

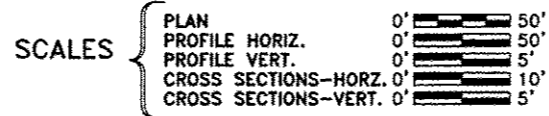
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 197	07-13106-01-BR	SANGAMON	13	1
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED  
SURFACE TRANSPORTATION PROGRAM - BRIDGE

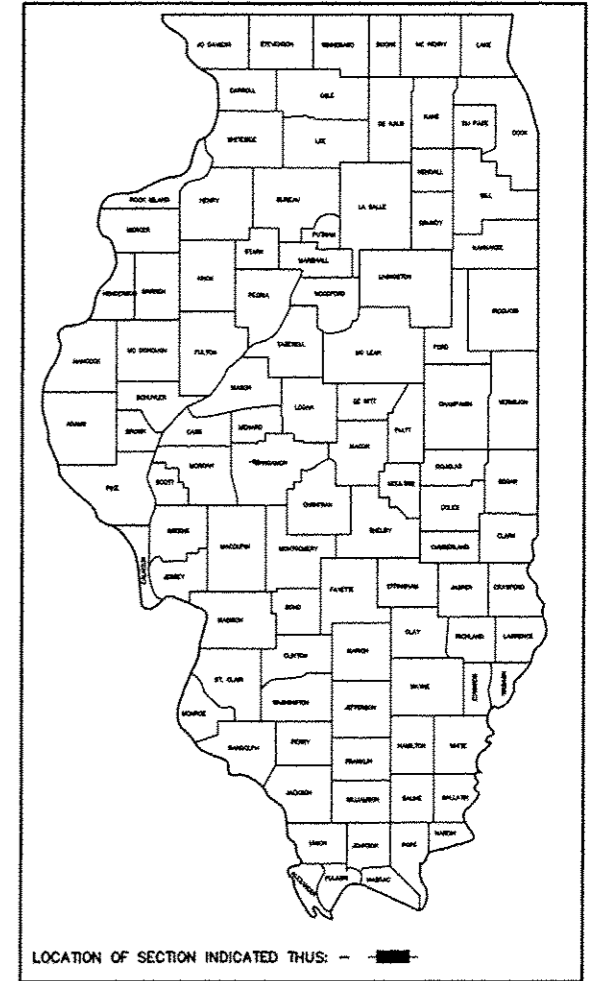
INDEX OF SHEETS

1. COVER SHEET
2. SUMMARY OF QUANTITIES & TYPICAL CROSS SECTION
3. PLAN AND PROFILE
4. CHANNEL MODIFICATION & EROSION CONTROL PLAN
- 5.-11. BRIDGE PLANS
- 12.-13. STATION CROSS SECTIONS



SECTION 07-13106-01-BR  
TOWNSHIP ROUTE 197  
SANGAMON COUNTY  
PROJECT BROS-0167(054)

C-96-245-08



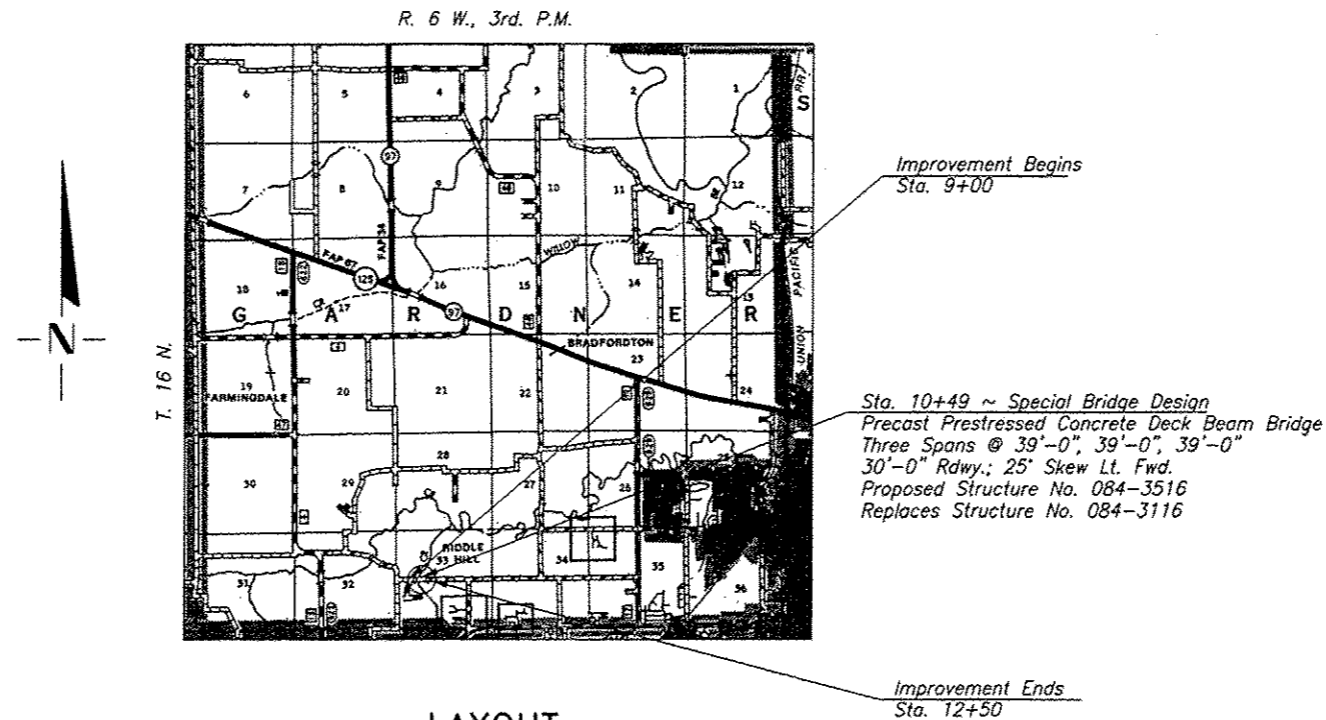
STANDARDS:

- 515001-03 NAME PLATE FOR BRIDGES
- 630301-06 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
- 631011-09 TRAFFIC BARRIER TERMINAL, TYPE 2
- 725001** OBJECT AND TERMINAL MARKERS
- 701901-05 TRAFFIC CONTROL DEVICES
- BLR 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
- BLR 24-2 MAILBOX TURNOUT FOR LOCAL ROADS
- BLR 27-1 TRAFFIC BARRIER TERMINAL TYPE 5A

BORINGS

UTILITIES

- AMEREN ILLINOIS  
825 NORTH MACARTHUR ROAD  
SPRINGFIELD, IL 62702
- AT&T  
1640 EAST HAZEL DELL ROAD  
SPRINGFIELD, IL 62703
- CURRAN-GARDNER WATER DISTRICT  
3382 HAZLETT ROAD  
SPRINGFIELD, IL 62707



LAYOUT

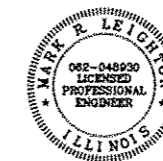
APPROXIMATE SCALE = 0 1 MILE  
Net Length of Section = 350.00 Feet = 0.066 Miles

DESIGN FUNCTIONAL CLASSIFICATION:  
LOCAL ROAD 400-1000 ADT  
CURRENT ADT: 650  
DESIGN SPEED: 3R GUIDELINES

CONTRACT NO. 93660

**CB** Coombe-Bloxdorf P.C.  
ENGINEERS/LAND SURVEYORS  
SPRINGFIELD, ILLINOIS  
www.coombebloxdorf.com

*Mark J. [Signature]*  
ILLINOIS PROFESSIONAL NO. 48930 Expires 11-30-17



APPROVED	<i>David E. Smith</i>	20 16
ROAD DISTRICT COMMISSIONER		
APPROVED	<i>MARCO</i>	20 16
COUNTY ENGINEER		
PASSED	<i>March 10</i>	20 16
DISTRICT SIX ENGINEER OF LOCAL ROADS & STREETS		
PASSED	<i>March 18</i>	20 16
DISTRICT SIX ENGINEER OF CONSTRUCTION		
Releasing for Bid Based on Limited Review	<i>March 18</i>	20 16
REGION FOUR ENGINEER		
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		

TOLL FREE JOINT UTILITY LOCATING  
INFORMATION FOR EXCAVATORS (J.U.L.I.E.)  
TELEPHONE NUMBER 1-800-892-0123

SUMMARY OF QUANTITIES CONSTRUCTION TYPE CODE 0011			
BRIDGE TYPE: X080			
CODE NO.	ITEM	UNIT	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	212
20100500	TREE REMOVAL, ACRES	ACRE	0.5
20200100	EARTH EXCAVATION	CU YD	150
20300100	CHANNEL EXCAVATION	CU YD	4,800
20400800	* FURNISHED EXCAVATION	CU YD	2,650
28000400	PERIMETER EROSION BARRIER	FOOT	1585
35100100	AGGREGATE BASE COURSE, TYPE A	TON	262
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	1,231
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	123
40603310	HOT MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	178
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	41.1
50300280	CONCRETE ENCASEMENT	CU YD	33.0
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS, (21" DEPTH)	SQ FT	3,510
50800105	REINFORCEMENT BARS	POUND	5,430
Δ50900205	STEEL RAILING, TYPE S1	FOOT	235
51200957	FURNISHING METAL SHELL PILES 12"X0.250"	FOOT	1,220
51202305	DRIVING PILES	FOOT	1,220
51203200	TEST PILE METAL SHELLS	EACH	2
51500100	NAME PLATES	EACH	1
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	391
58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	264
60103600	PIPE CULVERTS, CORRUGATED STEEL 15"	FOOT	162
Δ63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	1
Δ63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	4
Δ63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	3
67100100	MOBILIZATION	L SUM	1
70101830	* TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1
Δ72501000	* TERMINAL MARKER-DIRECT APPLIED	EACH	4
ΔK1005421	* SEEDING (SPECIAL)	ACRE	0.5
ΔX2501000	* SEEDING CLASS 2 (SPECIAL)	ACRE	0.3
ΔX2810208	* STONE RIPRAP, CLASS A4 (SPECIAL)	TON	1,641
ΔXX009105	* TREES TO BE PLANTED (SPECIAL)	ACRE	0.4

\* SEE SPECIAL PROVISIONS  
**Δ SPECIALTY ITEMS**

**GENERAL NOTES**

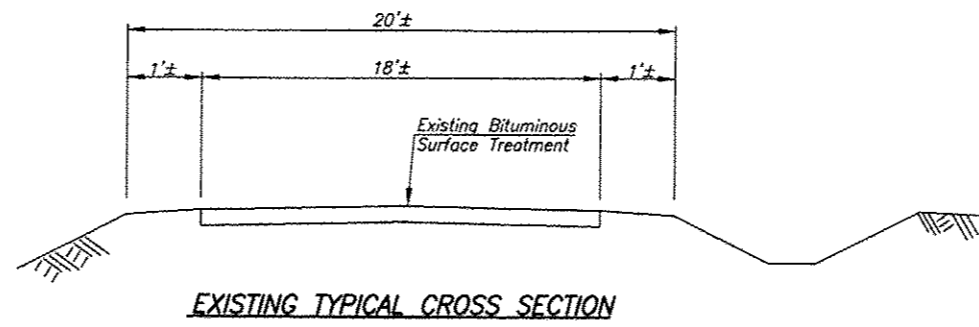
WHERE SECTION AND SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

THE AREA TO BE SEEDDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY AND EASEMENTS AS DIRECTED BY THE ENGINEER.

SEEDING, (SPECIAL) = 0.5 ACRES  
 SEEDING, CLASS 2 (SPECIAL) = 0.3 ACRES

THE COST OF REMOVAL OF ANY OBSTRUCTIONS OR CULVERTS NOT OTHERWISE INCLUDED IN REMOVAL OF EXISTING STRUCTURES WHICH INTERFERE WITH CONSTRUCTION WILL BE CONSIDERED INCIDENTAL TO THE COST OF EARTH EXCAVATION.

ALL PLAN ELEVATIONS REPRESENT USGS DATUM.



**EXISTING TYPICAL CROSS SECTION**

**APPLICATION RATES USED IN QUANTITY CALCULATIONS**

BITUMINOUS MATERIALS (TACK COAT) (BETWEEN LIFTS) 0.025 POUND/SQ. FT.  
 BITUMINOUS MATERIALS (PRIME COAT) (ON AGG. BASE) 0.25 POUND/SQ. FT.  
 HOT MIX ASPHALT (BINDER AND SURFACE COURSE) 112 LBS./SQ. YD./INCH  
 GRANULAR MATERIALS 2.05 TON/CU. YD.  
 STONE RIPRAP 1.75 TON/CU. YD.

