

KEY PLAN
 POPLAR ST. BRIDGE APPROACHES
 FAI ROUTE 70
 East St. Louis, St. Clair County, Illinois

082-0254

GENERAL NOTES:

1. Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering materials. Such variations shall not be cause for additional compensation for a change in the scope of work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
2. This project addresses selected seismic, redundancy and fatigue issues related only to those structures that are listed on the drawings. Related hazards associated with nearby structures or roadways that pass over the subject structures were not considered.
3. Unless noted otherwise, all materials and workmanship shall conform to :
 - a. The Illinois Department of Transportation, "Standard Specifications for Road and Bridge Construction", January 1, 1997.
 - b. Bridge Welding Code, American Welding Society, AWS D1.5-95.
 - c. Surface Texture, American Society of Mechanical Engineers, ANSI B46.1- Latest Edition.

STEEL NOTES:

1. Actual dimensions may vary slightly from the design drawings. The Contractor shall field verify existing dimensions prior to starting work. Dimensions of new members shall be adjusted as required to fit as-built conditions.
2. All new steel assemblies and pieces shall be shop painted with inorganic zinc rich primer/ Acrylic/ Acrylic paint system. The color of the final finish coat shall be Interstate Green, Munsell No. 7.5 G 4/8. Locations to receive field welding shall be masked off prior to shop painting and field painted **after welding.**
3. Unless noted otherwise, all bolts shall be high strength bolts (AASHTO M164). All threaded rods and dowels shall conform to the mechanical properties and thread configuration of AASHTO M164 bolts. All bolts, threaded rods, wire rope and hardware shall be galvanized according to 100T galvanized bolt provisions. In bolted applications, threads shall not be permitted in shear planes, unless noted otherwise. **AASHTO M253 bolts shall not be galvanized.**
4. Unless noted otherwise, all new steel shall be AASHTO M270 Grade 36 and have a minimum CVN impact toughness of 25 Ft.-Lb. at 40° F. All rods with upset ends shall have a maximum yield strength of 45 ksi.
5. ~~Welding electrodes shall be of hydrogen E70XX, unless noted otherwise. Field metal shall have a minimum CVN of 25 Ft.-Lb. at 29° F.~~
6. All turnbuckles, clevises and pins shall be galvanized and capable of developing the ultimate strengths of the corresponding assemblies.
7. All wire ropes shall be galvanized and shall have a minimum effective modulus of elasticity of 10,000 ksi. All wire rope fittings shall be capable of developing the ultimate strength of the corresponding rope.
8. Threads on all bolts, rods, and dowels, not installed per AISC specifications shall be peened.
9. Turnbuckles located in cross frame retrofits shall be tightened to achieve a torque of 1000 Ft.-Lbs. in the turnbuckle.
10. The existing structural steel coating contains lead. The Contractor should take appropriate precautions to deal with the presence of lead on this project. Lead based paint will not be removed from the structure except as necessary to remove transverse stiffeners and perform fatigue retrofits.
11. ~~At locations of transverse stiffener removal, existing girder webs shall be primed with an inorganic zinc rich primer and painted with a paint system compatible with the existing paint.~~
12. No welding, flame cutting or carbon-arc cutting is permitted unless specified in a repair detail or approved by the Engineer.

13. Alternative procedures for the structural modifications will be considered by the Engineer if submitted in writing for approval. The work shall be performed in the sequence listed in the Procedures unless otherwise approved by the Engineer. Where a procedure calls for approval of an Engineer before acceptance, it is anticipated that visual examinations or non-destructive tests will be conducted, and that additional grinding or other work may be required.
14. Where magnetic particle (MT) inspection is called for on the drawings, the minimum qualifications of the Inspector shall meet ASNT Level II requirements. The Engineer will observe the final test acceptance.
15. To avoid bolt clearance installation difficulties, the bumper assemblies shall be installed prior to the installation of the web reinforcement plates).

CONCRETE NOTES:

1. The Engineers' intent is to repair only large areas of unsound concrete or unsound areas receiving column wraps. The contract quantities do not include all of the unsound concrete on the piers. Areas of unsound concrete to be repaired shall be approved by the Engineer.
2. The extent of deteriorated concrete in columns and walls shall be determined by hammer tapping. The concrete removal shall extend a minimum of 4 in. beyond the edge of the unsound area, be as nearly rectangular as possible, and conform to the concrete repair details included in the drawings.
3. Concrete removal equipment consisting of pneumatic chipping hammers shall not exceed a maximum nominal weight of 30 lb. and shall be equipped with a cutting edge not less than 3/4 in. or greater than 2 1/2 in. in width. During concrete removal, exercise reasonable care to avoid cracking of underlying sound concrete.

DATE	SECTION	PROJECT	DATE	NO.	SHEET NO.
FALL 70		ST. CLAIR	91	4	
FOR YOUR INFO		REVISIONS (SEE SHEET)			

REVISIONS	
NAME	DATE
J.C.M.	10/21/98

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 SEISMIC AND REDUNDANCY RETROFIT REPAIRS
 I-70 ROUTE 70
 POPLAR STREET BRIDGE APPROACHES
 ST. CLAIR COUNTY

STRUCTURE NO. 082-0141 (ROADWAY A) STRUCTURE NO. 082-0253 (RAMP A)
 STRUCTURE NO. 082-0254 (ROADWAY G) STRUCTURE NO. 082-0201 (RAMP D)
 SCALE: NONE DRAWN BY: JN

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. S-3
F.A.I. 70		ST. CLAIR	91	5	SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

82-3HVB-2R-1-1

SCOPE OF WORK

SEISMIC RETROFIT

- Install column wraps on the following piers.
 - Structure No. 082-0141 (Roadway A, 18 locations)

A2	A7	A12	A16	A20
A4	A8	A13	A17	A21
A5	A9	A14	A18	
A6	A10	A15	A19	
 - Structure No. 082-0253 (Ramp R, 4 locations)

R1-1	R2-1	R3-1	R4-1
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 - Structure No. 082-0201 (Ramp O, 1 location)

O1-R

 - Structure No. 082-0254 (Roadway G, 11 locations)

G1	G4	G9	G12
G2	G5	G10	G13
G3	G8	G11	
- Install tie beam wraps on the following piers (excluding piers with cross frames)
 - Structure No. 082-0141 (Roadway A, 6 locations)

A4	A10	A14
A6	A13	A17
 - Structure No. 082-0254 (Roadway G, 2 locations)

G8	G10
----	-----
- Install cross frame assembly including: tie beam wraps, column bands, and slab/floor beam connections on the following piers.
 - Structure No. 082-0141 (Roadway A, 5 locations)

A2	A7	A9	A16	A19
----	----	----	-----	-----
 - Structure No. 082-0254 (Roadway G, 3 locations)

G2	G11	G12
----	-----	-----
- Install floor beam/column connection assembly on the following piers.
 - Structure No. 082-0254 (Roadway G, 1 location)

G13

- Install slab/floor beam connections on the following piers (excluding piers with cross frames)
 - Structure No. 082-0141 (Roadway A, 9 locations)

A3	A10	A14
A4	A11 (West)	A17
A6	A13	A20
 - Structure No. 082-0254 (Roadway G, 7 locations)

G3	G6	G8	G13
G4	G7	G10	
- Remove existing cross frames and install new cross frames on the following piers.
 - Structure No. 082-0253 (Ramp R, 3 locations)

R1-1	R2-1	R4-1
------	------	------
 - Structure No. 082-0201 (Ramp O, 1 location)

O1-R

- Install bumper tie assembly on the following piers.
 - Structure No. 082-0141 (Roadway A, 5 locations)

A5	A8	A12	A15	A18
----	----	-----	-----	-----
 - Structure No. 082-0253 (Ramp R, 1 location)

R3-1

 - Structure No. 082-0254 (Roadway G, 3 locations)

G5	G9	G12
----	----	-----
- Install bumper assembly on the following piers.
 - Structure No. 082-0254 (Roadway G, 2 locations)

G11	G12
-----	-----
- Install girder tie assembly on the following piers.
 - Structure No. 082-0141 (Roadway A, 2 locations)

A11	A21
-----	-----
 - Structure No. 082-0254 (Roadway G, 1 location)

G1

- Install roadway tie assembly on the following piers.
 - Structure No. 082-0141 (Roadway A, 2 locations)

A5	A21
----	-----
 - Structure No. 082-0254 (Roadway G, 2 locations)

G1	G12
----	-----
- Install bumper column bands on the following piers.
 - Structure No. 082-0141 (Roadway A, 4 locations)

A5	A8	A15	A18
----	----	-----	-----
 - Structure No. 082-0254 (Roadway G, 3 locations)

G5	G9	G11
----	----	-----
- Install foundation wall sawcut on the following pier.
 - Structure No. 082-0141 (Roadway A, 1 location)

A12

- Install shear transfer assembly on the following pier.
 - Structure No. 082-0141 (Roadway A, 1 location)

A11

14. Install foundation dowel modifications on the following piers.

- Structure No. 082-0141 (Roadway A, 10 locations)

A4	A8	A13	A17	A20
A6	A10	A15	A18	A21
- Structure No. 082-0253 (Ramp R, 4 locations)

R1-1	R2-1	R3-1	R4-1
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- Structure No. 082-0201 (Ramp O, 1 location)

O1-R

- Structure No. 082-0254 (Roadway G, 6 locations)

G2	G8	G10
G5	G9	G11

FATIGUE & REDUNDANCY RETROFIT

- Perform stiffener intersection modifications on the following structures.
 - Structure No. 082-0141 (Roadway A, 20 spans)

A1 thru A20

 - Structure No. 082-0254 (Roadway G, 13 spans)

G1 thru G13

- Perform long span floor beam retrofits on the following structures.
 - Structure No. 082-0141 (Roadway A, 7 spans)

A1	A3	A14	A20
A2	A4	A19	
 - Structure No. 082-0254 (Roadway G, 3 spans)

G1	G12	G13
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- Perform bottom flange splice - bolt replacement on the following structures.
 - Structure No. 082-0141 (Roadway A, 13 spans)

A1	A4	A8	A13	A18
A2	A6	A9	A15	
A3	A7	A10	A17	
- Perform crack extension retrofits on the following structures.
 - Structure No. 082-0141 (Roadway A, 3 spans)

A2	A12	A16
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- Install redundancy web plates on the following structures.
 - Structure No. 082-0141 (Roadway A, 13 spans)

A1 thru A10 and A12 thru A20

 - Structure No. 082-0254 (Roadway G, 13 spans)

G1 thru G13

***Wrapping of these columns by others (PTP-Research Project) and not part of this contract. See Special provisions.

SCOPE OF WORK

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 SEISMIC AND REDUNDANCY RETROFIT REPAIRS
 FAI ROUTE 70
 POPLAR STREET BRIDGE APPROACHES
 ST. CLAIR COUNTY

STRUCTURE NO. 082-0141 (ROADWAY A) STRUCTURE NO. 082-0253 (RAMP R)
 STRUCTURE NO. 082-0254 (ROADWAY G) STRUCTURE NO. 082-0201 (RAMP O)
 SCALE: NONE DRAWN BY: JN
 DATE: 1-23-98 CHECKED BY: MH

SEISMIC DATA

Bedrock acceleration coefficient (A) = 0.12g
 Site coefficient (S) = 1.0
 Seismic performance requirements:
 • Use of roadways without long delay or major repair.

DESIGN SPECIFICATIONS

1996 AASHTO Standard Specifications for Highway Bridges
 1995 FHWA Seismic Retrofit Manual

DESIGN LOADING

HS20-44

DESIGN STRESSES

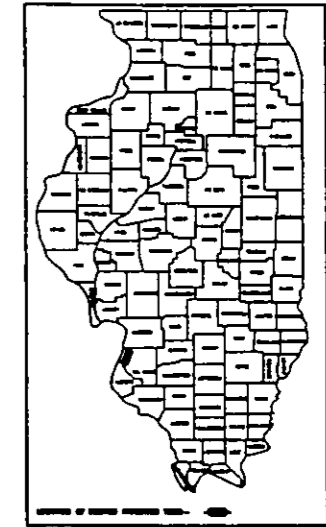
New Constructions

f'c = 4500 psi
 fy = 60,000 psi (Reinf.)
 fy = 36,000 psi (M270 Grade 36)
 fy = 70,000 psi (M270 Grade HPS 70W)

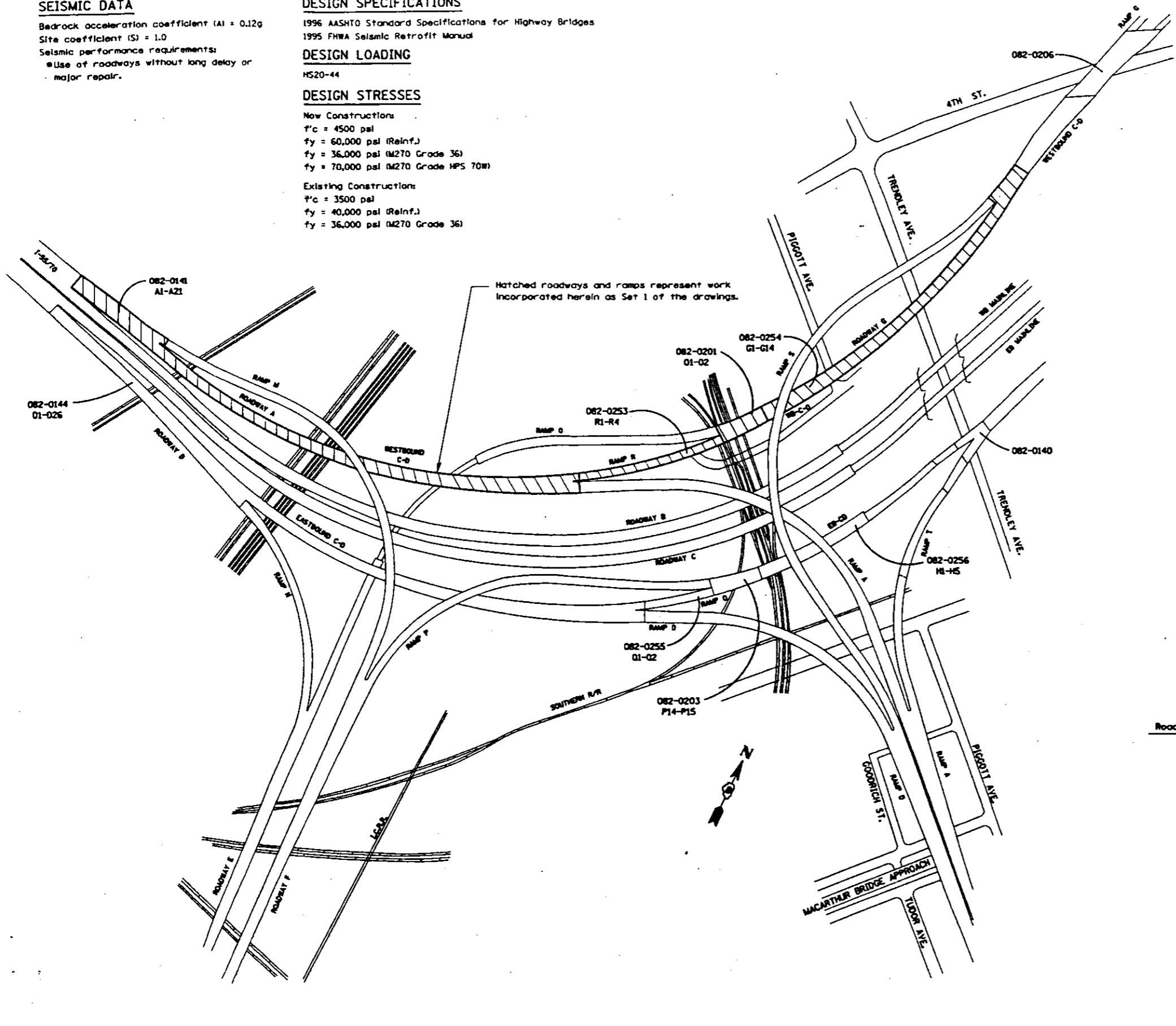
Existing Construction

f'c = 3500 psi
 fy = 40,000 psi (Reinf.)
 fy = 36,000 psi (M270 Grade 36)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 5-4
F.A.I. 7B		ST. CLAIR	91	6	SHEETS
ILLINOIS / FEDERAL PROJECT: 82-34VB-2R-1-1					



LOCATION SKETCH



Hatched roadways and ramps represent work incorporated herein as Set 1 of the drawings.

OVERALL PROJECT PLAN

Roadway / Ramp	Segment / Pier Nos.	Structure No.	Year / Structure Type
A	A1-A21	082-0141	1967 Two Girder System
C	G1-G14	082-0254	1967 Two Girder System
R	R1-R4	082-0253	1988 Multi Girder System
O	O1-O2 *	082-0201	—

*East side of span

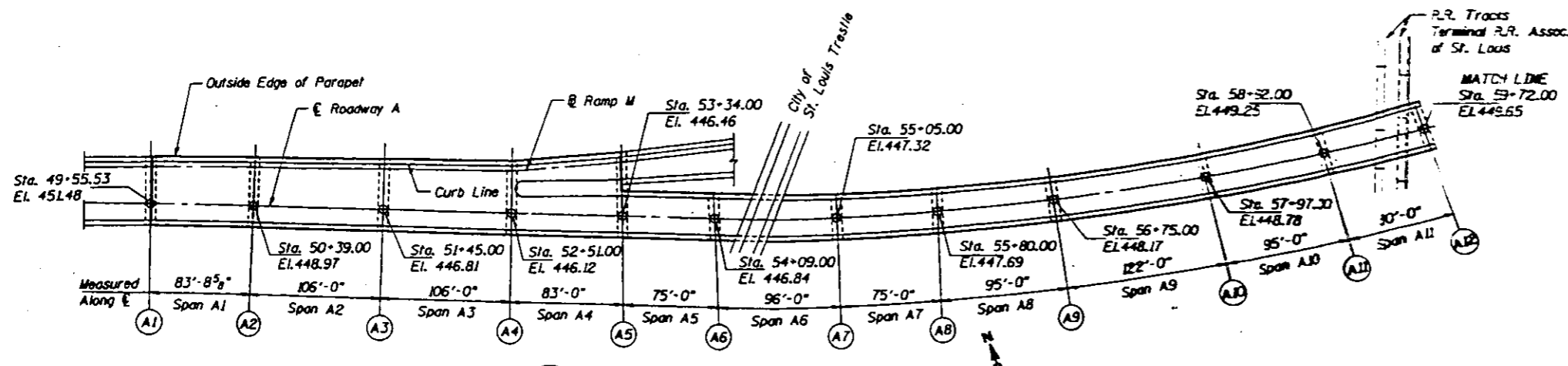
PROJECT PLAN

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 SEISMIC AND REDUNDANCY RETROFIT REPAIRS
 I-70 ROUTE TO
 POPLAR STREET BRIDGE APPROACHES
 ST. CLAIR COUNTY

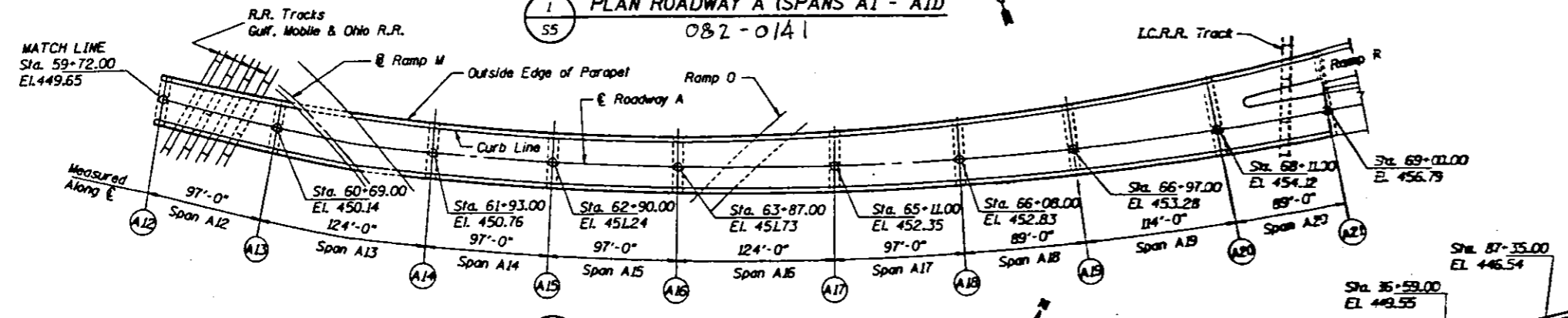
STRUCTURE NO. 082-0141 ROADWAY A STRUCTURE NO. 082-0253 RAMP R
 STRUCTURE NO. 082-0254 ROADWAY C STRUCTURE NO. 082-0201 RAMP O
 SCALE: NONE DRAWN BY JH
 DATE 1-23-98 CHECKED BY JH

STRUCTURE NO. 082-0141

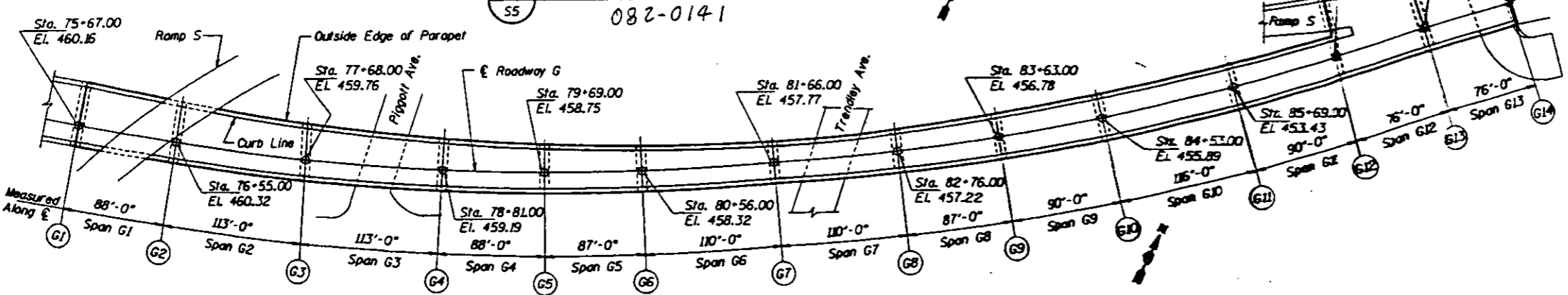
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.L. 78	6	ST. CLAIR	91	7
SHEETS				
SHEET NO. 5-5				



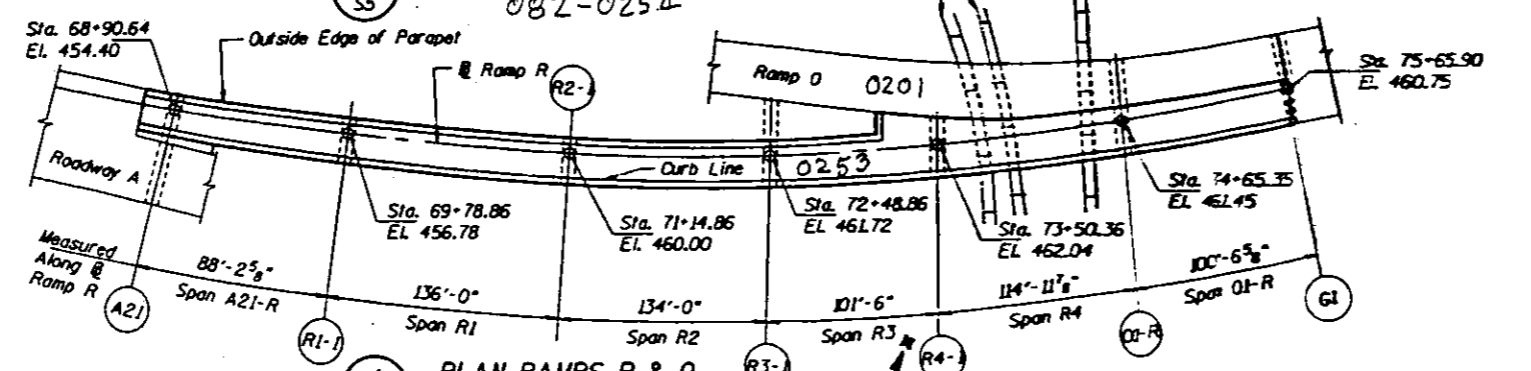
1 PLAN ROADWAY A (SPANS A1 - A11)
082-0141



2 PLAN ROADWAY A (SPANS A12 - A20)
082-0141



3 PLAN ROADWAY G (SPANS G1 - G13)
082-0254



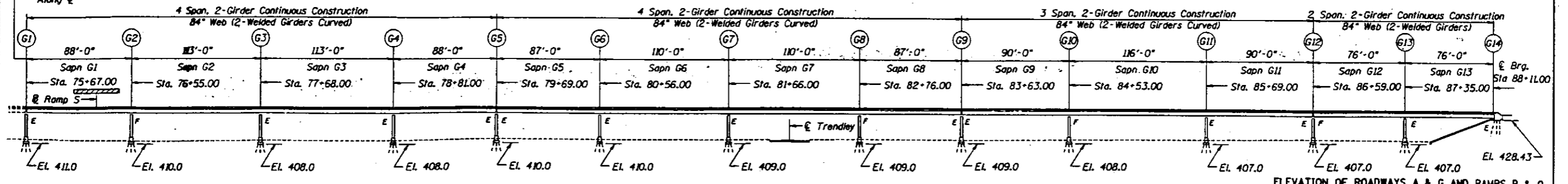
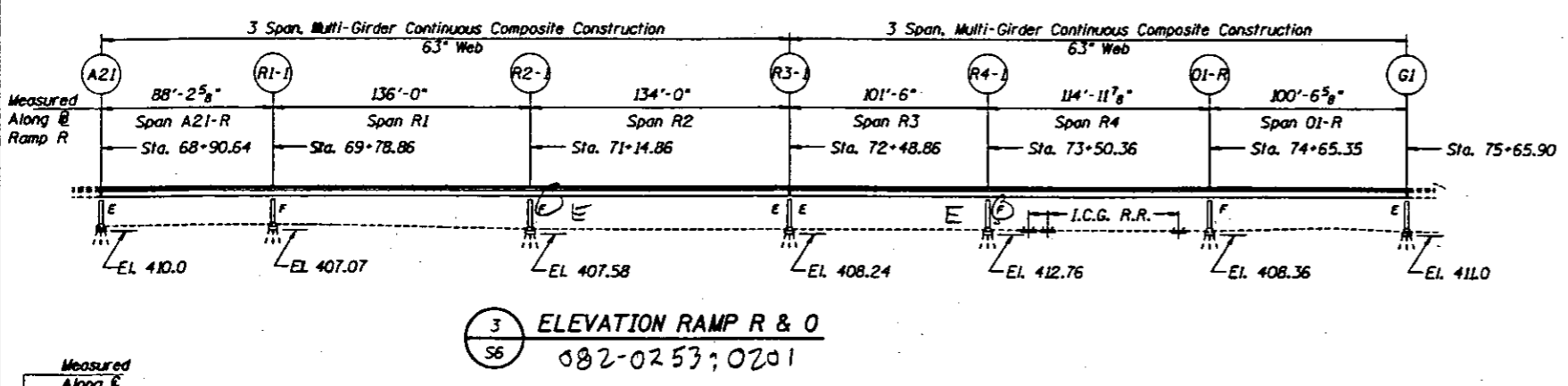
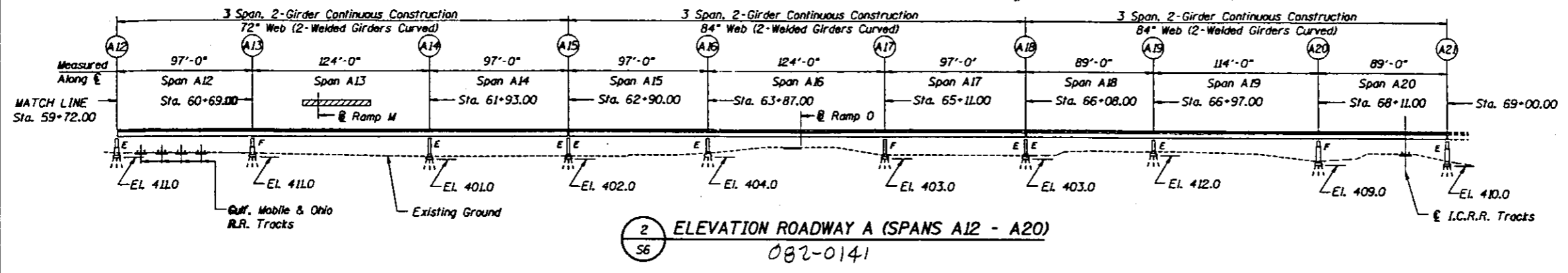
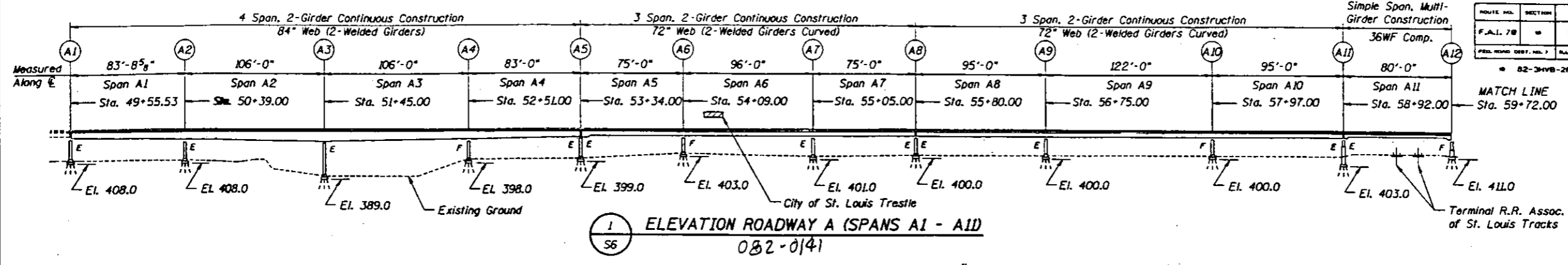
4 PLAN RAMP R & O
082-0253 & 0201

KEY PLAN FOR ROADWAYS A & G AND RAMPS R & O

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAJ ROUTE TO
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

STRUCTURE NO. 082-0141 ROADWAY A | STRUCTURE NO. 082-0253 RAMP R
STRUCTURE NO. 082-0254 ROADWAY G | STRUCTURE NO. 082-0201 RAMP O
SCALE: NONE | DRAWN BY: JH
DATE: 1-23-98 | CHECKED BY: HH

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. S-6
F.A.I. 78	11	ST. CLAIR	91	8	
PROJECT NO. 082-0141					

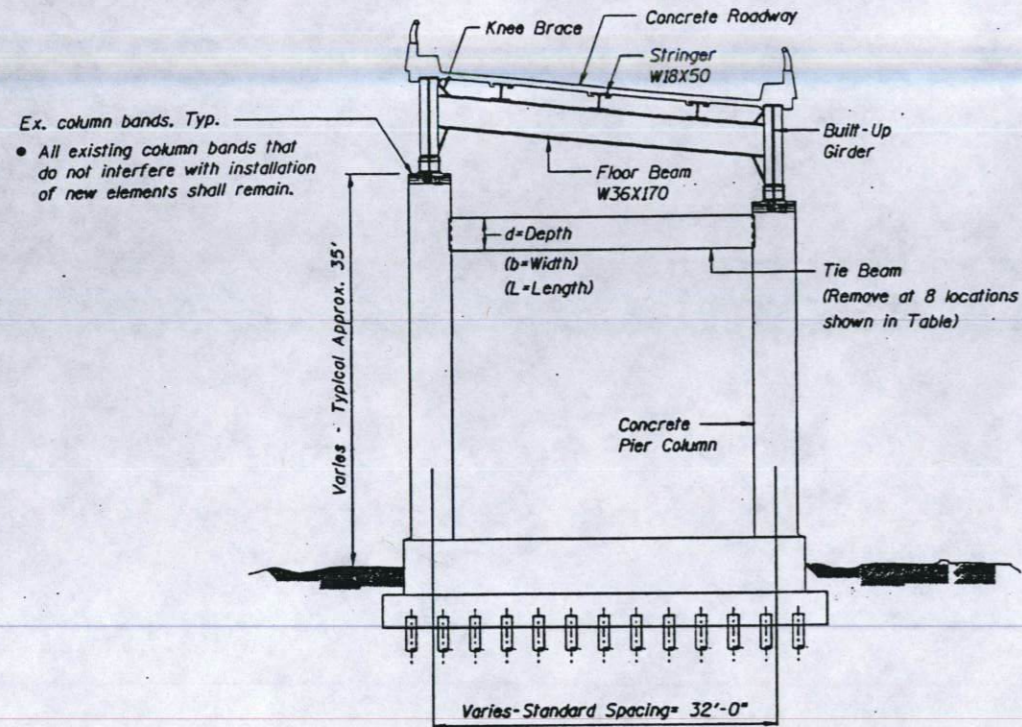


ELEVATION OF ROADWAYS A & G AND RAMPS R & O

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE TO
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

STRUCTURE NO. 082-0141 ROADWAY A | STRUCTURE NO. 082-0253 RAMP R
STRUCTURE NO. 082-0254 ROADWAY G | STRUCTURE NO. 082-0201 RAMP O

SCALE: NONE | DRAWN BY: JN
DATE: 1-23-98 | CHECKED BY: JN



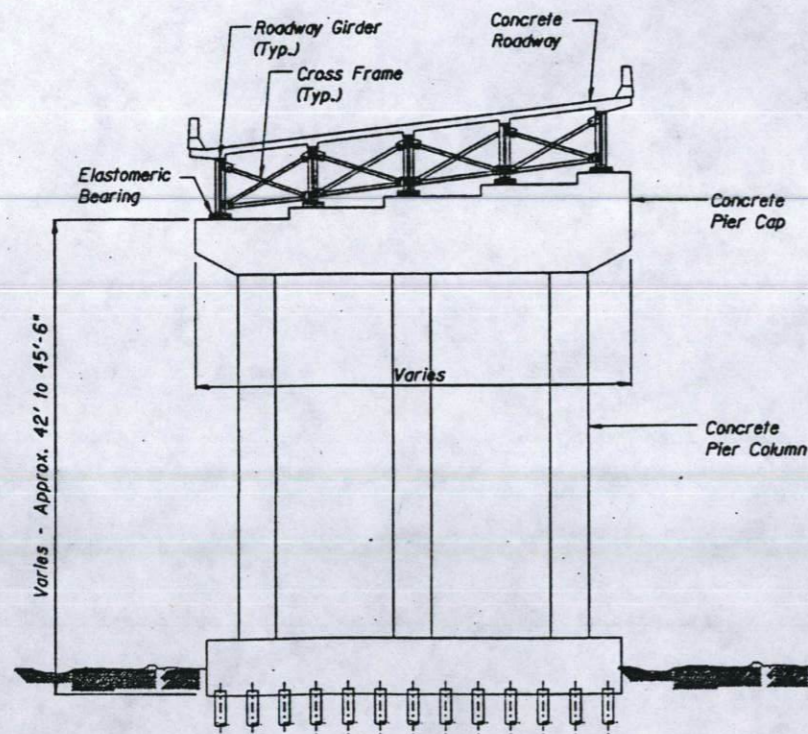
TIE BEAM REMOVAL PARAMETERS

Pier	d (in.)	b (in.)	L Ft. - in.	Comments
A5	36	15	48'-1"	See Note 3
A8	36	15	28'-0"	
A15	36	18	33'-1"	
A18	36	24	43'-7"	
A21	36	15	48'-1"	See Note 3
G1	36	15	40'-0"	See Note 3
G5	36	18	32'-7"	
G9	36	15	28'-0"	

Notes:

- Cut tie beam ends flush with inside faces of columns, such that horizontal ledge is eliminated.
- Coat exposed ends of reinforcement bars with DOT approved epoxy. Epoxy shall overlap a minimum of 1" onto surrounding concrete.
- Length (L) includes 2 tie beams to be removed.

1 TYPICAL SECTION THROUGH TWO GIRDER ROADWAY
(Section through Ramp Similar)

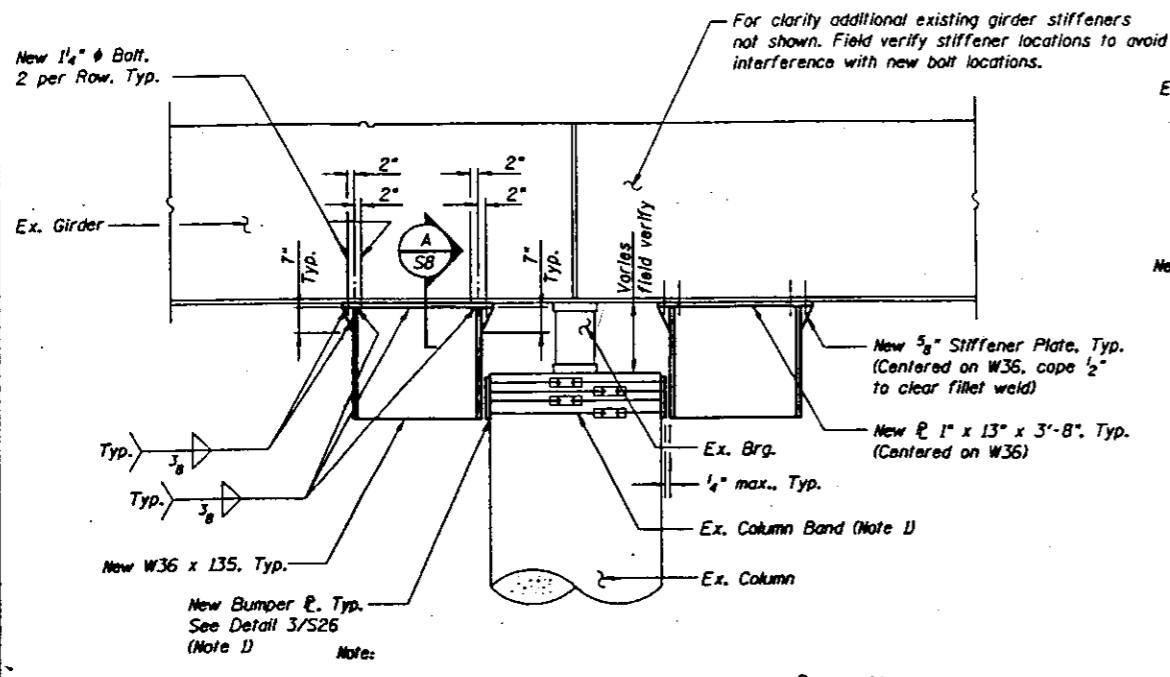


2 TYPICAL SECTION THROUGH MULTI - GIRDER ROADWAY

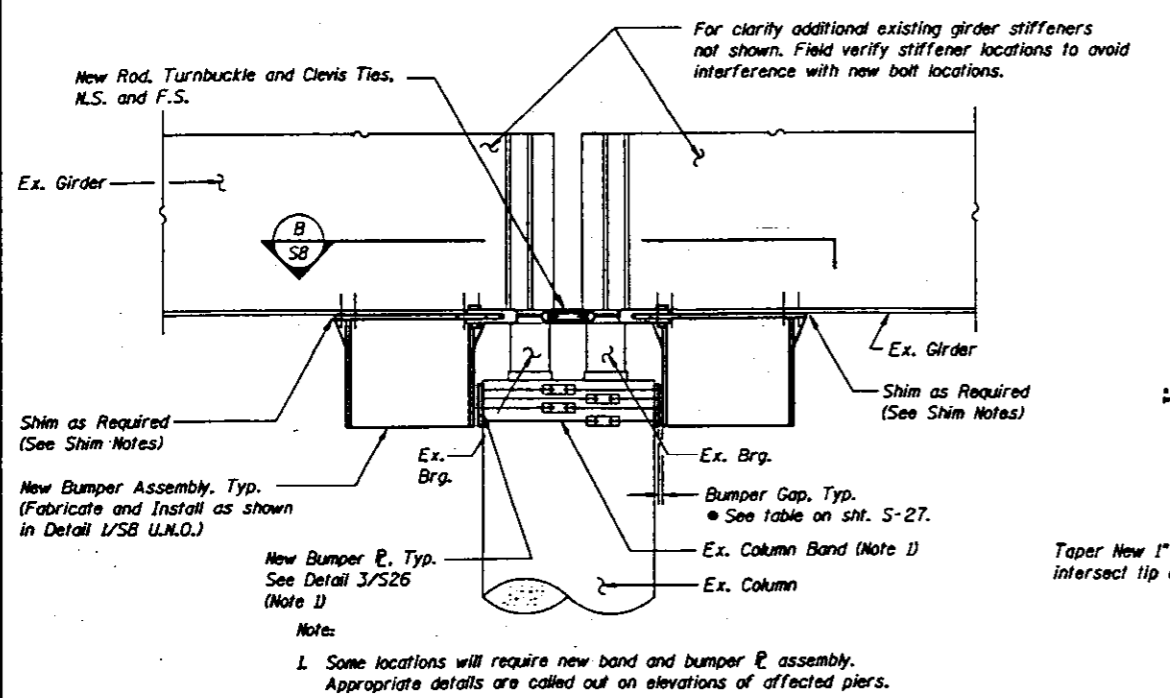
TYPICAL SUBSTRUCTURE DETAILS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

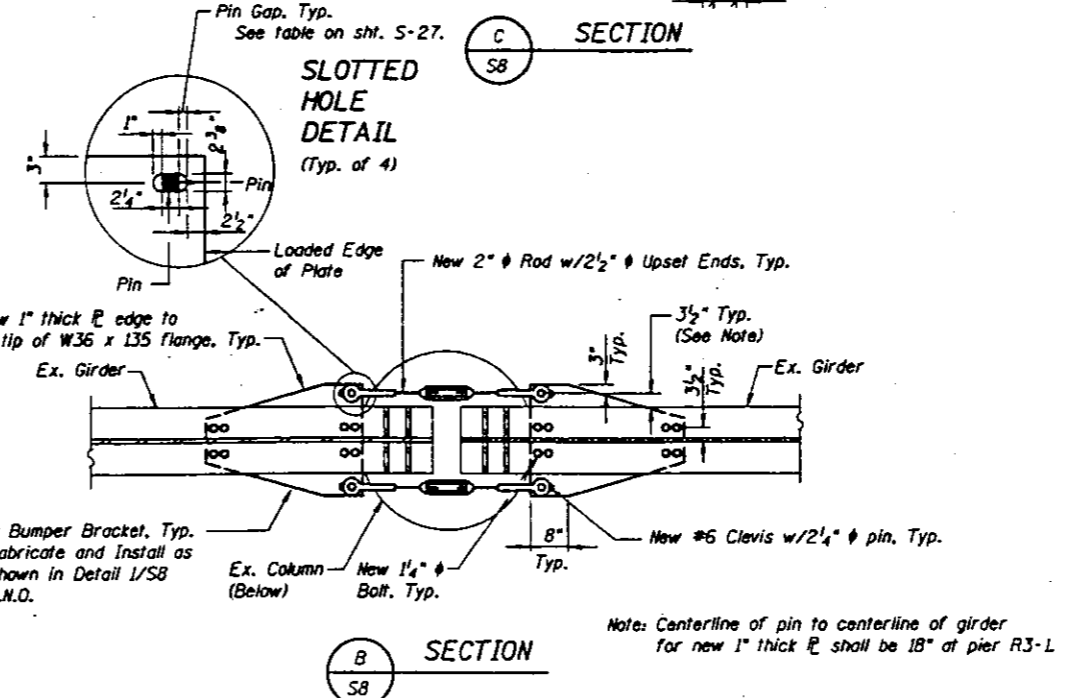
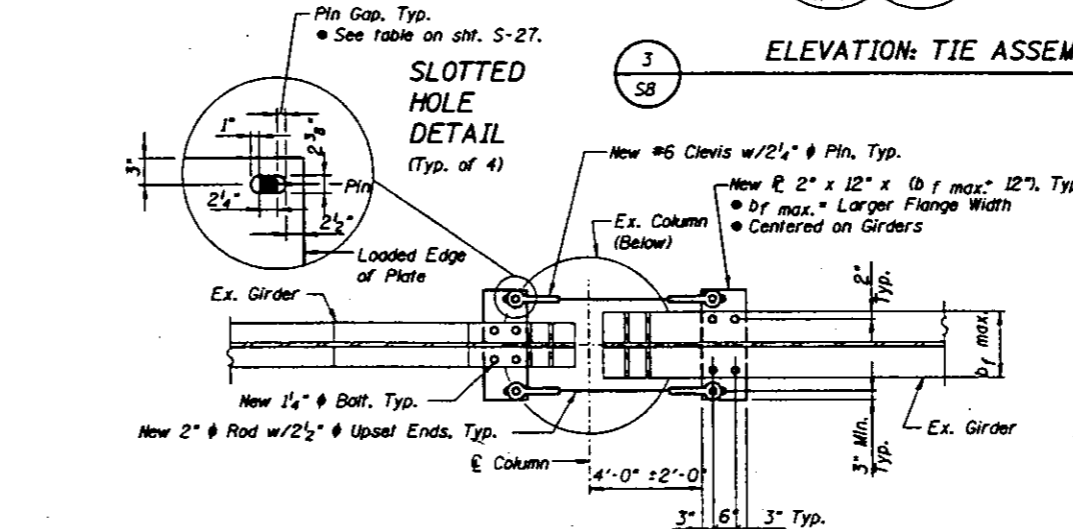
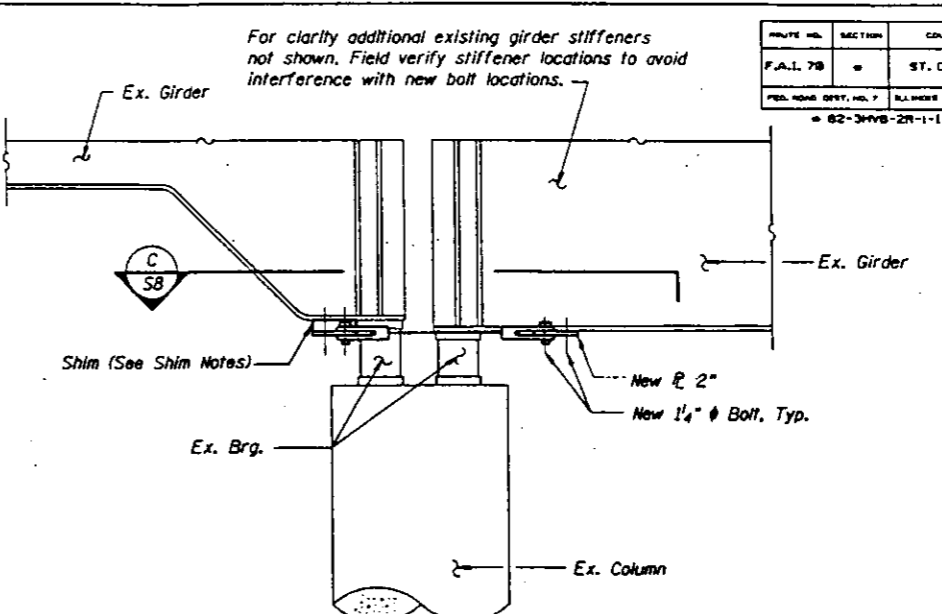
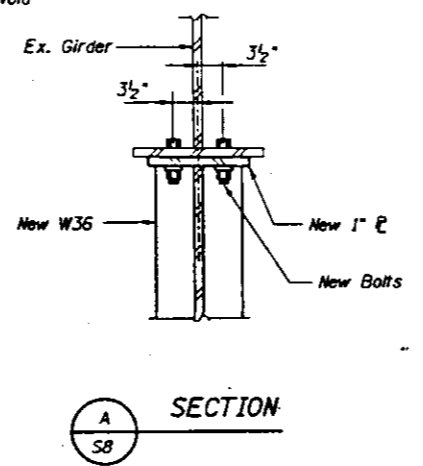
STRUCTURE NO. 082-0141 ROADWAY A3 STRUCTURE NO. 082-0253 GRAMP R0
STRUCTURE NO. 082-0254 ROADWAY G3 STRUCTURE NO. 082-0201 GRAMP G1
SCALE: NONE DRAWN BY: JN
DATE: 1-23-98 CHECKED BY: HM



1 ELEVATION: BUMPERS AT CONTINUOUS GIRDER
S8



2 ELEVATION: BUMPER/TIE ASSEMBLY
S8



SHIM NOTES:

1. Shim higher flange so that elevation difference between ends of rod is no more than 1/2".
2. Shim Plate length shall match the smaller length of the plates being shimmed, and shim plate width shall match the smaller width of the plates being shimmed.
3. Field verify shim requirements.

BUMPER/TIE ROD NOTES:

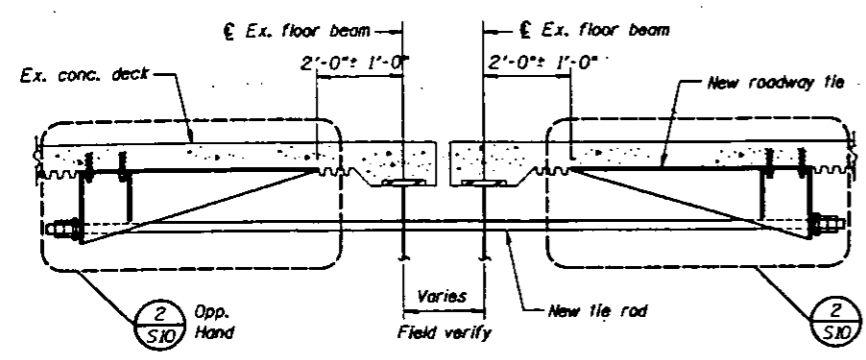
1. All bolt holes shall be standard round holes ($\phi + 1/16$) Unless Noted Otherwise.
2. All bumpers and tie rod connection plates shall be centered on the existing girder.
3. Tie Rods may be multiple bar sections with turnbuckles or single rods without turnbuckles.
4. The total length of the unthreaded portion of each tie rod assembly shall not be less than 1'-8".
5. Tie rods may extend 0" min. to 3/4" max. into clevis and turnbuckle openings U.N.O.

