

RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHTS.	NO.
T.R. 256	06-1116-00-BR	MACON	14	1	1
FED. ROAD DIST. NO.	ILLINOIS	PROJECT: BROS-115(63)			

CONTRACT NO. 95530

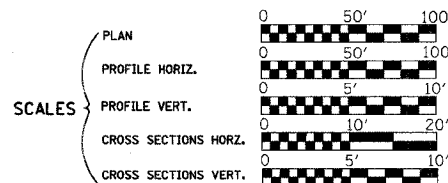
**INDEX OF SHEETS**

- 1 Cover Sheet
- 2 Summary of Quantities, General Notes, and Typical Sections
- 3 Plan and Profile
- 4 Horizontal Layout
- 5 Entrance Details
- 6-9 Station Cross Sections
- 10-14 Bridge Plans

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
**PLANS FOR PROPOSED  
LOCAL AGENCY IMPROVEMENT**

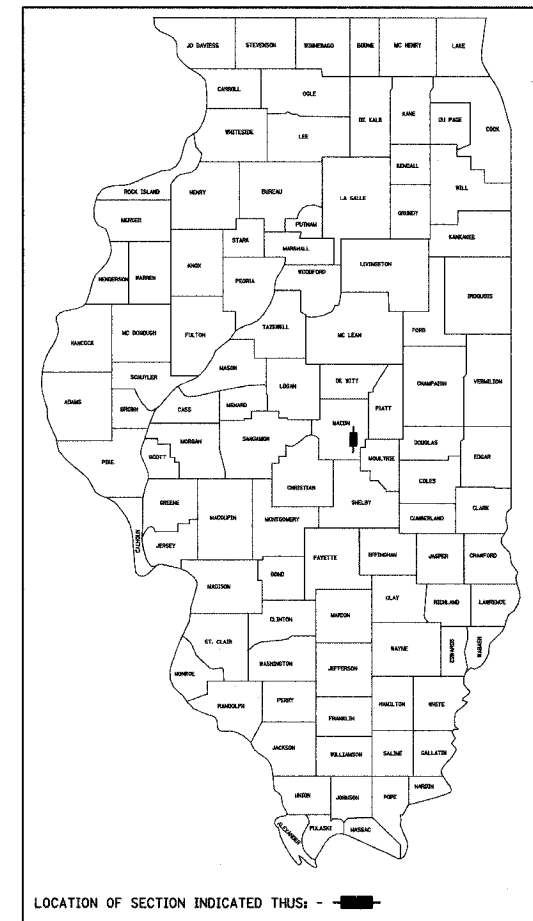
**LIST OF STANDARDS**

- Standard 000001-05 Standard symbols, abbreviations and patterns
- Standard 280001-04 Temporary erosion control systems
- Standard 515001-02 Name plate for bridges
- Standard 542306-01 Precast Reinforced Concrete Elliptical Flared End Section
- \*Standard 542311 Grating For Concrete Flared End Section
- Standard 630001-07 Steel Plate Beam Guardrail
- Standard 630301-04 Shoulder Widening For Type 1 (Special) Guardrail Terminals
- Standard 631011-04 Traffic Barrier Terminal, Type 2
- Standard 635006-02 Reflector and Terminal Marker Placement
- Standard 665001-01 Woven Wire Fence
- Standard 701011-01 Off-road moving operations, 2-l, 2-w, day only, for speeds > 45 mph
- Standard 701301-02 Lane closure, 2-l, 2-w, short time operations
- Standard 701901 Traffic control devices
- Standard BLR-21-7 Typical application of traffic control devices for Construction on Rural Local Highways
- Standard BLR-22-5 Typical application of traffic control devices 2-l, 2-w, rural, Road closed to Thru Traffic
- Standard BLR-27 Traffic Barrier Terminal, Type 5A
- \*Grating dimensions to be modified to fit "PRCF END S EL EQRS 60".
- Standard BLR-26 Steel Plate Beam Guardrail



**HIGHWAY BRIDGE PROGRAM  
T.R. 256 OVER BIG CREEK  
SECTION 06-1116-00-BR  
MACON COUNTY  
PROJECT BROS-115(63)**

C-97-021-08



ROADWAY CLASSIFICATION: LOCAL STREET (URBAN)  
2005 ADT = 550 (2026 ADT = 750)  
DESIGN SPEED: 30 MPH

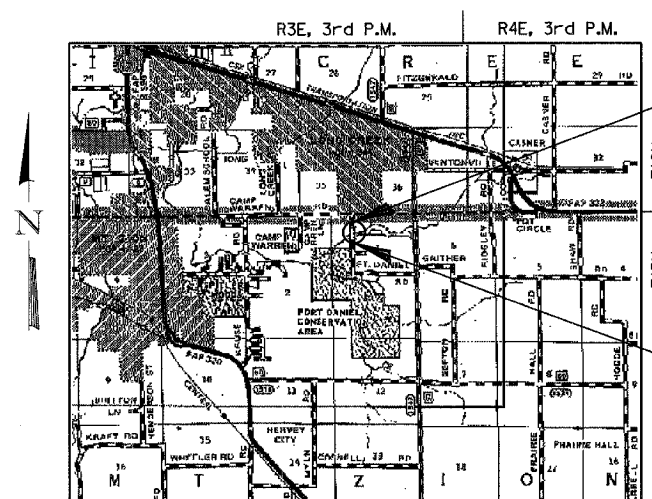
**JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS**

J.U.L.I.E. Telephone No. Toll Free 1-800-892-0123

CONTRACT NO. : 95530



345 EAST ASH AVENUE, SUITE B  
DECATUR, ILLINOIS 62526  
PH. 217-875-4800



IMPROVEMENT ENDS  
STA. 17+15.00

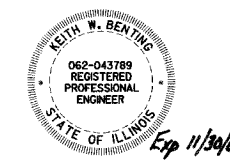
EXIST. STR. NO. 058-3168  
PROP. STR. NO. 058-3389

IMPROVEMENT BEGINS  
STA. 12+85.00

**LAYOUT**

Approximate Scale: miles

Total and Net Length of Improvement 430.00 Feet = 0.081 Miles



*Keith W. Bentley*  
Illinois Professional No. 43789

APPROVED NOVEMBER 5 2007  
*[Signature]*  
COUNTY ENGINEER

PASSED 11-9 2007  
*[Signature]*  
DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review  
11-9 2007  
*[Signature]*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

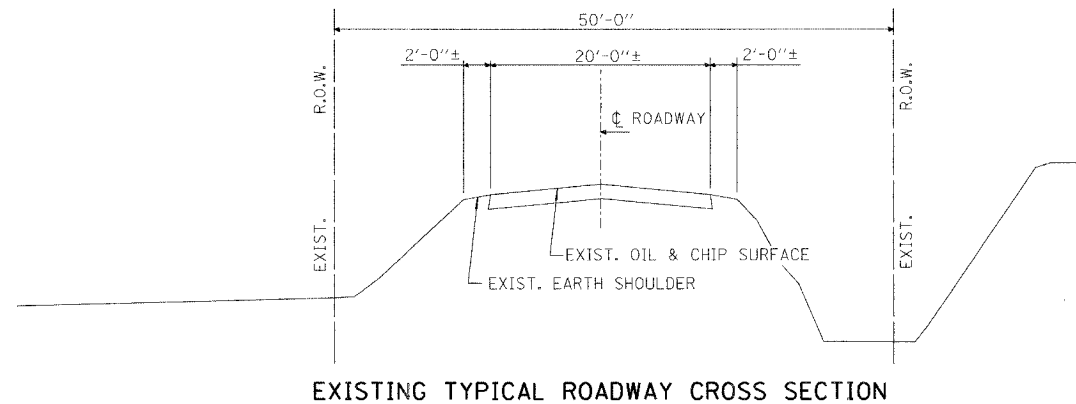
11/5/2007  
Date

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 256	06-III16-00-BR	MACON	14	2
FED. ROAD DIST. NO.	ILLINOIS PROJECT: BROS-115(63)	CONTRACT NO. 95530		

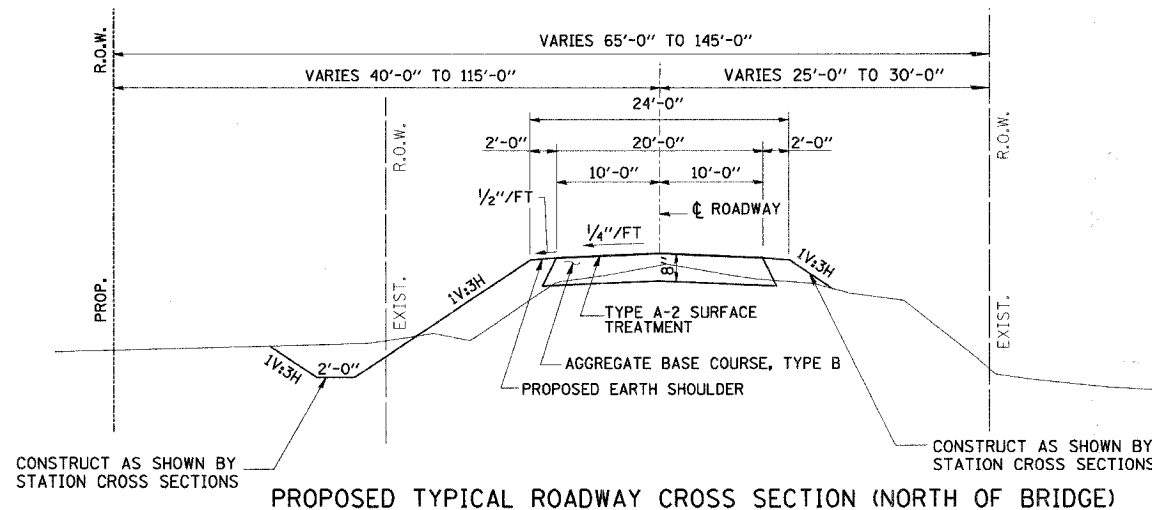
**SUMMARY OF QUANTITIES**

CODE NO.	ITEM	UNIT	QUANTITY
20100500	TREE REMOVAL, ACRES	ACRE	0.25
20200100	EARTH EXCAVATION	CU YD	421
20300100	CHANNEL EXCAVATION	CU YD	189
20400800	FURNISHED EXCAVATION	CU YD	173
20800150	TRENCH BACKFILL	CU YD	40.4
25000200	SEEDING, CLASS 2	ACRE	0.75
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	68
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	68
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	68
25100115	MULCH, METHOD 2	ACRE	0.75
28000300	TEMPORARY DITCH CHECKS	EACH	2
28000400	PERIMETER EROSION BARRIER	FOOT	148
28000500	INLET AND PIPE PROTECTION	EACH	3
28100107	STONE RIPRAP, CLASS A4	SQ YD	476
28200200	FILTER FABRIC	SQ YD	476
35101400	AGGREGATE BASE COURSE, TYPE B	TON	498
40300100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	418
40300300	BITUMINOUS MATERIALS (COVER AND SEAL COATS)	GALLON	835
40300500	COVER COAT AGGREGATE	TON	10
40300600	SEAL COAT AGGREGATE	TON	10
40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	19
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	18.6
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1484
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2320
50900205	STEEL RAILING, TYPE S1	FOOT	124
51201005	FURNISHING METAL SHELL PILES 12"	FOOT	206
51202305	DRIVING PILES	FOOT	206
51203200	TEST PILE METAL SHELLS	EACH	1
51500100	NAME PLATES	EACH	1
54207195	PIPE CULVERTS, TYPE 1, REINFORCED CONCRETE - ELLIPTICAL, EQUIVALENT ROUND-SIZE 60"	FOOT	100
54214755	PRECAST REINFORCED CONCRETE FLARED END SECTIONS - ELLIPTICAL, EQUIVALENT ROUND-SIZE 60"	EACH	2
54248200	GRATING FOR CONCRETE FLARED END SECTION EQUIVALENT ROUND-SIZE 60"	EACH	1
542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	49
542D0229	PIPE CULVERTS, CLASS D, TYPE 1 24"	FOOT	51
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	165
58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	433
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	16.2
Δ 63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	1
Δ 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	4
Δ 63100167	TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT)	EACH	3
Δ 63300725	STEEL PLATE BEAM GUARDRAIL (SHORT RADIUS)	FOOT	25
66500105	WOVEN WIRE FENCE, 4'	FOOT	230
67100100	MOBILIZATION	L SUM	1
Δ 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
• XX000610	RELOCATE EXISTING MAILBOX	EACH	2
• XX007147	EXISTING GATE TO BE RELOCATED	EACH	1
• XX007150	RELOCATE EXISTING SIGN, TYPE 1	EACH	1

