F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80/94	2004-133F	COOK	90	1

CONTRACT NO. 62898

D-91-012-01 D-91-018-01

FOR INDEX OF SHEETS, SEE SHEET NO. 2

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

F.A.I. 80/94 & F.A.P. 332

(ROUTE: I-80/94 & IL 394)

SECTION 2004-133F

BEAM AND BEARING FABRICATION

(OVER THORN CREEK, HARRISON AVE., AND I-80)

~~PROJECT~~

COOK COUNTY, IL AND LAKE COUNTY, IN

C-91-098-04

THIS PROJECT IS LOCATED IN THE VILLAGES OF LANSING AND SOUTH HOLLAND, ILLINOIS IN COOK COUNTY AND CITY OF HAMMOND, INDIANA IN LAKE COUNTY.

TRAFFIC DATA

FAI 80 (INTERSTATE 80)
FAI 94 (INTERSTATE 94)
IL 394 (ILLINOIS ROUTE 394)

DESIGN DESIGNATION:
- I-94 WB (F.A.I. RTE 94) 4875 (20) 70.60 (CRCP-30)
- I-80/94 (F.A.I. RTE 80/94) 8135 (30) 76.6 (CRC-30)
- IL-394 NB (F.A.P. RTE 332) 3500 (20) 38.95 (CRCP-30)

ADT:
- I-94 = 92,700 (1995); 116,000 (2020)
- IL-394 = 41,900 (1995); 78,000 (2020)
- I-80/94/US 6 = 145,100 (1995)
- I-80/94/US 6 = 168,000 (2020)

DESIGN SPEED:
- I-94 = 110 KM/HR
- IL 394 = 110 KM/HR
- I-80/94/US 6 (ILLINOIS) = 110 KM/HR
- I-80/94/US 6 (INDIANA) = 100 KM/HR

BEGIN PROJECT
STA. 440+513.386
℄ IL 394 SB

BEGIN PROJECT
STA. 110+108.500
℄ RAMP F

STRUCTURE NO. 016-2800/016-2845
IL 394 SB/RAMP F BRIDGE OVER THORN CREEK
STA. 440+704.350, LENGTH=215.090 m
ERECTED IN FUTURE CONTRACT

END PROJECT
STA. 440+726.657
℄ IL 394 SB

END PROJECT
STA. 110+306.335
℄ RAMP F

BEGIN PROJECT
STA. 20+440.950
℄ I-94 EB

STRUCTURE NO. 016-2807
I-94 EB OVER THORN CREEK
STA. 20+509.000, LENGTH=208.100 m
ERECTED IN FUTURE CONTRACT

END PROJECT
STA. 20+649.050
℄ I-94 EB

BEGIN PROJECT
STA. 8+736.455
℄ I-80 WB

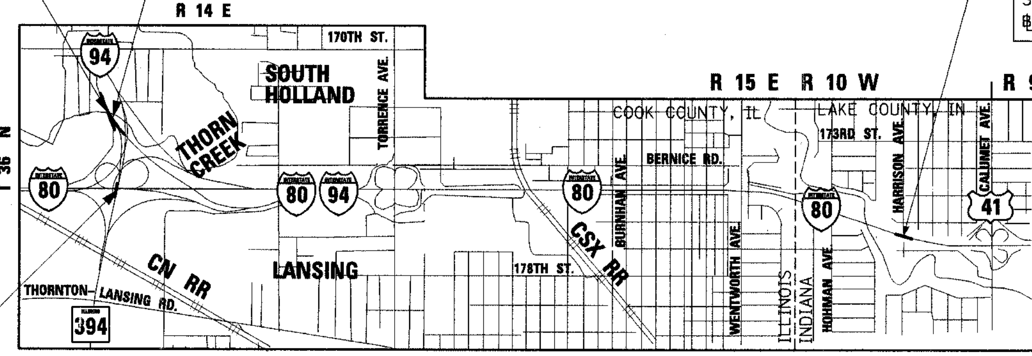
STRUCTURE NO. 016-1005/016-1006
(INDOT I-80-1-8461)
I-80 EB/WB OVER HARRISON AVE.
STA. 8+754.874, LENGTH=36.788 m
ERECTED IN FUTURE CONTRACT

END PROJECT
STA. 8+773.244
℄ I-80 WB

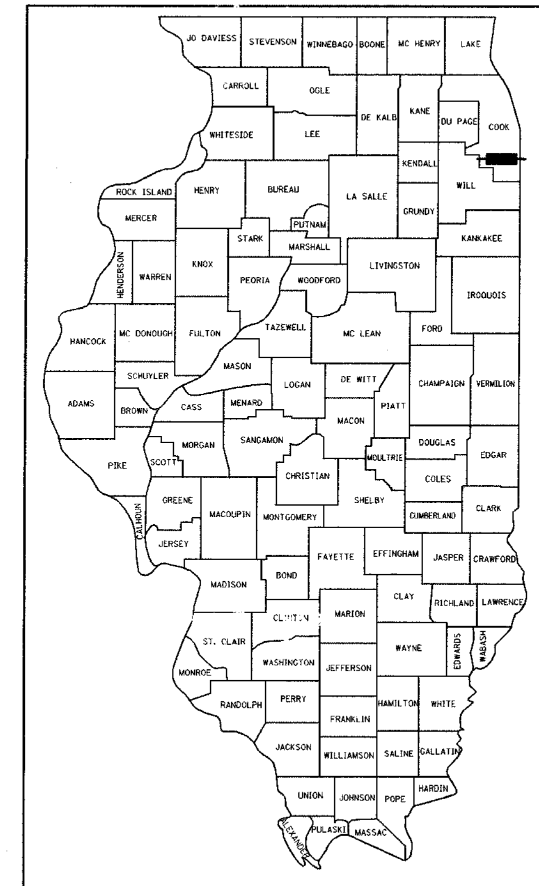
BEGIN PROJECT
STA. 440+152.811
℄ IL 394 SB

STRUCTURE NO. 016-2796
IL 394 SB OVER I-80
STA. STA. 440+193.335, LENGTH=81.384 m
ERECTED IN FUTURE CONTRACT

END PROJECT
STA. 440+234.229
℄ IL 394 SB



LOCATION MAP
SCALE = 1 : 20,000



LOCATION OF SECTION INDICATED THUS:-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED May 3, 20 05

Diane O'Keefe /RP
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

July 1, 20 05
Mike Hine /RP
ENGINEER OF DESIGN AND ENVIRONMENT

July 1, 20 05
Victor Modeer /RP
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

HNTB

AMERICAN CONSULTING ENGINEERS

STATE OF ILLINOIS — PHILIP C. AZZARELLO — 081-004245 — CHICAGO, ILLINOIS — LICENSED STRUCTURAL ENGINEER

GARY S. POWELL — REGISTERED — No. 10403944 — STATE OF INDIANA — PROFESSIONAL ENGINEER

GROSS LENGTH, STRUCTURE NO. 016-2796 = 81.384 m
GROSS LENGTH, STRUCTURE NO. 016-2800/016-2845 = 215.090 m
GROSS LENGTH, STRUCTURE NO. 016-2807 = 208.100 m
GROSS LENGTH, STRUCTURE NO. 016-1005/016-1006 = 36.788 m
NET LENGTH OF PROJECT = 541.362 m

Philip C. Azzarello 5-2-05
PHILIP C. AZZARELLO, S.E.
IL. LICENSE NO. 081-004245
EXPIRES: 11/30/06
DATE: 5-2-05
SHEETS: 1-78

Gary S. Powell
GARY S. POWELL, P.E.
IN. LICENSE NO. 10403944
EXPIRES: [redacted] 07-31-2006
DATE: 05-02-2005
SHEETS: 79-90

CONTRACT NO. 62898

CONSULTANT PROJECT ENGINEER: CATHERINE A. KIBBLE (847) 705-4269 - SCHAUMBURG, IL.

CONTRACT NO. 62898

FAI RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80/94	2004-133F	COOK	90	2
STA.		TO STA.		
FED ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

SUMMARY OF QUANTITIES

CODE	ITEM	UNIT	URBAN TOTAL QUANTITIES	CONSTRUCTION TYPE CODE: IDOT 100% STATE IL 394 SB OVER I-80 SN 016-2796 X271-2A	IDOT 100% STATE IL 394 OVER THORN CREEK SN 016-2800 X071-2A	100% ISTHA IL 394 OVER THORN CREEK (RAMP F) SN 016-2845 X071-2A	IDOT 100% STATE I-94 EB OVER THORN CREEK SN 016-2807 X071-2A	INDOT 100% INDIANA I-80/94 EB & WB HARRISON AVE. (EB/WB) SN 016-1005 / SN 016-1006 X271-2A
M5050120	FURNISHING STRUCTURAL STEEL	L SUM	1.00	0.09	0.47		0.28	0.16
MX030503	FURNISHING MODULAR EXPANSION JOINT 160MM	METER	14.7				14.7	
50300410	FURNISHING ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	36	12	24			
50300430	FURNISHING ELASTOMERIC BEARING ASSEMBLY, TYPE III	EACH	9		9			
MX030282	FURNISHING FLOATING BEARINGS, GUIDED EXPANSION, 750KN	EACH	12				12	
MX030267	FURNISHING FLOATING BEARINGS, GUIDED EXPANSION, 1250KN	EACH	2				2	
MX030268	FURNISHING FLOATING BEARINGS, GUIDED EXPANSION, 1500KN	EACH	12				12	
MX030484	FURNISHING FLOATING BEARINGS, GUIDED EXPANSION, 2000KN	EACH	10		10			
MX033543	FURNISHING FLOATING BEARINGS, GUIDED EXPANSION, 8000KN	EACH	1				1	
MX030499	FURNISHING FLOATING BEARINGS, FIXED, 1500KN	EACH	12				12	
MX030500	FURNISHING FLOATING BEARINGS, FIXED, 2250KN	EACH	12		12			
MX505025	STORAGE OF STRUCTURAL STEEL	UNIT	3434	303	1506	212	912	501
X0324146	STORAGE OF MODULAR EXPANSION JOINTS	CAL DA	45				45	
50300475	STORAGE OF ELASTOMERIC BEARING ASSEMBLIES	CAL DA	30	15	15			
X0324101	STORAGE OF FLOATING BEARINGS	CAL DA	30		15		15	
X5050200	FURNISHING STRUCTURAL STEEL (GIRDER SPANS)	L SUM	1.00			1.00		
X5030220	FURNISHING ELASTOMERIC BEARING, TYPE I (800 IN^3<V<1000 IN^3)	EACH	12			12		

INDEX OF SHEETS

1 COVER
2 SUMMARY OF QUANTITIES & INDEX OF SHEETS
3–15 STRUCTURE NO. 016–2796 SB IL 394 OVER I–80
16–57 STRUCTURE NO. 016–2800/2845 SB IL 394/RAMP F BRIDGE OVER THORN CREEK
58–78 STRUCTURE NO. 016–2807 EB I–94 OVER THORN CREEK
79–90 STRUCTURE NO. 016–1005/016–1006 I–80/94 EB & WB OVER HARRISON AVE. (EB/WB)

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
BEAM AND BEARING FABRICATION

SUMMARY OF QUANTITIES & INDEX OF SHEETS

HORIZ SCALE: NONE
VERT SCALE: NONE
DATE: MAY 16, 2005
DRAWN BY: JC
CHECKED BY: PCA

HNTB

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JChan 23-MAY-2005 17:31

Benchmark: BM ASC220 Square cut on southeast corner of NB IL 394 bridge over I-80. Elev. = 184.942

Existing Structure: S.N. 016-0971 four-span continuous 58.26 m Bk. to Bk. abutments, 15.60 m O. to O. R.C. deck supported by W760 steel stringers. Built as F.A. Route 122, Sec. 066-0303.6A-MFT at Station 32+47.94 (English) in 1952. Deck was rehabilitated in 1995.

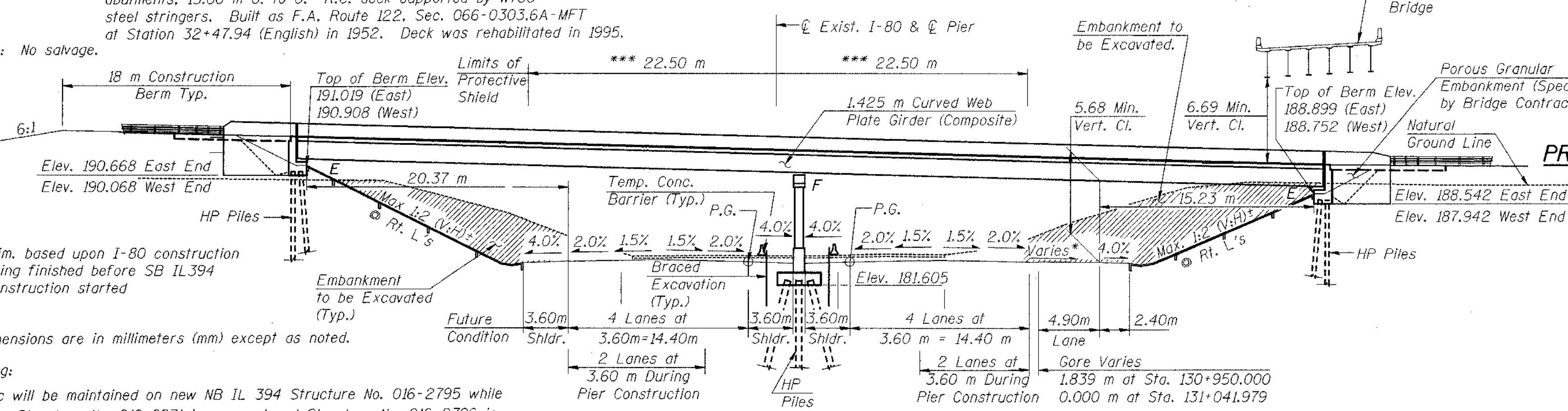
Salvage: No salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80/94	*	COOK	90	3
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1
29 SHEETS

*2004-133F CONTRACT NO. 62898



*** Dim. based upon I-80 construction being finished before SB IL394 construction started

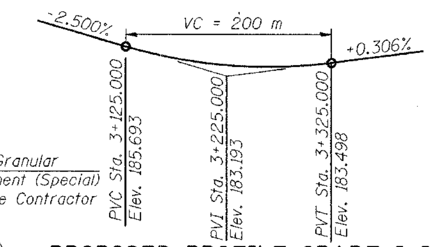
All dimensions are in millimeters (mm) except as noted.

ELEVATION

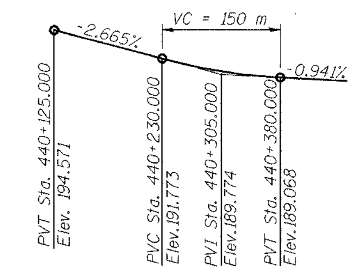
(All dimensions at right angles to ℄ Roadway, except as noted)

Staging:

Traffic will be maintained on new NB IL 394 Structure No. 016-2795 while existing Structure No. 016-0971 is removed and Structure No. 016-2796 is constructed. Existing I-80 traffic will be shifted as shown during pier construction. New Ramp G Bridge SN 016-2804 is being constructed concurrently with this bridge under a different construction contract. New Ramp J Bridge SN 016-2805 was constructed under a previous construction contract.



PROPOSED PROFILE GRADE I-80



PROPOSED PROFILE GRADE SB IL 394

CURVE DATA BL394SB-1

PI STA. = 440+282.451
Δ = 38°-53'-33"
R = 800.000 m
T = 282.451 m
L = 543.043 m
E = 48.398 m
S.E. = 5.40%
PC STA. = 440+000.000
PT STA. = 440+543.043

LOADING MS18

Allow 2.4 kN/m² for future wearing surface.

DESIGN SPECIFICATIONS

2002 AASHTO
2003 AASHTO Guide Specifications for Horizontally Curved Steel Girders Highway Bridges

DESIGN STRESSES

FIELD UNITS

f'_c = 24 MPa
f_y = 400 MPa (reinforcement)
f_y = 345 MPa (structural steel) (M270 Grade 345)
f_y = 250 MPa (structural steel) (M270 Grade 250)

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = .04
Site Coefficient (S) = 1.0

LEGEND

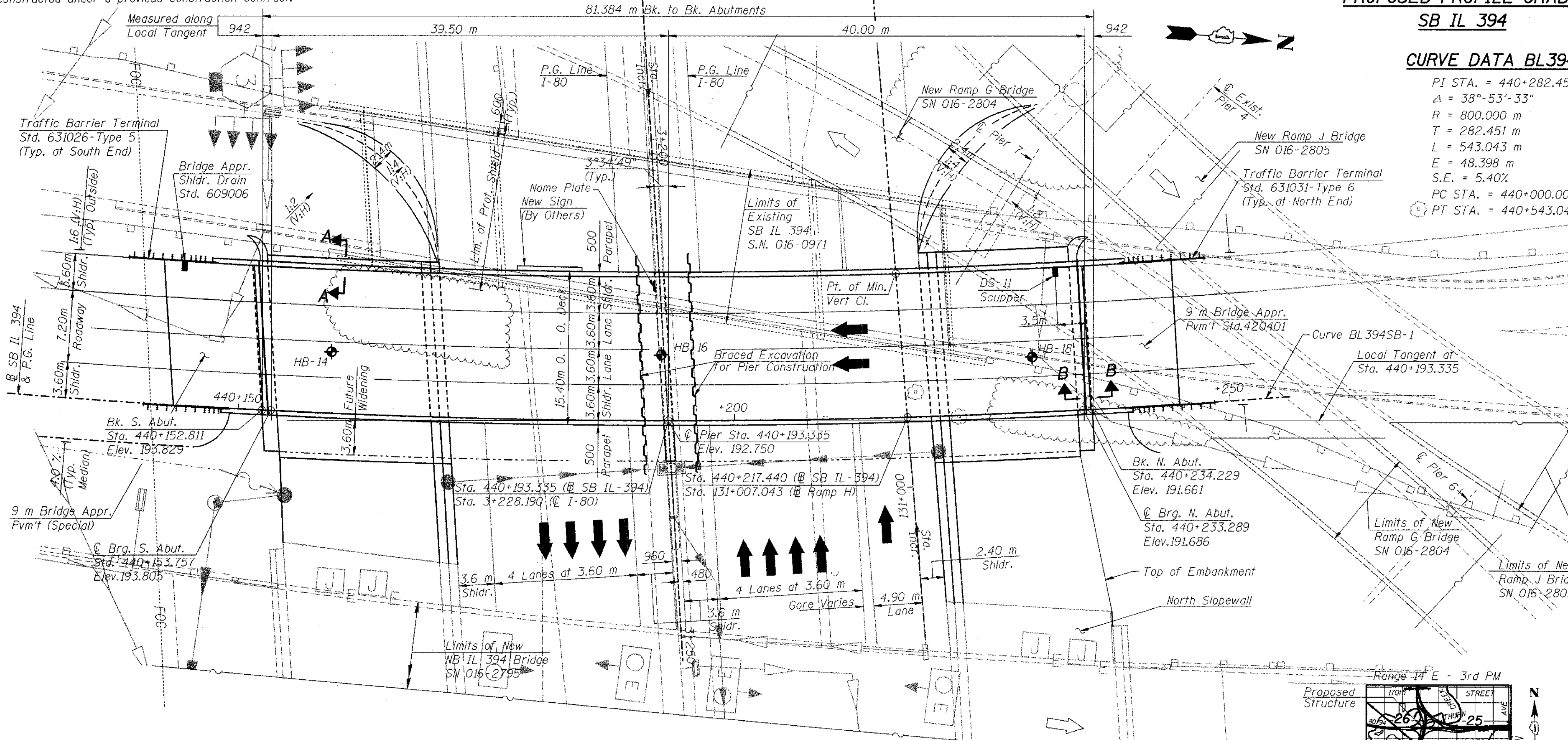
Boring
Exist. Guardrail
Exist. Tree
Embankment Excavation
Exist. Fiber Optic Cable
Exist. Sewer **
Exist. Manhole **
Exist. Inlet **
Proposed Sewer
Proposed Inlet
Proposed Catch Basin

** Existing [illegible] ned

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS PHILIP C. AZZARELLO 081-004245 CHICAGO, ILLINOIS LICENSED STRUCTURAL ENGINEER

Philip C. Azzarello 5-20-05
Philip C. Azzarello, S.E.
Ill. Reg. No. 081-004245
Expires 11-30-06

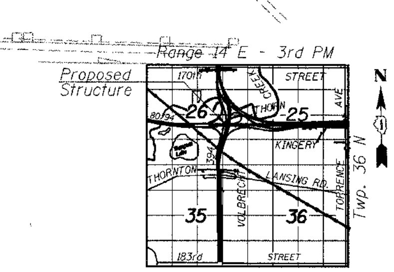


PLAN

(Existing I-80 Traffic Configuration Not Shown)

NOTES:

1. For Section A-A & B-B see Sht. No. 2 of 29.
2. All work shown on this drawing not related to the fabrication of the structural steel and bearings is for information only.



