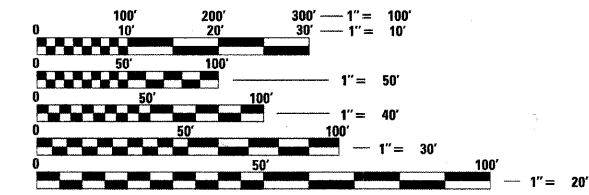


**INDEX OF SHEETS**

- 1 = COVER SHEET
- 2 = SUMMARY OF QUANTITIES
- 3 = GENERAL NOTES & SCHEDULES
- 4 = TYPICAL SECTIONS
- 5-7 = PLAN AND PROFILE
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- 10 = GENERAL PLAN & ELEVATION
- 11 = RIPRAP & PILE LAYOUT
- 12 = TOP OF SLAB ELEVATIONS
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- 15 = FRAMING PLAN
- 16 = SUPERSTRUCTURE DETAILS
- 17 = INTEGRAL ABUTMENT DIAPHRAGM DETAILS
- 18 = BRIDGE APPROACH SLAB DETAILS
- 19 = SOUTH ABUTMENT DETAILS
- 20 = SOUTH ABUTMENT SHEET PILE LAYOUT
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- 22 = NORTH ABUTMENT SHEET PILE LAYOUT
- 23 = STEEL RAILING, TYPE SM DETAILS
- 24 = BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
- 25 = METAL SHELL PILE DETAILS
- 26 = BORING LOGS
- 27-31 = CROSS SECTIONS

**STANDARDS**

- 000001-06 STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
- 280001-05 TEMPORARY EROSION CONTROL SYSTEMS
- 420401-08 BRIDGE APPROACH PAVEMENT CONNECTOR
- 515001-03 NAME PLATE FOR BRIDGES
- 542401-01 METAL END SECTION FOR PIPE CULVERTS
- 601001-04 SUB-SURFACE DRAINS
- 601101-01 CONCRETE HEADWALL FOR PIPE DRAIN
- 630001-09 STEEL PLATE BEAM GUARDRAIL
- 630301-05 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
- 631032-06 TRAFFIC BARRIER TERMINAL, TYPE 6A
- 635006-03 REFLECTOR AND TERMINAL MARKER PLACEMENT
- 635011-02 REFLECTOR MARKER AND MOUNTING DETAILS
- 701901-01 TRAFFIC CONTROL DEVICES
- 720011-01 METAL POSTS FOR SIGNS, MARKERS & DELINEATORS
- 728001-01 TELESCOPING STEEL SIGN SUPPORT
- 729001-01 APPLICATIONS OF TYPE A & B METAL POSTS (FOR SIGNS & MARKERS)
- BLR21-8 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
- BLR22-6 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
- BLR24-2 MAILBOX TURNOUT FOR LOCAL ROADS



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

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

**PROJECT ENGINEER - MCW**  
**PROJECT MANAGER - BKC**  
**CONTRACT NO. 87462**

**PROPOSED STRUCTURE: S.N. 006-3032**  
 A SINGLE SPAN (1098'-6") STEEL PLATE GIRDER BRIDGE ON CLOSED STEEL SHEET PILE ABUTMENTS @ STA. 59+75. SKEWED 30° RT. AHEAD.

**UTILITIES:**  
 VERIZON (FRONTIER COM.)  
 Attn: Garrett Burt  
 112 Elm Street  
 Sycamore, IL 60178  
 815-895-1538  
 AMEREN IP  
 Attn: Martin Fuller  
 1050 W. Blvd.  
 Belleville, IL 62222  
 618-236-6281

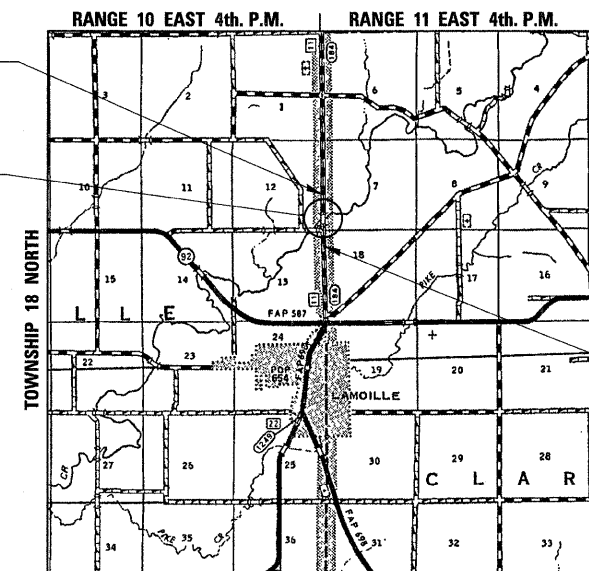
**FUNCTIONAL CLASSIFICATION**  
**MAJOR COLLECTOR (NON-URBAN)**  
**DESIGN SPEED 50 MPH**  
**2011 ADT - 850**  
**3R GUIDELINES**

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**

**PLANS FOR PROPOSED**  
**FEDERAL AID PROJECT**  
**HIGHWAY BRIDGE PROGRAM**

**FAS ROUTE 184 (COUNTY HIGHWAY 11)**  
**SECTION 08-00211-00-BR**  
**PROJECT BRS-0184(107)**  
**STRUCTURE REPLACEMENT**  
**BUREAU COUNTY**

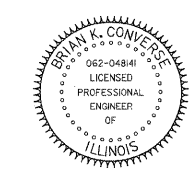
**C-93-096-10**



GROSS LENGTH = 1,100 FT. = 0.208 MILE  
 NET LENGTH = 1,100 FT. = 0.208 MILE



BUREAU COUNTY HIGHWAY DEPARTMENT	
APPROVED	2011
 BUREAU COUNTY ENGINEER	
PASSED	2011
 DISTRICT 3 PROJECT IMPLEMENTATION ENGINEER	
RELEASING FOR BID BASED ON LIMITED REVIEW	2011
 DEPUTY DIRECTOR OF HIGHWAYS, REGION 2 ENGINEER	



*Brian K. Convent*  
 DATE: 2/15/2011  
 EXPIRES 11/30/11

**WILLETT, HOFMANN & ASSOCIATES, INC.**  
**CONSULTING ENGINEERS**  
 Land Surveying - Transportation - Structural  
 Environmental - Architecture  
 809 East Second Street Dixon, Illinois 61021  
 Phone 815.284.3381 Fax 815.284.3385  
 Design Firm #184-000918  
 www.willetthofmann.com

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**SUMMARY OF QUANTITIES**  
CONSTRUCTION TYPE CODE: 0011

PAY CODE	QUANTITY	UNIT	ITEM
20100210	39	Unit	Tree Removal (over 15 units diameter)
*20200100	1178	Cu. Yd.	Earth Excavation
20300100	432	Cu. Yd.	Channel Excavation
20400800	2222	Cu. Yd.	Furnished Excavation
25100630	6468	Sq. Yd.	Erosion Control Blanket
28000305	217	Foot	Temporary Ditch Checks
28000400	348	Foot	Perimeter Erosion Barrier
28000500	1	Each	Inlet and Pipe Protection
*31100100	617	Ton	Subbase Granular Material, Type A
*40600100	970	Gallon	Bituminous Materials (Prime Coat)
40603080	353	Ton	Hot-Mix Asphalt Binder Course, IL-19.0, N50
40603310	163	Ton	Hot-Mix Asphalt Surface Course, Mix "C", N50
42001430	490	Sq. Yd.	Bridge Approach Pavement Connector (Flexible)
48100500	1123	Sq. Yd.	Aggregate Shoulders, Type A 6"
*50100100	1	Each	Removal of Existing Structures
50105220	30	Foot	Pipe Culvert Removal
50300225	43.7	Cu. Yd.	Concrete Structures
50300255	201.2	Cu. Yd.	Concrete Superstructure
50300260	502	Sq. Yd.	Bridge Deck Grooving
50300300	538	Sq. Yd.	Protective Coat
50500105	1	L. Sum	Furnishing and Erecting Structural Steel
50500505	960	Each	Stud Shear Connectors
50800205	47190	Pound	Reinforcement Bars, Epoxy Coated
50800515	62	Each	Bar Splicers
50901050	203	Foot	Steel Railing, Type SM
+51200957	602	Foot	Furnishing Metal Shell Piles 12" x 0.250"
51202305	602	Foot	Driving Piles
51203200	2	Each	Test Pile Metal Shells
51500100	1	Each	Name Plates
52100520	20	Each	Anchor Bolts, 1"
54201060	38	Foot	Pipe Culverts, Class D, Type 2:15"
54213870	2	Each	Steel End Sections 15"
59100100	58	Sq. Yd.	Geocomposite Wall Drain
*60107700	1928	Foot	Pipe Underdrains 6"
+ 63000001	137.5	Foot	Steel Plate Beam Guardrail, Type A, 6 Foot Posts
+ 63100087	4	Each	Traffic Barrier Terminal, Type 6A
+*63100167	4	Each	Traffic Barrier Terminal, Type 1 (Special) Tangent
67100100	1	L. Sum	Mobilization
+ 78001110	2869	Foot	Paint Pavement Marking - Line 4"
+ 78200410	17	Each	Guardrail Markers, Type A
Z0013798	1	L. Sum	Construction Layout
*X2070302	617	Ton	Porous Granular Embankment, Special
*X2501100	1.34	Acre	Seeding, Class 3 (Special)
*X2810210	1570	Ton	Stone Riprap, Class A5 (Special)
*X4020700	90	Sq. Yd.	Aggregate Surface Course, Type B 8"
*X5121800	10476	Sq. Ft.	Permanent Steel Sheet Piling
*X7010216	1	L. Sum	Traffic Control and Protection, (Special)

\*See BLR 11310 in the contract documents for Special Provisions.  
+Specialty Item

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USER NAME =	DESIGNED - M. A. CACKLEY	REVISED -	<b>BUREAU COUNTY</b> <b>F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK</b> <b>STATION 59+75</b>	<b>SUMMARY OF QUANTITIES</b> <b>STRUCTURE NO. 006-3032</b>  STA. 53+50 TO STA. 64+50	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
PLOT SCALE =	CHECKED - B. K. CONVERSE	REVISED -			184	08-00211-00-BR	BUREAU	31	2	
PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -			WHA# 1051010		CONTRACT NO. 87462			
	CHECKED - M. C. WAGNER	REVISED -			ILLINOIS FED. AID PROJECT BRS-0184(107)					

**GENERAL NOTES**

Existing structures (including foundations, walls, cisterns, wells, or other underground structures) within the right of way shall be removed in accordance with Article 501.04 and 501.05 of the Standard Specifications, without additional compensation, unless otherwise noted in the Plans or Special Provisions.

The Contractor shall seed all disturbed areas within the project limits.

The final top four inches of soil in any right of way area disturbed by the Contractor must be a cohesive soil capable of supporting vegetation and approved by the Engineer.

No overhaul has been computed and none shall be paid for from any source.

The Contractor shall be responsible for protecting utility property during construction operations as outlined in Article 107.31 of the Standard Specifications.

All telephone and electric poles, gas pipes, etc. in the way of the improvements shall be moved by the utilities prior to construction and shall not be included in the contract. The Contractor shall notify the respective utilities to make the necessary adjustments prior to this construction.

The location and elevation of the various underground utilities as shown on the plans are not to be taken as exact. The Contractor shall use special care when conducting construction operations near them to prevent damage.

The utilities located within the project limits or immediately adjacent to the project construction limits include:

AmerenIP Verizon (Frontier Com.)  
 Attn: Martin Fuller Attn: Garrett Burt  
 1050 W. Blvd. 112 Elm Street  
 Belleville, IL 62222 Sycamore, IL 60178  
 Ph. 618-236-6281 Ph. 815-895-1538

A minimum of 48 hours advance notice is required for non-emergency work.

A Nationwide 404 Permit has been issued for this project and the conditions of that Permit must be adhered to.

Where section or subsection monuments are encountered, the Engineer shall be notified before such monuments are removed. The Contractor shall protect and carefully preserve all property markers, monuments, and right of way pins until the Owner, an Authorized Surveyor, or Agent has witnessed or otherwise referenced their location. Any property markers, section or subsection monuments unless referenced, damaged by the Contractor shall be replaced at the expense of the Contractor.

Existing mail boxes, street signs, and traffic signs that are within the construction limits shall be removed and reset by the Contractor. Cost of removing and resetting to be included in the contract unit price bid per Cubic Yard for Earth Excavation.

**SCHEDULE OF QUANTITIES**

Table with 3 columns: LOCATION, UNIT, REMARKS. Includes TREE REMOVAL (OVER 15 UNITS DIAMETER) with RT. STA. 61+81.49 and 64+21.37.

Table with 3 columns: LOCATION, CU YD, REMARKS. Includes EARTH EXCAVATION with STA. 53+50 - 64+50.

Table with 3 columns: LOCATION, CU YD, REMARKS. Includes FURNISHED EXCAVATION with STA. 53+50 - 64+50.

Table with 3 columns: LOCATION, SQ YD, REMARKS. Includes EROSION CONTROL BLANKET with LT. STA. 53+50 - 59+15 and RT. STA. 53+50 - 59+34.

Table with 4 columns: USER NAME, DESIGNED, CHECKED, PLOT SCALE, PLOT DATE.

Table with 3 columns: LOCATION, FOOT, REMARKS. Includes TEMPORARY DITCH CHECKS with RT. STA. 54+50 to 64+00.

Table with 3 columns: LOCATION, FOOT, REMARKS. Includes PERIMETER EROSION BARRIER with LT. STA. 57+00 - 58+70 and RT. STA. 58+00 - 59+08.

Table with 3 columns: LOCATION, EACH, REMARKS. Includes INLET & PIPE PROTECTION with RT. STA. 57+52.

Table with 3 columns: LOCATION, TON, REMARKS. Includes SUBBASE GRANULAR MATERIAL, TYPE A with STA. 55+95.00 - 57+94.30.

Table with 3 columns: LOCATION, GALLON, REMARKS. Includes BITUMINOUS MATERIALS (PRIME COAT) with STA. 53+50.00 - 54+00.71.

Table with 3 columns: LOCATION, TON, REMARKS. Includes HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50 with STA. 54+50.00 - 55+95.00.

Table with 3 columns: LOCATION, TON, REMARKS. Includes HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50 with STA. 53+50.00 - 54+00.71.

Table with 3 columns: LOCATION, SQ YD, REMARKS. Includes BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE) with STA. 57+94.30 - 58+94.30.

Table with 3 columns: LOCATION, SQ YD, REMARKS. Includes AGGREGATE SHOULDERS, TYPE A 6" with LT. STA. 53+50.00 - 59+17.19.

BUREAU COUNTY  
F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK  
STATION 59+75

Table with 3 columns: LOCATION, FOOT, REMARKS. Includes PIPE CULVERT REMOVAL with RT. STA. 57+59.

Table with 3 columns: LOCATION, FOOT, REMARKS. Includes PIPE CULVERTS, CLASS D, TYPE 2 15" with PER 57+71.

Table with 3 columns: LOCATION, EACH, REMARKS. Includes STEEL END SECTIONS 15" with PER 57+71.

Table with 3 columns: LOCATION, FOOT, REMARKS. Includes PIPE UNDERDRAINS 6" with LT. STA. 53+50 - 56+00.

Table with 3 columns: LOCATION, FOOT, REMARKS. Includes STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS with RT. STA. 58+65.75 - 58+90.72.

Table with 3 columns: LOCATION, EACH, REMARKS. Includes TRAFFIC BARRIER TERMINAL, TYPE 6A with SOUTHWEST QUADRANT 1.

Table with 3 columns: LOCATION, EACH, REMARKS. Includes TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT with SOUTHWEST QUADRANT 1.

Table with 3 columns: LOCATION, FOOT, REMARKS. Includes PAINT PAVEMENT MARKING - LINE 4" with LT. STA. 53+50 - 64+50.

Table with 3 columns: LOCATION, EACH, REMARKS. Includes GUARDRAIL MARKERS, TYPE A with RT. STA. 58+14.31 - 61+28.14.

Table with 3 columns: LOCATION, ACRE, REMARKS. Includes SEEDING, CLASS 3 (SPECIAL) with LT. STA. 53+50 - 59+15.

Table with 3 columns: LOCATION, SQ YD, REMARKS. Includes AGGREGATE SURFACE COURSE, TYPE B 8" with PER 57+59.

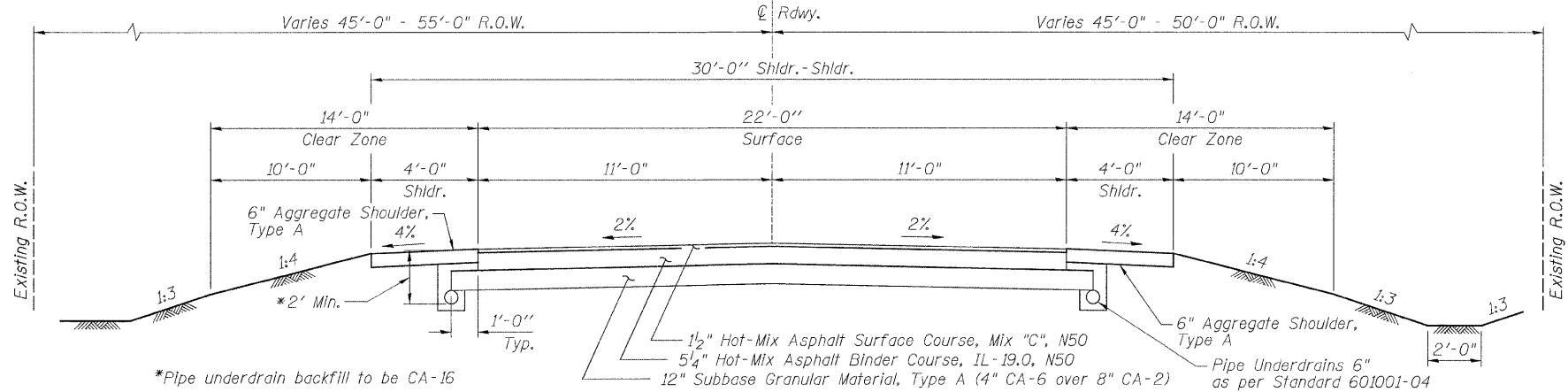
Table with 4 columns: F.A.S. RTE., SECTION, COUNTY, TOTAL SHEETS. Includes STA. 53+50 TO STA. 64+50.

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PAVEMENT STRUCTURAL DESIGN	
COUNTY HIGHWAY 11	
Structural Design Traffic (S.D.T.) = Year 2020	
Class III Street	P.V. 912
80,000# Truck Design	S.U. 73
	M.U. 51
	1,306 ADT
$E_{RI} = 2 \text{ ksi (Poor Subgrade)}$	
$TF = 0.28$	
HMA Mix Temp. = 79°F	
HMA $E_{AC} = 490 \text{ ksi}$	
HMA Design Strain = 225 microstrain	
<b>USE:</b>	
1 1/2" Hot-Mix Asphalt Surface Course, Mix "C", N50	
5 1/4" Hot-Mix Asphalt Binder Course, IL-19.0, N50	
12" Subbase Granular Material, Type A (4" CA-6 over 8" CA-2)	

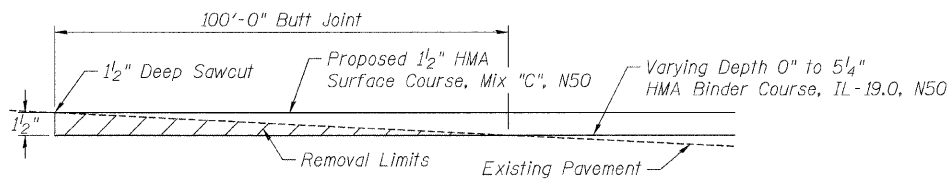
**PAVEMENT MIXTURE REQUIREMENTS**

	Surface	Binder
PG:	64-22	64-22
Design Air Voids	4.0 @ N50	4.0 @ N50
Mixture Composition (Gradation Mixture)	IL 9.5	IL 19.0
Friction Aggregate	C	
Density Test Method	Cores	Cores



**PROPOSED ROADWAY TYPICAL SECTION**

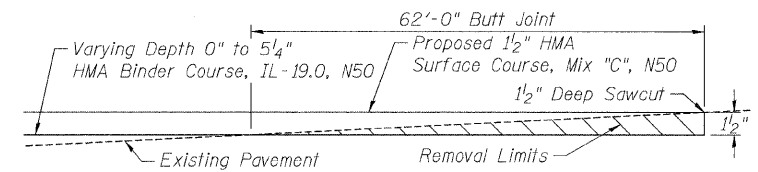
Full Depth Section Begins 55+95 & Ends 62+95.  
 Overlay 1 1/2" Surface & varying depth Binder (0" to 5 1/4")  
 from Station 54+50 to 55+95 & 62+95 to 63+88.



Cost of sawcut and pavement removal to be included in the contract unit price bid per Cubic Yard for Earth Excavation

**SOUTH BUTT JOINT**

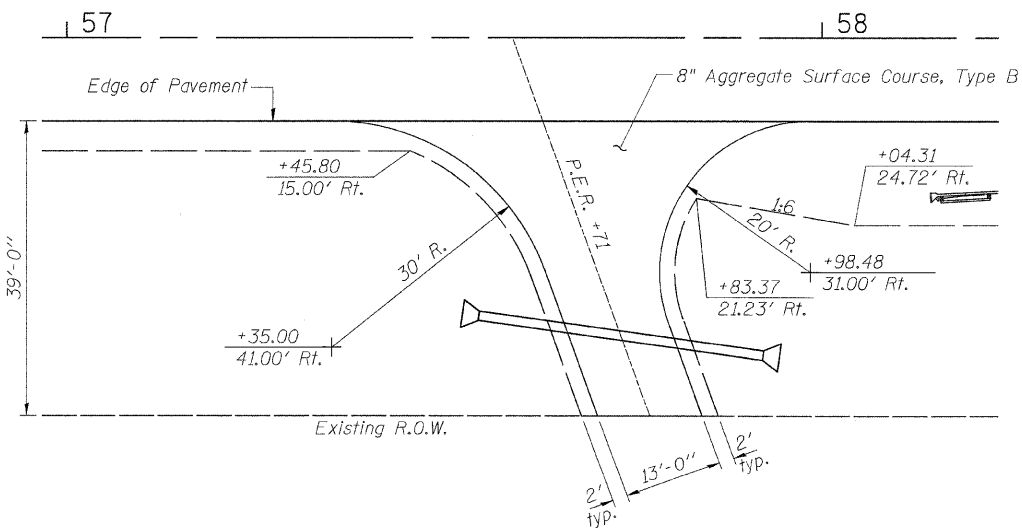
STATION 53+50 TO 54+50



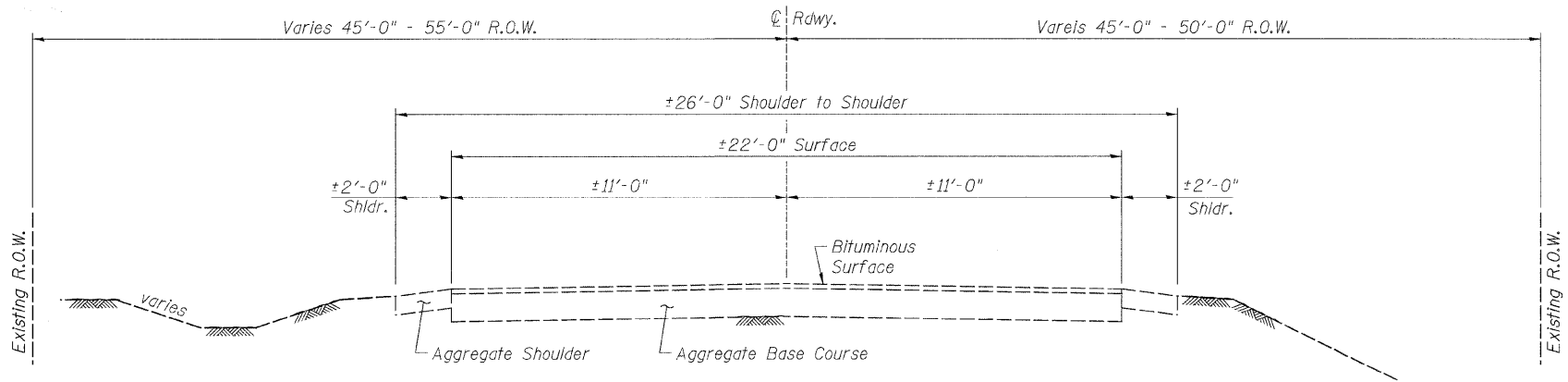
Cost of sawcut and pavement removal to be included in the contract unit price bid per Cubic Yard for Earth Excavation

**NORTH BUTT JOINT**

STATION 63+88 TO 64+50



**PRIVATE ENTRANCE DETAIL**



**EXISTING ROADWAY TYPICAL SECTION**

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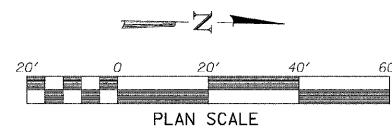
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PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -
	CHECKED - M. C. WAGNER	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

**TYPICAL SECTIONS**  
**STRUCTURE NO. 006-3032**

STA. 53+50 TO STA. 64+50

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
184	08-00211-00-BR	BUREAU	31	4
	WHA* 1051D10		CONTRACT NO. 87462	
ILLINOIS FED. AID PROJECT BRS-0184(07)				

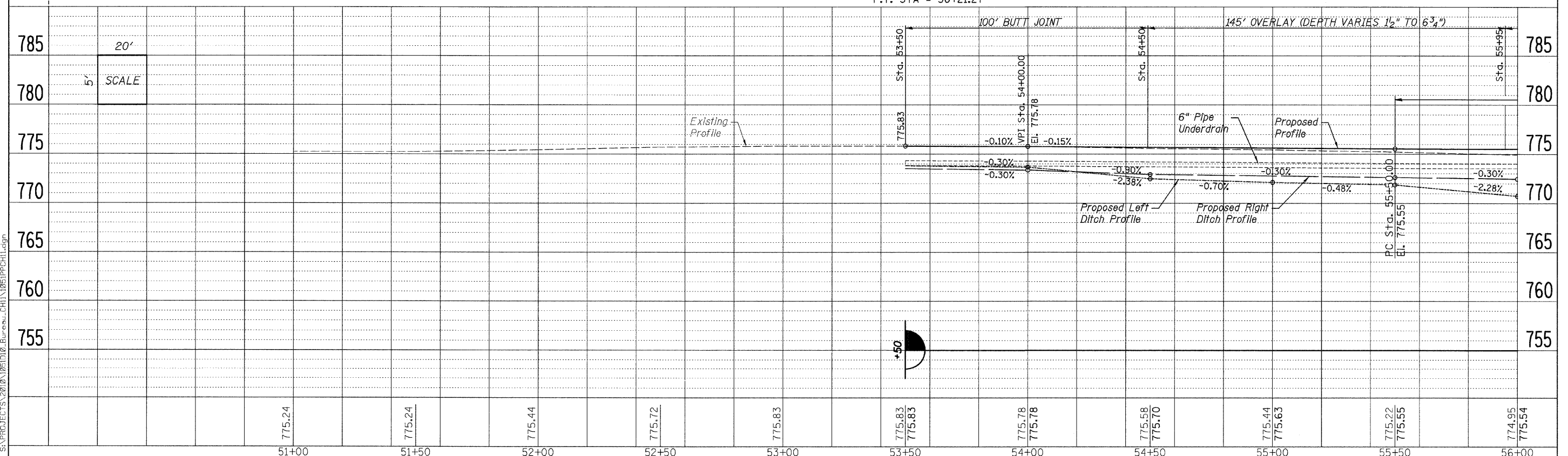


CH 11 - HORIZONTAL CONTROL POINTS					
PT #	STA.	N	E	EL.	DESCRIPTION
101	27.7' LT 53+32.8	1781068.55	2540131.99	774.04	IP
102	16.1' LT 57+87.4	1781523.91	2540146.66	773.11	IP
103	16.9' RT 61+13.4	1781849.25	2540185.55	773.74	IP
104	15.9' LT 64+36.5	1782172.74	2540157.88	781.66	IP
105	56.5' RT 60+61.1	1781796.29	2540224.23	768.53	IP

CH 11 - VERTICAL CONTROL POINTS			
PT #	STA.	EL.	DESCRIPTION
400	47.3' LT 53+44	776.75	RAILROAD SPIKE IN PP
401	15.4' LT 58+92	773.54	CHIS "□" ON SW WINGWALL OF EX. BRIDGE
402	35.8' LT 65+36	786.16	RAILROAD SPIKE IN 3RD PP N OF BRIDGE

