

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
341	04-00090-07 BR	WILL	57	1
		ILLINOIS	CONTRACT NO. 63442	

**D-91-548-08**

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- 56 DISTRICT 1 HIGHWAY STANDARD TC-11 REVISED 9/9/09
- 57 DISTRICT 1 HIGHWAY STANDARD TC-13 REVISED 9/9/09

**PROJECT LOCATED IN THE UNINCORPORATED TOWNSHIP OF JOLIET**

**HIGHWAY STANDARDS**

- 000001-05 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 280001-05 TEMPORARY EROSION CONTROL SYSTEM
- 420401-08 BRIDGE APPROACH PAVEMENT CONNECTOR
- 515001-03 NAME PLATE FOR BRIDGES
- 630001-08 STEEL PLATE BEAM GUARDRAIL
- 630301-05 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
- 631031-08 TRAFFIC BARRIER TERMINAL TYPE 6
- 635001-01 DELINEATORS
- 635006-03 REFLECTOR AND TERMINAL MARKER PLACEMENT
- 635011-02 REFLECTOR MARKER AND MOUNTING DETAILS
- 701901-01 TRAFFIC CONTROL DEVICES
- 720001-01 SIGN PANEL MOUNTING DETAILS
- 720006-02 SIGN PANEL ERECTION DETAILS
- 720011-01 METAL POSTS FOR SIGNS, MARKERS & DELINEATORS
- 780001-02 TYPICAL PAVEMENT MARKINGS
- BLR 21-8 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

**DISTRICT 1 HIGHWAY STANDARDS**

- TC-11 RAISED REFLECTIVE PAVEMENT MARKERS (SNOW PLOW RESISTANT)
- TC-13 DISTRICT ONE PAVEMENT MARKINGS

**DESIGN DESIGNATION**

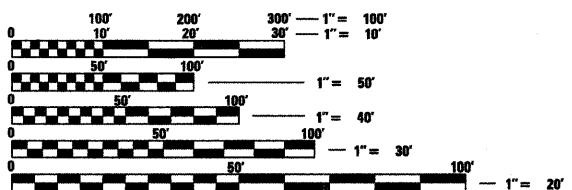
FUNCTIONAL CLASSIFICATION: COLLECTOR

**TRAFFIC DATA**

2030 ADT = 12,000 VEHICLES

**DESIGN SPEED LIMIT 45 MPH**

**POSTED SPEED LIMIT 35 MPH**



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

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

**PROJECT ENGINEER  
PROJECT MANAGER**

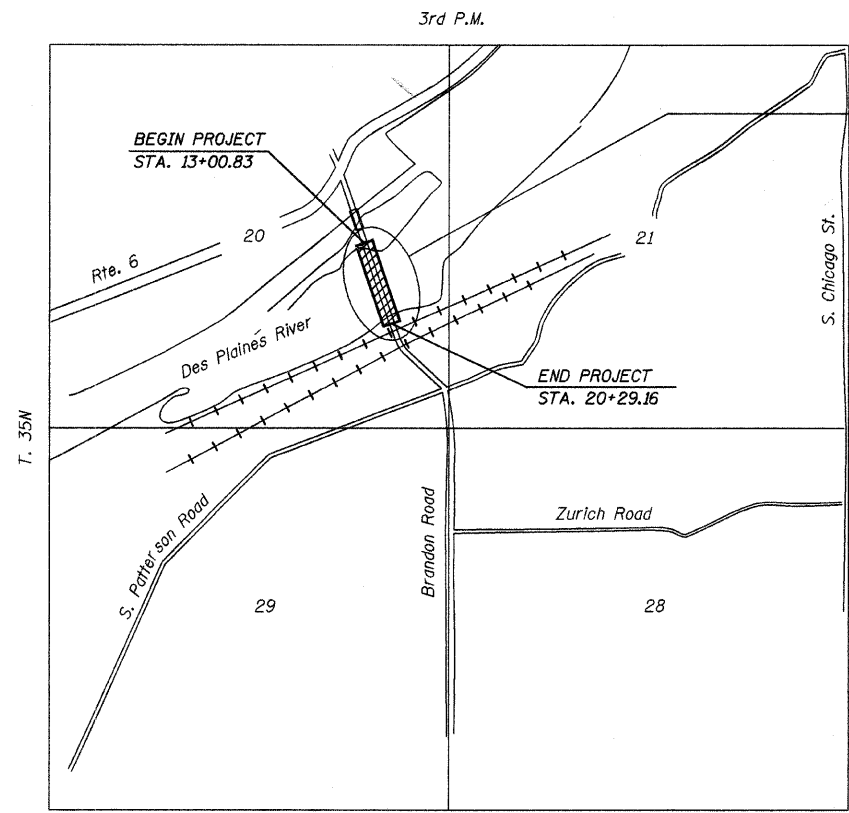
**CONTRACT NO. 63442**

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

**PROPOSED  
HIGHWAY PLANS**

**F.A.U. ROUTE 341 (BRANDON ROAD)  
COUNTY HIGHWAY 42  
SECTION 04-00090-07-BR  
PROJECT BRS-0197(110)  
BRIDGE REHABILITATION  
WILL COUNTY**

**C-91-548-08**



**PROPOSED REHABILITATION  
SN 099-3298**



LOCATION OF SECTION INDICATED THUS: - [shaded box] -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

APPROVED JANUARY 25<sup>TH</sup> 20 10  
*[Signature]*  
WILL COUNTY COUNTY ENGINEER

PASSED JANUARY 29, 2010 20  
*[Signature]*  
DISTRICT 1 ENGINEER OF LOCAL ROADS AND STREETS

RELEASING BID  
BASED ON LIMITED  
REVIEW FEBRUARY 3, 20 10  
*[Signature]*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION 1 ENGINEER

**PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS**

FIELD ENGINEER: MELCHOR MANGOBA (847) 705-4408

**TOWNSHIP OF: JOLIET**

**LOCATION MAP  
SCALE: NOT TO SCALE**

GROSS LENGTH = 728.33 FT. = 0.138 MILE  
NET LENGTH = 728.33 FT. = 0.138 MILE

**benesch**  
alfred benesch & company  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-665-0450 Job No. 3808.02

**GENERAL NOTES**

1. SEEDING SHALL NOT BE PERMITTED AT ANY TIME WHEN THE GROUND IS FROZEN, WET, OR IN AN UNTILLABLE CONDITION. LOCATIONS TO BE SEEDED WILL BE DETERMINED BY THE ENGINEER.
2. ALL ELEVATIONS REFERRING TO U.S.G.S. MEAN SEA LEVEL DATUM.
3. ALL DAMAGE TO CITY, COUNTY OR STATE OWNED UNDERGROUND FACILITIES, CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE. THIS SHALL INCLUDE ALL TEMPORARY REPAIRS REQUIRED TO KEEP THE FACILITY OPERATIONAL WHILE MATERIAL IS BEING OBTAINED TO MAKE PERMANENT REPAIRS. SPLICING OF ELECTRICAL CABLE SHALL NOT BE ALLOWED. ELECTRIC CABLE SHALL BE REPLACED FROM POLE TO POLE OR CONTROLLER.
4. EXCEPT WHERE MODIFIED BY THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS OR THE DETAILS IN THE PLANS, ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED JANUARY 1, 2007; THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS", ADOPTED JANUARY 1, 2010; THE LATEST EDITION OF THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS" MAY 1996 FIFTH EDITION; THE "DETAILS" IN THE PLANS; AND THE "SPECIAL PROVISIONS" IN THE CONTRACT DOCUMENTS.  
  
ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED AS THE LATEST IDOT STANDARDS.
5. THE CONTRACTOR SHALL PROVIDE AND INSTALL TWO (2) WEIGHTED SANDBAGS ON EACH TYPE I OR TYPE II BARRICADE USED - ONE (1) WEIGHTED SANDBAG ACROSS EACH BOTTOM RAIL.
6. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE SOIL AND GROUNDWATER CONDITIONS AT THE SITE. COPIES OF AVAILABLE GEOTECHNICAL INFORMATION ARE AVAILABLE FROM THE COUNTY FOR REVIEW AND INFORMATION.
7. THE CONTRACTOR SHALL CONTACT THE COUNTY ENGINEER AND THE CITY OF JOLIET A MINIMUM OF 72 HOURS PRIOR TO THE PLACEMENT OF ANY TEMPORARY TRAFFIC CONTROL DEVICES.
8. BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "JULIE" AT 1-800-892-0123 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE AND GAS FACILITIES, (48 HOUR NOTIFICATION IS REQUIRED).
9. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES AND THE CITY OF JOLIET.
10. THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON CITY, COUNTY OR STATE PROPERTY WITHOUT WRITTEN PERMISSION FROM THE DEPARTMENT.
11. ALL PAVEMENT MARKING SHALL BE PLACED THROUGHOUT THE PROJECT ACCORDING TO DISTRICT 1 TYPICAL PAVEMENT MARKING.
12. THE ILLINOIS DEPARTMENT OF TRANSPORTATION IS NOT THE OWNER OF RECORD FOR THIS BRIDGE. THOSE SEEKING HISTORIC, AS-BUILT OR OTHER EXISTING DOCUMENTS MUST CONTACT THE OWNER OF RECORD TO MAKE ARRANGEMENTS FOR ACCESS TO THIS INFORMATION.
13. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ACCESS TO ABUTTING PROPERTY AT ALL TIMES DURING THE CONSTRUCTION OF THIS PROJECT.
14. DO NOT SCALE PLANS FOR CONSTRUCTION DIMENSIONS. STATIONS ARE SHOWN FOR REFERENCE ONLY AND APPROXIMATE.
15. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS.
16. THE CONTRACTOR SHALL USE CARE IN REMOVING OR EXCAVATING NEAR ALL EXISTING ITEMS WHICH WILL REMAIN. ANY DAMAGE DONE TO EXISTING ITEMS BY THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
17. MATCH EXISTING PAVEMENT MARKINGS AT THE PROJECT LIMITS.

18. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS AT THE DIRECTION OF THE ENGINEER. THIS WORK IS INCIDENTAL TO THE CONTRACT.
19. THE CONTRACTOR SHALL GRADE EARTHWORK AND PLACE SEED AT THE TYPE 1 (SPECIAL) TRAFFIC BARRIER TERMINALS AS REQUIRED TO BE IN COMPLIANCE WITH THE STANDARD AND AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE INCIDENTAL TO THIS PAY ITEM.
20. IF THE CONTRACTOR CHOOSES TO USE A BARGE TO ACCESS ANY BRIDGE WORK, IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO OBTAIN ANY REQUIRED PERMITS. THE DURATION OF BARGE USE SHALL BE KEPT TO THE MINIMUM POSSIBLE. THE SIZE OF THE BARGE SHALL BE THE SMALLEST POSSIBLE TO ACCOMMODATE THE WORK.
21. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS SET FORTH IN THE REGIONAL PERMIT PROGRAM (RPP).

**MOT NOTES**

1. THE CONTRACTOR MUST FURNISH, INSTALL, MAINTAIN AND REMOVE ALL TEMPORARY SIGNS AND SUPPORTS. AFTER REMOVING THE SUPPORTS, THE CONTRACTOR MUST FILL HOLES (IF ANY) AND RESTORE THE GROUND TO ITS ORIGINAL CONDITION AND ELEVATION. THE COST OF PLACING GRAVEL, SOD, OR SEED MUST BE INCLUDED IN THE TRAFFIC CONTROL AND PROTECTION REQUIRED UNDER STANDARD 701901 AND BLR 21 AND WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE.
2. SIGNING SHALL BE PLACED AT LOCATIONS THAT WILL BE COMPATIBLE WITH EXISTING SIGNING.
3. ALL EXISTING SIGNS OR OTHER DETOUR SIGNS THAT CONFLICT WITH THE DETOUR SHALL BE COVERED.
4. ALL SIGNS SHALL BE BLACK LETTERING ON FLUORESCENT ORANGE BACKGROUND.

**HOT-MIX ASPHALT REQUIREMENTS**

MIXTURE TYPE	THICKNESS	AIR VOIDS @ NDES
BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)		
HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70 (IL-9.5 mm)	2"	4% @ 70 Gyr
HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70	10"	4% @ 70 Gyr

UNIT WEIGHT USED TO CALCULATE ALL HOT-MIX ASPHALT MIXTURES IS 112 LBS/SQ YD/IN.

THE "AC TYPE" FOR POLYMERIZED HMA MIXES SHALL BE "SBS/SBR PG 70-22" AND FOR NON-POLYMERIZED HMA THE "AC TYPE" SHALL BE "PG 64-22" UNLESS MODIFIED BY DISTRICT ONE SPECIAL PROVISIONS.  
FOR " PERCENT OF RAP" SEE DISTRICT ONE SPECIAL PROVISIONS.

FILE NAME =	DESIGNED - JRM	REVISED -	<b>benesch</b>	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>GENERAL NOTES</b>			F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	DATE - 11/30/09	REVISED -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT							

SI	SP	CODE NUMBER	ITEM	UNIT	TOTAL QUANTITY	80% FED, 20% LOCAL	
						ROADWAY SFTY-3J	STRUCTURAL X071-2A
	*	20700400	POROUS GRANULAR EMBANKMENT, SPECIAL	CU YD	126		126
		25000300	SEEDING, CLASS 3	ACRE	0.25		0.25
		25000400	NITROGEN FERTILIZER NUTRIENT	POUND	23		23
		25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	23		23
		25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	23		23
		25100630	EROSION CONTROL BLANKET	SQ YD	191		191
		28000400	PERIMETER EROSION BARRIER	FOOT	683		683
		28100107	STONE RIPRAP, CLASS A4	SQ YD	375		375
		28200200	FILTER FABRIC	SQ YD	375		375
		40300100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	3		3
		42001430	BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)	SQ YD	44		44
	*	44000700	APPROACH SLAB REMOVAL	SQ YD	240		240
		50102400	CONCRETE REMOVAL	CU YD	39.9		39.9
		50104650	SLOPE WALL REMOVAL	SQ YD	375		375
	*	50104800	REMOVAL OF EXISTING CONCRETE DECK	L SUM	1		1
		50157300	PROTECTIVE SHIELD	SQ YD	2334		2334
		50200100	STRUCTURE EXCAVATION	CU YD	156		156
		50300225	CONCRETE STRUCTURES	CU YD	69.4		69.4
		50300255	CONCRETE SUPERSTRUCTURE	CU YD	900.0		900.0
		50300260	BRIDGE DECK GROOVING	SQ YD	2224		2224
		50300300	PROTECTIVE COAT	SQ YD	2961		2961
		50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1		1
		50500505	STUD SHEAR CONNECTORS	EACH	2580		2580
	*	50500715	JACK AND REMOVE EXISTING BEARINGS	EACH	30		30
	*	50501110	STRUCTURAL STEEL REMOVAL	POUND	3790		3790
	+	50600300	CLEANING AND PAINTING STEEL BRIDGE	L SUM	1		1
	†	50606400	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES	L SUM	1		1
		50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	211,470		211,470
		50800515	BAR SPLICERS	EACH	62		62
		51500100	NAME PLATES	EACH	1		1
		52000110	PREFORMED JOINT STRIP SEAL	FOOT	96.0		96.0
		52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	10		10
		52100020	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	10		10
		52100520	ANCHOR BOLTS, 1"	EACH	40		40

SP = SPECIAL PROVISION  
SI = SPECIALTY ITEMS

△ Y080

SI	SP	CODE NUMBER	ITEM	UNIT	TOTAL QUANTITY	80% FED, 20% LOCAL	
						ROADWAY SFTY-3J	STRUCTURAL X071-2A
		52100530	ANCHOR BOLTS, 1 1/4"	EACH	20		20
		58700300	CONCRETE SEALER	SQ FT	755		755
		59000200	EPOXY CRACK INJECTION	FOOT	198		198
		59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	65		65
	*	60109580	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	104		104
	+	63000003	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	FOOT	150	150	
	+	63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4	4	
	+	* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	1	1	
	+	* 63100169	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED	EACH	1	1	
		63200310	GUARDRAIL REMOVAL	FOOT	427	427	
		67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	7		7
		67000600	ENGINEER'S FIELD LABORATORY	CAL MO	7		7
		67100100	MOBILIZATION	L SUM	1		1
	*	70102550	TRAFFIC CONTROL AND PROTECTION FOR TEMPORARY DETOUR	EACH	1		1
		70106800	CHANGEABLE MESSAGE SIGN	CAL MO	14		14
	+	72000100	SIGN PANEL - TYPE 1	SQ FT	8		8
	+	72400310	REMOVE SIGN PANEL - TYPE 1	SQ FT	8		8
	+	72900110	METAL POST - TYPE A	EACH	1		1
	+	* 78008200	POLYUREA PAVEMENT MARKING TYPE I - LETTERS AND SYMBOLS	SQ FT	58		58
	+	* 78008210	POLYUREA PAVEMENT MARKING TYPE I - LINE 4"	FOOT	2,106		2,106
	+	78100105	RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE)	EACH	20		20
	+	* 78200405	GUARDRAIL MARKERS	EACH	13		13
	*	78200530	BARRIER WALL MARKERS, TYPE C	EACH	20		20
	+	* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	2	2	
	*	X0323080	DRAINAGE SCUPPERS, DS-12	EACH	8		8
	*	X0325303	STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)	SQ FT	35		35
	*	X0325305	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	44		44
	*	X0326345	TURBIDITY BARRIER	FOOT	98		98
	*	Z0013798	CONSTRUCTION LAYOUT	L SUM	1		1
	*	Z0048665	RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1		1
	*	△ Z0076600	TRAINEES	HOUR	1000		1000

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**benesch**

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUMMARY OF QUANTITIES**

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
341	04-00090-07-BR	WILL	57	3
CONTRACT NO. 63442				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

GUARDRAIL SCHEDULE

LOCATION	TRAFFIC BARRIER TERMINAL, TYPE 6	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED	GUARDRAIL REFLECTORS	GUARDRAIL REMOVAL	TERMINAL MARKER - DIRECT APPLIED
	EACH	FOOT	EACH	EACH	EACH	FOOT	EACH
NORTHEAST APPROACH	1	37.5	0	0	3.00	78	0
NORTHWEST APPROACH	1	62.5	0	0	3.00	104	0
SOUTHEAST APPROACH	1	50	0	1	4.00	120	1
SOUTHWEST APPROACH	1	0	1	0	3.00	125	1
<b>TOTAL</b>	<b>4</b>	<b>150</b>	<b>1</b>	<b>1</b>	<b>13</b>	<b>427</b>	<b>2</b>

PAVING SCHEDULE

LOCATION	BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)
	SQ YD
NORTH APPROACH	22.00
SOUTH APPROACH	22.00
<b>TOTAL</b>	<b>44</b>

EROSION CONTROL SCHEDULE

LOCATION	EROSION CONTROL BLANKET	PERIMETER EROSION BARRIER	TURBIDITY CURTAIN	SEEDING, CLASS 3	NITROGEN FERTILIZER NUTRIENT	PHOSPHORUS FERTILIZER NUTRIENT	POTASSIUM FERTILIZER NUTRIENT
	SQ YD	FOOT	FOOT	ACRE	POUND	POUND	POUND
SOUTHEAST	92	193	98	0.25	23.00	23.00	23.00
SOUTHWEST	93	165					
NORTHEAST	3	147					
NORTHWEST	3	178					
<b>TOTAL</b>	<b>191</b>	<b>683</b>	<b>98</b>	<b>0.25</b>	<b>23</b>	<b>23</b>	<b>23</b>

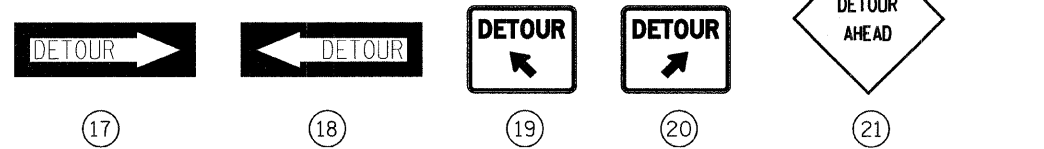
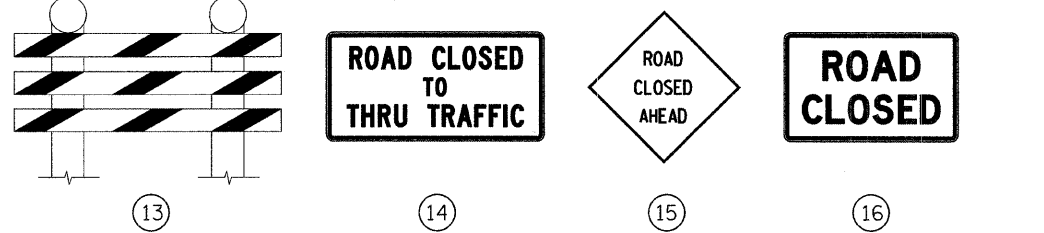
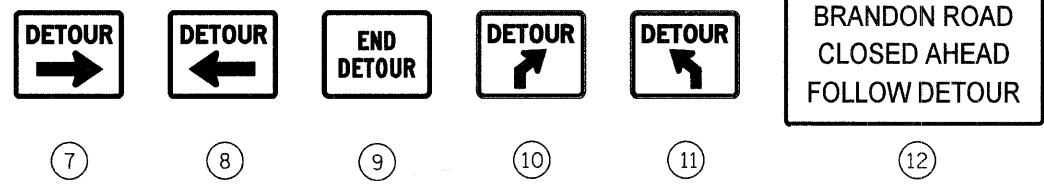
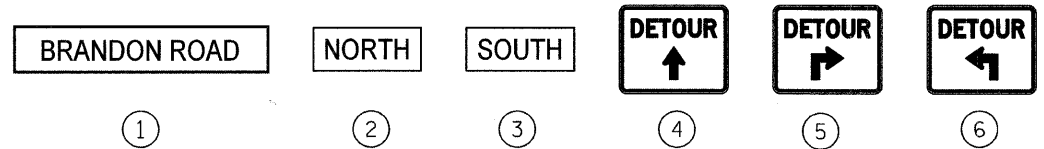
SIGNING SCHEDULE

LOCATION		REMOVE SIGN PANEL - TYPE 1	SIGN PANEL - TYPE 1	METAL POST - TYPE A
STATION	OFFSET	SQ FT	SQ FT	EACH
20+15.00	16.90	8		
20+15.00	19.60		8	1
<b>TOTAL</b>		<b>8</b>	<b>8</b>	<b>1</b>

PAVEMENT MARKING SCHEDULE

LOCATION		POLYUREA PAVEMENT MARKING TYPE 1 - LETTERS AND SYMBOLS	POLYUREA PAVEMENT MARKING TYPE 1 - LINE 4"	RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE)
STATION	STATION	SQ FT	FOOT	EACH
13+00.83	20+29.16	58	2106	20
<b>TOTAL</b>		<b>58</b>	<b>2106</b>	<b>20</b>

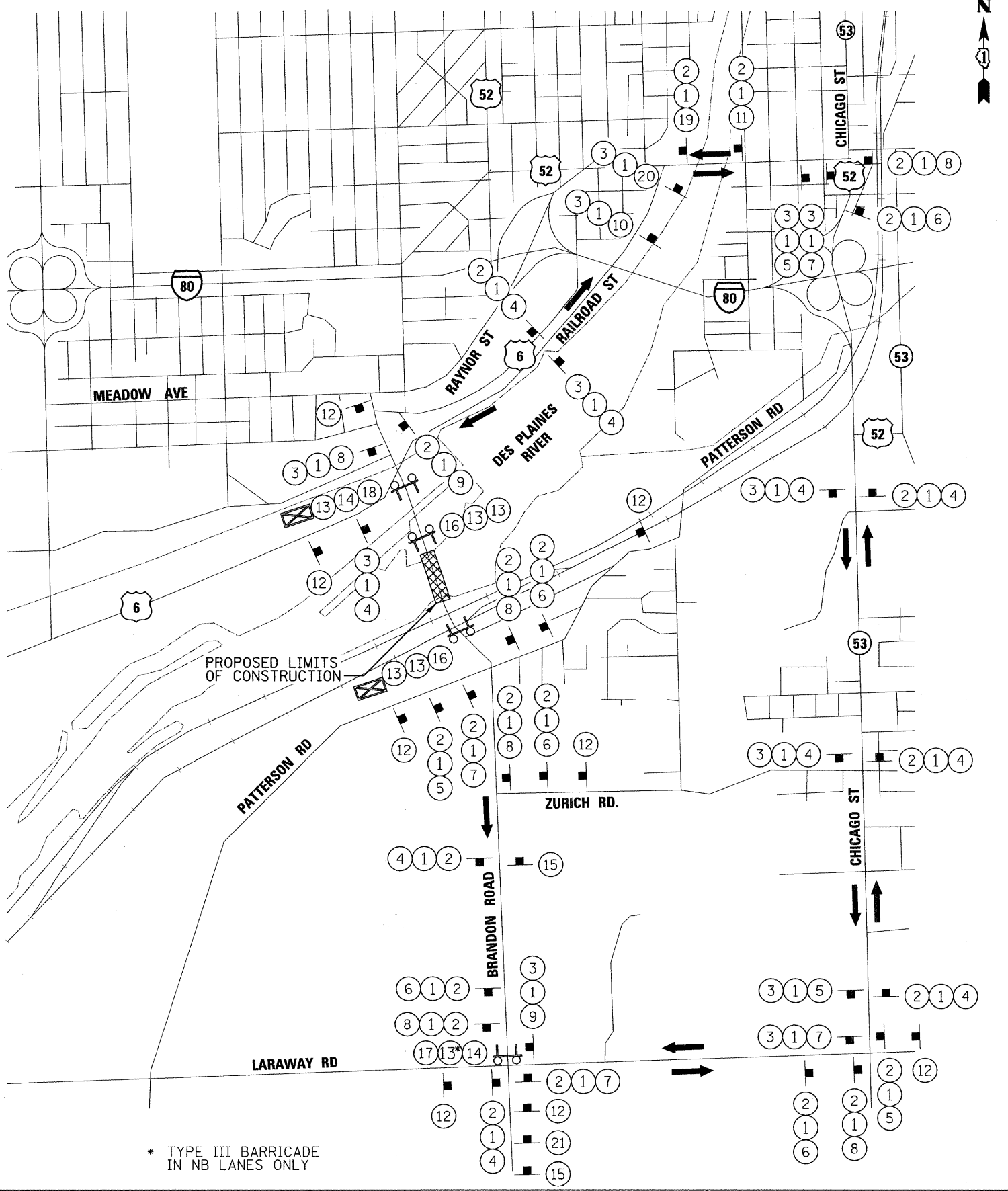




TYPICAL SIGN ASSEMBLY

- DETOUR TRAFFIC FLOW DIRECTION
- ▬ GUIDE SIGN ASSEMBLY
- ⚡ TYPE III BARRICADE WITH FLASHING LIGHTS
- ⊠ CHANGEABLE MESSAGE BOARD

NOTE:  
 FOR ADDITIONAL NOTES CONCERNING MAINTENANCE OF TRAFFIC SEE GENERAL NOTES SHEET.



\* TYPE III BARRICADE IN NB LANES ONLY

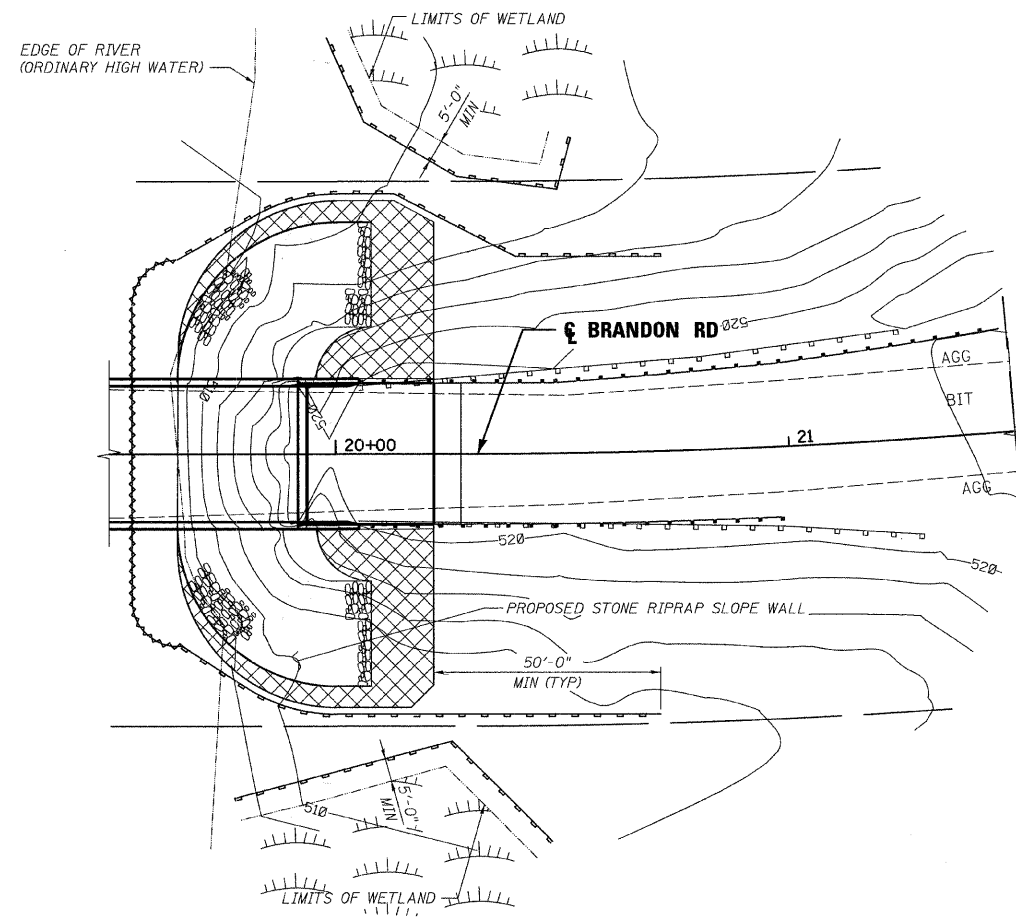
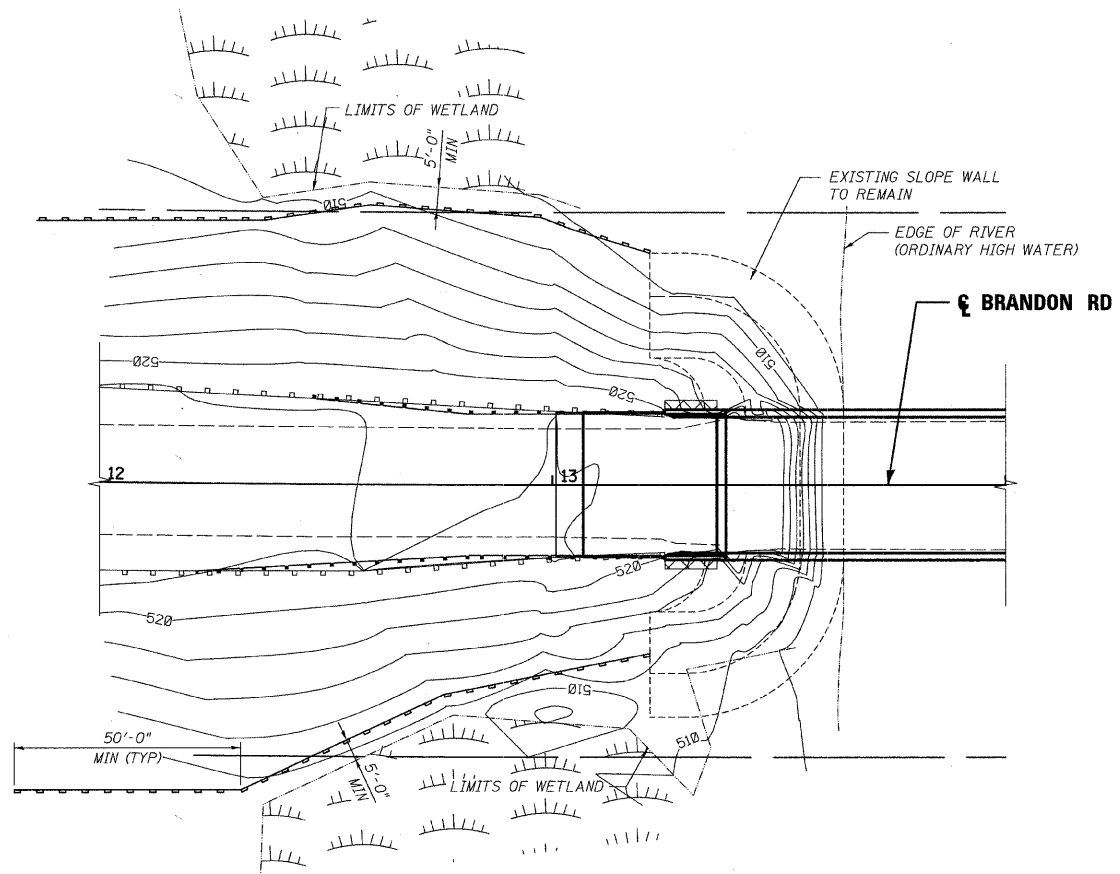
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


**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

<b>BRANDON ROAD DETOUR PLAN</b>	
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS
STA.	TO STA.

F.A.U. RTE. 341	SECTION 04-00090-07-BR	COUNTY WILL	TOTAL SHEETS 57	SHEET NO. 6
CONTRACT NO. 63442			ILLINOIS FED. AID PROJECT	



NOTE:  
PROPOSED SILT FENCE TO BE PLACE AS DIRECTED BY THE ENGINEER AS NEEDED TO PROTECT EXISTING WETLAND

-  TURBIDITY CURTAIN
-  PERIMETER EROSION BARRIER
-  SEEDING, CLASS 3 AND EROSION CONTROL BLANKET
-  EXISTING WETLANDS

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	DATE - 11/30/09	REVISED -

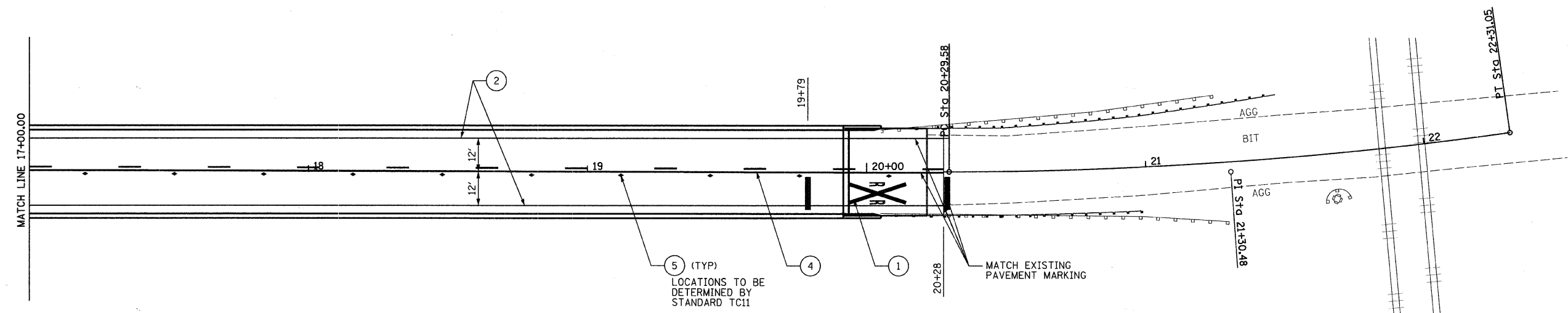
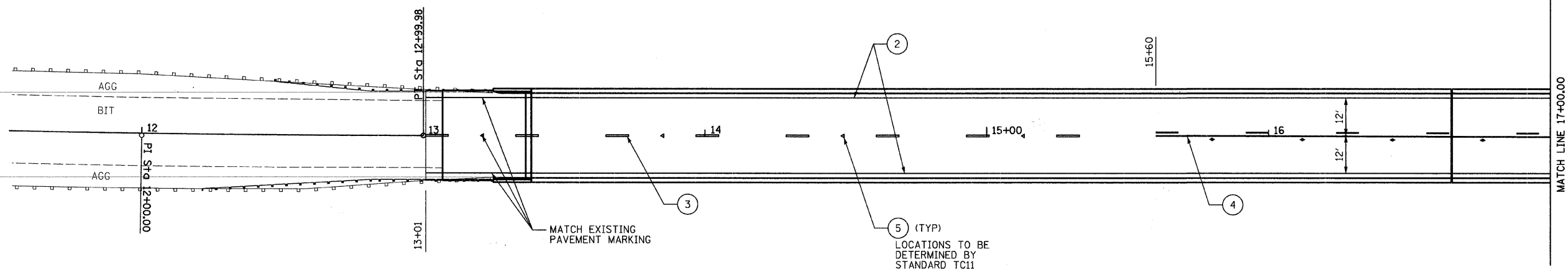
**benesch**

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**EROSION AND SEDIMENT CONTROL PLAN**

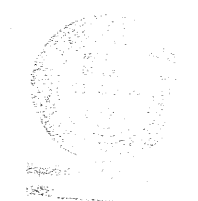
SCALE: 1" = 20' SHEET NO. 1 OF 1 SHEETS STA. XXXXXXX TO STA. XXXXXXX

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
341	04-00090-07-BR	WILL	57	7
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
CONTRACT NO. 63442				



**LEGEND**

- ① POLYUREA PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE)
- ② POLYUREA PAVEMENT MARKING - LINE 4" (WHITE)
- ③ POLYUREA PAVEMENT MARKING - LINE 4" (YELLOW) (10' DASH, 30' SKIP)
- ④ POLYUREA PAVEMENT MARKING - LINE 4" (YELLOW) (SOLID AND 10' DASH, 30' SKIP)
- ⑤ RECESSED REFLECTIVE PAVEMENT MARKER (2-WAY AMBER) (BRIDGE)



FILE NAME =	DESIGNED - JRM	REVISED -
...\\D1-63442-sht-pvmt.mrk.dgn	DRAWN - MB	REVISED -
PLOT DATE = 2/8/2010 10:02:59 AM	CHECKED - JAS	REVISED -
	DATE - 01/12/10	REVISED -

**benesch**

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN**

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
341	04-00090-07-BR	WILL	57	8
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 63442	



Bench Mark: Disc on NE parapet wingwall of S.N. 099-3298. Elev. 524.88.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

Existing Structure: S.N. 099-3298 built in 1971 as Brandon Road Bridge over Des Plaines River, Section 82B-2-MFT at Station 16+65.00. Structure consists of five steel plate girders over six spans configured in two units, with each unit continuous over three spans. The overall length of the bridge is 656'-4" and the out-to-out width is 32'-0" with no skew. There are two 14'-3" wide lanes for a total clear width of 28'-6". Concrete deck is 7 1/2" thick, with a 1 1/2" bituminous wearing surface. The hammerhead piers and stub abutments are cast-in-place concrete. The reinforcement is not epoxy coated. Expansion joints are located at the two abutments and at Pier 3. The alignment is straight and the grade is flat across the bridge except for a slight increase in elevation near the north abutment. No utilities or lights are presently attached to the bridge.

A detour route will be utilized to maintain traffic during construction.

No Salvage.

LOADING HS20-44

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

DESIGN SPECIFICATIONS (New Const.)

AASHTO Standard Specifications for Highway Bridges, 2002

DESIGN STRESSES

FIELD UNITS (New Construction)

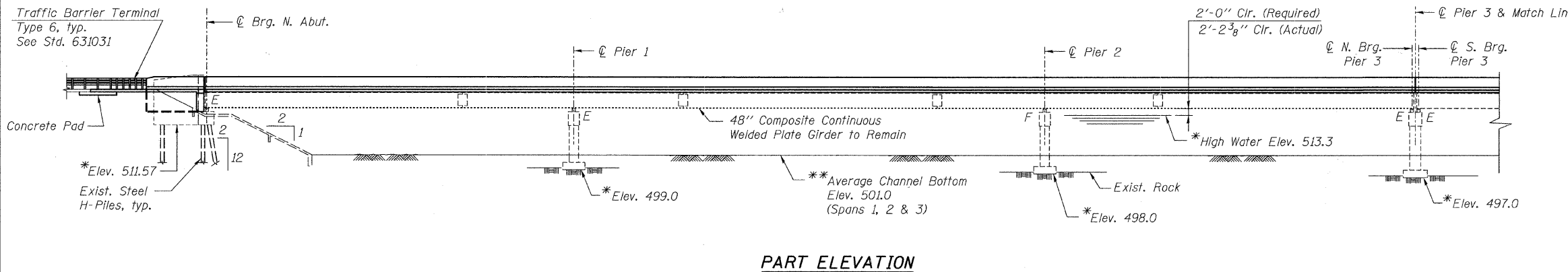
$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)  
 $f_y = 50,000$  psi (structural steel)

FIELD UNITS (Exist. Construction)

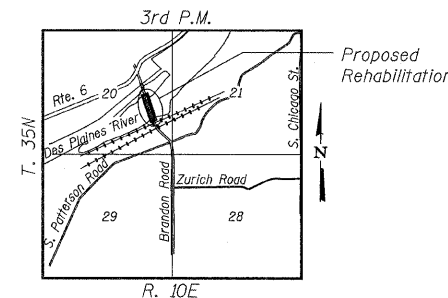
$f'_c = 3,000$  psi (superstructure)  
 $f'_c = 3,500$  psi (substructure)  
 $f_y = 40,000$  psi (reinforcement)  
 $f_y = 36,000$  psi (structural steel)

SEISMIC DATA

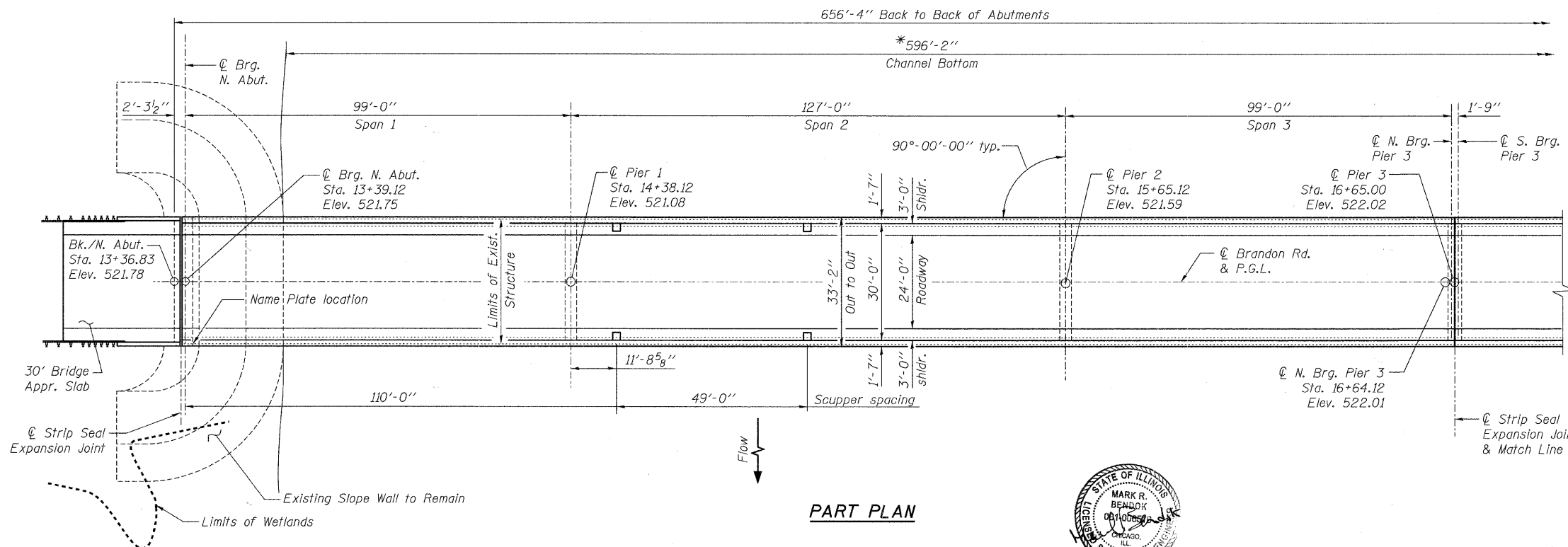
Seismic Performance Category (SPC) = A  
Horizontal Bedrock Acceleration Coefficient (A) = 0.04g  
Site Coefficient (S) = 1.0



PART ELEVATION



LOCATION SKETCH



PART PLAN

SCOPE OF WORK

- 1 Bridge will be closed and traffic will be detoured during construction.
- 2 Remove existing 7 1/2" concrete deck and 1 1/2" bituminous overlay. Replace with 8" deck composite in positive moment regions.
- 3 Remove and replace expansion joints.
- 4 Remove and replace existing approach slabs.
- 5 Remove and replace end diaphragms at the abutments and Pier 3.
- 6 Clean and paint all of the existing structural steel.
- 7 Replace expansion bearings at the abutments and Pier 3.
- 8 Replace fixed bearings at Piers 2 and 4.
- 9 Modify Pier 3 Cap width to meet seismic requirements.
- 10 Replace existing abutment backwalls and re-configure wingwalls to accommodate wider deck.
- 11 Remove south concrete slopewall and replace with stone riprap.