LOCATION SKETCH

DESIGNED	JJK
CHECKED	PCA/DD
DRAWN	LK
CHECKED	MAS

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
GENERAL PLAN & ELEVATION
SB ILLINOIS ROUTE 394 OVER INTERSTATE 80
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+193.335 STRUCTURE NO. 016-2796
DATE 05/16/05
SCALE ----
HNTB

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	4
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 2
29 SHEETS
*2004-133F
CONTRACT NO. 62898

GENERAL NOTES

THESE PLANS ARE FOR THE FABRICATION OF THE STRUCTURAL STEEL AND BEARINGS. ALL WORK SHOWN THAT IS NOT RELATED TO THE FABRICATION IS FOR INFORMATION ONLY. IT IS NOT INCLUDED IN THIS CONTRACT, AND IS IDENTIFIED AS "NOT IN CONTRACT".

1. All dimensions are in millimeters (mm) except as noted.
2. Fasteners shall be high strength bolts. Bolts M 22, open holes 24 mm ϕ, unless otherwise noted.
3. Calculated mass of structural steel =201,010 kg for M 270M Grade 345 and 910 kg for M 270M Grade 250.
4. The organic zinc rich primer / epoxy / urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception that masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the field. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Reddish Brown, Munsell No. 2.5YR 3/4. See Special Provision for "Cleaning and Painting New Metal Structures."

**** 5. Field welding of construction accessories will not be permitted to the beams or girders.

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

7. The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the tension flanges and webs, the cross frames and connection plates, and all splice plate material except fill plates.

**** 8. Reinforcement bars shall conform to the requirements of AASHTO M 31M or M 322M Grade 400.

**** 9. Slope walls shall be reinforced with welded wire fabric, 152 x 152 - MW25.8 x MW25.8 with a mass of 2.91 kg/m^2

**** 10. The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.

**** 11. The Contractor shall drive one steel HP310x79 test pile in a permanent location at the North and South Abutments and at the Pier as directed by the Engineer before ordering the remainder of piles.

12. 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 top bearing plate, shall be provided for each bearing and placed as detailed.

**** 13. Bridge Seat Sealer shall be applied to the seat area of the South and North Abutments, including future widening.

**** 14. When the deck pour is stopped for the day at one or more of the transverse Bonded Construction Joints in the deck Pouring Sequence as shown, the next pour shall not be made until both of the following requirements are met:
   1. At least 72 hours shall have elapsed from the end of the previous pour.
   2. The concrete strength shall have attained a minimum flexural strength of 4.5 MPa or a minimum compressive strength of 24 MPa.

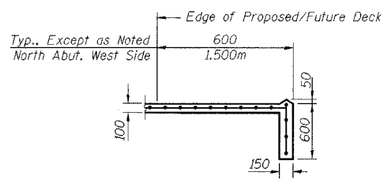
**** 15. All construction joints shall be bonded.

**** 16. Protective shield quantity calculated is based upon I-80 construction being completed before the start of SB IL394 construction. Protective shield quantity to be verified in the field.

**** 17. The construction of Ramp G Bridge (SN 016-2804) might be completed before the construction of SB IL394 Bridge (SN 016-2796). Due to the limited headroom some of the piles at North Abutment might require special pile driving equipment and multiple splices in the piles. The Splices must be full moment carrying splices with a min. splice length of 3 meters and their cost will be included in the unit price bid for "Driving Steel Piles". The requirements and details of the splices shall be in accordance with the Standard Specifications Art. 512.05(b) and Construction Memorandum No. 00-44, Effective May 5, 2000. Please note that this note overrides the requirements in the Standard Specifications regarding the minimum splice length of 8 meters and a maximum of one preplanned splice per pile.

**** 18. The existing structural steel coating may contain lead based paint. The Contractor should take appropriate precautions to deal with the presence of lead on this project. No additional compensation will be made to properly dispose of items containing lead.

**** THIS WORK IS NOT INCLUDED IN THIS FABRICATION CONTRACT AND IS PROVIDED FOR INFORMATION ONLY.



SECTION A-A

(For Location of Section A-A See Sheet No.1 of 29)

"NOT IN CONTRACT"

INDEX OF DRAWINGS

Sht. No.	Sht. Title
1	General Plan & Elevation
2	General Notes, Quantities & Details
*** 3	Slopewall Details (SN 016-2795)
4	Footing Layout, Offset Sketch, & Braced Excavation
5	Top of Slab Elevation Grid & Details
6-8	Top of Slab Elevations
*** 9	Deck Plan
10	Deck & Parapet Sections
*** 11	Parapet Elevation
*** 12	Deck Details
*** 13	Bridge Joint System
*** 14	Drainage Scupper DS-11
15	Framing Plan
16	Girder Elevation & Details
17	Structural Steel Details
18	Bearing Details
19	Anchor Bolt Details
*** 20	South Abutment Plan & Elevation
*** 21	South Abutment Details
*** 22	North Abutment Plan & Elevation
*** 23	North Abutment Details
*** 24	Abutment Details
*** 25	Pier Plan & Elevation
*** 26	Pier Section & Details
*** 27	Bar Splicer Assembly Details
*** 28-29	Soil Boring Logs

*** THIS WORK IS NOT INCLUDED IN THIS FABRICATION CONTRACT AND SHEET IS NOT INCLUDED IN THESE PLANS

TOTAL BILL OF MATERIAL

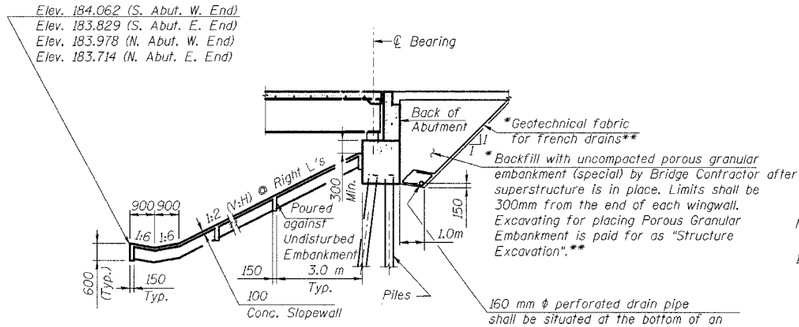
ITEM	UNIT	SUPER	SUB	TOTAL
Furnishing Structural Steel	L Sum	0.09	---	0.09
Storage of Structural Steel (a)	Unit	303	---	303
Furnishing Elastomeric Bearing Assembly, Type I	Each	---	12	12
Storage of Elastomeric Bearing Assemblies (b)	Cal Da	---	15	15

(a) For Storage of Structural Steel, one Unit shall be equal to 5 metric tons. The quantity was calculated based on the assumption that 25% of the steel mass is stored for 30 calendar days.

(b) 15 Calendar Days was estimated for Storage of Elastomeric Bearing Assemblies to establish unit bid price.

Bill of Material Notes:

1. For Splices of Steel Piles, see General Notes.
2. For Protective Shield, see General Notes.



*Behind abutment extension for future widening, place to top of lean concrete encasement.

**Cost to be included in the item "Porous Granular Embankment (Special)".

SECTION B-B

(N. Abut. Shown; S. Abut. Similar)

"NOT IN CONTRACT"

Horizontal Dimensions Shown at Right Angles (For Location of Section B-B, see Sheet No. 1 of 29)

Notes:

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

DESIGNED	MEA
CHECKED	MAS
DRAWN	LK
CHECKED	MAS/MEA

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

GENERAL NOTES, QUANTITIES & DETAILS

SB ILLINOIS ROUTE 394 OVER INTERSTATE 80
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+193.335 STRUCTURE NO. 016-2796

DATE 05/16/05
SCALE ---

HNTB

JK:m
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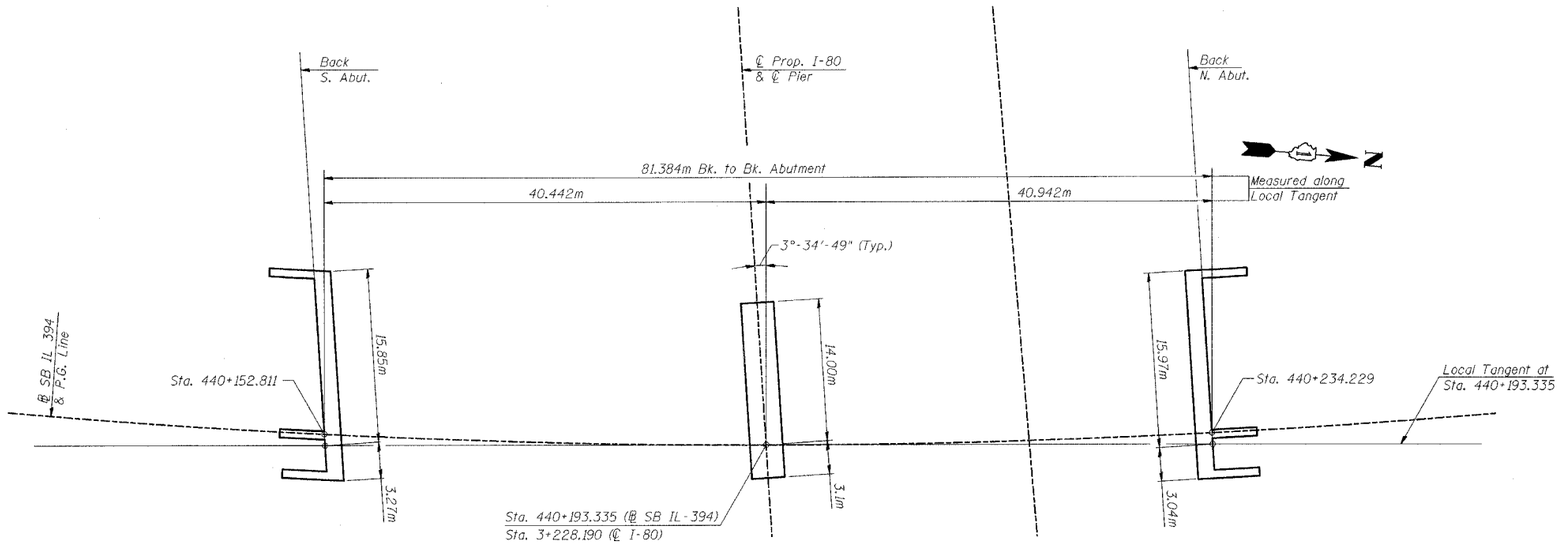
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	5
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 4
29 SHEETS

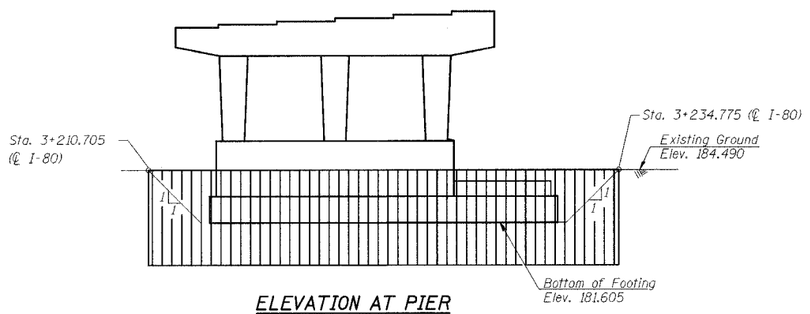
*2004-133F
CONTRACT NO. 62898

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



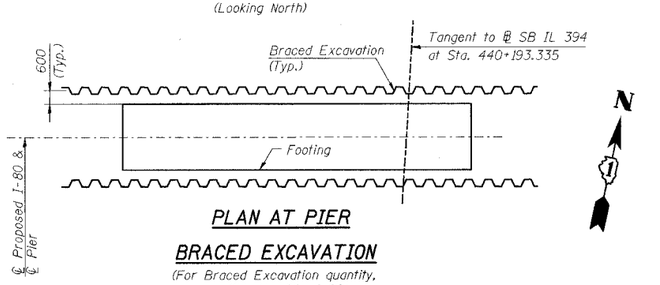
FOOTING LAYOUT

"NOT IN CONTRACT"



ELEVATION AT PIER

(Looking North)

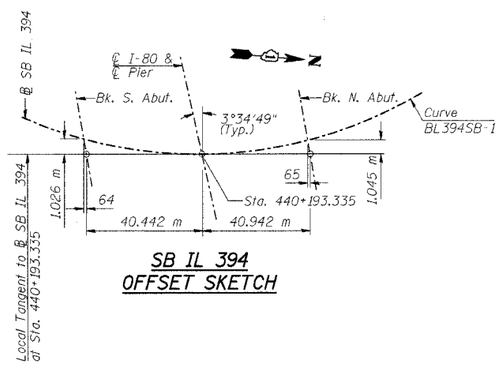


PLAN AT PIER

BRACED EXCAVATION

(For Braced Excavation quantity, see Sht. No. 26 of 29)

"NOT IN CONTRACT"



SB IL 394
OFFSET SKETCH

Notes:

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

DESIGNED	MEA
CHECKED	PY
DRAWN	LK
CHECKED	PY

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
FOOTING LAYOUT, OFFSET SKETCH & BRACED EXCAVATION
SB ILLINOIS ROUTE 394 OVER INTERSTATE 80
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+193.335 STRUCTURE NO. 016-2796
DATE 05/16/05
SCALE ---

HNTB

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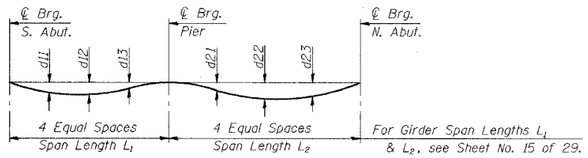
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	6
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 5
29 SHEETS

*2004-133F
CONTRACT NO. 62898



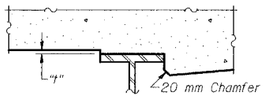
DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)

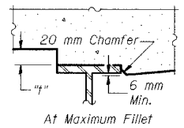
DEFLECTION TABLE

	Span 1			Span 2		
Girder	d11	d12	d13	d21	d22	d23
1 & 6	36	38	15	17	42	38
2-5	41	43	17	19	48	43

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 in the "Top of Slab Elevations" tables.



At Minimum Fillet



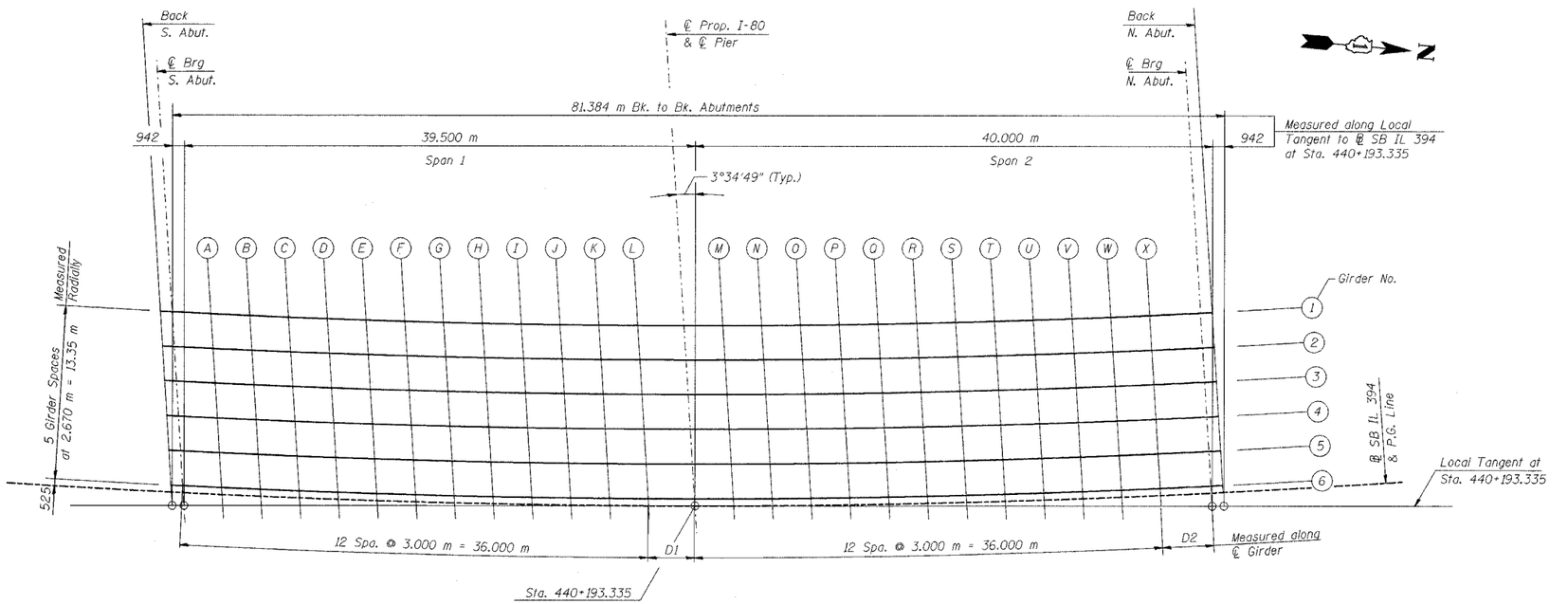
At Maximum Fillet

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

FILLET HEIGHTS

END OF SPAN DIMENSIONS (Meters)

Girder	D1	D2
1	3.583	3.955
2	3.582	3.955
3	3.581	3.955
4	3.580	3.954
5	3.579	3.954
6	3.578	3.954
℄/PGL	3.578	3.954



ELEVATION GRID

Notes:

1. Work this Sheet with Nos. 6-8 of 29 sheets.
2. All offsets & elevations shown in the "Top of Slab Elevations" tables are in meters (m).
3. All dimensions are in millimeters (mm) except as noted.

