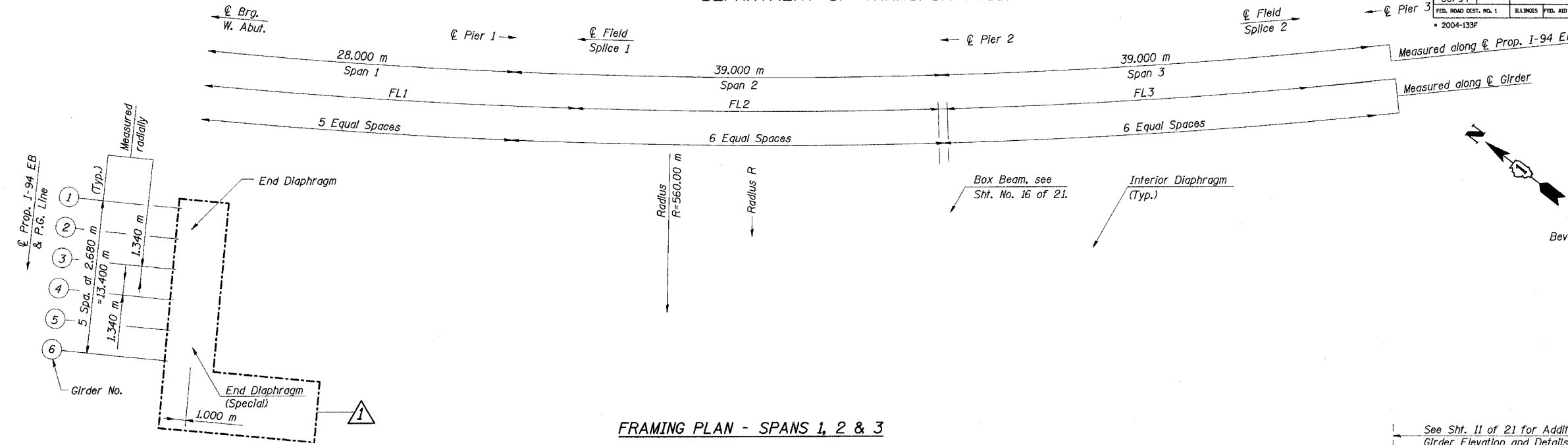


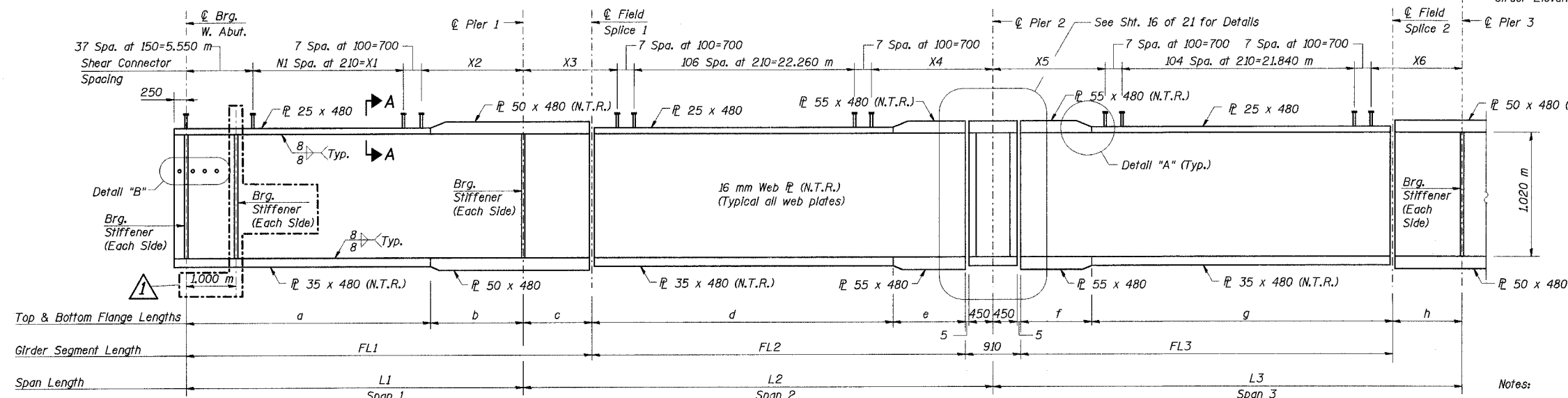


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 10 21 SHEETS
F. A. I. 80/94	*	COOK	90	67	
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-		CONTRACT NO. 62698
2004-133F					



FRAMING PLAN - SPANS 1, 2 & 3



ELEVATION - GIRDERS

(All Plates AASHTO M270 Grade 345)

(N.T.R. denotes plates to which notch toughness requirements are applicable)

GIRDER SPAN LENGTH (Meters)

Girder	L1	L2	L3
1	27.665	38.533	38.533
2	27.799	38.720	38.720
3	27.933	38.907	38.907
4	28.067	39.093	39.093
5	28.201	39.280	39.280
6	28.335	39.467	39.467

SHEAR CONNECTOR SPACING (Length In Meters)

Girder	N1	X1	X2	X3	X4	X5	X6
1	65	13.650	7.765	6.308	8.565	8.724	6.569
2	66	13.860	7.689	6.160	8.900	8.986	6.494
3	66	13.860	7.823	6.294	8.953	9.095	6.572
4	66	13.860	7.957	6.411	9.022	9.198	6.655
5	67	14.070	7.881	6.446	9.174	9.318	6.722
6	67	14.070	8.015	6.610	9.197	9.346	6.881