GENERAL PLAN AND ELEVATION 1 OF 2  
BRANDON ROAD OVER DES PLAINES RIVER  
(PUBLIC WATERS)  
COUNTY HIGHWAY 42  
WILL COUNTY  
STATION 16+65.00  
STRUCTURE NO. 099-3298

WATERWAY INFORMATION

Drainage Area = 970 Sq. Mi.		Low Grade Elev. 515.59 @ Sta. 15+01.62				
Flood Yr.	Freq.	Q C.F.S.	Opening Sq. Ft.	Nat. H.W.E.	Head - Ft. Exist.	Headwater El. Prop.
Design	50	34,880*	5,800*	513.3*		
Base	100					
Max. Calc.	500					

\* Data taken from existing plans.  
\*\* Data taken from 2006 Underwater Investigation Report

DESIGNED	JLS
CHECKED	MRB
DRAWN	VH
CHECKED	KWS



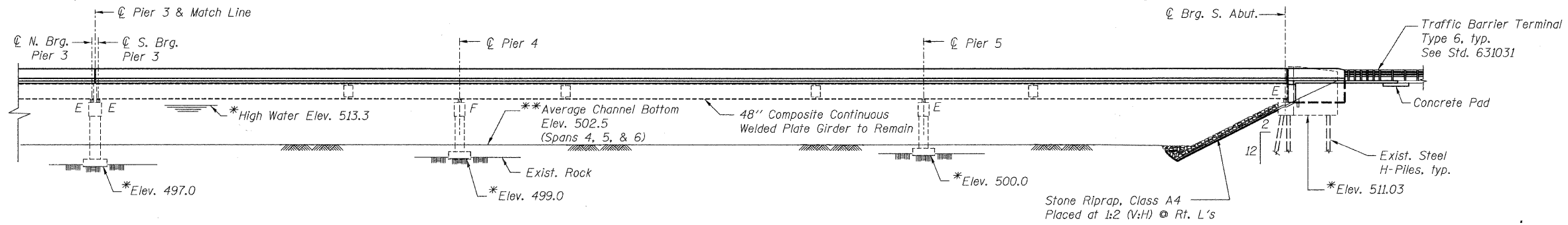
I certify that to the best of knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO Standard Specifications for Highway Bridges.

benesch

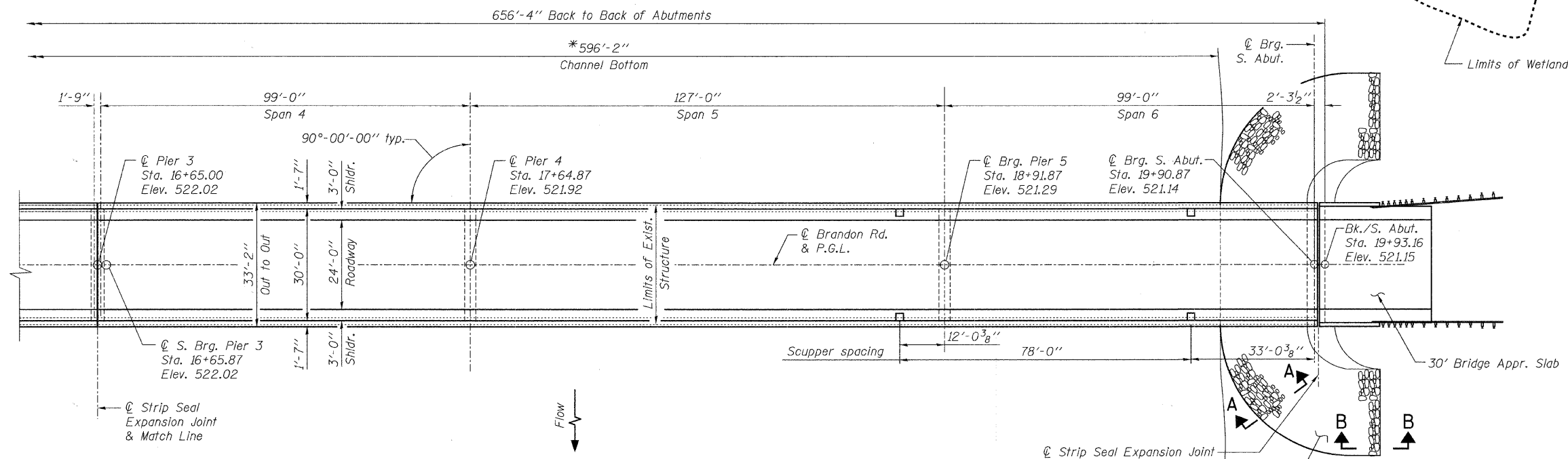
alfred benesch & company  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 3808 02

SHEET NO. S1 S47 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	9
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 63442		

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

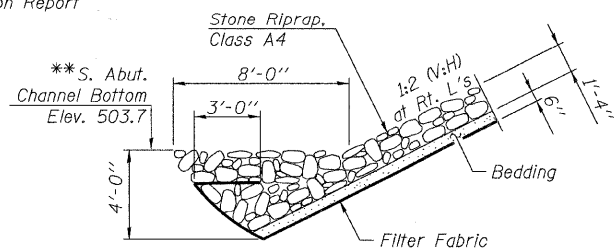


**PART ELEVATION**

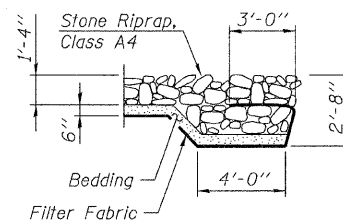


**PART PLAN**

\* Data taken from existing plans.  
\*\* Data taken from 2006 Underwater Investigation Report



**SECTION A-A**



**SECTION B-B**

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Chicago, Illinois 60601  
312-565-0450 Job No. 3808.02

DESIGNED -	JLS
CHECKED -	MRB
DRAWN -	VH
CHECKED -	KWS

**GENERAL PLAN AND ELEVATION 2 OF 2**  
**STRUCTURE NO. 099-3298**

SHEET NO. S2	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	10
S47 SHEETS	CONTRACT NO. 63442				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

**GENERAL NOTES**

- All new Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts (in painted areas and M164 Type 3 in unpainted areas). Holes shall be subpunched or subdrilled 1/16" dia. and reamed in the field to 3/16" dia. for 3/4" dia. bolts, unless otherwise noted.
- Calculated weight of Structural Steel = 10,090 lbs.
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- 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 qualified personnel approved by the Engineer.  
Any cracks that cannot be removed by grinding 1/4 inch 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.
- If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.
- Plan dimensions and details relative to existing plans are subject to nominal construction 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 at the unit price bid for the work.
- Bearing seat surfaces shall be constructed or adjusted to their designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
- Concrete Sealer shall be applied to the designated areas of abutment seats, backwalls and Pier 3 seat.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- The OZ/E/U 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. See Special Provision for Cleaning and Painting New Metal Structures.
- Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
- The Contractor shall obtain a construction permit from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for any temporary construction activity placed in the water except cofferdams. This shall include the placement of material for run-arounds, causeways, etc. Any permit application by the Contractor shall refer to the IDNR 3704 Floodway Construction permit number allowing permanent construction as shown in the contract plans.
- A minimum of 2 air monitors will be required to monitor abrasive blasting operations at this site, see special provision for "Containment and Disposal of Lead Paint Cleaning Residues".
- Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All beams, bearings and other structural steel within 5 ft. (measured along the beam) of either side of the deck joints shall be cleaned per Near White Blast Cleaning - SSPC-SP10. The exterior surfaces and bottom of the bottom flange of the fascia beams shall be cleaned per Power Tool Cleaning - Commercial Grade. All remaining structural steel shall be cleaned per Power Tool Cleaning - Modified SSPC-SP3.  
The designated areas cleaned per Near White Blast Cleaning - SSPC-SP10 and per Power Tool Cleaning - Commercial Grade shall be painted according to the requirements of Paint System 1 - OZ/E/U. The designated areas cleaned per Power Tool Cleaning - Modified SSPC-SP3 shall be painted according to the requirements of Paint System 2 - PS/EM/U. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No 5B 7/1. The color of the finish coat for the exterior and bottom flange of the fascia beams shall be Interstate Green. Munsell No 7.5G 4/8.

DESIGNED -	JLS
CHECKED -	MRB/KWS
DRAWN -	VH/MB
CHECKED -	MRB

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

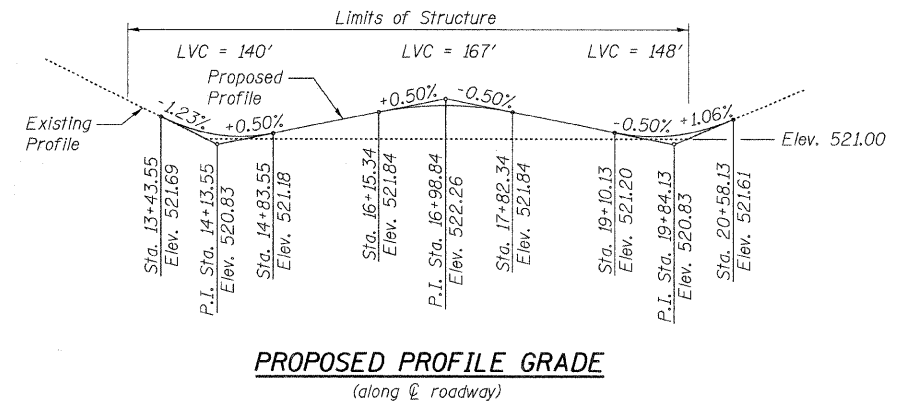
**INDEX OF SHEETS**

- S1 General Plan and Elevation 1 of 2
- S2 General Plan and Elevation 2 of 2
- S3 General Data
- S4 Concrete Removal
- S5 Miscellaneous Removal
- S6 Top of Slab Elevation Layout 1 of 2
- S7 Top of Slab Elevation Layout 2 of 2
- S8 Top of Slab Elevations 1 of 3
- S9 Top of Slab Elevations 2 of 3
- S10 Top of Slab Elevations 3 of 3
- S11 Top of North Approach Slab Elevations
- S12 Top of South Approach Slab Elevations
- S13 Deck Reinforcement Plan 1 of 3
- S14 Deck Reinforcement Plan 2 of 3
- S15 Deck Reinforcement Plan 3 of 3
- S16 Parapet Elevation
- S17 Deck Cross Section and Details
- S18 Deck Details
- S19 Bridge Approach Slab Details 1 of 2
- S20 Bridge Approach Slab Details 2 of 2
- S21 Preformed Joint Strip Seal
- S22 Drainage Scupper, DS-12
- S23 Structural Steel Repairs 1 of 2
- S24 Structural Steel Repairs 2 of 2
- S25 Bearings Details 1 of 2
- S26 Bearings Details 2 of 2
- S27 Abutment Details 1 of 3
- S28 Abutment Details 2 of 3
- S29 Abutment Details 3 of 3
- S30 Pier 1 and 2 Repairs
- S31 Pier 3 Repair 1 of 2
- S32 Pier 3 Repair 2 of 2
- S33 Pier 4 and 5 Repairs
- S34 Bar Splicer Assembly and Mechanical Splicer Details
- S35 Concrete Parapet Slipforming Option
- S36-S47 Existing Plan Information

DES PLAINES RIVER  
RE-BUILT 20\_\_ BY  
WILL COUNTY  
SECTION 04-00090-07-BR  
F.A.U. RT. 341 STA. 16+65  
STRUCTURE NO. 099-3298  
LOADING HS-20

**NAME PLATE**

Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates. See Std. 515001.



**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment, Special	Cu. Yd.		126	126
Stone Riprap, Class A4	Sq. Yd.		375	375
Filter Fabric	Sq. Yd.		375	375
Approach Slab Removal	Sq. Yd.	240		240
Concrete Removal	Cu. Yd.		39.9	39.9
Slope Wall Removal	Sq. Yd.		375	375
Removal of Existing Concrete Deck	L Sum		1	1
Protective Shield	Sq. Yd.	2334		2334
Structure Excavation	Cu. Yd.		156	156
Concrete Structures	Cu. Yd.		69.4	69.4
Concrete Superstructure	Cu. Yd.	900.0		900.0
Bridge Deck Grooving	Sq. Yd.	2224		2224
Protective Coat	Sq. Yd.	2961		2961
Furnishing and Erecting Structural Steel	L Sum		1	1
Stud Shear Connectors	Each	2580		2580
Jack and Remove Existing Bearings	Each	30		30
Structural Steel Removal	Pound	3790		3790
Cleaning and Painting Steel Bridge	L Sum		1	1
Containment and Disposal of Lead Paint Cleaning Residues	L Sum		1	1
Reinforcement Bars, Epoxy Coated	Pound	199,720	11,750	211,470
Bar Splicers	Each		62	62
Name Plates	Each		1	1
Preformed Joint Strip Seal	Foot	96.0		96.0
Elastomeric Bearing Assembly, Type I	Each	10		10
Elastomeric Bearing Assembly, Type II	Each	10		10
Anchor Bolts, 1"	Each	40		40
Anchor Bolts, 1 1/4"	Each	20		20
Concrete Sealer	Sq. Ft.		755	755
Epoxy Crack Injection	Foot		198	198
Geocomposite Wall Drain	Sq. Yd.		65	65
Pipe Underdrains For Structures 4"	Foot		104	104
Barrier Wall Markers, Type C	Each	20		20
Drainage Scuppers, DS-12	Each	8		8
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq. Ft.		35	35
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.		44	44

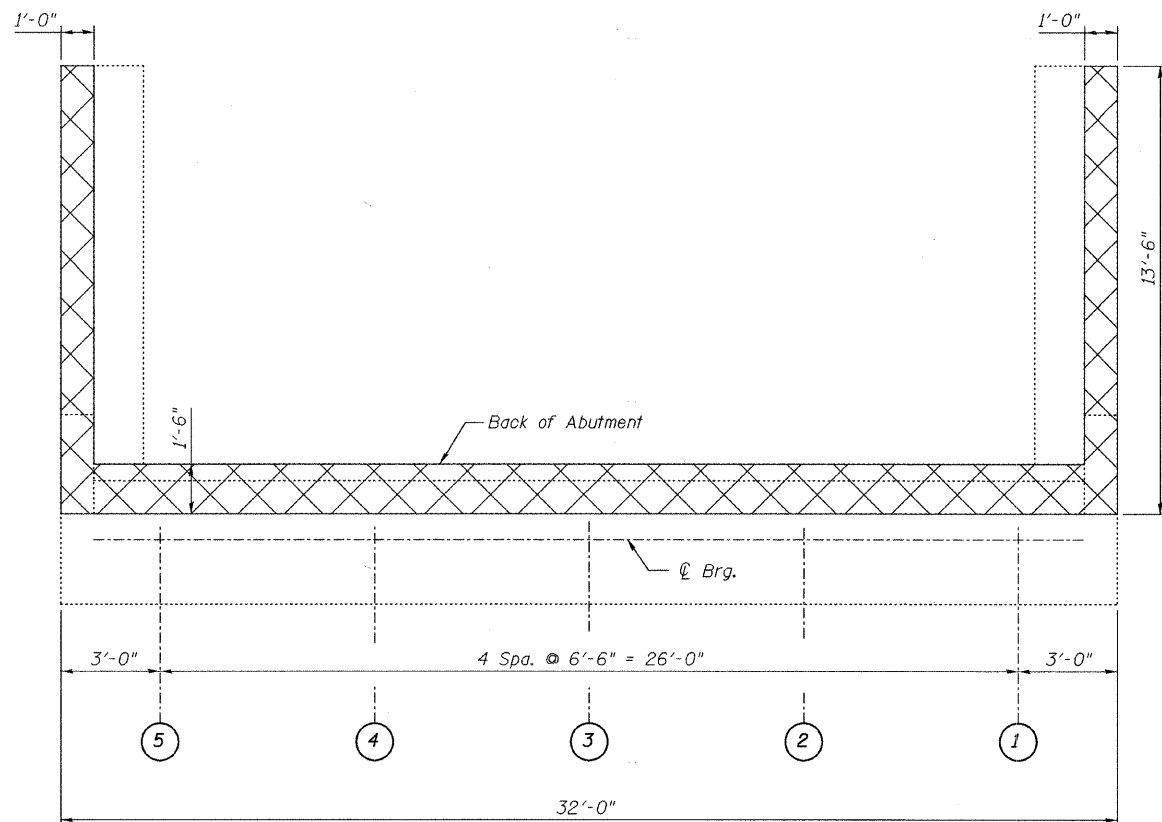
**GENERAL DATA**  
**STRUCTURE NO. 099-3298**

SHEET NO. S3	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	11
S47 SHEETS	CONTRACT NO. 63442				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

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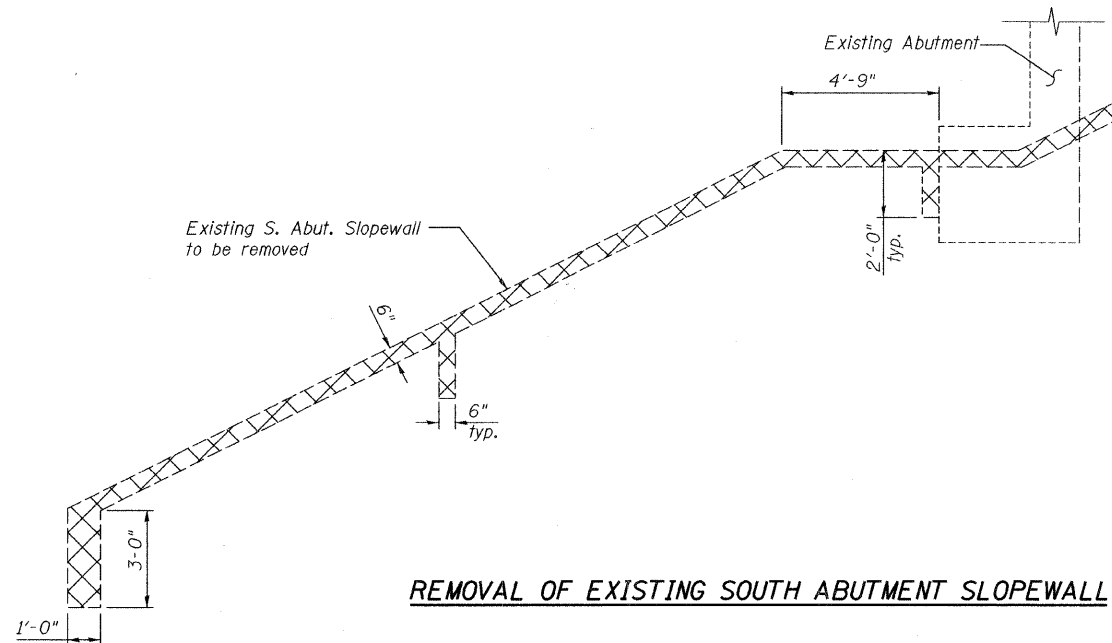
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**PLAN**


(N. Abut. shown, S. Abut. opposite hand)



**REMOVAL OF EXISTING SOUTH ABUTMENT SLOPEWALL**

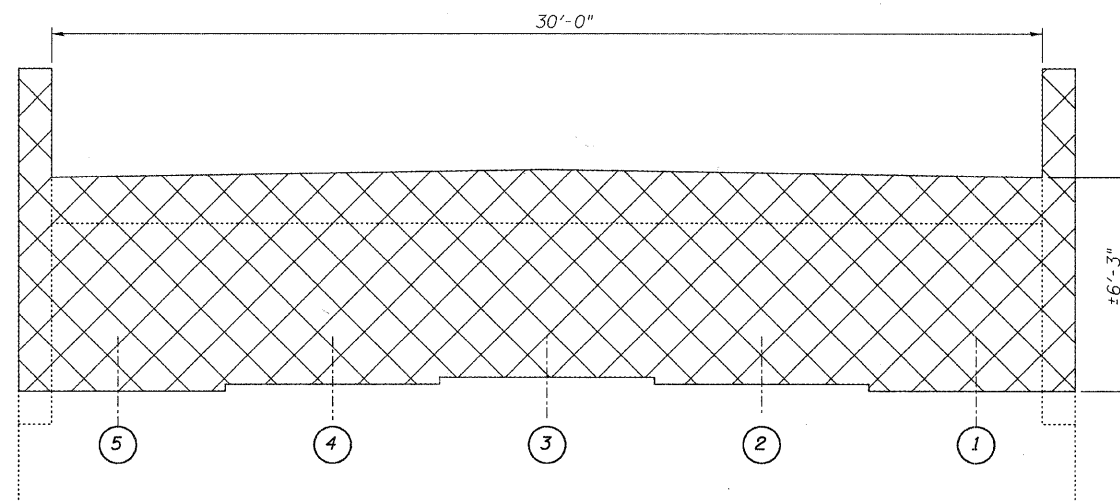
**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	39.9
Slope Wall Removal	Sq. Yd.	375
Approach Slab Removal	Sq. Yd.	240

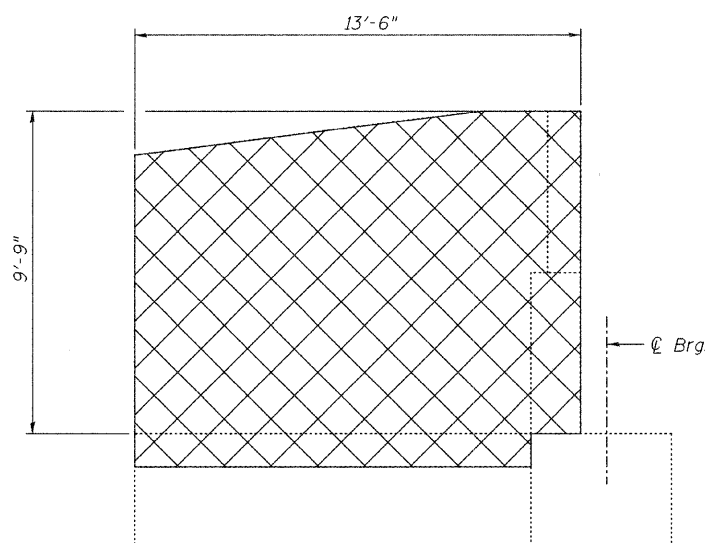
 indicates Concrete Removal

**NOTES:**

1. Approach slab to be removed, see special provision for "Approach Slab Removal."
2. Existing reinforcement bars extending into concrete removal areas shall be cleaned, straightened and incorporated into new concrete in accordance with IDOT Standard Specifications Article 501.03. Cost included with Concrete Removal.
3. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system in accordance with IDOT Standard Specifications Article 501.03. Cost included with Concrete Removal.



**ELEVATION**



**WINGWALL ELEVATION**

(4 thus)

**benesch**

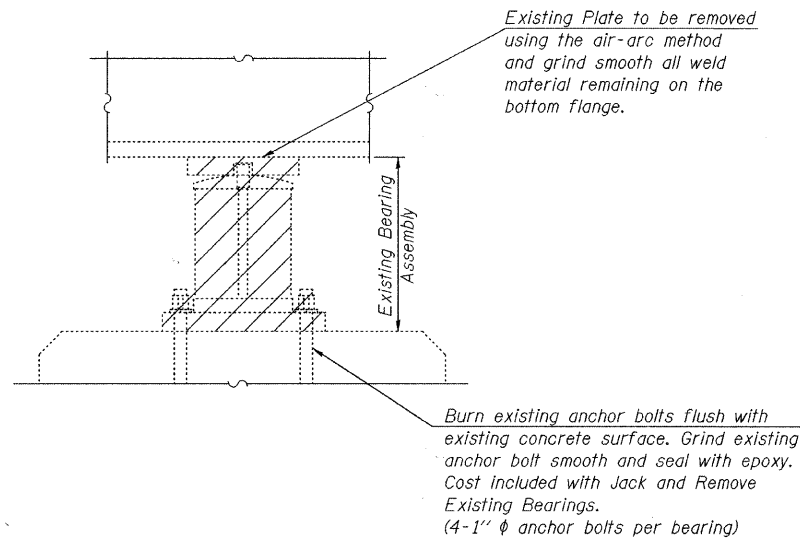
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Chicago, Illinois 60601  
312-565-0450 Job No. 3808.02

DESIGNED -	JLS
CHECKED -	MRB
DRAWN -	VH/MB
CHECKED -	KWS

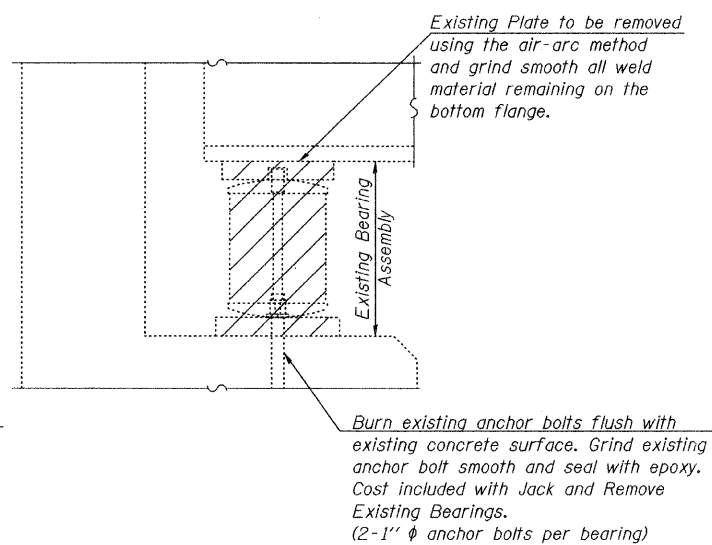
**CONCRETE REMOVAL  
STRUCTURE NO. 099-3298**

SHEET NO. S4	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	12
S47 SHEETS	CONTRACT NO. 63442				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

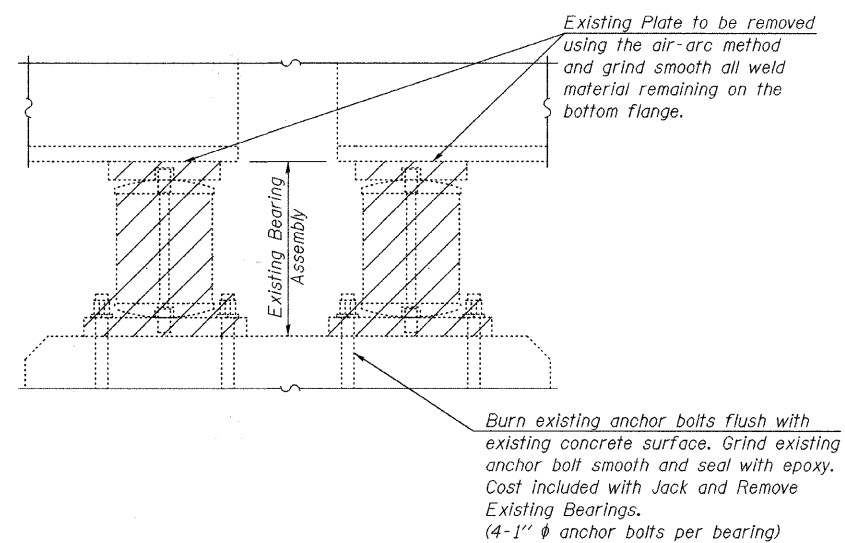
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**AT PIERS 2 AND 4**  
(10 bearings total)



**AT ABUTMENTS**  
(10 bearings total)



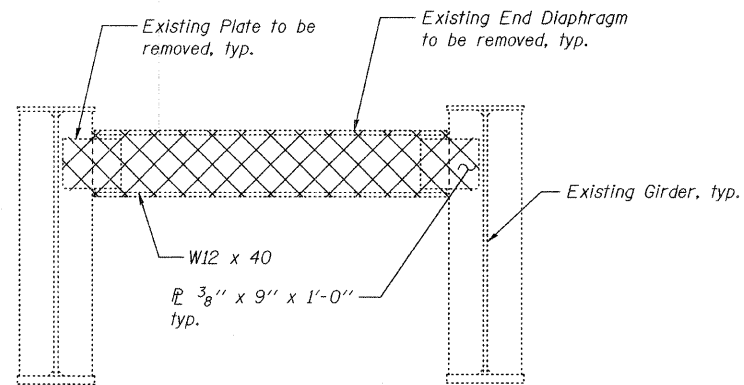
**AT PIER 3**  
(10 bearings total)

**EXISTING BEARINGS REMOVAL DETAILS**  
(Abutments and Piers 2, 3 & 4)

**EXISTING BEAM REACTION TABLE (PER BEARING)**

	N. Abut. S. Abut.	Piers 2 & 4	Pier 3*
RR kips (Beam Only)	7.0	31.0	7.0
RR kips (Total)	42.0	153.0	42.0

\* Two bearings per beam line.



**REMOVAL OF EXISTING END DIAPHRAGMS**  
(At Abutments and Pier 3 - 16 total)

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Jack and Remove Existing Bearings	Each	30
Structural Steel Removal	Pound	3790

- indicates bearing removal
- indicates diaphragm removal

**NOTES:**

- For Jacking and Cribbing see special provision for "Jack and Remove Existing Bearings."
- Jacking and cribbing for beams at Pier 3 shall be performed such that they can remain supported while the specified pier cap modifications are performed. Cost included with Jack and Remove Existing Bearings.
- Jacking and cribbing for beams at Abutments shall be performed such that they can remain supported while the specified structural repairs are performed. Cost included with Jack and Remove Existing Bearings.
- See existing plan information for additional information.
- Jacking shall not commence until the deck has been removed entirely. The minimum jack capacity for lifting the beams, at each bearing location, shall be 14 kips at the abutments and Pier 3 and 62 kips at Piers 2 and 4.

**MISCELLANEOUS REMOVAL**  
**STRUCTURE NO. 099-3298**

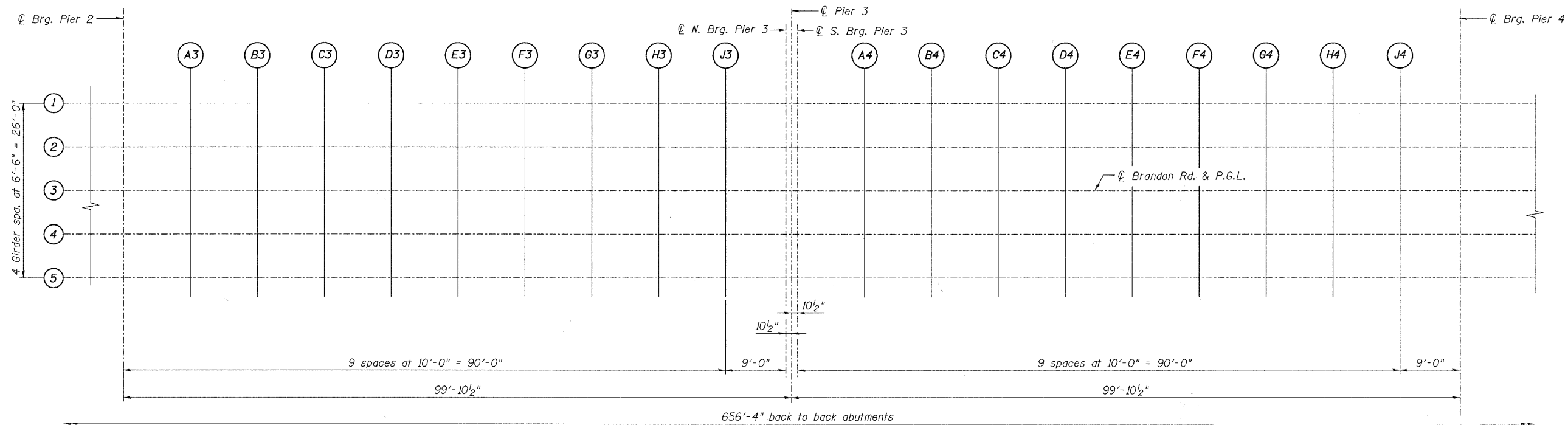
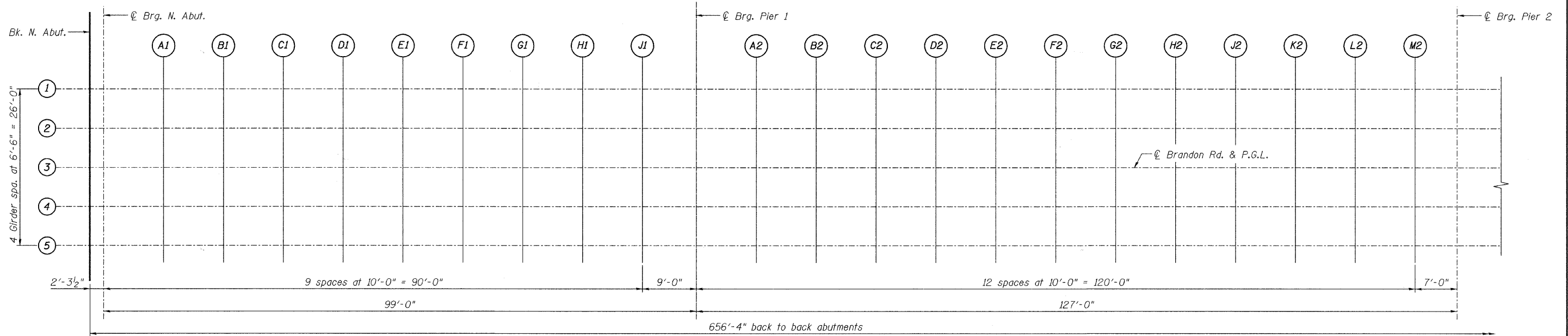
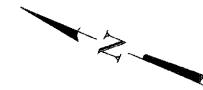
DESIGNED -	JLS
CHECKED -	MRB
DRAWN -	VH/MB
CHECKED -	KWS

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SHEET NO. S5	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S47 SHEETS	341	04-00090-07-BR	WILL	57	13
			CONTRACT NO. 63442		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**PARTIAL PLAN**

**TOP OF SLAB ELEVATION LAYOUT 1 OF 2  
STRUCTURE NO. 099-3298**

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	VH
CHECKED -	MRB

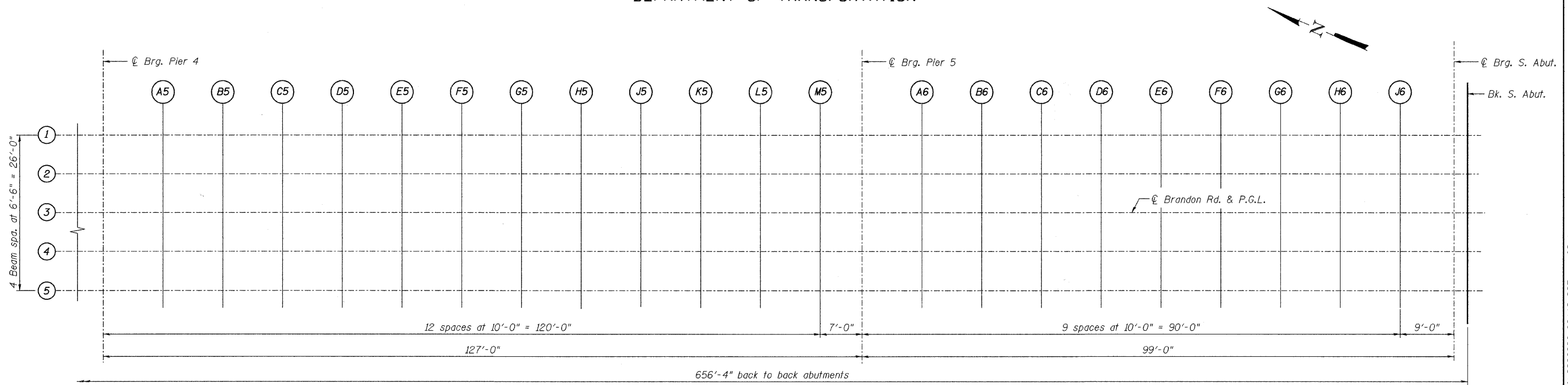
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312-595-0490 Job No. 3808.02

SHEET NO. S6 S47 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	14
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 63442		

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



PARTIAL PLAN

DESIGNED	JLS
CHECKED	KWS
DRAWN	VH
CHECKED	MRB

TOP OF SLAB ELEVATION LAYOUT 2 OF 2  
STRUCTURE NO. 099-3298

**benesch**

alfred benesch & company  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-566-0450 Job No. 3808.02

SHEET NO. S7 S47 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	15
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 63442		

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

GIRDER 1

GIRDER 1 (CONT.)

GIRDER 2

GIRDER 2 (CONT.)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
Bk. N. Abut.	13+36.83	-13.00	521.57	521.57
⊙ Brg. N. Abut.	13+39.12	-13.00	521.54	521.54
A1	13+49.12	-13.00	521.42	521.45
B1	13+59.12	-13.00	521.31	521.37
C1	13+69.12	-13.00	521.21	521.29
D1	13+79.12	-13.00	521.12	521.21
E1	13+89.12	-13.00	521.05	521.13
F1	13+99.12	-13.00	520.99	521.05
G1	14+09.12	-13.00	520.94	520.98
H1	14+19.12	-13.00	520.91	520.93
J1	14+29.12	-13.00	520.88	520.89
⊙ Brg. Pier 1	14+38.12	-13.00	520.87	520.87
A2	14+48.12	-13.00	520.87	520.88
B2	14+58.12	-13.00	520.89	520.91
C2	14+68.12	-13.00	520.91	520.96
D2	14+78.12	-13.00	520.95	521.02
E2	14+88.12	-13.00	521.00	521.09
F2	14+98.12	-13.00	521.05	521.15
G2	15+08.12	-13.00	521.10	521.20
H2	15+18.12	-13.00	521.15	521.23
J2	15+28.12	-13.00	521.20	521.26
K2	15+38.12	-13.00	521.25	521.29
L2	15+48.12	-13.00	521.30	521.31
M2	15+58.12	-13.00	521.35	521.35
⊙ Brg. Pier 2	15+65.12	-13.00	521.38	521.38
A3	15+75.12	-13.00	521.43	521.44
B3	15+85.12	-13.00	521.48	521.51
C3	15+95.12	-13.00	521.53	521.59
D3	16+05.12	-13.00	521.58	521.66
E3	16+15.12	-13.00	521.63	521.73
F3	16+25.12	-13.00	521.68	521.78
G3	16+35.12	-13.00	521.72	521.81
H3	16+45.12	-13.00	521.76	521.82
J3	16+55.12	-13.00	521.79	521.82
⊙ N. Brg. Pier 3	16+64.12	-13.00	521.81	521.81
⊙ Pier 3	16+65.00	-13.00	521.81	521.81
⊙ S. Brg. Pier 3	16+65.87	-13.00	521.81	521.81
A4	16+75.87	-13.00	521.83	521.87
B4	16+85.87	-13.00	521.84	521.91
C4	16+95.87	-13.00	521.84	521.94
D4	17+05.87	-13.00	521.84	521.94
E4	17+15.87	-13.00	521.83	521.93
F4	17+25.87	-13.00	521.82	521.90
G4	17+35.87	-13.00	521.80	521.85
H4	17+45.87	-13.00	521.78	521.80
J4	17+55.87	-13.00	521.74	521.75
⊙ Brg. Pier 4	17+64.87	-13.00	521.71	521.71

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
A5	17+74.87	-13.00	521.67	521.68
B5	17+84.87	-13.00	521.62	521.65
C5	17+94.87	-13.00	521.57	521.62
D5	18+04.87	-13.00	521.52	521.60
E5	18+14.87	-13.00	521.47	521.57
F5	18+24.87	-13.00	521.42	521.53
G5	18+34.87	-13.00	521.37	521.48
H5	18+44.87	-13.00	521.32	521.42
J5	18+54.87	-13.00	521.27	521.35
K5	18+64.87	-13.00	521.22	521.27
L5	18+74.87	-13.00	521.17	521.20
M5	18+84.87	-13.00	521.12	521.13
⊙ Brg. Pier 5	18+91.87	-13.00	521.08	521.08
A6	19+01.87	-13.00	521.03	521.04
B6	19+11.87	-13.00	520.98	521.00
C6	19+21.87	-13.00	520.94	520.98
D6	19+31.87	-13.00	520.91	520.97
E6	19+41.87	-13.00	520.89	520.96
F6	19+51.87	-13.00	520.87	520.95
G6	19+61.87	-13.00	520.87	520.95
H6	19+71.87	-13.00	520.88	520.94
J6	19+81.87	-13.00	520.90	520.93
⊙ Brg. S. Abut.	19+90.87	-13.00	520.93	520.93
Bk. S. Abut.	19+93.16	-13.00	520.94	520.94

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
Bk. N. Abut.	13+36.83	-6.50	521.67	521.67
⊙ Brg. N. Abut.	13+39.12	-6.50	521.65	521.65
A1	13+49.12	-6.50	521.52	521.55
B1	13+59.12	-6.50	521.41	521.47
C1	13+69.12	-6.50	521.32	521.39
D1	13+79.12	-6.50	521.23	521.31
E1	13+89.12	-6.50	521.16	521.23
F1	13+99.12	-6.50	521.10	521.15
G1	14+09.12	-6.50	521.05	521.09
H1	14+19.12	-6.50	521.01	521.03
J1	14+29.12	-6.50	520.99	520.99
⊙ Brg. Pier 1	14+38.12	-6.50	520.98	520.98
A2	14+48.12	-6.50	520.98	520.99
B2	14+58.12	-6.50	520.99	521.02
C2	14+68.12	-6.50	521.02	521.07
D2	14+78.12	-6.50	521.05	521.13
E2	14+88.12	-6.50	521.10	521.19
F2	14+98.12	-6.50	521.15	521.25
G2	15+08.12	-6.50	521.20	521.30
H2	15+18.12	-6.50	521.25	521.33
J2	15+28.12	-6.50	521.30	521.37
K2	15+38.12	-6.50	521.35	521.39
L2	15+48.12	-6.50	521.40	521.42
M2	15+58.12	-6.50	521.45	521.46
⊙ Brg. Pier 2	15+65.12	-6.50	521.49	521.49
A3	15+75.12	-6.50	521.54	521.55
B3	15+85.12	-6.50	521.59	521.61
C3	15+95.12	-6.50	521.64	521.69
D3	16+05.12	-6.50	521.69	521.76
E3	16+15.12	-6.50	521.74	521.83
F3	16+25.12	-6.50	521.79	521.88
G3	16+35.12	-6.50	521.83	521.91
H3	16+45.12	-6.50	521.86	521.93
J3	16+55.12	-6.50	521.89	521.93
⊙ N. Brg. Pier 3	16+64.12	-6.50	521.91	521.91
⊙ Pier 3	16+65.00	-6.50	521.91	521.91
⊙ S. Brg. Pier 3	16+65.87	-6.50	521.92	521.92
A4	16+75.87	-6.50	521.93	521.97
B4	16+85.87	-6.50	521.94	522.01
C4	16+95.87	-6.50	521.95	522.04
D4	17+05.87	-6.50	521.95	522.04
E4	17+15.87	-6.50	521.94	522.03
F4	17+25.87	-6.50	521.93	522.00
G4	17+35.87	-6.50	521.91	521.96
H4	17+45.87	-6.50	521.88	521.91
J4	17+55.87	-6.50	521.85	521.86
⊙ Brg. Pier 4	17+64.87	-6.50	521.82	521.82

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
A5	17+74.87	-6.50	521.78	521.78
B5	17+84.87	-6.50	521.73	521.75
C5	17+94.87	-6.50	521.68	521.73
D5	18+04.87	-6.50	521.63	521.70
E5	18+14.87	-6.50	521.58	521.67
F5	18+24.87	-6.50	521.53	521.63
G5	18+34.87	-6.50	521.48	521.58
H5	18+44.87	-6.50	521.43	521.52
J5	18+54.87	-6.50	521.38	521.45
K5	18+64.87	-6.50	521.33	521.37
L5	18+74.87	-6.50	521.28	521.30
M5	18+84.87	-6.50	521.23	521.23
⊙ Brg. Pier 5	18+91.87	-6.50	521.19	521.19
A6	19+01.87	-6.50	521.14	521.14
B6	19+11.87	-6.50	521.09	521.11
C6	19+21.87	-6.50	521.05	521.08
D6	19+31.87	-6.50	521.02	521.07
E6	19+41.87	-6.50	520.99	521.06
F6	19+51.87	-6.50	520.98	521.05
G6	19+61.87	-6.50	520.98	521.05
H6	19+71.87	-6.50	520.99	521.04
J6	19+81.87	-6.50	521.01	521.04
⊙ Brg. S. Abut.	19+90.87	-6.50	521.04	521.04
Bk. S. Abut.	19+93.16	-6.50	521.05	521.05

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	VH
CHECKED -	MRB

**benesch**

alfred benesch & company  
Engineers - Surveyors - Planners  
208 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 3908.02

TOP OF SLAB ELEVATIONS 1 OF 3  
STRUCTURE NO. 099-3298

SHEET NO. S8	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	16
S47 SHEETS			CONTRACT NO. 63442		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

P.G.L. & GIRDER 3

P.G.L. & GIRDER 3 (CONT.)

