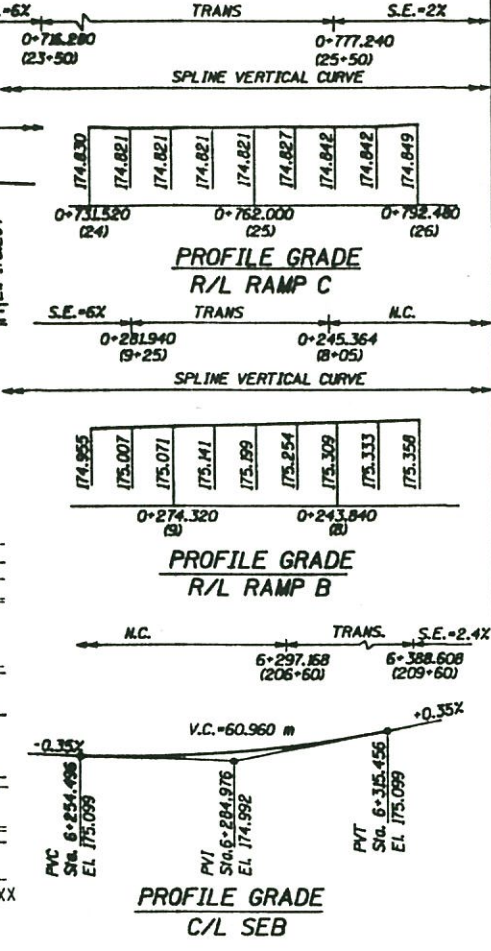
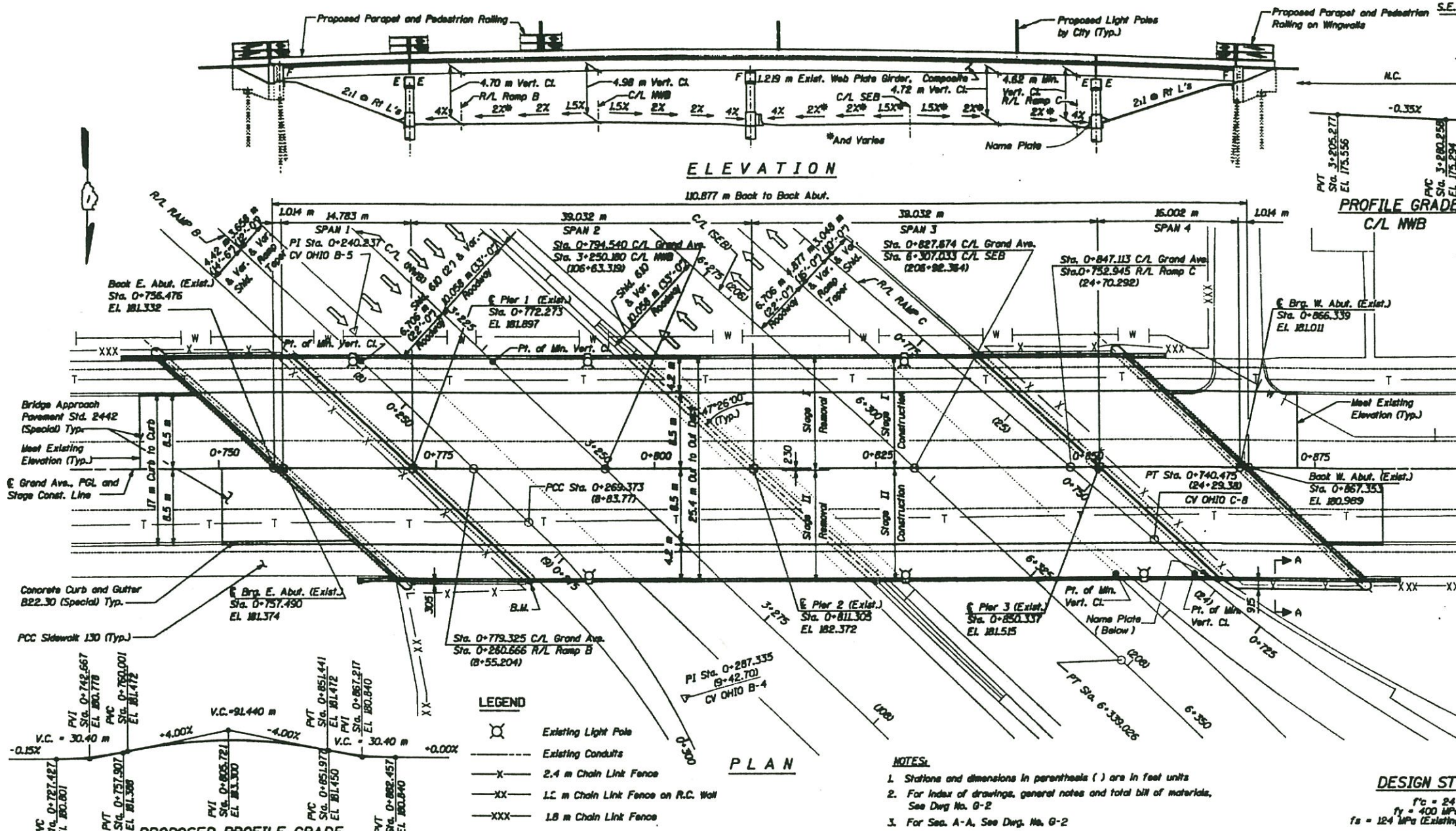


S/N: 016-2048

PROJECT NO.	SECTION	COUNTY	TOTAL STA. E.L.	SHEET NO.
016-2048	0303-476B-BR	COOK	0+811.305	1
STA.	10 SIA.			
FED. ROAD DIST. NO. 7	ILLINOIS PROJECT			

Bench Mark: Square cut N.W. corner of Pier 1 crestwall of Grand Ave. bridge over N.W.B. J.F.K. Elev. = 176.284 m  
 Existing Structure: S.N. 016-2048, two continuous interior spans, simply supported end spans, welded steel plate girder with non-composite R.C. deck, 10.877 m back to back abut., 25.376 m wide. Built as F.A.I. Route 94, Section 0303-476B, HF in 1960. Traffic to be maintained utilizing stage construction.



PROPOSED PROFILE GRADE  
 @ GRAND AVE.  
 (40 mm Rollax)

CURVE	OHIO B-4	OHIO B-5	NWB-1	SEB-1	OHIO C-8
Δ	23°-15'-59.8"	1°-08'-52.6"	4°-04'-00.5"	2°-04'-00.0"	46°-53'-49.6"
D	20°-02'-00.5"	0°-36'-01.6"	0°-35'-53.9"	0°-40'-00.0"	8°-30'-00.0"
R	87.174	2908.501	2918.884	268.593	205.456
T	17.959	29.137	103.630	47.248	89.115
L	35.484	58.272	207.178	94.496	158.169
E	1.829	0.143	1.838	0.424	18.492
P.C. STA.	0+288.373	0+211.104	3+146.183	6+244.614	0+572.318
P.I. STA.	0+287.335	0+240.237	3+249.796	6+291.862	0+661.433
P.T. STA.	0+304.804	0+269.376	3+353.341	6+339.026	0+740.475

- LEGEND**
- ⊗ Existing Light Pole
  - Existing Conduits
  - X- 2.4 m Chain Link Fence
  - XX- 1.2 m Chain Link Fence on R.C. Wall
  - XXX- 1.8 m Chain Link Fence

- NOTES:**
- Stations and dimensions in parentheses ( ) are in feet units
  - For Index of drawings, general notes and total bill of materials, See Dwg. No. G-2
  - For Sec. A-A, See Dwg. No. G-2

**DESIGN SPECIFICATIONS**  
 1992 AASHTO, with 1993, 1994 & 1995 Interim specifications

**LOADING MS18**  
 Allow 1.2 kN/m<sup>2</sup> for future wearing surface

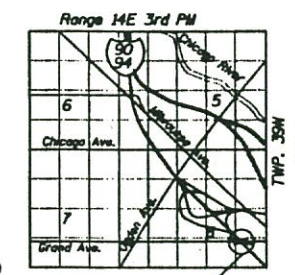
**SEISMIC DATA**  
 Seismic Performance Category (SPC) = A  
 Bedrock Acceleration Coefficient (A)=0.038g  
 Site Coefficient (S) = 1.2

STATION 0+811.305  
 BUILT BY  
 STATE OF ILLINOIS  
 F.A.I. RT. 90/94 SEC. 0303-476B-BR  
 F. A. PROJ.  
 LOADING MS18  
 STR. NO. 016-2048

Remove existing name plates adjacent to new name plate. Cost is included in pay item Name Plates. See Dwg. No. G-2.

**NAME PLATE**  
 See Std. 2113

Mohaweh, Wynn and Associates, Inc.



KENNEDY RECONSTRUCTION PROJECT  
 ILLINOIS DEPARTMENT OF TRANSPORTATION

GRAND AVENUE OVER KENNEDY EXPRESSWAY

**GENERAL PLAN**

F.A.I. 90/94 SECTION 0303-476B-BR SN 016-2048 COOK COUNTY STA. 0+811.305

DE LEUW, CATHER & COMPANY ENGINEERS AND PLANNERS

DATE	
JOB NO.	
DESIGNED	RCE
DRAWN	JW
CHECKED	EMM
APPROVED	
SCALE	
DRAWING NO.	G-1

IMAGE DIRECT CORP. (312) 251-1062 10/09/96 12

IRVING NO.	SECTION	COUNT	TOTAL SHEETS	SHEET NO.
FA 90/94		COOK		
TITLE		PROJECT		

**INDEX OF DRAWINGS**

- G-1 GENERAL PLAN
- G-2 INDEX OF DRAWINGS, TOTAL BILL OF MATERIAL, AND GENERAL NOTES
- G-3 STAGE CONSTRUCTION DETAILS
- G-4 TOP OF SLAB ELEVATIONS
- G-5 TOP OF SLAB ELEVATIONS
- G-6 TOP OF SLAB ELEVATIONS
- G-7 SUPERSTRUCTURE - SPANS 2 & 3
- G-8 SUPERSTRUCTURE - SPANS 1 & 4
- G-9 SUPERSTRUCTURE DETAILS
- G-10 PEDESTRIAN RAILING
- G-11 FRAMING PLAN
- G-12 ELASTOMERIC BEARING ASSEMBLIES
- G-13 ABUTMENT DETAILS
- G-14 SUBSTRUCTURE CONCRETE REPAIRS
- G-15 CONCRETE REPAIR DETAILS
- G-16 EXPANSION DEVICES
- G-17 TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
- G-18 ANCHOR BOLT DETAILS
- G-19 BAR SPLICER DETAILS

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Reinforcement Bars, Epoxy Coated	kg	90780	1830	92580
Removal of Existing Concrete Deck	L. Sum	0.60	--	0.60
* Protective Coat	m <sup>2</sup>	1146	--	1146
Concrete Removal	m <sup>3</sup>	19	--	19
Concrete Superstructure	m <sup>3</sup>	876.4	--	876.4
Concrete Structure	m <sup>3</sup>	--	8.8	8.8
Home Pipes	Each	1	--	1
Preformed Joint Seal 45 mm	m	79	--	79
Neoprene Expansion Joints 65 mm	m	79	--	79
Elastomeric Bearing Assembly Type 1	Each	64	--	64
Protective Shield	m <sup>2</sup>	1980	--	1980
Jack and Remove Existing Bearings	Each	64	--	64
Furnish and Erect Structural Steel	kg	2800	--	2800
Bridge Deck Grooving	m <sup>2</sup>	1800	--	1800
Formed Concrete Repair (Depth 4-125 mm)	m <sup>2</sup>	--	24.2	24.2
Pedestrian Railing	m	240	--	240
Cleaning and Painting Steel Bridge	L. Sum	0.25	--	0.25
Power Tool Cleaning Residue Containment and Disposal	L. Sum	0.25	--	0.25
Blasting Residue Containment and Disposal	L. Sum	0.25	--	0.25
Bridge Seat Sealer	m <sup>2</sup>	--	40	40
Epoxy Crack Sealing	m	--	2.8	2.8
Bar Splacers	Each	999	--	999
Slopedoff 100 mm	m <sup>2</sup>	--	21	21
Slopedoff Removal	m <sup>2</sup>	--	11	11
Stud Shear Connectors	Each	7920	--	7920

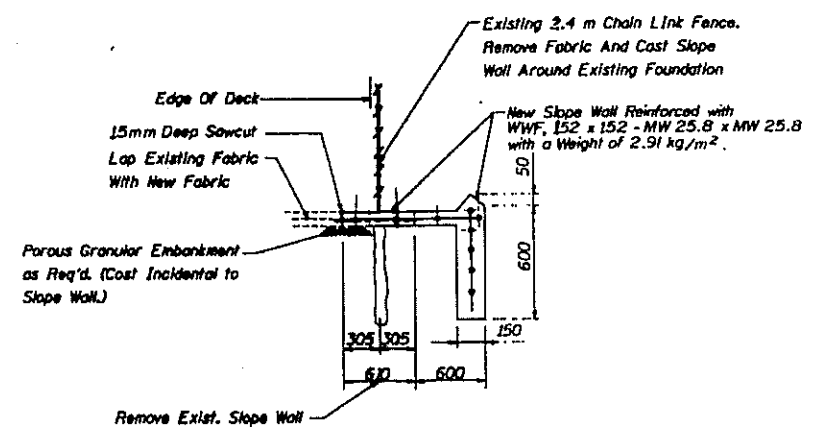
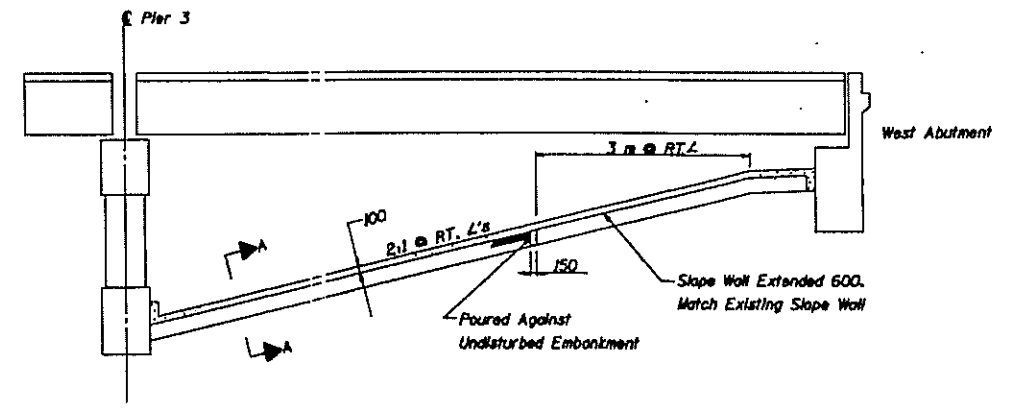
\* Deck Surface Not Included In The Quantity

**MAJOR WORK ITEMS**

1. Remove and replace bridge deck.
2. Replace bearings at Piers 1 & 3.
3. Clean and paint existing and new steel.
4. Remove railing and fence and replace with concrete parapet and pedestrian railing.

**General Notes**

1. Fasteners shall be high strength bolts. Bolts M22 mm  $\phi$ , open holes 24 mm  $\phi$ , unless otherwise noted.
2. The inorganic zinc rich primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the acrylic finish shall be light grey, Munsell No. 10 Y 7/1. See Special Provision "Cleaning and Painting Metal Structures".
3. Field welding of construction accessories will not be permitted to the bottom flange of beams or girders nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.
4. Reinforcement bars shall conform to the requirements of AASHTO M-31M, M-42 M or M-53 M Grade 400.
5. 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.
6. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 3 mm. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 3 mm adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. For Type I Elastomeric Bearings, shims of the dimensions of the top plate shall be provided and placed as detailed.
7. Cleaning and painting of existing structural steel shall be as specified in the Special Provision for "Cleaning and Painting Existing Steel Structures". All existing structural steel within 1.5 m of either side of expansion joints and Piers shall be cleaned by Method 1. All remaining existing structural steel shall be cleaned by Method 2. The Lead and Chromate Free Alkyd Paint System shall be used for painting of existing structural steel. The prime and intermediate coats shall be applied as specified in the special provision followed by one complete final finish coat over all steel surfaces. The color of the finish coat shall be Reddish-Brown, Munsell No. 2.5 YR3/4 for fascias and Light Gray, Munsell No. 10 Y 7/1 for all other areas.
8. All dimensions are in millimeters (mm) except as noted.
9. Bridge Seat Sealer shall be applied to the seat area of Piers 1 & 3.
10. Contractor shall coordinate with Utility Companies and determine the extent of replacement of Conduits suspended under the deck. Protect and maintain existing underpass luminaires.
11. The existing utilities have been taken from the original plans and from field observations. The information shown concerning type and location is not guaranteed to be accurate or all inclusive. The Contractor is responsible for making his own determinations as to type and location of underground and other utilities as maybe necessary to avoid damage thereto.
12. Existing bridge survey has not been performed. Existing dimensions and elevations shall be verified by Contractor.



**SECTION A-A**  
(At N.W. Slope Wall Only)  
Note: See Dwg. G-1 For Location

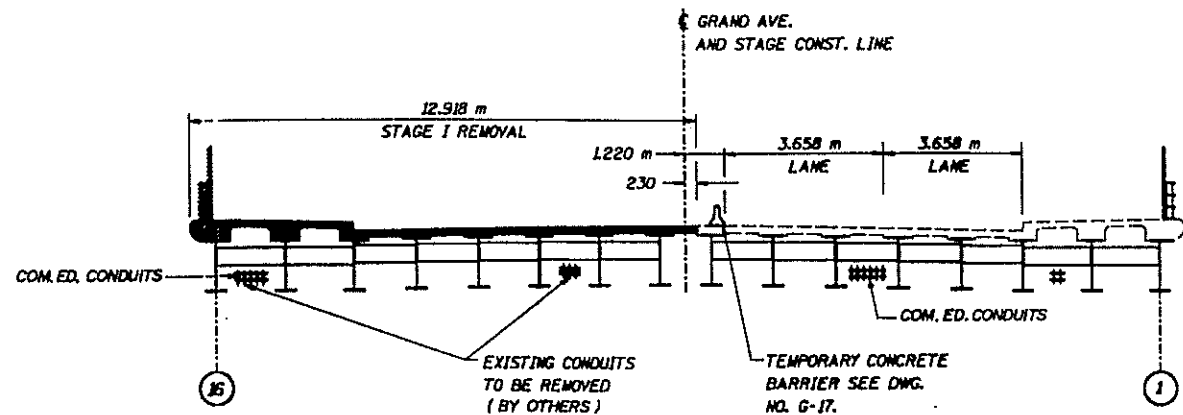
**DeLEUW  
CATHIER**

McQuinn, Wynn  
and Associates, Inc.