DESIGNED	MEA
CHECKED	MAS/PY
DRAWN	LK
CHECKED	MAS/PY

THIS SHEET FOR INFORMATION ONLY

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

TOP OF SLAB ELEVATION GRID AND DETAILS

SB ILLINOIS ROUTE 394 OVER INTERSTATE 80
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+193.335 STRUCTURE NO. 016-2796

DATE 05/16/05
SCALE ---

HNTB

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	7
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 6
29 SHEETS

*2004-133F
CONTRACT NO. 62698

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	440+151.223	-13.875	193.123	193.123
℄ Brg. S. Abut.	440+152.169	-13.875	193.098	193.098
A	440+155.222	-13.875	193.016	193.031
B	440+158.275	-13.875	192.935	192.962
C	440+161.328	-13.875	192.854	192.892
D	440+164.381	-13.875	192.772	192.817
E	440+167.434	-13.875	192.691	192.739
F	440+170.487	-13.875	192.610	192.657
G	440+173.540	-13.875	192.528	192.570
H	440+176.593	-13.875	192.447	192.482
I	440+179.646	-13.875	192.365	192.391
J	440+182.699	-13.875	192.284	192.300
K	440+185.752	-13.875	192.203	192.211
L	440+188.805	-13.875	192.121	192.123
℄ Pier	440+192.452	-13.875	192.024	192.024
M	440+195.504	-13.875	191.943	191.945
N	440+198.557	-13.875	191.861	191.869
O	440+201.610	-13.875	191.780	191.796
P	440+204.663	-13.875	191.699	191.725
Q	440+207.716	-13.875	191.617	191.653
R	440+210.769	-13.875	191.536	191.580
S	440+213.822	-13.875	191.455	191.504
T	440+216.875	-13.875	191.373	191.424
U	440+219.928	-13.875	191.292	191.341
V	440+222.981	-13.875	191.211	191.254
W	440+226.034	-13.875	191.129	191.162
X	440+229.087	-13.875	191.048	191.068
℄ Brg. N. Abut.	440+233.112	-13.875	190.941	190.941
Bk. N. Abut.	440+234.052	-13.875	190.916	190.916

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	440+151.533	-11.205	193.259	193.259
℄ Brg. S. Abut.	440+152.479	-11.205	193.234	193.234
A	440+155.522	-11.205	193.153	193.169
B	440+158.565	-11.205	193.071	193.101
C	440+161.607	-11.205	192.990	193.032
D	440+164.650	-11.205	192.909	192.958
E	440+167.692	-11.205	192.828	192.881
F	440+170.735	-11.205	192.747	192.799
G	440+173.778	-11.205	192.666	192.713
H	440+176.820	-11.205	192.585	192.624
I	440+179.863	-11.205	192.504	192.533
J	440+182.905	-11.205	192.423	192.441
K	440+185.948	-11.205	192.342	192.351
L	440+188.991	-11.205	192.261	192.264
℄ Pier	440+192.624	-11.205	192.164	192.164
M	440+195.667	-11.205	192.083	192.085
N	440+198.709	-11.205	192.002	192.011
O	440+201.752	-11.205	191.920	191.938
P	440+204.794	-11.205	191.839	191.868
Q	440+207.837	-11.205	191.758	191.797
R	440+210.880	-11.205	191.677	191.726
S	440+213.922	-11.205	191.596	191.651
T	440+216.965	-11.205	191.515	191.572
U	440+220.007	-11.205	191.434	191.488
V	440+223.050	-11.205	191.353	191.400
W	440+226.093	-11.205	191.272	191.308
X	440+229.135	-11.205	191.191	191.213
℄ Brg. N. Abut.	440+233.146	-11.205	191.084	191.084
Bk. N. Abut.	440+234.086	-11.205	191.060	191.060

Notes:

1. Work this sheet with Sheet No. 5 of 29 sheets.

THIS SHEET FOR INFORMATION ONLY

DESIGNED	MEA
CHECKED	MAS
DRAWN	LK
CHECKED	PY/MAS

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

TOP OF SLAB ELEVATIONS

SB ILLINOIS ROUTE 394 OVER INTERSTATE 80
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+193.335 STRUCTURE NO. 016-2796

DATE 05/16/05
SCALE ---

HNTB

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	8
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

*2004-133F CONTRACT NO. 62898

SHEET NO. 7
29 SHEETS

GIRDER 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	440+151.841	-8.535	193.395	193.395
℄ Brg. S. Abut.	440+152.787	-8.535	193.370	193.370
A	440+155.819	-8.535	193.289	193.305
B	440+158.852	-8.535	193.208	193.238
C	440+161.884	-8.535	193.127	193.169
D	440+164.916	-8.535	193.046	193.095
E	440+167.949	-8.535	192.966	193.019
F	440+170.981	-8.535	192.885	192.937
G	440+174.014	-8.535	192.804	192.851
H	440+177.046	-8.535	192.723	192.762
I	440+180.078	-8.535	192.642	192.671
J	440+183.111	-8.535	192.561	192.579
K	440+186.143	-8.535	192.481	192.490
L	440+189.175	-8.535	192.400	192.403
℄ Pier	440+192.795	-8.535	192.303	192.303
M	440+195.828	-8.535	192.223	192.225
N	440+198.860	-8.535	192.142	192.151
O	440+201.892	-8.535	192.061	192.079
P	440+204.925	-8.535	191.980	192.009
Q	440+207.957	-8.535	191.899	191.938
R	440+210.989	-8.535	191.818	191.867
S	440+214.022	-8.535	191.738	191.793
T	440+217.054	-8.535	191.657	191.714
U	440+220.086	-8.535	191.576	191.630
V	440+223.119	-8.535	191.495	191.542
W	440+226.151	-8.535	191.414	191.450
X	440+229.183	-8.535	191.334	191.356
℄ Brg. N. Abut.	440+233.181	-8.535	191.228	191.228
Bk. N. Abut.	440+234.121	-8.535	191.203	191.203

GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	440+152.147	-5.865	193.531	193.531
℄ Brg. S. Abut.	440+153.093	-5.865	193.506	193.506
A	440+156.115	-5.865	193.425	193.441
B	440+159.137	-5.865	193.345	193.375
C	440+162.159	-5.865	193.264	193.306
D	440+165.181	-5.865	193.183	193.232
E	440+168.204	-5.865	193.103	193.156
F	440+171.226	-5.865	193.022	193.074
G	440+174.248	-5.865	192.942	192.989
H	440+177.270	-5.865	192.861	192.900
I	440+180.292	-5.865	192.781	192.810
J	440+183.314	-5.865	192.700	192.718
K	440+186.336	-5.865	192.620	192.629
L	440+189.359	-5.865	192.539	192.542
℄ Pier	440+192.965	-5.865	192.443	192.443
M	440+195.987	-5.865	192.362	192.364
N	440+199.010	-5.865	192.282	192.291
O	440+202.032	-5.865	192.201	192.219
P	440+205.054	-5.865	192.121	192.150
Q	440+208.076	-5.865	192.040	192.079
R	440+211.098	-5.865	191.960	192.009
S	440+214.120	-5.865	191.879	191.934
T	440+217.143	-5.865	191.799	191.856
U	440+220.165	-5.865	191.718	191.772
V	440+223.187	-5.865	191.638	191.685
W	440+226.209	-5.865	191.557	191.593
X	440+229.231	-5.865	191.477	191.499
℄ Brg. N. Abut.	440+233.215	-5.865	191.371	191.371
Bk. N. Abut.	440+234.155	-5.865	191.346	191.346

GIRDER 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	440+152.450	-3.195	193.667	193.667
℄ Brg. S. Abut.	440+153.396	-3.195	193.642	193.642
A	440+156.408	-3.195	193.561	193.577
B	440+159.420	-3.195	193.481	193.511
C	440+162.432	-3.195	193.401	193.443
D	440+165.444	-3.195	193.321	193.370
E	440+168.456	-3.195	193.240	193.293
F	440+171.469	-3.195	193.160	193.212
G	440+174.481	-3.195	193.080	193.127
H	440+177.493	-3.195	193.000	193.039
I	440+180.505	-3.195	192.919	192.948
J	440+183.517	-3.195	192.839	192.857
K	440+186.529	-3.195	192.759	192.768
L	440+189.541	-3.195	192.678	192.681
℄ Pier	440+193.134	-3.195	192.583	192.583
M	440+196.146	-3.195	192.502	192.504
N	440+199.158	-3.195	192.422	192.431
O	440+202.170	-3.195	192.342	192.360
P	440+205.182	-3.195	192.262	192.291
Q	440+208.194	-3.195	192.181	192.220
R	440+211.206	-3.195	192.101	192.150
S	440+214.218	-3.195	192.021	192.076
T	440+217.231	-3.195	191.941	191.998
U	440+220.243	-3.195	191.860	191.914
V	440+223.255	-3.195	191.780	191.827
W	440+226.267	-3.195	191.700	191.736
X	440+229.279	-3.195	191.619	191.641
℄ Brg. N. Abut.	440+233.249	-3.195	191.514	191.514
Bk. N. Abut.	440+234.189	-3.195	191.490	191.490

Notes:

1. Work this sheet with Sheet No. 5 of 29 sheets.

THIS SHEET FOR INFORMATION ONLY

DESIGNED	MEA
CHECKED	MAS
DRAWN	LK
CHECKED	PY/MAS

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

TOP OF SLAB ELEVATIONS

SB ILLINOIS ROUTE 394 OVER INTERSTATE 80
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+193.335 STRUCTURE NO. 016-2796

DATE 05/16/05
SCALE ---

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	9
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 8
29 SHEETS

*2004-133F
CONTRACT NO. 62898

GIRDER 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	440+152.752	-0.525	193.803	193.803
℄ Brg. S. Abut.	440+153.698	-0.525	193.778	193.778
A	440+156.700	-0.525	193.698	193.713
B	440+159.702	-0.525	193.618	193.645
C	440+162.704	-0.525	193.538	193.576
D	440+165.706	-0.525	193.458	193.503
E	440+168.708	-0.525	193.378	193.426
F	440+171.710	-0.525	193.298	193.345
G	440+174.712	-0.525	193.218	193.260
H	440+177.714	-0.525	193.138	193.173
I	440+180.716	-0.525	193.058	193.084
J	440+183.718	-0.525	192.978	192.994
K	440+186.720	-0.525	192.898	192.906
L	440+189.722	-0.525	192.818	192.820
℄ Pier	440+193.302	-0.525	192.722	192.722
M	440+196.304	-0.525	192.642	192.644
N	440+199.306	-0.525	192.562	192.570
O	440+202.308	-0.525	192.482	192.498
P	440+205.310	-0.525	192.402	192.428
Q	440+208.312	-0.525	192.322	192.358
R	440+211.314	-0.525	192.242	192.286
S	440+214.316	-0.525	192.162	192.211
T	440+217.318	-0.525	192.082	192.133
U	440+220.320	-0.525	192.002	192.051
V	440+223.322	-0.525	191.922	191.965
W	440+226.324	-0.525	191.842	191.875
X	440+229.326	-0.525	191.762	191.782
℄ Brg. N. Abut.	440+233.282	-0.525	191.658	191.658
Bk. N. Abut.	440+234.222	-0.525	191.633	191.633

℄ SB IL394 & P.G. Line

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	440+152.811	0.000	193.830	193.830
℄ Brg. S. Abut.	440+153.757	0.000	193.805	193.805
A	440+156.757	0.000	193.725	193.741
B	440+159.757	0.000	193.645	193.675
C	440+162.757	0.000	193.565	193.607
D	440+165.757	0.000	193.485	193.534
E	440+168.757	0.000	193.405	193.458
F	440+171.757	0.000	193.325	193.377
G	440+174.757	0.000	193.245	193.292
H	440+177.757	0.000	193.165	193.204
I	440+180.757	0.000	193.085	193.114
J	440+183.757	0.000	193.005	193.023
K	440+186.757	0.000	192.925	192.934
L	440+189.757	0.000	192.845	192.848
℄ Pier	440+193.335	0.000	192.750	192.750
M	440+196.335	0.000	192.670	192.672
N	440+199.335	0.000	192.590	192.599
O	440+202.335	0.000	192.510	192.528
P	440+205.335	0.000	192.430	192.459
Q	440+208.335	0.000	192.350	192.389
R	440+211.335	0.000	192.270	192.319
S	440+214.335	0.000	192.190	192.245
T	440+217.335	0.000	192.110	192.167
U	440+220.335	0.000	192.030	192.084
V	440+223.335	0.000	191.950	191.997
W	440+226.335	0.000	191.870	191.906
X	440+229.335	0.000	191.790	191.812
℄ Brg. N. Abut.	440+233.289	0.000	191.686	191.686
Bk. N. Abut.	440+234.229	0.000	191.661	191.661

Notes:

1. Work this sheet with Sheet No. 5 of 29 sheets.

THIS SHEET FOR INFORMATION ONLY

DESIGNED	MEA
CHECKED	MAS
DRAWN	LK
CHECKED	PY/MAS

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

TOP OF SLAB ELEVATIONS

SB ILLINOIS ROUTE 394 OVER INTERSTATE 80
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+193.335 STRUCTURE NO. 016-2796

DATE 05/16/05
SCALE ---

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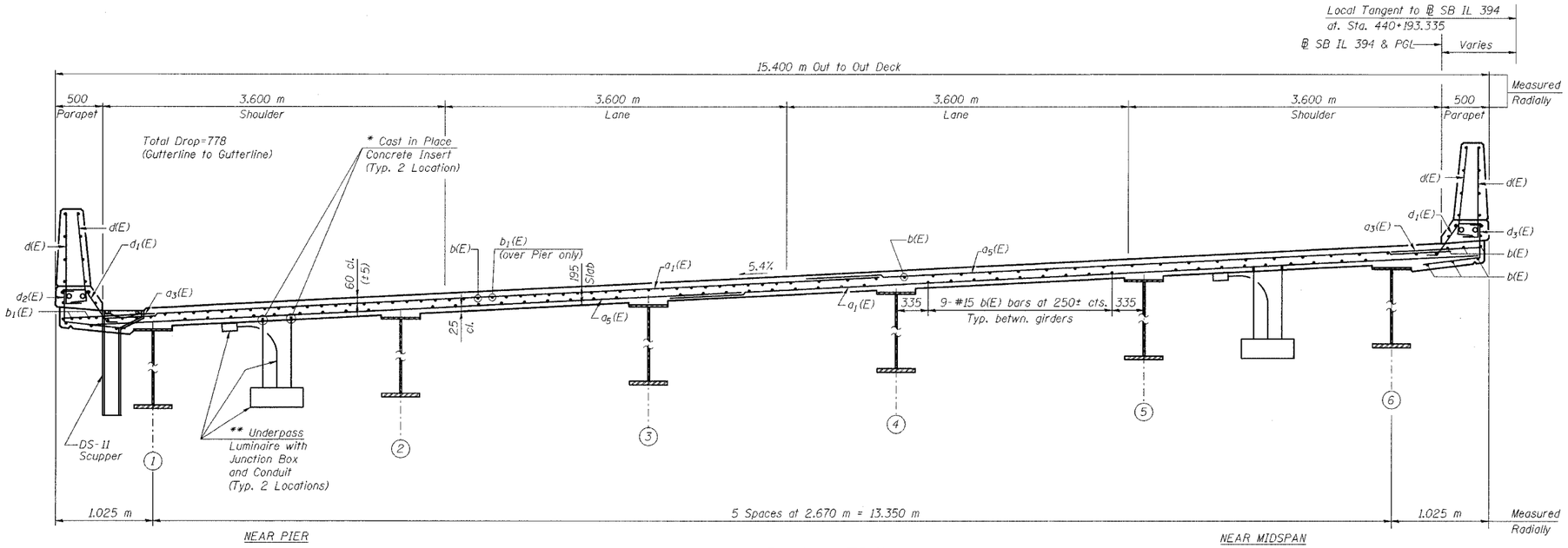
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	10
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 10
29 SHEETS

*2004-133F
CONTRACT NO. 62898

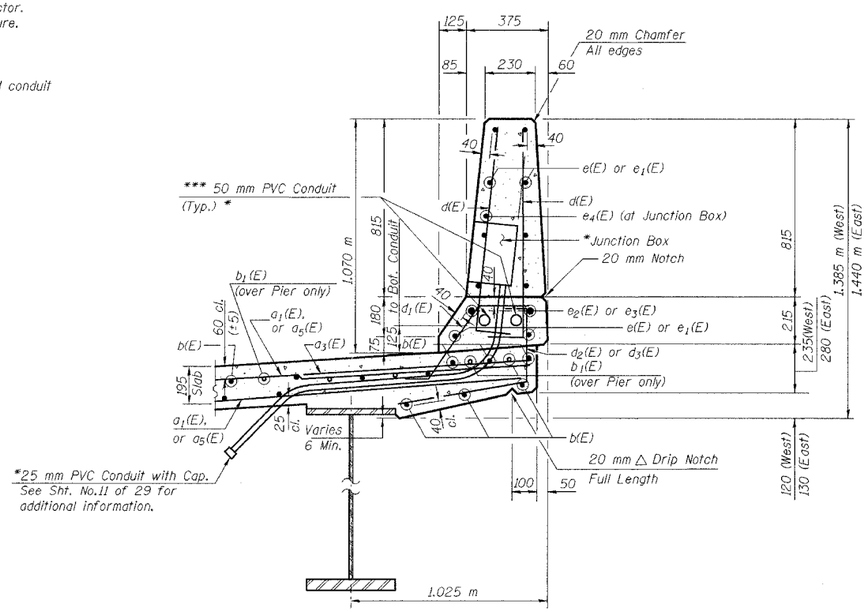


CROSS SECTION
(Looking Up Station)

*See Electrical Drawings for location and type, Junction Box location shown on Sht. 11 of 29.
Paid under Electrical Contract but installed by Bridge Contractor.
Installation included for payment under Concrete Superstructure.
Bridge Contractor to coordinate with Electrical Contractor.

**Elements paid and installed under Electrical Contract.

***Provide 25 mm min. clear between conduits and d(E) bar and conduit



*25 mm PVC Conduit with Cap. See Sht. No.11 of 29 for additional information.

SECTION THRU PARAPET

Notes:

1. Work this sheet with Sheet Numbers 9, 11, and 12 of 29 Sheets.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. All dimensions are in millimeters except as noted.

THIS SHEET FOR INFORMATION ONLY

DESIGNED	MEA
CHECKED	PY
DRAWN	LK
CHECKED	MAS

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

DECK & PARAPET SECTIONS

SB ILLINOIS ROUTE 394 OVER INTERSTATE 80
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+193.335 STRUCTURE NO. 016-2796

DATE 05/16/05
SCALE ---

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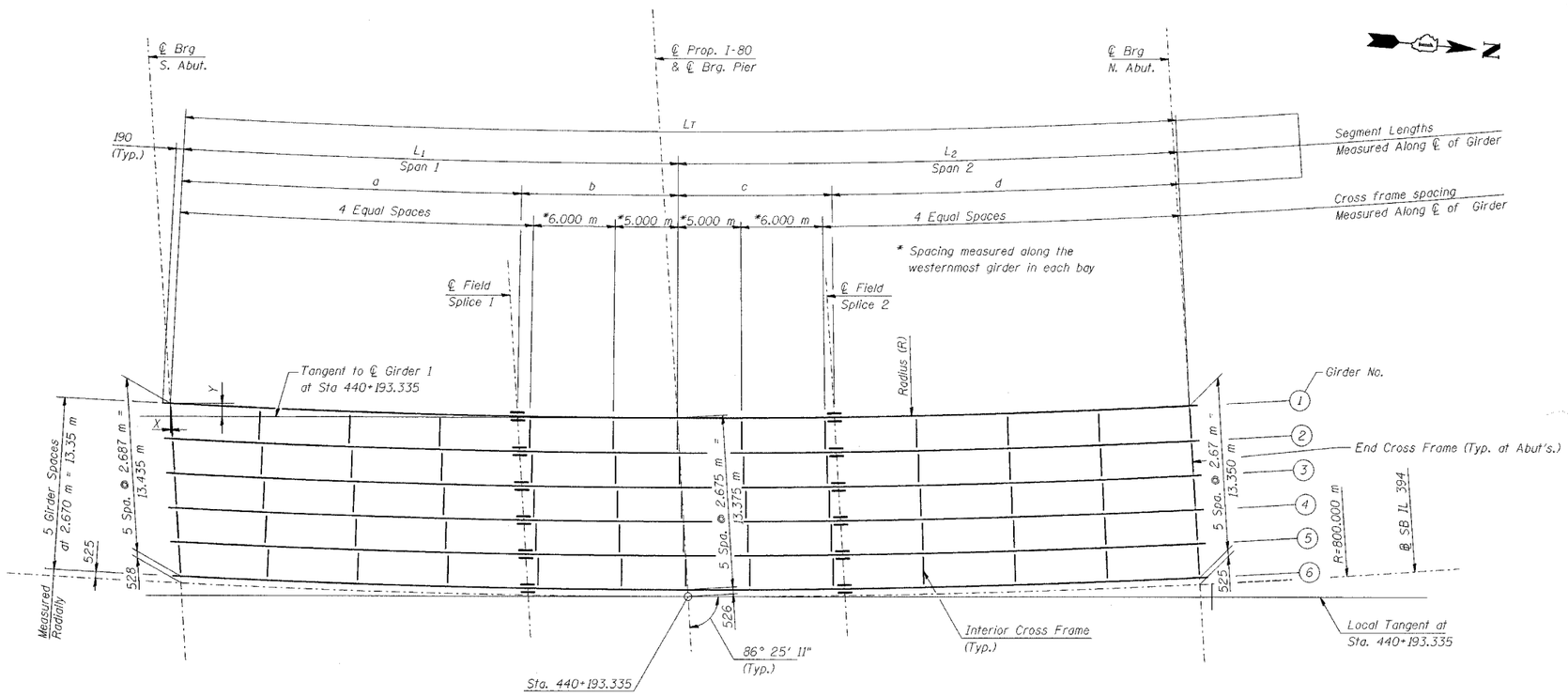
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	11
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 15
29 SHEETS

*2004-133F
CONTRACT NO. 62898



FRAMING PLAN

GIRDER DIMENSIONS (Meters)

		Span 1			Span 2			
Girder	Radius R	a	b	L_1 =a+b	c	d	L_2 =c+d	L_T
1	786.125	27.708	11.875	39.583	11.987	27.969	39.955	79.539
2	788.795	27.708	11.875	39.582	11.986	27.968	39.955	79.537
3	791.465	27.707	11.874	39.581	11.986	27.968	39.955	79.536
4	794.135	27.706	11.874	39.580	11.986	27.968	39.954	79.535
5	796.805	27.705	11.874	39.579	11.986	27.968	39.954	79.534
6	799.475	27.705	11.873	39.578	11.986	27.968	39.954	79.532

LAYOUT DIMENSIONS (Meters)

	℄ Brg. S. Abut.		Splice 1		Pier 1		Splice 2		℄ Brg. N. Abut.	
Girder	X	Y	X	Y	X	Y	X	Y	X	Y
1	0.065	1.041	0.006	0.103	0.000	0.000	0.005	0.079	0.061	0.972
2	0.064	1.028	0.006	0.100	0.000	0.000	0.005	0.081	0.061	0.977
3	0.064	1.016	0.006	0.097	0.000	0.000	0.005	0.083	0.061	0.982
4	0.063	1.005	0.006	0.094	0.000	0.000	0.005	0.085	0.062	0.987
5	0.062	0.993	0.006	0.091	0.000	0.000	0.005	0.087	0.062	0.992
6	0.061	0.981	0.006	0.089	0.000	0.000	0.006	0.089	0.062	0.997