PROP. CURVE CH11 CURVE 1  
 PI STA. = 54+00.77  
 $\Delta = 3^{\circ} 09' 33''$  (RT)  
 $D = 0^{\circ} 42' 58''$   
 $R = 8,000.00'$   
 $T = 220.61'$   
 $L = 441.12'$   
 $E = 3.04'$   
 $e = NC$   
 T.R. = N/A  
 S.E. RUN = N/A  
 P.C. STA = 51+80.16  
 P.T. STA = 56+21.27



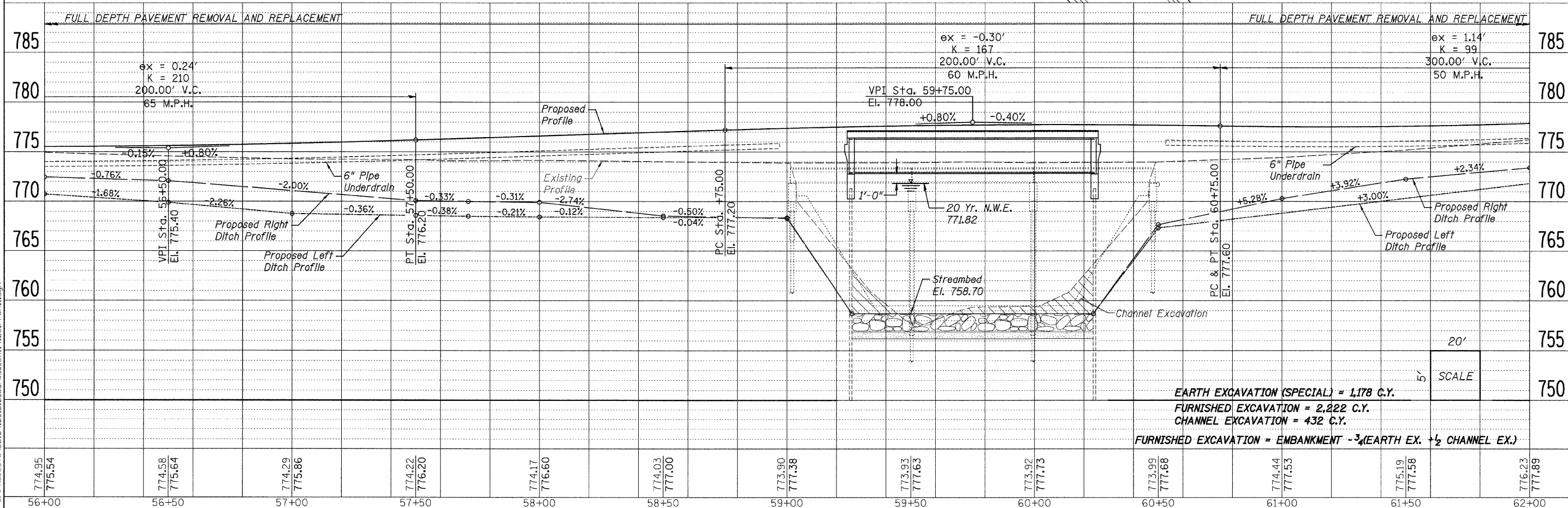
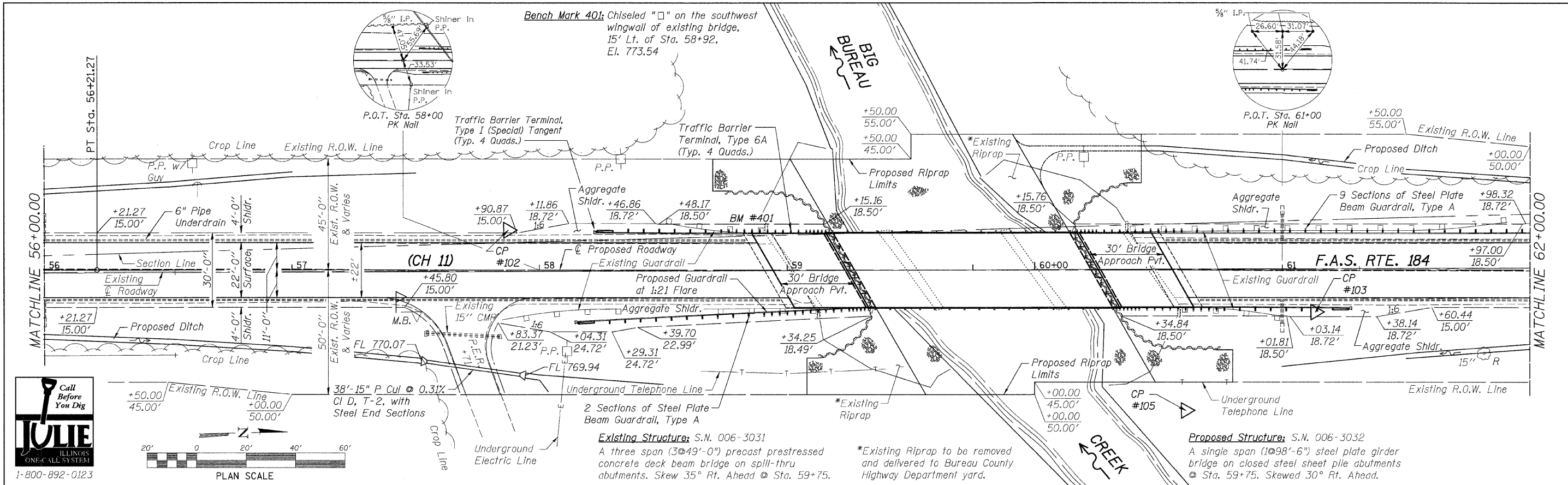
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PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -
	CHECKED - M. C. WAGNER	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

**PLAN & PROFILE**  
**STRUCTURE NO. 006-3032**  
 STA. 62+00 TO STA. 68+00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
184	08-00211-00-BR	BUREAU	31	5
WHA# 1051D10		CONTRACT NO. 87462		
ILLINOIS FED. AID PROJECT BR5-0184(107)				



774.95 775.54	774.58 775.64	774.29 775.86	774.22 776.20	774.17 776.60	774.03 777.00	773.90 777.38	773.93 777.63	773.92 777.73	773.99 777.68	774.44 777.53	775.19 777.58	776.23 777.89
56+00	56+50	57+00	57+50	58+00	58+50	59+00	59+50	60+00	60+50	61+00	61+50	62+00

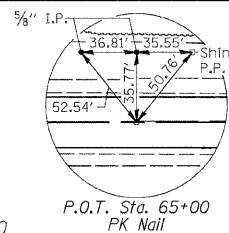
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PLLOT DATE =	DRAWN - F. D. LACHAT	REVISED -
	CHECKED - M. C. WAGNER	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59+75**

**PLAN & PROFILE**  
**STRUCTURE NO. 006-3032**  
 STA. 56+00 TO STA. 62+00

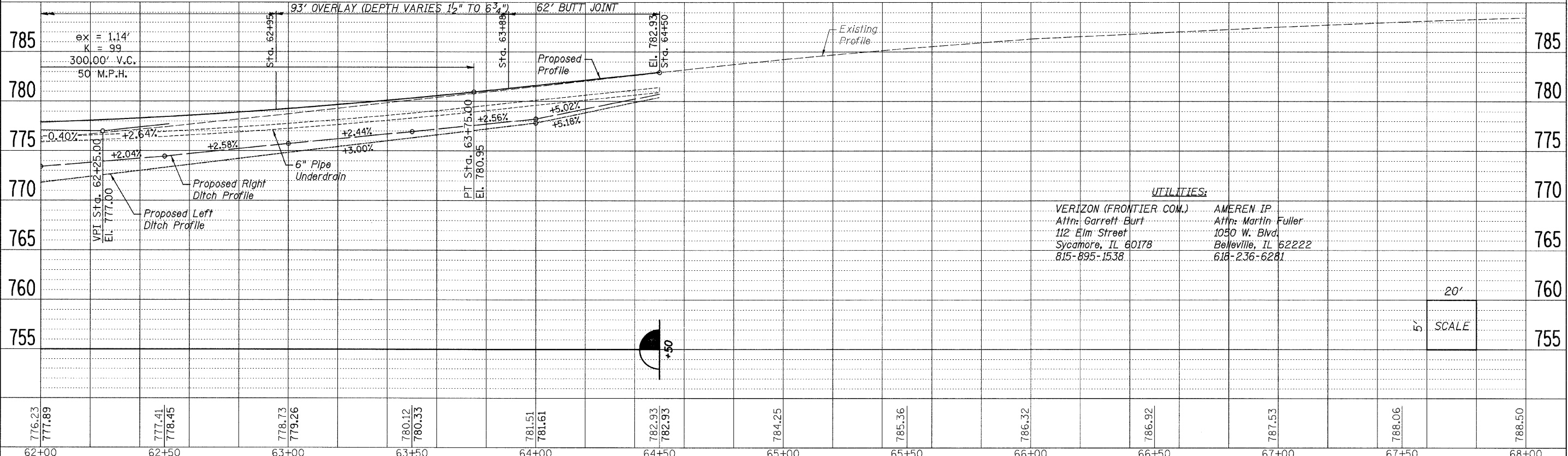
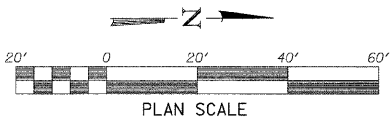
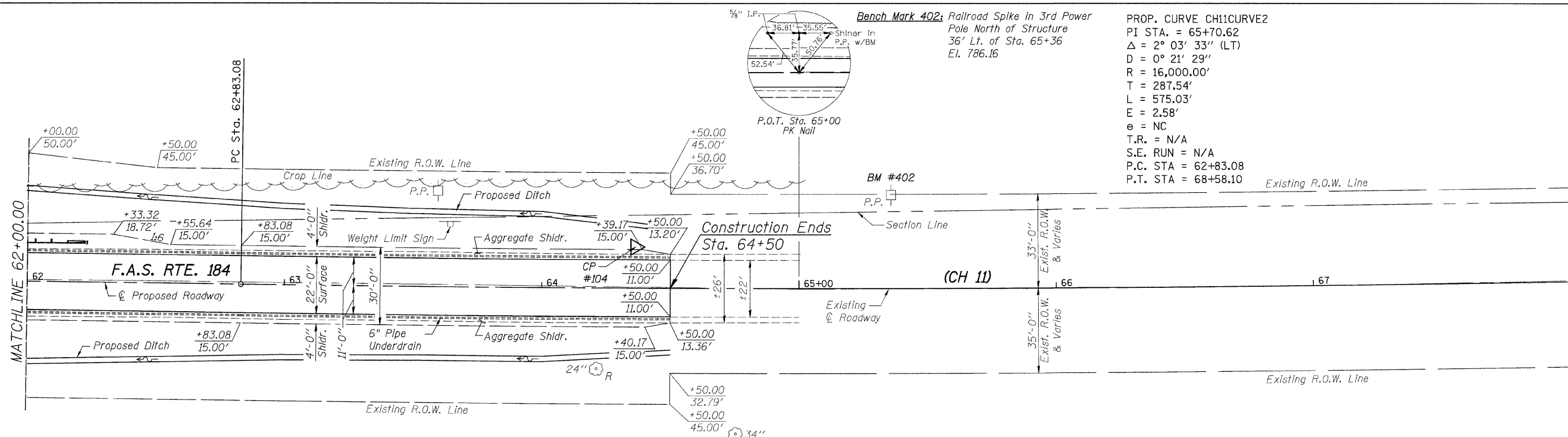
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WHA# 1051D10		CONTRACT NO. 87462		
ILLINOIS FED. AID PROJECT 895-0184(107)				

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**Bench Mark 402:** Railroad Spike in 3rd Power Pole North of Structure  
 36' Lt. of Sta. 65+36  
 El. 786.16

PROP. CURVE CH11CURVE2  
 PI STA. = 65+70.62  
 $\Delta = 2^\circ 03' 33''$  (LT)  
 $D = 0^\circ 21' 29''$   
 $R = 16,000.00'$   
 $T = 287.54'$   
 $L = 575.03'$   
 $E = 2.58'$   
 $e = NC$   
 $T.R. = N/A$   
 $S.E. RUN = N/A$   
 P.C. STA = 62+83.08  
 P.T. STA = 68+58.10



**UTILITIES:**  
 VERIZON (FRONTIER COM.) Attn: Garrett Burt  
 112 Elm Street  
 Sycamore, IL 60178  
 815-895-1538  
 AMEREN IP Attn: Martin Fuller  
 1050 W. Blvd  
 Belleville, IL 62222  
 618-236-6281

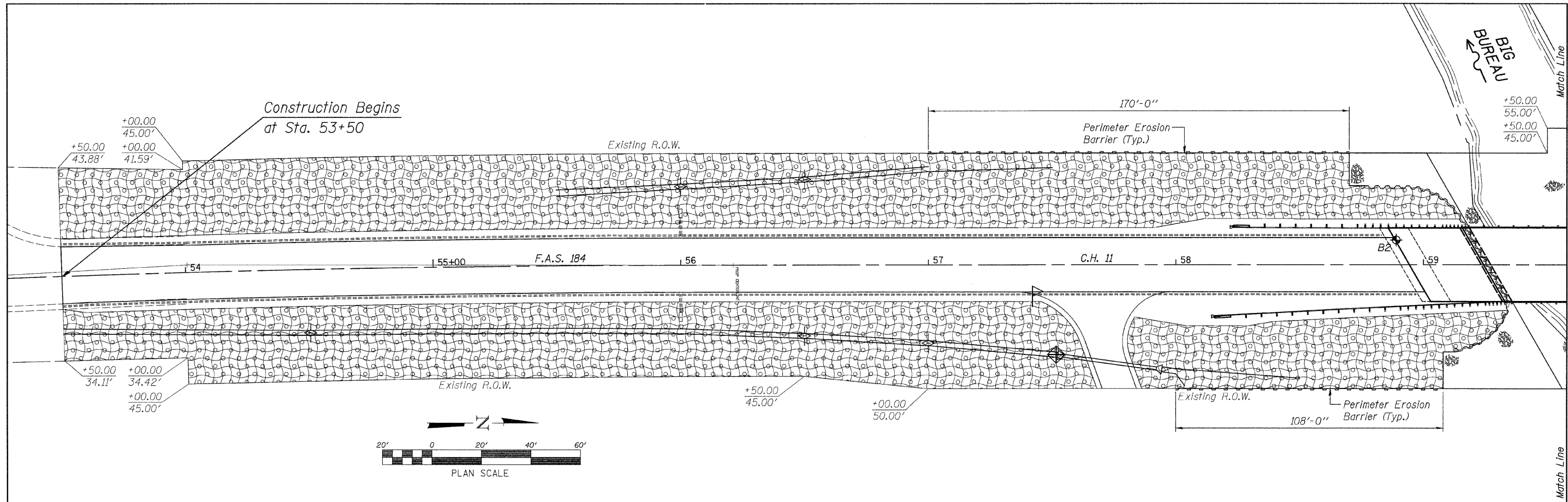
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PLDT SCALE =	CHECKED - B. K. CONVERSE	REVISED -
PLDT DATE =	DRAWN - F. D. LACHAT	REVISED -
	CHECKED - M. C. WAGNER	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

**PLAN & PROFILE**  
**STRUCTURE NO. 006-3032**  
 STA. 62+00 TO STA. 68+00

F.A.S. RTE. 184	SECTION 08-00211-00-BR	COUNTY BUREAU	TOTAL SHEETS 31	SHEET NO. 7
WHA# 1051D10		CONTRACT NO. 87462		
ILLINOIS FED. AID PROJECT BRS-0184(107)				



**STORM WATER POLLUTION PREVENTION PLAN**

The following plan is established and incorporated in the project to direct the contractor in the placement of temporary erosion control systems and to provide a storm sewer water pollution prevention plan for compliance under NPDES.

The purpose of this plan is to minimize erosion within the construction site and to limit sediments from leaving the construction site by utilizing proper temporary erosion control systems and providing ground cover within a reasonable amount of time.

Certain erosion control facilities shall be installed by the contractor at the beginning of construction, other items shall be installed by the contractor as directed by the engineer on a case by case situation depending on the contractor's sequence of activities, time of year, and expected weather conditions.

The contractor shall install permanent erosion control systems and seeding within a time frame specified herein and as directed by the engineer, therefore minimizing the amount of area susceptible to erosion and reducing the amount of temporary seeding. The engineer will determine if any temporary erosion control systems shown in the plan can be deleted and if any additional temporary erosion control systems, which are not included in this plan, shall be added. The contractor shall perform all work as directed by the engineer and as shown in Standard 280001 of the plans.

Section 280, Temporary Erosion Control, of the Standard Specifications additionally supplements this plan.

**SITE DESCRIPTION**

- DESCRIPTION OF CONSTRUCTION ACTIVITY:**
- The project consists of bridge replacement on F.A.S. 184 (C.H. 11) over Big Bureau Creek & approach roadway work thereto.
  - Construction includes pavement removal, earth excavation, entrances, channel excavation, various pavement items, bridge items and other miscellaneous items of construction.

**DESCRIPTION OF INTENDED SEQUENCE FOR MAJOR CONSTRUCTION ACTIVITIES WHICH WILL DISTURB SOILS FOR MAJOR PORTIONS OF THE CONSTRUCTION SITE:**

- Pavement removal and earth excavation
- Channel excavation
- Furnished excavation
- Aggregate base, bituminous surface and related appurtenances
- Placement of permanent erosion control, including seeding

**AREA OF CONSTRUCTION SITE:**

The total area of the construction site is estimated to be 2.20 acres of which 1.94 acres will be disturbed by excavation, grading, and other activities.

**OTHER REPORTS, STUDIES AND PLANS WHICH AID IN THE DEVELOPMENT OF THE STORM WATER POLLUTION PREVENTION PLAN AS REFERENCED DOCUMENTS:**

- Information of the soils and terrain within the site was obtained from soil borings that were utilized for the development of the proposed temporary erosion control systems.
- Project plan documents, specifications and special provisions, and plan drawings indicating drainage patterns and approximate slopes anticipated after grading activities were utilized for the proposed placement of the temporary erosion control systems.

**CONTROLS - EROSION CONTROLS AND SEDIMENT CONTROL**

**DESCRIPTION OF STABILIZATION PRACTICES AT THE BEGINNING OF CONSTRUCTION:**

- The drawings, specifications and special provisions will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices include: temporary seeding, permanent seeding, perimeter erosion barrier, and other appropriate measures as directed by the engineer. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.
  - Areas of existing vegetation (wood and grasslands) outside the proposed construction limits shall be identified by the engineer for preserving and shall be protected from construction activities.
  - Dead, diseased, or unsuitable vegetation within the site shall be removed as directed by the engineer, along with required tree removal.
  - As soon as reasonable access is available to all locations where water drains away from the project, temporary ditch checks and perimeter erosion barrier shall be installed as called out in this plan and directed by the engineer.
  - Bare and sparsely vegetated ground in highly erodible areas as determined by the engineer shall be temporarily seeded at the beginning of construction where no construction activities are expected within seven days.
  - At locations where a significant amount of water drains into the construction zone from outside areas (adjacent landowners), temporary ditch checks will be utilized to locally divert water, reduce flow rates, and collect outside siltation inside the right-of-way line.
- Establishment of these temporary erosion control measures will have additional benefits to the project. desirable grass seed will become established in these areas and will spread seeds onto the construction site until permanent seeding/mowing and over seeding can be completed.

**DESCRIPTION OF STABILIZATION PRACTICES DURING CONSTRUCTION:**

- During construction, areas outside the construction limits as outlined previously herein shall be protected, the contractor shall not use this area for staging (except as described on the plans and directed by the engineer), parking of vehicles or construction equipment, storage of materials, or other construction related activities.
  - Within the construction limits, areas which may be susceptible to erosion as determined by the engineer shall remain undisturbed until full scale construction is underway to prevent unnecessary soil erosion.
  - Earth stockpiles shall be temporarily seeded if they are to remain unused for more than fourteen days.
  - As construction proceeds, the contractor shall institute the following as directed by the engineer:
    - Place temporary erosion control facilities at locations shown on the plans.
    - Temporarily seed erodible bare earth on a weekly basis to minimize the amount of erodible surface area within the contract limits.
  - Excavated areas and embankment shall be permanently seeded immediately after final grading, if not, they shall be temporarily seeded if no construction activity in the area is planned for 7 days.
  - Construction equipment shall be stored and fueled only at designated locations, all necessary measures shall be taken to contain any fuel or other pollutant in accordance with EPA water quality regulations. leaking equipment or supplies shall be immediately repaired or removed from the site.
  - The resident engineer shall inspect the project daily during construction activities. Inspection shall also be done weekly and after rains of 1/2 inch or greater or equivalent snowfall and during the winter shutdown period. The project shall additionally be inspected by the construction field engineer on a bi-weekly basis to determine that erosion control efforts are in place and effective and if other erosion control work is necessary.

- Sediment collected during construction of the various temporary erosion control systems shall be disposed of on the site on a regular basis as directed by the engineer. The cost of this maintenance shall be included in the unit bid price for earth excavation.
- The temporary erosion control systems shall be removed as directed by the engineer after use is no longer needed or no longer functioning. The cost of this removal shall be included in the unit bid price for various temporary erosion control pay items.

**DESCRIPTION OF STRUCTURAL PRACTICES AFTER FINAL GRADING**

- Temporary erosion control systems shall be left in place with proper maintenance until permanent erosion control is in place and working properly and all proposed turf areas seeded and established.
- Once permanent erosion control systems as proposed in the plans are functional and established, temporary items shall be removed, cleaned up, and disturbed turf reseeded.

**MAINTENANCE AFTER CONSTRUCTION**

- Construction is complete after acceptance by IDOT final inspection. Maintenance up to this date will be by the contractor.

**MISCELLANEOUS:**

- Temporary erosion control seeding shall be applied at a rate of 100 lbs. /acres.
- Temporary ditch checks shall comply with section 280 of the Standard Specifications for Road and Bridge Construction and Standard 280001-05 located in the plans. Temporary ditch checks shall be aggregate.
- All erosion control products furnished shall be specifically recommended by the manufacturer for the use specified in the erosion control plan, prior to the approval and use of the product, the contractor shall submit to the engineer a notarized certification by the producer stating the intended use of the product and that the physical properties required for this application are met or exceeded. The contractor shall provide manufacturer installation procedures to facilitate the engineer in construction inspection.

This plan has been prepared to comply with the provisions of the NPDES permit number ILR10, issued by the Illinois Environmental Protection Agency for storm water discharges from construction site activities.



1-800-892-0123

**LEGEND**

- Inlet & Pipe Protection
- Perimeter Erosion Barrier
- Seeding, Class 3 (Special)
- Temporary Aggregate Ditch Checks
- Erosion Control Blanket

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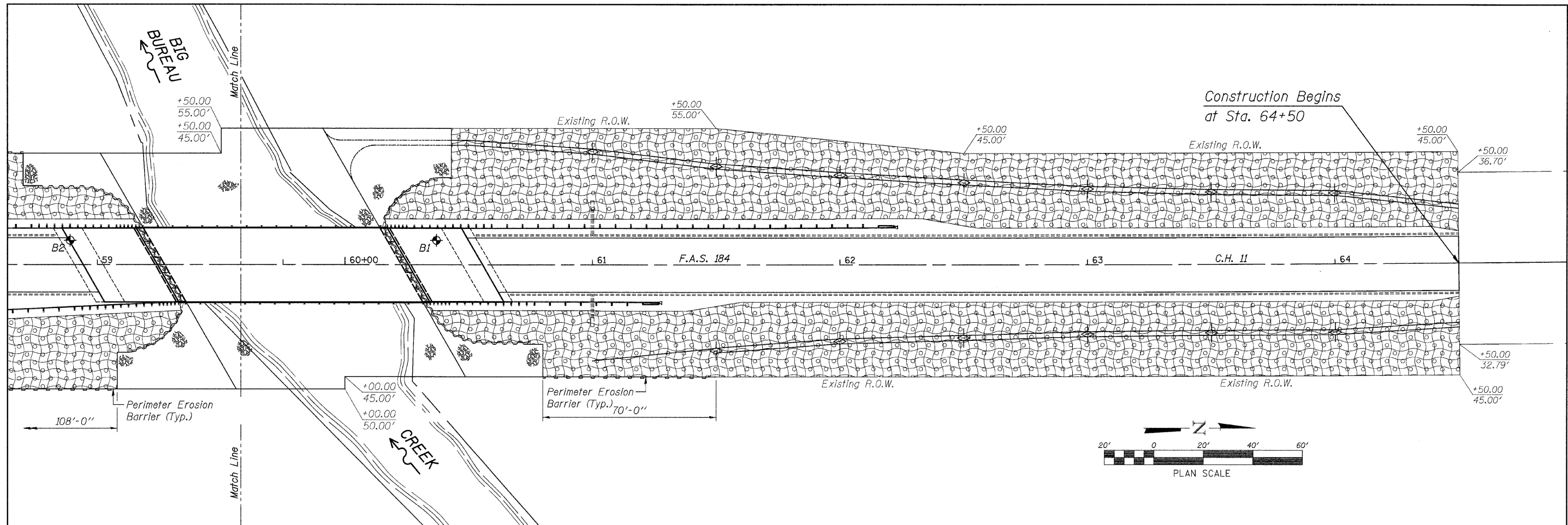
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PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -
	CHECKED - M. C. WAGNER	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

**EROSION CONTROL PLAN**  
**STRUCTURE NO. 006-3032**  
 STA. 53+27.87 TO STA. 59+57.94

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
184	08-00211-00-BR	BUREAU	31	8
	WHA# 1051D10		CONTRACT NO. 87462	
ILLINOIS FED. AID PROJECT BRS-0184(07)				





Construction Begins  
at Sta. 64+50

**EROSION CONTROL NOTES**

The soil erosion and sediment control practices will be inspected weekly and after 1/2" of rain or more by the individual on site in charge of soil erosion and sediment control during the construction of the project.

Perimeter erosion barrier shall comply with Section 280 of the Standard Specifications and shall be placed as shown on the Erosion Control Plan and in accordance with stations shown on the Schedule of Quantities sheet or as directed by the Engineer.

Silt fence shall be installed following the completion and stabilization of all areas adjacent to the on-site drainages, the silt fence will remain in place until the contributing area is stabilized.

For Seeding, Class 3 (special) see Special Provisions.

Erosion control blanket shall be placed in ditches and to all disturbed areas as shown on this Erosion Control Plan sheet and in accordance with Section 251 of the Standard Specifications for Road and Bridge Construction.

The use of green dye in the erosion control blanket is not acceptable.

The use of asphalt as a binder is not acceptable.

Temporary ditch checks shall comply with Section 280 of the Standard Specifications for Road and Bridge Construction and Standard 280001-05 located in the plans. Temporary ditch checks shall be aggregate.

Temporary ditch checks shall be placed at stations called out in the Schedule of Quantities or as directed by the Engineer.

Stockpiles of soil and other building materials to remain in place more than three (3) days shall be furnished with erosion and sediment control measures (i.e. perimeter silt fence). stockpiles to remain in place for 14 days or more shall receive temporary seeding.

All adjacent streets must be kept clear of debris. Inspected daily and cleaned when necessary.

