

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
• D7 BRIDGE PAINTING 2012-1	ILLINOIS	WAYNE	10	1
• F.A.P. RTE. 776 & 821			*#10+5=21	

FOR INDEX OF SHEETS, SEE SHEET NO. 2

**PROPOSED
HIGHWAY PLANS**

F.A.P. ROUTES 776 (IL. RTE. 242) & 821 (IL. RTE. 15)
SECTION D7 BRIDGE PAINTING 2012-1

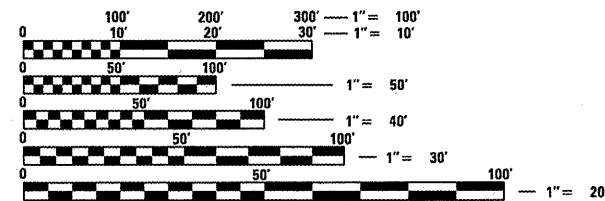
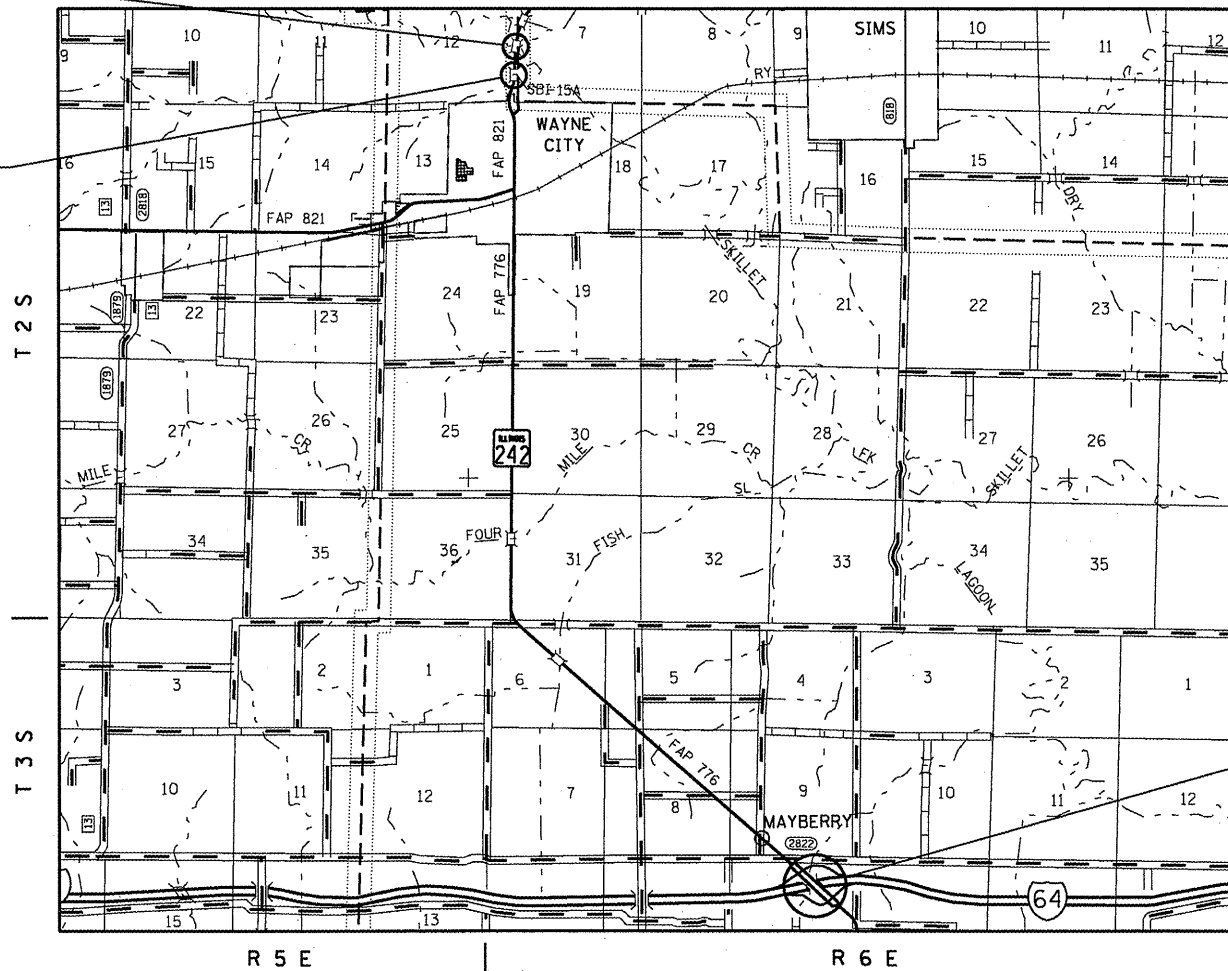
**BRIDGE PAINTING
WAYNE COUNTY**
C-97-078-11

ADT = 1100 (2007) IL. RTE. 242
3950 (2007) IL. RTE. 15



LOCATION 2
FAP 821
IL. RTE. 15
STA. 957 + 95.03
S.N. 096-0062

LOCATION 1
FAP 821
IL. RTE. 15
STA. 924 + 03
S.N. 096-0001



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.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

PROJECT ENGINEER: TOM RONAN
PROJECT MANAGER: TOM RONAN
PHONE 217-342-8320
CONTRACT NO. 74529

LOCATION 3
FAP 776
IL. RTE. 242
STA. 3767 + 50
S.N. 096-0032

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED *Oct 5 2011*
Regan L. Duckell
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

Dec 9 2011
Scott E. Stitt, P.E.
ENGINEER OF DESIGN AND ENVIRONMENT

Dec 9 2011
William R. Frazer
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

GROSS LENGTH = 3982 FT. = 0.75 MILE
NET LENGTH = 873 FT. = 0.17 MILE

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	INDEX OF SHEETS, GENERAL NOTES, LOCATION DESCRIPTIONS AND SUMMARY OF QUANTITIES
3-16	EXISTING STRUCTURE PLANS

THE FOLLOWING STANDARDS ARE A PART OF THESE PLANS AND ARE INCLUDED AFTER SHEET NO. 16:

STANDARD 701001-02	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
STANDARD 701006-03	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
STANDARD 701101-02	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
STANDARD 701106-02	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
STANDARD 701201-04	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
STANDARD 701400-05	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
STANDARD 701402-09	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
STANDARD 701406-06	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
STANDARD 701901-02	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES

GENERAL NOTES

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED JANUARY 1, 2012; THE SUPPLEMENTAL SPECIFICATIONS, THE RECURRING SPECIAL PROVISIONS, AND THE SPECIAL PROVISIONS INCLUDED IN THE PROPOSAL.

THE PROPOSED PROJECT IS LOCATED AT 3 LOCATIONS, STRUCTURE NUMBERS 096-0001 AND 096-0062, ON ILLINOIS ROUTE 15 IN WAYNE COUNTY AND STRUCTURE NUMBER 096-0032, ON ILLINOIS ROUTE 242 IN WAYNE COUNTY.

THE WORK INCLUDED IN THIS SECTION CONSISTS OF CLEANING AND PAINTING BRIDGES AT 2 LOCATIONS AS SPECIFIED IN THE PLANS AND SPECIAL PROVISIONS.

THE STRUCTURAL STEEL SHALL BE CLEANED AND PAINTED AS SPECIFIED IN THE SPECIAL PROVISIONS.

ALL DECK DRAINS SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF PAINT SYSTEM 1 - OZ/E/U. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT THEIR OWN EXPENSE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

ALL TRASH AND PAINTING DEBRIS, EXCLUDING WASTE BARRELS OR ROLL - OFF DUMPSTERS, SHALL BE REMOVED BEFORE BEGINNING WORK AT ANOTHER LOCATION.

ONLY STRUCTURAL STEEL IS TO BE PAINTED. ALL OTHER SURFACES WILL BE PROTECTED FROM BEING PAINTED. ALL PAINT AND OVERSPRAY WILL BE REMOVED AT THE CONTRACTOR'S EXPENSE.

THE SSPC OP1 AND OP2 PAINTING CONTRACTOR CERTIFICATION WILL BE REQUIRED FOR THIS PROJECT.

LOCATION #1

ROUTE: FAP 821
 MARKED: ILL 15
 SECTION: 17, B3
 STATION: 924+03
 STRUCTURE NUMBER: 096-0001

TYPE OF BRIDGE: Wide Flange I Beams-3 Spans (6 Beams)
 LOCATION: North Corporate Limits of Wayne City
 FEATURE CARRIED/SPANNED: ILL 15 over Shoe Creek

COLOR OF THE FINISH COAT SHALL BE GRAY, MUNSELL 5B 7/1.

Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All structural steel, including beams, bearings and diaphragms, shall be cleaned by SSPC-SP10- Near White Metal Blast Cleaning.

The designated areas cleaned per Near White Metal Blast Cleaning - SSPC-SP10 shall be painted according to the requirements of Paint System 1 - OZ/E/U.

Two air monitors will be required at this location.

LOCATION #2

ROUTE: FAP 821
 MARKED: ILL 15
 SECTION: 17BR-1
 STATION: 957+95.03
 STRUCTURE NUMBER: 096-0062

TYPE OF BRIDGE: Wide Flange I Beams-10 Spans (6 Beams)
 LOCATION: 0.2 Miles North of Wayne City
 FEATURE CARRIED/SPANNED: ILL 15 over Skillet Fork Overflow

COLOR OF THE FINISH COAT SHALL BE REDDISH BROWN, MUNSELL 2.5YR 3/4.

Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All structural steel within 6' (measured along the beam) of the abutments and any expansion joint, including beams, bearings and diaphragms, shall be cleaned by SSPC-SP10- Near White Metal Blast Cleaning.

The designated areas cleaned per Near White Metal Blast Cleaning - SSPC-SP10 shall be painted according to the requirements of Paint System 1 - OZ/E/U.

One air monitor will be required at this location.

LOCATION #3

ROUTE: FAP 776
 MARKED: ILL 242
 SECTION: 96-2HB-2
 STATION: 3767+50
 STRUCTURE NUMBER: 096-0032

TYPE OF BRIDGE: Welded Plate Girders-4 Spans (9 Girders)
 LOCATION: 0.75 miles north of the Hamilton County line
 FEATURE CARRIED/SPANNED: ILL 242 over I-64

COLOR OF THE FINISH COAT SHALL BE GRAY, MUNSELL 5B 7/1.

Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All structural steel, including beams, bearings and diaphragms/lateral bracing, shall be cleaned by SSPC-SP10- Near White Metal Blast Cleaning.

The designated areas cleaned per Near White Metal Blast Cleaning - SSPC-SP10 shall be painted according to the requirements of Paint System 1 - OZ/E/U.

No air monitors will be required at this location.

100% STATE

SUMMARY OF QUANTITIES			TOTAL QUANTITIES	CONT. CONSTRUCTION MAINT.	BRIDGE TYPE CODE PAINTING
CODE NO	ITEM	UNIT		FAP 821 0014	FAP 776 0014
67100100	MOBILIZATION	L SUM	1	0.67	0.33
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	1		1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	1	
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1		1
Z0007112	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES	L SUM	1	0.67	0.33
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1	1	
Z0010502	CLEANING AND PAINTING STEEL BRIDGE NO. 2	L SUM	1	1	
Z0010503	CLEANING AND PAINTING STEEL BRIDGE NO. 3	L SUM	1		1

• F.A.P. RTES. 242 & 15

FILE NAME =	USER NAME = swartzr	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	INDEX OF SHEETS, GENERAL NOTES, SUMMARY OF QUANTITIES AND STRUCTURE LOCATIONS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ca:\pw\work\pwi\dot\swartzr\10269474\077529-shr-index.dgn		DRAWN -	REVISED -			* D7 BRIDGE PAINTING 2012-	WAYNE	12	2	
PLOT SCALE = 100.0000' / 1"		CHECKED -	REVISED -			CONTRACT NO. 74529				
PLOT DATE = 10/4/2011		DATE -	REVISED -			SCALE: NA	SHEET NO. 1 OF 1 SHEETS	STA. TO STA.	ILLINOIS FED. AID PROJECT	

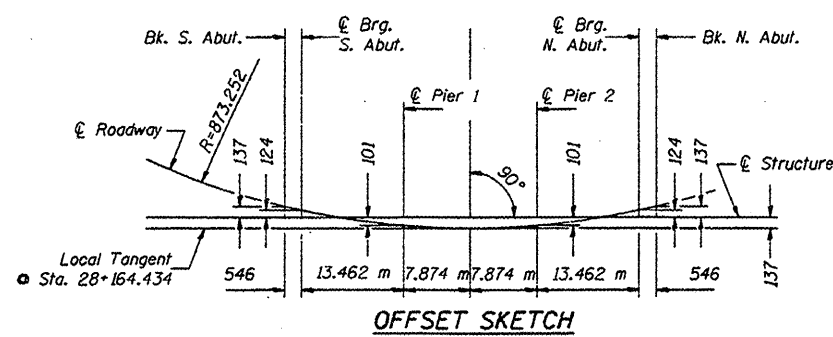
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
17-B-3	17-B-3	WAYNE	32	6
SHEET NO. 1				
23 SHEETS				

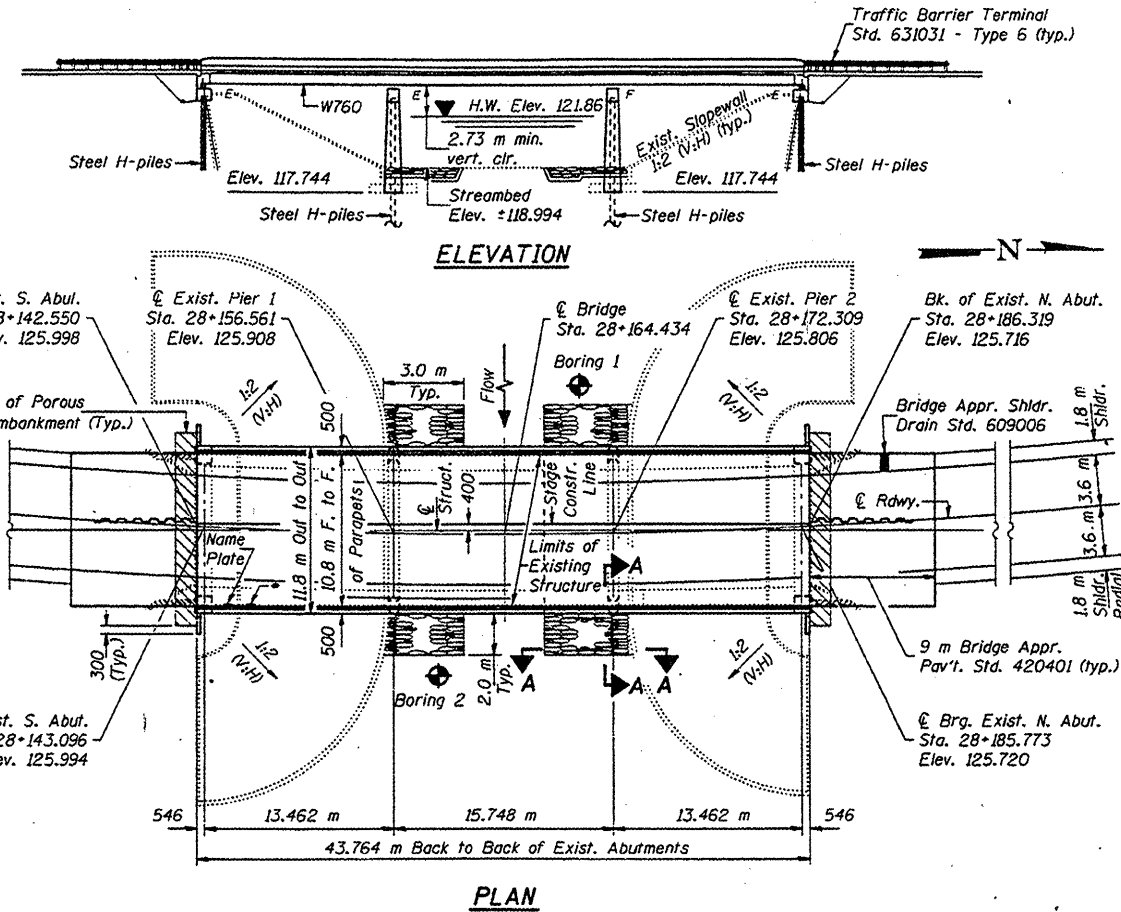
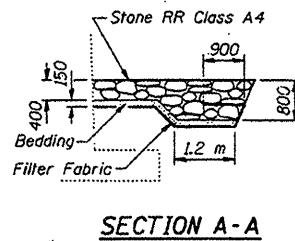
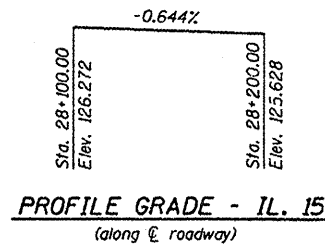
Bench Mark: Elev. 124.264 West bearing seat North Abutment of existing structure.

Existing Structure: SN 096-0001. Built as F.A. Route 16, Section 17-B3 at Station 28+164.434 in 1958.
The structure is a three span continuous R.C. deck on wide flange beams, with a length of 43.764 m Bk. to Bk. of Abutments and 0. to 0. width of 10.535 m. Supported on pile bent abutments and solid piers on spread footings. The existing deck shall be removed and replaced with a wider deck, add new beams, and widen the substructure.
Stage construction shall be utilized.
No salvage

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

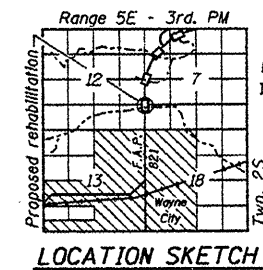


CURVE DATA
P.I. Sta. = 27+895.906
 $\Delta = 61^{\circ}33'30''$
R = 873.252 m
T = 520.129 m
L = 938.150 m
E = 143.168 m
S.E. = 3.2%



* Existing name plate to be cleaned and relocated. Cost is included with "Name Plates".

STATION 28+164.434
REBUILT BY
STATE OF ILLINOIS
F.A.P. RT. 821 SEC. 17-B-3
PROJECT BHF-821(31)
LOADING MS18
STR. NO. 096-0001
NAME PLATE
See Std. 515001



LOADING MS18
Allow 1.2 kN/m² for future wearing surface.

