

016-1068

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PLAN PREPARATION ENGINEER: K. ANTONSON /B. EPINO /K. BELGRAVE (708) 705-4121

INDEX OF SHEETS

1. TITLE SHEET
LOCATION MAP
INDEX OF SHEETS
STATE STANDARDS
SUMMARY OF QUANTITIES
2. GENERAL NOTES
BILL OF MATERIALS
DECK FRAMING PLAN
- 3-4. BEAM REPAIR DETAILS
5. TRAFFIC CONTROL DETAILS
6. DISTRICT ONE FREEWAY STANDARD
ONE LANE CLOSURE
7. DISTRICT ONE FREEWAY STANDARD
TWO LANE CLOSURE

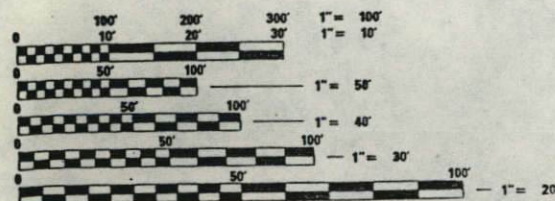
STATE STANDARDS

2298 - 9	2307 - 7
2299 - 13	2314 - 6
2300 - 3	2419

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY
50700400	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	740
64801700	TRAFFIC CONTROL AND PROTECTION	L SUM	1
Z0003600	BEAM STRAIGHTENING	L SUM	1

IMPROVEMENT IS LOCATED IN
THE MUNICIPALITY OF DOLTON



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

CONTRACT NO. 82595

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

PLANS FOR PROPOSED FEDERAL AID HIGHWAY

FAI RTE. 94 (I-94 /CALUMET EXPWY.)

AT MICHIGAN CITY ROAD

SECTION: 0606.2-HB-I-1

BEAM - STRAIGHTENING

COUNTY: COOK

C-91-562-93

MCHD, CN: 515750

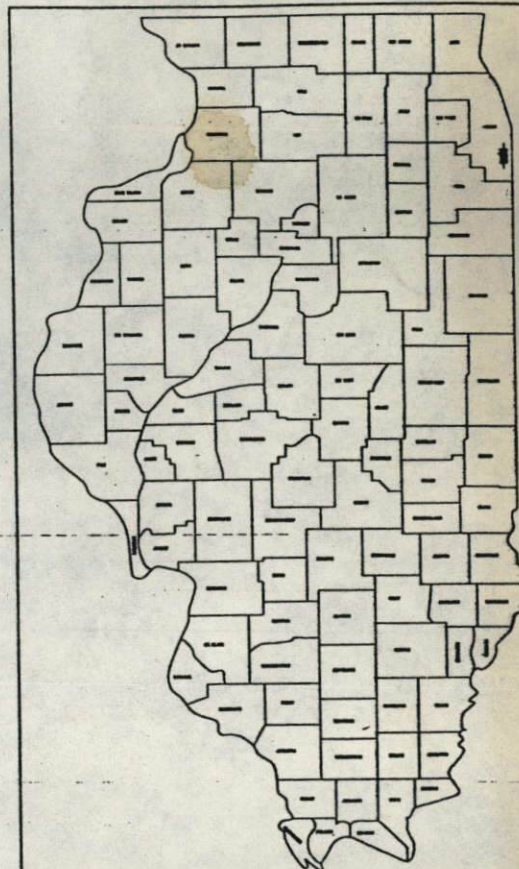
SN: 016-1068



LOCATION OF IMPROVEMENT:
MICHIGAN CITY ROAD
OVER I-94 (CALUMET EXPWAY)
SN: 016 - 1063

F.A.I.	ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	*	*	COOK	7	1

* 0606.2-HB-I-1



LOCATION OF SECTION INDICATED THUS: -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	
SUBMITTED	DECEMBER 20, 1993
EXAMINED	TE
PASSED	JAN. 28, 1994 Larry Gauld
APPROVED	JAN. 28, 1994 LARRY C. WELSH

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STATE OF ILLINOIS

FOR UTILITY INFORMATION
CALL J.U.L.I.E. 1-800-892-0123

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	DATE	BY	REVISION	SHEET NO. 1
7	2	7	2		3 SHEETS

GENERAL NOTES

All new structural steel shall conform to AASHTO Classification M-270 Gr. 36.
After the beam straightening operations have been completed, the Engineer in the field shall check to see that the top flange is tight against the slab. If not, the Contractor shall inject epoxy between the existing concrete deck and the top flange of the beam. Cost to be incidental to "Beam Straightening". See Special Provisions.

The beam straightening as described on the plans shall be performed by mechanical means only. The use of heat will not be allowed to facilitate the straightening process. See Special Provisions.

If the method of straightening differs from that shown on the plans, it shall be approved by the Engineer prior to ordering materials and installation.

All materials used in the straightening of the beam shall be included in the pay item "Beam Straightening".

Traffic control shall be determined by the District.

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.

Removal of all damaged members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be considered incidental to the contract.

The three coat lead and chrome free alkylid point system shall be used for shop and field painting of the new structural steel. The color of the final top coat shall match the existing steel.

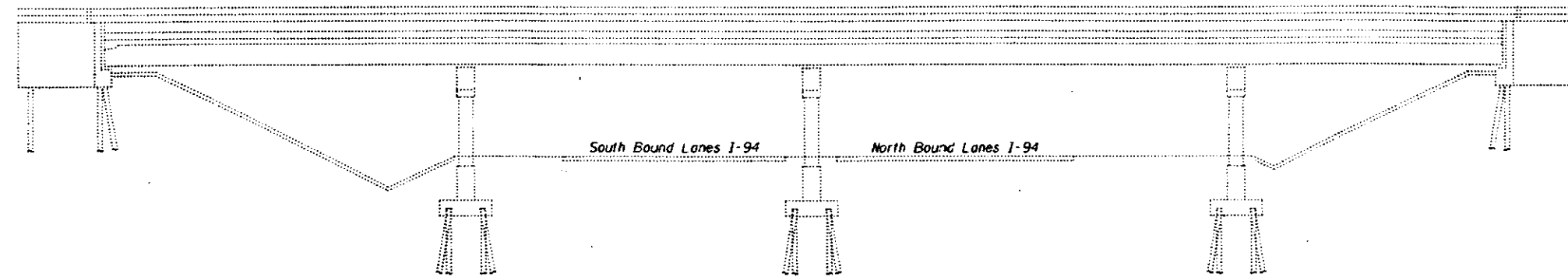
Structural steel shall only be cleaned and painted as required by the Special Provision: "Cleaning and Painting New Steel and Adjacent Areas of Existing Steel Structures".

Oil and all loose paint shall be removed from the damaged beam in the area of impact.

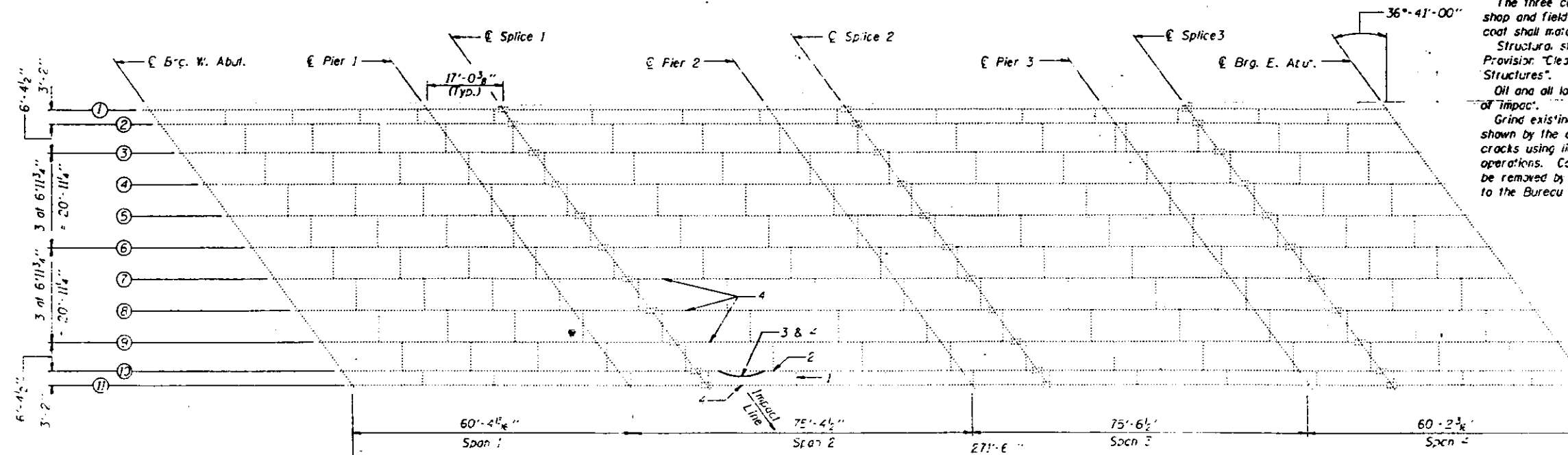
Grind existing nicks, gouges and shallow cracks in the damaged beams as shown by the detail on sheet 2. Ground surfaces shall be inspected for cracks using liquid dye penetrant prior to initiating any beam straightening operations. Cost is incidental to "Beam Straightening". Any cracks that cannot be removed by grinding approximately 1/4" deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition.

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pcwt	740
Traffic Control	L.S.	1
Beam Straightening	L.S.	1



ELEVATION



PLAN

1. Remove & replace existing W16X36 diaphragm & clip angles.
2. Existing bottom diaphragm clip angle to be removed & replaced.
3. Straighten existing beam & add flange F.S.
4. Grind scrapes, nicks, gouges and shallow cracks.

DESIGNED	John A. Valle	EXAMINED	John E. Hoffman
CHECKED	Paul H. Hedges	PASSED	
DRAWN	Joanne March	APPROVED	
CHECKED	C.H.M.		

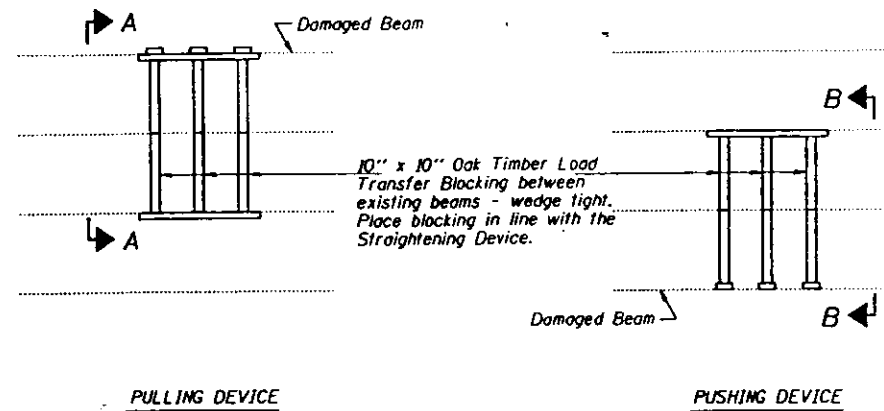
June 30, 1992

BEAM STRAIGHTENING
F.A.I. RTE. 94 SEC. 0606.2-HB
COOK COUNTY
STA. 400+00.00
STR. 016-1068

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

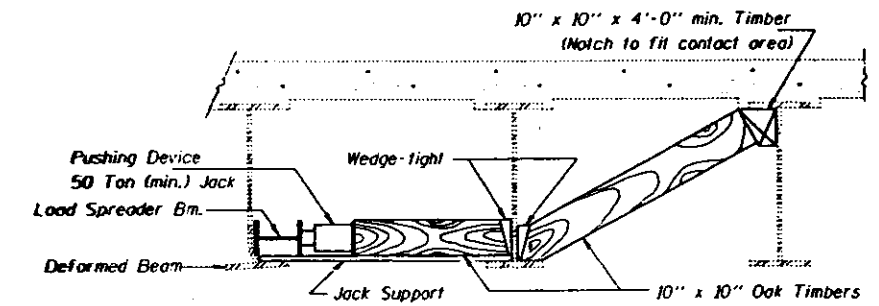
DATE	DESIGNED	EXAMINED	APPROVED	DATE
F.A.I. BY	DATE	DATE	DATE	DATE
7	3			

SHEET NO. 2
3 SHEETS

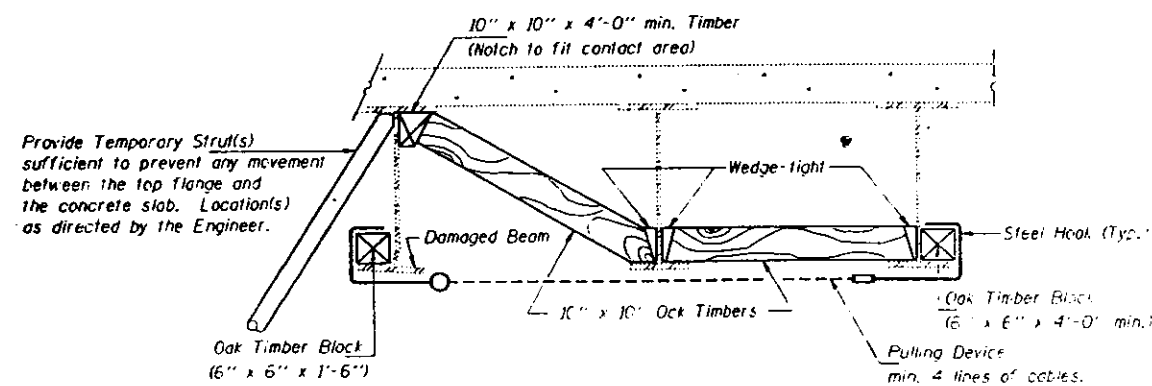


PARTIAL PLANS
SUGGESTED BEAM STRAIGHTENING METHODS

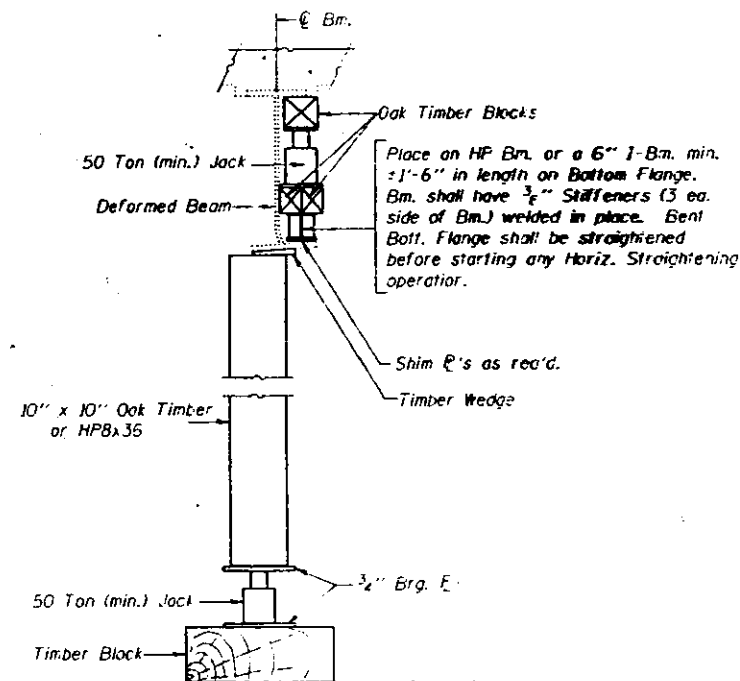
Straightening force shall be maintained on all load transfer blocking during beam straightening.



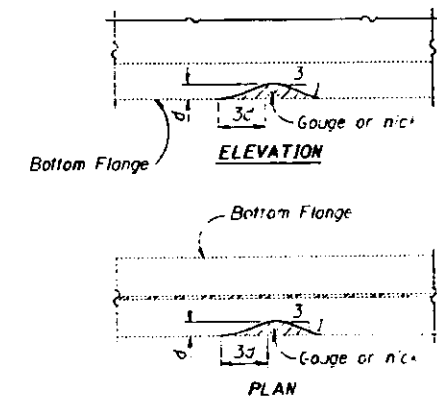
SECTION B-B



SECTION A-A



VERTICAL STRAIGHTENING DETAIL



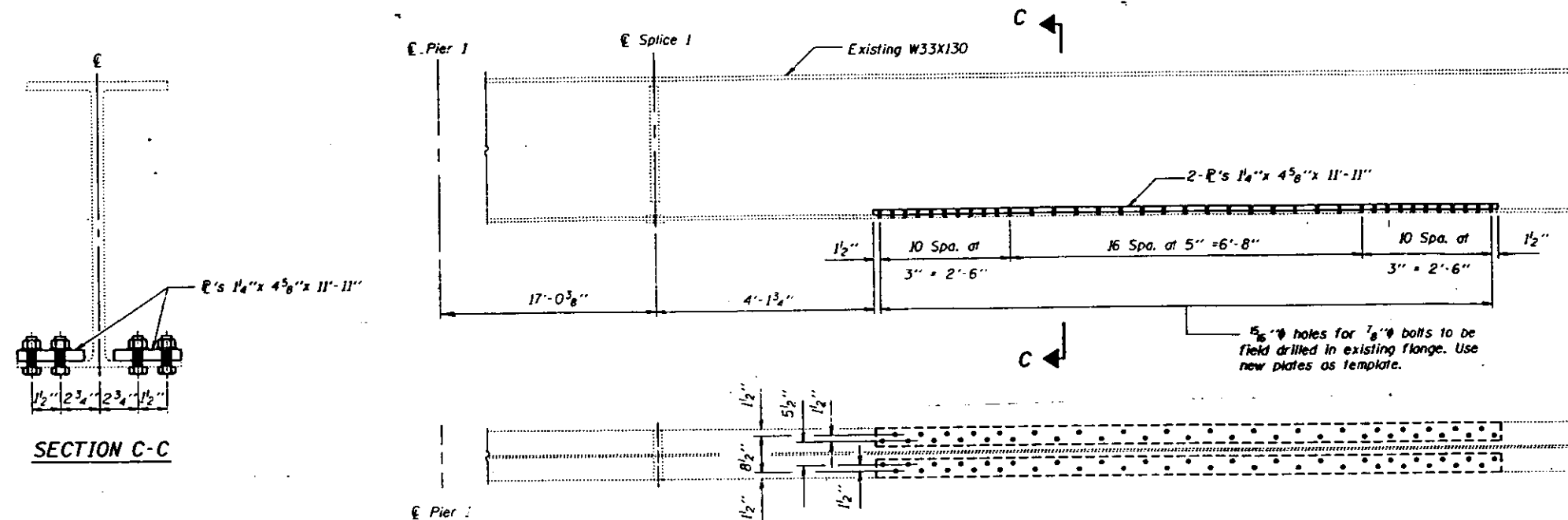
GRINDING DETAIL

DESIGNED <u>J.A.U.</u>	EXAMINED <u>June 30, 1993</u>
CHECKED <u>CHM</u>	PASSED <u>Joann E. Adams</u>
DRAWN <u>Joannie March</u>	APPROVED <u>ENGINEER OF BRIDGES AND STRUCTURES</u>
CHECKED <u>CHM J.A.U.</u>	DIRECTOR OF HIGHWAYS

BEAM STRAIGHTENING
F.A.I. RTE. 94 SEC. 0606.2-HB
COOK COUNTY
STA. 400+00.00
STR. 016-1068

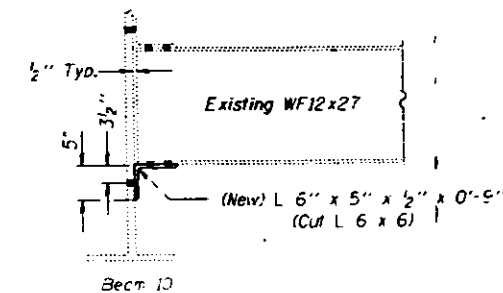
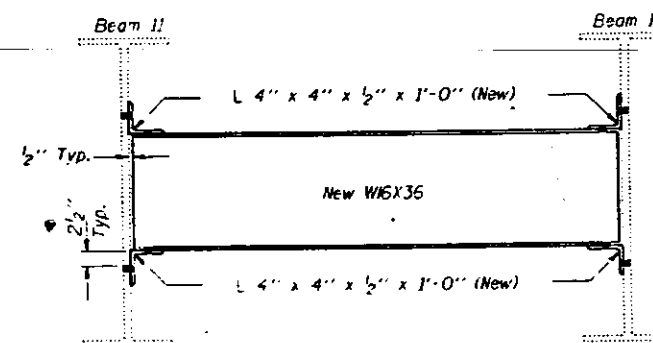
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DATE	REVISION	BY	CHK	DATE
F.A.I. 94	0606.2	7	4	
SHEET NO. 3				
3 SHEETS				

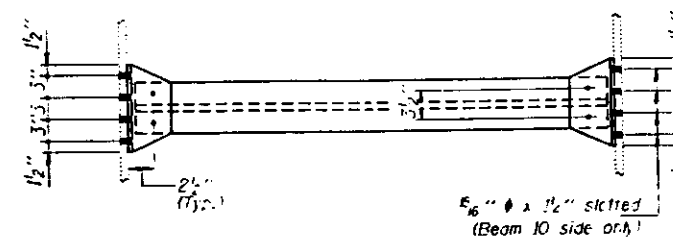


COVER PLATE DETAIL

Beam #10 looking north



Required
1 - W6x36
4 - L 6"x 6"x 1/2"x 1'-0"
1 - L 6"x 6"x 1/2"x 0'-9"
2 - Flange Pl 1/4"x 4 5/8"x 11'-11"



DIAPHRAGM CONNECTION DETAIL

5/8" x oversized holes for new 1/4" H.S. Bolts for all diaphragm connections unless otherwise noted. Two hardened washers shall be required at diaphragm connections.

DESIGNED J.A.U.	EXAMINED June 30, 1993
CHECKED CHM	PASSED
DRAWN Joannie March	APPROVED
CHECKED CHM J.A.U.	

BEAM STRAIGHTENING
F.A.I. RTE. 94 SEC. 0606.2-HB
COOK COUNTY
STA. 400+00.00
STR. 016-1068

Cook

Sec. (0505.4 & 0606.2 HB) R-86

I & R

October 20, 1989

#102

FOR INDEX OF SHEETS, SEE SHEET NO. 2

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

PLAN 1 INCH = 50 FEET
 PROFILE 1 INCH = 50 FEET HORIZ.
 CROSS SECTION 1 INCH = 5 FEET VERT.
 CROSS SECTION 1 INCH = 10 FEET HORIZ.
 CROSS SECTION 1 INCH = 5 FEET VERT.

F.A.I. ROUTE 94 (CALUMET EXPRESSWAY)
MICHIGAN CITY ROAD AND 154TH STREET
RECONSTRUCTION
 SECTION (0505.4 & 0606.2 HB) R-86
PROJECT ACIR-94-3(282)71
COOK COUNTY
 C-91-147-86

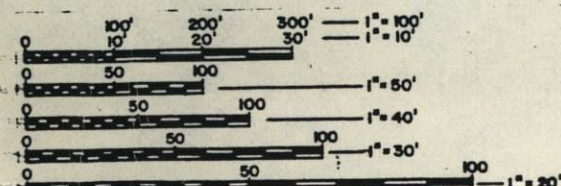
STRUCTURE NO. 016-1068 INCLUDES ONE (1) 4 SPAN
 CONTINUOUS STEEL WF BEAM
 AND CONCRETE DECK STRUCTURE
 ON R.C. PIERS AND PILE BENT
 ABUTMENTS.

STRUCTURE NO. 016-0914 INCLUDES ONE (1) 4 SPAN
 CONTINUOUS STEEL WF BEAM
 AND CONCRETE DECK STRUCTURE
 ON R.C. PIERS AND PILE BENT
 ABUTMENTS.

ROADWAY WORK TO BE PERFORMED CONSISTS OF RECONSTRUCT-
 ION, WIDENING AND RESURFACING OF MICHIGAN CITY ROAD AND
 154TH ST. BETWEEN THE LIMITS SHOWN.
 THE BRIDGE WORK TO BE PERFORMED CONSISTS OF REMOVAL OF
 THE EXISTING CONCRETE DECK; REMOVE, CLEAR AND PAINT EXISTING
 BEAMS; EXTEND THE SUBSTRUCTURE AND RAISE THE BEARING SEATS
 ON BOTH SIDES IN STAGES; PERFORM STRUCTURE EXCAVATION;
 CONSTRUCT THE SUBSTRUCTURE; INSTALL THE
 BEAMS; FURNISH AND ERECT STRUCTURAL STEEL, REINFORCEMENT
 STEEL, AND THE CLASS X CONCRETE DECK; NEW APPROACH SLABS
 AND ALL INCIDENTAL AND COLLATERAL WORK NECESSARY TO
 COMPLETE THE PROJECT.