GIRDER DIMENSIONS (Meters)

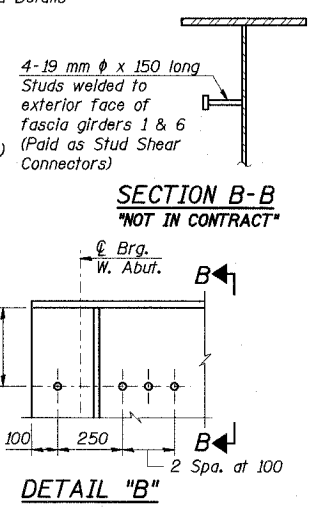
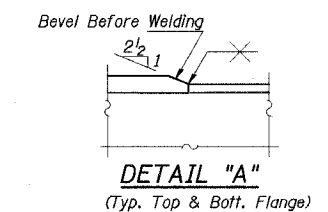
Girder	Radius R	Span 1			Span 2			Span 3	
		a	b	c	d	e	f	g	h
1	553.300	20.195	7.470	5.460	25.048	7.571	7.571	25.013	5.494
2	555.980	20.292	7.507	5.486	25.169	7.610	7.610	25.135	5.520
3	558.660	20.390	7.543	5.513	25.290	7.648	7.649	25.256	5.547
4	561.340	20.488	7.579	5.539	25.412	7.687	7.688	25.377	5.574
5	564.020	20.586	7.615	5.566	25.533	7.726	7.727	25.498	5.600
6	566.700	20.684	7.651	5.592	25.654	7.765	7.765	25.619	5.627

GIRDER SEGMENT LENGTH (Meters)

Girder	FL1	FL2	FL3
1	33.125	32.618	32.585
2	33.285	32.779	32.745
3	33.446	32.939	32.905
4	33.606	33.099	33.065
5	33.767	33.259	33.225
6	33.927	33.419	33.385

"NOT IN CONTRACT"

DESIGNED	MIL/JY
CHECKED	MAS
DRAWN	LK
CHECKED	KGN



- Notes:
- All dimensions are in millimeters (mm) except as noted.
  - Work this sheet with Sheet Nos. 11 & 12 of 21
  - Place all diaphragms radially.
  - See Section A-A on Sht. No. 13 of 21.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
I-94 EAST BOUND / IL 394 SOUTH BOUND  
FRAMING PLAN & GIRDER ELEVATION  
1 OF 2  
EB I-94 OVER THORN CREEK  
F.A.I. 94 SECTION 2004-133F  
COOK COUNTY  
STA. 20+509.000 STRUCTURE NO. 016-2807  
DATE 05/16/05  
SCALE ---

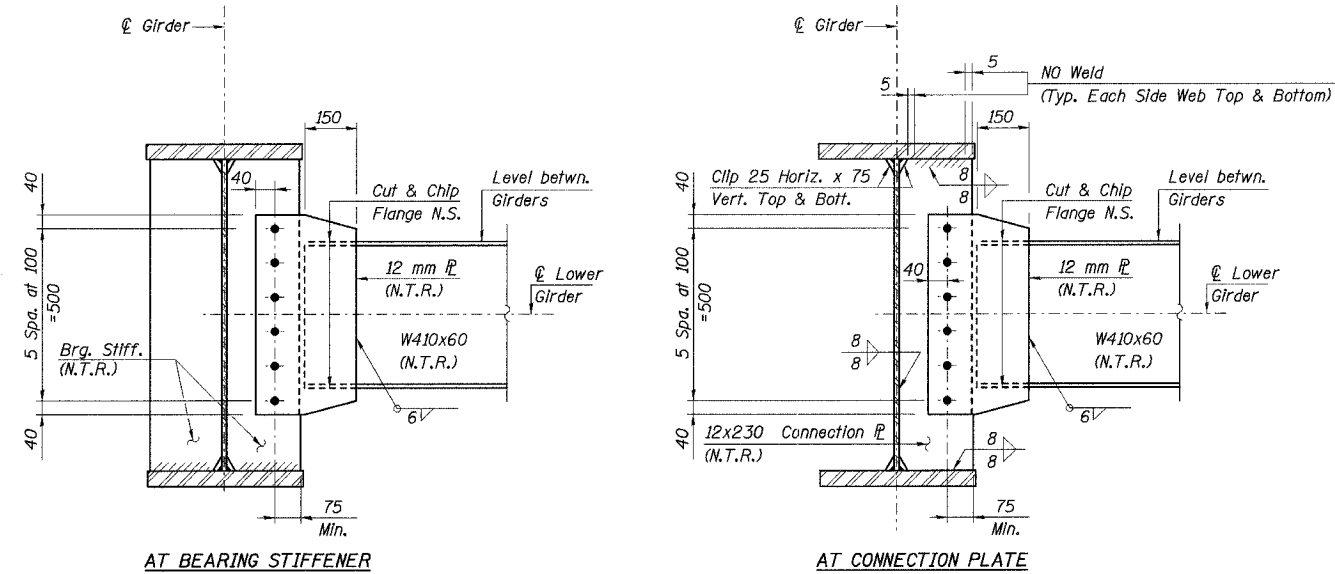
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Revised 07/07/2005, PCA