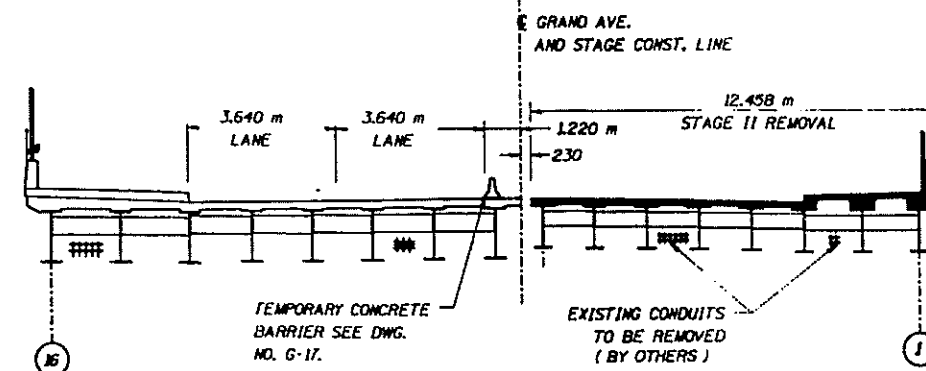
KENNEDY RECONSTRUCTION PROJECT		DATE
ILLINOIS DEPARTMENT OF TRANSPORTATION		JOB NO.
GRAND AVENUE OVER KENNEDY EXPRESSWAY		DESIGNED RCE
INDEX OF DRAWINGS, TOTAL BILL OF MATERIAL		DRAWN JIN
AND GENERAL NOTES		CHECKED ENM
F.A.I. 90/94	COOK COUNTY	APPROVED
SECTION 0303-476HB-BB	STA. 0+811.305	SCALE
DE LEUW, CATHIER & COMPANY		DRAWING NO.
ENGINEERS AND PLANNERS		G-2

IMAGE DIRECT CORP. (212) 261-1662 10/09/96 12:

SECTION	SECTION	COMMIT	TO	SHEET
F.M. 90/94	COOK		SECTION	NO.
TITLE		PROJECT		



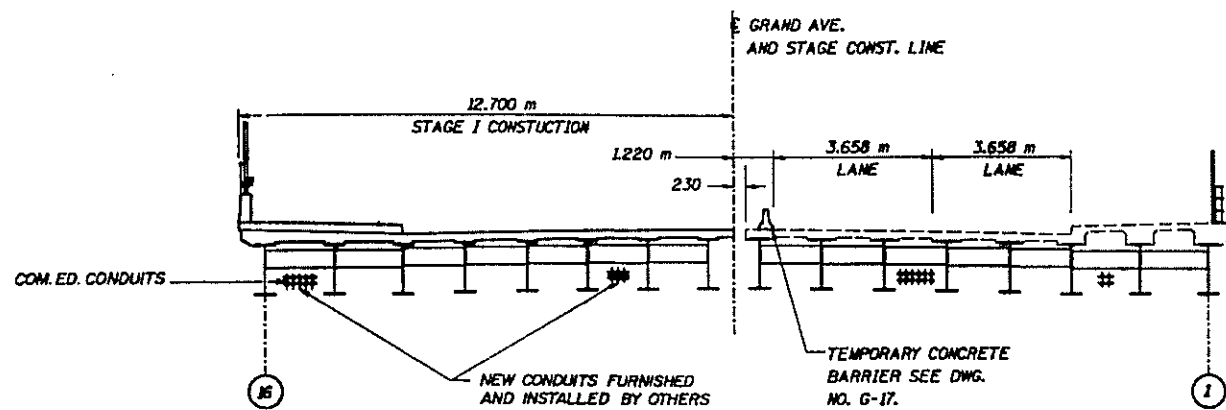
**STAGE I REMOVAL**



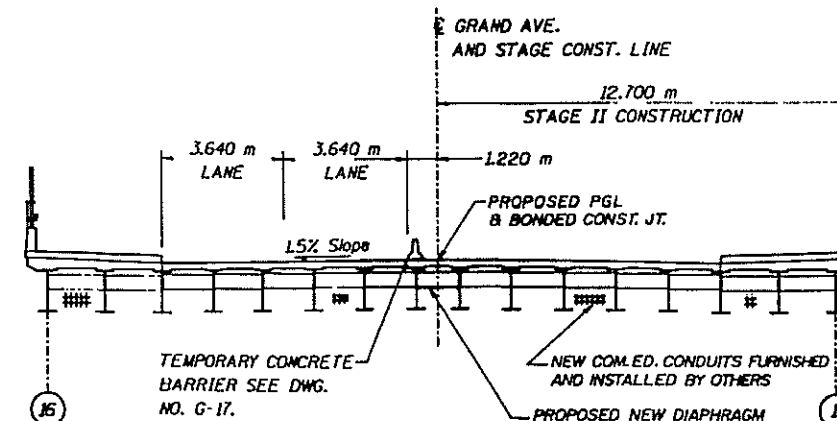
**STAGE II REMOVAL**

**LEGEND:**

- INDICATES NEW CONSTRUCTION
- INDICATES REMOVAL OF EXISTING SUPERSTRUCTURE



**STAGE I CONSTRUCTION**



**STAGE II CONSTRUCTION**

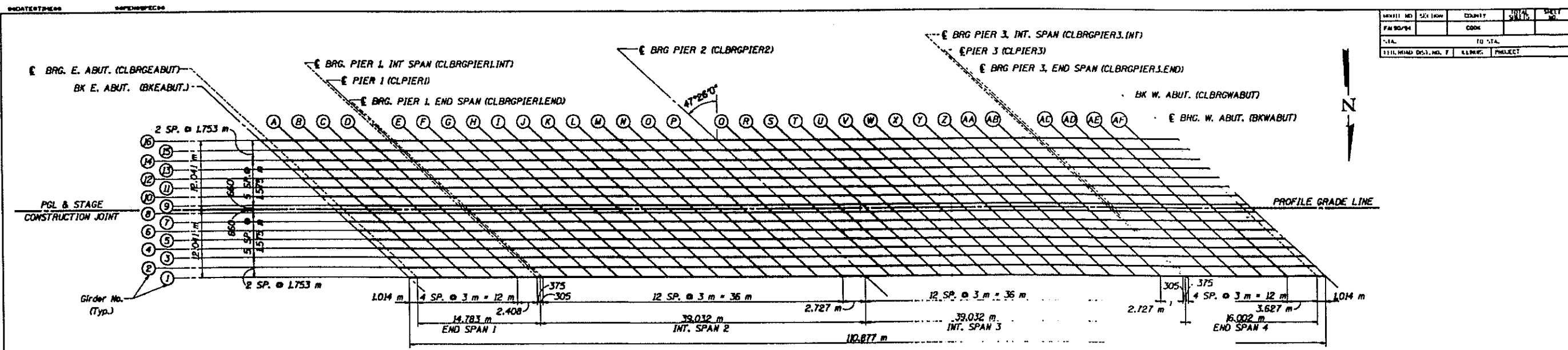
**NOTE:**  
1. PAY ITEMS FOR TEMPORARY CONCRETE BARRIERS INCLUDED IN ROADWAY PLANS.

**DELEUW  
CATHER**

**DeLeuw, Cather  
and Associates, Inc.**

KENNEDY RECONSTRUCTION PROJECT ILLINOIS DEPARTMENT OF TRANSPORTATION		DATE
GRAND AVENUE OVER KENNEDY EXPRESSWAY		JOB NO.
<b>CONSTRUCTION STAGING</b>		DESIGNED RCE
F.A.I. 90/94 SECTION 0303-476HB-BR	SN 026-2048	DRAWN JH
COOK COUNTY STA. 0+811.305		CHECKED EMM
DE LEUW, CATHER & COMPANY ENGINEERS AND PLANNERS		APPROVED
		SCALE
		DRAWING NO.
		<b>G-3</b>

IMAGE DIRECT CORP. (212) 251-1063 10/09/96 12



DATE	NO.	BY	REVISION
11/11/04	1	MM	REVISED

PLAN

**GIRDER 1**

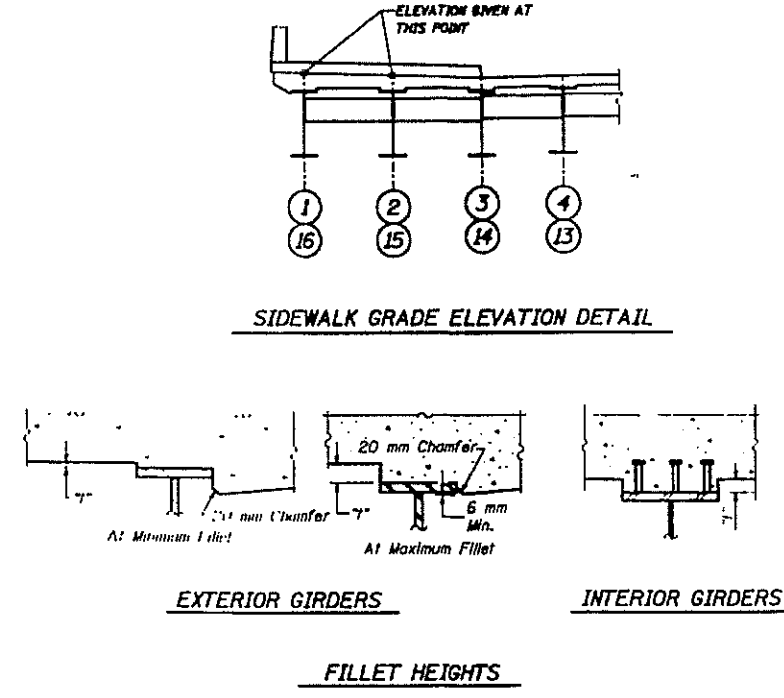
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK E. ABUT.	0+766.500	12.041	181.832	181.832
CLBRGABUT	0+770.600	12.041	181.863	181.863
A	0+773.600	12.041	181.731	181.736
B	0+776.600	12.041	181.832	181.839
C	0+779.600	12.041	181.904	181.911
D	0+782.600	12.041	181.969	181.972
CLBRGPIER1. END	0+785.000	12.041	182.015	182.015
CLPIER1	0+785.383	12.041	182.022	182.022
CLBRGPIER1. INT	0+785.680	12.041	182.027	182.027
E	0+786.680	12.041	182.078	182.094
F	0+781.680	12.041	182.117	182.150
G	0+784.680	12.041	182.149	182.193
H	0+797.680	12.041	182.174	182.225
I	0+800.680	12.041	182.192	182.246
J	0+803.680	12.041	182.201	182.256
K	0+806.680	12.041	182.202	182.254
L	0+809.680	12.041	182.196	182.242
M	0+812.680	12.041	182.181	182.220
N	0+815.680	12.041	182.159	182.188
O	0+818.680	12.041	182.129	182.148
P	0+821.680	12.041	182.091	182.100
CLBRGPIER2	0+824.415	12.041	182.050	182.050
Q	0+827.415	12.041	181.987	182.008
R	0+830.415	12.041	181.936	181.935
S	0+833.415	12.041	181.867	181.897
T	0+836.415	12.041	181.791	181.830
U	0+839.415	12.041	181.706	181.753
V	0+842.415	12.041	181.614	181.666
W	0+845.415	12.041	181.513	181.569
X	0+848.415	12.041	181.405	181.460
Y	0+851.415	12.041	181.289	181.340
Z	0+854.415	12.041	181.173	181.216
AA	0+857.415	12.041	181.068	181.100
AB	0+860.415	12.041	180.976	180.992
CLBRGPIER3. INT	0+863.142	12.041	180.902	180.902
CLPIER3	0+863.447	12.041	180.894	180.894
CLBRGPIER3. END	0+863.822	12.041	180.885	180.885
AC	0+866.822	12.041	180.817	180.821
AD	0+869.822	12.041	180.762	180.768
AE	0+872.822	12.041	180.718	180.725
AF	0+875.822	12.041	180.686	180.690
CLBRGWABUT	0+879.449	12.041	180.663	180.663
BK W. ABUT.	0+880.483	12.041	180.660	180.660

**GIRDER 2**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK E. ABUT.	0+787.877	10.298	181.987	181.937
CLBRGABUT	0+788.691	10.298	181.630	181.630
A	0+771.691	10.298	181.783	181.728
B	0+774.691	10.298	181.809	181.816
C	0+777.691	10.298	181.866	181.893
D	0+780.691	10.298	181.960	181.958
CLBRGPIER1. END	0+783.099	10.298	182.008	182.008
CLPIER1	0+783.474	10.298	182.013	182.013
CLBRGPIER1. INT	0+783.779	10.298	182.019	182.019
E	0+786.779	10.298	182.073	182.091
F	0+789.779	10.298	182.119	182.152
G	0+792.779	10.298	182.157	182.201
H	0+795.779	10.298	182.187	182.238
I	0+798.779	10.298	182.209	182.264
J	0+801.779	10.298	182.223	182.278
K	0+804.779	10.298	182.230	182.282
L	0+807.779	10.298	182.228	182.274
M	0+810.779	10.298	182.219	182.257
N	0+813.779	10.298	182.201	182.230
O	0+816.779	10.298	182.178	182.200
P	0+819.779	10.298	182.143	182.152
CLBRGPIER2	0+822.506	10.298	182.107	182.107
Q	0+825.506	10.298	182.068	182.068
R	0+828.506	10.298	182.003	182.022
S	0+831.506	10.298	181.939	181.969
T	0+834.506	10.298	181.867	181.907
U	0+837.506	10.298	181.788	181.835
V	0+840.506	10.298	181.701	181.753
W	0+843.506	10.298	181.605	181.660
X	0+846.506	10.298	181.502	181.557
Y	0+849.506	10.298	181.391	181.442
Z	0+852.506	10.298	181.273	181.316
AA	0+855.506	10.298	181.161	181.193
AB	0+858.506	10.298	181.061	181.077
CLBRGPIER3. INT	0+861.233	10.298	180.980	180.980
CLPIER3	0+861.538	10.298	180.971	180.971
CLBRGPIER3. END	0+861.913	10.298	180.961	180.961
AC	0+864.913	10.298	180.886	180.890
AD	0+867.913	10.298	180.829	180.829
AE	0+870.913	10.298	180.771	180.778
AF	0+873.913	10.298	180.732	180.737
CLBRGWABUT	0+877.540	10.298	180.700	180.700
BK W. ABUT.	0+878.554	10.298	180.694	180.694

**GIRDER 3**

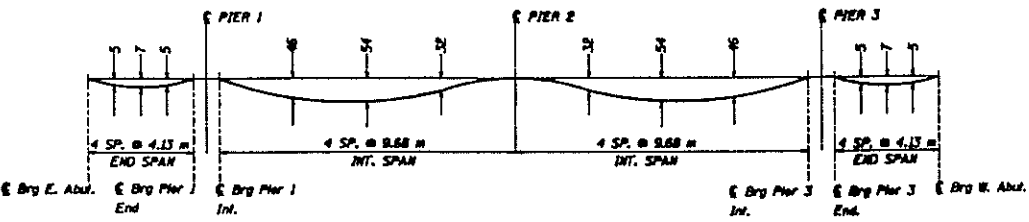
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK E. ABUT.	0+788.788	8.335	181.539	181.539
CLBRGABUT	0+788.783	8.335	181.594	181.594
A	0+788.783	8.335	181.693	181.693
B	0+778.783	8.335	181.783	181.790
C	0+773.783	8.335	181.866	181.872
D	0+778.783	8.335	181.940	181.944
CLBRGPIER1. END	0+781.191	8.335	181.994	181.994
CLPIER1	0+781.596	8.335	182.002	182.002
CLBRGPIER1. INT	0+781.871	8.335	182.009	182.009
E	0+784.871	8.335	182.067	182.086
F	0+787.871	8.335	182.118	182.151
G	0+790.871	8.335	182.161	182.205
H	0+793.871	8.335	182.196	182.247
I	0+796.871	8.335	182.223	182.278
J	0+799.871	8.335	182.243	182.298
K	0+802.871	8.335	182.254	182.306
L	0+805.871	8.335	182.258	182.304
M	0+808.871	8.335	182.251	182.292
N	0+811.871	8.335	182.241	182.270
O	0+814.871	8.335	182.221	182.240
P	0+817.871	8.335	182.193	182.201
CLBRGPIER2	0+820.596	8.335	182.161	182.161
Q	0+823.596	8.335	182.118	182.127
R	0+826.596	8.335	182.067	182.086
S	0+829.596	8.335	182.008	182.038
T	0+832.596	8.335	181.942	181.981
U	0+835.596	8.335	181.867	181.914
V	0+838.596	8.335	181.785	181.837
W	0+841.596	8.335	181.695	181.750
X	0+844.596	8.335	181.596	181.651
Y	0+847.596	8.335	181.490	181.541
Z	0+850.596	8.335	181.377	181.420
AA	0+853.596	8.335	181.259	181.290
AB	0+856.596	8.335	181.131	181.167
CLBRGPIER3. INT	0+859.378	8.335	181.063	181.063
CLPIER3	0+859.630	8.335	181.054	181.054
CLBRGPIER3. END	0+860.008	8.335	181.043	181.043
AC	0+861.008	8.335	180.980	180.964
AD	0+864.008	8.335	180.889	180.896
AE	0+868.008	8.335	180.830	180.837
AF	0+872.008	8.335	180.783	180.788
CLBRGWABUT	0+875.636	8.335	180.742	180.742
BK W. ABUT.	0+876.646	8.335	180.734	180.734



SIDEWALK GRADE ELEVATION DETAIL  
EXTERIOR GIRDERS  
INTERIOR GIRDERS  
FILLET HEIGHTS

To determine "f". After all structural steel has been erected, elevations of the top flanges of the girders shall be taken at the stations shown. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection", minus three (3) times equals the fillet heights above top flange of girder.

\* The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown above and Dwg's G-5 & G-6. All dimensions are in millimeters (mm) except as noted. All elevations and offsets are in meters.



