

FOR INDEX OF SHEETS  
SEE SHEET 2

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
**PLANS FOR PROPOSED**  
**CONTRACT MAINTENANCE**  
 ROUTE F.A.I. 88 (INTERSTATE 88)  
**SAND ROAD (CH 21) BRIDGE OVER I-88**  
**SECTION: (195-1HB-2)M**  
**BRIDGE REHABILITATION**  
**WHITESIDE COUNTY**  
**JOB NO. C-92-045-07**

**CONTRACT NO. 64D02**

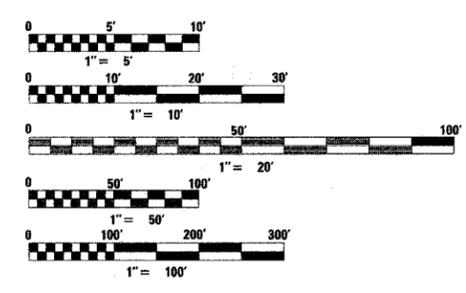
F.A.I. ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
88	(195-1HB-2)M	WHITESIDE	17	1
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

**D-92-042-07**



**TRAFFIC DATA**  
 EXISTING ADT  
 350 (2002)  
 SPEED LIMIT 55 MPH

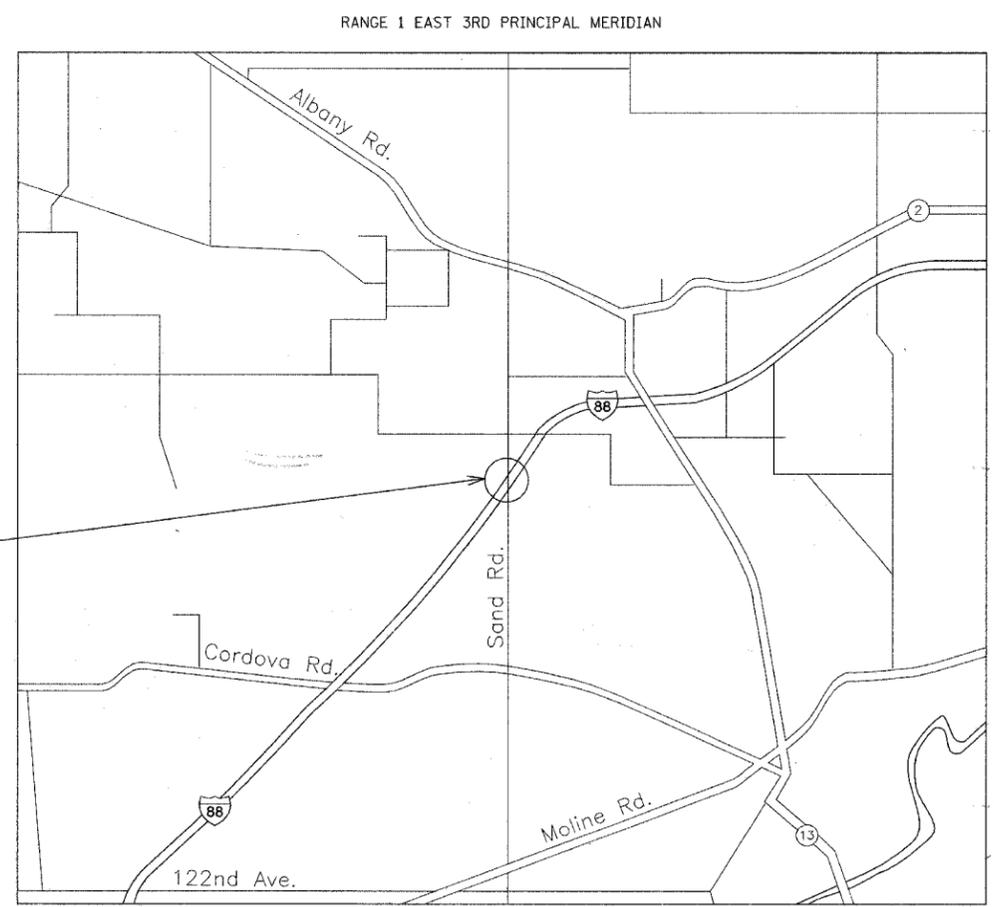
**PROJECT LOCATED IN WHITESIDE COUNTY**



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

**CONTRACT NO. 64D02**



PROJECT LOCATION  
 STRUCTURE NO: 098-0056

NEWTON TOWNSHIP  
 NOT TO SCALE

GROSS AND NET LENGTH OF PROJECT: 1,160 FT ( 0.22 MI)



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

SUBMITTED Feb. 9 2007  
Joseph E. Grose  
 DEPUTY DIRECTOR OF HIGHWAYS, DISTRICT 2 ENGINEER

May 11, 2007  
Eric E. Howard  
 ENGINEER OF DESIGN AND ENVIRONMENT

May 11, 2007  
Milton R. Sweeney  
 DIRECTOR, DIVISION OF HIGHWAYS

**DISTRICT 2, DIXON, IL**

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 THE STATE OF ILLINOIS**



GRAEF, ANHALT, SCHLOEMER & ASSOCIATES, INC.  
 ENGINEERS & SCIENTISTS  
 8501 W. Higgins Road; Suite 280  
 Chicago, Illinois 60631  
 (773) 399-0112

DISTRICT TWO PLAN PREPARATION ENGINEER: MAHMOUD ETEMADI (815) 284-5393

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
88	(195-1HB-2)M	WHITESIDE	17	2
STA. 44+17		TO STA. 55+10		
FED. AID PROJECT		ILLINOIS	FED. ROAD DIST. NO.	

**GENERAL NOTES**

THIS STRUCTURE WILL RETAIN THE SAME NUMBER 098-0056

AT BRIDGE EXPANSION JOINTS, IF TEMPORARY EXPANSION JOINT BULKHEADS ARE ATTACHED TO ADJACENT DECK SLABS OR ABUTMENTS FOR SUPPORT, THE CONTRACTOR SHALL CUT THE ATTACHMENTS AS SOON AS THE CONCRETE HAS SET TO PREVENT JOINT DAMAGE DUE TO HORIZONTAL CONTRACTION OR EXPANSION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY DURING CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.31 OF THE STANDARD SPECIFICATIONS. A MINIMUM OF 48 HOURS ADVANCE NOTICE IS REQUIRED FOR NON-EMERGENCY WORK. THE J.U.L.I.E. NUMBER IS 800-892-0123.

THE RESIDENT ENGINEER SHALL CONTACT THE BUREAU OF OPERATIONS ONE OR TWO DAYS BEFORE THE FINISH OF EACH STAGE SO THAT LOCATIONS CAN BE PAINTED.

THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON STATE PROPERTY WITHOUT PERMISSION FROM THE DEPARTMENT.

BARRICADES; THE CONTRACTOR SHALL PROVIDE AND INSTALL TWO (2) WEIGHTED SANDBAGS ON EACH TYPE I OR TYPE II BARRICADED USED - ONE(1) WEIGHTED SANDBAG ACROSS EACH BOTTOM RAIL. ALL TYPE III BARRICADES SHALL HAVE A MINIMUM OF FOUR(4) SANDBAGS PER BARRICADE, (1) PER LEG.

WHEN ARTIFICIAL LIGHTING IS USED IN NIGHT OPERATIONS, THE CONTRACTOR SHALL EXERCISE THE UTMOST PRECAUTIONS IN PREVENTING ADVERSE VISIBILITY TO THE MOTORING PUBLIC AND ADJOINING RESIDENTIAL AREAS.

ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE EDITION AS INDICATED BY THE SUBNUMBER LISTED ON THE INDEX OF SHEETS OR THE COPY OF THE STANDARD INCLUDED IN THESE PLANS.

QUANTITIES FOR DECK SLAB REPAIR ARE APPROXIMATE. LOCATIONS WILL BE DETERMINED BY THE RESIDENT ENGINEER FOLLOWING REMOVAL OF THE HMA SURFACE COURSE. ACTUAL REPAIR LOCATIONS SHALL BE SHOWN ON THE AS-BUILT PLANS.

THE WEIGHT OF HOT MIX ASPHALT SURFACE COURSE USED IN CALCULATING QUANTITIES IS 112 POUNDS PER INCH OF THICKNESS PER SQUARE YARD.

THE CONTRACTOR SHALL SUPPLY THE RESIDENT ENGINEER WITH THE MANUFACTURER'S INSTALLATION REQUIREMENTS FOR THE TYPE OF STEEL PLATE BEAM GUARDRAIL TERMINAL TYPE 1 SPECIAL (TANGENT) OR STEEL PLATE BEAM GUARDRAIL TERMINAL TYPE 1 SPECIAL (FLARED)

ONE 16D GALVANIZED NAIL SHALL BE USED TO TOE NAIL THE WOOD BLOCKOUT TO THE WOOD POST ON ALL TRAFFIC BARRIER TERMINAL TYPE 1 SPECIALS.

**INDEX OF SHEETS**

1. TITLE SHEET
2. GENERAL NOTES AND INDEX OF SHEETS
3. SUMMARY OF QUANTITIES
4. TYPICAL SECTIONS
5. PROPOSED PLAN
6. MOT PLAN
7. GENERAL PLAN & ELEVATION
8. DECK PLAN & CROSS SECTION
9. SUBSTRUCTURE REPAIR & RIPRAP DETAILS
10. JOINT DETAILS AT NORTH ABUTMENT
11. JOINT DETAILS AT SOUTH ABUTMENT
12. TYPICAL PARAPET & DECK SECTIONS & DETAILS
13. JOINT PLAN AND ELEVATION
14. FINGER PLATE JOINT DETAILS
15. MISCELLANEOUS DETAILS
16. PREFORMED JOINT STRIP SEAL
17. DRAINAGE SCUPPERS, DS-33

**HIGHWAY STANDARDS**

NO.	DESCRIPTION
483001-03	PCC SHOULDER
606001-03	CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
630001-07	STEEL PLATE BEAM GUARDRAIL
631031-06	TRAFFIC BARRIER TERMINAL, TYPE 6
635006-02	REFLECTOR AND TERMINAL MARKER PLACEMENT
635011-01	REFLECTOR MARKER AND MOUNTING DETAILS
701400-02	APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
701406-04	LANE CLOSURE MULTILANE DAY OPERATIONS ONLY FOR SPEEDS ≥ 45 MPH
702001-06	TRAFFIC CONTROL DEVICES
BLR 21-6	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

*Peter M. Johnston* 3-6-07  
 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS  
 052-847647  
 Exp 11-30-07  
*Scott D. Hinrichs*  
 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS  
 081-055730  
 3/4/07  
 EXPIRES: 11/30/08

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SAND ROAD (CH 21) BRIDGE OVER I-88  
 STRUCTURE NO: 098-0056  
 SECTION: (195-1HB-2)M  
 BRIDGE REHABILITATION  
 GENERAL NOTES AND INDEX OF SHEETS  
 SCALE: NTS  
 DATE: 2/7/07  
 DRAWN BY: LT  
 CHECKED BY: RS

CONTRACT NO. 64002

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
88	(195-1HB-2)M	WHITESIDE	17	3
STA. 44+17		TO STA. 55+10		
FED. AID PROJECT		ILLINOIS FED. ROAD DIST. NO.		

SUMMARY OF QUANTITIES

CODE NO	DESCRIPTION	UNIT	100% STATE QUANTITY SFTY-2A
20200600	EXCAVATING AND GRADING EXISTING SHOULDER	UNIT	11
28100107	STONE RIPRAP, CLASS A4	SQ YD	120
40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	168
42001300	PROTECTIVE COAT	SQ YD	37
42001500	P.C. CONCRETE BRIDGE APPROACH SHOULDER PAVEMENT	SQ YD	31
44000155	HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"	SQ YD	220
<b>44000086</b>	HOT-MIX ASPHALT SURFACE REMOVAL COMPLETE	SQ YD	1,579
48101700	AGGREGATE SHOULDERS, SPECIAL	CUYD	36
50102400	CONCRETE REMOVAL	CU YD	15.7
50157300	PROTECTIVE SHIELD	SQ YD	320
<b>52000110</b>	PREFORMED JOINT STRIP SEAL	FOOT	40
<b>52000600</b>	FABRIC REINFORCED ELASTOMERIC TROUGH	FOOT	40
50300255	CONCRETE SUPERSTRUCTURE	CU YD	17.2
<b>X0325305</b>	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	223
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2,360
<b>52000212</b>	FINGER PLATE EXPANSION JOINT, 4"	FOOT	37.5
<b>X0322121</b>	SHEET WATERPROOFING MEMBRANE SYSTEM	SQ YD	1552
60260100	INLETS TO BE ADJUSTED	EACH	4
60600605	CONCRETE CURB, TYPE B	FOOT	120
* 63000000	STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	1046
* 63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4
* 63100167	TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT)	EACH	4
63200310	GUARDRAIL REMOVAL	FOOT	1032
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1
78200410	GUARDRAIL MARKERS - TYPE A	EACH	10
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X0321468	PLUG EXISTING DECK DRAINS	EACH	50
X0321743	SILICONE JOINT SEALER, 1"	FOOT	24
X0321781	MECHANICAL SPLICE	EACH	70
X0323082	DRAINAGE SCUPPERS, DS-33	EACH	4
Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ YD	50
Z0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ YD	56
Z0016200	DECK SLAB REPAIR (PARTIAL)	SQ YD	359

\* SPECIALTY ITEM

*Johnston*  
3-6-07

*Exp.*  
11-30-07

*3/1/07*

PETER M. JOHNSON  
062-047647  
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

SCOTT D. HENRICHS  
081-005750  
LICENSED STRUCTURAL ENGINEER

EXPIRES: 11/30/07

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
SAND ROAD (CH 21) BRIDGE OVER I-88  
STRUCTURE NO: 098-0056  
SECTION: (195-1HB-2)M  
BRIDGE REHABILITATION

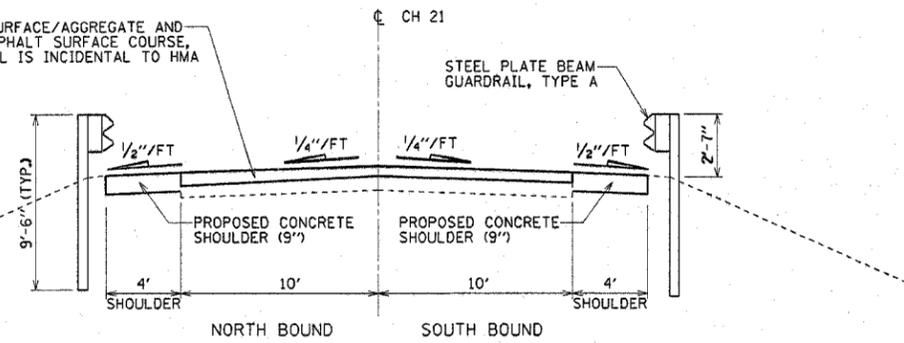
SUMMARY OF QUANTITIES

SCALE: NTS  
DATE: 2/7/07

DRAWN BY: LT  
CHECKED BY: RS

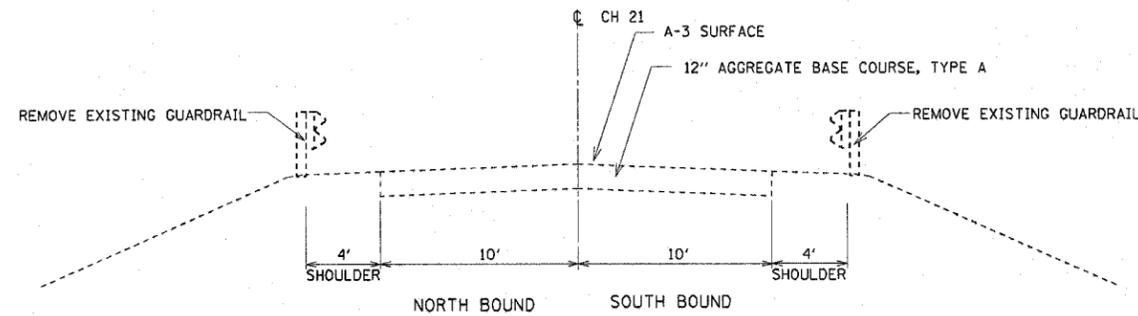
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
88	(195-1HB-2)M	WHITESIDE	17	4
STA. 44+17		TO STA. 55+10		
FED. AID PROJECT ILLINOIS FED. ROAD DIST. NO.				