DESIGN SPECIFICATIONS
1992 AASHTO with 1993, 1994, and 1995 Interims
Seismic Retrofitting Manual for Highway Bridges
(May 1995) FHWA-RD-94-052

DESIGN STRESSES
FIELD UNITS
f_c = 24 MPa
f_y = 400 MPa (reinforcement)
f_s = 124 MPa (exist. steel)
f_s = 138 MPa (M270 Grade 250 New steel)

SEISMIC DATA
Seismic Performance Category (SPC) = B
Bedrock Acceleration Coefficient (A) = 0.094g
Site Coefficient (S) = L5

WATERWAY INFORMATION

Drainage Area = 20.46 km² Low Grade Elev. 124.84 @ Sta. 29+108.400

Flood	Freq. Yr.	Q m ³ /s	Opening m ²		Nat. Head - m		Headwater El.	
			Exist.	Prop.	H.W.E. Exist.	Prop.	Exist.	Prop.
Design	50	75.6	50.7	-	121.86	0.07	-	121.93
Base	100	87.2	56.4	-	122.07	0.07	-	122.14
Overtopping	-	-	-	-	-	-	-	-
Max. Calc.	500	114.6	72.8	-	122.63	0.13	-	122.77

DESIGNED: James E. [Signature]
CHECKED: Steven [Signature]
DRAWN: r.b. carbonell
CHECKED: JFS [Signature]

EXAMINED: [Signature]
PASSED: [Signature]



EXPIRES 11-30-98

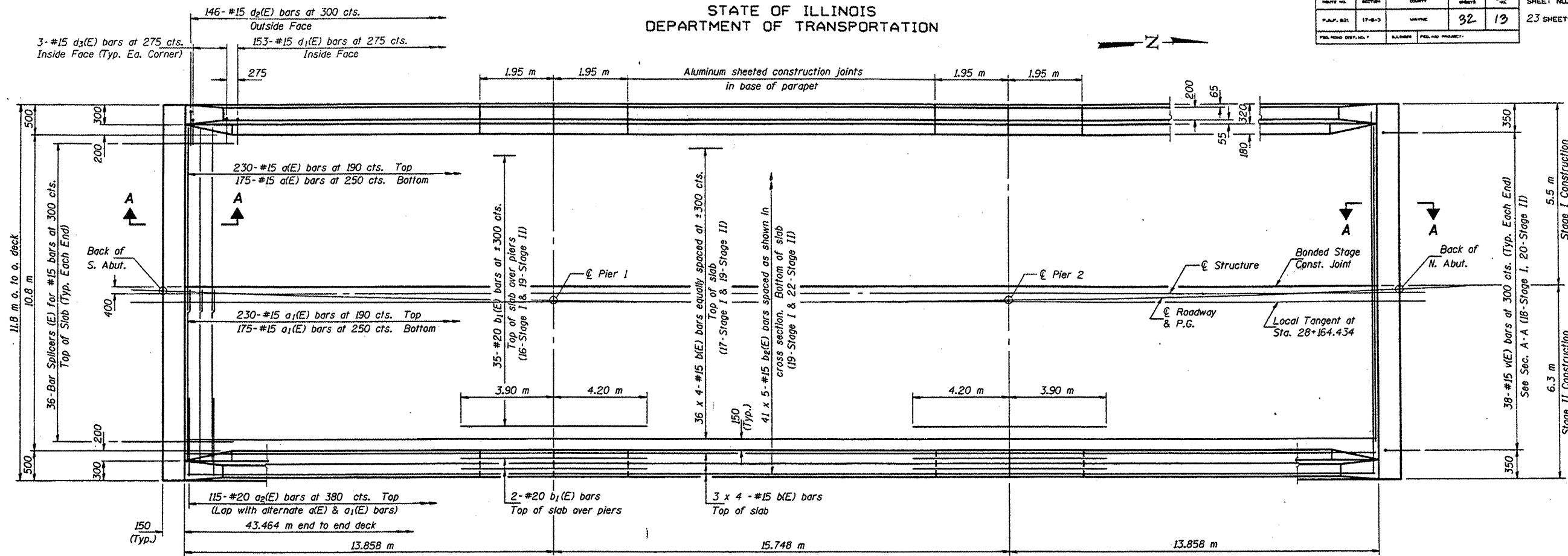
GENERAL PLAN
ILLINOIS ROUTE 15 OVER
SHOE CREEK
F.A.P. ROUTE 821 - SECTION 17-B-3
WAYNE COUNTY
STATION 28+164.434
STRUCTURE NO. 096-0001

LOCATION 1

3 of 16
74529

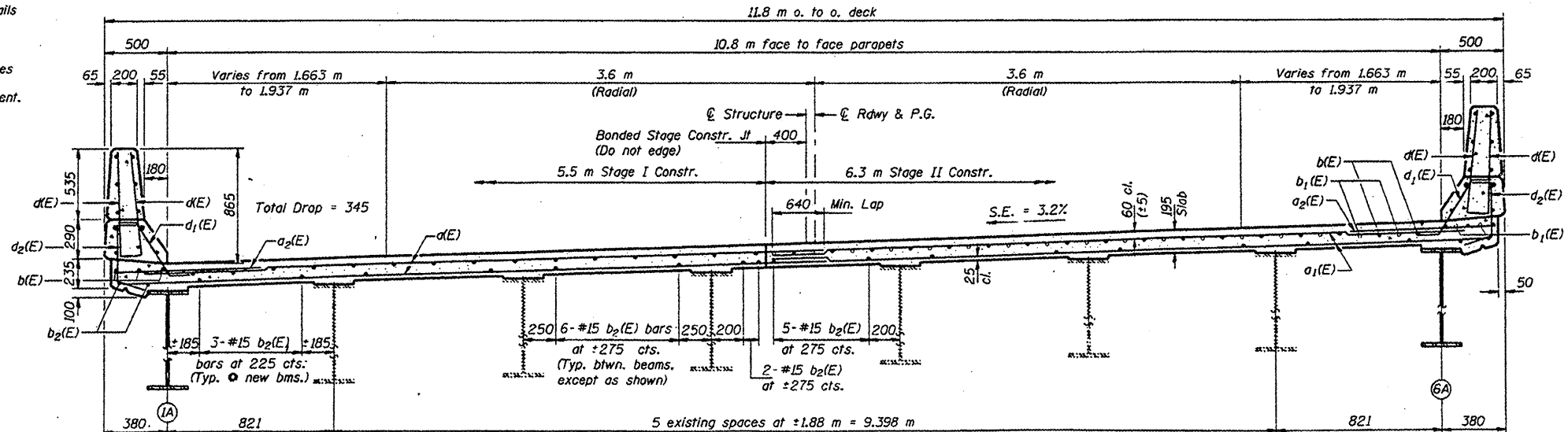
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
F.A.P. 821	17-B-3	WAYNE	32	13
SHEET NO. 8				23 SHEETS



PLAN

Notes: See Sheet #9 of 23 for superstructure details and Bill of Material.
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 20 x 3-#15 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet #9 of 23 for parapet reinforcement.
All dimensions are in millimeters (mm) except as noted.
See Sheet #9 of 23 for Section A-A.
See Sheet #10 of 23 for diaphragm details.



CROSS SECTION
(Looking North)

MIN. BAR LAP
#15 Bar = 510

DESIGNED	January 21 1997
CHECKED	
DRAWN	
CHECKED	
S-I-0 (M)	7-1-94

EXAMINED
PASSED
Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

SUPERSTRUCTURE
F.A.P. RTE. 821 - SEC. 17-B-3
WAYNE COUNTY
STATION 28+164.434

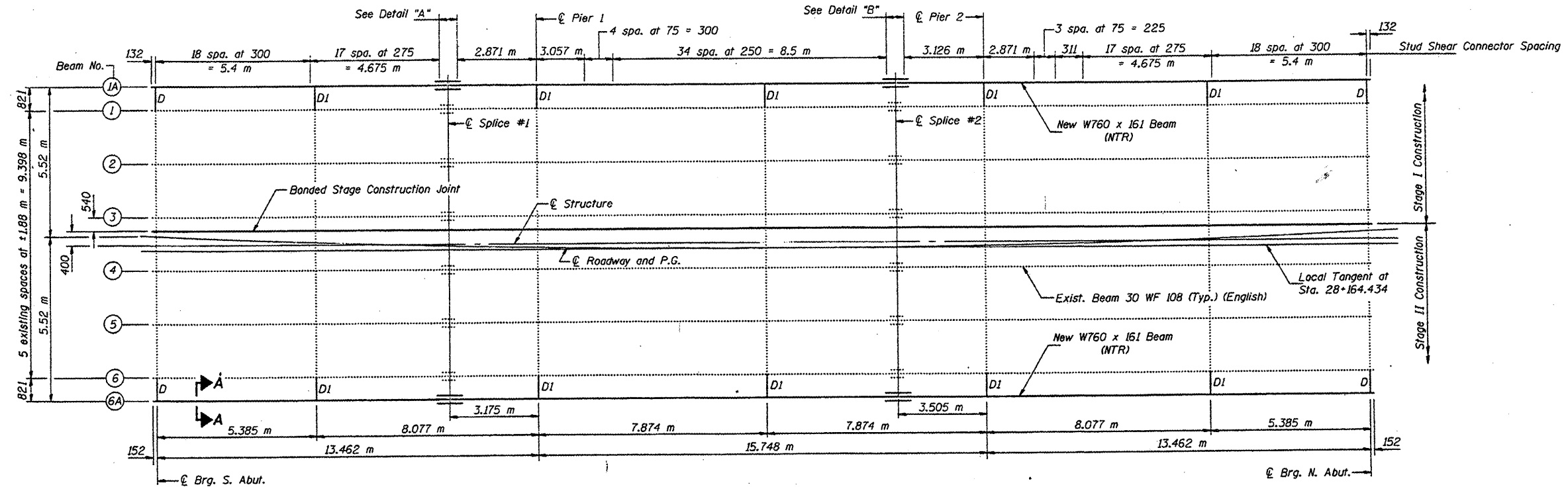
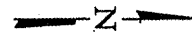
LOCATION 1

4 OF 16

74529

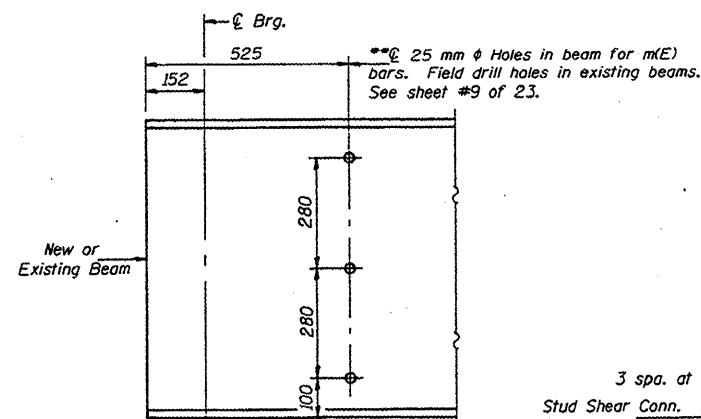
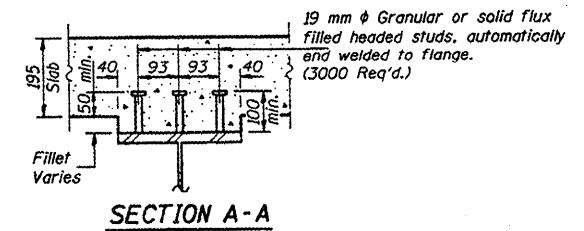
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	DATE	SHEET	SHEET NO. 12 23 SHEETS
F.A.P. 821	17-B-3	WAYNE	32	
PRIOR DIST. NO. 1	SCALE	PREPARED PROJECT		

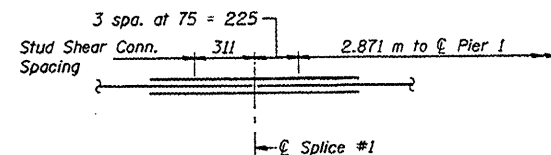


FRAMING PLAN

Note:
"NTR" denotes members to which Notch Toughness Requirements are applicable.



END OF BEAM DETAIL
**Cost of drilling holes is included with the cost of "Furnishing & Erecting Structural Steel".

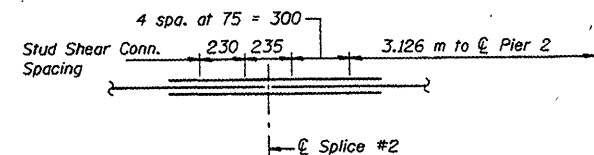


DETAIL "A"

TOP OF BEAM ELEVATIONS

Location	Beam #1A	Beam #6A
☉ Brg. S. Abut.	125.563	125.954
☉ Splice #1	125.52	125.872
☉ Brg. Pier 1	125.499	125.851
☉ Splice #2	125.418	125.772
☉ Brg. Pier 2	125.393	125.755
☉ Brg. N. Abut.	125.297	125.689

* For Fabrication only.



DETAIL "B"

DESIGNED	Jayme E. Hoff
CHECKED	Steve Nye
DRAWN	r.b. carbonell
CHECKED	JFS 5/94

EXAMINED	January 21, 1997
PASSED	Ralph E. Anderson

STRUCTURAL STEEL
F.A.P. RTE. 821 - SEC. 17-B-3
WAYNE COUNTY
STATION 28+164.434

LOCATION 1

5 OF 16
74529

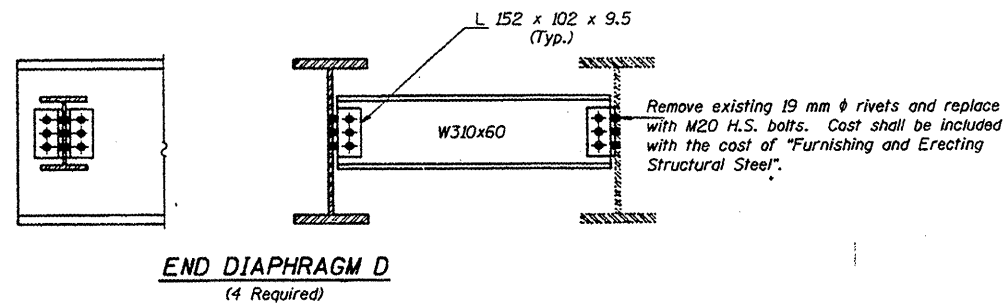
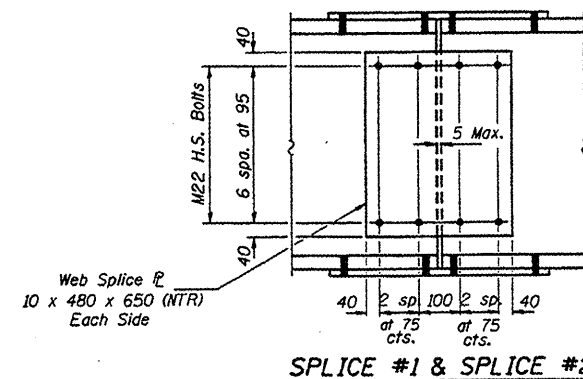
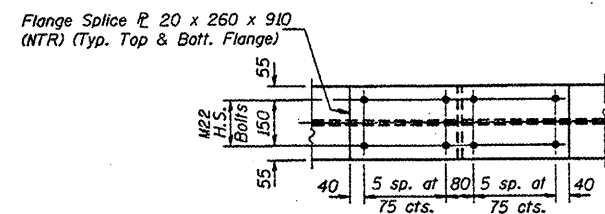
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	TOTAL	SHEET NO. 13
F.A.P. RTE.	17-B-3	WAYNE	32	18	23 SHEETS
FURNISHING DEPT. NO. 7		ALIGNED	FIELD PROJECT		

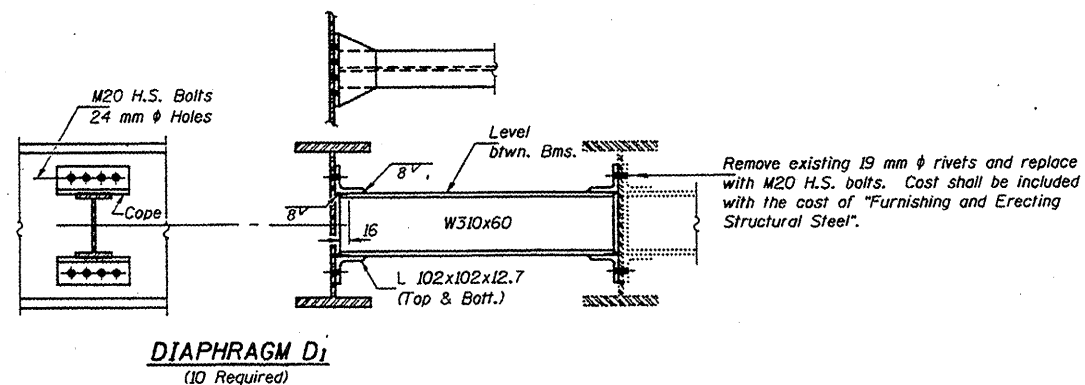
INTERIOR BEAM MOMENT TABLE			
	0.4 Sp. 1	0.6 Sp. 3	0.5 Sp. 2 Piers 1, 2
I_s (10^6 mm^4)	1860	1860	1860
I_c (n) (10^6 mm^4)	5280	5280	—
I_c (3n) (10^6 mm^4)	3880	3880	—
S_s (10^3 mm^3)	4910	4910	4910
S_c (n) (10^3 mm^3)	7480	7480	—
S_c (3n) (10^3 mm^3)	6740	6740	—
Q (kN/m)	10.64	10.64	14.39
M^D ($\text{kN}\cdot\text{m}$)	140	102	289
f_s @ non-comp (MPa)	28.5	20.8	58.9
s^D (kN/m)	3.75	3.75	—
M_s^D ($\text{kN}\cdot\text{m}$)	57	55	—
f_s^D (comp) (MPa)	8.5	8.2	—
M_t^* ($\text{kN}\cdot\text{m}$)	342	353	177
M (Imp) ($\text{kN}\cdot\text{m}$)	101	100	51
f_s ($M_t^* + M$) (MPa)	59.2	60.6	46.4
f_s (Total) (MPa)	96.2	89.6	105.3
VR (kN)	193	159	—

INTERIOR BEAM REACTION TABLE		
	Abut.	Piers 1 & 2
R^D (kN)	161*	232
R_t (kN)	137	165
Imp. (kN)	41	40
R (Total) (kN)	339	445

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (Total).
 I_{cn} and S_{cn} are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.
 I_{c3n} and S_{c3n} are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)
 VR is the maximum Live Load + Impact shear range in span.
 *Includes 86 kN reaction due to diaphragm and approach pavement.



Note:
Two hardened washers shall be required over all oversized holes for diaphragms.
All dimensions are in millimeters (mm) except as noted.