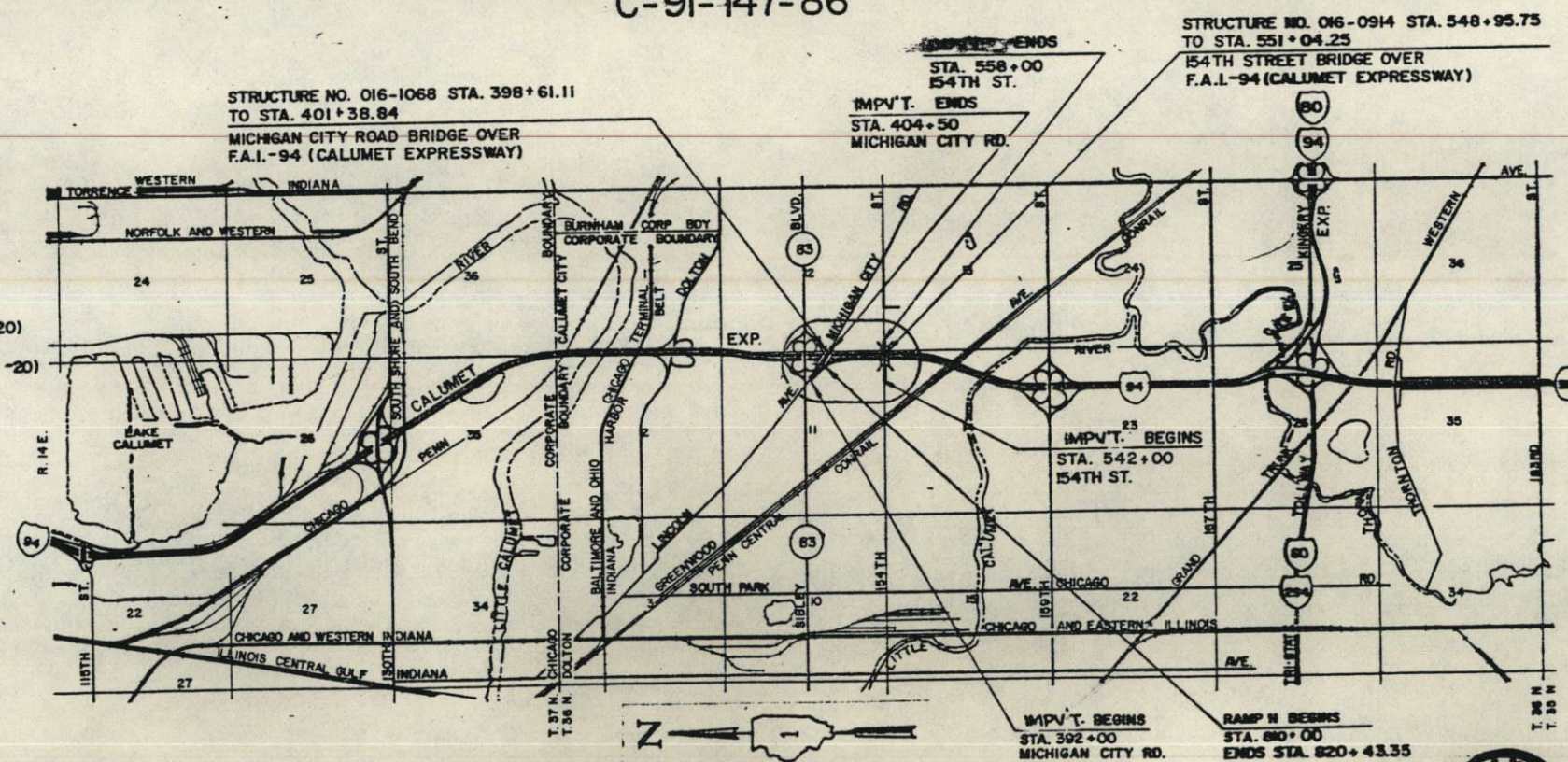
DESIGN DESIGNATION
 MICHIGAN CITY ROAD 1150 (08) ARTERIAL 0.25 (PCC-20)
 154TH STREET 1035 (08) AREA SERVICE 2.79 (PCC-20)

THIS PROJECT LIES WITHIN THE
 MUNICIPALITY OF THE FOLLOWING:
 VILLAGE OF DOLTON
 COOK COUNTY



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

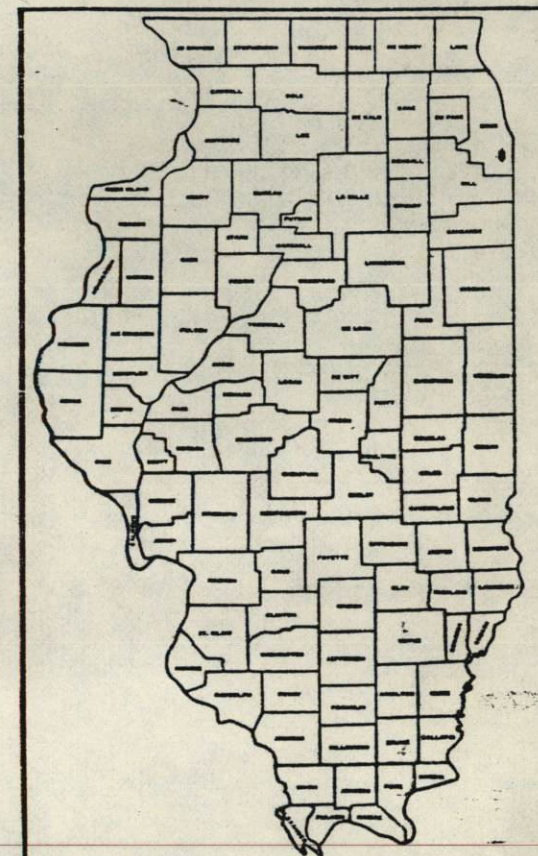
CONTRACT NO. 80290



LOCATION MAP
 SCALE 2" = 1 MILE
 GROSS & NET LENGTH OF IMPROVEMENT: MICHIGAN CITY ROAD = 1,250 FEET = 0.237 MILES
 154TH STREET = 1,600 FEET = 0.303 MILES
 TOTAL = 2,850 FEET = 0.540 MILES



ROUTE	SECTION	COUNTY	TOTAL SHEET
FAI 94	*	COOK	113
P-91-065-85			



LOCATION OF SECTION INDICATED THUS: —

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]
 DATE: 9-15-89

DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

016-1068

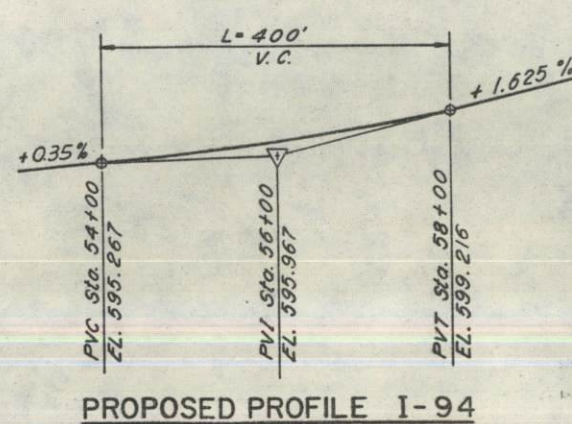
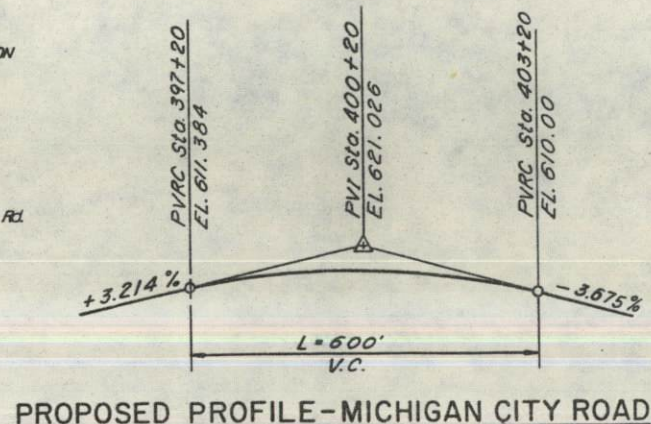
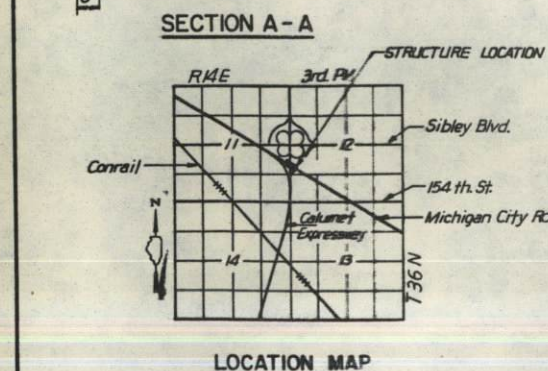
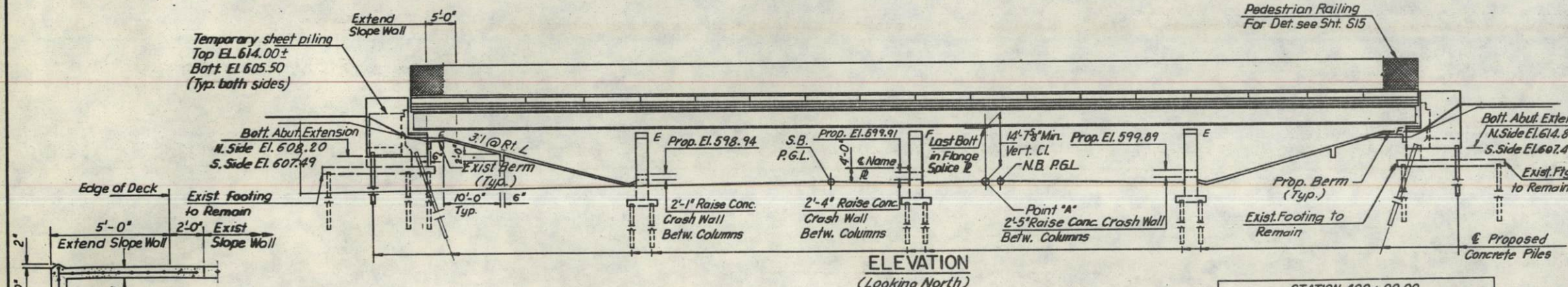
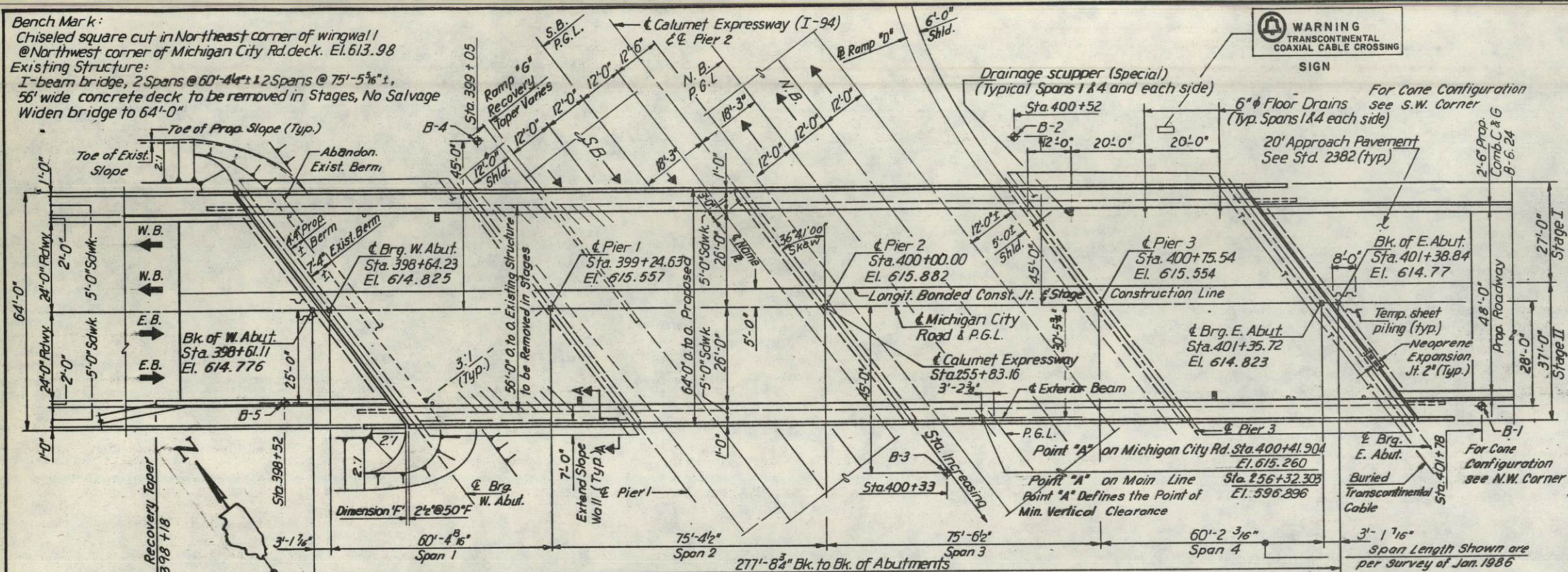
COOK COUNTY SECTION (0505.4 & 0606.2 HB) R-86 F.A.I. ROUTE 94

161068

0-226

Shop Plans Reel 762 & 150

Bench Mark:
Chiseled square cut in Northeast corner of wingwall
@ Northwest corner of Michigan City Rd. deck. El. 613.98
Existing Structure:
I-beam bridge, 2 Spans @ 60'-4 1/2" + 1.2 Spans @ 75'-5 1/2" + 1,
56' wide concrete deck to be removed in Stages, No Salvage
Widen bridge to 64'-0"



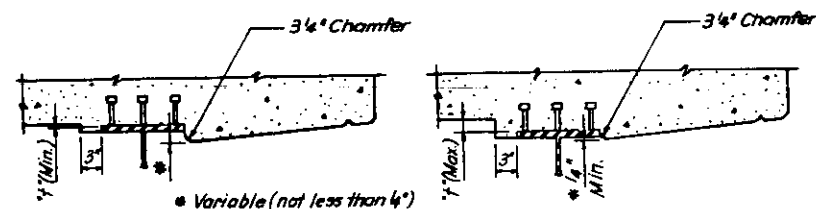
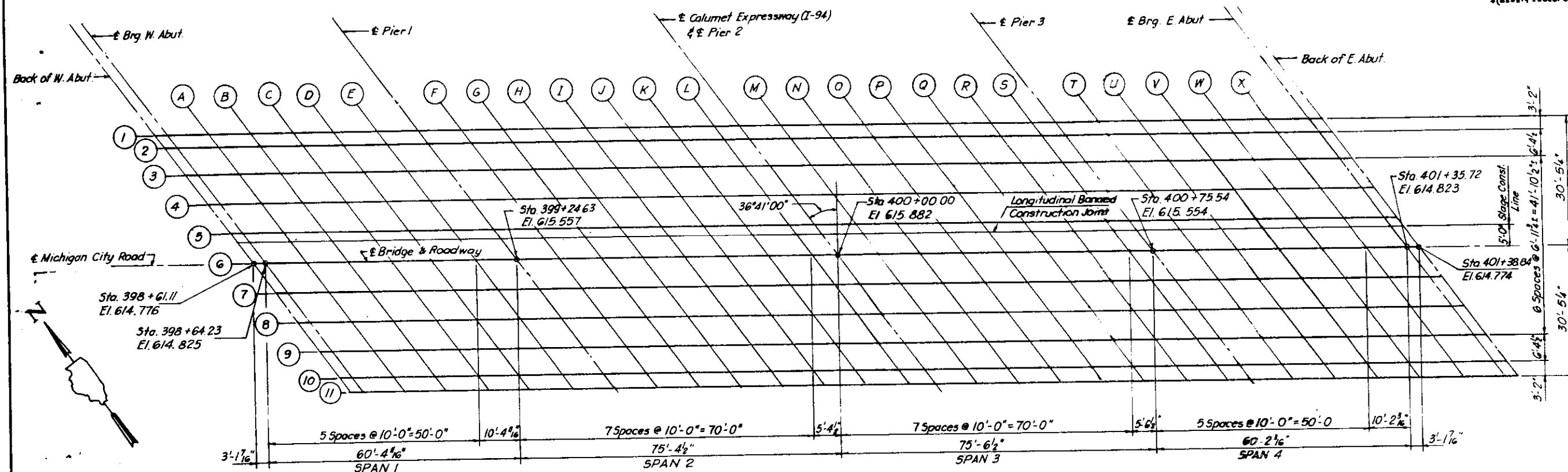
STATION 400+00.00
RE-BUILT 19 BY
STATE OF ILLINOIS
F.A.R.T. MICHIGAN CITY RD. SEC. (0505.4/0606.218)
F.A. PROJ. ACX: 94-3 (282) R-60
LOADING HS20
STR. NO. 016-1068

NAME PLATE



APPROVED
FOR STRUCTURAL ADEQUACY ONLY
James J. Rayburn
Engineer of Bridges and Structures

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLAN AND ELEVATION
MICHIGAN CITY ROAD OVER (I-94)
F.A.I. RTE 94
SECTION 1300-00
STA. 400+00.00
STRUCTURE No. 016-1068
SCALE
DATE MAY 1990
DRAWN BY K.C.
CHECKED BY L.W.



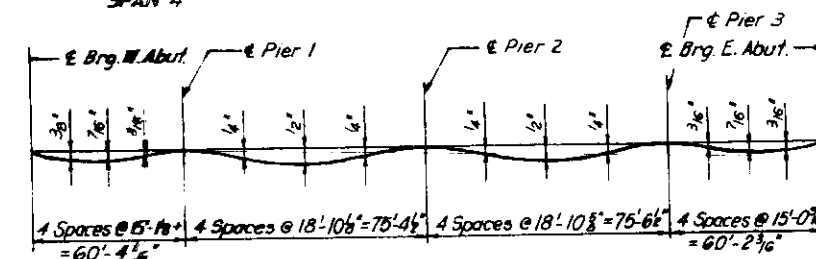
At Minimum Fillet
EXTERIOR BEAMS



Composite
INTERIOR BEAMS

METHOD OF DETERMINING FILLET HEIGHTS "f"

After all structural steel has been erected, elevation of the top flanges of the beams shall be taken at the stations shown. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection", minus floor thickness equals the fillet heights above top flange of beams.



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)

Note: 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.

GIRDER 1				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W. Abut.	39838.41	-30.479	613.910	613.910
C Brg. W. Abut.	39841.53	-30.479	613.967	613.967
A	39851.53	-30.479	614.143	614.166
B	39861.53	-30.479	614.308	614.344
C	39871.53	-30.479	614.461	614.497
D	39881.53	-30.479	614.603	614.626
E	39891.53	-30.479	614.733	614.741
C Pier 1	39901.93	-30.479	614.856	614.856
F	39911.93	-30.479	614.963	614.971
G	39921.93	-30.479	615.058	615.080
H	39931.93	-30.479	615.142	615.179
I	39941.93	-30.479	615.214	615.253
J	39951.93	-30.479	615.275	615.307
K	39961.93	-30.479	615.324	615.339
L	39971.93	-30.479	615.362	615.364
C Pier 2	39977.30	-30.479	615.378	615.378
M	39987.30	-30.479	615.398	615.406
N	39997.30	-30.479	615.407	615.430
O	40007.30	-30.479	615.404	615.441
P	40017.30	-30.479	615.390	615.429
Q	40027.30	-30.479	615.364	615.395
R	40037.30	-30.479	615.327	615.342
S	40047.30	-30.479	615.278	615.281
C Pier 3	40052.84	-30.479	615.246	615.246
T	40062.84	-30.479	615.180	615.188
U	40072.84	-30.479	615.102	615.125
V	40082.84	-30.479	615.012	615.047
W	40092.84	-30.479	614.911	614.947
X	40102.84	-30.479	614.799	614.823
C Brg. E. Abut.	40113.02	-30.479	614.673	614.673
Back of E. Abut.	40118.14	-30.479	614.632	614.632

GIRDER 2				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W. Abut.	39840.77	-27.313	614.001	614.001
C Brg. W. Abut.	39843.88	-27.313	614.058	614.058
A	39853.88	-27.313	614.231	614.254
B	39863.88	-27.313	614.393	614.429
C	39873.88	-27.313	614.543	614.560
D	39883.88	-27.313	614.682	614.706
E	39893.88	-27.313	614.810	614.818
C Pier 1	39904.28	-27.313	614.930	614.930
F	39914.28	-27.313	615.034	615.041
G	39924.28	-27.313	615.127	615.150
H	39934.28	-27.313	615.208	615.244
I	39944.28	-27.313	615.275	615.317
J	39954.28	-27.313	615.336	615.367
K	39964.28	-27.313	615.382	615.398
L	39974.28	-27.313	615.418	615.420
C Pier 2	39978.68	-27.313	615.432	615.432
M	39988.68	-27.313	615.449	615.457
N	39998.68	-27.313	615.455	615.478
O	40008.68	-27.313	615.450	615.486
P	40018.68	-27.313	615.433	615.472
Q	40028.68	-27.313	615.405	615.436
R	40038.68	-27.313	615.365	615.380
S	40048.68	-27.313	615.313	615.318
C Pier 3	40055.20	-27.313	615.280	615.280
T	40065.20	-27.313	615.211	615.218
U	40075.20	-27.313	615.130	615.153
V	40085.20	-27.313	615.038	615.074
W	40095.20	-27.313	614.934	614.971
X	40105.20	-27.313	614.819	614.843
C Brg. E. Abut.	40115.38	-27.313	614.690	614.690
Back of E. Abut.	40118.49	-27.313	614.648	614.648

GIRDER 3				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W. Abut.	39845.51	-20.938	614.186	614.186
C Brg. W. Abut.	39848.63	-20.938	614.241	614.241
A	39858.63	-20.938	614.409	614.432
B	39868.63	-20.938	614.566	614.602
C	39878.63	-20.938	614.711	614.747
D	39888.63	-20.938	614.844	614.868
E	39898.63	-20.938	614.965	614.974
C Pier 1	39909.03	-20.938	615.081	615.081
F	39919.03	-20.938	615.179	615.186
G	39929.03	-20.938	615.267	615.289
H	39939.03	-20.938	615.342	615.376
I	39949.03	-20.938	615.406	615.446
J	39959.03	-20.938	615.459	615.499
K	39969.03	-20.938	615.500	615.516
L	39979.03	-20.938	615.530	615.533
C Pier 2	39984.40	-20.938	615.541	615.541
M	39994.40	-20.938	615.553	615.561
N	40004.40	-20.938	615.554	615.577
O	40014.40	-20.938	615.543	615.579
P	40024.40	-20.938	615.521	615.560
Q	40034.40	-20.938	615.487	615.518
R	40044.40	-20.938	615.441	615.456
S	40054.40	-20.938	615.384	615.387
C Pier 3	40059.94	-20.938	615.348	615.348
T	40069.94	-20.938	615.273	615.281
U	40079.94	-20.938	615.187	615.210
V	40089.94	-20.938	615.090	615.125
W	40099.94	-20.938	614.981	615.017
X	40109.94	-20.938	614.860	614.884
C Brg. E. Abut.	40120.12	-20.938	614.725	614.725
Back of E. Abut.	40123.24	-20.938	614.682	614.682

GIRDER 4				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W. Abut.	39850.71	-13.958	614.386	614.386
C Brg. W. Abut.	39853.83	-13.958	614.439	614.439
A	39863.83	-13.958	614.601	614.624
B	39873.83	-13.958	614.751	614.788
C	39883.83	-13.958	614.890	614.928
D	39893.83	-13.958	615.018	615.042
E	39903.83	-13.958	615.134	615.142
C Pier 1	39914.23	-13.958	615.243	615.243
F	39924.23	-13.958	615.335	615.342
G	39934.23	-13.958	615.416	615.439
H	39944.23	-13.958	615.486	615.522
I	39954.23	-13.958	615.544	615.584
J	39964.23	-13.958	615.591	615.622
K	39974.23	-13.958	615.626	615.642
L	39984.23	-13.958	615.650	615.652
C Pier 2	39989.60	-13.958	615.658	615.658
M	39999.60	-13.958	615.664	615.671
N	40009.60	-13.958	615.659	615.682
O	40019.60	-13.958	615.642	615.678
P	40029.60	-13.958	615.613	615.653
Q	40039.60	-13.958	615.574	615.605
R	40049.60	-13.958	615.522	615.537
S	40059.60	-13.958	615.460	615.462
C Pier 3	40065.14	-13.958	615.420	615.420
T	40075.14	-13.958	615.339	615.347
U	40085.14	-13.958	615.247	615.270
V	40095.14	-13.958	615.143	615.179
W	40105.14	-13.958	615.028	615.065
X	40115.14	-13.958	614.902	614.925
C Brg. E. Abut.	40125.32	-13.958	614.761	614.761
Back of E. Abut.	40128.44	-13.958	614.716	614.716

