

SHEET NO	TITLE
1	COVER SHEET
2	SUMMARY OF QUANTITIES, GENERAL NOTES, TYPICAL CROSS SECTIONS AND ENTRANCE DETAILS
3	SCHEDULES OF QUANTITIES
4	ALIGNMENT & CROSS TIES
5	PLAN AND PROFILE SHEET
6	CONCRETE COLLAR
7-13	SN 070-4829 PLANS
14-19	CROSS SECTIONS

LIST OF ILLINOIS DOT HIGHWAY STANDARDS

000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
666001-01	RIGHT OF WAY MARKERS
701901-06	TRAFFIC CONTROL DEVICES
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

UTILITY CONTACTS:

UTILITY TYPE:

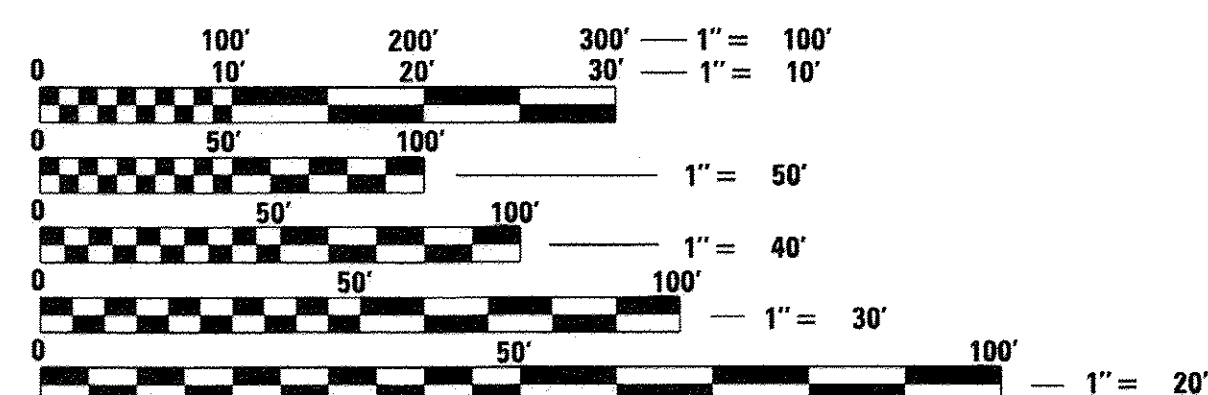
WATER
 MOULTRIE Co RURAL
 PUBLIC WATER DISTRICT
 ATTN: ANGELA EMEL
 PHONE: (217) 728-8842

UTILITY TYPE:

TELEPHONE & FIBER OPTIC
 CONSOLIDATED COMMUNICATIONS
 (217) 235-3355
 ATTN: WES CHAMBERS

UTILITY TYPE:

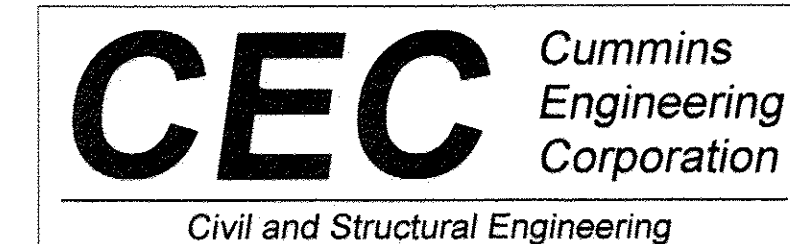
ELECTRIC
 COLES-MOULTRIE ELECTRIC
 COOPERATIVE
 ATTN: GREG GILLESPIE
 PHONE: (217) 258-5803



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

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

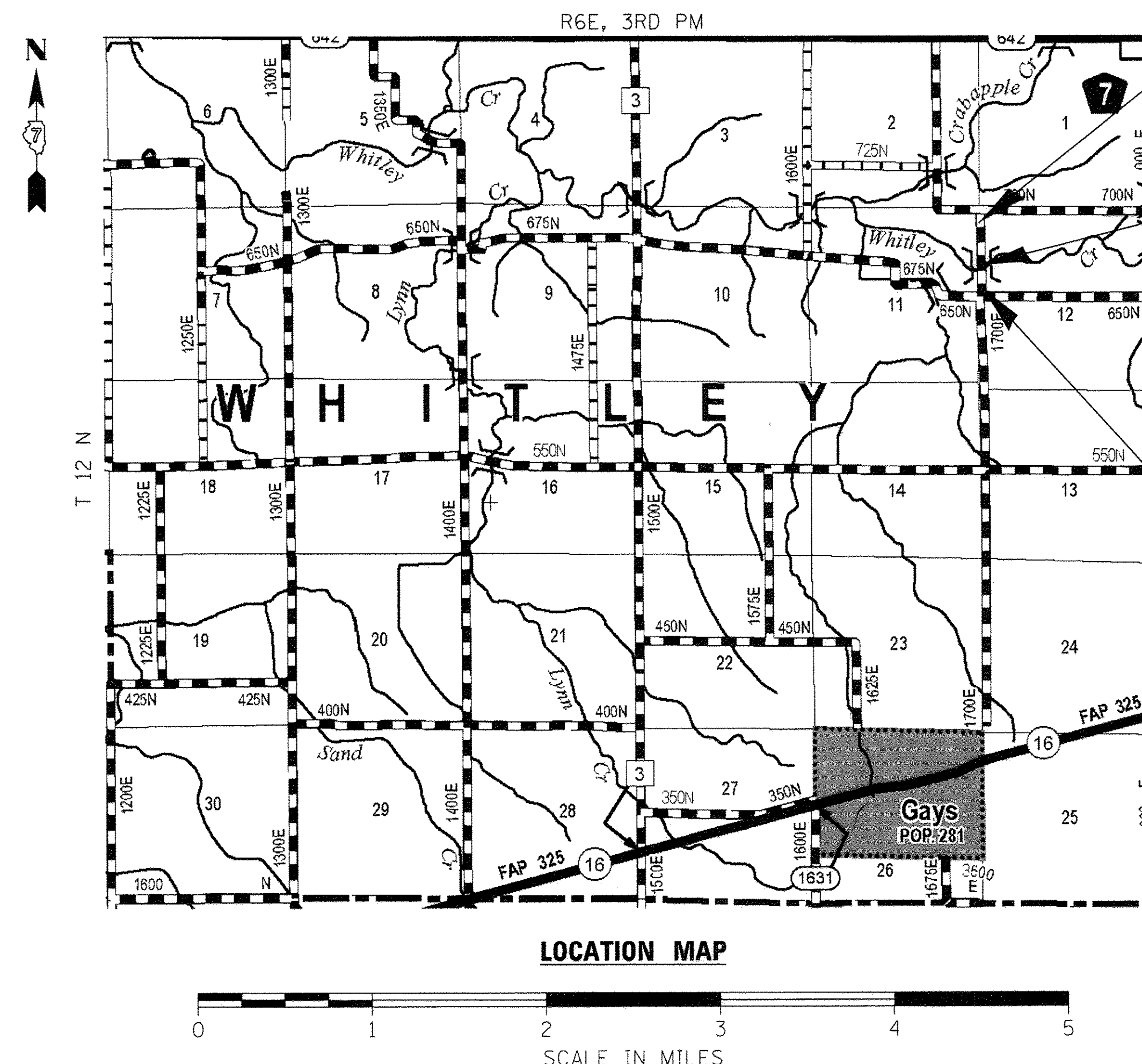
CONTRACT NO. 95812



DESIGN DESIGNATION
 FUNCTIONAL CLASSIFICATION: LOCAL ROAD
 DESIGN SPEED: 30 MPH
 CURRENT ADT: 125 (2010)
 3R GUIDELINES

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION PLANS FOR PROPOSED STP BRIDGE PROGRAM

**T.R. ROUTE 170 (1700E)
 SECTION 13-08114-00-BR
 PROJECT BROS-0139 (066)
 MOULTRIE COUNTY
 WHITLEY TOWNSHIP
 OVER WHITLEY CREEK
 C-97-031-16**



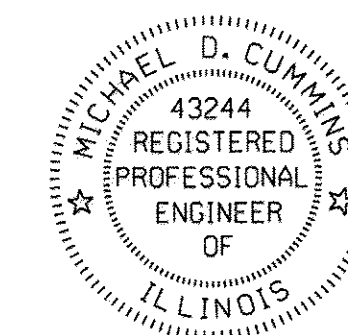
GROSS LENGTH OF SECTION 670.00 FEET 0.127 MILES

IMPROVEMENT ENDS
 STA 14+00.00

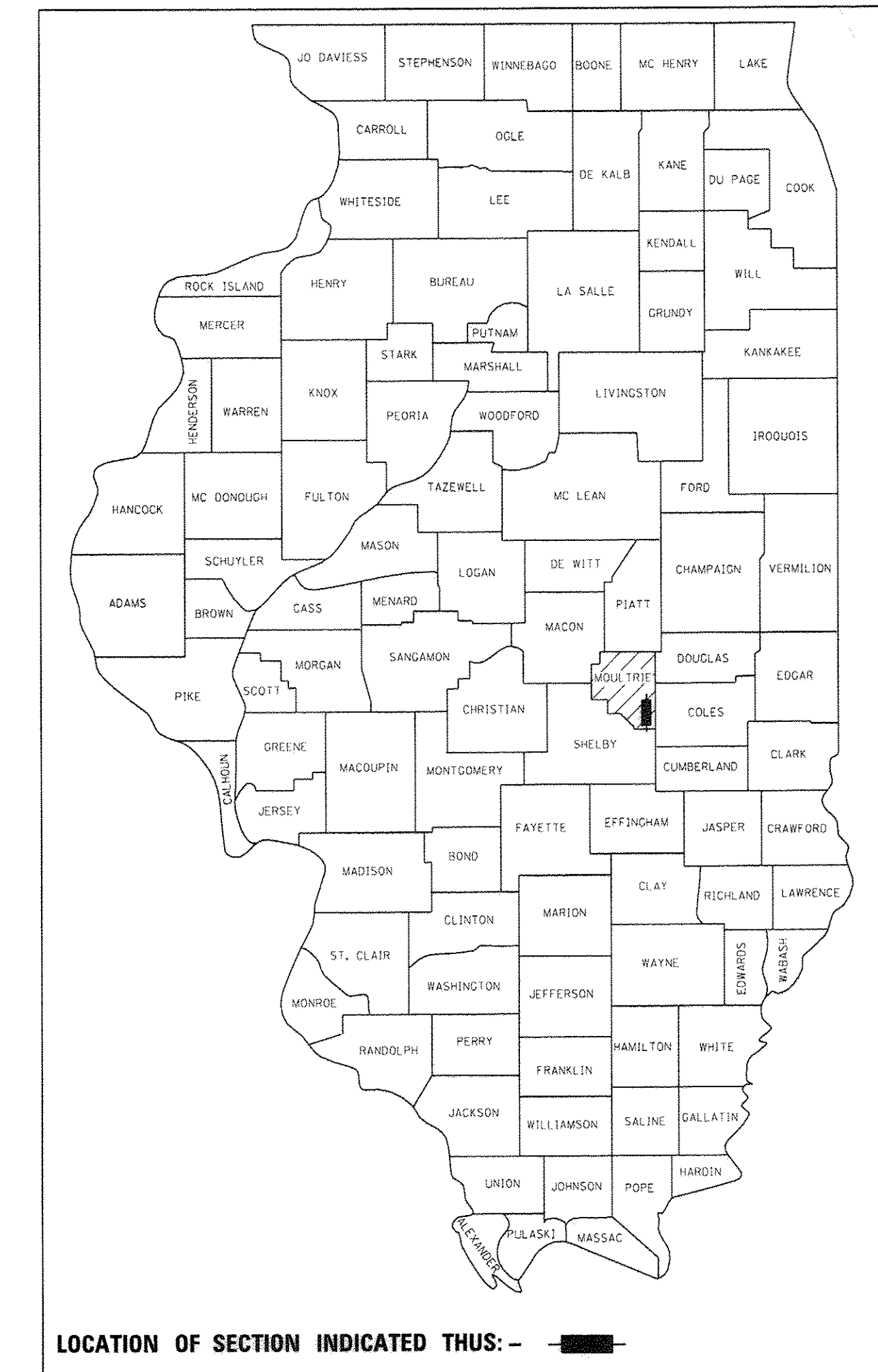
STA. 10+00.00
 PRECAST PRESTRESSED CONCRETE
 DECK BEAM BRIDGE, SINGLE SPAN
 AT 64'-7" BK. TO BK. ABUTS,
 27'-0" F. TO F. RAILS
 NO SKEW

PROPOSED SN 070-4829
 REPLACES
 EXISTING SN 070-4807

IMPROVEMENT BEGINS
 STA 7+30.00



Michael D. Cummins 3-28-17
 ILLINOIS PROFESSIONAL NO. 43244
 (Expires 11/30/17)



APPROVED	<i>MARCH 29</i>	20 17
	<i>John E. Morley</i> COUNTY ENGINEER	
PASSED	<i>MARCH 29</i>	20 17
	<i>John E. Morley</i> ROAD DISTRICT COMMISSIONER	
PASSED	<i>MARCH 31</i>	20 17
	<i>Tom Herman</i> DISTRICT SEVEN ENGINEER OF LOCAL ROADS AND STREETS	
RELEASED FOR BID BASED ON LIMITED REVIEW	<i>MARCH 31</i>	20 17
	<i>Michael D. Cummins</i> REGION FOUR ENGINEER	
	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	

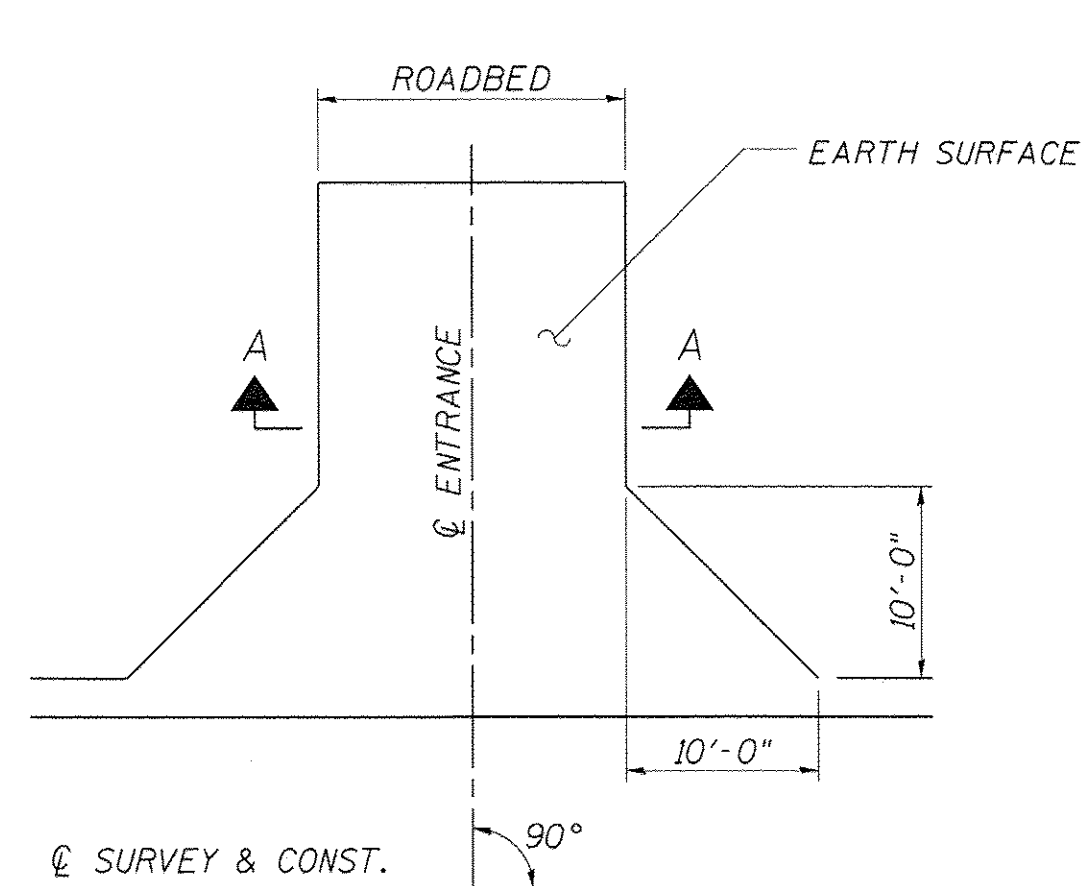
**PRINTED BY THE AUTHORITY
 OF THE STATE OF ILLINOIS**

SUMMARY OF QUANTITIES

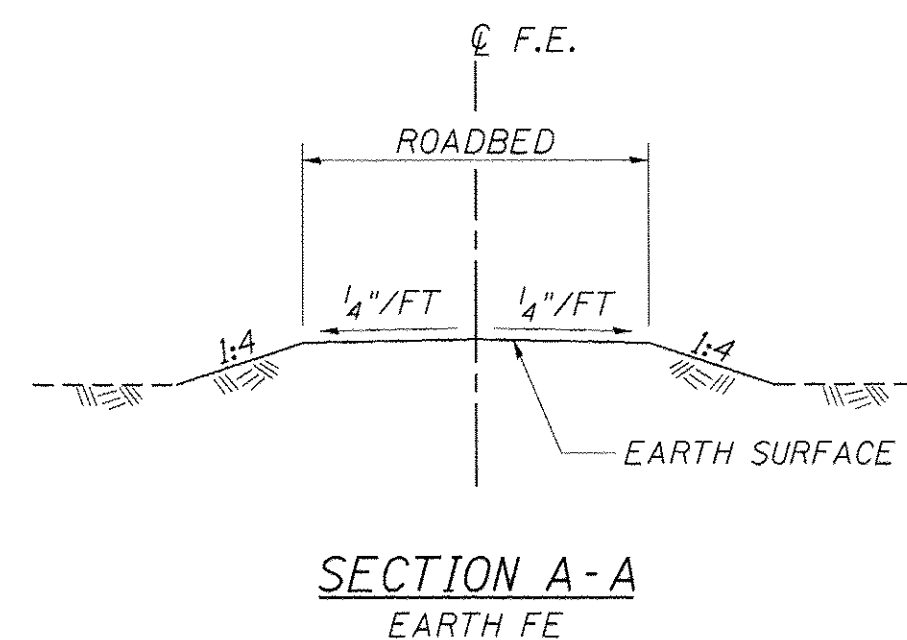
CODE NO.	ITEM	UNIT	TOTAL QUANTITY
20101000	TEMPORARY FENCE	FOOT	110
20200100	EARTH EXCAVATION	CU YD	440
20300100	CHANNEL EXCAVATION	CU YD	265
20400800	FURNISHED EXCAVATION	CU YD	660
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	48
28000305	TEMPORARY DITCH CHECKS	FOOT	48
28000400	PERIMETER EROSION BARRIER	FOOT	140
28000500	INLET AND PIPE PROTECTION	EACH	2
28100207	STONE RIPRAP, CLASS A4	TON	305
28200200	FILTER FABRIC	SQ YD	385
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	710
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50105220	PIPE CULVERT REMOVAL	FOOT	30
50200100	STRUCTURE EXCAVATION	CU YD	34
50300225	CONCRETE STRUCTURES	CU YD	24.4
50300280	CONCRETE ENCASMENT	CU YD	3.5
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1701
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2800
Δ 50900205	STEEL RAILING, TYPE S1	FOOT	126
51201400	FURNISHING STEEL PILES HP10X42	FOOT	432
51202305	DRIVING PILES	FOOT	432
51203400	TEST PILE STEEL HP10X42	EACH	1
51500100	NAME PLATES	EACH	1
54248510	CONCRETE COLLAR	CU YD	0.4
60100985	PIPE DRAINS 24"	FOOT	24
66600105	FURNISHING AND ERECTING RIGHT OF WAY MARKERS	EACH	10
67100100	MOBILIZATION	L SUM	1
* 70101830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1
542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	40
542D0229	PIPE CULVERTS, CLASS D, TYPE 1 24"	FOOT	20
* X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.50

* SEE SPECIAL PROVISION

Δ SPECIALTY ITEMS



FIELD ENTRANCE DETAIL



ENTRANCES TO BE CONSTRUCTED
RT STA 8+82 FE 16' ROADWAY
LT STA 13+80 FE 23' ROADWAY

GENERAL NOTES

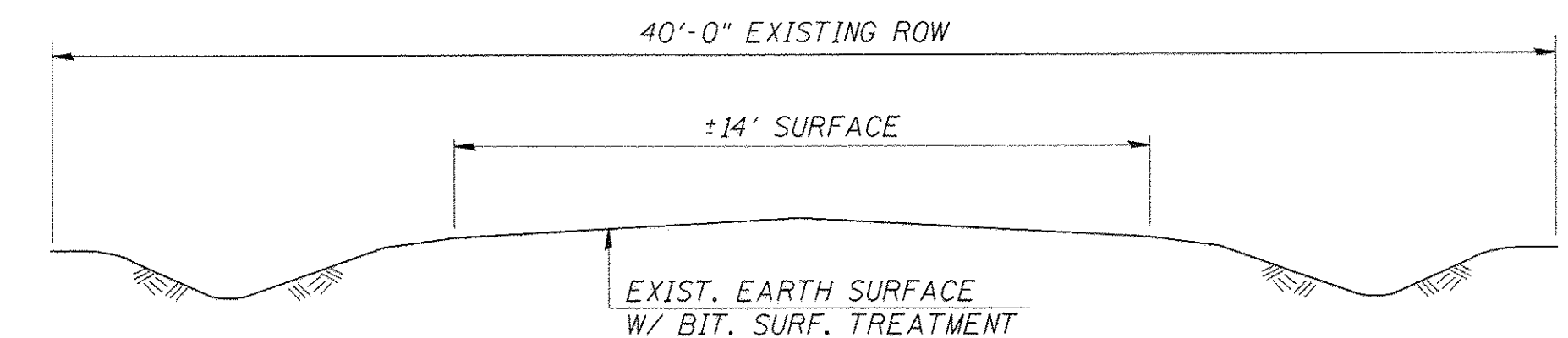
1. THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY AS DIRECTED BY THE ENGINEER.
SEEDING CLASS 2 (SPECIAL) = 0.50 ACRES
2. ALL ELEVATIONS SHOWN ON THE PLANS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. THE LOCATIONS OF EXISTING WATER MAINS, GAS MAINS, ELECTRIC POWER LINES, TELEPHONE LINES, AND OTHER UTILITIES AS SHOWN ON THE PLANS ARE BASED ON CAREFUL FIELD INVESTIGATION AND THE BEST INFORMATION AVAILABLE, BUT ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THEIR EXACT LOCATION FROM THE UTILITY COMPANIES, MUNICIPALITIES AND FIELD INSPECTION. SEE STANDARD SPECIFICATIONS.
4. CONTRACTOR SHALL CONSULT WITH THE ENGINEER IN REGARD TO THE EXACT LENGTH OF PIPE CULVERTS BEFORE ORDERING THESE ITEMS.
5. LAYOUT OF EROSION CONTROL ITEMS MAY BE VARIED IN THE FIELD TO SUIT GROUND CONDITIONS AS DIRECTED BY THE ENGINEER.
6. WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER OR AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

APPLICATION RATES USED IN QUANTITY CALCULATIONS

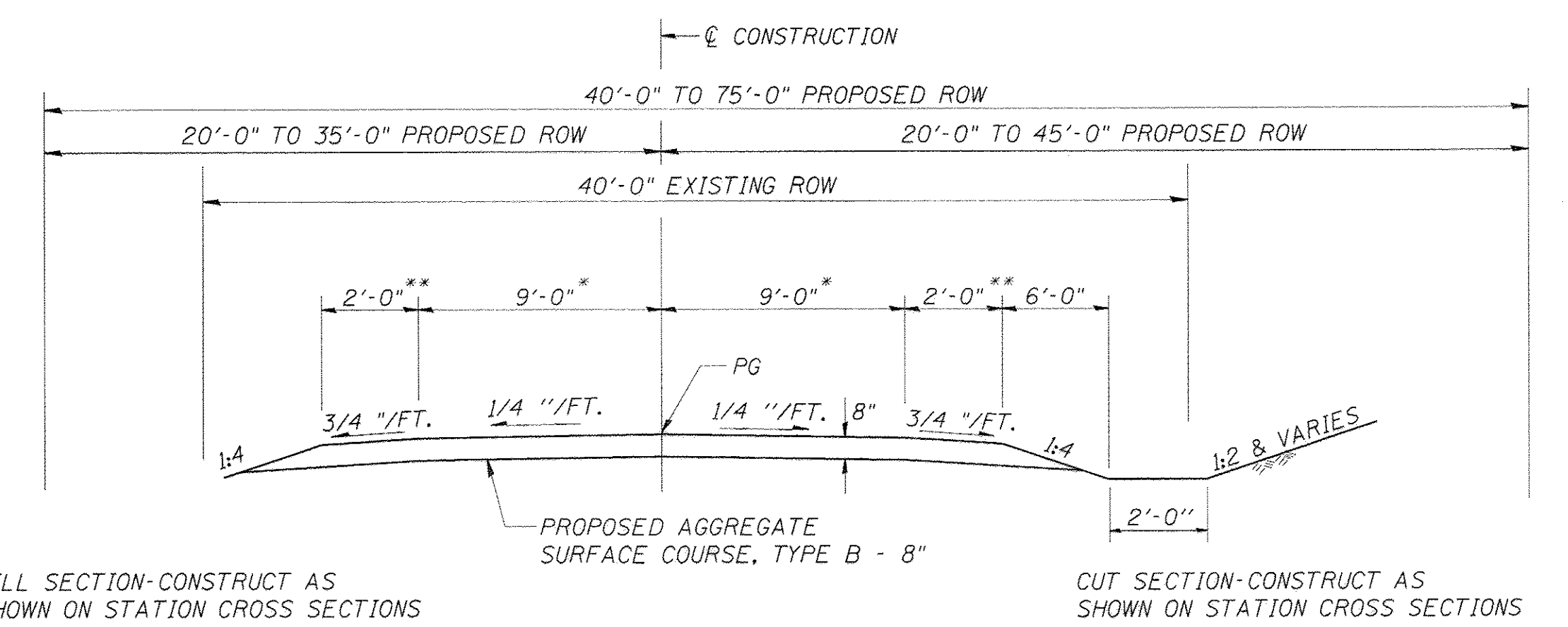
GRANULAR MATERIALS	2.05 TONS/CU YD
RIPRAP	1.5 TONS/CU YD
TEMPORARY EROSION CONTROL SEEDING	100 LBS/ACRE

COMMITMENTS

TREES THREE (3) INCHES OR GREATER IN DIAMETER AT BREAST HEIGHT SHALL NOT BE CLEARED FROM APRIL 1 THROUGH SEPTEMBER 30.