SEISMIC RETROFIT DETAILS

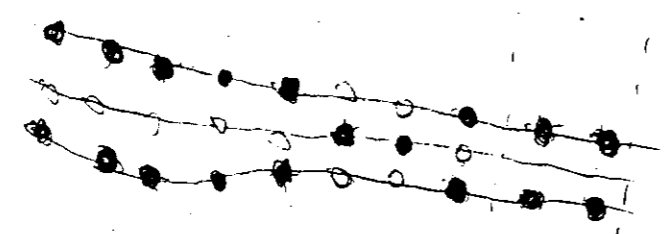
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

STRUCTURE NO. 082-0141 ROADWAY A1 STRUCTURE NO. 082-0253 BRAMP PD
STRUCTURE NO. 082-0254 ROADWAY G2 STRUCTURE NO. 082-0201 BRAMP PD
SCALE: NONE DRAWN BY: JH
DATE: 1-23-98 CHECKED BY: JH

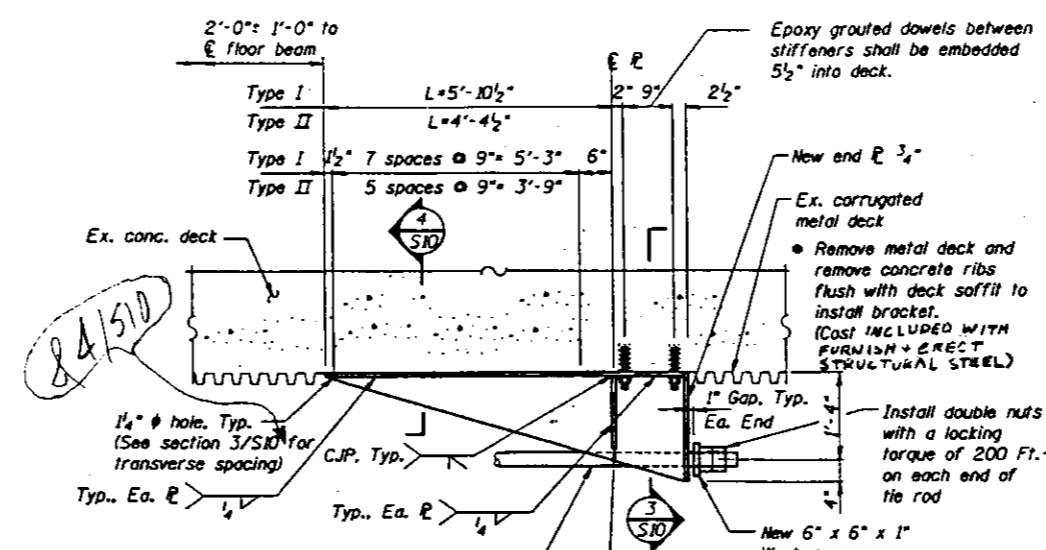
Note: Centerline of pin to centerline of girder for new 1" thick P. shall be 18" at pier R3-L



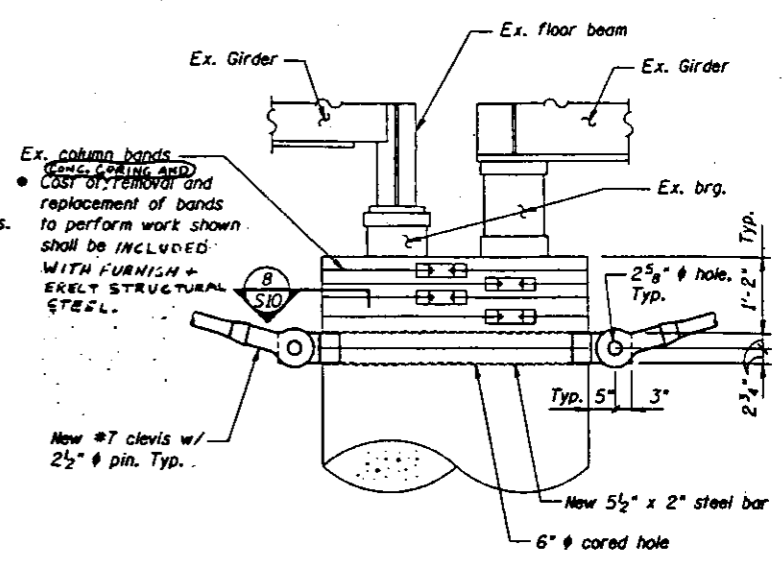
1 ELEVATION - ROADWAY TIE
S10



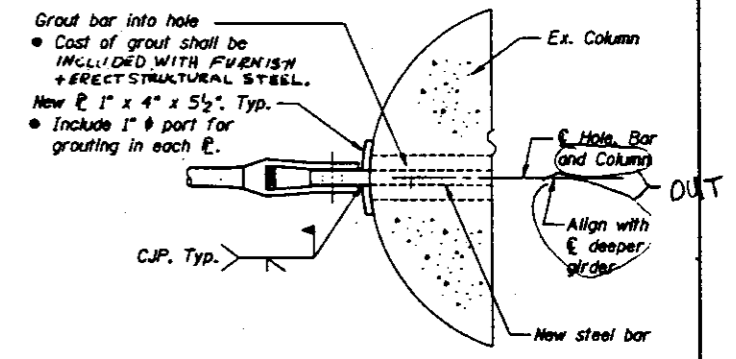
2 ELEVATION - ROADWAY TIE
S10



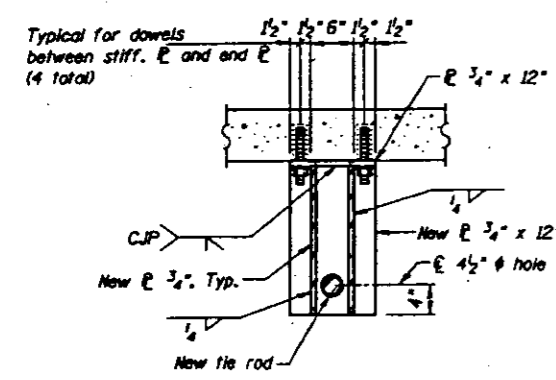
- Notes:
1. Install dowels within length L as follows:
Type I: 14 total dowels
Type II: 10 total dowels
Any hole within length L may be used provided dowels are evenly distributed about longitudinal axis of bracket.
 2. Unless noted otherwise, all dowels shall consist of 1" epoxy grouted dowels, embedded 4 1/2" into deck.
 3. Core drill 4" holes in floor beam webs to permit passage of rod.
 4. Gap at end of tie rod was developed for an installation temperature of 50° F. For other installation temperatures decrease the gap by 0.05" for every 5° F below 50° F and increase the gap by 0.05" for every 5° F above 50° F.
 5. Epoxy grouted dowel embedment shall be measured from the embedded end of the dowel to the smooth surface on the bottom of the concrete deck created by removing the concrete ribs.



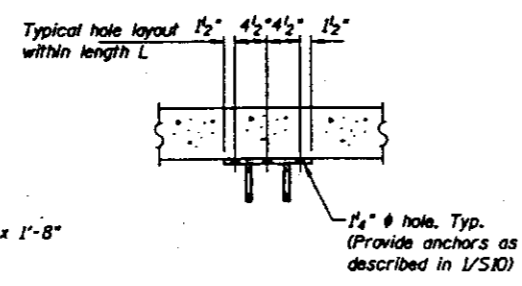
7 ELEVATION
S10



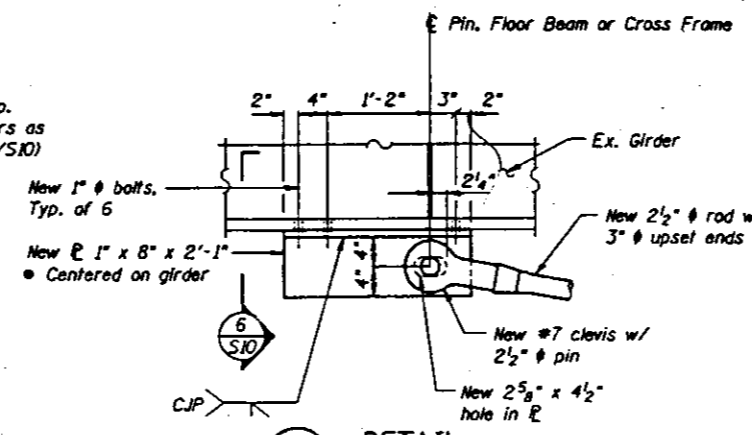
8 SECTION
S10



3 SECTION
S10

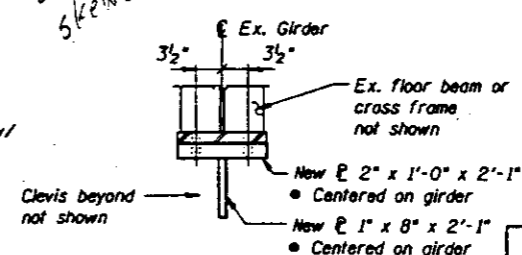


4 SECTION
S10



5 DETAIL
S10

R Bracket & Rod may be skewed to R girder.



6 SECTION
S10

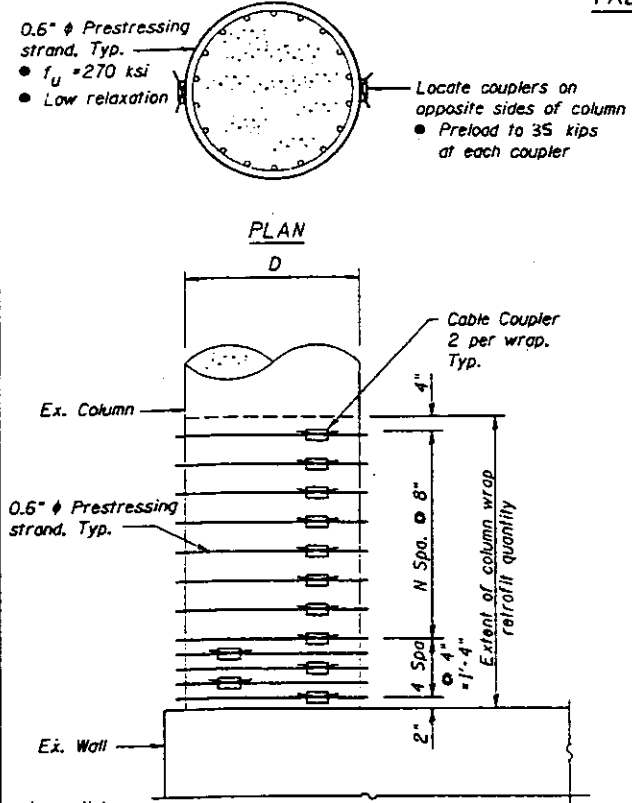
SEISMIC RETROFIT DETAILS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

STRUCTURE NO. 082-0141 ROADWAY A1 STRUCTURE NO. 082-0253 GRAMP D
STRUCTURE NO. 082-0254 ROADWAY G STRUCTURE NO. 082-0201 GRAMP C
SCALE: NONE DRAWN BY: JH
DATE: 1-23-98 CHECKED BY: MH

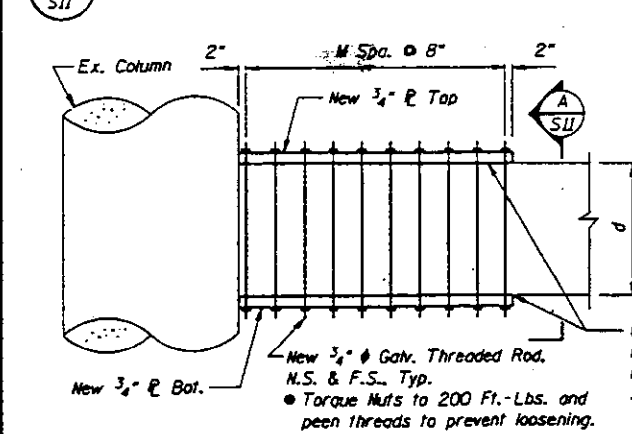
TABLE OF COLUMN WRAP AND TIE BEAM WRAP PARAMETERS

Pier	No. Cols.	D (in.)	N	M	b (in.)	d (in.)	Comments
A2	2	48	7	9	27	36	See Note 5
A4	2	54	8	9	27	36	
A5	1	48	7	—	—	—	Wrap South Col. only
A6	2	48	7	9	15	36	
A7	2	48	7	9	15	36	See Note 5
A8	2	48	7	—	—	—	
A9	2	48	7	9	15	36	See Note 5
A10	2	54	8	9	15	36	
A12	2	48	—	—	—	—	See Note 4
A13	2	48	7	9	15	36	See Note 7
A14	2	48	7	9	15	36	
A15	2	48	7	—	—	—	
A16	2	48	7	9	21	36	See Note 5 and 6
A17	2	54	8	9	24	36	See Note 6
A18	2	48	7	—	—	—	
A19	2	54	8	9	27	36	See Note 5
A20	2	54	8	—	—	—	
A21	1	48	7	—	—	—	Wrap North Col. only
R1-1	3	48	7	—	—	—	
R2-1	3	48	7	—	—	—	
R3-1	4	48	7	—	—	—	
R4-1	3	48	7	—	—	—	
O1-R	2	48	7	—	—	—	Wrap South 2 Cols. only
G1	1	48	7	—	—	—	Wrap South Col. only
G2	2	60	9	9	24	36	See Note 5
G3	2	48	7	—	—	—	See Note 8
G4	2	48	7	—	—	—	See Note 7
G5	2	48	7	—	—	—	
G8	2	54	8	9	15	36	
G9	2	48	7	—	—	—	
G10	2	54	8	9	15	36	
G11	2	48	7	9	15	36	See Note 5
G12	2	48	7	9	15	36	Wrap Out. Cols. See Note 5
G13	2	48	7	—	—	—	See Note 8



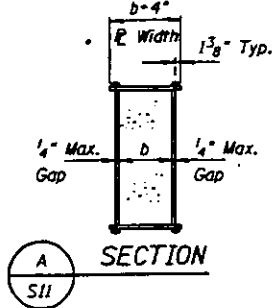
- Note:
- See table for dimensions not shown and additional notes.
 - Alternative column wraps may be used. See Special Provisions.

1 ELEVATION - TYPICAL COLUMN WRAP



- Notes:
- See table for dimensions not shown and additional notes.
 - Wrap each end as shown.

2 ELEVATION - TYPICAL TIE BEAM WRAP



- Notes:
- Complete all specified dowel bar modifications and concrete repairs at least 3 days before wrapping any member.
 - See detail 1/S11 for column wrap U.N.O.
 - See detail 2/S11 for tie beam wrap U.N.O.
 - See detail 6/S12 for column wrap.
 - See detail 2/S13 for modifications to the tie beam wrap.
 - Excavation required to install column wraps. See sheet S-28 for additional information. Provide column wrap protection at these locations as specified in the Special Provisions.
 - Existing dead conduit along face of column interferes with installation of column wrap. Remove conduit (approximate length of 30'). Removal cost shall be incidental to column wrap installation.
 - Existing live conduit along face of column interferes with installation of column wrap. Conduit shall be rerouted over the length of the wrap by a qualified electrician such that column wrap may be installed (approximate length of 6'-2"). Note that electrical service may only be interrupted between the hours of 8:00 AM and 4:00 PM. Relocation cost shall be incidental to column wrap installation.
3. See Special Provisions for column wrap exemptions.

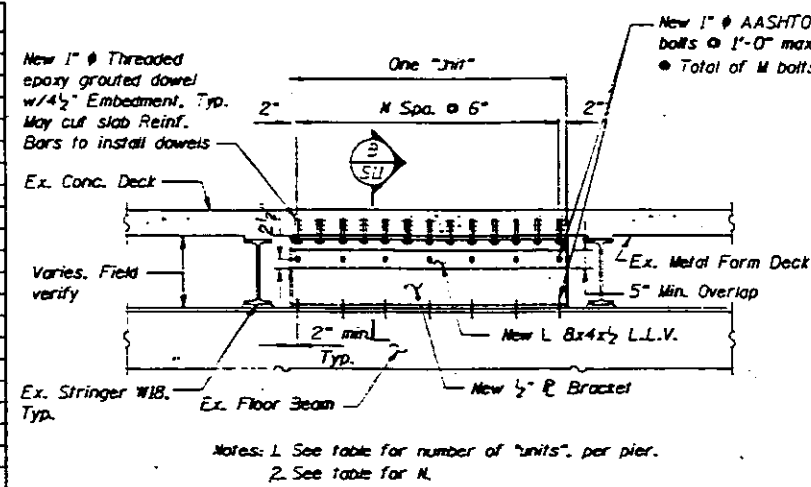
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 78		ST. CLAIR	91	13

PROJECT: ILLINOIS REG. AND PROJECT: 02-23VB-2R-1-1

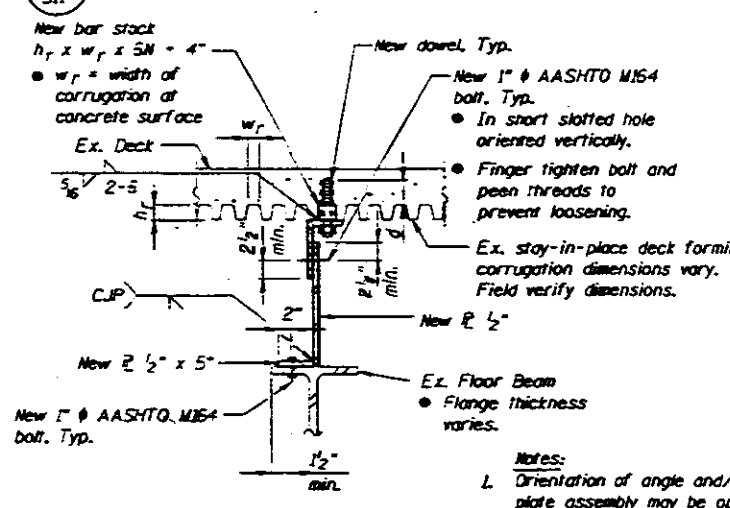
TABLE OF SLAB/FLOOR BEAM CONNECTION

Pier	No. of Units	N Per Unit	M Per Unit	Ref. Detail	Comments
A2	2	11	6	3/S-11	
A3	1	7	4	3/S-11	
A4	2	9	5	3/S-11	
A6	1	11	6	3/S-11	
A7	1	12	7	3/S-11	
A9	1	11	6	3/S-11	
A10	2	7	4	3/S-11	
A11	1	7	4	4/S-11	See Note 1
A13	2	8	5	3/S-11	
A14	1	7	4	3/S-11	
A16	2	9	5	3/S-11	
A17	2	9	5	3/S-11	
A19	3	8	5	3/S-11	
A20	2	9	5	3/S-11	
G2	2	12	7	3/S-11	
G3	1	8	5	3/S-11	
G4	1	9	5	3/S-11	
G6	1	8	5	3/S-11	
G7	1	8	5	3/S-11	
G8	2	8	5	3/S-11	
G10	1	12	7	3/S-11	
G11	1	13	7	3/S-11	
G12	1	9	5	4/S-11	See Note 2
G13	2	7	4	3/S-11	

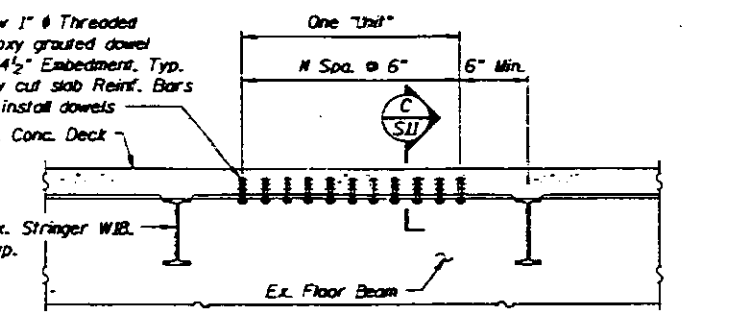
- Notes:
- West side expansion joint only.
 - East side expansion joint only, between southern 2 columns.



3 ELEVATION - SLAB FLOOR BEAM CONNECTION

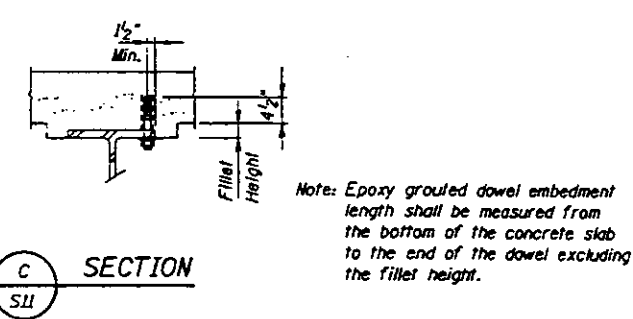


3 SECTION



- Notes:
- See table for number of "units" per pier.
 - See table for N.

4 ELEVATION - SLAB FLOOR BEAM CONNECTION



- Note: Epoxy grouted dowel embedment length shall be measured from the bottom of the concrete slab to the end of the dowel excluding the fillet height.

SEISMIC RETROFIT DETAILS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE TO
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

STRUCTURE NO. 082-0141 ROADWAY A) STRUCTURE NO. 082-0253 GRAMP RD
STRUCTURE NO. 082-0254 ROADWAY G) STRUCTURE NO. 082-0201 GRAMP G)
SCALE: NONE DRAWN BY JH
DATE 1-23-98 CHECKED BY HH

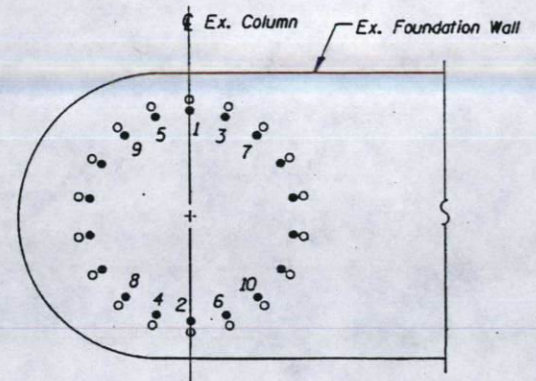
FOUNDATION WALL DOWEL MODIFICATION TABLE

Pier	Modifications per pier	Ref. Detail	No. of bars cut per modification	Comments
A4	2	3/S12	4	
A6	2	1/S12	4	
A8	2	1/S12	6	
A10	2	3/S12	6	
A13	2	1/S12	8	
A15	2	1/S12	8	
A17	2	1/S12	6	See Note 6
A18	2	1/S12	6	
A20	2	2/S12	8	
A21	1	1/S12	6	See Note 7
R1-1	3	3/S12	10	
R2-1	3	4/S12	12	
R3-1	4	1/S12	10	
R4-1	3	2/S12	8	
Q1-R	2	3/S12	2	See Note 8
G2	2	5/S12	14	
G5	2	1/S12	10	
G8	2	5/S12	10	
G9	2	1/S12	10	
G10	2	1/S12	4	
G11	2	1/S12	6	

360

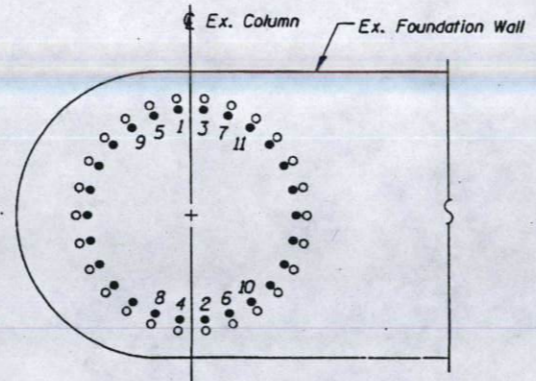
Notes:

- Cut number of foundation dowel bars indicated. To determine which bars to cut, see reference detail and cut bars starting with number 1 and finishing with the number shown in the table.
Example: Pier A6 cut dowel bars 1, 2, 3 and 4 as labeled in detail 1/S12.
- The contractor shall positively discern between column longitudinal reinforcing bars and foundation wall dowel bars prior to cutting any bars.
- Dowel bars to be cut must be cut within 2" of top of foundation wall. Corresponding column bars may also be cut at the same location.
- Concrete removal areas shall be limited to 1'-6" in height and shall be no deeper than 1 1/2" clear inside the vertical bars.
- Concrete removal and repair costs shall be incidental to the foundation wall dowel modification. All unsound concrete caused by bar cutting shall be removed prior to concrete repair. See sheet S-26 for concrete removal and repair details.
- Excavation required to perform foundation wall dowel modifications. See sheet S-28 for additional information.
- Modify dowels for north column only.
- Modify dowels for south two columns only.



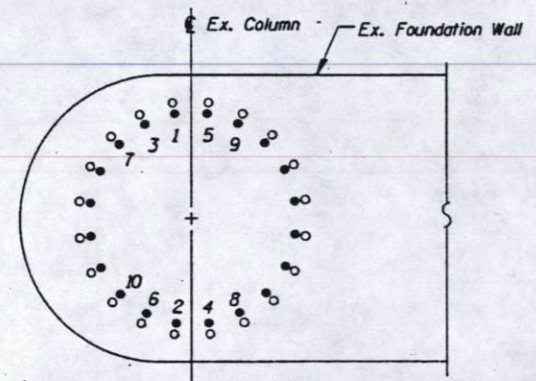
- Foundation Wall dowel bar (#10 or #11 bar)
- Outline of column bar

1 SECTION - FOUNDATION WALL DOWELS
S12 (18 Bar Layout)



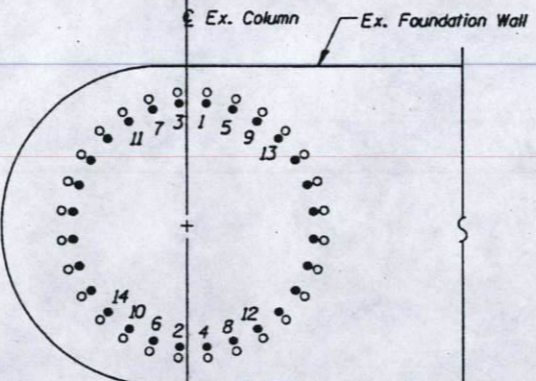
- Foundation Wall dowel bar (#11 bar)
- Outline of column bar

4 SECTION - FOUNDATION WALL DOWELS
S12 (26 Bar Layout)



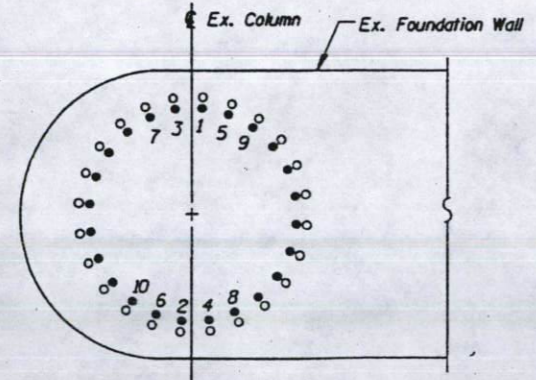
- Foundation Wall dowel bar (#10 or #11 bar)
- Outline of column bar

2 SECTION - FOUNDATION WALL DOWELS
S12 (20 Bar Layout)



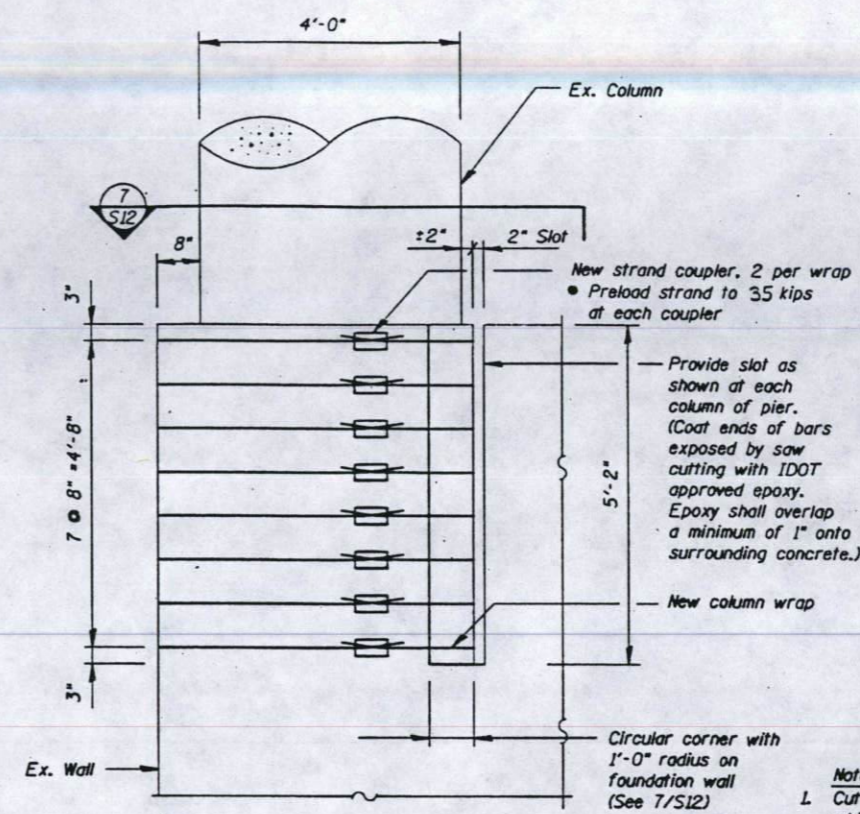
- Foundation Wall dowel bar (#11 bar)
- Outline of column bar

5 SECTION - FOUNDATION WALL DOWELS
S12 (28 Bar Layout)

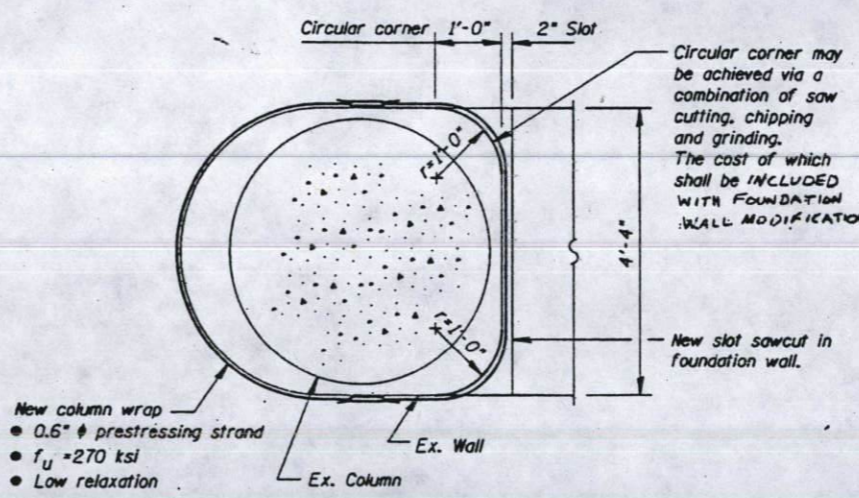


- Foundation Wall dowel bar (#11 bar)
- Outline of column bar

3 SECTION - FOUNDATION WALL DOWELS
S12 (24 Bar Layout)



6 ELEVATION - PIER A12
S12



7 SECTION
S12

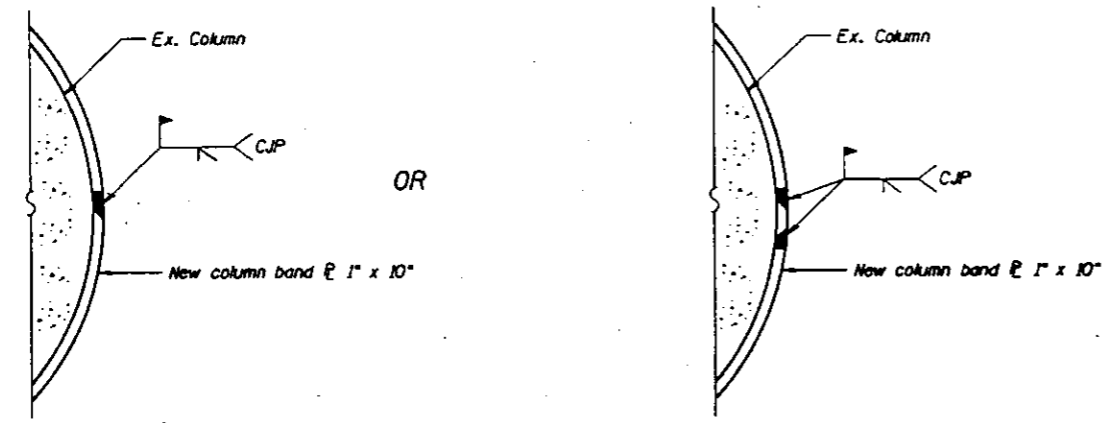
SEISMIC RETROFIT DETAILS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

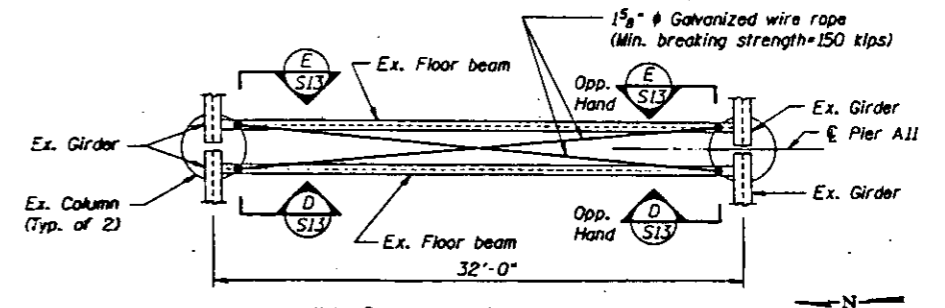
STRUCTURE NO. 082-0141 ROADWAY A1	STRUCTURE NO. 082-0253 GRAMP R3
STRUCTURE NO. 082-0254 ROADWAY G3	STRUCTURE NO. 082-0201 GRAMP C1
SCALE: NONE	DRAWN BY JM
DATE 1-23-98	CHECKED BY HW

STRUCTURE 082-0141 ROADWAY A1

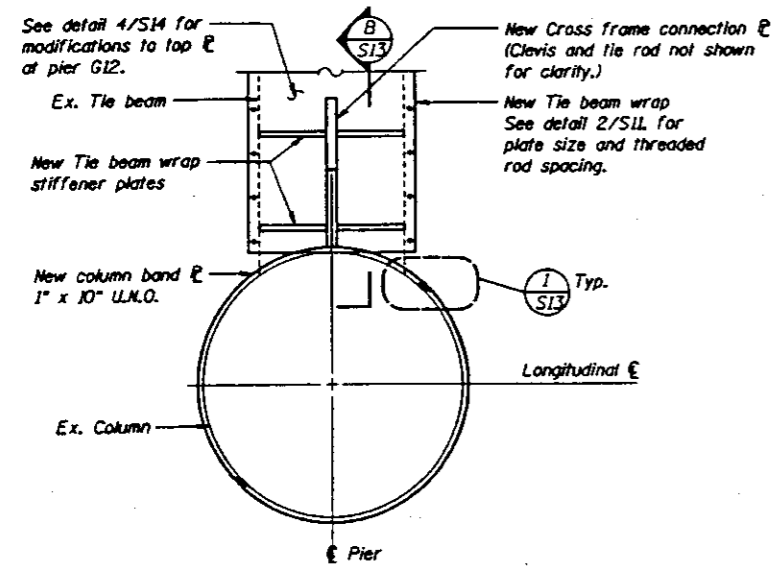
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. S-13 SHEETS
F.A.I. 70		ST. CLAIR	91	15	
FED. ROAD DIST. NO. 7					
ILLINOIS FED. AID PROJECT					
= 82-34VB-2R-1-1					



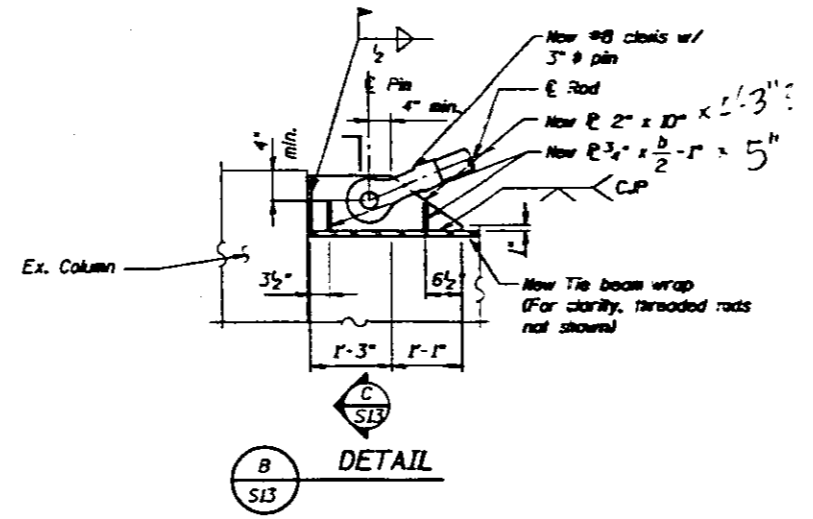
1 COLUMN BAND CONNECTION OPTIONS
S13



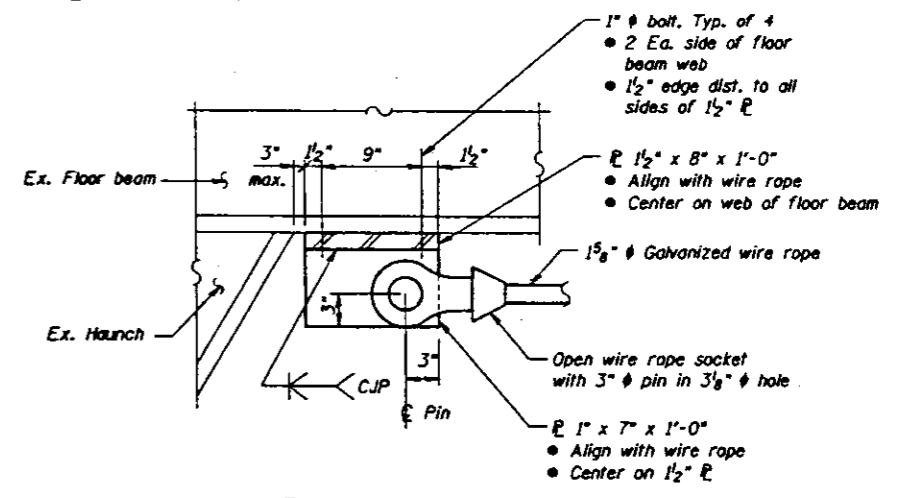
4 SHEAR TRANSFER ASSEMBLY AT PIER A11
S13



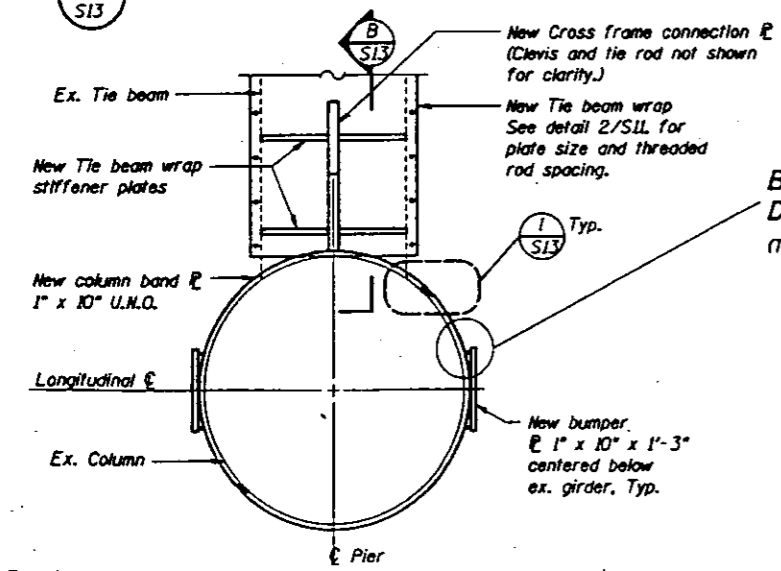
2 CROSS FRAME COLUMN BAND DETAIL
S13



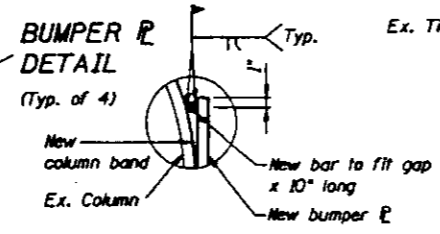
B DETAIL
S13



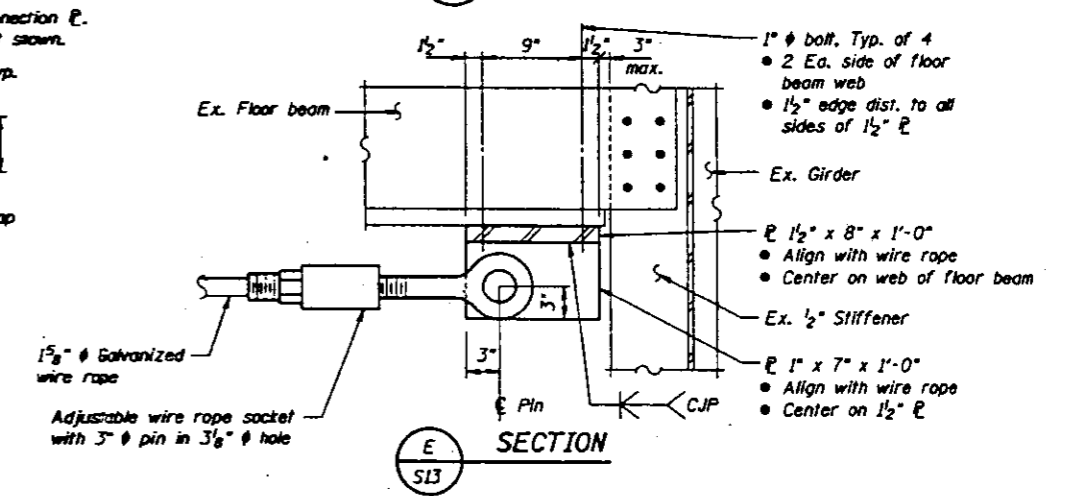
D SECTION
S13



3 COLUMN BAND DETAIL AT PIERS WITH BUMPERS & CROSS FRAMES
S13



C SECTION
S13



E SECTION
S13

- Notes:
1. Ex. Column wraps at the top of the columns shall be removed prior to the installation of the new column bands. REMOVAL OF EX. WRAPS SHALL BE INCLUDED WITH FURNISH + ERECT STRUCTURAL STEEL.
 2. Inject epoxy between the column band and concrete column surface to assure uniform bearing of the band. The cast shall be INCLUDED WITH FURNISH + ERECT STRUCTURAL STEEL.
 3. Prior to shop painting, mask off area of column band and cross frame connection plate interface. Field touch-up of paint shall be INCLUDED WITH FURNISH + ERECT STRUCTURAL STEEL.

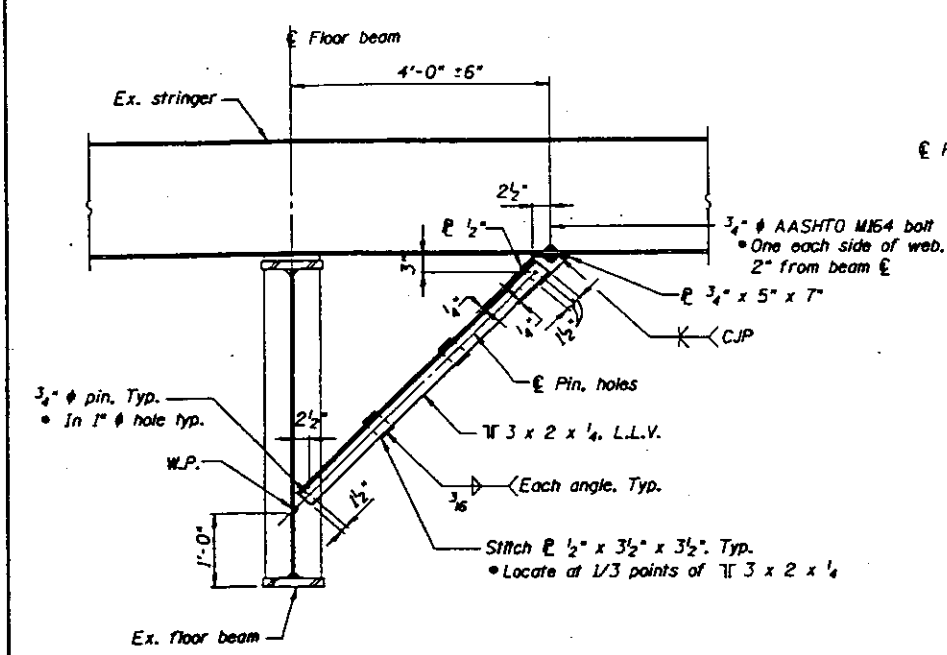
SEISMIC RETROFIT DETAILS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

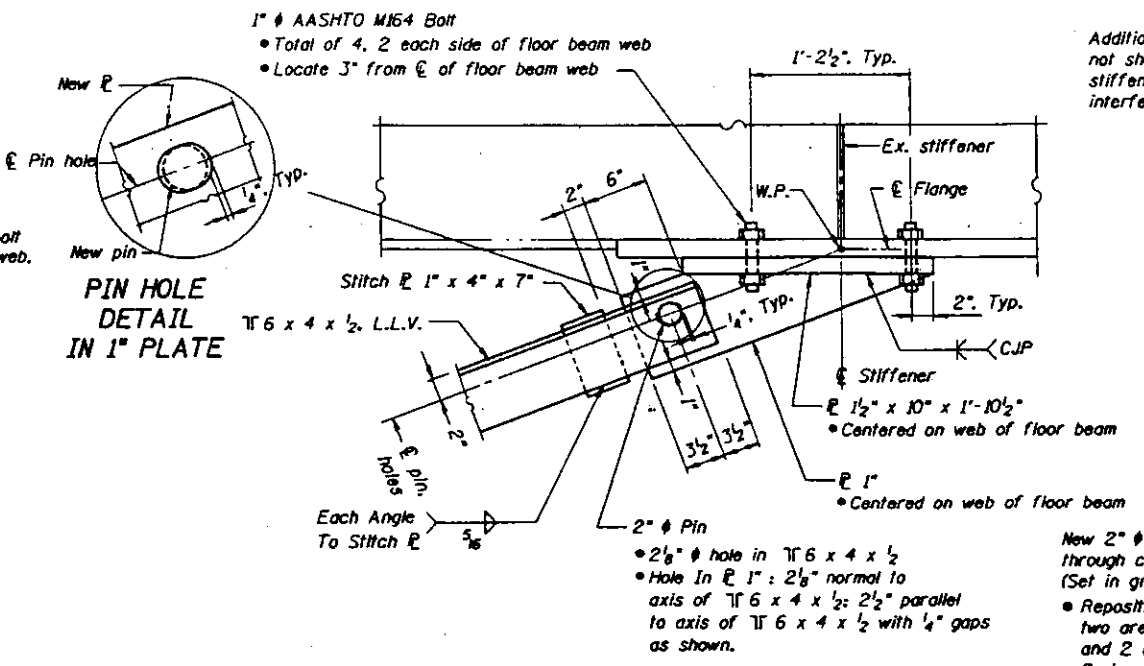
STRUCTURE NO. 082-0141 BROADWAY A1 STRUCTURE NO. 082-0253 GRAMP RD
STRUCTURE NO. 082-0254 BROADWAY G1 STRUCTURE NO. 082-0201 GRAMP G1
SCALE: NONE DRAWN BY: JM
DATE: 1-23-98 CHECKED BY: 184

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. S-14
F.A.I. 7B		ST. CLAIR	91	16	SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

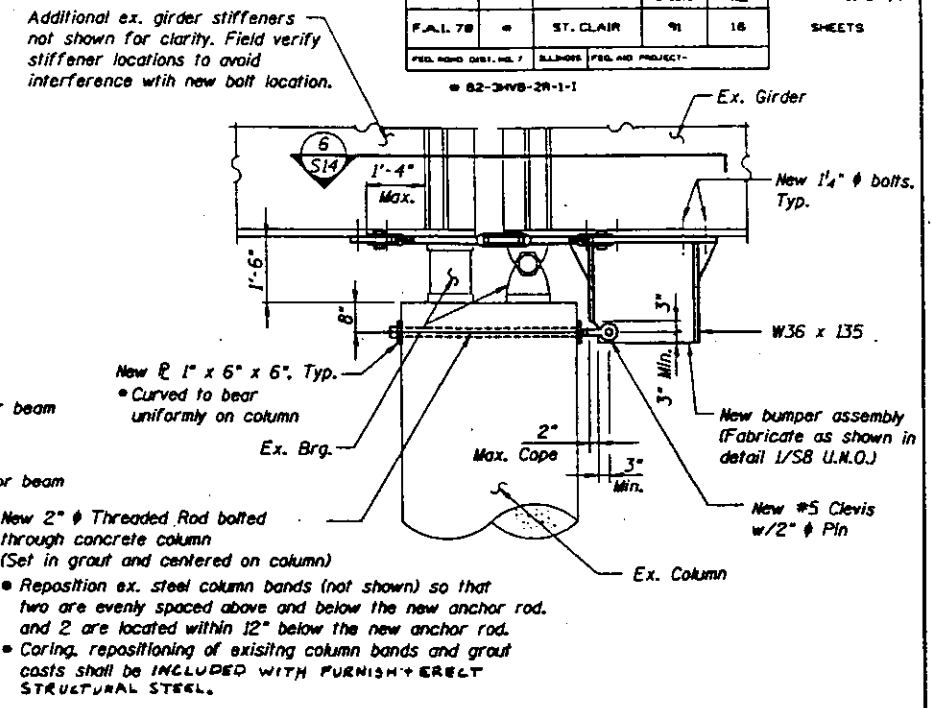
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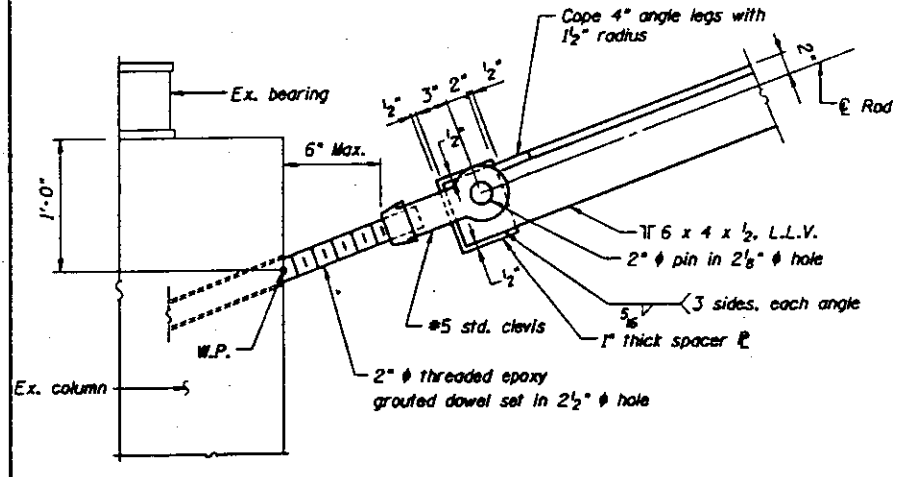
1 SECTION AT PIER G13
S14



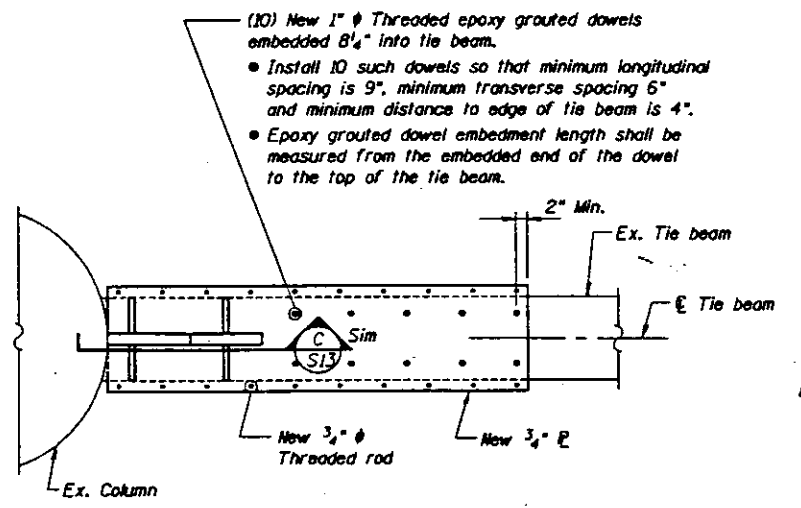
3 DETAIL AT PIER G13
S14



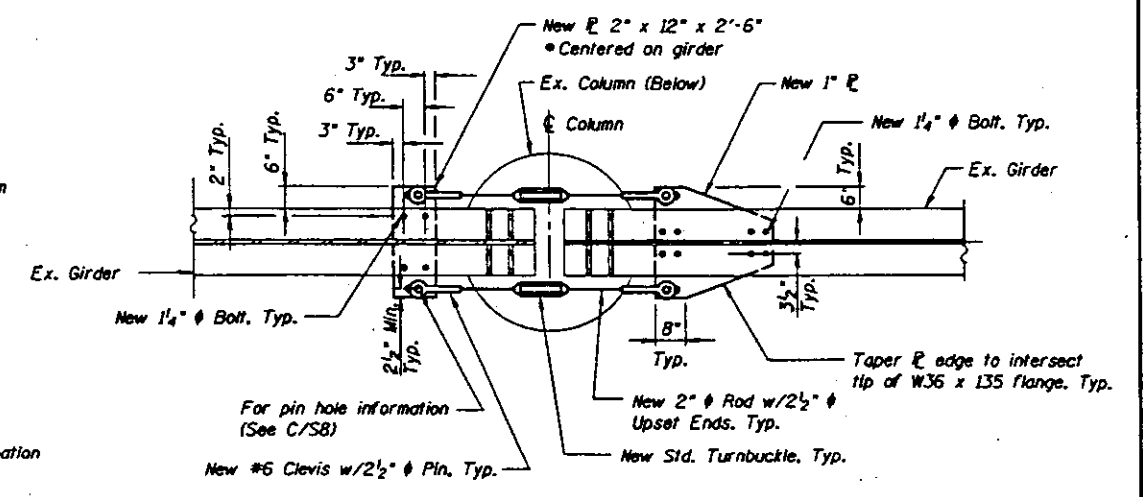
5 ELEVATION: BUMPER/TIE AT GIRDER WITH FIXED BEARING
S14



2 DETAIL PIER G13
S14

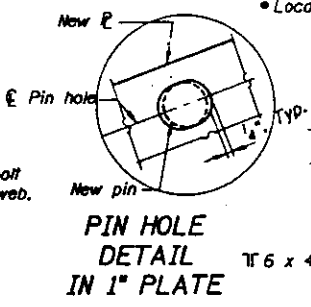


4 TIE BEAM TOP @ PIER G12
S14



6 SECTION
S14

1" AASHTO M164 Bolt
• Total of 4, 2 each side of floor beam web
• Locate 3" from centerline of floor beam web



Additional ex. girder stiffeners not shown for clarity. Field verify stiffener locations to avoid interference with new bolt location.