**LEGEND**

- Inlet & Pipe Protection
- Perimeter Erosion Barrier
- Seeding, Class 3 (Special)
- Temporary Aggregate Ditch Checks
- Erosion Control Blanket

**BILL OF MATERIAL**

Item	Unit	Quantity
Erosion Control Blanket	Sq. Yd.	6,468
Temporary Ditch Checks	Foot	217
Perimeter Erosion Barrier	Foot	348
Inlet & Pipe Protection	Each	1
Seeding, Class 3 (Special)	Acre	1.34



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PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -
	CHECKED - M. C. WAGNER	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

**EROSION CONTROL PLAN**  
**STRUCTURE NO. 006-3032**  
STA. 59+57.94 TO STA. 64+93.66

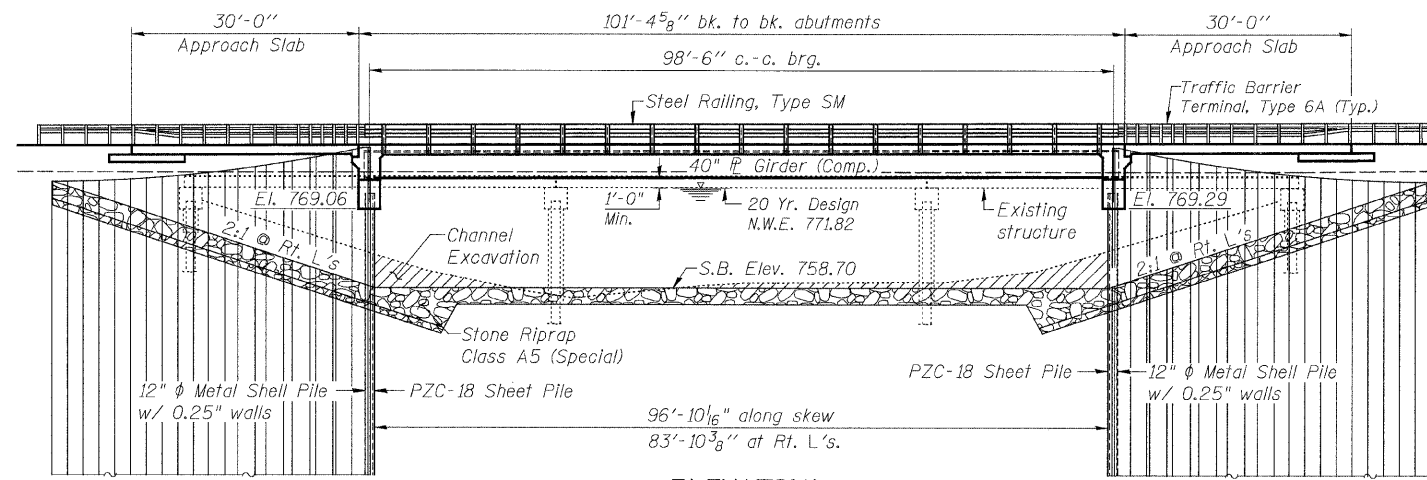
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
184	08-00211-00-BR	BUREAU	31	9
WHA# 1051D10			CONTRACT NO. 87462	
ILLINOIS FED. AID PROJECT BRS-0184(107)				

**EXISTING STRUCTURE:** S.N. 006-3031  
Originally built in 1974 as F.A.S. Route 184, Section 72-00104-00-BR. The existing structure is a three span (3 @ 49'-0") precast, prestressed concrete deck beam structure. 142'-10" back to back of abutments and 30'-0" out to out of deck. Structure to be removed and replaced. Road shall be closed to traffic during construction. No salvage.

**BENCH MARK:** Chiseled "□" on the southwest wingwall of existing bridge, 15' Lt. Sta. 58+92, Elev. 773.54

**BILL OF MATERIAL - BRIDGE**

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu Yd		432	432
Removal of Existing Structures	Each		1	1
Concrete Structures	Cu Yd	21.4	22.3	43.7
Concrete Superstructure	Cu Yd	201.2		201.2
Bridge Deck Grooving	Sq Yd	502		502
** Protective Coat	Sq Yd	538		538
Furnishing and Erecting Structural Steel	L Sum	1		1
Stud Shear Connectors	Each	960		960
Reinforcement Bars, Epoxy Coated	Pound	44,350	2,840	47,190
Bar Splicers	Each	62		62
Steel Railing, Type SM	Foot	203		203
Furnishing Metal Shell Piles 12"x0.250"	Foot		602	602
Driving Piles	Foot		602	602
Test Pile Metal Shells	Each		2	2
Name Plates	Each	1		1
Anchor Bolts, 1"	Each	20		20
Geocomposite Wall Drain	Sq Yd	58		58
* Porous Granular Embankment, Special	Ton	617		617
* Stone Riprap, Class A5 (Special)	Ton		1,570	1,570
** Permanent Steel Sheet Piling	Sq Ft		10,476	10,476



**ELEVATION**

**INDEX OF SHEETS**

- 1 General Plan and Elevation
- 2 Riprap & Pile Layout
- 3 Top of Slab Elevations
- 4-5 Top of South & North Bridge Approach Slab Elevations
- 6 Framing Plan
- 7 Superstructure Details
- 8 Integral Abutment Diaphragm Details
- 9 Bridge Approach Slab Details
- 10 South Abutment Details
- 11 South Abutment Sheet Pile Layout
- 12 North Abutment Details
- 13 North Abutment Sheet Pile Layout
- 14 Steel Railing, Type SM Details
- 15 Bar Splicer Assembly and Mechanical Splicer Details
- 16 Metal Shell Pile Details
- 17 Boring Logs

**GENERAL NOTES**

Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts 3/4" φ, holes 15/16" φ, unless otherwise noted.  
Calculated weight of Structural Steel = 99,951 lbs.  
All structural steel shall be AASHTO M 270 Grade 50, unless otherwise noted.  
No field welding is permitted except as specified in the contract documents.  
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.  
Reinforcement bars designated (E) shall be epoxy coated.  
The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all steel surfaces shall be Reddish Brown, Munsell No. 2.5 Yr. 3/4. See Special Provision for "Cleaning and Painting New Metal Structures".

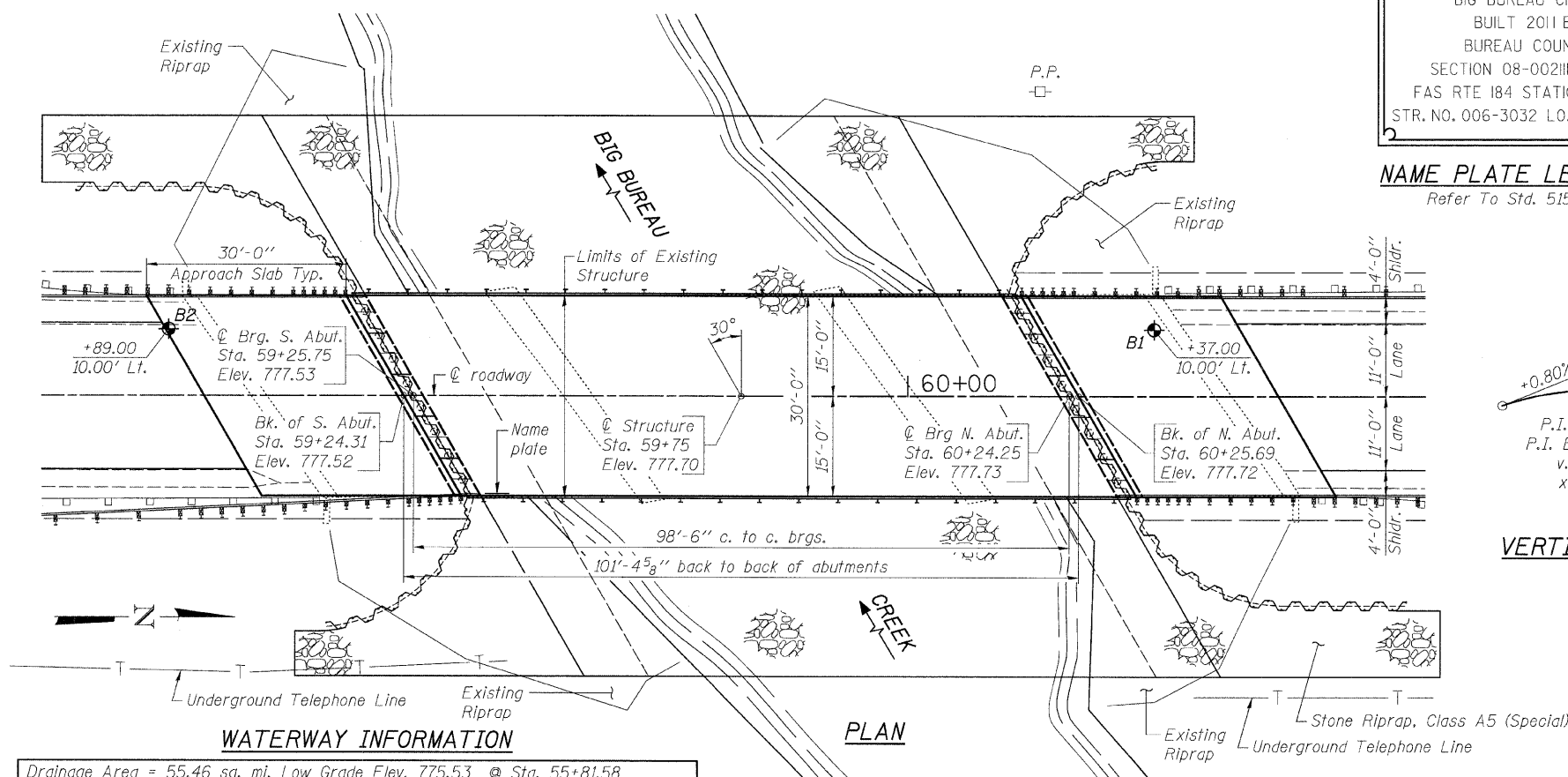
Layout of slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.  
The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.

\* See Special Provisions.  
\*\* Quantity is for Reinforced Concrete Deck and Approach Pavement.

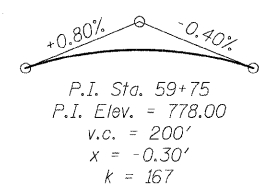
BIG BUREAU CREEK  
BUILT 2011 BY  
BUREAU COUNTY  
SECTION 08-00211-00-BR  
FAS RTE 184 STATION 59+75  
STR. NO. 006-3032 LOADING HL-93

**NAME PLATE LETTERING**

Refer To Std. 515001-03



**PLAN**



**VERTICAL CURVE**

**WATERWAY INFORMATION**

Drainage Area = 55.46 sq. mi. Low Grade Elev. 775.53 @ Sta. 55+81.58							
Flood Yr.	Freq.	Q	Opening Sq. Ft.	Nat. C.F.S.	Head - Ft.	Headwater E.L.	
Design	20	4,500	1,082	1,100	771.82	0.08	771.90
Base	100	6,810	1,112	1,260	773.65	0.86	774.51

**LOADING HL-93**

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

**DESIGN SPECIFICATIONS**

2010 AASHTO LRFD Bridge Design Specifications, 5th. Edition

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 1  
Design Spectral Acceleration at 1.0 sec. (S<sub>01</sub>) = 0.066g  
Design Spectral Acceleration at 0.2 sec. (S<sub>05</sub>) = 0.118g  
Soil Site Class = C

**DESIGN STRESSES**

**FIELD UNITS**  
f'c = 3,500 psi  
fy = 60,000 psi (Reinforcement)  
fy = 50,000 psi (M270 Grade 50)

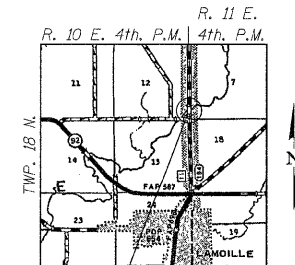
**DESIGN SCOUR ELEVATION TABLE**

Design Scour Elevation (ft.)	S. Abut.	N. Abut.
	754.70	754.70



Brian K. Converse  
DATE: 2/15/2011  
EXPIRES 11/30/12

"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 Bridge Design Specifications."



**LOCATION SKETCH**



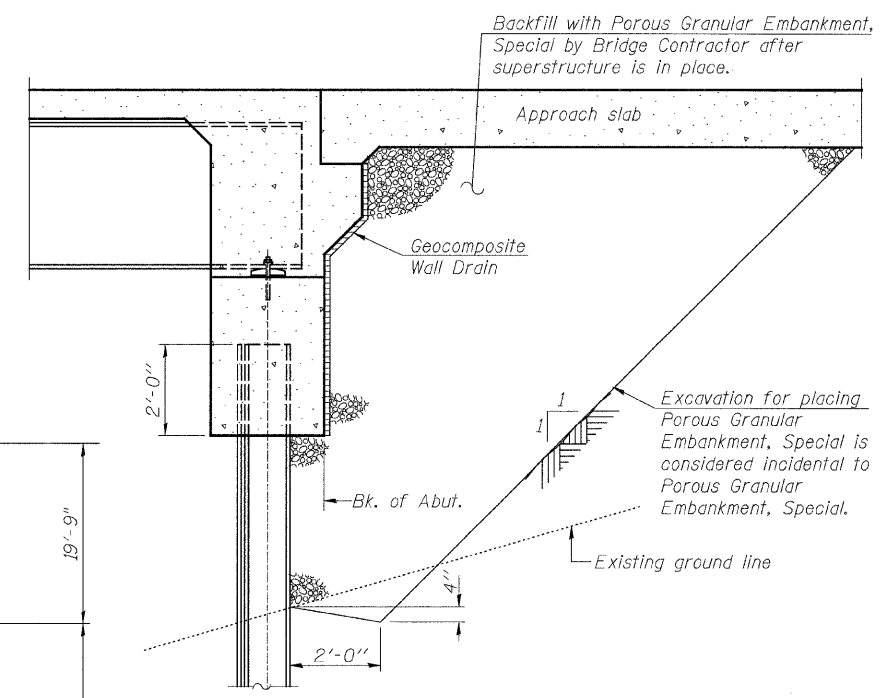
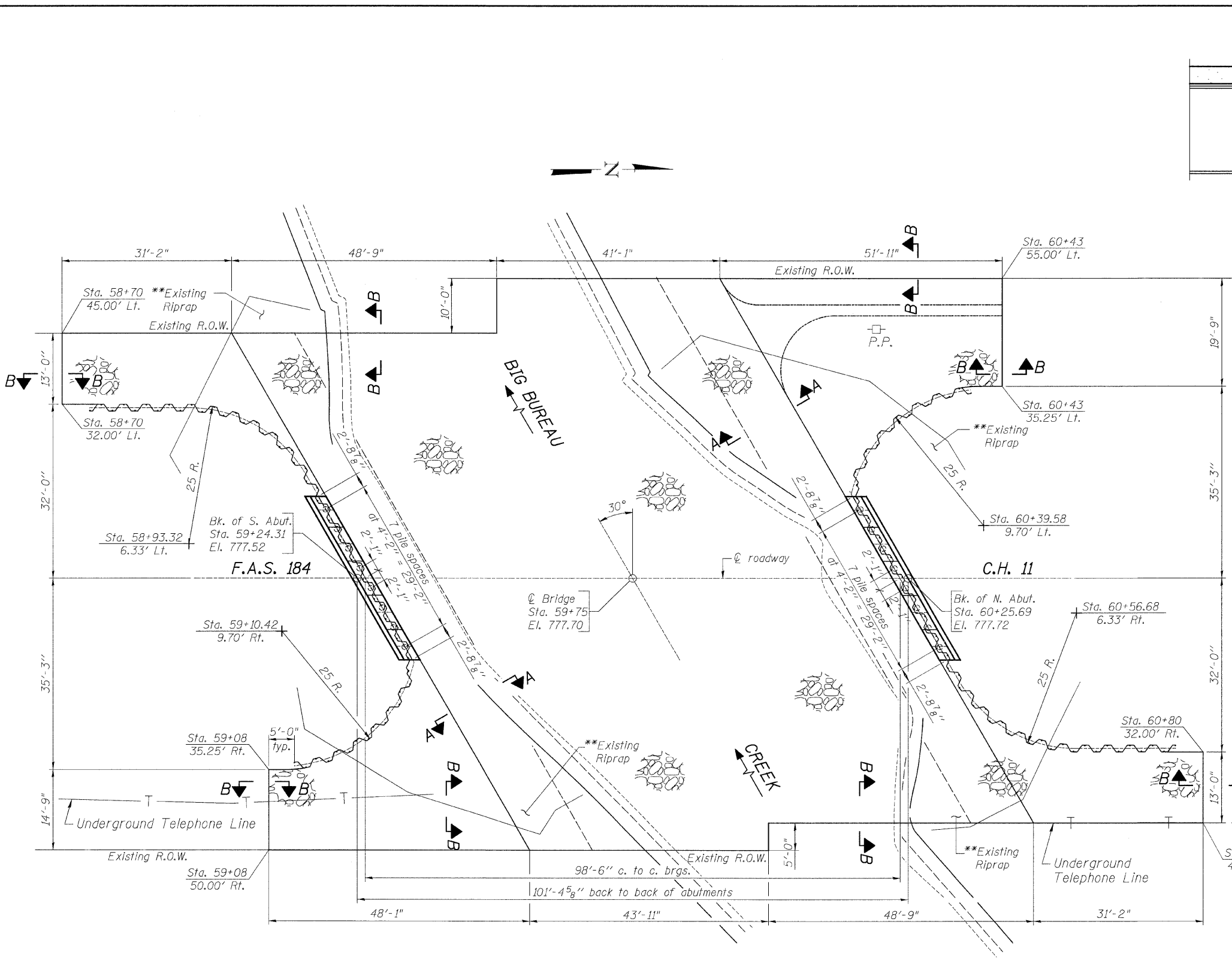
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CHECKED - B. K. CONVERSE	REVISOR -
DRAWN - F. D. LACHAT	REVISOR -
CHECKED - M. A. CACKLEY	REVISOR -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59+75**

**GENERAL PLAN & ELEVATION**  
**STRUCTURE NO. 006-3032**  
STRUCTURAL SHEET NO. 1 OF 17 SHEETS

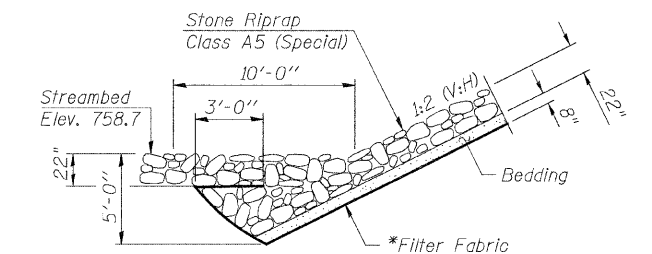
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184	08-00211-00-BR	BUREAU	31	10
WHA# 1051D10			CONTRACT NO. 87462	
ILLINOIS FED. AID PROJECT BRS-01840107				

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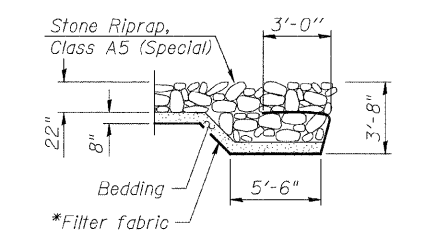


**SECTION THRU INTEGRAL ABUTMENT**  
(Horiz. dim. @ Rt. L's)

Note:  
All drainage system components shall extend 2'-0" beyond end of caps and around corners to intersect with sheeting.



**SECTION A-A**



**SECTION B-B**

**NOTE**

Geocomposite wall drain shall wrap around corners of cap to intersect with sheeting.  
Porous Granular Embankment, Special shall extend 2'-0" beyond end of cap.  
\*Included in the cost of Stone Riprap, A5 (Special).  
\*\*Existing riprap to be removed and delivered to the Bureau County Highway Department yard.

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Stone Riprap, Class A5 (Special)	Ton	1,570

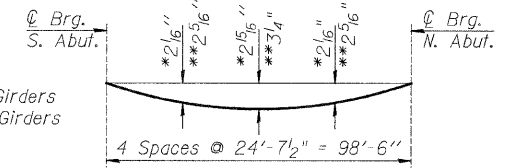
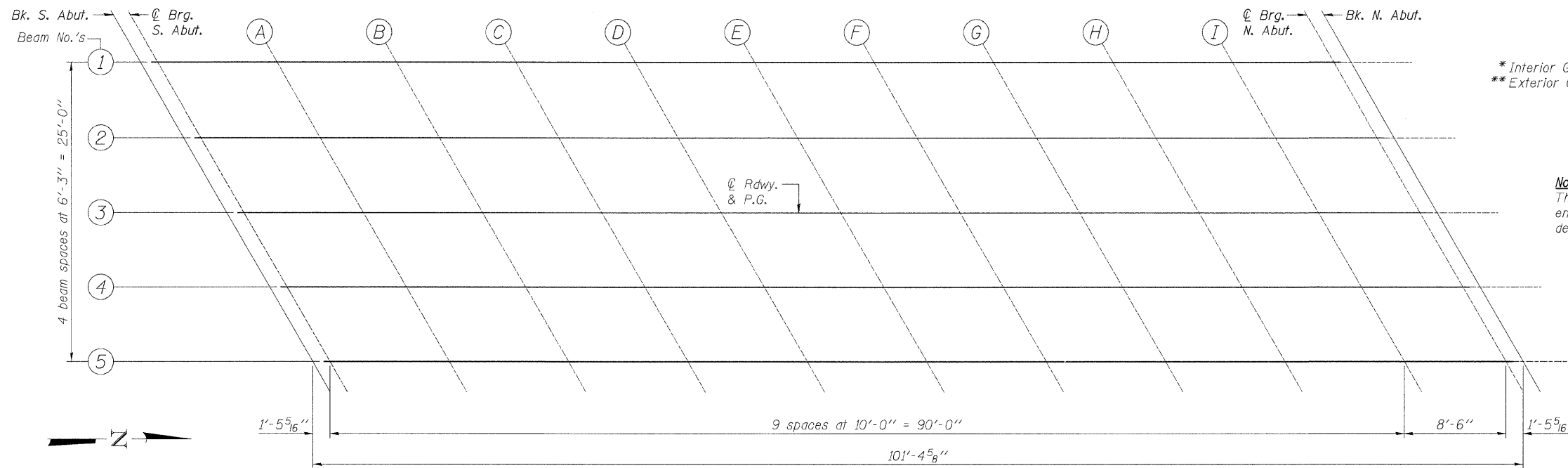
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PLOT SCALE =	DRAWN - F. D. LACHAT	REVISED -
PLOT DATE =	CHECKED - M. A. CACKLEY	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

**RIPRAP AND PILE LAYOUT**  
**STRUCTURE NO. 006-3032**

STRUCTURAL SHEET NO. 2 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
184	08-00211-00-BR	BUREAU	31	11
WHA# 1051D10		CONTRACT NO. 87462		
ILLINOIS FED. AID PROJECT BRS-0184(107)				



**DEAD LOAD DEFLECTION DIAGRAM**  
(Includes weight of concrete and railing only)

**Note:**  
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below.

**BEAM 1**

Location	Station	Offset Lt.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of S. Abut.	59+17.09	12.50	777.23	777.23
C Brg. S. Abut.	59+18.53	12.50	777.24	777.24
A	59+28.53	12.50	777.29	777.38
B	59+38.53	12.50	777.34	777.50
C	59+48.53	12.50	777.38	777.60
D	59+58.53	12.50	777.41	777.67
E	59+68.53	12.50	777.44	777.71
F	59+78.53	12.50	777.46	777.71
G	59+88.53	12.50	777.47	777.69
H	59+98.53	12.50	777.48	777.63
I	60+08.53	12.50	777.48	777.56
C Brg. N. Abut.	60+17.03	12.50	777.48	777.48
Bk. of N. Abut.	60+18.47	12.50	777.48	777.48

**BEAM 2**

Location	Station	Offset Lt.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of S. Abut.	59+20.70	6.25	777.38	777.38
C Brg. S. Abut.	59+22.14	6.25	777.39	777.39
A	59+32.14	6.25	777.43	777.51
B	59+42.14	6.25	777.48	777.62
C	59+52.14	6.25	777.51	777.71
D	59+62.14	6.25	777.54	777.78
E	59+72.14	6.25	777.57	777.81
F	59+82.14	6.25	777.59	777.82
G	59+92.14	6.25	777.60	777.79
H	60+02.14	6.25	777.61	777.74
I	60+12.14	6.25	777.61	777.67
C Brg. N. Abut.	60+20.64	6.25	777.60	777.60
Bk. of N. Abut.	60+22.08	6.25	777.60	777.60

**BEAM 3**

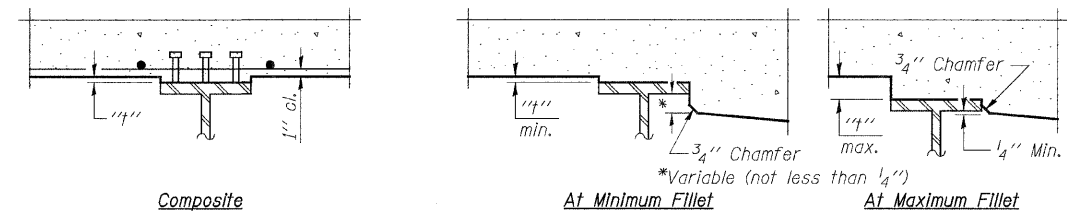
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of S. Abut.	59+24.31	0.00	777.52	777.52
C Brg. S. Abut.	59+25.75	0.00	777.53	777.53
A	59+35.75	0.00	777.58	777.65
B	59+45.75	0.00	777.62	777.76
C	59+55.75	0.00	777.65	777.85
D	59+65.75	0.00	777.68	777.91
E	59+75.75	0.00	777.70	777.95
F	59+85.75	0.00	777.72	777.95
G	59+95.75	0.00	777.73	777.92
H	60+05.75	0.00	777.73	777.87
I	60+15.75	0.00	777.73	777.80
C Brg. N. Abut.	60+24.25	0.00	777.73	777.73
Bk. of N. Abut.	60+25.69	0.00	777.72	777.72

**BEAM 4**

Location	Station	Offset Rt.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of S. Abut.	59+27.92	6.25	777.41	777.41
C Brg. S. Abut.	59+29.36	6.25	777.42	777.42
A	59+39.36	6.25	777.47	777.54
B	59+49.36	6.25	777.50	777.65
C	59+59.36	6.25	777.54	777.74
D	59+69.36	6.25	777.56	777.80
E	59+79.36	6.25	777.58	777.83
F	59+89.36	6.25	777.60	777.83
G	59+99.36	6.25	777.61	777.80
H	60+09.36	6.25	777.61	777.74
I	60+19.36	6.25	777.60	777.67
C Brg. N. Abut.	60+27.86	6.25	777.60	777.60
Bk. of N. Abut.	60+29.30	6.25	777.60	777.60

**BEAM 5**

Location	Station	Offset Rt.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of S. Abut.	59+31.53	12.50	777.31	777.31
C Brg. S. Abut.	59+32.97	12.50	777.31	777.31
A	59+42.97	12.50	777.36	777.44
B	59+52.97	12.50	777.39	777.55
C	59+62.97	12.50	777.42	777.64
D	59+72.97	12.50	777.45	777.71
E	59+82.97	12.50	777.46	777.73
F	59+92.97	12.50	777.48	777.73
G	60+02.97	12.50	777.48	777.70
H	60+12.97	12.50	777.48	777.63
I	60+22.97	12.50	777.48	777.55
C Brg. N. Abut.	60+31.47	12.50	777.47	777.47
Bk. of N. Abut.	60+32.91	12.50	777.47	777.47



**Composite INTERIOR BEAMS**

**At Minimum Fillet At Maximum Fillet EXTERIOR BEAMS**

To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown, minus slab thickness, equals the fillet heights "t" above top flange of beams.