BITUMINOUS CONCRETE MIXTURE REQUIREMENTS				
ITEM	ASPHALT GRADE	AGGREGATE COMPOSITION	VOIDS	QUALITY MANAGEMENT
HMA SURFACE COURSE (Mix "C") N50	PG 64-22	IL 9.5	4.0% @ N50 DESIGN	QC/QA

**GUARD RAIL SCHEDULE**

**TRAFFIC BARRIER TERMINAL, TY. 5A**

LT. STA. 9+84.15 TO 9+97.40 = 1 EACH  
 RT. STA. 9+70.16 TO 9+83.41 = 1 EACH  
 LT. STA. 11+14.59 TO 11+27.84 = 1 EACH  
 RT. STA. 11+00.60 TO 11+13.85 = 1 EACH  
**TOTAL = 4 EACH**

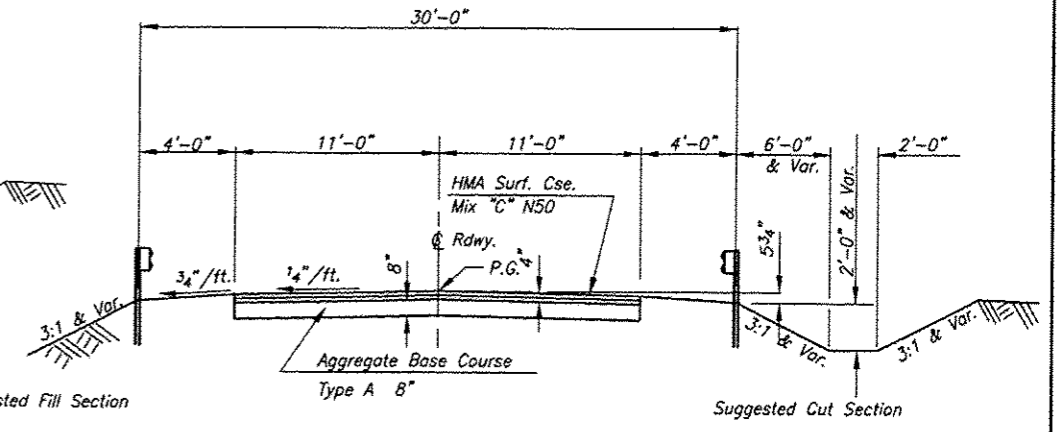
**TRAFFIC BARRIER TERMINAL, TY. 2**

\*LT. STA. 9+74.15 TO 9+84.15 = 1 EACH  
**TOTAL = 1 EACH**

\*SHOP CURVE TO 10' RADIUS

**TRAFFIC BARRIER TERMINAL, TY.1 SPECIAL (TANGENT)**

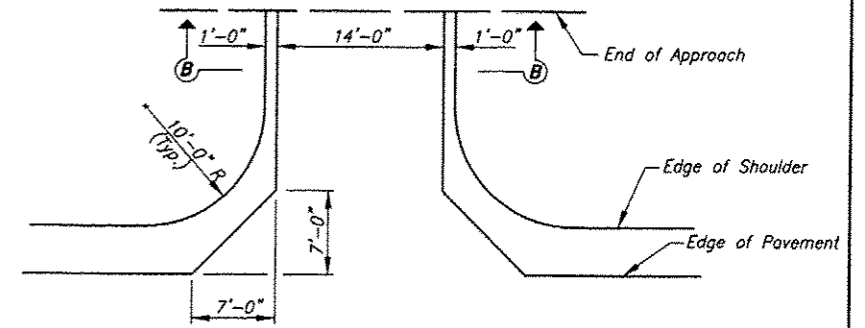
RT. STA. 9+20.16 TO 9+70.16 = 1 EACH  
 LT. STA. 11+27.84 TO 11+77.84 = 1 EACH  
 RT. STA. 11+13.85 TO 11+63.85 = 1 EACH  
**TOTAL = 3 EACH**



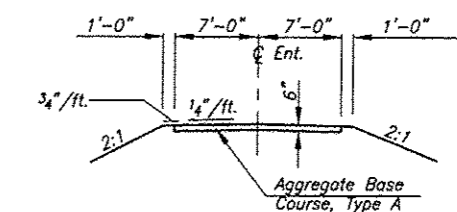
Road Classification: Local Road 400-1000 ADT  
 Current ADT 650

**TYPICAL CROSS SECTION**

Sta. 9+50 to Sta. 12+00  
 Transition from the proposed roadway to the existing roadway to be constructed from Sta. 9+00 to 9+50 from Sta. 12+00 to 12+50.



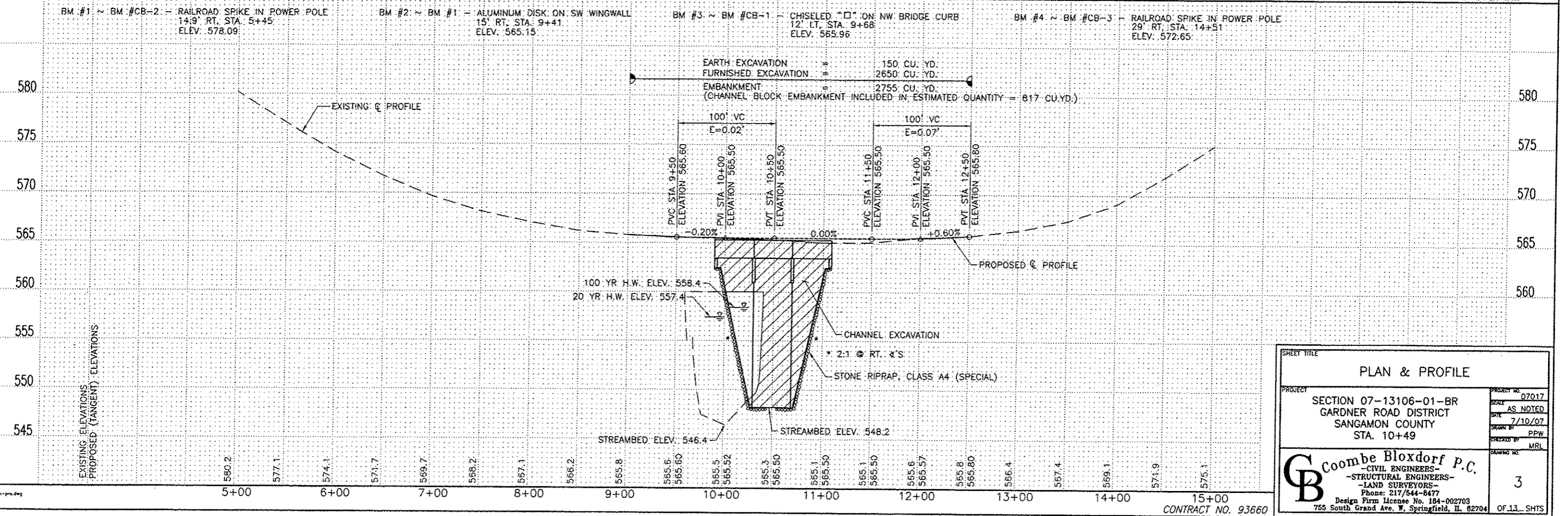
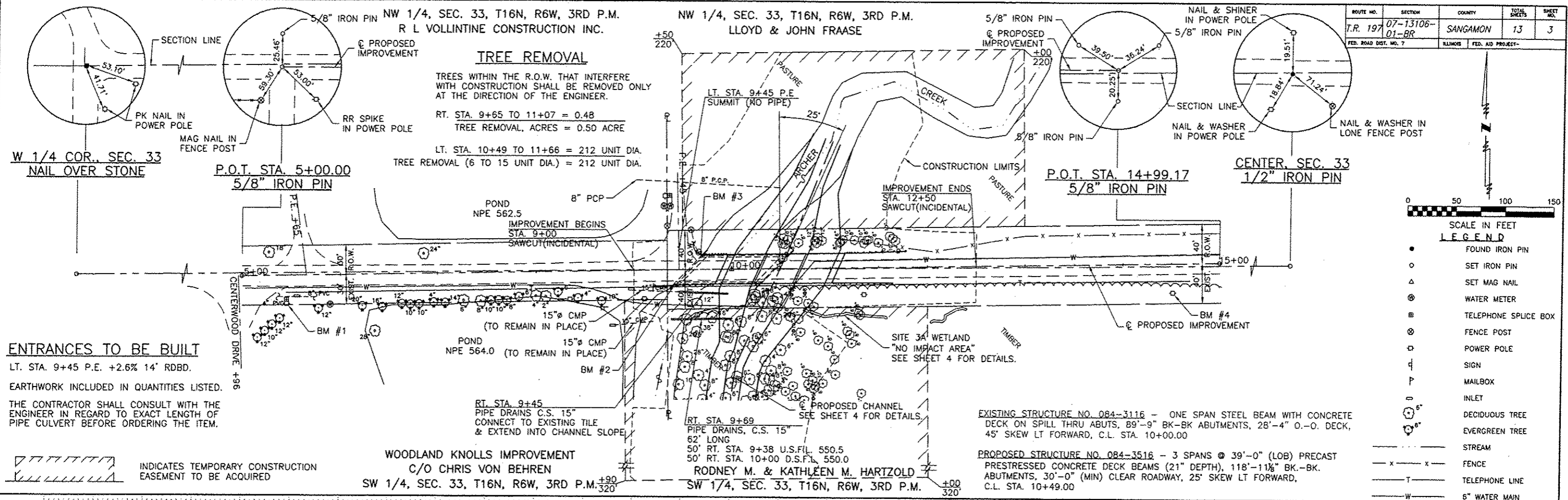
**PRIVATE ENTRANCE DETAIL**



**SECTION B-B**

SHEET TITLE		PROJECT NO.	
SUMMARY OF QUANTITIES & TYPICAL CROSS SECTION		07017	
PROJECT		SCALE	
SECTION 07-13106-01-BR GARDNER ROAD DISTRICT SANGAMON COUNTY STA. 10+49		7-10-15	
DRAWN BY		CHECKED BY	
MRL		MCB	
DATE		SHEET NO.	
7-10-15		2	
DRAWING NO.		OF 13 SHEETS	
<b>Coombe-Bloxdorf P.C.</b> - CIVIL ENGINEERS - - STRUCTURAL ENGINEERS - - LAND SURVEYORS - Phone: 217/844-8477 Design Firm License No. 184-002703 765 South Grand Ave. W. Springfield, IL 62704			

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 197	07-13106-01-BR	SANGAMON	13	3
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	



**PLAN & PROFILE**

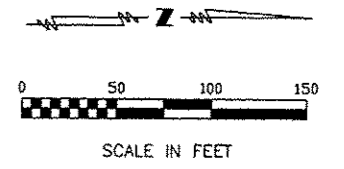
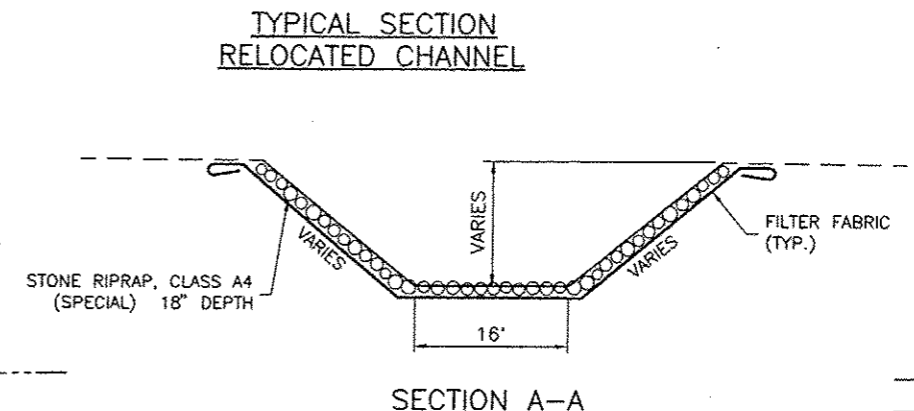
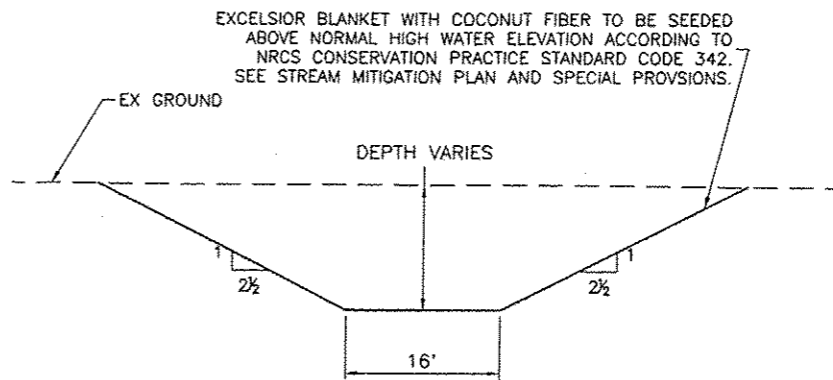
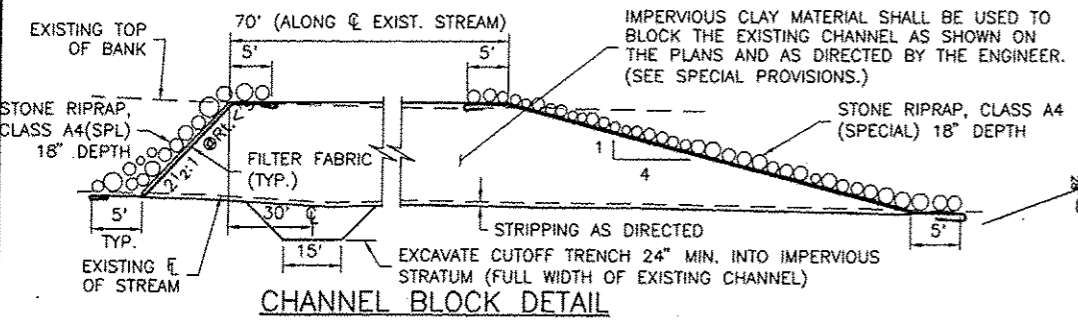
PROJECT: SECTION 07-13106-01-BR  
GARDNER ROAD DISTRICT  
SANGAMON COUNTY  
STA. 10+49