\* DEAD LOAD DEFLECTION DIAGRAM  
(Includes weight of concrete only)

DE LEUW  
CATHER

KENNEDY RECONSTRUCTION PROJECT ILLINOIS DEPARTMENT OF TRANSPORTATION GRAND AVENUE OVER KENNEDY EXPRESSWAY			DATE
TOP OF SLAB PLAN			JOB NO.
F.A.L. 90/94 SECTION 0303-176HB-BR SN 016-2048			DESIGNED RCE
COOK COUNTY STA. 0+811.305			DRAWN JW
DE LEUW, CATHER & COMPANY ENGINEERS AND PLANNERS			CHECKED ENM
ML 3411 MWJH HY			APPROVED
			SCALE
			DRAWING NO. G-4

IMAGE DIRECTOR CORP. (812) -251-1962 10/09/96 12:11

ROUTE NO SECTION COUNTY TOTAL SHEETS SHEET NO. STA. TO STA. FED. ROAD DIST. NO. 7 ILLINOIS PROJECT

GIRDER 4

Table with 5 columns: Location, Station, Offset, Theoretical Grade Elevations, Theoretical Grade Elevations Adjusted For Dead Load Deflection. Rows include locations like BREAUT, CLWBREAUT, A through Z, AA through AF, and various CLBWP/CLP/CLAE/CLBWAUT stations.

GIRDER 5

Table with 5 columns: Location, Station, Offset, Theoretical Grade Elevations, Theoretical Grade Elevations Adjusted For Dead Load Deflection. Rows include locations like BREAUT, CLWBREAUT, A through Z, AA through AF, and various CLBWP/CLP/CLAE/CLBWAUT stations.

GIRDER 6

Table with 5 columns: Location, Station, Offset, Theoretical Grade Elevations, Theoretical Grade Elevations Adjusted For Dead Load Deflection. Rows include locations like BREAUT, CLWBREAUT, A through Z, AA through AF, and various CLBWP/CLP/CLAE/CLBWAUT stations.

GIRDER 9

Table with 5 columns: Location, Station, Offset, Theoretical Grade Elevations, Theoretical Grade Elevations Adjusted For Dead Load Deflection. Rows include locations like BREAUT, CLWBREAUT, A through Z, AA through AF, and various CLBWP/CLP/CLAE/CLBWAUT stations.

GIRDER 7

Table with 5 columns: Location, Station, Offset, Theoretical Grade Elevations, Theoretical Grade Elevations Adjusted For Dead Load Deflection. Rows include locations like BREAUT, CLWBREAUT, A through Z, AA through AF, and various CLBWP/CLP/CLAE/CLBWAUT stations.

GIRDER 8

Table with 5 columns: Location, Station, Offset, Theoretical Grade Elevations, Theoretical Grade Elevations Adjusted For Dead Load Deflection. Rows include locations like BREAUT, CLWBREAUT, A through Z, AA through AF, and various CLBWP/CLP/CLAE/CLBWAUT stations.

PGL

Table with 5 columns: Location, Station, Offset, Theoretical Grade Elevations, Theoretical Grade Elevations Adjusted For Dead Load Deflection. Rows include locations like BREAUT, CLWBREAUT, A through Z, AA through AF, and various CLBWP/CLP/CLAE/CLBWAUT stations.

DELEUW CATHER

McKenzie, Myers and Associates, Inc.

KENNEDY RECONSTRUCTION PROJECT ILLINOIS DEPARTMENT OF TRANSPORTATION GRAND AVENUE OVER KENNEDY EXPRESSWAY TOP OF SLAB ELEVATIONS DATE JOB NO. DESIGNED RCE DRAWN JN CHECKED EMM APPROVED SCALE DRIVING NO. G-5

GIRDER 10

Table for GIRDER 10 showing location, station, offset, theoretical grade, and theoretical grade adjusted for dead load. Includes locations like BEARIBUT, CLAMPERS, and various points A through Z.

GIRDER 11

Table for GIRDER 11 showing location, station, offset, theoretical grade, and theoretical grade adjusted for dead load. Includes locations like BEARIBUT, CLAMPERS, and various points A through Z.

GIRDER 12

Table for GIRDER 12 showing location, station, offset, theoretical grade, and theoretical grade adjusted for dead load. Includes locations like BEARIBUT, CLAMPERS, and various points A through Z.

GIRDER 16

Table for GIRDER 16 showing location, station, offset, theoretical grade, and theoretical grade adjusted for dead load. Includes locations like BEARIBUT, CLAMPERS, and various points A through Z.

GIRDER 13

Table for GIRDER 13 showing location, station, offset, theoretical grade, and theoretical grade adjusted for dead load. Includes locations like BEARIBUT, CLAMPERS, and various points A through Z.

GIRDER 14

Table for GIRDER 14 showing location, station, offset, theoretical grade, and theoretical grade adjusted for dead load. Includes locations like BEARIBUT, CLAMPERS, and various points A through Z.

GIRDER 15

Table for GIRDER 15 showing location, station, offset, theoretical grade, and theoretical grade adjusted for dead load. Includes locations like BEARIBUT, CLAMPERS, and various points A through Z.

Summary table with columns: ROUTE NO, SECTION, COUNTY, TYPICAL SHEETS, SHEET NO., STA., TO STA., FED. ROAD DIST. NO., ILLINOIS PROJECT.

DOLEW CATHER

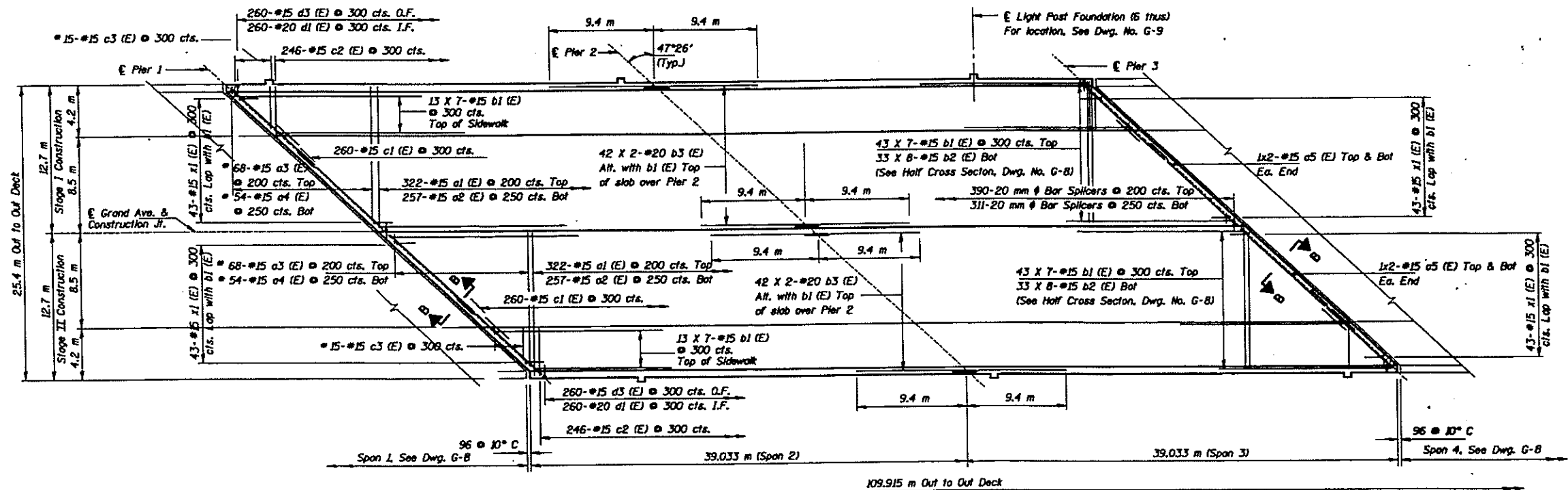
Malvern, Wynn and Associates, Inc.

KENNEDY RECONSTRUCTION PROJECT ILLINOIS DEPARTMENT OF TRANSPORTATION GRAND AVENUE OVER KENNEDY EXPRESSWAY TOP OF SLAB ELEVATIONS F.A.J. 9/0/94 SECTION 0303-476H-BR SN 016-2048 COOK COUNTY STA. 0+811.305 DE LEUW, CATHER & COMPANY ENGINEERS AND PLANNERS

Table with columns: DATE, JOB NO., DESIGNED, DRAWN, CHECKED, APPROVED, SCALE, DRAWING NO. Includes values like RCE, JH, EMM, and G-6.

IMAGE DIRECT COPY (312) 251-1962 10/09/96 12:

DATE: 10/09/96



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FARM/PM	COOR			
STA.	TO STA.			
FED. ROAD DIST. NO. T	LINDS		PROJECT	

BILL OF MATERIAL				
Bar No.	Size	Length (m)	Shape	
a1 (E)	696	12.6		
a2 (E)	554	12.3		
a3 (E)	408	12.7		
a4 (E)	324	12.4		
a5 (E)	48	9.65		
b1 (E)	720	11.57		
b2 (E)	528	10.19		
b3 (E)	168	9.7		
b4 (E)	212	15.62		
b5 (E)	212	16.84		
c1 (E)	732	0.73		
c2 (E)	640	4.14		
c3 (E)	90	4.15		
d1 (E)	724	1.37		
d2 (E)	184	0.53		
d3 (E)	732	1.68		
d4 (E)	18	1.26		
e1 (E)	48	5.13		
e2 (E)	224	5.48		
e3 (E)	48	5.58		
e4 (E)	24	1.27		
x1 (E)	344	1.28		
ITEM	UNIT	TOTAL		
Reinforcement Bars Epoxy Coated	kg	90720		
Concrete Superstructure	m <sup>3</sup>	876.4		
Bridge Deck Grooving	m <sup>2</sup>	1800		
Bar Splicers	Each	991		
Protective Coat	m <sup>2</sup>	1146		

Hatched area to be poured after superstructure forms have been removed. Quantity of Concrete Included with Concrete Superstructure. Rebars bled on Dwg. No. G-13

New Appr. Pavt. Std. 2442 (m) Special u1 (E) or u2 (E) h1 (E)

Cut Line Elev. See Dwg. G-13

Clean, Straighten and incorporate exist. vertical rebars in new construction

Back of Exist. Abut.

Preformed Joint Seal (45) See Dwg. G-16

25

25 cl.

195 Slab

25 cl.

25 cl.

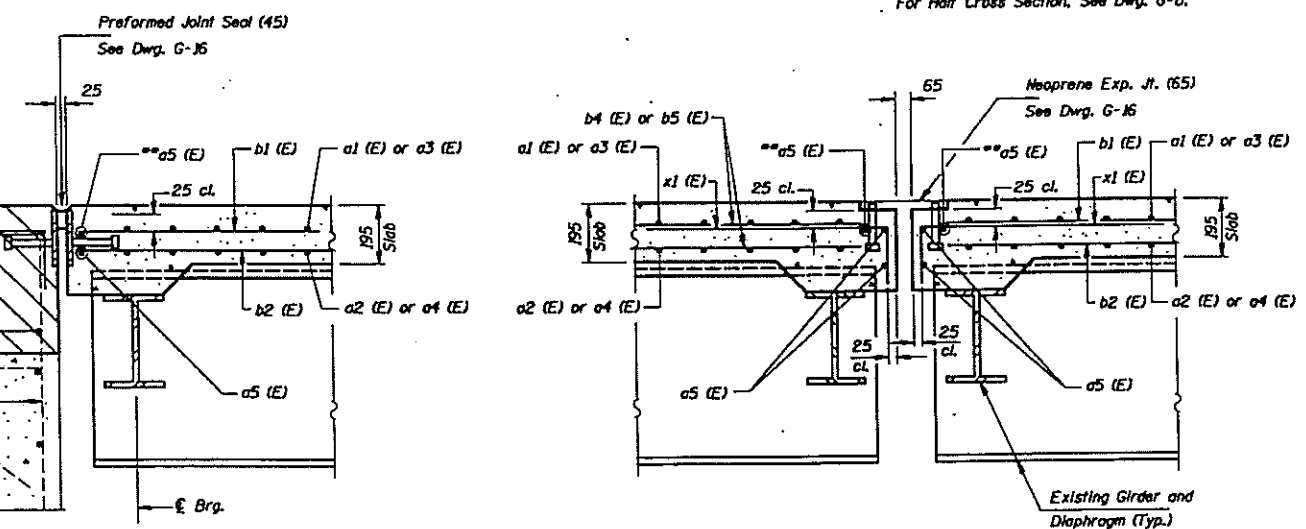
25 cl.

25 cl.

25 cl.

25 cl.

PLAN SPANS 2 & 3 For Half Cross Section, See Dwg. G-8.

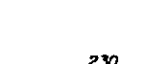


SECTION B-B AT RT. Ls

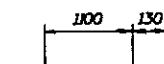
Place a5 (E) bars in back of anchor bolts as shown if required to maintain 25 mm cl. (+0-3 mm). Anchor bolts should be tied to a5 (E) and h (E) bars.

SECTION A-A AT RT. Ls

Note: For location of Section A-A, See Dwg. G-8.



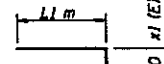
BAR d2 (E)



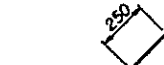
BAR d3 (E)



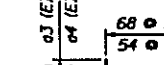
BAR d4 (E)



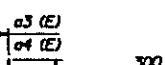
BAR x1 (E) & d1 (E)



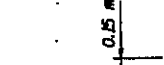
BAR a5 (E)



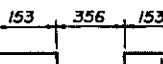
BAR a3 (E) & a4 (E)



BAR c1 (E)



BAR c3 (E)



BAR e4 (E)

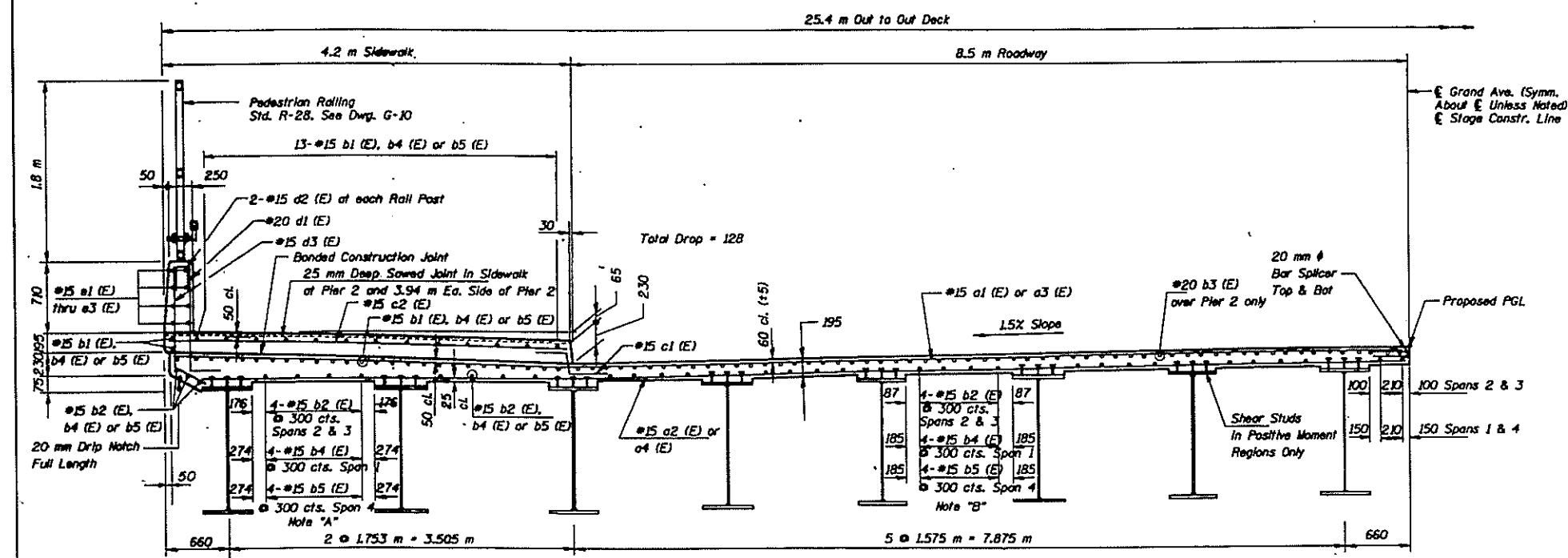
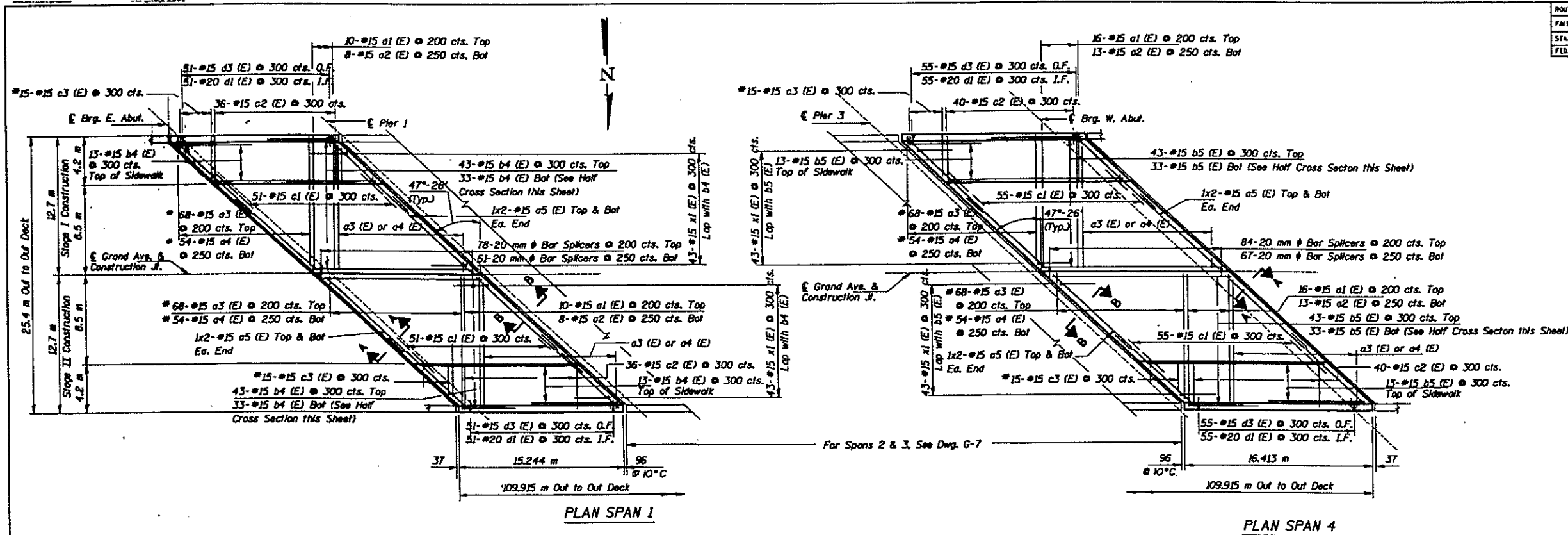
NO.	DATE	REVISION	BY

KENNEDY RECONSTRUCTION PROJECT  
ILLINOIS DEPARTMENT OF TRANSPORTATION  
GRAND AVENUE OVER KENNEDY EXPRESSWAY  
SUPERSTRUCTURE - SPANS 2 & 3  
F.A.I. 90/94 SECTION 0303-1784B-BR SH 035-2048  
COOK COUNTY STA. 0-811305  
DE LEJW, CATHER & COMPANY  
ENGINEERS AND PLANNERS

DATE	
JOB NO.	
DESIGNED	RCE
DRAWN	JN
CHECKED	EMM
APPROVED	
SCALE	
DRAWING NO.	G-7

DE LEJW  
CATHER

ROUTE NO.	SECTION	COUNTY	TITLE	SHEET NO.
F&M/94		COOK		
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		



- Notes**
1. For Bill of Material, Section A-A, Section B-B, and Bar Cutting Diagrams, See Dwg. G-7.
  2. \* Indicates order bars a3 (E), a4 (E) and a3 (E) full length. Cut bars in field to fit skew and use remainder of bars in opposite end.
  3. For Parapet Details and Rail Post Spacing, See Dwg. G-9.

