ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 146	08-05125 -00-BR	MOULTRIE	15	1
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 95565	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED HIGHWAY BRIDGE PROGRAM

PROJECT BROS–139(054)
SECTION 08–05125–00–BR
LOWE ROAD DISTRICT
MOULTRIE COUNTY
T.R. 146
PROPOSED STR. NO. 070–4535
JOB NO. C–97–022–09

INDEX OF SHEETS

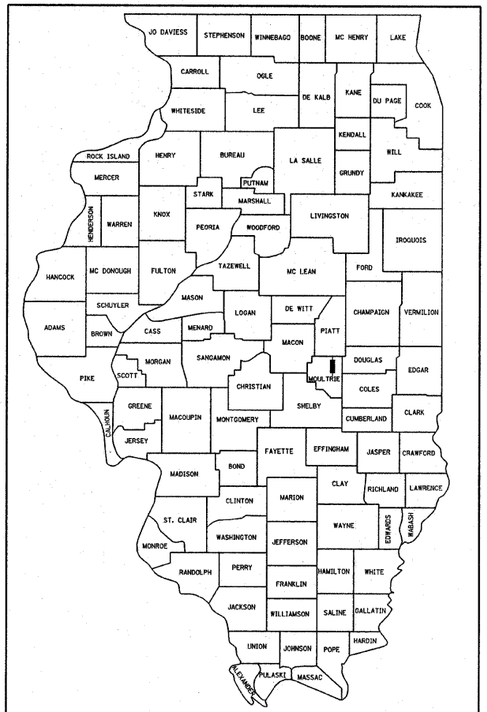
HIGHWAY STANDARDS

515001-03	NAME PLATE FOR BRIDGES
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
701901-01	TRAFFIC CONTROL DEVICES
BLR 21-8	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

UTILITIES

COLES-MOULTRIE ELECTRIC COOPERATIVE
104 DEWITT AVENUE
PO BOX 709
MATTOON, ILLINOIS 61938-0709

CONSOLIDATED COMMUNICATIONS
121 SOUTH 17TH STREET
MATTOON, ILLINOIS 61938



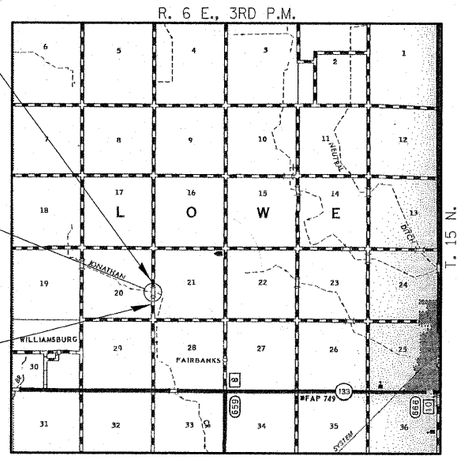
LOCATION OF SECTION INDICATED THUS:– ■■■

FUNCTIONAL CLASSIFICATION:	LOCAL ROAD (0 – 250 ADT)
DESIGN SPEED:	30 MPH
DESIGN TRAFFIC:	100 ADT (2031)
CURRENT TRAFIC:	75 ADT

IMPROVEMENT ENDS STATION 12+25

STA. 10+00
PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE. SINGLE SPAN @ 50'-0"
27'-0" RDWY.; SKEW = 0°
EXISTING STRUCTURE NO. 070-4503
PROPOSED STRUCTURE NO. 070-4535

IMPROVEMENT BEGINS STATION 7+50



N

LOCATION MAP

APPROXIMATE SCALE: 0 ——— 1 MILE

NET LENGTH OF SECTION = 475 FEET = 0.090 MILES

0 100' 200' 300' — 1"= 100'
0 10' 20' 30' — 1"= 10'
0 50' 100' — 1"= 50'
0 50' 100' — 1"= 40'
0 50' 100' — 1"= 30'
0 50' 100' — 1"= 20'

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.

WARNING

CALL J.U.L.I.E. TOLL FREE 1-800-892-0123

CALL 811 BEFORE YOU DIG

AGENCY RESPONSIBLE FOR LETTING

APPROVED Nov 14 20 08
Douglas E. DeLong
COUNTY ENGINEER

APPROVED Nov 14 20 08
Clifford Johnson
ROAD COMMISSIONER

PASSED 11-18 20 08
Maureen E. Gustin
DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review 11-18 20 08
Roger L. Driskell
DEPUTY DIRECTOR OF HIGHWAYS
REGION FOUR ENGINEER
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DATE: 10/30/2008

LICENSED PROFESSIONAL ENGINEER
STEVEN W. MEGGINSON
062-50781
STATE OF ILLINOIS
EXPIRES: 11/30/2009

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
HLR
ELGIN • SPRINGFIELD

PROJECT NUMBER: 08.0094.130 DATE: 10/29/08

CONTRACT NO. 95565

MOULTRIE COUNTY **SECTION 08–05125–00–BR**

SUMMARY OF QUANTITIES

			CONSTRUCTION CODE X080-2A	
	CODE NO	ITEM	UNIT	QUANTITY
	20200100	EARTH EXCAVATION	CU YD	325
	20300100	CHANNEL EXCAVATION	CU YD	65
	20400800	FURNISHED EXCAVATION	CU YD	150
>	20700110	POROUS GRANULAR EMBANKMENT	TON	100
>	25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.6
>	28100207	STONE RIPRAP, CLASS A4	TON	130
>	40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	410
	50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
	50300225	CONCRETE STRUCTURES	CU YD	21.8
	50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	1,350
	50800105	REINFORCEMENT BARS	POUND	2,650
*	50900205	STEEL RAILING, TYPE S1	FOOT	94
	51200957	FURNISHING METAL SHELL PILES 12"x0.250"	FOOT	405
	51202305	DRIVING PILES	FOOT	405
	51203200	TEST PILE METAL SHELLS	EACH	1
	51500100	NAME PLATES	EACH	1
>	542D0223	PIPE CULVERTS, CLASS D, TYPE 1 18"	FOOT	112
>	542D0229	PIPE CULVERTS, CLASS D, TYPE 1 24"	FOOT	112
>	60103600	PIPE DRAINS CORRUGATED STEEL 15"	FOOT	24
	60801018	FLAP GATE 18"	EACH	2
	60801024	FLAP GATE 24"	EACH	2
	67100100	MOBILIZATION	L SUM	1
*	78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4

> SEE SPECIAL PROVISIONS

* SPECIALTY ITEMS

GENERAL NOTES

ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADOPTED JANUARY 1, 2007," THESE PLANS AND THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS.

ALL CLEARING AND GRUBBING AND REMOVAL OF EXISTING DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION. THE REMOVAL OF THE EXISTING BITUMINOUS SURFACE WILL BE PAID FOR AS EARTH EXCAVATION. ALL BITUMINOUS MATERIAL SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR IN A METHOD APPROVED BY THE ENGINEER. PROPER DISPOSAL OF BITUMINOUS MATERIAL SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION AND NO ADDITONAL COMPENSATION WILL BE ALLOWED.

THE LOCATIONS OF EXISTING 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 THE LOCATIONS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THEIR EXACT LOCATION FROM THE INDIVIDUAL UTILITY COMPANIES AND BY FIELD INSPECTION.

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 MARKS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES:

POROUS GRANULAR EMBANKMENT	2.0 TON/CU YD
AGGREGATE SURFACE COURSE	2.05 TON/CU YD
STONE RIPRAP, CLASS A4	1.75 TON/CU YD

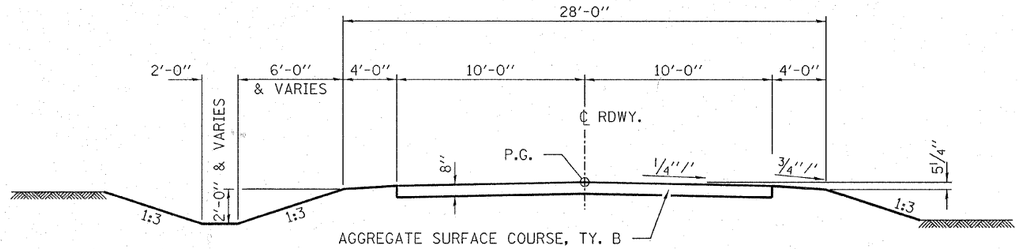
THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT-OF-WAY AS DIRECTED BY THE ENGINEER.

SEEDING, CLASS 2 (SPECIAL) = 0.6 ACRES

EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION (CU YD)	SHRINKAGE FACTOR	PERCENT USED	AVAILABLE* EXCAVATION (CU YD)	EMBANKMENT REQUIRED (CU YD)	EARTHWORK BALANCE (CU YD)
STA. 7+50 TO STA. 9+74.33	125	0%	100%	125	260	-135
STA. 9+74.33 TO STA. 10+25.67	-	0%	100%	-	-	-
STA. 10+25.67 TO STA. 12+25	200	0%	100%	200	204	-4
CHANNEL EXCAVATION	(65)	0%	70%	46		46
ENTRANCES					160	-160
EXC. FOR RIPRAP, PGE	(151)	0%	70%	106		
TOTAL	325			476	624	-147
USE:	325					150 (FURN EXC)

* AVAILABLE EXCAVATION = EXC. x (1-SHRINKAGE FACTOR) x % USED



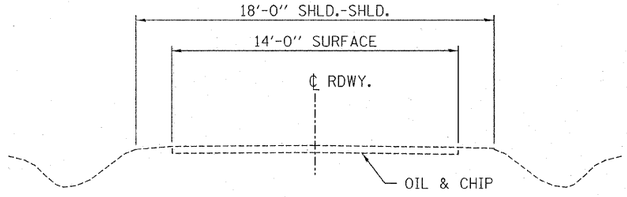
SUGGESTED CUT SECTION
CONSTRUCT AS SHOWN IN STATION CROSS SECTIONS

SUGGESTED FILL SECTION
CONSTRUCT AS SHOWN IN STATION CROSS SECTIONS

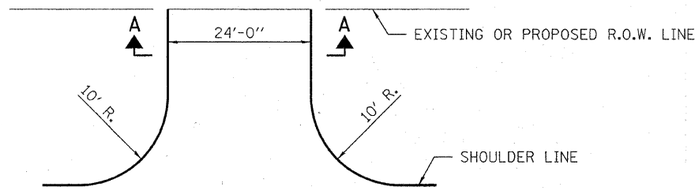
TYPICAL CROSS SECTION

STA. 7+50 TO 12+25

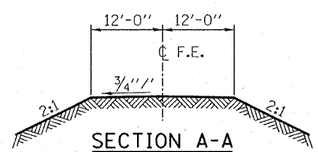
TRANSITION FROM THE PROPOSED ROADWAY TO THE EXISTING ROADWAY IS TO BE CONSTRUCTED FROM STA. 7+50 TO 8+00 AND STA. 11+75 TO 12+25. SEE SHEET 8 FOR TRANSITION AT BRIDGE.