• SEE SPECIAL PROVISIONS  
Δ SPECIALTY ITEMS

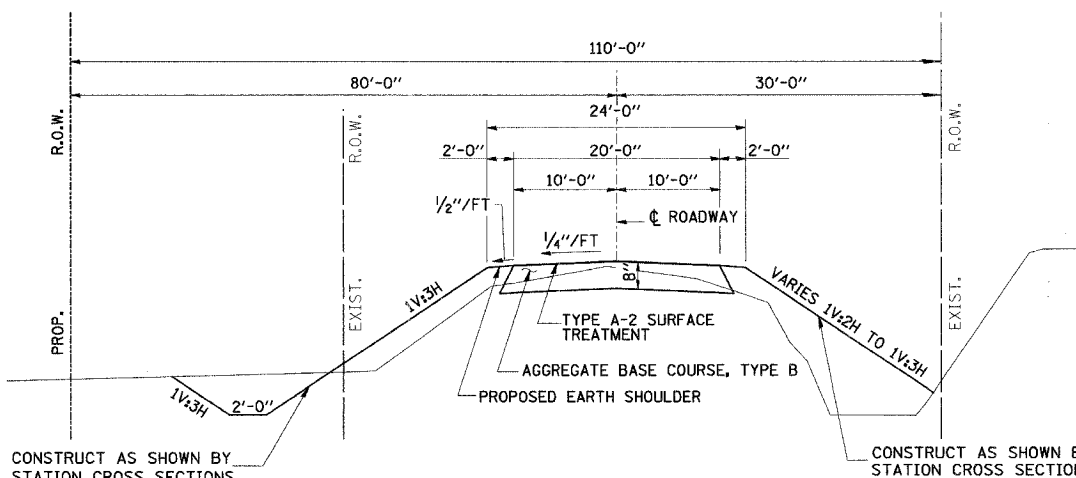


**EXISTING TYPICAL ROADWAY CROSS SECTION**



**PROPOSED TYPICAL ROADWAY CROSS SECTION (NORTH OF BRIDGE)**

STA. 15+33.65 TO STA. 16+65.00  
TRANSITION STA. 16+65.00 TO STA. 17+15.00  
AGGREGATE BASE COURSE, TYPE B = 187 TONS



**PROPOSED TYPICAL ROADWAY CROSS SECTION (SOUTH OF BRIDGE)**

STA. 13+35.00 TO STA. 14+70.15  
TRANSITION STA. 12+85.00 TO STA. 13+35.00  
AGGREGATE BASE COURSE, TYPE B = 194 TONS

**GENERAL NOTES**

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

CLASS OF SEEDING	BEGINNING DATES	TERMINATION
1, 1A, 1B, 2, 2A, 3 (IN SPRING)	MARCH 1	JUNE 1
1, 1A, 1B, 2, 2A, 3 (IN FALL)	AUGUST 1	NOVEMBER 15

LAYOUT OF EROSION CONTROL ITEMS MAY BE VARIED IN THE FIELD TO SUIT GROUND CONDITIONS AS DIRECTED BY THE ENGINEER.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITY FACILITIES. HE SHALL ALSO OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULES OF THE UTILITY COMPANIES FOR THEIR MARKING OF THE EXACT LOCATION.

**APPLICATION RATES**

MATERIAL	AMOUNT	UNIT
GRANULAR MATERIALS	2.05	TONS/CU. YD.
NITROGEN FERTILIZER NUTRIENT	90	LBS./ACRE
PHOSPHORUS FERTILIZER NUTRIENT	90	LBS./ACRE
POTASSIUM FERTILIZER NUTRIENT	90	LBS./ACRE
MULCH METHOD 2	2	TONS/ACRE
BITUMINOUS MATERIALS (PRIME COAT)	0.5	GAL/SQ. YD.
BITUMINOUS MATERIALS (COVER & SEAL COATS)	0.5	GAL/SQ. YD.
COVER COAT AGGREGATE	25	LBS./SQ. YD.
SEAL COAT AGGREGATE	25	LBS./SQ. YD.
BITUMINOUS SURFACE COURSE	112	LBS./SQ. YD.

MATERIAL REQUIRED FOR FURNISHED EXCAVATION SHALL BE DELIVERED FROM AN OFF-SITE LOCATION.

**ROADWAY QUANTITY SCHEDULE**

LOCATION	AGG BASE CSE B (TON)	BIT MATLS PR CT (GAL)	BIT MATLS C&S CT (GAL)	COVER COAT AGG (TON)	SEAL COAT AGG (TON)	HMA SC MIX "C" N50 (TON)
M.L. STA. 12+85.00 TO STA. 14+70.15	194	213	425	5	5	
M.L. STA. 15+33.65 TO STA. 17+15.00	187	205	410	5	5	
F.E. LT STA. 13+50.00	57					
P.E. LT STA. 16+06.00	50					
P.E. RT STA. 16+82.63	10					
OVERLAY AT STRUCTURE						19
<b>TOTALS</b>	<b>498</b>	<b>418</b>	<b>835</b>	<b>10</b>	<b>10</b>	<b>19</b>

**GENERAL DATA**

Date	Designed MJP	T.R. 256 OVER BIG CREEK SECTION 06-III16-00-BR MACON COUNTY STA. 15+01.90 PROP. STR. NO. 058-3389
Revisions	Drawn BKN	
	Checked KWB	
	Approved KWB	
Prepared by:	URS	
345 East Ash Avenue Decatur, IL 62526		URS Job No. 36431783

**BENCHMARK:**

"M" IN MUELLER ON FIRE HYDRANT  
STA. 17+86.7, 19.2' LT.

**EXISTING STRUCTURE NO. 058-3168**

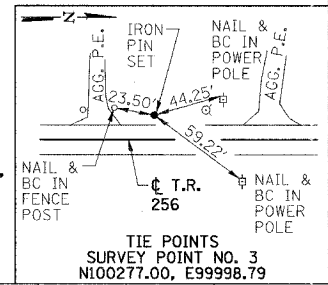
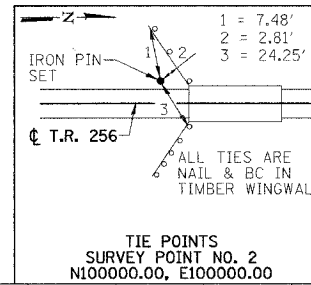
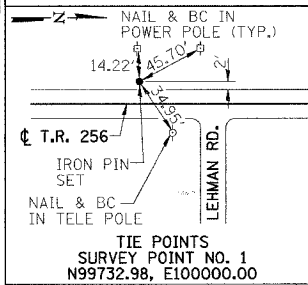
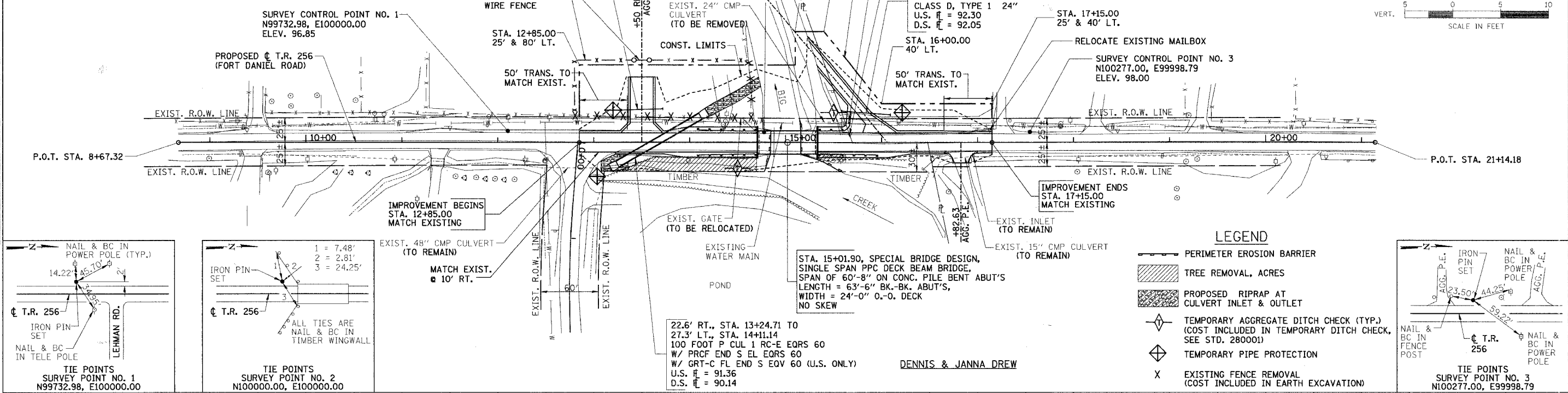
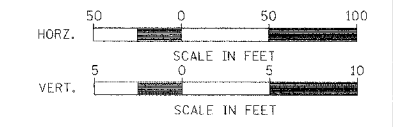
SINGLE SPAN CONCRETE DECK ON WF BEAM SUPERSTRUCTURE ON CLOSED TIMBER ABUTMENTS WITH TIMBER WINGWALLS. SUPERSTRUCTURE ALSO SUPPORTED WITH A STEEL BEAM PIER ADJACENT TO SOUTH ABUTMENT SUPPORTED BY STEEL PIPE PILES.  
32'-0"± BK.-BK. ABUTMENTS  
25'-0"± O.-O. DECK

**SURVEY CONTROL POINT NO. 2**  
N100000.00, E100000.00  
ELEV. 97.41

**GERALD L. CHAMBERS**

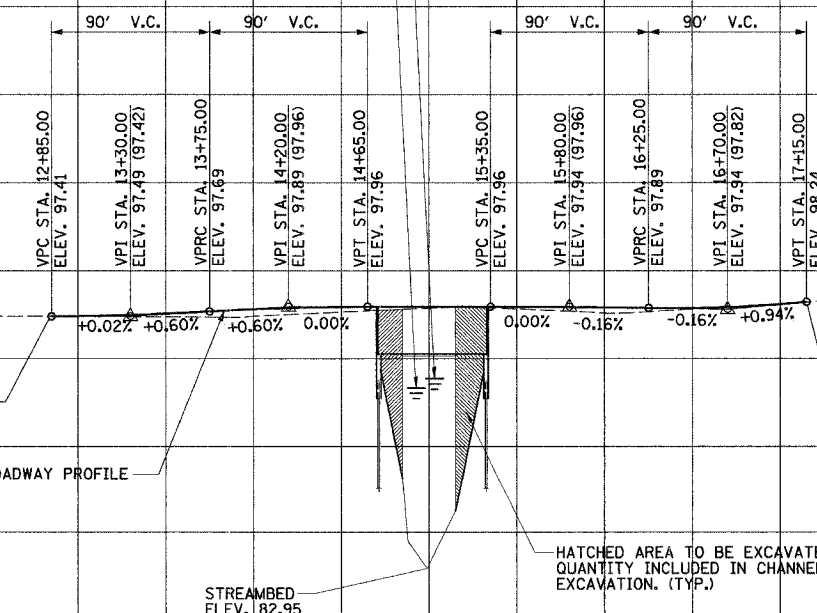
**MARY L. SPHAR**

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 256	06-11116-00-BR	MACON	14	3
STA. 8+67.32 TO STA. 21+14.18				
FED. ROAD DIST. NO.		ILLINOIS	PROJECT: BROS-11563	
CONTRACT NO. 95530				



- LEGEND**
- PERIMETER EROSION BARRIER
  - TREE REMOVAL, ACRES
  - PROPOSED RIPRAP AT CULVERT INLET & OUTLET
  - TEMPORARY AGGREGATE DITCH CHECK (TYP.) (COST INCLUDED IN TEMPORARY DITCH CHECK, SEE STD. 280001)
  - TEMPORARY PIPE PROTECTION
  - EXISTING FENCE REMOVAL (COST INCLUDED IN EARTH EXCAVATION)

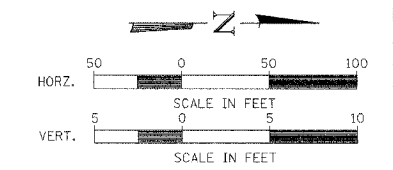
STATION	DESCRIPTION	QUANTITY	REMARKS
120	EARTHWORK SUMMARY EARTH EXCAVATION = 421 CU. YD. CHANNEL EXCAVATION = 189 CU. YD. FURNISHED EXCAVATION = 173 CU. YD.		
115	FOR INFORMATION ONLY, NOT A PAY ITEM MATERIAL REQUIRED FOR EMBANKMENT = 630 CU. YD. ESTIMATED EXCAVATED MATERIAL THAT WILL NOT BE SUITABLE FOR FILL = 0 CU. YD. FURNISHED EXCAVATION REQUIRED = 630 - (421+173) (0.75 SHRINKAGE) = 173 CU. YD.		
110	RELOCATE EXISTING MAILBOX STA. 15+67, 10' LT. = 1 EA. STA. 17+13, 15' LT. = 1 EA. TOTAL = 2 EA.		
105	TRAFFIC BARRIER TERMINAL, TYPE 5A S.E. QUADRANT = 1 EA. S.W. QUADRANT = 1 EA. N.E. QUADRANT = 1 EA. N.W. QUADRANT = 1 EA. TOTAL = 4 EA.		
100	TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT) S.E. QUADRANT = 1 EA. S.W. QUADRANT = 1 EA. N.E. QUADRANT = 1 EA. TOTAL = 3 EA.		
95	TRAFFIC BARRIER TERMINAL, TYPE 2 N.W. QUADRANT = 1 EA. TOTAL = 1 EA.		
90	STEEL PLATE BEAM GUARD RAIL (SHORT RADIUS) N.W. QUADRANT = 25 FT. TOTAL = 25 FT.		
80	BRIDGE ABUT. SLOPES = 372 SQ YD P CUL 1 RC-E EQRS 60 (U.S.) = 32 SQ YD P CUL 1 RC-E EQRS 60 (D.S.) = 72 SQ YD TOTAL = 476 SQ YD		



