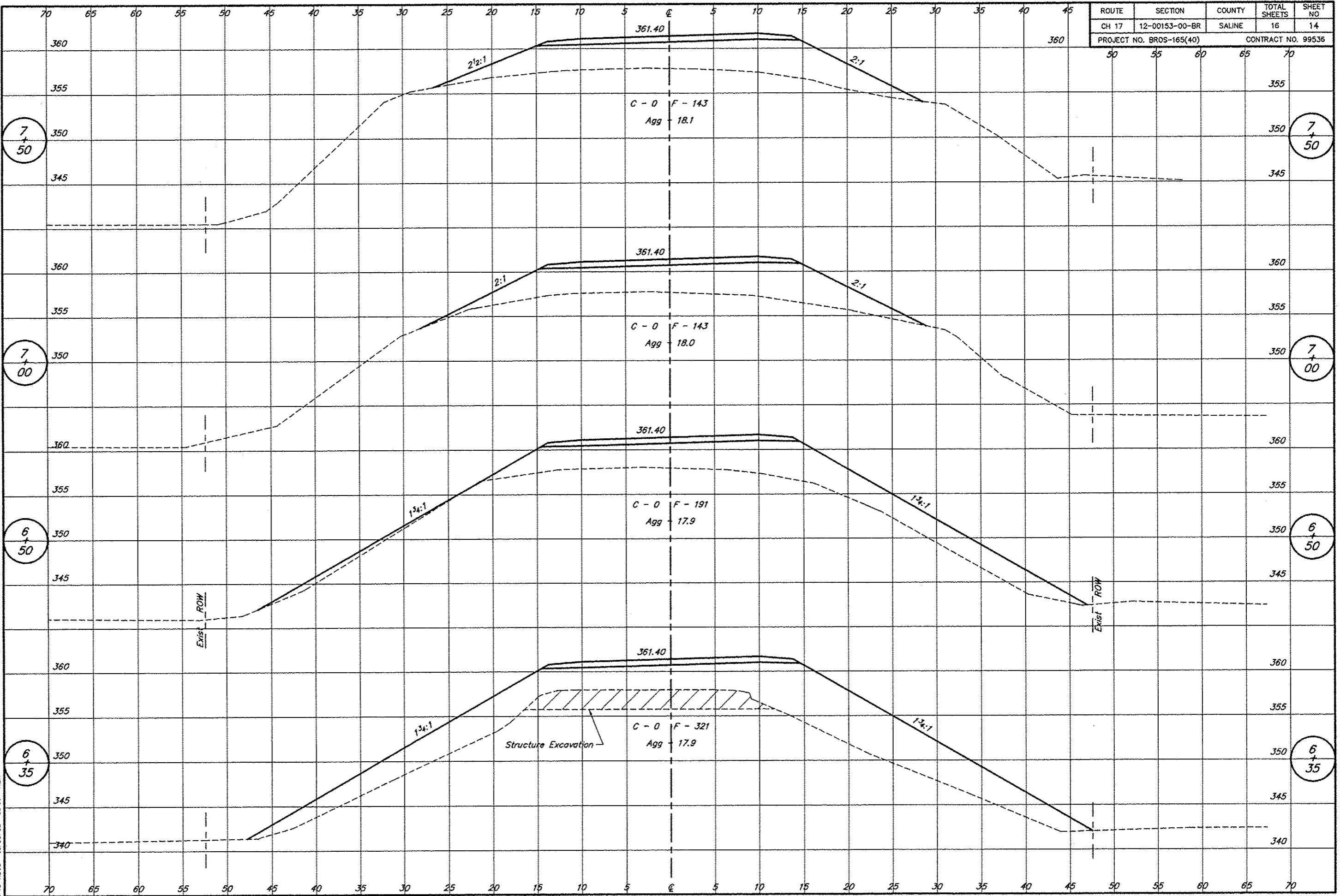
746 XS01 01/18/16 15:49 R.L.M

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
CH 17	12-00153-00-BR	SALINE	16	13
PROJECT NO. BROS-165(40)			CONTRACT NO. 99536	



