

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
204	*	ROCK ISLAND	31	1
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				

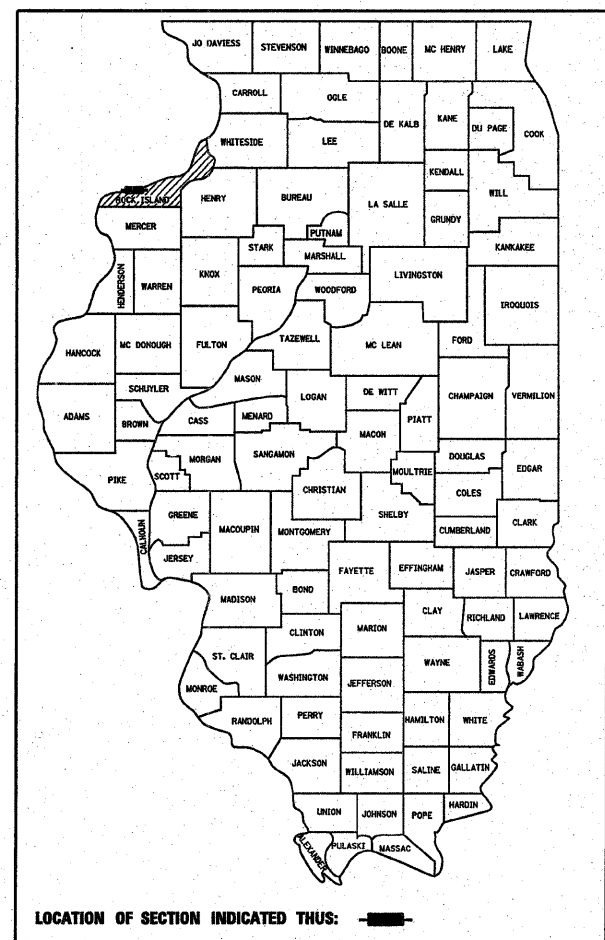
\*92-00297-00-BR

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

**PLANS FOR  
PROPOSED LOCAL AGENCY IMPROVEMENT  
BRP & STR FUNDS**

SCALES { PLAN 1:200  
PROFILE VERT. 1:100  
CROSS SECTIONS HORIZ. 1:100  
CROSS SECTIONS VERT. 1:50

**County Highway 59 over Lake George Spillway  
F.A.S. Route 204  
Section 92-00297-00-BR  
Project BRS-RS-204(101)  
Rock Island County  
Job No. C-92-063-07  
Contract No. 85424**



**WARNING**



**CALL BEFORE YOU DIG**

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF ILLINOIS

*John B. Fellman* 1-8-2008  
JOHN B. FELLMAN DATE  
EXPIRES 11/30/2009



APPROVED	<i>John C. Massa</i>	20 08
	ROCK ISLAND COUNTY ENGINEER	
APPROVED	<i>Janey 3rd</i>	20 08
	DISTRICT 2 ENGINEER OF LOCAL ROADS & STREETS	
APPROVED	<i>George F. Ryan</i>	20 08
	DEPUTY DIRECTOR OF HIGHWAYS, REGION 2 ENGINEER	

**INDEX OF SHEETS**

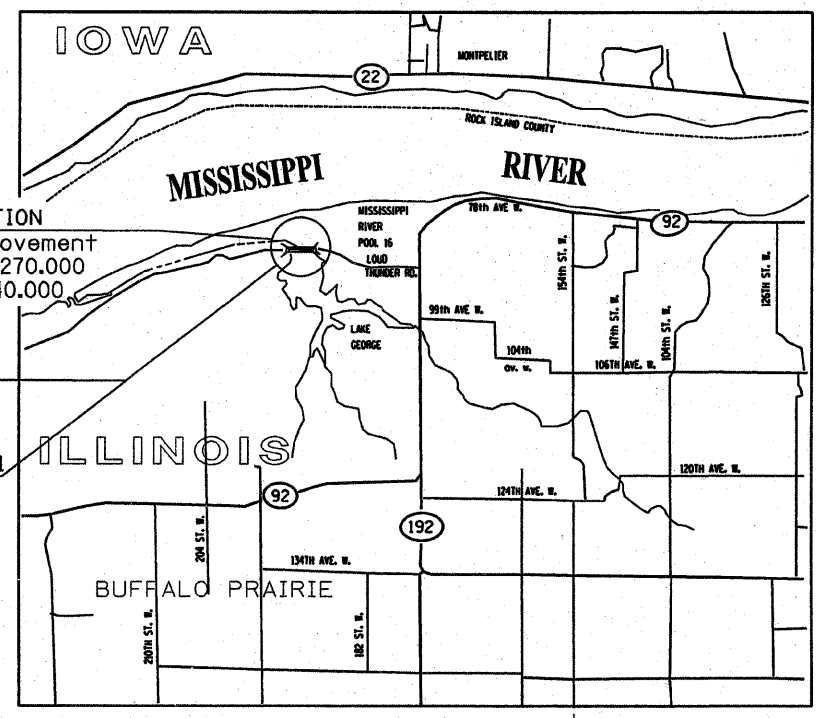
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- 515001-02 NAME PLATE FOR BRIDGES
- 601101 CONCRETE HEADWALL FOR PIPE DRAIN
- BLR26 STEEL PLATE BEAM GUARDRAIL 700mm (27 1/2") HEIGHT
- BLR27 TRAFFIC BARRIER TERMINAL TYPE 5A
- 664001-01 CHAIN LINK FENCE
- 701006-02 OFF-ROAD OPERATIONS, 2-LANE, 2-WAY, 4.5m (15') TO 600mm (24") FROM PAVEMENT EDGE
- 701201-02 LANE CLOSURE, 2-LANE, 2-WAY, DAY ONLY FOR SPEEDS > 45 mph
- 701301-02 LANE CLOSURE, 2L, 2W SHORT TIME OPERATIONS
- 701311-02 LANE CLOSURE, 2-LANE, 2-WAY MOVING OPERATIONS-DAY ONLY
- 701321-09 LANE CLOSURE, 2-LANE, 2-WAY, BRIDGE REPAIR WITH BARRIER
- 701901 TRAFFIC CONTROL DEVICES
- 704001-04 TEMPORARY CONCRETE BARRIER
- 720011 METAL POSTS FOR SIGNS, MARKERS & DELINEATORS
- 728001 TELESCOPING STEEL SIGN SUPPORT
- 729001 APPLICATION OF TYPES A & B METAL POSTS (FOR SIGNS & MARKERS)

**PROJECT LOCATION**  
Proposed Improvement Begins Sta. 0+270.000  
Ends Sta. 0+340.000

**EXISTING STRUCTURE NO. 081-3021**  
A 2-SPAN REINFORCED CONCRETE DECK ON STEEL BEAMS.  
**PROPOSED STRUCTURE NO. 081-3021**  
A 2-SPAN REINFORCED CONCRETE DECK ON EXISTING STEEL BEAMS.

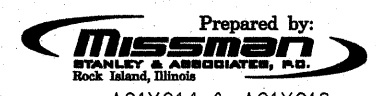


**Location Map**

SCALE 1:60,000  
NET LENGTH OF PROJECT = 70 meters = 0.070 km

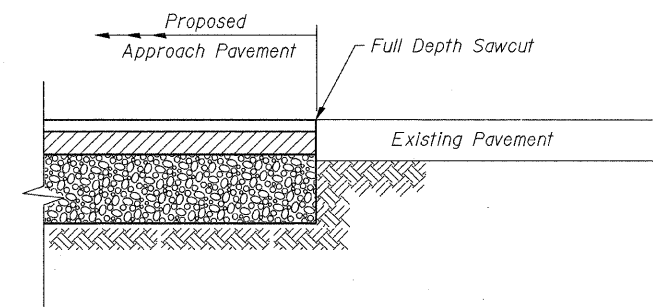
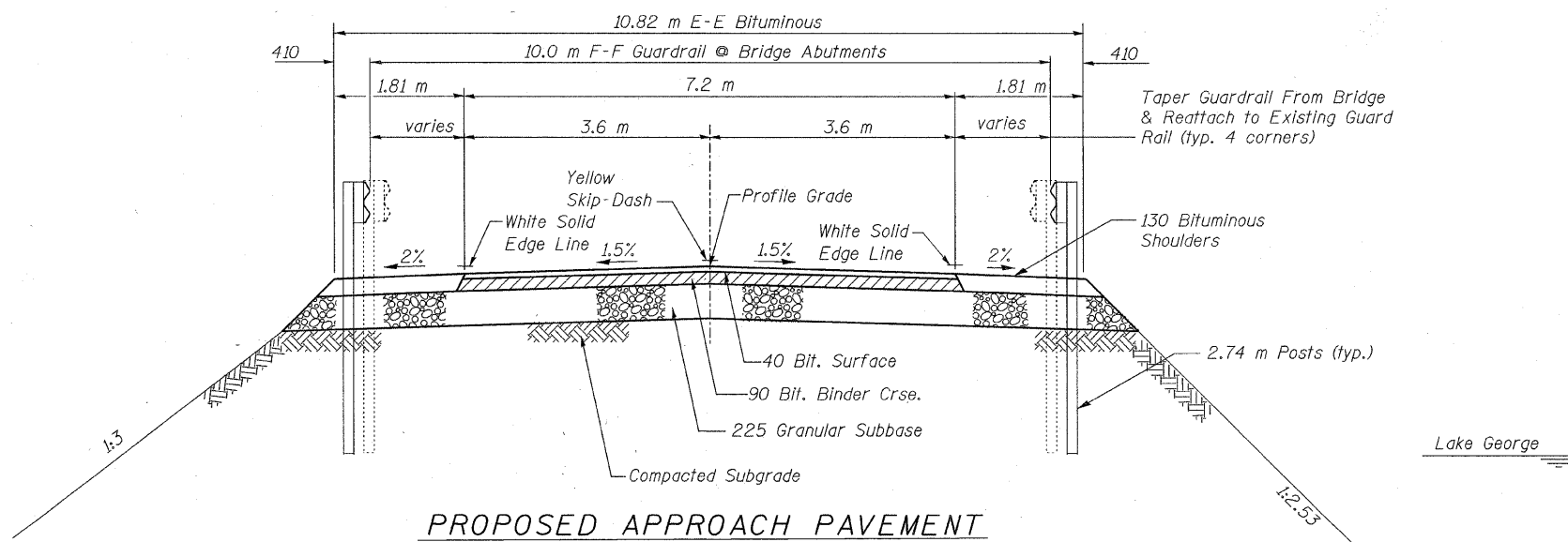
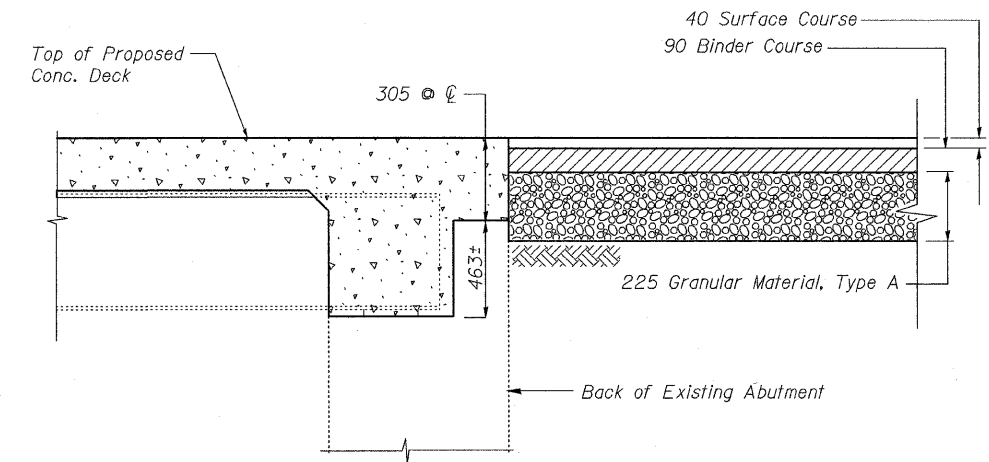
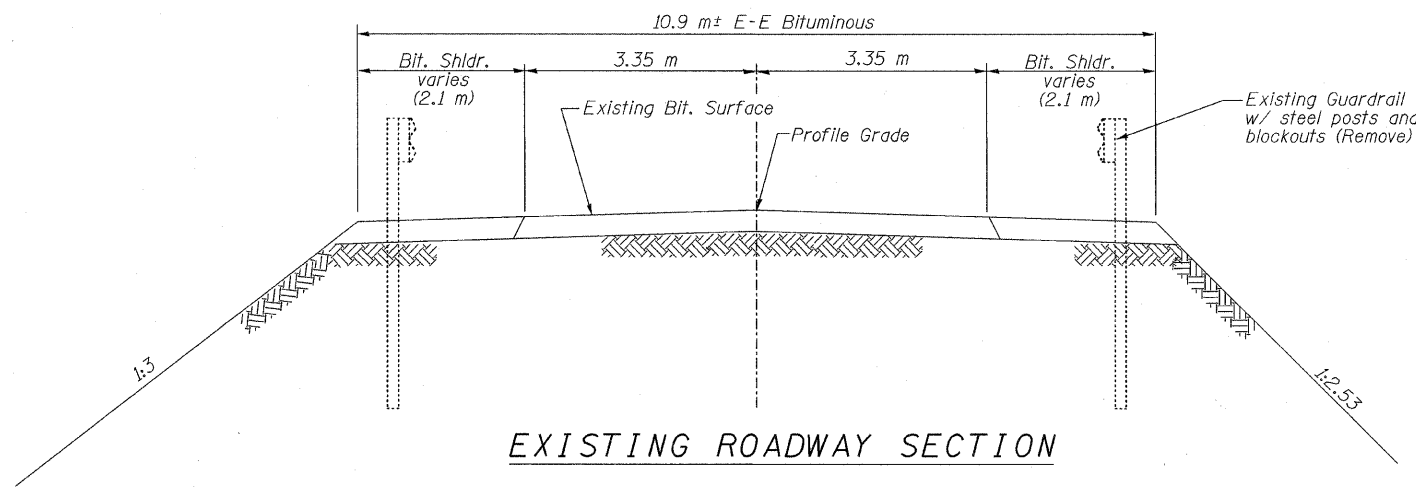
**DESIGN DESIGNATION**

HIGHWAY CLASS: MINOR COLLECTOR  
DESIGN SPEED: 80 km/h  
ADT= 750 (2008)



Prepared by:  
A01X014 & A01X018

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
204	*	ROCK ISLAND	31	2
STA. 0+270		TO STA. 0+340		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		
#92-00297-00-BR				



(Sta. 0+270 to Sta. 0+295)  
(Sta. 0+315 to Sta. 0+340)

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

**TYPICAL SECTIONS**

CH 59 OVER  
LAKE GEORGE SPILLWAY  
ROCK ISLAND COUNTY

DRAWN BY: RAP  
CHECKED BY: JBF

DATE: NOV. 2007

## SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY	CONST. TYPE CODE	
				X031-2A	1000
* 28102630	Stone Riprap Ditch Checks	Each	8	8	
* 50104720	Removal of Existing Concrete Deck	Each	1	1	
50500505	Stud Shear Connectors	Each	868	868	
Δ * 50600300	Cleaning and Painting Steel Bridge	L Sum	1	1	
Δ * 50606400	Containment and Disposal of Lead Paint Cleaning Residues	L Sum	1	1	
50800515	Bar Splacers	Each	188	188	
51500100	Name Plates	Each	1	1	
Δ * 63100205	Traffic Barrier Terminal, Type 5A (Special)	Each	4		4
67100100	Mobilization	L Sum	1	1	
* 70100405	Traffic Control & Protection, Standard 701321	Each	1	1	
70100450	Traffic Control & Protection, Standard 701201	L Sum	1		1
* 70101700	Traffic Control and Protection	L Sum	1	1	
M7030100	Short Term Pavement Marking	Meter	45.1		45.1
M2020010	Earth Excavation	Cu. m	585	585	
M2070220	Porous Granular Embankment	Cu. m	113	113	
M2113150	Topsail Furnish & Place, 150mm	Sq. m	400	400	
M2500310	Seeding, Class 4	Ha	0.29	0.29	
M2500400	Nitrogen Fertilizer Nutrient	Kg	29	29	
M2500500	Phosphorus Fertilizer Nutrient	Kg	29	29	
M2500600	Potassium Fertilizer Nutrient	Kg	29	29	
M2510115	Mulch, Method 2	Ha	0.29	0.29	
* M2810709	Stone Dumped Riprap, Class A5	Sq. m	220	220	
M3110225	Sub-base Granular Mat'l., Type A 225 mm	Sq. m	550		550
M4060100	Bituminous Materials (Prime Coat)	Liter	980		980
M4063080	Hot Mix Asphalt Binder Course, IL-19.0, N50	M Ton	114		114
M4063310	Hot Mix Asphalt Surface Course, Mix "C" N50	M Ton	50		50
M4402000	Pavement Removal	Sq. m	549.3		549.3
M4820530	Hot Mix Asphalt Shoulders, 130 mm	Sq. m	181		181
M5010240	Concrete Removal	Cu. m	69.5	69.5	
M5030350	Concrete Structures	Cu. m	77.2	77.2	
M5030360	Concrete Superstructure	Cu. m	45.6	45.6	
M5030390	Bridge Deck Grooving	Sq. m	189	189	
M5030450	Protective Coat	Sq. m	200	200	
M5050105	Furnishing and Erecting Structural Steel	L Sum	1	1	
M5050405	Furnishing and Erecting Structural Steel	Kg	7,150	7,150	
M5080105	Reinforcement Bars	Kg	5,140	5,140	
M5080205	Reinforcement Bars, Epoxy Coated	Kg	6,720	6,720	
* M5090220	Steel Railing, Type TP-1 (Special)	Meter	40	40	
M5210022	Anchor Bolts, M24	Each	44	44	
M5900200	Epoxy Crack Injection	Meter	50	50	
* M6011105	Pipe Underdrains for Structures, 150 mm	Meter	204	204	
Δ * M6300300	Steel Plate Beam, Guard Rail, Type A, Special	Meter	84		84
M6320030	Guardrail Removal	Meter	100		100
M6640100	Chain Link Fence, 1.2 m	Meter	141	141	
* M6641920	Chain Link Fence Removal	Meter	141	141	
Δ M7800205	Paint Pavement Marking - Line 100 mm	Meter	157.5		157.5
* MZ032470	Joint Sealer	Meter	164.9	164.9	
* MZ051800	Repair Concrete Structures	Sq. m	41.4	41.4	
* XY007265	Wall Restraining Anchors	Each	22	22	
* X0426200	Dewatering	L Sum	1	1	

\*See Special Provisions

Δ Specialty Items

## SCHEDULE OF ROADWAY QUANTITIES

### 225 SUB-BASE GRANULAR MATERIAL, TYPE A

Sta. 0+270 - 0+295	275 Sq. M.
Sta. 0+315 - 0+340	275 Sq. M.
<b>TOTAL</b>	<b>550 Sq. M.</b>

### BITUMINOUS MATERIALS (PRIME COAT)

Sta. 0+270 - 0+295	490 Liter
Sta. 0+315 - 0+340	490 Liter
<b>TOTAL</b>	<b>980 Liter</b>

### HMA BINDER & SURFACE COURSES

Sta. 0+270 - 0+295	82 M Ton
Sta. 0+315 - 0+340	82 M Ton
<b>TOTAL</b>	<b>164 M Ton</b>

### PAINT PAVEMENT MARKING - LINE 100 mm

Sta. 0+270 - 0+340 (White)	70 Meter
Sta. 0+270 - 0+340 (White)	70 Meter
Sta. 0+270 - 0+340 (Yellow)	17.5 Meter
<b>TOTAL</b>	<b>157.5 Meter</b>

### Pavement Removal

Sta. 0+270 - 0+295	272.5 Sq. m
Sta. 0+315 - 0+340	276.8 Sq. m
<b>TOTAL</b>	<b>549.3 Sq. m</b>

### TRAFFIC BARRIER TERMINAL, TYPE 5A

(REMOVE & REPLACE)	
Lt. Sta. 0+291 - 0+295	1 Ea.
Lt. Sta. 0+315 - 0+319	1 Ea.
Rt. Sta. 0+291 - 0+295	1 Ea.
Rt. Sta. 0+315 - 0+319	1 Ea.
<b>TOTAL</b>	<b>4 Ea.</b>

### GUARDRAIL REMOVAL & REPLACEMENT

Lt. Sta. 0+270 - 0+291	21 Meter
Lt. Sta. 0+319 - 0+340	21 Meter
Rt. Sta. 0+270 - 0+291	21 Meter
Rt. Sta. 0+319 - 0+340	21 Meter
<b>TOTAL</b>	<b>84 Meter</b>

### GENERAL NOTES:

1. Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the contractor will be paid for the quantity actually furnished at the unit price bid for such work.

2. All obstructions to the work removed by the contractor to facilitate construction which is not shown for removal or ordered by the engineer, shall be replaced with equal or better materials as approved by the engineer.

3. The location of all known existing utilities and sewers indicated on these plans are taken from existing records and are not guaranteed by the owner or the engineer; therefore, their locations must be considered approximate only. The contractor shall confirm the exact locations and elevations of these and other facilities that may exist, but are not shown on the plans prior to submitting bids. The contractor shall expose utilities and sewers noted on the plans, as directed in the field by the engineer, prior to beginning any construction operations so the exact locations and elevations may be determined.

4. The contractor shall provide, erect, and maintain all required barricades, fencing delineators, and such additional safeguards, safety devices, and protection equipment, and take such actions as are reasonably necessary to protect the life and health of his employees and the public in the vicinity of all construction work zones. All above referenced safety requirements shall be in conformance with all city, state, FHWA, and OSHA rules, standard specifications, and regulations (latest revision). Cost of said work shall be included in the contract unit prices for the various Traffic Control pay items.

5. The contractor shall be responsible for all damage to items not specified for removal, reconstruction, or demolition. All areas including, but not limited to, roadway, drives, structures, lawns, and parking areas outside the project scope or construction limits which are damaged by the contractor's operations during construction shall be replaced or repaired by the contractor, as approved by the engineer. No separate payment shall be made for said work and it shall be considered included in cost of other applicable work.

6. It shall be the contractor's responsibility to provide waste areas or disposal sites for excess or unsuitable material which is not desirable to be incorporated into the work involved on this project. No payment for overhaul will be allowed for material hauled to these sites.

7. Alternate plans for construction details other than those indicated hereon may be submitted to the engineer for consideration. Specific written approval must be received from the engineer before any such construction may proceed.

8. All dimensions are in millimeters (mm) unless noted otherwise.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION SUMMARY OF QUANTITIES & GENERAL NOTES
NAME	DATE	
		CH 59 OVER LAKE GEORGE SPILLWAY ROCK ISLAND COUNTY  DRAWN BY: RAP CHECKED BY: JBF

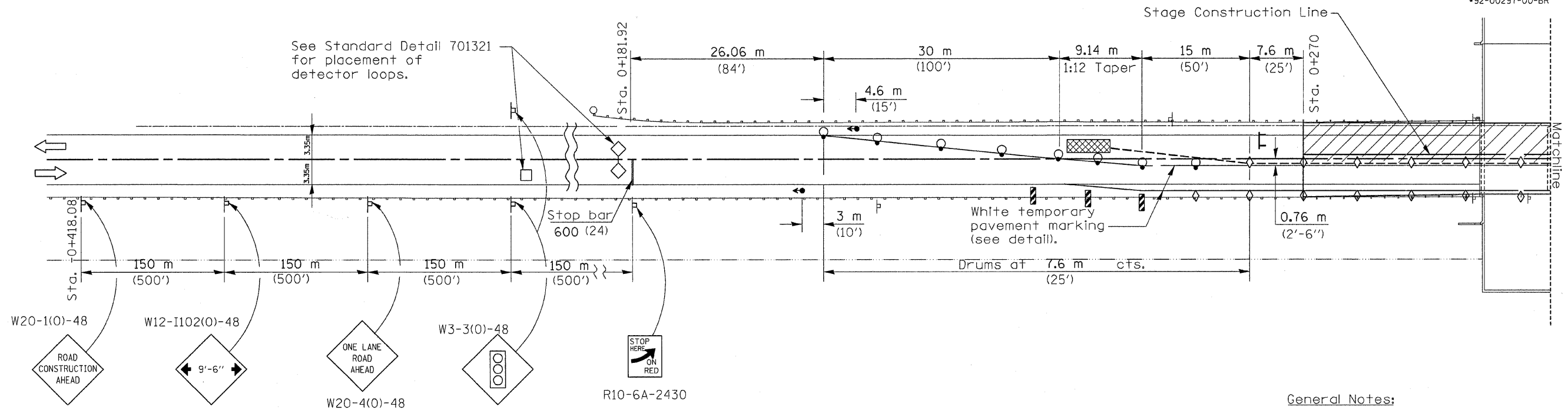
DATE: JAN, 2008

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
204		ROCK ISLAND	31	4
STA. 0+270		TO STA. 0+340		
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT

+92-00297-00-BR

DATE	BY
ORIGINAL SURVEY PLOTTED	DATE
NOTE BOOK TEMPLATE	
AREAS CHECKED	

DATE	BY
ORIGINAL SURVEY PLOTTED	DATE
NOTE BOOK TEMPLATE	
AREAS CHECKED	

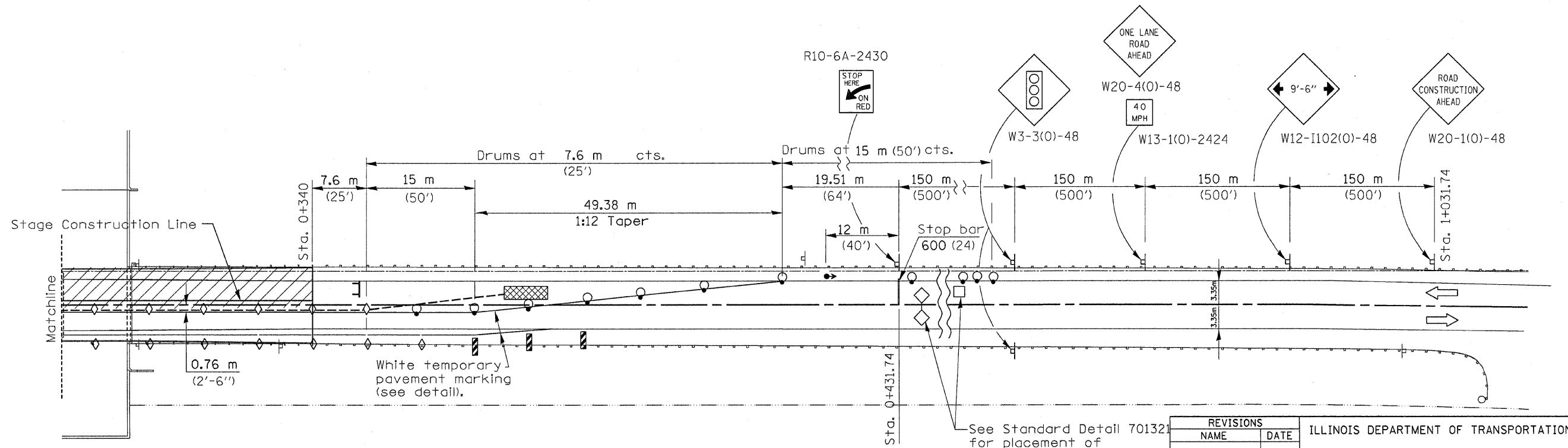


**General Notes:**

See Highway Standard 701321-09 for notes and details.