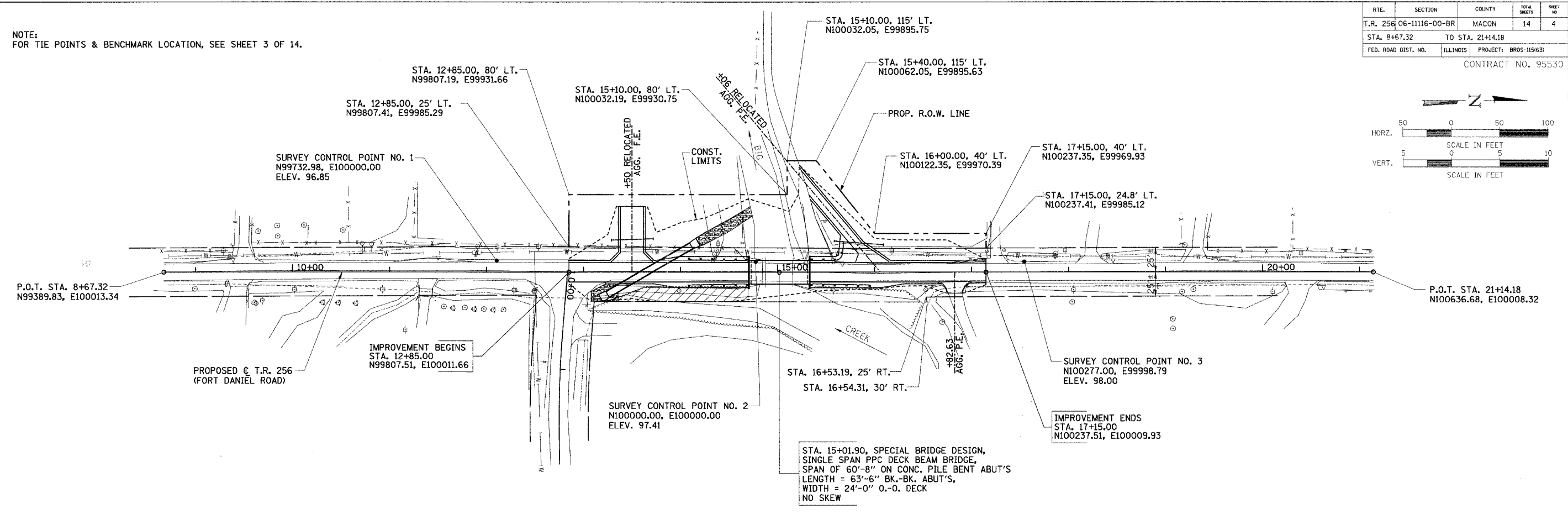
DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
CHECKED: \_\_\_\_\_  
DATE: \_\_\_\_\_

DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
CHECKED: \_\_\_\_\_  
DATE: \_\_\_\_\_

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 256	06-11116-00-BR	MACON	14	4
STA. 8+67.32		TO STA. 21+14.18		
FED. ROAD DIST. NO.	ILLINOIS	PROJECT:	BROS-151631	
CONTRACT NO. 95530				



NOTE:  
FOR TIE POINTS & BENCHMARK LOCATION, SEE SHEET 3 OF 14.



SHOULDER WIDENING FOR GUARDRAIL TERMINALS

- |                                |                          |
|--------------------------------|--------------------------|
| ① STA. 13+73.7, 12' RT. & LT.  | ④ STA. 15+33.65, 16' RT. |
| ② STA. 13+97.7, 16' RT. & LT.  | ⑤ STA. 16+06.0, 16' RT.  |
| ③ STA. 14+70.15, 16' RT. & LT. | ⑥ STA. 16+30.0, 12' RT.  |

PROPOSED STRUCTURE LAYOUT

- |   |  |
|---|--|
| <u>SOUTH ABUTMENT</u>   | <u>NORTH ABUTMENT</u>  |
| BK. OF S. ABUT. STA. 14+70.15<br>N99992.66, E100010.91        | BK. OF N. ABUT. STA. 15+33.65<br>N100056.16, E100010.66        |
| ☐ S. ABUT. STA. 14+71.40<br>N99993.91, E100010.91             | ☐ N. ABUT. STA. 15+32.40<br>N100054.91, E100010.66             |
| FRONT FACE OF S. ABUT. STA. 14+72.65<br>N99995.16, E100010.90 | FRONT FACE OF N. ABUT. STA. 15+31.15<br>N100053.66, E100010.67 |

STA. 15+01.90, SPECIAL BRIDGE DESIGN,  
SINGLE SPAN PPC DECK BEAM BRIDGE,  
SPAN OF 60'-8" ON CONC. PILE BENT ABUT'S  
LENGTH = 63'-6" BK.-BK. ABUT'S,  
WIDTH = 24'-0" O.-O. DECK  
NO SKEW

PLAN	DATE
BY	
DESIGNED	
CHECKED	
IN CHARGE	
DATE	

PROFILE	DATE
BY	
DESIGNED	
CHECKED	
IN CHARGE	
DATE	

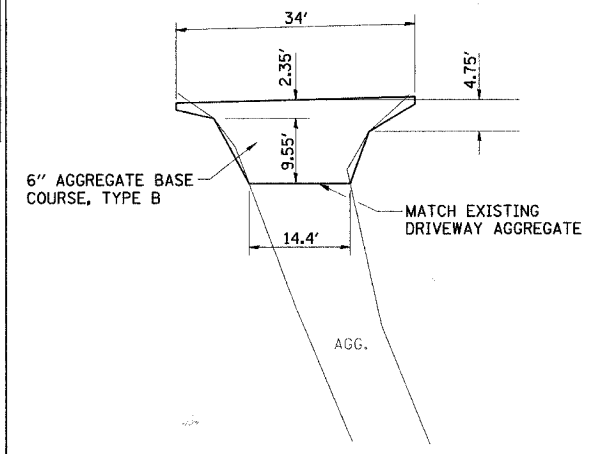
HORIZONTAL LAYOUT

RT. E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 256	06-11116-00-BR	MACON	14	5
STA. 8+67.32		TO STA. 21+14.18		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT: BR05-115163	

