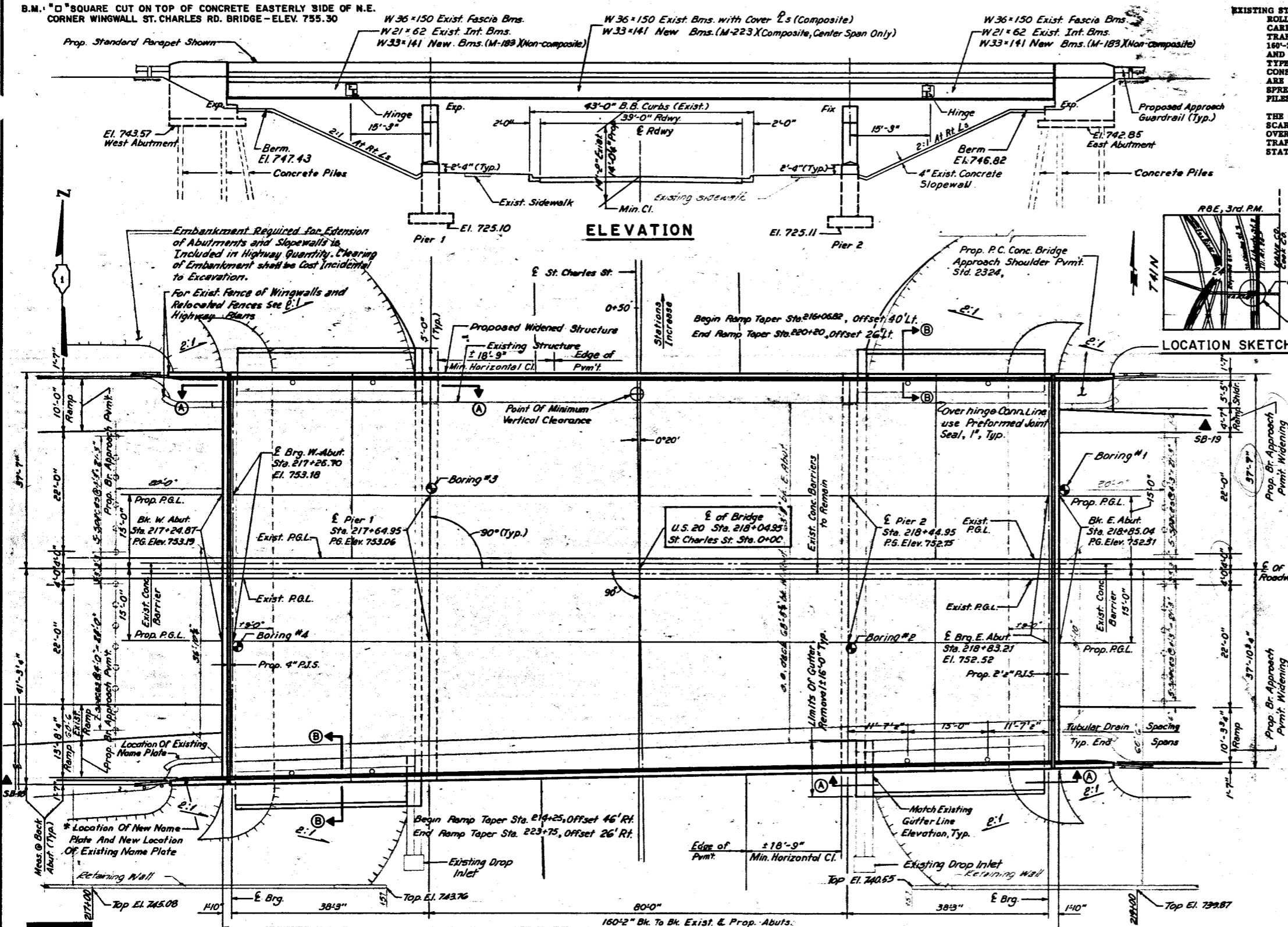


B.M. "D" SQUARE CUT ON TOP OF CONCRETE EASTERLY SIDE OF N.E. CORNER WINGWALL ST. CHARLES RD. BRIDGE - ELEV. 755.30



EXISTING STRUCTURE DATA: THE EXISTING THREE SPAN HINGED BOLDED BEAM STRUCTURE WAS CONSTRUCTED IN 1958, CARRYING TWO LANES IN EACH DIRECTION OF U.S. ROUTE 20 TRAFFIC OVER ST. CHARLES STREET. THE STRUCTURE IS 160'-3" LONG WITH A VARIABLE ROADWAY WIDTH. THE EAST AND WESTBOUND TRAFFIC IS SEPARATED BY A NEW JERSEY TYPE CONCRETE BARRIER WALL MEDIAN WHICH WAS CONSTRUCTED IN 1979. THE DECKS AND SUBSTRUCTURES ARE REINFORCED CONCRETE. THE PIERS ARE SUPPORTED ON SPREAD FOOTINGS, AND THE ABUTMENTS ARE SUPPORTED ON PILES.

THE CONTRACTOR SHALL WIDEN THE EXISTING STRUCTURE, SCRAP THE EXISTING DECK AND APPLY A CONCRETE OVERLAY OVER THE EXISTING DECK. TWO LANES OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES UTILIZING STATE CONSTRUCTION. NO SALVAGE.

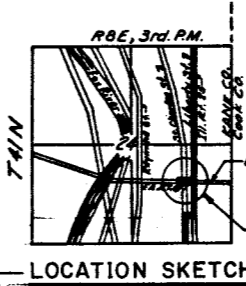
STA. 218+04.95
WIDENED 198 BY
STATE OF ILLINOIS
F.A.T. 6(SBLS) SEC. BR-HB-5 (86)
F.A. PROJ. EX 126-1(19)
LOADING HS20
STR. NO. 045-0006

See Standard 2113
See Plan for locations of new and existing Name Plates.

SHEET NO. 1 OF 22 SHEETS

- Original Construction Boring Locations.
- 1985 Reconstruction Boring Locations.

NOTE:
See Sheet #2 for Section A-A
9 B-B



ELEVATION

PLAN

PROFILE-U.S. RT. 20 BY-PASS

PROFILE-ST. CHARLES STREET

Baker Engineers
DESIGNED P. Wood
CHECKED J. Owen
DRAWN R. Spaldeman
CHECKED J. Owen



Signed *John H. Owen* Date 3-4-86
John H. Owen, SE, ILL. Reg No BR-3361

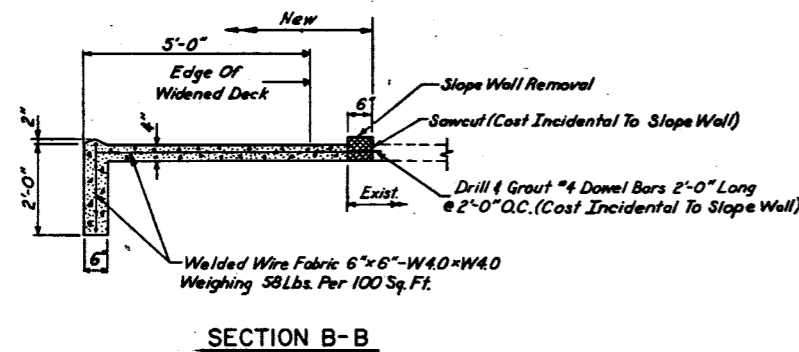
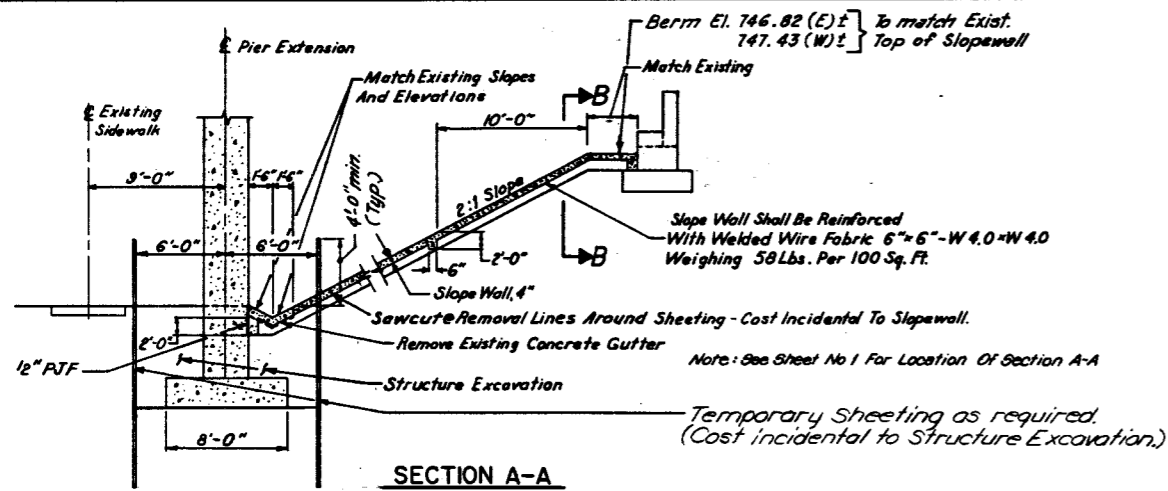
APPROVED
FOR STRUCTURAL ADEQUACY ONLY
James J. Rayburn
Chief of Bridges and Structures

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
GENERAL PLAN AND ELEVATION

REVISIONS	
NAME	DATE
Revised Profile Grade	5/31/85
Revised Profiles	2/3/86

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
ST. CHARLES STREET
SECTION BR-HB-5 (86)
KANE COUNTY
STATION 218+04.95
STR. NO. 045-0006

045-0006



TOTAL BILL OF MATERIALS				
ITEM	UNIT	SUPER-STRUCTURE	SUB-STRUCTURE	TOTAL
CONCRETE REMOVAL	CU YD	89	7	96
EXPANSION BOLTS, 3/4 INCH	EACH	6	174	180
REMOVAL OF EXISTING BEARINGS	EACH	---	39	39
STRUCTURE EXCAVATION	CU YD	---	316	316
FLOOR DRAINS	EACH	8	---	8
PROTECTIVE COAT	SQ YD	1529	---	1529
PREFORMED JOINT SEAL, 3/4"	LIN FT	76	---	76
PREFORMED JOINT SEAL, 4"	LIN FT	79	---	79
PREFORMED JOINT SEAL, 1"	LIN FT	149	---	149
PREFORMED JOINT SEAL, 2"	LIN FT	160	---	160
ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	---	30	30
ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	---	15	15
CLASS I CONCRETE	CU YD	161.6	143.8	305.4
STRUCTURAL STEEL	L. SUM	127	---	127
STUD SHEAR CONNECTORS	EACH	360	---	360
CLEANING & PTG. STEEL BR. NO. 2	L. SUM	1	---	1
REINFORCEMENT BARS	POUND	---	12870	12870
REINFORCEMENT BARS, EPOXY COATED	POUND	30,730	---	30,730
FURNISHING CONCRETE PILES	LIN FT	---	230	230
DRIVING CONCRETE PILES	LIN FT	---	230	230
TEST PILE CONCRETE	EACH	---	1	1
NAME PLATE	EACH	1	---	1
INSTALL & REMOVE	---	---	---	---
TEMPORARY CONCRETE BARRIER	UNIT	55	---	55
TEMPORARY CONCRETE BARRIER, TERMINAL SECTION	EACH	2	---	2
RELOCATE TEMPORARY CONCRETE BARRIER	UNIT	55	---	55
GUTTER REMOVAL	LIN FT	---	32	32
SLOPE WALL REMOVAL	SQ YD	---	43	43
SLOPE WALL, 4 INCH	SQ YD	---	194	194
BRIDGE DECK SCARIFICATION 1/2"	SQ YD	844	---	844
PLASTICIZED BRIDGE DECK CONCRETE OVERLAY	SQ YD	851	---	851
DECK SLAB REPAIR (FULL DEPTH)	SQ YD	50	---	50
DECK SLAB REPAIR (PARTIAL DEPTH)	SQ YD	425	---	425
EPOXY MORTAR REPAIR	CU FT	---	7	7
EPOXY CRACK SEALING	LIN FT	---	211	211

Calculated weight of Structural Steel = $\begin{cases} 40,620 \text{ Lbs. (M-183)} \\ 31,160 \text{ Lbs. (M-223)} \end{cases}$

GENERAL NOTES

- SEE PROPOSAL FOR BORING DATA.
- FASTENERS SHALL BE HIGH STRENGTH BOLTS. BOLTS 3/4" DIA., OPEN HOLES 13/16" DIA., UNLESS OTHERWISE NOTED.
- ALL STRUCTURAL STEEL SHALL RECEIVE ONE COAT OF DULL ORANGE PRIMER; NEW STRUCTURAL STEEL SHALL BE SHOP PRIMED.
- ALL STRUCTURAL STEEL, NEW AND EXISTING, SHALL RECEIVE TWO FIELD COATS OF ALUMINUM PAINT WITH THE FOLLOWING EXCEPTIONS, AS APPLICABLE, WHICH SHALL RECEIVE ONE COAT OF MAROON FIRST FIELD COAT AND FINAL COAT OF INTERSTATE GREEN.
 - THE EXTERIOR WEB SURFACE, THE BOTTOM AND EDGES OF THE BOTTOM FLANGE, THE BOTTOM SURFACE OF THE EXTERIOR TOP FLANGE, AND THE TOP SURFACE OF THE EXTERIOR BOTTOM FLANGE, OF NEW FACIA BEAMS.
 - ALL STRUCTURAL STEEL ELEMENTS OF NEW ELASTOMERIC BEARING ASSEMBLIES AND NEW STRUCTURAL STEEL FIXED BEARINGS FOR NEW FACIA BEAMS.
- FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF BEAMS 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.
- ANCHOR BOLTS SHALL BE SET BEFORE BOLTING NEW DIAPHRAGMS OVER SUPPORTS.
- THE MAIN LOAD CARRYING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE SUPPLEMENTAL REQUIREMENTS FOR NOTCH TOUGHNESS ZONE 2. THESE COMPONENTS ARE THE WIDE FLANGE BEAMS, ALL SPLICE PLATE MATERIAL AND HINGE PLATES.
- REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31 OR M-53, GRADE 60.
- PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF WORK. HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.
- EXPANSION BOLTS SHALL CONSIST OF APPROVED EXPANSION ANCHORS, PROVIDING MINIMUM CERTIFIED PROOF LOAD = 4,000 LBS., AND 3/4" DIA. X 12" HOOKED BOLTS.
- BEARING SEAT SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8 INCH. ADJUSTMENT SHALL BE MADE EITHER BY GRINDING THE SURFACE OR BY SHIMMING THE BEARING. TWO 1/8" ADJUSTING SHIMS, OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE, SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS. FOR TYPE I ELASTOMERIC BEARINGS, SHIMS OF THE DIMENSIONS OF TOP PLATE SHALL BE PROVIDED AND PLACED AS DETAILED.
- CONCRETE PILES AT ABUTMENTS SHALL BE DRIVEN THROUGH THE EMBANKMENT WITHOUT PRECORING.
- THE CONTRACTOR SHALL DRIVE ONE CONCRETE TEST PILE(S) IN PERMANENT LOCATION(S) SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.
- THE EMBANKMENT CONFIGURATION SHOWN SHALL BE THE MINIMUM EMBANKMENT THAT MUST BE CONSTRUCTED PRIOR TO WIDENING OF THE ABUTMENTS.

DESIGN DATA

- DESIGN SPECIFICATIONS: AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1983 EDITION, 1984 & 1985 INTERIMS.
- DESIGN STRESSES:
 - NEW CONCRETE: F'C=3500PSI
 - FC=1400PSI
 - NEW REINFORCING STEEL: FY=60,000PSI
 - FS=24,000PSI
 - NEW STRUCTURAL STEEL: FS=20,000PSI (M-183); FS=27,000 PSI (M-223 GR. 50)
 - EXISTING STRUCTURAL STEEL: FS=18,000PSI
 - STRUCTURAL STEEL, CONCRETE DECK AND SUBSTRUCTURE CONCRETE ARE DESIGNED BY THE SERVICE LOAD METHOD.
- DESIGN LOADING: HS20-44



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, BILL OF MATERIAL AND DETAILS

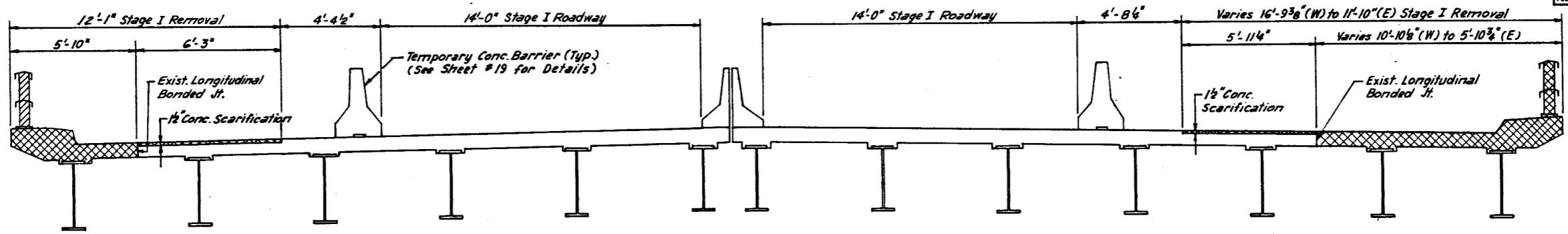
U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
ST. CHARLES STREET
SECTION BR-HB-5(86)
KANE COUNTY
STATION 218+04.95
STR. NO. 045-0006

REVISIONS	
NAME	DATE

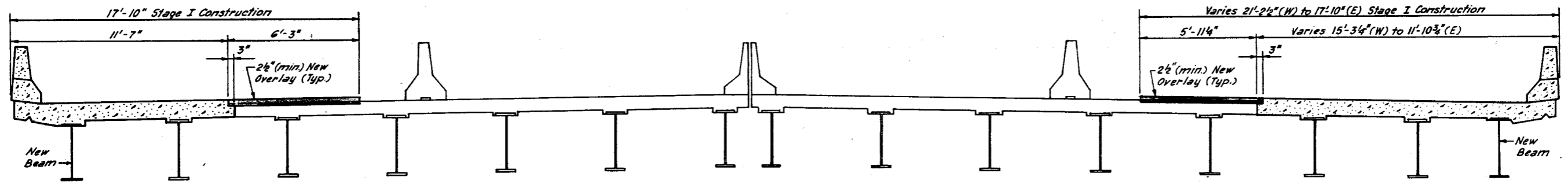
Baker Engineers

DESIGNED	J. Owen
CHECKED	P. Wood
DRAWN	K. Dypkowski
CHANGED	P. Wood

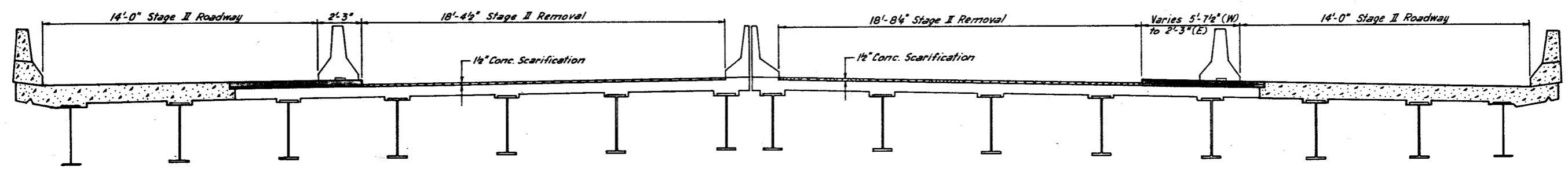
SHEET NO. 3	F.A. SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OF 22 SHEETS	426 BR-HB-5(86)	KANE	209	117
STA. TO STA.				
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



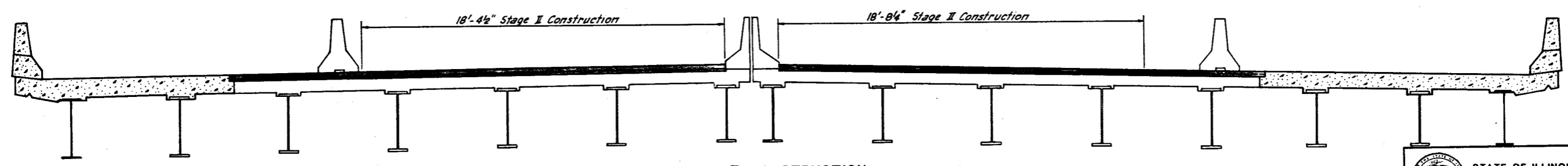
STAGE I REMOVAL
LOOKING EAST



STAGE I CONSTRUCTION
LOOKING EAST



STAGE II REMOVAL
LOOKING EAST



STAGE II CONSTRUCTION
LOOKING EAST

- NOTES:**
1. Transverse deck reinforcement extending into removed area shall be cleaned and incorporated into the new construction.
 2. Denotes conc. removal.
 3. (W) Denotes west end of slab. (E) Denotes east end of slab.

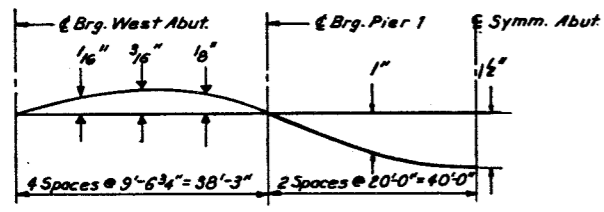
Baker Engineers Baker Engineering, Inc.	
DESIGNED	Z. Dabrowski
CHECKED	P. Wood
DRAWN	Z. Dabrowski
CHECKED	P. Wood

REVISIONS	
NAME	DATE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

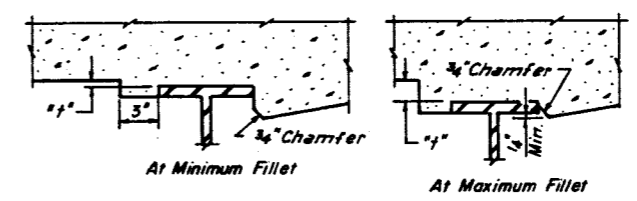
STAGE CONSTRUCTION

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
ST. CHARLES STREET
SECTION BR-HB-5(86)
KANE COUNTY
STATION 218+04.95
STR. NO. 045-0006



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 deflection as shown below.



FILLET HEIGHTS

To determine "f": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown below, minus slab thickness, equals the fillet heights "f" above top flange of beams.