PROJECT NO. 07017  
SCALE AS NOTED  
DATE 7/10/07  
DRAWN BY PPH  
CHECKED BY MRL

**Coombe Bloxdorf P.C.**  
- CIVIL ENGINEERS -  
- STRUCTURAL ENGINEERS -  
- LAND SURVEYORS -  
Phone: 217/544-8477  
Design Firm License No. 154-002703  
755 South Grand Ave. W. Springfield, IL 62704

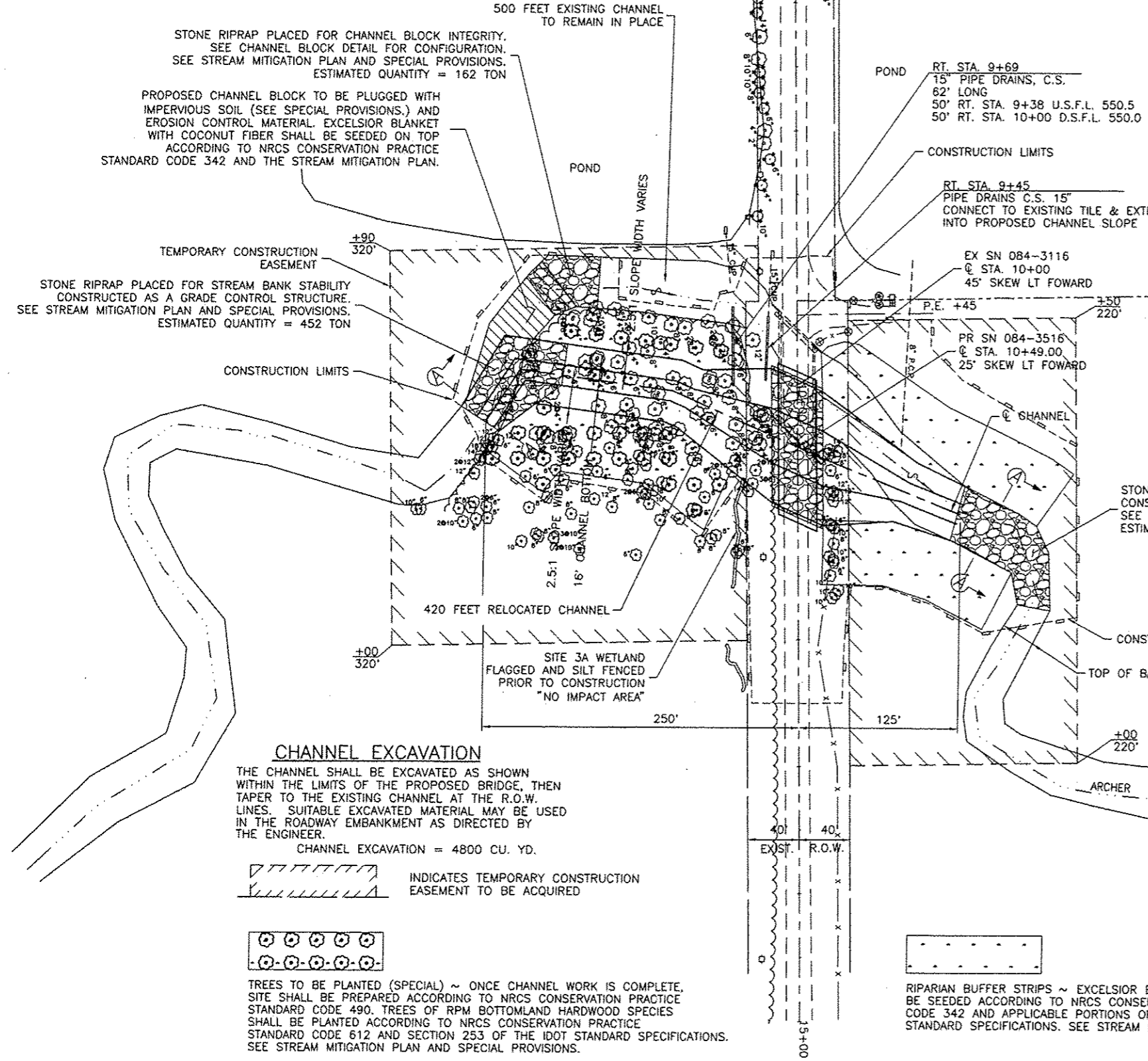
3 OF 13 SHTS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 197	07-13106-01-BR	SANGAMON	13	4
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	



**LEGEND**

- ⊙ WATER METER
- ⊞ TELEPHONE SPLICE BOX
- ⊙ FENCE POST
- ⊙ POWER POLE
- ⊙ SIGN
- ⊙ MAILBOX
- ⊙ INLET
- ⊙ DECIDUOUS TREE
- ⊙ EVERGREEN TREE
- STREAM
- x - FENCE
- - - PERIMETER EROSION BARRIER



STONE RIPRAP WILL BE PLACED IN THESE TRANSITIONS AS SHOWN ON THE PLANS AND THE TOP ELEVATION OF THE RIPRAP IN THE FLOWLINE SET AT LEAST 6 INCHES ABOVE THE EXISTING FLOWLINE TO SERVE AS GRADE CONTROL/ENERGY DISSIPATER.

**PERIMETER EROSION BARRIER SCHEDULE**

LOCATION	LENGTH FOOT
LT. STA. 9+00 TO STA. 12+50	716
RT. STA. 9+00 TO STA. 12+50	869
<b>TOTAL</b>	<b>1585</b>

**NOTES**

ALL SPOIL MATERIAL EXCAVATED FOR THE PROPOSED CHANNEL SHALL NOT BE RETURNED TO THE FLOODPLAIN AREAS BUT SHALL BE DEPOSITED IN A SELF CONTAINED AREA IN COMPLIANCE WITH IDOT STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER. SUITABLE EXCAVATED CLAY MATERIAL MAY BE USED IN THE CONSTRUCTION OF THE CHANNEL BLOCK STRUCTURE OR ROADWAY EMBANKMENT AS APPROVED BY THE ENGINEER. SEE SPECIAL PROVISIONS.

THE CONSTRUCTION LIMITS SHALL BE STAKED BY THE ENGINEER PRIOR TO COMMENCING CONSTRUCTION. THE CONSTRUCTION LIMITS MAY BE ADJUSTED BY THE ENGINEER TO PRESERVE TREES AND NO ADDITIONAL COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR CHANGED CONSTRUCTION LIMITS.

THE ENGINEER SHALL HAVE FINAL DETERMINATION OF THE PLACEMENT AND LOCATION OF THE PERIMETER EROSION BARRIER.

**SHEET TITLE**  
**CHANNEL MODIFICATION AND EROSION CONTROL PLAN**

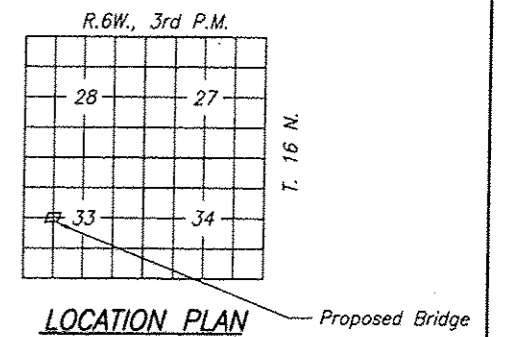
PROJECT: SECTION 07-13106-01-BR  
 GARDNER ROAD DISTRICT  
 SANGAMON COUNTY  
 STA. 10+49

PROJECT NO. 07917  
 SCALE 1"=50'  
 DATE 7-10-15  
 DRAWN BY PFW  
 CHECKED BY MRI  
 SHEET NO. 4

**Coombe-Bloxdorf P.C.**  
 - CIVIL ENGINEERS -  
 - STRUCTURAL ENGINEERS -  
 - LAND SURVEYORS -  
 Phone: 217/544-8477  
 Design Firm License No. 184-002703  
 755 South Grand Ave. W. Springfield, IL 62704

CONTRACT NO. 93660

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 197	07-13106-01-BR	SANGAMON	13	5
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	



ARCHER CREEK  
BUILT 201 BY  
SANGAMON COUNTY  
SEC. 07-13106-01-BR  
T.R. 197 STA. 10+49  
FA PROJ. BROS-0167(054)  
STR. NO. 084-3116 LOADING HL 93

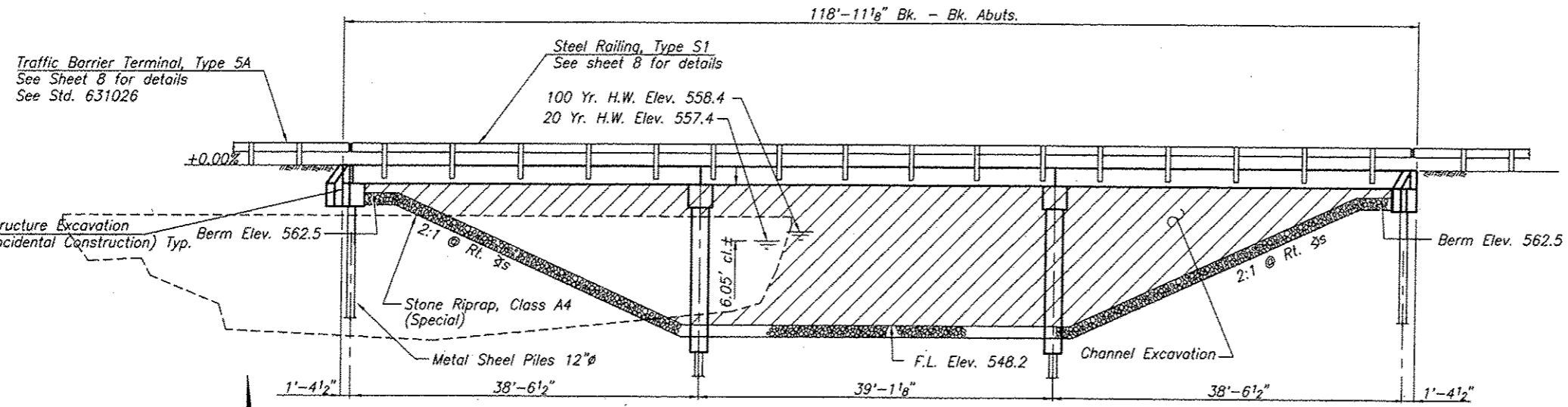
LETTERING FOR NAME PLATE  
See Std. 515001

**GENERAL NOTES**

Class SI concrete shall be used throughout.  
The Standard Specifications adopted by the Department of Transportation, April 1, 2016 shall apply to this work.  
The layout of riprap may be varied in the field to better suit ground conditions, as directed by the Engineer.  
The Contractor shall drive one metal shell test pile in a permanent location at the West Abutment and at Pier #2, as directed by the Engineer, before ordering the remainder of the piles.  
Hot Mix Asphalt Surface Course, Mix "C", N50, shall be used to level out the beam camber.