**DELEUW  
CATHER**

**Note "A"**  
Reinforcing shown is typical for girders spaced 1.753 m apart.

**HALF CROSS SECTION (LOOKING WEST)**

**Note "B"**  
Reinforcing shown is typical for girders spaced 1.575 m apart.

**Makowski, Wynn  
and Associates, Inc.**

NO.	DATE	REVISION	BY

KENNEDY RECONSTRUCTION PROJECT  
ILLINOIS DEPARTMENT OF TRANSPORTATION

GRAND AVENUE OVER KENNEDY EXPRESSWAY

**SUPERSTRUCTURE - SPANS 1 & 4**

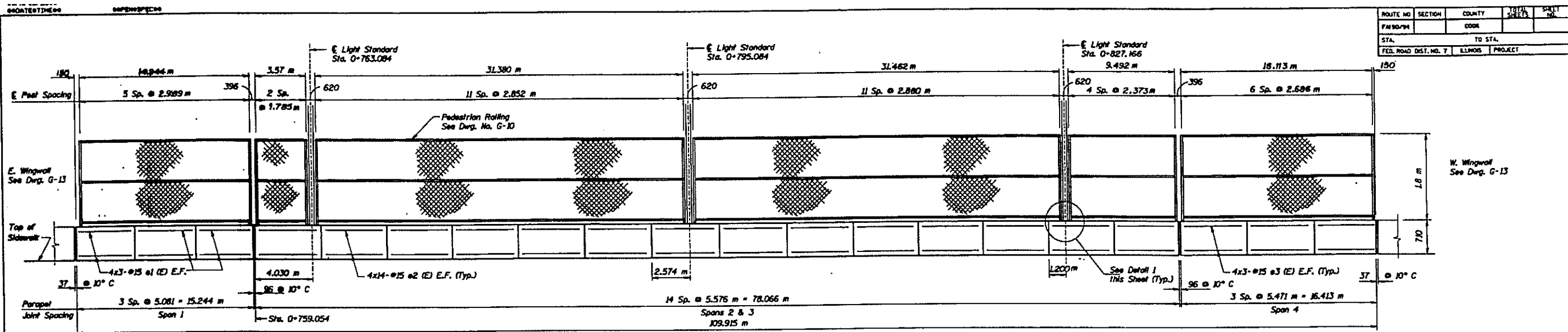
F.A.I. 90/94 SECTION 0303-476B-BP SN 015-2048 COOK COUNTY STA. G-BLL-305

DE LEUW, CATHER & COMPANY  
ENGINEERS AND PLANNERS

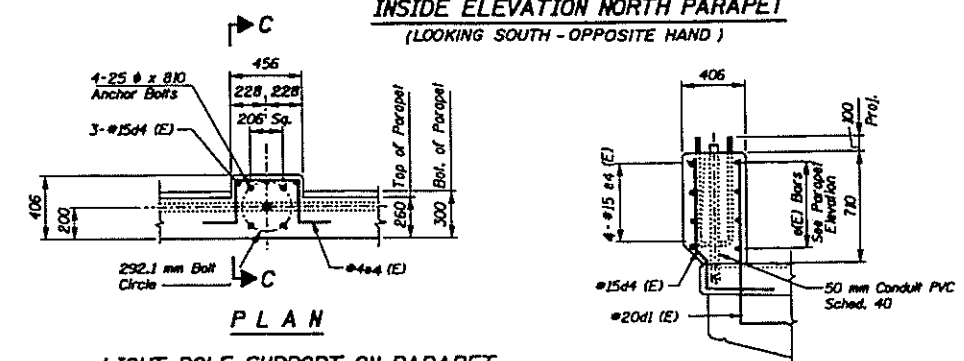
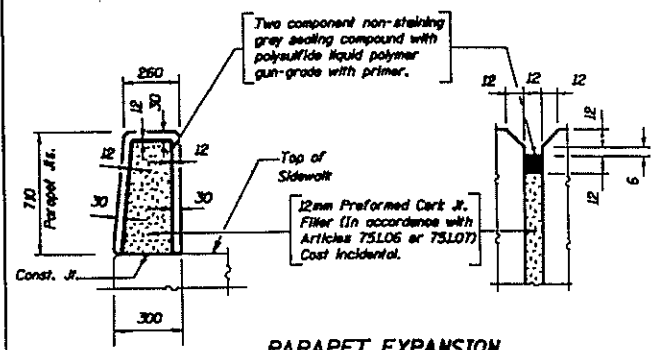
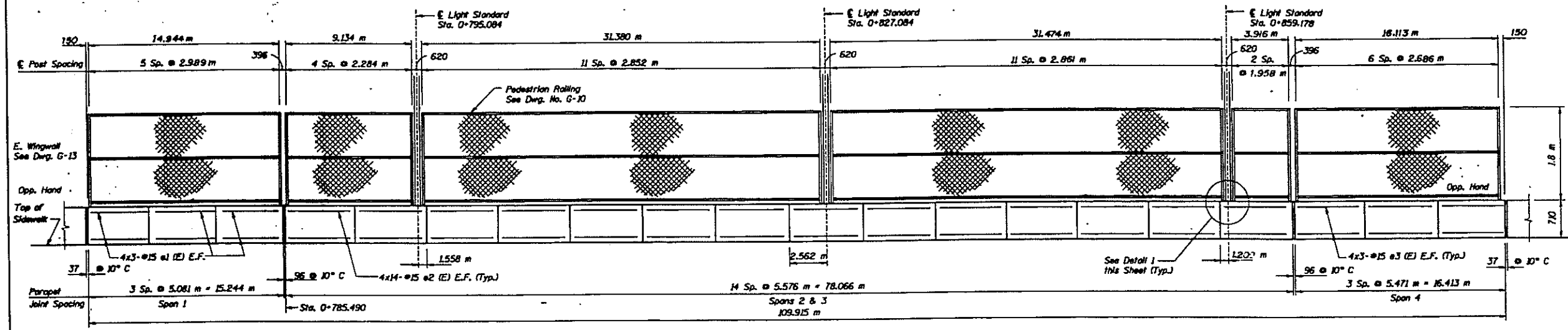
DATE	
JOB NO.	
DESIGNED	RCE
DRAWN	JW
CHECKED	EMM
APPROVED	
SCALE	
DRAWING NO.	G-8

IMAGE PROJECT CORR (212) 251-1063 10/29/96 61

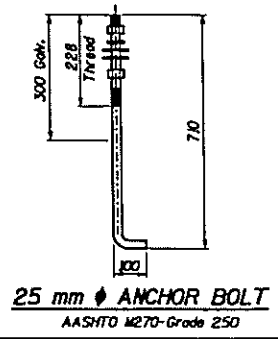




Note  
Reinforcement Bars and Concrete Quantities  
Included in Bill of Material on Dwg. No. 6-7.



Notes:  
Provide two hex nuts, two 76 mm O.D. Flat washers and one lockwasher for each anchor bolt. Nuts and washers shall be galvanized. All details for conduits, anchor bolts, nuts and washers shall be as approved by the Engineer.  
Existing Light Poles will be removed by the City of Chicago prior to construction.



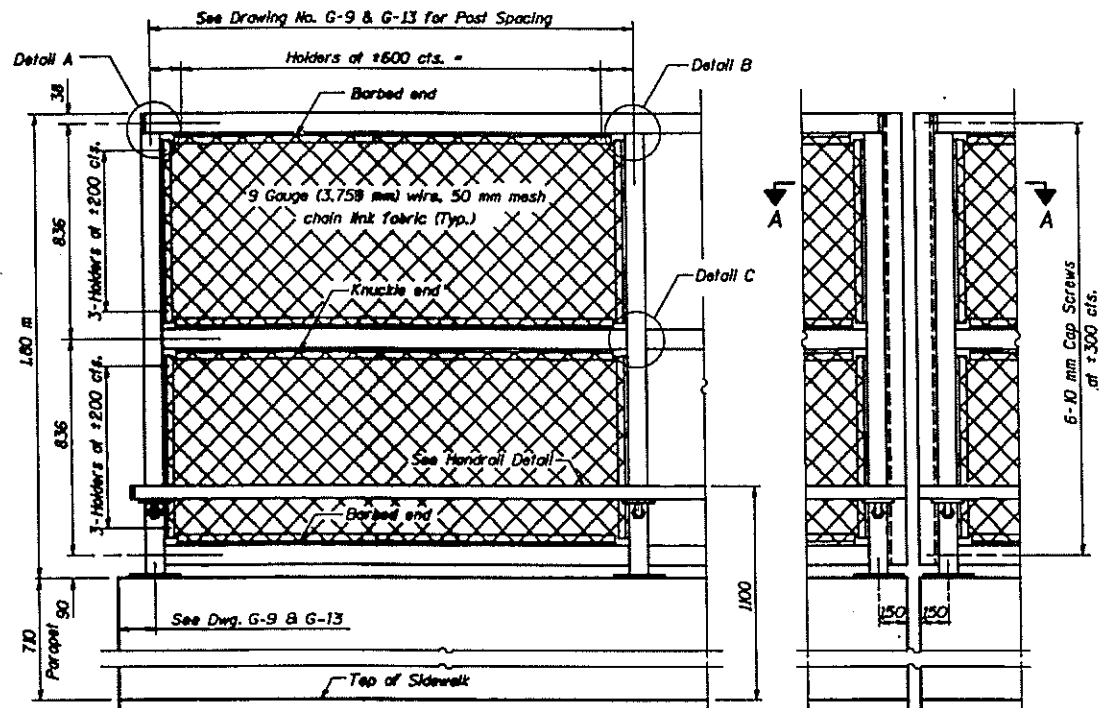
**DE LEUW CATHER**

Metcalf and Eddy, Inc.

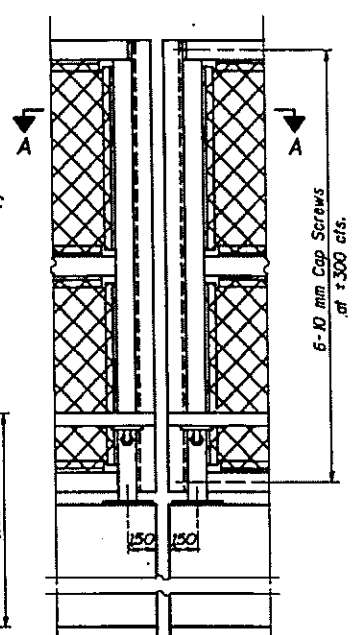
KENNEDY RECONSTRUCTION PROJECT				DATE
ILLINOIS DEPARTMENT OF TRANSPORTATION				JOB NO.
GRAND AVENUE OVER KENNEDY EXPRESSWAY				DESIGNED RCE
SUPERSTRUCTURE DETAILS				DRAWN JN
F.A.J. 90/94 SECTION 0303-4764B-BR SH 016-2048				CHECKED EMM
COOK COUNTY STA. 0+811.305				APPROVED
DE LEUW, CATHER & COMPANY ENGINEERS AND PLANNERS				SCALE
DRAWING NO. G-9				

IMAGE REPRODUCTION (2) 251-1063 10/29/95 01

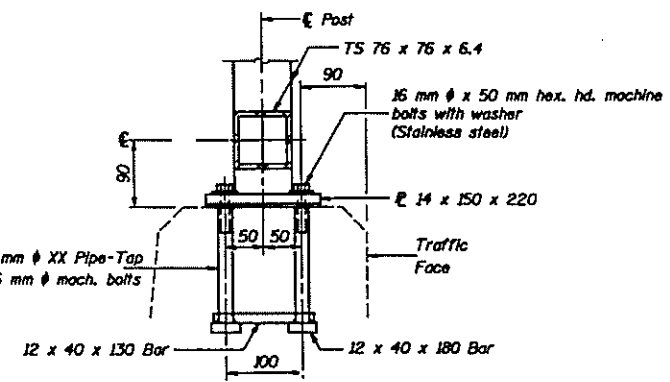
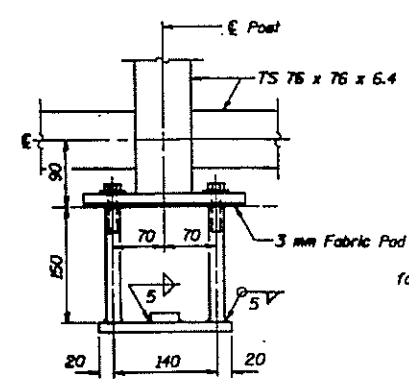
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F&M/PM		COOK		
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		



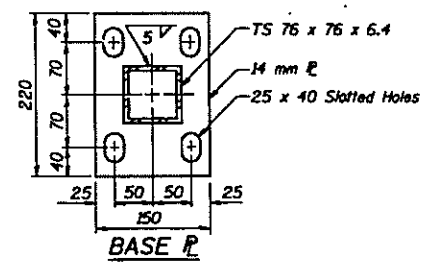
**ELEVATION**  
(Inside Face)



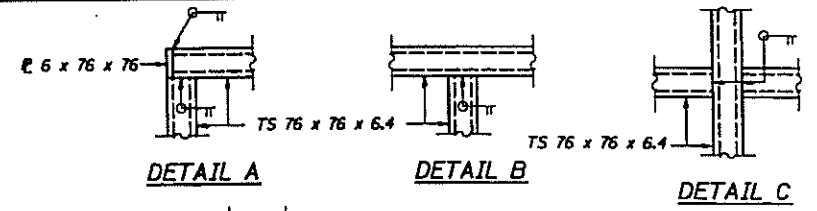
**ELEVATION**  
(At Expansion Joint)



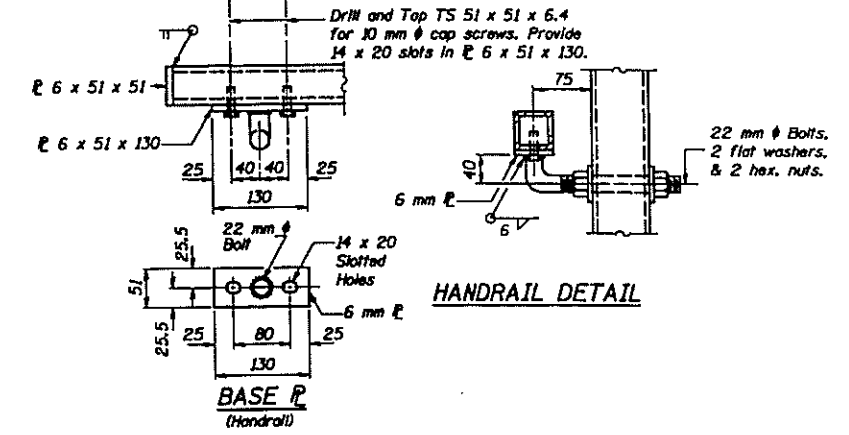
**ANCHOR BOLT DETAILS**



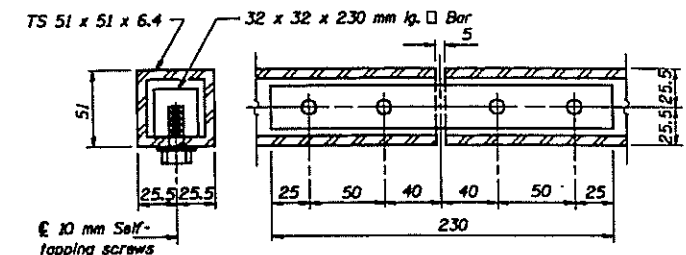
**BASE P**



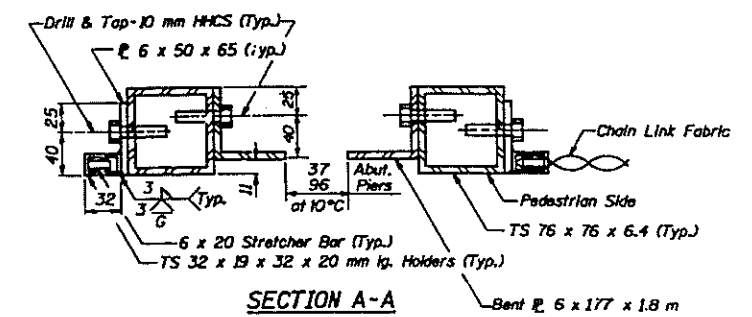
**DETAIL A**      **DETAIL B**      **DETAIL C**



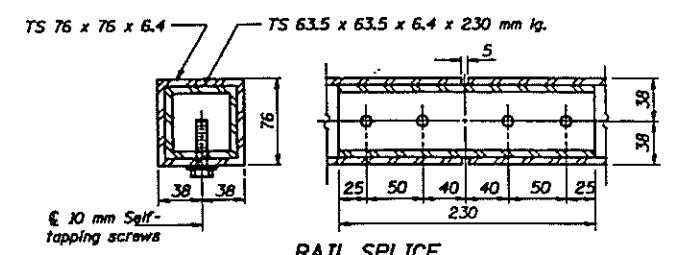
**HANDRAIL DETAIL**



**HANDRAIL SPLICE**



**SECTION A-A**



**RAIL SPLICE**

**NOTES**

Railing shall be in accordance with Section 509 of the Standard Specifications, except as noted, and will be paid for at the Contract Unit Price per meter for Pedestrian Railing.

The 9 gauge (3.75 mm) fabric ties shall be in accordance with Article 706.27(d) of the Standard Specifications.

Installation of the chain link fabric shall be in accordance with Section 664 of the Standard Specifications.

Hollow structural steel tubing shall conform to the requirements of ASTM designation A 500, Grade B, structural steel tubing.

All other steel shapes and plates shall conform to the requirements of AASHTO M-270 Grade 250.

The chain link fabric shall be placed along Pedestrian Side as shown on Section A-A.

Stretcher bars shall be used at all four sides of each panel.

All dimensions are in millimeters (mm) except as noted.