Drawing in not to Scale

Rumble Strips are not Required



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

**STAGE I TRAFFIC CONTROL**

CH 59 OVER  
LAKE GEORGE SPILLWAY  
ROCK ISLAND COUNTY

DRAWN BY: RAP

CHECKED BY: JBF

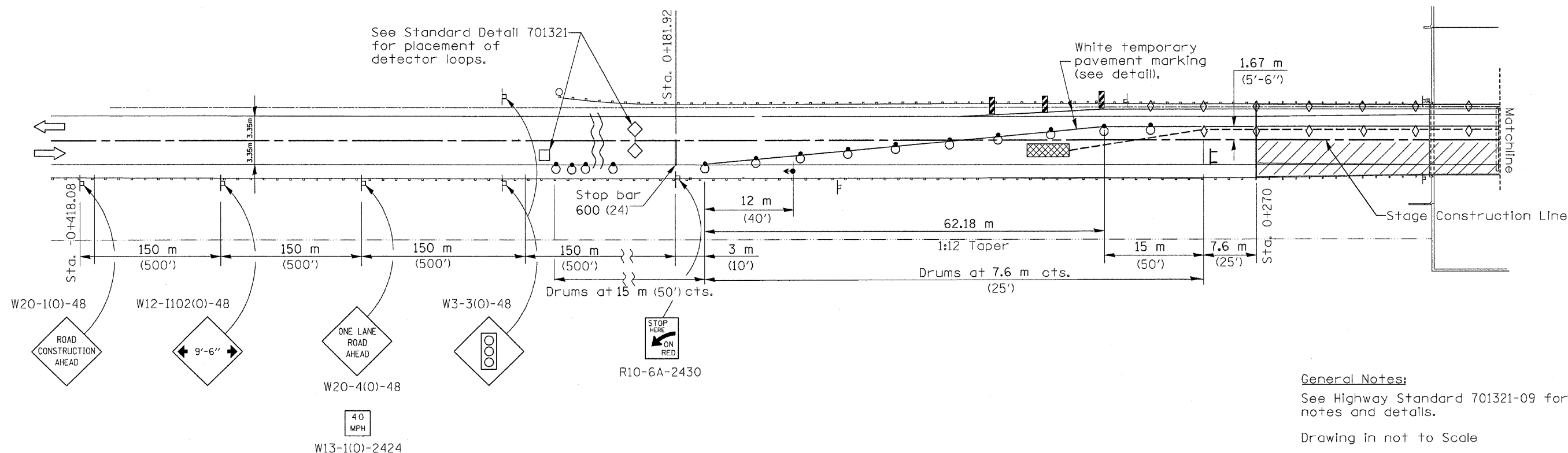
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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.
204	*	ROCK ISLAND	31
STA. 0+270		TO STA. 0+340	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT

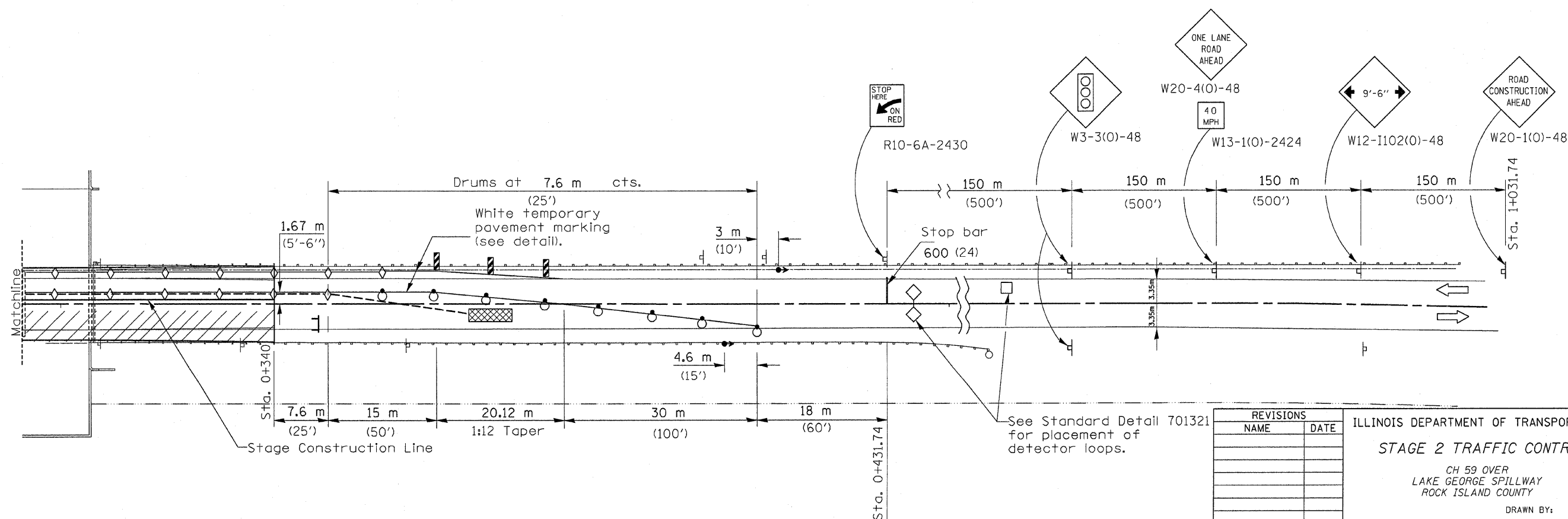
•92-00297-00-BR

DATE	BY

DATE	BY



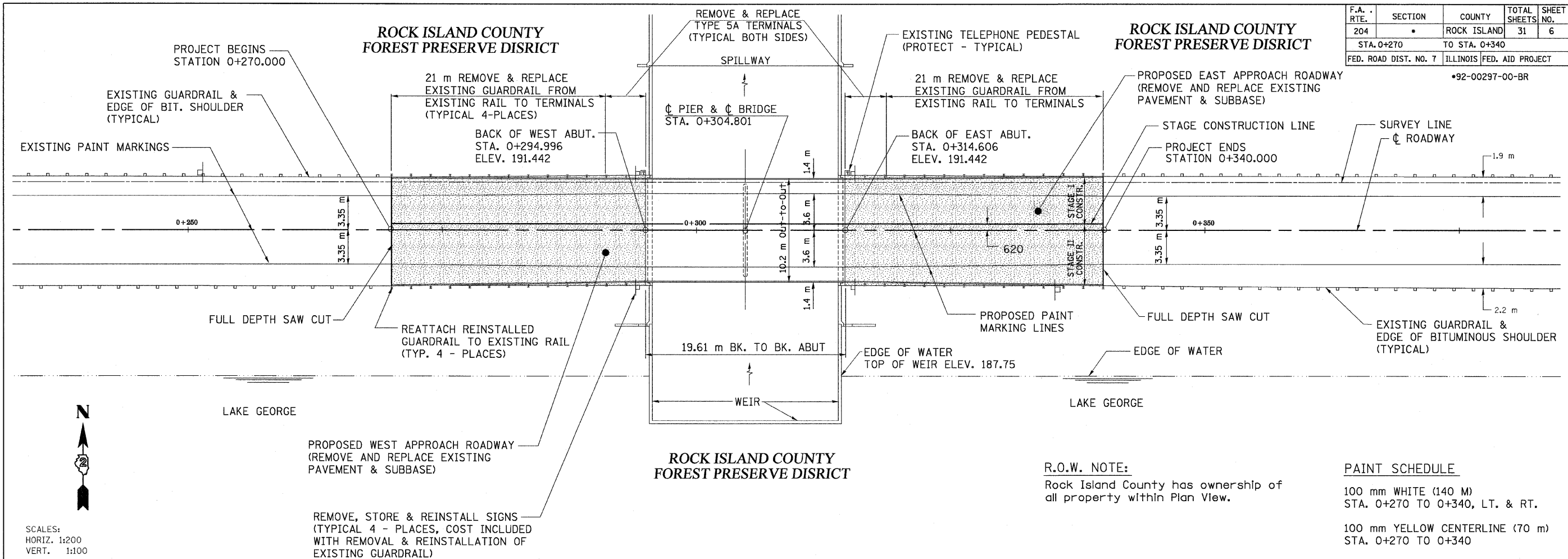
General Notes:  
See Highway Standard 701321-09 for notes and details.  
Drawing in not to Scale  
Rumble Strips are not Required



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**STAGE 2 TRAFFIC CONTROL**  
 CH 59 OVER  
 LAKE GEORGE SPILLWAY  
 ROCK ISLAND COUNTY  
 DRAWN BY: RAP  
 CHECKED BY: JBF  
 DATE: JAN. 2008

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
204	*	ROCK ISLAND	31	6
STA. 0+270		TO STA. 0+340		
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
*92-00297-00-BR				



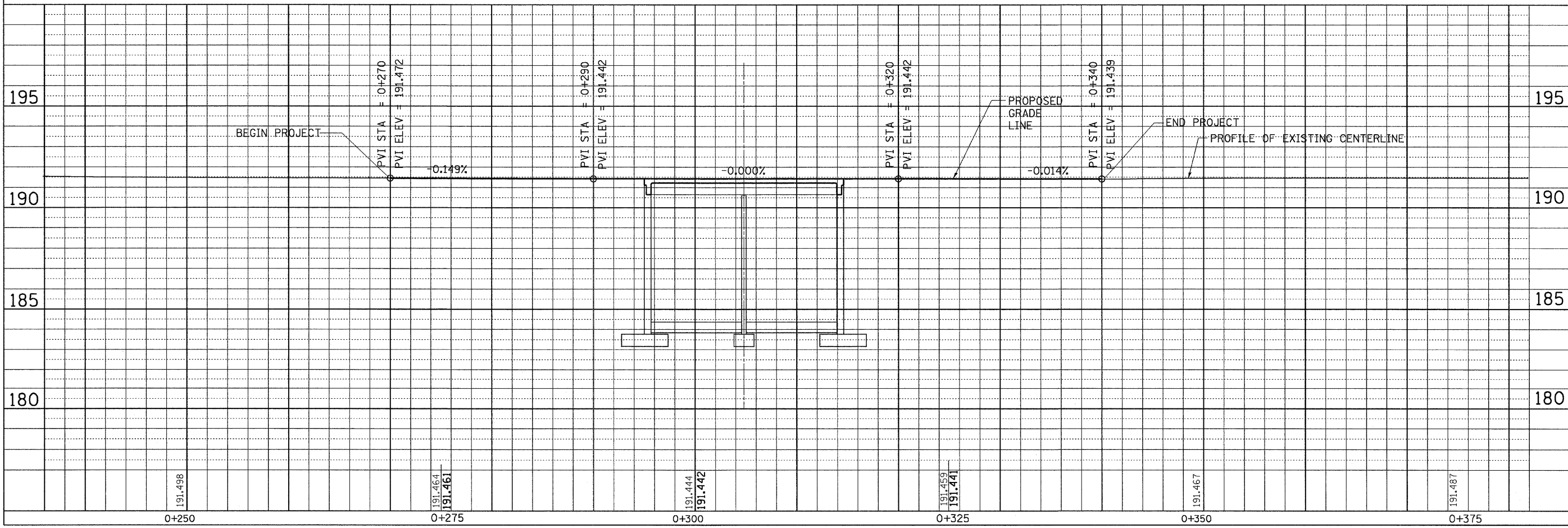
**R.O.W. NOTE:**  
Rock Island County has ownership of all property within Plan View.

**PAINT SCHEDULE**  
100 mm WHITE (140 M)  
STA. 0+270 TO 0+340, LT. & RT.  
100 mm YELLOW CENTERLINE (70 m)  
STA. 0+270 TO 0+340

SCALES:  
HORIZ. 1:200  
VERT. 1:100

BY	DATE

BY	DATE

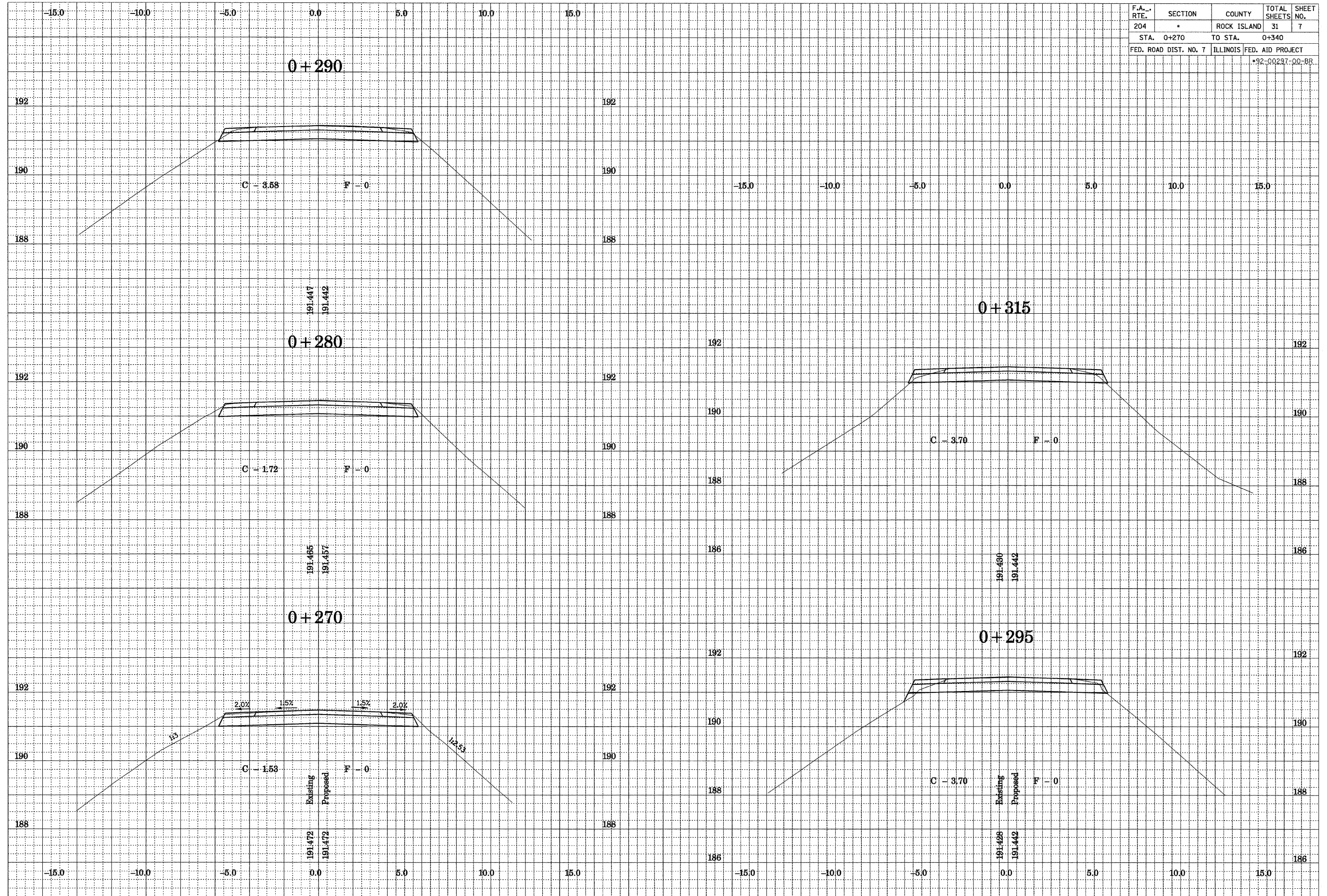




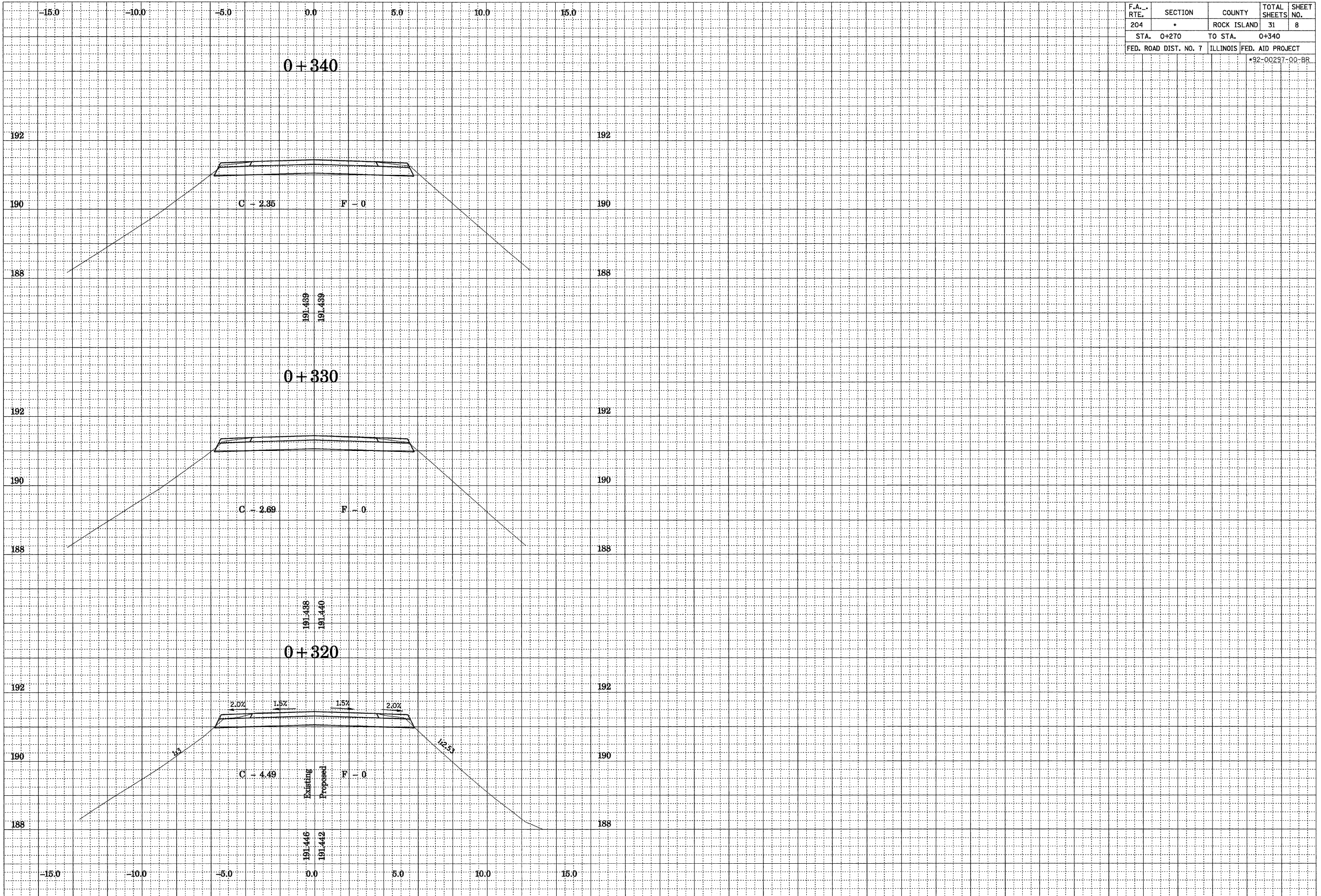
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204	*	ROCK ISLAND	31	7
STA. 0+270		TO STA.	0+340	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
*92-00237-00-BR.				

FINAL SURVEY	DATE
SURVEYED	BY
NOTE BOOK	
AREAS CHECKED	
NO.	

ORIGINAL SURVEY	DATE
SURVEYED	BY
NOTE BOOK	
AREAS CHECKED	
NO.	



F.A. RTE. 204	SECTION *	COUNTY ROCK ISLAND	TOTAL SHEETS 31	SHEET NO. 8
STA. 0+270		TO STA. 0+340		
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT
*92-00297-00-BR				



BY	DATE
SURVEYED	
TEMPLATE	
AREAS	
CHECKED	
NO.	

BY	DATE
ORIGINAL SURVEY	
NOTE BOOK	
AREAS	
CHECKED	
NO.	



Bench Mark: Chiseled "□" on S.E. corner bridge wingwall Elev. = 191.137

Existing Structure: S.N. 081-3021 built for Illinois Department of Conservation in 1966, is a 2 span WF with a 165 mm R.C. deck, 19.61 m back to back abutment and 9.45 m out to out, on closed abutments. The existing deck shall be removed and replaced along with substructure repairs utilizing stage construction.

No salvage

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 204	*	ROCK ISLAND	31	9
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1  
14 SHEETS

GENERAL NOTES

\* 92-00297-00-BR  
Contract 85424

Fasteners shall be AASHTO M164M Type 1, Mechanically galvanized bolts. Bolts M20  $\phi$ , holes 22 mm  $\phi$ , unless otherwise noted. 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 interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Blue 10B 3/6. See Special Provision for "Cleaning and Painting New Metal Structures."

Cleaning and painting of the existing structural steel shall be as specified in the Special Provision for "Cleaning and Painting Existing Steel Structures". All existing structural steel within 1.5 m of beam ends shall be cleaned per near white blast cleaning SSPC-SP10. The exterior and the bottom flange of the fascia beams shall be cleaned per power tool cleaning - commercial grade. The aluminum epoxy mastic / acrylic paint system shall be used for painting of existing structural steel. The color of the final finish coat shall be Blue, Munsell No. 10B 3/6.

Reinforcement bars shall conform to the requirements of ASTM A 706M Gr 400 (IL Modified). See Special Provisions

Plan dimensions and details relative to existing plans are subject to routine variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished based upon the unit price bid for the work.

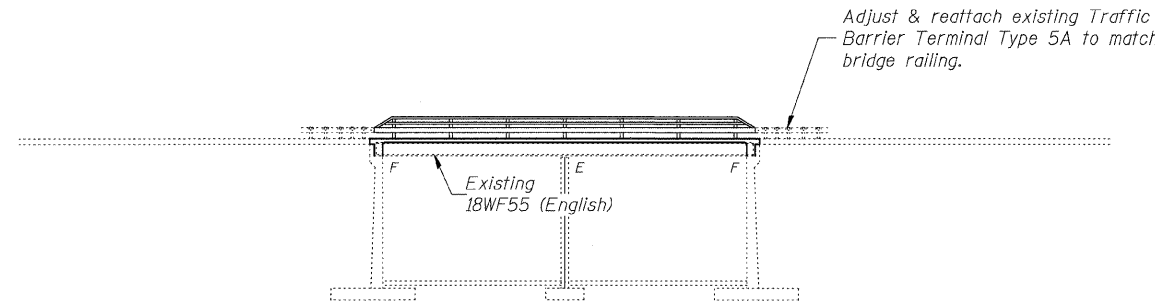
No field welding is permitted except as specified in the contract documents. The existing structural steel coating contains lead. The Contractor should take appropriate precautions to deal with the presence of lead on this project.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by an individual acceptable to the Engineer. Any cracks that can not be removed by grinding 6mm deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

All dimensions are in millimeters (mm) except as noted.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Concrete Deck	Each	1		1
Wall Restraining Anchors	Each		22	22
Steel Railing, Type TP-1 (Special)	m	40		40
Furnishing and Erecting Structural Steel	kg	2090	5060	7150
Concrete Superstructure	m <sup>3</sup>	45.6		45.6
Concrete Structures	m <sup>3</sup>		4.4	4.4
Reinforcement Bars, Epoxy Coated	kg	6290	430	6720
Protective Coat	m <sup>2</sup>	200		200
Stud Shear Connectors	Each	868		868
Epoxy Crack Injection	m		50	50
Name Plates	Each	1		1
Containment and Disposal of Lead Paint Cleaning Residue	L.S.	1		1
Bridge Deck Grooving	m <sup>2</sup>	189		189
Cleaning and Painting Steel Bridge	L.S.	1		1
Bar Splicers	Each	188		188
Anchor Bolts, M24	Each	0	44	44



ELEVATION

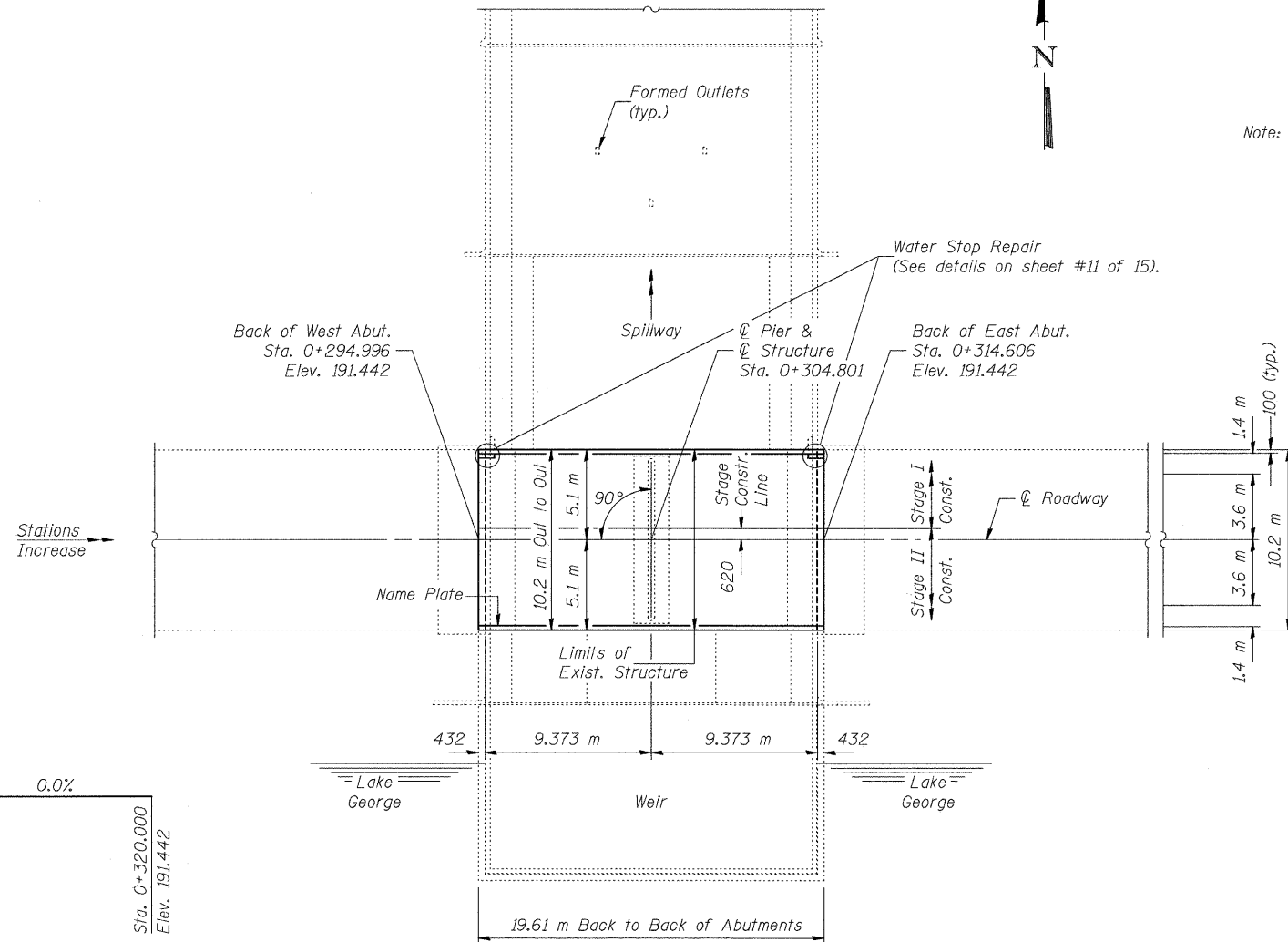
Reinforcement bars designated (E) shall be epoxy coated.

LAKE GEORGE SPILLWAY  
REBUILT 20 BY  
ROCK ISLAND COUNTY  
SEC. 92-00297-00-BR  
F.A.S. RT. 204 STA. 0+304.801  
F.A. PROJECT:  
STR. NO. 081-3021 LOADING MS18

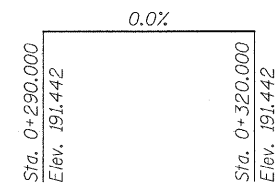
NAME PLATE

See Std. 515001

Note: Existing Name Plate to be cleaned and relocated next to new Name Plate. Cost included with Name Plates.



PLAN



PROFILE GRADE  
(along  $\phi$  roadway)

DESIGNED	SPN
CHECKED	TWH
DRAWN	R. Doty
CHECKED	SPN/TWH

December 28, 2007  
EXAMINED: [Signature]  
PASSED: [Signature]



EXPIRES 11-30-2008

LOADING MS18  
Allow 1.2 kN/m<sup>2</sup> for future wearing surface.