GIRDER 5				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W. Abut.	39855.91	-8.979	614.583	614.583
C Brg. W. Abut.	39859.03	-8.979	614.634	614.634
A	39869.03	-8.979	614.790	614.813
B	39879.03	-8.979	614.934	614.970
C	39889.03	-8.979	615.067	615.103
D	39899.03	-8.979	615.189	615.213
E	39909.03	-8.979	615.299	615.307
C Pier 1	39919.43	-8.979	615.401	615.401
F	39929.43	-8.979	615.488	615.495
G	39939.43	-8.979	615.563	615.586
H	39949.43	-8.979	615.627	615.663
I	39959.43	-8.979	615.679	615.718
J	39969.43	-8.979	615.720	615.751
K	39979.43	-8.979	615.749	615.764
L	39989.43	-8.979	615.767	615.769
C Pier 2	39994.80	-8.979	615.772	615.772
M	40004.80	-8.979	615.772	615.779
N	40014.80	-8.979	615.768	615.783
O	40024.80	-8.979	615.738	615.774
P	40034.80	-8.979	615.703	615.743
Q	40044.80	-8.979	615.657	615.688
R	40054.80	-8.979	615.600	615.615
S	40064.80	-8.979	615.531	615.534
C Pier 3	40070.34	-8.979	615.488	615.488
T	40080.34	-8.979	615.402	615.409
U	40090.34	-8.979	615.304	615.327
V	40100.34	-8.979	615.194	615.230
W	40110.34	-8.979	615.073	615.108
X	40120.34	-8.979	614.940	614.964
C Brg. E. Abut.	40130.62	-8.979	614.794	614.794
Back of E. Abut.	40133.64	-8.979	614.746	614.746

GIRDER 6 & ROADWAY				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W. Abut.	39861.11	0.000	614.776	614.776
C Brg. W. Abut.	39864.23	0.000	614.825	614.825
A	39874.23	0.000	614.975	614.998
B	39884.23	0.000	615.114	615.150
C	39894.23	0.000	615.241	615.277
D	39904.23	0.000	615.357	615.380
E	39914.23	0.000	615.461	615.469
C Pier 1	39924.63	0.000	615.557	615.557
F	39934.63	0.000	615.637	615.645
G	39944.63	0.000	615.707	615.729
H	39954.63	0.000	615.764	615.801
I	39964.63	0.000	615.811	615.850
J	39974.63	0.000	615.845	615.877
K	39984.63	0.000	615.869	615.884
L	39994.63	0.000	615.881	615.883
C Pier 2	40000.00	0.000	615.882	615.882
M	40010.00	0.000	615.876	615.884
N	40020.00	0.000	615.859	615.882
O	40030.00	0.000	615.830	615.867
P	40040.00	0.000	615.790	615.829
Q	40050.00	0.000	615.738	615.769
R	40060.00	0.000	615.675	615.690
S	40070.00	0.000	615.600	615.603
C Pier 3	40075.64	0.000	615.554	615.554
T	40085.64	0.000	615.461	615.469
U	40095.64	0.000	615.357	615.384
V	40105.64	0.000	615.242	615.277
W	40115.64	0.000	615.115	615.151
X	40125.64	0.000	614.976	615.000
C Brg. E. Abut.	40135.72	0.000	614.823	614.823
Back of E. Abut.	40138.84	0.000	614.774	614.774

GIRDER 7				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W. Abut.	39866.31	6.979	614.748	614.748
¢ Brg. W. Abut.	39869.43	6.979	614.796	614.796
A	39879.43	6.979	614.940	614.963
B	39889.43	6.979	615.072	615.109
C	39899.43	6.979	615.193	615.229
D	39909.43	6.979	615.303	615.327
E	39919.43	6.979	615.401	615.409
¢ Pier 1	39929.83	6.979	615.491	615.491
F	39939.83	6.979	615.566	615.573
G	39949.83	6.979	615.629	615.652
H	39959.83	6.979	615.681	615.717
I	39969.83	6.979	615.721	615.761
J	39979.83	6.979	615.750	615.781
K	39989.83	6.979	615.767	615.783
L	39999.83	6.979	615.773	615.776
¢ Pier 2	40005.20	6.979	615.772	615.772
M	40015.20	6.979	615.780	615.787
N	40025.20	6.979	615.736	615.759
O	40035.20	6.979	615.702	615.738
P	40045.20	6.979	615.655	615.695
Q	40055.20	6.979	615.598	615.629
R	40065.20	6.979	615.528	615.543
S	40075.20	6.979	615.448	615.450
¢ Pier 3	40080.74	6.979	615.398	615.398
T	40090.74	6.979	615.299	615.307
U	40100.74	6.979	615.189	615.213
V	40110.74	6.979	615.068	615.104
W	40120.74	6.979	614.935	614.972
X	40130.74	6.979	614.790	614.814
¢ Brg. E. Abut.	40140.92	6.979	614.632	614.632
Back of E. Abut.	40144.04	6.979	614.580	614.580

GIRDER 8				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W. Abut.	39871.51	13.958	614.717	614.717
¢ Brg. W. Abut.	39874.63	13.958	614.763	614.763
A	39884.63	13.958	614.901	614.924
B	39894.63	13.958	615.028	615.064
C	39904.63	13.958	615.143	615.179
D	39914.63	13.958	615.246	615.270
E	39924.63	13.958	615.339	615.347
¢ Pier 1	39935.03	13.958	615.422	615.422
F	39945.03	13.958	615.491	615.498
G	39955.03	13.958	615.548	615.571
H	39965.03	13.958	615.594	615.630
I	39975.03	13.958	615.628	615.666
J	39985.03	13.958	615.651	615.683
K	39995.03	13.958	615.663	615.678
L	40005.03	13.958	615.663	615.665
¢ Pier 2	40010.40	13.958	615.658	615.658
M	40020.40	13.958	615.640	615.647
N	40030.40	13.958	615.611	615.634
O	40040.40	13.958	615.570	615.606
P	40050.40	13.958	615.518	615.557
Q	40060.40	13.958	615.454	615.485
R	40070.40	13.958	615.379	615.394
S	40080.40	13.958	615.292	615.295
¢ Pier 3	40085.94	13.958	615.239	615.239
T	40095.94	13.958	615.135	615.142
U	40105.94	13.958	615.019	615.042
V	40115.94	13.958	614.891	614.927
W	40125.94	13.958	614.752	614.789
X	40135.94	13.958	614.602	614.626
¢ Brg. E. Abut.	40146.12	13.958	614.437	614.437
Back of E. Abut.	40149.24	13.958	614.384	614.384

GIRDER 9				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W. Abut.	39876.71	20.938	614.684	614.684
¢ Brg. W. Abut.	39879.83	20.938	614.727	614.727
A	39889.83	20.938	614.859	614.882
B	39899.83	20.938	614.980	615.018
C	39909.83	20.938	615.089	615.125
D	39919.83	20.938	615.187	615.211
E	39929.83	20.938	615.273	615.281
¢ Pier 1	39940.23	20.938	615.350	615.350
F	39950.23	20.938	615.413	615.420
G	39960.23	20.938	615.465	615.487
H	39970.23	20.938	615.504	615.541
I	39980.23	20.938	615.535	615.572
J	39990.23	20.938	615.550	615.581
K	40000.23	20.938	615.555	615.570
L	40010.23	20.938	615.549	615.551
¢ Pier 2	40015.60	20.938	615.541	615.541
M	40025.60	20.938	615.517	615.524
N	40035.60	20.938	615.482	615.505
O	40045.60	20.938	615.435	615.472
P	40055.60	20.938	615.377	615.416
Q	40065.60	20.938	615.307	615.338
R	40075.60	20.938	615.226	615.241
S	40085.60	20.938	615.134	615.136
¢ Pier 3	40091.14	20.938	615.077	615.077
T	40101.14	20.938	614.967	614.974
U	40111.14	20.938	614.845	614.868
V	40121.14	20.938	614.711	614.747
W	40131.14	20.938	614.566	614.603
X	40141.14	20.938	614.410	614.434
¢ Brg. E. Abut.	40151.32	20.938	614.239	614.239
Back of E. Abut.	40154.44	20.938	614.184	614.184

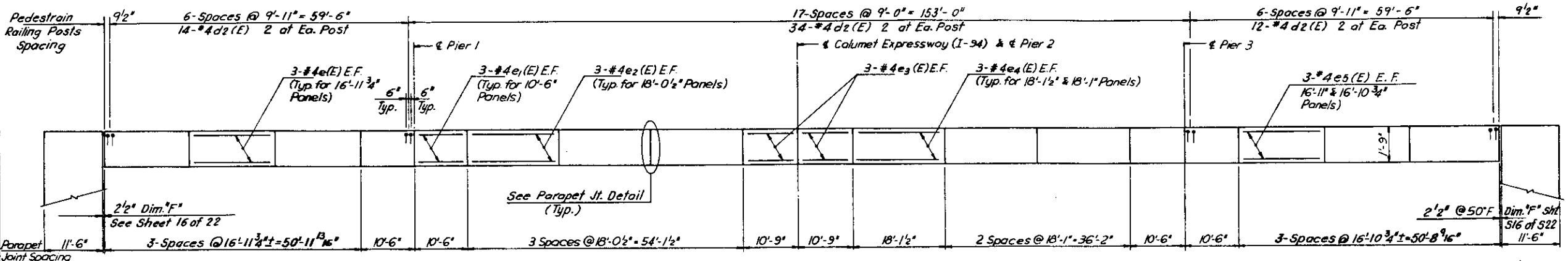
GIRDER 10				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W. Abut.	39881.45	27.313	614.650	614.650
¢ Brg. W. Abut.	39884.58	27.313	614.692	614.692
A	39894.58	27.313	614.818	614.841
B	39904.58	27.313	614.934	614.970
C	39914.58	27.313	615.037	615.073
D	39924.58	27.313	615.129	615.153
E	39934.58	27.313	615.210	615.218
¢ Pier 1	39944.97	27.313	615.282	615.282
F	39954.97	27.313	615.339	615.347
G	39964.97	27.313	615.385	615.408
H	39974.97	27.313	615.420	615.456
I	39984.97	27.313	615.443	615.482
J	39994.97	27.313	615.454	615.485
K	40004.97	27.313	615.454	615.469
L	40014.97	27.313	615.442	615.445
¢ Pier 2	40020.35	27.313	615.431	615.431
M	40030.35	27.313	615.402	615.410
N	40040.35	27.313	615.362	615.385
O	40050.35	27.313	615.308	615.345
P	40060.35	27.313	615.246	615.285
Q	40070.35	27.313	615.171	615.202
R	40080.35	27.313	615.084	615.099
S	40090.35	27.313	614.986	614.988
¢ Pier 3	40095.88	27.313	614.927	614.927
T	40105.88	27.313	614.811	614.818
U	40115.88	27.313	614.683	614.706
V	40125.88	27.313	614.544	614.580
W	40135.88	27.313	614.394	614.431
X	40145.88	27.313	614.232	614.256
¢ Brg. E. Abut.	40156.06	27.313	614.056	614.056
Back of E. Abut.	40159.18	27.313	613.999	613.999

GIRDER 11				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W. Abut.	39883.81	30.479	614.633	614.633
¢ Brg. W. Abut.	39886.93	30.479	614.674	614.674
A	39896.93	30.479	614.798	614.821
B	39906.93	30.479	614.911	614.947
C	39916.93	30.479	615.012	615.048
D	39926.93	30.479	615.101	615.124
E	39936.93	30.479	615.179	615.187
¢ Pier 1	39947.33	30.479	615.248	615.248
F	39957.33	30.479	615.303	615.311
G	39967.33	30.479	615.346	615.368
H	39977.33	30.479	615.378	615.415
I	39987.33	30.479	615.398	615.437
J	39997.33	30.479	615.407	615.439
K	40007.33	30.479	615.404	615.419
L	40017.33	30.479	615.390	615.392
¢ Pier 2	40022.70	30.479	615.377	615.377
M	40032.70	30.479	615.345	615.353
N	40042.70	30.479	615.302	615.325
O	40052.70	30.479	615.247	615.284
P	40062.70	30.479	615.181	615.220
Q	40072.70	30.479	615.103	615.134
R	40082.70	30.479	615.014	615.029
S	40092.70	30.479	614.913	614.916
¢ Pier 3	40098.24	30.479	614.852	614.852
T	40108.24	30.479	614.733	614.741
U	40118.24	30.479	614.603	614.626
V	40128.24	30.479	614.462	614.497
W	40138.24	30.479	614.308	614.345
X	40148.24	30.479	614.144	614.168
¢ Brg. E. Abut.	40158.42	30.479	613.965	613.965
Back of E. Abut.	40161.54	30.479	613.907	613.907

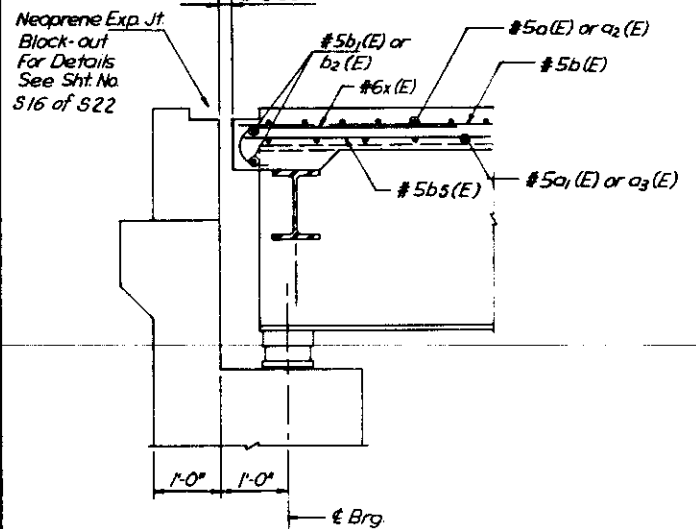
STAGE CONSTRUCTION LINE				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W. Abut.	39857.38	-5.000	614.638	614.638
¢ Brg. W. Abut.	39860.51	-5.000	614.689	614.689
A	39870.51	-5.000	614.843	614.866
B	39880.51	-5.000	614.986	615.022
C	39890.51	-5.000	615.117	615.153
D	39900.51	-5.000	615.237	615.260
E	39910.51	-5.000	615.345	615.353
¢ Pier 1	39920.91	-5.000	615.446	615.446
F	39930.91	-5.000	615.531	615.539
G	39940.91	-5.000	615.604	615.626
H	39950.91	-5.000	615.666	615.703
I	39960.91	-5.000	615.717	615.756
J	39970.91	-5.000	615.756	615.788
K	39980.91	-5.000	615.783	615.798
L	39990.91	-5.000	615.800	615.802
¢ Pier 2	39996.27	-5.000	615.803	615.803
M	40006.27	-5.000	615.802	615.810
N	40016.27	-5.000	615.789	615.812
O	40026.27	-5.000	615.764	615.801
P	40036.27	-5.000	615.728	615.767
Q	40046.27	-5.000	615.681	615.712
R	40056.27	-5.000	615.622	615.637
S	40066.27	-5.000	615.551	615.554
¢ Pier 3	40071.81	-5.000	615.507	615.507
T	40081.81	-5.000	615.419	615.427
U	40091.81	-5.000	615.319	615.342
V	40101.81	-5.000	615.208	615.243
W	40111.81	-5.000	615.085	615.121
X	40121.81	-5.000	614.951	614.975
¢ Brg. E. Abut.	40131.99	-5.000	614.803	614.803
Back of E. Abut.	40135.12	-5.000	614.755	614.755

BILL OF MATERIALS				
BAR	NO.	SIZE	LENGTH	SHAPE
a1(E)	505	#5	28'-7"	—
a2(E)	365	#5	28'-1"	—
a3(E)	505	#5	36'-6"	—
a4(E)	365	#5	36'-0"	—
a5(E)	64	#5	2'-9"	—
b(E)	780	#5	28'-10"	—
b1(E)	4	#5	35'-5"	—
b2(E)	8	#5	23'-8"	—
b3(E)	124	#6	34'-10"	—
b4(E)	62	#6	35'-8"	—
b5(E)	616	#5	26'-6"	—
c(E)	273	#5	5'-7"	—
c1(E)	273	#5	3'-0"	J
c2(E)	270	#5	4'-3"	—
d(E)	546	#4	4'-3"	J
d1(E)	546	#6	4'-4"	J
d2(E)	120	#4	2'-1"	□
e(E)	36	#4	16'-8"	—
e1(E)	48	#4	10'-2"	—
e2(E)	36	#4	17'-8"	—
e3(E)	24	#4	10'-5"	—
e4(E)	36	#4	17'-9"	—
e5(E)	36	#4	16'-7"	—
x(E)	208	#6	4'-4"	—
Reinf. (Epoxy Coated)			Lbs.	120,550
Class X Concrete - Superstructure			CU.YD.	541.8
Protective Coat			SQ.YD.	530

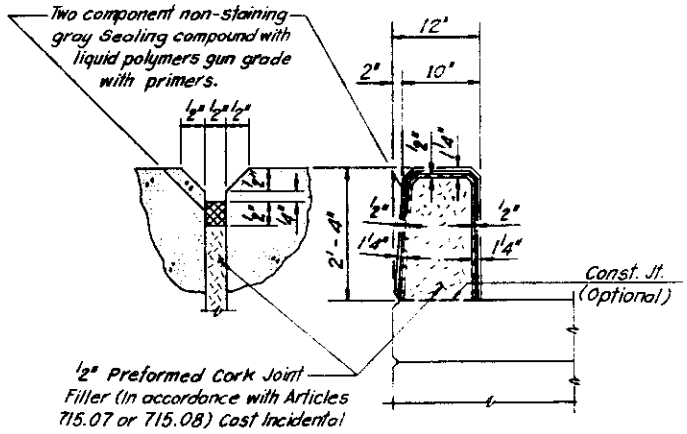
Notes: Reinforcement Bars Designated (E) shall be Epoxy Coated.
Cost for Bar Splicers Incidental to Item Reinforcement Bars Epoxy Coated.



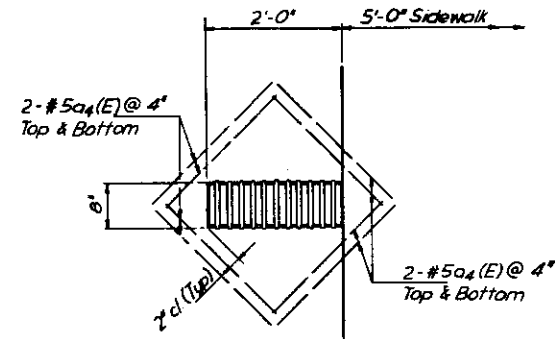
PARAPET ELEVATION
(2 - THUS)



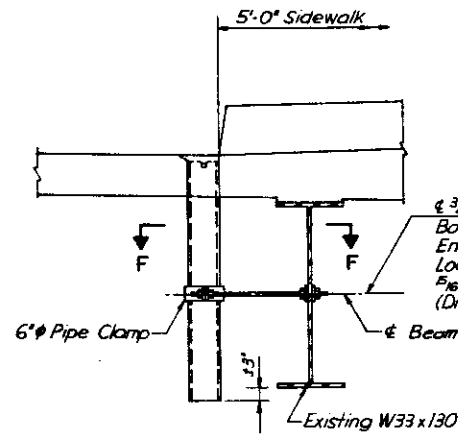
SECTION B - B



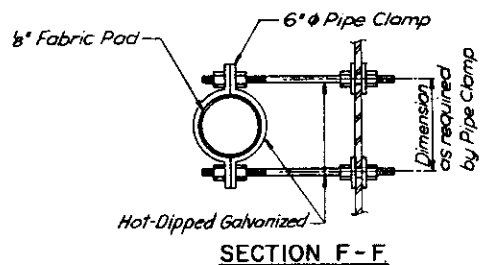
PARAPET JOINT DETAIL



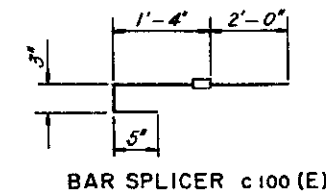
DRAINAGE SCUPPER (SPECIAL)
SEE SHEET NO. S17 & S18 OF S22



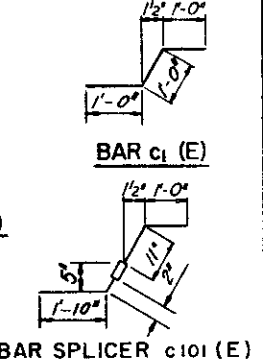
6" FLOOR DRAIN - SECTION
The surface of the Fiberglass pipe shall be free of bond inhibiting agents.



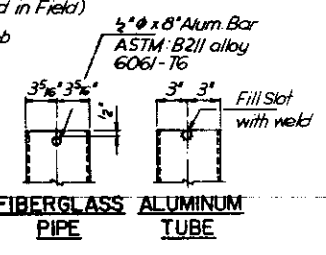
SECTION F - F



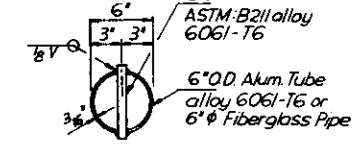
BAR SPLICER c100 (E)



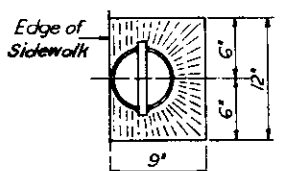
BAR SPLICER c101 (E)



FIBERGLASS ALUMINUM
PIPE TUBE



TOP PLAN



TOP PLAN

BAR d (E)

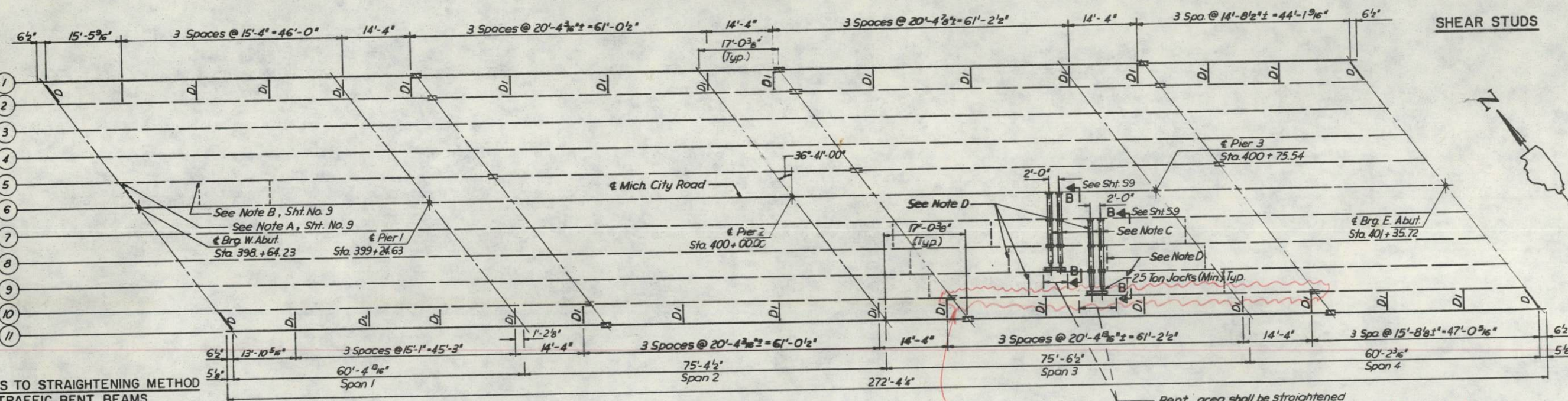
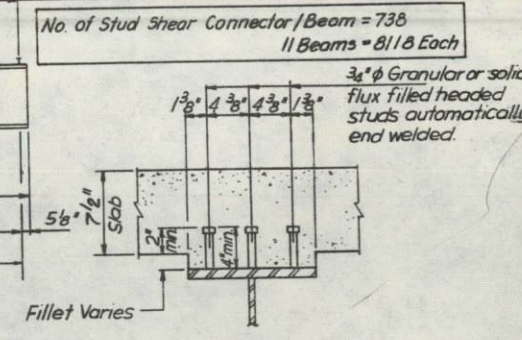
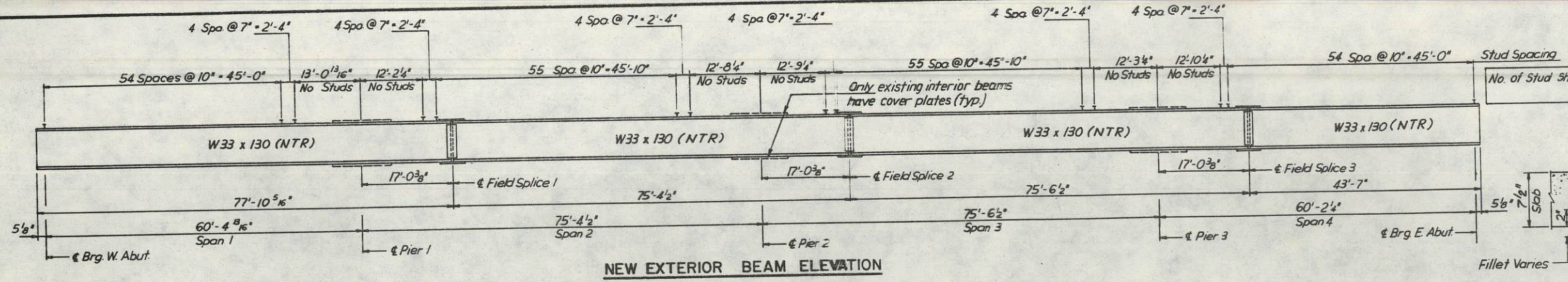
BAR d1 (E)

BAR d2 (E)

BAR x (E)

NOTE
Fiberglass pipe shall conform to ASTM: D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.
The exterior surfaces of the Floor Drain shall be painted with the vinyl enamel coat painting specified for Structural Steel. The exterior surfaces of the aluminum drains shall be cleaned and given a wash-coat pretreatment in accordance with the Steel Struct. Painting Council's Spec. SSPC-SPI & SSPC-Paint 27 followed by the vinyl enamel coat painting specified for Structural Steel.