BEAM 1

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRWA	217+06.70	-19.300	752.878	752.878
A	217+06.70	-19.500	752.895	752.895
B	217+06.70	-19.500	752.912	752.796
C	217+06.70	-19.500	752.788	752.788
CBRGP1	217+04.95	-19.500	752.753	752.753
D	217+04.95	-19.500	752.719	752.761
E	217+04.95	-19.500	752.685	752.767
F	217+04.95	-19.500	752.650	752.781
G	218+04.95	-19.500	752.614	752.736
H	218+04.95	-19.500	752.578	752.685
I	218+04.95	-19.500	752.530	752.612
J	218+04.95	-19.500	752.483	752.525
CBRGP2	218+04.95	-19.500	752.432	752.432
K	218+04.95	-19.500	752.377	752.363
L	218+04.95	-19.500	752.318	752.304
M	218+04.95	-19.500	752.255	752.228
CBRGA	218+03.20	-19.500	752.201	752.201

BEAM 2

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRWA	217+06.70	-14.000	752.904	752.904
A	217+06.70	-14.000	752.931	752.927
B	217+06.70	-14.000	752.889	752.888
C	217+06.70	-14.000	752.866	752.888
CBRGP1	217+04.95	-14.000	752.830	752.839
D	217+04.95	-14.000	752.806	752.835
E	217+04.95	-14.000	752.773	752.890
F	217+04.95	-14.000	752.740	752.816
G	218+04.95	-14.000	752.706	752.790
H	218+04.95	-14.000	752.680	752.794
I	218+04.95	-14.000	752.625	752.682
J	218+04.95	-14.000	752.579	752.688
CBRGP2	218+04.95	-14.000	752.530	752.530
K	218+04.95	-14.000	752.476	752.467
L	218+04.95	-14.000	752.419	752.411
M	218+04.95	-14.000	752.358	752.355
CBRGA	218+03.20	-14.000	752.305	752.305

NORTH LONG. CONST. JOINT

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRWA	217+06.70	-11.000	753.913	753.913
A	217+06.70	-11.000	753.988	753.976
B	217+06.70	-11.000	753.947	753.938
C	217+06.70	-11.000	753.914	753.906
CBRGP1	217+04.95	-11.000	753.887	753.887
D	217+04.95	-11.000	753.854	753.883
E	217+04.95	-11.000	753.821	753.878
F	217+04.95	-11.000	753.789	753.865
G	218+04.95	-11.000	753.754	753.838
H	218+04.95	-11.000	753.715	753.791
I	218+04.95	-11.000	753.673	753.730
J	218+04.95	-11.000	753.627	753.686
CBRGP2	218+04.95	-11.000	753.577	753.577
K	218+04.95	-11.000	753.524	753.515
L	218+04.95	-11.000	753.467	753.439
M	218+04.95	-11.000	753.406	753.408
CBRGA	218+03.20	-11.000	753.352	753.352

BEAM 3

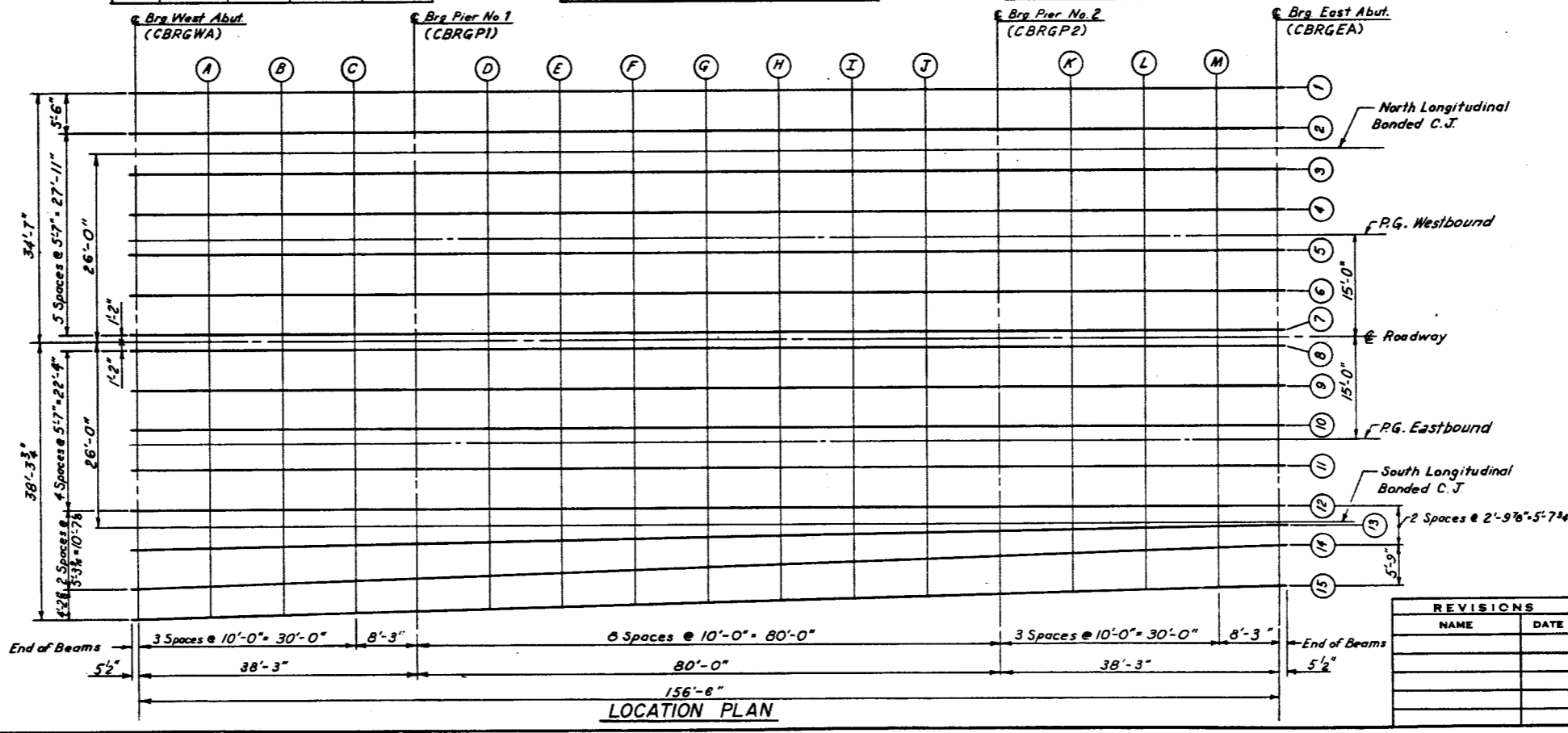
LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRWA	217+06.70	-8.500	753.852	753.852
A	217+06.70	-8.500	753.919	753.924
B	217+06.70	-8.500	753.906	753.987
C	217+06.70	-8.500	753.953	753.952
CBRGP1	217+04.95	-8.500	753.926	753.926
D	217+04.95	-8.500	753.893	753.902
E	217+04.95	-8.500	753.860	753.878
F	217+04.95	-8.500	753.828	753.852
G	218+04.95	-8.500	753.793	753.819
H	218+04.95	-8.500	753.754	753.778
I	218+04.95	-8.500	753.712	753.730
J	218+04.95	-8.500	753.666	753.675
CBRGP2	218+04.95	-8.500	753.616	753.616
K	218+04.95	-8.500	753.563	753.562
L	218+04.95	-8.500	753.506	753.507
M	218+04.95	-8.500	753.444	753.448
CBRGA	218+03.20	-8.500	753.391	753.391

BEAM 4

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRWA	217+06.70	-2.920	753.140	753.140
A	217+06.70	-2.920	753.187	753.112
B	217+06.70	-2.920	753.074	753.075
C	217+06.70	-2.920	753.041	753.040
CBRGP1	217+04.95	-2.920	753.013	753.013
D	217+04.95	-2.920	752.981	752.990
E	217+04.95	-2.920	752.948	752.966
F	217+04.95	-2.920	752.915	752.939
G	218+04.95	-2.920	752.880	752.906
H	218+04.95	-2.920	752.841	752.865
I	218+04.95	-2.920	752.799	752.817
J	218+04.95	-2.920	752.753	752.762
CBRGP2	218+04.95	-2.920	752.703	752.703
K	218+04.95	-2.920	752.649	752.648
L	218+04.95	-2.920	752.591	752.593
M	218+04.95	-2.920	752.530	752.534
CBRGA	218+03.20	-2.920	752.477	752.477

PROFILE GRADE LINE WESTBOUND & EASTBOUND

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRWA	217+06.70	0.000	753.185	753.185
A	217+06.70	0.000	753.152	753.157
B	217+06.70	0.000	753.119	753.120
C	217+06.70	0.000	753.086	753.085
CBRGP1	217+04.95	0.000	753.059	753.059
D	217+04.95	0.000	753.026	753.035
E	217+04.95	0.000	752.993	753.011
F	217+04.95	0.000	752.960	752.984
G	218+04.95	0.000	752.925	752.951
H	218+04.95	0.000	752.887	752.911
I	218+04.95	0.000	752.844	752.862
J	218+04.95	0.000	752.798	752.807
CBRGP2	218+04.95	0.000	752.748	752.748
K	218+04.95	0.000	752.694	752.693
L	218+04.95	0.000	752.637	752.639
M	218+04.95	0.000	752.575	752.579
CBRGA	218+03.20	0.000	752.522	752.522



Baker Engineers
 Baker Engineering, Inc.
 DESIGNED: P. Wood
 CHECKED: J. Owen
 DRAWN: K. Dypkowski
 CHECKED: P. Wood

REVISIONS

NAME	DATE

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
TOP OF SLAB ELEVATIONS
 U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
 ST. CHARLES STREET
 SECTION BR-HB-5(86)
 KANE COUNTY
 STATION 218+04.95
 STR. NO. 045-0006

€ BEAM 5

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRGA	217+26.70	2.670	753.227	753.227
A	217+36.70	2.670	753.194	753.199
B	217+46.70	2.670	753.161	753.162
C	217+56.70	2.670	753.128	753.127
CBRGP1	217+66.95	2.670	753.100	753.100
D	217+74.95	2.670	753.076	753.076
E	217+84.95	2.670	753.053	753.052
F	217+94.95	2.670	753.001	753.025
G	218+04.95	2.670	752.966	752.992
H	218+14.95	2.670	752.928	752.952
I	218+24.95	2.670	752.885	752.905
J	218+34.95	2.670	752.839	752.848
CBRGP2	218+44.95	2.670	752.789	752.789
K	218+54.95	2.670	752.735	752.734
L	218+64.95	2.670	752.678	752.680
M	218+74.95	2.670	752.616	752.620
CBRGEA	218+83.20	2.670	752.543	752.543

€ BEAM 6

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRGA	217+26.70	8.250	753.312	753.312
A	217+36.70	8.250	753.279	753.284
B	217+46.70	8.250	753.246	753.247
C	217+56.70	8.250	753.213	753.212
CBRGP1	217+66.95	8.250	753.186	753.186
D	217+74.95	8.250	753.153	753.162
E	217+84.95	8.250	753.120	753.138
F	217+94.95	8.250	753.087	753.111
G	218+04.95	8.250	753.052	753.078
H	218+14.95	8.250	753.014	753.038
I	218+24.95	8.250	752.971	752.989
J	218+34.95	8.250	752.925	752.934
CBRGP2	218+44.95	8.250	752.875	752.875
K	218+54.95	8.250	752.821	752.828
L	218+64.95	8.250	752.764	752.766
M	218+74.95	8.250	752.702	752.706
CBRGEA	218+83.20	8.250	752.649	752.649

€ BEAM 7

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRGA	217+26.70	13.830	753.395	753.395
A	217+36.70	13.830	753.362	753.367
B	217+46.70	13.830	753.329	753.330
C	217+56.70	13.830	753.296	753.295
CBRGP1	217+66.95	13.830	753.269	753.269
D	217+74.95	13.830	753.236	753.245
E	217+84.95	13.830	753.203	753.221
F	217+94.95	13.830	753.170	753.194
G	218+04.95	13.830	753.135	753.161
H	218+14.95	13.830	753.097	753.121
I	218+24.95	13.830	753.054	753.072
J	218+34.95	13.830	753.008	753.017
CBRGP2	218+44.95	13.830	752.958	752.958
K	218+54.95	13.830	752.904	752.903
L	218+64.95	13.830	752.847	752.849
M	218+74.95	13.830	752.785	752.789
CBRGEA	218+83.20	13.830	752.732	752.732

€ BEAM 8

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRGA	217+26.70	-13.830	753.395	753.395
A	217+36.70	-13.830	753.362	753.367
B	217+46.70	-13.830	753.329	753.330
C	217+56.70	-13.830	753.296	753.295
CBRGP1	217+66.95	-13.830	753.269	753.269
D	217+74.95	-13.830	753.236	753.245
E	217+84.95	-13.830	753.203	753.221
F	217+94.95	-13.830	753.170	753.194
G	218+04.95	-13.830	753.135	753.161
H	218+14.95	-13.830	753.097	753.121
I	218+24.95	-13.830	753.054	753.072
J	218+34.95	-13.830	753.008	753.017
CBRGP2	218+44.95	-13.830	752.958	752.958
K	218+54.95	-13.830	752.904	752.903
L	218+64.95	-13.830	752.847	752.849
M	218+74.95	-13.830	752.785	752.789
CBRGEA	218+83.20	-13.830	752.732	752.732

€ BEAM 9

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRGA	217+26.70	-8.250	753.313	753.313
A	217+36.70	-8.250	753.280	753.285
B	217+46.70	-8.250	753.247	753.248
C	217+56.70	-8.250	753.214	753.213
CBRGP1	217+66.95	-8.250	753.186	753.186
D	217+74.95	-8.250	753.153	753.162
E	217+84.95	-8.250	753.120	753.138
F	217+94.95	-8.250	753.087	753.111
G	218+04.95	-8.250	753.052	753.078
H	218+14.95	-8.250	753.014	753.038
I	218+24.95	-8.250	752.971	752.989
J	218+34.95	-8.250	752.925	752.934
CBRGP2	218+44.95	-8.250	752.875	752.875
K	218+54.95	-8.250	752.821	752.828
L	218+64.95	-8.250	752.764	752.766
M	218+74.95	-8.250	752.702	752.706
CBRGEA	218+83.20	-8.250	752.649	752.649

€ BEAM 10

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRGA	217+26.70	-2.670	753.227	753.227
A	217+36.70	-2.670	753.194	753.199
B	217+46.70	-2.670	753.161	753.162
C	217+56.70	-2.670	753.128	753.127
CBRGP1	217+66.95	-2.670	753.100	753.100
D	217+74.95	-2.670	753.076	753.076
E	217+84.95	-2.670	753.053	753.052
F	217+94.95	-2.670	753.001	753.025
G	218+04.95	-2.670	752.966	752.992
H	218+14.95	-2.670	752.928	752.952
I	218+24.95	-2.670	752.885	752.905
J	218+34.95	-2.670	752.839	752.848
CBRGP2	218+44.95	-2.670	752.789	752.789
K	218+54.95	-2.670	752.735	752.734
L	218+64.95	-2.670	752.678	752.680
M	218+74.95	-2.670	752.616	752.620
CBRGEA	218+83.20	-2.670	752.543	752.543

€ BEAM 11

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRGA	217+26.70	2.920	753.140	753.140
A	217+36.70	2.920	753.107	753.112
B	217+46.70	2.920	753.074	753.075
C	217+56.70	2.920	753.041	753.040
CBRGP1	217+66.95	2.920	753.014	753.014
D	217+74.95	2.920	752.981	752.990
E	217+84.95	2.920	752.948	752.966
F	217+94.95	2.920	752.915	752.939
G	218+04.95	2.920	752.880	752.906
H	218+14.95	2.920	752.842	752.866
I	218+24.95	2.920	752.799	752.817
J	218+34.95	2.920	752.753	752.762
CBRGP2	218+44.95	2.920	752.703	752.703
K	218+54.95	2.920	752.649	752.648
L	218+64.95	2.920	752.591	752.593
M	218+74.95	2.920	752.530	752.534
CBRGEA	218+83.20	2.920	752.477	752.477

€ BEAM 12

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRGA	217+26.70	8.500	753.055	753.055
A	217+36.70	8.500	753.022	753.027
B	217+46.70	8.500	752.989	752.989
C	217+56.70	8.500	752.955	752.954
CBRGP1	217+66.95	8.500	752.928	752.928
D	217+74.95	8.500	752.895	752.904
E	217+84.95	8.500	752.862	752.880
F	217+94.95	8.500	752.829	752.853
G	218+04.95	8.500	752.794	752.820
H	218+14.95	8.500	752.755	752.779
I	218+24.95	8.500	752.713	752.731
J	218+34.95	8.500	752.667	752.676
CBRGP2	218+44.95	8.500	752.617	752.617
K	218+54.95	8.500	752.563	752.562
L	218+64.95	8.500	752.505	752.507
M	218+74.95	8.500	752.444	752.448
CBRGEA	218+83.20	8.500	752.390	752.390

SOUTH LONG. CONST. JOINT

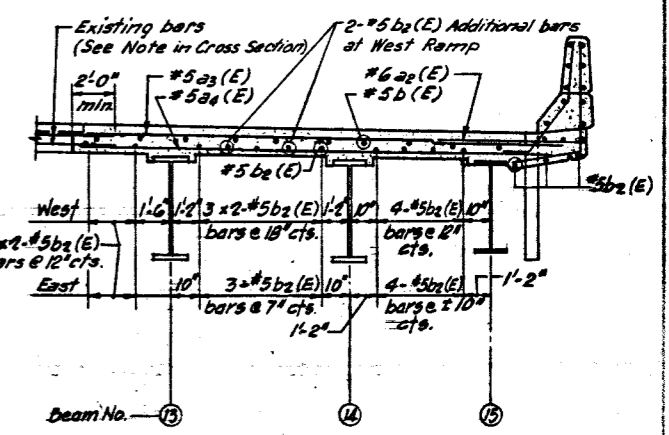
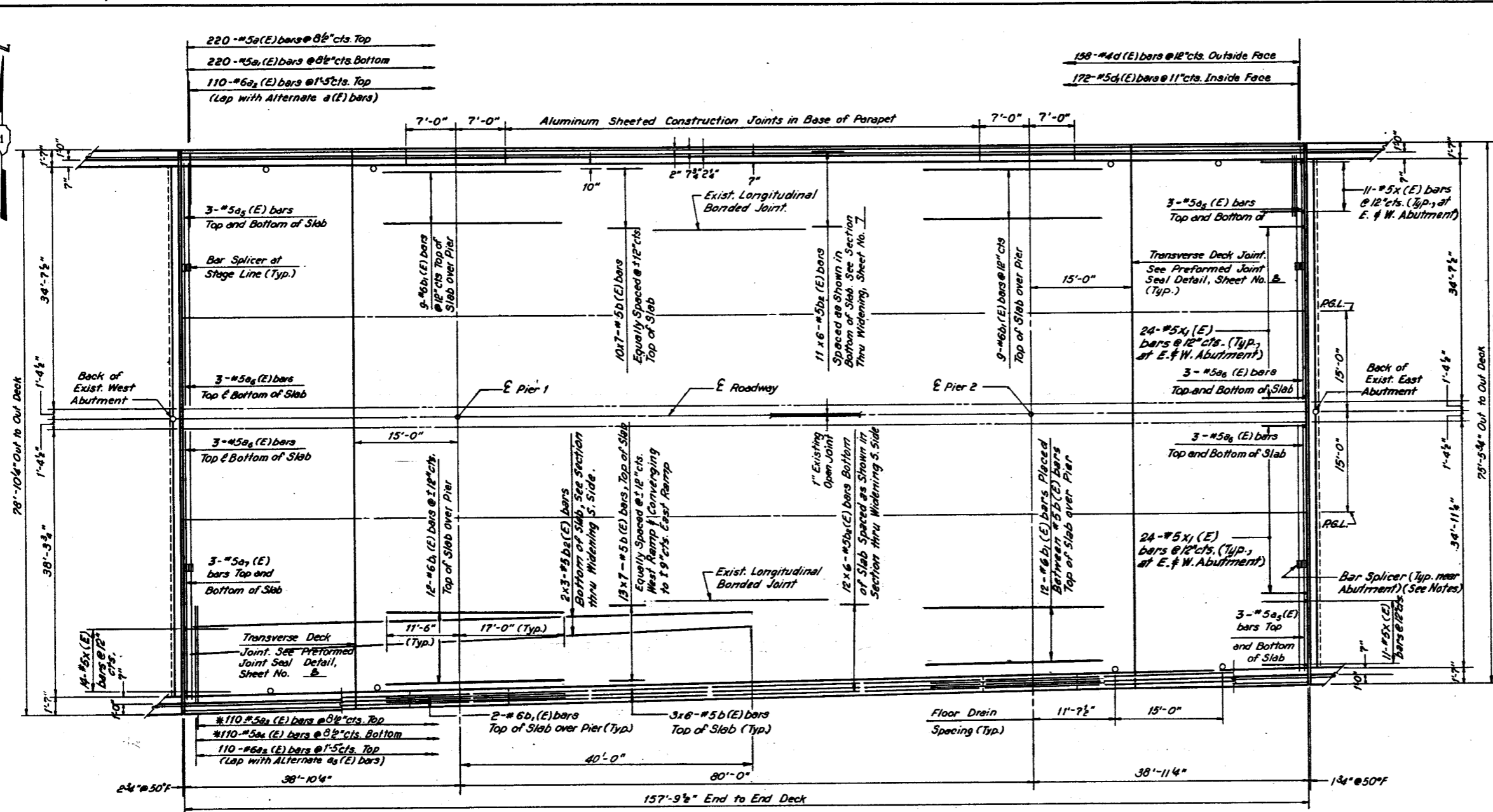
LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRGA	217+26.70	11.000	753.016	753.016
A	217+36.70	11.000	752.983	752.989
B	217+46.70	11.000	752.950	752.950
C	217+56.70	11.000	752.917	752.914
CBRGP1	217+66.95	11.000	752.890	752.890
D	217+74.95	11.000	752.857	752.875
E	217+84.95	11.000	752.824	752.861
F	217+94.95	11.000	752.790	752.841
G	218+04.95	11.000	752.756	752.813
H	218+14.95	11.000	752.717	752.770
I	218+24.95	11.000	752.674	752.715
J	218+34.95	11.000	752.628	752.656
CBRGP2	218+44.95	11.000	752.578	752.578
K	218+54.95	11.000	752.524	752.516
L	218+64.95	11.000	752.466	752.460
M	218+74.95	11.000	752.405	752.405
CBRGEA	218+83.20	11.000	752.351	752.351

€ BEAM 13

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRGA	217+26.70	13.800	752.973	752.973
A	217+36.70	13.800	752.940	752.948
B	217+46.70	13.800	752.907	752.912
C	217+56.70	13.800	752.874	752.870
CBRGP1	217+66.95	13.800	752.846	752.856
D	217+74.95	13.800	752.813	752.845
E	217+84.95	13.800	752.780	752.832
F	217+94.95	13.800	752.747	752.815
G	218+04.95	13.800	752.714	752.789
H	218+14.95	13.800	752.681	752.748
I	218+24.95	13.800	752.648	752.696
J	218+34.95	13.800	752.615	752.633
CBRGP2	218+44.95	13.800	752.582	752.564
K	218+54.95	13.800	752.549	752.508
L	218+64.95	13.800	752.516	752.451
M	218+74.95	13.800	752.483	752.398
CBRGEA	218+83.20	13.800	752.450	752.346

€ BEAM 14

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRGA	217+26.70	19.890	752.892	752.892
A	217+36.70	18.770	752.863	752.860
B	217+46.70	18.450	752.835	752.828
C	217+56.70	18.140	752.807	752.801
CBRGP1	217+66.95	17.880	752.780	752.784
D	217+74.95	17.560	752.	



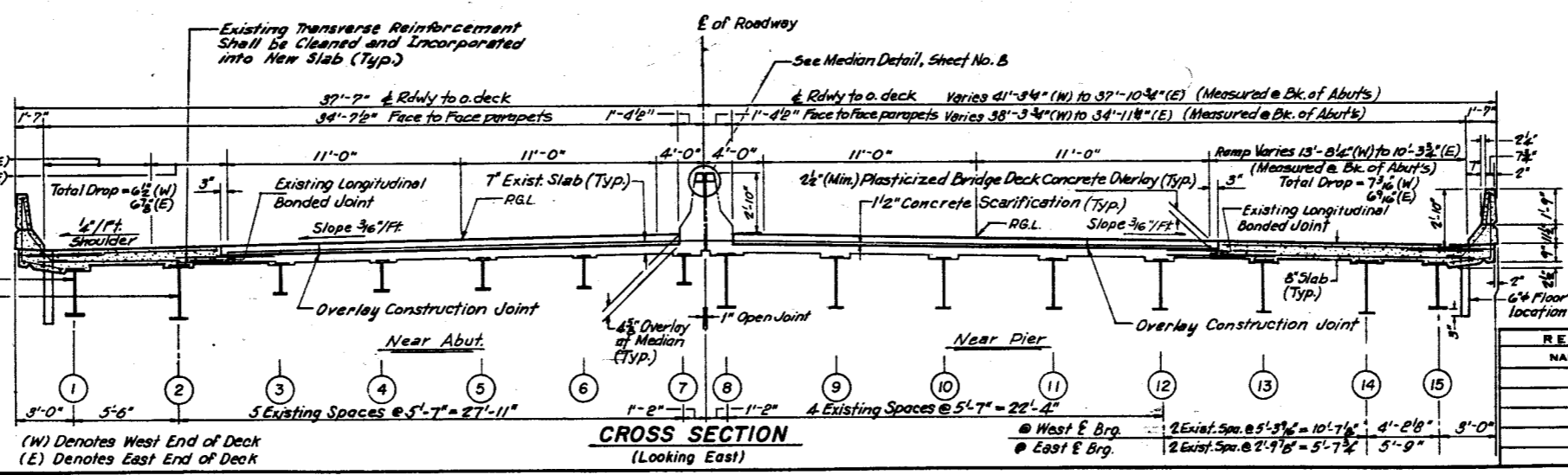
SECTION THRU WIDENING
(S. Side widening is shown)
SUPERSTRUCTURE
BILL OF MATERIAL

ITEM	UNIT	TOTAL
Plasticized Bridge Deck Conc. Overlay	Sq. Yd.	251
Bridge Deck Scarification	Sq. Yd.	244
Deck Slab Repair (Partial Depth)	Sq. Yd.	225
Deck Slab Repair (Full Depth)	Sq. Yd.	50
Class "X" Concrete	Cu. Yd.	158.6
Concrete Removal	Cu. Yd.	86
Preformed Joint Seal, 1 in.	Lin. Ft.	149
Preformed Joint Seal, 2 in.	Lin. Ft.	160

- NOTES:**
- See Sheet No. 7 for Superstructure Details and Bill of Material for Reinforcement Bars.
 - Reinforcement Bars designated (E) shall be Epoxy coated.
 - Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
 - For Bar Splicer Details, see Sheet #20. Cost incidental to REINFORCEMENT BARS (Epoxy Coated).
 - Minimum Bar Laps
#5 - 1'-8"
#6 - 2'-0"

* Order a₃(E) and a₄(E) bars full Length Cut to fit Taper and use Remainder of Bars in Opposite End.