EXISTING CROSS SECTION



FIELD ENTRANCE DETAIL



SECTION A-A

FILE NAME = 080094-sht-rdw.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	
		DRAWN - D.A.B.	REVISED -	
	PLOT SCALE =	CHECKED - S.W.M.	REVISED - S.W.M.	
	PLOT DATE = 10/29/2008	DATE - 04/08/08	REVISED - 10/29/08	

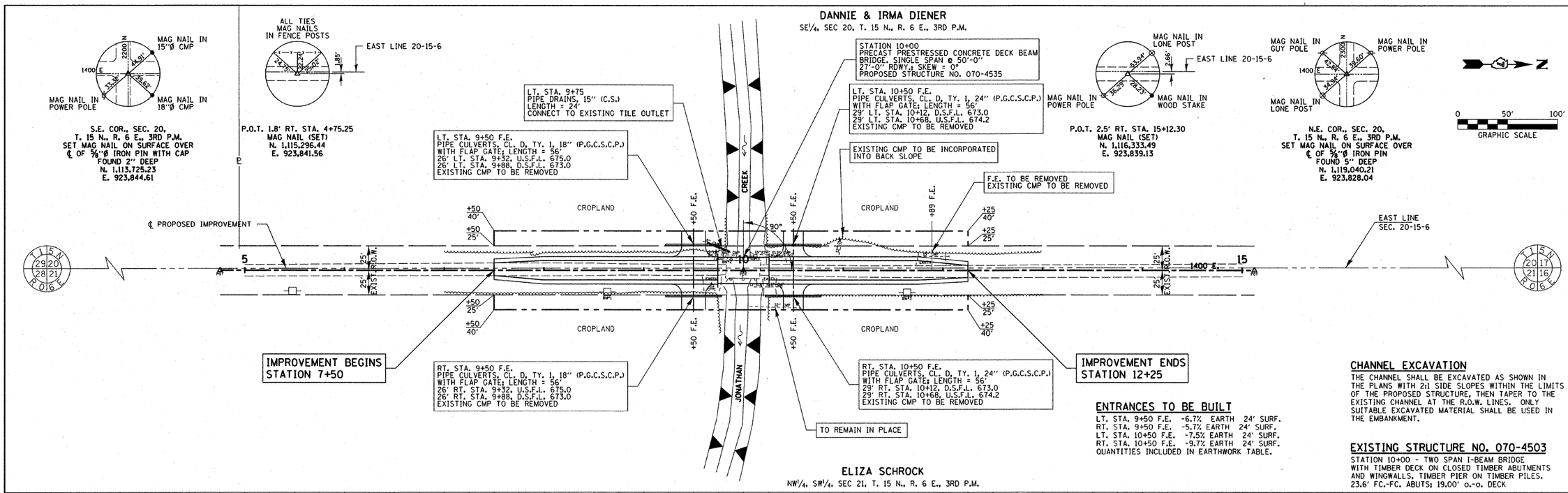
STATE OF ILLINOIS
MOULTRIE COUNTY HIGHWAY DEPARTMENT

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS

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

SUMMARY OF QUANTITIES AND TYPICAL SECTIONS

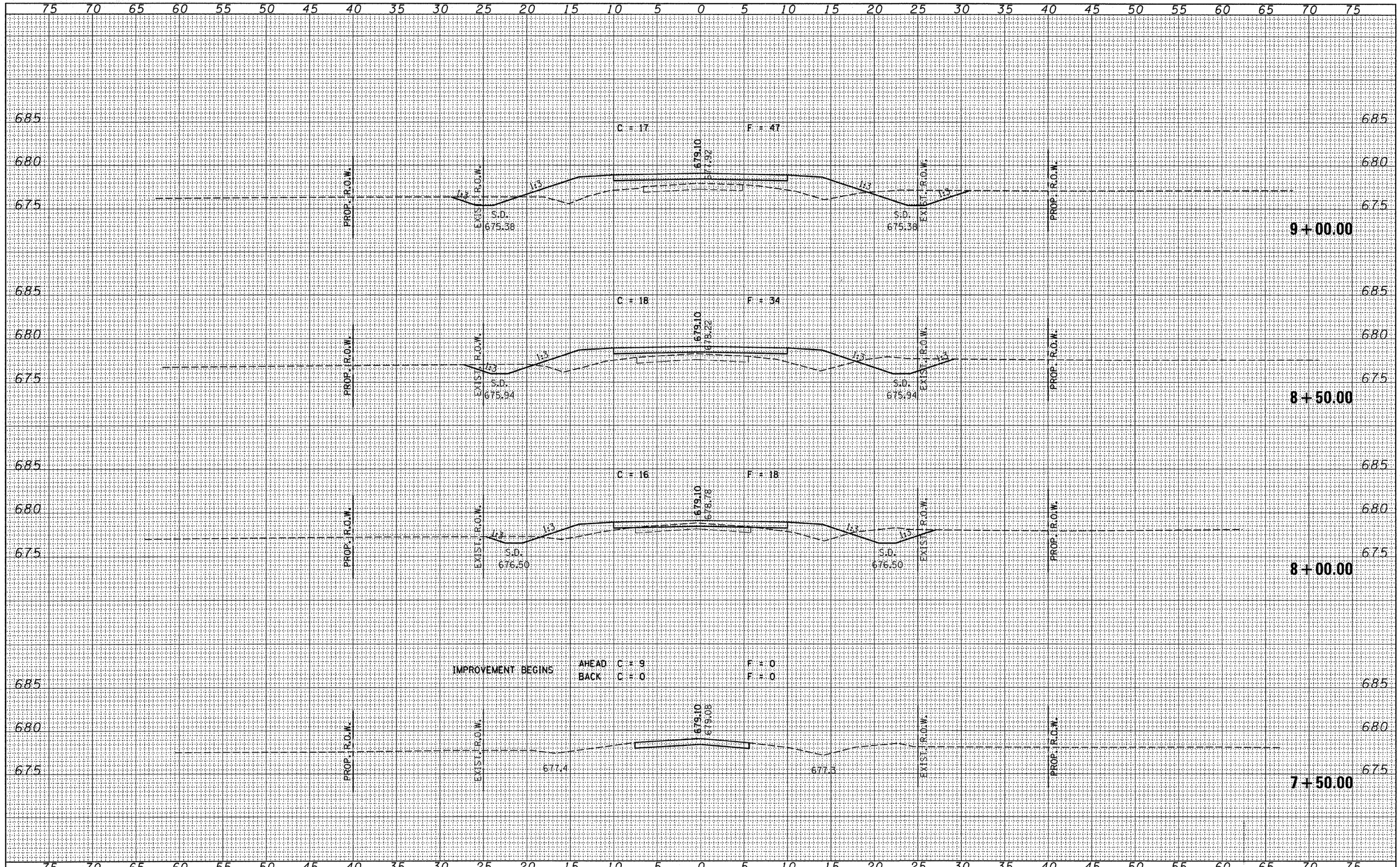
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
146	08-05125-00-BR	MOULTRIE	15	2
LOWE ROAD DISTRICT		CONTRACT NO. 95565		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



FILE NAME = 080094-sht-ppl.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS MOULTRIE COUNTY HIGHWAY DEPARTMENT	HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS
		DRAWN - D.T.M.	REVISED -		
	PLOT SCALE =	CHECKED - S.W.M.	REVISED - S.W.M.		SCALE: 1:50
	PLOT DATE = 10/29/2008	DATE - 04/08/08	REVISED - 10/29/08		SHEET NO. 1 OF 1 SHEETS

PLAN & PROFILE
LOWE ROAD DISTRICT
STA. 4+75.25 TO STA. 15+12.30

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
146	08-05125-00-BR	MOULTRIE	15	3
		CONTRACT NO. 95565		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



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

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

FILE NAME = 080094-sht-sxs.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS MOULTRIE COUNTY HIGHWAY DEPARTMENT
		DRAWN - D.T.M.	REVISED -	
	PLOT SCALE =	CHECKED - S.W.M.	REVISED - S.W.M.	
	PLOT DATE = 10/29/2008	DATE - 04/08/08	REVISED - 10/29/08	