BEARING SEAT ELEVATIONS

Girder	℄ Brg. S. Abut.	℄ Brg. Pier	℄ Brg. N. Abut.
1	191.228	190.126	189.072
2	191.364	190.266	189.215
3	191.500	190.405	189.359
4	191.636	190.545	189.502
5	191.773	190.685	189.645
6	191.909	190.824	189.789

Notes:

1. *Coordinate system (x, y) shown in Framing Plan is for Girder 1. Typical for all Girders with local tangent to each girder at ℄ Station 440+193.335*
2. *Place all interior cross frames at right angles to girders*
3. *The Contractor shall submit the proposed method of erection of the steel girders and cross frames for approval by the engineer prior to the start of this work.*
4. *All dimensions are in millimeters (mm) except noted otherwise.*

DESIGNED	MEA
CHECKED	MAS/ACF
DRAWN	LK
CHECKED	ACF

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

FRAMING PLAN

SB ILLINOIS ROUTE 394 OVER INTERSTATE 80
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+193.335 STRUCTURE NO. 016-2796

DATE 05/16/05
SCALE ---

HNTB

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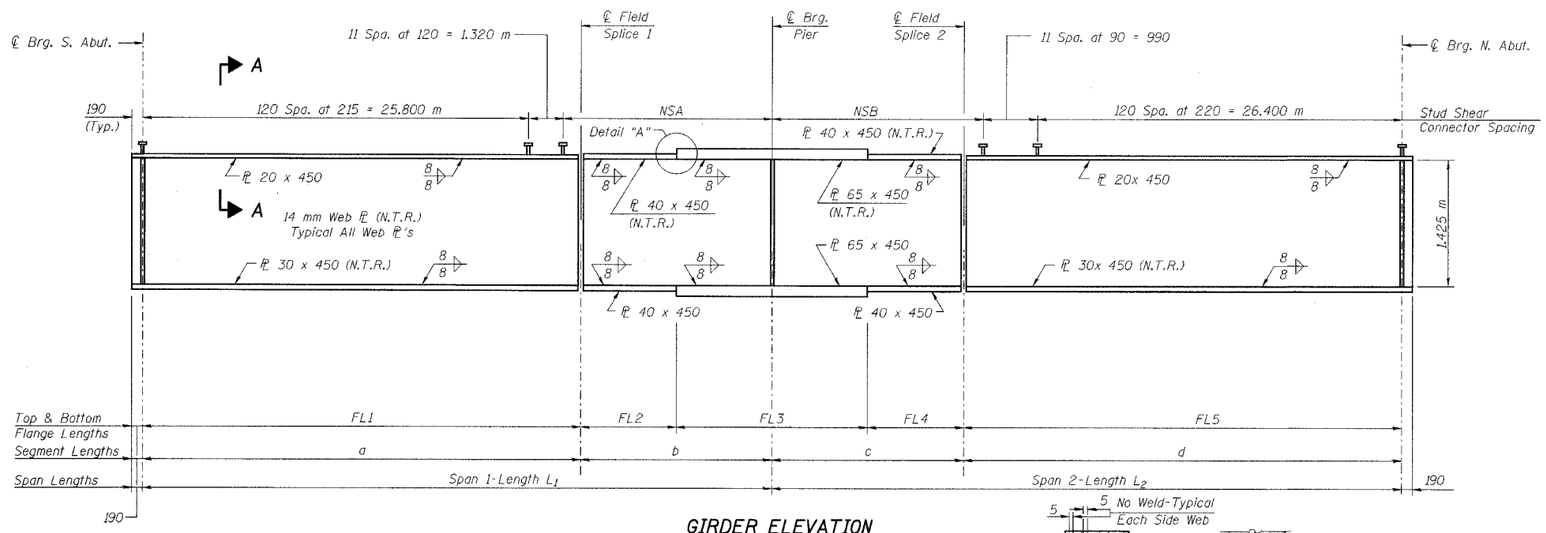
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	12
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

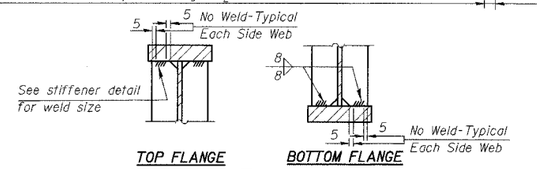
SHEET NO. 16
29 SHEETS

*2004-133F
CONTRACT NO. 62898



GIRDER ELEVATION

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



TOP FLANGE — BOTTOM FLANGE

STIFFENER TO FLANGE WELD

Typical for Bearing Stiffeners

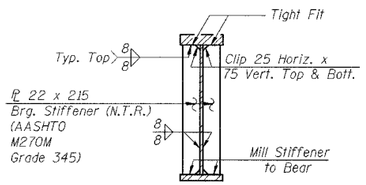
STUD SHEAR CONNECTOR SPACING (Meters)

Girder	Pier	
	NSA	NSB
1	12.463	12.565
2	12.462	12.565
3	12.461	12.565
4	12.460	12.564
5	12.459	12.564
6	12.458	12.564

"NOT IN CONTRACT"

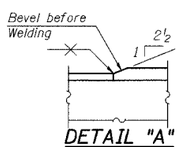
GIRDER TOP AND BOTTOM FLANGE LENGTHS (Meters)

Girder	FL1	FL2	FL3	FL4	FL5
1	27.708	7.521	8.749	7.591	27.969
2	27.708	7.521	8.749	7.591	27.968
3	27.707	7.520	8.749	7.591	27.968
4	27.706	7.520	8.749	7.591	27.968
5	27.705	7.520	8.749	7.591	27.968
6	27.705	7.520	8.749	7.591	27.968



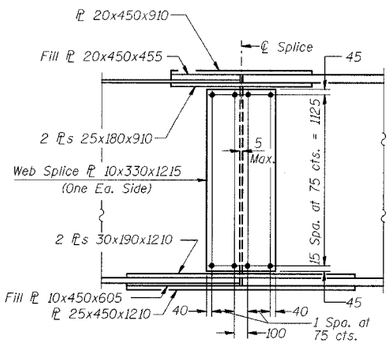
AT PIER & ABUTMENT

BEARING STIFFENERS

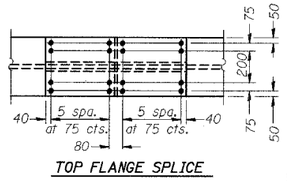


DETAIL "A"

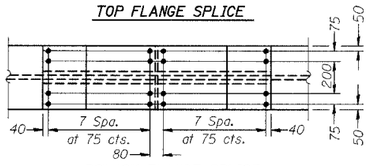
(Typ. Top & Bott. Flange)



WEB SPLICE

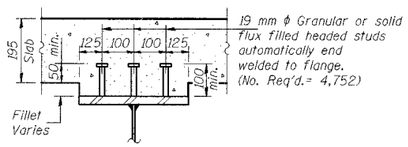


TOP FLANGE SPLICE



BOTTOM FLANGE SPLICE

FIELD SPLICE 1 & 2



SECTION A-A

"NOT IN CONTRACT"

Notes:

1. For Span Lengths L_1, L_2 & Segment Lengths a thru d, see Sheet No. 15 of 29.
2. All Flange Plates & Web Plates shall be AASHTO M270M Grade 345.
3. All Field Splice Plates, except Fill Plates, shall be AASHTO M270M Grade 345 and shall meet the Notch Toughness Requirements (N.T.R.)
4. All dimensions are in millimeters (mm) except noted otherwise.

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp.1	Pier	0.6 Sp.2
Is	(10^6 mm⁴)	14,961	35,865	14,961
Ic (n)	(10^6 mm⁴)	35,458	---	35,458
Ic (3n)	(10^6 mm⁴)	25,654	---	25,654
Ss	(10^3 mm³)	22,520	46,129	22,520
Sc (n)	(10^3 mm³)	30,178	---	30,178
Sc (3n)	(10^3 mm³)	27,541	---	27,541
Sbt	(10^3 mm³)	675	2,194	675
wℓ	(kN/m)	16	29	16
Mℓ	(kN·m)	1,510	6,339	1,503
sℓ	(kN/m)	9	---	9
Msℓ	(kN·m)	945	---	963
M℄	(kN·m)	1,817	1,945	1,833
M (Imp)	(kN·m)	454	389	458
5/3[M℄+M(Imp)]	(kN·m)	3,785	3,890	3,819
Ma	(kN·m)	8,111	13,298	8,171
Mbt	(kN·m)	12	29	12
fsℓ (non-comp)	(MPa)	67	137	67
fsℓ (comp)	(MPa)	34	---	35
fs 5/3[M℄+M(Imp)]	(MPa)	125	84	127
ft	(MPa)	18	13	18
fs(Overload)	(MPa)	227	222	228
fs (Total)	(MPa)	295	288	297
Fcr(Overload)	(MPa)	328	312	328
VR	(kN)	300	---	300
Fcr	(MPa)	345	323	345

INTERIOR GIRDER REACTION TABLE				
		S. Abut.	Pier	N. Abut.
R ℓ	(kN)	355	1,379	361
R ℄	(kN)	232	461	232
Imp.	(kN)	70	115	70
R (Total)	(kN)	657	1,955	663

Fcr - Critical average flange stress (smaller of Fcr1 or Fcr2 for partially braced flanges and Fy for continuously braced flanges) computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges (Sections 5.2, 5.3 and 5.4).

Fcr (Overload) - Critical average flange stress at overload computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges Section 9.5.

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total and Overload).

Ic(n) and Sc(n) are the moment of inertia and section modulus of the composite section used in computing stresses due to live load.

Ic(3n) and Sc(3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead load (see AASHTO 10.38).

VR is the maximum ℄ + impact shear range in span.

Ma (Applied Moment) = 1.3 [Mℓ + Msℓ + 5/3 (M℄ + M (Imp))]

fs (Overload) is the sum of stresses due to Mℓ + Msℓ + 5/3 (M℄ + M (Imp))

fs (Total) is the sum of stresses due to 1.3 [Mℓ + Msℓ + 5/3 (M℄ + M (Imp))]

Sbt is the section modulus for one top flange plate for lateral flange bending.

Mbt is the lateral bending moment during construction for flange plate (factored).

f_ℓ is the calculated normal stress at the edge of flange due to lateral bending (factored).

M℄ and R℄ include the effects of centrifugal force and superelevation.

DESIGNED	MEA
CHECKED	MAS/ACF
DRAWN	LK
CHECKED	ACF

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

GIRDER ELEVATION & DETAILS

SB ILLINOIS ROUTE 394 OVER INTERSTATE 80
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+193.335 STRUCTURE NO. 016-2796

DATE 05/16/05
SCALE ---

HNTB

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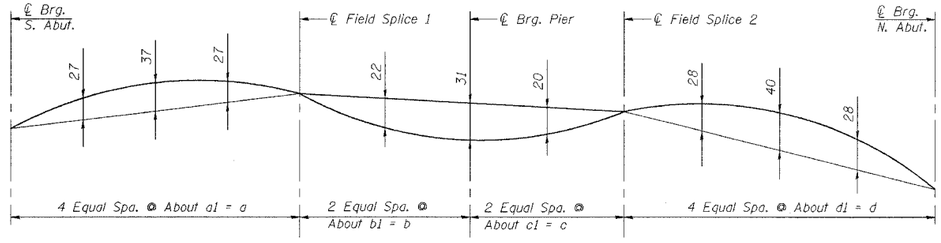
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

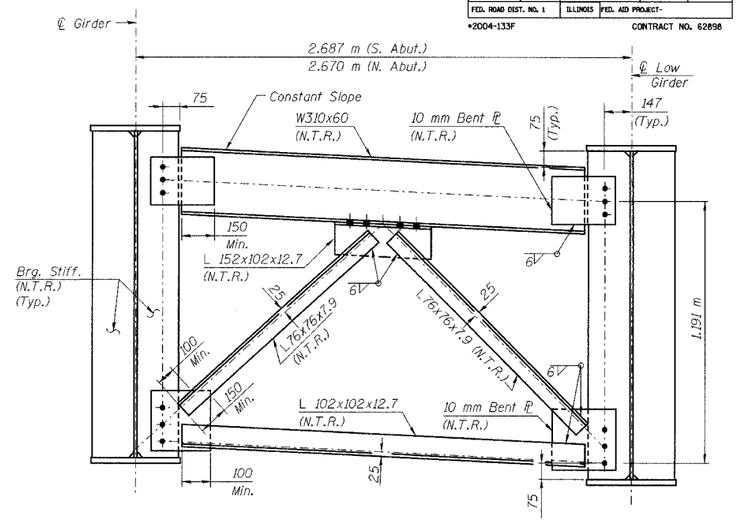
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	13
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 17
29 SHEETS
•2004-133F
CONTRACT NO. 62898



CAMBER DIAGRAM

(For dimensions a, b, c, and d, see Sheet No. 15 of 29).



END CROSS FRAME

(At South Abutment looking South)
(AASHTO M270M Grade 345, N.T.R.)

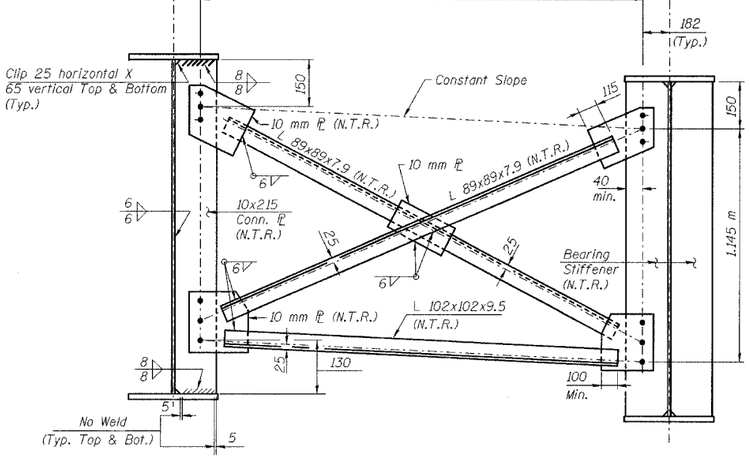
GIRDER DIMENSIONS (Meters)

Girder	a1	b1	c1	d1
1	6.927	5.938	5.993	6.992
2	6.927	5.937	5.993	6.992
3	6.927	5.937	5.993	6.992
4	6.927	5.937	5.993	6.992
5	6.926	5.937	5.993	6.992
6	6.926	5.937	5.993	6.992

TOP OF WEB ELEVATIONS FOR FABRICATION (Meters)

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

Girder	℄ Brg. S Abut.	℄ F.S. 1	℄ Pier	℄ F.S. 2	℄ Brg. N. Abut.
1	192.848	192.056	191.729	191.409	190.691
2	192.984	192.195	191.869	191.550	190.834
3	193.120	192.333	192.008	191.690	190.978
4	193.256	192.472	192.148	191.831	191.121
5	193.392	192.610	192.288	191.972	191.264
6	193.528	192.749	192.427	192.113	191.408



AT CONNECTION PLATE

AT BEARING STIFFENER

(See Sheet No. 16 of 29 for weld requirements.)

INTERIOR CROSS FRAME

(At Pier and within span looking South)
(AASHTO M270M Grade 345, N.T.R.)

Notes:
1. All dimensions are in millimeters (mm) except as noted.
2. All cross frame connections to have 28 mm ϕ oversized holes for all M22 H.S. Bolts.
3. Two hardened washers shall be required over all oversized holes.
4. See Sheet No. 16 of 29 for bearing stiffener details.
5. N.T.R. denotes members to which notch toughness requirements are applicable.

DESIGNED	MEA
CHECKED	PY
DRAWN	LK
CHECKED	PY/ACF

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

STRUCTURAL STEEL DETAILS

SB ILLINOIS ROUTE 394 OVER INTERSTATE 80
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+193.335 STRUCTURE NO. 016-2796

DATE 05/16/05
SCALE ---

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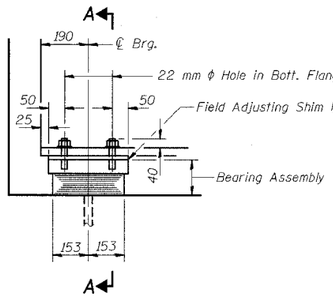
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

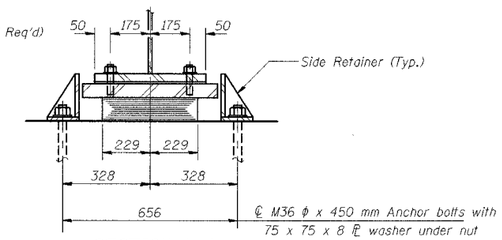
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	14
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 18
29 SHEETS

*2004-133F CONTRACT NO. 62898



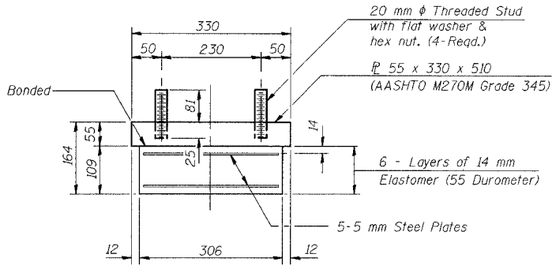
ELEVATION AT S. & N. ABUT.



SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

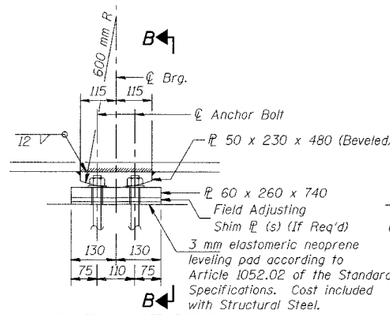
(Abutments)



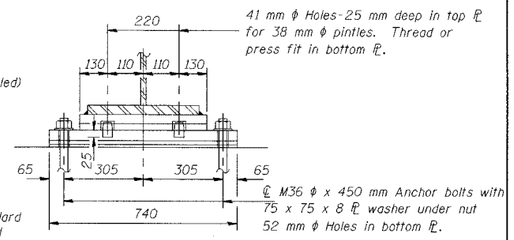
BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.

Notes: Anchor bolts at fixed bearings may be built into the masonry.
See sheet No. 19 of 29 sheets for Anchor Bolt installation.
All dimensions are in millimeters (mm) except as noted.