**FILLET HEIGHTS**

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**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59+75**

**TOP OF SLAB ELEVATIONS**  
**STRUCTURE NO. 006-3032**

STRUCTURAL SHEET NO. 3 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
184	08-00211-00-BR	BUREAU	31	12
WHA# 1051D10		CONTRACT NO. 87462		
ILLINOIS FED. AID PROJECT BRS-0184(107)				

LEFT EDGE OF APPROACH PAVEMENT

Location	Station	Offset Lt.	Theoretical Grade Elevations
A	58+85.65	15.00	776.98
B	58+95.65	15.00	777.05
C	59+05.65	15.00	777.12
D	59+15.65	15.00	777.18

LEFT EDGE OF TRAFFIC LANE

Location	Station	Offset Lt.	Theoretical Grade Elevations
A	58+87.96	11.00	777.08
B	58+97.96	11.00	777.15
C	59+07.96	11.00	777.21
D	59+17.96	11.00	777.27

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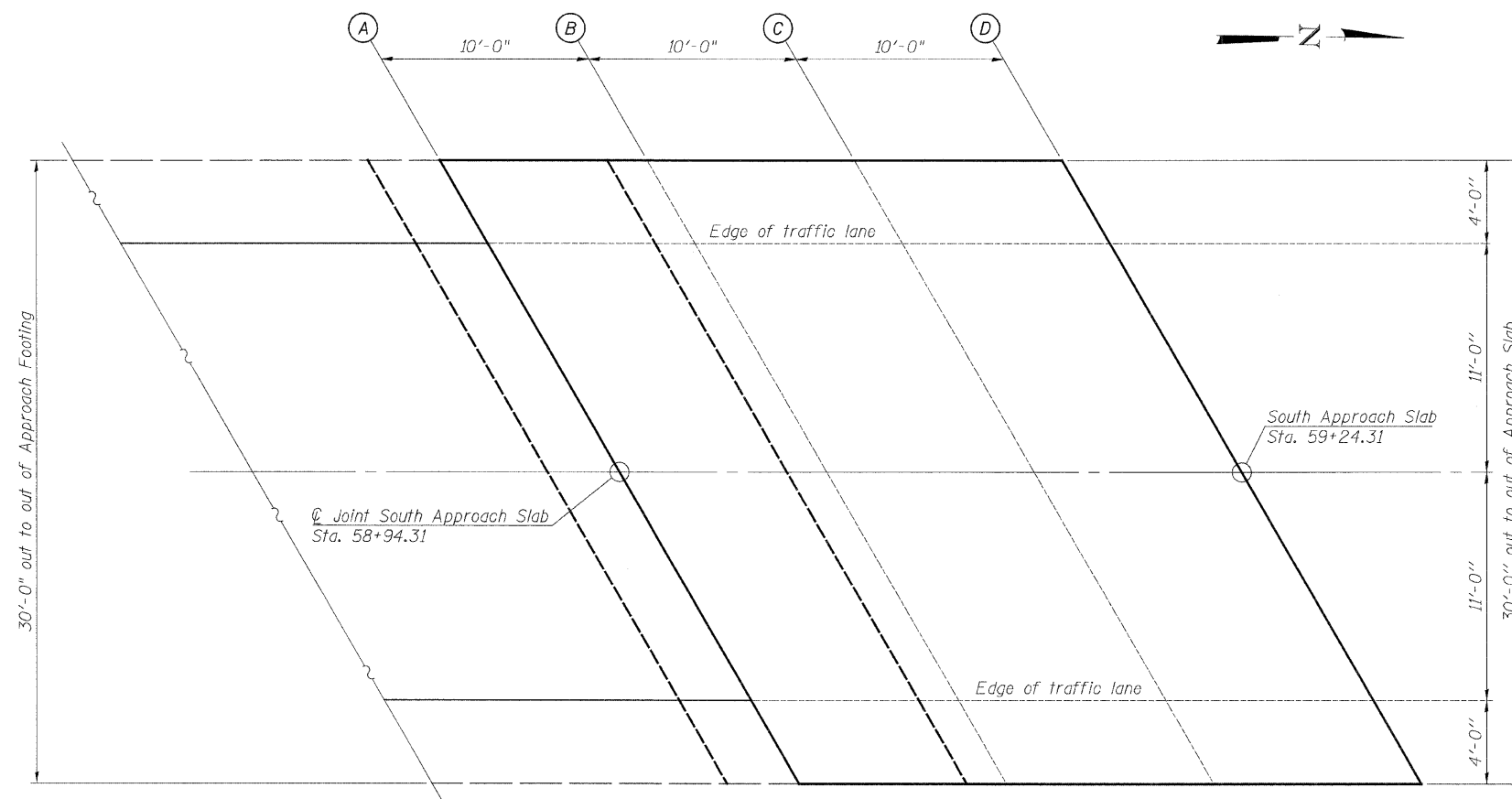
Location	Station	Offset	Theoretical Grade Elevations
A	58+94.31	0.00	777.34
B	59+04.31	0.00	777.41
C	59+14.31	0.00	777.47
D	59+24.31	0.00	777.52

RIGHT EDGE OF TRAFFIC LANE

Location	Station	Offset Rt.	Theoretical Grade Elevations
A	59+00.66	11.00	777.17
B	59+10.66	11.00	777.23
C	59+20.66	11.00	777.28
D	59+30.66	11.00	777.33

RIGHT EDGE OF APPROACH PAVEMENT

Location	Station	Offset Rt.	Theoretical Grade Elevations
A	59+02.97	15.00	777.10
B	59+12.97	15.00	777.16
C	59+22.97	15.00	777.21
D	59+32.97	15.00	777.26



PLAN

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**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

**TOP OF SOUTH BRIDGE APPROACH SLAB ELEVATIONS**  
**STRUCTURE NO. 006-3032**

STRUCTURAL SHEET NO. 4 OF 17 SHEETS

F.A.S. RTE. 184	SECTION 08-00211-00-BR	COUNTY BUREAU	TOTAL SHEETS 31	SHEET NO. 13
WHA# 1051D10		CONTRACT NO. 87462		
ILLINOIS FED. AID PROJECT BRS-0184(07)				

LEFT EDGE OF APPROACH PAVEMENT

Location	Station	Offset Lt.	Theoretical Grade Elevations
A	60+17.03	15.00	777.43
B	60+27.03	15.00	777.42
C	60+37.03	15.00	777.41
D	60+47.03	15.00	777.39

LEFT EDGE OF TRAFFIC LANE

Location	Station	Offset Lt.	Theoretical Grade Elevations
A	60+19.34	11.00	777.51
B	60+29.34	11.00	777.50
C	60+39.34	11.00	777.48
D	60+49.34	11.00	777.46

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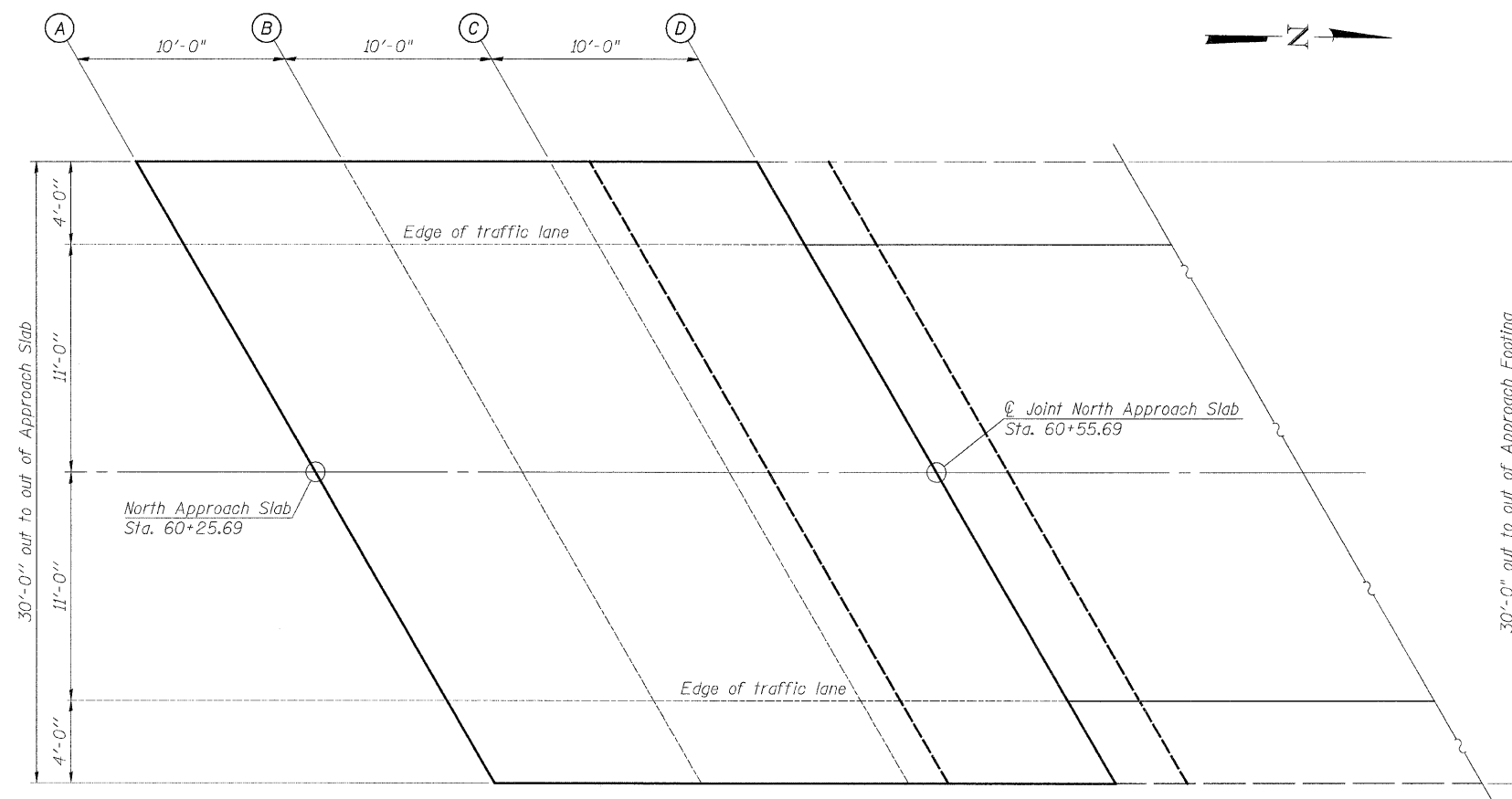
Location	Station	Offset	Theoretical Grade Elevations
A	60+25.69	0.00	777.72
B	60+35.69	0.00	777.71
C	60+45.69	0.00	777.69
D	60+55.69	0.00	777.67

RIGHT EDGE OF TRAFFIC LANE

Location	Station	Offset Rt.	Theoretical Grade Elevations
A	60+32.04	11.00	777.50
B	60+42.04	11.00	777.48
C	60+52.04	11.00	777.46
D	60+62.04	11.00	777.43

RIGHT EDGE OF APPROACH PAVEMENT

Location	Station	Offset Rt.	Theoretical Grade Elevations
A	60+34.35	15.00	777.41
B	60+44.35	15.00	777.39
C	60+54.35	15.00	777.37
D	60+64.35	15.00	777.34



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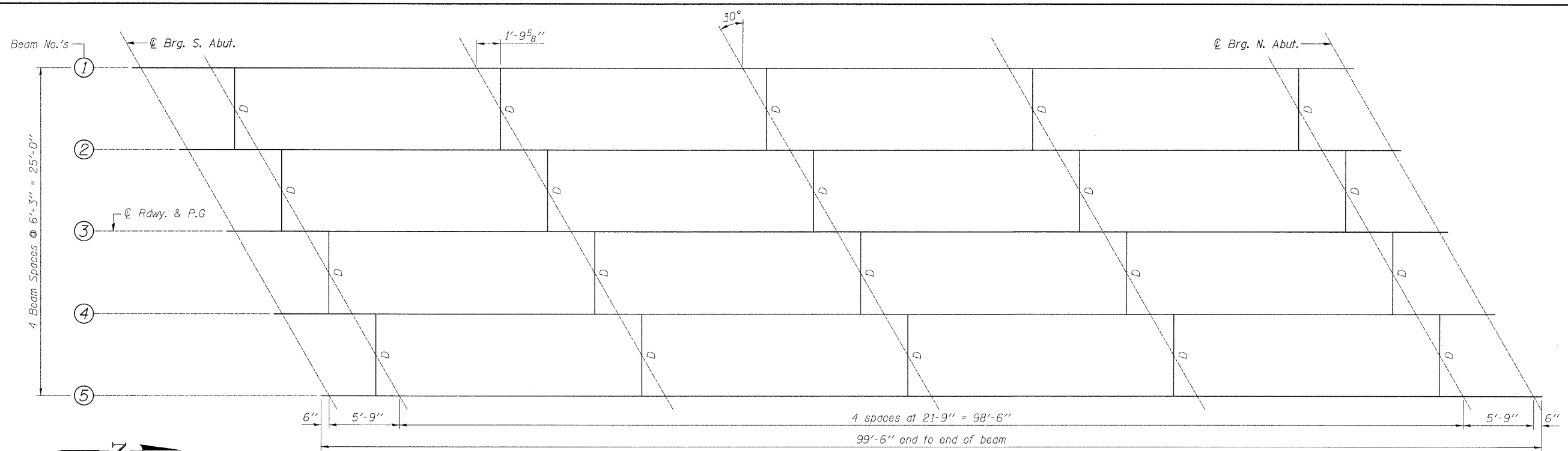
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**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

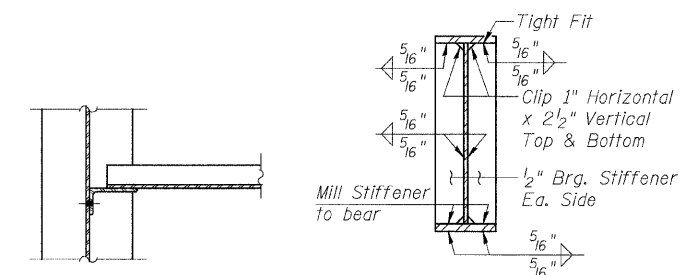
**TOP OF NORTH BRIDGE APPROACH SLAB ELEVATIONS**  
**STRUCTURE NO. 006-3032**

STRUCTURAL SHEET NO. 5 OF 17 SHEETS

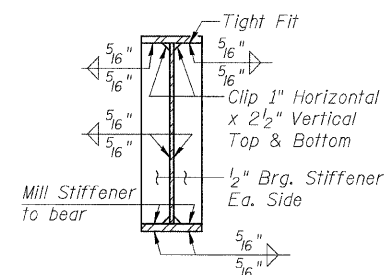
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WHA# 1051D10		CONTRACT NO. 87462		
[ILLINOIS] FED. AID PROJECT BRS-0184(07)				



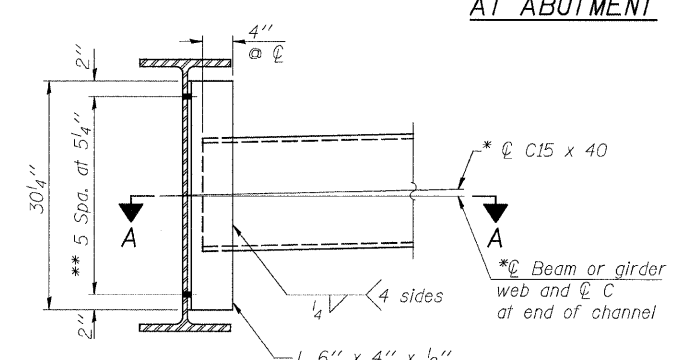
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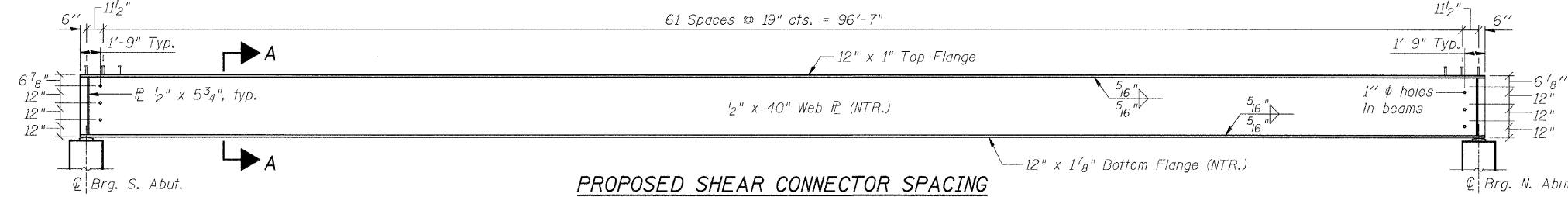
SECTION A-A



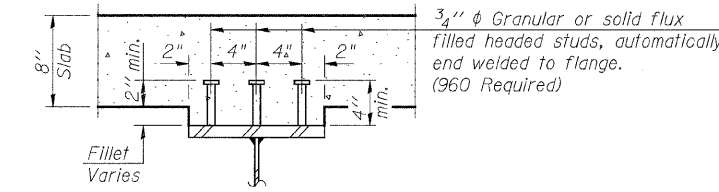
SECTION AT ABUTMENT



INTERIOR DIAPHRAGM



PROPOSED SHEAR CONNECTOR SPACING

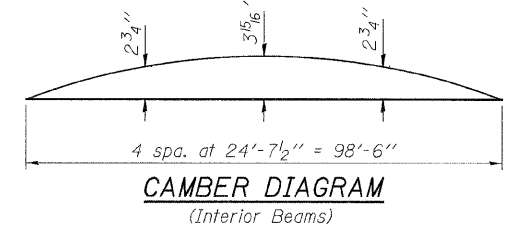


SECTION A-A

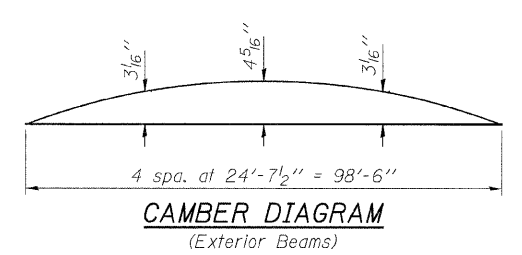
INTERIOR & EXTERIOR GIRDER MOMENT TABLE		
	Interior Center of Span	Exterior Center of Span
$I_s$	(in <sup>4</sup> ) 16,651	16,651
$I_c(n)$	(in <sup>4</sup> ) 42,452	41,205
$I_c(3n)$	(in <sup>4</sup> ) 30,165	29,173
$S_s$	(in <sup>3</sup> ) 938	938
$S_c(n)$	(in <sup>3</sup> ) 1,257	1,248
$S_c(3n)$	(in <sup>3</sup> ) 1,152	1,141
$Z$	(in <sup>3</sup> )	
DC1	(k') 0.872	0.954
M <sub>DC1</sub>	(k) 1,058	1,157
DC2	(k') 0.040	0.040
M <sub>DC2</sub>	(k) 49	49
DW	(k') 0.313	0.281
M <sub>DW</sub>	(k) 380	341
$M_{\frac{1}{2}} + Imp$	(k) 1,436	1,494
$M_u$ (Strength I)	(k) 4,465	4,633
$\phi_r M_n$	(k) 6,036	5,958
$f_s$ DC1	(ksi) 13.5	14.8
$f_s$ DC2	(ksi) 0.5	0.5
$f_s$ DW	(ksi) 4.0	3.6
$f_s$ 1.3(I+I)	(ksi) 17.8	18.6
$f_s$ (Service II)	(ksi) 35.8	37.5
$f_s$ (Total)(Strength I)	(ksi) 47.5	49.6
$V_r$	(k) 28.3	30.0

TOP OF WEB ELEVATIONS (FOR FABRICATORS USE ONLY)					
BEAM NUMBER	☉ Brg. South Abutment	0.25 Pt.	0.50 Pt.	0.75 Pt.	☉ Brg. North Abutment
1	776.324	776.694	776.876	776.814	776.564
2	776.468	776.807	776.978	776.916	776.687
3	776.612	776.945	777.111	777.043	776.809
4	776.504	776.832	776.993	776.920	776.680
5	776.396	776.744	776.905	776.821	776.550

INTERIOR & EXTERIOR GIRDER REACTION TABLE HL93 Loading		
	Interior at Abutment	Exterior at Abutment
R <sub>DC1</sub>	(k) 42.9	47.0
R <sub>DC2</sub>	(k) 2.0	2.0
R <sub>DW</sub>	(k) 15.4	13.8
R <sub><math>\frac{1}{2}</math> + Imp</sub>	(k) 90.2	77.3
R <sub>Total</sub>	(k) 150.5	140.1



CAMBER DIAGRAM (Interior Beams)



CAMBER DIAGRAM (Exterior Beams)

NOTES:

All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual or diaphragms at supports may be temporarily disconnected to install bearing anchor rods. Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

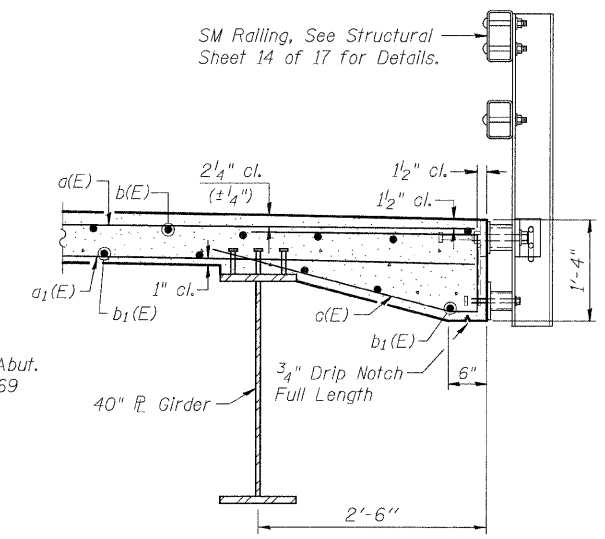
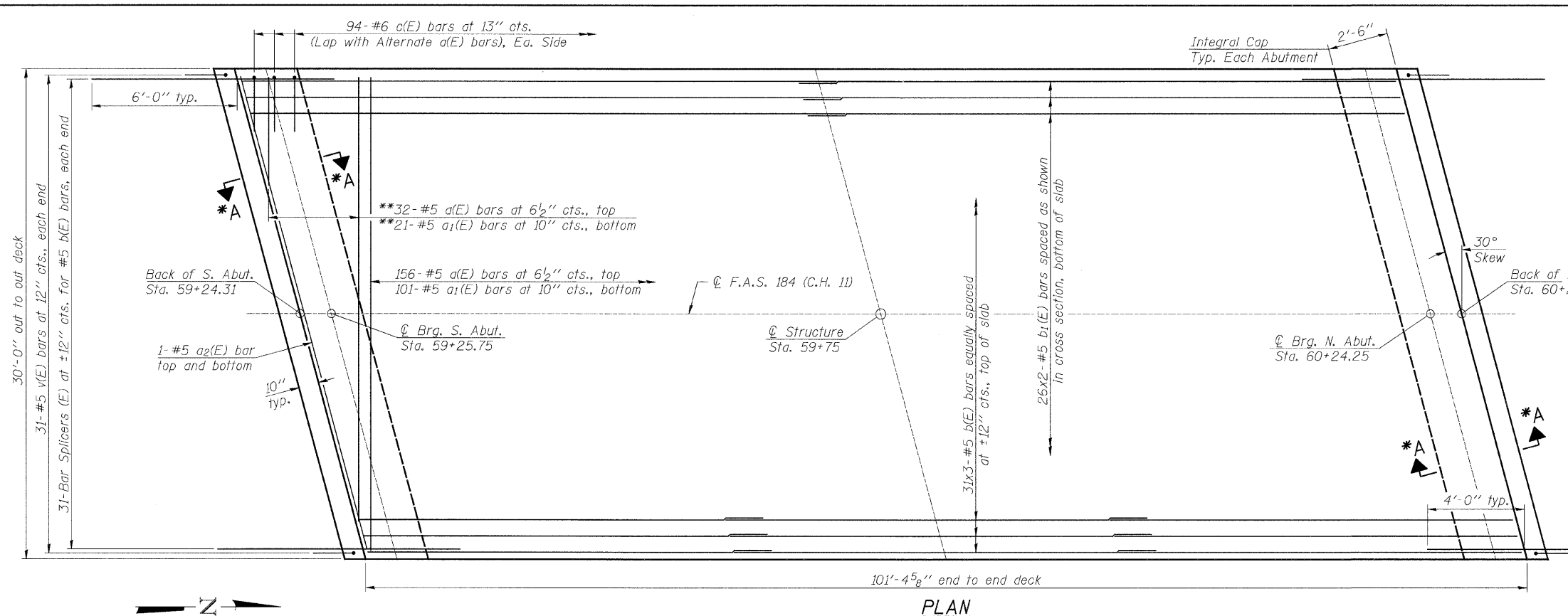
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BUREAU COUNTY  
F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK  
STATION 59 + 75

FRAMING PLAN  
STRUCTURE NO. 006-3032  
STRUCTURAL SHEET NO. 6 OF 17 SHEETS

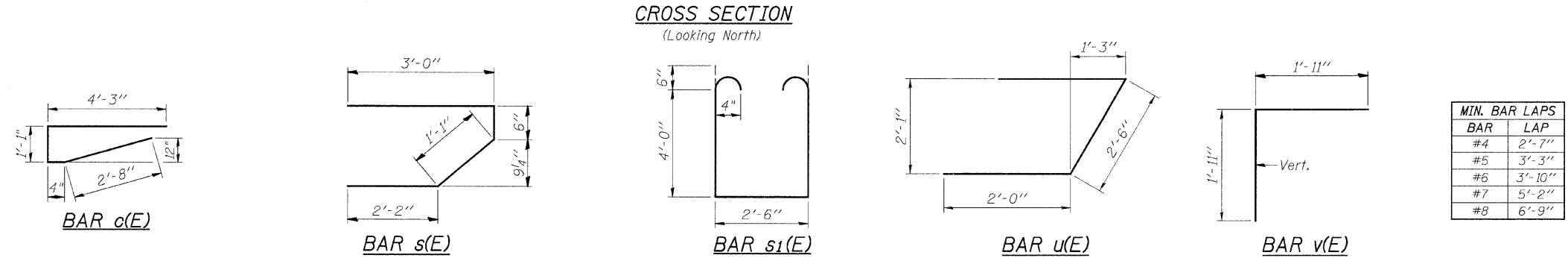
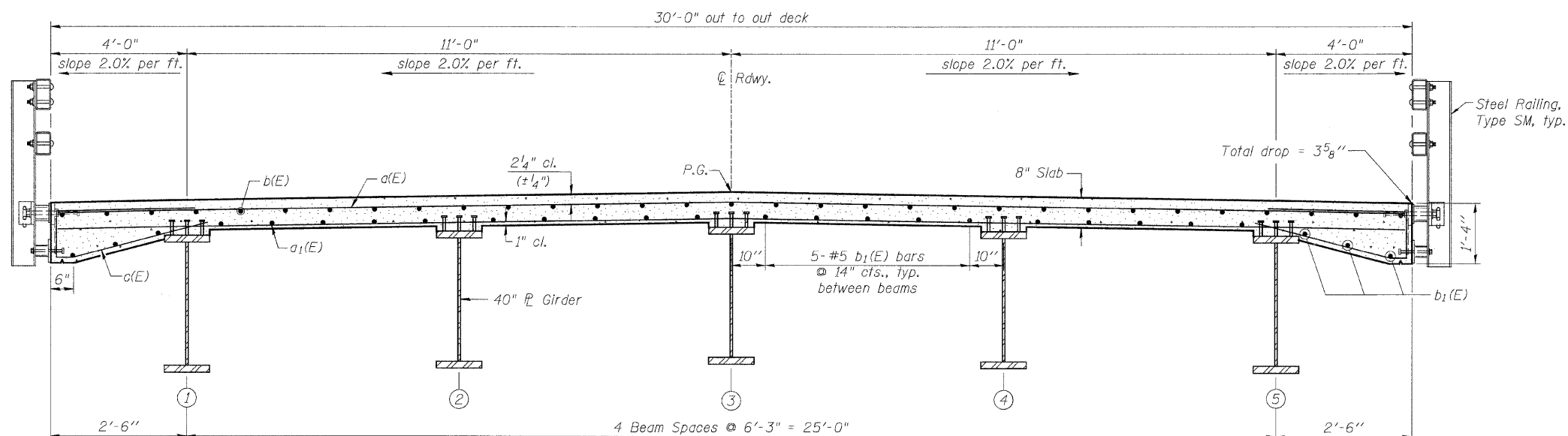
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
184	08-00211-00-BR	BUREAU	31	15
WHA# 1051D10		CONTRACT NO. 87462		
ILLINOIS FED. AID PROJECT BR5-0184(107)				



**SECTION THRU EDGE OF DECK**  
 Reinforcement bars in the top of the deck may be placed with a 1/2" minimum clearance in the area of the rail post anchor devices. 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.