TYPICAL EXISTING ROADWAY CROSS SECTION

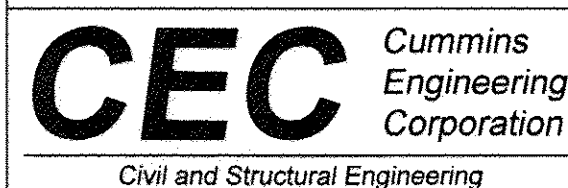


TYPICAL PROPOSED ROADWAY CROSS SECTION

BRIDGE OMISSION
STA 9+67.71 TO STA 10+32.29

STA 7+30.00 TO STA 9+67.71
STA 10+32.29 TO STA 14+00

- * TRANSITION FROM EXISTING ROADWAY TO PROPOSED ROADWAY STA 7+30 TO STA 8+05
- TRANSITION FROM PROPOSED ROADWAY TO EXISTING ROADWAY STA 13+25 TO STA 14+00
- ** TRANSITION SHOULDERS FROM 2'-0" AT STA 9+42.5 TO 4'-6" AT STA 9+67.5 AND FROM 4'-6" AT STA 10+32.0 TO 2'-0" AT STA 10+57.0



JOB = 2414	DESIGNED - NAK	REVISED -
FILE NAME = 2414-sh.t-gen.dgn	DRAWN - SJS	REVISED -
PLOT SCALE = 50.0000' / IN.	CHECKED - NAK	REVISED -
PLOT DATE = 3/28/2017	DATE - 9/23/2016	REVISED -

MOULTRIE COUNTY TR 170 IMPROVEMENTS

SUMMARY OF QUANTITIES, GENERAL NOTES, TYPICAL CROSS SECTIONS AND ENTRANCE DETAILS

SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.
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T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
170	13-08114-00-BR	MOULTRIE	19	2
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 95812	

EARTHWORK

LOCATION	EXCAVATION	EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
LOCATION	CU YD	CU YD	CU YD	CU YD
EARTH EXCAVATION				
STA 7+30 TO STA 9+68	200	150	440	-290
STA 10+32 TO STA 14+00	240	180	480	-300
ENTRANCES				
RT STA 8+82	0	0	67	-67
LT STA 13+80	0	0	3	-3
SUBTOTAL	440	330	990	-660
CHANNEL EXCAVATION				
STA 9+70 TO STA 10+25	265			
EXCAVATION FOR RIPRAP **				
STA 9+79 TO STA 10+11	200			
TOTAL	905	330	990	-660

SHRINKAGE = 25%

** EXCAVATION FOR RIPRAP WILL NOT BE PAID FOR SEPERATELY BUT SHALL BE INCLUDED IN THE

AGGREGATE SURFACE COURSE, TYPE B

LOCATION	TON
STA 7+30.00 TO STA 8+05.00	68
STA 8+05.00 TO STA 9+42.50	174
STA 9+42.50 TO STA 9+67.71	35
STA 10+32.29 TO STA 10+57.00	34
STA 10+57.00 TO STA 13+25.00	331
STA 13+25.00 TO STA 14+00.00	68
TOTAL	710

PIPE CULVERT REMOVAL

LOCATION	TYPE	FOOT
LT STA 13+79	12" CMP	30
TOTAL		30

PIPE CULVERTS, CLASS D, TYPE 1 15"

LOCATION	FOOT
LT STA 13+80	40
TOTAL	40

PIPE CULVERTS, CLASS D, TYPE 1 24"

LOCATION	FOOT
LT STA 8+07	20
TOTAL	20

PIPE DRAINS 24"

LOCATION	FOOT
LT STA 9+75	24
TOTAL	24

CONCRETE COLLAR

LOCATION	CU YD
LT STA 8+07	0.4
TOTAL	0.4

PERIMETER EROSION BARRIER

LOCATION	FOOT
RT STA 7+30 TO STA 8+70	140
TOTAL	140

TEMPORARY FENCE

LOCATION	FOOT
RT STA 7+35 TO STA 8+45	110
TOTAL	110

FURNISHING AND ERECTING RIGHT OF WAY MARKERS

LOCATION	EACH
18.69' LT STA 7+30	1
45.00' LT STA 8+20	1
45.00' LT STA 10+40	1
35.00' LT STA 10+40	1
25.14' LT STA 13+95	1
19.68' LT STA 13+95	1
21.19' RT STA 8+50	1
35.00' RT STA 8+50	1
35.00' RT STA 11+00	1
20.31' RT STA 14+00	1
TOTAL	10

SEEDING, CLASS 2 (SPECIAL)

LOCATION	ACRE
LT STA 7+30 TO STA 9+80.00	0.13
LT STA 10+32 TO STA 14+00.00	0.15
RT STA 7+30 TO STA 9+93	0.08
RT STA 10+32 TO STA 14+00	0.12
SUBTOTAL	0.48
USE	0.50

TEMPORARY EROSION CONTROL SEEDING

LOCATION	POUND
LT STA 7+30 TO STA 9+80	13
LT STA 10+32 TO STA 14+00	15
RT STA 6+50 TO STA 7+13	8
RT STA 10+32 TO STA 14+00	12
TOTAL	48

TEMPORARY DITCH CHECKS

LOCATION	FOOT
LT STA 9+00	8
LT STA 10+37	8
LT STA 12+00	8
RT STA 9+60	8
RT STA 10+37	8
RT STA 12+00	8
TOTAL	48

INLET AND PIPE PROTECTION

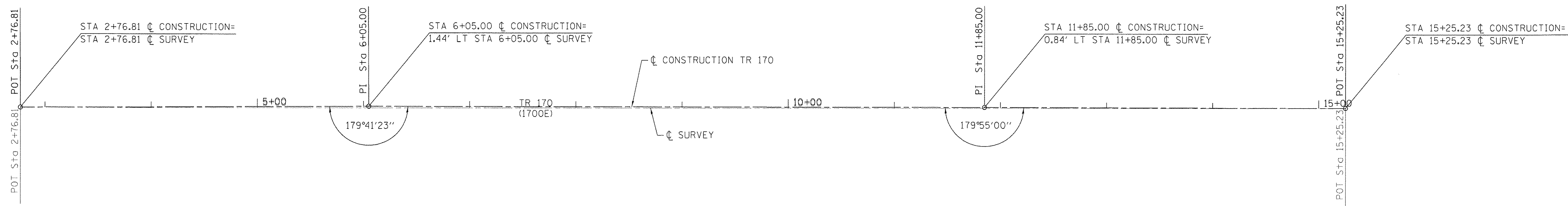
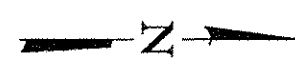
LOCATION	EACH
LT STA 9+58	1
LT STA 14+07	1
TOTAL	2

STONE RIPRAP, CLASS A4

LOCATION	TON
LT STA 9+75 TO STA 9+90	25
STRUCTURE	280
TOTAL	305

FILTER FABRIC

LOCATION	SQ YD
LT STA 9+75 TO STA 9+90	36
STRUCTURE	349
TOTAL	385



BM#1 - CUT "4" ON N.E. CAP BOLT F.H.
 STA. 3+98, 22' LT
 ELEV. 673.07

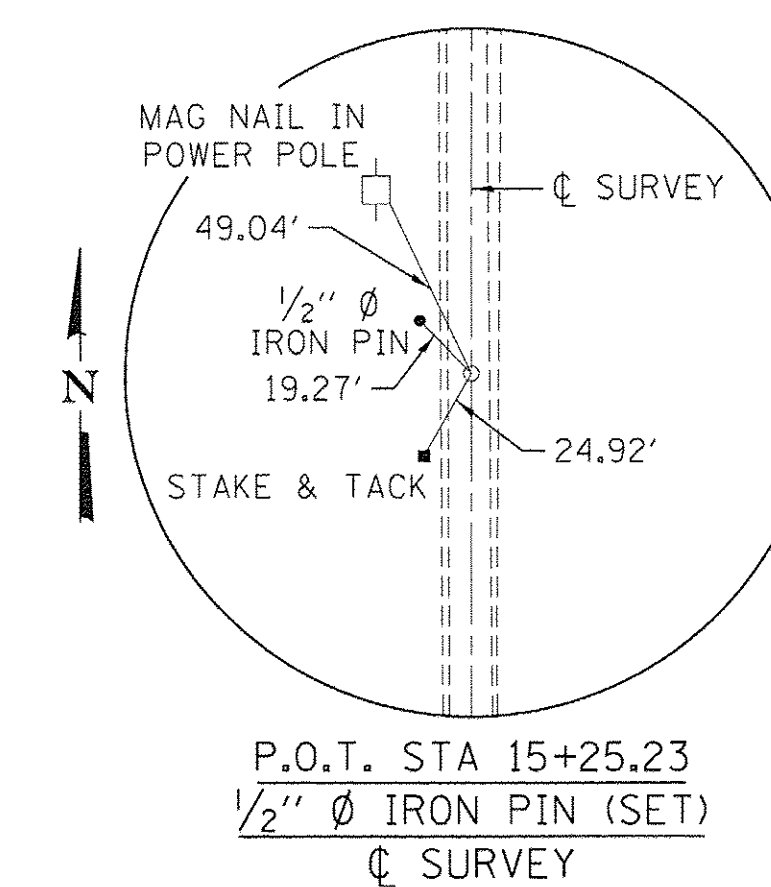
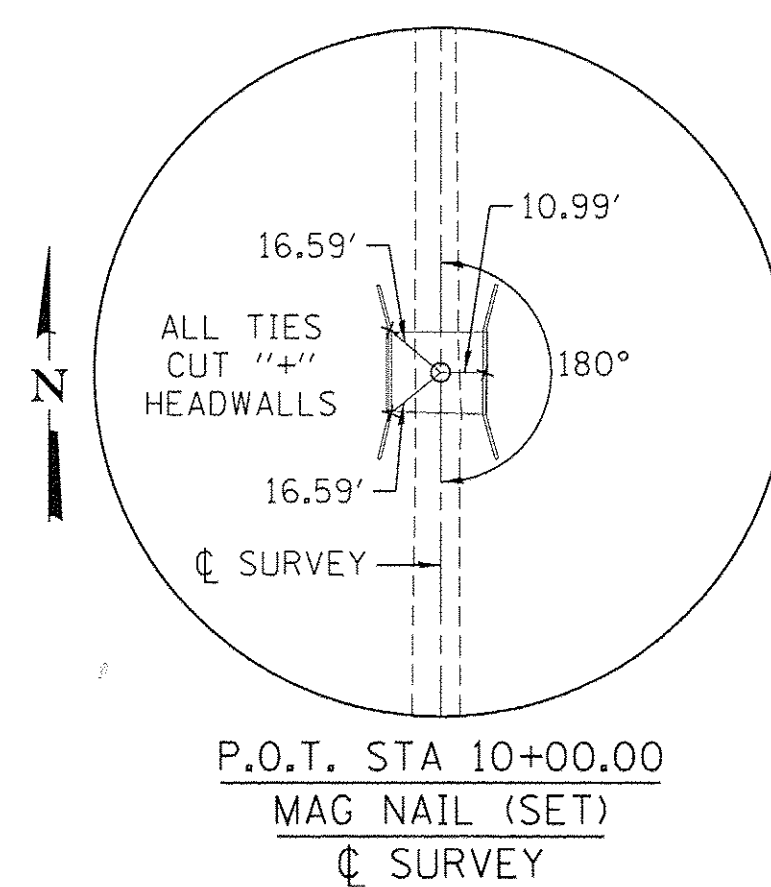
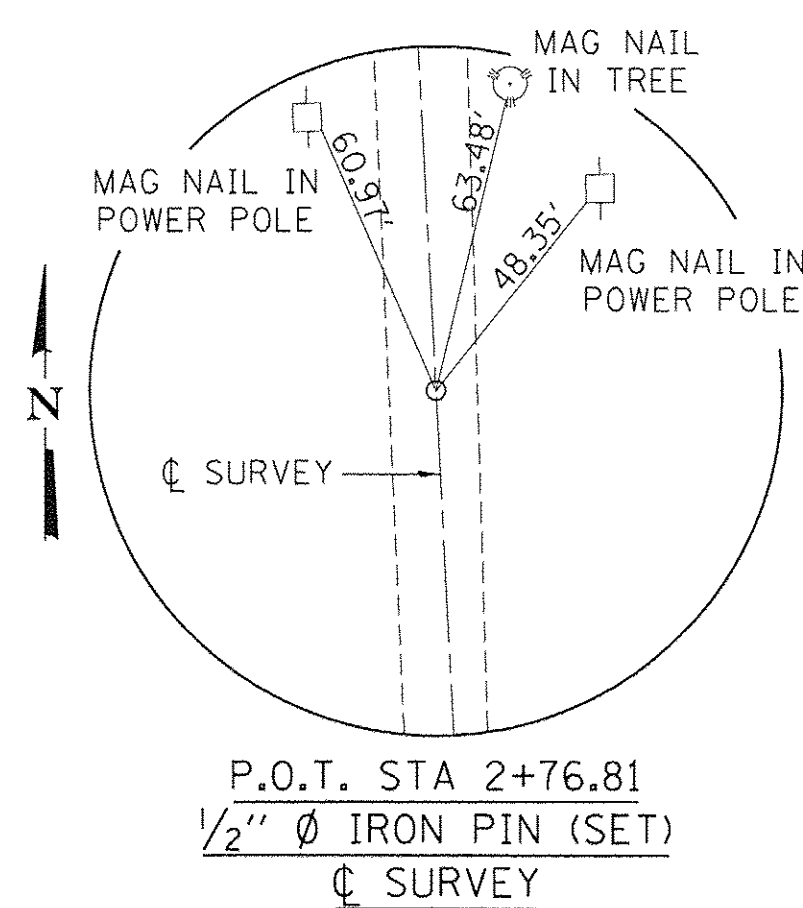
BM#2 - MAG SPIKE IN POWER POLE
 STA. 6+59, 20' LT
 ELEV. 650.26

BM#3 - CUT "4" ON CONCRETE HEADWALL
 STA. 10+11, 11' RT
 ELEV. 650.46

BM#4 - MAG SPIKE IN POWER POLE
 STA 12+71, 19' LT
 ELEV. 653.80

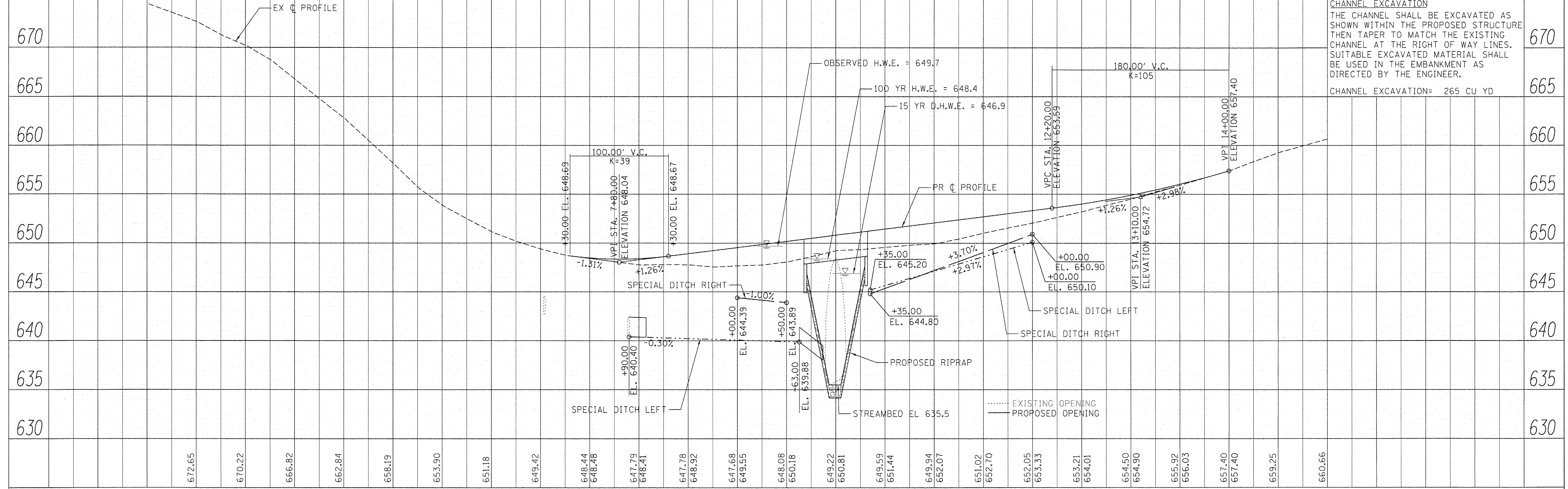
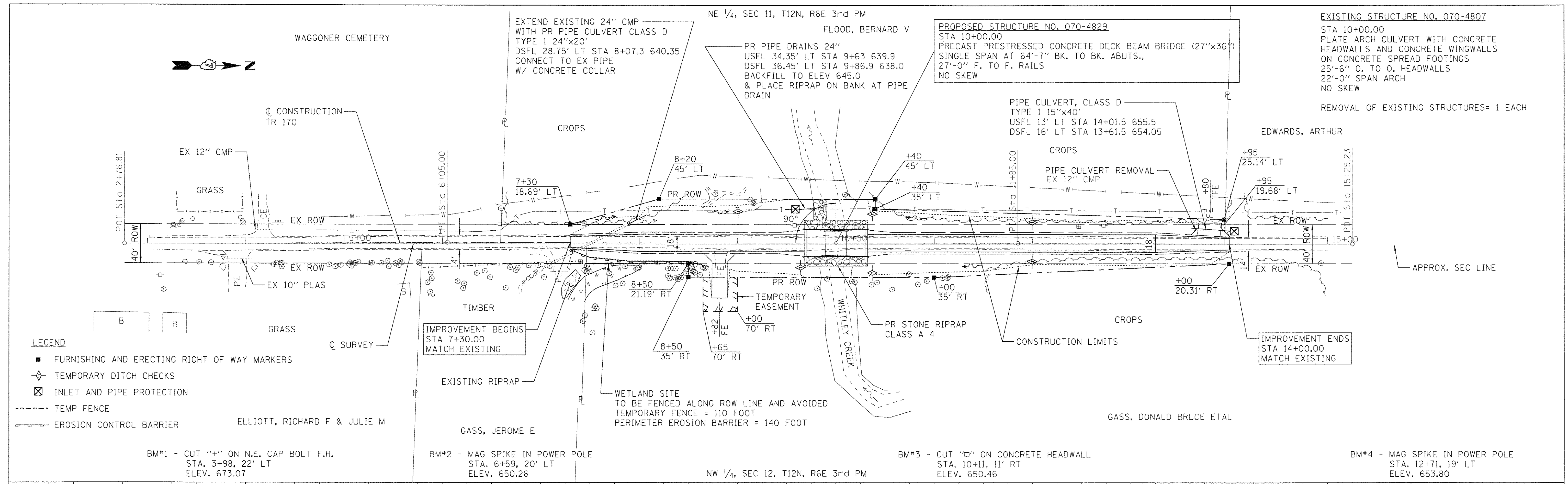
☐ SURVEY			
CONTROL POINT	STATION	COORDINATES	
		NORTHING	EASTING
P.O.T.	2+76.81	1031505.49	940080.02
P.O.T.	10+00.00	1032228.46	940062.48
P.O.T.	15+25.23	1032753.54	940049.75

☐ CONSTRUCTION			
CONTROL POINT	STATION	COORDINATES	
		NORTHING	EASTING
P.O.T.	2+76.81	1031505.49	940080.02
P.I.	6+05.00	1031833.55	940070.62
P.I.	11+85.00	1032413.39	940057.16
P.O.T.	15+25.23	1032753.54	940049.75



DATE	
BY	
NO.	
FILE NAME	
CHECKED	
ALIGNED	
PLANNED	
NOTED	
PLAN	

DATE	
BY	
NO.	
FILE NAME	
CHECKED	
STRUCTURE	
NOTATIONS	
CHKO	
PROFILE	



672.65	670.22	666.82	662.84	658.19	653.90	651.18	649.42	648.44	648.78	647.79	648.41	647.78	648.92	647.68	649.55	648.08	650.18	649.22	650.81	649.59	651.44	649.94	652.07	651.02	652.70	652.05	653.33	653.21	654.01	654.50	654.90	655.92	656.03	657.40	657.40	659.25	660.66
4+00		5+00		6+00		7+00		8+00		9+00		10+00		11+00		12+00		13+00		14+00		15+00															

CEC Cummins Engineering Corporation
Civil and Structural Engineering

JOB - 2414
FILE NAME = 2414-shr-plan1.dgn
PLOT SCALE = 50.0000" / IN.
PLOT DATE = 3/28/2017

DESIGNED - NAK
DRAWN - SJS
CHECKED - NAK
DATE - 2/22/2016

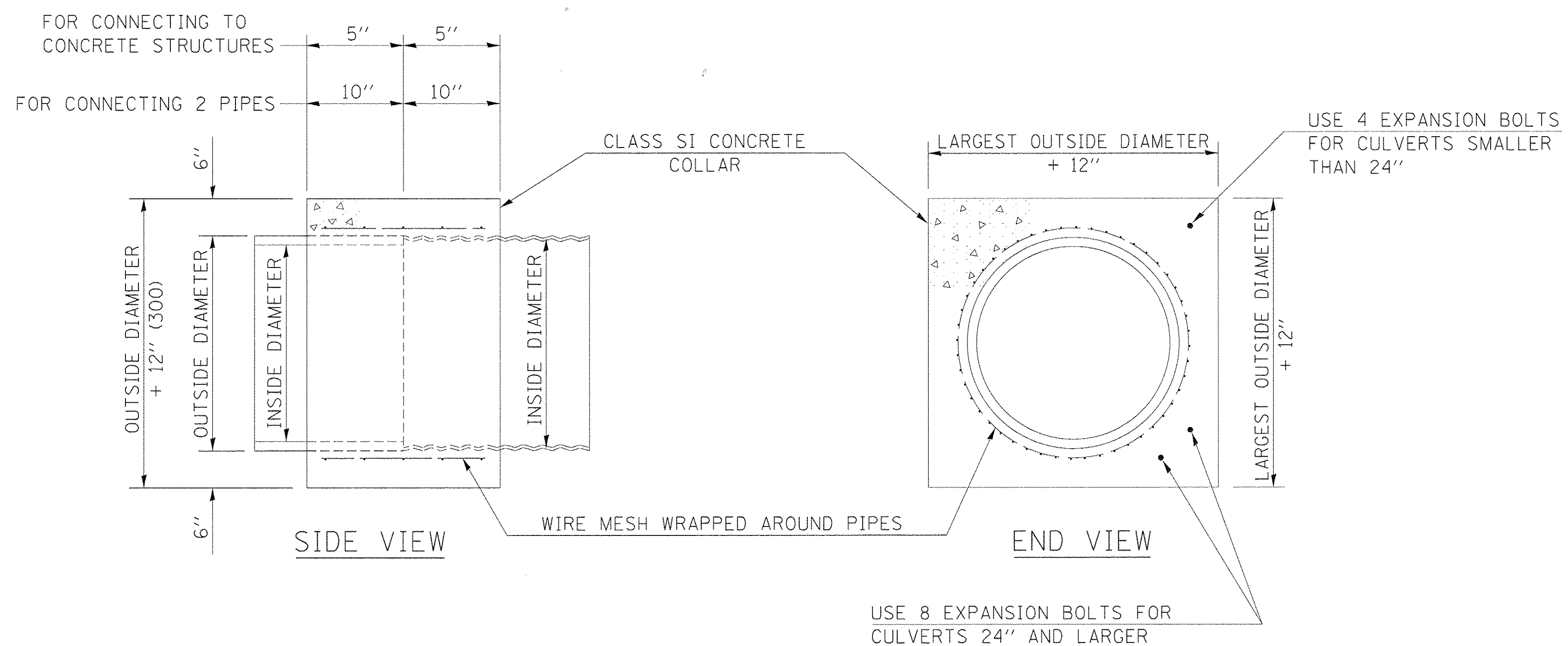
REVISED -
REVISED -
REVISED -
REVISED -

**MOULTRIE COUNTY
TR 170 IMPROVEMENTS**

PLAN AND PROFILE

SCALE: SHEET NO. OF SHEETS STA. 6+50.00 TO STA. 14+00.00

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
170	13-08114-00-BR	MOULTRIE	19	5
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		CONTRACT NO. 95812		

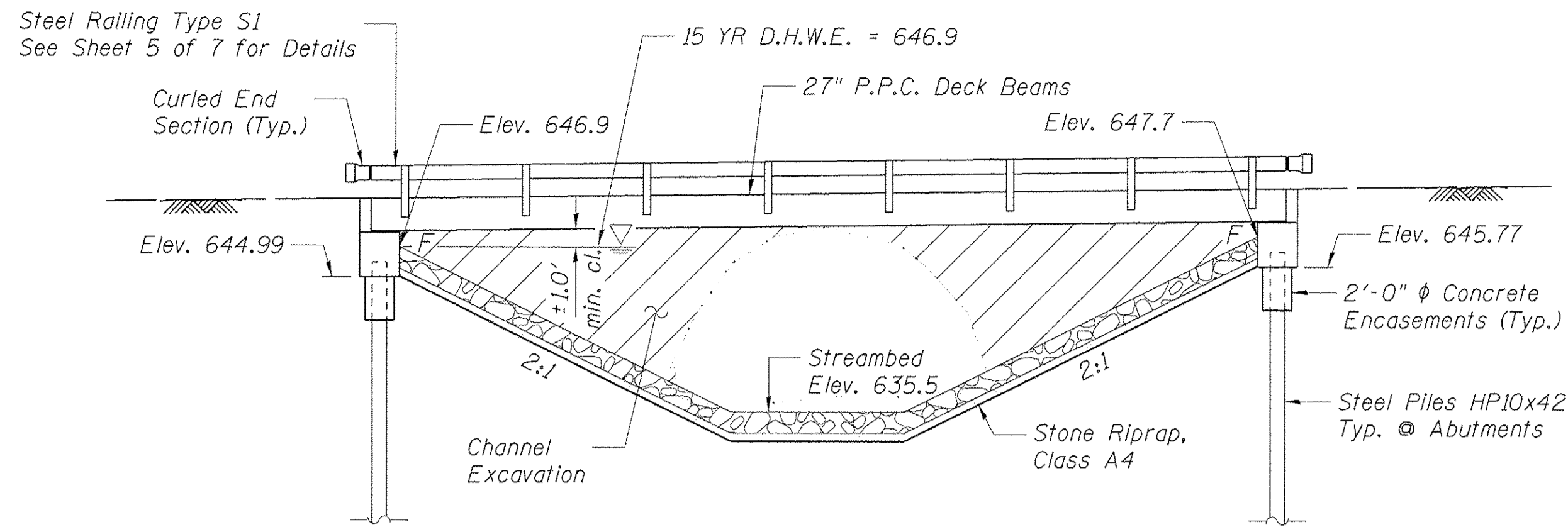
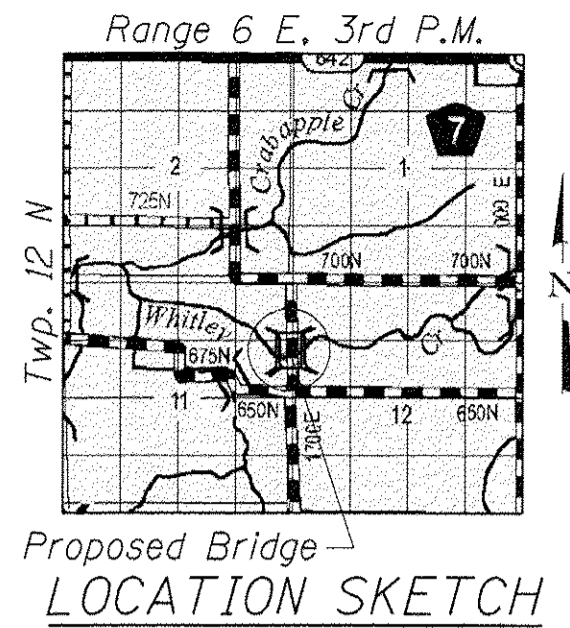


GENERAL NOTES

1. CLASS SI CONCRETE SHALL BE USED THROUGHOUT.
2. WHEN CONCRETE COLLARS ARE USED TO CONNECT PIPES OF DIFFERENT OUTSIDE DIAMETERS, THE CONCRETE COLLAR SHALL BE FORMED USING THE LARGEST OUTSIDE DIAMETER (SEE END VIEW).
3. THE WIRE MESH SHALL WEIGH NOT LESS THAN 54#/100 SQ. FT.
4. WHEN CONCRETE COLLARS ARE CONSTRUCTED ADJACENT TO AN EXISTING CONCRETE STRUCTURE (HEADWALLS, ETC.) EXPANSION BOLTS, SHALL BE USED AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE, EACH, FOR EXPANSION BOLTS OF THE SIZE SPECIFIED IN THE PLANS.
5. CONCRETE COLLARS WILL BE PAID FOR AT THE CONTRACT UNIT PRICE, PER CUBIC YARD, FOR CONCRETE COLLARS INCLUDING ALL MATERIAL AND LABOR SPECIFIED TO COMPLETE THE WORK IN PLACE.

