

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
81B	13-03132-00-BR	MOULTRIE	16	1
FED. ROAD DIST. NO.		ILLINOIS		

INDEX OF SHEETS 03-08-2019 LETTING ITEM 184

SHEET NO	TITLE
1	COVER SHEET
2	SUMMARY OF QUANTITIES, GENERAL NOTES AND ENTRANCE DETAILS
3	TYPICAL CROSS SECTIONS
4	SCHEDULES OF QUANTITIES
5	ALIGNMENT, BENCHMARKS AND CROSS TIES
6	PLAN AND PROFILE SHEET
7-13	SN 070-4336 PLANS
14-16	CROSS SECTIONS

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

**T.R. ROUTE 81B (1700N)
SECTION 13-03132-00-BR
PROJECT KPXC(594)
MOULTRIE COUNTY
JONATHAN CREEK TOWNSHIP
OVER JONATHAN CREEK
C-97-062-18**

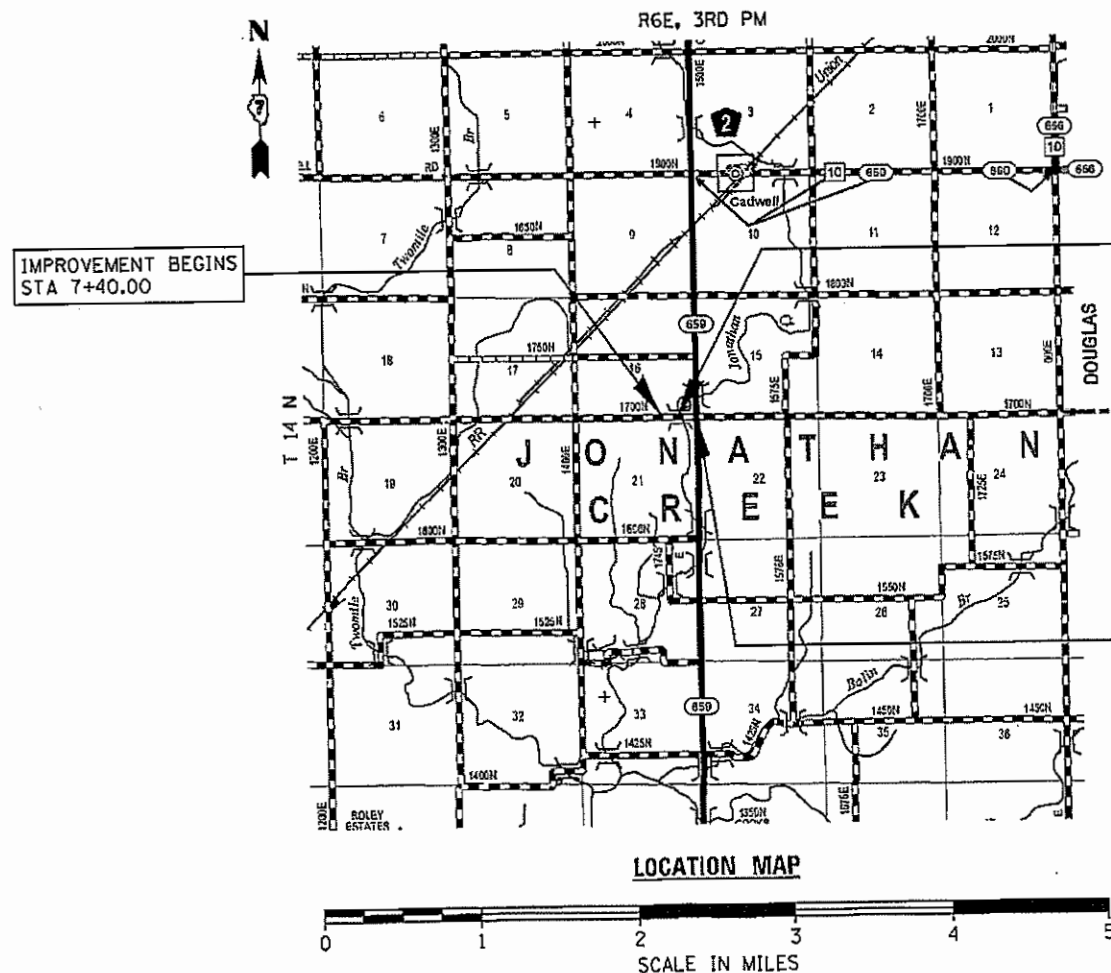


**LIST OF ILLINOIS
DOT HIGHWAY STANDARDS**

000001-07	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
602306-03	INLETS, TYPE B
602601-06	PRECAST REINFORCED CONCRETE FLAT SLAB TOP
604036-03	TYPE 8 GRATE
701901-08	TRAFFIC CONTROL DEVICES
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

UTILITY CONTACTS:

UTILITY TYPE: ELECTRIC COLES-MOULTRIE ELECTRIC COOPERATIVE ATTN: JIM WALLACE PHONE: (217) 258-5815, (217) 235-0341	UTILITY TYPE: WATER MOULTRIE Co RURAL PUBLIC WATER DISTRICT ATTN: ANGELA EMEL PHONE: (217) 728-8842
UTILITY TYPE: TELEPHONE & FIBER OPTIC FRONTIER COMMUNICATIONS (SOUTH) ATTN: KALIN HINSHAW PHONE: (815) 895-1515	UTILITY TYPE: GAS NATURAL GAS PIPELINE CO. ATTN: GREG SMITH PHONE: (309) 914-7848

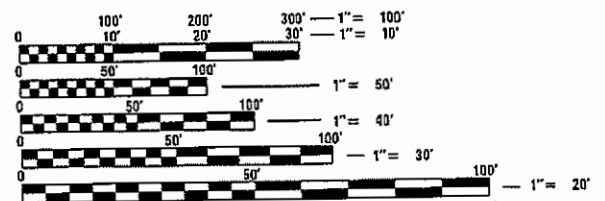


IMPROVEMENT BEGINS
STA 7+40.00

STA. 10+02.00
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 070-4336 REPLACES EXISTING SN 070-4313

IMPROVEMENT ENDS
STA 11+55.00



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. 95843



DESIGN DESIGNATION
FUNCTIONAL CLASSIFICATION: LOCAL ROAD
DESIGN SPEED: 30 MPH
CURRENT ADT: 175 (2018)
3R GUIDELINES



Michael D. Cummins 12/21/18
ILLINOIS PROFESSIONAL NO. 43244
(Expires 11/30/19)

APPROVED	DECEMBER 26, 2018
	<i>Jeffrey Bird</i> COUNTY ENGINEER
PASSED	12-26-18
	<i>Shirley</i> DISTRICT COMMISSIONER
PASSED	Jan 4, 2019
	<i>Jeffery M. Smith</i> DISTRICT SEVEN ENGINEER OF LOCAL ROADS AND STREETS
RELEASED FOR BID BASED ON LIMITED REVIEW	Jan 4, 2019
	<i>Jeffrey M. Smith</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
20200100	EARTH EXCAVATION	CU YD	90
20300100	CHANNEL EXCAVATION	CU YD	125
20400800	FURNISHED EXCAVATION	CU YD	130
20600110	GRANULAR EMBANKMENT, SPECIAL	TON	84
20800150	TRENCH BACKFILL	CU YD	11
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	12
28000400	PERIMETER EROSION BARRIER	FOOT	310
28000500	INLET AND PIPE PROTECTION	EACH	5
28100207	STONE RIPRAP, CLASS A4	TON	220
28200200	FILTER FABRIC	SQ YD	235
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	329
40300200	BITUMINOUS MATERIALS (PRIME COAT)	TON	1
40300400	BITUMINOUS MATERIALS (COVER AND SEAL COATS)	TON	2.5
40300500	COVER COAT AGGREGATE	TON	9
40300600	SEAL COAT AGGREGATE	TON	9
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50105220	PIPE CULVERT REMOVAL	FOOT	154
50200100	STRUCTURE EXCAVATION	CU YD	49
50300225	CONCRETE STRUCTURES	CU YD	26.0
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1,701
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	3,410
50900205	STEEL RAILING, TYPE S1	FOOT	126

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
51200957	FURNISHING METAL SHELL PILES 12" X 0.250"	FOOT	340
51202305	DRIVING PILES	FOOT	340
51203200	TEST PILE METAL SHELLS	EACH	2
51500100	NAME PLATES	EACH	1
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	16.0
60240301	INLETS, TYPE B, TYPE 8 GRATE	EACH	2
67100100	MOBILIZATION	L SUM	1
70101830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1
72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
542D0223	PIPE CULVERTS, CLASS D, TYPE 1 18"	FOOT	406
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.12

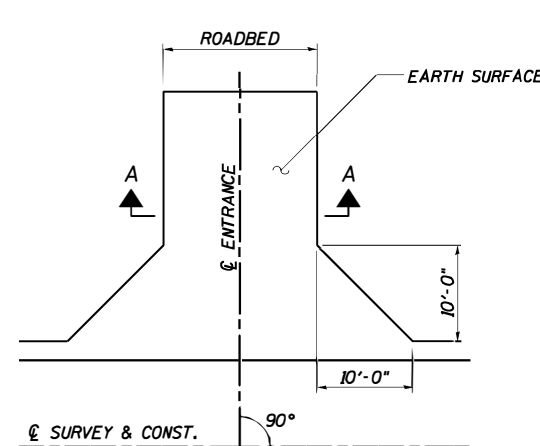
* SEE SPECIAL PROVISION

GENERAL NOTES

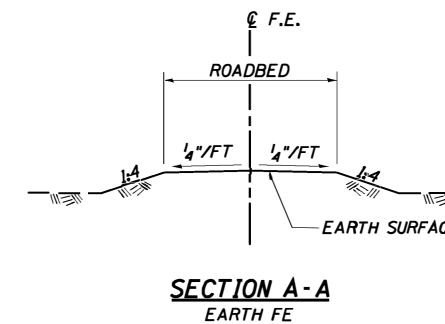
1. THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY AS DIRECTED BY THE ENGINEER.
SEEDING CLASS 2 (SPECIAL) = 0.12 ACRES
2. ALL ELEVATIONS SHOWN ON THE PLANS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. THE LOCATIONS OF EXISTING WATER MAINS, 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. THE 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.

