

Bench Mark: Sta. 5+698.96, 0.000 offset, Elev. 142.512.

Existing Structure: S.N. 006-0083 Built in 1965 as S.B.I. Rte. 29, Section 22B-1, at Sta. 5+955.600.  
Existing structure consists of a 4-span reinforced concrete deck on steel WF stringers supported on concrete pile bent spill thru abutments and timber pile supported solid piers. 93.954 m Bk.-Bk. abuts, varies 11.411 m to 10.973 m O.-O. deck. Concrete deck to be removed and replaced.  
One lane of traffic to be maintained utilizing stage construction.

No salvage

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET	SHEET NO. 1
F.A.S. 2245	22B-1D	BUREAU	66	11	26 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

GENERAL NOTES

Fasteners shall be high strength bolts. Bolts M20, open holes 22 mm  $\phi$ , unless otherwise noted.  
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 diaphragms over supports.  
Reinforcement bars shall conform to the requirements of AASHTO M 31M, M 42M or M 53M Grade 400.  
Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Prior to pouring the new concrete for the deck, all loose rust, loose mill scale and all other loose, detrimental foreign material shall be removed from the existing shear studs and from the portions of flanges of beams in contact with concrete. The removal shall be accomplished with appropriate hand tools. Cost shall be included with Removal of Existing Concrete Deck.

All dimensions are in millimeters (mm) except as noted.  
The existing structural steel coating contains lead. The Contractor should take appropriate precautions to deal with the presence of lead on this project.

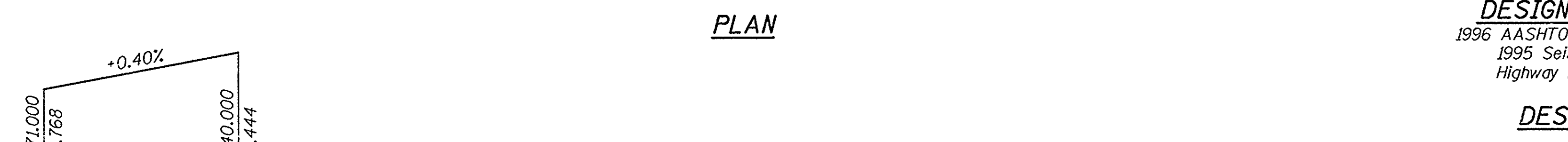
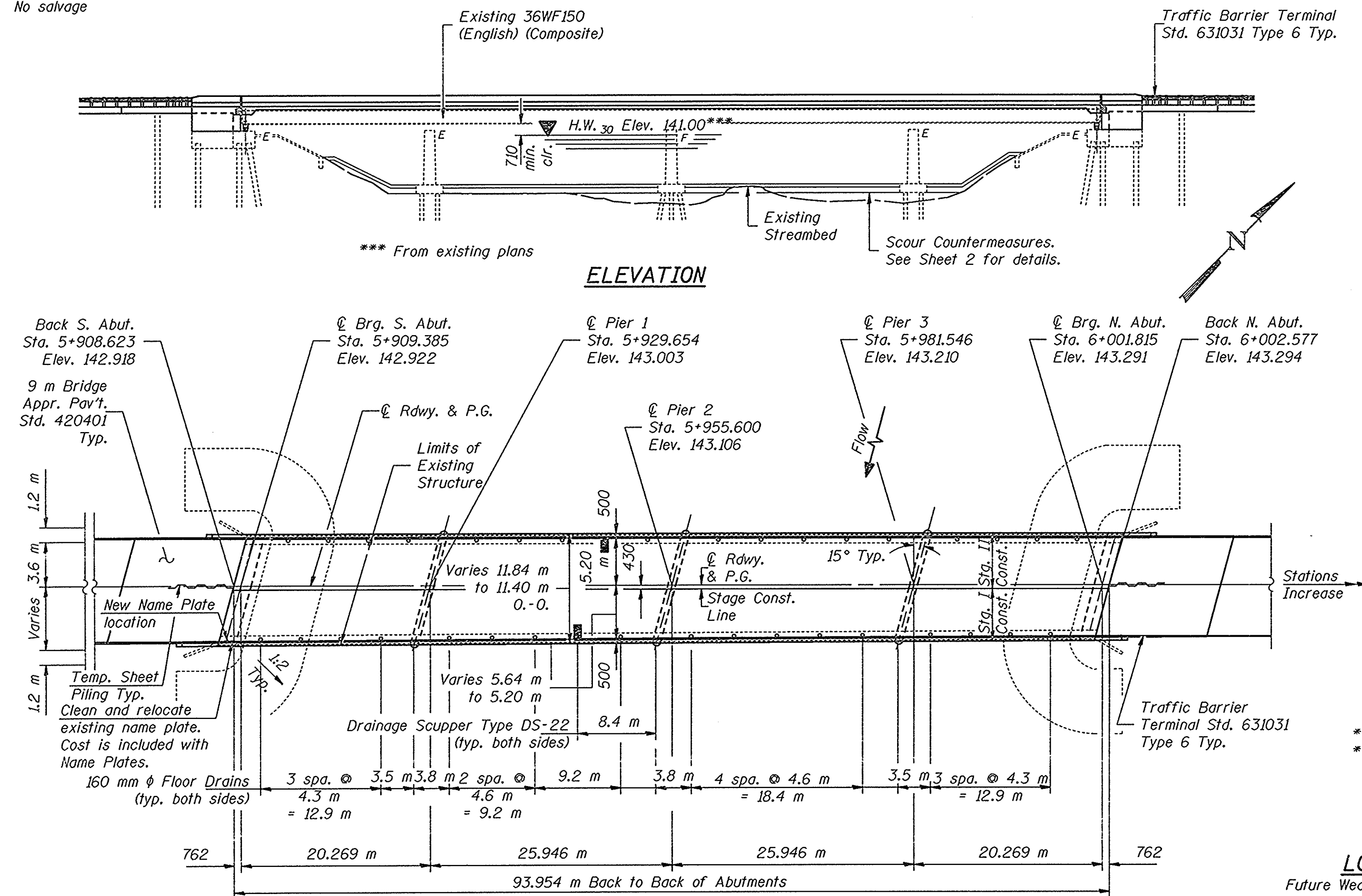
Field painting of structural steel shall be done under a separate painting contract.  
All new structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M 300, Type 1.

Existing structural steel shall only be cleaned as required by the Special Provision Cleaning and Painting Adjacent Areas of Existing Steel Structures.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 3 mm. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 3 mm adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Concrete Deck	Each	1		1
Floor Drains	Each	34		34
Elastomeric Bearing Assembly, Type II	Each	12		12
Stud Shear Connectors	Each	2382		2382
Jack and Remove Existing Bearings	Each	12		12
Name Plates	Each	1		1
* Wire Enclosed Riprap, Class A4	m <sup>2</sup>		1297	1297
Stone Riprap, Class A5	m <sup>2</sup>		1014	1014
Filter Fabric for use with Riprap	m <sup>2</sup>		1014	1014
** Protective Coat	m <sup>2</sup>	1212		1212
Concrete Removal	m <sup>3</sup>		23.8	23.8
Structure Excavation	m <sup>3</sup>		56	56
Neoprene Expansion Joint, 50 mm	m	22.0		22.0
Concrete Structures	m <sup>3</sup>		28.7	28.7
Concrete Superstructure	m <sup>3</sup>	286.0		286.0
Bridge Deck Grooving	m <sup>2</sup>	930		930
Furnishing and Erecting Structural Steel	kg	2360		2360
Structural Steel Removal	kg	1410		1410
Reinforcement Bars, Epoxy Coated	kg	42090	2660	44750
Temporary Sheet Piling	m <sup>2</sup>		45.5	45.5
Bar Splicers	Each	898		898
Drainage Scuppers	Each	2		2
Quarry Run Granular Embankment	m <sup>3</sup>		103	103



STATION 5+955.600  
REBUILT 200 BY  
STATE OF ILLINOIS  
F.A.S. RT. 2245 - SECT. 22B-1D  
F.A. PROJECT:  
LOADING MS18  
STR. NO. 006-0083

DESIGNED: Eric J. Carlson  
CHECKED: C. M. Evey  
DRAWN: W.D.C. / M.B.M.  
CHECKED: E.J.C. / C.M.E.

EXAMINED: Thomas J. ...  
PASSED: ...

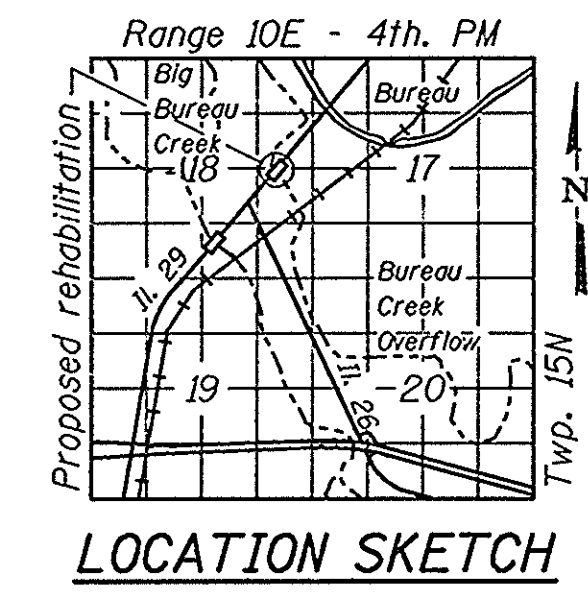
STATE OF ILLINOIS  
REGISTERED PROFESSIONAL ENGINEER  
081-004625  
EXPIRES 11-30-2000

LOADING MS18  
Future Wearing Surface not allowed.  
DESIGN SPECIFICATIONS  
1996 AASHTO with 1997 and 1998 Interims  
1995 Seismic Retrofitting Guidelines for  
Highway Bridges FHWA/RD-94/052

DESIGN STRESSES  
Existing Structure  
 $f_c = 10$  MPa  
 $f_s = 140$  MPa (reinforcement)  
 $f_y = 250$  MPa (structural steel)  
 $v = 520$  kPa (footings)

New Construction  
 $f_y = 400$  MPa (reinforcement)  
 $f_c = 24$  MPa  
 $f_y = 250$  MPa (structural steel AASHTO M 270M, grade 250)

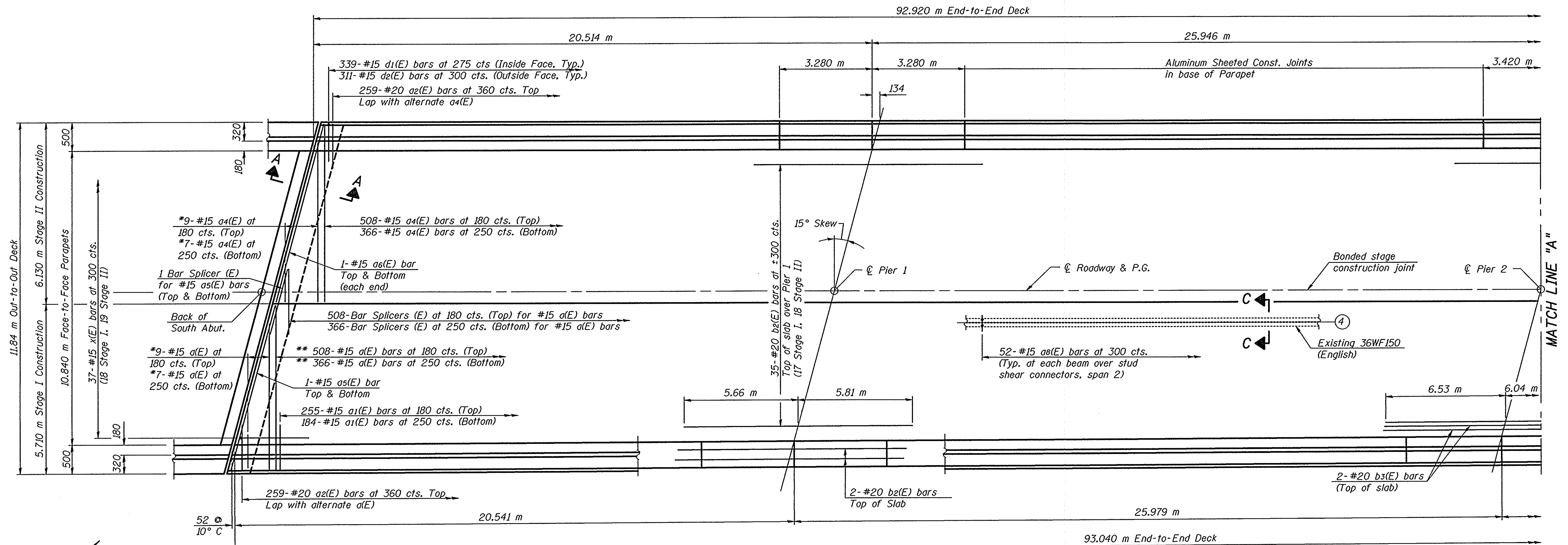
SEISMIC DATA  
Seismic Performance Category (SPC) = A  
Bedrock Acceleration Coefficient (A) = 0.038g  
Site Coefficient (S) = 1.2



GENERAL PLAN & ELEVATION  
ILLINOIS ROUTE 26 AND 29 OVER  
BIG BUREAU CREEK OVERFLOW  
F.A.S. ROUTE 2245 - SECTION 22B-1D  
BUREAU COUNTY  
STATION 5+955.600  
STRUCTURE NO. 006-0083

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 8
F.A.S. 2245	22B-1D	BUREAU	66	18	26 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			



PLAN

\* Order a(E) and a4(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

Notes: See Sheets 9 thru 12 of 26 for superstructure details and Bill of Material.  
Reinforcement bars designated (E) shall be epoxy coated.  
Bars indicated thus 34 x 11-#15 etc. indicates 34 lines of bars with 11 lengths per line.  
See Sheets 10 and 11 of 26 for parapet reinforcement.  
See Sheet 12 of 26 for Section C-C.

**MINIMUM BAR LAP**  
#15 Bar = 510

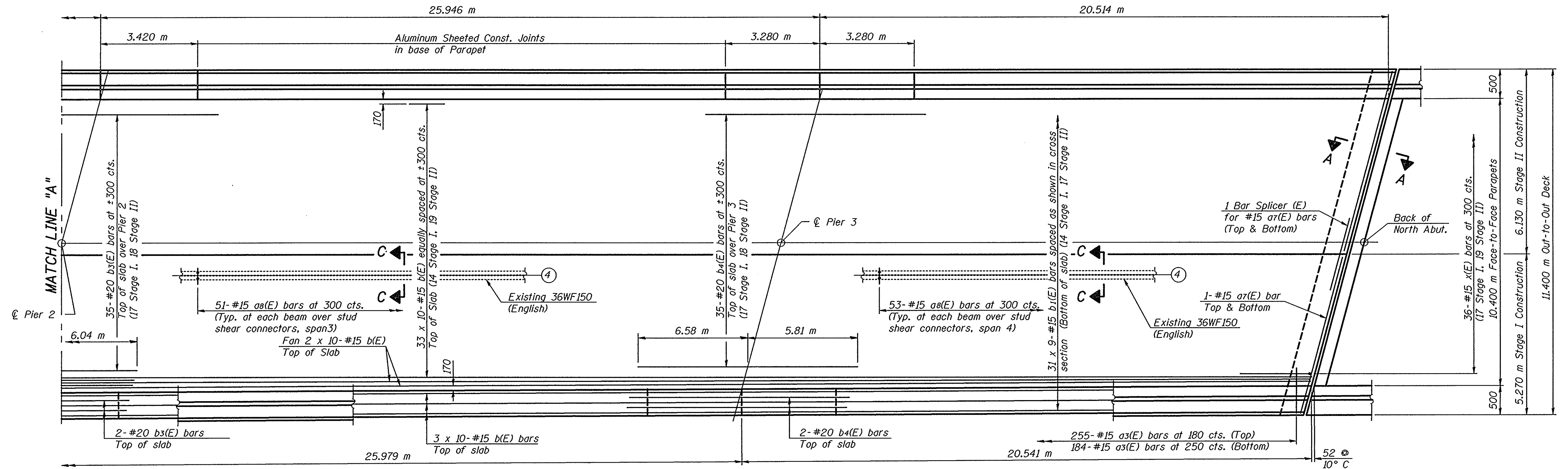
DESIGNED	E.J.C.
CHECKED	C.M.E.
DRAWN	M.B.M.
CHECKED	E.J.C. / C.M.E.