PLAN



CROSS SECTION
(Looking East)

(W) Denotes West End of Deck
(E) Denotes East End of Deck

2 Existing Sp. @ 5'-3 3/4" = 10'-7 1/2"
4 Existing Sp. @ 5'-7" = 22'-4"

2 Existing Sp. @ 2'-9 1/2" = 5'-7 1/2"
5'-9"

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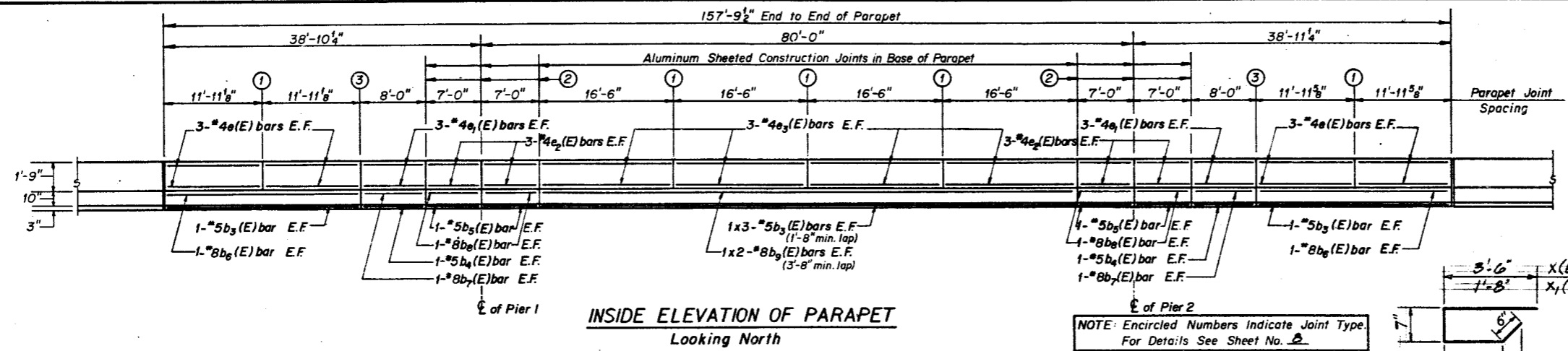
DESIGNED: M. Ryann
CHECKED: J. Owen
DRAWN: J. Chaliki
CHECKED: M. Ryann

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE

U.S. ROUTE 20 BY-PASS (F.A.R. 426) OVER
ST. CHARLES STREET
SECTION BR-HB-5(86)
KANE COUNTY
STATION 218+04.95
STR. NO. 045-0006

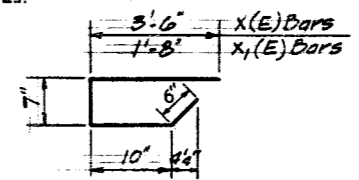
REVISIONS	
NAME	DATE



- NOTES:**
- E.F. - indicates Each Face.
 - Bars indicated thus 11 x 2-#5 etc. indicates 11 lines of bars with 2 lengths per line.
 - The exterior surfaces of the Floor Drain shall be painted with maroon and green paint as specified for structural steel. The exterior surfaces of the Aluminum Tube shall be cleaned and given a washcoat pretreatment in accordance with Steel Structures Painting Council's Specification SSPC-SP1 & SSPC-Paint 27 prior to painting.
 - Fiberglass Pipe shall conform to ASTM D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum. The surface of the Fiberglass Pipe shall be free of bond inhibiting agents.
 - Reinforcement bars designated (E) shall be Epoxy Coated.

INSIDE ELEVATION OF PARAPET
Looking North

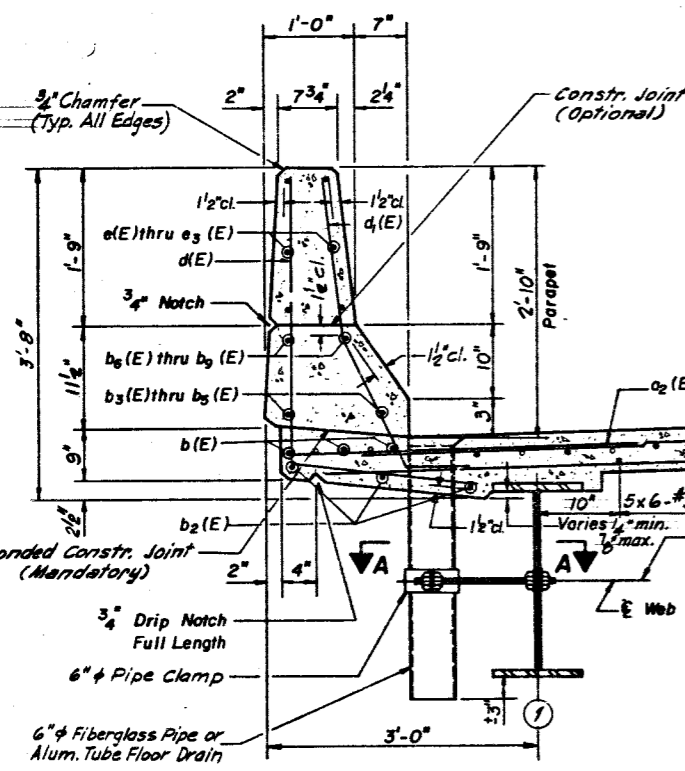
NOTE: Encircled Numbers Indicate Joint Type. For Details See Sheet No. 8.



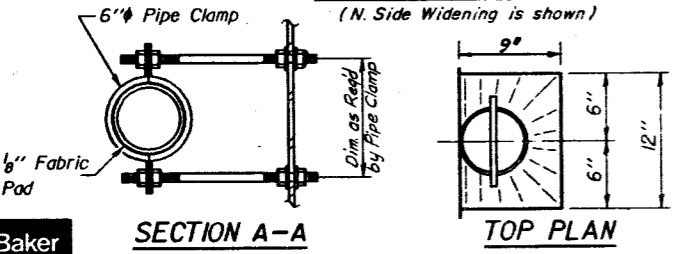
BARS x(E) & x1(E)

SUPERSTRUCTURE
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	220	#5	10'-6"	—
a1(E)	220	#5	10'-6"	—
a2(E)	220	#6	4'-0"	—
a3(E)	110	#5	25'-0"	—
a4(E)	110	#5	25'-0"	—
a5(E)	18	#5	16'-9"	—
a6(E)	24	#5	17'-6"	—
a7(E)	6	#5	20'-0"	—
b(E)	197	#5	24'-0"	—
b1(E)	50	#6	26'-6"	—
b2(E)	144	#5	24'-0"	—
b3(E)	20	#5	23'-7"	—
b4(E)	8	#5	7'-9"	—
b5(E)	16	#5	6'-9"	—
b6(E)	8	#8	23'-7"	—
b7(E)	8	#8	7'-9"	—
b8(E)	16	#8	6'-9"	—
b9(E)	8	#8	34'-9"	—
c(E)	316	#4	5'-0"	—
c1(E)	344	#5	3'-11"	—
c2(E)	160	#4	1'-0"	—
d(E)	48	#4	11'-8"	—
d1(E)	24	#4	7'-9"	—
d2(E)	48	#4	6'-9"	—
d3(E)	48	#4	16'-3"	—
d4(E)	16	#4	19'-5"	—
x(E)	47	#5	5'-5"	—
x1(E)	96	#5	3'-7"	—
Reinforcement Bars (Epoxy Coated)		Lbs	30,570	
Floor Drains		Ea	8	

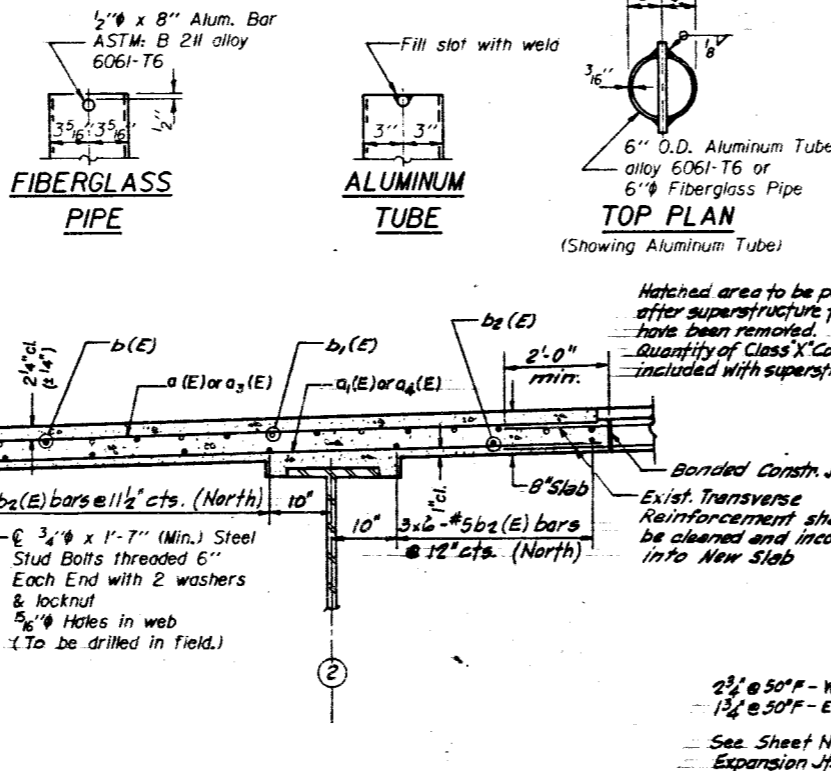


SECTION THRU WIDENING
(N. Side Widening is shown)



SECTION A-A

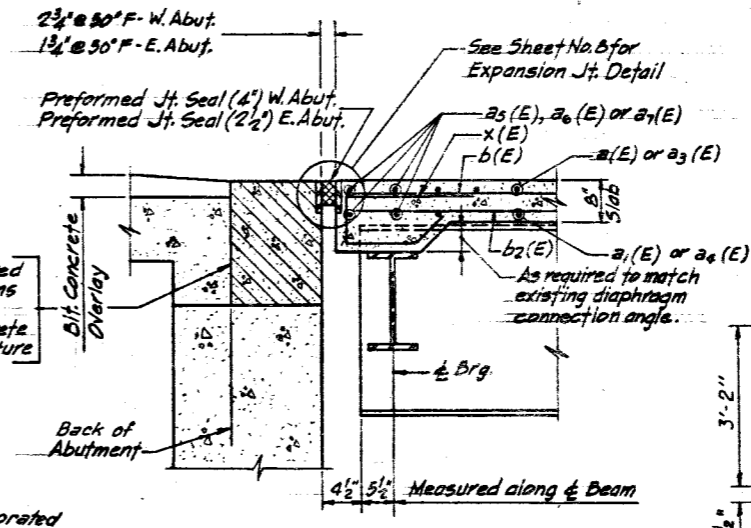
TOP PLAN



FIBERGLASS PIPE

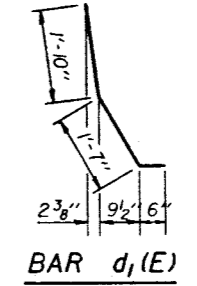
ALUMINUM TUBE

TOP PLAN
(Showing Aluminum Tube)

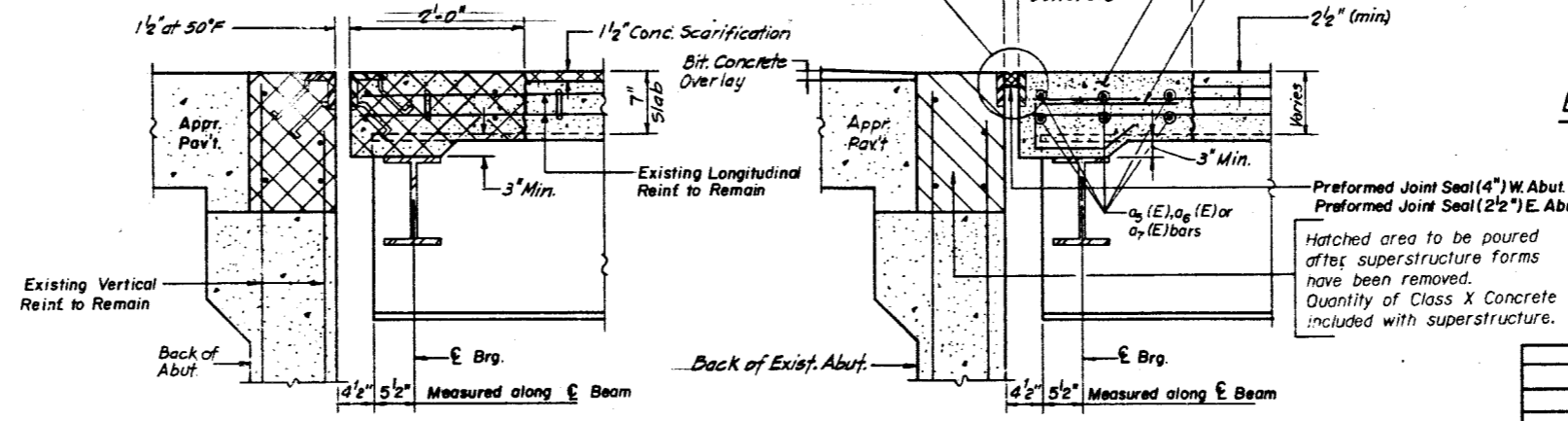


SECTION THRU ABUTMENTS
AT WIDENING

BAR d(E)



BAR d1(E)



EXISTING SECTION THRU ABUTMENTS

NEW SECTION THRU EXISTING ABUTMENTS

Denotes Concrete Removal and Scarification

REVISIONS

NAME	DATE

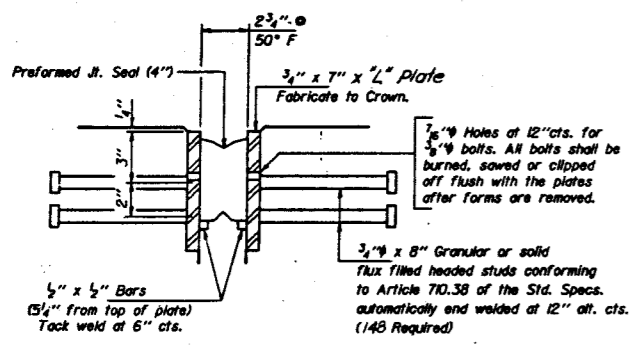
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS

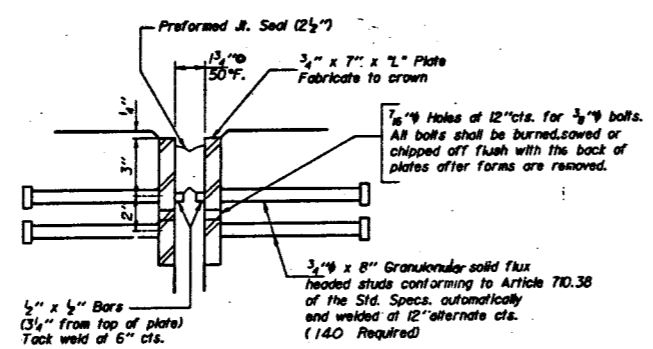
U.S. ROUTE 20 BY-PASS (F.A.P.426) OVER
ST. CHARLES STREET
SECTION BR-HB-5(86)
KANE COUNTY
STATION 218+04.95
STR. No. 045-0006

Baker Engineers
Baker Engineering, Inc.

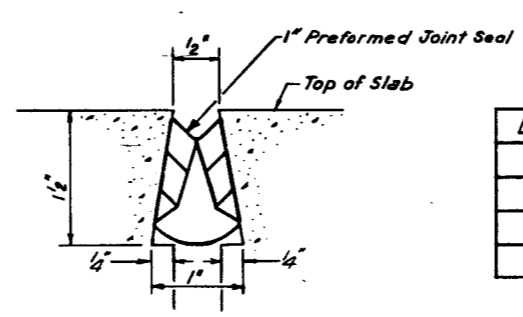
DESIGNED: M. Ryan
CHECKED: J. Owen
DRAWN: J. Chaliki's
CHECKED: M. Ryan



EXPANSION JOINT (WEST ABUTMENT)



EXPANSION JOINT (EAST ABUTMENT)

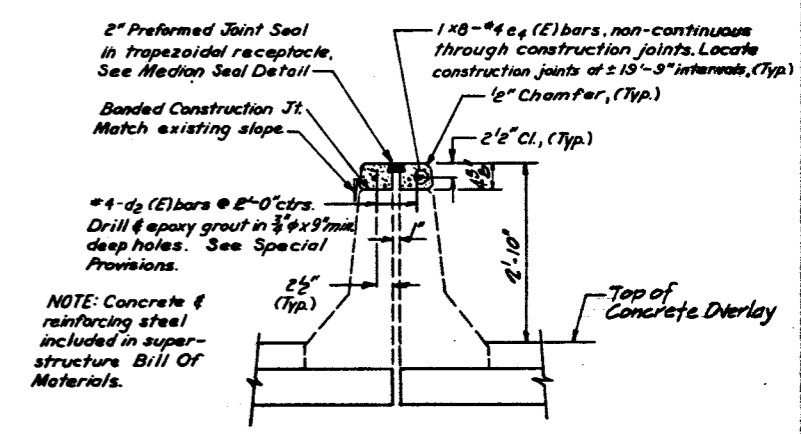


TRANSVERSE DECK JOINT (AT HINGE - All horizontal dimensions at right angles to joint)

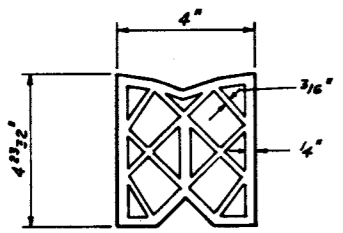
L Lengths for Stage Construction

	Stage I	Stage II
North	16'-2 3/4"	18'-4 1/4"
South	14'-7 1/4" W. Abut. 16'-2 3/4" E. Abut.	18'-5 1/4"

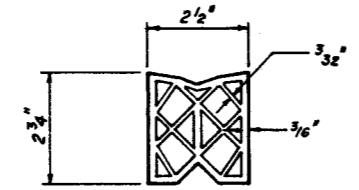
Butt Weld Plates at Stage Line



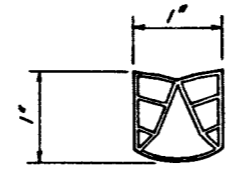
MEDIAN DETAIL



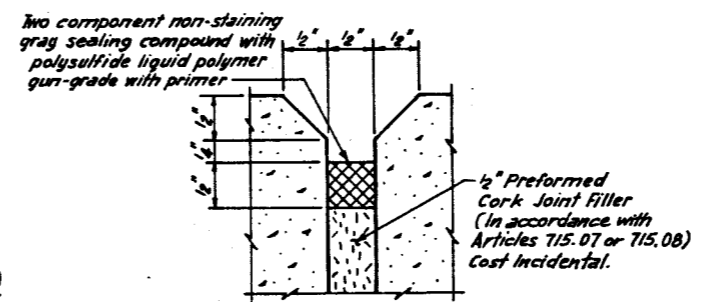
PREFORMED JOINT SEAL (4")



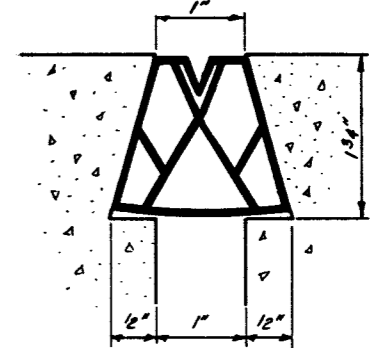
PREFORMED JOINT SEAL (2 1/2")



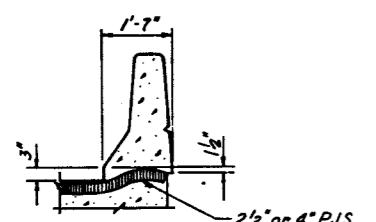
PREFORMED JOINT SEAL (1") (0.450" MOVEMENT)



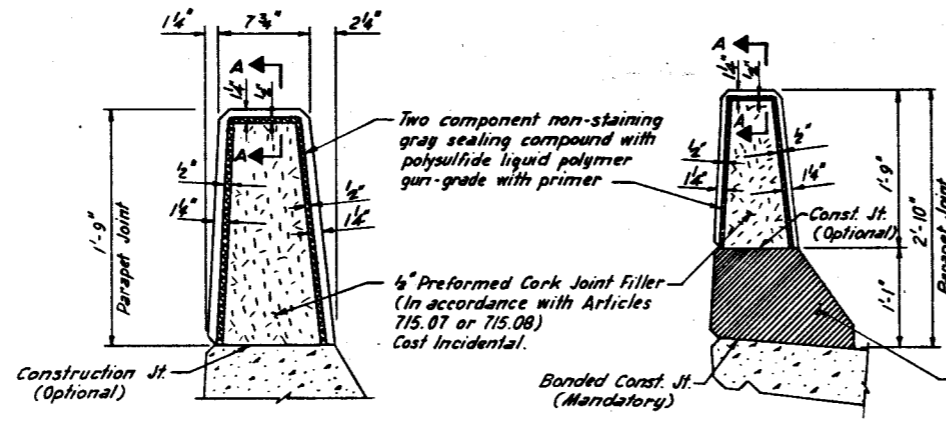
SECTION A-A



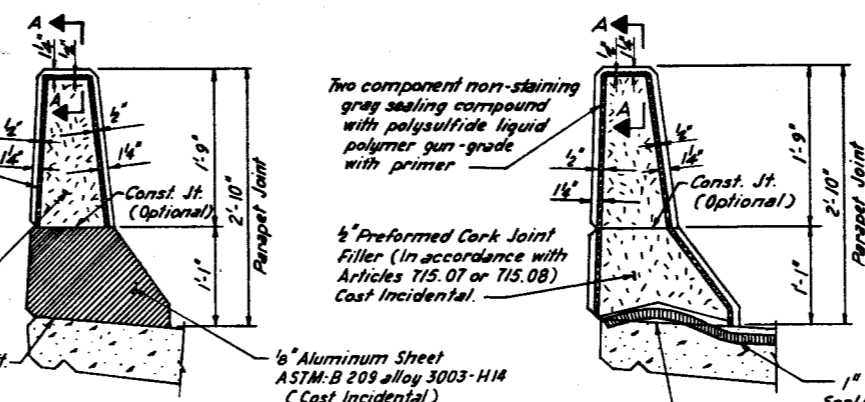
MEDIAN SEAL DETAIL



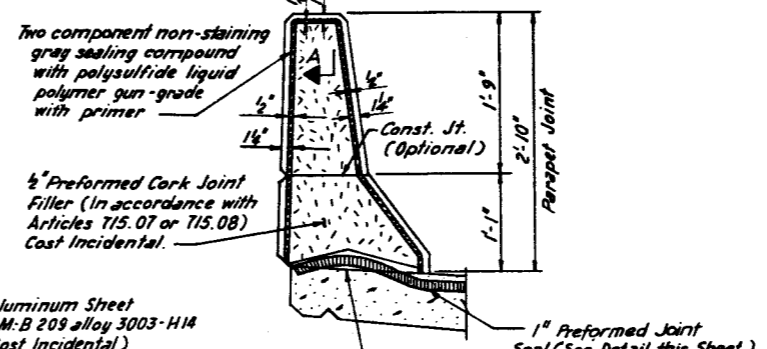
EXPANSION JOINT END OF SEAL TREATMENT



TYPE 1



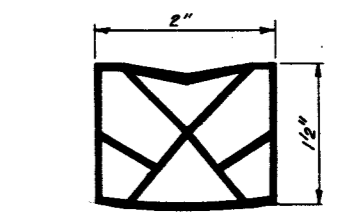
TYPE 2



TYPE 3

PARAPET JOINT DETAILS

(For Location of Parapet Joints See Sheet No. 7)



PREFORMED JOINT SEAL (2") (0.975" MOVEMENT)

Baker Engineers
Baker Engineering, Inc.