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-94	4	COOK	113	62
STA.	TO STA.	KLING STUBBINS	FEDERAL AID PROJECT	
46505.41	46606.14	61R-84		SHT. S8 OF S22



NOTES TO STRAIGHTENING METHOD FOR TRAFFIC BENT BEAMS

- Note C:** 10" x 10" Oak timber load transfer blocking between existing beams - wedge tight. Place blocking in line with the jacking beams when jacking bent beam.
- Note D:** Remove existing rivets in diaph. connecting angles or entire diaph. if req'd. or as directed by the Engineer in the field. Use H.S. Bolts of the same size in replacement.
- Note E:** All materials and items used in the straightening of bent beams shall be incidental to "Beam Straightening." For details see this sht. & S9. Jacking force shall be maintained on all load transfer blocking during beam straightening.

TOP OF BEAM ELEVATIONS

Location	1	2	3	4	5	6	7	8	9	10	11
Brig. W. Abut.	613.269	613.363	613.548	613.743	613.940	614.133	614.100	614.068	614.033	613.996	613.973
Pier 1	614.038	614.113	614.264	614.425	614.584	614.740	614.673	614.605	614.534	614.465	614.429
Splice 1	614.235	614.325	614.466	614.617	614.766	614.911	614.835	614.757	614.676	614.597	614.558
Pier 2	614.544	614.599	614.708	614.825	614.939	615.047	614.939	614.825	614.708	614.599	614.544
Splice 2	614.629	614.679	614.779	614.886	614.989	615.087	614.989	614.845	614.718	614.599	614.540
Pier 3	614.412	614.447	614.515	614.587	614.655	614.720	614.565	614.406	614.244	614.093	614.019
Splice 3	614.349	614.379	614.438	614.500	614.558	614.613	614.447	614.278	614.106	613.946	613.867
Brig. E. Abut.	613.974	613.994	614.028	614.065	614.097	614.131	613.963	613.743	613.542	613.389	613.265

Notes:

- After the diaphragms have been disconnected raise and set the existing beams on Temporary Support System high enough to raise the substructures to proposed elevations. After the substructure concrete has attained strength of 2800 p.s.i. and the bearings have been installed the beams shall be set into new permanent elevations and reconnected by means of 3/4" H.S. Bolts.
- Before new concrete deck slab is poured the top flange splice plate rivets shall be inspected for their deterioration. If sectional losses of more than 1/8" of an inch are found those rivets shall be removed and replaced with 3/4" H.S. Bolts. The top of top flanges, cover pl's and splice pl's shall be thoroughly cleaned before the installation of concrete deck slab. The weight of 25% of top flange rivets replacement is included in calculated weight of Structural steel.

beam replaced, NOT straightened (6-6-90 memo)

INTERIOR BEAM MOMENT TABLE

	0.4 Sp. 1	Pier No. 1	0.5 Sp. 2	Pier No. 2
I_s (in ⁴)	6710	11,222	6710	11,222
I_c (in ⁴)	18,167	—	18,167	—
S_s (in ³)	405	649	405	649
S_c (in ³)	598	—	598	—
Q (K/ft)	.823	.998	.823	.998
M_u (K)	192	489.2	169	490.9
f_s -Non-Comp (Ksi)	5.68	9.05	5.01	9.07
S_u (K/ft)	.175	—	.175	—
M_{su} (K)	46	—	46.5	—
M_u (K)	434	312	470	336
M_{imp} (K)	117	81	118	84
Total (K)	597	393	634.5	420
f_s -Comp (Ksi)	12.00	7.27	12.70	7.77
f_s Total (Ksi)	17.68	16.32	17.70	16.84
VR (K)	39.9	58.2	42.8	61.4

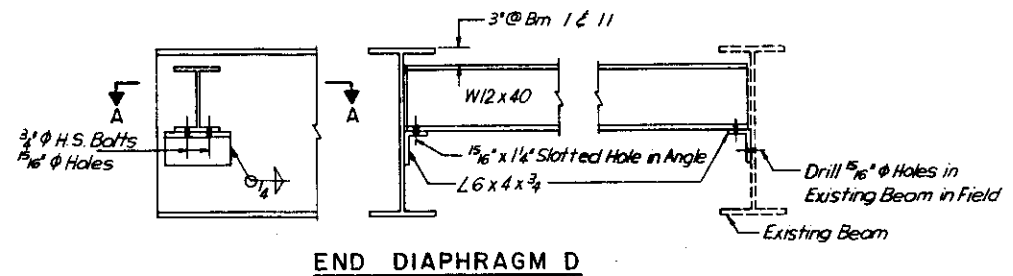
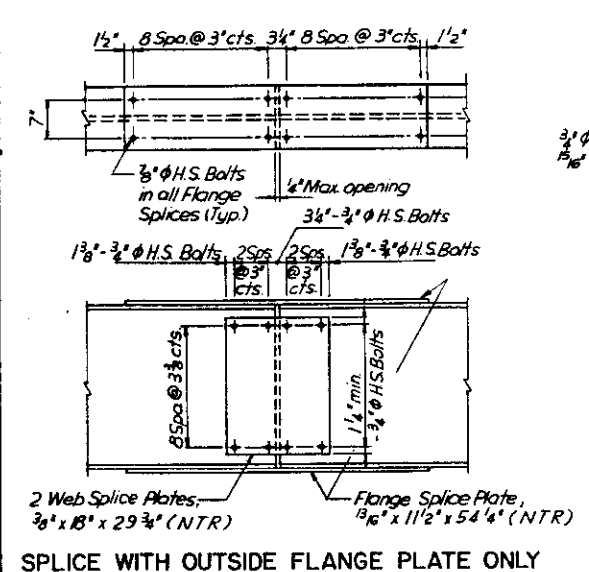
I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s total.
 I_c and S_c are the moment of inertia and section modulus of the composite section used in computing f_s total.
 VR is the maximum k + Impact shear range in span.

INTERIOR BEAM REACTION TABLE

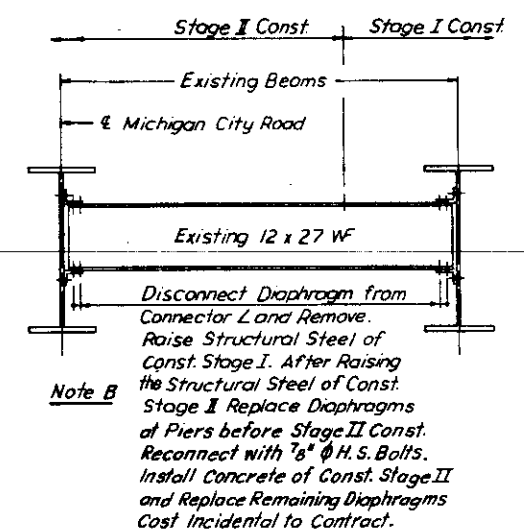
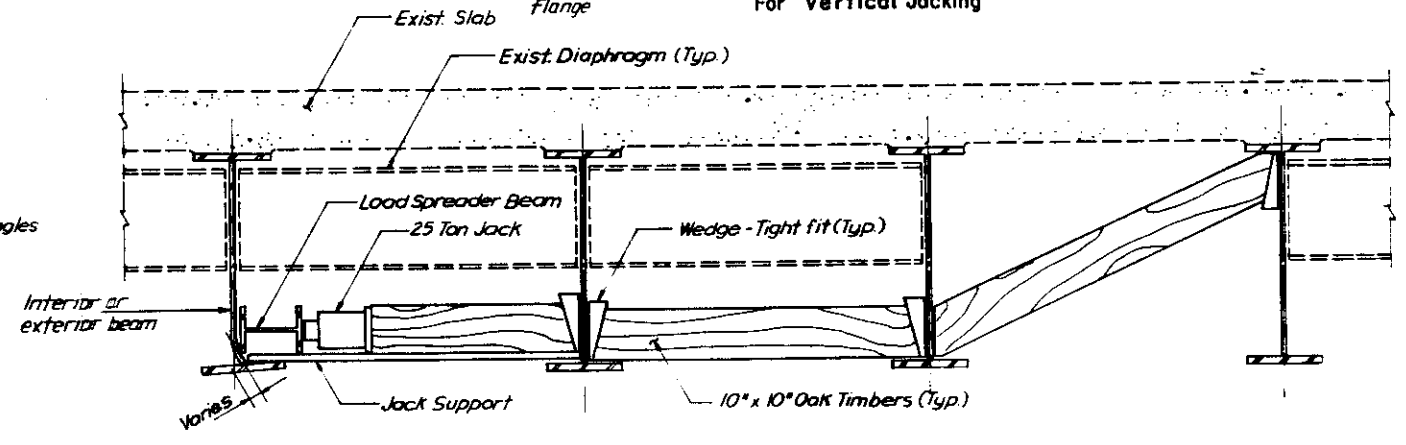
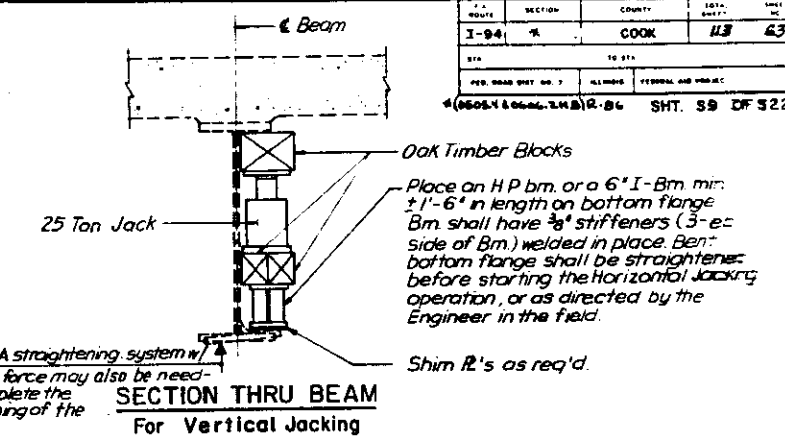
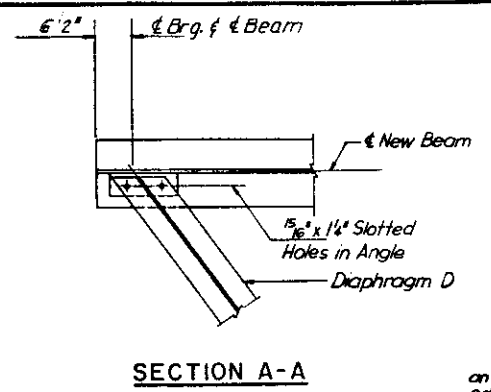
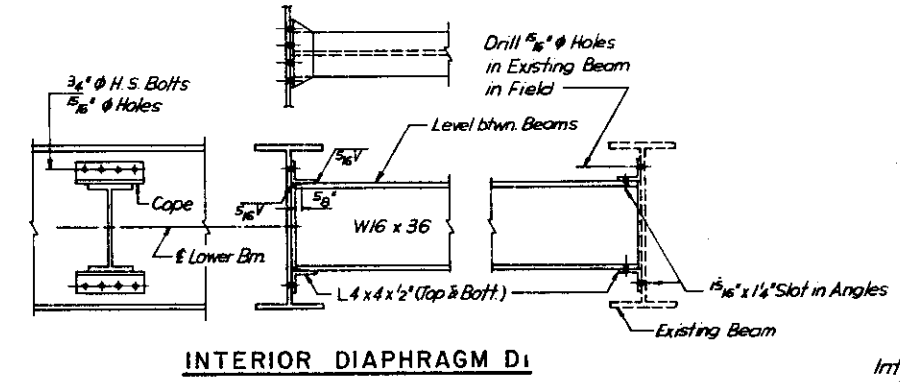
	Abutment	Pier No. 1	Pier No. 2
R_u	22.1	76.70	76.2
R_k	42.3	53.7	55.3
R_{imp}	11.4	14.0	13.8
R_{TOT}	75.8	144.4	145.3

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 STEEL DETAILS I
 MICHIGAN CITY ROAD OVER I-94
 F.A.I. RTE. 94
 SECTION COOK COUNTY
 STA. 400+00.00
 STRUCTURE No. 016-1068
 SCALE
 DATE MAY 1989
 DRAWN BY EBP
 CHECKED BY L.M.

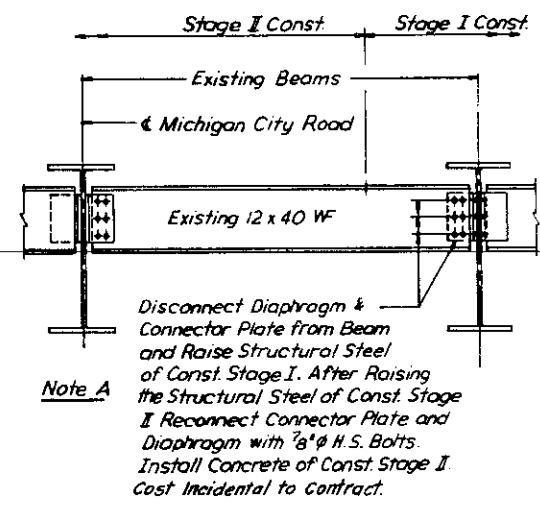
PROJECT	SECTION	COUNTY	DATE	SHEET
I-94	1	COOK	11/83	43
NO. 1	TO STA.	ILLINOIS	FEDERAL AID PROJECT	
(0606) & (0606) (M.B.) R-86				SHT. 89 OF 322



Note: Hardened washers shall be required over all 5/16" holes.



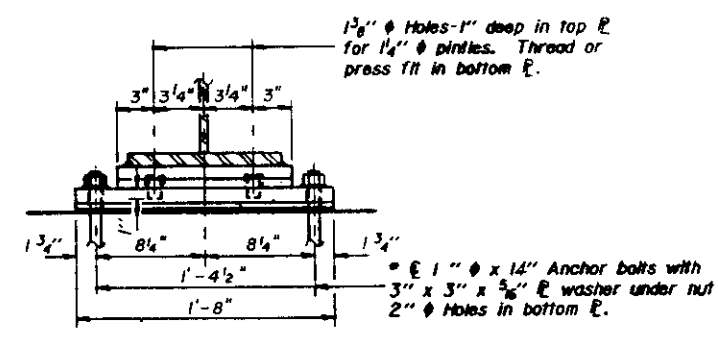
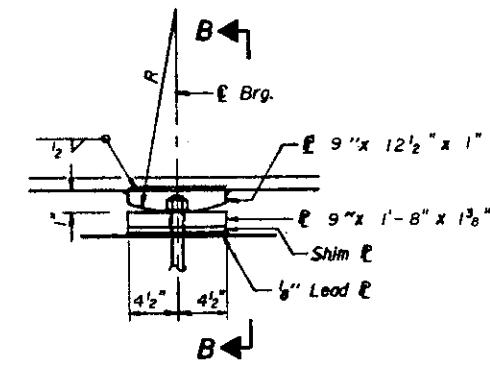
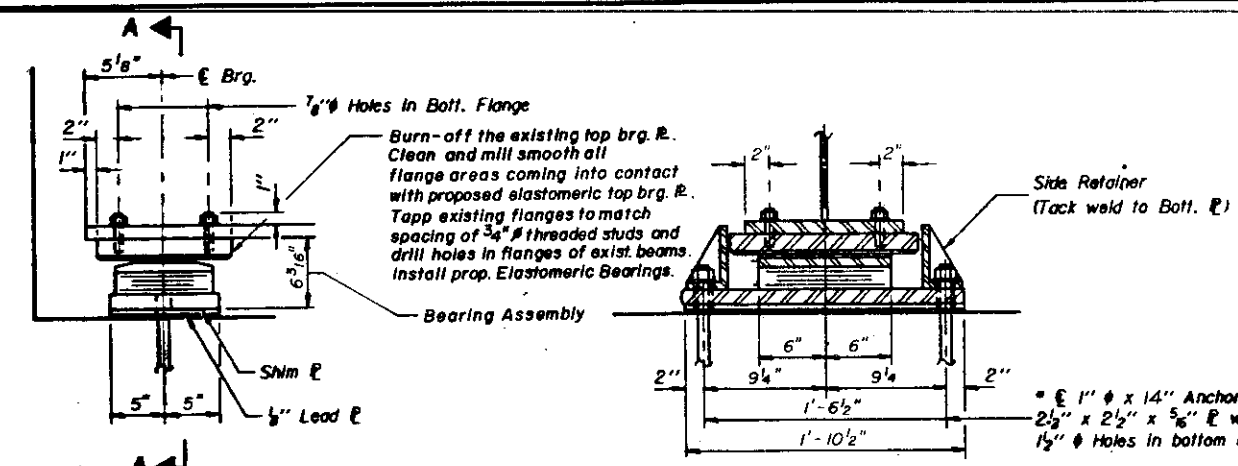
Note B



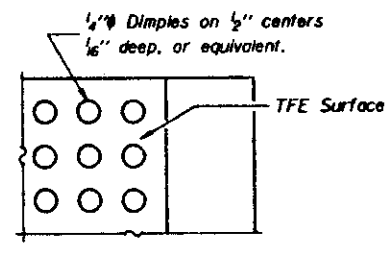
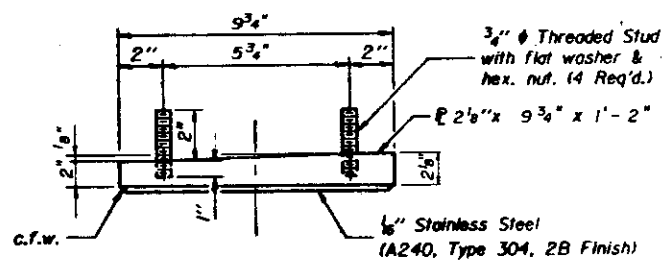
Note A

Note: Contractor may use his own method for beam straightening. Contractor's method shall be submitted for approval before starting work.

STATE OF ILLINOIS	
DEPARTMENT OF TRANSPORTATION	
STEEL DETAILS II	
MICHIGAN CITY ROAD OVER I-94	
F.A.I. RTE. 94	
SECTION	COOK COUNTY
STA. 400+00.00	
STRUCTURE No. 016 - 1068	
SCALE	DRAWN BY EBP
DATE MAY 1989	CHECKED BY L.N.

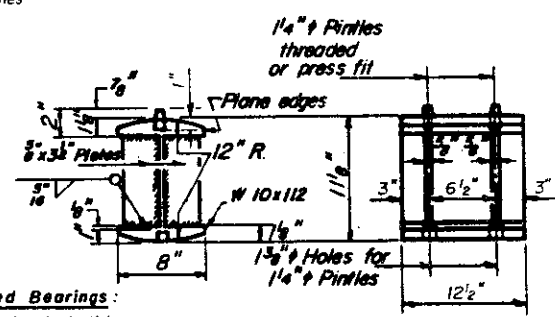
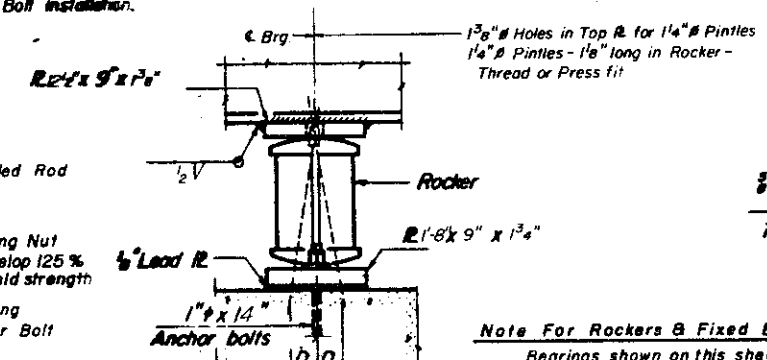


TYPE II TFE ELASTOMERIC EXP. BRG.
ALL BEAMS AT ABUTMENT BEARINGS



* Notes: Anchor bolts of fixed bearings may be built into the masonry. See Sht. No. S20 for Anchor Bolt Installation.

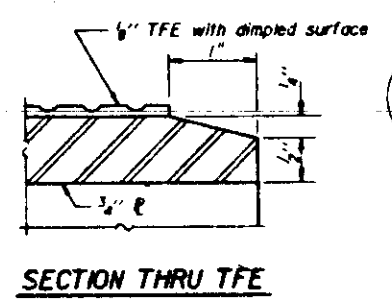
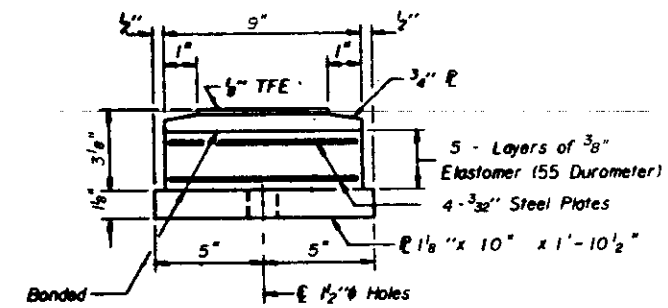
FIXED BEARING



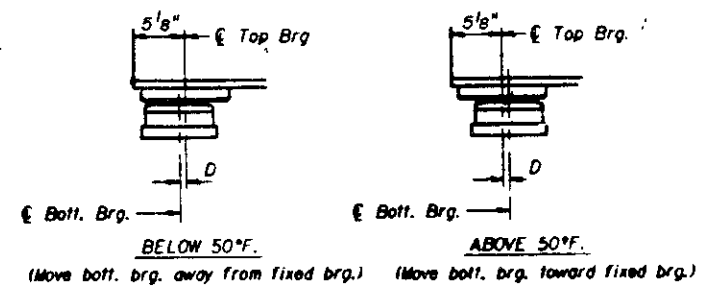
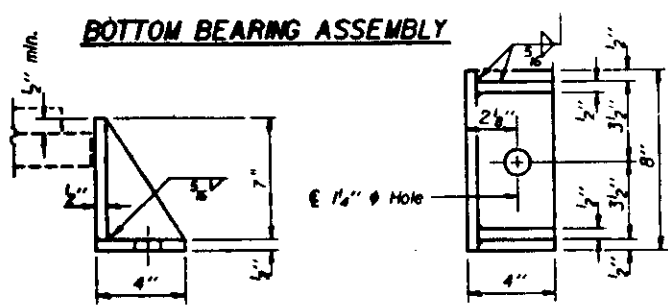
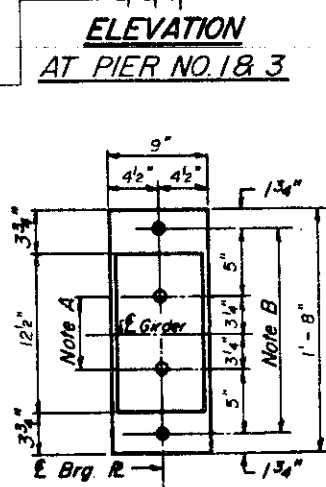
Note For Rockers & Fixed Bearings:
Bearings shown on this sheet shall be provided for new Beams I & II only. If existing Anchor Bolts to be extended for Beam 2 thru 10 are inadequate for reuse they shall be removed and new Bolts provided of size shown for Beams I & II. Four inches (±) diameter plugs of concrete shall be removed around each Bolt to a depth necessary to allow cutting off existing Bolts a minimum of 1" below the bottom of new Bolts. Existing Reinforcement Bars shall not be cut in removing Anchor Bolts.
For method of cleaning and painting of existing bearings see Cleaning and Painting of Existing Steel in General Notes Sht. No. S1.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	22



ANCHOR BOLT EXTENSION
90 Required.
(36 Each Pier 1 & 3)
(18 Each Pier 2)
For D values see "Setting Anchor Bolts at Expansion Bearing"

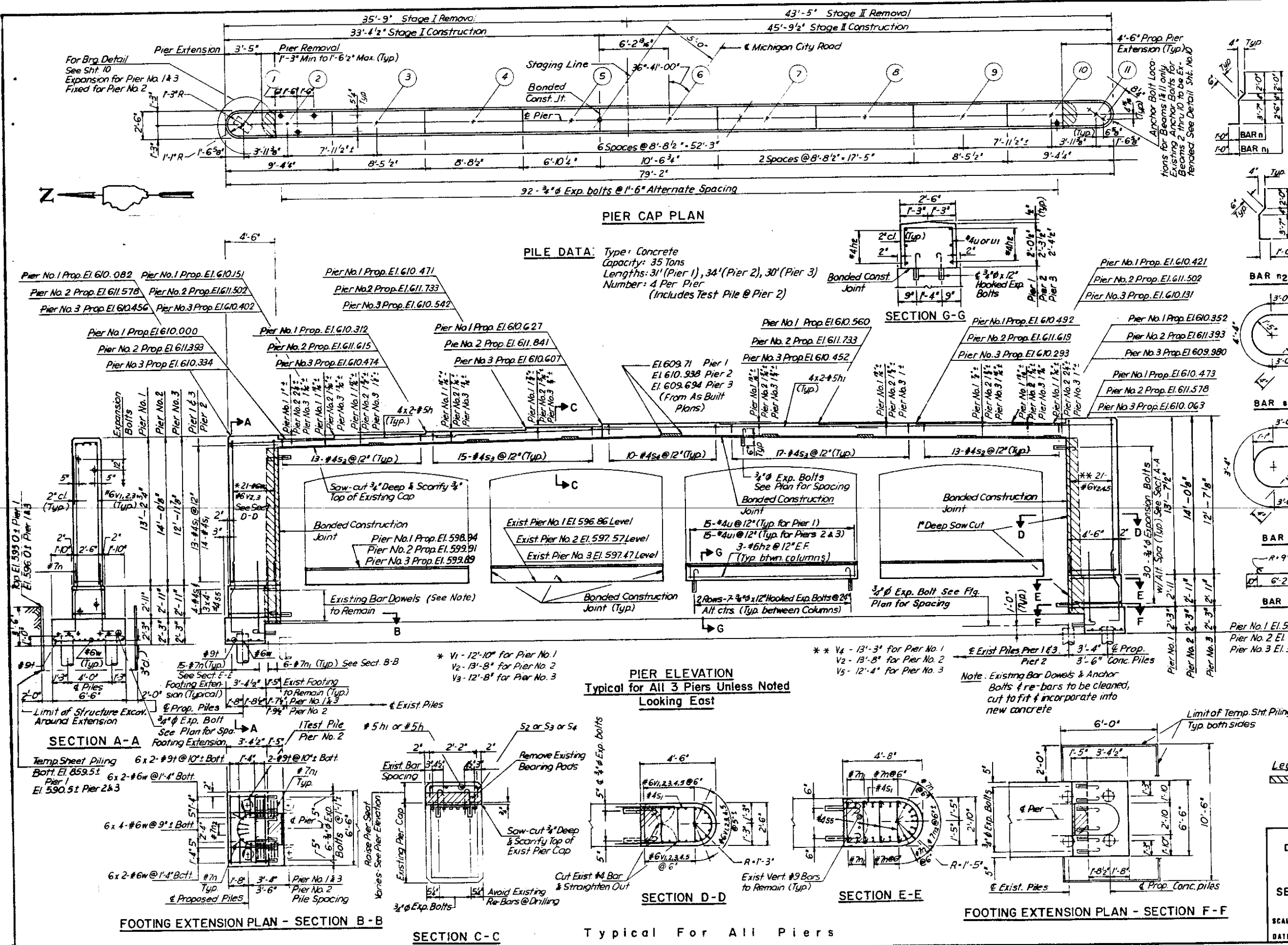


NOTE B
1 1/2" Holes for 1" anchor bolts. 5/16" x 2 1/2" x 2 1/2" R. Washers under nut.