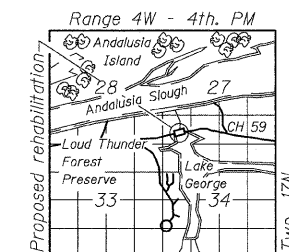
DESIGN SPECIFICATIONS  
1996 AASHTO

DESIGN STRESSES

FIELD UNITS  
NEW CONSTRUCTION  
 $f'_c = 24$  MPa  
 $f_y = 400$  MPa (reinforcement)  
 $f_y = 250$  MPa (structural steel M 270M, Gr. 250)  
EXISTING CONSTRUCTION  
 $f'_c = 24$  MPa  
 $f_y = 276$  MPa (reinforcement)  
 $f_y = 250$  MPa (structural steel)

SEISMIC DATA

Seismic Performance Category (SPC) = A  
Bedrock Acceleration Coefficient (A) = 0.028g  
Site Coefficient (S) = 1.2



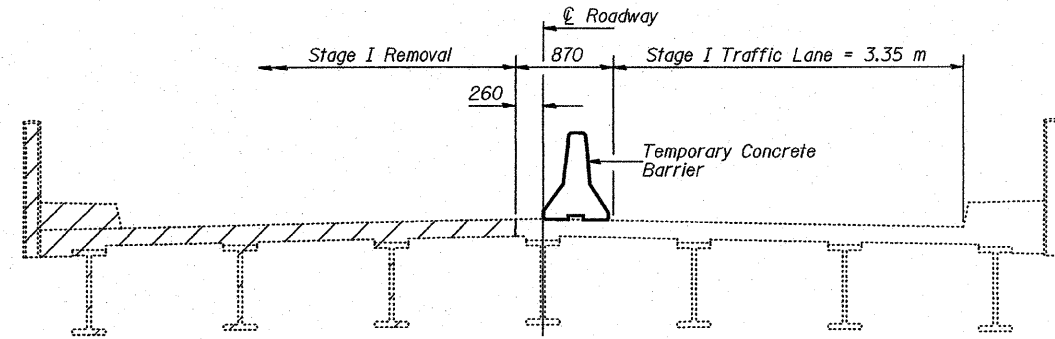
LOCATION SKETCH

GENERAL PLAN  
CH 59 OVER  
LAKE GEORGE SPILLWAY  
F.A.S. RTE. 204-SEC. 92-00297-00-BR  
ROCK ISLAND COUNTY  
STATION 0+304.801  
STRUCTURE NO. 081-3021

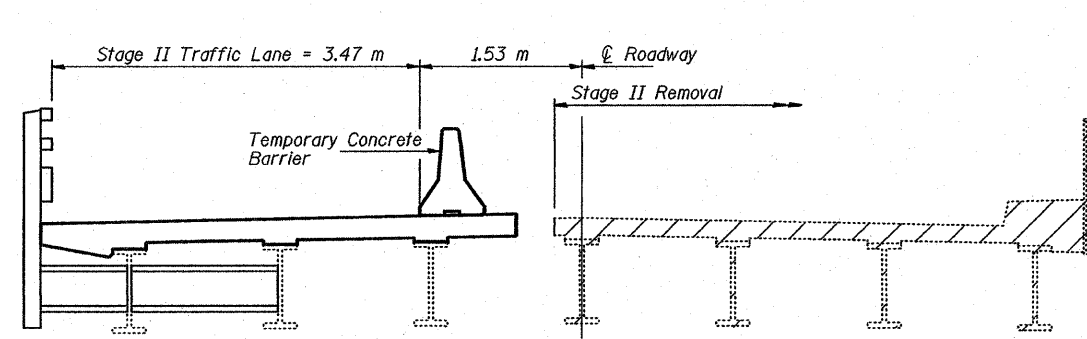
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
FAS 204	*	ROCK ISLAND	31	10
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

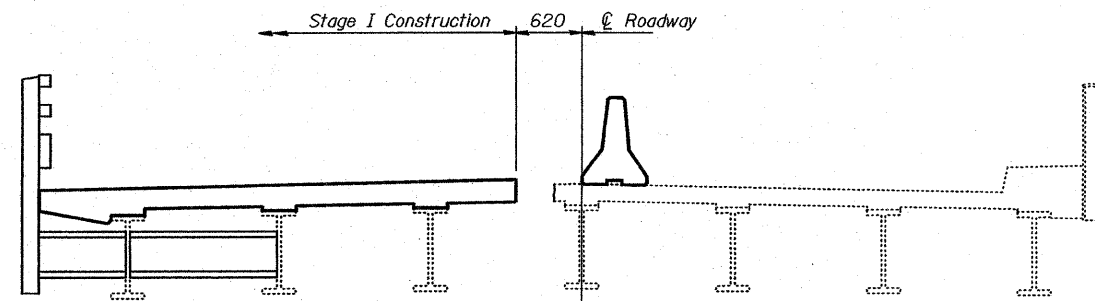
\* 92-00297-00-BR



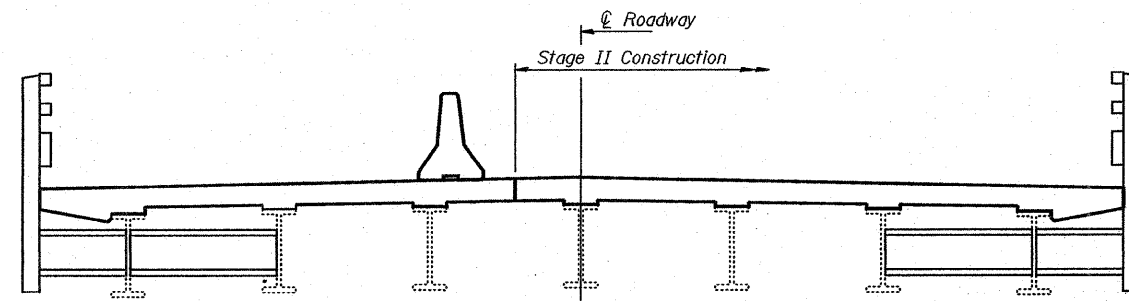
STAGE I REMOVAL



STAGE II REMOVAL



STAGE I CONSTRUCTION



STAGE II CONSTRUCTION

Notes: Hatched areas indicate Removal of Existing Concrete Deck.  
For details of Temporary Concrete Barrier see sheet 3 of 15.  
For quantity of Temporary Concrete Barrier see Roadway Plans.  
All cross sections are Looking East.  
**TEMPORARY CONCRETE BARRIER SHALL BE INCLUDED IN STD. 701321**

DESIGNED	SPN
CHECKED	TWH
DRAWN	R. Doty
CHECKED	SPN/TWH

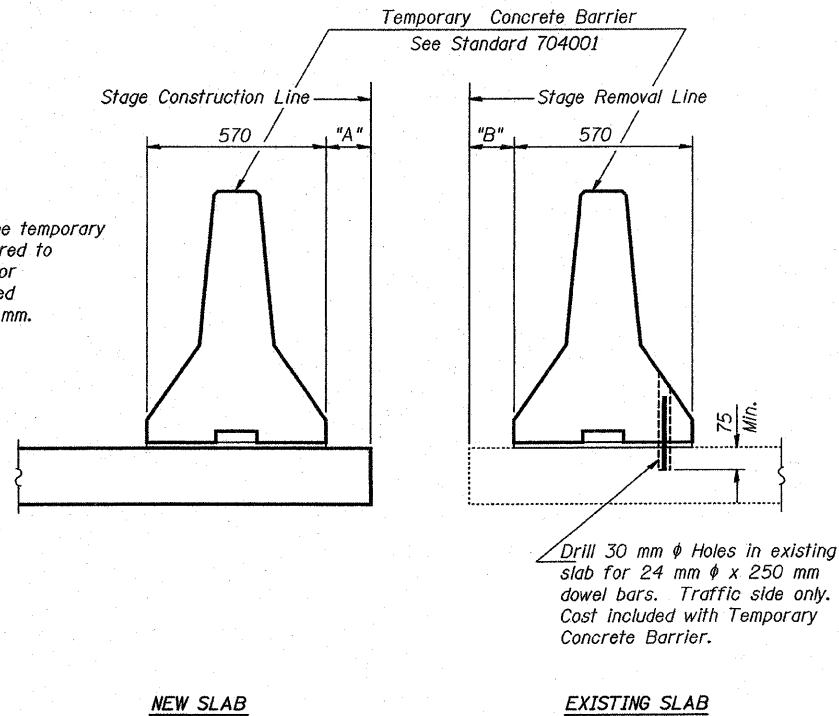
Aug. 24, 2007  
EXAMINED *Thomas J. Damgalak*  
PASSED *Robert E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

STAGE CONSTRUCTION  
F.A.S. RT. 204 SEC. 92-00297-00-BR  
ROCK ISLAND COUNTY  
STA. 0+304.801

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 3
FAS 204	**	ROCK ISLAND	31	11	14 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

\*\* 92-00297-00-BR

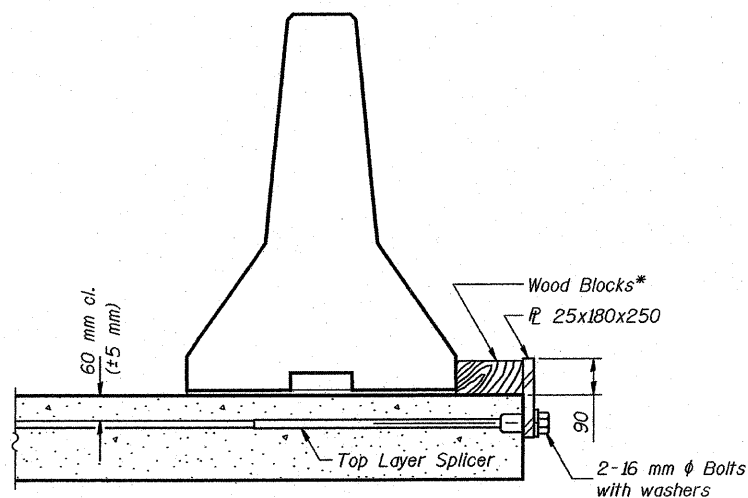


When "A" is 150 mm or less, the temporary concrete barrier shall be anchored to new slab according to Detail I or Detail II. No anchorage required when "A" is greater than 1050 mm.

**NOTES**

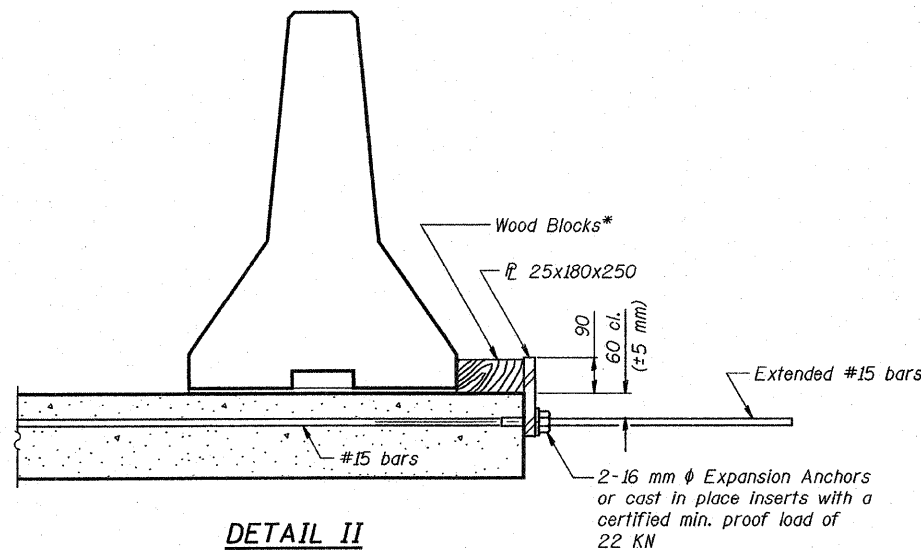
- Detail I - With Bar Splicer or Couplers:  
Connect one (1) 25x180x250 steel  $\bar{L}$  to the top layer of couplers with 2-16 mm  $\phi$  bolts screwed to coupler at approximate  $\bar{C}$  of each 3 m barrier panel.
- Detail II - With Extended Reinforcement Bars:  
Connect one (1) 25x180x250 steel  $\bar{L}$  to the concrete slab with 2-16 mm  $\phi$  Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate  $\bar{C}$  of each 3 m barrier panel.
- Cost of anchorage included with Temporary Concrete Barrier, **STD. 701321**
- All dimensions are in millimeters (mm) except as noted.

**SECTIONS THRU SLAB**



**DETAIL I**

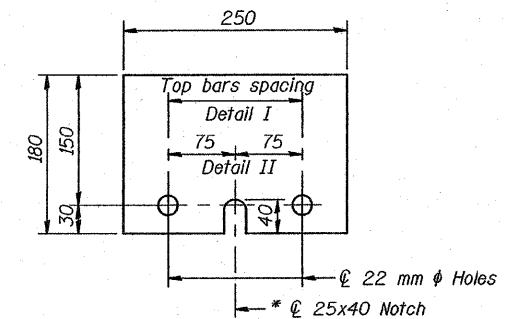
The 25x180x250 Plate shall not be removed until Stage II Construction forms and reinforcement bars are in place.



**DETAIL II**

The 25x180x250 Plate shall not be removed until Stage II Construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

\*Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.



**$\bar{L}$  25x180x250**

\* Required only with Detail II

DESIGNED	SPN
CHECKED	TWH
DRAWN	R. Doty
CHECKED	SPN/TWH

Aug. 24, 2007  
EXAMINED *Thomas J. Demagala*  
ENGINEER OF BRIDGE DESIGN  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

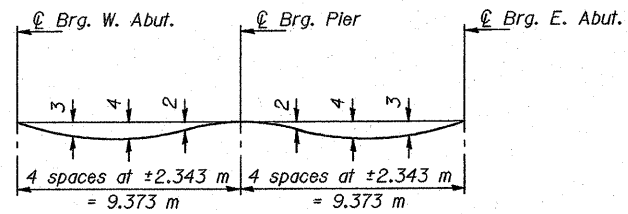
R-27 (M) 4-30-99

**TEMPORARY CONCRETE BARRIER  
FOR STAGE CONSTRUCTION  
F.A.S. RT. 204 SEC. 92-00297-00-BR  
ROCK ISLAND COUNTY  
STA. 0+304.801**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 4 14 SHEETS
FAS 204	#	ROCK ISLAND	31	12	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

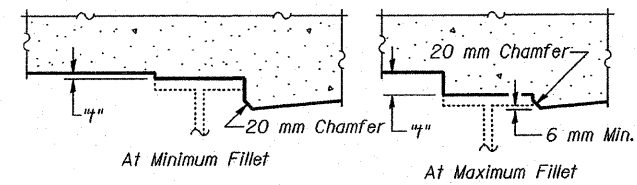
\* 92-00297-00-BR



**DEAD LOAD DEFLECTION DIAGRAM**

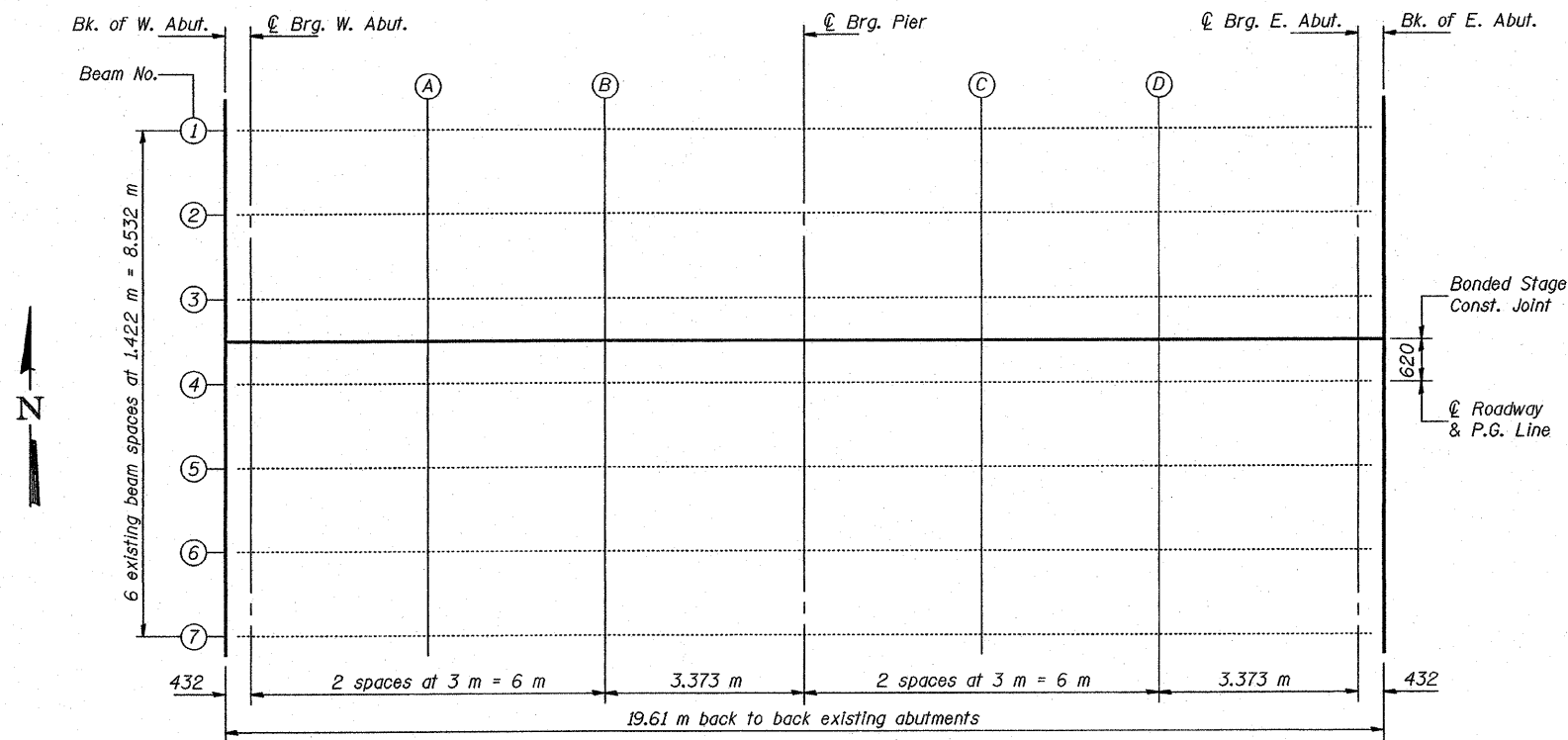
(Includes weight of concrete only.)

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 and on sheet 5 of 15.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below and on sheet 5 of 15. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown below and on sheet 5 of 15, minus slab thickness, equals the fillet heights "t" above top flange of beams.

**FILLET HEIGHTS**



**ELEVATIONS LOCATION PLAN**

DESIGNED	SPN
CHECKED	TWH
DRAWN	R. Doty
CHECKED	SPN/TWH

Aug. 24, 2007  
 EXAMINED *Thomas J. Damagala*  
 ENGINEER OF BRIDGE DESIGN  
 PASSED *Ralph E. Curkum*  
 ENGINEER OF BRIDGES AND STRUCTURES

**TOP OF SLAB ELEVATIONS**  
 F.A.S. RT. 204 SEC. 92-00297-00-BR  
 ROCK ISLAND COUNTY  
 STA. 0+304.801

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 204	*	ROCK ISLAND	31	13
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

\* 92-00297-00-BR

SHEET NO. 5  
14 SHEETS

**BEAM 1**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. w. Abut.	294.996	-4.266	191.375	191.375
⊕ Brg. W. Abut.	295.428	-4.266	191.375	191.375
A	298.428	-4.266	191.375	191.378
B	301.428	-4.266	191.375	191.378
⊕ Pier	304.801	-4.266	191.375	191.375
C	307.801	-4.266	191.375	191.377
D	310.801	-4.266	191.375	191.378
⊕ Brg. E. Abut.	314.174	-4.266	191.375	191.375
Bk. E. Abut.	314.606	-4.266	191.375	191.375

**BEAM 2**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. w. Abut.	294.996	-2.844	191.399	191.399
⊕ Brg. W. Abut.	295.428	-2.844	191.399	191.399
A	298.428	-2.844	191.399	191.403
B	301.428	-2.844	191.399	191.402
⊕ Pier	304.801	-2.844	191.399	191.399
C	307.801	-2.844	191.399	191.402
D	310.801	-2.844	191.399	191.403
⊕ Brg. E. Abut.	314.174	-2.844	191.399	191.399
Bk. E. Abut.	314.606	-2.844	191.399	191.399

**BEAM 3**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. w. Abut.	294.996	-1.422	191.421	191.421
⊕ Brg. W. Abut.	295.428	-1.422	191.421	191.421
A	298.428	-1.422	191.421	191.424
B	301.428	-1.422	191.421	191.424
⊕ Pier	304.801	-1.422	191.421	191.421
C	307.801	-1.422	191.421	191.423
D	310.801	-1.422	191.421	191.424
⊕ Brg. E. Abut.	314.174	-1.422	191.421	191.421
Bk. E. Abut.	314.606	-1.422	191.421	191.421

**BONDED STAGE CONSTRUCTION JOINT**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. w. Abut.	294.996	-.620	191.433	191.433
⊕ Brg. W. Abut.	295.428	-.620	191.433	191.433
A	298.428	-.620	191.433	191.436
B	301.428	-.620	191.433	191.435
⊕ Pier	304.801	-.620	191.433	191.433
C	307.801	-.620	191.433	191.435
D	310.801	-.620	191.433	191.436
⊕ Brg. E. Abut.	314.174	-.620	191.433	191.433
Bk. E. Abut.	314.606	-.620	191.433	191.433

**⊕ ROADWAY, PROFILE GRADE LINE AND BEAM 4**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. w. Abut.	294.996	.000	191.442	191.442
⊕ Brg. W. Abut.	295.428	.000	191.442	191.442
A	298.428	.000	191.442	191.445
B	301.428	.000	191.442	191.445
⊕ Pier	304.801	.000	191.442	191.442
C	307.801	.000	191.442	191.445
D	310.801	.000	191.442	191.445
⊕ Brg. E. Abut.	314.174	.000	191.442	191.442
Bk. E. Abut.	314.606	.000	191.442	191.442

**BEAM 5**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. w. Abut.	294.996	1.422	191.421	191.421
⊕ Brg. W. Abut.	295.428	1.422	191.421	191.421
A	298.428	1.422	191.421	191.424
B	301.428	1.422	191.421	191.424
⊕ Pier	304.801	1.422	191.421	191.421
C	307.801	1.422	191.421	191.423
D	310.801	1.422	191.421	191.424
⊕ Brg. E. Abut.	314.174	1.422	191.421	191.421
Bk. E. Abut.	314.606	1.422	191.421	191.421

**BEAM 6**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. w. Abut.	294.996	2.844	191.399	191.399
⊕ Brg. W. Abut.	295.428	2.844	191.399	191.399
A	298.428	2.844	191.399	191.403
B	301.428	2.844	191.399	191.402
⊕ Pier	304.801	2.844	191.399	191.399
C	307.801	2.844	191.399	191.402
D	310.801	2.844	191.399	191.403
⊕ Brg. E. Abut.	314.174	2.844	191.399	191.399
Bk. E. Abut.	314.606	2.844	191.399	191.399

**BEAM 7**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. w. Abut.	294.996	4.266	191.375	191.375
⊕ Brg. W. Abut.	295.428	4.266	191.375	191.375
A	298.428	4.266	191.375	191.378
B	301.428	4.266	191.375	191.378
⊕ Pier	304.801	4.266	191.375	191.375
C	307.801	4.266	191.375	191.377
D	310.801	4.266	191.375	191.378
⊕ Brg. E. Abut.	314.174	4.266	191.375	191.375
Bk. E. Abut.	314.606	4.266	191.375	191.375

DESIGNED	SPN
CHECKED	TWH
DRAWN	R. Doty
CHECKED	SPN/TWH

Aug. 24, 2007  
 EXAMINED *Thomas J. Domagalala*  
 ENGINEER OF BRIDGE DESIGN  
 PASSED *Ralph E. Carlson*  
 ENGINEER OF BRIDGES AND STRUCTURES

Note: For Elevations Location Plan see sheet 4 of 15.

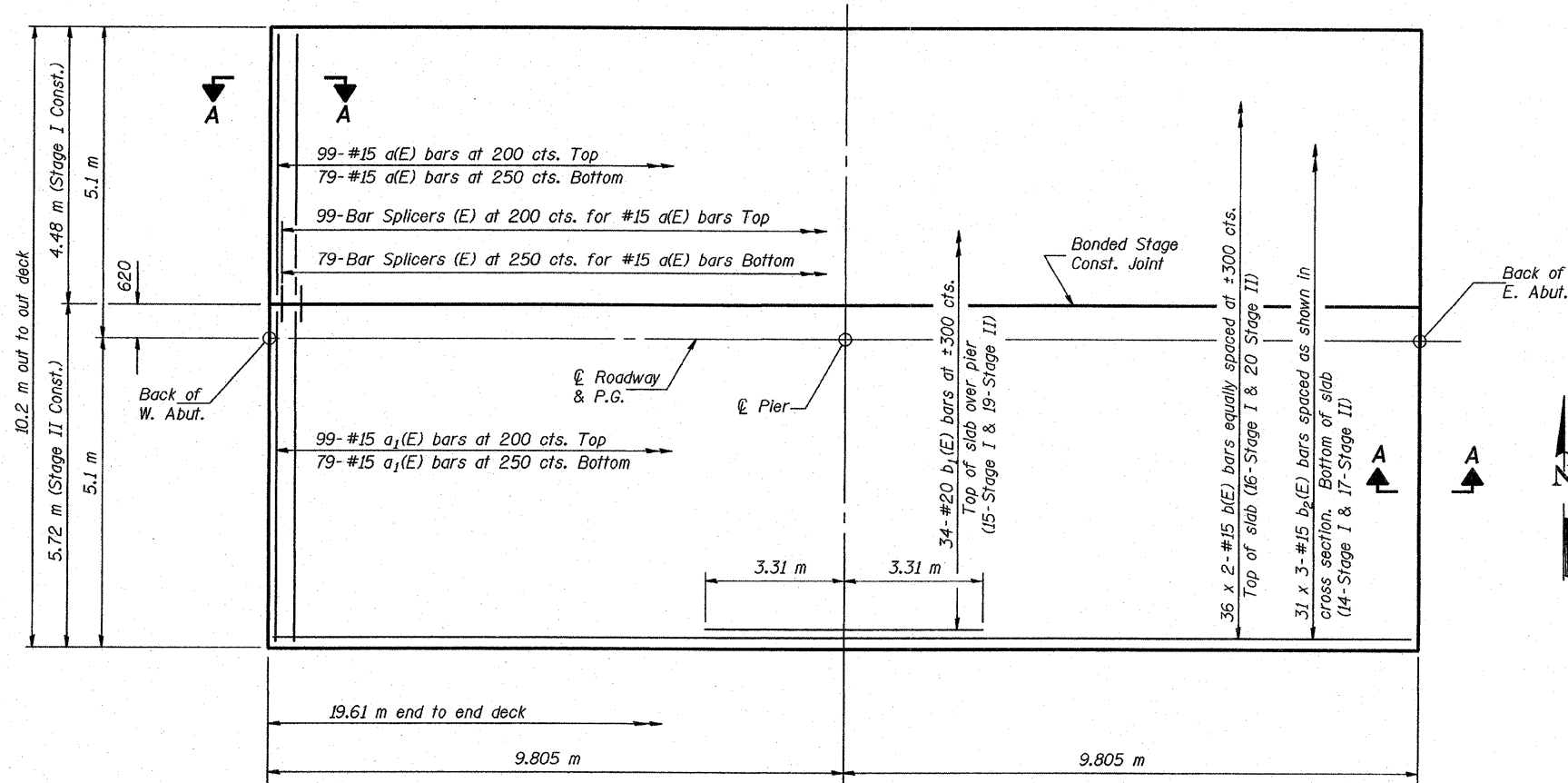
**TOP OF SLAB ELEVATIONS**  
**F.A.S. RT. 204 SEC. 92-00297-00-BR**  
**ROCK ISLAND COUNTY**  
**STA. 0+304.801**



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 6 14 SHEETS
FAS 204	*	ROCK ISLAND	31	14	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

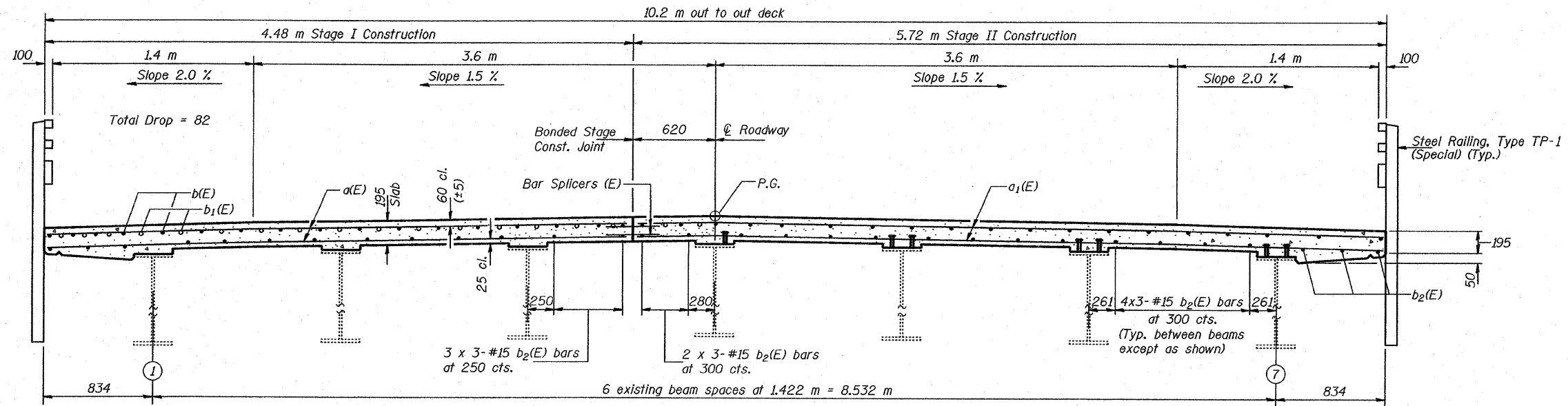
\* 92-00297-00-BR



**MIN. BAR LAP**  
#15 Bar = 510

Notes: See sheet 7 of 15 for superstructure details, Section A-A and Bill of Material.  
See sheet 8 of 15 for Bar Splicer Details.  
Bars indicated thus 31 x 3-#15 etc. indicates 31 lines of bars with 3 lengths per line.  
Reinforcement bars in the top of the deck may be placed with a 30 mm 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.