DESIGNED	R. Wood
CHECKED	J. Owen
DRAWN	Z. Dabrowski
CHECKED	R. Wood

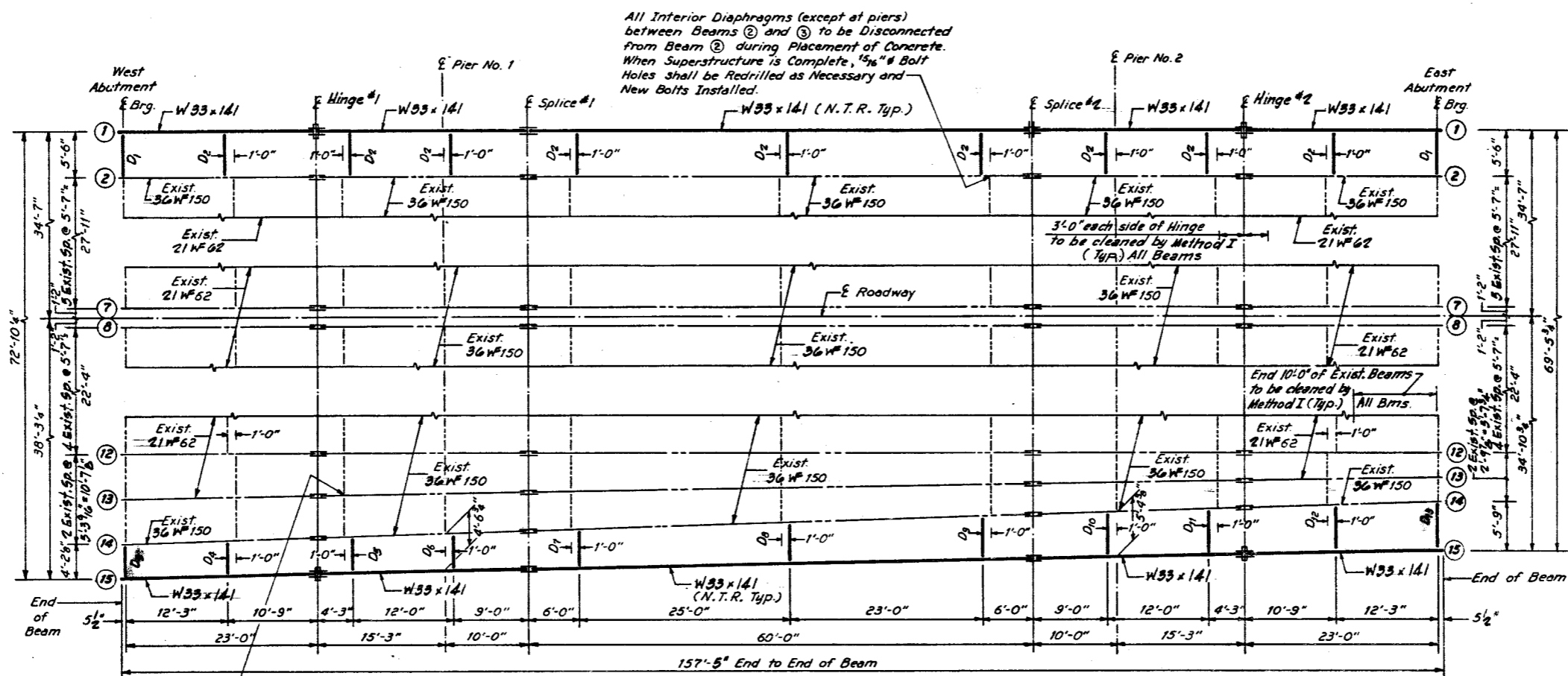
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS

U.S. ROUTE 20 BY-PASS (F.A.R. 426) OVER
ST. CHARLES STREET
SECTION BR-HB-5 (B6)
KANE COUNTY
STATION 218+04.95
STR. NO. 045-000G

REVISIONS

NAME	DATE



EXISTING INTERIOR BEAM MOMENT TABLE

	0.3 Sp. 1 or 0.7 Sp. 3	Pier land 2	0.5 Sp. 2
I _s (in ⁴)	1330	9040	10862
I _c (in ⁴)			22549
S _s (in ³)	127	504	667
S _c (in ³)			866
R (1/1)	0.987	1.093	0.877
M _g (IK)	74.2	297.74	477.66
fs-non-comp (KSI)	7.01	7.09	8.59
S _L (K/1)			0.216
M _{sg} (IK)			109.83
M _g (IK)	93.4	335.2	590.6
M _{imp} (IK)	28.0	90.5	141.7
TOTAL (IK)	121.4	425.7	842.13
fs-comp (KSI)			11.70
fs-TOTAL (KSI)	18.5	17.2	20.3
VR (K)			37.1

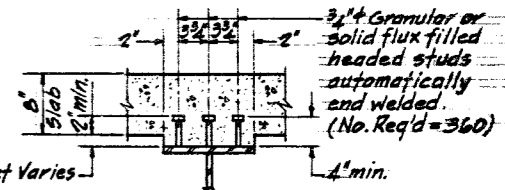
NEW EXTERIOR BEAM MOMENT TABLE

	0.3 Sp. 1 or 0.7 Sp. 3	Pier land 2	0.5 Sp. 2
I _s (in ⁴)	7450	7450	7450
I _c (in ⁴)			18727
S _s (in ³)	448	448	448
S _c (in ³)			643
R (1/1)	0.967	0.967	0.783
M _g (IK)	64.0	282.0	398.1
fs-non-comp (KSI)	1.7	7.6	10.7
S _L (K/1)			0.176
M _{sg} (IK)			89.4
M _g (IK)	93.4	335.2	590.6
M _{imp} (IK)	28.0	90.5	141.7
TOTAL (IK)	121.4	425.7	821.7
fs-comp (KSI)			15.3
fs-TOTAL (KSI)	4.97	18.96	26.0
VR (K)			37.1

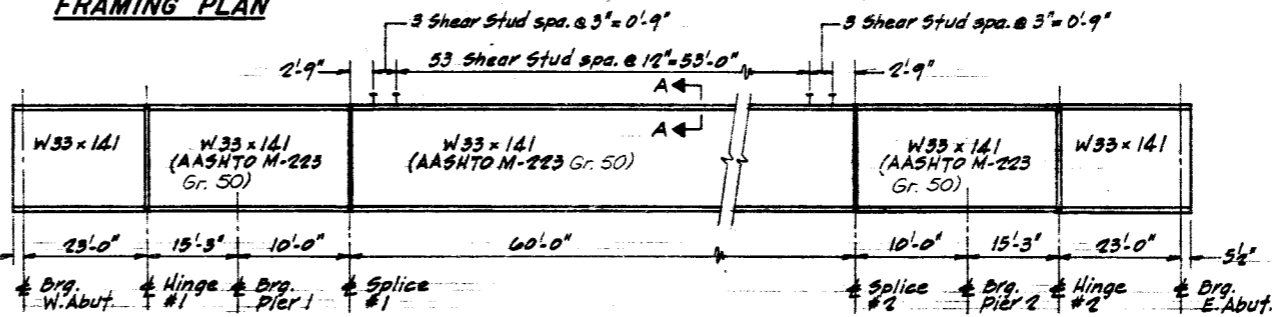
INTERIOR BEAM REACTION TABLE

	E & W Abuts	Piers 1 & 2
R _B (K)	11.37	72.31
R _L (K)	21.8	38.4
Imp. (K)	6.6	10.4
R _{TOTAL} (K)	39.8	121.1

I_s and S_s are the moment of Inertia and section modulus of the steel section used in computing fs TOTAL.
I_c and S_c are the moment of Inertia and section modulus of the composite section used in computing fs TOTAL.
VR is the maximum 4 + impact shear range in span.



FRAMING PLAN

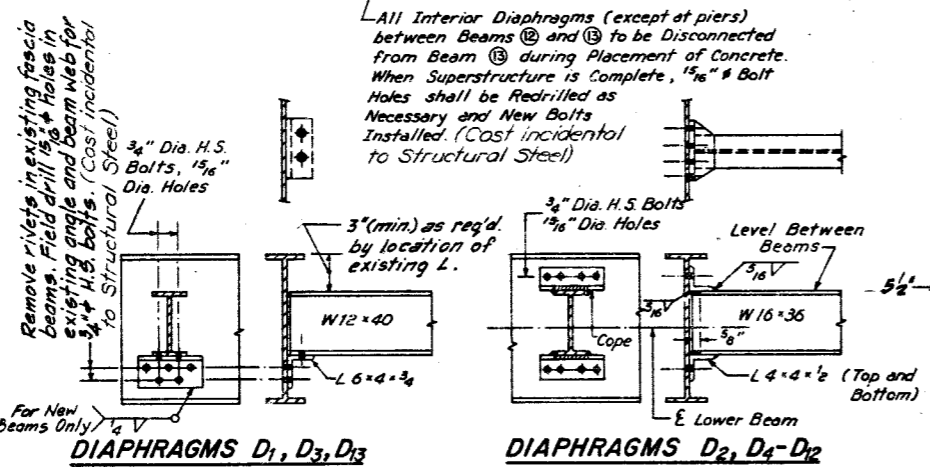


BEAM ELEVATION (Beam No's 1 & 15)
See Sheet No. 2 for Notch Toughness Requirements (N.T.R.)

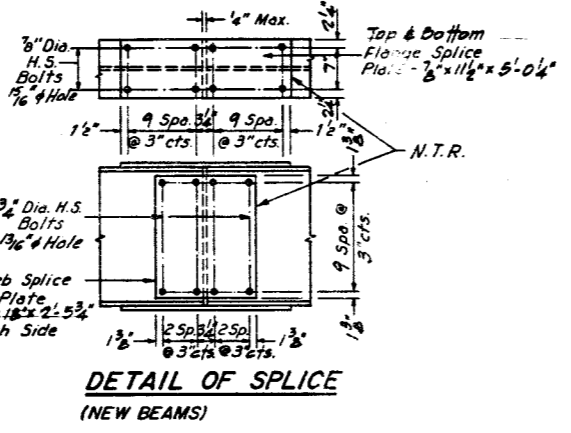
TOP OF FLANGE ELEVATIONS (BEFORE ANY DEFLECTION)*

LOC. BEAM	E Brg. W. Abut.	E Hinge No. 1	E Brg. Pier 1	E Splice No. 1	E Splice No. 2	E Brg. Pier 2	E Hinge No. 2	E Brg. E. Abut.
1	752.17	752.07	752.00	751.95	751.71	751.67	751.61	751.49
15	752.12	752.02	751.96	751.91	751.71	751.67	751.61	751.51

*FOR FABRICATION ONLY



NOTE: Two Hardened Washers Shall be Required Over All 1 1/2" Dia. Holes. All Contact Surfaces of Joints for the Diaphragms Shall be Free of Paint or Lacquer.



DIAPHR. NO.	E TO E BM.
D ₁ , D ₂	5'-6"
D ₃	4'-2 1/8"
D ₄	4'-3 5/8"
D ₅	4'-5 7/8"
D ₆	4'-6 3/8"
D ₇	4'-8 1/8"
D ₈	4'-11 1/8"
D ₉	5'-2 7/8"
D ₁₀	5'-4 1/4"
D ₁₁	5'-5 3/4"
D ₁₂	5'-7 1/2"
D ₁₃	5'-9"

Baker Engineers
Baker Engineering, Inc.

DESIGNED: M. Ryann
CHECKED: J. Owen
DRAWN: J. Chalakis
CHECKED: M. Ryann

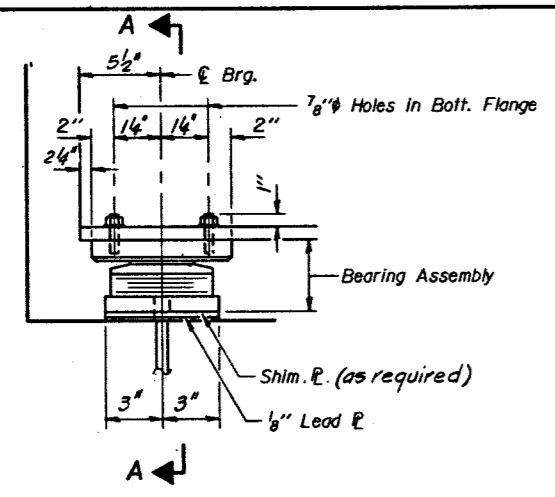
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL

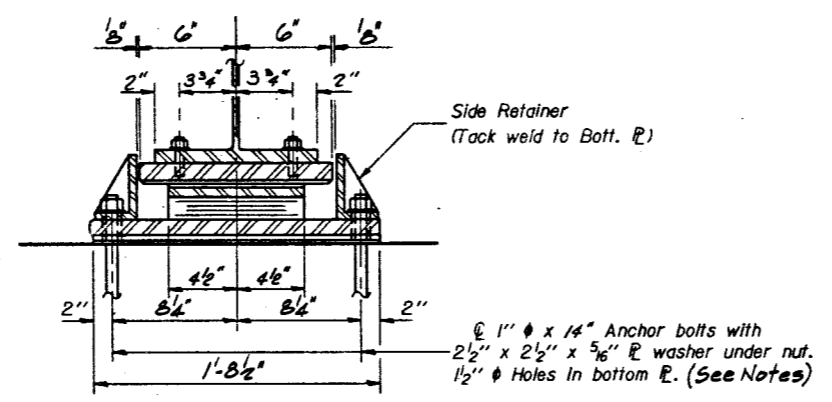
U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
ST. CHARLES STREET
SECTION BR-HB-5(86)
KANE COUNTY
STATION 218+04.95
STR. NO. 045-0006

REVISIONS

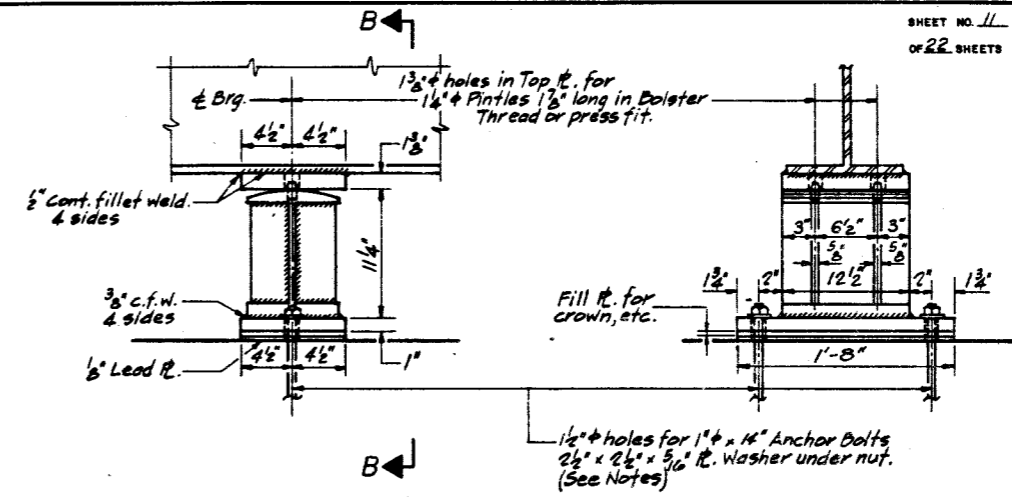
NAME	DATE



ELEVATION AT WEST ABUT.
(Looking North)

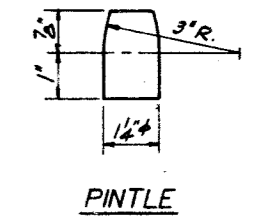


SECTION A-A



ELEVATION AT PIER 2

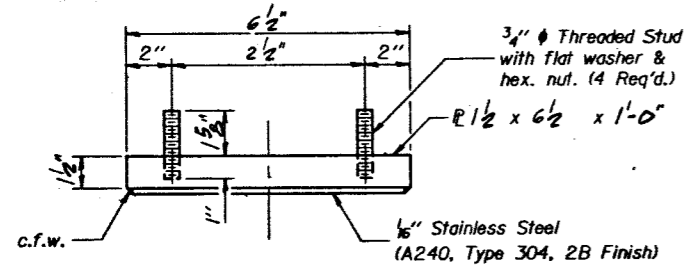
SECTION B-B



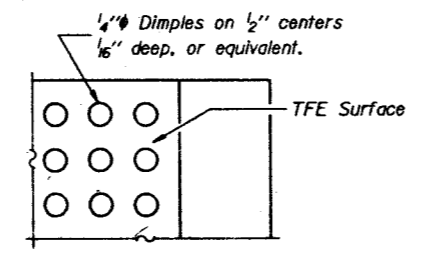
PINTLE

TYPE II TFE ELASTOMERIC EXP. BRG.

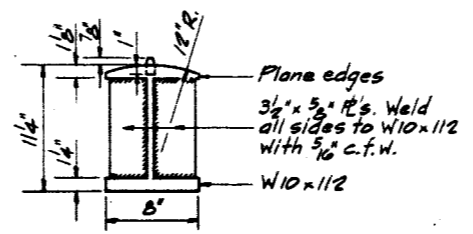
FIXED BEARING



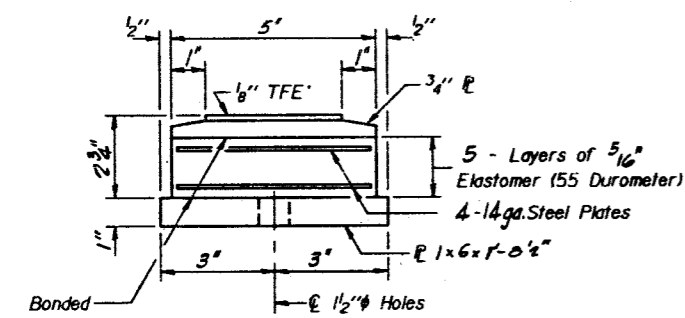
TOP BEARING ASSEMBLY



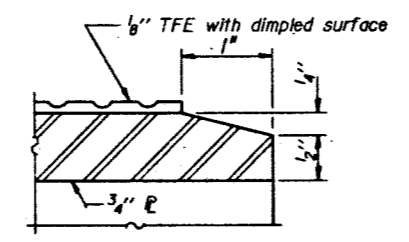
PLAN-TFE SURFACE



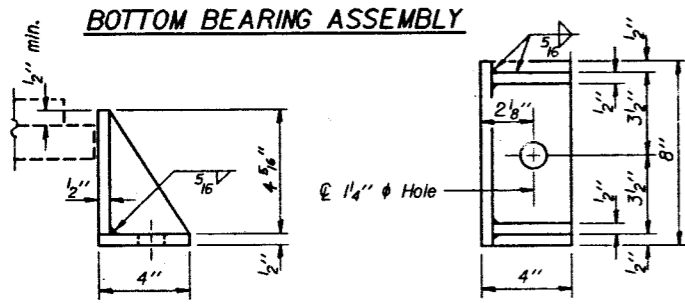
BOLSTER



BOTTOM BEARING ASSEMBLY



SECTION THRU TFE

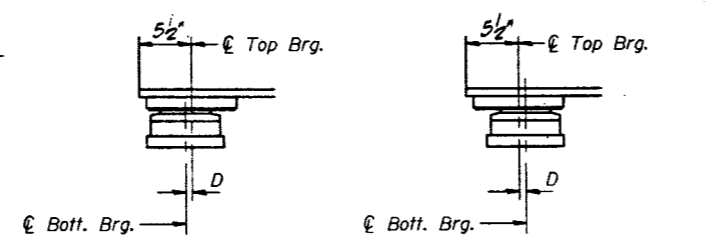


SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

Baker Engineers
Baker Engineering, Inc.

DESIGNED	P. Wood
CHECKED	J. Owen
DRAWN	J. Chaliki's
CHECKED	P. Wood



SETTING ANCHOR BOLTS AT EXP. BRG. (TYPE II)

D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type II	Each	2

REVISIONS

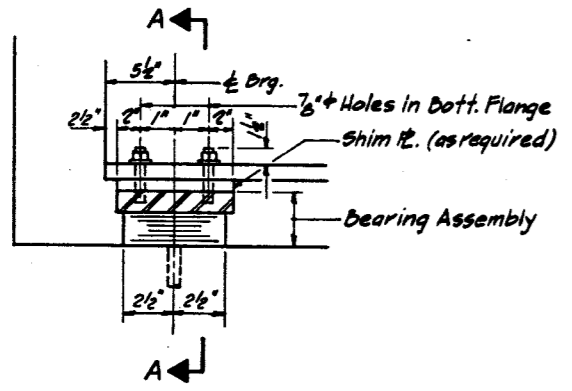
NAME	DATE

- Notes:**
- Anchor bolts at fixed bearings may be built into the masonry. See Sheet #21 for Anchor Bolt Details.
 - All steel plates shown on this sheet shall be AASHTO M-183 unless otherwise noted.
 - The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces. Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
 - Cost of Structural Steel for Fixed Bearing at Pier #2 is included for payment with "Furnishing and Erecting Structural Steel."

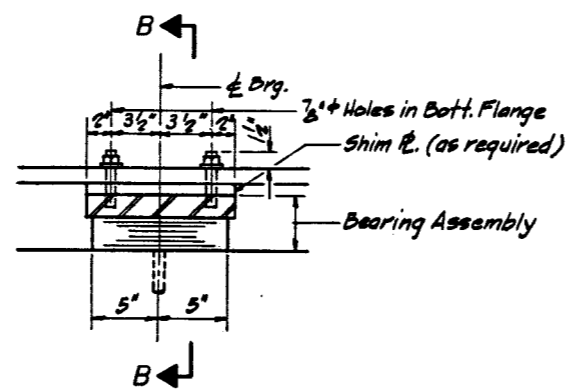
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

**NEW BEARING DETAILS
WEST ABUTMENT & PIER 2**

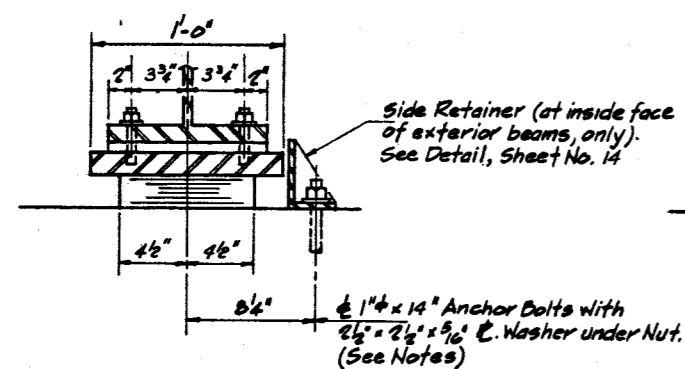
U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
ST. CHARLES STREET
SECTION BR-HB-5(86)
KANE COUNTY
STATION 218+04.95
STR. NO. 045-0006



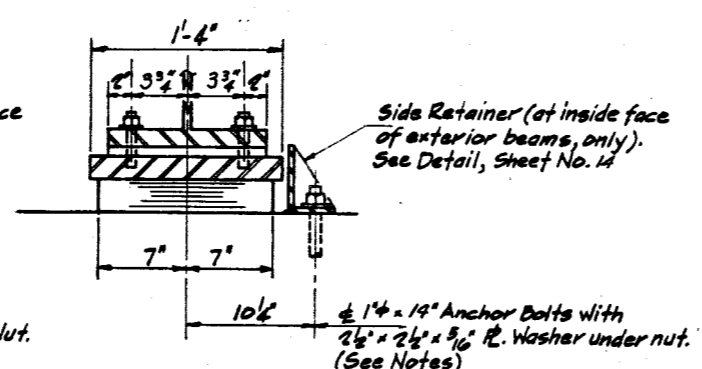
ELEVATION AT EAST ABUT.
(Looking South)



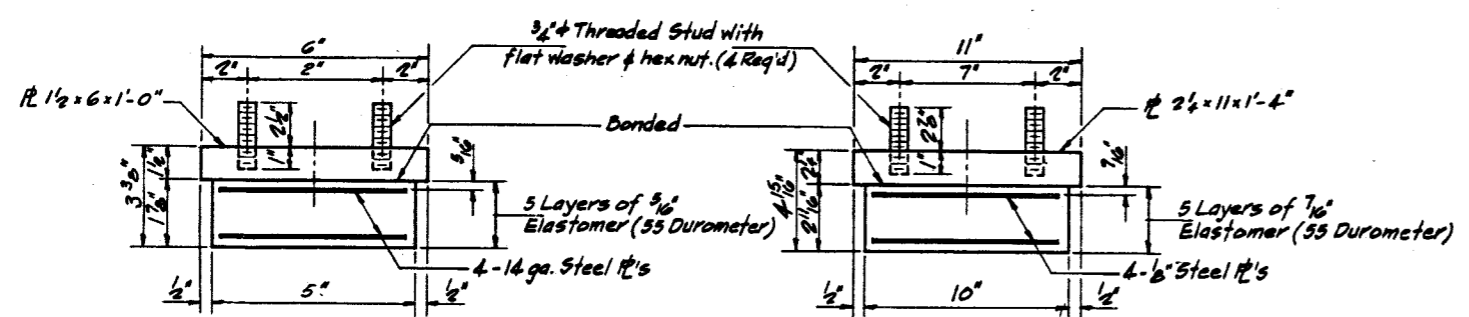
ELEVATION AT PIER 1



SECTION A-A



SECTION B-B



EAST ABUT. BEARING ASSEMBLY

PIER 1 BEARING ASSEMBLY

TYPE I ELASTOMERIC EXPANSION BRG.

- Notes:
- See Sheet #21 for Anchor Bolt Details.
 - Shim plates shall not be placed under Bearing Assembly.

Baker Engineers
Baker Engineering, Inc.

DESIGNED	P. Wood
CHECKED	J. Owen
DRAWN	J. Chaliki's
CHECKED	P. Wood

BILL OF MATERIAL

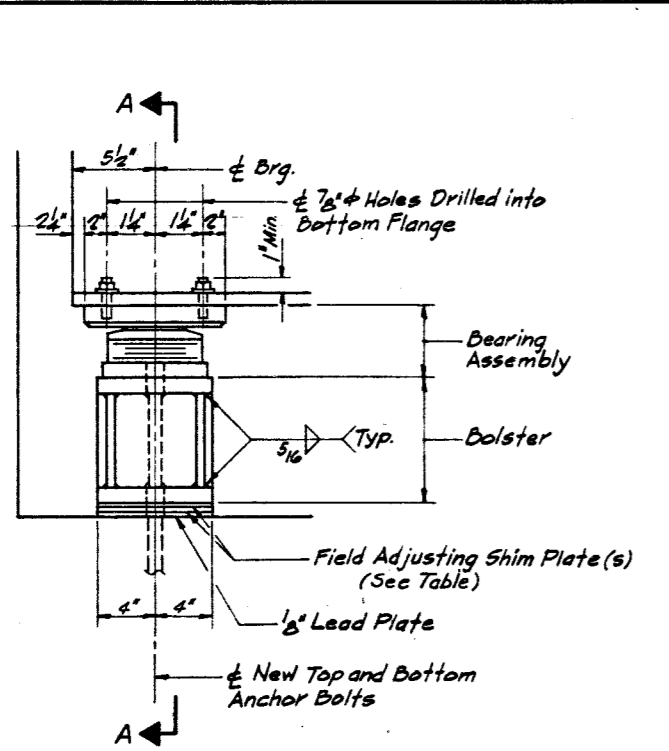
Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	4

REVISIONS	
NAME	DATE

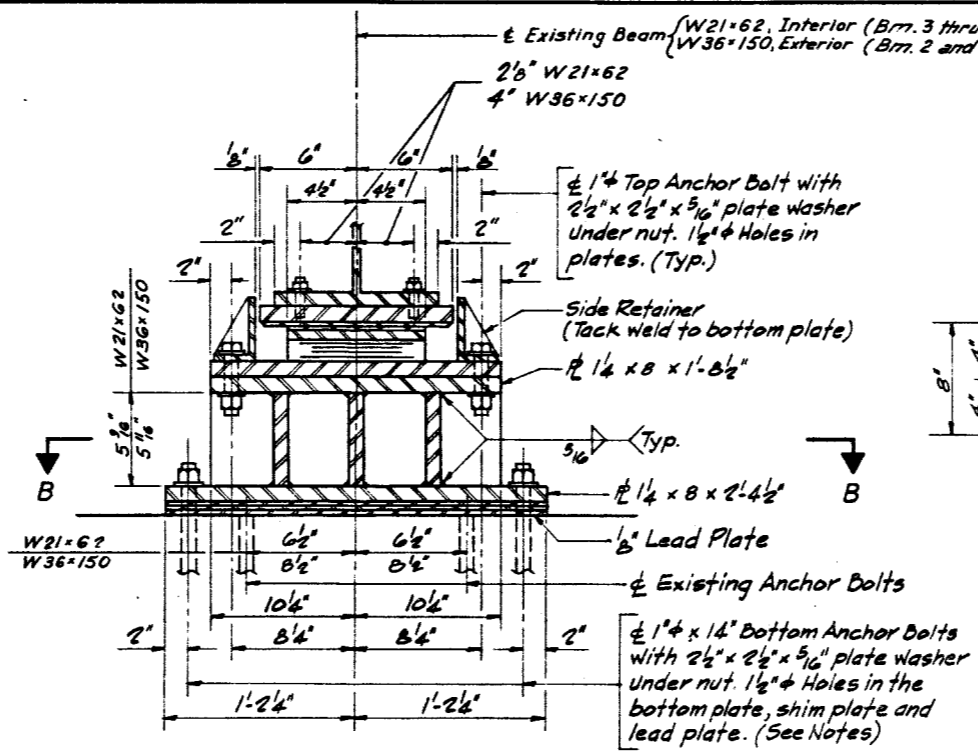
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

**NEW BEARING DETAILS
EAST ABUTMENT & PIER 1**

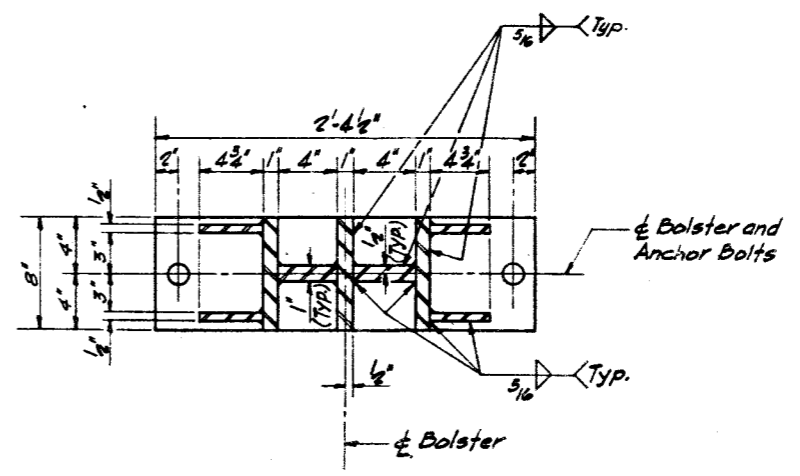
U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
ST. CHARLES STREET
SECTION BR-HB-5(86)
KANE COUNTY
STATION 218+04.95
STR. NO. 045-000 G



ELEVATION AT WEST ABUT.