NOTE A
1/4" Pintles-1 7/8" long in Bott. R. thread or press fit.

SECTION	COUNTY	FILE NO.	SHEET NO.
I-94	COOK	113	65
STA.	TO STA.	ILLINOIS PROJECT NO.	PROJECT NO.
4+00.00	4+00.00	113	65

BAR NO.	SIZE	LENGTH	SHAPE
n1	36	#7	7'-1"
n2	18	#7	7'-1"
n3	24	#4	13'-6"
n4	80	#4	9'-11"
n5	78	#4	3'-2"
n6	96	#4	3'-2"
n7	30	#4	3'-0"
n8	24	#9	7'-0"
n9	21	#6	13'-10"
n10	21	#6	14'-3"
n11	21	#6	14'-3"
n12	24	#5	23'-6"
n13	24	#5	23'-6"
n14	72	#4	3'-3"
n15	72	#4	14'-5"
n16	60	#4	5'-8"
n17	120	#4	6'-2"
n18	Exp. Bolts	3/4"	Ea. 840
n19	Furnishing Conc. Piles	L.F.	357
n20	Driving Conc. Piles	L.F.	346
n21	Test Piles	Each	1
n22	Structure Excavation	C.Y.	43.5
n23	Reinforcement Bars	Lbs.	9555
n24	Concrete Removal	C.Y.	12.9
n25	Temp Sheet Piling	S.F.	794
n26	Concrete Class "X"	C.Y.	108.1

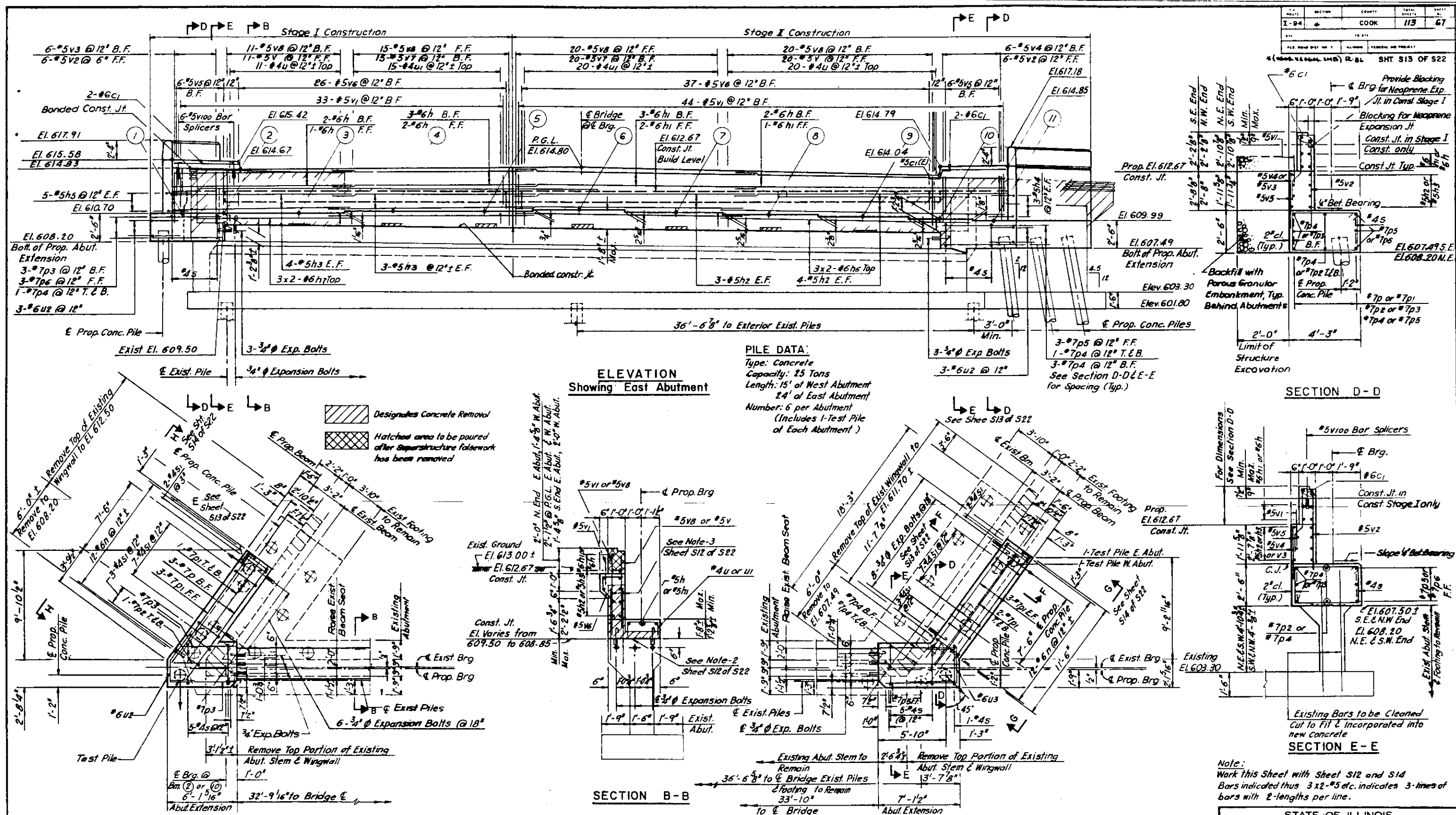


Legend
Indicates concrete removal

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PIER DETAILS
MICHIGAN CITY ROAD OVER I-94
F.A.I. RTE. 94
SECTION STA. 400+00.00
STRUCTURE No. 016 - 1068
SCALE
DATE MAY 1989
DRAWN BY EBP
CHECKED BY L.M.

PROJECT	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-94	+	COOK	113	67

FILE NO. DIST. NO. 7 AL-ROAD FEDERAL HIGHWAY PROJECT
 10 574
 SHT S13 OF S22



PILE DATA:
 Type: Concrete
 Capacity: 25 Tons
 Length: 15' at West Abutment
 24' at East Abutment
 Number: 6 per Abutment
 (Includes 1-Test Pile of Each Abutment)

ELEVATION
 Showing East Abutment

SECTION B-B

SECTION D-D

SECTION E-E

PARTIAL PLAN-PILE CAP
 N.E. & S.W. CORNER

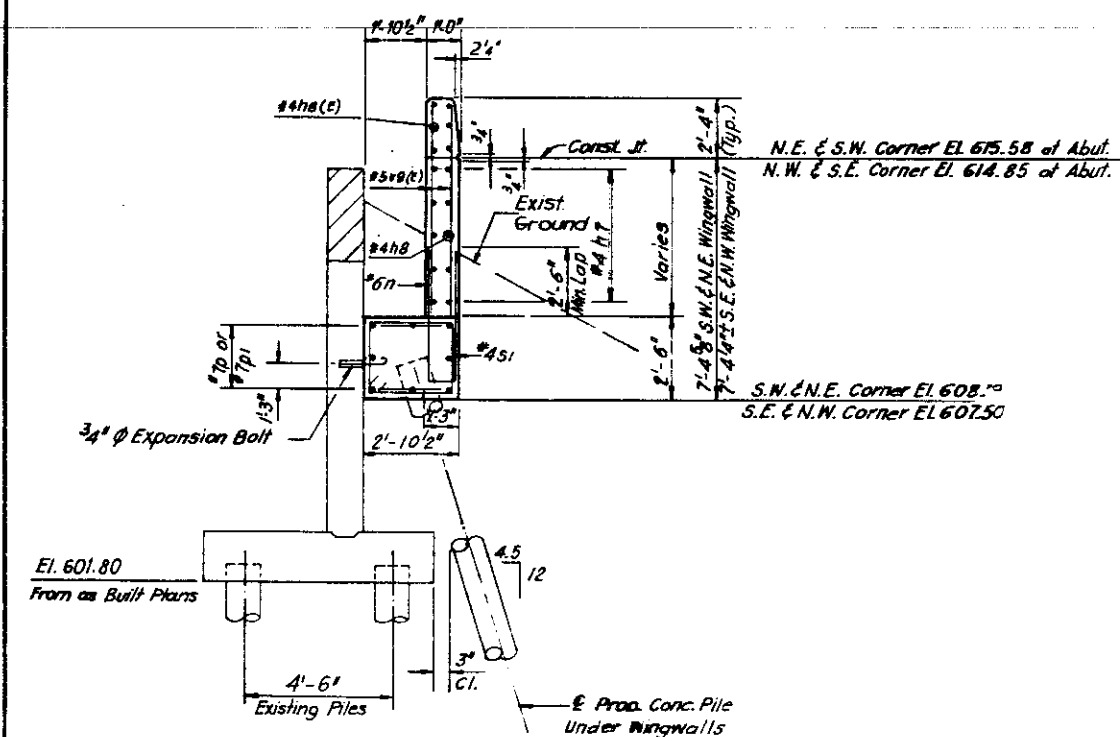
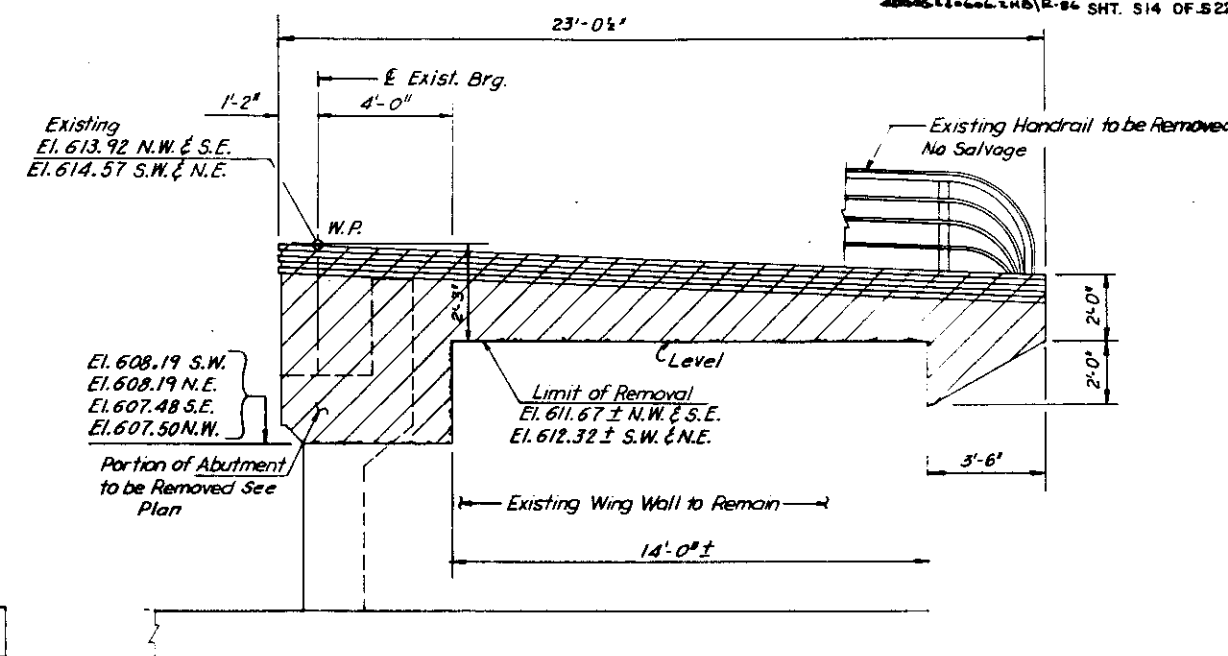
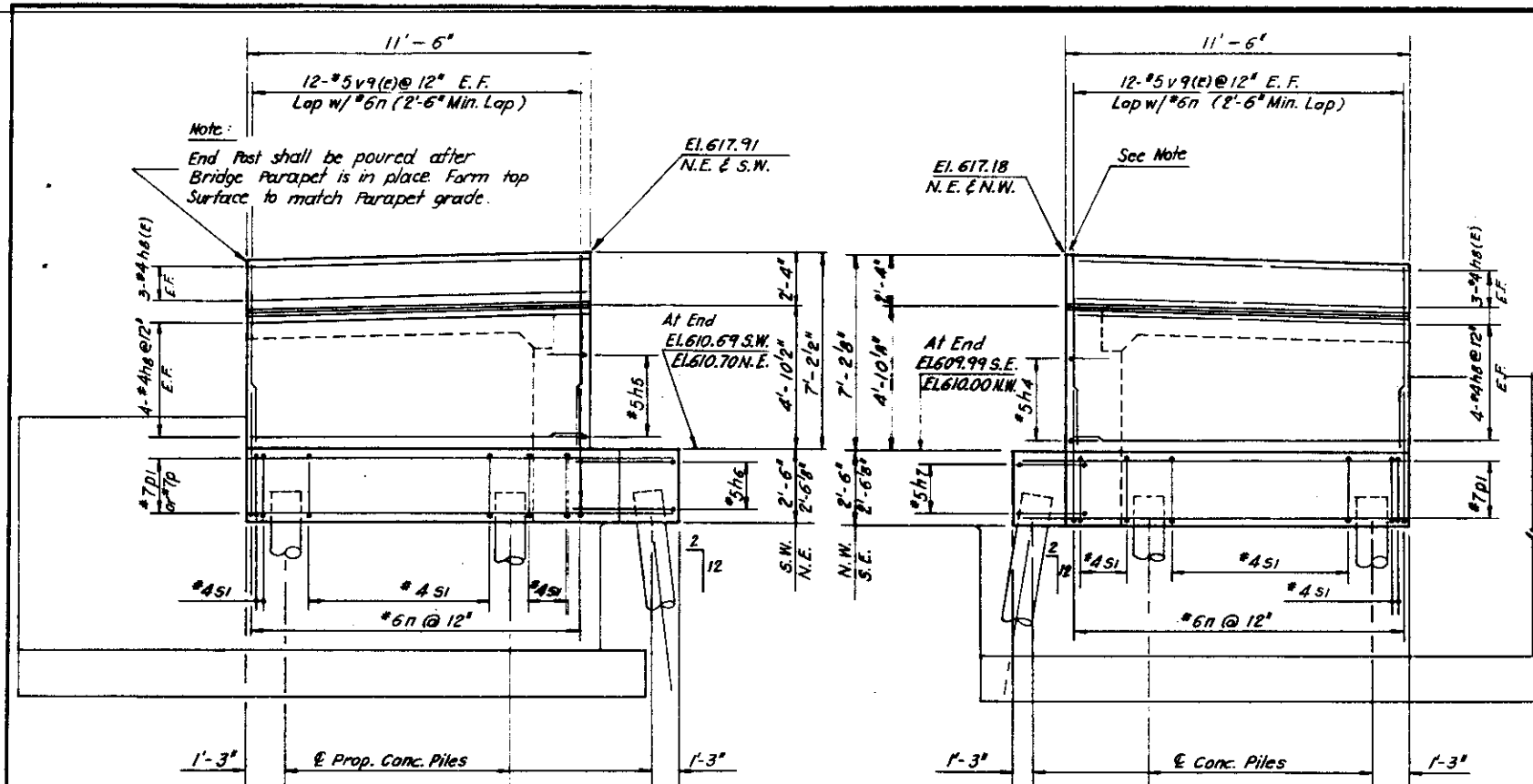
Beam No	1	2	3	4	5	6	7	8	9	10	11
Conc. Elev.	610.70	610.70	610.70	610.79	610.79	610.85	610.6	610.46	610.26	610.08	609.99
Shim R.	—	3/16"	9/16"	—	3/16"	—	—	—	—	—	—

PARTIAL PLAN-PILE CAP
 N.W. & S.E. CORNER

Note:
 Work this Sheet with Sheet S12 and S14
 Bars indicated thus 3x2-#5 etc. indicates 3-times of bars with 2-lengths per line.

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 ABUTMENT DETAILS II
 MICHIGAN CITY ROAD OVER I-94
 F.A.I. RTE. 94
 SECTION STA. 400+00.00
 STRUCTURE No. 016-1068
 SCALE DRAWN BY EOP
 DATE MAY 1989 CHECKED BY L.M.

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-94	COOK	113	68
TO STA.			
FROM STA.			
PROJECT NO. 1			
SHEET 514 OF 522			



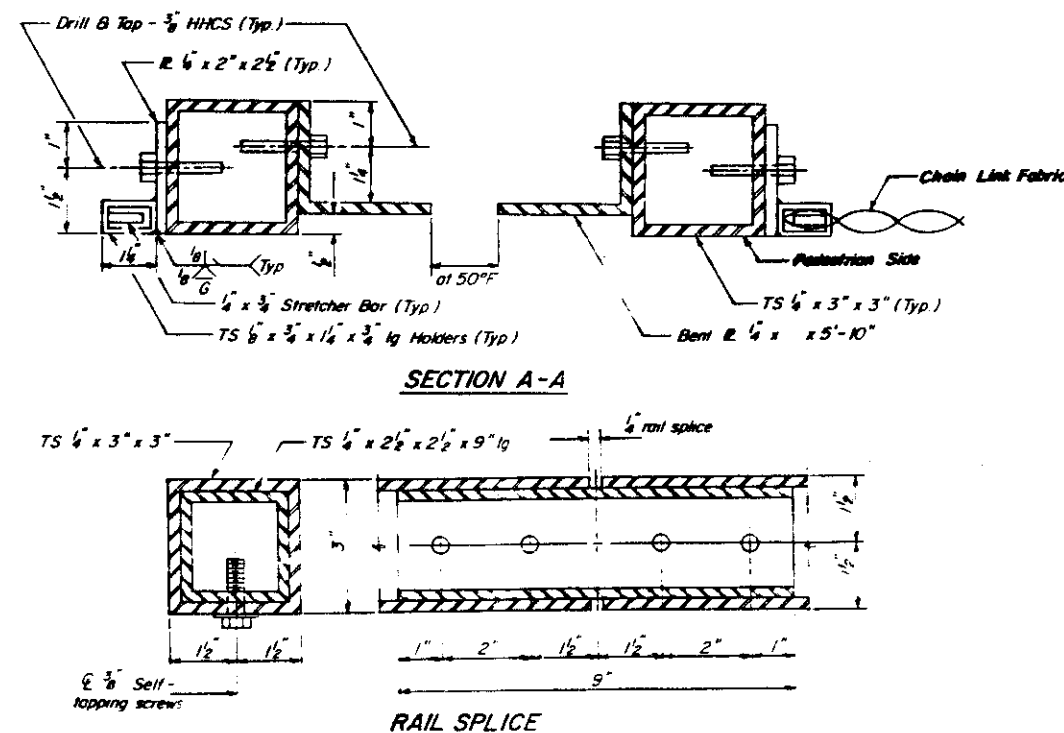
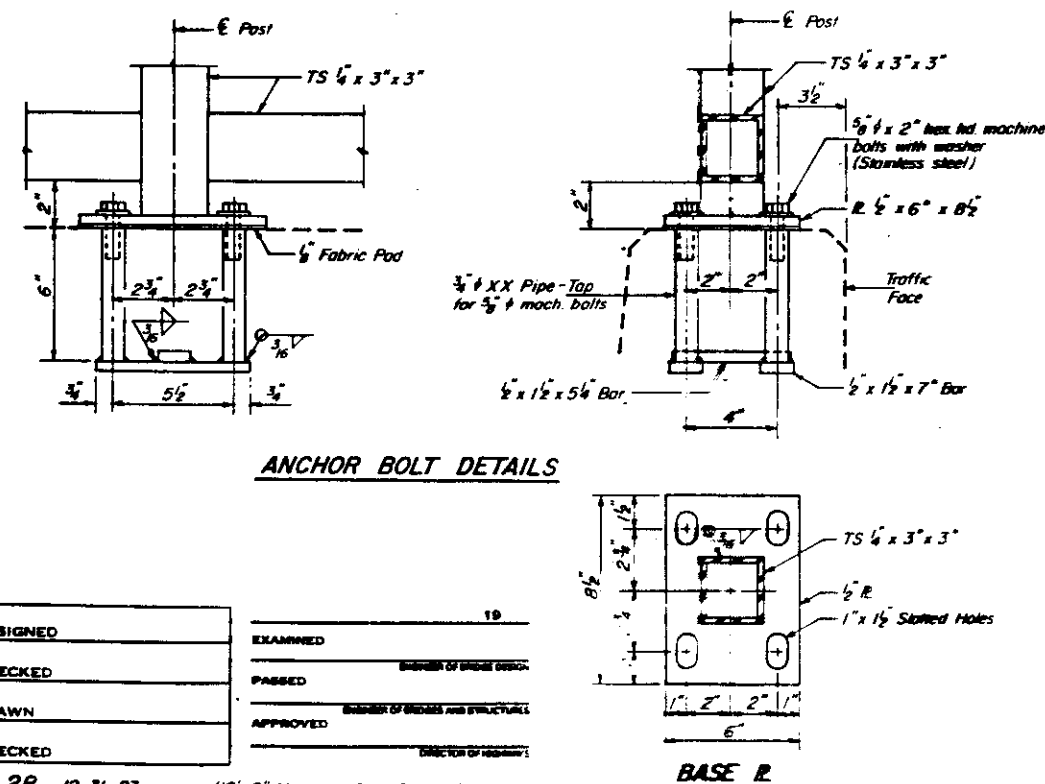
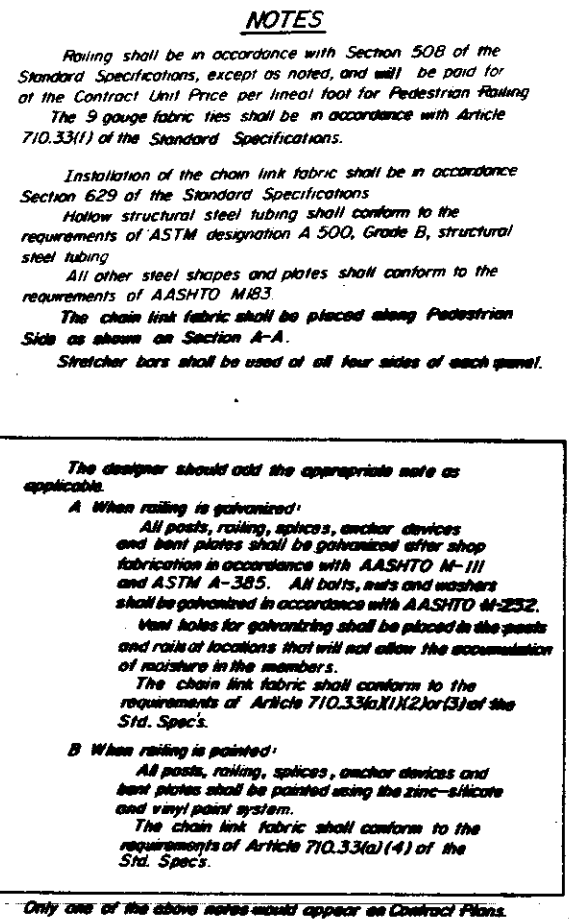
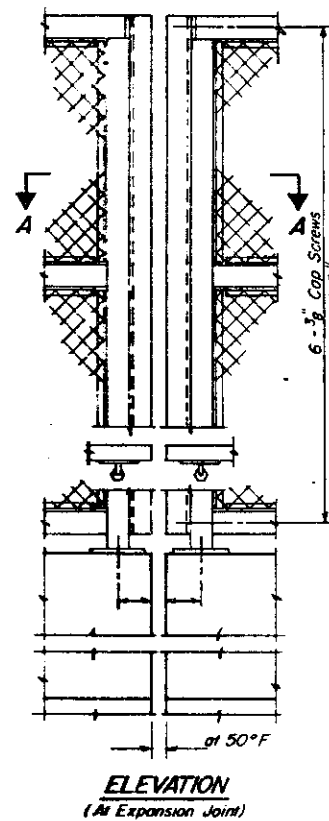
Note:
Work this Sheet with Sheet 512 and 513

8-7-89 WINE WALLS EPOXY COATED BARS			
STATE OF ILLINOIS			
DEPARTMENT OF TRANSPORTATION			
ABUTMENT DETAILS III			
MICHIGAN CITY ROAD OVER I-94			
F.A.I. RTE. 94			
SECTION	COOK COUNTY		
STA. 400+00.00			
STRUCTURE No. 016 - 1068			
SCALE	DRAWN BY M.P.		
DATE MAY 1983	CHECKED BY L.M.		