**SUPERSTRUCTURE  
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	188	#5	29'-8"	—
a <sub>1</sub> (E)	122	#5	29'-8"	—
a <sub>2</sub> (E)	4	#5	34'-3"	—
b(E)	93	#5	35'-10"	—
b <sub>1</sub> (E)	52	#5	52'-2"	—
c(E)	188	#6	8'-4"	⌋
m(E)	12	#6	34'-3"	—
m <sub>1</sub> (E)	30	#6	9'-11"	—
m <sub>2</sub> (E)	8	#6	6'-10"	—
m <sub>3</sub> (E)	4	#6	2'-6"	—
s(E)	60	#5	7'-7"	⌋
s <sub>1</sub> (E)	60	#4	11'-6"	⌋
u(E)	16	#6	6'-6"	⌋
v(E)	62	#5	3'-10"	⌋
Concrete Superstructure			Cu. Yd.	112.5
Bridge Deck Grooving			Sq. Yd.	316
Protective Coat			Sq. Yd.	338
Furnishing & Erecting Structural Steel			L. Sum	1
Stud Shear Connectors			Each	960
Reinforcement Bars, Epoxy Coated			Pound	20,900
Anchor Bolts, 1"			Each	20



BAR	LAP
#4	2'-7"
#5	3'-3"
#6	3'-10"
#7	5'-2"
#8	6'-9"

**NOTES:**  
 Bars indicated thus 31 x 3-#5 etc. indicates 31 lines of bars with 3 lengths per line.  
 \*See Structural Sheet 8 of 17 for details.  
 \*\*Order a(E) and a<sub>1</sub>(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

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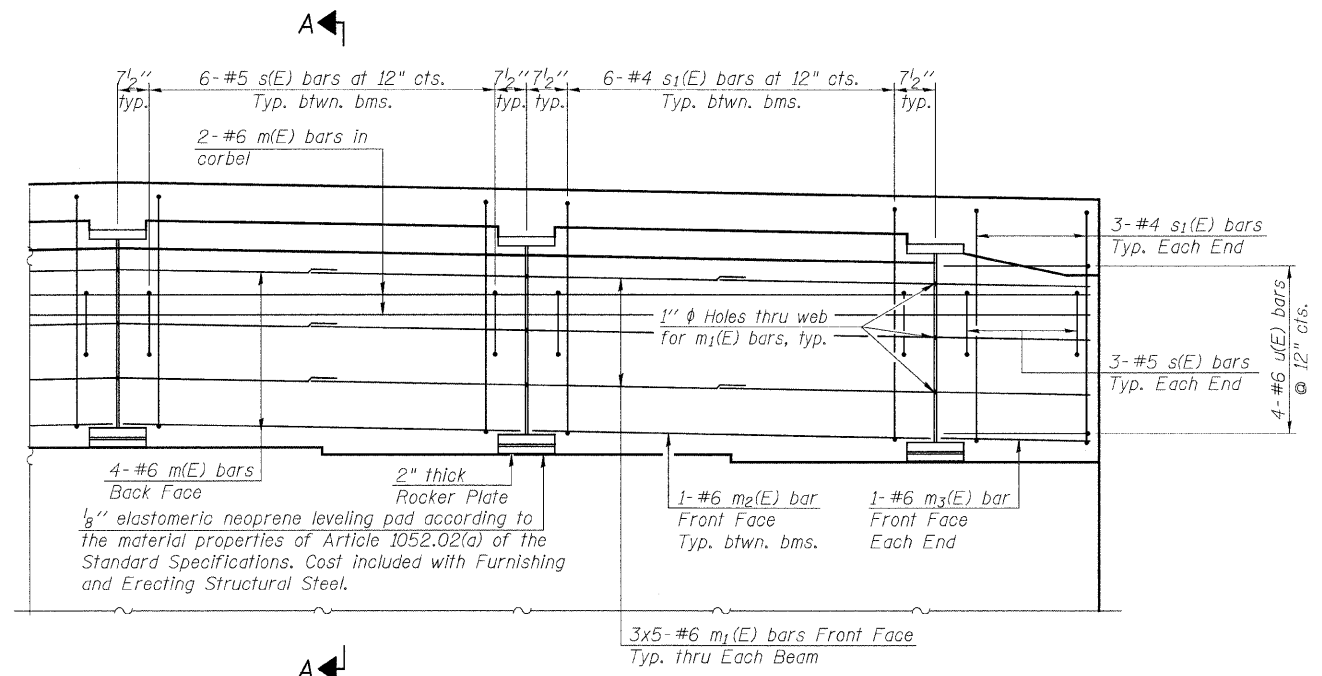
**BUREAU COUNTY  
 F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK  
 STATION 59 + 75**

**SUPERSTRUCTURE DETAILS  
 STRUCTURE NO. 006-3032**

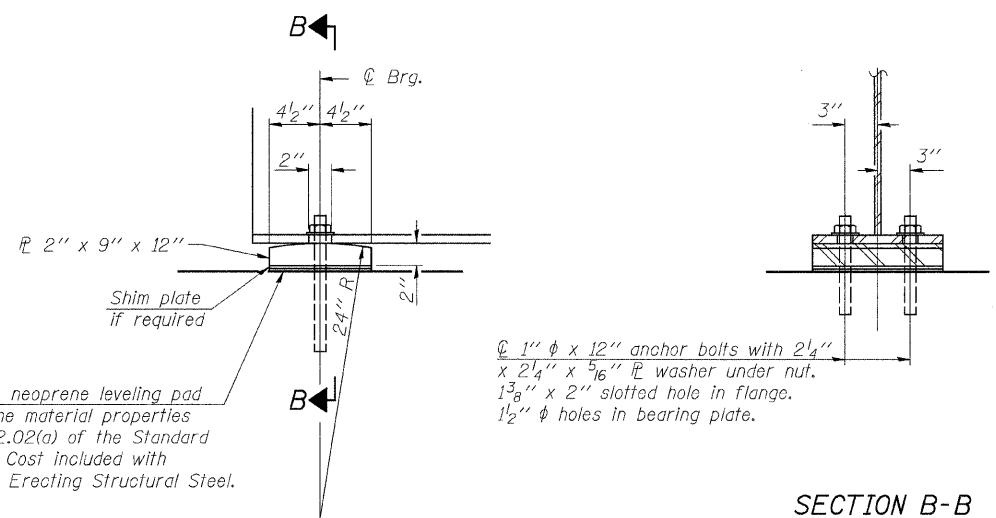
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184	08-00211-00-BR	BUREAU	31	16
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ILLINOIS FED. AID PROJECT BR5-0184(107)				

STRUCTURAL SHEET NO. 7 OF 17 SHEETS



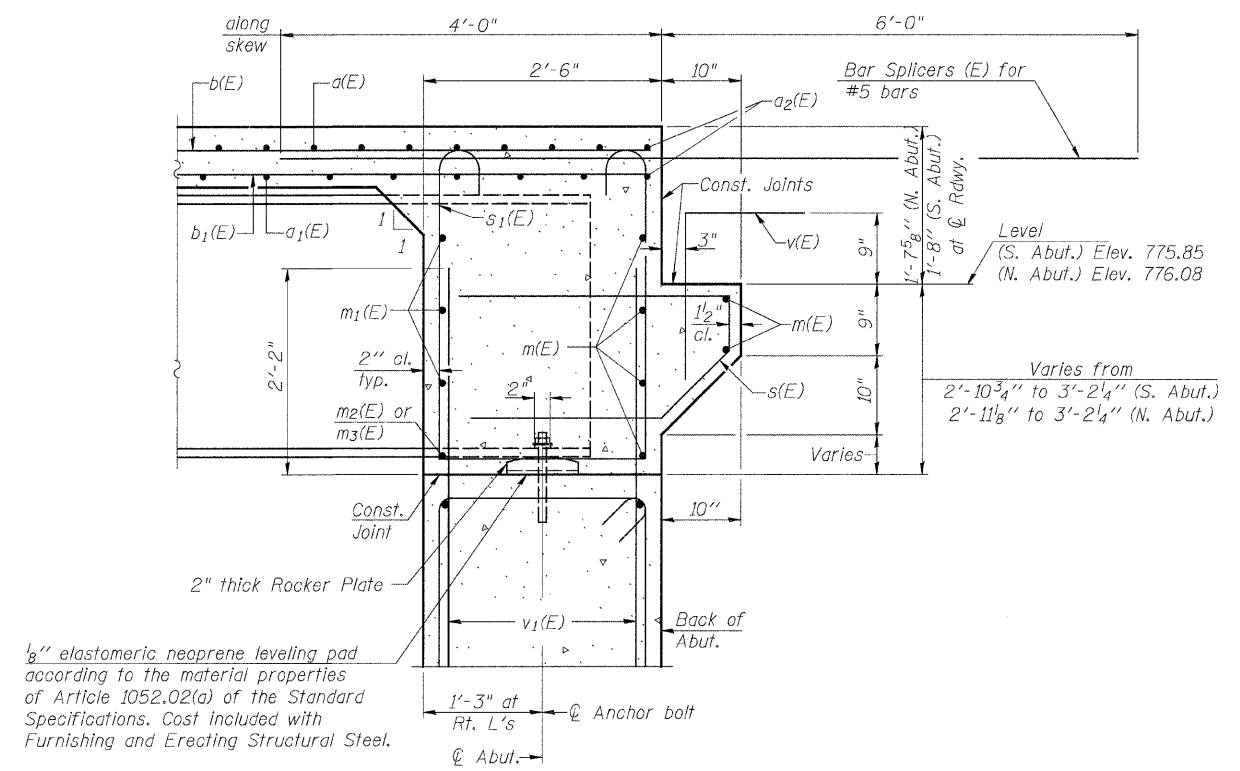


**DIAPHRAGM ELEVATION AT ABUTMENT**



**ELEVATION AT ABUTMENT**

**FIXED BEARING**



**SECTION A-A**

Dimensions at right angles to abutment, except as shown.

**NOTES:**

- Reinforcement bars in diaphragm are billed with superstructure on Structural Sheet 7 of 17. Concrete in diaphragm is included with Concrete Superstructure on Structural Sheet 7 of 17. For details of bars s(E) & s1(E) see Structural Sheet 7 of 17.
- The s(E) and s1(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36 ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

MIN. BAR LAPS	
BAR	LAP
#4	2'-7"
#5	3'-3"
#6	3'-10"
#7	5'-2"
#8	6'-9"

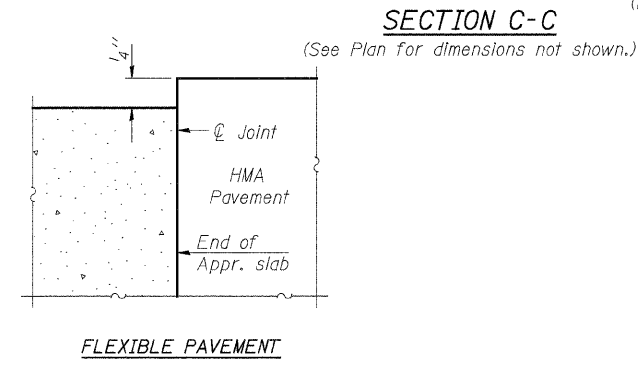
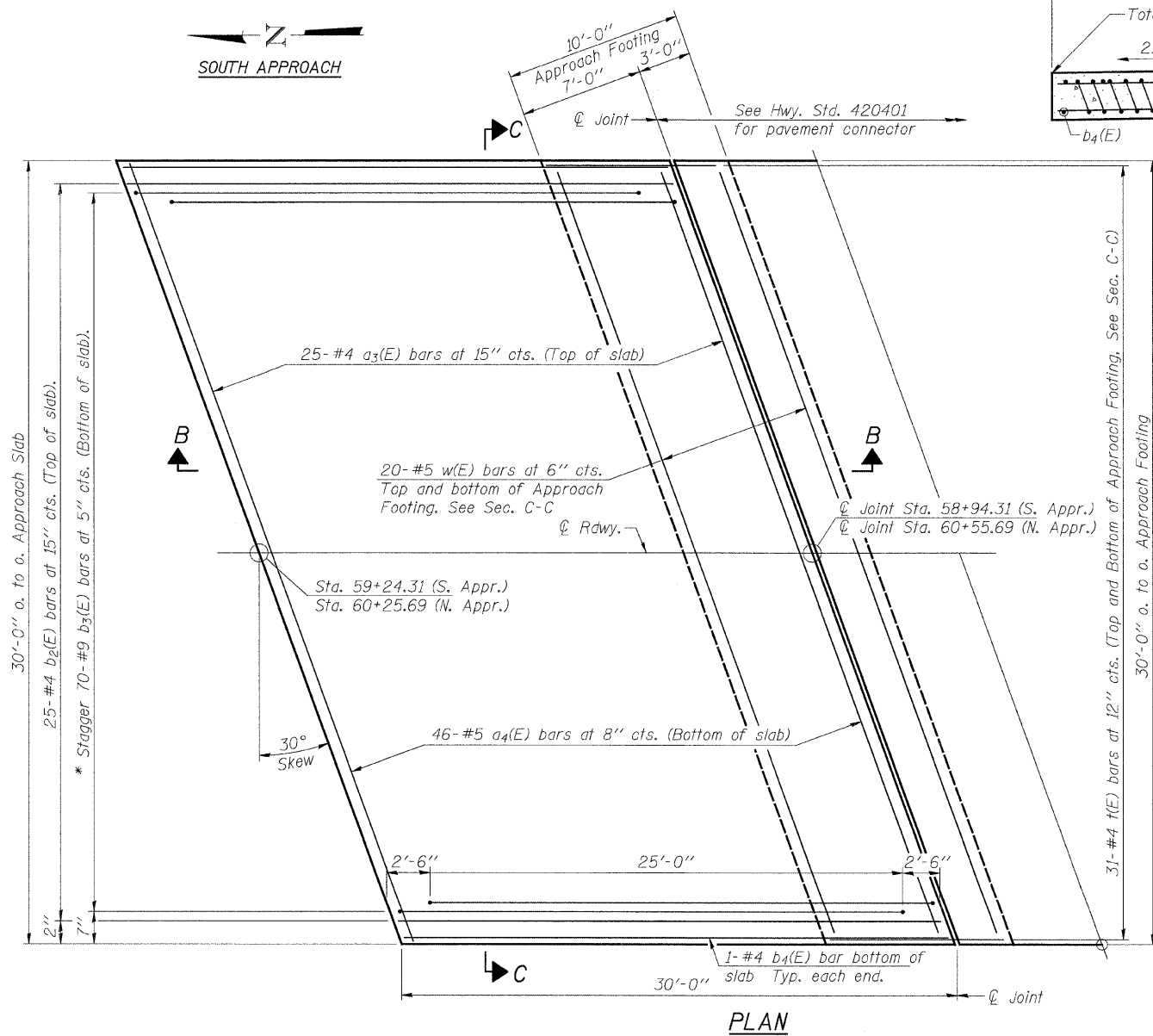
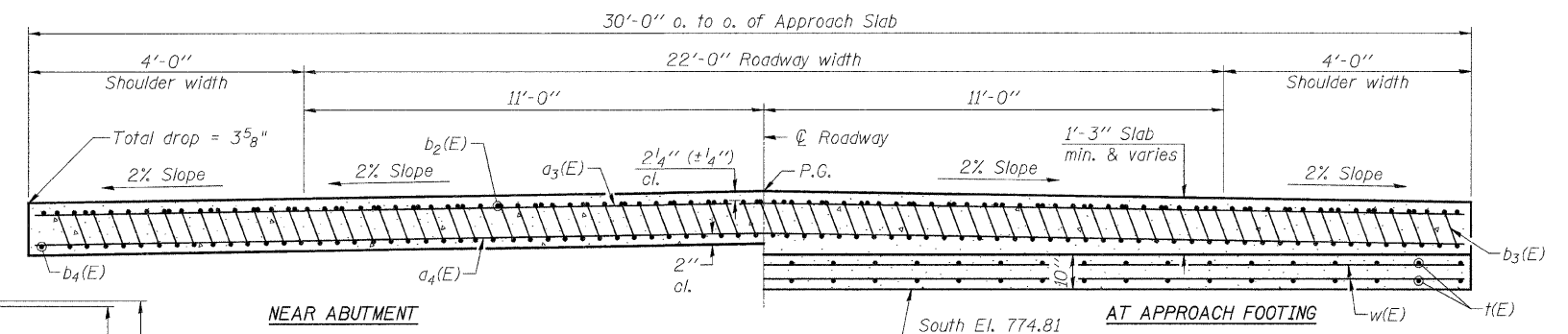
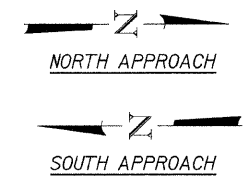
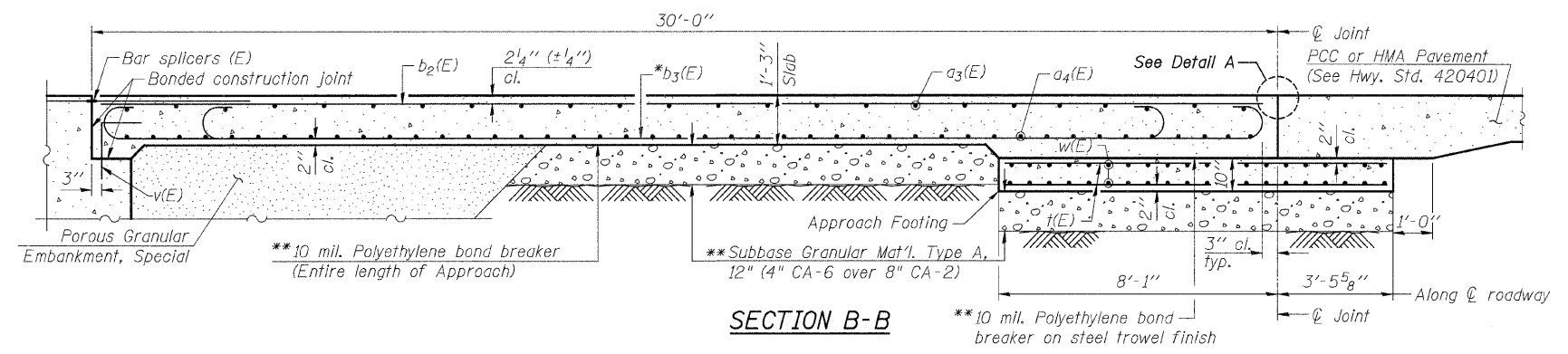
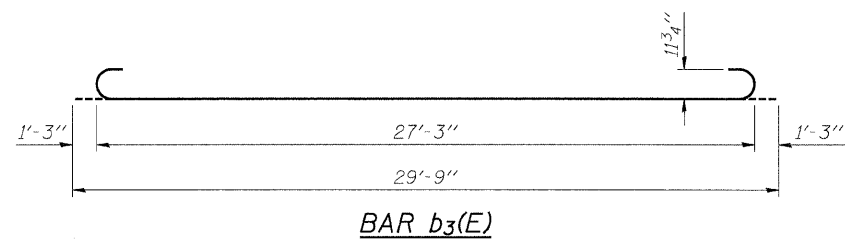
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**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

**INTEGRAL ABUTMENT DIAPHRAGM DETAILS**  
**STRUCTURE NO. 006-3032**  
 STRUCTURAL SHEET NO. 8 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
184	08-00211-00-BR	BUREAU	31	17
	WHA# 1051010		CONTRACT NO. 87462	
ILLINOIS FED. AID PROJECT BRS-0184(07)				



**TWO APPROACHES  
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a <sub>3</sub> (E)	50	#4	34'-3"	—
a <sub>4</sub> (E)	92	#5	34'-3"	—
b <sub>2</sub> (E)	50	#4	29'-8"	—
b <sub>3</sub> (E)	140	#9	29'-9"	—
b <sub>4</sub> (E)	4	#4	29'-8"	—
t(E)	124	#4	11'-2"	—
w(E)	80	#5	34'-3"	—
Concrete Structures		Cu. Yd.	21.4	
Concrete Superstructure		Cu. Yd.	88.7	
Bridge Deck Grooving		Sq. Yd.	186	
Protective Coat		Sq. Yd.	200	
Reinforcement Bars, Epoxy Coated		Pound	23,450	

- NOTES:**  
 a<sub>3</sub>(E) and a<sub>4</sub>(E) bar spacings measured along  $\text{\O}$  Rdwy.  
 Approach slab shall be paid for as Concrete Superstructure.  
 Approach footing concrete shall be paid for as Concrete Structures.  
 Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.  
 For v(E) bar details, see Structural Sheet 7 of 17.  
 The approach footing maximum applied service bearing pressure (Q<sub>max</sub>) = 2.0 ksf.  
 For Bar Splicer Assembly Details, see Structural Sheet 15 of 17.  
 Cost of excavation for approach footing included with Concrete Structures.  
 For Porous Granular Embankment, Special and drainage treatment details, see Structural Sheet 2 of 17.  
 \*Tilt #9 b<sub>3</sub>(E) bars as required to maintain clearance.  
 \*\*Cost included with Concrete Superstructure.

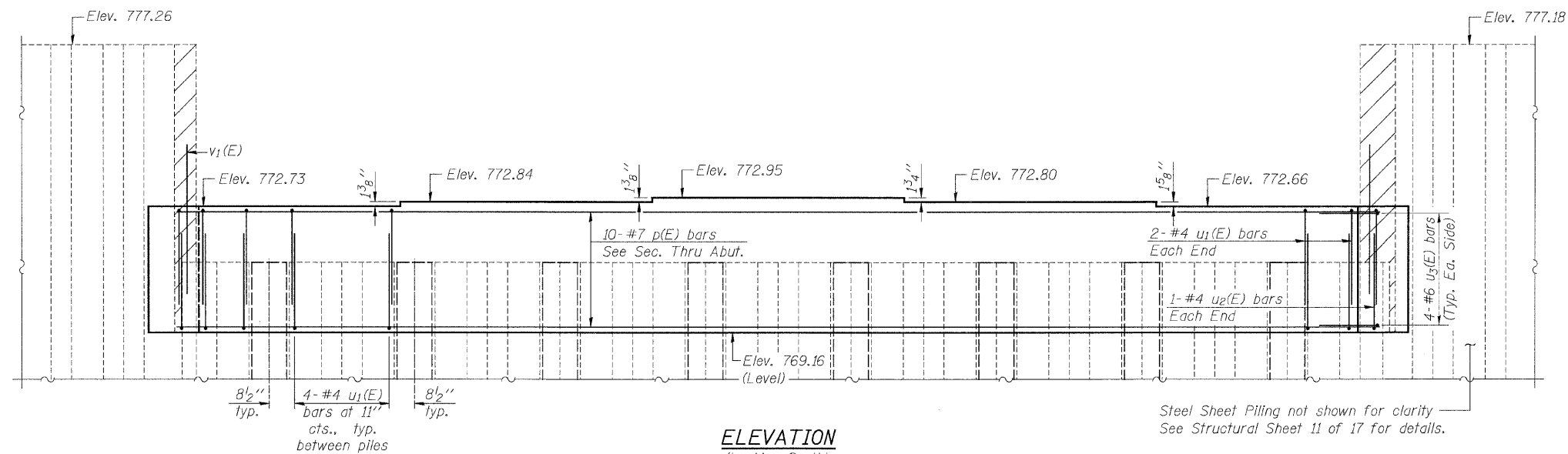
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PLOT SCALE =	CHECKED - B. K. CONVERSE	REVISED -
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	CHECKED - M. A. CACKLEY	REVISED -

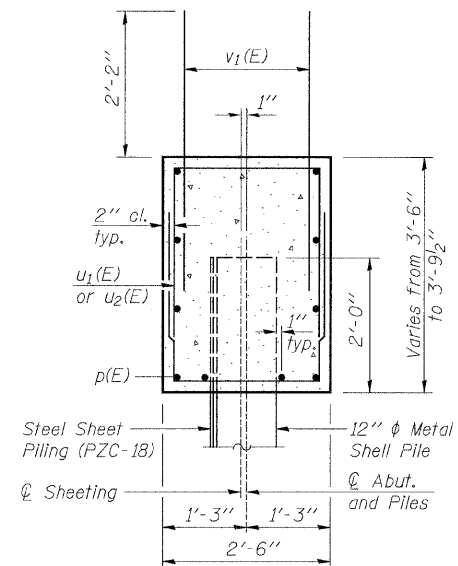
**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

**BRIDGE APPROACH SLAB DETAILS**  
**STRUCTURE NO. 006-3032**  
 STRUCTURAL SHEET NO. 9 OF 17 SHEETS

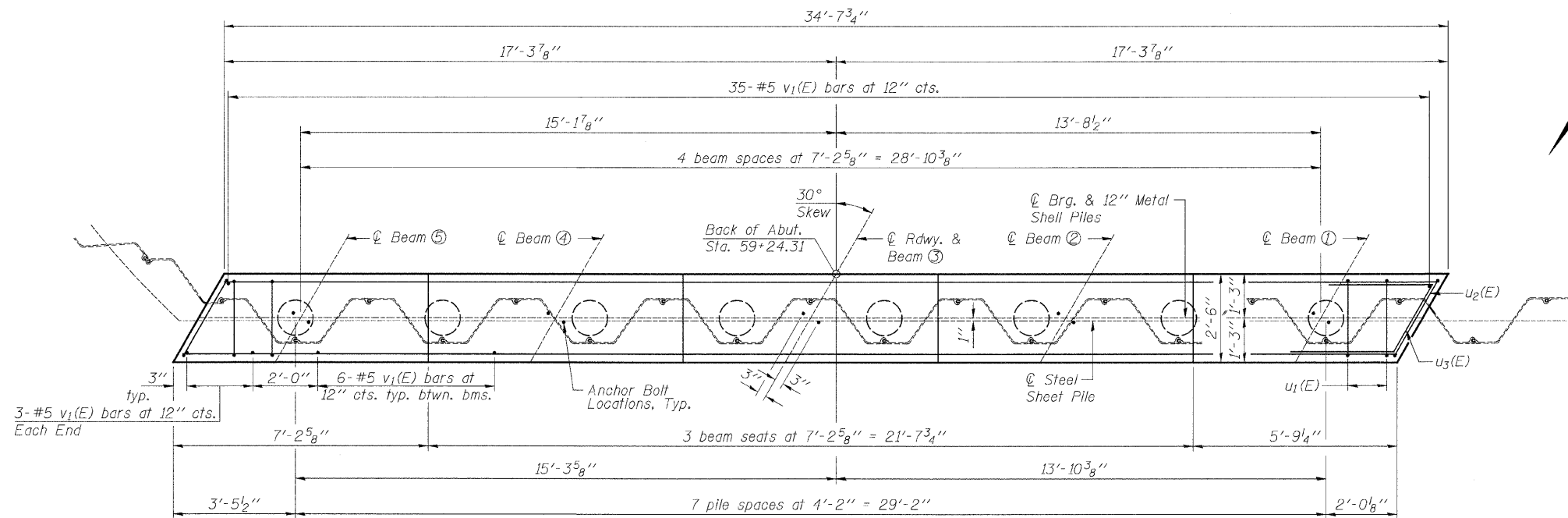
F.A.S. RTE. 184	SECTION 08-00211-00-BR	COUNTY BUREAU	TOTAL SHEETS 31	SHEET NO. 18
WHA# 1051D10		CONTRACT NO. 87462		
ILLINOIS FED. AID PROJECT BRS-0184(07)				



**ELEVATION**  
(Looking South)



**SEC. THRU ABUT.**



**PLAN**

**PILE DATA**

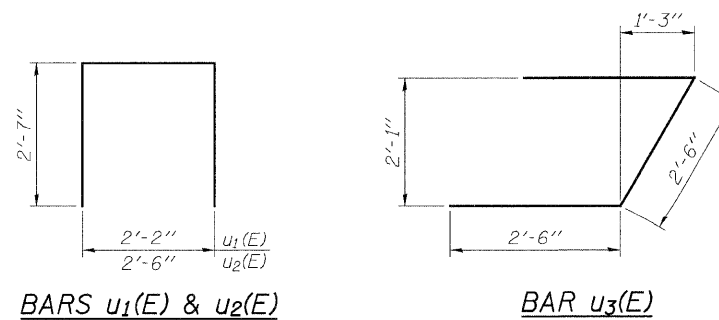
Type: Metal Shell 12"  $\phi$  x 0.250" walls  
 Nominal Required Bearing: 243 kips  
 Factored Resistance Available: 134 kips  
 Est. Length: 41'  
 No. Production Piles: 7  
 No. Test Piles: 1

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape	
p(E)	10	#7	34'-3"	—	
u <sub>1</sub> (E)	64	#4	7'-4"	U	
u <sub>2</sub> (E)	4	#4	7'-8"	U	
u <sub>3</sub> (E)	8	#6	7'-6"	∟	
v <sub>1</sub> (E)	65	#5	4'-4"	—	
Concrete Structures				Cu. Yd.	11.2
Reinforcement Bars, Epoxy Coated				Pound	1,420
Furnishing Metal Shell Piles 12" x 0.250"				Foot	287
Driving Piles				Foot	287
Test Pile Metal Shells				Each	1
* Geocomposite Wall Drain				Sq. Yd.	29
* Porous Granular Embankment, Special				Ton	313

**NOTES:**

- \* See Structural Sheet 2 of 17 for drainage details.
- All exposed edges shall have standard 3/4" chamfers, except as noted.
- Space reinforcement in cap to miss anchor bolts.
- Pour steps monolithically with cap.
- Contractor shall burn hole in sheeting for u(E), u<sub>1</sub>(E) & u<sub>2</sub>(E) bar placement. Cost incidental to Reinforcement Bars, Epoxy Coated.
- For pile details, see Structural Sheet 16 of 17.
- For hatched area details, see Structural Sheet 11 of 17.