New 2" Threaded Rod bolted through concrete column (Set in grout and centered on column)
• Reposition ex. steel column bands (not shown) so that two are evenly spaced above and below the new anchor rod, and 2 are located within 12" below the new anchor rod.
• Coring, repositioning of existing column bands and grout casts shall be INCLUDED WITH FURNISH+ERECT STRUCTURAL STEEL.

(10) New 1" Threaded epoxy grouted dowels embedded 8 1/4" into tie beam.
• Install 10 such dowels so that minimum longitudinal spacing is 9", minimum transverse spacing 6" and minimum distance to edge of tie beam is 4".
• Epoxy grouted dowel embedment length shall be measured from the embedded end of the dowel to the top of the tie beam.

Note:
For additional tie beam wrap information See details 2/S11 and 2/S13.

For pin hole information (See C/S8)
New #6 Clevis w/2 1/2" Pin, Typ.

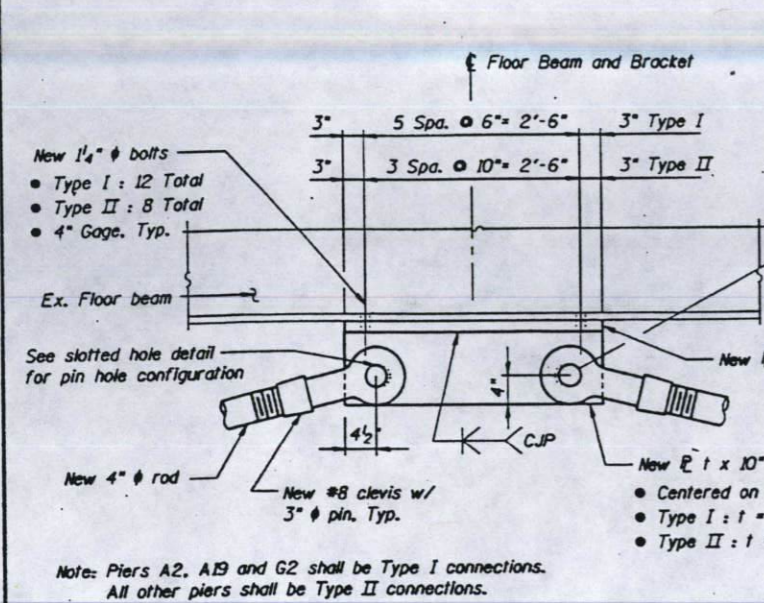
Notes:
1. See sheet S-8 for bumper/tie rod notes.
2. See sheet S-8 for shim notes.

SEISMIC RETROFIT DETAILS

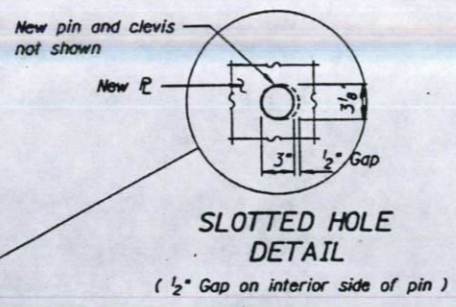
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE TO
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

STRUCTURE NO. 082-0141 BROADWAY A1 STRUCTURE NO. 082-0253 RAMP B3
STRUCTURE NO. 082-0254 BROADWAY C1 STRUCTURE NO. 082-0204 RAMP C1
SCALE: NONE DRAWN BY: JM
DATE: 1-23-98 CHECKED BY: HM

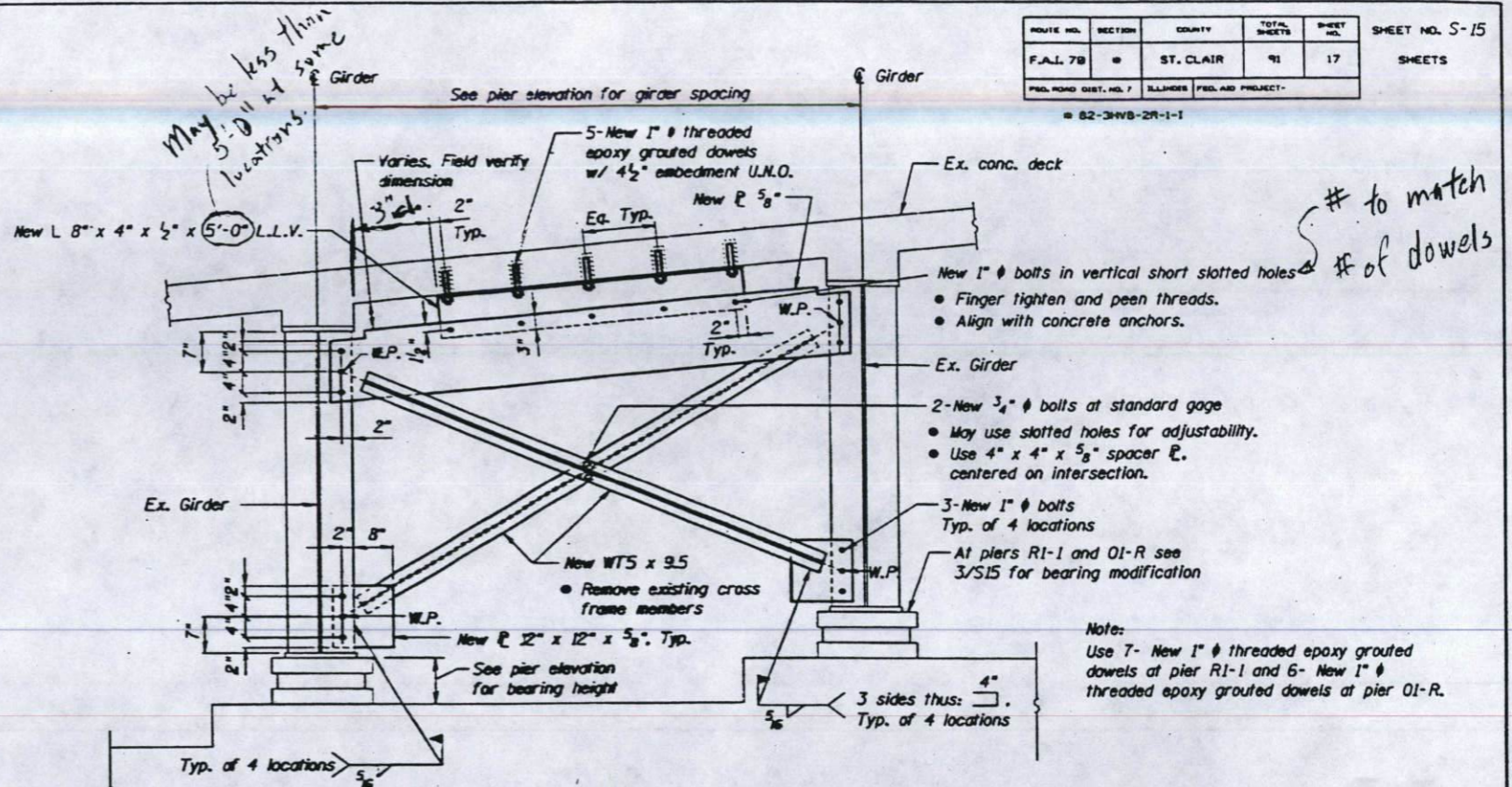
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. S-15 SHEETS
F.A.L. 7B	#	ST. CLAIR	91	17	
PROJ. NO. DIST. NO. 7					
# 82-34VB-2R-1-1					



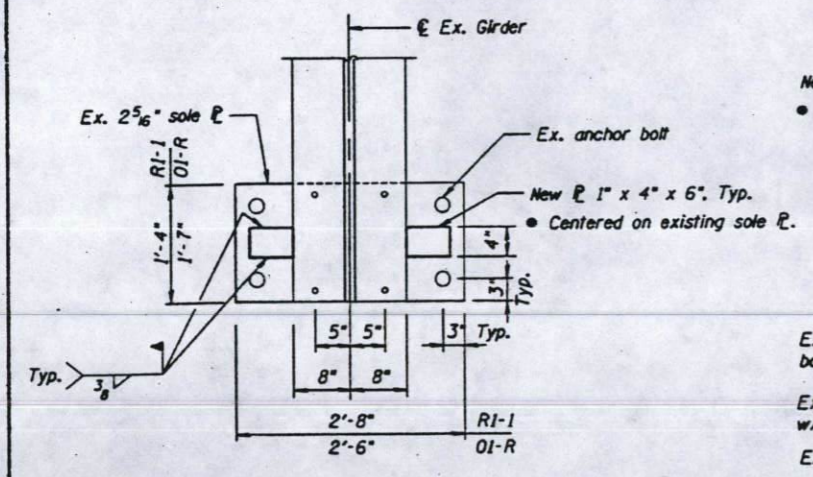
1 TIE ROD CONNECTION PLATE DETAIL
S15



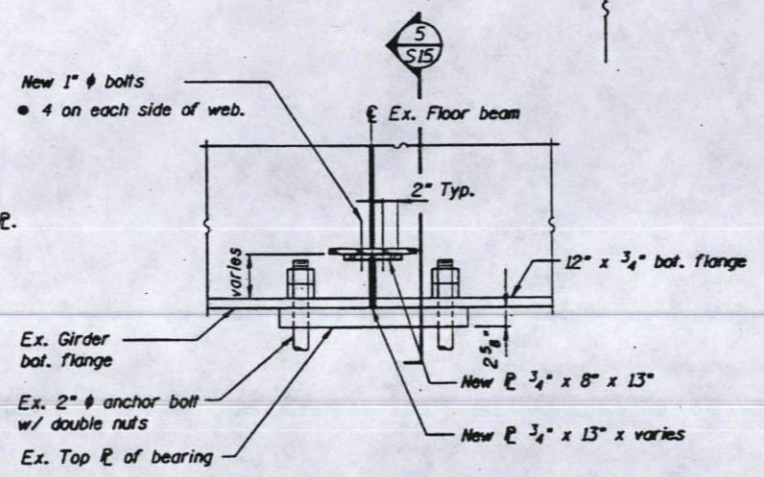
SLOTTED HOLE DETAIL
(1/2" Gap on interior side of pin)



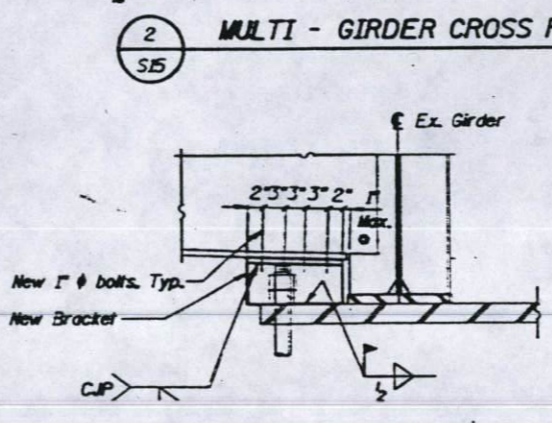
2 MULTI-GIRDER CROSS FRAME
S15



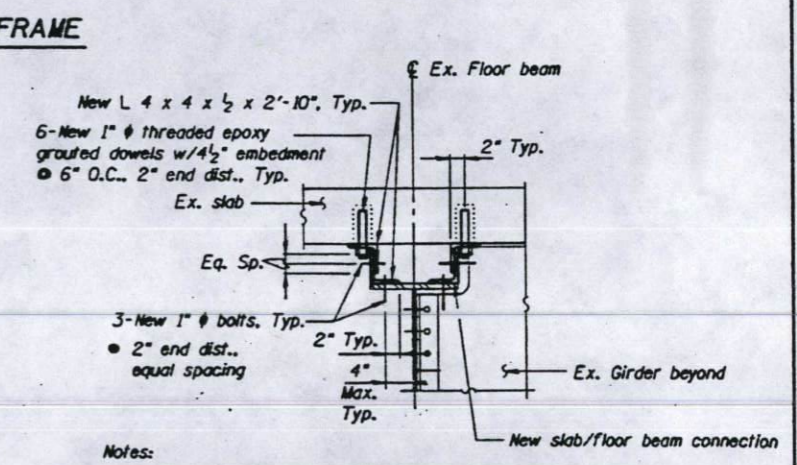
3 BEARING MODIFICATION AT R1-1 AND O1-R
S15



4 FLOOR BEAM/BEARING CONNECTION AT PIER O1-R
S15

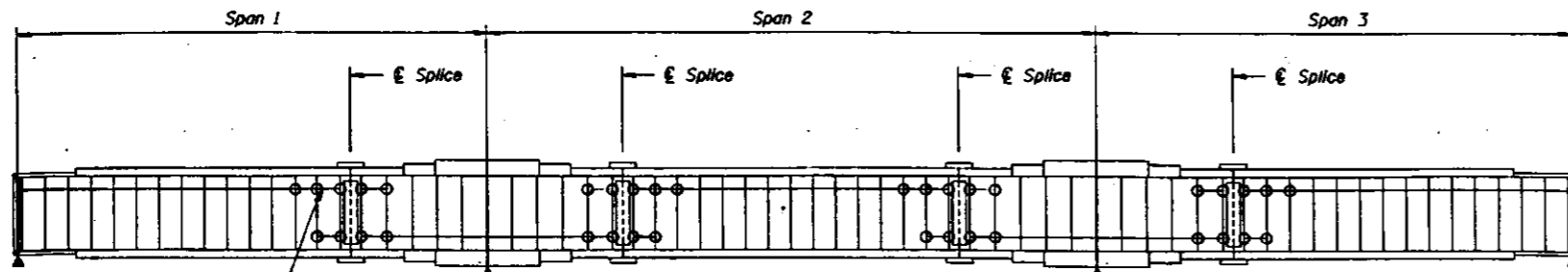


5 FLOOR BEAM/BEARING CONNECTION AT PIER O1-R
S15



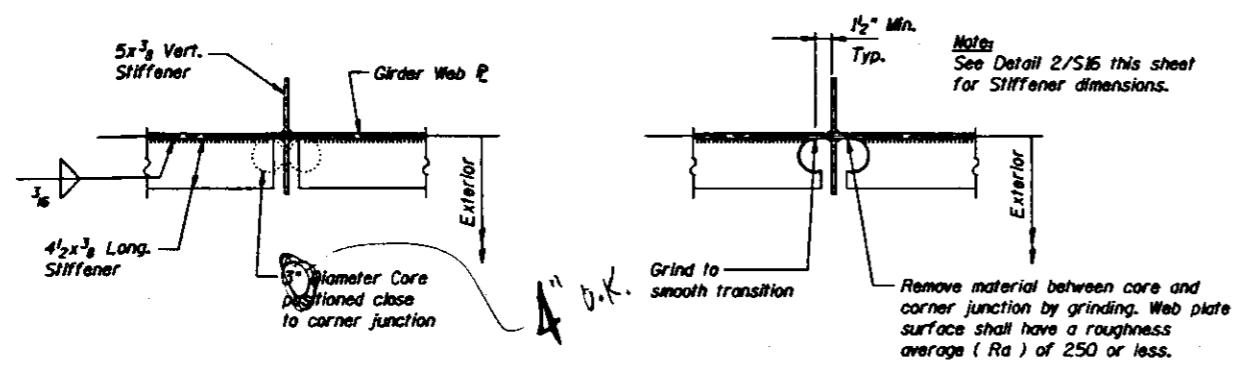
6 SLAB/FLOOR BEAM CONNECTION AT PIER O1-R
S15

SEISMIC RETROFIT DETAILS
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY
STRUCTURE NO. 082-0141 (ROADWAY A) STRUCTURE NO. 082-0253 (RAMP RD)
STRUCTURE NO. 082-0254 (ROADWAY G) STRUCTURE NO. 082-0201 (RAMP ON SCALE: NONE DRAWN BY JH
DATE 1-23-98 CHECKED BY HH



Modify stiffener intersection condition by increasing gap between stiffener welds
See Retrofit Details 2/S16 and 3/S16

1 GIRDER ELEVATION INDICATING TYPICAL FRACTURE CONTROL MODIFICATION LOCATIONS
S16



2 STIFFENER INTERSECTION MODIFICATION DETAIL
S16

3 STIFFENER INTERSECTION MODIFICATION DETAIL
S16

Notes:
See Detail 2/S16 this sheet for Stiffener dimensions.

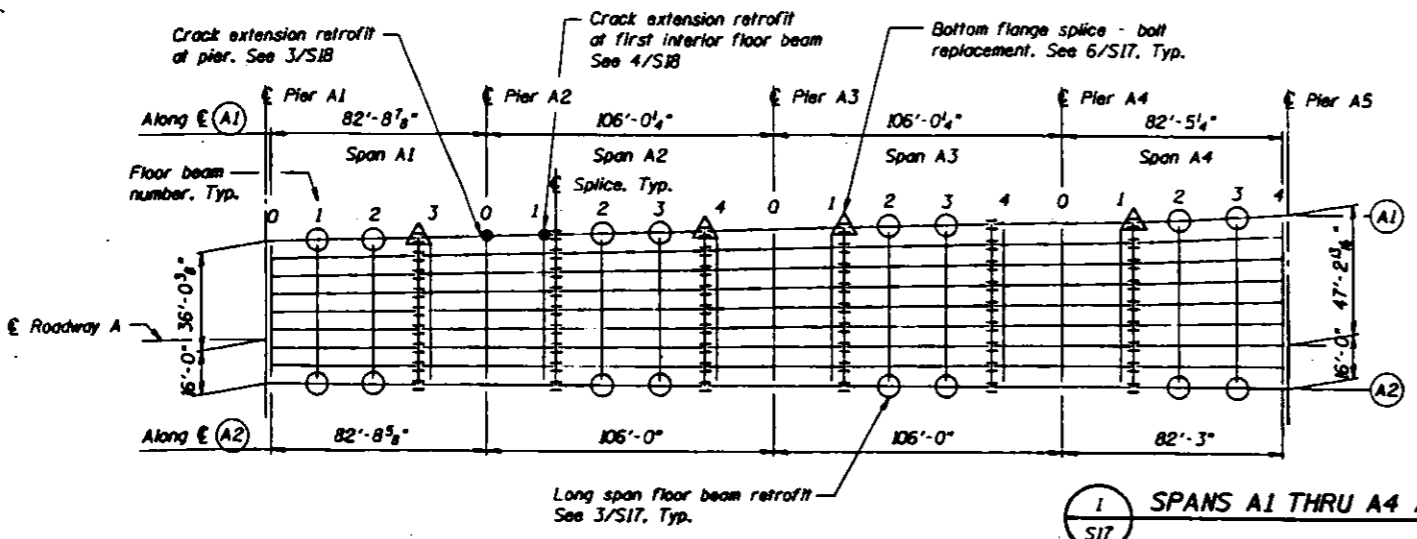
Procedure:

1. Core 3/8" diameter holes positioned close to corner junction through 3/8" thick longitudinal stiffener as shown in detail 2/S16.
2. Remove material between core and intersection junction by grinding with carbide tools and a dye grinder as shown in detail 3/S16. Web plate surface shall have a roughness average (Ra) of 250 or less.
3. Remove all burrs from cut edge and check for irregularities. Cored surface shall have an Ra equal to 500 or less.
4. After burr removal the modification shall be inspected using magnetic particle (MT) methods. Notify Engineer if a crack is detected. (Cost incidental to stiffener intersection modification).
5. The exposed steel surfaces shall be cleaned and painted using an aluminum epoxy mastic primer.
6. Obtain approval of Engineer before proceeding.
7. Paint area with top coat.

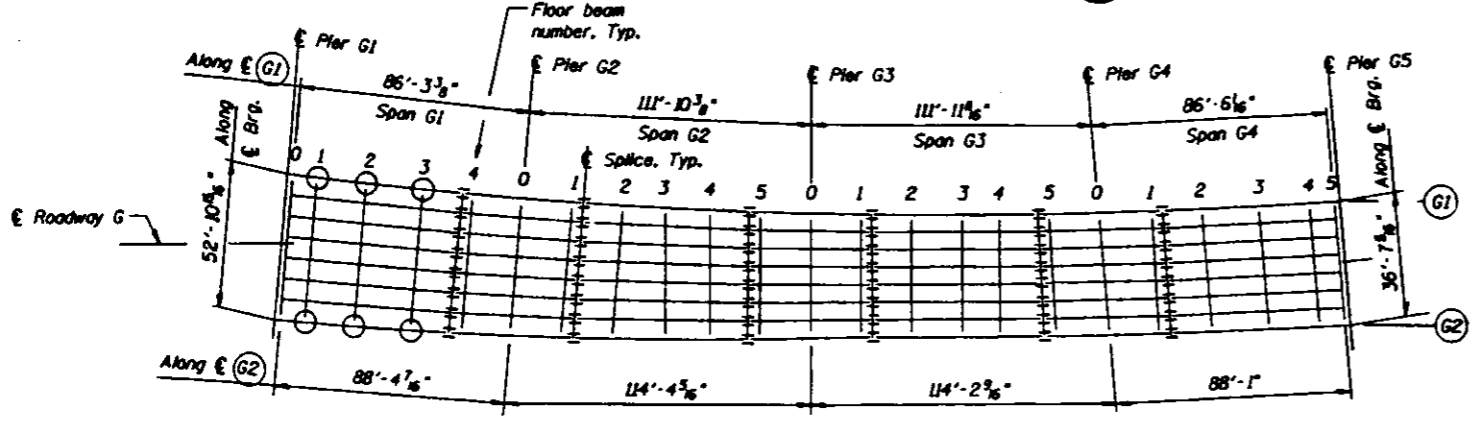
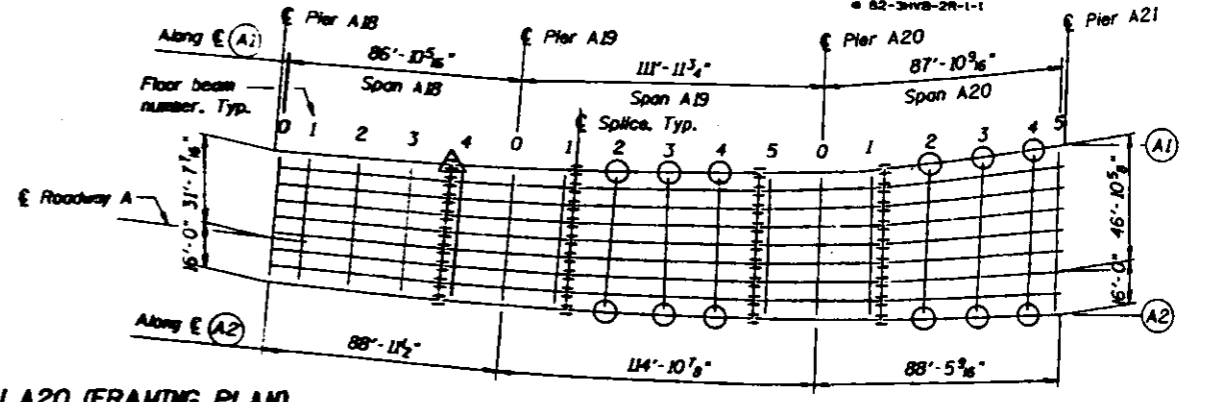
BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
Stiffener intersection modification	EACH	1056

STIFFENER INTERSECTION MODIFICATION DETAIL
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY
STRUCTURE NO. 082-0251 ROADWAY AL STRUCTURE NO. 082-0253 GRAMP RD
STRUCTURE NO. 082-0254 ROADWAY BL STRUCTURE NO. 082-0201 GRAMP CR
SCALE: NONE DRAWN BY JH
DATE 1-23-98 CHECKED BY JH

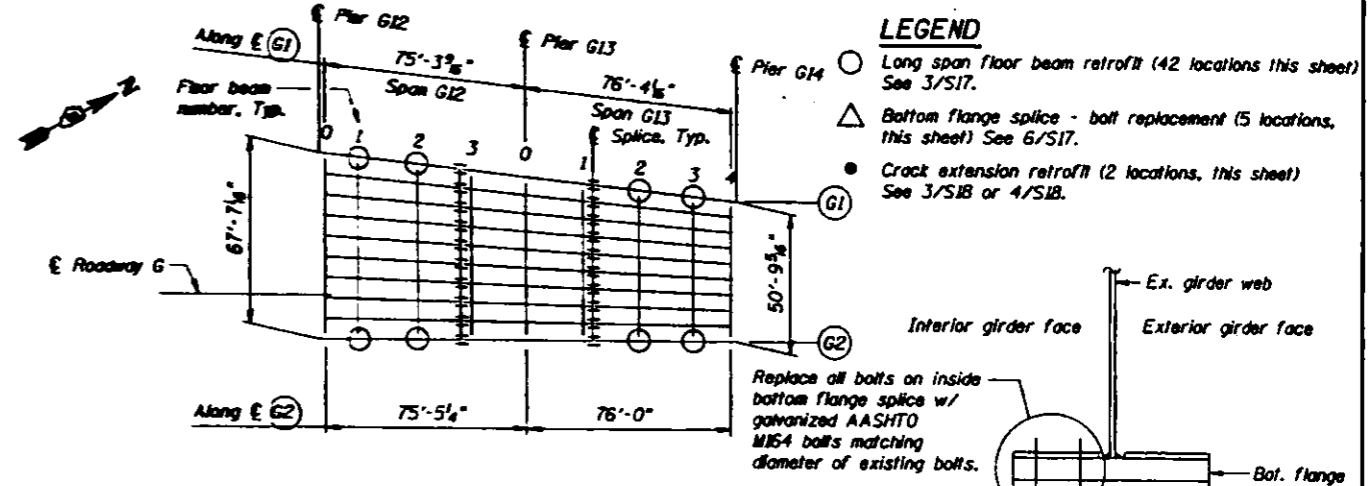
STRUCTURAL STEEL FABRICATION



1 SPANS A1 THRU A4 AND A18 THRU A20 (FRAMING PLAN)
S17



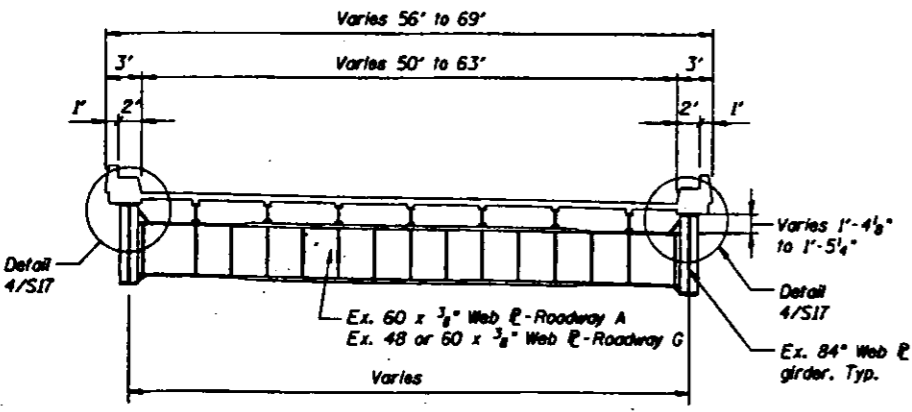
2 SPANS G1 THRU G4 AND G12 THRU G13 (FRAMING PLAN)
S17



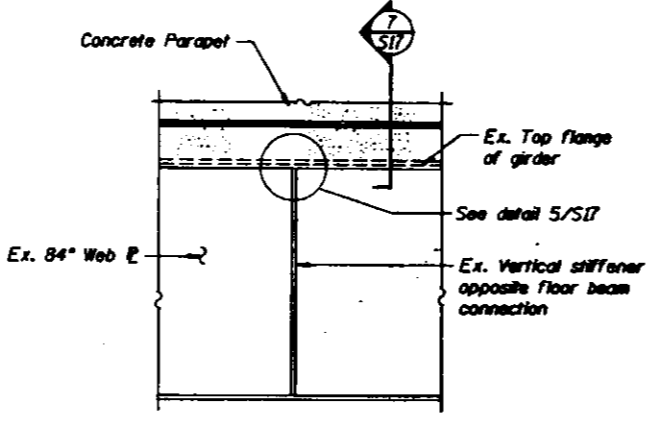
- LEGEND**
- Long span floor beam retrofit (42 locations this sheet) See 3/S17.
 - △ Bottom flange splice - bolt replacement (5 locations, this sheet) See 6/S17.
 - Crack extension retrofit (2 locations, this sheet) See 3/S18 or 4/S18.

BILL OF MATERIAL

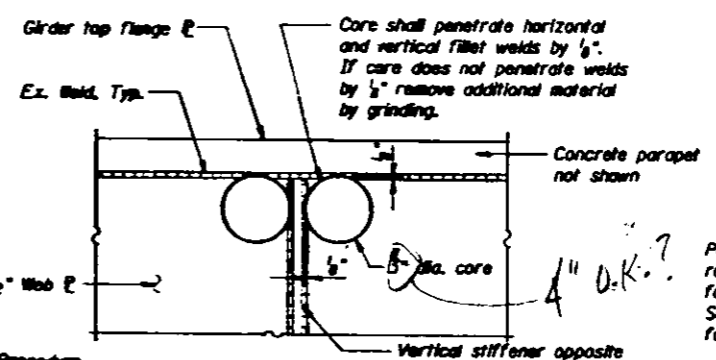
ITEM	UNIT	QUANTITY
Long span floor beam retrofit	EACH	44
Bottom flange splice - bolt replacement	EACH	14



3 LONG SPAN FLOOR BEAMS (> 50')
S17

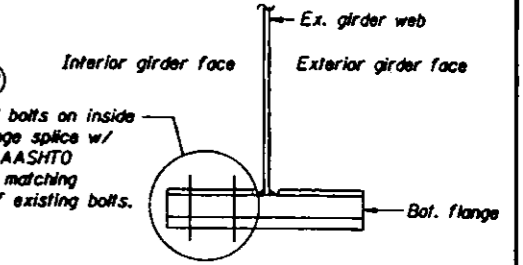


4 EXTERIOR ELEVATION OF GIRDER AT FLOOR BEAM CONNECTION
S17

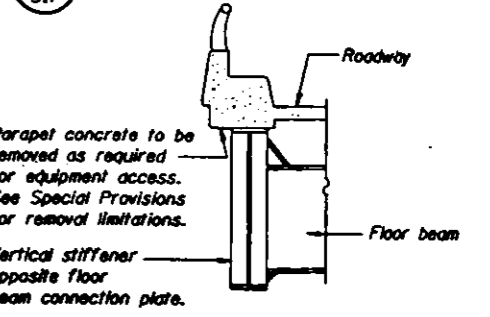


- Procedure:**
1. Remove parapet concrete, as required, in accordance with detail 7/S17, for equipment access.
 2. Core 3" diameter holes through web plate adjacent to the top flange as positioned in 5/S17. Core holes shall penetrate the horizontal and vertical fillet welds approximately 1/8". If core does not penetrate weld by 1/8", remove additional material by grinding. Remove all burrs from core or ground surface. Surface shall have a roughness average (Ra) of 500 or less.
 3. Clean surface to remove any cutting oils or rusting and paint exposed steel surface with aluminum epoxy mastic primer.
 4. Obtain approval of Engineer before proceeding.
 5. Paint surfaces with top coat.

5 LONG SPAN FLOOR BEAM RETROFIT
S17



6 BOTTOM FLANGE SPLICE - BOLT REPLACEMENT
S17



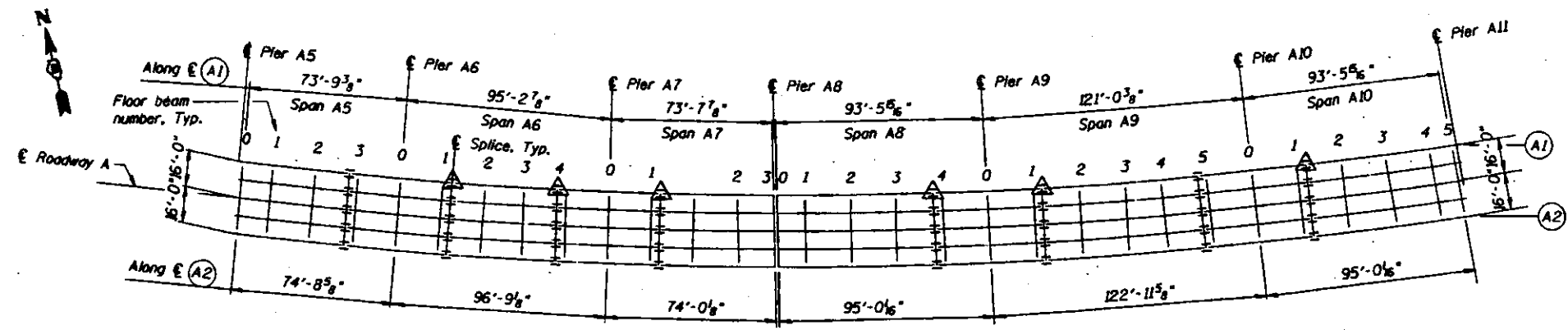
7 SECTION THRU GIRDER
S17

LONG SPAN FLOOR BEAM RETROFIT & BOLT REPLACEMENT

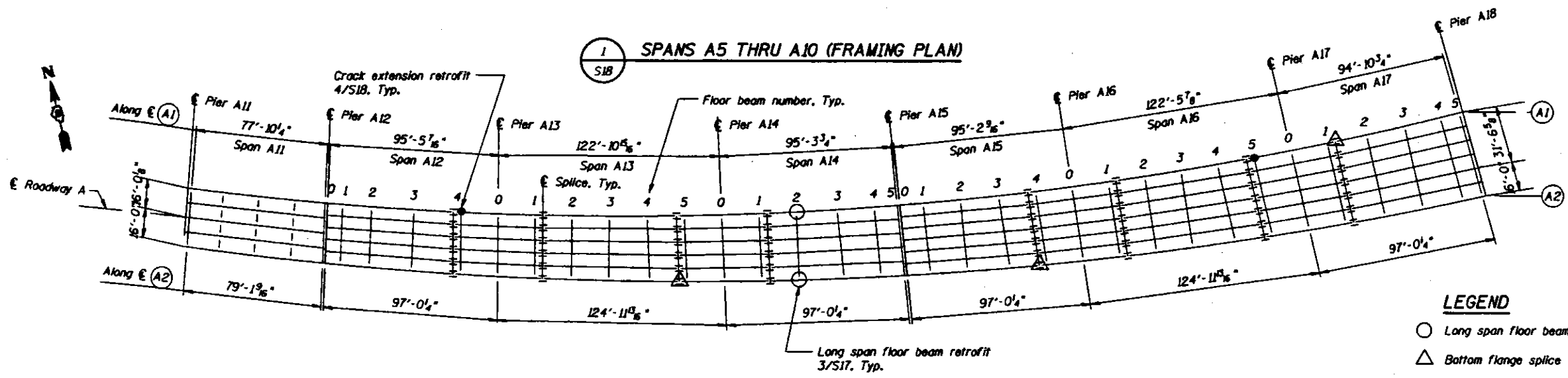
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 SEISMIC AND REDUNDANCY RETROFIT REPAIRS
 FAI ROUTE TO
 POPLAR STREET BRIDGE APPROACHES
 ST. CLAIR COUNTY

STRUCTURE NO. 02-0254 ROADWAY AL STRUCTURE NO. 02-0253 GRAMP RD
 STRUCTURE NO. 02-0254 ROADWAY G STRUCTURE NO. 02-0201 GRAMP RD
 SCALE: NONE DRAWN BY JN
 DATE 1-23-98 CHECKED BY 181

ROUTE NO.	SECTION	QUANTITY	TOTAL SHEETS	SHEET NO.	SHEET NO. S-18
F.A.I. 78		ST. CLAIR	91	28	
PROJECT NO. 02-0254 ROADWAY G					



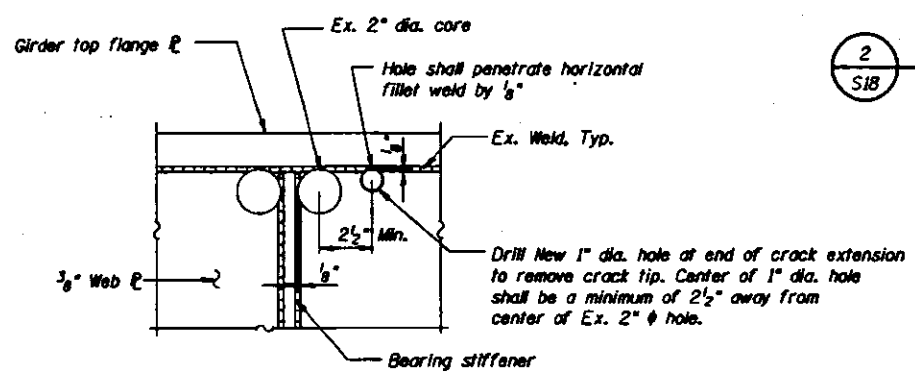
1 SPANS A5 THRU A10 (FRAMING PLAN)



2 SPANS A11 THRU A17 (FRAMING PLAN)

LEGEND

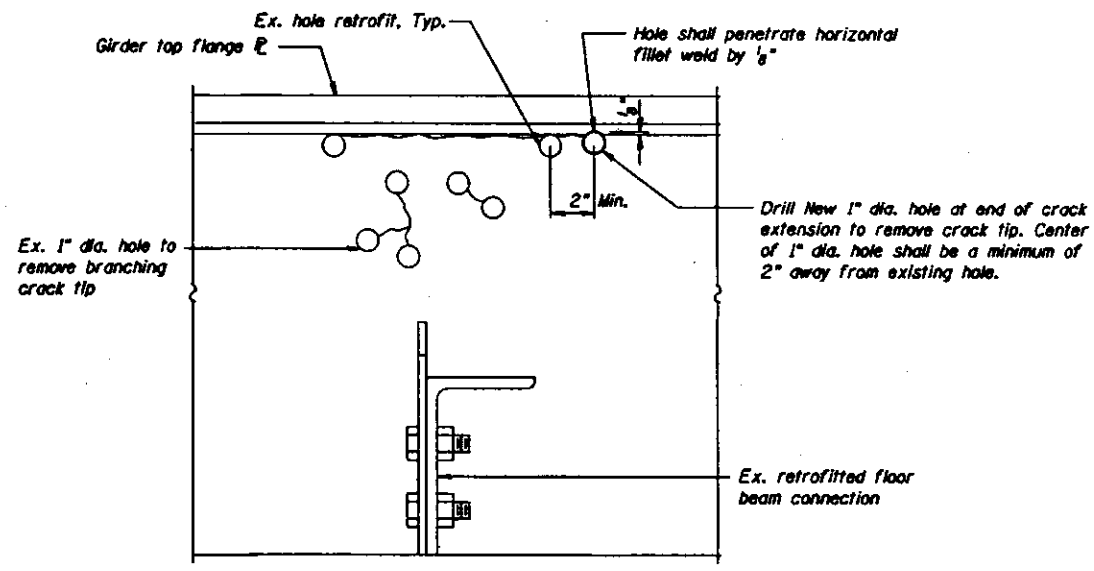
- Long span floor beam retrofit (2 locations this sheet) See 3/S17.
- △ Bottom flange splice - bolt replacement (9 locations, this sheet) See 6/S17.
- Crack extension retrofit (2 locations, this sheet) See 4/S18.



Procedure:

1. Inspect girder web plate in region of existing retrofits to determine location of crack extension and crack tip using magnetic particle inspection (MT) methods. (Cost incidental to crack extension at pier)
2. Drill 1" diameter hole at end of crack extension to remove crack tip. Center of 1" diameter hole shall be positioned in accordance with detail 3/S18 or 4/S18.
3. Cored surfaces shall have a Roughness Average (Ra) of 500 or less.
4. Re-inspect area using MT methods to verify crack does not extend past the newly drilled holes (Cost incidental to CRACK EXTENSION MODIFICATIONS).
5. Obtain approval of Engineer.
6. Clean exposed steel surface to remove contaminants and paint with aluminum epoxy mastic primer.

3 CRACK EXTENSION RETROFIT AT PIER



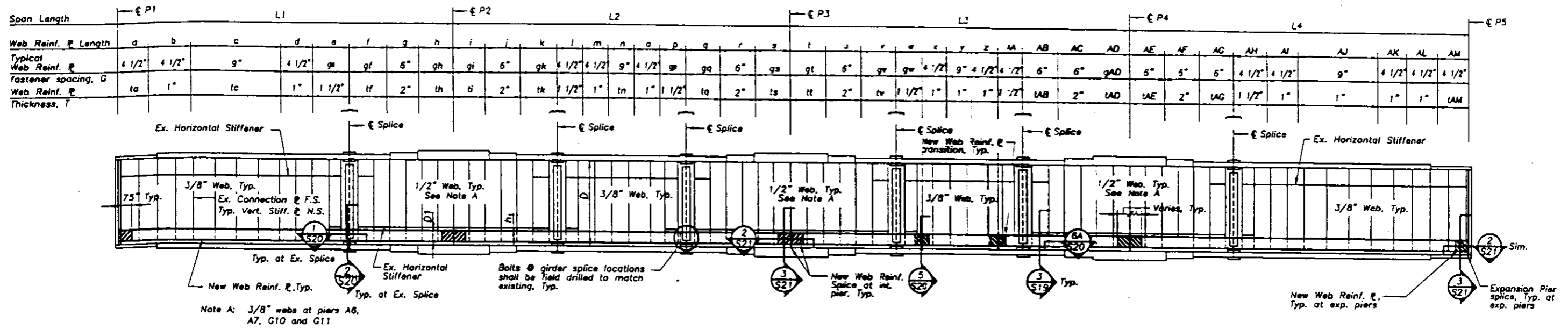
4 CRACK EXTENSION RETROFIT AT FIRST INTERIOR FLOOR BEAMS

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
Crack extension MODIFICATION	EACH	4

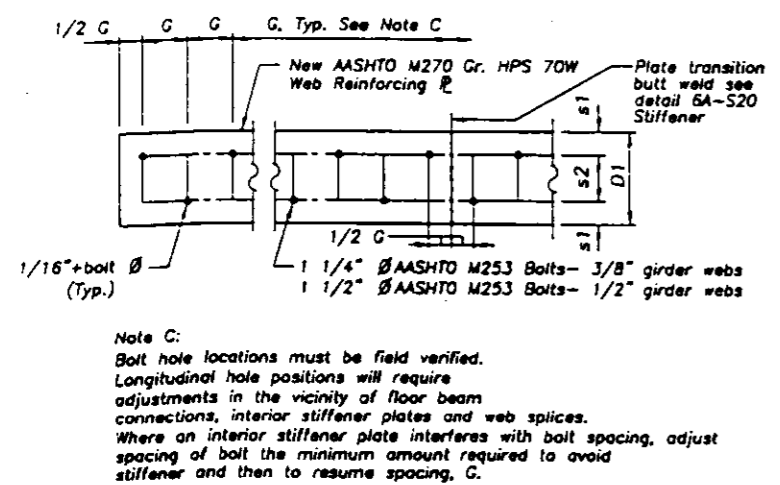
CRACK EXTENSION RETROFITS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

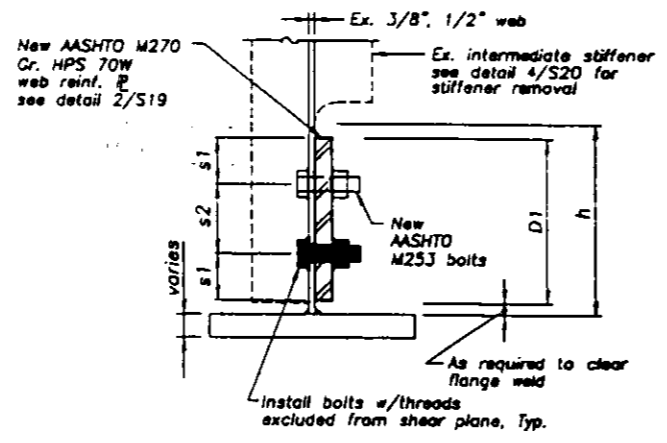
STRUCTURE NO. 082-0254 ROADWAY G STRUCTURE NO. 082-0253 BRAMP RD
STRUCTURE NO. 082-0254 ROADWAY G STRUCTURE NO. 082-0254 BRAMP RD
SCALE: NONE DRAWN BY JH
DATE 1-23-98 CHECKED BY MH



1 GIRDER 2 ELEVATION INDICATING TYPICAL REDUNDANCY RETROFIT LOCATIONS (Girder 1 Opposite Hand)
 NOTE: SEE TABLE OF WEB REINFORCEMENT PLATE PARAMETERS SHEET S-19A



2 WEB REINFORCEMENT PLATE ELEVATION



3 TYPICAL WEB REINFORCEMENT PLATE

Rowway Spans	Web Reinforcement Plate					
	3	D1	s1	s2	s	n1
	in.	in.	in.	in.	in.	in.
A1-A4	36	14	4	5	15	17
A5-A7	72	12	3	5	13	15
A8-A10	72	12	3	5	13	15
A12-A14	72	12	3	5	13	15
A15-A17	72	12	3	5	13	15
A18-A20	36	14	4	5	15	17
G1-G4	36	14	4	5	15	17
G5-G8	36	14	4	5	15	17
G9-G11	36	14	4	5	15	17
G12-G13	36	14	4	5	15	17

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
Steel girder web reinforcement plate	Lbs.	538,600
Vertical web stiffener removal	EACH	1,571

Bolt Diameter	Girder Web Plate	Total Reinforcement Plate Thickness							
		1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1/2	1/2	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
1/4	3/8	1.25	1.25	1.25	1.25	1.25	no	no	no

Note: Includes (1) 3/32" hardened washer, each end.