DATE TO	SECTION	COUNT	INSTR TO	SHEET NO
7-1-94	4	COOK		60A
PER SHEET SHEET NO 1 NAME PER AND PROJECT				

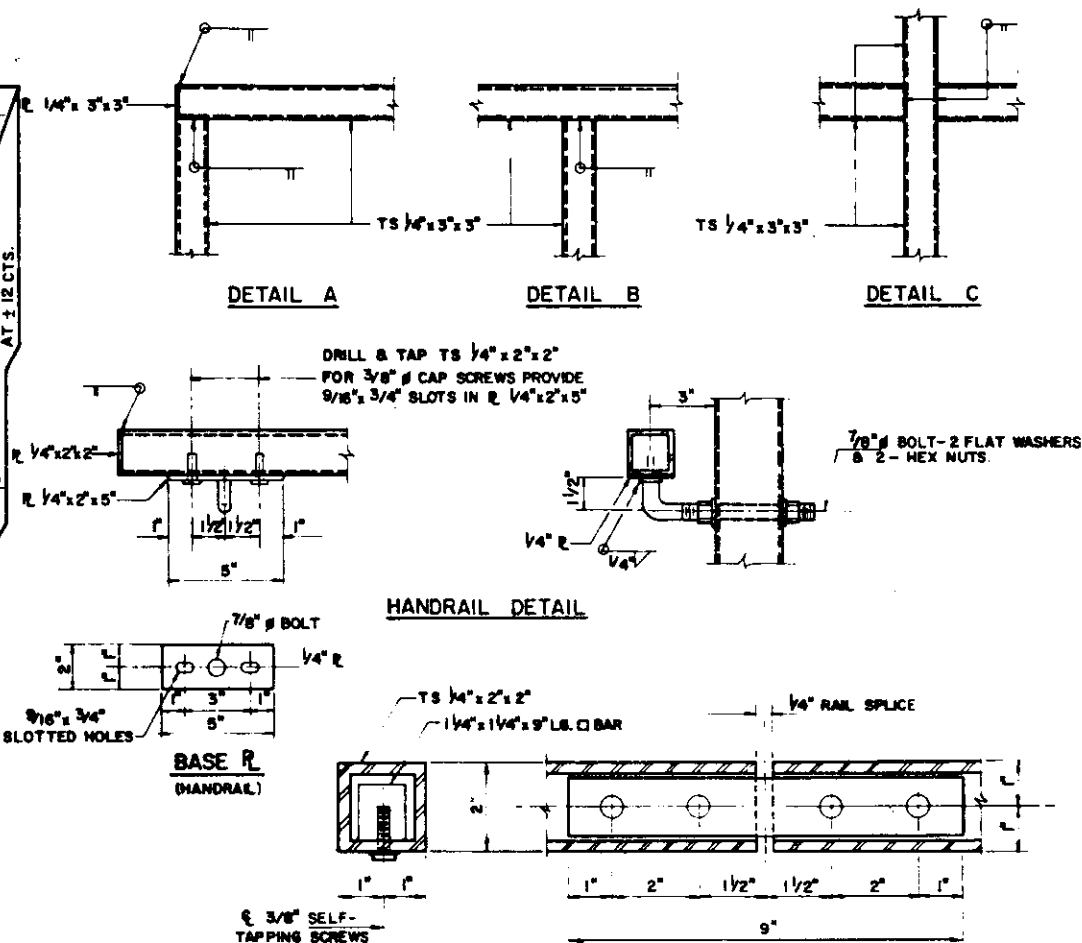
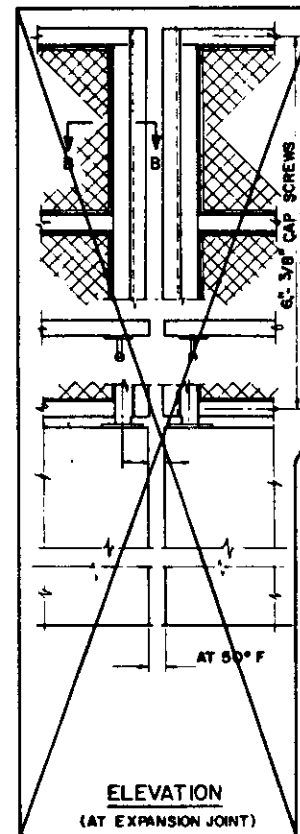
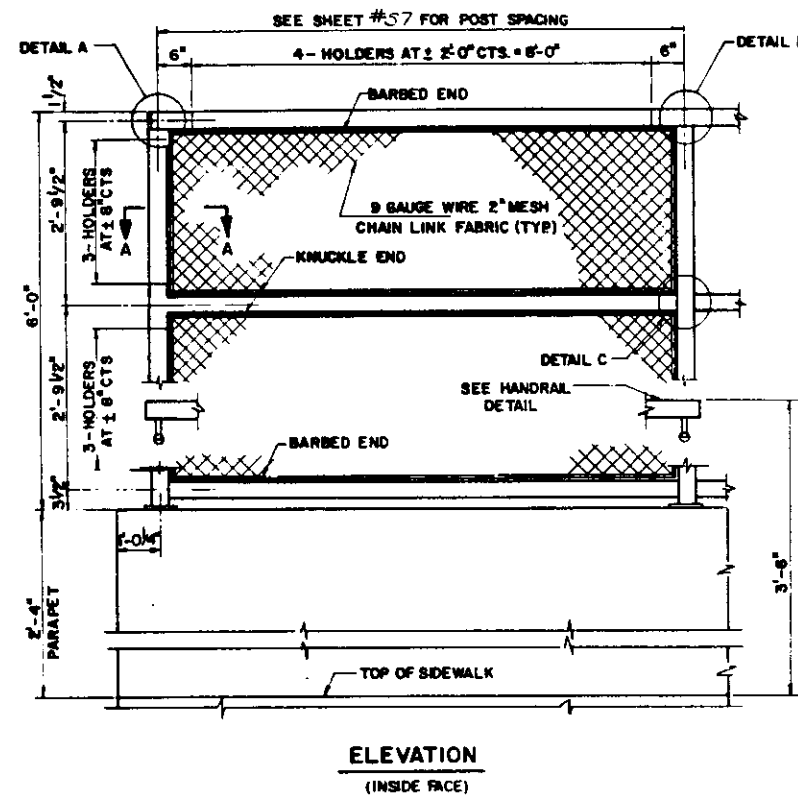
4 (0508.4 + 0606.2ND) R-EL

SHEET NO
SHEETS



<u>BILL OF MATERIAL</u>		
Item	Unit	Quantity
Pedestrian Railings	Lin. Ft	

PEDESTRIAN RAILING



NOTES

RAILINGS SHALL BE IN ACCORDANCE WITH SECTION 508 OF THE STANDARD SPECIFICATIONS, EXCEPT AS NOTED, AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAL FOOT FOR PEDESTRIAN RAILING. THE 9 GAUGE FABRIC TIES SHALL BE IN ACCORDANCE WITH ARTICLE 710.33(f) OF THE STANDARD SPECIFICATIONS.

INSTALLATION OF THE CHAIN LINK FABRIC SHALL BE IN ACCORDANCE SECTION 629 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 M183.

THE CHAIN LINK FABRIC SHALL BE PLACED ALONG PEDESTRIAN SIDE. SEE SECTION A-A.

NOTES

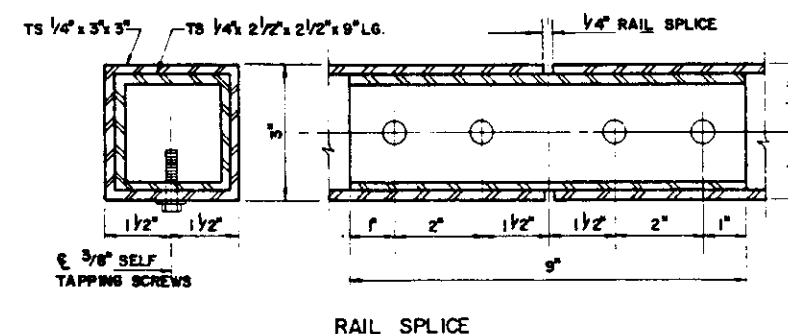
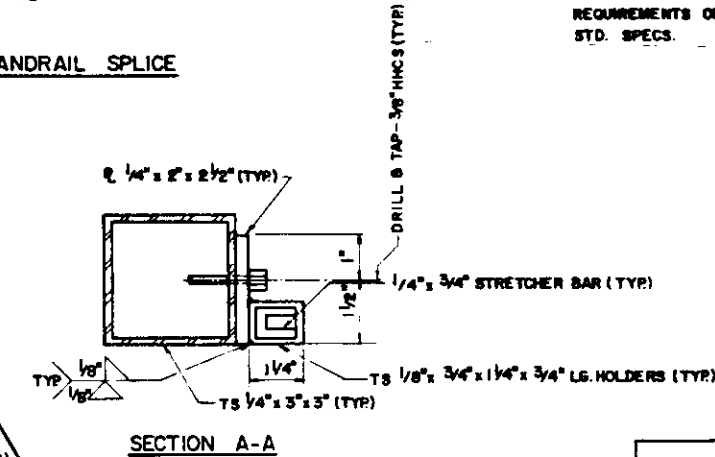
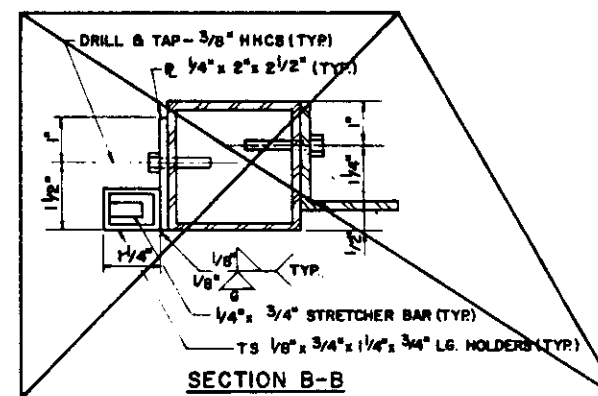
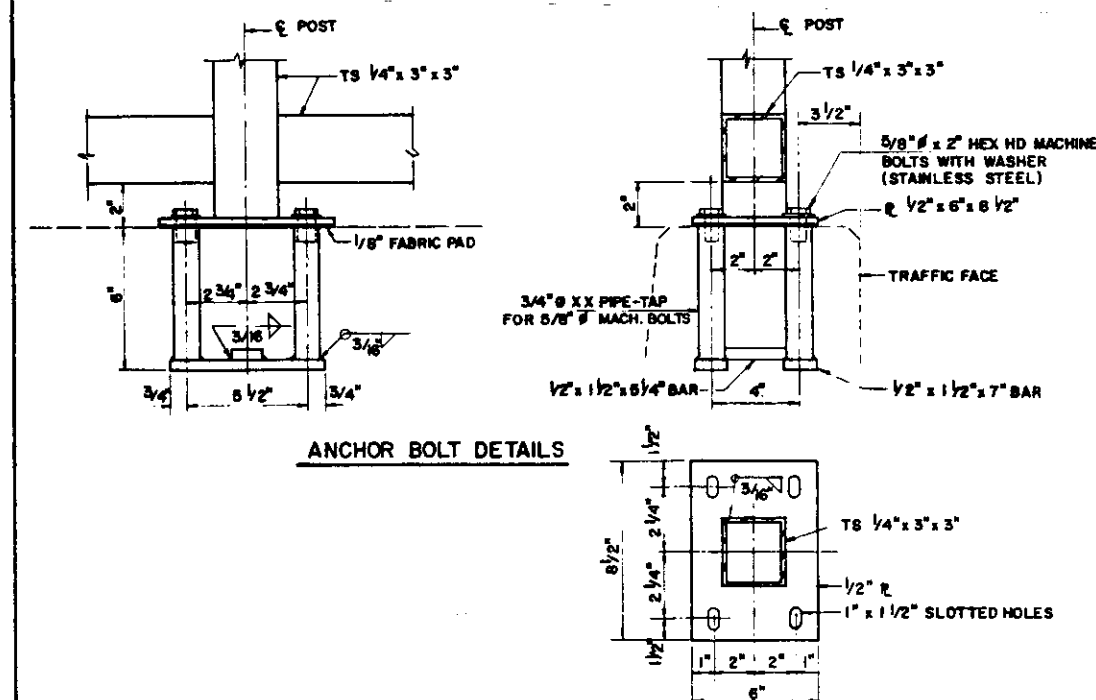
ALL POSTS, RAILING, SPLICES, ANCHOR DEVICES AND BENT PLATES SHALL BE GALVANIZED AFTER SHOP FABRICATION IN ACCORDANCE WITH AASHTO M-111 AND ASTM A-365. ALL BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M-232.

VENT HOLES FOR GALVANIZING SHALL BE PLACED IN THE POSTS AND RAIL AT LOCATIONS THAT WILL NOT ALLOW THE ACCUMULATION OF MOISTURE IN THE MEMBERS.

THE CHAIN LINK FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ARTICLE 710.33(1)(2) OR (3) OF THE STD. SPECS.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
PEDESTRIAN RAILING	L.F.	546



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PEDESTRIAN RAILING
MICHIGAN CITY ROAD OVER I-94
FAI RTE 94
SECTION COOK COUNTY
STA. 400 + 00.00
STRUCTURE No. 016 - 1068
DATE MAY 1989

Joint Size "C" at 50°F "D" at 50°F

ITEM	UNIT	QUANTITY
1-104	Lin. Ft.	174
2-104	Lin. Ft.	174
3-104	Lin. Ft.	174
4-104	Lin. Ft.	174
5-104	Lin. Ft.	174
6-104	Lin. Ft.	174
7-104	Lin. Ft.	174
8-104	Lin. Ft.	174
9-104	Lin. Ft.	174
10-104	Lin. Ft.	174
11-104	Lin. Ft.	174
12-104	Lin. Ft.	174
13-104	Lin. Ft.	174
14-104	Lin. Ft.	174
15-104	Lin. Ft.	174
16-104	Lin. Ft.	174
17-104	Lin. Ft.	174
18-104	Lin. Ft.	174
19-104	Lin. Ft.	174
20-104	Lin. Ft.	174
21-104	Lin. Ft.	174
22-104	Lin. Ft.	174
23-104	Lin. Ft.	174
24-104	Lin. Ft.	174
25-104	Lin. Ft.	174
26-104	Lin. Ft.	174
27-104	Lin. Ft.	174
28-104	Lin. Ft.	174
29-104	Lin. Ft.	174
30-104	Lin. Ft.	174
31-104	Lin. Ft.	174
32-104	Lin. Ft.	174
33-104	Lin. Ft.	174
34-104	Lin. Ft.	174
35-104	Lin. Ft.	174
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38-104	Lin. Ft.	174
39-104	Lin. Ft.	174
40-104	Lin. Ft.	174
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42-104	Lin. Ft.	174
43-104	Lin. Ft.	174
44-104	Lin. Ft.	174
45-104	Lin. Ft.	174
46-104	Lin. Ft.	174
47-104	Lin. Ft.	174
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49-104	Lin. Ft.	174
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66-104	Lin. Ft.	174
67-104	Lin. Ft.	174
68-104	Lin. Ft.	174
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91-104	Lin. Ft.	174
92-104	Lin. Ft.	174
93-104	Lin. Ft.	174
94-104	Lin. Ft.	174
95-104	Lin. Ft.	174
96-104	Lin. Ft.	174
97-104	Lin. Ft.	174
98-104	Lin. Ft.	174
99-104	Lin. Ft.	174
100-104	Lin. Ft.	174

INSTALLATION NOTES

Use anchor blocks and continuous seal as anchor bolt location templates

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

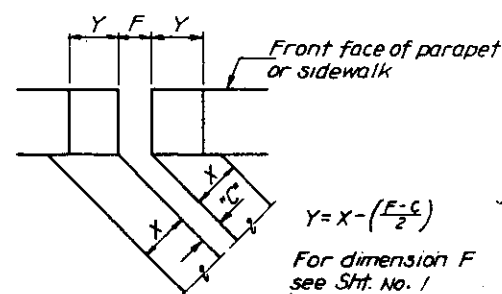
NOTE A:

Maximum spacing of anchor bolts shall be 12" centers.

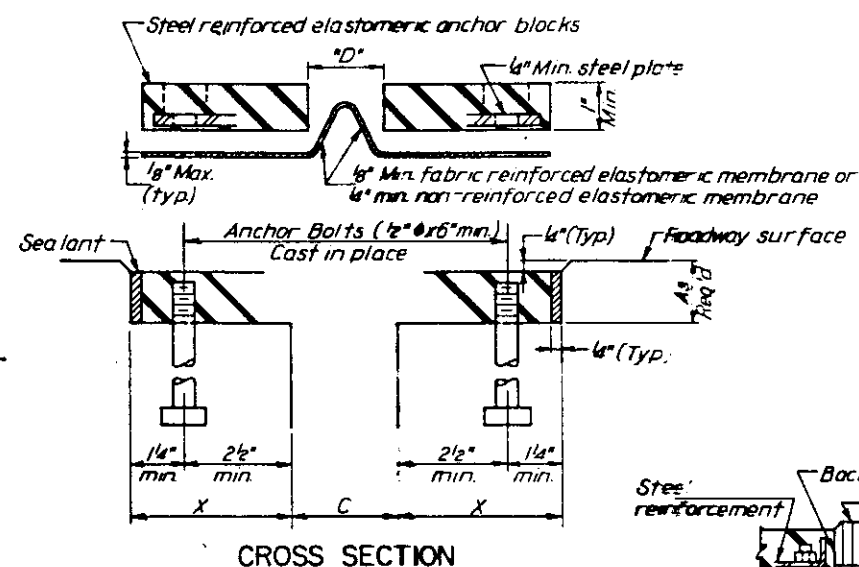
SKEW LIMITATIONS

The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews.

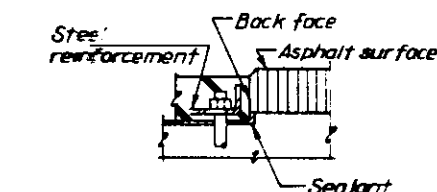
For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D" might require modifications to insure a minimum clearance of 1/2" from center line of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also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



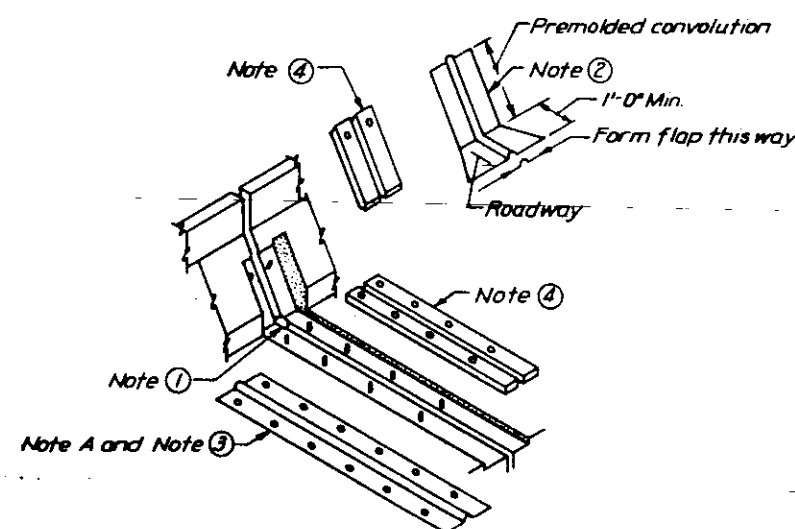
FORMING BLOCKOUT SKETCH



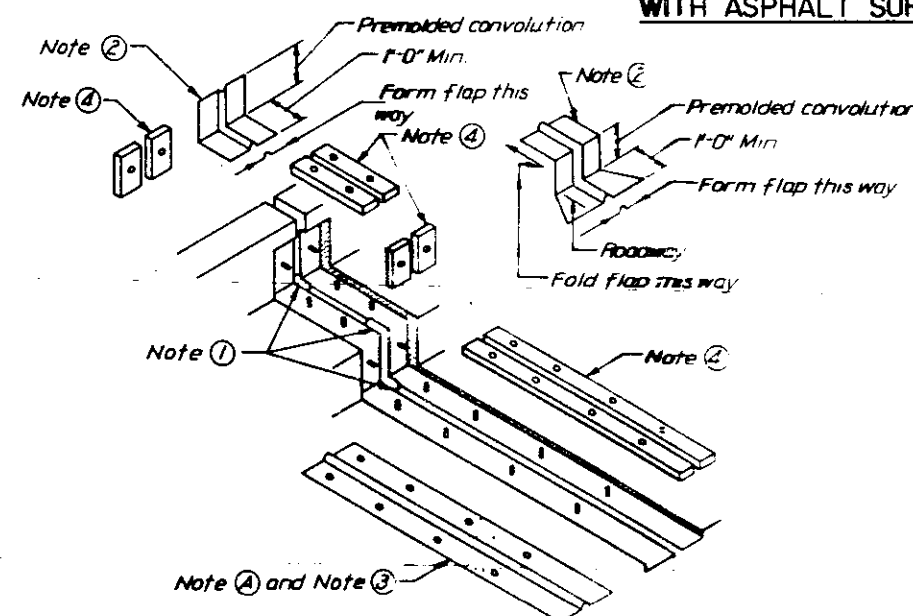
CROSS SECTION



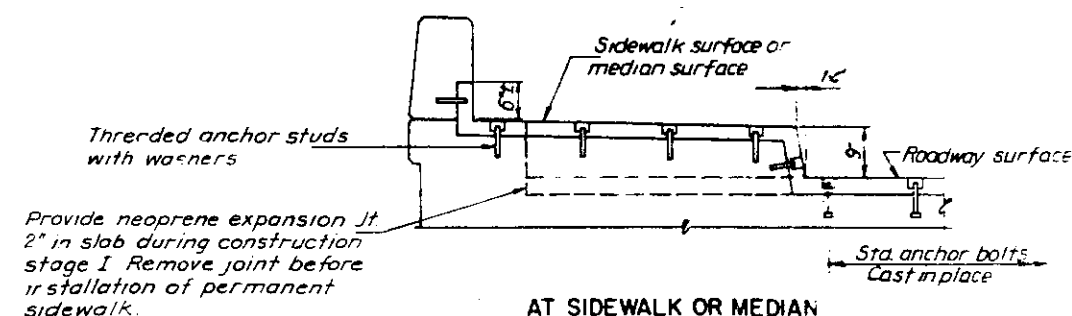
ANCHOR BLOCK REINFORCEMENT WITH ASPHALT SURFACE



AT PARAPET



AT SIDEWALK OR MEDIAN



AT SIDEWALK OR MEDIAN
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. See Special Provisions

The elastomeric membrane shall be premolded with a single or 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.

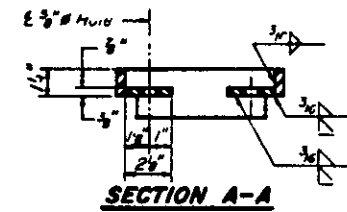
The parapet and sidewalk flaps may be furnished factory vulcanized to the roadway membrane provided the center line of the convolution is maintained and the process and method meet the approval of the Engineer.

