

03-11-11 LETTING ITEM 125

FOR INDEX OF SHEETS, SEE SHEET NO. 2

IMPROVEMENTS ARE LOCATED IN THE CITIES OF CHICAGO & JOLIET, AND IN THE VILLAGES OF HUNTLEY, GLENWOOD, TINLEY PARK, NEW LENNOX, & CHANNAHON.

016-1100

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

VARIOUS ROUTES
VARIOUS LOCATIONS
SECTION: 2010-064-I
PERMANENT PROTECTIVE SHIELDING
KANE, COOK & WILL COUNTIES
C-91-699-10

LOC 1 SN 045-0073
LOC 2 SN 016-1100
LOC 3 SN 016-2121
LOC 4 SN 099-0206
LOC 5 SN 099-0205
LOC 6 SN 099-0203
LOC 7 SN 099-0216
LOC 8 SN 099-0182

FOR LOCATION MAPS SEE SHEETS 4 - 6

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123 OR 811
C.U.A.N.
CHICAGO UTILITY ALERT NETWORK
1-312-744-7000

PROJECT ENGINEER ROBERT BORO (847) 705-4178
PROJECT MANAGER ISSAM RAYYAN

CONTRACT NO. 60L45

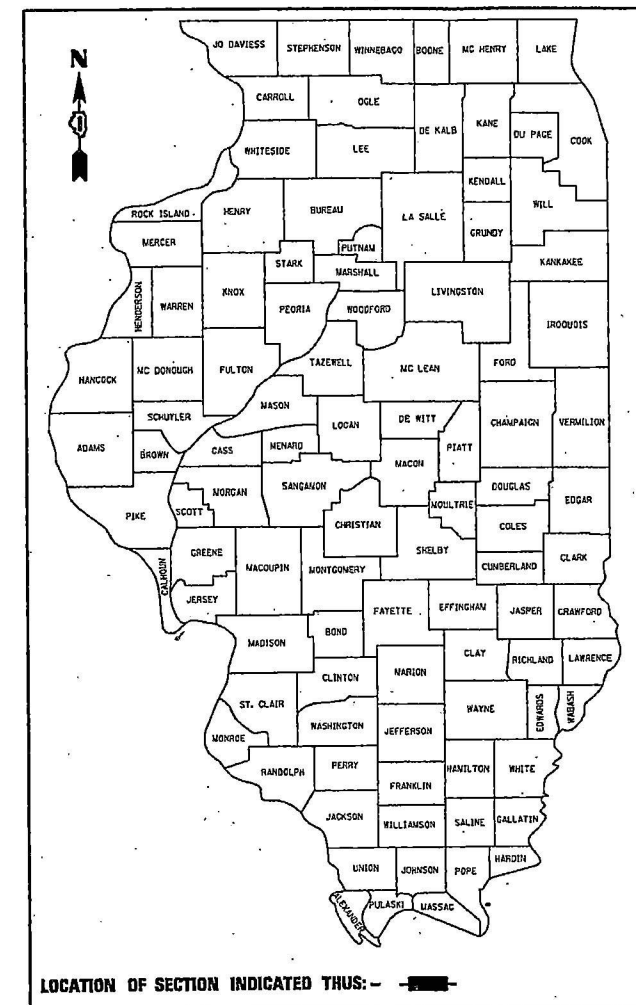
016-1100

VARIOUS

100%
6-25-11

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	2010-064-I	VARIOUS	28	1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO.	60L45	

*28+6=34



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED JANUARY 4, 2011
Diana M. O'Hea
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

FEB 4, 2011
Scott E. Stitt P.E.
ENGINEER OF DESIGN AND ENVIRONMENT

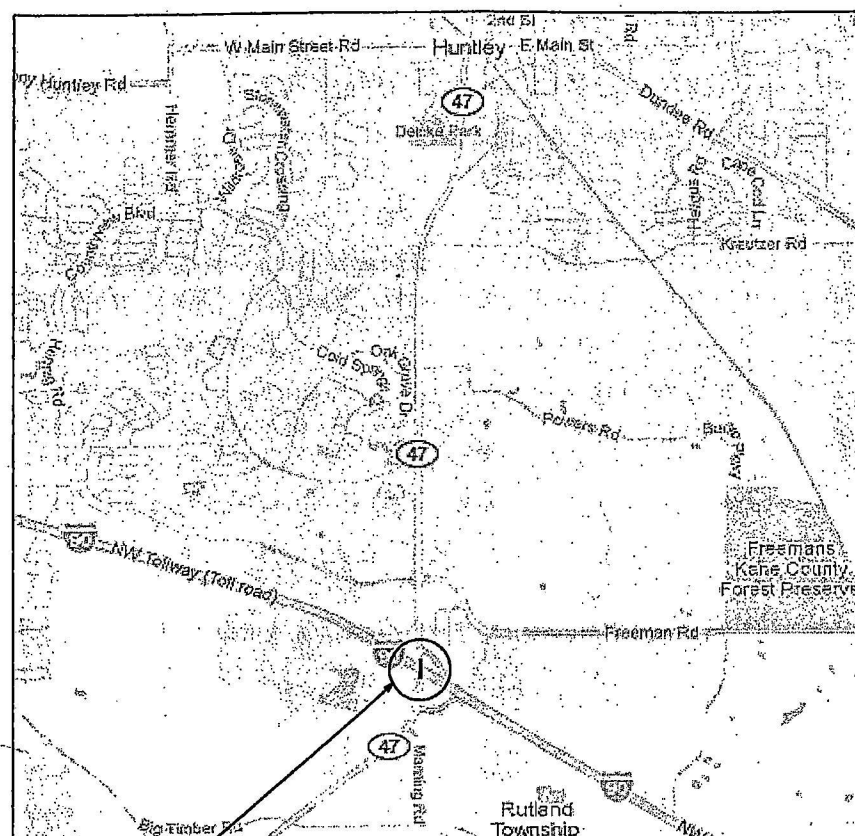
FEB 4, 2011
Christopher M. Reedler
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS



LOCATION 1

R 7 E



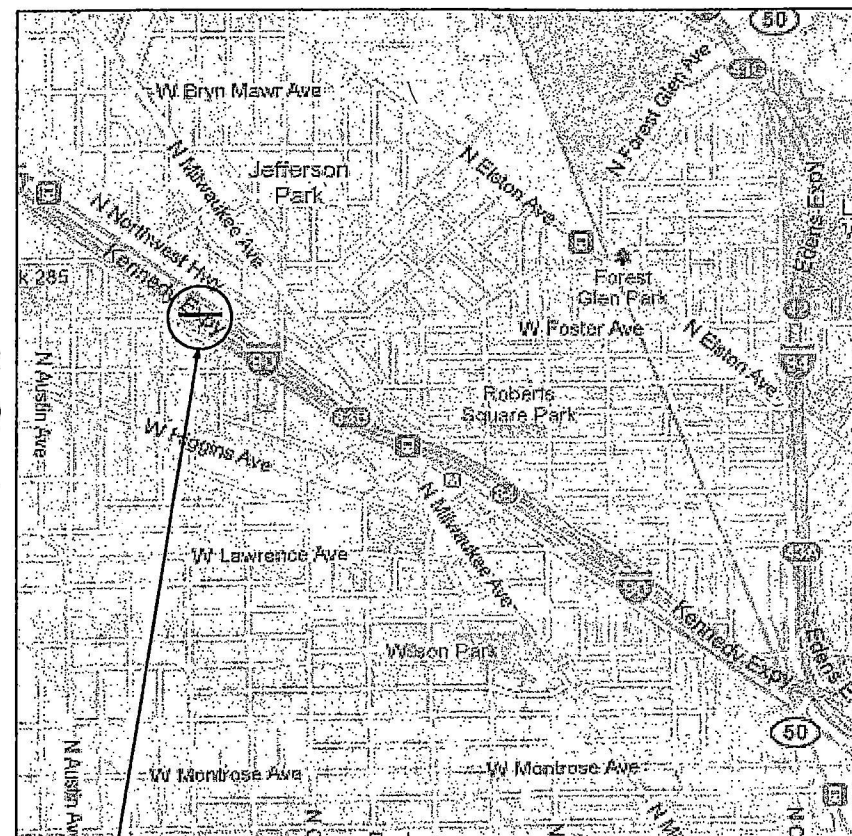
RUTLAND TOWNSHIP

IL-47 OVER I-90
VILLAGE OF HUNTLEY, KANE COUNTY
(SN 045-0073)

TRAFFIC DATA: (I-90)
SPEED LIMIT = 65 MPH
2008 ADT = 66,700

LOCATION 2

R 13 E



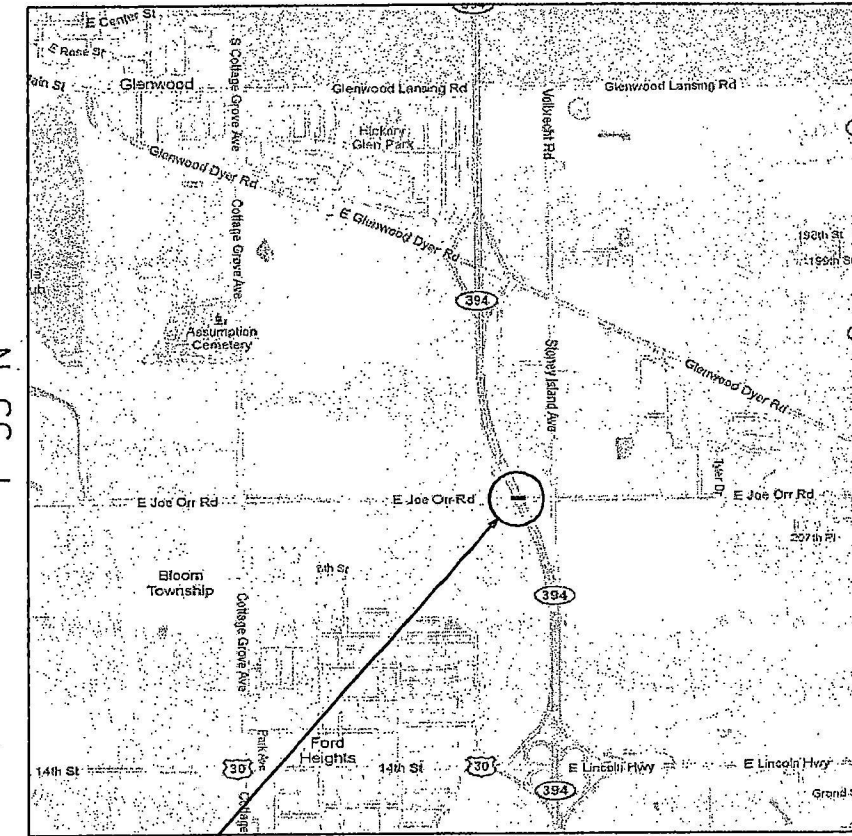
JEFFERSON TOWNSHIP

FOSTER AVE OVER I-90
CITY OF CHICAGO, COOK COUNTY
(SN 016-1100)

TRAFFIC DATA: (I-90)
SPEED LIMIT = 55 MPH
2008 ADT = 244,900

LOCATION 3

R 14 E

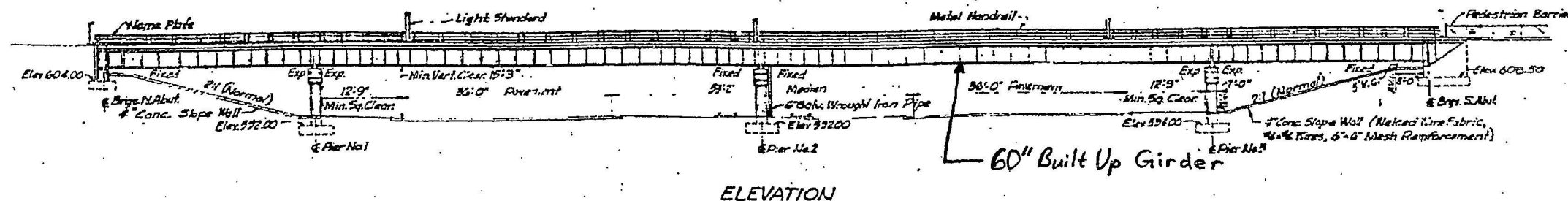
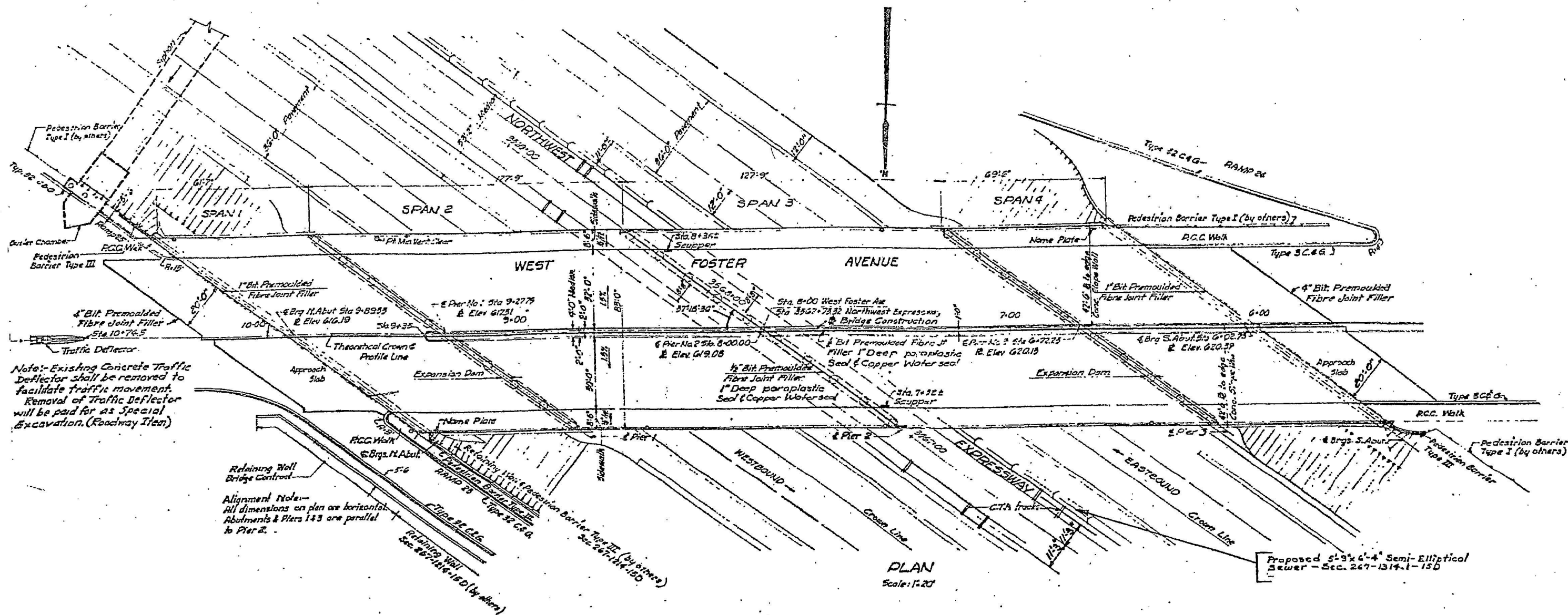


BLOOM TOWNSHIP

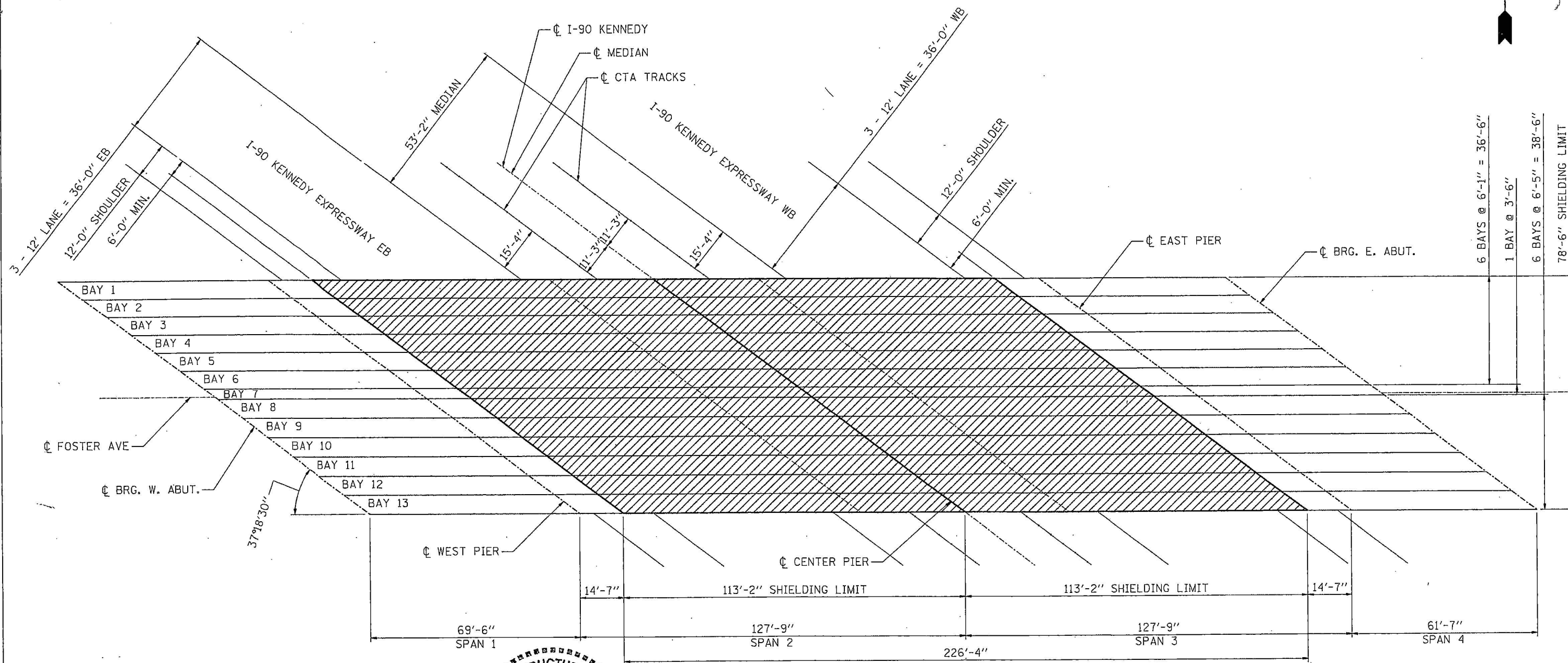
JOE ORR RD OVER IL 394
VILLAGE OF GLENWOOD, COOK COUNTY
(SN 016-2121)

TRAFFIC DATA: (IL 394)
SPEED LIMIT = 55 MPH
2009 ADT = 54,000

FILE NAME = c:\p\work\p\dot\m\ethanbo\0213820\016-1100-sht-plan.dgn	USER NAME = nathanbo	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	LOCATIONS 1 - 3 LOCATION MAPS				F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -						VAR	2010-064-I	VARIOUS	28	4
	PLOT SCALE = 1/8" = 1' / IN.	CHECKED -	REVISED -						CONTRACT NO. 60L45				
	PLOT DATE = 11/30/2010	DATE	REVISED -		FED. ROAD DIST. NO. 1 (ILLINOIS) FED. AID PROJECT								
	SCALE:				SHEET NO.	OF	SHEETS	STA.	TO STA.				

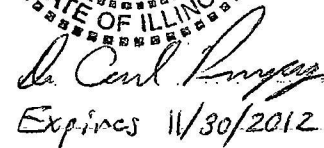


FILE NAME =	USER NAME = nathanbo	DESIGNED =	REVISED =	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STRUCTURE PLAN FOSTER AVE OVER I-90 LOCATION 2: SN 016-1100	SCALE:	SHEET NO. 1 OF 2 SHEETS	STA.	TO STA.	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
c:\p\work\p\dot\dot\nathanbo\0213820\016	910-shr-plan.dgn	DRAWN =	REVISED =							VAR	2010-064-1	VARIOUS	28	9
PLOT SCALE = 1/8"=1'-0"	CHECKED =	REVISED =	REVISED =										CONTRACT NO.	60L45
PLOT DATE = 11/8/2010	DATE =	REVISED =	REVISED =											



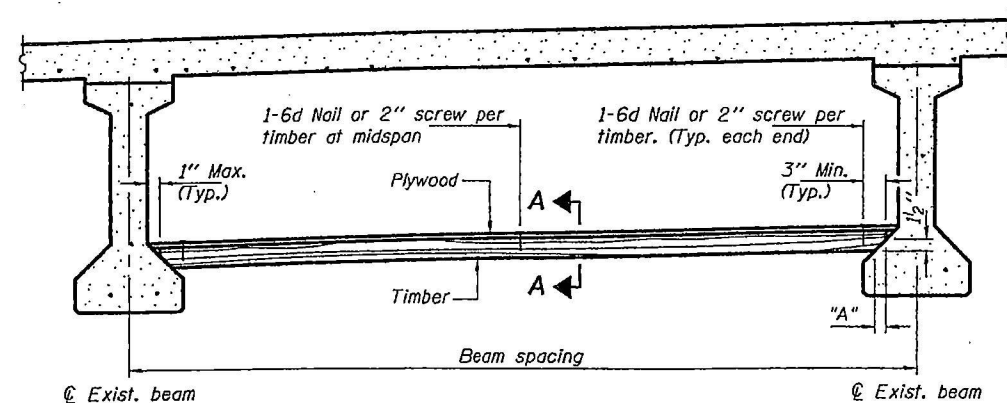
 - INDICATES PROPOSED PROTECTIVE SHIELDING (PERMANENT)

FOR PROTECTIVE SHIELD DETAILS, SEE SHEET 23 OF 28.

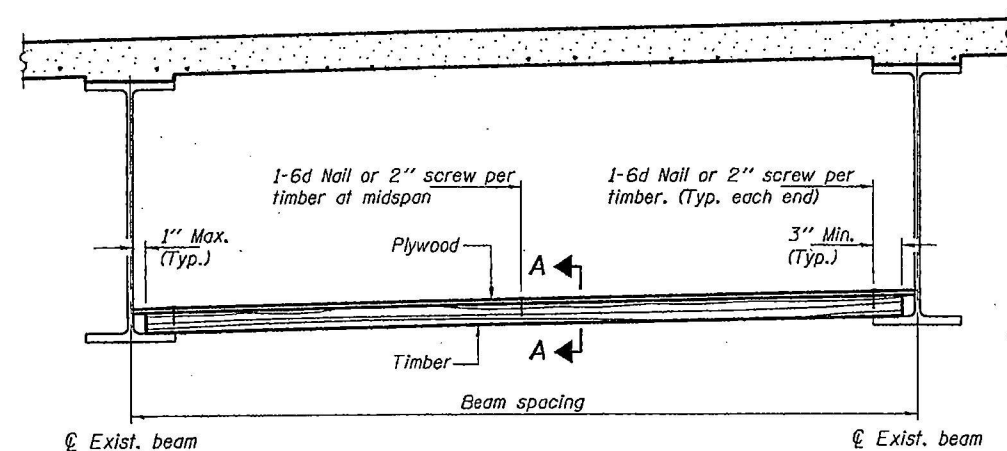
TOTAL BILL OF MATERIAL

Item	Unit	Total
Protective Shield (Permanent)	Sq. Yd.	1974

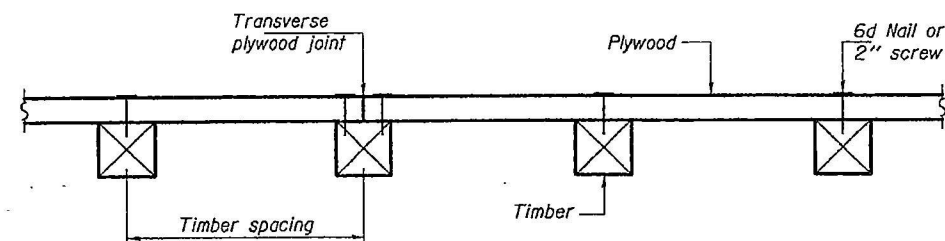
FILE NAME =	USER NAME = nethenbo	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STRUCTURE PLAN FOSTER AVE OVER I-90 LOCATION 2: SN 016-1100				F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
cs\pw\work\p\dot\nethenbo\0213820\DI6	910-shr-plandgn	DRAWN -	REVISED -		VAR	2010-064-I	VARIOUS	28	10				
	PLOT SCALE = 1000.00' 1" = 1 IN.	CHECKED -	REVISED -				CONTRACT NO.	60145					
	PLOT DATE = 1/11/2011	DATE -	REVISED -		SCALE:	SHEET NO. 2 OF 2 SHEETS	STA.	TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



PPC I-BEAMS AND BULB-T's



STEEL BEAMS



SECTION A-A

TIMBER SPACING

Beam Spacing (ft.)	Timber Sizes (in.)		
	4" x 4" with min. Fb=775 psi Fv=135 psi	4" x 6" with min. Fb=775 psi Fv=135 psi	6" x 6" with min. Fb=575 psi Fv=125 psi
	Maximum Timber Spacing (in.)		
4.5	16	16	16
4.75	16	16	16
5.0	16	16	16
5.25	16	16	16
5.5	16	16	16
5.75	16	16	16
6.0	16	16	16
6.25	12	16	16
6.5	12	16	16
6.75	12	16	16
7.0	8	16	16
7.25	8	16	16
7.5	8	16	16
7.75	8	16	16
8.0	8	12	16
8.25	8	12	16
8.5	6	12	12
8.75	6	12	12
9.0	6	8	12

PPC I-BEAMS AND BULB-T's

BEAM	"A"
36" I-Beam	1 1/2"
42" I-Beam	1 1/2"
48" I-Beam	1 1/2"
54" I-Beam	1 5/8"
63" Bulb-T	3 3/8"
72" Bulb-T	3 3/8"

Notes: See special provision for Permanent Protective Shield System.
 Timber sizes shown are nominal sizes. Rough sawn timber of the dimensions shown will also be considered acceptable.
 The minimum Fb and Fv values shown are the tabulated design values given in the National Design Specification for Wood Construction for No. 2 Spruce-Pine-Fir without adjustment factors applied. Better grades or other species with equal or higher allowable stresses will also be considered acceptable.
 The timber spacings shown have been determined using allowable stresses with all adjustment factors necessary for the anticipated service conditions.
 All timber shall be treated.
 Plywood shall be 5/8" rated Exterior type plywood by APA.
 Plywood shall be placed such that the face grain is perpendicular to the timber supports. When less than a full sheet (4' width) of plywood is used, the width of the strip used shall not be less than 2'.
 Transverse plywood joints shall be supported by timbers.
 When 4" x 6" timbers are used, they shall be placed such that the wide face is horizontal and the narrow face is vertical.
 Design load = 200 psf.

BILL OF MATERIAL

Item	Unit	Total
Protective Shield (Permanent)	Sq. Yd.	3665

PPS-1

01-22-09

FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PERMANENT PROTECTIVE SHIELD			F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
#FILE#		DRAWN -	REVISED -					VAR	2010-064-1	VARIOUS	28	23
	PLOT SCALE = #SCALE#	CHECKED -	REVISED -					CONTRACT NO. 60L45				
	PLOT DATE = #DATE#	DATE -	REVISED -					FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				
				SCALE:		SHEET NO.	OF	SHEETS	STA.	TO STA.		

#143

62650

4-23-04

Cook Sec

2003-0811

JAR

#143

143

95%
11-13-2004

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
VARIOUS	2003-0811	COOK	42	1

62650

62650

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DISTRICT ONE

PROPOSED HIGHWAY PLANS

ROUTE: VARIOUS ROUTES IN DISTRICT ONE
SECTION: 2003-0811
BRIDGE SECURITY FENCE
COOK COUNTY
C-91-204-03

INDEX OF SHEETS

- 1 COVER SHEET, INDEX OF SHEETS AND STATE STANDARDS
- 2 GENERAL NOTES
- 3 SUMMARY OF QUANTITIES
- 4-5 TYPICAL DRAWINGS
- 6-40 LOCATION MAPS AND PLAN SHEETS
- 41 DETAIL - DISTRICT ONE FREEWAY STANDARD ONE LANE CLOSURE
- 42 TRAFFIC CONTROL DETAILS FOR FREEWAY SHOULDER CLOSURES AND PARTIAL RAMP CLOSURES

STATE STANDARDS

664001-01

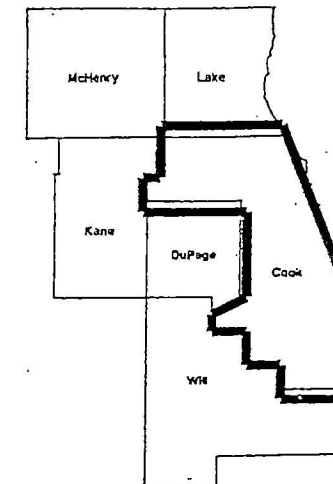
701101

701606-03

702001-04

701400-01

701401-02

**CONTRACT NO. 62650**

LOCATION OF IMPROVEMENT INDICATED THUS:

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED: October 31, 2003John P. Kall
DISTRICT ENGINEERJanuary 30, 2004
Mike Hine
ENGINEER OF DESIGN AND ENVIRONMENTJanuary 30, 2004
Victor Meder
DIRECTOR, DIVISION OF HIGHWAYS

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OF THE STATE OF ILLINOIS

J.U.L.I.E.: JOINT UTILITY LOCATION
INFORMATION FOR EXCAVATION
(800) 892-0123

Revised 4/8/04

016-1100

0-409

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
VARIOUS	2003-0811	Cook	42	2

62650

GENERAL NOTES

1. OUTSIDE THE CITY OF CHICAGO, BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "J.U.L.I.E." AT (800) 892-0123 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE AND GAS UTILITIES. (48 HOUR NOTIFICATION IS REQUIRED). IN THE CITY OF CHICAGO, BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "C.U.A.N." (CHICAGO UTILITY ALERT NETWORK) AT (312) 744-7000 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE AND GAS UTILITIES. (48 HOUR NOTIFICATION IS REQUIRED).
2. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES.
3. THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON STATE PROPERTY WITHOUT WRITTEN PERMISSION FROM THE DEPARTMENT.
4. _____
5. WHEN ARTIFICIAL LIGHTING IS UTILIZED IN NIGHT OPERATIONS, THE CONTRACTOR SHALL EXERCISE THE UTMOST PRECAUTIONS IN PREVENTING ADVERSE VISIBILITY TO THE MOTORING PUBLIC AND ADJOINING RESIDENTIAL AREAS.
6. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS. ALL DIMENSIONS AND GATE LOCATIONS AS SHOWN ON THE PLAN SHEETS MAY NEED TO BE ALTERED IN ORDER TO MEET EXISTING FIELD CONDITIONS AND THE CLEARANCES SPECIFIED IN THESE PLANS.
7. THE CONTRACTOR SHALL CONTACT THE DISTRICT ONE TRAFFIC CONTROL SUPERVISOR AT (847) 705-4155 A MINIMUM OF 72 HOURS IN ADVANCE OF BEGINNING WORK.

GENERAL NOTES (cont'd)

8. THESE PLANS HAVE BEEN PREPARED FROM NOTES RECEIVED FROM FIELD MAINTENANCE ENGINEERS.
9. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ACCESS TO ABUTTING PROPERTY AT ALL TIMES DURING THE CONSTRUCTION OF THIS PROJECT.
10. DO NOT SCALE PLANS FOR CONSTRUCTION DIMENSIONS.
11. DIRECTION INDICATOR BARRICADES SHALL BE USED IN LANE CLOSURE TAPERS.
12. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES AND THE CITY OF CHICAGO.