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS

SCALE: | SHEET NO. OF SHEETS

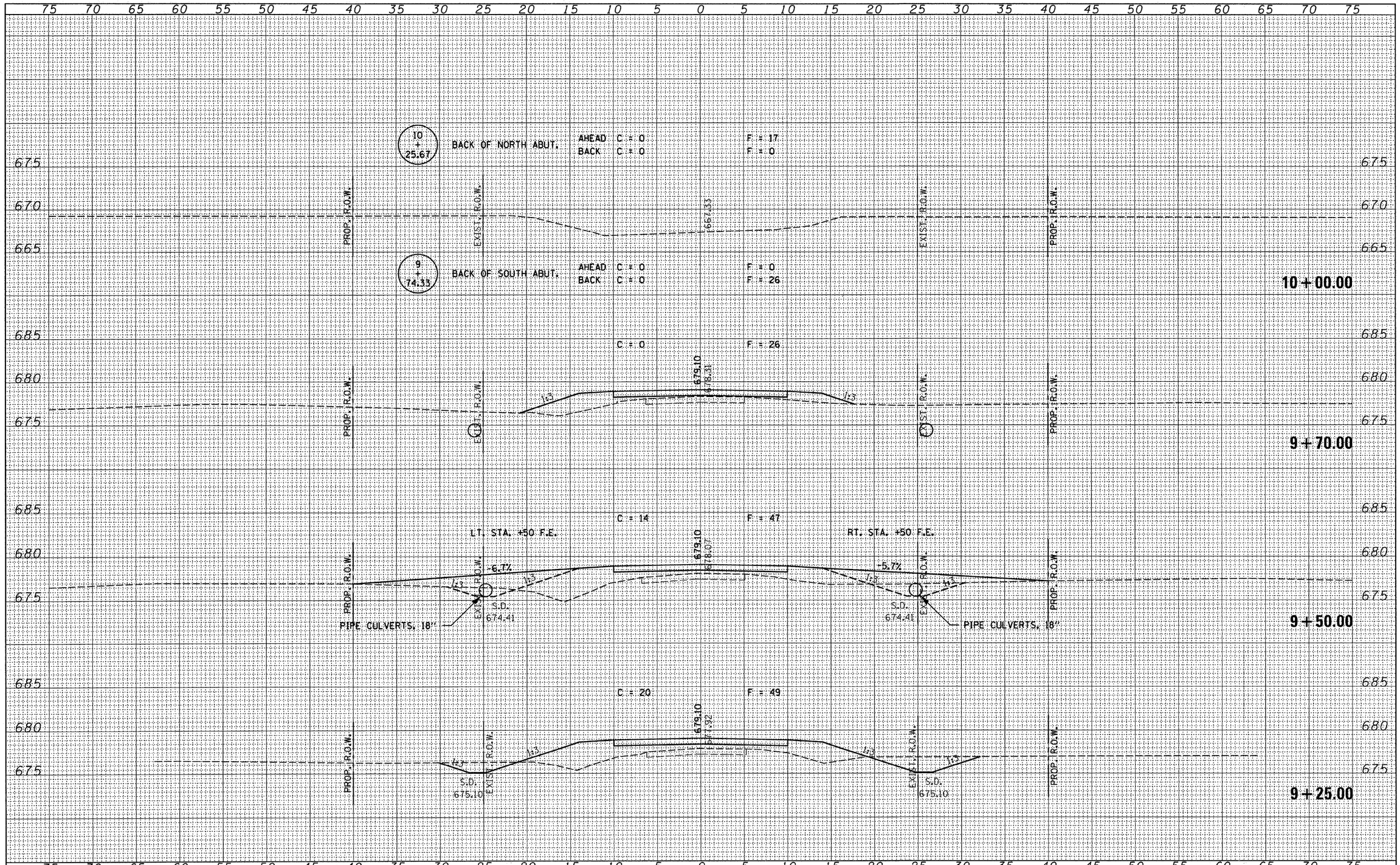
CROSS SECTIONS
LOWE ROAD DISTRICT

STA. 7+50.00 TO STA. 9+00.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
146	08-05125-00-BR	MOULTRIE	15	4
		CONTRACT NO. 95565		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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

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



FILE NAME = 080294-sht-xs.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS MOULTRIE COUNTY HIGHWAY DEPARTMENT	HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS
		DRAWN - D.T.M.	REVISED -		
	PLOT SCALE =	CHECKED - S.W.M.	REVISED - S.W.M.		
	PLOT DATE = 10/29/2008	DATE - 04/08/08	REVISED - 10/29/08		SCALE: SHEET NO. OF SHEETS

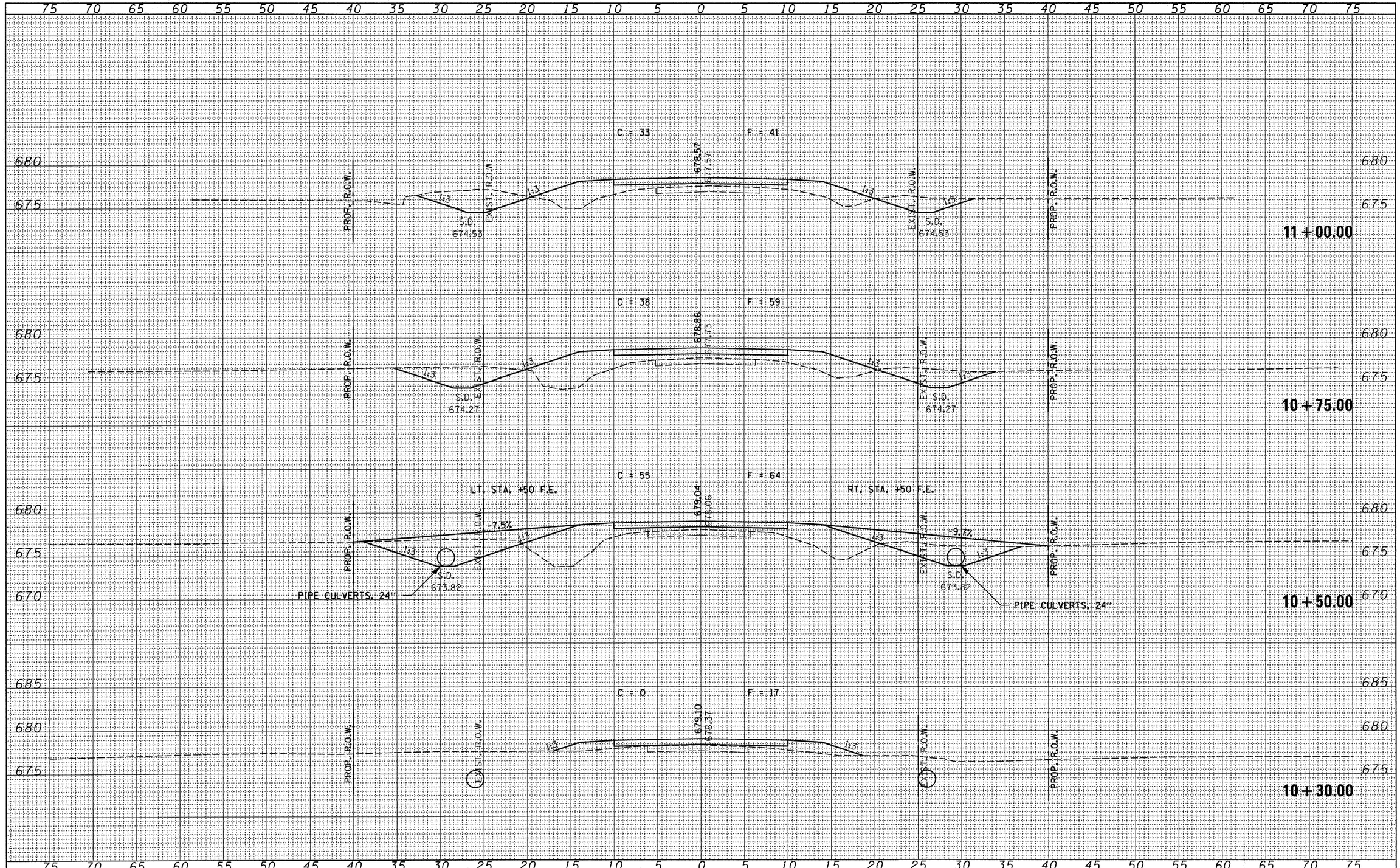
CROSS SECTIONS
LOWE ROAD DISTRICT

STA. 9+25.00 TO STA. 10+00.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
146	08-05125-00-BR	MOULTRIE	15	5
		CONTRACT NO. 95565		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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

