

016-0834

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED  
FEDERAL AID INTERSTATE HIGHWAY

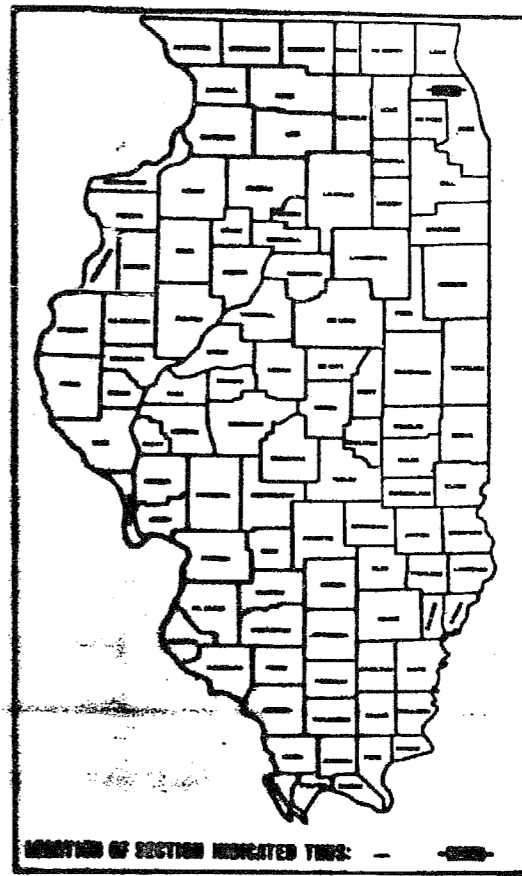
F.A.I. ROUTE 94  
SECTION - 0203.1-BR-79  
PROJECT 1-94-2(153)41

REHABILITATION OF DEVON AVENUE GRADE SEPARATION  
OVER EDENS EXPRESSWAY  
COOK COUNTY  
C- 94-182-79

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	0203.1-BR-79	COOK	24	1
F.A.I. PROJ.		ILLINOIS PROJECT		
P-94-272-78				

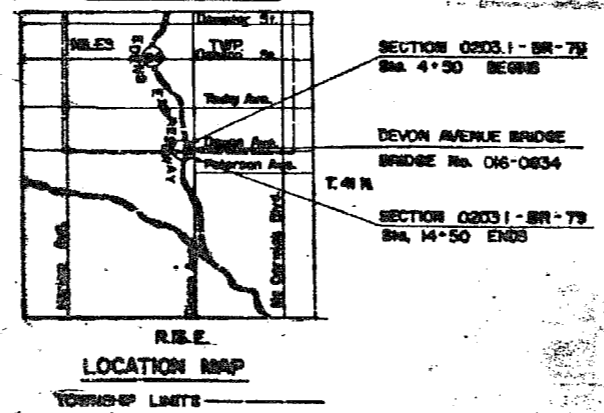
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**DESCRIPTION OF WORK**

THE IMPROVEMENT CONSISTS OF REPAIRING THE BRIDGE CARRYING DEVON AVENUE OVER THE EDENS EXPRESSWAY. INCLUDED IS RAISING OF SUPERSTRUCTURE, REPLACEMENT OF ABUTMENT BEARINGS WITH ELASTOMERIC BEARINGS, REPAIR AND RESURFACING OF THE DECK, APPROACH ROADWAYS, CONCRETE PIERS AND ABUTMENTS.



*Girindra C. Roy*  
GIRINDRA ROY  
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STATE OF ILLINOIS NO. 81 - 3448  
DATE JULY 1, 1979

*N. S. Shah*  
N. S. SHAH  
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STATE OF ILLINOIS NO. 62 - 33211  
DATE JULY 1, 1979

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

7/26/79  
*John C. ...*  
8/6/79  
*Thomas R. ...*  
8/6/79  
*John ...*

U.S. DEPARTMENT OF TRANSPORTATION  
GENERAL HIGHWAY ADMINISTRATION

APPROVED  
DIVISION ADMINISTRATOR

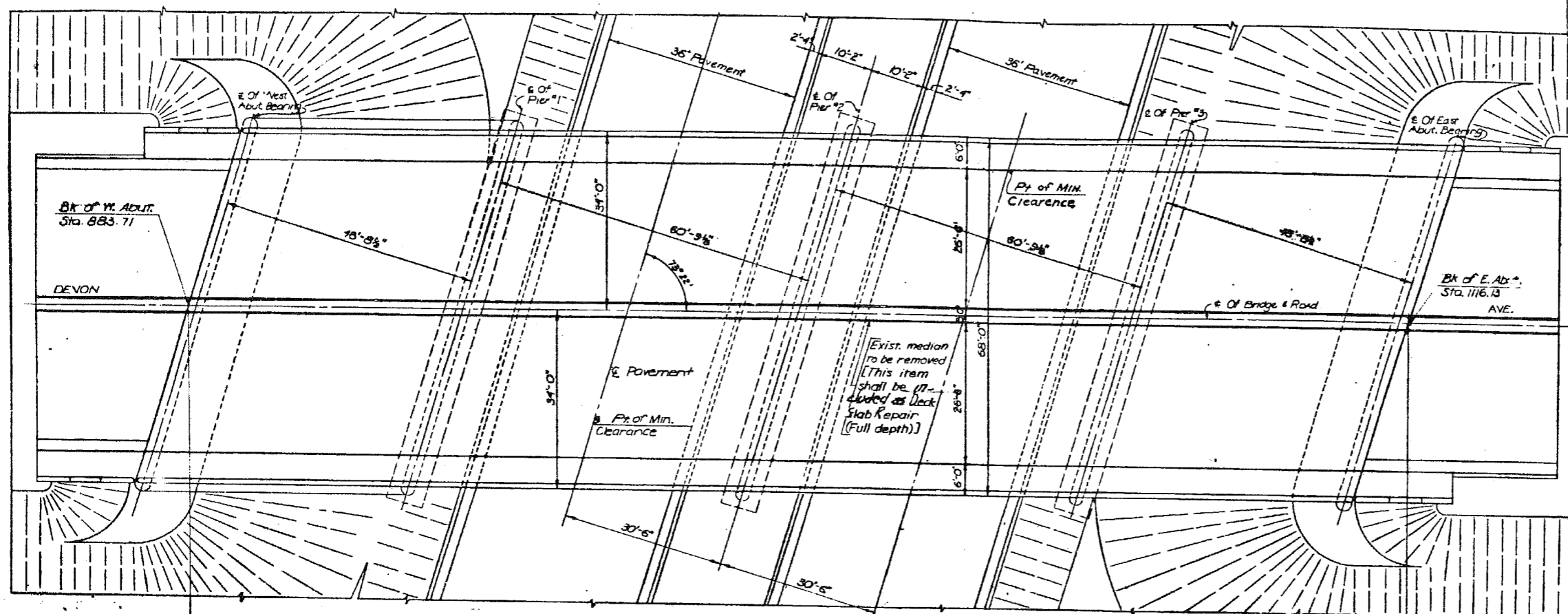
GLOBETROTTERS ENG. CORP.  
CONSULTING ENGINEERS  
6829 SOUTH WABASH AVE. CHICAGO, ILL. PH. 312-582-8401

CONTRACT NO. 34016

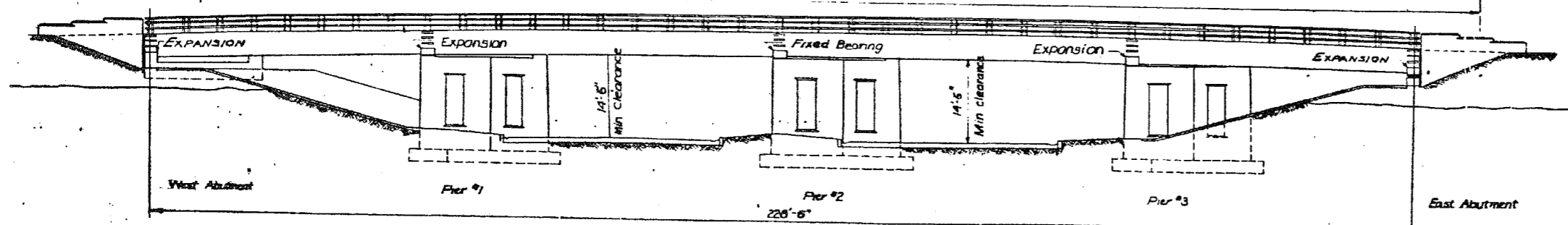
COUNTY COOK SECTION 0203.1-BR-79 F.A.I. ROUTE 94

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	0203.1-BR-78	COOK	24	3
F. H. A. REG.		ILLINOIS PROJECT		

P-91-272-78



**PLAN OF EXISTING BRIDGE DECK**  
232.41 Bk to Bk. Abuts



**ELEVATION**

Design Specifications:  
AASHTO 1977 &  
Interims 1978

Design Loading: HS 20-44

Design Stresses:  
f<sub>c</sub> = 3500 psi (Class X Concrete)  
f<sub>s</sub> = 20 000 psi (Structural Steel)  
f<sub>y</sub> = 40 000 psi (Reinf.)

APPROVED  
FOR STRUCTURAL ADEQUACY ONLY

**SCOPE OF WORK**

Existing Bridge No. 016-0834 @ Station 27+45.3 built in 1949 as Federal Aid Highway on FA Route 99 Sec 0203.1 HB at Devon Avenue over Eden Expressway Project. The Bridge Super-structure (Steel framing & Deck) is to be raised by 6". Build new concrete bearing pods at abutments and piers. Replace roller bearings at abutments with elastomeric bearings, reuse existing rocker and fixed bearings at piers. Strip and Scarify entire deck and replace with slab partial and full depth repairs where required. Overlay entire deck with bridge deck concrete overlay. The longitudinal joint to be replaced by monolithic slab. Existing expansion joints at abutments and approaches to be removed and replaced. Some damaged curbs to be repaired. Provide new diaphragm steel beams and flashing at all fascia beams. Part of the roadway at both bridge approaches and both approach slabs shall be raised by placing bituminous asphalt concrete on the top of existing roadway pavement and concrete approach slabs. Provide new lanes and crosswalk markings. Removal and replacement of concrete curb & gutters and sidewalk.

**GENERAL NOTES**

- It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to construction and ordering materials.
- Reinforcement bar bending dimensions are out to out.
- All exposed concrete edges shall have 3/4" chamfer unless otherwise indicated.
- All reinforcement bars shall conform to AASHTO M31 Grade 40 or AASHTO M53 Grade 40.
- Flashing at the fascia beams shall be A307 (corrosion resistant steel).
- Expansion bolts shall consist of self-drilling expansion anchors and 3/8" x 12" hotted bolts.
- The basic lead silico chromate paint system shall be used for painting of new structural steel and bearings.
- All missing nuts at the bearing plates shall be A 307.
- Sequence of construction shown on drawing D-7.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8" inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/8" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates.
- All existing utility conduits and wiring and other existing utilities shall be extended due to raising of the bridge and costs thereof shall be incidental to the contract.

**GENERAL PLAN AND ELEVATION**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**  
DIVISION OF HIGHWAYS - DISTRICT I  
1000 PLAZA DRIVE, SCHLAUBURG, ILL.

REHABILITATION OF  
DEVON AVENUE GRADE SEPARATION OVER  
EDEN EXPRESSWAY

**GLOBETROTTERS ENG. CORP.**  
CONSULTING ENGINEERS  
1800 SOUTH WABASH AVE. CHICAGO, ILL. 60605

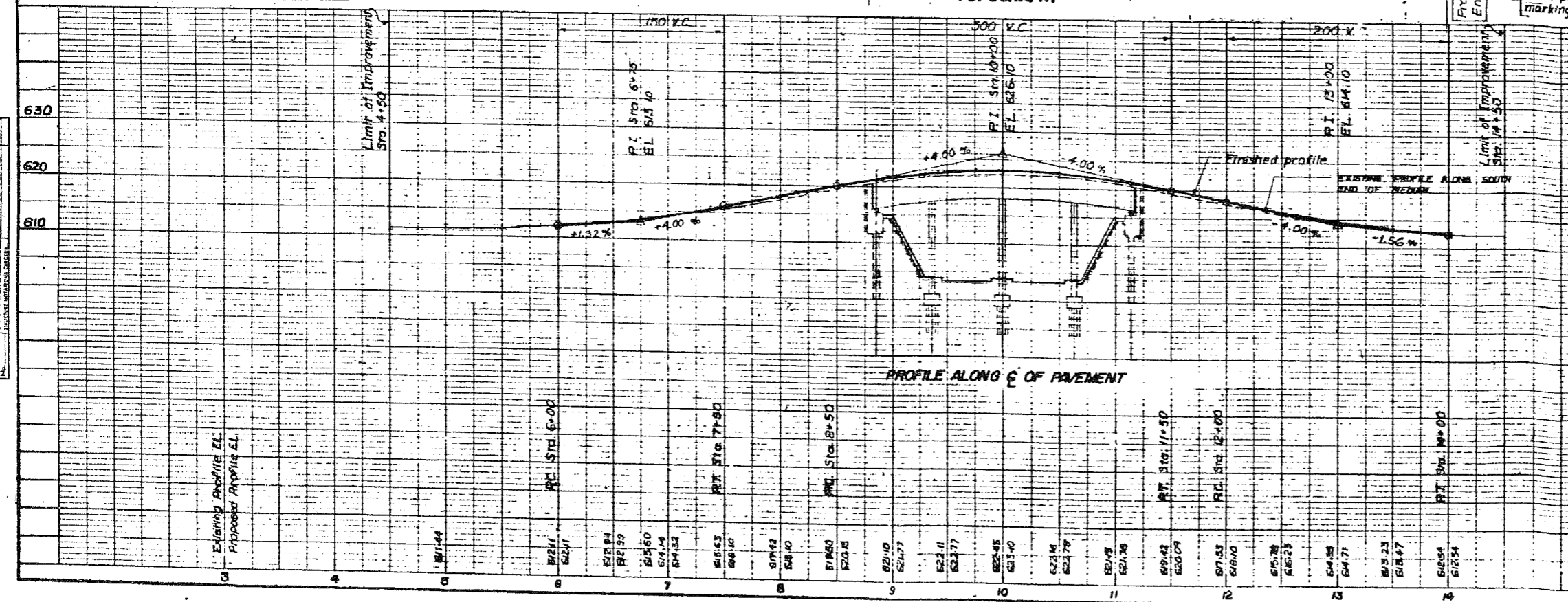
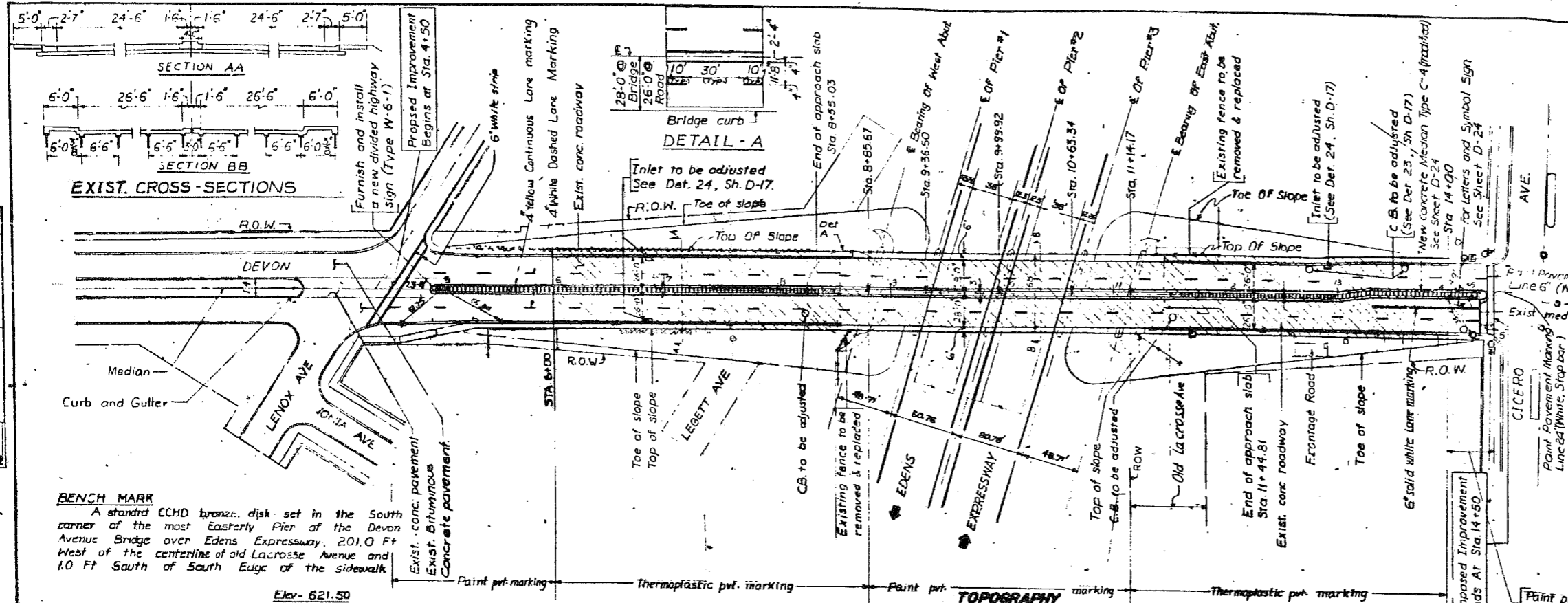
SCALE: None DRAWN BY: Ken Canale SHEET No. D-5  
DATE: 6-29-79 CHECKED BY: R.R. PATEL

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	02031-BR-78	COOK	24	4
P. H. V. A. REG.		ILLINOIS PROJECT		

P-91-272-78

Item	Unit	Qty
1. Fence removal & replacement	Lin. Ft.	80
2. Thermoplastic Pavement marking - Line 4	Lin. Ft.	1360
3. Thermoplastic Pavement marking - Line 5	Lin. Ft.	100
4. Paint pavement marking - Line 4	Lin. Ft.	1100
5. Paint pavement marking - Line 6	Lin. Ft.	300
6. Thermoplastic pavement marking - Line 24	Lin. Ft.	30
7. Thermoplastic Marking Letters & Symbols adjusted for Inlet & CB	Sq. Ft.	60
8. Frame and Grate adjusted for Inlet & CB	Each	8
9. Pavement Removal & Portland Cement Conc. Replacement	Sq. Yd.	100

- LEGEND**
- ▣ Area to be raised and overlaid
  - Inlet
  - Electric Pole
  - Electric vault
  - Traffic sign
  - Traffic signal
  - Tree
  - Hedge
  - Fence
  - Catch Basin
- Note:**
1. Finished profile elevations as shown in this drawing are at the edge of the median.
  2. Lane marking as shown in this drawing are permanent lane markings. This work shall be done after completion of the deck and roadway repair work.
  3. For cross section showing improvement see Sheet D-24.
  4. For median details see Sheet D-24.