DESIGNED	January 21, 1997
CHECKED	
DRAWN	
CHECKED	

EXAMINED
PASSED

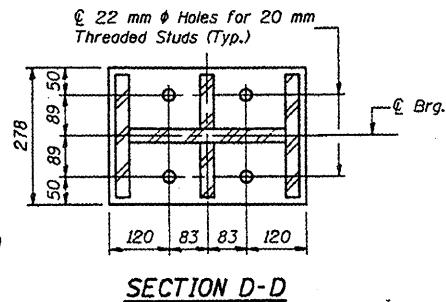
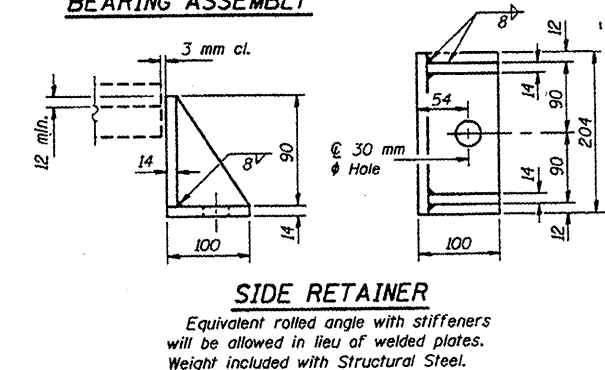
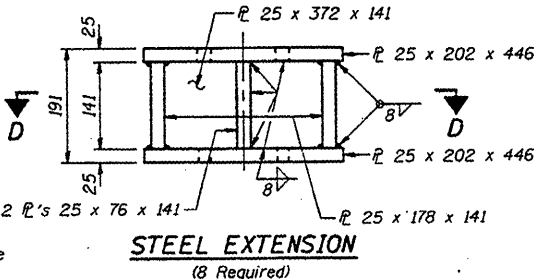
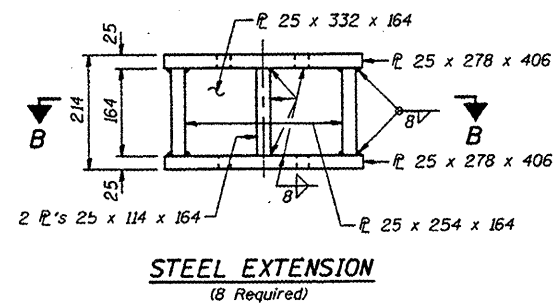
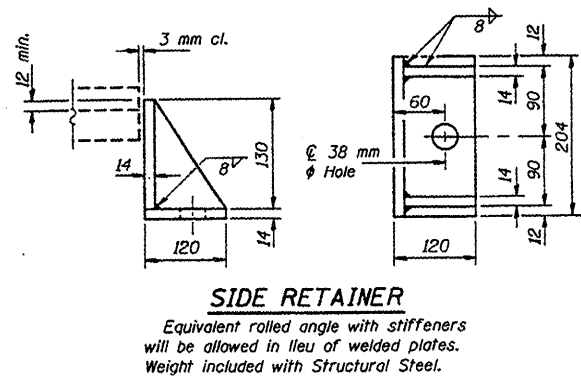
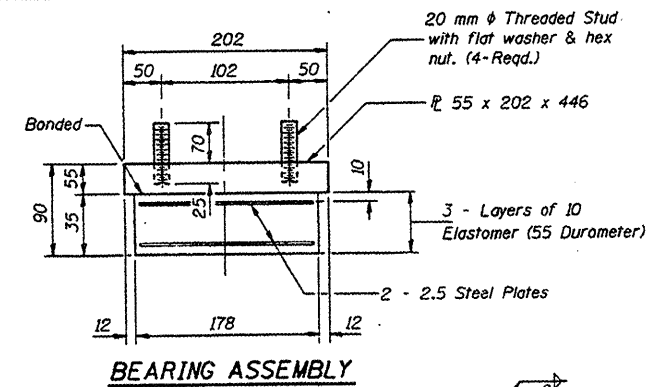
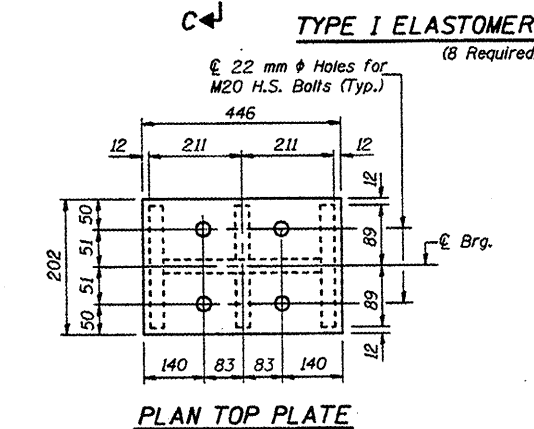
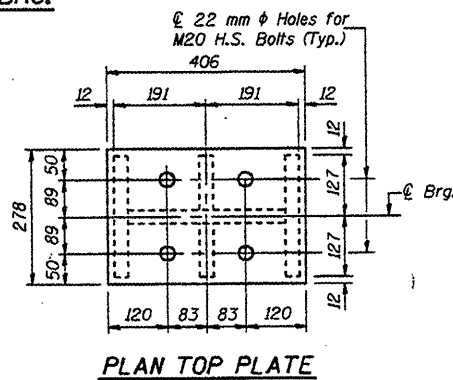
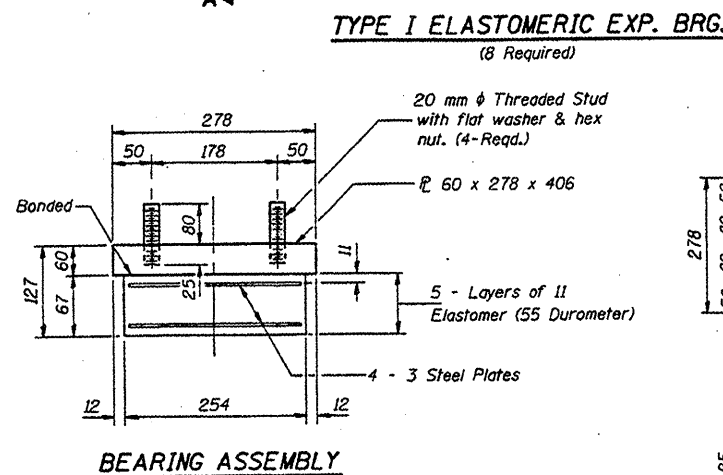
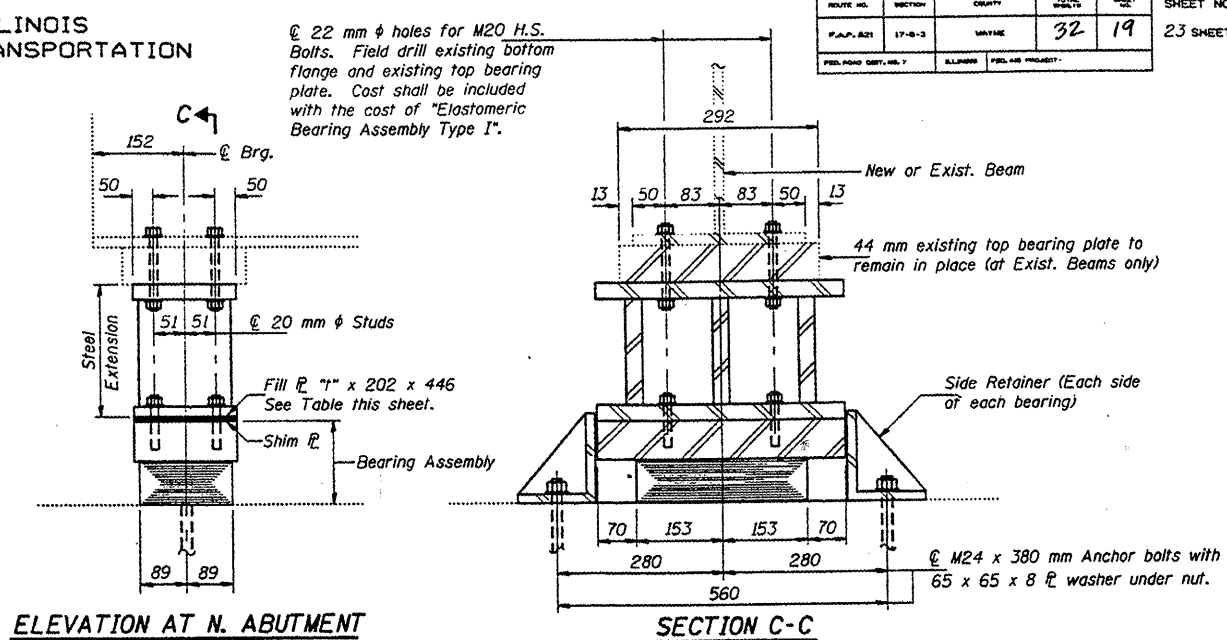
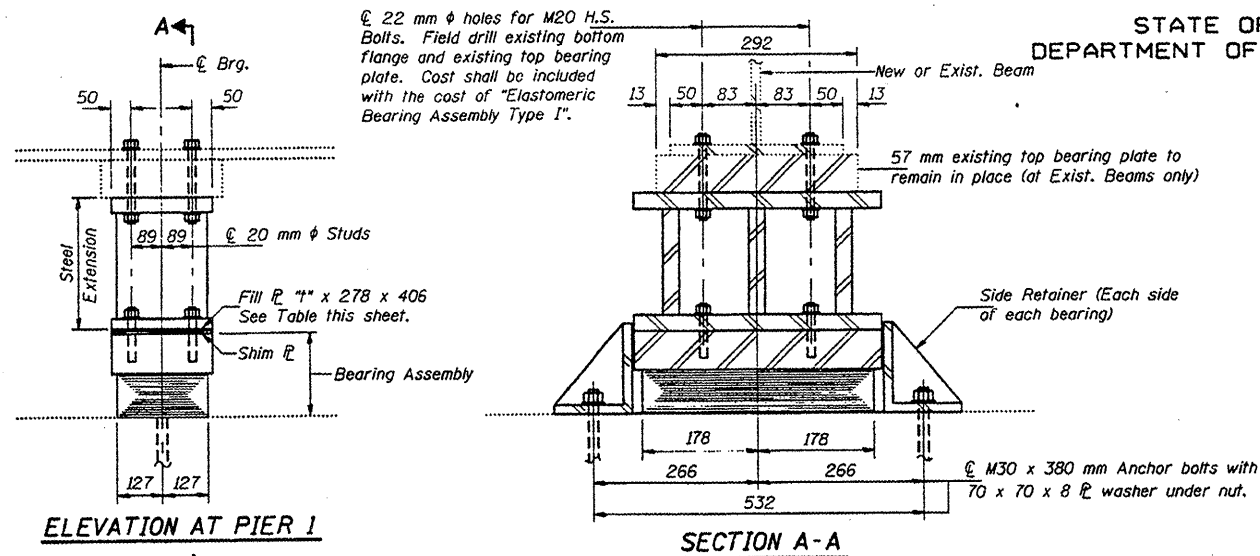
STRUCTURAL STEEL DETAILS
F.A.P. RTE. 821 - SEC. 17-B-3
WAYNE COUNTY
STATION 28+164.434

LOCATION 1

SA 0-16
74529

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

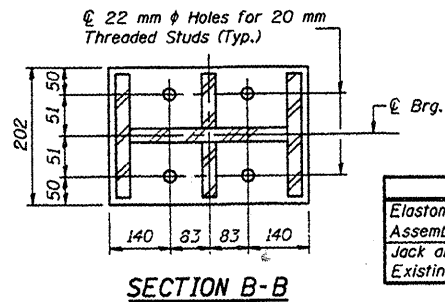
ROUTE NO.	SECTION	CREW	DATE	SHEET
F.A.P. RTE.	17-B-3	WAYNE	32	19
SHEET NO. 14				23 SHEETS



Notes:
For anchor bolt installation details see sheet #16 of 23.
See sheet #15 of 23 for Jack and Remove Existing Bearing Procedure.
Shim plates shall not be placed under Bearing Assembly.

DIMENSION "I"

Beam	1A	1	2	3	4	5	6	6A
Pier 1	30	-	-	-	-	-	-	-
N. Abut.	-	8	3	3	3	-	-	-



BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	16
Jack and Remove Existing Bearings	Each	12

PIER 1 AND NORTH ABUTMENT
BEARING DETAILS
F.A.P. RTE. 821 - SEC. 17-B-3
WAYNE COUNTY
STATION 28+164.434
5B OF 16
74529

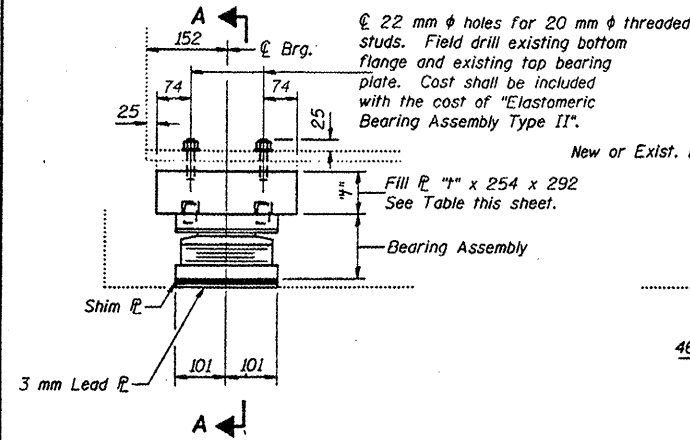
DESIGNED *James E. Hoff*
CHECKED *Steven P. ...*
DRAWN *r.b. carbonell*
CHECKED *J.P.S. ...*

EXAMINED *Orsi O. Kaspar*
PASSED *Ralph E. ...*

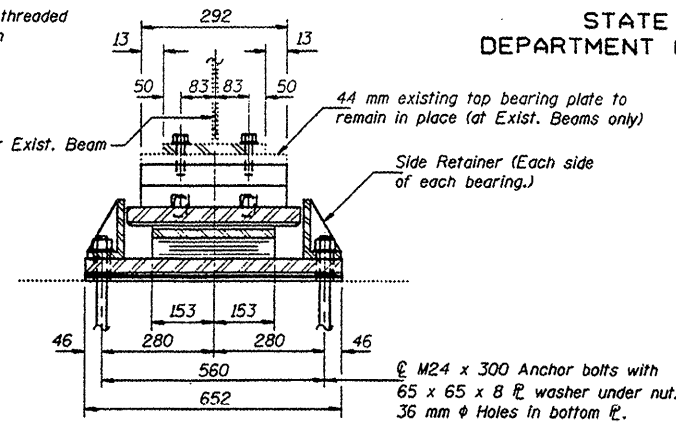
January 21 1997

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

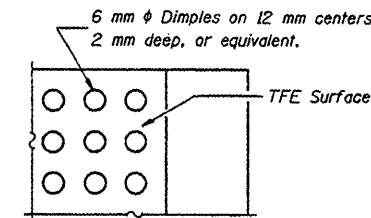
ROUTE NO.	SECTION	COUNTY	POST MILE	SHEET NO.
F.A.P. 821	17-B-3	WAYNE	32	20
TOTAL SHEETS				23 SHEETS



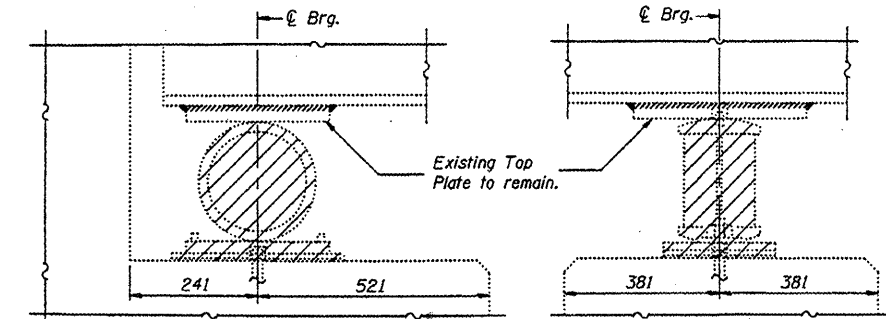
ELEVATION AT SOUTH ABUT.



SECTION A-A



PLAN-TFE SURFACE



AT ABUTMENTS

AT PIER #1

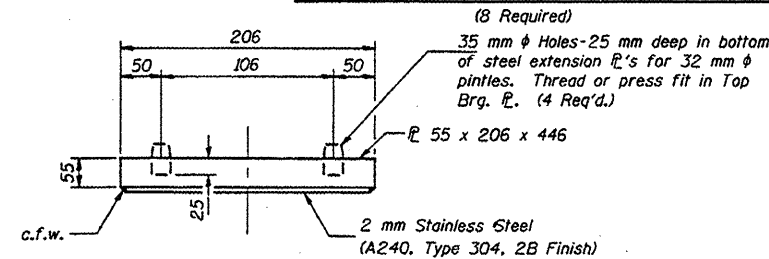
JACK AND REMOVE EXISTING BEARING

Hatched area indicates removal of existing bearing.

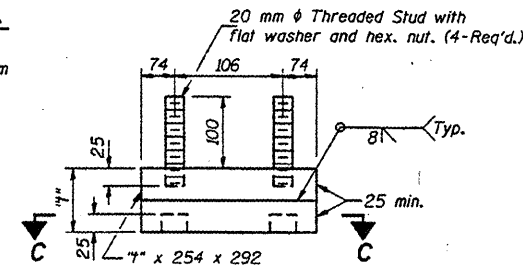
JACK AND REMOVE EXISTING BEARING PROCEDURE

1. The Contractor shall submit for approval by the Engineer, plans for jacking & cribbing prior to commencing any work at the bearings.
2. Jacking and removing existing bearings shall be done after deck removal is completed and before the new deck is poured.
3. Jacking shall be limited to a maximum of 3 mm lift to remove the existing bearing assembly, utilizing a jack or series of jacks. The max. dead load reaction at each beam with the deck removed is 30 kN at Piers and 10 kN at Abutments. The Minimum Jack Capacity for each beam is 60 kN at Piers and 20 kN at Abutments.
4. Remove the existing anchor bolts flush with the concrete surface and grind smooth. The rocker and bottom plates shall be removed leaving the existing top plate intact. The bottom flange area of the beam and existing top plate shall be cleaned and painted as specified for structural steel.
5. The new bearings and steel extensions shall be in place and the jacks shall be lowered before the new deck is poured.

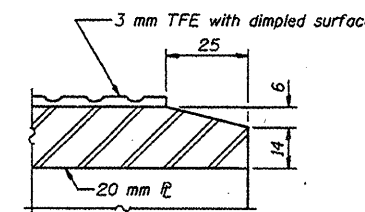
TYPE II TFE ELASTOMERIC EXP. BRG.



TOP BEARING ASSEMBLY



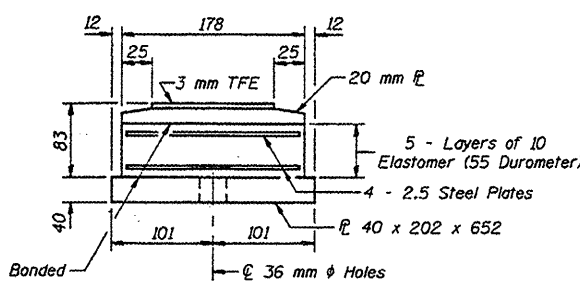
STEEL EXTENSION DETAIL



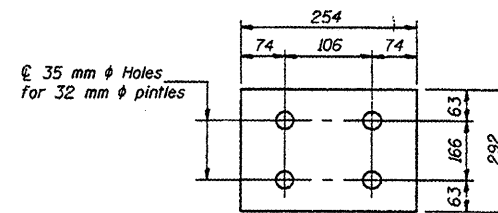
SECTION THRU TFE

Note: The 3 mm 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 3 mm TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



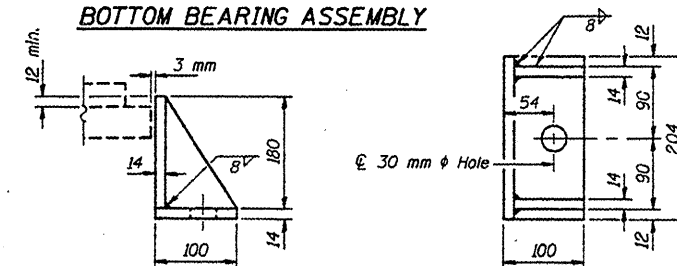
BOTTOM BEARING ASSEMBLY



SECTION C-C

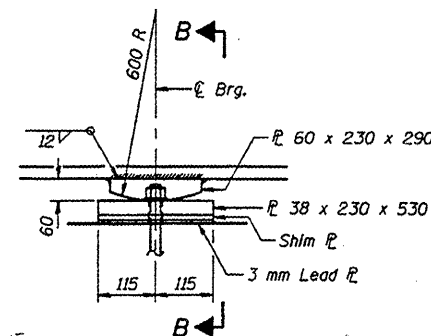
DIMENSION "I"

Beam	1A	1	2	3	4	5	6	6A
S. Abut.	73	101	102	96	98	93	90	73



SIDE RETAINER

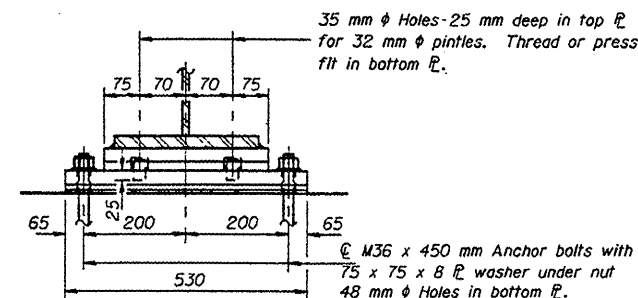
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.



ELEVATION AT PIER 2

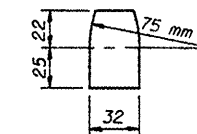
FIXED BEARING AT PIER 2

(At new beams only)
(2 Required)



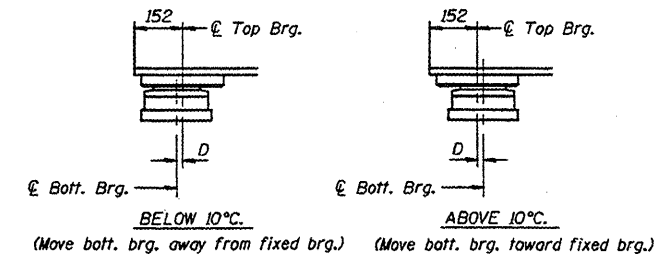
SECTION B-B

Note: For anchor bolt installation details see sheet #16 of 23.