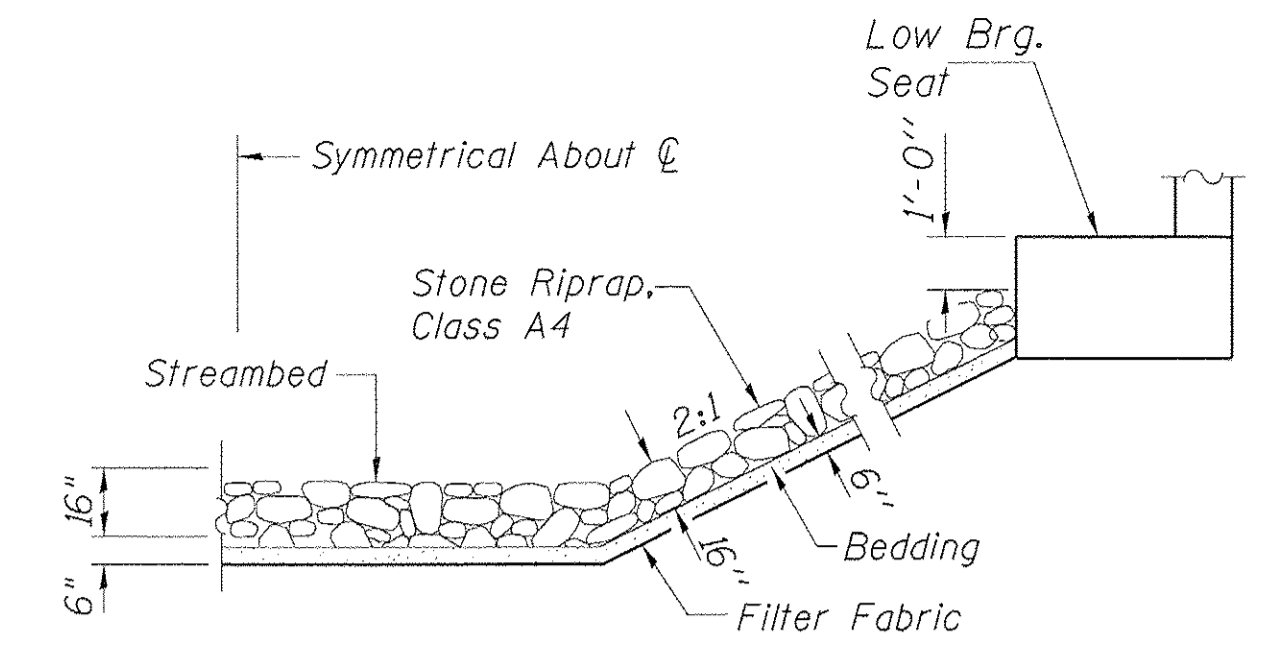
QUANTITIES FOR CONCRETE PIPES	
INSIDE DIAMETER OF PIPE	ESTIMATED CLASS SI CONCRETE REQUIRED
INCH	20" WIDTH CU. YD.
4"	0.14
6"	0.16
8"	0.19
10"	0.22
12"	0.25
15"	0.30
18"	0.35
24"	0.45
30"	0.57
36"	0.69
42"	0.83
48"	0.97
54"	1.12
60"	1.28

QUANTITIES FOR METAL PIPES	
INSIDE DIAMETER OF PIPE	ESTIMATED CLASS SI CONCRETE REQUIRED
INCH	20" WIDTH CU. YD.
4"	0.12
6"	0.14
8"	0.16
10"	0.19
12"	0.21
15"	0.25
18"	0.29
24"	0.38
30"	0.47
36"	0.59
42"	0.69
48"	0.81
54"	0.93
60"	1.05

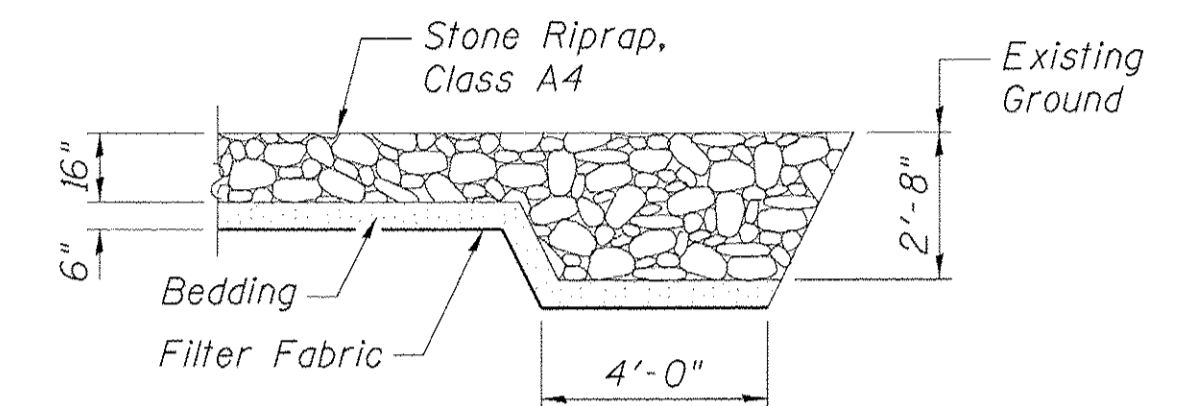


ELEVATION

WHITLEY CREEK
 BUILT 20__ BY
 WHITLEY ROAD DISTRICT
 MOULTRIE COUNTY
 SEC. 13-08114-00-BR
 STATION 10+00
 STR. NO. 070-4829 LOADING HL93
 LETTERING FOR NAME PLATE
 See Std. 515001



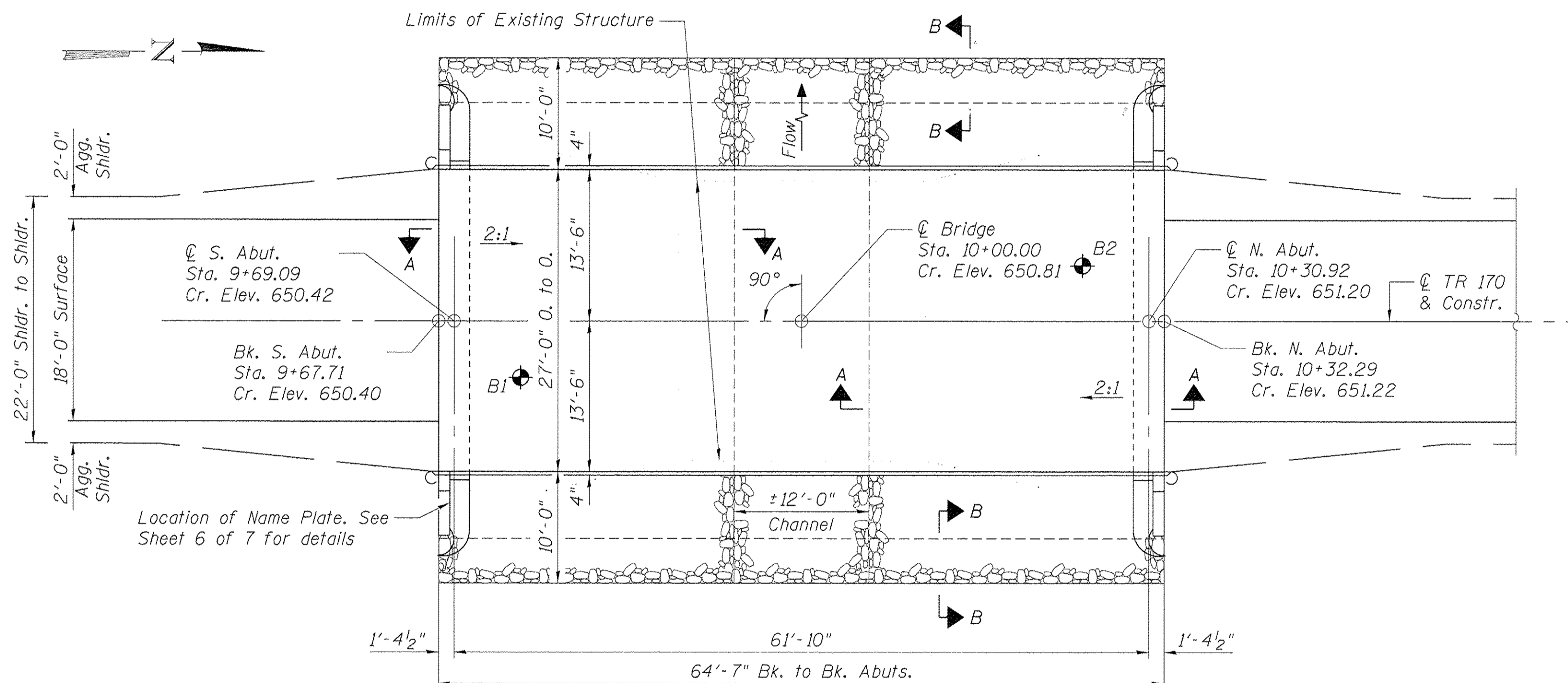
SECTION A-A
 STONE RIPRAP DETAIL



SECTION B-B
 STONE RIPRAP DETAIL

GENERAL NOTES

- See Special Provisions for Boring data.
- 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.
- The Steel H-Piles shall be according to AASHTO M270 Grade 50. The Contractor shall drive one steel test pile in a permanent location at the North Abutment, as directed by the Engineer, before ordering the remainder of piles. The test piles shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
* Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1,701		1,701
Concrete Structures	Cu. Yd.		24.4	24.4
* Reinforcement Bars, Epoxy Coated	Pound		2,800	2,800
Steel Railing, Type S1	Foot	126		126
Name Plates	Each	1		1
Furnishing Steel Piles HP10x42	Foot		432	432
Driving Piles	Foot		432	432
Test Pile Steel HP10x42	Each		1	1
Stone Riprap, Class A4	Ton		280	280
Concrete Encasement	Cu. Yd.		3.5	3.5
Filter Fabric	Sq. Yd.		349	349
Structure Excavation	Cu. Yd.		34	34

* See Special Provisions

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	S. Abut.	N. Abut.
	645.0	645.8

WATERWAY INFORMATION

Drainage Area	10.4 Sq. Mi.
Required Opening (15 Yr.)	397 Sq. Ft.
Existing Opening (15 Yr.)	198 Sq. Ft.
Approach Opening (15 Yr.)	0 Sq. Ft.
Proposed Opening (15 Yr.)	397 Sq. Ft.
Required Opening (100 Yr.)	475 Sq. Ft.
Existing Opening (100 Yr.)	208 Sq. Ft.
Approach Opening (100 Yr.)	114 Sq. Ft.
Proposed Opening (100 Yr.)	475 Sq. Ft.
Design Discharge (15 Yr.)	1,220 C.F.S.
Created Head (15 Yr.)	0.1 Ft.
100 Year Discharge	1,960 C.F.S.
100 Yr. Created Head	0.1 Ft.

DESIGN STRESSES

FIELD UNITS

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

PRECAST PRESTRESSED UNITS

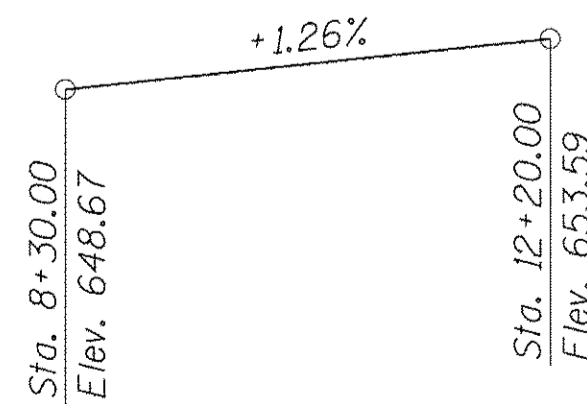
$f'_c = 6,000$ psi
 $f'_{ci} = 5,000$ psi
 $f_{pu} = 270,000$ psi ($\frac{1}{2}$ " ϕ low lax. strands)
 $f_{pbt} = 201,960$ psi ($\frac{1}{2}$ " ϕ low lax. strands)
 $f_y = 60,000$ psi (Reinforcement)

DESIGN SPECIFICATIONS

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

LOADING HL-93

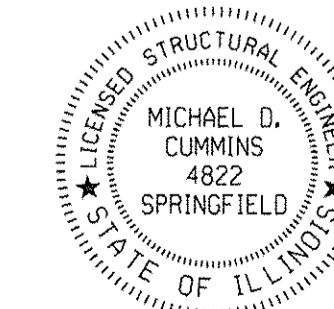
Allow 50#/#Sq. Ft. for future wearing surface.



PROFILE GRADE
 (Along TR 170)

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

Michael D. Cummins 3-28-17
 ILLINOIS STRUCTURAL NO. 4822 (Expires 11/30/18)



GENERAL PLAN & ELEVATION
 TR 170 OVER WHITLEY CREEK
 SECTION 13-08114-00-BR
 MOULTRIE COUNTY
 STATION 10+00
 STRUCTURE NO. 070-4829



JOB = 2414
 FILE = 2414_0704829_08.GPE.dgn
 DATE = 3/28/2017

DESIGNED - AAN
 CHECKED - RK
 DRAWN - SJS
 CHECKED - MDC

REVISED -
 REVISED -
 REVISED -
 REVISED -

MOULTRIE COUNTY
 TR 170 IMPROVEMENTS

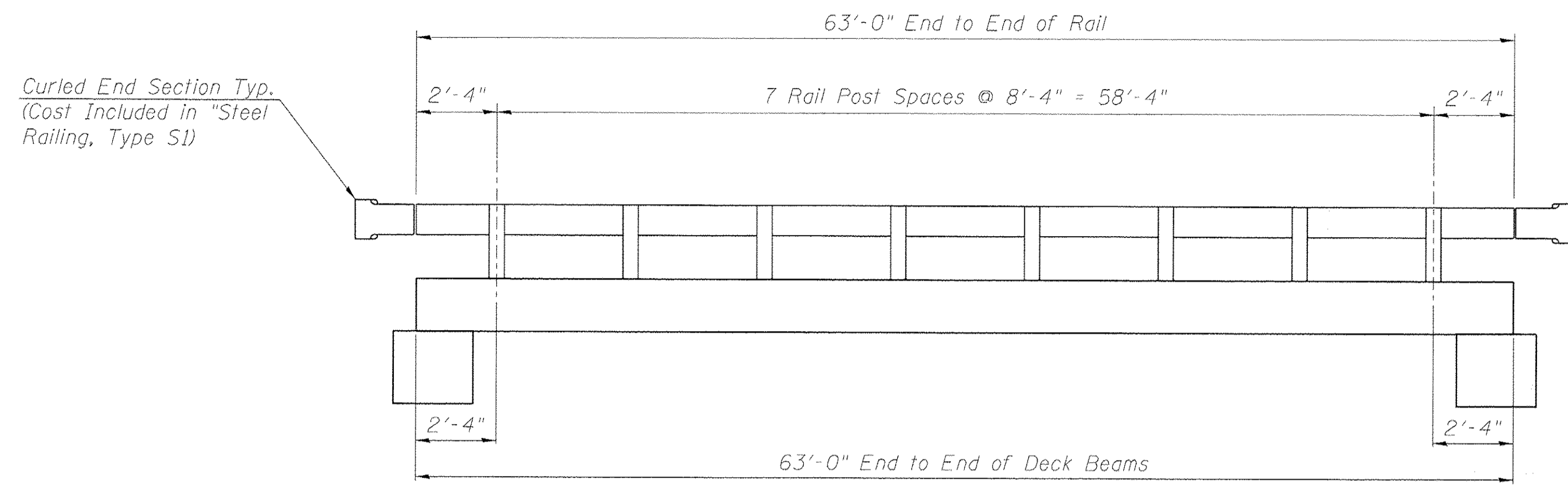
GENERAL PLAN & ELEVATION
 STRUCTURE NO. 070-4829

SHEET NO. 1 OF 7 SHEETS

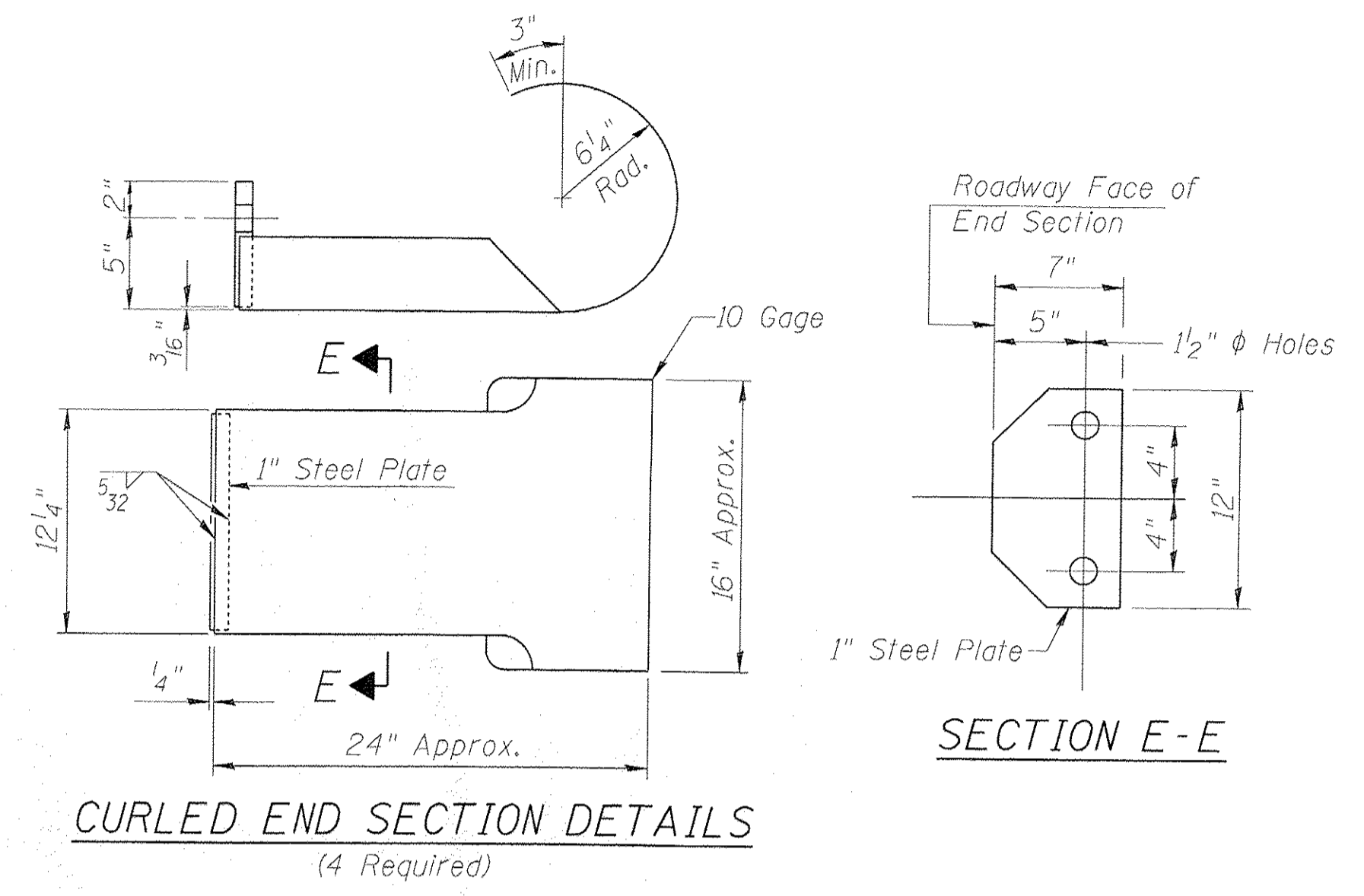
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
170	13-08114-00-BR	MOULTRIE	19	7

CONTRACT NO. 95812

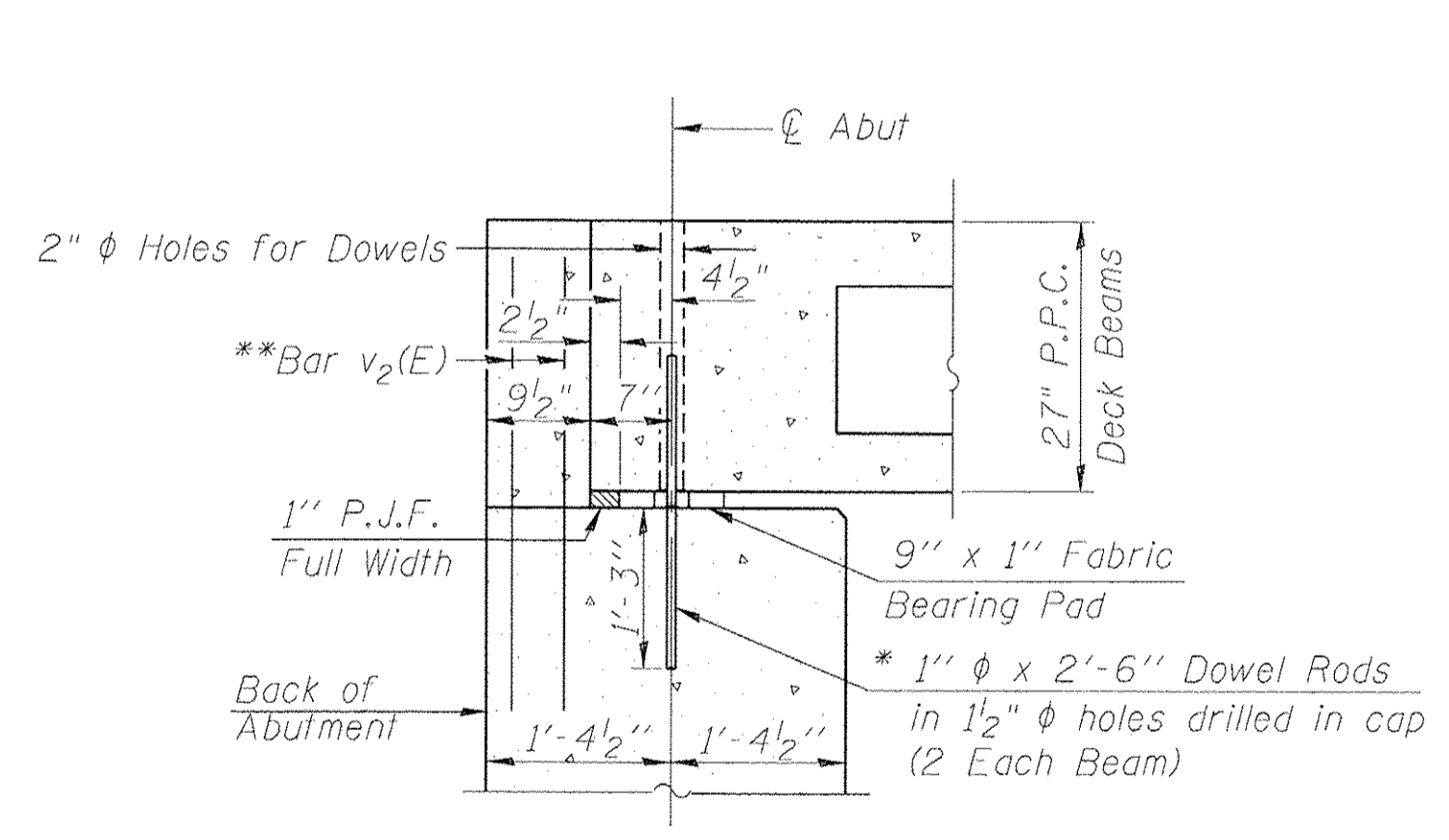
ILLINOIS FED. AID PROJECT



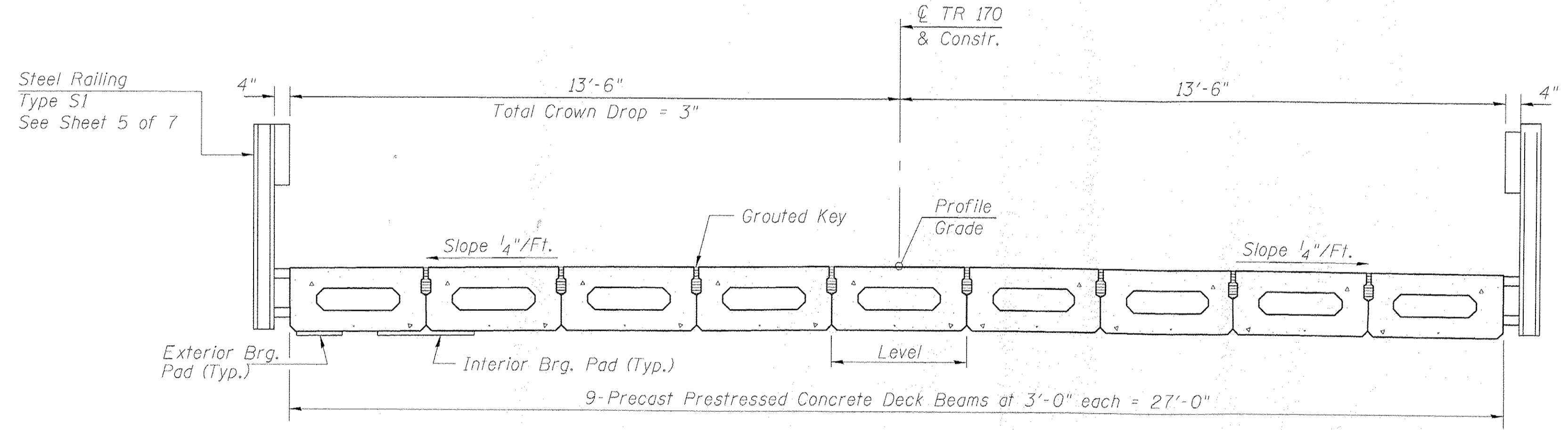
RAIL ELEVATION



CURLLED END SECTION DETAILS
(4 Required)



SECTION THRU ABUT.
(@ Rt. Δ's to Abut.)