GIRDER 4

GIRDER 4 (CONT.)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
Bk. N. Abut.	13+36.83	0.00	521.78	521.78
☉ Brg. N. Abut.	13+39.12	0.00	521.75	521.75
A1	13+49.12	0.00	521.63	521.66
B1	13+59.12	0.00	521.52	521.57
C1	13+69.12	0.00	521.42	521.49
D1	13+79.12	0.00	521.33	521.41
E1	13+89.12	0.00	521.26	521.33
F1	13+99.12	0.00	521.20	521.26
G1	14+09.12	0.00	521.15	521.19
H1	14+19.12	0.00	521.11	521.13
J1	14+29.12	0.00	521.09	521.10
☉ Brg. Pier 1	14+38.12	0.00	521.08	521.08
A2	14+48.12	0.00	521.08	521.09
B2	14+58.12	0.00	521.09	521.12
C2	14+68.12	0.00	521.12	521.17
D2	14+78.12	0.00	521.16	521.23
E2	14+88.12	0.00	521.20	521.29
F2	14+98.12	0.00	521.25	521.35
G2	15+08.12	0.00	521.30	521.40
H2	15+18.12	0.00	521.35	521.44
J2	15+28.12	0.00	521.40	521.47
K2	15+38.12	0.00	521.45	521.49
L2	15+48.12	0.00	521.50	521.52
M2	15+58.12	0.00	521.55	521.56
☉ Brg. Pier 2	15+65.12	0.00	521.59	521.59
A3	15+75.12	0.00	521.64	521.65
B3	15+85.12	0.00	521.69	521.72
C3	15+95.12	0.00	521.74	521.79
D3	16+05.12	0.00	521.79	521.86
E3	16+15.12	0.00	521.84	521.93
F3	16+25.12	0.00	521.89	521.98
G3	16+35.12	0.00	521.93	522.02
H3	16+45.12	0.00	521.96	522.03
J3	16+55.12	0.00	521.99	522.03
☉ N. Brg. Pier 3	16+64.12	0.00	522.01	522.01
☉ Pier 3	16+65.00	0.00	522.02	522.02
☉ S. Brg. Pier 3	16+65.87	0.00	522.02	522.02
A4	16+75.87	0.00	522.03	522.07
B4	16+85.87	0.00	522.05	522.11
C4	16+95.87	0.00	522.05	522.14
D4	17+05.87	0.00	522.05	522.14
E4	17+15.87	0.00	522.04	522.13
F4	17+25.87	0.00	522.03	522.10
G4	17+35.87	0.00	522.01	522.06
H4	17+45.87	0.00	521.98	522.01
J4	17+55.87	0.00	521.95	521.96
☉ Brg. Pier 4	17+64.87	0.00	521.92	521.92

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
A5	17+74.87	0.00	521.88	521.89
B5	17+84.87	0.00	521.83	521.86
C5	17+94.87	0.00	521.78	521.83
D5	18+04.87	0.00	521.73	521.80
E5	18+14.87	0.00	521.68	521.78
F5	18+24.87	0.00	521.63	521.73
G5	18+34.87	0.00	521.58	521.68
H5	18+44.87	0.00	521.53	521.62
J5	18+54.87	0.00	521.48	521.55
K5	18+64.87	0.00	521.43	521.48
L5	18+74.87	0.00	521.38	521.40
M5	18+84.87	0.00	521.33	521.34
☉ Brg. Pier 5	18+91.87	0.00	521.29	521.29
A6	19+01.87	0.00	521.24	521.25
B6	19+11.87	0.00	521.19	521.21
C6	19+21.87	0.00	521.15	521.18
D6	19+31.87	0.00	521.12	521.17
E6	19+41.87	0.00	521.09	521.16
F6	19+51.87	0.00	521.08	521.16
G6	19+61.87	0.00	521.08	521.15
H6	19+71.87	0.00	521.09	521.14
J6	19+81.87	0.00	521.11	521.14
☉ Brg. S. Abut.	19+90.87	0.00	521.14	521.14
Bk. S. Abut.	19+93.16	0.00	521.15	521.15

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
Bk. N. Abut.	13+36.83	6.50	521.67	521.67
☉ Brg. N. Abut.	13+39.12	6.50	521.65	521.65
A1	13+49.12	6.50	521.52	521.55
B1	13+59.12	6.50	521.41	521.47
C1	13+69.12	6.50	521.32	521.39
D1	13+79.12	6.50	521.23	521.31
E1	13+89.12	6.50	521.16	521.23
F1	13+99.12	6.50	521.10	521.15
G1	14+09.12	6.50	521.05	521.09
H1	14+19.12	6.50	521.01	521.03
J1	14+29.12	6.50	520.99	520.99
☉ Brg. Pier 1	14+38.12	6.50	520.98	520.98
A2	14+48.12	6.50	520.98	520.99
B2	14+58.12	6.50	520.99	521.02
C2	14+68.12	6.50	521.02	521.07
D2	14+78.12	6.50	521.05	521.13
E2	14+88.12	6.50	521.10	521.19
F2	14+98.12	6.50	521.15	521.25
G2	15+08.12	6.50	521.20	521.30
H2	15+18.12	6.50	521.25	521.33
J2	15+28.12	6.50	521.30	521.37
K2	15+38.12	6.50	521.35	521.39
L2	15+48.12	6.50	521.40	521.42
M2	15+58.12	6.50	521.45	521.46
☉ Brg. Pier 2	15+65.12	6.50	521.49	521.49
A3	15+75.12	6.50	521.54	521.55
B3	15+85.12	6.50	521.59	521.61
C3	15+95.12	6.50	521.64	521.69
D3	16+05.12	6.50	521.69	521.76
E3	16+15.12	6.50	521.74	521.83
F3	16+25.12	6.50	521.79	521.88
G3	16+35.12	6.50	521.83	521.91
H3	16+45.12	6.50	521.86	521.93
J3	16+55.12	6.50	521.89	521.93
☉ N. Brg. Pier 3	16+64.12	6.50	521.91	521.91
☉ Pier 3	16+65.00	6.50	521.91	521.91
☉ S. Brg. Pier 3	16+65.87	6.50	521.92	521.92
A4	16+75.87	6.50	521.93	521.97
B4	16+85.87	6.50	521.94	522.01
C4	16+95.87	6.50	521.95	522.04
D4	17+05.87	6.50	521.95	522.04
E4	17+15.87	6.50	521.94	522.03
F4	17+25.87	6.50	521.93	522.00
G4	17+35.87	6.50	521.91	521.96
H4	17+45.87	6.50	521.88	521.91
J4	17+55.87	6.50	521.85	521.86
☉ Brg. Pier 4	17+64.87	6.50	521.82	521.82

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
A5	17+74.87	6.50	521.78	521.78
B5	17+84.87	6.50	521.73	521.75
C5	17+94.87	6.50	521.68	521.73
D5	18+04.87	6.50	521.63	521.70
E5	18+14.87	6.50	521.58	521.67
F5	18+24.87	6.50	521.53	521.63
G5	18+34.87	6.50	521.48	521.58
H5	18+44.87	6.50	521.43	521.52
J5	18+54.87	6.50	521.38	521.45
K5	18+64.87	6.50	521.33	521.37
L5	18+74.87	6.50	521.28	521.30
M5	18+84.87	6.50	521.23	521.23
☉ Brg. Pier 5	18+91.87	6.50	521.19	521.19
A6	19+01.87	6.50	521.14	521.14
B6	19+11.87	6.50	521.09	521.11
C6	19+21.87	6.50	521.05	521.08
D6	19+31.87	6.50	521.02	521.07
E6	19+41.87	6.50	520.99	521.06
F6	19+51.87	6.50	520.98	521.05
G6	19+61.87	6.50	520.98	521.05
H6	19+71.87	6.50	520.99	521.04
J6	19+81.87	6.50	521.01	521.04
☉ Brg. S. Abut.	19+90.87	6.50	521.04	521.04
Bk. S. Abut.	19+93.16	6.50	521.05	521.05

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	VH
CHECKED -	MRB

**benesch**

alfred benesch & company  
Engineers - Surveyors - Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-865-0450 Job No. 3808.02

SHEET NO. 59	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	17
S47 SHEETS	CONTRACT NO. 63442				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

TOP OF SLAB ELEVATIONS 2 OF 3  
STRUCTURE NO. 099-3298

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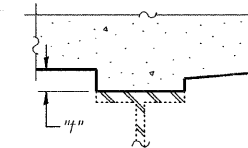
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**GIRDER 5**

**GIRDER 5 (CONT.)**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
Bk. N. Abut.	13+36.83	13.00	521.57	521.57
☉ Brg. N. Abut.	13+39.12	13.00	521.54	521.54
A1	13+49.12	13.00	521.42	521.45
B1	13+59.12	13.00	521.31	521.37
C1	13+69.12	13.00	521.21	521.29
D1	13+79.12	13.00	521.12	521.21
E1	13+89.12	13.00	521.05	521.13
F1	13+99.12	13.00	520.99	521.05
G1	14+09.12	13.00	520.94	520.98
H1	14+19.12	13.00	520.91	520.93
J1	14+29.12	13.00	520.88	520.89
☉ Brg. Pier 1	14+38.12	13.00	520.87	520.87
A2	14+48.12	13.00	520.87	520.88
B2	14+58.12	13.00	520.89	520.91
C2	14+68.12	13.00	520.91	520.96
D2	14+78.12	13.00	520.95	521.02
E2	14+88.12	13.00	521.00	521.09
F2	14+98.12	13.00	521.05	521.15
G2	15+08.12	13.00	521.10	521.20
H2	15+18.12	13.00	521.15	521.23
J2	15+28.12	13.00	521.20	521.26
K2	15+38.12	13.00	521.25	521.29
L2	15+48.12	13.00	521.30	521.31
M2	15+58.12	13.00	521.35	521.35
☉ Brg. Pier 2	15+65.12	13.00	521.38	521.38
A3	15+75.12	13.00	521.43	521.44
B3	15+85.12	13.00	521.48	521.51
C3	15+95.12	13.00	521.53	521.59
D3	16+05.12	13.00	521.58	521.66
E3	16+15.12	13.00	521.63	521.73
F3	16+25.12	13.00	521.68	521.78
G3	16+35.12	13.00	521.72	521.81
H3	16+45.12	13.00	521.76	521.82
J3	16+55.12	13.00	521.79	521.82
☉ N. Brg. Pier 3	16+64.12	13.00	521.81	521.81
☉ Pier 3	16+65.00	13.00	521.81	521.81
☉ S. Brg. Pier 3	16+65.87	13.00	521.81	521.81
A4	16+75.87	13.00	521.83	521.87
B4	16+85.87	13.00	521.84	521.91
C4	16+95.87	13.00	521.84	521.94
D4	17+05.87	13.00	521.84	521.94
E4	17+15.87	13.00	521.83	521.93
F4	17+25.87	13.00	521.82	521.90
G4	17+35.87	13.00	521.80	521.85
H4	17+45.87	13.00	521.78	521.80
J4	17+55.87	13.00	521.74	521.75
☉ Brg. Pier 4	17+64.87	13.00	521.71	521.71

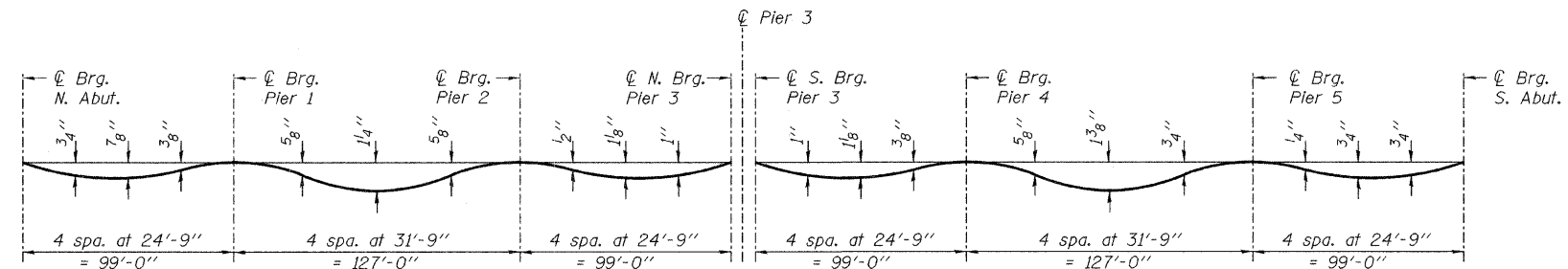
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
A5	17+74.87	13.00	521.67	521.68
B5	17+84.87	13.00	521.62	521.65
C5	17+94.87	13.00	521.57	521.62
D5	18+04.87	13.00	521.52	521.60
E5	18+14.87	13.00	521.47	521.57
F5	18+24.87	13.00	521.42	521.53
G5	18+34.87	13.00	521.37	521.48
H5	18+44.87	13.00	521.32	521.42
J5	18+54.87	13.00	521.27	521.35
K5	18+64.87	13.00	521.22	521.27
L5	18+74.87	13.00	521.17	521.20
M5	18+84.87	13.00	521.12	521.13
☉ Brg. Pier 5	18+91.87	13.00	521.08	521.08
A6	19+01.87	13.00	521.03	521.04
B6	19+11.87	13.00	520.98	521.00
C6	19+21.87	13.00	520.94	520.98
D6	19+31.87	13.00	520.91	520.97
E6	19+41.87	13.00	520.89	520.96
F6	19+51.87	13.00	520.87	520.95
G6	19+61.87	13.00	520.87	520.95
H6	19+71.87	13.00	520.88	520.94
J6	19+81.87	13.00	520.90	520.93
☉ Brg. S. Abut.	19+90.87	13.00	520.93	520.93
Bk. S. Abut.	19+93.16	13.00	520.94	520.94



At Fascia Girder

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

**FILLET HEIGHTS**



**DEAD LOAD DEFLECTION DIAGRAM**

(Includes weight of concrete only)

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 on the plans.

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	VH
CHECKED -	MRB

**TOP OF SLAB ELEVATIONS 3 OF 3  
STRUCTURE NO. 099-3298**

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312-565-0450 Job No. 3808.02

SHEET NO. S10 S47 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	18
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 63442					

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EAST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of North Appr. Slab	13+06.83	-15.00	521.89
N1	13+16.83	-15.00	521.77
N2	13+26.83	-15.00	521.65
S. End of North Appr. Slab	13+36.83	-15.00	521.53

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of North Appr. Slab	13+06.83	-12.00	521.96
N1	13+16.83	-12.00	521.83
N2	13+26.83	-12.00	521.71
S. End of North Appr. Slab	13+36.83	-12.00	521.59

☉ BRANDON ROAD & PROFILE GRADE

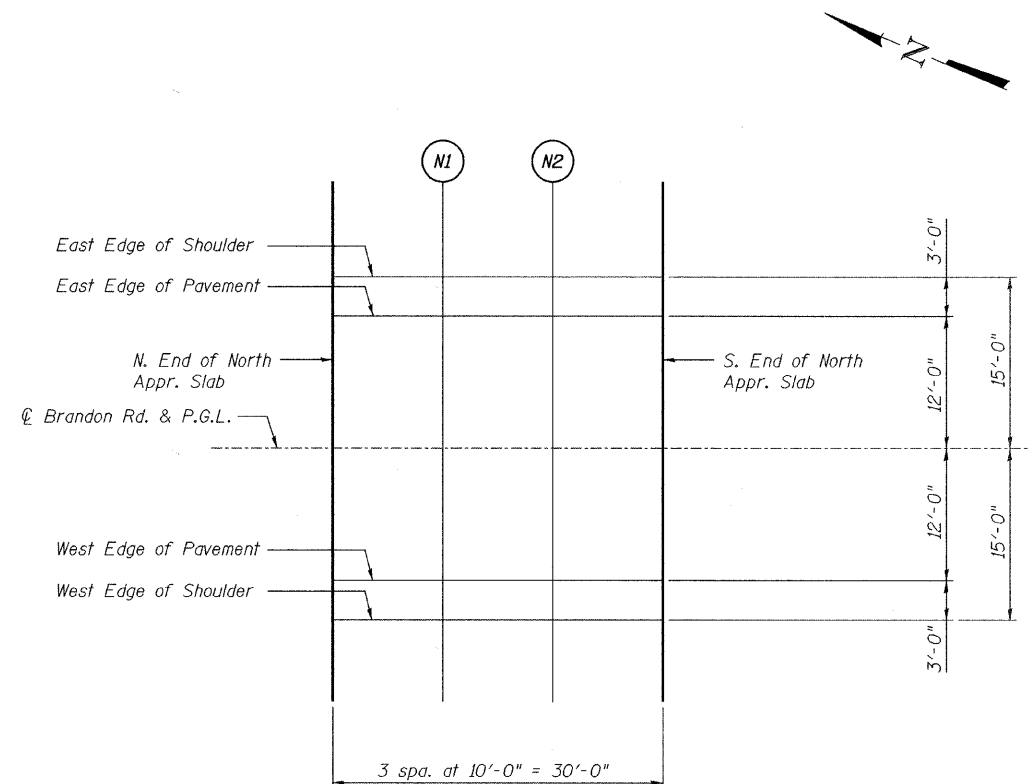
Location	Station	Offset	Theoretical Grade Elevations
N. End of North Appr. Slab	13+06.83	0.00	522.14
N1	13+16.83	0.00	522.02
N2	13+26.83	0.00	521.90
S. End of North Appr. Slab	13+36.83	0.00	521.78

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of North Appr. Slab	13+06.83	12.00	521.96
N1	13+16.83	12.00	521.83
N2	13+26.83	12.00	521.71
S. End of North Appr. Slab	13+36.83	12.00	521.59

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of North Appr. Slab	13+06.83	15.00	521.89
N1	13+16.83	15.00	521.77
N2	13+26.83	15.00	521.65
S. End of North Appr. Slab	13+36.83	15.00	521.53



**PLAN**  
(North Approach)

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	VH
CHECKED -	MRB

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SHEET NO. S11	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S47 SHEETS	341	04-00090-07-BR	WILL	57	19
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 63442					

**TOP OF NORTH APPROACH  
SLAB ELEVATIONS  
STRUCTURE NO. 099-3298**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EAST EDGE OF SHOULDER

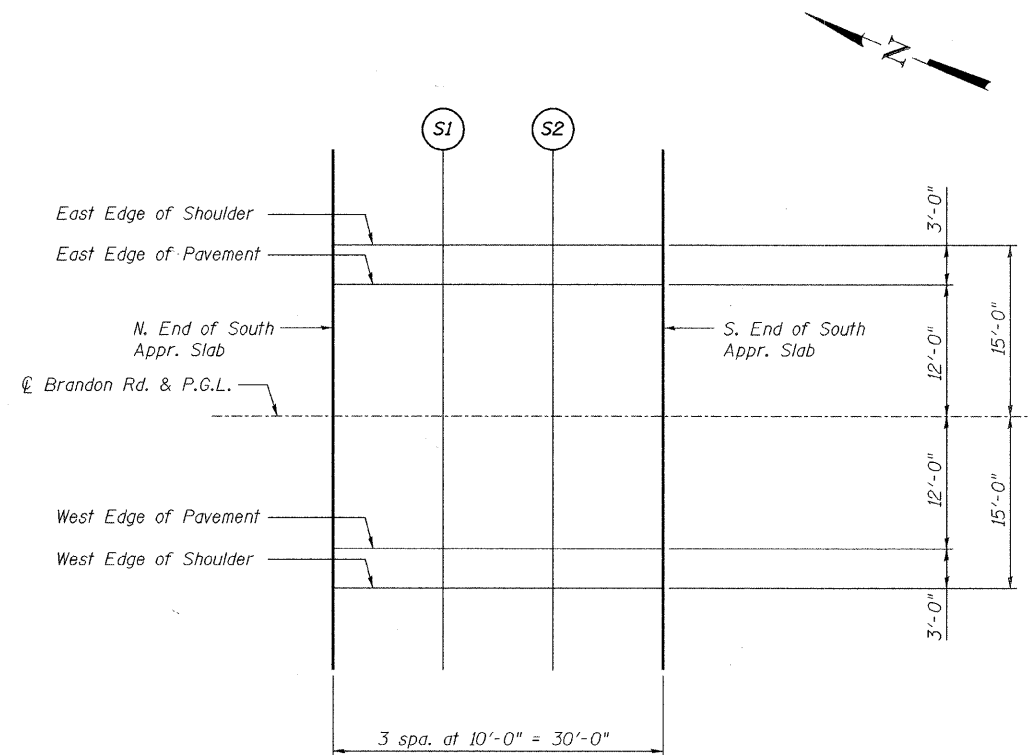
Location	Station	Offset	Theoretical Grade Elevations
N. End of South Appr. Slab	19+93.16	-15.00	520.90
S1	20+03.16	-15.00	520.94
S2	20+13.16	-15.00	520.99
S. End of South Appr. Slab	20+23.16	-15.00	521.06

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of South Appr. Slab	19+93.16	-12.00	520.96
S1	20+03.16	-12.00	521.00
S2	20+13.16	-12.00	521.06
S. End of South Appr. Slab	20+23.16	-12.00	521.12

☉ BRANDON ROAD & PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations
N. End of South Appr. Slab	19+93.16	0.00	521.15
S1	20+03.16	0.00	521.19
S2	20+13.16	0.00	521.24
S. End of South Appr. Slab	20+23.16	0.00	521.31



**PLAN**  
(South Approach)

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of South Appr. Slab	19+93.16	12.00	520.96
S1	20+03.16	12.00	521.00
S2	20+13.16	12.00	521.06
S. End of South Appr. Slab	20+23.16	12.00	521.12

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of South Appr. Slab	19+93.16	15.00	520.90
S1	20+03.16	15.00	520.94
S2	20+13.16	15.00	520.99
S. End of South Appr. Slab	20+23.16	15.00	521.06

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	VH
CHECKED -	MRB

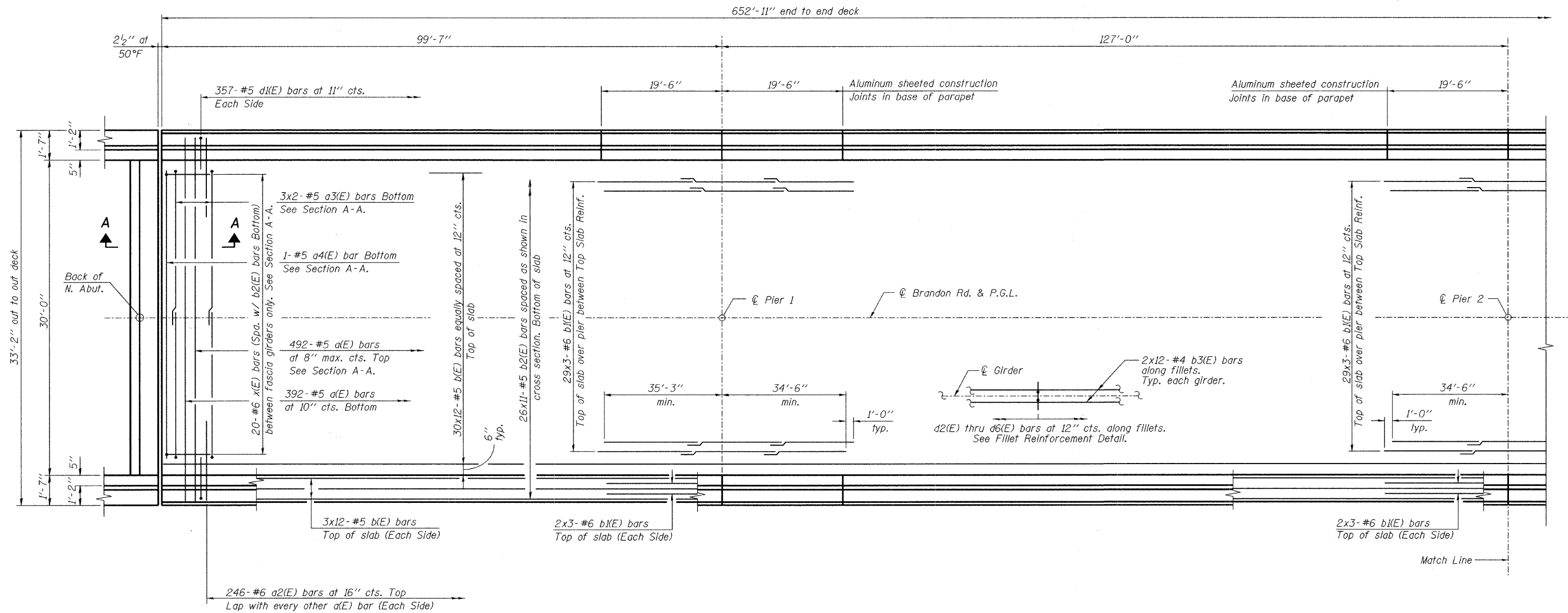
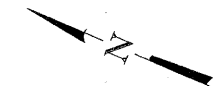
**TOP OF SOUTH APPROACH  
SLAB ELEVATIONS  
STRUCTURE NO. 099-3298**

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SHEET NO. S12	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S47 SHEETS	341	04-00090-07-BR	WILL	57	20
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 63442					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**PARTIAL PLAN**

**NOTES:**

1. For Section A-A and Fillet Reinforcement Detail see sheet S18.
2. For additional notes see sheet S15.

DESIGNED -	JLS
CHECKED -	MRB
DRAWN -	VH/MB
CHECKED -	KWS

**DECK REINFORCEMENT PLAN 1 OF 3  
STRUCTURE NO. 099-3298**

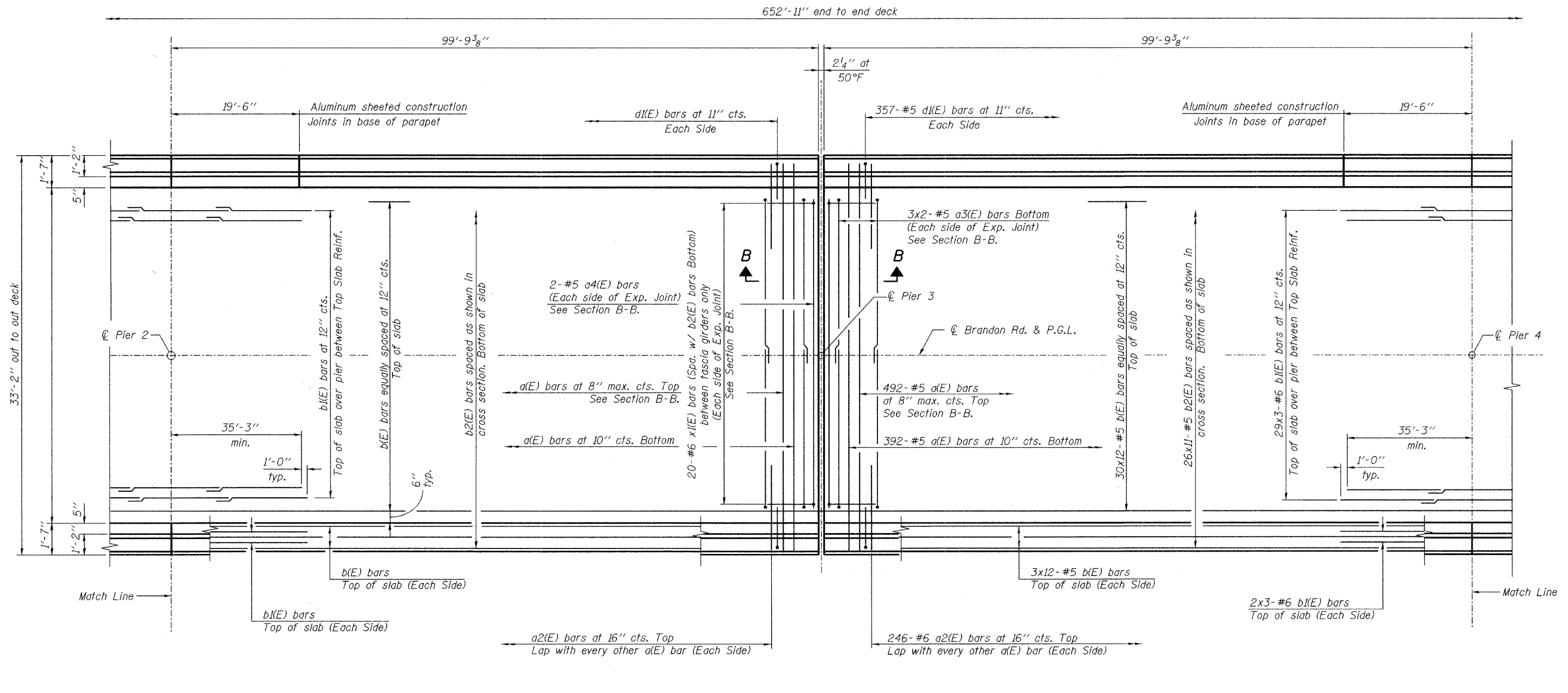
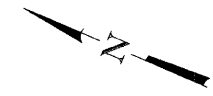
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312-565-0450 Job No. 3808.02

SHEET NO. S13 S47 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	21
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 63442					

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DEPARTMENT OF TRANSPORTATION



**PARTIAL PLAN**

**NOTES:**

1. For Section B-B and Fillet Reinforcement Detail see sheet S18.
2. For additional notes see sheet S15.

DESIGNED -	JLS
CHECKED -	MRB
DRAWN -	VH/MB
CHECKED -	KWS

**DECK REINFORCEMENT PLAN 2 OF 3**  
**STRUCTURE NO. 099-3298**

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312-955-0450 Job No. 3808.02

SHEET NO. S14 S47 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	22
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 63442		

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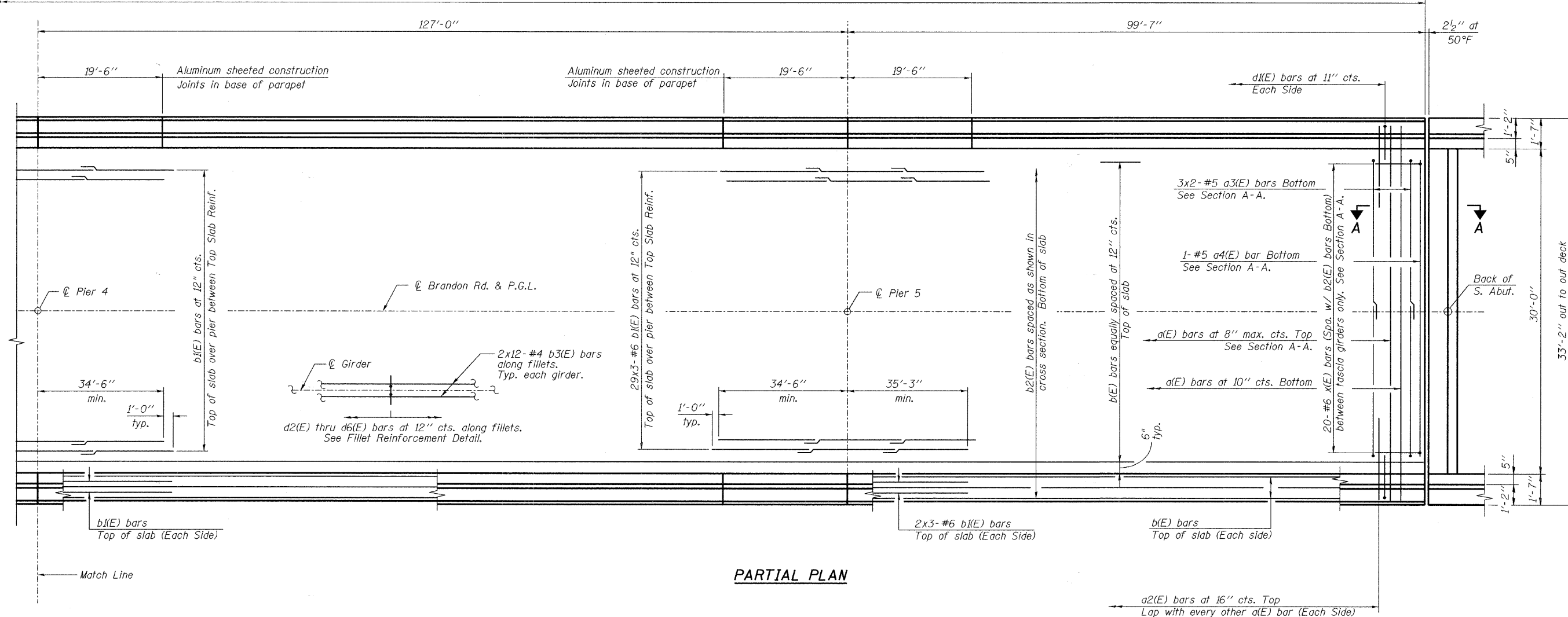
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DEPARTMENT OF TRANSPORTATION



652'-11" end to end deck



**PARTIAL PLAN**

**MINIMUM BAR LAP**  
(Slab)

#4 bar	= 2'-7"
#5 bar	= 3'-3"
#6 bar	= 3'-10"

- NOTES:**
- Dimensions are based on a 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 on sheet S21.
  - Bars indicated thus 2x3-#5 etc. indicates 2 lines of bars with 3 lengths per line.
  - For Bill of Material and Reinforcement schedule see sheet S17.
  - For Section A-A and Fillet Reinforcement Detail see sheet S18.

DESIGNED -	JLS
CHECKED -	MRB
DRAWN -	VH/MB
CHECKED -	KWS

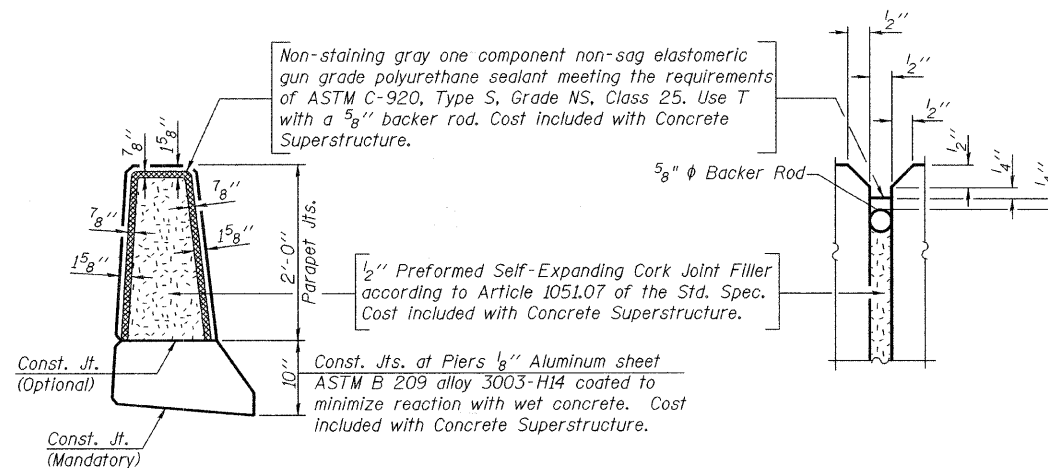
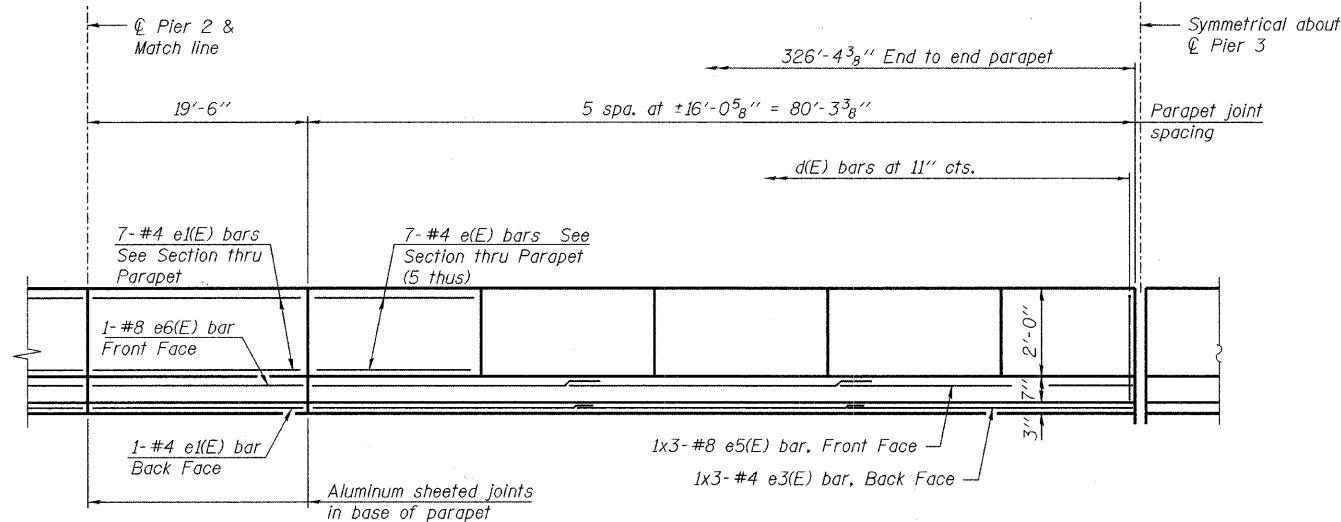
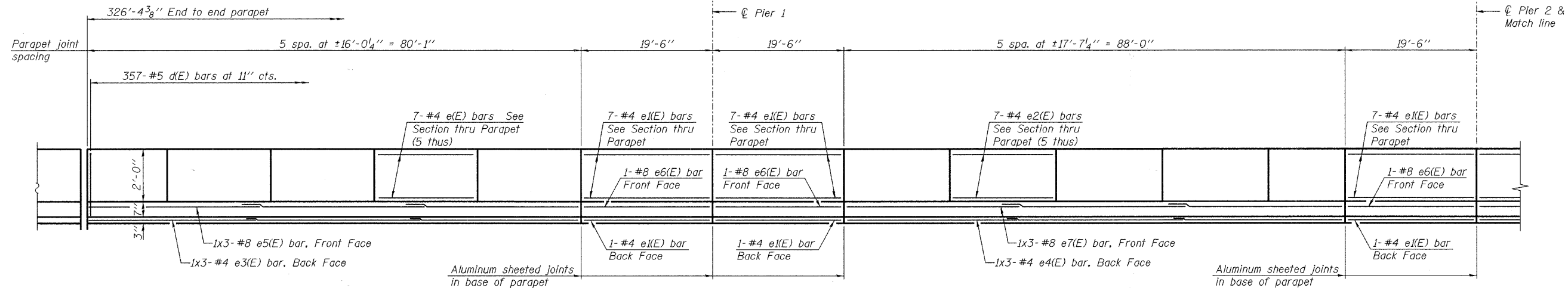
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**DECK REINFORCEMENT PLAN 3 OF 3**  
**STRUCTURE NO. 099-3298**

SHEET NO. S15	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	23
S47 SHEETS	CONTRACT NO. 63442				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

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PARAPET JOINT DETAILS

MINIMUM BAR LAP

(Parapet)  
#4 bar = 2'-0"  
#8 bar = 5'-2"

NOTES:

1. Bars indicated thus 1x3-#8 etc. indicates 1 line of bars with 3 lengths per line.
2. For Section Thru Parapet, Bill of Material and Reinforcement schedule see sheet S17.
3. The joint opening at the Abutments and Pier 3 shall match the deck opening.