PINTLE

LOCATION 1



SETTING ANCHOR BOLTS AT EXP. BRG.

D = 1 mm per each 10 m of expansion for every 8° temp. change from the normal temp. of 10°C.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	8
Jack and Remove Existing Bearings	Each	6

PIER 2 AND SOUTH ABUTMENT

BEARING DETAILS

F.A.P. RTE. 821 - SEC. 17-B-3

WAYNE COUNTY

STATION 28+164.434

5C OF 16

74529

DESIGNED	J. J. Hoff
CHECKED	R. B. Carbonell
DRAWN	r. b. carbonell
CHECKED	JFS SPN

EXAMINED
Ralph E. Anderson
SUPERVISOR OF BRIDGES AND STRUCTURES

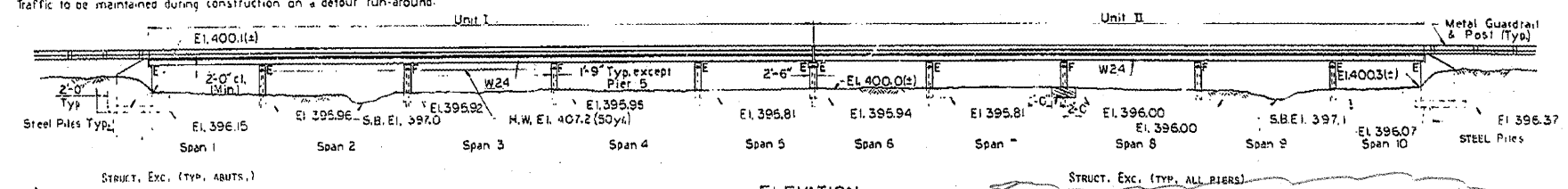
JANUARY 21 1997

BM-Chiseled 'D' NW Wing Skillet Fork Overflow. Elev. 410.67
 Existing Structure: Structure No. 096-0002. Original Structure built in 1922 as S.B.I. Rt. 15, Section 17c, Wayne County, Sta. 957+90. Twenty Span R.C. Slab, closed abuts, Structure widened in 1958 under Section 17 B.Y. Sta. 957+95 to 26'-0" Rwy. Superstructure and parts of the substructure are to be removed as necessary by the Bridge Contractor after completion of detour. No salvage.
 Traffic to be maintained during construction on a detour run-around.

ROUTE NO.	SECTION	COUNTY	POST MILE	SHEET NO.
F.A. 821	17BR-1	WAYNE	27	5
ILLINOIS PROJECT	Sheet 1 of 18			

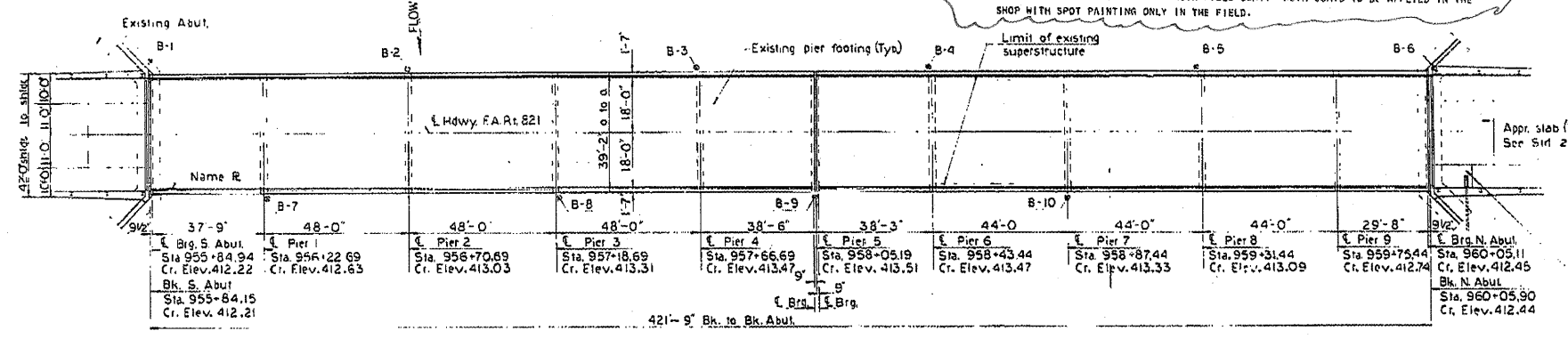
GENERAL NOTES

SEE PROPOSAL FOR BORING LOG.
 REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS IN AASHTO M-222 OR M-223 GRADE 60.
 FASTENERS SHALL BE HIGH STRENGTH BOLTS, AASHTO M-294 TYPE 3 BOLTS 3/4" OPEN HOLES 1/4" MIN., UNLESS OTHERWISE NOTED.
 CALCULATED WEIGHT OF STRUCTURAL STEEL = 237,448 LBS.
 ALL STRUCTURAL STEEL SHALL BE AASHTO M-222 UNPAINTED EXCEPT EXPANSION JOINT ANGLES AND ATTACHED BARS WHICH SHALL BE AASHTO M-183 AND SHOP PAINTED WITH TWO COATS OF BASIC LEAD SILICO CHROMATE PAINT.
 FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF BEAMS OR RIBBERS 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 DIAPHRAGMS OVER SUPPORTS. THE CONTRACTOR SHALL DRIVE 6 STEEL TEST PILES IN PERMANENT LOCATIONS AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES: ONE TEST PILE EACH AT N. AND S. ABUT. AND ONE TEST PILE EACH AT PIERS 7, 4, 6, 8.
 THE STATIONING OF THE ABUTMENTS OF THE NEW STRUCTURE IS BASED FROM THE FIELD SURVEY, IN RELATION TO THE EXISTING STRUCTURE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD, AND TO NOTIFY THE ENGINEER OF ANY VARIATION IN THE DATA SHOWN ON THE PLANS PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS.
 BEARING 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 SKIMMING 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.
 THE MAIN LOAD-CARRYING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE SUPPLEMENTAL REQUIREMENTS FOR NOTCH HIGHNESS ZONE 2. THESE COMPONENTS ARE THE WIDE FLANGE BEAMS AND ALL SPICE PLATE MATERIAL.
 *INCLUDING 2, 110 LBS. AASHTO M-114 STEEL FOR EXPANSION DEVICE
 BRIDGE APPROACH SHOULDER PAVEMENT TYPICAL ALL CORNERS STANDARD 2324



ELEVATION

ALL STRUCTURAL STEEL FOR A DISTANCE OF THREE TIMES THE DEPTH OF THE BEAMS EACH WAY FROM THE DECK JOINTS SHALL BE CLEANED AND GIVEN ONE COAT OF THE BASIC LEAD SILICO CHROMATE PRIMER AND HARDEN FIELD COAT. BOTH COATS TO BE APPLIED IN THE SHOP WITH SPOT PAINTING ONLY IN THE FIELD.



PLAN

STATION 957+95.03
 BUILT 19 BY
 STATE OF ILLINOIS
 FA RT 821 SEC 17 BR-1
 FA. PROJ. BR-F-821(7)
 LOADING HS 20
 STR. NO. 291

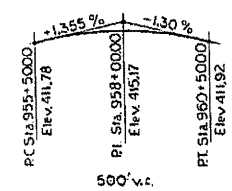
NAME PLATE
 See Std. 2113
 *STRUCTURE NUMBER TO BE SUPPLIED BY DISTRICT

WATERWAY INFORMATION
 Drainage Area 475 sq. mi. (Skillet Fork & Overflow)
 Character level & rolling
 Required Opening (50 yr. flood) 2957 cfs
 Present Opening 2957 cfs
 Proposed Opening 2960 cfs
 High water El. 4072 (50 yr.) Overflow
 High water El. 4077 (100 yr.)
 Created Head .3 ft. (50 yr.)
 Created Head .4 ft. (100 yr.)
 Q.50 9315 cfs
 Q.100 11,221 cfs

DESIGN STRESSES

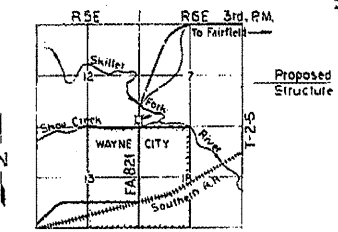
$f_c = 3500$ psi
 $f_t = 1000$ psi (Abut. & ww)
 $f_y = 50000$ psi (Re-bars)
 $f_y = 50000$ psi (M-222 S/c unpainted)
 $n = 8$
 Loading HS 20-44
 Allow 25% for future WS

Design Specifications, 1977 AASHTO Specifications, 1978 & 1979 Interim Specifications.



PROFILE GRADE
 F.A. RT. 821

APPROVED
 (Signature)



LOCATION SKETCH

TOTAL BILL OF MATERIALS

Item	Unit	Suppl.	Sub.	Total
Removal of Existing Struct.	Each			1
Structure Excavation	Cu Yd		511	511
Protective Coat	Sq Yd	2030		2030
Class X Concrete	Cu Yd	492.9	506.4	999.3
Structural Steel	L.S.			1
Stud Shear Connectors	Each	6210		6210
Reinforcement Bars	Lb.	48580	38120	86700
Rein. Bars (Epoxy Coated)	Lb.	75590		75590
Steel Piles (HP10x42)	Lin. Ft.		6252	6252
Test Pile Steel (HP10x42)	Each		6	6
Preformed Jt. Seal 4"	Lin. Ft.	39		39
Preformed Jt. Seal 2 1/2"	Lin. Ft.	39		39
Name Plates	Each	1		1
Poisonous Granular Embankment	Cu Yd.			460
Neoprene Exp. Jt. 4"	Lin. Ft.	36		36
Floor Drains	Each	84		84

**STEEL PILES SHALL CONFORM TO AASHTO M-222 SPECIFICATIONS

PROJECT BR-F 821(7)
 F.A. RT. 821 OVER SKILLET FORK OVERFLOW
 GENERAL PLAN & ELEVATION
 F.A. RT. 821 SEC. 17 BR-1
 WAYNE COUNTY
 STA. 957+9503

MTA, INCORPORATED
 DESIGNED: [Signature] CHECKED: [Signature]
 DATE: 11-5-79 NO. 0701

LOCATION 2 SN 096-0062

6 of 16
 74529

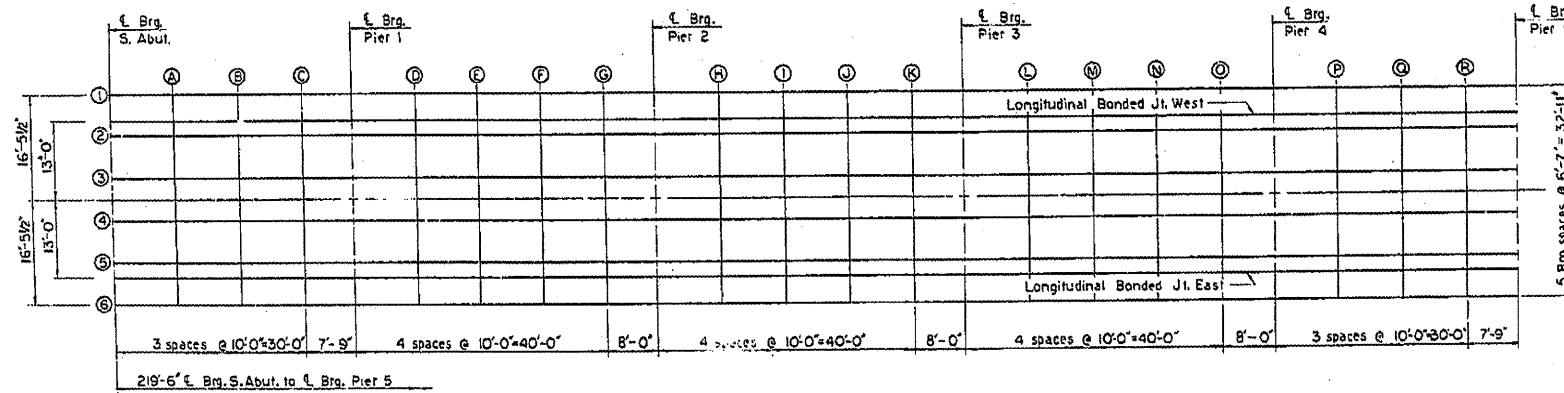
BEAMS 1&6

LONG BONDED CONST. JTS.

BEAMS 2&5

BEAMS 3&4

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEV'S ADJUSTED FOR DEAD LOAD DEFLECTION	LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEV'S ADJUSTED FOR DEAD LOAD DEFLECTION	LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEV'S ADJUSTED FOR DEAD LOAD DEFLECTION	LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEV'S ADJUSTED FOR DEAD LOAD DEFLECTION
BRG. S. ABUT.	955+84.94	16.458	411.991	411.943	BRG. S. ABUT.	955+84.94	13.000	412.013	412.013	BRG. S. ABUT.	955+84.94	9.875	412.067	412.067	BRG. S. ABUT.	955+84.94	3.292	412.170	412.170
A	955+94.94	16.458	412.055	411.071	A	955+94.94	13.000	412.127	412.143	A	955+94.94	9.875	412.161	412.197	A	955+94.94	3.292	412.284	412.300
B	956+04.94	16.458	412.164	412.181	B	956+04.94	13.000	412.236	412.253	B	956+04.94	9.875	412.290	412.308	B	956+04.94	3.292	412.393	412.410
C	956+14.94	16.458	412.268	412.274	C	956+14.94	13.000	412.340	412.346	C	956+14.94	9.875	412.394	412.401	C	956+14.94	3.292	412.497	412.503
BRG. P-1	956+22.69	16.458	412.344	412.344	BRG. P-1	956+22.69	13.000	412.416	412.416	BRG. P-1	956+22.69	9.875	412.470	412.470	BRG. P-1	956+22.69	3.292	412.573	412.573
D	956+32.69	16.458	412.439	412.452	D	956+32.69	13.000	412.511	412.524	D	956+32.69	9.875	412.565	412.578	D	956+32.69	3.292	412.667	412.681
E	956+42.69	16.458	412.527	412.552	E	956+42.69	13.000	412.600	412.624	E	956+42.69	9.875	412.654	412.678	E	956+42.69	3.292	412.756	412.781
F	956+52.69	16.458	412.611	412.633	F	956+52.69	13.000	412.683	412.705	F	956+52.69	9.875	412.737	412.759	F	956+52.69	3.292	412.840	412.862
G	956+62.69	16.458	412.689	412.700	G	956+62.69	13.000	412.761	412.772	G	956+62.69	9.875	412.815	412.826	G	956+62.69	3.292	412.918	412.929
BRG. P-2	956+70.69	16.458	412.798	412.798	BRG. P-2	956+70.69	13.000	412.820	412.820	BRG. P-2	956+70.69	9.875	412.874	412.874	BRG. P-2	956+70.69	3.292	412.977	412.977
H	956+80.69	16.458	412.817	412.829	H	956+80.69	13.000	412.889	412.901	H	956+80.69	9.875	412.943	412.955	H	956+80.69	3.292	413.046	413.058
I	956+90.69	16.458	412.880	412.903	I	956+90.69	13.000	412.952	412.975	I	956+90.69	9.875	413.007	413.029	I	956+90.69	3.292	413.109	413.131
J	957+00.69	16.458	412.939	412.959	J	957+00.69	13.000	413.011	413.031	J	957+00.69	9.875	413.064	413.085	J	957+00.69	3.292	413.168	413.188
K	957+10.69	16.458	412.991	413.001	K	957+10.69	13.000	413.063	413.073	K	957+10.69	9.875	413.117	413.127	K	957+10.69	3.292	413.220	413.230
BRG. P-3	957+18.69	16.458	413.030	413.030	BRG. P-3	957+18.69	13.000	413.102	413.102	BRG. P-3	957+18.69	9.875	413.156	413.156	BRG. P-3	957+18.69	3.292	413.259	413.259
L	957+27.69	16.458	413.073	413.086	L	957+28.69	13.000	413.145	413.158	L	957+28.69	9.875	413.199	413.213	L	957+28.69	3.292	413.304	413.315
M	957+36.69	16.458	413.111	413.135	M	957+38.69	13.000	413.183	413.207	M	957+38.69	9.875	413.237	413.261	M	957+38.69	3.292	413.340	413.364
N	957+46.69	16.458	413.144	413.165	N	957+48.69	13.000	413.216	413.238	N	957+48.69	9.875	413.270	413.292	N	957+48.69	3.292	413.373	413.395
O	957+56.69	16.458	413.171	413.182	O	957+58.69	13.000	413.243	413.254	O	957+58.69	9.875	413.297	413.308	O	957+58.69	3.292	413.400	413.411
BRG. P-4	957+66.69	16.458	413.189	413.189	BRG. P-4	957+66.69	13.000	413.261	413.261	BRG. P-4	957+66.69	9.875	413.315	413.315	BRG. P-4	957+66.69	3.292	413.418	413.418
P	957+76.69	16.458	413.207	413.216	P	957+76.69	13.000	413.279	413.288	P	957+76.69	9.875	413.333	413.342	P	957+76.69	3.292	413.436	413.445
Q	957+86.69	16.458	413.219	413.238	Q	957+86.69	13.000	413.291	413.310	Q	957+86.69	9.875	413.345	413.364	Q	957+86.69	3.292	413.448	413.467
R	957+96.69	16.458	413.226	413.240	R	957+96.69	13.000	413.299	413.312	R	957+96.69	9.875	413.353	413.367	R	957+96.69	3.292	413.455	413.468
BRG. P-5	958+04.69	16.458	413.228	413.228	BRG. P-5	958+04.44	13.000	413.300	413.300	BRG. P-5	958+04.44	9.875	413.355	413.355	BRG. P-5	958+04.44	3.292	413.457	413.457



PLAN

UNIT 1
 TOP OF SLAB ELEVATIONS
 F.A. 821 SEC. 17 BR-1
 WAYNE COUNTY
 STA. 957+9503

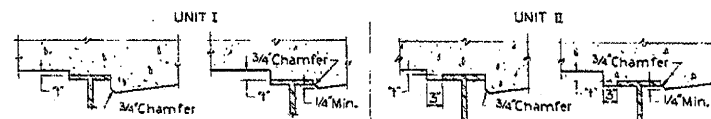
MTA, INCORPORATED
 DESIGNED BY: [Signature] CHECKED BY: [Signature]
 DRAWN BY: [Signature] DATE: 11-5-79 NO. 0701

7 of 16
 74529

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PA. 821	17BR-1	WAYNE	27	7
FED. ROAD DIST. NO. 7	N. LINDEN	PROJECT	Sheet 3 of 18	