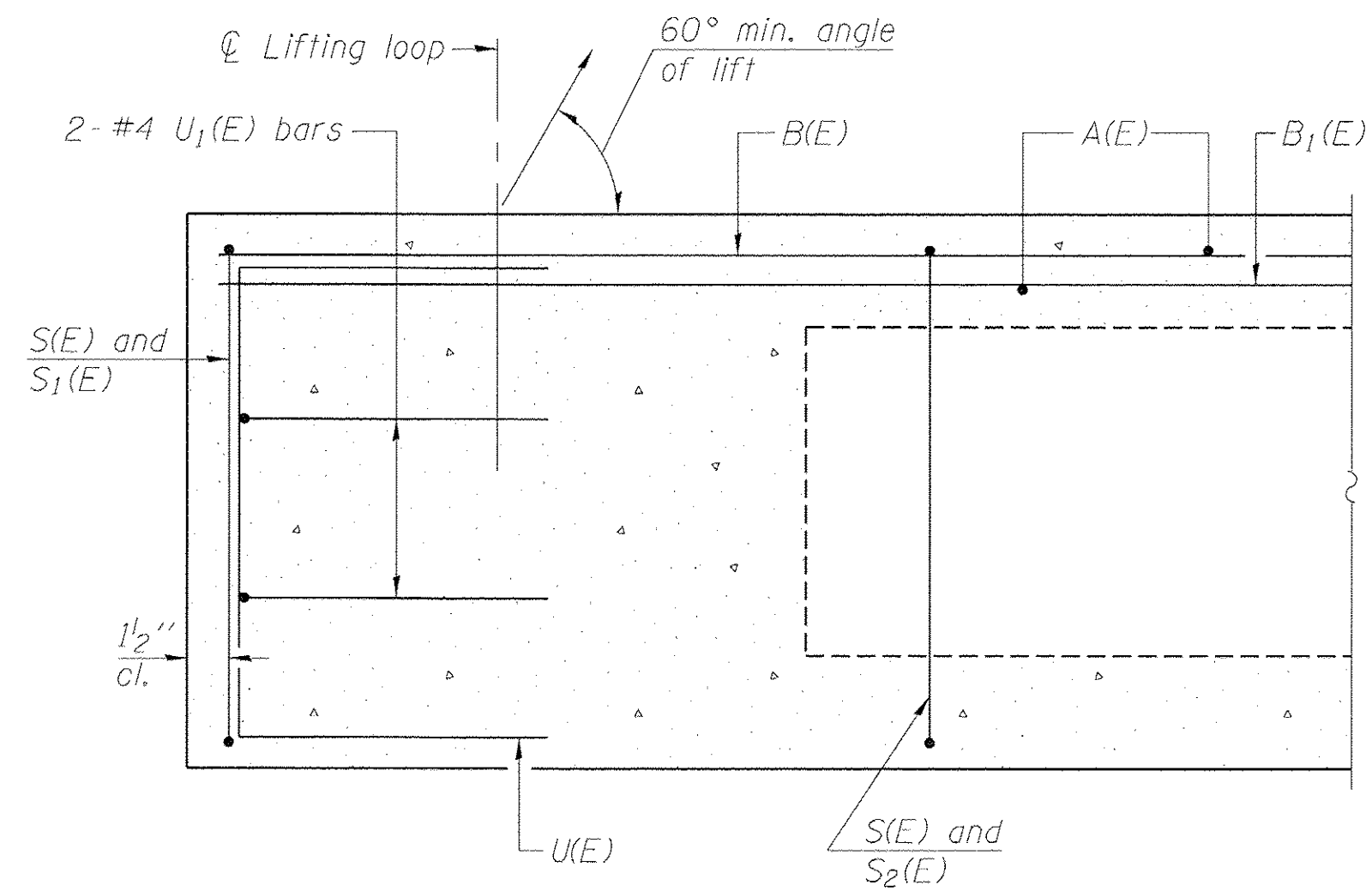


CROSS SECTION

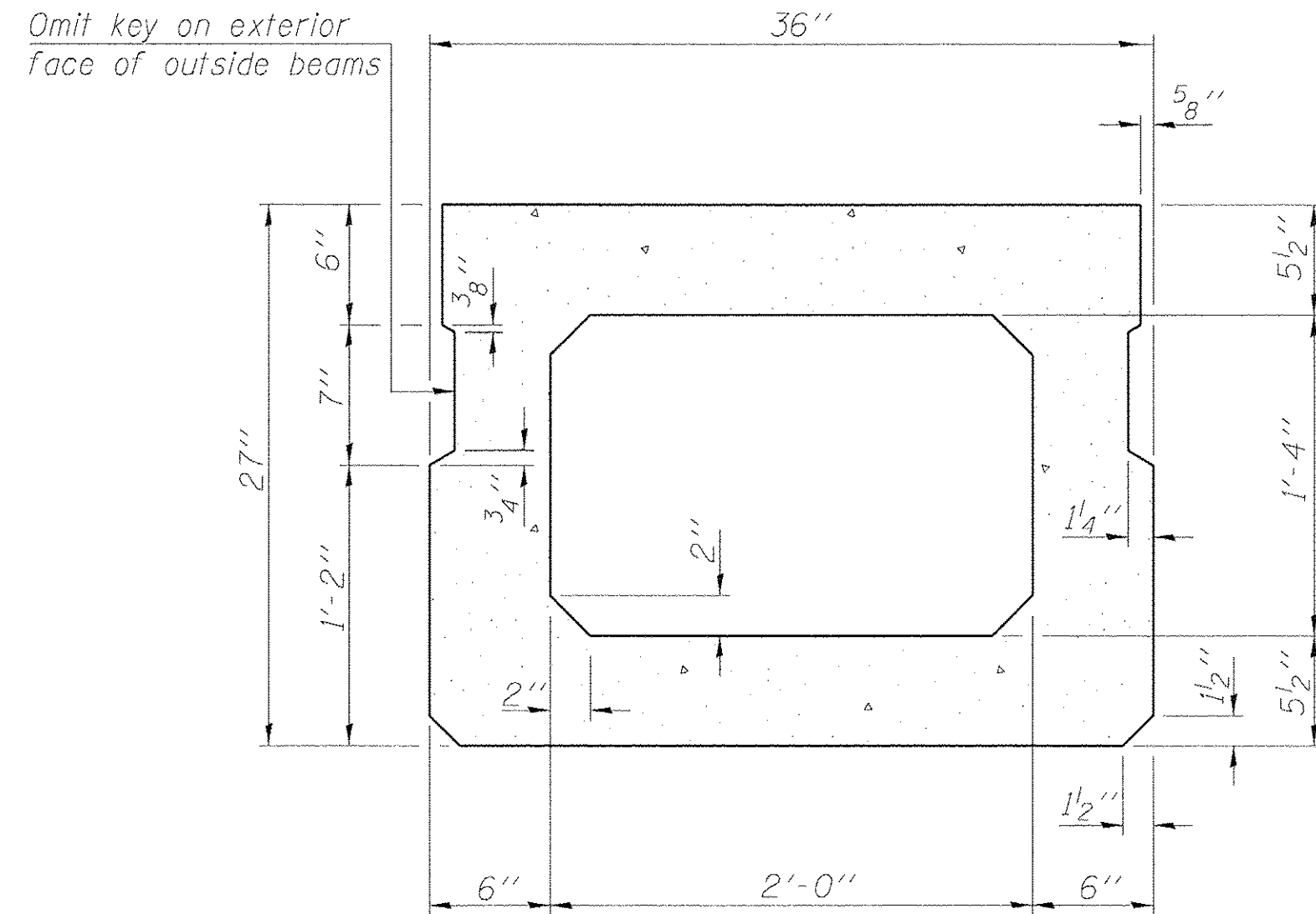
* After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.

** See Sheet 6 of 7 for v₂(E) bar

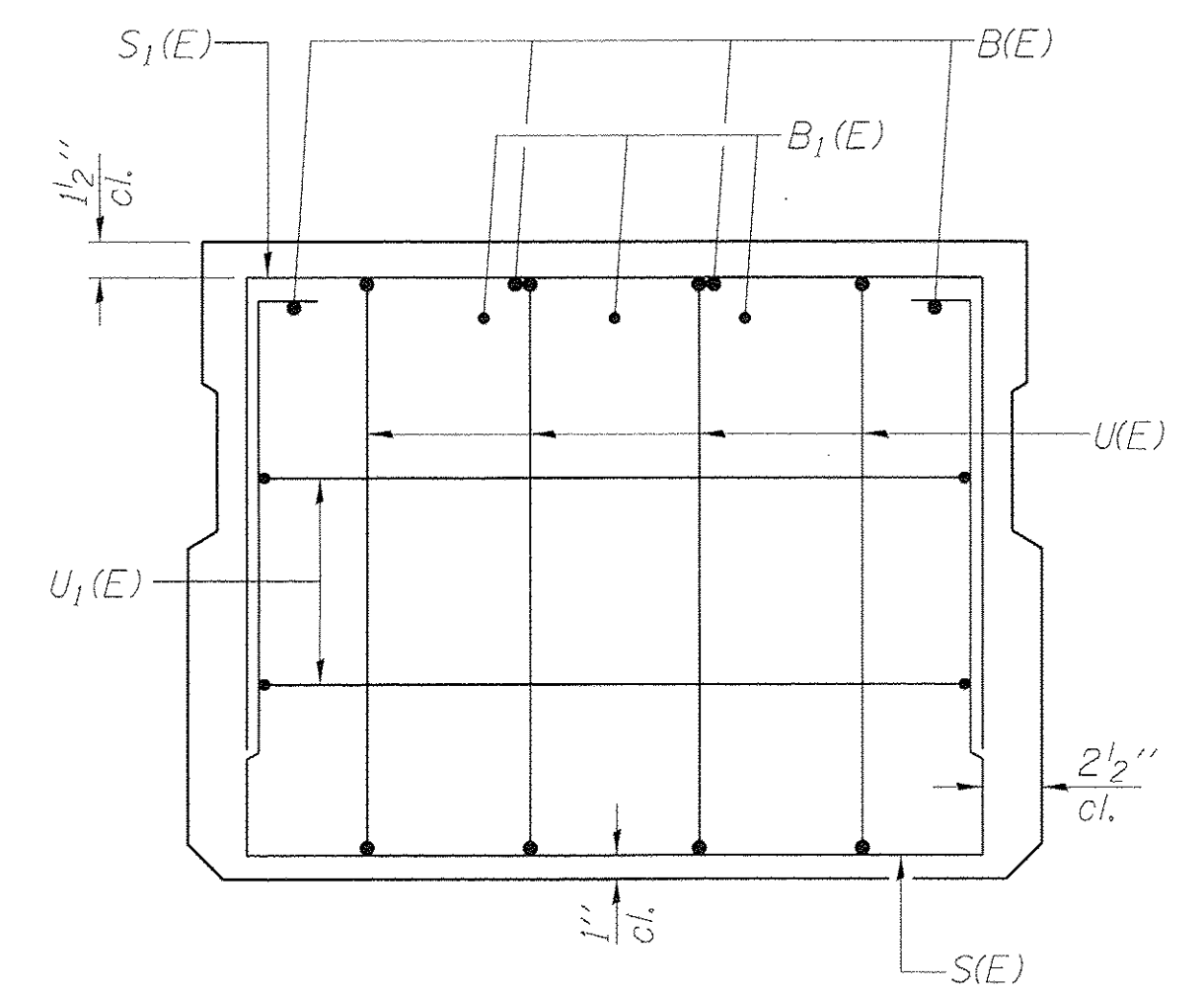
Notes:
See Sheet 3 & 4 of 7 for Superstructure.
See Sheet 5 of 7 for Steel Railing, Type S1.



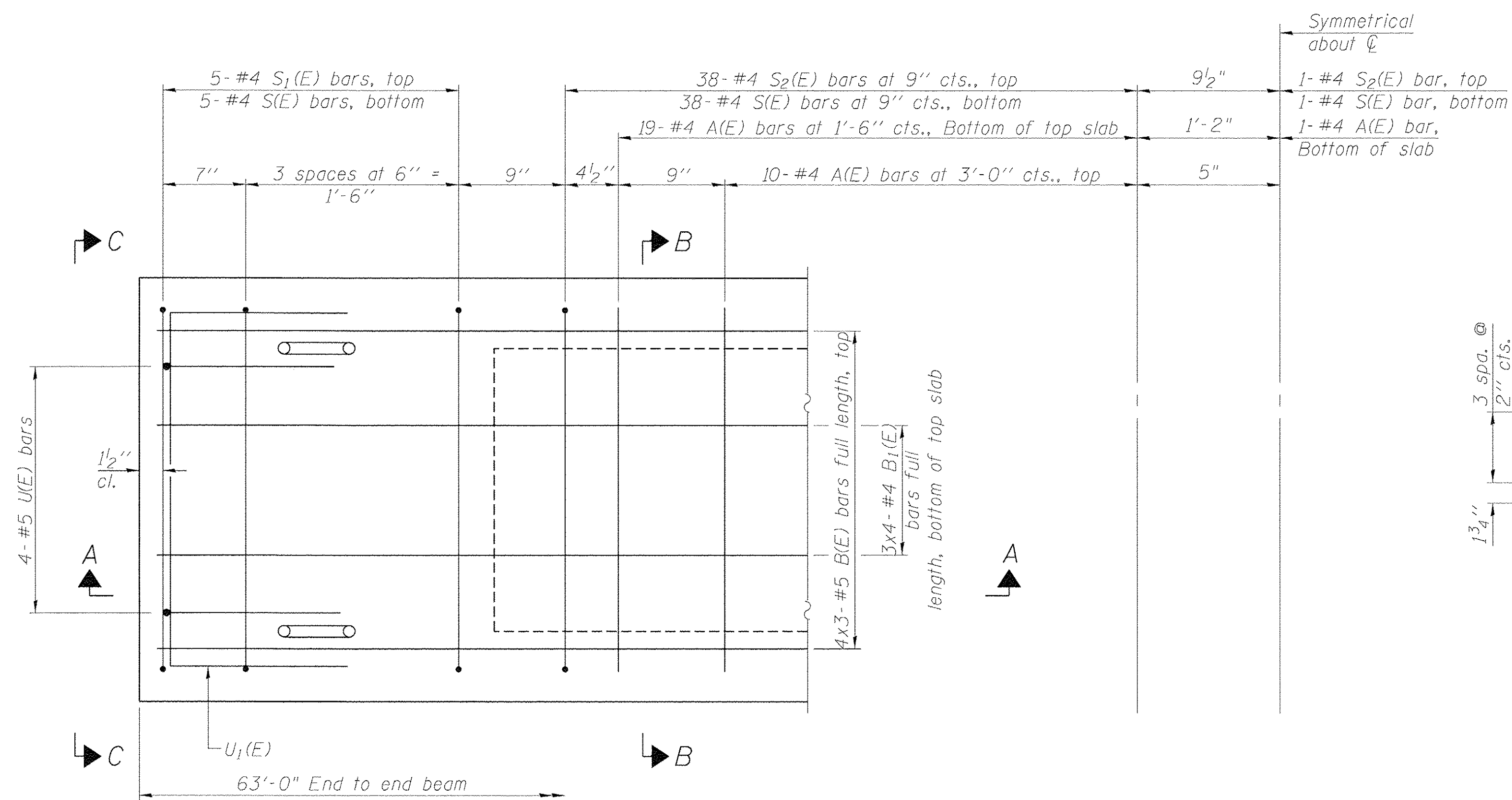
SECTION A-A



SECTION B-B
(Showing dimensions)

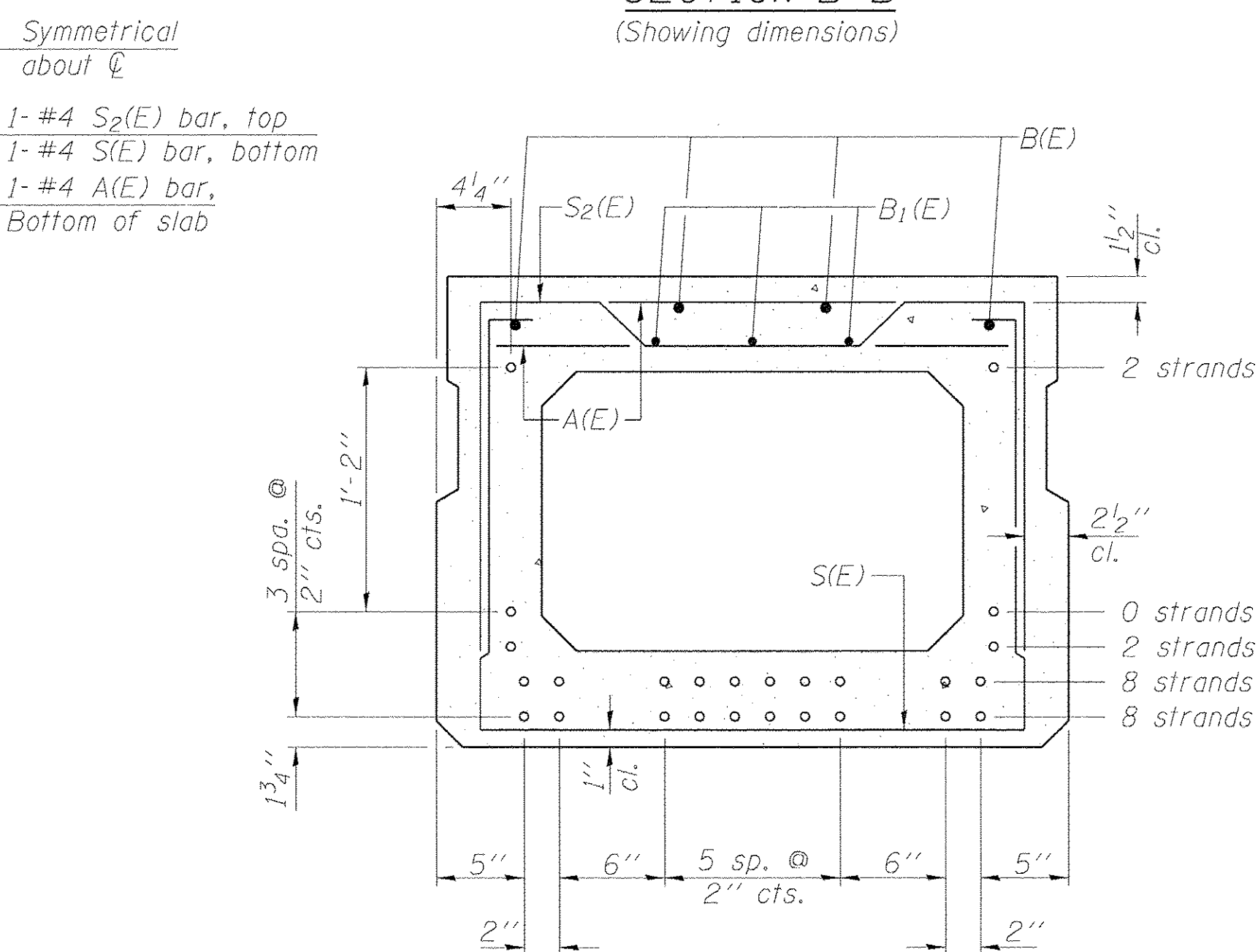


VIEW C-C



PLAN VIEW

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



SECTION B-B
(Showing reinforcement and permissible strand locations)
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST
ONE BEAM ONLY

(For information only)

Bar	No.	Size	Length	Shape
A(E)	59	#4	2'-7"	—
B(E)	12	#5	22'-7"	—
B1(E)	12	#4	17'-2"	—
S(E)	87	#4	7'-5"	⌋
S1(E)	10	#4	5'-11"	⌋
S2(E)	77	#4	6'-2"	⌋
U(E)	8	#5	4'-6"	⌋
U1(E)	4	#4	5'-0"	⌋

Note: See sheet 4 of 7 for additional details and Bill of Material.

MINIMUM BAR LAP

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

PD-2736-0

6-8-15

CEC
Civil and Structural Engineering

JOB = 2414
FILE = 2414_0704829_00_Deck.dgn
DATE = 3/28/2017

DESIGNED - AAN
CHECKED - RK
DRAWN - SJS
CHECKED - MDC

REVISED -
REVISED -
REVISED -
REVISED -

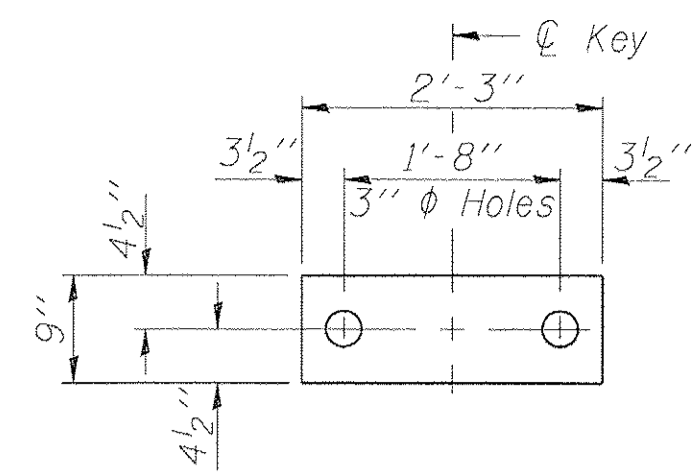
**MOULTRIE COUNTY
TR 170 IMPROVEMENTS**

**27" x 36" PPC DECK BEAM
STRUCTURE NO. 070-4829**

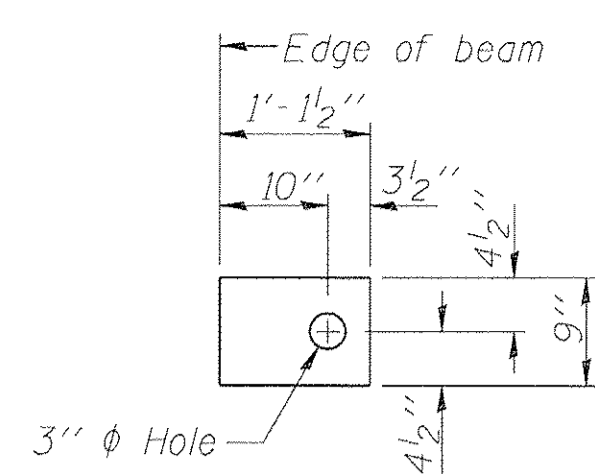
SHEET NO. 3 OF 7 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
170	13-08114-00-BR	MOULTRIE	19	9
CONTRACT NO. 95812				

ILLINOIS FED. AID PROJECT



FABRIC BEARING PAD
(Interior - 16 Required)

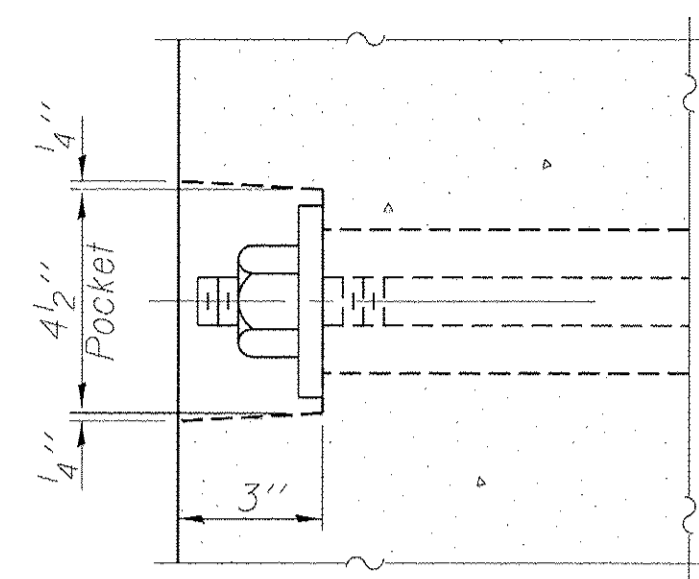


FABRIC BEARING PAD
(Exterior - 4 Required)

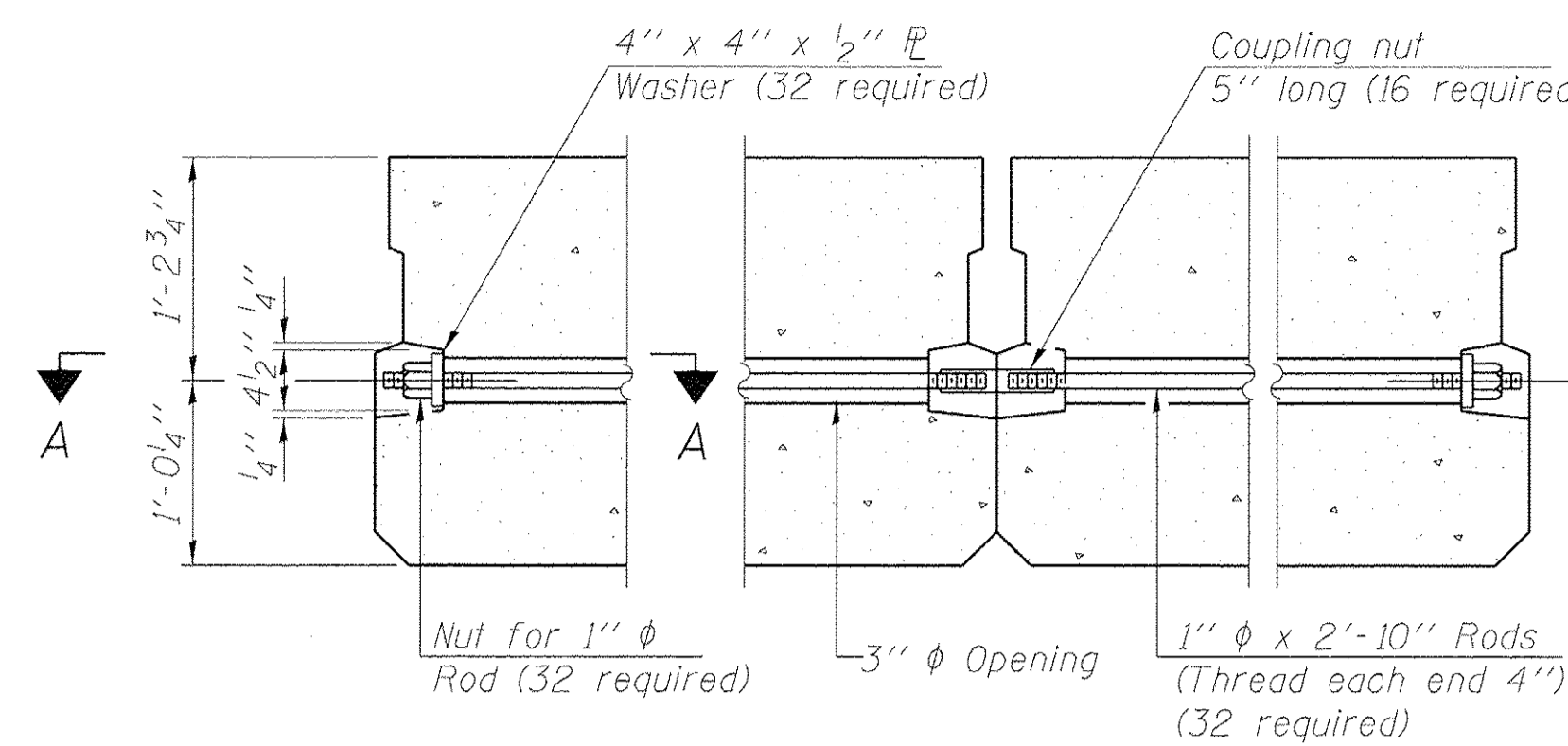
FIXED

Notes:

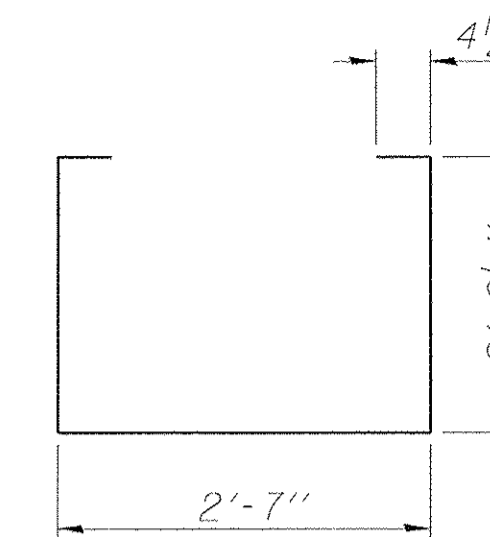
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



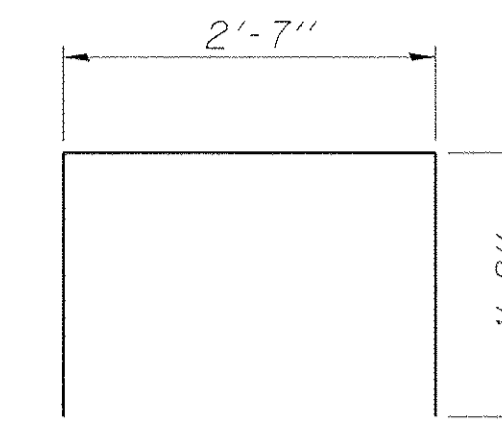
SECTION A-A



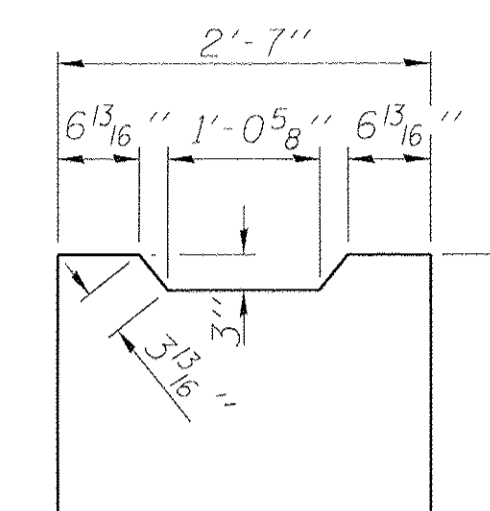
TYPICAL TRANSVERSE TIE ASSEMBLY



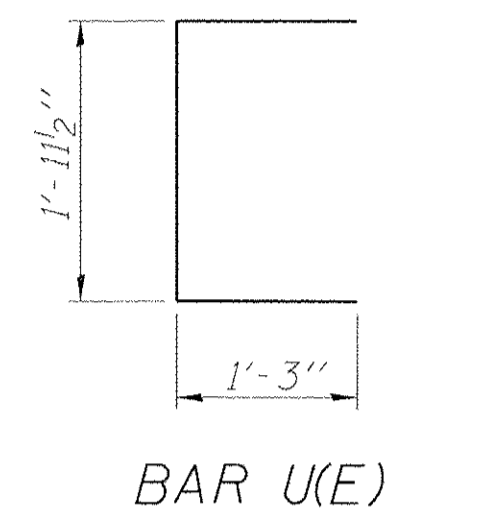
BAR S(E)



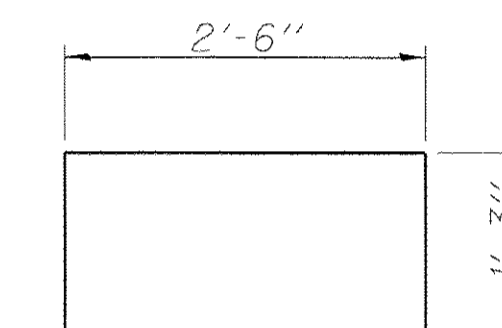
BAR S1(E)