November 18, 1999  
EXAMINED *Thomas J. Donagale*  
PASSED *Ralph V. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

**SUPERSTRUCTURE**  
F.A.S. ROUTE 2245 SEC. 22B-1D  
BUREAU COUNTY  
STATION 5+955.600

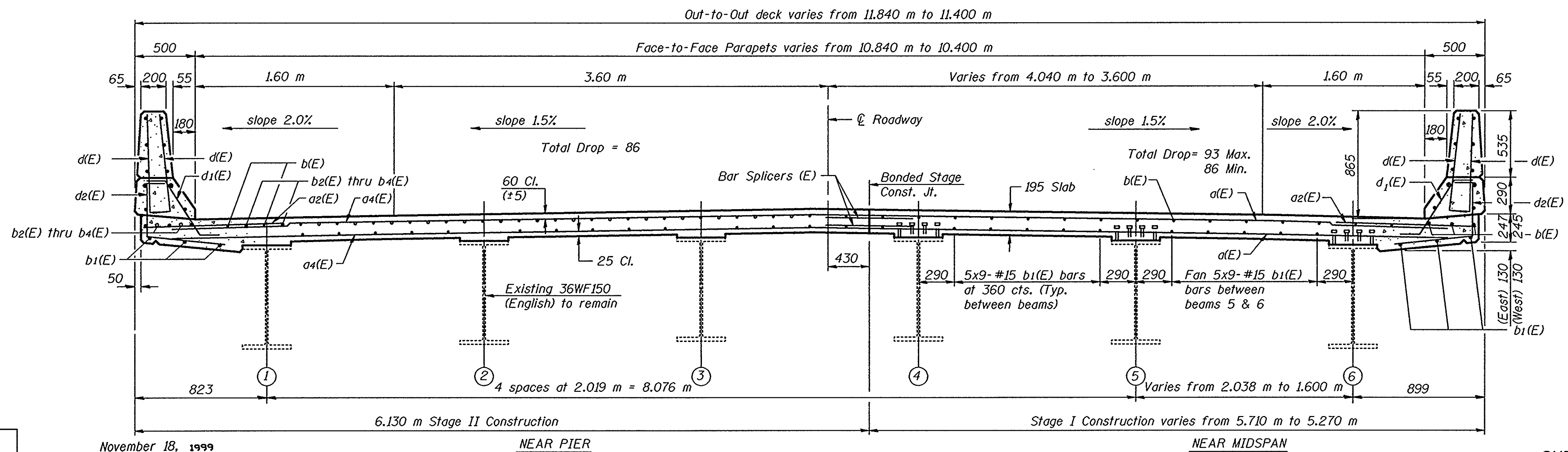
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 9 26 SHEETS
F.A.S. 2245	22B-1D	BUREAU	66	19	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT:			



PLAN

Note: Work this sheet with sheet 8 of 26.



CROSS SECTION  
(Looking North)

DESIGNED	E.J.C.
CHECKED	C.M.E.
DRAWN	M.B.M.
CHECKED	E.J.C. / C.M.E.

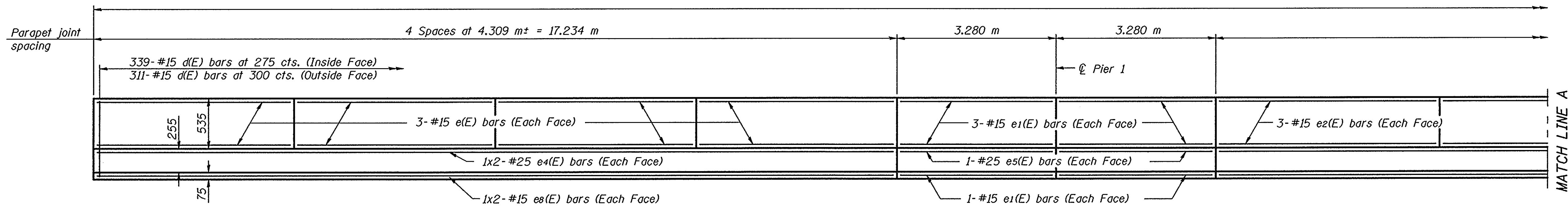
November 18, 1999  
EXAMINED *Thomas J. Domagala*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

SUPERSTRUCTURE  
F.A.S. ROUTE 2245 SEC. 22B-1D  
BUREAU COUNTY  
STATION 5+955.600

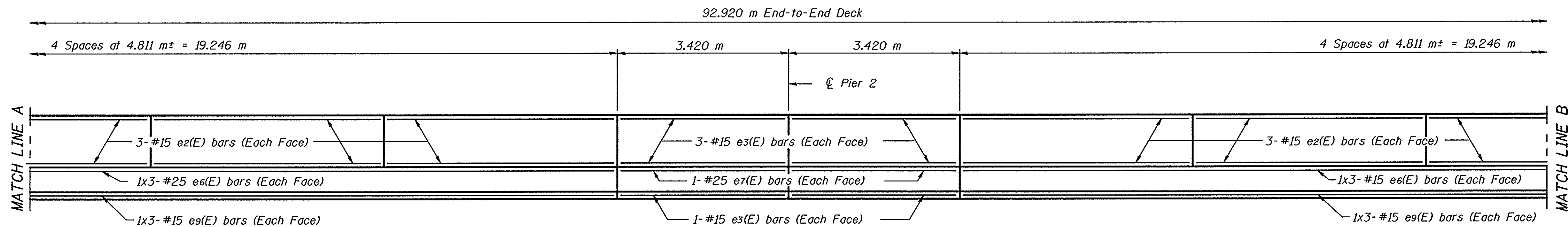


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

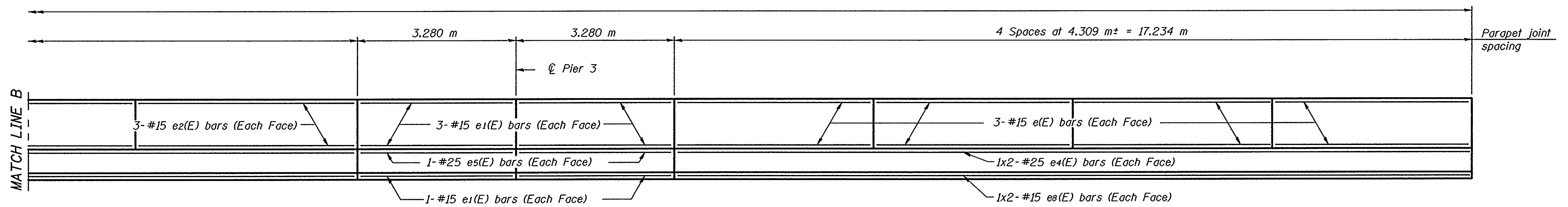
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F.A.S. 2245	22B-1D	BUREAU	66	20	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



**WEST PARAPET ELEVATION**  
(Inside face of West parapet, looking West)



**WEST PARAPET ELEVATION**  
(Inside face of West parapet, looking West)



**WEST PARAPET ELEVATION**  
(Inside face of West parapet, looking West)

DESIGNED	E.J.C.
CHECKED	C.M.E.
DRAWN	M.B.M.
CHECKED	E.J.C. / C.M.E.

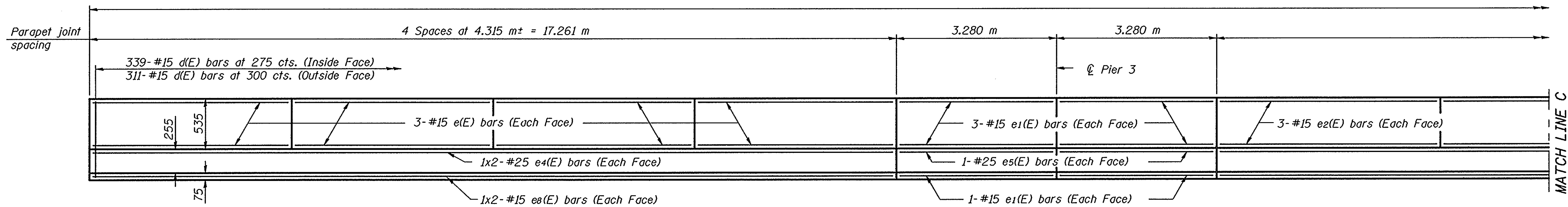
November 18, 1999  
 EXAMINED *Thomas J. Donagale*  
 ENGINEER OF BRIDGE DESIGN  
 PASSED *Ralph E. Anderson*  
 ENGINEER OF BRIDGES AND STRUCTURES

**MINIMUM BAR LAP**  
 #15 Bar = 490  
 #25 Bar = 1.01 m

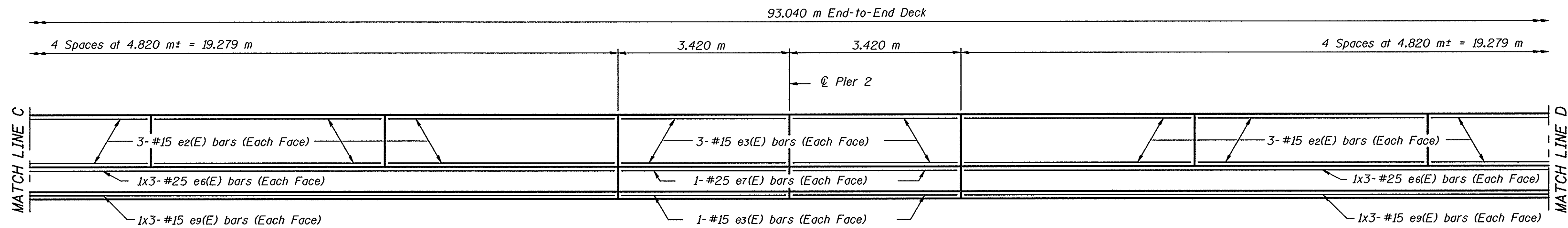
**SUPERSTRUCTURE DETAILS**  
**F.A.S. ROUTE 2245 SEC. 22B-1D**  
**BUREAU COUNTY**  
**STATION 5+955.600**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

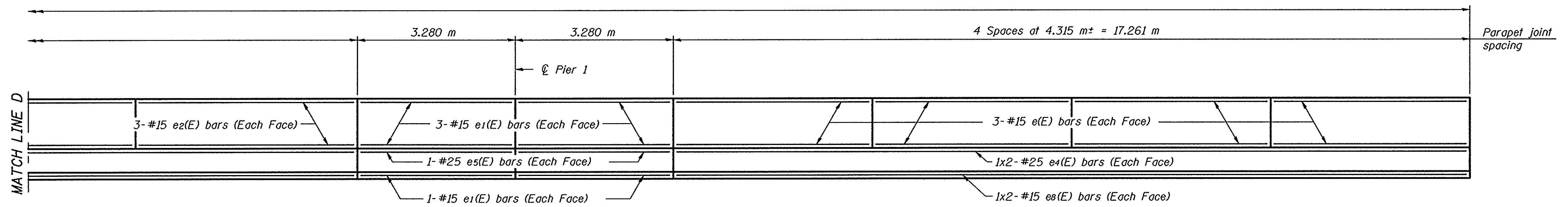
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F.A.S. 2245	22B-1D	BUREAU	66	21	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			



**EAST PARAPET ELEVATION**  
(Inside face of East parapet, looking East)



**EAST PARAPET ELEVATION**  
(Inside face of East parapet, looking East)



**EAST PARAPET ELEVATION**  
(Inside face of East parapet, looking East)

DESIGNED	E.J.C.
CHECKED	C.M.E.
DRAWN	M.B.M.
CHECKED	E.J.C. / C.M.E.

November 18, 1999  
EXAMINED *Thomas J. Donagale*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

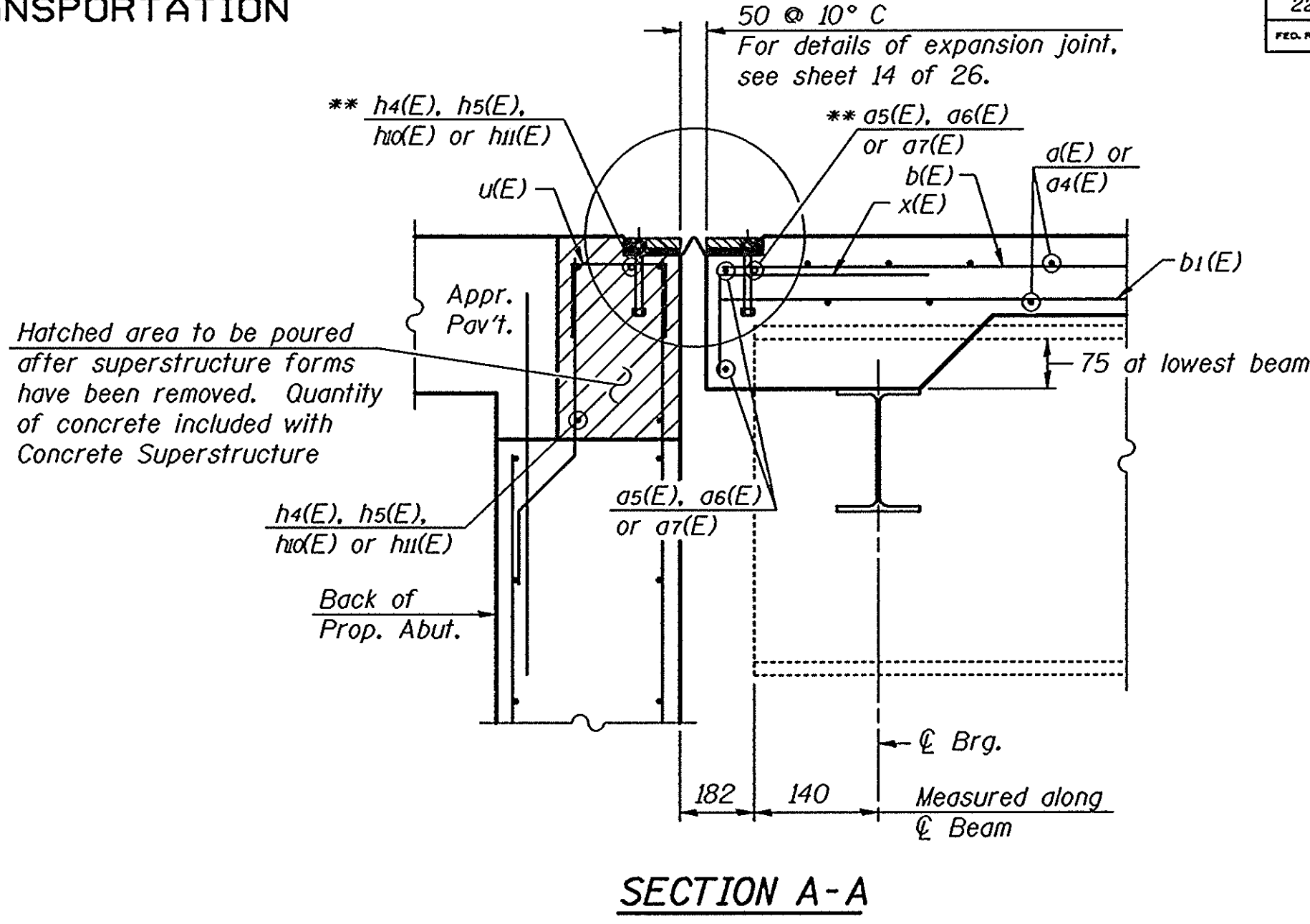
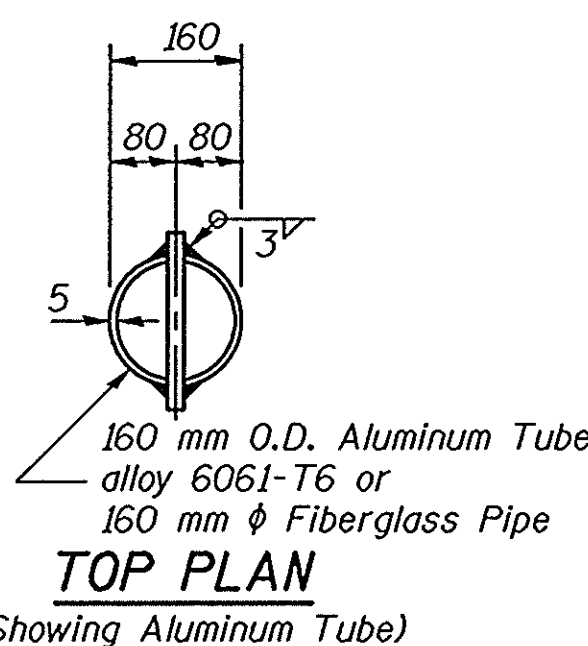
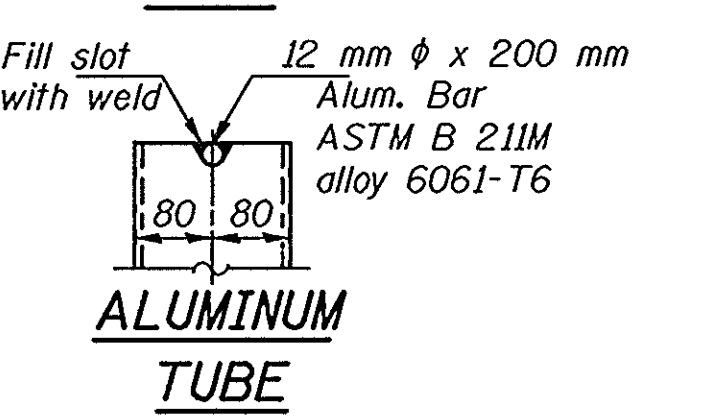
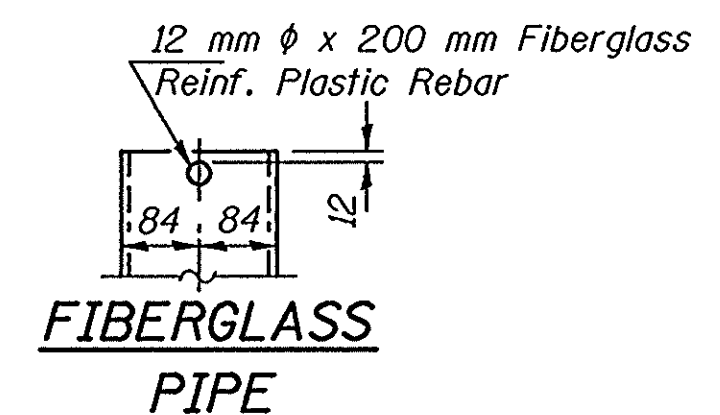
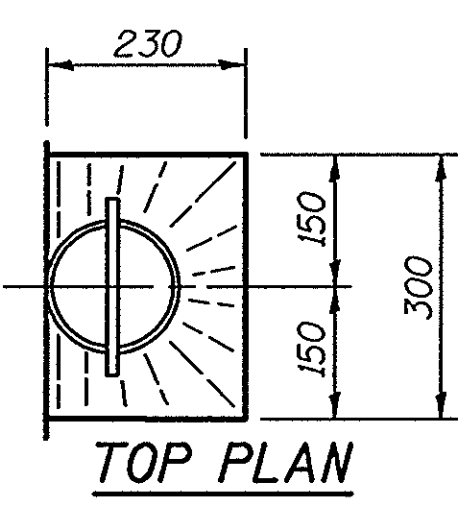
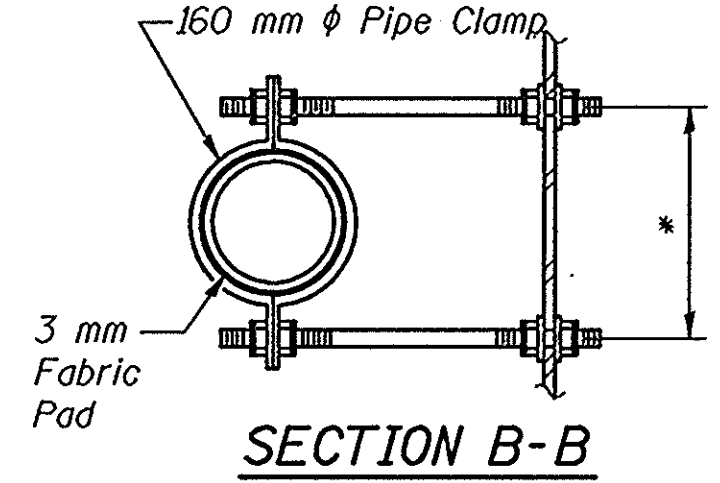
**MINIMUM BAR LAP**  
#15 Bar = 490  
#25 Bar = 1.01 m