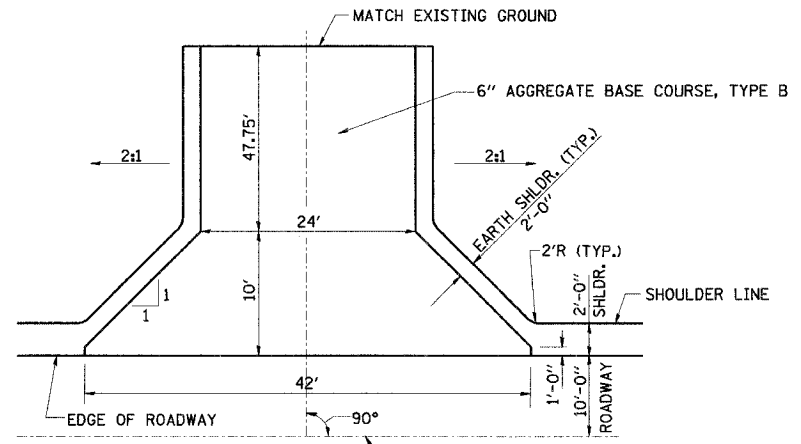
CONTRACT NO. 95530

DATE	BY	REVISION

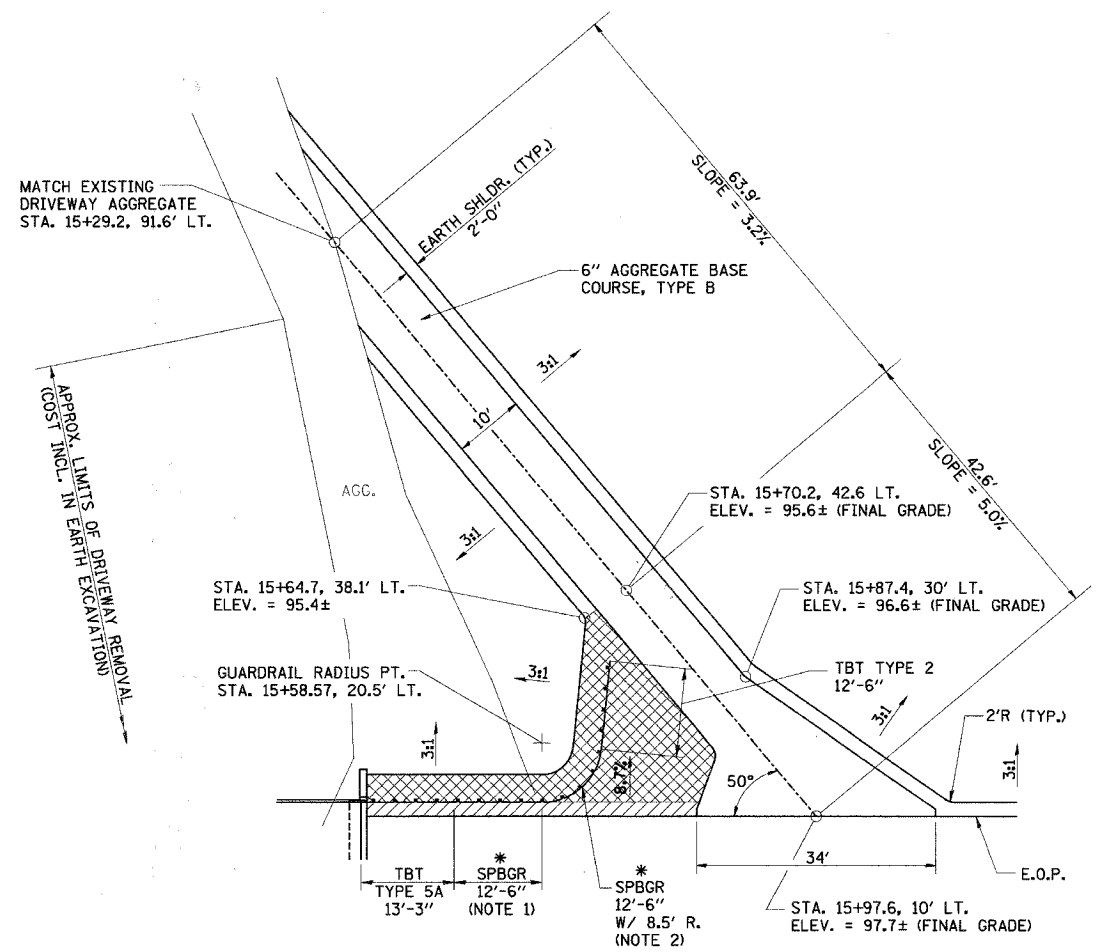
DATE	BY	REVISION



**PRIVATE ENTRANCE DETAIL**  
**STA. 16+82.83**  
 AGGREGATE BASE COURSE, TYPE B  
 TOTAL = 10 TONS



**FIELD ENTRANCE DETAIL**  
**STA. 13+50.00**  
 AGGREGATE BASE COURSE, TYPE B  
 TOTAL = 57 TONS



2' SHLDR. SLOPED AT 1/2" / FT.  
 SLOPED AT 8.7%

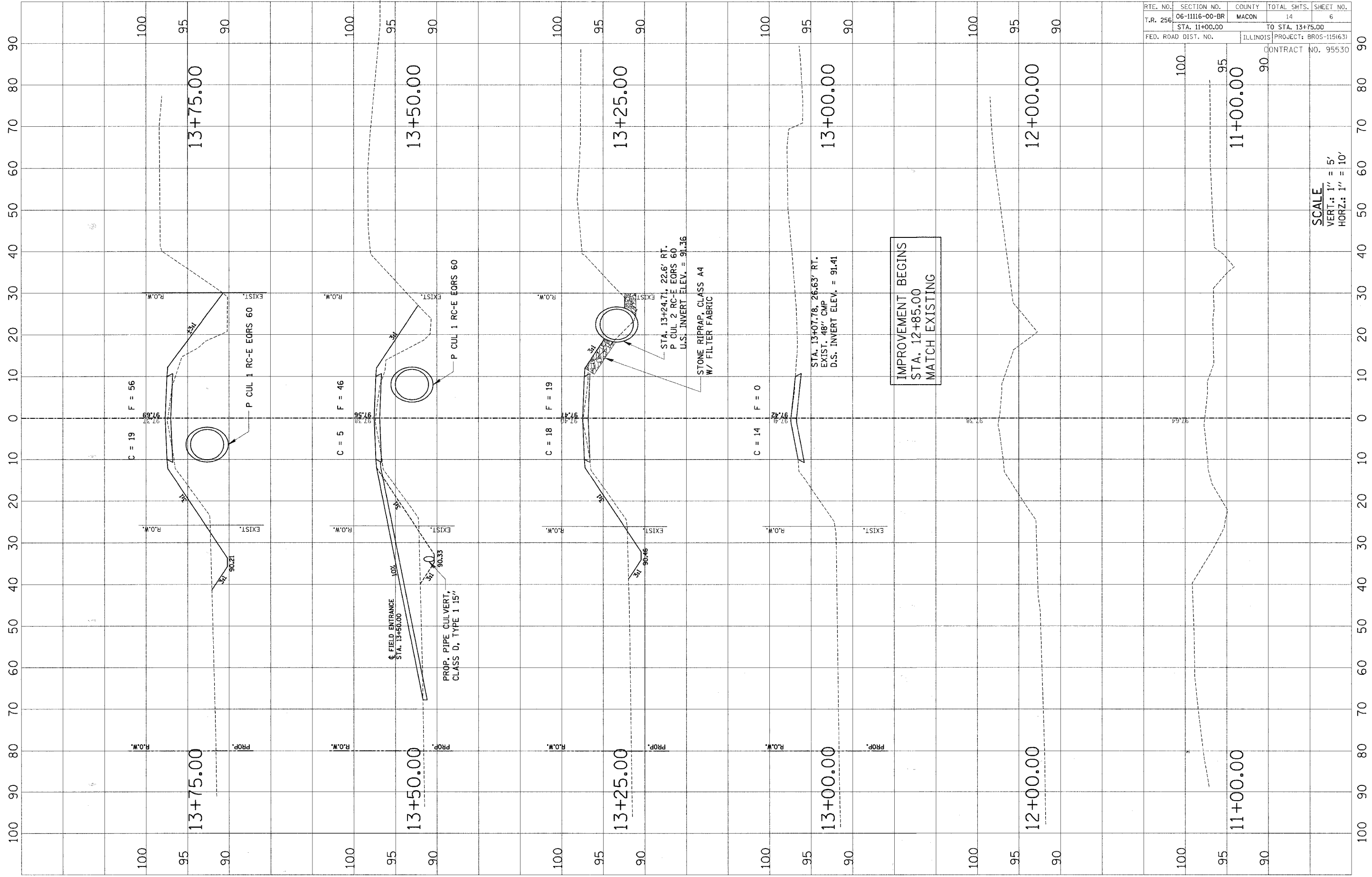
\* PAY LIMITS OF STEEL PLATE BEAM  
 GUARDRAIL, SHORT RADIUS = 25'-0"

**PRIVATE ENTRANCE DETAIL**  
**STA. 16+06.00**  
 AGGREGATE BASE COURSE, TYPE B  
 TOTAL = 50 TONS

- NOTES:**
- CONSTRUCT ACCORDING TO STANDARD 631011-04 FOR TRAFFIC BARRIER TERMINAL TYPE 2, EXCEPT DELETE END SECTION AND SPLICE INTO RADIUS GUARDRAIL.
  - FOR THE 8'-6" RADIUS, THE RAIL IS NOT BOLTED TO THE POST LOCATED AT THE MIDPOINT OF THE CURVE.

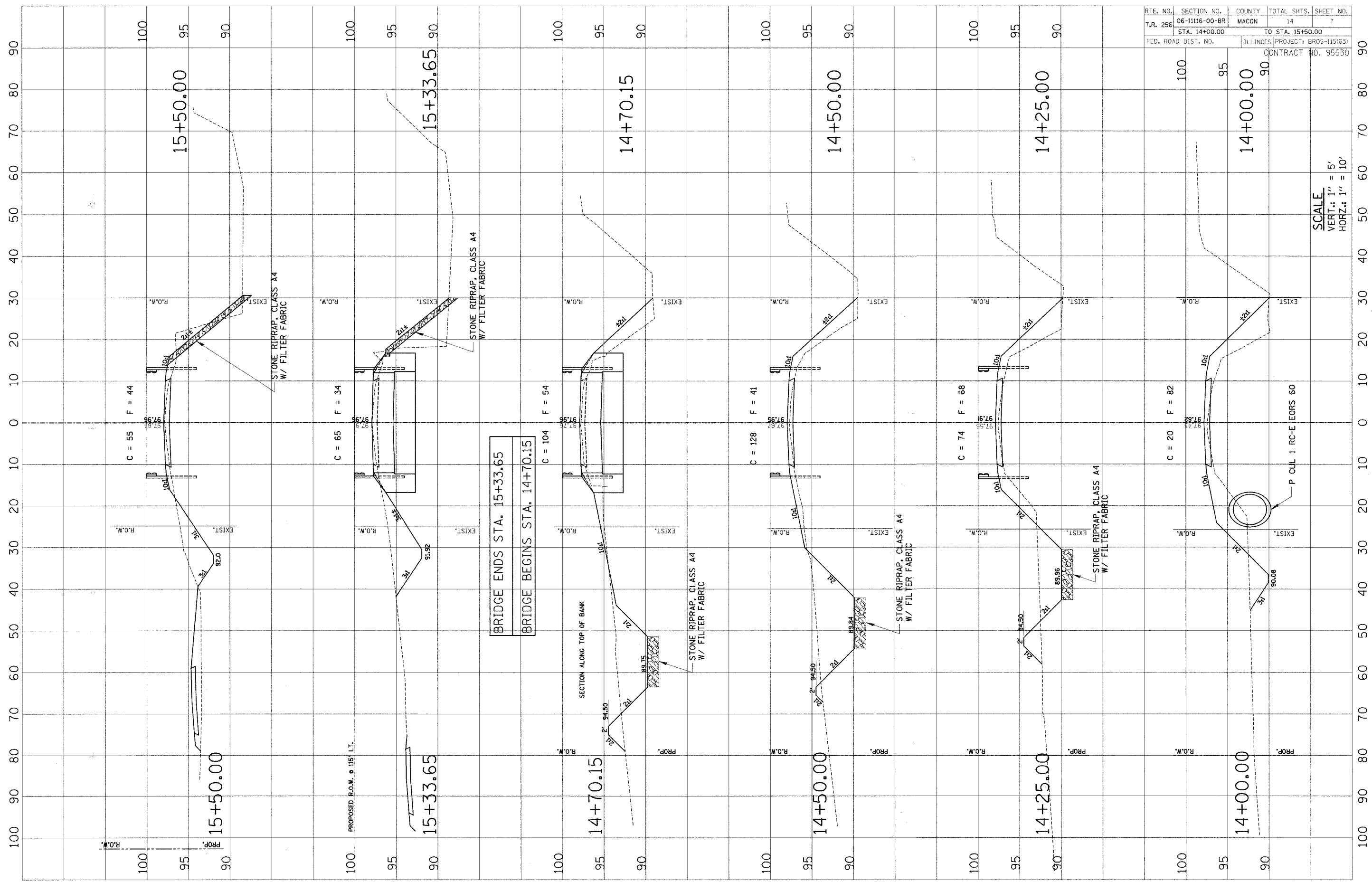
**ENTRANCE DETAILS**

RTE. NO.	SECTION NO.	COUNTY	TOTAL SHTS.	SHEET NO.
T.R. 256	06-11116-00-BR	MACON	14	6
STA. 11+00.00		TO STA. 13+75.00		
FED. ROAD DIST. NO.	ILLINOIS		PROJECT: BR05-115(63)	
CONTRACT NO. 95530				



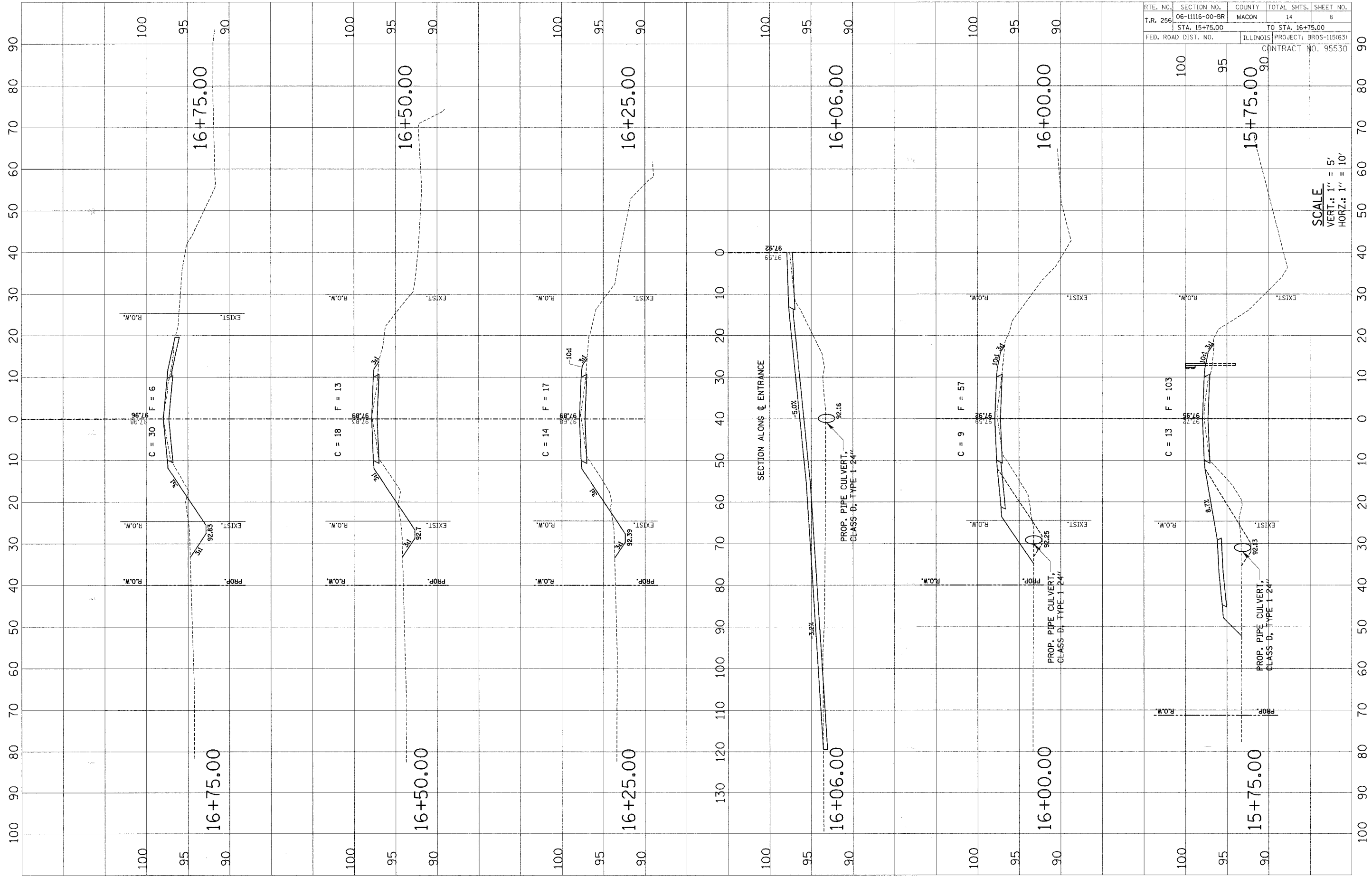
SCALE  
 VERT.: 1" = 5'  
 HORZ.: 1" = 10'

RTE. NO.	SECTION NO.	COUNTY	TOTAL SHTS.	SHEET NO.
T.R. 256	06-11116-00-BR	MACON	14	7
STA. 14+00.00		TO STA. 15+50.00		
FED. ROAD DIST. NO.	ILLINOIS PROJECT: BR05-115(63)		CONTRACT NO. 95530	