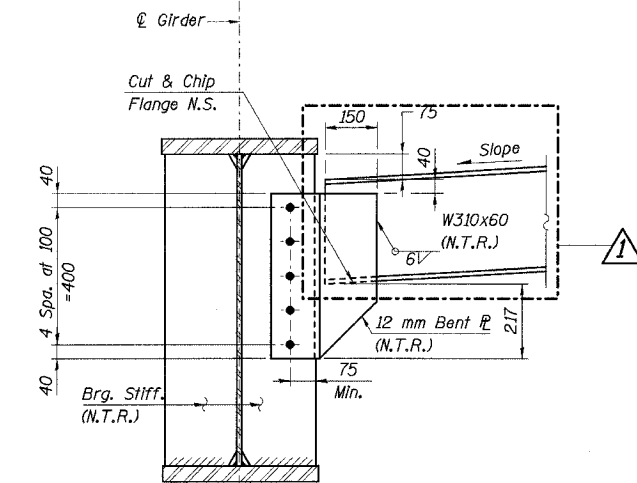
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

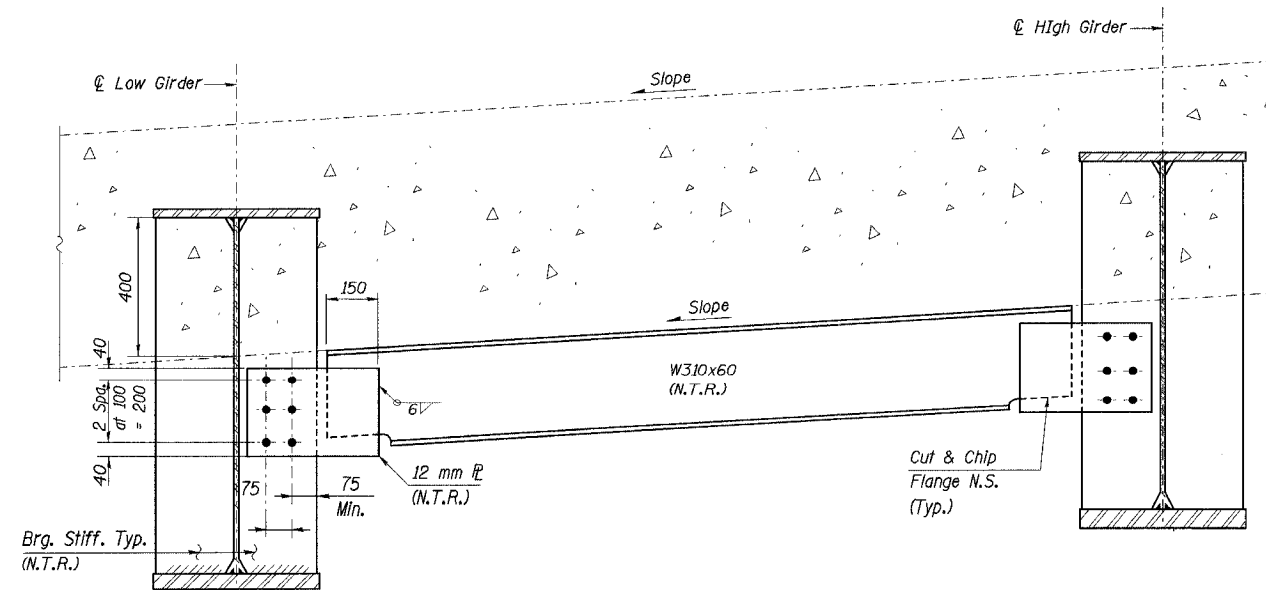
ROUTE NO. F. A. I. 80/94	SECTION •	COUNTY COOK	TOTAL SHEETS 90	SHEET NO. 71	SHEET NO. 14 21 SHEETS
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT-			
• 2004-133F		CONTRACT NO. 62898			



**INTERIOR DIAPHRAGM**  
(AASHTO M270M Grade 345)



**END DIAPHRAGM - EAST ABUTMENT**  
**END DIAPHRAGM (SPECIAL) - WEST ABUTMENT**  
(AASHTO M270M Grade 345)



**END DIAPHRAGM - WEST ABUTMENT**  
(AASHTO M270M Grade 345)

Notes:

- All dimensions are in millimeters (mm) except as noted.
- See Sheet No. 13 of 21 for bearing stiffener details and weld requirements.
- N.T.R. denotes plates to which notch toughness requirements are applicable.
- All diaphragm connections to have 28 mm  $\phi$  oversized holes for all M22 H.S. bolts.
- Two hardened washers shall be required over all oversized holes.

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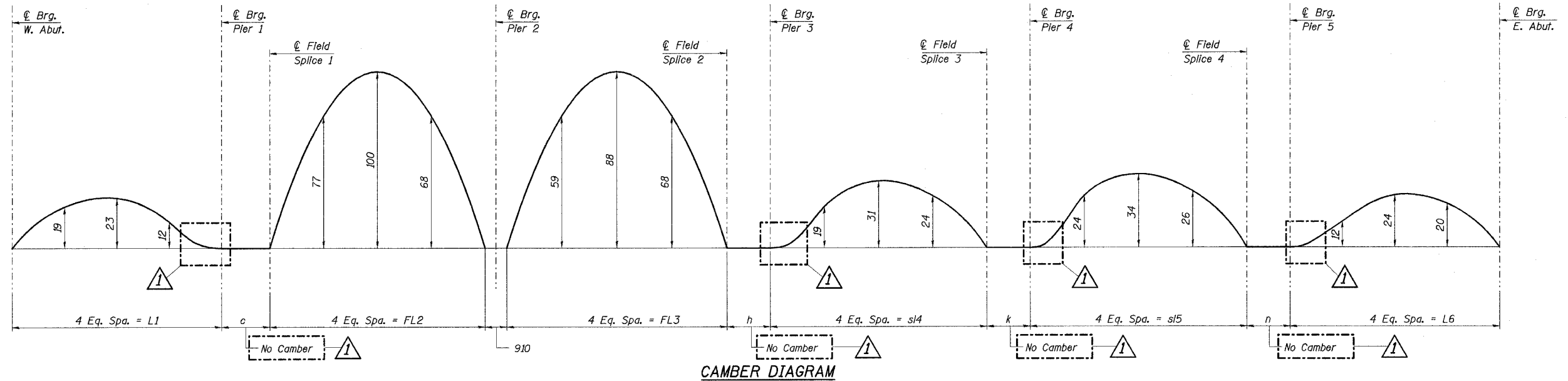
DESIGNED	MIL
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