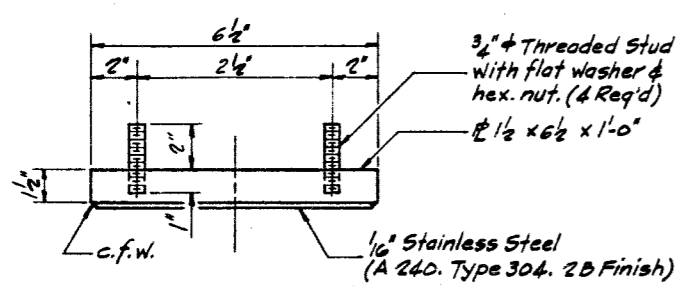


SECTION A-A

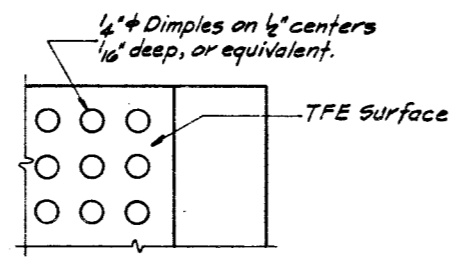


SECTION B-B

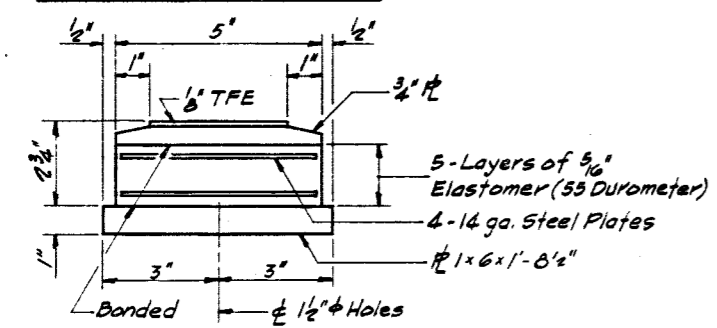
TYPE II TFE ELASTOMERIC EXP. BRG. WITH BOLSTER



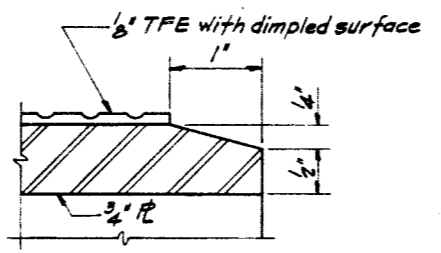
TOP BEARING ASSEMBLY



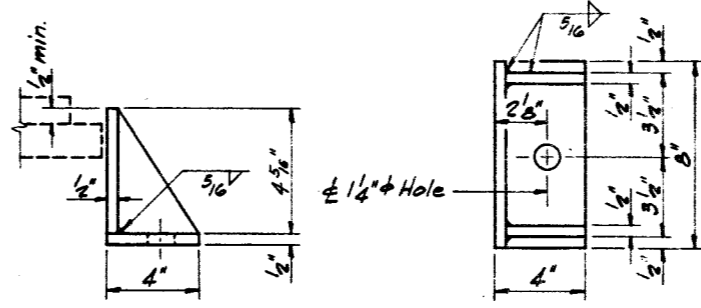
PLAN - TFE SURFACE



BOTTOM BEARING ASSEMBLY

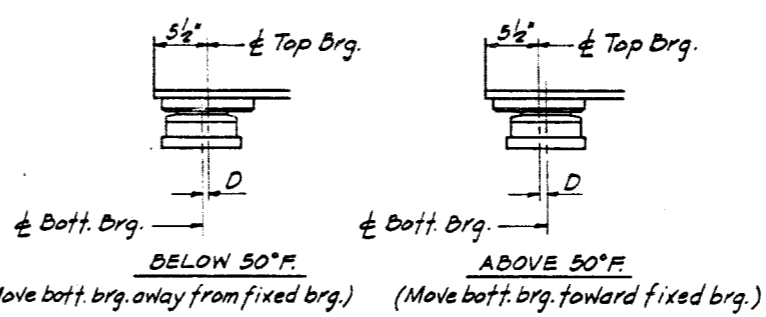


SECTION THRU TFE



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



SETTING ANCHOR BOLTS AT EXP. BRG.

D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

TABLE OF SHIM PLATES

Beam	2	3	4	5	6	7	8	9	10	11	12	13	14
Location													
West Abutment	5/16"	3/16"	0	3/4"	0	3/4"	3/4"	0	3/4"	0	3/4"	0	0

- Notes:**
- See Sheet #21 for Anchor Bolt Details.
 - The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces. Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
 - Contractor shall verify dimensions of exist. Bearings before removal and ordering of new Bearings, or fabrication of Bolsters.
 - Cost of Structural Steel for Bolsters is included for payment with "Furnishing and Erecting Structural Steel".
 - The Contractor has the option to provide an alternate bolster arrangement made up of an appropriate wide flange or HP shape with the necessary stiffeners. This alternate must be submitted via detailed shop drawings and must receive approval by the Engineer prior to fabrication.

Baker Engineers
Baker Engineering, Inc.

DESIGNED	P. Wood
CHECKED	J. Owen
DRAWN	J. Chaliki
CHECKED	P. Wood

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type II	Each	13

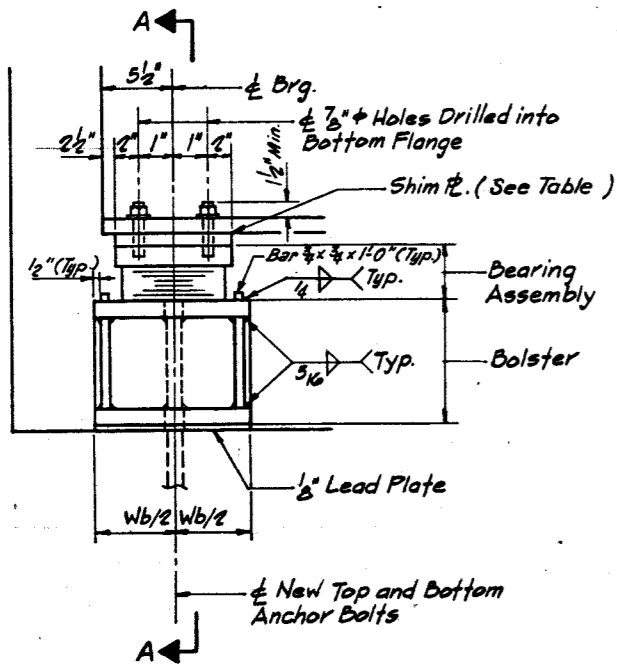
REVISIONS

NAME	DATE

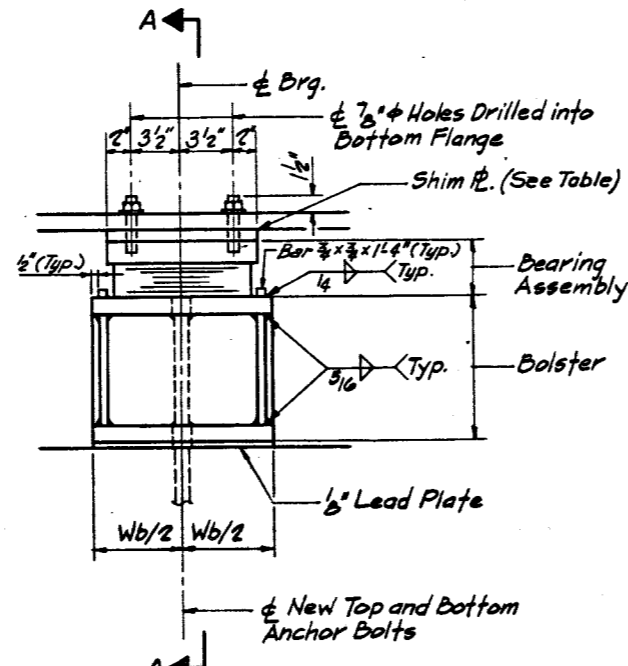
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

**REPLACEMENT BEARING DETAILS
WEST ABUTMENT**

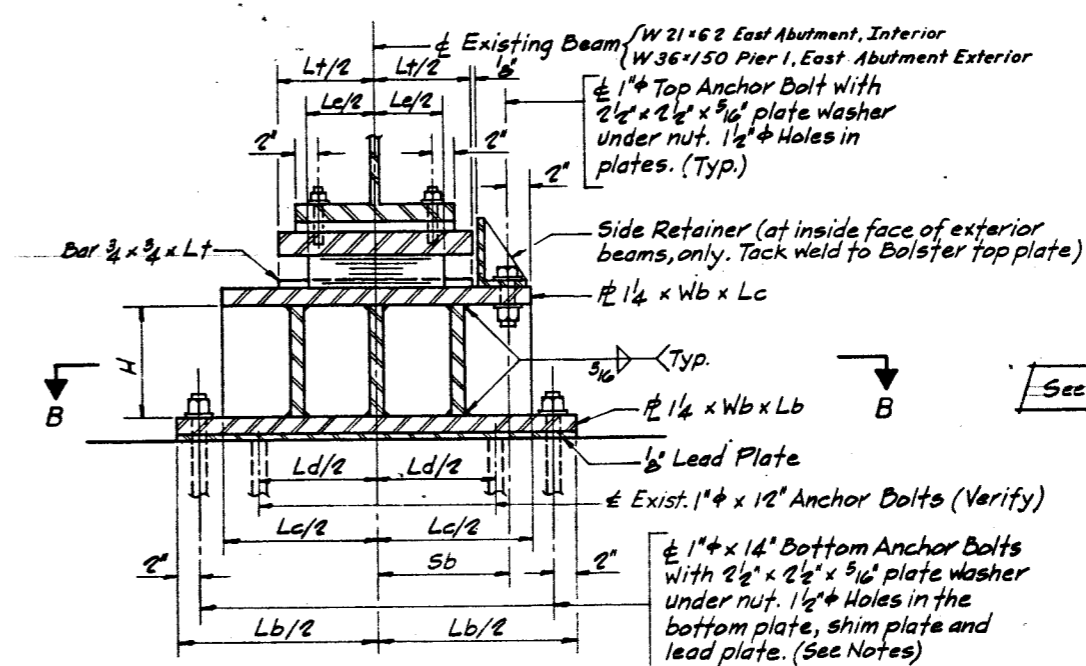
U.S. ROUTE 20 BY-PASS (F.A.R. 426) OVER
ST. CHARLES STREET
SECTION BR-HB-5(86)
KANE COUNTY
STATION 218+04.95
STR. NO. 045-0006



ELEVATION AT EAST ABUT.



ELEVATION AT PIER I

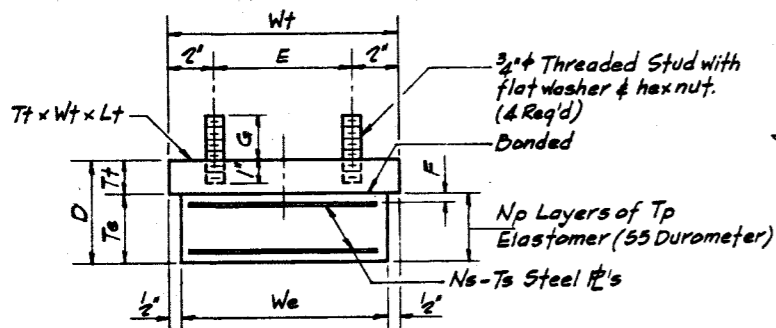


SECTION A-A

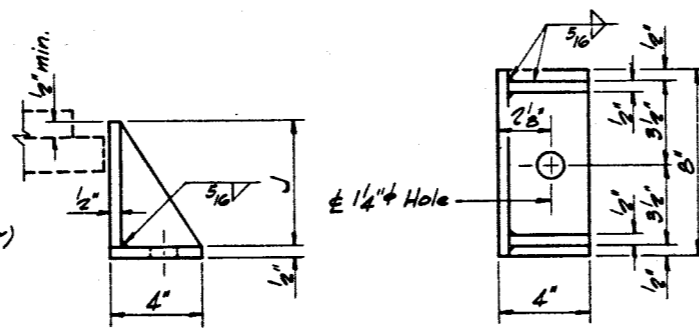
TYPE I ELASTOMERIC EXPANSION BRG. WITH BOLSTER

TABLE OF SHIM PLATES

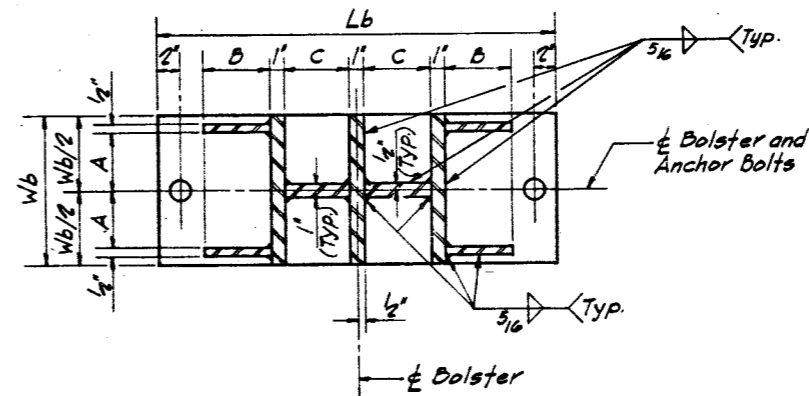
Beam Location	2	3	4	5	6	7	8	9	10	11	12	13	14
East Abutment	0	7/16"	0	3/4"	0	5/8"	5/8"	0	3/4"	0	7/16"	0	0
Pier 1	1/2"	0	1/16"	0	3/4"	0	0	3/4"	0	1/16"	0	5/8"	0



EAST ABUT. BEARING ASSEMBLY
PIER I BEARING ASSEMBLY



SIDE RETAINER
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



SECTION B-B

- Notes:
- See Sheet #21 for Anchor Bolt Details.
 - Contractor shall verify dimensions of existing Bearings before removal and ordering of new Bearings, or fabrication of Bolsters.
 - Cost of Structural Steel for Bolsters is included for payment with "Furnishing and Erecting Structural Steel".

TABLE OF VARIABLES FOR TYPE I EXPANSION BEARINGS WITH BOLSTERS

LOCATION	VARIABLE																							
	Te	We	Le	Np	Tp	Ns	Ts	Tt	Wt	Lt	Wb	Lb	Lc	Sb	Ld	A	B	C	D	E	F	G	H	J
East, Abutment Int. W21x62	17/8"	5"	9"	5	5/16"	4	1/4"	1 1/2"	6"	1'-0"	9"	2'-4 1/2"	1'-8 1/2"	5 1/2"	1'-1"	3 1/2"	4 3/4"	4"	3 3/8"	2"	5/16"	2 1/2"	7 1/2"	3 3/8"
East, Abutment Ext. W36x150	1 7/8"	5"	9"	5	5/16"	4	1/4"	1 1/2"	6"	1'-0"	9"	2'-4 1/2"	1'-8 1/2"	8 1/2"	1'-5"	3 1/2"	4 3/4"	4"	3 3/8"	2"	5/16"	2 1/2"	7 5/8"	3 3/8"
Pier 1	2 1/16"	10"	1'-2"	5	7/16"	4	1/8"	2 1/4"	11"	1'-4"	1'-2"	2'-8 1/2"	2'-0 1/2"	10 1/2"	1'-5 1/2"	6"	5 3/4"	5"	4 15/16"	7"	7/16"	2 3/8"	6 15/16"	4 15/16"

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	26

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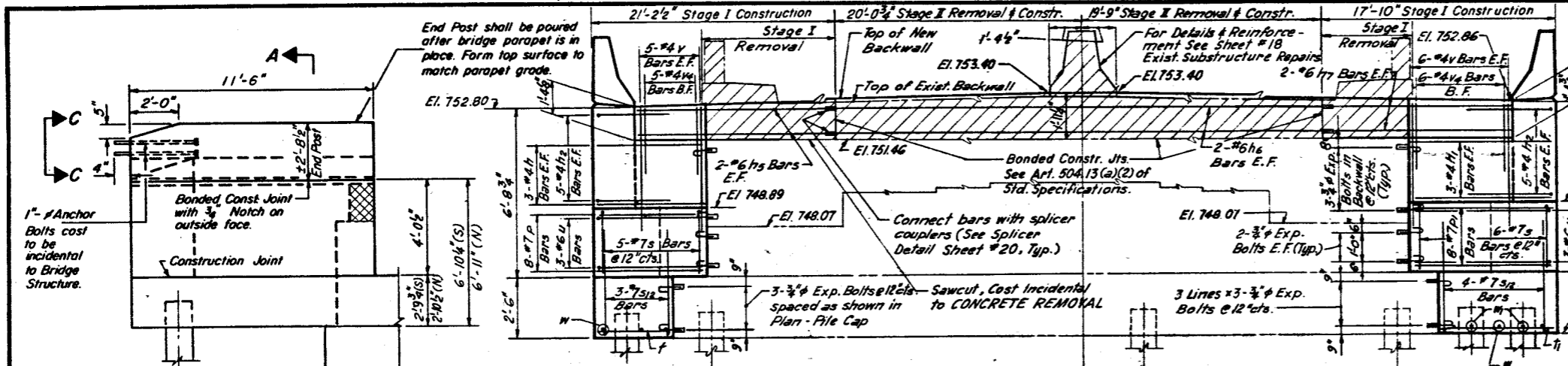
NAME	DATE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

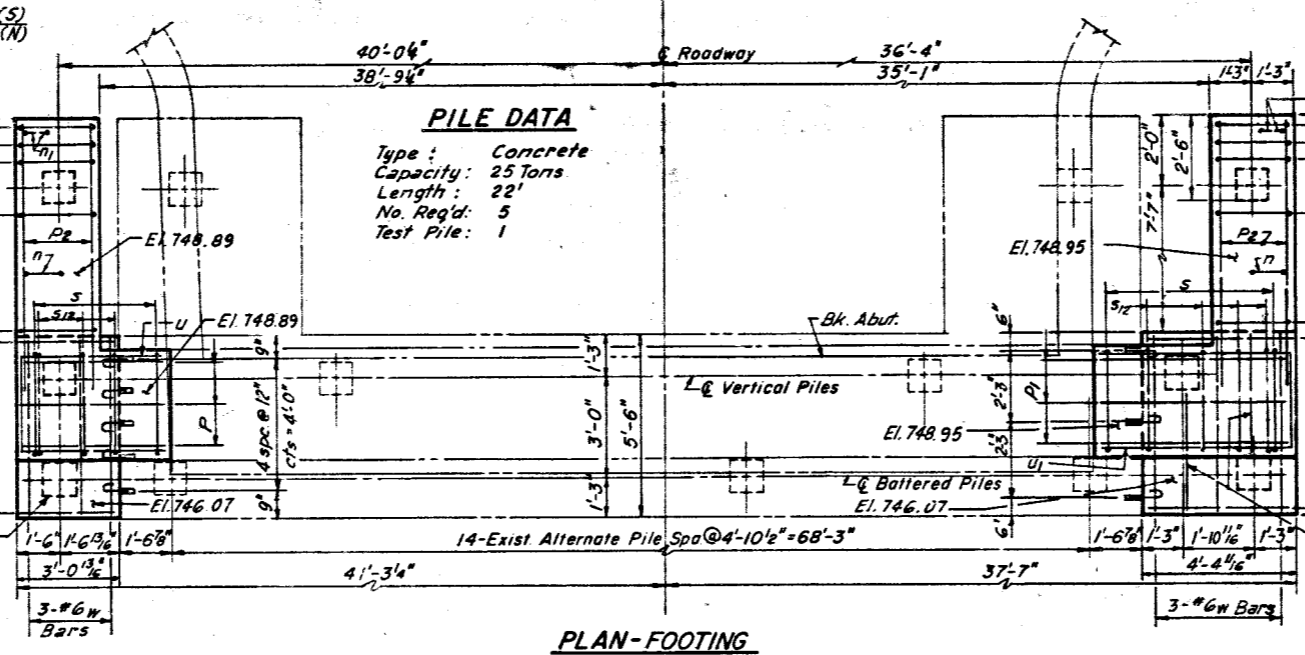
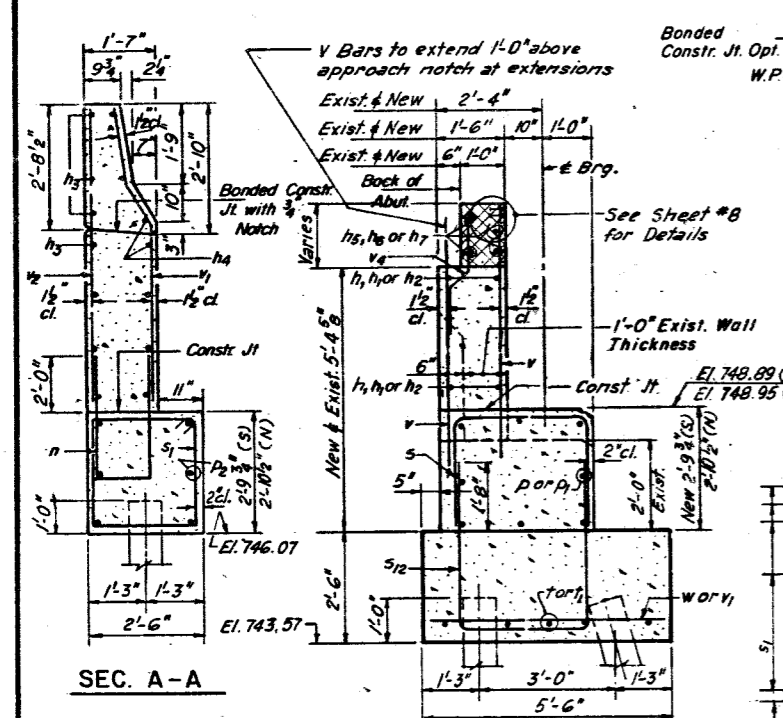
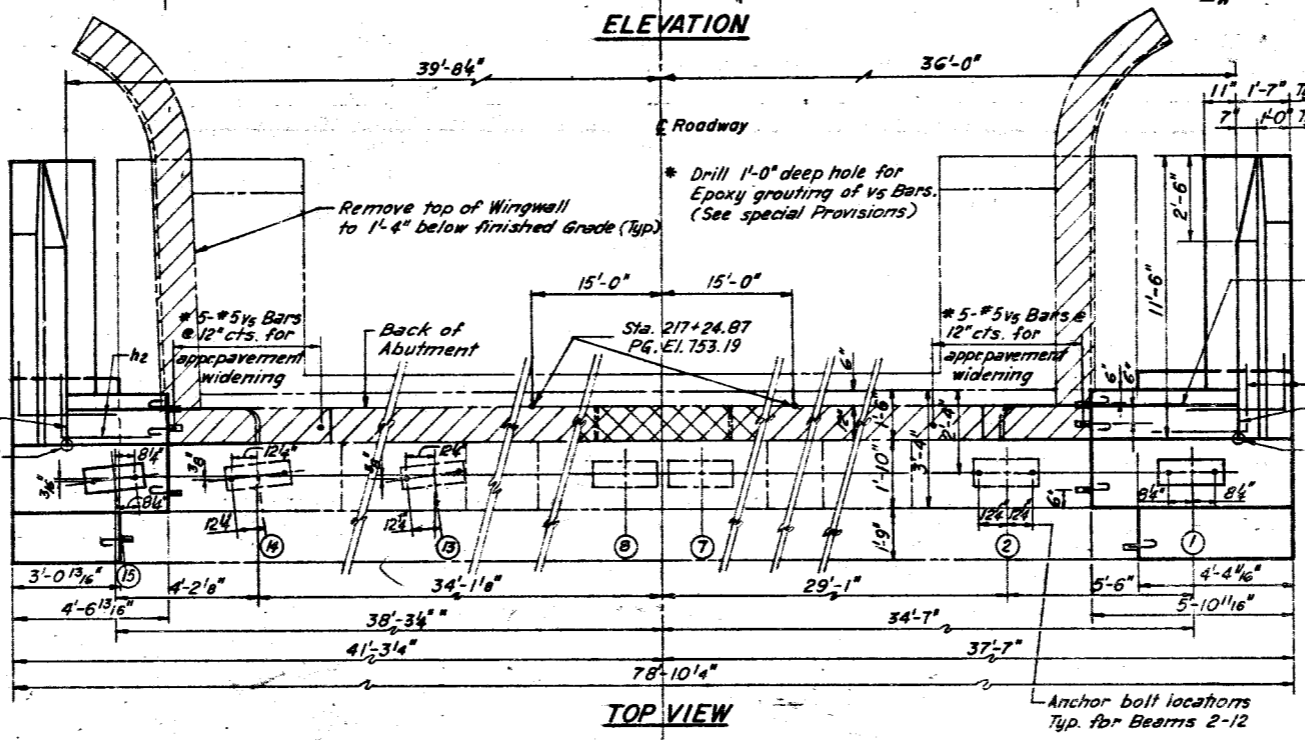
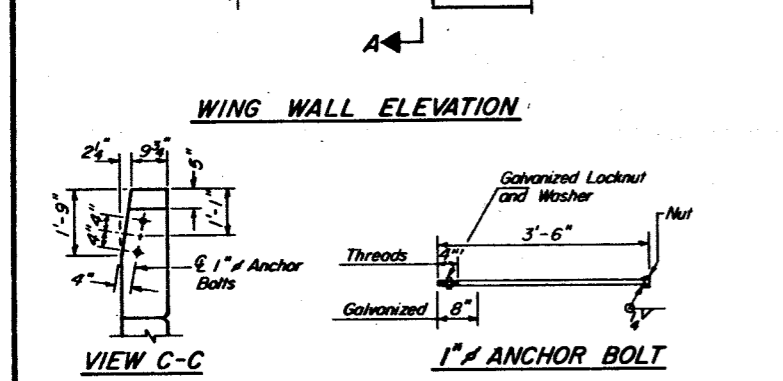
REPLACEMENT BEARING DETAILS
EAST ABUTMENT & PIER I