REMOVE 3" OF EXISTING A-3 SURFACE/AGGREGATE AND REPLACE WITH 3" HOT MIX ASPHALT SURFACE COURSE, MIX C, N 50 (2 LIFTS) (REMOVAL IS INCIDENTAL TO HMA SURFACE COURSE)



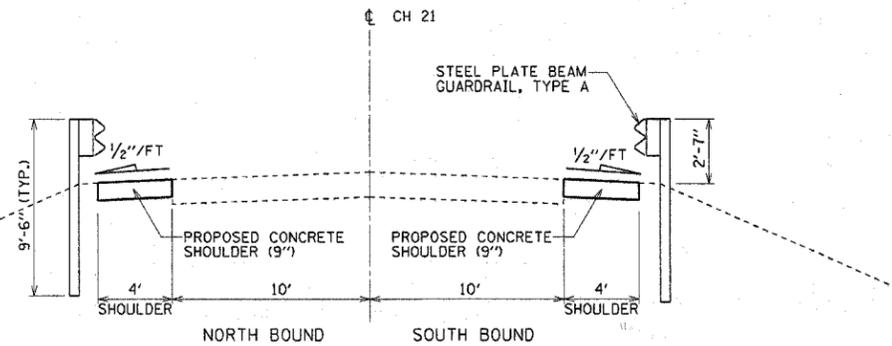
**PROPOSED ROADWAY TYPICAL SECTION**

STA. 45+87.13 TO STA. 46+37.13  
 STA. 51+78.29 TO STA. 52+28.29  
 (LOOKING SOUTH)



**EXISTING ROADWAY TYPICAL SECTION**

STA. 44+17 TO STA. 46+37.13  
 STA. 51+78.29 TO STA. 55+10  
 (LOOKING SOUTH)



**PROPOSED ROADWAY TYPICAL SECTION**

STA. 44+17 TO STA. 45+87.13  
 STA. 52+28.29 TO STA. 55+10  
 (LOOKING SOUTH)

MIXTURE TYPE	AC TYPE	AIR VOIDS
HOT MIX ASPHALT SURFACE COURSE, MIX C, N 50	PG 64-22	4% @ 50 GYR

REVISIONS	
NAME	DATE

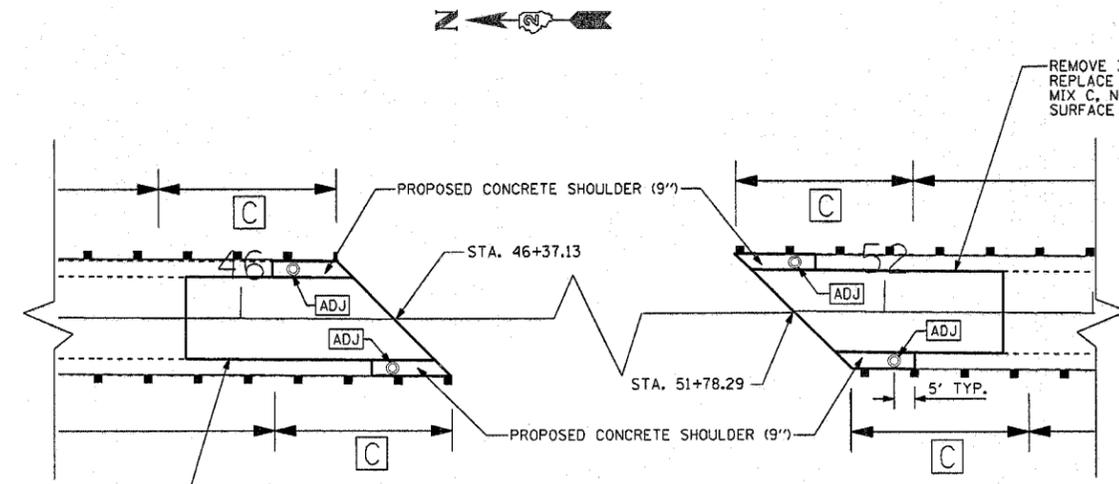
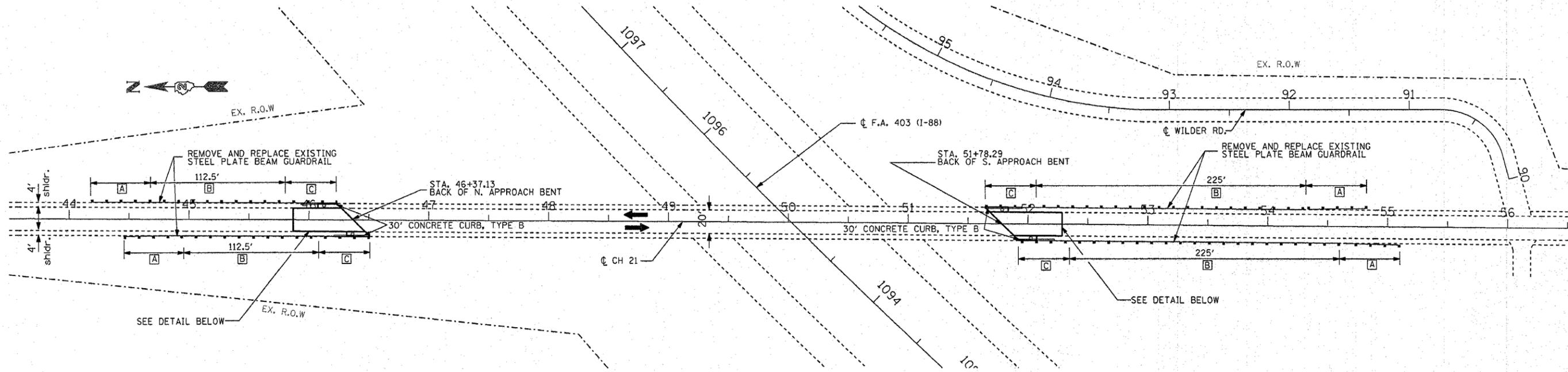
ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SAND ROAD (CH 21) BRIDGE OVER I-88  
 STRUCTURE NO: 098-0056  
 SECTION: (195-1HB-2)M  
 BRIDGE REHABILITATION

**TYPICAL SECTIONS**

SCALE: NTS  
 DATE: 2/7/07  
 DRAWN BY: LT  
 CHECKED BY: PJ

CONTRACT NO. 64D02

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
88	(195-1HB-2)M	WHITESIDE	17	5
STA. 44+17		TO STA. 55+10		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



BRIDGE APPROACH DETAIL  
SCALE: 1"=20'

REMOVE 3" OF EXISTING A-3 SURFACE/AGGREGATE AND REPLACE WITH 3" HOT MIX ASPHALT SURFACE COURSE, MIX C, N 50 (2 LIFTS) (REMOVAL IS INCIDENTAL TO HMA SURFACE COURSE)

- LEGEND
- [A] TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL (TANGENT)
  - [B] STEEL PLATE BEAM GUARDRAIL, TYPE A
  - [C] TRAFFIC BARRIER TERMINAL, TYPE 6
  - [ADJ] ADJUST EXISTING DRAINS TO GRADE

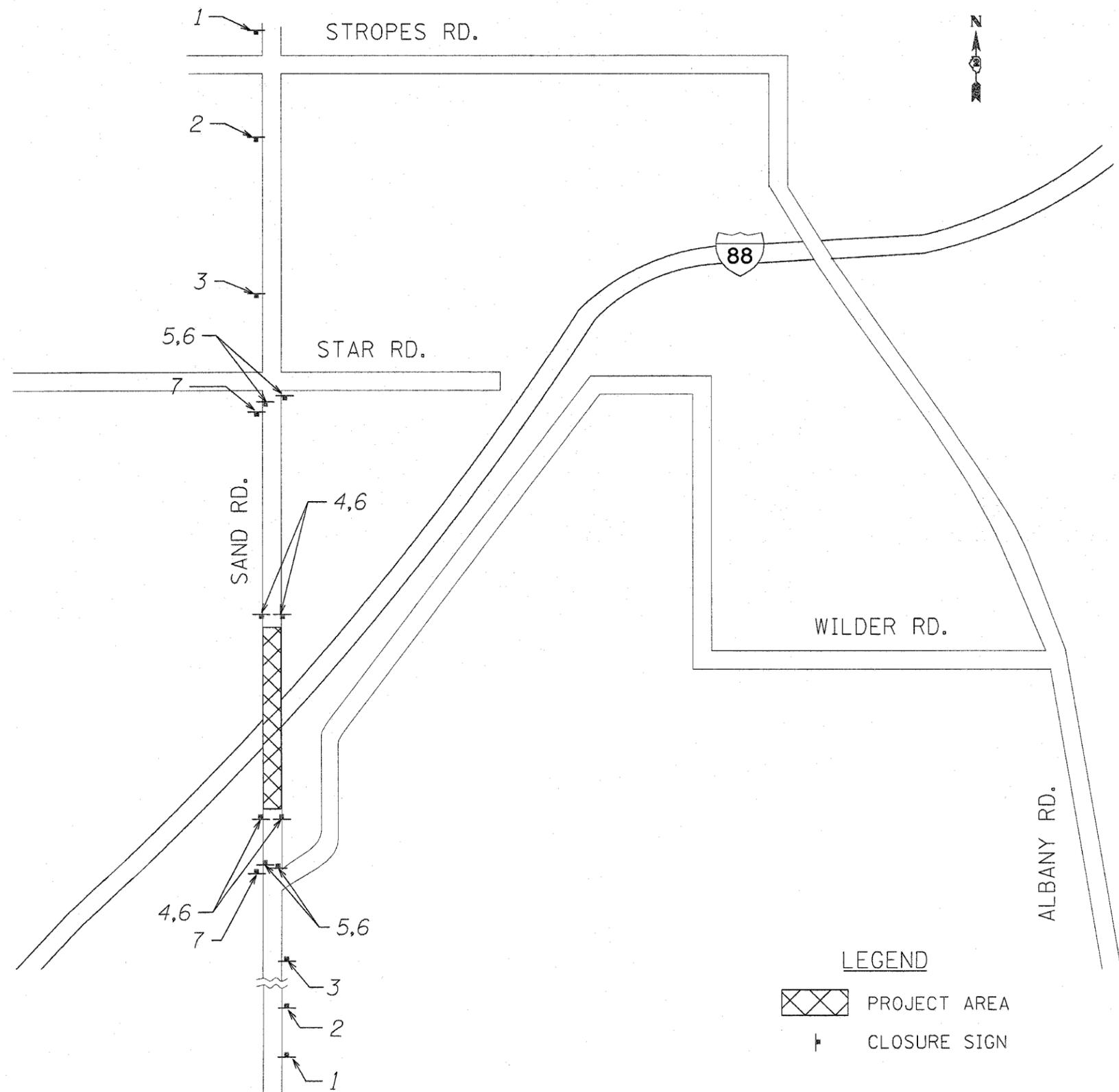
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SAND ROAD (CH 21) BRIDGE OVER I-88  
 STRUCTURE NO: 098-0056  
 SECTION: (195-1HB-2)M  
 BRIDGE REHABILITATION  
 PROPOSED PLAN  
 SCALE: 1"=40'  
 DATE 2/7/07  
 DRAWN BY LT  
 CHECKED BY PJ

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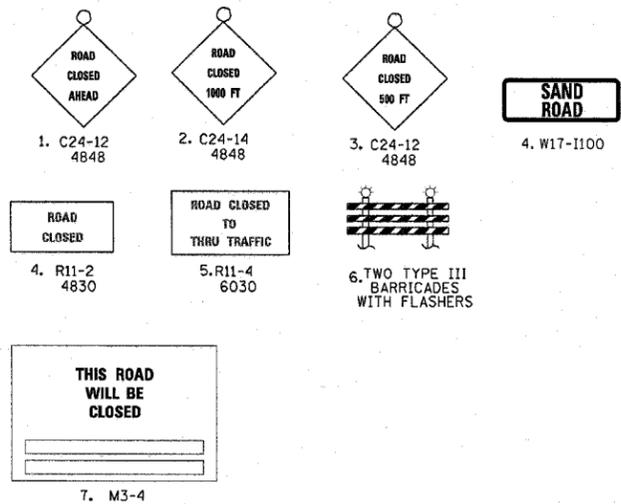
CONTRACT NO. 64D02

F.A.T. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
88	(195-1HB-2)M	WHITESIDE	17	6
STA. 44+17		TO STA. 55+10		
FED. AID PROJECT		ILLINOIS FED. ROAD DIST. NO.		