**SUPERSTRUCTURE DETAILS**  
F.A.S. ROUTE 2245 SEC. 22B-1D  
BUREAU COUNTY  
STATION 5+955.600

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DATE	SHEET	SHEET NO. 12 26 SHEETS
F.A.S. 2245	22B-10	BUREAU	6/6	22	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

\* Dimension as required by Pipe Clamp

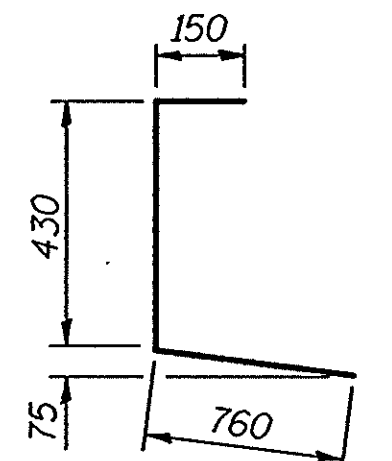
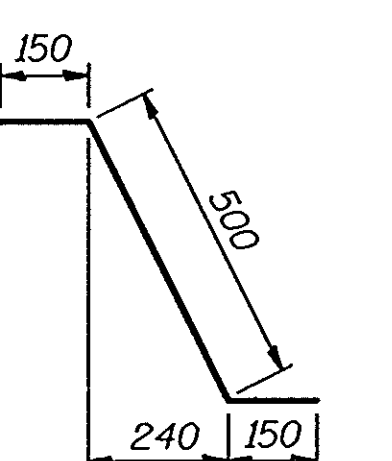
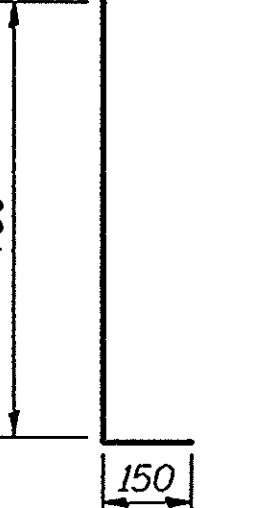
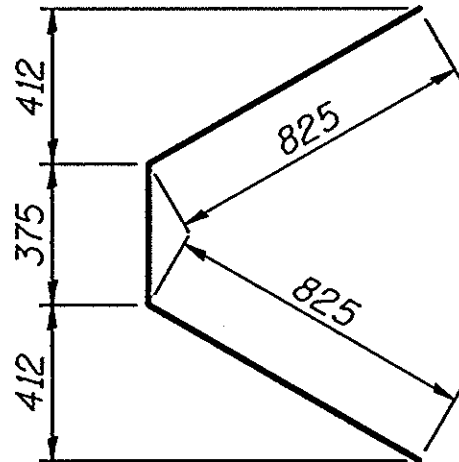
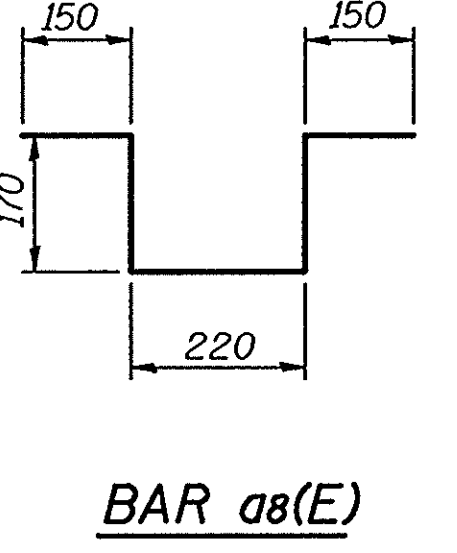
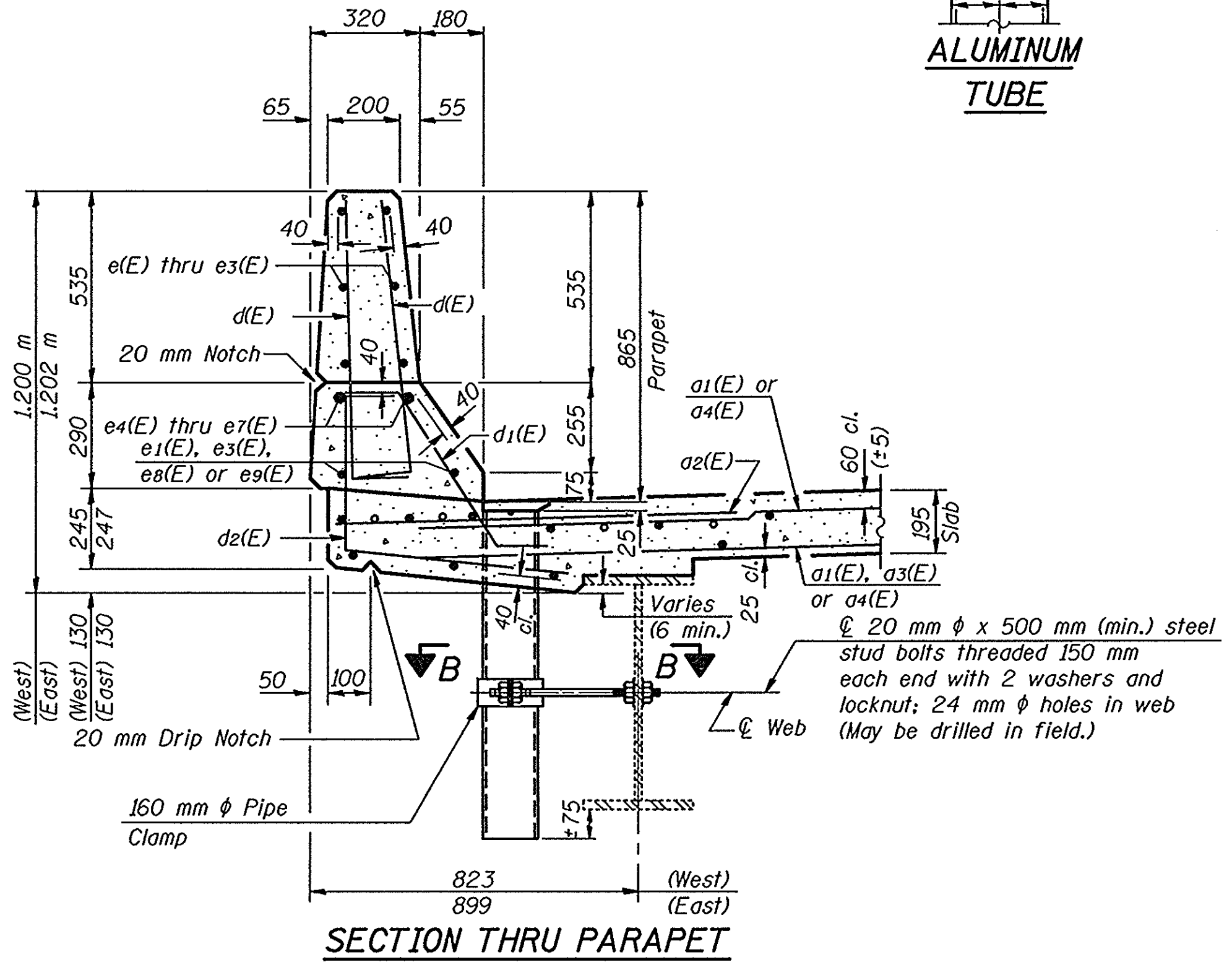


\*\* Place bars in back of anchor bolts as shown if required to maintain 25 mm cl. (+/- 3 mm). Anchor bolts should be tied to these bars.

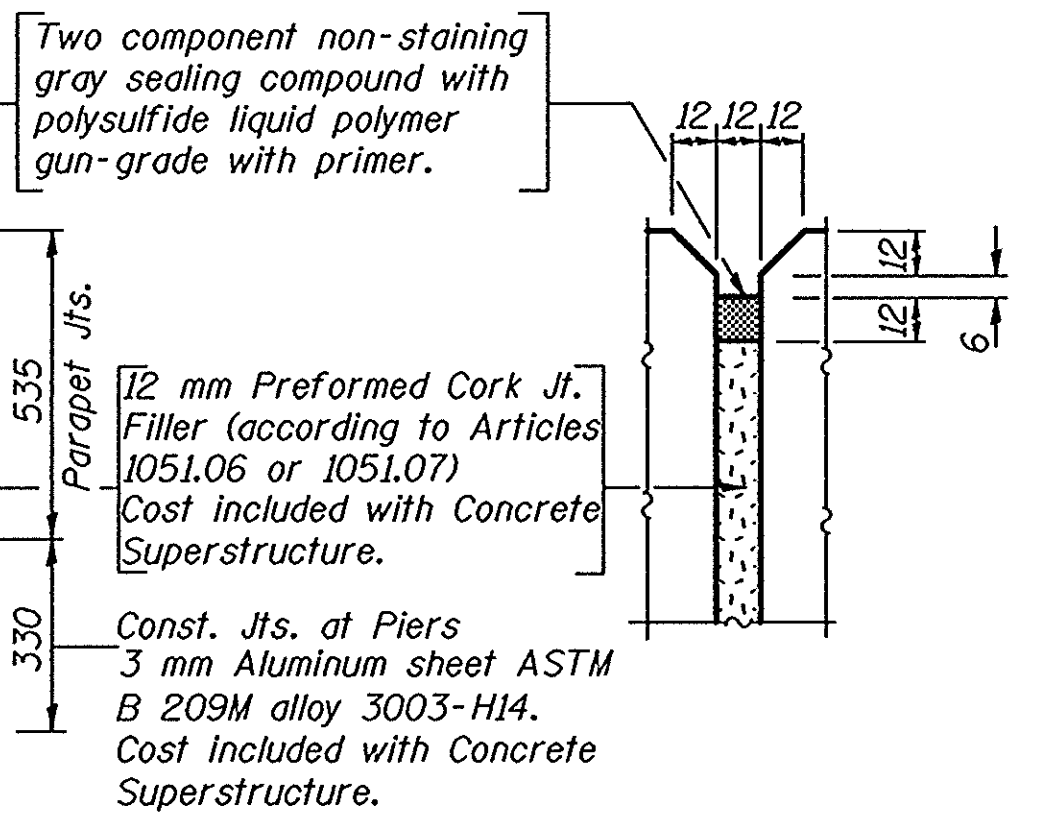
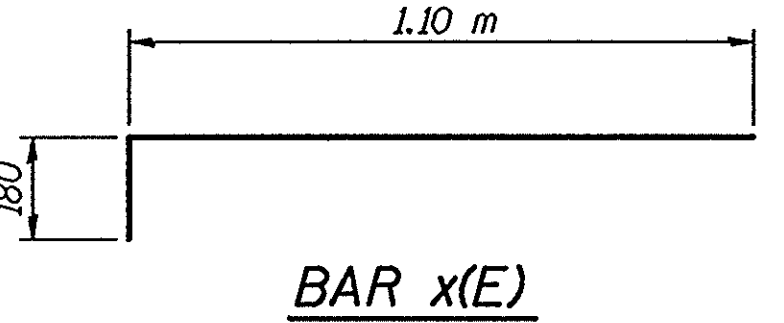
SUPERSTRUCTURE  
BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
a(E)	890	#15	5.19	—
a1(E)	439	#15	0.95	—
a2(E)	518	#20	1.20	—
a3(E)	439	#15	0.73	—
a4(E)	890	#15	6.05	—
a5(E)	2	#15	5.83	—
a6(E)	4	#15	6.27	—
a7(E)	2	#15	5.38	—
a8(E)	936	#15	0.87	—
a9(E)	16	#15	0.60	—
a10(E)	4	#15	2.03	—
b(E)	410	#15	9.75	—
b1(E)	279	#15	10.77	—
b2(E)	39	#20	11.47	—
b3(E)	39	#20	12.57	—
b4(E)	39	#20	12.39	—
d(E)	1300	#15	0.91	—
d1(E)	678	#15	0.80	—
d2(E)	622	#15	1.34	—
e(E)	96	#15	4.24	—
e1(E)	64	#15	3.20	—
e2(E)	96	#15	4.74	—
e3(E)	32	#15	3.34	—
e4(E)	16	#25	9.10	—
e5(E)	16	#25	3.20	—
e6(E)	24	#25	7.10	—
e7(E)	8	#25	3.34	—
e8(E)	16	#15	9.02	—
e9(E)	24	#15	6.98	—
x(E)	73	#15	1.28	—
Reinforcement Bars, Epoxy Coated	kg	42,090		
Concrete Superstructure	m <sup>3</sup>	286.0		

Reinforcement bars designated (E) shall be epoxy coated.  
Bars indicated thus 34 x 11-#15 etc. indicates 34 lines of bars with 11 lengths per line.



SECTION C-C  
\*\*\* a8(E) bars shall be required at any other locations where fillet heights exceed 150 mm. Additional a8(E) bars may be required.



Notes:  
Floor Drains need not be painted.  
Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 200 MPa minimum. The surface of the fiberglass pipe shall be free of bond inhibiting agents.

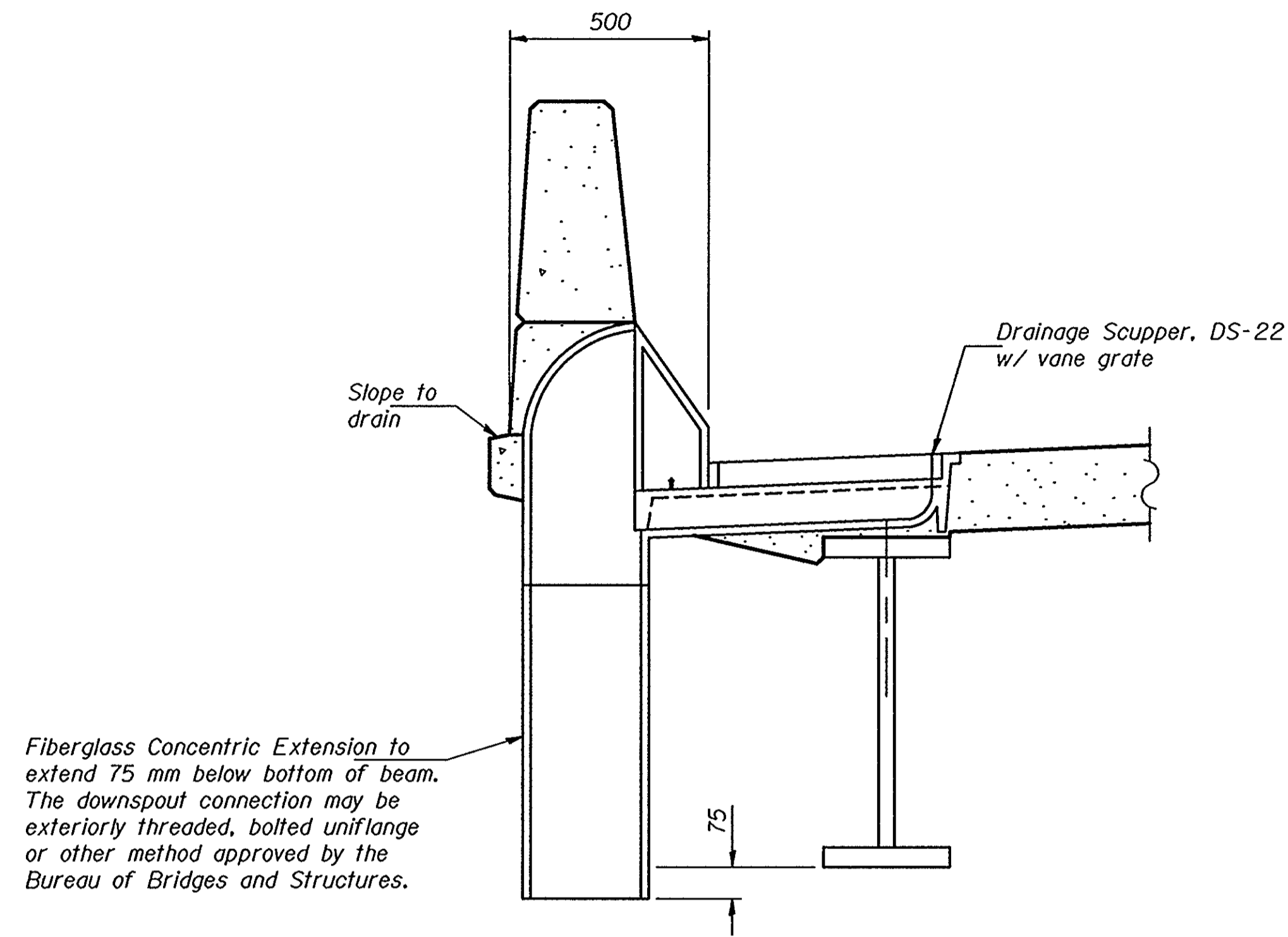
DESIGNED	E.J.C.
CHECKED	C.M.E.
DRAWN	M.B.M.
CHECKED	E.J.C. / C.M.E.