**UNIT I
C. ROADWAY**

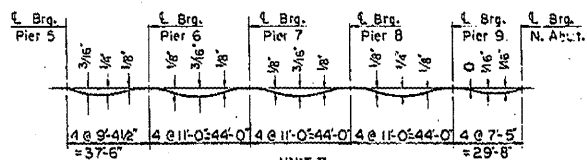
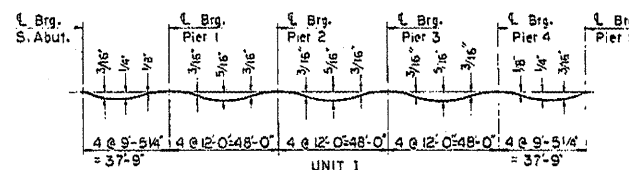
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEV'S ADJUSTED FOR DEAD LOAD DEFLECTION
BRG. S. ABUT.	955+84.94	0	412.221	412.221
A	955+94.94	0	412.355	412.351
B	956+04.94	0	412.444	412.462
C	956+14.94	0	412.548	412.555
BRG. P-1	956+22.69	0	412.625	412.625
D	956+32.69	0	412.719	412.733
E	956+42.69	0	412.807	412.832
F	956+52.69	0	412.891	412.914
G	956+62.69	0	412.970	412.980
BRG. P-2	956+70.69	0	413.029	412.029
H	956+80.69	0	413.097	412.109
I	956+90.69	0	413.161	413.185
J	957+00.69	0	413.219	413.239
K	957+10.69	0	413.272	413.281
BRG. P-3	957+18.69	0	413.310	413.310
L	957+28.69	0	413.354	413.367
M	957+38.69	0	413.391	413.416
N	957+48.69	0	413.424	413.446
O	957+58.69	0	413.451	413.463
BRG. P-4	957+66.69	0	413.470	413.470
P	957+76.69	0	413.487	413.496
Q	957+86.69	0	413.500	413.578
R	957+96.69	0	413.507	413.520
BRG. P-5	958+04.44	0	413.509	413.509



At Minimum Fillet At Maximum Fillet At Minimum Fillet At Maximum Fillet

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

FILLET HEIGHTS



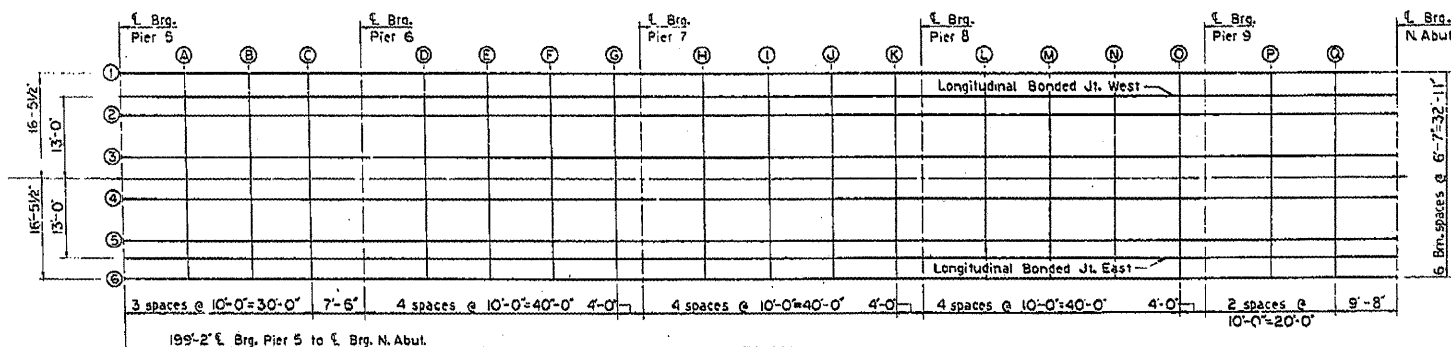
DEAD LOAD DEFLECTION DIAGRAMS

(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 as shown.

**UNIT II
C. ROADWAY**

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEV'S ADJUSTED FOR DEAD LOAD DEFLECTION
BRG. P-5	958+05.94	0	413.509	413.509
A	958+15.94	0	413.506	413.523
B	958+25.94	0	413.497	413.517
C	958+35.94	0	413.484	413.492
BRG. P-6	958+43.44	0	413.470	413.470
D	958+53.44	0	413.447	413.456
E	958+63.44	0	413.419	413.435
F	958+73.44	0	413.385	413.398
G	958+85.44	0	413.346	413.350
BRG. P-7	958+87.44	0	413.329	413.329
H	958+97.44	0	413.282	413.297
I	959+07.44	0	413.251	413.248
J	959+17.44	0	413.174	413.186
K	959+27.44	0	413.112	413.116
BRG. P-8	959+31.44	0	413.086	413.086
L	959+41.44	0	413.016	413.027
M	959+51.44	0	412.941	412.961
N	959+61.44	0	412.861	412.877
O	959+71.44	0	412.775	412.780
BRG. P-9	959+75.44	0	412.739	412.739
P	959+85.44	0	412.646	412.649
Q	959+95.44	0	412.548	412.555
BRG. N. ABUT.	950+05.11	0	412.448	412.448



**PLAN
UNIT II**

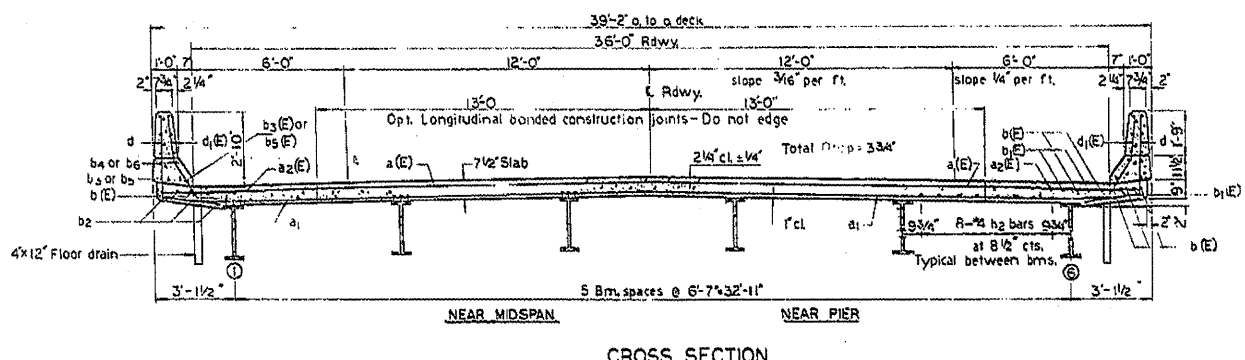
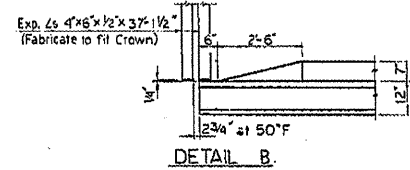
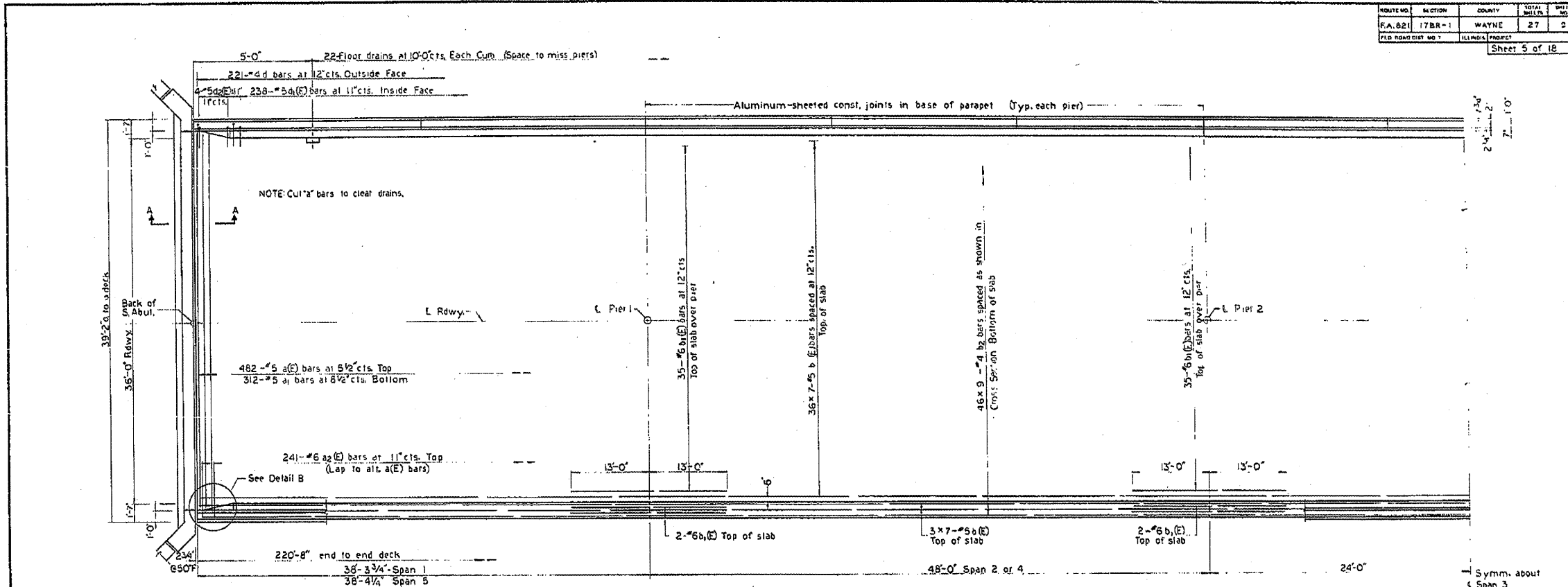
UNITS I & II
TOP OF SLAB ELEVATIONS
FA.RT.821 SEC.17BR-1
WAYNE COUNTY
STA. 957+95.03

MTA, INCORPORATED

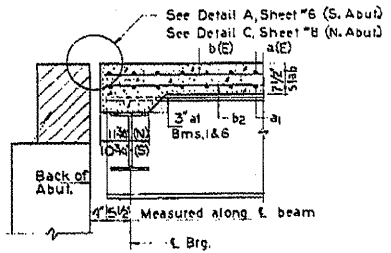
DESIGNED: [Signature] CHECKED: [Signature] DATE: 11-1-79

88 16
74529

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET
F.A. 821	17BR-1	WAYNE	27	2
FIELD ROAD DIST NO.		ILLINOIS PROJECT	Sheet 5 of 18	



Min. Lap Length
 #4 bars 1'-4"
 #5 bars 1'-8"
 #8 bars 3'-0"



Hatched area to be poured after superstructure forms have been removed. Quantity of Class X Conc. included with Superstructure.

SECTION A-A

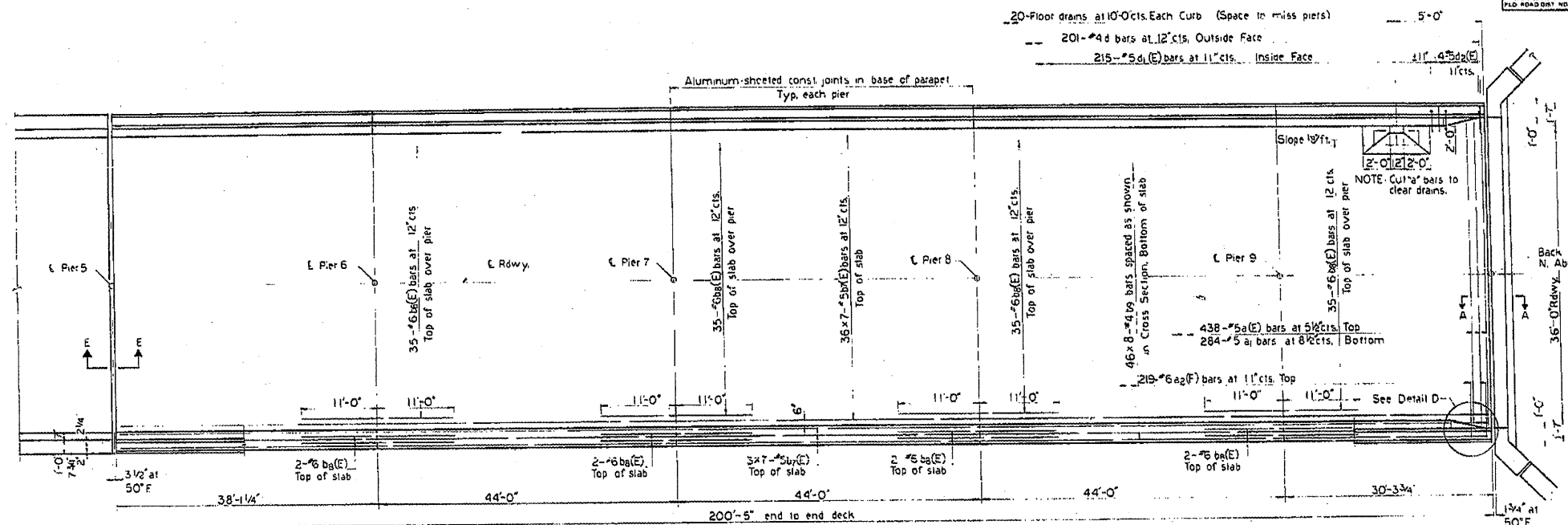
UNIT I
 SUPERSTRUCTURE
 F.A. RT 821 SEC. 17BR-1
 WAYNE COUNTY
 STA. 957 + 95.03

NOTES:
 See sheet #6 for Superstructure details and Bill of Materials.
 Reinforcement bars designated (E) shall be epoxy-coated.
 See Special Provisions.
 Bars shown thus 36#7-#5 etc. indicate 36 lines of bars with 7 lengths per line.

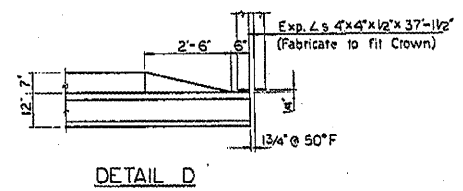
MTA, INCORPORATED
 DESIGNED [Signature] CHECKED [Signature] DATE 11-5-77 NO. 0701

9 of 16
 74529

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA. 821	17BR-1	WAYNE	27	11
FILED ROAD DIST. NO. 7	ILLINOIS PROJECT	Sheet 7 of 18		



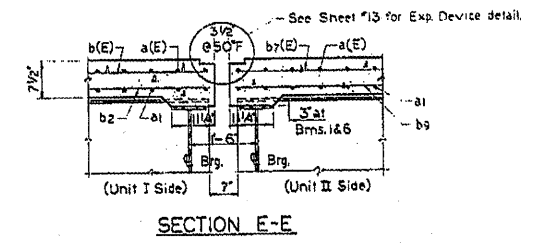
PLAN
UNIT II



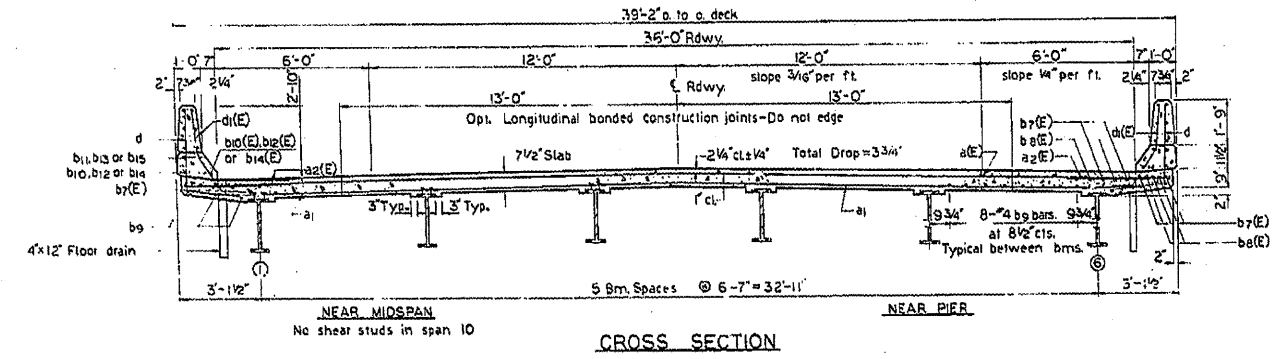
DETAIL D

Min. Lap Length

#4 bars	1'-4"
#5 bars	1'-8"
#6 bars	3'-0"



SECTION E-E



CROSS SECTION

NOTES:
See Sheet #8 for Superstructure details and Bill of Materials.
Reinforcement bars designated (E) shall be epoxy-coated.
See Special Provisions.
Bars shown thus 36 #7-5 etc. indicate 36 lines of bars with 7 lengths per line.

UNIT II
SUPERSTRUCTURE
F.A.R.T. 821 SEC. 17BR-1
WAYNE COUNTY
STA. 957 + 95.03

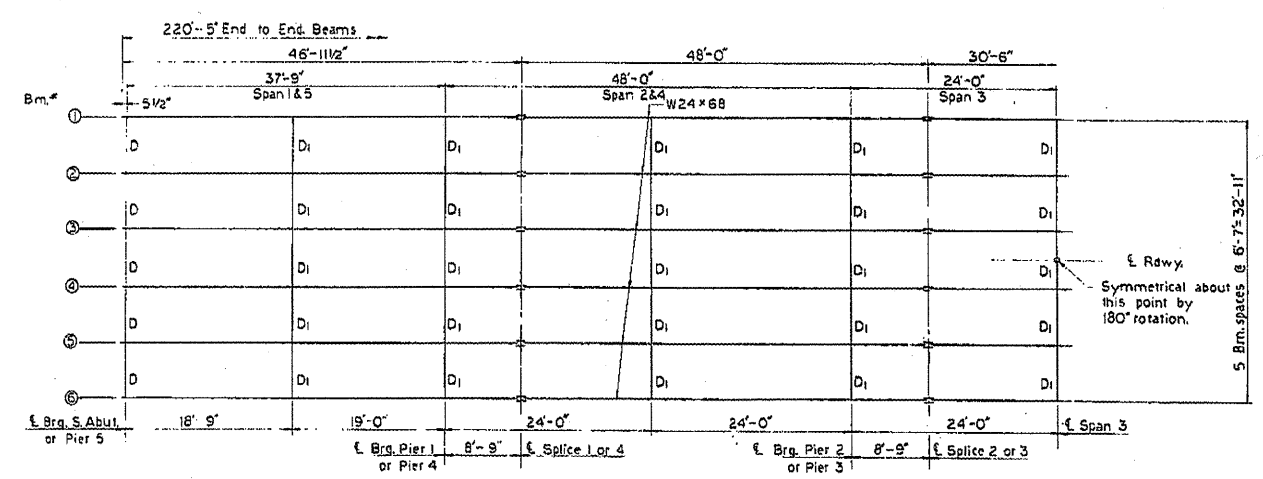
MTA, INCORPORATED

DESIGNED: [Signature] CHECKED: [Signature] DATE: 11-5-78 NO. 0701

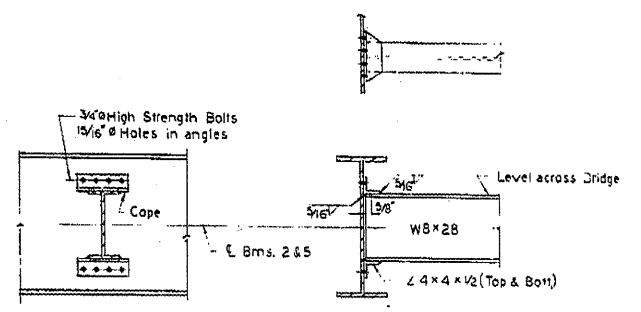
10 8 16
74529

ROUTE NO.	SECT. NO.	COUNTY	TOTAL SHEETS	SHEET NO.
PA. 821	17BR-1	WAYNE	27	13
JOB ROAD DIST. NO. 1		ILLINOIS PROJECT		

Sheet 9 of 18

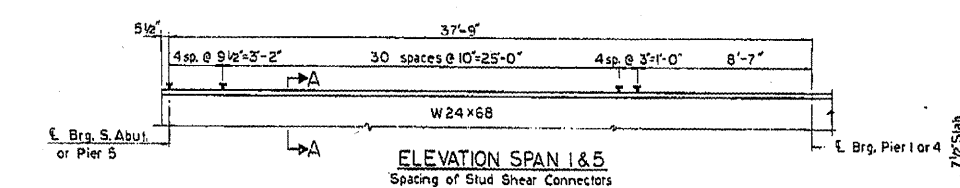


HALF FRAMING PLAN
All Beams are W24x68

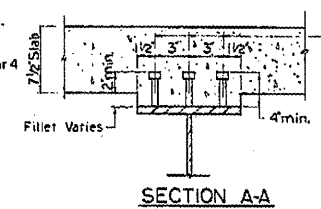


DIAPHRAGM D1
No. Req'd: 45 Each Unit

NOTE: Hardened washers shall be required over 1 5/8" holes in angles.