BILL OF MATERIAL		
ITEM	UNIT	QUANTITY
Neoprene Expansion Joint 2"	Lin. Ft.	174

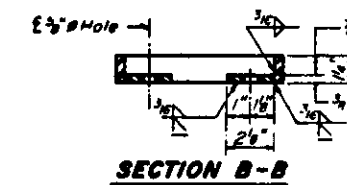
STATE OF ILLINOIS	
DEPARTMENT OF TRANSPORTATION	
NEOPRENE EXPANSION JOINT DETAILS	
MICHIGAN CITY ROAD OVER I-94	
F.A.I. RTE. 94	
SECTION	COOK COUNTY
STA. 400+00.00	
STRUCTURE No. D16 - 1068	
SCALE	1" = 1'-0"
DATE	MAY 1989
DRAWN BY	STC/STC
CHECKED BY	STC/STC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

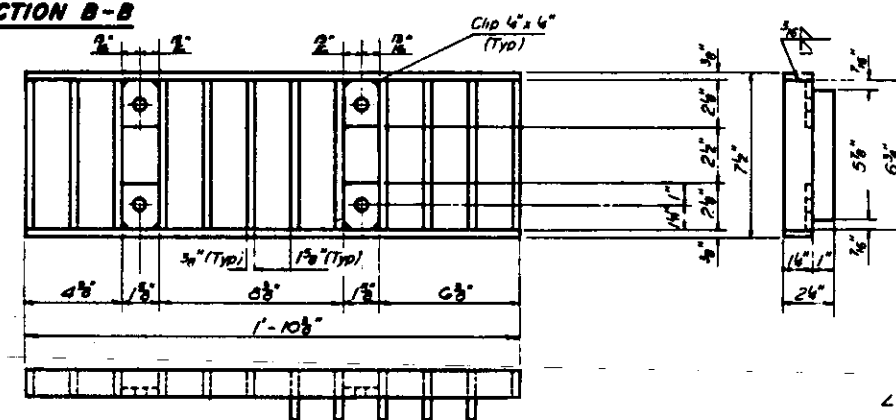
DATE	BY	CHECKED	DATE	BY
1-94	COOK	113	71	
SHT. 517 OF 522				



SECTION A-A



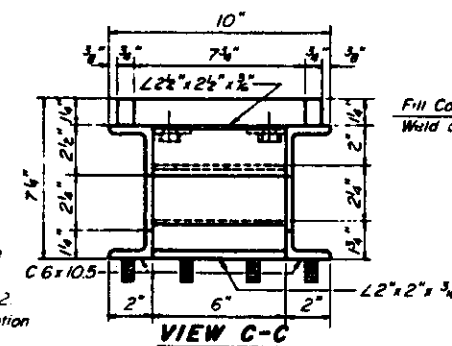
SECTION B-B



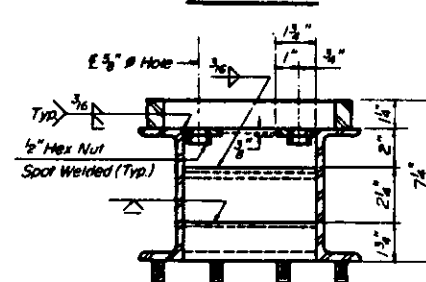
GRATE

Notes

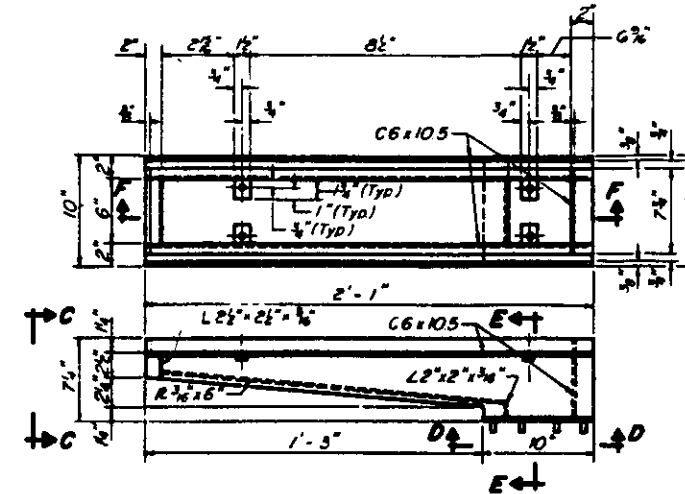
- Follow structural steel tubing shall conform to the requirements of A.S.T.M. Specification A-500 Grade B, or A-501 Structural Steel Tubing.
- All other shapes, plates and bars shall conform to the requirements of A.A.S.H.T.O. M-183.
- Bolts, studs, washers and nuts shall conform to the requirements of A.S.T.M. A-307.
- The Grate, Frame, and Downspout shall be galvanized after shop fabrication in accordance with A.A.S.H.T.O. M-111 B A.S.T.M. A-385.
- All bolts, washers and nuts shall be galvanized in accordance with A.A.S.H.T.O. M-232.
- Cost of the Grate, Frame, Downspout, Bolts, Washers and Nuts including complete installation of Scupper shall be paid for at the unit bid price for "Special Drainage Scupper".
- For Scupper locations, See Sheet #1.



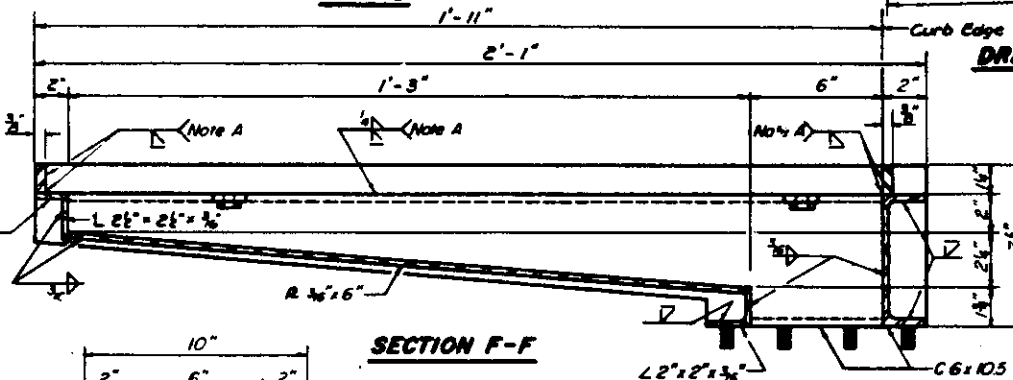
VIEW C-C



SECTION E-E

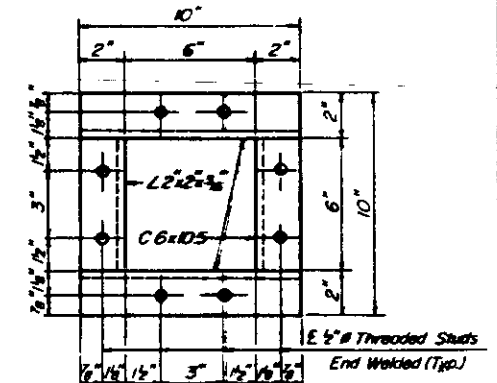
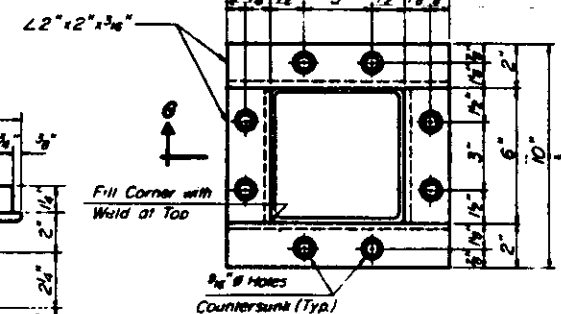


FRAME



SECTION F-F

Note A: Surface of welds shall be recessed 1/8" Max or placed flush with inside face of bars to provide clearance for Grate.



VIEW D-D

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Special Drainage Scupper (6"x4") Each		4

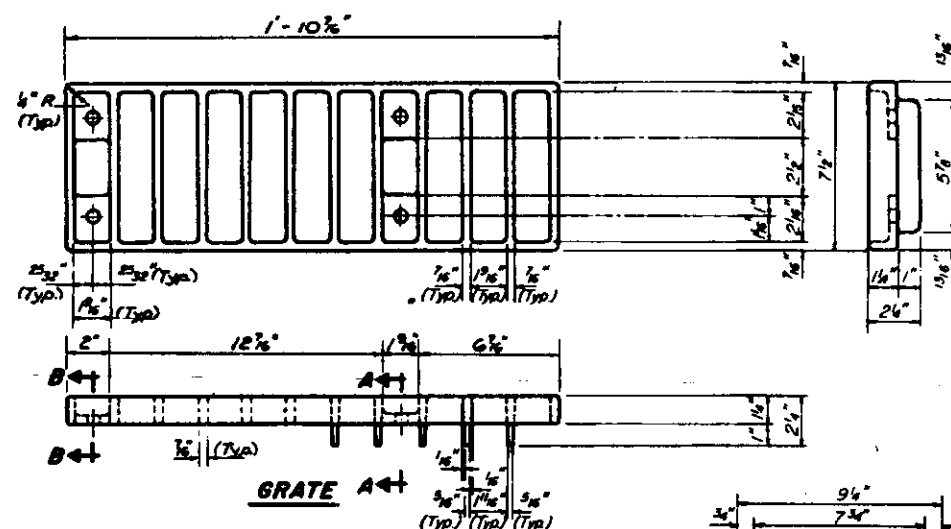
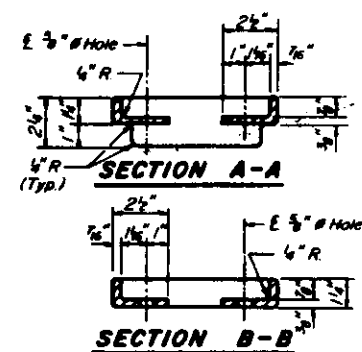
Work this Sheet with Sheet S18

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
STEEL DRAINAGE SCUPPER
MICHIGAN CITY ROAD OVER I-94
FM RTE 94 COOK COUNTY
SECTION STA. 400 + 00.00
STRUCTURE No. 016 - 1068
SCALE
DATE MAY 1989

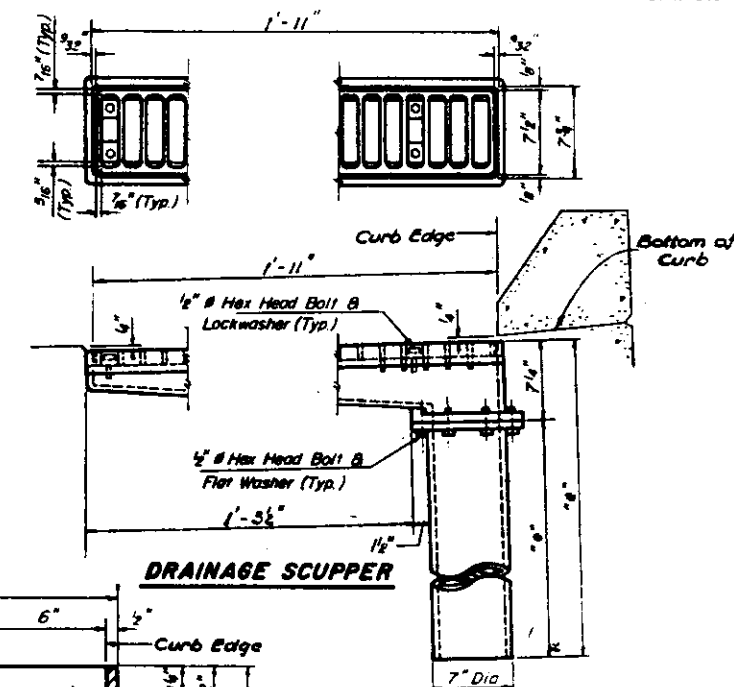
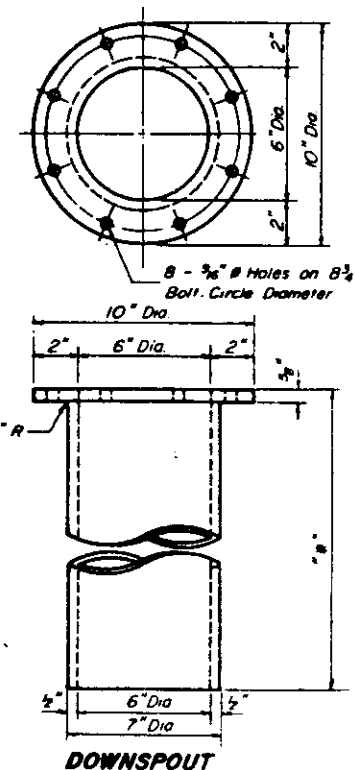
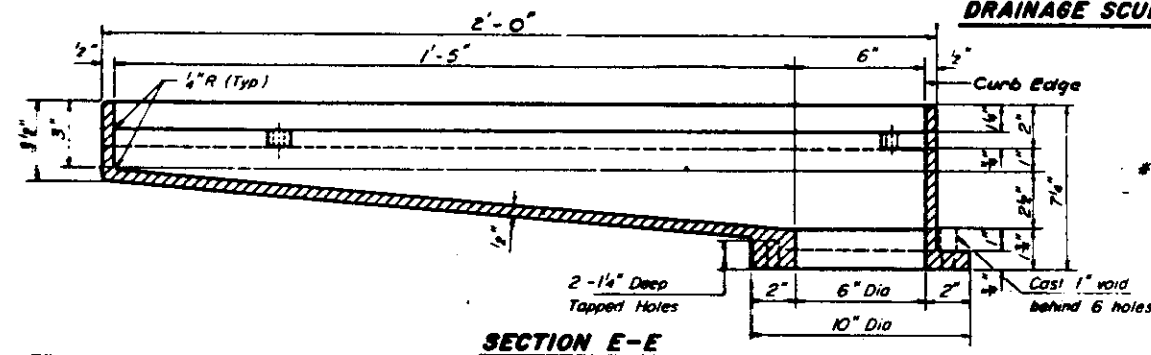
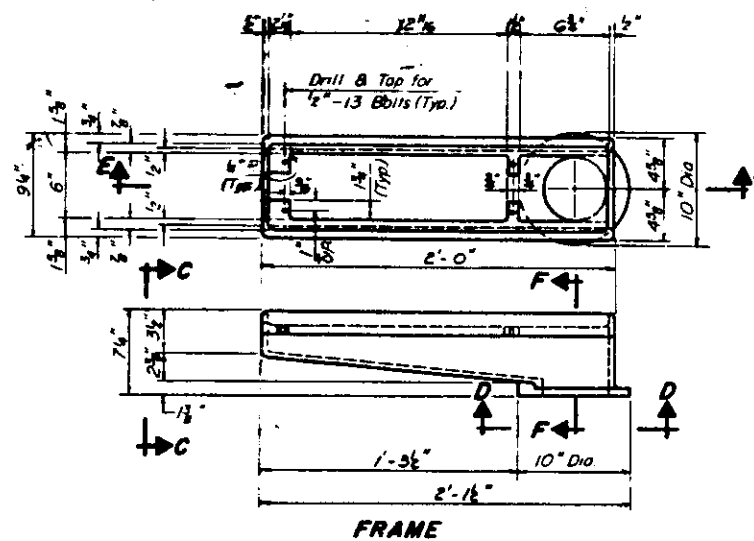
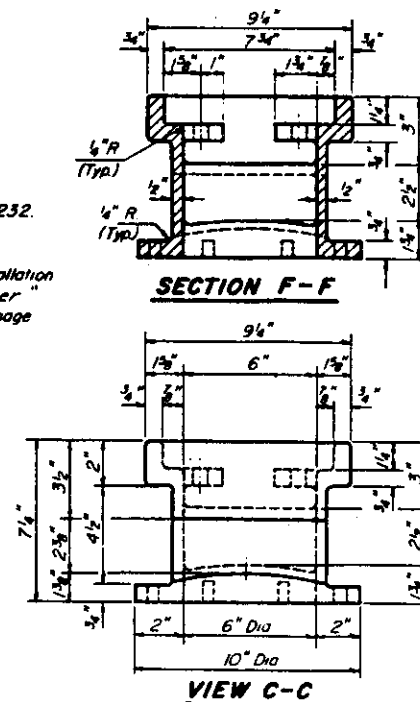
CHECKED BY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SECTION	PROJECT	DATE	BY
I-94	COOK	113	72
SHT. 518 OF 522			

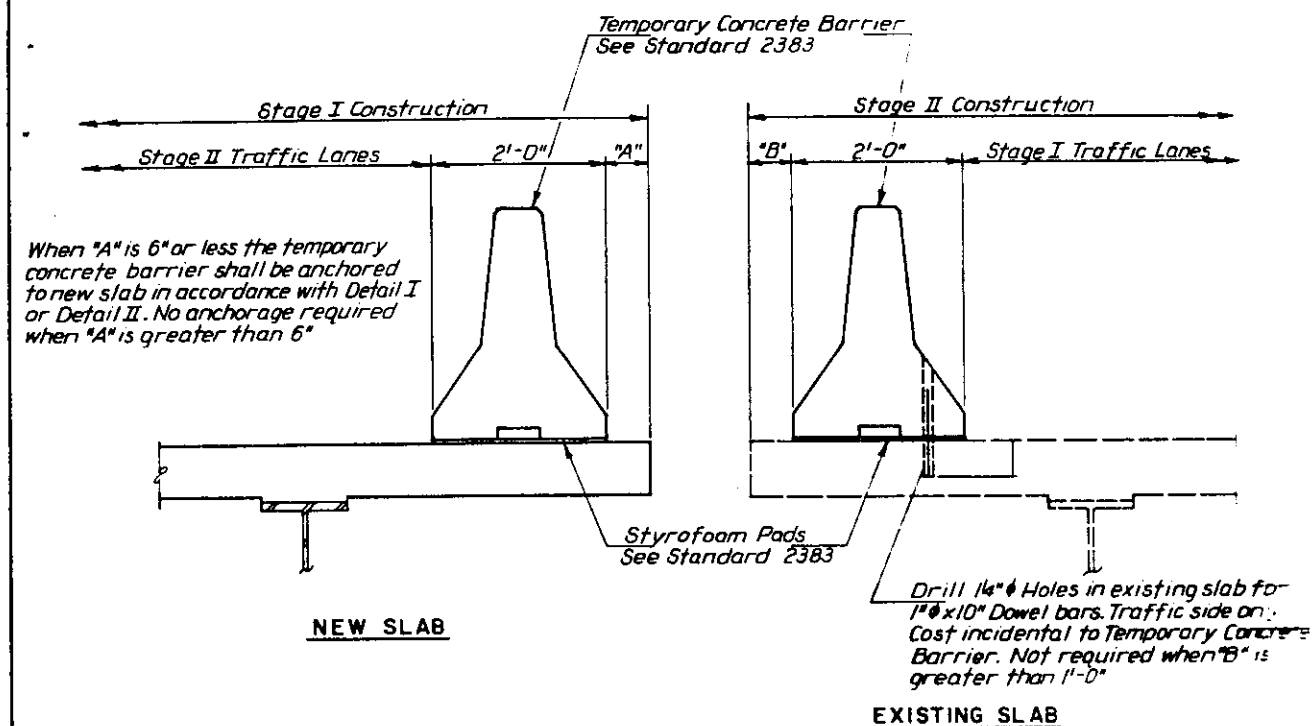


Notes:
All cast iron parts shall be gray iron conforming to the requirements of AASHTO: M-105, Class 30.
Bolts and washers shall conform to the requirements of A.S.T.M.: A-307.
All bolts and washers shall be galvanized in accordance with A.A.S.H.T.O.: M-232.
As an alternate bolts and washers may be stainless steel conforming to the requirements of A.S.T.M.: A-193 Type 304.
Cost of the Grate, Frame, Downspout, bolts and washers including complete installation of Scupper shall be paid for at the unit bid price for "Special Drainage Scupper".
The Contractor may use at his option steel drainage scuppers or cast iron drainage scuppers.
For Scupper locations, see Sheet #1.

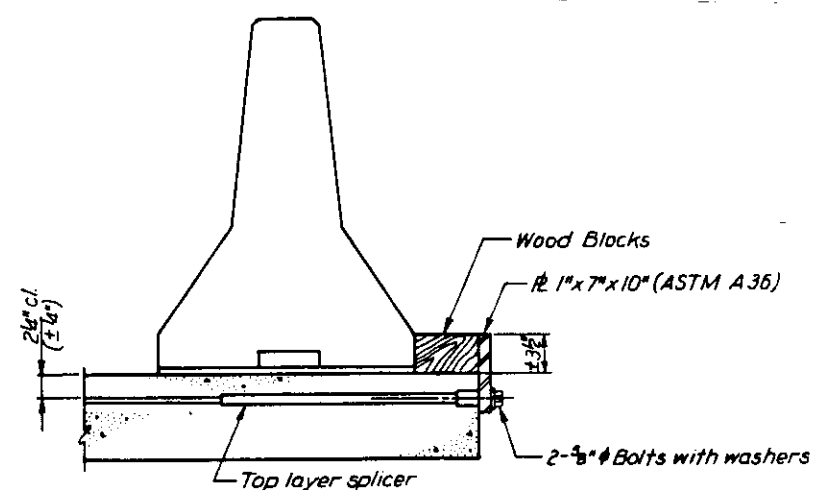


* Dimensions to be determined in the field

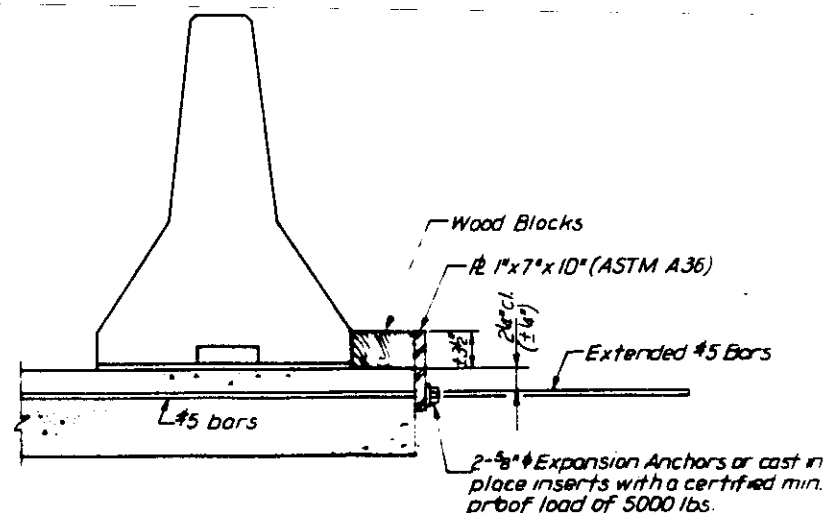
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
ALTERNATE - CAST IRON DRAINAGE SCUPPER
MICHIGAN CITY ROAD OVER I-94
SECTION FAI RTE. 94 COOK COUNTY
SCALE
DATE MAY 1989
DRAWN BY
CHECKED BY L. M.



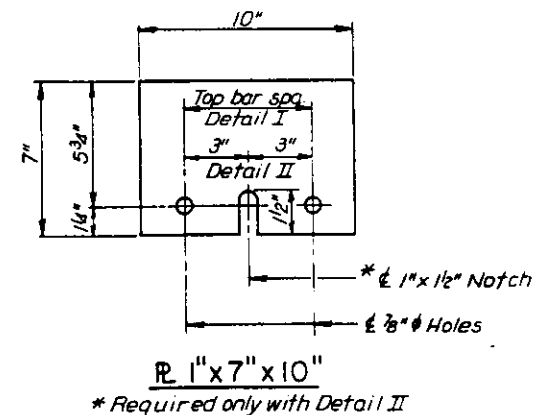
SECTIONS THRU SLAB



The 1" x 7" x 10" Plate shall not be removed until Stage II Construction forms and reinforcement bars are in place.



The 1" x 7" x 10" Plate shall not be removed until Stage II Construction forms and all reinforcement bars are placed and the concrete is ready to be placed.



NOTES

Detail I - With Bar Splicer or Couplers:
 Connect one (1) 1" x 7" x 10" steel R to the top layer of couplers with 2-3/8" ϕ bolts screwed to coupler at approximate $\frac{1}{2}$ of each 10'-0" barrier panel.