**MAINTENANCE OF TRAFFIC**

1. THE DEPARTMENT SHALL BE NOTIFIED 72 HOURS PRIOR TO ROAD CLOSURE AND IMMEDIATELY AFTER THE ROAD HAS BEEN REOPENED.
2. WHITESIDE COUNTY SHALL BE NOTIFIED AT LEAST TWO WEEKS PRIOR TO CLOSING THE ROAD.
3. THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE ALL TEMPORARY SIGN SUPPORTS. AFTER REMOVING THE SUPPORTS, THE CONTRACTOR SHALL FILL HOLES (IF ANY) AND RESTORE THE GROUND TO ITS ORIGINAL CONDITION AND ELEVATION. PLACING OF GRAVEL, SOD, OR SEED SHALL BE INCLUDED IN THE UNIT BID PRICE FOR "TRAFFIC CONTROL FOR ROAD CLOSURE".
4. ALL SIGNS, SUPPORTS AND POSITIONING SHALL BE IN ACCORDANCE WITH THE ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
5. ALL WARNING SIGNS IN TEMPORARY TRAFFIC CONTROL ZONES SHALL HAVE A BLACK LEGEND ON AN ORANGE BACKGROUND, UNLESS OTHERWISE NOTED.
6. EACH TYPE III BARRICADE SHALL BE EQUIPPED WITH TWO FLASHING AMBER LIGHTS.
7. FOR STABILIZATION, ALL TYPE III BARRICADES SHALL HAVE A MINIMUM OF FOUR (4) SANDBAGS PER BARRICADE (ONE PER LEG).
8. THE CONTRACTOR SHALL ERECT SIGN NO. 7 AT LEAST 2 WEEKS IN ADVANCE OF THE CLOSURE.
9. ALL ENTRANCES ON THE CLOSED PORTION OF SAND ROAD SHALL BE OPEN FOR TRAFFIC DURING THE ENTIRE CONSTRUCTION PERIOD.
10. THE WORK SHALL BE PAID FOR AT THE LUMP SUM PRICE FOR "TRAFFIC CONTROL FOR ROAD CLOSURE"



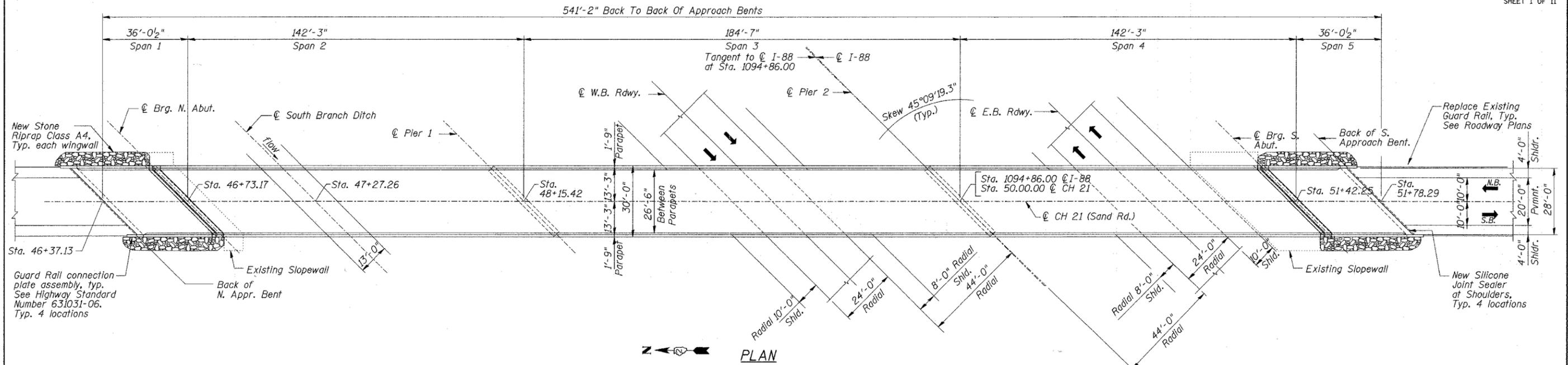
**LEGEND**

-  PROJECT AREA
-  CLOSURE SIGN

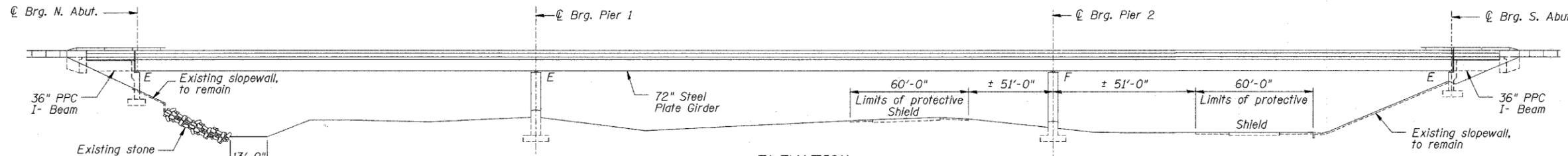
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SAND ROAD (CH 21) BRIDGE OVER I-88  
 STRUCTURE NO: 098-0056  
 SECTION: (195-1HB-2)M  
 BRIDGE REHABILITATION  
 MOT PLAN  
 SCALE: NTS  
 DATE: 2/7/07  
 DRAWN BY: LT  
 CHECKED BY: PJ

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
88	1195-1HB-21M	WHITESIDE	17	7
STA. 44+17 TO STA. 55+10				
FED. AID PROJECT ILLINOIS FED. ROAD DIST. NO.				



PLAN



ELEVATION  
(Dimensions normal to CH21 (Sand Rd.))

DESIGN STRESSES

New Construction  
 $f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)  
 $F_y = 50,000$  psi (structural steel M270 Gr. 50)

TOTAL BILL OF MATERIALS

ITEM	UNITS	TOTAL
Stone Riprap Class A4	Sq. Yd.	120
Hot Mix Asphalt Surface Course Mix "C", N50	Ton	130.4
Protective Coat	Sq. Yd.	37
Hot Mix Asphalt Surface Removal Complete	Sq. Yd.	1,579
Concrete Removal	Cu. Yd.	15.7
Protective Shield	Sq. Yd.	320
Concrete Superstructure	Cu. Yd.	17.2
Reinforcement Bars, Epoxy Coated	Pound	2,360
Fabric Reinforced Elastomeric Trough	Foot	40
Preformed Joint Strip Seal	Foot	40
Finger Plate Expansion Joint, 4"	Foot	37.5
Sheet Waterproofing Membrane System	Sq. Yd.	1,552
Plug Existing Deck Drains	Each	50
Silicone Joint Sealer 1"	Foot	24
Mechanical Splice	Each	70
Structural Repair of Concrete (Depth <= 5")	Sq. Ft.	223
Drainage Scuppers, DS-33	Each	4
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	50
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	56
Deck Slab Repair (Partial)	Sq. Yd.	359

GENERAL NOTES

All new structural steel shall conform to AASHTO M-270 Gr. 50, unless otherwise noted.

All new fasteners shall be AASHTO M164 Type I, Mechanically galvanized bolts. Holes shall be  $\frac{1}{16}$ " diameter for  $\frac{3}{4}$ " diameter bolts, unless otherwise noted. Holes shall be  $\frac{1}{16}$ " diameter for  $\frac{7}{8}$ " diameter bolts, unless otherwise noted.

No field welding is permitted except as specified in the contract documents.

Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60 ( IL Modified ). See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.

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 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 at the unit price bid for work.

Layout of proposed slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and all other loose, 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  $\frac{1}{4}$  in. 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.

The existing structural steel coating contains lead. The contractor shall take appropriate precautions to deal with the presence of lead on this project.

Quantities for deck slab repair are approximate. Quantity of Deck Slab Repair (Full Depth, Type I) and Deck Slab Repair (Full Depth, Type II) are each assumed to be equal to 2.50% of the deck area. Quantity of Deck Slab Repair (Partial) is assumed to be equal to 20.0% of the deck area. Locations will be determined by the Resident Engineer following removal of the Hot Mix Asphalt surface course. Actual repair locations shall be shown on the as-built plans. Contractor will be paid for the quantity furnished.

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures." Cost included with Finger Plate Expansion Joint, 4".

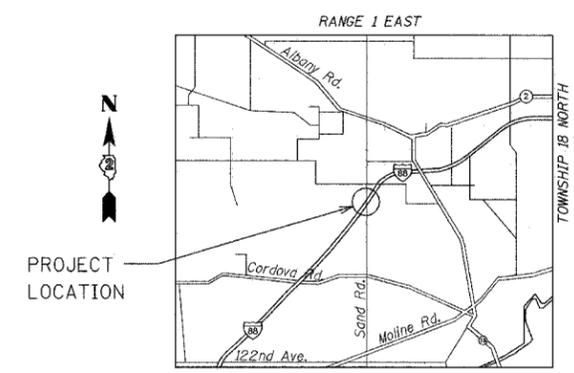
All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with Finger Plate Expansion Joint, 4".

Joint openings shall be adjusted according to article 520.04 of the standard specifications when the deck is poured at an ambient temperature other than 50°F.

Protective coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.



Handwritten signature and date: 3/4/07

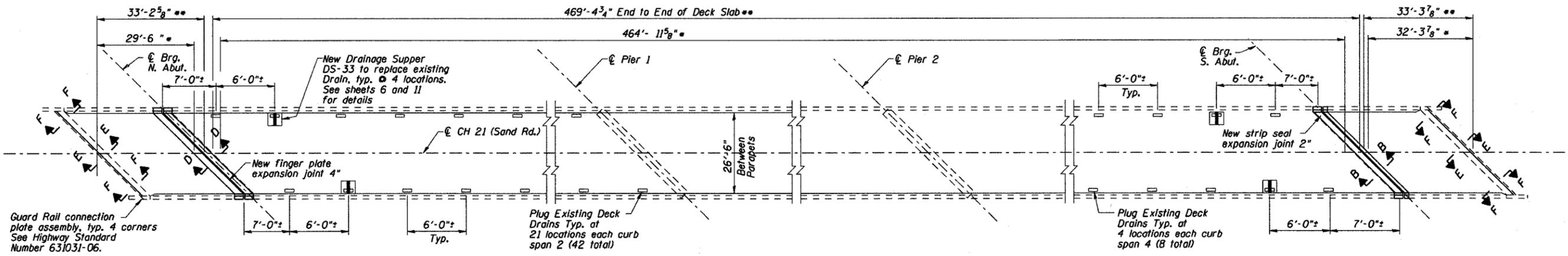


LOCATION SKETCH

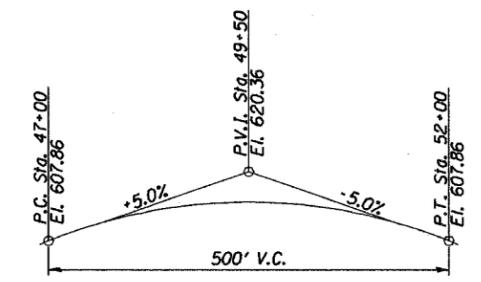
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 CH21 (SAND ROAD) BRIDGE OVER I-88  
 STRUCTURE NO: 098-0056  
 SECTION: 1195-1HB-21M  
 BRIDGE REHABILITATION  
 GENERAL PLAN & ELEVATION  
 SCALE: NTS  
 DATE: 2-07-2007  
 DRAWN BY: M.M.  
 CHECKED BY: K.G.W.

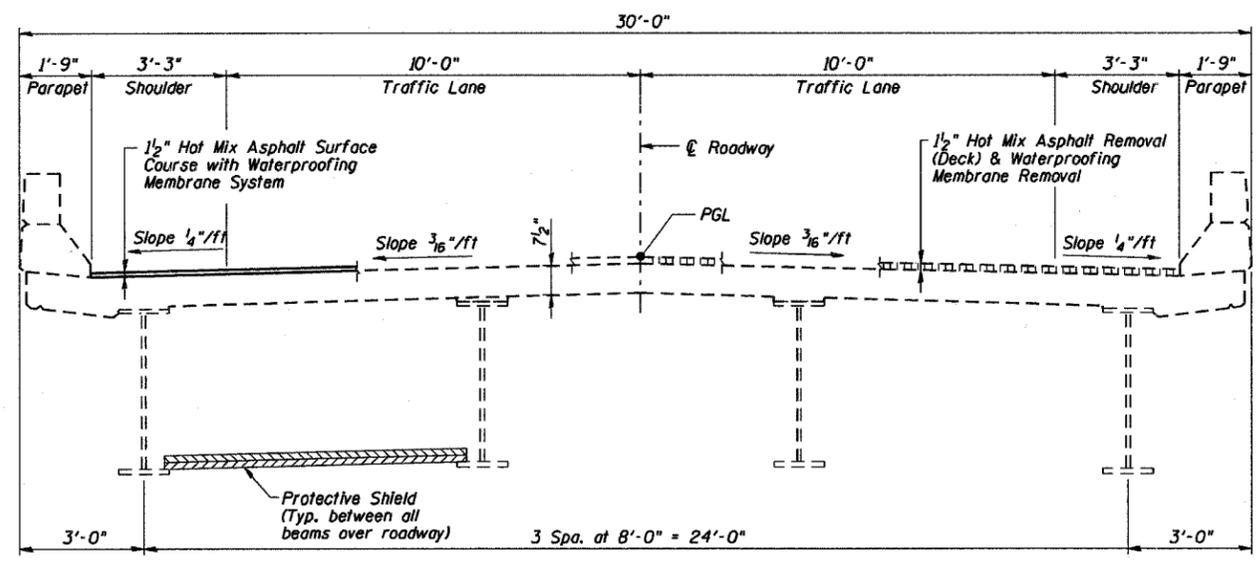
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
88	(195-1HB-2)M	WHITESIDE	17	8
STA. 44+17 TO STA. 55+10				
FED. AID PROJECT ILLINOIS FED. ROAD DIST. NO.				



PLAN



PROFILE GRADE CH21



DECK CROSS SECTION

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
		Superstructure
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	50
Deck Slab Repair (Full Depth, Type II)	Sq.Yd.	50
Deck Slab Repair (Partial)	Sq.Yd.	359
Protective Shield	Sq.Yd.	320
Plug Exist. Deck Drains	Each	50
Drainage Scupper DS-33	Each	4
Hot Mix Asphalt Surface Removal (Deck)	Sq. Yd.	1579
Waterproofing Membrane System	Sq. Yd.	1552
Hot Mix Asphalt Surface Course, Mix "C", N50	Ton	130.4

Notes:

- \* - Limits of Hot Mix Asphalt Surface Course and Waterproofing Membrane System
  - \*\* - Limits of Hot Mix Asphalt Removal (Deck)
- For Section B-B, see Sheet 5  
 For Section D-D, see Sheet 4  
 For Sections E-E and F-F, see Sheet 6

REVISIONS	
NAME	DATE

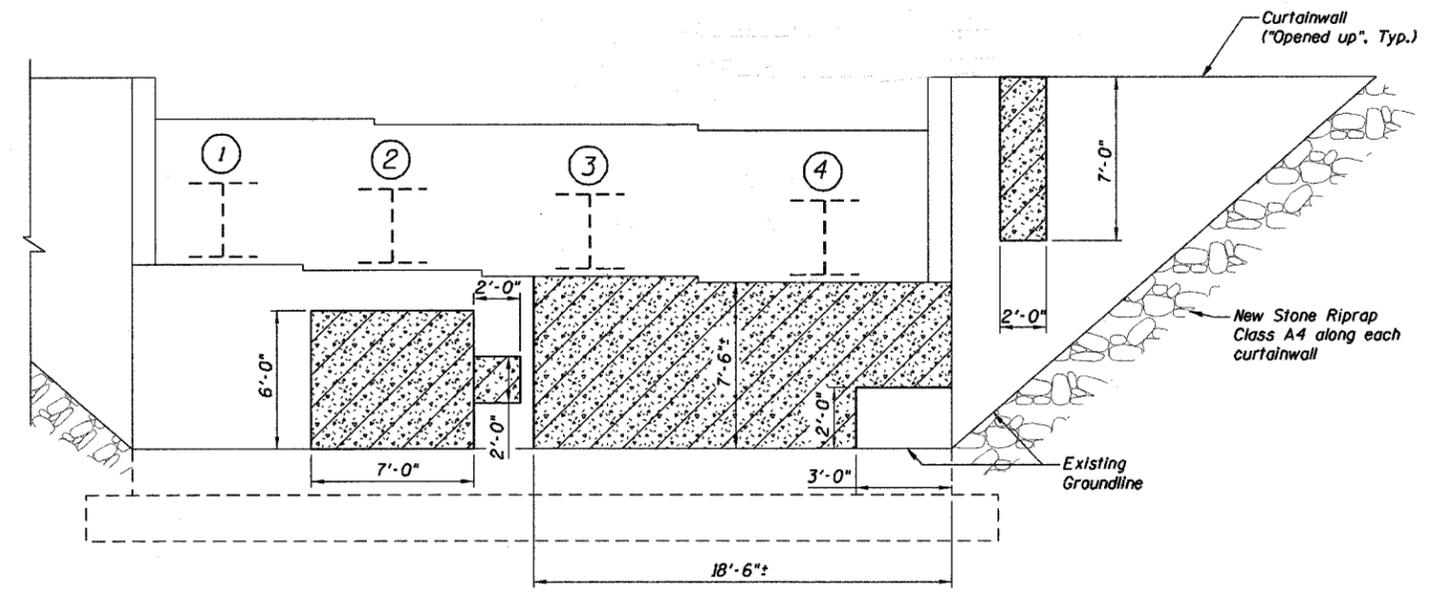
ILLINOIS DEPARTMENT OF TRANSPORTATION  
 CH21 (SAND ROAD) BRIDGE OVER I-88  
 STRUCTURE NO: 098-0056  
 SECTION: (195-1HB-2)M  
 BRIDGE REHABILITATION