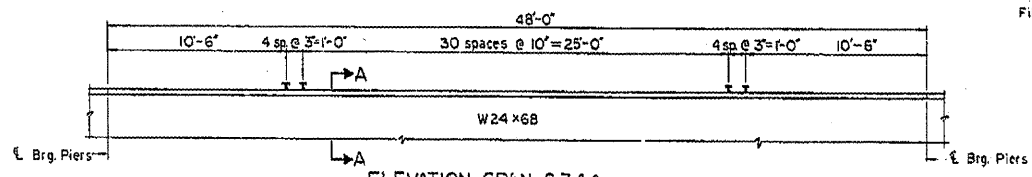


ELEVATION SPAN 1 & 5
Spacing of Stud Shear Connectors

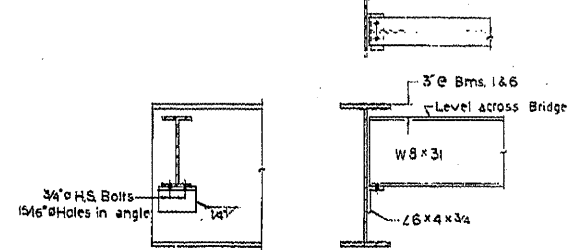


SECTION A-A

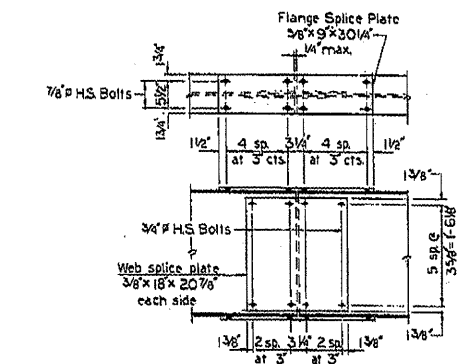
3/4" Granular or solid flux filled headed studs automatically end welded. (No. Req'd = 3510)



ELEVATION-SPAN 2, 3 & 4
Spacing of Stud Shear Connectors



DIAPHRAGM D
No. Req'd: 10 Each Unit



DETAIL OF SPLICE

TOP OF BEAM ELEVATIONS

	Bm. 1 or 6	Bm. 2 or 5	Bm. 3 or 4
ℓ Brg. S. Abut.	411.26	411.40	411.50
ℓ Brg. P-1	411.61	411.75	411.85
ℓ Splice 1	411.69	411.83	411.93
ℓ Brg. P-2	412.01	412.15	412.25
ℓ Splice 2	412.08	412.22	412.32
ℓ Splice 3	412.26	412.40	412.50
ℓ Brg. P-3	412.29	412.43	412.53
ℓ Splice 4	412.44	412.58	412.68
ℓ Brg. P-4	412.46	412.60	412.70
ℓ Brg. Pier 5	412.55	412.69	412.79

The above Elevations are for fabrication only.

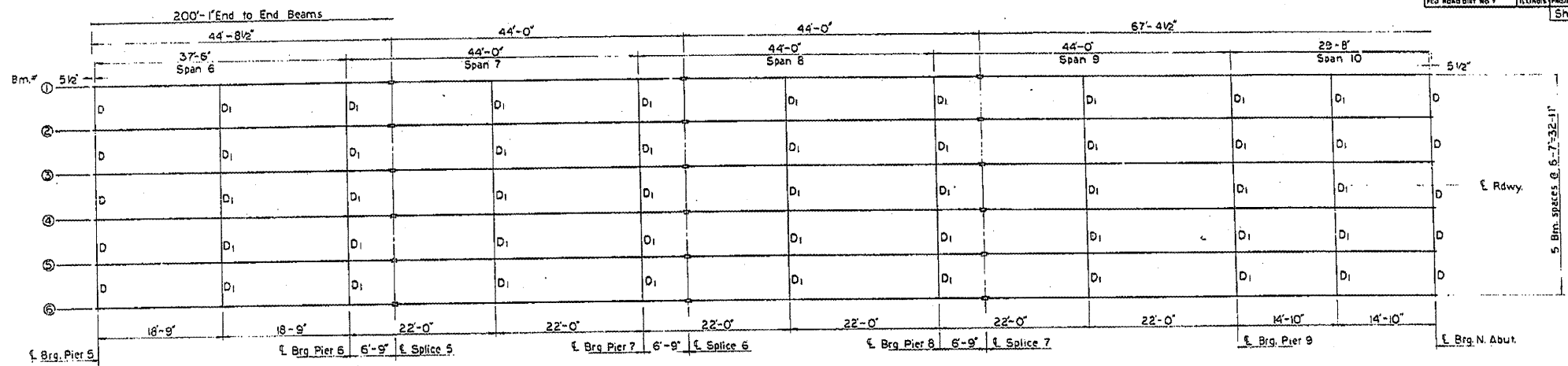
UNIT I
STRUCTURAL STEEL
P.A. 821 SEC. 17BR-1
WAYNE COUNTY
STA. 957+95.03

MTA, INCORPORATED
DESIGNED BY: [Signature] CHECKED BY: [Signature]
DRAWN L.C.M. DATE: 11-5-78 NO. 0701

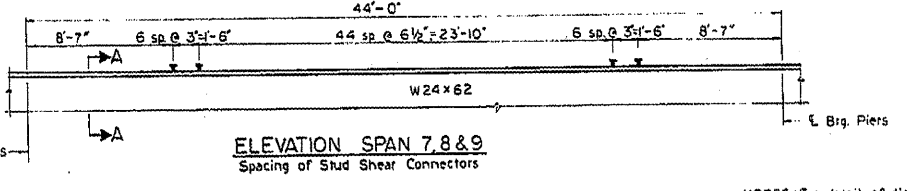
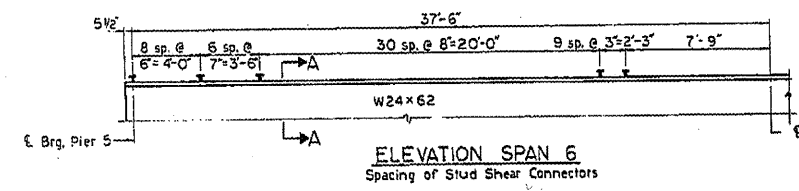
11 of 16

74529

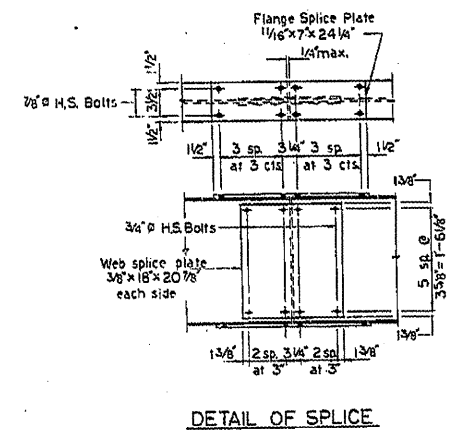
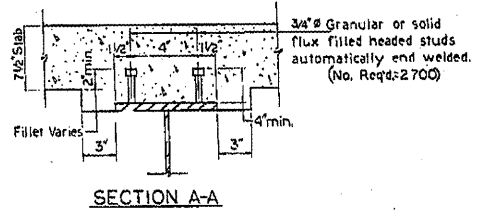
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 821	17BR-1	WAYNE	27	14
FED. ROAD DIST. NO. 7		ILLINOIS PROJECT		Sheet 10 of 18



FRAMING PLAN
All Beams are W24x62



NOTES: For detail of diaphragm D & D₁ see sheet 9.
No stud shear connectors required in span 10.



TOP OF BEAM ELEVATIONS

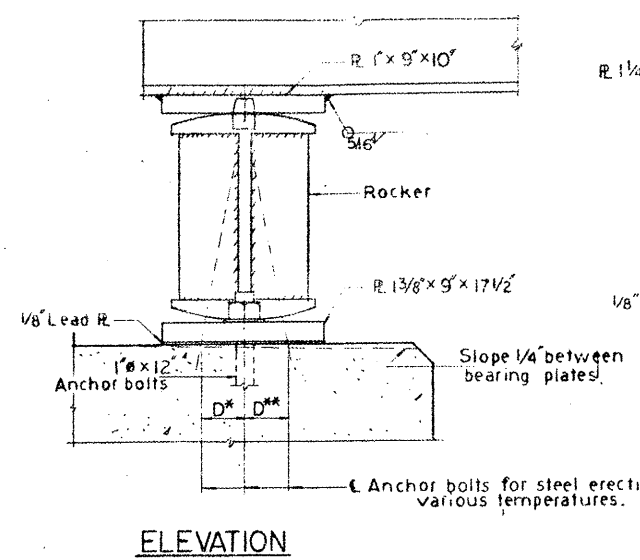
	Bm. 1 of 6	Bm. 2 of 5	Bm. 3 of 4
℄ Brg. Pier 5	412.55	412.69	412.79
℄ Brg. P-6	412.46	412.60	412.70
℄ Splice 5	412.44	412.58	412.68
℄ Brg. P-7	412.32	412.46	412.56
℄ Splice 6	412.30	412.44	412.54
℄ Brg. P-8	412.07	412.21	412.31
℄ Splice 7	412.03	412.17	412.27
℄ Brg. P-9	411.72	411.86	411.96
℄ Brg. N. Abut.	411.48	411.62	411.72

The above Elevations are for fabrication only.

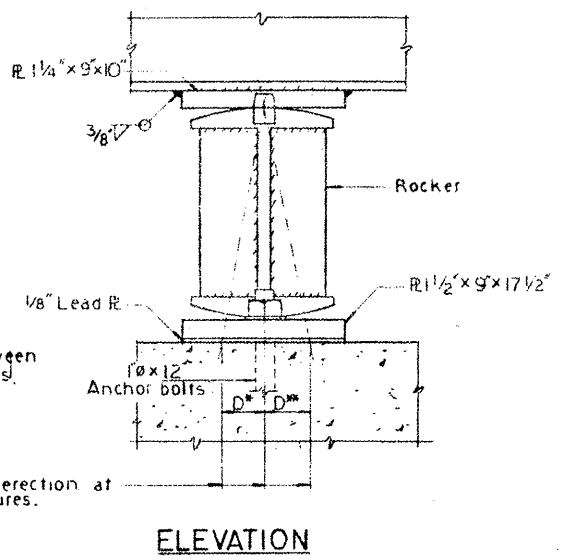
UNIT II
STRUCTURAL STEEL
F.A. RT 821 SEC. 17BR-1
WAYNE COUNTY
STA. 957+95.03

MTA, INCORPORATED
DESIGNED BY [Signature] CHECKED BY [Signature] DATE 11-5-79 0701
DRAWN L.C.M.

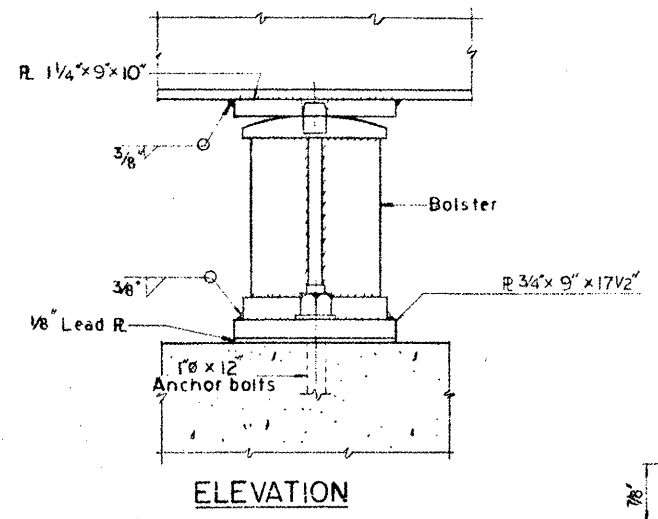
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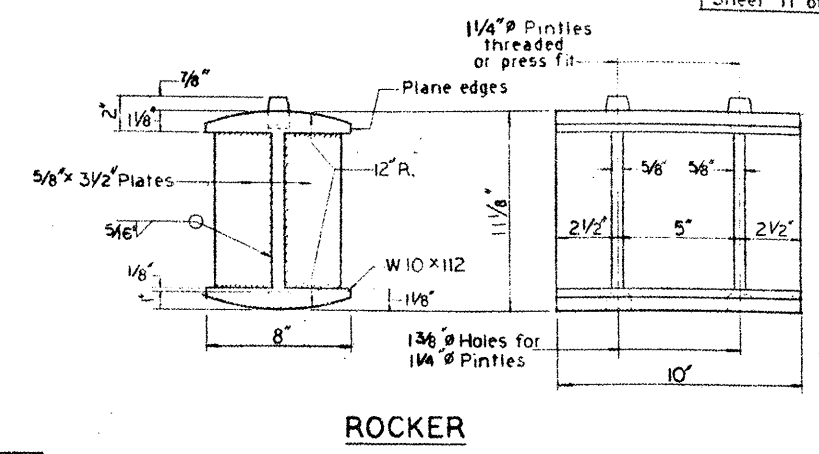
ELEVATION



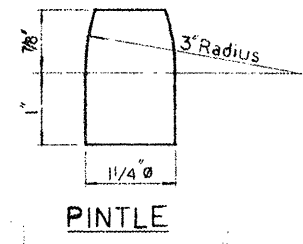
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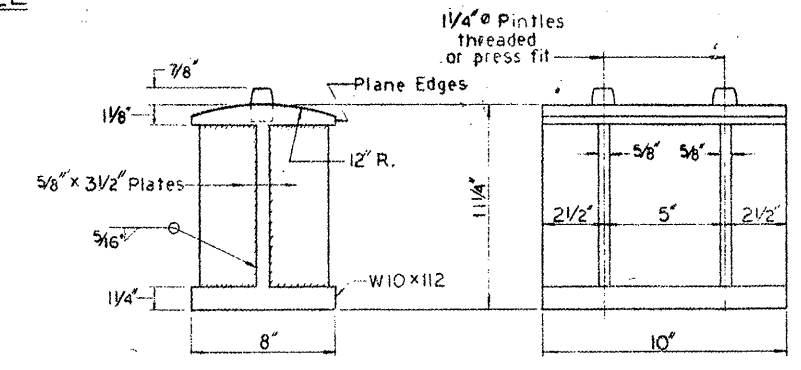
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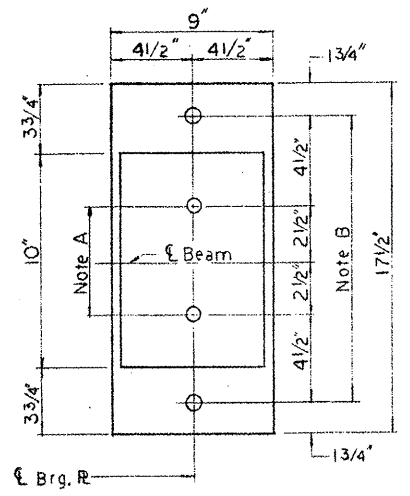
ROCKER



PINTLE

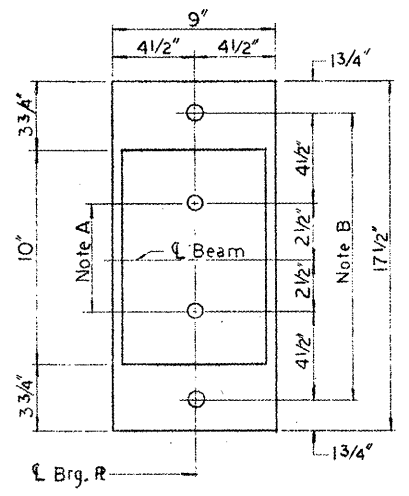


BOLSTER



PLAN

AT S. ABUTMENT & PIER 5



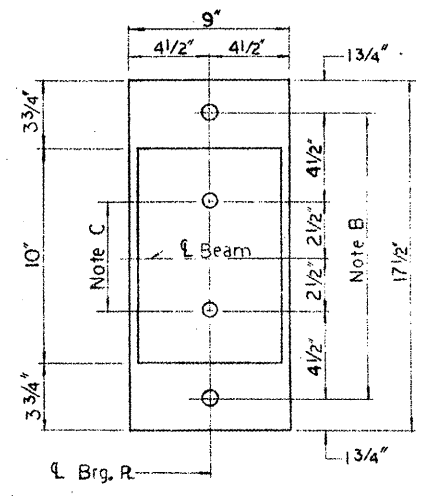
PLAN

AT PIER 1 & 4

NOTE A
 1 3/8\"/>

NOTE B
 1 1/2\"/>

NOTE C
 1 3/8\"/>



PLAN

AT PIER 2 & 3

BEARING ASSEMBLY DETAILS

NOTES ON SETTING OF ANCHOR BOLTS AT EXP. BRGS.

a) D* (Side of brg. away from fixed brg.)
 D* = 1/8\"/>

D** (Side of brg. toward fixed brg.)
 D** = 1/8\"/>

b) After beams have been erected and dimensions D* or D** determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.

INTERIOR BEAM MOMENT TABLE

	4 Span 1, Pier 1	5 Span 2, Pier 2	5 Span 3
I _s (in ⁴)	1830	1830	1830
I _c ³ (in ⁴)	4383	4383	4383
I _c ¹ (in ⁴)	5728	5728	5728
S _s (in ³)	154	154	154
S _c ³ (in ³)	2208	2208	2208
S _c ¹ (in ³)	2426	2426	2426
Q (K/ft)	70	70	70
M _Q (K)	689	1315	704
f _s Q (KSI)	54	102	55
S _Q (K/ft)	29	29	29
M _{SQ} (K)	336	427	414
f _s S _Q (KSI)	18	33	23
M _{L+I} (K)	2734	1532	3244
f _s L+I (KSI)	134	119	160
f _s Total (K)	394	432	448
VR (K)	43.3	37.4	37.1

f_s Total = 1.3(f_sQ + f_sL+I)

INTERIOR BEAM REACTION TABLE

	S. Abut. & P-5	P-1 or P-4	P-2 or P-3
R _Q (K)	14.3	47.3	48.2
R _L (K)	31.2	38.4	38.4
Imp. (K)	9.3	11.3	11.1
R _{TOTAL} (K)	54.8	97.0	97.7

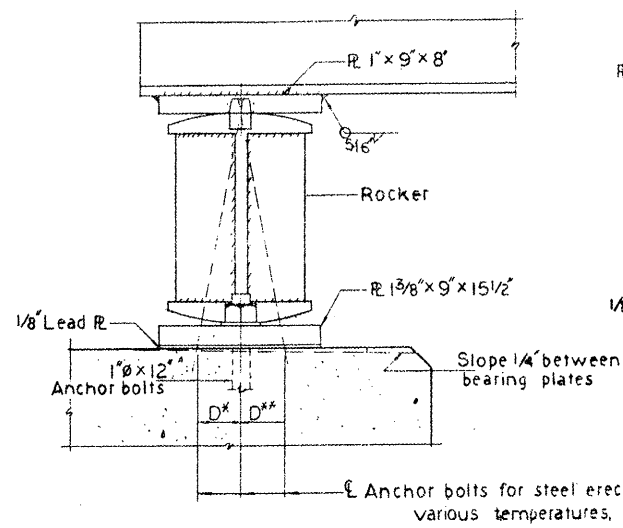
NOTES FOR STRESS TABLE

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_sTotal.
 I_c and S_c are the moment of inertia and section modulus of the composite section used in computing f_sTotal.
 VR is the maximum L+I impact shear range in span used to determine shear connector spacing.