**BARS u<sub>1</sub>(E) & u<sub>2</sub>(E)**

**BAR u<sub>3</sub>(E)**

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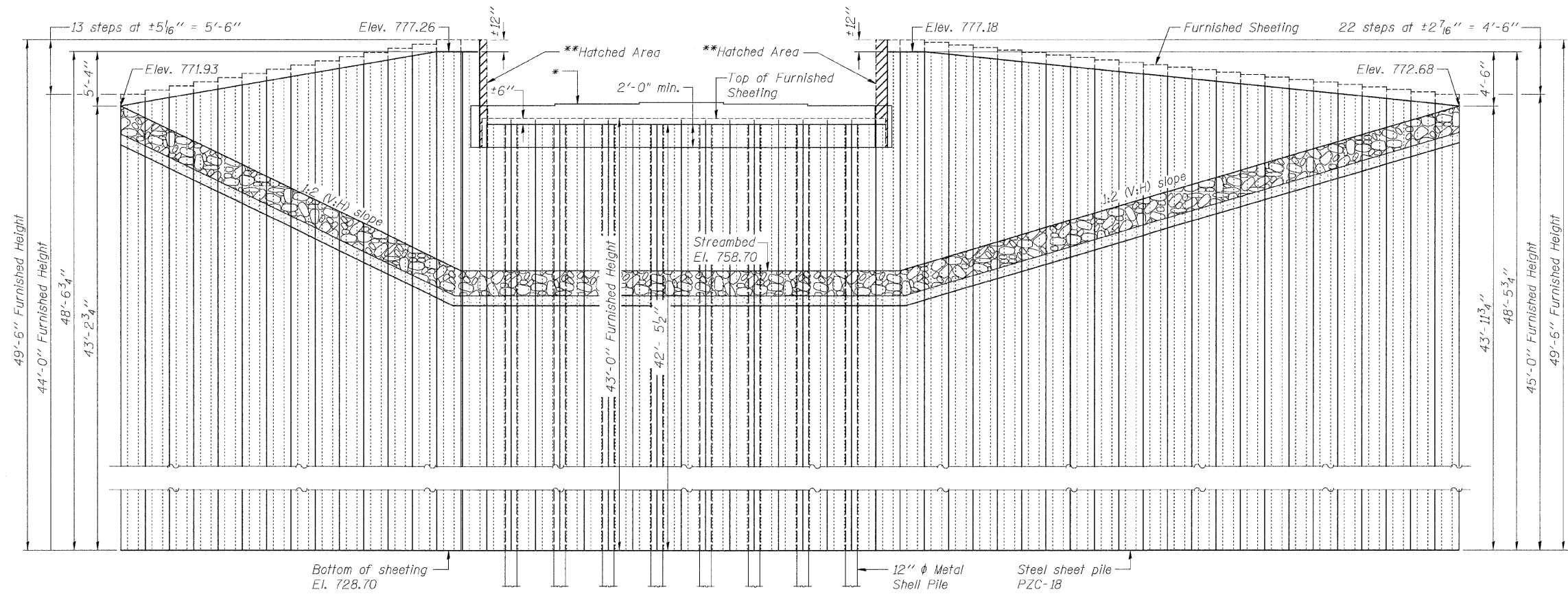
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	CHECKED - M. A. CACKLEY	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

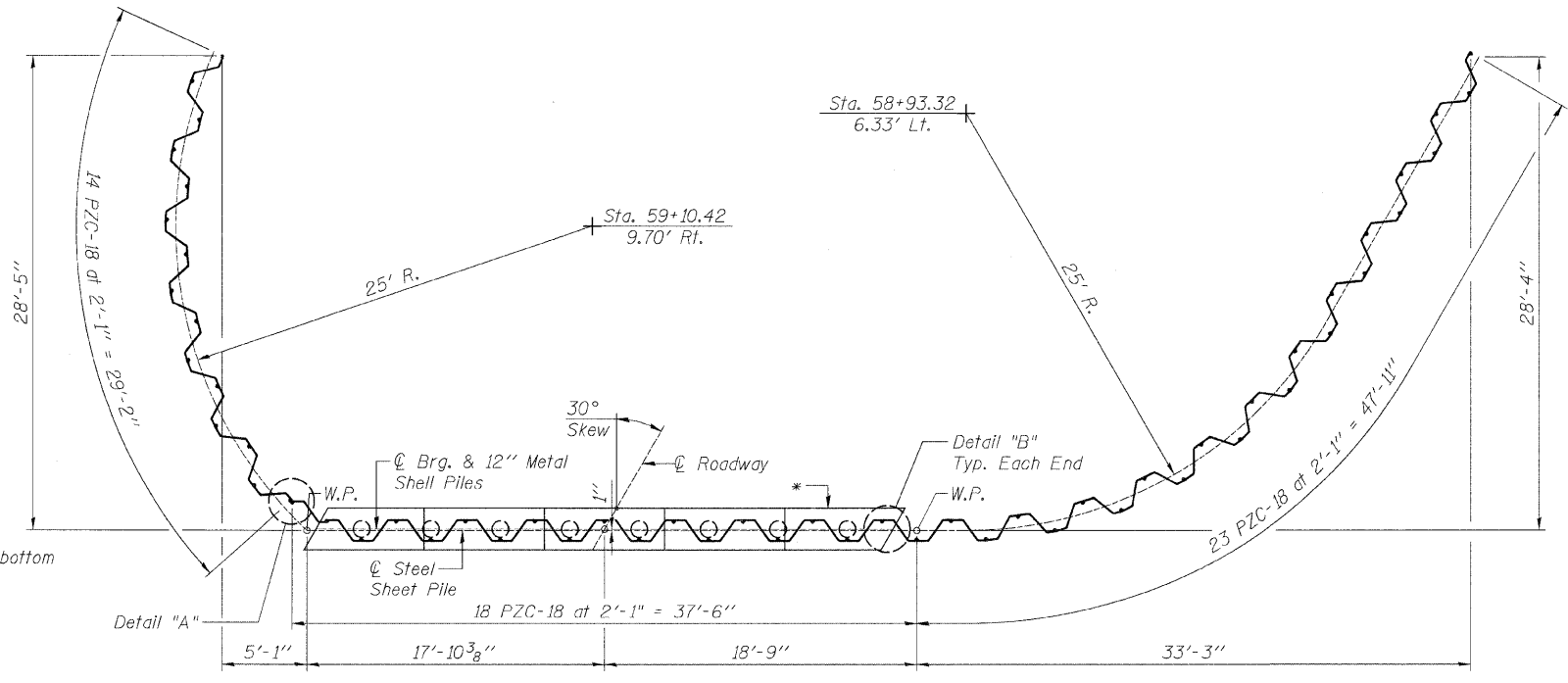
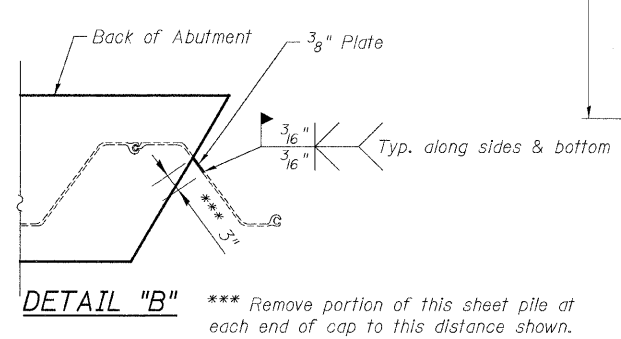
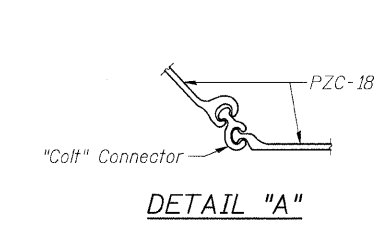
**SOUTH ABUTMENT DETAILS**  
**STRUCTURE NO. 006-3032**

STRUCTURAL SHEET NO. 10 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
184	08-00211-00-BR	BUREAU	31	19
WHA# 1051010			CONTRACT NO. 87462	
ILLINOIS FED. AID PROJECT BR5-0184(107)				



**ELEVATION**  
(Looking South)  
(Sheeting shown straight for clarity)



**PLAN**

**BILL OF MATERIAL**

Item	Unit	Total
Permanent Steel Sheet Piling	Sq. Ft.	5,233

**NOTES**

- \* Abutment cap details not shown for clarity. See Structural Sheet 10 of 17 for details.
- \*\* After sheeting is driven the Contractor shall cut a notch in the sheeting as shown, then form & pour the reinforced concrete abutment cap, then lastly place a 3/8" thick plate in the gap for tight fit and weld. See Detail "B". Cost for this work shall be included in the contract unit price per Square Foot for Permanent Steel Sheet Piling.
- The Contractor shall be paid for furnished sheeting as shown and Contractor shall drive the sheeting an extra 6" if top is not damaged, as directed by the Engineer.

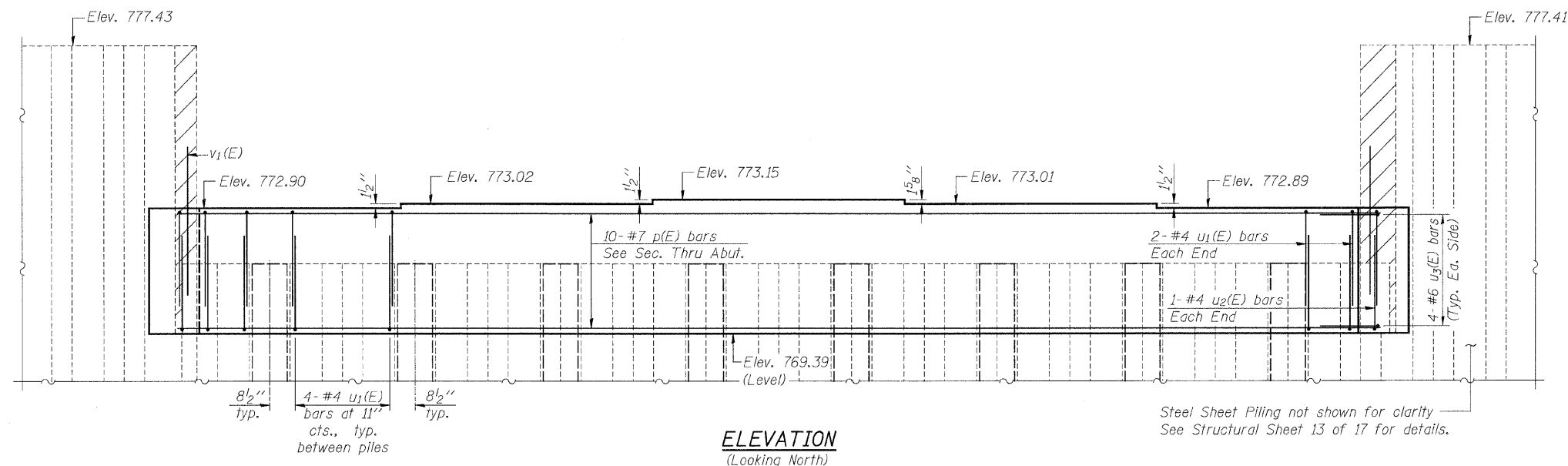
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PLOT SCALE =	CHECKED - B. K. CONVERSE	REVISED -
PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -
	CHECKED - M. A. CACKLEY	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

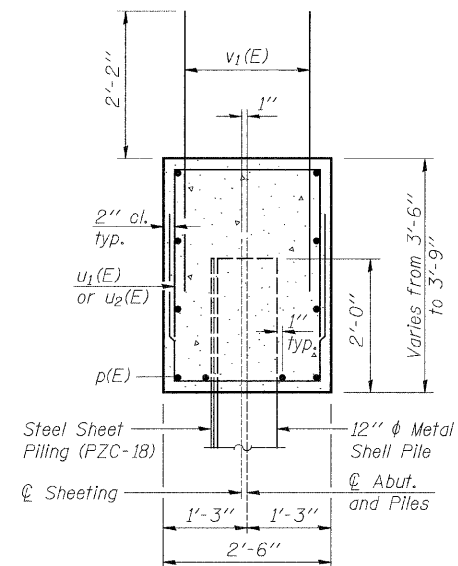
**SOUTH ABUTMENT SHEET PILE LAYOUT**  
**STRUCTURE NO. 006-3032**  
STRUCTURAL SHEET NO. 11 OF 17 SHEETS

F.A.S. NO. 184	SECTION 08-00211-00-BR	COUNTY BUREAU	TOTAL SHEETS 31	SHEET NO. 20
WHA* 1051010		CONTRACT NO. 87462		
ILLINOIS FED. AID PROJECT BRS-0184(07)				

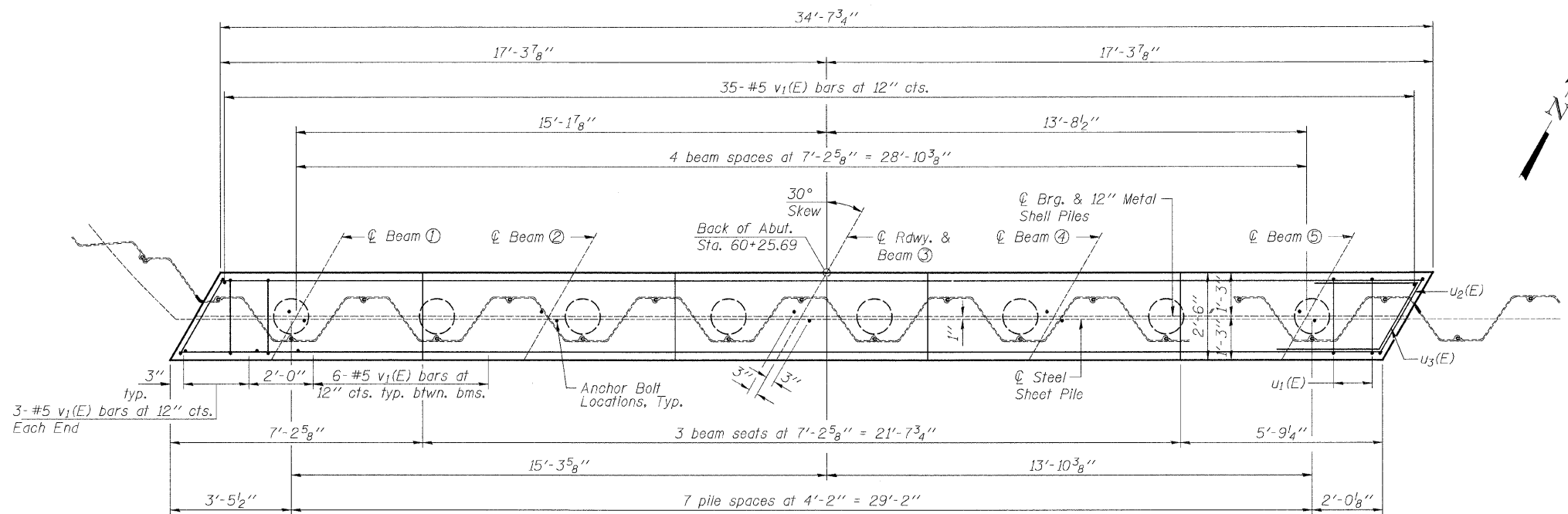


**ELEVATION**  
(Looking North)

Steel Sheet Piling not shown for clarity  
See Structural Sheet 13 of 17 for details.

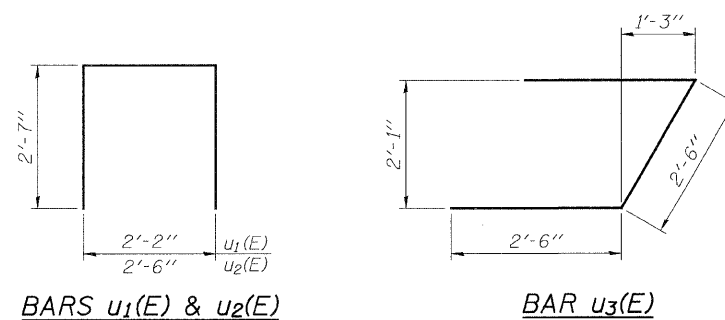


**SEC. THRU ABUT.**



**PILE DATA**

Type: Metal Shell 12"  $\phi$  x 0.250" walls  
Nominal Required Bearing: 243 kips  
Factored Resistance Available: 134 kips  
Est. Length: 45'  
No. Production Piles: 7  
No. Test Piles: 1



**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
p(E)	10	#7	34'-3"	—
u1(E)	64	#4	7'-4"	U
u2(E)	4	#4	7'-8"	U
u3(E)	8	#6	7'-6"	7
v1(E)	65	#5	4'-4"	—
Concrete Structures		Cu. Yd.	11.1	
Reinforcement Bars, Epoxy Coated		Pound	1,420	
Furnishing Metal Shell Piles 12" x 0.250"		Foot	315	
Driving Piles		Foot	315	
Test Pile Metal Shells		Each	1	
* Geocomposite Wall Drain		Sq. Yd.	29	
* Porous Granular Embankment, Special		Ton	304	

**NOTES:**

- \* See Structural Sheet 2 of 17 for drainage details.
- All exposed edges shall have standard 3/4" chamfers, except as noted.
- Space reinforcement in cap to miss anchor bolts.
- Pour steps monolithically with cap.
- Contractor shall burn hole in sheeting for u(E), u1(E) & u2(E) bar placement. Cost incidental to Reinforcement Bars, Epoxy Coated.
- For pile details, see Structural Sheet 16 of 17.
- For hatched area details, see Structural Sheet 13 of 17.

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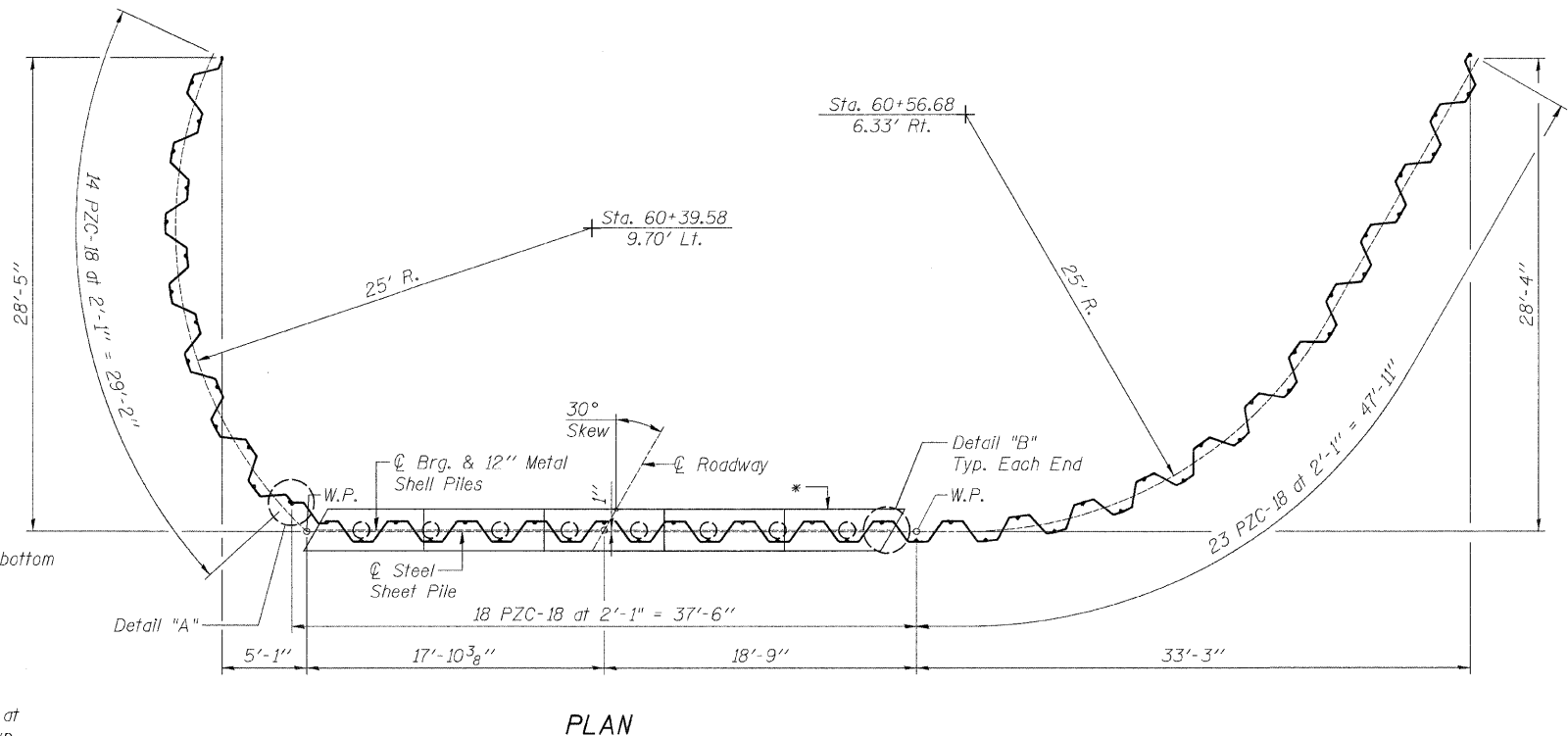
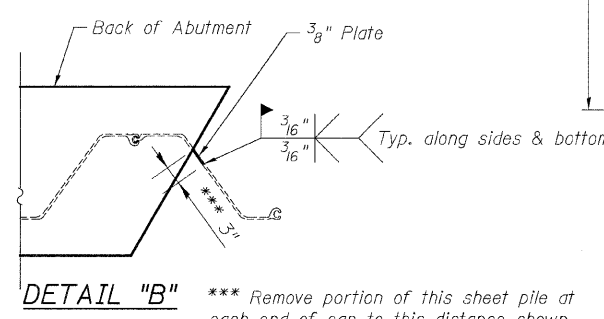
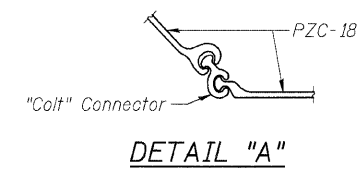
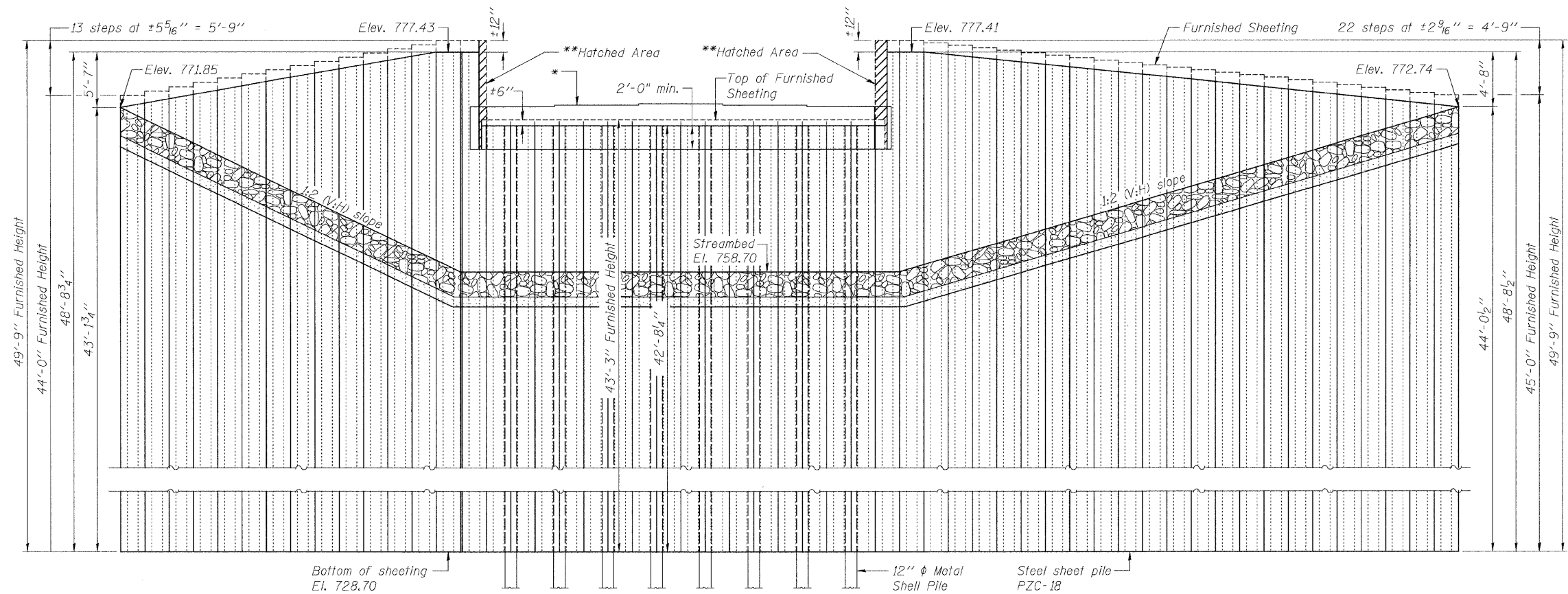
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PLOT SCALE =	CHECKED - B. K. CONVERSE	REVISED -
PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -
	CHECKED - M. A. CACKLEY	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

**NORTH ABUTMENT DETAILS**  
**STRUCTURE NO. 006-3032**

STRUCTURAL SHEET NO. 12 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
184	08-00211-00-BR	BUREAU	31	21
WHIA# 1051D10		CONTRACT NO. 87462		
(ILLINOIS) FED. AID PROJECT BRS-0184(107)				



**BILL OF MATERIAL**

Item	Unit	Total
Permanent Steel Sheet Piling	Sq. Ft.	5,243

**NOTES**

\* Abutment cap details not shown for clarity. See Structural Sheet 12 of 17 for details.

\*\* After sheeting is driven the Contractor shall cut a notch in the sheeting as shown, then form & pour the reinforced concrete abutment cap, then lastly place a 3/8" thick plate in the gap for tight fit and weld. See Detail "B". Cost for this work shall be included in the contract unit price per Square Foot for Permanent Steel Sheet Piling.

The Contractor shall be paid for furnished sheeting as shown and Contractor shall drive the sheeting an extra 6" if top is not damaged, as directed by the Engineer.