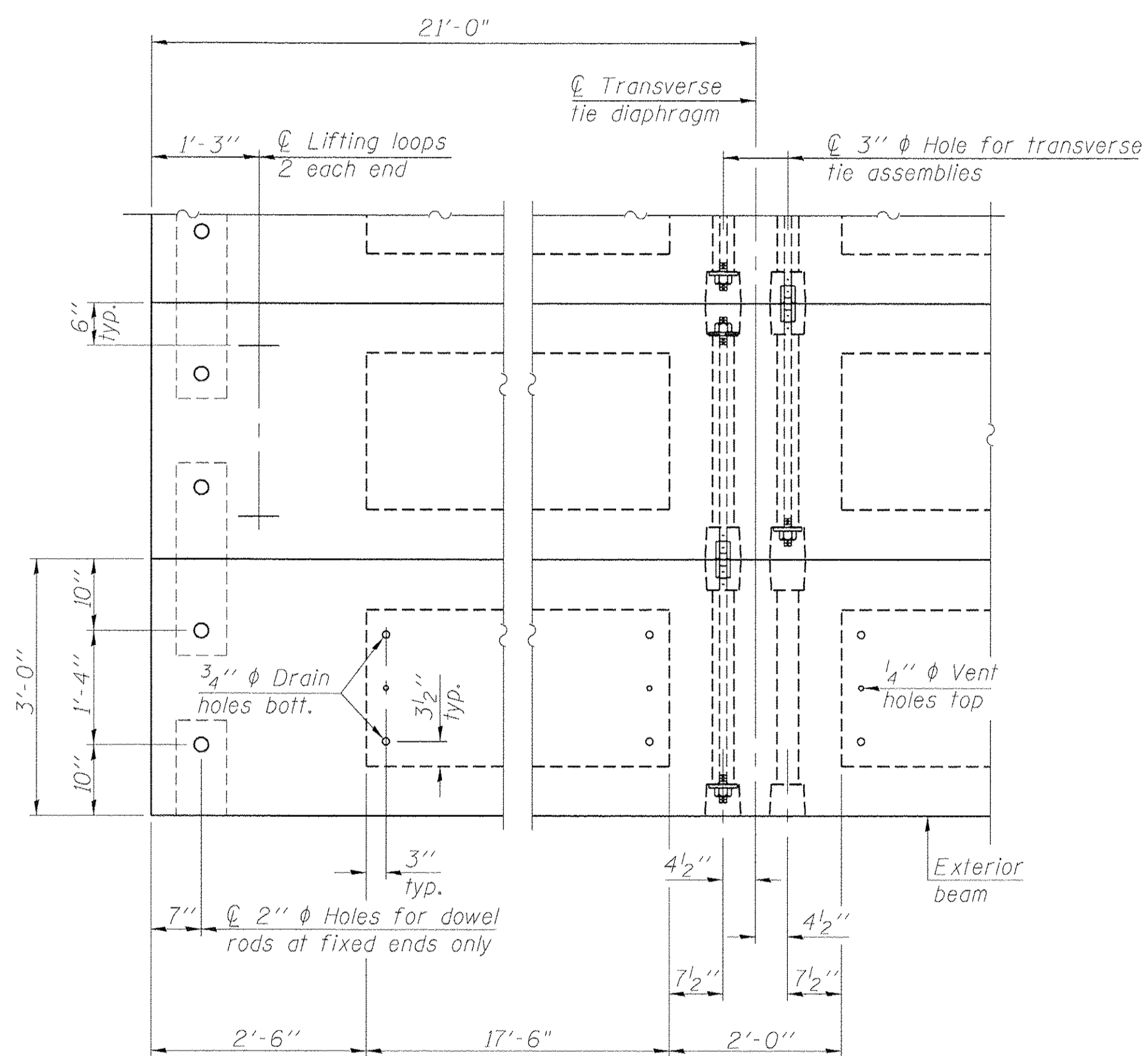
BAR S2(E)



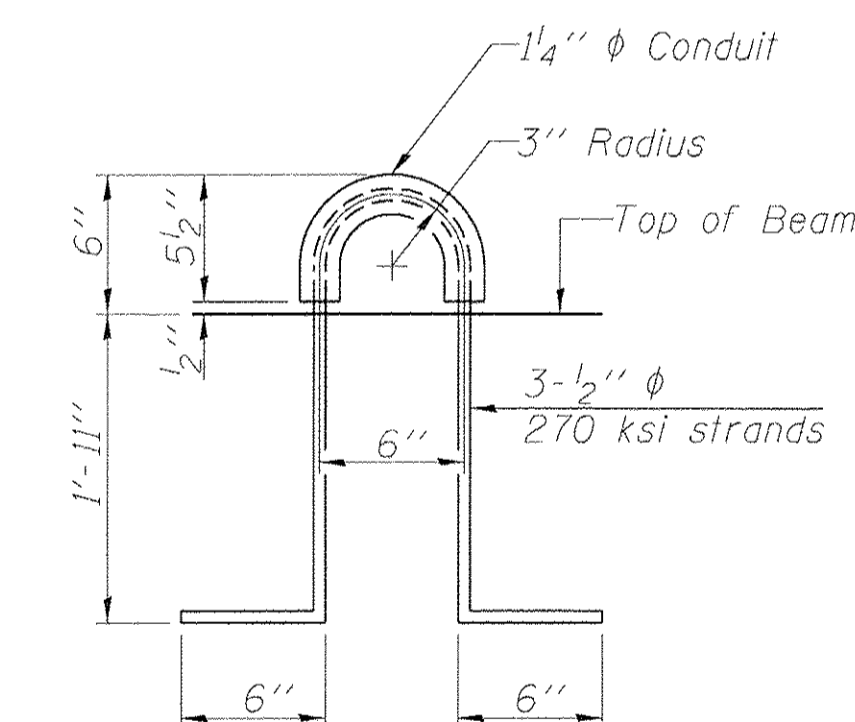
BAR U(E)



BAR U1(E)



PLAN VIEW



LIFTING LOOP DETAIL

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" diameter rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place. Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling. Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Compressive strength of prestressed concrete, f'c, shall be 6000 psi. Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1,701
---	---------	-------

PD-2736-0D

1-28-16

CEC Cummins Engineering Corporation
Civil and Structural Engineering

JOB = 2414	DESIGNED - AAN	REVISED -
FILE = 2414_0704829_00_Deck.dgn	CHECKED - RK	REVISED -
DATE = 3/28/2017	DRAWN - SJS	REVISED -
	CHECKED - MDC	REVISED -

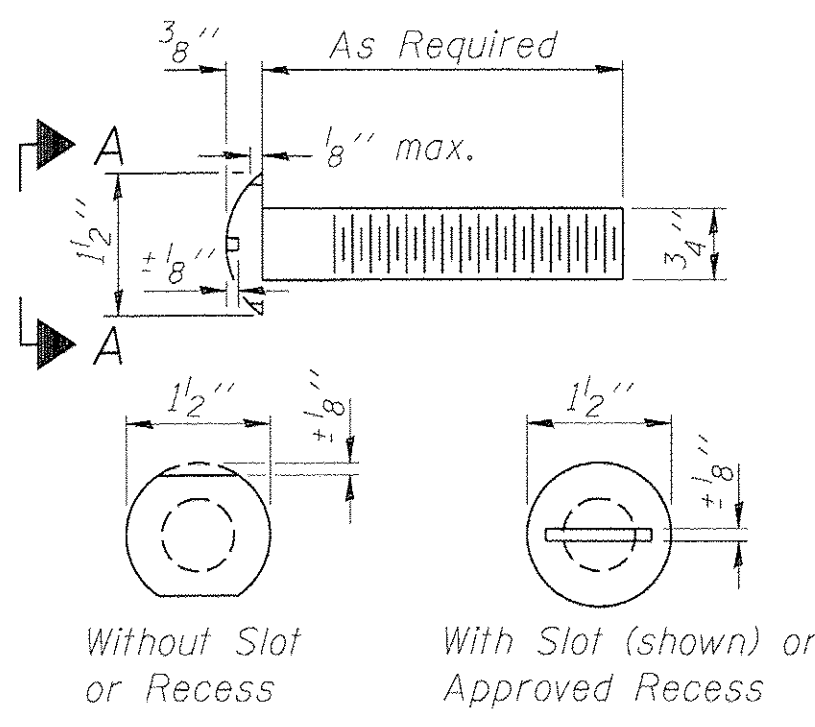
MOULTRIE COUNTY
TR 170 IMPROVEMENTS

27" x 36" PPC DECK BEAM DETAILS
STRUCTURE NO. 070-4829

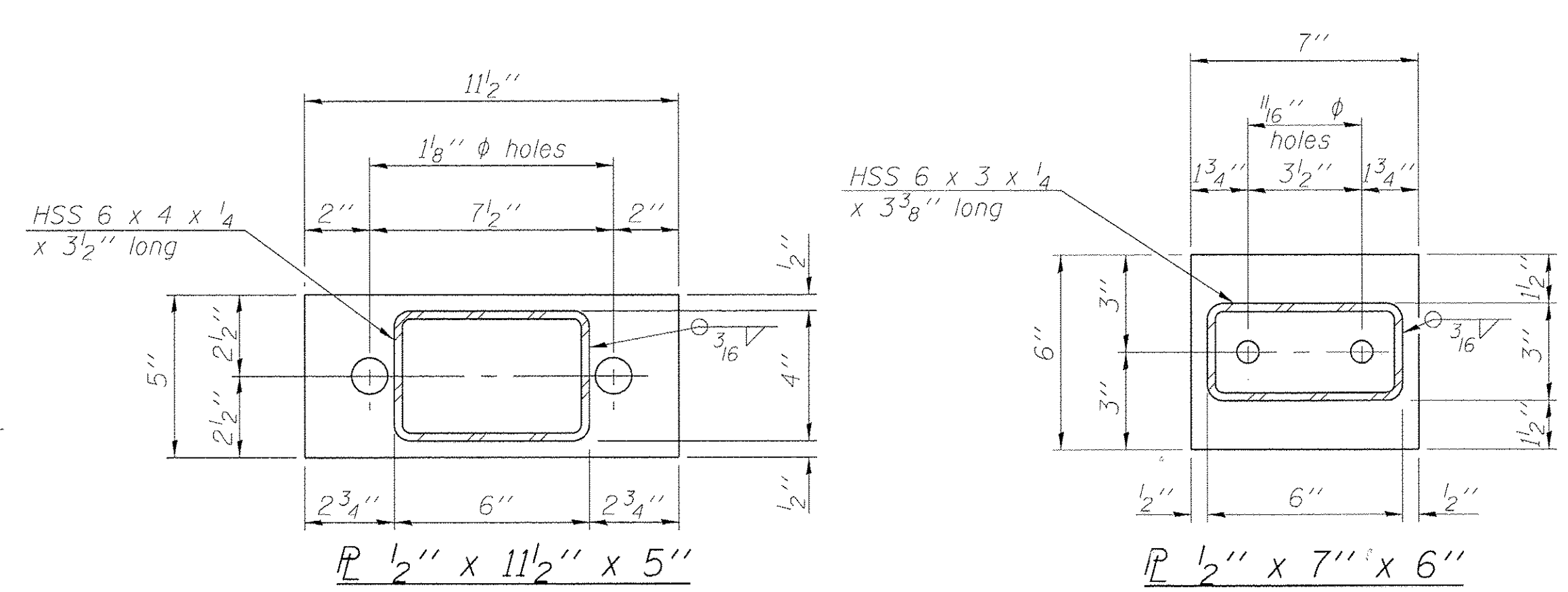
SHEET NO. 4 OF 7 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
170	13-08114-00-BR	MOULTRIE	19	10
			CONTRACT NO. 95812	

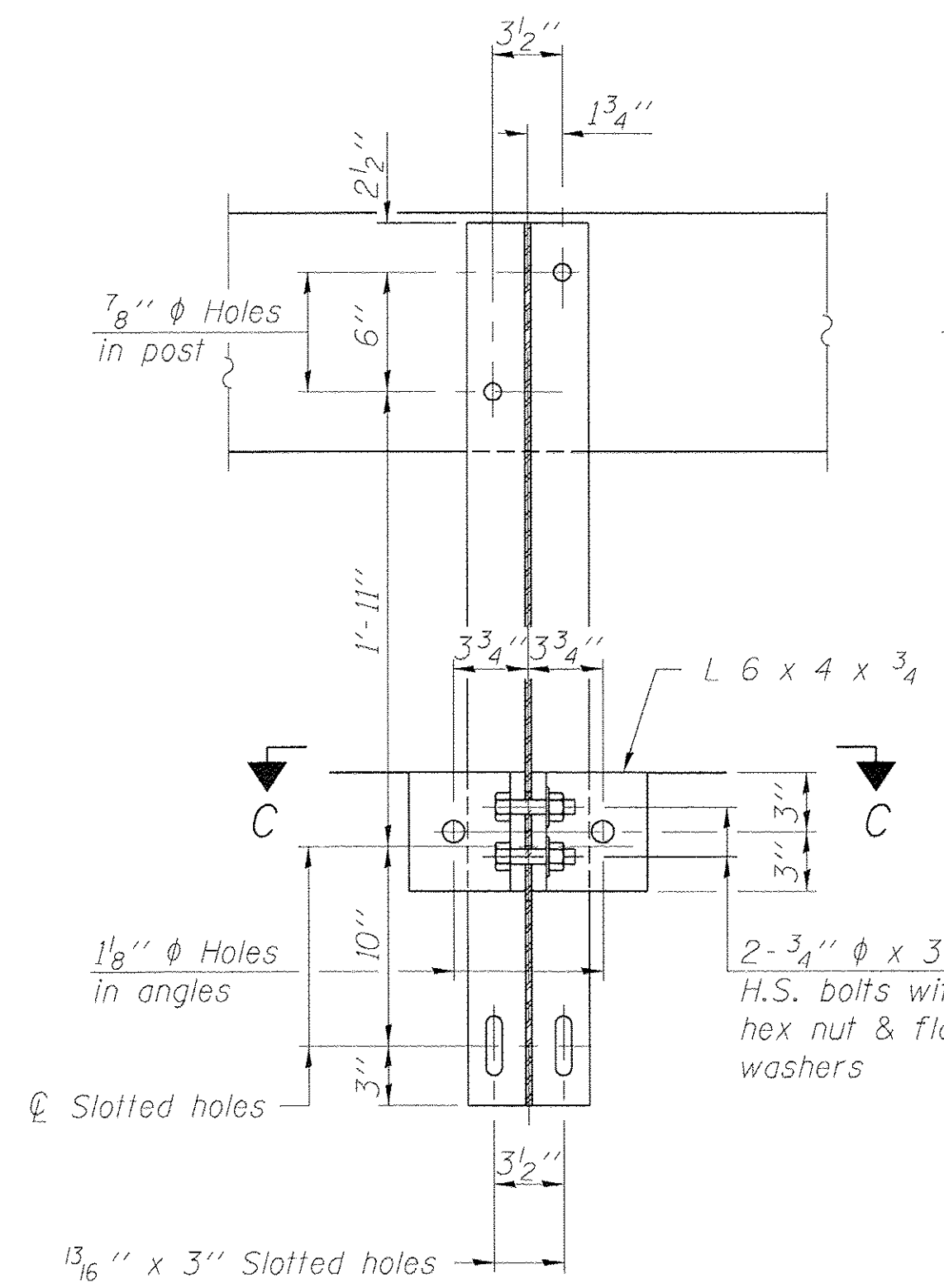
ILLINOIS FED. AID PROJECT



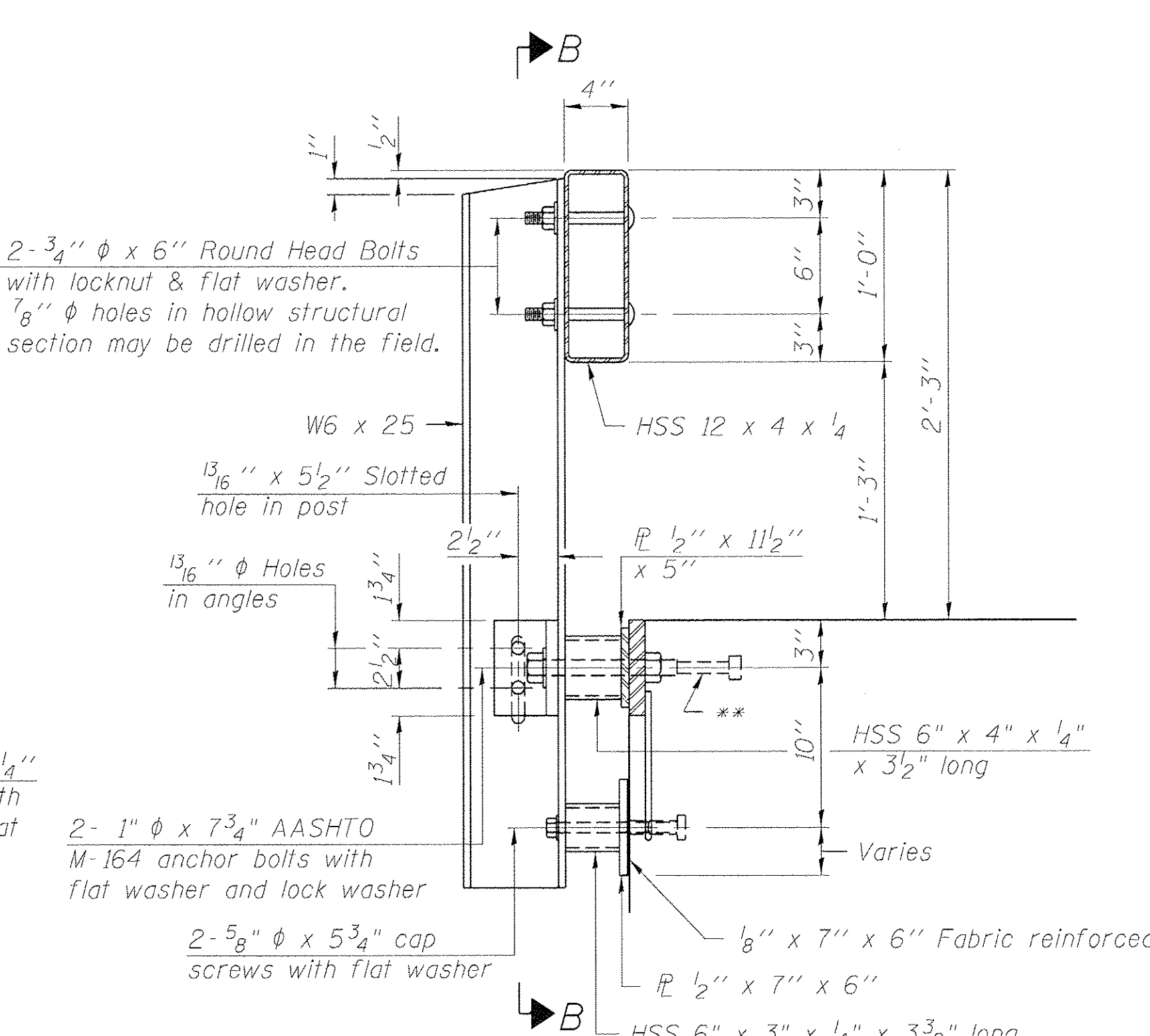
VIEW A-A
ROUND HEAD BOLT



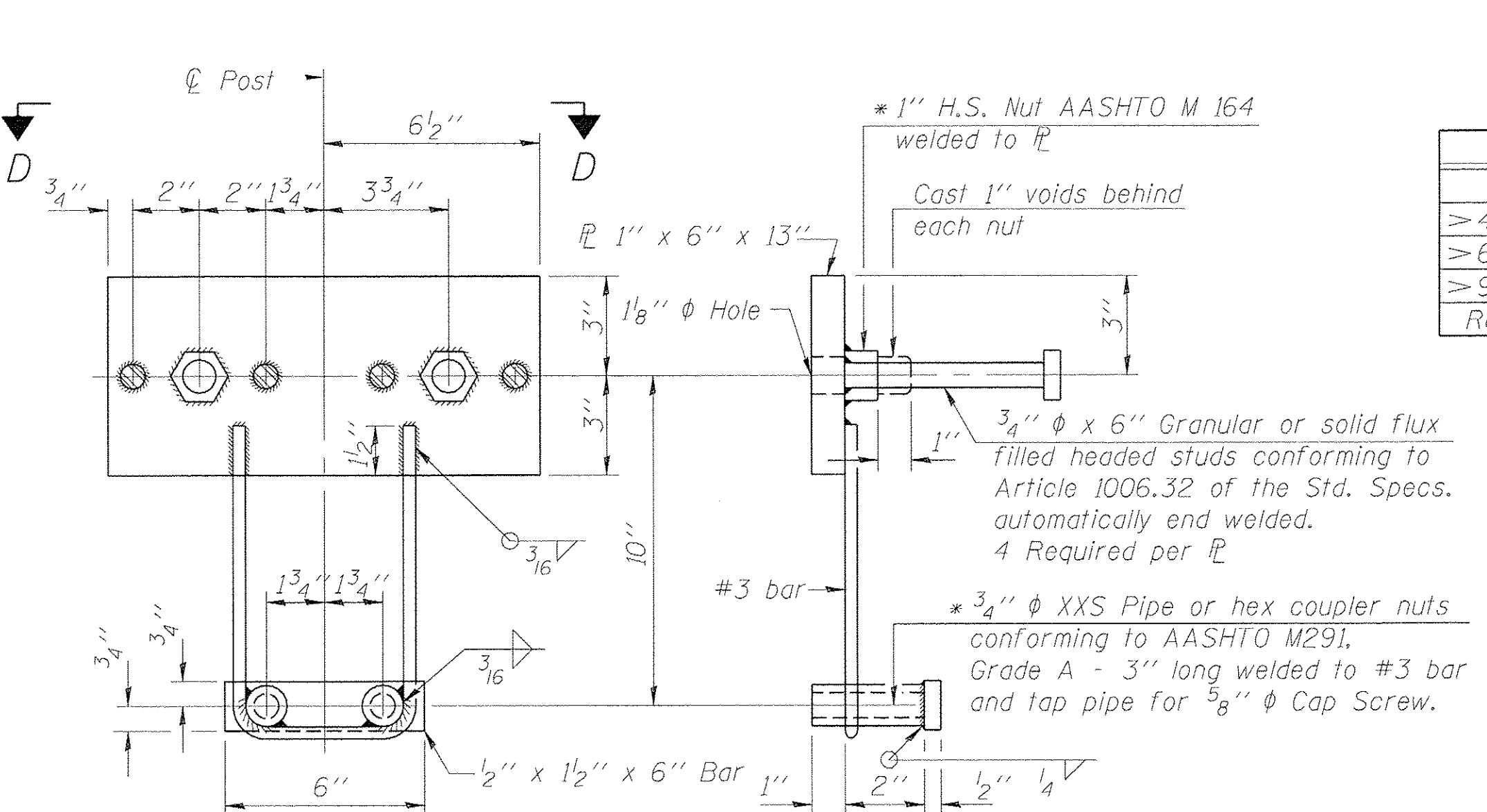
\mathbb{R} 1/2" x 11 1/2" x 5"
 \mathbb{R} 1/2" x 7" x 6"