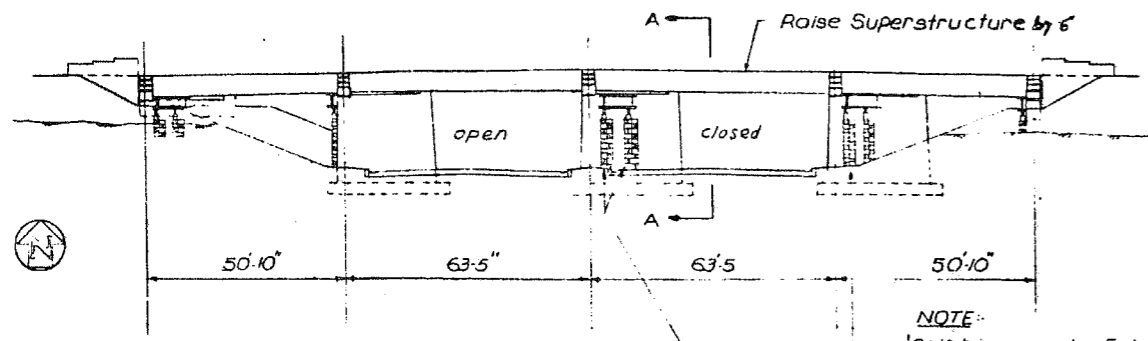


**PLAN**  
NOTE BOOK  
BY: R. R. PATEL

**PROFILE**  
NOTE BOOK  
BY: R. R. PATEL

RYE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	0203.1-BR-78	COOK	24	6
P.W.A. RES.			ILLINOIS PROJECT	

P-91-272-78



**ELEVATION**  
(Proposed Locations of  
Jacks and Cribbings)

**NOTE:**  
Cribbings may be Extended below  
Ground to the Tops of the Pier  
Foundations if Needed

3/8" φ Holes in Post  
(3/8" φ Holes in Tubing  
may be drilled in field)

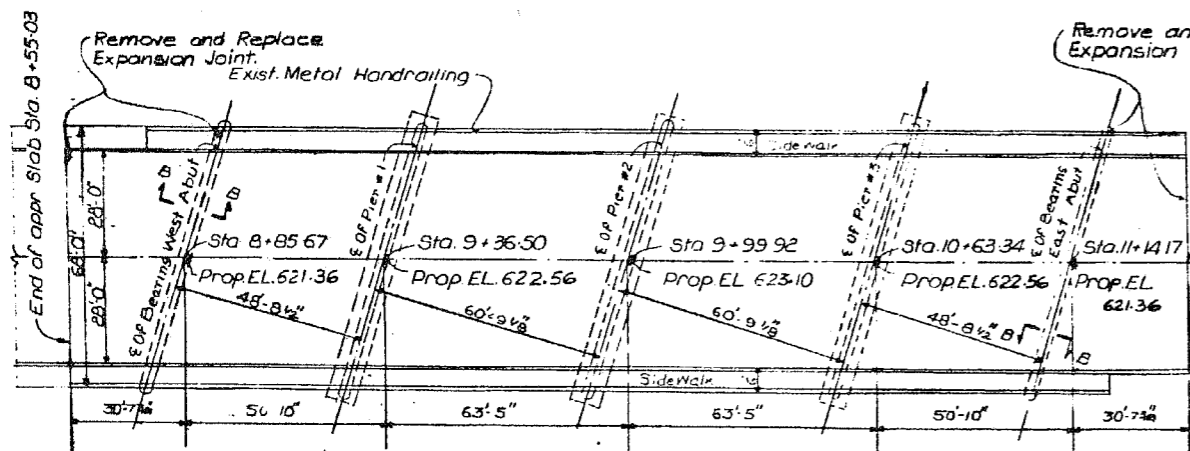
W6x25 @ 7'-9"  
max. cts.  
(AASHTO M-188)

2" x 3" Button Head Machine  
Bolts (with slot or approved recess  
in head) with locknut and flat washer.

Drill 4-1/2" φ holes for 1" φ  
threaded rods with hex.  
nut and flat washer.  
Epoxy grout rods.

**Base Plate Detail**

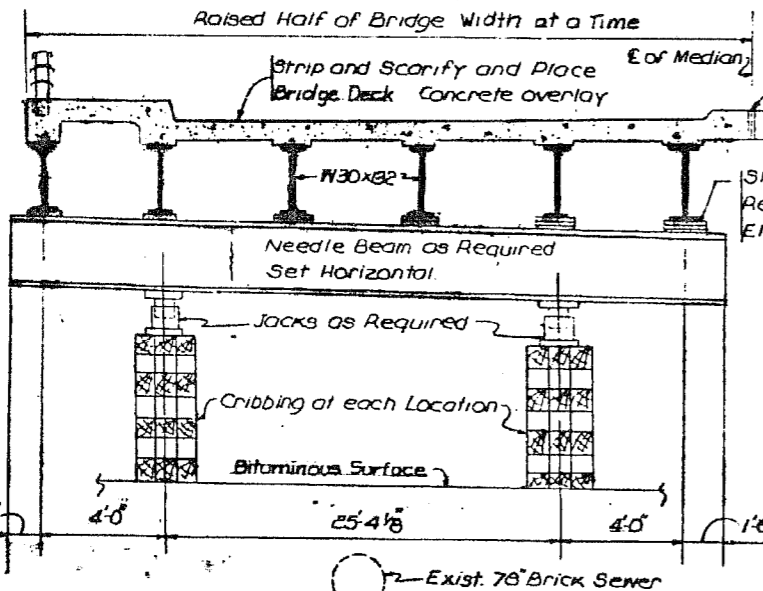
**Anchorage Detail**



**PLAN**

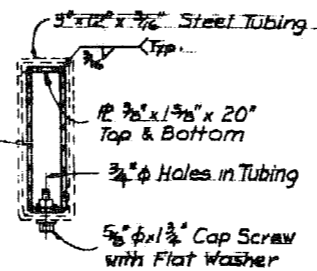
Top of finished bridge deck elevations shown on this  
plan are based on 2" thick Portland Cement Concrete  
bearing surface. If latex modified concrete is used,  
the elevations shall be lowered by 1/4".

Raised Half of Bridge Width at a Time

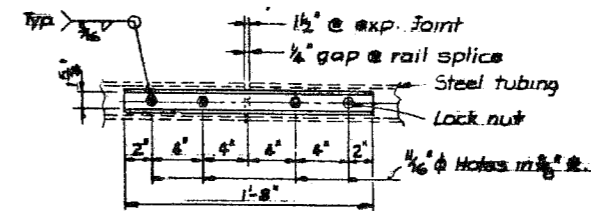


**SECTION A-A**

12" x 11" x 20"  
Each Side

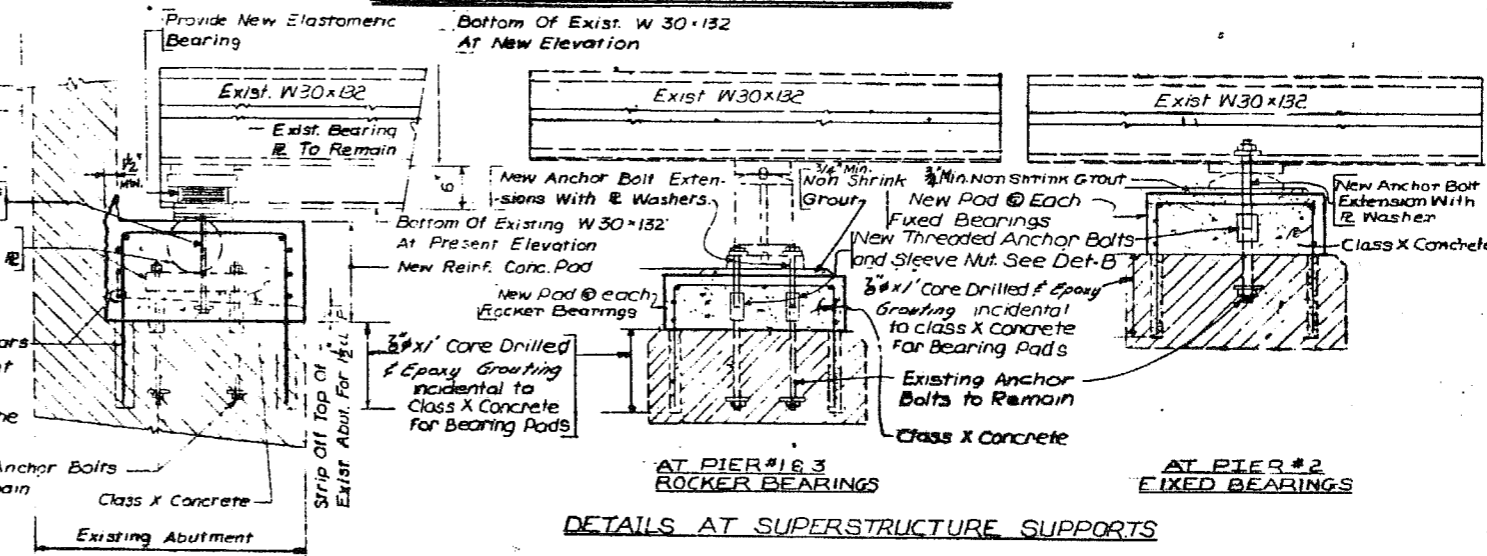


Note: See bridge rail standard type S  
for expansion joint details



**Plan-Bottom Splice Plate**  
Typical

**TEMPORARY BRIDGE RAIL DETAILS**



**DETAILS AT SUPERSTRUCTURE SUPPORTS**

See Sheets D-11, D-13, D-19 & D-20 for  
Pier & Rocker Bearing Repair.

See Sheets D-12 & D-20  
for Pier & Bearing  
Repair.

**AT EAST & WEST  
ABUTMENT**

See Sheets D-14 & D-15 for  
Abutment Repair.  
See Sheet D-19 for Elastomeric  
Bearing Details.

**BRIDGE SUPERSTRUCTURE RAISING DETAILS**

**ILLINOIS DEPARTMENT  
OF TRANSPORTATION**  
DIVISION OF HIGHWAYS - DISTRICT I  
1000 PLAZA DRIVE, SCHALMERS, ILL.

**REHABILITATION OF  
DEVON AVE. GRADE SEPARATION OVER  
EDENS EXPRESSWAY**

**GLOBETROTTERS ENG. CORP.**  
CONSULTING ENGINEERS  
1080 SOUTH WABASH AVE. CHICAGO ILL. 60605

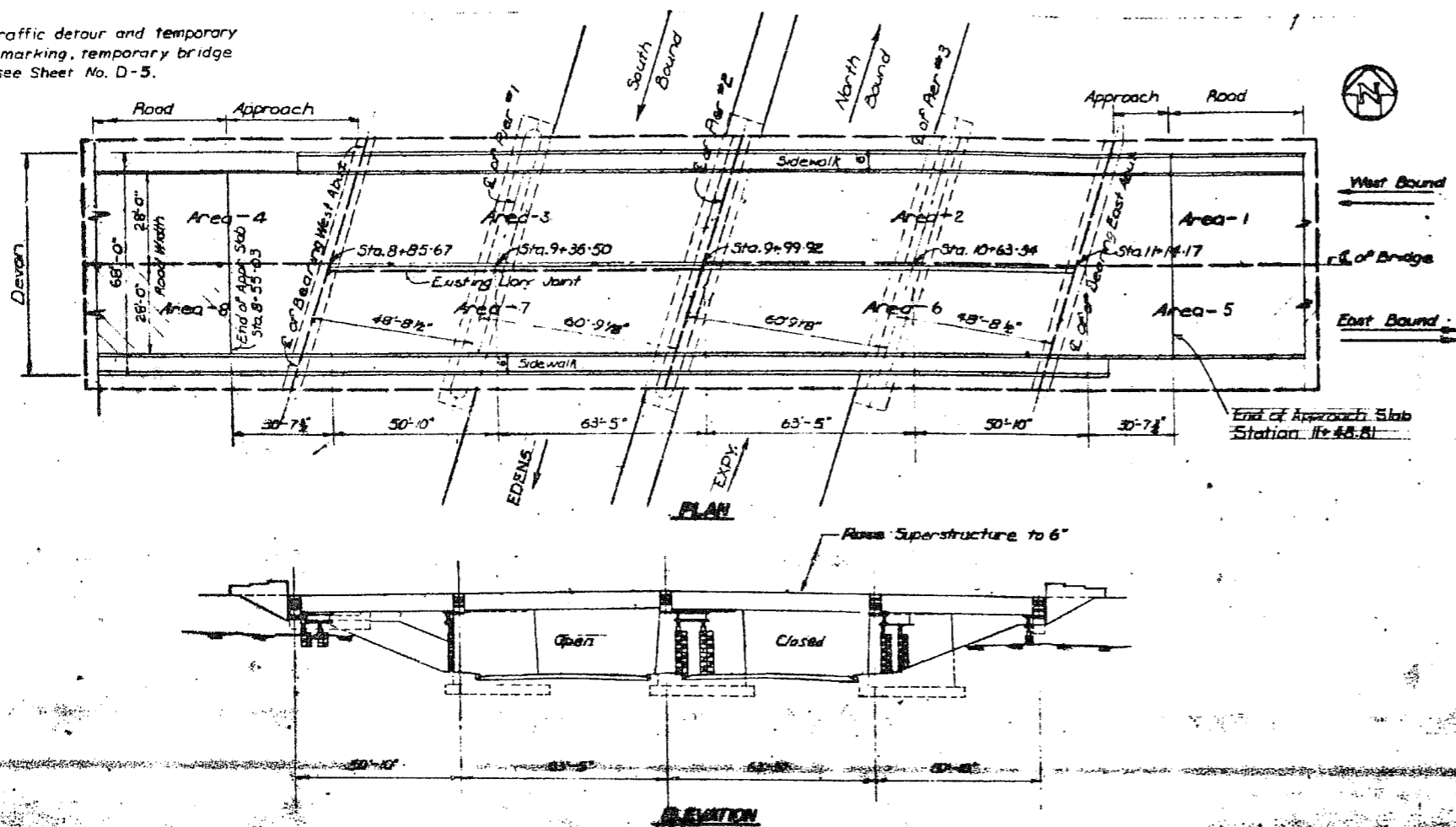
SCALE: None    DRAWN BY: Ken Cording    SHEET No. 6



**Notes:**

For traffic detour and temporary lane marking, temporary bridge rail, see Sheet No. D-5.

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	0803.1-BR-78	COOK	24	7
ILLINOIS PROJECT				
P-91-272-78				



**GENERAL NOTES**

1. Tentative cribbing and jacking arrangements and locations are shown on the drawing. The Contractor is responsible for the complete design of the bridge lifting procedure. Contractor to submit his detail procedure for Engineer's review and approval.
2. Jacks must be simultaneously lifting all points in equal magnitude of all times. A master control reservoir with valves & gauges will be required for all jacking operations.
3. Any unequal jack movement in excess of 1/8" will not be permitted.
4. The jacks must be mechanically secured and locked at the lifted position to insure against hydraulic failure of jacks.
5. Jacks must be calibrated along with the pressure gauge prior to use.
6. Design the needle beam such to preclude deflection in excess of 1/8". However all bridge girders must be set to the true elevation within ± 1/16" by using appropriate shims and wedges over the needle beam.
7. Locate the needle beam as close to the existing bearing points as possible to permit the seat rebuilding.
8. The cribbing and jacks must be designed for the bridge deck Dead load and construction load.
9. Determine the bearing area of the cribbing after a penetrometer test.
10. Periodic checks should be made to determine differential settlement of the cribbing, jacks etc. Any such settlement must be corrected immediately.
11. Contractors must record the levels of undersides of the bridge girders at all bearings prior, during and after the lifting of the bridge. Bi-Daily monitoring of those elevations will be required.
12. It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to construction and ordering of materials.
13. For Edens reconstruction Staging IV and VEA see I.D.O.T. drawing 244 M 85 will be under no circumstances any additional lane closures be permitted on the Edens Expressway.