APPLICATION RATES USED IN QUANTITY CALCULATIONS

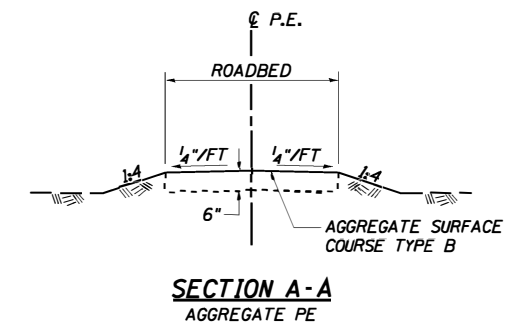
GRANULAR MATERIALS	2.05 TONS/CU YD
RIPRAP	1.5 TONS/CU YD
TEMPORARY EROSION CONTROL SEEDING	100 LBS/ACRE



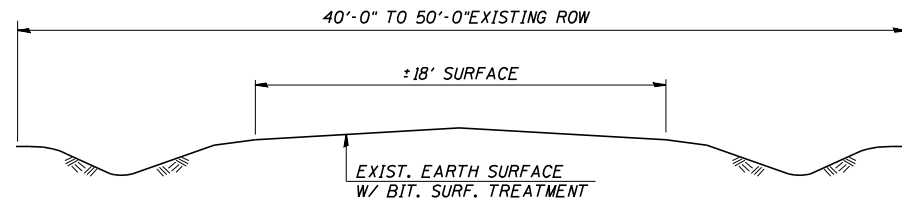
PRIVATE & FIELD ENTRANCE DETAIL



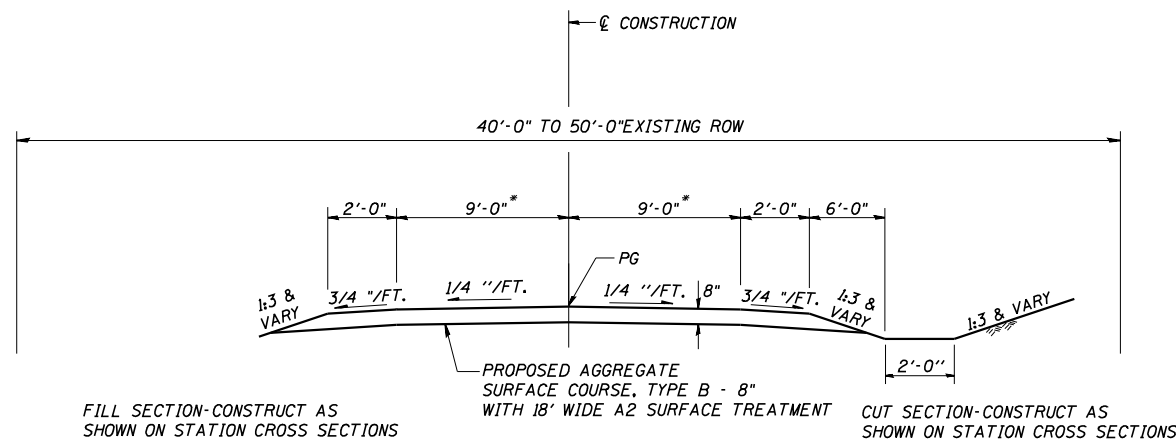
ENTRANCES TO BE CONSTRUCTED
RT STA 10+70 TO 16' ROADWAY



ENTRANCES TO BE CONSTRUCTED
RT STA 7+70 TO 24' ROADWAY



TYPICAL EXISTING ROADWAY CROSS SECTION



FILL SECTION-CONSTRUCT AS SHOWN ON STATION CROSS SECTIONS

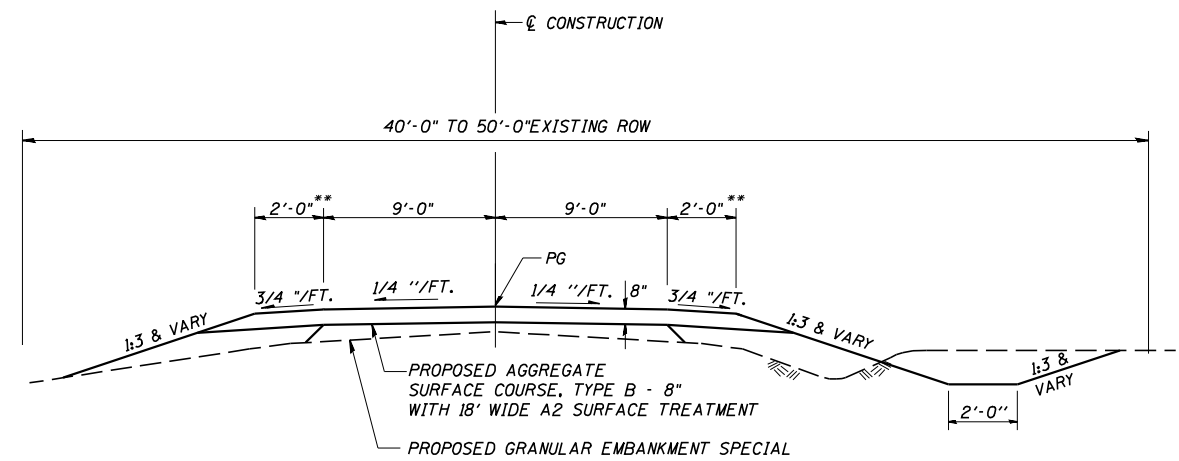
PROPOSED AGGREGATE SURFACE COURSE, TYPE B - 8" WITH 18' WIDE A2 SURFACE TREATMENT

CUT SECTION-CONSTRUCT AS SHOWN ON STATION CROSS SECTIONS

TYPICAL PROPOSED ROADWAY CROSS SECTION

STA 7+40 TO STA 8+75
STA 10+75 TO STA 11+55

* TRANSITION FROM EXISTING ROADWAY TO PROPOSED ROADWAY STA 7+40 TO STA 7+90
TRANSITION FROM PROPOSED ROADWAY TO EXISTING ROADWAY STA 11+05 TO STA 11+55



FILL SECTION-CONSTRUCT AS SHOWN ON STATION CROSS SECTIONS

PROPOSED AGGREGATE SURFACE COURSE, TYPE B - 8" WITH 18' WIDE A2 SURFACE TREATMENT

PROPOSED GRANULAR EMBANKMENT SPECIAL

CUT SECTION-CONSTRUCT AS SHOWN ON STATION CROSS SECTIONS

TYPICAL PROPOSED ROADWAY CROSS SECTION

BRIDGE OMISSION
STA 9+69.71 TO STA 10+34.29

STA 8+75 TO STA 9+69.71
STA 10+34.29 TO STA 10+75

** TRANSITION SHOULDERS FROM 2'-0" AT STA 9+44.5 TO 4'-6" AT STA 9+69.71 AND FROM 4'-6" AT STA 10+34.29 TO 2'-0" AT STA 10+60

EARTHWORK

LOCATION	EARTH EXCAVATION	EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
TR 81B				
STA 7+40.00 TO STA 9+69.71	50	40	110	-70
STA 10+34.29 TO STA 11+55.00	40	30	90	-60
TOTAL	90	70	200	-130

SHRINKAGE = 25%

28000250 TEMPORARY EROSION CONTROL SEEDING

LOCATION	POUND
STA 7+80 TO STA 9+70	3
STA 10+35 TO STA 11+55	2
STA 8+10 TO STA 9+70	4
STA 10+35 TO STA 10+60	1
STA 10+40 TO STA 11+55	2
TOTAL	12

28000500 INLET AND PIPE PROTECTION

LOCATION	EACH
LT STA 9+35	1
LT STA 10+65	1
LT STA 7+40	1
RT STA 9+50	1
RT STA 10+90	1
TOTAL	5

28000400 PERIMETER EROSION BARRIER

LOCATION	FOOT
LT STA 7+40 TO STA 8+50	110
LT STA 9+35 TO STA 9+70	35
LT STA 10+35 TO STA 10+65	30
RT STA 8+10 TO STA 9+00	90
RT STA 9+50 TO STA 9+70	20
RT STA 10+35 TO STA 10+60	25
TOTAL	310

X2501000 SEEDING, CLASS 2 (SPECIAL)

LOCATION	ACRE
STA 7+80 TO STA 9+70	0.03
STA 10+35 TO STA 11+55	0.02
STA 8+10 TO STA 9+70	0.04
STA 10+35 TO STA 10+60	0.01
STA 10+40 TO STA 11+55	0.02
TOTAL	0.12

40200800 AGGREGATE SURFACE COURSE, TYPE B

LOCATION	TON
STA 8+40.00 TO STA 9+44.71	122.43
STA 9+44.71 TO STA 9+69.71	32.36
STA 10+34.29 TO STA 10+59.29	32.36
STA 10+59.29 TO STA 11+55.00	111.91
RT. STA 7+70 (ENTRANCE)	29.48
TOTAL	328.54
USE	329

BITUMINOUS SURFACE TREATMENT A2

LOCATION	BITUMINOUS MATERIALS (PRIME COAT)	BITUMINOUS MATERIALS (COVER AND SEAL COATS)	COVER COAT AGGREGATE	SEAL COAT AGGREGATE
	TON	TON	TON	TON
APPLICATION RATES	0.35 GAL/SQ YD	0.45 GAL/SQ YD	25 LB/SQ YD	25 LB/SQ YD
STA 7+40.00 TO STA 9+69.71	0.64	1.64	5.74	5.74
STA 10+34.29 TO STA 11+55.00	0.34	0.86	3.02	3.02
TOTAL	0.98	2.5	8.76	8.76

50105220 PIPE CULVERT REMOVAL

LOCATION	TYPE	FOOT
LT STA 9+59 TO STA 9+85	18" CMP	26
LT STA 10+17 TO STA 10+43	18" CMP	26
RT STA 7+52 TO STA 7+92	18" CMP	40
RT STA 9+61 TO STA 9+85	18" CMP	24
RT STA 10+22 TO STA 10+46	18" CMP	24
RT STA 10+62 TO STA 10+76	15" STEEL	14
TOTAL		154

542D0223 PIPE CULVERTS, CLASS D, TYPE 1 18"

LOCATION	FOOT
LT STA 9+35 TO STA 9+85	50
LT STA 10+17 TO STA 10+61	44
RT STA 7+41 TO STA 9+49	208
RT STA 9+51 TO STA 9+87	36
RT STA 10+22 TO STA 10+90	68
TOTAL	406

60240301 INLETS, TYPE B, TYPE 8 GRATE

LOCATION	EACH
RT STA 7+40	1
RT STA 9+50	1
TOTAL	2

20800150 TRENCH BACKFILL

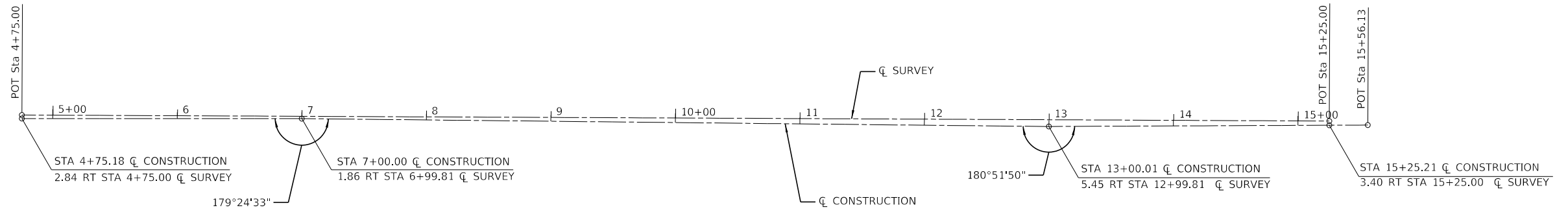
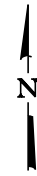
LOCATION	CU YD
RT STA 7+70	11
TOTAL	11

20600110 GRANULAR EMBANKMENT, SPECIAL

LOCATION	TON
STA 8+75.00 TO STA 9+69.71	58.41
STA 10+34.36 TO STA 10+75.00	25.15
TOTAL	83.56
USE	84

72501000 TERMINAL MARKER - DIRECT APPLIED

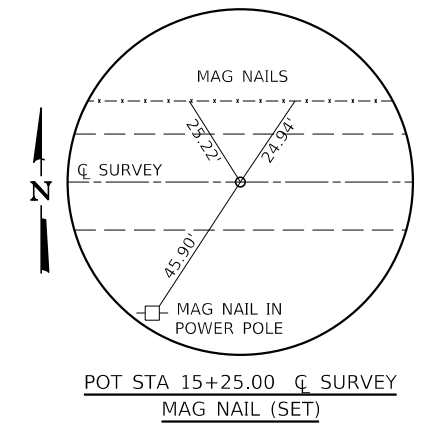
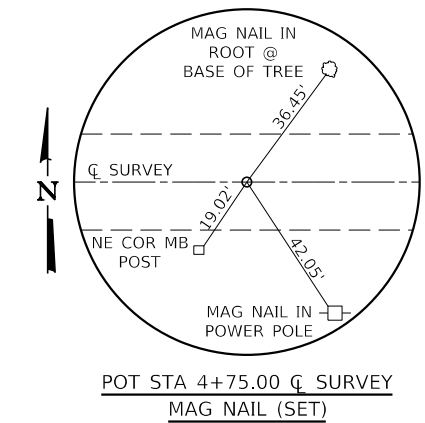
LOCATION	EACH
LT STA 9+69	1
LT STA 10+35	1
RT STA 9+69	1
RT STA 10+35	1
TOTAL	4