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
VARIOUS	2003-081 I	Cook	42	3

62656

SUMMARY OF QUANTITIES

Pay Item	Description	Unit	Y102 URBAN Total	* CONT. MAINT.	** HOMELAND SECURITY HSEC
66400305	CHAIN LINK FENCE, 6'	FOOT	1231.00	1231	
66400505	CHAIN LINK FENCE, 8'	FOOT	10965.00	5046	5919
66402900	CHAIN LINK GATES, 6' X 6' SINGLE	EACH	12.00	12	
66404900	CHAIN LINK GATES, 8' X 6' SINGLE	EACH	105.00	35	70
67100100	MOBILIZATION	L SUM	1.00	0.70	0.30
70102625	TRAFFIC CONTROL AND PROTECTION, STANDARD 701606	L SUM	1.00	0.70	0.30
X0323599	LOCKS FOR GATES	EACH	200	75	125
X7011015	TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS)	L SUM	1.00	0.70	0.30

* CONTRACT MAINTENANCE - LOCATIONS 1-18, 28-32
** HOMELAND SECURITY - LOCATIONS 19-27

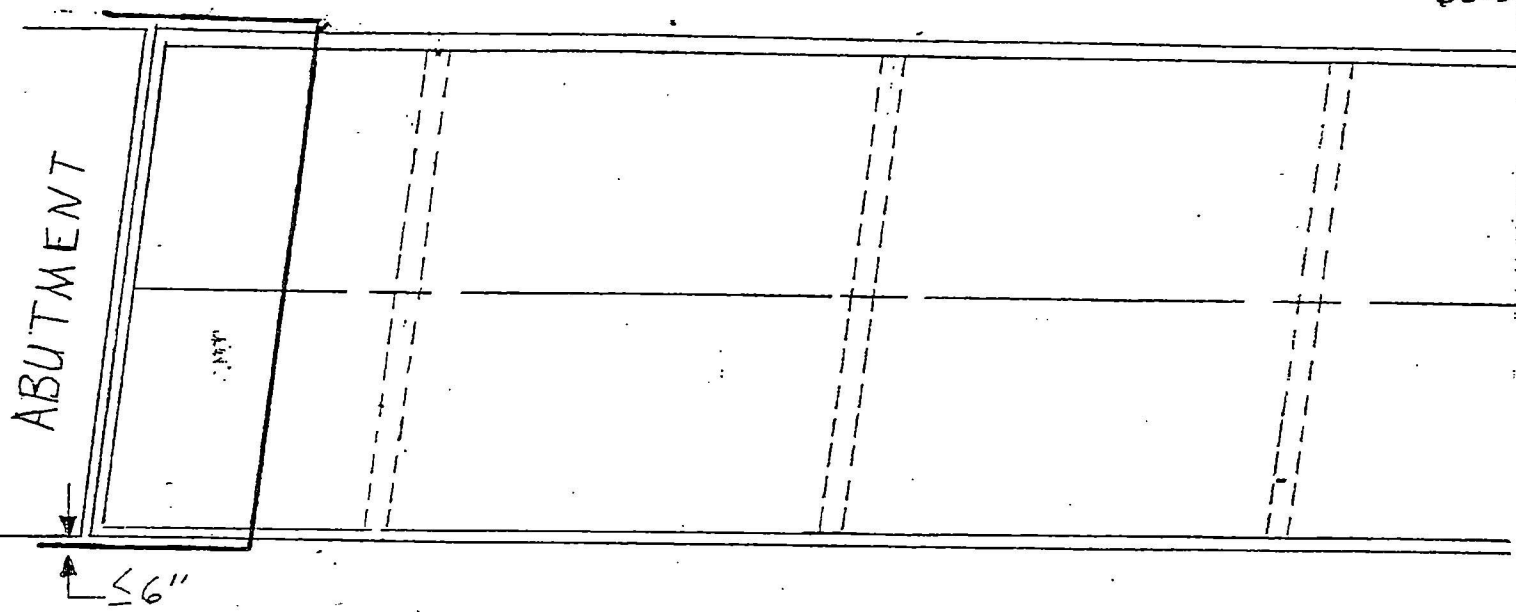
Rev. 4-8-04

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
VARIOUS	2003-081 I	COOK	42	4

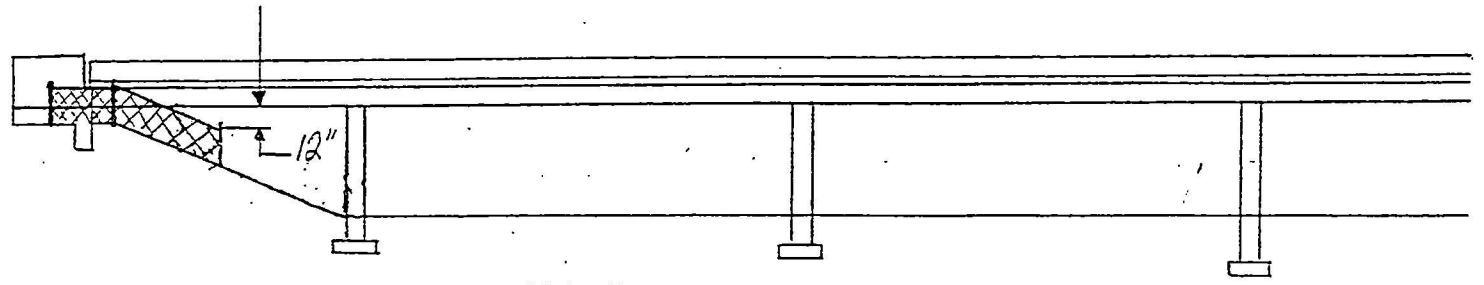
6265b

NOTES :

- ALL FENCE SHALL BE 8' UNLESS OTHERWISE NOTED ON THE PLANS
- A 12" CLEARANCE BETWEEN THE TOP OF THE FENCE AND THE BOTTOM OF THE BRIDGE DECK FLOOR/BEAM SHALL BE MAINTAINED FOR THE PURPOSE OF FUTURE BRIDGE MAINTENANCE.
- A 4" CLEARANCE BETWEEN THE BOTTOM OF THE FENCE AND THE SLOPE WALL SHALL BE MAINTAINED FOR THE PURPOSE OF FUTURE CLEANING AND FLUSHING OF THE ENCLOSED AREA.
- THE END POST SHALL BE WITHIN 6" OR LESS FROM THE ABUTMENT.
- THE INTENT OF THIS CONTRACT IS TO DENY ACCESS OF ANY UNAUTHORIZED PERSONNEL UNDER THE BRIDGE. ACTUAL FENCE INSTALLATIONS MAY VARY FROM WHAT IS SHOWN ON THE PLANS. ALL FENCE INSTALLATIONS MUST BE APPROVED BY THE ENGINEER.



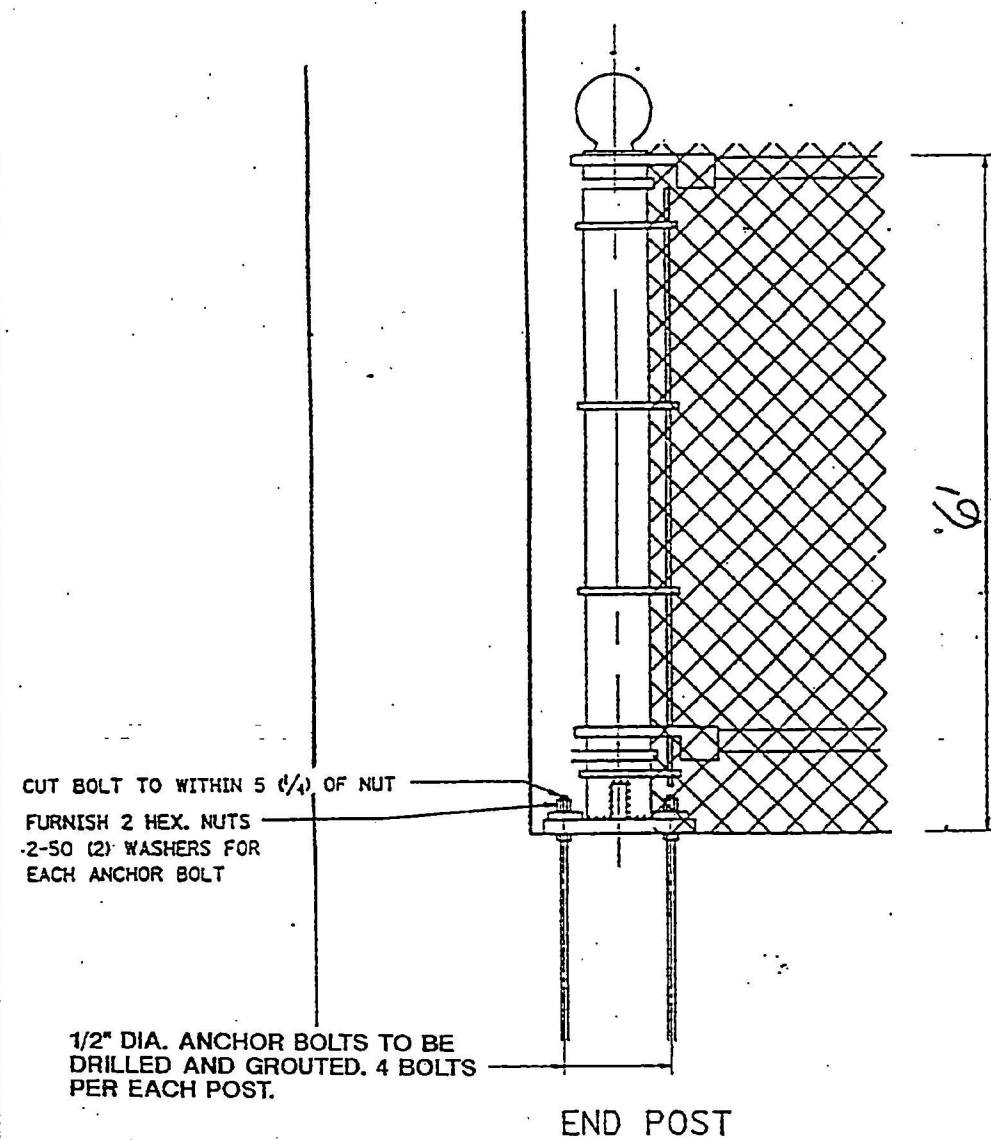
TYPICAL PLAN VIEW



TYPICAL ELEVATION VIEW

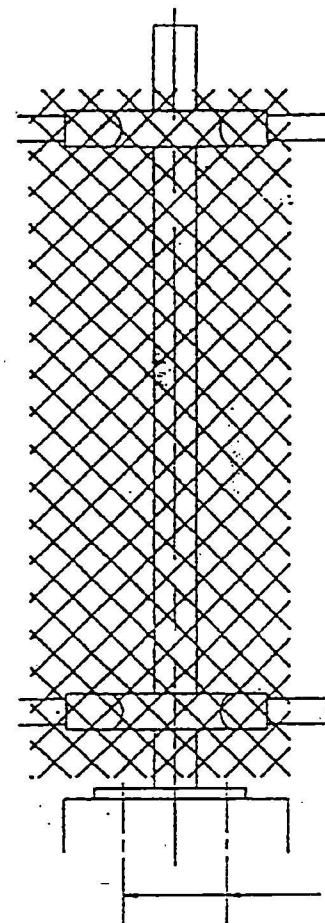
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
VARIOUS	2003-081 I	COOK	42	5

62655

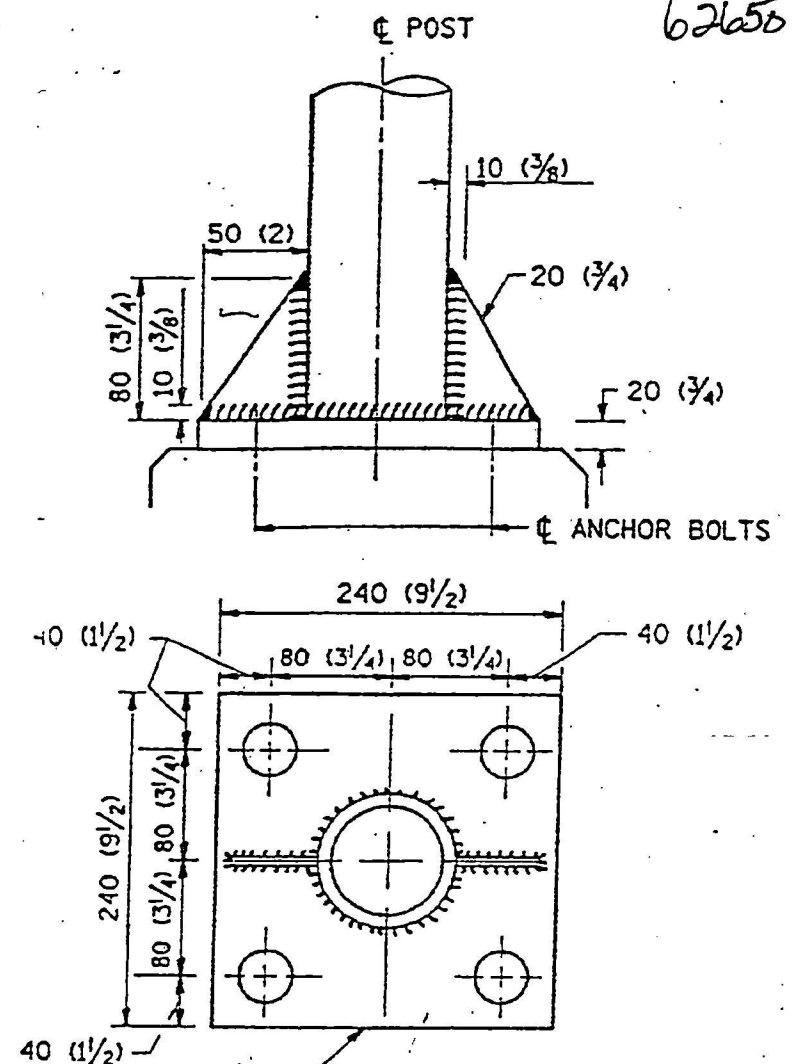


NOTE:

THE COST OF FURNISHING ANCHOR BOLTS, NUTS, & WASHERS TO BE INCIDENTAL



LINE POST



240 (9 1/2) X 80 (3/4) X 240 (9 1/2) BASE PL
4-30 (1 1/4) Ø HOLES FOR END & LINE POSTS

ANCHOR PLATE DETAILS

NOTE:

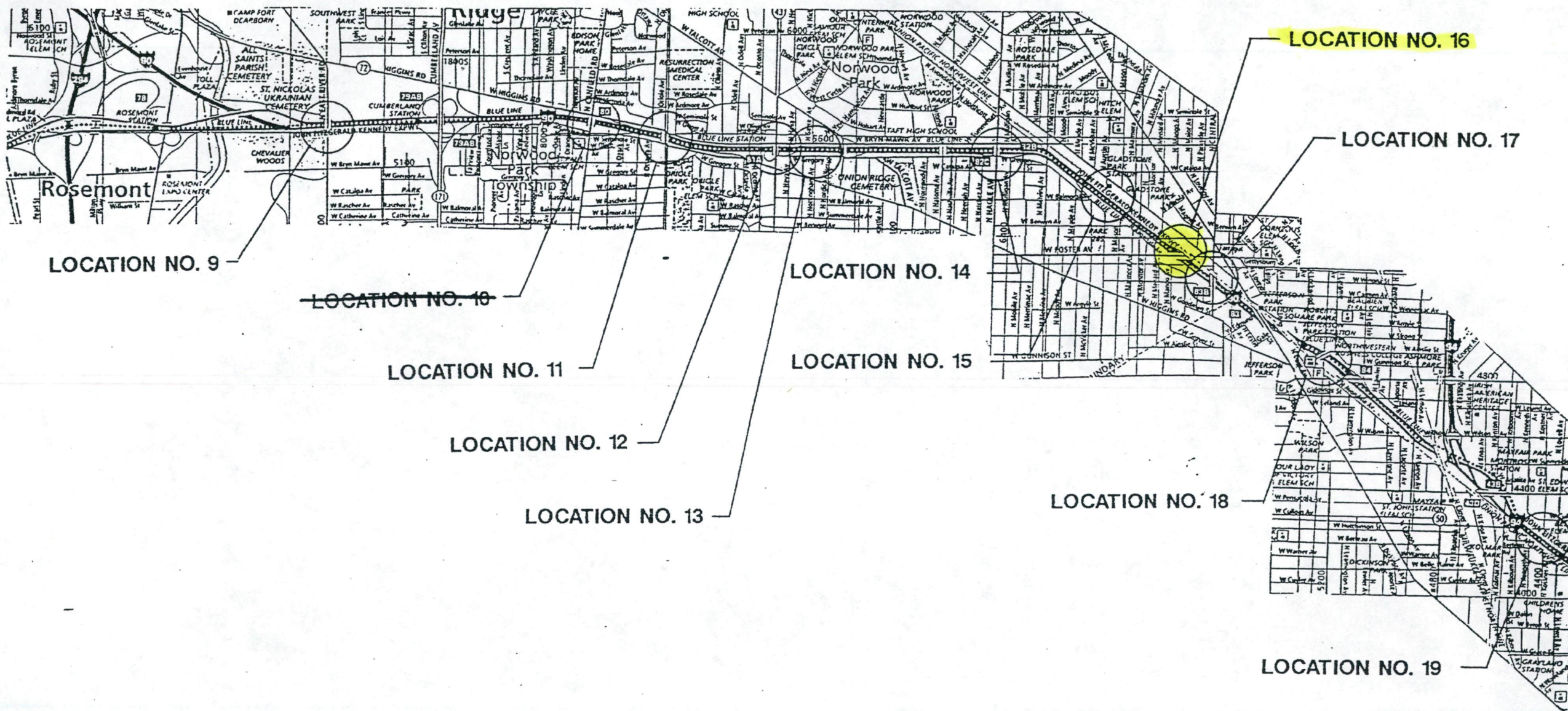
POST, PLATE AND GUSSET ASSEMBLY SHALL BE GALVANIZED AFTER ALL CUTTING, DRILLING, WELDING, AND FABRICATION HAVE BEEN COMPLETED. THE GALVANIZED COATING SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 120. THE GALVANIZED COATING SHALL NOT BE LESS THAN 610 G/SQ. M (2.0 OZ./SQ. FT.) OF SURFACE.

ALL HARDWARE AND LABOR NECESSARY TO CONSTRUCT AND INSTALL POSTS SHALL BE INCLUDED IN THE COST OF THE CHAIN FENCE TO BE INSTALL.



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
VARIOUS	2003-0811	COOK	42	15

62650



TRAFFIC DATA FOR LOCATION 9-18

2001 ADT = 175,000

POSTED SPEED LIMIT = 55 MPH

TRAFFIC DATA FOR LOCATION 19

2001 ADT = 12,000 ±

POSTED SPEED LIMIT = 30 MPH

LOCATIONS 9 TO 19

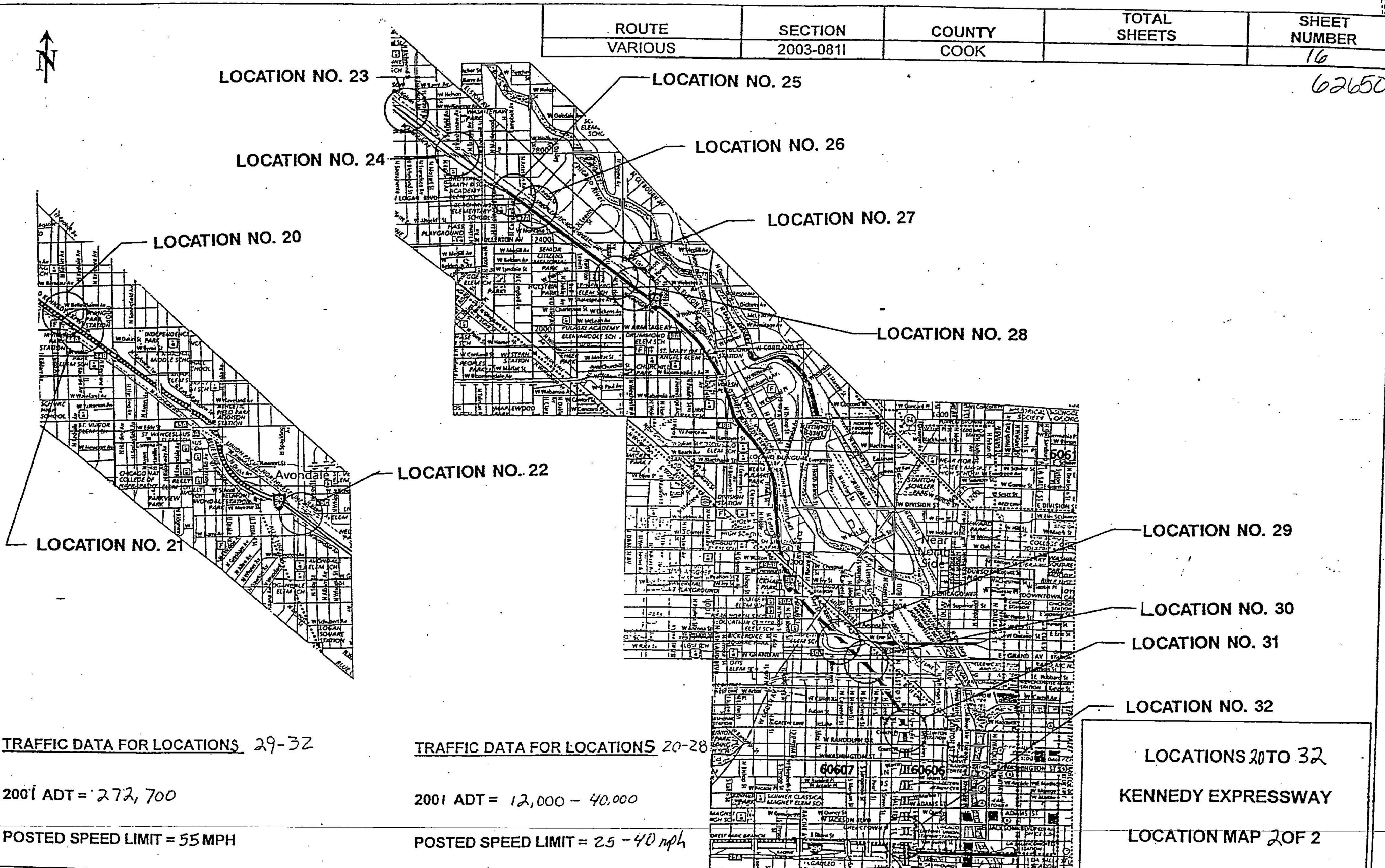
KENNEDY EXPRESSWAY

LOCATION MAP 1 OF 2



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
VARIOUS	2003-0811	COOK		16

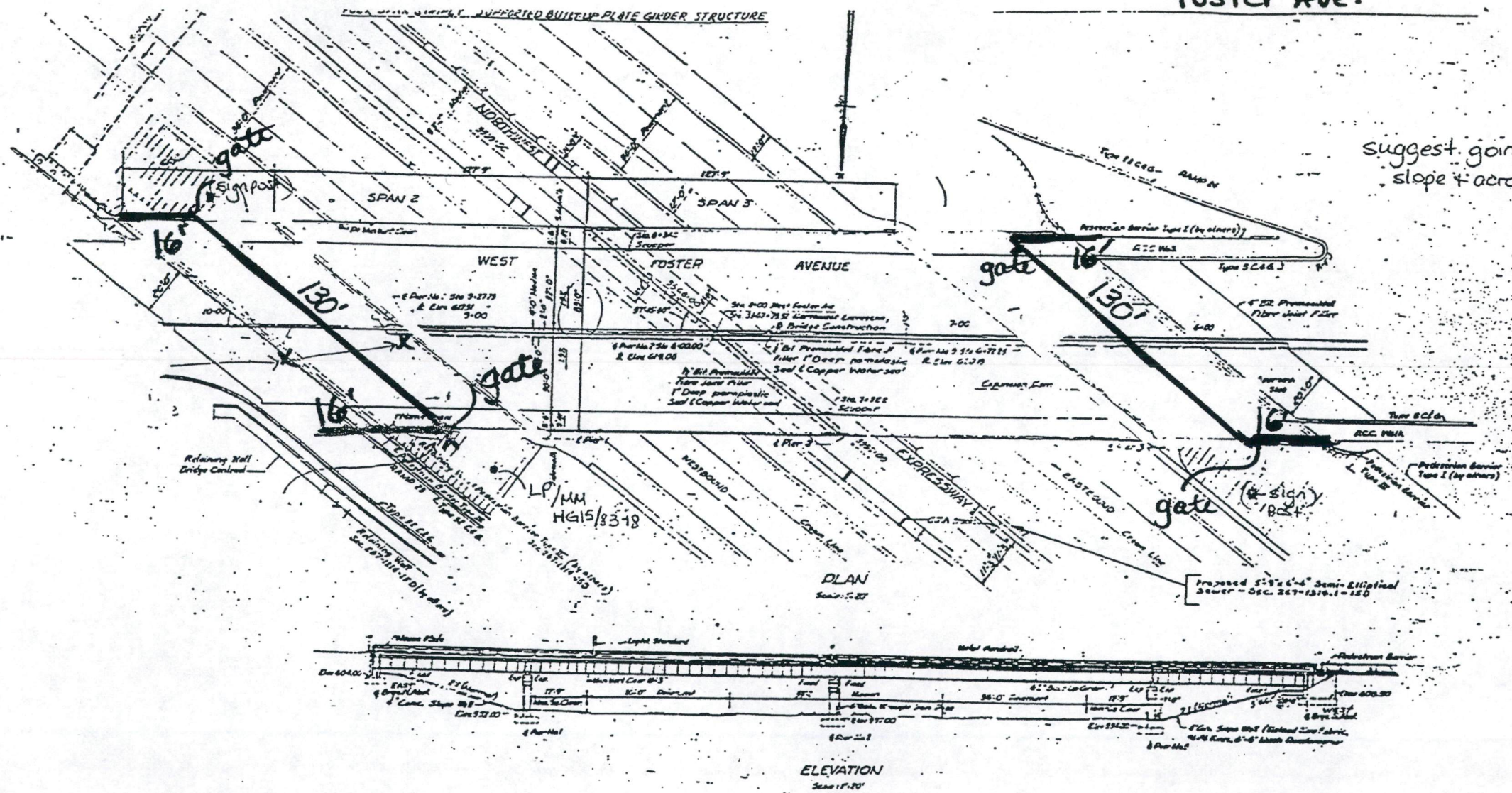
62650



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
VARIOUS	2003-081 I	COOK	42	24

62650

Bridge No.: 016-1100
Foster Ave.



suggest going only 25' down slope & across.

- 8' fence
- 16' down ledge
- 2 gates each side, 4 gates total

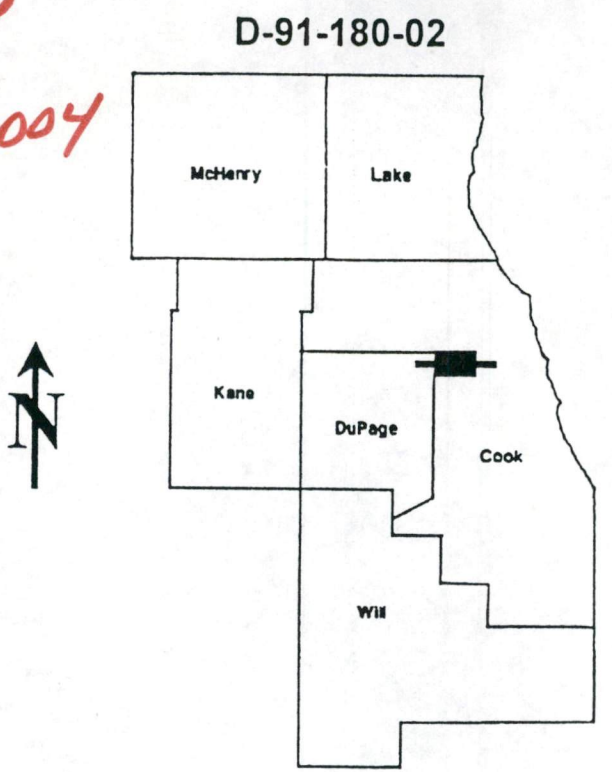
LOCATION NO. 16

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
FAI 90	2002-052BR	COOK	24	1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DISTRICT ONE
PROPOSED HIGHWAY PLANS

FAI 90: I-90 (KENNEDY EXPWY)
AND CTA RR UNDER
1) EAST RIVER ROAD (SN:016-2124)
2)FOSTER AVE (SN:016-1100)
SECTION: 2002-052BR
COOK COUNTY
SUBSTRUCTURE REPAIR

95%
3-10-2004



LOCATION OF IMPROVEMENT INDICATED THUS:

C-91-180-02

FOR INDEX OF SHEETS SEE SHEET 2

TRAFFIC DATA

I-90
SPEED LIMIT = 55 MPH
2000 ADT = 164,300

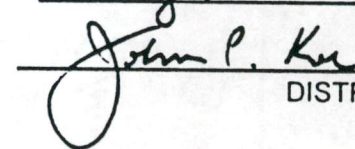
1) EAST RIVER ROAD
SPEED LIMIT = 35 MPH
2000 ADT = 19,709

2) FOSTER AVENUE
SPEED LIMIT = 35 MPH
1998 ADT = 24,000

IMPROVEMENTS ARE LOCATED
IN THE CITY OF CHICAGO

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED: August 12 2002


DISTRICT ENGINEER

20

ENGINEER OF DESIGN AND ENVIRONMENT

20

DIRECTOR, DIVISION OF HIGHWAYS

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

C.U.A.N.: CHICAGO UTILITY
ALERT NETWORK
(312) 744-7000

CONTRACT NO.: 62458

form date: 4/19/2001

s:\wpl\contracts-

DISTRICT ONE BUREAU OF MAINTENANCE
MAINTENANCE DESIGN ENGINEER: R. BORO (847) 705-4178

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
FAI 90	2002-052BR	COOK	24	2

INDEX OF SHEETS

1	TITLE SHEET
2	INDEX OF SHEETS
3	LOCATION MAP
4	STATE STANDARDS
5	GENERAL NOTES
6	SUMMARY OF QUANTITIES
7-14	LOCATION 1 CONCRETE REPAIR LOCATIONS EAST RIVER ROAD (SN: 016-2124)
15-21	LOCATION 2 CONCRETE REPAIR LOCATIONS FOSTER AVE. (SN: 016-1100)
22	DISTRICT ONE FREEWAY STANDARD ONE LANE CLOSURE
23	DISTRICT ONE FREEWAY STANDARD TWO LANE CLOSURE
24	TRAFFIC CONTROL FOR SHOULDER CLOSURES AND PARTIAL RAMP CLOSURES

INDEX OF SHEETS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
FAI-90	2002-052BR	COOK	24	4

STATE STANDARDS

000001-04 Standard Symbols, Abbreviations and Patterns

701101 Off-Road Operations, Multilane, Less Than 4.5 m (15') Away, For Speeds $\geq$ 45 MPH

701411-02 Lane Closure, Multilane, At Entrance Or Exit Ramp, For Speeds $\geq$ 45 MPH

702001- 02 Traffic Control Devices

STATE STANDARDS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
FAI-90	2002-052BR	COOK	24	5

GENERAL NOTES

1. BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "C.U.A.N." (CHICAGO UTILITY ALERT NETWORK) AT (312) 744-7000 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE AND GAS UTILITIES. (48 HOUR NOTIFICATION IS REQUIRED).

2. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES AND THE CITY OF CHICAGO.

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

4. BARRICADES: THE CONTRACTOR SHALL PROVIDE AND INSTALL TWO (2) WEIGHTED SAND BAGS ON EACH UNBALLASTED TYPE I OR TYPE II BARRICADE USED. (ONE [1] WEIGHTED SAND BAG ACROSS EACH BOTTOM RAIL). THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT THE COSTS SHALL BE CONSIDERED AS INCLUDED IN THE CONTRACT UNIT PRICES FOR THE CONSTRUCTION ITEMS INVOLVED, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

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

6. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS.

7. THE CONTRACTOR SHALL CONTACT THE DISTRICT ONE TRAFFIC CONTROL SUPERVISOR AT (847)705-4155 A MINIMUM OF 72 HOURS IN ADVANCE OF BEGINNING WORK.

8. DO NOT SCALE PLANS FOR CONSTRUCTION DIMENSIONS.

9. CARE SHALL BE TAKEN NOT TO DAMAGE EXISTING TRAFFIC SYSTEM CENTER CONDUIT ATTACHED TO EAST ABUTMENT AT FOSTER AVENUE. CONTACT JOE JAYTON AT (708) 524-2145.

GENERAL NOTES

Rev.