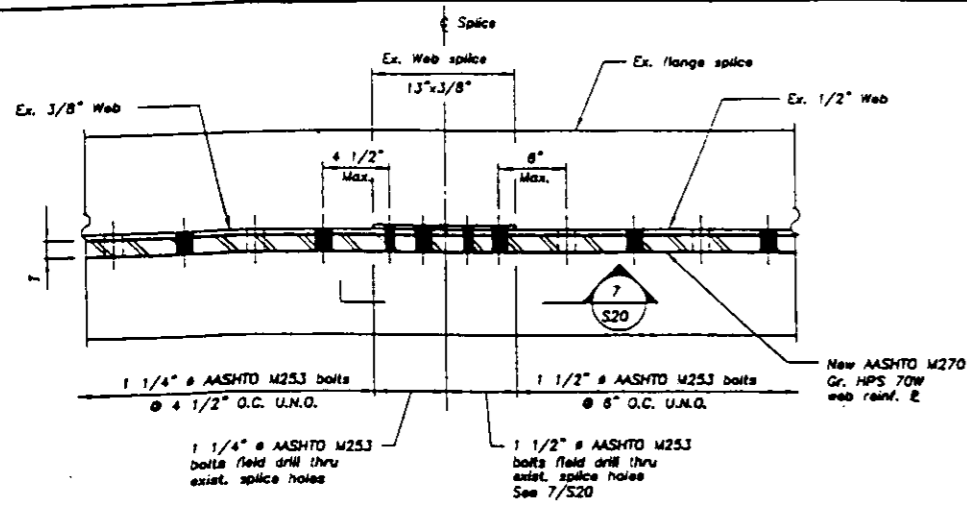
REVISIONS	
NO.	DATE
1	10/21/08

REDUNDANCY RETROFIT DETAILS

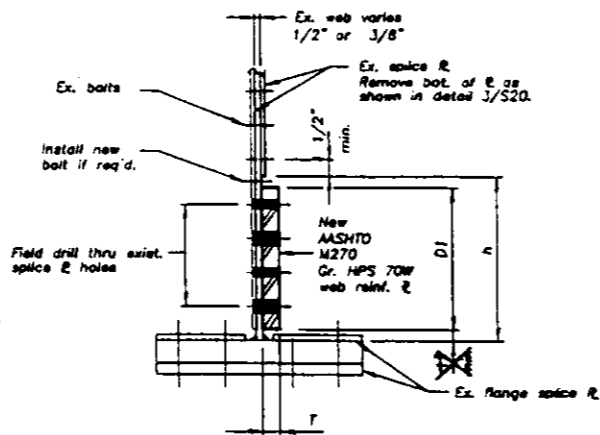
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 SEISMIC AND REDUNDANCY RETROFIT REPAIRS
 I-70 ROUTE 70
 POPLAR STREET BRIDGE APPROACHES
 ST. CLAIR COUNTY

STRUCTURE NO. 082-0141 (ROADWAY A) STRUCTURE NO. 082-0253 (RAMP #1)
 STRUCTURE NO. 082-0254 (ROADWAY G) STRUCTURE NO. 082-0201 (RAMP #2)
 SCALE: NONE DRAWN BY: JH
 DATE: 1-23-08 CHECKED BY: MH

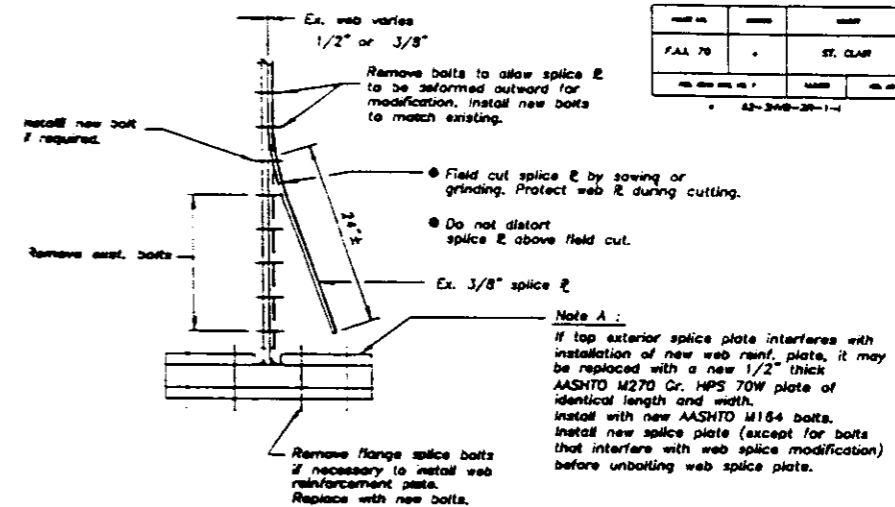
DATE	BY	CHECKED	DATE	BY
F.A.A. 78		ST. CLAIR	84	12
42-3448-20-1-1 42-3448-20-1-1				



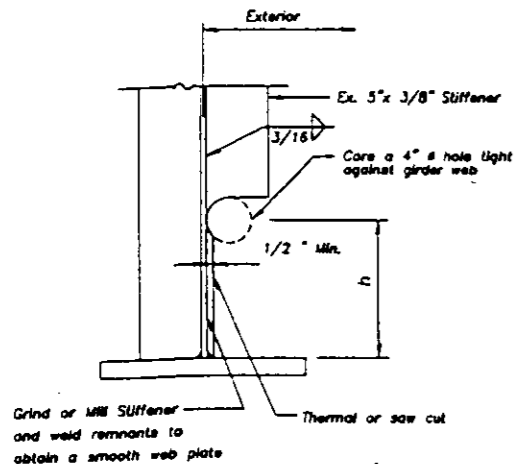
1 WEB REINFORCEMENT PLATE AT GIRDER WEB SPLICE



2 WEB REINFORCEMENT PLATE AT GIRDER WEB SPLICE



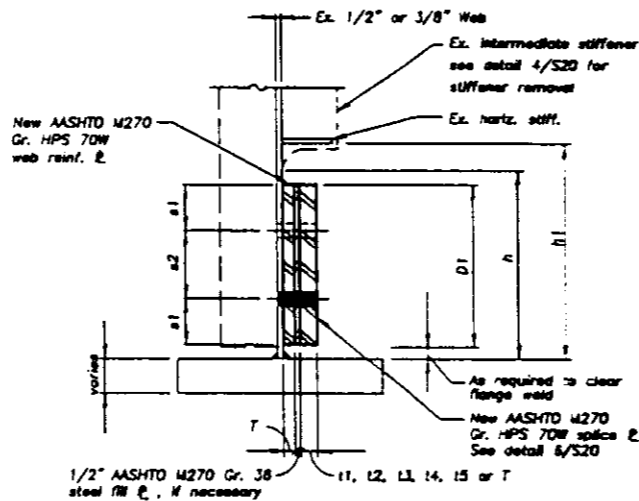
3 GIRDER SPLICE PLATE MODIFICATION



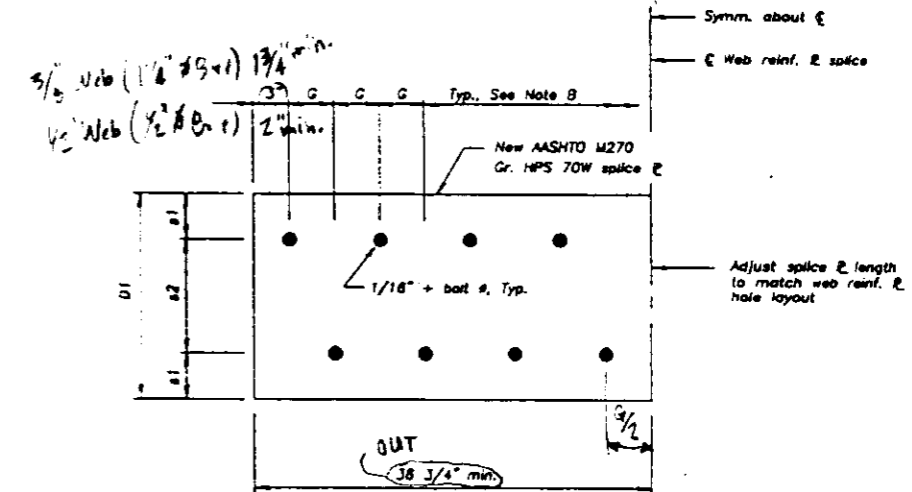
Procedure:

1. Core a 4" hole light against girder web. Do not notch or gauge web plate.
2. Thermal or saw cut, horizontal cut and vertical cut. Vertical cut shall be positioned at least 1/2" away from girder web. Do not notch or gauge web plate.
3. Remove all stiffener remnants and connecting welds by grinding or milling. Web plate surface shall have a Roughness Average (Ra) of 250 or less.

4 VERTICAL STIFFENER MODIFICATION

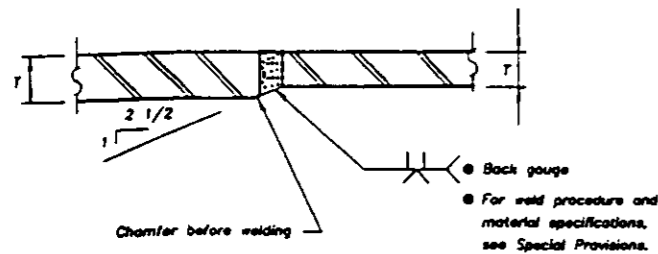


5 TYPICAL WEB REINFORCEMENT PLATE SPLICE

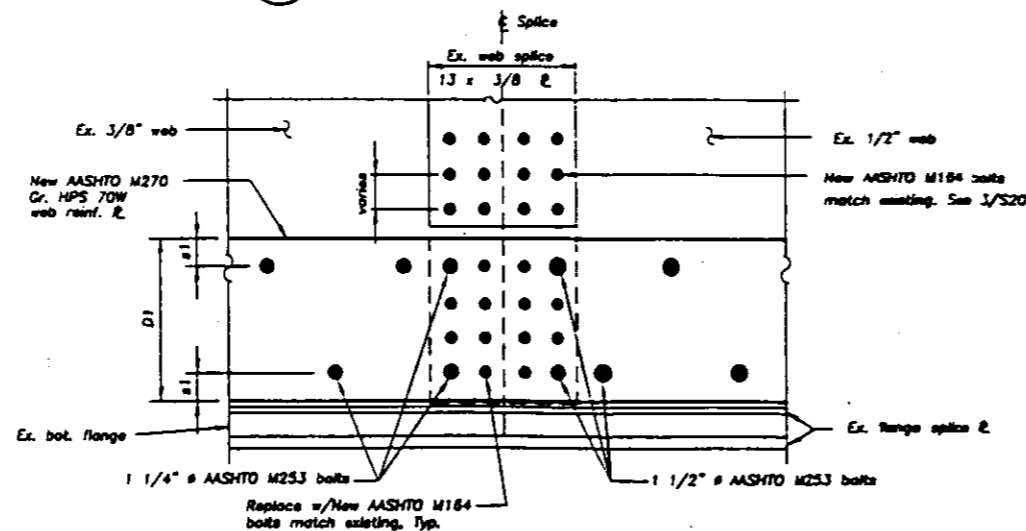


6 TYPICAL WEB REINFORCEMENT SPLICE PLATE

- Note B: For splice locations other than at piers
- maximum 2 locations per span For 1/2" or thicker web R and 2" or thicker web reinf. R
 - Hole size and spacing to match web reinf. R
 - Splice R thickness to match greater web reinf. R thickness.
 - Min. no. fasteners = 16 @ 4 1/2" spacing; 8 @ 9" spacing; 12 @ 6" spacing as alternate
 - See detail 5A/S20 for butt weld detail at other transitions



6A BUTT WELD SPLICE AT WEB REINF. PLATE TRANSITIONS



7 ELEVATION AT GIRDER WEB SPLICE

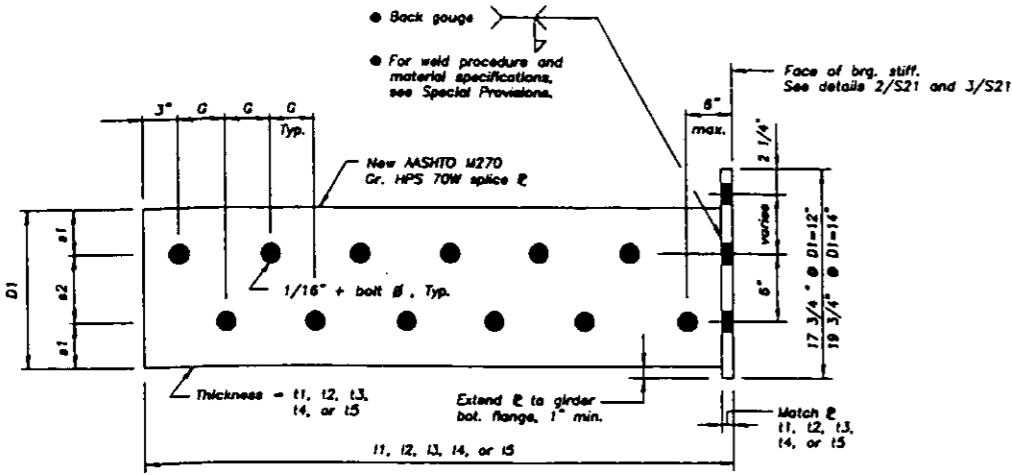
Notes

1. See sheet S-19 for dimensions D1, h, h1, s1 & s2.
2. See sheet S-21 for dimensions t1, t2, t3, t4 and t5.
3. T = thickness of web reinf. R.
4. G = spacing of bolts, see sheet S-19A.

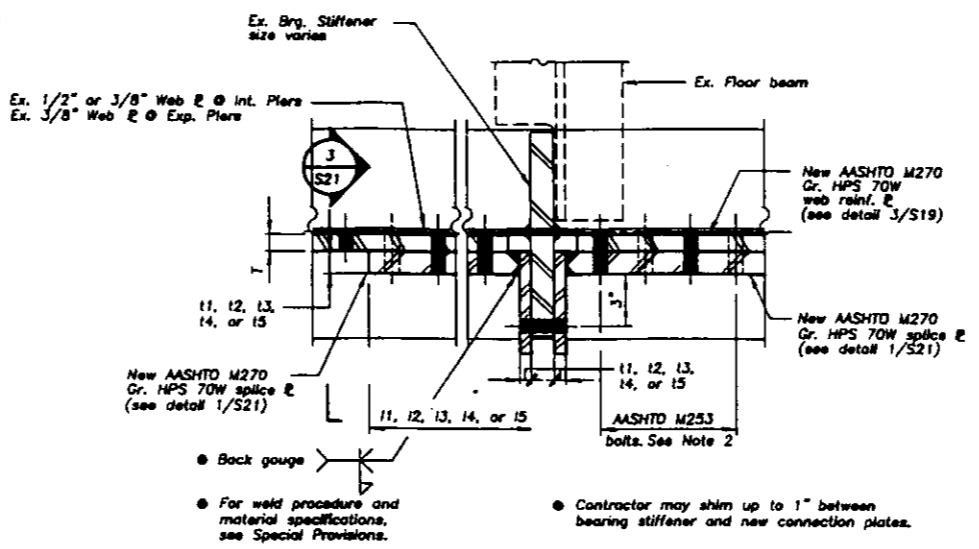
REVISIONS	
NAME	DATE
JCB	10/21/88

REDUNDANCY RETROFIT DETAILS

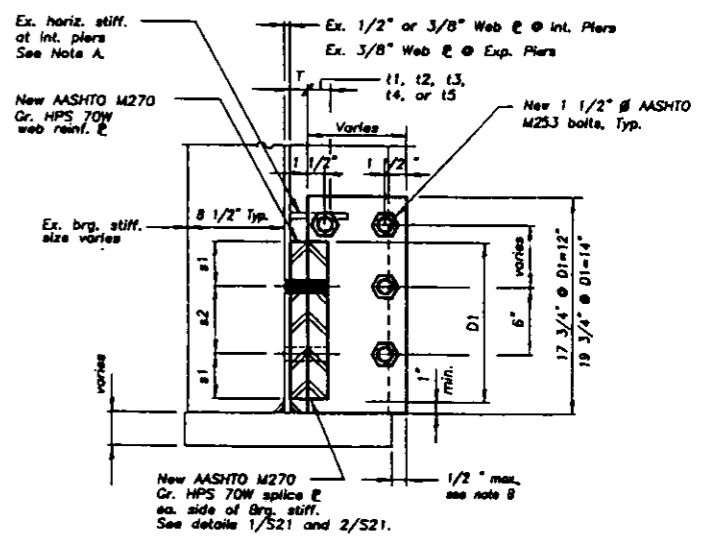
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 SEISMIC AND REDUNDANCY RETROFIT REPAIRS
 FAI ROUTE 70
 POPLAR STREET BRIDGE APPROACHES
 ST. CLAIR COUNTY
 STRUCTURE NO. 082-0161 (ROADWAY A) STRUCTURE NO. 082-0253 (RAMP R)
 STRUCTURE NO. 082-0254 (ROADWAY G) STRUCTURE NO. 082-0201 (RAMP D)
 SCALE: NONE DRAWN BY JN
 DATE: 1-23-88 CHECKED BY HM



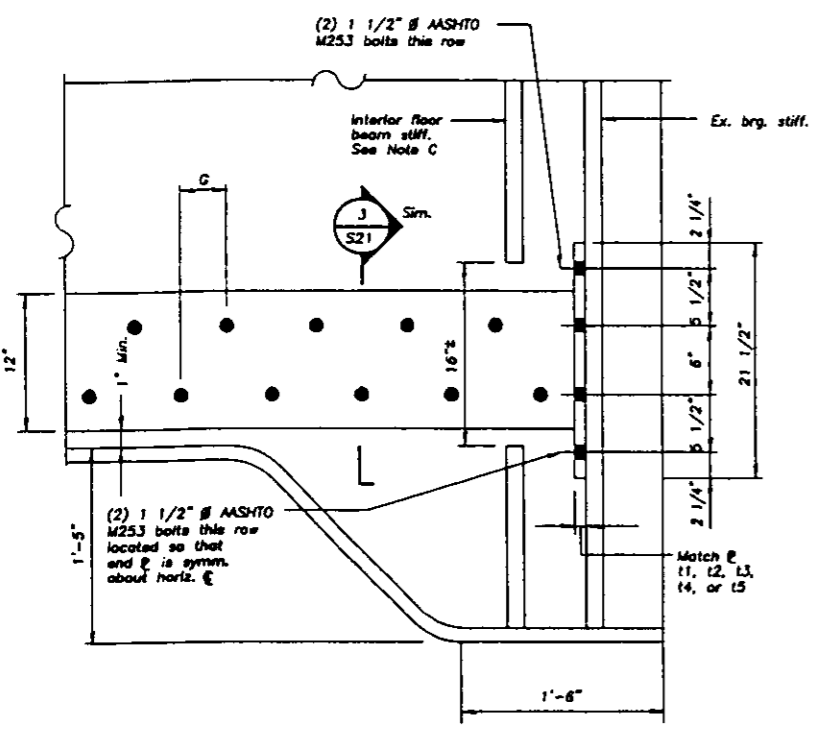
1 TYPICAL WEB REINFORCEMENT SPLICE PLATE AT PIERS S21



2 WEB REINFORCEMENT PLATE SPLICE AT BEARING STIFFENER S21

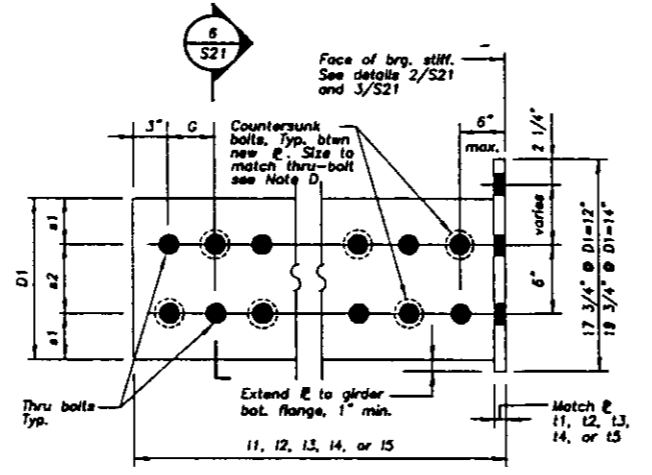


3 WEB REINFORCEMENT PLATE AT PIERS S21



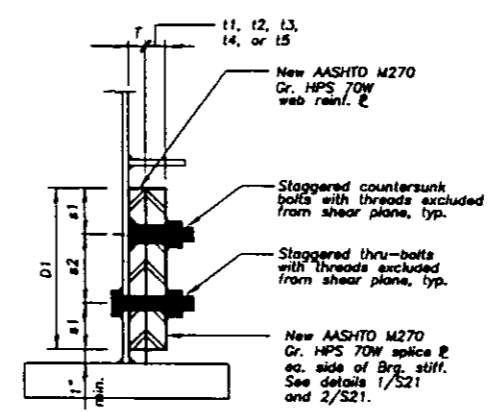
4 WEB REINFORCEMENT SPLICE PLATE AT HAUNCH S21

Note C: Remove vertical stiffener to permit installation of web reinforcement splice plate. See detail 4/S20. Two core holes through stiffener will be required for stiffener removal.



5 WEB REINFORCEMENT SPLICE PLATE WITH COUNTERSUNK BOLTS S21

Note D: See Splice Plate at Piers table for locations.



6 COUNTERSUNK HOLES S21

Note A: End of longitudinal stiffener to be removed if necessary to permit installation of splice plate.
 Note B: No minimum edge requirements for holes in bearing stiffeners at interior piers. 1 1/2\"/>

Roadway	Splice Plate at Piers									
	P1		P2		P3		P4		P5	
	I1	I2	I2	I3	I3	I4	I4	I5	I5	
A1-A4	1.50	75	2	87	2	87	2	87	1.50	75
A5-A7	1	75	1.50	75	1.50	75	1	75		
A8-A10	1.50	75	2	87	2	87	1.50	75		
A12-A14	1.50	75	2	87	2	87	1.50	75		
A15-A17	2	75	2	87	2	87	2	75		
A18-A20	1.50	75	2	87	2	87	2	75		
G1-G4	1.50	75	2	87	2	87	2	87	1.50	75
G5-G8	1	75	1	75	1	75	1	75	1	75
G9-G11	1	75	1	75	1	75	1	75		
G12-G13	2	75	2	87	1.50	75				

* See detail 5/S21 for locations of additional bolts

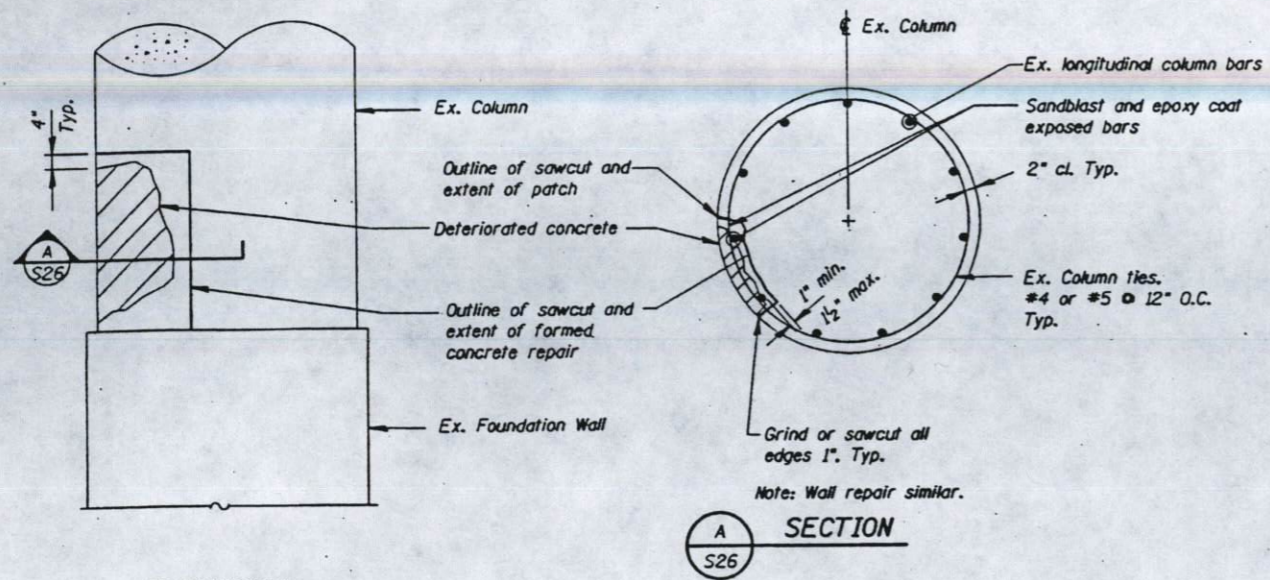
- Notes:
- Web reinforcement plate splice symmetric around interior bearing stiffener.
 - 1 1/2\"/>

REVISIONS	
NAME	DATE
JCM	10/21/88

REDUNDANCY RETROFIT DETAILS

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 SEISMIC AND REDUNDANCY RETROFIT REPAIRS
 FAI ROUTE 70
 POPLAR STREET BRIDGE APPROACHES
 ST. CLAIR COUNTY

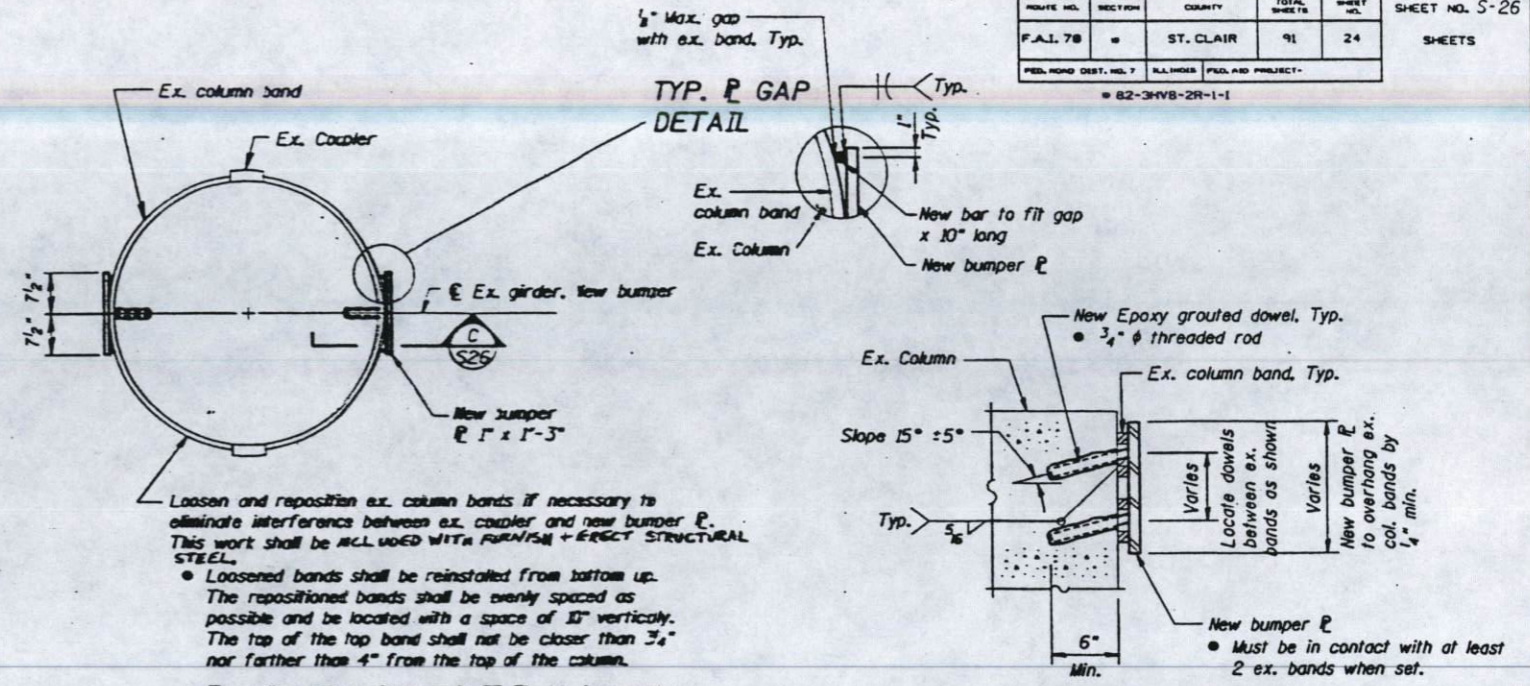
STRUCTURE NO. 082-0141 (ROADWAY A)	STRUCTURE NO. 082-0253 (RAMP R)
STRUCTURE NO. 082-0254 (ROADWAY G)	STRUCTURE NO. 082-0201 (RAMP O)
SCALE: NONE	DRAWN BY: JH
DATE: 1-23-98	CHECKED BY: HH



ELEVATION

A SECTION
S26

1 TYPICAL CONCRETE COLUMN REPAIR
S26

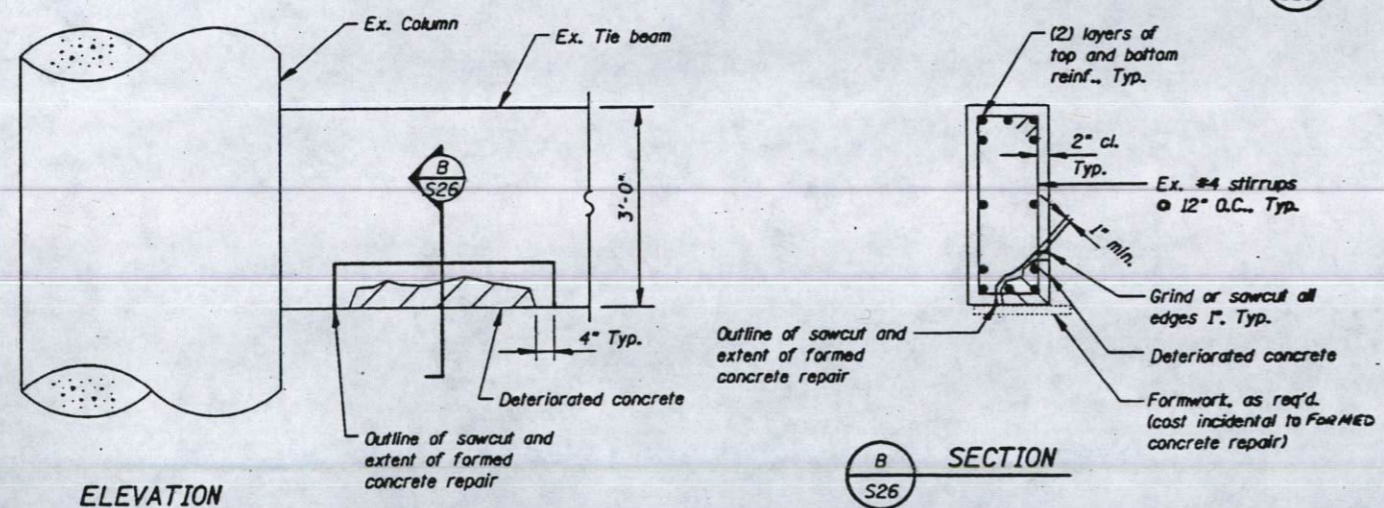


TYP. R GAP DETAIL

C SECTION
S26

- Loosen and reposition ex. column bands if necessary to eliminate interference between ex. coupler and new bumper R. This work shall be INCLUDED WITH FURNISH + ERECT STRUCTURAL STEEL.
- Loosened bands shall be reinstalled from bottom up. The repositioned bands shall be evenly spaced as possible and be located with a space of 10" vertically. The top of the top band shall not be closer than 3/4" nor farther than 4" from the top of the column.
 - The bolts shall be tightened in 55 Ft.-Lb. increments in a clockwise direction, to a final torque of 220 Ft.-Lbs.
 - All of the threads in each of the four nuts shall be fully engaged upon final tightening.
 - Once a final torque of 220 Ft.-Lbs. is reached in each nut, the band threads shall be peened to the nut to prevent loosening.

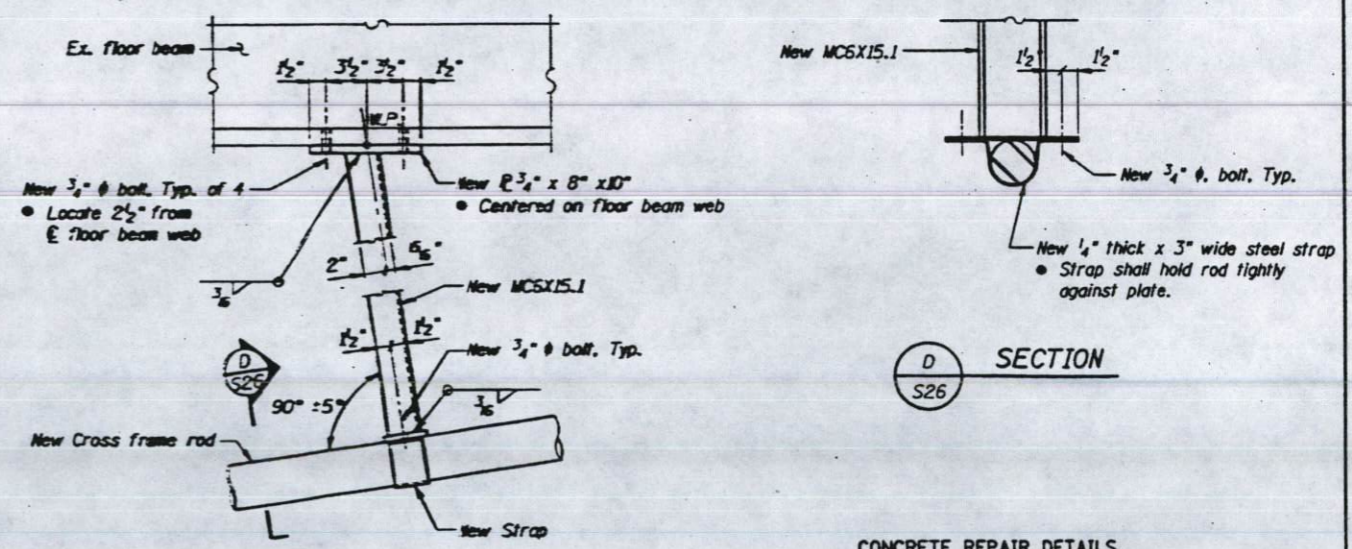
3 BUMPER PLATE DETAIL
S26



ELEVATION

B SECTION
S26

2 TYPICAL CONCRETE TIE BEAM REPAIR
S26



4 TIE ROD SUPPORT DETAIL
S26

D SECTION
S26

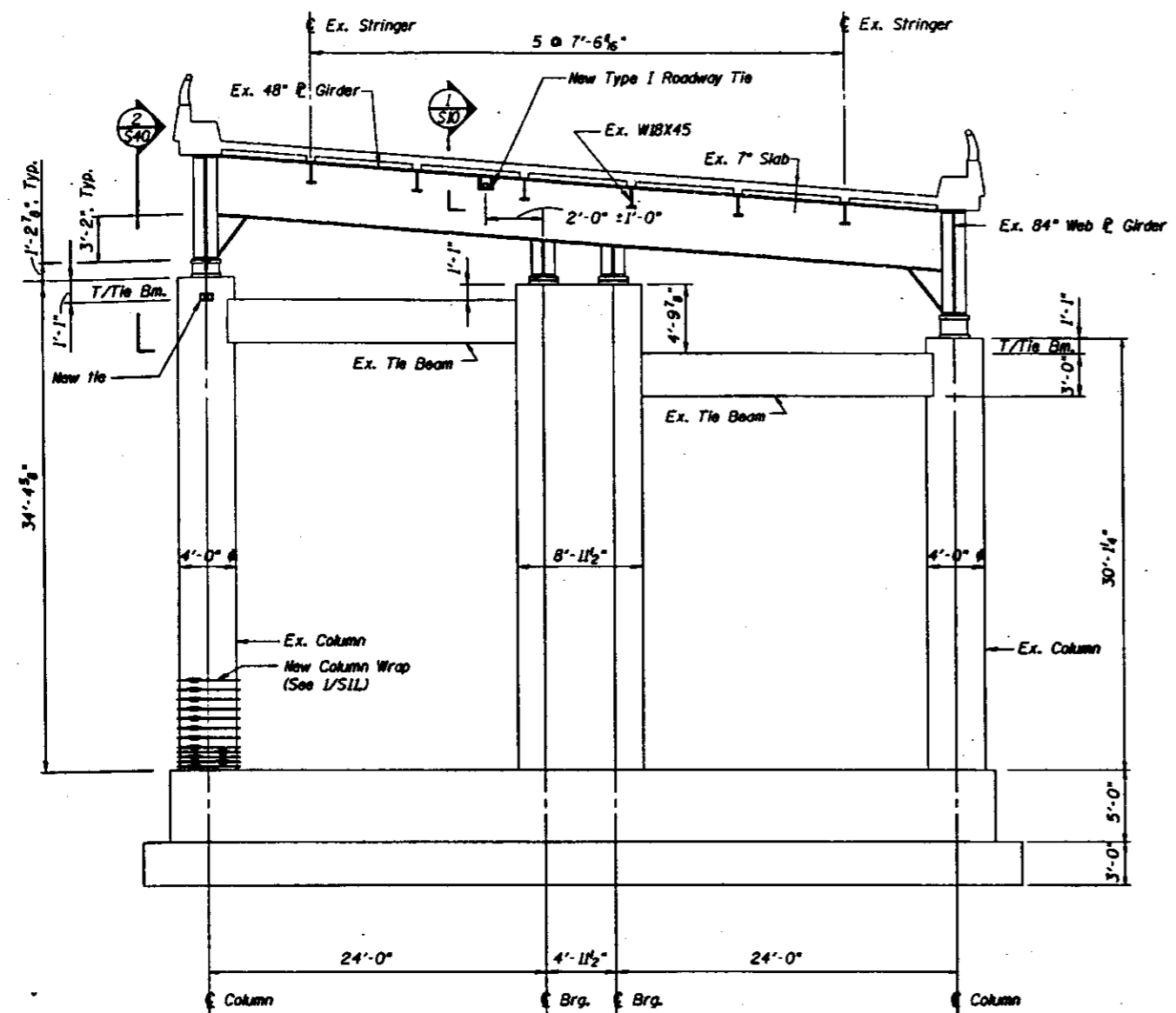
CONCRETE REPAIR DETAILS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

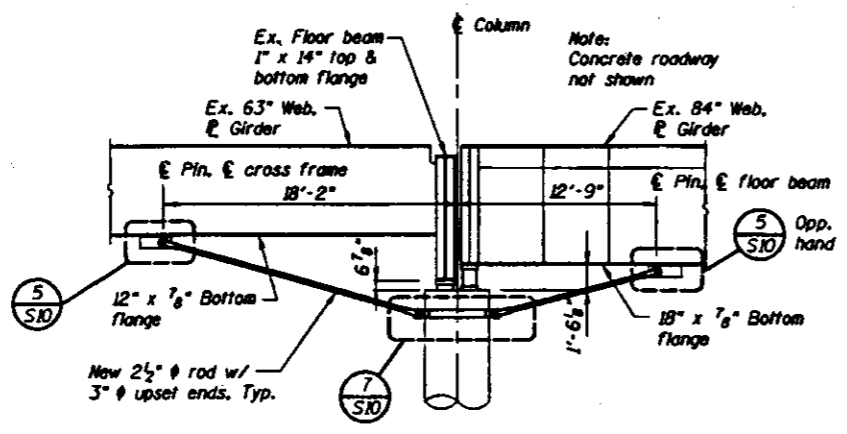
STRUCTURE NO. 082-0141 (ROADWAY A) STRUCTURE NO. 082-0253 (RAMP B)
STRUCTURE NO. 082-0254 (ROADWAY C) STRUCTURE NO. 082-0201 (RAMP D)
SCALE: NONE DRAWN BY: JH
DATE: 1-23-98 CHECKED BY: JH

STRUCTURAL 97422\BET\1\1012128.DWG

82-3448-2R-1-1



1
S40
ELEVATION PIER G1



2
S40
ELEVATION EXISTING ROADWAY GIRDERS AT PIER G1

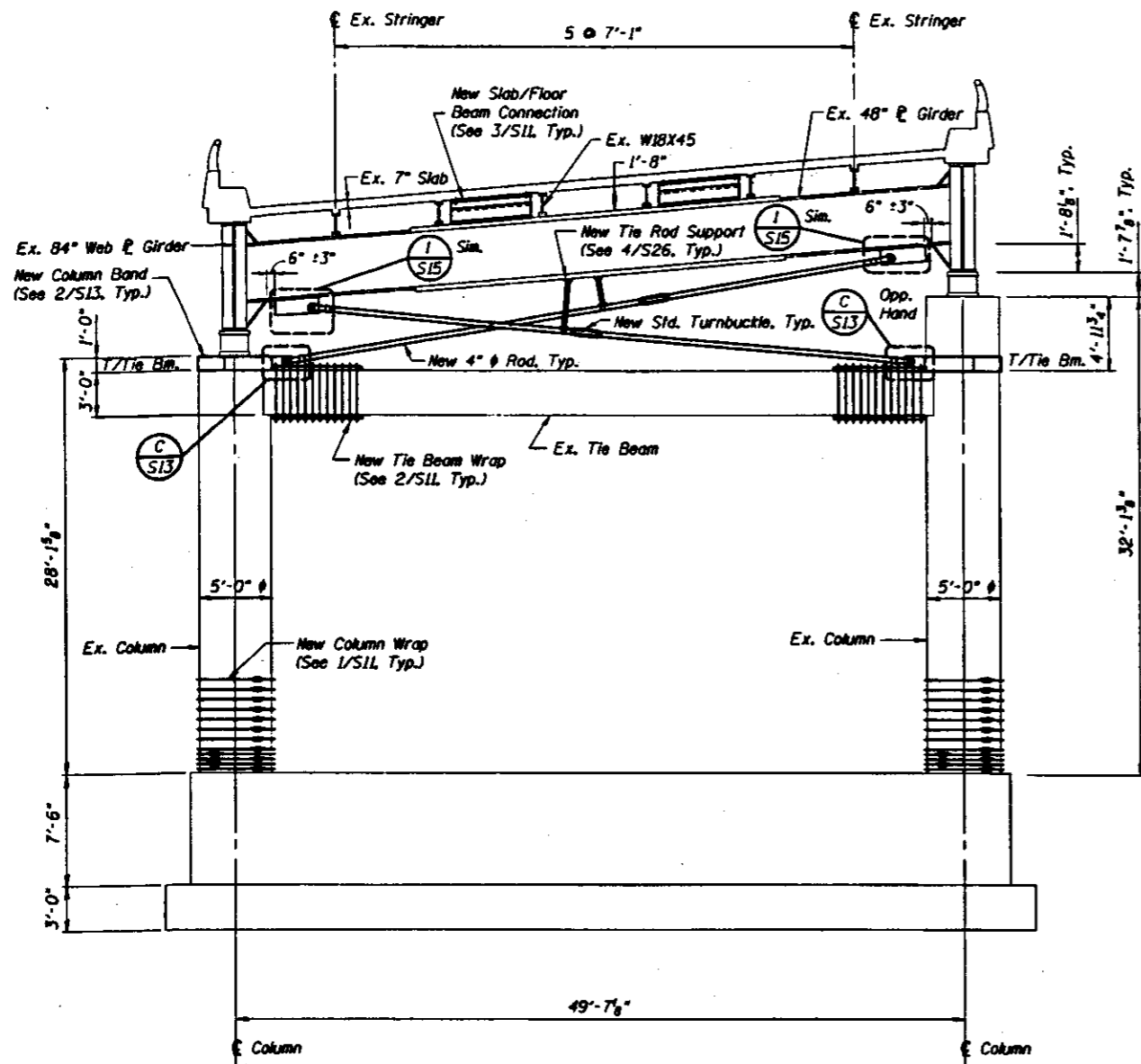
BILL OF MATERIAL - PIER G1		
ITEM	UNIT	QUANTITY
Concrete removal	CY	5.6
Furnish and erect structural steel	LBS.	3135
Epoxy grouted dowels	EACH	28
Column wrap	SQ. FT.	81.7

PIER G1 RETROFIT

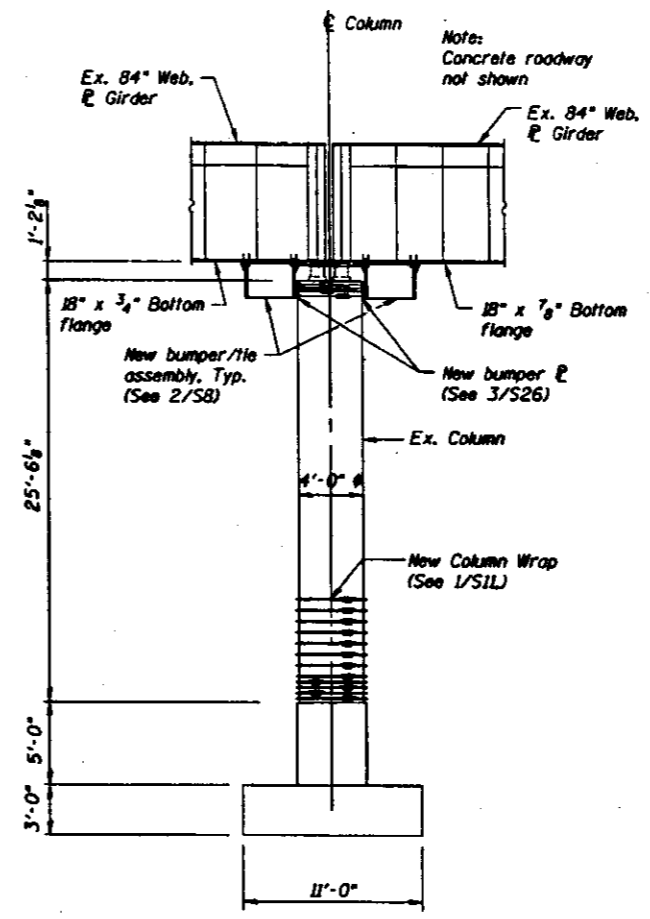
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

STRUCTURE NO. 082-0241 (ROADWAY A) STRUCTURE NO. 082-0253 (RAMP B)
STRUCTURE NO. 082-0254 (ROADWAY G) STRUCTURE NO. 082-0201 (RAMP C)
SCALE: NONE DRAWN BY JH
DATE 1-23-98 CHECKED BY JH

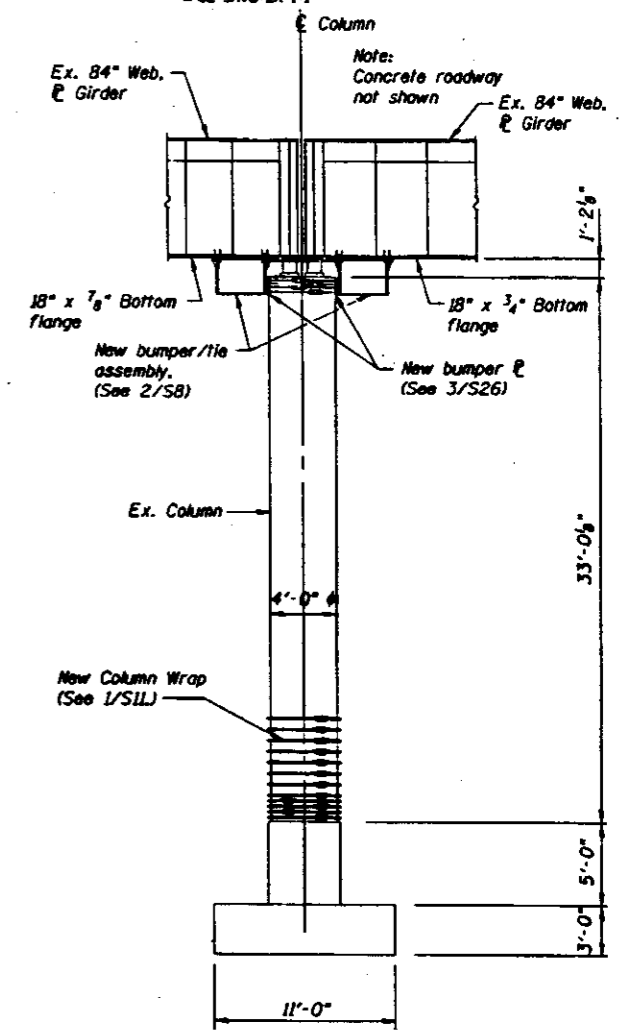
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. S-41 SHEETS
F.A.L. 70	8	ST. CLAIR	91	39	
FED. ROAD DIST. NO. 7	ALABAMA	FED. AID PROJECT			
# 02-34WB-2R-1-1					



1
S41
ELEVATION PIER G2



NORTH



SOUTH

2
S41
ELEVATIONS PIER G5

BILL OF MATERIAL - PIER G2

ITEM	UNIT	QUANTITY
Furnish and erect structural steel	LBS.	9776
Epoxy grouted dowels	EACH	26
Foundation wall dowel modification	EACH	28
Column wrap	SQ. FT.	246.1

BILL OF MATERIAL - PIER G3 *

ITEM	UNIT	QUANTITY
Furnish and erect structural steel	LBS.	330
Epoxy grouted dowels	EACH	9
Column wrap	SQ. FT.	163.4

* Elevation not shown

BILL OF MATERIAL - PIER G4 *

ITEM	UNIT	QUANTITY
Furnish and erect structural steel	LBS.	365
Epoxy grouted dowels	EACH	10
Column wrap	SQ. FT.	163.4

* Elevation not shown

BILL OF MATERIAL - PIER G5

ITEM	UNIT	QUANTITY
Concrete removal	CY	5.4
Furnish and erect structural steel	LBS.	3077
Epoxy grouted dowels	EACH	8
Foundation wall dowel modification	EACH	20
Column wrap	SQ. FT.	163.4