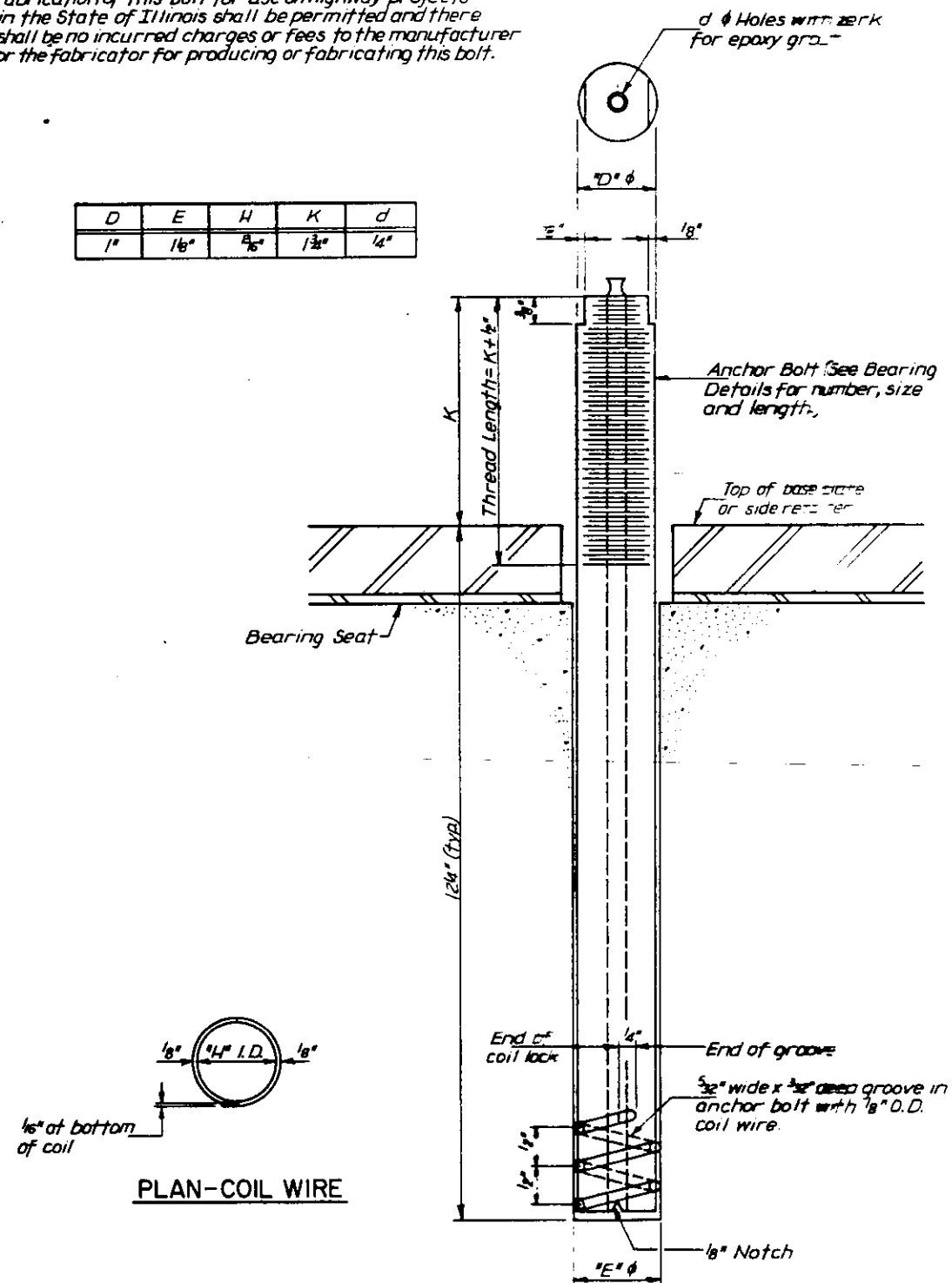
Detail II - With Extended Reinforcement Bars:
 Connect one (1) 1" x 7" x 10" steel R to the concrete slab with 2-3/8" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate $\frac{1}{2}$ of each 10'-0" barrier panel.

Cost of anchorage is incidental to Temporary Concrete Barrier.

CLASS	COOK	COOK	COOK	COOK
1-34	*	COOK	119	74
TO 24				
COOK				

410-66-12HB R-86 SMT S20 DF S22

D	E	H	K	d
1"	1/8"	1/16"	1/32"	1/4"



ILLINOIS COL-LOCK ANCHOR BOL-

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A519, Grade 1026 and supplied with hexagonal nuts and cut 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 I and of a Class suitable for the temperature at installation.

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 zerkl 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.

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:

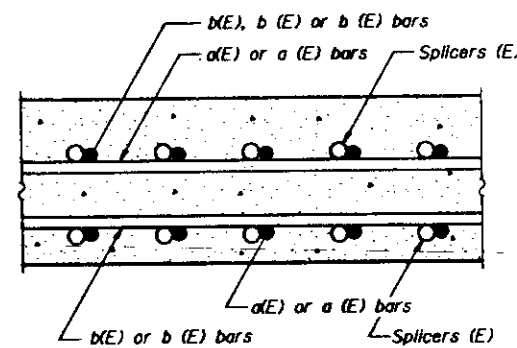
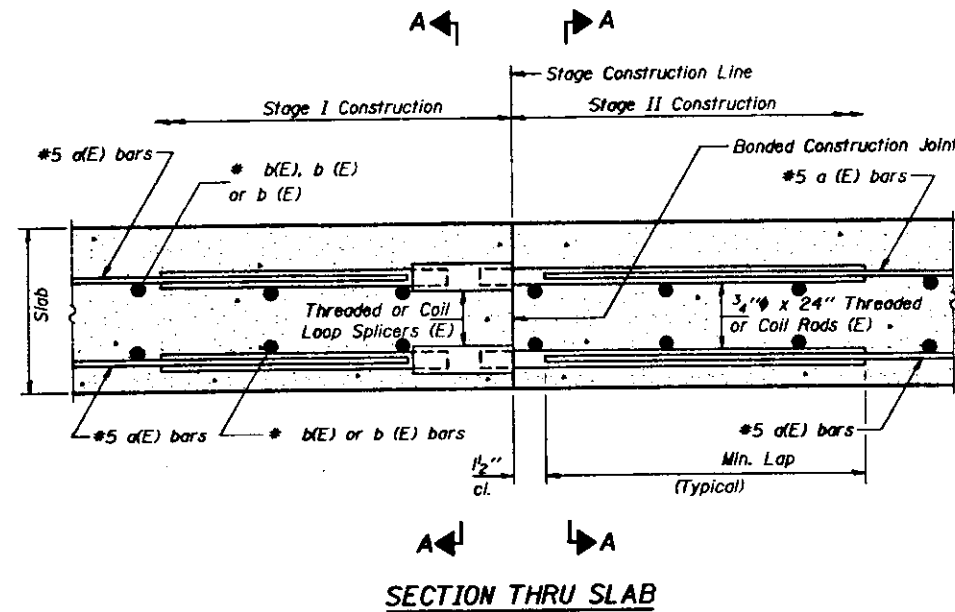
1. A threaded rod stud with nut and washer conforming to ASTM A307.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
ILLINOIS COIL - LOCK ANCHOR BOLT
MICHIGAN CITY ROAD OVER I-94
F.A.I. RTE. 94
SECTION COOK COUNTY
STA. 400 + 00.00
STRUCTURE No. 016 - 1068
SCALE
DATE MAY 1999

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

PROJECT NO.	DISTRICT	COUNTY	SECTION	SHEET NO.
I-94	*	COOK	119	75
SHEETS S22				

4 (0505, 4 & 4606, 1, 2, 3, 4) R2B6



SPLICER DETAILS

(No. Req'd. 285 in Slab/Sidewalk Connection marked *5c.01)
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

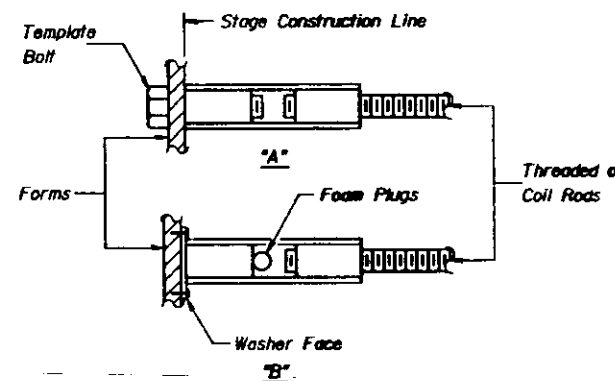
Wire Connector



WELDED SECTIONS

SPLICER ALTERNATIVES

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



NOTES

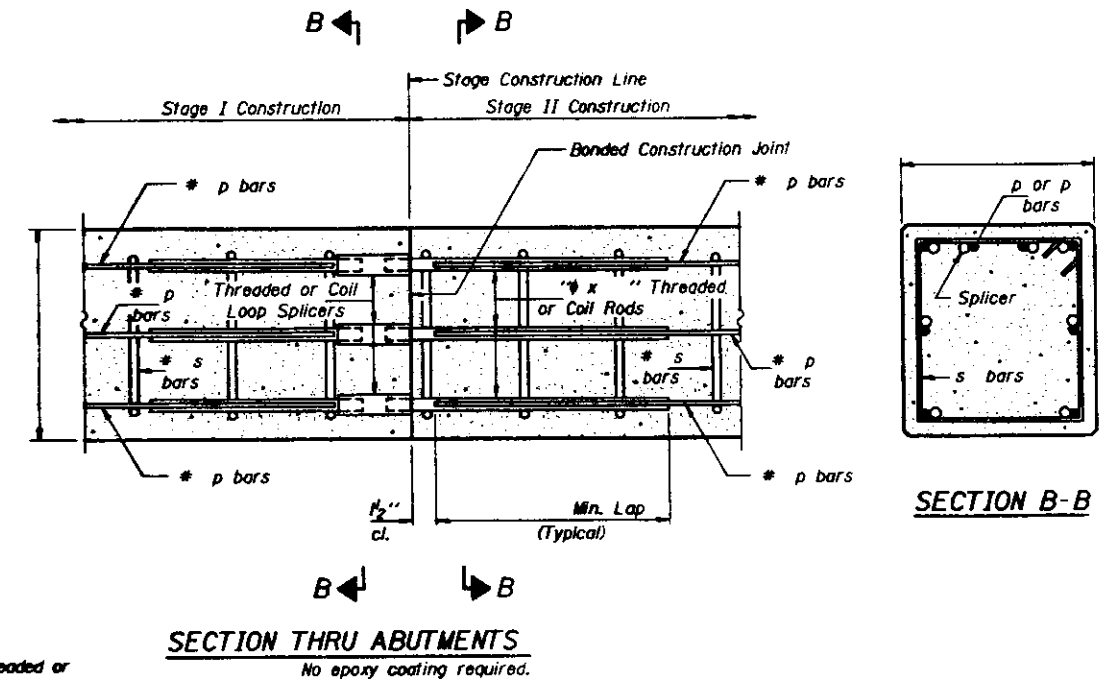
Steel Splicer (Coupler) assembly shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Steel Splicer rods shall be of minimum 60 ksi yield strength, threaded or rolled full length and have effective tensile stress area equal 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:

- Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$
- Minimum "Pull-out" Strength (Tension in kips) = $1.25 \times f_{s_{allow}} \times A_t$

Where f_y = Yield strength of lapped reinforcement bars in ksi.
 $f_{s_{allow}}$ = 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 = 59.3 kips-tension Minimum Pull-out Strength = 23.6 kips-tension



SPLICER DETAILS

(No. Req'd. 12 placed vertically in Abutment Backwall marked *5v100)
Cost incidental to Reinforcement Bars.

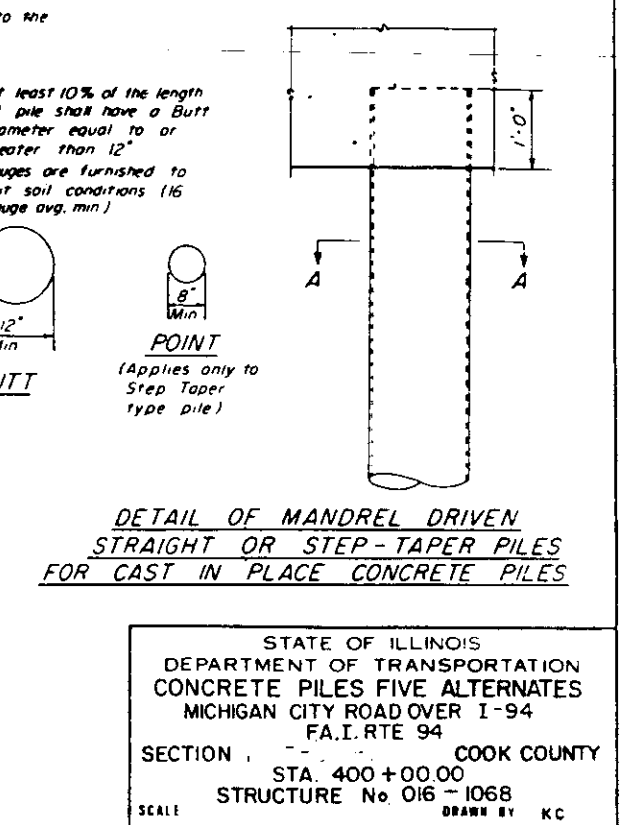
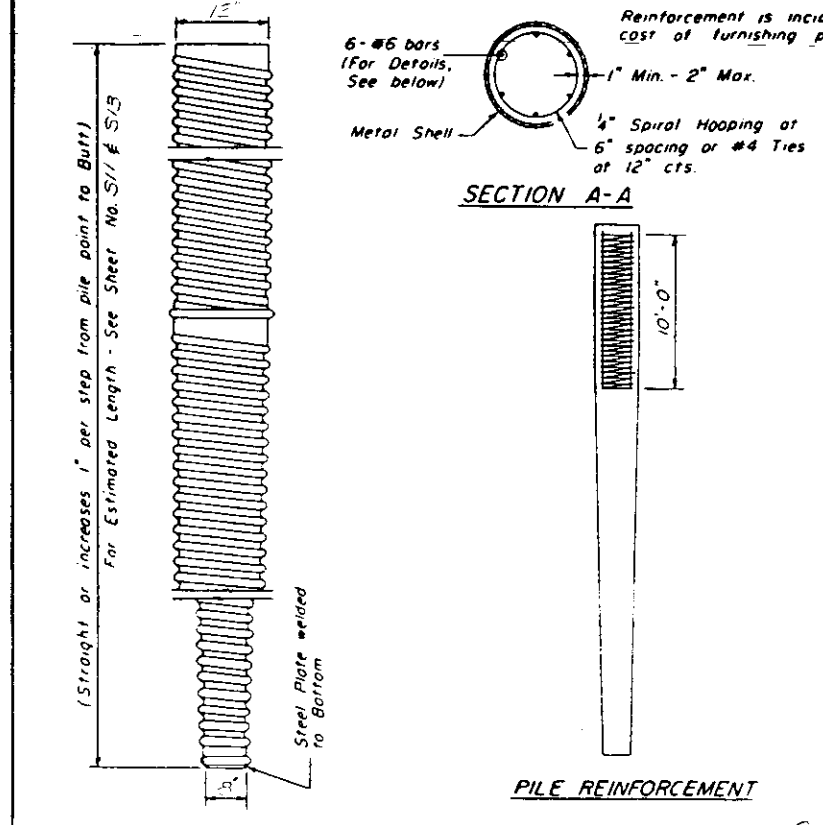
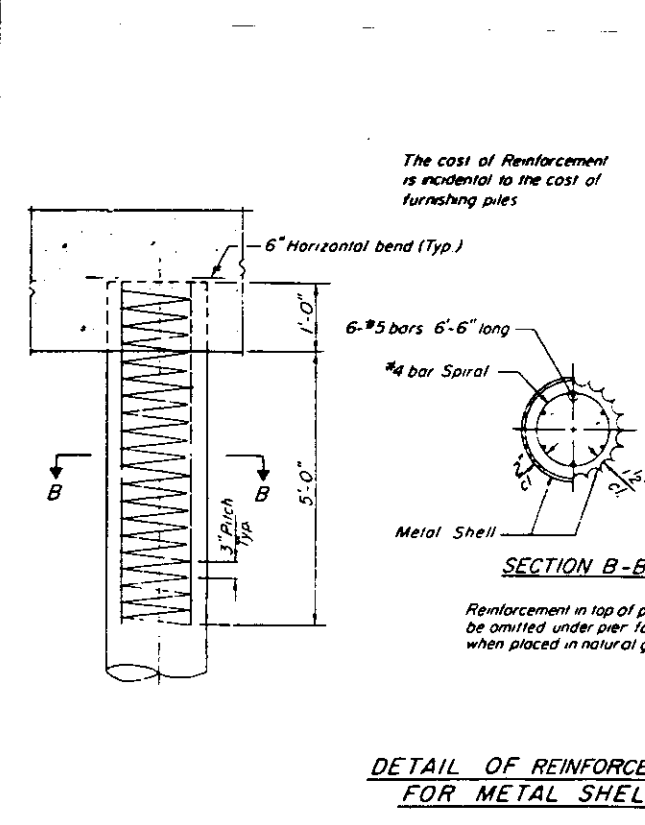
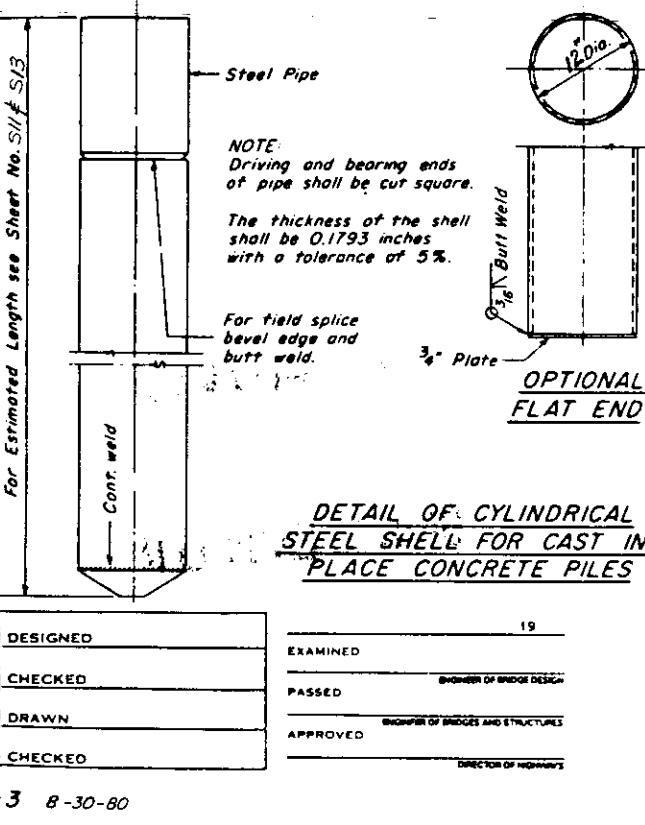
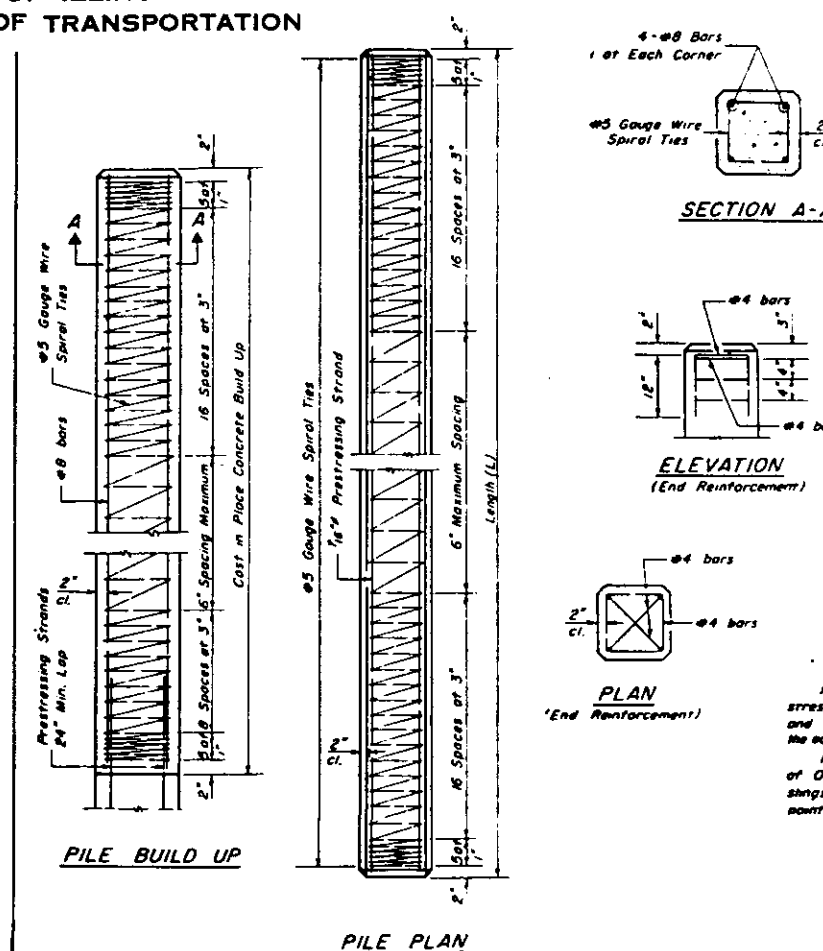
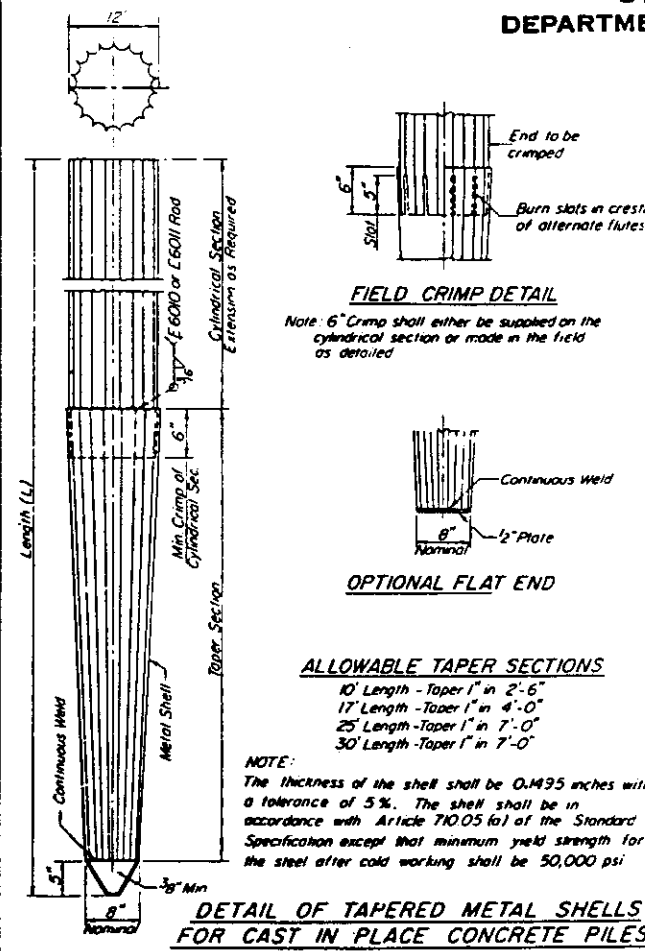
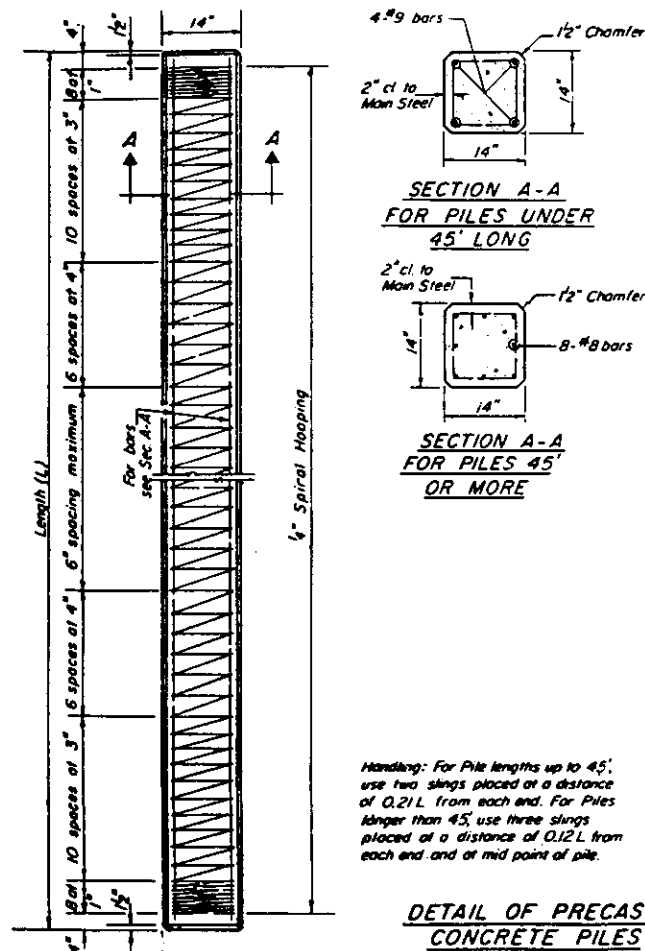
DESIGNED
CHECKED
DRAWN
CHECKED

BSD-1 12-31-87

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION SPLICER DETAILS MICHIGAN CITY ROAD OVER I-94 F.A.I. RTE. 94	
SECTION	COOK COUNTY
STA. 400+00.00	STRUCTURE No. 016-1068
SCALE	BRAWN BY EDP
DATE MAY 1989	CHECKED BY L.M.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

1-94	COOK	113	76
* (505-44) (0006-2) (HB) R-8 SHT. 522 OF 522			



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
CONCRETE PILES FIVE ALTERNATES
MICHIGAN CITY ROAD OVER I-94
F.A.I. RTE 94
SECTION 11-11 COOK COUNTY
STA. 400+00.00
STRUCTURE No. 016-1068
SCALE
DATE MAY 1989
DRAWN BY KC
CHECKED BY L.M.

Rev 10-4-89

X-3 B-30-80