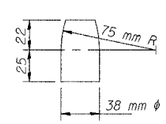
ELEVATION AT PIER



SECTION B-B

FIXED BEARING

(Structural Steel AASHTO M 270M Grade 345.
Cost included with Structural Steel)



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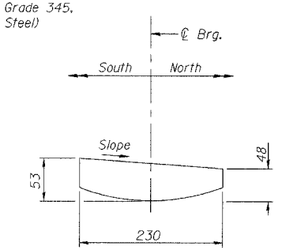
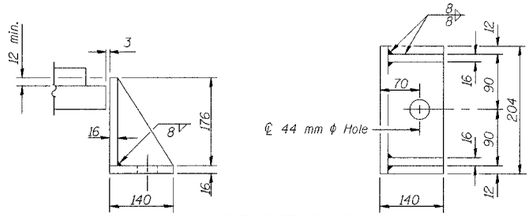


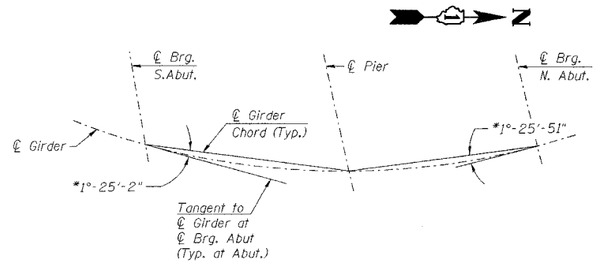
TOP FIXED BEARING PLATE BEVEL

(Looking West)



SIDE RETAINER

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



EXPANSION BEARING ORIENTATION

* Measured from ℄ Girder Chord to Tangent to ℄ Girder at ℄ Bearing Abutment

BILL OF MATERIAL

Item	Unit	Quantity
Furnishing Elastomeric Bearing Assembly, Type I	Each	12
Storage of Elastomeric Bearing Assemblies	Cal Da	15

DESIGNED	MEA
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

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

BEARING DETAILS

SB ILLINOIS ROUTE 394 OVER INTERSTATE 80
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+193.335 STRUCTURE NO. 016-2796

DATE 05/16/05
SCALE ---

HNTB

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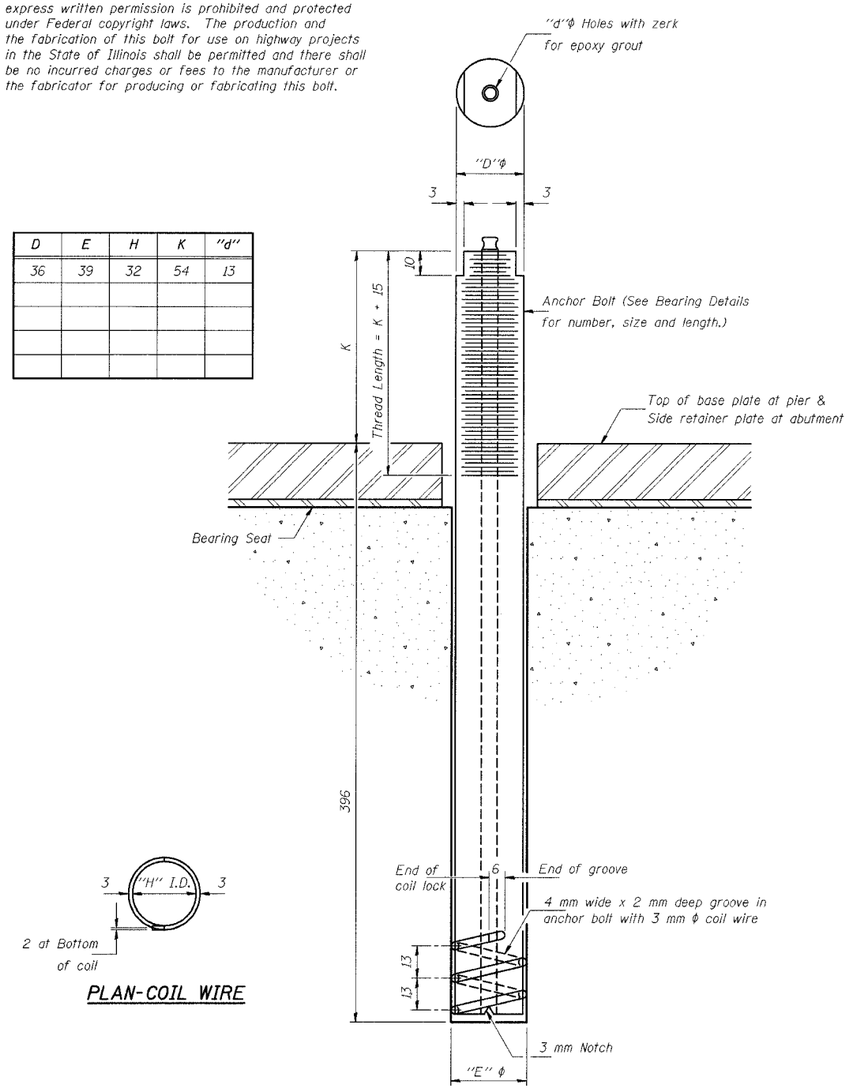
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

SHEET NO. 19
29 SHEETS
*2004-133F
CONTRACT NO. 62898

D	E	H	K	"d"
36	39	32	54	13



ILLINOIS COIL-LOCK ANCHOR BOLT

PLAN-COIL WIRE

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system comforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

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

LOCATION	TYPE
So. Abut.	M36x450 (A307)
Pier	M36x450 (A307)
No. Abut.	M36x450 (A307)

ASTM F 1554 (Fy = 724 MPa), ASTM A 449 and AASHTO M 314 (Fy = 724 MPa) anchor bolts may be substituted for the anchor bolts shown above.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing & Erecting Structural Steel".

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

THIS SHEET FOR INFORMATION ONLY

DESIGNED	MEA
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

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

ANCHOR BOLT DETAILS

SB ILLINOIS ROUTE 394 OVER INTERSTATE 80
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+193.335 STRUCTURE NO. 016-2796

DATE 05/16/05
SCALE ---

HNTB

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Benchmark: TBM #316 Set cut box on foundation of overhead sign truss (C3) NE corner of exit ramp to I-80 westbound: approximately mile marker 74.30 Elev. = 183.274

Existing Structure: S.N. 016-0164, three-span continuous 39.49 m Bk. to Bk. abutments, variable width from 21.60 m to 23.4 m O. to O. Haunched R.C. slab on multicolumn piers and closed abutments. Built as S.A. Route 66, Sec. 066-0303.1-MFT at Station 4+61.67 (English) in 1945. Bridge was widened in 1969 and deck was rehabilitated in 1995.

Salvage: No salvage.

Note: All dimensions are in millimeters (mm) except as noted. (Dimensions, Stations and Elevations in parenthesis are in English Units.)

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

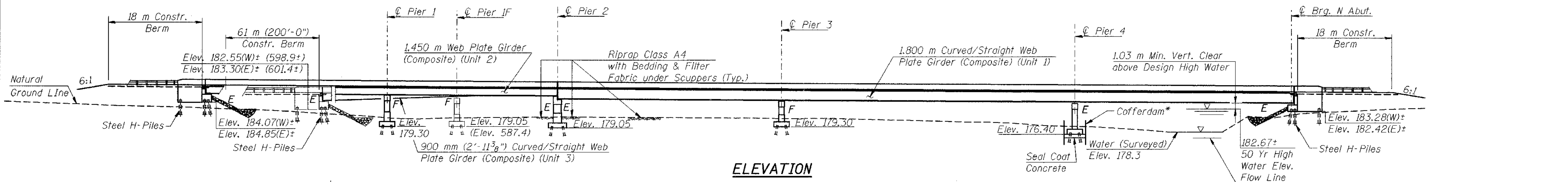
Staging: New bridge to be constructed while WB I-80/NB I-294 and EB I-94/I-80 traffic is maintained on existing bridge (SN 016-0164) and while SB IL-394 traffic has been detoured off the existing bridge to new NB IL-394 pavement.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	16
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1

42 SHEETS

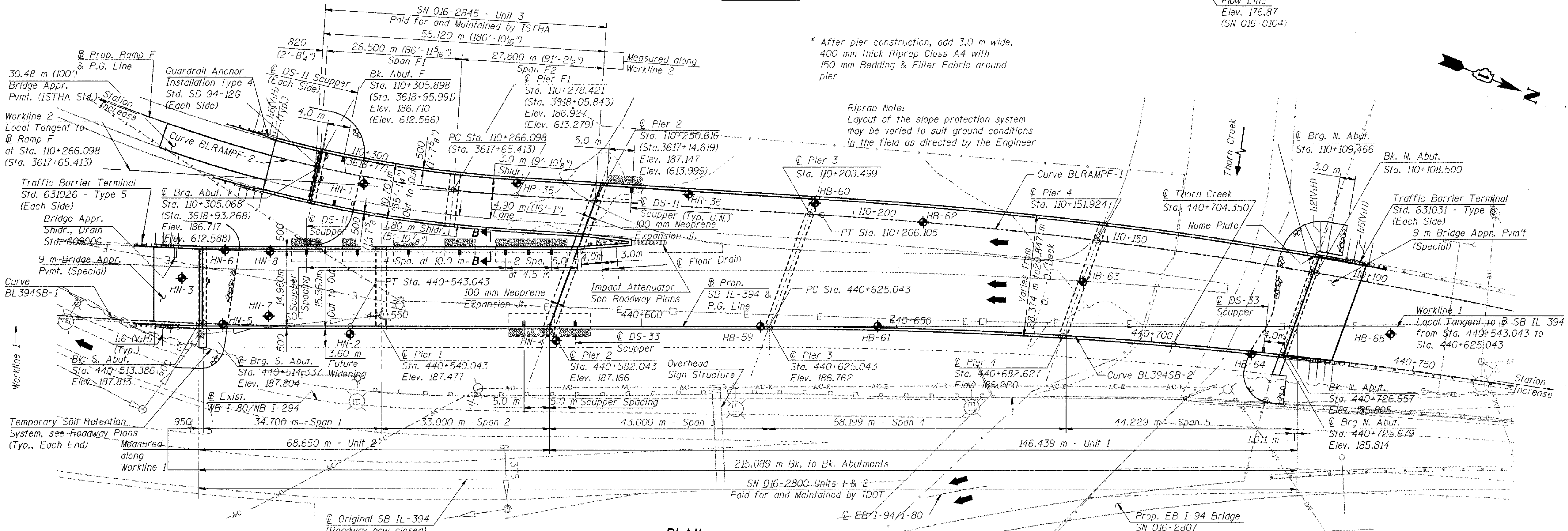
* 2004-133F CONTRACT NO. 62898



ELEVATION

* After pier construction, add 3.0 m wide, 400 mm thick Riprap Class A4 with 150 mm Bedding & Filter Fabric around pier

Riprap Note: Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer



PLAN

Note: For skew angles, see Offset Sketch.

Limits of Existing EB I-94 & SB IL 394 & WB I-80/ NB I-294 Bridge S.N. 016-0164

APPROVED
FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

Notes:

1. All Work shown on this drawing not related to the fabrication of the structural steel and bearings is for information only.

WATERWAY INFORMATION

Drainage Area = 274.43 km² Prop. Low Grade Elev. 184.80 @ Sta. 440+750									
	Freq.	Q	Opening m²		Nat.	Head-m.		Headwater El.	
	Yr.	m³/s	Exist.	Prop.	H.W.E.	Exist.	Prop.	Exist.	Prop.
	10	124.6		208.7	181.97		0.01		181.98
Design	50	188.3		276.1	182.67		0.01		182.68
Base	100	213.5		307.8	182.98		0.01		182.99
Overtop	100	213.5		---	182.98		---		---
Max. Calc.	500	280.3		339.6	183.77		0.03		183.82

LOADING MS18 & ALT.

Allow 2.4 kN/m² for future wearing surface.

DESIGN SPECIFICATIONS

2002 AASHTO

2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges

Bridge Design Criteria: IDOT except Illinois State Toll Highway Authority, June 2000 with Approved Revisions- Unit 3 only (Ramp F South of Pier 2, excluding Pier 2 Joint)

DESIGNED	DD
CHECKED	PCA
DRAWN	LK/JRB
CHECKED	PCA

DESIGN STRESSES

FIELD UNITS

f'_c = 24 MPa

f_y = 400 MPa (reinforcement)

f_y = 345 MPa (structural steel) (M270M Grade 345)

f_y = 250 MPa (structural steel) (M270M Grade 250)

SEISMIC DATA

Seismic Performance Category (SPC) = A

Bedrock Acceleration Coefficient (A) = .04

Site Coefficient (S) = 1.0

LEGEND

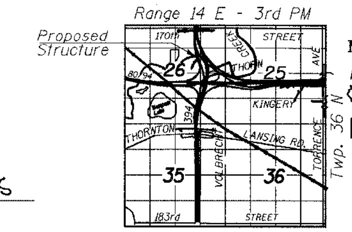
- Boring
- Exist. Guardrail
- Exist. Manhole
- Exist. Inlet
- Exist. Light Pole
- Exist. Drainage
- Exist. Elec. Conduit
- Exist. Utility Power Pole
- Exist. Fence

STATE OF ILLINOIS PHILIP C. AZZARELLO 081-004245 CHICAGO, ILLINOIS LICENSED STRUCTURAL ENGINEER

Philip C. Azzarello 5-20-05

Philip C. Azzarello, S.E.
Ill. Reg. No. 081-004245
Expires 11-30-06

Range 14 E - 3rd PM



LOCATION SKETCH

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

GENERAL PLAN & ELEVATION

SB IL ROUTE 394 / RAMP F OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800/2845

DATE 05/16/05

SCALE ---

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

SHEET NO. 2
42 SHEETS

* 2004-133F
CONTRACT NO. 62898

GENERAL NOTES

THESE PLANS ARE FOR THE FABRICATION OF THE STRUCTURAL STEEL AND BEARINGS. ALL WORK SHOWN THAT IS NOT RELATED TO THE FABRICATION IS FOR INFORMATION ONLY, IS NOT INCLUDED IN THIS CONTRACT, AND IS IDENTIFIED AS "NOT IN CONTRACT".

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

2. Fasteners shall be high strength bolts. Bolts M 22, open holes 24 mm ϕ, unless otherwise noted.

3. Calculated mass of structural steel:
   For SN 016-2800 (Units 1&2): 999,240 kg for M 270M Grade 345 and 5,660 kg for M 270M Grade 250.
   For SN 016-2845 (Unit 3): 140,620 kg for M 270M Grade 345 and 690 kg for M 270M Grade 250.

4. The organic zinc rich primer / epoxy / urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception that masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the field. For SN 016-2800 (Units 1 & 2), the color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1; and the color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Reddish Brown, Munsell No. 2.5YR 3/4. For SN 016-2845 (Unit 3), the color of the final finish coat for all interior and exterior steel surfaces shall be Interstate Green Munsell No. 7.5G 4/8. See Special Provision for "Cleaning and Painting New Metal Structures."

* 5. Field welding of construction accessories will not be permitted to the beams or girders.

* 6. Anchor bolts shall be set before bolting cross frames and diaphragms over supports.

7. The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the tension flanges and webs, the cross frames and connection plates, diaphragms and connection plates, and all splice plate material except fill plates.

* 8. Reinforcement bars shall conform to the requirements of AASHTO M 31M or M 322M Grade 400.

* 9. The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.

* 10. The Contractor shall drive one steel test pile in a permanent location at the South Abutment, Abutment F, Pier 1, and Pier1F; and two steel test piles in a permanent loction at the North Abutment, Pier 2, Pier 3 and Pier 4 as directed by the Engineer before ordering the remainder of piles.

11. 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. For Type I Elastomeric Bearings, two 3mm adjusting shims shall be provided for each bearing and placed as detailed.

* 12. Bridge Seat Sealer shall be applied to the seat area of the Abutments and Pier 2, including future widening.

* 13. All construction joints shall be bonded.

* 14.. When the deck pour is stopped for the day at one or more of the transverse Bonded Construction Joints in the deck Pouring Sequence as shown, the next pour shall be made until both of the following requirements are met:
   1. At least 72 hours shall have elapsed from the end of the previous pour.
   2. The concrete strength shall have attained a minimum flexural strength of 4.5 MPa or a minimum compressive strength of 24 MPa.

* THIS WORK IS NOT INCLUDED IN THIS FABRICATION CONTRACT AND IS PROVIDED FOR INFORMATION ONLY.

INDEX OF DRAWINGS

Sht. No.	Sht. Title
1	General Plan & Elevation
2	General Notes & Quantities
3	Offset Sketches, Profiles & Curve Data
4	Top of Slab Elevations, Grid & Details Spans 3-5 - Unit 1
5-9	Top Of Slab Elevations Spans 3-5 - Unit 1
10	Top Of Slab Elevations, Grid & Details Spans 1 & 2 - Unit 2
11-12	Top Of Slab Elevations Spans 1 & 2 - Unit 2
13	Top Of Slab Elevations, Grid & Details Spans 1F & 2F - Unit 3
14-15	Top Of Slab Elevations Spans 1F & 2F - Unit 3
16	Deck Cross Sections & Cross Slope Transition
17	General Framing Plan - Spans 3-5 - Unit 1
18	Girder Layout Spans 3-5 - Unit 1
19	Framing Plan Span 3
20	Girder Elevation & Details, Span 3
21	Framing Plan Span 4
22	Girder Elevation & Details, Span 4
23	Framing Plan Span 5
24	Girder Elevation & Details - Span 5
25-26	Connection Details, Spans 3-5 - Unit 1
27	Cross Framing Details Spans 3-5 - Unit 1
28-29	Camber & Top of Web Elevations, Spans 3-5 - Unit 1
30	Moment & Reaction Tables & Field Splices, Spans 3-5 - Unit 1
31	Framing Plan, Spans 1 & 2 - Unit 2
32	Girder Elevation & Details, Spans 1 & 2 - Unit 2
33	Camber, Top of Web Elevations & Cross Frame Details - Unit 2
34	Framing Plan Spans 1F & 2F - Unit 3
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38	Elastomeric Expansion Bearings Type III
39	Floating Expansion Bearings
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41	Bearing Orientation Details, Spans 3-5 - Unit 1
42	Anchor Bolt Details

TOTAL BILL OF MATERIAL

	ITEM	UNIT	SUPER	SUB	TOTAL
IDOT	Furnishing Structural Steel	L Sum	0.47	---	0.47
IDOT	Furnishing Floating Bearings, Guided Expansion 2000 KN	Each	---	10	10
IDOT	Furnishing Floating Bearings, Fixed 2250 KN	Each	---	12	12
IDOT	Furnishing Elastomeric Bearing Assembly, Type I	Each	---	24	24
IDOT	Furnishing Elastomeric Bearing Assembly, Type III	Each	---	9	9
IDOT	Storage of Elastomeric Bearing Assemblies (b)	Cal Da	---	15	15
IDOT	Storage of Floating Bearings (b)	Cal Da	---	15	15
IDOT	Storage of Structural Steel (a)	Unit	1718	---	1718
ISTHA	Furnishing Structural Steel (Girder Spans)	L Sum	1	---	1
ISTHA	Furnishing Elastomeric Bearing, Type I (800 in^2<V<1000 in^2)	Each	---	12	12

Note: IDOT pay items are for Units 1 and 2. The ISTHA pay items are for Unit 3.

(a) For Storage of Structural Steel, one Unit shall be equal to 5 metric tons. The quantity was calculated based on the assumption that 25% of the steel mass is stored for 30 calendar days.

(b) 15 Calendar Days was estimated for storage of bearings to establish unit bid price.

DESIGNED	PCA
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

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

GENERAL NOTES & QUANTITIES

SB IL ROUTE 394 / RAMP F OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800/2845

DATE 05/16/05
SCALE ---

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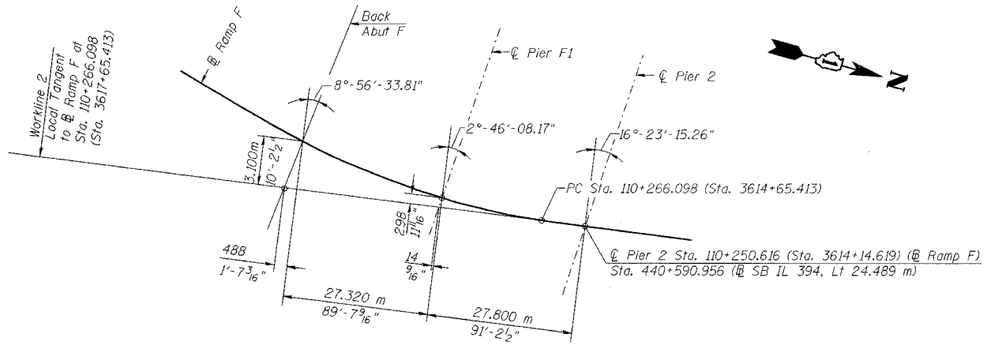
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

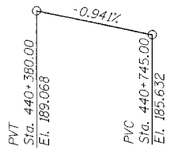
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	18
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 3
42 SHEETS

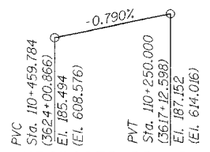
• 2004-133F
CONTRACT NO. 62898



RAMP F OFFSET SKETCH



PROPOSED PROFILE
GRADE SB IL 394



PROPOSED PROFILE
GRADE ℄ RAMP F

CURVE DATA BL394SB-1

PI STA. = 440+282.451
Δ = 38° 53' 33.20"
D = 7°-09'-43"
R = 800.000 m
T = 282.451 m
L = 543.043 m
E = 48.398 m
PC STA. = 440+000.000
PT STA. = 440+543.043
S.E. = 5.40%
SE IN = Sta. 440+000 to 440+028
SE OUT = Sta. 440+506 to 440+601

CURVE DATA BL394SB-2

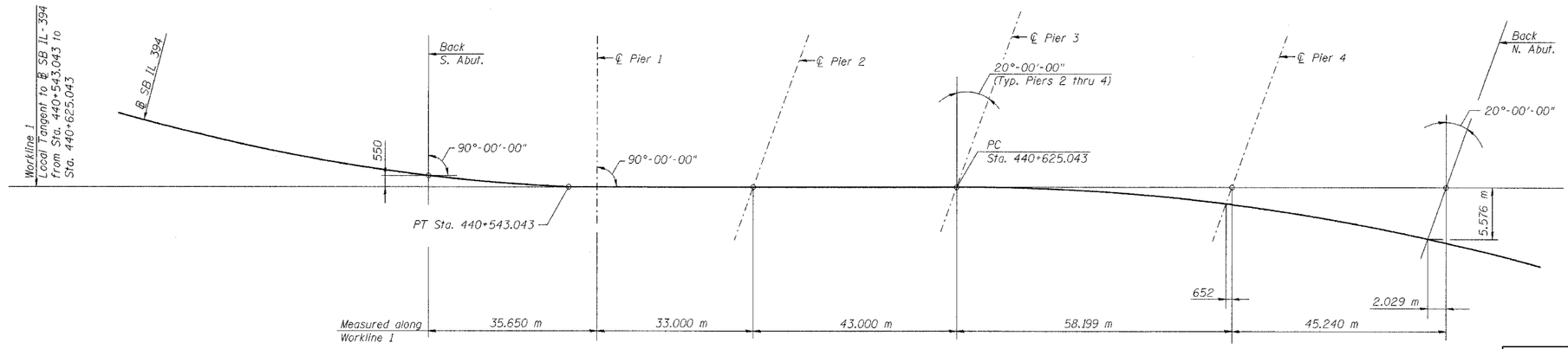
PI STA. = 440+806.211
Δ = 22° 09' 47.12"
D = 6°-11'-39"
R = 925.000 m
T = 181.168 m
L = 357.807 m
E = 17.575 m
PC STA. = 440+625.043
PT STA. = 440+982.850
S.E. = 5.10%
SE IN = Sta. 440+601 to 440+651
SE OUT = Sta. 440+961 to 441+095

CURVE DATA BLRAMPF-1

PI STA. = 110+103.471
Δ = 12° 36' 57.24"
D = 6°-07'-16"
R = 936.039 m
T = 103.471 m
L = 206.105 m
E = 5.702 m
PC STA. = 110+000.000
PT STA. = 110+206.105
S.E. = ---
SE IN = ---
SE OUT = ---

CURVE DATA BLRAMPF-2

PI STA. = 110+306.544 (3618+98.110)
Δ = 18°-01'-32.77"
D = 22°-28'-08"
R = 255.000 m (836.614')
T = 40.447 m (132.700')
L = 80.225 m (263.205')
E = 3.188 m (10.459')
PC STA. = 110+266.098 (3617+65.413)
PT STA. = 110+346.323 (3620+28.619)
S.E. = 6%
SE IN = Sta. --- to 110+286
SE OUT = Sta. 110+710 to 110+766



SB IL-394 OFFSET SKETCH

DESIGNED	JJK
CHECKED	MAS
DRAWN	LK
CHECKED	PCA

Notes:
1. All dimensions shown are in millimeter (mm) except as noted.
2. Dimensions and Stations in parantheses are in English units.