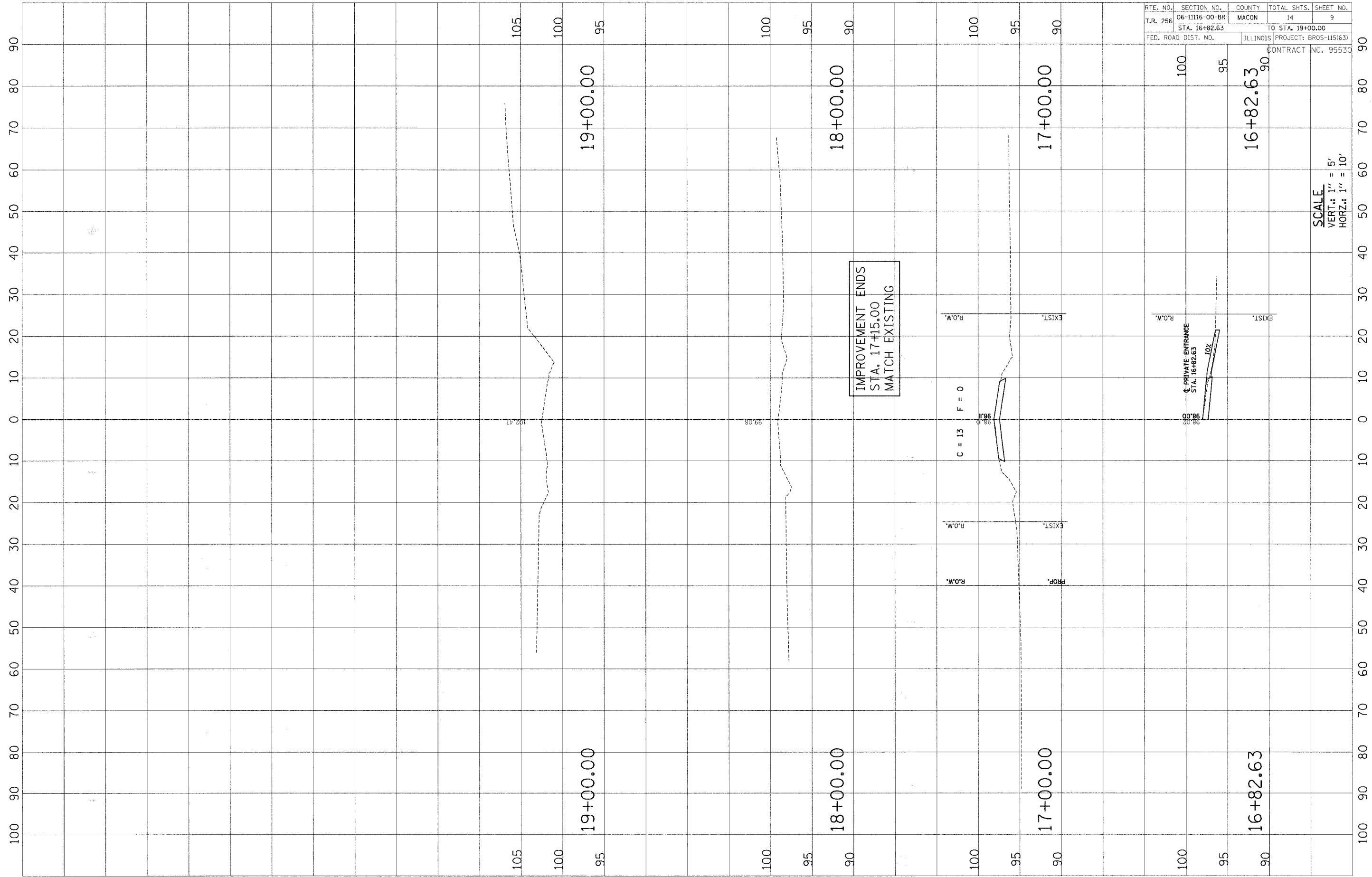
SCALE  
 VERT.: 1" = 5'  
 HORIZ.: 1" = 10'

RTE. NO.	SECTION NO.	COUNTY	TOTAL SHTS.	SHEET NO.
T.R. 256	06-11116-00-BR	MACON	14	8
STA. 15+75.00		TO STA. 16+75.00		
FED. ROAD DIST. NO.	ILLINOIS		PROJECT: BR05-115(63)	
CONTRACT NO. 95530				



SCALE  
 VERT.: 1" = 5'  
 HORZ.: 1" = 10'





RTE. NO.	SECTION NO.	COUNTY	TOTAL SHTS.	SHEET NO.
T.R. 256	06-11116-00-BR	MACON	14	9
STA. 16+82.63		TO STA. 19+00.00		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT: BR05-115463	
		CONTRACT NO. 95530		

IMPROVEMENT ENDS  
STA. 17+15.00  
MATCH EXISTING

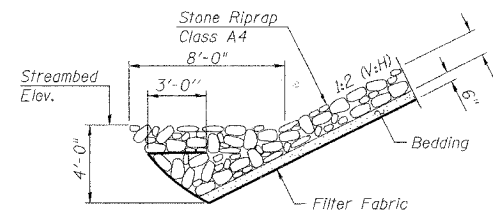
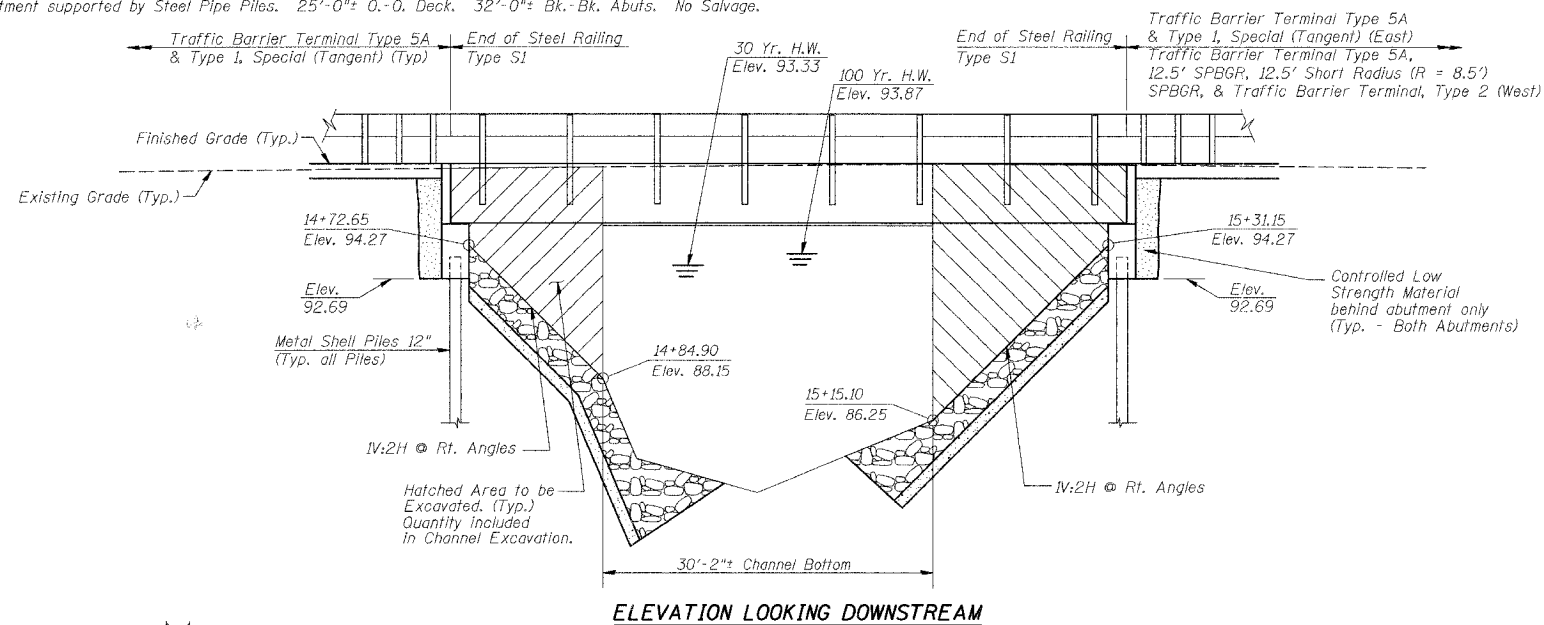
SCALE  
VERT.: 1" = 5'  
HORZ.: 1" = 10'

**BENCHMARK:**

1/4" In Mueller on Fire Hydrant Sta. 17+86.78, 19.2' Lt.  
Elevation = 100.00

**EXISTING STRUCTURE (SN 058-3168):**

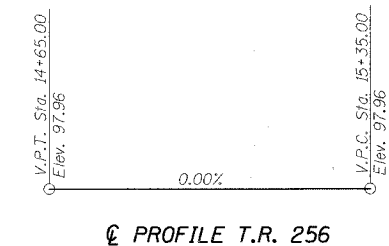
Single Span Concrete Deck on WF Beam Superstructure on Closed Timber Abutments with Timber Wingwalls. Superstructure also supported with a Steel Beam Pier adjacent to South Abutment supported by Steel Pipe Piles. 25'-0"± O.-O. Deck. 32'-0"± Bk.-Bk. Abutms. No Salvage.



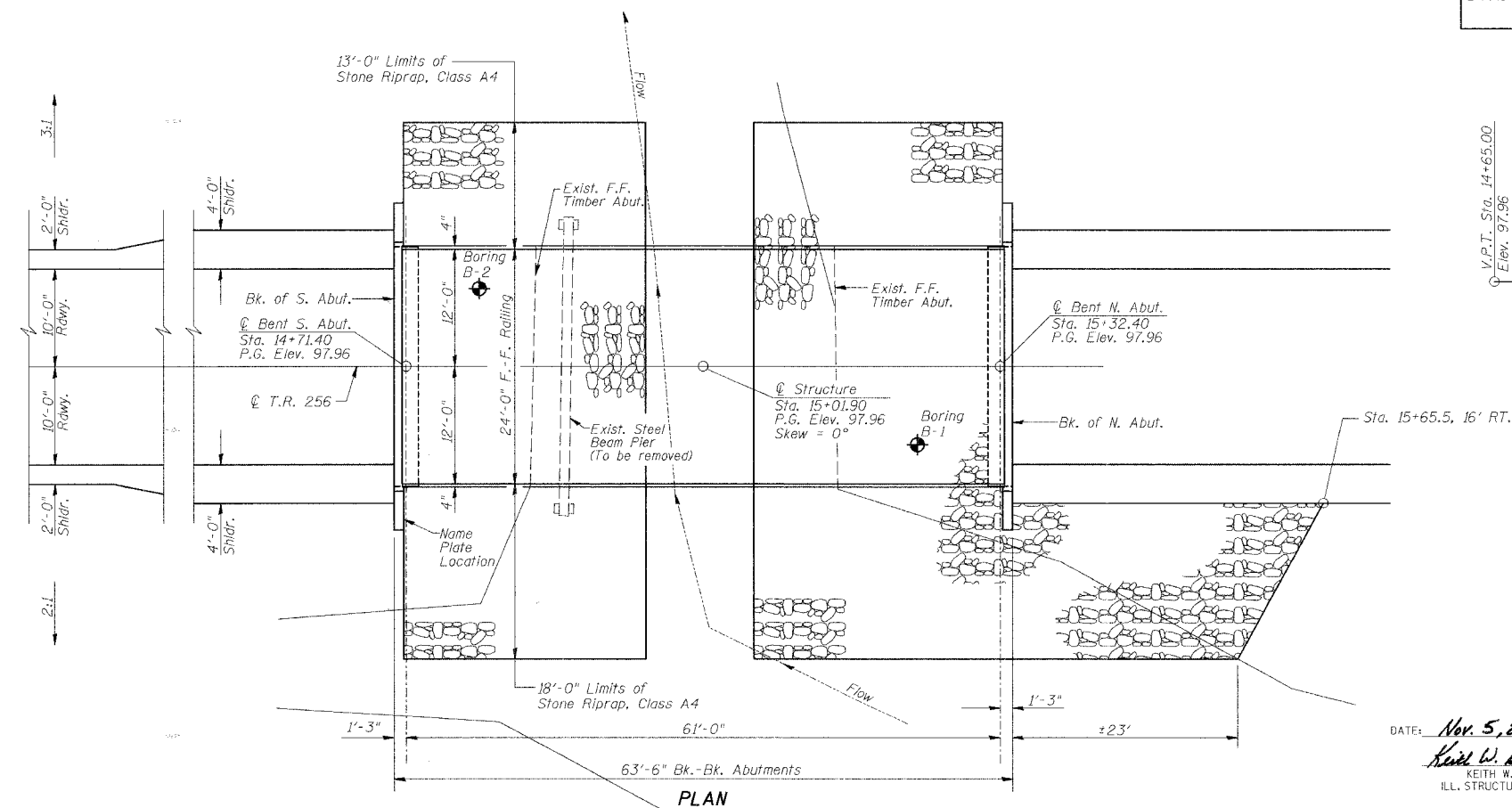
**STONE RIPRAP ANCHOR DETAIL**

**BIG CREEK  
BUILT 200\_ BY MACON COUNTY  
PROJECT NO. BROS-115(63)  
SECTION 06-1116-00-BR  
T.R. 256 STA. 15+01.90  
STR. NO. 058-3389 LOADING HS-20  
FORT DANIEL BRIDGE**

**NAME PLATE**  
(See Std. 515001)



**C PROFILE T.R. 256**



**PLAN**

DATE: **Nov. 5, 2007**

*Keith W. Bentz*  
KEITH W. BENTZ  
ILL. STRUCTURAL NO. 4777



"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'."