PLAN



NEAR PIER

CROSS SECTION  
(Looking East)

NEAR MIDSPAN

DESIGNED	SPN
CHECKED	TWH
DRAWN	R. Doty
CHECKED	SPN/TWH

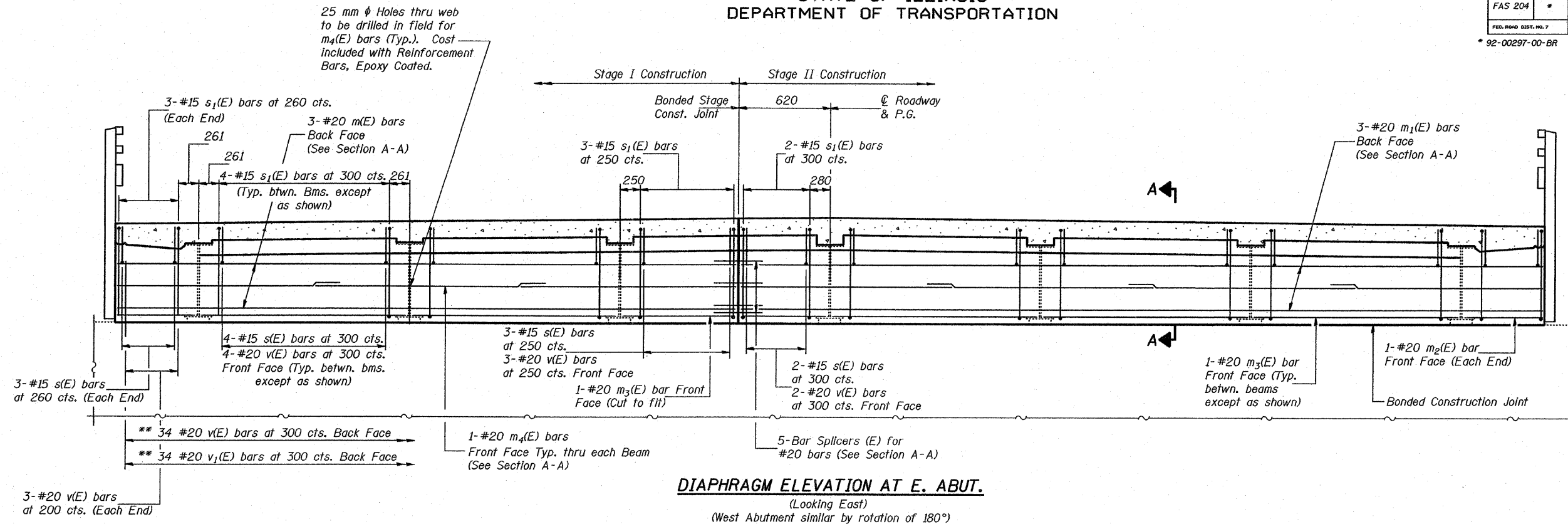
Aug. 24, 2007  
EXAMINED *Thomas J. Domagala*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

**SUPERSTRUCTURE**  
F.A.S. RT. 204 SEC. 92-00297-00-BR  
ROCK ISLAND COUNTY  
STA. 0+304.801

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 7
FAS 204	*	ROCK ISLAND	31	15	14 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

\* 92-00297-00-BR

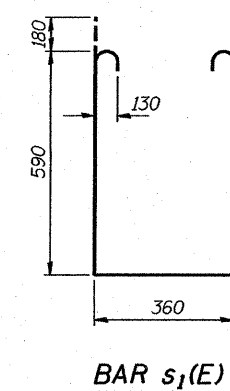
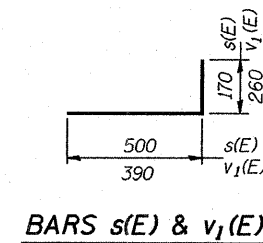
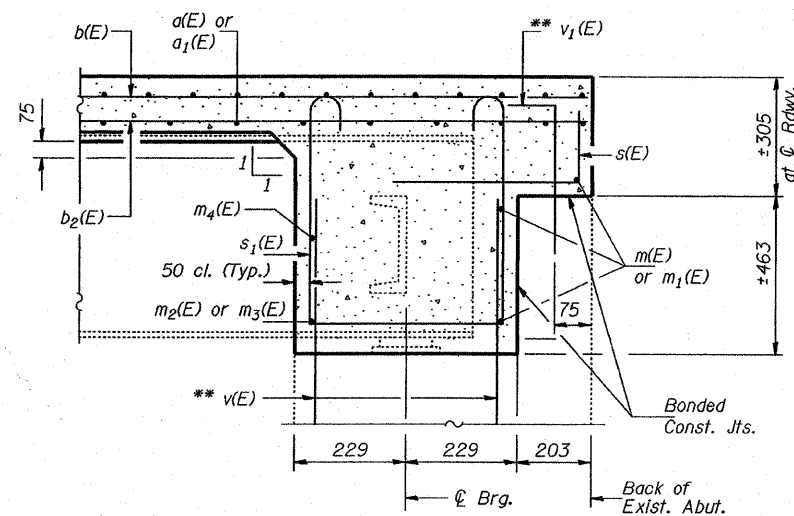


\*\* Epoxy grout  $v(E)$  and  $v_1(E)$  bars in 230 mm (Min.) drilled holes according to Section 584 of the Standard Specifications.

**MIN. BAR LAP**  
#20 Bar = 850

**BILL OF MATERIAL**

Bar	No.	Size	Length (m)	Shape
$a(E)$	178	#15	4.40	—
$a_1(E)$	178	#15	5.64	—
$b(E)$	72	#15	10.06	—
$b_1(E)$	34	#20	6.62	—
$b_2(E)$	93	#15	6.85	—
$m(E)$	6	#20	4.40	—
$m_1(E)$	6	#20	5.64	—
$m_2(E)$	4	#20	0.75	—
$m_3(E)$	12	#20	1.34	—
$m_4(E)$	14	#20	2.08	—
$s(E)$	62	#15	0.67	┌
$s_1(E)$	62	#15	1.90	┌
$v(E)$	130	#20	0.68	—
$v_1(E)$	68	#20	0.65	┌
Reinforcement Bars, Epoxy Coated		kg	6290	
Concrete Superstructure		m <sup>3</sup>	45.6	



DESIGNED	SPN
CHECKED	TWH
DRAWN	R. Doty
CHECKED	SPN/TWH

Aug. 24, 2007

EXAMINED *Thomas J. Damagala*  
ENGINEER OF BRIDGE DESIGN

PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

**SUPERSTRUCTURE DETAILS**  
F.A.S. RT. 204 SEC. 92-00297-00-BR  
ROCK ISLAND COUNTY  
STA. 0+304.801

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET	SHEET NO. 8
FAS 204	***	ROCK ISLAND	31	16	14 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-		

\*\*\* 92-00297-00-BR

NOTES

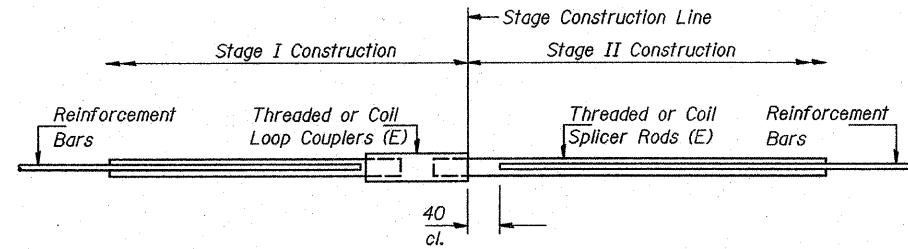
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars. Splicer rods shall be of minimum 400 MPa yield strength, threaded or coiled full length. All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars. Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity =  $1.25 \times 10^{-3} \times f_y \times A_t$   
(Tension in kN)
- ② Minimum \*Pull-out Strength =  $1.25 \times 10^{-3} \times f_{s_{allow}} \times A_t$   
(Tension in kN)

Where  $f_y$  = Yield strength of lapped reinforcement bars in MPa.  
 $f_{s_{allow}}$  = Allowable tensile stress in lapped reinforcement bars in MPa (Service Load)  
 $A_t$  = Tensile stress area of lapped reinforcement bars ( $mm^2$ ).  
\* = 28 day concrete

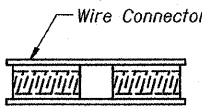
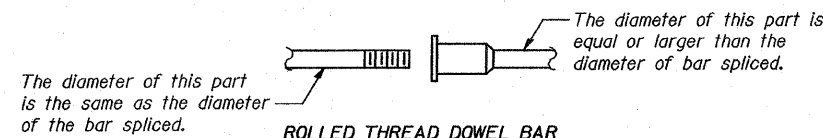
BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kN - tension	Min. Pull-Out Strength kN - tension
#15	610 mm	100	40
#20	790 mm	150	60
#25	1.04 m	250	100
#30	1.37 m	350	140

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for bar splicers. All dimensions are in millimeters (mm) except as noted.



BAR SPLICER ASSEMBLY DETAIL

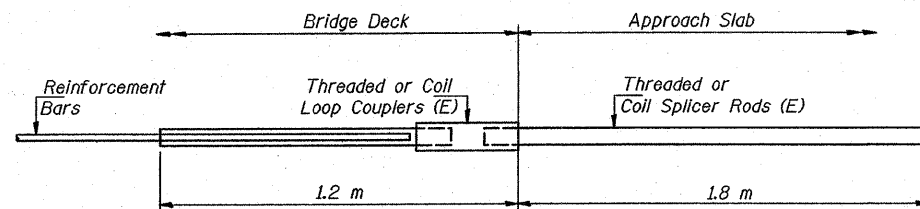
Bar Size	No. Assemblies Required	Location
#15	178	Deck
#20	10	Abutment



WELDED SECTIONS

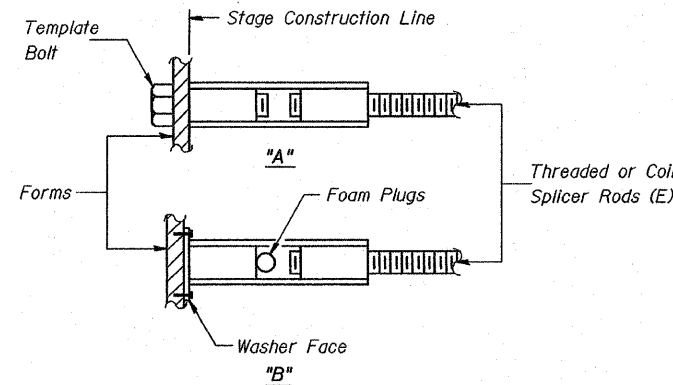
BAR SPLICER ASSEMBLY ALTERNATIVES

\*\* Heavy Hex Nuts conforming to ASTM A 563M, Grade C, D or DH may be used.



INTEGRAL ABUTMENT  
BAR SPLICER ASSEMBLY DETAIL  
FOR #15 BAR

Min. Capacity = 100 kN - tension
Min. Pull-out Strength = 40 kN - tension
No. Required = 0



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.

DESIGNED	SPN
CHECKED	TWH
DRAWN	R. Doty
CHECKED	SPN/TWH

Aug. 24, 2007  
EXAMINED *Thomas J. Damgalak*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

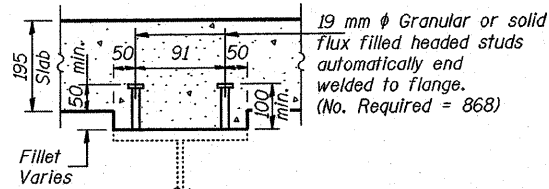
BSD-1 (M) 4-30-97

BAR SPLICER ASSEMBLY DETAILS  
F.A.S. RT. 204 SEC. 92-00297-00-BR  
ROCK ISLAND COUNTY  
STA. 0+304.801

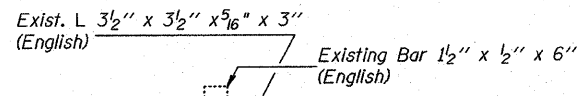
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET	SHEET NO. 9
FAS 204	*	ROCK ISLAND	31	17	14 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

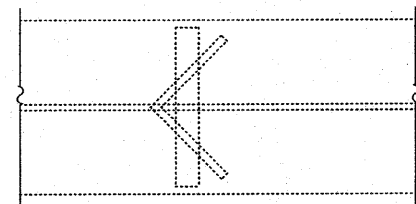
\* 92-00297-00-BR



SECTION A-A

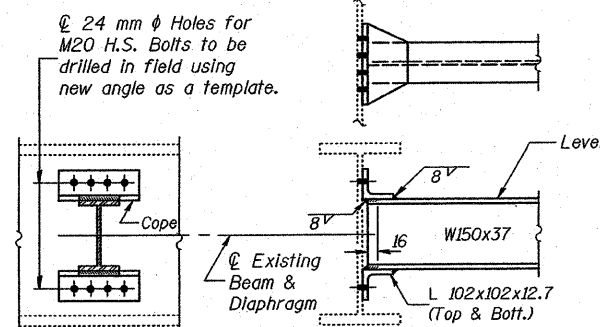


ELEVATION

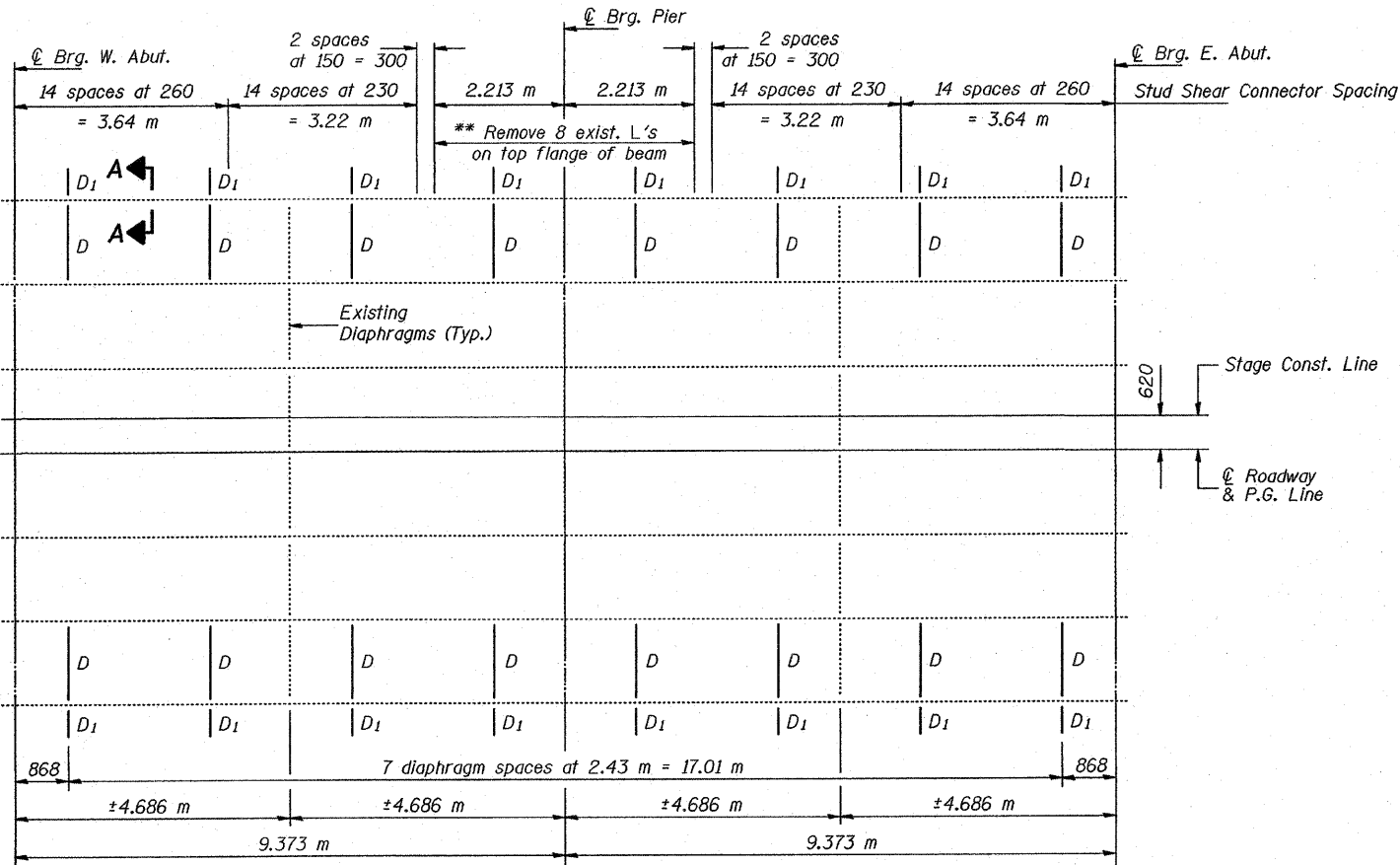


PLAN

\*\* EXISTING ANGLE

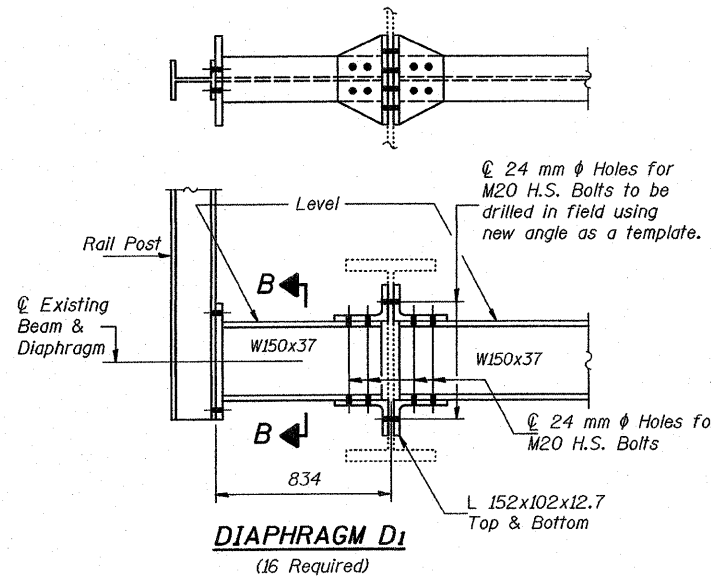


DIAPHRAGM D  
(16 Required)

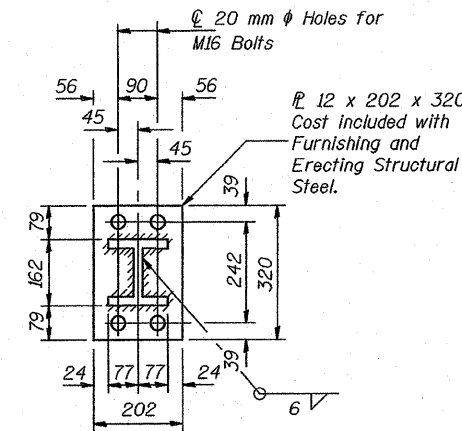


FRAMING PLAN

\*\* Remove existing angles using air-arc method, grind smooth and check for cracks with dye penetrant. Cost included with Removal of Existing Concrete Deck.



DIAPHRAGM D1  
(16 Required)



SECTION B-B

	0.4 Sp. 1	Pier #1	0.6 Sp. 2
$I_s$ ( $10^6 \text{ mm}^4$ )	370	370	370
$I_c$ (n) ( $10^6 \text{ mm}^4$ )	1300		1300
$I_c$ (3n) ( $10^6 \text{ mm}^4$ )	957		957
$S_s$ ( $10^3 \text{ mm}^3$ )	1610	1610	1610
$S_c$ (n) ( $10^3 \text{ mm}^3$ )	2740		2740
$S_c$ (3n) ( $10^3 \text{ mm}^3$ )	2440		2440
$Z$ ( $10^3 \text{ mm}^3$ )		1830	
$\rho$ (kN/m)	7.64	9.69	7.64
$M\ell$ (kN·m)	47	99	47
$s\ell$ (kN/m)	2.05		2.05
$Ms\ell$ (kN·m)	16		16
$M\ell$ (kN·m)	148	74	148
$M$ (Imp) (kN·m)	44	22	44
$S_3[M\ell + M(\text{Imp})]$ (kN·m)	320	160	320
$M_a$ (kN·m)	498	337	498
$M_u$ (kN·m)	719	458	719
$fs\ell$ non-comp (MPa)	29	61	29
$fs\ell$ (comp) (MPa)	7		7
$fs_{S_3}(\ell + \text{Imp})$ (MPa)	117	99	117
$fs$ (Overload) (MPa)	153	161	153
$fs$ (Total) (MPa)	198	209	198
VR (kN)	129		129

	Abuts.	Piers
$R\ell$ (kN)	35	112
$R\ell$ (kN)	91	114
Imp. (kN)	27	34
$R$ (Total) (kN)	153	260

$I_s$  and  $S_s$  are the moment of inertia and section modulus of the steel section used in computing  $fs$  (Total & Overload).  
 $I_c(n)$  and  $S_c(n)$  are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.  
 $I_c(3n)$  and  $S_c(3n)$  are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)  
 VR is the maximum Live Load + Impact shear range in span.  
 $Z$  is the plastic section modulus used to determine the Fully Plastic Moments in the non-composite areas.  
 $M_a$  (Applied Moment) =  $1.3[M\ell + Ms\ell + S_3(M\ell + M(\text{Imp}))]$ .  
 The Plastic Moment Capacity for compact, braced section ( $M_u$ ) is computed according to AASHTO 10.48.1 & 10.50.1.1.  
 $fs$  (Overload) is the sum of the stresses due to  $M\ell + Ms\ell + S_3(M\ell + M(\text{Imp}))$ .

DESIGNED	SPN
CHECKED	TWH
DRAWN	R. Doty
CHECKED	SPN/TWH

Aug. 24, 2007  
 EXAMINED *Thomas J. Romagallo*  
 ENGINEER OF BRIDGE DESIGN  
 PASSED *Ronald E. Anderson*  
 ENGINEER OF BRIDGES AND STRUCTURES