SECTION B-B



SECTION AT RAILING POST



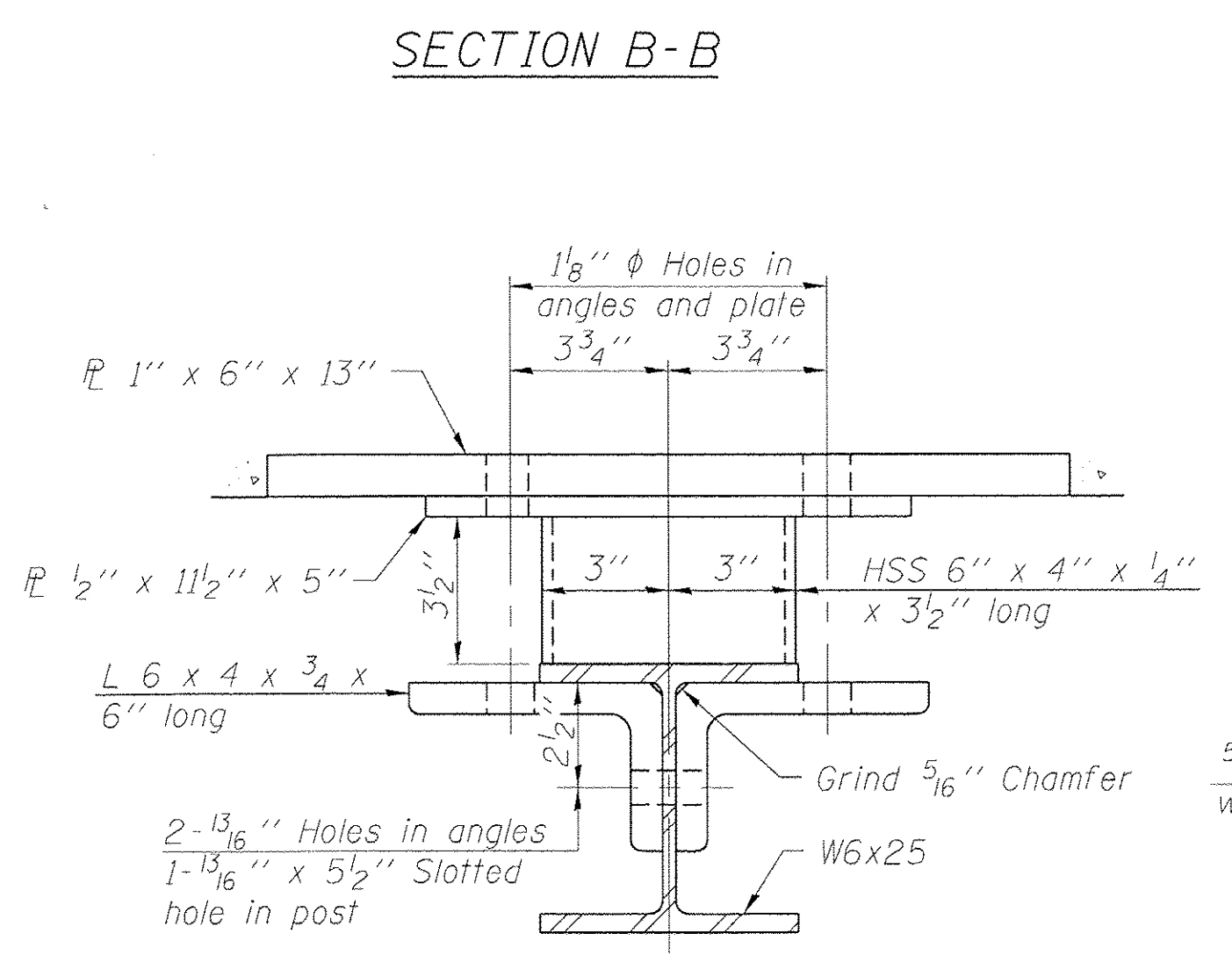
ANCHOR DEVICE

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

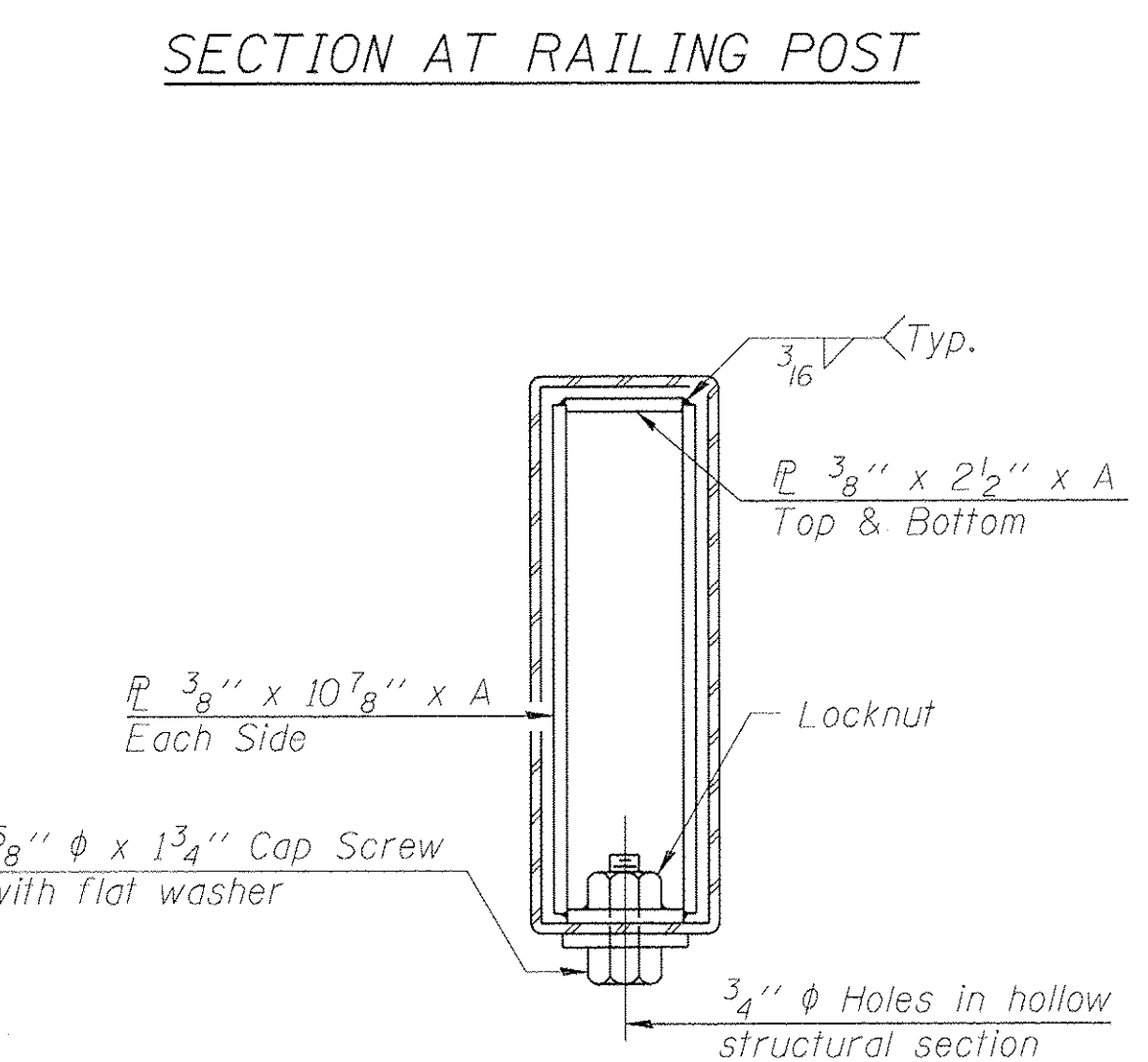
SPLICE DIMENSIONS

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

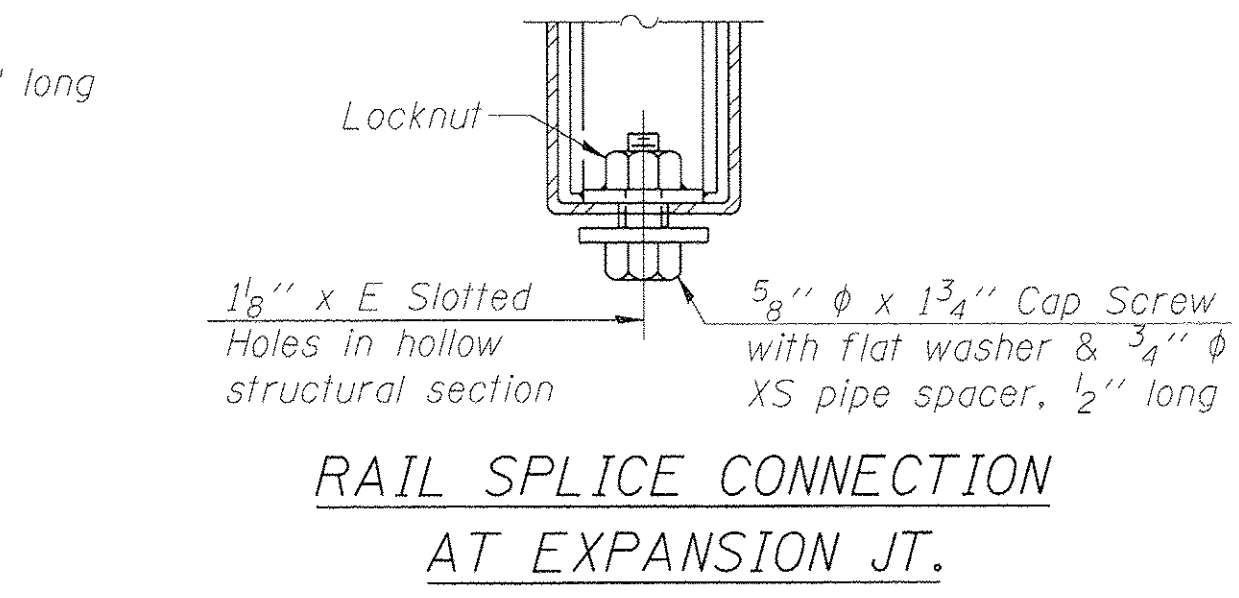
T = Total movement at expansion joint as shown on the design plans.



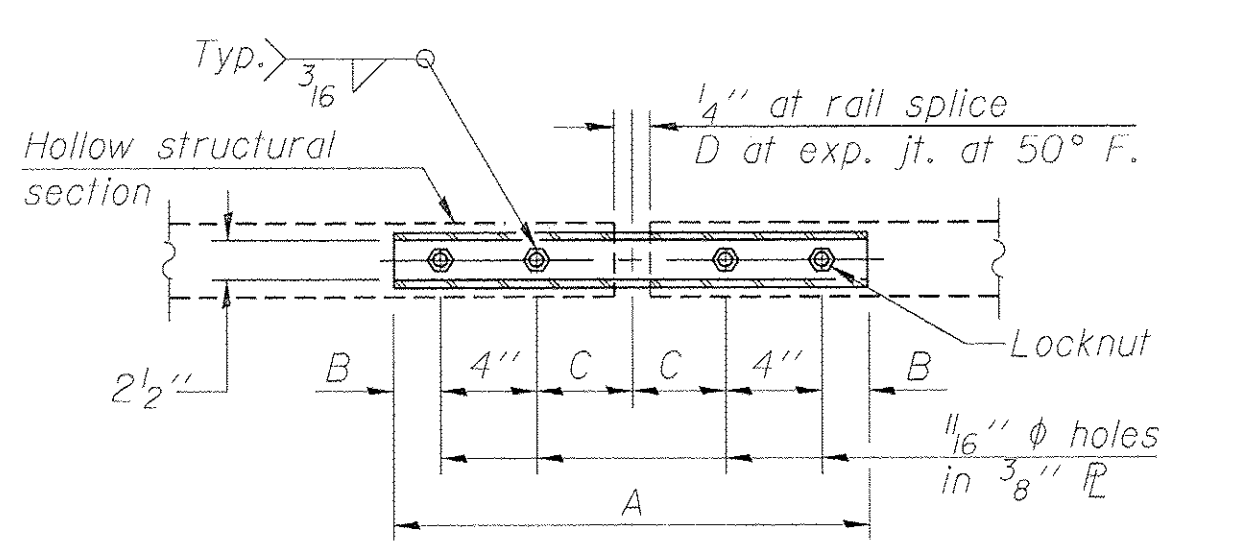
SECTION C-C



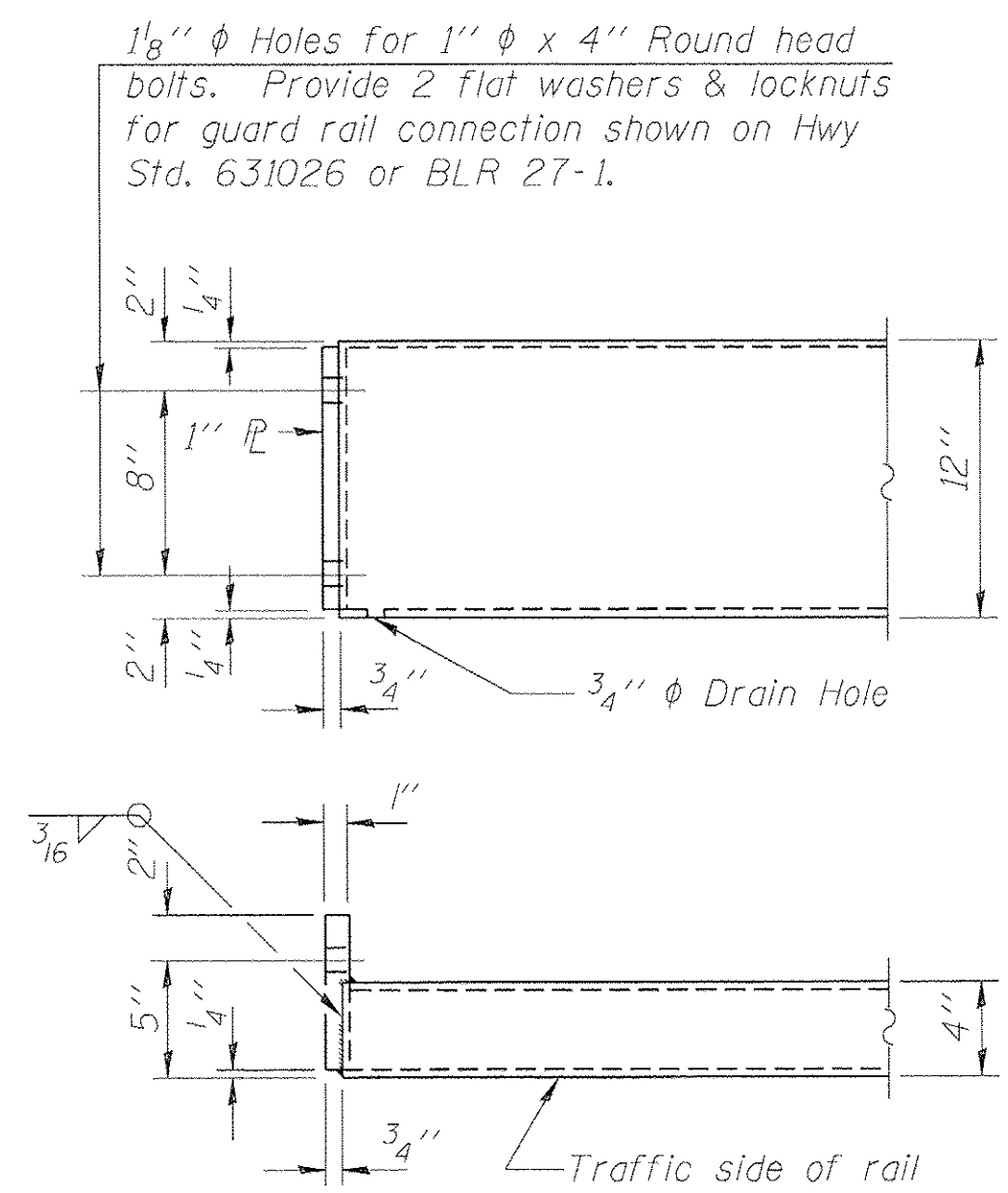
SECTIONS AT RAIL SPLICE



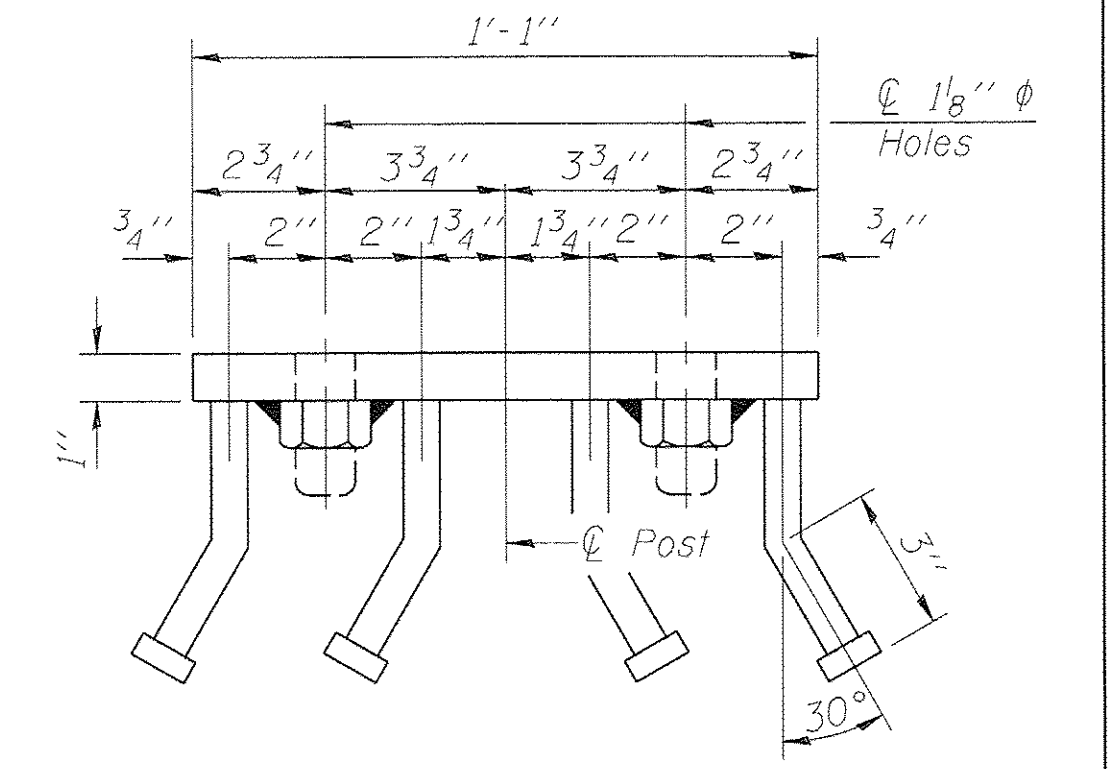
RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE TYPICAL



END OF RAIL DETAILS

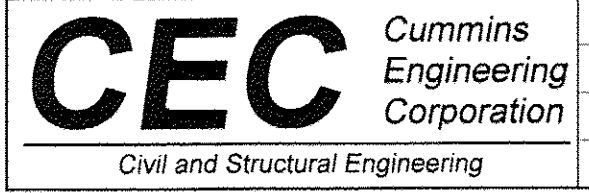


VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	126

R-23A 1-12-15 (10'-9" Maximum Post Spacing)



JOB = 2414	DESIGNED - AAN	REvised -
FILE = 2414.0704829_00_Rail.dgn	CHECKED - RK	REvised -
DATE = 3/28/2017	DRAWN - SJS	REvised -
	CHECKED - MDC	REvised -

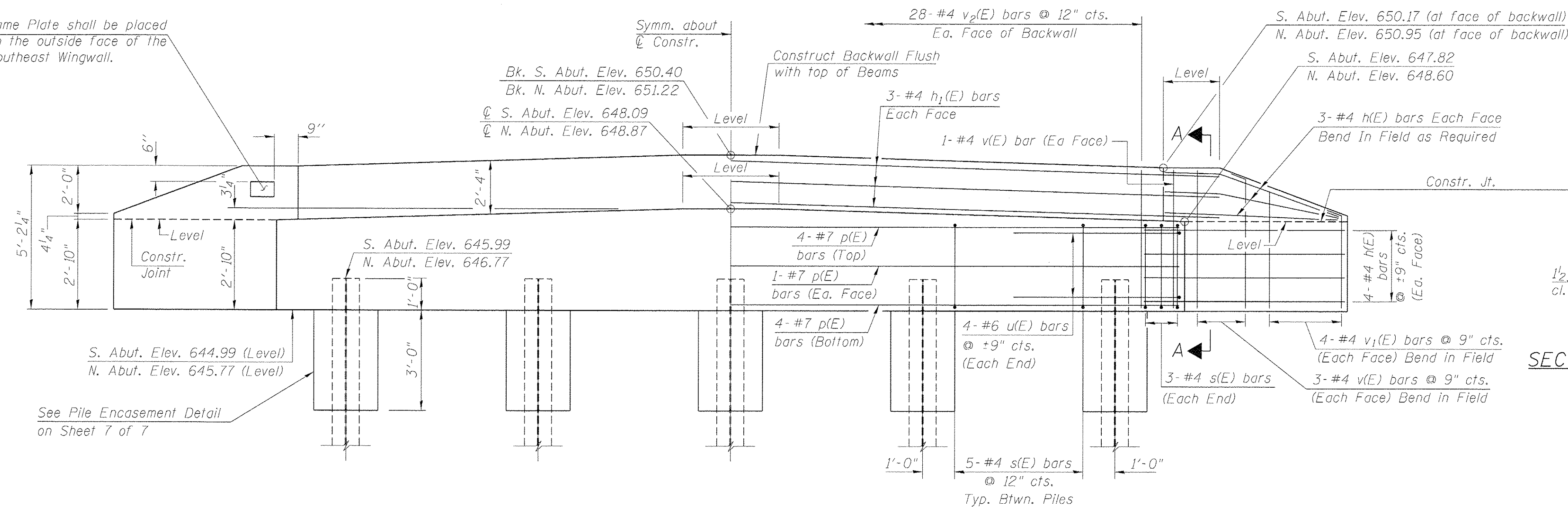
MOULTRIE COUNTY
TR 170 IMPROVEMENTS

STEEL RAILING, TYPE S-1
STRUCTURE NO. 070-4829

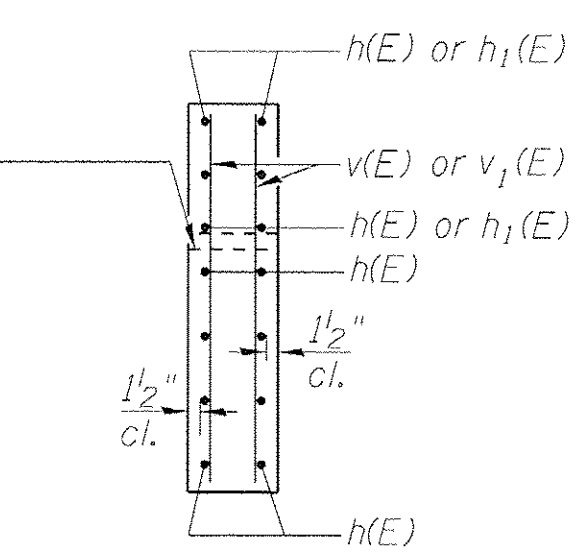
SHEET NO. 5 OF 7 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
170	13-08114-00-BR	MOULTRIE	19	11
CONTRACT NO. 95812				
ILLINOIS FED. AID PROJECT				

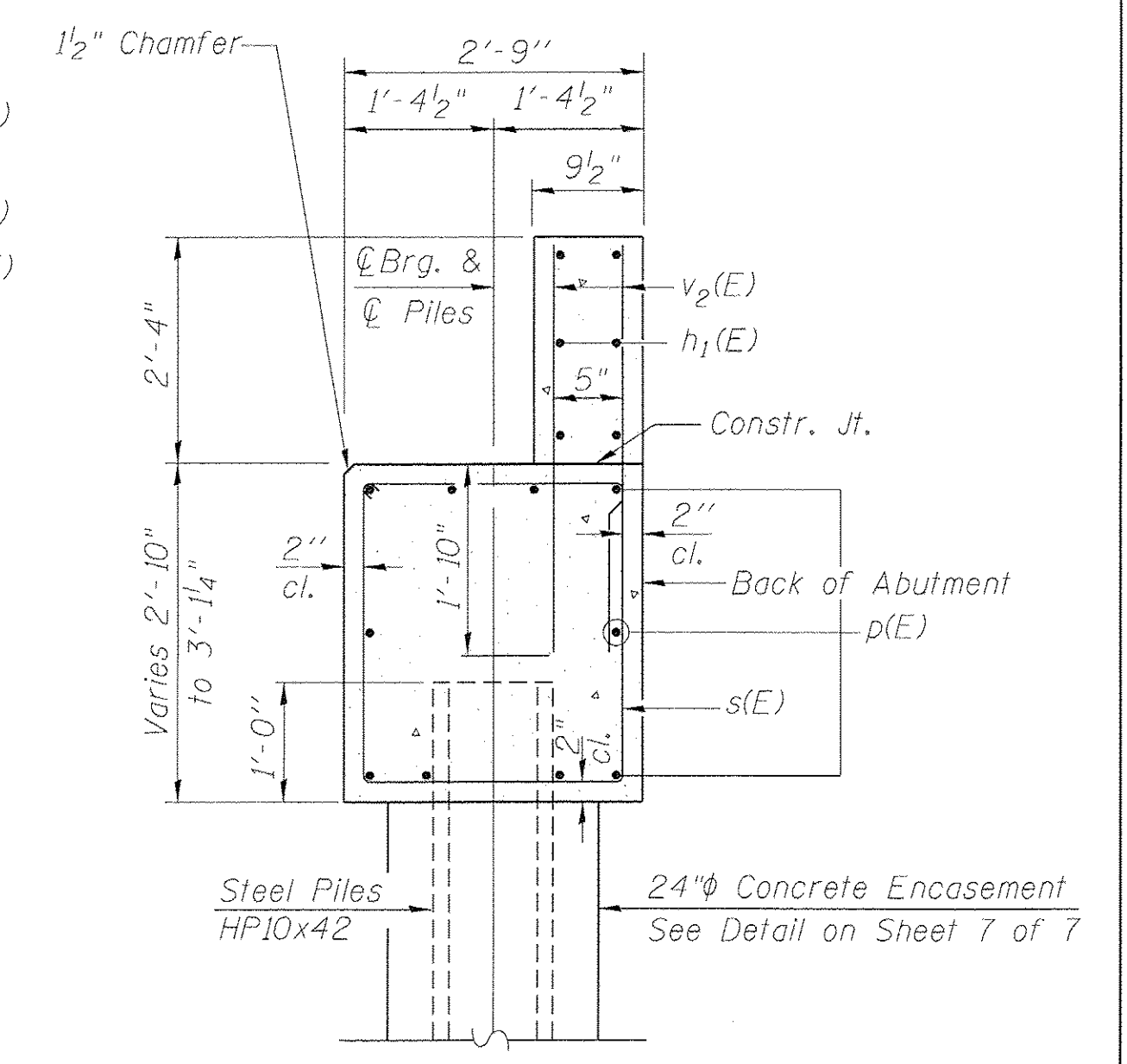
Name Plate shall be placed on the outside face of the Southeast Wingwall.



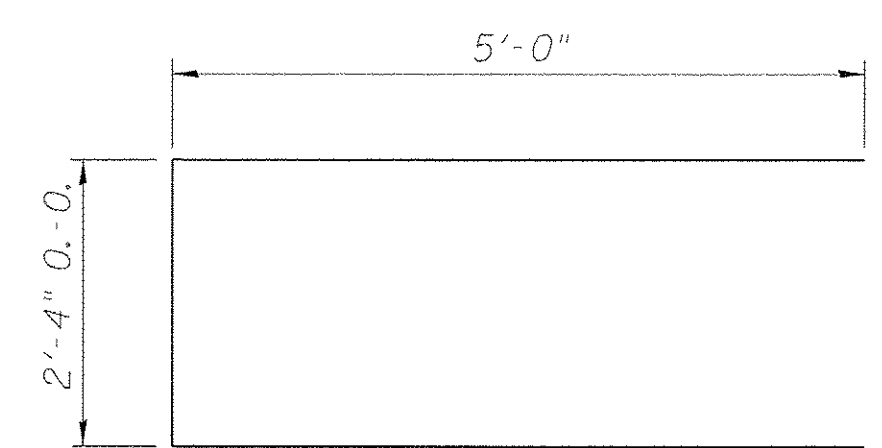
ELEVATION



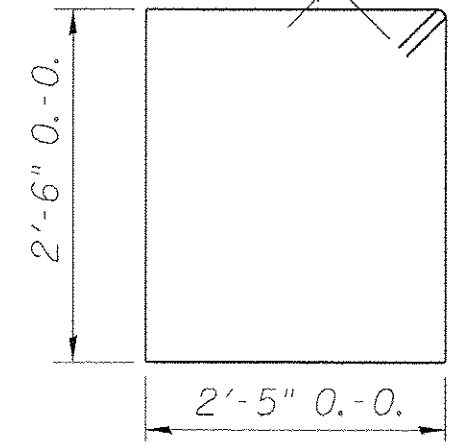
SECTION A-A



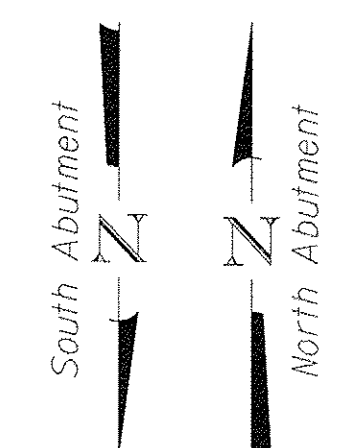
SECTION THRU ABUTMENT



BAR u(E)

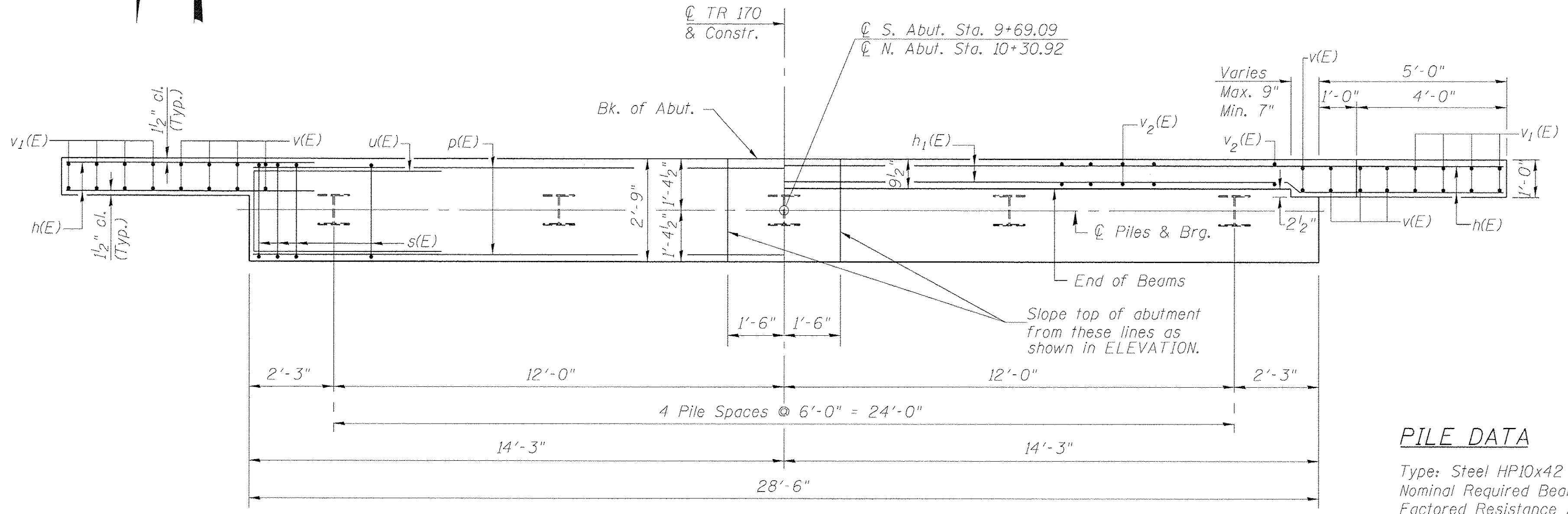


BAR s(E)



**BILL OF MATERIAL
TWO ABUTMENTS**

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	56	#4	6'-10"	—
h ₁ (E)	12	#4	30'-6"	—
p(E)	20	#7	28'-2"	—
s(E)	52	#4	10'-8"	□
u(E)	16	#6	12'-4"	—
v(E)	32	#4	4'-9"	—
v ₁ (E)	32	#4	3'-10"	—
v ₂ (E)	112	#4	4'-0"	—
Concrete Structures			Cu. Yd.	24.4
Reinforcement Bars, Epoxy Coated			Pound	2800
Name Plates			Each	1
Furnishing Steel Piles HP10x42			Foot	432
Driving Piles			Foot	432
Concrete Encasement			Cu. Yd.	3.5
Structure Excavation			Cu. Yd.	34
Test Pile Steel HP10x42			Each	1



PLAN

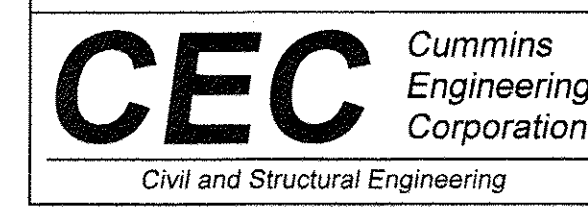
PILE DATA

Type: Steel HP10x42
 Nominal Required Bearing: 236 kips
 Factored Resistance Available: 130 kips
 No. Required: 10 piles*
 Estimated Length: 48 ft. @ S. Abut.
 48 ft. @ N. Abut.

Note:
 The Steel H-Piles shall be according to AASHTO M270 Grade 50.

* Includes one steel test pile HP10x42 to be driven in a permanent location at the North Abutment, as directed by the Engineer, before ordering the remainder of the piles. The test pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

Note: After beams are in place and dowel rods grouted, the backwall and the portions of the wingwalls above the construction joint shall be poured.