CL SURVEY			
CONTROL POINT	STATION	COORDINATES	
		NORTHING	EASTING
P.O.T	4+75.00	1087038.05	928076.79
P.O.T	15+25.00	1087033.23	929126.78

CL CONSTRUCTION			
CONTROL POINT	STATION	COORDINATES	
		NORTHING	EASTING
P.O.T	4+75.18	1087035.21	928076.78
P.I.	7+00.00	1087035.16	928301.59
P.I.	13+00.01	1087028.81	928901.57
P.O.T	15+56.13	1087029.97	929157.69

- BM#1 - MAG SPIKE IN POWER POLE
STA. 7+14, 25' RT
ELEV. 655.54
- BM#2 - CUT "□" ON CONCRETE CURB
STA. 9+77, 13' RT
ELEV. 652.20 (GPS)
- BM#3 - CUT "□" ON CONCRETE FENCE POST
STA. 11+59, 29' RT
ELEV. 660.09



JOB = 2540
 FILE NAME = 2540-shr-ali.dgn
 PLOT SCALE = 100.0000' / in.
 PLOT DATE = 12/21/2018

DESIGNED - NAK
 DRAWN - SJS
 CHECKED - NAK
 DATE - 9/23/2016

**MOULTRIE COUNTY
 TR 81B IMPROVEMENTS**

ALIGNMENT, BENCHMARKS AND CROSS TIES

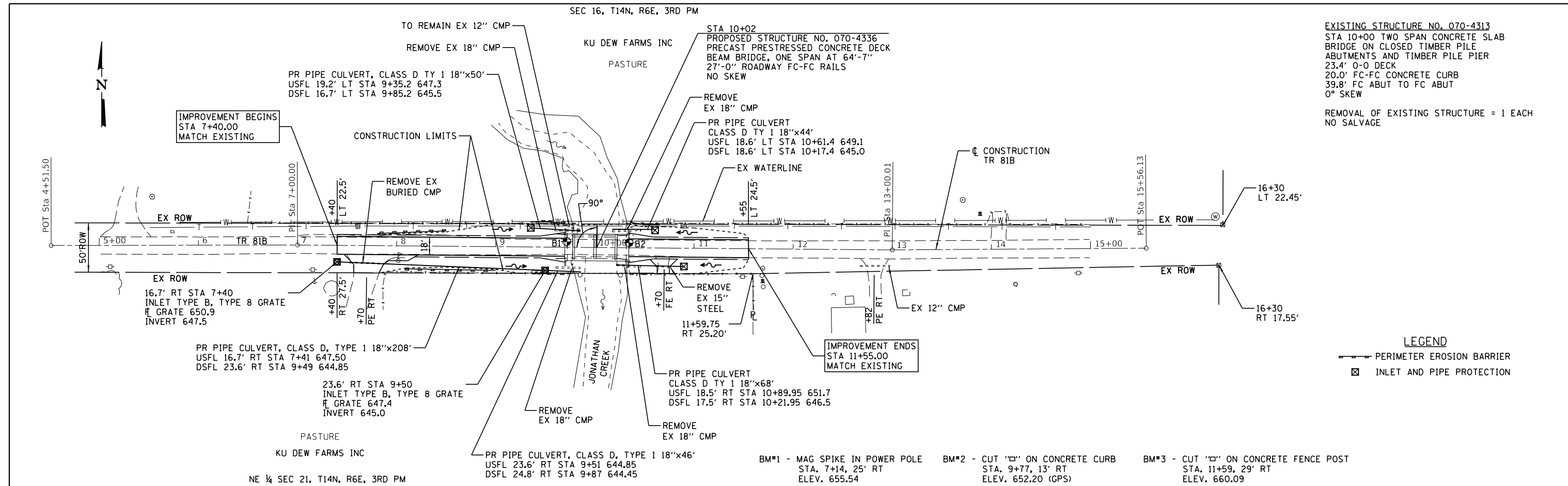
SCALE: SHEET NO. OF SHEETS STA. TO STA.

T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
81B	13-03132-00-BR	MOULTRIE	16	5

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT CONTRACT NO. 95843

PLAN	SURVEYED	DATE
	PLOTTED	
	ALIGNED	
	CHECKED	
	FILE NAME	
	NO.	

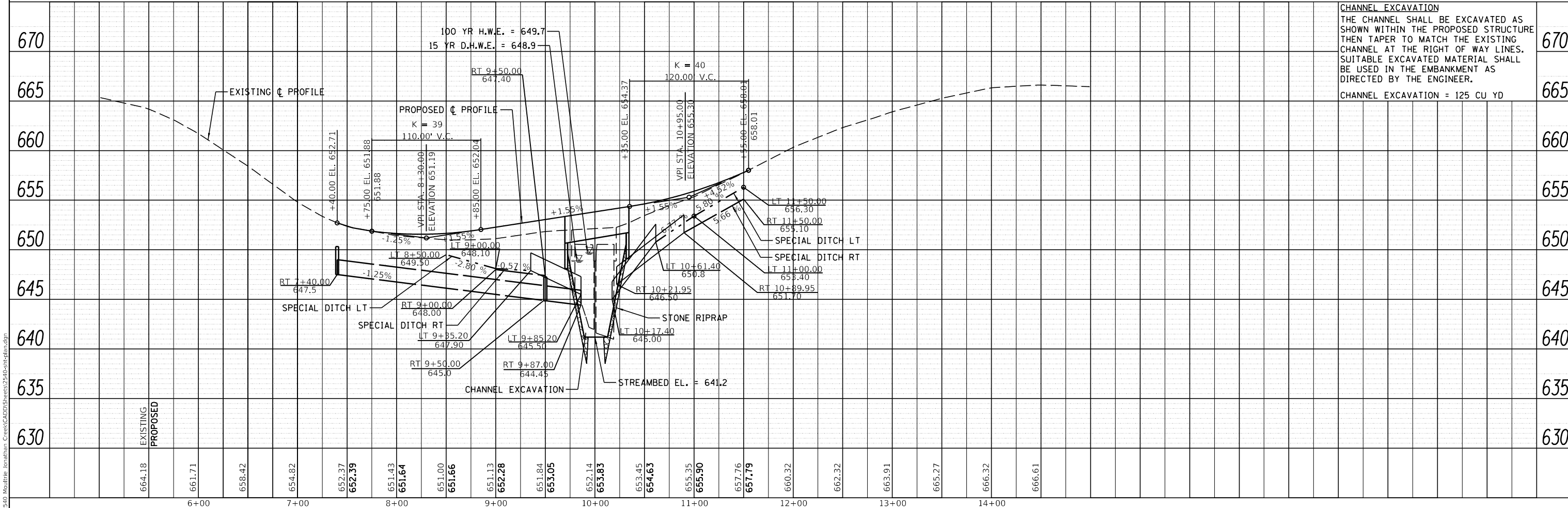
PROFILE	SURVEYED	DATE
	PLOTTED	
	GRADES	
	CHECKED	
	STRUCTURE	
	NOTATION	
	NO.	



EXISTING STRUCTURE NO. 070-4313
 STA 10+00 TWO SPAN CONCRETE SLAB
 BRIDGE ON CLOSED TIMBER PILE
 ABUTMENTS AND TIMBER PILE PIER
 23.4' 0-0 DECK
 20.0' FC-FC CONCRETE CURB
 39.8' FC ABUT TO FC ABUT
 0° SKEW

REMOVAL OF EXISTING STRUCTURE = 1 EACH
 NO SALVAGE

LEGEND
 — PERIMETER EROSION BARRIER
 ☒ INLET AND PIPE PROTECTION



CHANNEL EXCAVATION
 THE CHANNEL SHALL BE EXCAVATED AS
 SHOWN WITHIN THE PROPOSED STRUCTURE
 THEN TAPER TO MATCH THE EXISTING
 CHANNEL AT THE RIGHT OF WAY LINES.
 SUITABLE EXCAVATED MATERIAL SHALL
 BE USED IN THE EMBANKMENT AS
 DIRECTED BY THE ENGINEER.

CHANNEL EXCAVATION = 125 CU YD

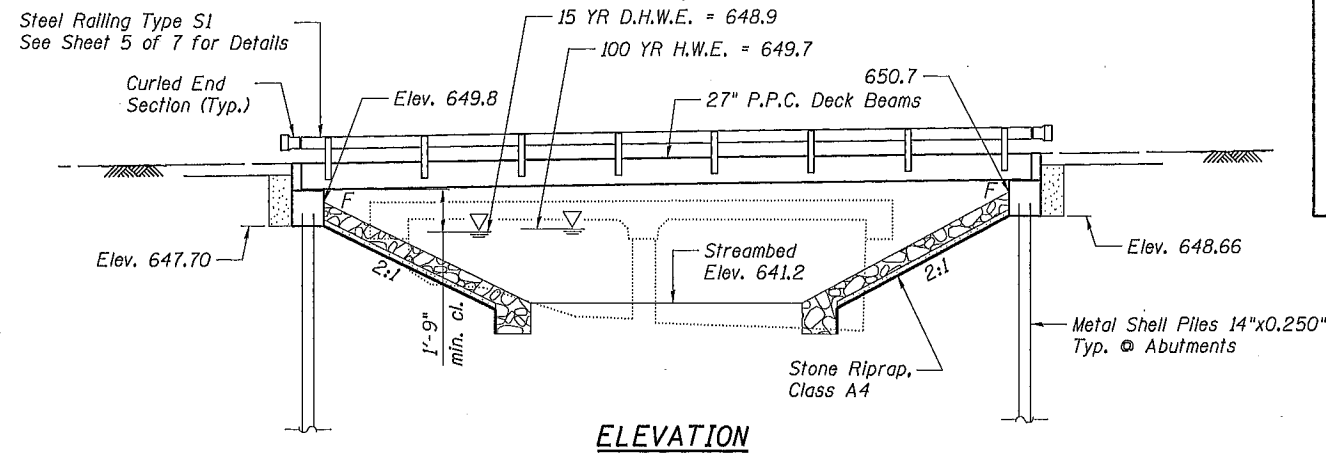
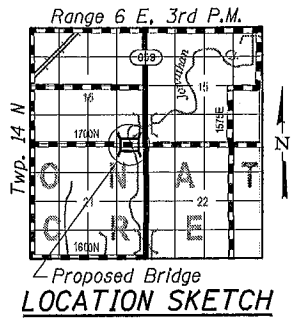
664.18	EXISTING
661.71	PROPOSED
658.42	
654.82	
652.37	
652.39	
651.43	
651.64	
651.00	
651.66	
651.13	
652.28	
651.84	
653.05	
652.14	
653.83	
653.45	
654.63	
655.35	
655.90	
657.76	
657.79	
660.32	
662.32	
663.91	
665.27	
666.32	
666.61	