DECK PLAN & CROSS SECTION

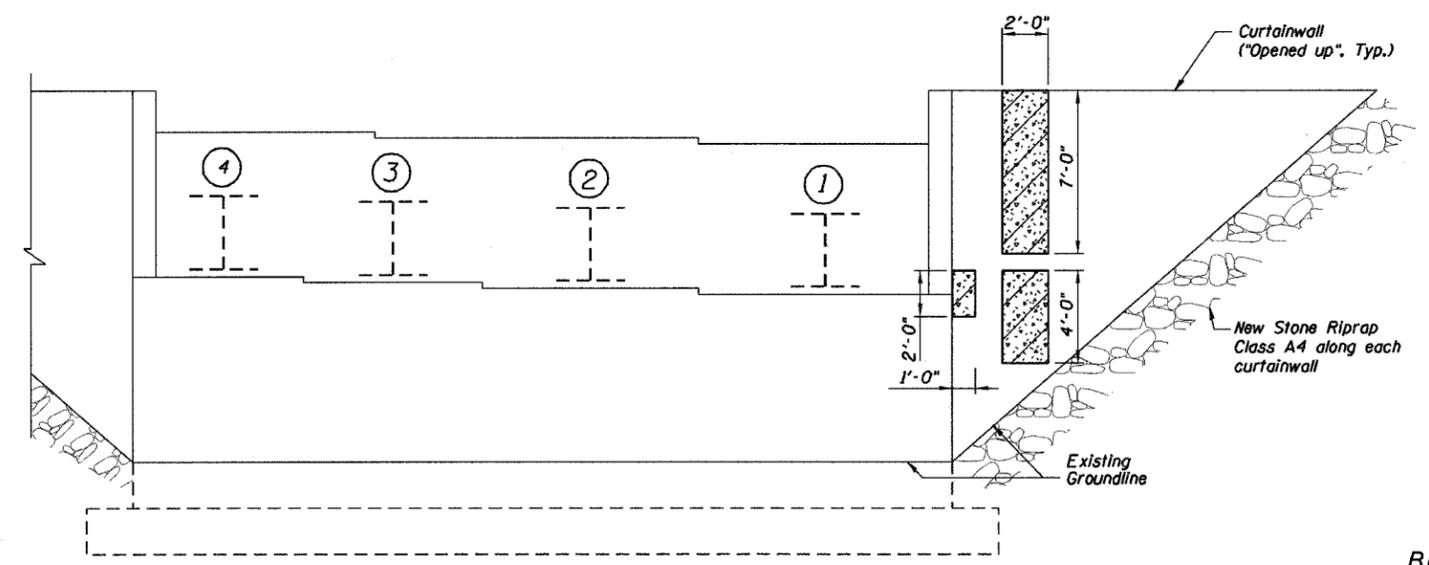
SCALE: NTS  
 DATE: 2-07-2007

DRAWN BY: M.M.  
 CHECKED BY: K.G.W.

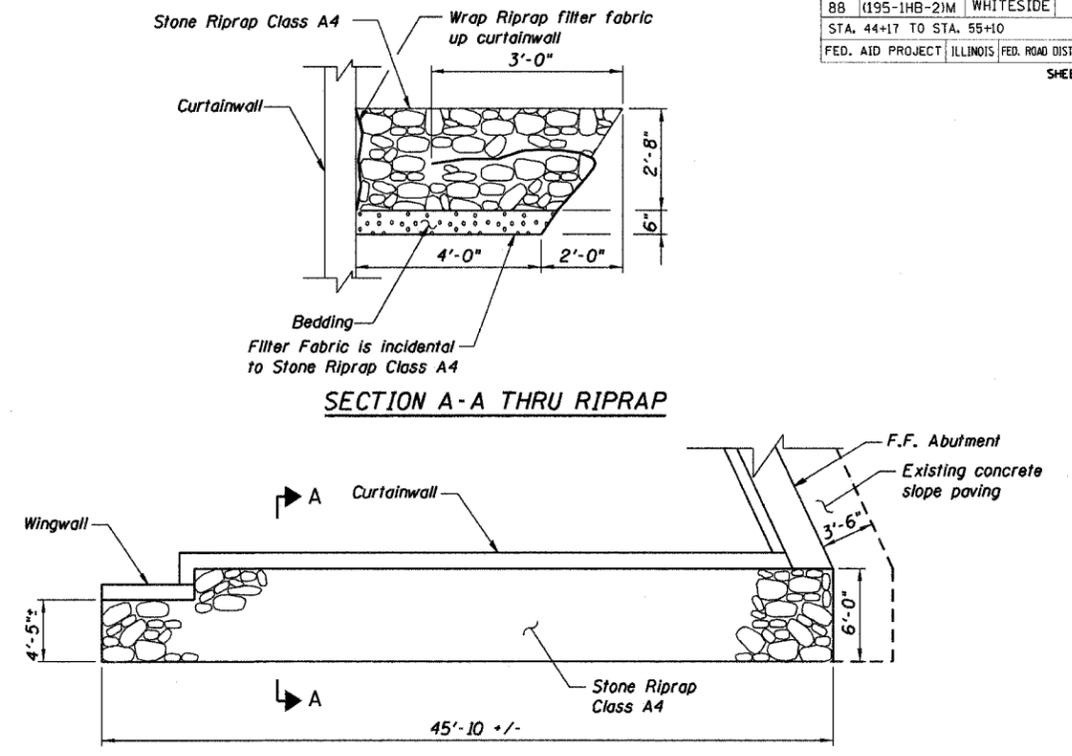
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
88	(195-1HB-2)M	WHITESIDE	17	9
STA. 44+17 TO STA. 55+10				
FED. AID PROJECT ILLINOIS FED. ROAD DIST. NO.				



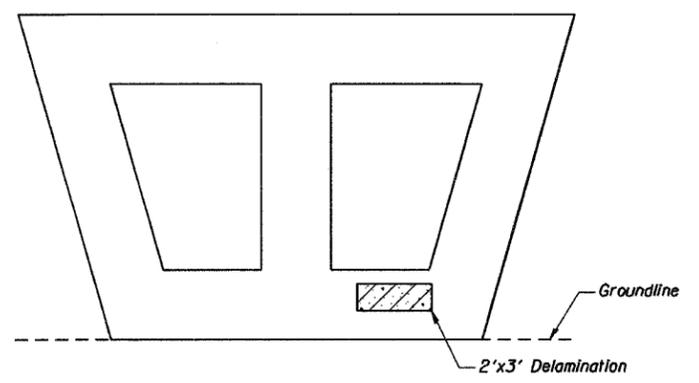
**EXIST. SOUTH ABUTMENT ELEVATION**  
(Looking South)



**EXIST. NORTH ABUTMENT ELEVATION**  
(Looking North)



**RIPRAP PLAN AT ABUTMENTS**  
(North Abutment, West side shown. Other locations similar)



**Existing North Pier**  
(Looking South)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY		
		N. Abutment & Wingwalls	S. Abutment & Wingwalls	North Pier
Structural Repair of Concrete (Depth Equal to or Less than 5")	Sq. Ft.	24	193	6
Stone Riprap Class A4	Sq.Yd.	60	60	0

**LEGEND**

Structural Repair of Concrete (Depth Equal to or Less than 5")

Girder Number

REVISIONS	
NAME	DATE

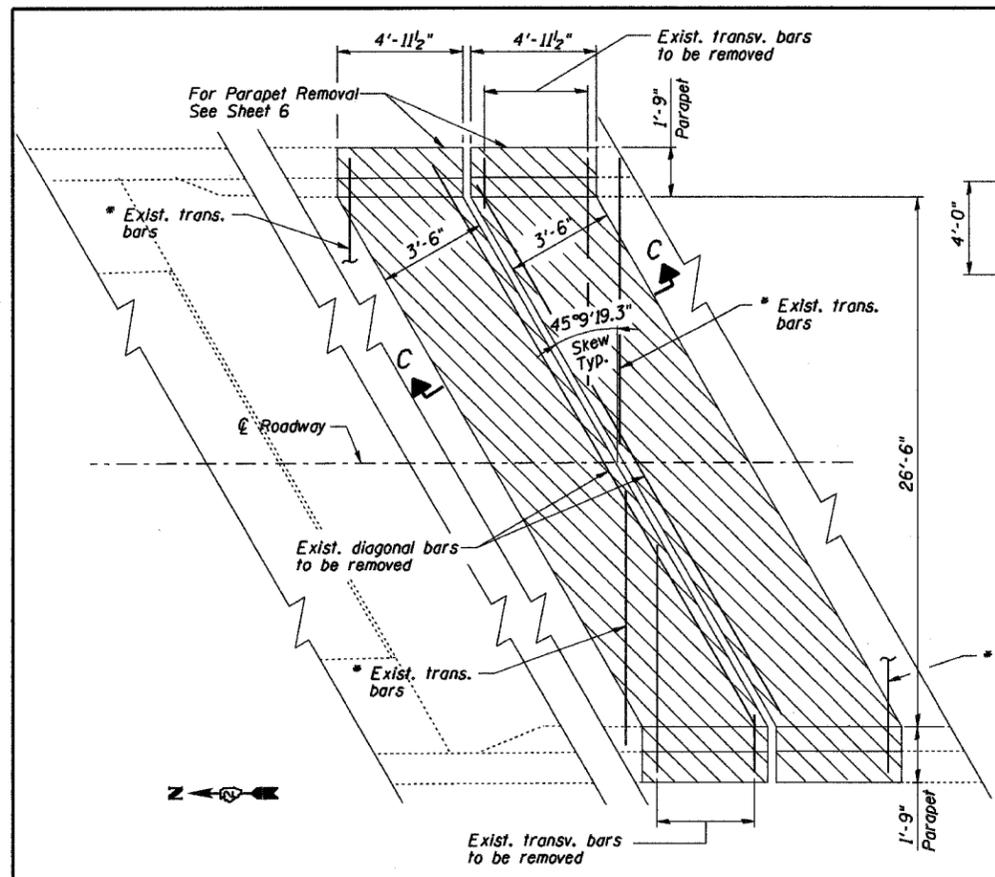
ILLINOIS DEPARTMENT OF TRANSPORTATION  
CH21 (SAND ROAD) BRIDGE OVER I-88  
STRUCTURE NO: 098-0056  
SECTION: (195-1HB-2)M  
BRIDGE REHABILITATION

SUBSTRUCTURE REPAIR & RIPRAP DETAILS

SCALE: NTS  
DATE: 2-07-2007

DRAWN BY: M.J.M.  
CHECKED BY: K.G.W.

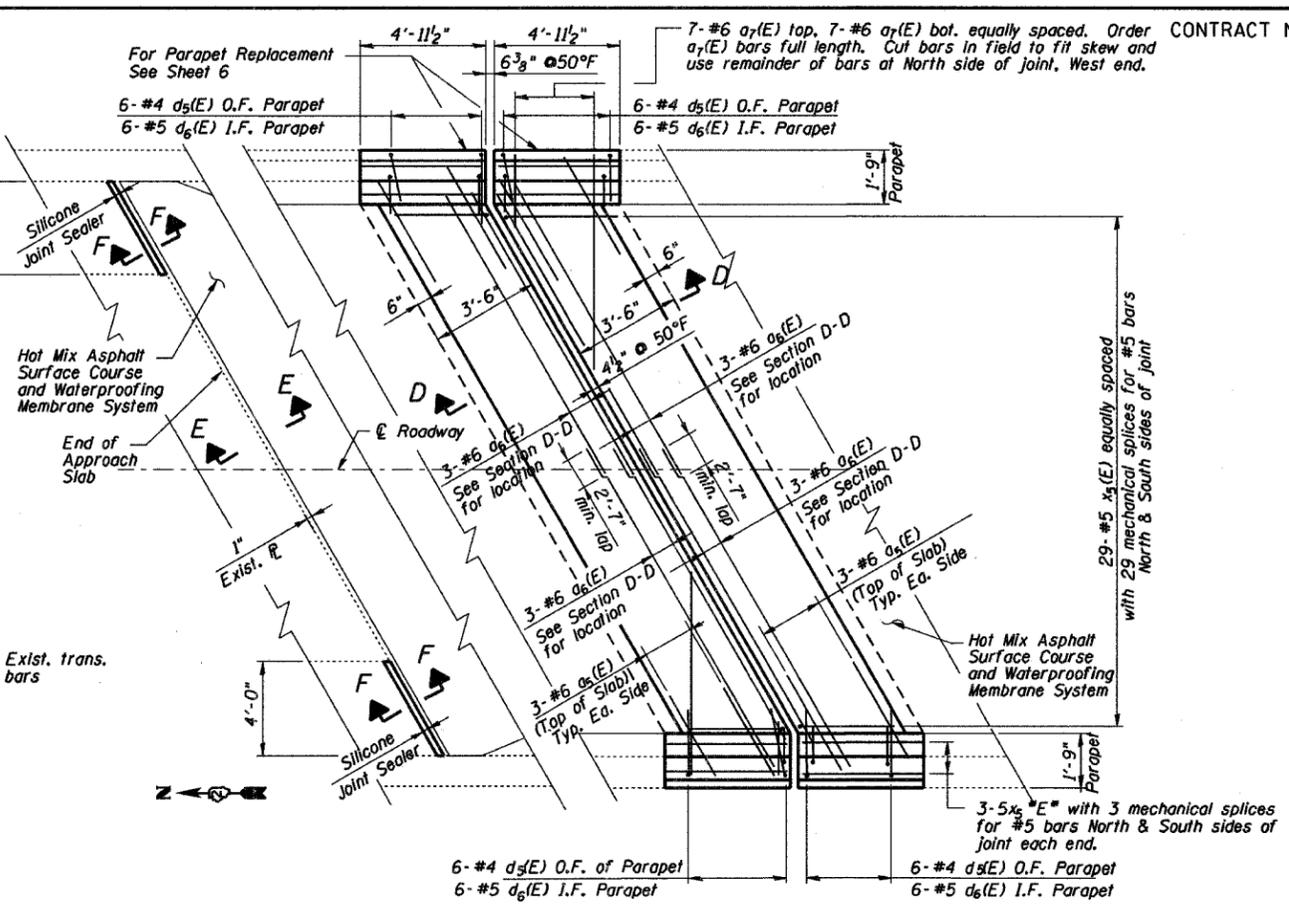
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
BB	(195-1HB-2)M	WHITESIDE	17	10
STA. 44+17 TO STA. 55+10				
FED. AID PROJECT ILLINOIS FED. ROAD DIST. NO.				
SHEET 4 OF 11				