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
ST. CHARLES STREET
SECTION BR-HB-5(86)
KANE COUNTY
STATION 218+04.95
STR. NO. 045-0006

Baker Engineers
DESIGNED: P. Wood
CHECKED: J. Owen
DRAWN: J. Chaliki's
CHECKED: F. Wood

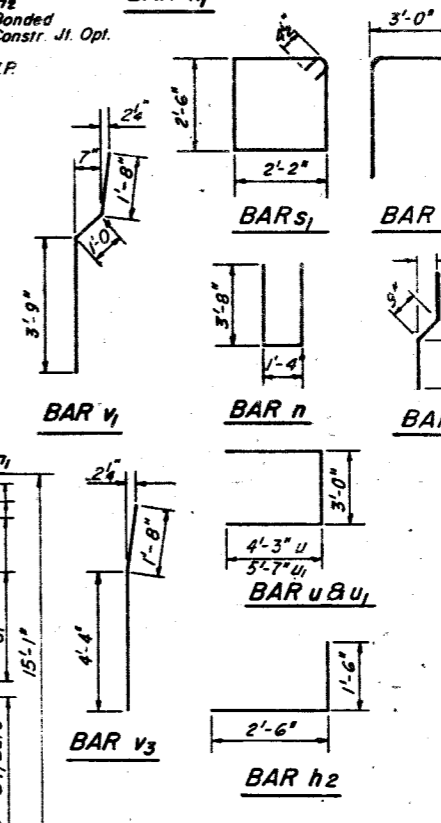
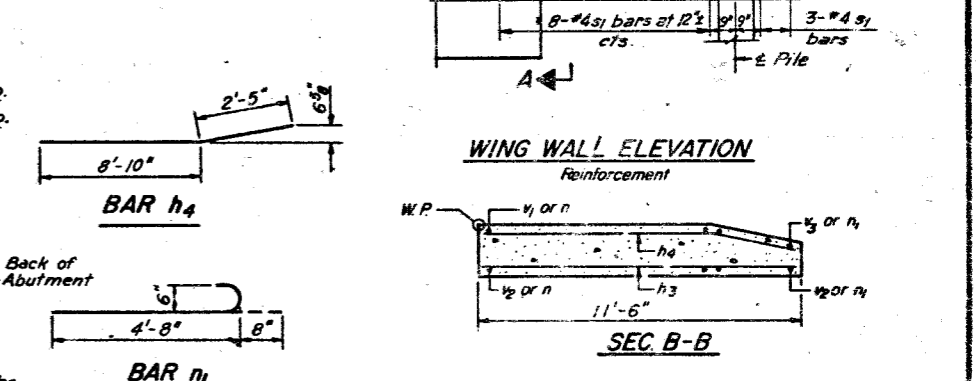


NOTES:
 Hatched Area Indicates Concrete Removal. Reinforcement Extending Into Removed Area Shall Be Cleaned And Incorporated Into The New Construction. Cross Hatched Area To Be Poured After Superstructure Is In Place. Quantity Of Class X Concrete Included With Superstructure. Space Reinforcement In Cap To Miss Anchor Bolts Expansion Bolts Shall Be Anchored In Sound Concrete. Pour Steps Monolithically With Cap.
 Designations:
 (N) Denotes North Wingwall
 (S) Denotes South Wingwall
 I.F. Denotes Inside Face
 O.F. Denotes Outside Face
 E.F. Denotes Each Face
 N.F. Denotes Near Face
 B.F. Denotes Back Face
 Cast of Bar Splicers Incidental to REINFORCEMENT BARS.



PILE DATA

Type: Concrete
 Capacity: 25 Tons
 Length: 22'
 No. Req'd: 5
 Test Pile: 1



W. ABUT. BILL OF MATERIAL

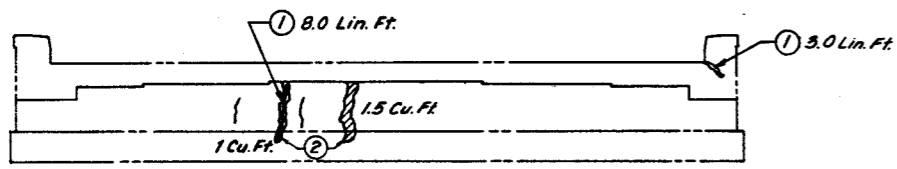
Bar	No.	Size	Length	Shape
n	6	#4	4'-3"	
n1	6	#4	5'-7"	
n2	20	#4	4'-0"	
n3	14	#4	11'-3"	
n4	14	#4	11'-3"	
n5	4	#6	19'-3"	
n6	4	#6	39'-11"	
n7	4	#6	15'-10"	
n	18	#6	8'-8"	
n1	18	#6	8'-8"	
n2	8	#7	4'-3"	
n3	8	#7	5'-7"	
n4	12	#7	11'-3"	
n5	11	#7	8'-2"	
n6	22	#4	10'-1"	
n7	7	#7	11'-0"	
n	5	#6	3'-9"	
n1	5	#6	4'-7"	
n2	3	#6	11'-0"	
n3	3	#6	14'-2"	
n4	22	#4	3'-8"	
n5	18	#6	6'-3"	
n6	24	#6	6'-0"	
n7	6	#6	6'-0"	
n8	11	#6	3'-9"	
n9	10	#6	2'-0"	
n10	6	#6	5'-9"	
n11	2	#6	2'-5"	
n12	2	#6	2'-5"	
Class X Concrete				Cu. Yds. 20.2
Reinforcement Bars				Lbs. 2807
Furnishing Concrete Piles				Lin. Ft. 110
Test Pile Concrete				Co. 1
Concrete Removal				Cu. Yds. 3.5
Expansion Bolts (3/4")				Co. 44

Baker Engineers
 Baker Engineering, Inc.
 DESIGNED: P. Wood
 CHECKED: J. Owen
 DRAWN: Z. Dabrowski
 CHECKED: P. Wood

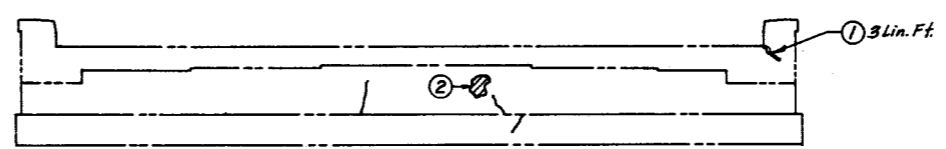
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
WEST ABUTMENT
 U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
 ST. CHARLES STREET
 SECTION BR-HB-5(86)
 KANE COUNTY
 STATION 218+04.95
 STR. NO. 045-000 G

REVISIONS

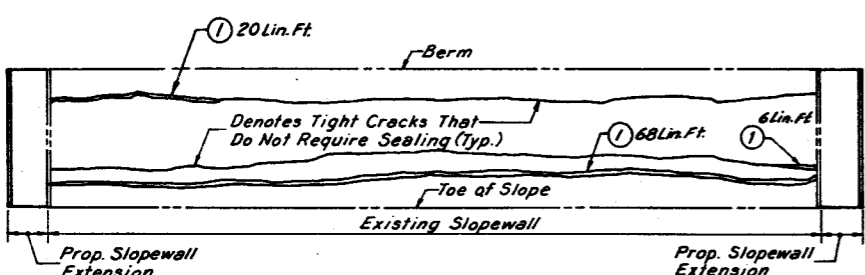
NO.	NAME	DATE



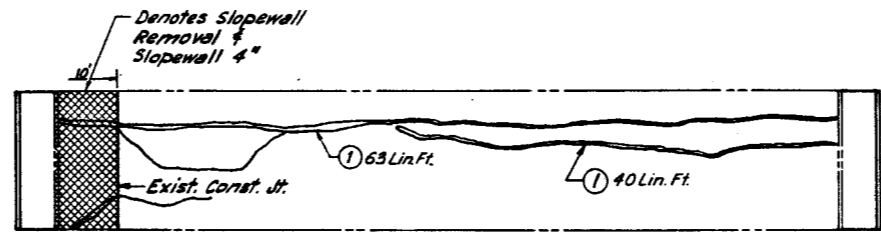
EAST ABUTMENT



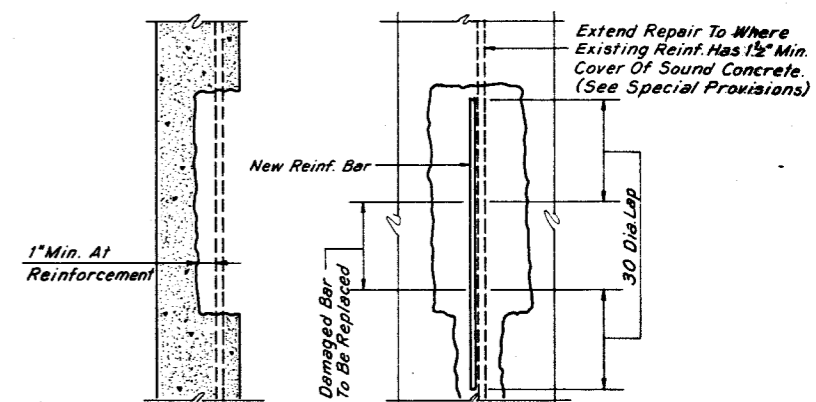
WEST ABUTMENT



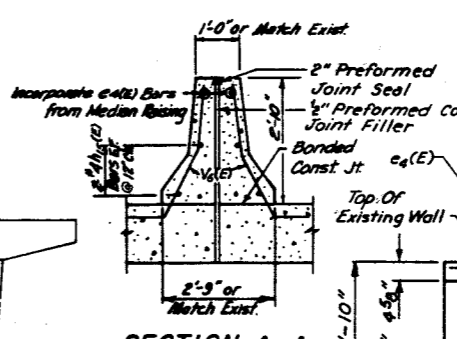
EAST ABUTMENT SLOPEWALL



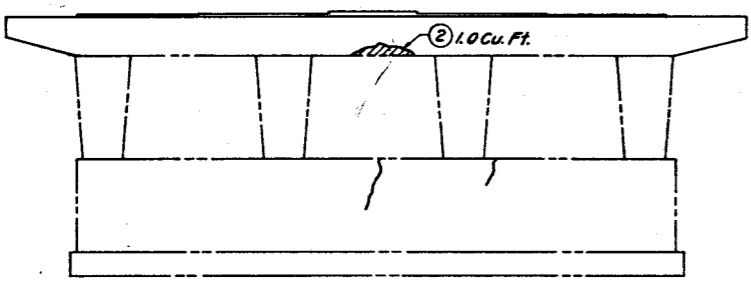
WEST ABUTMENT SLOPEWALL



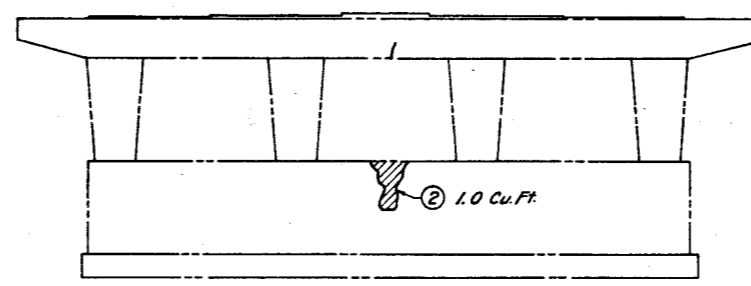
NOTE: Detail Applies Where Exist. Reinf. Is Exposed As A Result Of Removing Unsound Concrete. Exist. Reinf. Having 25% Or More Of Cross Sectional Area Lost Due To Corrosion Or Damage During Concrete Removal Shall Be Replaced By New Reinf. Lapped As Shown. Payment For Added Reinforcing Steel Shall Be At The Unit Price For Reinforcement Bars.



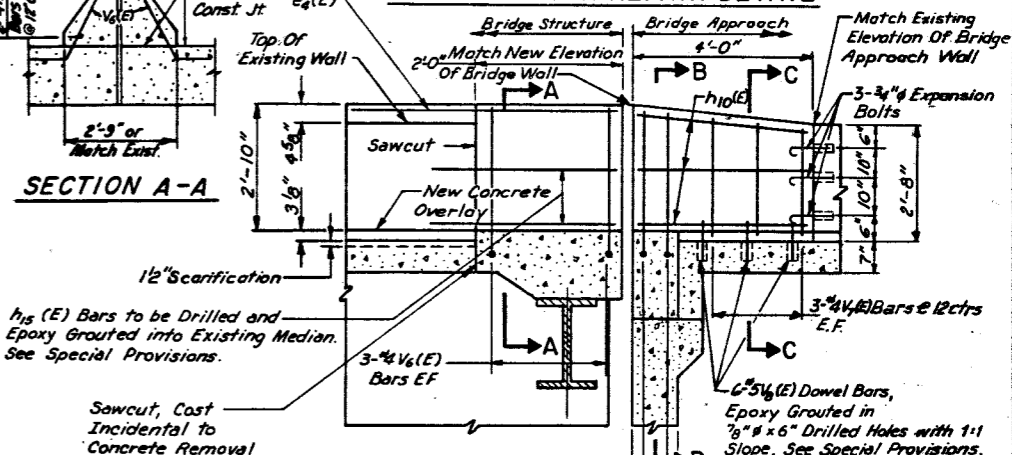
EPOXY MORTAR REPAIR DETAIL



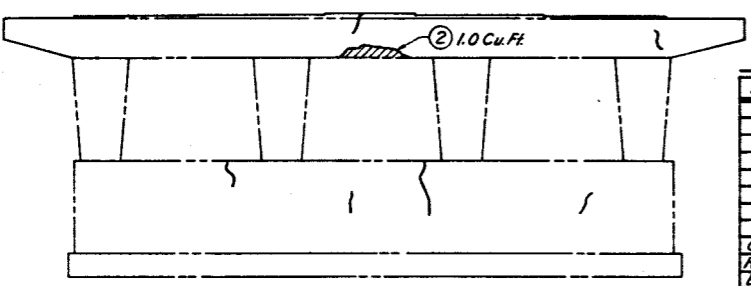
PIER 2 EAST FACE



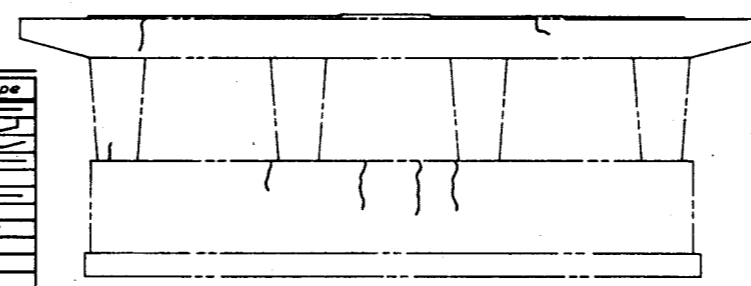
PIER 2 WEST FACE



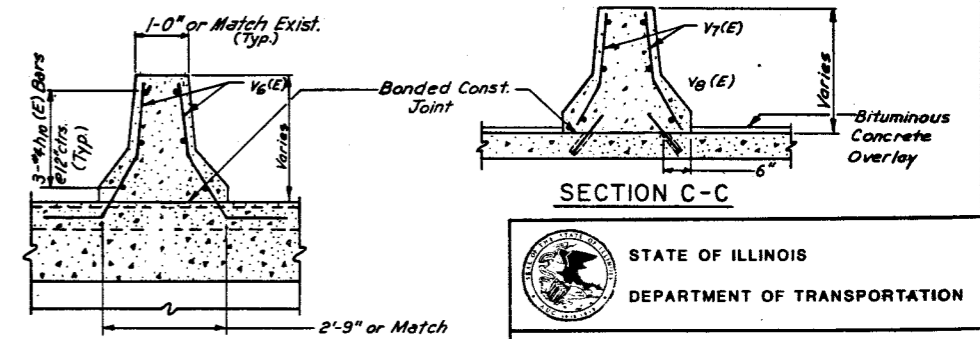
DETAIL OF MEDIAN BARRIER WALL



PIER 1 EAST FACE



PIER 1 WEST FACE



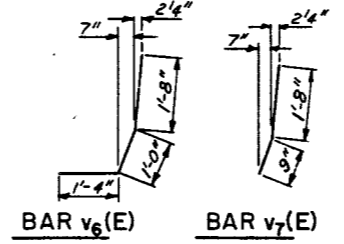
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h ₁₀ (E)	12	#4	9'-8"	
V ₆ (E)	20	#4	4'-0"	
V ₇ (E)	12	#4	2'-5"	
h ₁₅ (E)	8	#4	2'-8"	
V ₈	12	#8	1'-8"	

Item	Unit	Quantity
Class X Concrete	Cu. Yds.	3
Reinforcement Bars	Lbs.	156
Epoxy Crack Sealing	Lin. Ft.	211
Epoxy Mortar Repair	Cu. Ft.	7
Concrete Removal	Cu. Yd.	3
Expansion Bolts	Each	6

Note: Quantities Of Concrete & Reinforcement Bars Are For Medians At Both Approaches And Are Included In Superstructure Quantities

LEGEND
 ① Denotes Epoxy Crack Sealing
 ② Denotes Epoxy Mortar Repair
 ~ Denotes Tight Crack that Does Not Require Sealing
 Note: Remove Point on Piers as Required and at Direction of the Engineer of Repair Locations, Cost Incidental.



Baker Engineers
 Baker Engineering, Inc.
 DESIGNED: P. Wood
 CHECKED: J. Owen
 DRAWN: K. Dypkowski
 CHECKED: P. Wood

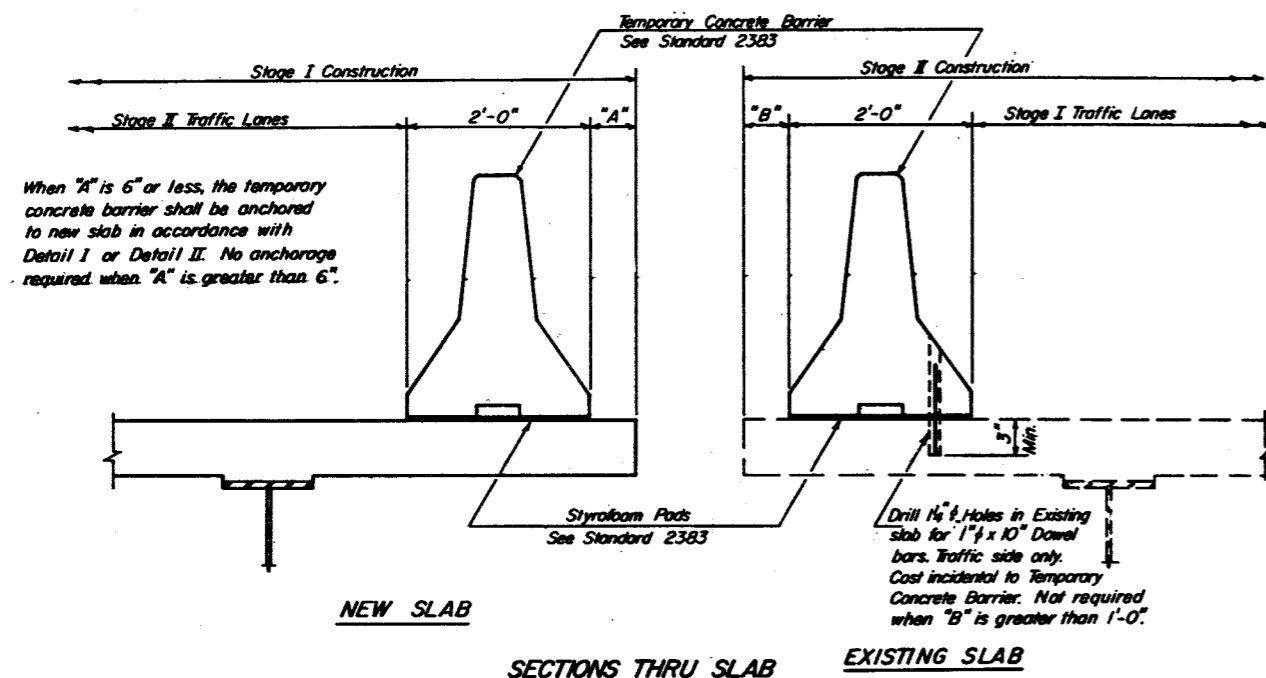
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING SUBSTRUCTURE REPAIRS
 U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER ST. CHARLES STREET
 SECTION BR-HB-5(86)
 KANE COUNTY
 STATION 218+04.95
 STR. NO. 045-0006

REVISIONS

NAME	DATE

PROJECT NO.	SECTION	DATE	BY	CHKD.
P.A. 426	BR-HB-5 (86)	KANE	209	133
SHEET NO. 19		OF 22 SHEETS		

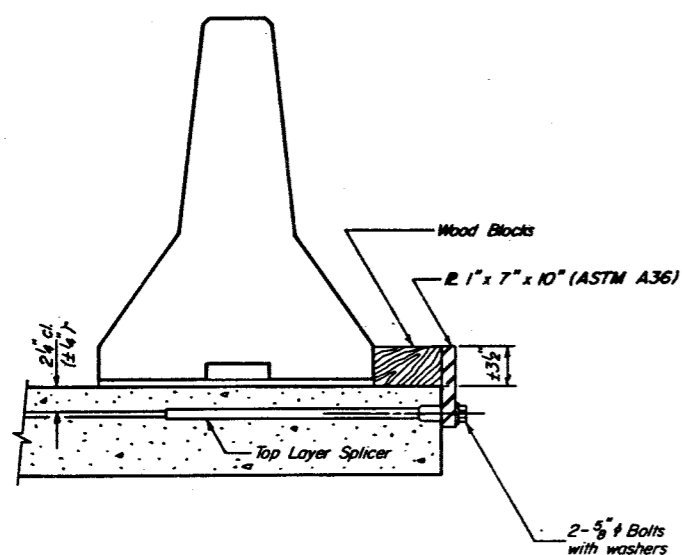


NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7" x 10" steel *I*. to the top layer of couplers with 2-5/8" bolts screwed to coupler at approximate $\frac{1}{2}$ of each 10'-0" barrier panel.

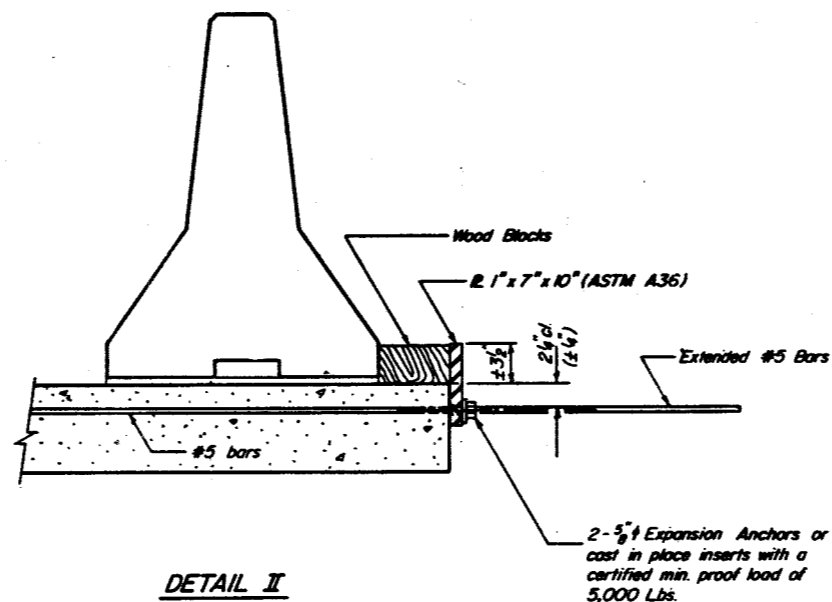
Detail II - With Extended Reinforcement Bars:
Connect one (1) 1" x 7" x 10" steel *I*. to the concrete slab with 2-5/8" Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate $\frac{1}{2}$ of each 10'-0" barrier panel.