**SUGGESTED SEQUENCE OF CONSTRUCTION STAGES**

(Proposed Locations of Jacks and Cribbing)

NOTE: Cribbing may be extended below ground to tops of the Pier foundation if needed

This work shall not start until 5-1-80

- North Bound Lanes of Edens Closed to Traffic (Edens Reconstruction Stage IV See note 13)**
- 1. Shift traffic on east bound lanes on Devon and close west bound lanes.
  - 2. Remove the raised median & Clean Longitudinal Joint
  - 3. Install Crib and Jack North half of bridge Areas-2 and 3.
  - 4. Rehabilitate bridge, piers and abutment in area-2 and approach sections and roadway sections in areas-1 and 4 simultaneously. Rehabilitate bearings at all piers and abutments under North half of bridge.
- STAGE B**
- 5. Open traffic on West bound lanes on Devon and close traffic on East bound lanes on Devon.
  - 6. Install Crib and Jack South half of bridge areas-6 and 7.
  - 7. Rehabilitate bridge, piers and abutment in area-6 and approach sections and roadway sections in areas-5 and 8 simultaneously. Rehabilitate bearings at all piers and abutments under South half of bridge.
- STAGE C**
- 8. Open traffic on outer West bound and outer East bound lanes and rehabilitate median between areas 1, 2 and 5, 6.
- South Bound Lanes of Edens Closed to Traffic (Edens Reconstruction Stage VEA- See note 13)**
- 9. Traffic remains open on outer west bound and outer east bound lanes and rehabilitate median between areas 3, 4 and 7, 8.
- STAGE D**
- 10. Open traffic on west bound lanes of Devon and close traffic on east bound lanes.
- STAGE E**
- 11. Rehabilitate bridge, piers and abutment in area 7.
  - 12. Open traffic on east bound lanes on Devon and close traffic on west bound lanes on Devon.
- STAGE F**
- 13. Rehabilitate bridge, piers and abutment in area 8.
  - 13. Open all lanes to traffic By 9-15-80

**Maximum Reactions From Superstructure Per Crib Bearing in kips**

	Abut. West or East	Pier #1	Pier #2	Pier #3
Dead Load	16.1	52.9	55.2	54.9
Live Load	36.4	39.3	40.6	39.3
Total Load	52.5	92.2	95.8	94.2

**Bill of Materials**

ITEM	UNIT	QUANT.
Raising of Bridge	L.S.	1
Raise and Reposition Beams, Crib and Racker	Each	36

**CONSTRUCTION STAGING & BRIDGE SUPERSTRUCTURE RAISING PROCEDURE**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**

**DIVISION OF HIGHWAYS - DISTRICT I**  
1800 PLAZA DRIVE, SCHLAUSBURG, ILL.

REHABILITATION OF  
DEVON AVENUE GRADE SEPARATION OVER  
EDENS EXPRESSWAY

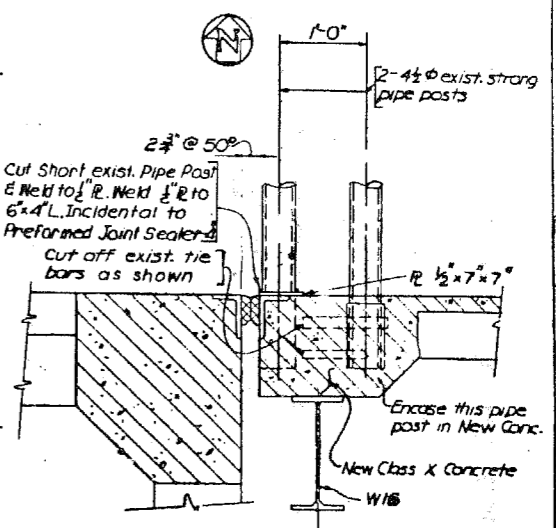
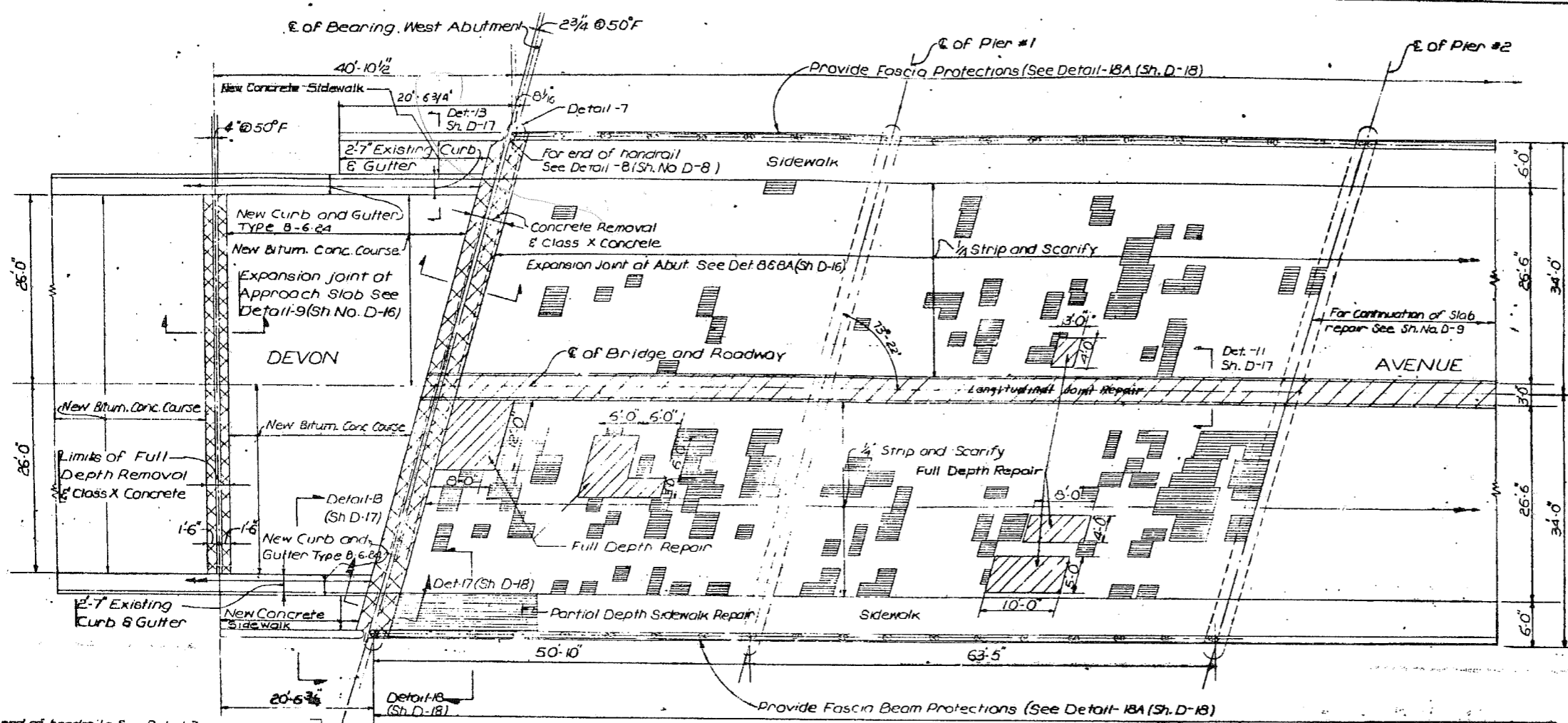
**GLOBETROTTERS ENG. CORP.**  
CONSULTING ENGINEERS  
1050 SOUTH WABASH AVE. CHICAGO, ILL. 60605

DESIGNED BY: Ken Conrad  
CHECKED BY: R.R. PATEL

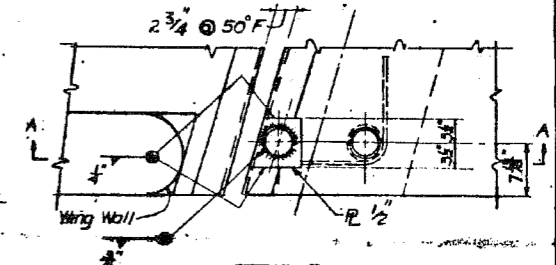
SHEET NO. 9-7

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	0205.1-BR-73	COOK	24	8
P.N.W.A. REG.		ILLINOIS PROJECT		

P-91-272-78



SECTION A-A



DETAIL-7 (Sheets D-8 & D-9)

For end of handrail - See Detail 7 Contractor shall support handrailing and posts during rehabilitation of the expansion joint over sidewalk - Typical.

TOP DECK PLAN - WEST HALF

SCOPE OF WORK - BRIDGE DECK AND APPROACHES

1. Strip and scarify the entire concrete deck for a depth of 1/4".
2. After scarification, partial and full depth deck slab repairs shall be made.
3. Remove concrete deck and approach slab within the limits shown for the transverse expansion joints.
4. Remove concrete deck in median strip within the limits shown.
5. Clean all reinforcing exposed during the removals and replace reinforcement bars showing more than a 15% loss of section with new reinforcement bars. Use sand blast for cleaning and removal of rust.
6. Any rebar nicked, cut, or otherwise damaged by the Contractor's operations will be replaced by new bars of the same size spliced with min. 12 bars diameters extending beyond either side of the damaged area at the Contractor's expense.
7. Replace transverse expansion joint at each abutment.
8. Replace expansion joints at the end of the approach slab.
9. Repair major cracks in the approach slab.
10. Replace the following with Class X Concrete:
  - a. Partial sidewalk and curb repairs, and partial and full depth deck repairs.
  - b. Longitudinal expansion joint.
  - c. Transverse expansion joint (including joint angles assemblies) at each abutment.
  - d. Approach slab expansion joints.
  - e. New curb and gutter sections and new sidewalk slab.
11. Place dense concrete overlay on the bridge deck.
12. Pour new curb and gutter sections and new sidewalk slab.
13. Place bituminous asphalt concrete overlay on approach slabs and pavement.
14. The finished surface of the bridge and approach and the cross-slope shall match the profile shown on drwg D-4.
15. One half the bridge (2 lanes) shall be closed at one time per sequence of construction. No additional lane closing will be permitted.
16. Contractor to provide planking on top of lower flanges of steel beams over the active lanes of Edens Expressway where required to keep debris from dropping onto the expressway.
17. Clean and Paint Handrailing.
18. Provide Fascia Beam Protection Plate.

Bill of Material For D-8 & D-9

ITEM	UNIT	QUANT.
1. Deck Slab Repair (Full Depth)	Sq. Yd.	160
2. Deck Slab Repair (Partial Depth)	Sq. Yd.	200
3. Preformed Joint Sealer - 4" Special	Ln. Ft.	143
4. Preformed Joint Filler - 4" Special	Ln. Ft.	104
5. Structural Steel	Lbs.	5132
6. Bridge Deck Concrete Overlay	Sq. Yd.	1430
7. Concrete Pavement Scarification	Sq. Yd.	1430
8. Concrete Curb Repair	Ln. Ft.	45.0
9. Fascia Beam Protection Flashing	Ln. Ft.	460

- LEGEND
- Longitudinal Joint Repair & Full Depth Repair
  - Partial Depth Repair
  - Replacement of Expansion Joint

**TOP DECK PLAN - WEST HALF**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**

DIVISION OF HIGHWAYS - DISTRICT I  
1000 PLAZA DRIVE, SCHALBURG, ILL.

REHABILITATION OF  
DEVON AVENUE GRADE SEPARATION OVER  
EDENS EXPRESSWAY

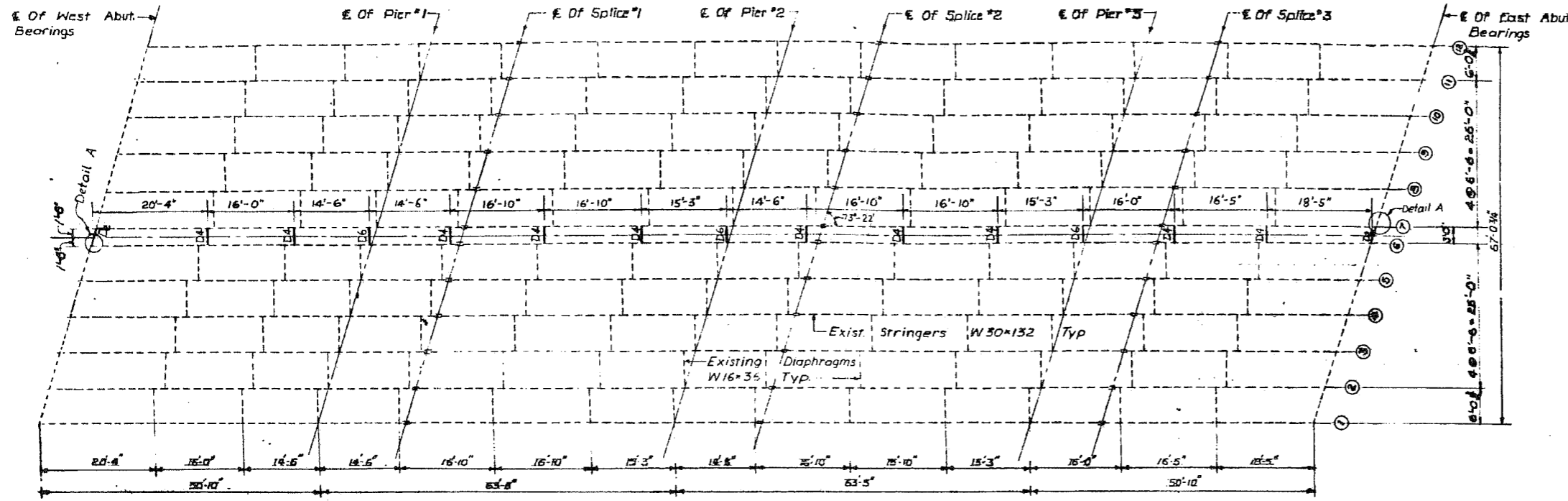
**GLOBETROTTERS ENG. CORP.**  
CONSULTING ENGINEERS  
1020 SOUTH WABASH AVE. CHICAGO, ILL. 60605

SCALE: None DRAWN BY: Ken Carls SHEET No. D-8



RTK.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
04	0203.1-BR-79	COOK	24	10
K.H.W.A. REG.			ILLINOIS PROJECT	

P-91-272-78



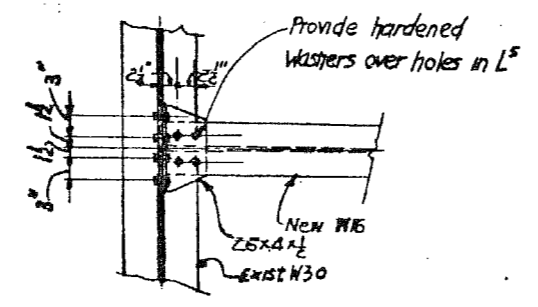
**STEEL FRAMING PLAN**

**SCOPE OF STRUCTURAL STEEL WORK**

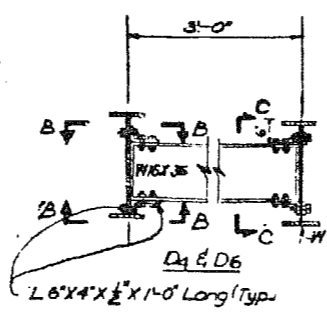
1. For procedure of raising the superstructure, see General Notes on Sheet No. D-7.
2. The existing roller bearings at the abutments will be replaced by elastomeric bearings, therefore discard existing rollers and bottom bearing plates. After new concrete pads have acquired required strength, install the new elastomeric bearings according to Details shown on Sheet No. D-19.
3. After the new concrete pads acquired required strength, reset the existing rocker and fixed bearing assemblies according to details shown on Sheet Nos. D-19 and D-20.
4. Seal the top Flange of the steel fascia beams with a sealant before anchoring protective fascia plate.

**Bill of Material**

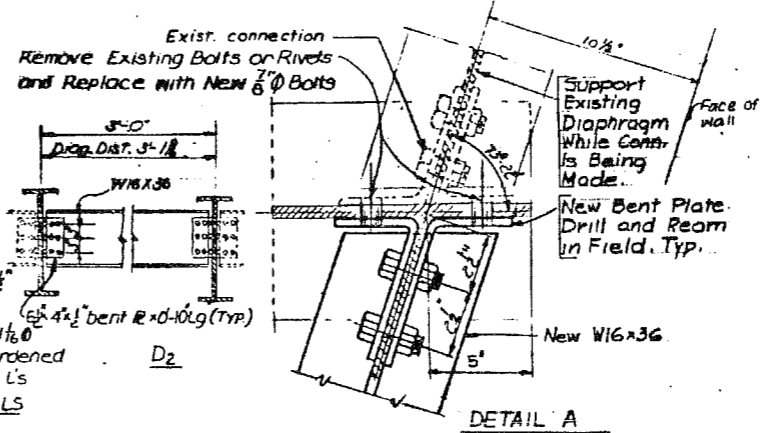
ITEM	UNIT	QUANT.
1. Structural Steel	Lbs.	2532



**PLAN ON B-B**



**SECTION C-C**  
 All bolts 5/8" Ø M-164 with 1 1/2" holes in L<sup>s</sup> Provide hardened Washers over holes in L<sup>s</sup>  
**DIAPHRAGM DETAILS**



**DETAIL A**

**STEEL FRAMING REPAIR**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**  
 DIVISION OF HIGHWAYS - DISTRICT I  
 1000 PLAZA DRIVE, Schaumburg, ILL.

REHABILITATION OF  
 DEVON AVENUE GRADE SEPARATION OVER  
 EDENS EXPRESSWAY

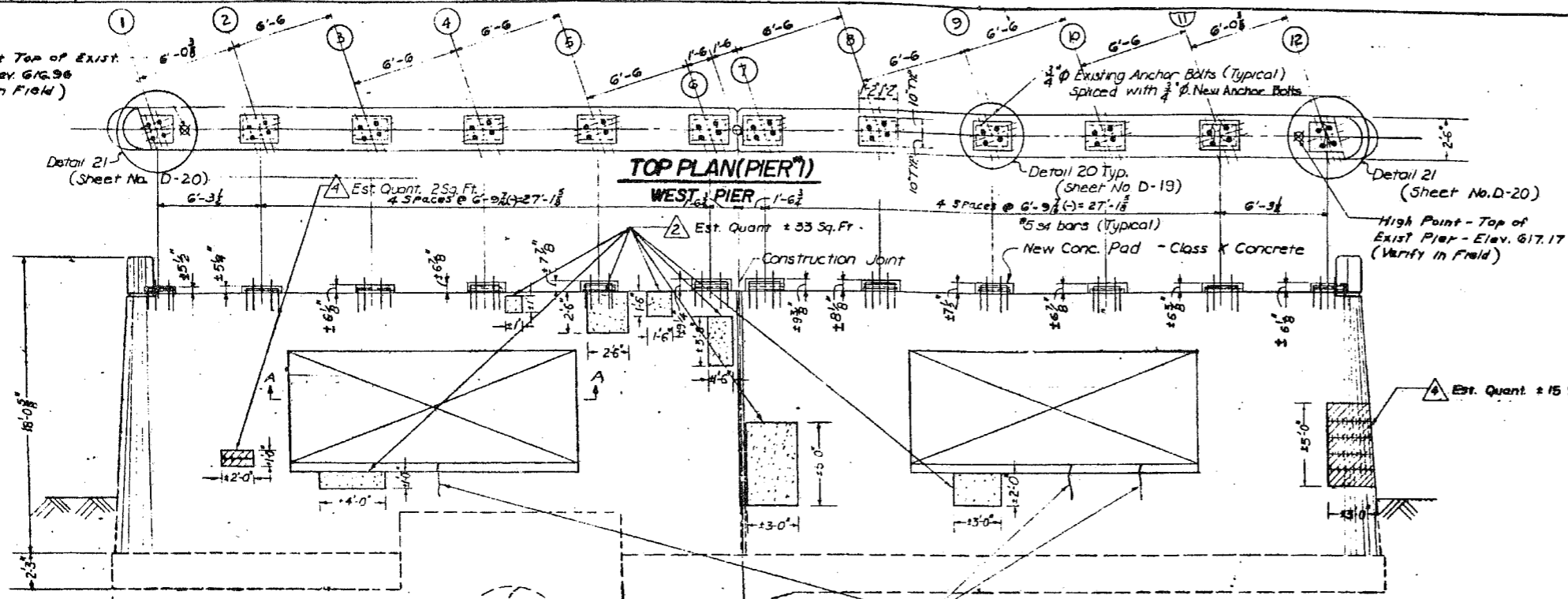
**GLOBETROTTERS ENG. CORP.**  
 CONSULTING ENGINEERS  
 1020 SOUTH WABASH AVE. CHICAGO, ILL. 60605

SCALE: None DRAWN BY: Ken Cording SHEET No. D-10  
 DATE: 6-29-79 CHECKED BY: R.R. PATEL



LOW POINT TOP OF EXIST. PIER - Elev. 616.96 (Verify in Field)