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
OFFSET SKETCHES, PROFILES
& CURVE DATA
SB IL ROUTE 394 / RAMP F OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800/2845
DATE 05/16/05
SCALE ---

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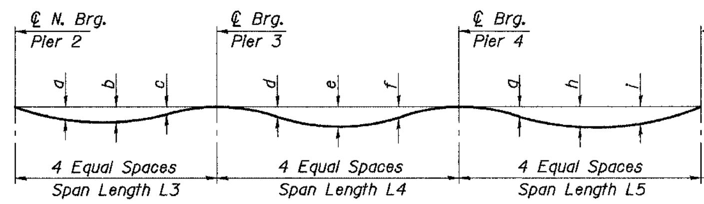
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



For Girder Span Lengths L3, L4 & L5 See General Framing Plan Drawing Sheet No. 17 of 42.

DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of slab & parapet-no future wearing surface)

DEAD LOAD DEFLECTION TABLE

Girder No. \ Deflection	Span 3 (L3)			Span 4 (L4)			Span 5 (L5)		
	a	b	c	d	e	f	g	h	i
1	21	23	8	28	50	27	10	26	25
2	21	24	9	23	46	26	11	29	27
3 **	19	21	8	3	8	14	-	-	-
4	22	25	10	23	47	28	6	19	20
5 **	24	26	9	31	56	33	-2	3	11
6	23	25	8	36	64	38	2	15	17
7	24	25	9	33	61	34	7	22	22
8	22	25	10	23	46	26	12	30	28
9 **	20	23	8	2	8	14	-	-	-
10	24	26	11	22	46	26	12	30	28
11	25	27	10	31	58	32	11	29	28
12	22	24	8	30	54	30	9	26	24

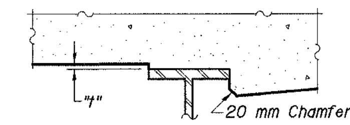
Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown in the "Top of Slab Elevations" tables. All offsets shown in the "Top of Slab Elevations" tables are in meters.

** Last span for G3, G5 & G9 is from Pier 3 or Pier 4 to Head Beam.

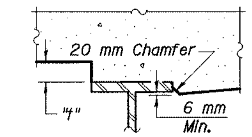
END OF SPAN DIMENSIONS

(Values in Meters)

Location	D1	D2	D3
Girder 1	2.743	2.635	3.393
Girder 2	2.743	2.643	3.411
Girder 3 **	2.944	2.318	-
Girder 4	3.154	2.960	3.302
Girder 5 **	3.154	3.091	1.567
Girder 6	3.154	3.240	3.900
Girder 7	3.154	3.300	4.045
Girder 8	3.154	3.303	4.050
Girder 9 **	3.381	2.467	-
Girder 10	3.617	3.666	3.891
Girder 11	3.617	3.680	3.920
Girder 12	3.617	3.692	3.948
℄ SB IL 394 & PGL	3.617	3.584	4.052



At Minimum Fillet



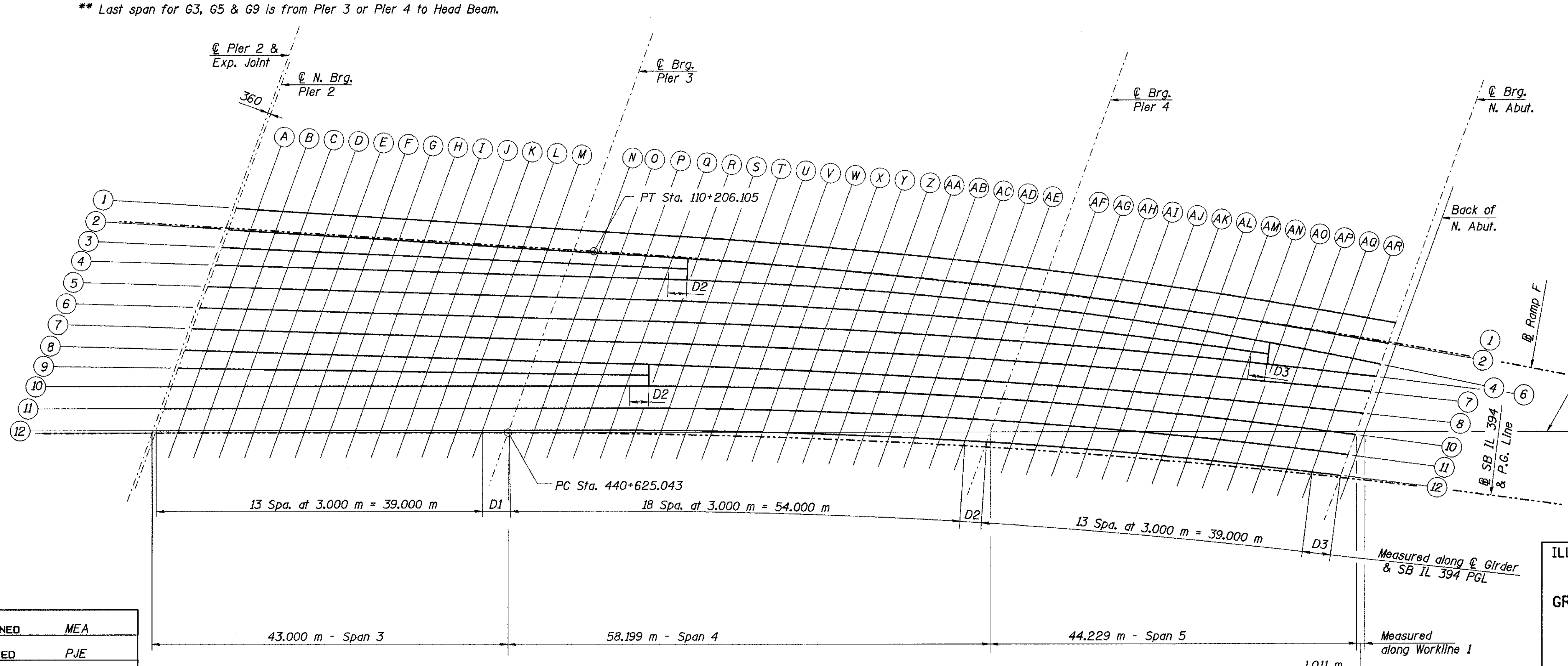
At Maximum Fillet

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

FILLET HEIGHTS

Notes:

1. Work this sheet with Sheet Nos. 5 - 9 of 42.
2. For Girder Framing Layout see Sheets Nos. 17, 19 21 & 23 of 42.
3. All dimensions are in millimeters (mm) unless otherwise noted.



ELEVATION GRID

THIS SHEET FOR INFORMATION ONLY

DESIGNED	MEA
CHECKED	PJE
DRAWN	LK
CHECKED	PJE

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

TOP OF SLAB ELEVATIONS, GRID & DETAILS, SPANS 3-5 - UNIT 1

SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800

DATE 05/16/05
SCALE ---

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	20
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 5
42 SHEETS

* 2004-133F
CONTRACT NO. 62898

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ Pier 2	440+591.820	-26.864	187.115	187.115
℄ N. Brg. Pier 2	440+592.200	-26.841	187.118	187.118
A	440+595.190	-26.652	187.149	187.156
B	440+598.180	-26.463	187.178	187.191
C	440+601.180	-26.274	187.207	187.226
D	440+604.170	-26.085	187.235	187.258
E	440+607.170	-25.896	187.262	187.287
F	440+610.160	-25.707	187.288	187.312
G	440+613.150	-25.518	187.314	187.337
H	440+616.150	-25.329	187.338	187.359
I	440+619.140	-25.140	187.362	187.377
J	440+622.140	-24.951	187.385	187.396
K	440+625.130	-24.762	187.407	187.413
L	440+628.040	-24.578	187.429	187.431
M	440+630.960	-24.403	187.449	187.449
℄ Pier 3	440+633.630	-24.252	187.467	187.467
N	440+636.550	-24.095	187.486	187.489
O	440+639.470	-23.948	187.506	187.514
P	440+642.390	-23.810	187.525	187.540
Q	440+645.310	-23.682	187.544	187.567
R	440+648.240	-23.556	187.562	187.592
S	440+651.160	-23.427	187.710	187.747
T	440+654.080	-23.296	187.538	187.581
U	440+657.010	-23.162	187.501	187.547
V	440+659.930	-23.026	187.464	187.513
W	440+662.850	-22.887	187.426	187.474
X	440+665.780	-22.746	187.389	187.434
Y	440+668.700	-22.602	187.352	187.394
Z	440+671.630	-22.456	187.315	187.350
AA	440+674.550	-22.307	187.278	187.306
AB	440+677.480	-22.156	187.242	187.263
AC	440+680.410	-22.002	187.205	187.219
AD	440+683.330	-21.846	187.169	187.176
AE	440+686.260	-21.687	187.133	187.135
℄ Pier 4	440+688.830	-21.545	187.102	187.102
AF	440+691.760	-21.382	187.065	187.066
AG	440+694.690	-21.216	187.030	187.033
AH	440+697.620	-21.048	186.994	187.002
AI	440+700.540	-20.877	186.959	186.971
AJ	440+703.470	-20.703	186.924	186.941
AK	440+706.400	-20.527	186.889	186.912
AL	440+709.330	-20.349	186.854	186.880
AM	440+712.260	-20.168	186.819	186.848
AN	440+715.190	-19.985	186.787	186.815
AO	440+718.120	-19.799	186.755	186.781
AP	440+721.060	-19.610	186.723	186.746
AQ	440+723.990	-19.419	186.690	186.707
AR	440+726.920	-19.226	186.657	186.667
℄ Brg. N. Abut.	440+730.240	-19.004	186.620	186.620
Back of N. Abut.	440+731.181	-18.941	186.610	186.610

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ Pier 2	440+590.890	-24.318	187.149	187.149
℄ N. Brg. Pier 2	440+591.270	-24.294	187.152	187.152
A	440+594.260	-24.105	187.176	187.183
B	440+597.260	-23.916	187.200	187.214
C	440+600.250	-23.727	187.222	187.241
D	440+603.240	-23.538	187.244	187.267
E	440+606.240	-23.349	187.265	187.290
F	440+609.230	-23.160	187.285	187.310
G	440+612.230	-22.971	187.304	187.328
H	440+615.220	-22.782	187.323	187.344
I	440+618.210	-22.593	187.340	187.357
J	440+621.210	-22.404	187.357	187.369
K	440+624.200	-22.215	187.373	187.380
L	440+627.150	-22.028	187.388	187.391
M	440+630.070	-21.851	187.402	187.402
℄ Pier 3	440+632.750	-21.697	187.414	187.414
N	440+635.670	-21.538	187.428	187.430
O	440+638.600	-21.388	187.441	187.448
P	440+641.530	-21.247	187.454	187.466
Q	440+644.460	-21.116	187.466	187.484
R	440+647.390	-20.987	187.478	187.503
S	440+650.320	-20.857	187.490	187.522
T	440+653.250	-20.723	187.463	187.501
U	440+656.190	-20.588	187.425	187.466
V	440+659.120	-20.450	187.386	187.430
W	440+662.050	-20.311	187.349	187.394
X	440+664.980	-20.169	187.311	187.354
Y	440+667.920	-20.024	187.274	187.315
Z	440+670.850	-19.878	187.237	187.271
AA	440+673.780	-19.730	187.199	187.226
AB	440+676.720	-19.579	187.162	187.182
AC	440+679.650	-19.426	187.126	187.140
AD	440+682.580	-19.271	187.089	187.096
AE	440+685.520	-19.113	187.053	187.055
℄ Pier 4	440+688.110	-18.973	187.021	187.021
AF	440+691.040	-18.812	186.984	186.985
AG	440+693.980	-18.648	186.949	186.953
AH	440+696.910	-18.482	186.913	186.922
AI	440+699.850	-18.314	186.877	186.891
AJ	440+702.790	-18.144	186.842	186.861
AK	440+705.730	-17.972	186.807	186.832
AL	440+708.660	-17.797	186.771	186.800
AM	440+711.600	-17.621	186.737	186.768
AN	440+714.540	-17.442	186.704	186.736
AO	440+717.480	-17.261	186.672	186.703
AP	440+720.420	-17.078	186.638	186.662
AQ	440+723.360	-16.892	186.605	186.625
AR	440+726.300	-16.705	186.572	186.572
℄ Brg. N. Abut.	440+729.650	-16.489	186.534	186.534
Back of N. Abut.	440+730.591	-16.427	186.523	186.523

GIRDER 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ Pier 2	440+590.110	-22.176	187.182	187.182
℄ N. Brg. Pier 2	440+590.490	-22.158	187.184	187.184
A	440+593.490	-22.016	187.203	187.209
B	440+596.480	-21.875	187.220	187.232
C	440+599.480	-21.733	187.237	187.254
D	440+602.480	-21.592	187.253	187.274
E	440+605.470	-21.450	187.270	187.293
F	440+608.470	-21.309	187.284	187.306
G	440+611.470	-21.167	187.299	187.320
H	440+614.460	-21.025	187.313	187.332
I	440+617.460	-20.884	187.327	187.342
J	440+620.460	-20.742	187.340	187.351
K	440+623.450	-20.601	187.352	187.359
L	440+626.420	-20.460	187.364	187.367
M	440+629.350	-20.328	187.375	187.375
℄ Pier 3	440+632.230	-20.207	187.385	187.385
N	440+635.160	-20.094	187.397	187.400
O	440+638.100	-19.990	187.407	187.414
P	440+641.030	-19.895	187.417	187.429
Q	440+643.970	-19.810	187.429	187.447

Notes:

1. Work this sheet with Sheet No. 4 of 42 sheets.
2. All elevations and offsets are in meters (m).

DESIGNED	MEA
CHECKED	PJE
DRAWN	LK
CHECKED	PJE

THIS SHEET FOR INFORMATION ONLY

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
TOP OF SLAB ELEVATIONS-1
SPANS 3-5 - UNIT 1
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

HNTB

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

SHEET NO. 6
42 SHEETS

* 2004-133F
CONTRACT NO. 62898

GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ Pier 2	440+589.330	-20.033	187.217	187.217
℄ N. Brg. Pier 2	440+589.710	-20.022	187.218	187.218
A	440+592.710	-19.927	187.230	187.238
B	440+595.710	-19.833	187.242	187.257
C	440+598.710	-19.738	187.253	187.273
D	440+601.710	-19.643	187.265	187.289
E	440+604.710	-19.549	187.276	187.302
F	440+607.700	-19.454	187.286	187.312
G	440+610.700	-19.360	187.297	187.322
H	440+613.700	-19.265	187.306	187.328
I	440+616.700	-19.171	187.316	187.334
J	440+619.700	-19.076	187.325	187.339
K	440+622.700	-18.981	187.333	187.341
L	440+625.680	-18.887	187.342	187.346
M	440+628.620	-18.799	187.350	187.351
℄ Pier 3	440+631.710	-18.717	187.358	187.358
N	440+634.650	-18.649	187.366	187.368
O	440+637.590	-18.591	187.375	187.382
P	440+640.530	-18.541	187.383	187.395
Q	440+643.470	-18.502	187.392	187.410
R	440+646.410	-18.461	187.399	187.424
S	440+649.350	-18.412	187.407	187.438
T	440+652.300	-18.355	187.396	187.434
U	440+655.240	-18.289	187.359	187.400
V	440+658.180	-18.215	187.323	187.368
W	440+661.120	-18.133	187.287	187.333
X	440+664.060	-18.043	187.251	187.295
Y	440+667.000	-17.944	187.214	187.256
Z	440+669.940	-17.837	187.178	187.213
AA	440+672.880	-17.721	187.142	187.171
AB	440+675.820	-17.597	187.105	187.127
AC	440+678.770	-17.465	187.069	187.084
AD	440+681.710	-17.325	187.032	187.040
AE	440+684.650	-17.176	186.996	186.999
℄ Pier 4	440+687.550	-17.021	186.960	186.960
AF	440+690.490	-16.856	186.923	186.922
AG	440+693.440	-16.682	186.887	186.887
AH	440+696.380	-16.500	186.850	186.854
AI	440+699.320	-16.310	186.813	186.821
AJ	440+702.260	-16.111	186.776	186.788
AK	440+705.200	-15.905	186.740	186.756
AL	440+708.150	-15.690	186.703	186.722
AM	440+711.090	-15.466	186.666	186.688
AN	440+714.030	-15.234	186.631	186.653
AO	440+716.970	-14.994	186.595	186.616
AP	440+719.910	-14.746	186.560	186.578
AQ	440+722.860	-14.490	186.524	186.538
AR	440+725.800	-14.225	186.487	186.495
℄ Brg. N. Abut.	440+729.040	-13.924	186.447	186.447
Back of N. Abut.	440+729.980	-13.834	186.435	186.435

GIRDER 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ Pier 2	440+588.400	-17.461	187.206	187.206
℄ N. Brg. Pier 2	440+588.780	-17.449	187.208	187.208
A	440+591.780	-17.355	187.218	187.226
B	440+594.770	-17.261	187.225	187.240
C	440+597.770	-17.166	187.232	187.253
D	440+600.770	-17.072	187.240	187.266
E	440+603.770	-16.977	187.247	187.275
F	440+606.770	-16.883	187.254	187.282
G	440+609.770	-16.788	187.260	187.287
H	440+612.770	-16.693	187.267	187.290
I	440+615.760	-16.599	187.272	187.290
J	440+618.760	-16.504	187.278	187.291
K	440+621.760	-16.410	187.283	187.290
L	440+624.760	-16.315	187.287	187.289
M	440+627.710	-16.224	187.291	187.291
℄ Pier 3	440+630.810	-16.139	187.294	187.294
N	440+633.760	-16.068	187.299	187.303
O	440+636.710	-16.007	187.303	187.312
P	440+639.650	-15.955	187.307	187.324
Q	440+642.600	-15.912	187.312	187.337
R	440+645.550	-15.871	187.315	187.347
S	440+648.500	-15.826	187.320	187.360
T	440+651.450	-15.778	187.317	187.365
U	440+654.400	-15.724	187.283	187.335
V	440+657.350	-15.667	187.248	187.302
W	440+660.300	-15.606	187.212	187.267
X	440+663.250	-15.541	187.177	187.230
Y	440+666.200	-15.472	187.140	187.190
Z	440+669.150	-15.399	187.105	187.148
AA	440+672.100	-15.321	187.069	187.104
AB	440+675.050	-15.240	187.034	187.062
AC	440+678.000	-15.155	186.999	187.019
AD	440+680.950	-15.065	186.964	186.975
AE	440+683.900	-14.972	186.929	186.934
℄ Pier 4	440+686.940	-14.872	186.893	186.893
AF	440+689.890	-14.770	186.858	186.856
AG	440+692.840	-14.664	186.823	186.821
AH	440+695.790	-14.555	186.789	186.789
AI	440+698.750	-14.441	186.755	186.757
AJ	440+701.700	-14.323	186.720	186.725
AK	440+704.650	-14.202	186.686	186.695
AL	440+707.600	-14.076	186.652	186.665
AM	440+710.550	-13.946	186.618	186.633
AN	440+713.510	-13.812	186.585	186.604