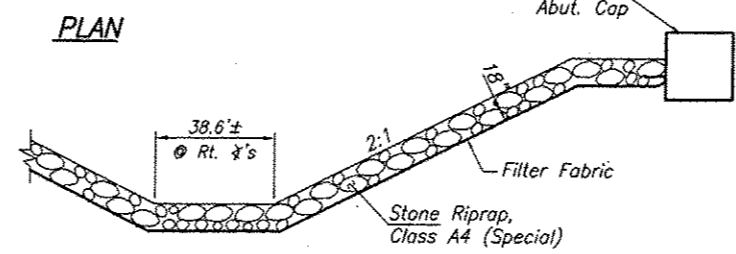
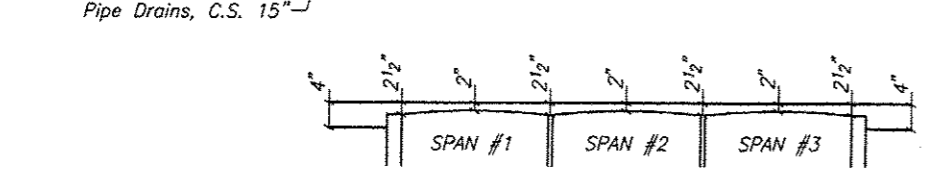
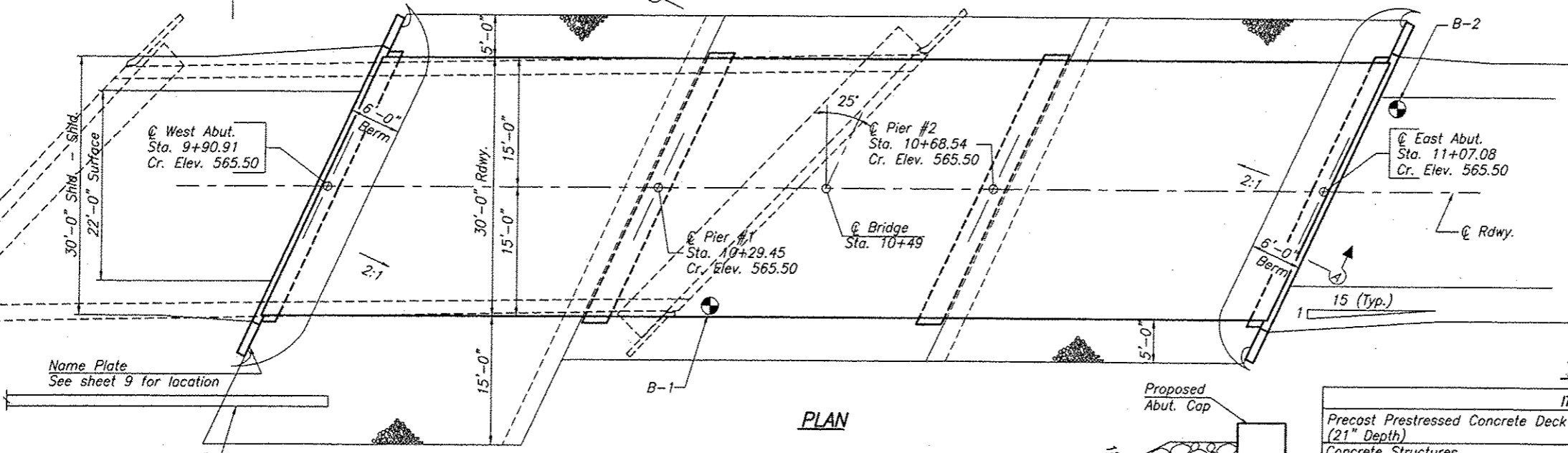
**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	3,510		3,510
Concrete Structures	Cu. Yd.		41.1	41.1
Reinforcement Bars	Pound		5,430	5,430
Steel Railing, Type S1	Foot	235		235
Name Plates	Each		1	1
Metal Shell Piles 12" x 0.25" Walls	Foot		1,220	1,220
Test Pile, Metal Shell	Each		2	2
Stone Riprap, Class A4 (Special)	Ton			507
Concrete Encasement	Cu. Yd.		33.0	33.0
Hot Mix Asphalt Surf. Cse. Mix "C", N50	Ton	55		55
Waterproofing Membrane System	Sq. Yd.	391		391
PC Mortar Fairing Course	Foot	264		264



**DESIGN SCOUR ELVATION TABLE**

	W. Abut.	Pier #1	Pier #2	E. Abut.
Design Scour Elevation (ft.)	560.63	543.74	543.74	560.63



**WATERWAY DATA**

DRAINAGE AREA	18.8 SQ. MI.
EXISTING OPENING	386 SQ. FT.
REQUIRED OPENING	480 SQ. FT.
PROPOSED OPENING	480 SQ. FT.
DESIGN DISCHARGE (20YR.)	2240 C.F.S.
CREATED HEAD	0.56 FEET
100 YR. DISCHARGE	3577 C.F.S.
100 YR. CREATED HEAD	0.91 FEET

**DESIGN STRESSES**

$f'_c$	= 5,000 psi (Prestressed Beams)
$f'_{ci}$	= 4,000 psi (Prestressed Beams)
$f_c$	= 1,400 psi (Class SI Concrete)
$f'_s$	= 270,000 psi (Prestressed Strands)
$f'_{si}$	= 189,000 psi (Prestressed Strands)
$f_s$	= 24,000 psi (Reinf. Bars -- Field Units)
$f_y$	= 60,000 psi (Reinf. Bars -- Precast Units)
$n$	= 9 (Class SI Concrete)

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".



Mary Coombe Bloxdorf 12-22-15  
ILLINOIS STRUCTURAL NO. 4859

CONSTRUCTION PERMITS: IDNR-Office of Water Resources has issued Permit DS2015022 for construction of this project.

Loading HS 20-44  
Design Specifications: 2002 AASHTO  
25#/Sq. Ft. included in dead load for future wearing surface.

EXP. 11-30-16

CONTRACT NO. 93660

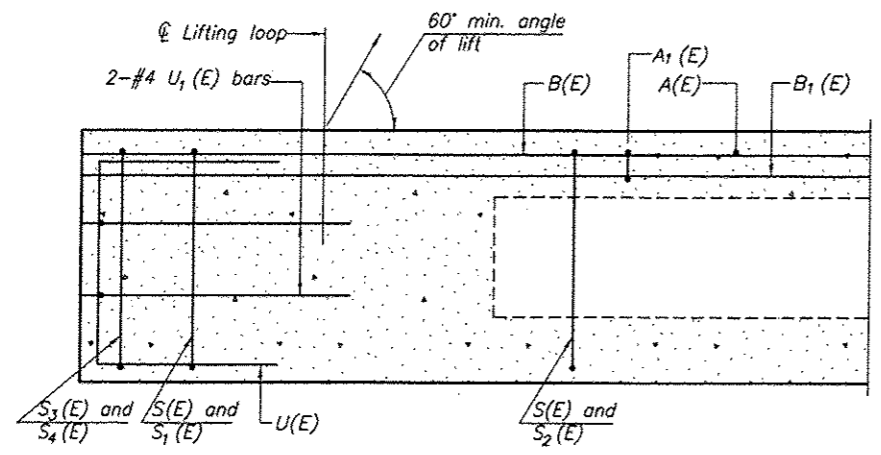
**GENERAL PLAN & ELEVATION**

PROJECT: SECTION 07-13106-01-BR  
GARDNER ROAD DISTRICT  
SANGAMON COUNTY  
STATION 10+49

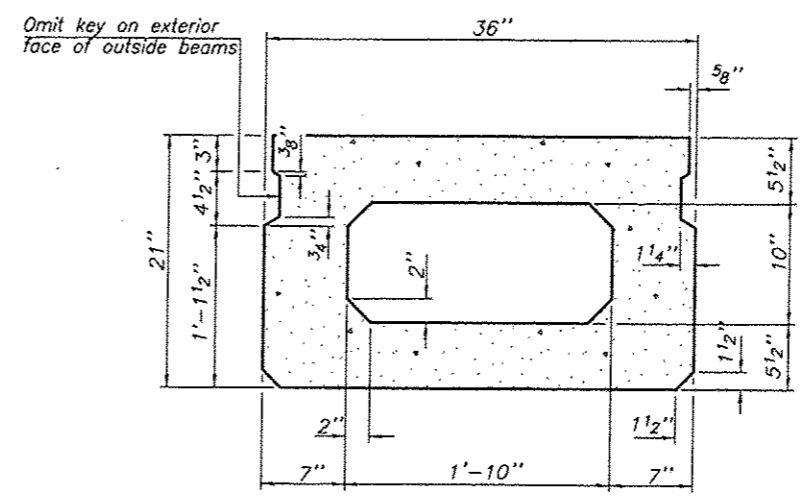
PROJECT NO. 02017  
DATE: 7-10-15  
DRAWN BY: MRL  
CHECKED BY: MCB  
DESIGNED BY: MCB

**Coombe-Bloxdorf P.C.**  
-CIVIL ENGINEERS-  
-STRUCTURAL ENGINEERS-  
-LAND SURVEYORS-  
Phone: 217/644-8477  
Design Firm License No. 104-002703  
755 South Grand Ave. W. Springfield, IL 62704