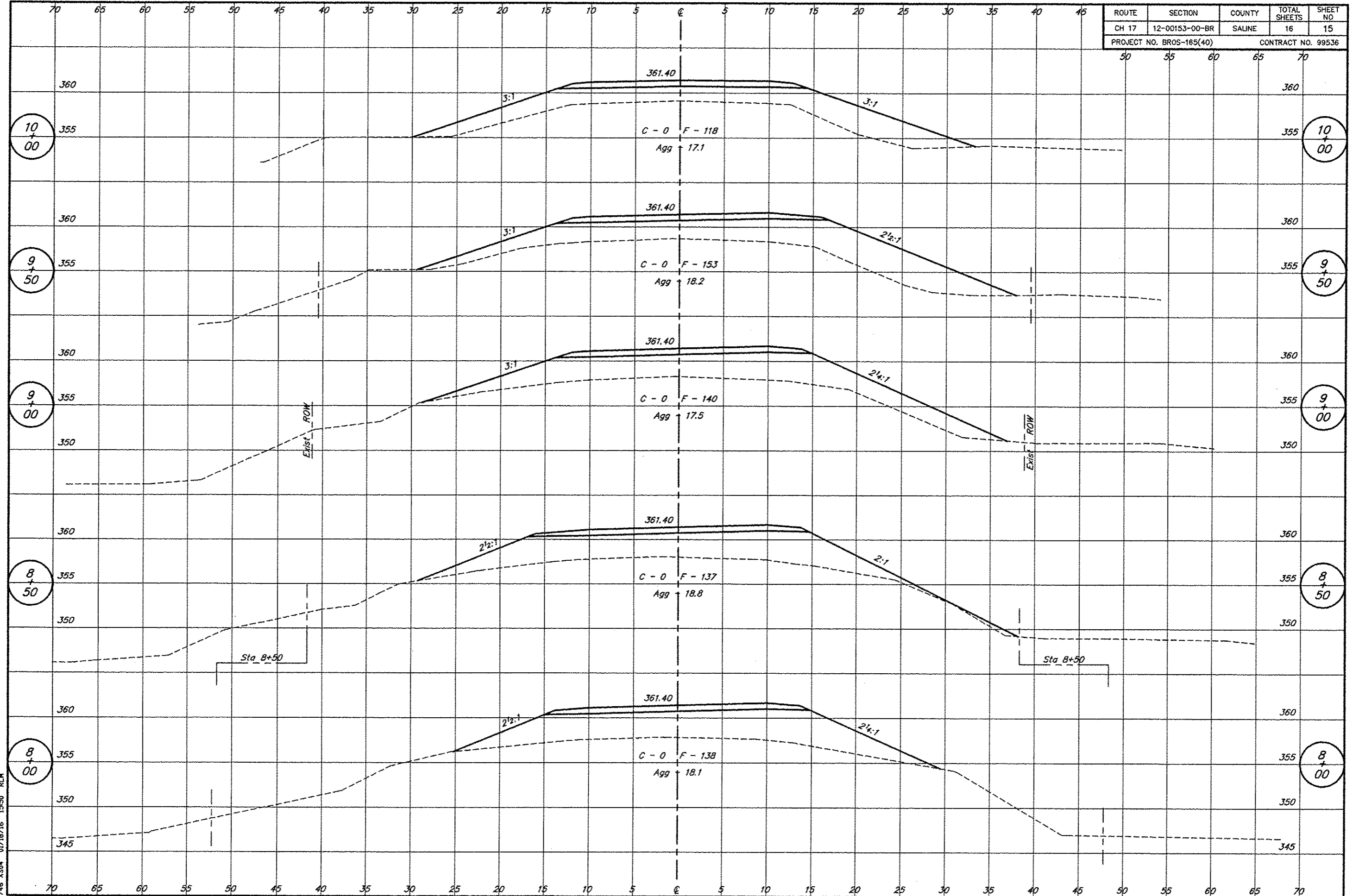
746 XS02 01/18/16 13:49 RLM

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
CH 17	12-00153-00-BR	SALINE	16	14
PROJECT NO. BROS-165(40)			CONTRACT NO. 99536	