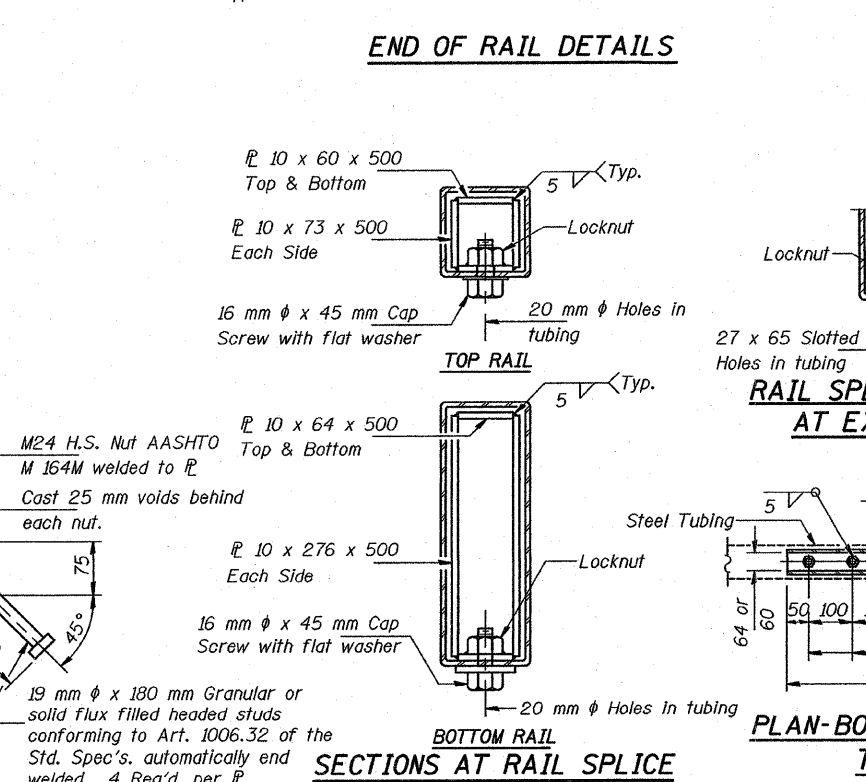
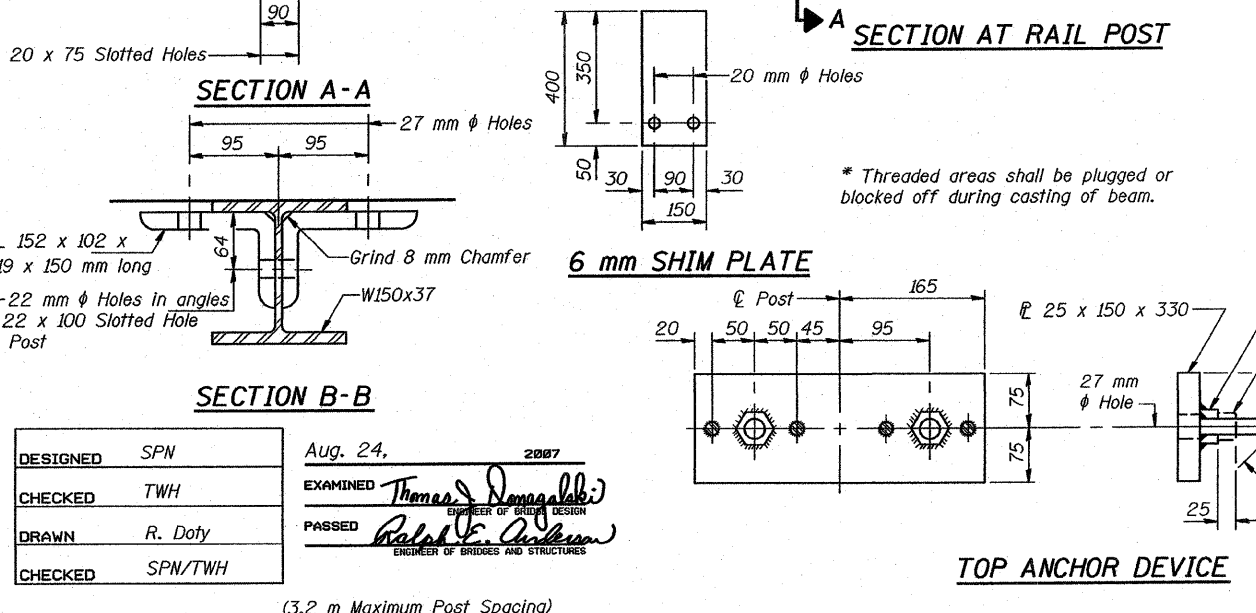
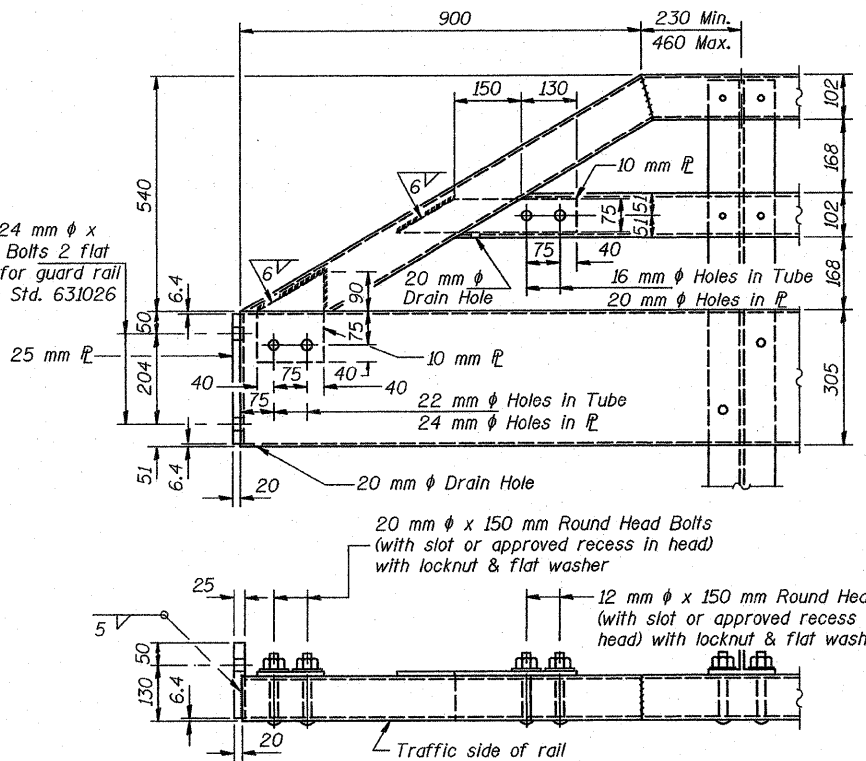
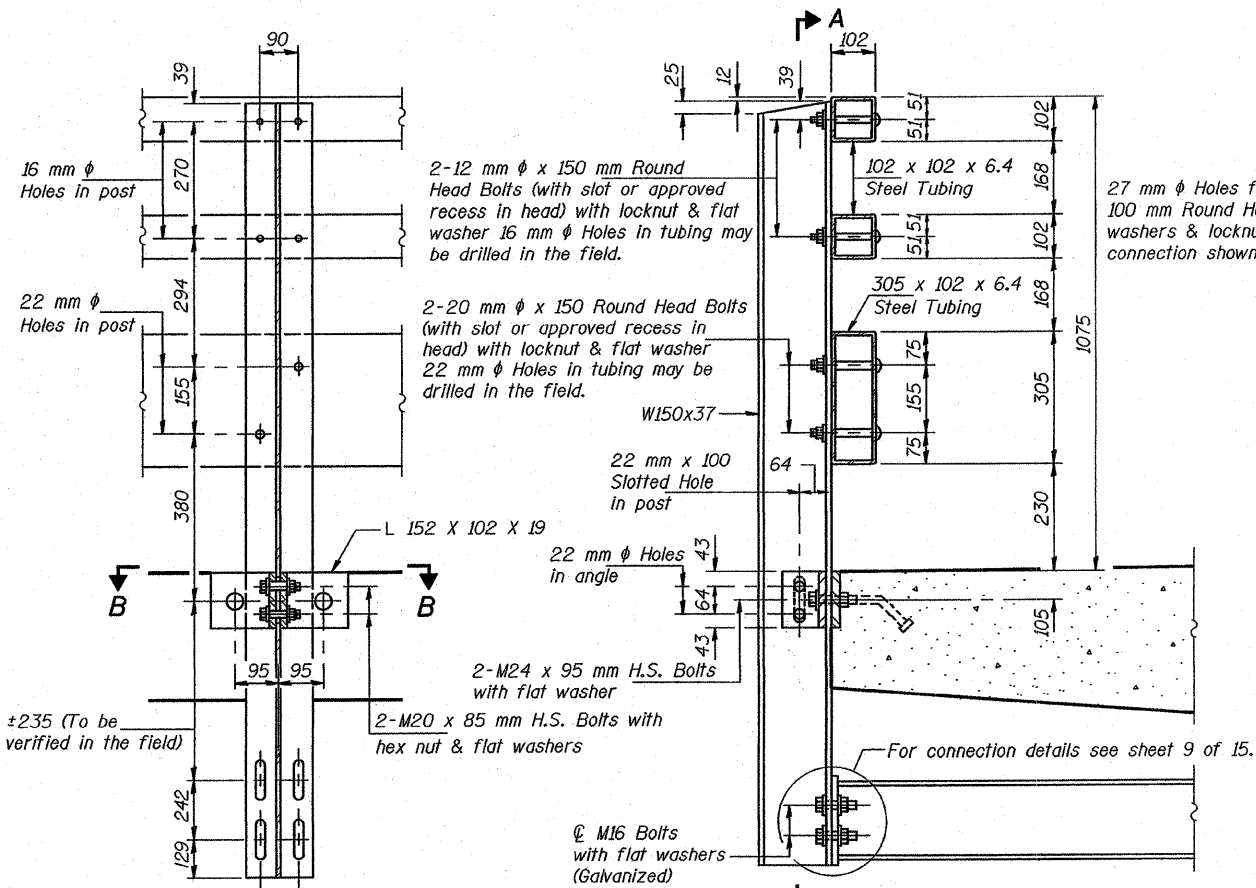
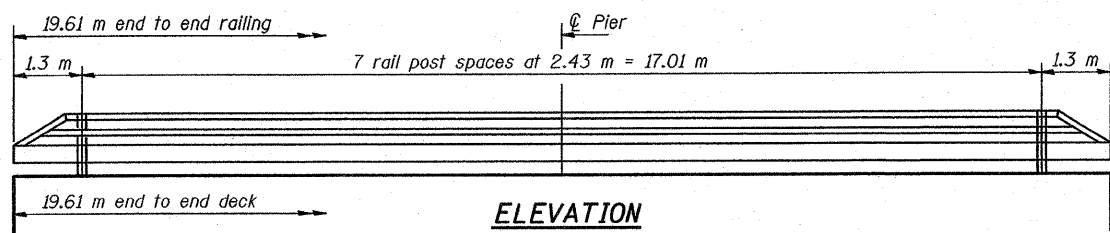
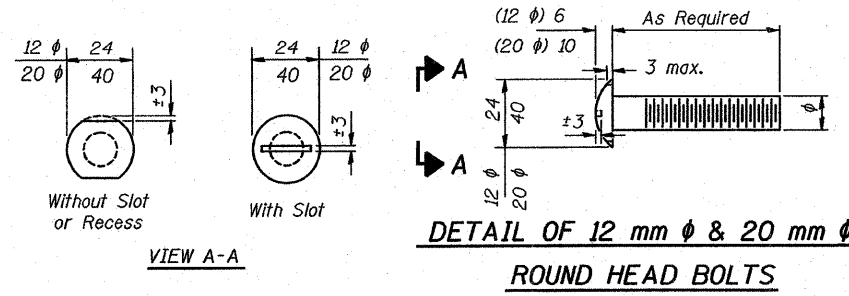
Note: Two hardened washers shall be required over all oversized holes. Cost of field drilling holes is included with Furnishing and Erecting Structural Steel.

STRUCTURAL STEEL  
 F.A.S. RT. 204 SEC. 92-00297-00-BR  
 ROCK ISLAND COUNTY  
 STA. 0+304.801

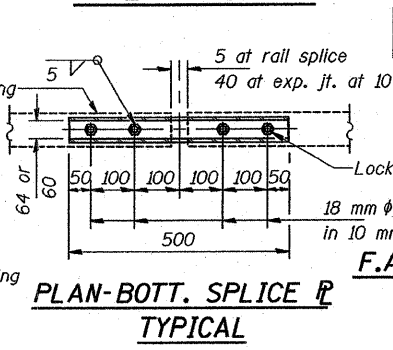
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 204	*	ROCK ISLAND	31	18
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

SHEET NO. 10  
14 SHEETS  
92-00297-00-BR

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**RAIL SPLICE CONNECTION AT EXPANSION JT.**



**NOTES**

All bolts, nuts, cap screws, washers and lock washers shall be galvanized according to AASHTO M 232.  
All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. Galvanized rail shall not be painted.  
Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per meter for STEEL RAILING, TYPE TP-1 (SPECIAL).  
All field drilled holes shall be coated with an approved zinc rich paint before erection.  
The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 1060.07 Type II or place 3 mm fabric bearing pad between the post and concrete.  
The M20 high strength bolts used to connect the 152 x 102 x 19 angles to the post shall be tightened according to Article 505.04(f)(3) of the Standard Specifications. The M24 high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 16 mm  $\phi$  cap screws in bottom of posts shall be tightened to a snug fit only.  
For multi-span bridges, sufficient 6 x 150 x 400 galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing.  
All dimensions are in millimeters (mm) except as noted.

**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type TP-1 (Special)	m	40

**TYPE TP-1 (SPECIAL) COMBINATION STEEL RAILING**  
F.A.S. RT. 204 SEC. 92-00297-00-BR  
ROCK ISLAND COUNTY  
STA. 0+304.801

DESIGNED	SPN	Aug. 24, 2007
CHECKED	TWH	EXAMINED <i>Thomas J. Damgalab</i>
DRAWN	R. Doty	PASSED <i>Robert G. Anderson</i>
CHECKED	SPN/TWH	ENGINEER OF BRIDGES AND STRUCTURES

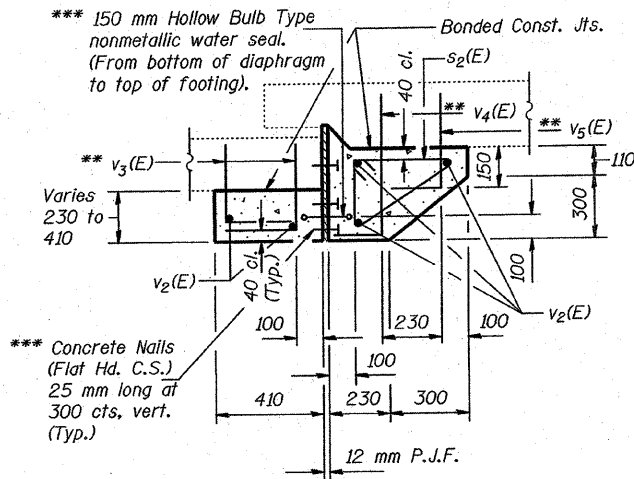
(3.2 m Maximum Post Spacing)



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET	SHEET NO. 11
FAS 204	*	ROCK ISLAND	31	19	14 SHEETS
FED. ROAD DIST. NO. 7	B.LINING	FED. AID PROJECT-			

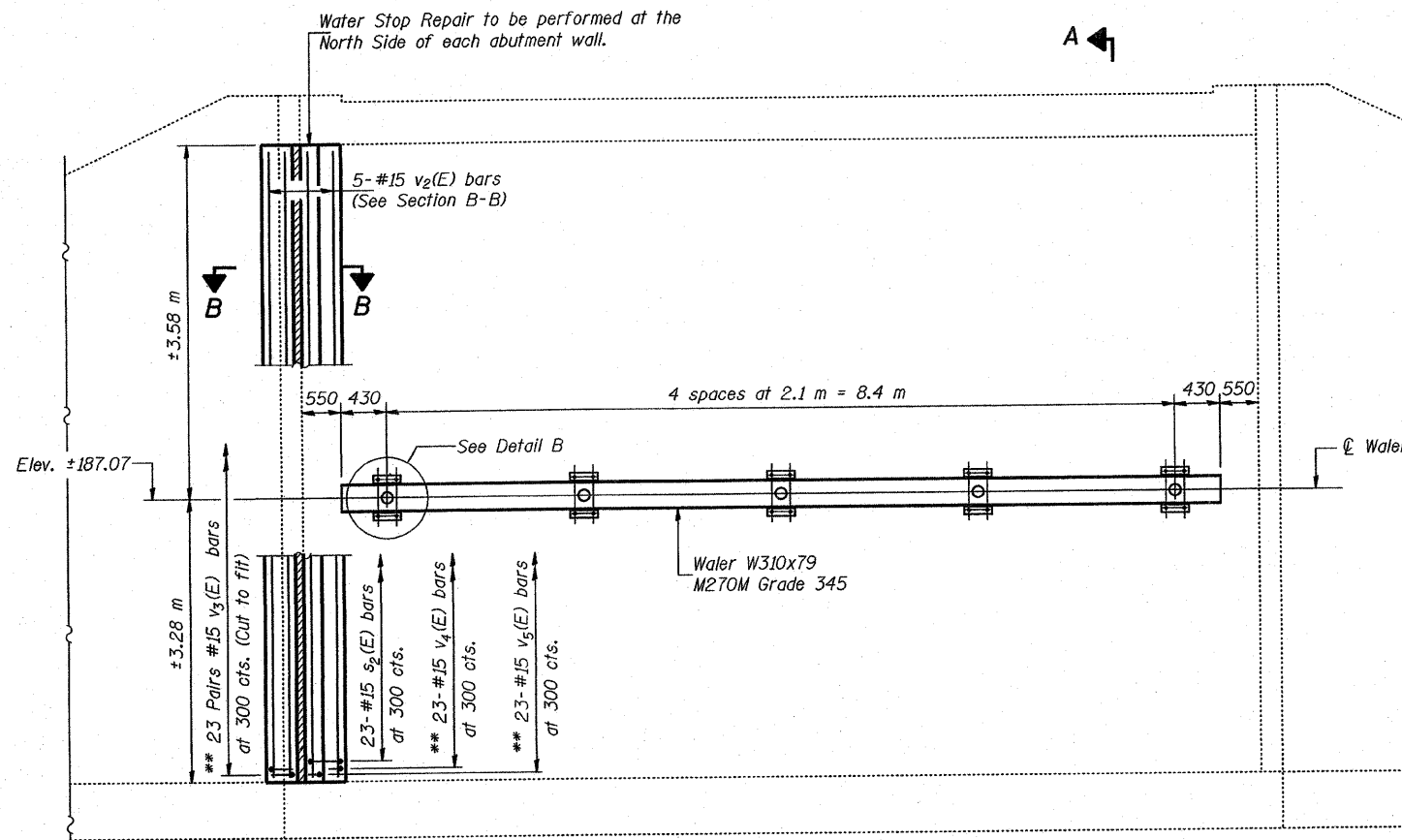
\* 92-00297-00-BR



**SECTION B-B**

\*\* Epoxy grout v<sub>3</sub>(E), v<sub>4</sub>(E) and v<sub>5</sub>(E) bars in 230 mm min. drilled holes according to Section 584 of the Standard Spec's.

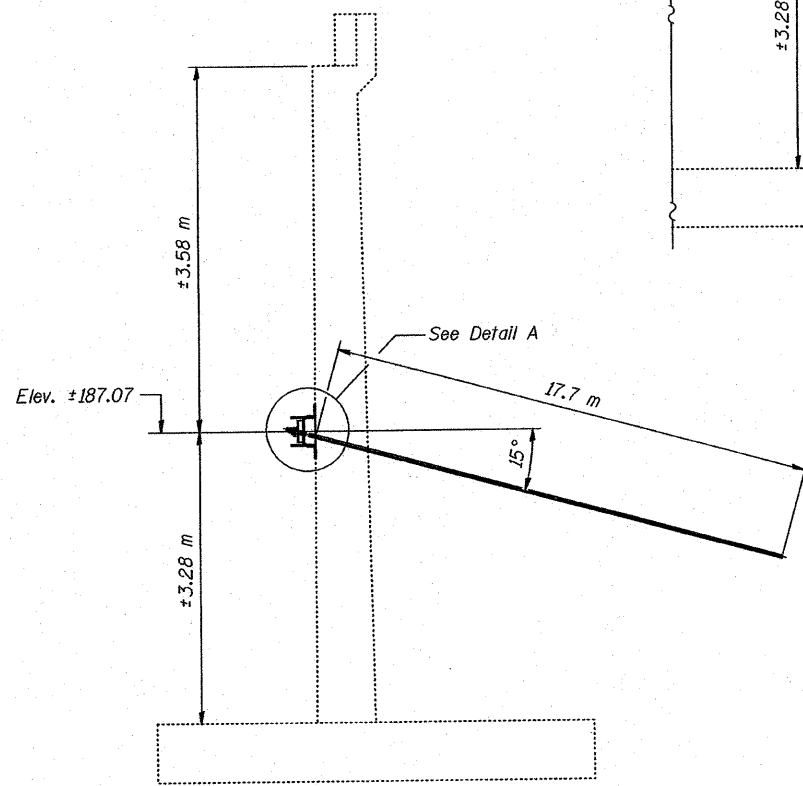
\*\*\* Cost included with Concrete Structures.



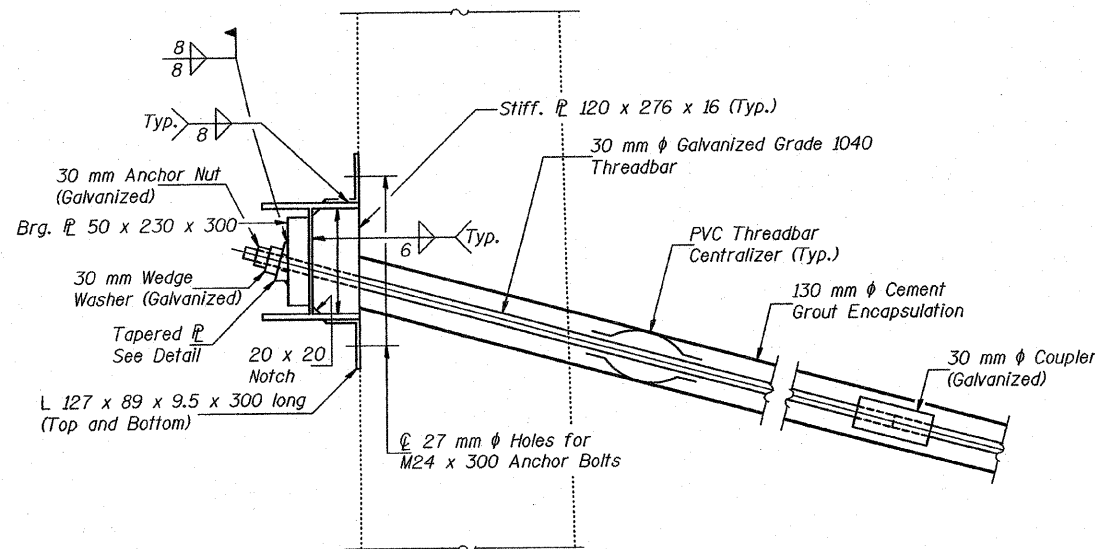
**ELEVATION - ABUTMENT WALLS**

(East Abutment - Looking East)  
(West Abutment Similar)

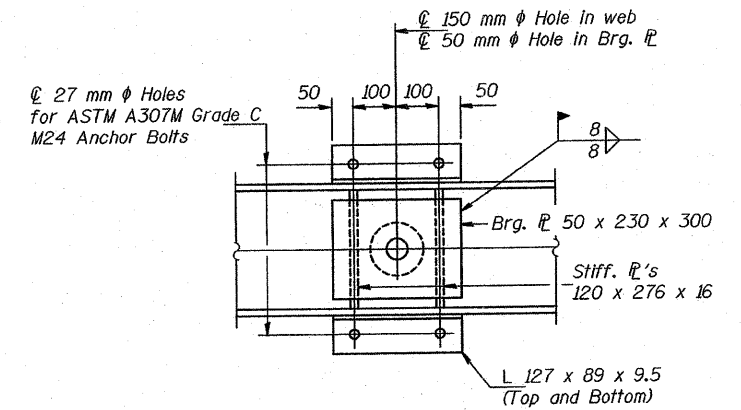
Notes:  
Work this sheet with sheet 12 of 15.  
After the grout is cured, the anchor nuts, wale and the cover nut shall be tightened to a snug fit using a hand wrench.  
The water stop repair is to be done after the new deck has been poured and wales with wall restraining anchors have been installed.  
For anchor bolt installation details see sheet 15 of 15.  
Structural steel wales shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type I.  
ASTM F 1554 (Fy = 724 MPa), ASTM A 449 and AASHTO M 134 (Fy = 724 MPa) anchor bolts may be substituted for the anchor bolts shown above.  
Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.  
Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.  
~~The anchor bolts, furnished and installed including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel"~~  
All dimensions are in millimeters (mm) except as noted.



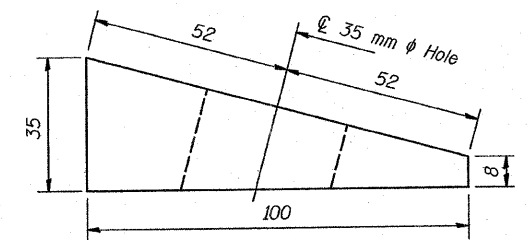
**SECTION A-A**



**DETAIL A**



**DETAIL B**



**TAPERED P DETAIL**

DESIGNED	SPN
CHECKED	TWH
DRAWN	R. Doty
CHECKED	SPN/TWH

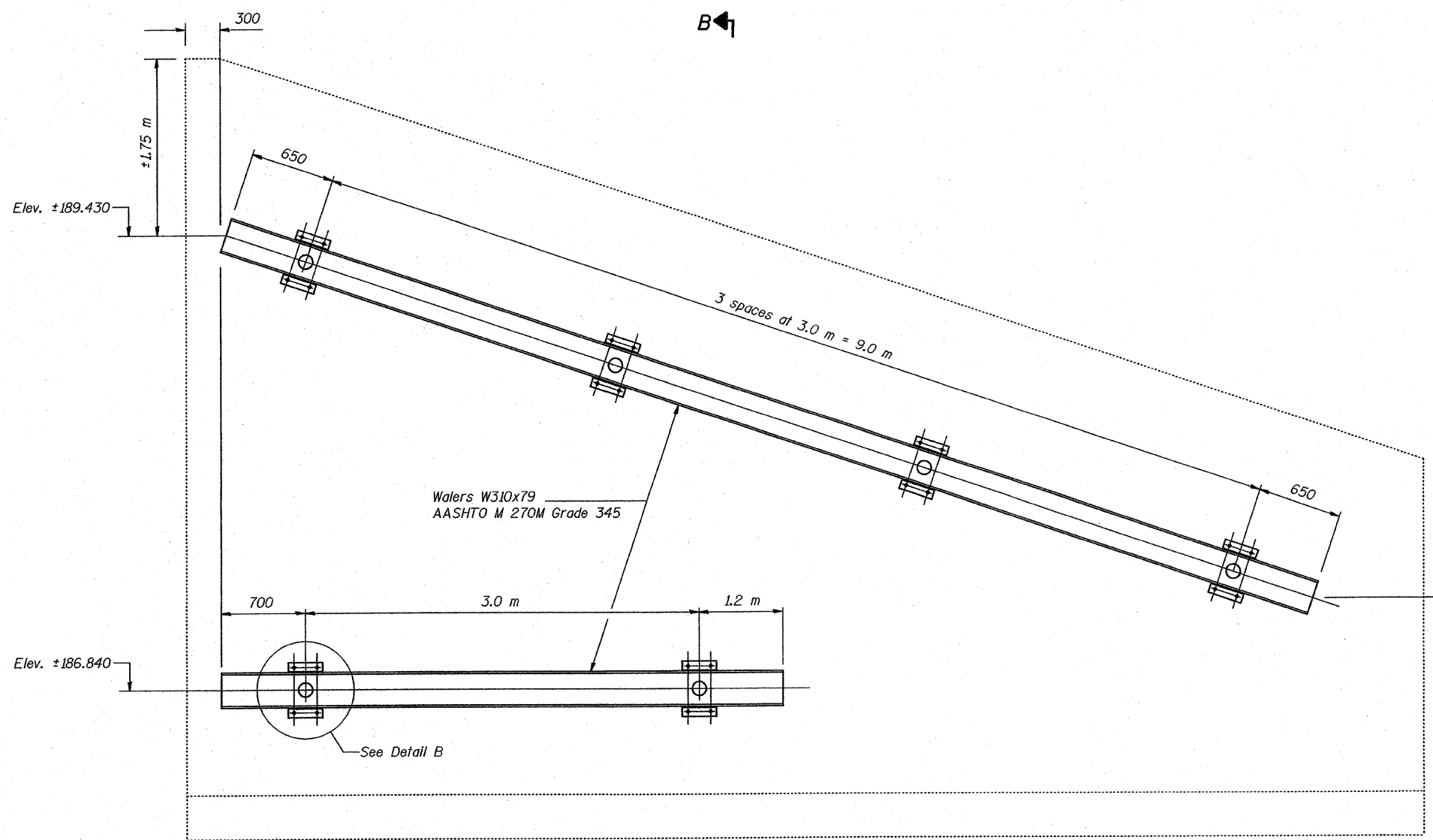
Aug. 24, 2007  
EXAMINED *Thomas Domagalick*  
ENGINEER OF BRIDGE DESIGN  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

**WALL ANCHOR DETAILS**  
F.A.S. RT. 204 SEC. 92-00297-00-BR  
ROCK ISLAND COUNTY  
STA. 0+304.801

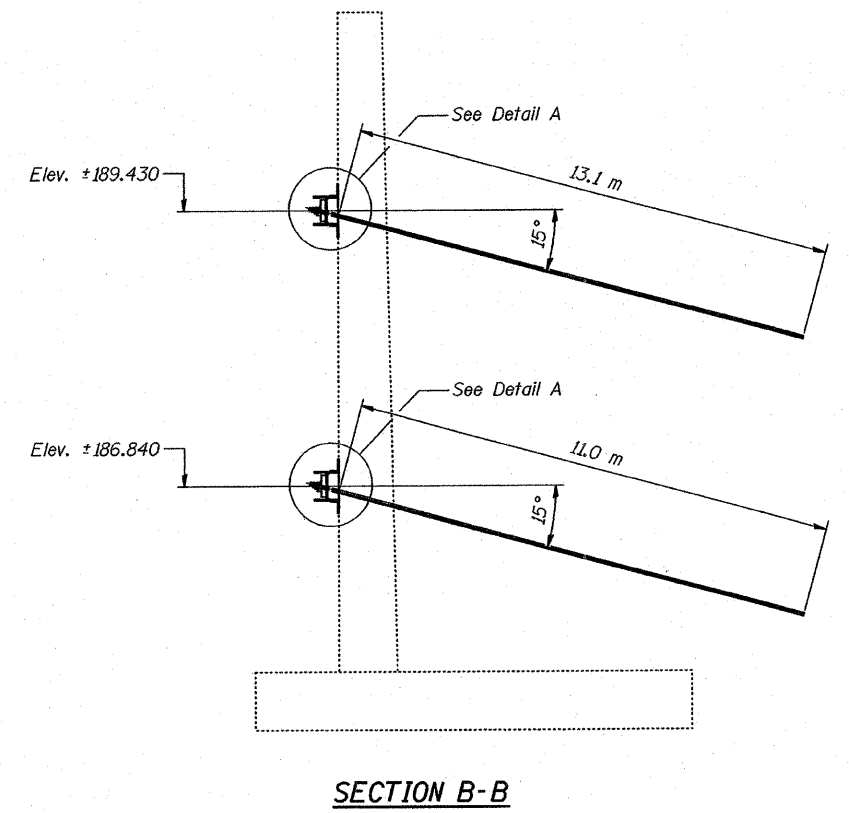
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET	SHEET NO. 12
FAS 204	*	ROCK ISLAND	31	20	14 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-		

\* 92-00297-00-BR



**ELEVATION - N. W. & N.E. WINGWALLS**



**SECTION B-B**

**TWO ABUTMENTS  
BILL OF MATERIAL**

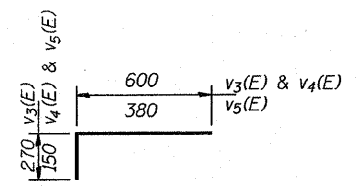
Bar	No.	Size	Length(m)	Shape
$s_2(E)$	46	#15	1.51	▽
$v_2(E)$	10	#15	6.70	—
$v_3(E)$	92	#15	0.87	└
$v_4(E)$	46	#15	0.75	└
$v_5(E)$	46	#15	0.53	└
Concrete Structures			m <sup>3</sup>	4.4
Reinforcement Bars, Epoxy Coated			kg	430

**WALL ANCHOR DETAILS**  
F.A.S. RT. 204 SEC. 92-00297-00-BR  
ROCK ISLAND COUNTY  
STA. 0+304.801

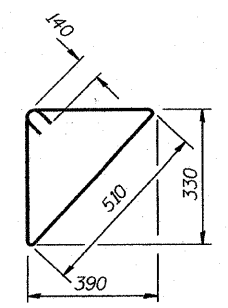
DESIGNED	SPN
CHECKED	TWH
DRAWN	R. Doty
CHECKED	SPN/TWH

Aug. 24, 2007  
EXAMINED *Thomas J. Domagalicki*  
ENGINEER OF BRIDGES DESIGN  
PASSED *Ronald E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

Note: Work this sheet with sheet 11 of 15.