BILL OF MATERIAL - PIER G6 *

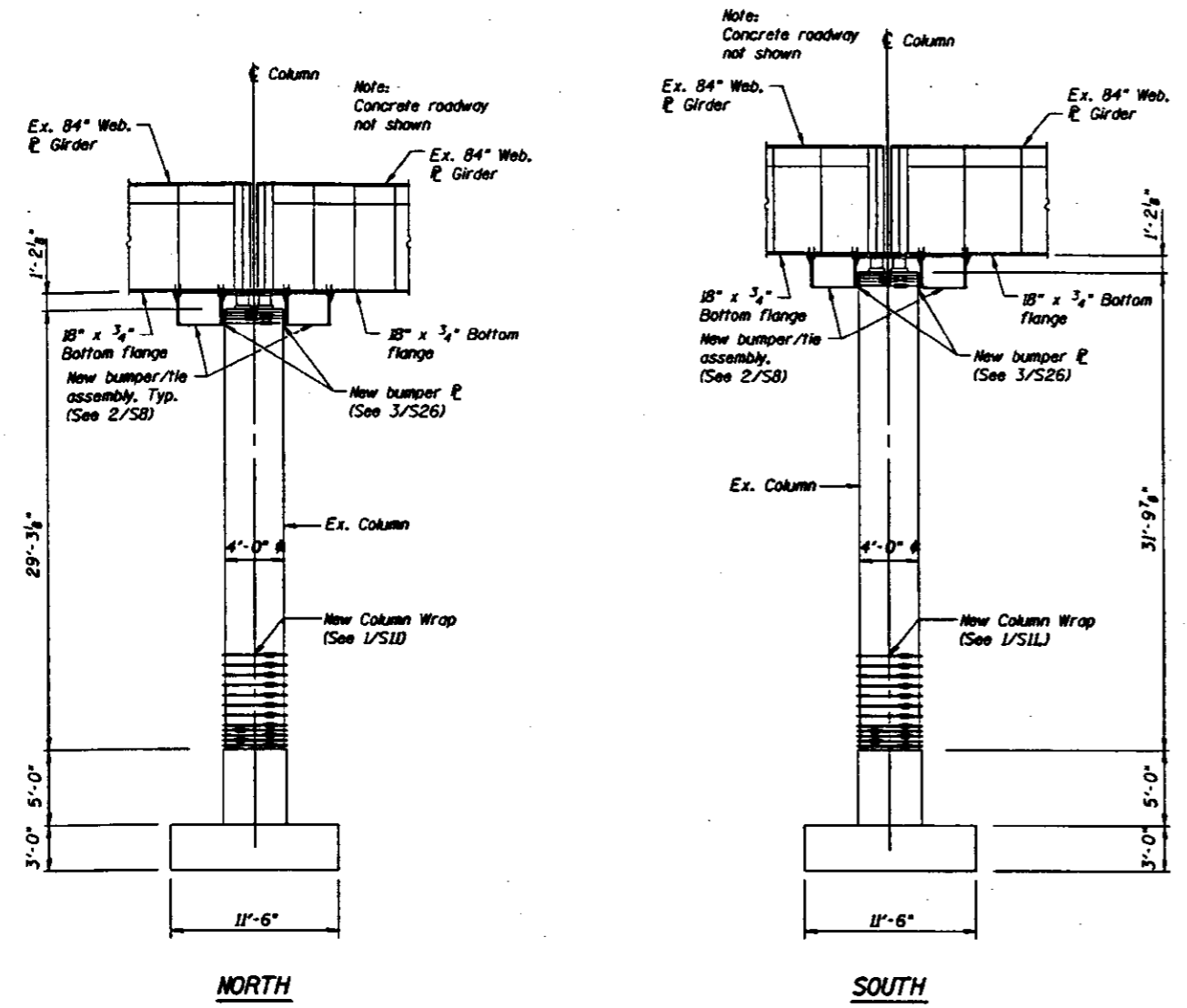
ITEM	UNIT	QUANTITY
Furnish and erect structural steel	LBS.	330
Epoxy grouted dowels	EACH	9

* Elevation not shown

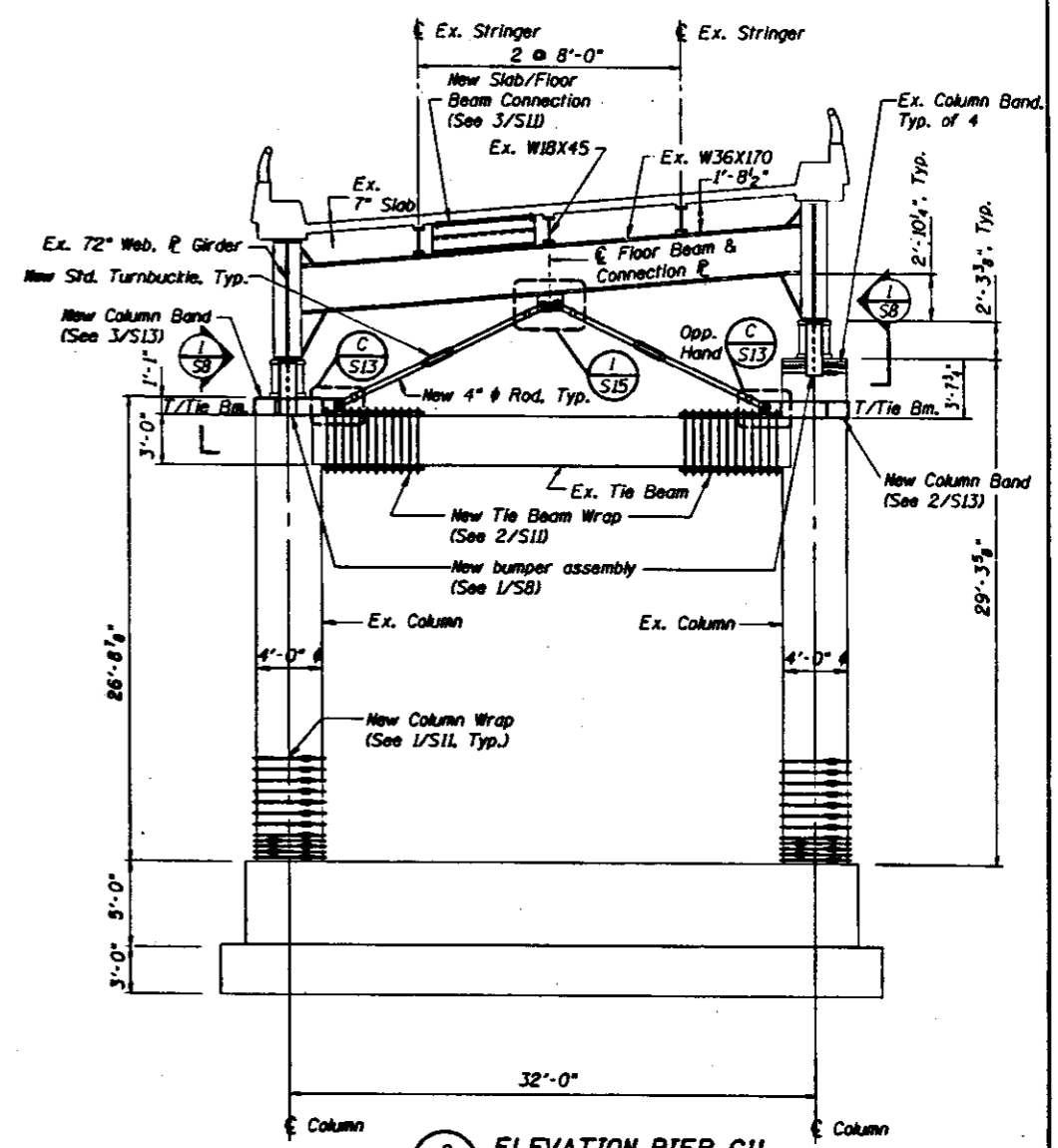
PIERS G2 & G5 RETROFITS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

STRUCTURE NO. 082-0141 (ROADWAY A) STRUCTURE NO. 082-0253 (RAMP R)
STRUCTURE NO. 082-0254 (ROADWAY G) STRUCTURE NO. 082-0204 (RAMP O)
SCALE: NONE DRAWN BY: JM
DATE: 1-23-98 CHECKED BY: NH



1 ELEVATIONS PIER G9
S42



2 ELEVATION PIER G11
S42

BILL OF MATERIAL - PIER G7 *

ITEM	UNIT	QUANTITY
Furnish and erect structural steel	LBS.	330
Epoxy grouted dowels	EACH	9

* Elevation not shown

BILL OF MATERIAL - PIER G8 *

ITEM	UNIT	QUANTITY
Furnish and erect structural steel	LBS.	2115
Epoxy grouted dowels	EACH	18
Foundation wall dowel modification	EACH	20
Column wrap	SQ. FT.	202.7

BILL OF MATERIAL - PIER G9

ITEM	UNIT	QUANTITY
Concrete removal	CY	3.9
Furnish and erect structural steel	EACH	3077
Epoxy grouted dowels	EACH	8
Foundation wall dowel modification	EACH	20
Column wrap	SQ. FT.	153.4
Formed concrete repair	SQ. FT.	10

BILL OF MATERIAL - PIER G10 *

ITEM	UNIT	QUANTITY
Furnish and erect structural steel	LBS.	1940
Epoxy grouted dowels	EACH	13
Foundation wall dowel modification	EACH	8
Column wrap	SQ. FT.	202.7

* Elevation not shown

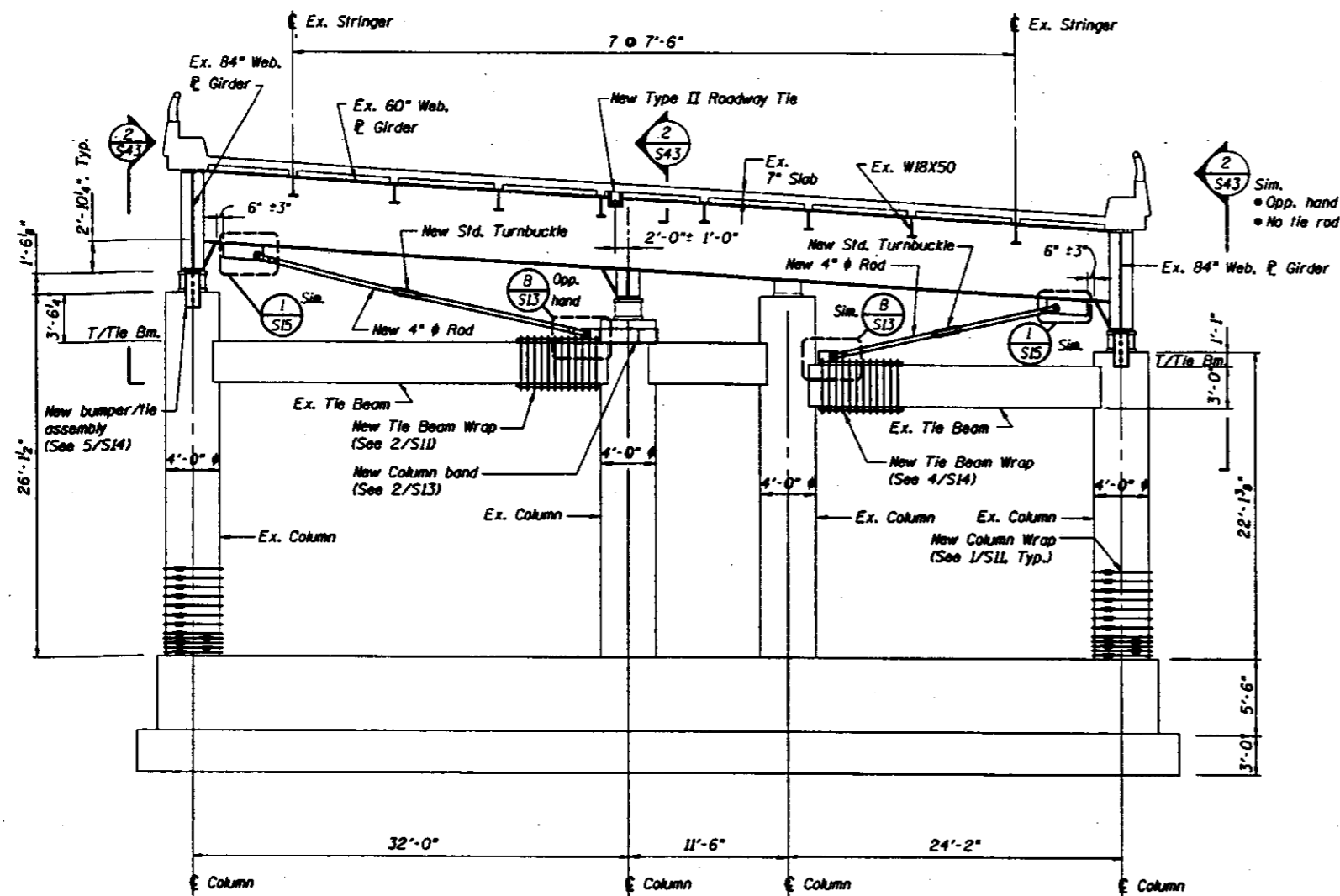
BILL OF MATERIAL - PIER G11

ITEM	UNIT	QUANTITY
Furnish and erect structural steel	LBS.	7767
Epoxy grouted dowels	EACH	18
Foundation wall dowel modification	EACH	12
Column wrap	SQ. FT.	153.4

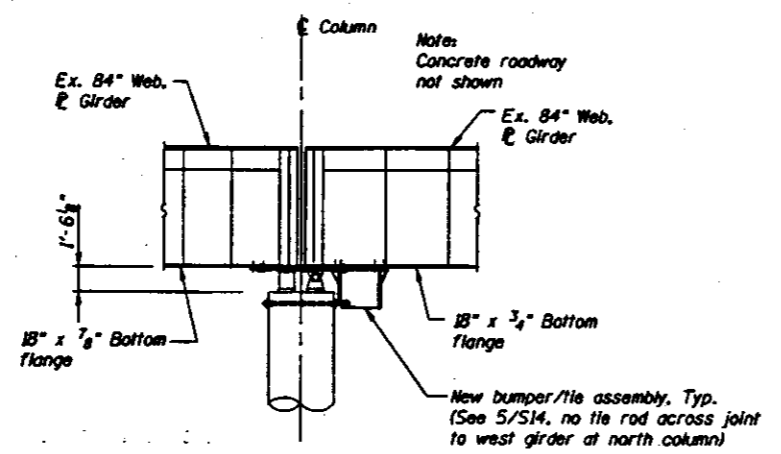
PIERS G9 & G11 RETROFITS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

STRUCTURE NO. 082-041 ROADWAY A STRUCTURE NO. 082-0253 RAMP ID
STRUCTURE NO. 082-0254 BROADWAY ID STRUCTURE NO. 082-0201 RAMP ID
SCALE: NONE DRAWN BY JN
DATE: 1-23-98 CHECKED BY HH



1 ELEVATION PIER G12
S43



2 ELEVATION EXISTING ROADWAY GIRDERS AT PIER G12
S43

BILL OF MATERIAL - PIER G12

ITEM	UNIT	QUANTITY
Furnish and erect structural steel	LBS.	7859
Epoxy grouted dowels	EACH	20
Column wrap	SO. FT.	163.4

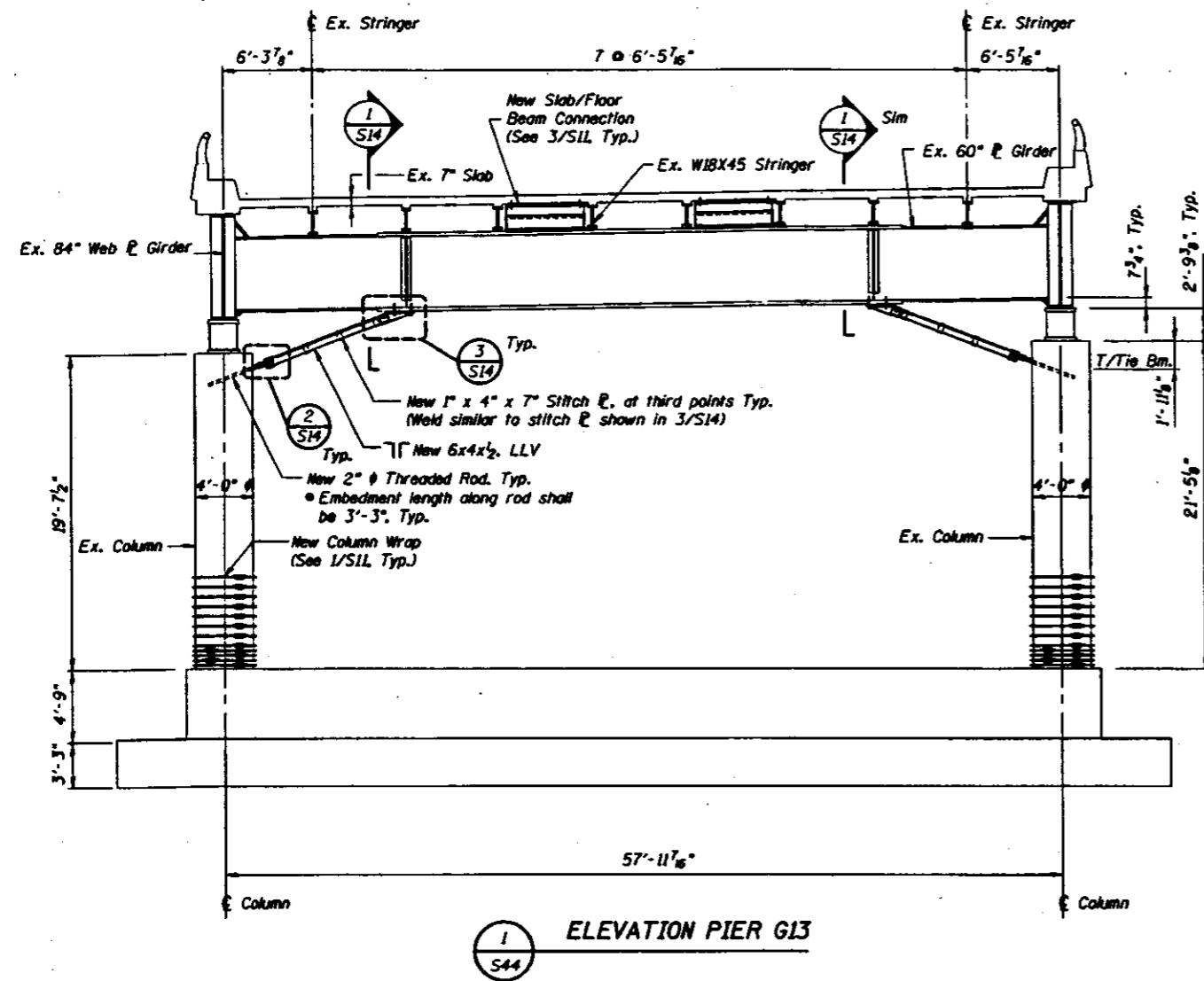
PIER G12 RETROFITS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

STRUCTURE NO. 082-0141 ROADWAY A1 STRUCTURE NO. 082-0253 GRAMP RD
STRUCTURE NO. 082-0254 ROADWAY G2 STRUCTURE NO. 082-0208 GRAMP C3
SCALE: NONE DRAWN BY: JN
DATE: 1-23-98 CHECKED BY: HH

PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. S-44
F.A.L. 78	8	ST. CLAIR	91	42	SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

82-3118-29-1-1



1
S44
ELEVATION PIER G13

BILL OF MATERIAL - PIER G13		
ITEM	UNIT	QUANTITY
Furnish and erect structural steel	LBS.	1920
Epoxy grouted dowels	EACH	16
Column wrap	SQ. FT.	163.4

PIER G13 RETROFITS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SEISMIC AND REDUNDANCY RETROFIT REPAIRS
FAI ROUTE 70
POPLAR STREET BRIDGE APPROACHES
ST. CLAIR COUNTY

STRUCTURE NO. 082-0141 BROADWAY A STRUCTURE NO. 082-0253 GRAMP RD
STRUCTURE NO. 082-0254 BROADWAY G STRUCTURE NO. 082-0208 GRAMP RD
SCALE: NONE DRAWN BY JN
DATE 1-23-98 CHECKED BY WH

SEE SHEET NO. 7 FOR INDEX OF SHEETS

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

S 82-3HVB-2R-1				
70	6	ST. CLAIR	320	1A
P-98-021-05				

THE STRUCTURES REHABILITATED IN THIS PROJECT WERE BUILT AS SECTIONS:

- 82-4HB
- 82-4HB-1
- 82-3HYFAE-1
- 82-4HVB

PLANS FOR PROPOSED FEDERAL AID HIGHWAY

SCALE IN FEET

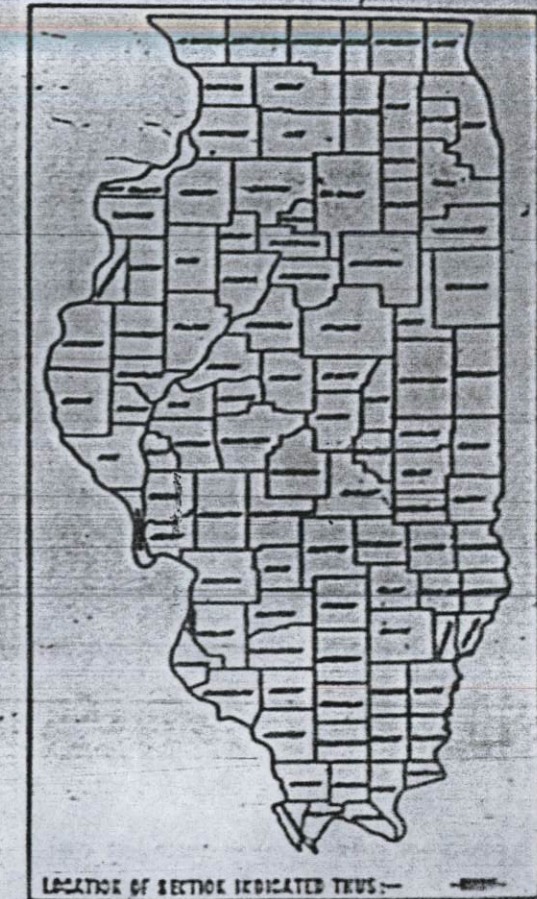
PLAN 1 INCH 80 FT.
 PROFILE HOR. 1 INCH 80 FT.
 VERT. 1 INCH 5 FT.
 CROSS-SECTIONS
 HOR. 1 INCH 10 FT.
 VERT. 1 INCH 5 FT.

F.A.I. ROUTE 70
 SECTION 82 - 3HVB - 2R - 1
 PROJECT IR - 70 - 1 (155) I
 ST. CLAIR COUNTY

C-98-106-86

Construction Changes Sheets:

- 2A (246A OF 320)
- 4A (248A OF 320)
- 5A (249A OF 320)
- 6A (250A OF 320)
- 8A (252A OF 320)
- 9A (253A OF 320)
- 10A (254A OF 320)
- 11A (255A OF 320)
- 46A (290A OF 320)



MICROFILMED _____
 REEL NUMBER _____
 AWARDED _____
 RESIDENT ENGINEER _____
 AS BUILT CHANGES WERE MADE
 ON THE FOLLOWING SHEETS

DESIGN DESIGNATION
 C-D'S 2 LANES: 1800(06) TRUNK 17.4(C-20)



PROJECT
 ENDS 118 + 5435 E.B. I-65/70
 EQUATION: 111 + 70.90 E.B. C-D BK.
 100 + 36.40 E.B. I-65/70 AND

PROJECT
 BEGINS 56+00.14 E.B. C-D

AS REVISED

082-0254

Reel 8-171

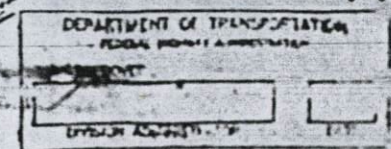
1000 0 1000 2000 3000
 SCALE IN FEET

NET LENGTH OF PROJECT - 6,865.89 FT. - 1.311 MILES

ANTHONY W. NEMETZ
 NO. 62-39027

CARLOS A. LIZANA-FARAS
 NO. 81-3934

PREPARED BY:
 EVEROLUP CORPORATION
 ST. LOUIS, MISSOURI



CONTRACT NO. 42345

ST. CLAIR COUNTY SECTION 82-3HVB-2R-1 F.A.I. ROUTE 70

Revised 1-25-89 M.H.B.
082-0254

INDEX OF SHEETS

1	TITLE SHEET
2-6	TYPICAL SECTIONS
7	INDEX OF SHEETS
8-10	SUMMARY OF QUANTITIES
11-12	SCHEDULE OF QUANTITIES
13	ALIGNMENT PLAN
14-17	REFERENCE TIES
18-22	PLAN SHEETS
23-25	PROFILE SHEETS
26-28	DRAINAGE PLANS
29	SEWER PROFILES
30-32	TEMPORARY CONNECTION
33-35	SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL
35A-35H	TRAFFIC CONTROL AND PROTECTION HOV LANE
36	PAVEMENT MARKING DETAILS
37	RAMP H EXIT & MISC. DETAILS
38-41	SEEDING DETAILS
42-97	BRIDGE - ROADWAYS A, G AND D - DECK REHABILITATION
98-137	BRIDGE - RAMP R RECONSTRUCTION
138-168	BRIDGE - RAMPS Q AND P RECONSTRUCTION
169-176	BRIDGE - ROADWAY H - DECK REHABILITATION
177-198	BRIDGE - ROADWAY H OVER TRENDLEY AVENUE
199-224	BRIDGE - RAMP G OVER 4TH STREET
225-244	BRIDGE - ROADWAY C OVER 4TH STREET
245-291	BRIDGES - ROADWAY B & C OVER BROADWAY AND MAIN STREET
292	MAINTENANCE AND CONSTRUCTION SIGN SUPPORT BRACKETS
293-304	SIGNING PLANS
305-320	CROSS SECTIONS
	STANDARDS
	1527-9 2230-15 2308-4 2343-6
	1683-4 2237-10 2314-5 2353-7
	2113-2 2240-5 2323-9 2362-3
	2130-9 2250-1 2324-6 2364-1
	2135 2258-3 2326-3 2381
	2143-3 2262-4 2327-10
	2168-11 2263-3 2336-4 2397-1
	2203-14 2298-7 2337-2 2419
	2213-4 2299-10 2340-4
	2215-3 2300-3 2341-1
	2217-3 2307-6 2342-5
	2228-4

GENERAL NOTES

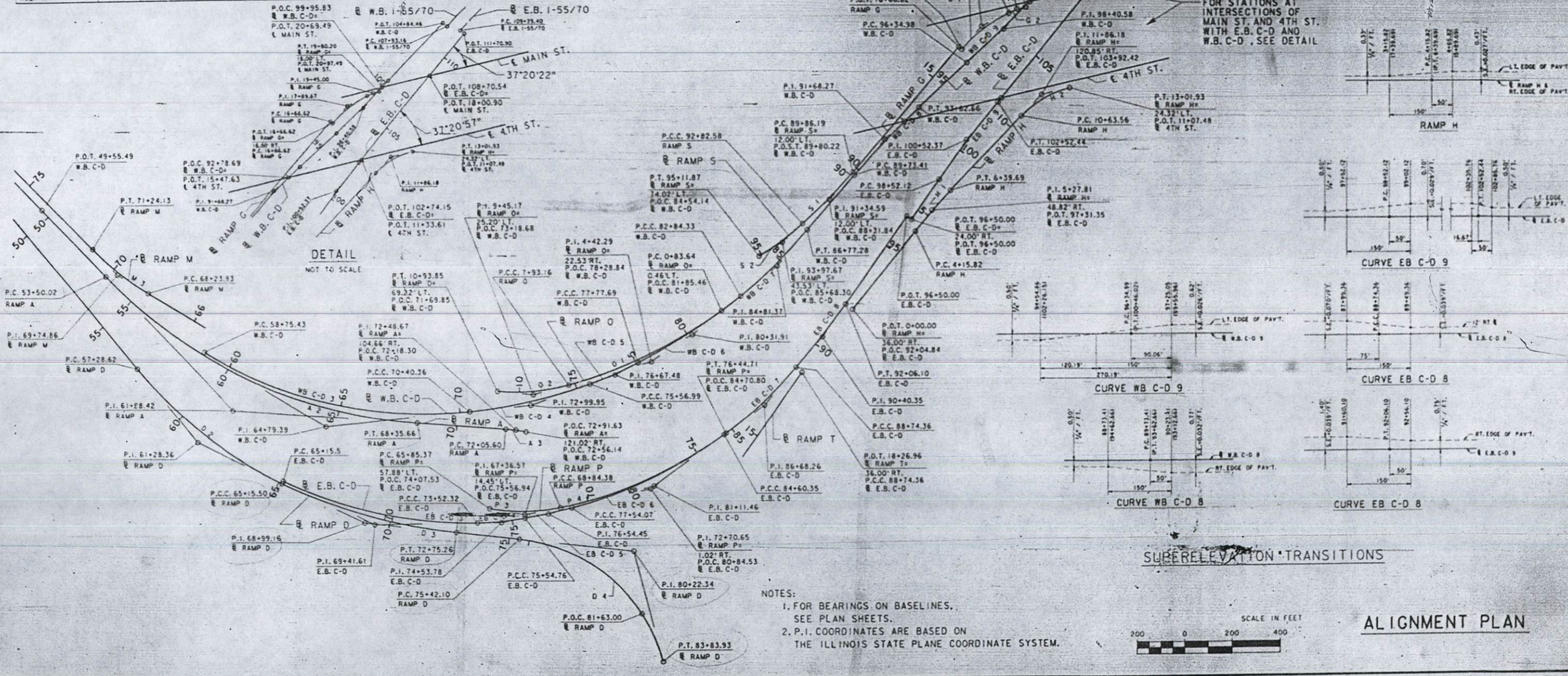
- ALL ELEVATIONS ARE BASED ON U.S. G.S. DATUM.
- THE STANDARDS WITH THE REVISION NUMBERS LISTED IN THE INDEX OF SHEETS SHALL APPLY TO THIS PROJECT.
- ANY PARTIAL REMOVAL OF CONCRETE PAVEMENT OR ASPHALTIC CONCRETE PAVEMENT SHALL REQUIRE A SAW CUT.
- SEED ALL DISTURBED AREAS THAT ARE NOT PAVED.
- ALL TREES, BRUSH, AND SHRUBS WITHIN THE CONSTRUCTION LIMITS WILL BE REMOVED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS" AND SPECIAL PROVISIONS. ALL TREES BETWEEN THE CONSTRUCTION LIMITS AND THE EXISTING RIGHT-OF-WAY WILL BE PRESERVED UNLESS DESIGNATED TO BE REMOVED BY THE ENGINEER.
- WHERE SECTION OR SUBSECTION MARKERS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED AGENT, OR LAND SURVEYOR HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION. THE CONTRACTOR WILL BE RESPONSIBLE FOR HAVING AN AUTHORIZED SURVEYOR RE-ESTABLISH ANY SECTION OR SUB-SECTION MONUMENTS DESTROYED BY HIS OPERATIONS.
- LENGTHS OF STORM SEWERS ARE MEASURED FROM CENTERLINE TO CENTERLINE OF STRUCTURES.
- EXCEPT WHERE DESIGNATED OTHERWISE, THE LOCATIONS AND/OR DEPTHS OF UNDERGROUND UTILITIES SHOWN HAVE BEEN TAKEN FROM OFFICE RECORD INFORMATION FURNISHED BY THE UTILITY OWNERS AND MUST BE CONSIDERED APPROXIMATE. FIELD MARKINGS OF FACILITIES IN CRITICAL AREAS MAY BE OBTAINED BY PROVIDING A MINIMUM OF 96 HOURS ADVANCE NOTICE TO THE RESIDENT ENGINEER SO THAT UTILITIES CAN BE GIVEN NOTICE. AGENCIES KNOWN TO HAVE UNDERGROUND FACILITIES WITHIN THE LIMITS OF THIS IMPROVEMENT ARE THE FOLLOWING (MEMBERS OF "JULIE", PHONE (800)892-0123, ARE INDICATED BY *):
 - * UNION ELECTRIC
 - * ILLINOIS AMERICAN WATER CO.
 - * LACLEDE GAS CO.
 - * EXPLORER PIPELINE CO.
 - * ILLINOIS BELL
- IT HAS BEEN ESTIMATED THAT 100 SQ. YDS. OF PAVEMENT REMOVAL AND CONTINUOUSLY REINFORCED PORTLAND CEMENT CONCRETE REPLACEMENT, TYPE III IS REQUIRED FOR THE PROJECT AT LOCATIONS DETERMINED BY THE ENGINEER.
- THE ANCHOR BOLT CAPSULES ARE NOT SUPPLIED BY THE FABRICATION CONTRACT. THE NUMBER AND SIZE OF CAPSULE REQUIRED MUST BE DETERMINED BY THE CONTRACTOR TO MATCH THE ANCHOR BOLT SIZE. IF THE FABRICATION CONTRACTOR ELECTS TO USE THE STATE EXPANSION BOLT, THE CAPSULES WILL NOT BE REQUIRED.
- ANY INLETS AND PIPES TO BE REMOVED SHOWN IN THE PLANS AND NOT ITEMIZED AS PAY ITEMS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
- IF PARAPET RECONSTRUCTION ALTERNATE 1 IS SELECTED BY THE CONTRACTOR, HE WILL BE ALLOWED TO USE A 90 LB. HAMMER TO REMOVE THE PORTION OF THE PARAPET AS SHOWN FOR ALTERNATIVES 2 AND 3.
- THE CONTRACTOR SHALL SCHEDULE HIS BITUMINOUS OPERATIONS TO INSURE THAT THE PROJECT SCHEDULE IS MET AND THE BITUMINOUS IS PLACED AS SPECIFIED IN THE STANDARD SPECIFICATIONS.

THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES:

BITUMINOUS CONCRETE	112 LBS. / INCH / SQ. YD.
BITUMINOUS MATERIALS PRIME COAT	0.0003129 TONS / SQ. YD.
GRANULAR MATERIALS	2.05 TONS / CU. YD.
NITROGEN FERTILIZER NUTRIENT	120 LBS. / ACRE
PHOSPHORUS FERTILIZER NUTRIENT	72 LBS. / ACRE
POTASSIUM FERTILIZER NUTRIENT	48 LBS. / ACRE
MULCH	2 TONS / ACRE
EMULSIFIED ASPHALT	0.35 TON / TON OF MULCH

LOCATION	CURVE NO.	CURVE DATA										P.I. COORDINATES	
		P.I. STATION	Δ	D	T	R	L	E	S.E.	NORTH	EAST		
W.B. 1-55/70	WB ML 2	112+6.69	30°31'52" RT	3'41'32"	473.53	55.83	826.92	56.76	EXISTING	713603.33	500696.92		
E.B. 1-55/70	EB ML 2	118+84.59	29°00'37" RT	4'10'01"	945.19	275.00	1656.3	293.54	EXISTING	714131.90	500867.98		
WESTBOUND C-D	WB C-D 3	64+79.39	37°18'33" LT	3'12'20"	603.96	179.00	1164.93	99.20	+0.080'/FT.	709735.09	498804.50		
WESTBOUND C-D	WB C-D 4	72+99.99	35°53'57" LT	2'41'25"	259.59	2129.67	516.63	15.76	+0.080'/FT.	710240.91	499504.39		
WESTBOUND C-D	WB C-D 5	76+67.48	31°12'12" LT	3'13'34"	110.49	176.00	220.70	3.43	EXISTING	710523.39	499743.49		
WESTBOUND C-D	WB C-D 6	80+31.91	27°19'09" LT	2'19'58"	254.22	2456.01	506.64	13.12	EXISTING	710828.83	499942.79		
WESTBOUND C-D	WB C-D 7	84+81.37	23°37'30" LT	2'42'14"	197.04	2118.99	392.95	9.14	EXISTING	711249.25	500106.75		
WESTBOUND C-D	WB C-D 8	91+68.27	6°51'03" RT	1'45'36"	194.86	3255.50	389.25	5.83	0.032'/FT.	711925.36	500234.26		
WESTBOUND C-D	WB C-D 9	98+40.58	3°50'17" LT	0'56'00"	205.59	6138.83	411.04	3.44	0.026'/FT.	712566.89	500436.92		
EASTBOUND C-D	EB C-D 3	69+41.62	28°38'13" LT	3'10'59"	426.11	800.00	836.82	69.75	EXISTING	709481.83	499188.41		
EASTBOUND C-D	EB C-D 4	74+53.78	27°59'57" LT	4'45'00"	101.46	1206.23	202.44	4.26	+0.080'/FT.	709753.03	499640.94		
EASTBOUND C-D	EB C-D 5	76+54.45	27°59'43" LT	3'20'16"	95.69	2858.27	195.31	1.74	+0.080'/FT.	709883.80	499783.78		
EASTBOUND C-D	EB C-D 6	81+71.46	27°37'50" LT	3'03'45"	357.39	1670.81	706.28	33.83	EXISTING	710204.44	500118.54		
EASTBOUND C-D	EB C-D 7	86+68.26	37°17'45" LT	3'10'16"	207.92	1806.76	414.01	11.92	EXISTING	710721.59	500347.88		
EASTBOUND C-D	EB C-D 8	90+40.35	5°25'25" RT	1'38'08"	165.99	3504.62	331.74	3.93	0.039'/FT.	711089.00	500417.27		
EASTBOUND C-D	EB C-D 9	100+52.37	4°16'40" RT	1'04'07"	200.25	5361.81	400.32	3.74	0.029'/FT.	712094.78	500534.17		
RAMP P	P 3	67+36.57	20°59'42" LT	7'01'18"	151.20	816.00	299.01	13.89	EXISTING	709831.38	499710.28		
RAMP P	P 4	72+70.65	24°55'00" LT	3'16'38"	386.27	148.39	760.33	42.18	EXISTING	710187.10	500131.19		
RAMP M	M 3	69+74.86	14°42'33" RT	4'53'19"	50.93	1172.00	300.20	9.68	EXISTING	709846.21	497737.94		
RAMP D	D 2	61+28.36	24°52'53" RT	3'09'43"	396.74	812.00	786.88	43.57	EXISTING	709408.20	498365.56		
RAMP D	D 3	68+95.16	8°17'11" RT	2'35'28"	283.66	2211.24	769.76	33.04	EXISTING	709466.36	499146.80		
RAMP D	D 4	80+22.34	68°54'17" RT	8'11'06"	480.24	700.00	841.83	148.90	EXISTING	709925.27	500180.23		
RAMP A	A 2	61+28.42	42°14'36" LT	2'50'37"	778.40	701.00	1485.64	145.12	EXISTING	709539.51	498429.90		
RAMP A	A 3	72+48.67	7°02'31" RT	8'11'06"	43.07	100.00	86.03	1.32	EXISTING	710191.57	499501.87		
RAMP C	C 1	4+42.29	20°38'35" RT	2'54'34"	358.65	168.33	709.52	32.39	EXISTING	710647.15	499850.49		
RAMP C	C 2	9+45.17	20°41'52" RT	6'53'41"	157.00	831.00	300.40	13.79	EXISTING	710284.44	499491.00		
RAMP S	S 1	51+54.59	7°28'26" RT	2'31'18"	148.40	2272.14	296.39	4.84	EXISTING	711596.99	500160.12		
RAMP S	S 2	93+97.67	2°02'13" RT	5'23'42"	115.09	1042.00	229.29	6.27	EXISTING	711346.51	500078.02		
RAMP C	C 1	1+25.67	22°48'26" RT	9'23'34"	123.05	61.00	242.85	12.29	EXISTING	712529.42	500352.24		
RAMP C	C 2	19+45.00	32°33'52" RT	18'56'30"	35.53	302.49	70.73	2.08	EXISTING	712461.67	500438.76		
RAMP H	H 1	5+27.81	4°28'38" RT	2'00'00"	111.99	2864.93	223.87	2.19	0.027'/FT.	711702.64	500553.29		
RAMP H	H 2	-66.8	32°28'59" RT	13'54'24"	122.63	412.00	238.37	7.86	EXISTING	712410.25	500709.78		

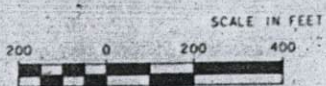
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DETAIL
NOT TO SCALE

SUPERELEVATION TRANSITIONS

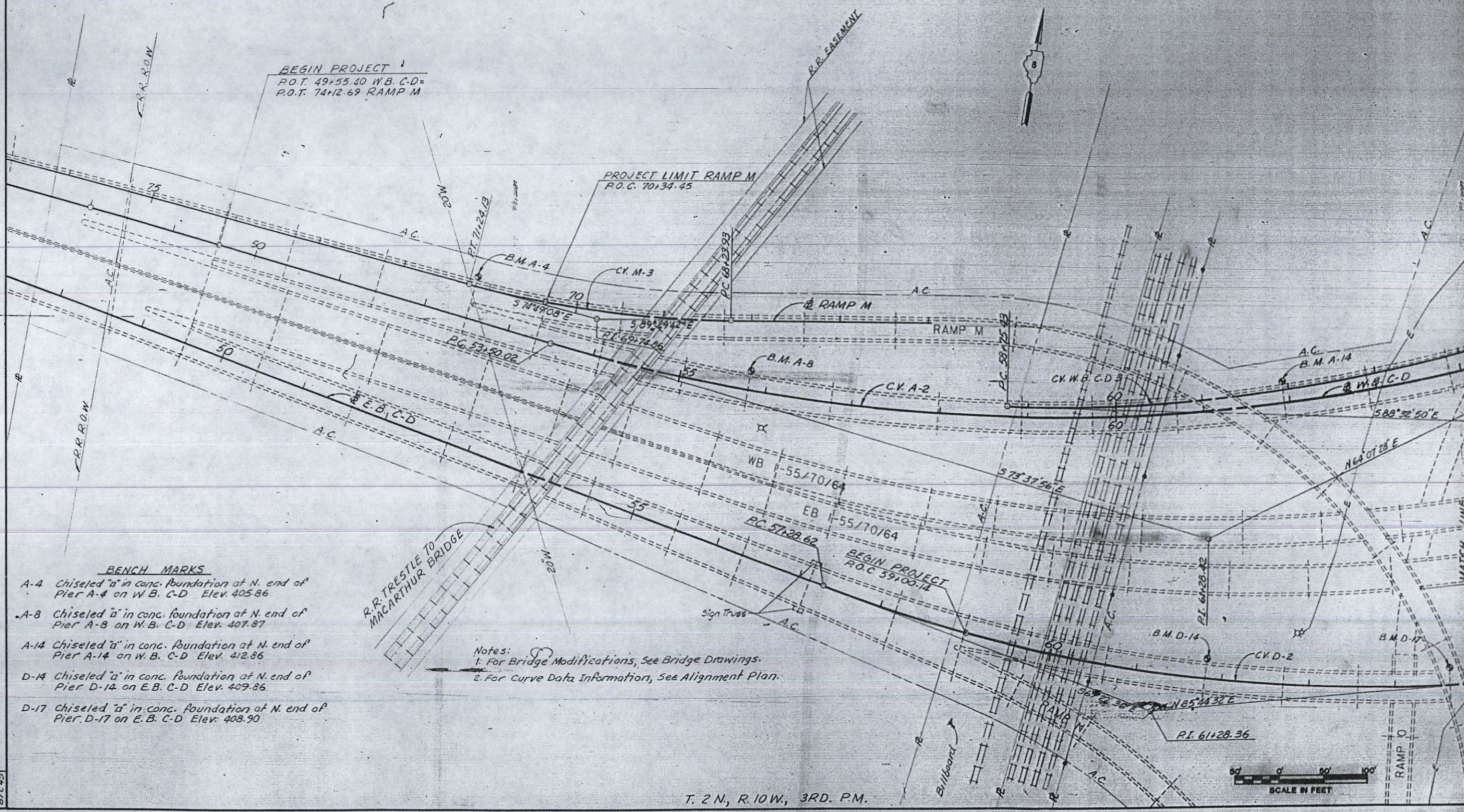
- NOTES:
1. FOR BEARINGS ON BASELINES, SEE PLAN SHEETS.
 2. P.I. COORDINATES ARE BASED ON THE ILLINOIS STATE PLANE COORDINATE SYSTEM.



ALIGNMENT PLAN

SECTION	REC.	COUNTY	DATE	PLAT
70	#	ST. CLAIR	320	18

R 62-3HVB-2R-1



BENCH MARKS

- A-4 Chiseled "a" in conc. foundation at N. end of Pier A-4 on W.B. C-D Elev. 405.86
- A-8 Chiseled "a" in conc. foundation at N. end of Pier A-8 on W.B. C-D Elev. 407.87
- A-14 Chiseled "a" in conc. foundation at N. end of Pier A-14 on W.B. C-D Elev. 412.86
- D-14 Chiseled "a" in conc. foundation at N. end of Pier D-14 on E.B. C-D Elev. 409.86
- D-17 Chiseled "a" in conc. foundation at N. end of Pier D-17 on E.B. C-D Elev. 408.90

Notes:
 1. For Bridge Modifications, See Bridge Drawings.
 2. For Curve Data Information, See Alignment Plan.

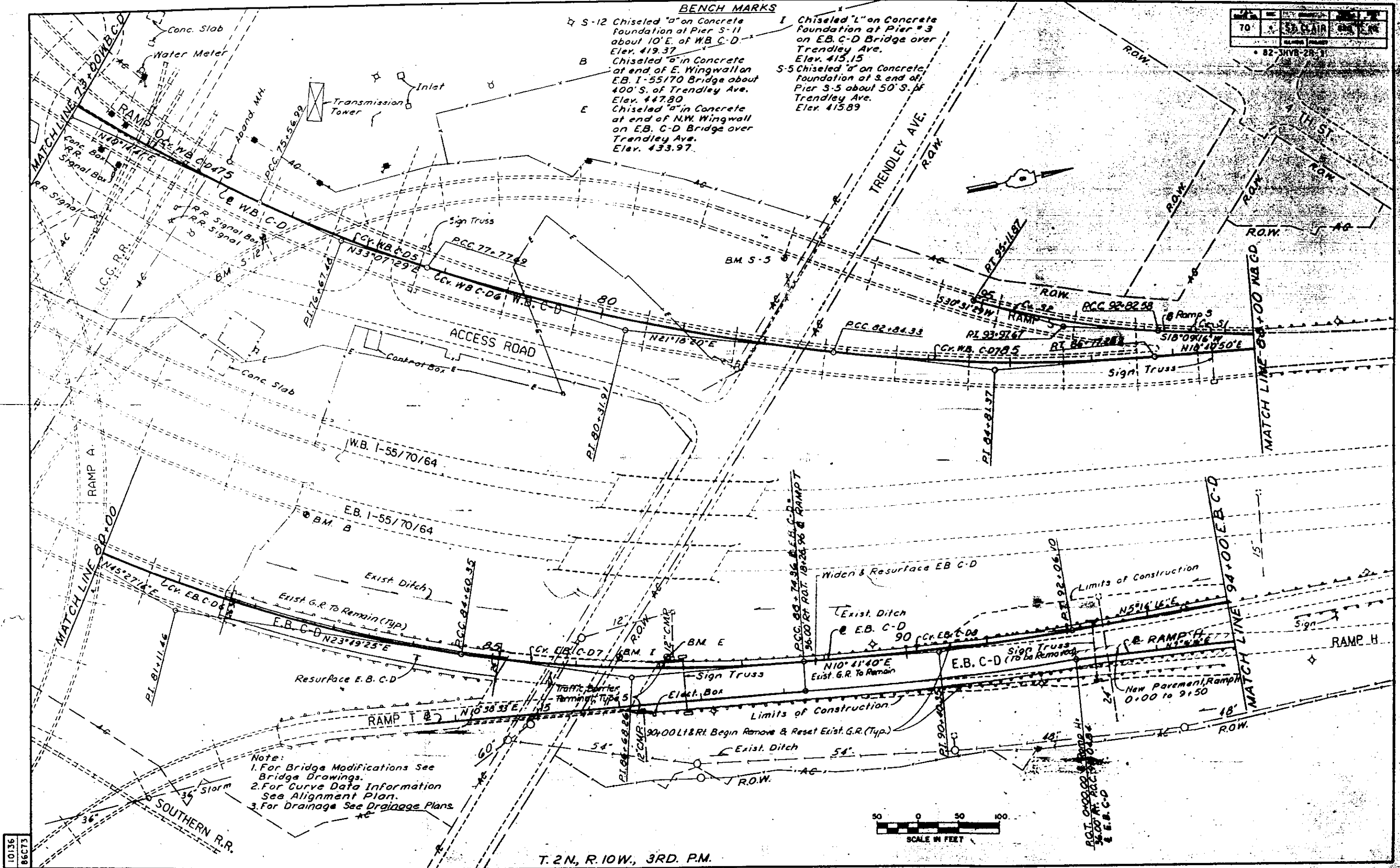
T. 2 N., R. 10 W., 3RD. P.M.