INSIDE ELEVATION OF EAST PARAPET  
REFLECTED INSIDE ELEVATION OF WEST PARAPET

DESIGNED -	JLS
CHECKED -	MRB
DRAWN -	VH
CHECKED -	KWS

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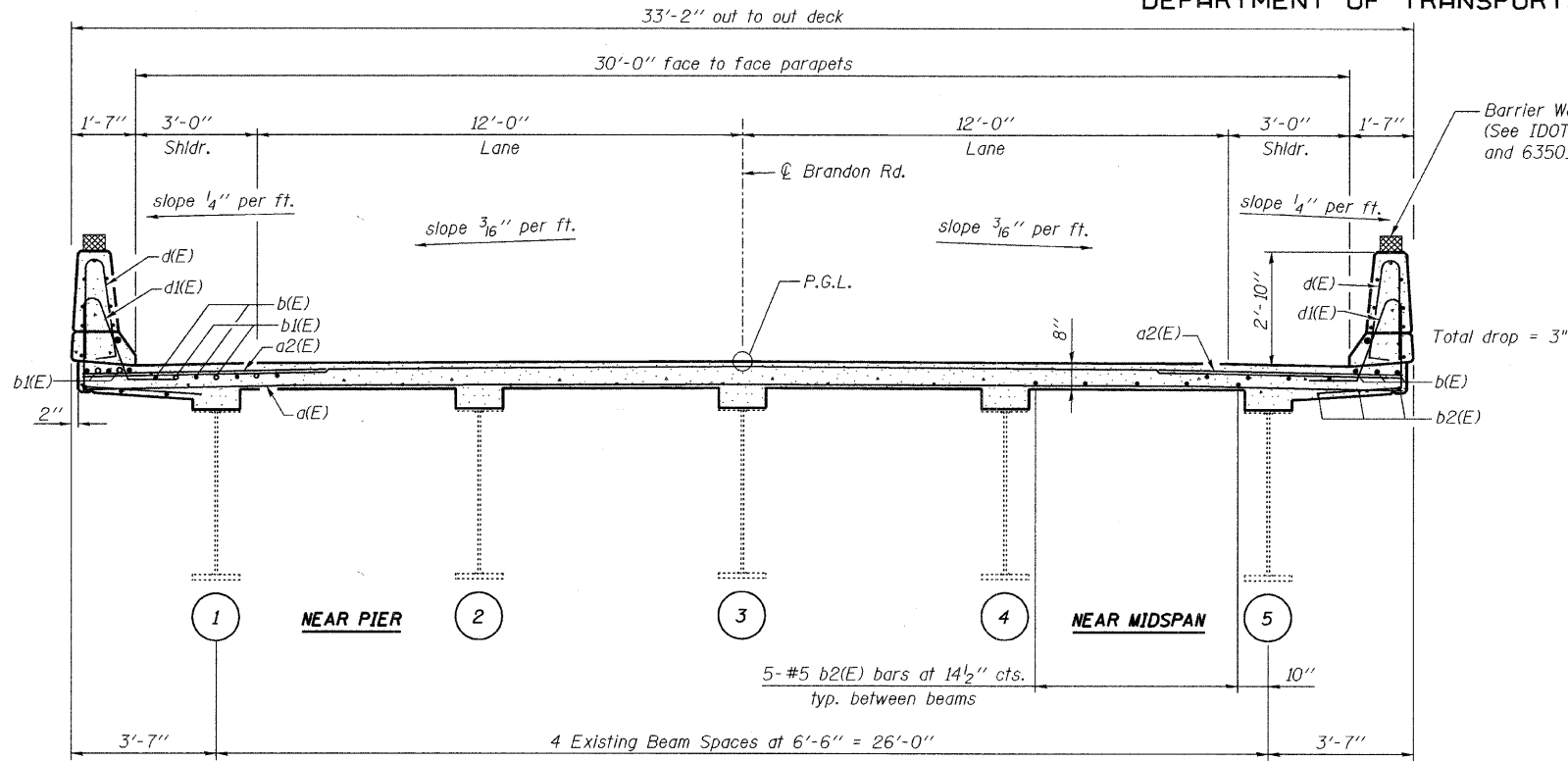
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Chicago, Illinois 60601  
312-565-0450 Job No. 3808.02

SHEET NO. S16 S47 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	24
CONTRACT NO. 63442					
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

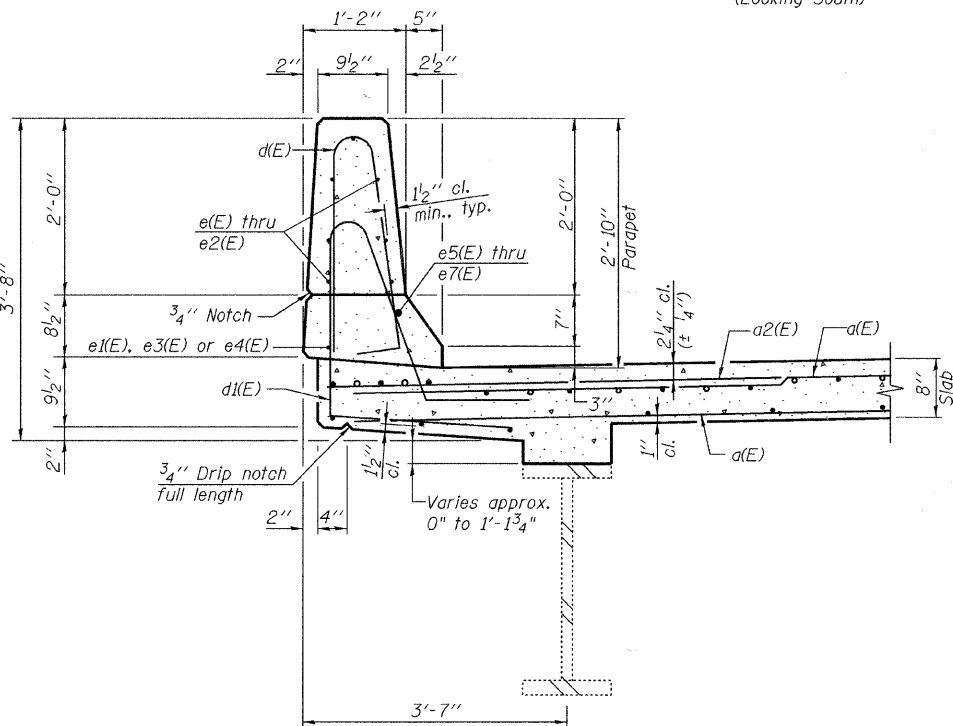
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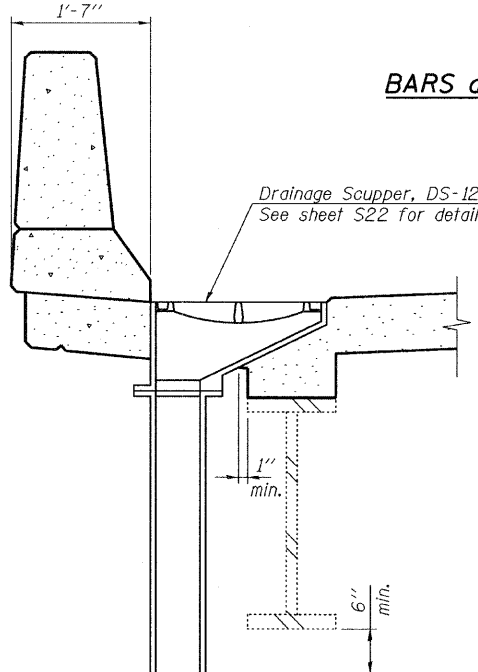
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**CROSS SECTION**  
(Looking South)

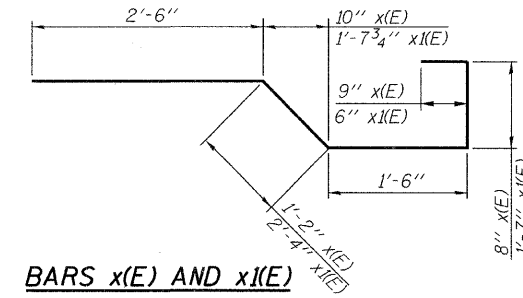


**SECTION THRU PARAPET**

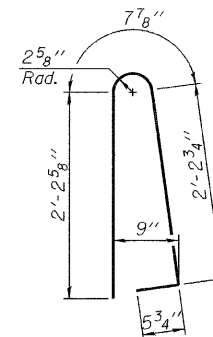


**SECTION C-C**

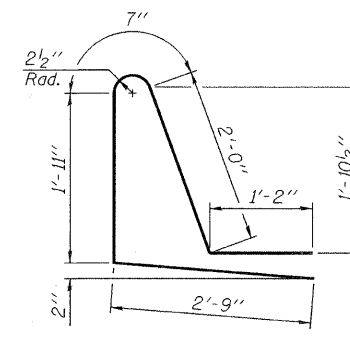
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CHECKED -	MRB
DRAWN -	VH/MB
CHECKED -	KWS



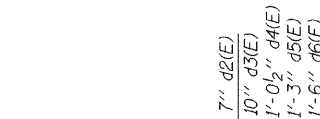
**BARS x(E) AND x1(E)**



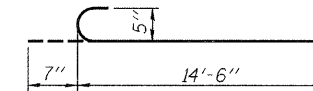
**BAR d(E)**



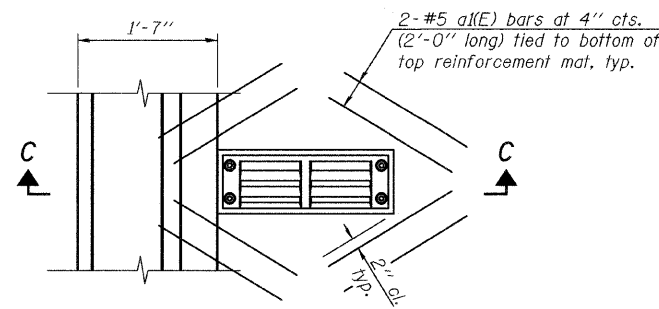
**BAR d1(E)**



**BARS d2(E), d3(E), d4(E), d5(E) AND d6(E)**



**BAR a3(E)**



**ADDITIONAL SCUPPER REINFORCEMENT**  
(8 Scuppers)

**NOTES:**

1. Drains shall be located clear of all diaphragms.
2. Cut longitudinal reinforcement to clear drainage scuppers.

**DECK CROSS SECTION AND DETAILS**  
**STRUCTURE NO. 099-3298**

**SUPERSTRUCTURE**  
**BILL OF MATERIAL**

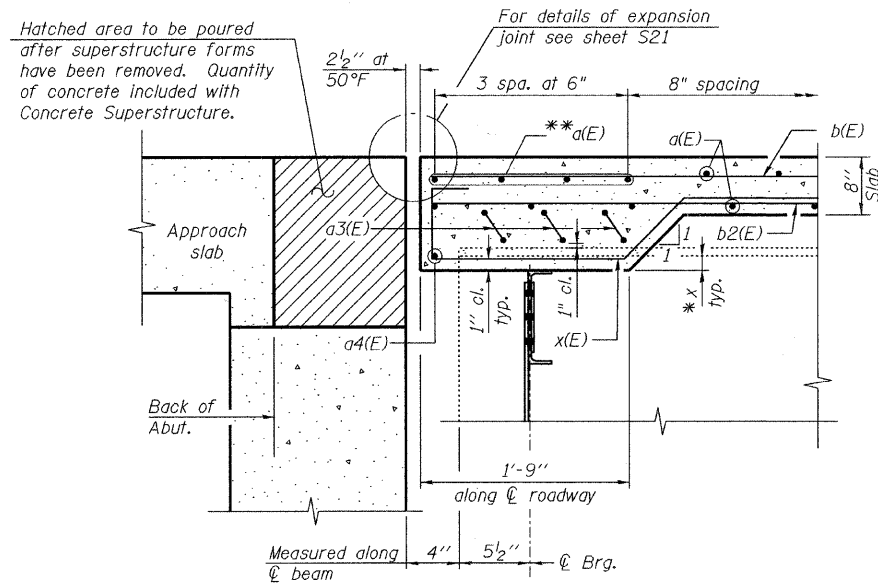
Bar	No.	Size	Length	Shape
a(E)	1768	*5	32'-6"	—
a1(E)	64	*5	2'-0"	—
a2(E)	984	*6	6'-6"	—
a3(E)	24	*5	15'-9"	—
a4(E)	6	*5	25'-9"	—
b(E)	864	*5	30'-3"	—
b1(E)	396	*6	26'-3"	—
b2(E)	572	*5	32'-9"	—
b3(E)	240	*4	29'-3"	—
d(E)	1428	*5	5'-7"	—
d1(E)	1428	*5	8'-5"	—
d2(E)	1170	*4	4'-7"	—
d3(E)	290	*4	4'-7"	—
d4(E)	585	*4	5'-0"	—
d5(E)	560	*4	5'-5"	—
d6(E)	680	*4	5'-11"	—
e(E)	280	*4	15'-9"	—
e1(E)	128	*4	19'-3"	—
e2(E)	140	*4	17'-4"	—
e3(E)	24	*4	28'-2"	—
e4(E)	12	*4	30'-9"	—
e5(E)	24	*8	30'-4"	—
e6(E)	16	*8	19'-3"	—
e7(E)	12	*8	32'-10"	—
x(E)	40	*6	6'-7"	—
x1(E)	40	*6	8'-5"	—
Reinforcement Bars, Epoxy Coated		Pound	179,650	
Concrete Superstructure		Cu. Yd.	806.6	

SHEET NO. S17 S47 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	25
FED. ROAD DIST. NO.			ILLINOIS	CONTRACT NO. 63442	
			FED. AID PROJECT		

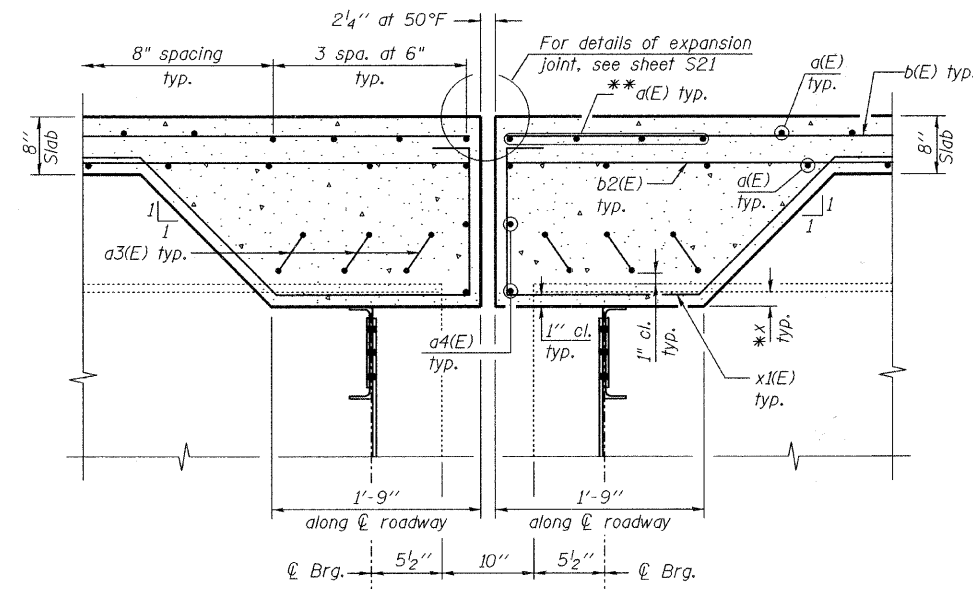
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Chicago, Illinois 60601  
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SECTION A-A

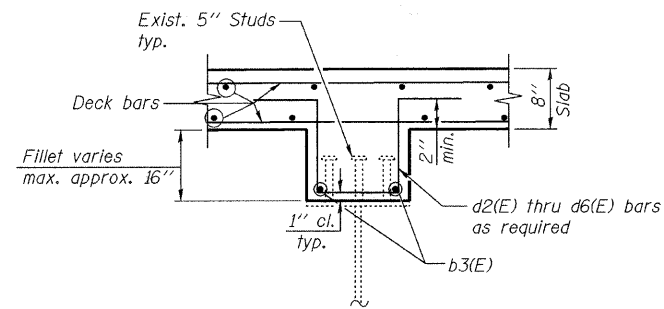


SECTION B-B

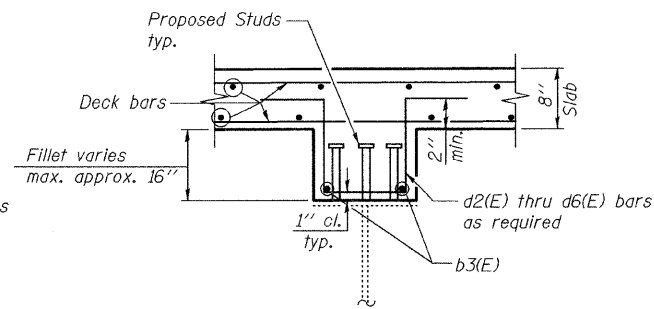
\* see Table A  
\*\* place under b(E) bars

TABLE A

GIRDER	x
1 & 5	3/4"
2 & 4	2"
3	3/4"



WITH EXISTING STUDS



WITH PROPOSED STUDS

FILLET REINFORCEMENT DETAIL

FILLET REINFORCEMENT TABLE

BAR	USE WHEN FILLET LESS THAN
d2(E)	5 1/2"
d3(E)	8 1/2"
d4(E)	11"
d5(E)	1'-1 1/2"
d6(E)	1'-4 1/2"

NOTE:

The concrete edge beams shall be placed from fascia beam to fascia beam and not on the overhangs of the structure.

DESIGNED -	JLS
CHECKED -	MRB
DRAWN -	VH/MB
CHECKED -	KWS

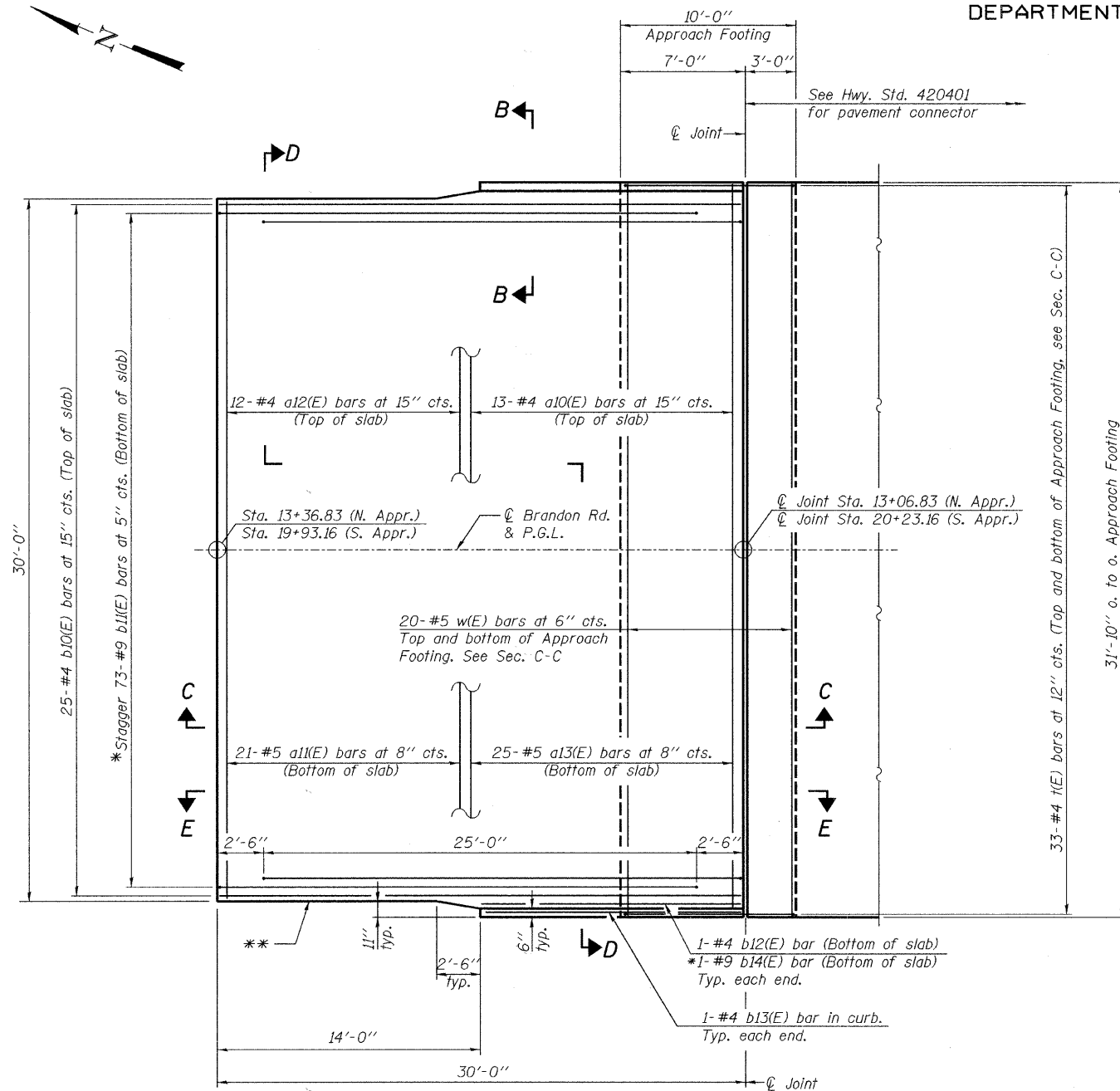
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SHEET NO. S18	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	26
S47 SHEETS			CONTRACT NO. 63442		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

DECK DETAILS  
STRUCTURE NO. 099-3298

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

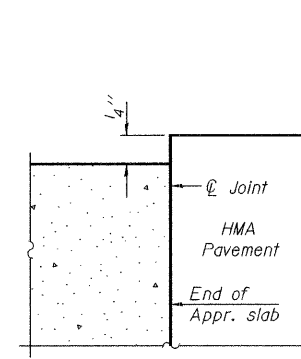


**PLAN**

(S. Approach shown, N. Approach opposite hand)

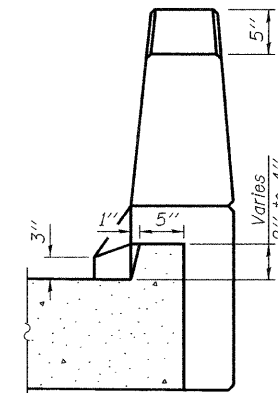
- \* Tilt #9 b11(E) and b14(E) bars as required to maintain clearance.
- \*\* Closed cell joint filler according to Article 1051.08 of the Std. Specifications; full depth of slab, full length of parapet. Typ. each parapet. Cost included with Concrete Superstructure.

DESIGNED -	JLS
CHECKED -	MRB
DRAWN -	VH/MB
CHECKED -	KWS



**FLEXIBLE PAVEMENT**

**DETAIL A**



**VIEW B-B**

**NOTE:**

For Sections C-C and D-D and View E-E see sheet S20.

**BRIDGE APPROACH SLAB DETAILS**  
**1 OF 2**  
**STRUCTURE NO. 099-3298**

SHEET NO. S19	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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S47 SHEETS	CONTRACT NO. 63442				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

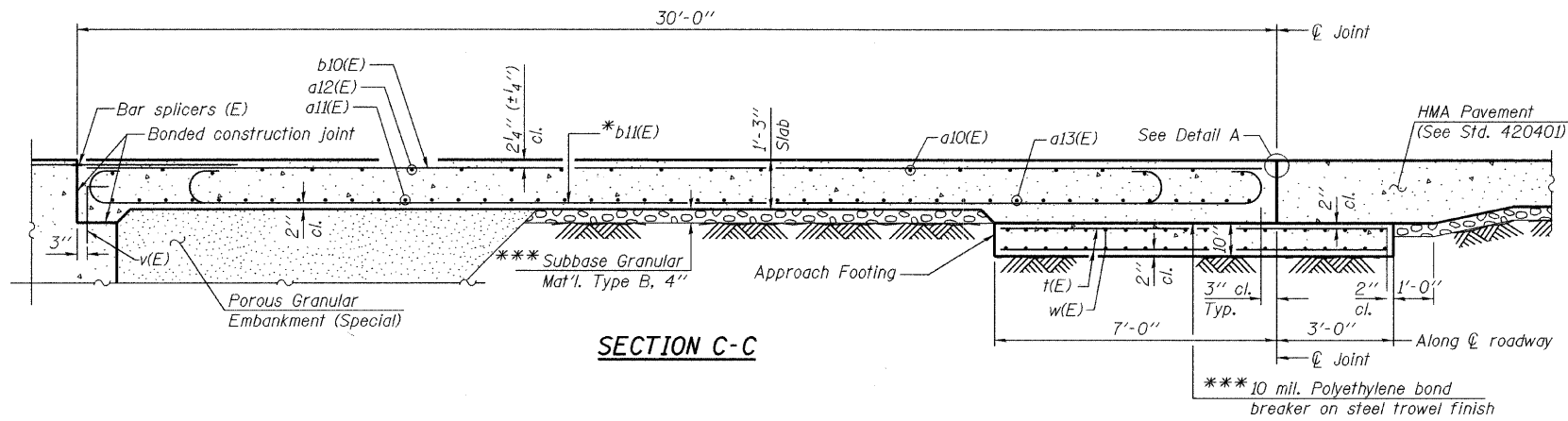
**benesch**

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Chicago, Illinois 60601  
312-565-0450 Job No. 3808.02

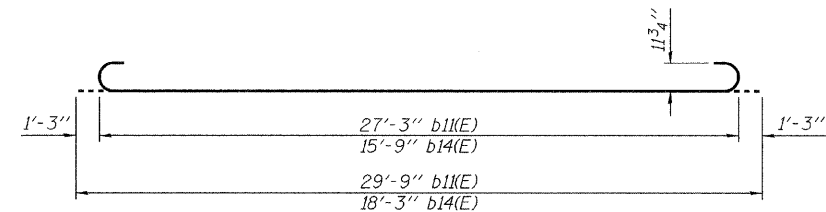
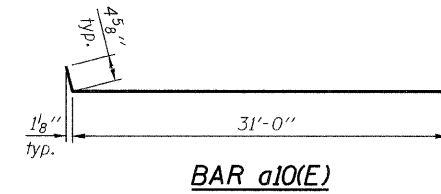
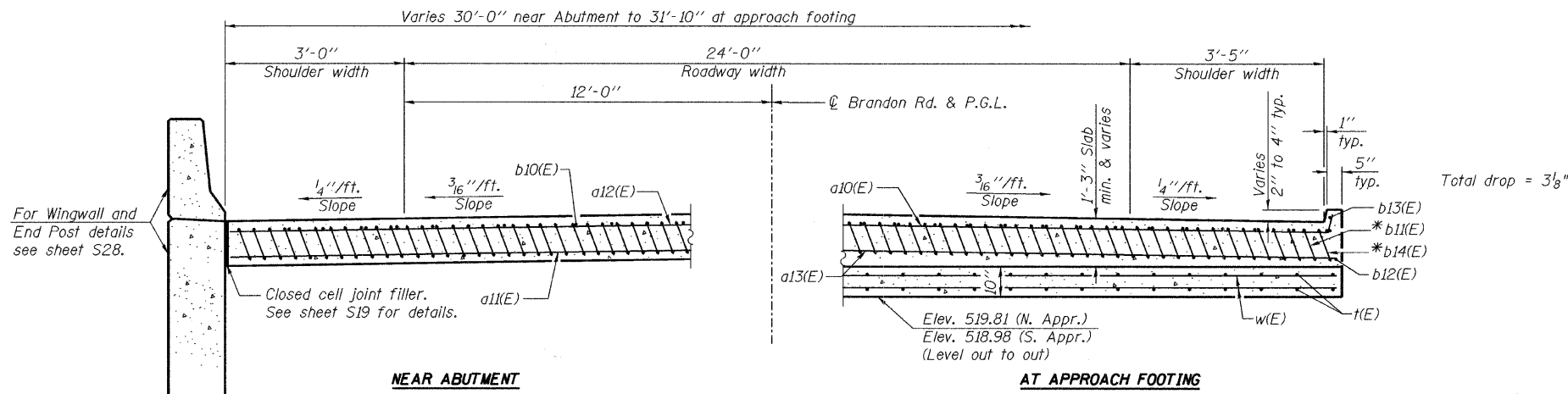
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TWO APPROACHES  
BILL OF MATERIAL



Bar	No.	Size	Length	Shape	
a10(E)	26	#4	31'-9"	U	
a11(E)	42	#5	29'-8"	U	
a12(E)	24	#4	29'-8"	U	
a13(E)	50	#5	31'-6"	U	
b10(E)	50	#4	29'-8"	U	
b11(E)	146	#9	29'-9"	U	
b12(E)	4	#4	15'-9"	U	
b13(E)	4	#4	15'-8"	U	
b14(E)	4	#9	18'-3"	U	
t(E)	132	#4	9'-8"	U	
w(E)	80	#5	31'-6"	U	
Concrete Superstructure				Cu. Yd.	93.4
Concrete Structures				Cu. Yd.	19.7
Reinforcement Bars, Epoxy Coated				Pound	23,560

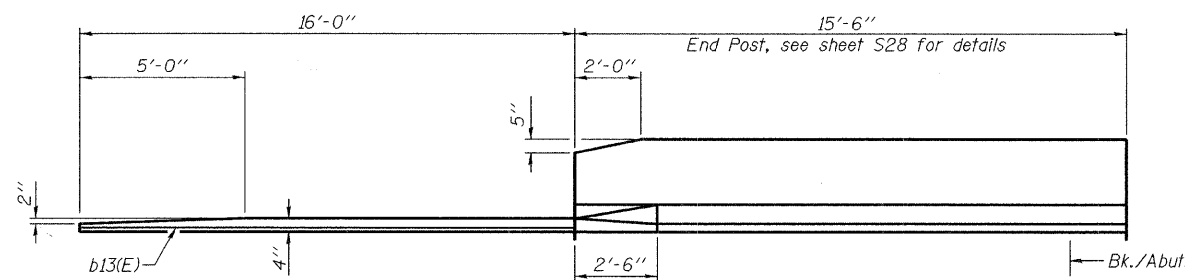


SECTION D-D  
(See Plan for dimensions not shown)

\* Tilt #9 b11(E) and b14(E) bars as required to maintain clearance.  
\*\*\* Cost included with Concrete Superstructure.

NOTES:

- For Detail A and View B-B see sheet S19.
- Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
- Approach footing concrete shall be paid for as Concrete Structures.
- Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
- For v(E) bar details see sheet S27.
- The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
- For bar splicer details see sheet S34.
- Cost of excavation for approach footing included with Concrete Structures.
- For Porous Granular Embankment (Special) and drainage treatment details see sheet S29.



VIEW E-E

DESIGNED -	JLS
CHECKED -	MRB
DRAWN -	VH/MB
CHECKED -	KWS

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Chicago, Illinois 60601  
312-565-0490 Job No. 3808.02

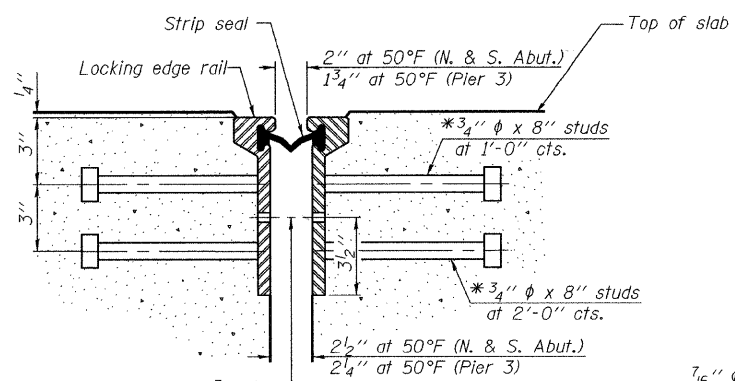
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	341	04-00090-07-BR	WILL	57	28
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 63442		

BRIDGE APPROACH SLAB DETAILS  
2 OF 2  
STRUCTURE NO. 099-3298

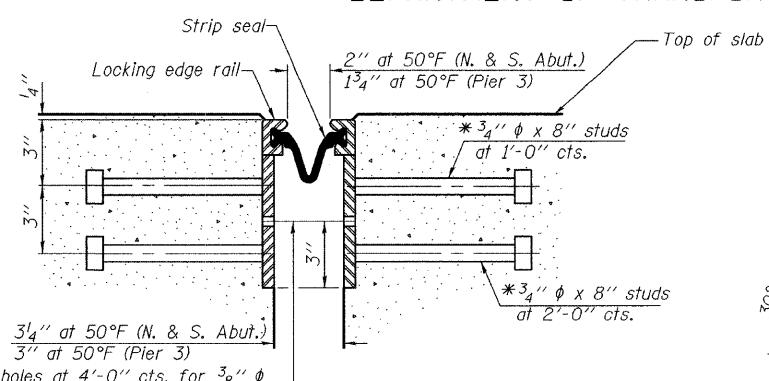
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

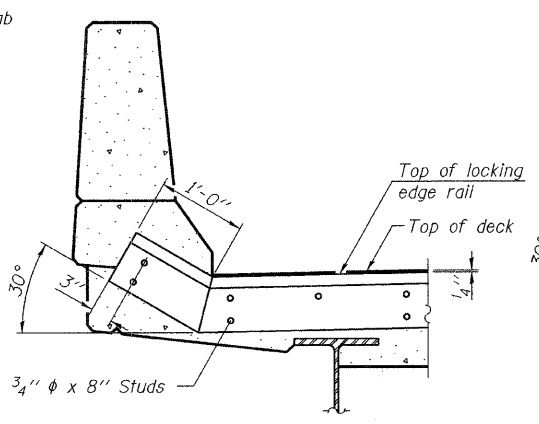
\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



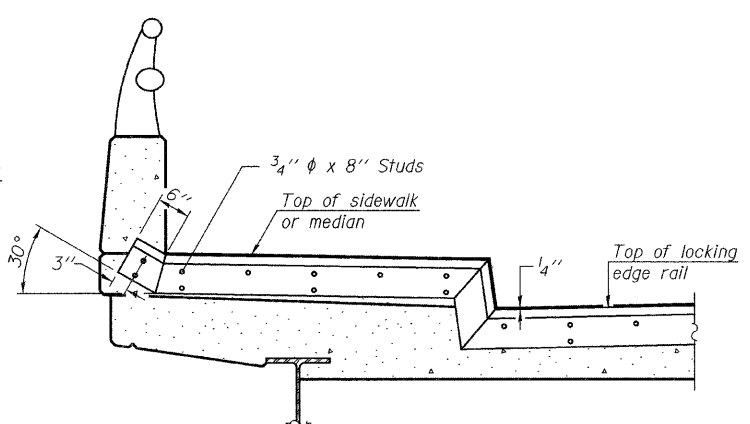
SECTION THRU  
ROLLED RAIL JOINT



SECTION THRU  
WELDED RAIL JOINT



AT PARAPET  
(See Section A-A for end treatment of skews > 30°.)



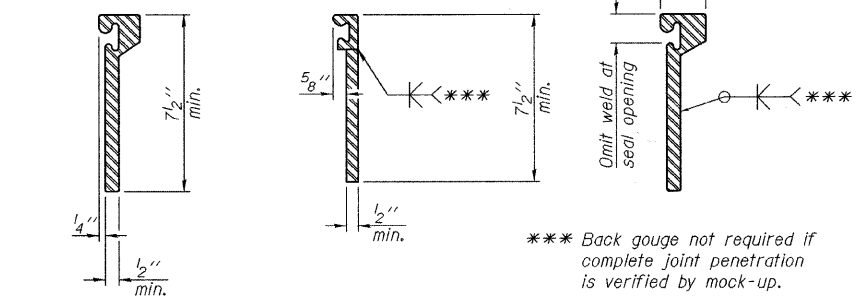
AT SIDEWALK OR MEDIAN  
(Shorter plates with a single row of studs at 12 inch cts. may be necessary on medians which are shallower than 9 inch. See manufacturer's recommendation.)

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

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

TYPICAL END TREATMENTS

Notes:  
The strip seal shall be made continuous and shall have a minimum thickness of 1/4 inch. 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 Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. 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.  
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.  
Maximum space between rail segments at stage lines shall be 3/16 inch, sealed with a suitable sealant.

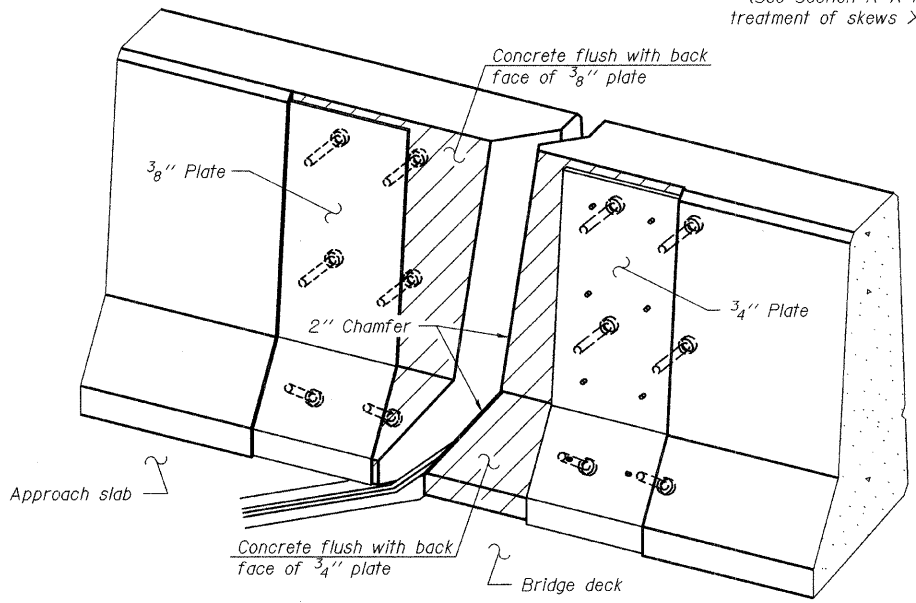


ROLLED  
EXTRUDED RAIL

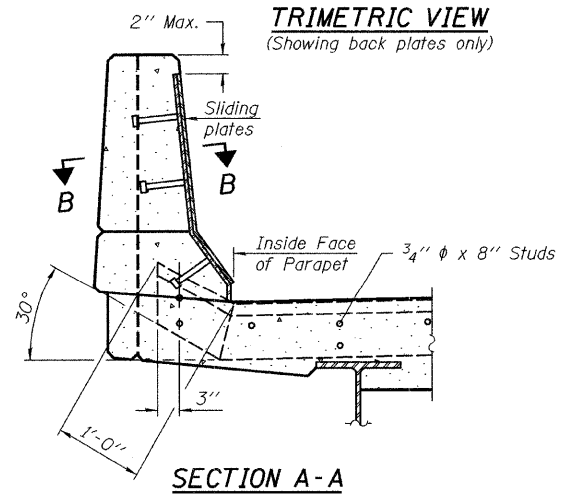
WELDED RAIL

LOCKING EDGE  
RAIL SPLICE

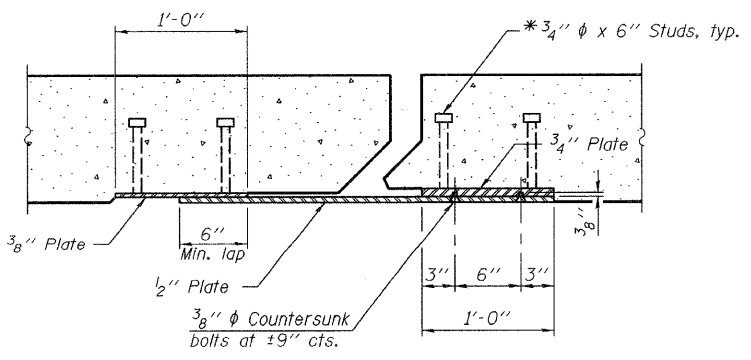
The inside of the locking edge rail groove shall be free of weld residue.  
Rolled rail shown, welded rail similar.



TRIMETRIC VIEW  
(Showing back plates only)

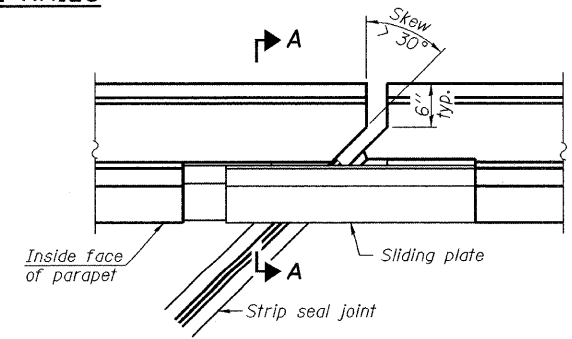


SECTION A-A  
POINT BLOCK DETAILS  
(for skews > 30°)



SECTION B-B

LOCKING EDGE RAILS



PLAN

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	96.0

PREFORMED JOINT STRIP SEAL  
STRUCTURE NO. 099-3298

DESIGNED -	JLS
CHECKED -	MRB
DRAWN -	VH
CHECKED -	MRB

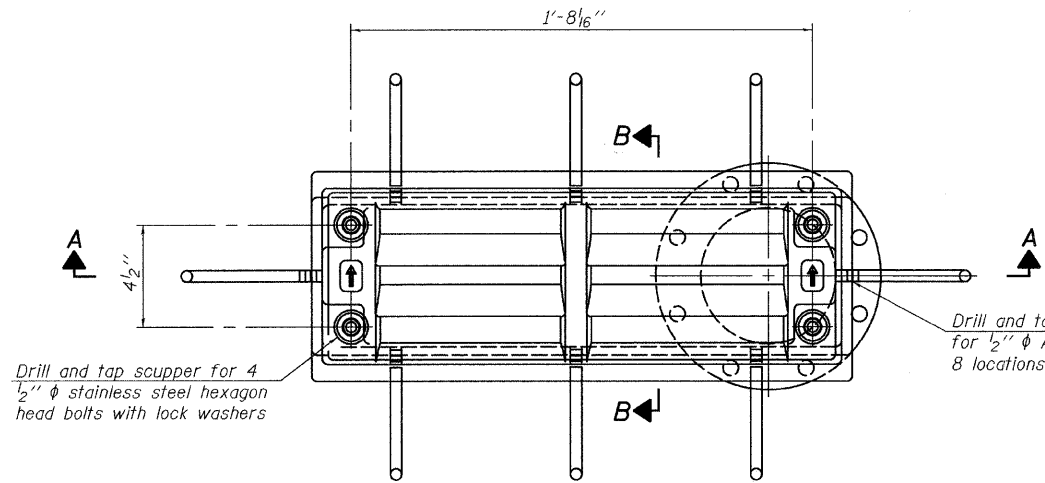
EJ-SSJ 11-1-09

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312-865-0460 Job No. 3908.02

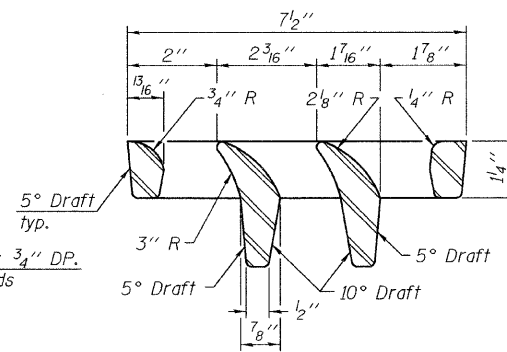
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FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
			CONTRACT NO. 63442		

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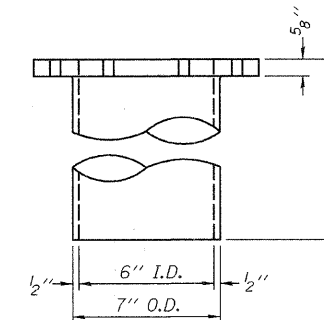
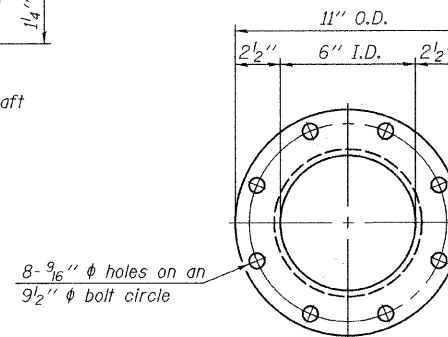
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



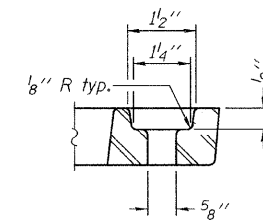
PLAN



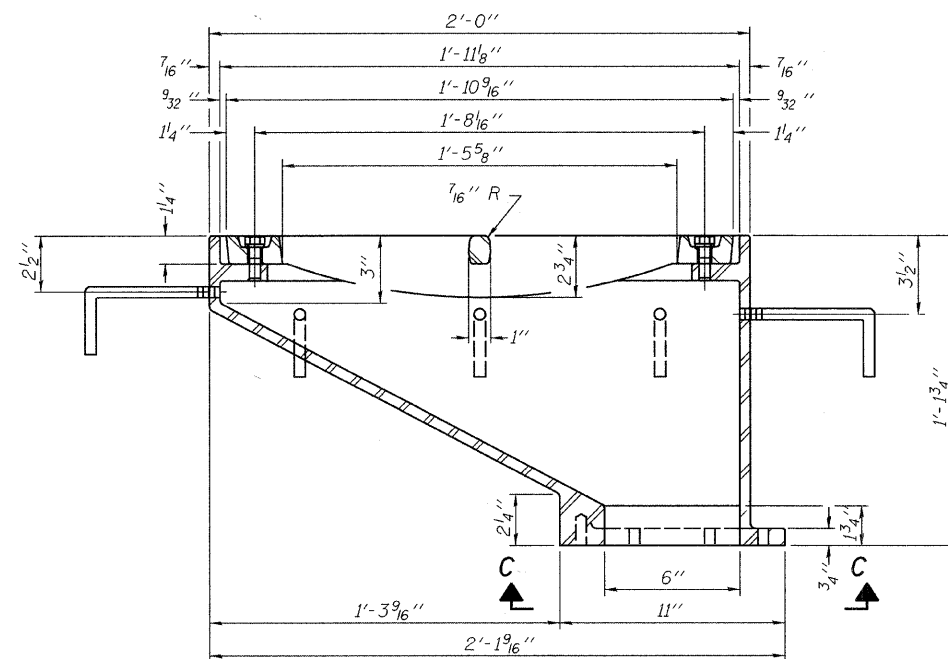
VANE GRATE DETAIL



DOWNSPOUT

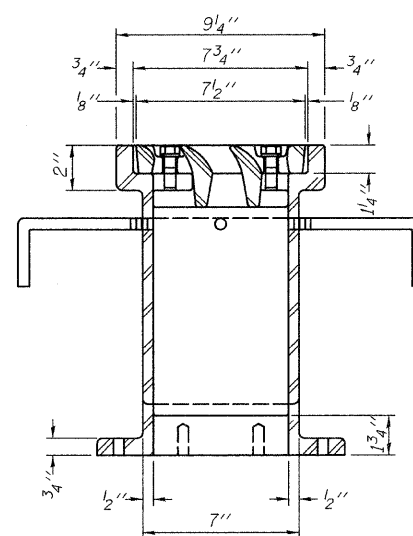


BOLT HOLE DETAIL



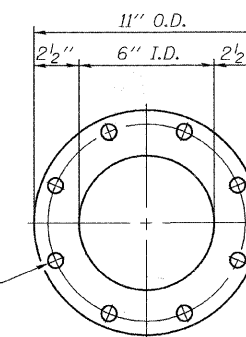
SECTION A-A

(See sheet S17 for scupper location relative to parapet)

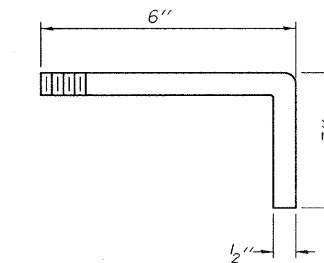


SECTION B-B

Drill and tap 8 holes for 1/2"-13 bolts on a 9 1/2" φ bolt circle. (2 blind holes are 1 1/4" deep, 6 thru holes)



VIEW C-C



ANCHOR STUD DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-12	Each	8

DRAINAGE SCUPPER, DS-12  
STRUCTURE NO. 099-3298

DESIGNED -	MRB
CHECKED -	KWS
DRAWN -	VH
CHECKED -	MRB

DS-12

11-1-09

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312-565-0460 Job No. 3908.02

SHEET NO. S22	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S47 SHEETS	341	04-00090-07-BR	WILL	57	30
			CONTRACT NO. 63442		
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

	0.4 Span 1 0.6 Span 3 0.4 Span 4 0.6 Span 6	Pier 1 Pier 2 Pier 4 Pier 5	0.5 Span 2 0.5 Span 5
$I_s$	(in <sup>4</sup> )	20,872	20,872
$I_o(n)$	(in <sup>4</sup> )	72,612	72,612
$I_o(3n)$	(in <sup>4</sup> )	49,826	49,826
$S_s$	(in <sup>3</sup> )	954	954
$S_c(n)$	(in <sup>3</sup> )	1568	1568
$S_c(3n)$	(in <sup>3</sup> )	1396	1396
$Z$	(in <sup>3</sup> )	1871	
$\phi$	(k/')	0.998	1.014
$M\phi$	(k)	572.6	548.1
$s\phi$	(k/')	0.480	0.480
$M_s\phi$	(k)	324.1	366.5
$M_L$	(k)	745.5	837.9
$M_I$	(k)	166.4	166.2
$^{5/8}[M_L + M_I]$	(k)	152.3	167.7
$M_a$	(k)	3145.4	3369.0
$M_u$	(k)	5727.3	5727.3
$f_s \phi$ non-comp	(ksi)	7.2	6.9
$f_s \phi$ (comp)	(ksi)	2.8	3.2
$f_s \ ^{5/8}[M_L + M_I]$	(ksi)	11.7	12.8
$f_s$ (Overload)	(ksi)	21.6	22.9
$f_s$ (Total)	(ksi)		
VR	(k)	57.1	45.2

	N. Abut.	Piers 1, 2, 4 or 5	N. Brg. Pier 3 S. Brg. Pier 3
$R\phi$	(k)	53.1	55.5
$R_L$	(k)	42.3	42.3
$R_I$	(k)	9.4	9.4
$R_{Total}$	(k)	104.8	107.2

\* Compact section  
\*\* Braced non-compact and partially braced section

$I_s, S_s$ : Non-composite moment of inertia and section modulus of the steel section used for computing  $f_s$  (Total and Overload) due to non-composite dead loads (in<sup>4</sup> and in<sup>3</sup>).