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
FAI 90	2002-052BR	COOK	24	6

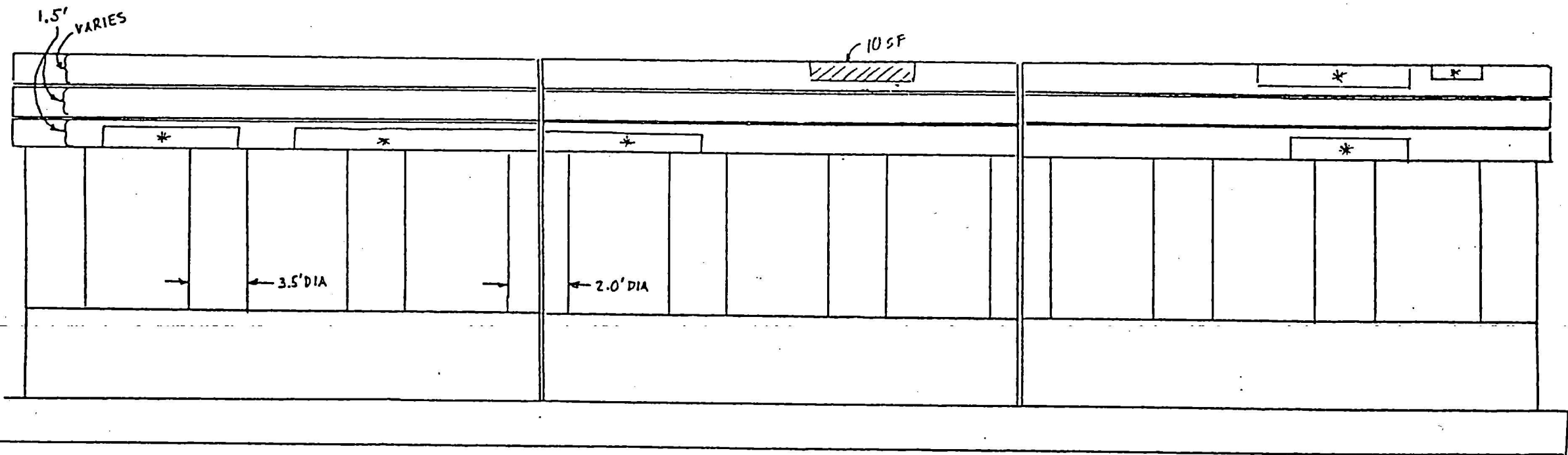
SUMMARY OF QUANTITIES

100% STATE
URBAN

PAY ITEM	DESCRIPTION	UNIT	TOTAL	CONSTRUCTION TYPE CODE SFTY-2A	
				016- 2124	016- 1100
67100400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	2.0	1.0	1.0
67100100	MOBILIZATION	L SUM	1.0	0.5	0.5
X0301689	HIGH PERFORMANCE – ENHANCED SHOTCRETE	SQ FT	1320	658	662
X7011015	TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS)	L SUM	1.0	0.5	0.5
Z0048665	RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1.0	0.5	0.5
50301250	FORMED CONCRETE REPAIR(DEPTH ≥ 5")	SQ. FT.	17		17
Z0073300	TEMPORARY SHORING AND CRIBBING	L SUM	1		1

Rev .

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
FAI 90	2002-052 BR	COOK	24	15



PIER #1 LOOKING EAST

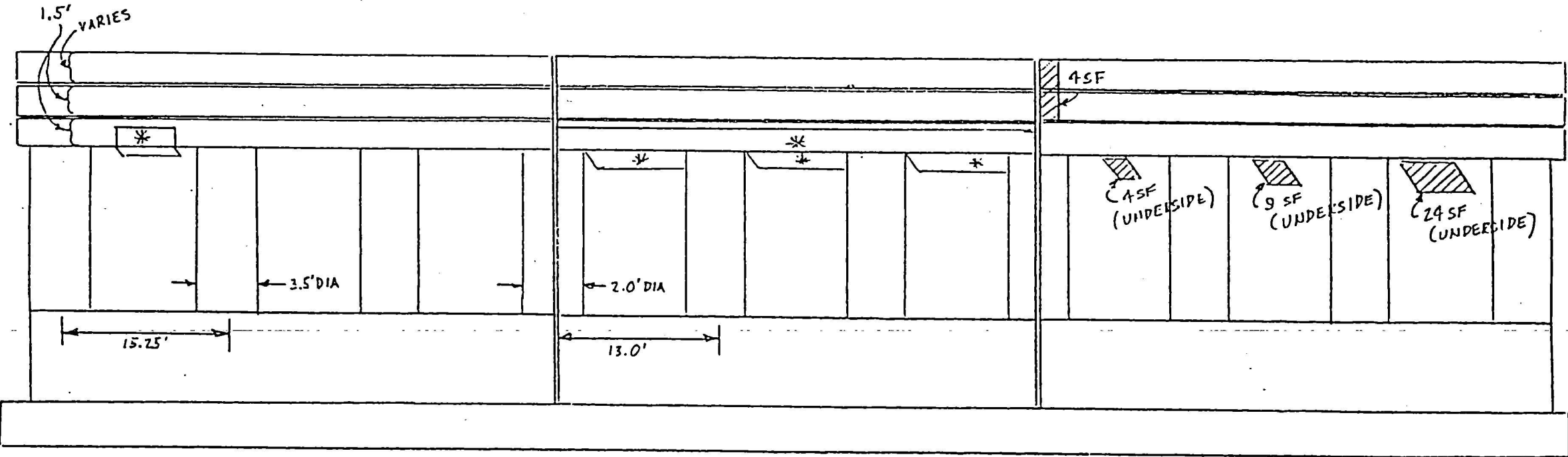


Total area of shotcrete repair = 10 sf

- * - Previous formed conc. repair (1991 const. contract 80894)
- General hairline map cracking, but intact

CONCRETE REPAIR
LOCATIONS
FOSTER AVE OVER
I-90
SN:016-1100

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
FAI 90	2002-052 BR	COOK	24	16



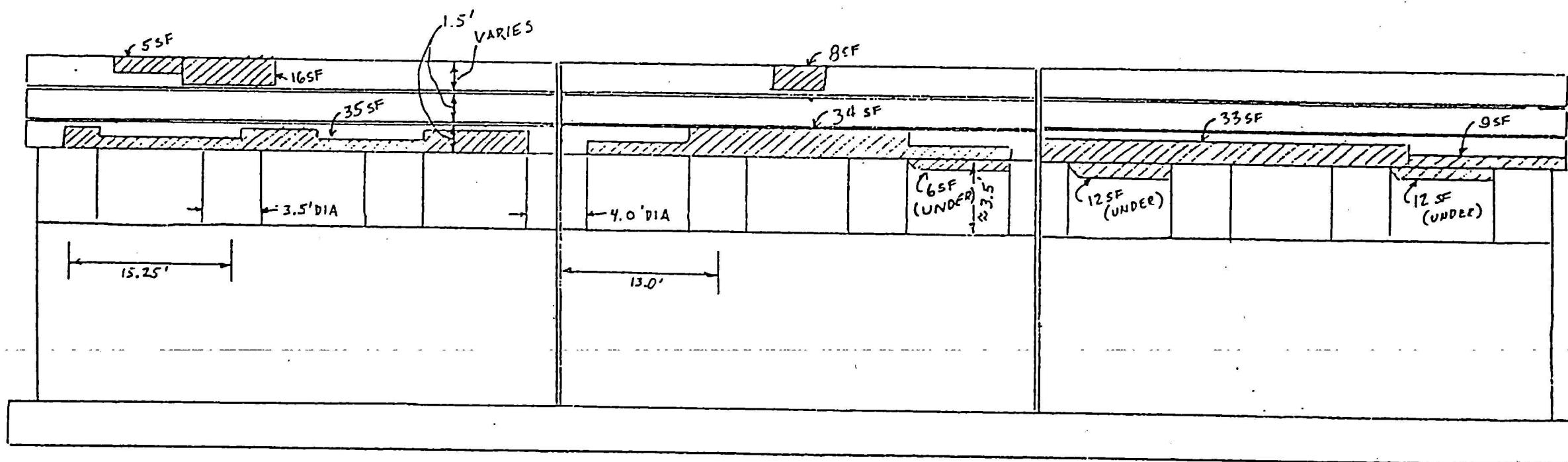
PIER #1 LOOKING WEST

 Total area of shotcrete repair = 41 sf

- * - Previous formed conc. repair (1991 const. contract 80894)
- General hairline map cracking, but intact

CONCRETE REPAIR
LOCATIONS
FOSTER AVE OVER
I-90
SN:016-1100

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
FAI 90	2002-052 BR	COOK	24	17



PIER #2 LOOKING EAST

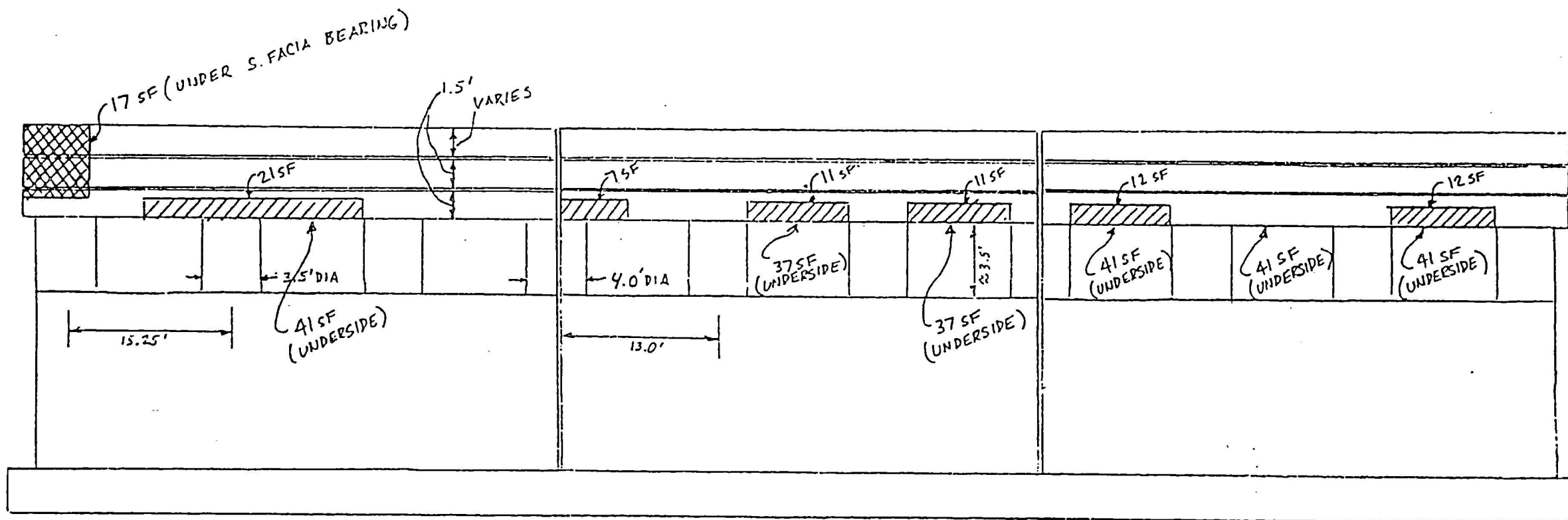


Total area of shotcrete repair = 170 sf

* Note: CTA tracks on either side of pier #2

CONCRETE REPAIR
LOCATIONS
FOSTER AVE OVER
I-90
SN:016-1100

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
FAI 90	2002-052 BR	COOK	24	18



PIER #2 LOOKING WEST



- Formed Concrete
Repair (Depth $\geq 5"$) =
17 Sq. Ft.



Total area of shotcrete repair = 329 sf

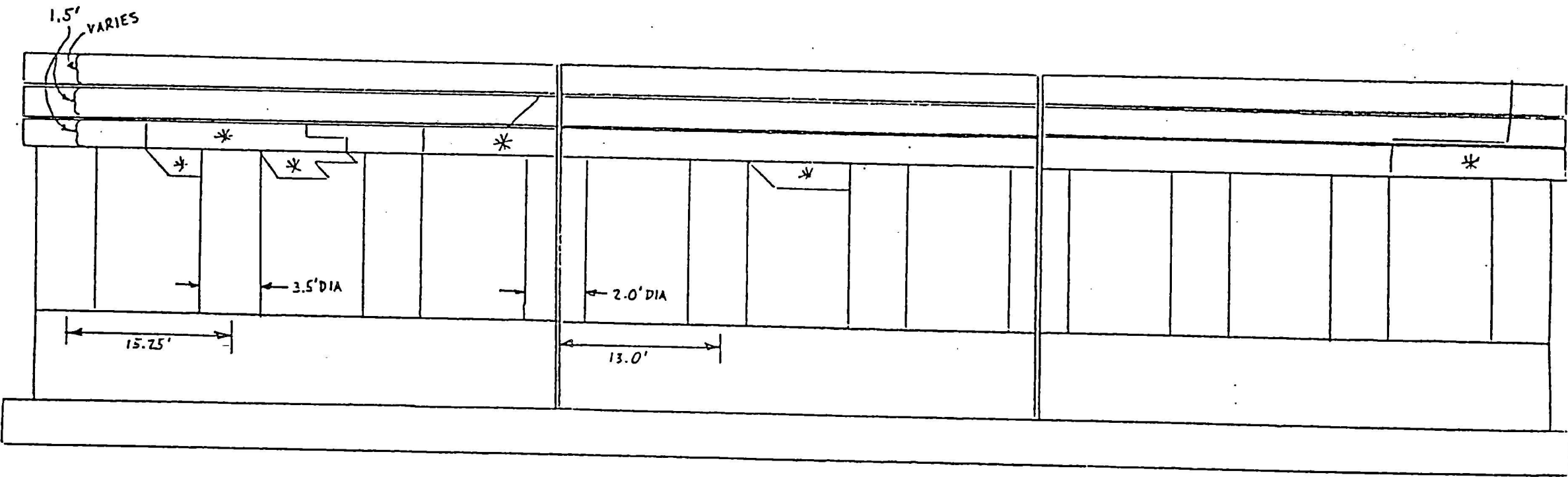
(Temporary Shoring and
Cribbing Required at
this location.)

* Note: CTA tracks on either side of pier #2

Rev.

CONCRETE REPAIR
LOCATIONS
FOSTER AVE OVER
I-90
SN:016-1100

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
FAI 90	2002-052 BR	COOK	24	19



PIER #3 LOOKING EAST

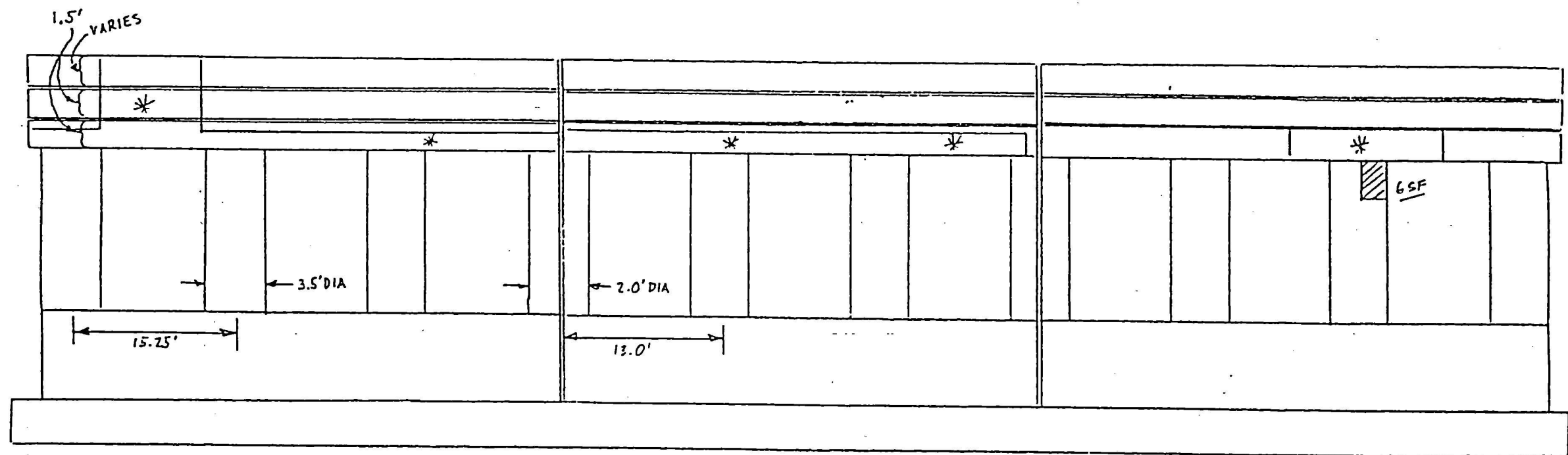


Total area of shotcrete repair = 0 sf

- * - Previous formed conc. repair (1991 const. contract 80894)
- General hairline map cracking, but intact

CONCRETE REPAIR
LOCATIONS
FOSTER AVE OVER
I-90
SN:016-1100

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
FAI 90	2002-052 BR	COOK	24	20



PIER #3- LOOKING WEST

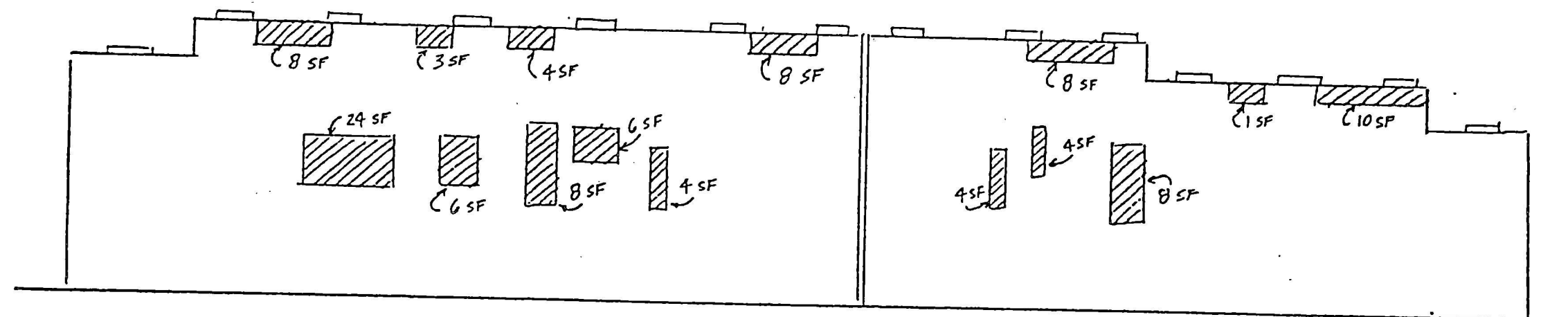


Total area of shotcrete repair = 6 sf

- * - Previous formed conc. repair (1991 const. contract 80894)
- General hairline map cracking, but intact

CONCRETE REPAIR
LOCATIONS
FOSTER AVE OVER
I-90
SN:016-1100

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
FAI 90	2002-052 BR	COOK	24	21



EAST ABUTMENT (LOOKING EAST)



Total area of shotcrete repair = 106 sf

CONCRETE REPAIR
LOCATIONS
FOSTER AVE OVER
I-90
SN:016-1100

COOK

SEC. 1313.1-1(90)

I&R

MAY 3, 1991

#249

249

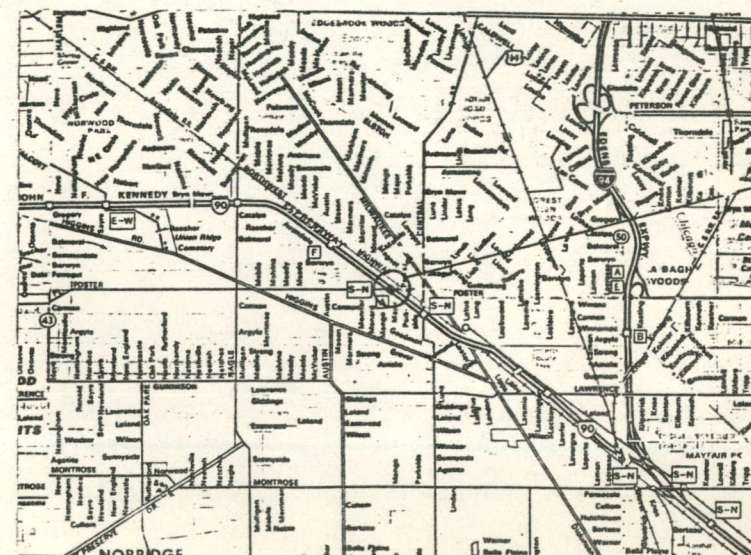
99%
5-13-92

FOR INDEX OF SHEETS, SEE SHEET NO. 2

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
FEDERAL AID HIGHWAY

PLAN 1"=20'
PROFILE HORIZ.
PROFILE VERT.
CROSS SECTION

F.A.I. ROUTE 90 (I-90)
BRIDGE REPAIRS: FOSTER AVE./KENNEDY EXPRESSWAY
STATE BRIDGE NO. 016-1100
SECTION 1313.1-1(90)
COUNTY: COOK
C-91-440-90



LOCATION OF WORK
FOSTER AVE./KENNEDY X-WAY
BR. NO. 016-1100

1 MILE
Layout Scale

THIS IMPROVEMENT IS LOCATED IN
THE CITY OF CHICAGO

CONTRACT NO. 80894

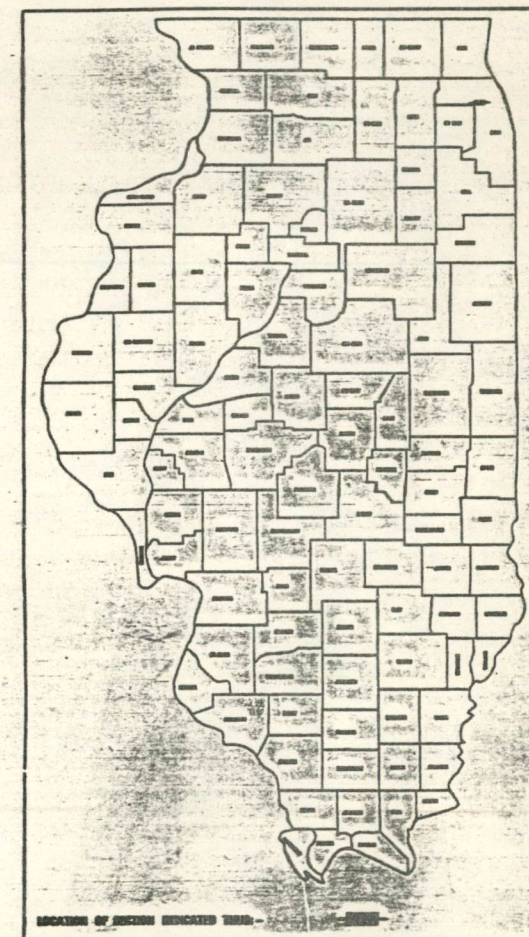
016-1100 161100

NET LENGTH = 4326 LIN. FT. (0.82 MILE)

F.A.I. ROUTE 90 SECTION 1313.1-1(90) COOK COUNTY

PAV. TYPE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	1313.1-1(90)	COOK	29	1

D-91-440-90



STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	
SUBMITTED	3-29-91
EXAMINED	3-29-91
PASSED	3-29-91
APPROVED	3-29-91

PRINTED BY AUTHORITY OF THE STATE OF ILLINOIS

0-250

15-FEB-91 09:44:56
ZF6410.C007M1999IAA.DGN
LEVELS = 6,35 (VI=76)

G. HACK / L. LESNIAK MAINTENANCE (708) 705-4168

ROUTE	SECTION	COUNTY	TOTAL SMTS.	SMT. NO.
FAL 90	1313.1-I(90)	Cook	29	2

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY
40600850	BIT. CONC. SURF. CSE. MIX. D, CL I, T 2	TON	70
50102400	CONCRETE REMOVAL	CU. YD.	136.5
50300110	PREFORMED JOINT SEAL 1-3/4"	LIN. FT.	420
50300155	NEOPRENE EXPANSION JOINT 2-1/2"	LIN. FT.	274
50400300	CLASS I CONCRETE	CU. YD.	165.6
50401245	FORMED CONCRETE REPAIR (DEPTH EQUAL TO OR LESS THAN 5")	SQ. FT.	1,130
50700400	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	15,330
51200200	REINFORCEMENT BARS, EPOXY COATED	POUND	18,610
61701000	BITUMINOUS CONCRETE SURFACE REMOVAL	SQ. YD.	2,694
61701115	BITUMINOUS CONCRETE SURFACE REMOVAL (FULL DEPTH)	SQ. YD.	490
64600400	ENGINEER'S FIELD OFFICE, TYPE A	CAL. MO.	4
64701000	PAVEMENT MARKING TAPE, TYPE III 4"	LIN. FT.	2,120
64801700	TRAFFIC CONTROL AND PROTECTION	L. SUM	1
65000100	MOBILIZATION	L. SUM	1
*T5020200	PAINT PAVEMENT MARKING-LINE 4"	LIN. FT.	1,940
TX006900	TEMPORARY INFORMATION SIGNING	SQ. FT.	80
Z0006110	BRIDGE DECK MICROSILICA CONCRETE OVERLAY	SQ. YD.	2,467
Z0015960	DECK SLAB REMOVAL (FULL DEPTH - TYPE 1)	SQ. YD.	9
Z0015961	DECK SLAB REMOVAL (FULL DEPTH - TYPE 2)	SQ. YD.	144
Z0020300	EPOXY CRACK SEALING	LIN. FT.	24
Z0037400	PAVEMENT MARKING REMOVAL	LIN. FT.	50
Z0037700	PAVEMENT RELIEF JOINT, TYPE I	LIN. FT.	225
Z0047300	PROTECTIVE SHIELD	SQ. YD.	951
Z0048665	RAILROAD PROTECTIVE LIABILITY INSURANCE	L. SUM	1
Z0012350	CONCRETE SURFACE REMOVAL (METHOD 3)	SQ. YD.	2,694

* Specialty Items

INDEX OF SHEETS

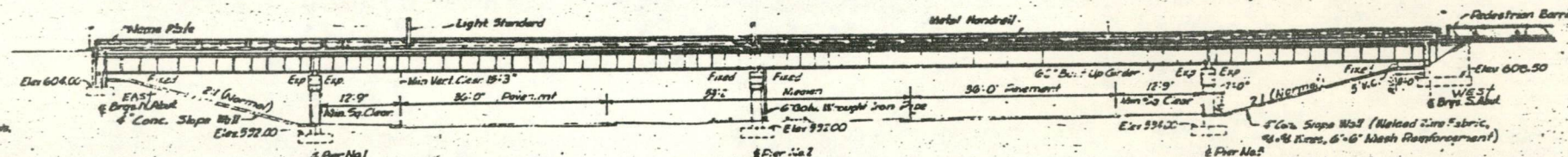
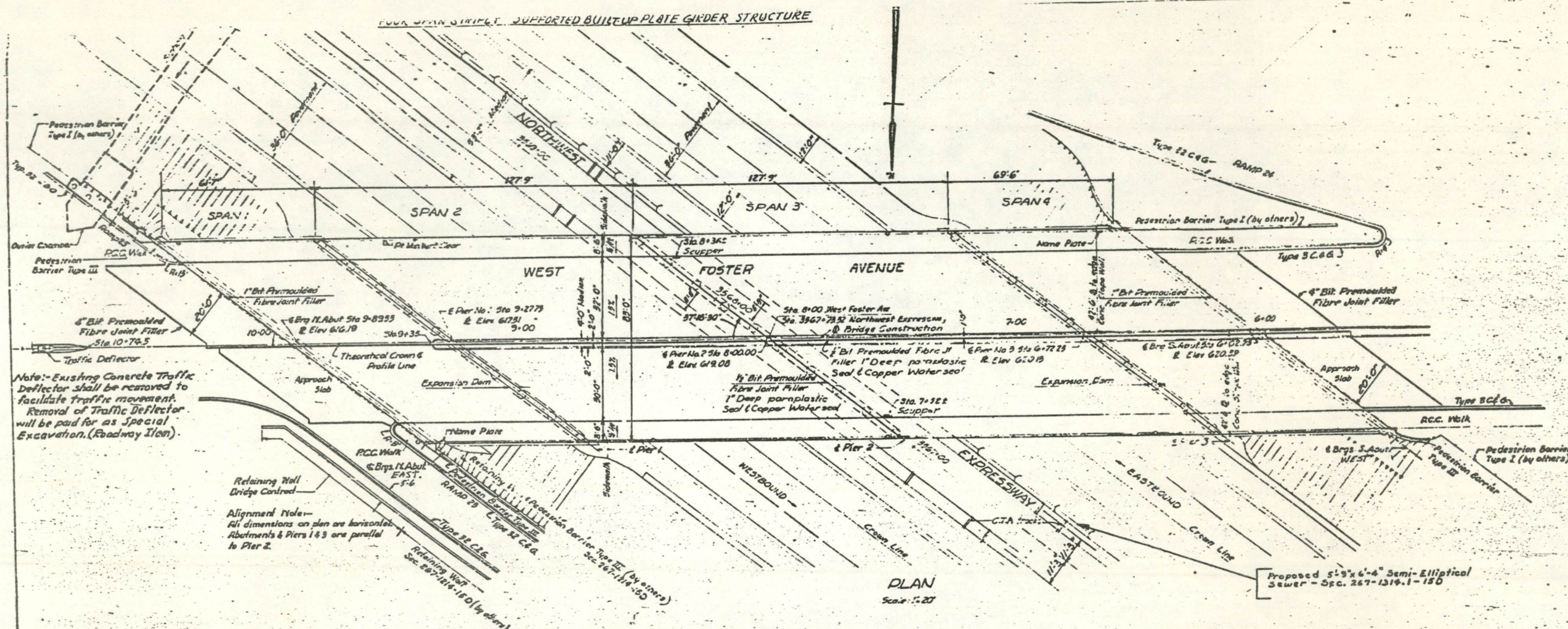
- TITLE SHEET
- INDEX OF SHEETS AND SUMMARY OF QUANTITIES
- GENERAL PLAN AND ELEVATION
- EXISTING DECK SECTION AND JOINT DETAILS
- PROPOSED DECK SECTION AND PROPOSED MEDIAN RECONSTRUCTION
- PROPOSED EXPANSION & FIXED JOINT RECONSTRUCTION
- & 8. PROPOSED REINFORCEMENT LAYOUT, JOINT AND MEDIAN RECONSTRUCTION
- ABUTMENT AND PIER REPAIRS
- & 11. PLAN: EXISTING DECK REINFORCEMENT LAYOUT
- EXISTING SLIDING PLATE ASSEMBLY
- FRAMING PLAN
- DETAILS: EAST ABUTMENT
- & 16. PIER DETAILS
- TOP AND BOTTOM DECK SURVEY AND PLAN: DECK SLAB REMOVAL (F.D.)
- PAVEMENT RELIEF JOINT DETAILS AND TEMPORARY PAVEMENT MARKING, LETTERS AND SYMBOLS
- BAR SPLICER COUPLER DETAILS
- NEOPRENE EXPANSION JOINT DETAILS
- TYPICAL SECTIONS: STAGE 1 & 2 CONSTRUCTION
- PLAN: TRAFFIC CONTROL - STAGE 1 CONSTRUCTION
- PLAN: TRAFFIC CONTROL - STAGE 2 CONSTRUCTION
- & 25. DETOUR PLAN
- TEMPORARY INFORMATION SIGNING
- ONE LANE CLOSURE
- TWO LANE CLOSURE
- TRAFFIC CONTROL AND PROTECTION FOR SIDEROADS, INTERSECTIONS, AND DRIVEWAYS

ATTACHED STANDARDS:

2298-5,2299-1,2300-3,2307-6,
2314-5,2419, U-1, U-2, U-6

F.A.I. 90 (I-90)
SECTION:1313.1-I(90)
COOK COUNTY

ROUTE	SECTION	COUNTY	TOTAL SHEET	SHEET NO.
FAI 90	1313.1-I(90)	COOK	29	3



GENERAL NOTES

- Design is in accordance with the following: Standard Specifications for Road and Bridge Construction, State of Illinois, dated Jan. 2, 1988 and Supplemental Specifications, AASHTO 1993.
- Class "K" concrete shall be used throughout and shall have a minimum ultimate strength of 40 days of 7000 p.s.i.
- All reinforcing shall be intermediate grade steel with an allowable working stress of 20,000 psi.
- Reinforcing bars shall be deformed bars and shall conform to the requirements of Specifications for Cold-Chambered Steel Reinforcing Bars, A.S.T.M. Designation A-615. Deformation on bars shall conform to the requirements of Specifications for the Determination of Deformed Steel Bars for Concrete Reinforcement, A.S.T.M. Designation A-606, as amended. No date.
- Each span of bridge deck shall be poured in one continuous operation. Finishing of the deck shall comply with S.B.S. of the Standard Specifications.
- The use of copper, stainless, rubber, neoprene, copper nails, bituminous fibre joint filler, permeable joint sealers, ground mica, and wax paper shall be included in the bid price of Class "K" concrete. The contractor shall be responsible for the proper use and protection of the copper, stainless, rubber, neoprene, copper nails, bituminous fibre joint filler, permeable joint sealers, ground mica, and wax paper. The contractor shall be responsible for the proper use and protection of the copper, stainless, rubber, neoprene, copper nails, bituminous fibre joint filler, permeable joint sealers, ground mica, and wax paper.
- Copper neoprene sealers shall be installed as directed.
- Rubber neoprene sealers shall be installed as recommended by the manufacturer.
- All backfill behind abutments and piers shall be compacted and shall conform with the special provisions and shall be placed and compacted mechanically in accordance with Section 10 of the Standard Specifications.