USER NAME =	DESIGNED - M. C. WAGNER	REVISED -
PLOT SCALE =	CHECKED - B. K. CONVERSE	REVISED -
PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -
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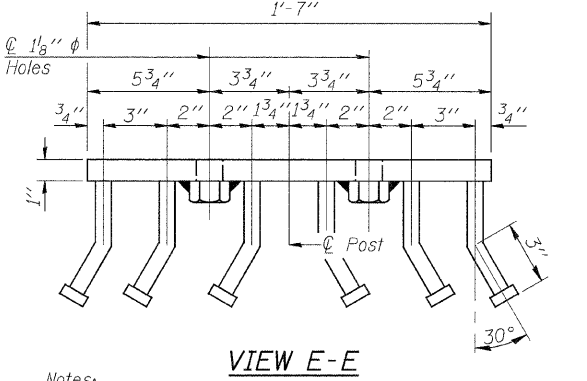
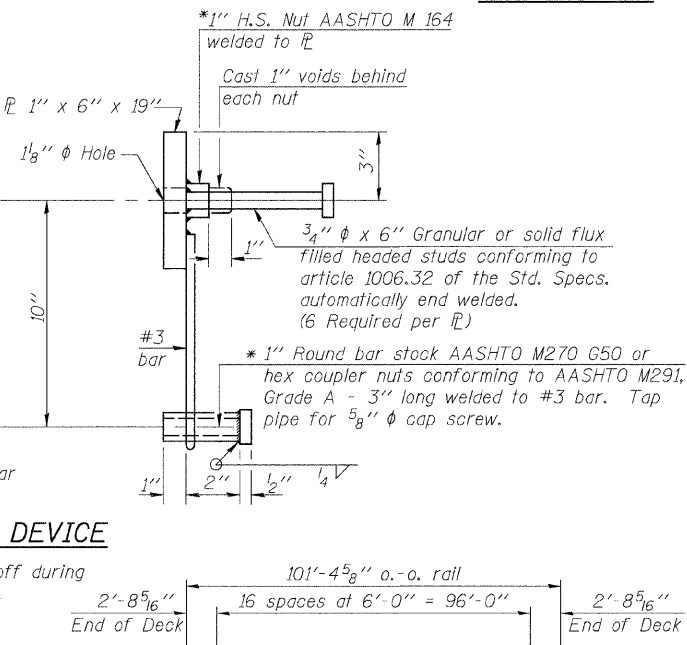
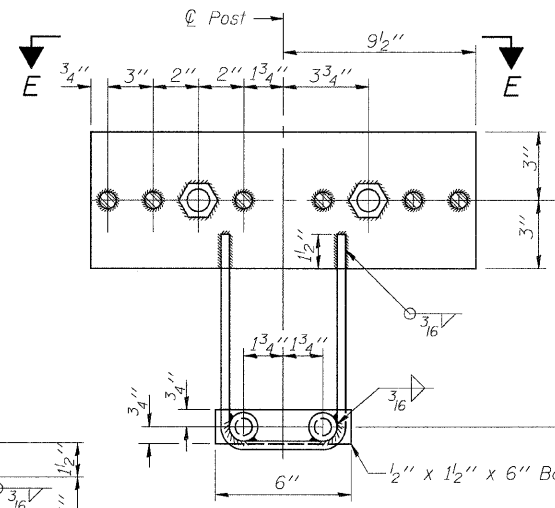
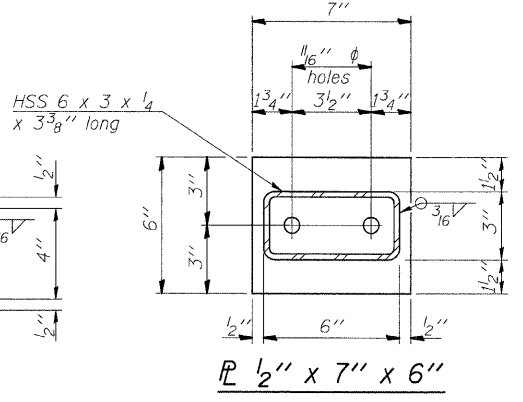
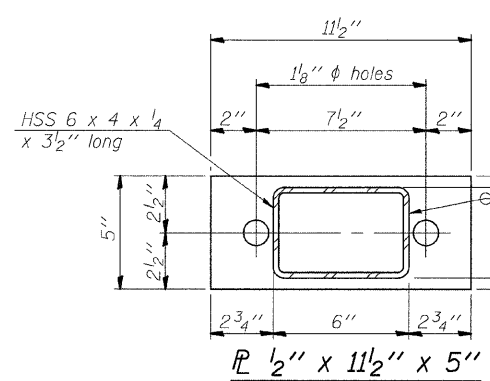
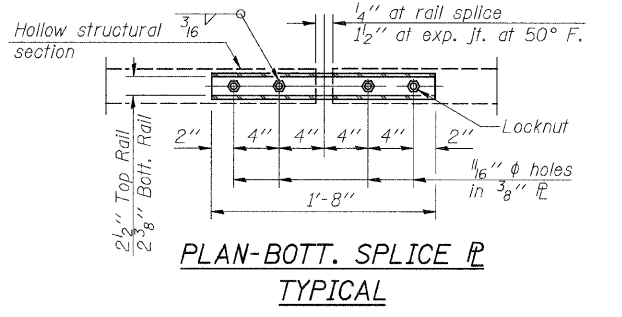
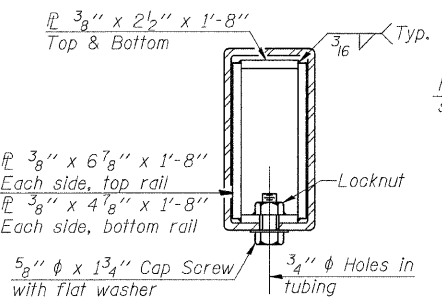
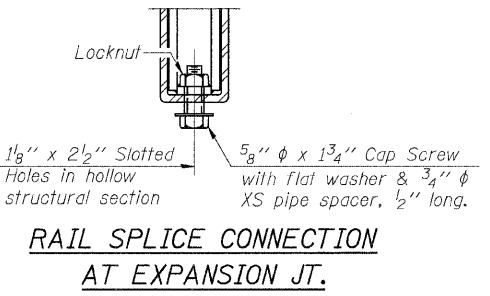
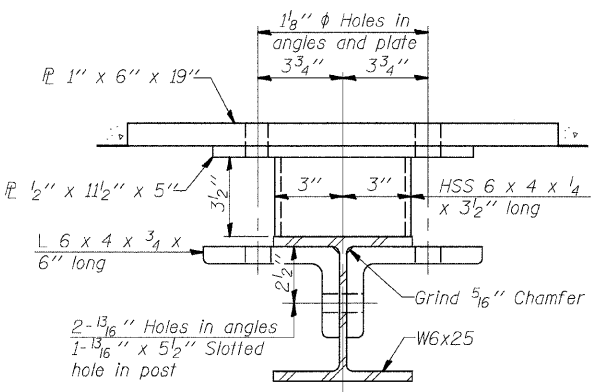
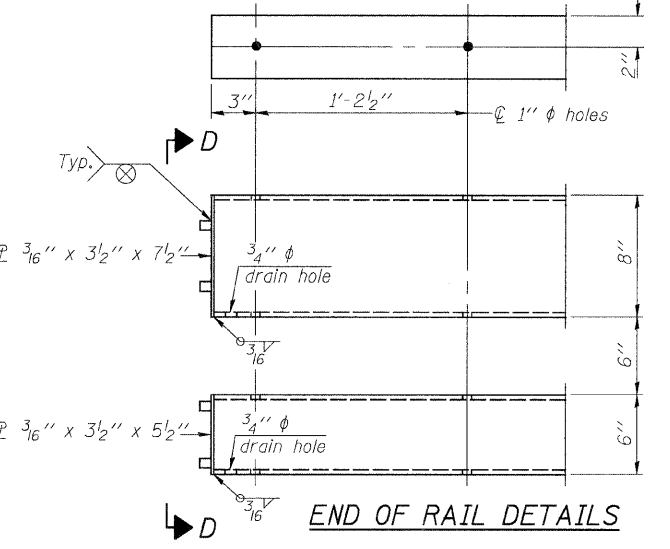
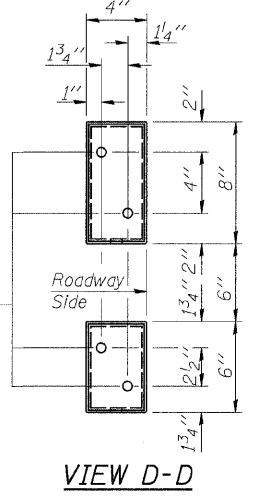
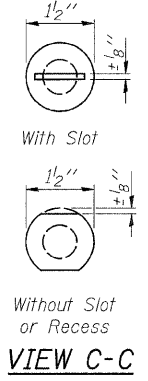
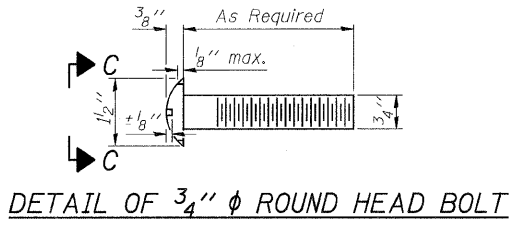
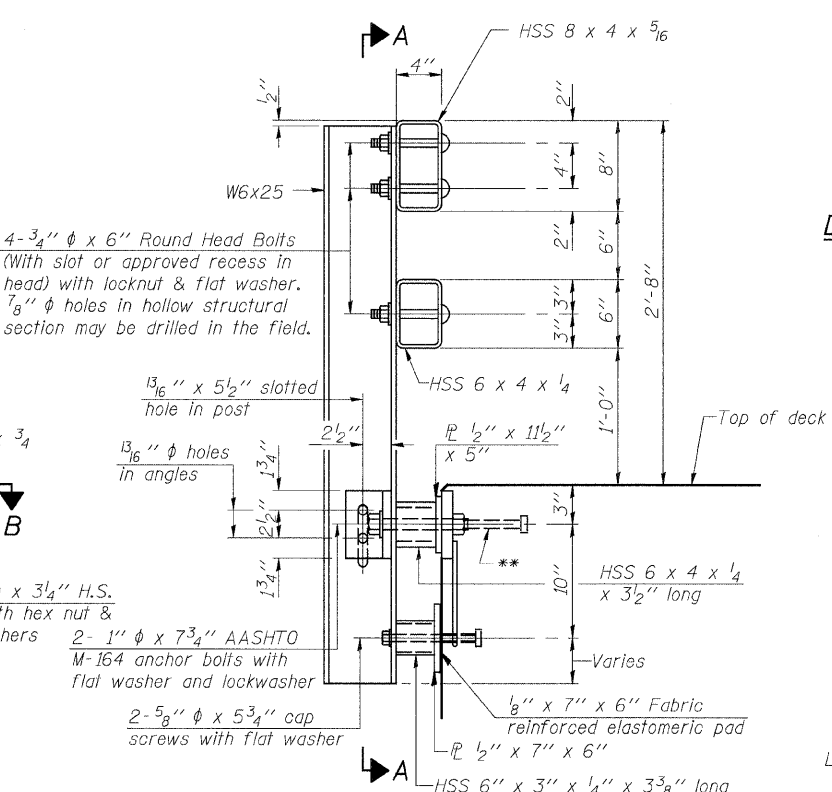
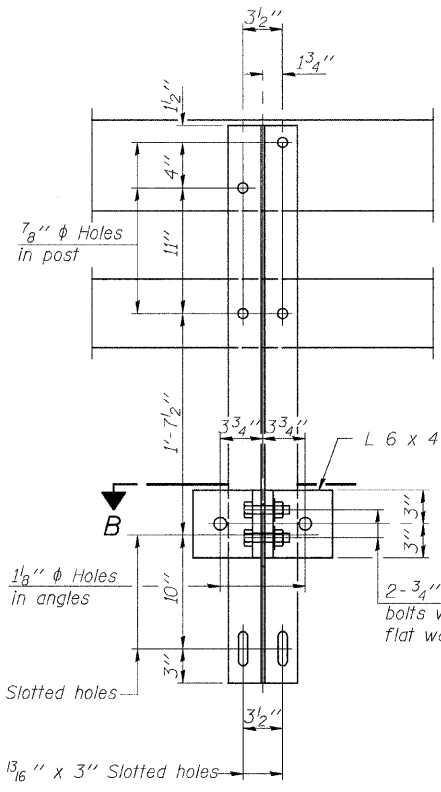
**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

**NORTH ABUTMENT SHEET PILE LAYOUT**  
**STRUCTURE NO. 006-3032**  
 STRUCTURAL SHEET NO. 13 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
184	08-00211-00-BR	BUREAU	31	22
WHA# 1051D10		CONTRACT NO. 87462		
ILLINOIS FED. AID PROJECT BRS-0184(107)				

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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 SM.  
 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**

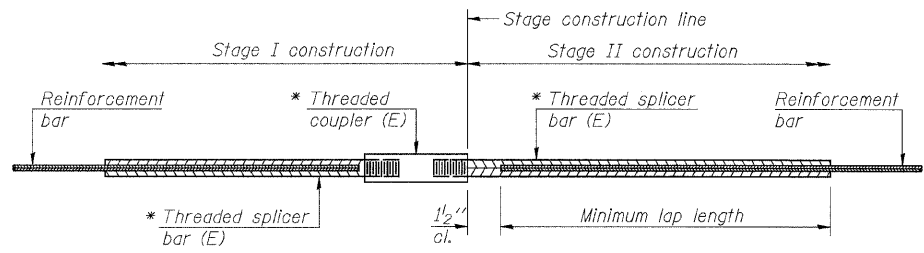
Item	Unit	Quantity
Steel Railing, Type SM	Foot	203

USER NAME =	DESIGNED - M. C. WAGNER	REVISED -
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	CHECKED - M. A. CACKLEY	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59+75**

**STEEL RAILING, TYPE SM DETAILS**  
**STRUCTURE NO. 006-3032**  
 STRUCTURAL SHEET NO. 14 OF 17 SHEETS

F.A.S. RTE. 184	SECTION 08-00211-00-BR	COUNTY BUREAU	TOTAL SHEETS 31	SHEET NO. 23
WHA# 1051D10		CONTRACT NO. 87462		
ILLINOIS FED. AID PROJECT BRS-0184(G07)				



**STANDARD BAR SPLICER ASSEMBLY**

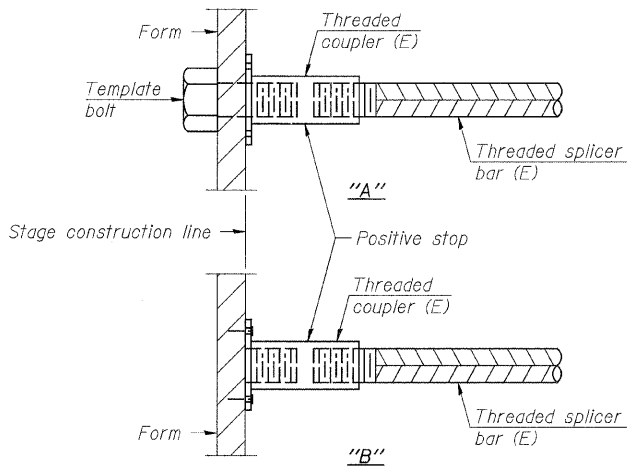
Minimum Lap Lengths					
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

- Table 1: Black bar, 0.8 Class C
- Table 2: Black bar, Top bar lap, 0.8 Class C
- Table 3: Epoxy bar, 0.8 Class C
- Table 4: Epoxy bar, Top bar lap, 0.8 Class C
- Table 5: Epoxy bar, Top bar lap, Class B

Threaded splicer bar length = min. lap length + 1/2" + thread length

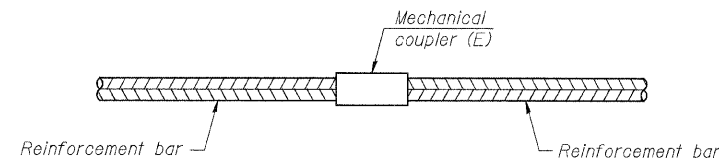
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length



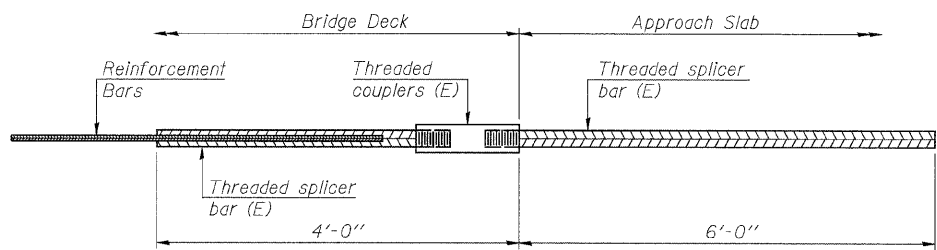
**INSTALLATION AND SETTING METHODS**

"A" : Set bar splicer assembly by means of a template bolt.  
 "B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.  
 (E) : Indicates epoxy coating.



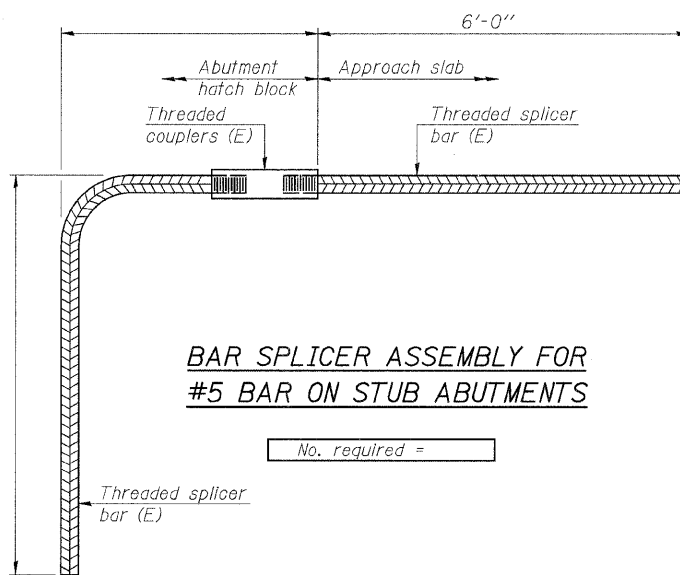
**STANDARD MECHANICAL SPLICER**

Location	Bar size	No. assemblies required



**BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS**

No. required = 62



**BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS**

No. required =

**NOTES**  
 Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.  
 All reinforcement shall be lapped and tied to the splicer bars.  
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.  
 See special provision for Mechanical Splicers.  
 See approved list of bar splicer assemblies and mechanical splicers for alternatives.

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	CHECKED - M. A. CACKLEY	REVISED -

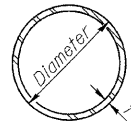
**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

**BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS**  
**STRUCTURE NO. 006-3032**

STRUCTURAL SHEET NO. 15 OF 17 SHEETS

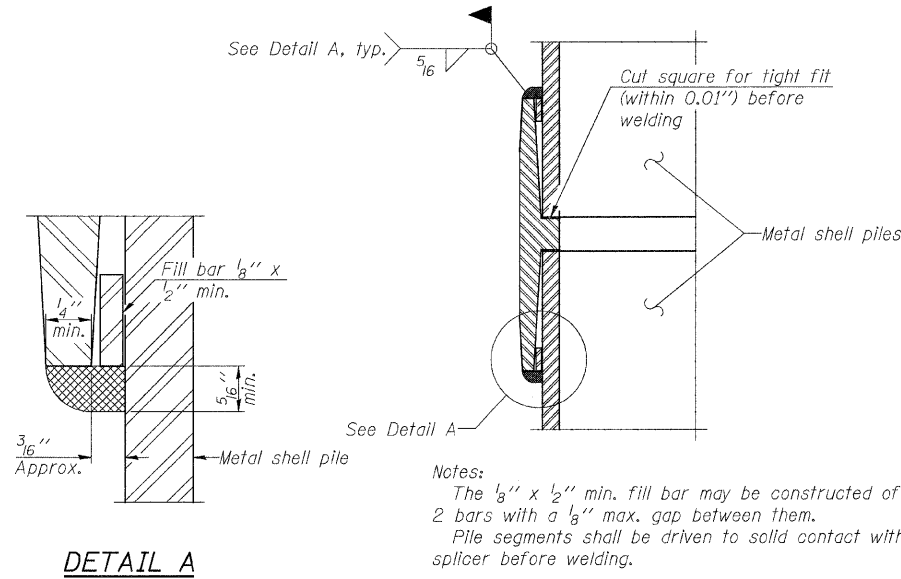
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184	08-00211-00-BR	BUREAU	31	24
	WHA# 1051D10	CONTRACT NO. 87462		
<small>ILLINOIS FED. AID PROJECT BR5-0184(007)</small>				





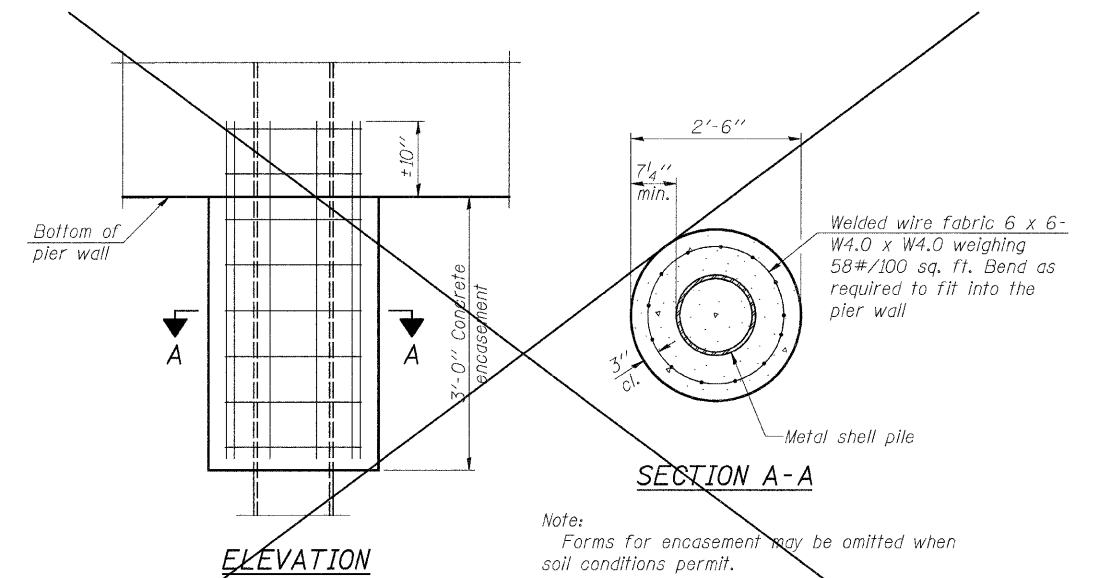
**METAL SHELL PILE TABLE**

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



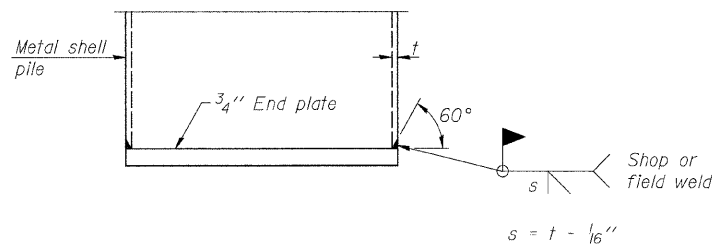
Notes:  
 The  $\frac{1}{8}'' \times \frac{1}{2}''$  min. fill bar may be constructed of 2 bars with a  $\frac{1}{8}''$  max. gap between them.  
 Pile segments shall be driven to solid contact with splicer before welding.

**WELDED COMMERCIAL SPLICE**

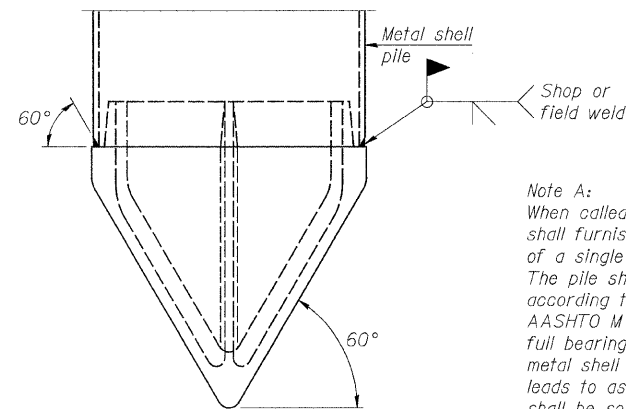


Note:  
 Forms for encasement may be omitted when soil conditions permit.

**CONCRETE ENCASEMENT AT PIERS**

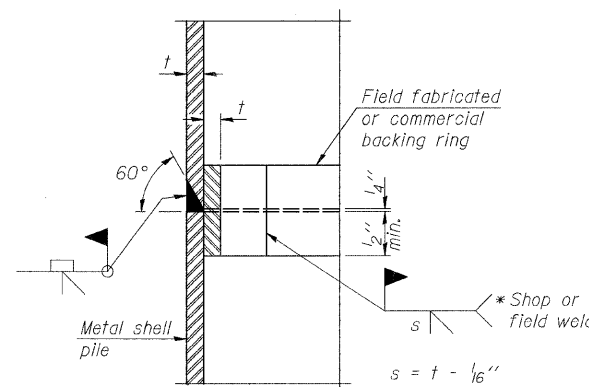


**END PLATE ATTACHMENT**

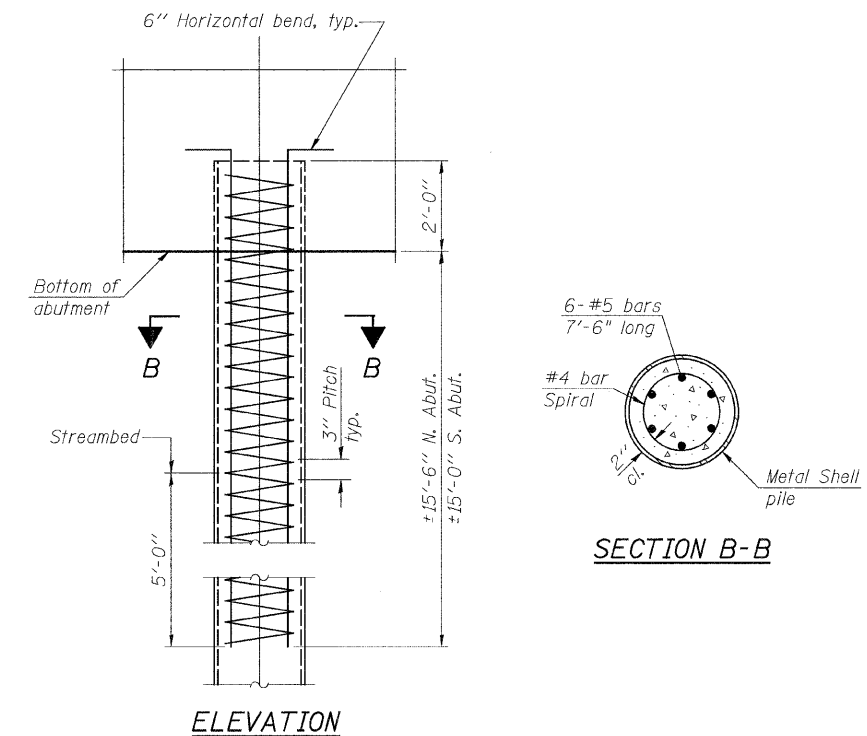


Note A:  
 When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing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