JOB = 2414
 FILE = 2414_0704829_00_Abut.dgn
 DATE = 3/28/2017

DESIGNED - AAN
 CHECKED - RK
 DRAWN - SJS
 CHECKED - MDC

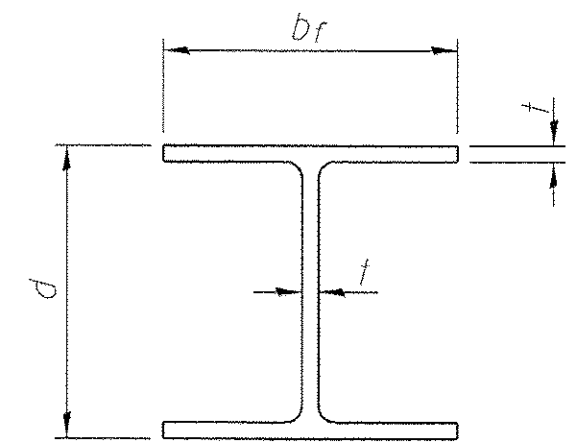
REVISED -
 REVISED -
 REVISED -
 REVISED -

**MOULTRIE COUNTY
TR 170 IMPROVEMENTS**

**ABUTMENTS
STRUCTURE NO. 070-4829**

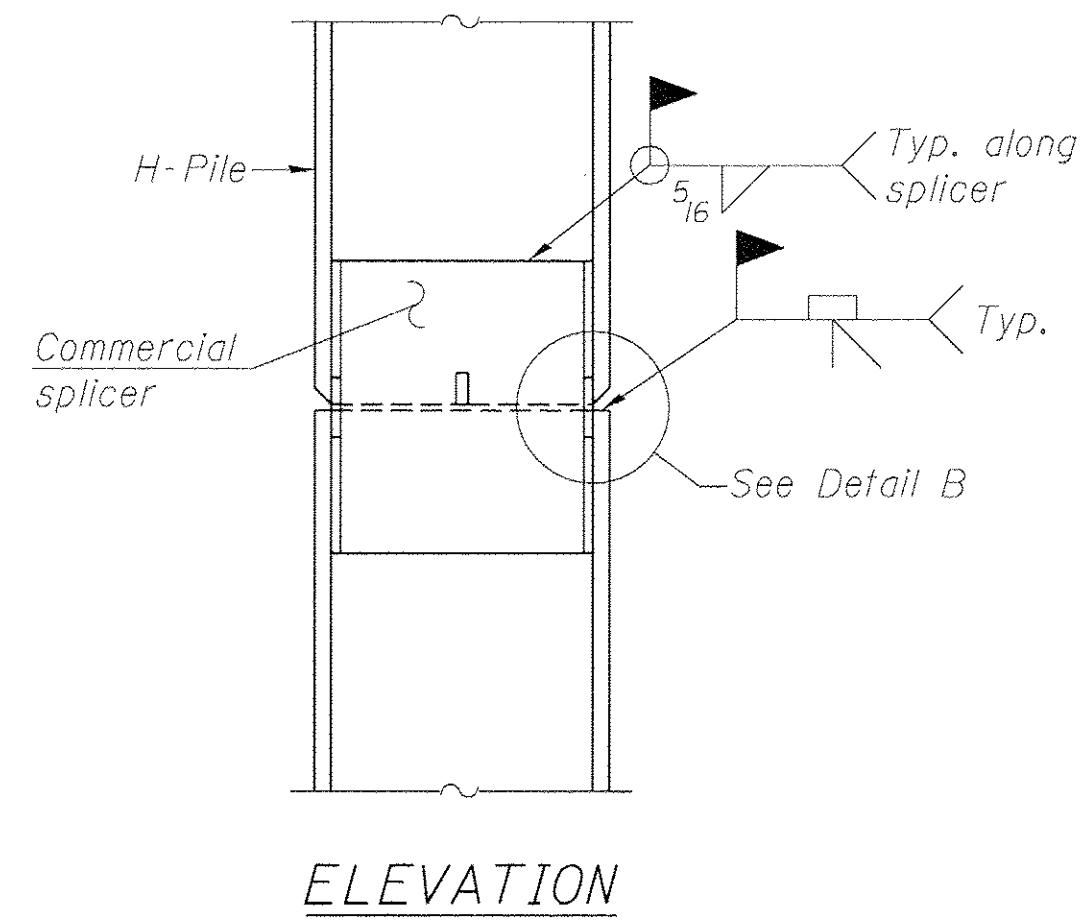
SHEET NO. 6 OF 7 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
170	13-08114-00-BR	MOULTRIE	19	12
CONTRACT NO. 95812				
ILLINOIS FED. AID PROJECT				

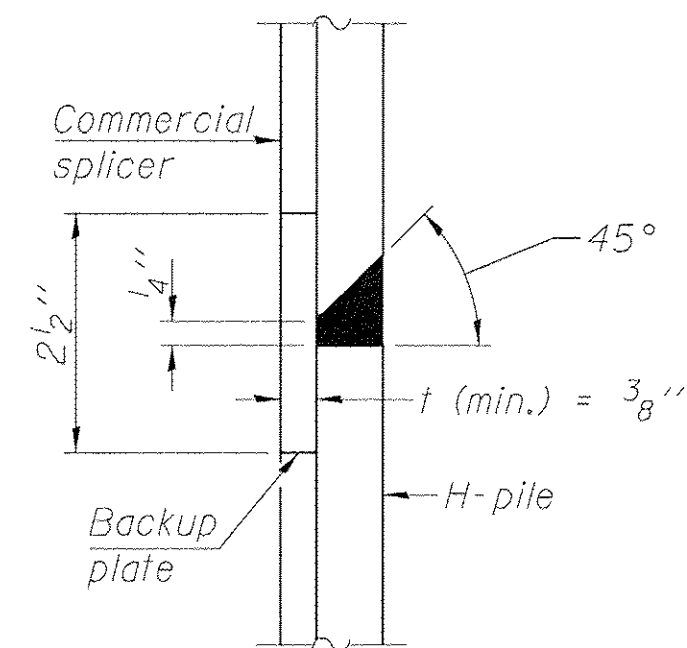


STEEL PILE TABLE

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

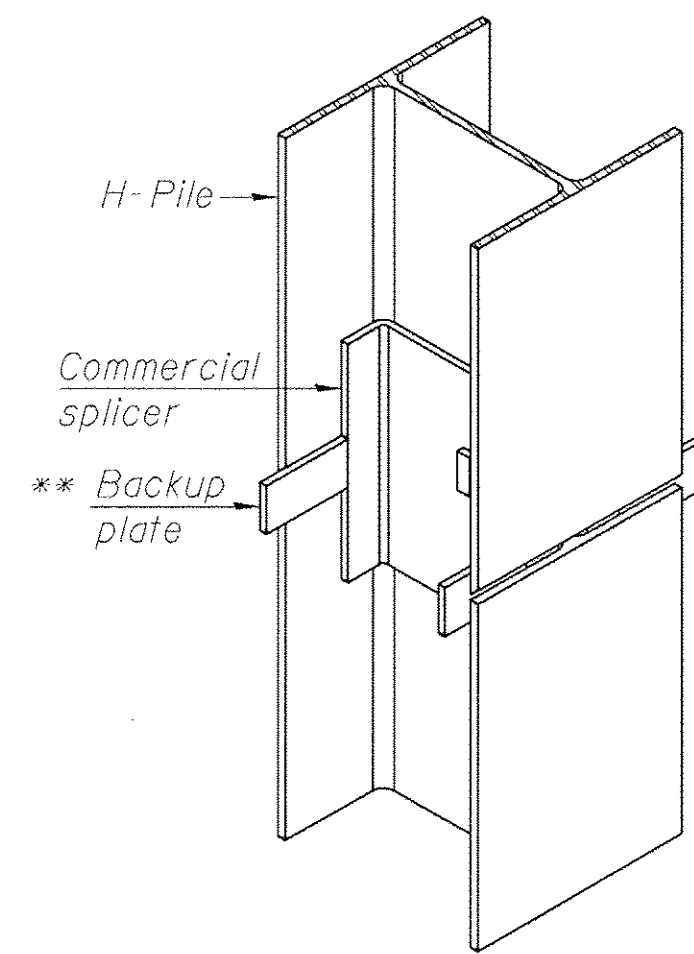


ELEVATION

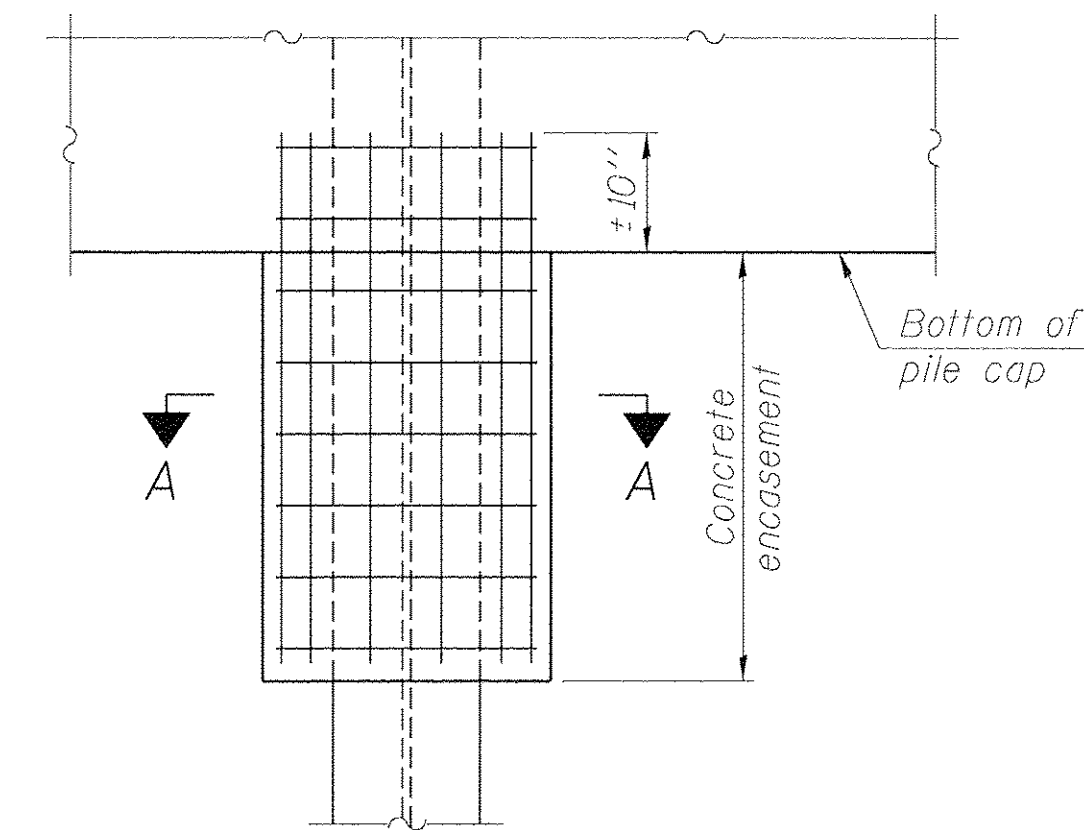


DETAIL "B"

WELDED COMMERCIAL SPLICE

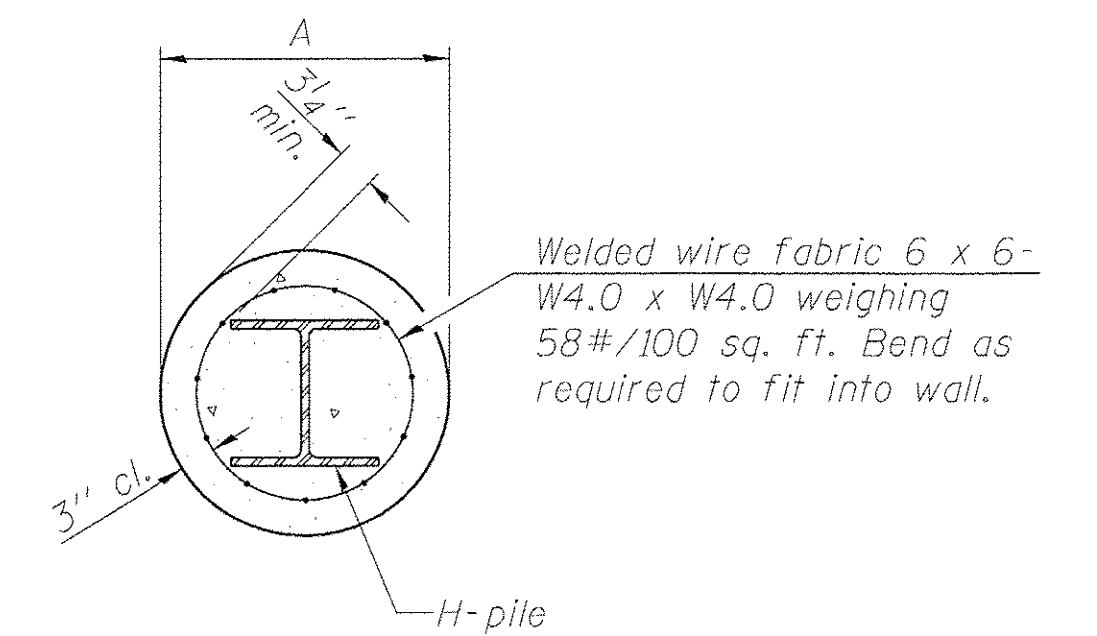


ISOMETRIC VIEW



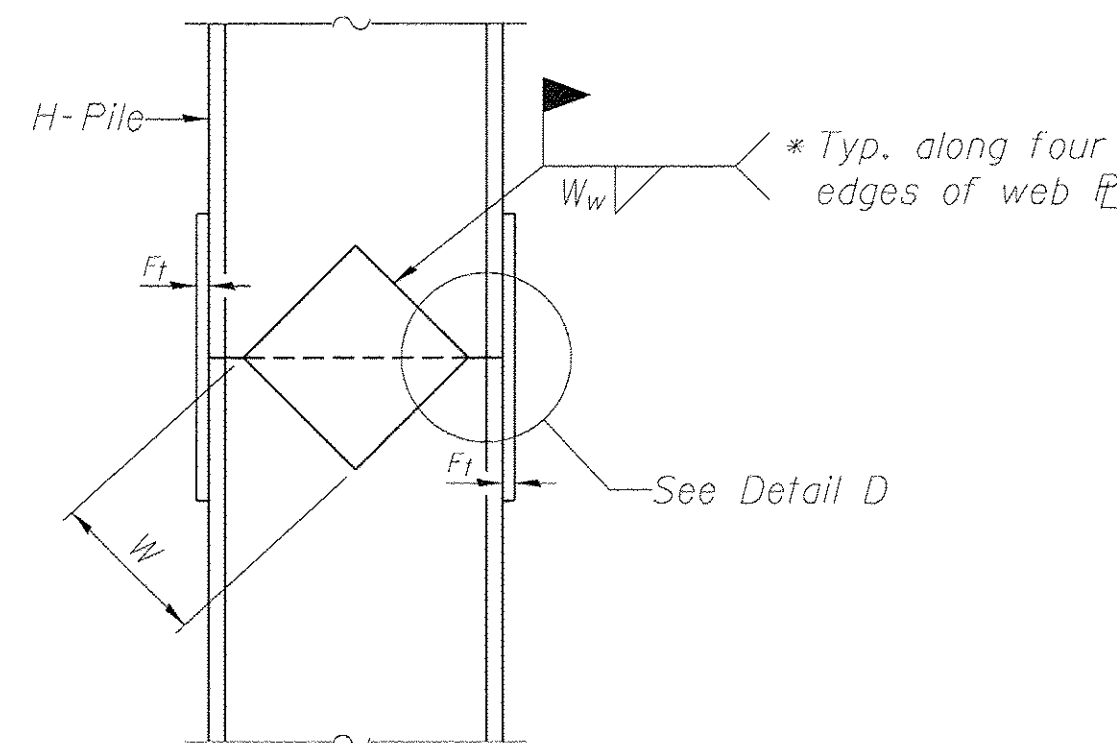
ELEVATION

PILE ENCASEMENT

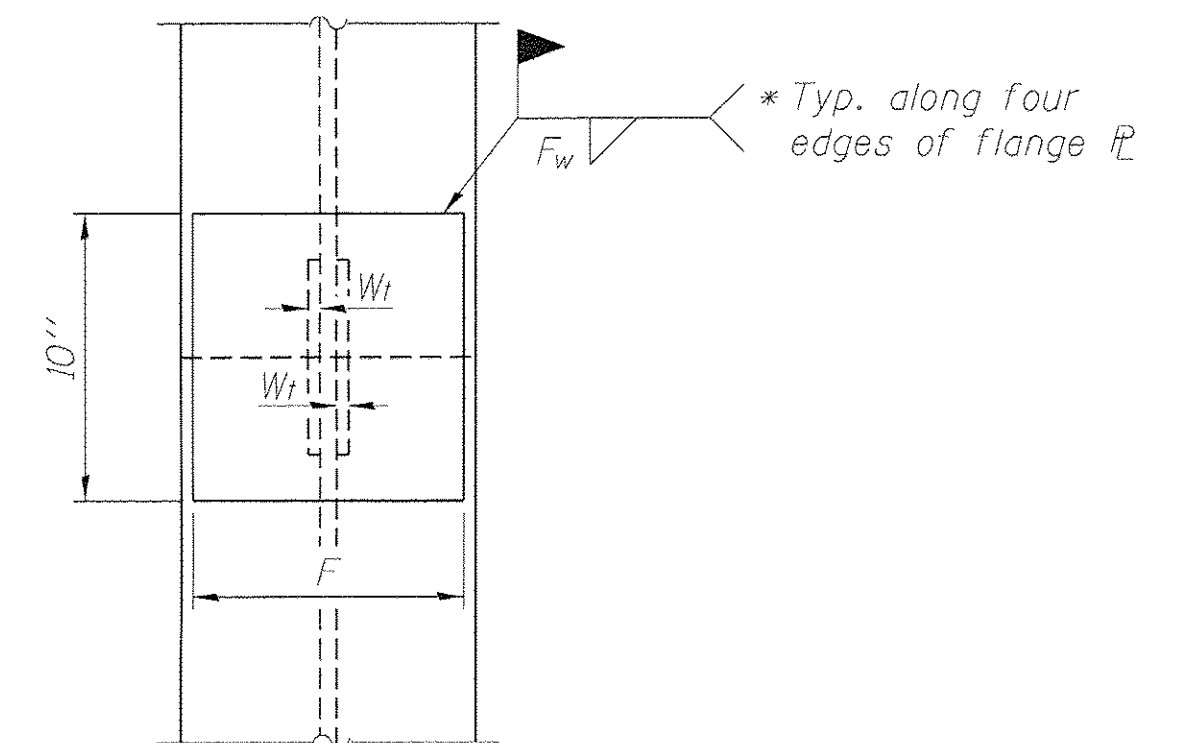


SECTION A-A

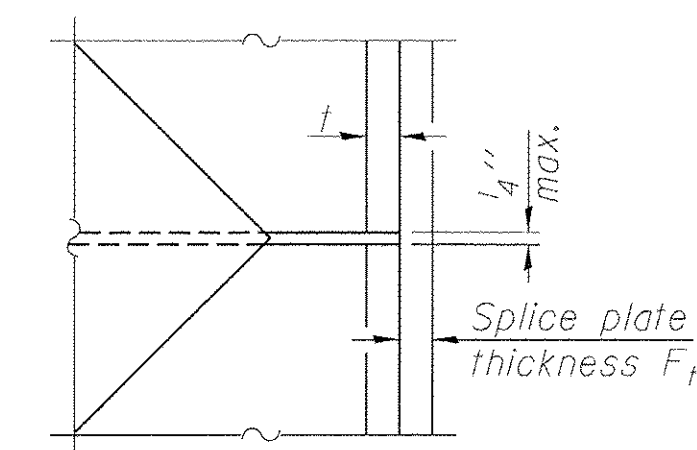
Note: Forms for encasement may be omitted when soil conditions permit.



ELEVATION



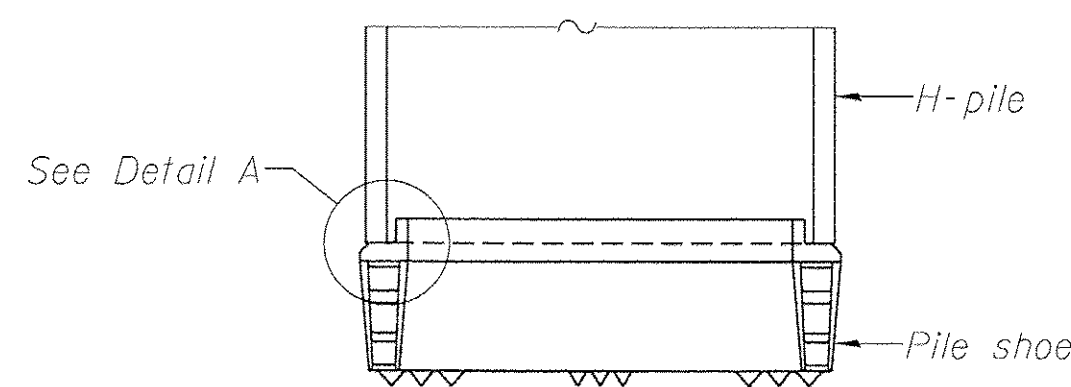
END VIEW



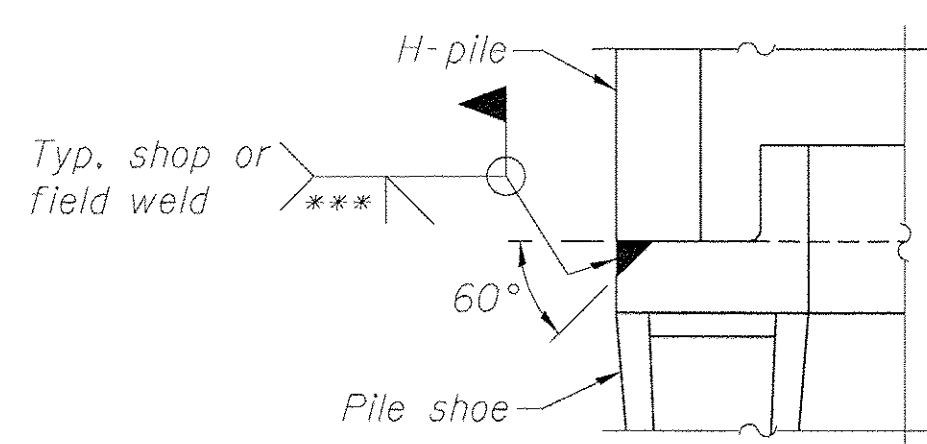
DETAIL D

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

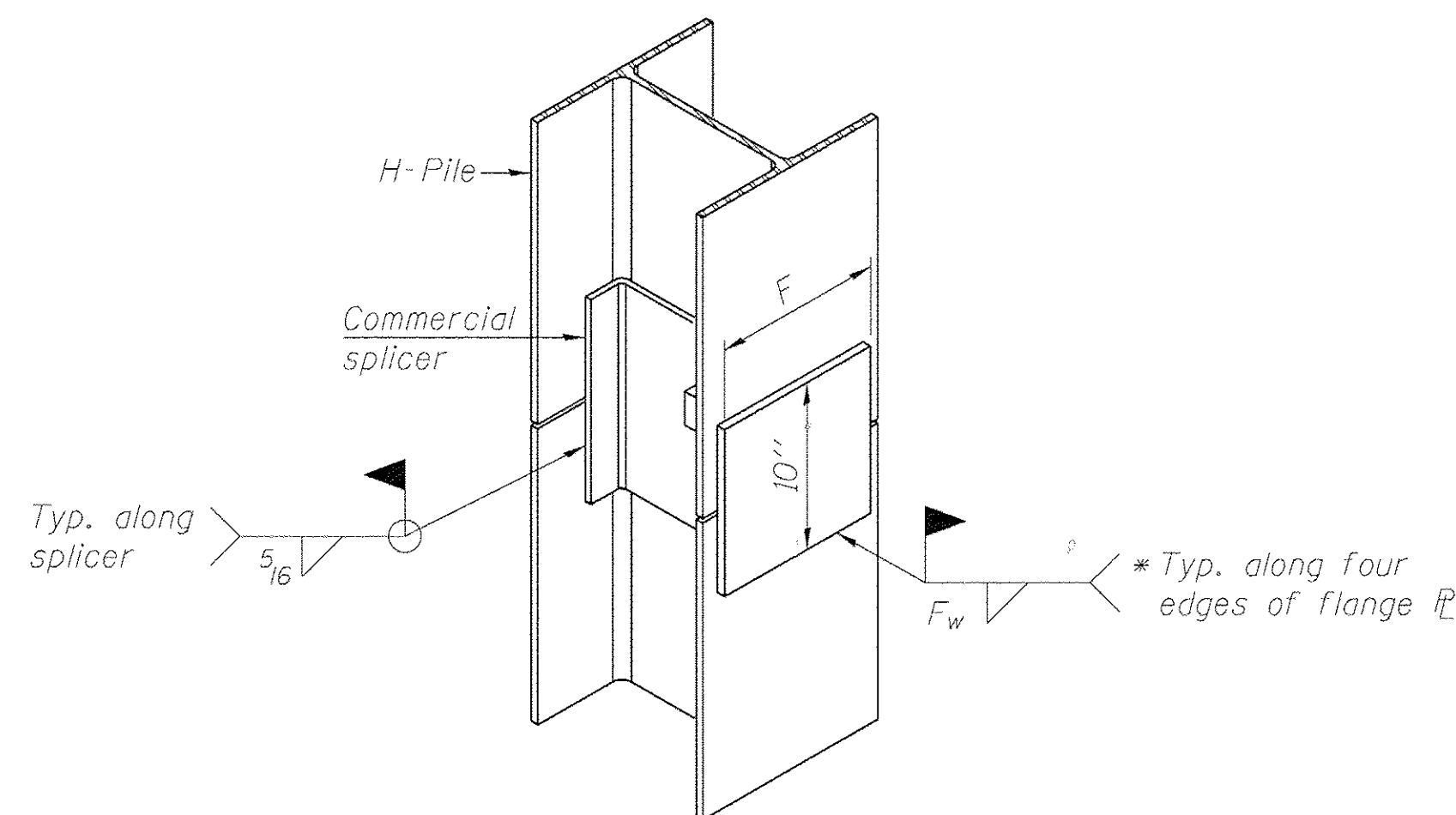


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



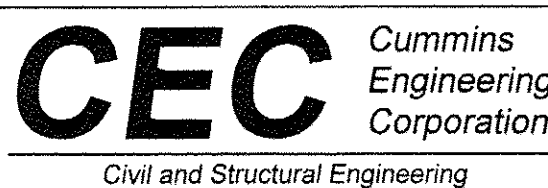
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

- * Interrupt welds 1/4" from end of web and/or each flange.
- ** Remove portions of backup plates that extend outside the flanges.
- *** Weld size per pile shoe manufacturer (5/16" min.).