CONCRETE REMOVAL NORTH ABUTMENT EXP. JOINT PLAN

**LEGEND**

	- Concrete Removal
	- Concrete Superstructure



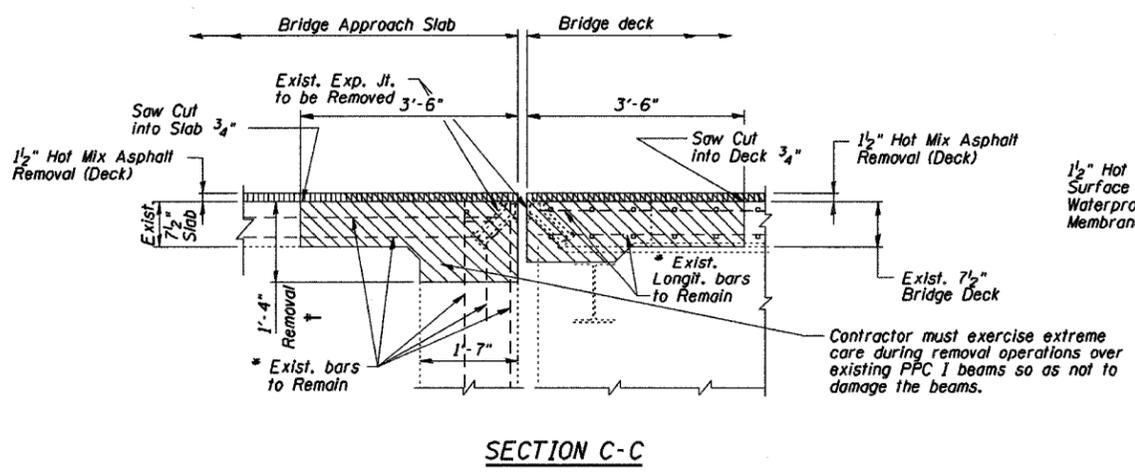
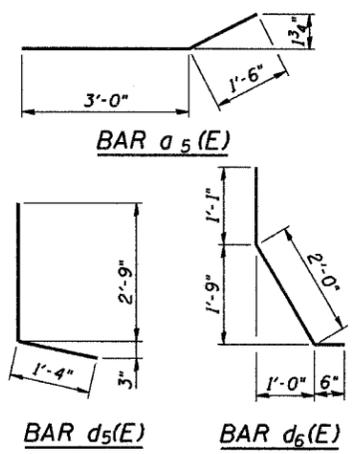
CONCRETE REPLACEMENT NORTH ABUTMENT EXP. JOINT PLAN

- NOTES:**
- \* Exist. reinforcement bars extending into the removal areas shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with approved bar splicer or anchorage system. Cost included with Concrete Removal.
  - For Sections E-E & F-F see Sheet 6.
  - † At existing prestressed girders and curtain wall, concrete removal limits shall be to the top of the beam or curtain wall. Contractor must exercise extreme care during removal operations over existing PPC I beams so as not to damage the beams.
  - Protective Coat shall be applied to the concrete deck and slab, and to the inside and top faces of the curb and parapet. Do not apply Protective Coat to surfaces that will have Waterproofing Membrane System applied.

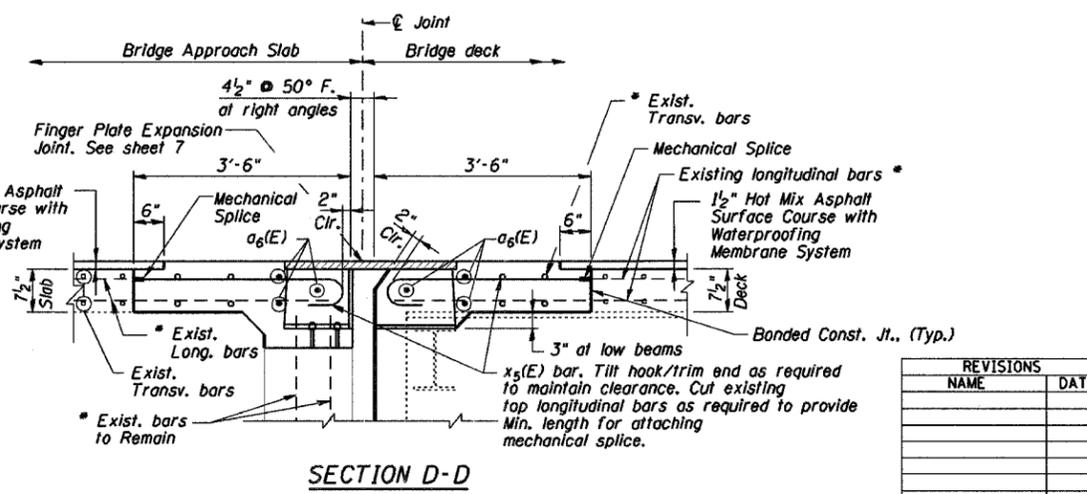
**BILL OF MATERIAL**

Bar No.	Size	Length	Shape
a5(E)	#6	4'-6"	—
a6(E)	#6	22'-3"	—
a7(E)	#6	8'-4"	—
d5(E)	#4	4'-1"	L
d6(E)	#5	3'-7"	L
x5(E)	#5	4'-7"	J
Reinforcement Bars, Epoxy Coated	Pound	1150	
Mechanical Splice	Each	70	
Protective Coat	Sq. Yd.	23	
Concrete Removal	Cu. Yd.	11.0	
Concrete Superstructure	Cu. Yd.	12.0	
Silicone Joint Sealer	Foot	12	

Reinforcement Bars designated (E) shall be epoxy coated.



SECTION C-C



SECTION D-D

**REVISIONS**

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 CH21 (SAND ROAD) BRIDGE OVER I-88  
 STRUCTURE NO: 098-0056  
 SECTION: (195-1HB-2)M  
 BRIDGE REHABILITATION

JOINT DETAILS AT NORTH ABUTMENT

SCALE: NTS  
 DATE: 2-07-2007

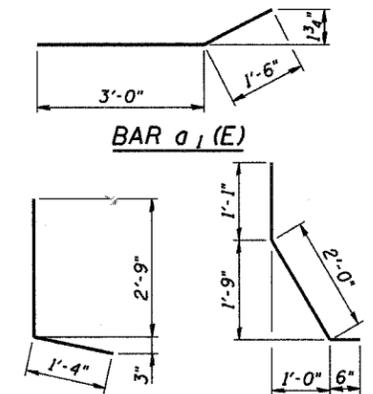
DRAWN BY: M.M.  
 CHECKED BY: K.G.W.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
88	(195-1HB-2)M	WHITESIDE	17	11
STA. 44+17 TO STA. 55+10				
FED. AID PROJECT ILLINOIS FED. ROAD DIST. NO.				
SHEET 5 OF 11				

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
$a_1(E)$	8	#6	4'-6"	—
$a_2(E)$	22	#6	22'-3"	—
$a_3(E)$	8	#6	5'-3"	—
$d_1(E)$	15	#4	4'-1"	└
$d_2(E)$	15	#5	3'-7"	└
$x_1(E)$	25	#5	3'-4"	└
$x_2(E)$	38	#5	2'-2"	└
Reinforcement Bars, Epoxy Coated		Pound	1,120	
Protective Coat		Sq. Yd.	14	
Concrete Removal		Cu. Yd.	4.7	
Concrete Superstructure		Cu. Yd.	5.2	
Silicone Joint Sealer		Foot	12	

Reinforcement Bars designated (E) shall



\*\* Dimensions are based on the Rolled Rail Strip Seal Joint. If the contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details of base sheet EJ-SSJ.

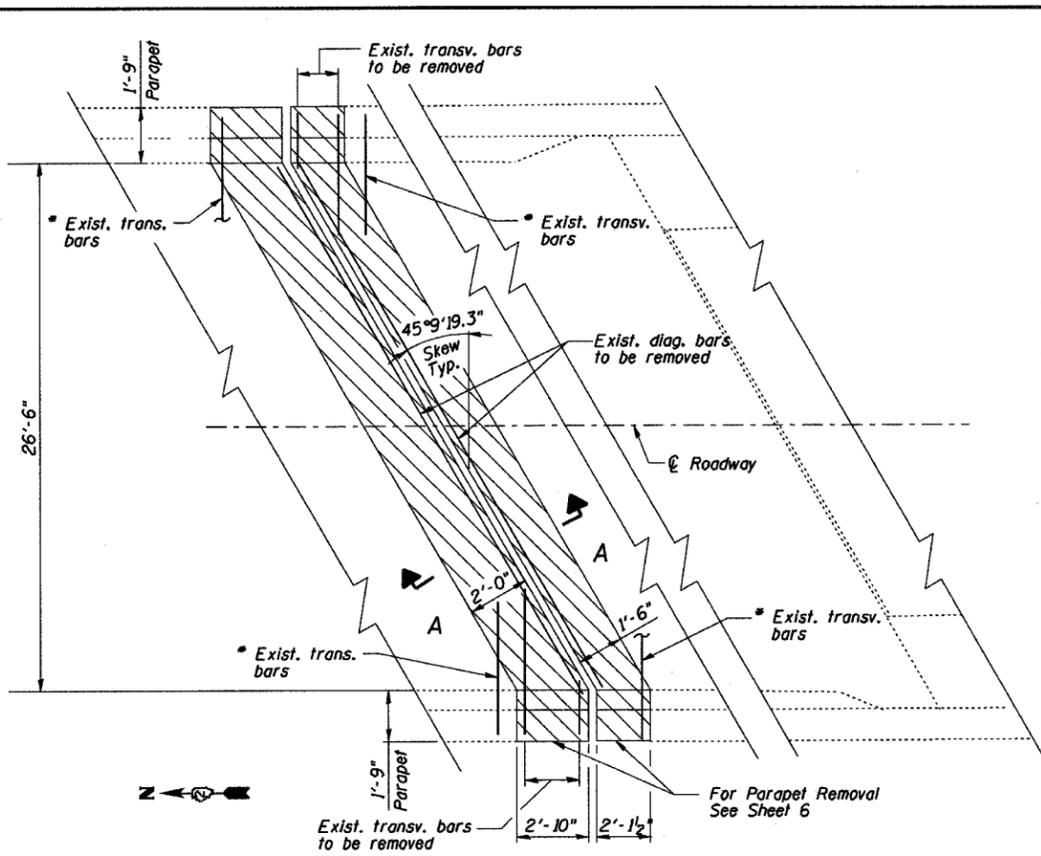
ILLINOIS DEPARTMENT OF TRANSPORTATION  
 CH21 (SAND ROAD) BRIDGE OVER I-88  
 STRUCTURE NO. 098-0056  
 SECTION: (195-1HB-2)M  
 BRIDGE REHABILITATION

JOINT DETAILS AT SOUTH ABUTMENT

SCALE: NTS  
 DATE: 2-07-2007

DRAWN BY: M.M.  
 CHECKED BY: K.G.W.

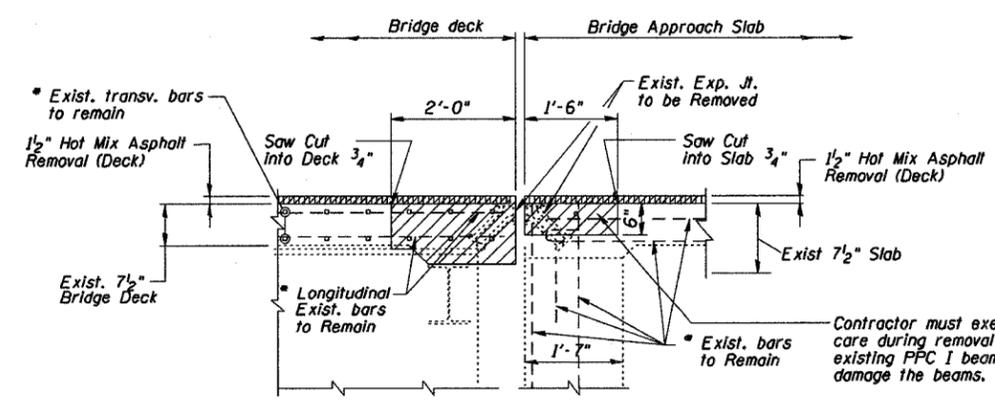
REVISIONS	
NAME	DATE



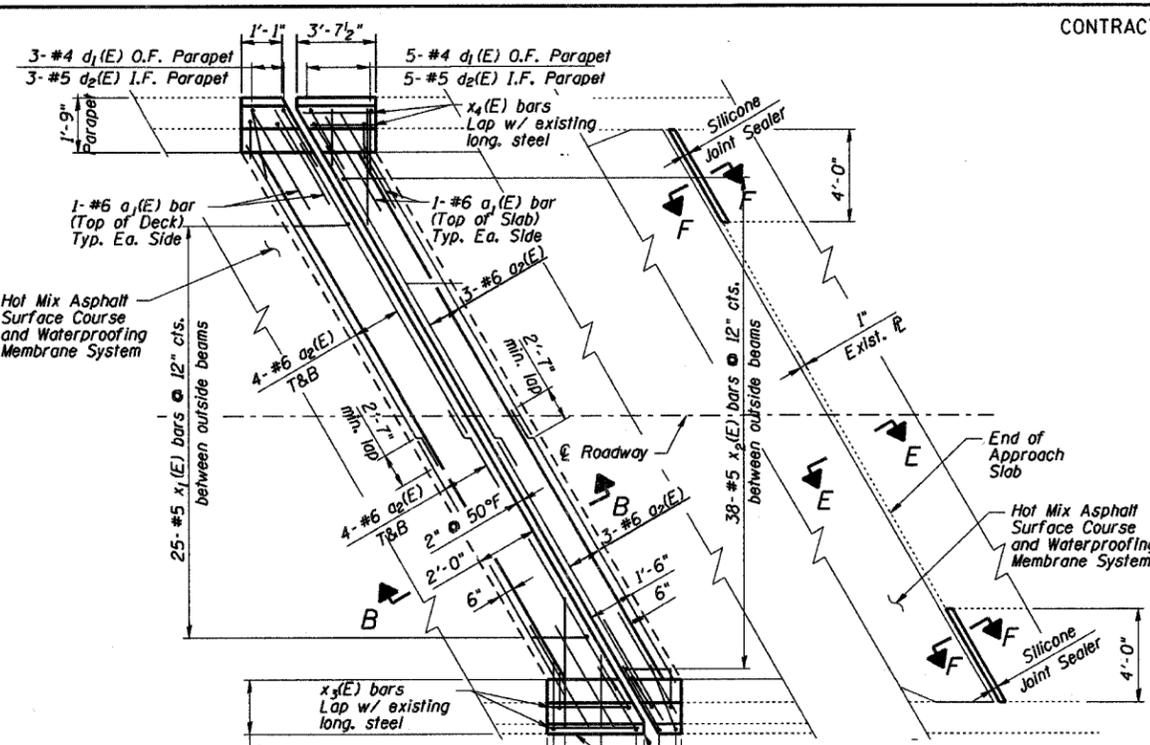
**CONCRETE REMOVAL @ SOUTH ABUTMENT EXP. JOINT PLAN**

**LEGEND**

- Concrete Removal
- Concrete Superstructure



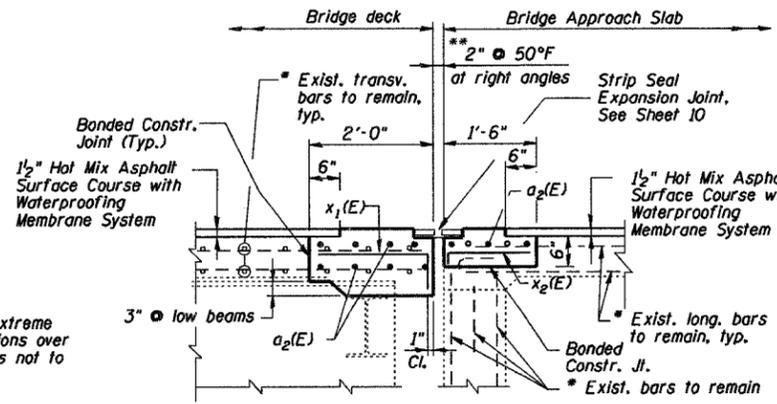
**SECTION A-A**



**CONCRETE REPLACEMENT @ SOUTH ABUTMENT EXP. JOINT PLAN**

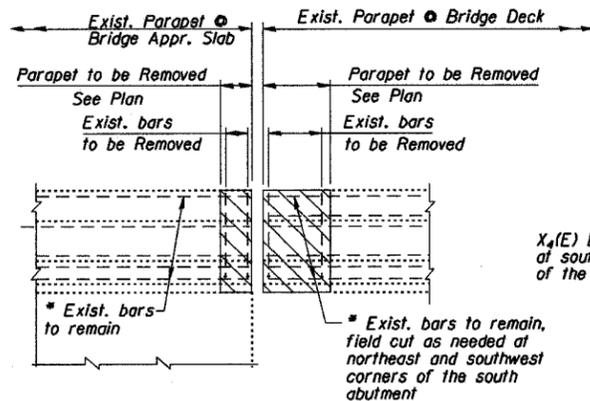
**NOTES:**

1. \* Exist. reinforcement bars extending into the removal areas shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with approved bar splicer or anchorage system. Cost included with Concrete Removal. Longitudinal bars at the northeast and southwest corners shall be field cut to fit skew as is required.
2. For Sections E-E & F-F see Sheet 6.
3. Protective Coat shall be applied to the concrete deck and slab, and to the inside and top faces of the curb and parapet. Do not apply Protective Coat to surfaces that will have Waterproofing Membrane System applied.