All posts, railing, splices, anchor devices, and bent plates shall be galvanized after shop fabrication in accordance with AASHTO M-111 and ASTM A-385. All bolts, nuts, and washers shall be galvanized in accordance with AASHTO M-232.

Vent holes for galvanizing shall be placed in the posts and rails at locations that will not allow the accumulation of moisture in the members.

The chain link fabric shall conform to the requirements of Article 706.27(a)(1)(2) or (3) of the Standard Specifications.

**BILL OF MATERIAL**

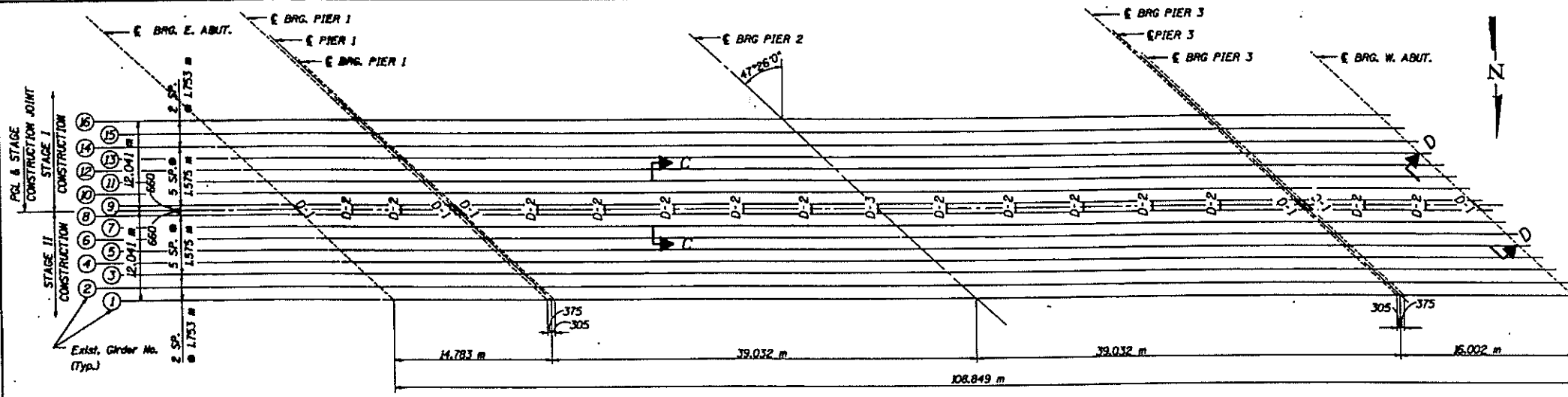
Item	Unit	Quantity
Pedestrian Railing	m	240

**DeLew Cather**

KENNEDY RECONSTRUCTION PROJECT ILLINOIS DEPARTMENT OF TRANSPORTATION				DATE
GRAND AVENUE OVER KENNEDY EXPRESSWAY				JOB NO.
<b>PEDESTRIAN RAILING</b>				DESIGNED RCE
F&I 90/94 SECTION 0303-476H8-BR SN 016-2048				DRAWN JLN
COOK COUNTY STA. 0-811305				CHECKED EMM
DE LEUW, CATHER & COMPANY ENGINEERS AND PLANNERS				APPROVED
				SCALE
				DRAWING NO. <b>G-10</b>

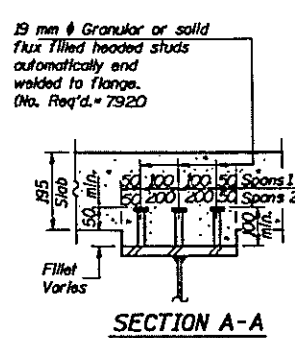
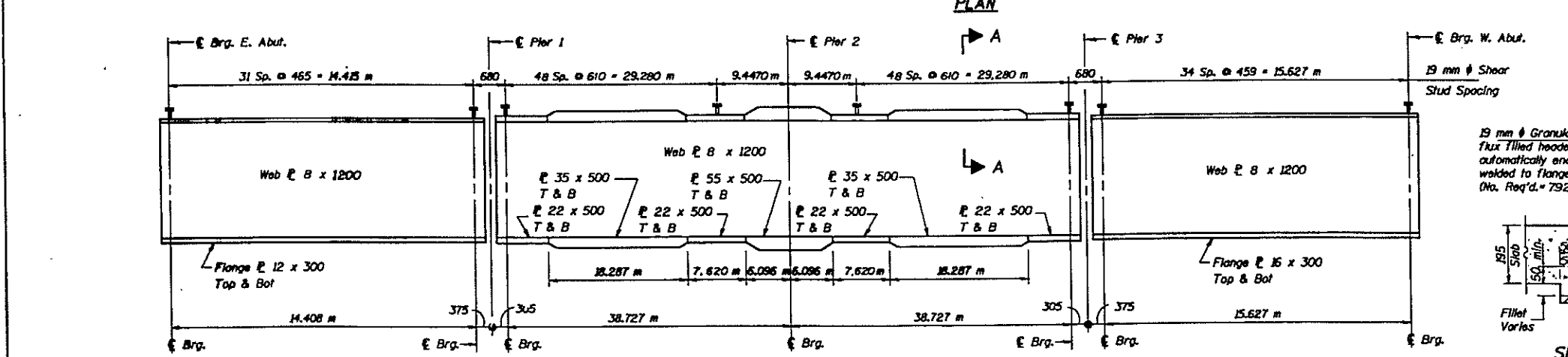
IMAGE DIRECT CORP. (312) 251-1962 10/09/96 01

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FM 90/94		COOK		
STA.		TO STA.		
FED. ROAD DIST. NO. 7		ILLINOIS PROJECT		



	0.5 Sp. 1	3/5 Sp. 2	Pier 2	6/5 Sp. 3	0.5 Sp. 4
$I_s$ ( $10^4 \text{ mm}^4$ )	4134	15124	24862	15124	4489
$I_c$ ( $10^4 \text{ mm}^4$ )	10568	26483	-	26483	11807
$I_c$ (3rd) ( $10^4 \text{ mm}^4$ )	7914	20409	-	20409	8852
$S_s$ ( $10^3 \text{ mm}^3$ )	6846	23513	37288	23513	7817
$S_c$ ( $10^3 \text{ mm}^3$ )	9304	27319	-	27319	10758
$S_c$ (3rd) ( $10^3 \text{ mm}^3$ )	8681	25653	-	25653	9863
$Z$ ( $10^3 \text{ mm}^3$ )	-	-	-	-	-
$D$ (kN/m)	9.33	12.10	16.86	12.10	9.49
$M_E$ (kN-m)	2.43	1177	3348	1177	290
$M_E$ (kN-m)	4.82	4.82	-	4.82	4.82
$M_{SE}$ (kN-m)	125	517	-	517	145
$M_{SE}$ (kN-m)	365	1053	1054	1053	412
$M$ (kN-m)	106	210	209	210	115
$S_y(M + M_{imp})$ (kN-m)	785	2106	2105	2106	879
$M_{SE}$ (kN-m)	1499	4940	7088	4940	1708
$M_{SE}$ (kN-m)	-	-	-	-	-
$I_s$ non-comp (kPa)	37	50	90	50	37
$I_s$ (comp) (kPa)	15	20	-	20	15
$I_s$ (k+imp) (kPa)	83	77	56	77	82
$I_s$ (Overload) (kPa)	135	147	146	147	134
$I_s$ (Total) (kPa)	176	191	190	191	174
$VR$ (kN)	156	182	-	182	158

	E. Abut.	Continuous Spans	Pier 2	W. Abut.
$R_P$ (kN)	102	240	825	112
$R_I$ (kN)	125	141	339	127
$R_{Imp}$ (kN)	36	28	44	36
$R$ (Total) (kN)	263	409	1208	275



$I_s$  and  $S_s$  are the moment of inertia and section modulus of the steel section used in computing  $I_s$  (Total & Overload).

$I_{cs}$  and  $S_{cs}$  are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

$I_{csw}$  and  $S_{csw}$  are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (See AASHTO 10.38)

$VR$  is the maximum Live Load + Impact shear range in span.

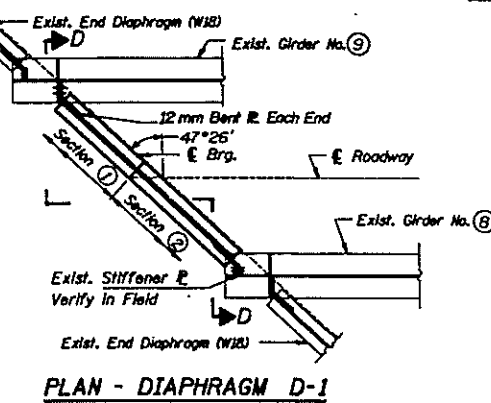
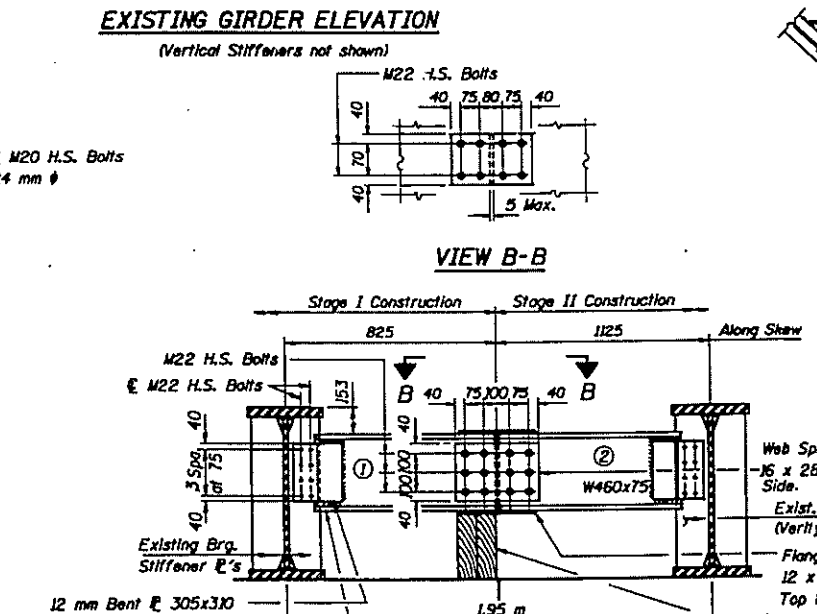
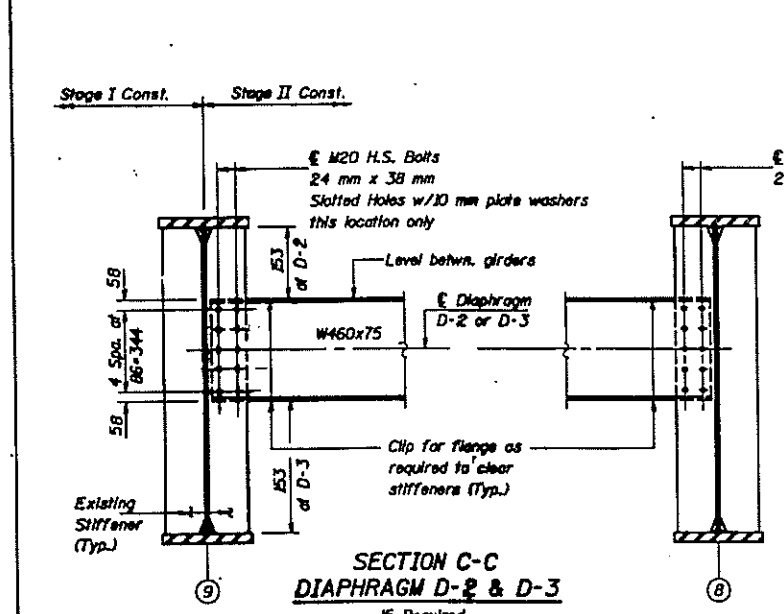
$Z$  is the plastic section modulus used to determine the fully plastic moments in the non-compacted areas.

$M_a$  (Applied Moment) =  $L_3 M_E + M_{SE} + \frac{1}{2} M_k + M_{imp}$ .

The Plastic Moment capacity ( $M_u$ ) is computed according to AASHTO 10.48.1 and 10.50.1.1.

$I_s$  (Overload) is the sum of the stresses due to  $M_E + M_{SE} + \frac{1}{2} M_k + M_{imp}$ .

$I_s$  (Total) (Non-compacted section) is the sum of the stresses due to  $L_3 M_E + M_{SE} + \frac{1}{2} M_k + M_{imp}$ .



- DIAPHRAGM D-1 CONSTRUCTION SEQUENCE**
- 1) Order Diaphragm D-1 in two sections with lengths as shown.
  - 2) Attach section (1) of Diaphragm to Beam (3) and top flange splice (E) during Stage I Construction.
  - 3) Place Timber Block Posts below section (1) of diaphragm as shown.
  - 4) Attach section (2) of diaphragm to both Beam (3) and section (1) of diaphragm during Stage II Construction.
  - 5) Attach all remaining splice plates to sections (1) and (2) of diaphragms.
  - 6) Remove Timber Block Posts.

**DELEUW CATHER**

Note: The bolts for slotted holes shall only be finger tightened prior to deck slab pouring and then fully tightened after completion of the pour.

Wt. of Structural Steel = 2,600 kg

KENNEDY RECONSTRUCTION PROJECT  
ILLINOIS DEPARTMENT OF TRANSPORTATION

GRAND AVENUE OVER KENNEDY EXPRESSWAY

**FRAMING PLAN**

F.A.I. 90/94  
SECTION 0303-475NB-BR SH 016-2048

COOK COUNTY  
STA. 0+81.305

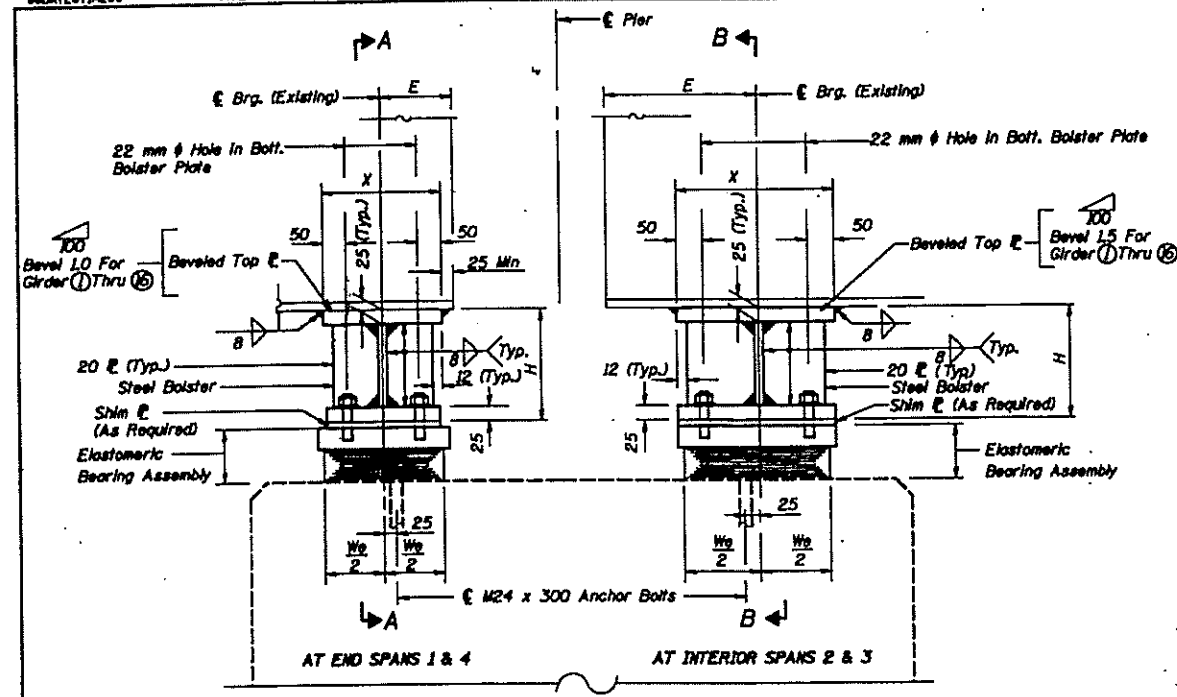
DE LEUW, CATHER & COMPANY  
ENGINEERS AND PLANNERS

DATE: \_\_\_\_\_  
JOB NO.: \_\_\_\_\_  
DESIGNED: RCE  
DRAWN: JIV  
CHECKED: ENM  
APPROVED: \_\_\_\_\_  
SCALE: \_\_\_\_\_  
DRAWING NO.: G-11

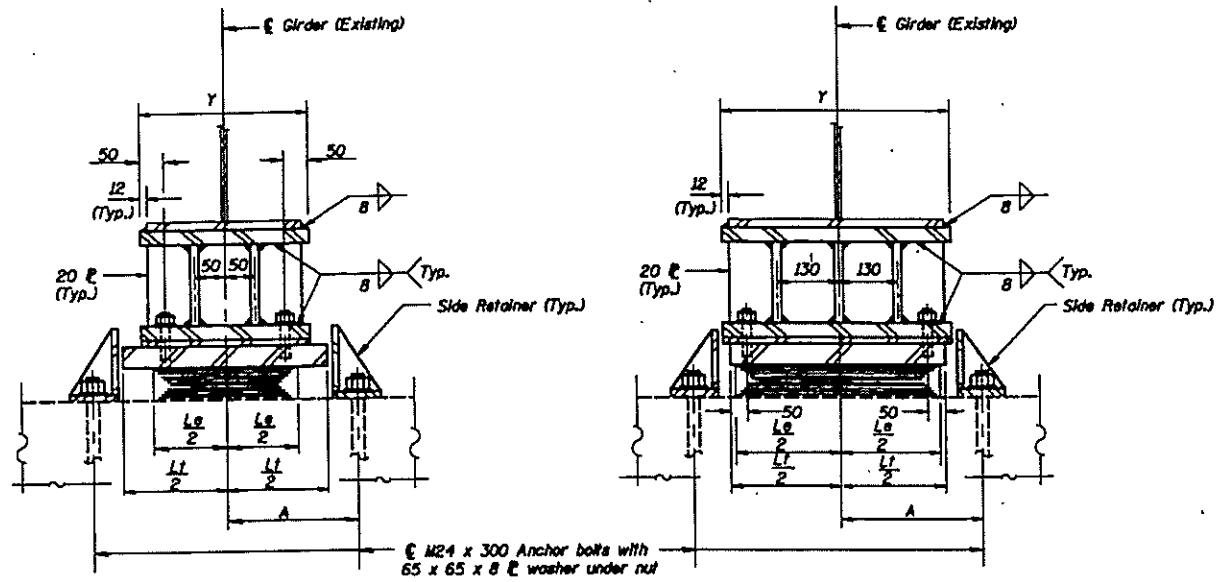
NO.	DATE	REVISION	BY

IMAGE DIRECT CORP. (312) 251-1962 10/09/96 01

ROUTE NO.	SECTION	COUNTY	SHEET NO.
FAR 98/94		COOK	
STA.	TO STA.		
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	



ELEVATION AT (PIERS 1 & 3)



SECTION A-A

SECTION B-B

**BEARING REPLACEMENT NOTES:**

1. Remove existing bearings of Piers 1 & 3 including top & bottom plates using Air Arc Method. Grind fillet weld smooth after removing plates.
2. Existing bearing to be removed. Height of new bearings plus steel bolsters are based upon dimensions from original drawings, and are subject to normal construction variations and conditions. It shall be the Contractor's responsibility to field verify existing conditions and dimensions to make approved adjustments as required prior to construction or ordering of materials. Such a variation shall not be cause for additional compensation or change in scope of work.
3. All Structural Steel shall be AASHTO M270 - Grade 250.
4. The Contractor shall supply the following steel full size shim plates for each bearing: 2-3mm Shims And 1-1.6mm Shim. AASHTO M270 - Grade 250.
5. All dimensions are in millimeters (mm) except as noted.