DESIGNED	-	NAK	REVISED	-
DRAWN	-	SJS	REVISED	-
CHECKED	-	NAK	REVISED	-
DATE	-	7/20/2018	REVISED	-

MOULTRIE COUNTY
TR 81B IMPROVEMENTS

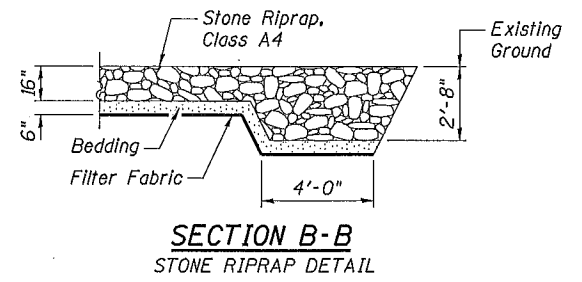
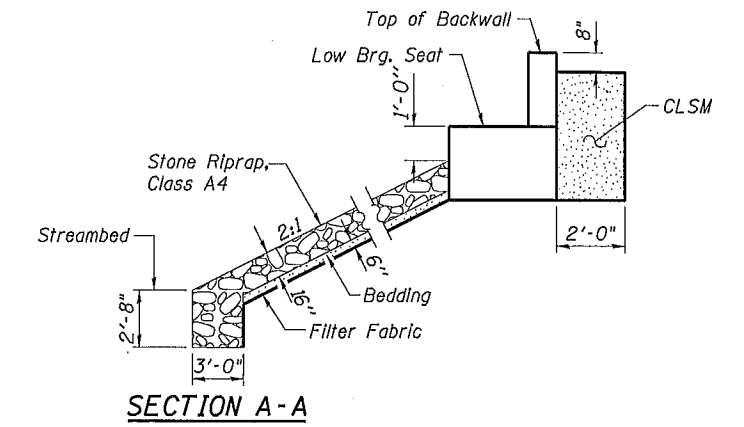
PLAN AND PROFILE
 SCALE: 1"=50'
 SHEET OF SHEETS STA. 4+51.50 TO STA. 15+56.13

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
81B	13-03132-00-BR	MOULTRIE	16	6
CONTRACT NO. 95843				
ILLINOIS FED. AID PROJECT				



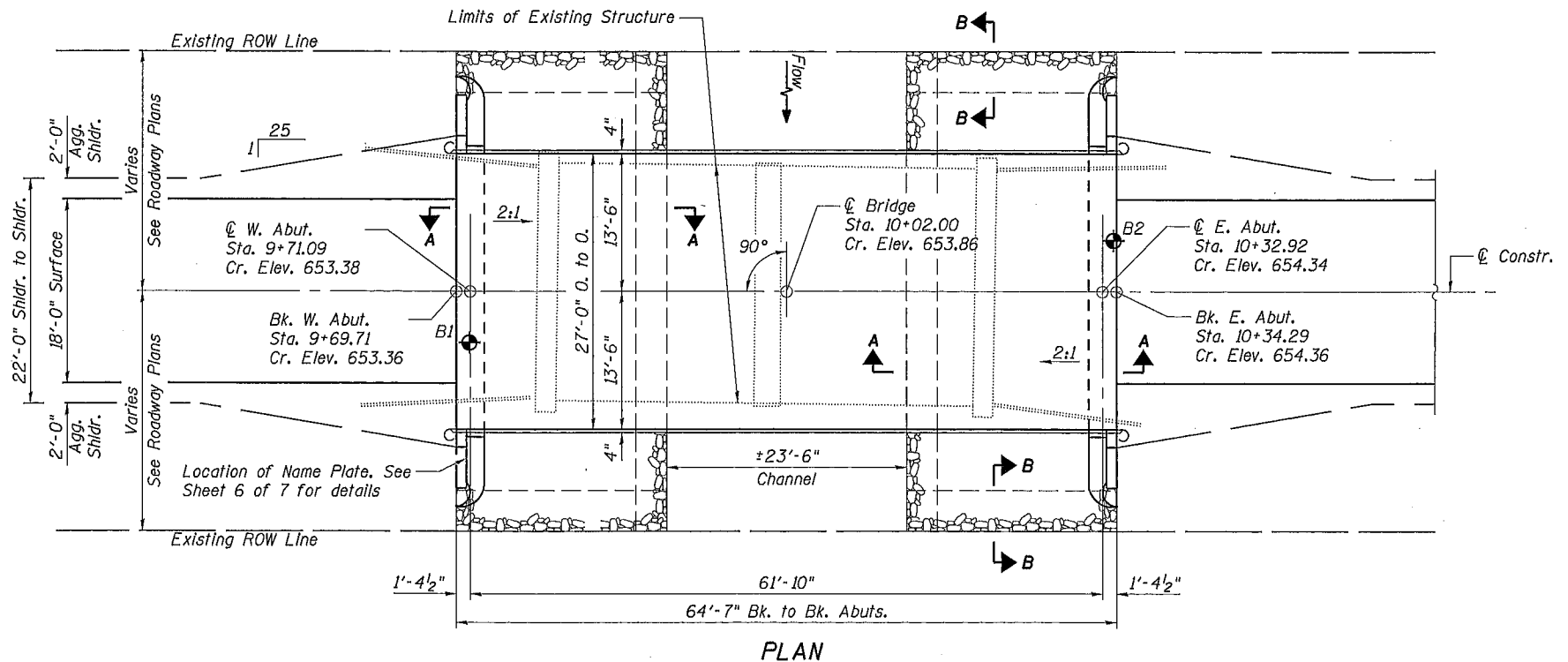
**JONATHAN CREEK
BUILT 20__ BY
JONATHAN CREEK ROAD DISTRICT
MOULTRIE COUNTY
SEC. 13-03132-00-BR
STATION 10+02
STR. NO. 070-4336 LOADING HL93**

LETTERING FOR NAME PLATE
See Std. 515001



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.



TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1701		1701
Concrete Structures	Cu. Yd.		26.0	26.0
Reinforcement Bars, Epoxy Coated	Pound		3410	3410
Steel Railing, Type S1	Foot	126		126
Name Plates	Each		1	1
Furnishing Metal Shell Piles 14"x0.250"	Foot		340	340
Driving Piles	Foot		340	340
Test Pile Metal Shells	Each		2	2
Stone Riprap, Class A4	Ton		220	220
Filter Fabric	Sq. Yd.		235	235
Structure Excavation	Cu. Yd.		49	49
Controlled Low-Strength Material	Cu. Yd.		16.0	16.0

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	W. Abut.	E. Abut.
	647.7	648.7

WATERWAY INFORMATION

Drainage Area	16.5 Sq. Mi.
Required Opening (15 Yr.)	300 Sq. Ft.
Existing Opening (15 Yr.)	239 Sq. Ft.
Approach Opening (15 Yr.)	0 Sq. Ft.
Proposed Opening (15 Yr.)	300 Sq. Ft.
Required Opening (100 Yr.)	344 Sq. Ft.
Existing Opening (100 Yr.)	268 Sq. Ft.
Approach Opening (100 Yr.)	0 Sq. Ft.
Proposed Opening (100 Yr.)	344 Sq. Ft.
Design Discharge (15 Yr.)	1,200 C.F.S.
Created Head (15 Yr.)	0.2 Ft.
100 Year Discharge	1,900 C.F.S.
100 Yr. Created Head	0.4 Ft.

DESIGN STRESSES

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

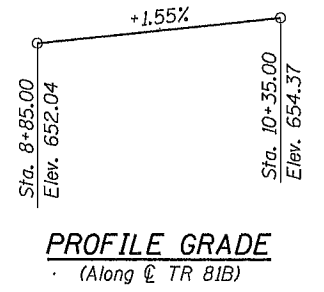
PRECAST PRESTRESSED UNITS
 $f'_c = 6,000$ psi
 $f_{ci} = 5,000$ psi
 $f_{pu} = 270,000$ psi ($\frac{1}{2}$ " ϕ low lax. strands)
 $f_{pbt} = 201,960$ psi ($\frac{1}{2}$ " ϕ low lax. strands)
 $f_y = 60,000$ psi (Reinforcement)

DESIGN SPECIFICATIONS

2017 AASHTO LRFD Bridge Design Specifications, 8th Edition

LOADING HL-93

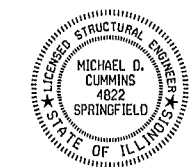
Allow 50#/Sq. Ft. for future wearing surface.



PROFILE GRADE
(Along ϕ TR 81B)

"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 12/21/18
ILLINOIS STRUCTURAL NO. 4822 (Expires 11/30/20)



**GENERAL PLAN & ELEVATION
TR 81B OVER JONATHAN CREEK
SECTION 13-03132-00-BR
MOULTRIE COUNTY
STATION 10+02
STRUCTURE NO. 070-4336**



JOB = 2540
FILE = 2540_0704336_00_OPE.dgn
DATE = 12/20/2018

DESIGNED - AAN	REVISED -
CHECKED - MDC	REVISED -
DRAWN - SJS	REVISED -
CHECKED - MDC	REVISED -

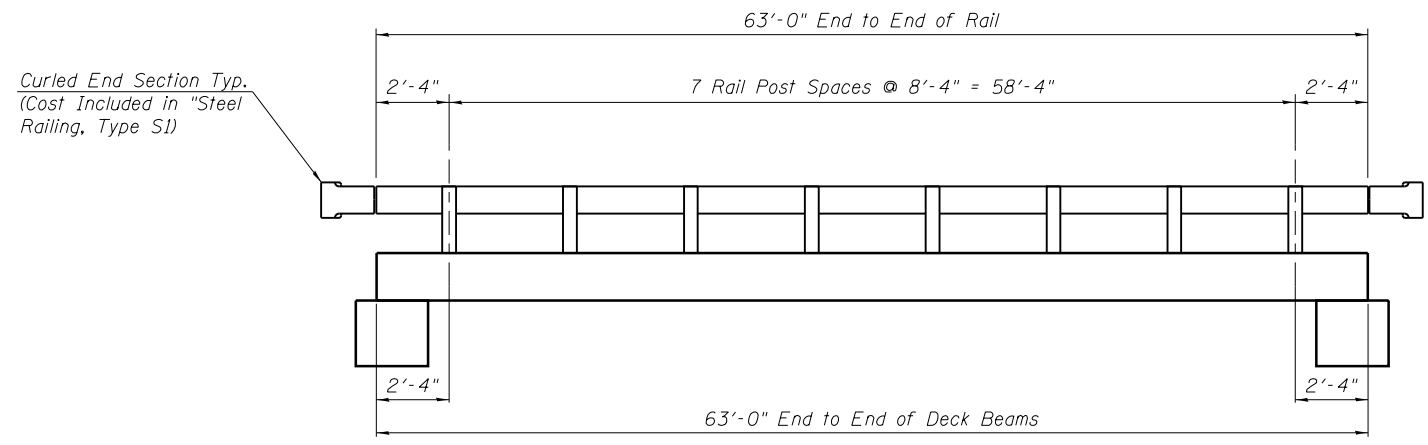
**MOULTRIE COUNTY
TR 81B IMPROVEMENTS**

**GENERAL PLAN & ELEVATION
STRUCTURE NO. 070-4336**

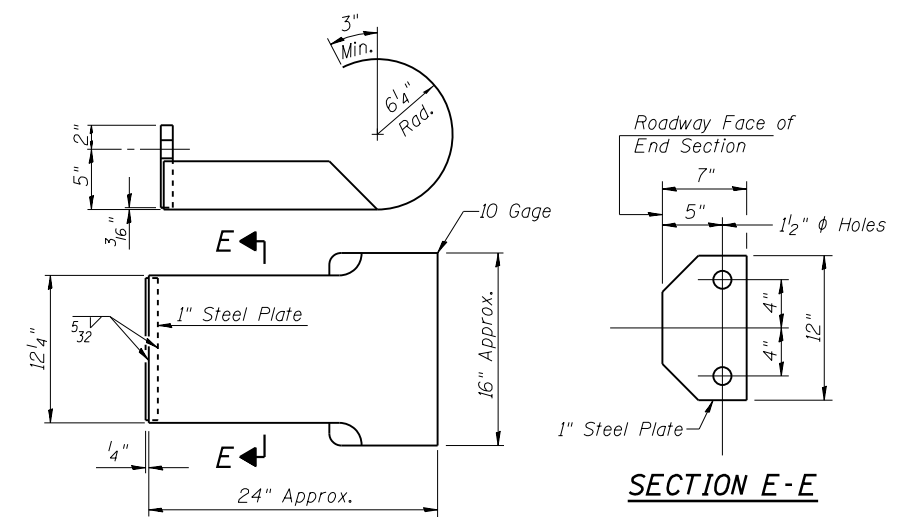
SHEET NO. 1 OF 7 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
B1B	13-03132-00-BR	MOULTRIE	16	7