Elevation datum U.S.G. & Mean Sea Level = Elevation 000

All steel girders, diaphragms, bearing shoes, fabric pads, anchor bolts, sleeves and expansion dams for this bridge will be supplied by the Steel Fabricator & Erector at the site to the Contractor. The Contractor shall set all anchor bolts, sleeves, fabric pads, shoes, and erect all structural steel.

DESIGN DATA

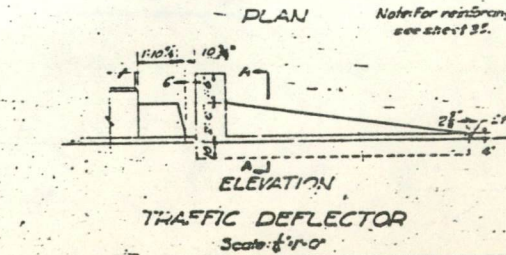
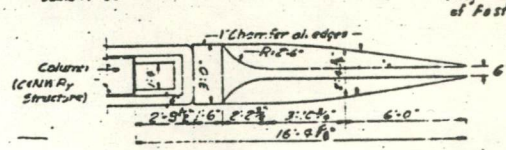
Design Load: AASHTO H20-S16-44

Design Stresses:
 Earth Pressure: 30° Fluid
 Structural Steel: 18,000 psi
 Reinforcing Steel: 20,000 psi
 Deck Slab & Substructure Concrete (without earth pressure): 4000 psi
 Substructure Concrete (with earth pressure): 4000 psi
 Max. Filling Pressure: 0.5 T.S.F.

Retaining Wall Surcharge: 3 Ft

ELEVATION

Scale: 1"=20'



Bench Mark
 B.M. Elev 621.70
 "x" punched on west side of
 ring on fire hydrant at S.W. corner
 of Foster Ave. & Monitor Ave.

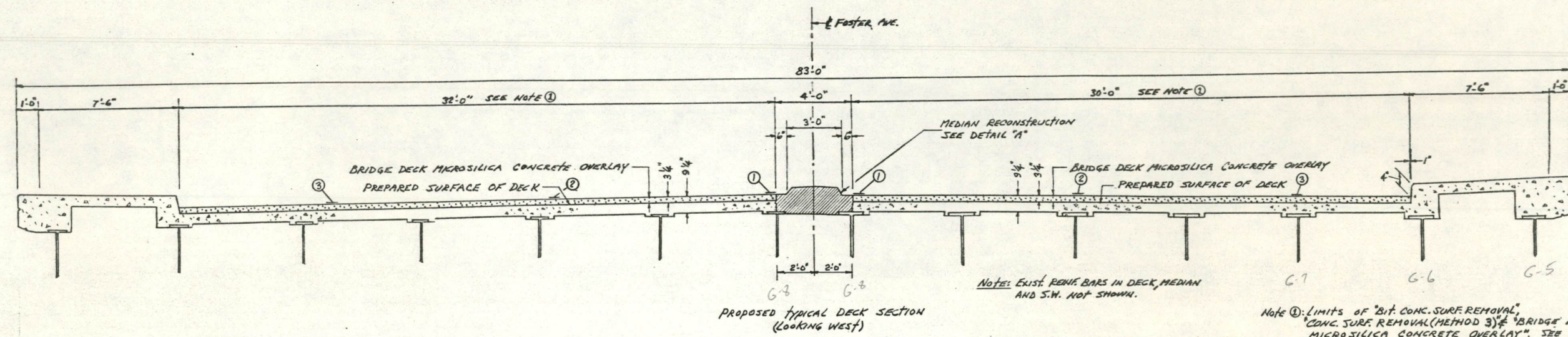
B.I.L. OF MATERIAL	
5' HIGH WALL	1890 SQ. YDS.
PEDESTRIAN BARRIER TYPE III	39 LIN. FT.
CLASS "K" CONCRETE	29 CU. YDS.
DEPARTMENT OF HIGHWAYS	
COOK COUNTY, ILLINOIS	
DANIEL RYAN	WILLIAM J. BRIGHTMAN
PROJECT ENGINEER	SENIOR ENGINEER
GENERAL PLAN AND ELEVATION	
OF FOSTER AVE. GRADE SEPARATION	
NORTHWEST CORNER	
COMPUTED M.K.M.	PROJECT U-265 (1A)
DRAWN S.H.	SCALE AS SHOWN
CHECKED F.E.D.	APPROVED
APPROVED	173 267 24 108 470-2
JAY, CROFTON & THORNTON, INC. ENGINEERS, BOSTON, MASS. & CHICAGO, ILL.	

GENERAL PLAN & ELEVATION

BR. NO. 016-1100

F.A.I. 90 (I-90) SECTION:1313.1-I(90) COOK CO.

ROUTE	SECTION	COUNTY	TOTAL SHTS.	SHT. NO.
FAL 90	1313.1-I(90)	COOK	29	5

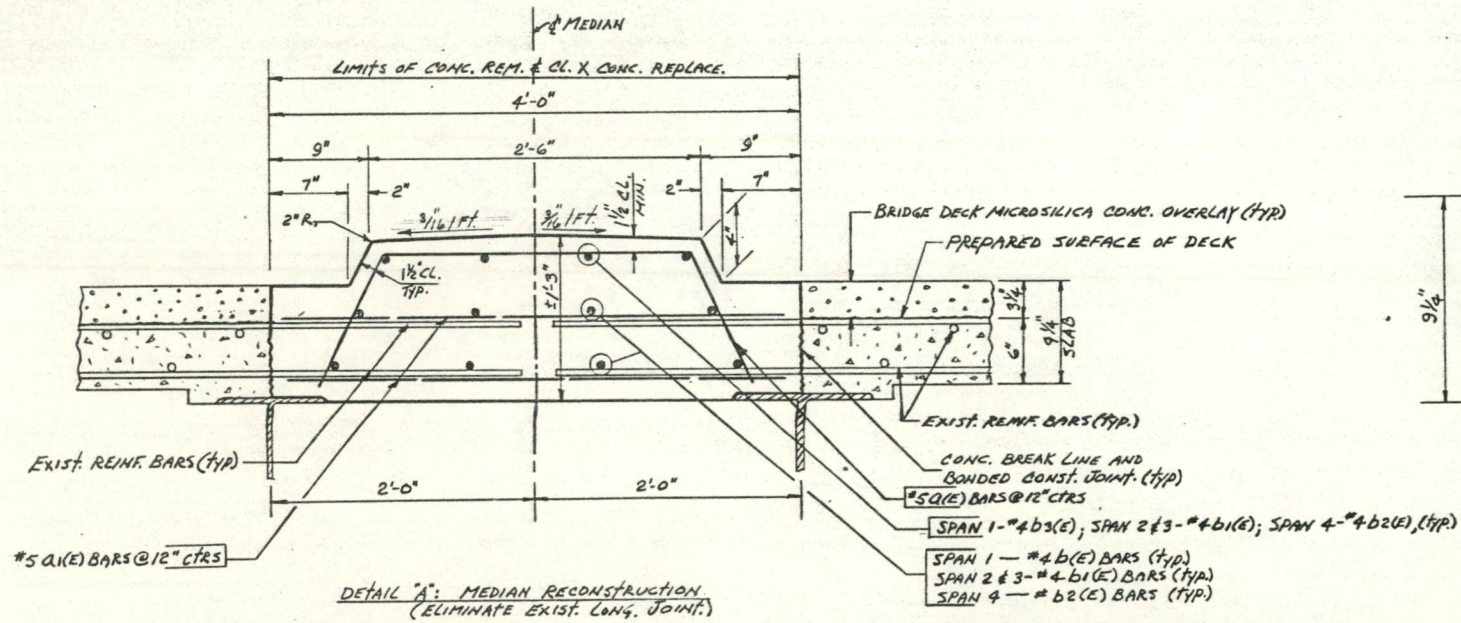


NOTE: EXIST. BRIDGE RAIL
NOT SHOWN SEE SHIT. 7

NOTE: EXIST. REINF. BARS IN DECK, MEDIAN
AND S.W. NOT SHOWN.

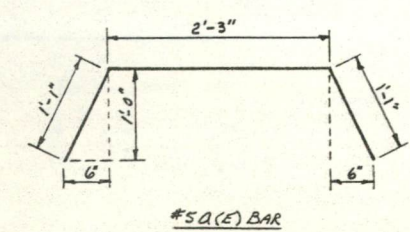
NOTE 1: LIMITS OF "BIT. CONC. SURF. REMOVAL",
"CONC. SURF. REMOVAL (METHOD 3)" & "BRIDGE DECK
MICROSILICA CONCRETE OVERLAY". SEE SPEC. PROV.

- PAINT PAVE. MARKING LINE 4"
- 1 LEFT EDGE LINE - SOLID YELLOW
 - 2 LANE LINE - 6' DASH, 18' SPACE - WHITE
 - 3 RIGHT EDGE LINE - SOLID WHITE

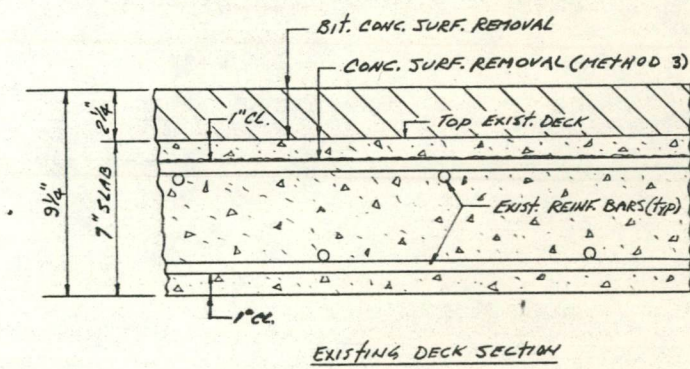


DETAIL 'A': MEDIAN RECONSTRUCTION
(ELIMINATE EXIST. LONG. JOINT.)

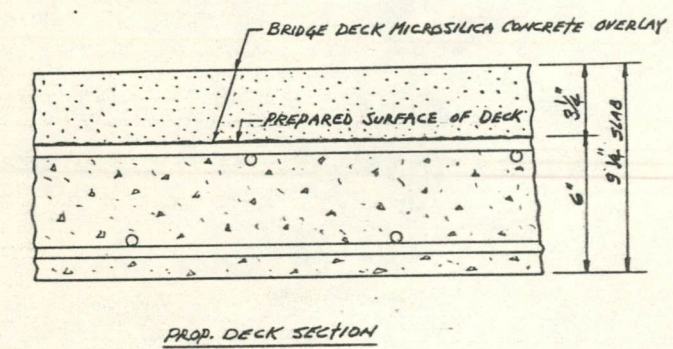
NOTE: #4 b(E), b1(E), b2(E) & b3(E) BARS
SHALL BE EQUALLY SPACED IN TOP
OF MEDIAN & TOP AND BOT. OF DECK.



#5 Q(E) BAR



EXISTING DECK SECTION



PROP. DECK SECTION

BILL OF MATERIALS
(MEDIAN RECONSTR.)

BAR	SIZE	NO. REQ.	LENGTH	SHAPE
Q(E)	#5	332	4'-5"	U
Q1(E)	#5	790	3'-9"	—
b(E)	#4	24	22'-6"	—
b1(E)	#4	120	27'-3"	—
b2(E)	#4	36	25'-3"	—
b3(E)	#4	4	7'-3"	—
REINF. BARS (E) - 7780 LBS.				
CONCRETE REMOVAL - 51.5 C.Y.				
CLASS X CONCRETE - 55.6 C.Y.				

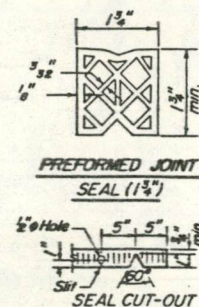
(E) INDICATES EPOXY COATED

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 OF MATERIALS. SUCH
VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A
CHANGE IN THE SCOPE OF THE WORK. HOWEVER, THE CONTRACTOR WILL BE
PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR
THE WORK.

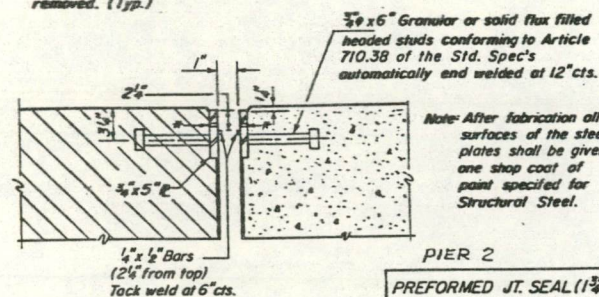
PROP. TYPICAL DECK SECTIONS AND
MEDIAN RECONSTRUCTION DETAILS

NOTE: REMOVE ALL LONG. REINF. BARS AND BARS SHAPED THUSLY J,
IN THE CONC. REMOVAL AREA. ALL TRANS. REINF. BARS SHALL
REMAIN IN THE NEW WORK AND SHALL BE THOROUGHLY CLEANED OF
OLD CONCRETE AND RUST PRIOR TO PLACING NEW CONCRETE.
SEE SHIT. 7 & 8 FOR REINF. LAYOUT, MEDIAN RECONSTRUCTION.

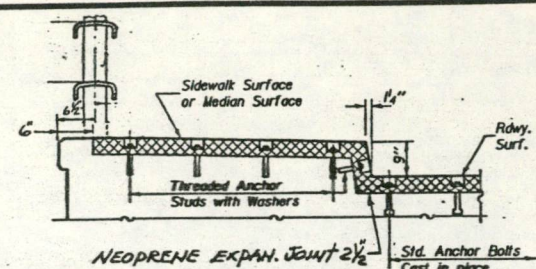
ROUTE	SECTION	COUNTY	TOTAL SPTS.	SHT. NO.
FAI 90	1313.1-I(90)	COOK	29	6



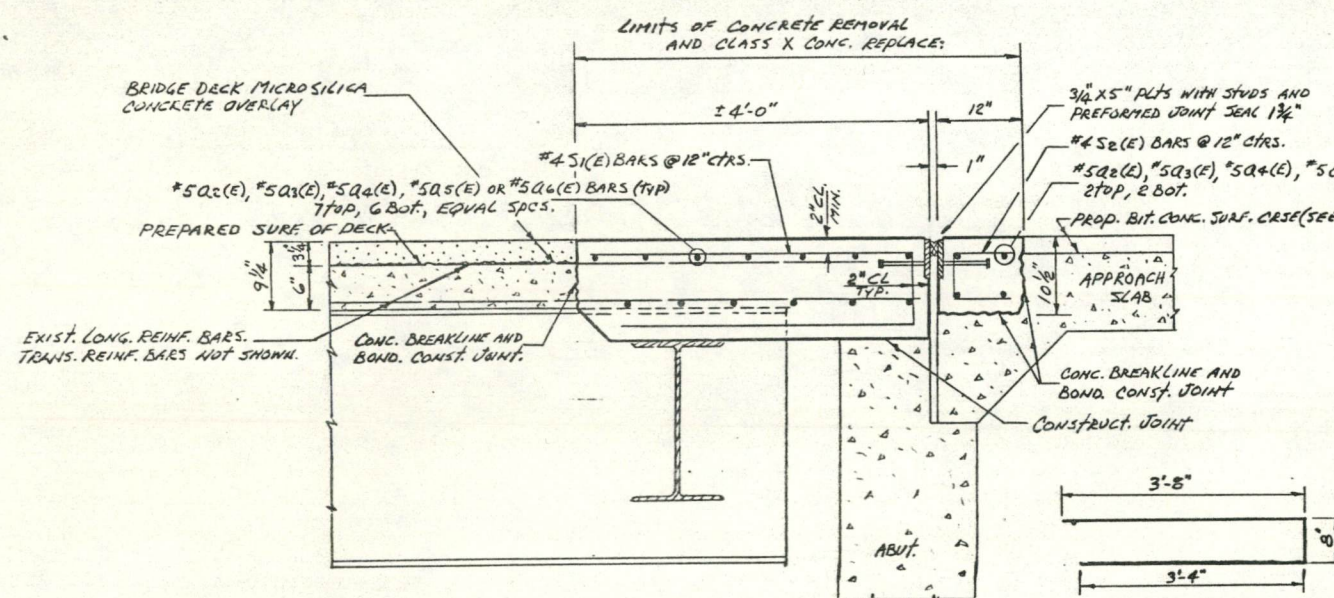
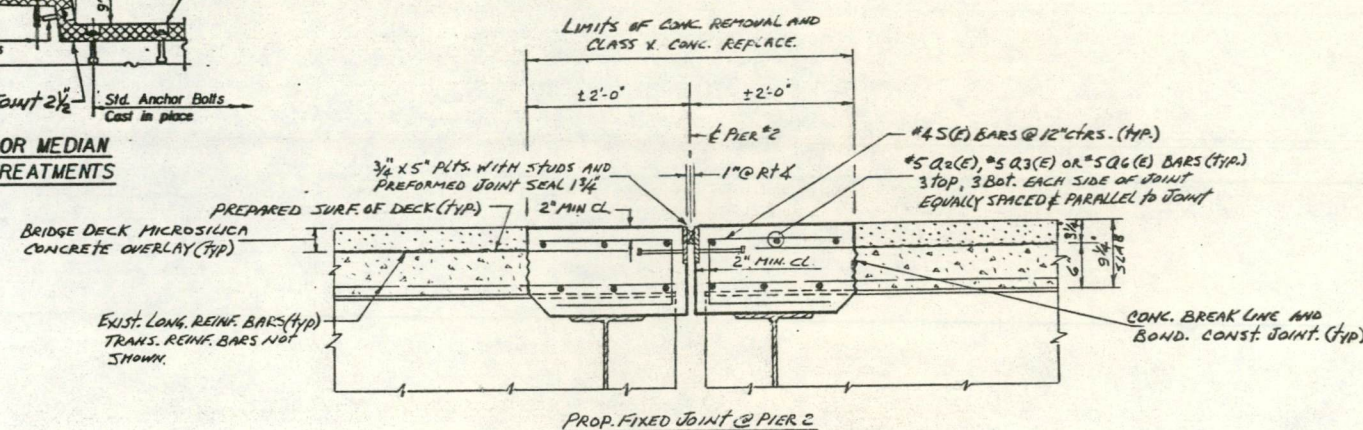
*7/16" Holes at 12" cts. for 3/8" bolts. All bolts shall be burned, sawed or chipped off flush with the plates after forms are removed. (Typ.)



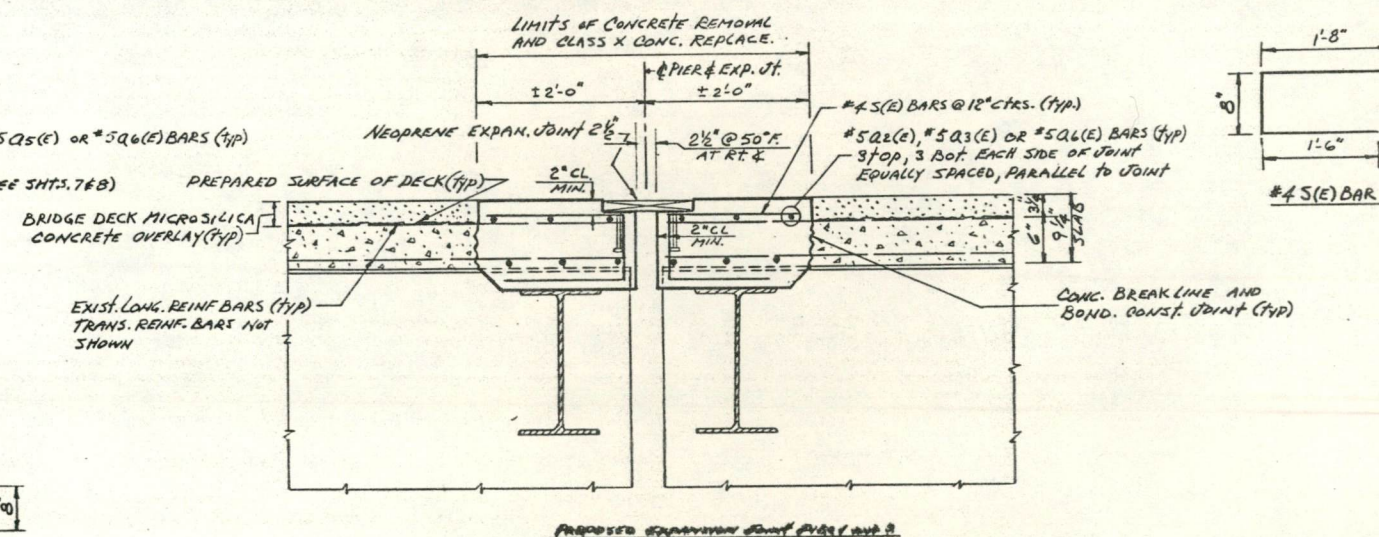
PIER 2
PREFORMED JT. SEAL (1 3/4") OVER FIXED BEARINGS



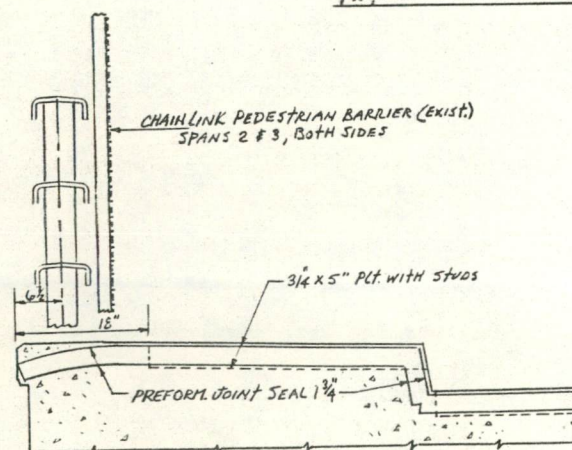
PIER 1 & 3 AT SIDEWALK OR MEDIAN
TYPICAL END TREATMENTS



PROPOSED FIXED JOINT AT ABUTMENTS



PROPOSED EXPANSION JOINT PIER 1 AND 3



END TREATMENT AT S.W. PIER 2
PREFORMED JOINT SEAL (1 3/4") OVER FIXED BEARING

NOTE: REMOVE ALL EXIST. REINF. BARS PARALLEL TO THE JOINT & REINF. BARS SHOWN THUSLY. ALL OTHER REINF. BARS SHALL REMAIN IN THE NEW WORK & SHALL BE THOROUGHLY CLEANED OF RUST AND OLD CONCRETE PRIOR TO PLACING NEW CONCRETE. (TYP. ALL JOINTS) SEE PLAN SHTS 7 & 8 FOR PLAN OF REINF. LAYOUT.

BILL OF MATERIAL
(ABUT., PIERS 1, 2 & 3)

BAR.	SIZE	NO. REQ.	LENGTH	SHAPE
Q2(E)	#5	70	27'-10"	—
Q3(E)	#5	123	25'-7"	—
Q4(E)	#5	17	28'-10"	—
Q5(E)	#5	17	29'-10"	—
Q6(E)	#5	23	22'-7"	—
S(E)	#4	660	3'-10"	□
SH(E)	#4	220	7'-8"	□
S2(E)	#4	220	2'-0"	□

REINF. BARS (E) - 10,830 LBS.
CONCRETE REMOVAL - 85.0 CU. YD.
CLASS X CONCRETE - 110 CU. YD.
FURN. AND ERECT. STRUCT. STEEL - 15,330 LBS.
PREFORMED JOINT SEAL 1 3/4" = 420 L.F.
NEOPRENE EXPANSION JOINT 2 1/2" = 274 L.F.

(E) INDICATES EPOXY COATED

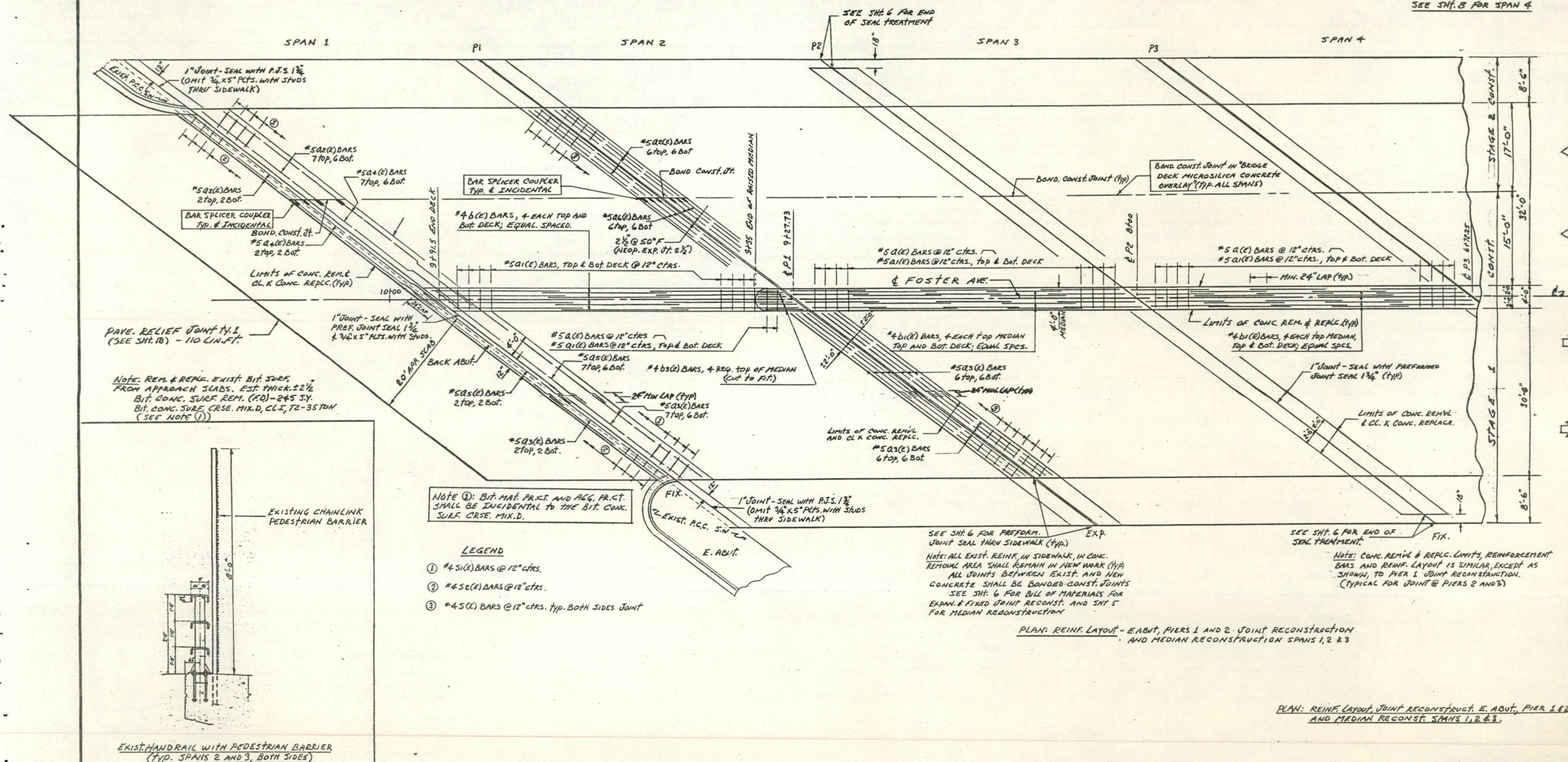
NOTE: THE ENTIRE EXISTING SLIDING PLATE EXPANSION JOINT ASSEMBLIES (AT PIERS 1 & 3) IN THE SIDEWALK, MEDIAN AND DECK SHALL BE REMOVED. THE COST OF THIS WORK IS INCLUDED IN THE CONTRACTOR'S UNIT PRICE BID FOR 'CONCRETE REMOVAL'. SEE SHT. 12