GIRDER 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ Pier 2	440+587.470	-14.920	187.190	187.190
℄ N. Brg. Pier 2	440+587.850	-14.908	187.190	187.190
A	440+590.850	-14.813	187.194	187.202
B	440+593.850	-14.719	187.197	187.211
C	440+596.850	-14.624	187.200	187.220
D	440+599.850	-14.530	187.201	187.226
E	440+602.840	-14.435	187.203	187.229
F	440+605.840	-14.340	187.205	187.231
G	440+608.840	-14.246	187.206	187.231
H	440+611.840	-14.151	187.207	187.229
I	440+614.840	-14.057	187.207	187.223
J	440+617.840	-13.962	187.206	187.217
K	440+620.840	-13.868	187.206	187.212
L	440+623.830	-13.773	187.204	187.206
M	440+626.810	-13.680	187.203	187.203
℄ Pier 3	440+629.910	-13.592	187.202	187.202
N	440+632.870	-13.518	187.200	187.204
O	440+635.830	-13.454	187.199	187.210
P	440+638.780	-13.399	187.198	187.217
Q	440+641.740	-13.354	187.196	187.225
R	440+644.700	-13.313	187.195	187.233
S	440+647.650	-13.272	187.193	187.239
T	440+650.610	-13.232	187.192	187.246
U	440+653.570	-13.193	187.164	187.222
V	440+656.530	-13.154	187.133	187.195
W	440+659.480	-13.116	187.101	187.164
X	440+662.440	-13.078	187.070	187.129
Y	440+665.400	-13.040	187.038	187.094
Z	440+668.360	-13.004	187.007	187.056
AA	440+671.320	-12.968	186.976	187.017
AB	440+674.270	-12.932	186.945	186.977
AC	440+677.230	-12.897	186.914	186.936
AD	440+680.190	-12.862	186.882	186.896
AE	440+683.150	-12.828	186.852	186.858
℄ Pier 4	440+686.350	-12.792	186.819	186.819
AF	440+689.310	-12.759	186.787	186.785
AG	440+692.260	-12.726	186.757	186.755
AH	440+695.220	-12.695	186.726	186.726
AI	440+698.180	-12.663	186.696	186.700
AJ	440+701.140	-12.632	186.665	186.672
AK	440+704.100	-12.602	186.635	186.646
AL	440+707.060	-12.573	186.604	186.619
AM	440+710.020	-12.543	186.575	186.592
AN	440+712.980	-12.515	186.545	186.563
AO	440+715.940	-12.487	186.517	186.535
AP	440+718.900	-12.459	186.488	186.504
AQ	440+721.860	-12.432	186.459	186.472
AR	440+724.820	-12.406	186.431	186.439
℄ Brg. N. Abut.	440+728.670	-12.372	186.394	186.394
Back of N. Abut.	440+729.631	-12.364	186.385	186.385

Notes:

1. Work this sheet with Sheet No. 4 of 42 sheets.
2. All elevations and offsets are in meters (m).

DESIGNED	MEA
CHECKED	PJE
DRAWN	LK
CHECKED	PJE

THIS SHEET FOR INFORMATION ONLY

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
TOP OF SLAB ELEVATIONS-2
SPANS 3-5 - UNIT 1
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER 7

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ Pier 2	440+586.550	-12.378	187.178	187.178
℄ N. Brg. Pier 2	440+586.930	-12.366	187.177	187.177
A	440+589.930	-12.271	187.173	187.181
B	440+592.920	-12.177	187.173	187.187
C	440+595.920	-12.082	187.170	187.191
D	440+598.920	-11.987	187.167	187.193
E	440+601.920	-11.893	187.163	187.190
F	440+604.920	-11.798	187.159	187.187
G	440+607.920	-11.704	187.155	187.181
H	440+610.910	-11.609	187.150	187.172
I	440+613.910	-11.515	187.144	187.161
J	440+616.910	-11.420	187.139	187.151
K	440+619.910	-11.325	187.132	187.139
L	440+622.910	-11.231	187.126	187.128
M	440+625.900	-11.137	187.119	187.119
℄ Pier 3	440+629.010	-11.046	187.112	187.112
N	440+631.980	-10.969	187.104	187.108
O	440+634.940	-10.901	187.098	187.108
P	440+637.900	-10.844	187.091	187.109
Q	440+640.870	-10.796	187.084	187.111
R	440+643.830	-10.753	187.077	187.112
S	440+646.800	-10.712	187.071	187.114
T	440+649.770	-10.674	187.064	187.115
U	440+652.730	-10.638	187.044	187.099
V	440+655.700	-10.605	187.014	187.073
W	440+658.660	-10.574	186.984	187.044
X	440+661.630	-10.545	186.955	187.011
Y	440+664.600	-10.518	186.926	186.978
Z	440+667.560	-10.494	186.897	186.942
AA	440+670.530	-10.472	186.868	186.905
AB	440+673.490	-10.453	186.839	186.868
AC	440+676.460	-10.436	186.810	186.831
AD	440+679.430	-10.421	186.782	186.794
AE	440+682.390	-10.408	186.752	186.756
℄ Pier 4	440+685.660	-10.397	186.721	186.721
AF	440+688.620	-10.389	186.693	186.692
AG	440+691.590	-10.384	186.665	186.665
AH	440+694.560	-10.381	186.637	186.641
AI	440+697.520	-10.380	186.609	186.618
AJ	440+700.490	-10.381	186.581	186.595
AK	440+703.460	-10.385	186.553	186.571
AL	440+706.420	-10.392	186.525	186.547
AM	440+709.390	-10.400	186.498	186.522
AN	440+712.360	-10.411	186.471	186.495
AO	440+715.320	-10.424	186.444	186.467
AP	440+718.290	-10.440	186.417	186.438
AQ	440+721.260	-10.458	186.389	186.406
AR	440+724.220	-10.478	186.362	186.372
℄ Brg. N. Abut.	440+728.220	-10.509	186.326	186.326
Back of N. Abut.	440+729.192	-10.517	186.318	186.318

GIRDER 8

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ Pier 2	440+585.620	-9.835	187.169	187.169
℄ N. Brg. Pier 2	440+586.000	-9.823	187.168	187.168
A	440+589.000	-9.729	187.161	187.168
B	440+592.000	-9.634	187.153	187.166
C	440+595.000	-9.540	187.144	187.163
D	440+598.000	-9.445	187.136	187.160
E	440+600.990	-9.351	187.126	187.151
F	440+603.990	-9.256	187.117	187.143
G	440+606.990	-9.162	187.107	187.132
H	440+609.990	-9.067	187.096	187.118
I	440+612.990	-8.973	187.086	187.104
J	440+615.990	-8.878	187.074	187.088
K	440+618.990	-8.783	187.063	187.071
L	440+621.980	-8.689	187.051	187.055
M	440+624.980	-8.594	187.038	187.039
℄ Pier 3	440+628.110	-8.500	187.025	187.025
N	440+631.080	-8.420	187.013	187.015
O	440+634.050	-8.350	187.000	187.007
P	440+637.020	-8.289	186.988	187.000
Q	440+640.000	-8.238	186.975	186.993
R	440+642.970	-8.193	186.963	186.988
S	440+645.940	-8.150	186.951	186.983
T	440+648.920	-8.109	186.939	186.977
U	440+651.890	-8.071	186.921	186.963
V	440+654.860	-8.035	186.891	186.935
W	440+657.840	-8.001	186.861	186.906
X	440+660.810	-7.970	186.831	186.874
Y	440+663.790	-7.941	186.802	186.843
Z	440+666.760	-7.915	186.773	186.808
AA	440+669.740	-7.891	186.743	186.771
AB	440+672.710	-7.869	186.714	186.735
AC	440+675.680	-7.850	186.686	186.701
AD	440+678.660	-7.834	186.656	186.664
AE	440+681.630	-7.819	186.627	186.630
℄ Pier 4	440+684.910	-7.806	186.596	186.596
AF	440+687.880	-7.797	186.568	186.569
AG	440+690.860	-7.790	186.540	186.544
AH	440+693.830	-7.786	186.511	186.520
AI	440+696.810	-7.784	186.483	186.498
AJ	440+699.780	-7.784	186.455	186.475
AK	440+702.760	-7.787	186.427	186.453
AL	440+705.730	-7.792	186.400	186.430
AM	440+708.710	-7.799	186.372	186.404
AN	440+711.680	-7.809	186.344	186.376
AO	440+714.660	-7.822	186.317	186.347
AP	440+717.630	-7.836	186.290	186.317
AQ	440+720.610	-7.854	186.262	186.283
AR	440+723.580	-7.873	186.236	186.248
℄ Brg. N. Abut.	440+727.600	-7.903	186.199	186.199
Back of N. Abut.	110+728.570	-7.911	186.191	186.191

GIRDER 9

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ Pier 2	440+584.830	-7.665	187.164	187.164
℄ N. Brg. Pier 2	440+585.210	-7.659	187.163	187.163
A	440+588.210	-7.612	187.150	187.157
B	440+591.210	-7.565	187.139	187.152
C	440+594.210	-7.518	187.126	187.144
D	440+597.210	-7.471	187.113	187.135
E	440+600.210	-7.425	187.101	187.125
F	440+603.210	-7.378	187.088	187.113
G	440+606.210	-7.331	187.075	187.098
H	440+609.210	-7.284	187.062	187.082
I	440+612.210	-7.237	187.048	187.064
J	440+615.210	-7.190	187.035	187.047
K	440+618.210	-7.143	187.021	187.028
L	440+621.210	-7.096	187.007	187.011
M	440+624.210	-7.049	186.992	186.993
℄ Pier 3	440+627.570	-7.000	186.976	186.976
N	440+630.550	-6.966	186.961	186.963
O	440+633.520	-6.942	186.948	186.954
P	440+636.500	-6.927	186.934	186.946
Q	440+639.480	-6.922	186.921	186.939

Notes:

1. Work this sheet with Sheet No. 4 of 42 sheets.
2. All elevations and offsets are in meters (m).

DESIGNED	MEA
CHECKED	PJE
DRAWN	LK
CHECKED	PJE

THIS SHEET FOR INFORMATION ONLY

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
TOP OF SLAB ELEVATIONS-3
SPANS 3-5 - UNIT 1
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	23
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 8
42 SHEETS

* 2004-133F
CONTRACT NO. 62898

GIRDER 10

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ Pier 2	440+584.040	-5.494	187.162	187.162
℄ N. Brg. Pier 2	440+584.430	-5.494	187.160	187.160
A	440+587.430	-5.494	187.143	187.150
B	440+590.430	-5.494	187.127	187.142
C	440+593.430	-5.494	187.110	187.131
D	440+596.430	-5.494	187.094	187.120
E	440+599.430	-5.494	187.078	187.106
F	440+602.430	-5.494	187.061	187.089
G	440+605.430	-5.494	187.045	187.071
H	440+608.430	-5.494	187.029	187.053
I	440+611.430	-5.494	187.012	187.032
J	440+614.430	-5.494	186.997	187.012
K	440+617.430	-5.494	186.980	186.990
L	440+620.430	-5.494	186.964	186.970
M	440+623.430	-5.494	186.947	186.949
℄ Pier 3	440+627.030	-5.497	186.928	186.928
N	440+630.010	-5.508	186.912	186.914
O	440+632.990	-5.529	186.897	186.903
P	440+635.980	-5.559	186.882	186.893
Q	440+638.960	-5.600	186.867	186.884
R	440+641.940	-5.642	186.854	186.878
S	440+644.920	-5.681	186.839	186.869
T	440+647.900	-5.716	186.825	186.862
U	440+650.880	-5.748	186.811	186.852
V	440+653.870	-5.776	186.785	186.829
W	440+656.850	-5.800	186.758	186.803
X	440+659.830	-5.820	186.731	186.774
Y	440+662.810	-5.836	186.704	186.744
Z	440+665.790	-5.849	186.676	186.711
AA	440+668.770	-5.858	186.649	186.677
AB	440+671.750	-5.864	186.621	186.643
AC	440+674.730	-5.865	186.593	186.608
AD	440+677.710	-5.863	186.565	186.574
AE	440+680.700	-5.858	186.537	186.539
℄ Pier 4	440+684.340	-5.845	186.502	186.502
AF	440+687.320	-5.831	186.473	186.474
AG	440+690.300	-5.814	186.444	186.448
AH	440+693.280	-5.792	186.415	186.424
AI	440+696.260	-5.767	186.385	186.400
AJ	440+699.250	-5.738	186.356	186.376
AK	440+702.230	-5.705	186.326	186.352
AL	440+705.210	-5.669	186.296	186.326
AM	440+708.190	-5.629	186.266	186.298
AN	440+711.170	-5.585	186.236	186.268
AO	440+714.150	-5.538	186.205	186.235
AP	440+717.140	-5.486	186.174	186.200
AQ	440+720.120	-5.431	186.144	186.164
AR	440+723.100	-5.373	186.113	186.125
℄ Brg. N. Abut.	440+726.970	-5.291	186.072	186.072
Back of N. Abut.	440+727.935	-5.270	186.062	186.062

GIRDER 11

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ Pier 2	440+583.100	-2.894	187.162	187.162
℄ N. Brg. Pier 2	440+583.480	-2.894	187.159	187.159
A	440+586.480	-2.894	187.136	187.144
B	440+589.480	-2.894	187.115	187.131
C	440+592.480	-2.894	187.094	187.116
D	440+595.480	-2.894	187.071	187.098
E	440+598.480	-2.894	187.049	187.078
F	440+601.480	-2.894	187.027	187.057
G	440+604.480	-2.894	187.005	187.033
H	440+607.480	-2.894	186.984	187.008
I	440+610.480	-2.894	186.961	186.981
J	440+613.480	-2.894	186.940	186.955
K	440+616.480	-2.894	186.917	186.926
L	440+619.480	-2.894	186.896	186.901
M	440+622.480	-2.894	186.873	186.874
℄ Pier 3	440+626.090	-2.895	186.847	186.847
N	440+629.080	-2.903	186.826	186.829
O	440+632.070	-2.921	186.804	186.813
P	440+635.060	-2.949	186.784	186.801
Q	440+638.050	-2.986	186.763	186.788
R	440+641.040	-3.026	186.744	186.777
S	440+644.030	-3.063	186.723	186.764
T	440+647.020	-3.096	186.704	186.753
U	440+650.010	-3.126	186.684	186.737
V	440+653.000	-3.152	186.659	186.715
W	440+655.990	-3.176	186.633	186.690
X	440+658.980	-3.196	186.605	186.658
Y	440+661.970	-3.212	186.578	186.628
Z	440+664.960	-3.225	186.550	186.593
AA	440+667.950	-3.235	186.523	186.558
AB	440+670.940	-3.242	186.495	186.522
AC	440+673.930	-3.245	186.467	186.485
AD	440+676.920	-3.245	186.439	186.450
AE	440+679.910	-3.242	186.411	186.415
℄ Pier 4	440+683.580	-3.233	186.376	186.376
AF	440+686.570	-3.222	186.347	186.348
AG	440+689.560	-3.208	186.318	186.321
AH	440+692.550	-3.191	186.289	186.297
AI	440+695.540	-3.170	186.260	186.274
AJ	440+698.530	-3.146	186.231	186.250
AK	440+701.520	-3.118	186.201	186.226
AL	440+704.500	-3.087	186.171	186.200
AM	440+707.490	-3.053	186.141	186.172
AN	440+710.480	-3.016	186.111	186.142
AO	440+713.470	-2.975	186.081	186.111
AP	440+716.460	-2.931	186.051	186.077
AQ	440+719.460	-2.884	186.020	186.040
AR	440+722.450	-2.833	185.989	186.001
℄ Brg. N. Abut.	440+726.350	-2.762	185.949	185.949
Back of N. Abut.	440+727.324	-2.743	185.939	185.939

GIRDER 12

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ Pier 2	440+582.150	-0.294	187.166	187.166
℄ N. Brg. Pier 2	440+582.530	-0.294	187.162	187.162
A	440+585.530	-0.294	187.135	187.142
B	440+588.530	-0.294	187.107	187.120
C	440+591.530	-0.294	187.079	187.098
D	440+594.530	-0.294	187.052	187.076
E	440+597.530	-0.294	187.024	187.049
F	440+600.530	-0.294	186.997	187.023
G	440+603.530	-0.294	186.969	186.993
H	440+606.530	-0.294	186.941	186.962
I	440+609.530	-0.294	186.914	186.930
J	440+612.530	-0.294	186.887	186.898
K	440+615.530	-0.294	186.858	186.865
L	440+618.530	-0.294	186.831	186.834
M	440+621.530	-0.294	186.804	186.805
℄ Pier 3	440+625.150	-0.294	186.770	186.770
N	440+628.150	-0.300	186.743	186.746
O	440+631.150	-0.315	186.715	186.724
P	440+634.150	-0.339	186.689	186.705
Q	440+637.150	-0.374	186.663	186.687
R	440+640.140	-0.411	186.638	186.670
S	440+643.140	-0.445	186.612	186.651
T	440+646.140	-0.476	186.585	186.631
U	440+649.140	-0.504	186.560	186.609
V	440+652.140	-0.530	186.534	186.586
W	440+655.140	-0.552	186.507	186.560
X	440+658.130	-0.571	186.479	186.529
Y	440+661.130	-0.588	186.452	186.499
Z	440+664.130	-0.601	186.424	186.464
AA	440+667.130	-0.612	186.397	186.430
AB	440+670.130	-0.619	186.369	186.394
AC	440+673.120	-0.624	186.341	186.359
AD	440+676.120	-0.625	186.313	186.323
AE	440+679.120	-0.624	186.285	186.288
℄ Pier 4	440+682.810	-0.618	186.250	186.250
AF	440+685.810	-0.610	186.221	186.221
AG	440+688.810	-0.599	186.192	186.194
AH	440+691.800	-0.586	186.163	186.169
AI	440+694.800	-0.569	186.134	186.146
AJ	440+697.800	-0.549	186.105	186.122
AK	440+700.800	-0.526	186.075	186.096
AL	440+703.800	-0.500	186.046	186.072
AM	440+706.790	-0.472	186.016	186.043
AN	440+709.790	-0.440	185.987	186.015
AO	440+712.790	-0.405	185.956	185.982
AP	440+715.790	-0.368	185.926	185.949
AQ	440+718.790	-0.327	185.896	185.914
AR	440+721.790	-0.284	185.866	185.877
℄ Brg. N. Abut.	440+725.730	-0.222	185.825	185.825
Back of N. Abut.	440+726.707	-0.206	185.816	185.816

Notes:

1. Work this sheet with Sheet No. 4 of 42 sheets.
2. All elevations and offsets are in meters (m).

DESIGNED	MEA
CHECKED	PJE
DRAWN	LK
CHECKED	PJE

THIS SHEET FOR INFORMATION ONLY

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
TOP OF SLAB ELEVATIONS-4
SPANS 3-5 UNIT 1
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

HNTB

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	24
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 9
42 SHEETS

* 2004-133F
CONTRACT NO. 62898

℄ S.B. IL 394 & P.G. LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ Pier 2	440+582.043	0.000	187.166	187.166
℄ N. Brg. Pier 2	440+582.426	0.000	187.163	187.163
A	440+585.426	0.000	187.135	187.142
B	440+588.426	0.000	187.106	187.119
C	440+591.426	0.000	187.078	187.097
D	440+594.426	0.000	187.050	187.074
E	440+597.426	0.000	187.022	187.047
F	440+600.426	0.000	186.993	187.019
G	440+603.426	0.000	186.965	186.989
H	440+606.426	0.000	186.937	186.958
I	440+609.426	0.000	186.909	186.925
J	440+612.426	0.000	186.880	186.891
K	440+615.426	0.000	186.852	186.859
L	440+618.426	0.000	186.824	186.827
M	440+621.426	0.000	186.796	186.797
℄ Pier 3	440+625.043	0.000	186.762	186.762
N	440+628.043	0.000	186.733	186.736
O	440+631.043	0.000	186.705	186.714
P	440+634.043	0.000	186.677	186.693
Q	440+637.043	0.000	186.649	186.673
R	440+640.043	0.000	186.620	186.652
S	440+643.043	0.000	186.592	186.631
T	440+646.043	0.000	186.564	186.610
U	440+649.043	0.000	186.536	186.585
V	440+652.043	0.000	186.507	186.559
W	440+655.043	0.000	186.479	186.532
X	440+658.043	0.000	186.451	186.501
Y	440+661.043	0.000	186.423	186.470
Z	440+664.043	0.000	186.394	186.434
AA	440+667.043	0.000	186.366	186.399
AB	440+670.043	0.000	186.338	186.363
AC	440+673.043	0.000	186.310	186.328
AD	440+676.043	0.000	186.282	186.292
AE	440+679.043	0.000	186.253	186.256
℄ Pier 4	440+682.627	0.000	186.220	186.220
AF	440+685.627	0.000	186.191	186.191
AG	440+688.627	0.000	186.163	186.165
AH	440+691.627	0.000	186.135	186.141
AI	440+694.627	0.000	186.107	186.119
AJ	440+697.627	0.000	186.078	186.095
AK	440+700.627	0.000	186.050	186.071
AL	440+703.627	0.000	186.022	186.048
AM	440+706.627	0.000	185.994	186.021
AN	440+709.627	0.000	185.965	185.993
AO	440+712.627	0.000	185.937	185.963
AP	440+715.627	0.000	185.909	185.932
AQ	440+718.627	0.000	185.881	185.899
AR	440+721.627	0.000	185.852	185.863
℄ Brg. N. Abut.	440+725.679	0.000	185.814	185.814
Back of N. Abut.	440+726.657	0.000	185.805	185.805