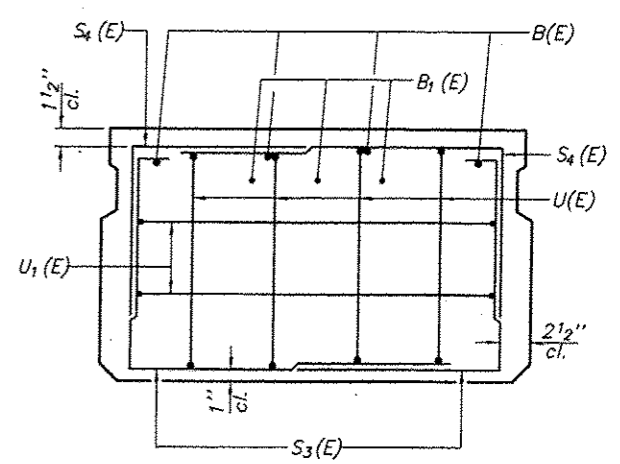
5 OF 13 SHTS



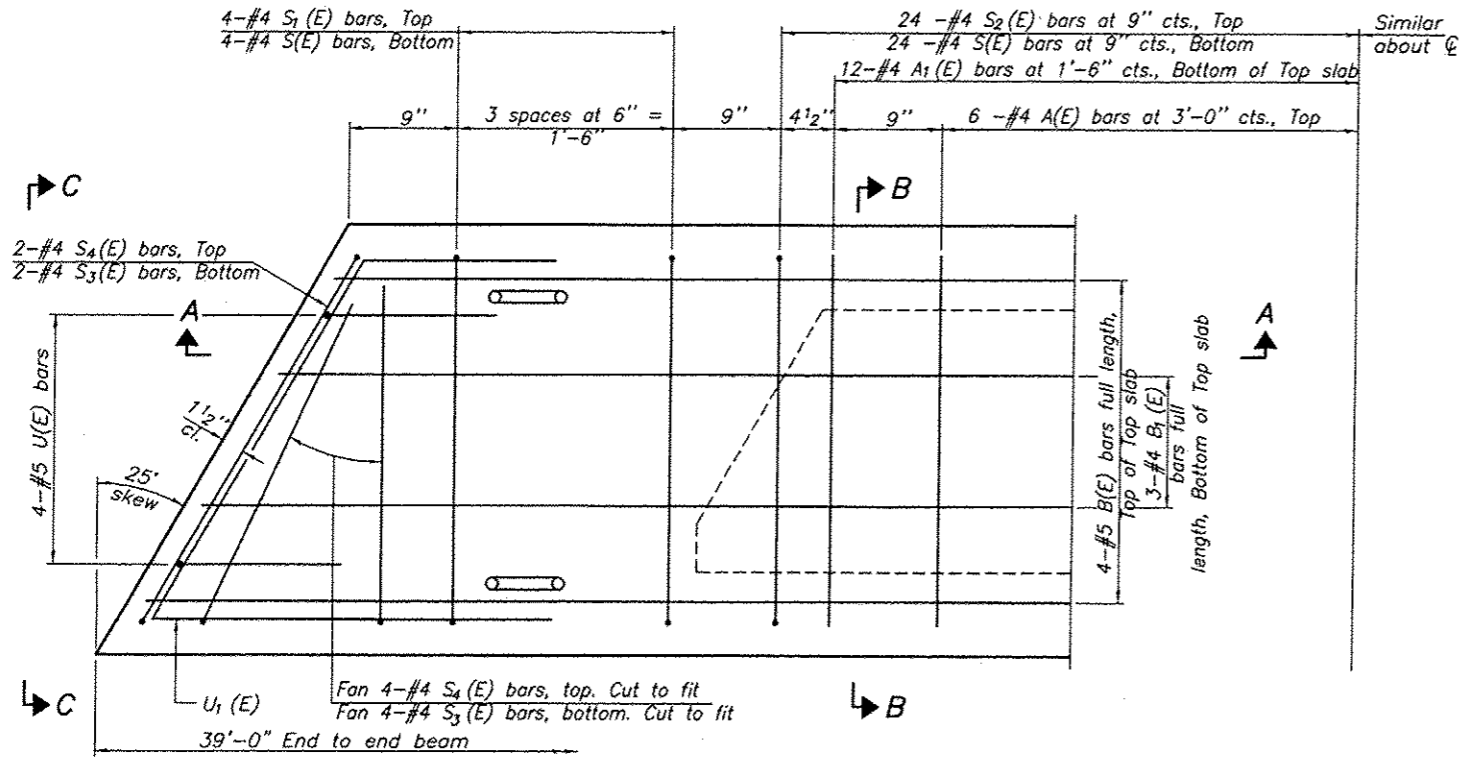
**SECTION A-A**



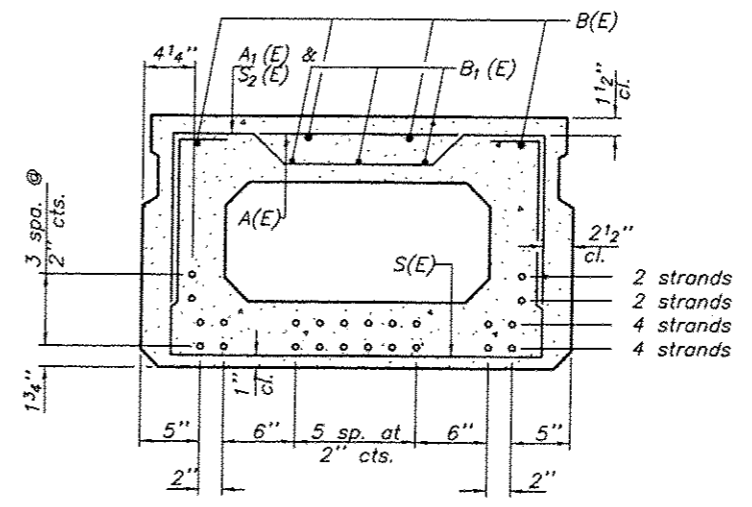
**SECTION B-B**  
(Showing dimensions)



**VIEW C-C**



**PLAN VIEW**



**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)	12	#4	2'-7"	—
A1(E)	24	#4	2'-10"	—
B(E)	4	#5	38'-8"	—
B1(E)	3	#4	38'-8"	—
S(E)	56	#4	6'-5"	□
S1(E)	8	#4	4'-11"	□
S2(E)	48	#4	5'-2"	□
S3(E)	12	#4	4'-6"	□
S4(E)	12	#4	3'-9"	□
U(E)	8	#5	4'-0"	□
U1(E)	4	#4	6'-6"	□

Note: See sheet 7 of 13 for additional details and Bill of Material.

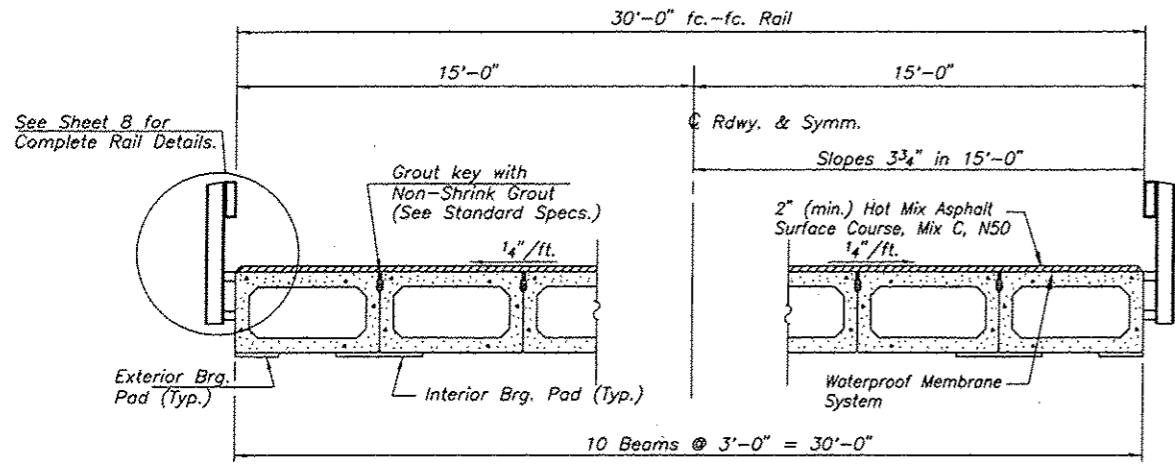
Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

**MINIMUM BAR LAP**  
#4 bar = 2'-0"  
#5 bar = 2'-6"

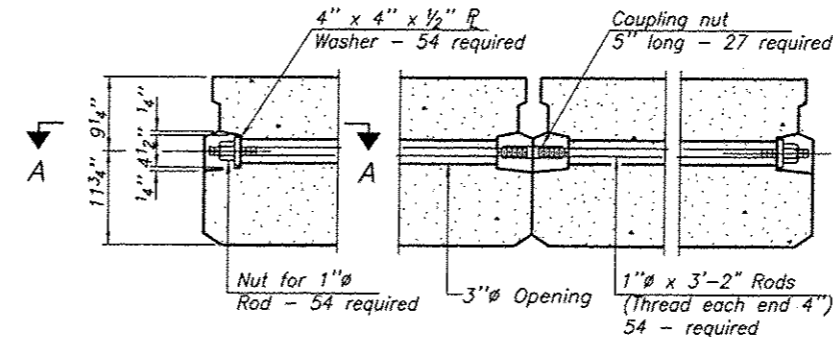
CONTRACT NO. 93660

SHEET TITLE		SUPERSTRUCTURE	
PROJECT	SECTION 07-13106-01-BR	PROJECT NO.	07017
	GARDNER ROAD DISTRICT	DATE	7-10-15
	SANGAMON COUNTY	DRAWN BY	MRL
	STATION 10+49	CHECKED BY	MCB
<b>Coombe-Bloxdorf P.C.</b> - CIVIL ENGINEERS - - STRUCTURAL ENGINEERS - - LAND SURVEYORS - Phone: 217/544-8477 Design Firm License No. 184-002703 755 South Grand Ave. W. Springfield, IL 62704		SHEET NO. <b>6</b> OF 13 SHTS	

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 197	07-13106-01-BR	SANGAMON	13	7
FED. ROAD DIST. NO. 7		BLINDS	FED. AID PROJECT-	

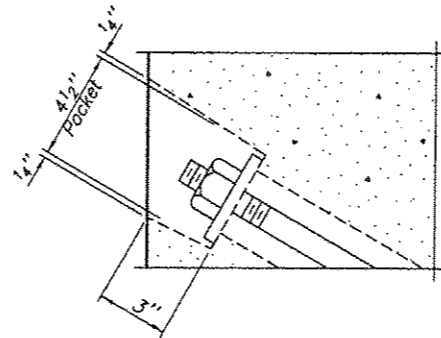


CROSS SECTION

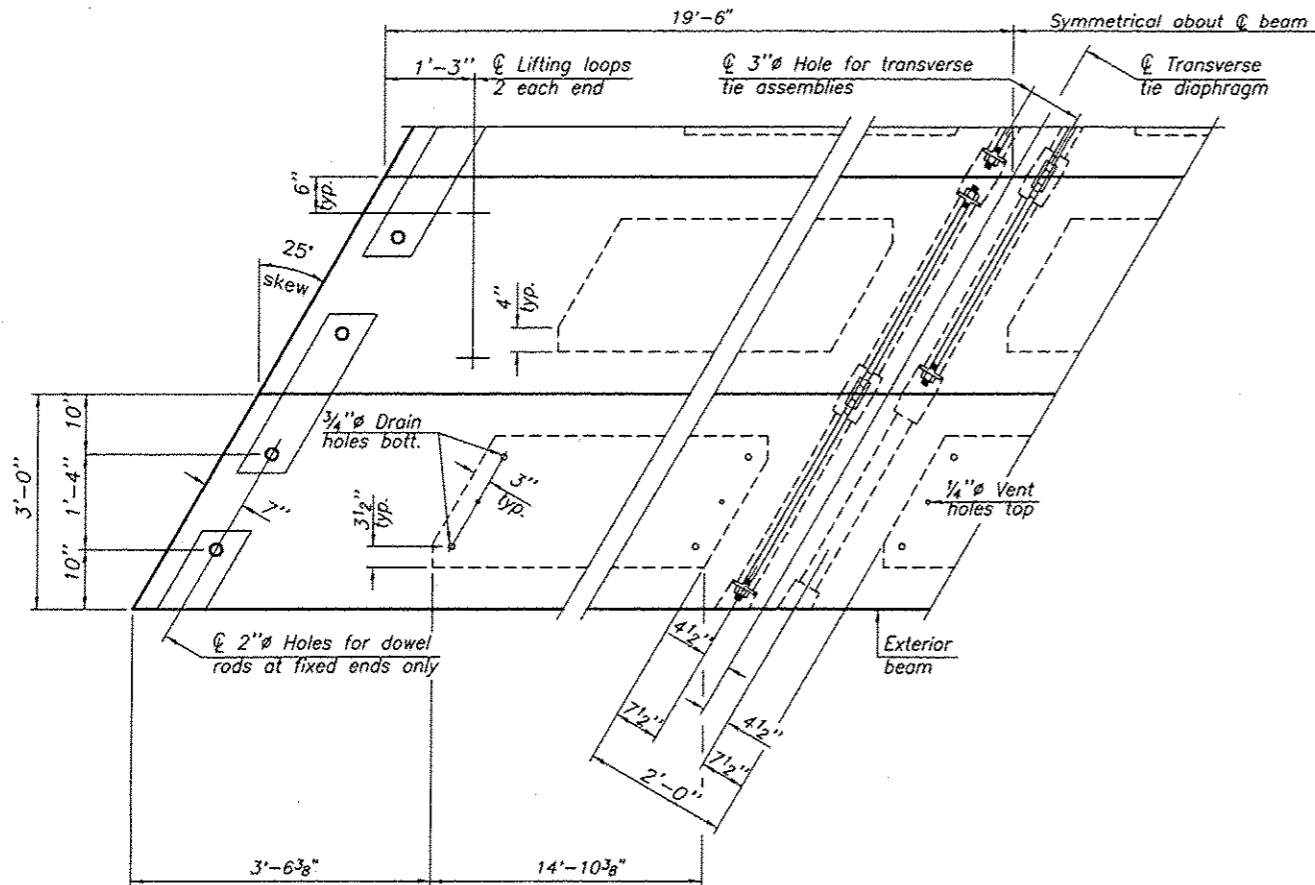


TYPICAL TRANSVERSE TIE ASSEMBLY

Hardware quantities includes all spans

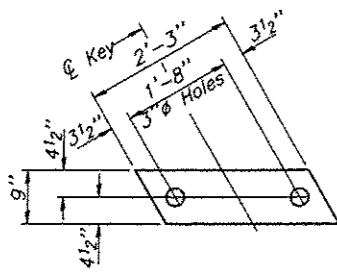


SECTION A-A

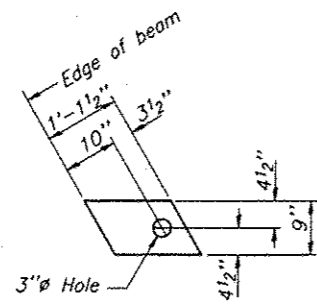


PLAN VIEW

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



FABRIC BEARING PAD (Interior)



FABRIC BEARING PAD (Exterior)

FIXED

Notes: All bearing pads shall be 1" thick.

NOTES

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

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

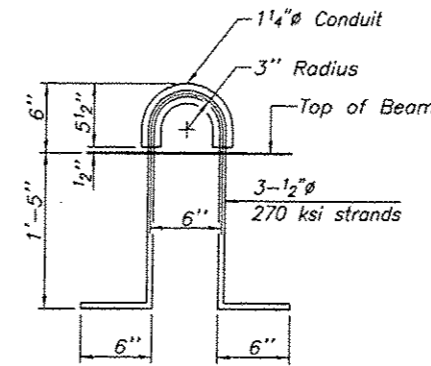
Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2 1/2" lifting pin shall be used to engage the lifting loops during handling.

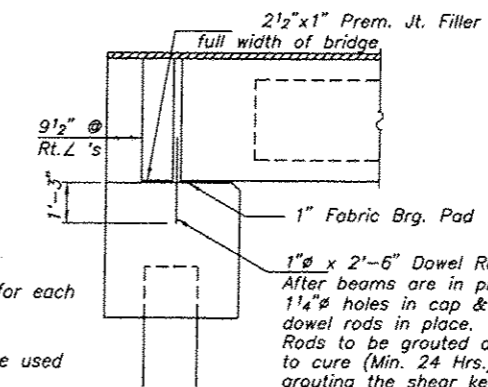
Corrosion inhibitor, per Article 1020.05(b)(12) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f'c, shall be 6000 psi.