ILLINOIS DEPARTMENT OF TRANSPORTATION  
I-94 EAST BOUND / IL 394 SOUTH BOUND  
**DIAPHRAGM DETAILS**  
EB I-94 OVER THORN CREEK  
F.A.I. 94 SECTION 2004-133F  
COOK COUNTY  
STA. 20+509.000 STRUCTURE NO. 016-2807  
DATE 05/16/05  
SCALE ---  
**HNTB**

Revised 07/07/2005, PCA

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 15
F. A. I. 80/94	*	COOK	90	72	21 SHEETS
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT			
2004-133F			CONTRACT NO. 62898		



(For Dimensions c, h, L1, FL2, FL3, see Sheet 10 of 21. For Dimensions k, n, L6, see Sheet 11 of 21.)

**TOP OF WEB ELEVATIONS FOR FABRICATION (Meters)**

(Elevations are before any deflection and are to be used for fabrication only)

Girder	℄ Brg. W. Abut.	℄ Brg. Pier 1	℄ Splice 1	D.S. Interface*	U.S. Interface*	℄ Splice 2	℄ Brg. Pier 3	℄ Splice 3	℄ Brg. Pier 4	℄ Splice 4	℄ Brg. Pier 5	℄ Brg. E. Abut.
1	184.930	184.882	184.870	184.695	184.691	184.581	184.553	184.401	184.377	184.240	184.210	184.094
2	185.091	185.043	185.031	184.856	184.852	184.743	184.715	184.563	184.538	184.401	184.371	184.255
3	185.252	185.203	185.193	185.017	185.013	184.904	184.876	184.724	184.699	184.562	184.531	184.416
4	185.412	185.364	185.354	185.178	185.174	185.066	185.037	184.885	184.860	184.723	184.692	184.577
5	185.573	185.525	185.514	185.339	185.334	185.226	185.198	185.045	185.021	184.884	184.853	184.738
6	185.734	185.686	185.675	185.500	185.495	185.386	185.358	185.206	185.182	185.045	185.014	184.898

\* Girder top of web elevations are given at the intersection of the respective girder ℄ and the outer face of the upstation (U.S.) or downstation (D.S.) box beam web at Pier 2.

**BEARING SEAT ELEVATIONS (Meters)**

(For all bearings except at Pier 2)

Girder	℄ Brg. W. Abut.	℄ Pier 1	℄ Pier 3	℄ Pier 4	℄ Pier 5	℄ Brg. E. Abut.
1	183.647	183.539	183.245	183.074	182.867	182.806
2	183.808	183.700	183.407	183.235	183.028	182.967
3	183.969	183.860	183.568	183.396	183.188	183.128
4	184.129	184.021	183.729	183.557	183.349	183.289
5	184.290	184.182	183.890	183.718	183.510	183.450
6	184.451	184.343	184.050	183.879	183.671	183.610

**GIRDER DIMENSIONS (Meters)**

Girder	s14	s15
1	29.690	27.663
2	29.834	27.797
3	29.978	27.931
4	30.122	28.065
5	30.266	28.199
6	30.410	28.333

**PIER 2 BEARING SEAT ELEVATIONS (Meters)**

Column	℄ Pier 2
North	183.047
Center	183.570
South	184.445

Notes:

- All dimensions are in millimeters (mm) except as noted.
- Work this sheet with Sheets 10, 11, 13, 16 & 18-20 of 21.

DESIGNED	PJE
CHECKED	TRL
DRAWN	LK
CHECKED	TRL

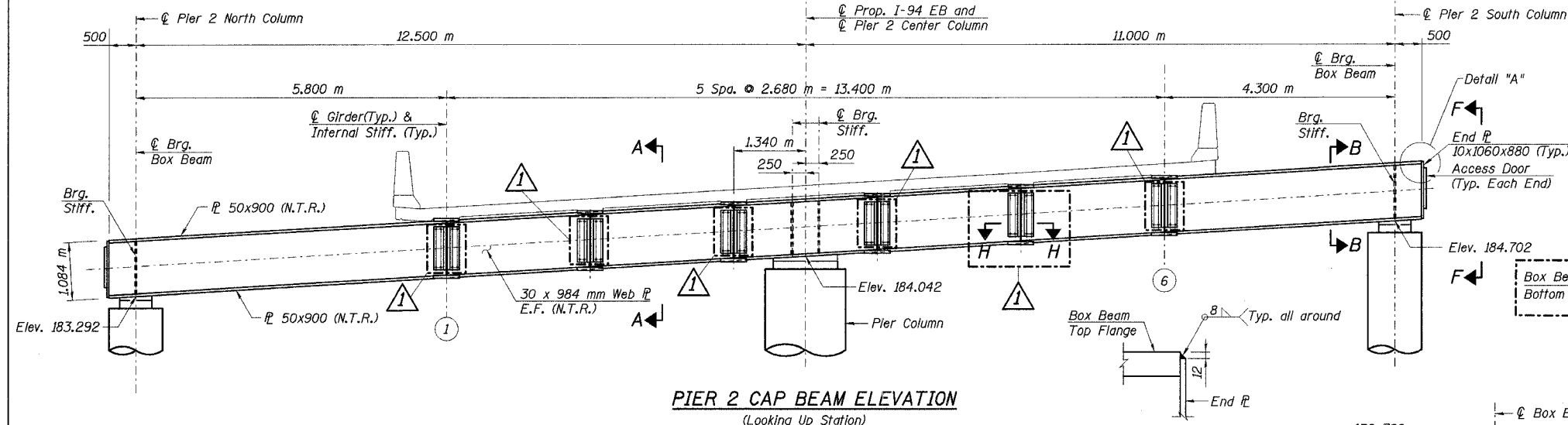
ILLINOIS DEPARTMENT OF TRANSPORTATION  
I-94 EAST BOUND / IL 394 SOUTH BOUND  
**CAMBER AND TOP OF WEB ELEVATIONS**  
EB I-94 OVER THORN CREEK  
F.A.I. 94 SECTION 2004-133F  
COOK COUNTY  
STA. 20+509.000 STRUCTURE NO. 016-2807  
DATE 05/16/05  
SCALE ---  
**HNTB**