Cost of anchorage is incidental to Temporary Concrete Barrier.



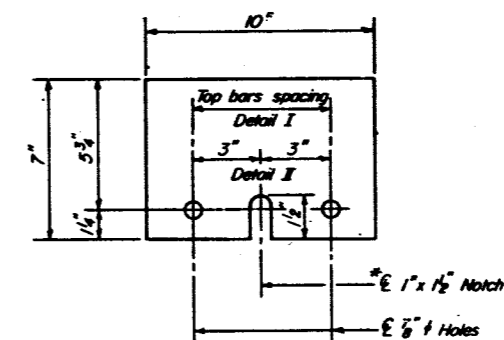
DETAIL I

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



DETAIL II

The 1" x 7" x 10" 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.



1" x 7" x 10"
* Required only with Detail II

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Baker Engineering, Inc.

DESIGNED
CHECKED
DRAWN
CHECKED

REVISIONS	
NAME	DATE

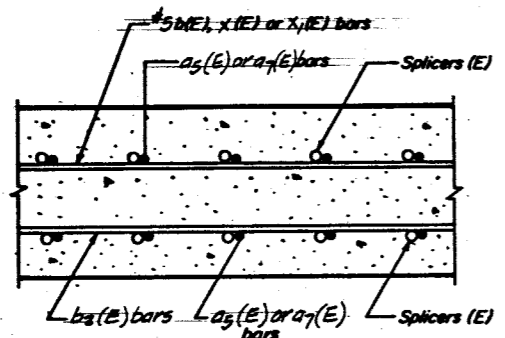
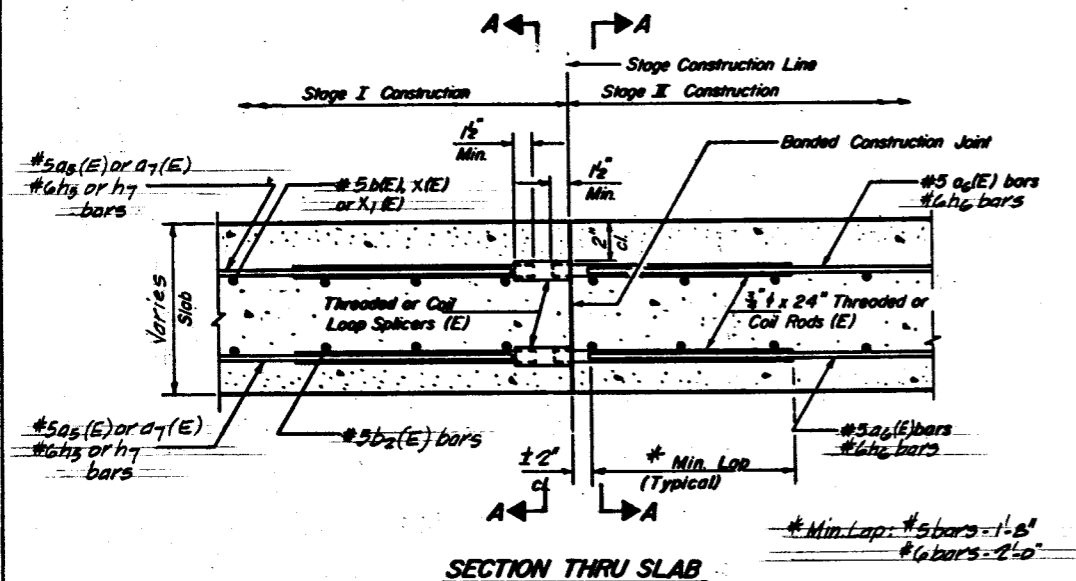
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
ST. CHARLES STREET
SECTION BR-HB-5(86)
KANE COUNTY
STATION 218+04.95
STR. NO. 045-0006

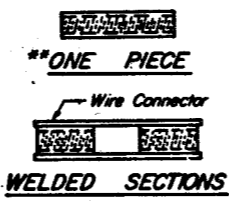
DESIGN NO.	SECTION	SHEET	TOTAL SHEETS
BR-HB-5 (86)	KANE	209	134
DESIGNED BY		DATE	

SHEET NO. 20
OF 22 SHEETS

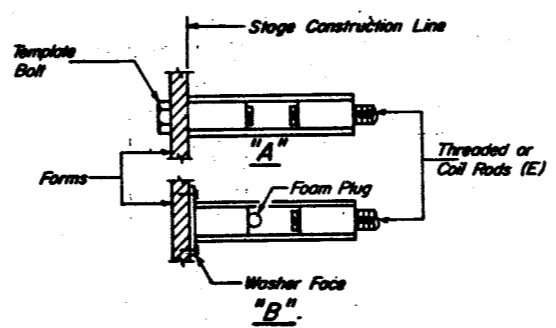


SPLICER DETAILS
(No. Reqd. 40)

Cost incidental to reinforcement bars (Epoxy Coated).



SPLICER ALTERNATIVES
** Heavy Hex Nuts conforming to ASTM A563, Grade C, D or DH may be used.



"A": Set splicer by means of a template bolt.
"B": Set splicer by nailing to wood forms or cementing to steel forms.
(E): Indicates epoxy coating.

NOTES

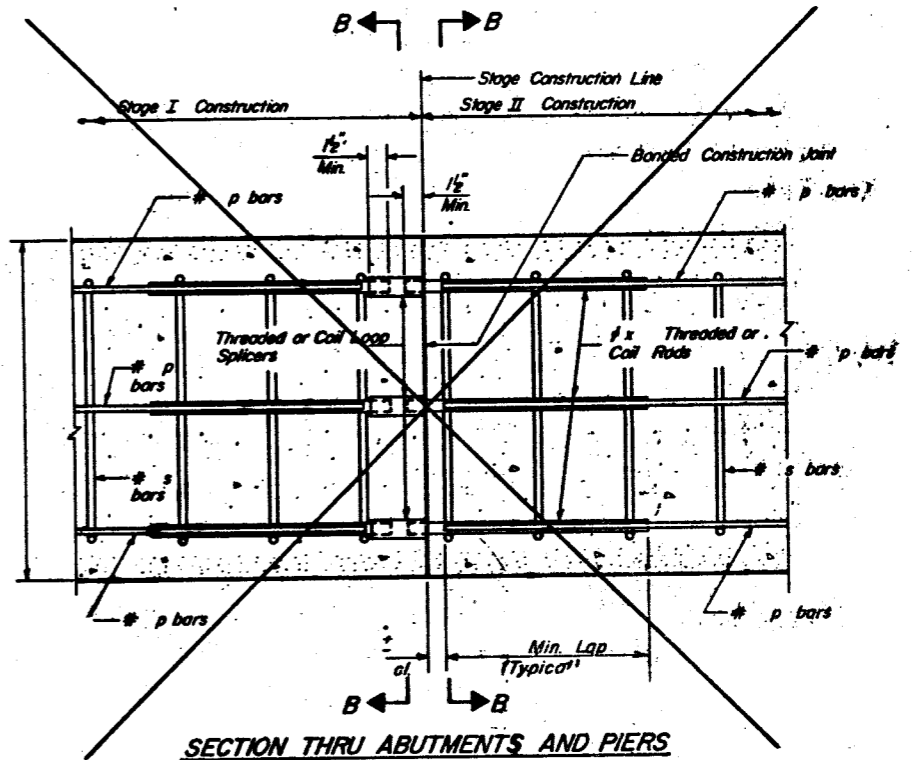
Steel Splicer (Coupler) assembly shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Steel Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length and have effective tensile stress area equal or greater than that of the lapped reinforcement bars.
Splicer rods shall extend minimum 1/2 inches into the couplers.
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 = $1.25 \times f_y \times A_s$
(Tension in kips)
- Minimum Pull-out Strength = $1.25 \times f_{allow} \times A_s$
(Tension in kips)

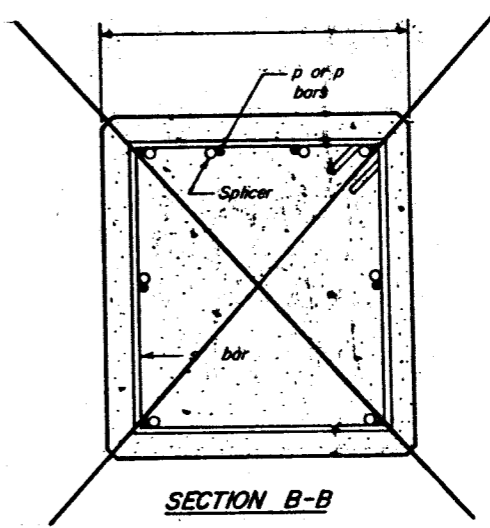
Where f_y = Yield strength of lapped reinforcement bars in k.s.i.
 f_{allow} = Allowable tensile stress in lapped reinforcement bars in k.s.i. (Service Load)
 A_s = Tensile stress area of lapped reinforcement bars.
* 28 day concrete

Typical Splicer (Coupler) Assembly Sizes:

In Slabs	#5 bar lap with 3/8" Splicer (Coupler) x 2'-0" Splicer Rods	Minimum Capacity = 23.0 kips-tension Minimum Pull-out Strength = @ 2 kips-tension
In Sub-structures	#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
In Sub-structures	#8 bar lap with 1 1/4" Splicer (Coupler) x 4'-6" Splicer Rods	Minimum Capacity = 58.9 kips-tension Minimum Pull-out Strength = @ 3.6 kips-tension



SECTION THRU ABUTMENTS AND PIERS
No epoxy coating required.



SPLICER DETAILS
(No. Reqd.)

Cost incidental to reinforcement bars.

REVISIONS	
NAME	DATE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER (COUPLER) DETAILS AT STAGE CONSTRUCTION

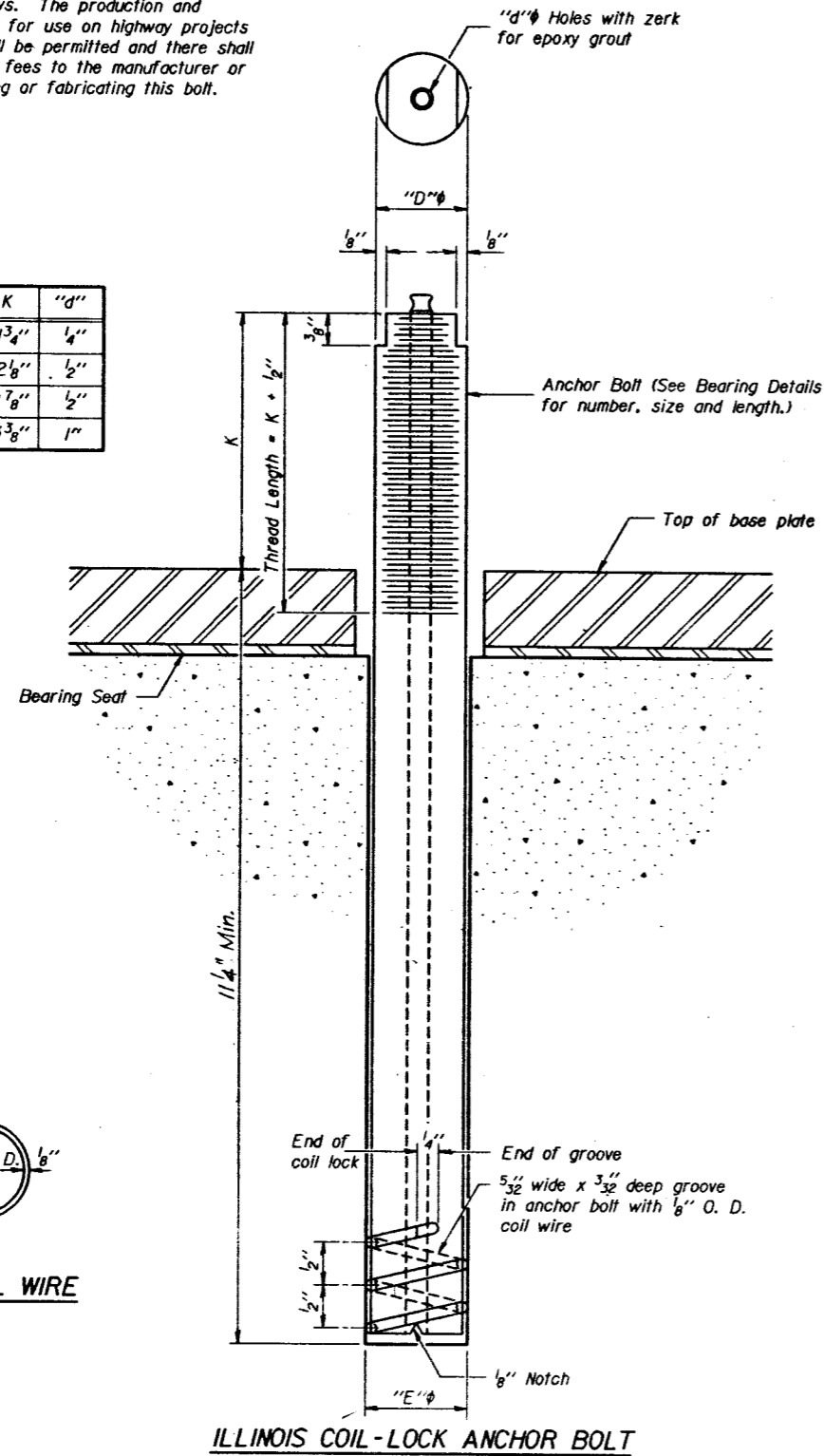
U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
ST. CHARLES STREET
SECTION BR-HB-5(86)
KANE COUNTY
STATION 218+04.95
STR. NO. 045-000G

Baker Engineers
Baker Engineering, Inc.

DESIGNED
CHECKED
DRAWN
CHECKED

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"
1"	1 1/8"	1 3/16"	1 3/4"	1/4"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 3/8"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"



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 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.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

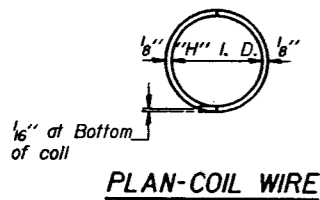
1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through 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.

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 and 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".



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 Baker Engineering, Inc.

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CHECKED	

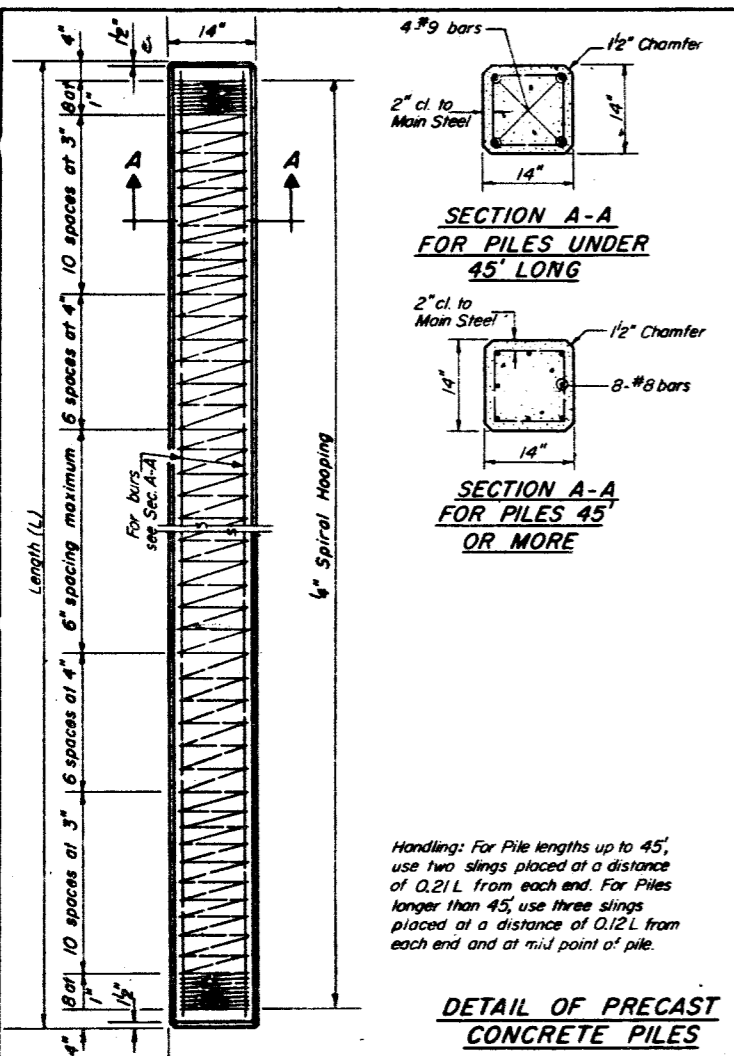
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

ANCHOR BOLT DETAILS FOR BEARINGS

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
 ST. CHARLES STREET
 SECTION BR-HB-5(86)
 KANE COUNTY
 STATION 218+04.95
 STR. NO. 045-0006

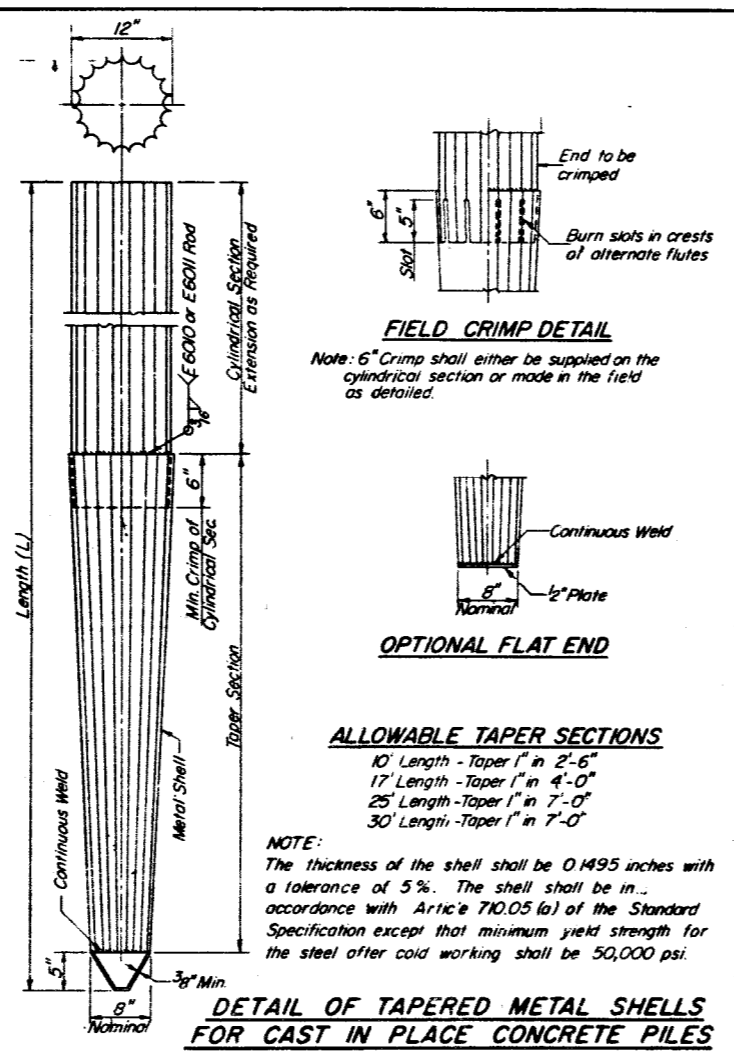
REVISIONS	
NAME	DATE

PROJECT NO.	BR-HB-5 (86)	DESIGN NO.	209	DATE	136
DATE		BY	KANE		
DESIGNED BY		CHECKED BY		DESIGNED BY	

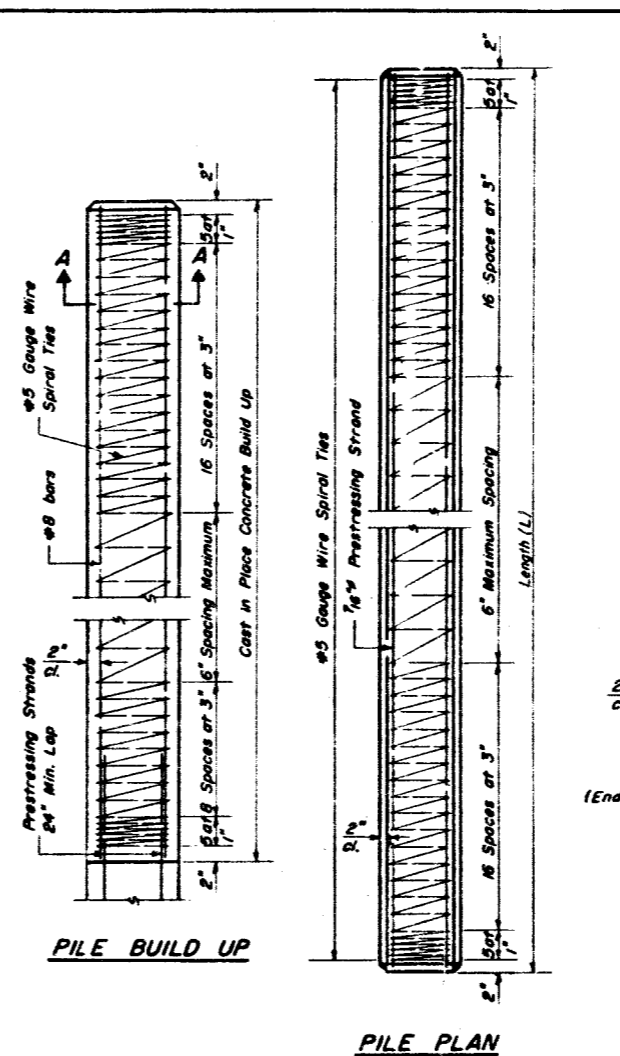


Handling: For Pile lengths up to 45', use two slings placed at a distance of 0.21L from each end. For Piles longer than 45', use three slings placed at a distance of 0.12L from each end and at mid point of pile.