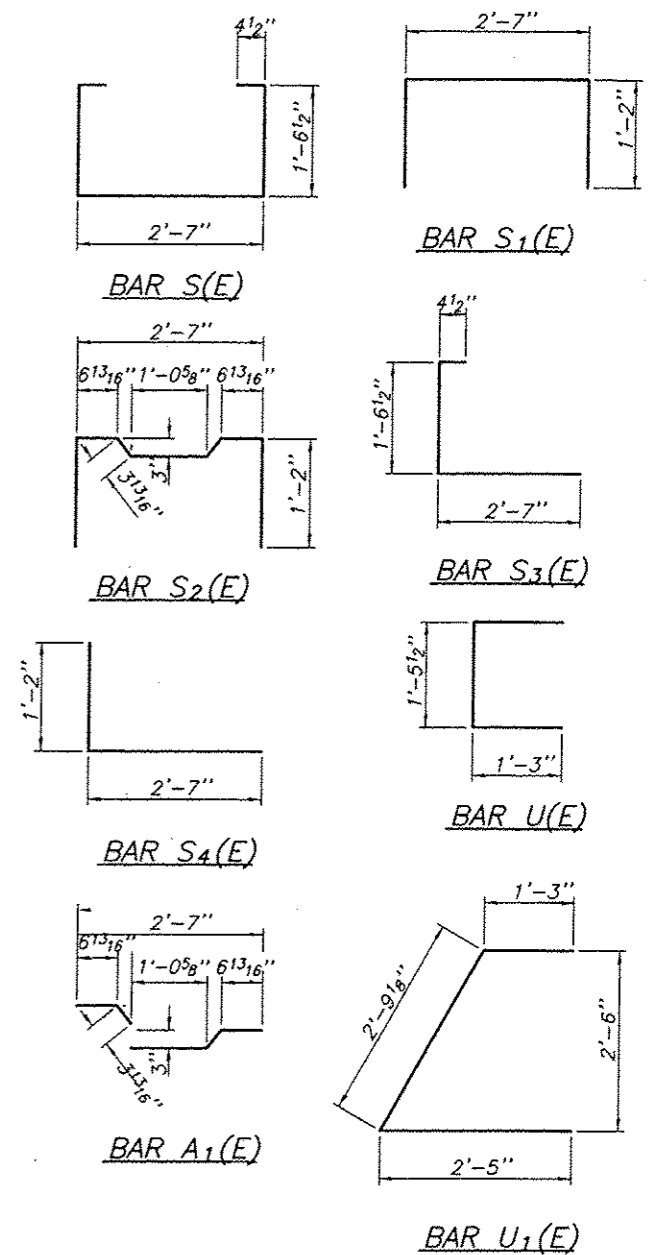
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.



LIFTING LOOP DETAIL



SECTION AT ABUTMENTS



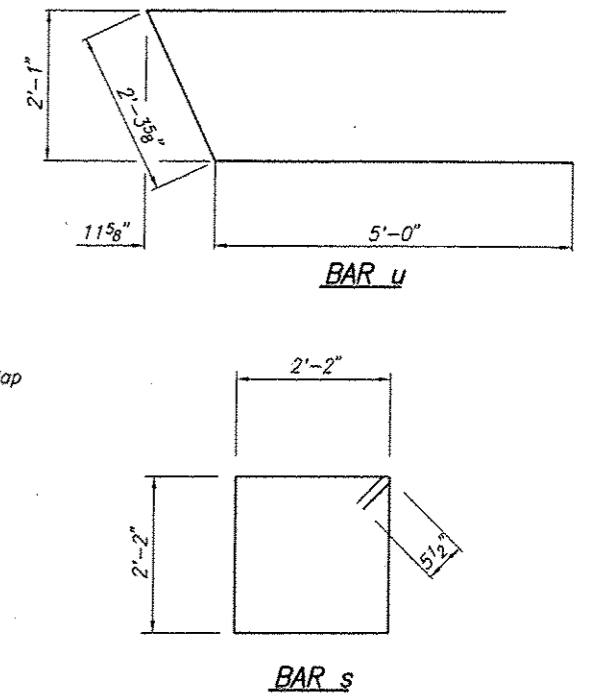
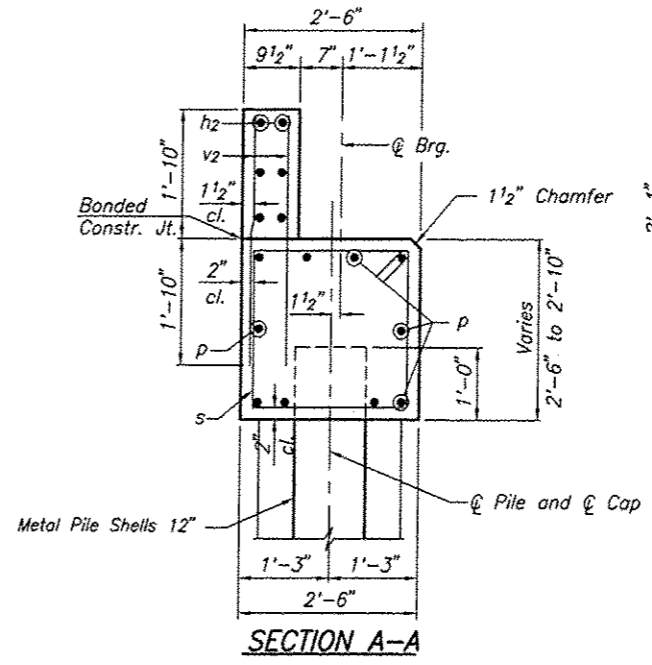
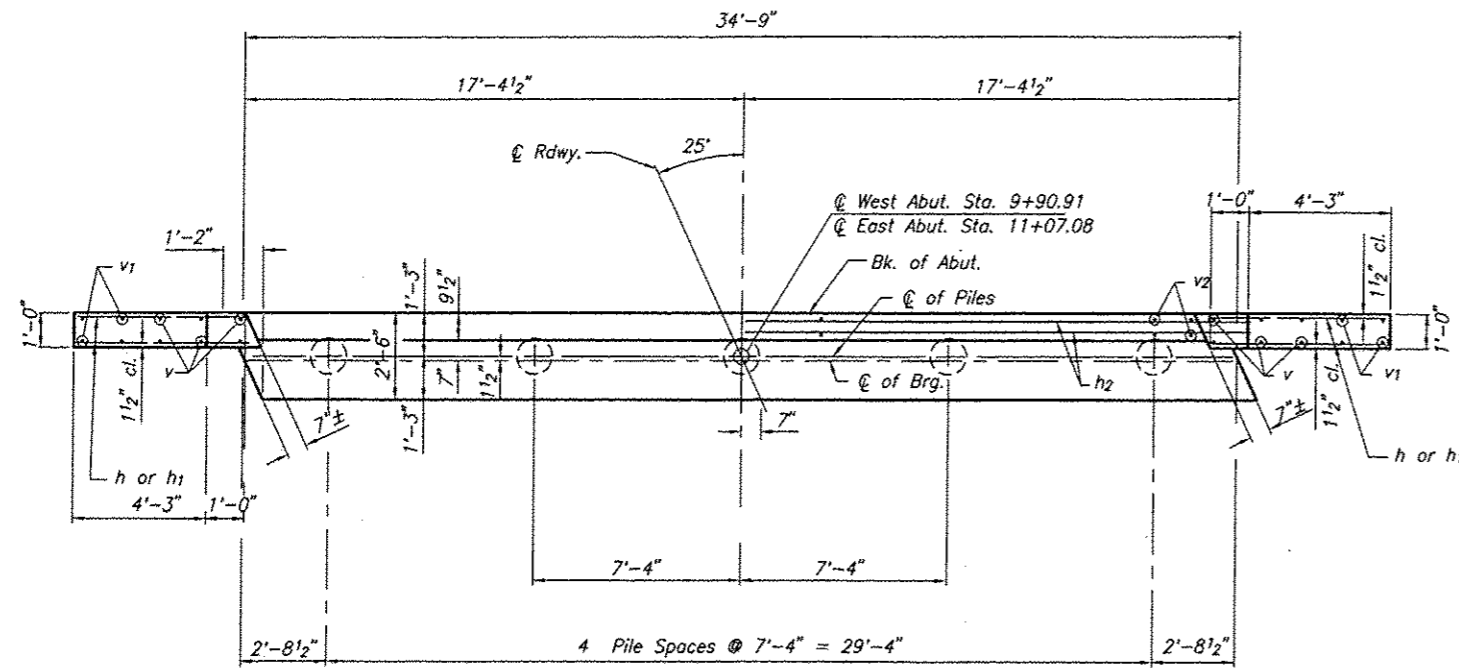
BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	3,510
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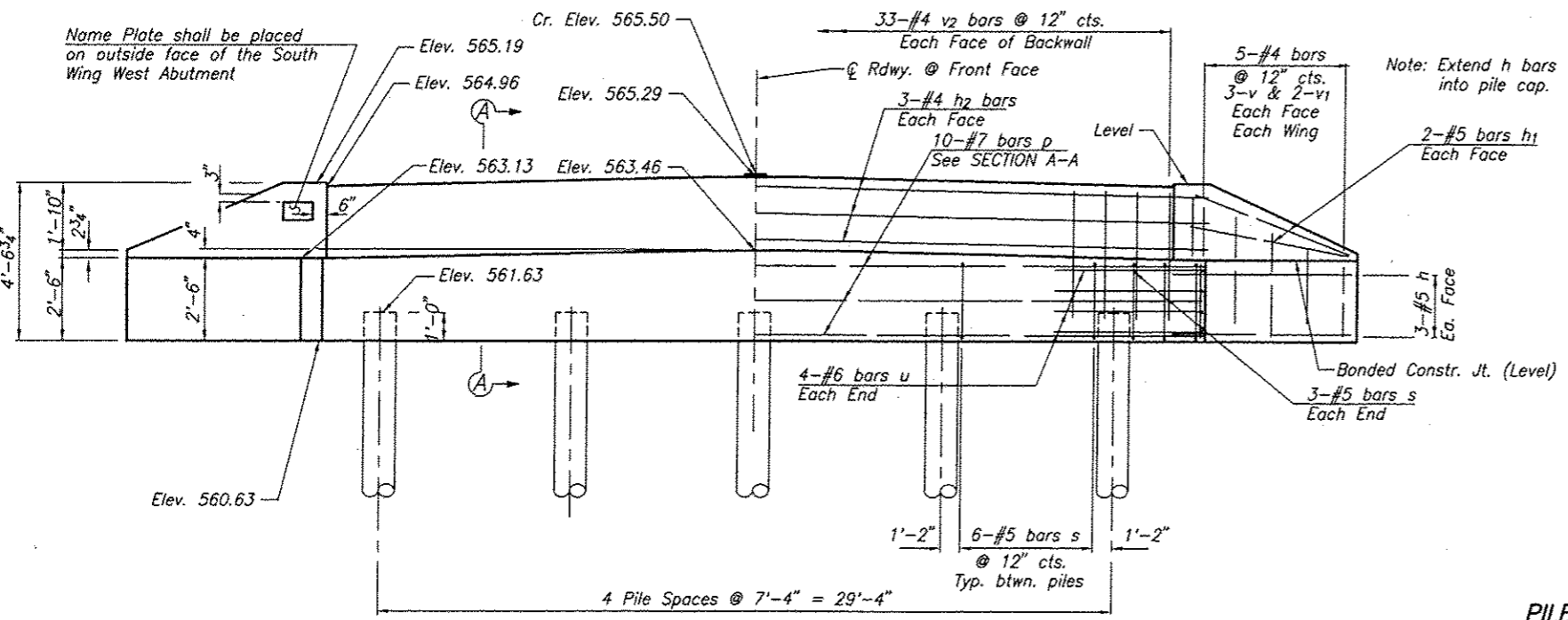
SHEET TITLE		07017	
SUPERSTRUCTURE DETAILS			
PROJECT	SECTION 07-13106-01-BR	DATE	7-10-15
GARDNER ROAD DISTRICT		DESIGNED BY	MRL
SANGAMON COUNTY		CHECKED BY	MCB
STATION 10+49		DRAWING NO.	7
<b>Combe-Bloxdorf P.C.</b> - CIVIL ENGINEERS - - STRUCTURAL ENGINEERS - - LAND SURVEYORS - Phone: 217/644-8477 Design Firm License No. 184-002703 755 South Grand Ave., Springfield, IL 62704		OF 13 SHTS	