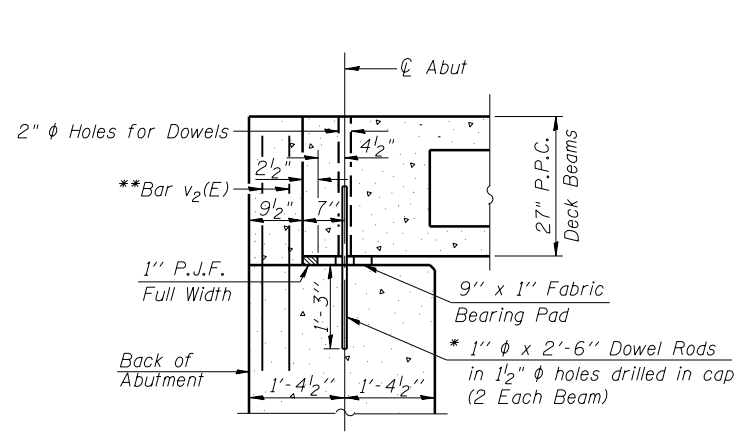
CONTRACT NO. 95843
ILLINOIS FED. AID PROJECT



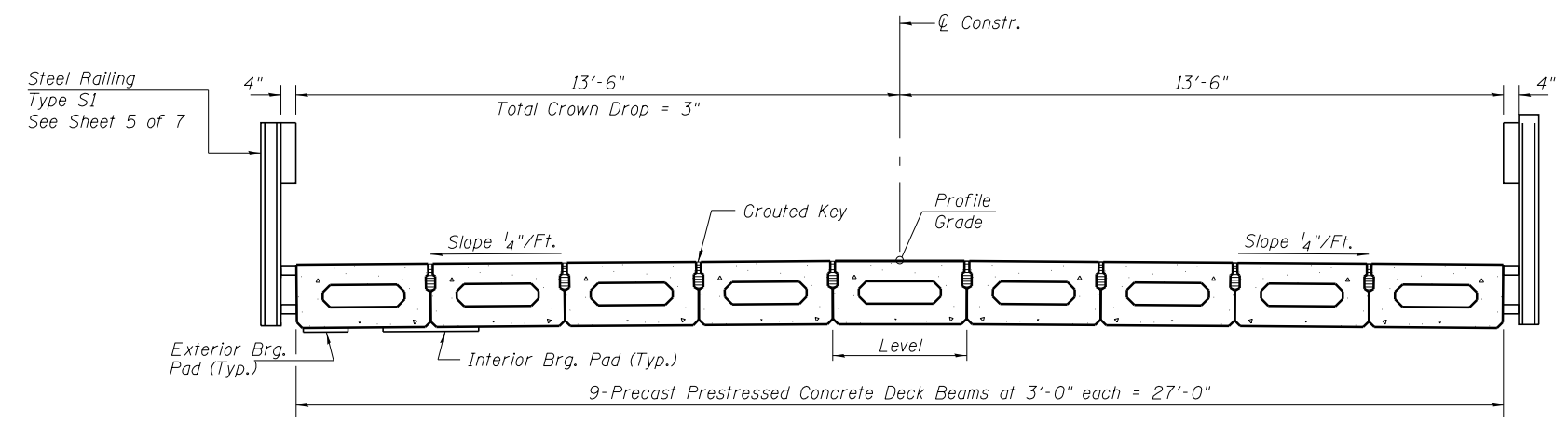
RAIL ELEVATION



CURLLED END SECTION DETAILS
(4 Required)



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

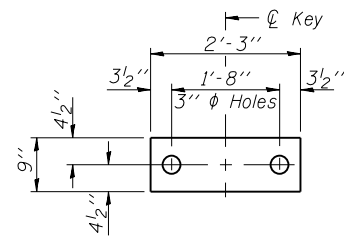


CROSS SECTION

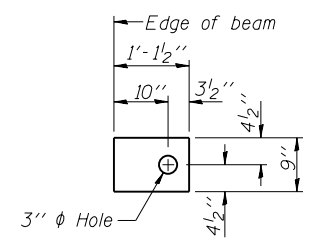
* After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.

** 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.



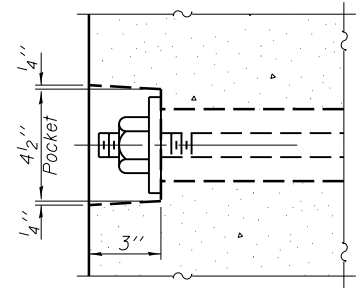
FABRIC BEARING PAD
(Interior - 16 Required)



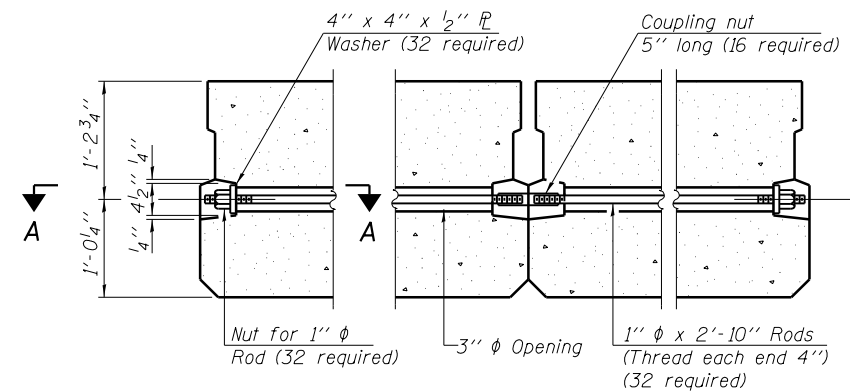
FABRIC BEARING PAD
(Exterior - 4 Required)

FIXED

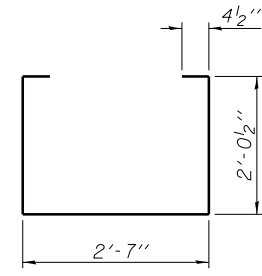
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



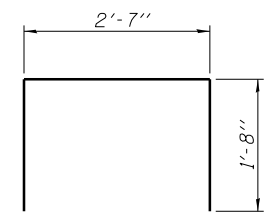
SECTION A-A



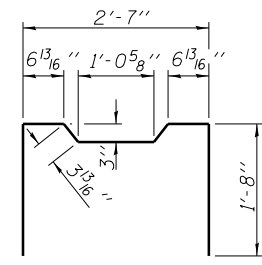
TYPICAL TRANSVERSE TIE ASSEMBLY



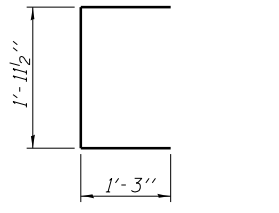
BAR S(E)



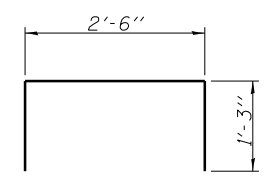
BAR S1(E)



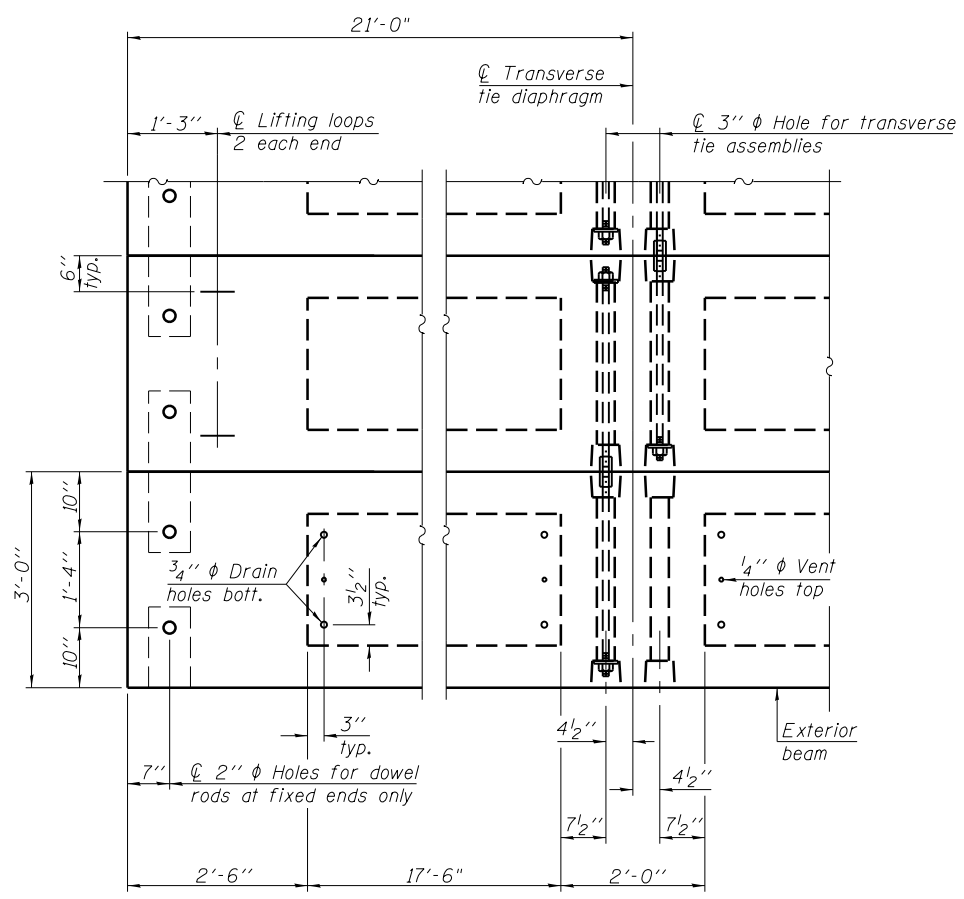
BAR S2(E)



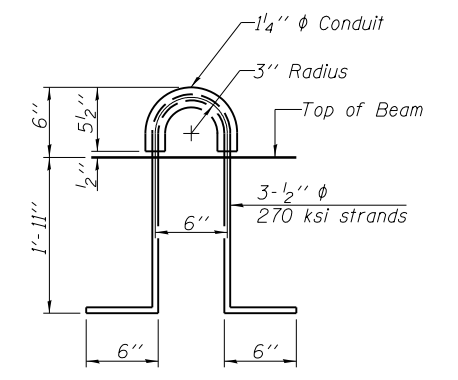
BAR U(E)



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" ϕ 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" ϕ 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
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PD-2736-0D 1-28-16



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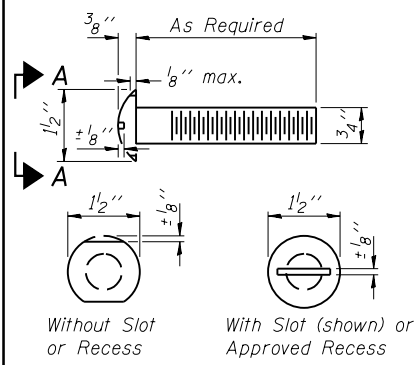
MOULTRIE COUNTY
TR 81B IMPROVEMENTS