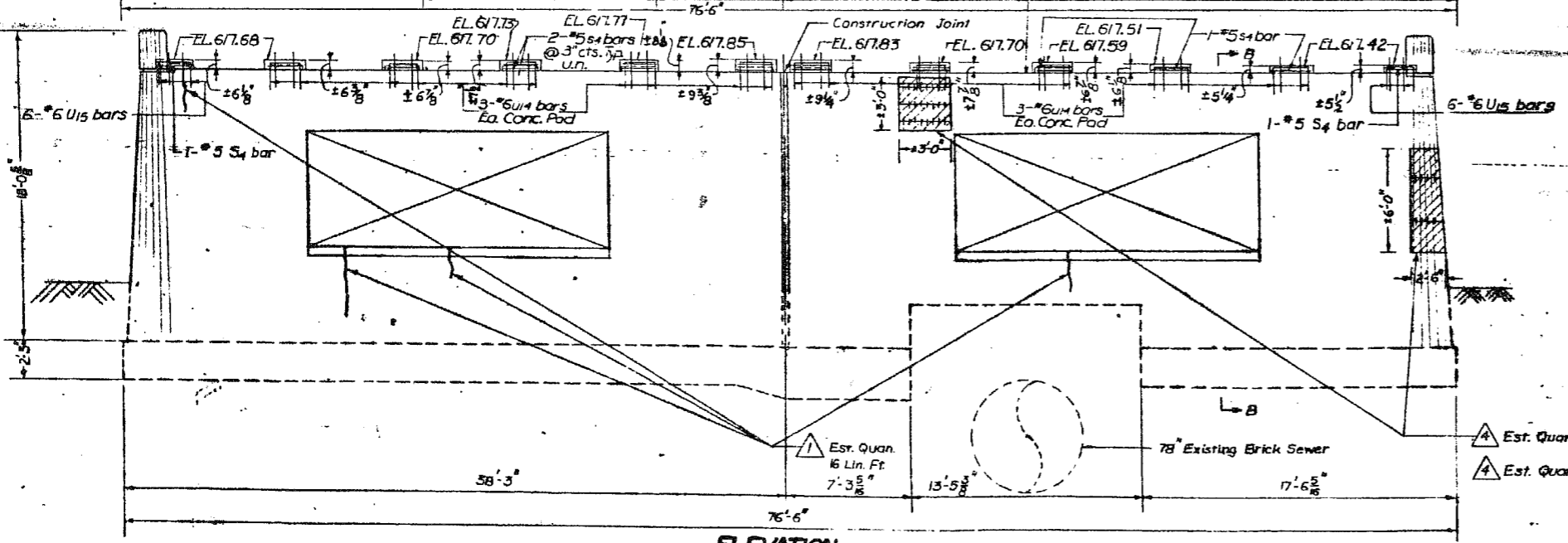
RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	0203.1-BR-79	COOK	24	11
P.M.W.A. REG. ILLINOIS PROJECT				
P-91-272-78				



78" Existing Brick Sewer

**ELEVATION**  
Looking West

1. Est. Quant. ±15 Lin. Ft.  
Top of Exist. Pier  
Elev. Varies - See Plan for High  
Low Points  
38'-3"



**ELEVATION**  
Looking East

Bill of Material	
Item	Quan.
Repair Concrete Structures	±84.00 Sq. Ft.
Sealing Cracks	±35.00 Lin. Ft.
Class X Conc. For Bearing Pads	1.3 Cu. Yds
Reinforcement Bars	401 Lbs.

- Notes**
1. #4 New Anchor Bolts and sleeves are incidental to Class X Concrete Bearing Pads.
  2. For Reinforcement Bar Schedule See Sh. D-22 Drilling and Non Shrink Grout are incidental to Class X Concrete Bearing Pads.

**CONCRETE REPAIR NOTES**

- ▲ **CRACK:** Cracks in concrete to be cleaned and epoxy pressure injected per item sealing cracks.
- ▲ **DELAMINATION:** Remove disintegrated concrete as shown. Clean and replace per item repair of concrete structures.
- ▲ **SPALLING:** Spalled areas to be removed, as shown, cleaned and grouted per item repair of concrete structures.
- ▲ **DEEP SPALLING - EXPOSING REINF. BARS:** Spalled areas to be removed and cleaned. Exposed rebar to be sand blasted and area grouted per item repair of concrete structures.

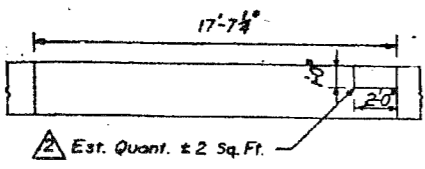
**PIER No.1 (West Pier) - REPAIR**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**  
DIVISION OF HIGHWAYS - DISTRICT I  
1000 PLAZA DRIVE, Schaumburg, ILL.

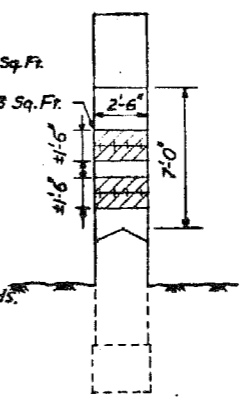
REHABILITATION OF  
DEVON AVENUE GRADE SEPARATION OVER  
EDENS EXPRESSWAY

**GLOBETROTTERS ENG. CORP.**  
CONSULTING ENGINEERS  
1020 SOUTH WABASH AVE. CHICAGO, ILL. 60605

SCALE: None DRAWN BY: Ken Cronin SHEET No. 0-11  
DATE: 6-29-79 CHECKED BY: R.R. PATEL



SECTION AA

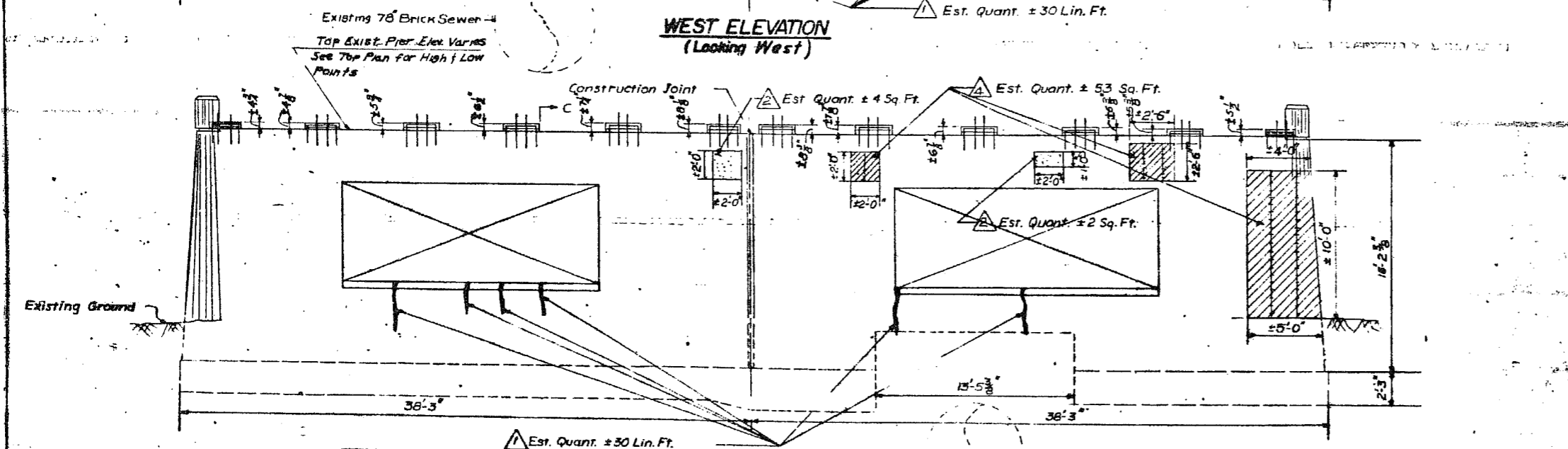
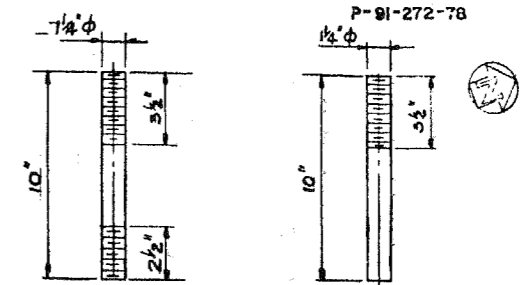
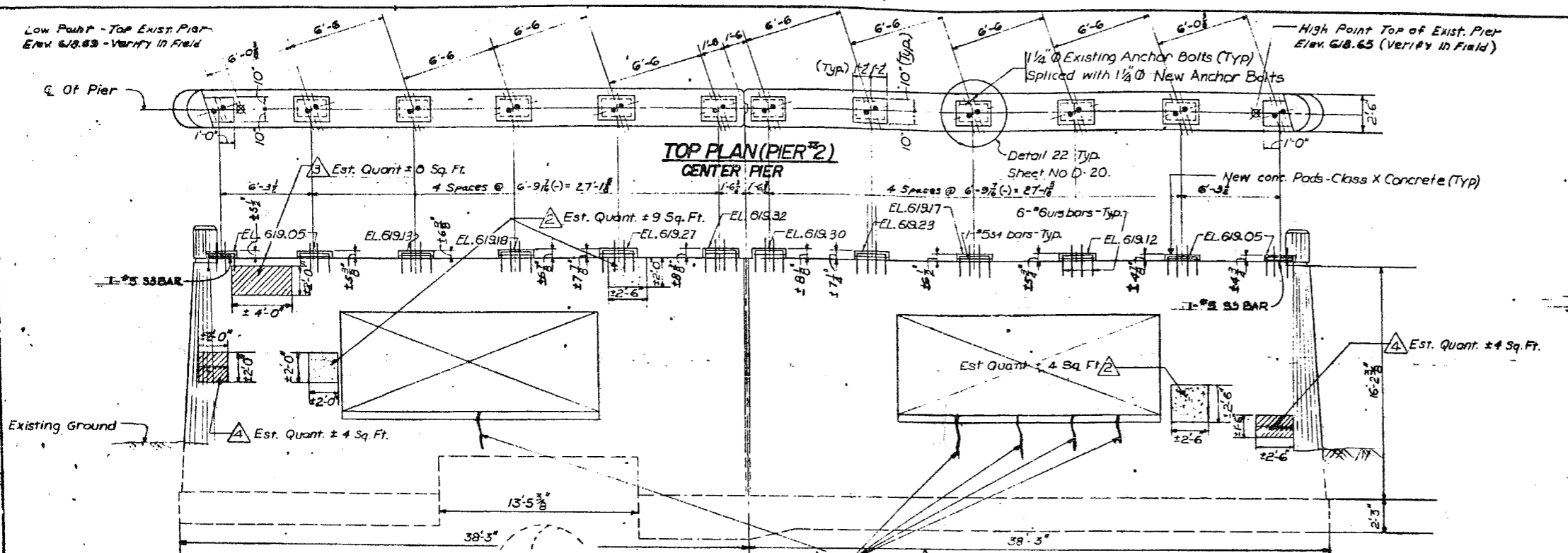


SECTION BB

Low Point - Top Exist. Pier  
Elev. 618.63 - Verify in Field

High Point Top of Exist. Pier  
Elev. 618.63 (Verify in Field)

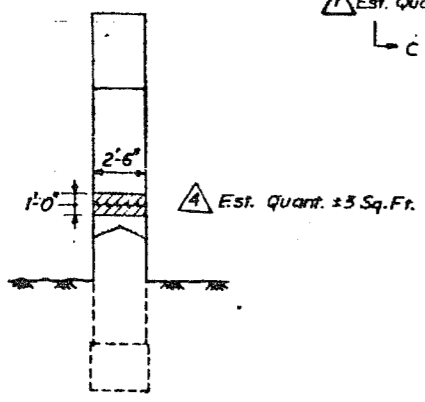
RTK	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
04	0203.1-BR-79	COOK	24	12
P.W.A. REG. ILLINOIS PROJECT				



**CONCRETE REPAIR NOTES**

- CRACK:** Cracks in concrete to be cleaned and epoxy pressure injected per item sealing cracks.
- DELAMINATION:** Remove disintegrated concrete as shown. Clean and replace per item repair of concrete structures.
- SPALLING:** Spalled areas to be removed, as shown, cleaned and grouted per item repair of concrete structures.
- DEEP SPALLING - EXPOSING REIN. BARS:** Spalled areas to be removed and cleaned. Exposed rebars to be sand blasted and area grouted per item repair of concrete structures.

- Notes:**
- 1 1/4" New Anchor Bolts including sleeves or welding are incidental to Class X Concrete for Bearing Pads.
  - For Reinf. Bar Schedule See Sh. D-22. Drilling & non shrink Grout are incidental to Class X Concrete Bearing Pads.



Bill Of Material	
Item	Quan.
Repair Concrete Structures	± 88.00 Sq. Ft.
Sealing Cracks	± 60.00 Lin. Ft.
Class X Conc. for Bearing Pads	1.30 Cu. Yds.
Reinforcement Bars	372 Lbs

**PIER No.2(Center Pier)-REPAIR**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**  
DIVISION OF HIGHWAYS - DISTRICT I  
1000 PLAZA DRIVE, SCHAUMBURG, ILL.

REHABILITATION OF  
DEVON AVENUE GRADE SEPARATION OVER  
EDENS EXPRESSWAY

**GLOBETROTTERS ENG. CORP.**  
CONSULTING ENGINEERS  
1020 SOUTH WABASH AVE. CHICAGO, ILL. 60605

SCALE: NONE DRAWN BY: Ken Gurdine  
DATE: 6-29-79 CHECKED BY: R.R. PATEL SHEET No. D-12

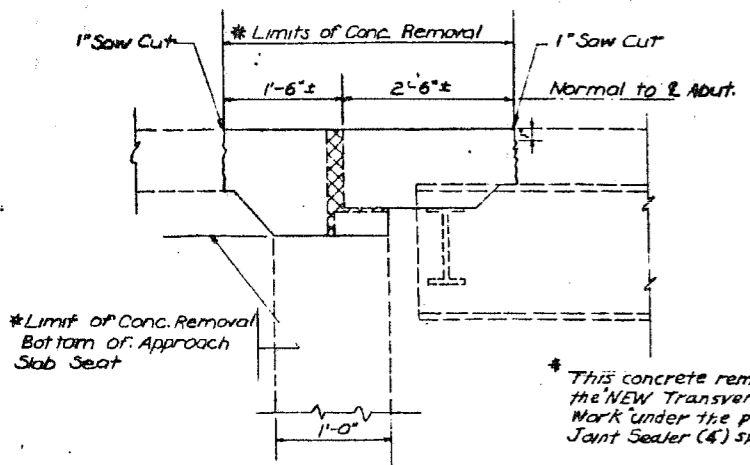




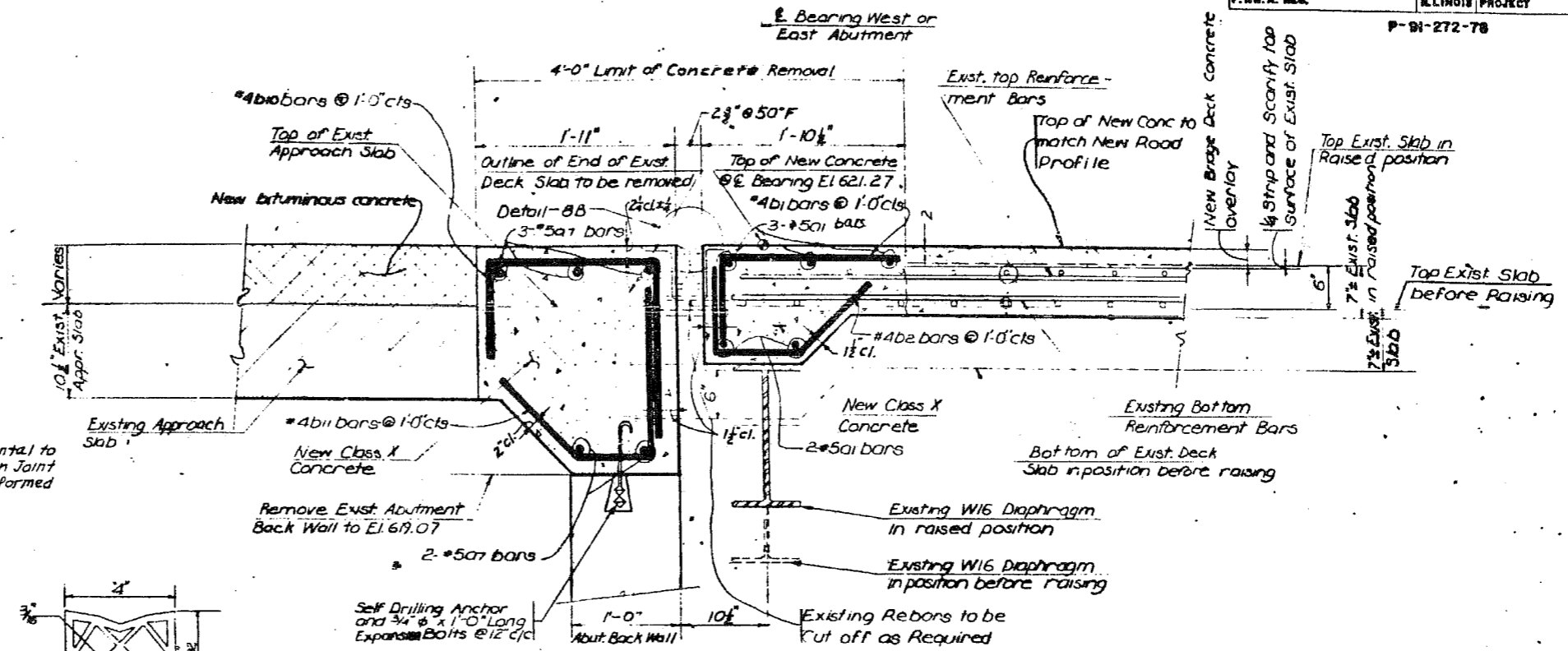




DIST.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	02031-BR-78	COOK	24	16
F.W.A. NO.			ILLINOIS PROJECT	
			P-91-272-78	