Revised 07/07/2005, PCA

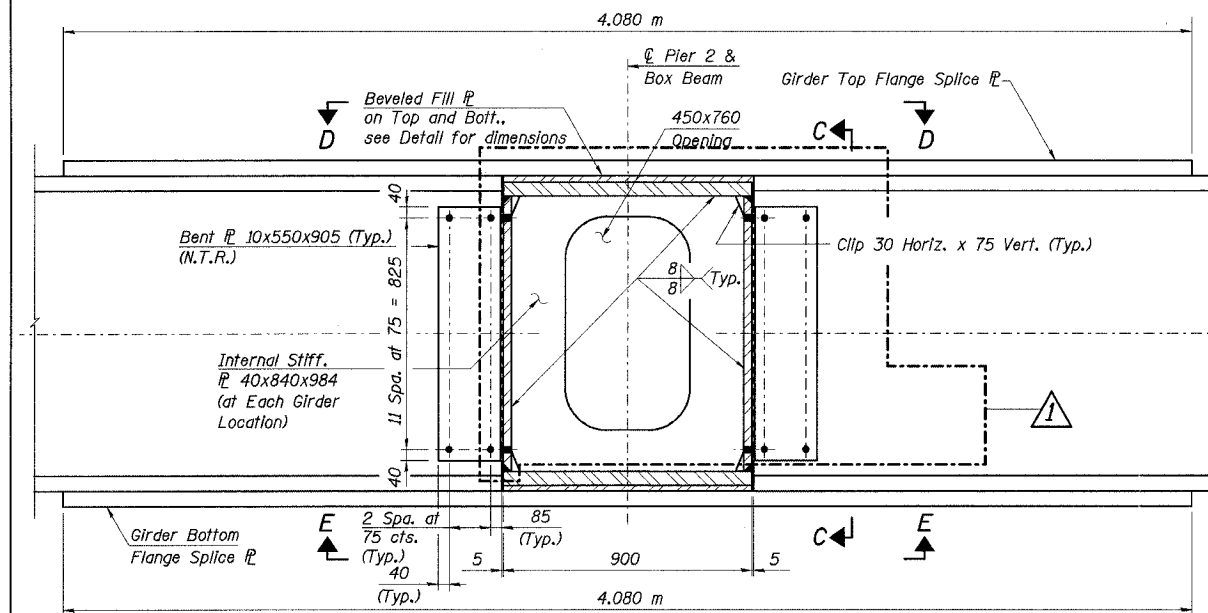
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

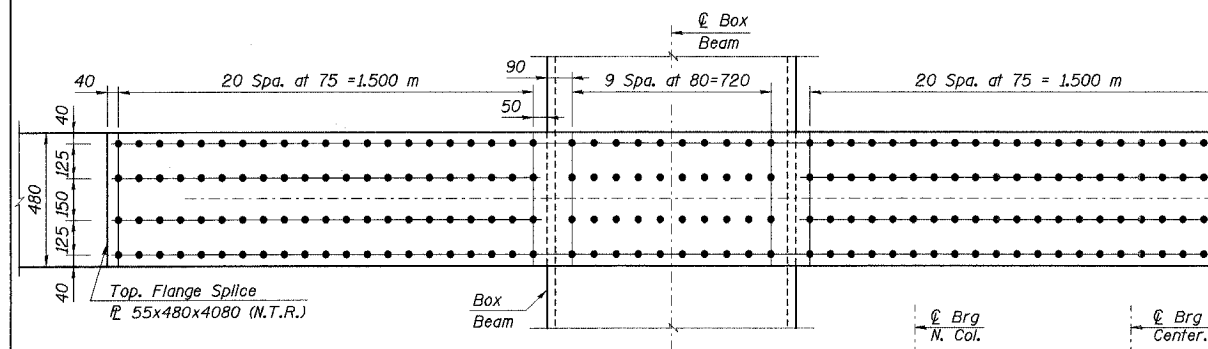
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
F. A. I. 80/94		COOK	90	73	21 SHEETS
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			CONTRACT NO. 62898		