PROP. EXPANSION & FIXED JOINT RECONSTRUCTION

ROUTE	SECTION	COUNTY	TOTAL SHTS.	SHT. NO.
FAI 90	1313.1-I(90)	Cook	29	7

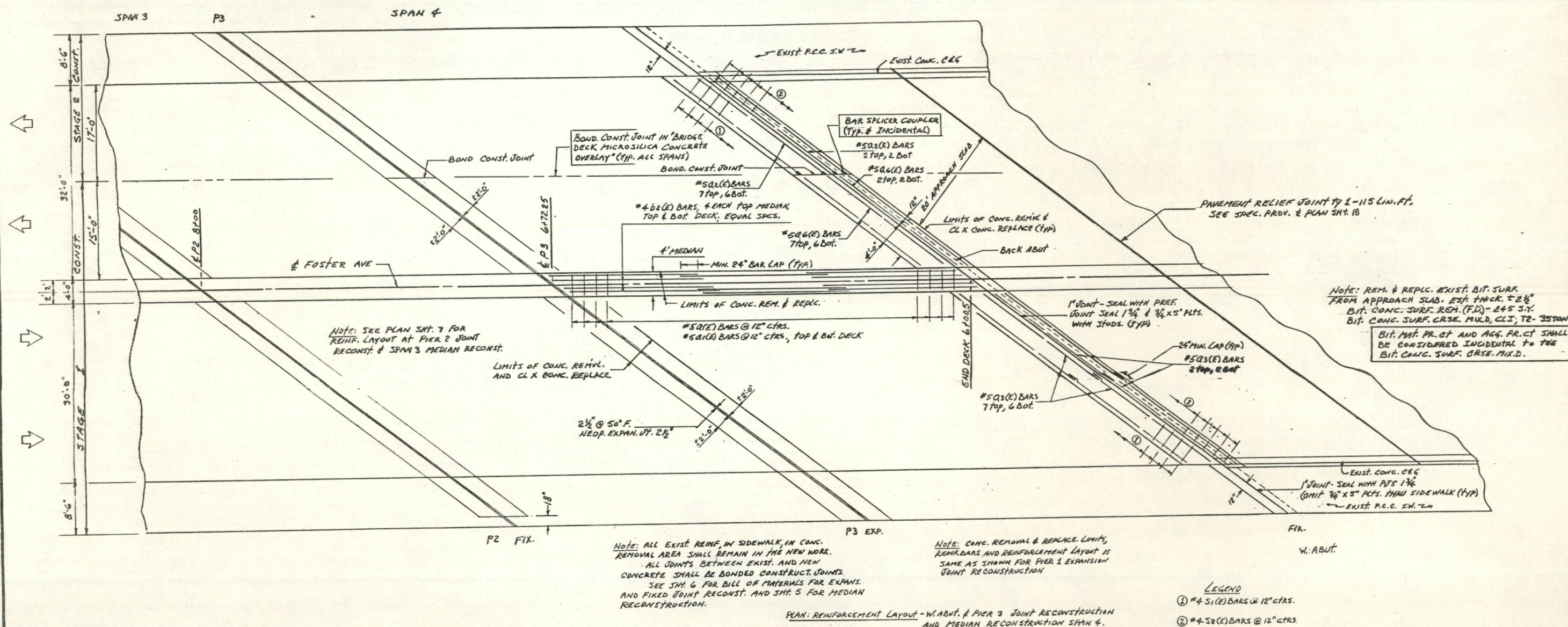


SEE SHT. 8 FOR SPAN 4

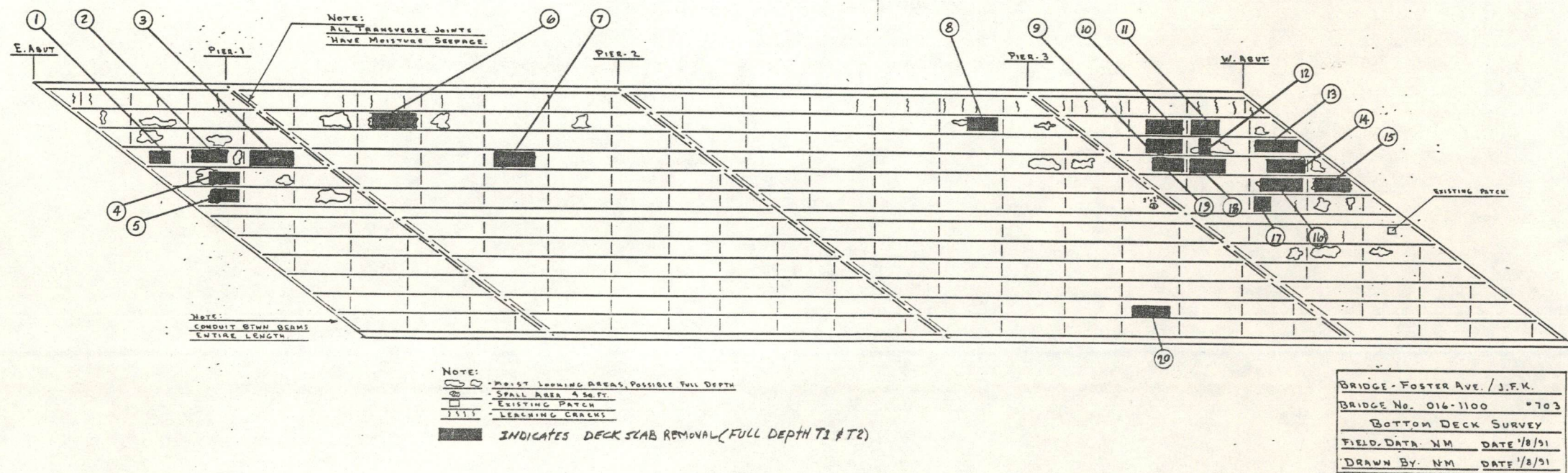
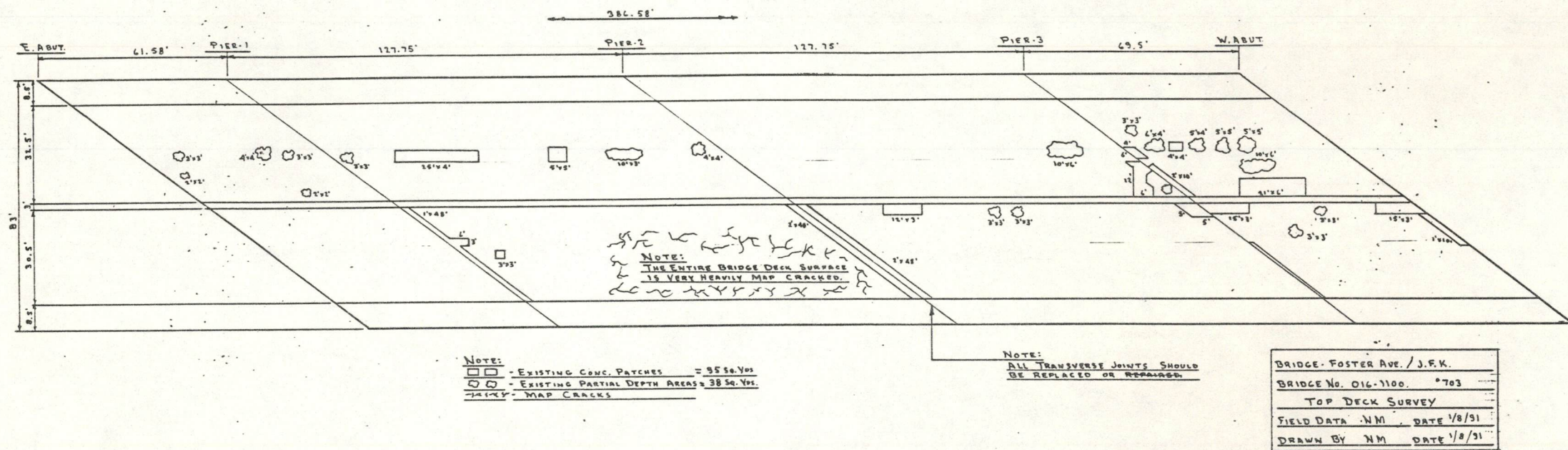


ROUTE	SECTION	COUNTY	TOTAL SHTS.	SHT. NO.
FAI 90	1313.1-I(90)	COOK	29	8

SEE SHT. 7 FOR SPANS 1, 2 & 3



ROUTE	SECTION	COUNTY	TOTAL SPTS.	SHT. NO.
FAI 90	1313J-I(90)	Cook	29	17



DECK SLAB REMOVAL (K.D.)

KEY	SIZE	S.Y.	TYPE
①	6x6	4	2
②	6x9	6	2
③	6x15	10	2
④	6x9	6	2
⑤	6x9	6	2
⑥	6x12	8	2
⑦	6x12	8	2
⑧	6x9	6	2
⑨	6x15	10	2
⑩	6x15	10	2
⑪	6x15	10	2
⑫	6x5	3.3	1
⑬	6x15	10	2
⑭	6x15	10	2
⑮	6x12	8	2
⑯	6x15	10	2
⑰	6x6	4	2
⑱	6x15	10	2
⑲	6x12	8	2
⑳	5x9	5	1

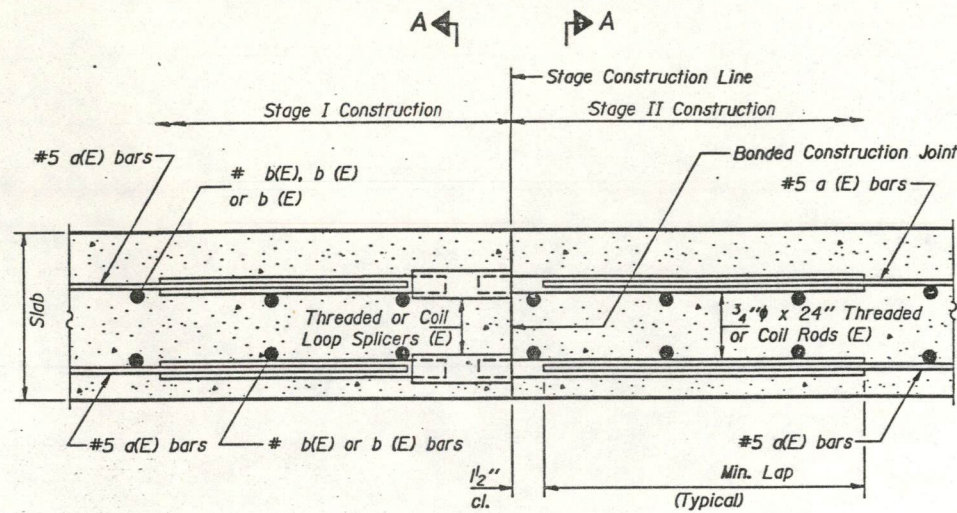
DECK SLAB REMOVAL (F.D.-T1) = 9.0 SY.
DECK SLAB REMOVAL (F.D.-T2) = 144.0 SY.

TOP AND BOTTOM DECK SURVEY

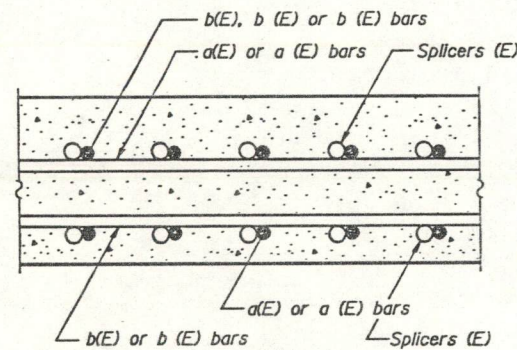
F.A.I. 90 (I-90)
SECTION: 1313.1-I(90)
COOK COUNTY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
90	*	COOK	29	19
SHEETS				
* 1313.1-I(90)				



SECTION THRU SLAB



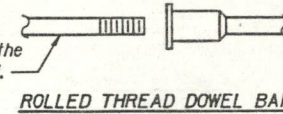
SECTION A-A

SPLICER DETAILS

(No. Req'd.)

Cost incidental to Reinforcement Bars (Epoxy Coated).

The diameter of this part of Splicer is the same as the diameter of the bar spliced.

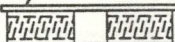


ROLLED THREAD DOWEL BAR



ONE PIECE

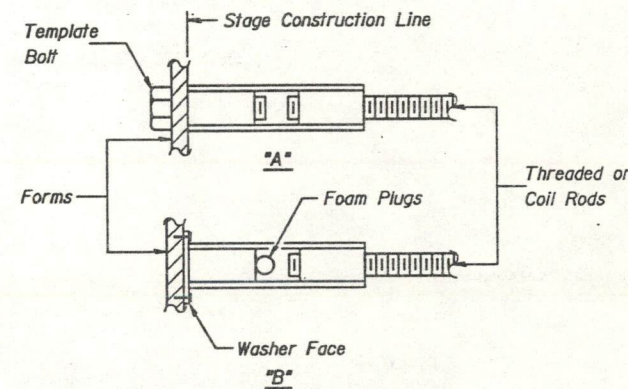
Wire Connector



WELDED SECTIONS

SPLICER ALTERNATIVES

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



INSTALLATION AND SETTING METHODS

"A" : Set splicer by means of a template bolt.

"B" : Set splicer by nailing to wood forms or cementing to steel forms.

(E) : Indicates epoxy coating.

NOTES

Steel Splicer (Coupler) assembly shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Steel Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length and have effective tensile stress area equal to or greater than that of the lapped reinforcement bars.
All reinforcement bars shall be lapped and tied to the splicer rods.
Splicer (coupler) assembly in the slab shall be epoxy coated in accordance with the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed splicer (coupler) assembly satisfies the following requirements:

- ① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$
- ② Minimum *Pull-out Strength (Tension in kips) = $1.25 \times f_{sallow} \times A_t$

Where f_y = Yield strength of lapped reinforcement bars in ksi.

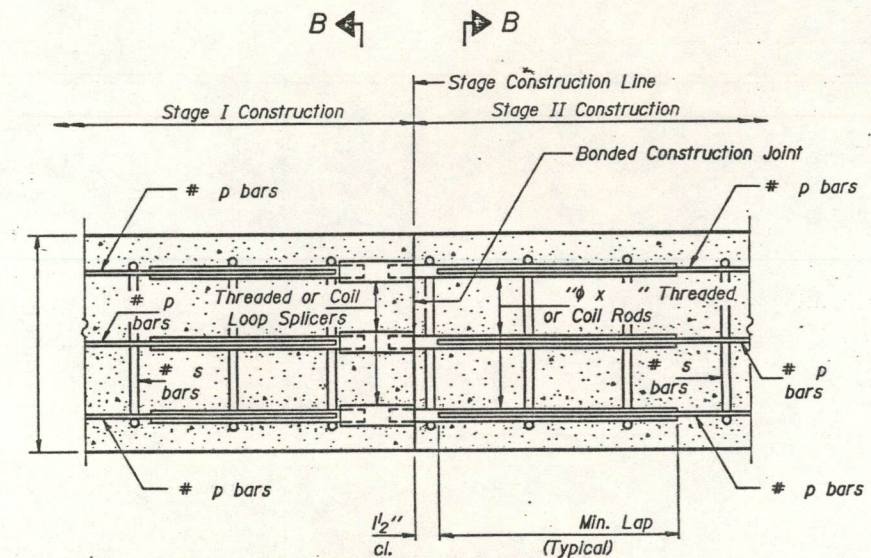
f_{sallow} = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)

A_t = Tensile stress area of lapped reinforcement bars.

* = 28 day concrete

Typical Splicer (Coupler) Assembly Sizes:

In Slabs	#5 bar lap with 3/4" Splicer (Coupler) x 2'-0" Splicer Rods	Minimum Capacity = 23.0 kips-tension Minimum Pull-out Strength = 9.2 kips-tension
In Sub-Structure	#7 bar lap with 1" Splicer (Coupler) x 3'-5" Splicer Rods	Minimum Capacity = 45.1 kips-tension Minimum Pull-out Strength = 18.0 kips-tension
	#8 bar lap with 1 1/4" Splicer (Coupler) x 4'-6" Splicer Rods	Minimum Capacity = 58.9 kips-tension Minimum Pull-out Strength = 23.6 kips-tension



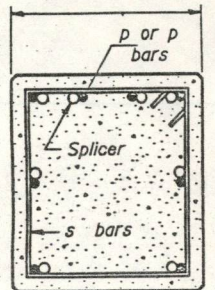
SECTION THRU ABUTMENTS AND PIERS

No epoxy coating required.

SPLICER DETAILS

(No. Req'd. 70)

Cost incidental to Reinforcement Bars.



SECTION B-B

DESIGNED	19
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	APPROVED

BSD-1 12-31-87

**BAR SPLICER (COUPLER) DETAILS
AT STAGE CONSTRUCTION**

F.A.I. 90 (I-90) SECTION:1313.1-I(90) COOK COUNTY

Joint Size	"C" at 50°F	"D" at 50°F
2"	2"	1½" Min.
2½"	2½"	1¾" Min.
4"	3"	2½" Min.

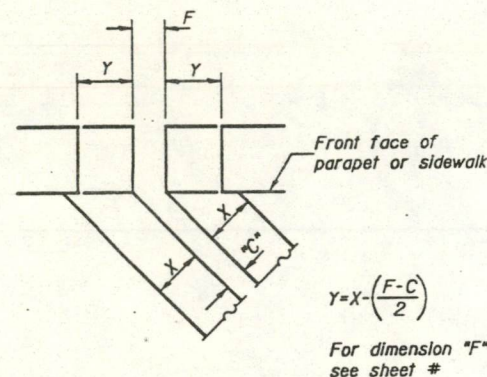
INSTALLATION NOTES

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

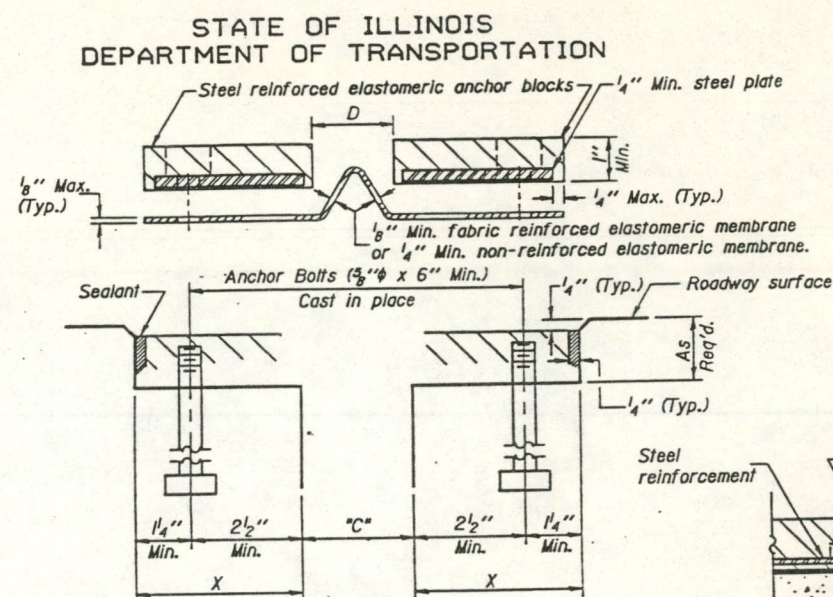
NOTE A: Maximum spacing of anchor bolts shall be 12" centers.

SKEW 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 1½" 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



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.

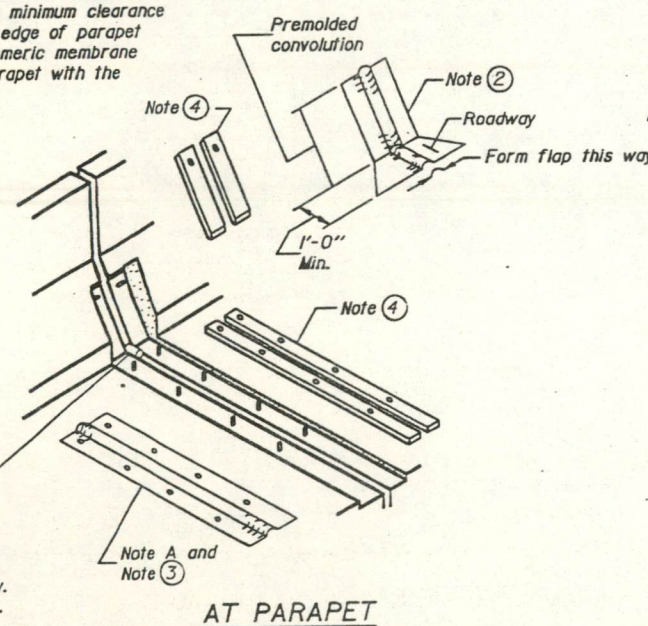
The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

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

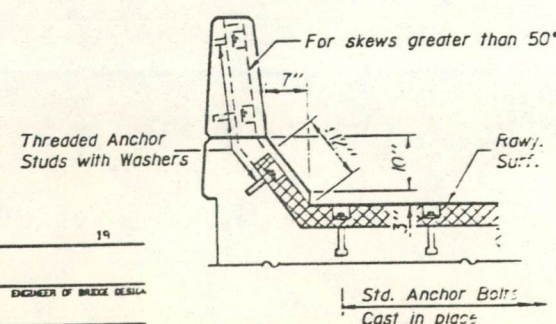
The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

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.

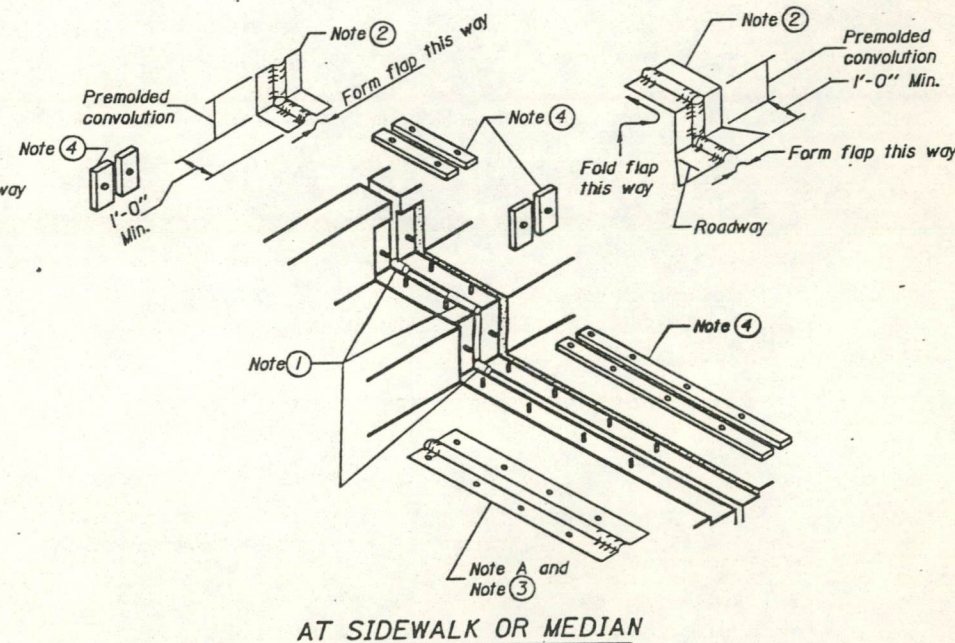
The parapet and sidewalk flaps may be furnished factory vulcanized to the roadway membrane provided the centerline of the convolution is maintained and the process and method meet the approval of the Engineer.



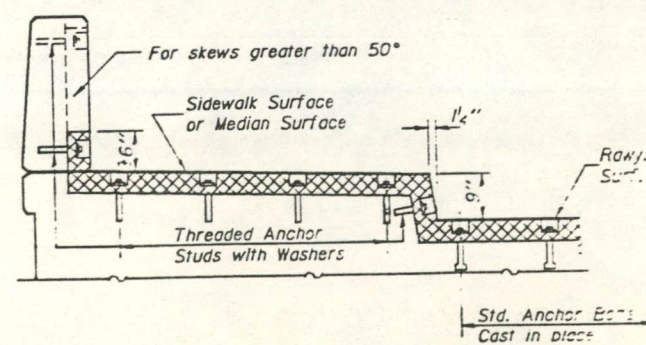
AT CURB



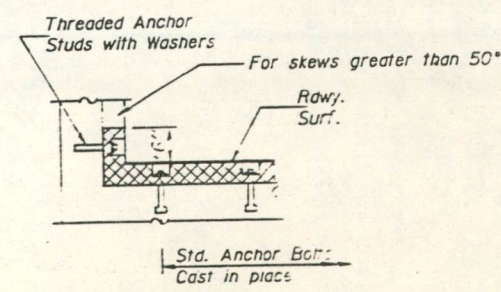
AT PARAPET



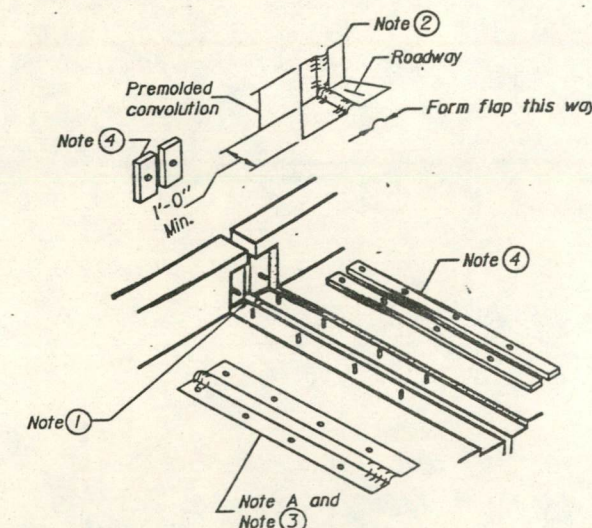
AT SIDEWALK OR MEDIAN



AT SIDEWALK OR MEDIAN
TYPICAL END TREATMENTS



AT WALL



AT WALL

CONTINUOUS SEAL TYPE
NEOPRENE EXPANSION JOINTS
For 2", 2½" and 4" Movement

F.A.I. 90 (I-90)
SECTION: 1313.1-I(90)
COOK COUNTY

DESIGNED	EXAMINED
CHECKED	PASSED
DRAWN	APPROVED
CHECKED	
EJ-CS 6-1-89	

STATE OF ILLINOIS

DEPARTMENT OF PUBLIC WORKS AND BUILDINGS

DIVISION OF HIGHWAYS

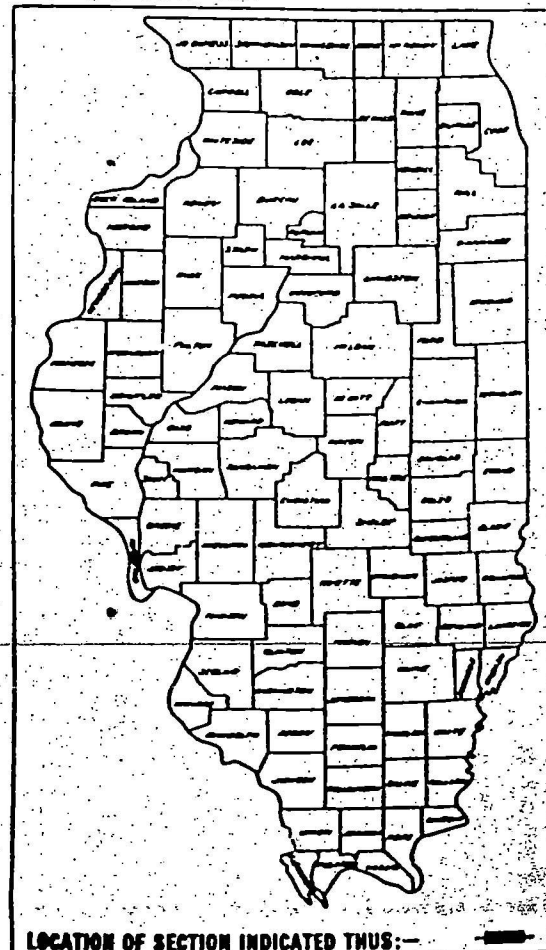
PLANS FOR PROPOSED

FEDERAL AID HIGHWAY

FEDERAL AID ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
173	X	COOK	99	1

X-510-1969-6-J&SGM

P-90-508-69



LOCATION OF SECTION INDICATED THUS:—

KENNEDY EXPRESSWAY F.A. ROUTE 173

SECTION X-510-1969-6-J&SGM

GUARD RAIL AND SIGN MODERNIZATION

COOK COUNTY

PROJECT U-265(70)



IMPROVEMENT BEGINS
STA. 153+00

IMPROVEMENT ENDS
STA. 3653+00

CHICAGO

PROJECT LENGTH = 40458 FT. 7.663 MILES

INDEX OF SHEETS

- 1 COVER SHEET, INDEX OF SHEETS
- 2 SUMMARY OF QUANTITIES, PLAN NOTES, SIGNATURE BOX.
- 3-12 SUMMARY OF QUANTITIES
- 13-14 PLAN SHEET OF GUARD RAIL MODERNIZATION
- 15 DETAIL OF GUARD RAIL CONNECTION TO WING WALL AND ROUND PIER, TYPICAL DETAIL OF GUARD RAIL INSTALLATION AT BRIDGE PIER, SIGN FOUNDATION OR ABUTMENT
- 16 DETAIL OF GUARD RAIL ANCHOR BLOCK, DETAIL OF GUARD RAIL CONNECTION TO COLLISION WALL
- 17-19 DETAILS OF COLLISION WALL AT BRIDGE PIER
- 20-45 PLAN AND SIGN LAYOUT SHEETS
- 46-60 OVERHEAD TRUSS DETAILS
- 61-75 CANTILEVER TRUSS DETAILS
- 76-77 BRIDGE MOUNT SIGN DETAILS
- 78-79 FLUORESCENT LIGHTING DETAILS
- 80 STANDARD SIGN PLACEMENT DETAIL
- 81-82 STANDARD SIGN MOUNTING DETAIL
- 83 WOOD POST MOUNTING
- 84 STANDARD 2307
- 85 STANDARD 2313
- 86 STANDARD 2314
- 87 STANDARD 2315
- 88 STANDARD 2230-3
- 89 STANDARD 2231-3
- 90 STANDARD 2256-2
- 91 STANDARD 2140-4
- 92 STANDARD 2141-8
- 93 STANDARD 2147-4
- 94 STANDARD 2148-4
- 95 STANDARD 2180-3
- 96 STANDARD 2298-1
- 97 STANDARD 2299-1
- 98 STANDARD 2300
- 99 STANDARD 2158-5

CONTRACT NO. 26434

016-1100

COOK COUNTY SECTION: X-510-1969-6-J&SGM F.A.P. ROUTE 173

STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS DIVISION OF HIGHWAYS	
APPROVED	DATE
<i>[Signature]</i>	<i>[Signature]</i>
<i>[Signature]</i>	<i>[Signature]</i>
<i>[Signature]</i>	<i>[Signature]</i>
<i>[Signature]</i>	<i>[Signature]</i>
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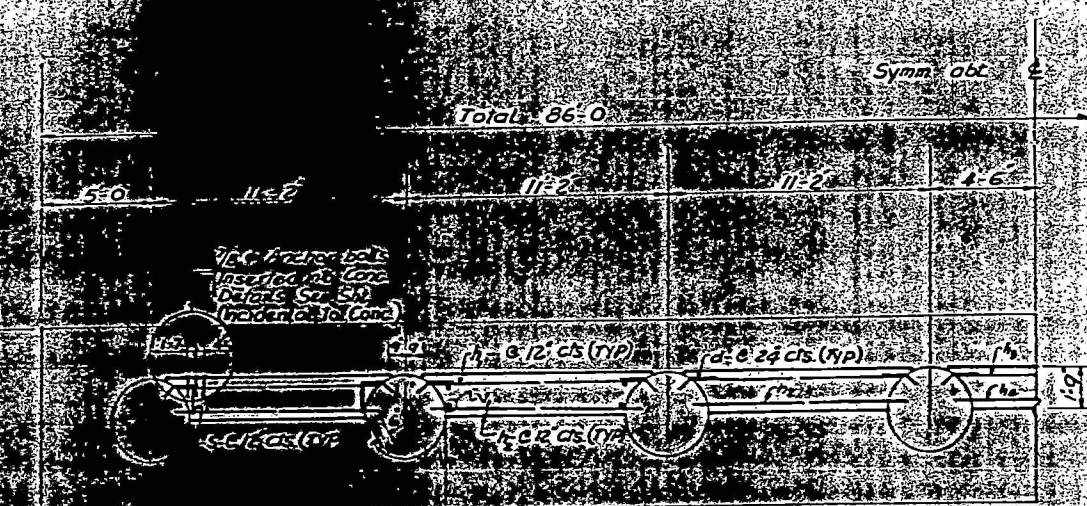
DEPARTMENT OF TRANSPORTATION BUREAU OF PUBLIC ROADS	
APPROVED	DATE
<i>[Signature]</i>	<i>[Signature]</i>
DIVISION ENGINEER	

O-100
267-13B.1-180

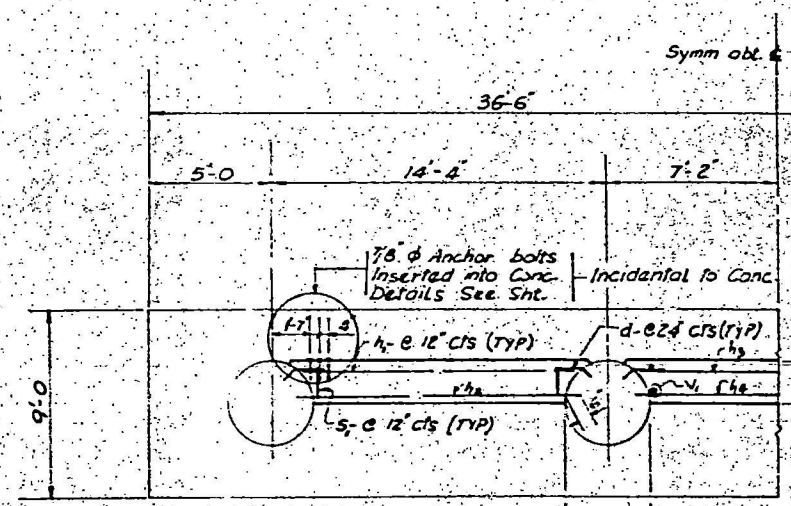
SECTION	EXPRESSWAY	TOTAL SHEETS	SHEET NO.
173	KENNEDY	99	19
STA.	TO STA.		
YES	ROAD DIST. NO. 1	ALIGNED	YES AND PROJECT