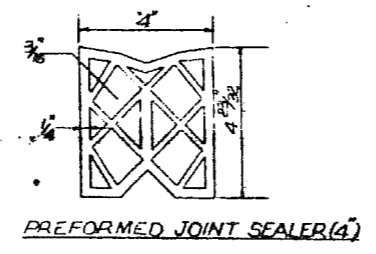


**EXISTING TRANSVERSE EXPANSION JOINT DETAILS**  
**DETAIL-8**  
(Sheet D-8 & D-9)

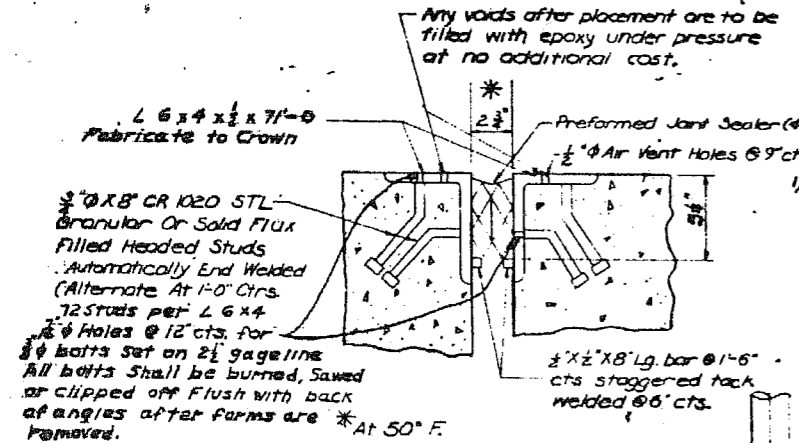


**NEW TRANSVERSE EXPANSION JOINT DETAIL**  
**DETAIL-8A**  
(Sheets D-8 & D-9)

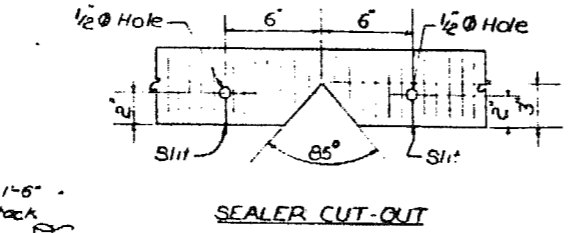
**Notes:**  
For Reinforcement Bar Schedule see sh. D-21



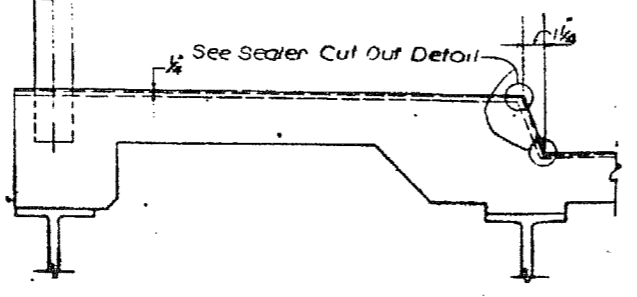
**PREFORMED JOINT SEALER (4)**



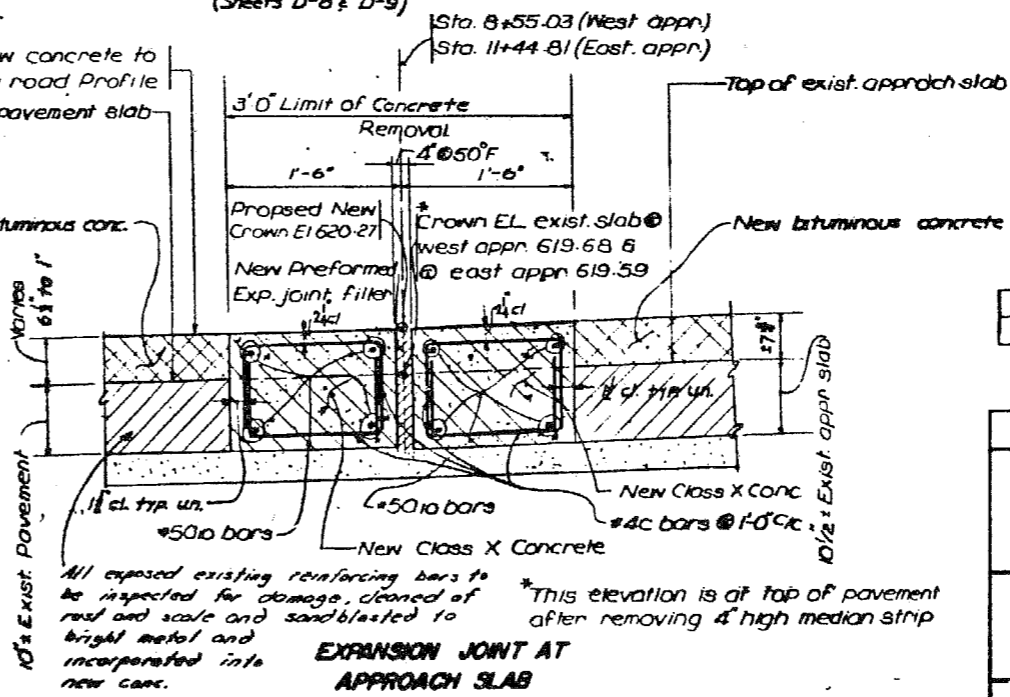
**TRANSVERSE EXPANSION JOINT OVER ROAD**  
**DETAIL-8B**



**SEALER CUT-OUT**



**PREFORMED JOINT SEALER OVER SIDEWALK**



**EXPANSION JOINT AT APPROACH SLAB**  
**DETAIL-9**  
(Sheets D-8 & D-9)

**BILL OF MATERIALS**

ITEM	UNIT	QTY.
Expansion Bolts - 3/8"	Each	184

**EXPANSION JOINT DETAILS**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**  
DIVISION OF HIGHWAYS - DISTRICT I  
1000 PLAZA DRIVE, Schaumburg, ILL.

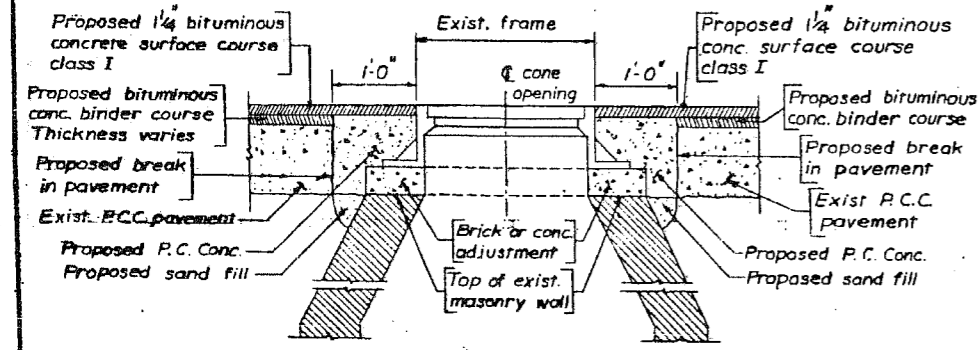
REHABILITATION OF  
DEVON AVENUE GRADE SEPARATION OVER  
EDENS EXPRESSWAY

**GLOBETROTTERS ENG. CORP.**  
CONSULTING ENGINEERS  
1020 SOUTH WABASH AVE. CHICAGO, ILL. 60605

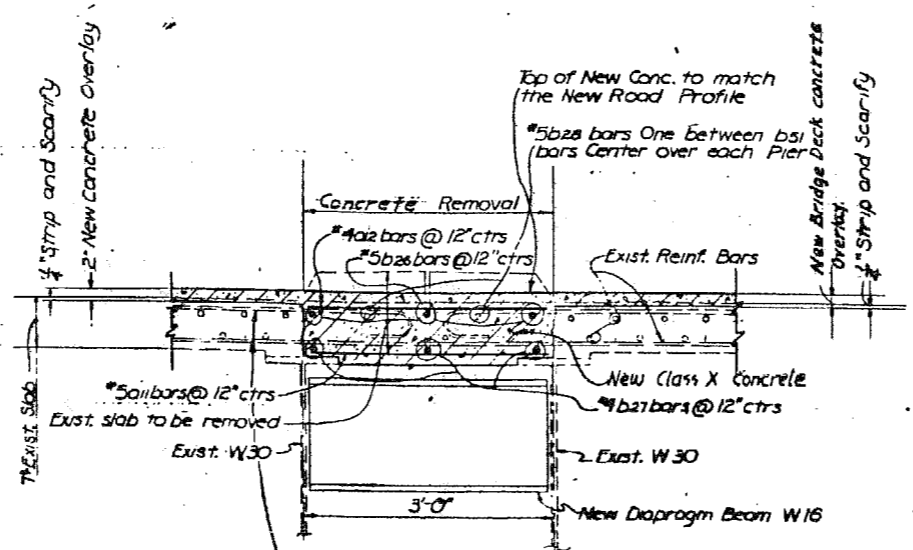
SCALE: None DRAWN BY: Ken C... SHEET No. 0-16  
DATE: 6-29-78 CHECKED BY: R.R. PATEL

B.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
D-4	0203.1-BR-79	COOK	24	17
P. W. A. REG.			ILLINOIS PROJECT	

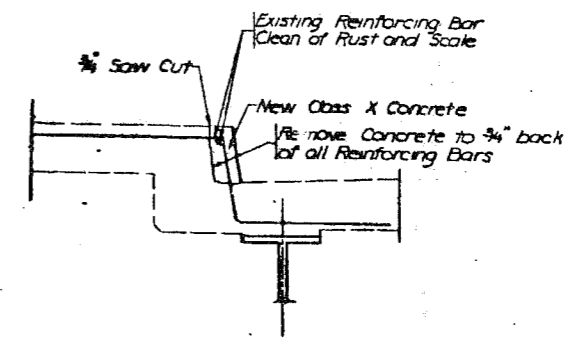
P-91-272-78



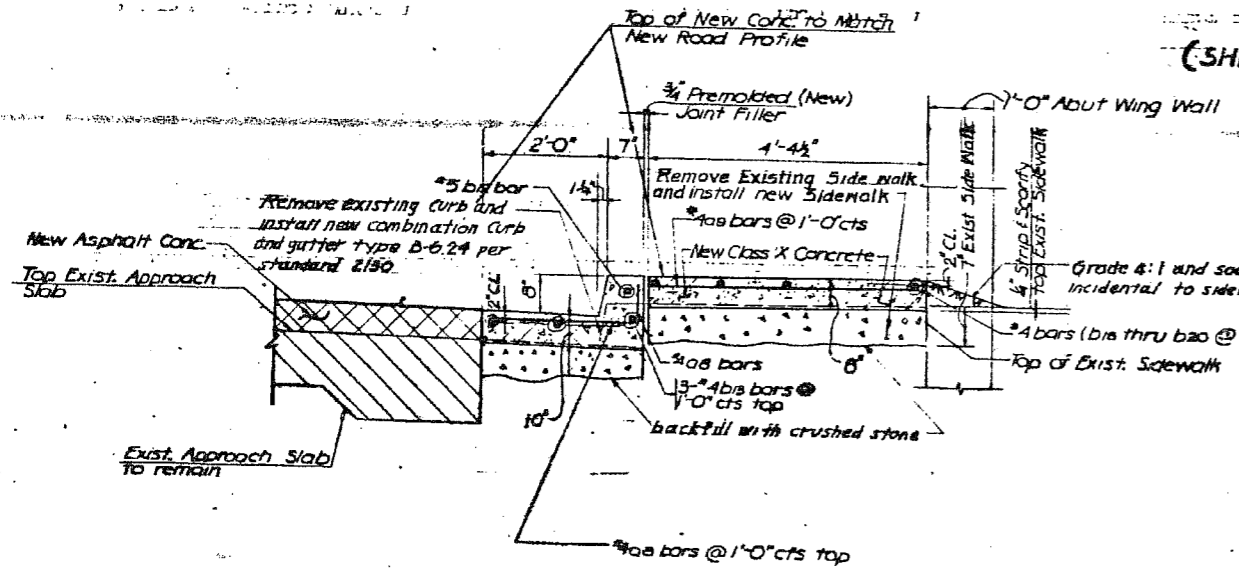
**FRAME & GRATE ADJUSTMENT  
FOR CATCH BASIN  
DETAIL-23  
(SHEET - D-4)**



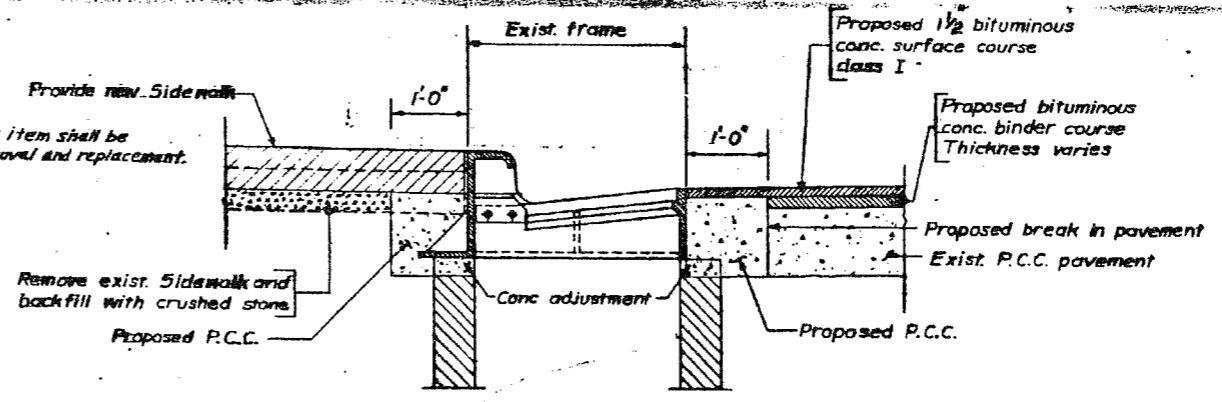
**LONGITUDINAL JOINT REMOVAL  
DETAIL - 11  
(SHEETS D-8, D-9, D-21)**



**REPAIR OF SIDEWALK CURB  
OVER BRIDGE DECK  
DETAIL - 12 (TYP)**



**CURB AND GUTTER SECTION  
AND SIDEWALK REPLACEMENT  
AT APPROACH SLAB  
DETAIL-13  
(SHEETS D-8, D-9, D-21)**



**FRAME & GRATE ADJUSTMENT  
FOR INLET  
DETAIL-24  
(SHEET D-4)**

**MISCELLANEOUS CONCRETE REPAIR DETAILS**

**ILLINOIS DEPARTMENT  
OF TRANSPORTATION**

DIVISION OF HIGHWAYS - DISTRICT I  
1000 PLAZA DRIVE, SCHAMBURG, ILL.

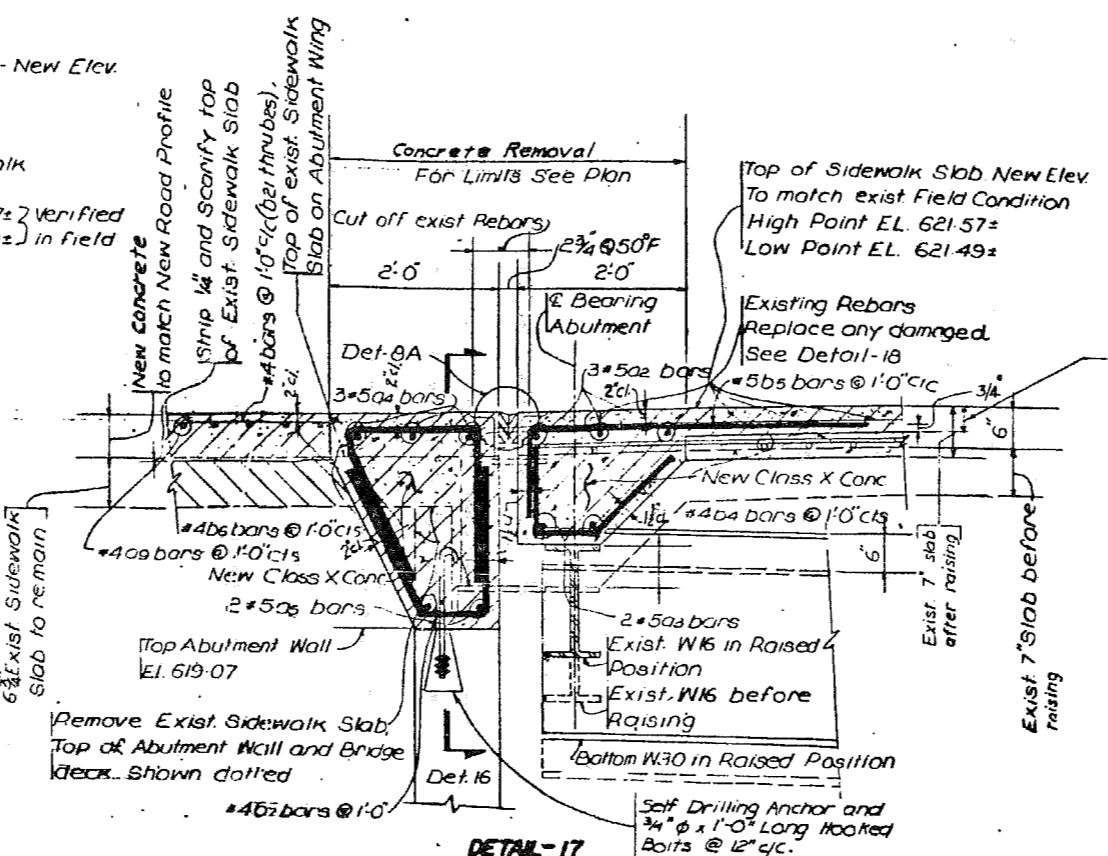
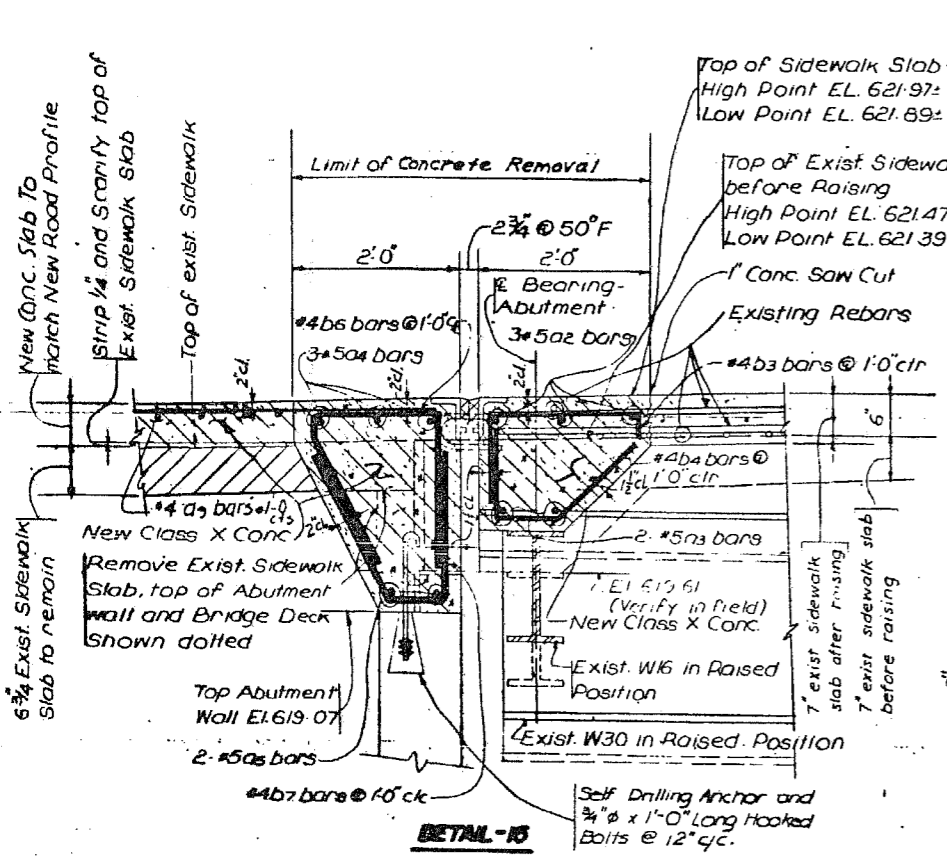
REHABILITATION OF  
DEVON AVENUE GRADE SEPARATION OVER  
EDENS EXPRESSWAY