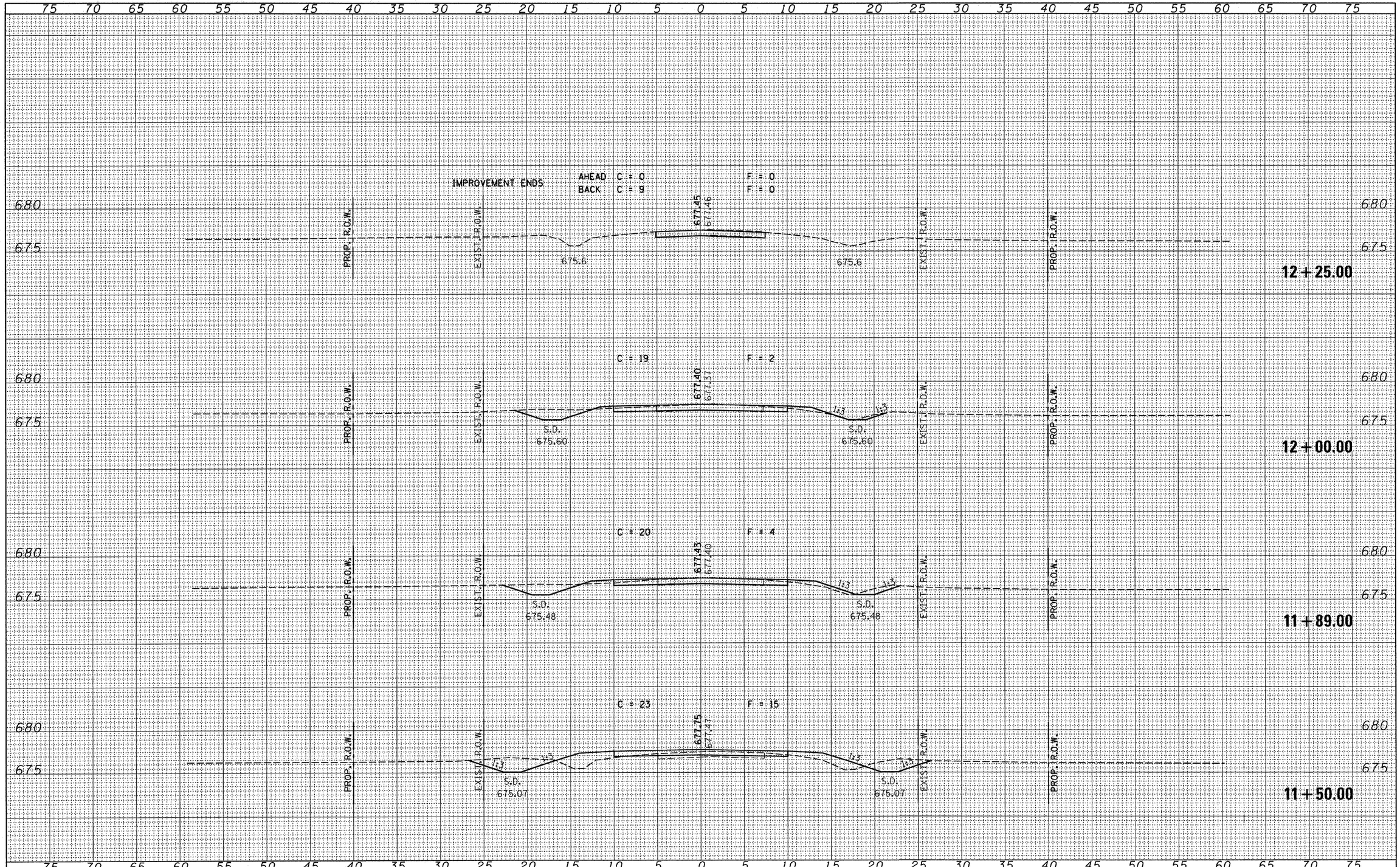
ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TOPSOIL AVE. AREAS		
NOTE BOOK		
NO.	AREAS CHECKED	



FILE NAME = 080094-sht-sxs.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS MOULTRIE COUNTY HIGHWAY DEPARTMENT	HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS	CROSS SECTIONS LOWE ROAD DISTRICT	T.R. 146 / SECTION 08-05125-00-BR / COUNTY MOULTRIE / TOTAL SHEETS 15 / SHEET NO. 6
		DRAWN - D.T.M.	REVISED -				CONTRACT NO. 95565
	PLOT SCALE =	CHECKED - S.W.M.	REVISED - S.W.M.		SCALE:	SHEET NO. OF SHEETS	STA. 10+30.00 TO STA. 11+00.00
	PLOT DATE = 10/29/2008	DATE - 04/08/08	REVISED - 10/29/08				FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

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

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



FILE NAME = 080094-sht-sxs.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS MOULTRIE COUNTY HIGHWAY DEPARTMENT	HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS
		DRAWN - D.T.M.	REVISED -		
	PLOT SCALE =	CHECKED - S.W.M.	REVISED - S.W.M.		
	PLOT DATE = 10/29/2008	DATE - 04/08/08	REVISED - 10/29/08		SCALE: SHEET NO. OF SHEETS

CROSS SECTIONS
LOWE ROAD DISTRICT

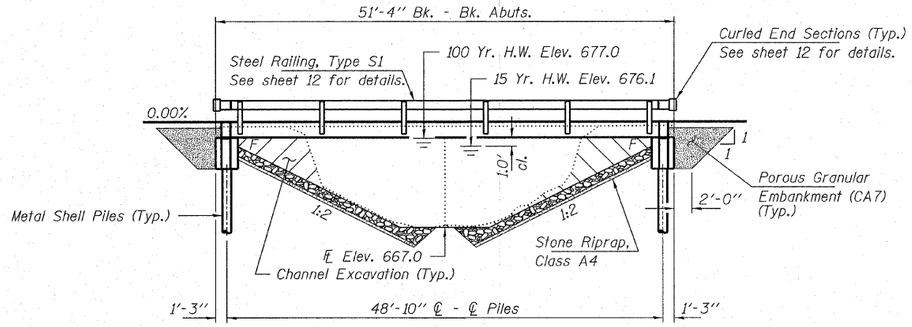
STA. 11+50.00 TO STA. 12+25.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
146	08-05125-00-BR	MOULTRIE	15	7
		CONTRACT NO. 95565		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

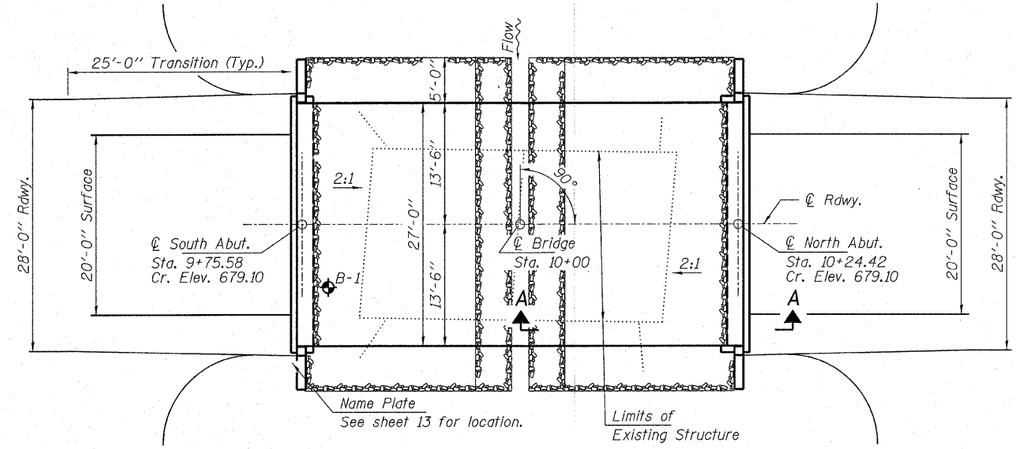
BENCHMARK: Chiseled "□" on I-Beam. 10' Lt., Sta. 9+84, Elev. 677.98

EXISTING STRUCTURE: Two span I-Beam bridge with timber deck on closed timber abutments and wingwalls. Timber pier & piles. Structure closed to traffic.

No Salvage



ELEVATION



PLAN

GENERAL NOTES

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

The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at North Abutment or approved by the Engineer before ordering the remainder of piles.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

Excavation required to construct the Abutments shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation.

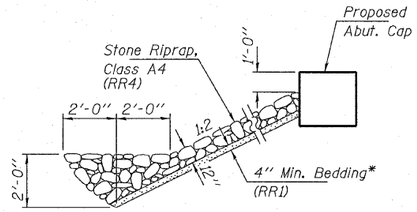
All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act. The IEPA has issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions.

See Sheet 15 for Boring.

JONATHAN CREEK
BUILT 200_ BY
LOWE ROAD DISTRICT
MOULTRIE COUNTY
SEC. 08-05125-00-BR
STR. NO. 070-4535
LOADING HL 93

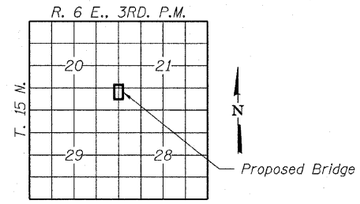
NAME PLATE

See Std. 515001



SECTION A-A

* Estimated Bedding quantity = 50 Tons
Cost included in Stone Riprap, Class A4



LOCATION SKETCH

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			65
Porous Granular Embankment	Ton			100
Stone Riprap, Class A4	Ton			130
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		21.8	21.8
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1,350		1,350
Reinforcement Bars	Pound		2,650	2,650
Steel Railing, Type S1	Foot	94		94
Metal Shell Piles 12"x0.250"	Foot		405	405
Driving Piles	Foot		405	405
Test Pile Metal Shells	Each		1	1
Name Plates	Each		1	1

DESIGN STRESSES

FIELD UNITS

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

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
f'ci = 5,000 psi
f's = 270,000 psi (½"ϕ low lax. strands)
f'si = 201,960 psi (½"ϕ low lax. strands)
fy = 60,000 psi (Reinf.)

LOADING HL 93

Design Specifications: 2008 AASHTO LRFD with all applicable interims.
50#/Sq. Ft. included in dead load for future wearing surface.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.234g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.478g
Soil Site Class = E

WATERWAY INFORMATION

Drainage Area = 4.1 Sq. Mi.
Exist. Low Grade Elev. 677.2 @ Sta. 5+50
Prop. Low Grade Elev. 677.2 @ Sta. 5+50

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	612	170	230	675.5	0.2	0.1	675.7	675.6
Design	15	702	180	260	676.1	0.2	0.1	676.2	676.2
Base	100	1160	200	300	677.0	0.6	0.7	677.6	677.7
Overtopping	100	1160	200	300	677.0	0.6	0.7	677.6	677.7
Max. Calc.	500	1571	200	310	677.4	0.7	0.6	678.1	678.0

10 Year Velocity through Existing Bridge = 4.5 fps
10 Year Velocity through Proposed Bridge = 4.2 fps

DESIGNED -	S.M.S.
CHECKED -	S.W.M.
DRAWN -	D.A.B.
CHECKED -	D.T.M.

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 Standard Specifications for Highway Bridges".