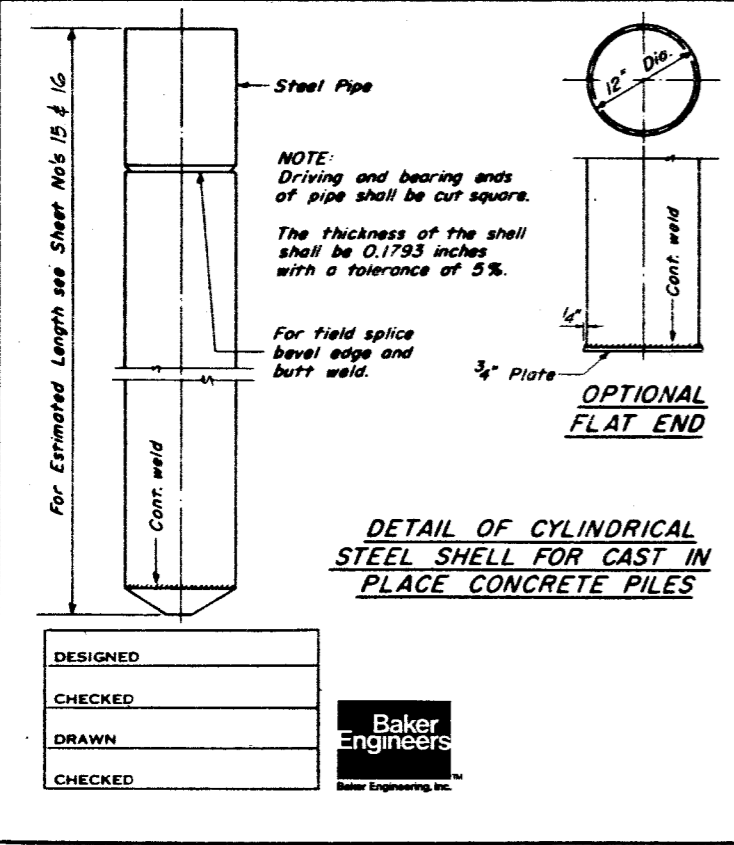
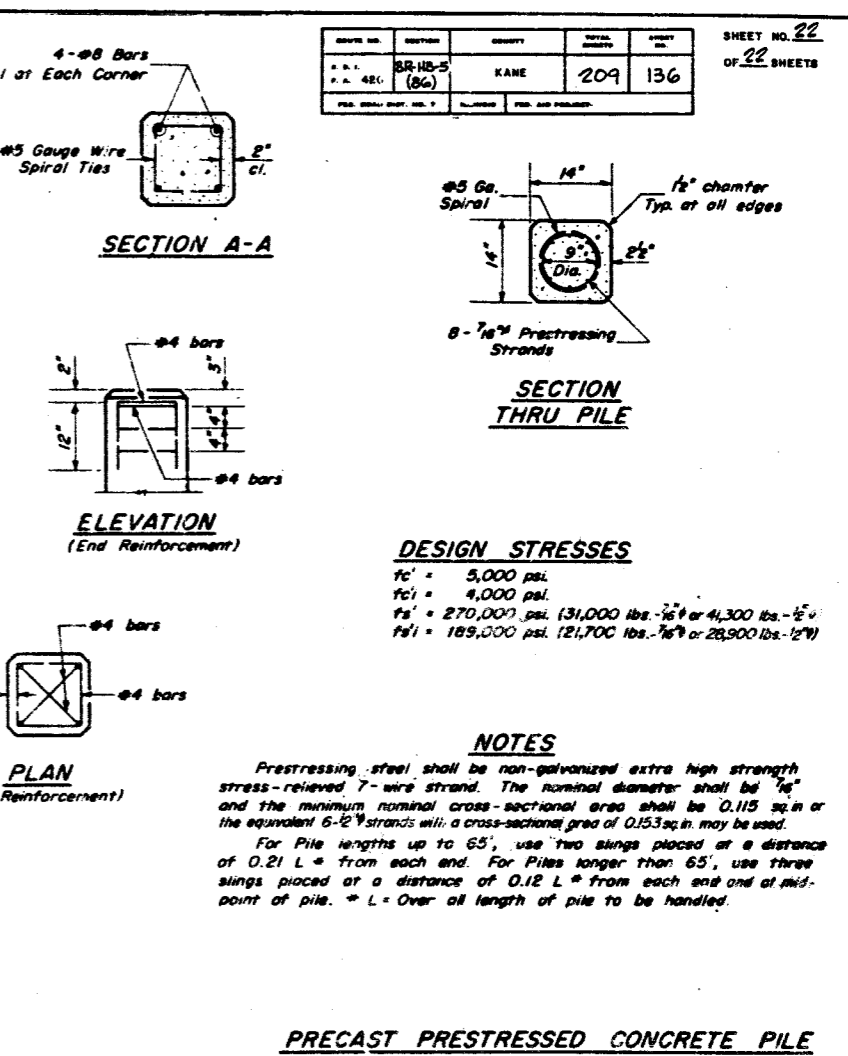
DETAIL OF PRECAST CONCRETE PILES



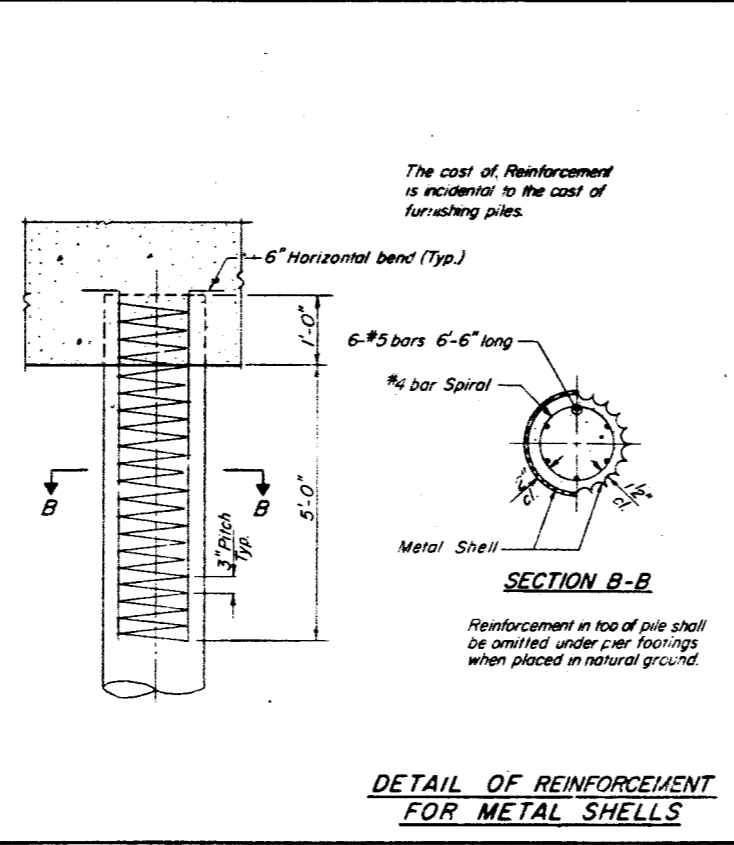
DETAIL OF TAPERED METAL SHELLS FOR CAST IN PLACE CONCRETE PILES



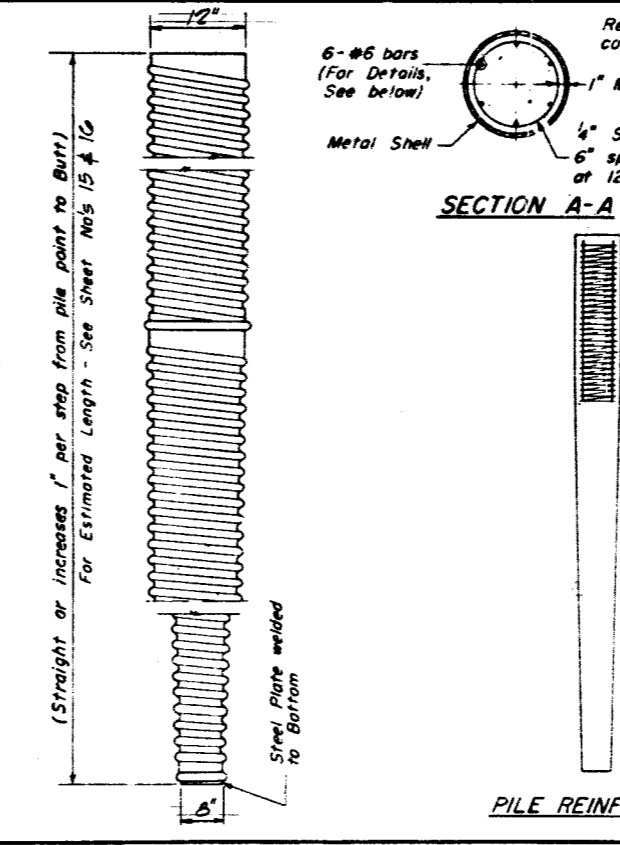
PILE PLAN



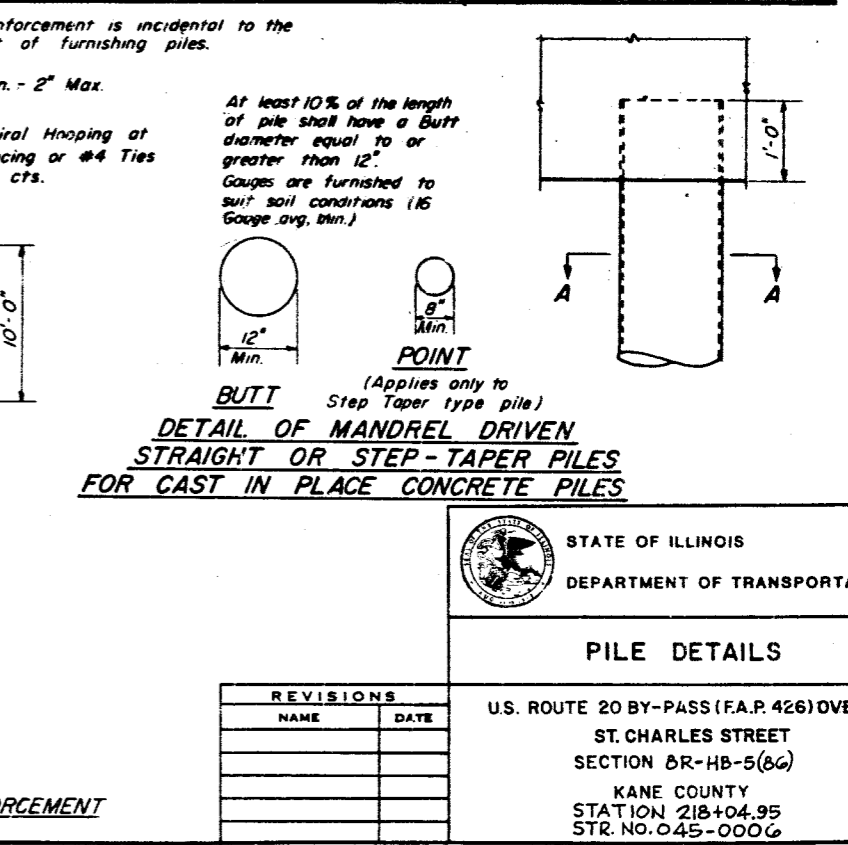
DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES



DETAIL OF REINFORCEMENT FOR METAL SHELLS



PILE REINFORCEMENT



DETAIL OF MANDREL DRIVEN STRAIGHT OR STEP-TAPER PILES FOR CAST IN PLACE CONCRETE PILES

DESIGNED
CHECKED
DRAWN
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Baker Engineers
Baker Engineering, Inc.

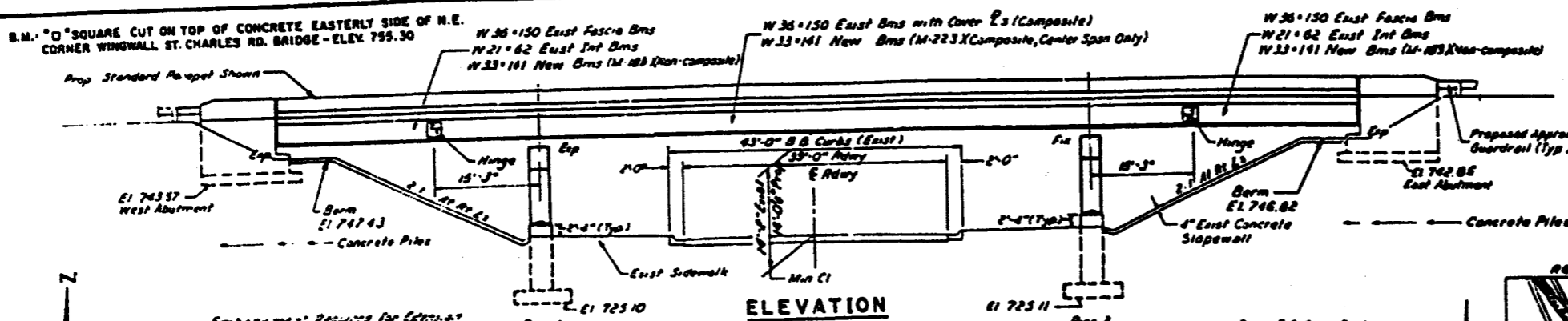
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PILE DETAILS

REVISIONS	
NAME	DATE

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
ST. CHARLES STREET
SECTION BR-HB-5(86)
KANE COUNTY
STATION 218+04.95
STR. NO. 045-0006

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
420	KANE	5	1



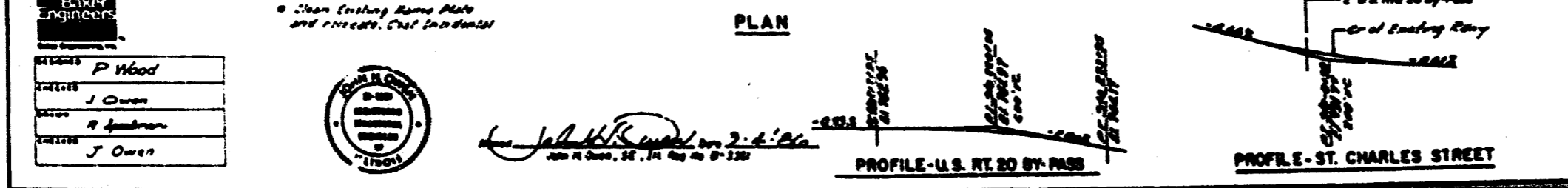
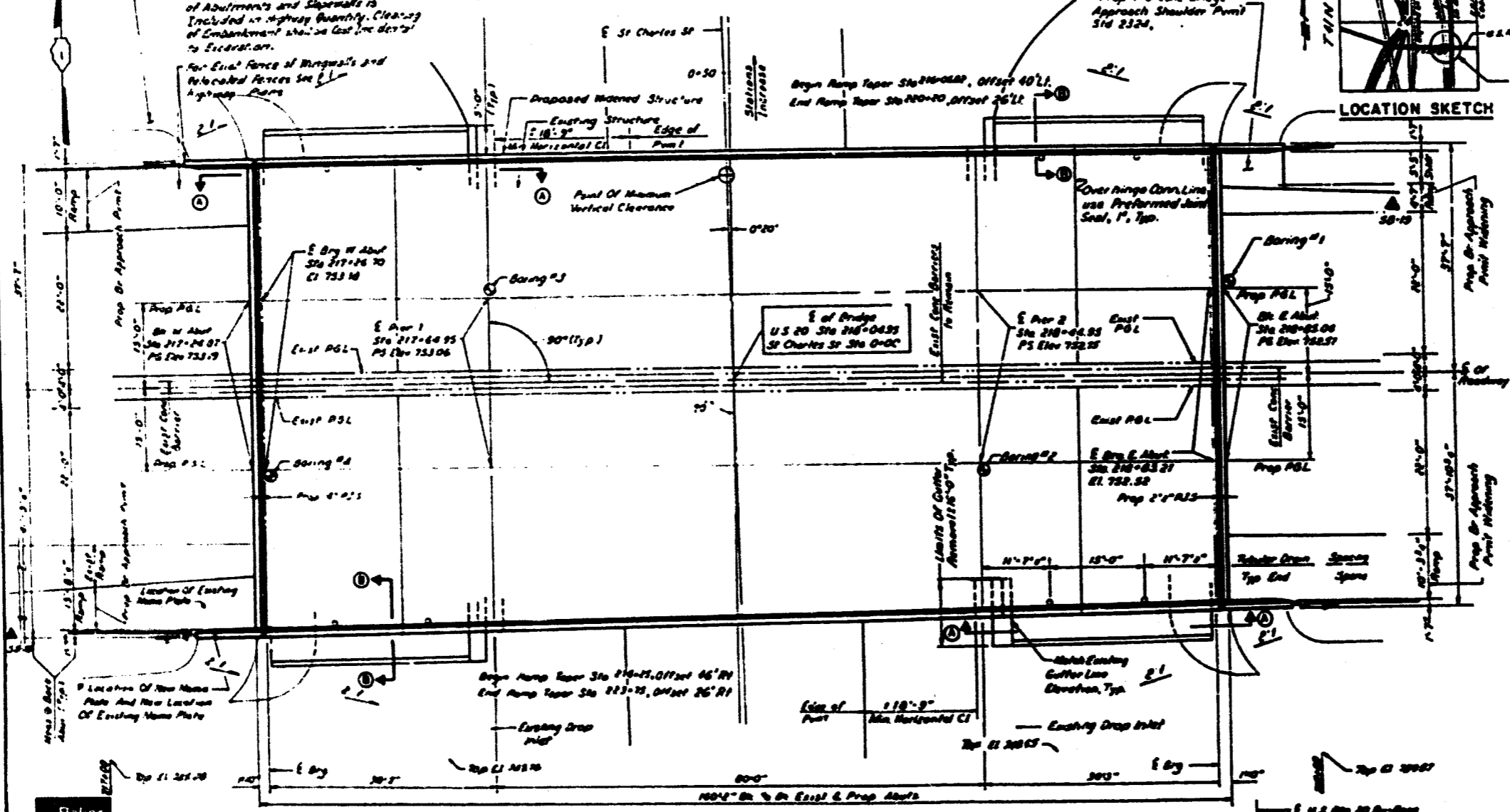
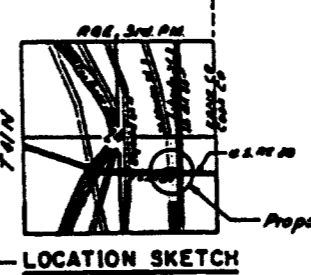
EXISTING STRUCTURE DATA: THE EXISTING THREE SPAN BENT BOLDED BEAM STRUCTURE WAS CONSTRUCTED IN 1944, CARRYING TWO LANES IN EACH DIRECTION OF U.S. ROUTE 20 TRAFFIC OVER ST. CHARLES STREET. THE STRUCTURE IS 140'-0" LONG WITH A VARIABLE ROADWAY WIDTH. THE EAST AND WESTBOUND TRAFFIC IS SEPARATED BY A NEW JERSEY TYPE CONCRETE BARRIER WALL DESIGN WHICH WAS CONSTRUCTED IN 1978. THE DECK AND SUBSTRUCTURES ARE REINFORCED CONCRETE. THE PIERS ARE SUPPORTED ON SPREAD FOOTINGS, AND THE ABUTMENTS ARE SUPPORTED ON PILES.

THE CONTRACTOR SHALL WIDEN THE EXISTING STRUCTURE, SCABBY THE EXISTING DECK AND APPLY A CONCRETE OVERLAY OVER THE EXISTING DECK. TWO LANES OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES UTILIZING STATE CONSTRUCTION. NO SALVAGE.

STA. 218+04.95
WIDENED 150' BY
STATE OF ILLINOIS
F.A.T. GEN. SEC. BR. NO. 5 (86)
E.A. PROJ. 51
LOADING NS20
STR. NO. 045-0006

SHEET NO 2 OF 4 SHEETS
Original Construction Boring Locations
1983 Reconstruction Boring Locations

NOTE
See Sheet #2 for Section A-A
1 B-B



FOR INFORMATION ONLY

APPROVED
STRUCTURAL ENGINEER ONLY
James J. [Signature]

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
GENERAL PLAN AND ELEVATION

REVISIONS	DATE

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
ST. CHARLES STREET
SECTION BR-NO-5 (86)
KANE COUNTY
STATION 218+04.95
STR. NO. 045-0006

DESIGNED	P Wood
CHECKED	J Owen
DRAWN	R [Signature]
ENCLERED	J Owen

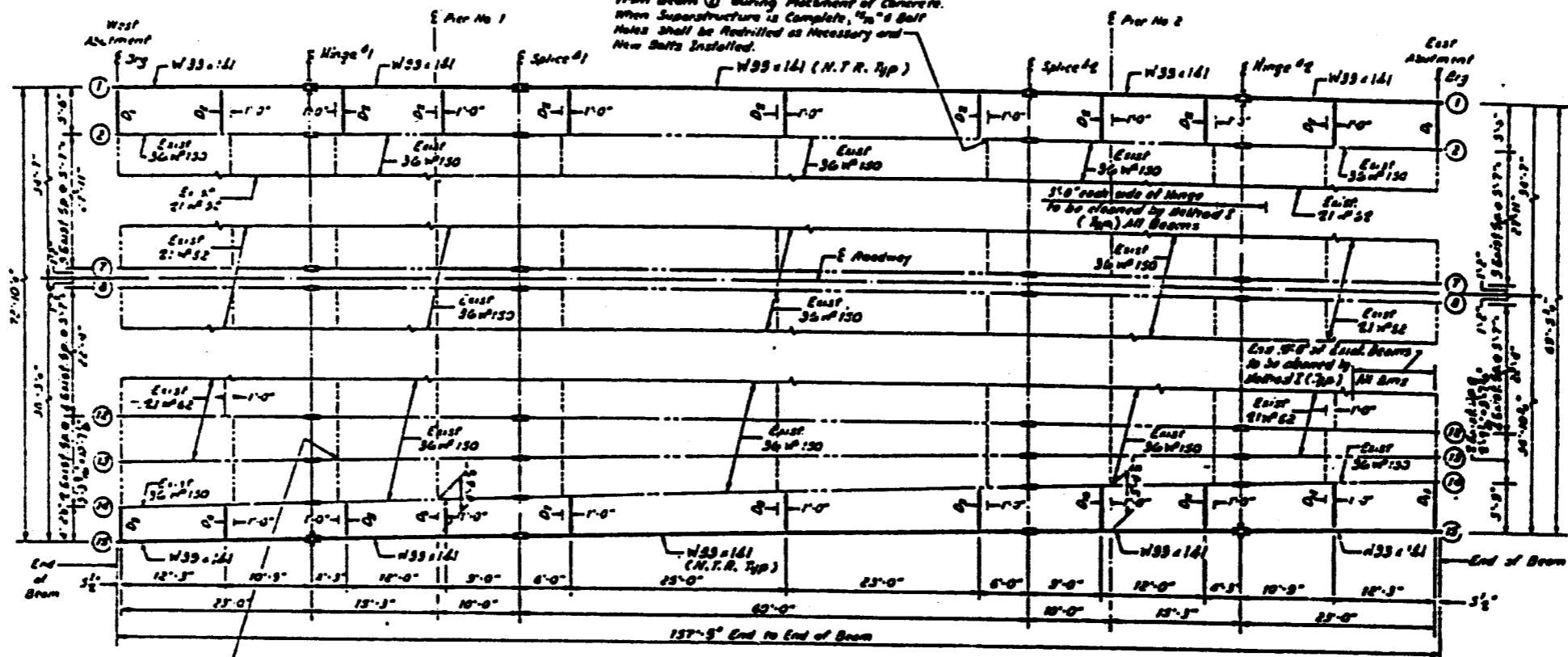


James J. [Signature]
John H. Owen, SE, 714 May St, St. Charles, IL 62253

PROFILE - U.S. RT. 20 BY-PASS
PROFILE - ST. CHARLES STREET

A B C

All Interior Diaphragms (except at piers) between Beams 1 and 3 to be disconnected from Beam 1 during Placement of Concrete. When Superstructure is Complete, "a" Bars shall be Rebarbed as Necessary and New Bars Installed.



EXIST'G INTERIOR BEAM MOMENT TABLE

	0.3321	Pier 1 and 2	0.3321
S_p (ft)	13.33	9.25	13.33
S_c (ft)	1.91		1.91
S_d (ft)	1.27	3.04	1.27
S_e (ft)			1.27
S_f (ft)	0.337	1.033	0.337
M_p (k)	74.2	297.74	477.46
M_c (k)	7.01	7.09	6.59
M_d (k)			6.59
M_e (k)			102.93
M_f (k)	23.2	332.2	349.2
M_{total} (k)	107.2	459	121.7
P_{max} (k)	17.2	423.7	642.13
P_{min} (k)	18.3	17.2	17.2
V_R (k)			37.1

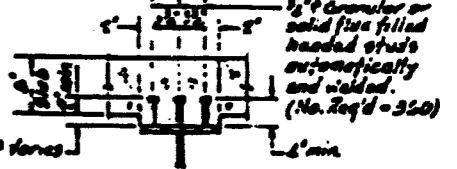
NEW INTERIOR BEAM MOMENT TABLE

	0.3321	Pier 1 and 2	0.3321
S_p (ft)	13.33	9.25	13.33
S_c (ft)	1.91		1.91
S_d (ft)	1.27	3.04	1.27
S_e (ft)			1.27
S_f (ft)	0.337	1.037	0.337
M_p (k)	64.3	232.0	375.1
M_c (k)	1.7	7.6	19.7
M_d (k)			6.76
M_e (k)			69.4
M_f (k)	23.2	332.2	349.2
M_{total} (k)	107.2	459	121.7
P_{max} (k)	17.2	423.7	642.13
P_{min} (k)	18.3	17.2	17.2
V_R (k)			37.1

INTERIOR BEAM REACTION TABLE

	0.3321	Pier 1 and 2	0.3321
R_1 (k)	11.37	12.31	
R_2 (k)	21.5	36.2	
R_3 (k)	6.6	10.4	
R_4 (k)	5.0	10.1	

S_p and S_c are the moment of inertia and section modulus of the steel section and in computing P_{total} .
 S_d and S_e are the moment of inertia and section modulus of the concrete section used in computing P_{total} .
 M_c is the maximum V_c shear force in span.



FRAMING PLAN

BEAM ELEVATION (Beam No. 1 & 3)

See Sheet No. 2 for Notch Toughness Requirements (N.T.R.)

Web & Flange Splice Plate Material shall be AASHTO M-223 Gr. 50.

TOP OF FLANGE ELEVATIONS BEFORE ANY DEFLECTION

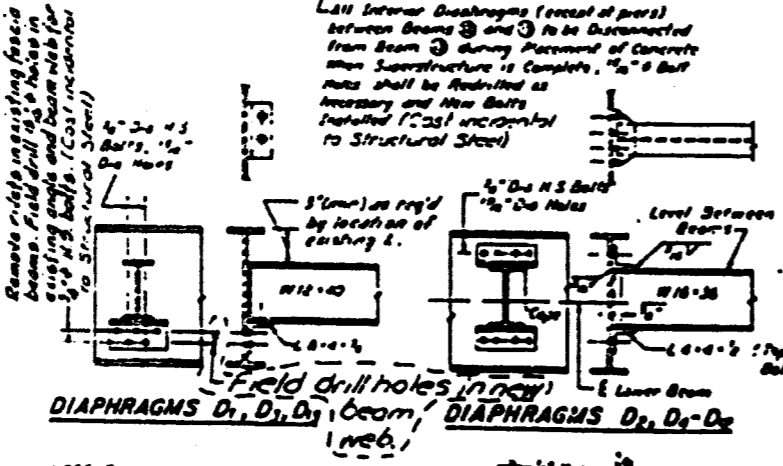
LOC. BEAM	E. Pier 1	E. Pier 2	E. Pier 1	E. Pier 2	E. Pier 1	E. Pier 2	E. Pier 1	E. Pier 2
1	792.77	792.97	792.00	791.23	791.71	791.67	791.24	791.29
13	792.18	792.98	791.23	791.21	791.71	791.57	791.21	791.21

FOR FABRICATION ONLY

FOR INFORMATION ONLY

DIAPHRAGM NO. & TOE DIM.

D1	5'-0"
D2	4'-2 1/2"
D3	4'-3 1/2"
D4	4'-2 1/2"
D5	5'-1 1/2"
D6	5'-2 1/2"
D7	5'-3 1/2"
D8	5'-1 1/2"
D9	5'-2 1/2"
D10	5'-3 1/2"



DETAIL OF SPICE (NEW BEAMS)

AS REVISED

AS REVISED 3-10-81

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL

U.S. ROUTE 20 BY-PASS (I.P.A. 426) OVER
ST. CHARLES STREET
SECTION 04-40-9(66)
BANE COUNTY
STATION 213+04.35
STR. NO. 045-0000

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