November 18, 1999  
EXAMINED *Thomas J. Donagallo*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

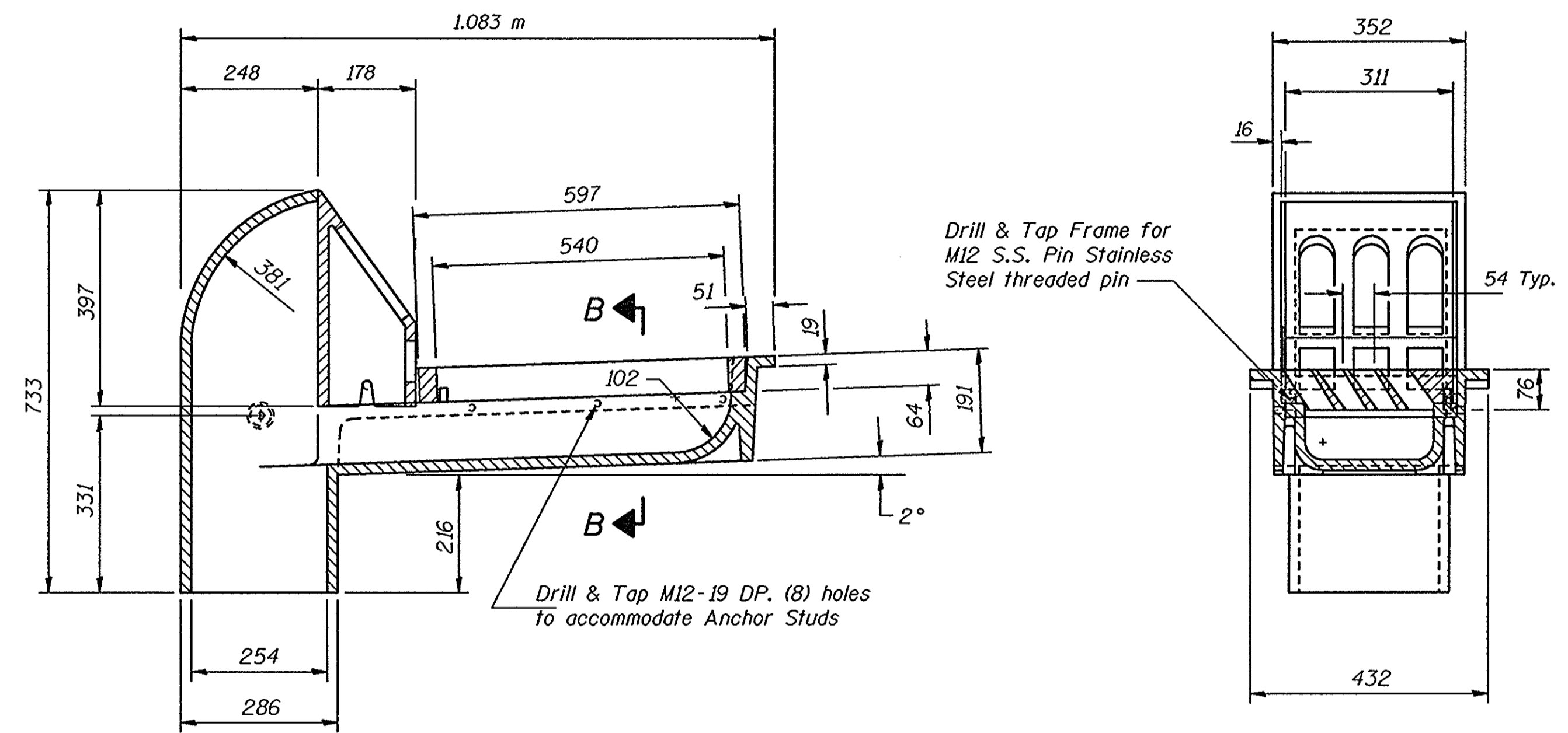
SUPERSTRUCTURE DETAILS  
F.A.S. ROUTE 2245 SEC. 22B-10  
BUREAU COUNTY  
STATION 5+955.600

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

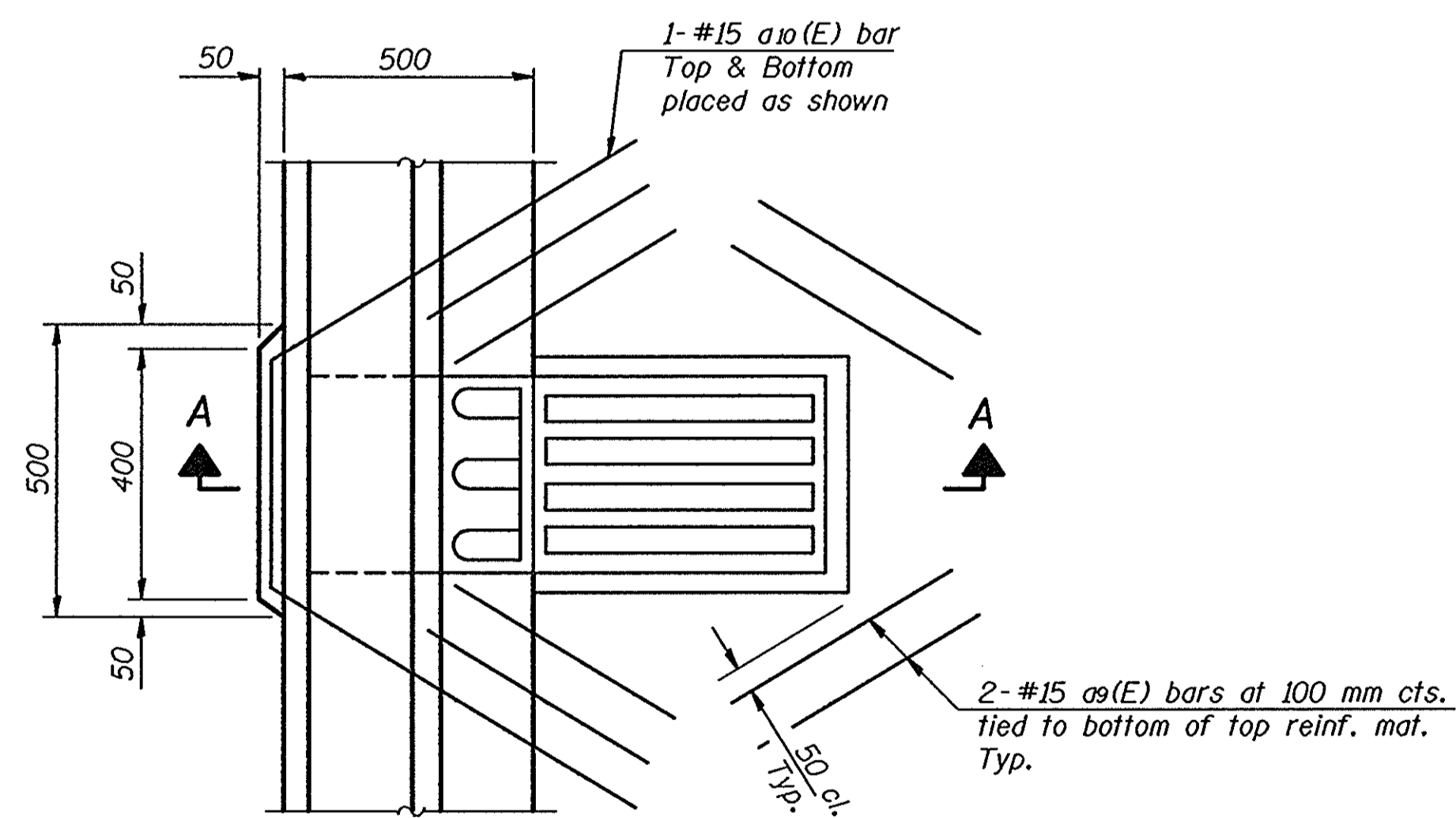
ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET	SHEET NO.
F.A.S. 2245	22B-1D	BUREAU	66	23	26 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			



SECTION A-A



DRAINAGE SCUPPER DETAIL



PLAN

Note: Reinforcement bars designated (E) shall be epoxy coated. Cut longitudinal reinforcement to clear drainage scuppers.

Notes:  
All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.  
Bolts and nuts shall conform to the requirements of ASTM A 307.  
All bolts and washers shall be galvanized according to AASHTO M 232.  
As an alternate bolts and washers may be stainless steel conforming to the requirements of ASTM A 193 M, Type 304.  
Cost of the grate, frame, downspout, bolts and washers including complete installation of scupper will be paid for at the unit bid price each for Drainage Scuppers.

DESIGNED	E.J.C.
CHECKED	C.M.E.
DRAWN	M.B.M.
CHECKED	E.J.C. / C.M.E.

November 18, 1999

EXAMINED *Thomas J. Donagale*  
ENGINEER OF BRIDGE DESIGN

PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

DS-22 SCUPPER DETAILS  
F.A.S. ROUTE 2245 SEC. 22B-1D  
BUREAU COUNTY  
STATION 5+955.600

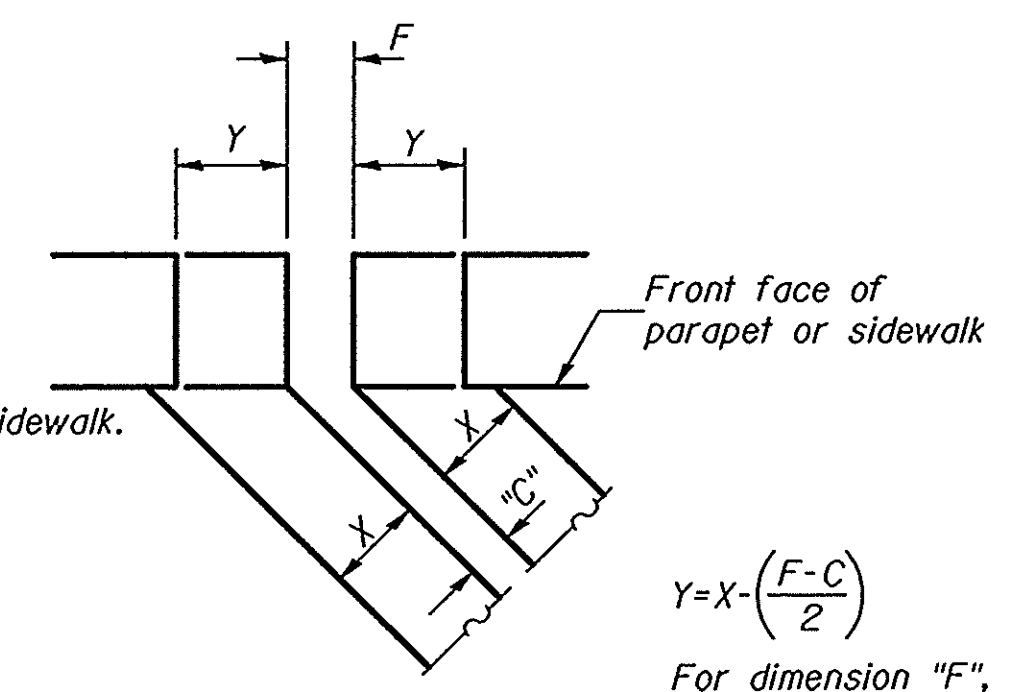


Joint Size	"C" at 10 °C	"D" at 10 °C
50	50	40 Min.
65	65	45 Min.
100	75	65 Min.

**INSTALLATION NOTES**

- ① Install continuous seal in roadway, parapet, curb, and sidewalk.
- ② Install anchor blocks as indicated.

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



**FORMING BLOCKOUT SKETCH**

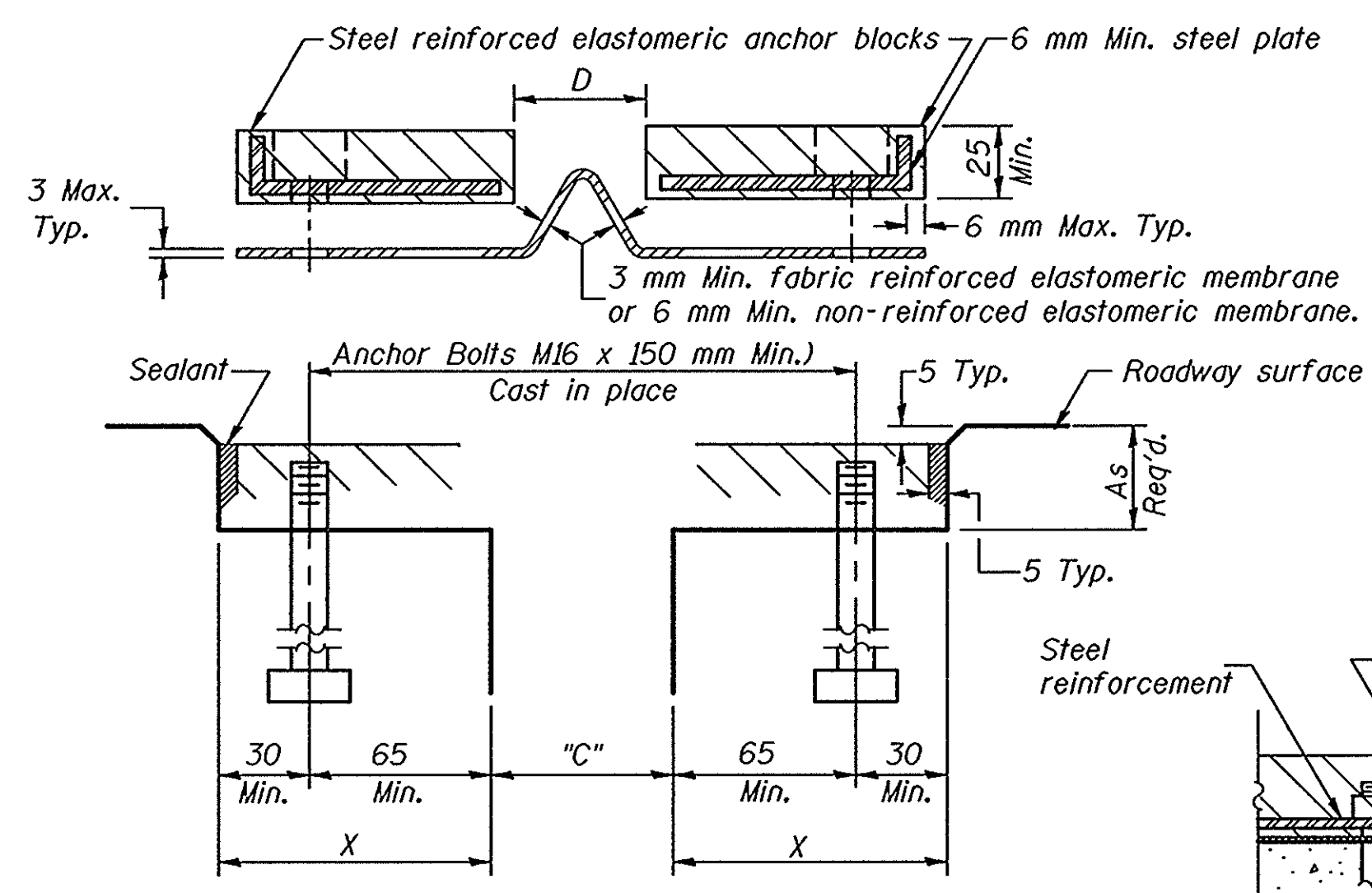
$$Y = X - \left( \frac{F - C}{2} \right)$$

For dimension "F", see sheets 8 and 9 of 26.