Steven W. Megginson 10-30-2008
ILLINOIS STRUCTURAL NO. 081-6064

LICENSED STRUCTURAL ENGINEER
STEVEN W. MEGGINSON
081-6064
SPRINGFIELD, IL
STATE OF ILLINOIS

Expires 11-30-10

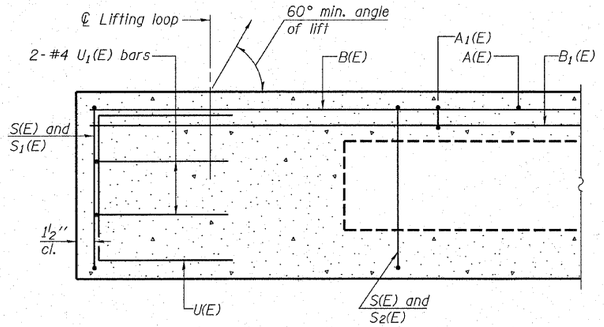
GENERAL PLAN AND ELEVATION
STRUCTURE NO. 070-4535

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

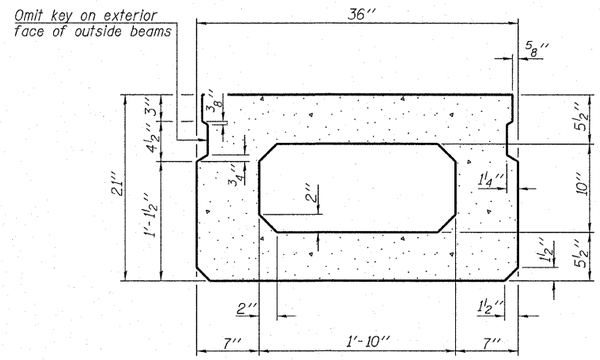
PROJECT NUMBER: 08.0094.130 | DATE: 10/29/08

SHEET NO. 1
8 SHEETS

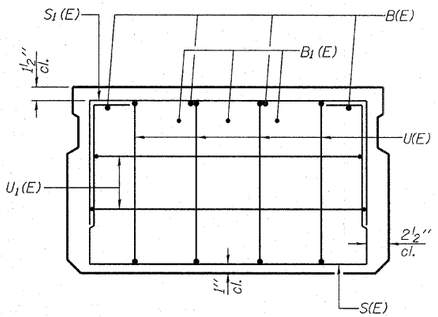
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
146	08-05125-00-BR	MOULTRIE	15	8
LOWE ROAD DISTRICT		CONTRACT NO. 95565		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



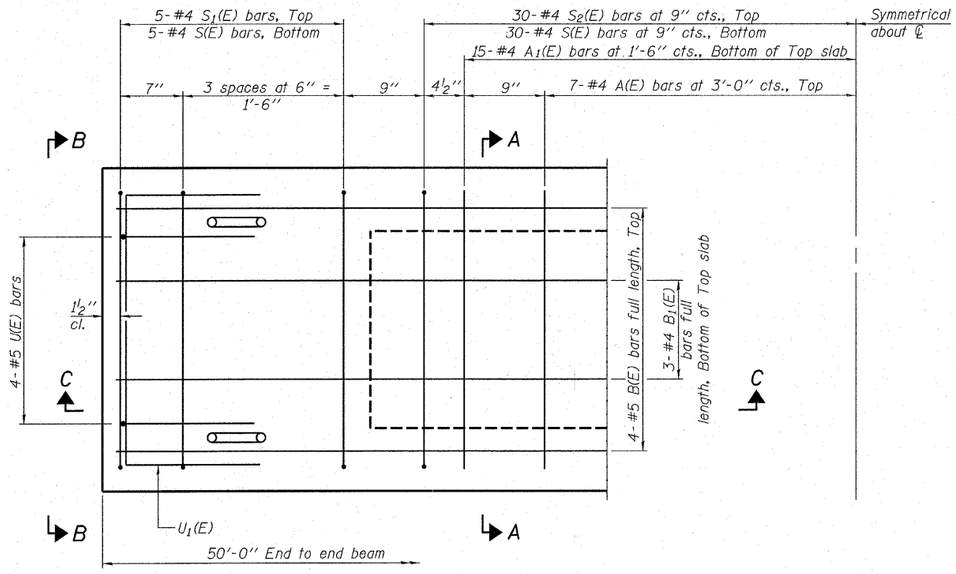
SECTION C-C



SECTION A-A
(Showing dimensions)

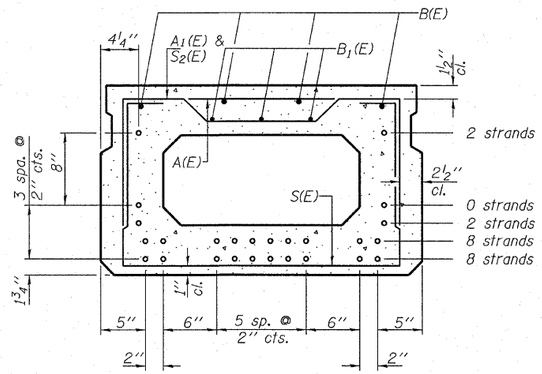


VIEW B-B



PLAN VIEW

Note: Spacing of S(E) and $S_2(E)$ 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 A-A
(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)	14	#4	2'-7''	—
B(E)	4	#5	49'-8''	—
$B_1(E)$	3	#4	49'-8''	—
S(E)	70	#4	6'-5''	⌴
$S_1(E)$	10	#4	4'-11''	⌐¬
$S_2(E)$	60	#4	5'-2''	⌐¬
U(E)	8	#5	4'-0''	⊏
$U_1(E)$	4	#4	5'-0''	⌐¬

Note: See sheets 10 & 11 for additional details and Bill of Material.

DESIGNED -	S.M.S.
CHECKED -	S.W.M.
DRAWN -	D.A.B.
CHECKED -	D.T.M.

PD-2136-0 5-16-08

21'' x 36'' PPC DECK BEAM
STRUCTURE NO. 070-4535

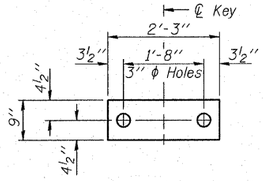
HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
HLR
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

PROJECT NUMBER: 08.0094.130 DATE: 10/29/08

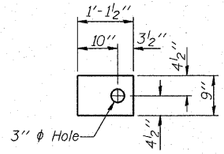
SHEET NO. 2

8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
146	08-05125-00-BR	MOULTRIE	15	9
LOWE ROAD DISTRICT		CONTRACT NO. 95565		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



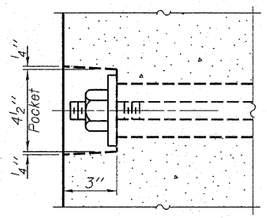
FABRIC BEARING PAD
(16 Req'd - Interior)



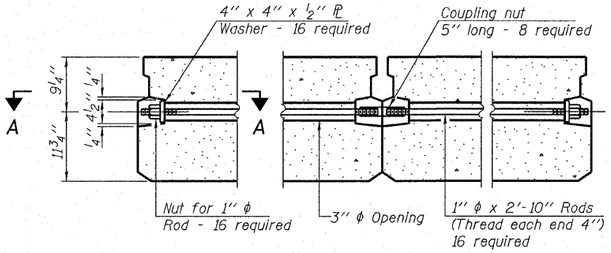
FABRIC BEARING PAD
(4 Req'd - Exterior)

FIXED

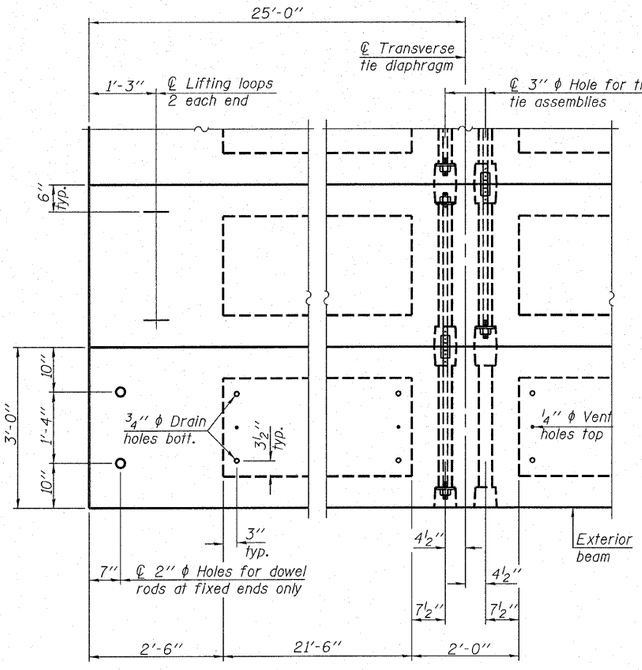
Note: Omit holes when using expansion bearings.



SECTION A-A

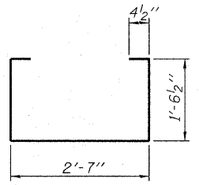


TYPICAL TRANSVERSE TIE ASSEMBLY

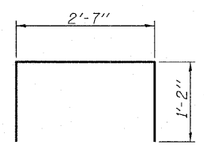


PLAN VIEW

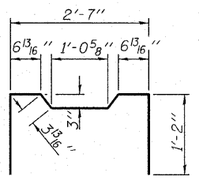
Note: Connect beams in pairs with the transverse tie configuration shown.



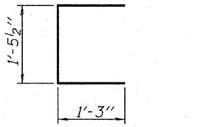
BAR S(E)



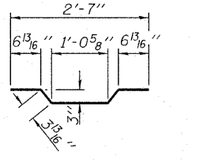
BAR S_1(E)



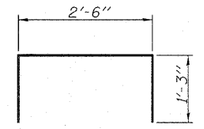
BAR S_2(E)



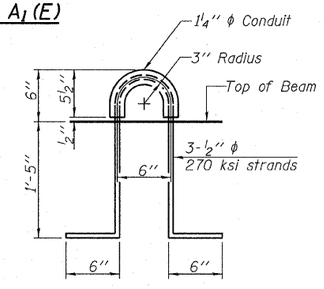
BAR U(E)



BAR A_1(E)



BAR U_1(E)



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	1,350

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be ½" 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.

Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).

Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2½" ϕ 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.

DESIGNED -	S.M.S.
CHECKED -	S.W.M.
DRAWN -	D.A.B.
CHECKED -	D.T.M.

PD-2136-0D 5-16-08

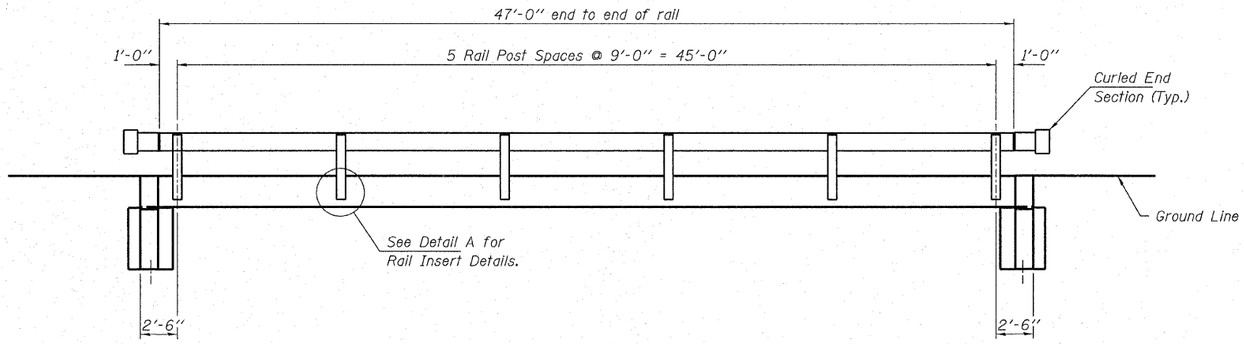
HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

PROJECT NUMBER: 06.0094.130 DATE: 10/29/08

SHEET NO. 3
8 SHEETS

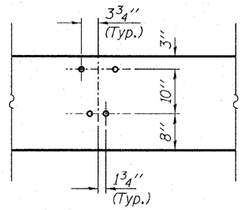
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
146	08-05125-00-BR	MOULTRIE	15	10
LOWE ROAD DISTRICT		CONTRACT NO. 95565		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SUPERSTRUCTURE DETAILS
21" X 36" PPC DECK BEAM DETAILS
STRUCTURE NO. 070-4535

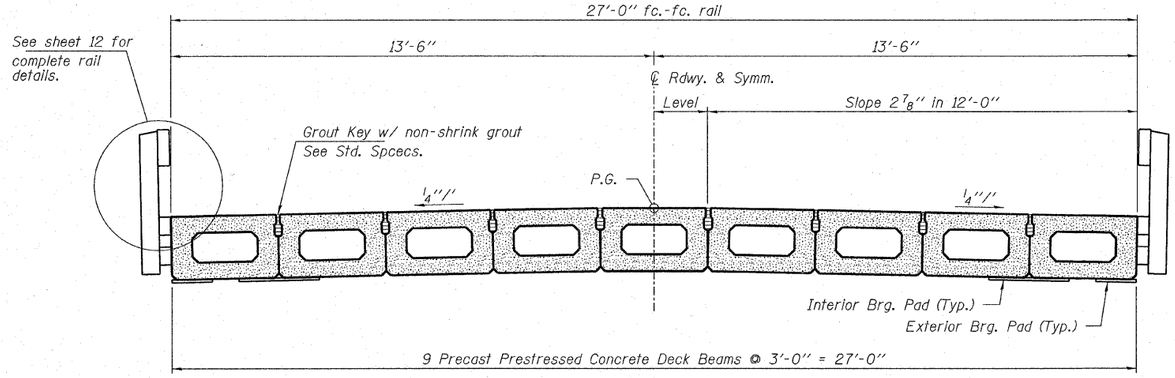


ELEVATION
Showing Rail Post Spaces

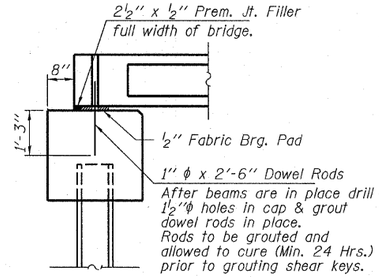
See sheet 12 for Railing Details.



DETAIL A



CROSS SECTION
See sheets 9 & 10 for Superstructure.



SECTION AT ABUTMENTS
@ Rt. L's

DESIGNED	S.M.S.
CHECKED	S.W.M.
DRAWN	D.A.B.
CHECKED	D.T.M.

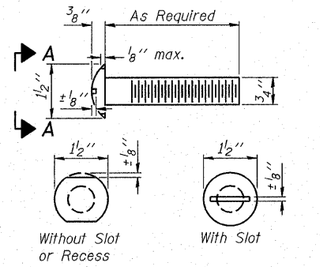
SUPERSTRUCTURE DETAILS
STRUCTURE NO. 070-4535

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
HLR
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

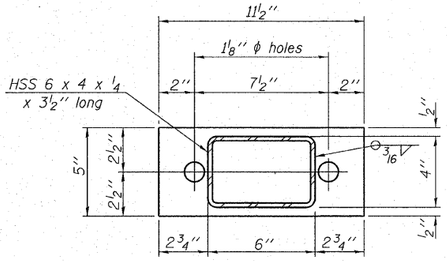
PROJECT NUMBER: 08.0094.130 | DATE: 10/29/08

SHEET NO. 4
8 SHEETS

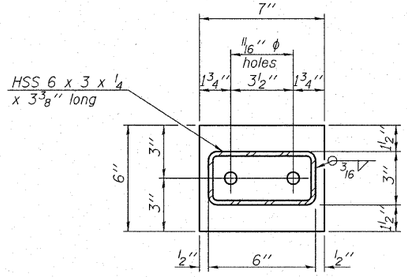
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
146	08-05125-00-BR	MOULTRIE	15	11
LOWE ROAD DISTRICT		CONTRACT NO. 95565		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



VIEW A-A ROUND HEAD BOLT

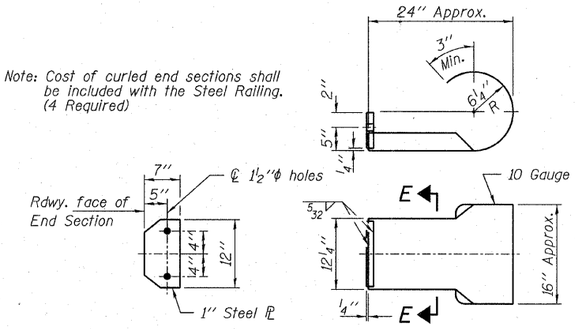


PL 1/2" x 11 1/2" x 5"



PL 1/2" x 7" x 6"

Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)



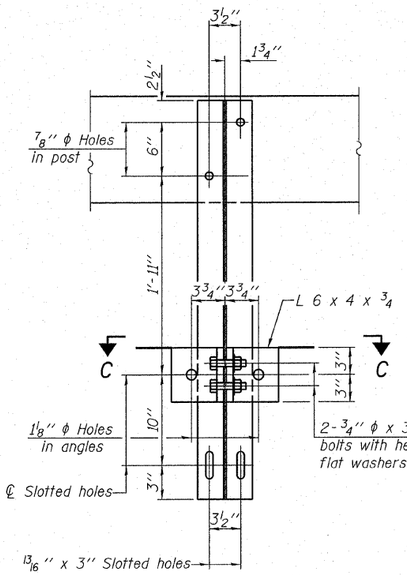
Notes:

All field drilled holes shall be coated with an approved zinc rich paint before erection.

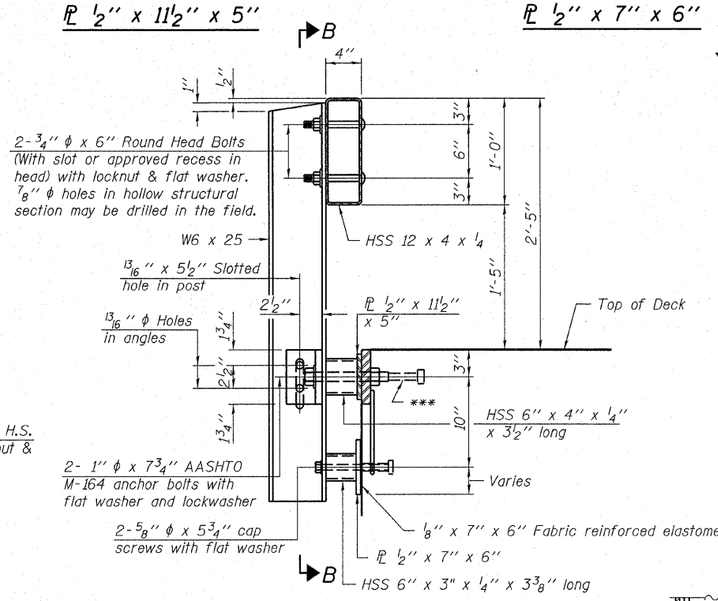
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.