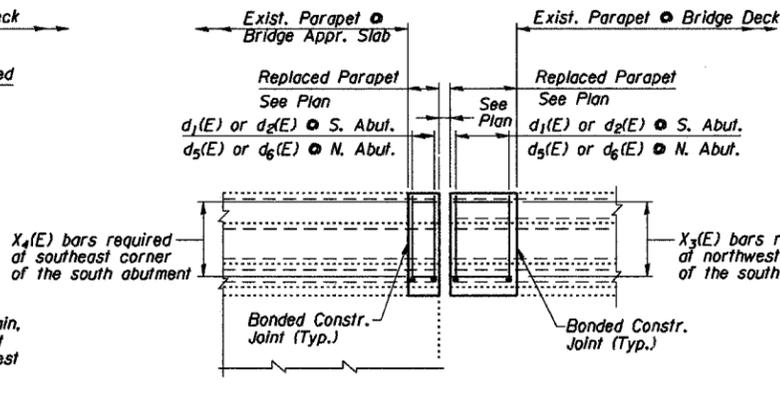


**SECTION B-B**

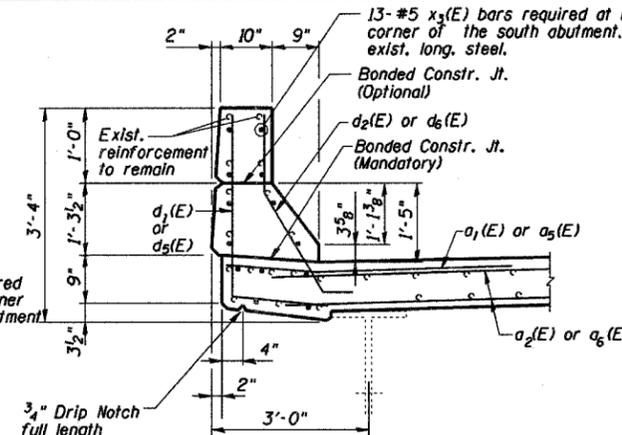
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
88	(195-1HB-2)M	WHITESIDE	17	12
STA. 44+17 TO STA. 55+10				
FED. AID PROJECT ILLINOIS FED. ROAD DIST. NO.				



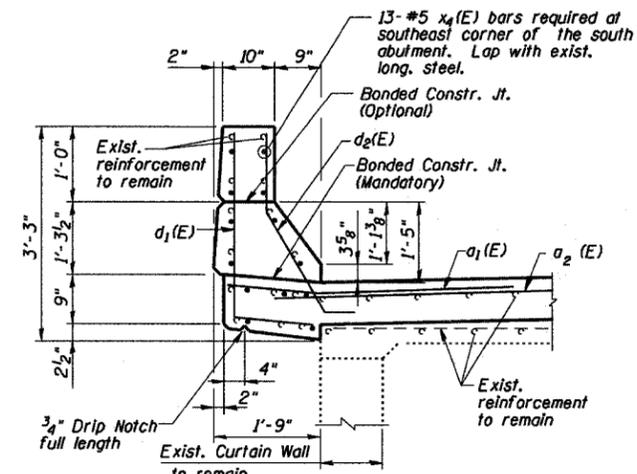
**CONCRETE REMOVAL • PARAPET ELEVATION**



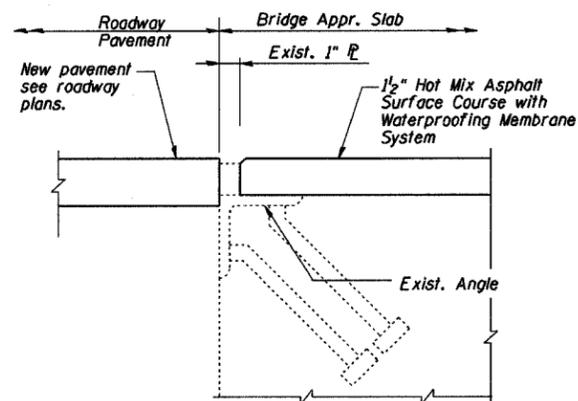
**CONCRETE REPLACEMENT • PARAPET ELEVATION**



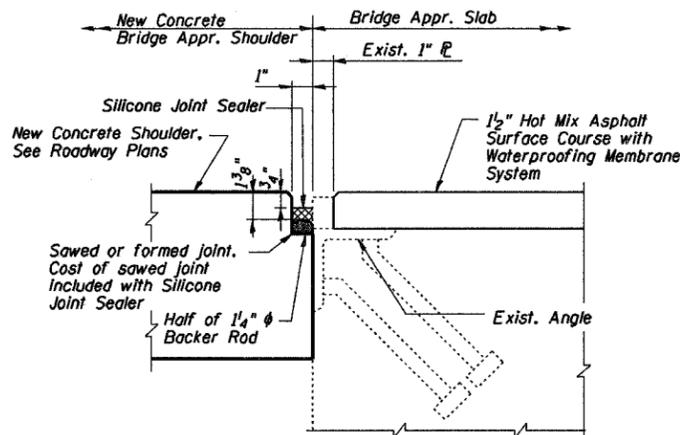
**SECTION THRU BRIDGE DECK PARAPET**



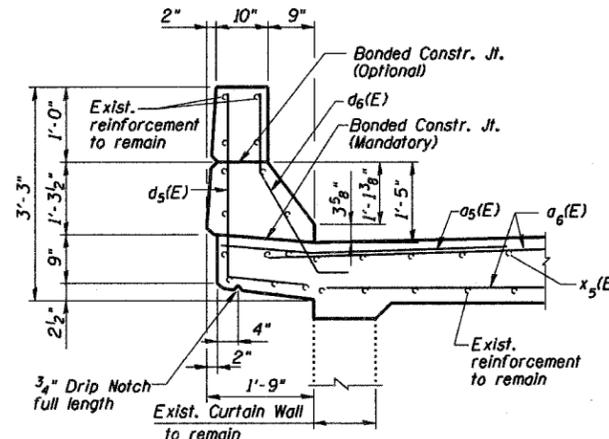
**SECTION THRU APPROACH SLAB PARAPET • S. ABUTMENT**



**SECTION E-E**



**SECTION F-F**



**SECTION THRU APPROACH SLAB PARAPET • N. ABUTMENT**

**NOTES:**

- \* Exist. reinforcement bars extending into the removal areas shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with approved bar splicer or anchorage system. Cost included with Concrete Removal or Deck Slab Repair (Full Depth, Type II).
- Cut exist. longitudinal reinforcement to clear drainage scupper.
- Hatched areas indicate concrete sections to be removed and replaced. Perimeters of concrete removal areas shall be saw cut 3/4" prior to the removal of concrete.

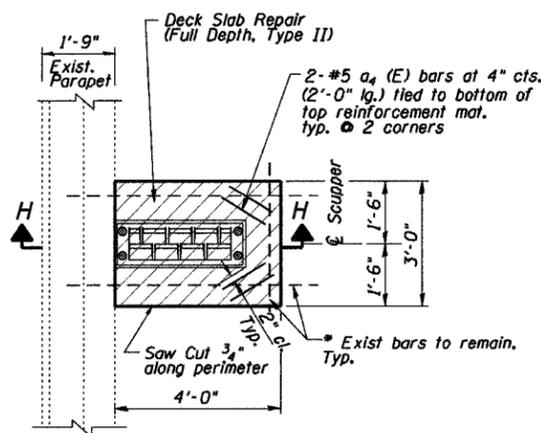
**LEGEND**

- Concrete Removal
- Deck Slab Repair (Full Depth, Type II)

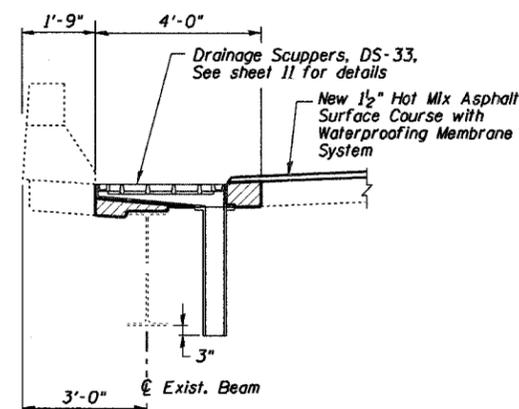
**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a4(E)	16	#4	2'-0"	—
x3(E)	13	#5	2'-5"	—
x4(E)	13	#5	1'-9"	—
Reinforcement Bars Epoxy Coated		Pound		90
Deck Slab Repair (Full Depth, Type II)		Sq. Yd.		6

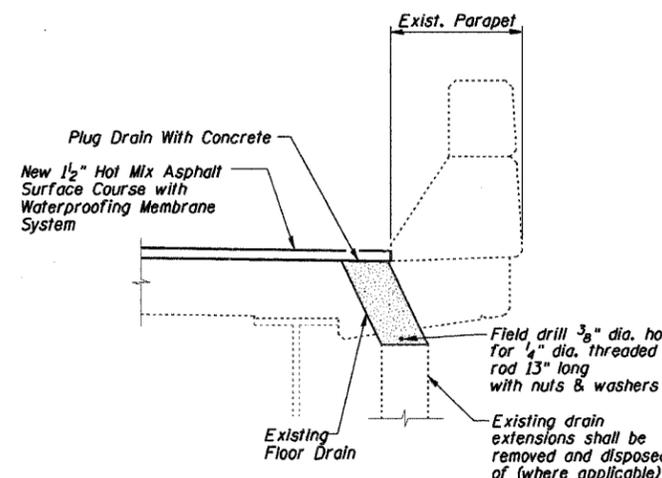
Reinforcement bars designated (E) shall be epoxy coated



**NEW SCUPPER PLAN**



**SECTION H-H**



**DRAIN ELIMINATION DETAIL**

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
CH21 (SAND ROAD) BRIDGE OVER I-88  
STRUCTURE NO: 098-0056  
SECTION: (195-1HB-2)M  
BRIDGE REHABILITATION

TYPICAL PARAPET & DECK SECTIONS & DETAILS

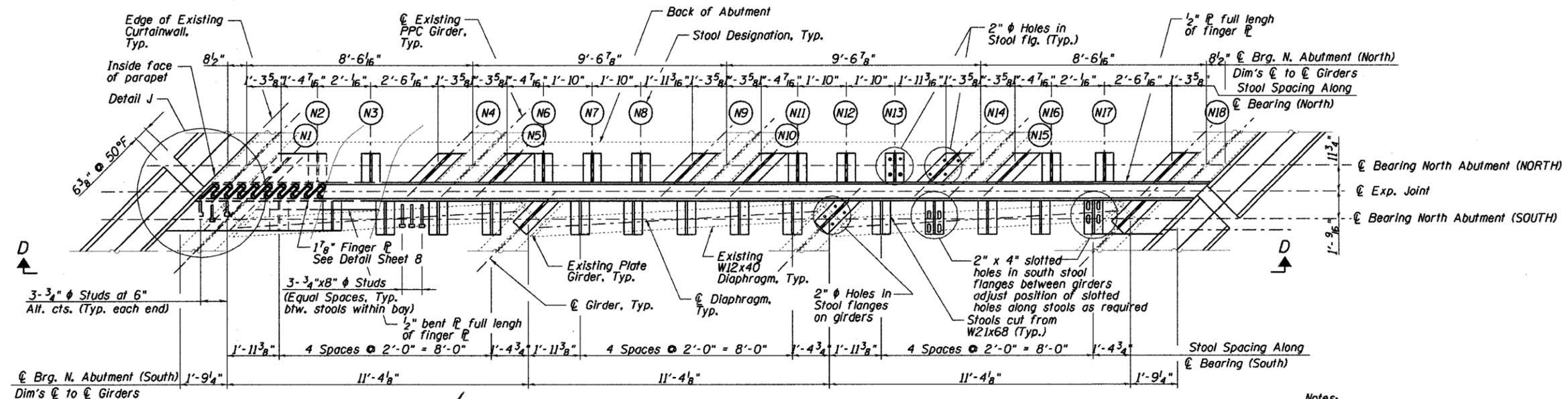
SCALE: NTS

DRAWN BY: M.M.

DATE 2-07-2007

CHECKED BY: K.G.W.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEET NO.
88	(195-1HB-2)M	WHITESIDE	17
STA. 44+17 TO STA. 55+10			13
FED. AID PROJECT ILLINOIS FED. ROAD DIST. NO.			



PLAN OF FINGER PLATE JOINT NORTH ABUTMENT

**Notes:**

Cost of removal and/or re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included in the cost of "Finger Plate Expansion Joint, 4"

Provide 1/4" normal shim plus one 1/8" and one 1/16" shim for height adjustment under the stools. Contractor shall field verify existing dimensions before ordering the finger plates. Tapered shims shall be added under the stools as required by the Engineer to make a smooth finger joint. Cost shall be included in the cost of "Finger Plate Expansion Joint 4".