10370
87C45

BENCH MARKS

- S-12 Chiseled "a" on Concrete Foundation at Pier S-11 about 10' E. of WB C-D. Elev. 419.37
- B Chiseled "a" in Concrete at end of E. Wingwall on E.B. I-55/70 Bridge about 400' S. of Trendley Ave. Elev. 447.80
- E Chiseled "a" in Concrete at end of N.W. Wingwall on E.B. C-D Bridge over Trendley Ave. Elev. 433.97
- I Chiseled "L" on Concrete Foundation at Pier #3 on E.B. C-D Bridge over Trendley Ave. Elev. 415.15
- S-5 Chiseled "a" on Concrete Foundation at 2 end of Pier S-5 about 50' S. of Trendley Ave. Elev. 415.89



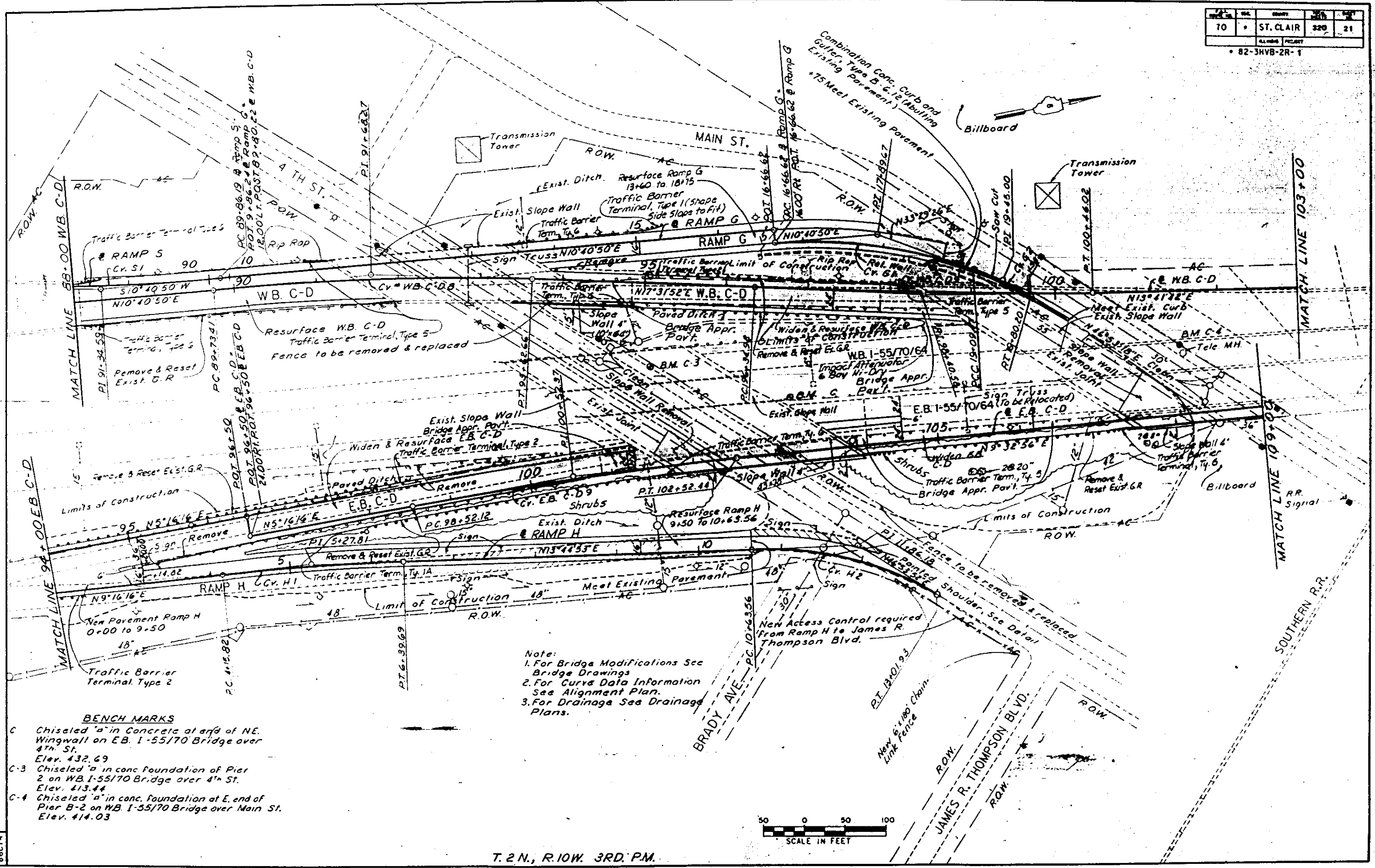
Note:
 1. For Bridge Modifications See Bridge Drawings.
 2. For Curve Data Information See Alignment Plan.
 3. For Drainage See Drainage Plans.



T. 2 N., R. 10 W., 3RD. P.M.

10136
 86C73

NO.	DATE	BY	CHKD	APP'D
70		ST. CLAIR	320	21
ALIGNED		PROJECT		
• 82-3HVB-2R-1				



Note:
 1. For Bridge Modifications See Bridge Drawings
 2. For Curve Data Information See Alignment Plan.
 3. For Drainage See Drainage Plans.

- BENCH MARKS**
- C Chiseled "a" in Concrete at end of NE Wingwall on EB. I-55/70 Bridge over 4th St. Elev. 432.69
 - C-3 Chiseled "a" in conc. foundation of Pier 2 on WB. I-55/70 Bridge over 4th St. Elev. 413.44
 - C-4 Chiseled "a" in conc. foundation at E. end of Pier B-2 on WB. I-55/70 Bridge over Main St. Elev. 414.03

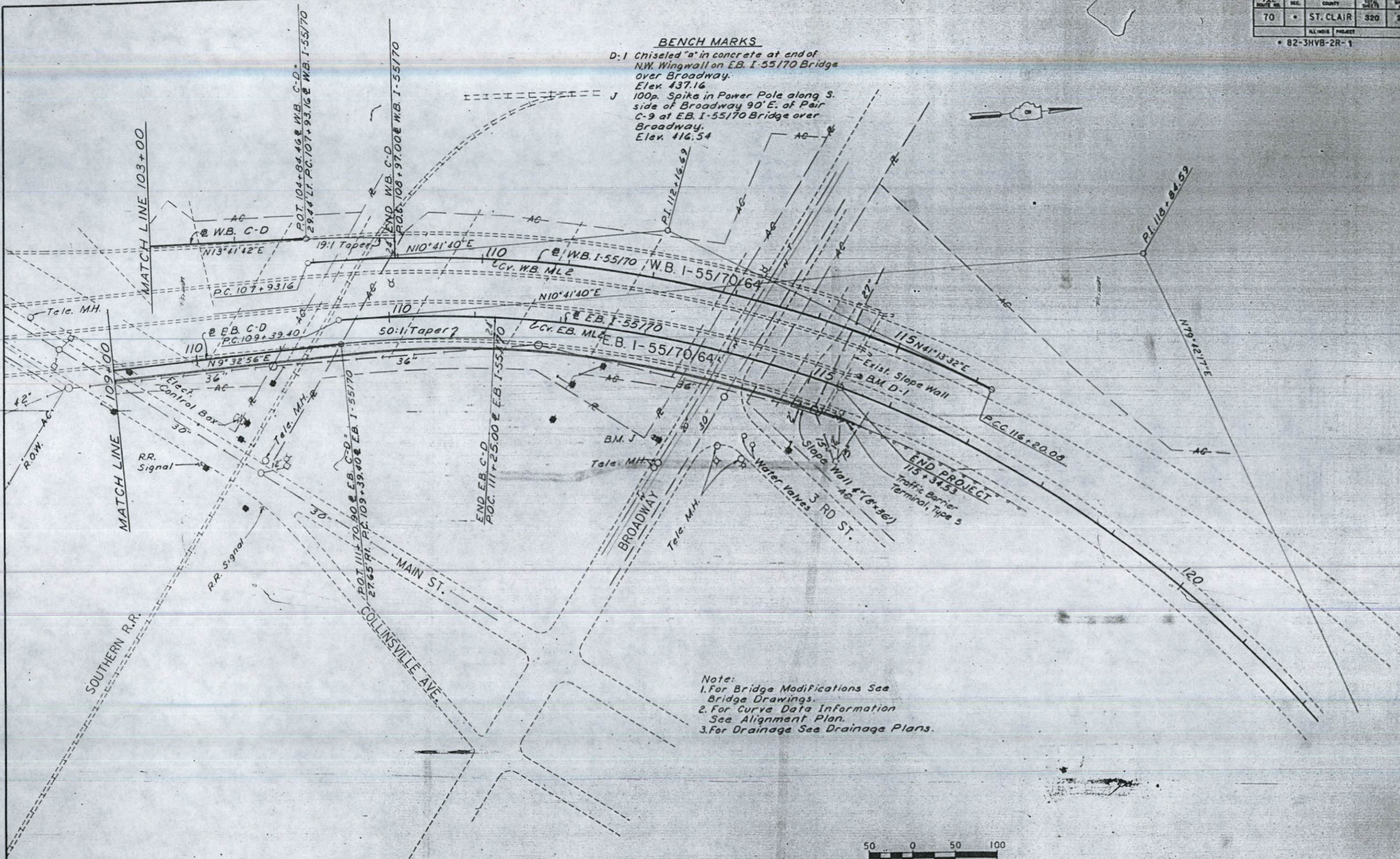


T. 2 N., R. 10 W. 3RD. PM.

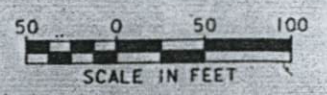
10136
86674

F.A.S. ROUTE NO.	SEC.	COUNTY	TOWNSHIP	RANGE	SHEET NO.
70	•	ST. CLAIR	320	22	
ILLINOIS PROJECT					
• 82-3HVB-2R-1					

BENCH MARKS
 D-1 Chiseled "a" in concrete at end of N.W. Wingwall on E.B. I-55/70 Bridge over Broadway.
 Elev. 437.16
 J 100p. Spike in Power Pole along S. side of Broadway 90' E. of Pair C-9 at E.B. I-55/70 Bridge over Broadway.
 Elev. 416.54

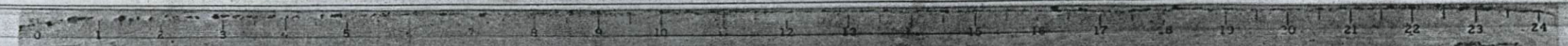


Note:
 1. For Bridge Modifications See Bridge Drawings.
 2. For Curve Data Information See Alignment Plan.
 3. For Drainage See Drainage Plans.



T. 2 N., R. 10 W., 3RD. P.M.

10136
86C75



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
INDEX OF DRAWINGS

DATE	SECTION	COUNTY	SHEET	TOTAL
F.A.I. TO		ST. CLAIR	320	42
		ILLINOIS	PROJECT	

82-3HV8-2R-1

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: THE 1988 EDITION OF THE STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," ADDENDA AND THE SPECIAL PROVISIONS SHALL GOVERN.

CALCULATED WEIGHT OF ERECTING STRUCTURAL STEEL:

68,915 LBS. (M183) FABRICATED UNDER SEPARATE CONTRACT.
(See Special Provisions for field painting requirements)

THE ZINC - SILICATE AND VINYL PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF NEW STRUCTURAL STEEL EXCEPT OTHERWISE NOTED.

REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M31, M42 OR M53, GRADE 60.

PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS, AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION BEFORE ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN SCOPE OF WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

DIMENSIONS ARE MEASURED AT A TEMPERATURE OF 50°F.

ALL TRANSVERSE AND LONGITUDINAL DIMENSIONS ARE MEASURED HORIZONTALLY.

IF SECTION MONUMENTS AND/OR PERMANENT BENCHMARKS ARE ENCOUNTERED WITHIN THE PAVEMENT OR PARAPET AREAS BEING REHABILITATED, THE CONTRACTOR SHALL ADJUST SAME AS DIRECTED BY THE ENGINEER. PAYMENT TO BE MADE IN ACCORDANCE WITH ARTICLE 109.04 OF THE "STANDARD SPECIFICATIONS".

THE ROADWAY EXPANSION PLATES SHALL BE FLAME CUT AS PROVIDED IN ARTICLE 507.04 (1) OF THE STANDARD SPECIFICATIONS.

* INDICATES HIGH STRENGTH BOLT, SHOP OR FIELD INSTALLED UNLESS OTHERWISE NOTED.

PROTECTIVE COAT SHALL NOT BE APPLIED TO SURFACES WHERE BRIDGE DECK CONCRETE OVERLAY IS APPLIED.

FOR MAINTENANCE AND CONSTRUCTION SIGN SUPPORT DETAILS AND LOCATION SEE SHEET 292 OF 320.

FOR TEMPORARY CONCRETE BARRIER PAY ITEM SEE ROADWAY PLANS.

GENERAL NOTES, ESTIMATED QUANTITIES AND INDEX OF DRAWINGS

- ROADWAY A
- 2 GENERAL PLAN AND ELEVATION-SPANS A1 THRU A7
 - 3 GENERAL PLAN AND ELEVATION-SPANS A8 THRU A14
 - 4 GENERAL PLAN AND ELEVATION-SPANS A15 THRU A17
 - 5 GENERAL PLAN AND ELEVATION-SPANS A18 THRU A24
 - 6 CROSS SECTIONS
 - 7 PARAPETS - SPANS A1 THRU A4
 - 8 PARAPETS - SPANS A5 THRU A7
 - 9 PARAPETS - SPANS A8 THRU A11
 - 10 PARAPETS - SPANS A12 THRU A14
 - 11 PARAPETS - SPANS A15 THRU A17
 - 12 PARAPETS - SPANS A18 THRU A20
 - 13 PARAPETS - SPANS A21 THRU A24
 - 14 PARAPET RECONSTRUCTION ALTERNATE 1
 - 15 PARAPET TRANSITION - SPAN 1
 - 16 EAST PARAPET TRANSITION AT PIER A1 AND RETURN WALL AT PIER A5
 - 17 RETURN WALL NEAR PIER A21
 - 18 MISCELLANEOUS DETAILS
 - 19 PARAPET AND SLAB MODIFICATIONS - SPAN A20
 - 20 FINGER PLATE DETAILS AT PIER A25
 - 21 PARAPET - SLIDING PLATE DETAILS
 - 22 SCUPPER DETAILS

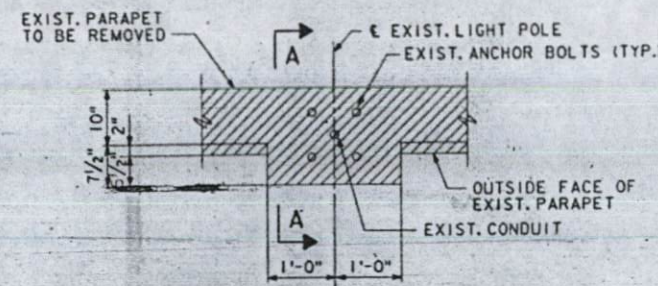
- ROADWAY G
- 23 GENERAL PLAN AND ELEVATION - SPANS G1 THRU G4
 - 24 GENERAL PLAN AND ELEVATION - SPANS G5 THRU G13
 - 25 PARAPETS - SPANS G1 THRU G4
 - 26 PARAPETS - SPANS G5 THRU G8
 - 27 PARAPETS - SPANS G9 THRU G13
 - 28 PARAPET RECONSTRUCTION ALTERNATE 1
 - 29 WEST PARAPET TRANSITION - SPAN G1
 - 30 RETURN WALL AT PIER G12
 - 31 FINGER PLATE DETAILS AT PIER G5
 - 32 EXPANSION JOINT DETAILS
 - 33 SCUPPER DETAILS

- ROADWAY D
- 34 GENERAL PLAN AND ELEVATION - SPANS D11 THRU D17
 - 35 GENERAL PLAN AND ELEVATION - SPANS D18 THRU D21
 - 36 GENERAL PLAN AND ELEVATION - SPANS D22 THRU D25
 - 37 GENERAL PLAN AND ELEVATION - SPANS D26 THRU D32
 - 38 PARAPETS - SPANS D11 THRU D14
 - 39 PARAPETS - SPANS D15 THRU D17
 - 40 PARAPETS - SPANS D18 THRU D21
 - 41 PARAPETS - SPANS D22 THRU D25
 - 42 PARAPETS - SPANS D26 THRU D29
 - 43 PARAPETS - SPANS D30 THRU D32
 - 44 PARAPET RECONSTRUCTION ALTERNATE 1
 - 45 SLAB REPAIR DETAILS
 - 46 DECK MODIFICATIONS AT PIER D11
 - 47 RETURN WALL NEAR PIER D26
 - 48 FINGER PLATE DETAILS AT PIER D15
 - 49 FINGER PLATE DETAILS AT PIERS D22, D28 & D33
 - 50 FINGER PLATE DETAILS AT PIERS D22, D28 & D33.
 - 51 EXPANSION JOINT DETAILS
 - 52 EXPANSION JOINT DETAILS AND PARAPET TRANSITION
 - 53 SCUPPER DETAILS

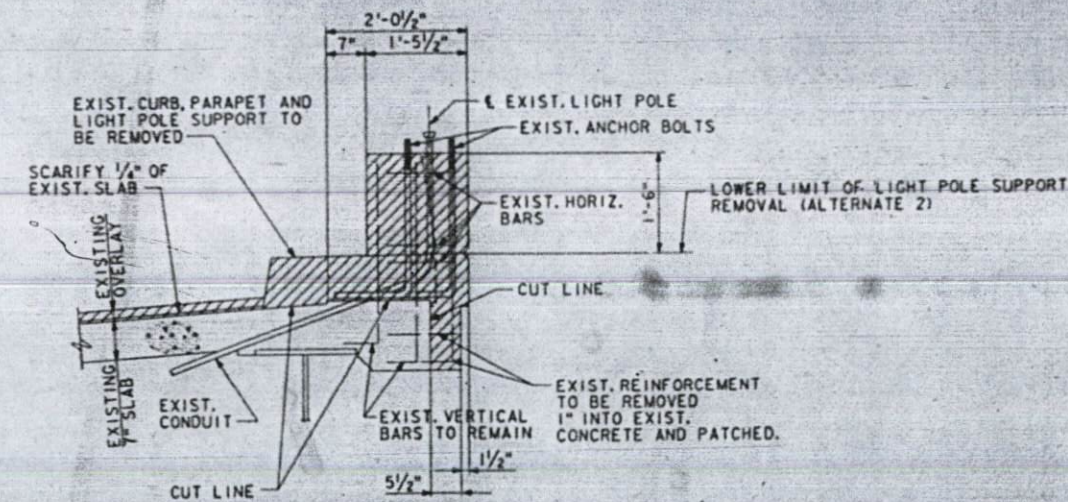
- ROADWAYS A, G & D
- 54 PARAPET RECONSTRUCTION - ALTERNATES 2 AND 3
 - 55 NEOPRENE EXPANSION JOINTS - 2", 2 1/2" AND 4"
 - 56 CAST-IRON DRAINAGE SCUPPER

TOTAL BILL OF MATERIAL					
ITEM	UNIT	ROADWAY A	ROADWAY G	ROADWAY D	TOTAL
		SUPERSTR.	SUPERSTR.	SUPERSTR.	
CLASS X CONCRETE, SUPERSTRUCTURE	CU. YDS.	92.2	74.7	138.2	
REINFORCEMENT BARS (EPOXY COATED)	LBS.	12,372	6070	11,040	
NEOPRENE EXPANSION JOINT (2")	LIN. FT.	131	32	107	
NEOPRENE EXPANSION JOINT (4")	LIN. FT.	125	37	72	
NEOPRENE EXPANSION JOINT (2 1/2")	LIN. FT.	68	91	40	
BRIDGE DECK CONCRETE OVERLAY OPTION	SQ. YDS.	10,453	5,142	9,054	
CONCRETE REMOVAL	CU. YDS.	149.2	127.7	134.6	
PARAPET RECONSTRUCTION	LIN. FT.	4,611	2,336	4,465	
FURNISHING AND ERECTING STRUCTURAL STEEL	Lbs.	5430	2704	4056	
ERECTING STRUCTURAL STEEL	LUMP SUM	1	1	1	
FLOOR DRAINS	EACH	8		2	
DRAINAGE SCUPPERS	EACH	39	12	33	
PROTECTIVE COAT	SQ. YDS.	1,945	1,049	2,048	
INSTALLING REINFORCED NEOPRENE EXPANSION JOINT TREATMENT	LIN. FT.	37	41	146	
BITUMINOUS CONCRETE SURFACE REMOVAL (BRIDGE DECK)	SQ. YDS.	9,632	4,839	8,597	
DECK SLAB REPAIR (FULL DEPTH)	SQ. YDS.	362	353	483	
DECK SLAB REPAIR (PARTIAL)	SQ. YDS.	2,014	353	1,750	
CONCRETE BRIDGE DECK SCARIFICATION (1/4 INCH)	SQ. YDS.	9,532	4,750	8,380	
FLOOR DRAIN REMOVAL	EACH	293	149	248	

* Quantity does not include bridge deck surface.



PLAN-EXISTING PARAPET AT LIGHT POLE



SECTION A-A

NOTE: DEMOLITION SHOWN FOR PARAPET RECONSTRUCTION ALTERNATE 1.
FOR ALTERNATE 2 REMOVE THE LIGHT POLE SUPPORT TO THE LIMITS SHOWN.
FOR ALTERNATE 3 THE LIGHT POLES SHALL BE REMOVED. LIGHT POLE SUPPORT TO REMAIN.
THE PORTION OF THE LIGHT POLE SUPPORTS TO REMAIN SHALL HAVE THE ROADWAY FACE REMOVED TO MATCH THE ADJACENT PARAPET REMOVAL AS SHOWN ON THE PARAPET RECONSTRUCTION DETAIL FOR ALTERNATES 2 AND 3.

REHABILITATION FOR
FAI - 55/70 COMPLEX
ROADWAYS A,G AND D-DECK REHABILITATION
GENERAL NOTES, ESTIMATED QUANTITIES
AND INDEX OF DRAWINGS
STRUCTURE NO. 082-0141 (ROADWAY A)
STRUCTURE NO. 082-0254 (ROADWAY G)
STRUCTURE NO. 082-0144 (ROADWAY D)
FAI-701 ST. CLAIR CO.

PREPARED BY:
SYERDRUP CORPORATION
ST. LOUIS, MISSOURI

REV. 8/26/88

SHEET NO. 1 OF 56

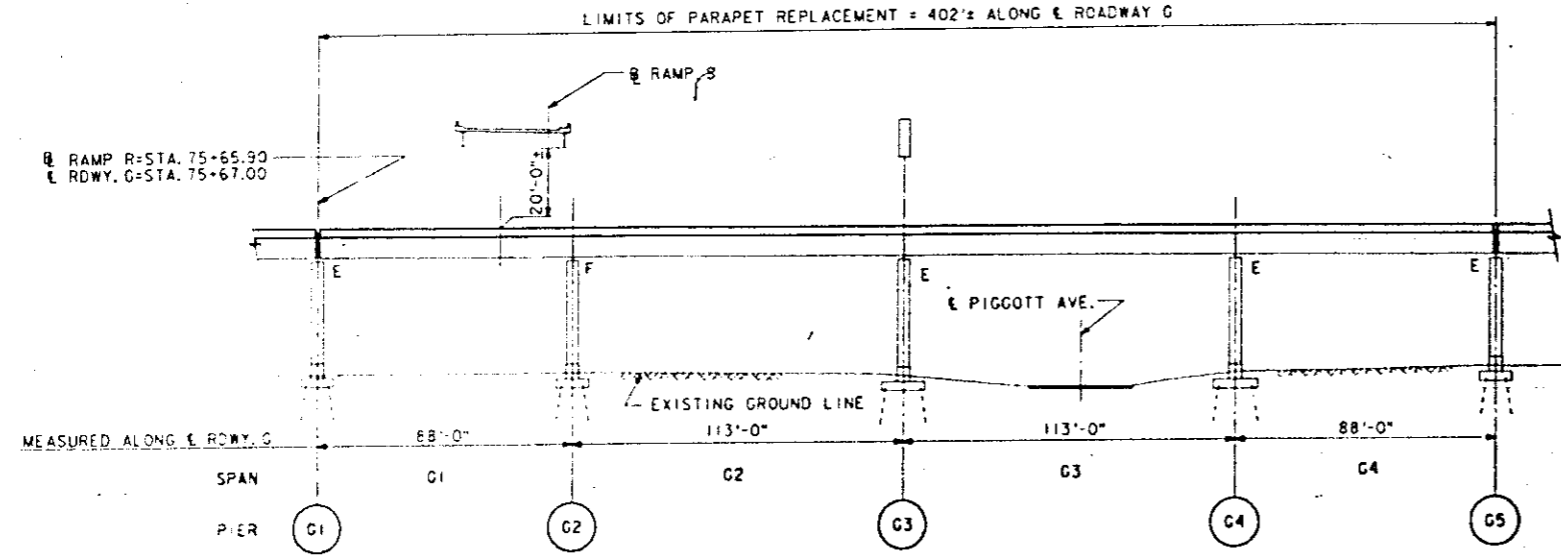
10320 FILE:ZF3\110\110DETIE.DGN
875513 PRF: DETIE
LEVELS PLOTTED DATE: OCT. 14, 1987
35 54 56 57 58 63

G.J. DEE
DESIGNED
C. LIZANA
CHECKED
R. ROTH
DRAWN
C. LIZANA/B. CARLSON
CHECKED

PROJECT NO.	ST. CLAIR	320	64
DATE			

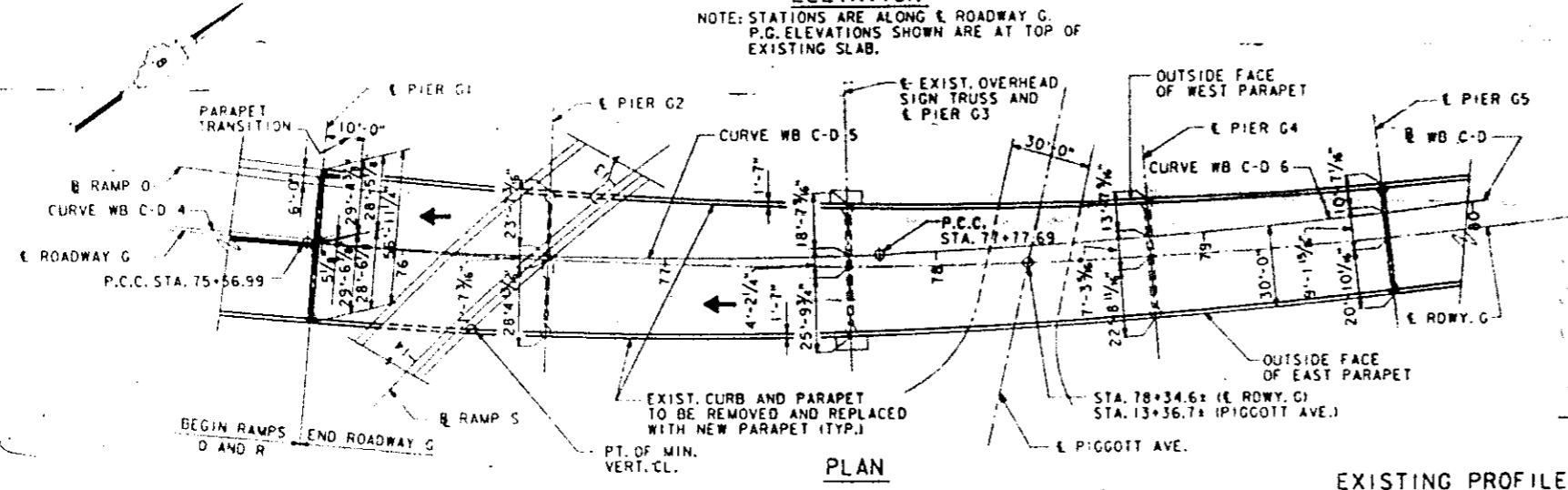
BENCH MARK S-12

CHISELED "S" ON CONCRETE FOUNDATION OF
PIER S-11 ABOUT 10' E OF WB C-D.
ELEV. 419.37

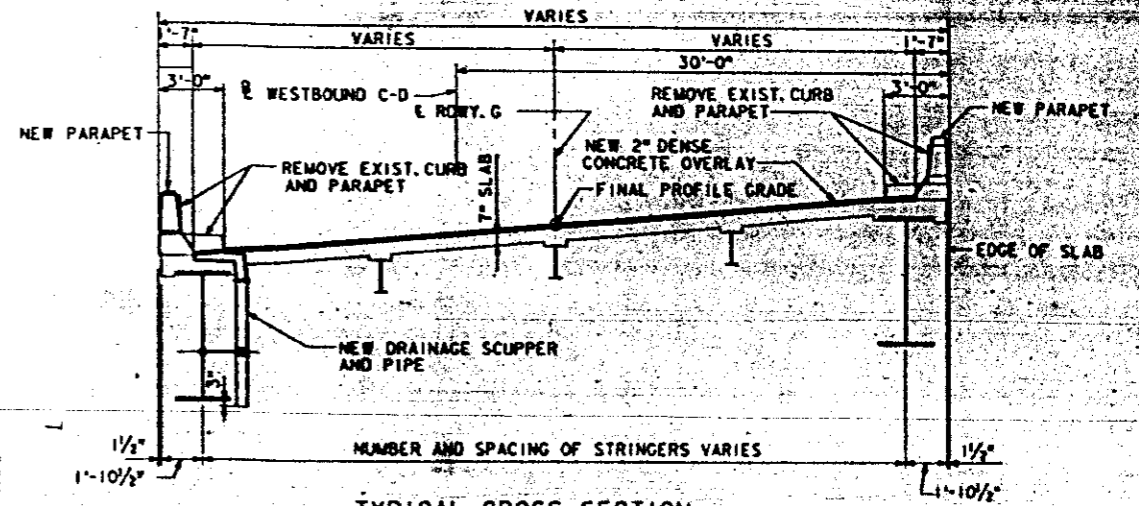


ELEVATION

NOTE: STATIONS ARE ALONG E. ROADWAY G.
P.C. ELEVATIONS SHOWN ARE AT TOP OF
EXISTING SLAB.



PLAN



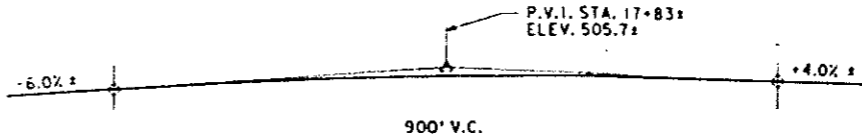
TYPICAL CROSS SECTION

(LOOKING AHEAD STATION)
SPAN G3 SHOWN, OTHER SPANS SIMILAR.

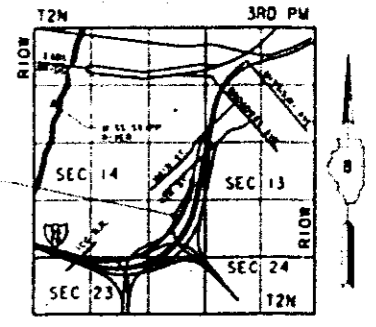
NOTES

STAGE I CONSTRUCTION WILL BEGIN ON WEST PARAPET SIDE OF E. ROADWAY G.
STAGE II CONSTRUCTION WILL BEGIN ON EAST PARAPET SIDE OF THE E. ROADWAY G.
EXISTING DRAINS TO BE REPLACED OR REMOVED, AS SHOWN ON PARAPET SHEETS.
IT IS ESTIMATED THAT 7% OF THE DECK WILL REQUIRE PARTIAL DEPTH
PATCHING AND 7% OF THE DECK WILL REQUIRE FULL DEPTH PATCHING.
THE ACTUAL EXTENT OF PATCHING TO BE DETERMINED AFTER REMOVAL OF EXISTING
WEARING SURFACE.

EXISTING PROFILE GRADE - E. ROADWAY G
(ELEVATION SHOWN IS AT TOP OF EXISTING SLAB)



EXISTING PROFILE GRADE - RAMP S
(ELEVATION SHOWN IS AT TOP OF EXISTING SLAB)



LOCATION PLAN

DESIGN STRESSES - EXISTING STRUCTURE

DESIGN SPECIFICATIONS: AASHTO 1961 AND APPLICABLE
1962 AND 1963 INTERIMS.
LOADING: HS20-44 AND ALTERNATE
REINFORCED CONCRETE:
DECK SLAB f_c=1400 psi n=10
SUBSTRUCTURE f_c=1400 psi n=10
V_c=75 psi - FOOTINGS
REINFORCING f_s=20,000 psi
STRUCTURAL STEEL: f_s=20,000 psi

DESIGN STRESSES - NEW CONSTRUCTION

DESIGN SPECIFICATIONS: AASHTO 1983 AND APPLICABLE
1984 AND 1985 INTERIMS.
LOADING: HS20-44 AND ALTERNATE
REINFORCED CONCRETE:
DECK SLAB f_c=3500 psi
SUBSTRUCTURE f_c=4000 psi
REINFORCING f_y=60,000 psi
STRUCTURAL STEEL: f_y=36,000 psi (M183)

LEVELS PLOTTED DATE: OCT. 14, 1987
2 3 20 24 26 28 35 39 42 50 55 56 63
10320 FILE:ZF3:110:11DETTE.DGN
875518 PRF:DETTE

DESIGNED	M. COTTEN
CHECKED	R. TAGARAO
CHECKED	S. KAEMMERER
DRAWN	R. SANDOVAL
CHECKED	

APPROVED
FOR STRUCTURAL ENGINEERING ONLY

James J. ...
Engineer of Bridge Structures



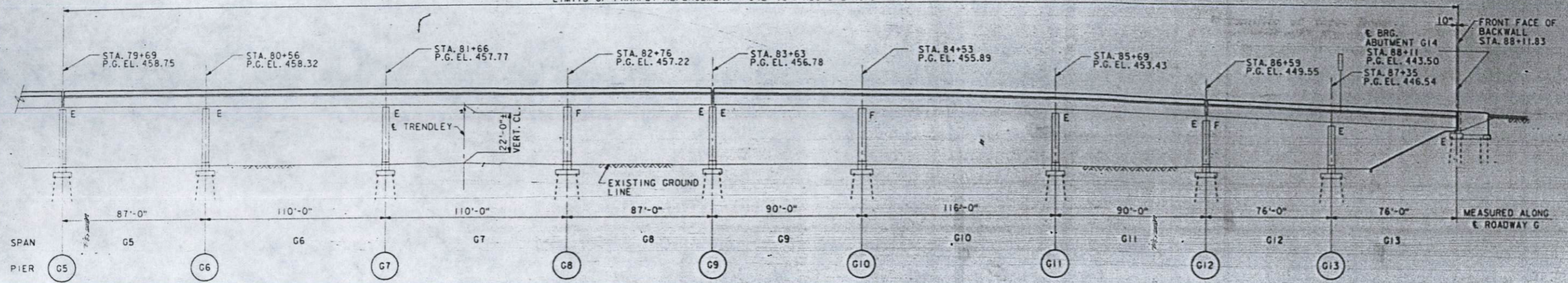
PREPARED BY:
SYVERDRUP CORPORATION
ST. LOUIS, MISSOURI

REV. 8/26/88

REHABILITATION FOR
FAI - 55/70 COMPLEX
ROADWAY G-DECK REHABILITATION
GENERAL PLAN AND ELEVATION
SPANS G1 THRU G4
STRUCTURE NO. 082-0254
STA. 75+67.00 TO STA. 88+11.83 (FAI-70) ST. CLAIR CO.

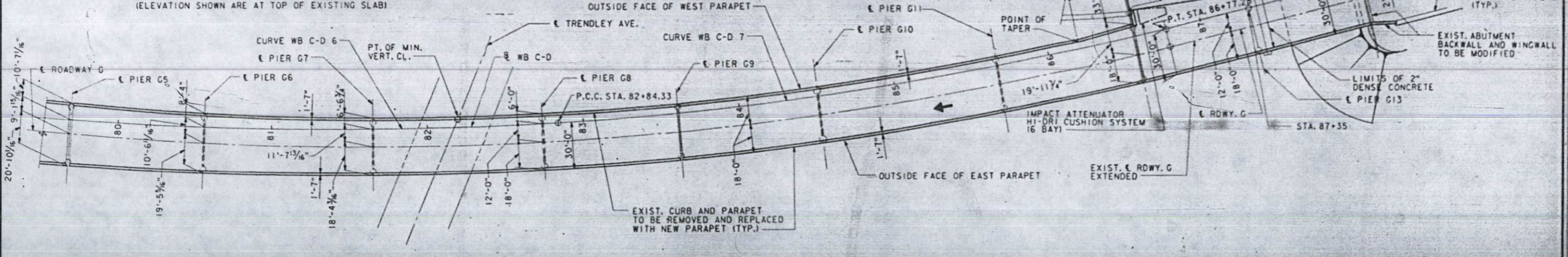
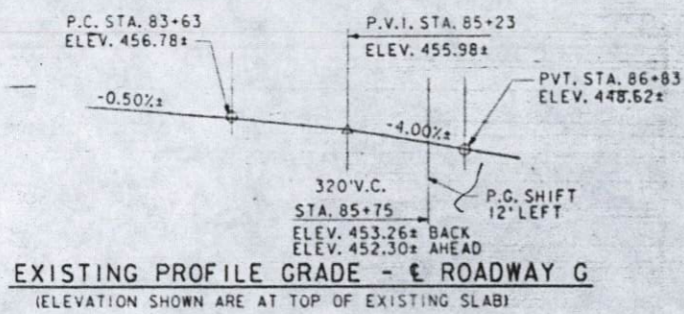
SHEET NO. 23 OF 56

LIMITS OF PARAPET REPLACEMENT = 842'-10"± ALONG E ROADWAY G



ELEVATION

NOTE: STATIONS ARE ALONG E ROADWAY G.
P.G. ELEVATIONS SHOWN ARE AT TOP OF EXISTING SLAB.



PLAN

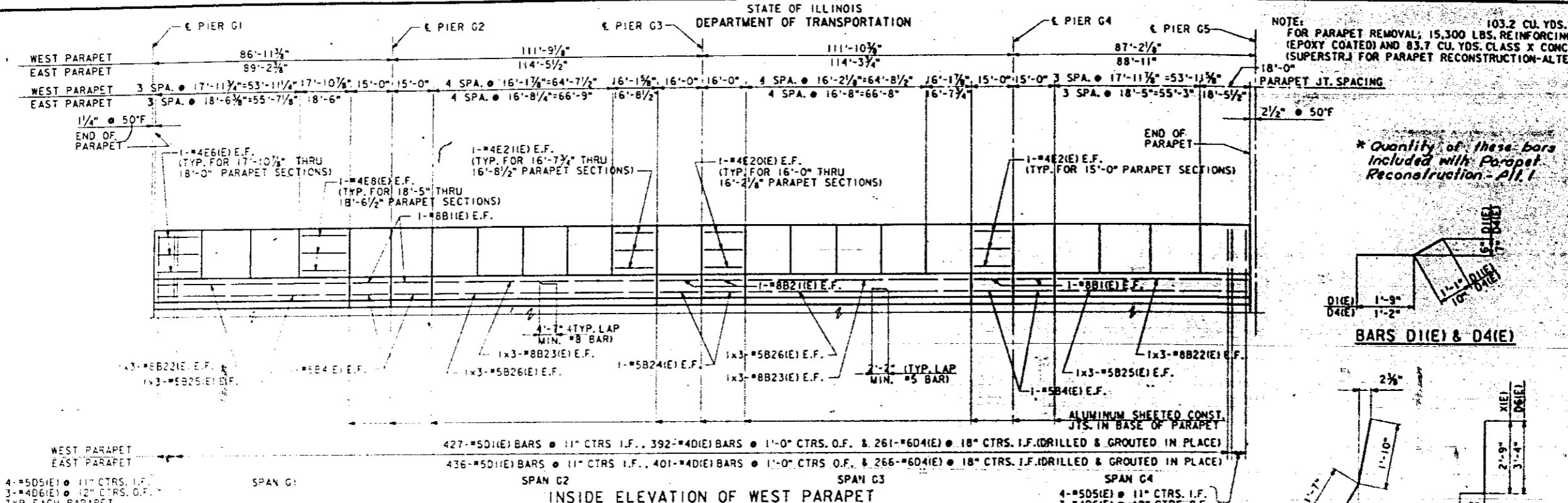
CURVE DATA - WB C-D 5	CURVE DATA - WB C-D 6	CURVE DATA - WB C-D 7
P.I. STA. = 76+67.48	P.I. STA. = 80+31.91	P.I. STA. = 84+81.37
Δ = 7° - 07' - 12" LT.	Δ = 11° - 49' - 09" LT.	Δ = 10° - 37' - 30" LT.
D = 3° - 13' - 34"	D = 2° - 19' - 58"	D = 2° - 42' - 14"
R = 1776.00'	R = 2456.01'	R = 2118.99'
T = 110.49'	T = 254.22'	T = 197.04'
L = 220.70'	L = 506.64'	L = 392.95'
E = 3.43	E = 13.12'	E = 9.14'
P.C.C. STA. = 75+56.99	P.C.C. STA. = 77+77.69	P.C.C. STA. = 82+84.33
P.C.C. STA. = 77+77.69	P.C.C. STA. = 82+84.33	P.T. STA. = 86+77.28

LEVELS PLOTTED DATE: OCT. 14, 1987
2 3 24 26 39 42 43 50 63
FILE: ZF3\110\1DE78E.DGN
875519 PRF: DETBE

M. COTTEN	DESIGNED
R. TAGARAO	CHECKED
S. KAEMMERER	DRAWN
R. SANDOVAL	CHECKED

PREPARED BY:
SYVERDRUP CORPORATION
ST. LOUIS, MISSOURI

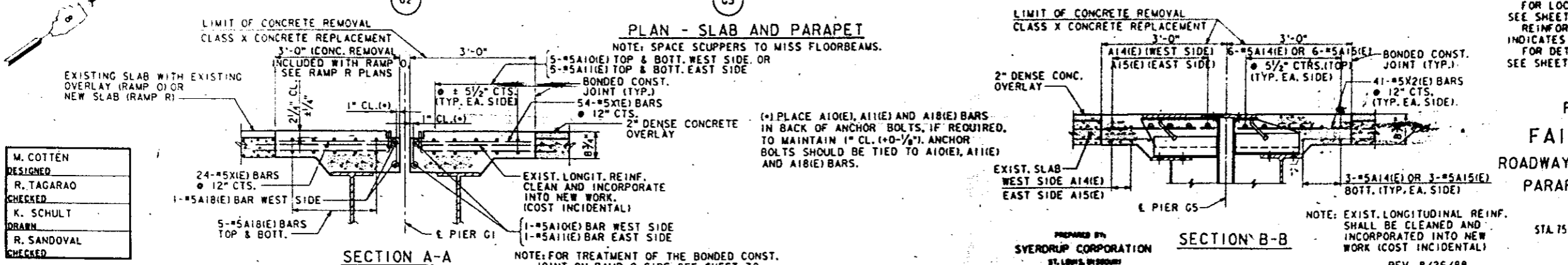
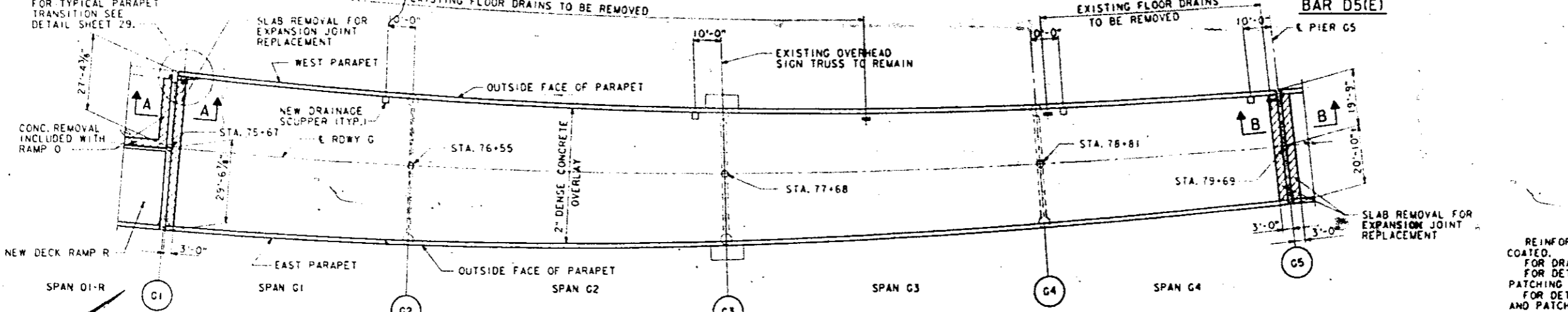
REHABILITATION FOR
FAI - 55/70 COMPLEX
ROADWAY G - DECK REHABILITATION
GENERAL PLAN AND ELEVATION
SPANS G5 THRU G13
STRUCTURE NO. 082-0254
STA. 75+67.00 TO STA. 88+11.83 (FAI-70) ST. CLAIR CO.



INSIDE ELEVATION OF WEST PARAPET
NOTE: EAST PARAPET SIMILAR, EXCEPT AS NOTED.
O.F. INDICATES OUTSIDE FACE.
I.F. INDICATES INSIDE FACE.
E.F. INDICATES EACH FACE.
ALL DIMENSIONS ARE MEASURED ALONG OUTSIDE FACE OF PARAPETS.

427-#501(E) BARS @ 11" CTRS. I.F., 392-#401(E) BARS @ 11" CTRS. O.F. & 261-#604(E) @ 18" CTRS. I.F. (DRILLED & GROUTED IN PLACE)
436-#501(E) BARS @ 11" CTRS. I.F., 401-#401(E) BARS @ 11" CTRS. O.F. & 266-#604(E) @ 18" CTRS. I.F. (DRILLED & GROUTED IN PLACE)

4-#505(E) @ 11" CTRS. I.F.
3-#406(E) @ 12" CTRS. O.F.
TYP. EACH PARAPET



DESIGNED
M. COTTEN
R. TAGARAO
CHECKED
K. SCHULT
DRAWN
R. SANDOVAL
CHECKED

LEVELS PLOTTED DATE: OCT. 14, 1987
35 54 56 57 58 63
FILE: ZF3110.10E1105E.DGN
875622 PRF, DET105E

FAI 70	ST. CLAIR	320	68
A* 82-3HV8-2R-1			

BILL OF MATERIAL

BAR NO.	NO.	SIZE	LENGTH	SHAPE
A10(E)	12	#5	32'-0"	
A11(E)	12	#5	26'-9"	
A14(E)	18	#5	22'-8"	
A15(E)	18	#5	19'-4"	
A16(E)	12	#5	25'-0"	
B1(E)	16	#5	14'-9"	
B21(E)	8	#5	15'-9"	
B22(E)	24	#8	27'-8"	
B23(E)	24	#8	30'-10"	
B24(E)	8	#5	15'-9"	
B25(E)	24	#5	26'-11"	
B26(E)	24	#5	29'-2"	
B3(E)	16	#5	2'-10"	
D1(E)	793	#4	2'-8"	
D1(E)	863	#5	2'-10"	
D4(E)	527	#6	2'-0"	
D5(E)	16	#5	3'-11"	
D6(E)	12	#4	5'-4"	
E2(E)	48	#4	14'-3"	
E6(E)	48	#4	17'-8"	
E8(E)	48	#4	18'-2"	
E20(E)	84	#4	15'-9"	
E21(E)	60	#4	16'-5"	
X1(E)	78	#5	3'-6"	
X2(E)	82	#5	2'-5"	
CLASS X CONCRETE SUPERSTRUCTURE	CU. YDS.	90.5		
REINFORCEMENT BARS (EPOXY COATED)	LBS.	2690		
BRIDGE DECK CONCRETE OVERLAY OPTION	SO. YDS.	2,002		
CONCRETE REMOVAL	CU. YDS.	26.5		
DECK SLAB REPAIR (FULL DEPTH)	SO. YDS.	138		
DECK SLAB REPAIR (PARTIAL)	SO. YDS.	138		

NOTE: ACTUAL EXTENT OF PATCHING TO BE DETERMINED AFTER REMOVAL OF EXISTING WEARING SURFACE.
BILL OF MATERIAL INCLUDES ALL REINFORCEMENT DETAILED IN SECTION A-A AT PIER G1 AND SECTION B-B AT PIER G5.

NOTES
REINFORCEMENT BARS MARKED (E) SHALL BE EPOXY COATED.
FOR DRAINAGE SCUPPER DETAILS, SEE SHEET 56.
FOR DETAILS OF FULL DEPTH OR PARTIAL DEPTH PATCHING OF SLAB, SEE SHEET 28.
FOR DETAILS OF REMOVAL OF EXISTING FLOOR DRAINS AND PATCHING OF SLAB, SEE SHEET 33.
FOR LOCATION AND DETAILS OF EXPANSION JOINTS, SEE SHEETS 31 & 55.
REINFORCEMENT BARS MARKED 1x3-#5 ETC. INDICATES 1 LINE OF BARS WITH 3 LENGTHS PER LINE.
FOR DETAILS OF PARAPET RECONSTRUCTION SEE SHEET 28.

**REHABILITATION FOR
FAI - 55/70 COMPLEX
ROADWAY G - DECK REHABILITATION
PARAPETS - SPANS G1 THRU G4**

STRUCTURE NO. 082-0254
STA. 75+67.00 TO STA. 88+11.83 FAI-70 ST. CLAIR CO.