**BARS  $v_3(E)$ ,  $v_4(E)$  &  $v_5(E)$**

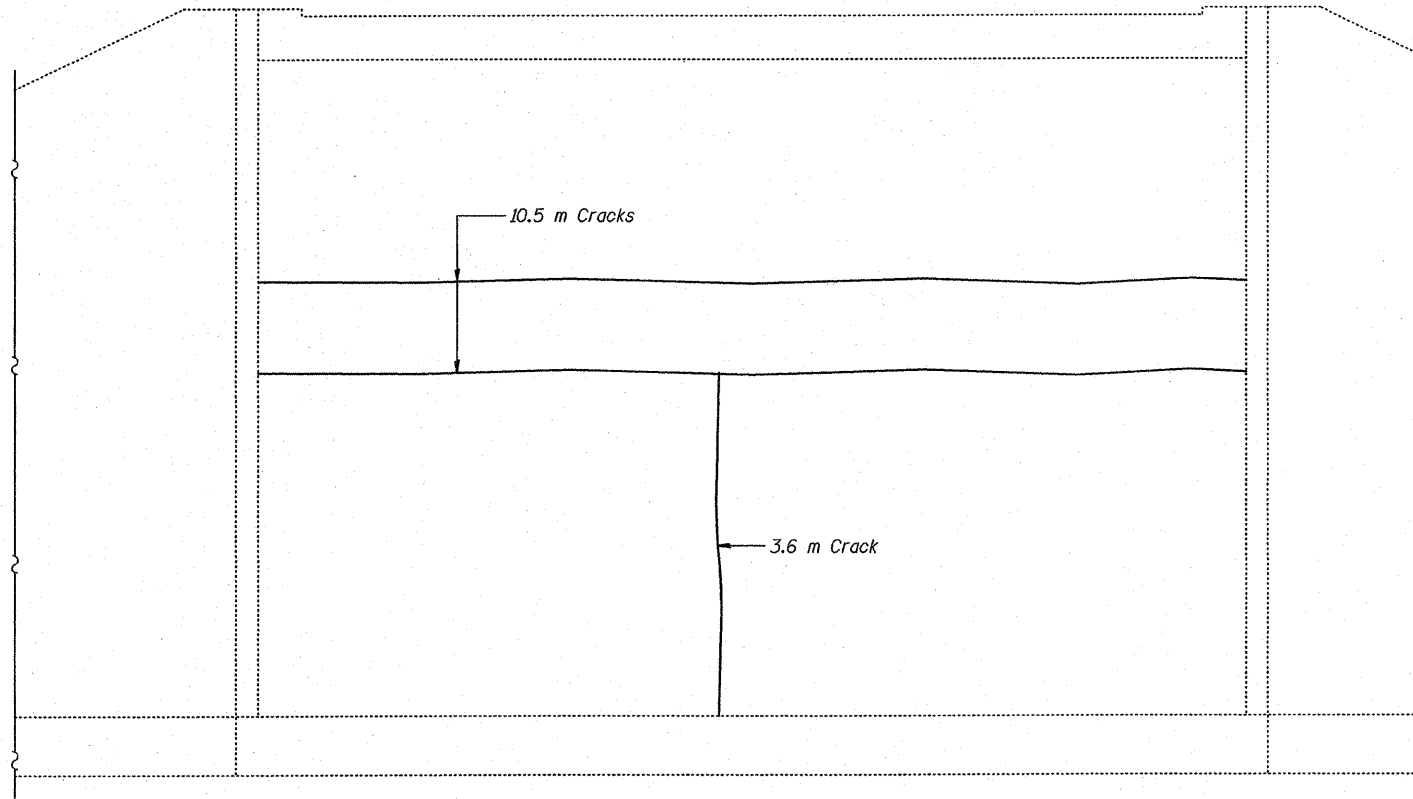


**BAR  $s_2(E)$**

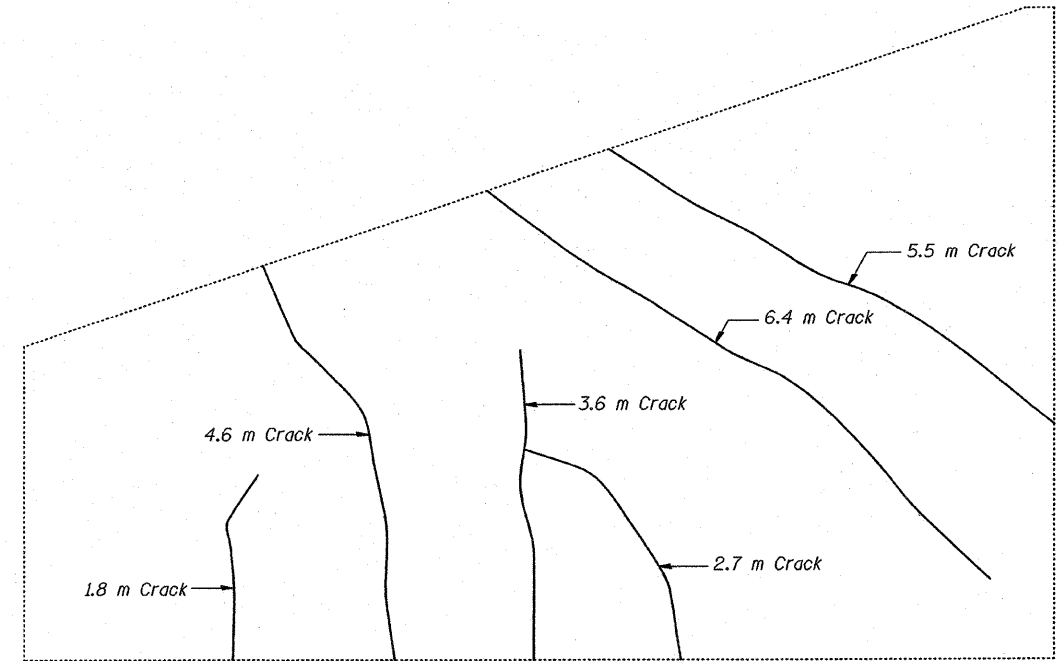
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET	SHEET NO. 13 14 SHEETS
FAS 204	*	ROCK ISLAND	31	21	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

# 92-00297-00-BR



**ELEVATION - EAST ABUTMENT**  
(Looking East)



**ELEVATION - NORTHEAST WINGWALL**  
(Looking East)

**BILL OF MATERIAL**

Item	Unit	Quantity
Epoxy Crack Injection	m	50

DESIGNED	SPN
CHECKED	TWH
DRAWN	R. Doty
CHECKED	SPN/TWH

Aug. 24, 2007  
 EXAMINED *Thomas J. Demagalicki*  
 ENGINEER OF BRIDGE DESIGN  
 PASSED *Ralph E. Anderson*  
 ENGINEER OF BRIDGES AND STRUCTURES

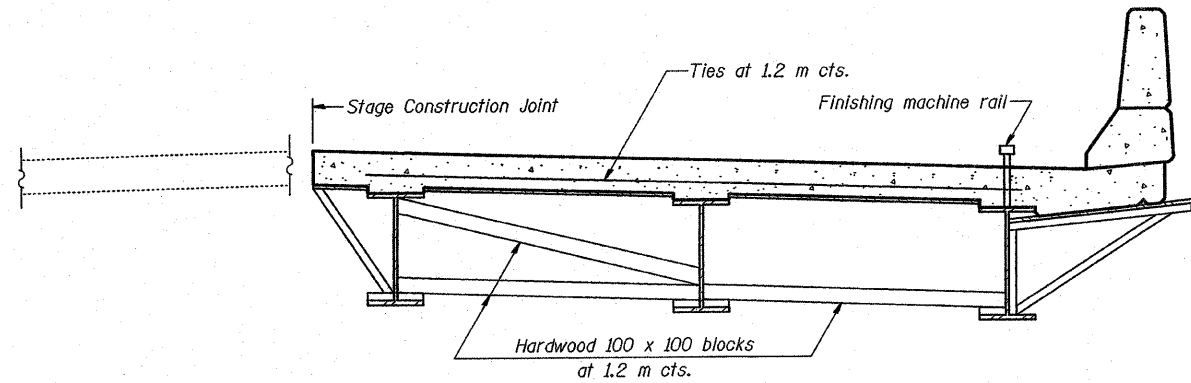
**REPAIR DETAILS**  
 F.A.S. RT. 204 SEC. 92-00297-00-BR  
 ROCK ISLAND COUNTY  
 STA. 0+304.801

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

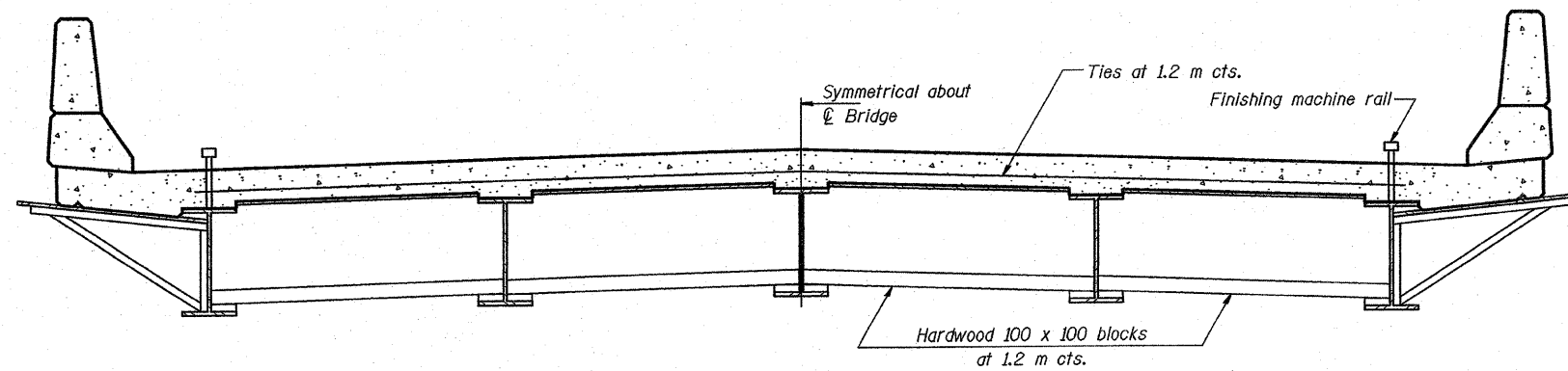
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 14 14 SHEETS
FAS 204	*	ROCK ISLAND	31	22	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

\* 92-00297-00-BR

When cantilever forming brackets are used, the work shall be done according to Article 503.06, except as modified below and in the details shown on this sheet.  
The finishing machine rails shall be placed on the top flange of the exterior beams.  
The beams or girders supporting cantilever forming brackets shall be tied together at 1.2 m intervals.  
For Standard construction, or Stage Construction the Hardwood bracing materials shall be placed as shown between webs of beams in each bay.



**FORM BRACES FOR  
STAGE CONSTRUCTION**



**FORM BRACES FOR  
STANDARD CONSTRUCTION**

DESIGNED	SPN
CHECKED	TWH
DRAWN	R. Doty
CHECKED	SPN/TWH

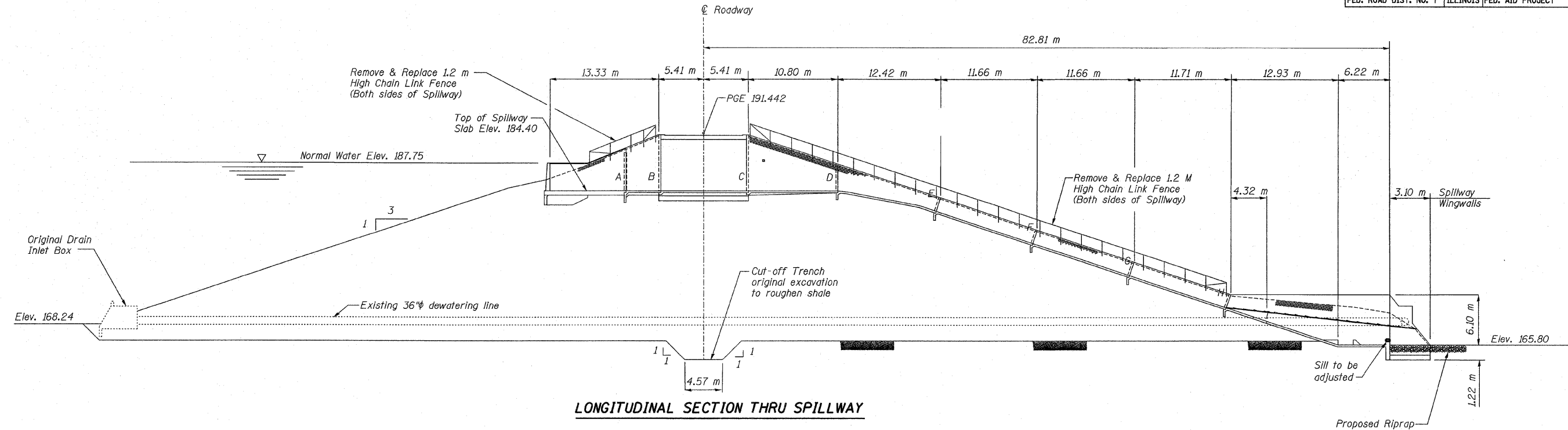
Aug. 24, 2007  
EXAMINED *Thomas J. Donagale*  
ENGINEER OF BRIDGE DESIGN  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

SB-1 (M) 4-30-97

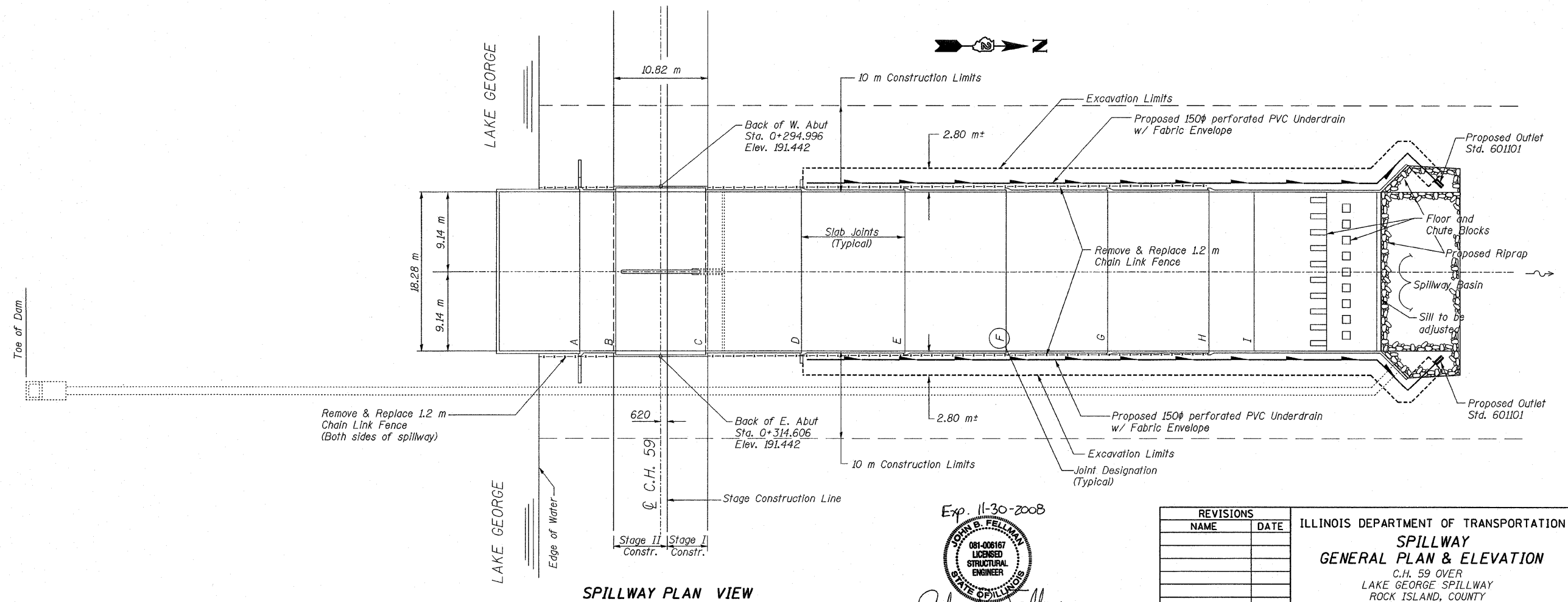
**CANTILEVER FORMING BRACKETS**  
**F.A.S. RT. 204 SEC. 92-00297-00-BR**  
**ROCK ISLAND COUNTY**  
**STA. 0+304.801**

Bench Mark: Chiseled "□" on S.E. corner bridge wing wall Elev. = 191.137

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
204	92-00297-00-BR	ROCK ISLAND	31	23
STA. 0+270		TO STA. 0+340		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

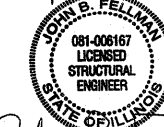


**LONGITUDINAL SECTION THRU SPILLWAY**



**SPILLWAY PLAN VIEW**

Exp. 11-30-2008



John B. Fellman  
12-20-2007

REVISIONS	
NAME	DATE

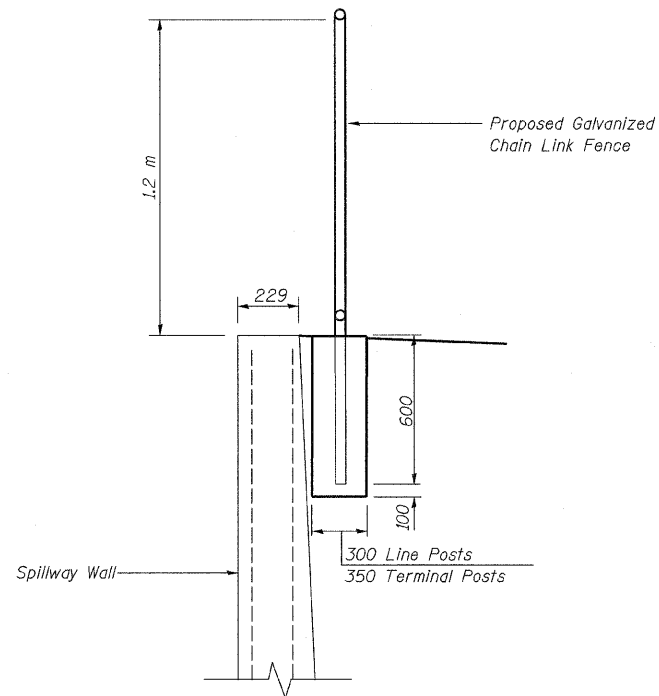
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**SPILLWAY**  
**GENERAL PLAN & ELEVATION**  
C.H. 59 OVER  
LAKE GEORGE SPILLWAY  
ROCK ISLAND, COUNTY  
DRAWN BY RAP  
CHECKED BY JBF  
DATE NOV. 2007



F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
204	92-00297-00-BR	ROCK ISLAND	31	24
STA. 0+270		TO STA. 0+340		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

**SPILLWAY REPAIRS  
CONSTRUCTION SEQUENCE**

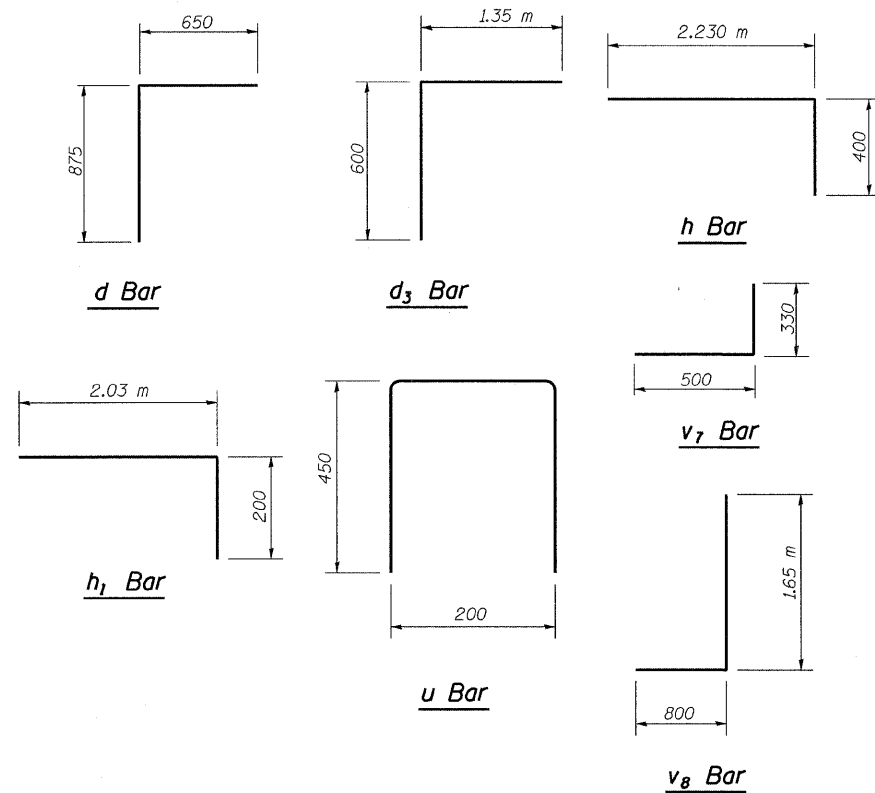
1. Coordinate guardrail removal & reinstallation with bridge and roadway work to allow equipment access to applicable construction areas. (Stage I & Stage II of bridge work)
2. Remove & dispose of existing chain link fence on north side of roadway.
3. Set up safety fencing & barricades in place of chain link fence.
4. Perform required work on the spillway slab, walls, weir, and stilling basin.
5. Excavate behind spillway walls.
6. Install pipe underdrains & backfill.
7. Furnish and place topsoil.
8. Install proposed chain link fence.
9. Seed construction limits, fertilize & mulch.
10. Complete Stage I Bridge & Roadway work.
11. Reinstall guardrail before switching traffic over to Stage II bridge work.
12. Remove and replace chain link fence on south side of roadway during Stage II bridge & roadway work.
13. Complete Stage II Bridge & Roadway work.
14. Reinstall guardrail & terminals.



**FENCE POST DETAIL**  
(See Std. 664001-01)

**BILL OF MATERIAL**

Bar	No.	Size	Length (m)	Shape
d <sub>2</sub>	50	#20	10.95	—
d <sub>3</sub>	100	#20	3.87	—
d <sub>4</sub>	8	#20	9.45	—
b <sub>3</sub>	60	#20	12.19	—
d	122	#15	1.53	┌
d <sub>1</sub>	8	#15	10.95	┌
d <sub>2</sub>	16	#15	3.87	┌
d <sub>3</sub>	16	#20	1.95	┌
d <sub>4</sub>	9	#20	2.90	┌
h	3	#15	2.63	┌
h <sub>1</sub>	3	#15	2.23	┌
h <sub>2</sub>	8	#20	2.90	┌
u	62	#15	1.10	┌
v <sub>6</sub>	15	#15	1.58	┌
v <sub>7</sub>	30	#15	0.83	┌
v <sub>8</sub>	16	#20	2.45	┌
v <sub>9</sub>	8	#20	1.20	┌
Stone Riprap Ditch Checks			Each	8
Earth Excavation			Cu. M	585
Porous Granular Embankment			Cu. m	113
Topsoil Furnish & Place, 150mm			Sq. m	400
Seeding, Class 4			Ha	0.29
Nitrogen Fertilizer Nutrient			Kg	29
Phosphorus Fertilizer Nutrient			Kg	29
Potassium Fertilizer Nutrient			Kg	29
Mulch, Method 2			Ha	0.29
Stone Dumped Riprap, Class A5			Sq. m	220
Concrete Removal			Cu. m	69.5
Concrete Structures			Cu. m	72.8
Furnishing and Erecting Structural Steel			L Sum	1
Reinforcement Bars			Kg	5,140
Pipe Underdrains for Structures, 150 mm			Meter	204
Chain Link Fence, 1.2 m			Meter	141
Chain Link Fence Removal			Meter	141
Joint Sealer			Meter	164.9
Repair Concrete Structures			Sq. m	41.4
Dewatering			L Sum	1



**MIN. BAR LAPS**

#15 bar = 490  
#20 bar = 610

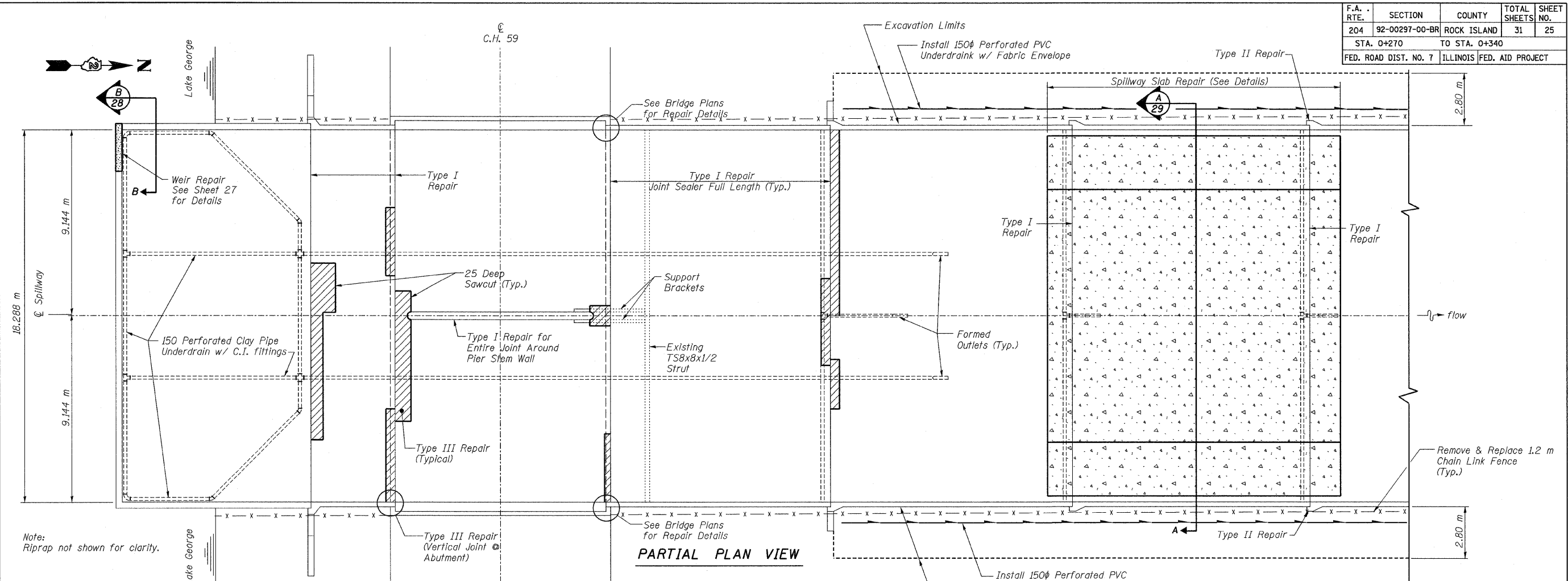
**DESIGN STRESSES**

f'c = 24 MPa (3,500 psi)  
fy = 400 MPa (60,000 psi) (Reinforcement)  
fy = 250 MPa (36 ksi), M 270M, Gr. 250 (Structural Steel)  
fy = 317 MPa (46 ksi), ASTM A500, Gr. B (Structural Tubing)

REVISIONS	
NAME	DATE

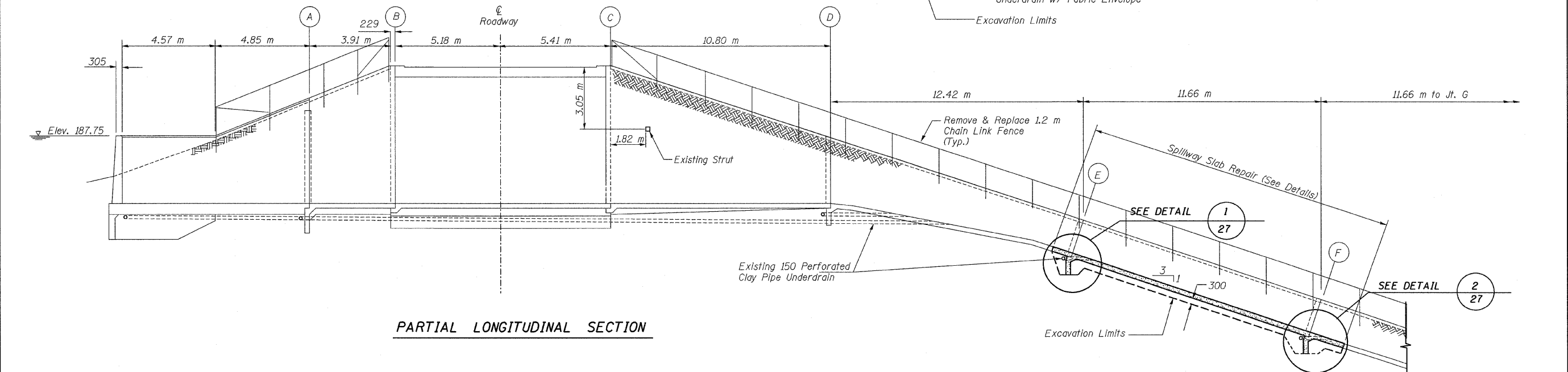
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**SPILLWAY DETAILS**  
C.H. 59 OVER  
LAKE GEORGE SPILLWAY  
ROCK ISLAND, COUNTY  
DRAWN BY RAP  
CHECKED BY JBF  
DATE NOV. 2007

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
204	92-00297-00-BR	ROCK ISLAND	31	25
STA. 0+270		TO STA. 0+340		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		



Note: Riprap not shown for clarity.