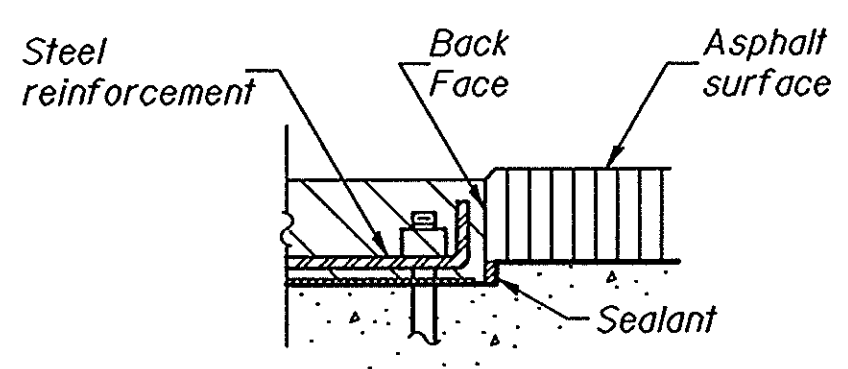
**SKEW LIMITATIONS**

The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews. For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed according to dimension "D", might require modifications to insure a minimum clearance of 40 mm from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at ±300 cts.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



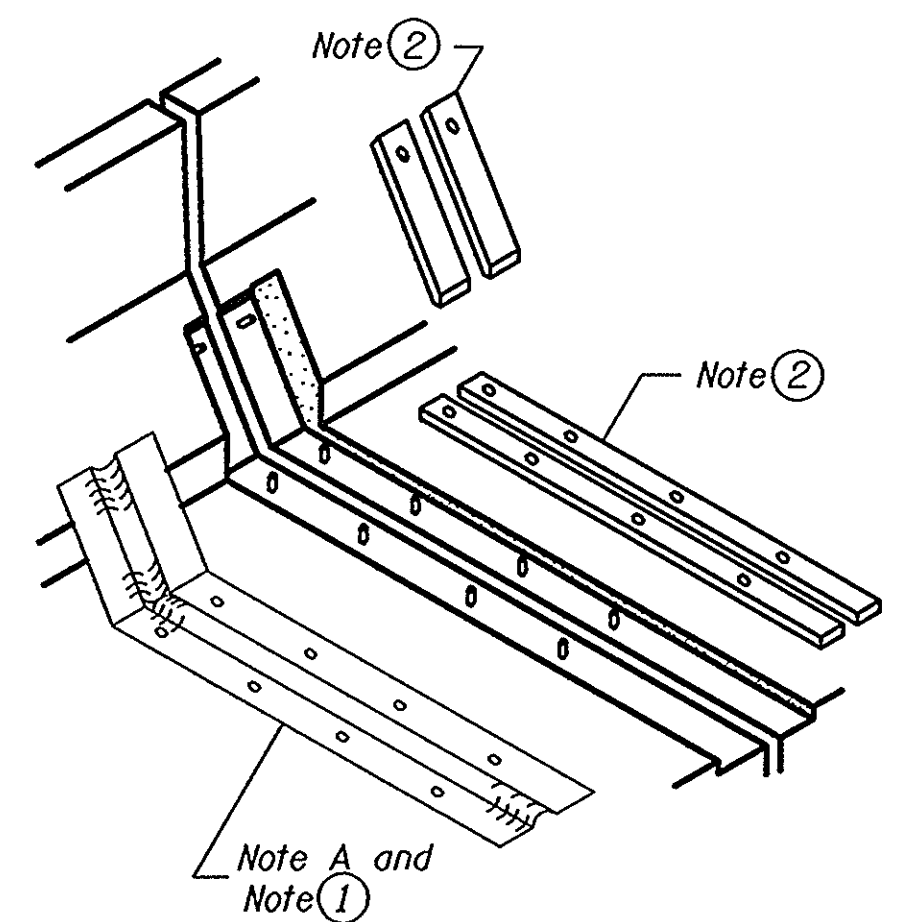
**CROSS SECTION**



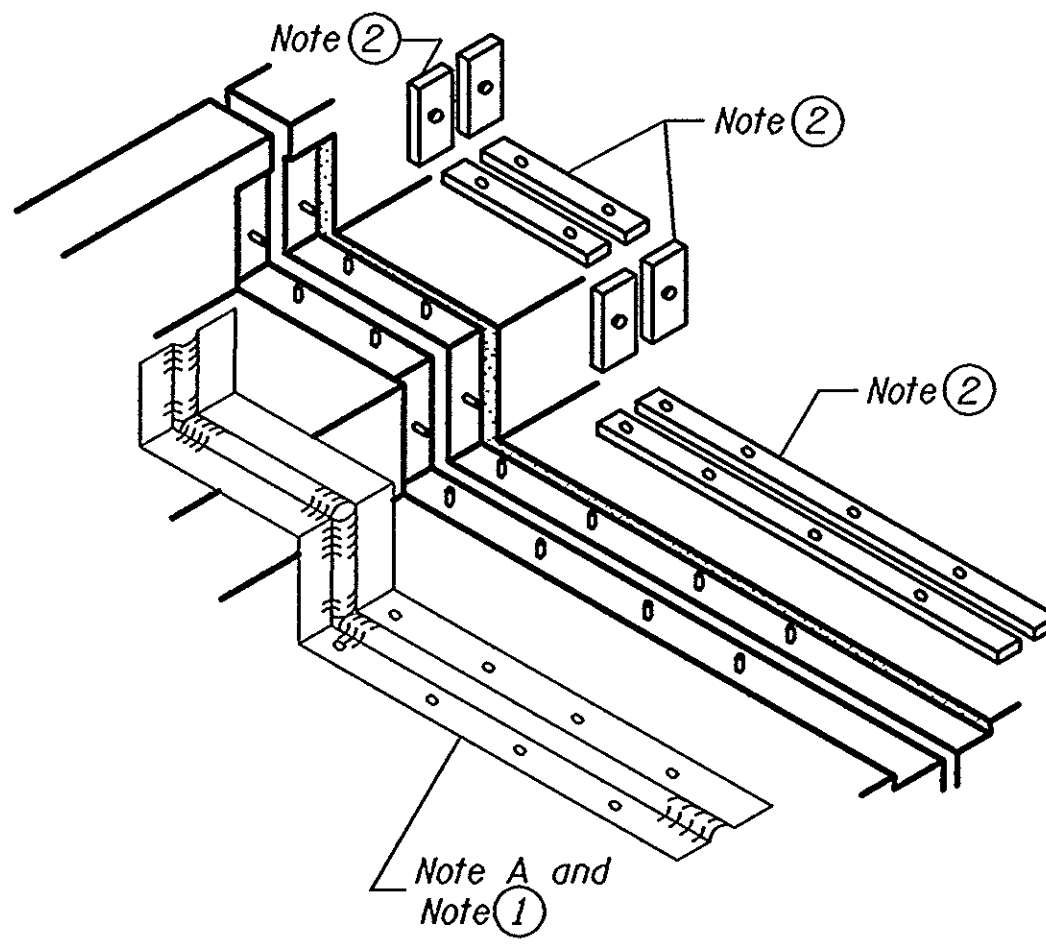
**ANCHOR BLOCK WITH ASPHALT SURFACE**

**GENERAL NOTES**

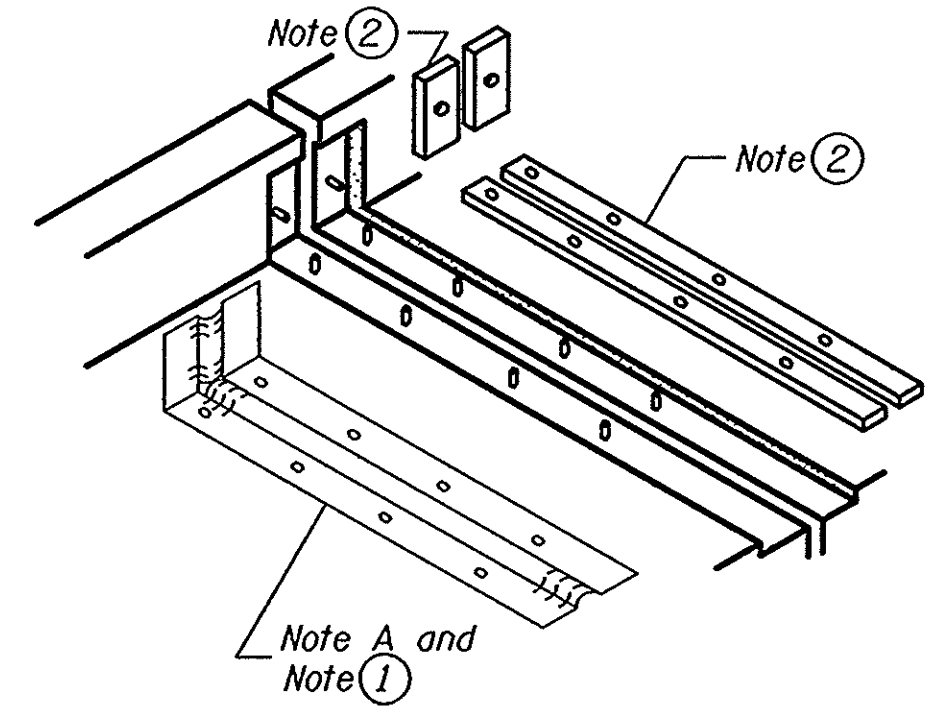
Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane.  
The elastomeric membrane shall be pre-molded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.  
The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.  
Joint openings shall be adjusted according to Article 503.10(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 10 °C.  
The parapet and roadway membrane shall be made continuous by an approved vulcanizing process. Lapping will not be permitted.



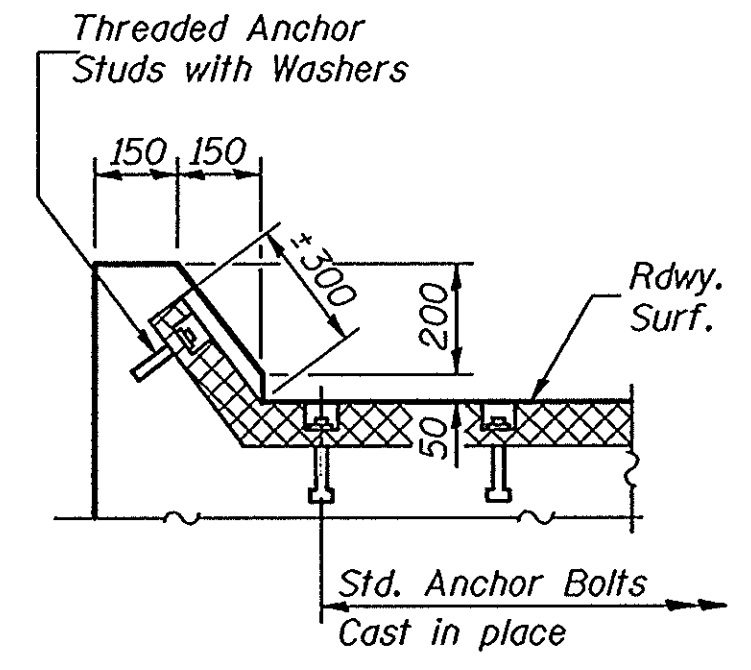
**AT PARAPET**



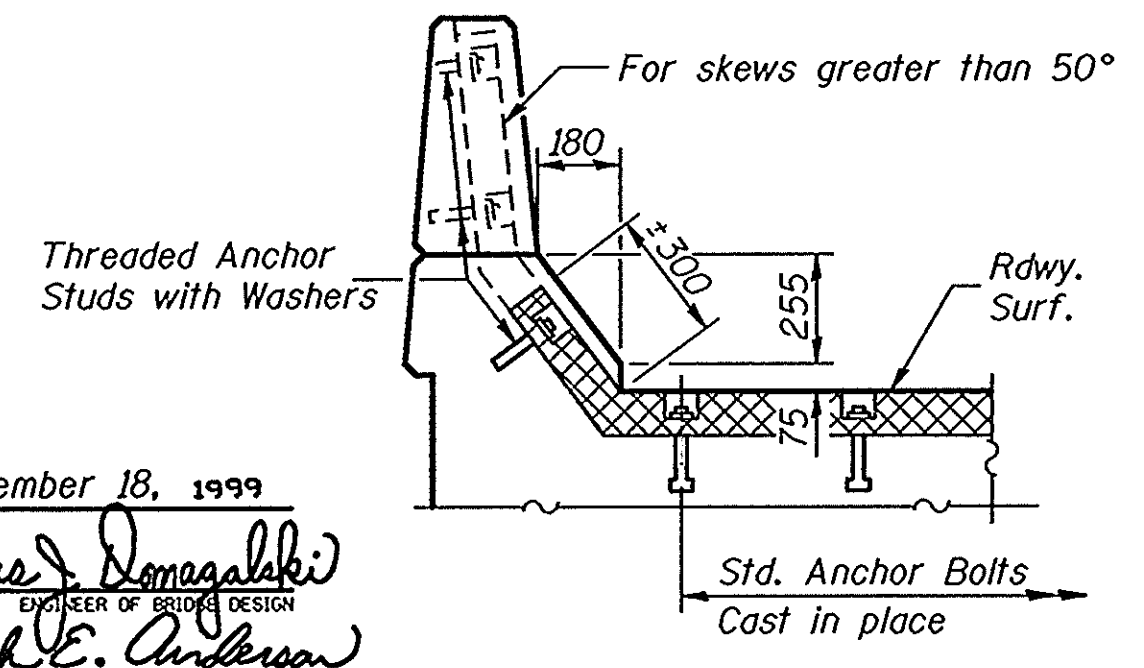
**AT SIDEWALK OR MEDIAN**



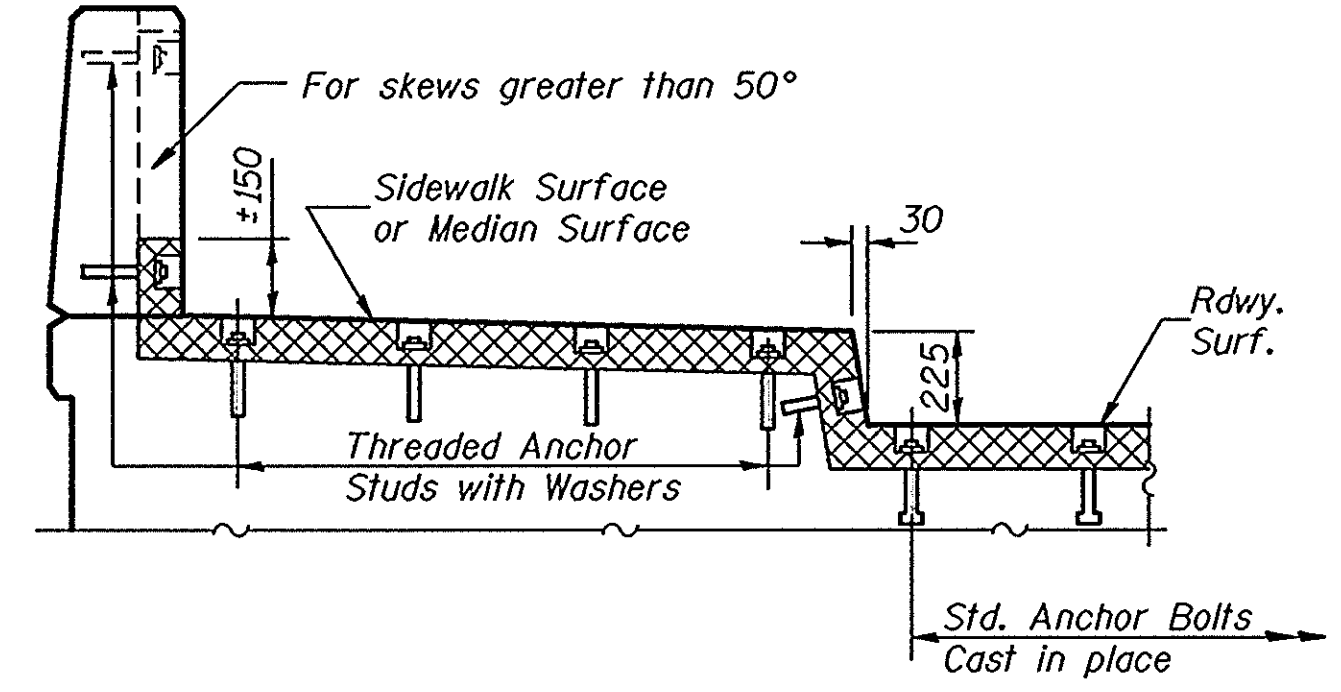
**AT WALL**



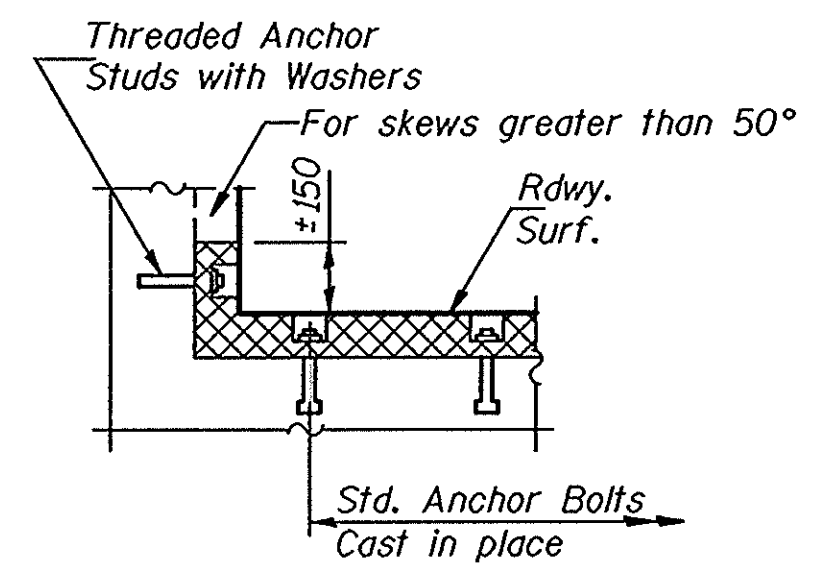
**AT CURB**



**AT PARAPET**



**AT SIDEWALK OR MEDIAN  
TYPICAL END TREATMENTS**



**AT WALL**

DESIGNED	E.J.C.
CHECKED	C.M.E.
DRAWN	M.B.M.
CHECKED	E.J.C. / C.M.E.