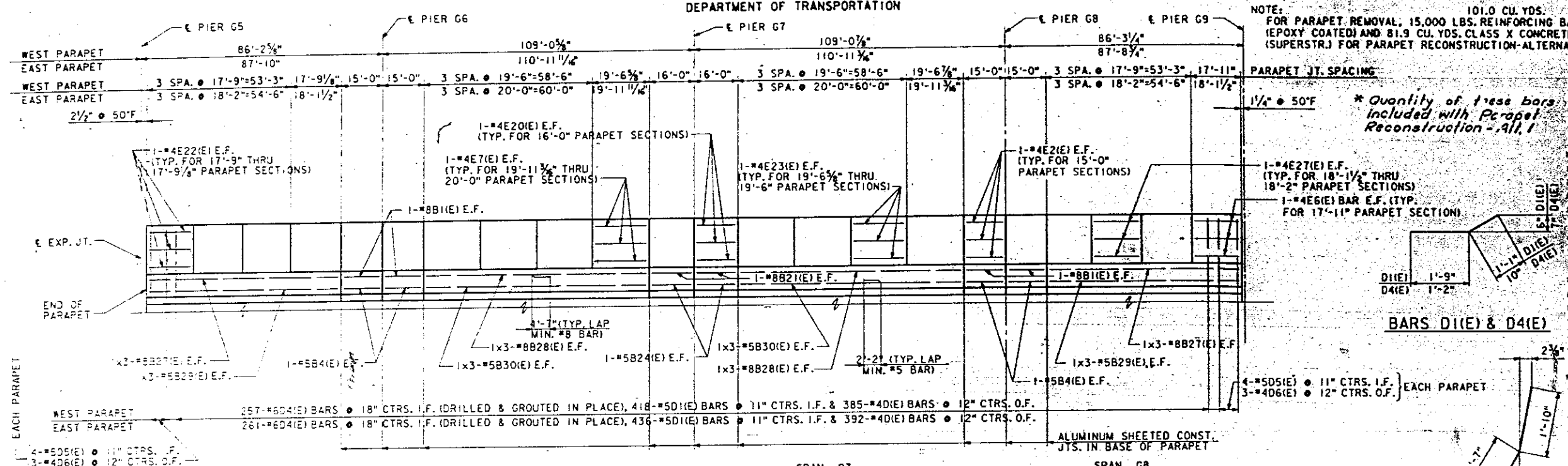
PREPARED BY
SYVERUP CORPORATION
ST. LOUIS, MISSOURI

REV. 8/26/88

SHEET NO. 25 OF 56

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

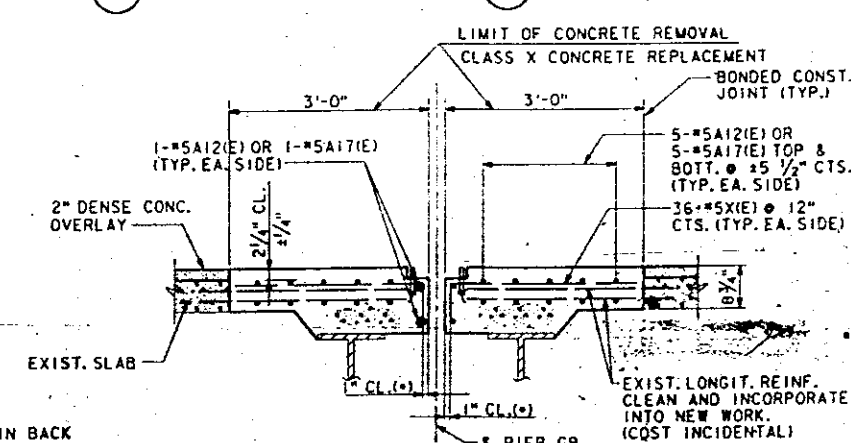
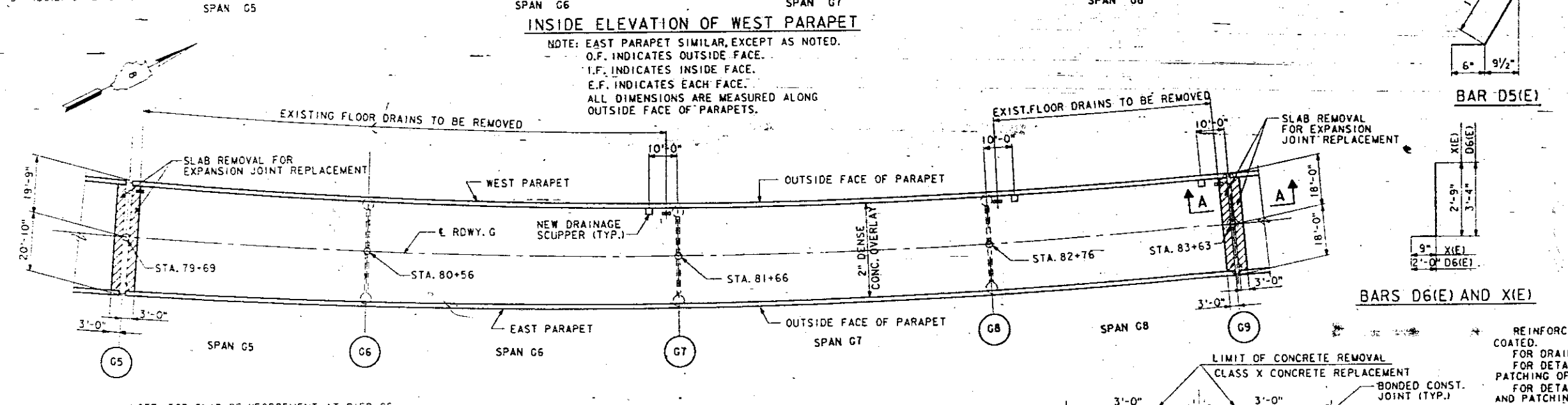
DATE	NO.	REV.	BY	CHK.
A.1.70	001		ST. CLAIR	320
			CLARK	67



BILL OF MATERIAL

SPANS G5 THRU G8				
BAR NO.	NO.	SIZE	LENGTH	SHAPE
A12(E)	24	#5	20'-0"	
A17(E)	24	#5	17'-8"	
B1(E)	16	#8	14'-9"	
B4(E)	16	#8	14'-9"	
B21(E)	8	#8	15'-9"	
B24(E)	8	#8	15'-9"	
B27(E)	24	#8	27'-2"	
B28(E)	24	#8	29'-8"	
B29(E)	24	#8	25'-7"	
B30(E)	24	#8	28'-0"	
BX(E)	12	#5	2'-10"	
D1(E)	777	#4	2'-8"	
D4(E)	518	#6	2'-0"	
D5(E)	16	#5	3'-11"	
D6(E)	12	#4	5'-4"	
E2(E)	48	#4	14'-9"	
E6(E)	6	#4	17'-8"	
E7(E)	48	#4	19'-8"	
E20(E)	24	#4	15'-9"	
E22(E)	42	#4	17'-5"	
E23(E)	48	#4	19'-2"	
E27(E)	48	#4	17'-10"	
X(E)	72	#5	3'-6"	

CLASS X CONCRETE SUPERSTRUCTURE	CU. YDS.	17.8
REINFORCEMENT BARS (EPOXY COATED)	LBS.	1240
BR. DECK CONCRETE OVERLAY OPTION	SQ. YDS.	1470
CONCRETE REMOVAL	CU. YDS.	17.0
DECK SLAB REPAIR (FULL DEPTH)	SQ. YDS.	100
DECK SLAB REPAIR (PARTIAL)	SQ. YDS.	100



NOTES:
REINFORCEMENT BARS MARKED (E) SHALL BE EPOXY COATED.
FOR DRAINAGE SCUPPER DETAILS, SEE SHEET 56.
FOR DETAILS OF FULL DEPTH OR PARTIAL DEPTH PATCHING OF SLAB, SEE SHEET 28.
FOR DETAILS OF REMOVAL OF EXISTING FLOOR DRAINS AND PATCHING OF SLAB, SEE SHEET 33.
FOR LOCATION AND DETAILS OF EXPANSION JOINTS, SEE SHEET 55.
REINFORCEMENT BARS MARKED 1x3 - #5 ETC. INDICATES 1 LINE OF BARS WITH 3 LENGTHS PER LINE.
FOR DETAILS OF PARAPET RECONSTRUCTION SEE SHEET 28.

REHABILITATION FOR
FAI - 55/70 COMPLEX
ROADWAY G-DECK REHABILITATION
PARAPETS - SPANS G5 THRU G8

STRUCTURE NO. 082-0254
STA. 75+67.00 TO STA. 88+11.83 (FAI-70) ST. CLAIR CO.
REV. 8/26/88
SHEET NO. 26 OF 56

LEVELS PLOTTED DATE: OCT. 14, 1987
35 54 56 57 58 63
FILE: ZF3J1101.DET1106E.DGN
PRF: DET1106E

DESIGNED	M. COTTEN
CHECKED	R. TAGARAO
DRAWN	K. SCHULT
CHECKED	R. SANDOVAL

NOTE:
FOR PARAPET REMOVAL, 14,120 LBS. REINFORCING BARS
(EPOXY COATED) AND 77.4 CU. YDS. CLASS X CONCRETE
(SUPERSTR.) FOR PARAPET RECONSTRUCTION-ALTERNATE 1.

ROUTE NO.	SECTION	CONTRACT	SHEET NO.	TOTAL SHEETS
F.A.I. 70	ST. CLAIR	320	68	

BILL OF MATERIAL

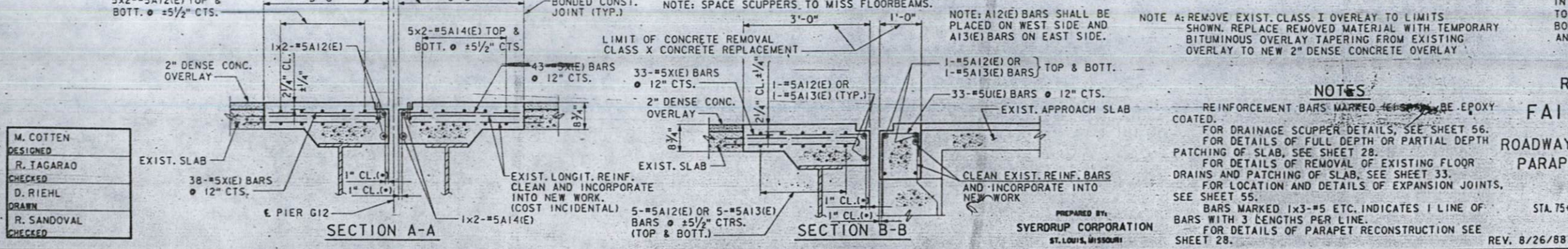
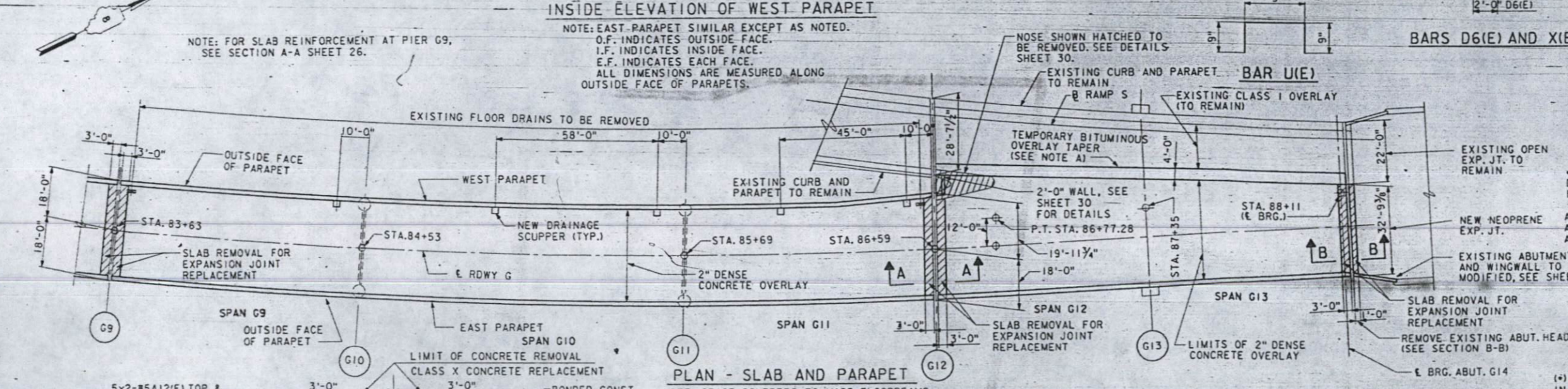
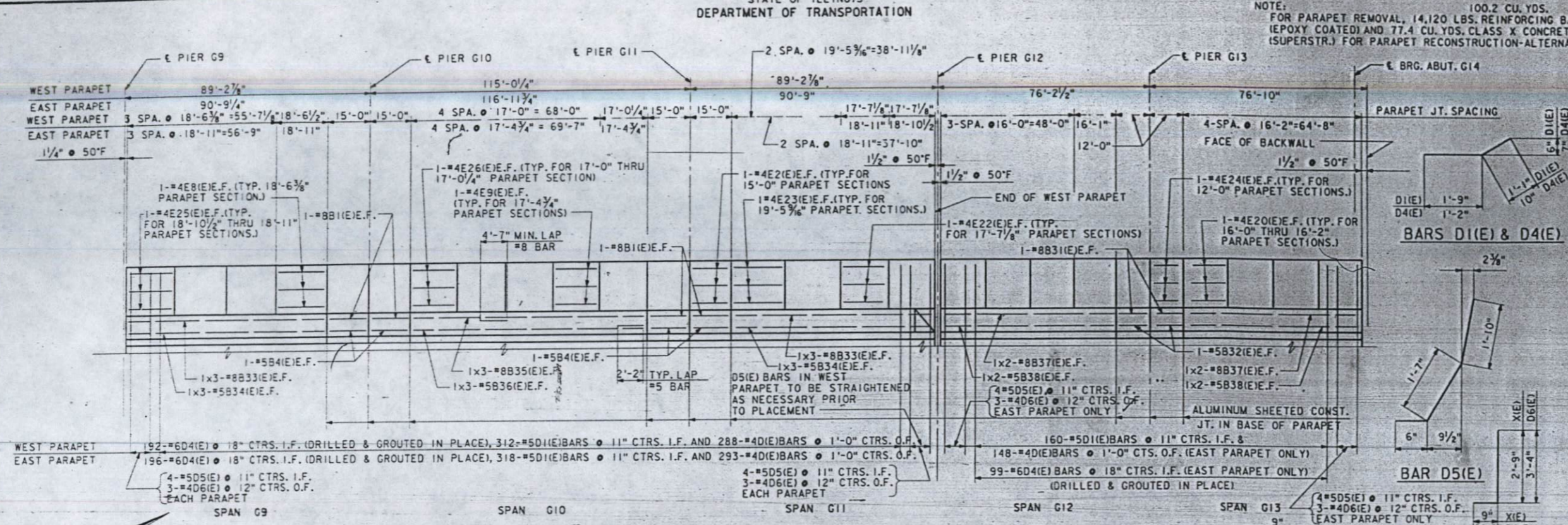
SPANS G9 THRU G13				
BAR	NO.	SIZE	LENGTH	SHAPE
A12(E)	38	#5	20'-0"	
A13(E)	14	#5	14'-6"	
A14(E)	24	#5	22'-9"	
B1(E)	16	#8	14'-9"	
B4(E)	16	#5	14'-9"	
B31(E)	4	#8	11'-9"	
B32(E)	4	#5	11'-9"	
B33(E)	24	#8	28'-2"	
B34(E)	24	#5	26'-7"	
B35(E)	12	#8	32'-0"	
B36(E)	12	#5	30'-5"	
B37(E)	8	#8	34'-9"	
B38(E)	8	#5	33'-7"	
BX1(E)	20	#5	2'-10"	
D1(E)	729	#4	2'-8"	
D1(E)	790	#5	2'-10"	
D4(E)	487	#6	2'-0"	
D5(E)	24	#5	3'-11"	
D6(E)	18	#4	5'-4"	
E2(E)	48	#4	14'-9"	
E8(E)	24	#4	18'-2"	
E9(E)	30	#4	17'-1"	
E20(E)	48	#4	15'-9"	
E22(E)	12	#4	17'-5"	
E23(E)	12	#4	19'-2"	
E24(E)	12	#4	11'-9"	
E25(E)	48	#4	18'-7"	
E26(E)	30	#4	16'-9"	
X1(E)	114	#5	3'-6"	
U1(E)	33	#5	2'-3"	
CLASS X CONCRETE SUPERSTRUCTURE				CU. YDS. 24.6
REINFORCEMENT BARS (EPOXY COATED)				LBS. 2140
BR. DECK CONCRETE OVERLAY OPTION				50. YDS. 1,670
CONCRETE REMOVAL				CU. YDS. 22.3
**DECK SLAB REPAIR (FULL DEPTH)				50. YDS. 115
**DECK SLAB REPAIR (PARTIAL)				50. YDS. 115

** ACTUAL EXTENT OF PATCHING TO BE DETERMINED AFTER REMOVAL OF EXISTING WEARING SURFACE.
BILL OF MATERIAL INCLUDES ALL REINFORCEMENT DETAILED IN SECTION A-A AT PIER G12 AND IN SECTION B-B AT ABUTMENT G14.

* Quantity of these bars included with Parapet Reconstruction - All 1

REHABILITATION FOR
FAI -- 55/70 COMPLEX
ROADWAY G - DECK REHABILITATION
PARAPETS - SPANS G9 THRU G13

STRUCTURE NO. 082-0254
STA. 75+67.00 TO STA. 88+11.83 (FAI-70) ST. CLAIR CO.
REV. 8/26/88
SHEET NO. 27 OF 56



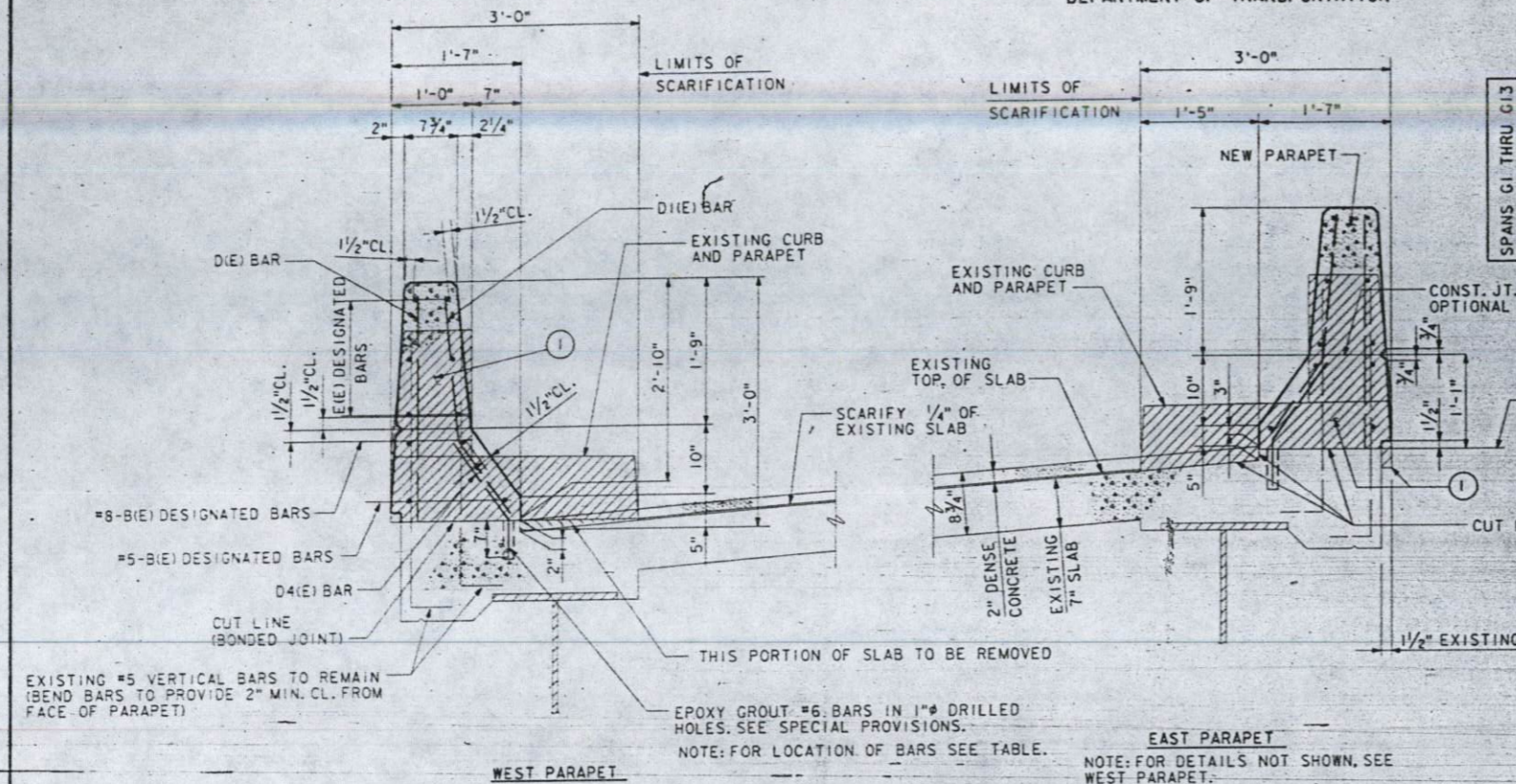
LEVELS PLOTTED DATE: OCT. 14, 1987
35 54 56 57 58 63

FILE: ZF31C110.D1DET107E.DGN
B75624 PRF1.DET107E

M. COTTEN
DESIGNED
R. TAGARAO
CHECKED
D. RIEHL
DRAWN
R. SANDOVAL
CHECKED

PREPARED BY:
SVERDRUP CORPORATION
ST. LOUIS, MISSOURI

*B2-3HVB-2R-1



SECTION THRU PARAPETS

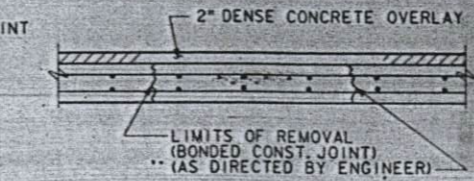
1 REMOVE EXISTING CURB, PARAPET AND PORTION OF EXISTING SLAB TO LIMITS SHOWN BY HATCHING.

PARAPET RECONSTRUCTION ALTERNATE 1		
ITEM	UNIT	QUANTITY
PARAPET REMOVAL	CU.YDS.	304.4
REINFORCING BARS (EPOXY COATED)	LBS.	44,420
CLASS X CONCRETE SUPERSTRUCTURE	CU.YDS.	243.0

NOTE: QUANTITIES SHOWN ARE FOR CONTRACTOR INFORMATION ONLY. PARAPET RECONSTRUCTION SHALL BE PAID FOR ON A LIN. FT. BASIS.

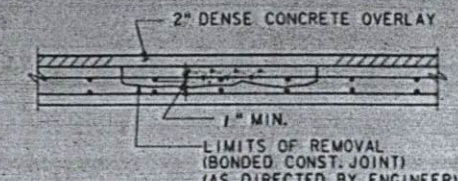
LOCATION - PARAPET REINFORCEMENT				
SPANS	#4(E) BARS	#5(E) BARS	#6(E) BARS	#8(E) BARS
G1 THRU G4	E2(E), E6(E), E8(E), E20(E), E21(E), D1(E), D6(E)	B4(E), B24(E) THRU B26(E), D1(E), D5(E)	D4(E)	B1(E) & B21(E) THRU B23(E)
G5 THRU G8	E2(E), E6(E), E7(E), E20(E), E22(E), E23(E) & E27(E), D1(E), D6(E)	B4(E), B24(E), B29(E), B30(E), D1(E), D5(E)	D4(E)	B1(E), B21(E), B27(E) & B28(E)
G9 THRU G13	E2(E), E8(E), E9(E), E20(E), E22(E) THRU E26(E), D1(E), D6(E)	B4(E), B32(E), B34(E), B36(E), B38(E), D1(E), D5(E)	D4(E)	B1(E), B31(E), B33(E), B35(E) & B37(E)

NOTE: SEE PARAPET ELEVATIONS FOR COMPLETE BAR BILLINGS.



FULL DEPTH PATCHING

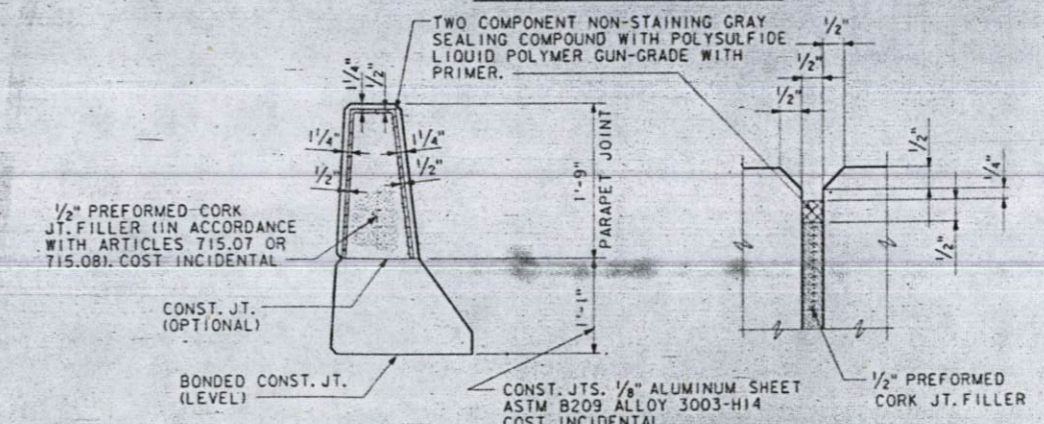
- NOTES:
- AS DIRECTED BY ENGINEER, REMOVE EXISTING CONCRETE THE FULL DEPTH OF THE DECK WITHOUT DAMAGING EXISTING REINFORCING BARS.
 - REMOVE ANY STAY-IN-PLACE FORMS THAT ARE PRESENT.
 - CLEAN EXISTING REINFORCING BARS AND INCORPORATE INTO NEW WORK.
 - REPLACE REMOVED MATERIAL WITH CLASS X CONCRETE.
 - NEW CONCRETE IS TO ATTAIN FULL 28-DAY STRENGTH PRIOR TO PLACING OVERLAY.
 - SEE SPECIAL PROVISIONS.



PARTIAL DEPTH PATCHING

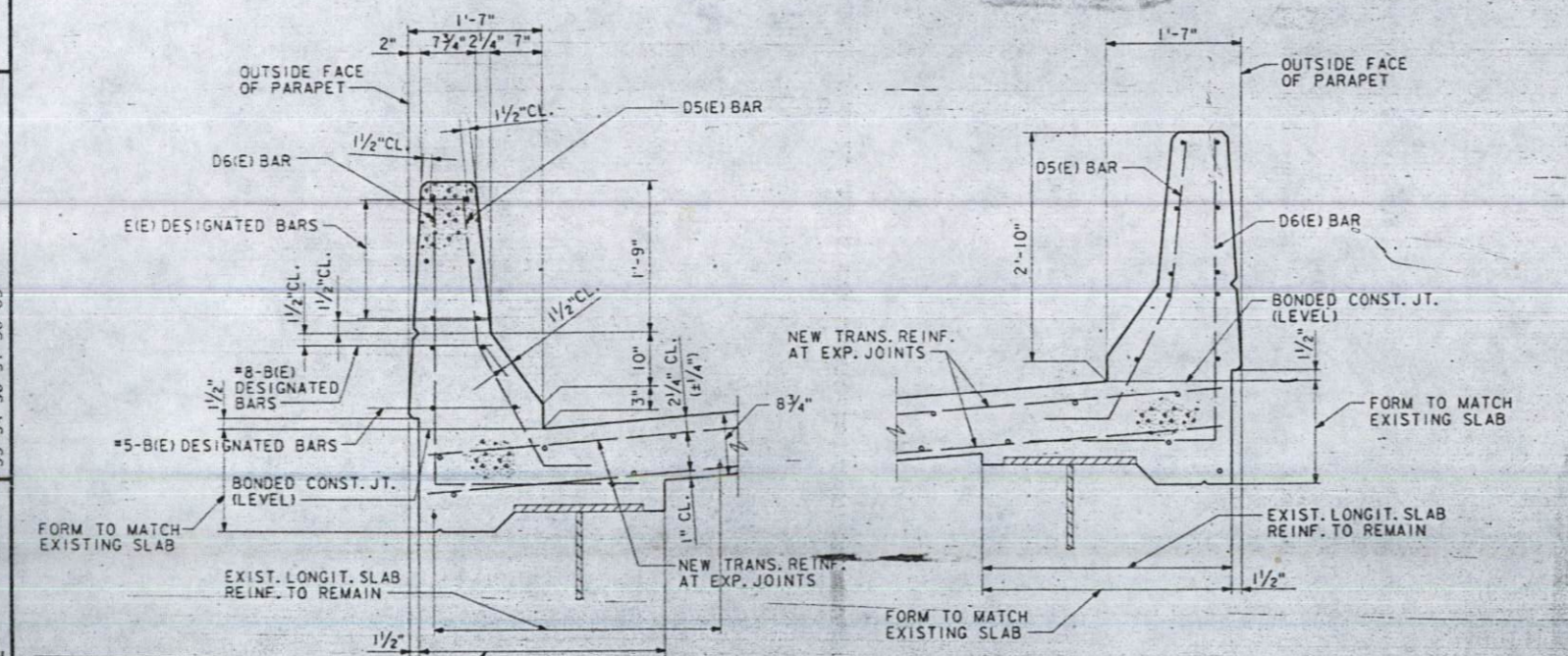
- NOTES:
- AS DIRECTED BY ENGINEER, REMOVE EXISTING CONCRETE TO A DEPTH OF 1/4" MINIMUM BELOW THE TOP REINFORCING BARS, LEAVING EXISTING REINFORCING BARS IN PLACE.
 - CLEAN EXISTING REINFORCING BARS AND INCORPORATE IN THE NEW WORK.
 - CLEAN PATCH AREA OF ANY LOOSE MATERIAL.
 - REPLACE REMOVED MATERIAL WITH CLASS X CONCRETE TO THE LEVEL OF ADJOINING CONCRETE.
 - NEW CONCRETE IS TO ATTAIN FULL 28-DAY STRENGTH PRIOR TO PLACING OVERLAY.
 - SEE SPECIAL PROVISIONS.

SLAB REPAIR DETAILS



PARAPET JOINT DETAILS

NOTE: ALL EDGES SHALL HAVE A 1/4" CHAMFER.



SECTION THRU PARAPETS NEAR EXP. JOINT

NOTE: FOR DETAILS NOT SHOWN, SEE WEST PARAPET.

NOTE

THE CONTRACTOR SHALL TEST 10% OF THE D4(E) BARS IN THE FRONT FACE OF THE PARAPET, AS DIRECTED BY THE ENGINEER, TO MEET A MIN. CERTIFIED PULL OUT LOAD OF 13.3 KIPS. FOR EVERY BAR THAT FAILS TO MEET THE PULL OUT LOAD OF 13.3 KIPS, THE CONTRACTOR SHALL TEST TWO ADDITIONAL BARS AND RECROUT AN ADDITIONAL D4(E) BAR EITHER SIDE OF THE FAILED BAR. COST OF TESTING AND ADDITIONAL BARS SHALL BE INCIDENTAL TO "REINF. BARS (EPOXY COATED)".

REHABILITATION FOR

FAI - 55/70 COMPLEX
ROADWAY G - DECK REHABILITATION
PARAPET RECONSTRUCTION
ALTERNATE 1

STRUCTURE NO. 082-0254

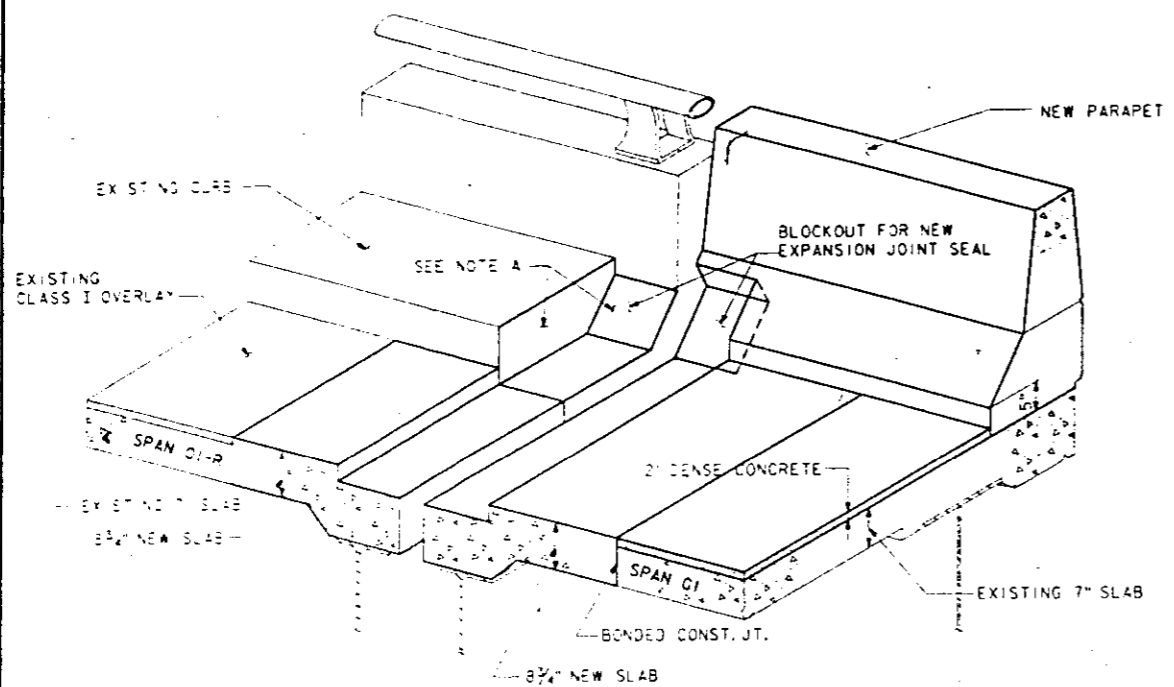
STA. 75+67.00 TO STA. 88+11.83 (FAI-70) ST. CLAIR CO.

PREPARED BY:
SVERDRUP CORPORATION
ST. LOUIS, MISSOURI

SHEET NO. 28 OF 56

LEVELS PLOTTED DATE: OCT. 14, 1987
35 54 56 57 58 63
10320 FILE: ZF3(C110)10E.T108E.DGN
BYS625 PRF.DETI08E

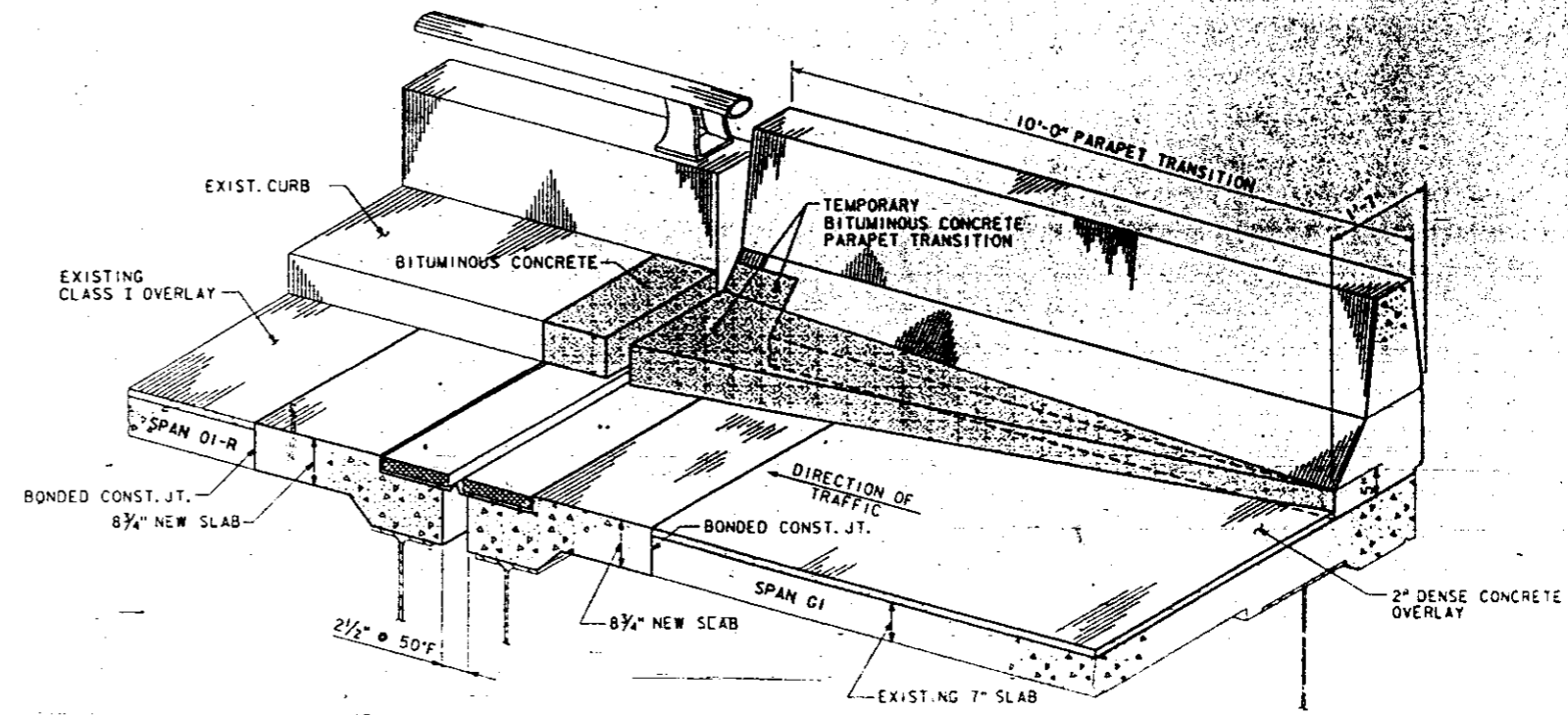
M. COTTEN
DESIGNED
R. TAGARAO
CHECKED
D. REIHL
DRAWN
R. SANDOVAL
CHECKED



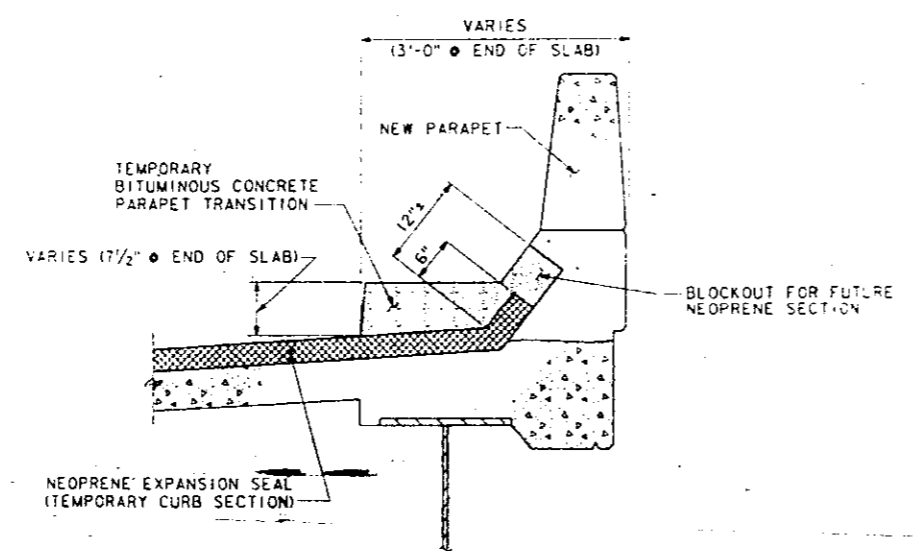
TRIMETRIC-MODIFICATION TO EXISTING CURB AND REPLACEMENT OF JOINT AT PIER G1

NOTE A: EXISTING REINFORCEMENT TO BE REMOVED 1\"/>

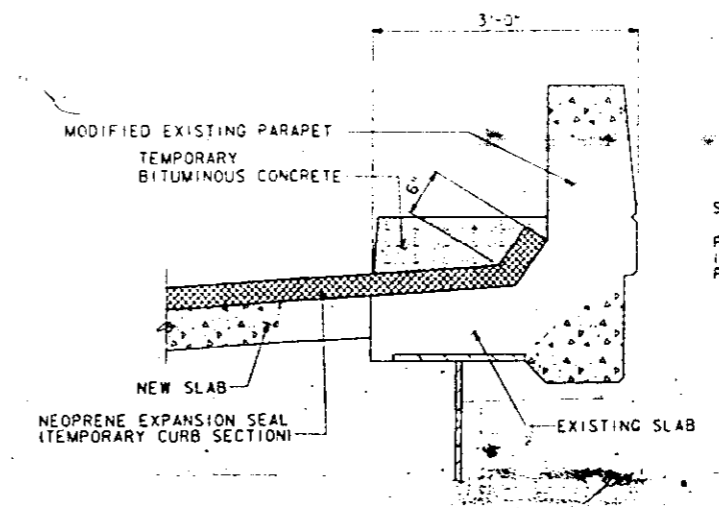
NOTE: DETAILS SHOWN FOR WEST PARAPET ONLY.



TRIMETRIC - PARAPET TRANSITION - SPAN G1



SECTION THRU PARAPET NEAR END OF SLAB - SPAN G1



SECTION THRU EXISTING CURB NEAR END OF SLAB - SPAN O1-R

NOTES
FOR PARAPET RECONSTRUCTION DETAILS SEE SHEET 28.
FOR NEOPRENE EXPANSION JOINT SEAL DETAILS, SEE SHEET 55.
BITUMINOUS CONCRETE AND PATCHING FOR PARAPET TRANSITION SHALL BE CONSIDERED INCIDENTAL TO THE COST OF REPLACEMENT OF PARAPET.

REHABILITATION FOR
FAI-55/70 COMPLEX
ROADWAY G-DECK REHABILITATION
WEST PARAPET TRANSITION - SPAN G1

STRUCTURE NO. 082-0254

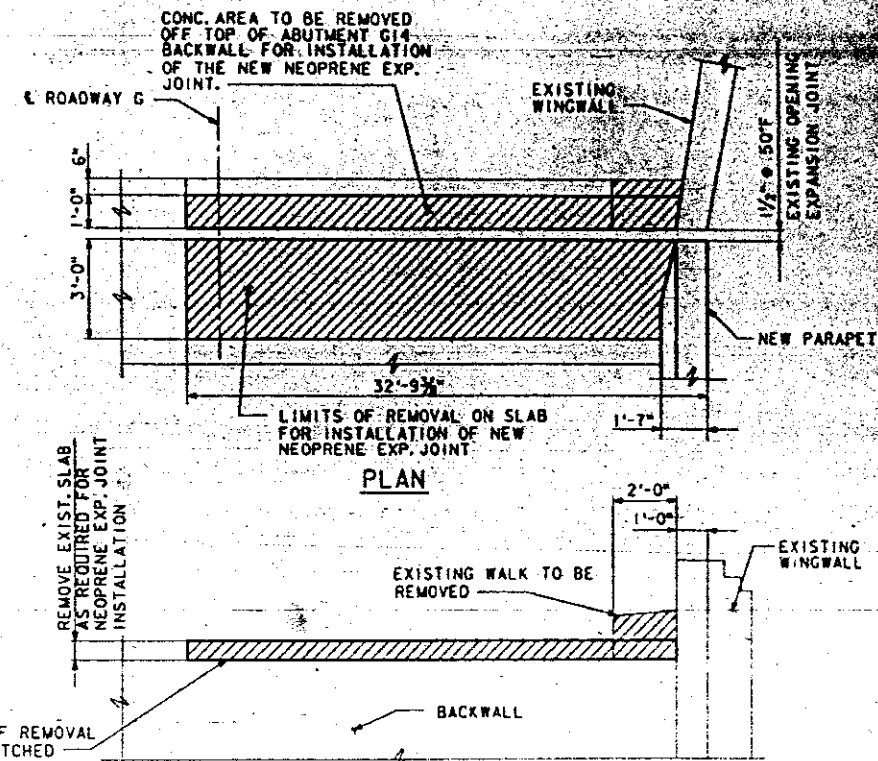
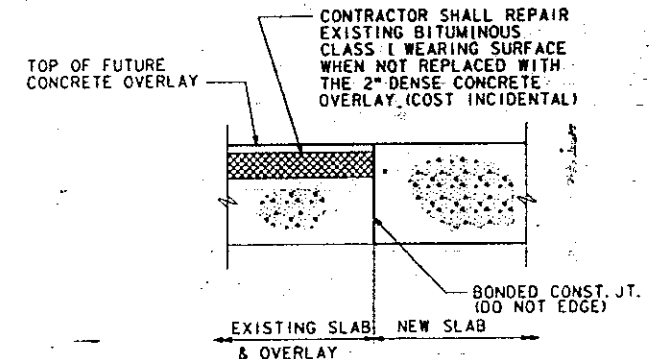
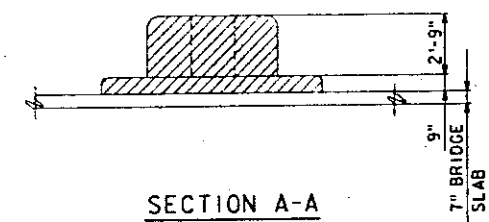
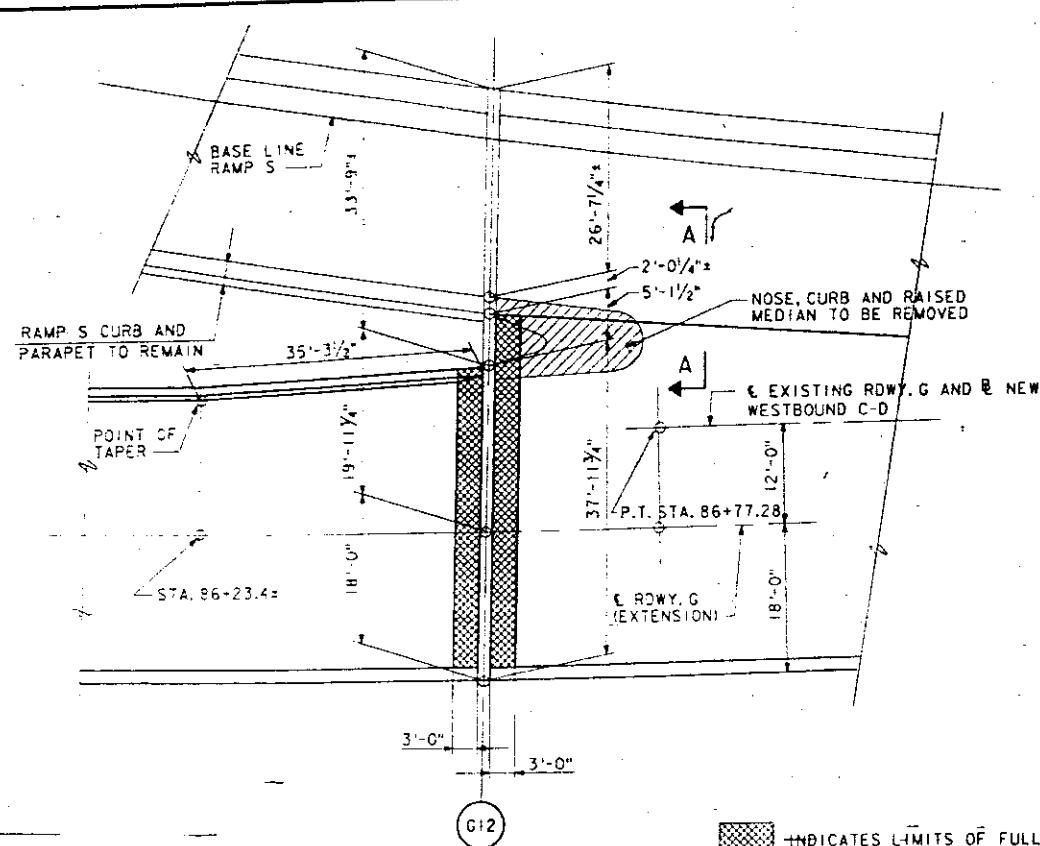
STA. 75+67.00 TO STA. 88+11.83 (FAI-70) ST. CLAIR CO.

SHEET NO. 29 OF 56

PREPARED BY:
SYERORUP CORPORATION
ST. LOUIS, MISSOURI

10320	FILE: ZS3110.11DET109E.DGN	DATE: OCT. 14, 1987
	875626	PRF: DET109E
LEVELS PLOTTED: 35 56 58 63		
GJD-FAC	DESIGNED	
M. COTTEN	CHECKED	
E. WELZ	CHECKED	
R. SANDOVAL	CHECKED	

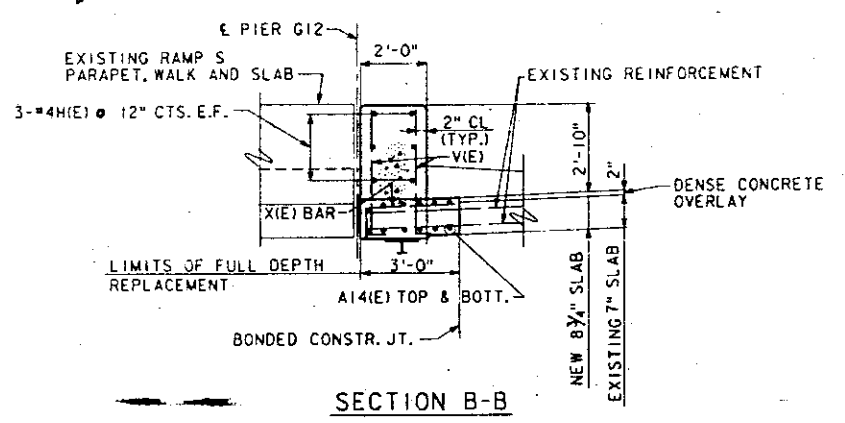
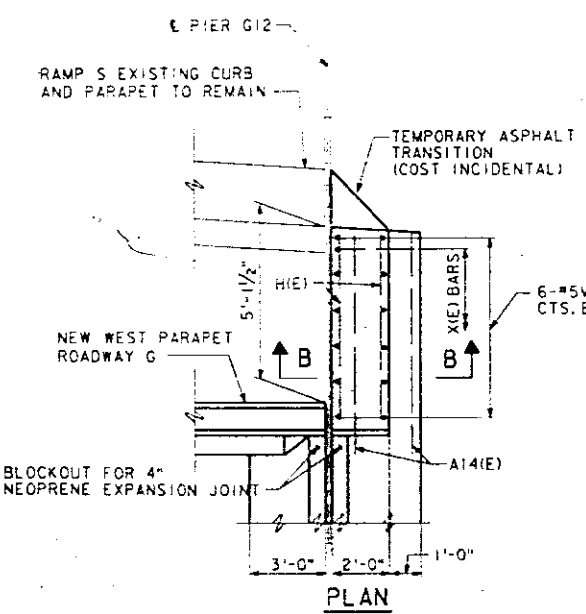
82-3HVB-2R-1



INDICATES LIMITS OF FULL DEPTH SLAB REMOVAL.

NOSE AT PIER G12 MODIFICATION

EXIST. NOSE, CURB AND PARAPET TO BE REMOVED AND REPLACED WITH A CONCRETE WALL.



BILL OF MATERIAL FOR WALL

BAR	NO.	SIZE	LENGTH	SHAPE
H(E)	6	#4	5'-8"	—
V(E)	12	#5	4'-2"	—
CLASS X CONC. SUPERSTRUCTURE			CU. YDS.	1.8
REINFORCEMENT BAR (EPOXY COATED)			LBS.	70



ABUTMENT G14 BACKWALL MODIFICATION

(EAST SIDE ONLY)
NOTE: SEE SHEET 55 FOR NEOPRENE EXPANSION JOINT BLOCKOUT AT VERTICAL WALL.
SEE SHEET 27 FOR TRANSVERSE SECTION THRU EXPANSION JOINT.