**GLOSETROTTERS ENG. CORP.**  
CONSULTING ENGINEERS  
1020 SOUTH WABASH AVE. CHICAGO, ILL. 60605

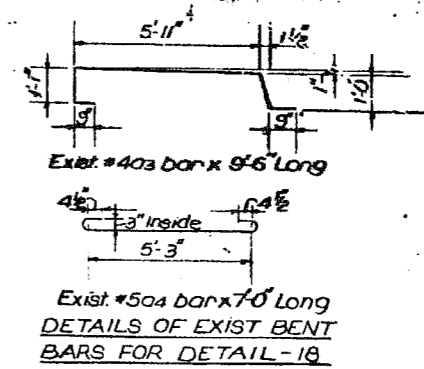
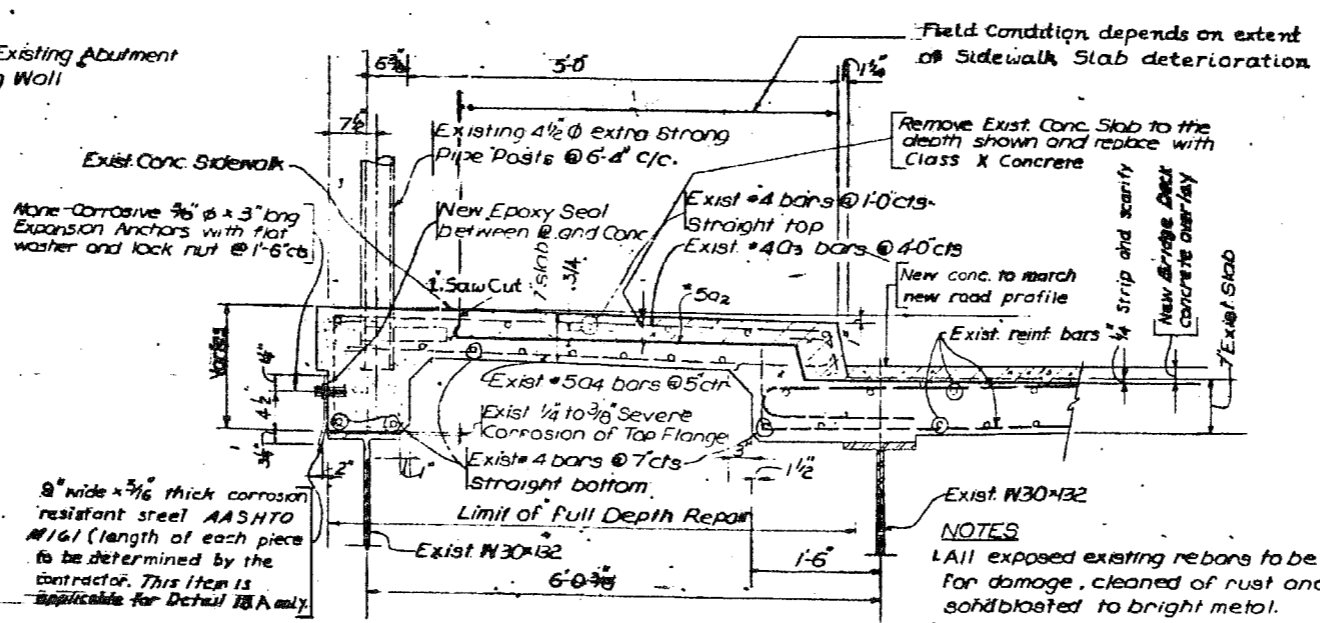
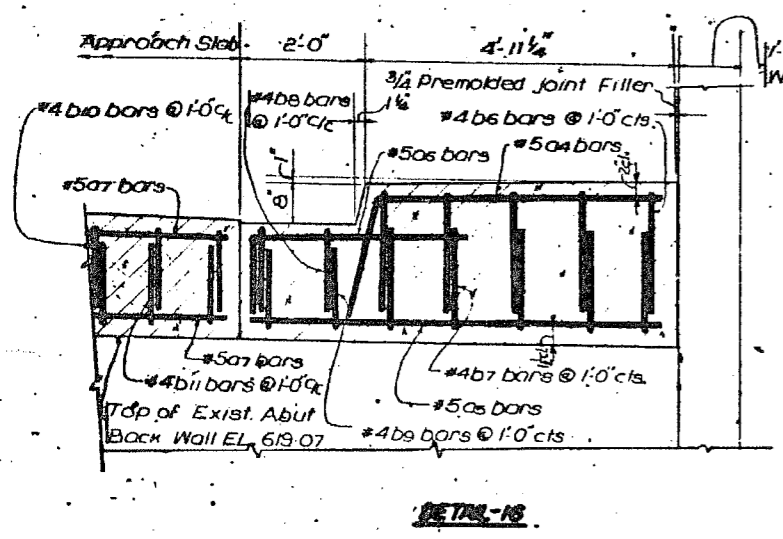
SCALE: NONE DRAWN BY: Ken Conrad  
DATE: 6-23-79 CHECKED BY: R.R. PATEL SHEET No. D-17

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	D203.1-BR-78	COOK	24	18
F. H. A. RES.			ILLINOIS PROJECT	

P-91-272-78



Remove partial depth of sidewalk slab and fill with Class X Concrete See Detail-18.



**EXPANSION JOINTS & SIDEWALK REPAIR DETAIL**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**  
DIVISION OF HIGHWAYS - DISTRICT I  
1000 PLAZA DRIVE, SCHLAUBURG, ILL.

REHABILITATION OF  
BEYON AVENUE GRADE SEPARATION OVER  
EDENS EXPRESSWAY

**GLOBETROTTERS ENG. CORP.**  
CONSULTING ENGINEERS  
1000 SOUTH WABASH AVE. CHICAGO, ILL. 60605

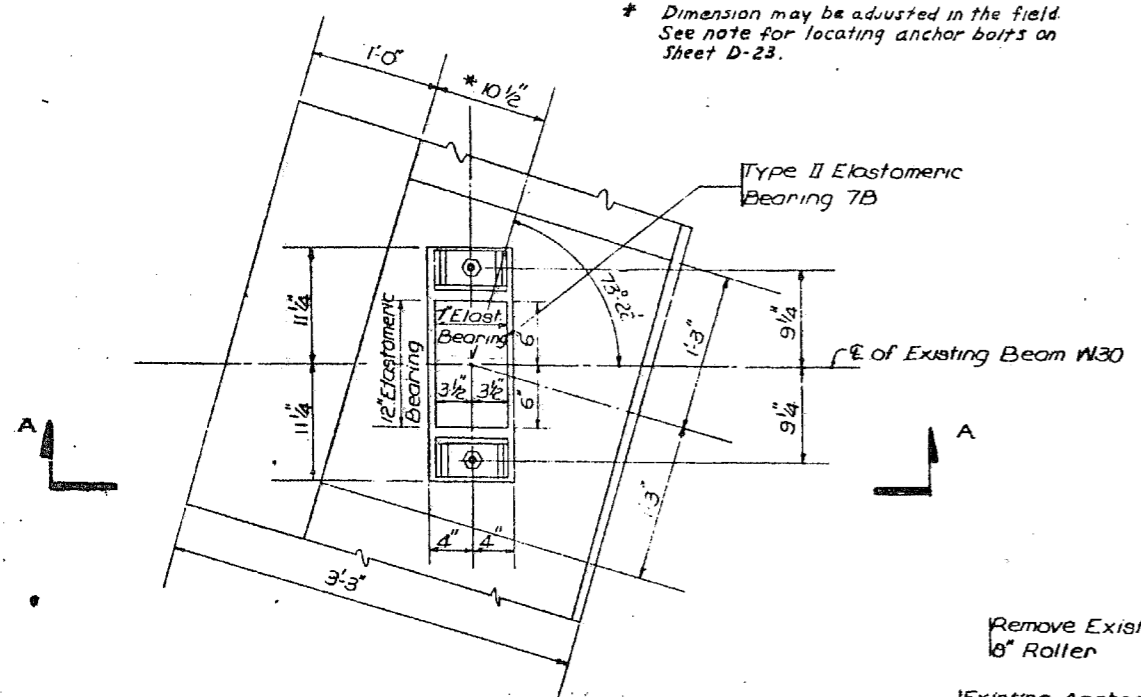
SCALE: None DRAWN BY: Ken Condrine SHEET No. D-18  
DATE: 6-29-79 CHECKED BY: R.R. PATEL

**NOTES**  
1. All exposed existing rebars to be inspected for damage, cleaned of rust and scale and sandblasted to bright metal.  
2. In sidewalk portion to be replaced any existing rebars nicked, cut or otherwise damaged by contractor's operations shall be replaced by new bars of the same size and shape, spliced a minimum of 1'-4". See Exist bent bars details.

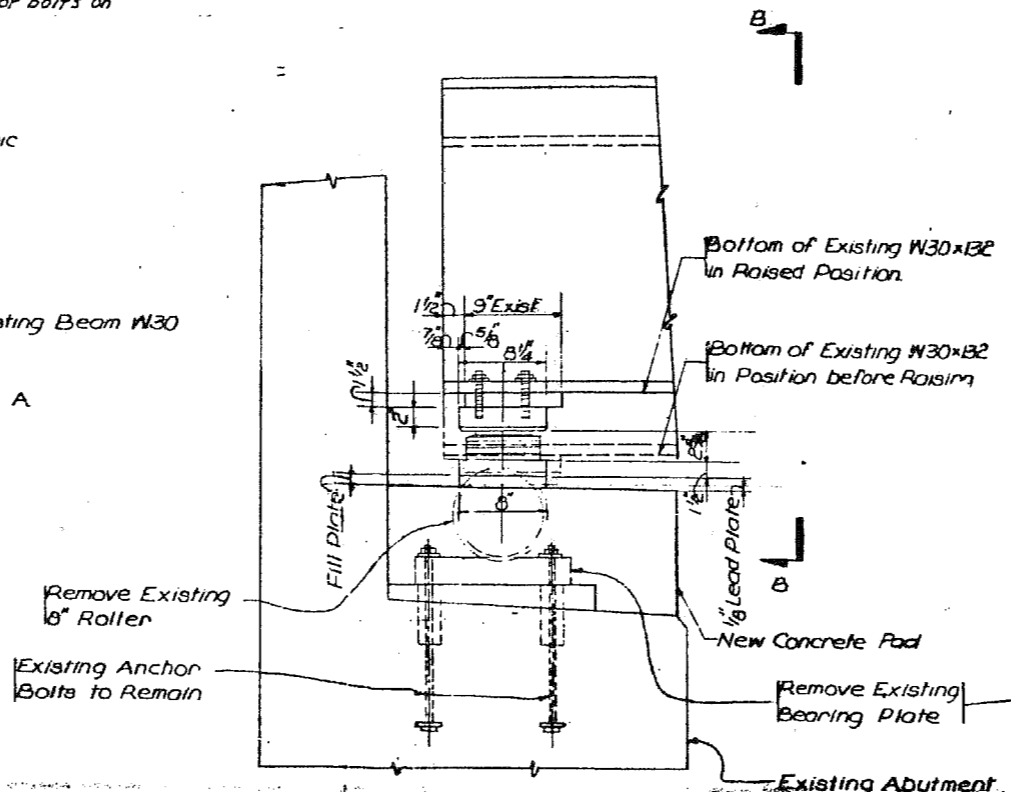
RYE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	0205.1-BR-79	COOK	24	19
P. H. A. RES.		ILLINOIS PROJECT		

P-94-272-78

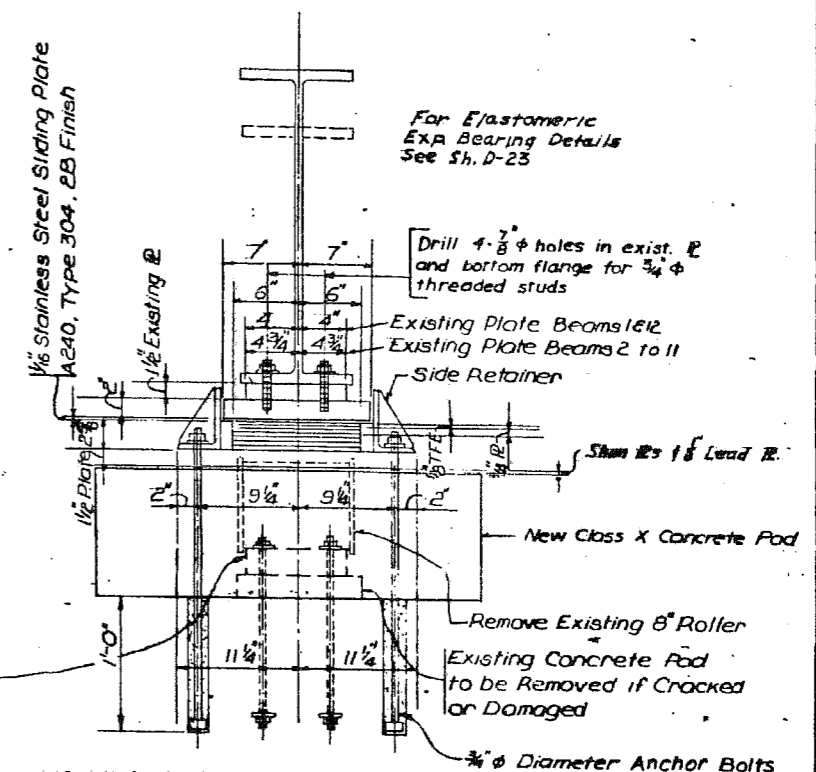
\* Dimension may be adjusted in the field. See note for locating anchor bolts on Sheet D-23.



**PLAN OF ELASTOMERIC BEARING ON ABUTMENT**  
**DETAIL - 19**  
(SHEETS D-14, D-15.)

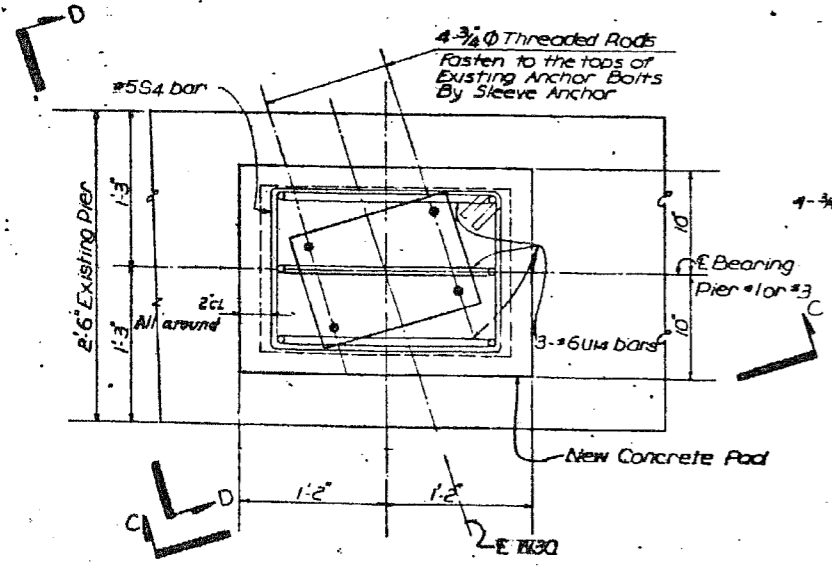


**SECTION A-A**

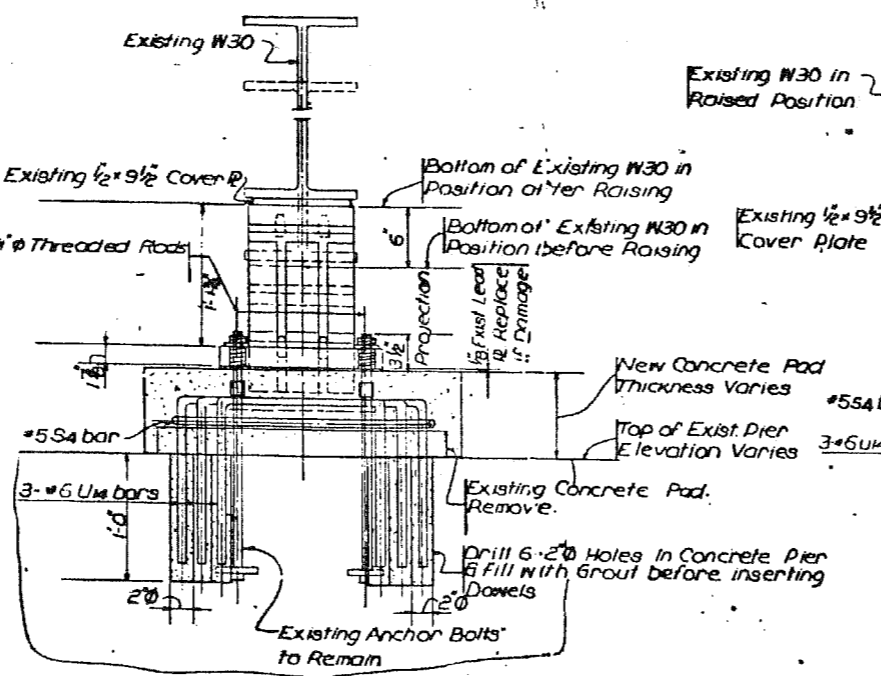


**SECTION B-B**

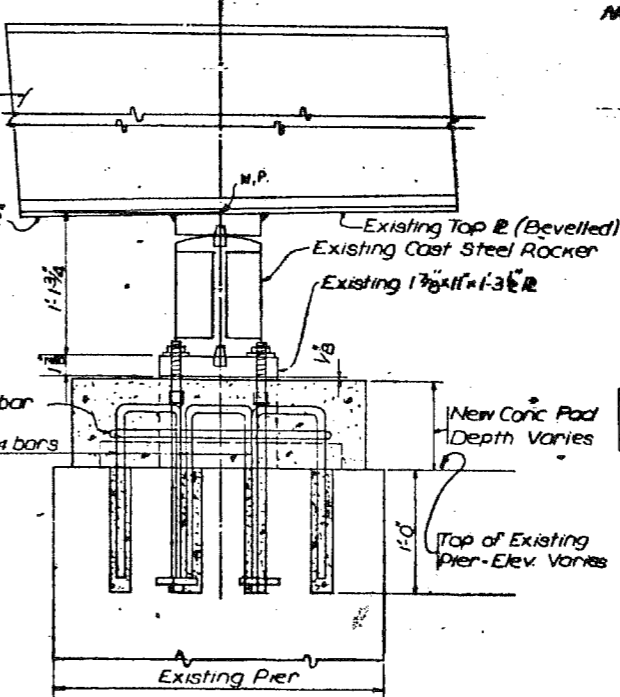
Notes:  
For Dead and Live Load Reactions on Abutment and Pier Bearings See Sh. D-7. See general notes on Sheet D-3 for shim plate Requirement under bearing assemblies.