BILL OF MATERIAL

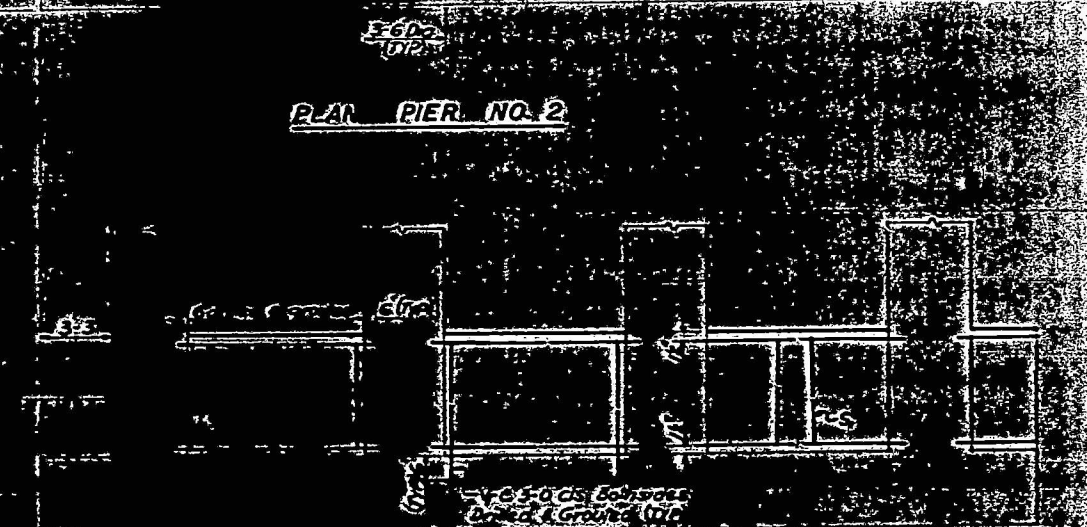
Mark	NO	Size	Length	Shape
d	42	5	1-9	—
h	36	5	9-8	—
h ₂	36	6	8-7	—
h ₃	6	5	7-0	—
h ₄	6	6	5-8	—
v	14	5	6-0	—
s	54	4	14-6	□
Reinforcement bars lb. 2040				
Class X Concrete Cu Yd 21.0				
Standard Bolts 7/8" x 10" Ea 8				
d	108	5	1-9	—
h ₁	96	5	13-8	—
h ₂	96	6	12-9	—
h ₃	14	5	6-9	—
h ₄	14	6	5-5	—
v	144	5	6-8	—
s	208	4	15-10	□
Reinforcement Bars Lb. 6650				
Class X Concrete Cu Yd 83.7				
Standard Bolts 7/8" x 10" Ea 16				
d	36	5	1-9	—
h	36	5	12-8	—
h ₂	36	6	15-7	—
v	60	5	6-0	—
s	72	4	14-6	□
Reinforcement Bars Lb. 2300				
Class X Concrete Cu Yd 20.9				
Standard Bolts 7/8" x 10" Ea 16				
d	60	5	1-9	—
h	48	5	13-4	—
h ₂	48	6	14-8	—
h ₃	14	5	12-4	—
h ₄	14	6	8-9	—
v	104	5	6-0	—
s	114	4	14-6	□
Reinforcement Bars Lb. 4110				
Class X Concrete Cu Yd 41.8				
Standard Bolts 7/8" x 10" Ea 16				



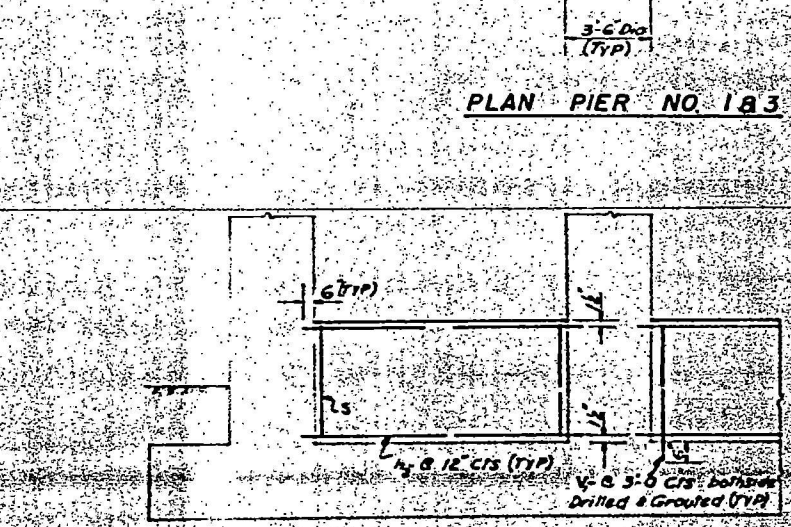
PLAN PIER NO. 2



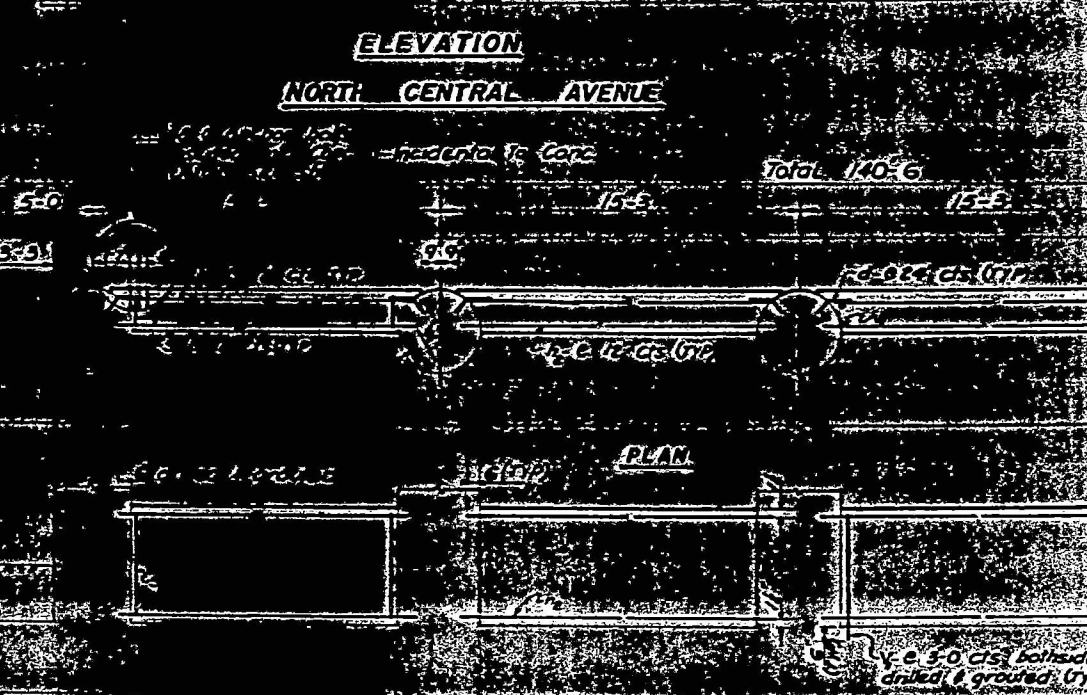
PLAN PIER NO. 183



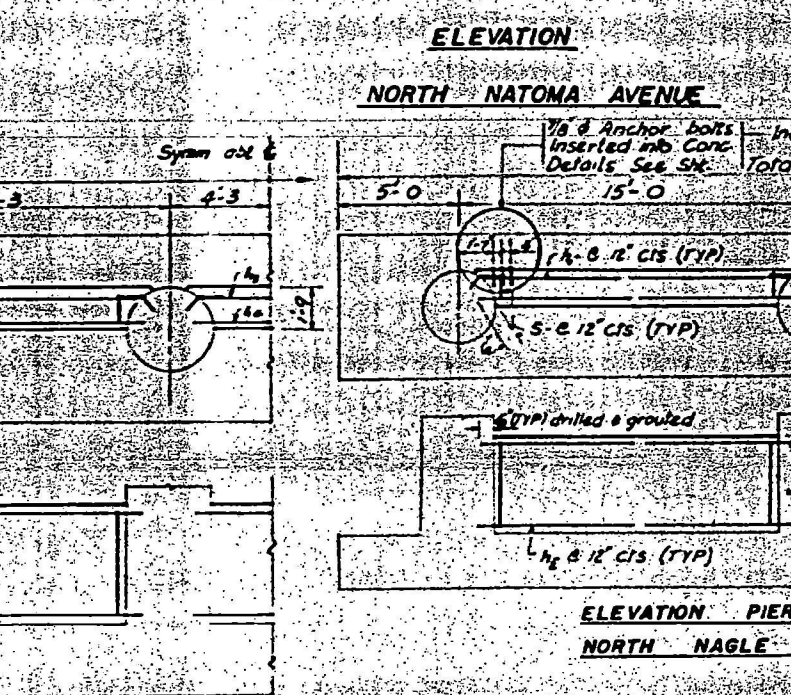
ELEVATION



ELEVATION



PLAN PIER NO. 183



ELEVATION PIER NO. 183

REVISIONS	NAME	DATE
1		
2		
3		
4		
5		

ILLINOIS DIVISION OF HIGHWAYS
KENNEDY EXPRESSWAY

DETAILS OF COLLISION WALL
AT BRIDGE PIERS

SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 1'-0"

DATE: Aug 1963

DRAWN BY: G.O.
CHECKED BY: W.Y.

INDEX OF SHEETS

SHEET NO.	TITLE PAGE
22	TITLE PAGE
23	BILL OF MATERIAL
24	GENERAL PLAN AND ELEVATION
25	NORTH ABUTMENT
26	RAMP 23 RETAINING WALL STA. 0+37.14 RT. TO STA. 1+00.00 RT.
27	SOUTH ABUTMENT
28	PIER DETAILS - PART I
29	PIER DETAILS - PART II
30	FRAMING PLAN AND DETAILS
31	FRAMING DETAILS
32	CROSS SECTION AND DETAILS
33	HANDRAIL DETAILS
34	EXPANSION DAM DETAILS
35	REINFORCING STEEL DETAILS APPROACH SLAB
36	BORING DATA
37	REINFORCING STEEL DETAILS NORTH ABUTMENT
38	REINFORCING STEEL DETAILS SOUTH ABUTMENT
39	REINFORCING STEEL DETAILS - PIERS PART I
40	REINFORCING STEEL DETAILS - PIERS PART II
41	REINFORCING STEEL DETAILS - DECK SLAB PART I
42	REINFORCING STEEL DETAILS - DECK SLAB PART II
43	REINFORCING STEEL DETAILS - SCHEDULE PART I
44	REINFORCING STEEL DETAILS - SCHEDULE PART II
45	PLAN OF EXCAVATION AREA
46	PROFILE OF EXCAVATION AREA AND RUNAROUND ROAD
47	ALIGNMENT PLAN
48	PLAN AND PROFILE
49	TYPICAL ROADWAY SECTIONS
50	GRADING PLAN
51	ELECTRICAL PLAN
52	W. FOSTER AVE. INVERTED SIPHON GENERAL PLAN AND ELEVATION
53	W. FOSTER AVE. INVERTED SIPHON SEWER PLAN
54	W. FOSTER AVE. INVERTED SIPHON INLET JUNCTION CHAMBER PLAN AND SECTIONS
55	W. FOSTER AVE. INVERTED SIPHON INLET JUNCTION CHAMBER SECTIONS
56	W. FOSTER AVE. INVERTED SIPHON OUTLET JUNCTION CHAMBER PLAN AND SECTIONS
57	W. FOSTER AVE. INVERTED SIPHON OUTLET JUNCTION CHAMBER SECTIONS
58	W. FOSTER AVE. INVERTED SIPHON MISCELLANEOUS DETAILS
59	W. FOSTER AVE. INVERTED SIPHON REINFORCING STEEL DETAILS INLET JUNCTION CHAMBER - PART 1
60	W. FOSTER AVE. INVERTED SIPHON REINFORCING STEEL DETAILS INLET JUNCTION CHAMBER - PART 2
61	W. FOSTER AVE. INVERTED SIPHON REINFORCING STEEL DETAILS INLET JUNCTION CHAMBER - PART 3
62	W. FOSTER AVE. INVERTED SIPHON REINFORCING STEEL DETAILS OUTLET JUNCTION CHAMBER - PART 1
63	W. FOSTER AVE. INVERTED SIPHON REINFORCING STEEL DETAILS OUTLET JUNCTION CHAMBER - PART 2
64	W. FOSTER AVE. INVERTED SIPHON REINFORCING STEEL DETAILS OUTLET JUNCTION CHAMBER - PART 3
65-67	NORTHWEST EXPRESSWAY CROSS SECTIONS
68	W. FOSTER AVE. CROSS SECTIONS

STATE OF ILLINOIS COUNTY OF COOK DEPARTMENT OF HIGHWAYS

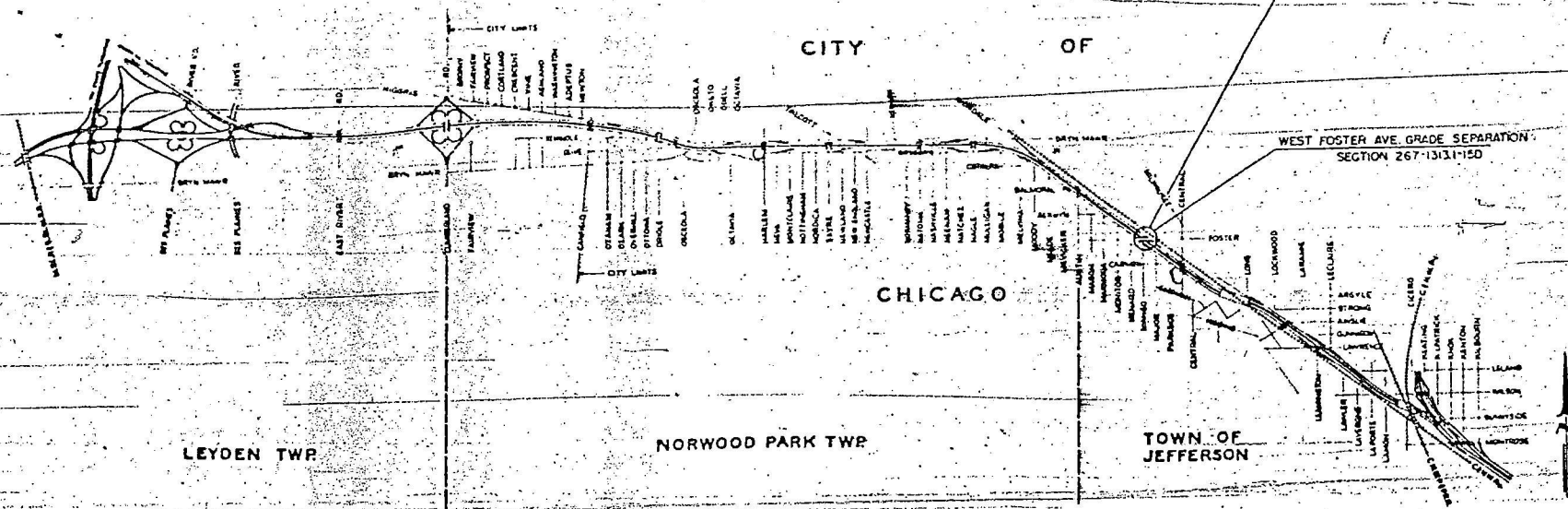
PLANS FOR PROPOSED FEDERAL AID HIGHWAY

PLAN	1 INCH	50 FT
PROFILE HOR.	1 INCH	50 FT
SCALE	PROFILE VERT.	1 INCH 5 FT
	CROSS SECTIONS	1 INCH 4 FT VERT
	CROSS SECTIONS	1 INCH 10 FT HOR

FEDERAL AID ROUTE 173 PROJECT U-265(18) WEST FOSTER AVE. GRADE SEPARATION OVER NORTHWEST EXPRESSWAY SECTION 267-1313.1-15D

SECTION 267-1313.1-15D INCLUDES CONSTRUCTION OF A BUILT-UP STEEL PLATE GIRDER BRIDGE, SIMPLY-SUPPORTED, FOUR SPANS AT 61'-7", 127'-9", 127'-9" AND 69'-8" ON WEST FOSTER AVENUE OVER NORTHWEST EXPRESSWAY IN THE TOWN OF JEFFERSON, CITY OF CHICAGO, AT STATION 3567+73.32 ON NORTHWEST EXPRESSWAY. A POINT APPROXIMATELY 560 FEET WEST OF THE INTERSECTION OF W. FOSTER AND N. CENTRAL AVENUES. THE CONSTRUCTION OF A CONCRETE-ENCASED INVERTED SEWER SIPHON UNDER THE NORTHWEST EXPRESSWAY AT STA. 3570+05, WITH INLET AND OUTLET CHAMBERS, MANHOLES, AND APPURTENANCES AND APPROXIMATELY 1150 FEET OF CONTRIBUTORY SEWER. THE CONSTRUCTION OF AN R.C. RETAINING WALL APPROXIMATELY 60 FEET LONG.

LENGTH OF STRUCTURE = 367.06 FT. (0.0733 MILES)
LENGTH OF ROADWAY = 520.39 FT. (0.0966 MILES)
LENGTH OF CONTRACT = 507.47 FT. (0.1719 MILES)
LENGTH ALONG EXPRESSWAY = (0.00 MILES)



COUNTY OF COOK DEPARTMENT OF HIGHWAYS	
APPROVED	March 21, 1958 M. F. Bp.
APPROVED	March 21, 1958 R. J. Stark
APPROVED	March 21, 1958 C. J. Stark
SUPERINTENDENT	

STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS DIVISION OF HIGHWAYS	
APPROVED	DATE
APPROVED	DATE
DIRECTOR	

DEPARTMENT OF COMMERCE BUREAU OF PUBLIC ROADS	
APPROVED	DATE
DIVISION - ENGINEER	

FAY SPOFFORD & THORNDIKE, INC.
ENGINEERS BOSTON, MASS.

0-65A
3567+73.32
267-1313.1-15D

BILL OF MATERIAL

STRUCTURE ITEMS

QUANTITY	UNIT	ITEM
1,390	SQ. YDS.	SLOPE WALL
2,818	CU. YDS.	CLASS X CONCRETE
427,559	LBS.	REINFORCEMENT BARS
5,740	CU. YDS.	CLASS A EXCAVATION FOR STRUCTURES
1,363	CU. YDS.	CLASS A EXCAVATION FOR STRUCTURES (MODIFIED)
1,559	TONS	SAND OR GRAVEL EMBANKMENT
68	LIN. FT.	PIPE UNDERDRAINS 6 INCH
470	SQ. YDS.	P.C. CONCRETE PAVEMENT (16-1/2" - 10-1/2" - 16-1/2")
791	LIN. FT.	FURNISHING AND ERECTING METAL HANDRAIL, TYPE "A"
2	EACH	NAME PLATES
336	LIN. FT.	CONCRETE MEDIAN, TYPE 4 (MODIFIED ON STRUCTURE)
39	LIN. FT.	PEDESTRIAN BARRIER, TYPE III
2	EACH	22" X 26" SCUPPERS
34	LIN. FT.	GALV. WROUGHT IRON PIPE, 6" DIA. STD. WEIGHT
1,928,420	LBS.	ERECTING STRUCTURAL STEEL
25	CU. YDS.	POROUS GRANULAR EMBANKMENT

ROADWAY ITEMS

QUANTITY	UNIT	ITEM
12	IN. DIA.	TREE REMOVAL, SPECIAL (6" TO 15" DIA.)
134	IN. DIA.	TREE REMOVAL, SPECIAL (OVER 15" DIA.)
78,090	CU. YDS.	SPECIAL EXCAVATION
950	TONS	SUB-BASE - GRANULAR MATERIAL, TYPE A
3,436	SQ. YDS.	P.C. CONCRETE BASE COURSE (9")
665	GALS.	BITUMINOUS MATERIALS (PRIME COAT)
7	TONS	AGGREGATE (PRIME COAT)
486	TONS	BITUMINOUS CONCRETE BINDER COURSE
358	TONS	BITUMINOUS CONCRETE SURFACE COURSE, FINE DENSE-
		GRADED AGGREGATE, TYPE 2, SUBCLASS 1-11
7,848	SQ. FT.	P.C. CONCRETE SIDEWALK (5")
2,800	SQ. YDS.	EXPONABLE P.C. CONCRETE PAVEMENT (8")
14	SQ. YDS.	CORRUGATED WARNING STRIP
14	SQ. YDS.	PAVEMENT FABRIC
7	SQ. YDS.	P.C. CONCRETE DRIVEWAY PAVEMENT (8")
895	LIN. FT.	CONCRETE CURB, TYPE 4
1,325	LIN. FT.	COMBINATION CONCRETE CURB AND GUTTER, TYPE 3
42	LIN. FT.	CONCRETE MEDIAN, TYPE 4 (MODIFIED)
206	SQ. FT.	LONGITUDINAL CURB EXPANSION JOINTS
8.4	M. FT. B. M.	MISCELLANEOUS TIMBER
2	EACH	SECTION MARKERS
34	CU. YDS.	TOPSOIL FROM STOCKPILE
0.045	TONS	FERTILIZER NUTRIENTS
970	SQ. YDS.	SEEDING
8	UNITS	SUPPLEMENTAL WATERING
2	GALS.	EMULSION ASPHALT
25	SQ. YDS.	P.C. CONCRETE PAVEMENT (8")
643	UNITS	EMBANKMENT SPRINKLING
	LUMP SUM	TEMPORARY SHEET PILING

DRAINAGE ITEMS

QUANTITY	UNIT	ITEM
9	EACH	CATCH BASINS, TYPE A2, 4" DIA., WITH TYPE 5 FRAME, OPEN LID
1	EACH	CATCH BASINS, TYPE A2, 4" DIA., WITH TYPE 31 FRAME AND GRATE
2	EACH	MANHOLES, TYPE A, 4" DIA., WITH TYPE 5 FRAME, CLOSED LID
1	EACH	MANHOLES, TYPE B, 60" DIA., SEWER
2	EACH	MANHOLES, TYPE B3, 45" DIA., SEWER
34	LIN. FT.	STORM SEWERS, TYPE 1, 6 INCH
306	LIN. FT.	STORM SEWERS, TYPE 2, 10 INCH
46	LIN. FT.	STORM SEWERS, TYPE 2, 15 INCH
378	LIN. FT.	STORM SEWERS, TYPE 2, 18 INCH
226	LIN. FT.	STORM SEWERS, TYPE 2, 30 INCH
556	LIN. FT.	STORM SEWERS, TYPE 2, 60 INCH
260	LIN. FT.	STORM SEWERS, TYPE 3, 60 INCH
260	LIN. FT.	CAST IRON WATER PIPE, 12 INCH (B AND S)
260	LIN. FT.	CAST IRON WATER PIPE, 24 INCH (B AND S)
22	LIN. FT.	CAST IRON WATER PIPE, 12 INCH (FLANGED)
52	LIN. FT.	CAST IRON WATER PIPE, 24 INCH (FLANGED)
3,313	CU. YDS.	TRENCH BACKFILL
5	EACH	FILLING EXISTING MANHOLES
2	EACH	FILLING EXISTING CATCH BASINS
4	EACH	CATCH BASINS TO BE ADJUSTED
715.7	CU. YDS.	CLASS A CONCRETE
6	EACH	STOP PLANK ASSEMBLY
4	EACH	CAST IRON FRAME, TYPE 1 CLOSED LID
3	EACH	MANHOLES TO BE ADJUSTED
2	EACH	PLUGGING EXISTING DRAINS & SEWERS (12 INCHES OR LESS)
2	EACH	PLUGGING EXISTING DRAINS & SEWERS (OVER 12 INCHES)
3	EACH	MANHOLES, TYPE A, 4 FT. DIA. WITH TYPE 1 FRAME, CLOSED LID
16	LIN. FT.	STORM SEWERS, TYPE 2, 24 INCH

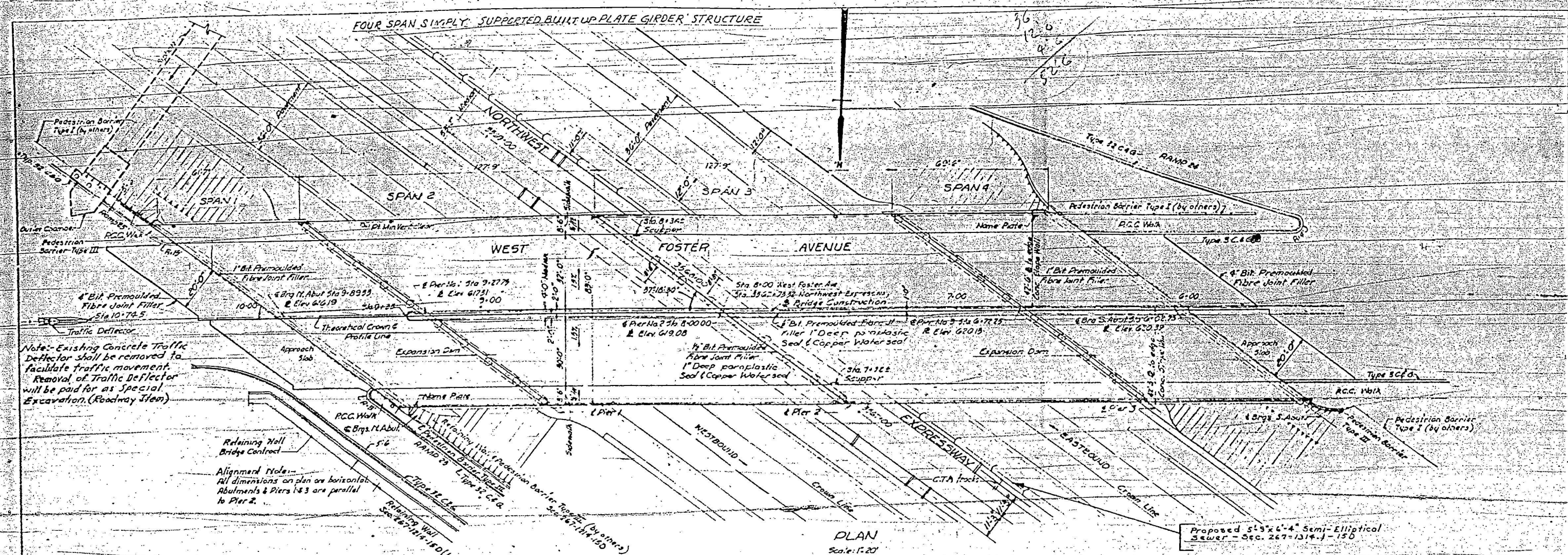
UTILITY ITEMS

QUANTITY	UNIT	ITEM
1,568	LIN. FT.	3-1/2" ASBESTOS CEMENT CONDUIT
20	LIN. FT.	4- 3-1/2" ASBESTOS CEMENT CONDUIT (ENCASED IN CONCRETE)
240	LIN. FT.	2- 3-1/2" ASBESTOS CEMENT CONDUIT (ENCASED IN CONCRETE)
925	LIN. FT.	2-1/2" RIGID STEEL CONDUIT
2	EACH	HANDHOLES, CITY OF CHICAGO, TYPE 11114-A
2	EACH	HANDHOLES, CITY OF CHICAGO, TYPE 11912
3	EACH	FOUNDATION FOR LIGHT STANDARD CITY OF CHGO TYPE 11408A

SPECIAL EXCAVATION 78,090 CU. YDS.
 STRUCTURAL EXCAVATION 3,338 " "
 SUBSTRUCTURAL BACKFILL + 25% 81,428 " "
 FILL + 25 PER CENT 149 " "
 SURPLUS 80,189 CU. YDS.

NOTE:
 34 Cu Yds of Top Soil to be obtained
 from Area B See Sheet No. 4

DEPARTMENT OF HIGHWAYS COOK COUNTY, ILLINOIS DANIEL RYAN PRESIDENT BOARD OF COUNTY TRUSTEES WILLIAM J. MORTIMER CLERK OF COUNTY OF COOK, ILL.					
W. FOSTER AVE. GRADE SEPARATION BILL OF MATERIAL					
COMPUTED R.E.F. & S.	PROJECT: U 265 (18)				
DRAWN	SCALE				
CHECKED R.E.F. & S.	APPROVED <i>M.T. Pao</i>				
<i>Shing J. Shek</i> Engineer	Sheet No. 173	State Aid Route No. 267	Sheet No. 23	Total Sheets 102	Drawing No. NW477-S
REVISED (0) 1-28-58 REVISED (0) 1-2-58 FAY, SPOFFORD & THORNDIKE, INC. ENGINEERS, BOSTON, MASS. - CHICAGO, ILL.					



GENERAL NOTES

Design is in accordance with the following:
Standard Specifications for Road and Bridge Construction, State of Illinois, dated Jan. 2, 1962 and Supplemental Specifications, A.A.S.H.O. 1963.

Class "K" concrete shall be used throughout and shall have a minimum ultimate strength of 28 days of 5500 p.s.i.

All reinforcing shall be intermediate grade steel with an allowable working stress of 20,000 p.s.i.

Reinforcing bars shall be deformed bars and shall conform to the requirements of Specifications for Deformed Steel for Concrete Reinforcement, ASTM Designation A-615. Deformation on bars shall conform to the requirements of Specifications for the Deformation of Deformed Steel Bars for Concrete Reinforcement, ASTM Designation A-305, as amended to date.

Each span of bridge deck shall be poured in one continuous operation. Finishing of the deck slab shall comply with S118 of the Standard Specifications.

The coat of copper waterproofing, rubber waterproofing, copper nails, bituminous fibre joint fillers, paraffin joint sealers, ground nuts, and for proper shall be included in the bid price of Class "K" concrete. The contractor's method of supporting, bracing, and protecting the copper (rubber waterproofing and bituminous paraffin fibre joint filler) during construction, so that the copper waterproofing does not become bent, torn or distorted, shall be approved by the Engineer.

Copper waterproofing splices shall be soldered or brazed.

Rubber waterproofing shall be applied as recommended by the manufacturer.

All backfill behind abutments and wingwalls shall be sand or gravel embankment and shall conform with the special provisions and shall be placed and compacted mechanically in accordance with Section 6.0 of the Standard Specifications.

Elevation datum U.S.G.S. Mean Sea Level - Elevation 000'.
All steel girders, diaphragms, bearing shoes, fabric pads, anchor bolts, sleeves and expansion dams for this bridge will be supplied by the Steel Fabricator at the site to the Contractor. The Contractor shall set all anchor bolts, sleeves, fabric pads, shoes, and erect all structural steel. Traffic Classification "T".

DESIGN DATA

Design Load A.A.S.H.O. H20-S16-44.

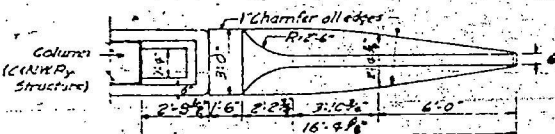
Design Stresses

Earth Pressure 30° Fluid
Structural Steel 18,000 p.s.i.
Reinforcing Steel 20,000 p.s.i.
Deck Slab & Substructure Concrete (without earth pressure) 4000 p.s.i.
Substructure Concrete (with earth pressure) 3000 p.s.i.
Max. Footing Pressure 2.5 T.S.F.

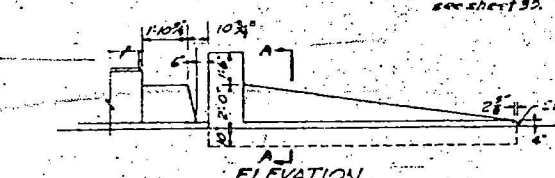
Retaining Wall Surcharge 3 Ft.

ELEVATION

Scale: 1" = 20'



PLAN
Note for reinforcing see sheet 35.



TRAFFIC DEFLECTOR

Scale: 1" = 10'

SECTION A-A

Scale: 1" = 10'

Proposed 5' x 6' x 4' Semi-Elliptical Sewer - Sec. 267-1314.1-156

SEC. 267-1314.1-15 D

BILL OF MATERIAL

CONCRETE	1890 SQ. YDS.
PEDESTRIAN BARRIER TYPE III	39 LIN. FT.
CLASS "K" CONCRETE	2.5 CU. YDS.

DEPARTMENT OF HIGHWAYS COOK COUNTY, ILLINOIS

DANIEL RYAN WILLIAM J. MORTIMER
PRESIDENT BOARD OF COMMISSIONERS

GENERAL PLAN AND ELEVATION W. FOSTER AVE. GRADE SEPARATION OVER NORTHWEST EXPRESSWAY

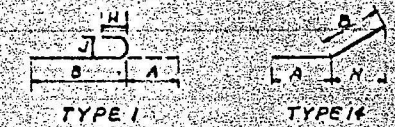
COMPUTED: HKM	PROJECT: U-265 (1A)
DRAWN: SH	SCALE: A-1 NOT TO SCALE
CHECKED: FEO	APPROVED: [Signature]
APPROVED: [Signature]	DATE: 1/17/64
173	267
34	102
NW 478-S	

SAY, SPOFFORD & THORNDIKE, INC. ENGINEERS, BOSTON, MASS. & CHICAGO, ILL.