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



BILL OF MATERIAL - 2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE
h	24	#5	5'-7"	—
h1	16	#5	4'-11"	—
h2	12	#4	35'-6"	—
p	20	#7	34'-5"	—
s	60	#5	9'-7"	□
u	16	#6	12'-4"	≡
v	24	#4	3'-8"	—
v1	16	#4	2'-8"	—
v2	132	#4	3'-8"	—
Concrete Structures		Cu. Yd.	23.2	
Reinforcement Bars		Pound	3,220	
Name Plates		Each	1	
Metal Shell Piles 12" x 0.25"		Foot	450	
Test Pile, Metal Shells		Each	1	
Concrete Encasement		Cu. Yd.	4.6	

PILE DATA

	W. Abut.	E. Abut.
Type: Metal Shell - 12"φ x 0.25" walls		
Nominal Required Bearing	195 Kips	195 Kips
Factored Resistance Available	97 Kips	97 Kips
Est. Length	50 ft.	50 ft.
Number Required	5*	5

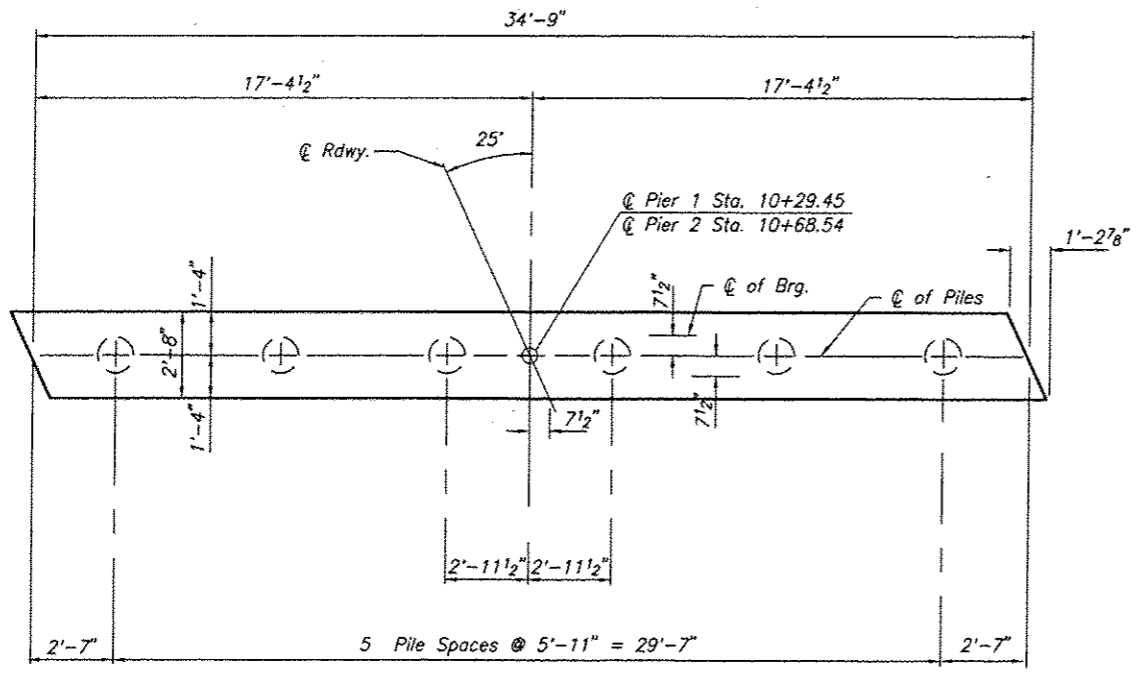
\*Includes one metal shell test pile to be driven in a permanent location at the West Abutment.

SHEET TITLE: ABUTMENTS

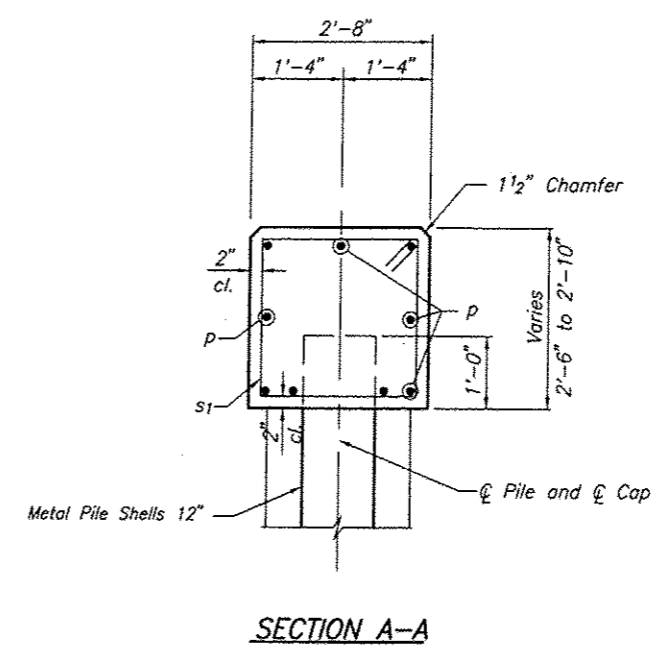
PROJECT: SECTION 07-13106-01-BR  
 GARDNER ROAD DISTRICT  
 SANGAMON COUNTY  
 STATION 10+49

PROJECT NO. 07017  
 SCALE: 7-10-15  
 DRAWN BY: MRL  
 CHECKED BY: MCB  
 DRAWING NO. 9

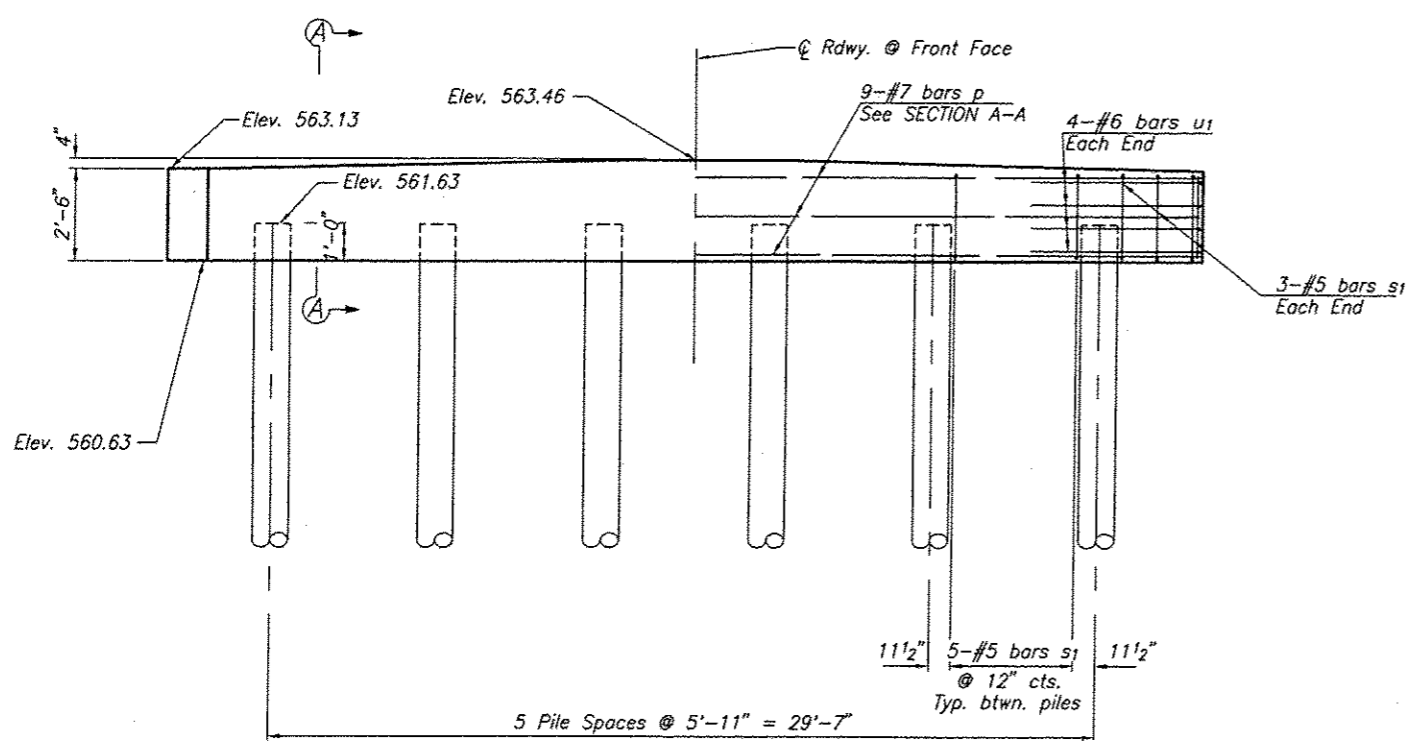
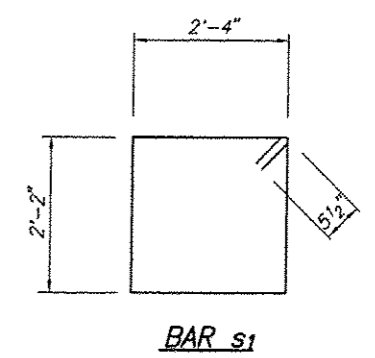
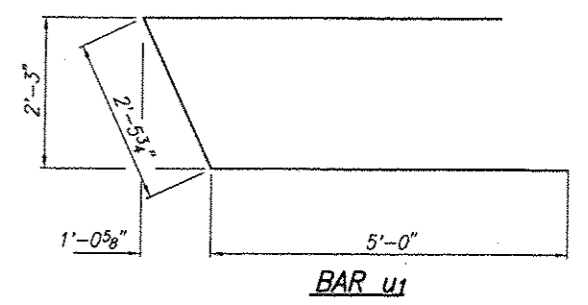
**Coombe-Bloxdorf P.C.**  
 -CIVIL ENGINEERS-  
 -STRUCTURAL ENGINEERS-  
 -LAND SURVEYORS-  
 Phone: 217/544-8477  
 Design Firm License No. 184-002703  
 755 South Grand Ave. W, Springfield, IL 62704



**PLAN**



**SECTION A-A**



**ELEVATION**

**BILL OF MATERIAL - 2 PIERS**

BAR	NO.	SIZE	LENGTH	SHAPE
p	18	#7	34'-5"	—
s1	62	#5	9'-11"	□
u1	16	#6	12'-6"	▭
Concrete Structures		Cu. Yd.	17.9	
Reinforcement Bars		Pound	2,210	
Metal Shell Piles 12" x 0.25"		Foot	770	
Test Pile, Metal Shells		Each	1	
Concrete Encasement		Cu. Yd.	28.4	

**PILE DATA**  
 Type: Metal Shell - 12"φ x 0.25" walls  
 Nominal Required Bearing 258 Kips  
 Factored Resistance Available 129 Kips  
 Est. Length 70 ft.  
 Number Required 12\*

\*Includes one metal shell test pile to be driven in a permanent location at Pier #2.

**PIERS**

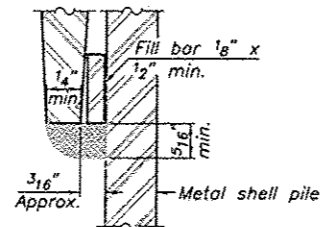
PROJECT	SECTION 07-13106-01-BR GARDNER ROAD DISTRICT SANGAMON COUNTY STATION 10+49	PROJECT NO.	07017
SCALE		DATE	7-10-15
DRAWN BY	MRL	CHECKED BY	MCB
<b>Coombe-Bloxdorf P.C.</b> - CIVIL ENGINEERS - - STRUCTURAL ENGINEERS - - LAND SURVEYORS - Phone: 217/544-8477 Design Firm License No. 184-002703 755 South Grand Ave. W. Springfield, IL 62704		10	OF 13 SHTS



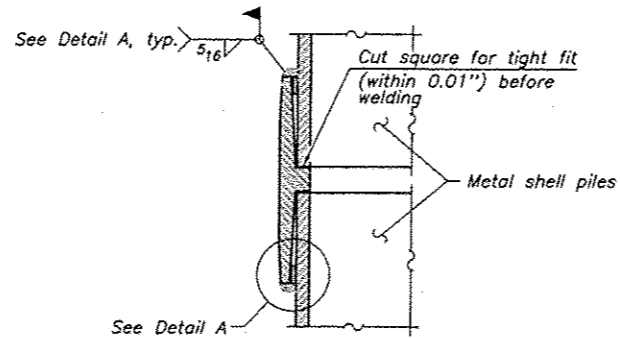
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 197	07-13106-01-BR	SANGAMON	13	11
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

**METAL SHELL PILE TABLE**

Designation	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. <sup>3</sup> /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

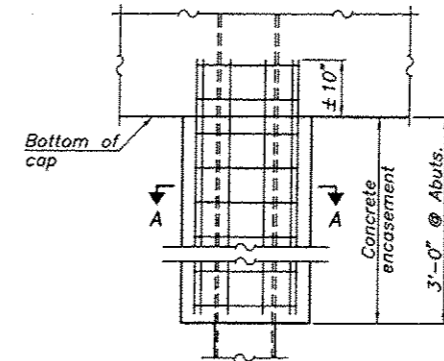


**DETAIL A**



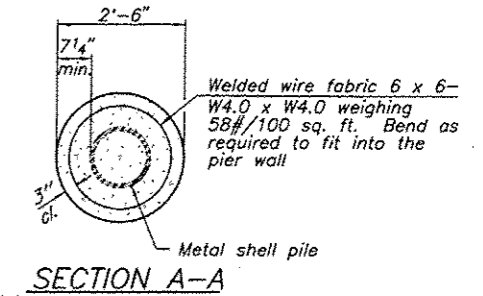
Notes:  
The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.  
Pile segments shall be driven to solid contact with splicer before welding.