**DETAIL 20**  
(SHEETS D-11, D-13.)



**SECTION C-C**



**SECTION D-D**

**NEW ELASTOMERIC BEARING DETAILS & EXISTING ROCKER BEARING RAISING DETAILS**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**  
DIVISION OF HIGHWAYS - DISTRICT I  
1000 PLAZA DRIVE, SCHAMBURG, ILL.

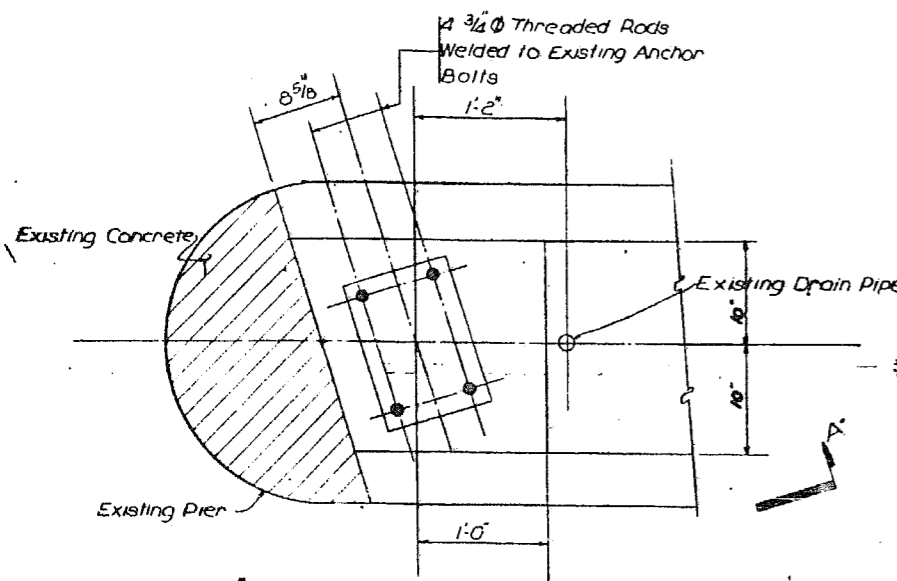
REHABILITATION OF  
BEVON AVENUE GRADE SEPARATION OVER  
EDENS EXPRESSWAY

**GLOBETROTTERS ENG. CORP.**  
CONSULTING ENGINEERS  
1020 SOUTH WABASH AVE. CHICAGO, ILL. 60605

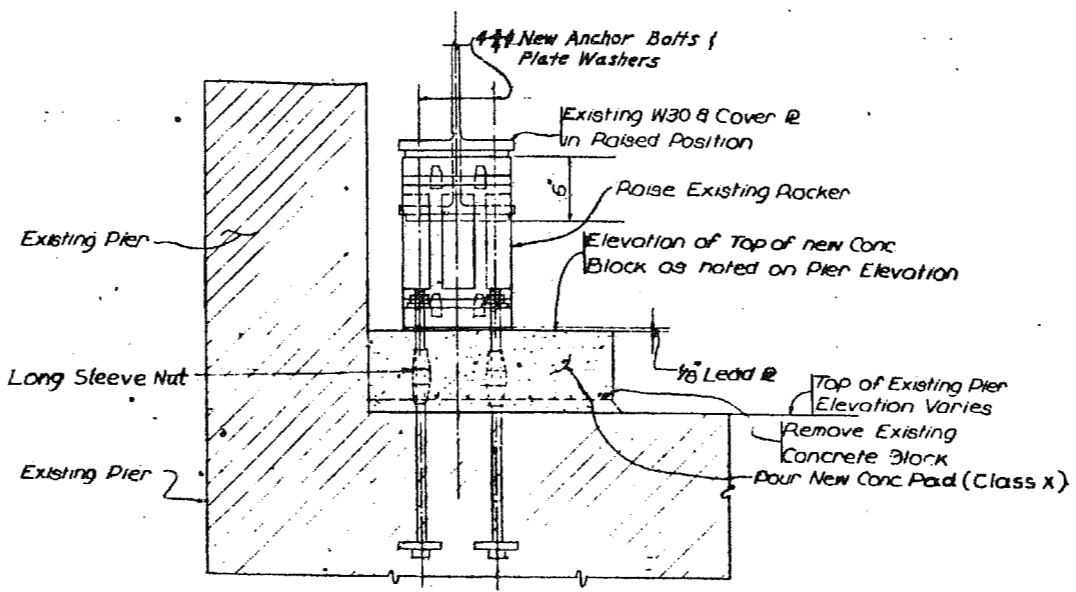
SCALE: None DRAWN BY: Ken Gering SHEET No. D-19  
DATE: 6-29-79 CHECKED BY: R. R. PATEL

RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
84	C203.1-BR-78	COOK	24	20
F.W.A. REG.		ILLINOIS PROJECT		

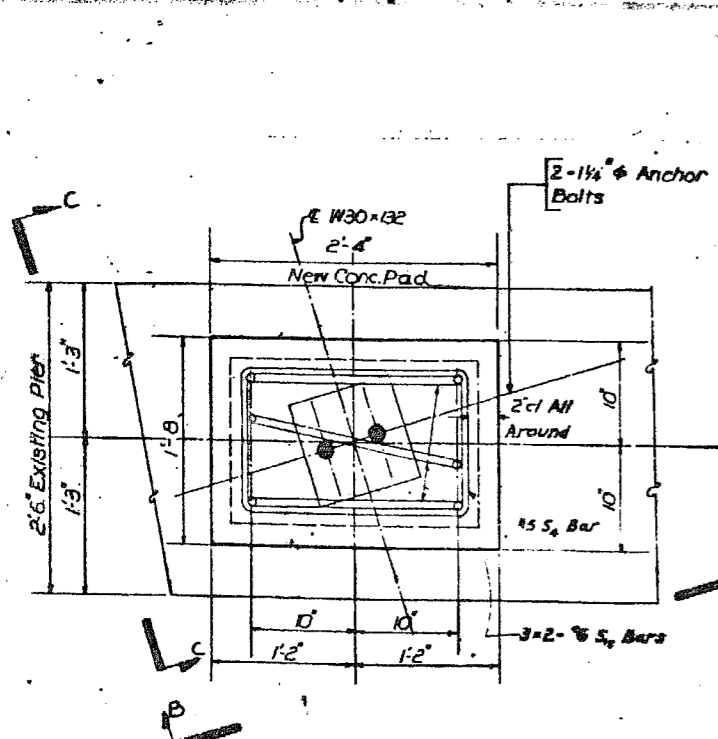
P-91-272-78



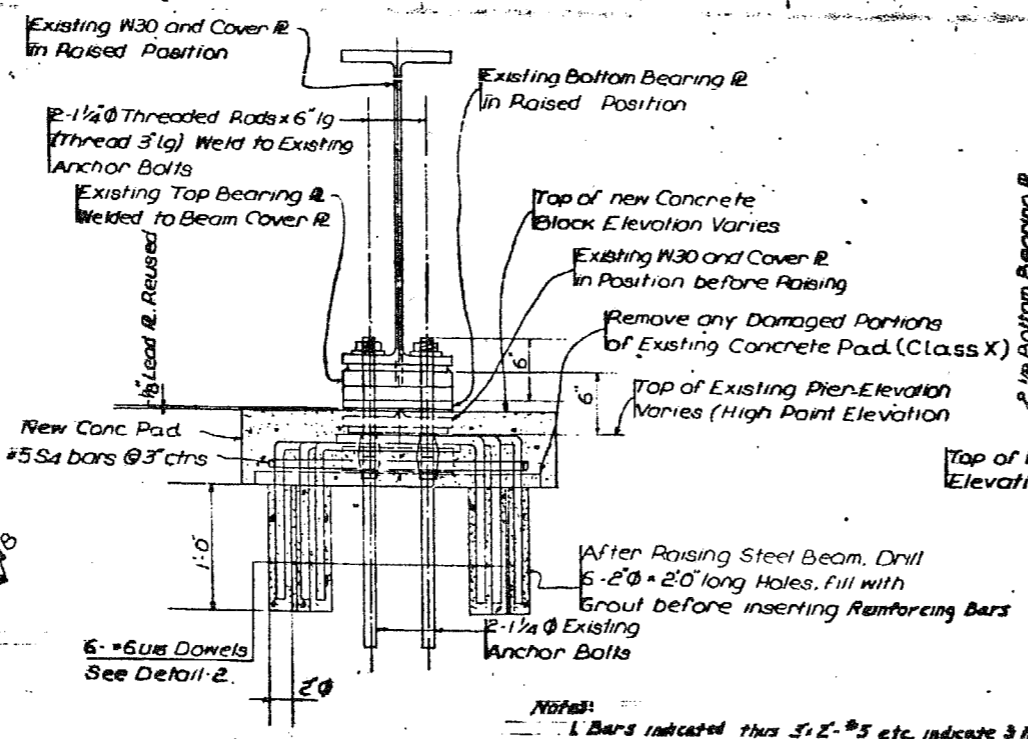
**DETAIL-21**  
(SHEETS D-11, D-13)



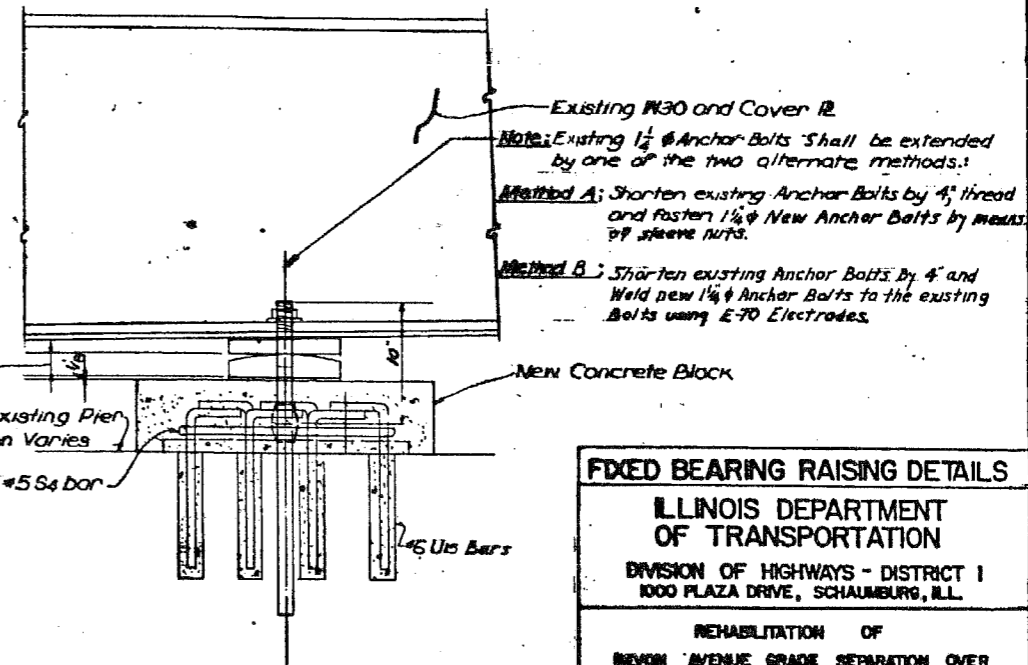
**SECTION A-A**



**DETAIL-22**  
(SHEET D-12)



**SECTION B-B**



**SECTION C-C**

**Notes:**  
 1. Bars indicated thus 3-2-#5 etc. indicate 3 bars or bars with 2 bars per line.  
 2. See General notes on Sheet D-3 for shim plate requirements under the bearing assemblies.

**Note:** Existing 1 1/2" Anchor Bolts shall be extended by one of the two alternate methods:  
**Method A:** Shorten existing Anchor Bolts by 4" thread and fasten 1 1/4" New Anchor Bolts by means of sleeve nuts.  
**Method B:** Shorten existing Anchor Bolts by 4" and Weld new 1 1/4" Anchor Bolts to the existing Bolts using E-70 Electrodes.

**FIXED BEARING RAISING DETAILS**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**  
 DIVISION OF HIGHWAYS - DISTRICT I  
 1000 PLAZA DRIVE, SCHAMBURG, ILL.

REHABILITATION OF  
 BEYON AVENUE GRADE SEPARATION OVER  
 EDENS EXPRESSWAY

**GLOBETROTTERS ENG. CORP.**  
 CONSULTING ENGINEERS  
 1050 SOUTH WABASH AVE. CHICAGO, ILL. 60605

SCALE: None DRAWN BY: Ken Chmielecki SHEET No. B-20  
 DATE: 6-23-78 CHECKED BY: R. R. PATRICK





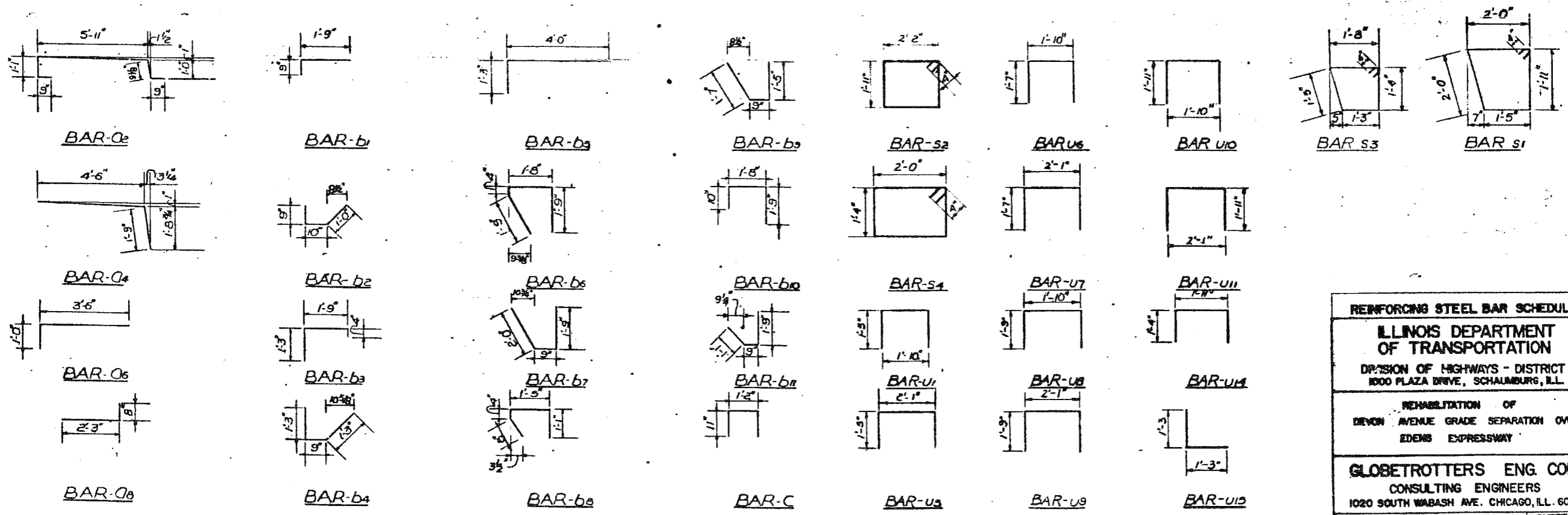
HYE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S4	0203.1-BR-78	COOK	24	22
P.M.A. REG.		ILLINOIS PROJECT		

P-91-272-78

Bridge Superstructure				
Reinforcement Bar Schedule				
Bars	No	Size	Type	Length
Q1	40	#5	—	18'-3"
Q2	12	#5	—	9'-6"
Q3	8	#5	—	6'-0"
Q4	12	#5	—	6'-3"
Q5	8	#5	—	6'-8"
Q6	12	#5	—	4'-6"
Q7	20	#5	—	26'-3"
Q8	112	#4	—	2'-11"
Q9	79	#4	—	4'-1"
Q10	32	#5	—	27'-0"
Q11	224	#5	—	2'-9"
Q12	224	#4	—	2'-10"
b1	112	#4	—	2'-6"
b2	112	#4	—	2'-7"
b3	21	#4	—	3'-4"
b4	28	#4	—	3'-3"
b5	7	#5	—	5'-3"
b6	20	#4	—	5'-2"
b7	20	#4	—	4'-6"
b8	8	#4	—	3'-6"

Bridge Superstructure				
Reinforcement Bar Schedule				
Bars	No	Size	Type	Length
b9	8	#4	—	3'-9"
b10	106	#4	—	4'-3"
b11	106	#4	—	3'-7"
b12	4	#5	—	19'-0"
b13	12	#4	—	18'-9"
b14	2	#5	—	18'-10"
b15	6	#4	—	18'-11"
b16	1	#4	—	17'-3"
b17	1	#4	—	17'-0"
b18	1	#4	—	16'-8"
b19	1	#4	—	16'-5"
b20	1	#4	—	16'-1"
b21	3	#4	—	17'-6"
b22	3	#4	—	17'-9"
b23	3	#4	—	18'-1"
b24	3	#4	—	18'-4"
b25	3	#4	—	18'-7"
b26	30	#5	—	25'-0"
b27	36	#4	—	20'-9"
b28	4	#5	—	24'-0"
b29	4	#5	—	14'-0"
C	208	#4	—	3'-0"

Bridge Substructure				
Reinforcement Bar Schedule				
Bars	No	Size	Type	Length
S1	8	#5	—	8'-0"
S2	65	#5	—	8'-10"
S3	6	#5	—	6'-4"
S4	39	#5	—	7'-4"
U	112	#5	—	1'-6"
U1	12	#6	—	4'-8"
U3	12	#6	—	4'-11"
U4	6	#6	—	5'-0"
U7	6	#6	—	5'-3"
U8	18	#6	—	5'-4"
U6	18	#6	—	5'-7"
U10	12	#6	—	5'-8"
U11	12	#6	—	5'-11"
U4	60	#6	—	4'-7"
U5	96	#6	—	2'-6"



**REINFORCING STEEL BAR SCHEDULE**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**

DIVISION OF HIGHWAYS - DISTRICT I  
1800 PLAZA DRIVE, SCHLAUBURG, ILL.