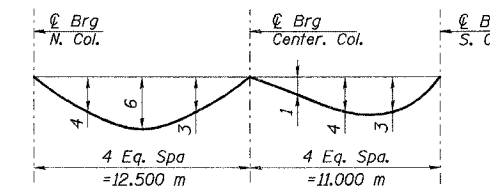
**PIER 2 CAP BEAM ELEVATION**  
(Looking Up Station)



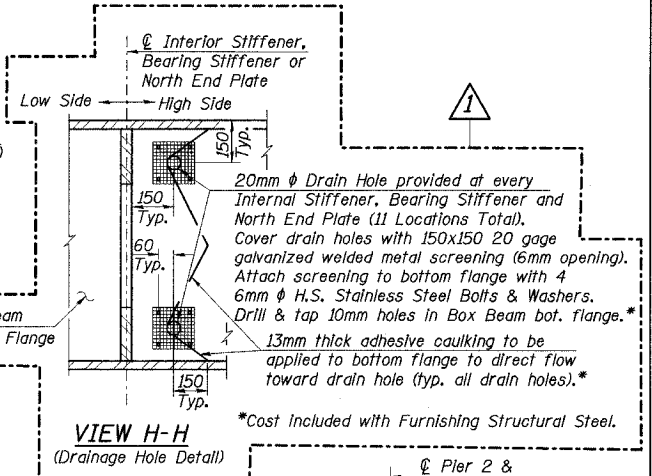
**SECTION A-A**



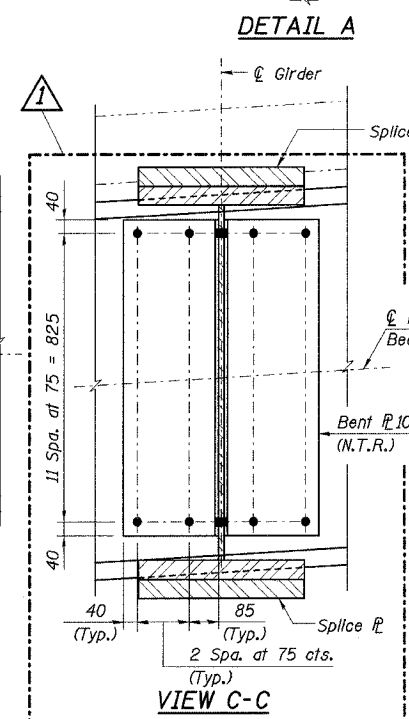
**VIEW D-D & E-E**  
(View D-D (Top view) shown, View E-E (Bottom view) similar)



**DEAD LOAD DEFLECTION**  
(Includes weight of slab and parapet)

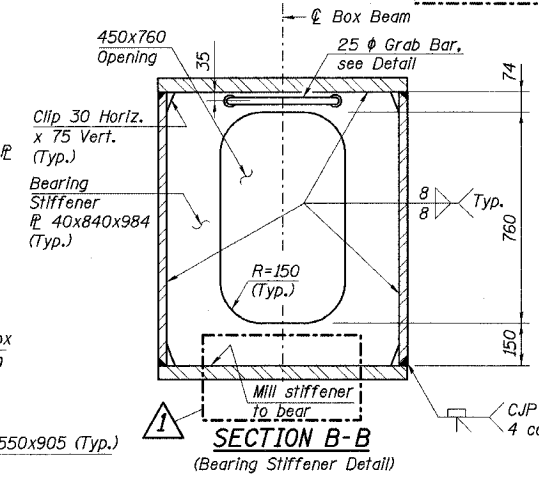


**VIEW H-H**  
(Drainage Hole Detail)

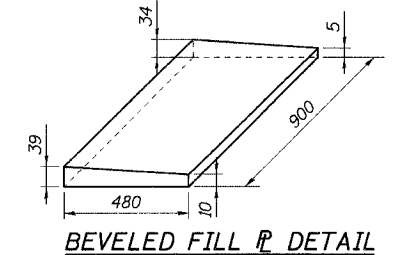


**DETAIL A**

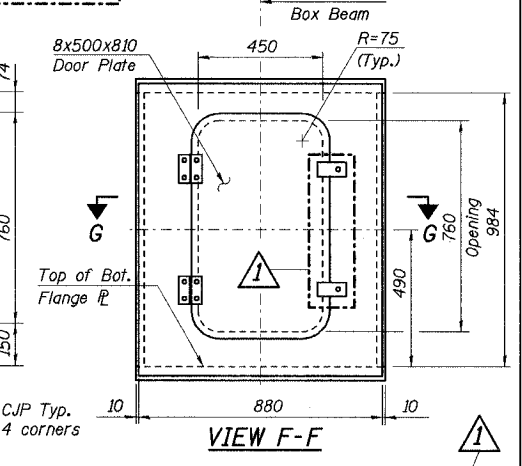
**VIEW C-C**



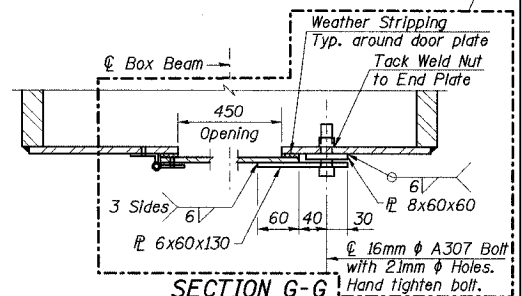
**SECTION B-B**  
(Bearing Stiffener Detail)