27" x 36" PPC DECK BEAM
STRUCTURE NO. 070-4336

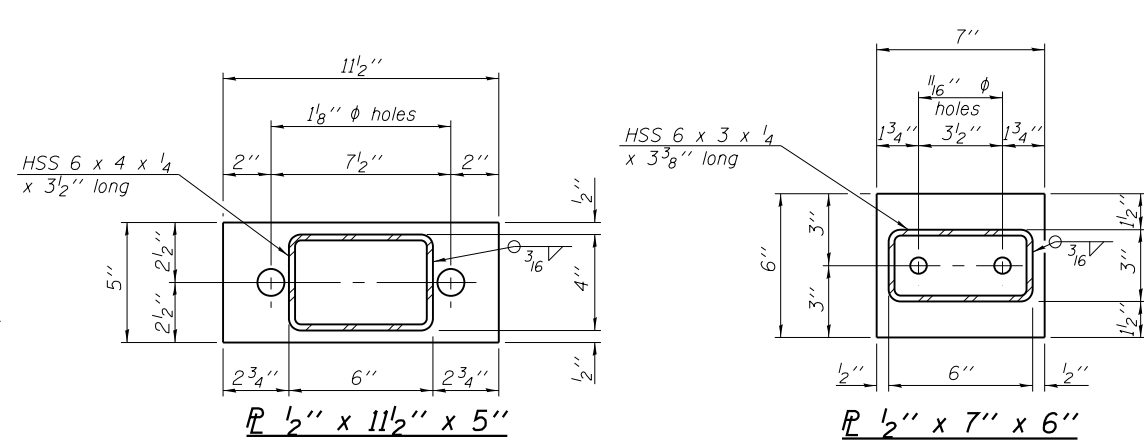
SHEET NO. 4 OF 7 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 95843				

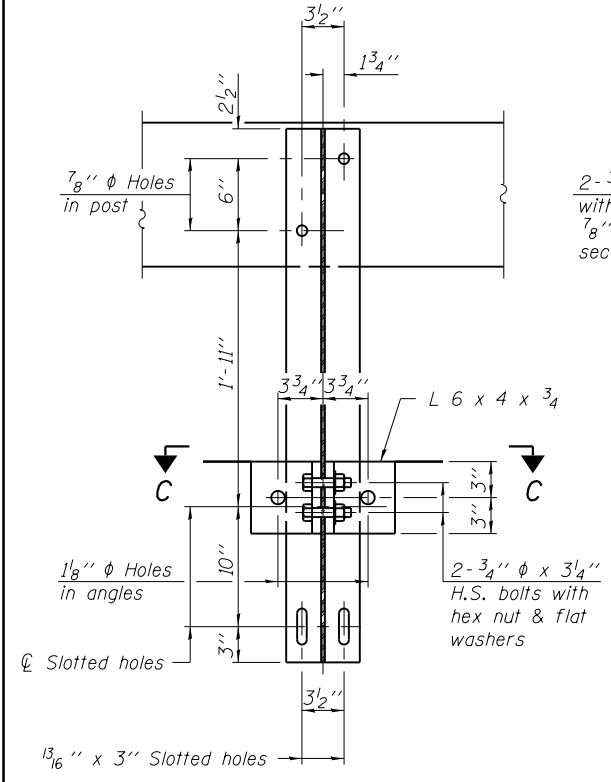
ILLINOIS FED. AID PROJECT



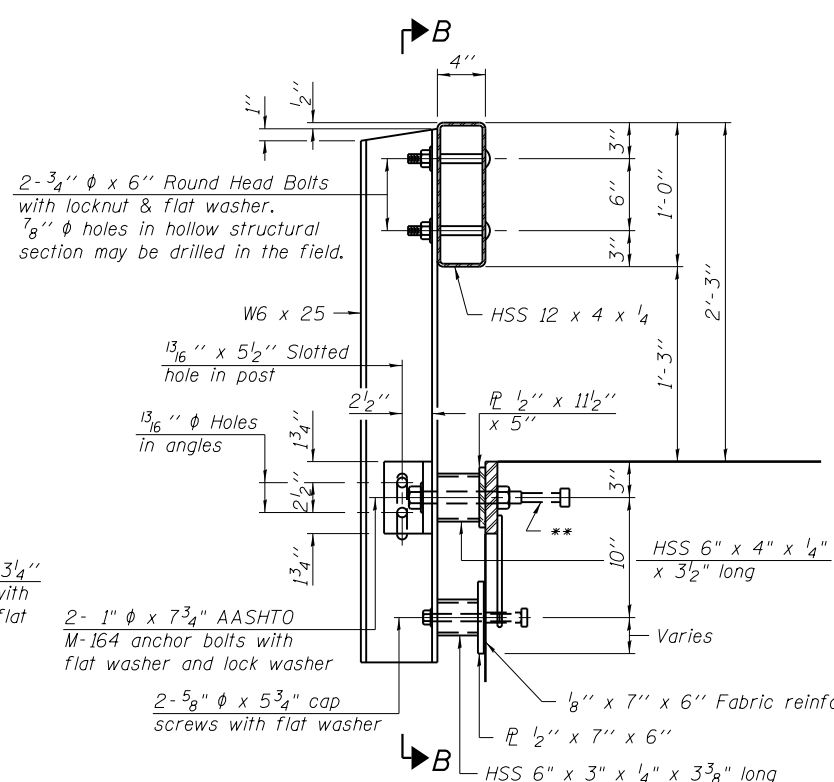
VIEW A-A
ROUND HEAD BOLT



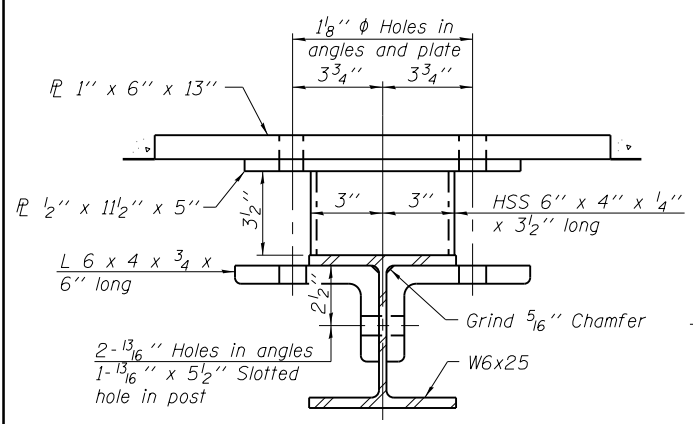
\mathbb{P} 1/2" x 11 1/2" x 5"
 \mathbb{P} 1/2" x 7" x 6"



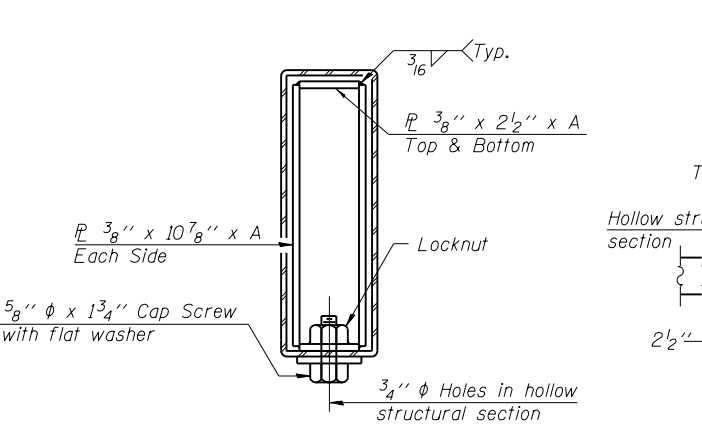
SECTION B-B



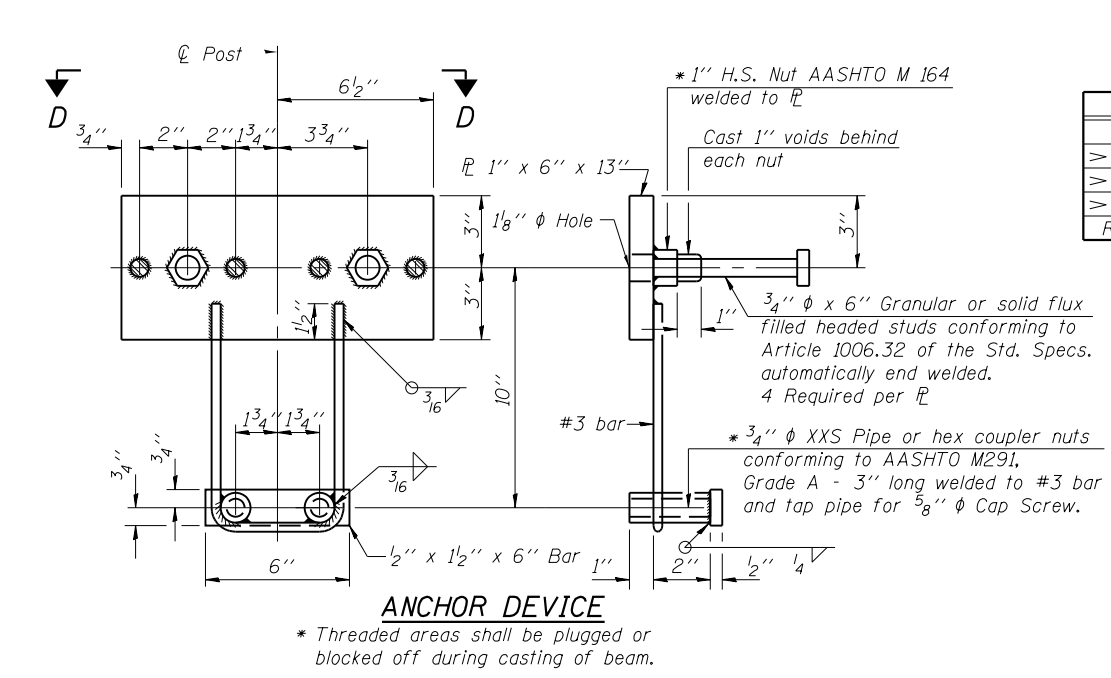
SECTION AT RAILING POST



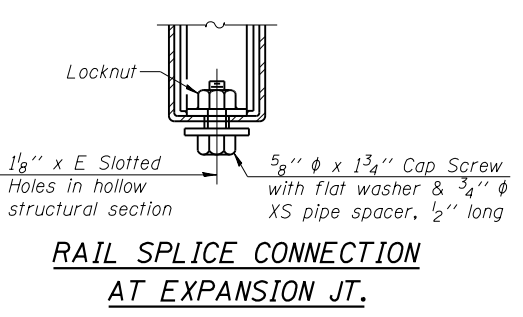
SECTION C-C



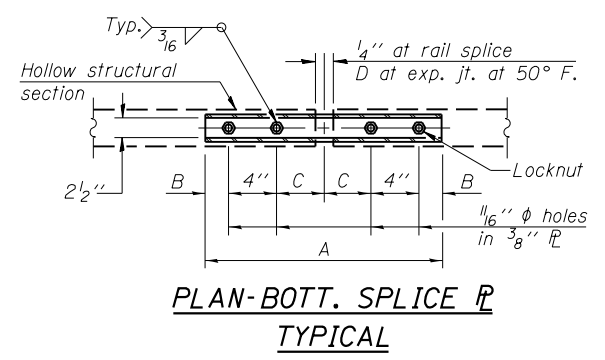
SECTIONS AT RAIL SPLICE



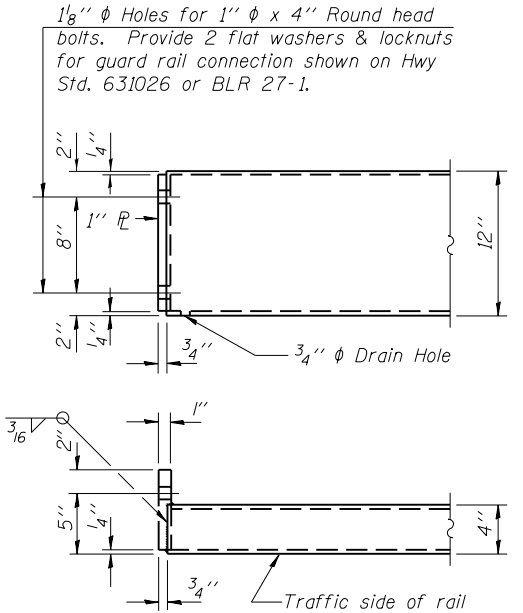
ANCHOR DEVICE



RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE P TYPICAL



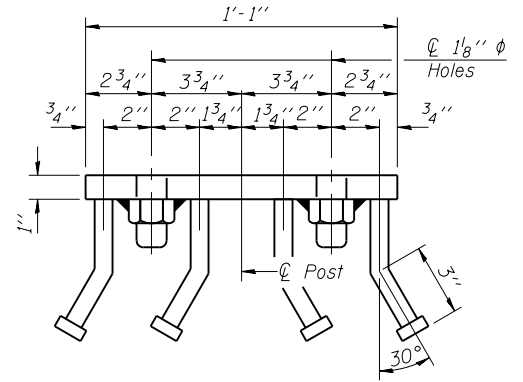
END OF RAIL DETAILS

SPLICE DIMENSIONS

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

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

Notes:
For multi-span bridges, sufficient 1/4 inch x 6 inch x 1'-2 inch 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.