$I_o(n), S_o(n)$ : Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing  $f_s$  (Total and Overload) due to short-term composite live loads (in<sup>4</sup> and in<sup>3</sup>).

$I_o(3n), S_o(3n)$ : Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing  $f_s$  (Total and Overload) due to long-term composite (superimposed) dead loads (in<sup>4</sup> and in<sup>3</sup>).

$Z$ : Plastic Section Modulus of the steel section in non-composite areas (in<sup>3</sup>).

$\phi$ : Un-factored non-composite dead load (kips/ft.).

$M\phi$ : Un-factored moment due to non-composite dead load (kip-ft.).

$s\phi$ : Un-factored long-term composite (superimposed) dead load (kips/ft.).

$M_s\phi$ : Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

$M_L$ : Un-factored live load moment (kip-ft.).

$M_I$ : Un-factored moment due to impact (kip-ft.).

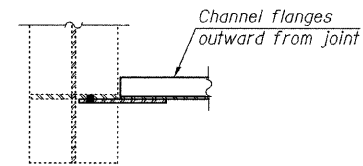
$M_a$ : Factored design moment (kip-ft.).  
 $1.3 [M\phi + M_s\phi + \frac{5}{8}(M_L + M_I)]$

$M_u$ : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).

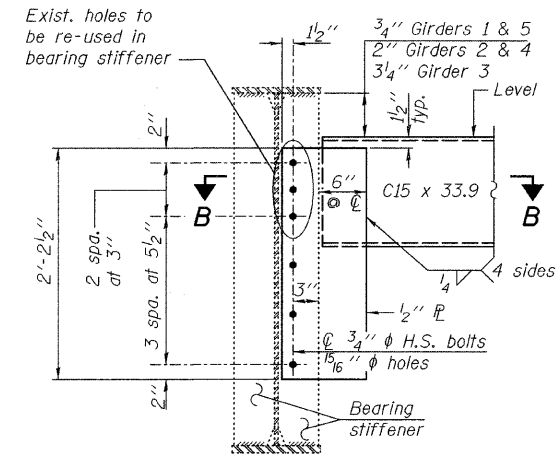
$f_s$  (Overload): Sum of stresses as computed from the moments below (ksi).  
 $M\phi + M_s\phi + \frac{5}{8}(M_L + M_I)$

$f_s$  (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).  
 $1.3 [M\phi + M_s\phi + \frac{5}{8}(M_L + M_I)]$

VR: Maximum  $L$  + impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).



SECTION B-B



END DIAPHRAGM  
(16 required)

Location	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5
Ⓞ Brg. N. Abut.	520.44	520.54	520.63	520.55	520.44
Ⓞ Brg. Pier 1	519.86	519.95	520.04	519.95	519.84
Ⓞ Brg. Pier 2	519.87	519.95	520.05	519.98	519.87
Ⓞ Pier 3	519.86	519.96	520.09	519.99	519.88
Ⓞ Brg. Pier 4	519.89	520.00	520.11	520.00	519.93
Ⓞ Brg. Pier 5	519.88	519.98	520.08	519.98	519.88
Ⓞ Brg. S. Abut.	519.89	519.99	520.09	519.99	519.89

\*\*\*For information only. Elevations are based on survey results and represent the proposed elevation after bearings have been replaced.

NOTES:

- Two hardened washers required for each set of oversized holes.
- Existing and Proposed bolt holes in the existing bearing stiffeners shall be subpunched or subdrilled  $\frac{15}{16}$ " diameter and reamed in the field to  $\frac{15}{16}$ " diameter. Cost included with Furnishing and Erecting Structural Steel.
- All structural steel shall conform to the requirements of AASHTO M 270 Grade 50.

DESIGNED -	JLS
CHECKED -	MRB/KWS
DRAWN -	VH
CHECKED -	MRB/KWS

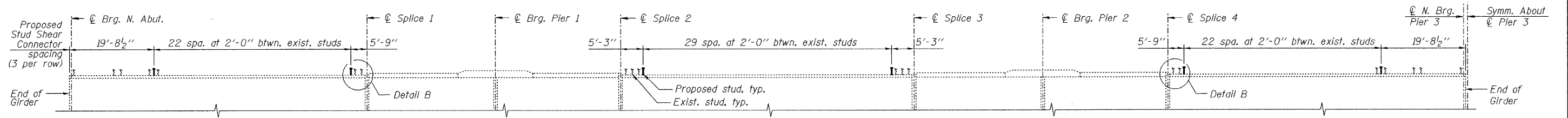
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312-595-0450 Job No. 3808.02

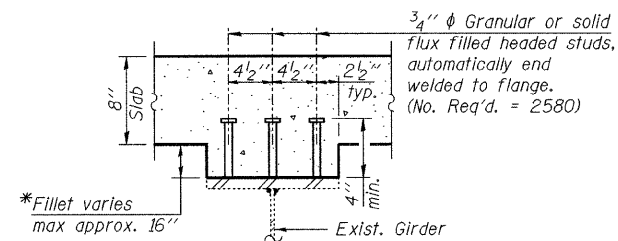
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S47 SHEETS	CONTRACT NO. 63442				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STRUCTURAL STEEL REPAIRS 1 OF 2  
STRUCTURE NO. 099-3298

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

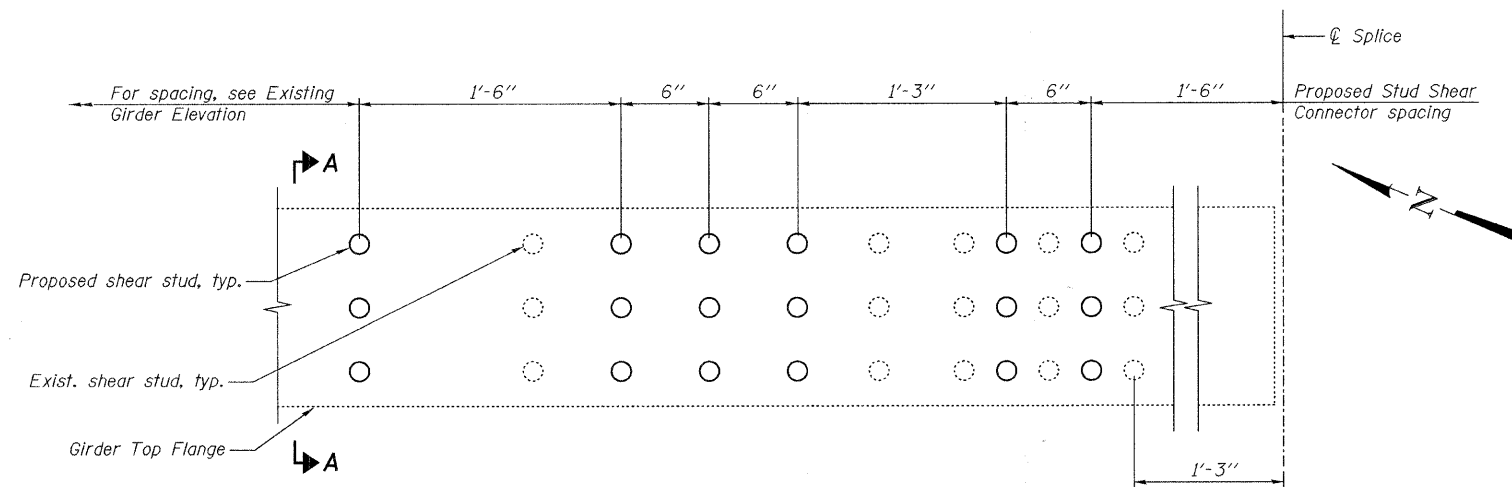


**EXISTING GIRDER ELEVATION**



**SECTION A-A**

\*Fillet reinforcement required along entire span.  
See sheet S18 for Fillet Reinforcement Detail.



**DETAIL B**

Near Splice 1 & 5 shown,  
Near Splice 4 & 8 opposite hand

**NOTES:**

1. See existing plan information for existing stud layout and dimensions.
2. Extreme care shall be taken when removing the deck to preserve the existing studs. See special provision for "Removal of Existing Concrete Deck."

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	MB
CHECKED -	MRB

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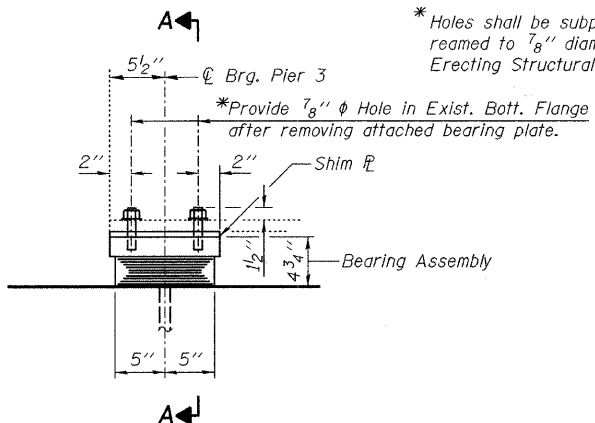
**STRUCTURAL STEEL REPAIRS 2 OF 2  
STRUCTURE NO. 099-3298**

SHEET NO. S24	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	32
S47 SHEETS	CONTRACT NO. 63442				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		



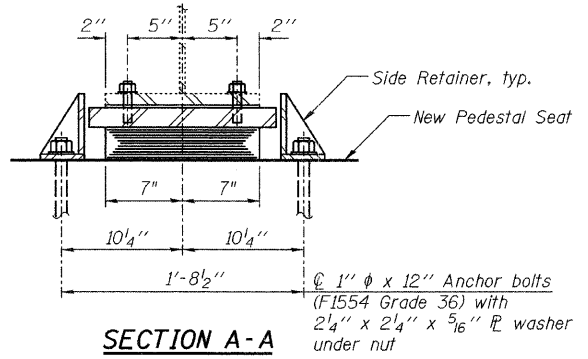
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

\*Holes shall be subpunched or subdrilled  $\frac{3}{4}$ " diameter and reamed to  $\frac{7}{8}$ " diameter. Cost included with Furnishing and Erecting Structural Steel.

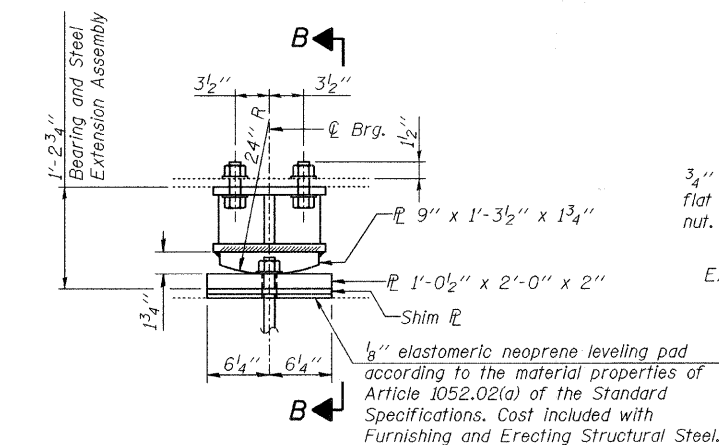


ELEVATION AT PIER 3

TYPE I ELASTOMERIC EXP. BRG.

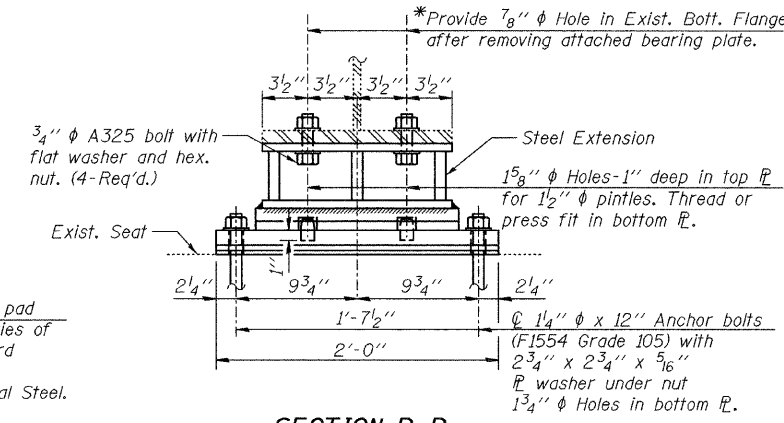


SECTION A-A

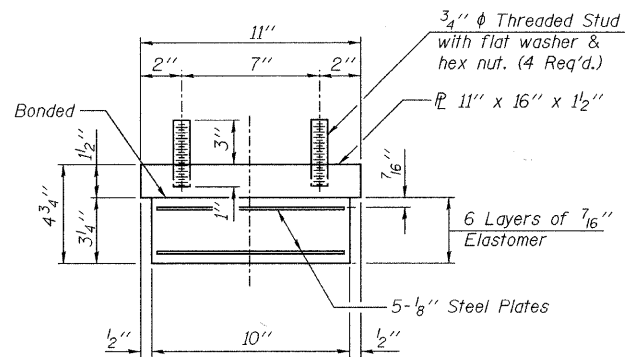


ELEVATION AT PIER

FIXED BEARING  
(Piers 2 & 4)

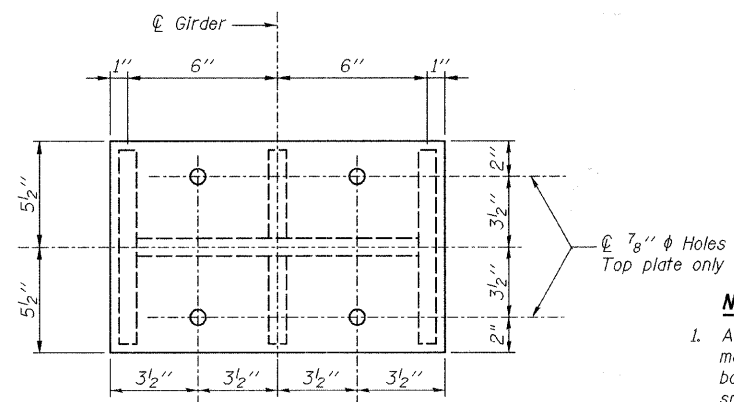


SECTION B-B

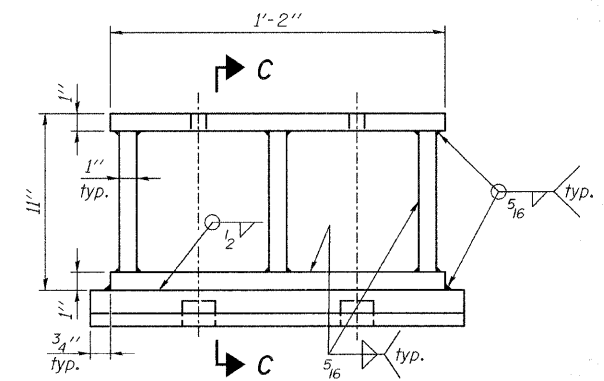


BEARING ASSEMBLY

(Shim plates shall not be placed under Bearing Assembly.)

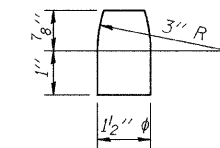


PLAN STEEL EXTENSION



ELEVATION STEEL EXTENSION

(Weight included with Furnishing and Erecting Structural Steel.)



PINTLE

NOTES:

- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Anchor bolts at fixed bearings shall be installed in holes drilled into the existing pier.
- Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.
- The structural steel plates of the Bearing Assembly and Steel Extension shall conform to the requirements of AASHTO M 270 Grade 50.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims as shown on bearing details.
- The anchor bolt size and grades shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.
- Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	10
Anchor Bolts, 1"	Each	20
Anchor Bolts, 1 1/4"	Each	20

BEARING DETAILS 1 OF 2  
STRUCTURE NO. 099-3298

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	VH/MB
CHECKED -	MRB

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alfred benesch & company  
Engineers - Surveyors - Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-595-0450 Job No. 3808.02

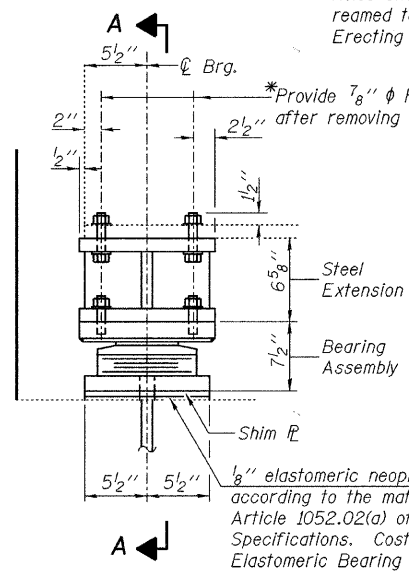
SHEET NO. S25	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	33
S47 SHEETS	CONTRACT NO. 63442				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

x:\380802\engineer\ng\_documents\phase-11\brandon\_road\_bridg\final\0993298-63442-025-brgi.dgn 10:04:09 AM 1/22/2010

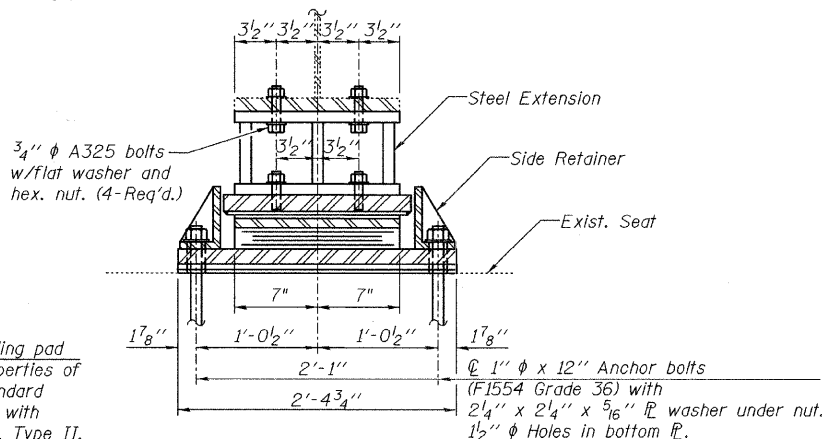
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

\*Holes shall be subpunched or subdrilled  $\frac{3}{4}$ " diameter and reamed to  $\frac{7}{8}$ " diameter. Cost included with Furnishing and Erecting Structural Steel.

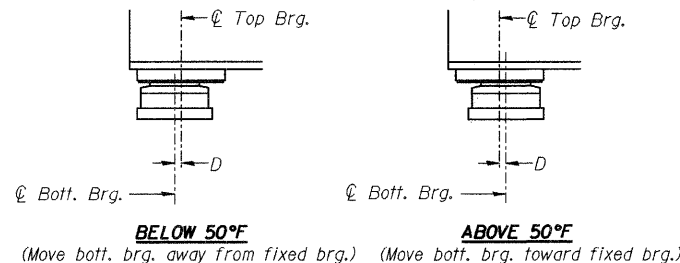
\*Provide  $\frac{7}{8}$ "  $\phi$  Holes in Exist. Bott. Flange after removing attached bearing plate.



ELEVATION AT ABUT.



SECTION A-A



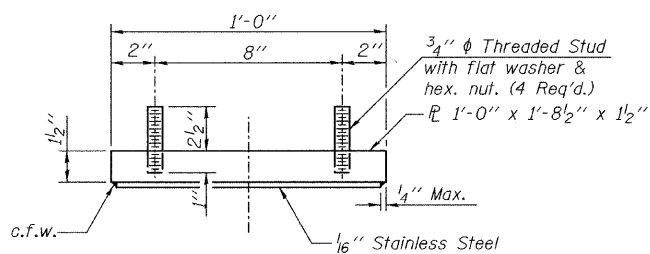
SETTING ANCHOR BOLTS AT EXP. BRG.

(D= $\frac{1}{8}$ " per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.)

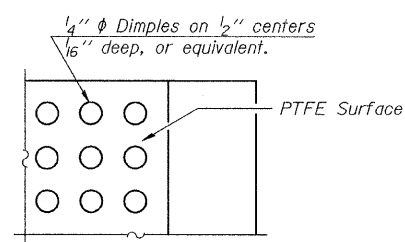
NOTES:

- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.
- The  $\frac{1}{8}$ " PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.
- Bonding of  $\frac{1}{8}$ " PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
- The structural steel plates of the Bearing Assembly and Steel Extension shall conform to the requirements of AASHTO M 270 Grade 50.
- Two  $\frac{1}{8}$  in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- The anchor bolt size and grades shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.
- Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

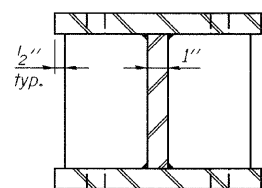
TYPE II ELASTOMERIC EXP. BRG.



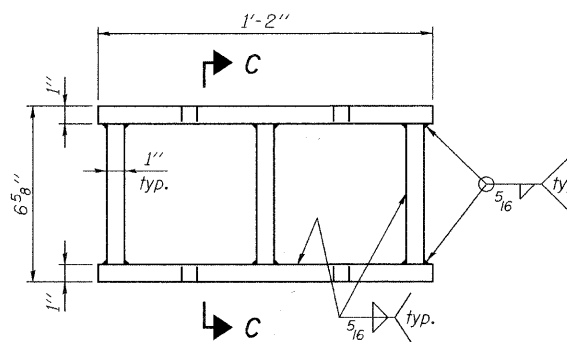
TOP BEARING ASSEMBLY



PLAN-PTFE SURFACE

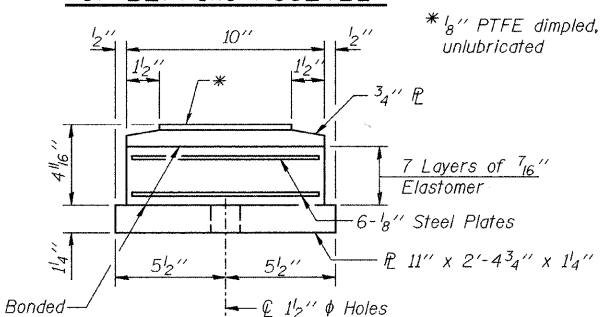


SECTION C-C

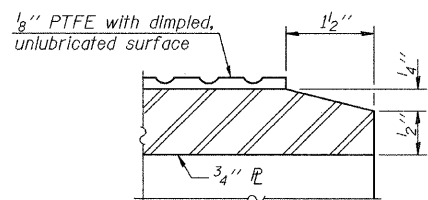


ELEVATION STEEL EXTENSION

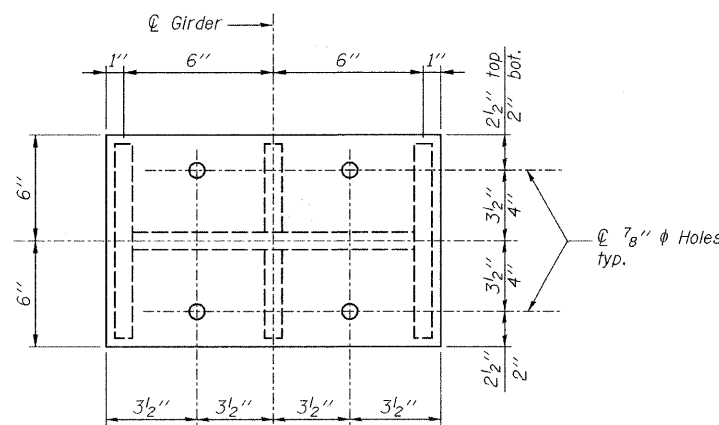
(Weight included with Furnishing and Erecting Structural Steel.)



BOTTOM BEARING ASSEMBLY



SECTION THRU PTFE



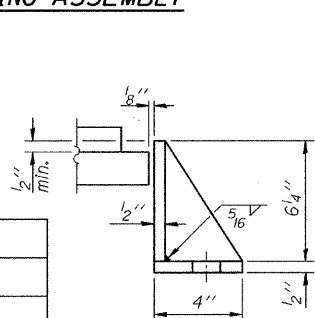
PLAN STEEL EXTENSION

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type II	Each	10
Anchor Bolts, 1"	Each	20

BEARING DETAILS 2 OF 2  
STRUCTURE NO. 099-3298

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	VH/MB
CHECKED -	MRB



SIDE RETAINER

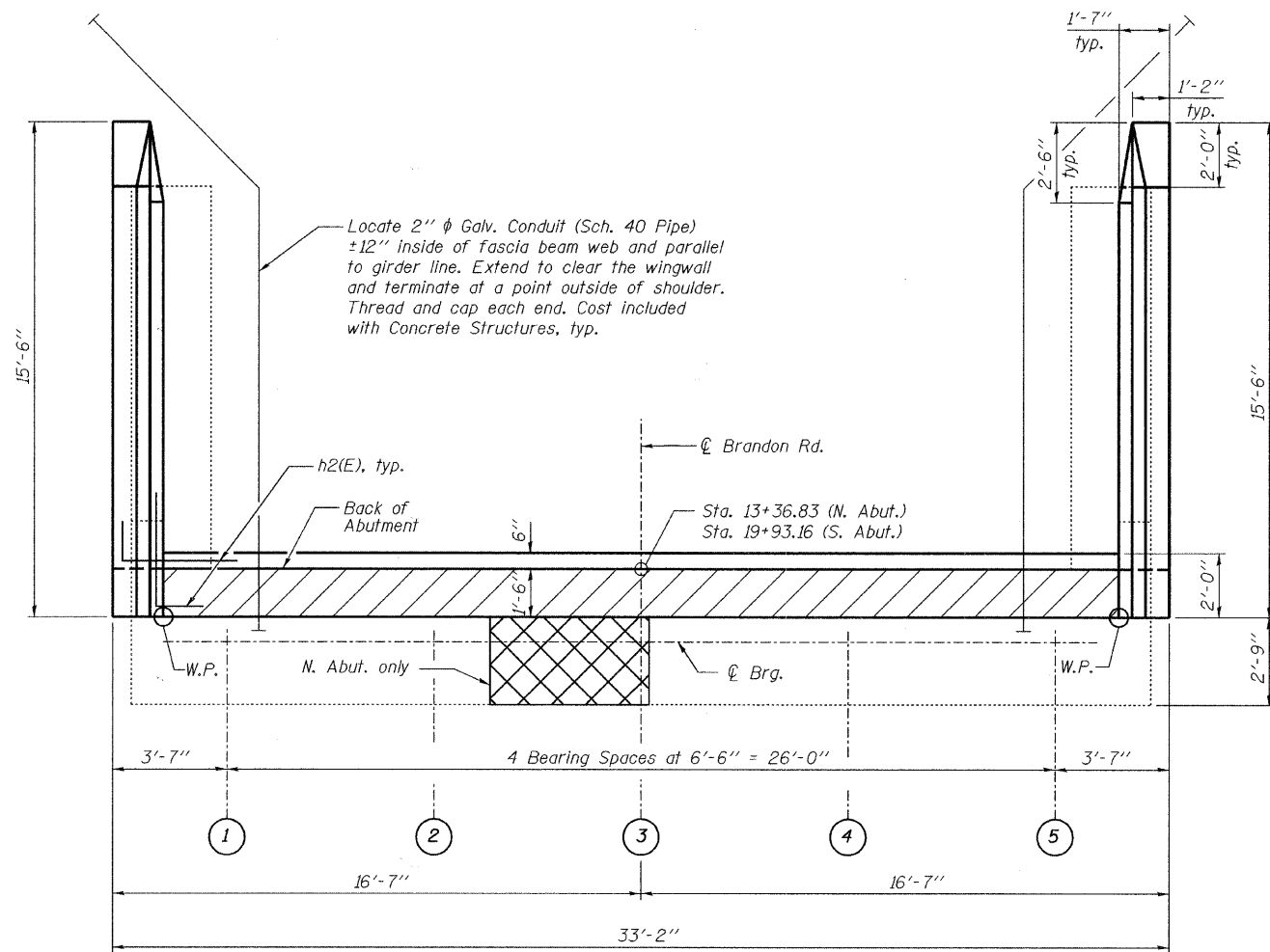
(Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.)

benesch

alfred benesch & company  
Engineers - Surveyors - Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 3808.02

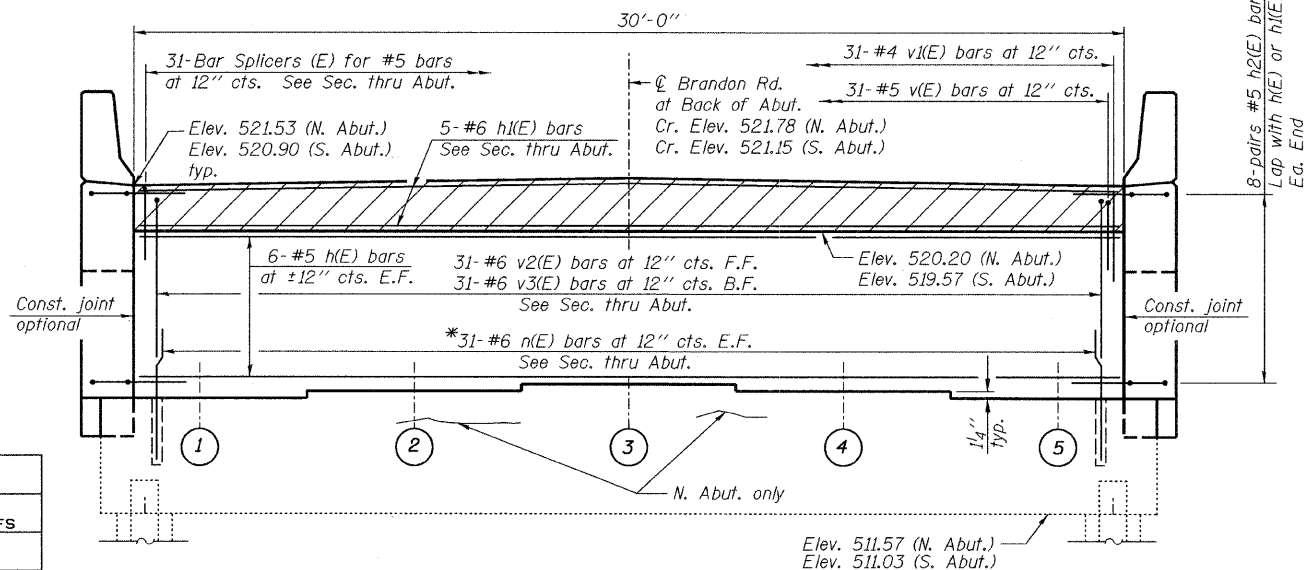
SHEET NO. S26	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S47 SHEETS	341	04-00090-07-BR	WILL	57	34
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 63442					

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

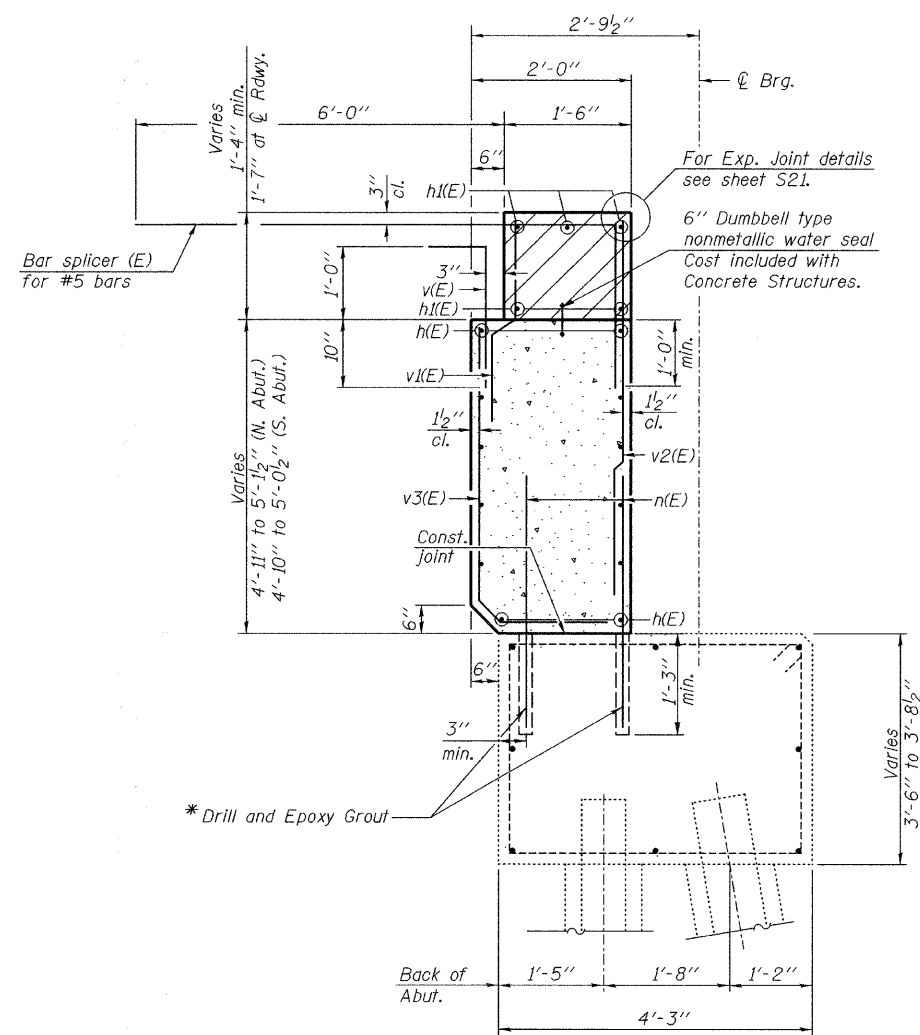


**PLAN**

(S. Abut. shown, N. Abut. opposite hand)



**ELEVATION**  
(Looking South)



**SEC. THRU ABUT.**

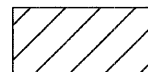
\* Drill and Epoxy Grout rebar according to Section 584 of the Std. Specifications. Cost included with Concrete Structures.



indicates Epoxy Crack Injection



indicates Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)



indicates area to be poured after superstructure forms have been removed

**NOTE:**

Crack widths are  $\frac{1}{8}'' \pm \frac{1}{16}''$  unless otherwise noted.

DESIGNED -	JLS
CHECKED -	KWS/EFS
DRAWN -	VH/MB
CHECKED -	KWS

**benesch**

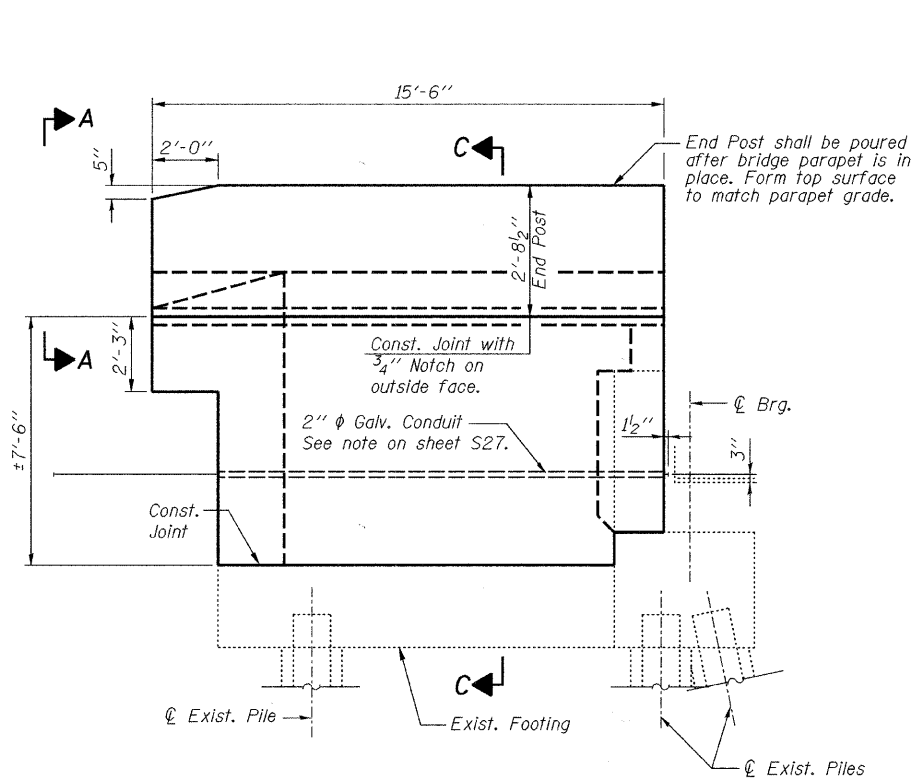
alfred benesch & company  
Engineers - Surveyors - Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 3808.02

SHEET NO. S27	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	35
S47 SHEETS	CONTRACT NO. 63442				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

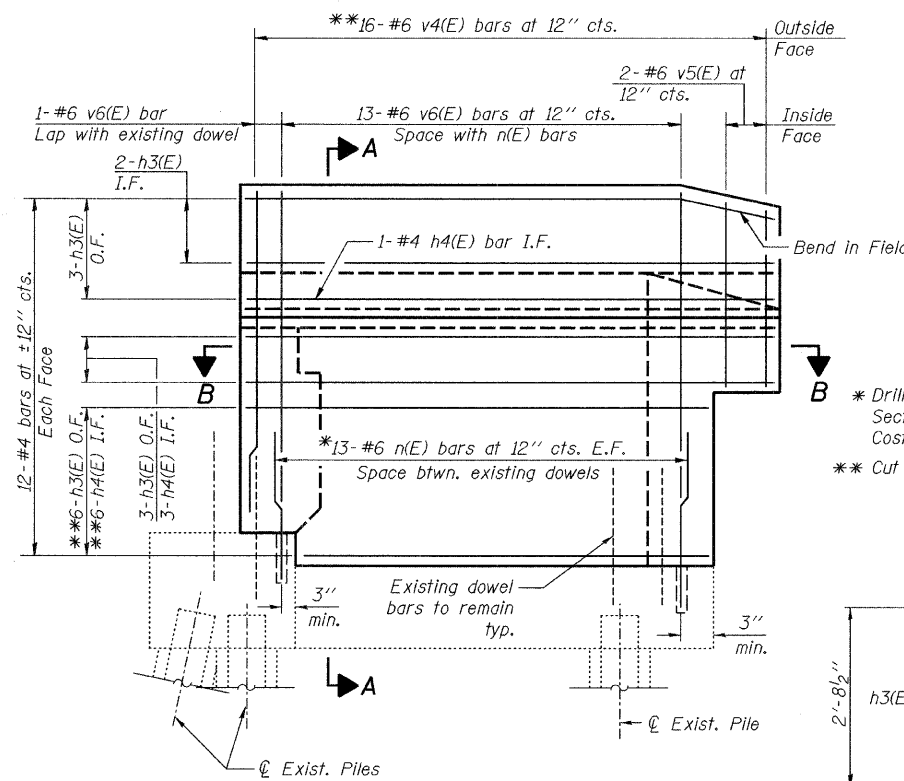
**ABUTMENT DETAILS 1 OF 3**  
**STRUCTURE NO. 099-3298**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

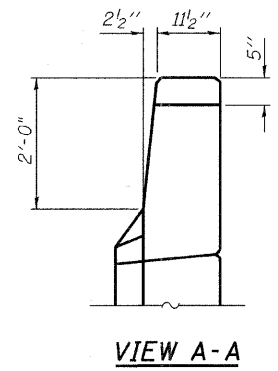
TWO ABUTMENTS  
BILL OF MATERIAL



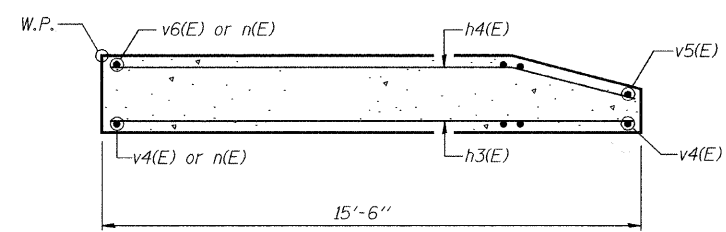
WINGWALL ELEVATION  
(Showing Dimensions)



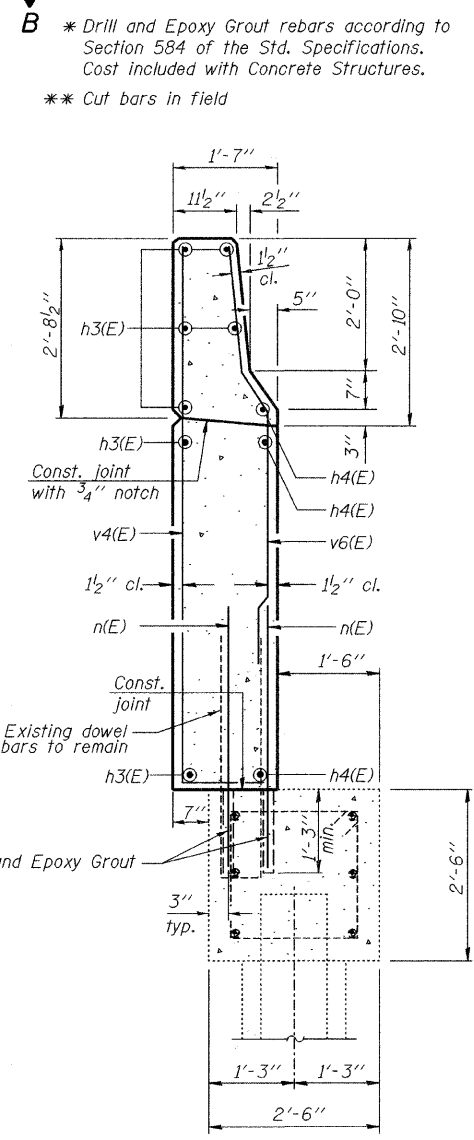
WINGWALL ELEVATION  
(Showing Reinforcement)



VIEW A-A

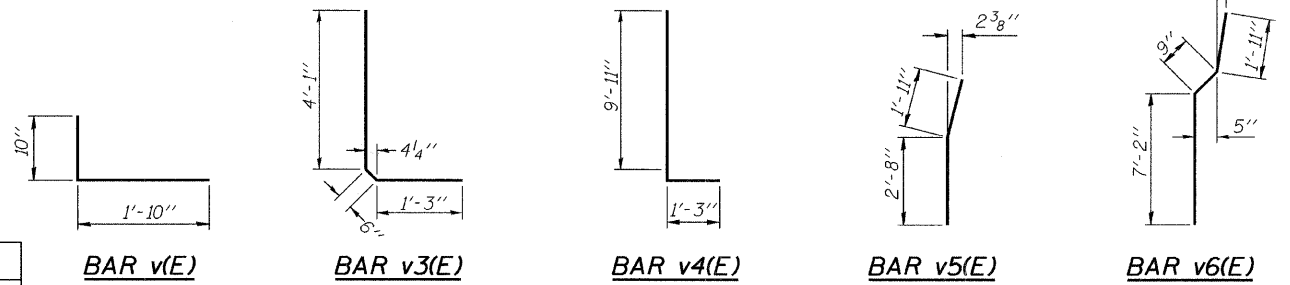


SECTION B-B



SECTION C-C

DESIGNED -	JLS
CHECKED -	KWS/EFS
DRAWN -	VH/MB
CHECKED -	KWS



Bar	No.	Size	Length	Shape
h(E)	24	#5	29'-8"	—
h1(E)	10	#6	29'-8"	—
h2(E)	64	#5	7'-0"	L
h3(E)	56	#4	15'-2"	—
h4(E)	40	#4	15'-2"	—
n(E)	228	#6	4'-6"	—
v(E)	62	#5	2'-8"	—
v1(E)	62	#4	3'-0"	—
v2(E)	62	#6	6'-0"	—
v3(E)	62	#6	5'-10"	—
v4(E)	64	#6	11'-2"	—
v5(E)	8	#6	4'-7"	—
v6(E)	56	#6	9'-10"	—
<b>Structure Excavation</b> Cu. Yd. 156				
<b>Concrete Structures</b> Cu. Yd. 47.0				
<b>Reinforcement Bars, Epoxy Coated</b> Pound 7,530				
<b>Concrete Sealer</b> Sq. Ft. 563				
<b>Epoxy Crack Injection</b> Foot 40				
<b>Structural Repair of Concrete (Depth Greater Than 5 Inches)</b> Sq. Ft. 10				
<b>Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)</b> Sq. Ft. 19				

- NOTES:**
- Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure on sheet S17.
  - Quantity of concrete in end post included with Concrete Superstructure on sheet S20.
  - For details of Bar Splicers, see sheet S34.
  - I.F. indicates inside face  
O.F. indicates outside face  
E.F. indicates each face  
F.F. indicates front face  
B.F. indicates back face
  - Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.
  - The quantities shown are for estimating purposes only. The area to be repaired shall be determined by the Engineer at the time of construction. Actual repair locations shall be shown on the as-built plans.