EJ-CS (M) 4-30-97

November 18, 1999  
EXAMINED *Thomas J. Domagalick*  
PASSED *Ralph V. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

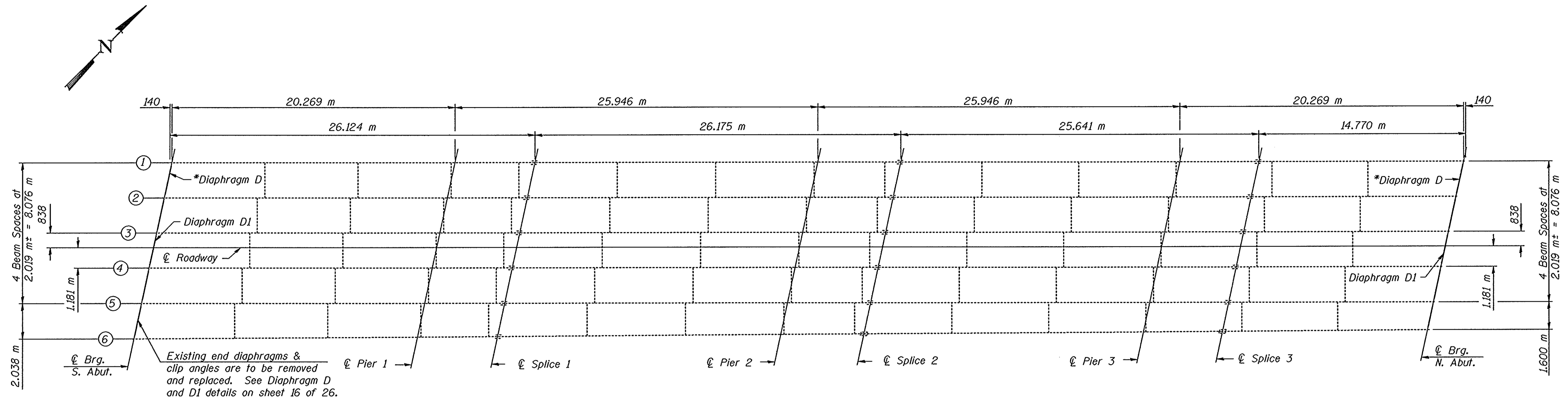
**CONTINUOUS SEAL TYPE  
NEOPRENE EXPANSION JOINTS**  
For 50, 65 and 100 Movement

**F.A.S. ROUTE 2245 SEC. 22B-1D  
BUREAU COUNTY  
STATION 5+955.600**

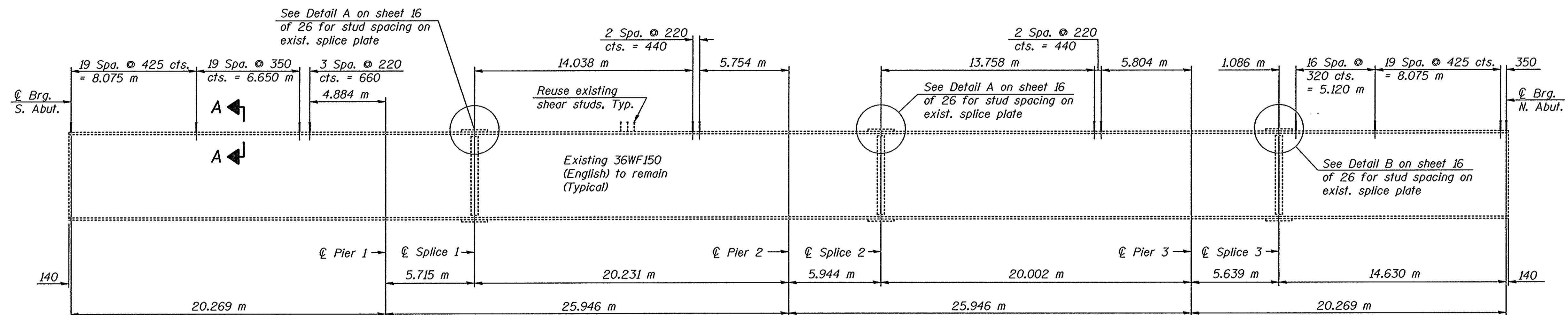


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	*SHEET NO.	SHEET NO. 15
F.A.S. 2245	22B-1D	BUREAU	66	25	26 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			



EXISTING FRAMING PLAN



EXISTING BEAM ELEVATION

Notes:  
For Section A-A, see sheet 16 of 26.  
Existing shear studs that are damaged or removed during deck removal shall be replaced in kind. Cost is included with Removal of Existing Concrete Deck.

\* Adjust length of diaphragm in exterior East bay (North and South).

DESIGNED	E.J.C.
CHECKED	C.M.E.
DRAWN	M.B.M.
CHECKED	E.J.C. / C.M.E.

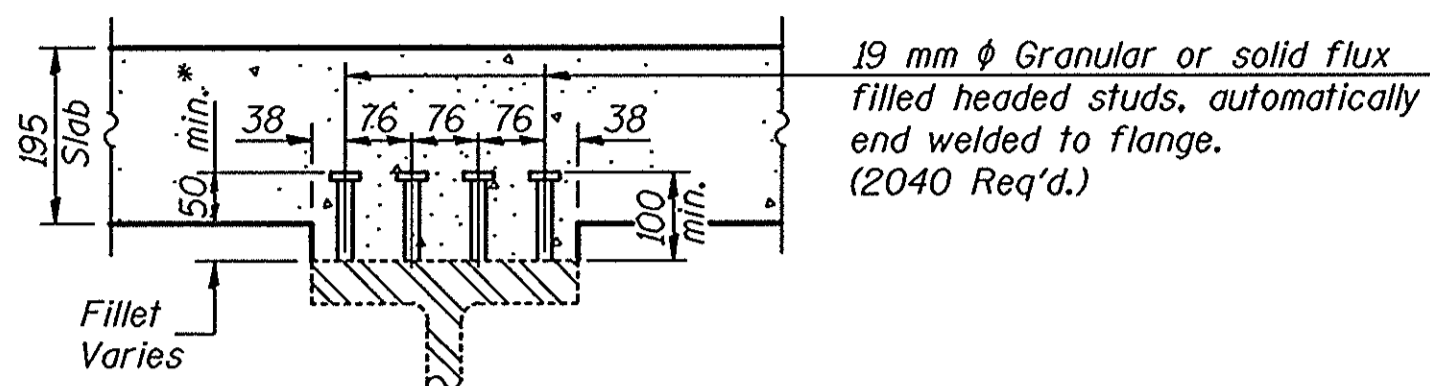
November 18, 1999  
EXAMINED *Thomas J. Domagala*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

FRAMING PLAN & ELEVATION  
F.A.S. ROUTE 2245 SEC. 22B-1D  
BUREAU COUNTY  
STATION 5+955.600

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

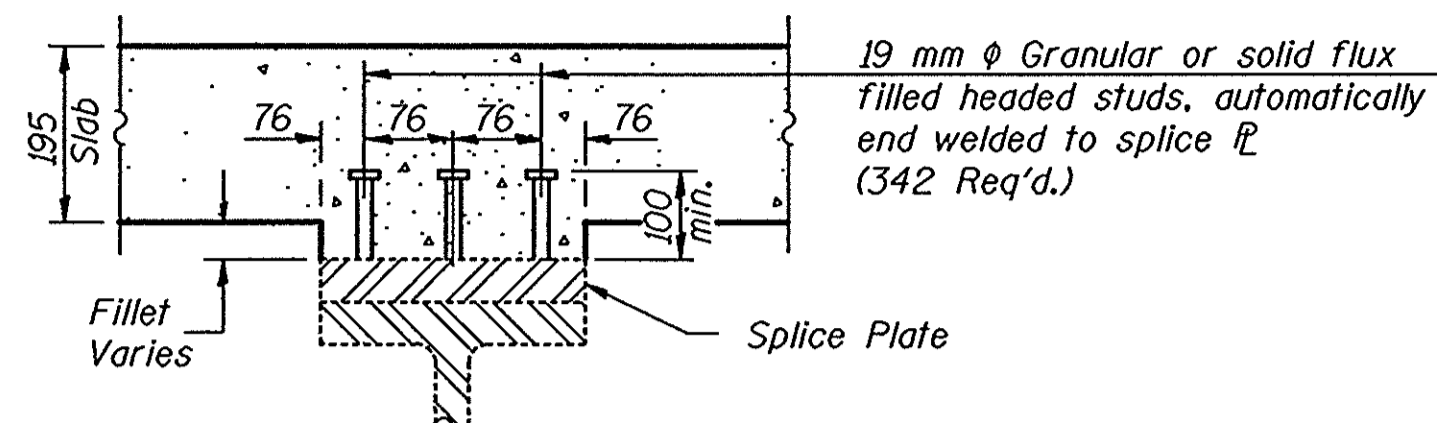
ROUTE NO.	SECTION	COUNTY	SHEET	DATE	SHEET NO. 16
F.A.S. 2245	22B-1D	BUREAU	66	26	26 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

Note: Total number of Stud Shear Connectors is 2382.  
2040 are required as shown in Section A-A.  
342 are required as shown in Section B-B.

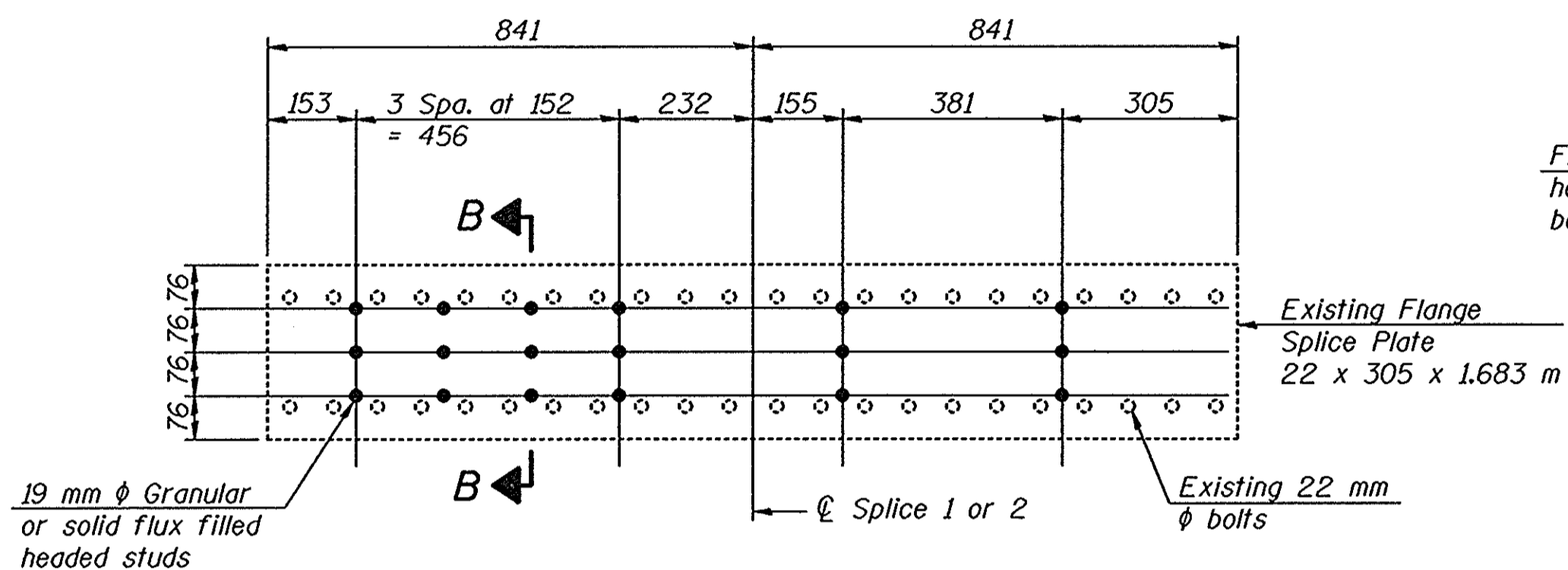


SECTION A-A

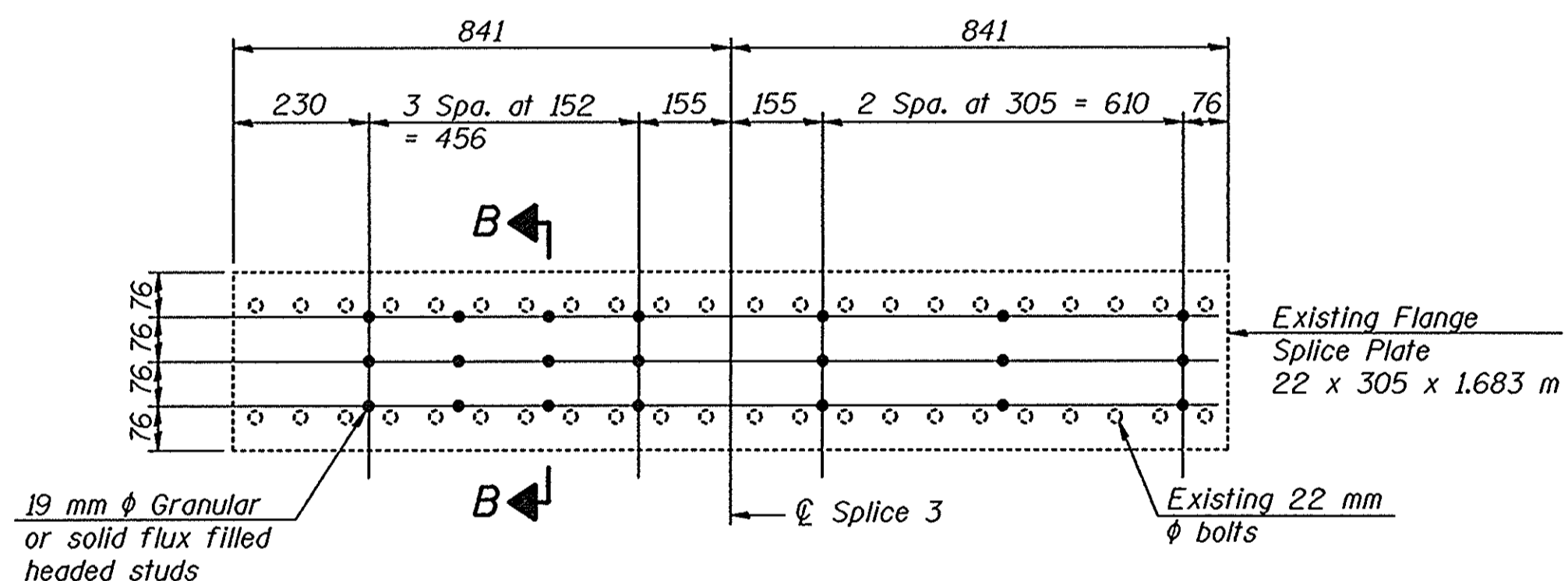
\* applies at span 1 only.



SECTION B-B



DETAIL A



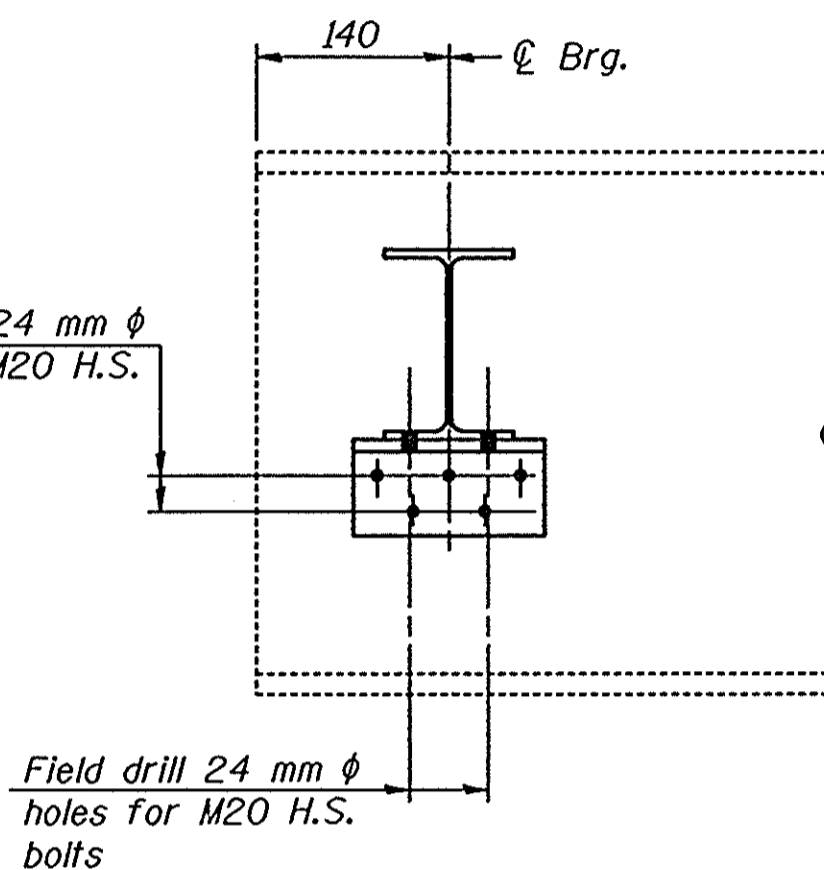
DETAIL B

DIAPHRAGM D1 CONSTRUCTION SEQUENCE

- 1.) Order Diaphragm D1 in two sections as shown on this sheet.
- 2.) Attach Section 1 to beam 4 along with top flange splice  $\ell$ .
- 3.) Place timber block posts between section 1 of diaphragm and abutment bearing seat.
- 4.) Attach section 2 of diaphragm to section 1 and beam 3 during stage II construction.
- 5.) Attach web splice plates to sections 1 and 2 of diaphragms.
- 6.) Remove timber block posts.
- 7.) Attach bottom flange splice plate to sections 1 and 2.

DESIGNED	E.J.C.
CHECKED	C.M.E.
DRAWN	M.B.M.
CHECKED	E.J.C. / C.M.E.