**PARTIAL PLAN VIEW**

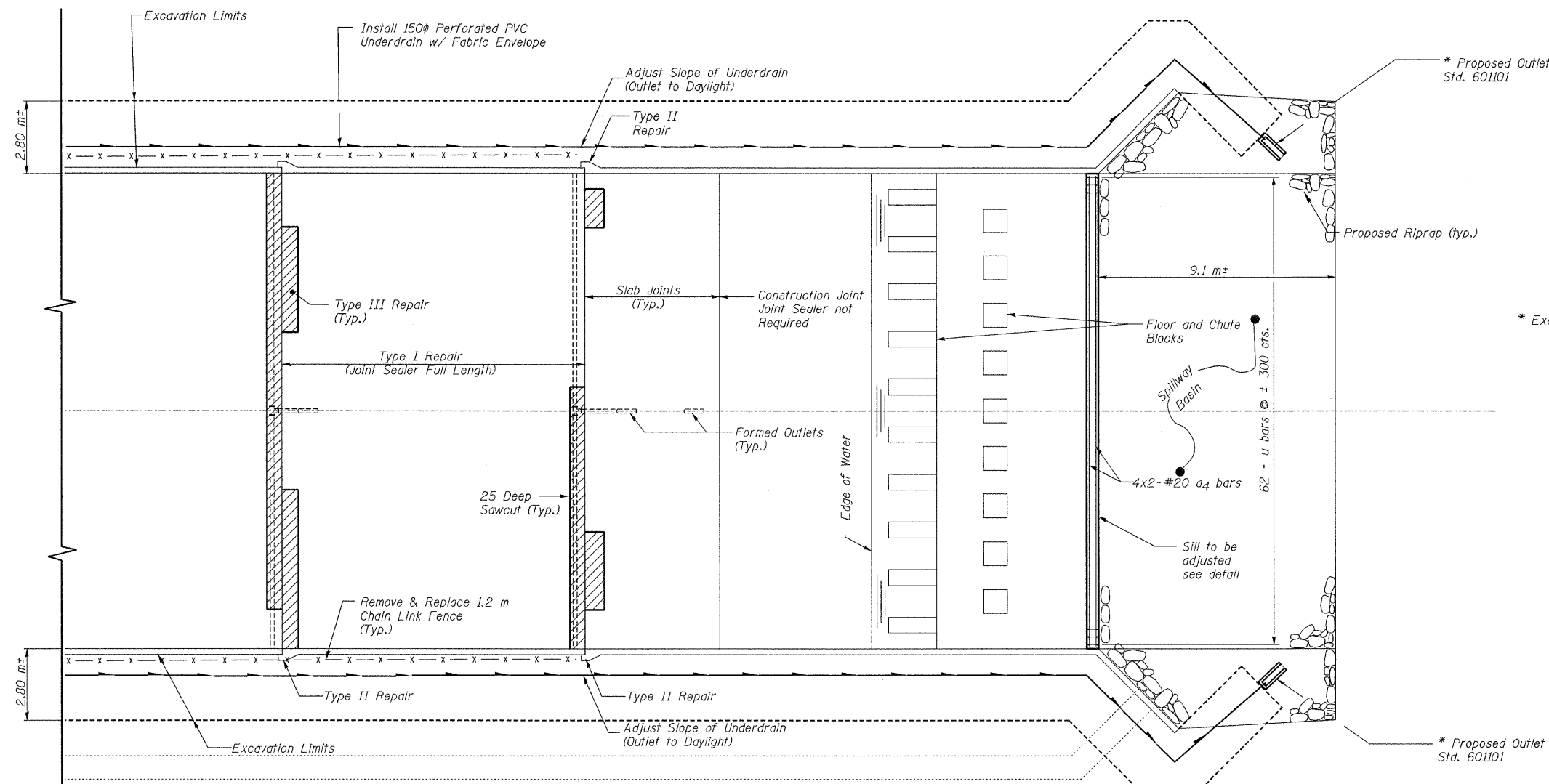


**PARTIAL LONGITUDINAL SECTION**

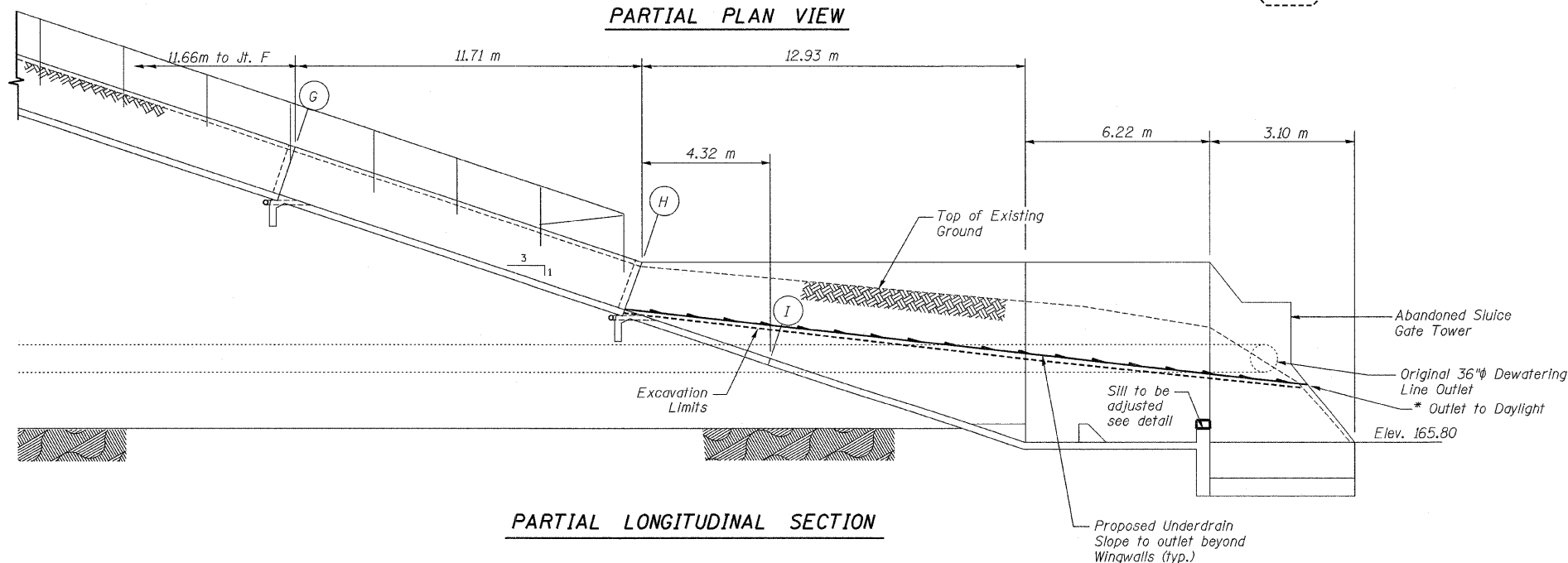
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**SPILLWAY**  
**DETAIL PLAN & ELEVATION**  
 C.H. 59 OVER  
 LAKE GEORGE SPILLWAY  
 ROCK ISLAND, COUNTY  
 DRAWN BY RAP  
 CHECKED BY JBF  
 DATE NOV. 2007

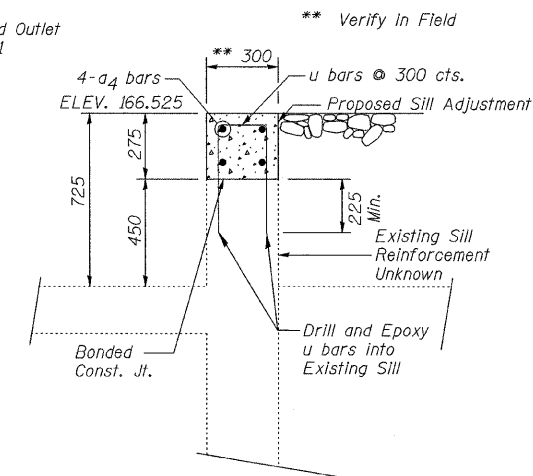
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
204	92-00297-00-BR	ROCK ISLAND	31	26
STA. 0+270		TO STA. 0+340		
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				



**PARTIAL PLAN VIEW**



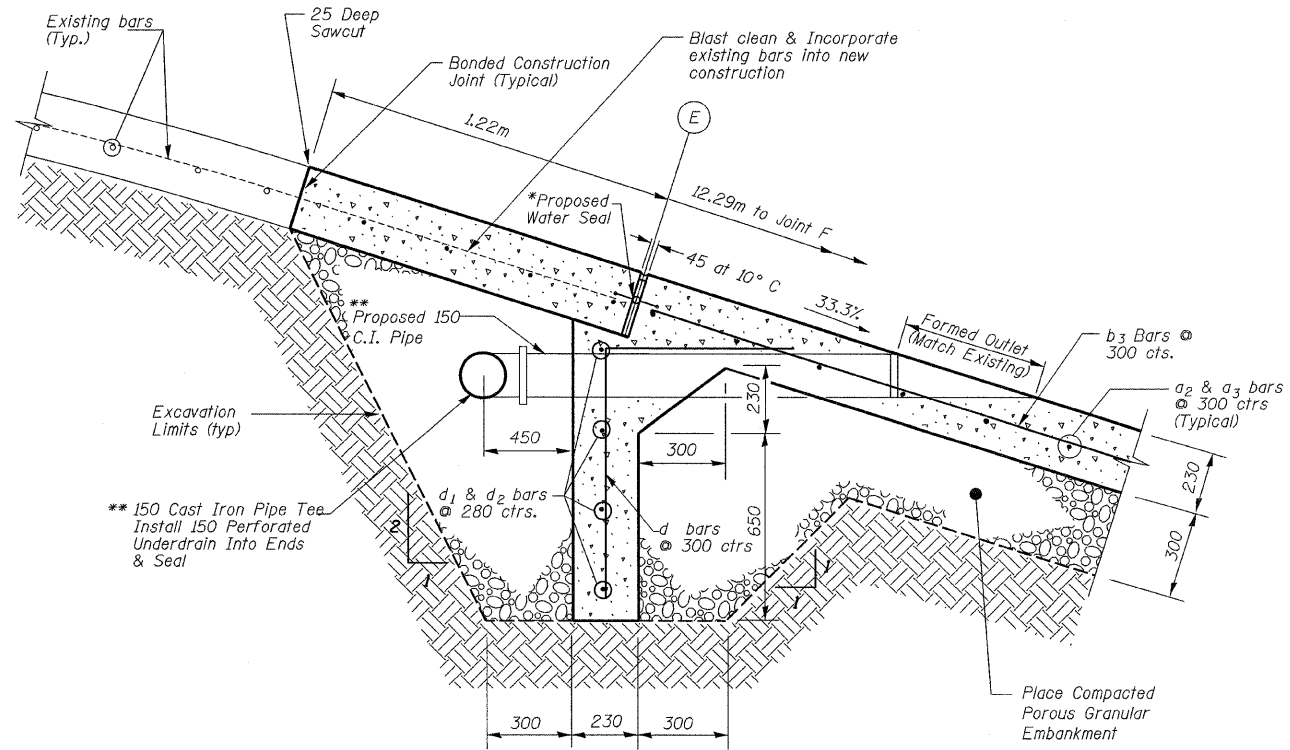
**PARTIAL LONGITUDINAL SECTION**



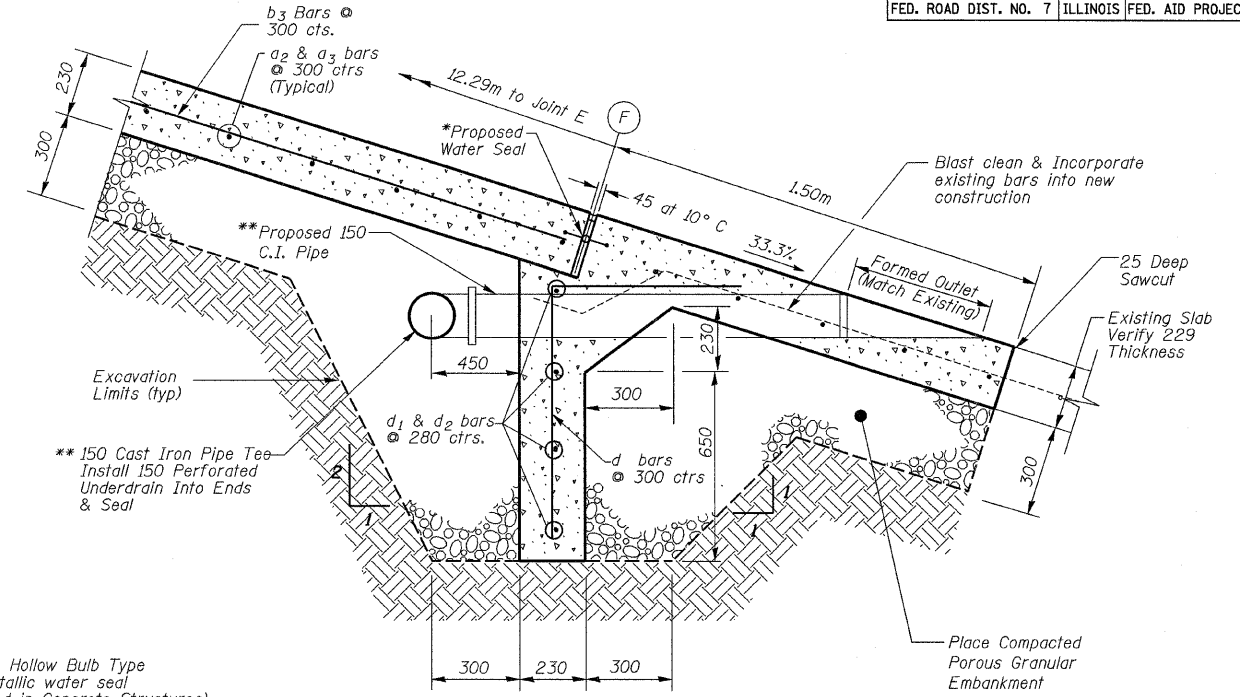
**SILL DETAIL**  
(Concrete Structures)

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION <b>SPILLWAY DETAIL PLAN &amp; ELEVATION</b> C.H. 59 OVER LAKE GEORGE SPILLWAY ROCK ISLAND, COUNTY DRAWN BY RAP CHECKED BY JBF
NAME	DATE	
		DATE NOV. 2007

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
204	92-00297-00-BR	ROCK ISLAND	31	27
STA. 0+270		TO STA. 0+340		
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				

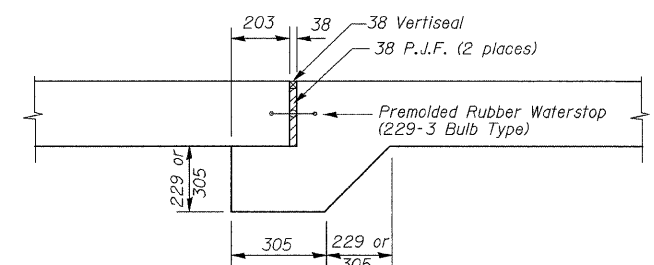


DETAIL 1  
27

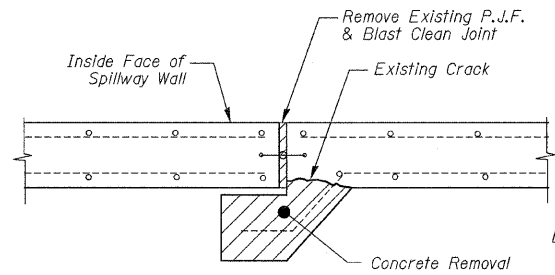


DETAIL 2  
27

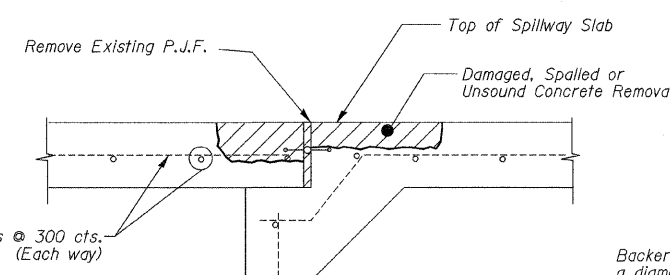
Notes:  
 \* 150 mm Hollow Bulb Type non-metallic water seal (Included in Concrete Structures)  
 \*\* The Cast Iron Pipe, fittings, & Installation shall be Included in Cost of Pipe Underdrains



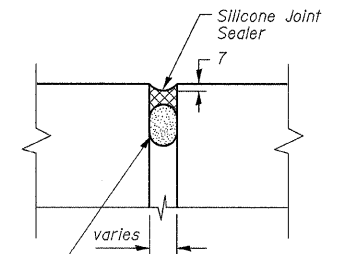
ORIGINAL JOINT DETAIL  
For All Vertical & Horizontal Joints



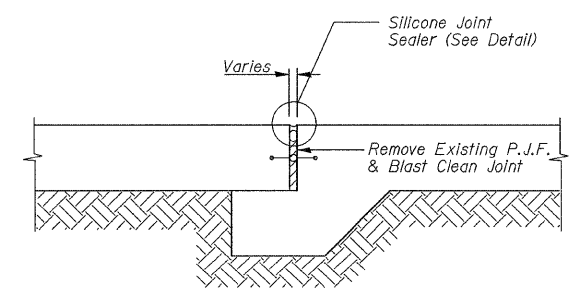
TYPE II EXISTING JOINT  
(Concrete Removal)



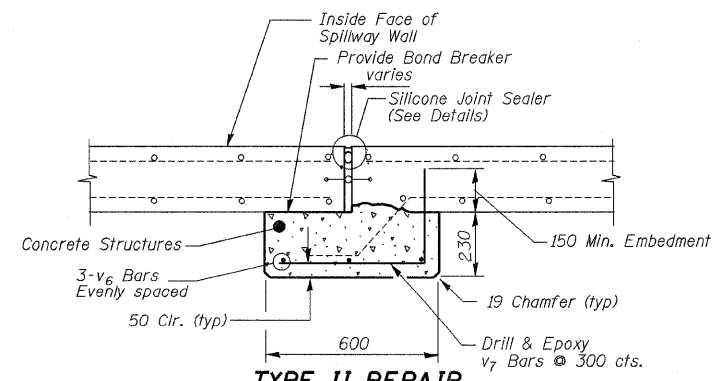
TYPE III EXISTING JOINT  
(Repair Concrete Structures)



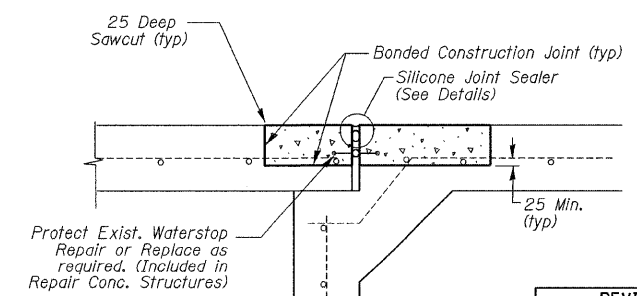
SILICONE JOINT SEALER DETAIL



TYPE I REPAIR  
For Horizontal Slab Joints A-H & Pier Stem



TYPE II REPAIR  
(Concrete Structures)

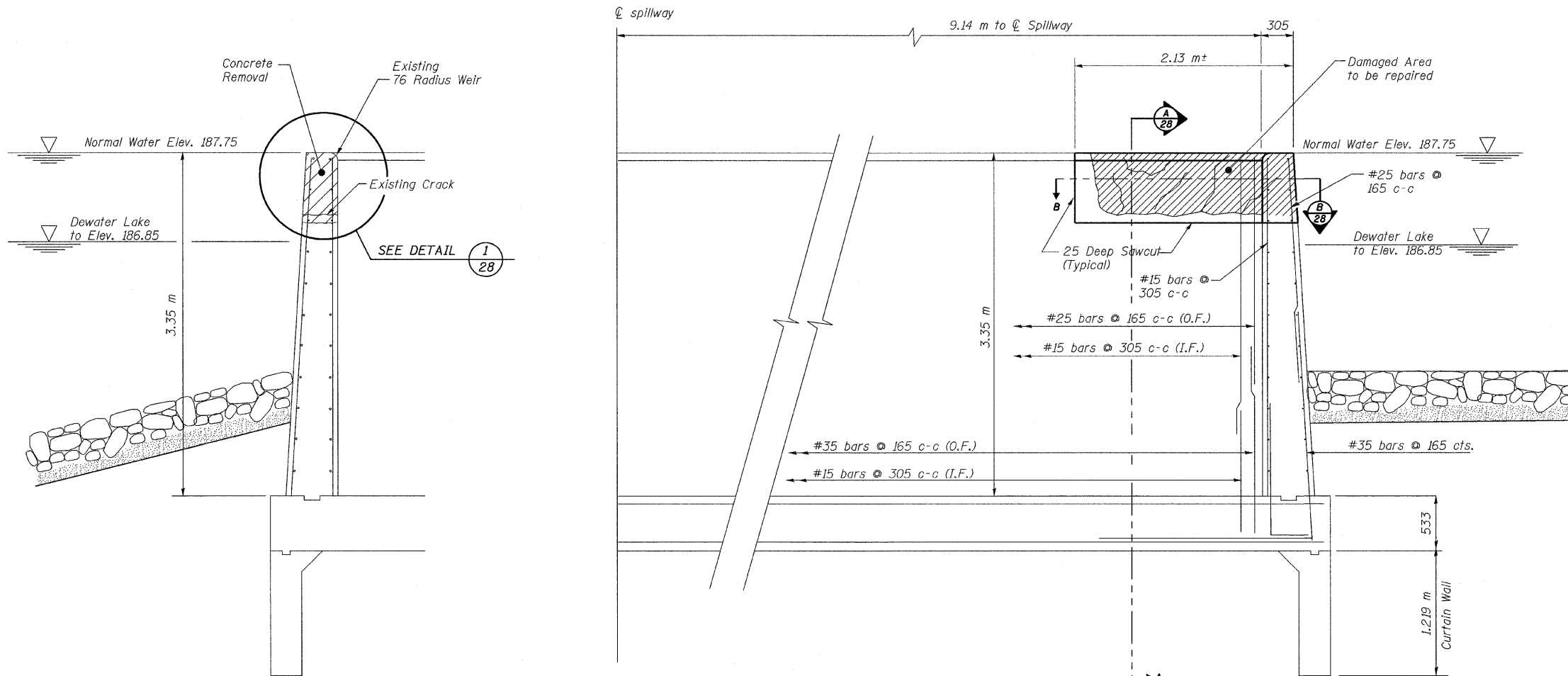


TYPE III REPAIR  
(Repair Concrete Structures)

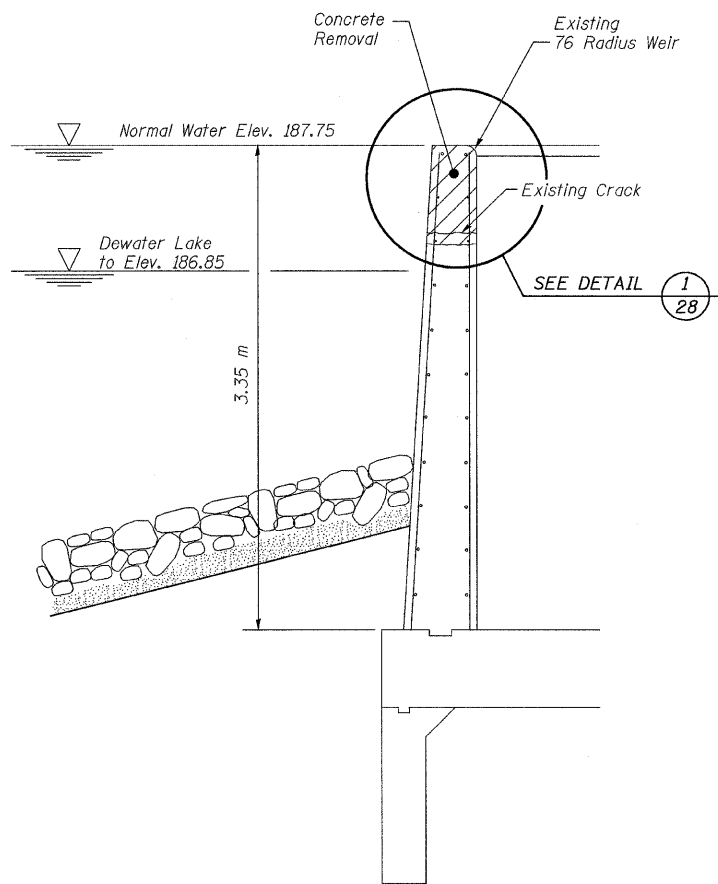
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**TYPICAL JOINT DETAILS & REPAIRS**  
 C.H. 59 OVER LAKE GEORGE SPILLWAY  
 ROCK ISLAND, COUNTY  
 DRAWN BY RAP  
 CHECKED BY JBF  
 DATE NOV. 2007

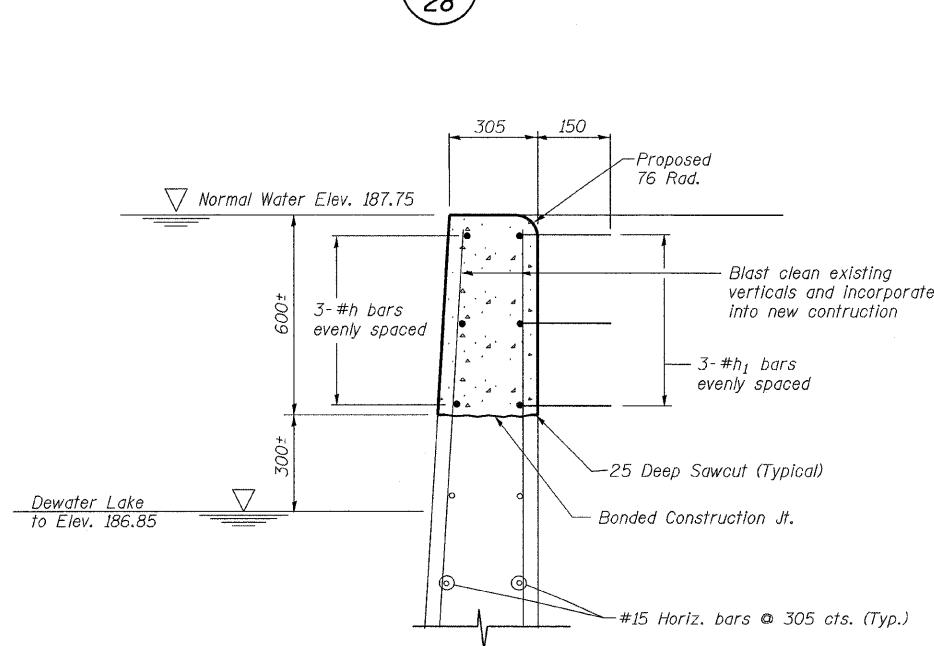
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
204	92-00297-00-BR	ROCK ISLAND	31	28
STA. 0+270		TO STA. 0+340		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		