MINIMUM BAR LAP

#5 bar = 2'-6"  
#6 bar = 3'-1"

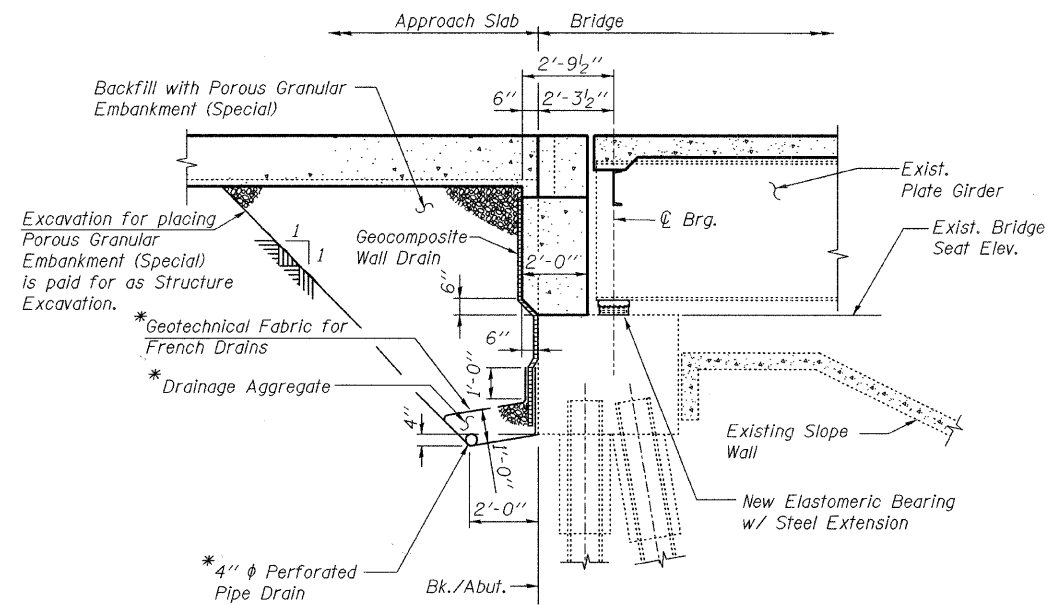
ABUTMENT DETAILS 2 OF 3  
STRUCTURE NO. 099-3298

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Engineers - Surveyors - Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 3808.02

SHEET NO. S28 S47 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	36
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 63442					

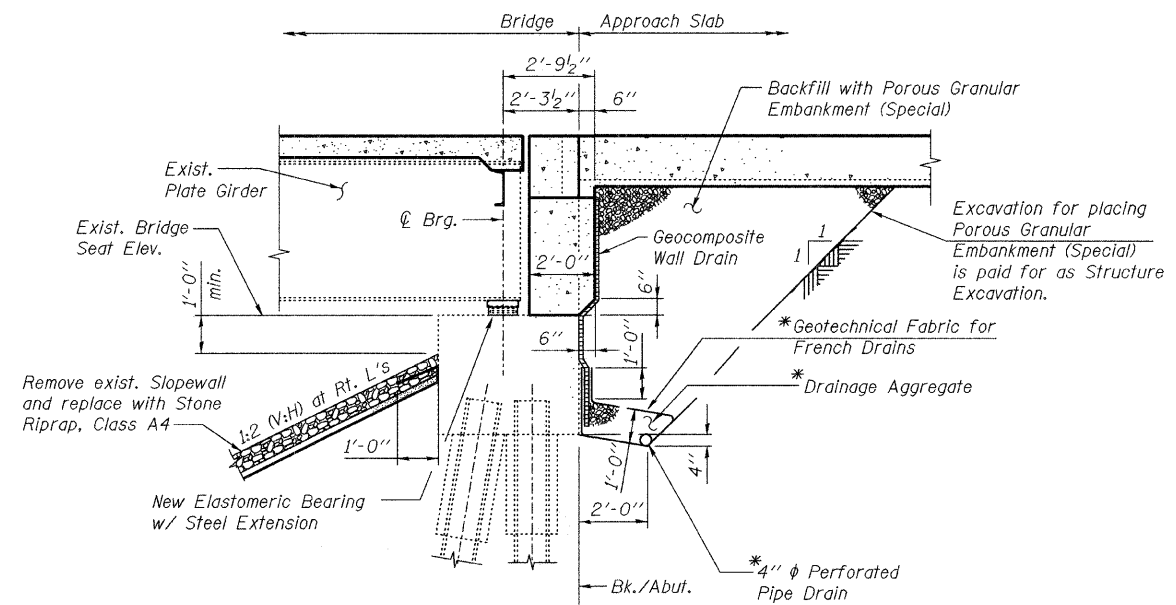
1/22/2010 10:04:14 AM x:\3808\3808.02\engineering\ng\_documents\phase.11\brandon.road\_bridge\road\_bridge\0993298-63442-028-abut2.dgn

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**SECTION THRU NORTH ABUTMENT**

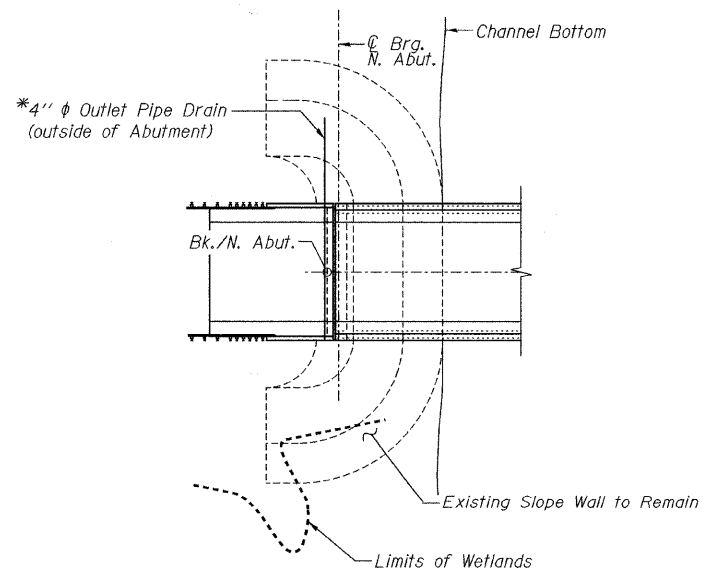
(Horiz. dim. @ Rt. L's)



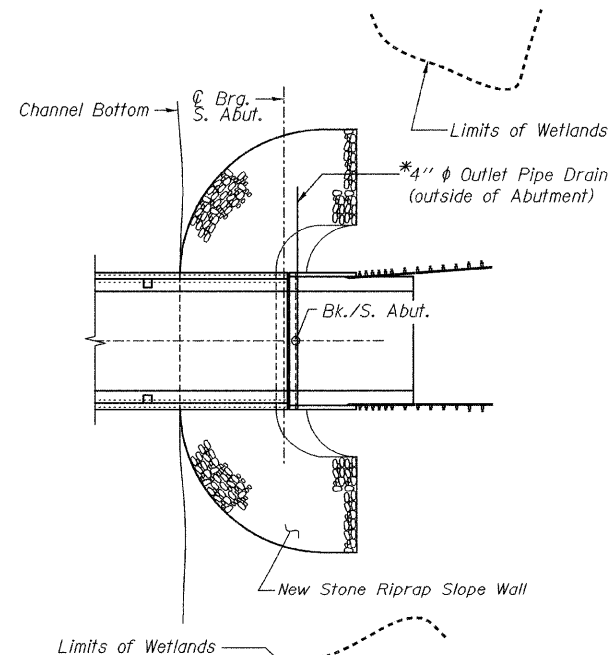
**SECTION THRU SOUTH ABUTMENT**

(Horiz. dim. @ Rt. L's)

\*Included in the cost of Pipe Underdrains for Structures 4".



**AT NORTH ABUTMENT**



**AT SOUTH ABUTMENT**

**PIPE DRAIN LAYOUT**

(Slope pipes such that water drains to the East.)

**NOTE:**

All drainage system components shall extend parallel to the abutment backwall until they intersect the wingwalls. The pipe shall extend under the existing wingwall until exiting through the slope wall a minimum of 3". At the North Abutment, the resulting gap between the underdrain and existing concrete slope wall shall be grouted. The cost to install the underdrain through the existing embankment and to grout shall be included in the cost of Pipe Underdrains for Structures 4".

DESIGNED -	JLS
CHECKED -	MRB
DRAWN -	VH
CHECKED -	MRB

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Engineers • Surveyors • Planners  
208 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-566-0450 Job No. 3808.02

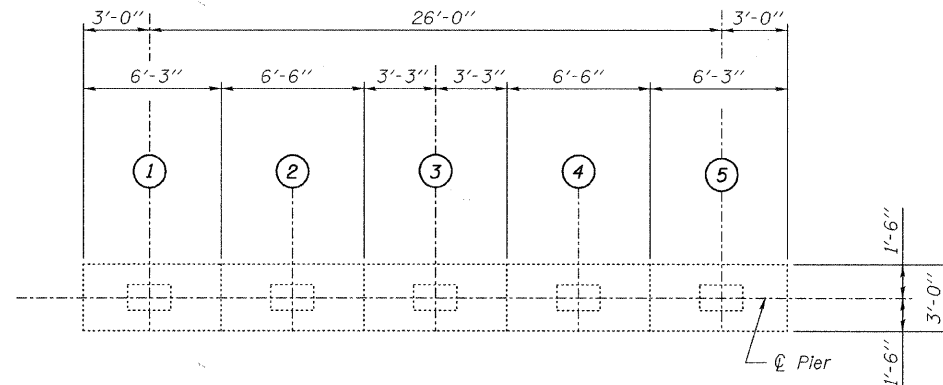
**ABUTMENT DETAILS 3 OF 3  
STRUCTURE NO. 099-3298**

SHEET NO. S29	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	341	04-00090-07-BR	WILL	57	37
S47 SHEETS	CONTRACT NO. 63442				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Epoxy Crack Injection	Foot	40
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq. Ft.	10
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	10

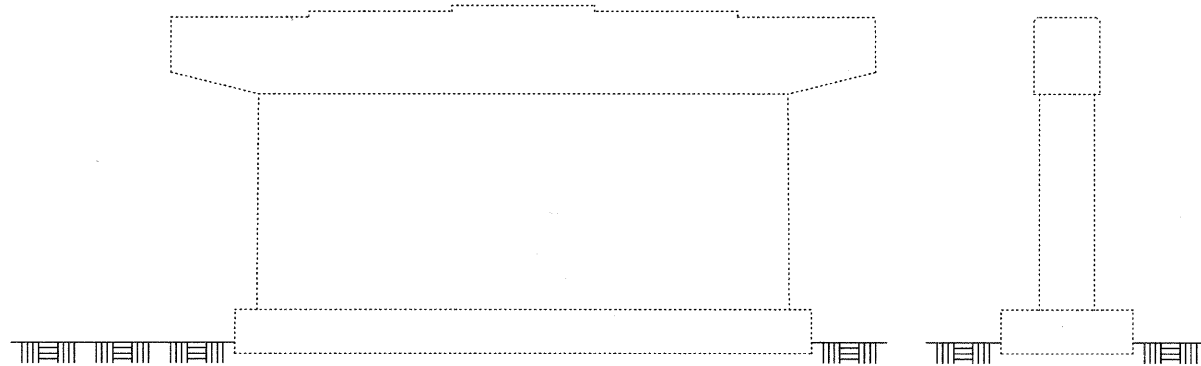


**TOP PLAN**

~~~~~ indicates Epoxy Crack Injection  
 indicates Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)

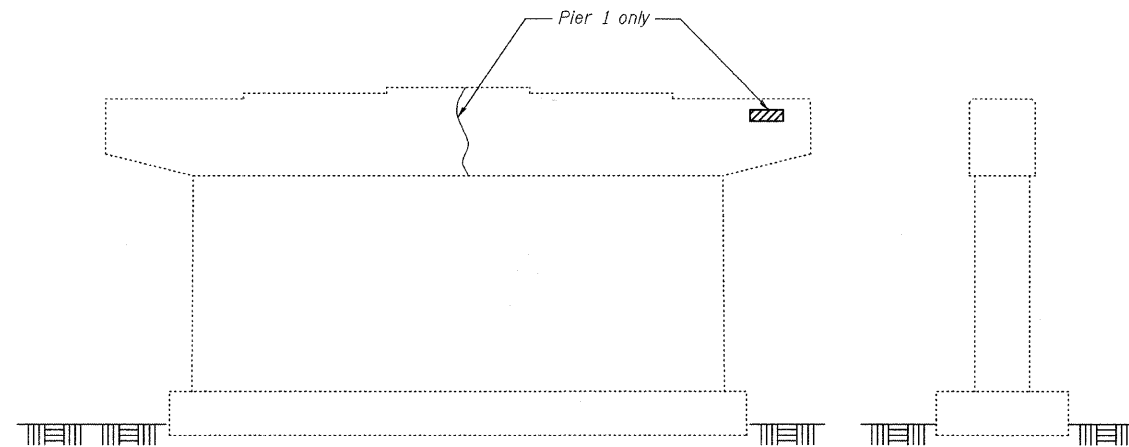
**NOTES:**

- The quantities shown are provided as a contingency for estimating purposes only. The area to be repaired shall be determined by the Engineer at the time of construction. Actual repair locations shall be shown on the as-built plans.
- Crack widths are  $\frac{1}{8}'' \pm \frac{1}{16}''$  unless otherwise noted.



**ELEVATION**  
(Looking South)

**END VIEW**  
(Looking East)



**ELEVATION**  
(Looking North)

**END VIEW**  
(Looking West)

|            |     |
|------------|-----|
| DESIGNED - | JLS |
| CHECKED -  | MRB |
| DRAWN -    | VH  |
| CHECKED -  | MRB |

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312-565-0450 Job No. 3808.02

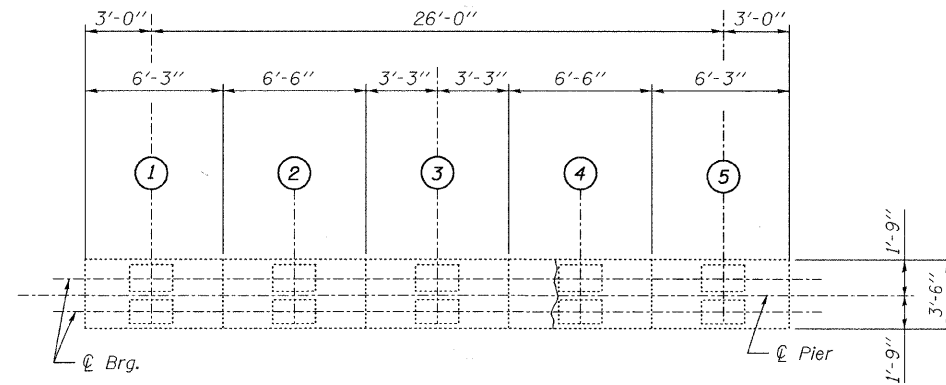
|                             |             |                |          |                  |           |
|-----------------------------|-------------|----------------|----------|------------------|-----------|
| SHEET NO. S30<br>S47 SHEETS | F.A.U. RTE. | SECTION        | COUNTY   | TOTAL SHEETS     | SHEET NO. |
|                             | 341         | 04-00090-07-BR | WILL     | 57               | 38        |
| FED. ROAD DIST. NO.         |             |                | ILLINOIS | FED. AID PROJECT |           |
| CONTRACT NO. 63442          |             |                |          |                  |           |

**PIER 1 AND 2 REPAIRS**  
**STRUCTURE NO. 099-3298**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**BILL OF MATERIAL**

| ITEM                                                                 | UNIT    | TOTAL |
|----------------------------------------------------------------------|---------|-------|
| Epoxy Crack Injection                                                | Foot    | 78    |
| Structural Repair of Concrete (Depth Greater Than 5 Inches)          | Sq. Ft. | 5     |
| Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches) | Sq. Ft. | 5     |

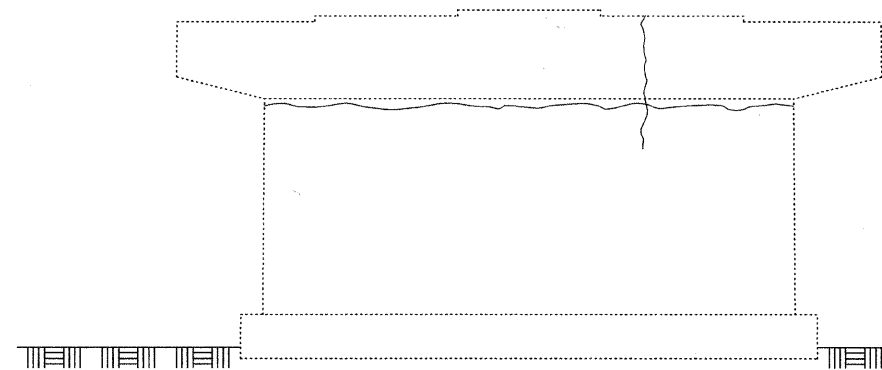


**TOP PLAN**

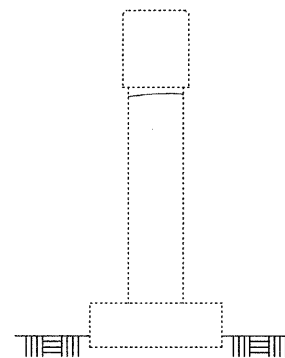
~~~~~ indicates Epoxy Crack Injection

**NOTES:**

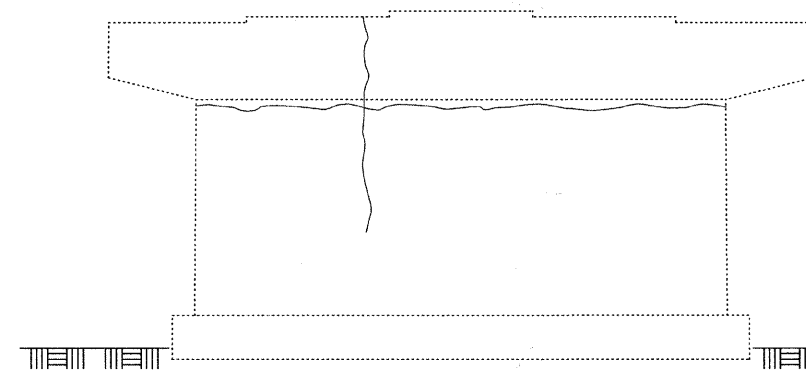
- The quantities shown are provided as a contingency for estimating purposes only. The area to be repaired shall be determined by the Engineer at the time of construction. Actual repair locations shall be shown on the as-built plans.
- Crack widths are  $\frac{1}{8}$ "  $\pm$   $\frac{1}{16}$ " unless otherwise noted.



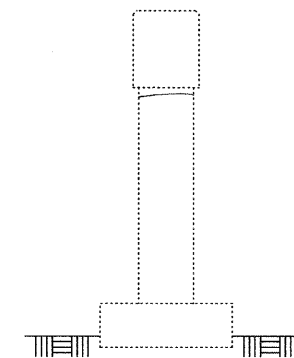
**ELEVATION**  
(Looking South)



**END VIEW**  
(Looking East)



**ELEVATION**  
(Looking North)



**END VIEW**  
(Looking West)

|            |     |
|------------|-----|
| DESIGNED - | JLS |
| CHECKED -  | MRB |
| DRAWN -    | VH  |
| CHECKED -  | MRB |

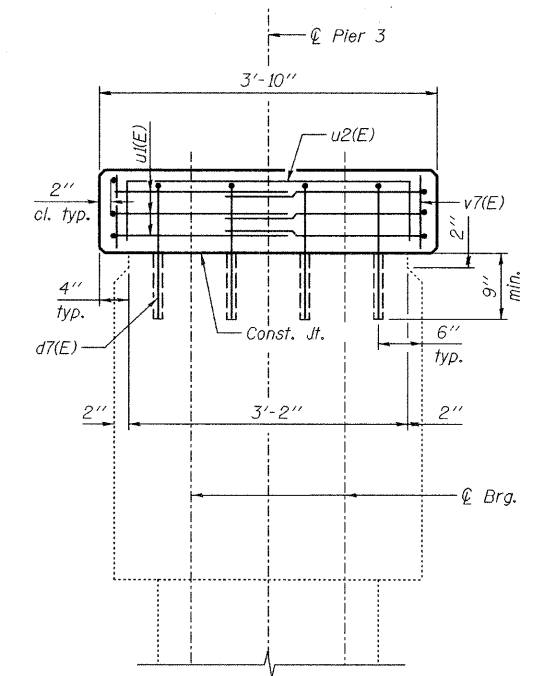
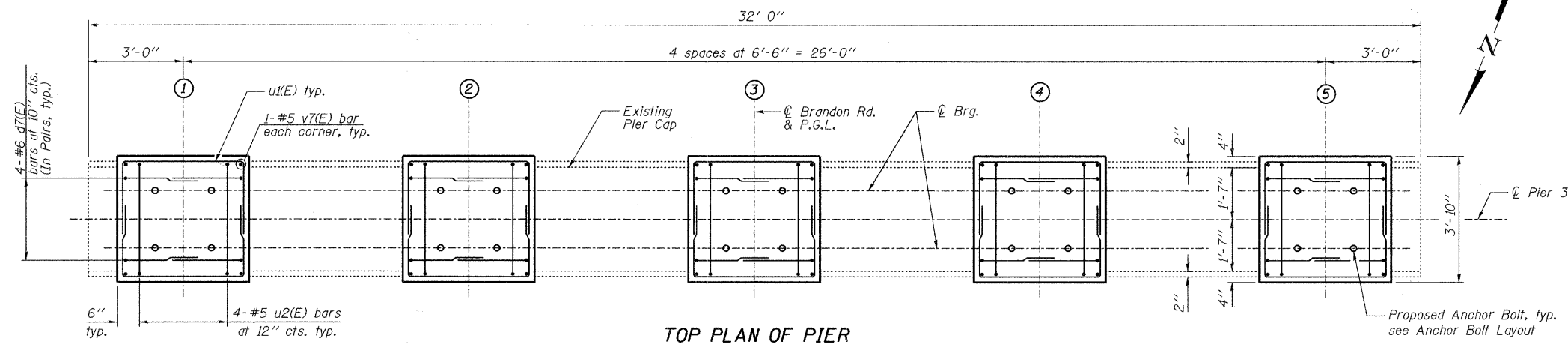
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Chicago, Illinois 60601  
312-565-0450 Job No. 3808.02

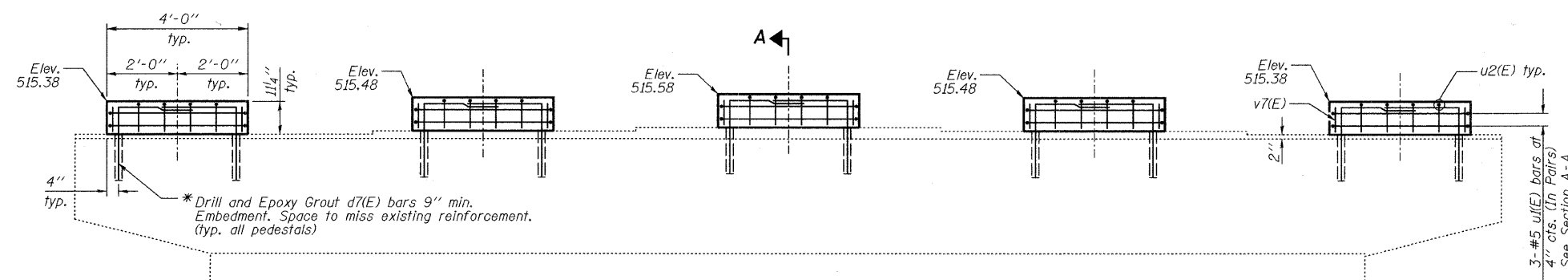
|                             |                |                |                  |                    |              |
|-----------------------------|----------------|----------------|------------------|--------------------|--------------|
| SHEET NO. S31<br>S47 SHEETS | F.A.U.<br>RTE. | SECTION        | COUNTY           | TOTAL<br>SHEETS    | SHEET<br>NO. |
|                             | 341            | 04-00090-07-BR | WILL             | 57                 | 39           |
| FED. ROAD DIST. NO.         |                |                | ILLINOIS         | CONTRACT NO. 63442 |              |
|                             |                |                | FED. AID PROJECT |                    |              |

**PIER 3 REPAIR 1 OF 2**  
**STRUCTURE NO. 099-3298**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



SECTION A-A



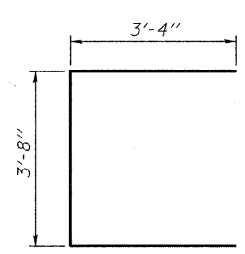
ELEVATION  
(Looking South)

\* Drill and Epoxy Grout rebar according to Section 584 of the Std. Specifications. Cost included with Concrete Structures.

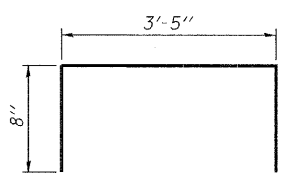
BILL OF MATERIAL

| Bar                              | No. | Size | Length | Shape   |     |
|----------------------------------|-----|------|--------|---------|-----|
| d7(E)                            | 40  | #6   | 4'-9"  | □       |     |
| u1(E)                            | 30  | #5   | 10'-4" | ▬       |     |
| u2(E)                            | 20  | #5   | 4'-9"  | ▬       |     |
| v7(E)                            | 20  | #5   | 0'-9"  | ▬       |     |
| Concrete Structures              |     |      |        | Cu. Yd. | 2.7 |
| Reinforcement Bars, Epoxy Coated |     |      |        | Pound   | 730 |
| Concrete Sealer                  |     |      |        | Sq. Ft. | 192 |

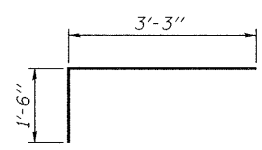
NOTE:  
Space pedestal reinforcement to miss proposed anchor bolts.



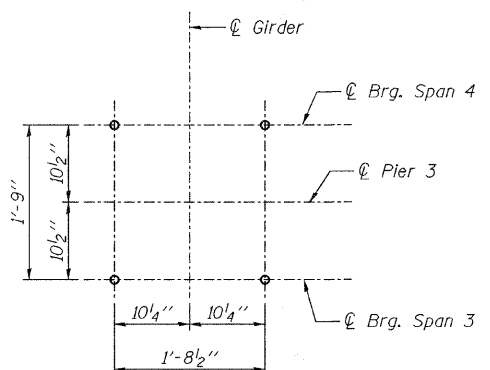
BAR u1(E)



BAR u2(E)



BAR d7(E)



ANCHOR BOLT LAYOUT  
(typ. each pedestal)

MINIMUM BAR LAP

#5 bar = 2'-6"  
#6 bar = 3'-0"

|            |         |
|------------|---------|
| DESIGNED - | JLS/MRB |
| CHECKED -  | MRB/KWS |
| DRAWN -    | VH/MB   |
| CHECKED -  | MRB/KWS |

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|                     |                    |                           |        |              |           |
|---------------------|--------------------|---------------------------|--------|--------------|-----------|
| SHEET NO. S32       | F.A.U. RTE.        | SECTION                   | COUNTY | TOTAL SHEETS | SHEET NO. |
|                     | 341                | 04-00090-07-BR            | WILL   | 57           | 40        |
| S47 SHEETS          | CONTRACT NO. 63442 |                           |        |              |           |
| FED. ROAD DIST. NO. |                    | ILLINOIS FED. AID PROJECT |        |              |           |

PIER 3 REPAIR 2 OF 2  
STRUCTURE NO. 099-3298

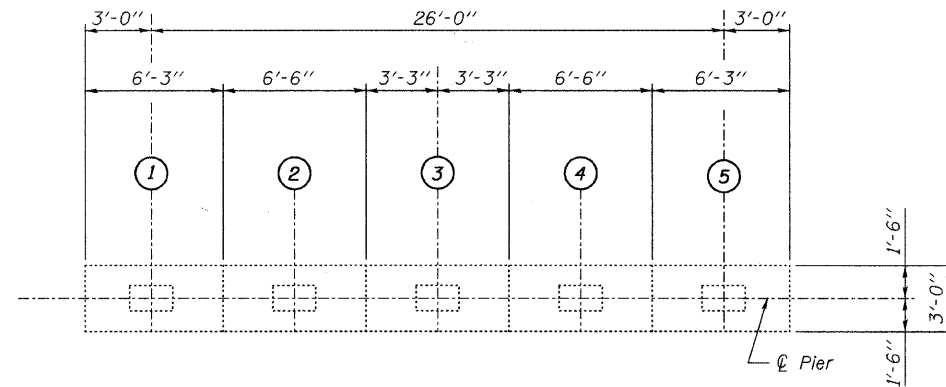
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**BILL OF MATERIAL**

| ITEM   | UNIT    | TOTAL |
|--|---------|-------|
| Epoxy Crack Injection  | Foot    | 40    |
| Structural Repair of Concrete (Depth Greater Than 5 Inches)          | Sq. Ft. | 10    |
| Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches) | Sq. Ft. | 10    |