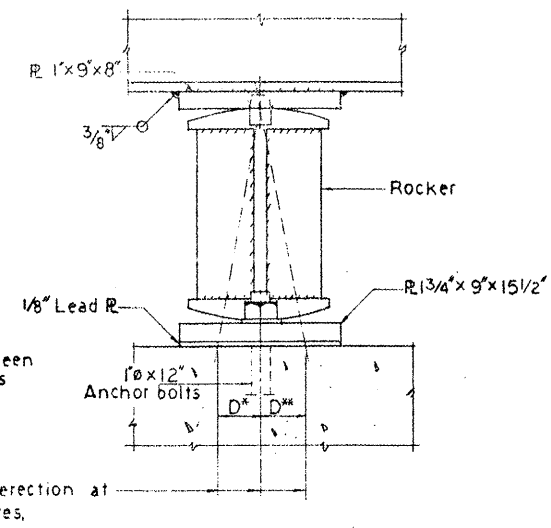
BEARINGS UNIT 1
 F.A.RT 821 SEC. 17BR-1
 WAYNE COUNTY
 STA. 957-95.03

MTA, INCORPORATED

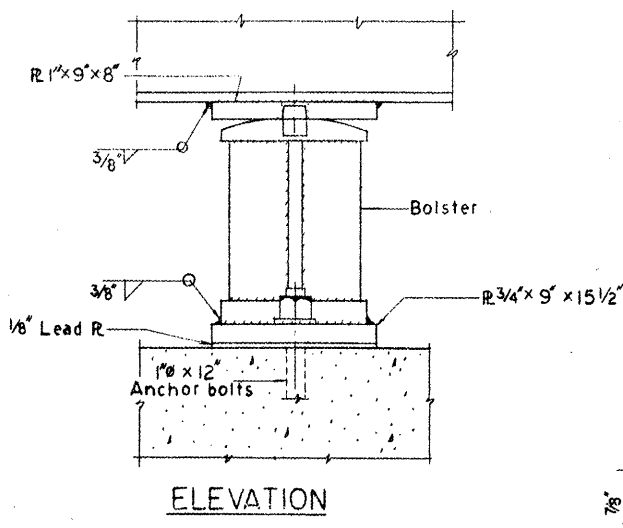
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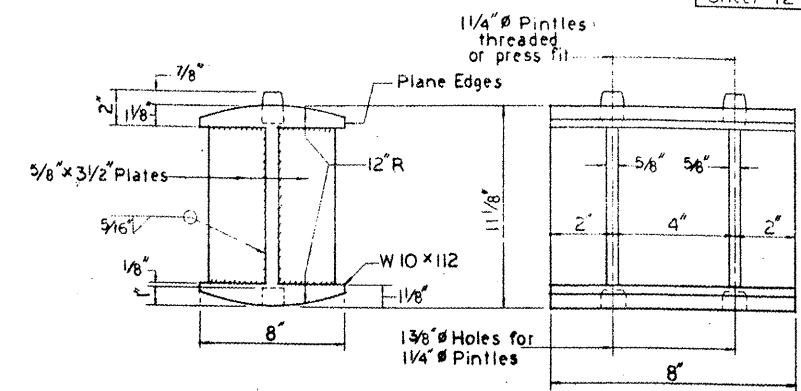
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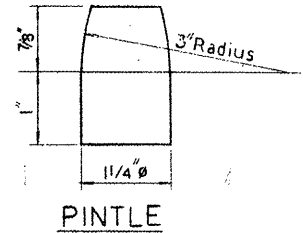
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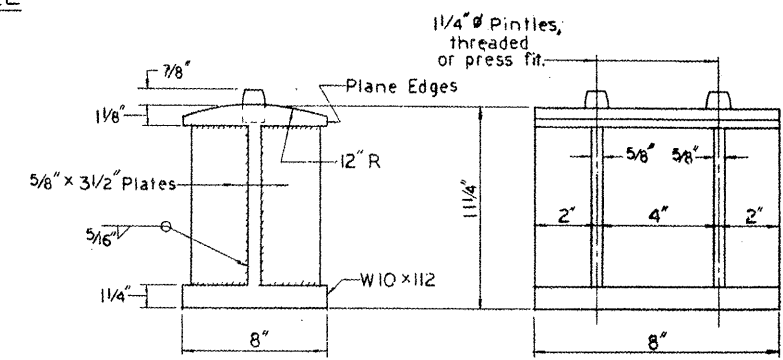
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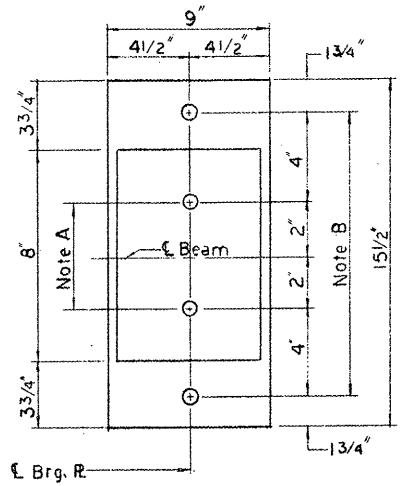
ROCKER



PINTLE

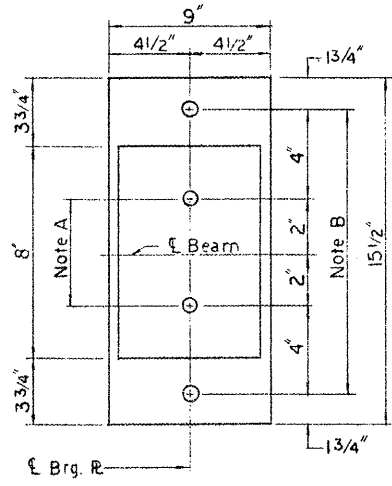


BOLSTER



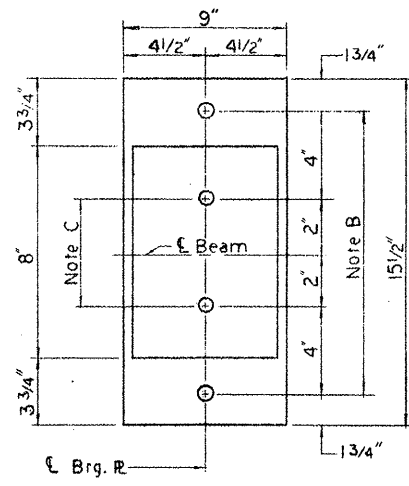
PLAN

AT N. ABUTMENT & PIER 5



PLAN

AT PIER 6 & 9



PLAN

AT PIER 7 & 8

NOTE A
1 3/8" Holes - 1" deep in top R for pintles. Thread or press fit pintles into bottom R.

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

NOTE C
1 3/8" Holes - 1" deep in top R only for 1/4" pintles

BEARING ASSEMBLY DETAILS

NOTES ON SETTING OF ANCHOR BOLTS AT EXP. BRGS.

a) D* (Side of brg. away from fixed brg.)
D* = 1/8" per each 100' of expansion for every 15° fall below the normal temp. of 50° F.

D** (Side of brg. toward fixed brg.)
D** = 1/8" per each 100' of expansion for every 15° rise above the normal temp. of 50° F.

b) After beams have been erected and dimensions D* or D** determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.

INTERIOR BEAM MOMENT TABLE

	4 Span 6	P-6	5 Span 7	P-7	5 Span 8	P-8	5 Span 9	P-9	4 Span 10
I _s (in ⁴)	1550	1550	1550	1550	1550	1550	1550	1550	1550
I _c ³ (in ⁴)	3976		3976		3976		3976		3976
I _c (in ⁴)	5182		5182		5182		5182		5182
S _s (in ³)	131	131	131	131	131	131	131	131	131
S _c ³ (in ³)	1965		1965		1965		1965		1965
S _c (in ³)	217		217		217		217		217
Q (K/r)	70	70	70	70	70	70	70	70	70
M _Q (K)	72	119.7	56.2	111.8	56.5	119.0	63.3	98.3	35.7
f _{sQ} (KSI)	6.6	11.0	5.1	10.2	5.2	10.9	5.8	9.0	3.3
S _Q (K/r)	29	29	29	29	29	29	29	29	29
M _{SQ} (K)	345	38.6	33.8	38.5	33.4	39.3	34.9	34.8	17.2
f _{sSQ} (KSI)	21	3.5	2.1	3.5	2.0	3.6	2.1	3.2	1.6
M _{LI} (K)	2686	141.5	286.6	148.7	287.1	148.9	293.8	141.6	171.8
f _{sLI} (KSI)	120	130	128	136	128	136	131	130	157
*f _{s Total}	37.3	47.0	37.1	47.3	37.1	48.3	38.7	44.0	40.4
VR (K)	432		35.9		35.8		36.0		36.0

* f_{s Total} = 1.3 (f_{sQ} + f_{sSQ}) + 3/8 f_{sLI} + 1

INTERIOR BEAM REACTION TABLE

	P-5	P-6	P-7	P-8	P-9	N.A.
R _Q (K)	14.6	45.	43.6	44.6	40.7	10.4
R _L (K)	31.0	37.6	37.8	37.7	37.4	27.4
Imp. (K)	9.4	11.3	11.0	11.2	11.2	8.3
R _{TOTAL} (K)	55.	93.9	92.9	93.5	89.3	46.1

NOTES FOR STRESS TABLE

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 V + Impact shear range in span used to determine shear connector spacing.

BEARINGS UNIT II
F.A.R.T. 821 SEC. 17BR-1
WAYNE COUNTY
STA. 957+95.03
12B OF 16 74529

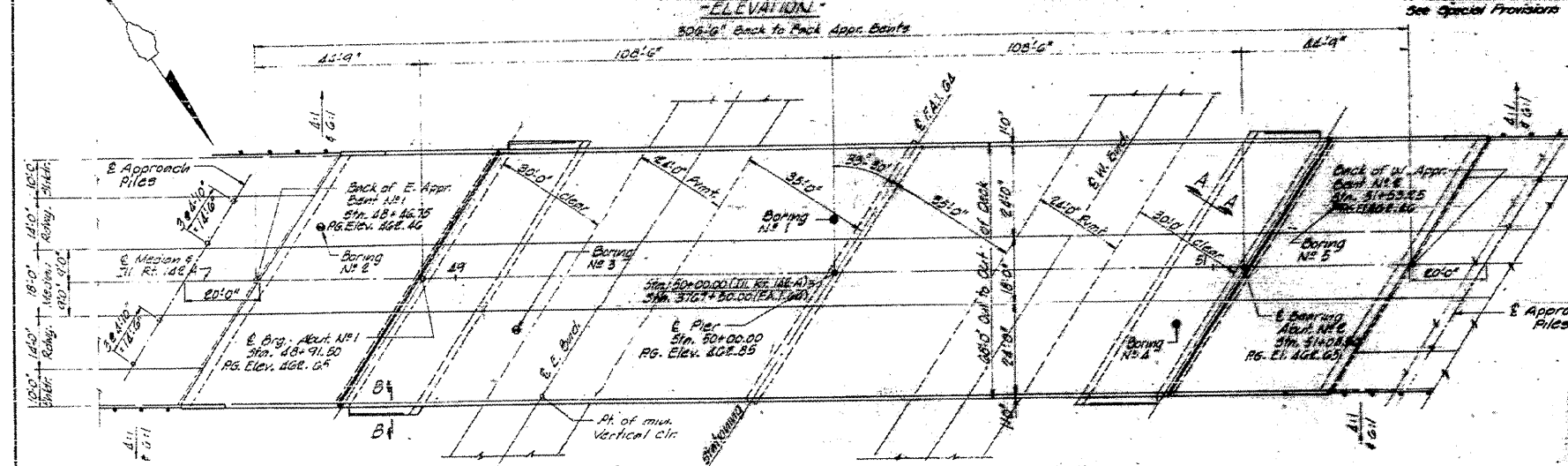
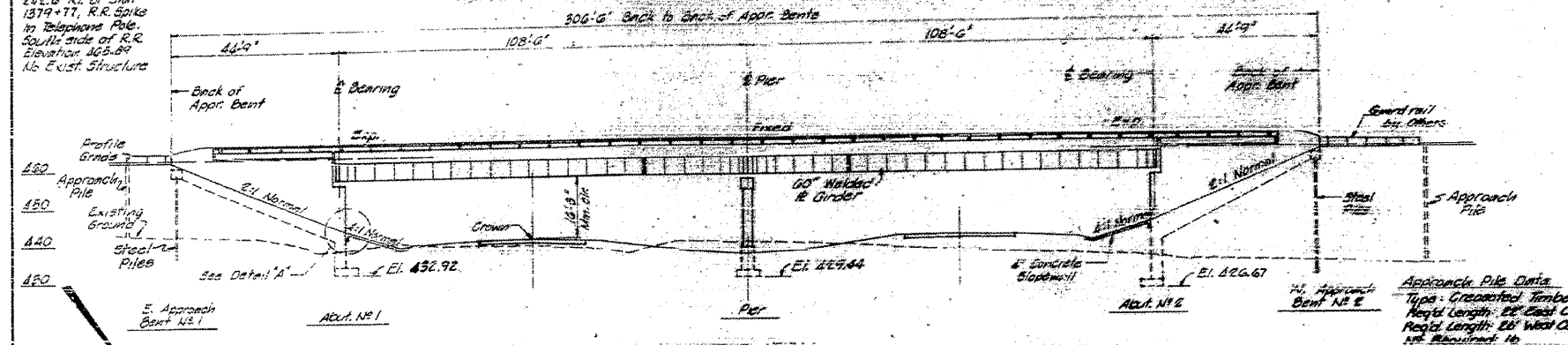
MTA, INCORPORATED

DESIGNED: [Signature]
DRAWN: L.C.M.
CHECKED: [Signature]
DATE: 11-5-79 NO. 0701

BENCH MARK *
 242.0' R.C. of Sta.
 1379+77, R.R. Spike
 in Telephone Pole.
 South side of R.R.
 Elevation 465.89
 No. Exst. Structure

Sheet No. 1
 of 14 Sheets

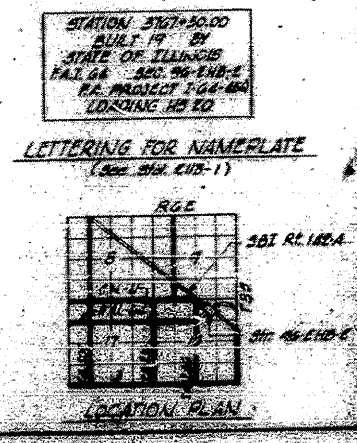
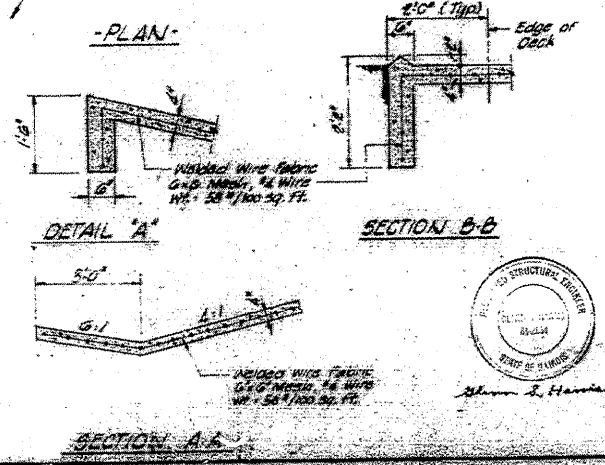
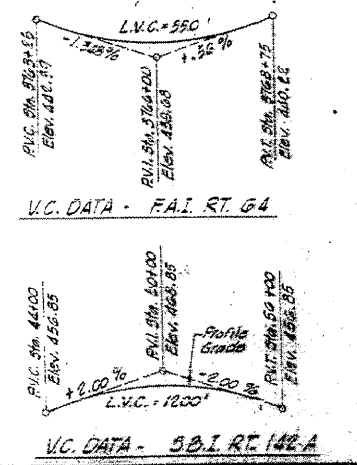
DATE	200	42
BY		
CHECKED		
APPROVED		



-DESIGN LOADING-
 Live HS 20-44 AASHTO 1965 Specifications
 Dead Load includes 25#/sq ft. of Roadway for future wearing surface.

-DESIGN STRESSES-
 Fc = 1400 p.s.i. Superstructure, Curbs & Parapets
 Fc = 1200 p.s.i. Superstructure Slab
 Ft = 75 p.s.i. Footings
 Fy = 50,000 p.s.i. Reinforcing Steel
 Fu = 20,000 p.s.i. Structural Steel (A-36)
 n = 10
 Live Load Deflection:
 1/1000 for non-composite construction

-PRESTRESS BEAMS-
 Fp = 5000 p.s.i.
 Fti = 2000 p.s.i.
 Ffs = 238,000 p.s.i.
 Fsi = 178,500 p.s.i.



-GENERAL NOTES-

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

Field connections shall be bolted using high strength bolts. Bolts 3/4" Ø, open holes 13/16" Ø, unless otherwise noted.

THE BASIC LEAD SILICO CHROMATE PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF STRUCTURAL STEEL.

THE EMBANKMENT CONFIGURATION SHOWN SHALL BE THE MINIMUM EMBANKMENT THAT MUST BE CONSTRUCTED PRIOR TO CONSTRUCTION OF THE ABUTMENTS.

Field welding of construction accessories will not be permitted to the bottom flange of beams or girders nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.

Anchor bolts shall be set before bolting cross frames over supports.

Slope wall shall be reinforced with welded wire fabric 6"x6" mesh, weighing 58# per 100 sq ft.

The Contractor shall drive 2 steel test piles in a permanent location at Bents No. 1 & 2 as directed by the Engineer before ordering the remainder of piles.

An alternate strand pattern using Extra High Strength Prestressing strand (270 KSI) is permitted.

The concrete rail section above the mandatory construction joint at the top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.

Calculated plan weight of Structural Steel = 507,910 lbs.