**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.



**METAL SHELL REINFORCEMENT AT ABUTMENTS**

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

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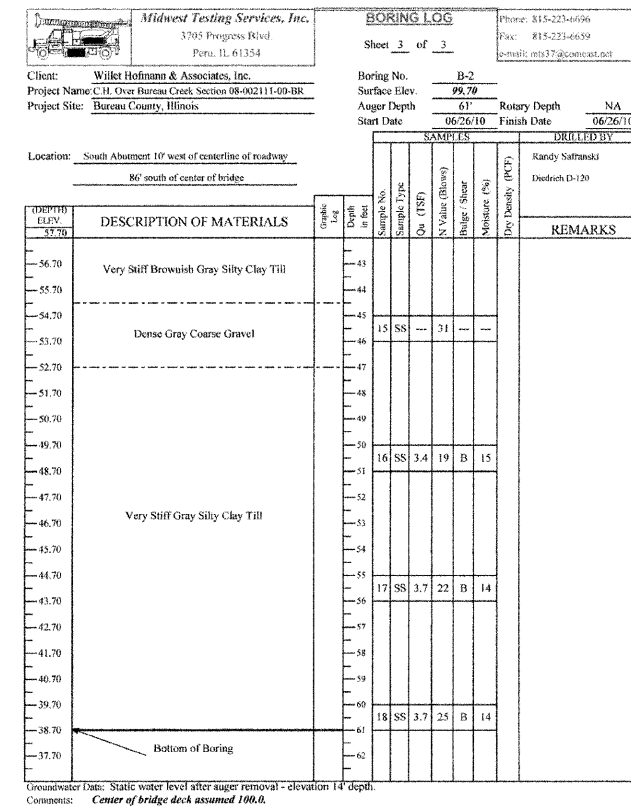
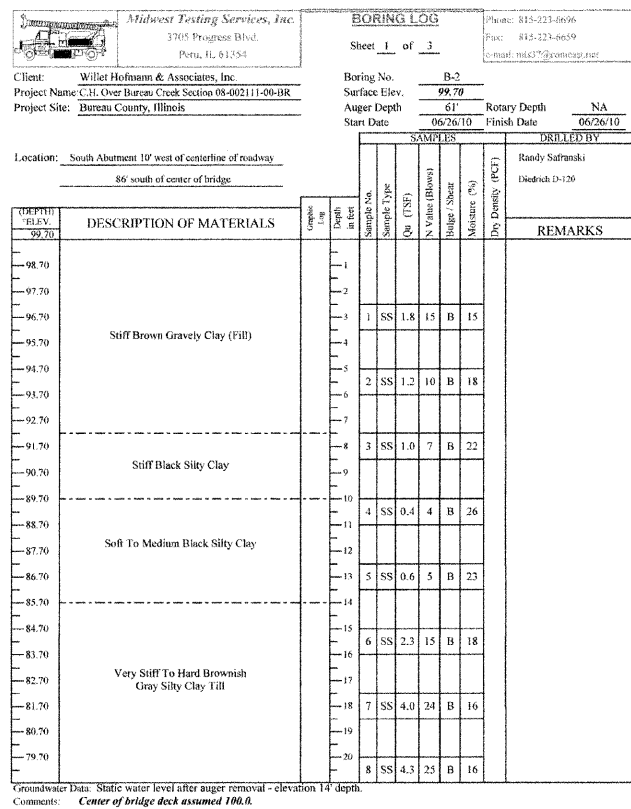
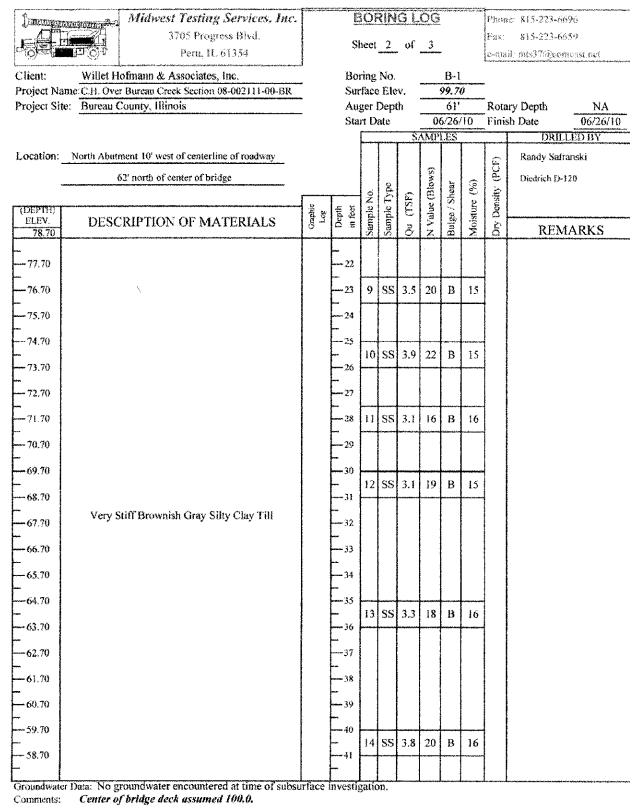
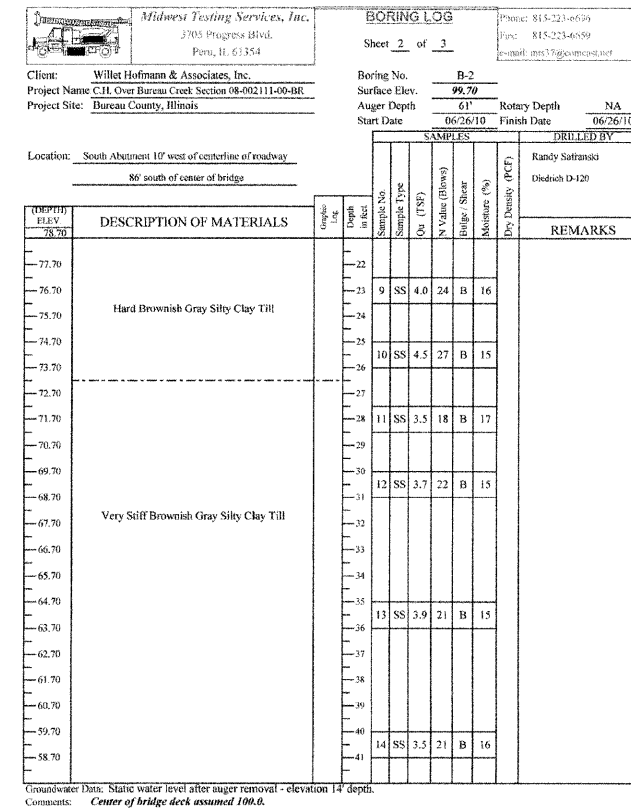
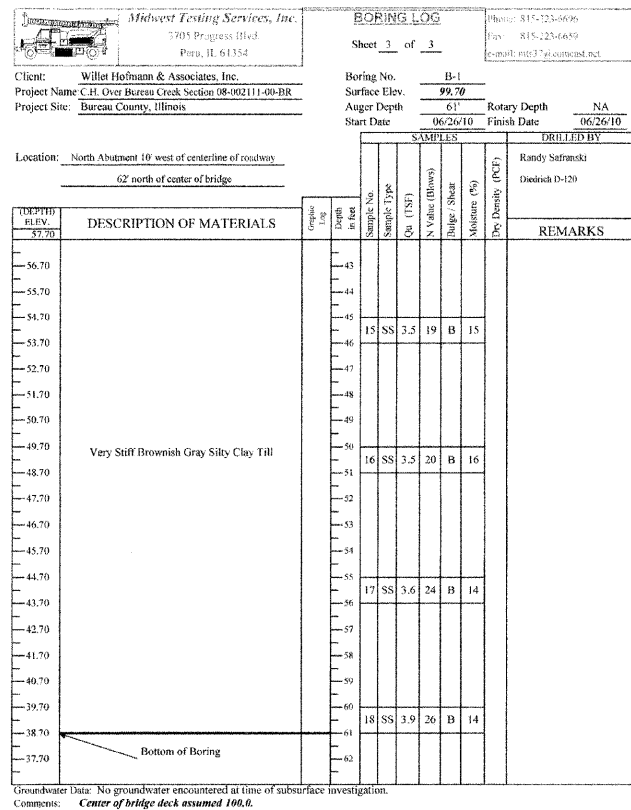
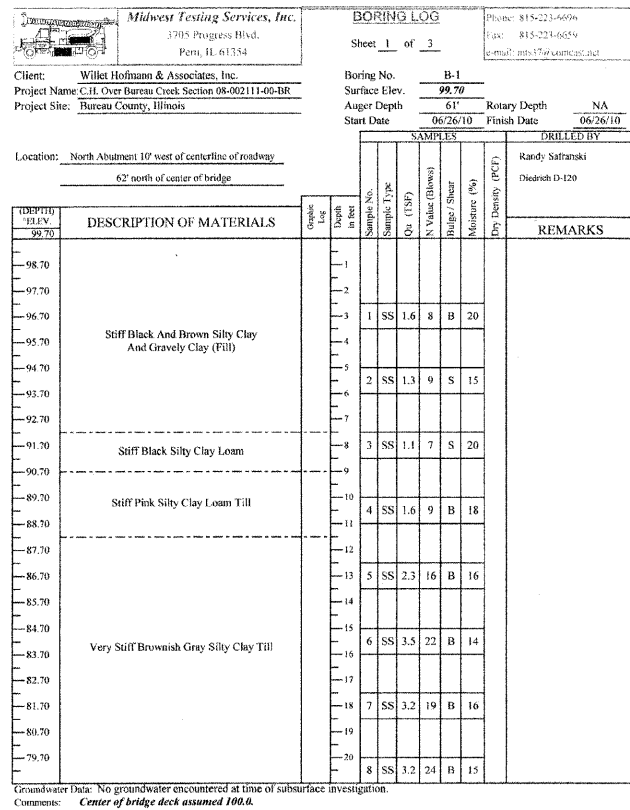
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	CHECKED - M. A. CACKLEY	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

**METAL SHELL PILE DETAILS**  
**STRUCTURE NO. 006-3032**

STRUCTURAL SHEET NO. 16 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	WHA# 1051D10		CONTRACT NO. 87462	
ILLINOIS FED. AID PROJECT BR5-0184107				



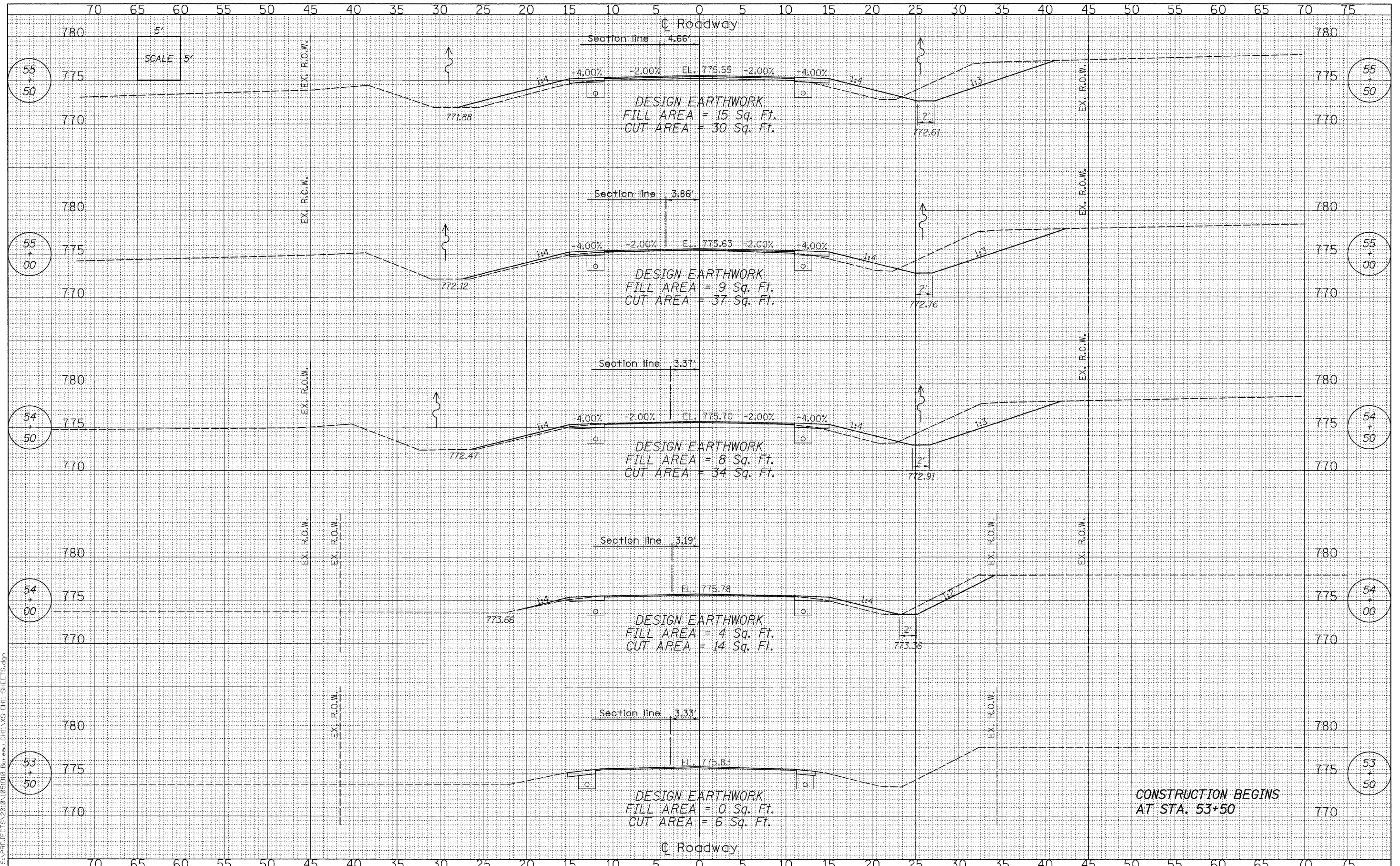
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	CHECKED - M. A. CACKLEY	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

**BORING LOGS**  
**STRUCTURE NO. 006-3032**  
STRUCTURAL SHEET NO. 17 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
184	08-00211-00-BR	BUREAU	31	26
WHA* 1051D10		CONTRACT NO. 87462		
[ILLINOIS] FED. AID PROJECT BRS-0184(107)				



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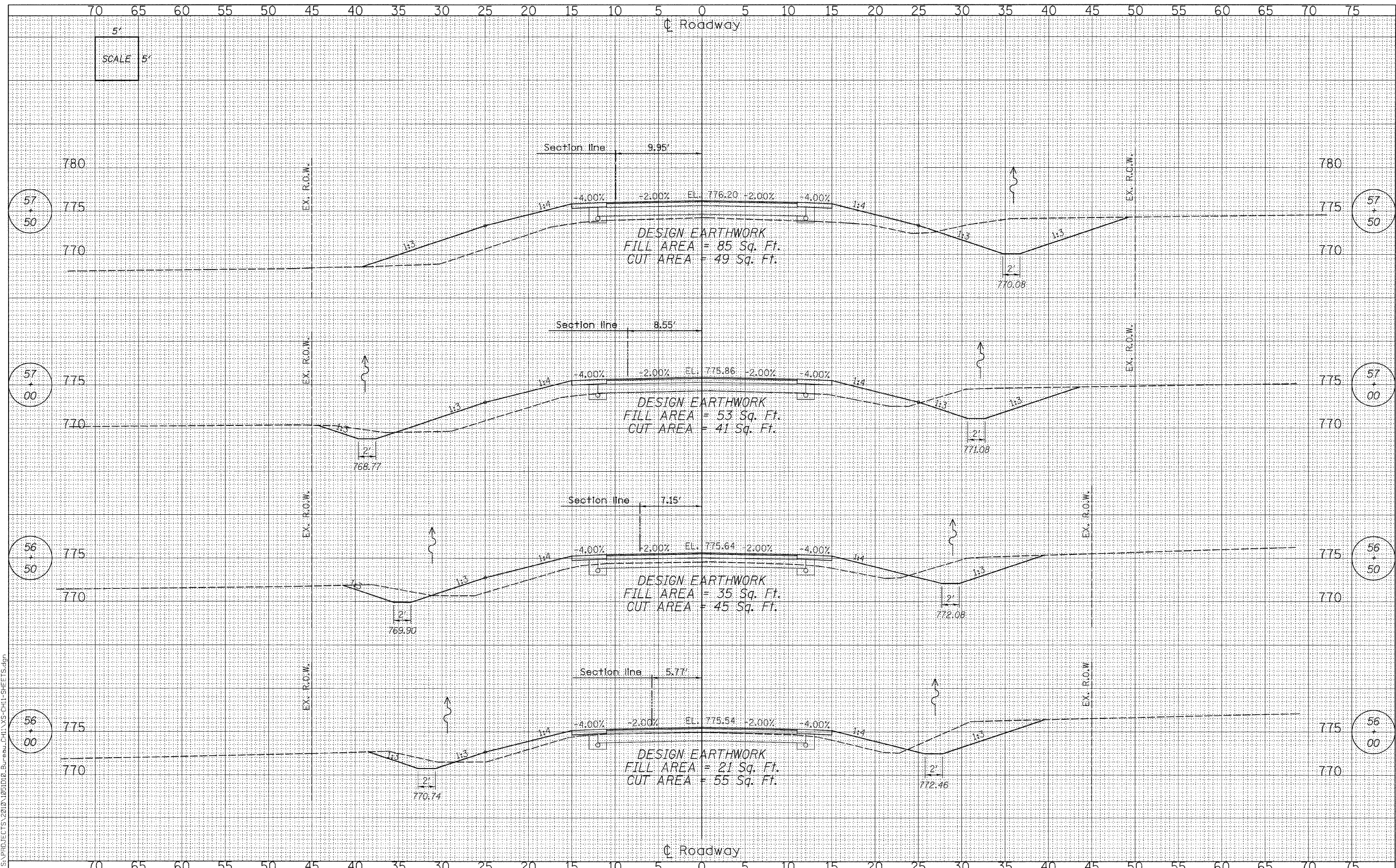
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	CHECKED - M. A. CACKLEY	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

<b>CROSS SECTIONS</b>			
<b>STRUCTURE NO. 006-3032</b>			
STA. 53+50 TO STA. 55+50			

F.A.S. RTE. 184	SECTION 08-00211-00-BR	COUNTY BUREAU	TOTAL SHEETS 31	SHEET NO. 27
WHA# 1051010		CONTRACT NO. 87462		
<small>(ILLINOIS) FED. AID PROJECT BRS-0184(07)</small>				

**CONSTRUCTION BEGINS  
AT STA. 53+50**



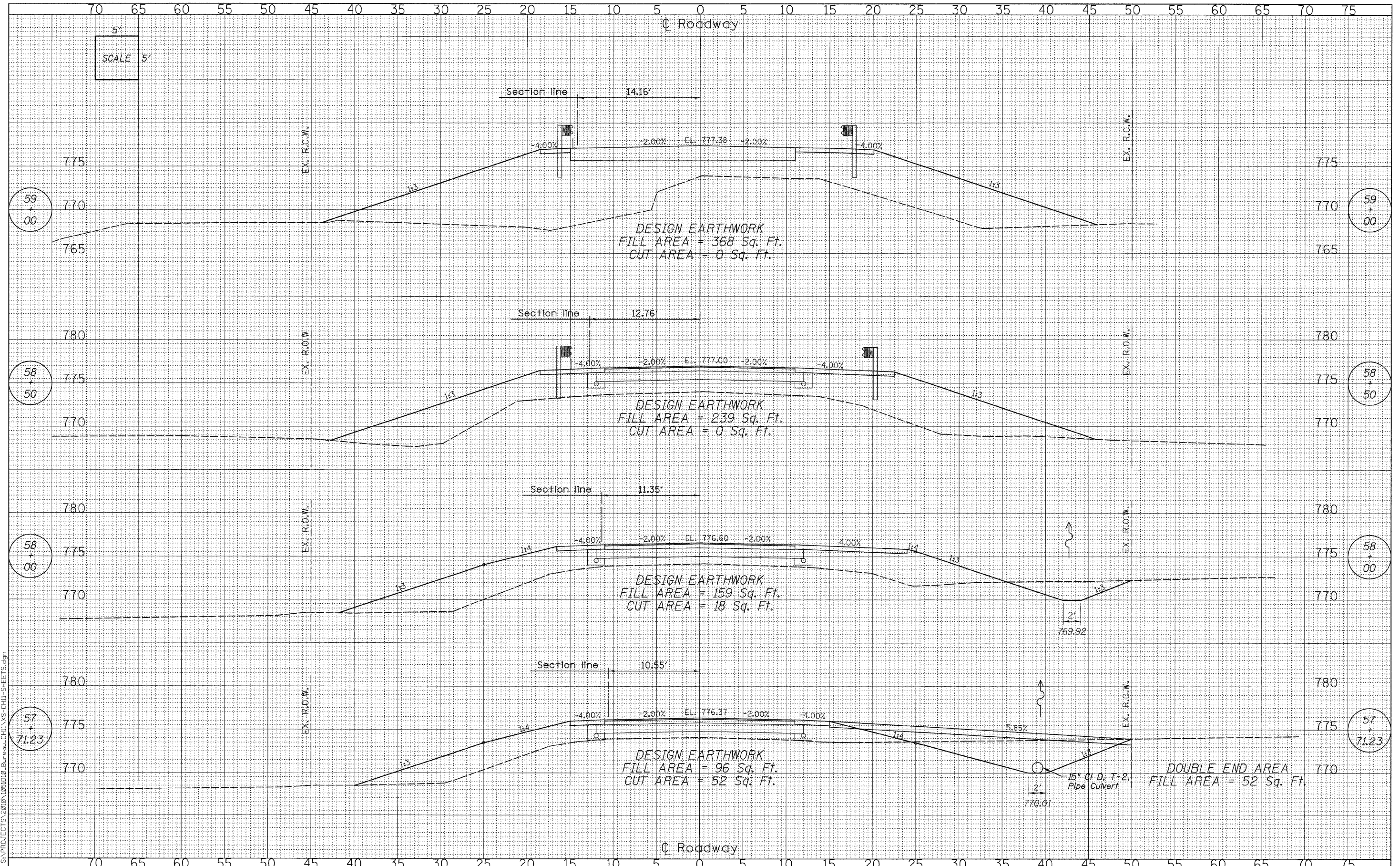
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PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -
	CHECKED - M. A. CACKLEY	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59+75**

**CROSS SECTIONS**  
**STRUCTURE NO. 006-3032**  
 STA. 56+00 TO STA. 57+50

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
184	08-00211-00-BR	BUREAU	31	28
WHA# 1051010		CONTRACT NO. 87462		
<small>ILLINOIS FED. AID PROJECT BRS-0184(107)</small>				



5'  
SCALE 5'

☐ Roadway

Section line 14.16'

DESIGN EARTHWORK  
FILL AREA = 368 Sq. Ft.  
CUT AREA = 0 Sq. Ft.

Section line 12.76'

DESIGN EARTHWORK  
FILL AREA = 239 Sq. Ft.  
CUT AREA = 0 Sq. Ft.

Section line 11.35'

DESIGN EARTHWORK  
FILL AREA = 159 Sq. Ft.  
CUT AREA = 18 Sq. Ft.

Section line 10.55'

DESIGN EARTHWORK  
FILL AREA = 96 Sq. Ft.  
CUT AREA = 52 Sq. Ft.

DOUBLE END AREA  
FILL AREA = 52 Sq. Ft.

☐ Roadway

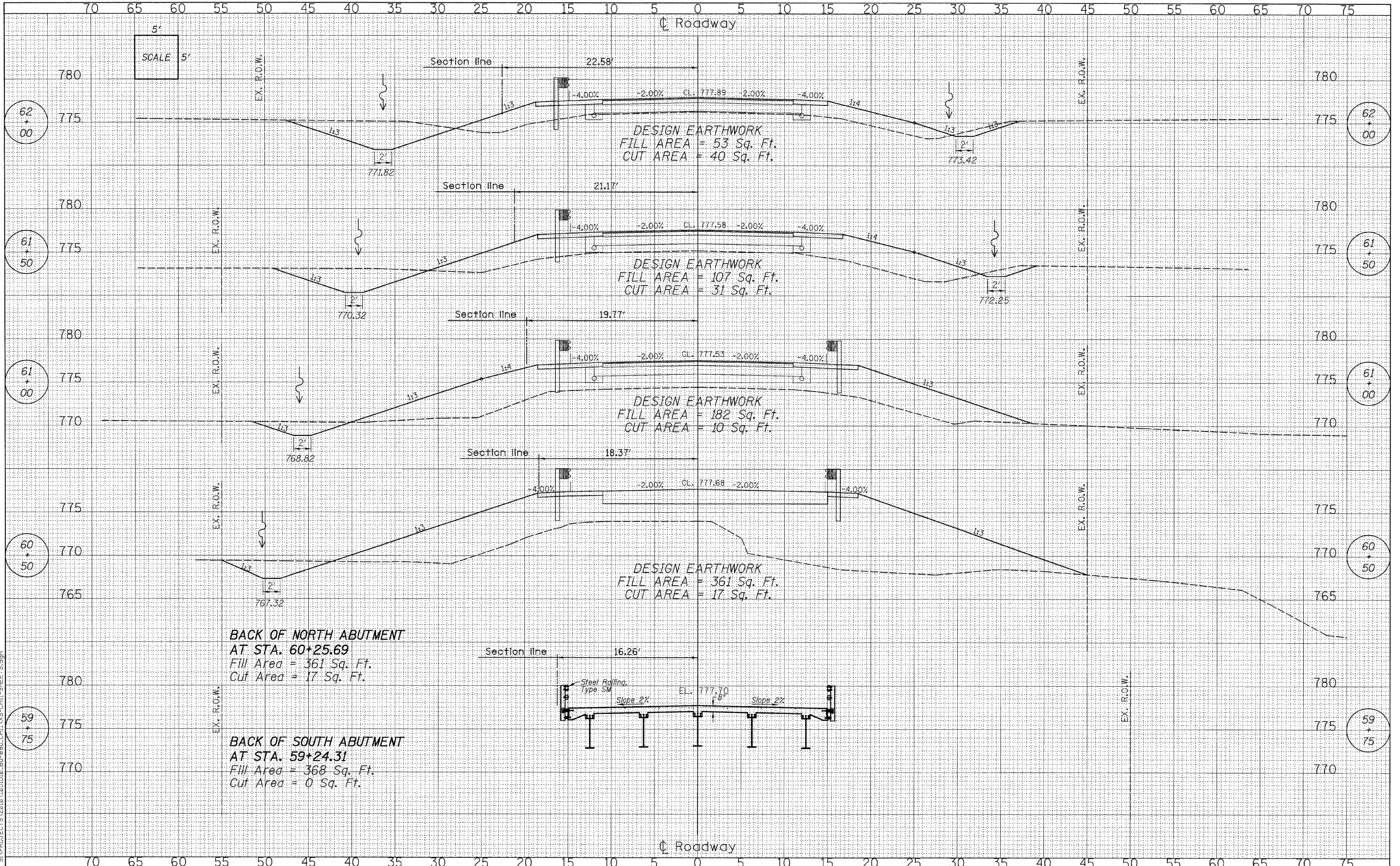
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PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -
	CHECKED - M. A. CACKLEY	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

**CROSS SECTIONS**  
**STRUCTURE NO. 006-3032**  
STA. 57+71.23 TO STA. 59+00

F.A.S. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
184	08-00211-00-BR	BUREAU	31	29
WHA# 1051D10		CONTRACT NO. 87462		
ILLINOIS FED. AID PROJECT BRS-0184(07)				



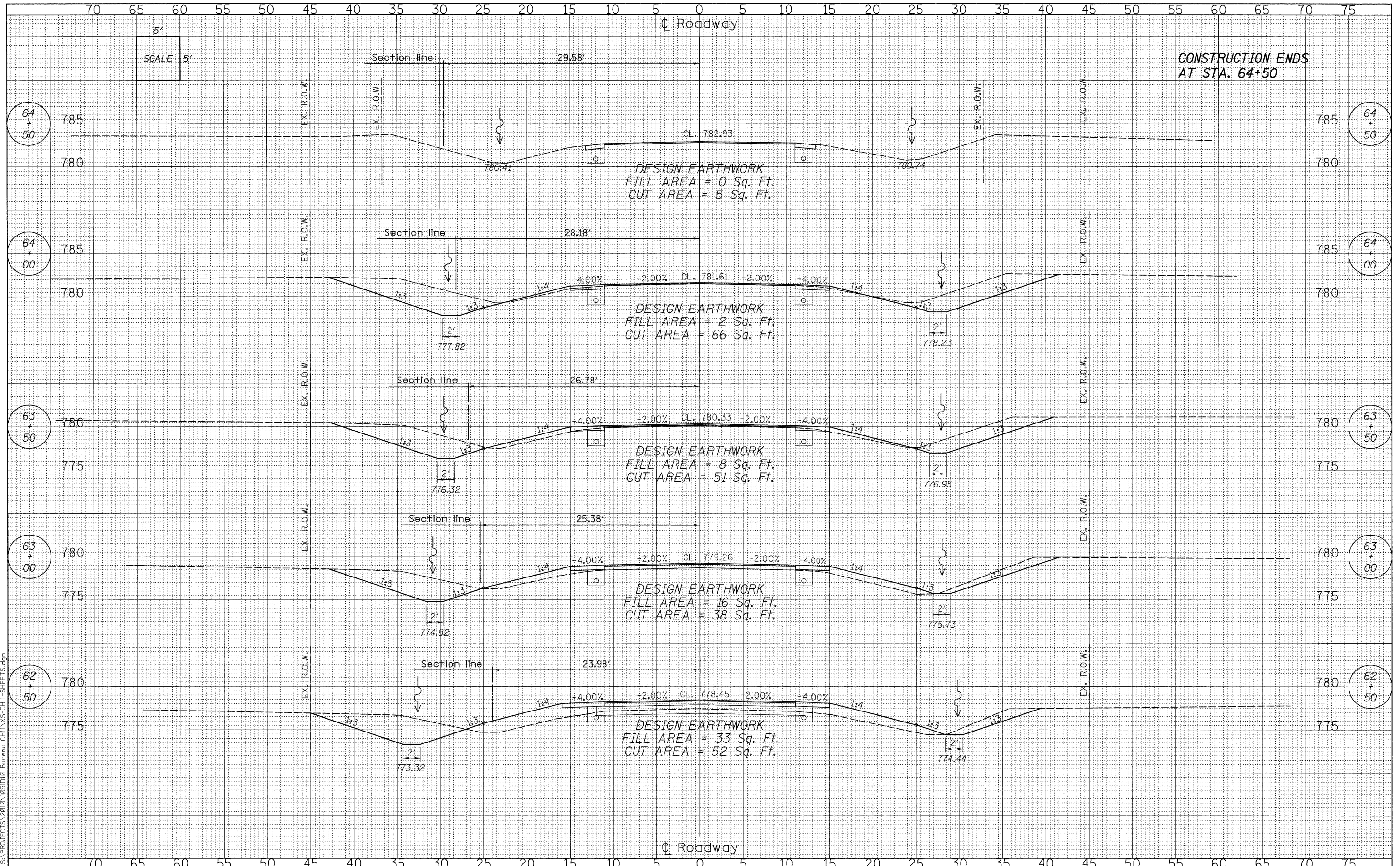
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	CHECKED - M. A. CACKLEY	REVISED -

**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59 + 75**

**CROSS SECTIONS**  
**STRUCTURE NO. 006-3032**  
STA. 59+75 TO STA. 62+00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
184	08-00211-00-BR	BUREAU	31	30
WHA# 1051D10		CONTRACT NO. 87462		
ILLINOIS FED. AID PROJECT BRS-01841007				



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**BUREAU COUNTY**  
**F.A.S. 184 (C.H. 11) OVER BIG BUREAU CREEK**  
**STATION 59+75**

**CROSS SECTIONS**  
**STRUCTURE NO. 006-3032**  
 STA. 62+50 TO STA. 64+50

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
184	08-00211-00-BR	BUREAU	31	31
	WHA# 1051010		CONTRACT NO. 87462	
ILLINOIS FED. AID PROJECT BR5-0184(107)				