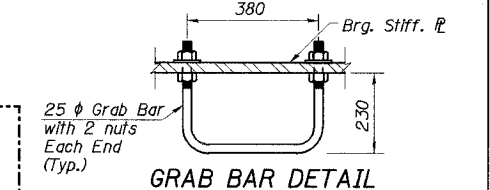
**BEVELED FILL PLATE DETAIL**



**VIEW F-F**



**SECTION G-G**



**GRAB BAR DETAIL**

- Notes:
1. N.T.R. denotes Plates to which notch toughness requirements are applicable.
  2. All dimensions are in millimeters (mm) except as noted.
  3. Preclude threads in the shear plane of H. S. Bolts.
  4. Contact Surface of splice plates must be blast-cleaned surfaces and blast-cleaned surfaces with "Class B" coatings. Coatings classified as "Class B" include those coatings which provide a mean slip coefficient not less than 0.50 as determined by test in accordance with "Test Method to Determine the Slip Coefficient for Coatings used in Bolted Joints" as adopted by Research Council on Structural Connections.
  5. All Bolts are 22 mm H.S. Bolts with 24 mm holes unless otherwise noted.
  6. All Steel components of the box girder and Splice plates are M 270M Grade 345 except the fill plates of the splices. The fill plates are M 270M Grade 250.
  7. Cost for Access Door hardware and Weather Stripping included with Furnishing Structural Steel.

DESIGNED	MEA
CHECKED	MIL
DRAWN	LK
CHECKED	MIL

ILLINOIS DEPARTMENT OF TRANSPORTATION  
I-94 EAST BOUND / IL 394 SOUTH BOUND  
**PIER 2 CAP BEAM DETAILS**  
EB I-94 OVER THORN CREEK  
F.A.I. 94 SECTION 2004-133F  
COOK COUNTY  
STA. 20+509.000 STRUCTURE NO. 016-2807  
DATE 05/16/05  
SCALE ---

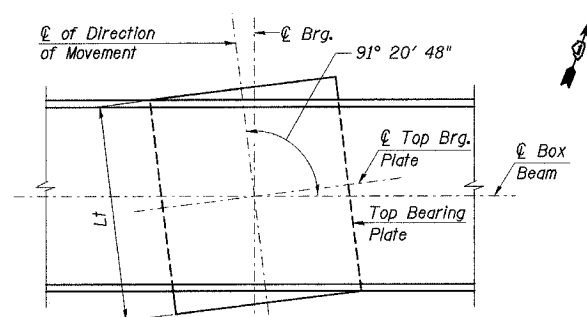
**HNTB**

Revised 07/07/2005, PCA

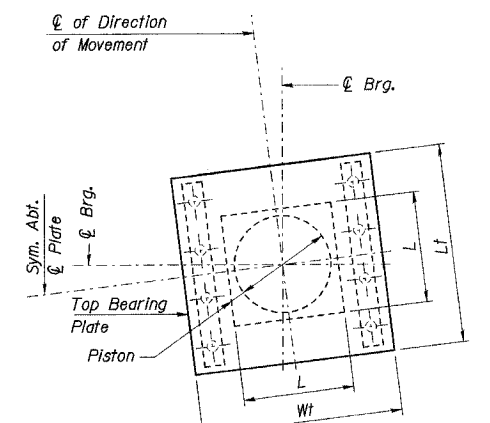
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 17
F. A. I. 80/94	*	COOK	90	74	21 SHEETS
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-		CONTRACT NO. 62898
* 2004-133F					

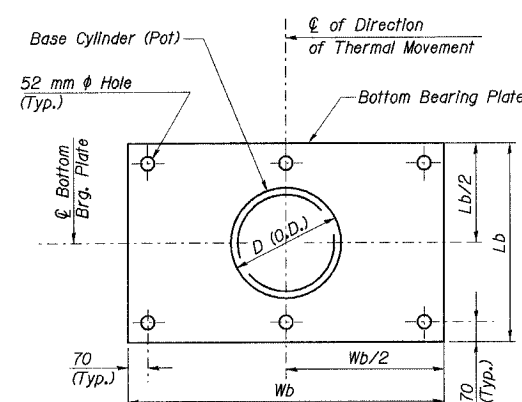


**SECTION A-A**  
(Brg. at Center Column shown;  
East Column and West Column Brg. similar)



**TOP BEARING PLATE  
AND PISTON PLAN**

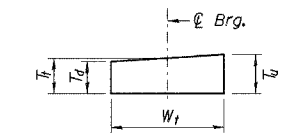
Note: Plate and piston are parallel to Q of Direction of movement and not perpendicular to Q Box Beam Orientation Angle provided in section A-A



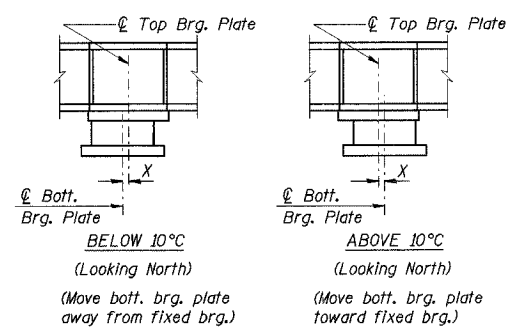
**BOTTOM BEARING PLATE  
AND BASE CYLINDER PLAN**

(Center Column)  
Note: Plate and piston are parallel to Q of Direction of movement and not perpendicular to Q Box Beam Orientation Angle provided in Section A-A