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

F-HP 1-27-12



JOB = 2414
 FILE = 2414_0704829_00_Pile.dgn
 DATE = 3/28/2017

DESIGNED - AAN
 CHECKED - RK
 DRAWN - SJS
 CHECKED - MDC

REVISED -
 REVISED -
 REVISED -
 REVISED -

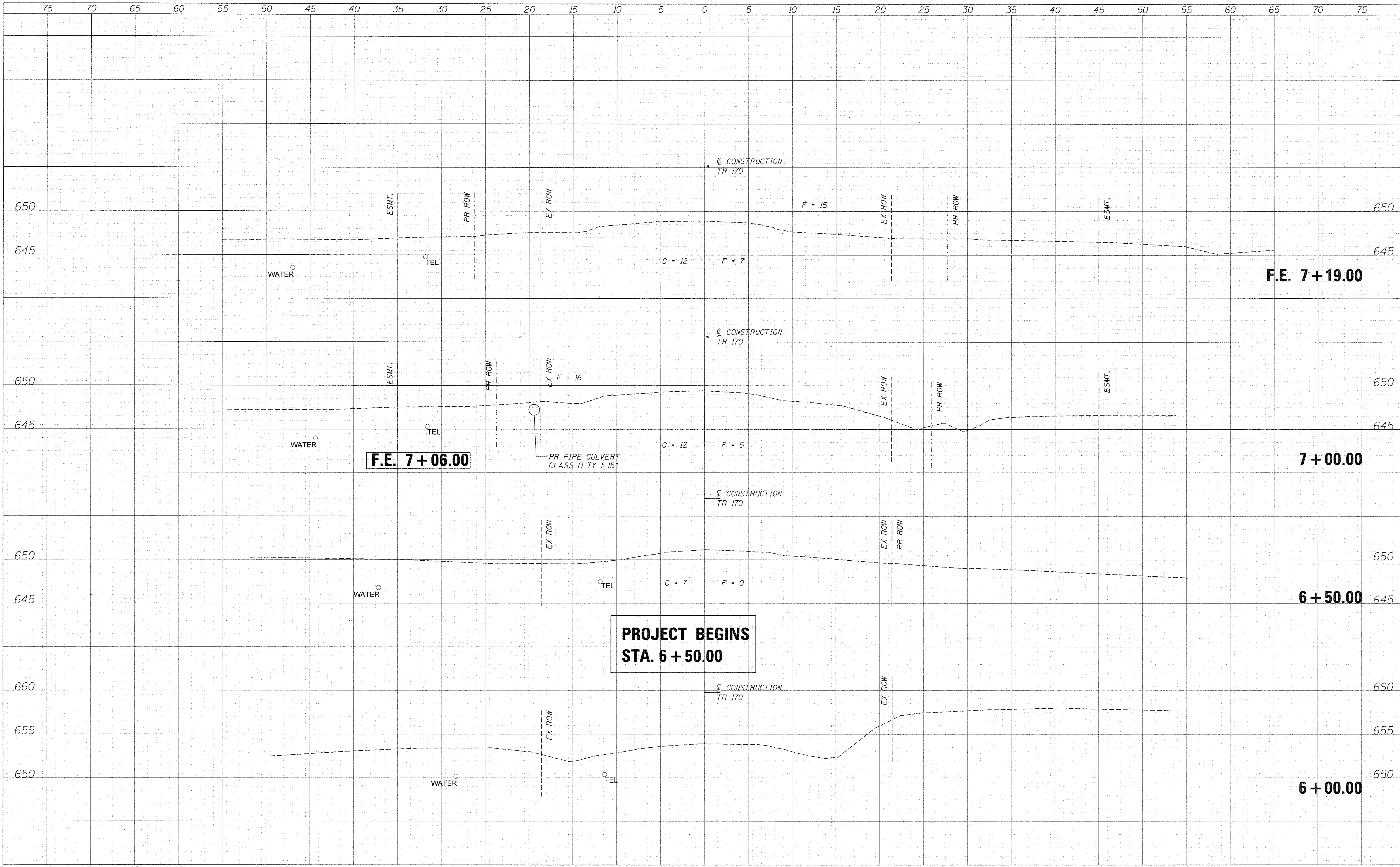
MOULTRIE COUNTY
 TR 170 IMPROVEMENTS

HP PILE DETAILS
 STRUCTURE NO. 070-4829

SHEET NO. 7 OF 7 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
170	13-08114-00-BR	MOULTRIE	19	13
CONTRACT NO. 95812				

ILLINOIS FED. AID PROJECT



DATE	
BY	
FINAL SURVEY	
NOTED SURVEY	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
NOTED SURVEY	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	



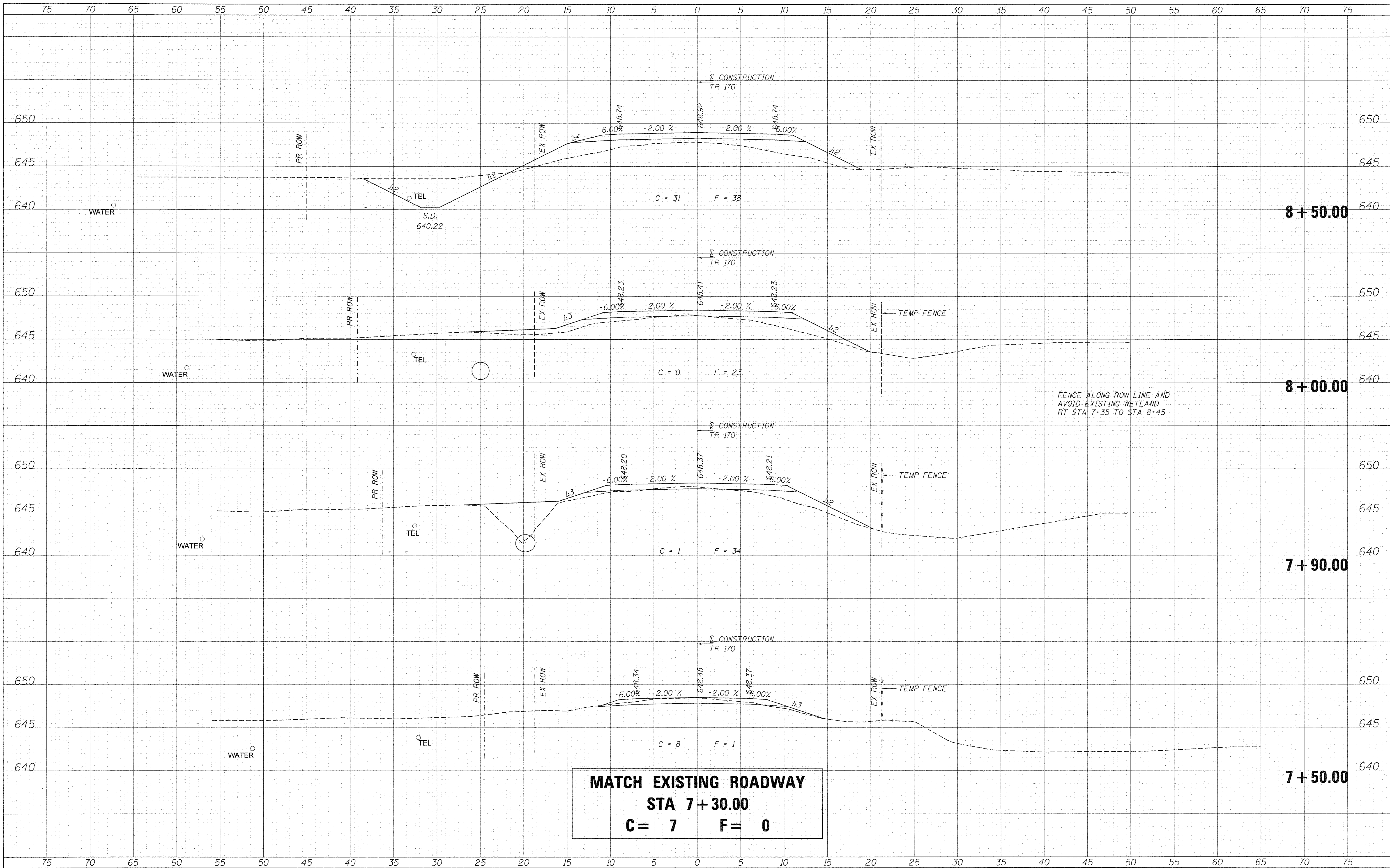
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FILE NAME = 2414-shr-xsec.dgn	DRAWN - SJS	REVISED -
PLOT SCALE = 5.0000" / 1"	CHECKED - NAK	REVISED -
PLOT DATE = 3/28/2017	DATE - 3/30/2016	REVISED -

**MOULTRIE COUNTY
TR 170 IMPROVEMENTS**

CROSS SECTIONS

SCALE: SHEET NO. OF SHEETS STA. 6+00.00 TO STA. 7+19.00

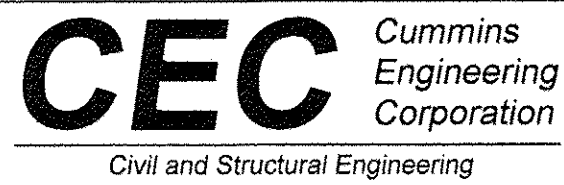
TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
170	13-08114-00-BR	MOULTRIE	19	14
CONTRACT NO. 95812				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



MATCH EXISTING ROADWAY
STA 7 + 30.00
C = 7 F = 0

DATE	
BY	
DESIGNED	
DRAWN	
CHECKED	
DATE	
FILE NAME	
SCALE	
PLotted	
Template	
Areas	
Checked	

DATE	
BY	
DESIGNED	
DRAWN	
CHECKED	
DATE	
FILE NAME	
SCALE	
PLotted	
Template	
Areas	
Checked	



JOB = 2414
 FILE NAME = 2414-shr-xsec.dgn
 PLOT SCALE = 5.0000" / 1"
 PLOT DATE = 3/28/2017

DESIGNED - NAK
 DRAWN - SJS
 CHECKED - NAK
 DATE - 3/30/2016

MOULTRIE COUNTY
TR 170 IMPROVEMENTS

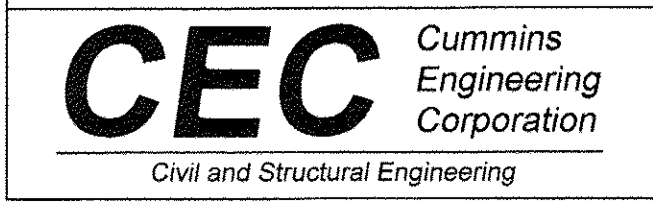
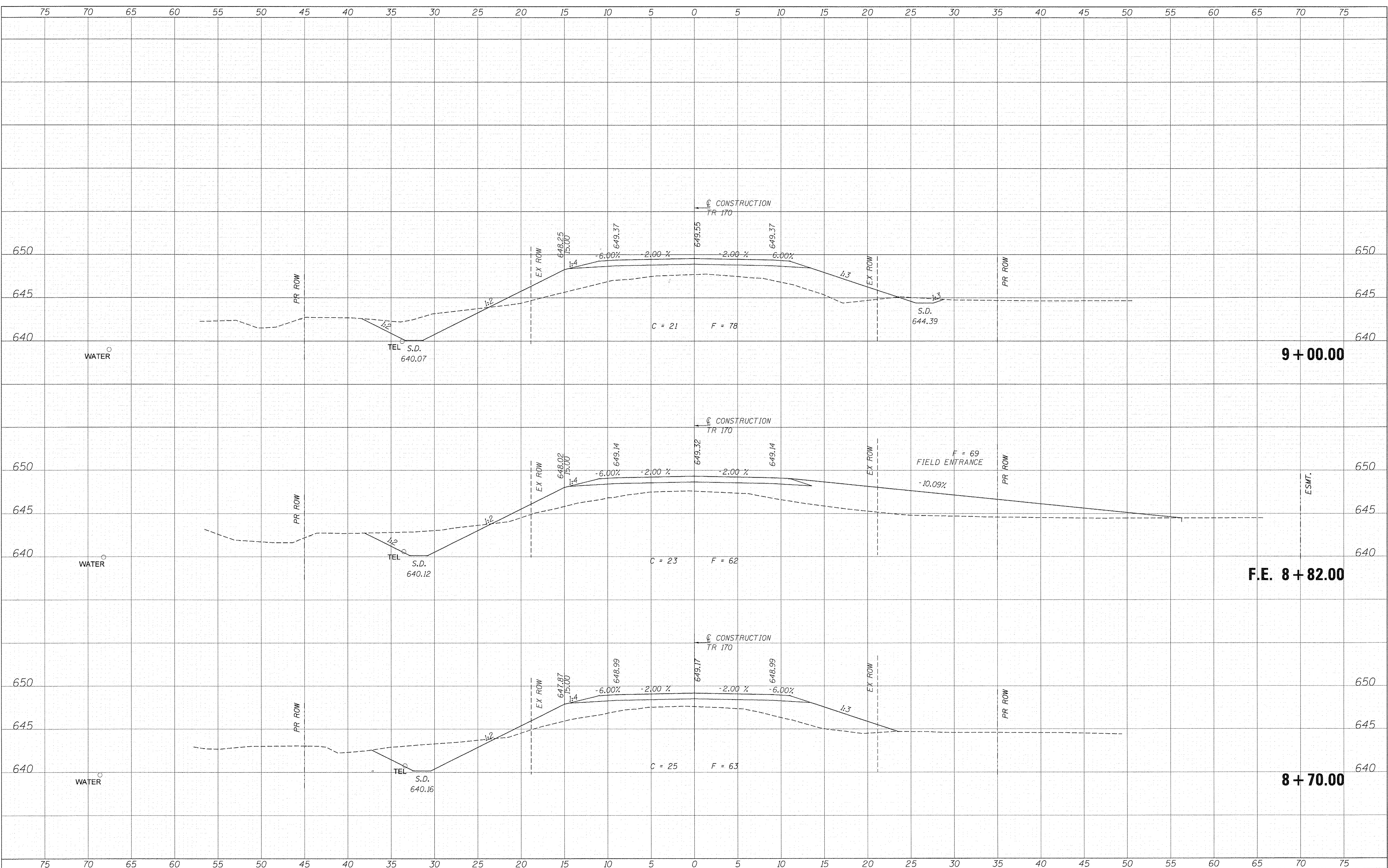
CROSS SECTIONS
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TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
170	13-08114-00-BR	MOULTRIE	19	15
CONTRACT NO. 95812				

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

DATE	
BY	
SAVED SURVEY	
TEMPLATE	
AREAS CHECKED	
FINAL	
NOTE BOOK	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
TEMPLATE	
AREAS CHECKED	
NOTE BOOK	
NO.	



JOB = 2414	DESIGNED - NAK	REVISED -
FILE NAME = 2414-sht-xsec.dgn	DRAWN - SJS	REVISED -
PLOT SCALE = 5.0000' / IN.	CHECKED - NAK	REVISED -
PLOT DATE = 3/28/2017	DATE - 3/30/2016	REVISED -

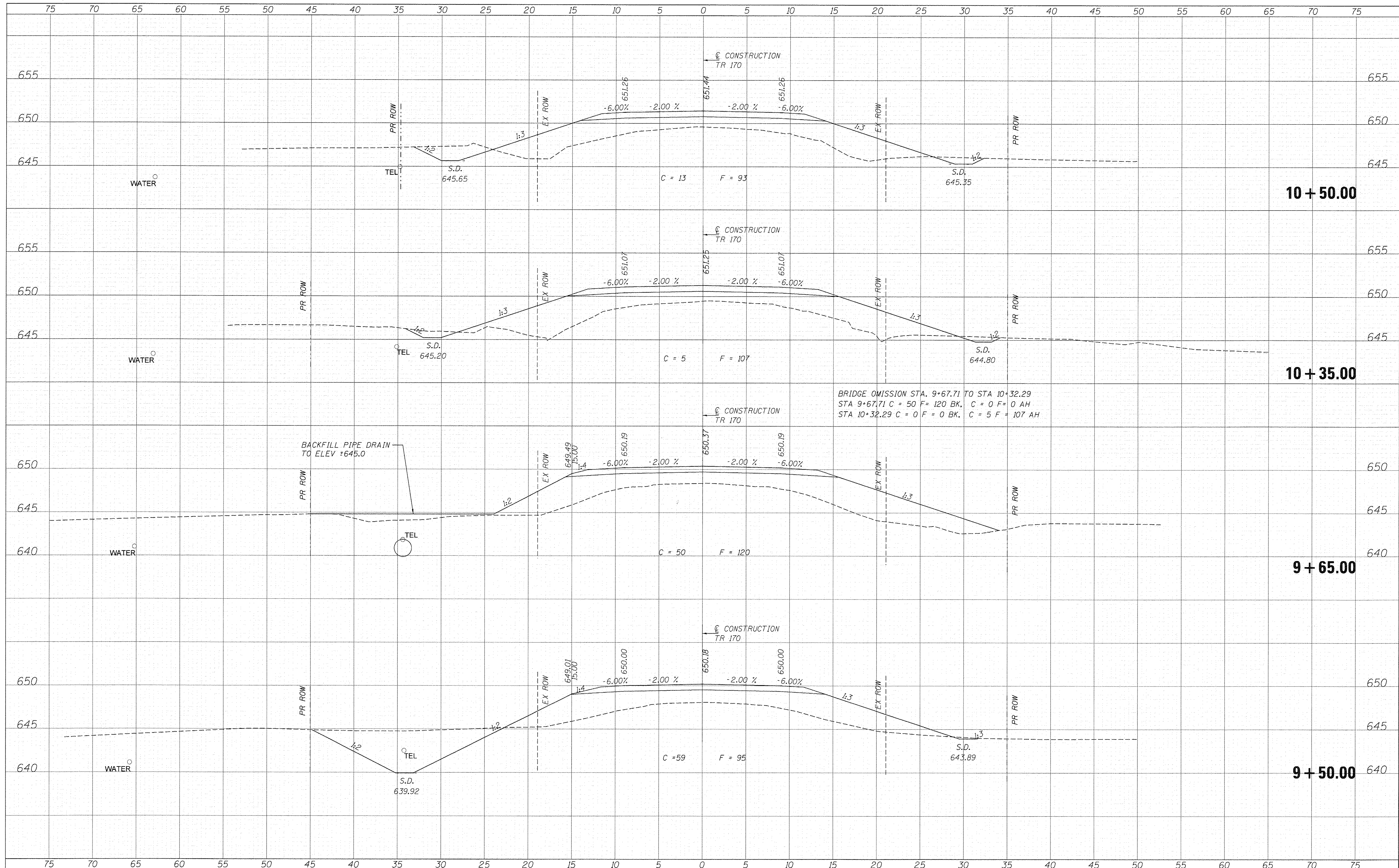
**MOULTRIE COUNTY
TR 170 IMPROVEMENTS**

CROSS SECTIONS			
SCALE:	SHEET NO.	OF SHEETS	STA. 8+70.00 TO STA. 9+00.00

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
170	13-08114-00-BR	MOULTRIE	19	16
CONTRACT NO. 95812				
FED. ROAD DIST. NO. 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.	



JOB = 2414	DESIGNED - NAK	REVISED -
FILE NAME = 2414-sht-xsec.dgn	DRAWN - SJS	REVISED -
PLDT SCALE = 5.0000' / IN.	CHECKED - NAK	REVISED -
PLDT DATE = 3/28/2017	DATE - 3/30/2016	REVISED -

**MOULTRIE COUNTY
TR 170 IMPROVEMENTS**

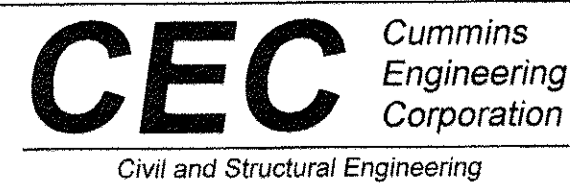
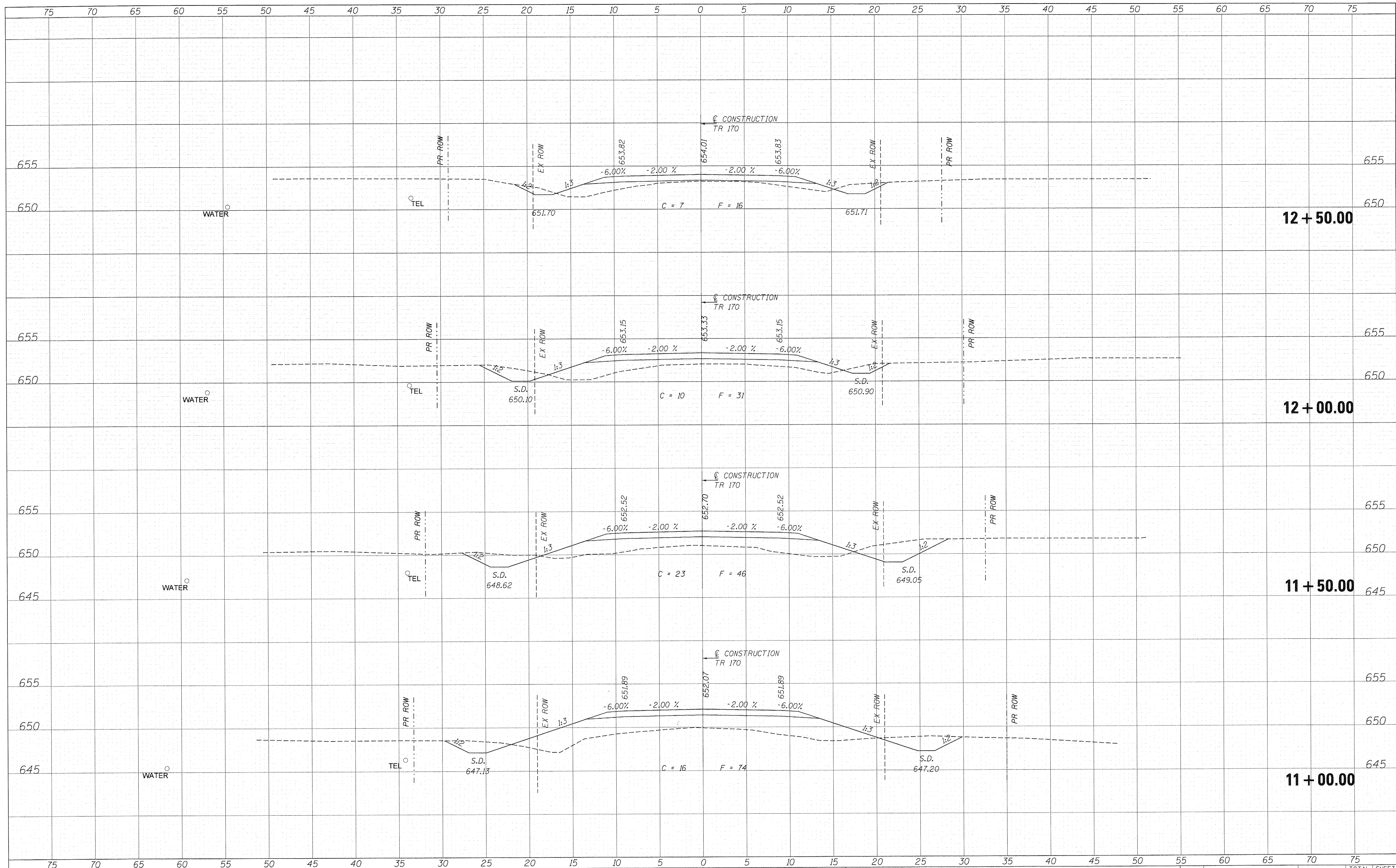
CROSS SECTIONS

SCALE:	SHEET NO.	OF	SHEETS	STA. 9+50.00	TO STA. 10+50.00
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TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
170	13-08114-00-BR	MOULTRIE	19	17
CONTRACT NO. 95812				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

DATE	
BY	
FINAL SURVEY	
TEMP. AREAS	
NO. CHECKED	

DATE	
BY	
ORIGINAL SURVEY	
TEMP. AREAS	
NO. CHECKED	



JOB = 2414
 FILE NAME = 2414-sht-xsec.dgn
 PLOT SCALE = 5.0000' / IN.
 PLOT DATE = 3/28/2017

DESIGNED - NAK
 DRAWN - SJS
 CHECKED - NAK
 DATE - 3/30/2016

REVISED -
 REVISED -
 REVISED -
 REVISED -

**MOULTRIE COUNTY
 TR 170 IMPROVEMENTS**

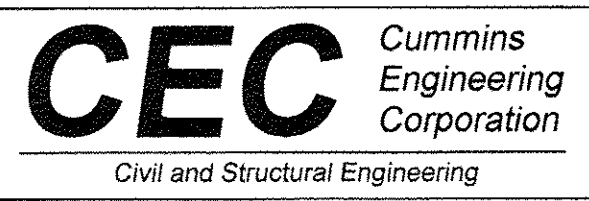
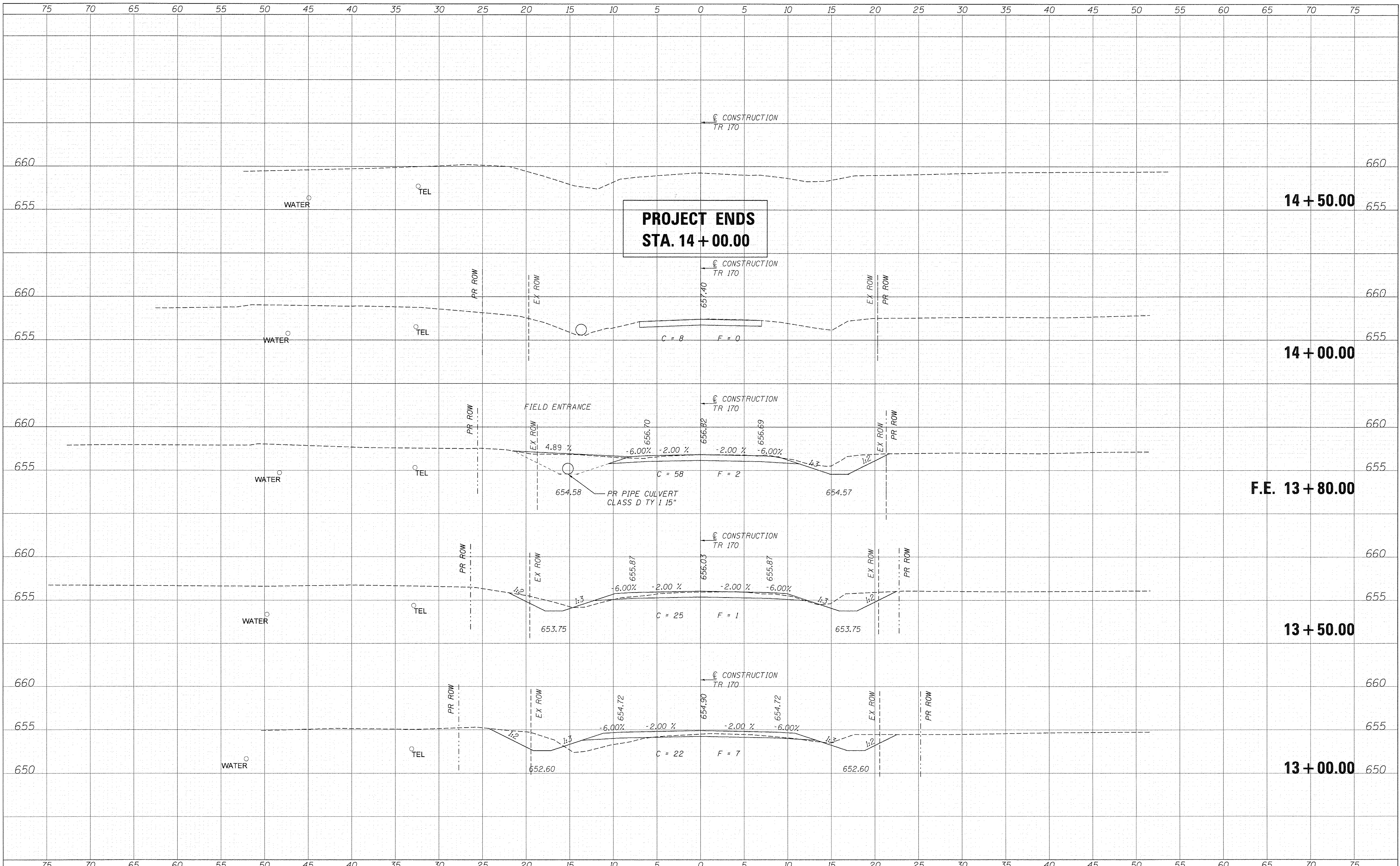
CROSS SECTIONS

SCALE: SHEET NO. OF SHEETS STA. 11+00.00 TO STA. 12+50.00

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
170	13-08114-00-BR	MOULTRIE	19	18
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 95812	

DATE	
BY	
DESIGNED	
DRAWN	
CHECKED	
DATE	
FILE NAME	
PLLOT SCALE	
PLLOT DATE	
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	
BY	
DESIGNED	
DRAWN	
CHECKED	
DATE	
FILE NAME	
PLLOT SCALE	
PLLOT DATE	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	



JOB = 2414	DESIGNED - NAK	REVISED -
FILE NAME = 2414-shr-xsec.dgn	DRAWN - SJS	REVISED -
PLLOT SCALE = 5.0000' / IN.	CHECKED - NAK	REVISED -
PLLOT DATE = 3/28/2017	DATE - 3/30/2016	REVISED -

**MOULTRIE COUNTY
TR 170 IMPROVEMENTS**

CROSS SECTIONS

SCALE:	SHEET NO.	OF	SHEETS	STA. 13+00.00	TO STA. 14+50.00
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TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
170	13-08114-00-BR	MOULTRIE	19	19
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		CONTRACT NO. 95812		