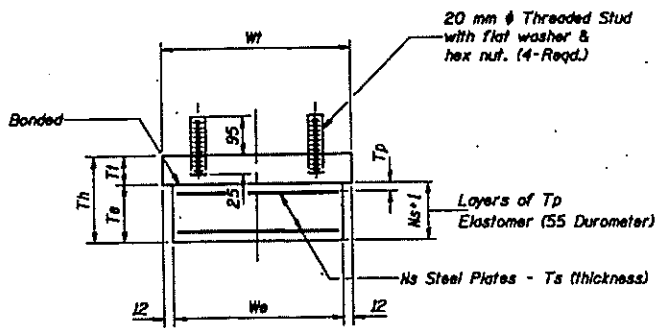
**TYPE I ELASTOMERIC EXP. BRG.**

**BEARING SHIM PLATES**

Location	Pier 1		Pier 3	
	Span 1	Span 2	Span 3	Span 4
1	0	5	8	0
2	0	6	10	0
3	16	22	14	0
4	10	18	14	0
5	0	8	16	0
6	0	10	16	0
7	0	11	18	0
8	0	11	18	0
9	0	13	18	0
10	0	13	18	0
11	0	14	18	0
12	0	14	18	0
13	0	14	16	0
14	0	14	16	0
15	0	16	13	0
16	0	16	11	0

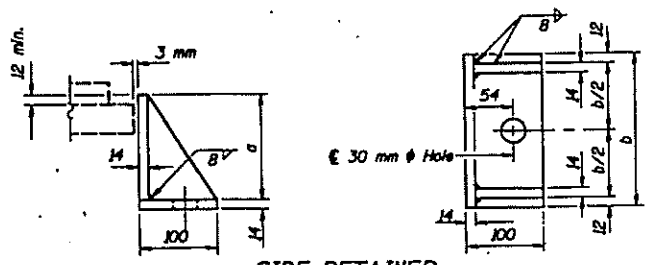
**ELASTOMERIC BEARING DATA**

Span	Pier	A	E	Le	Lt	Na	Th	Te	Tp	Ts	Tl	We	Wt	X	Y	a	b	H
1	1	235	137	306	356	3	83	48	10	2.5	38	178	202	178	329	109	150	279
2 or 3	1 or 3	323	306	356	508	7	157	111	11	3	46	254	278	278	532	169	150	205
4	3	235	137	306	356	3	83	48	10	2.5	38	178	202	178	329	109	150	279



BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.

**BILL OF MATERIAL**

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	64
Jack and Remove Existing Bearings	Each	64

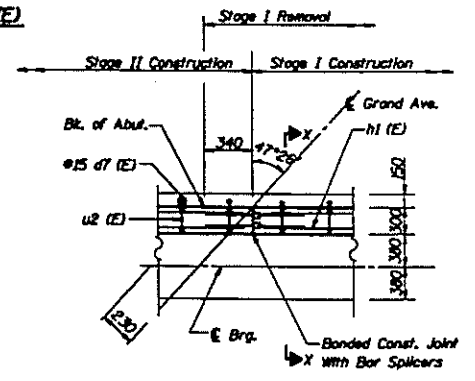
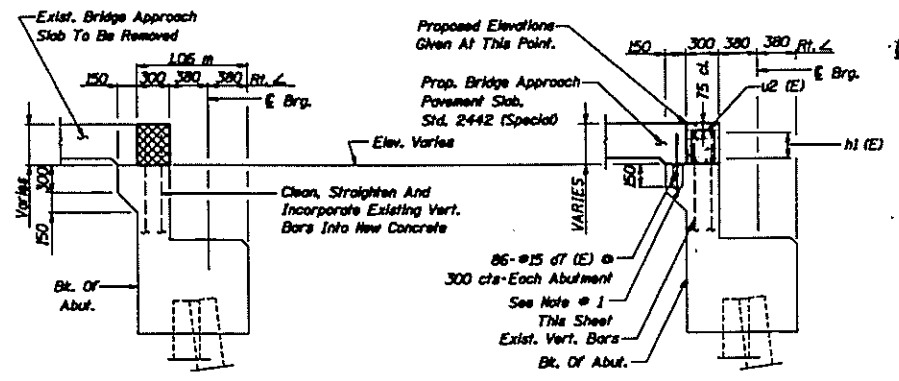
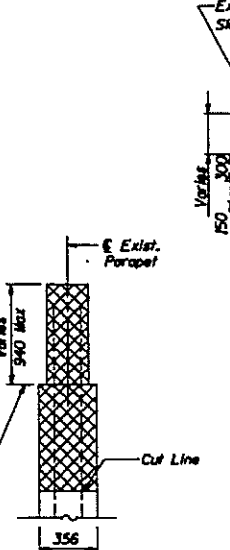
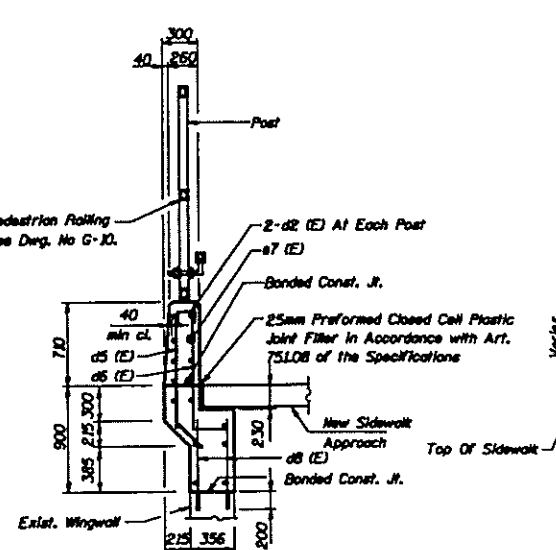
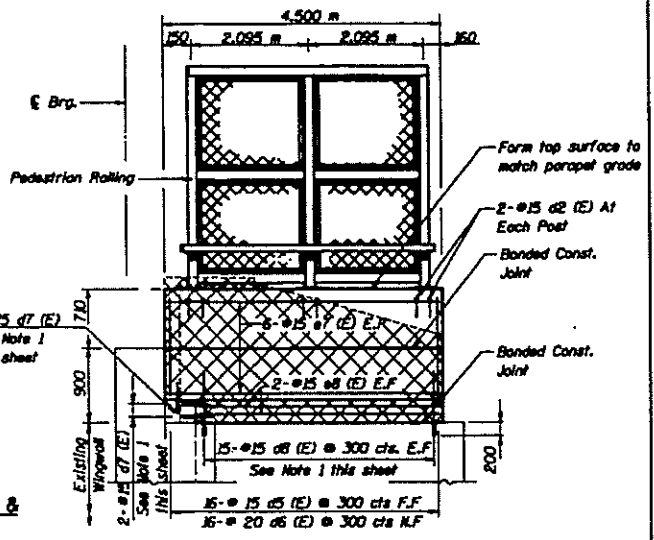
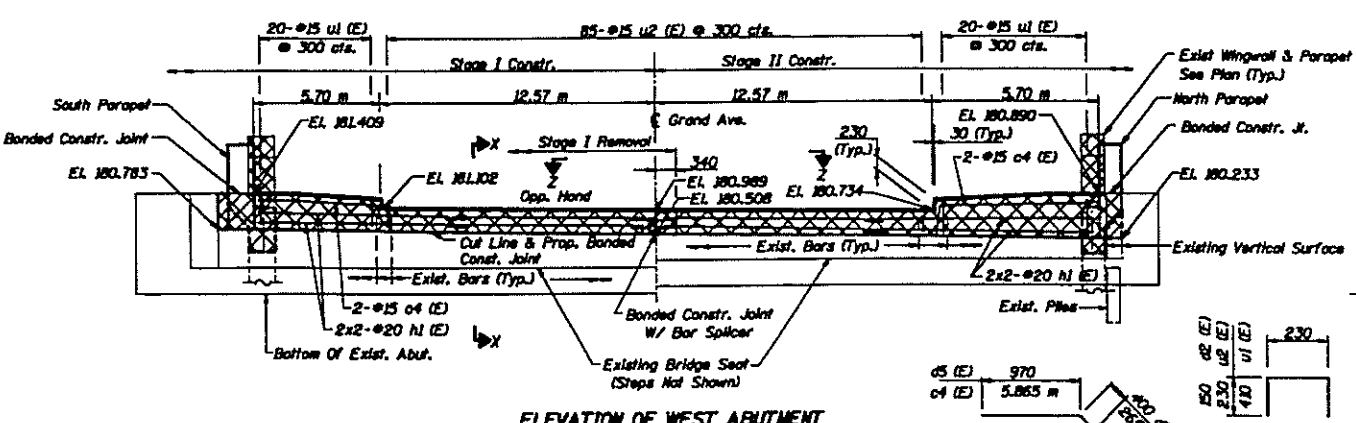
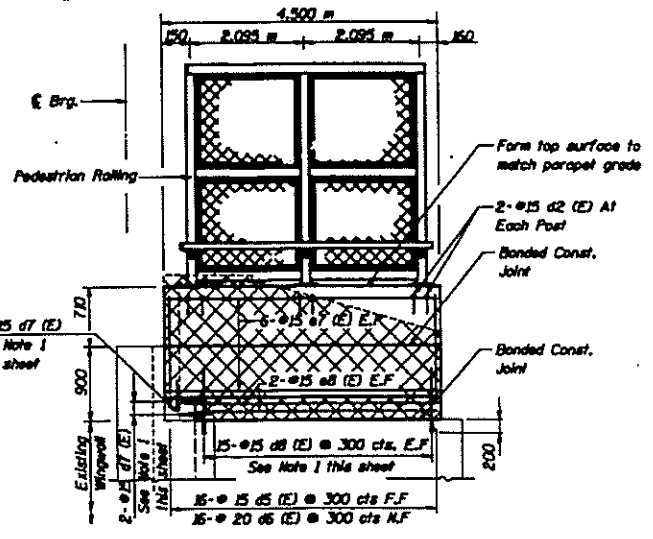
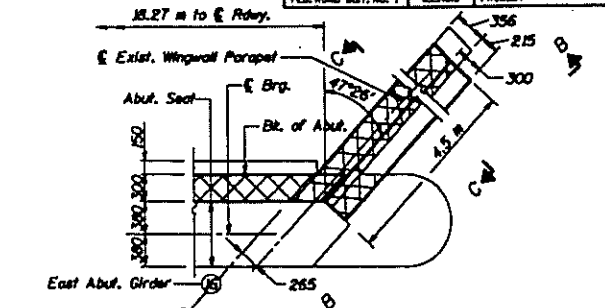
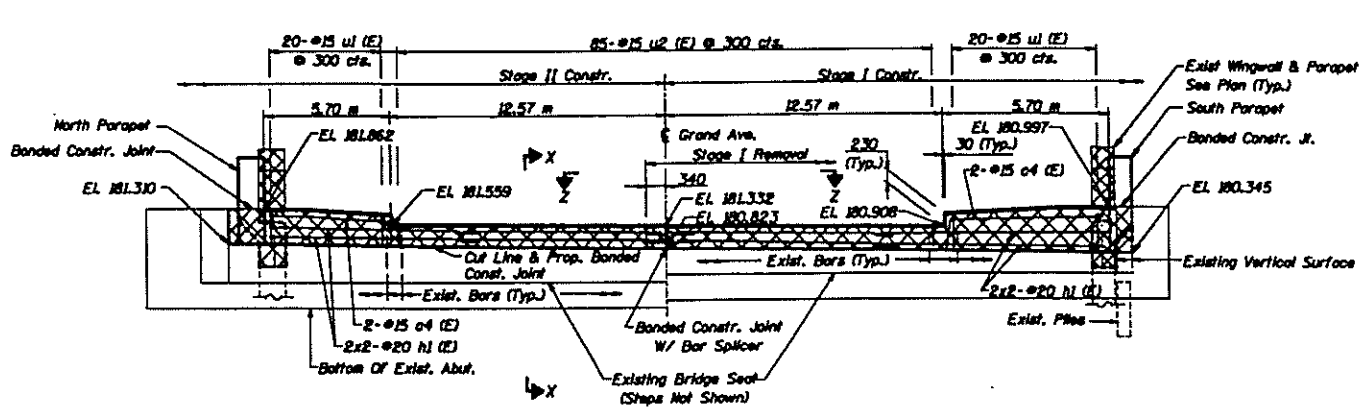
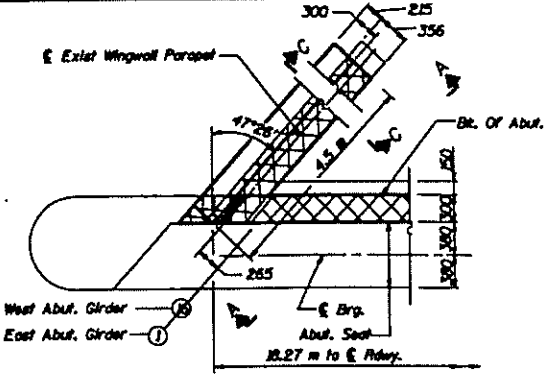
\* Item includes furnishing and installing of Steel Bolsters, Side Retainers, Bolts, Washers, Field Welding, Shim Plates and all Structural Steel as shown.

KENNEDY RECONSTRUCTION PROJECT ILLINOIS DEPARTMENT OF TRANSPORTATION GRAND AVENUE OVER KENNEDY EXPRESSWAY ELASTOMERIC BEARING ASSEMBLIES F.A.I. 90/94 SECTION 0303-476HD-BR SN 016-2018 COOK COUNTY STA. 0-BLL305				DATE
DE LEUW, CATHER & COMPANY ENGINEERS AND PLANNERS				JOB NO.
				DESIGNED RCE
				DRAWN BY
				CHECKED ENM
				APPROVED
				SCALE
				DRAWING NO. G-12

**DE LEUW  
CATHER**

IMAGE PROJECT CORP (212) 251-1962 10/29/96 01

ROUTE NO	SECTION	COUNTY	JOB NO.	SHEET NO.
FM 98/94		COOK	2442	13
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		



BILL OF MATERIAL ABUTMENTS

Bar	Number	W. Abut.	E. Abut.	Size	Length (m)	Shape
d4 (E)	4	4		#15	5.89	
d2 (E)	12	12		#15	0.53	
d5 (E)	32	32		#15	1.37	
d6 (E)	32	32		#20	1.22	
d7 (E)	92	92		#15	0.30	
d8 (E)	30	30		#15	0.80	
n1 (E)	16		16	#20	9.54	
d7 (E)	12		12	#15	4.40	
d8 (E)	4		4	#15	4.80	
u1 (E)	40		40	#15	1.05	
u2 (E)	85		85	#15	0.69	
ITEM		UNIT		TOTAL		
Concrete Removal		m <sup>3</sup>		0		
Concrete Structure		m <sup>3</sup>		6.8		
Reinforcement Bars		kg		1830		
Epoxy Coated Bar Splicers		Each		8		

- Notes:
1. Drill & Epoxy Grout d7 (E) and d8 (E) Bars in 25mm Dia. Holes to depth indicated. Cost incidental to Reinforcement Bars, Epoxy Coated.
  2. Bonded Construction Joint shall be in accordance to Article 503.09(a) 2 of the Standard Specifications.
  3. E.F = Each Face, F.F = Far Face, N.F = Near Face
  4. Reinforcement Bars designated (E) shall be epoxy coated.
  5. Bars indicated thus 2x2-#15 etc. indicates 2 lines of bars with 2 lengths per line.