REINFORCING SCHEDULE

Mark	No.	Size	Length	Station	Top	A	B	C	D	E	F	G	H	J	K	O	R
q1	88	5	1-7	C	1	0-7	1-0						0-5	0-5			
h1	26	5	10-6														
h2	26	5	15-6														
h3	1	5	10-3														
h4	1	5	0-0														
h5	1	5	5-9														
h6	1	5	6-2														
h7	5	5	8-0														
h8	8	5	9-3														
h9	20	5	2-6		1-3	1-3							1-0				
f1	16	5	32-0														
f2	2	5	4-0														
f3	2	5	6-4														
f4	2	5	8-8														
f5	2	5	11-0														
y1	73	5	7-7														
y2	22	5	5-5														
m1	1	6	8-0														
m2	16	6	1-9														
m3	1	6	3-6														
m4	1	6	2-6														
s1	36	5	1-9														
s2	1	6	3-6														
s3	1	5	2-6														
s4	1	5	8-0														

BENDING DIAGRAM



GENERAL NOTES

1. All Pipe Underdrain shall be 6" Galv. perf. Corrugated Metal Pipe.
2. The cost of 6" C.I. pipe and fittings, corrugated metal end caps and fittings, shall be included in the Contract Unit Price bid for Pipe Underdrain.
3. All Underdrain to be connected to Highway Drainage System. For details, see Sheet No. 53.
4. T-Top; B-Bottom; N.F.-Near Face; F.F.-Far Face; E.F.-Each Face.

NOTES

1. Stations are along Base Line of Ramp 23.
2. All linear dimensions of Panels are along Working Line of Wall.

SEC. 267-1313.1-15D

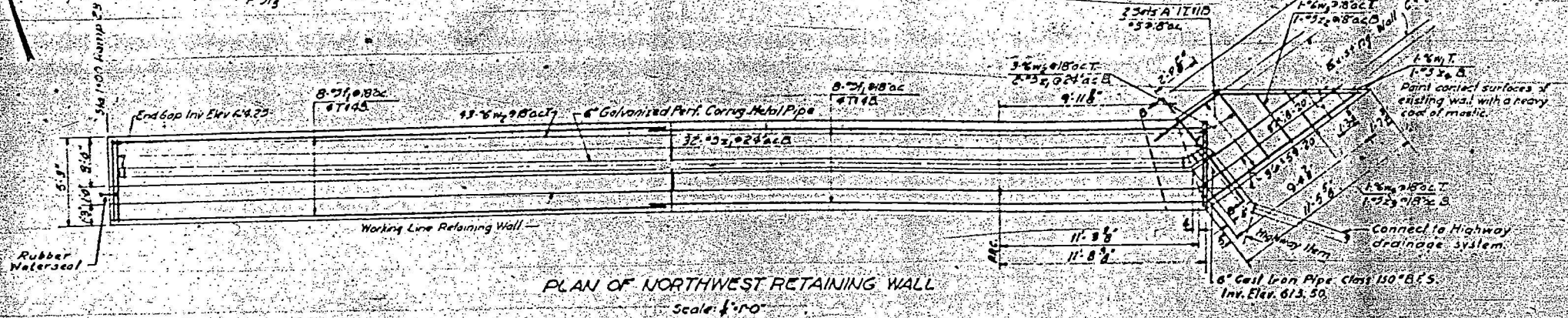
BILL OF MATERIAL

POROUS GRANULAR EMBANKMENT	25 CU. YDS.
CLASS "X" CONCRETE	382 CU. YDS.
REINFORCEMENT BARS	2850 LBS.
CLASS "A" EXCAVATION FOR STRUCTURES	55 CU. YDS.
CLASS "A" EXCAVATION FOR STRUCTURES MODIFIED	110 CU. YDS.
SAND OR GRAVEL EMBANKMENT	183 TONS
PIPE UNDERDRAIN 6"	68 LMF.

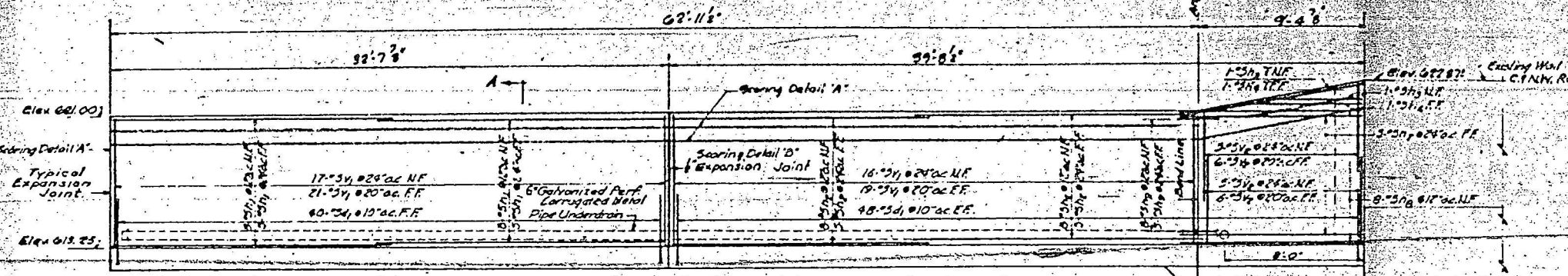
DEPARTMENT OF HIGHWAYS COOK COUNTY, ILLINOIS

DANIEL RYAN PRESIDENT BOARD OF COMMISSIONERS	WILLIAM J. MORTIMER SUPERINTENDENT OF HIGHWAYS
RAMP 23, RETAINING WALL STA. 0+371.4R TO STA. 1+00.00R WEST FOSTER AVE. GRADE SEPARATION OVER NORTHWEST EXPRESSWAY	
COMPUTED J.N.C.	PROJECT U 265(3)
DRAWN J.M.F.	SCALE AS NOTED
CHECKED J.H.K.	APPROVED
APPROVED [Signature]	173 267 26 102 NW480-S
FAY, SPOFFORD & THORNDIKE, INC. ENGINEERS, BOSTON, MASS. - CHICAGO, ILL.	

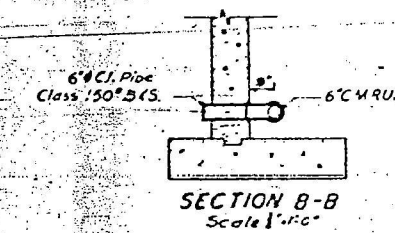
SET "A"
2 REQUIRED
1-3/4"
1-3/4"
1-3/4"
1-3/4"



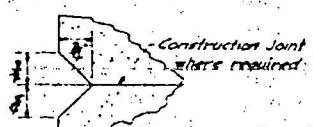
PLAN OF NORTHWEST RETAINING WALL
Scale: 1"=10'



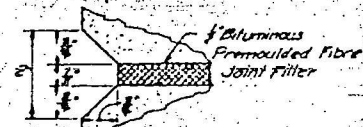
DEVELOPED ELEVATION OF NORTHWEST RETAINING WALL
Scale: 1"=10'



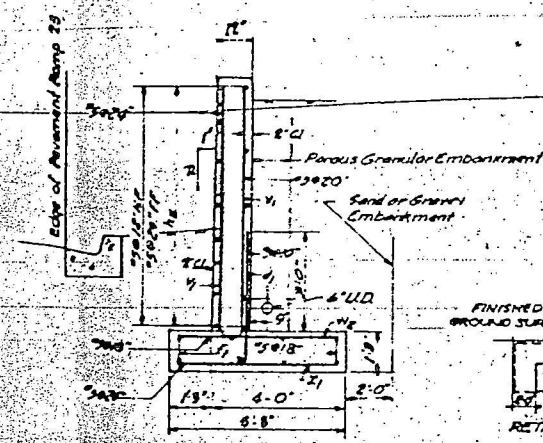
SECTION B-B
Scale: 1"=10'



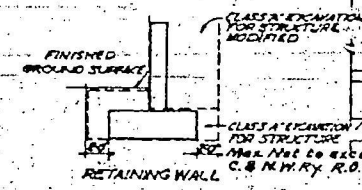
SCORING DETAIL "A"
Scale: Half Size



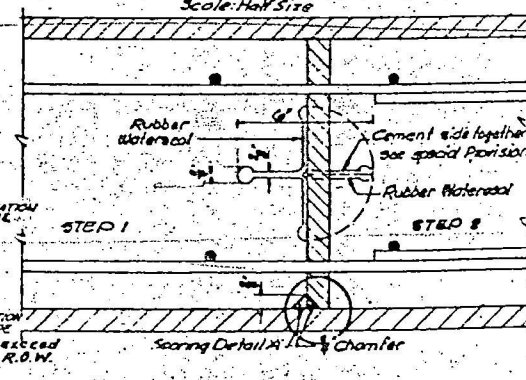
SCORING DETAIL "B"
Scale: Half Size



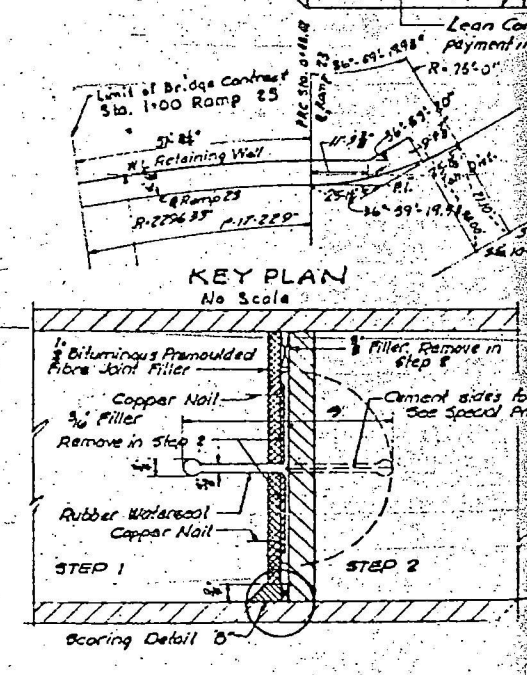
SECTION A-A
Scale: 1"=10'



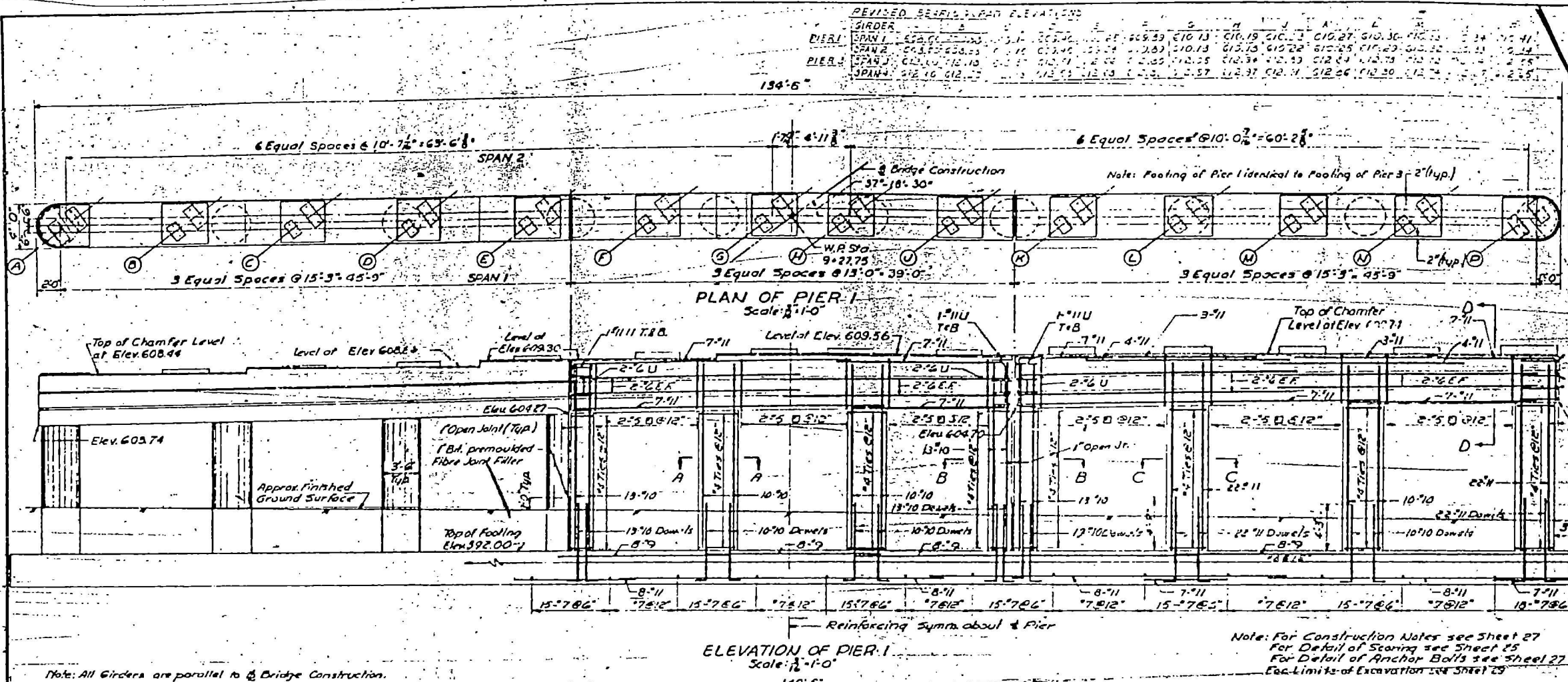
LIMITS OF EXCAVATION
No Scale

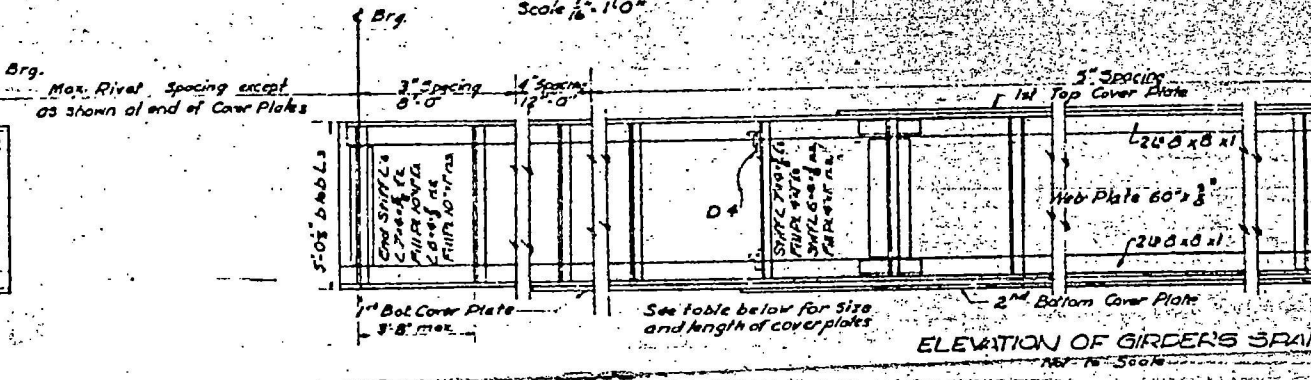
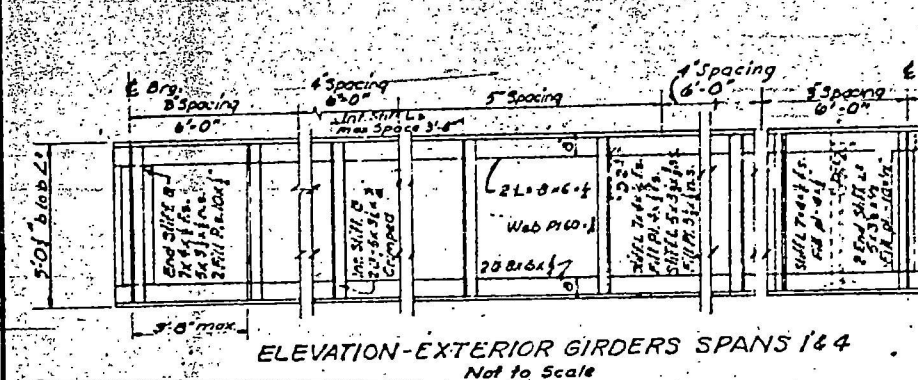
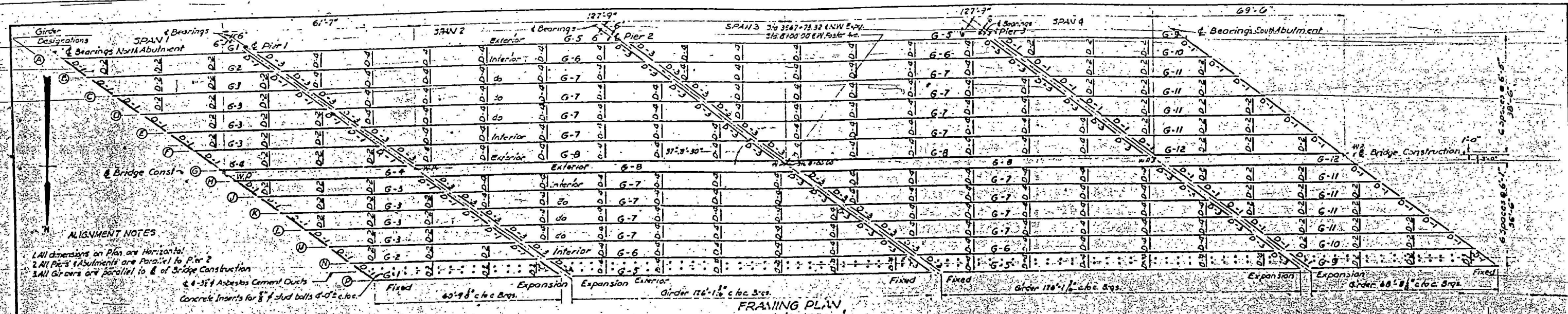


TYPICAL BONDED CONSTRUCTION JOINT
Scale: 1"=10'

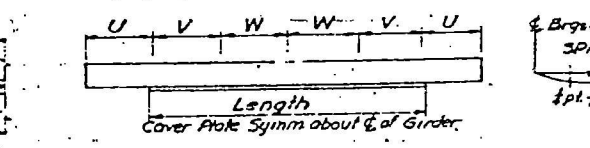


TYPICAL EXPANSION JOINT
Scale: 1"=10'





SCHEDULE OF GIRDER COVER PLATES AND SHEAR CONNECTORS



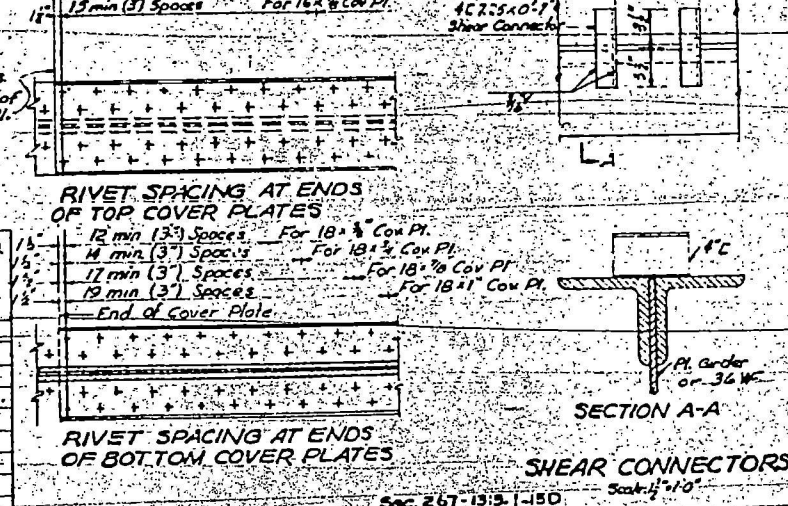
SPACING OF L SHEAR CONNECTORS

SPAN	GIRDER	U			V			W		
		1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
SPAN 1	G1	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
	G2	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
	G3	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
	G4	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
SPAN 2	G5	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
	G6	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
	G7	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
	G8	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
SPAN 3	G9	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
	G10	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
	G11	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
	G12	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
SPAN 4	G13	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
	G14	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
	G15	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
	G16	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"

BOTTOM					DEAD LOAD DEFLECTION												CAMBER
COVER PLATE					SPAN 1			SPAN 2			SPAN 3			SPAN 4			
SIZE LENGTH					1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd	
SEE BELOW					1/2	1 1/2	1/2	-	-	-	-	-	-	-	-	-	1/8
8"x1"	44'-0"	1/2	1 1/2	1/2	-	-	-	-	-	-	-	-	-	-	-	-	1 1/2
8"x1"	45'-0"	1/2	1 1/2	1/2	-	-	-	-	-	-	-	-	-	-	-	-	1 1/2
-	-	1/2	1 1/2	1/2	-	-	-	-	-	-	-	-	-	-	-	-	1 1/2
SEE BELOW					-	-	3	4 1/2	3	3	4 1/2	3	-	-	-	-	5 1/2
					-	-	2 3/4	3 1/2	2 3/4	2 3/4	3 1/2	2 3/4	-	-	-	4 3/4	
					-	-	2 3/4	3 1/2	2 3/4	2 3/4	3 1/2	2 3/4	-	-	-	4 3/4	
					-	-	2 3/4	4	2 3/4	2 3/4	4	2 3/4	-	-	-	5 1/2	
					-	-	-	-	-	-	-	-	-	-	-	-	
8"x1"	51'-0"	-	-	-	-	-	-	-	-	-	-	-	-	1 1/2	1 1/2	1 1/2	2
0"x1"	54'-0"	-	-	-	-	-	-	-	-	-	-	-	-	1	1 1/2	1	1 3/4
8"x1"	49'-0"	-	-	-	-	-	-	-	-	-	-	-	-	1 1/2	1 1/2	1 1/2	1 3/4

Notes: Stud shear connectors may be substituted for the channel shear connectors with the approval of the County.
 4-1/2" studs are required for each

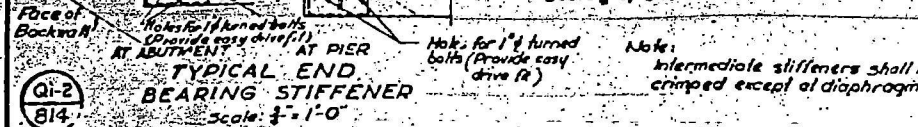
COVER PLATE	BOTTOM	COVER PLATE
2nd	1st	2nd

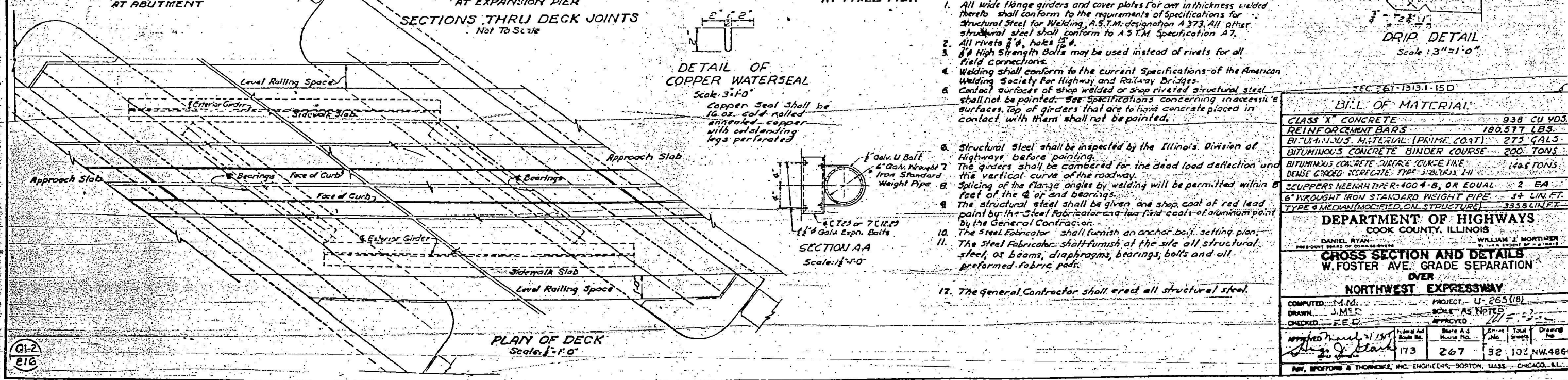
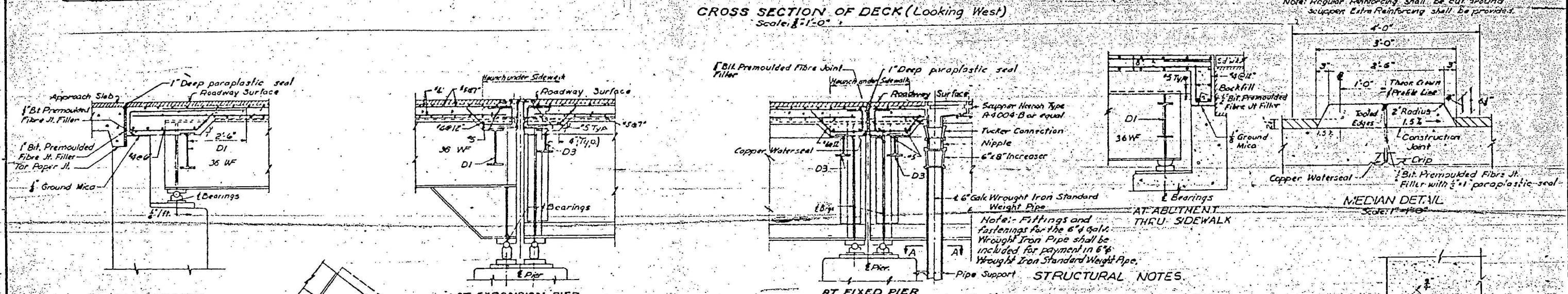
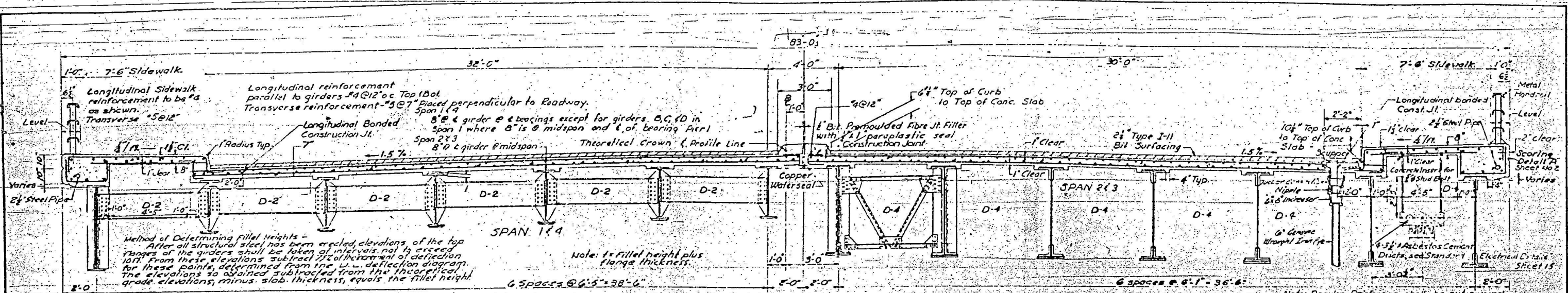


DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS

FRAMING PLAN AND DETAILS
W. FOSTER AVE. GRADE SEPARATION
OVER
NORTHWEST EXPRESSWAY

COMPUTED, F.E.D. PROJECT U-265 (13)
DRAWN, S.W. SCALE AS NOTED
CHECKED, F.E.D. APPROVED [Signature]
APPROVED [Signature]
173 237 30 102 NW 484-S
RAY, BROWNE & THORNBELL, INC. ENGINEERS, BOSTON, MASS. - CHICAGO, ILL.





SEC. 267-1313.1-15 D

BILL OF MATERIAL

CLASS "X" CONCRETE	938 CU YDS.
REINFORCEMENT BARS	180,577 LBS.
BITUMINOUS MATERIAL (PRIME COAT)	275 GALS.
BITUMINOUS CONCRETE BINDER COURSE	200 TONS
BITUMINOUS CONCRETE SURFACE COURSE FINE DENSE GRADED AGGREGATE TYPE 3-BULKING III	140.5 TONS
SCUPPERS NEENAH TYPE A-4004-B, OR EQUAL	2 EA.
6" WROUGHT IRON STANDARD WEIGHT PIPE TYPE 4 MEDIAN (MODIFIED ON STRUCTURE)	335.8 LIN. FT.

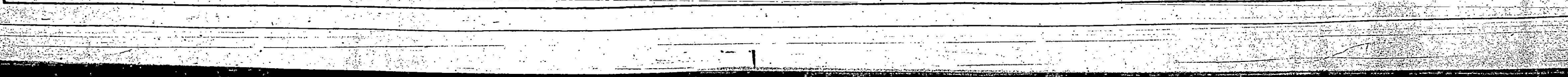
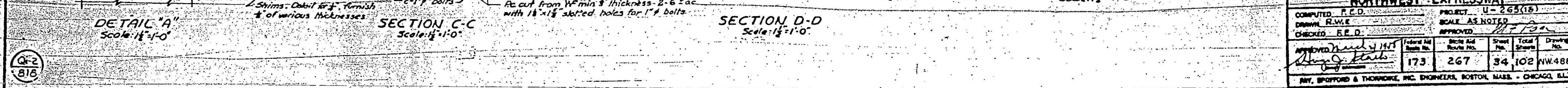
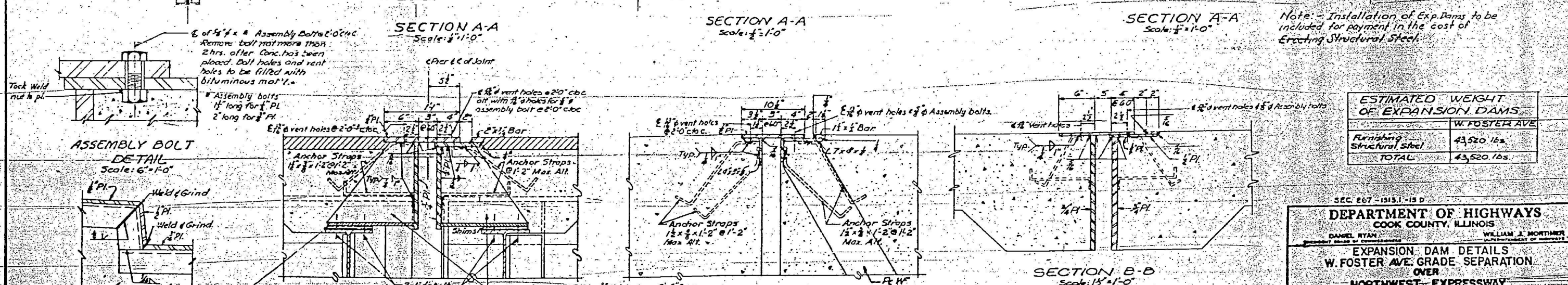
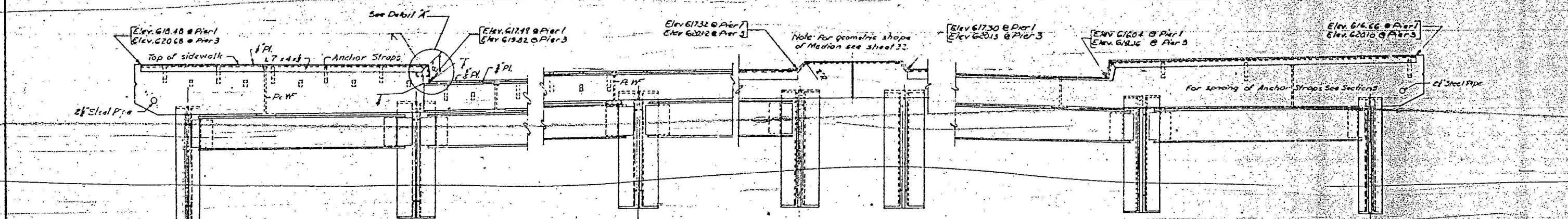
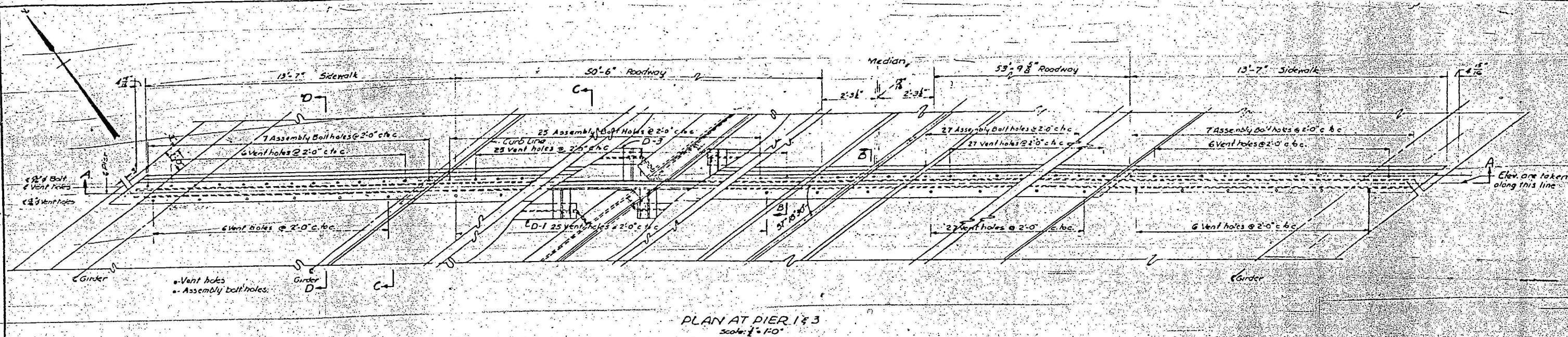
DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS

CROSS SECTION AND DETAILS
W. FOSTER AVE. GRADE SEPARATION
OVER
NORTHWEST EXPRESSWAY

COMPUTED: M.M. PROJECT: U-265 (18)
DRAWN: J.M.C. SCALE: AS NOTED
CHECKED: F.E.C. APPROVED: 2/1/53

APPROVED: 1/15/53
J. J. Clark
173 267 32 102 NW 4865

BY: BROTHERS & THORNTON, INC. ENGINEERS, BOSTON, MASS. - CHICAGO, ILL.