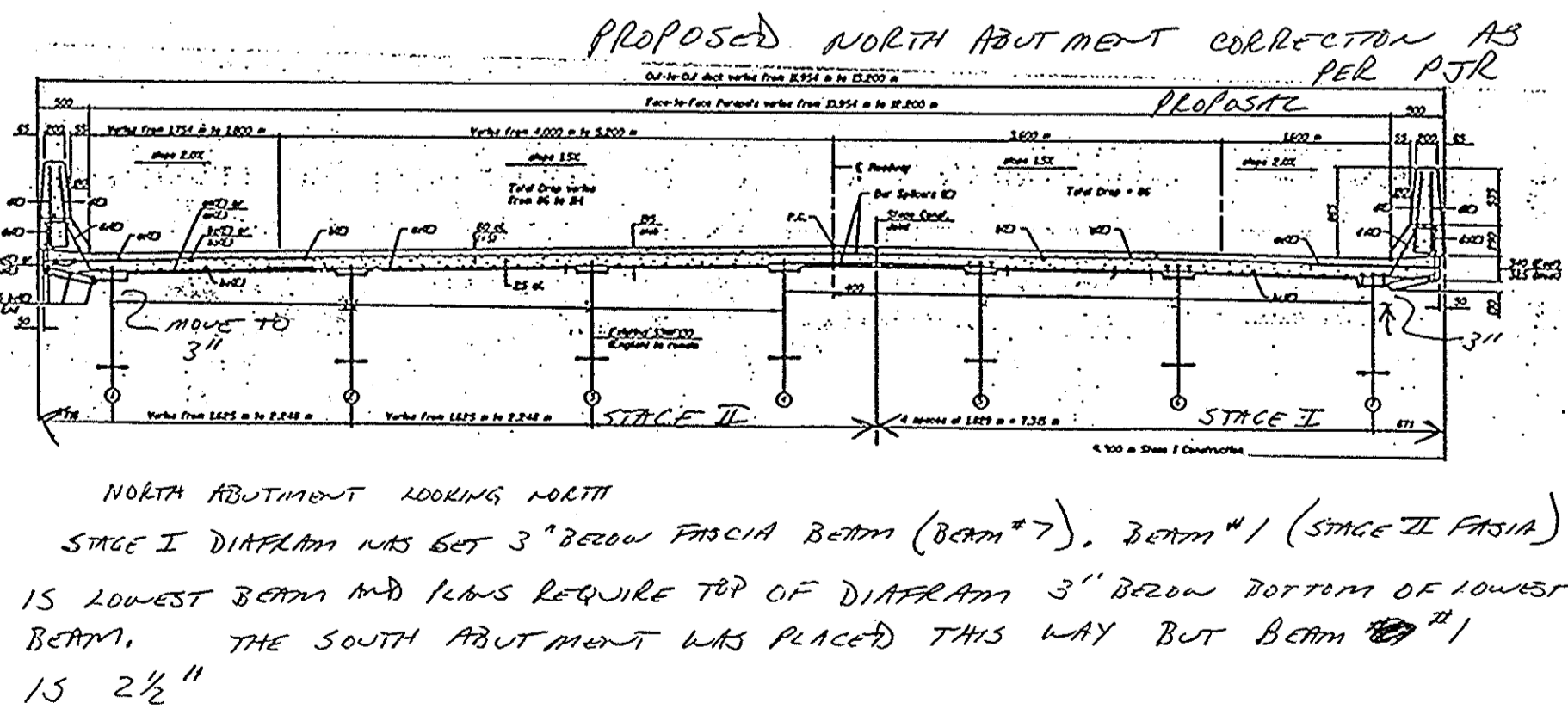
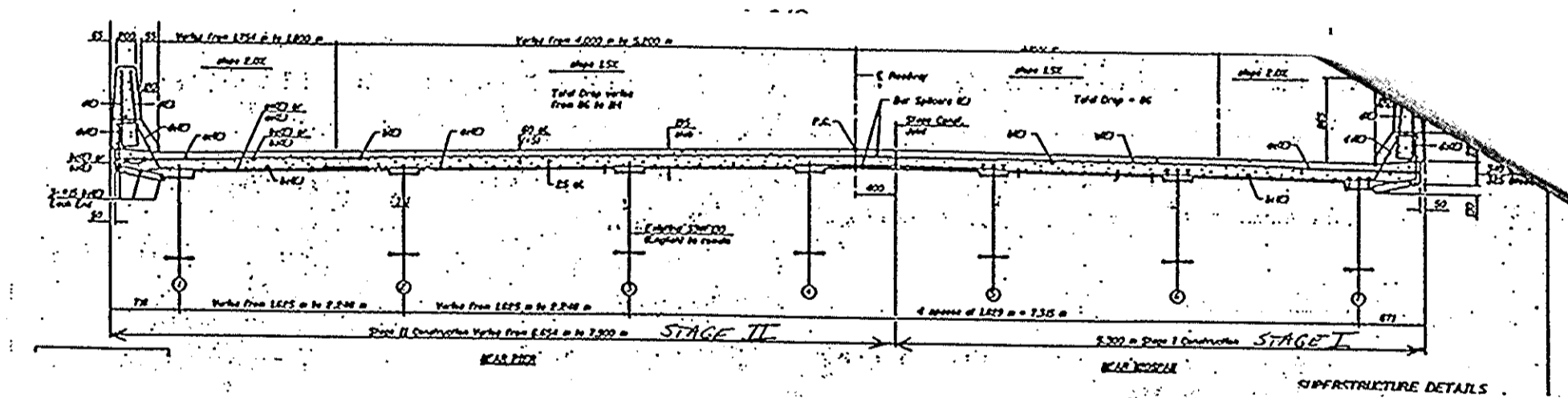
November 18, 1999  
EXAMINED *Thomas J. Donagabki*  
PASSED *Ronald E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES



DIAPHRAGM D

10 Required

- Notes:
- Two hardened washers shall be required over all oversize holes for diaphragms.
  - Existing diaphragm to be removed by air-arc method. Grind smooth all weld material on the web.
  - Cost of field drilling included with Furnishing and Erecting Structural Steel.



TO BE LOCATED dimensions.)

	0.4 Sp. 1 or 0.6 Sp. 4	Pier 1 or Pier 3	0.5 Sp. 2 or 0.5 Sp. 3	Pier 2
$I_s$ ( $10^6 \text{ mm}^4$ )	3770	5353	3770	5353
$I_c (n)$ ( $10^6 \text{ mm}^4$ )	9741	-	9741	-
$I_c (3n)$ ( $10^6 \text{ mm}^4$ )	7092	-	7092	-
$S_s$ ( $10^3 \text{ mm}^3$ )	8280	11432	8280	11432
$S_c (n)$ ( $10^3 \text{ mm}^3$ )	12046	-	12046	-
$S_c (3n)$ ( $10^3 \text{ mm}^3$ )	10844	-	10844	-
$Z$ ( $10^3 \text{ mm}^3$ )	-	-	-	-
$\rho$ (kN/m)	11.71	13.76	11.71	13.76
$M\ell$ (kN·m)	312	756	306	798
$s\ell$ (kN/m)	2.05	-	2.05	-
$Ms\ell$ (kN·m)	64	-	75	-
$M\ell$ (kN·m)	646	454	728	502
$M$ (Imp) (kN·m)	169	114	173	119
$^5_2[M\ell + M(\text{Imp})]$ (kN·m)	1360	946	1503	1035
$Ma$ (kN·m)	2256	2212	2449	2383
$Mu$ (kN·m)	3292	-	3292	-
$fs\ell(\text{non-comp})$ (MPa)	38	66	37	70
$fs\ell(\text{comp})$ (MPa)	6	-	7	-
$fs^5_3(\ell + \text{Imp})$ (MPa)	113	83	125	91
$fs$ (Overload) (MPa)	157	149	169	151
$fs$ (Total) (MPa)	-	194	-	208
VR (kN)	227.2	-	238.6	-

	Abuts.	Pier 1 or 3	Pier 2
$R\ell$ (kN)	102	354	360
$R\ell$ (kN)	163	189	189
Imp. (kN)	43	42	42
$R$ (Total) (kN)	308	585	591

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

$I_c(n)$  and  $S_c(n)$  are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

$I_c(3n)$  and  $S_c(3n)$  are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (according to AASHTO 10.38)

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

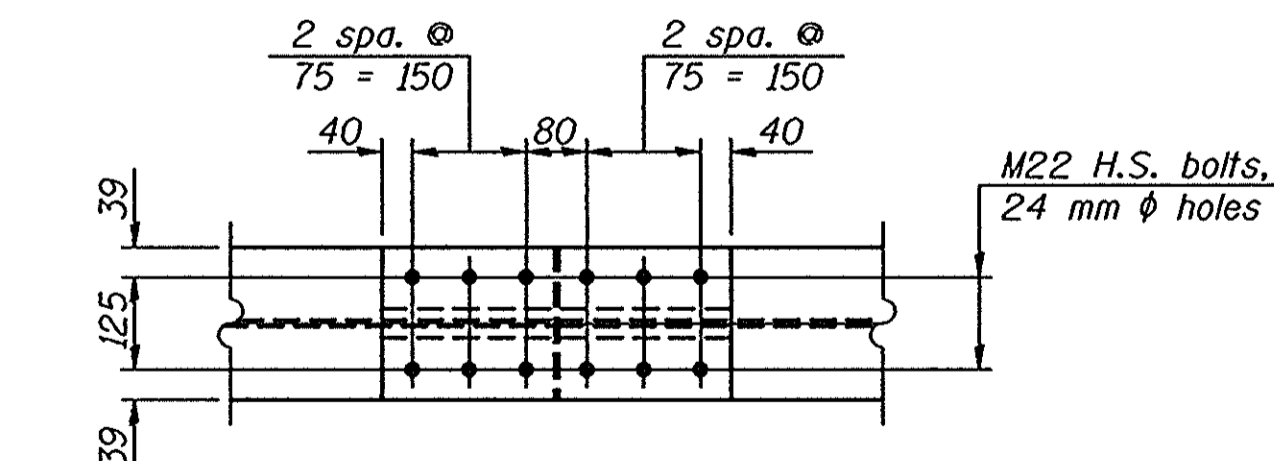
Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.

$Ma$  (Applied Moment) =  $1.3[M\ell + Ms\ell + ^5_3(M\ell + M_{\text{Imp}})]$ .

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

$fs$  (Overload) is the sum of the stresses due to  $M\ell + Ms\ell + ^5_3(M\ell + M_{\text{Imp}})$ .

$fs$  (Total) (Non-compact section) is the sum of the stresses due to  $1.3[M\ell + Ms\ell + ^5_3(M\ell + M_{\text{Imp}})]$ .

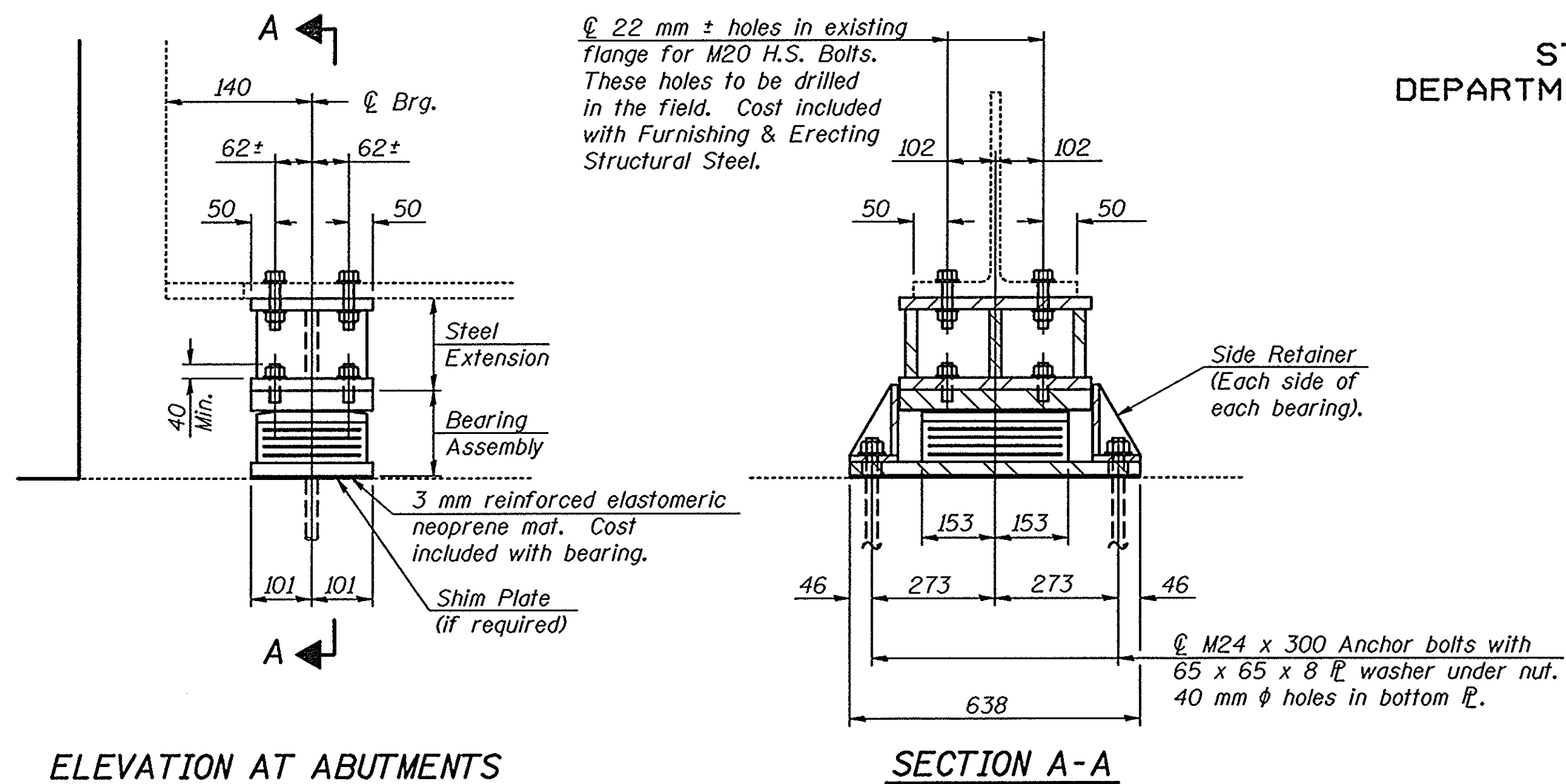


VIEW C-C

STRUCTURAL STEEL  
F.A.S. ROUTE 2245 SEC. 22B-1D  
BUREAU COUNTY  
STATION 5+955.600

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	POST MILE	SHEET	SHEET NO. 17
F.A.S. 2245	22B-1D	BUREAU	66	27	26 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



ELEVATION AT ABUTMENTS

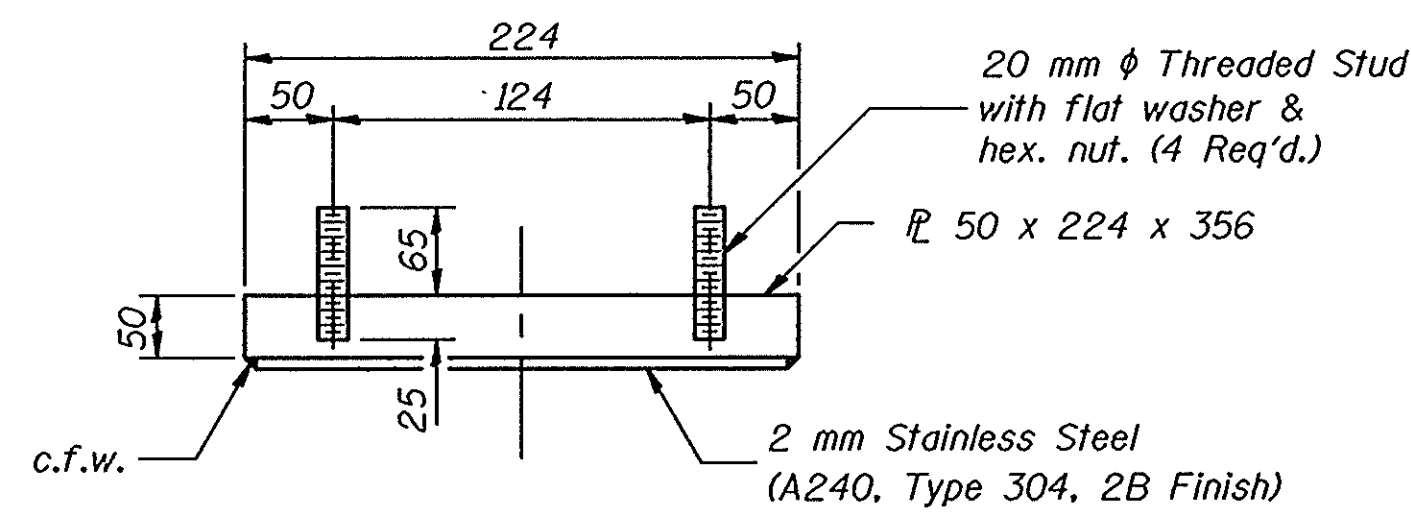
SECTION A-A

TYPE II ELASTOMERIC EXP. BRG.