KENNEDY RECONSTRUCTION PROJECT  
ILLINOIS DEPARTMENT OF TRANSPORTATION  
GRAND AVENUE OVER KENNEDY EXPRESSWAY  
ABUTMENT DETAILS

F.A.I. 90/94  
SECTION 0303-476H-BR SN 016-2048  
COOK COUNTY STA. 0+813.05

DE LEUW, CATHER & COMPANY  
ENGINEERS AND PLANNERS

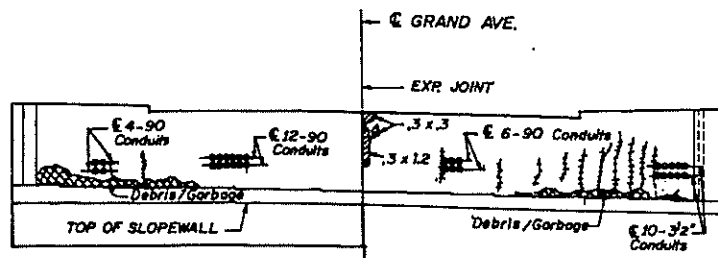
DATE  
JOB NO.  
DESIGNED RCE  
DRAWN JLN  
CHECKED EMM  
APPROVED  
SCALE  
DRAWING NO. G-13

DE LEUW  
CATHER

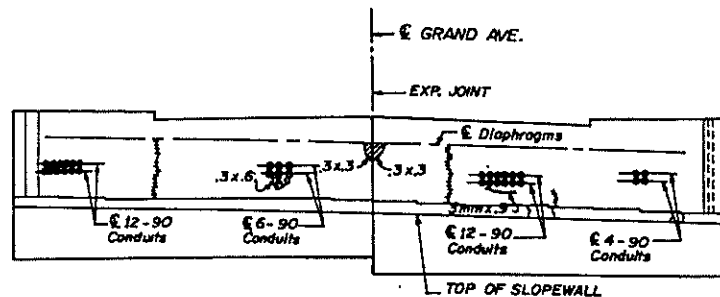
Indicates Concrete Removal

IMAGE PROJECT: 00RP (042) 251-1053 10/09/96 01

ROUTE NO.	SECTION	COUNTY	TOTAL	SHEET
FBI 90/94		COOK	10/10	14
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

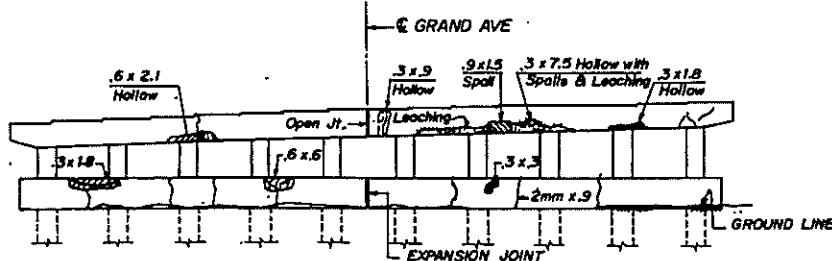


**EAST ABUTMENT**  
 Spalled & Hollow Areas  $0.54 \text{ m}^2$   
 Cracks 2 mm Width or Greater  $0 \text{ m}$

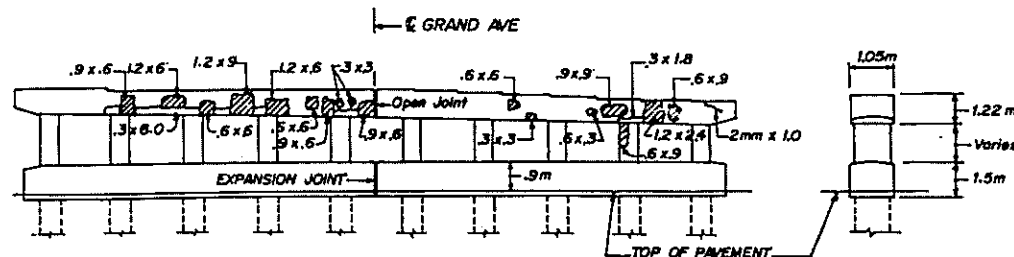


**WEST ABUTMENT**  
 Spalled & Hollow Areas  $0.36 \text{ m}^2$   
 Cracks 2 mm Width or Greater  $0.9 \text{ m}$

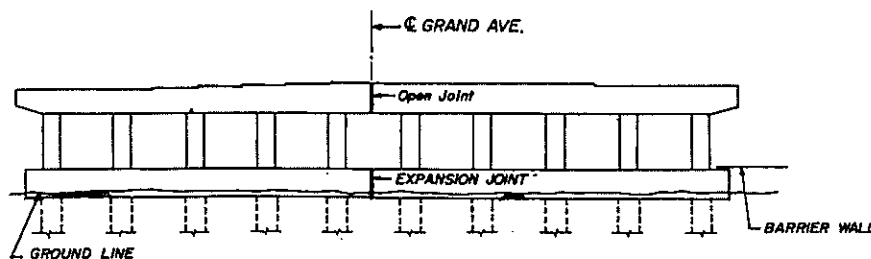
- NOTES:**
- All dimensions are in meters unless otherwise noted.
  - Cracks shown but not Quantified require no work. Cracks 2 mm or wider will be sealed with Epoxy.
  - Hollow and Spalled Areas shall be repaired. (Formed Concrete Repair).



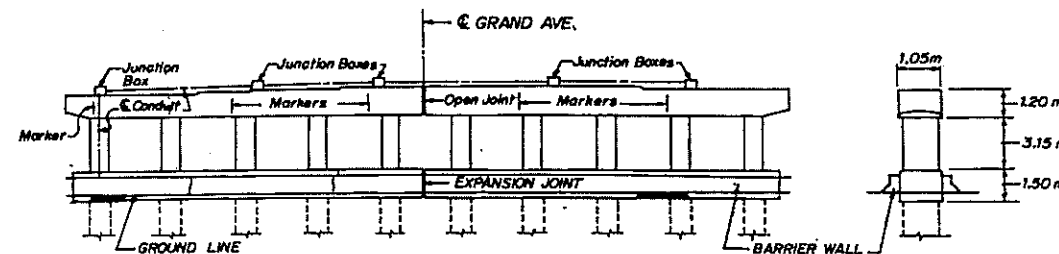
**PIER 1 - EAST FACE**  
 Spalled & Hollow Areas  $6.66 \text{ m}^2$   
 Cracks 2 mm Width or Greater  $0.9 \text{ m}$



**PIER 1 - WEST FACE**  
 Spalled & Hollow Areas  $12.24 \text{ m}^2$   
 Cracks 2 mm Width or Greater  $1.0 \text{ m}$



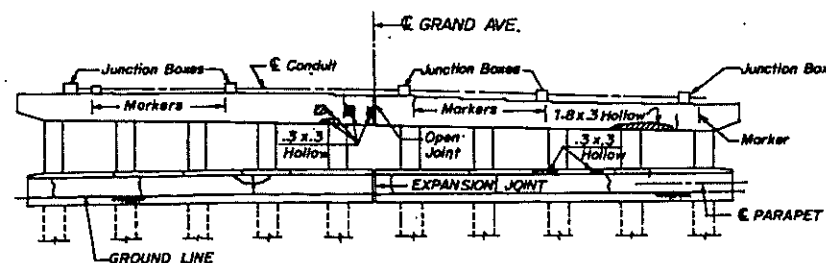
**PIER 2 - EAST FACE**  
 Spalled & Hollow Areas  $0 \text{ m}^2$   
 Cracks 2 mm Width or Greater  $0 \text{ m}$



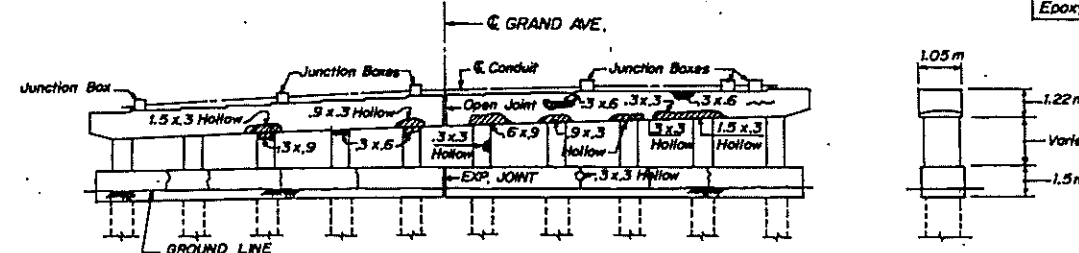
**PIER 2 - WEST FACE**  
 Spalled & Hollow Areas  $0 \text{ m}^2$   
 Cracks 2 mm Width or Greater  $0 \text{ m}$

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Formed Concrete Repair (Depth $\geq 125\text{mm}$ )	$\text{m}^2$	24.4
Epoxy Crack Sealing	m	2.8



**PIER 3 - EAST FACE**  
 Spalled & Hollow Areas  $1.08 \text{ m}^2$   
 Cracks 2 mm Width or Greater  $0 \text{ m}$



**PIER 3 - WEST FACE**  
 Spalled & Hollow Areas  $3.33 \text{ m}^2$   
 Cracks 2 mm Width or Greater  $0 \text{ m}$

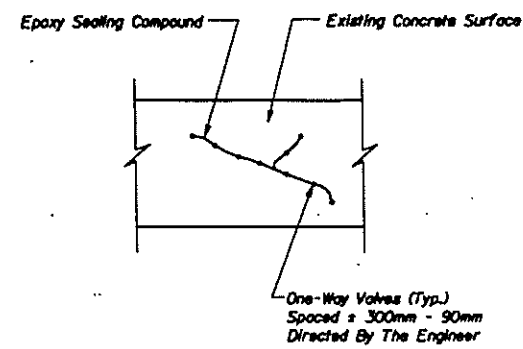
- LEGEND:**
- Cracks
  - Cracks with Leaching
  - Leaching
  - Spalls

**DeLew Cather**

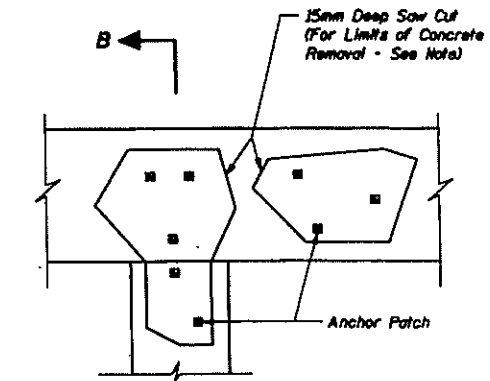
KENNEDY RECONSTRUCTION PROJECT ILLINOIS DEPARTMENT OF TRANSPORTATION		DATE
GRAND AVENUE OVER KENNEDY EXPRESSWAY		JOB NO.
SUBSTRUCTURE CONCRETE REPAIRS		DESIGNED RCE
F.A.T. 90/94 SECTION 0303-476B-B1 SH 016-2048		DRAWN PCW
COOK COUNTY STA. 0+812.305		CHECKED EMM
DE LEUW, CATHER & COMPANY ENGINEERS AND PLANNERS		APPROVED
SCALE		DATE
DRAWING NO. G-14		

IMAGE PROJECT CORR. (312) 251-1962 10/09/96 01

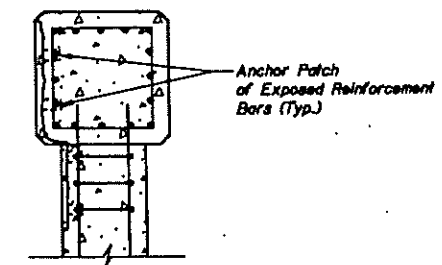
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FM 90/94		COOK		
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ELONGS	PROJECT		



**EPOXY CRACK SEALING**

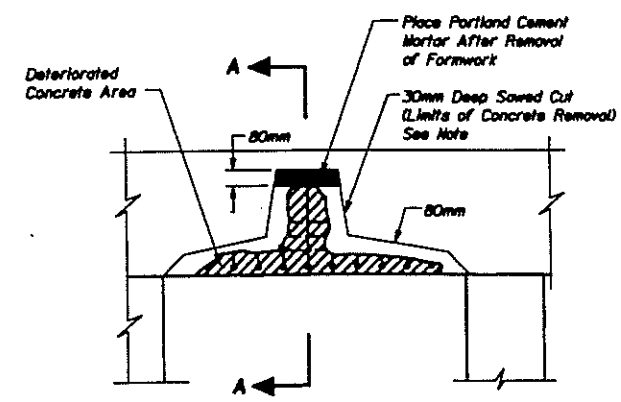


**ELEVATION**

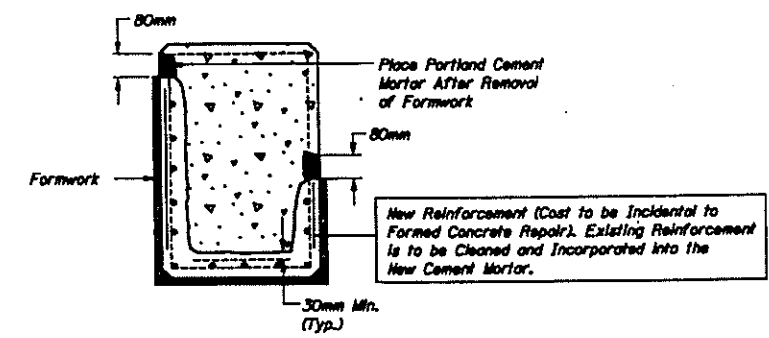


**SECTION B-B**

**EPOXY MORTAR REPAIR (DEPTH LESS THAN 40mm)**

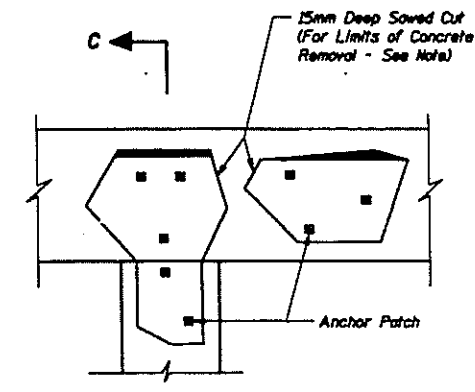


**LIMITS OF CONCRETE REMOVAL**

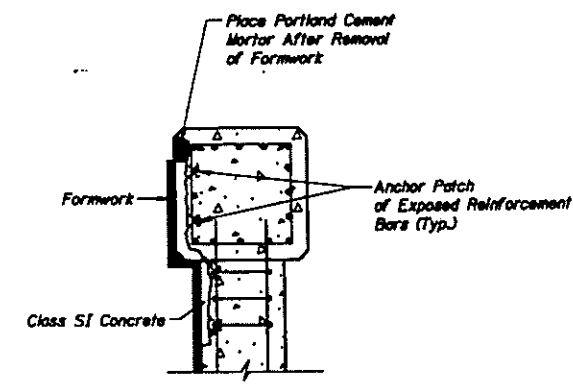


**SECTION A-A**

**FORMED CONCRETE REPAIR (DEPTH GREATER THAN 125mm)**



**ELEVATION**



**SECTION C-C**

**FORMED CONCRETE REPAIR (DEPTH EQUAL TO OR LESS THAN 125mm)**

**NOTE:**  
Limits of deteriorated concrete to be determined as follows:  
Areas around existing spalls to be tapped with hammer for dull hollow sound to indicate the extent of unsound concrete.

**DE LEUW  
CATHER**

Madisonville, Wyo  
and Associates, Inc.

NO.	DATE	REVISION	BY

KENNEDY RECONSTRUCTION PROJECT  
ILLINOIS DEPARTMENT OF TRANSPORTATION  
GRAND AVENUE OVER KENNEDY EXPRESSWAY  
**CONCRETE REPAIR DETAILS**  
F.A.T. 90/94 SECTION 0303-4764B-BR SN 016-2048  
COOK COUNTY STA. 0+813.005  
DE LEUW, CATHER & COMPANY  
ENGINEERS AND PLANNERS

DATE	
JOB NO.	
DESIGNED	RCE
DRAWN	JN
CHECKED	EMW
APPROVED	
SCALE	
DRAWING NO.	G-15

IMAGE DIRECT CORP. (312) 251-1962 10/09/96 01

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAB/8/84		COOK		
STA.	TO STA.			
FED. ROAD DIST. NO. 1	LLINOIS	PROJECT		

Joint Size	°C at 10 °C	°D at 10 °C
65	65	45 Min.

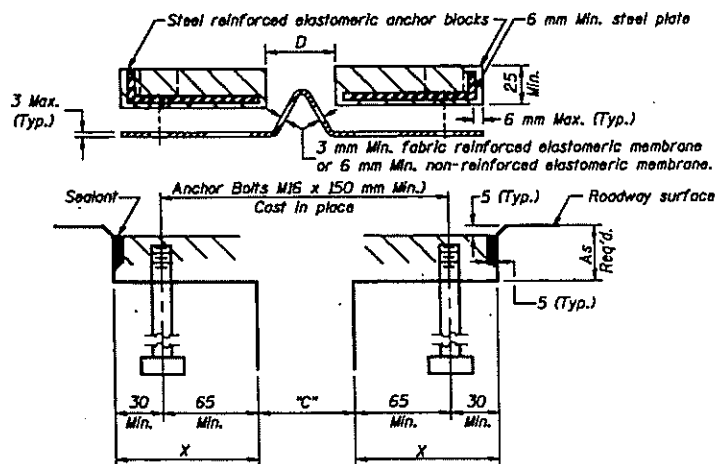
**INSTALLATION NOTES**

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

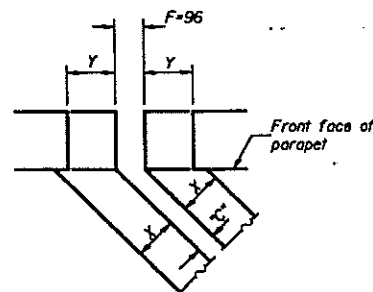
NOTE A: Maximum spacing of anchor bolts shall be 300 centers.

**SKEW LIMITATIONS**

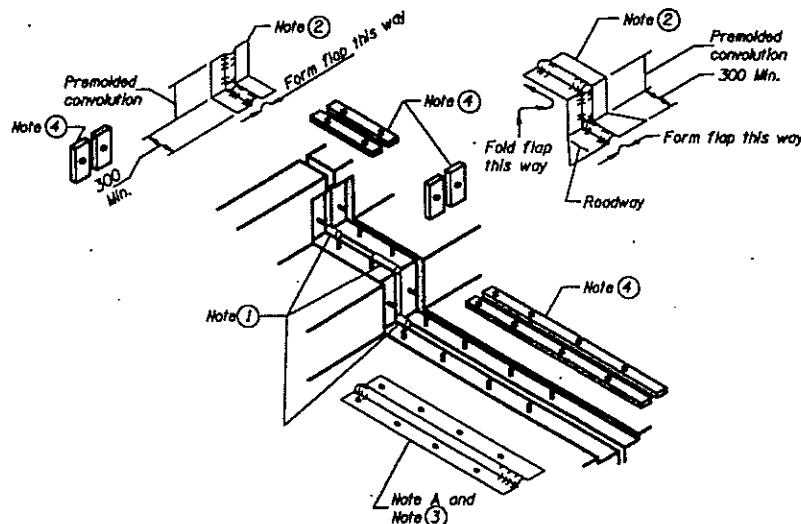
The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews. For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D", might require modifications to insure a minimum clearance of 40 mm from 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 ±300 cts.



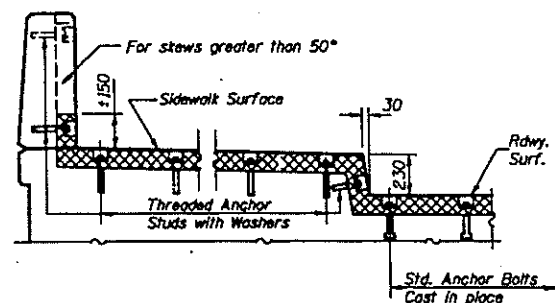
**CROSS SECTION**



**FORMING BLOCKOUT SKETCH**



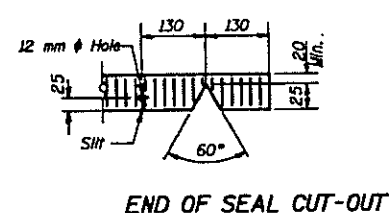
**AT SIDEWALK OR MEDIAN**



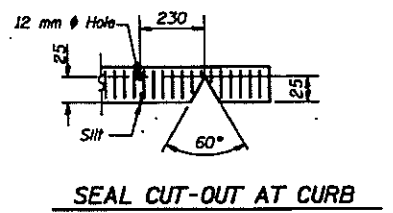
**AT SIDEWALK TYPICAL END TREATMENTS**

**GENERAL NOTES**

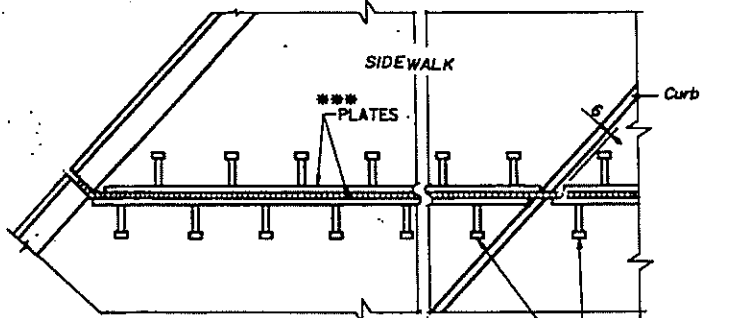
Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane.  
 The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.  
 The 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 503.10(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 10 °C.  
 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.  
 All dimensions are in millimeters (mm) except as noted.