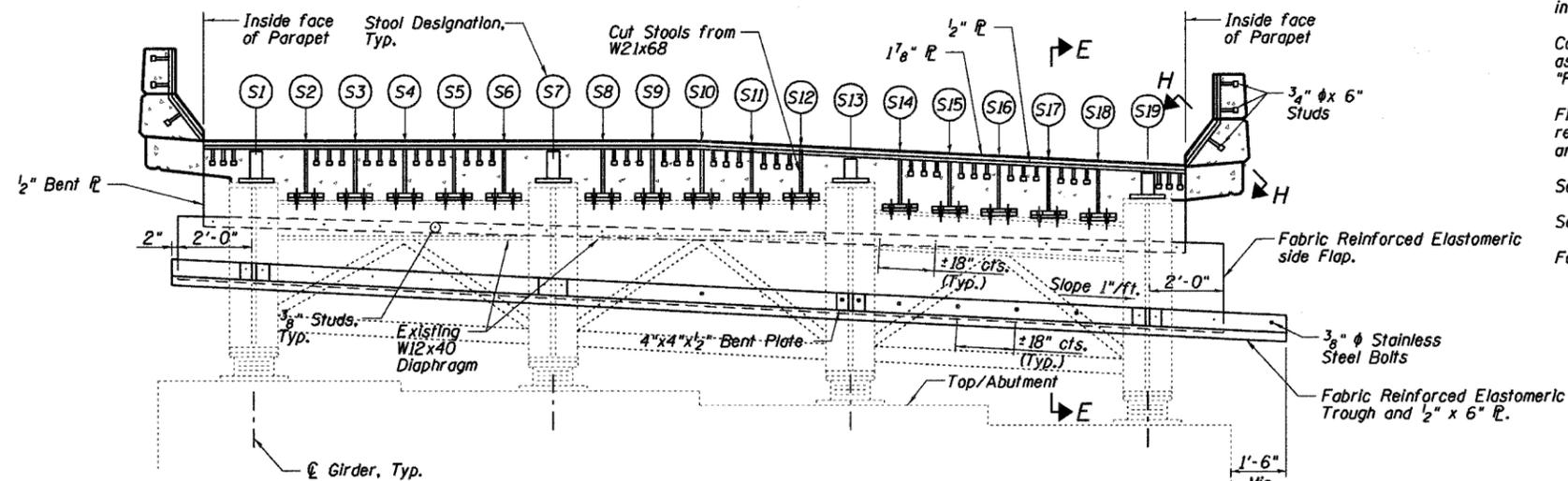
Cost for the fabric reinforced elastomeric trough and all associated hardware shall be included in the cost of "Fabric Reinforced Elastomeric Trough".

Finger Plate Expansion Joint shall be assembled in its final relative position with the ends in place for shop inspection and acceptance.

See sheet 8 for section E-E, and detail J

See sheet 9 for section H-H

For stool elevations and heights, see "Stool Variable Table" on sheet 8.



ELEVATION SECTION D-D  
(Looking North)  
South side of joint shown

**BILL OF MATERIAL**

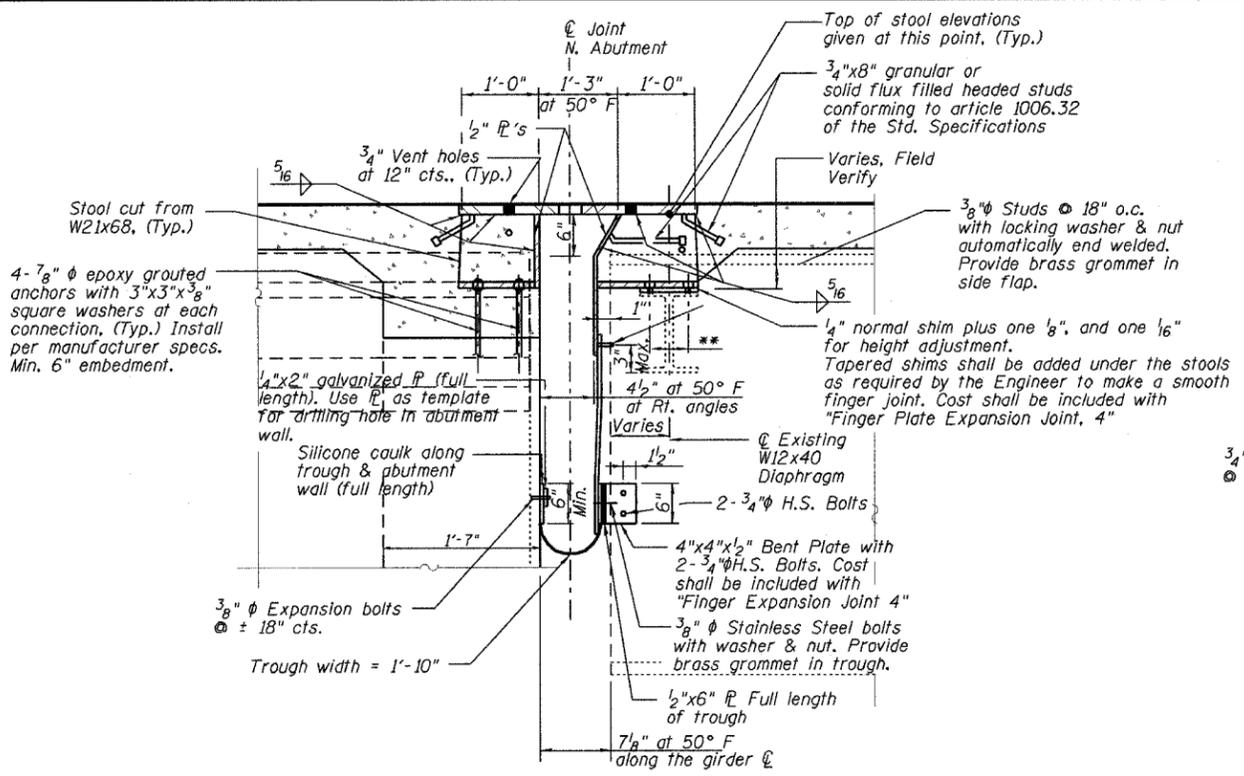
Item	Unit	Total
Finger Plate Expansion Joint 4"	Foot	37.5
Fabric Reinforced Elastomeric Trough	Foot	40.0

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
CH21 (SAND ROAD) BRIDGE OVER I-88  
STRUCTURE NO: 098-0056  
SECTION: (195-1HB-2)M  
BRIDGE REHABILITATION

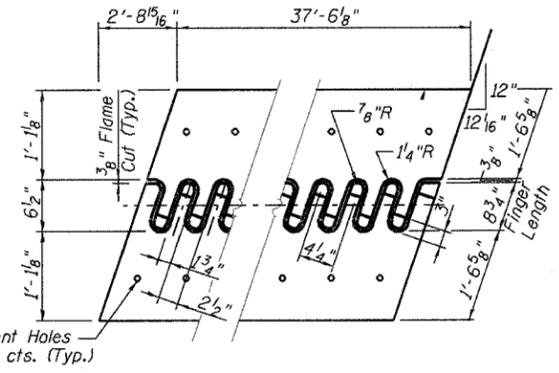
JOINT PLAN AND ELEVATION  
SCALE: NTS  
DATE: 2-07-2007  
DRAWN BY: M.M.  
CHECKED BY: K.G.W.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
88	(195-1HB-2)M	WHITESIDE	17	14
STA. 44+17 TO STA. 55+10				
FED. AID PROJECT ILLINOIS FED. ROAD DIST. NO. _____				



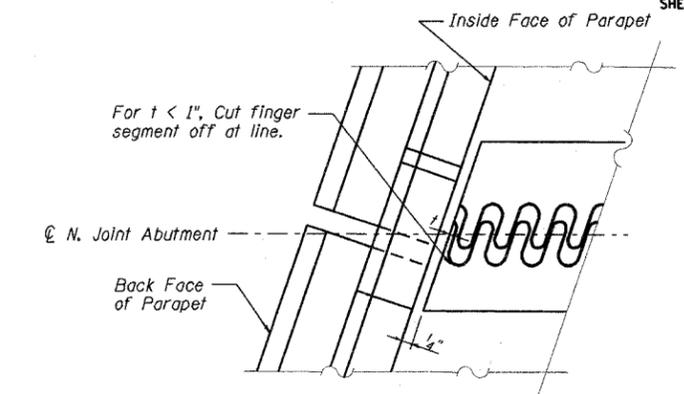
SECTION E-E

\*\* Field drill holes in existing diaphragm top flange. 4-3/4 inch high strength bolts each connection. Provide nut and 3 inch x 3 inch x 3/8 inch sq. washers at each bolt measured at right angle to abutment

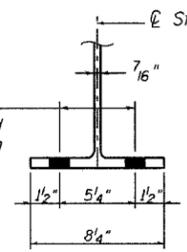


FINGER PLATE DETAIL

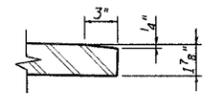
Cut from PL 1/8 inch x 2'-8 3/4 inch x 40'-3 1/16 inch (M270, GR 50)



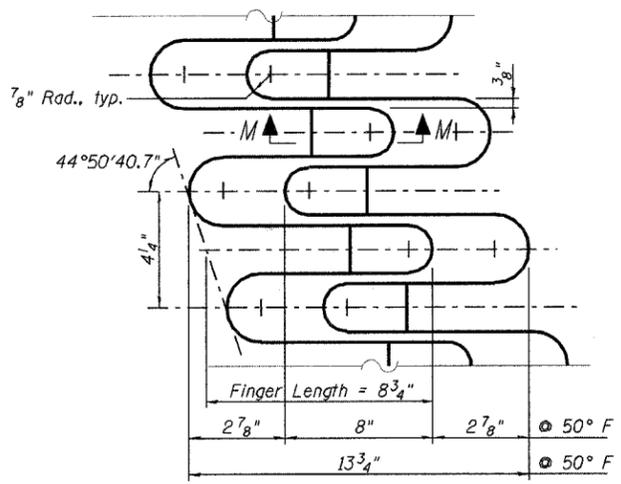
DETAIL J



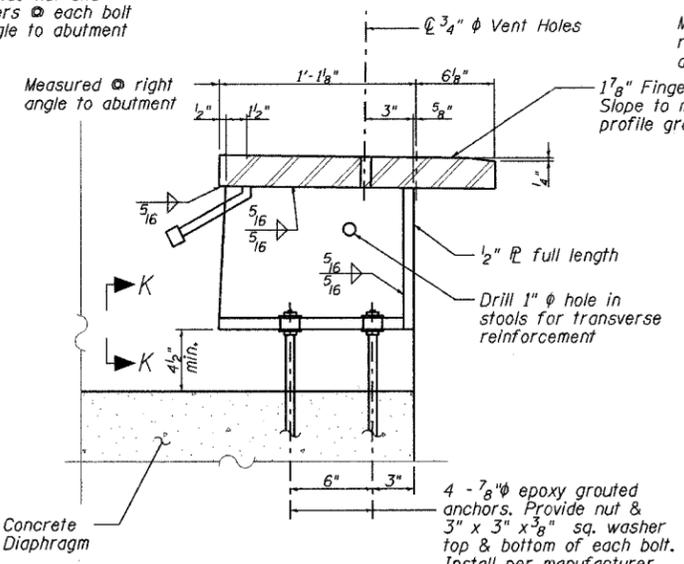
VIEW K-K



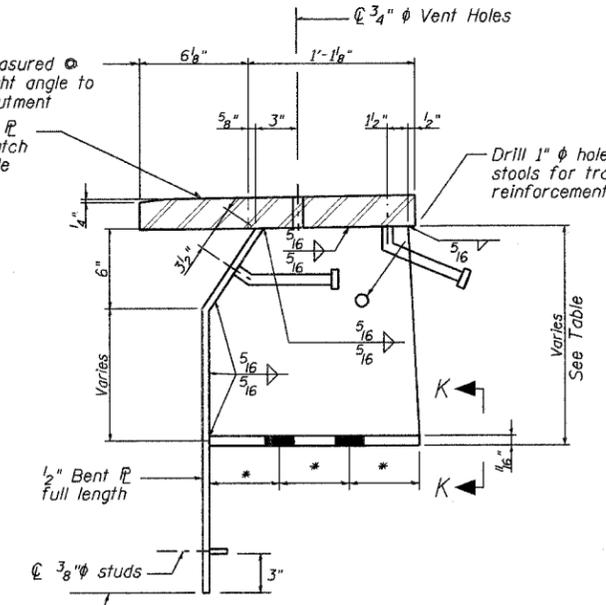
SECTION M-M



DETAIL L



STOOL DETAIL NORTH SIDE



STOOL DETAIL SOUTH SIDE

Horizontal dimensions are measured normal to back of finger plate.  
 \* Contractor shall verify dimensions with from diaphragm shop drawings and field measurements.  
 Holes to be spaced to miss stiffeners on girder mounted stools.

North Side of Joint			South Side of Joint		
Stool Designation	Top of Stool Elev. (Inches)	Stool Height (Inches)	Stool Designation	Top of Stool Elev. (Inches)	Stool Height (Inches)
N1	606.624	9	S1	606.769	7.375
N2	606.596	9	S2	606.729	12.750
N3	606.551	9	S3	606.683	13.000
N4	606.489	9	S4	606.634	13.250
N5	606.426	9	S5	606.585	13.375
N6	606.392	9	S6	606.536	13.625
N7	606.348	9	S7	606.502	7.375
N8	606.303	9	S8	606.455	14.000
N9	606.256	9	S9	606.406	14.125
N10	606.163	9	S10	606.351	14.375
N11	606.100	9	S11	606.258	14.000
N12	606.014	9	S12	606.165	13.625
N13	605.929	9	S13	606.100	7.375
N14	605.839	9	S14	606.010	13.125
N15	605.719	9	S15	605.917	12.875
N16	605.655	9	S16	605.824	12.625
N17	605.562	9	S17	605.731	12.375
N18	605.435	9	S18	605.633	12.125
			S19	605.563	7.375

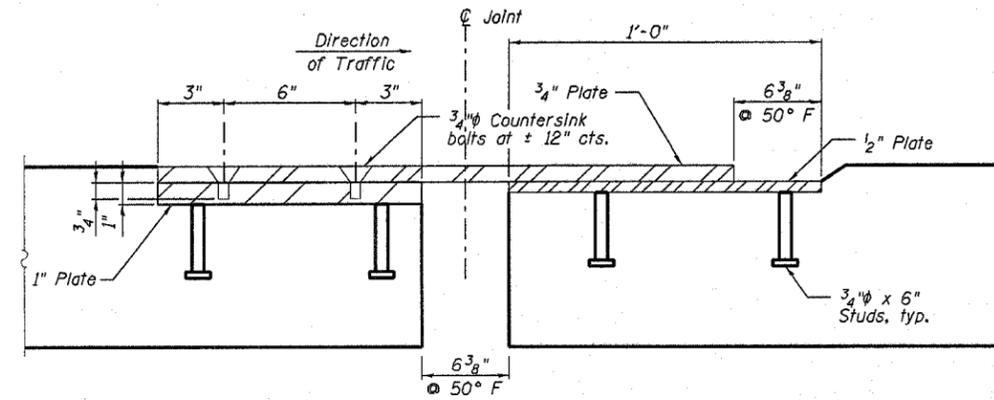
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 CH21 (SAND ROAD) BRIDGE OVER I-88  
 STRUCTURE NO: 098-0056  
 SECTION: (195-1HB-2)M  
 BRIDGE REHABILITATION  
 FINGER PLATE JOINT DETAILS  
 SCALE: NTS  
 DATE: 2-07-2007  
 DRAWN BY: M.M.  
 CHECKED BY: K.G.W.