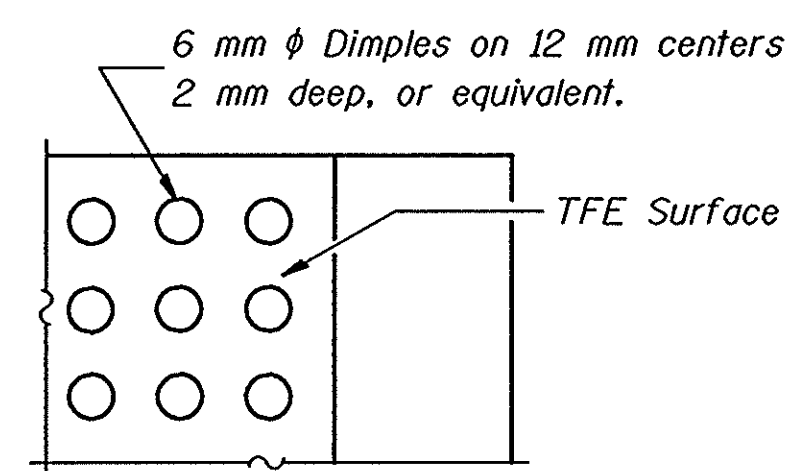
Notes: New steel extensions, side retainers, shim L's, connection bolts, and anchor bolts are included in Furnishing and Erecting Structural Steel.  
See Sheets 21, 23 & 26 of 26 for anchor bolt installation.  
Prior to ordering any material, the contractor shall verify in the field all bearing height and shim thickness dimensions.

SHIM PLATE TABLE

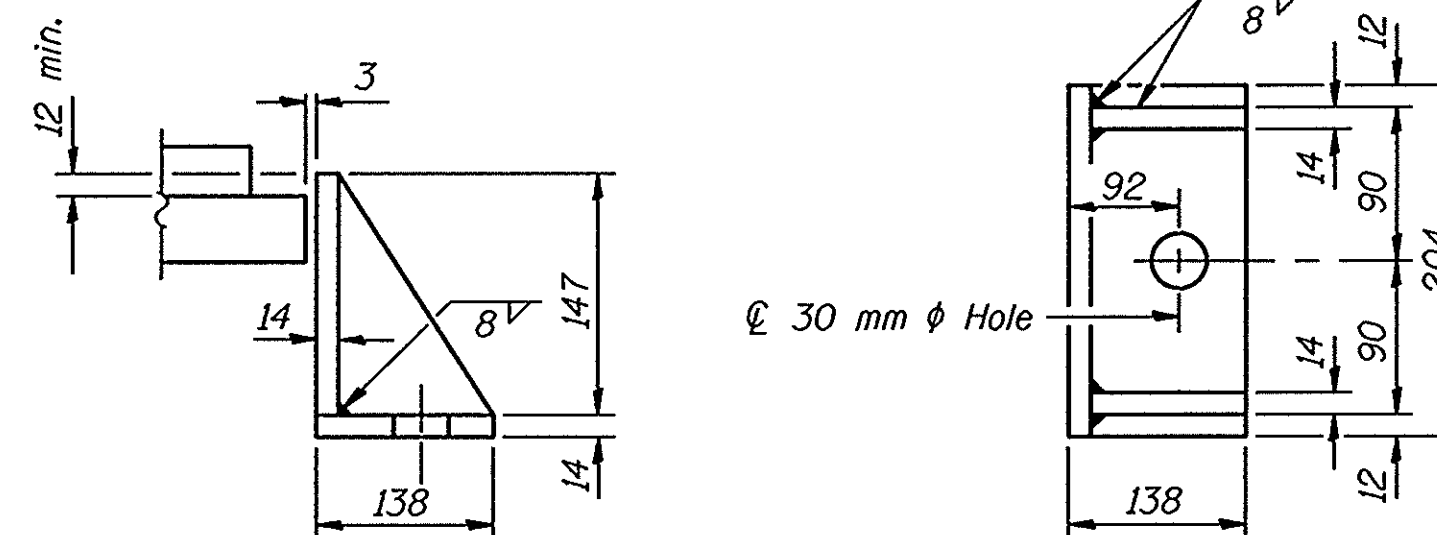
Beam	1	2	3	4	5	6
South Abut.	-	3	3	-	-	-
North Abut.	-	3	3	-	-	-



TOP BEARING ASSEMBLY

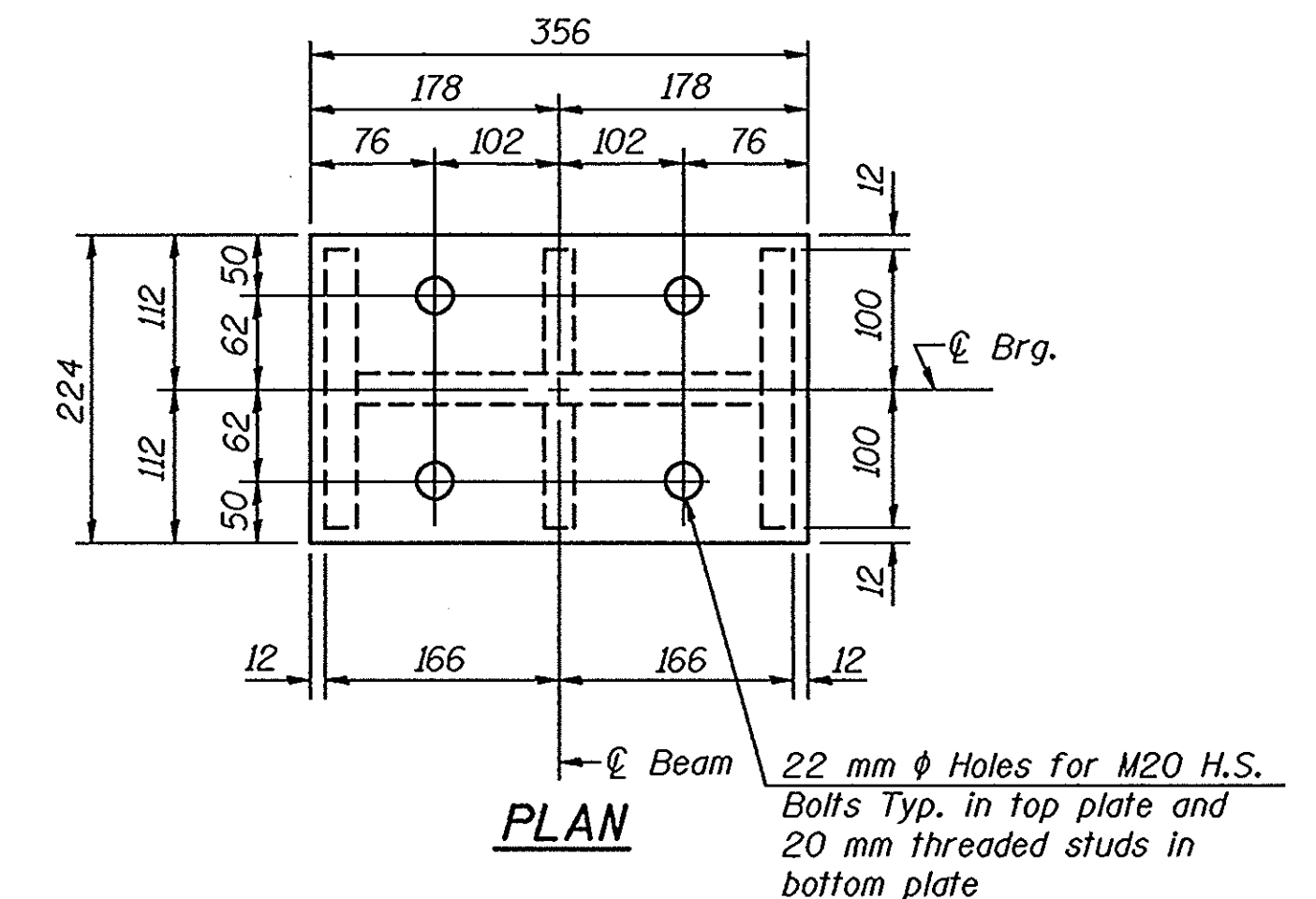


PLAN-TFE SURFACE

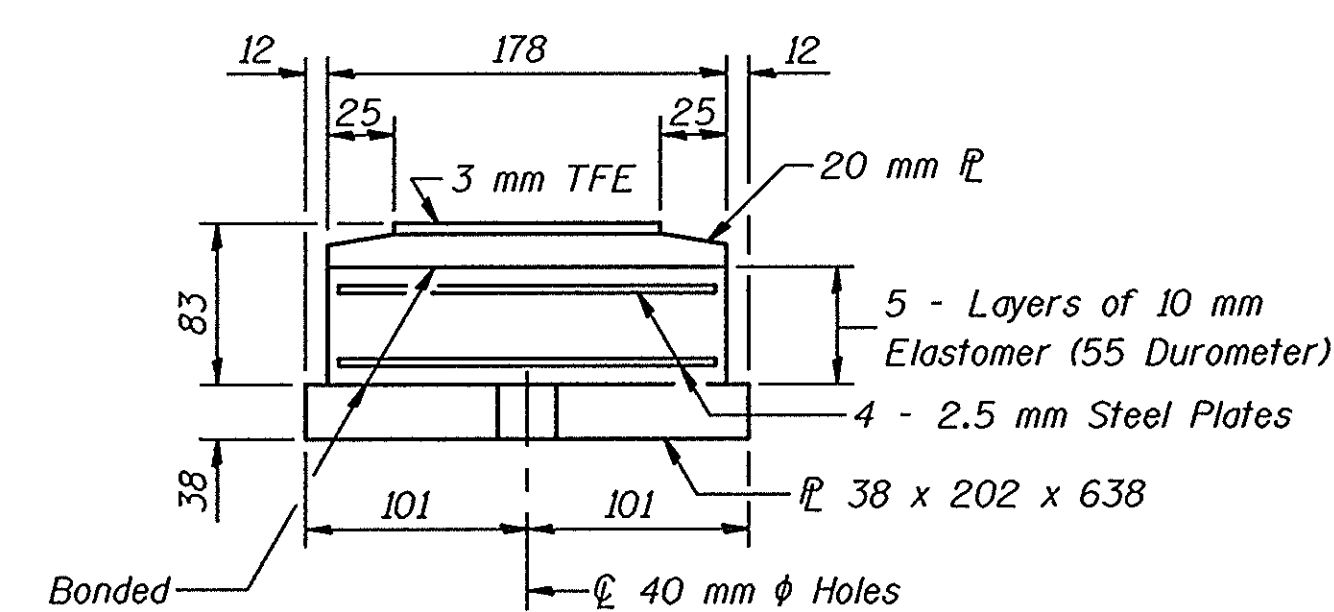


SIDE RETAINER

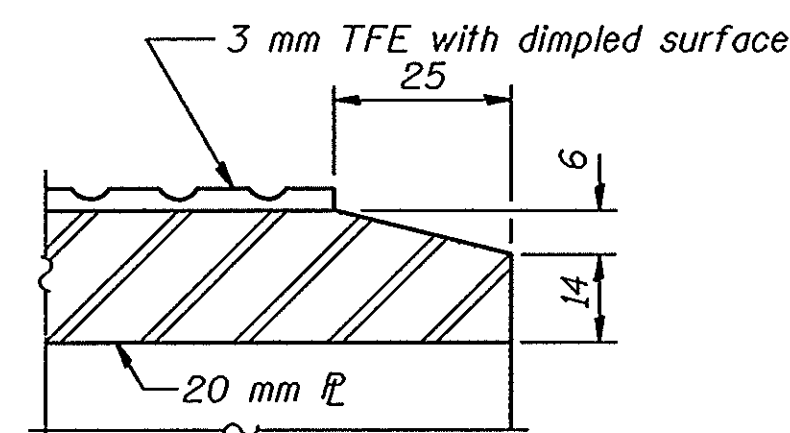
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.



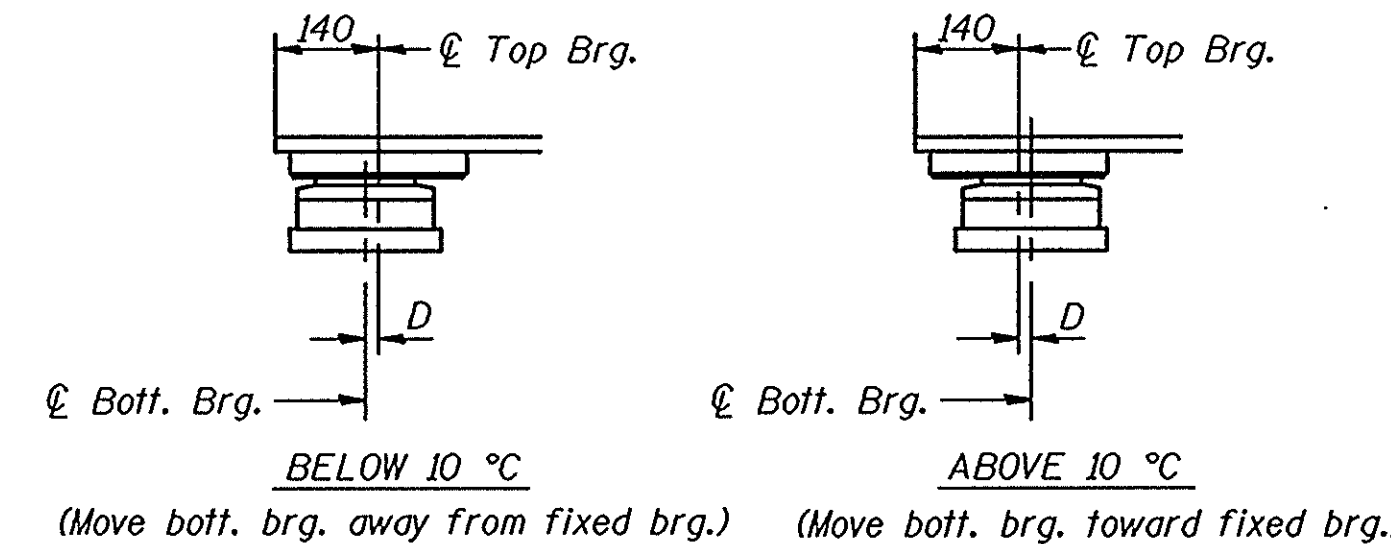
PLAN



BOTTOM BEARING ASSEMBLY

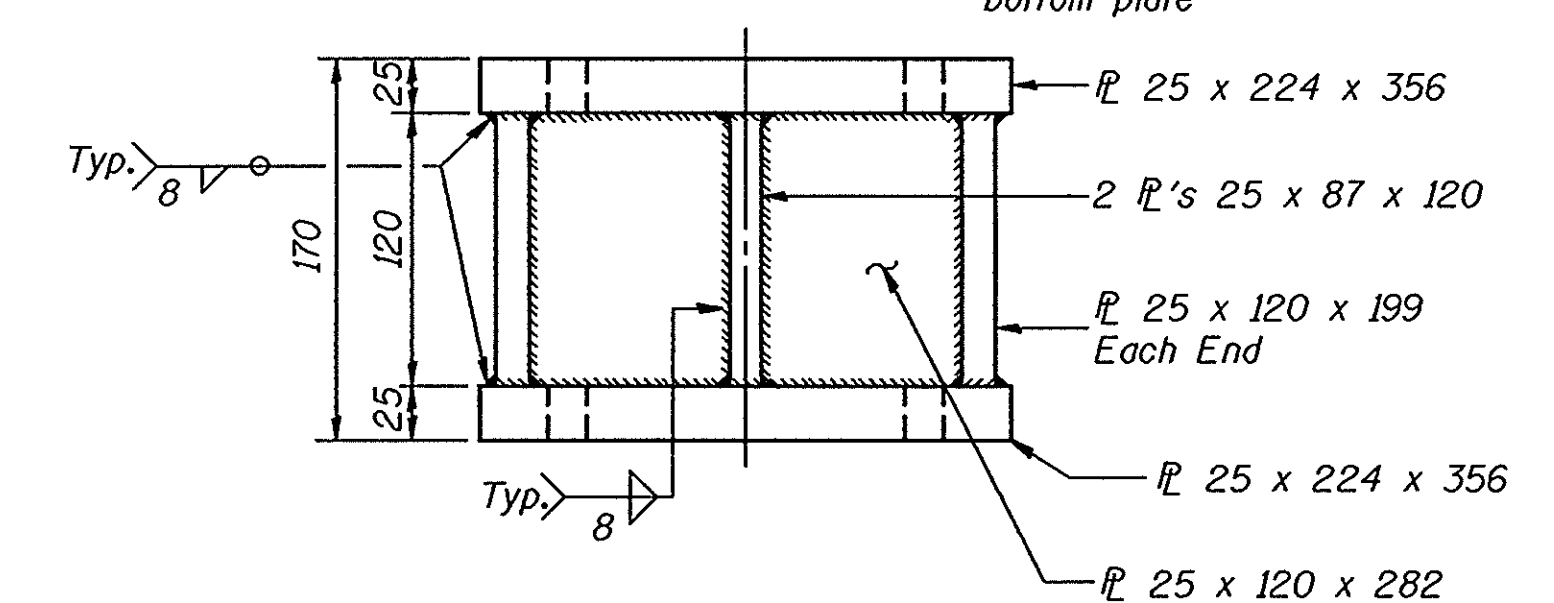


SECTION THRU TFE



SETTING ANCHOR BOLTS AT EXP. BRG.

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



STEEL EXTENSION AT EACH ABUTMENT BEARING

(12 Required)

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.

DESIGNED	E.J.C.
CHECKED	C.M.E.
DRAWN	M.B.M.
CHECKED	E.J.C. / C.M.E.

EXAMINED	November 18, 1999
PASSED	Thomas J. Domagala
	Ralph E. Anderson

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	12

BEARING DETAILS  
F.A.S. ROUTE 2245 SEC. 22B-1D  
BUREAU COUNTY  
STATION 5+955.600