ESTIMATED WEIGHT OF EXPANSION DAMS	
W. FOSTER AVE	
Furnishing Structural Steel	43,520 lbs.
TOTAL	43,520 lbs.

SEC. 267-1513.1-15 D

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS

DANIEL RYAN
CHIEF ENGINEER

WILLIAM J. NORTHROP
CHIEF ENGINEER

EXPANSION DAM DETAILS
W. FOSTER AVE. GRADE SEPARATION
OVER
NORTHWEST EXPRESSWAY

COMPUTED P.E.D.
DRAWN R.W.E.
CHECKED F.E.D.

APPROVED *[Signature]* 1/1/51

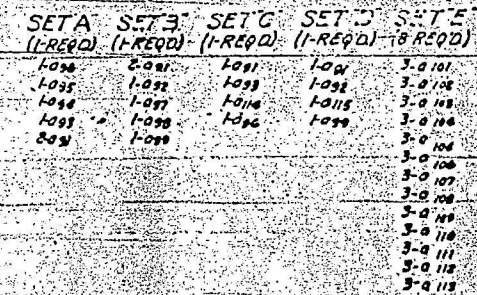
PROJECT U-265(15)

SCALE AS NOTED

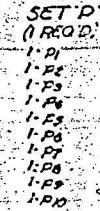
APPROVED *[Signature]*

Federal Aid Route No.	State Aid Route No.	Sheet No.	Total Sheets	Drawing No.
173	267	34	102	NW.488-S

RAY, SPOFFORD & THORP, INC. ENGINEERS, BOSTON, MASS. - CHICAGO, ILL.

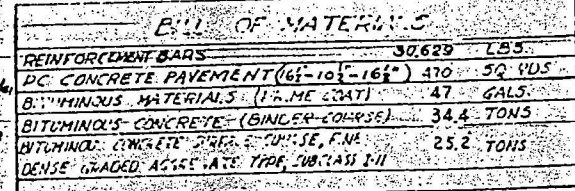


Scale: 1" = 10'



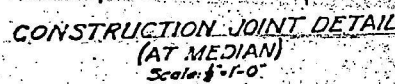
Scale: 1:100

ELEVATION
TRAFFIC DEFLECTOR
Sched 4-1-72
Sec 267-131.1-17D



Score: 3.50

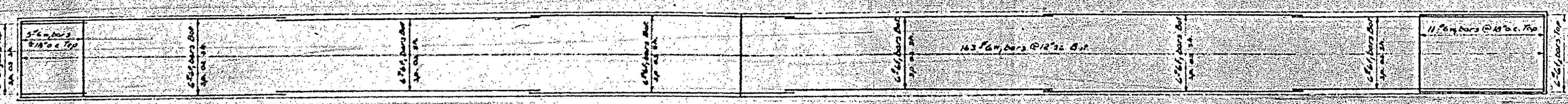
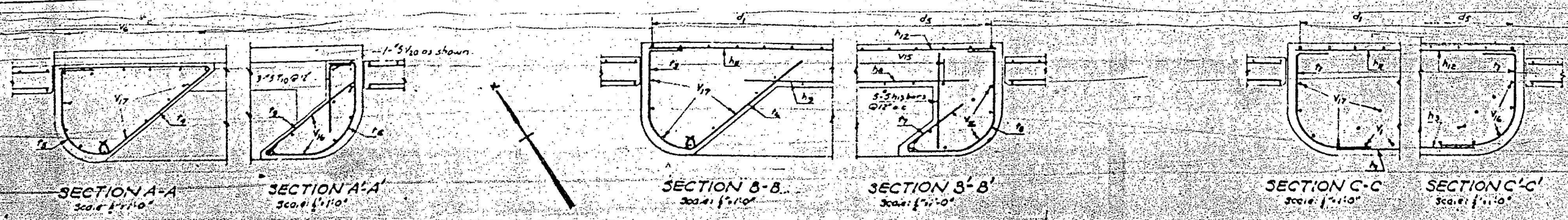
Scale: $\frac{1}{4}'' = 1'-0''$



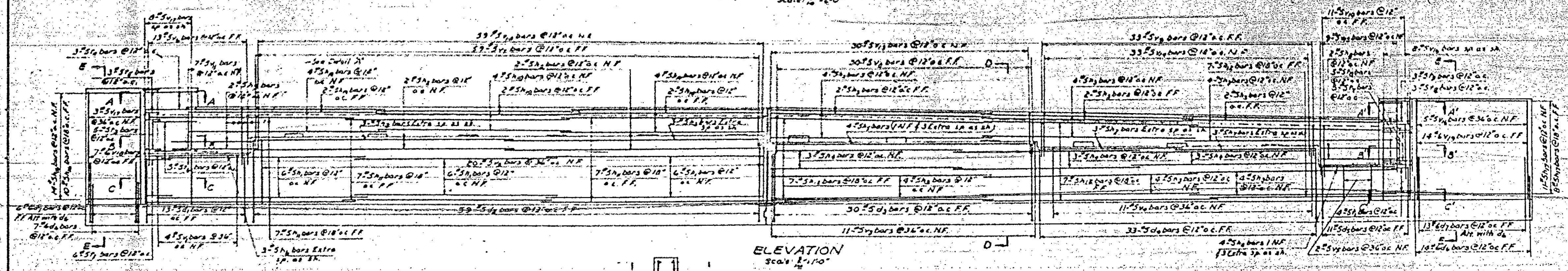
5444.5-1-0"

Q1-2
8/9

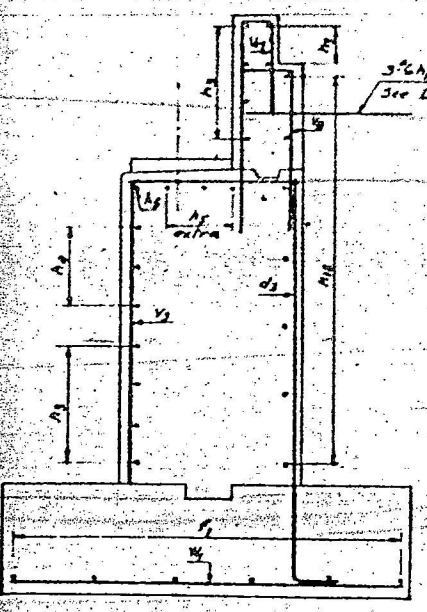
DEPARTMENT OF HIGHWAYS COOK COUNTY, ILLINOIS						
DANIEL RYAN President Board of Commissioners		WILLIAM J. MORTIMER Chief Engineer of Highways				
REINFORCING STEEL DETAILS APPROACH SLAB W. FOSTER AVE. GRADE SEPARATION OVER NORTHWEST EXPRESSWAY						
COMPUTED	K.C.	PROJECT U-263 (B)				
DRAWN	W.S. J.U.	SCALE AS NOTED				
CHECKED	A.T.	APPROVED <i>W.S. J.U.</i>				
APPROVED <i>W.S. J.U.</i> <i>W.S. J.U.</i>		Federal Aid Route No. 173	State Aid Route No. 267	Sheet No. 35	Total Sheets 102	Drawing No. NW-489
FAY, SPORFORD & THORNDIKE, INC. ENGINEERS, BOSTON, MASS. - CHICAGO, ILL.						



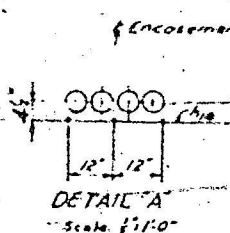
PLAN OF FOOTING
Scale: 1/4" = 1'-0"



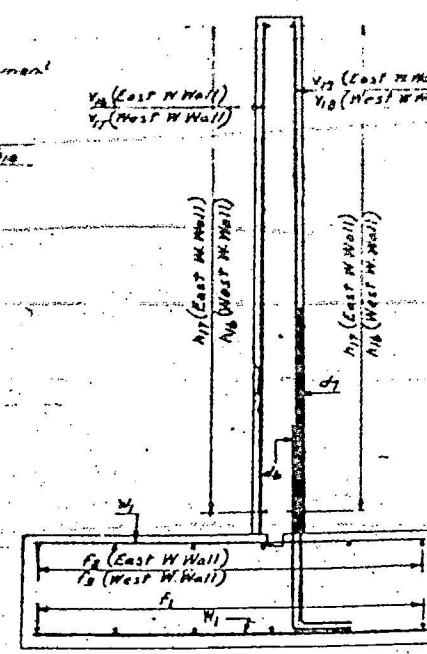
ELEVATION
Scale: 1/4" = 1'-0"



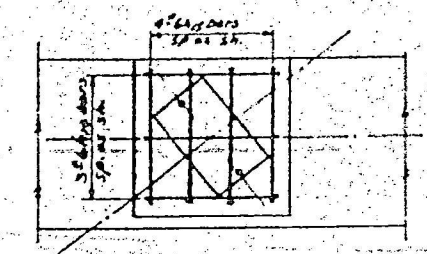
SECTION D-D
Scale: 1/4" = 1'-0"



DETAIL A
Scale: 1/4" = 1'-0"



SECTION E-E
Scale: 1/4" = 1'-0"



BEARING PAD DETAIL
Scale: 1/4" = 1'-0"

Distribution Steel required for
Pads C, D, F, G, H, M, N

SEC. 807-13131-15D

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS

DANIEL RYAN
RESIDENT ENGINEER OF HIGHWAYS

WILLIAM J. MORTIMER
RESIDENT ENGINEER OF HIGHWAYS

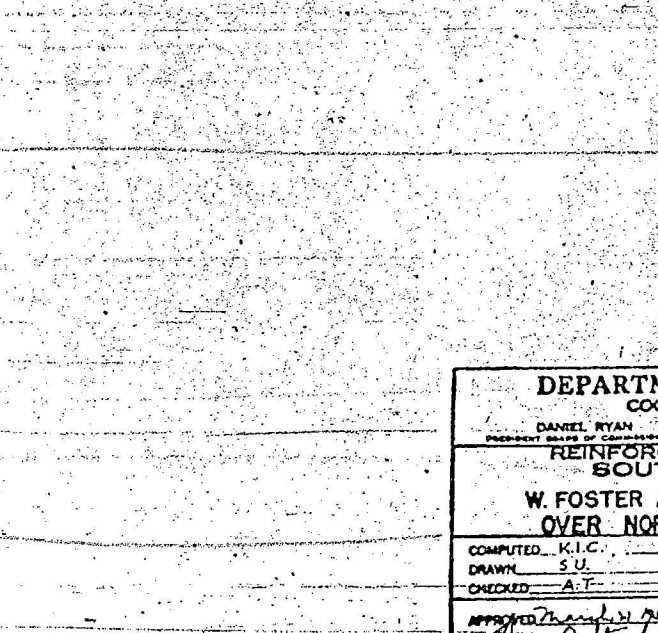
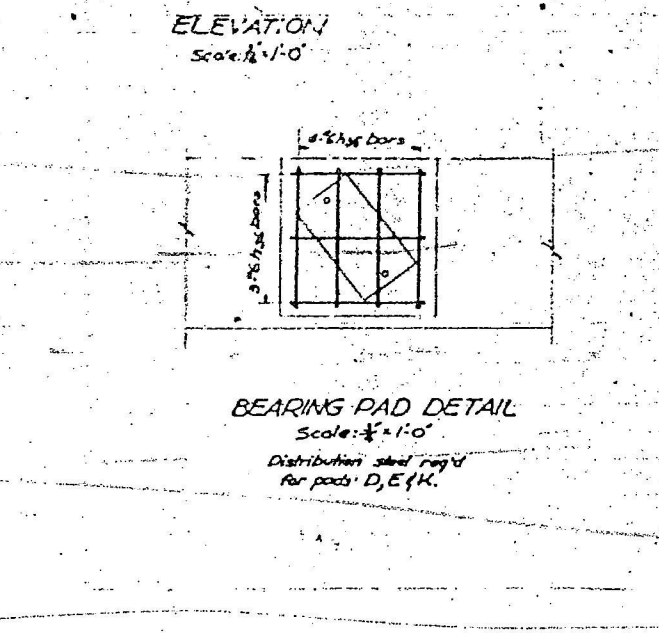
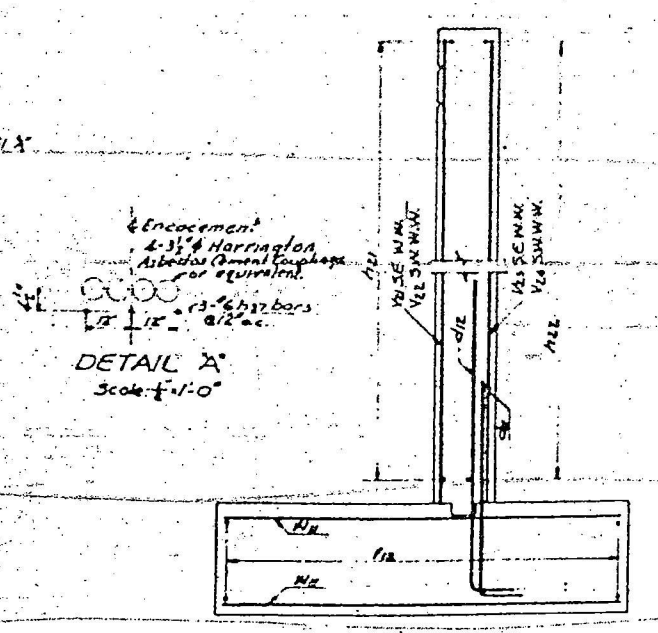
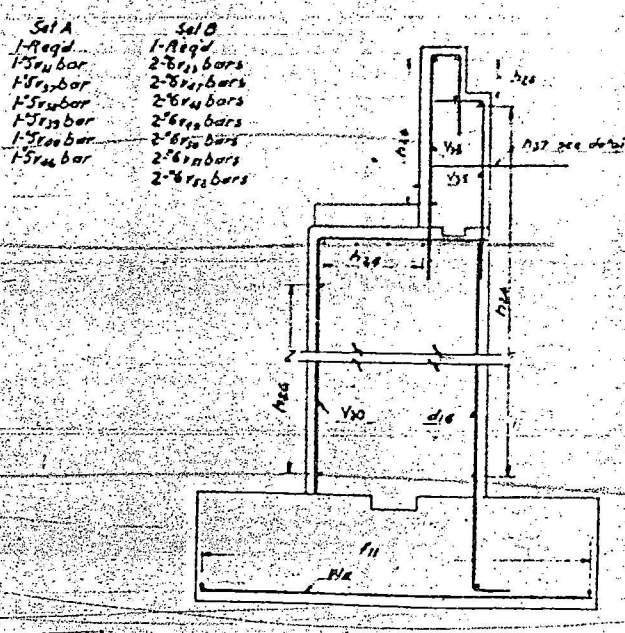
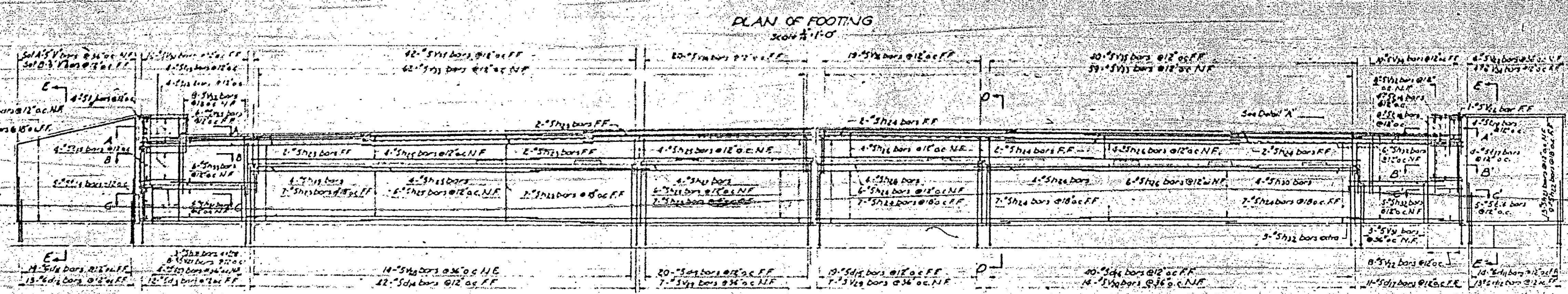
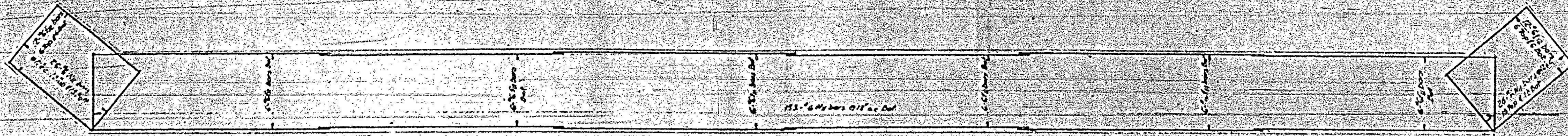
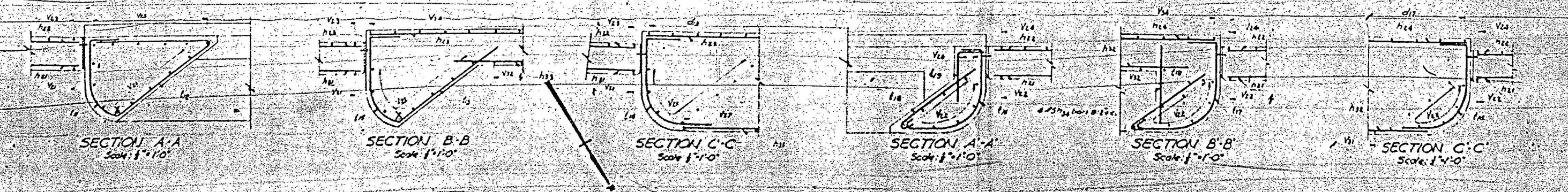
REINFORCING STEEL DETAILS
NORTH ABUTMENT
W. FOSTER AVE. GRADE SEPARATION
OVER NORTHWEST EXPRESSWAY

COMPUTED M.P.
DRAWN V.L.S.
CHECKED A.T.

PROJECT 11-265-10
SCALE AS NOTED
APPROVED 11-1-60

From Ad. Route No.	State Ad. Route No.	Sheet No.	Total Sheets	Drawing No.
173	267	37	102	NW.491-S

FAY, SPOFFORD & THORNDIKE, INC. ENGINEERS, BOSTON, MASS. - CHICAGO, ILL.



Sec. 267-1513.1-150

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS

DANIEL RYAN
PRESIDENT BOARD OF ENGINEERS

WILLIAM J. MORTIMER
PRESIDENT BOARD OF ENGINEERS

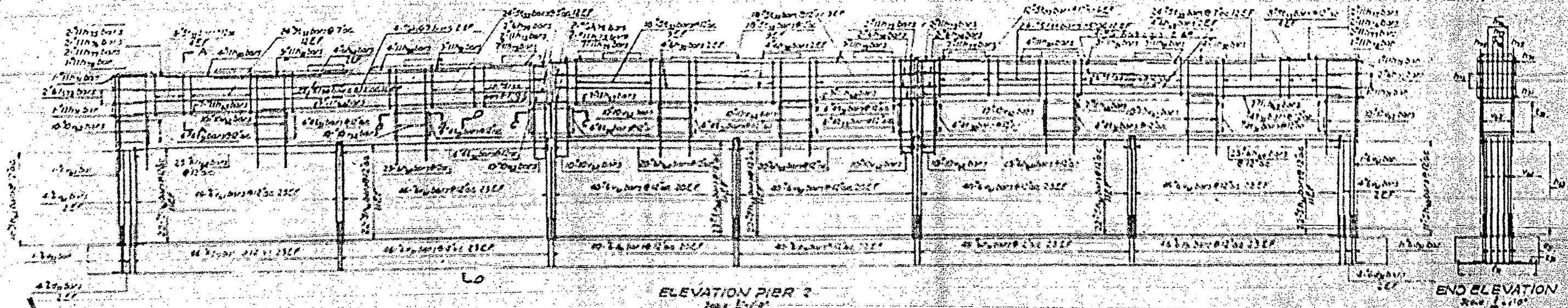
REINFORCING STEEL DETAILS
SOUTH ABUTMENT

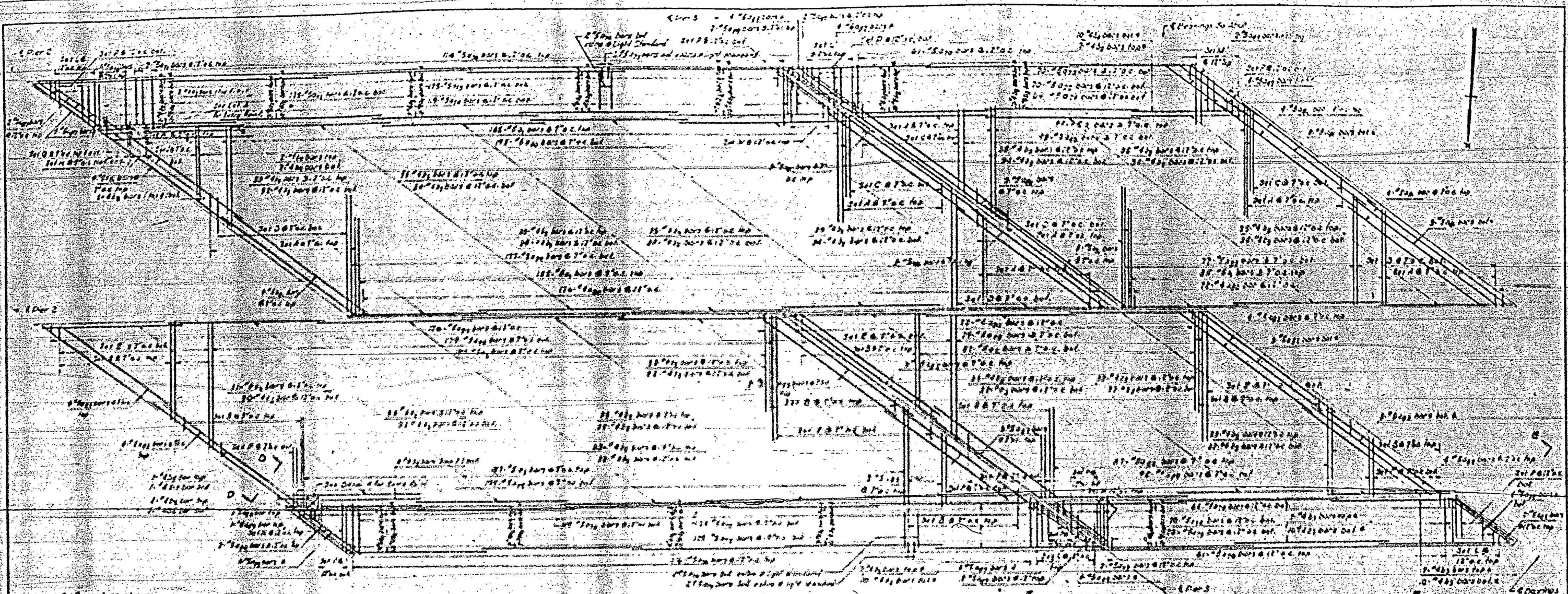
W. FOSTER AVE. GRADE SEPARATION
OVER NORTHWEST EXPRESSWAY

COMPUTED: K.I.C. PROJECT: U-263 (18)
DRAWN: S.U. SCALE: AS NOTED
CHECKED: A.T. APPROVED: [Signature]

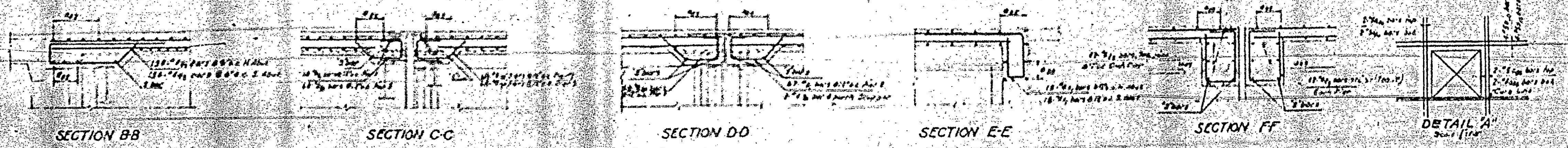
APPROVED: [Signature]
FAY, SPOFFORD & THORNDIKE, INC. ENGINEERS, BOSTON, MASS. - CHICAGO, ILL.

173 267 38 102 NW492-S





PLAN OF DECK PART 2
Scale 1/4" = 1'-0"



SECTION BB

SECTION C-C

SECTION D-D

SECTION E-E

SECTION F-F

DETAIL A

SECTIONS THRU DECK JOINTS
Scale 1/4" = 1'-0"

SECTIONS THRU SIDEWALK JOINTS
Scale 1/4" = 1'-0"

3 Bars (1/2" dia. max. 1/2" dia. min.)

Bar Size	Bar Spacing	Bar Length	Bar Quantity
1/2"	12"	12"	12
1/2"	12"	12"	12
1/2"	12"	12"	12

Set A-1	Set A-2	Set A-3	Set A-4	Set A-5	Set A-6	Set A-7	Set A-8	Set A-9	Set A-10	Set A-11	Set A-12	Set A-13	Set A-14	Set A-15	Set A-16	Set A-17	Set A-18	Set A-19	Set A-20	Set A-21	Set A-22	Set A-23	Set A-24	Set A-25	Set A-26	Set A-27	Set A-28	Set A-29	Set A-30	Set A-31	Set A-32	Set A-33	Set A-34	Set A-35	Set A-36	Set A-37	Set A-38	Set A-39	Set A-40	Set A-41	Set A-42	Set A-43	Set A-44	Set A-45	Set A-46	Set A-47	Set A-48	Set A-49	Set A-50	Set A-51	Set A-52	Set A-53	Set A-54	Set A-55	Set A-56	Set A-57	Set A-58	Set A-59	Set A-60	Set A-61	Set A-62	Set A-63	Set A-64	Set A-65	Set A-66	Set A-67	Set A-68	Set A-69	Set A-70	Set A-71	Set A-72	Set A-73	Set A-74	Set A-75	Set A-76	Set A-77	Set A-78	Set A-79	Set A-80	Set A-81	Set A-82	Set A-83	Set A-84	Set A-85	Set A-86	Set A-87	Set A-88	Set A-89	Set A-90	Set A-91	Set A-92	Set A-93	Set A-94	Set A-95	Set A-96	Set A-97	Set A-98	Set A-99	Set A-100
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DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS

REINFORCING STEEL DETAILS
DECK SLAB PART II
W. FOSTER AVE. GRADE SEPARATION
OVER NORTHWEST EXPRESSWAY

COMPUTED BY: [Signature]
DRAWN BY: [Signature]
CHECKED BY: [Signature]

PROJECT: U-243 (S)
SCALE: AS NOTED
APPROVED: [Signature]

173 267 42 102 NW 496-3

FAY, SPOFFORD & THORNDIKE, INC. ENGINEERS, BOSTON, MASS. - CHICAGO, ILL.

REINFORCING SCHEDULE										REINFORCING SCHEDULE										REINFORCING SCHEDULE									
Line	Item	Loc. on Sheet	17	18	19	20	21	22	23	Line	Item	Loc. on Sheet	17	18	19	20	21	22	23	Line	Item	Loc. on Sheet	17	18	19	20	21	22	23
1	100	100								1	100	100								1	100	100							
2	100	100								2	100	100								2	100	100							
3	100	100								3	100	100								3	100	100							
4	100	100								4	100	100								4	100	100							
5	100	100								5	100	100								5	100	100							
6	100	100								6	100	100								6	100	100							
7	100	100								7	100	100								7	100	100							
8	100	100								8	100	100								8	100	100							
9	100	100								9	100	100								9	100	100							
10	100	100								10	100	100								10	100	100							
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16	100	100								16	100	100								16	100	100							
17	100	100								17	100	100								17	100	100							
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21	100	100								21	100	100								21	100	100							
22	100	100								22	100	100								22	100	100							
23	100	100								23	100	100																	

FAY, SPOFFORD & THORNDIKE, INC. ENGINEERS, BOSTON, MASS. - CH

Q1-2
827

[illegible]

Figure 1 displays 20 different cross-sectional shapes, each labeled with a type number and its corresponding dimensions and points of interest:

- TYPE 1:** A semi-circular arch with radius R , width C , and height H . Points A and B are marked on the top surface.
- TYPE 2:** A rectangular shape with width C , height H , and a central vertical slot of width A . Points A and B are marked on the top surface.
- TYPE 3:** A U-shaped profile with width C , height H , and a central vertical slot of width A . Points A and B are marked on the top surface.
- TYPE 4:** A semi-circular arch with radius R , width C , and height H . Points A and B are marked on the top surface.
- TYPE 5:** A rectangular shape with width C , height H , and a central vertical slot of width A . Points A and B are marked on the top surface.
- TYPE 6:** A U-shaped profile with width C , height H , and a central vertical slot of width A . Points A and B are marked on the top surface.
- TYPE 7:** A semi-circular arch with radius R , width C , and height H . Points A and B are marked on the top surface.
- TYPE 8:** A rectangular shape with width C , height H , and a central vertical slot of width A . Points A and B are marked on the top surface.
- TYPE 9:** A U-shaped profile with width C , height H , and a central vertical slot of width A . Points A and B are marked on the top surface.
- TYPE 10:** A semi-circular arch with radius R , width C , and height H . Points A and B are marked on the top surface.
- TYPE 11:** A rectangular shape with width C , height H , and a central vertical slot of width A . Points A and B are marked on the top surface.
- TYPE 12:** A U-shaped profile with width C , height H , and a central vertical slot of width A . Points A and B are marked on the top surface.
- TYPE 13:** A semi-circular arch with radius R , width C , and height H . Points A and B are marked on the top surface.
- TYPE 14:** A rectangular shape with width C , height H , and a central vertical slot of width A . Points A and B are marked on the top surface.
- TYPE 15:** A U-shaped profile with width C , height H , and a central vertical slot of width A . Points A and B are marked on the top surface.
- TYPE 16:** A semi-circular arch with radius R , width C , and height H . Points A and B are marked on the top surface.
- TYPE 17:** A rectangular shape with width C , height H , and a central vertical slot of width A . Points A and B are marked on the top surface.
- TYPE 18:** A U-shaped profile with width C , height H , and a central vertical slot of width A . Points A and B are marked on the top surface.
- TYPE 19:** A semi-circular arch with radius R , width C , and height H . Points A and B are marked on the top surface.
- TYPE 20:** A rectangular shape with width C , height H , and a central vertical slot of width A . Points A and B are marked on the top surface.

COMPUTED DRAWING CHECKED	DATE J.S.	PROJECT 2-80383	SCALE AS NOTED
APPROVED	DATE J.S.	APPROVED	DATE J.S.
173	207	44	108
RAY, SPOTFORD & THORNTON, INC. ENGINEERS, BOSTON, MASS. - CHICAGO, ILL.			