TOTAL BILL OF MATERIAL

Item	UNIT	QUANTITY	UNIT PRICE	TOTAL
Precast Prestressed Deck - 2 Beam-30	Lin. Ft.	747	147	109,779
Class X Concrete	Cu. Yds.	TOTAL	109.7	14,171
Structural Steel	L.S.	507,910	1.0	507,910
Aluminum Railings	Lin. Ft.	516	5.64	2,912
Reinforcing Bars	Lbs.	507,910	0.000	507,910
Grouted Piles (20" to 30")	Cu. Yds.	325	7.92	2,574
Steel Piles - 24" dia	Feet	2	2	4
Test Piles - 24" dia	Feet	2	2	4
Protective Coat	Sq. Yds.	244.8	2.66	651.1
Name Plates	Each	1	4.10	4.10
Slope Wall (6")	Sq. Yds.	610	1.63	995.7
Clear Cut Excavation for Structures	Cu. Yds.	47	1.0	47.0
Back Excavation for Structures	Cu. Yds.	1.0	1.0	1.0
Bridge Seal-Coater	L.S.	1.0	1.0	1.0

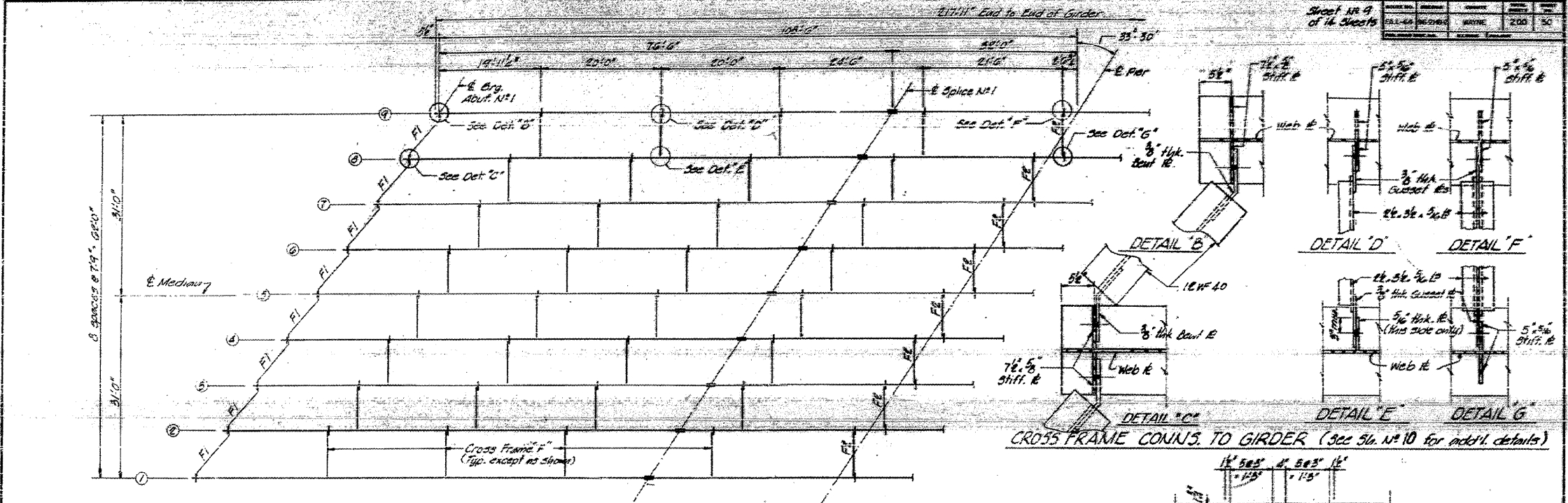
GENERAL PLAN AND ELEVATION

STATE OF ILLINOIS
 DEPT. OF PUBLIC WORKS AND BUILDING
 DIVISION OF HIGHWAYS
 PROJECT 104-484
 LOSCHING NO. 82

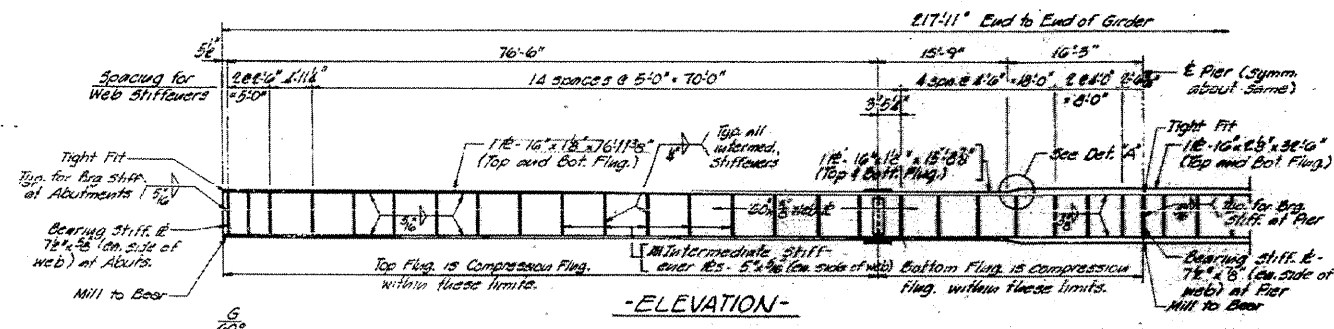
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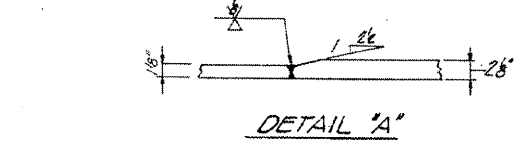
LOCATION 3 SN 096-0032



-FRAMING PLAN-
Symm. about line E of Pier
by 130° Rotation



-ELEVATION-

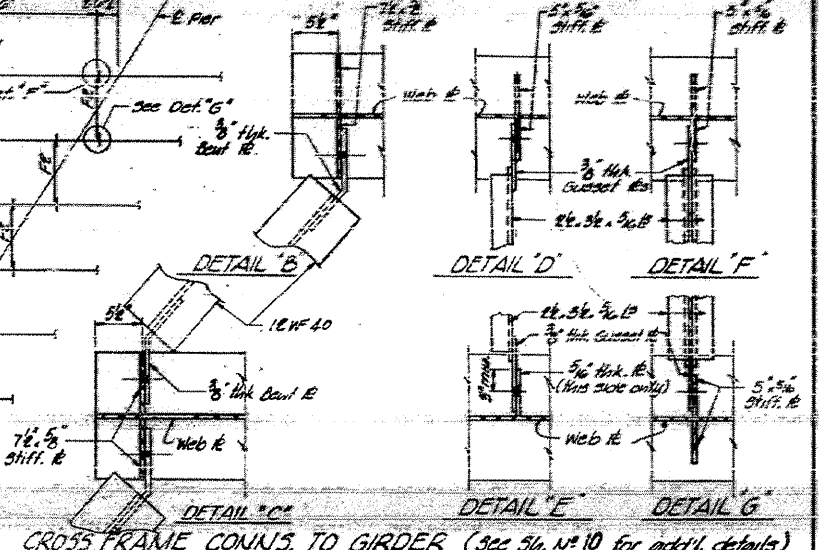


DETAIL 'A'

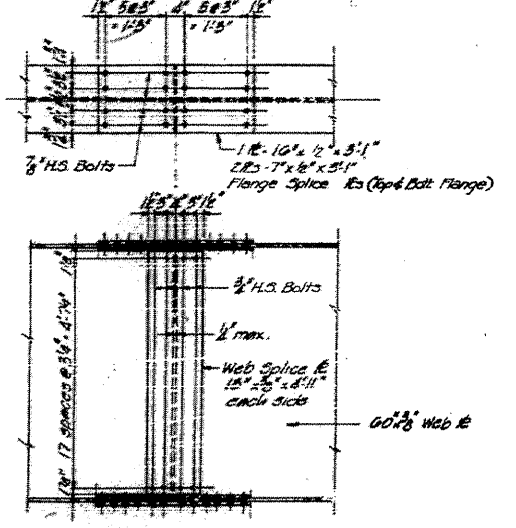
Beam No.	Area (sq ft)
1-9	211.845
2-8	221.601
3-7	221.149
4-6	221.870
5	222.030

Beam No.	Area (sq ft)	Pier
R 8 (12)	24.5	106.6
R E (12)	26.0	81.5
Imp. (12)	10.0	17.5
R total (12)	106.4	251.9

Beam No.	Area (sq ft)	Pier
7 (12)	20.350	72.350
8 (12)	1.50	1.30
10 (12)	9.50	22.51
11 (12)	9.18	10.95
Imp. (12)	1.96	2.55
12 (12)	20.50	35.64
13 (12)	19.0	19.1



CROSS FRAME CONNS. TO GIRDER (See Sp. No. 10 for add'l. details)



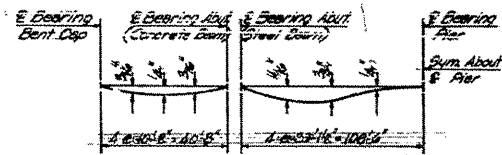
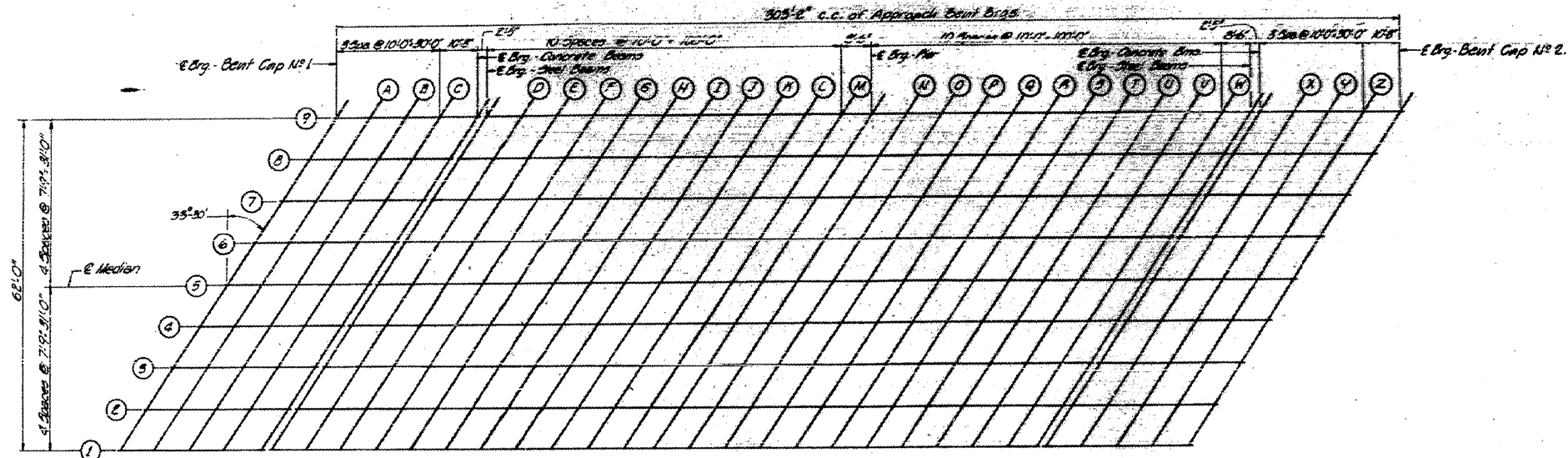
-SPLICE DETAIL-

STRUCTURAL STEEL DETAILS			
NO.	DESCRIPTION	QTY	UNIT
1	1/2" x 10 1/2" x 1/2" STIFFENERS	14	EA
2	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
3	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
4	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
5	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
6	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
7	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
8	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
9	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
10	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
11	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
12	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
13	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
14	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
15	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
16	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
17	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
18	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
19	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
20	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
21	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
22	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
23	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
24	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
25	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
26	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
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29	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
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32	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
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40	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
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44	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
45	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
46	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
47	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
48	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
49	1/2" x 10 1/2" x 1/2" FLANGES	14	EA
50	1/2" x 10 1/2" x 1/2" FLANGES	14	EA

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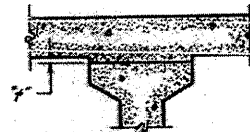
Sheet No. 3
Of 14 Sheets

DATE	DRAWN	CHECKED	APPROVED



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 as shown on Sheet No. 2.



To determine "f". After all precast prestressed beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted algebraically from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown left, minus slab thickness, equals the fillet height "f". A positive value of "f" equals the fillet height above the beam. A negative value of "f", not to exceed "12", equals embedment of the beam above the theoretical bottom of slab elevations.

FILLET HEIGHTS

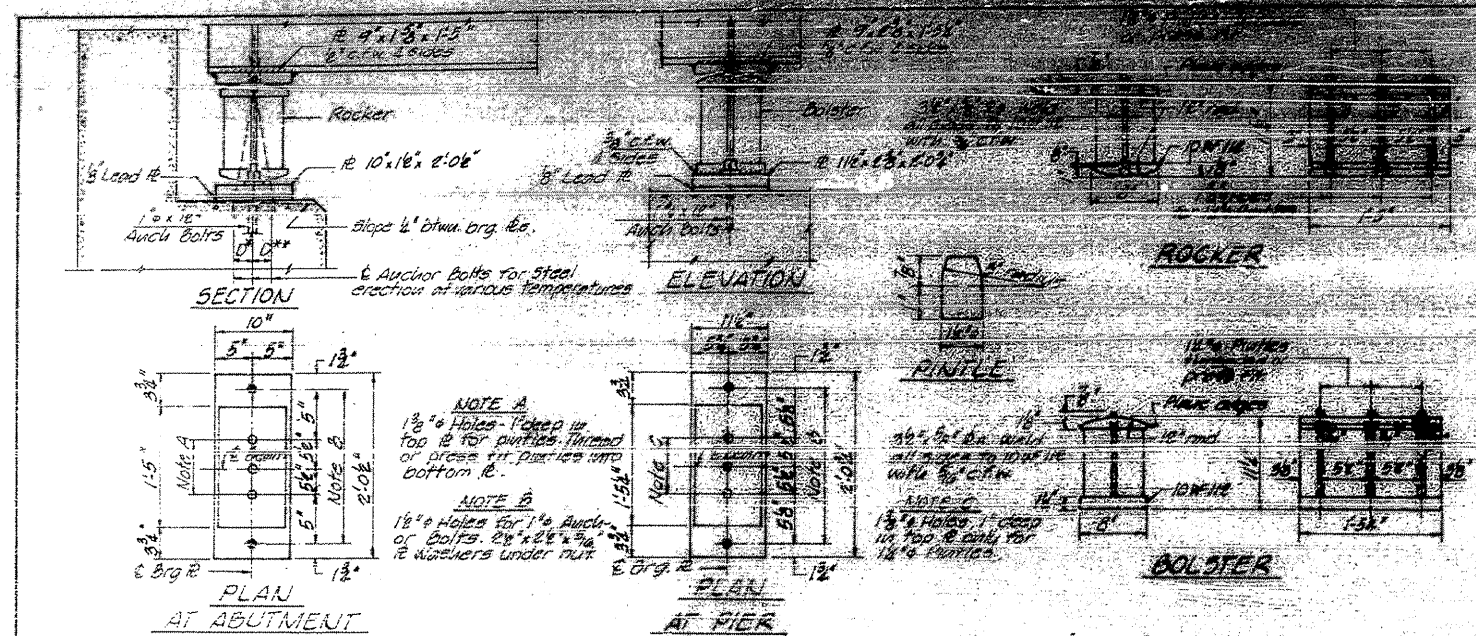


To determine "f". After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown left, minus slab thickness, equals the fillet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

FILLET HEIGHTS

DECK ELEVATIONS		
STATION	ELEVATION	REMARKS

15 8/16
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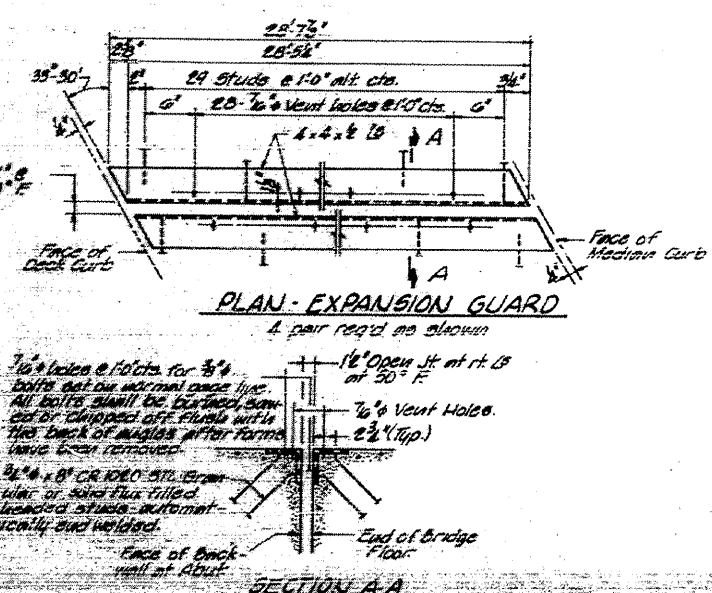
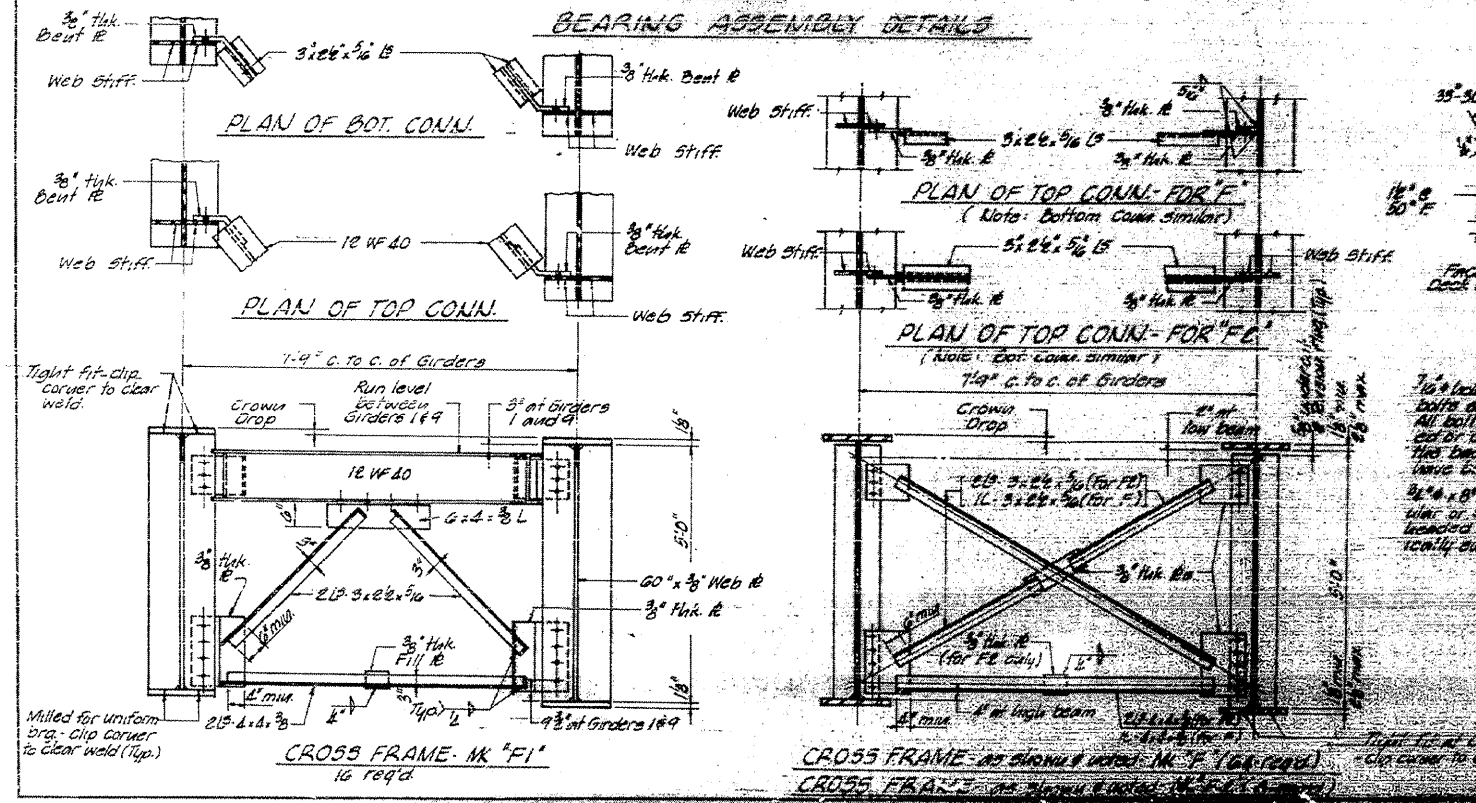


NOTES ON SETTING OF ANCHOR BOLTS AT END BEAMS

D* = 1/2" Side of bearing away from fixed bearing.
 D** = 1/2" per inch 100% expansion for every 20° fall below normal temperature of 50° F.

D** (Side of bearing toward fixed end)
 D*** = 1/2" per 100% of expansion for every 10° rise above normal temperature of 50° F.

After beams have been erected and dimensions of C.P. are checked, holes shall be drilled and anchor bolts shall be placed in place. All fixed anchor bolts may be built into the masonry.



STRUCTURAL STEEL DETAILS

1/2" holes @ 1'-0" cto. for 3/4" bolts set on internal gage line. All bolts shall be burled, sand-blasted or clipped off flange with flat deck of angles after forms have been removed.

3/4" x 8" CR 1080 ATL. Br. or steel flux filled. Loaded studs automatically and welded.

Face of back wall of Abut.

End of Bridge Floor.