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 256	06-1116-00-BR	MACON	14	10
FED. ROAD DIST. NO.	ILLINOIS PROJECT:	BROS-115(63)		

CONTRACT NO. 95530

**GENERAL NOTES**

Layout of Riprap Slopes may be varied in the field to suit ground conditions as directed by the Engineer.  
See Proposal for Boring Data.  
Reinforcement Bars shall conform to the requirements of ASTM A 706 (IL MOD), Grade 60.  
The Contractor shall drive one Metal Shell Test Pile in a permanent location at the North Abutment as directed by the Engineer before ordering the remainder of piles.  
Excavation required for abutment construction shall be included in the cost of Concrete Structures. No additional compensation will be provided for Structure Excavation.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Structures	Each			1
P.P.C Deck Beams (27" Depth)	Sq. Ft.	1484		1484
Concrete Structures	Cu. Yd.		18.6	18.6
Reinforcement Bars, Epoxy Coated	Pound		2320	2320
Furnishing Metal Shell Piles 12"	Foot		206	206
Driving Piles	Foot		206	206
Test Pile Metal Shells	Each		1	1
Channel Excavation	Cu. Yd.		189	189
Stone Riprap, Class A4	Sq. Yd.		372	372
Filter Fabric	Sq. Yd.		372	372
Name Plates	Each		1	1
Steel Railing Type S1	Foot	124		124
Portland Cement Mortar Fairing Course	Foot	433		433
Waterproofing Membrane System	Sq. Yd.	165		165
Hot Mix Asphalt Surface Course, Mixture C, N50	Ton	19		19
Controlled Low-Strength Material	Cu. Yd.		16.2	16.2

**DESIGN SPECIFICATIONS**  
2002 AASHTO

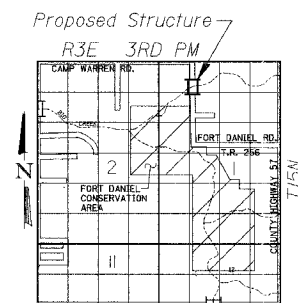
**LOADING HS20-44**

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

**DESIGN STRESSES**

**FIELD UNITS**  
f'c = 3,500 p.s.i.  
fy = 60,000 p.s.i.  
n = 9

**PPC UNITS**  
f'ci = 4,000 p.s.i.  
f'c = 5,000 p.s.i.  
f's = 270,000 p.s.i.  
f'sl = 201,960 p.s.i.



**LOCATION SKETCH**

**WATERWAY INFORMATION**

Drainage Area = 6.8 Sq. Mi. Existing Low Grade Elev. 97.38 @ Sta. 12+50.00  
Proposed Low Grade Elev. 97.41 @ Sta. 12+85.00

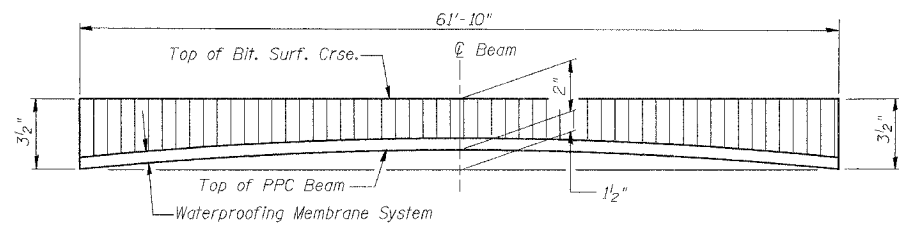
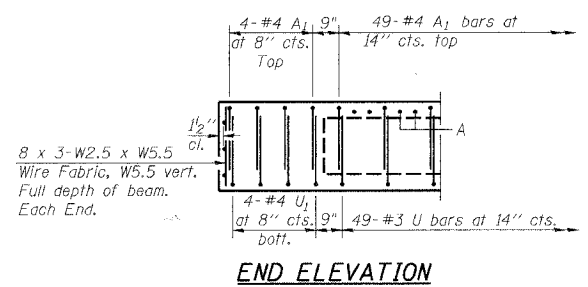
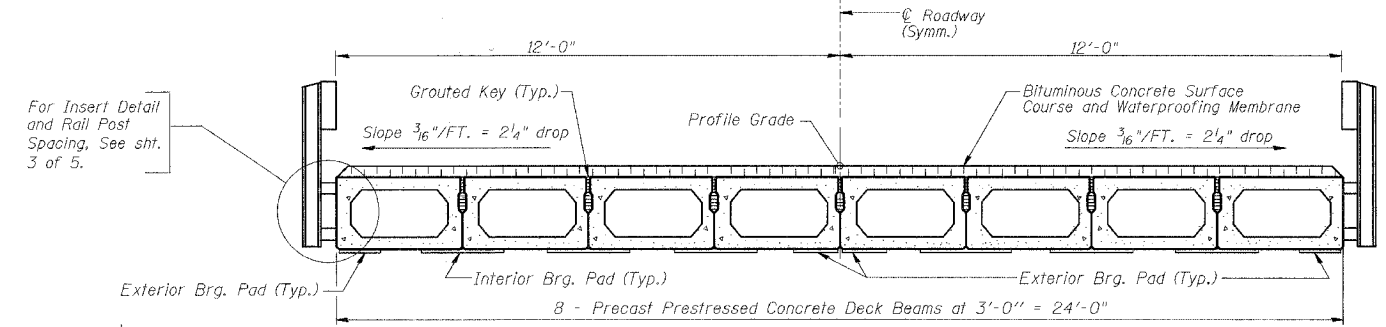
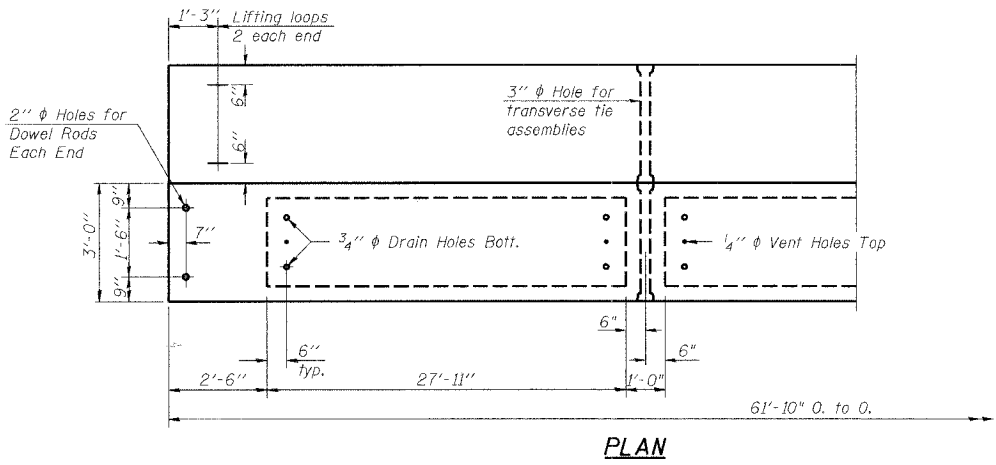
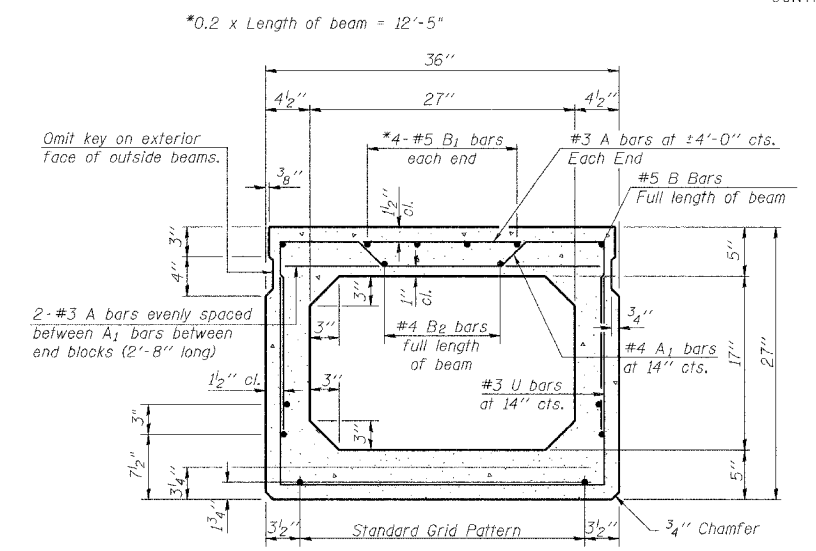
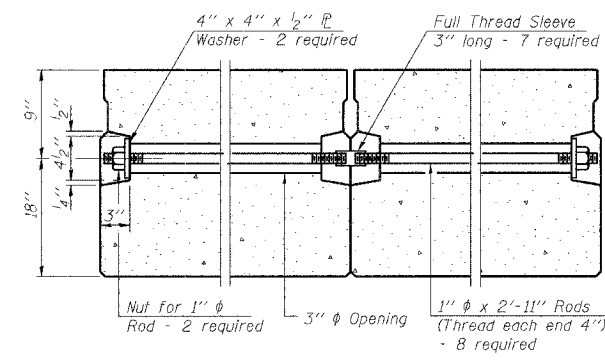
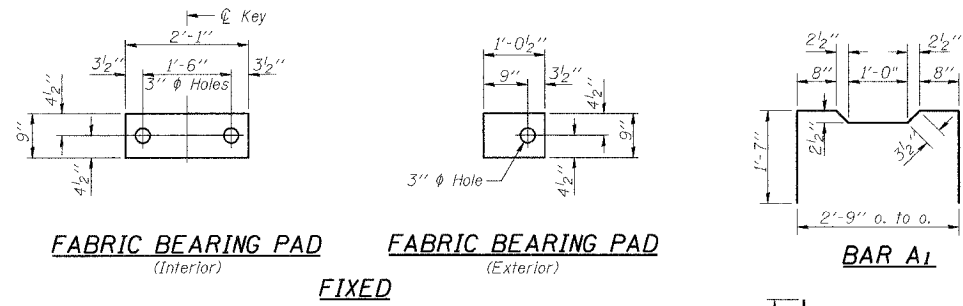
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head-Ft.		Headwater E.L.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	30	1499	271	345	93.33	0.09	0.01	93.42	93.34
Base	100	2021	290	376	93.87	0.18	0.01	94.05	93.88
Overlapping									
Max. Calc.	500	2707	314	410	94.47	0.38	0.02	94.85	94.49

Low Beam Elev. (Prop.) = 95.27

**GENERAL PLAN AND ELEVATION**

Date	Designed MJJ	T.R. 256 OVER BIG CREEK SECTION 06-1116-00-BR MACON COUNTY STA. 15+01.90 PROP. STR. NO. 058-3389	Sheet No.
Revisions	Drawn BKN		1
	Checked KWB		
	Approved KWB		
Prepared by:	<b>URS</b> 345 East Ash Avenue Decatur, IL 62526		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 256	06-III6-00-BR	MACON	14	II
FED. ROAD DIST. NO.	ILLINOIS	PROJECT: BROS-115(63)	CONTRACT NO. 95530	

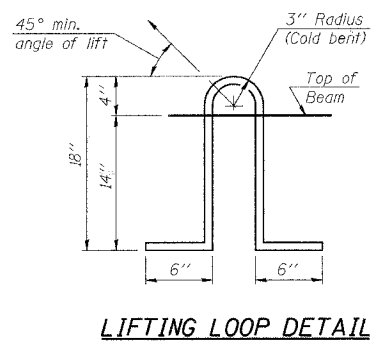


**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. 27"	Sq. Ft.	1484
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**NOTES**