CONTRACT NO. 64D02

F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
88	(195-1HB-2)M	WHITESIDE	17	15
STA. 44+17 TO STA. 55+10				
FED. AID PROJECT ILLINOIS FED. ROAD DIST. NO. .				

SHEET 9 OF 11



SECTION H-H

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

CH21 (SAND ROAD) BRIDGE OVER I-88  
 STRUCTURE NO: 098-0056  
 SECTION: (195-1HB-2)M  
 BRIDGE REHABILITATION

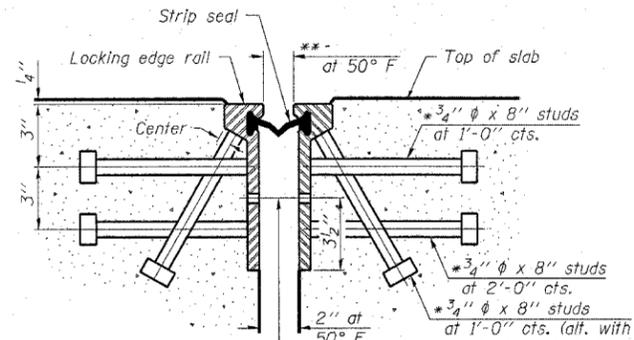
MISCELLANEOUS DETAILS

SCALE: NTS DRAWN BY: M.M.  
 DATE: 2-07-2007 CHECKED BY: K.G.W.

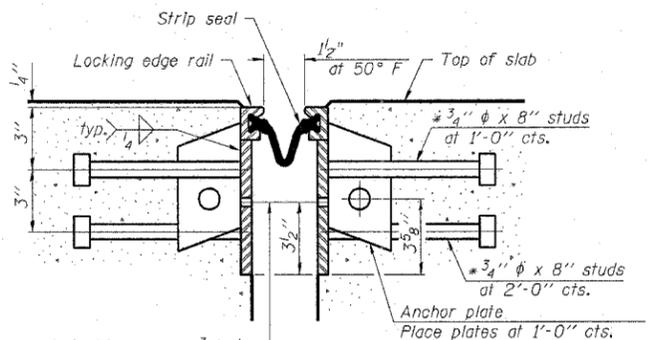
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
BB	(195-1HB-2)M	WHITESIDE	17	16
STA. 44+17 TO STA. 55+10				
FED. AID PROJECT ILLINOIS FED. ROAD DIST. NO.				

\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

\*\* When joint is fixed, dimension is set at 1 1/2".



7/16"  $\phi$  holes at 4'-0" cts. for 3/8"  $\phi$  bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.



7/16"  $\phi$  holes at 4'-0" cts. for 3/8"  $\phi$  bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

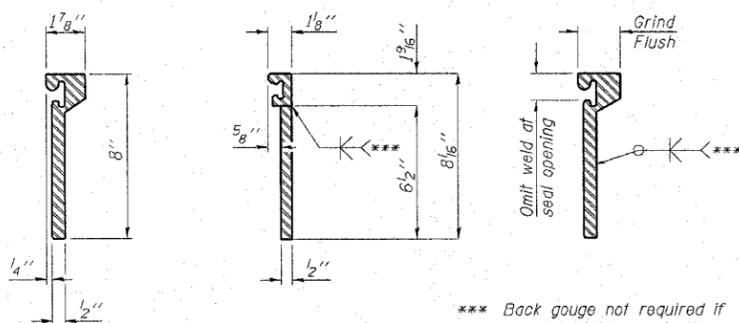
The height and thickness of the Locking Edge Rails are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.

The manufacturer's recommended installation methods shall be followed. The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

SECTION THRU ROLLED RAIL JOINT

SECTION THRU WELDED RAIL JOINT



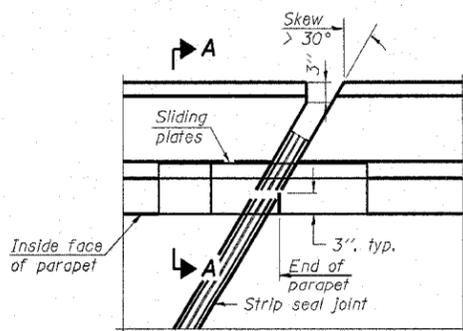
ROLLED (EXTRUDED) RAIL WELDED RAIL

\*\*\* Back gouge not required if complete joint penetration is verified by mock-up.

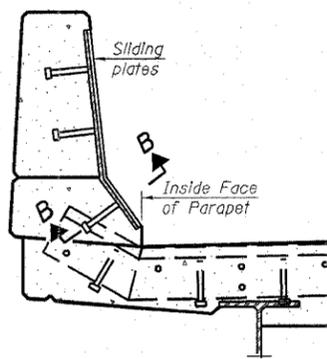
LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

LOCKING EDGE RAILS

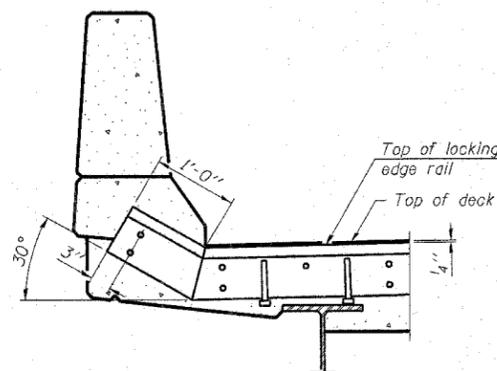


PLAN

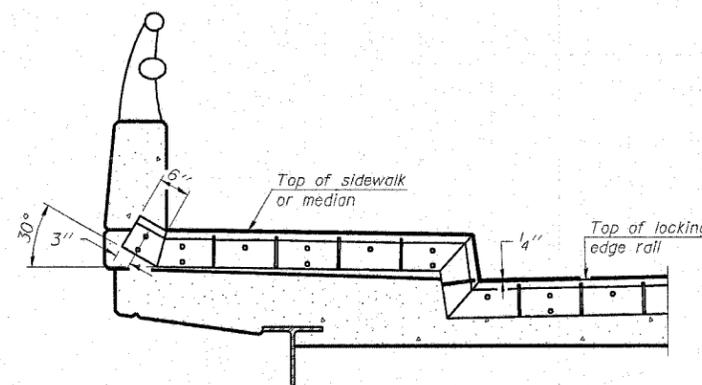


SECTION A-A

POINT BLOCK DETAILS (for skews > 30°)



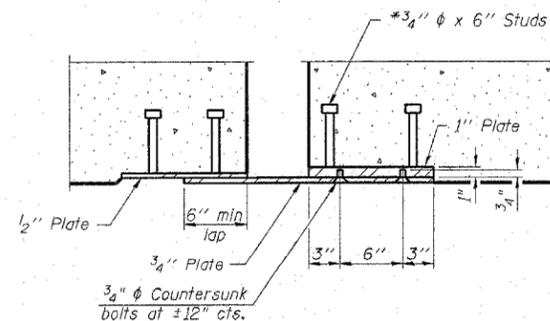
AT PARAPET



AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	40

REVISIONS	
NAME	DATE

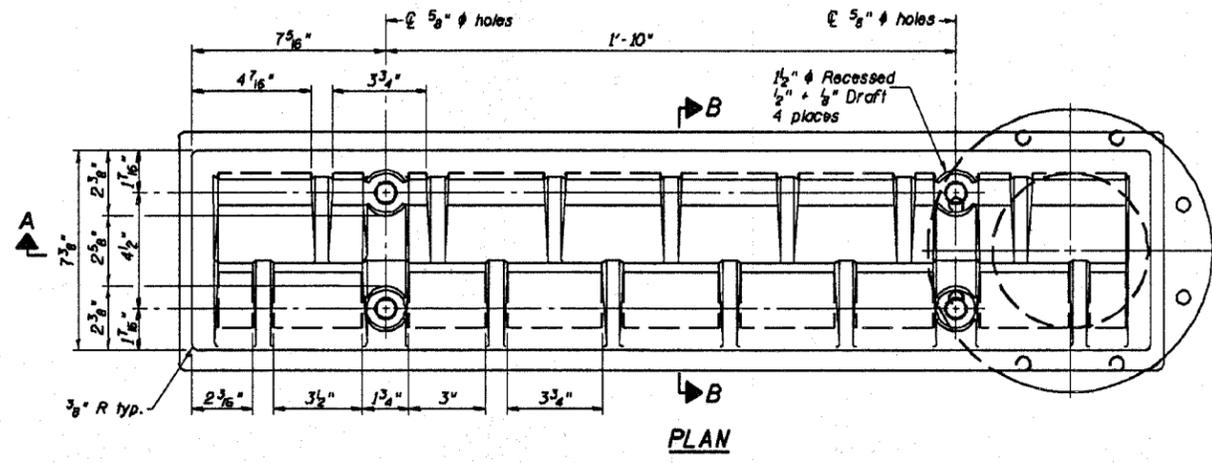
ILLINOIS DEPARTMENT OF TRANSPORTATION  
CH21 (SAND ROAD) BRIDGE OVER I-88  
STRUCTURE NO: 098-0056  
SECTION: (195-1HB-2)M  
BRIDGE REHABILITATION

PREFORMED JOINT STRIP SEAL

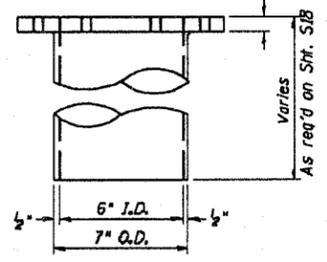
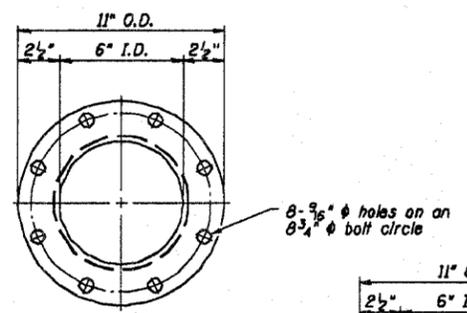
SCALE: NTS  
DATE 2-07-2007

DRAWN BY: M.M.  
CHECKED BY: K.G.W.

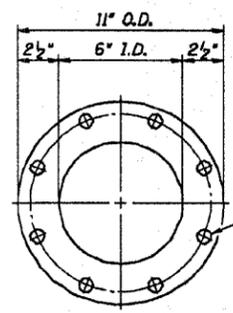
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
88 (1195-1HB-2M)	WHITESIDE	17	17
STA. 44+17 TO STA. 55+10			
FED. AID PROJECT ILLINOIS FED. ROAD DIST. NO.			



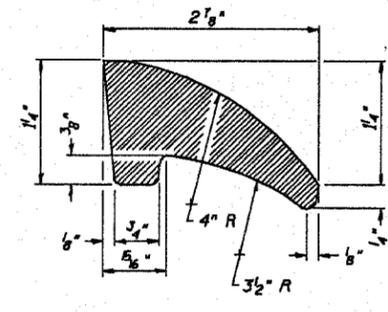
PLAN



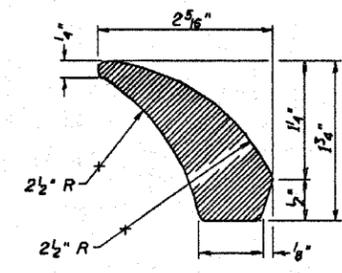
DOWNSPOUT



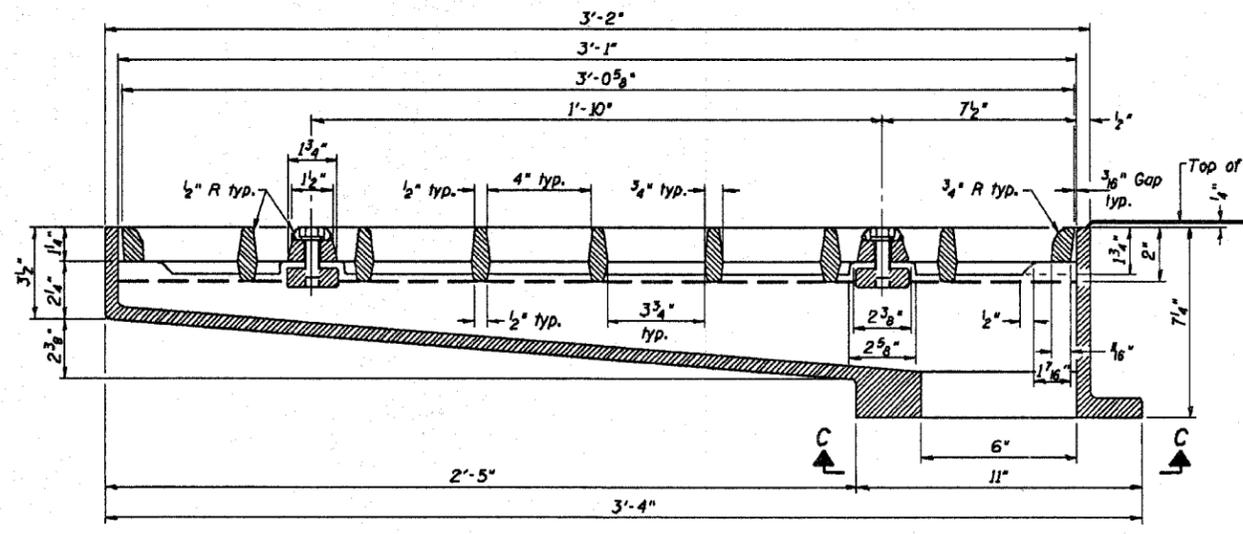
VIEW C-C



FIRST VANE DETAIL

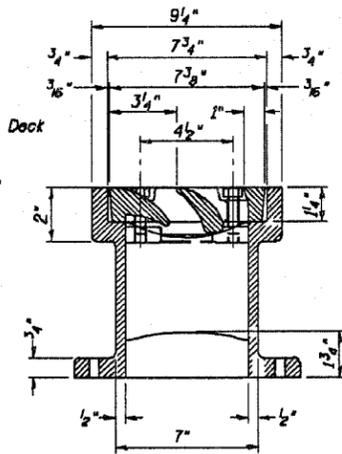


SECOND VANE DETAIL

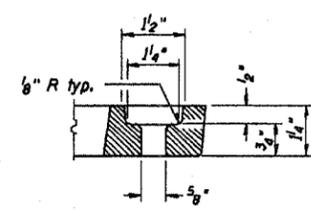


SECTION A-A

See Sheet 6 for scupper location relative to parapet.



SECTION B-B



BOLT HOLE DETAIL

Notes: All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.  
 Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.  
 The grate, frame and downspout shall be galvanized according to AASHTO M 111 and ASTM A 385. Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.  
 As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.  
 Structural steel weldments of equal sections and of the same configuration may be substituted for cast iron. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval.  
 The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.  
 Cast of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-33.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 CH21 (SAND ROAD) BRIDGE OVER I-88  
 STRUCTURE NO: 098-0056  
 SECTION: 1195-1HB-2M  
 BRIDGE REHABILITATION  
 DRAINAGE SCUPPERS, DS-33  
 SCALE: NTS  
 DATE: 2-07-2007  
 DRAWN BY: M.M.  
 CHECKED BY: K.G.W.