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)

CEC Cummins Engineering Corporation
Civil and Structural Engineering

JOB = 2540
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DATE = #DATE*

DESIGNED - AAN
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MOULTRIE COUNTY
TR 81B IMPROVEMENTS

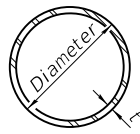
STEEL RAILING, TYPE S-1
STRUCTURE NO. 070-4336

SHEET NO. 5 OF 7 SHEETS

See Sheet 2 of 7 for Curled End Section and Rail Elevation.

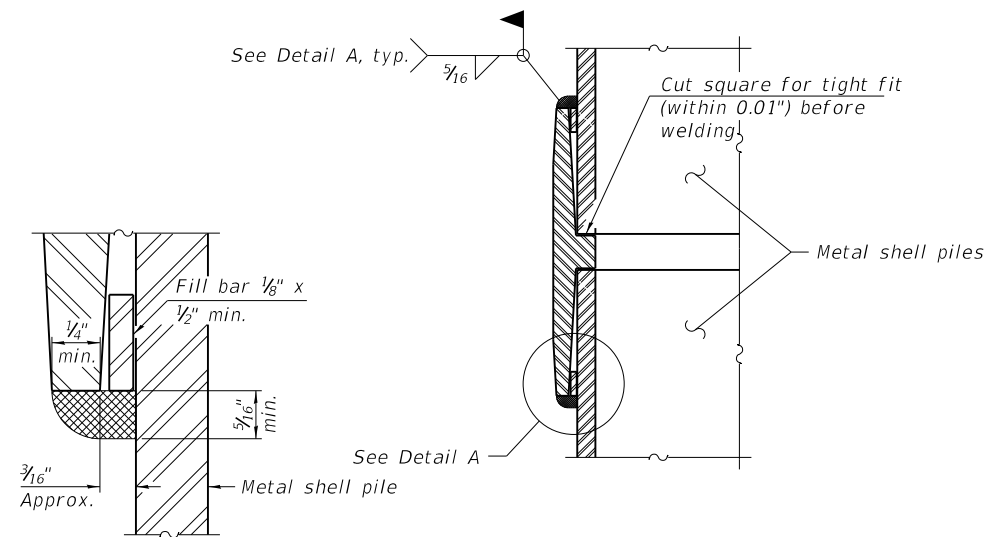
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
81B	13-03132-00-BR	MOULTRIE	16	11

CONTRACT NO. 95843
ILLINOIS FED. AID PROJECT



METAL SHELL PILE TABLE

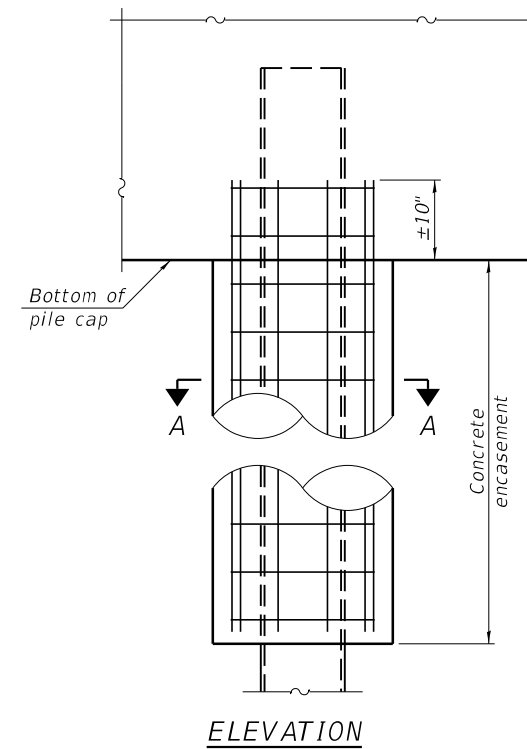
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470



DETAIL A

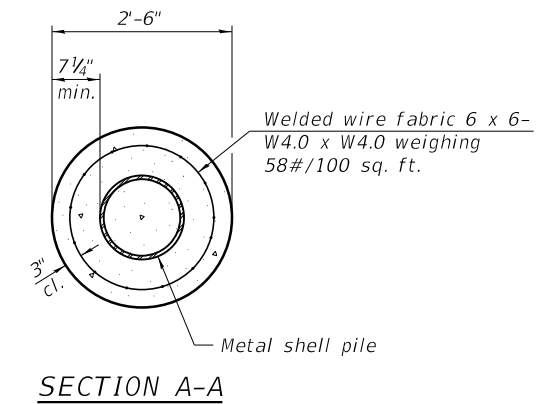
WELDED COMMERCIAL SPLICE

Notes:
 The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.
 Pile segments shall be driven to solid contact with splicer before welding.

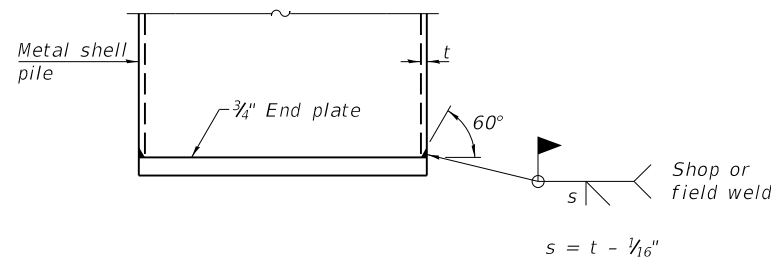


ELEVATION

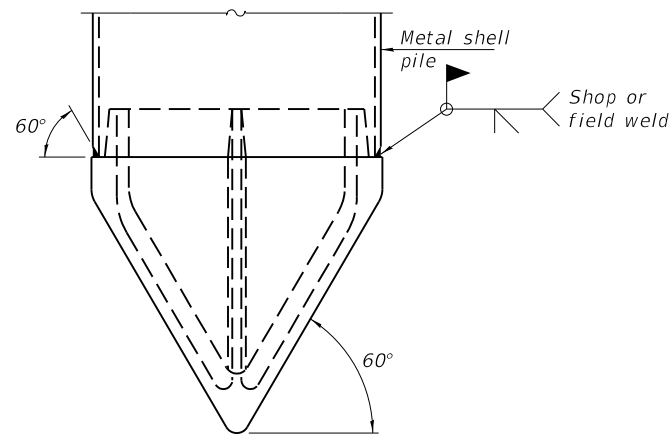
INDIVIDUAL PILE CONCRETE ENCASEMENT AT PIERS



SECTION A-A

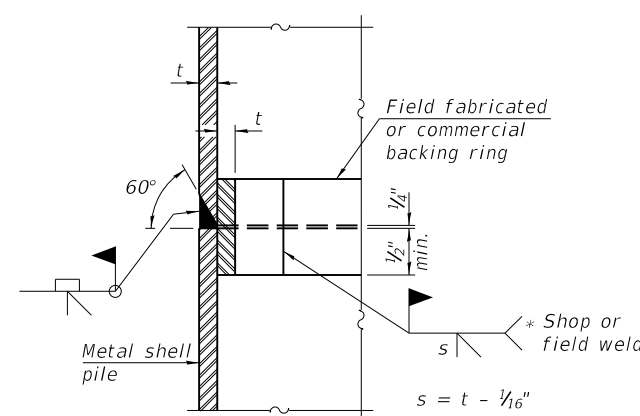


END PLATE ATTACHMENT



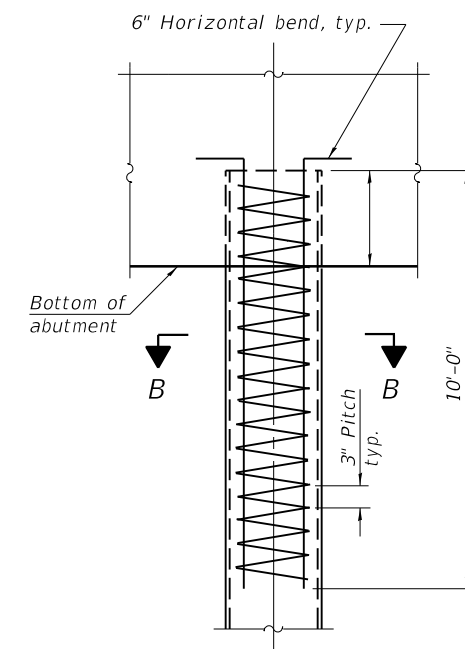
PILE SHOE ATTACHMENT

(When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld).



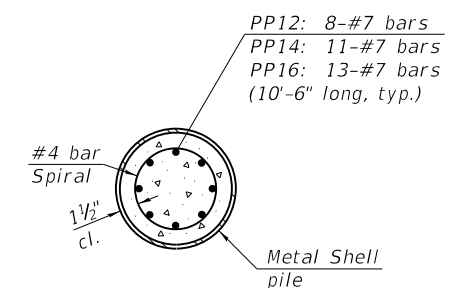
COMPLETE PENETRATION WELD SPLICE

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



ELEVATION

REINFORCEMENT AT ABUTMENTS



SECTION B-B

Note:
 The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.