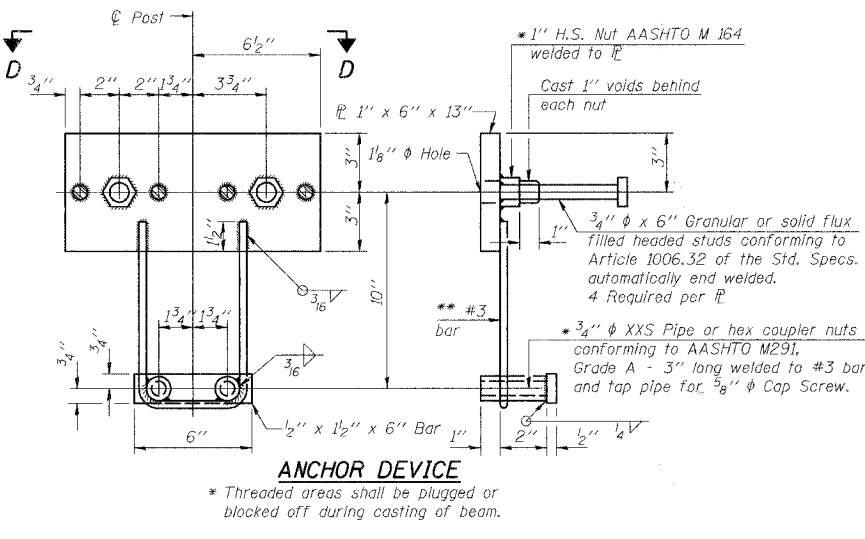
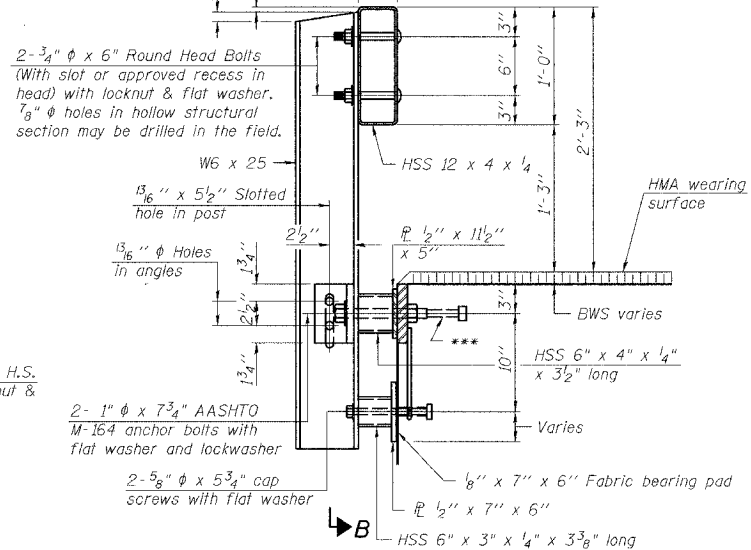
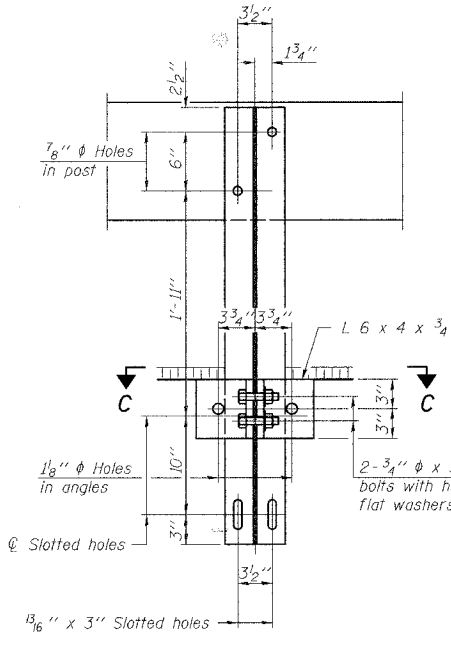
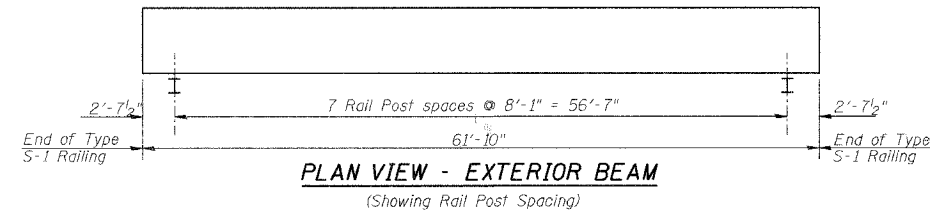
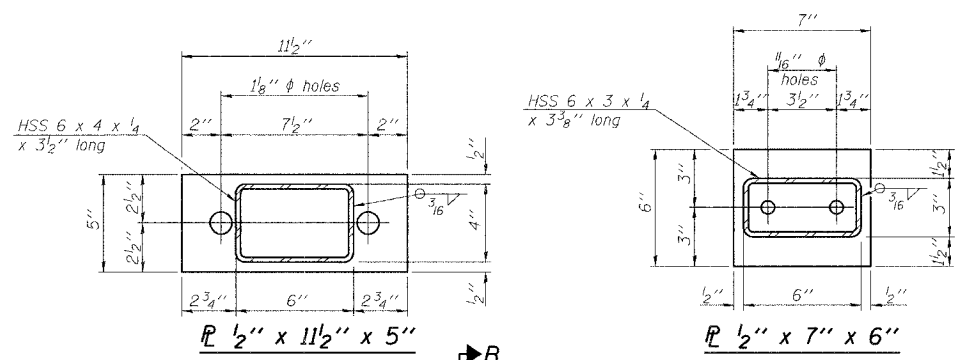
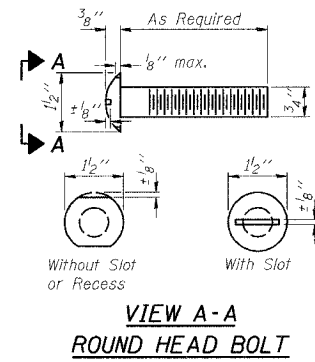
Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. Lifting loops shall be 2 - 1/2" φ-270 ksi strands, as shown. The 1" φ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place. Non prestressing steel shall conform to ASTM A 706 (IL MOD), Grade 60. The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing. Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key. Corrosion Inhibitor, per Article 1020.05(b)(12) of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Required Release Strength, f'ci, shall be 4000 p.s.i.



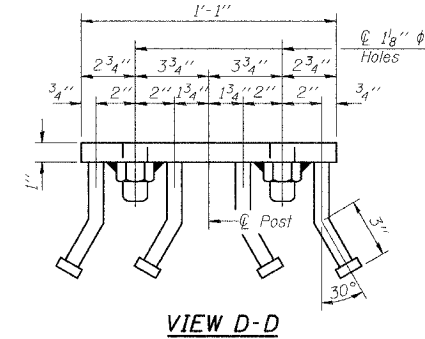
**SUPERSTRUCTURE**

Date	Designed MJP	T.R. 256 OVER BIG CREEK SECTION 06-III6-00-BR MACON COUNTY STA. 15+01.90 PROP. STR. NO. 058-3389	Sheet No.
Revisions	Drawn BKN		2
	Checked KWB		
	Approved KWB		
Prepared by:	<b>URS</b> 345 East Ash Avenue Decatur, IL 62526		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 256	06-III6-00-BR	MACON	14	12
FED. ROAD DIST. NO.	ILLINOIS PROJECT: BR05-115(63)		CONTRACT NO. 95530	

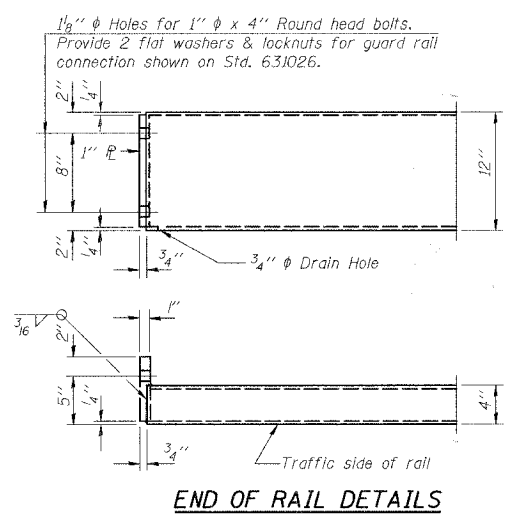
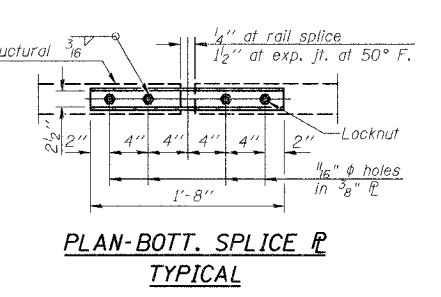
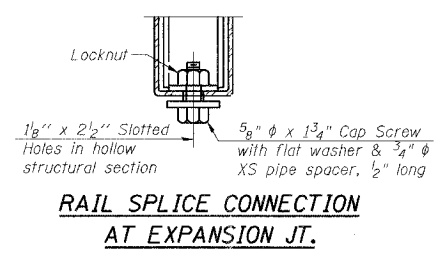
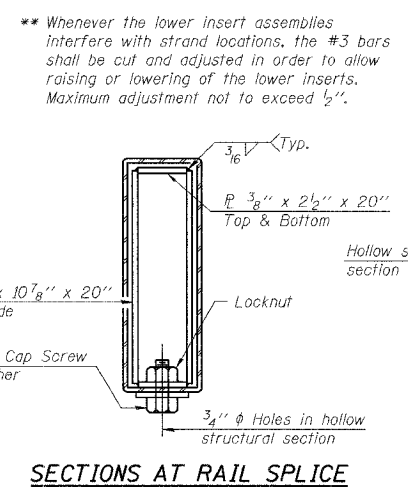
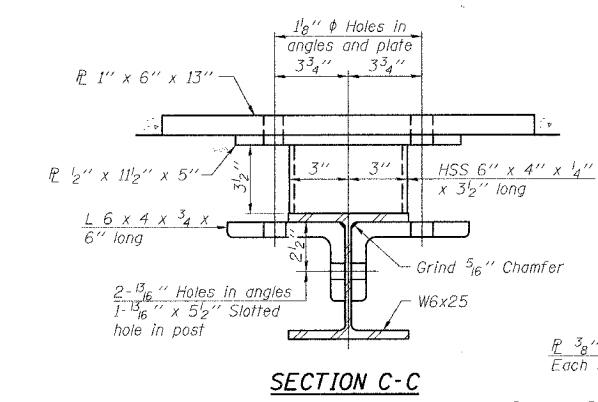


Notes:  
 All field drilled holes shall be coated with an approved zinc rich paint before erection.  
 For multi-span bridges, sufficient 1/4 inch x 6 inch x 1'-2 inch galvanized steel shims shall be provided to align rail between adjacent spans. Cast included with Steel Railing, Type S-1.  
 All steel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



**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing Type S-1	Foot	124



**STEEL RAILING**

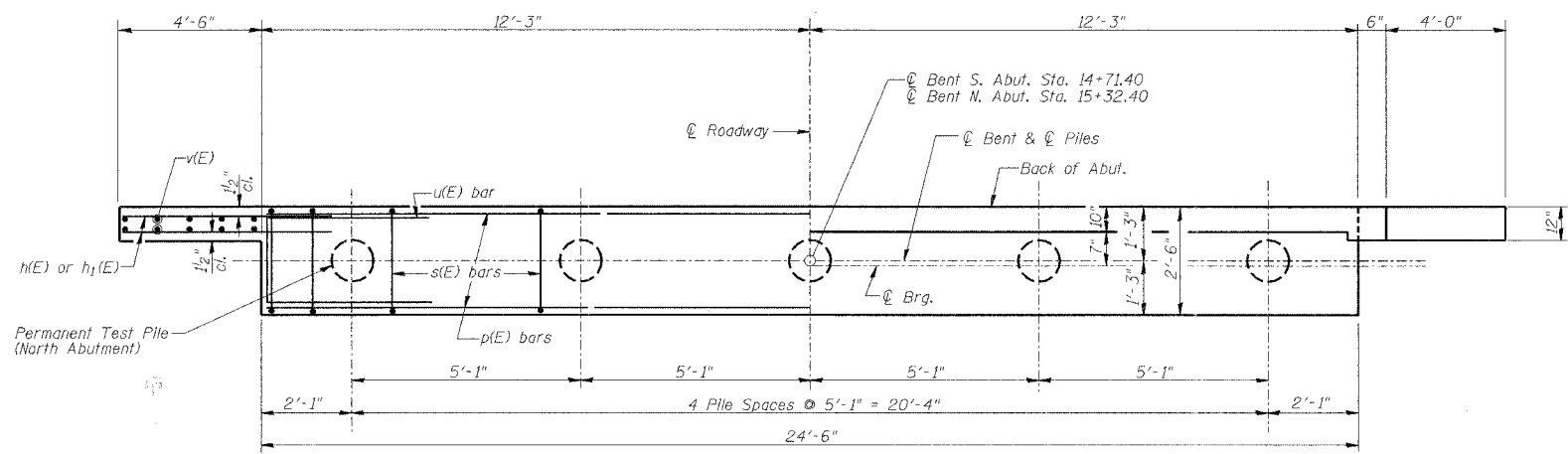
Date	Designed MJJ	T.R. 256 OVER BIG CREEK SECTION 06-III6-00-BR MACON COUNTY STA. 15+01.90 PROP. STR. NO. 058-3389	Sheet No.
Revisions	Drawn BKN		3
	Checked KWB		of 5
	Approved KWB		URS Job No. 36431783
Prepared by:	URS 345 East Ash Avenue Decatur, IL 62526		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 256	06-III16-00-BR	MACON	14	13
FED. ROAD DIST. NO.		ILLINOIS PROJECT: BROS-115(63)		

CONTRACT NO. 95530

**NOTES**

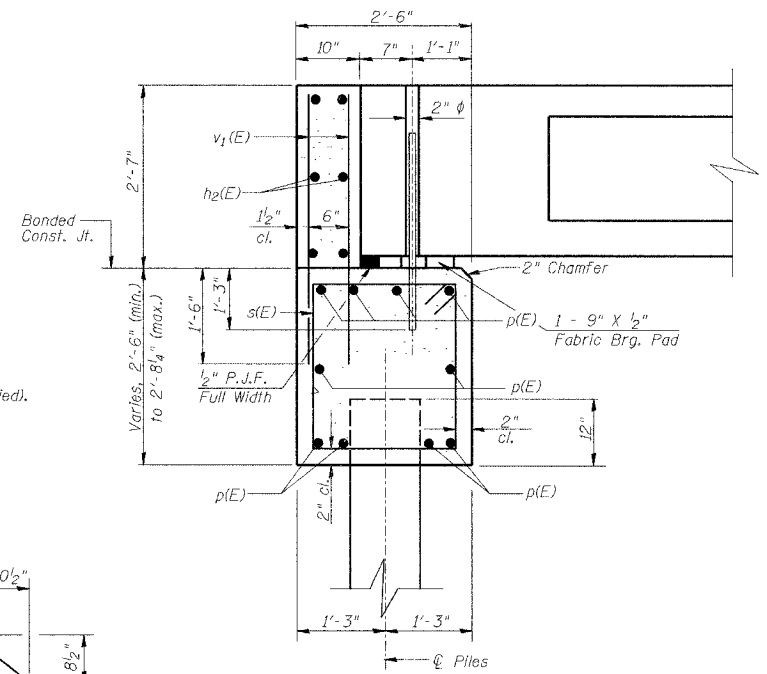
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- 1" dia. x 2'-6" dowel rods in 1 1/2" dia. holes drilled in cap (4 each beam). Dowel rods to be grouted after beams are in place and allowed to cure (min. 24 hrs.) prior to grouting the shear keys. The grout shall be an approved non-shrink grout.
- Reinforcement bars designated (E) shall be Epoxy coated.
- Space reinforcement in cap to miss dowel rods.
- All Elev. given at Bk. of Abut. unless otherwise noted.
- The Metal Shell Piles shall be according to ASTM A 252 Grade 3.
- The Test Pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the Pile Data information.
- Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60 (II. Modified). See special provisions.