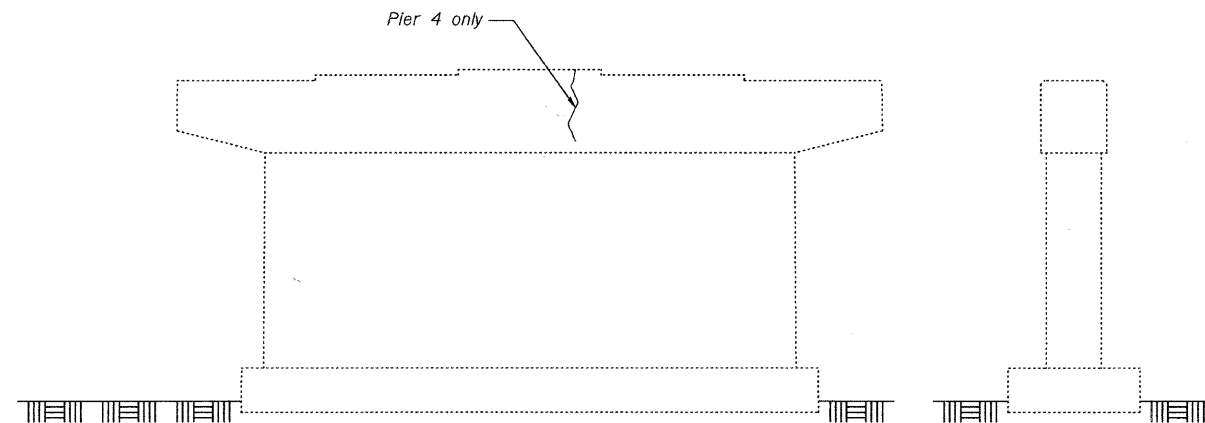


**TOP PLAN**

~~~~~ indicates Epoxy Crack Injection

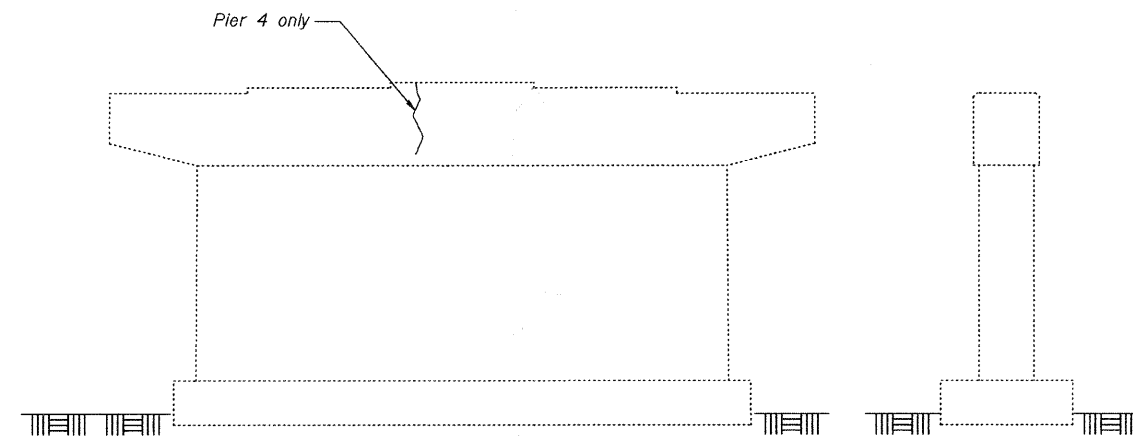
**NOTES:**

1. The quantities shown are provided as a contingency for estimating purposes only. The area to be repaired shall be determined by the Engineer at the time of construction. Actual repair locations shall be shown on the as-built plans.
2. Crack widths are  $\frac{1}{8}'' \pm \frac{1}{16}''$  unless otherwise noted.



**ELEVATION**  
(Looking South)

**END VIEW**  
(Looking East)



**ELEVATION**  
(Looking North)

**END VIEW**  
(Looking West)

|            |     |
|------------|-----|
| DESIGNED - | JLS |
| CHECKED -  | MRB |
| DRAWN -    | VH  |
| CHECKED -  | MRB |

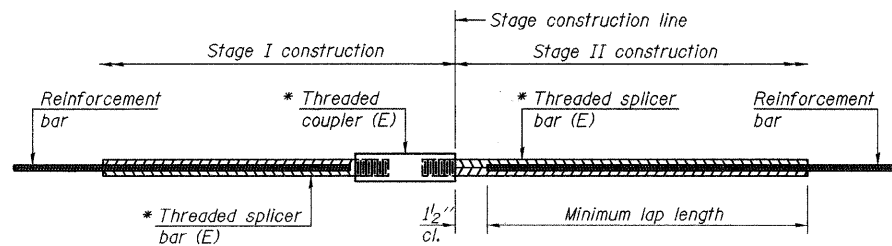
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Chicago, Illinois 60601  
312-565-0450 Job No. 3808.02

|                             |                |                |                  |                    |              |
|-----------------------------|----------------|----------------|------------------|--------------------|--------------|
| SHEET NO. S33<br>S47 SHEETS | F.A.U.<br>RTE. | SECTION        | COUNTY           | TOTAL<br>SHEETS    | SHEET<br>NO. |
|                             | 341            | 04-00090-07-BR | WILL             | 57                 | 41           |
| FED. ROAD DIST. NO.         |                |                | ILLINOIS         | CONTRACT NO. 63442 |              |
|                             |                |                | FED. AID PROJECT |                    |              |

**PIER 4 AND 5 REPAIRS  
STRUCTURE NO. 099-3298**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**STANDARD BAR SPLICER ASSEMBLY**

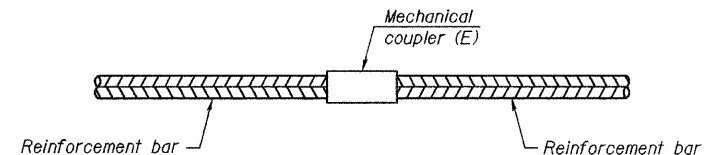
| Minimum Lap Lengths    |         |         |         |         |
|------------------------|---------|---------|---------|---------|
| Bar size to be spliced | Table 1 | Table 2 | Table 3 | Table 4 |
| 3, 4                   | 1'-5"   | 1'-11"  | 2'-1"   | 2'-4"   |
| 5                      | 1'-9"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

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

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

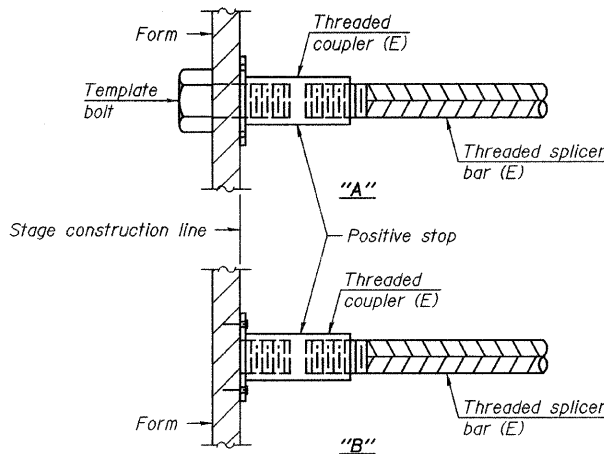
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

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



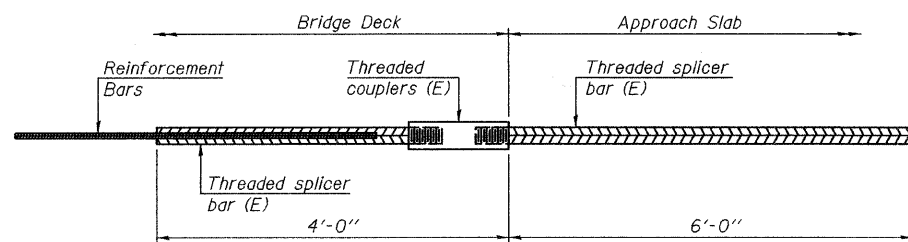
**STANDARD MECHANICAL SPLICER**

| Location | Bar size | No. assemblies required |
|----------|----------|-------------------------|
|          |          |                         |
|          |          |                         |
|          |          |                         |
|          |          |                         |



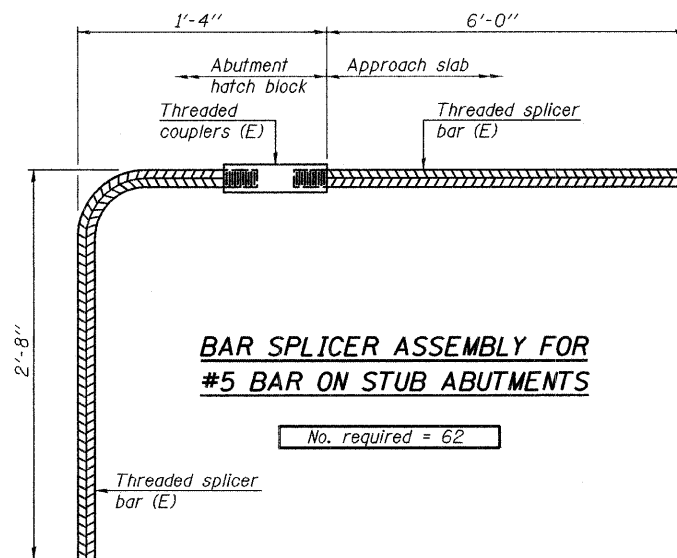
**INSTALLATION AND SETTING METHODS**

"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.



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

No. required =



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

No. required = 62

**NOTES**

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

**BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS  
STRUCTURE NO. 099-3298**

|            |     |
|------------|-----|
| DESIGNED - | JLS |
| CHECKED -  | KWS |
| DRAWN -    | VH  |
| CHECKED -  | MRB |

BSD-1 11-1-09

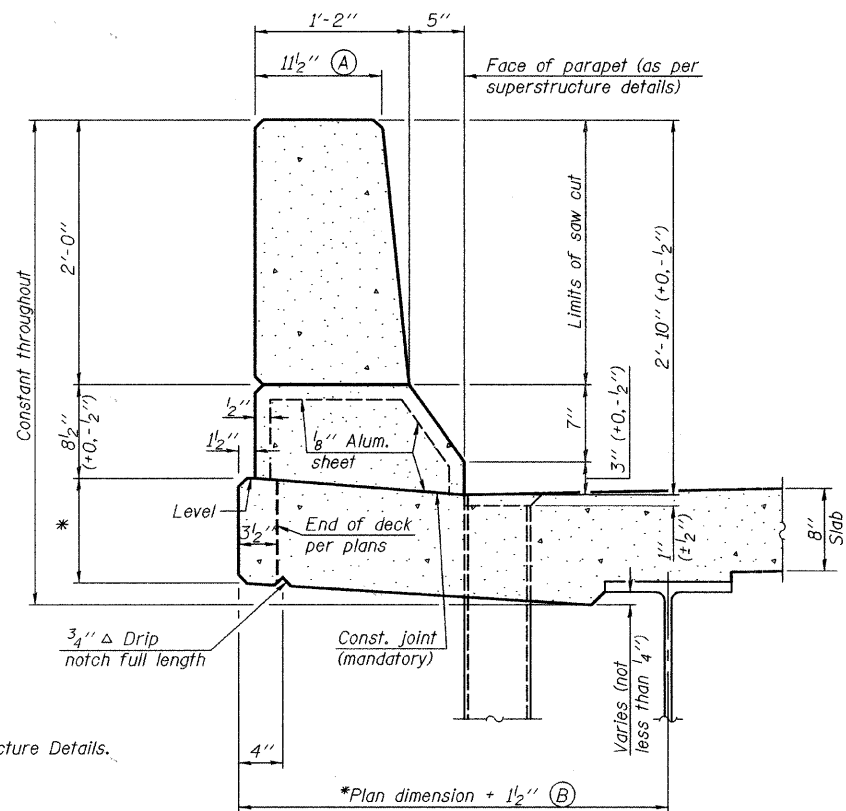
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312-565-0450 Job No. 3808.02

|                     |                    |                |                  |              |           |
|---------------------|--------------------|----------------|------------------|--------------|-----------|
| SHEET NO. S34       | F.A.U. RTE.        | SECTION        | COUNTY           | TOTAL SHEETS | SHEET NO. |
|                     | 341                | 04-00090-07-BR | WILL             | 57           | 42        |
| S47 SHEETS          | CONTRACT NO. 63442 |                |                  |              |           |
| FED. ROAD DIST. NO. |                    | ILLINOIS       | FED. AID PROJECT |              |           |

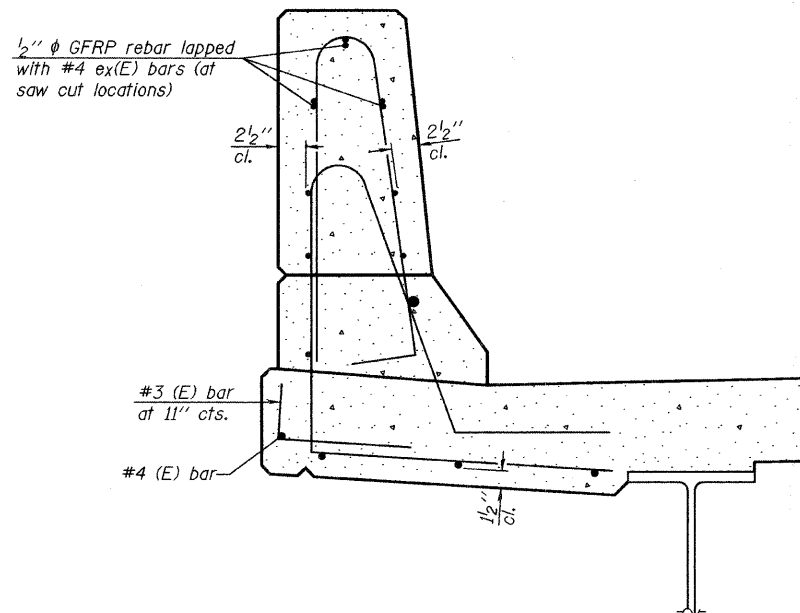
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**SECTION**  
(Showing dimensions)

\* See Superstructure Details.



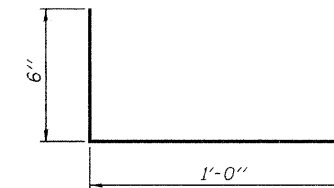
**SECTION**  
(Showing reinforcement clearances for slip forming and additional reinforcement bars)

**GENERAL NOTES**

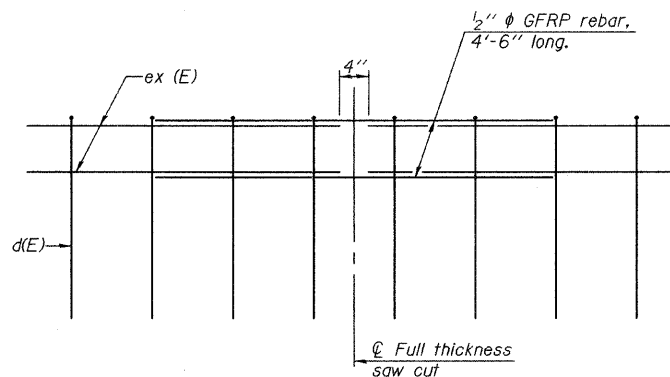
All dimensions shall remain the same as shown on superstructure details, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B = 0.0165 cu. yds./ft. of parapet.

Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all joint locations in lieu of cork joint filler.

Steel superstructure shown. Other superstructure types similar.



**#3 (E) BAR**



**GFRP REBAR STIFFENING DETAIL**

(Place as shown in parapet section at each parapet joint location.)

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312-595-0450 Job No. 3808.02

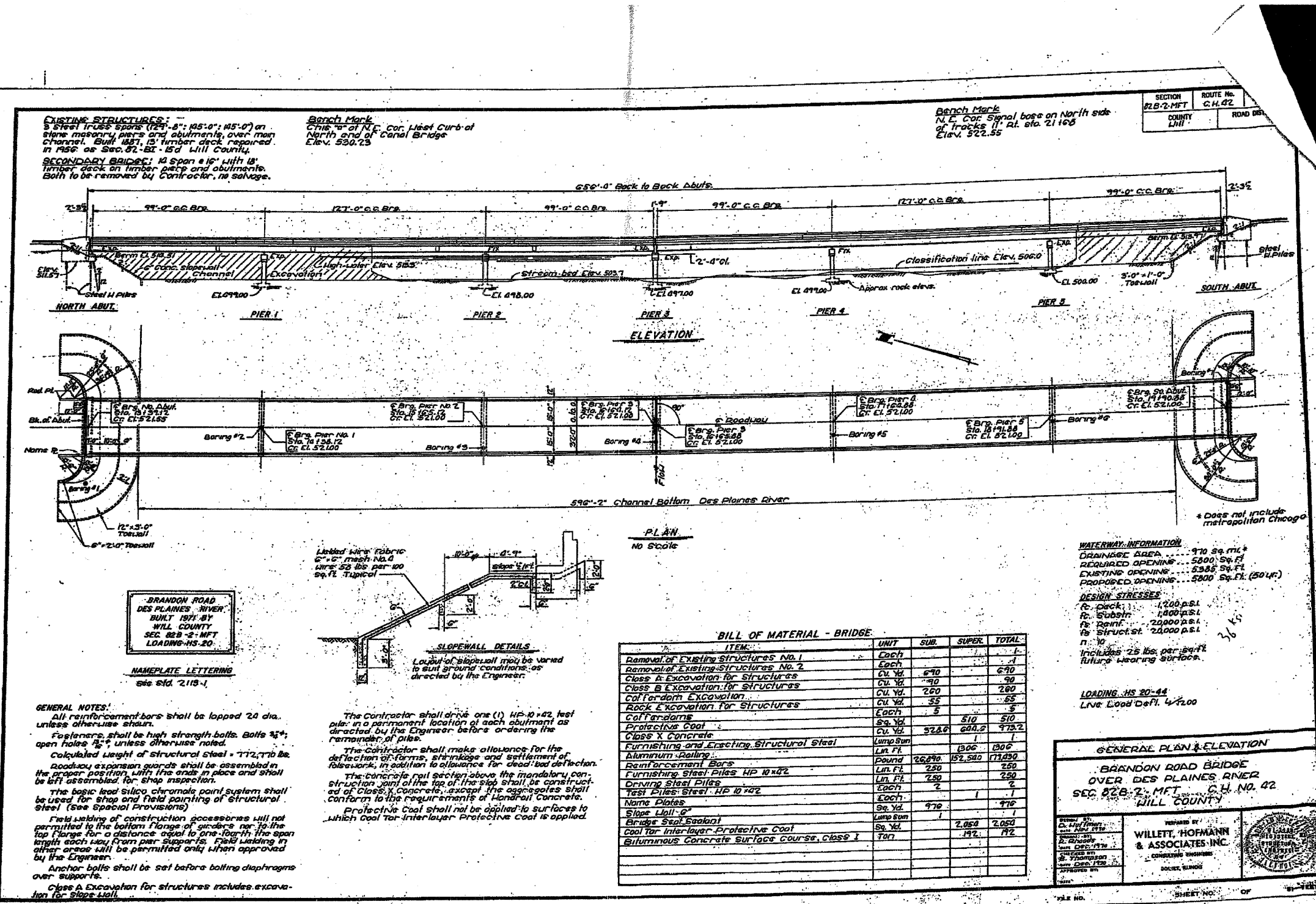
|            |     |
|------------|-----|
| DESIGNED - | JLS |
| CHECKED -  | MRB |
| DRAWN -    | VH  |
| CHECKED -  | MRB |

SFP-34

11-1-09

|                     |                    |                |                  |              |           |
|---------------------|--------------------|----------------|------------------|--------------|-----------|
| SHEET NO. S35       | F.A.U. RTE.        | SECTION        | COUNTY           | TOTAL SHEETS | SHEET NO. |
|                     | 341                | 04-00090-07-BR | WILL             | 57           | 43        |
| S47 SHEETS          | CONTRACT NO. 63442 |                |                  |              |           |
| FED. ROAD DIST. NO. |                    | ILLINOIS       | FED. AID PROJECT |              |           |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**EXISTING STRUCTURES:** -  
5 Steel Truss spans (101'-8" x 145'-0" x 145'-0") on stone masonry piers and abutments, over main channel. Built 1887, 15' timber deck repaired in 1956 as Sec. 02-B-15d Will County.

**SECONDARY BRIDGE:** 12 Span 616' with 18' timber deck on timber piers and abutments. Both to be removed by Contractor, no salvage.

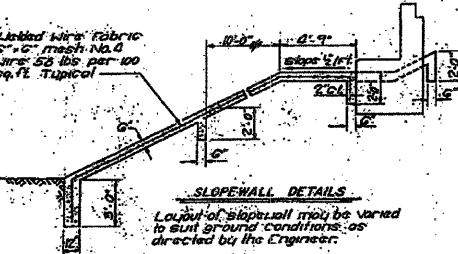
**Bench Mark:**  
Chis. 10' of N.E. Cor. West Curb of North end of Canal Bridge  
Elev. 530.73

**Bench Mark:**  
N.E. Cor. Signal base on North side of tracks 11' at sta. 21165  
Elev. 522.55

BRANDON ROAD  
DES PLAINES RIVER  
BUILT 1971 BY  
WILL COUNTY  
SEC. 02B-2-MFT  
LOADING-HS-20

NAMEPLATE LETTERING  
see Std. 2118-1

**GENERAL NOTES:**  
All reinforcement bars shall be lapped 20 dia. unless otherwise shown.  
Fasteners shall be high strength bolts. Bolts 3/4" open holes 1/2" unless otherwise noted.  
Calculated weight of structural steel = 112,710 lbs.  
Roadway expansion guards shall be assembled in the proper position with the grade in place and shall be left assembled for shop inspection.  
The basic lead silico chromate paint system shall be used for shop and field painting of structural steel (See Special Provisions).  
Field welding of construction accessories will not be permitted to the bottom flange of girders nor to the top flange for a distance equal to 6D (D=depth) the span length each way from pier supports. Field welding in other areas will be permitted only when approved by the Engineer.  
Anchor bolts shall be set before bolting diaphragms over supports.  
Class A Excavation for structures includes excavation for slope walls.



The Contractor shall drive one (1) HP-10x42 test pile in a permanent location of each abutment as directed by the Engineer before ordering the remainder of piles.  
The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework, in addition to allowance for dead load deflection.  
The concrete rail section above the mandatory construction joint at the top of the slope shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Standard Concrete.  
Protective Coat shall not be applied to surfaces to which Cool Tar Interlayer Protective Coat is applied.

**WATERWAY INFORMATION**  
DRAINAGE AREA ... 170 sq. mi.  
REQUIRED OPENING ... 5000 Sq. Ft.  
EXISTING OPENING ... 5385 Sq. Ft.  
PROPOSED OPENING ... 5300 Sq. Ft. (504F.)

**DESIGN STRESSES**  
R. Deck ... 1,200 p.s.i.  
R. Substr. ... 1,800 p.s.i.  
R. Reinft. ... 20,000 p.s.i.  
R. Struct. St. ... 20,000 p.s.i.  
n = 9  
Includes 25 lbs. per sq. ft. future wearing surface.

LOADING - HS 20-44  
Live Load Defl. 1/4200

|            |     |
|------------|-----|
| DESIGNED - | JLS |
| CHECKED -  | MRB |
| DRAWN -    | VH  |
| CHECKED -  | MRB |

FOR INFORMATION ONLY

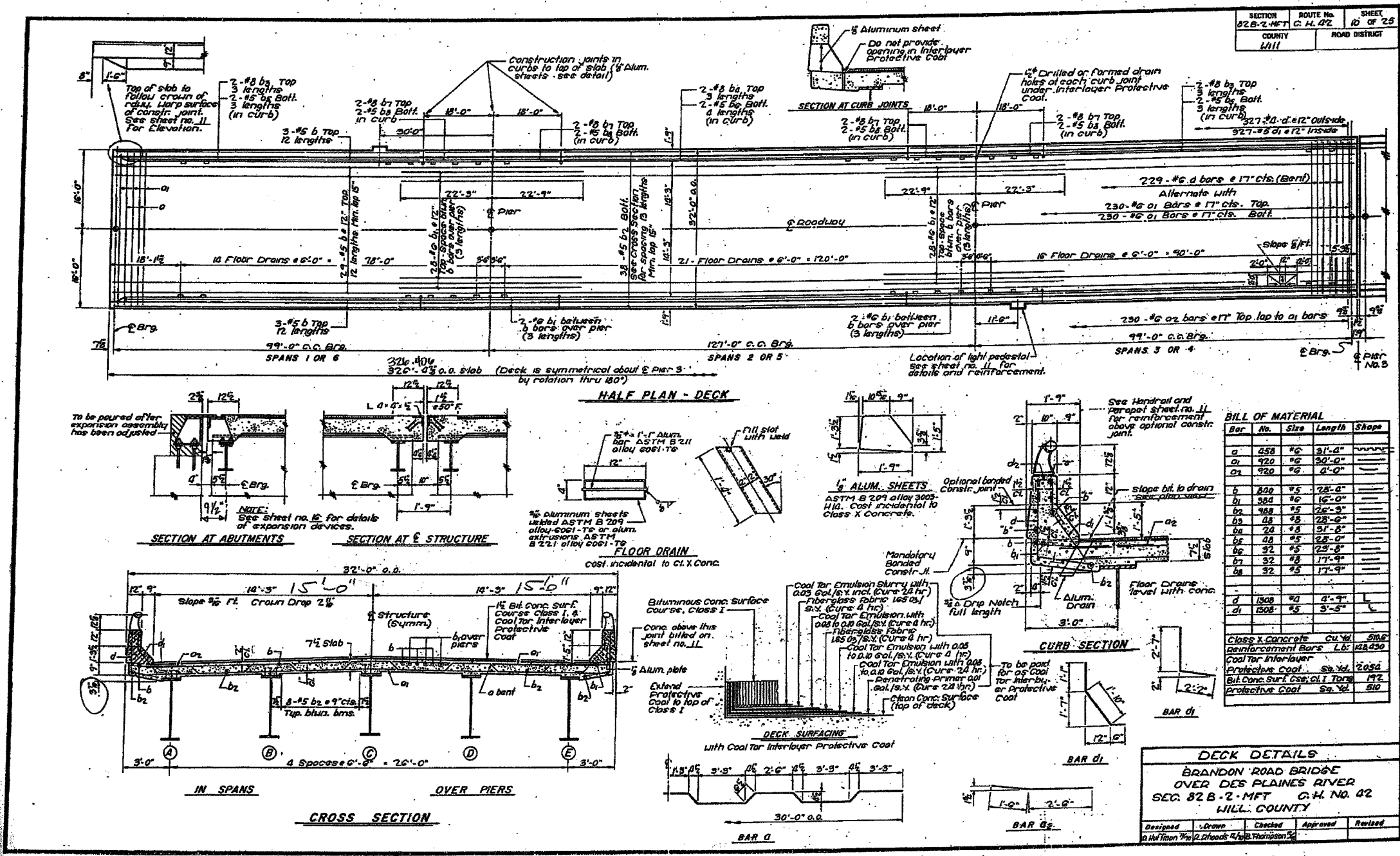
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312-565-0450 Job No. 3808.02

|                     |                    |                |                  |              |           |
|---------------------|--------------------|----------------|------------------|--------------|-----------|
| SHEET NO. S36       | F.A.U. RTE.        | SECTION        | COUNTY           | TOTAL SHEETS | SHEET NO. |
|                     | 341                | 04-00090-07-BR | WILL             | 57           | 44        |
| S47 SHEETS          | CONTRACT NO. 63442 |                |                  |              |           |
| FED. ROAD DIST. NO. |                    | ILLINOIS       | FED. AID PROJECT |              |           |

EXISTING PLAN INFORMATION  
STRUCTURE NO. 099-3298

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



|          |     |
|----------|-----|
| DESIGNED | JLS |
| CHECKED  | MRB |
| DRAWN    | VH  |
| CHECKED  | MRB |

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Chicago, Illinois 60601  
312-565-0450 Job No. 3808.02

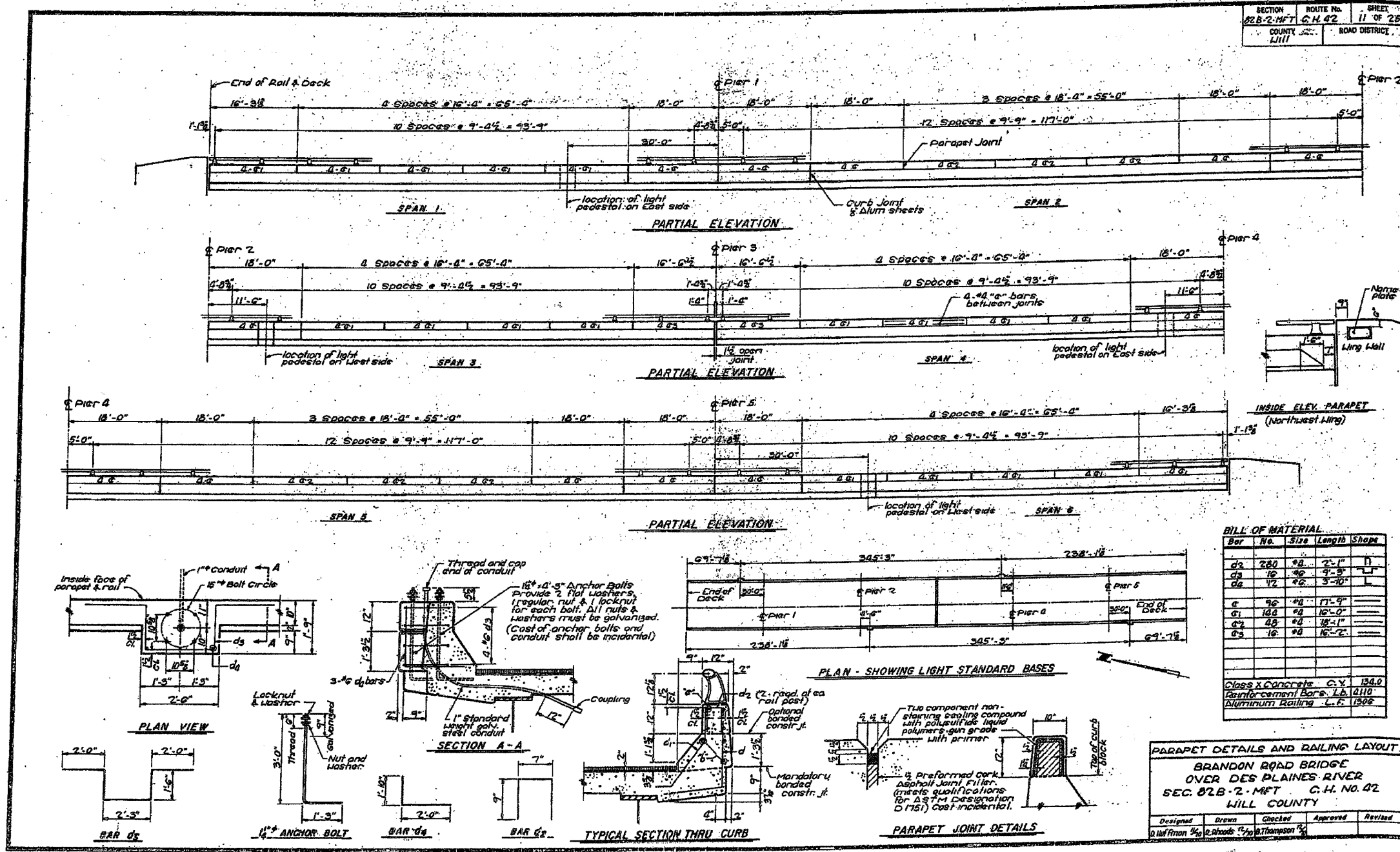
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|---------------|---------------------|----------------|------------------|--------------|-----------|
| SHEET NO. S37 | F.A.U. RTE.         | SECTION        | COUNTY           | TOTAL SHEETS | SHEET NO. |
|               | 341                 | 04-00090-07-BR | WILL             | 57           | 45        |
| S47 SHEETS    | CONTRACT NO. 63442  |                |                  |              |           |
|               | FED. ROAD DIST. NO. | ILLINOIS       | FED. AID PROJECT |              |           |

EXISTING PLAN INFORMATION  
STRUCTURE NO. 099-3298

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

|           |               |          |
|-----------|---------------|----------|
| SECTION   | ROUTE No.     | SHEET    |
| 02B-2-MFT | C.H. 42       | 11 OF 25 |
| COUNTY    | ROAD DISTRICT |          |
| Will      |               |          |



**BILL OF MATERIAL**

| Bar No. | Size   | Length | Shape |
|---------|--------|--------|-------|
| d2      | 280 #8 | 2'-11" | I     |
| d3      | 16 #6  | 9'-5"  | I     |
| d4      | 12 #6  | 3'-10" | I     |
| g       | 96 #8  | 17'-9" |       |
| g1      | 188 #8 | 16'-0" |       |
| g2      | 48 #8  | 18'-1" |       |
| g3      | 16 #8  | 16'-2" |       |

Class X Concrete C.Y. 134.0  
Reinforcing Bars L.B. 4110  
Aluminum Railing L.F. 1306

**PARAPET DETAILS AND RAILING LAYOUT**

BRANDON ROAD BRIDGE  
OVER DES PLAINES RIVER  
SEC. 02B-2-MFT C.H. NO. 42  
WILL COUNTY

|            |            |                |          |         |
|------------|------------|----------------|----------|---------|
| Designed   | Drawn      | Checked        | Approved | Revised |
| W. Hoffman | J. Roberts | J. B. Thompson |          |         |

|          |     |
|----------|-----|
| DESIGNED | JLS |
| CHECKED  | MRB |
| DRAWN    | VH  |
| CHECKED  | MRB |

FOR INFORMATION ONLY

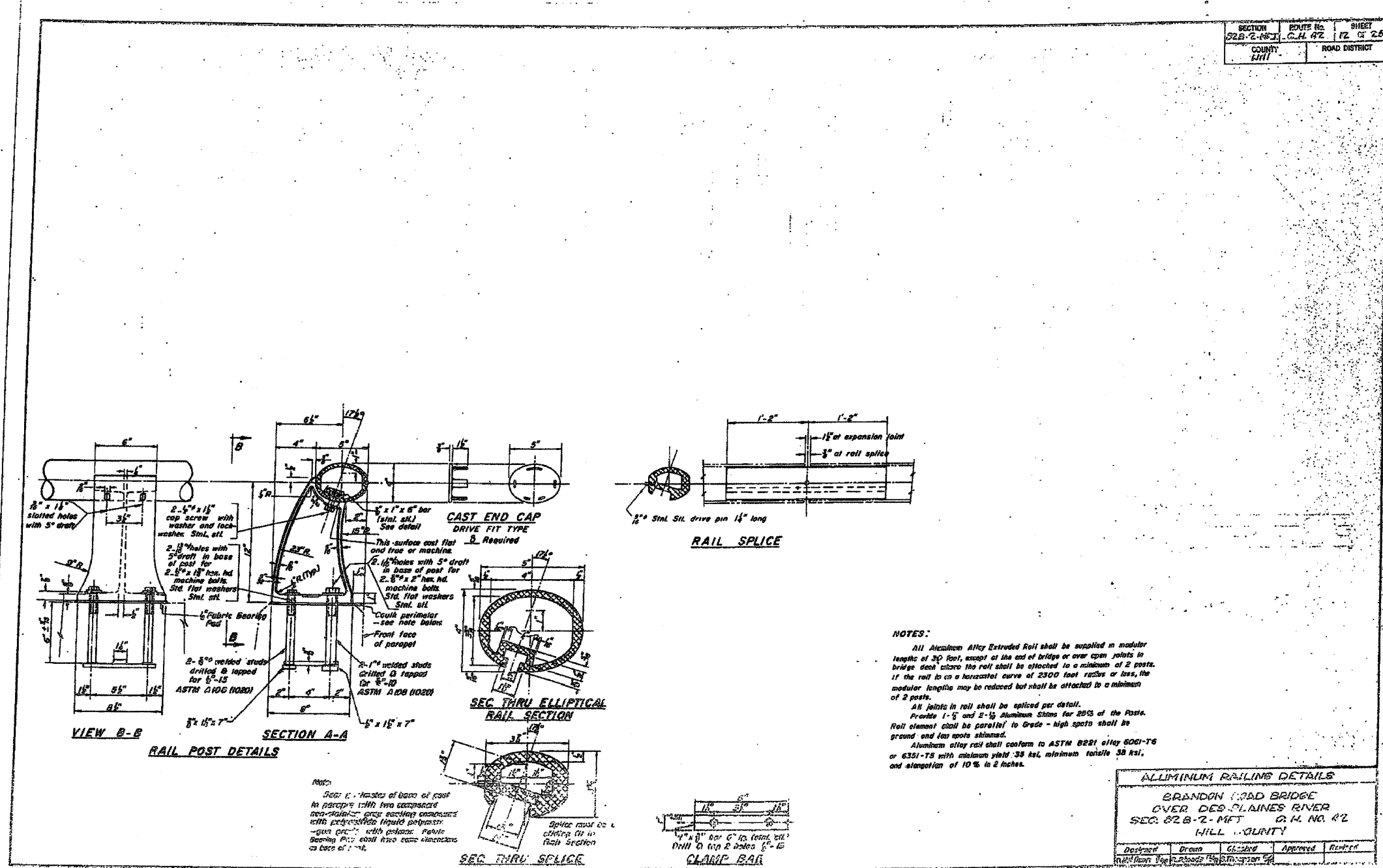
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Chicago, Illinois 60601  
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|               |                     |                |                  |              |           |
|---------------|---------------------|----------------|------------------|--------------|-----------|
| SHEET NO. S38 | F.A.U. RTE.         | SECTION        | COUNTY           | TOTAL SHEETS | SHEET NO. |
|               | 341                 | 04-00090-07-BR | WILL             | 57           | 46        |
| S47 SHEETS    | CONTRACT NO. 63442  |                |                  |              |           |
|               | FED. ROAD DIST. NO. | ILLINOIS       | FED. AID PROJECT |              |           |

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

|                      |                      |                   |
|----------------------|----------------------|-------------------|
| SECTION<br>82B-2-MFT | ROUTE No.<br>C.H. 42 | SHEET<br>12 OF 25 |
| COUNTY<br>WILL       | ROAD DISTRICT        |                   |



**NOTES:**  
 All Aluminum Alloy Extruded Rail shall be supplied in modular lengths of 30' Rail, except at the end of bridge or over spans joints in bridge deck where the rail shall be attached to a minimum of 2 posts. If the rail is on a horizontal curve of 2300 foot radius or less, the modular lengths may be reduced but shall be attached to a minimum of 2 posts.  
 All joints in rail shall be spliced per detail.  
 Provide 1-1/2" and 2-1/2" Aluminum Slats for 20% of the Posts. Rail element shall be parallel to Grade - high spots shall be ground and low spots skimmed.  
 Aluminum alloy rail shall conform to ASTM B221 alloy 6061-T6 or 6351-T5 with minimum yield 38 ksi, minimum tensile 58 ksi, and elongation of 10% in 2 inches.

| ALUMINUM RAILING DETAILS                                                                   |       |         |          |          |
|--------------------------------------------------------------------------------------------|-------|---------|----------|----------|
| BRANDON ROAD BRIDGE<br>OVER DES PLAINES RIVER<br>SEC. 82B-2-MFT C.H. NO. 42<br>HILL COUNTY |       |         |          |          |
| Designed                                                                                   | Drawn | Checked | Approved | Reviewed |
|                                                                                            |       |         |          |          |

|            |     |
|------------|-----|
| DESIGNED - | JLS |
| CHECKED -  | MRB |
| DRAWN -    | VH  |
| CHECKED -  | MRB |

FOR INFORMATION ONLY

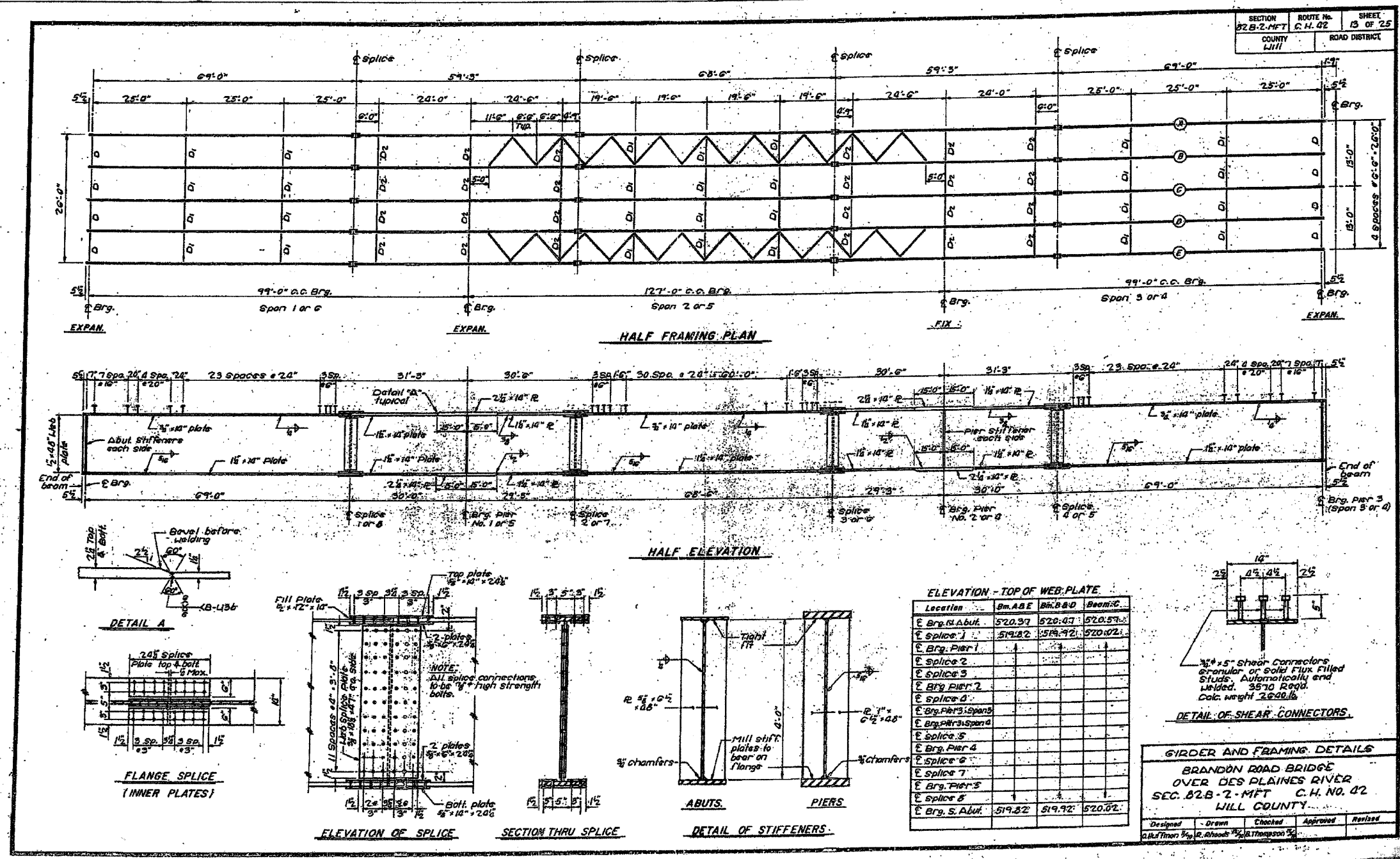
**benesch**  
 alfred benesch & company  
 Engineers • Surveyors • Planners  
 205 North Michigan Avenue, Suite 2400  
 Chicago, Illinois 60601  
 312-965-0450 Job No. 3808.02

|                             |                    |                           |                  |                    |                 |
|-----------------------------|--------------------|---------------------------|------------------|--------------------|-----------------|
| SHEET NO. S39<br>S47 SHEETS | F.A.U. RTE.<br>341 | SECTION<br>04-00090-07-BR | COUNTY<br>WILL   | TOTAL SHEETS<br>57 | SHEET NO.<br>47 |
|                             | CONTRACT NO. 63442 |                           |                  |                    |                 |
| FED. ROAD DIST. NO.         |                    | ILLINOIS                  | FED. AID PROJECT |                    |                 |

EXISTING PLAN INFORMATION  
STRUCTURE NO. 099-3298

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



ELEVATION - TOP OF WEB PLATE

| Location             | 9+48.2 | 9+48.2 | 9+48.2 |
|----------------------|--------|--------|--------|
| E. Brg. S. Abut.     | 520.37 | 520.47 | 520.57 |
| E. Splice 1          | 519.82 | 519.92 | 520.02 |
| E. Brg. Pier 1       |        |        |        |
| E. Splice 2          |        |        |        |
| E. Splice 3          |        |        |        |
| E. Brg. Pier 2       |        |        |        |
| E. Splice 4          |        |        |        |
| E. Brg. Pier 3       |        |        |        |
| E. Brg. Pier 3 Spand |        |        |        |
| E. Splice 5          |        |        |        |
| E. Brg. Pier 4       |        |        |        |
| E. Splice 6          |        |        |        |
| E. Splice 7          |        |        |        |
| E. Brg. Pier 5       |        |        |        |
| E. Splice 8          |        |        |        |
| E. Brg. S. Abut.     | 519.82 | 519.92 | 520.02 |

GIRDER AND FRAMING DETAILS  
BRANDON ROAD BRIDGE  
OVER DES PLAINES RIVER  
SEC. 82-B-2-MFT C.H. NO. 02  
WILL COUNTY

Designed - Drawn - Checked - Approved - Revised  
G. H. Thompson W. J. Rhoads W. J. Rhoads W. J. Rhoads W. J. Rhoads

|            |     |
|------------|-----|
| DESIGNED - | JLS |
| CHECKED -  | MRB |
| DRAWN -    | VH  |
| CHECKED -  | MRB |

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Chicago, Illinois 60601  
312-565-0450 Job No. 3808.02

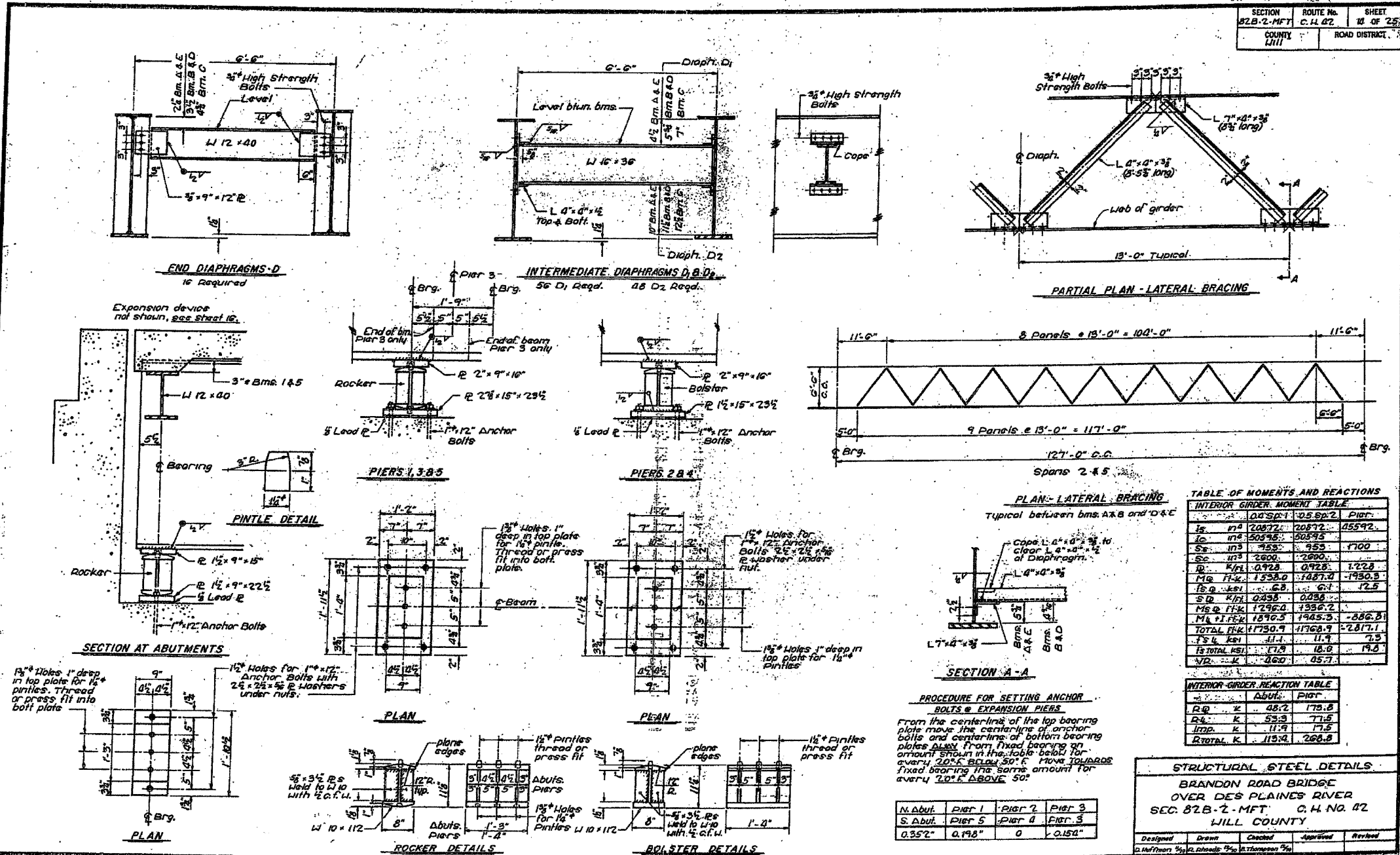
|                    |                     |                |                           |              |           |
|--------------------|---------------------|----------------|---------------------------|--------------|-----------|
| SHEET NO. S40      | F.A.U. RTE.         | SECTION        | COUNTY                    | TOTAL SHEETS | SHEET NO. |
|                    | 341                 | 04-00090-07-BR | WILL                      | 57           | 48        |
| S47 SHEETS         | FED. ROAD DIST. NO. |                | ILLINOIS FED. AID PROJECT |              |           |
| CONTRACT NO. 63442 |                     |                |                           |              |           |

EXISTING PLAN INFORMATION  
STRUCTURE NO. 099-3298

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



|          |     |
|----------|-----|
| DESIGNED | JLS |
| CHECKED  | MRB |
| DRAWN    | VH  |
| CHECKED  | MRB |

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312-566-0460 Job No. 3808.02

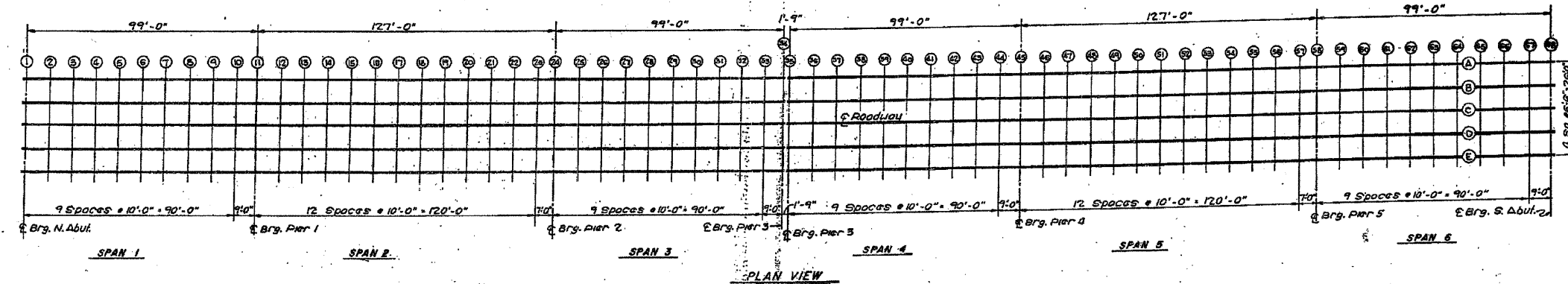
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|---------------|--------------------|----------------|---------------------------|--------------|-----------|
| SHEET NO. S41 | F.A.U. RTE.        | SECTION        | COUNTY                    | TOTAL SHEETS | SHEET NO. |
|               | 341                | 04-00090-07-BR | WILL                      | 57           | 49        |
| S47 SHEETS    | CONTRACT NO. 63442 |                | ILLINOIS FED. AID PROJECT |              |           |

EXISTING PLAN INFORMATION  
STRUCTURE NO. 099-3298

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

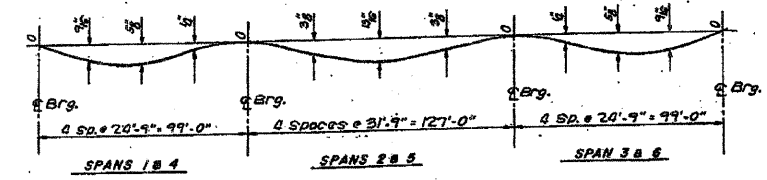
SECTION: 82B-2-MFT  
ROUTE No: C.H. 42  
SHEET: 15 OF 25  
COUNTY: Will  
ROAD DISTRICT:



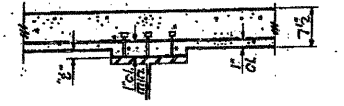
THEORETICAL TOP OF SLAB ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTIONS

| SPANS 1, 2 & 3 |          |             |             |         |
|----------------|----------|-------------|-------------|---------|
| LOC.           | STATION  | BEAMS A & E | BEAMS B & D | BEAM C  |
| 1              | 13139.12 | 521.346     | 521.047     | 521.549 |
| 2              | 13149.12 | 521.249     | 521.350     | 521.552 |
| 3              | 13159.12 | 521.162     | 521.263     | 521.366 |
| 4              | 13169.12 | 521.080     | 521.186     | 521.287 |
| 5              | 13179.12 | 521.012     | 521.113     | 521.215 |
| 6              | 13189.12 | 520.960     | 521.068     | 521.149 |
| 7              | 13199.12 | 520.888     | 520.990     | 521.091 |
| 8              | 14109.12 | 520.842     | 520.943     | 521.045 |
| 9              | 14119.12 | 520.811     | 520.912     | 521.013 |
| 10             | 14129.12 | 520.799     | 520.900     | 521.002 |
| 11             | 14138.12 | 520.797     | 520.898     | 521.000 |
| 12             | 14148.12 | 520.800     | 520.902     | 521.004 |
| 13             | 14158.12 | 520.812     | 520.913     | 521.015 |
| 14             | 14168.12 | 520.827     | 520.929     | 521.031 |
| 15             | 14178.12 | 520.853     | 520.955     | 521.047 |
| 16             | 14188.12 | 520.880     | 520.988     | 521.066 |
| 17             | 14198.12 | 520.912     | 520.960     | 521.066 |
| 18             | 15108.12 | 520.861     | 520.963     | 521.065 |
| 19             | 15118.12 | 520.853     | 520.954     | 521.056 |
| 20             | 15128.12 | 520.858     | 520.960     | 521.062 |
| 21             | 15138.12 | 520.872     | 520.974     | 521.075 |
| 22             | 15148.12 | 520.897     | 520.999     | 521.101 |
| 23             | 15158.12 | 520.938     | 520.990     | 521.092 |
| 24             | 15168.12 | 520.996     | 520.898     | 521.000 |
| 25             | 15178.12 | 520.999     | 520.901     | 521.003 |
| 26             | 15188.12 | 520.809     | 520.911     | 521.013 |
| 27             | 15198.12 | 520.824     | 520.926     | 521.028 |
| 28             | 16108.12 | 520.840     | 520.941     | 521.043 |
| 29             | 16118.12 | 520.861     | 520.953     | 521.058 |
| 30             | 16128.12 | 520.855     | 520.957     | 521.058 |
| 31             | 16138.12 | 520.850     | 520.952     | 521.054 |
| 32             | 16148.12 | 520.838     | 520.939     | 521.041 |
| 33             | 16158.12 | 520.818     | 520.920     | 521.021 |
| 34             | 16168.12 | 520.796     | 520.898     | 521.000 |

| SPANS 4, 5 & 6 |          |             |             |         |
|----------------|----------|-------------|-------------|---------|
| LOC.           | STATION  | BEAMS A & E | BEAMS B & D | BEAM C  |
| 35             | 16168.87 | 520.797     | 520.898     | 521.000 |
| 36             | 16178.87 | 520.820     | 520.922     | 521.023 |
| 37             | 16188.87 | 520.850     | 520.941     | 521.043 |
| 38             | 16198.87 | 520.882     | 520.953     | 521.055 |
| 39             | 17108.87 | 520.853     | 520.957     | 521.058 |
| 40             | 17118.87 | 520.850     | 520.952     | 521.053 |
| 41             | 17128.87 | 520.838     | 520.940     | 521.042 |
| 42             | 17138.87 | 520.823     | 520.924     | 521.026 |
| 43             | 17148.87 | 520.808     | 520.910     | 521.011 |
| 44             | 17158.87 | 520.799     | 520.900     | 521.002 |
| 45             | 17168.87 | 520.796     | 520.898     | 521.000 |
| 46             | 17178.87 | 520.800     | 520.902     | 521.004 |
| 47             | 17188.87 | 520.812     | 520.913     | 521.015 |
| 48             | 17198.87 | 520.827     | 520.929     | 521.031 |
| 49             | 18108.87 | 520.843     | 520.945     | 521.047 |
| 50             | 18118.87 | 520.858     | 520.958     | 521.060 |
| 51             | 18128.87 | 520.882     | 520.969     | 521.066 |
| 52             | 18138.87 | 520.861     | 520.963     | 521.065 |
| 53             | 18148.87 | 520.853     | 520.954     | 521.056 |