DESIGNED	JFA
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

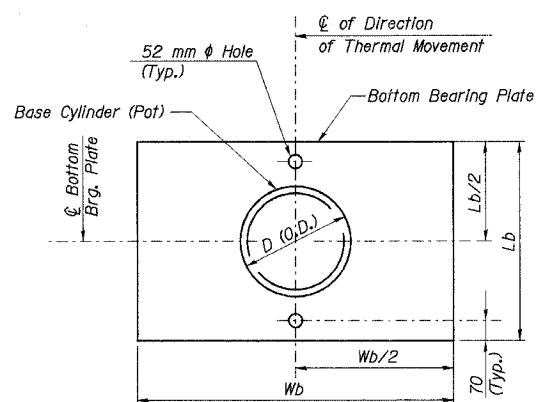


**TOP PLATE BEVEL DETAIL**



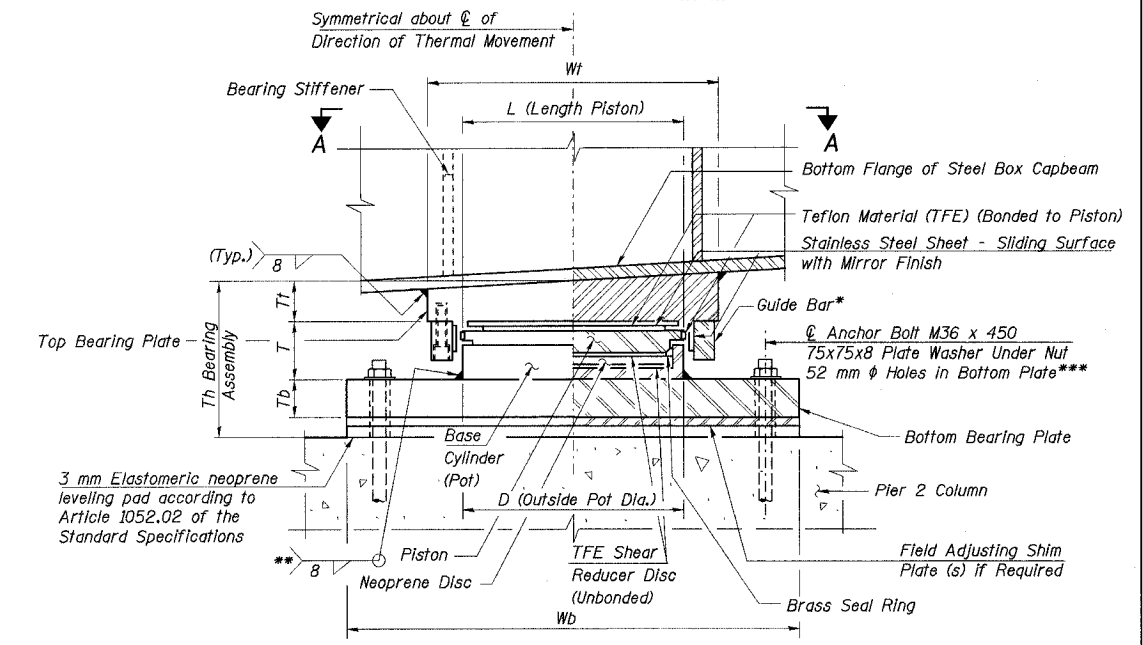
**ANCHOR BOLT SETTING DETAILS  
AT EXPANSION BEARINGS**

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



**BOTTOM BEARING PLATE  
AND BASE CYLINDER PLAN**

(East and West Column)  
Note: Plate and piston are parallel to Q of Direction of movement and not perpendicular to Q Box Beam Orientation Angle provided in Section A-A



**HALF SECTION THRU GUIDED EXPANSION BEARING**

Note: Th & Tt are measured at Q Bearing. Th includes 3mm elastomeric neoprene mat.

\* As alternatives to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.

\*\* Weld may be omitted if base cylinder is recessed into bottom bearing plate.

\*\*\*Note: North and South Column anchor bolts are A307 and Center Column anchor bolts are A325. See Note 4.

**BEARING ASSEMBLY DIMENSIONS**

Member	Dimension	Location		
		S. Col.	Center Col.	N. Col.
Top Plate	Wt	460	1050	440
	Lt	900	1075	900
	Td	70	152	64
	Tt	84	183	77
	Tu	98	215	90
Bearing	D	315	765	290
	L	315	765	290
	T	85	180	80
	Tb	510	1000	485
Bottom Plate	Lb	1200	1390	1200
	Tb	85	106	85
Bearing Assembly	Th	257	472	245

**BEARING DESIGN INFORMATION**

Design Information	Location		
	S. Col.	Center Col.	N. Col.
Vertical Design Load (kN)	1166	7706	975
Pay Item Size (kN)	1250	8000	1250
Total Required Movement (mm)	41	41	41

Note:  
Vertical Design Load = Total Vertical Dead Load + Live Load (No Impact)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Furnishing Floating Bearings, Guided Expansion, 1,250 kN	Each	2
Furnishing Floating Bearings, Guided Expansion, 8,000 kN	Each	1

- Notes:
- All dimensions are in millimeters (mm) except as shown.
  - The structural steel for the top and bottom bearing plates shall be AASHTO M 270M Grade 345.
  - Cost of top and bottom bearing plates, 3mm Elastomeric Neoprene, shim plates and threaded studs with washer shall be included with Furnishing Floating Bearings.
  - For anchor bolt type and details, see Anchor Bolt Details Sht. No. 21 of 21 Shts.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
I-94 EAST BOUND / IL 394 SOUTH BOUND

**PIER 2 BEARING DETAILS**

EB I-94 OVER THORN CREEK  
F.A.I. 94 SECTION 2004-133F  
COOK COUNTY

STA. 20+509.000 STRUCTURE NO. 016-2807  
DATE 05/16/05  
SCALE ---

**HNTB**

Revised 07/07/2005, PCA

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