All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

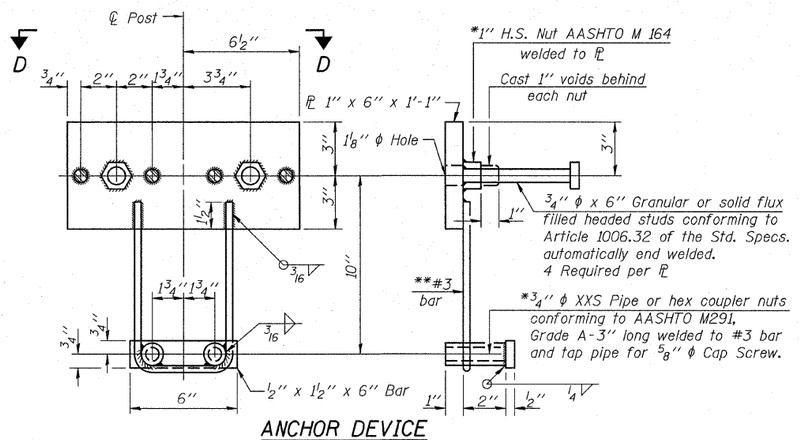
***The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



SECTION B-B

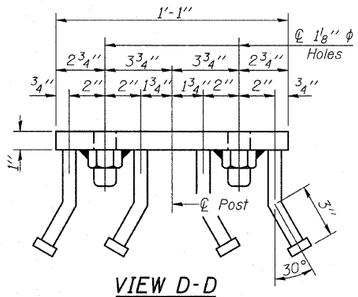


SECTION AT RAILING POST



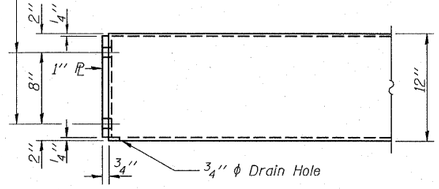
ANCHOR DEVICE

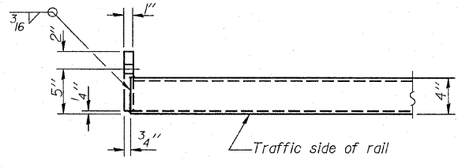
*Threaded areas shall be plugged or blocked off during casting of beam.



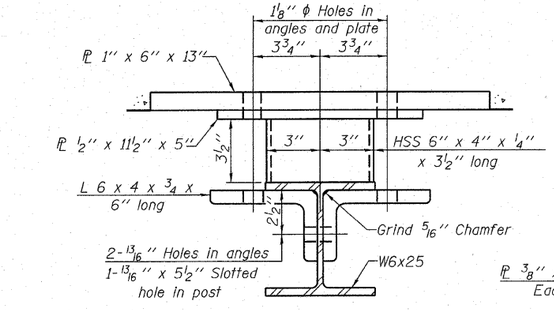
VIEW D-D

1 1/8" ϕ Holes for 1" ϕ x 4" Round head bolts. Provide 2 flat washers & locknuts for guard rail connection shown on Std. 631026.



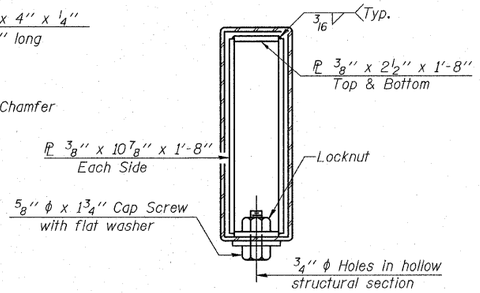


END OF RAIL DETAILS

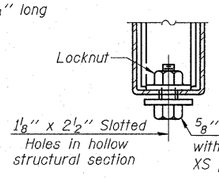


SECTION C-C

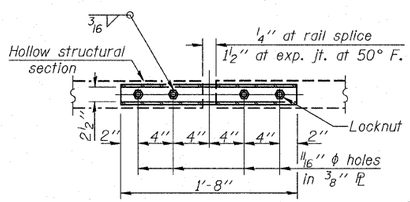
**Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



SECTIONS AT RAIL SPLICE



RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTTOM SPLICE PL TYPICAL

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	94

STEEL RAILING, TYPE S-1
STRUCTURE NO. 070-4535

DESIGNED	S.M.S.
CHECKED	S.W.M.
DRAWN	D.A.B.
CHECKED	D.T.M.

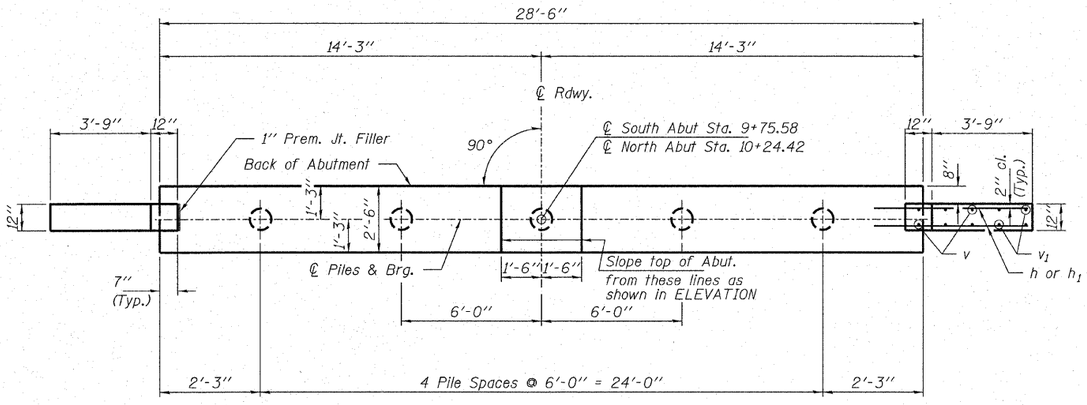
R-23A 5-16-08 (10'-9" Maximum Post Spacing)

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

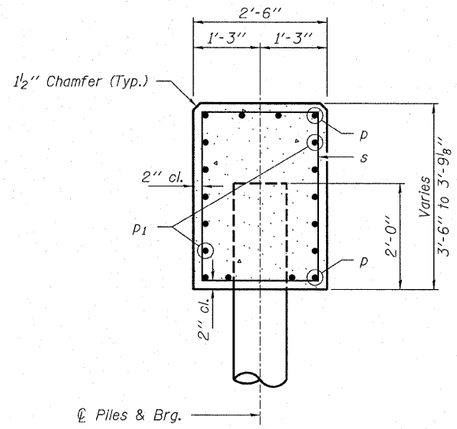
PROJECT NUMBER: 08.0094.130 DATE: 10/29/08

SHEET NO. 5
8 SHEETS

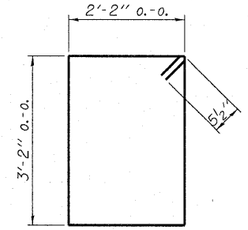
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
146	08-05125-00-BR	MOULTRIE	15	12
LOWE ROAD DISTRICT		CONTRACT NO. 95565		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



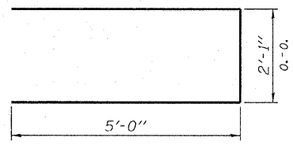
PLAN



SECTION A-A

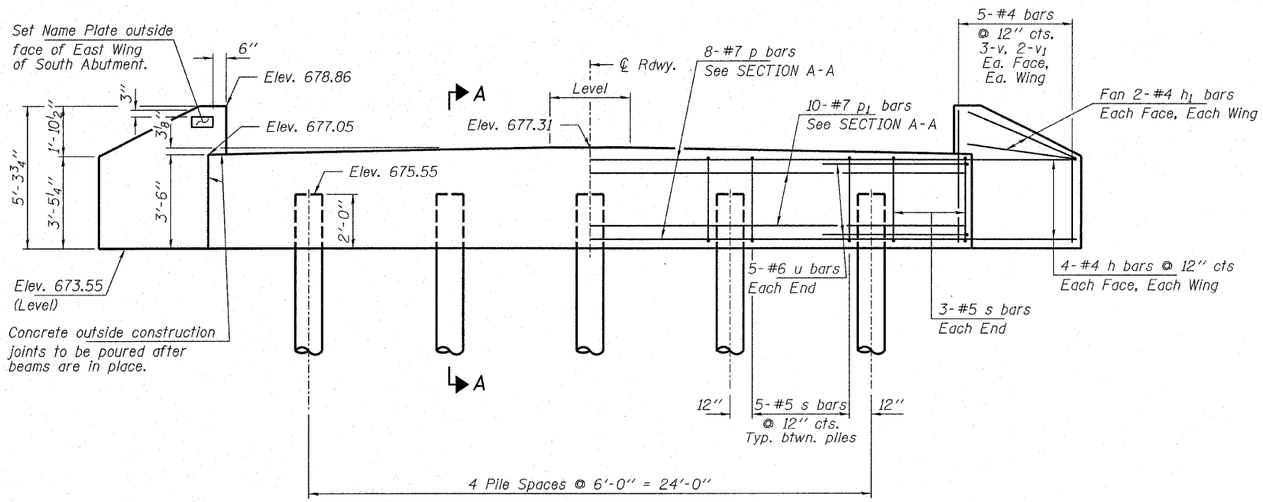


BAR s



BAR u

Note: Extend h bars into abutment cap.



ELEVATION

PILE DATA

Type _____ Metal Shell Piles, 12" x 0.25" walls
No. Req'd. (2 Abuts.) _____ 10*
Factored Resistance Available ____ 131 Kips/Pile
Nominal Req'd Bearing _____ 262 Kips/Pile
Est. Lengths _____ 45 Feet/Pile

Notes: The test pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

* Includes one test pile to be driven in permanent location at the North Abutment.

BILL OF MATERIAL - 2. ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE
h	32	#4	6'-0"	
h_1	16	#4	4'-6"	
p	16	#7	28'-2"	
p_1	20	#4	28'-2"	
s	52	#5	11'-7"	
u	20	#6	12'-1"	
v	24	#4	4'-4"	
v_1	16	#4	3'-4"	
Concrete Structures			Cu. Yd.	21.8
Reinforcement Bars			Pound	2,650
Metal Shell Piles 12"x0.25"			Foot	405
Test Pile Metal Shells			Each	1
Name Plates			Each	1

DESIGNED -	S.M.S.
CHECKED -	S.W.M.
DRAWN -	D.A.B.
CHECKED -	D.T.M.