F-MS 8-11-2017



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DATE = *DATE*	DRAWN - SJS	REVISED -
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**MOULTRIE COUNTY
 TR 81B IMPROVEMENTS**

**METAL SHELL PILE DETAILS
 STRUCTURE NO. 070-4336**

SHEET NO. 7 OF 7 SHEETS

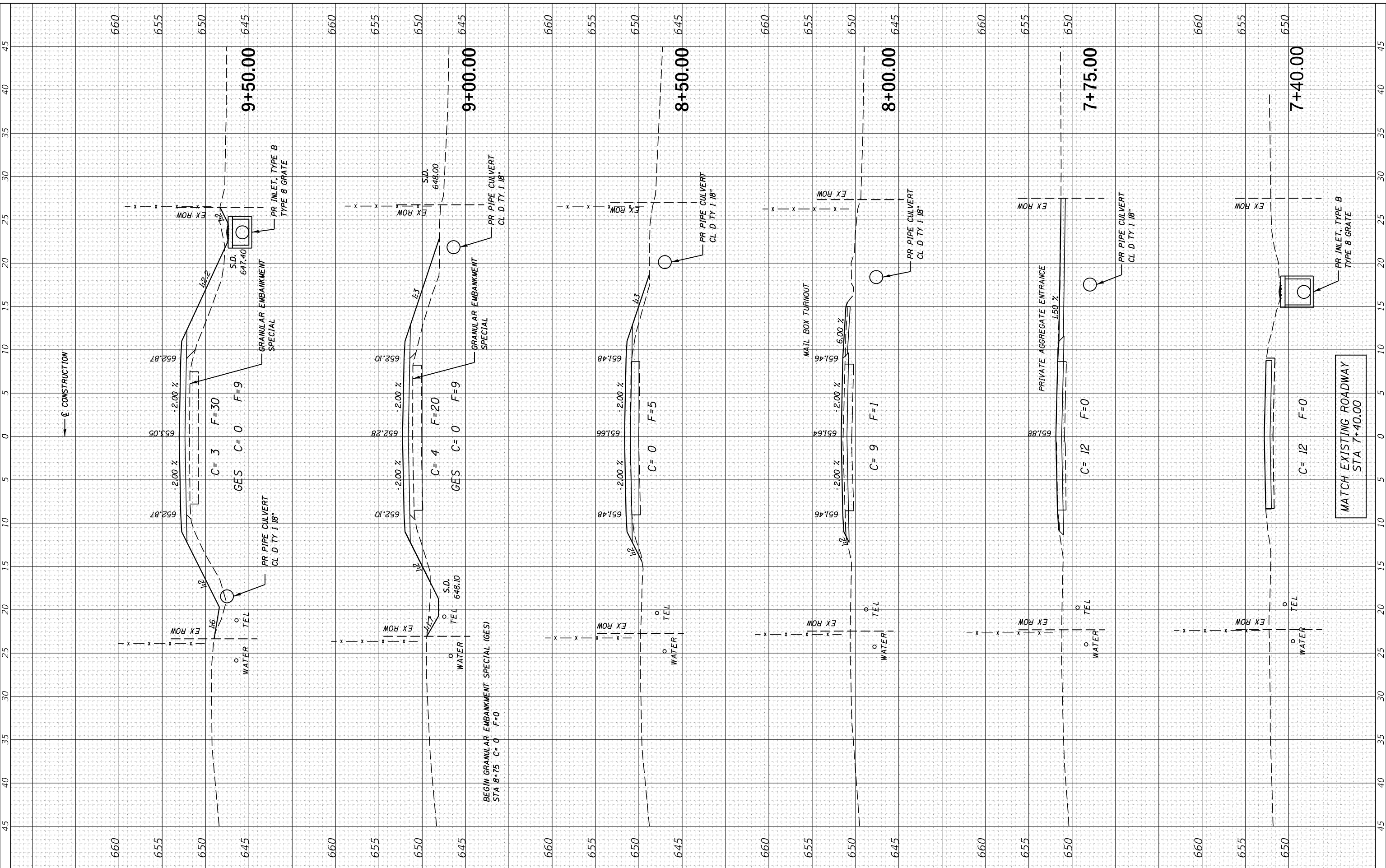
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
81B	13-03132-00-BR	MOULTRIE	16	13
CONTRACT NO. 95843				

ILLINOIS FED. AID PROJECT

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BY	DATE

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Civil and Structural Engineering

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DESIGNED - NAK
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CHECKED - NAK
DATE - 6/21/2018

REVISED -
REVISED -
REVISED -
REVISED -

**MOULTRIE COUNTY
TR 81B IMPROVEMENTS**

CROSS SECTIONS

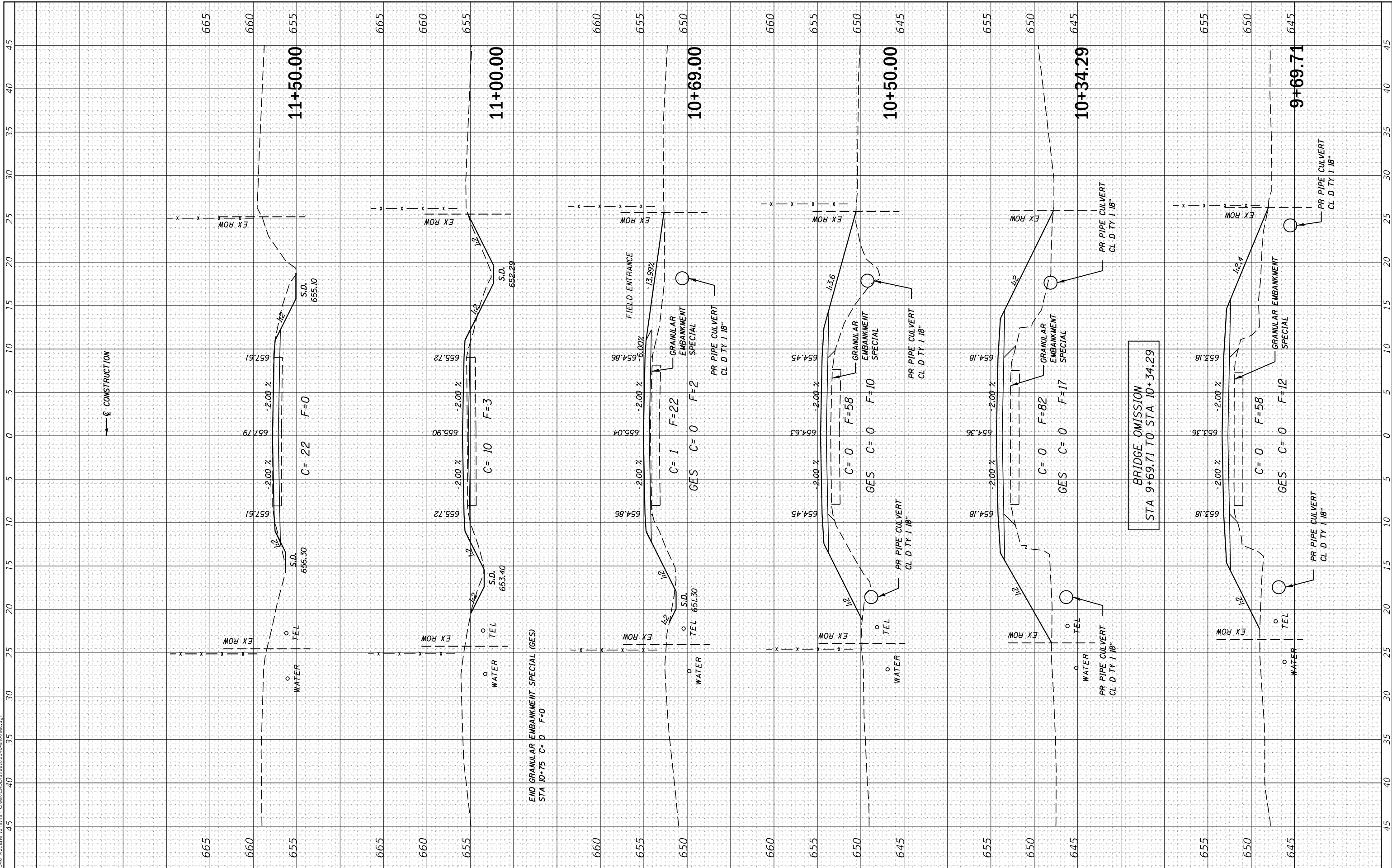
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CONTRACT NO. 95843				
ILLINOIS		FED. AID PROJECT		

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Civil and Structural Engineering

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MOULTRIE COUNTY TR 81B IMPROVEMENTS

CROSS SECTIONS

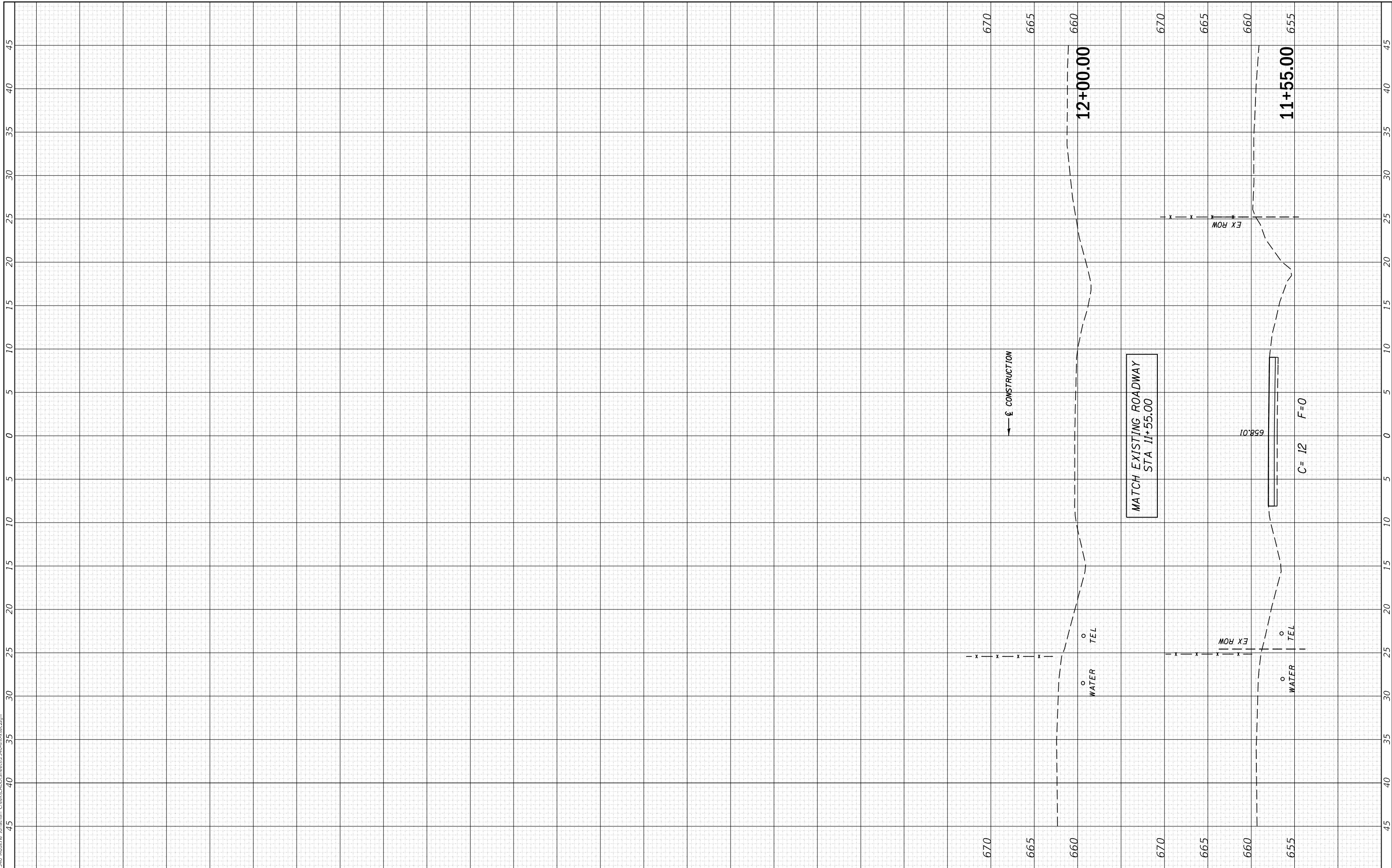
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CONTRACT NO. 95843				
ILLINOIS FED. AID PROJECT				

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Civil and Structural Engineering

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REVISED -
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REVISED -

**MOULTRIE COUNTY
TR 81B IMPROVEMENTS**

CROSS SECTIONS

SCALE: SHEET OF SHEETS STA. 11+54.90 TO STA. 12+00.00

T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 95843				
ILLINOIS FED. AID PROJECT				