**END OF SEAL CUT-OUT**

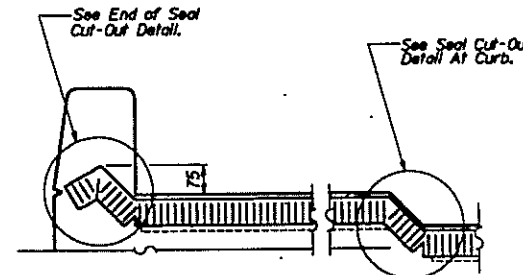


**SEAL CUT-OUT AT CURB**

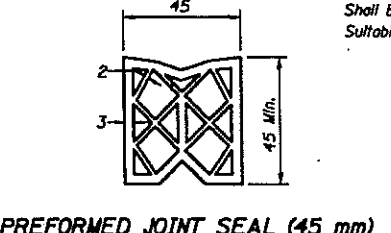


**PLAN**

\*\*\* Cut Retainer Bars in Sidewalk 150 mm Short of Sidewalk Face.  
 19 mm x 200 mm Granular Or Solid Flux Filled Headed Studs Conforming To Art. 706.32 Of The Std. Spec's Automatically End Welded At 300 mm Alt. Cts.

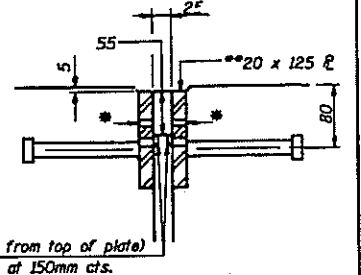


**TYPICAL AT SIDEWALK SEAL TREATMENT**



**PREFORMED JOINT SEAL (45 mm)**

\* 12 mm x 300 cts. For 10 mm Bolts. All Bolts Shall Be Burned, Sawed or Chipped Off Flush With The Plates After Forms Are Removed (Typ.)  
 \*\*\* Furnish In Segments Of 6 m Maximum Length. Maximum Space Between Installed Segments Shall Be 5 mm. Seal Space with Silicone Sealant Suitable For Structural Steel.



**PREFORMED JOINT SEAL**

After Fabrication All Surfaces Of The Steel Plates Shall Be Given One Shop Coat Of Paint Specified For Structural Steel. No Field Painting Required.

**DELEUW CATHER**

McIntosh, Myers and Associates, Inc.

NO.	DATE	REVISION	BY

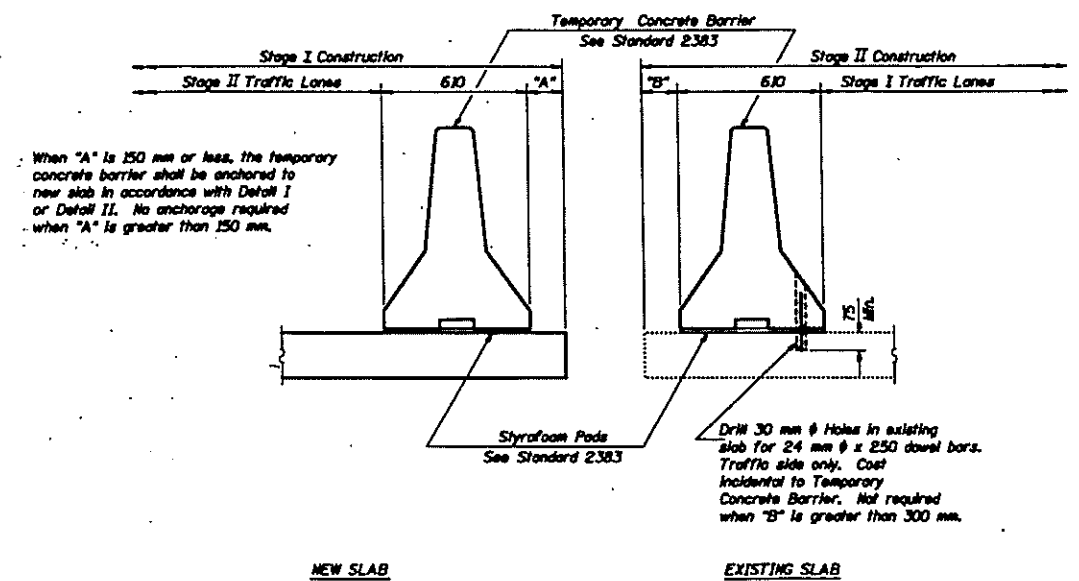
KENNEDY RECONSTRUCTION PROJECT  
 ILLINOIS DEPARTMENT OF TRANSPORTATION  
 GRAND AVENUE OVER KENNEDY EXPRESSWAY  
**EXPANSION DEVICES**  
 F.A.I. 90/84 SECTION 0303-476B-BR SN 016-2048  
 DE LEUW, CATHER & COMPANY  
 ENGINEERS AND PLANNERS

DATE	
JOB NO.	
DRAWN	RCE
CHECKED	JW
APPROVED	EMM
SCALE	
DRAWING NO.	G-16

IMAGE DIRECT CORP. (312) 251-1062 10/09/96 01



ROUTE NO.	SECTION	COUNTY	SHEET NO.
FAH/MSH		COOK	
STA.	TO STA.		
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	



**SECTIONS THRU SLAB**

**NOTES**

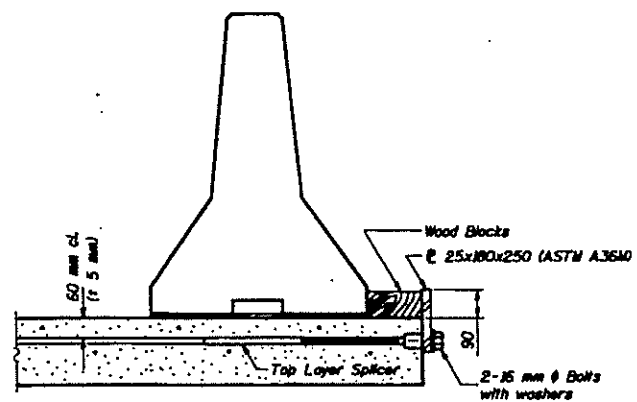
**Detail I - With Bar Splicer or Couplers:**  
Connect one (1) 25x180x250 steel  $\bar{c}$  to the top layer of couplers with 2-16 mm  $\phi$  bolts screwed to coupler at approximate  $\bar{c}$  of each 3 m barrier panel.

**Detail II - With Extended Reinforcement Bars:**  
Connect one (1) 25x180x250 steel  $\bar{c}$  to the concrete slab with 2-16 mm  $\phi$  Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate  $\bar{c}$  of each 3 m barrier panel.

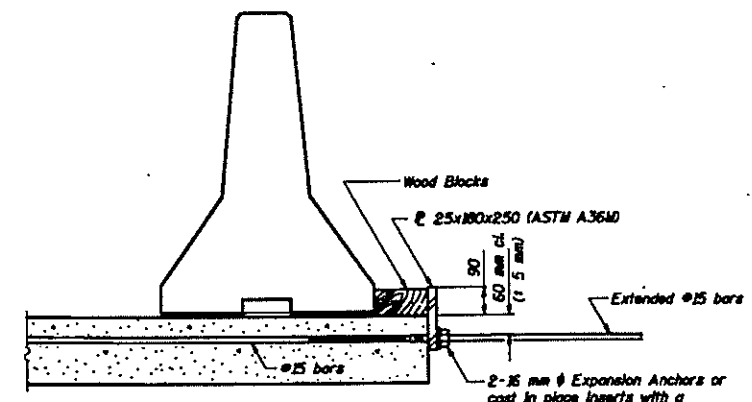
Cost of anchorage is incidental to Temporary Concrete Barrier.

The quantity of Temporary Concrete Barrier is included with Roadway Plans.

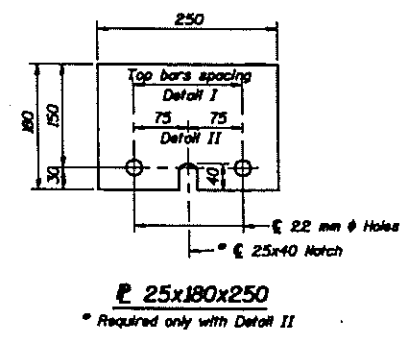
All dimensions are in millimeters (mm) except as noted.



**DETAIL I**  
The 25x180x250 Plate shall not be removed until Stage II Construction forms and reinforcement bars are in place.



**DETAIL II**  
The 25x180x250 Plate shall not be removed until Stage II Construction forms and all reinforcement bars are in place and the concrete is ready to be placed.



**DE LEUW  
CATHER**

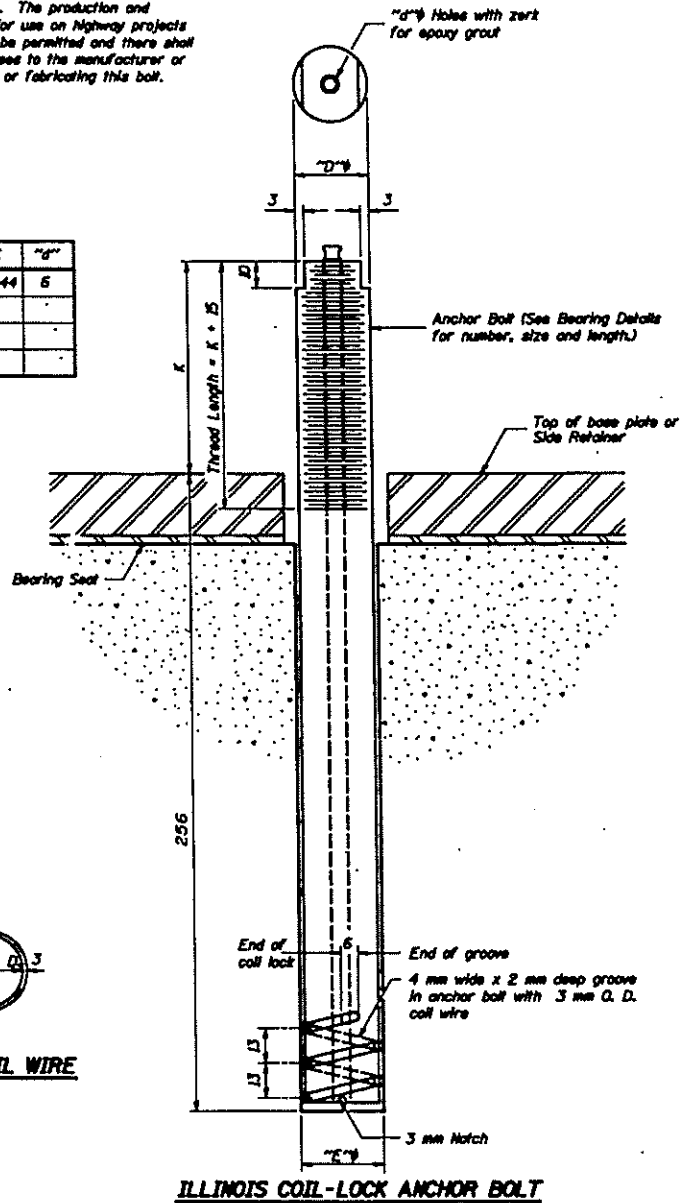
KENNEDY RECONSTRUCTION PROJECT ILLINOIS DEPARTMENT OF TRANSPORTATION				DATE
GRAND AVENUE OVER KENNEDY EXPRESSWAY TEMPORARY CONCRETE BARRIER AT STAGE CONSTRUCTION				JOB NO.
F.A.T. 90/94 SECTION 0303-476HS-BR SN 016-2048				DESIGNED RCE
COOK COUNTY STA. 0+811.305				DRAWN JN
DE LEUW, CATHER & COMPANY ENGINEERS AND PLANNERS				CHECKED EMM
Mohaweh, Wyne and Associates, Inc.				APPROVED
NO.	DATE	REVISION	BY	SCALE
				6-17

IMAGE REJECT CORR (212) 251-1063 10/09/96 01

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F490/PM		COOK		
STA.	TO STA.			
FED. ROAD DIST. NO. 7	LLANDS	PROJECT		

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
25	27	20	44	6



### MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A519, Grade 1025 and supplied with hexagonal nuts and cotter washers.  
The coil wire shall be made of any suitable soft steel wire.  
The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.  
The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C881, Type I, Grade 1 and of a Class suitable for the temperature of installation.

### INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

### ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes in accordance with the manufacturer's recommendations and procedures.  
The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:  
1. A threaded rod stud with nut and washer conforming to ASTM A307.  
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

### GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or in accordance with the manufacturer's recommendation after beams or girders have been erected and adjusted.  
Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.  
The anchor bolts, furnished and installed including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel".  
All dimensions are in millimeters (mm) except as noted.

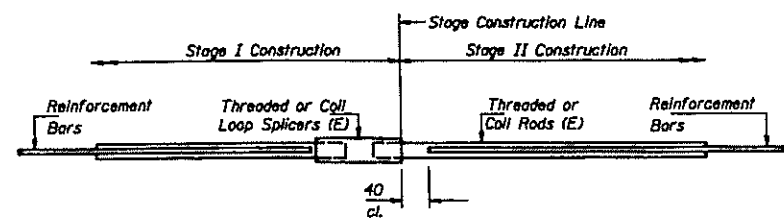
**DE LEUW  
CATHER**

McIntosh, Wyman  
and Associates, Inc.

KENNEDY RECONSTRUCTION PROJECT				DATE
ILLINOIS DEPARTMENT OF TRANSPORTATION				JOB NO.
GRAND AVENUE OVER KENNEDY EXPRESSWAY				DESIGNED RCE
ANCHOR BOLT DETAILS				DRAWN JH
F.A.T. 80/94 SECTION 0303-4761B-BR SN 016-2048 COOK COUNTY STA. 0+811.305				CHECKED EMM
DE LEUW, CATHER & COMPANY ENGINEERS AND PLANNERS				APPROVED
				SCALE
				DRAWING NO. G-18

IMAGE DIRECT CORP. (312) 251-1962 10/09/96 01

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. 90/94		COOK		
STA.	TO STA.			
FED. ROAD DIST. NO. 7	KLING	PROJECT		



**SPLICER DETAIL**

Bar Size	No. Req'd. (Splicers)	Location
20 mm	552	TOP OF SLAB
20 mm	439	BOT. OF SLAB
20 mm	8	ABUTMENT

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

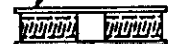
The diameter of this part is equal or larger than the diameter of bar spliced.

**ROLLED THREAD DOWEL BAR**



ONE PIECE

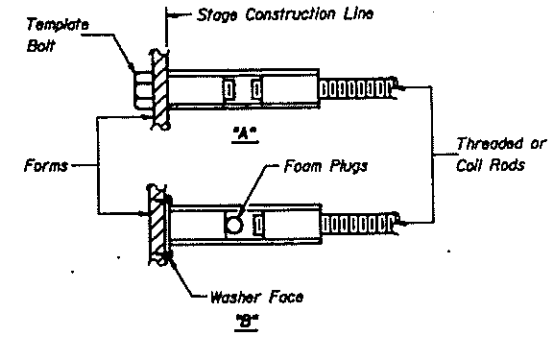
Wire Connector



**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 rolling 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 400 MPa yield strength, threaded or coiled full length.  
 All reinforcement bars shall be lapped and tied to the splicer rods.  
 Splicer (coupler) assembly 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 =  $1.25 \times 10^{-3} \times f_y \times A_1$   
 (Tension in kN)

② Minimum Pull-out Strength =  $1.25 \times 10^{-3} \times f_{sallow} \times A_1$   
 (Tension in kN)

Where  $f_y$  = Yield strength of lapped reinforcement bars in MPa.  
 $f_{sallow}$  = Allowable tensile stress in lapped reinforcement bars in MPa (Service Load)  
 $A_1$  = Tensile stress area of lapped reinforcement bars (mm<sup>2</sup>),  
 \* = 28 day concrete

**Typical Splicer (Coupler) Assembly Sizes:**

#15 bar lap with 20 mm $\phi$ Splicer (Coupler) x 610 mm Splicer Rods	Minimum Capacity = 100 kN-tension Minimum Pull-out Strength = 40 kN-tension
#20 bar lap with 25 mm $\phi$ Splicer (Coupler) x 790 mm Splicer Rods	Minimum Capacity = 150 kN-tension Minimum Pull-out Strength = 60 kN-tension
#25 bar lap with 30 mm $\phi$ Splicer (Coupler) x 1.04 m Splicer Rods	Minimum Capacity = 250 kN-tension Minimum Pull-out Strength = 100 kN-tension
#30 bar lap with 36 mm $\phi$ Splicer (Coupler) x 1.37 m Splicer Rods	Minimum Capacity = 350 kN-tension Minimum Pull-out Strength = 140 kN-tension

\*or splicer assemblies shall be in accordance with Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."  
 All dimensions are in millimeters (mm) except as noted.

**DE LEUW  
CATHER**

Mohaweh, Myers and Associates, Inc.

KENNEDY RECONSTRUCTION PROJECT ILLINOIS DEPARTMENT OF TRANSPORTATION				DATE
GRAND AVENUE OVER KENNEDY EXPRESSWAY BAR SPLICER (COUPLER) DETAILS				JOB NO.
AT STAGE CONSTRUCTION				DESIGNED RCE
F.A.I. 90/94 SECTION 0303-476H-BR SN 016-2048 COOK COUNTY S/A. 0-811305				DRAWN J.N.
DE LEUW, CATHER & COMPANY ENGINEERS AND PLANNERS				CHECKED EMM
				APPROVED
				SCALE
				DRAWING NO. G-19

IMAGE DIRECT CORP. (312) 251-1962 10/09/96 01