| 54             | 18158.87 | 520.838     | 520.940     | 521.042 |
| 55             | 18168.87 | 520.822     | 520.924     | 521.025 |
| 56             | 18178.87 | 520.807     | 520.909     | 521.010 |
| 57             | 18188.87 | 520.796     | 520.900     | 521.002 |
| 58             | 18198.87 | 520.796     | 520.898     | 521.000 |
| 59             | 19108.87 | 520.799     | 520.901     | 521.003 |
| 60             | 19118.87 | 520.809     | 520.911     | 521.013 |
| 61             | 19128.87 | 520.824     | 520.926     | 521.028 |
| 62             | 19138.87 | 520.840     | 520.941     | 521.043 |
| 63             | 19148.87 | 520.851     | 520.953     | 521.058 |
| 64             | 19158.87 | 520.855     | 520.957     | 521.058 |
| 65             | 19168.87 | 520.850     | 520.952     | 521.054 |
| 66             | 19178.87 | 520.838     | 520.939     | 521.041 |
| 67             | 19188.87 | 520.818     | 520.920     | 521.021 |
| 68             | 19198.87 | 520.796     | 520.898     | 521.000 |



DEAD LOAD DEFLECTION DIAGRAM  
Height of Structural Steel not included.  
Diagram for reference only. Do not use for construction.



METHOD OF DETERMINING FILLET HEIGHT  
After all Structural Steel has been erected, elevations of the top flanges of the beams shall be taken at the locations shown above. These elevations shall be taken from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown at left, minus slab thickness equals the fillet height 1/2" above top flange of beams.

| TOP OF SLAB ELEVATIONS                                                                     |       |         |          |         |
|--------------------------------------------------------------------------------------------|-------|---------|----------|---------|
| BRANDON ROAD BRIDGE<br>OVER DES PLAINES RIVER<br>SEC. 82B-2-MFT C.H. NO. 42<br>WILL COUNTY |       |         |          |         |
| Designed                                                                                   | Drawn | Checked | Approved | Revised |
| JLS                                                                                        | MRB   | VH      | MRB      |         |

|          |     |
|----------|-----|
| DESIGNED | JLS |
| CHECKED  | MRB |
| DRAWN    | VH  |
| CHECKED  | MRB |

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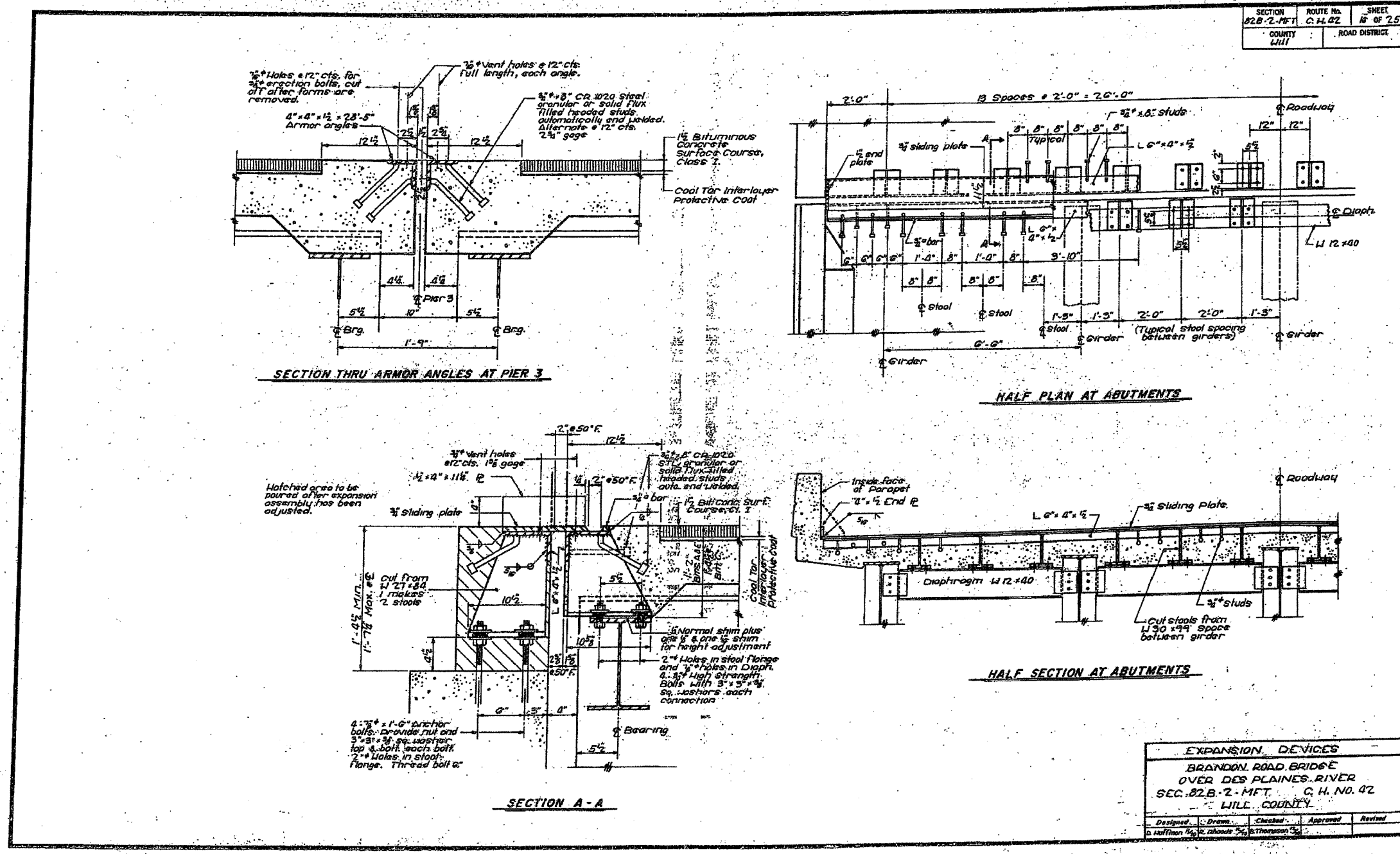
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alfred benesch & company  
Engineers - Surveyors - Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 3808.02

|               |                     |                |                  |              |           |
|---------------|---------------------|----------------|------------------|--------------|-----------|
| SHEET NO. S42 | F.A.U. RTE.         | SECTION        | COUNTY           | TOTAL SHEETS | SHEET NO. |
|               | 341                 | 04-00090-07-BR | WILL             | 57           | 50        |
| S47 SHEETS    | CONTRACT NO. 63442  |                |                  |              |           |
|               | FED. ROAD DIST. NO. | ILLINOIS       | FED. AID PROJECT |              |           |

EXISTING PLAN INFORMATION  
STRUCTURE NO. 099-3298

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



|            |     |
|------------|-----|
| DESIGNED - | JLS |
| CHECKED -  | MRB |
| DRAWN -    | VH  |
| CHECKED -  | MRB |

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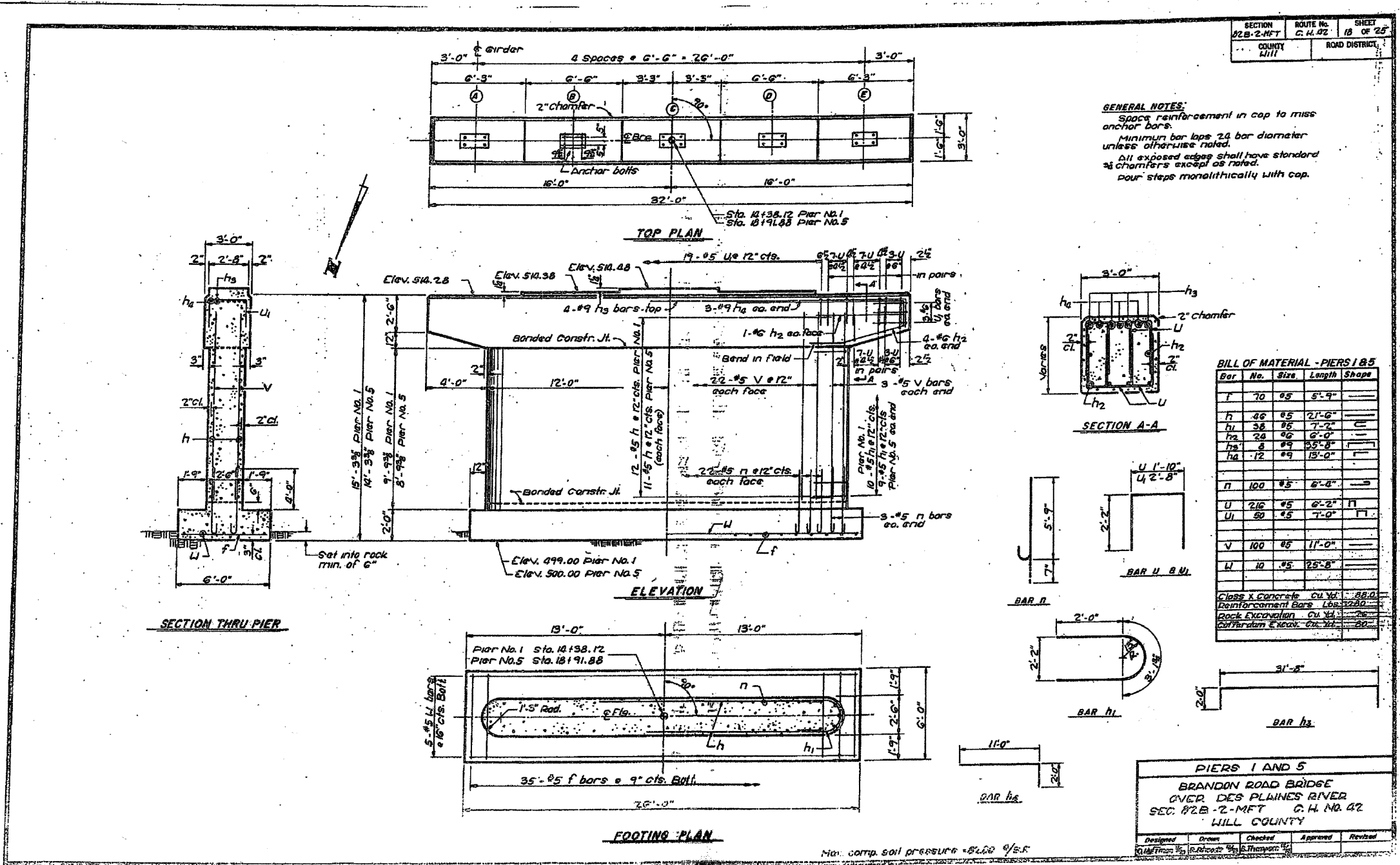
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|---------------------|--------------------|---------------------------|--------|--------------|-----------|
| SHEET NO. S43       | F.A.U. RTE.        | SECTION                   | COUNTY | TOTAL SHEETS | SHEET NO. |
|                     | 341                | 04-00090-07-BR            | WILL   | 57           | 51        |
| S47 SHEETS          | CONTRACT NO. 63442 |                           |        |              |           |
| FED. ROAD DIST. NO. |                    | ILLINOIS FED. AID PROJECT |        |              |           |

EXISTING PLAN INFORMATION  
STRUCTURE NO. 099-3298

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



|           |               |          |
|-----------|---------------|----------|
| SECTION   | ROUTE No.     | SHEET    |
| 82B-2-MFT | C. H. 42      | 18 OF 25 |
| COUNTY    | ROAD DISTRICT |          |
| Will      |               |          |

**BILL OF MATERIAL - PIERS 1 & 5**

| Bar No. | Size   | Length | Shape |
|---------|--------|--------|-------|
| T       | 70 #5  | 5'-9"  |       |
| h       | 46 #5  | 2'-6"  |       |
| h1      | 36 #5  | 7'-7"  |       |
| h2      | 24 #9  | 6'-0"  |       |
| h3      | 8 #9   | 35'-8" |       |
| h4      | 12 #9  | 13'-0" |       |
| n       | 100 #5 | 6'-0"  |       |
| U       | 216 #5 | 6'-2"  | U     |
| U1      | 80 #5  | 7'-0"  | U1    |
| V       | 100 #5 | 11'-0" |       |
| W       | 10 #5  | 25'-8" |       |

Class X Concrete Cu Yd. 88.0  
Reinforcement Bars Lbs. 2240  
Rock Excavation Cu Yd. 20  
Cutlerdam Excav. Cu Yd. 80

|          |       |         |          |         |
|----------|-------|---------|----------|---------|
| Designed | Drawn | Checked | Approved | Revised |
| JLS      | MRB   | VH      | MRB      |         |

|          |     |
|----------|-----|
| DESIGNED | JLS |
| CHECKED  | MRB |
| DRAWN    | VH  |
| CHECKED  | MRB |

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Chicago, Illinois 60601  
312-565-0450 Job No. 3808.02

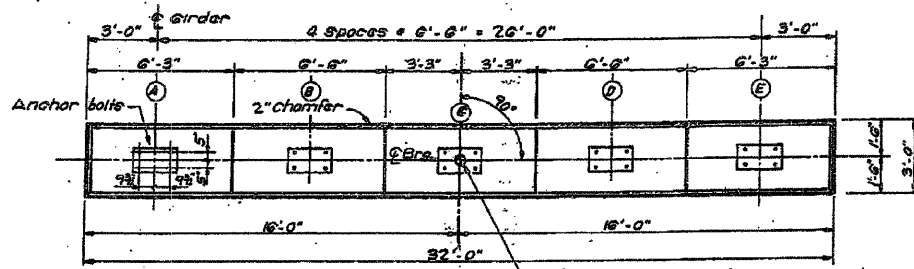
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|---------------|--------------------|----------------|-----------------------------------------------|--------------|-----------|
| SHEET NO. S45 | F.A.U. RTE.        | SECTION        | COUNTY                                        | TOTAL SHEETS | SHEET NO. |
|               | 341                | 04-00090-07-BR | WILL                                          | 57           | 53        |
| S47 SHEETS    | CONTRACT NO. 63442 |                | FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT |              |           |

EXISTING PLAN INFORMATION  
STRUCTURE NO. 099-3298

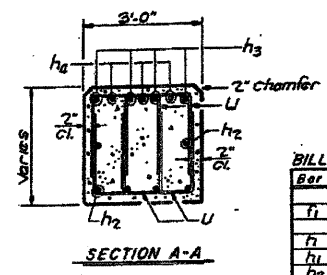
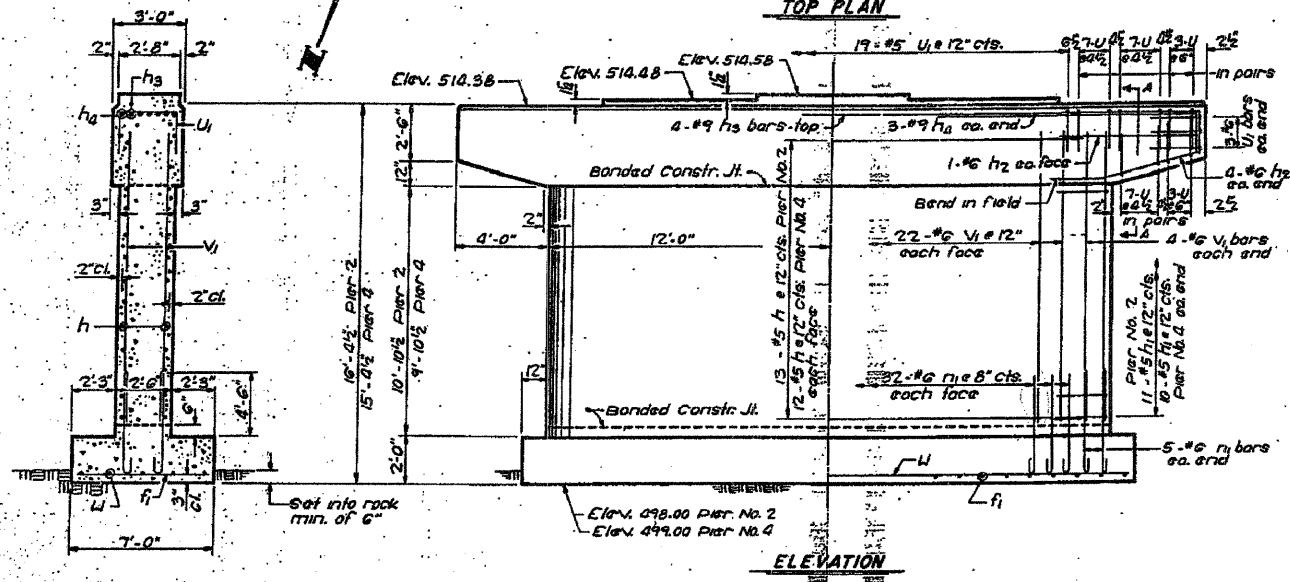
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

|                      |                     |                  |
|----------------------|---------------------|------------------|
| SECTION<br>02B-2-MFT | ROUTE No.<br>G.M.42 | SHEET<br>19 OF 2 |
| COUNTY<br>Will       | ROAD DISTRICT       |                  |



**GENERAL NOTES:**  
 Space reinforcement in cap to miss anchor bars.  
 Minimum bar laps 2d bar diameter unless otherwise noted.  
 All exposed edges shall have standard chamfers except as noted.  
 Pour steps monolithically with cap.



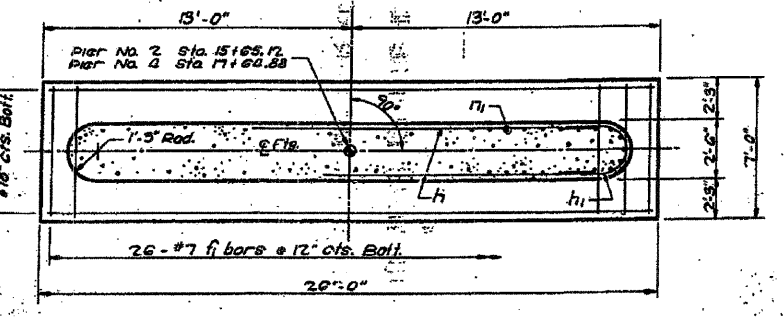
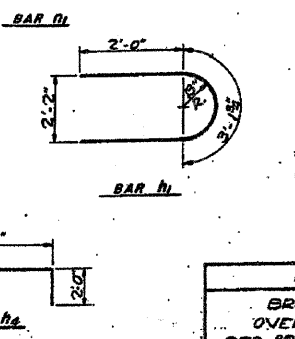
**BILL OF MATERIAL - PIERS 2 & 4**

| Bar No. | Size | Length | Shape |
|---------|------|--------|-------|
| f1      | #7   | 6'-9"  |       |
| h       | #5   | 21'-6" |       |
| h1      | #5   | 7'-2"  |       |
| h2      | #6   | 6'-0"  |       |
| h3      | #9   | 35'-8" |       |
| h4      | #9   | 15'-0" |       |
| U1      | #6   | 6'-11" |       |
| U       | #5   | 6'-2"  |       |
| U1      | #5   | 7'-0"  |       |
| V1      | #6   | 11'-6" |       |
| U       | #5   | 25'-8" |       |

Class X Concrete cu. yd. 926  
 Reinforcement Bars lbs. 9290  
 Rock Excavation cu. yd. 170  
 Containment Excavation cu. yd. 714

SECTION THRU PIER

ELEVATION



FOOTING PLAN

**PIERS 2 AND 4**  
 BRANDON ROAD BRIDGE  
 OVER DES PLAINES RIVER  
 SEC. 82B-2-MFT G.M. NO. 42  
 WILL COUNTY

|          |       |         |          |         |
|----------|-------|---------|----------|---------|
| Designed | Drawn | Checked | Approved | Revised |
|          |       |         |          |         |

Max. comp. soil pressure = 8200 #/s.f.

|            |     |
|------------|-----|
| DESIGNED - | JLS |
| CHECKED -  | MRB |
| DRAWN -    | VH  |
| CHECKED -  | MRB |

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 312-665-0450 Job No. 3808.02

|                     |                    |                |        |                  |           |
|---------------------|--------------------|----------------|--------|------------------|-----------|
| SHEET NO. S46       | F.A.U. RTE.        | SECTION        | COUNTY | TOTAL SHEETS     | SHEET NO. |
|                     | 341                | 04-00090-07-BR | WILL   | 57               | 54        |
| S47 SHEETS          | CONTRACT NO. 63442 |                |        |                  |           |
| FED. ROAD DIST. NO. |                    | ILLINOIS       |        | FED. AID PROJECT |           |

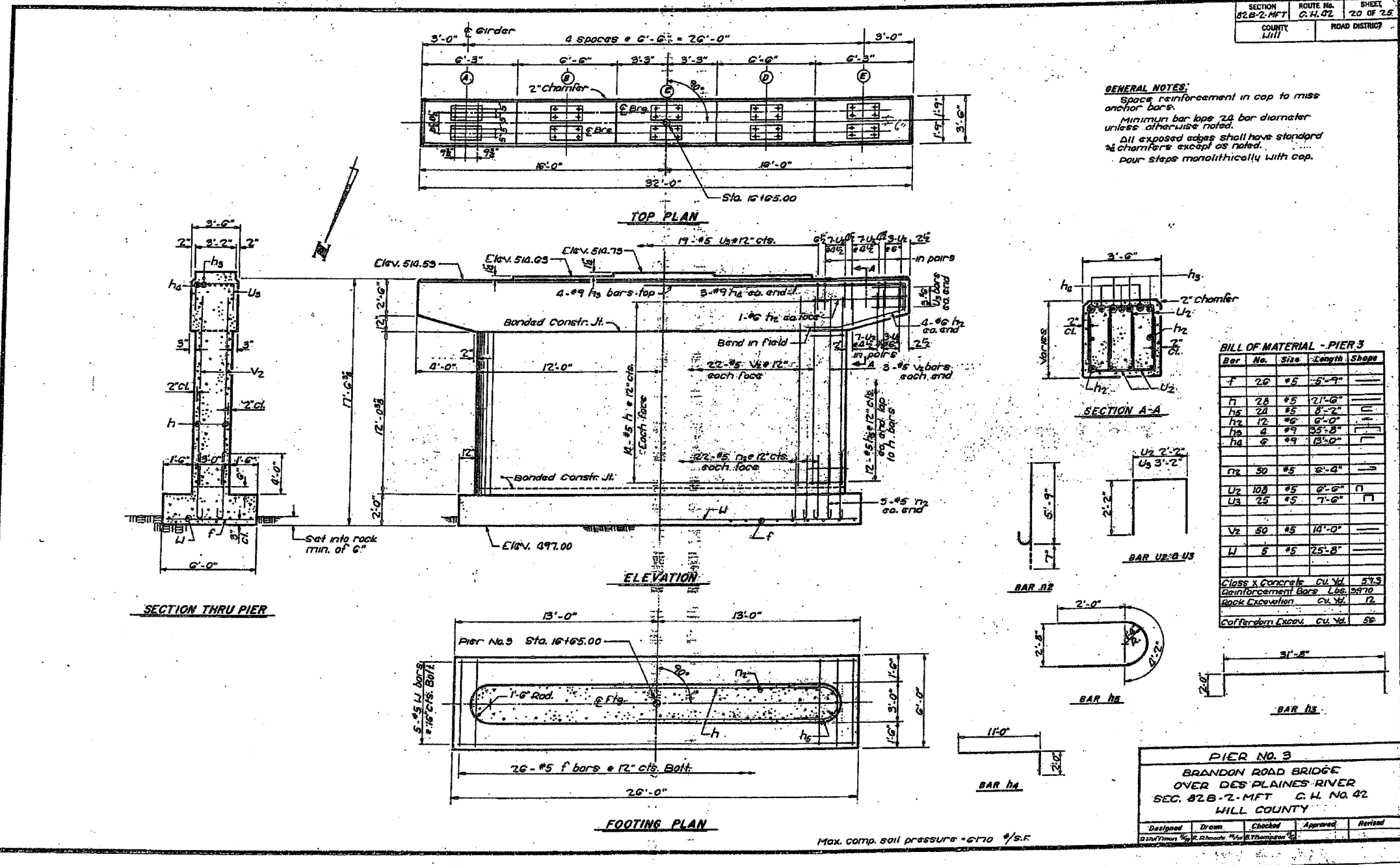
EXISTING PLAN INFORMATION  
 STRUCTURE NO. 099-3298

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

|                      |                      |                   |
|----------------------|----------------------|-------------------|
| SECTION<br>82B-2-MFT | ROUTE No.<br>C.H. 82 | SHEET<br>20 OF 25 |
| COUNTY<br>Will       | ROAD DISTRICT        |                   |

**GENERAL NOTES:**  
 Space reinforcement in cap to miss anchor bars.  
 Minimum bar laps 24 bar diameter unless otherwise noted.  
 All exposed edges shall have standard 45 chamfers except as noted.  
 Pour steps monolithically with cap.



**BILL OF MATERIAL - PIER 3**

| Bar No. | Size | Length | Shops  |
|---------|------|--------|--------|
| F       | 26   | #5     | 5'-9"  |
| U1      | 28   | #5     | 21'-0" |
| U2      | 28   | #5     | 8'-2"  |
| U3      | 25   | #5     | 6'-0"  |
| V1      | 4    | #9     | 25'-8" |
| V2      | 6    | #9     | 13'-0" |
| W       | 5    | #5     | 25'-8" |
| U1      | 50   | #5     | 6'-0"  |
| U2      | 108  | #5     | 6'-0"  |
| U3      | 25   | #5     | 7'-0"  |
| V1      | 50   | #5     | 14'-0" |
| W       | 5    | #5     | 25'-8" |

Class 1 Concrete Cu. Yd. 57.3  
 Reinforcement Bars Lbs. 2970  
 Back Excavation Cu. Yd. 12  
 Cofferdam Exposed Cu. Yd. 56

**PIER NO. 3**  
 BRANDON ROAD BRIDGE  
 OVER DES PLAINES RIVER  
 SEC. 82B-2-MFT C.H. NO. 82  
 WILL COUNTY

|          |       |         |          |         |
|----------|-------|---------|----------|---------|
| Designed | Drawn | Checked | Approved | Revised |
|          |       |         |          |         |

Max. comp. soil pressure = 170 #/sq. ft.

|            |     |
|------------|-----|
| DESIGNED - | JLS |
| CHECKED -  | MRB |
| DRAWN -    | VH  |
| CHECKED -  | MRB |

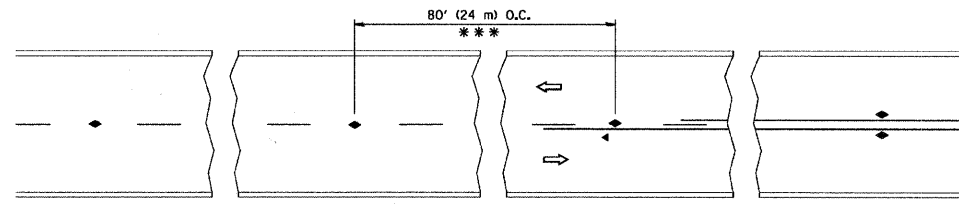
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 alfred benesch & company  
 Engineers - Surveyors - Planners  
 205 North Michigan Avenue, Suite 2400  
 Chicago, Illinois 60601  
 312-995-0450 Job No. 3808.02

|                     |             |         |                    |                  |           |
|---------------------|-------------|---------|--------------------|------------------|-----------|
| SHEET NO. S47       | F.A.U. RTE. | SECTION | COUNTY             | TOTAL SHEETS     | SHEET NO. |
|                     | S47 SHEETS  | 341     | 04-00090-07-BR     | WILL             | 57        |
| FED. ROAD DIST. NO. |             |         | ILLINOIS           | FED. AID PROJECT |           |
|                     |             |         | CONTRACT NO. 63442 |                  |           |

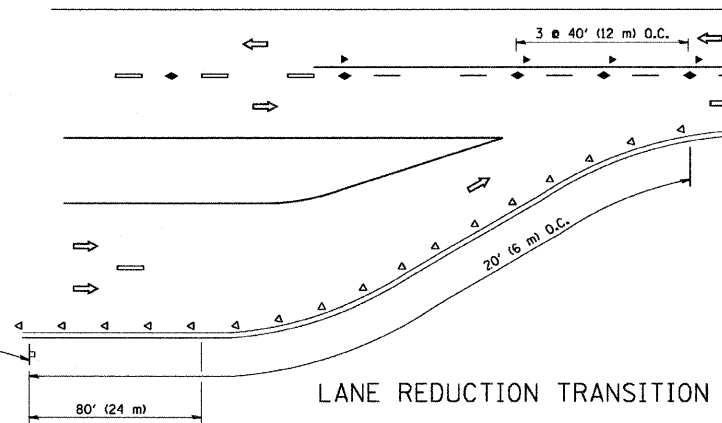
EXISTING PLAN INFORMATION  
 STRUCTURE NO. 099-3298

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 1/22/2010

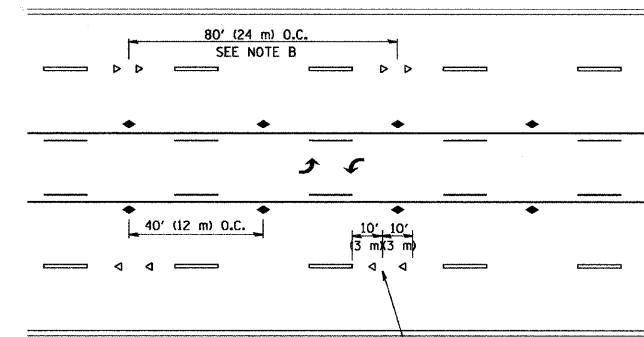


\*\*\* REDUCE TO 40' (12 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEED 45 M.P.H. (70 km/h) OR LESS.

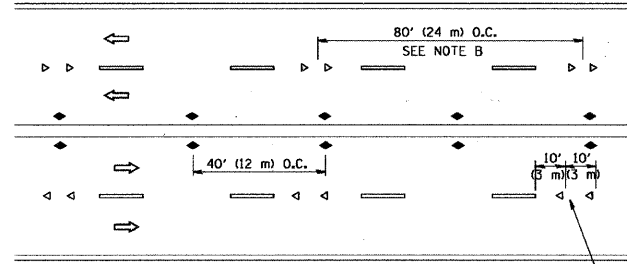
TWO-LANE/TWO-WAY



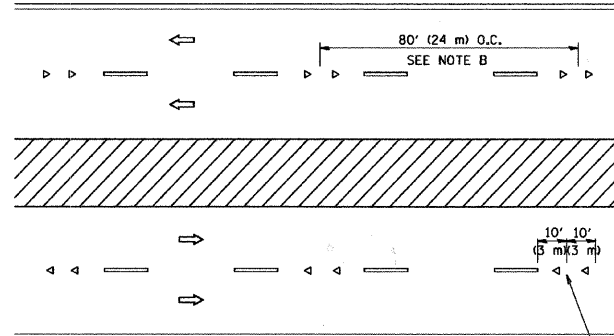
LANE REDUCTION TRANSITION



TWO-WAY LEFT TURN



MULTI-LANE/UNDIVIDED



MULTI-LANE/DIVIDED

GENERAL NOTES

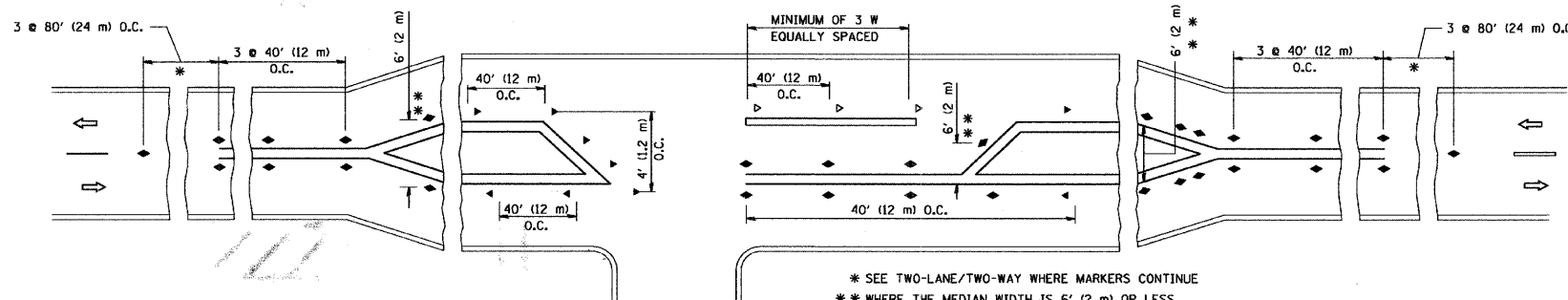
1. MARKERS USED WITH DASHED LINES SHALL BE CENTERED IN THE GAP BETWEEN SEGMENTS.
2. MARKERS USED ADJACENT TO SOLID LINES SHALL BE OFFSET 2 TO 3 (50 TO 75) TOWARD TRAFFIC AS SHOWN.
3. MARKERS THROUGH TANGENTS LESS THAN 500' (150 m) IN LENGTH BETWEEN CURVES SHALL BE INSTALLED AT THE LESSER OF THE TWO CURVE SPACINGS.

SYMBOLS

- YELLOW STRIPE
- WHITE STRIPE
- ◀ ONE-WAY AMBER MARKER
- ◀ ONE-WAY CRYSTAL MARKER (W/O)
- ◆ TWO-WAY AMBER MARKER

LANE MARKER NOTES

- A. USE DOUBLE LANE LINE MARKERS SPACED AS SHOWN.
- B. REDUCE TO 40' (12 m) O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 10 M.P.H (20 km/h) LOWER THAN POSTED SPEEDS.



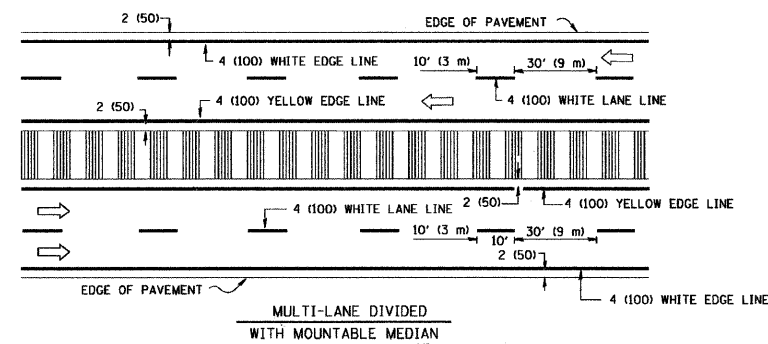
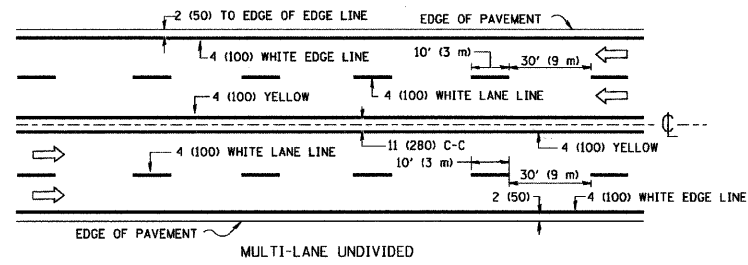
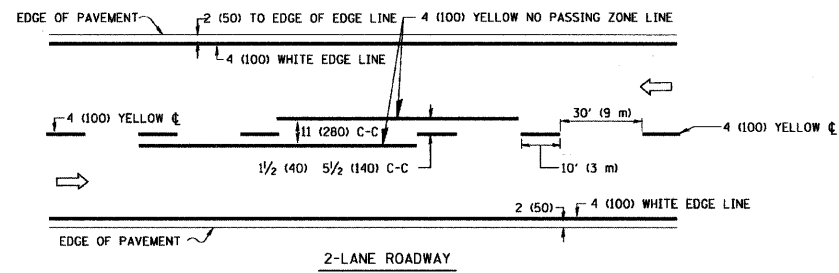
LEFT TURN

\* SEE TWO-LANE/TWO-WAY WHERE MARKERS CONTINUE  
 \*\* WHERE THE MEDIAN WIDTH IS 6' (2 m) OR LESS USE TWO-WAY MARKERS.

All dimensions are in inches (millimeters) unless otherwise shown.

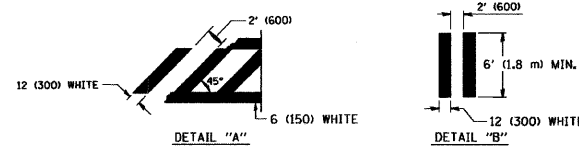
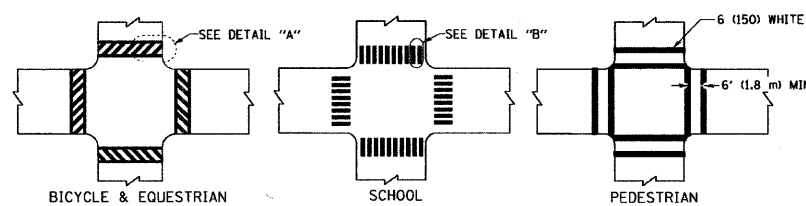
|                                                      |                        |                                 |                                                                    |                                                           |                                                                                          |      |         |                  |                           |                    |                    |                 |
|------------------------------------------------------|------------------------|---------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------------------------|------|---------|------------------|---------------------------|--------------------|--------------------|-----------------|
| FILE NAME =<br>c:\pwork\pwork\drivakosgn\48180315\td | USER NAME = drivakosgn | DESIGNED -<br>DRAWN -           | REVISED - T. RAMMACHER 09-19-94<br>REVISED - T. RAMMACHER 03-12-99 | <b>STATE OF ILLINOIS<br/>DEPARTMENT OF TRANSPORTATION</b> | <b>TYPICAL APPLICATIONS<br/>RAISED REFLECTIVE PAVEMENT MARKERS (SNOW-FLOW RESISTANT)</b> |      |         | F.A. RTE.<br>341 | SECTION<br>04-00090-07-BR | COUNTY<br>WILL     | TOTAL SHEETS<br>57 | SHEET NO.<br>56 |
| PLOT SCALE = 50,000' / IN.                           | CHECKED -              | REVISED - T. RAMMACHER 01-06-00 | SCALE: NONE                                                        |                                                           | SHEET NO. 1 OF 1 SHEETS                                                                  | STA. | TO STA. | <b>TC-11</b>     |                           | CONTRACT NO. 63442 |                    |                 |
| PLOT DATE = 9/9/2009                                 | DATE -                 | REVISED - C. JUCIUS 09-09-09    | FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT                    |                                                           |                                                                                          |      |         |                  |                           |                    |                    |                 |



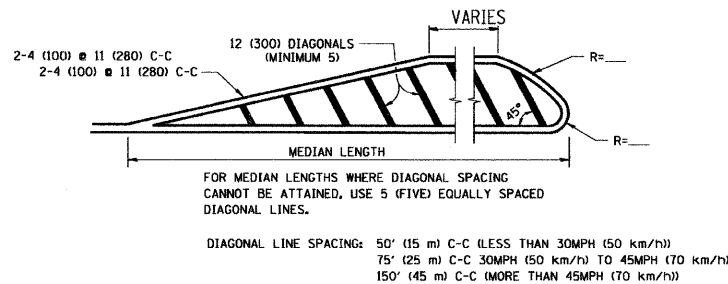
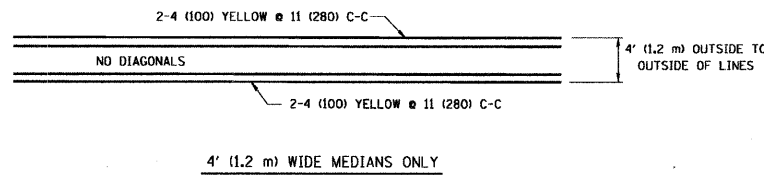


NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE

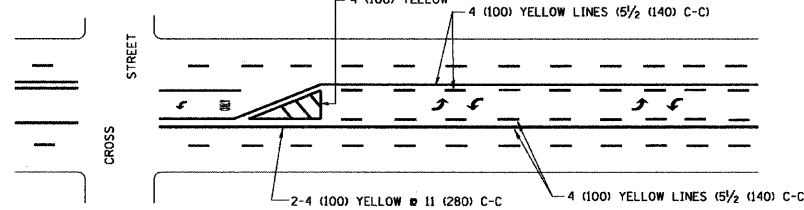
TYPICAL LANE AND EDGE LINE MARKING



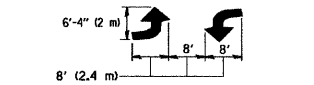
TYPICAL CROSSWALK MARKING



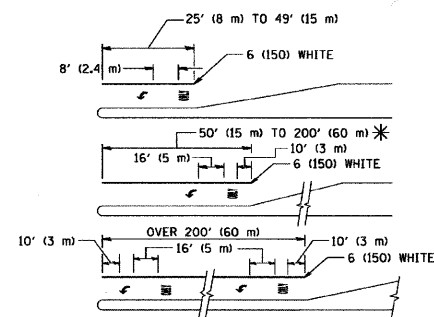
MEDIANS OVER 4' (1.2 m) WIDE



A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR. ADDITIONAL PAIRS SHALL BE PLACED AT 200' (60 m) TO 300' (90 m) INTERVALS.



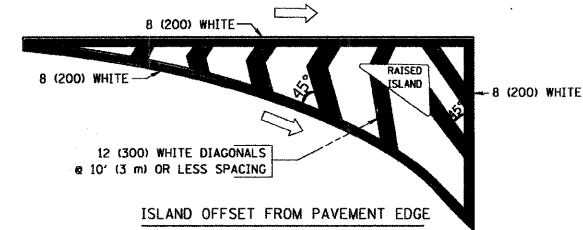
TYPICAL PAINTED MEDIAN MARKING



FULL SIZE LETTERS 8' (2.4 m) AND ARROWS SHALL BE USED.  
 AREA = 15.6 SQ. FT. (1.5 m<sup>2</sup>) ; AREA = 20.8 SQ. FT. (1.9 m<sup>2</sup>)  
 \* TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

TYPICAL TURN LANE MARKING



TYPICAL ISLAND MARKING

| TYPE OF MARKING                                                                                   | WIDTH OF LINE                                                                              | PATTERN                         | COLOR                                             | SPACING / REMARKS                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CENTERLINE ON 2 LANE PAVEMENT                                                                     | 4 (100)                                                                                    | SKIP-DASH                       | YELLOW                                            | 10' (3 m) LINE WITH 30' (9 m) SPACE                                                                                                                                |
| CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT                                                       | 2 @ 4 (100)                                                                                | SOLID                           | YELLOW                                            | 11 (280) C-C                                                                                                                                                       |
| NO PASSING ZONE LINES FOR ONE DIRECTION FOR BOTH DIRECTIONS                                       | 4 (100)<br>2 @ 4 (100)                                                                     | SOLID<br>SOLID                  | YELLOW<br>YELLOW                                  | 5/2 (140) C-C FROM SKIP-DASH CENTERLINE<br>11 (280) C-C<br>OMIT SKIP-DASH CENTERLINE BETWEEN                                                                       |
| LANE LINES                                                                                        | 4 (100)<br>5 (125) ON FREEWAYS                                                             | SKIP-DASH<br>SKIP-DASH          | WHITE<br>WHITE                                    | 10' (3 m) LINE WITH 30' (9 m) SPACE                                                                                                                                |
| DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)                                   | SAME AS LINE BEING EXTENDED                                                                | SKIP-DASH                       | SAME AS LINE BEING EXTENDED                       | 2' (600) LINE WITH 6' (1.8 m) SPACE                                                                                                                                |
| EDGE LINES                                                                                        | 4 (100)                                                                                    | SOLID                           | YELLOW-LEFT<br>WHITE-RIGHT                        | OUTLINE MOUNTABLE MEDIANS IN YELLOW; EDGE LINES ARE NOT USED NEXT TO BARRIER CURB                                                                                  |
| TURN LANE MARKINGS                                                                                | 6 (150) LINE; FULL SIZE LETTERS & SYMBOLS (8' (2.4m))                                      | SOLID                           | WHITE                                             | SEE TYPICAL TURN LANE MARKING DETAIL                                                                                                                               |
| TWO WAY LEFT TURN MARKING                                                                         | 2 @ 4 (100) EACH DIRECTION<br>8' (2.4m) LEFT ARROW                                         | SKIP-DASH AND SOLID<br>IN PAIRS | YELLOW<br>WHITE                                   | 10' (3 m) LINE WITH 30' (9 m) SPACE FOR SKIP-DASH; 5/2 (140) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE<br>SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL             |
| CROSSWALK LINES (PEDESTRIAN)<br>A. DIAGONALS (BIKE & EQUESTRIAN)<br>B. LONGITUDINAL BARS (SCHOOL) | 2 @ 6 (150)<br>12 (300) @ 45°<br>12 (300) @ 90°                                            | SOLID<br>SOLID<br>SOLID         | WHITE<br>WHITE<br>WHITE                           | NOT LESS THAN 6' (1.8 m) APART<br>2' (600) APART<br>2' (600) APART<br>SEE TYPICAL CROSSWALK MARKING DETAILS.                                                       |
| STOP LINES                                                                                        | 24 (600)                                                                                   | SOLID                           | WHITE                                             | PLACE 4' (1.2 m) IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT. OTHERWISE, PLACE AT DESIRED STOPPING POINT, PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE |
| PAINTED MEDIANS                                                                                   | 2 @ 4 (100) WITH 12 (300) DIAGONALS @ 45°<br>NO DIAGONALS USED FOR 4' (1.2 m) WIDE MEDIANS | SOLID                           | YELLOW; TWO WAY TRAFFIC<br>WHITE; ONE WAY TRAFFIC | 11 (280) C-C FOR THE DOUBLE LINE<br>SEE TYPICAL PAINTED MEDIAN MARKING.                                                                                            |
| GORE MARKING AND CHANNELIZING LINES                                                               | 8 (200) WITH 12 (300) DIAGONALS @ 45°                                                      | SOLID                           | WHITE                                             | DIAGONALS:<br>15' (4.5 m) C-C (LESS THAN 30MPH (50 km/h))<br>20' (6 m) C-C (30MPH (50 km/h) TO 45MPH (70 km/h))<br>30' (9 m) C-C (OVER 45MPH (70 km/h))            |
| RAILROAD CROSSING                                                                                 | 24 (600) TRANSVERSE LINES; "RR" 15 6' (1.8 m) LETTERS; 16 (400) LINE FOR "X"               | SOLID                           | WHITE                                             | SEE STATE STANDARD 780001<br>AREA OF:<br>"R"=3.6 SQ. FT. (0.33 m <sup>2</sup> ) EACH<br>"X"=54.0 SQ. FT. (5.0 m <sup>2</sup> )                                     |
| SHOULDER DIAGONALS                                                                                | 12 (300) @ 45°                                                                             | SOLID                           | WHITE - RIGHT<br>YELLOW - LEFT                    | 50' (15 m) C-C (LESS THAN 30MPH (50 km/h))<br>75' (25 m) C-C (30 MPH (50 km/h) TO 45MPH (70 km/h))<br>150' (45 m) C-C (OVER 45MPH (70 km/h))                       |

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STATE STANDARD 780001.

All dimensions are in inches (millimeters) unless otherwise shown.