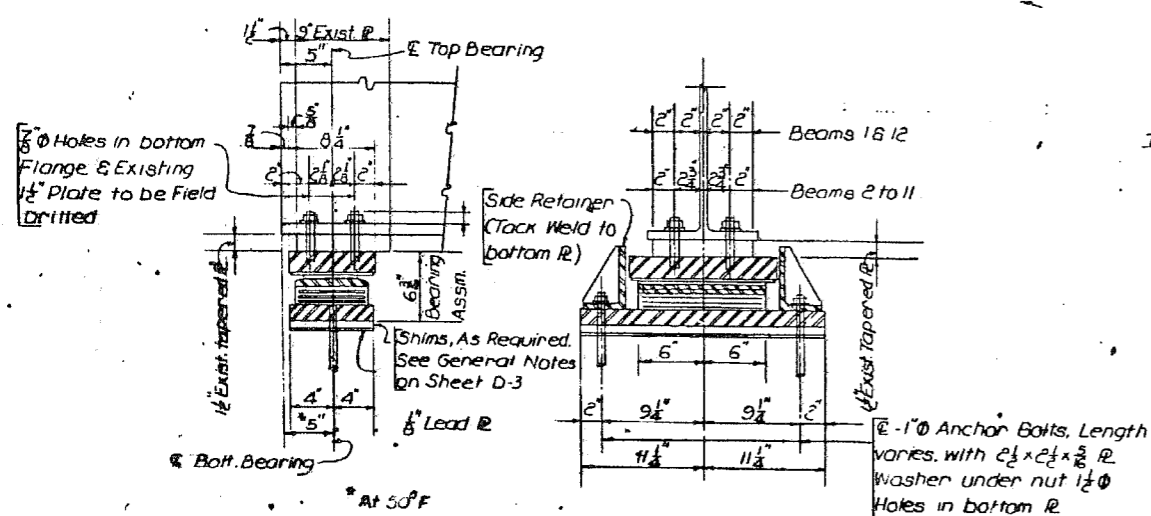
REHABILITATION OF  
DEVON AVENUE GRADE SEPARATION OVER  
EDENS EXPRESSWAY

**GLOBETROTTERS ENG. CORP.**  
CONSULTING ENGINEERS  
1020 SOUTH WABASH AVE. CHICAGO, ILL. 60605

SCALE: None DRAWN BY: Ren C... SHEET No.

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
D-3	0203J-BR-79	COOK	24	23
F.H.W.A. REG.		ILLINOIS PROJECT		

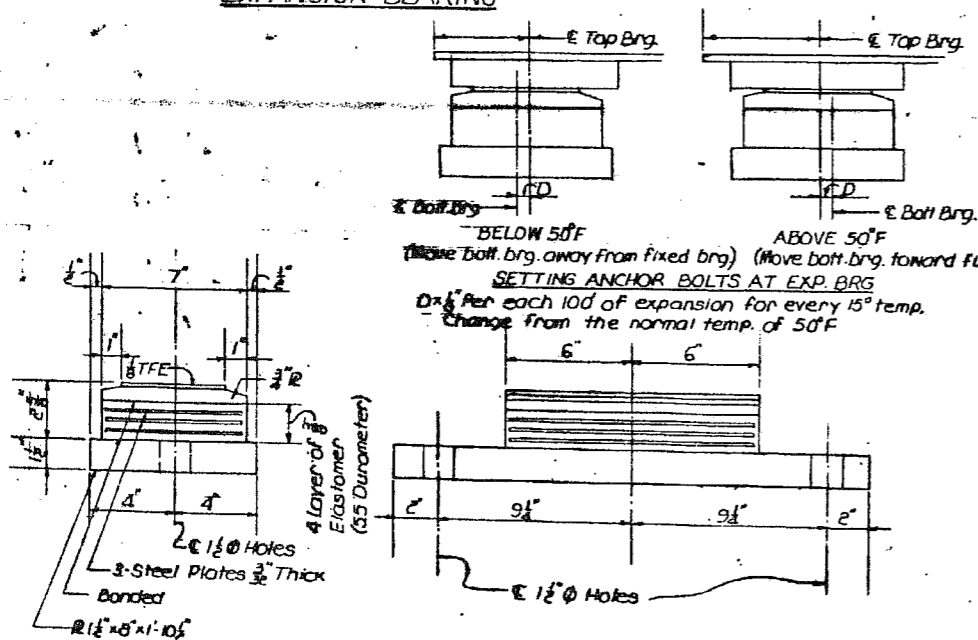
P-91-272-78



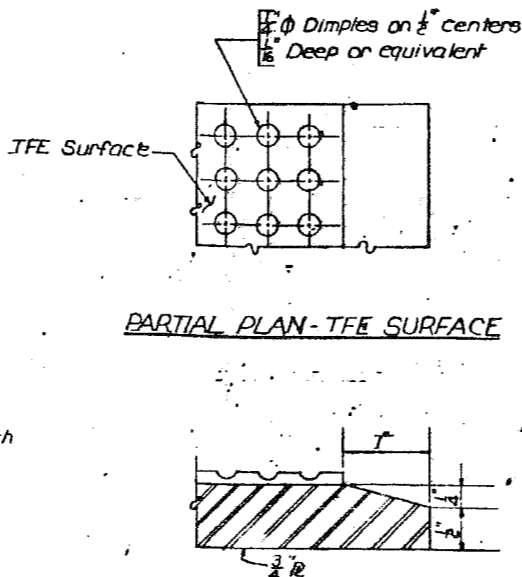
\* At 50°F

NOTE:  
After top bearing assemblies have been erected holes at lower expansion bearing shall be drilled and anchor bolts grouted in place.

**TYPE II TFE ELASTOMERIC EXPANSION BEARING**



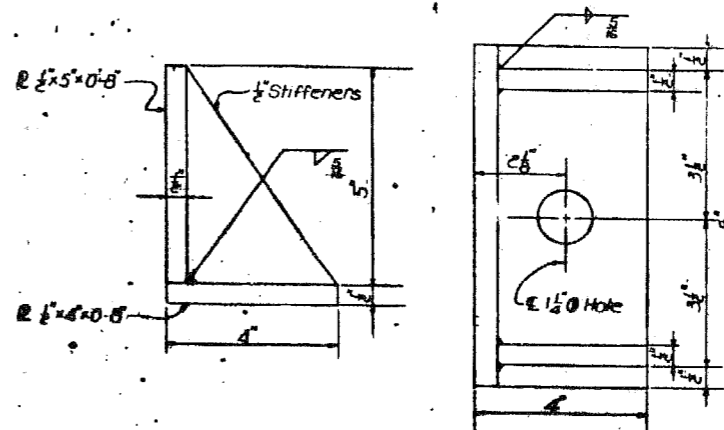
**BOTTOM BEARING ASSEMBLY**  
(24 Required)



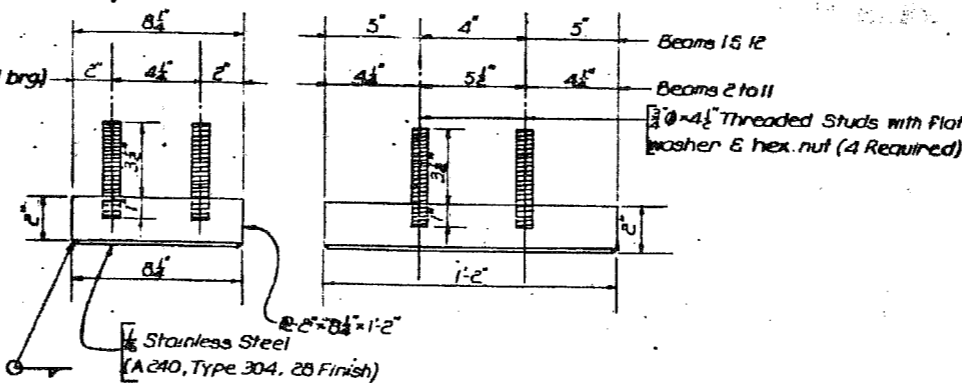
**SECTION THRU TFE**

NOTE:

The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirement of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.



**SIDE RETAINER**



**TOP BEARING ASSEMBLY**  
(4 Required for Beams 16/12  
20 Required for Beams 2 to 11)

NOTE:  
For new anchor bolt details see Sheets D-14 and D-15

**NEW ELASTOMERIC BEARING DETAILS**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**

DIVISION OF HIGHWAYS - DISTRICT I  
1000 PLAZA DRIVE, Schaumburg, ILL.

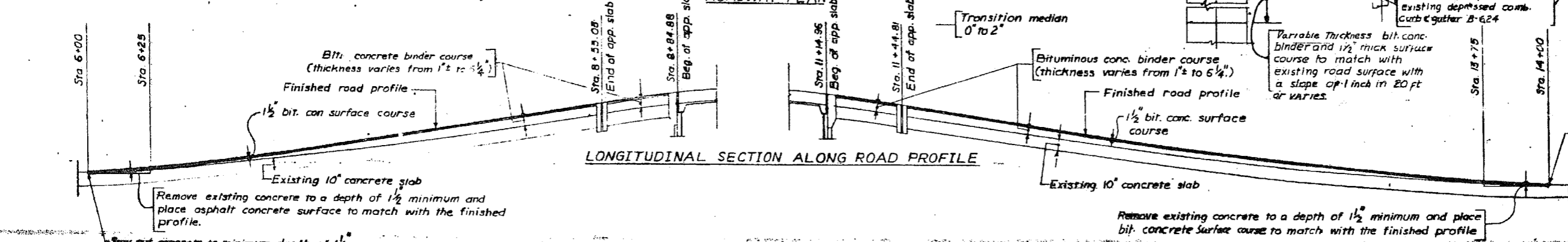
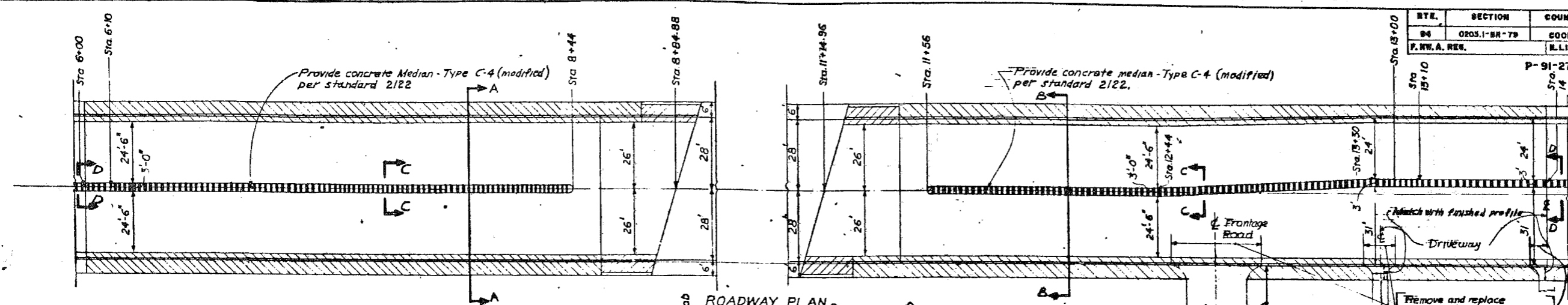
REHABILITATION OF  
DEVON AVENUE GRADE SEPARATION OVER  
EDENS EXPRESSWAY

**GLOBETROTTERS ENG. CORP.**  
CONSULTING ENGINEERS  
1020 SOUTH WABASH AVE. CHICAGO, ILL. 60605

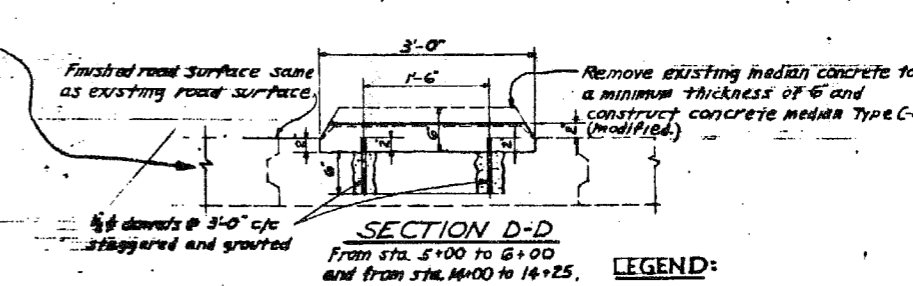
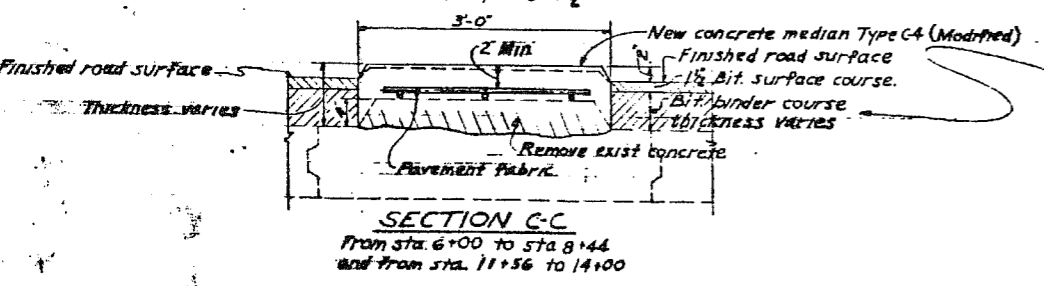
SCALE: NONE DRAWN BY: R.P. P... SHEET No. D-23  
DATE: 6-29-79 CHECKED BY: R.R. PATL

BTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	0203.1-BR-79	COOK	24	24
F.W.A. RES.		ILLINOIS PROJECT		

P-91-272-78

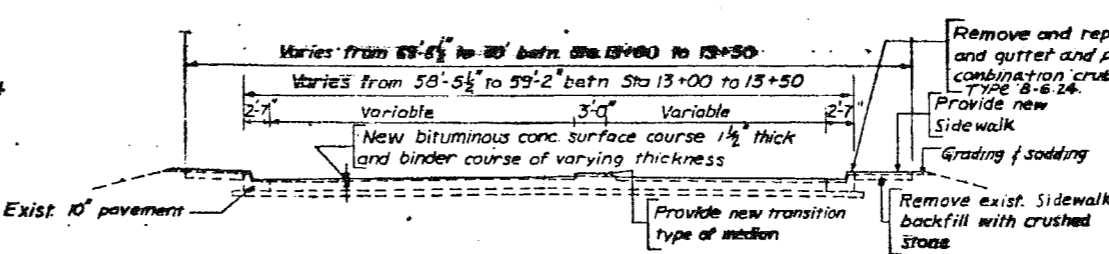
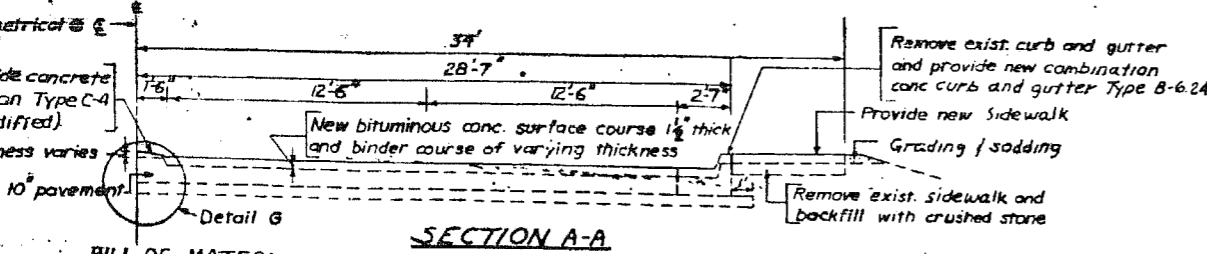


**Note:**  
The reconstruction of the median shall be paid for at the contract unit price per square feet of concrete median type C-4 (modified) which shall include all labor and materials necessary to complete the work. Removal of concrete, drilling holes and grouting of holes for dowel bars, furnishing pavement fabric per standard 2122 shall be considered incidental to this item of work.



**LEGEND:**

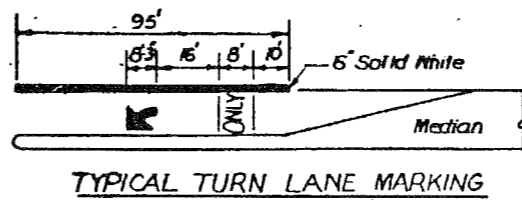
- New combination curb and gutter type B-624 and sidewalk with reinforcement
- Remove & replace combination curb & gutter type B-624 and sidewalk.



**BILL OF MATERIALS**

ITEM	UNIT	QTY
1. Concrete Median Type C-4 (modified)	Sq. Ft.	2325
2. Combination curb and gutter removal and replacement, Type B-624	Lin Ft.	1158
3. Sidewalk Removal and Replacement	Sq. Ft.	5060
4. Bituminous Concrete Binder course (Mixture B)	TON	610
5. Bit. conc. surface course Mixture B Class-1	TON	246
6. Bituminous Material Prime Coat	Gallon	300

ITEM	UNIT	QTY
7. Levelling Binder by hand Method	Ton	10
8. Mixture for Cracks, Joints & Flangerways	Ton	5
9. Protective Coat	Sq. Yd	2860



**ROADWAY WORK**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**

DIVISION OF HIGHWAYS - DISTRICT I  
1000 PLAZA DRIVE, SCHMIDGALL, ILL.

REHABILITATION OF  
**BEYON AVENUE GRADE SEPARATION OVER EDENS EXPRESSWAY**

**GLOBETROTTERS ENG. CORP.**  
CONSULTING ENGINEERS  
1020 SOUTH WABASH AVE. CHICAGO, ILL. 60605

SCALE: None    DRAWN BY: R.R. PATEL    SHEET No. D-24  
DATE: 6-29-79    CHECKED BY: Ray Pankh