NOTES ABUT. G14

1. REMOVE CONCRETE IN BACKWALL AND SLAB TO LIMITS SHOWN.
2. DEMOLISH AREA REQUIRED FOR WINGWALL EXPANSION JOINT BLOCKOUT AND CUT EXISTING REINFORCEMENT TO CLEAR BLOCKOUT.
3. WALK REMOVAL WILL BE TO TOP OF APPROACH PAVEMENT EXCEPT AS NEEDED FOR INSTALLATION OF EXPANSION DEVICE.
4. REPLACE THE EXPANSION JOINT AS SHOWN ON EXPANSION JOINT DETAIL ON SHEET 27.
5. REMOVE ANY WALK THAT IS ON APPROACH PAVEMENT TO THE LEVEL OF ADJACENT PAVEMENT.
6. EXISTING REINFORCING BARS THAT PROTRUDE FROM BACKWALL SHALL BE CUT 1/2" BELOW TOP OF CONCRETE.

NOSE REPLACEMENT WALL

NOTES

FOR BILLING OF A14(E) AND X(E) BARS SEE SECTION A-A SHEET 27.
EXISTING LONGITUDINAL REINF. SHALL BE CLEANED AND INCORPORATED INTO NEW WORK (COST INCIDENTAL).

DESIGNED	J. WAVERING
CHECKED	R. SANDOVAL
DRAWN	D. RIEHL
CHECKED	R. SANDOVAL

LEVELS PLOTTED DATE: OCT. 14, 1987
35 54 56 57 58 63
FILE:ZF3110.DDET9L.DGN
875309 PRF: DET9E

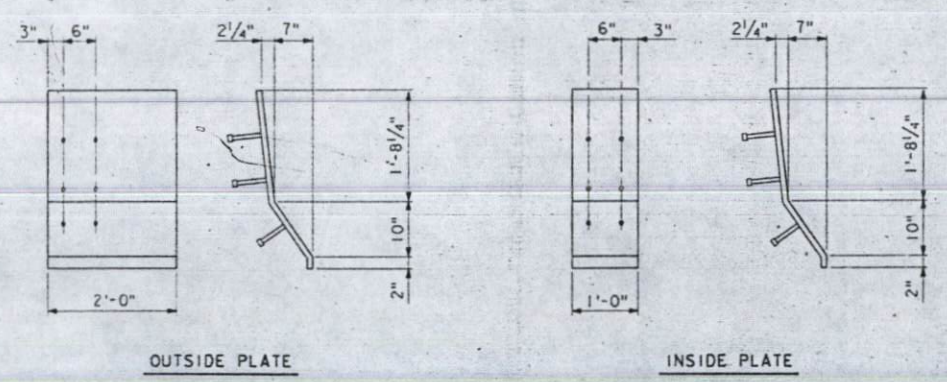
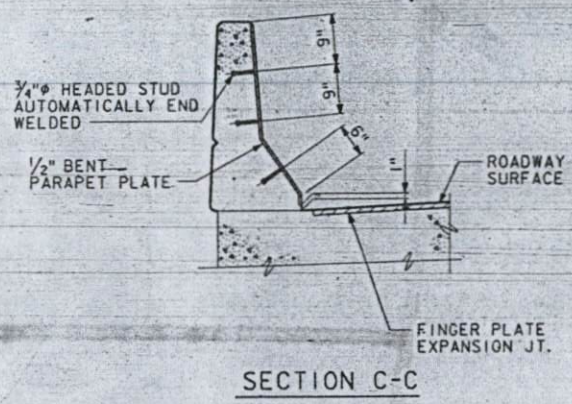
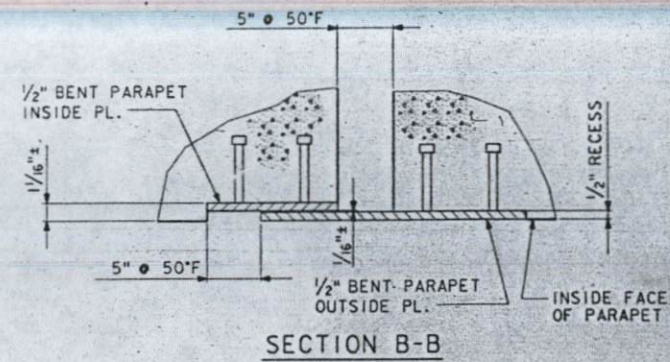
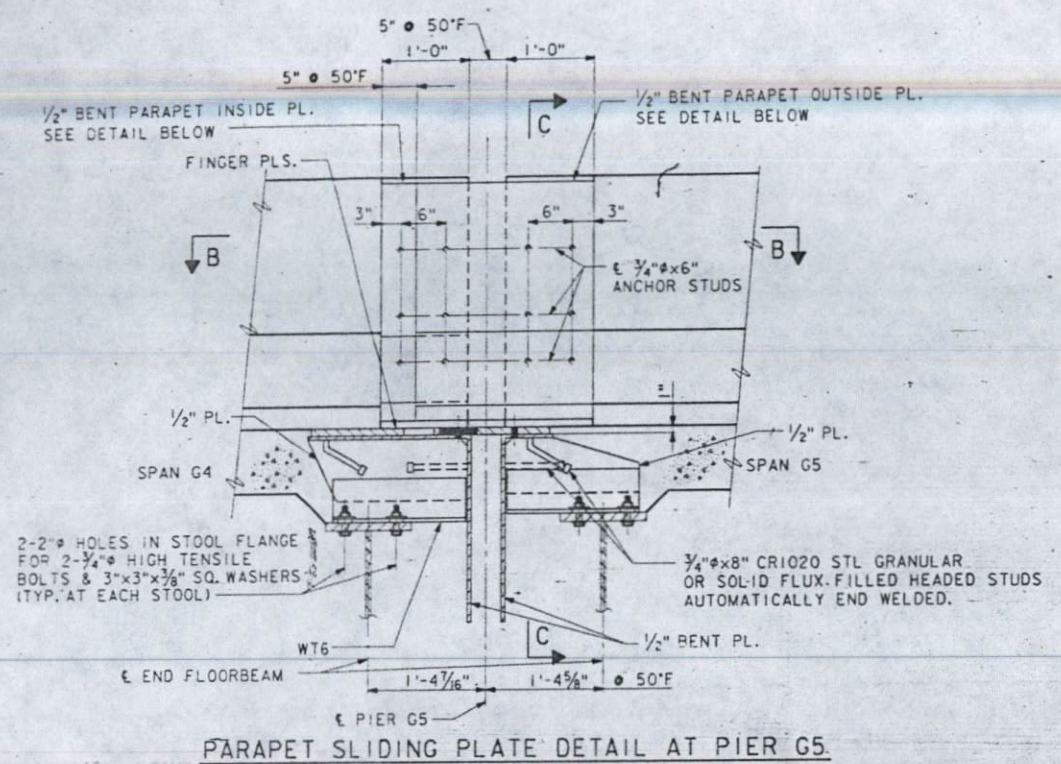
PREPARED BY:
SVERDRUP CORPORATION
ST. LOUIS, MISSOURI

REHABILITATION FOR
FAI-55/70 COMPLEX
ROADWAY G - DECK REHABILITATION
RETURN WALL AT PIER G12

STRUCTURE NO. 082-0254
STA. 75+67.00 TO STA. 88+11.83 (FAI-70) ST. CLAIR CO.

ROUTE NO.	SECTION	COUNTY	FILE NO.	SHEET NO.
FAI-70	*	ST. CLAIR	320	73
BLANDS		PROJECT		

* 82-3HVB-2R-1



NOTES

FURNISHING OF STRUCTURAL STEEL AND REINFORCED NEOPRENE ELASTOMERIC TROUGH ARE NOT PART OF THIS CONTRACT.
FIELD DRILLING, FIELD WELDING AND ERECTION OF STRUCTURAL STEEL ARE PART OF THIS CONTRACT. SEE SHOP DRAWINGS AND SPECIAL PROVISIONS.

REHABILITATION FOR
FAI - 55/70 COMPLEX
ROADWAY G - DECK REHABILITATION
EXPANSION JOINT DETAILS

STRUCTURE NO. 082-0254
STA. 75+67.00 TO STA. 88+11.83 @ FAI-70 ST. CLAIR CO.

PREPARED BY:
SVERDRUP CORPORATION
ST. LOUIS, MISSOURI

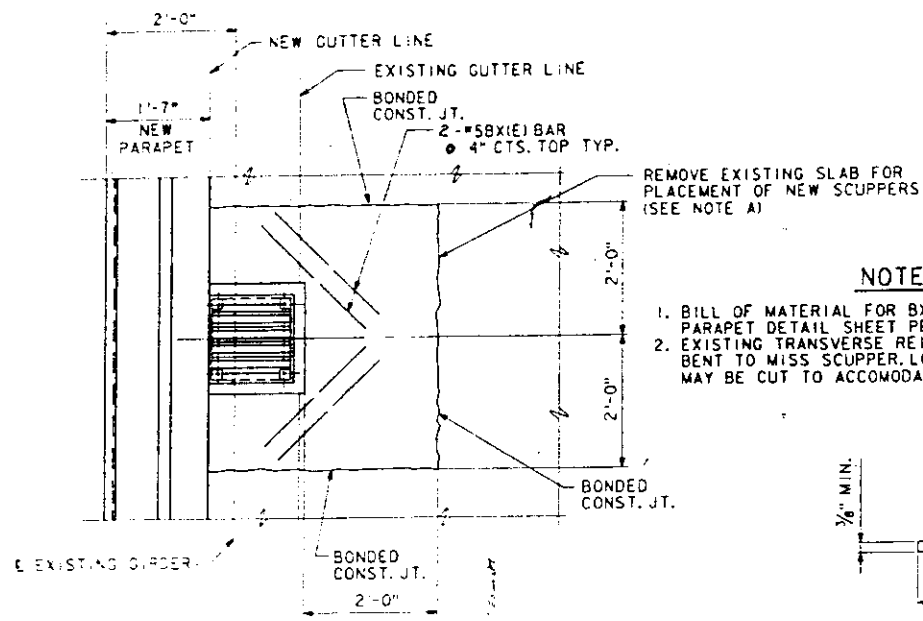
SHEET NO. 32 OF 56

LEVELS PLOTTED DATE: OCT. 14, 1987
35 56 57 58 63
FILE: ZF3:110.13DET10E.DGN
PRF:DET10E

DESIGNED	R. BUTTERFIELD
CHECKED	B. CARLSON
DRAWN	D. RIEHL
CHECKED	B. CARLSON

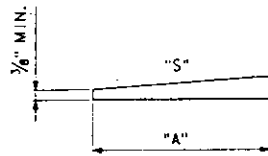


*82-3HV8-2R-1



NOTE A

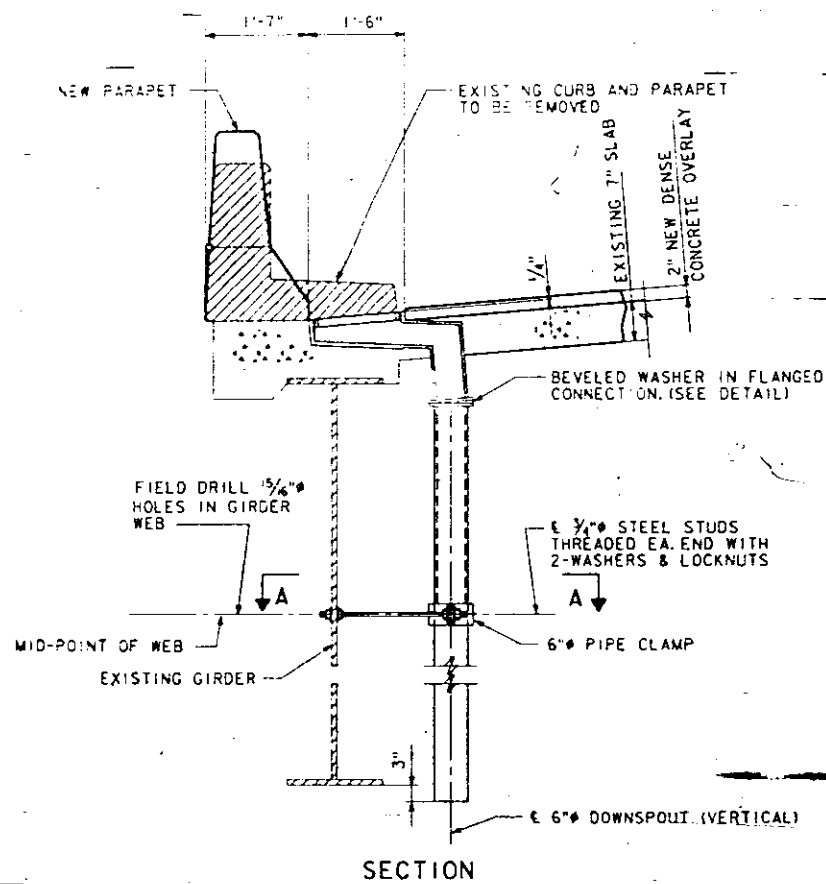
1. BILL OF MATERIAL FOR BX(E) BARS IS ON THE PARAPET DETAIL SHEET PER EACH ROADWAY SECTION.
2. EXISTING TRANSVERSE REINFORCEMENT BARS SHALL BE BENT TO MISS SCUPPER. LONGITUDINAL REINFORCEMENT BARS MAY BE CUT TO ACCOMMODATE SCUPPER AS REQUIRED.



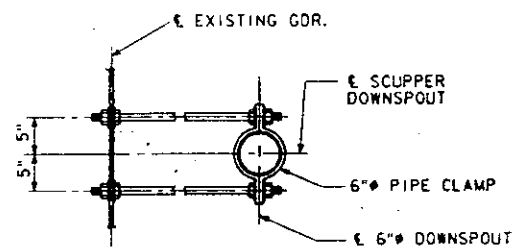
BEVELED WASHER DETAIL

1. "S" EQUALS THE SLOPE OF THE SUPERELEVATION AT THE INDIVIDUAL SCUPPER LOCATION.
2. THE BEVEL SHALL BE SUFFICIENT TO ALLOW VERTICAL INSTALLATION OF DOWN-SPOUT.
3. DIMENSION "A" SHALL BE AS REQUIRED FOR THE PARTICULAR SCUPPER TYPE.

PLAN

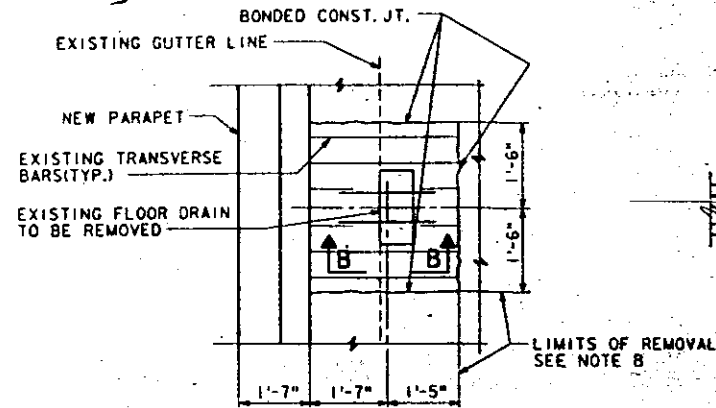


SECTION

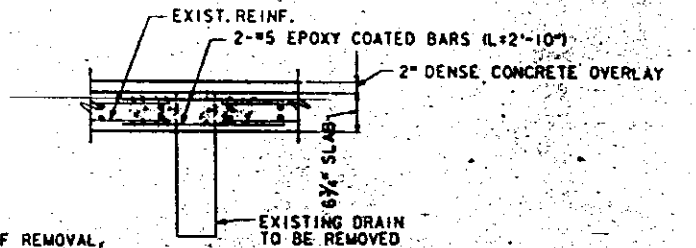


SECTION A-A

DRAINAGE SCUPPER



PLAN



SECTION B-B

NOTE B

1. REMOVE THE EXISTING DRAIN TO LIMITS SHOWN WITHOUT DAMAGE TO EXISTING REINFORCEMENT BARS.
2. CLEAN EXISTING REINFORCEMENT BARS AND TIE NEW #5 BARS TO SPAN DRAIN HOLE.
3. REPLACE REMOVED CONCRETE WITH CLASS X CONCRETE TO THE LEVEL OF EXISTING CONCRETE.
4. NEW CONCRETE IS TO ATTAIN FULL 28-DAY STRENGTH PRIOR TO PLACING OVERLAY.
5. COST OF NEW CLASS X CONCRETE AND #5 BARS TO BE INCIDENTAL TO DECK SLAB REPAIR (FULL DEPTH).
6. IT IS ESTIMATED THAT IN SPANS G1 THROUGH G13 THERE ARE 149 FLOOR DRAINS TO BE REMOVED.

FLOOR DRAIN REMOVAL

10320 FILE:ZF31101DET110E.DGN
875627 PRF:DET110E

LEVELS PLOTTED DATE: OCT. 14, 1987
35 54 56 57 58 63

DESIGNED	M. COTTEN
CHECKED	R. TAGARAO
DRAWN	J. CORLEY
CHECKED	R. SANDOVAL

BILL OF MATERIAL

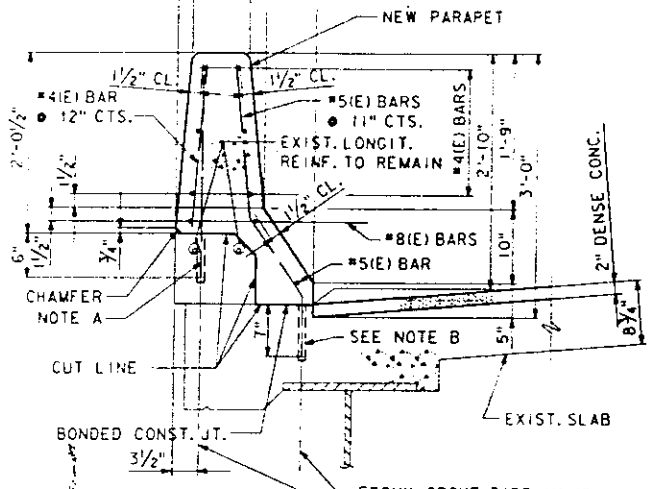
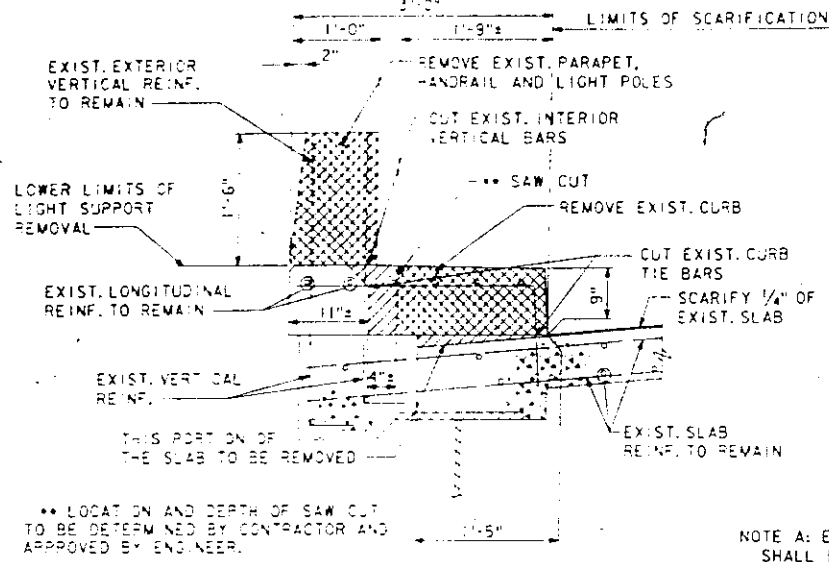
ITEM	UNIT	QUANTITY
DRAINAGE SCUPPERS	EACH	12

NOTE: FOR SPACING OF DRAINAGE SCUPPERS SEE SHEETS 25 THRU 27.

PREPARED BY
SVERDRUP CORPORATION
ST. LOUIS, MISSOURI

REHABILITATION FOR
FAI - 55/70 COMPLEX
ROADWAY G - DECK REHABILITATION
SCUPPER DETAILS

STRUCTURE NO. 082-0254
STA. 75+67.00 TO STA. 88+11.83 FAI-70R ST. CLAIR CO.

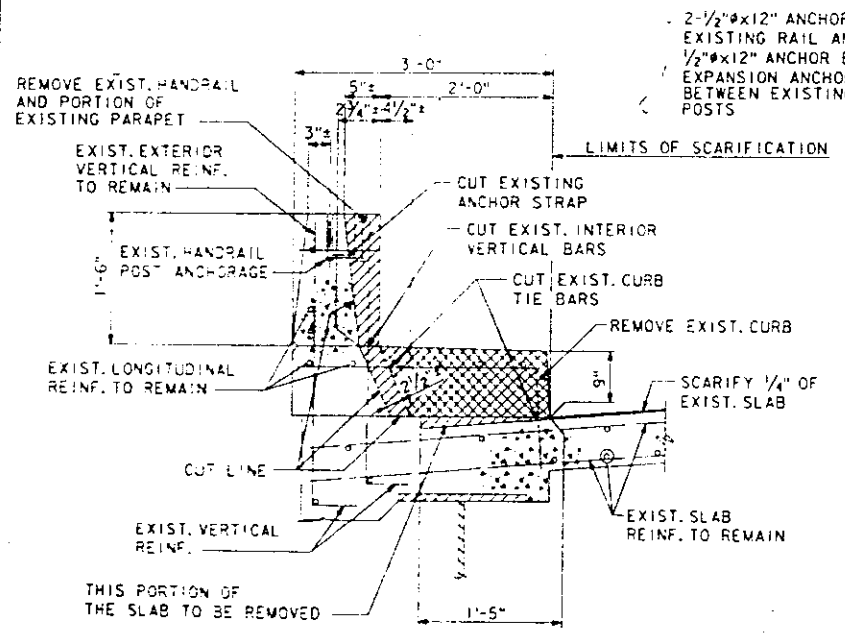


PARAPET RECONSTRUCTION - ALTERNATE 2

NOTE: EXPANSION ANCHORS FOR SIGN SUPPORT IN NEW PARAPET NOT SHOWN. SEE SIGN SUPPORT DETAILS.
REINFORCING SHOWN IS TYPICAL EXCEPT FOR SLAB AND PARAPET SECTION 3'-0"± EACH SIDE OF EXPANSION JOINT. SEE PARAPET SECTION AT EXPANSION JOINT.

MODIFICATION

NOTE B
WHICHEVER ALTERNATIVE IS SELECTED, THE CONTRACTOR SHALL TEST 10% OF THE #5(E) BARS IN THE FRONT FACE OF THE NEW PARAPET, AS DIRECTED BY THE ENGINEER TO MEET A MIN. CERTIFIED PULL OUT LOAD OF 13.3 KIPS. FOR EVERY BAR THAT FAILS TO MEET THE PULL OUT LOAD OF 13.3 KIPS, THE CONTRACTOR SHALL TEST TWO ADDITIONAL BARS AND REGROUT AN ADDITIONAL #5(E) BAR EITHER SIDE OF THE FAILED BAR. COST OF TESTING AND ADDITIONAL BARS SHALL BE INCIDENTAL TO "REINF. BARS (EPOXY COATED)".



PARAPET RECONSTRUCTION - ALTERNATE 3

NOTE: EXPANSION ANCHORS FOR SIGN SUPPORT IN NEW PARAPET NOT SHOWN. SEE SIGN SUPPORT DETAILS.
REINFORCING SHOWN IS TYPICAL EXCEPT FOR SLAB AND PARAPET SECTION 3'-0"± EACH SIDE OF EXPANSION JOINT. SEE PARAPET SECTION AT EXPANSION JOINT.
LIGHT POLES SHALL BE REMOVED. LIGHT POLE SUPPORTS TO REMAIN IN PLACE AS NOTED.

LEGEND:

- LIMITS OF REMOVAL BY LARGE HAMMER (90 LB.)
- LIMITS OF REMOVAL BY SMALL HAMMER (45 LB.) OR WATER JET.

10320 FILE: ZF3110.1PARALT2.DGN
 87565 PRE: PARALT2
 LEVELS PLOTTED DATE: OCT. 14, 1987
 35 56 57 58 63

G. J. DEE	DESIGNED
C. LIZANA	CHECKED
S. KAEMMERER	DESIGN
P. HANSON	CHECKED

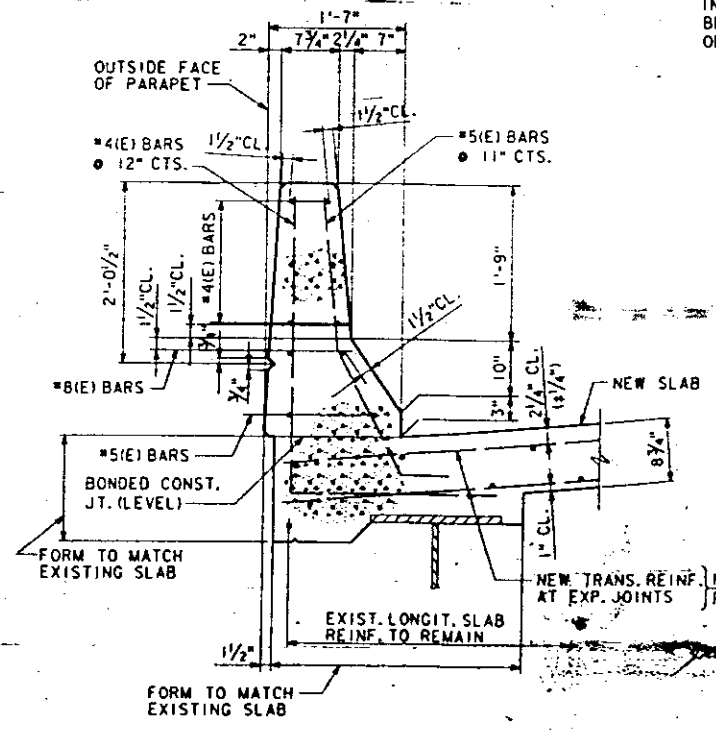
PARAPET RECONSTRUCTION ALTERNATE 2			
PARAPET REMOVAL	CU. YDS.	483.0	
REINFORCING BARS (EPOXY COATED)	LBS.	82,121	
CLASS X CONCRETE SUPERSTRUCTURE	CU. YDS.	356.1	
SPANS A1 THRU A24			
SPANS G1 THRU G13			
SPANS D11 THRU D32			
SPANS H1 THRU H4			

PARAPET RECONSTRUCTION ALTERNATE 3			
PARAPET REMOVAL	CU. YDS.	304.4	
REINFORCING BARS (EPOXY COATED)	LBS.	48,489	
CLASS X CONCRETE SUPERSTRUCTURE	CU. YDS.	203.0	
EXPANSION BOLTS 1/2"x12"	EACH	4768	
SPANS A1 THRU A24			
SPANS G1 THRU G13			
SPANS D11 THRU D32			
SPANS H1 THRU H4			

NOTE: QUANTITIES SHOWN ARE FOR CONTRACTOR'S INFORMATION ONLY. PARAPET RECONSTRUCTION SHALL BE PAID FOR ON A L.H. FT. BASIS. SEE TOTAL BILL OF MATERIAL.

NOTES

FOR PARAPET RECONSTRUCTION - ALTERNATE 1 FOR ROADWAYS A, G, D AND H, SEE PARAPET DETAILS.
ALL REINFORCING BARS AND EXPANSION BOLTS SHALL BE EPOXY COATED.
PARAPET JOINT DETAILS SAME AS SHOWN FOR ALTERNATE 1.
LONGITUDINAL PARAPET REINFORCEMENT SHALL LAP 4'-7" MIN. FOR #8 BARS AND 2'-2" MIN. FOR #5 BARS.
DURING THE ENTIRE DEMOLITION OPERATION IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT SLAB AREAS UNDERNEATH THE PARAPET BEING REPLACED FROM ANY DAMAGE TO THE CONCRETE OR REBARS.



SECTION THRU PARAPET AT EXP. JOINT

PREPARED BY:
SVERDRUP CORPORATION
ST. LOUIS, MISSOURI

REHABILITATION FOR
FAI-55/70 COMPLEX
ROADWAYS A, G, D AND H
PARAPET RECONSTRUCTION
ALTERNATES 2 AND 3
STRUCTURE NO. 082-0141 (RDWY. A)
STRUCTURE NO. 082-0254 (RDWY. G)
STRUCTURE NO. 082-0144 (RDWY. D)
STRUCTURE NO. 082-0256 (RDWY. H)
IFAI-701 ST. CLAIR CO.

Joint Size	"C" at 50°F	"D" at 50°F	Location
2"	2"	1 1/2" Min.	Piers A5, A11, A12, Abut. G4, D11, D12 & D18
2 1/2"	2 1/2"	1 3/4" Min.	Piers A21, G1, G9 & D21
4"	3"	2 1/2" Min.	Piers A1, A8, A15, A18, D26 & G12

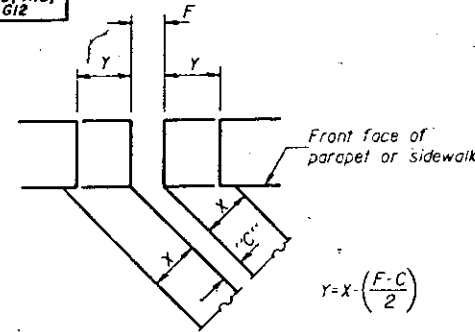
INSTALLATION NOTES

1. Install sponge mandrels into positions shown to form flap convolution.
2. Install parapet or sidewalk piece (trim roadway flap to fit before applying epoxy).
3. Install continuous seal in roadway.
4. Install anchor blocks as indicated.

NOTE A: Maximum spacing of anchor bolts shall be 12" centers.

SKREW LIMITATIONS

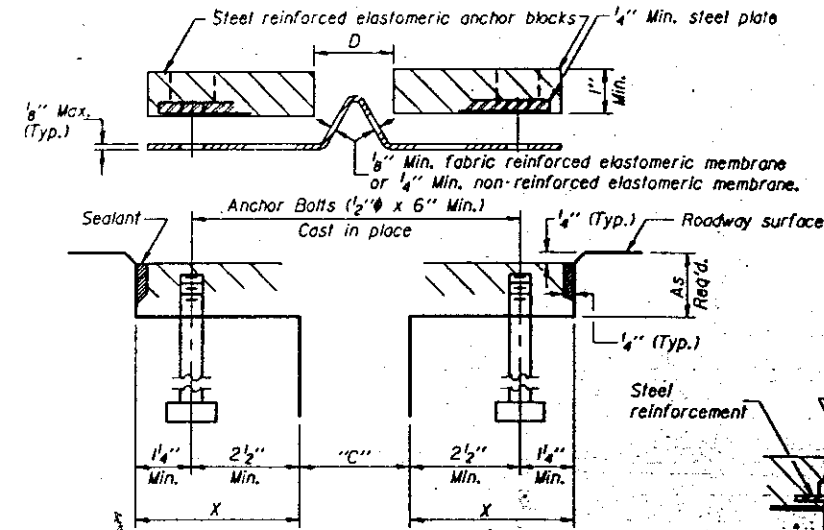
The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews. For skews greater than 50° the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D" might require modifications to insure a minimum clearance of 1/2" from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at 12" cts.



FORMING BLOCKOUT SKETCH

$$Y = X \left(\frac{F-C}{2} \right)$$

For dimension "F" see parapet details.



CROSS SECTION

ANCHOR BLOCK REINFORCEMENT WITH ASPHALT SURFACE

GENERAL NOTES

Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane. See Special Provisions.

The elastomeric membrane shall be pre-molded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

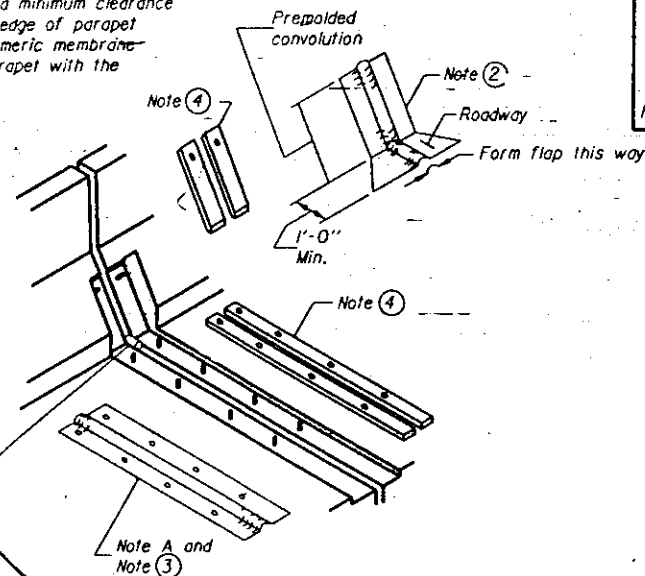
The steel reinforcement must extend up the back face of anchor blocks when asphalt surfaces are used but is optional in concrete blockout.

The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

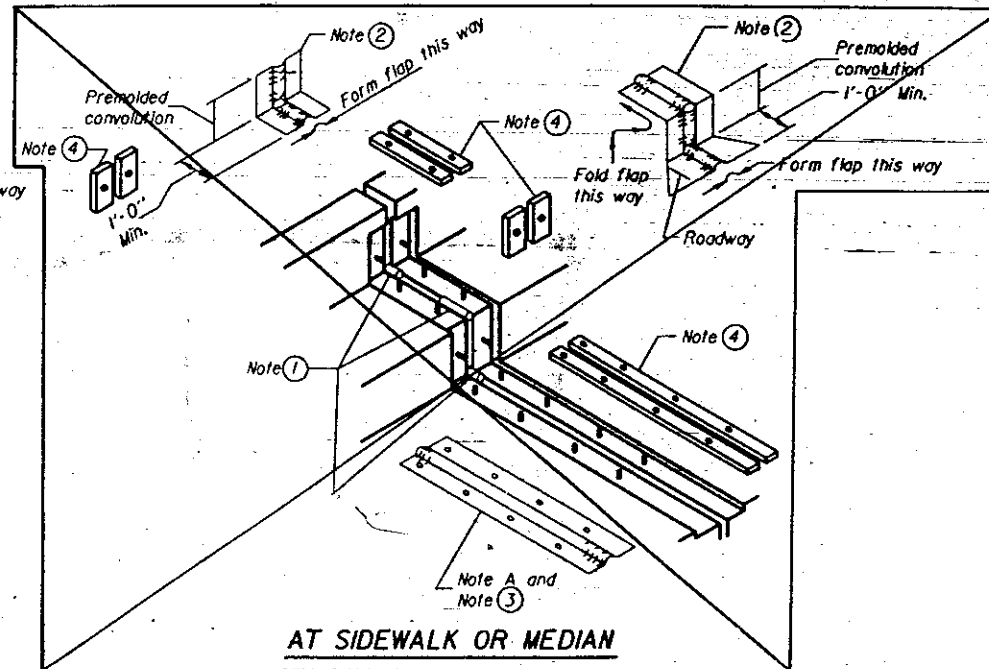
Joint openings shall be adjusted in accordance with Article 503.07(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.

The parapet and sidewalk flaps may be furnished factory vulcanized to the roadway membrane provided the centerline of the convolution is maintained and the process and method meet the approval of the Engineer.

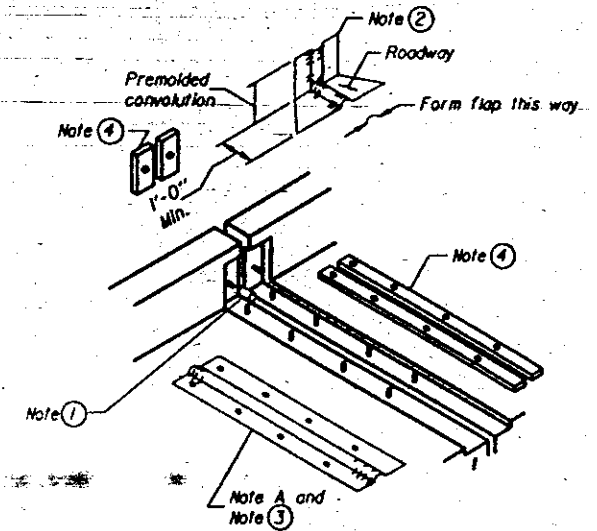
Anchor bolts, washers and nuts, to be plated against corrosion in accordance with the special provisions, shall be zinc-coated by the mechanical plating method conforming to ASTM B695, class 50. Zinc-coated nuts shall be topped oversize in accordance with the requirements of AASHTO M29 and shall meet the supplementary requirements S11 thru S12.1 of the same specifications for lubricant and testing.



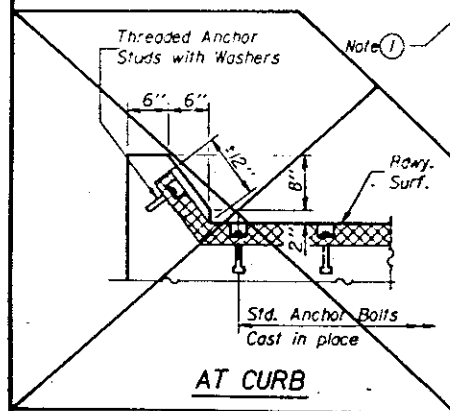
AT PARAPET



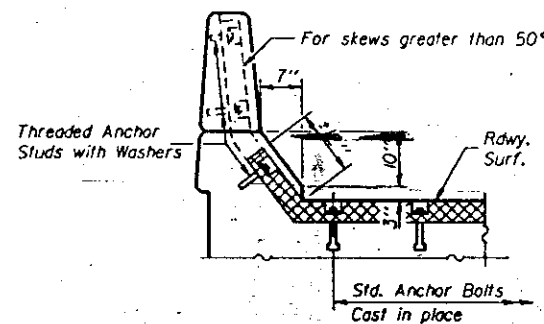
AT SIDEWALK OR MEDIAN



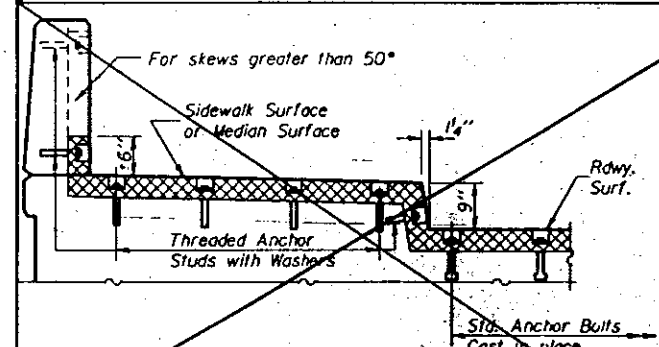
AT VERTICAL PARAPET WALL
East Parapet - Abut. G4



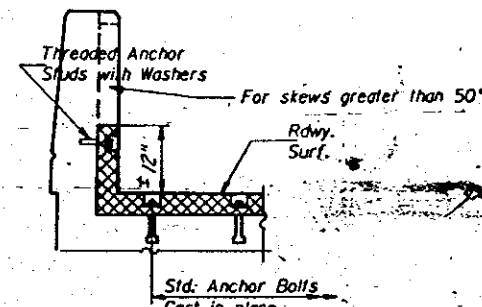
AT CURB



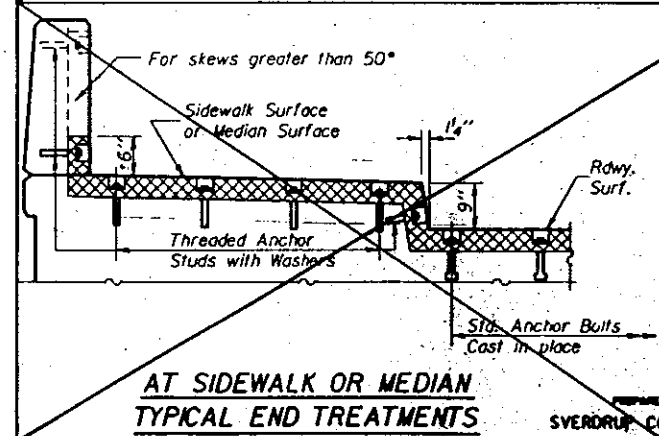
AT PARAPET



AT SIDEWALK OR MEDIAN



AT VERTICAL PARAPET WALL



TYPICAL END TREATMENTS

DESIGNED	
CHECKED	
DRAWN	
CHECKED	R. Sandoval

EJ-CS 12-1-83

7/20/87

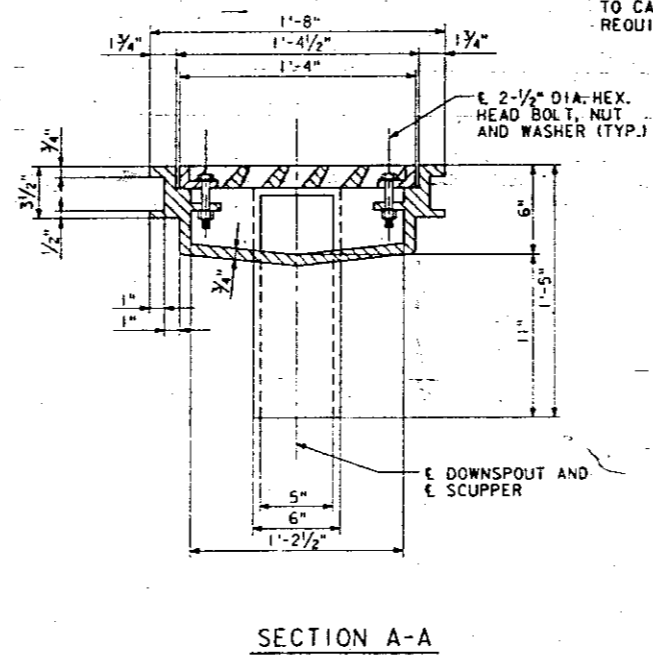
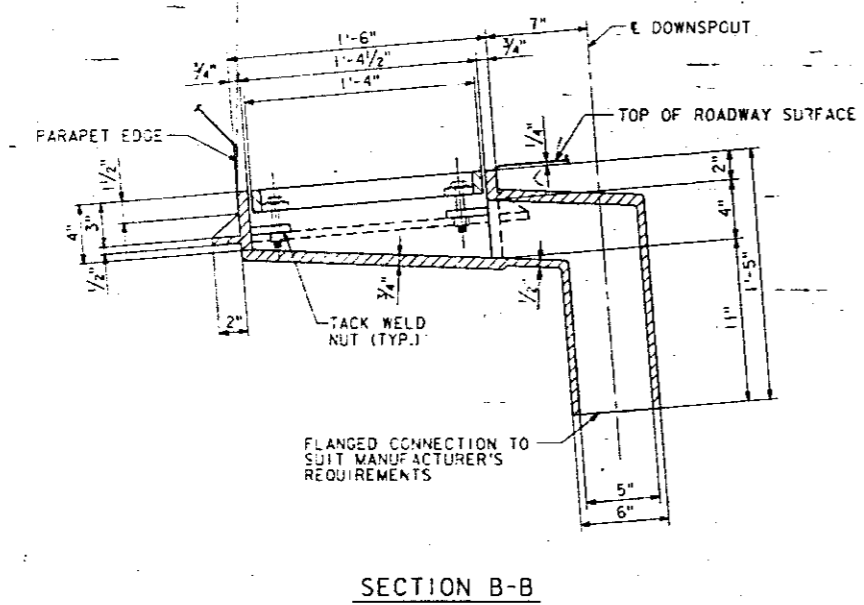
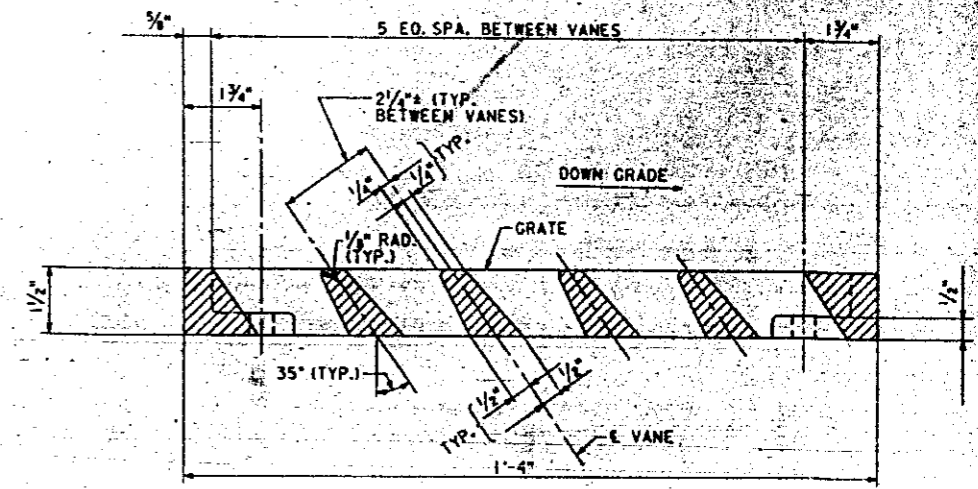
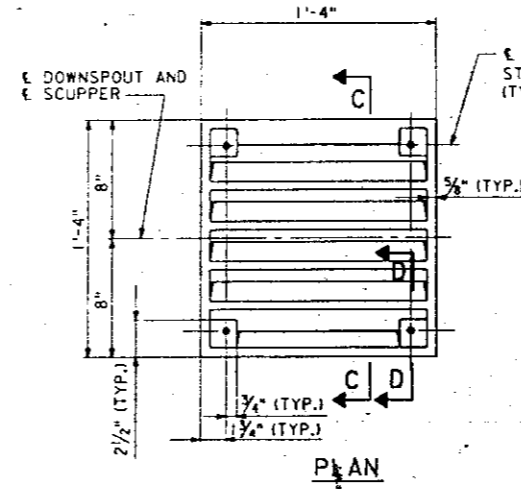
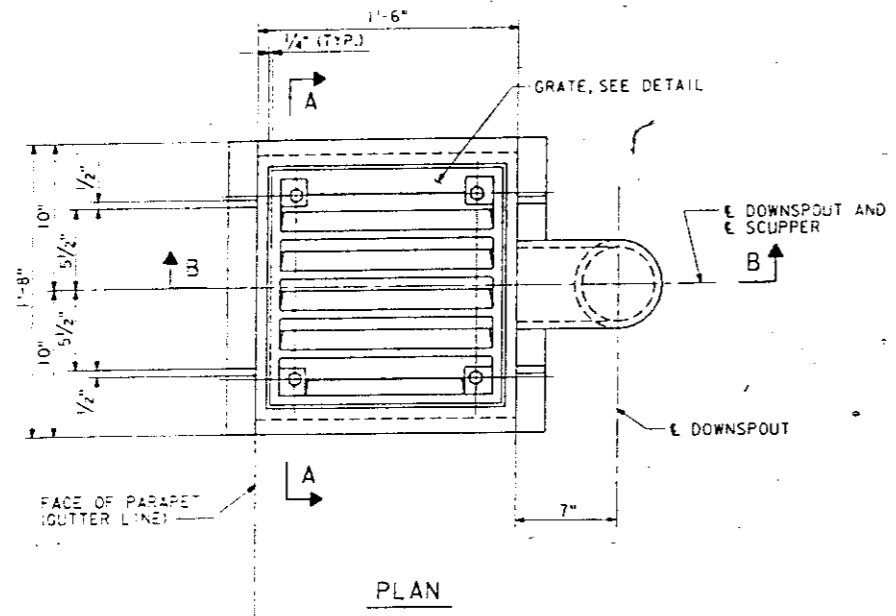
PREPARED BY
SVERDRUP CORPORATION

REHABILITATION FOR
FAI - 55/70 COMPLEX
CONTINUOUS SEAL TYPE
NEOPRENE EXPANSION JOINTS
FOR 2", 2 1/2" AND 4" MOVEMENT

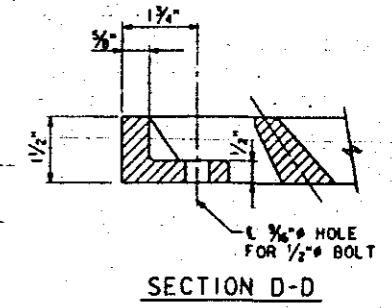
STRUCTURE NO. 082-0141 (RDWY. A)
STRUCTURE NO. 082-0144 (RDWY. D)
STRUCTURE NO. 082-0284 (RDWY. G)

(FAI - 70) ST. CLAIR CO.
SHEET NO. 55 OF 56

082-3HVB-2R-1



NOTE: LOCATION OF HOLES FOR FASTENING GRATE TO CASTING TO SUIT MANUFACTURER'S REQUIREMENTS.



NOTES

ALL CAST IRON PARTS SHALL BE GRAY IRON CONFORMING TO THE REQUIREMENTS OF AASHTO M-105, CLASS 30.
BOLTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307.
ALL BOLTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M-232.
AS AN ALTERNATE BOLTS AND WASHERS MAY BE STAINLESS STEEL CONFORMING TO THE REQUIREMENTS OF ASTM A-193 TYPE 304.
COST OF THE GRATE, FRAME, DOWNSPOUT, BOLTS AND WASHERS INCLUDING COMPLETE INSTALLATION OF SCUPPER SHALL BE PAID FOR AT THE UNIT BID PRICE FOR "DRAINAGE SCUPPERS".
A MATERIAL SUCH AS GREASE SHOULD BE USED AS A TREATMENT FOR THE BOLTS ANCHORING THE GRATE TO THE FRAME.

DRAINAGE SCUPPER

NOTE: FOR CONNECTION OF SCUPPER TO DOWNSPOUT AND DOWNSPOUT TO GIRDER, SEE SCUPPER DETAILS FOR EACH ROADWAY SET OF PLANS.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY		
		RDWY. A	RDWY. G	RDWY. D
DRAINAGE SCUPPERS	EACH	39	12	33

REHABILITATION FOR
FAI - 55/70 COMPLEX
CAST IRON DRAINAGE SCUPPER

STRUCTURE NO. 082-0141 (RDWY. A)
STRUCTURE NO. 082-0144 (RDWY. D)
STRUCTURE NO. 082-0254 (RDWY. G)
(FAI-70) ST. CLAIR CO.

PREPARED BY
SYVERDRUP CORPORATION
ST. LOUIS, MISSOURI

REV. 8/26/88

SHEET NO. 56 OF 56

LEVELS PLOTTED DATE: OCT. 14, 1987
FILE: Z53110.1C1SCUP.DGN
35,56,57,58
PRF: CISCUP

G.J. DEE
DESIGNED
C. LIZANA
CHECKED
R. ROTH
DRAIN
R. BUTTERFIELD
CHECKED