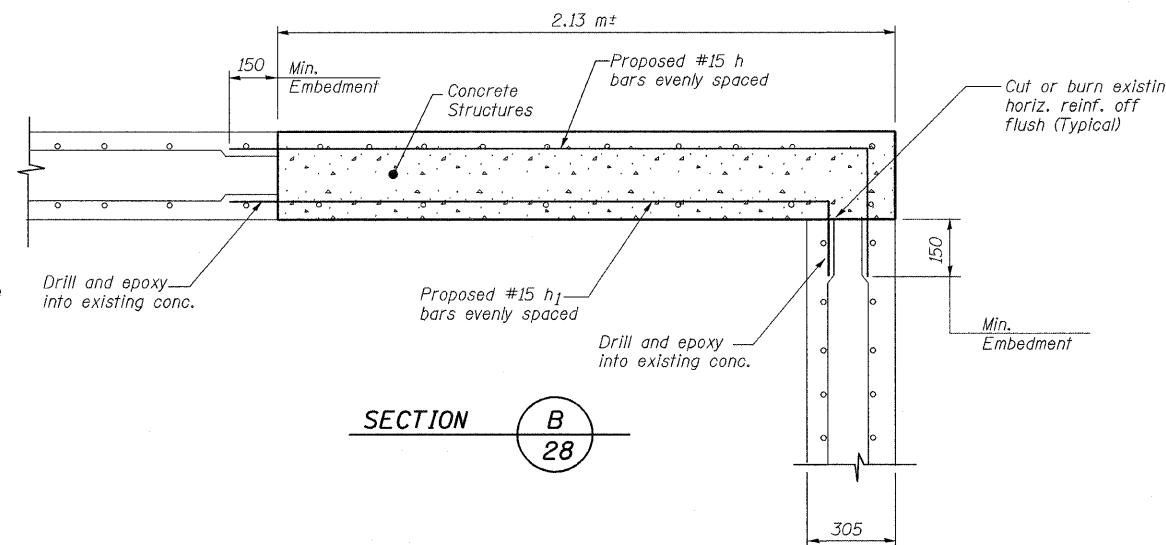
**ELEVATION VIEW**  
(Looking South)



**SECTION A**  
28



**DETAIL 1**  
28

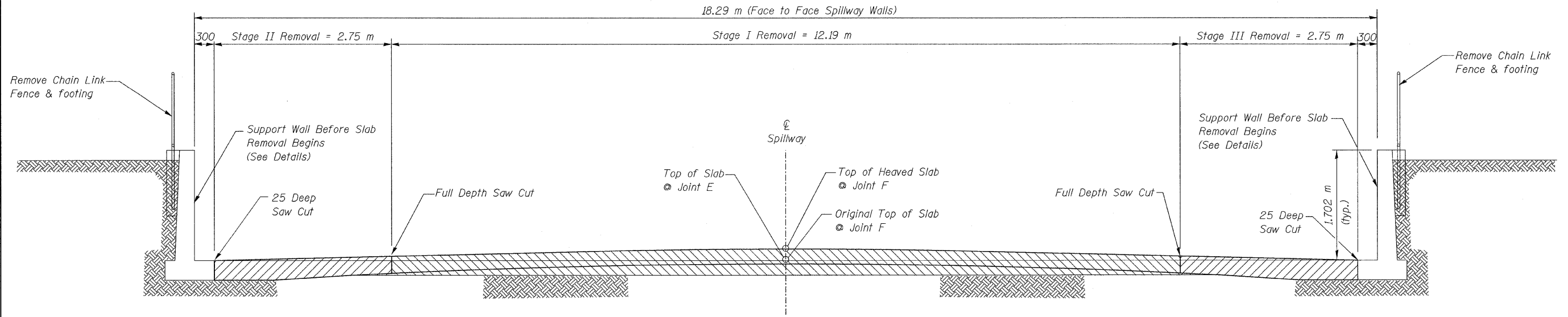


**SECTION B**  
28

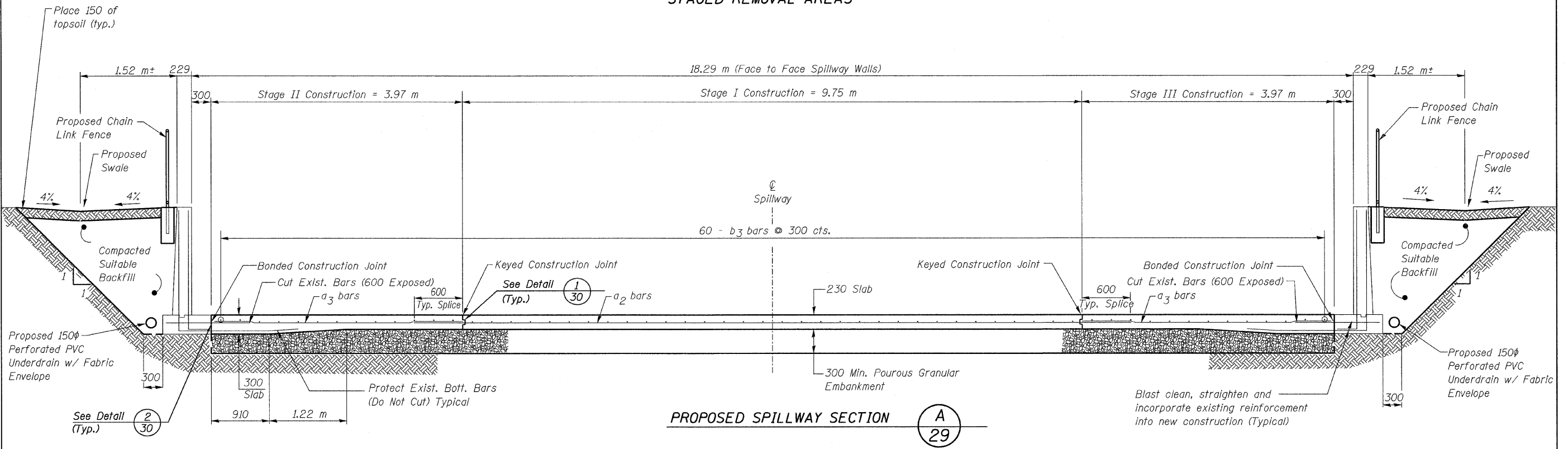
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**WEIR REPAIR DETAILS**  
C.H. 59 OVER  
LAKE GEORGE SPILLWAY  
ROCK ISLAND, COUNTY  
DRAWN BY RAP  
CHECKED BY JBF  
DATE NOV. 2007

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
204	92-00297-00-BR	ROCK ISLAND	31	29
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



**EXISTING SPILLWAY SECTION  
STAGED REMOVAL AREAS**

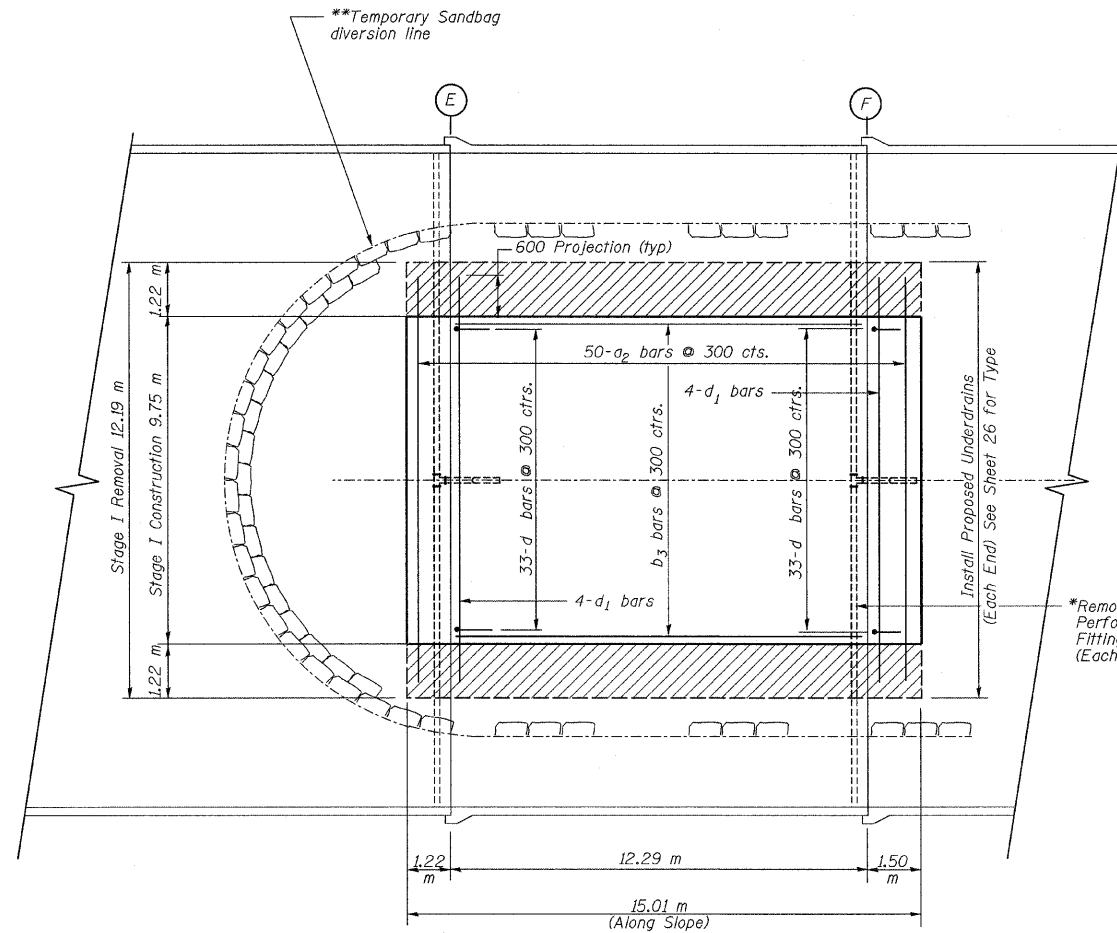


**PROPOSED SPILLWAY SECTION**

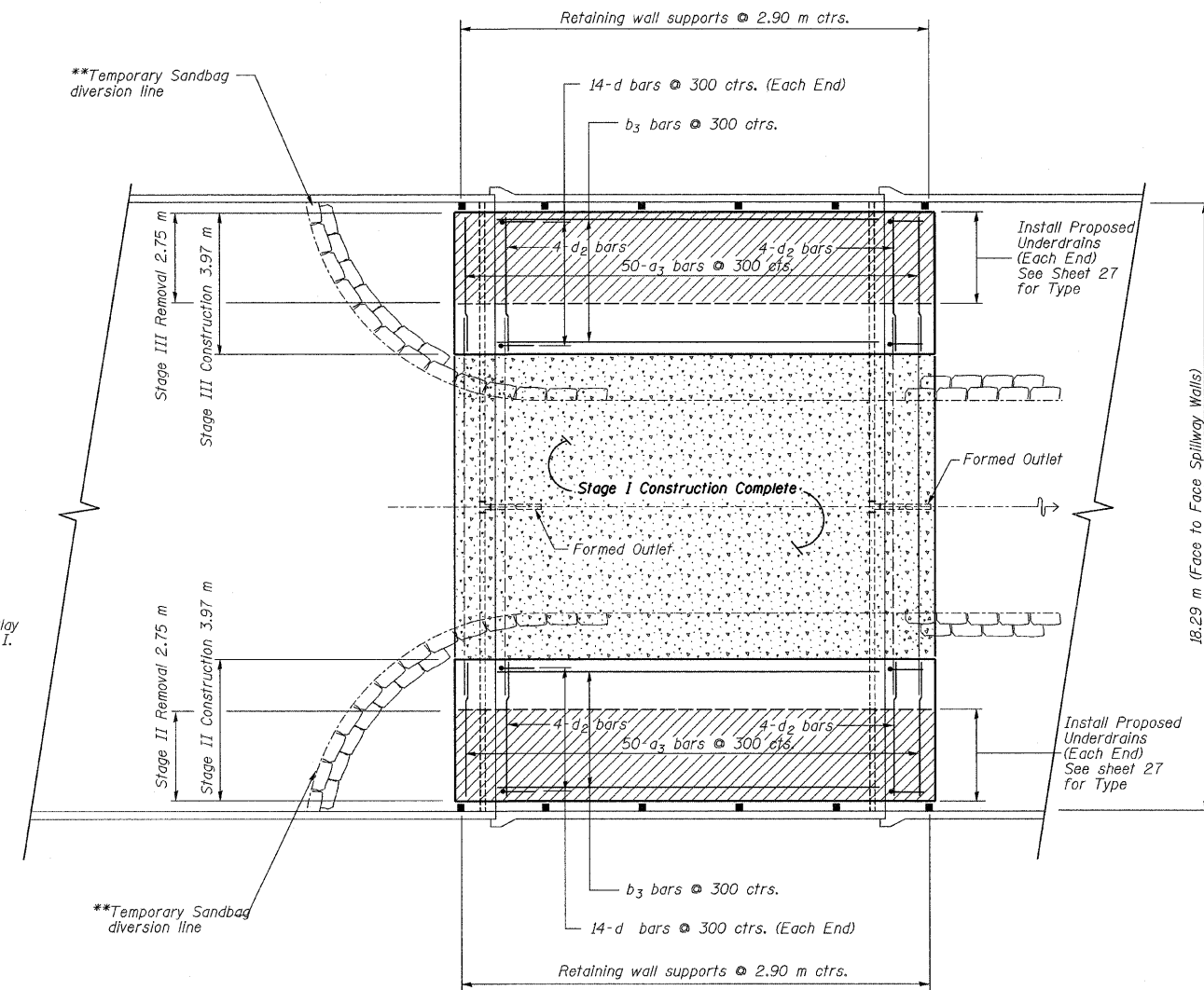
REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION <b>SPILLWAY SLAB REPAIR SECTIONS</b> C.H. 59 OVER LAKE GEORGE SPILLWAY ROCK ISLAND, COUNTY DRAWN BY RAP CHECKED BY JBF
NAME	DATE	
		DATE NOV. 2007



F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
204	92-00297-00-BR	ROCK ISLAND	31	30
STA. 0+270		TO STA. 0+340		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		



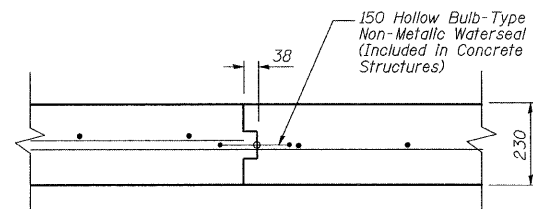
**STAGE I REINFORCING PLAN**



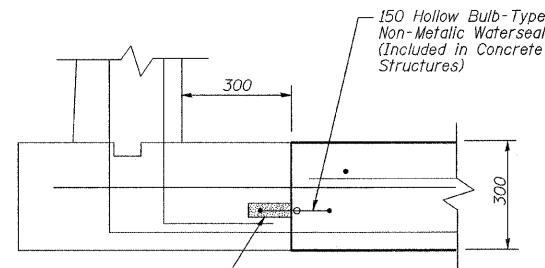
**STAGE II & III REINFORCING PLAN**

\* Cost Included in Concrete Removal & Earth Excavation.

\*\* Contractor shall maintain a dry excavation at all times. Divert flow accordingly during each staged construction. At no time during the project, can the spillway be completely blocked. Spillway flow shall be maintained. This work will not be paid for separately, but shall be included in the cost of Concrete Structures.



Detail 1  
30



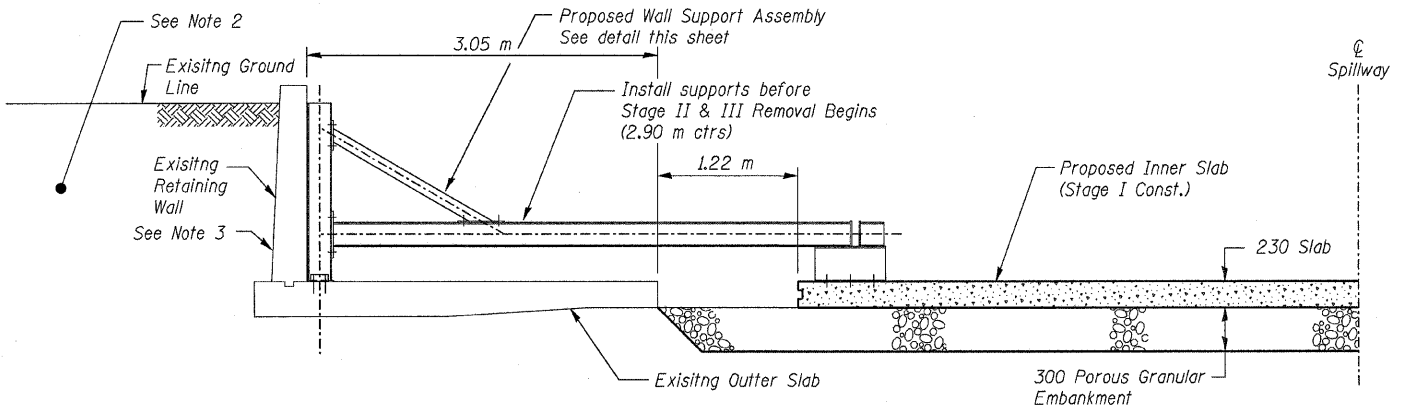
Detail 2  
30

Epoxy new Water Seal into 50 wide sawcut groove. Epoxy to meet the requirements of ASTM C881, Type III, Grade 3. Prime Groove with an Epoxy meeting ASTM C881, Type III Grade 1.

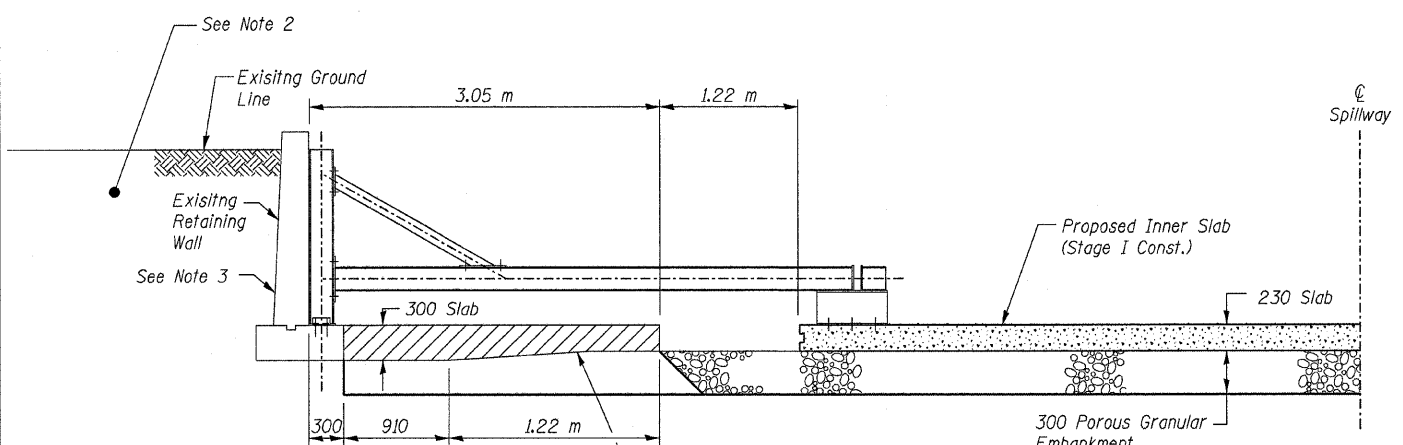
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**SPILLWAY SLAB REPAIR**  
**STAGED DETAIL PLAN**  
 C.H. 59 OVER  
 LAKE GEORGE SPILLWAY  
 ROCK ISLAND, COUNTY  
 DRAWN BY RAP  
 CHECKED BY JBF  
 DATE NOV. 2007

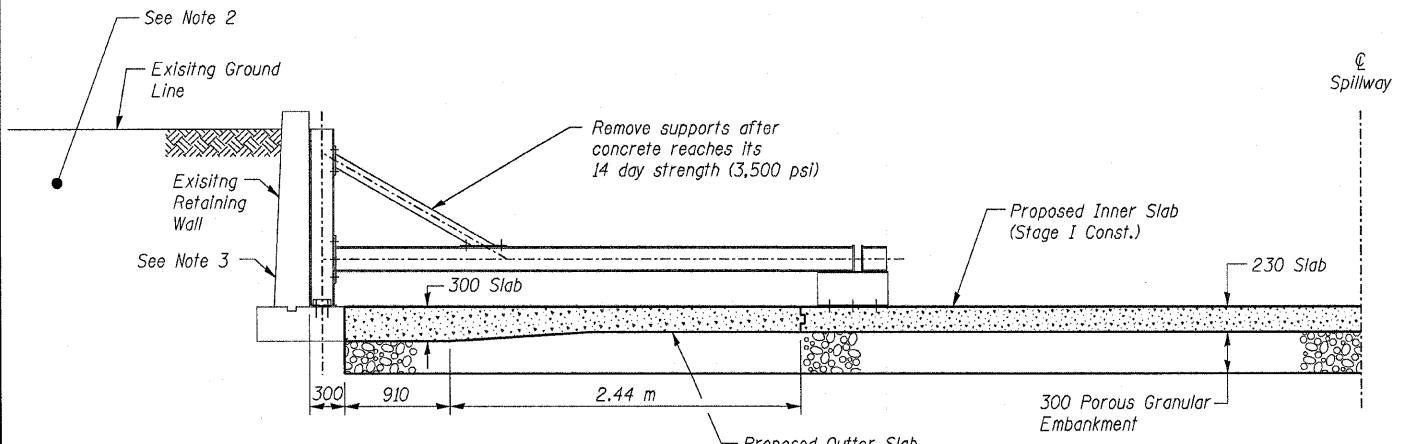
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
204	92-00297-00-BR	ROCK ISLAND	31	31
STA. 0+270		TO STA. 0+340		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		



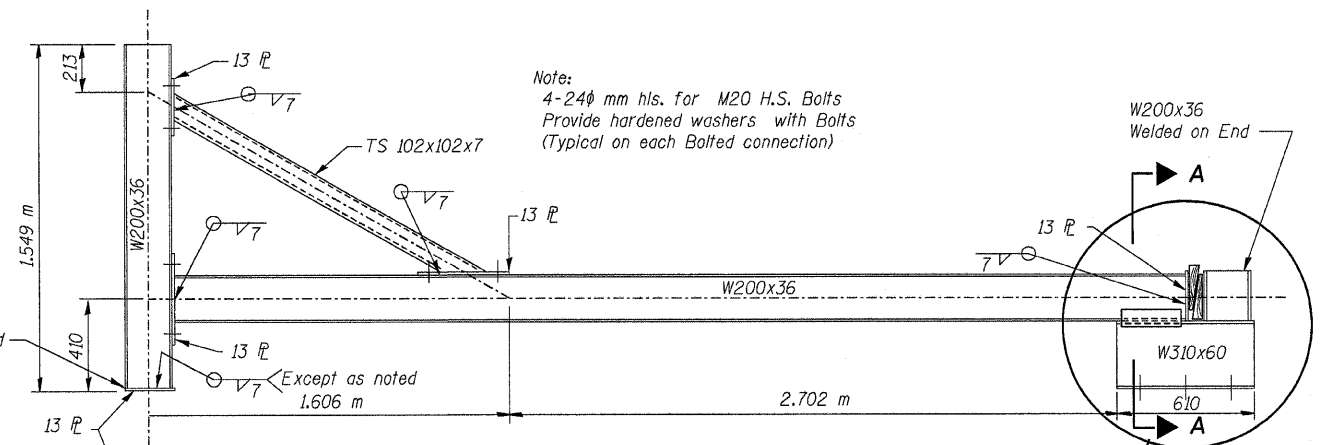
**STAGE I CONSTRUCTION COMPLETED**



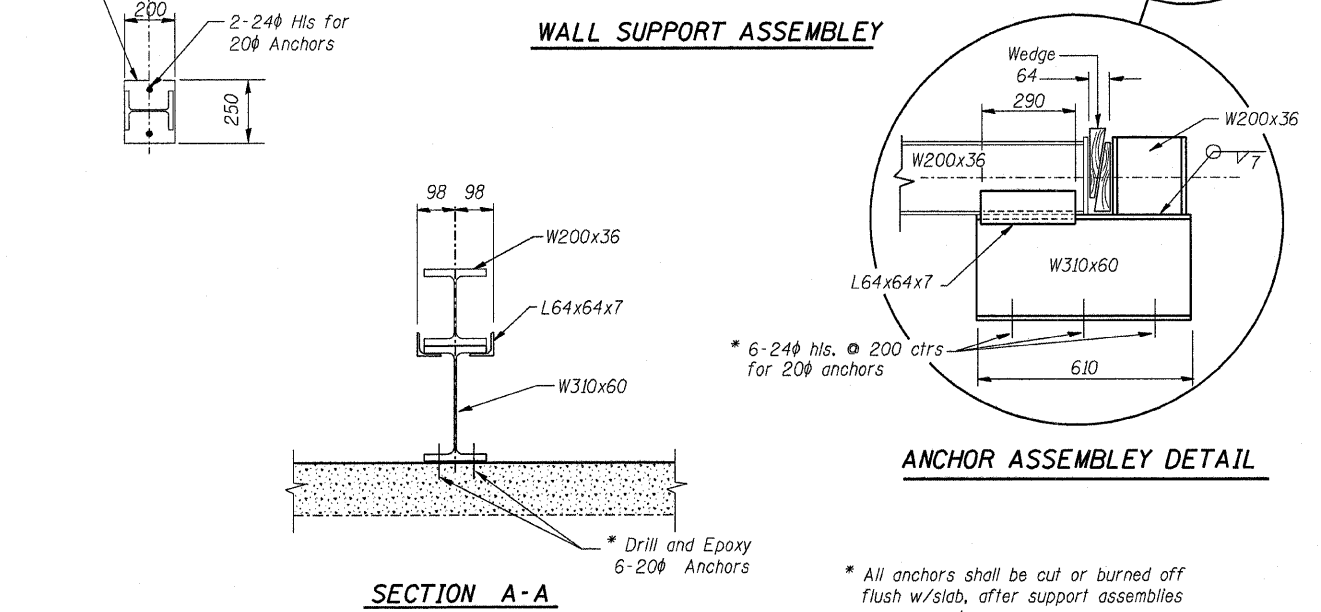
**TYPICAL STAGE II REMOVAL**  
(Stage III Similar)



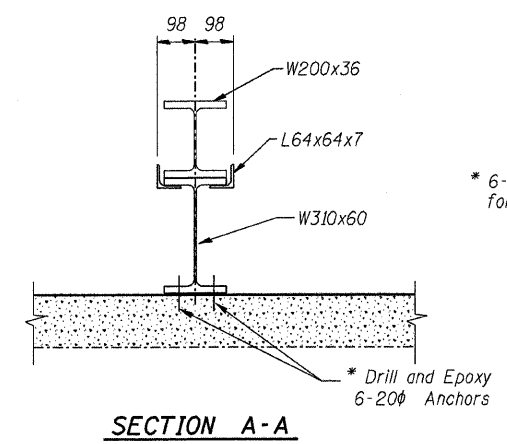
**STAGE II CONSTRUCTION COMPLETED**  
(Stage III Similar)



**WALL SUPPORT ASSEMBLY**



**ANCHOR ASSEMBLY DETAIL**



**SECTION A-A**

**General Notes:**

1. Furnishing, Erecting, Relocating & Removal from the project site of the Temporary Wall Support Assemblies shall be included in the contract unit price per lump sum from Furnishing & Erecting Structure Steel, which price shall include all labor & materials required to complete the work. Calculated weight of Structural Steel = AASHTO M270M, Grade 250 = 3,860 kg.
2. Spillway Slab Repair shall be completed before earth excavation may begin behind walls.
3. Provide Shims for uniform bearing on spillway wall. Included in cost of supports.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**TEMPORARY WALL SUPPORT  
 DETAILS FOR CONSTRUCTION**  
 C.H. 59 OVER  
 LAKE GEORGE SPILLWAY  
 ROCK ISLAND, COUNTY  
 DRAWN BY RAP  
 CHECKED BY JBF  
 DATE JAN. 2008