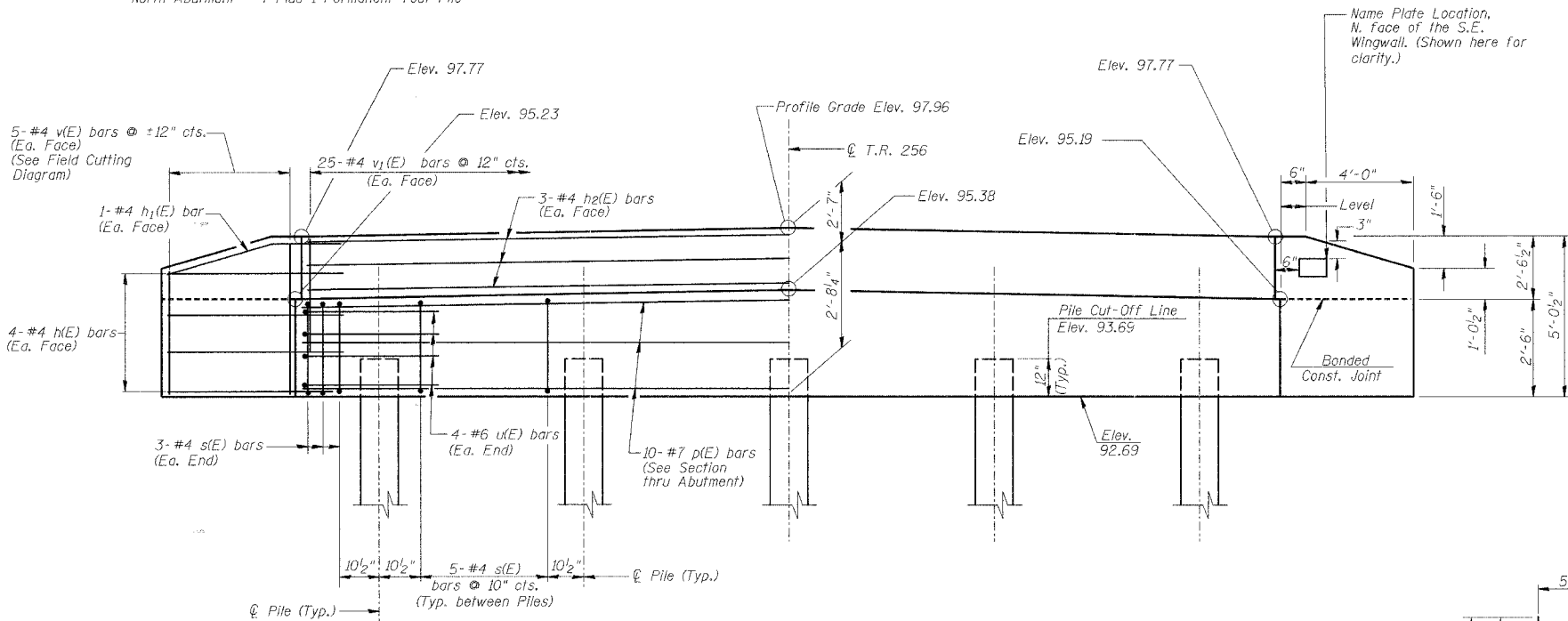
**PLAN**

**PILE DATA**

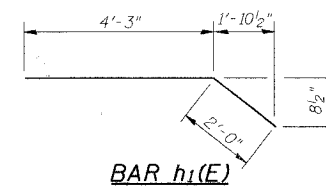
Type & Size: Metal Shell - 12" in. dia. x 0.25 in. walls  
 Nominal Required Bearing: 216 Kips  
 Allowable Resistance Available: 72 Kips  
 Estimated Length: 22'-0" South Abutment  
 24'-0" North Abutment  
 No. Required: South Abutment - 5  
 North Abutment - 4 Plus 1 Permanent Test Pile



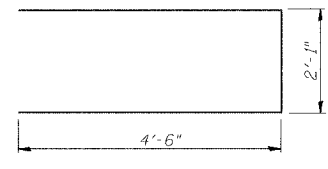
**SECTION THRU ABUT.**  
(At Rt. Angles)



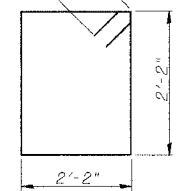
**ELEVATION**



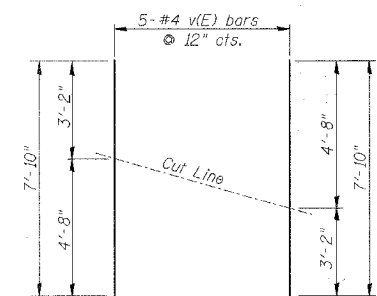
**BAR h1(E)**



**BAR u(E)**



**BAR s(E)**



**FIELD CUTTING DIAGRAM**

Order bars full length. Cut to fit as shown and use remainder of bars in other face.

**BILL OF MATERIAL SOUTH & NORTH ABUTMENTS**

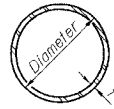
Bar	No.	Size	Length	Shape
h(E)	32	#4	6'-0"	—
h1(E)	8	#4	6'-3"	—
h2(E)	12	#4	24'-2"	—
p(E)	20	#7	24'-2"	—
s(E)	52	#4	9'-5"	□
u(E)	16	#6	11'-1"	—
v(E)	20	#4	7'-10"	—
v1(E)	100	#4	3'-11"	—
Concrete Structures			Cu. Yd.	18.6
Reinforcement Bars, Epoxy Coated			Pound	2320
Furnishing Metal Shell Piles 12"			Foot	206
Driving Piles			Foot	206
Test Pile Metal Shells			Each	1

**SOUTH & NORTH ABUTMENTS**

Date	Designed MJP	T.R. 256 OVER BIG CREEK SECTION 06-III16-00-BR MACON COUNTY STA. 15+01.90 PROP. STR. NO. 058-3389	Sheet No.
Revisions	Drawn BKN		4
	Checked KWB		
	Approved KWB		
Prepared by: <b>URS</b> 345 East Ash Avenue Decatur, IL 62526			URS Job No. 36431783

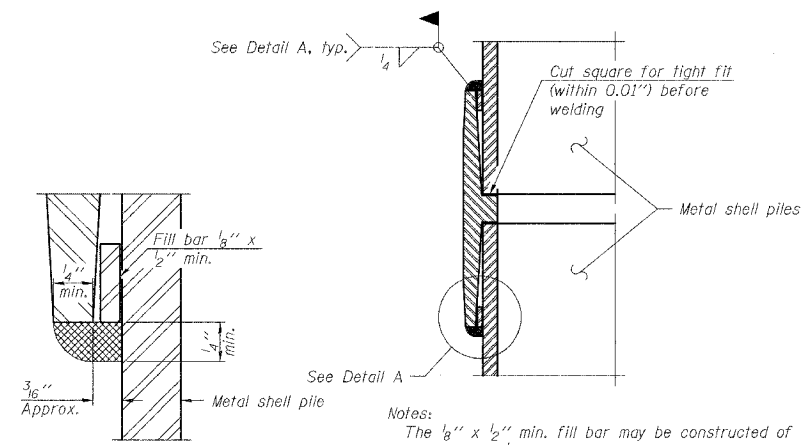
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 256	06-III6-00-BR	MACON	14	14
FED. ROAD DIST. NO.		ILLINOIS PROJECT: BROS-115(63)		

CONTRACT NO. 95530



**METAL SHELL PILE TABLE**

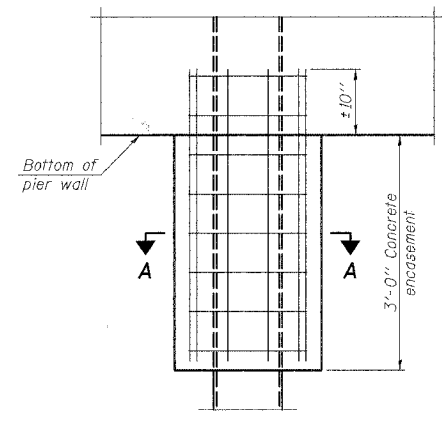
Designation	Wall thickness <i>t</i>	Weight per foot (Lbs./ft.)	Inside volume (yd. <sup>3</sup> /ft.)	Encasement diameter A
PP12	0.250"	31.37	0.0267	30"
PP14	0.250"	36.71	0.0368	30"



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

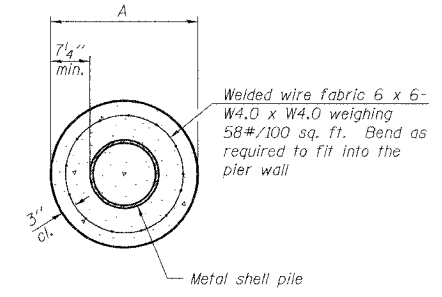
**DETAIL A**

**WELDED COMMERCIAL SPLICE**



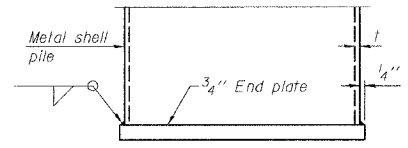
**ELEVATION**

**CONCRETE ENCASEMENT AT PIERS**

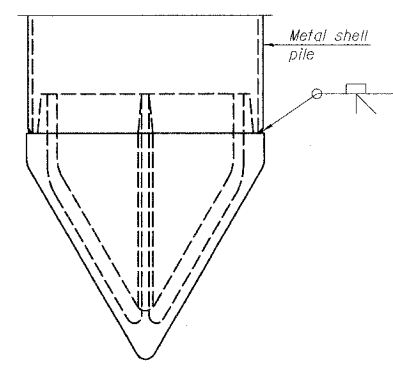


**SECTION A-A**

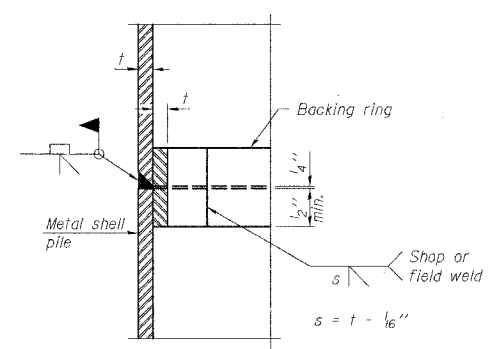
Notes:  
 See Metal Shell Pile Table for dimension "A".  
 Forms for encasement may be omitted when soil conditions permit.



**END PLATE ATTACHMENT**

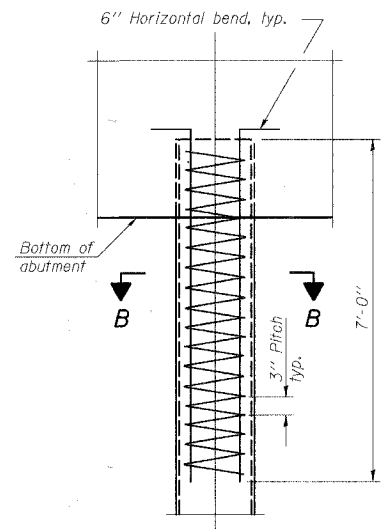


**METAL SHELL PILE SHOE ATTACHMENT**



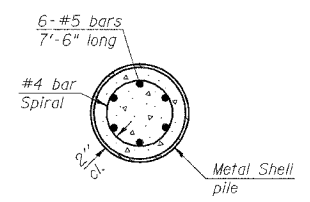
**COMPLETE PENETRATION WELD SPLICE**

Backing ring made from pile shell. Remove segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



**ELEVATION**

**METAL SHELL REINFORCEMENT AT ABUTMENTS**



**SECTION B-B**

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

PILE DETAILS			
Date	Designed MJP	T.R. 256 OVER BIG CREEK SECTION 06-III6-00-BR MACON COUNTY STA. 15+01.90 PROP. STR. NO. 058-3389	Sheet No.
Revisions	Drawn BKN		<b>5</b>
	Checked KWB		
	Approved KWB		
Prepared by: <b>URS</b>	345 East Ash Avenue Decatur, Il. 62526		
		URS Job No. 36431783	