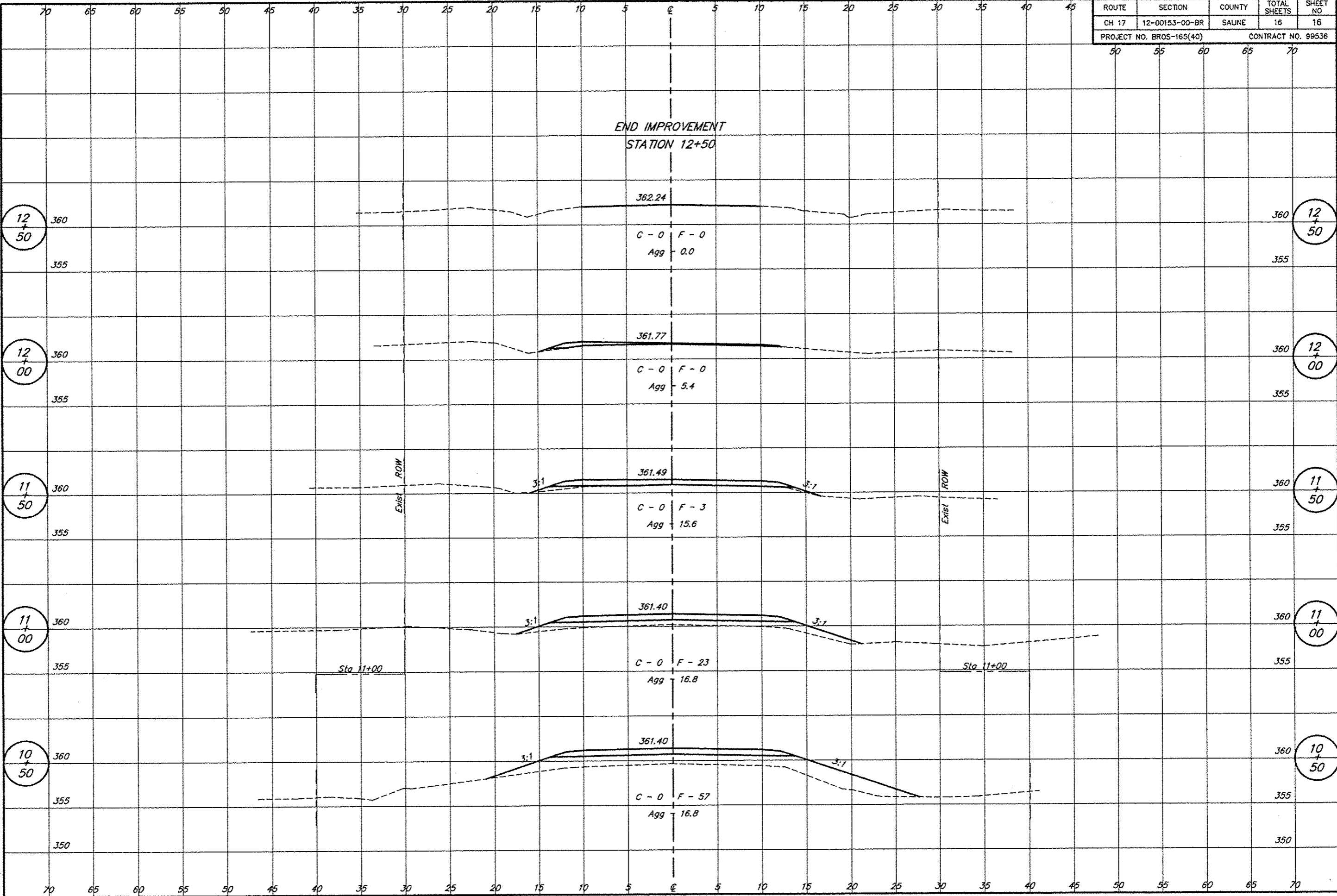
746 XS03 01/18/16 1550 RLM

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
CH 17	12-00153-00-BR	SALINE	16	15
PROJECT NO. BROS-165(40)			CONTRACT NO. 99536	



746 XSD4 01/18/16 15:50 RLM

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
CH 17	12-00153-00-BR	SALINE	16	16
PROJECT NO. BROS-165(40)			CONTRACT NO. 99536	



746 X305 03/10/16 1105 RLM