**WELDED COMMERCIAL SPLICE**



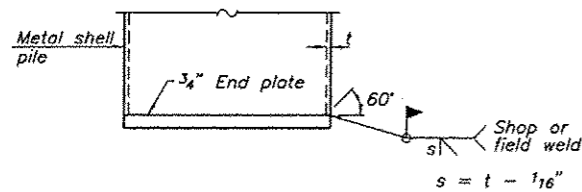
**ELEVATION**

**CONCRETE ENCASEMENT**

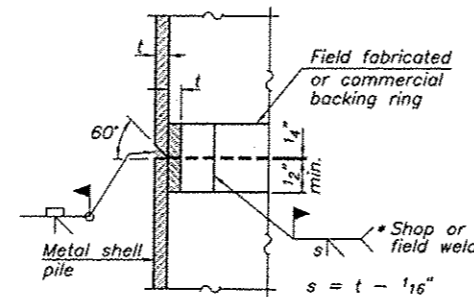


Notes:  
Forms for encasement may be omitted when soil conditions permit.

**SECTION A-A**

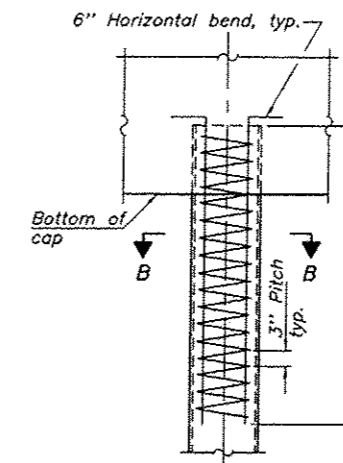


**END PLATE ATTACHMENT**



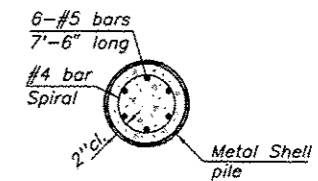
**COMPLETE PENETRATION WELD SPLICE**

\* 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.

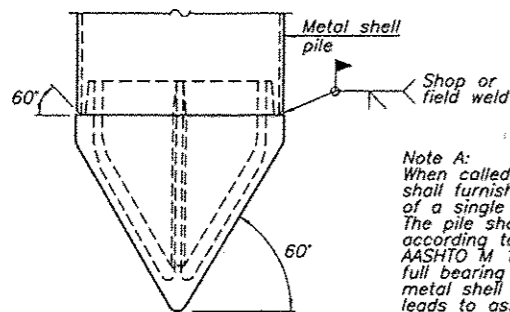


**ELEVATION**

**METAL SHELL REINFORCEMENT**



**SECTION B-B**



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.

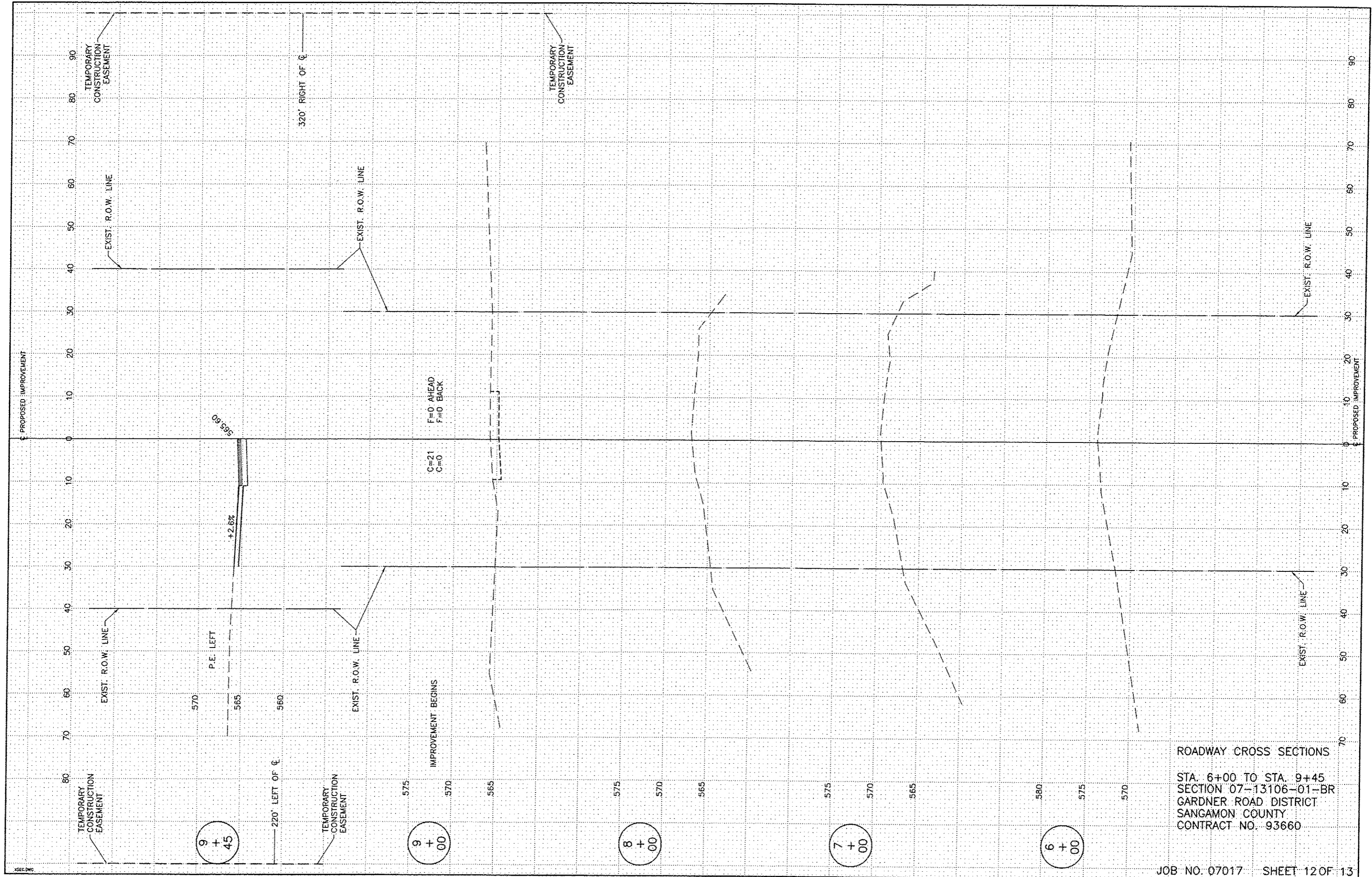
**METAL SHELL PILE SHOE ATTACHMENT**

(See Note A)

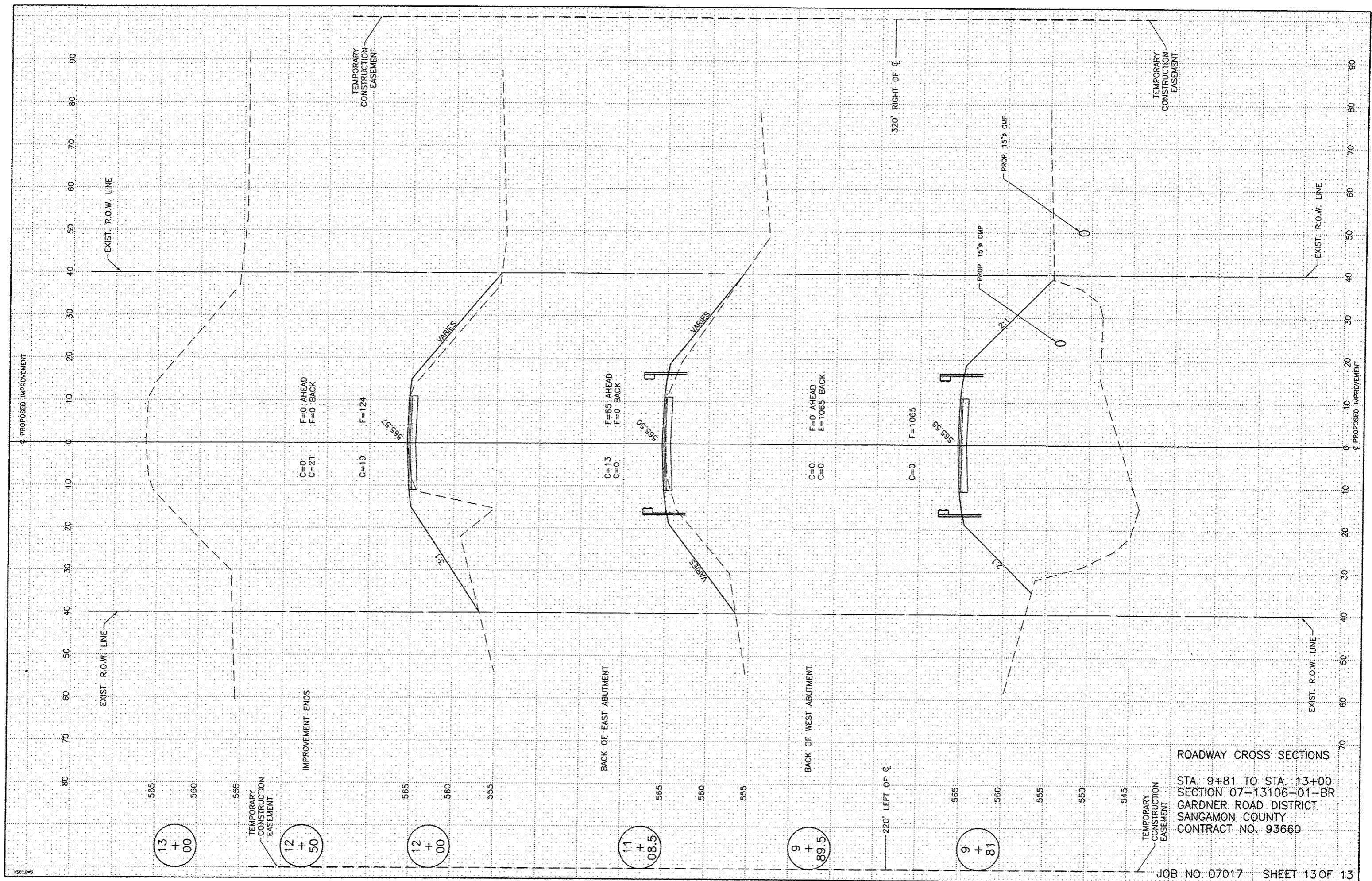
Note:  
The metal shell piles shall be according to ASTM A 252 Grade 3.

CONTRACT NO. 93660

SHEET TITLE		METAL SHELL PILE DETAILS	
PROJECT	SECTION 07-13106-01-BR GARDNER ROAD DISTRICT SANGAMON COUNTY STATION 10+49	PROJECT NO.	07017
DATE	7-10-15	DESIGNED BY	MRL
CHECKED BY	MCB	DRAWN NO.	11
<b>Coombe-Bloxdorf P.C.</b> - CIVIL ENGINEERS - - STRUCTURAL ENGINEERS - - LAND SURVEYORS - Phone: 217/544-8477 Design Firm License No. 184-002703 765 South Grand Ave. W. Springfield, IL 62704		OF 13 SHTS	



ROADWAY CROSS SECTIONS  
 STA. 6+00 TO STA. 9+45  
 SECTION 07-13106-01-BR  
 GARDNER ROAD DISTRICT  
 SANGAMON COUNTY  
 CONTRACT NO. 93660



ROADWAY CROSS SECTIONS

STA. 9+81 TO STA. 13+00  
 SECTION 07-13106-01-BR  
 GARDNER ROAD DISTRICT  
 SANGAMON COUNTY  
 CONTRACT NO. 93660