ABUTMENTS
STRUCTURE NO. 070-4535

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

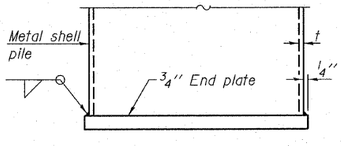
PROJECT NUMBER: 08 0094 130 | DATE: 10/29/08

SHEET NO. 6
8 SHEETS

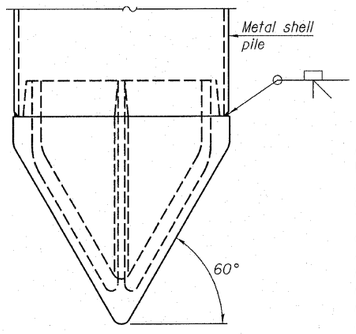
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
146	08-05125-00-BR	MOULTRIE	15	13
LOWE ROAD DISTRICT		CONTRACT NO. 95565		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd.³ /ft.)
PP12	0.179″	22.60	0.0274
PP12	0.250″	31.37	0.0267
PP14	0.250″	36.71	0.0368
PP14	0.312″	45.61	0.0361



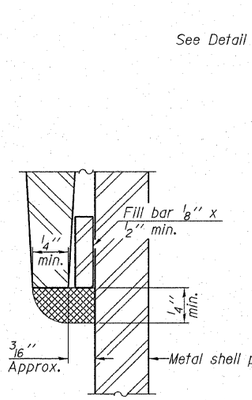
END PLATE ATTACHMENT



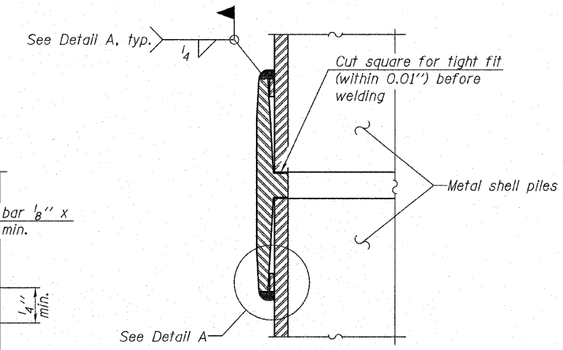
Note A:
When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over 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.

METAL SHELL PILE SHOE ATTACHMENT

(See Note A)

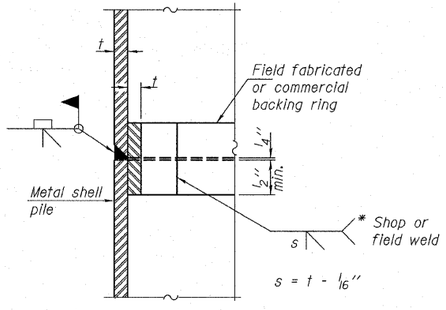


DETAIL A



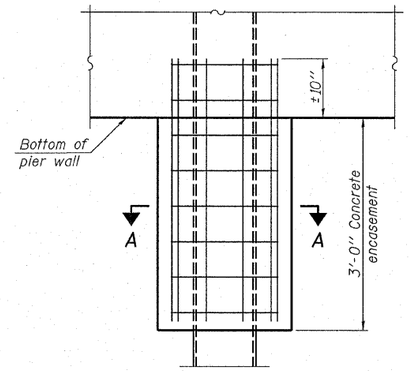
Notes:
The 1/8″ x 1/2″ min. fill bar may be constructed of 2 bars with a 1/8″ max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.

WELDED COMMERCIAL SPLICE

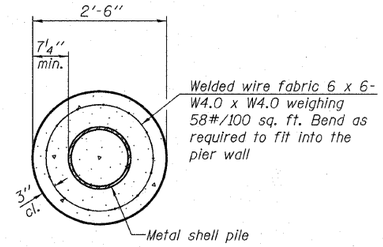


COMPLETE PENETRATION WELD SPLICE

* 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.



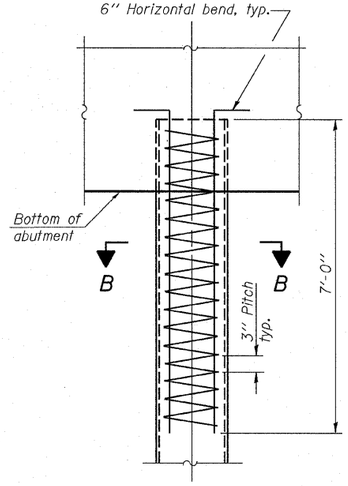
ELEVATION



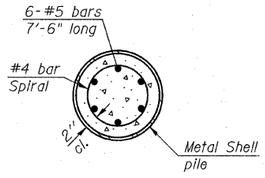
SECTION A-A

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

CONCRETE ENCASEMENT AT PIERS



ELEVATION



SECTION B-B

METAL SHELL REINFORCEMENT AT ABUTMENTS

Note: The metal shell piles shall be according to ASTM A 252 Grade 3.

METAL SHELL PILE DETAILS
STRUCTURE NO. 070-4535

DESIGNED -	S.M.S.
CHECKED -	S.W.M.
DRAWN -	D.A.B.
CHECKED -	D.T.M.

F-MS 5-16-08

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

PROJECT NUMBER: 08.0094.130 DATE: 10/29/08

SHEET NO. 7
8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
146	08-05125-00-BR	MOULTRIE	15	14
LOWE ROAD DISTRICT		CONTRACT NO. 95565		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
Reynolds Drilling Corp.

SOIL BORING LOG

Date 4/18/08

ROUTE CR 14.00 E DESCRIPTION Soils Boring for Bridge Replacement LOGGED BY CE Jolly

SECTION 08-05125-00-BR LOCATION Lowe, SEC. 20, TWP. 15N, RNG. 6E, 3rd PM

COUNTY Moultrie DRILLING METHOD Hollow Stem Auger HAMMER TYPE Hydraulic

STRUCT. NO. _____
Station _____

BORING NO. B-1
Station 9+78.5
Offset 7.00ft Rt
Ground Surface Elev. 678.50 ft

Surface Water Elev. _____ ft
Stream Bed Elev. 667.00 ft

Groundwater Elev.:
First Encounter _____ ft
Upon Completion 666.0 ft ▽
After ____ Hrs. _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Soil Description
				Oil & Chip road and subgrade. 678.00
			16.3	Brown, moist SILTY CLAY LOAM. (A-7-6)
	2			
	3 4	1.5 P	27.2	
-5	2			
	4 5	1.1 B	23.7	
				672.00 Gray, moist CLAY LOAM. (A-6)
	2			
	2 4	0.2 B	24.7	
				669.50 Gray, moist CLAY LOAM. (A-6)
-10	2			
	2 6	2.3 B	14.7	
				667.00 Gray, moist SILTY LOAM, trace sand, trace gravel. (A-4)
	4			▽
	7 10	3.4 B	12.9	
-15	4			
	7 10	3.2 B	12.7	
	6			
	9 17	1.5 P	13.1	
-20	3			
			16.6	Gray, moist SILTY LOAM, trace sand, trace gravel. (A-4) *(continued)*
	3 8			
	9			
	13 21	7.8 B	11.3	
-25	9			
	16 21			
	6			
	9 15	5.3 B	11.7	
				650.00 Brown, moist PEAT. (A-8)
-30	6			
	8 10	2.0 P	59.9	
				646.50 Gray, moist SILTY LOAM, trace sand, trace gravel. (A-6)
	8			
	10 13	1.0 B	19.3	
-35	6			
	6 7	1.0 B	19.0	
	5			
	5 5		18.1	640.90 Gray, saturated, fine to coarse SAND, with fine gravel. (A-1-a)
-40	3			

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

BBS, from 137 (Rev. 8-99)

Date 4/18/08

ROUTE CR 14.00 E DESCRIPTION Soils Boring for Bridge Replacement LOGGED BY CE Jolly

SECTION 08-05125-00-BR LOCATION Lowe, SEC. 20, TWP. 15N, RNG. 6E, 3rd PM

COUNTY Moultrie DRILLING METHOD Hollow Stem Auger HAMMER TYPE Hydraulic

STRUCT. NO. _____
Station _____

BORING NO. B-1
Station 9+78.5
Offset 7.00ft Rt
Ground Surface Elev. 678.50 ft

Surface Water Elev. _____ ft
Stream Bed Elev. 667.00 ft

Groundwater Elev.:
First Encounter _____ ft
Upon Completion 666.0 ft ▽
After ____ Hrs. _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Soil Description
	5 8		16.7	Gray, saturated, fine to coarse SAND, with fine gravel. (A-1-a) *(continued)*
				637.00 Gray, wet to saturated, clayey SILT. (A-4)
	9			
	8 7		28.0	
-45	8			
	8 8		26.8	
	7			
	4 7	2.0 P	45.7	
-50	6			628.50 Brown, moist PEAT. (A-8)
	6 12		19.8	627.50 Gray, wet, silty, fine SAND. (A-3)
				End of Boring
-55				
-60				

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

BBS, from 137 (Rev. 8-99)

DESIGNED	S.M.S.
CHECKED	S.W.M.
DRAWN	D.A.B.
CHECKED	D.T.M.

BORING

BORING
STRUCTURE NO. 070-4535

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
PROJECT NUMBER 08.0094.130 DATE: 10/20/08

SHEET NO. 8
8 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
146	08-05125-00-BR	MOULTRIE	15	15
LOWE ROAD DISTRICT		CONTRACT NO. 95565		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		