RAMP F ℄

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ Pier 2	440+590.956	-24.489	187.147	187.147
℄ N. Brg. Pier 2	440+591.331	-24.465	187.150	187.150
A	440+594.325	-24.276	187.174	187.181
B	440+597.319	-24.087	187.198	187.212
C	440+600.313	-23.898	187.221	187.240
D	440+603.307	-23.709	187.243	187.266
E	440+606.301	-23.520	187.264	187.289
F	440+609.295	-23.331	187.285	187.310
G	440+612.289	-23.142	187.304	187.328
H	440+615.283	-22.953	187.323	187.344
I	440+618.277	-22.764	187.341	187.358
J	440+621.271	-22.575	187.358	187.370
K	440+624.265	-22.386	187.375	187.382
L	440+627.207	-22.200	187.390	187.393
M	440+630.132	-22.022	187.405	187.405
℄ Pier 3	440+632.806	-21.869	187.418	187.418
N	440+635.733	-21.709	187.432	187.434
O	440+638.661	-21.553	187.445	187.452
P	440+641.589	-21.396	187.458	187.470
Q	440+644.517	-21.240	187.470	187.488
R	440+647.446	-21.083	187.481	187.506
S	440+650.375	-20.926	187.492	187.524
T	440+653.305	-20.769	187.464	187.502
U	440+656.236	-20.612	187.425	187.466
V	440+659.166	-20.455	187.386	187.430
W	440+662.098	-20.298	187.348	187.393
X	440+665.029	-20.140	187.310	187.353
Y	440+667.962	-19.983	187.272	187.313
Z	440+670.894	-19.825	187.234	187.268
AA	440+673.828	-19.667	187.197	187.224
AB	440+676.761	-19.509	187.160	187.180
AC	440+679.696	-19.351	187.123	187.137
AD	440+682.630	-19.193	187.086	187.093
AE	440+685.565	-19.035	187.050	187.052
℄ Pier 4	440+688.085	-18.899	187.018	187.018
AF	440+691.021	-18.741	186.982	186.983
AG	440+693.958	-18.583	186.947	186.951
AH	440+696.895	-18.424	186.911	186.920
AI	440+699.832	-18.266	186.876	186.890
AJ	440+702.770	-18.107	186.841	186.860
AK	440+705.709	-17.948	186.806	186.831
AL	440+708.648	-17.789	186.771	186.800
AM	440+711.588	-17.631	186.737	186.768
AN	440+714.528	-17.472	186.705	186.737
AO	440+717.468	-17.312	186.673	186.704
AP	440+720.409	-17.153	186.641	186.665
AQ	440+723.350	-16.994	186.609	186.629
AR	440+726.292	-16.835	186.577	186.577
℄ Brg. N. Abut.	440+729.684	-16.651	186.540	186.540
Back of N. Abut.	440+730.582	-16.602	186.530	186.530

Notes:

Work this sheet with Sheet No. 4 of 42 sheets.

All elevations and offsets are in meters (m).

DESIGNED	MEA
CHECKED	PJE
DRAWN	LK
CHECKED	PJE

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THIS SHEET FOR INFORMATION ONLY

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
TOP OF SLAB ELEVATIONS-5
SPANS 3-5 UNIT 1
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

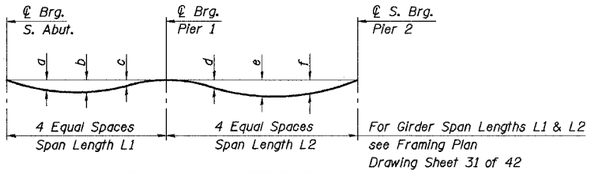
HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	25
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 10
42 SHEETS

• 2004-133F
CONTRACT NO. 62898



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of slab & parapet-no future wearing surface)

DEAD LOAD DEFLECTION TABLE

Girder No. \ Deflection	Span 1 (L1)			Span 2 (L2)		
	a	b	c	d	e	f
1	24	26	10	25	51	44
2	27	29	12	23	46	39
3	28	32	13	18	39	34
4	29	33	15	15	34	29
5	29	35	16	13	28	25
6	30	36	17	9	24	21

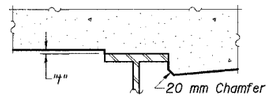
Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown in the "Top of Slab Elevations" tables.

All offsets shown in the "Top of Slab Elevations" tables are in meters.

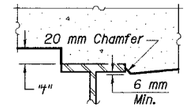
END OF SPAN DIMENSIONS

(Values in Meters)

Location	D1	D2	D3
Girder 1	1.700	N/A	N/A
Girder 2	1.700	N/A	3.843
Girder 3	1.700	N/A	2.842
Girder 4	1.700	N/A	1.841
Girder 5	1.700	3.840	N/A
Girder 6	1.700	2.839	N/A
℄ SB IL 394 & PGL	1.706	2.617	N/A



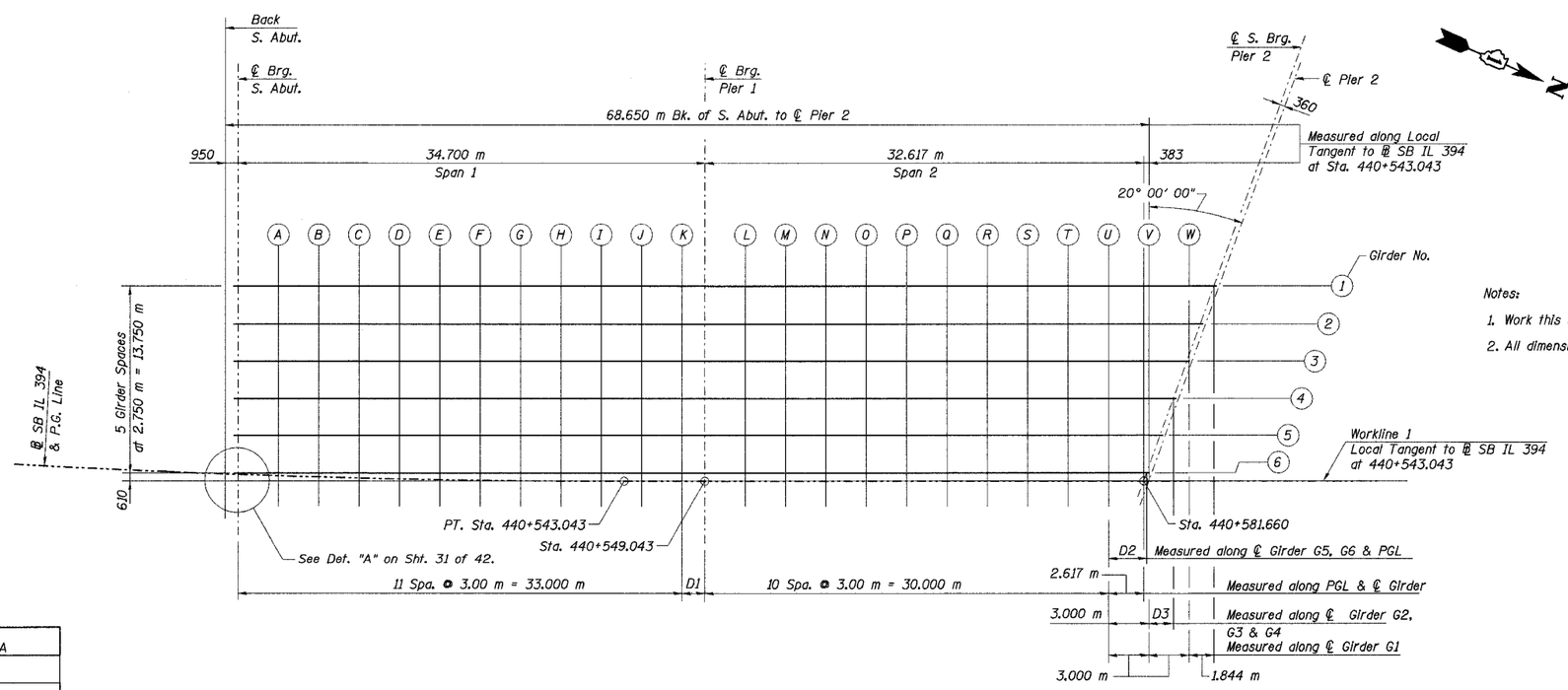
At Minimum Fillet



At Maximum Fillet

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

FILLET HEIGHTS



ELEVATION GRID

Notes:

1. Work this sheet with Sheet Nos. 11 & 12 of 42.
2. All dimensions are in millimeters (mm) unless otherwise noted.

THIS SHEET FOR INFORMATION ONLY

DESIGNED	MEA
CHECKED	JY
DRAWN	LK
CHECKED	JY

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
TOP OF SLAB ELEVATIONS, GRID & DETAILS, SPANS 1 & 2 - UNIT 2
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

HNTB

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	26
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 11
42 SHEETS

* 2004-133F
CONTRACT NO. 62898

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back of S. Abut.	440+512.865	-13.810	187.140	187.140
℄ Brg. S. Abut.	440+513.831	-13.845	187.139	187.139
A	440+516.883	-13.947	187.136	187.146
B	440+519.935	-14.038	187.135	187.153
C	440+522.987	-14.117	187.134	187.159
D	440+526.040	-14.186	187.133	187.161
E	440+529.094	-14.243	187.134	187.162
F	440+532.148	-14.288	187.135	187.160
G	440+535.203	-14.323	187.137	187.158
H	440+538.257	-14.346	187.139	187.153
I	440+541.312	-14.358	187.142	187.149
J	440+544.343	-14.360	187.144	187.146
K	440+547.343	-14.360	187.147	187.147
℄ Pier 1	440+549.043	-14.360	187.149	187.149
L	440+552.043	-14.360	187.152	187.157
M	440+555.043	-14.360	187.155	187.169
N	440+558.043	-14.360	187.158	187.182
O	440+561.043	-14.360	187.161	187.195
P	440+564.043	-14.360	187.164	187.208
Q	440+567.043	-14.360	187.167	187.217
R	440+570.043	-14.360	187.170	187.223
S	440+573.043	-14.360	187.173	187.225
T	440+576.043	-14.360	187.176	187.222
U	440+579.043	-14.360	187.179	187.217
V	440+582.043	-14.360	187.182	187.207
W	440+585.043	-14.360	187.185	187.194
℄ S. Brg. Pier 2	440+586.887	-14.360	187.186	187.186
℄ Pier 2	440+587.270	-14.360	187.187	187.187

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back of S. Abut.	440+512.971	-11.060	187.275	187.275
℄ Brg. S. Abut.	440+513.933	-11.095	187.272	187.272
A	440+516.974	-11.197	187.263	187.274
B	440+520.015	-11.288	187.255	187.275
C	440+523.057	-11.367	187.248	187.275
D	440+526.100	-11.436	187.242	187.272
E	440+529.143	-11.493	187.236	187.268
F	440+532.186	-11.538	187.231	187.259
G	440+535.230	-11.573	187.227	187.250
H	440+538.274	-11.596	187.223	187.239
I	440+541.318	-11.608	187.220	187.229
J	440+544.343	-11.610	187.217	187.220
K	440+547.343	-11.610	187.214	187.214
℄ Pier 1	440+549.043	-11.610	187.212	187.212
L	440+552.043	-11.610	187.209	187.213
M	440+555.043	-11.610	187.206	187.217
N	440+558.043	-11.610	187.203	187.225
O	440+561.043	-11.610	187.200	187.232
P	440+564.043	-11.610	187.197	187.237
Q	440+567.043	-11.610	187.194	187.240
R	440+570.043	-11.610	187.191	187.239
S	440+573.043	-11.610	187.188	187.235
T	440+576.043	-11.610	187.185	187.225
U	440+579.043	-11.610	187.182	187.213
V	440+582.043	-11.610	187.179	187.198
℄ S. Brg. Pier 2	440+585.886	-11.610	187.175	187.175
℄ Pier 2	440+586.269	-11.610	187.174	187.174

GIRDER 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back of S. Abut.	440+513.075	-8.310	187.409	187.409
℄ Brg. S. Abut.	440+514.034	-8.345	187.404	187.404
A	440+517.064	-8.447	187.390	187.401
B	440+520.095	-8.538	187.376	187.397
C	440+523.126	-8.617	187.362	187.390
D	440+526.158	-8.686	187.350	187.383
E	440+529.191	-8.743	187.339	187.372
F	440+532.224	-8.788	187.328	187.359
G	440+535.257	-8.823	187.317	187.342
H	440+538.290	-8.846	187.307	187.325
I	440+541.324	-8.858	187.298	187.308
J	440+544.343	-8.860	187.289	187.294
K	440+547.343	-8.860	187.280	187.280
℄ Pier 1	440+549.043	-8.860	187.275	187.275
L	440+552.043	-8.860	187.266	187.269
M	440+555.043	-8.860	187.257	187.267
N	440+558.043	-8.860	187.248	187.266
O	440+561.043	-8.860	187.239	187.266
P	440+564.043	-8.860	187.230	187.265
Q	440+567.043	-8.860	187.221	187.261
R	440+570.043	-8.860	187.212	187.254
S	440+573.043	-8.860	187.203	187.242
T	440+576.043	-8.860	187.194	187.228
U	440+579.043	-8.860	187.185	187.210
V	440+582.043	-8.860	187.176	187.188
℄ S. Brg. Pier 2	440+584.885	-8.860	187.167	187.167
℄ Pier 2	440+585.268	-8.860	187.166	187.166

GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back of S. Abut.	440+513.179	-5.560	187.543	187.543
℄ Brg. S. Abut.	440+514.135	-5.595	187.536	187.536
A	440+517.154	-5.697	187.516	187.527
B	440+520.175	-5.788	187.496	187.517
C	440+523.195	-5.867	187.476	187.505
D	440+526.217	-5.936	187.458	187.492
E	440+529.239	-5.993	187.441	187.476
F	440+532.261	-6.038	187.424	187.457
G	440+535.284	-6.073	187.407	187.434
H	440+538.307	-6.096	187.391	187.410
I	440+541.330	-6.108	187.376	187.389
J	440+544.343	-6.110	187.361	187.367
K	440+547.343	-6.110	187.346	187.347
℄ Pier 1	440+549.043	-6.110	187.337	187.337
L	440+552.043	-6.110	187.323	187.325
M	440+555.043	-6.110	187.308	187.316
N	440+558.043	-6.110	187.293	187.309
O	440+561.043	-6.110	187.278	187.302
P	440+564.043	-6.110	187.263	187.294
Q	440+567.043	-6.110	187.248	187.283
R	440+570.043	-6.110	187.233	187.269
S	440+573.043	-6.110	187.218	187.252
T	440+576.043	-6.110	187.203	187.230
U	440+579.043	-6.110	187.188	187.206
V	440+582.043	-6.110	187.173	187.181
℄ S. Brg. Pier 2	440+583.884	-6.110	187.164	187.164
℄ Pier 2	440+584.267	-6.110	187.162	187.162

GIRDER 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back of S. Abut.	440+513.282	-2.810	187.677	187.677
℄ Brg. S. Abut.	440+514.234	-2.845	187.668	187.668
A	440+517.244	-2.947	187.641	187.653
B	440+520.253	-3.038	187.615	187.637
C	440+523.264	-3.117	187.590	187.620
D	440+526.275	-3.186	187.566	187.601
E	440+529.287	-3.243	187.543	187.579
F	440+532.299	-3.288	187.520	187.554
G	440+535.311	-3.323	187.497	187.525
H	440+538.323	-3.346	187.476	187.498
I	440+541.336	-3.358	187.454	187.468
J	440+544.343	-3.360	187.433	187.439
K	440+547.343	-3.360	187.412	187.413
℄ Pier 1	440+549.043	-3.360	187.400	187.400
L	440+552.043	-3.360	187.379	187.381
M	440+555.043	-3.360	187.358	187.365
N	440+558.043	-3.360	187.337	187.351
O	440+561.043	-3.360	187.317	187.337
P	440+564.043	-3.360	187.296	187.322
Q	440+567.043	-3.360	187.275	187.304
R	440+570.043	-3.360	187.254	187.284
S	440+573.043	-3.360	187.233	187.260
T	440+576.043	-3.360	187.212	187.233
U	440+579.043	-3.360	187.191	187.204
℄ S. Brg. Pier 2	440+582.883	-3.360	187.164	187.164
℄ Pier 2	440+583.266	-3.360	187.161	187.161

GIRDER 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back of S. Abut.	440+513.384	-0.060	187.810	187.810
℄ Brg. S. Abut.	440+514.333	-0.095	187.799	187.799
A	440+517.332	-0.197	187.766	187.778
B	440+520.332	-0.288	187.735	187.757
C	440+523.332	-0.367	187.704	187.734
D	440+526.333	-0.436	187.674	187.709
E	440+529.334	-0.493	187.644	187.681
F	440+532.335	-0.538	187.615	187.650
G	440+535.337	-0.573	187.587	187.617
H	440+538.339	-0.596	187.559	187.582
I	440+541.342	-0.608	187.532	187.547
J	440+544.343	-0.610	187.505	187.512
K	440+547.343	-0.610	187.478	187.479
℄ Pier 1	440+549.043	-0.610	187.463	187.463
L	440+552.043	-0.610	187.436	187.437
M	440+555.043	-0.610	187.409	187.415
N	440+558.043	-0.610	187.382	187.393
O	440+561.043	-0.610	187.355	187.372
P	440+564.043	-0.610	187.328	187.351
Q	440+567.043	-0.610	187.302	187.326
R	440+570.043	-0.610	187.275	187.299
S	440+573.043	-0.610	187.248	187.270
T	440+576.043	-0.610	187.221	187.238
U	440+579.043	-0.610	187.194	187.203
℄ S. Brg. Pier 2	440+581.882	-0.610	187.168	187.168
℄ Pier 2	440+582.265	-0.610	187.165	187.165

Notes:

1. Work this sheet with Sheet No. 10 of 42 sheets.
2. All elevations and offsets are in meters (m).

THIS SHEET FOR INFORMATION ONLY

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
TOP OF SLAB ELEVATIONS-1
SPANS 1 & 2 - UNIT 2
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

HNTB

DESIGNED	MEA
CHECKED	JY
DRAWN	LK
CHECKED	JY

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	27
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

* 2004-133F

SHEET NO. 12
42 SHEETS

CONTRACT NO. 62898

℄ SB IL 394 & PGL

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back of S. Abut.	440+513.386	0.000	187.813	187.813
℄ Brg. S. Abut.	440+514.337	0.000	187.804	187.804
A	440+517.339	0.000	187.775	187.787
B	440+520.340	0.000	187.747	187.770
C	440+523.341	0.000	187.719	187.750
D	440+526.342	0.000	187.691	187.726
E	440+529.342	0.000	187.662	187.699
F	440+532.343	0.000	187.634	187.669
G	440+535.343	0.000	187.606	187.636
H	440+538.343	0.000	187.578	187.600
I	440+541.343	0.000	187.549	187.564
J	440+544.343	0.000	187.521	187.528
K	440+547.343	0.000	187.493	187.494
℄ Pier 1	440+549.043	0.000	187.477	187.477
L	440+552.043	0.000	187.449	187.450
M	440+555.043	0.000	187.420	187.426
N	440+558.043	0.000	187.392	187.403
O	440+561.043	0.000	187.364	187.381
P	440+564.043	0.000	187.336	187.359
Q	440+567.043	0.000	187.308	187.332
R	440+570.043	0.000	187.279	187.304
S	440+573.043	0.000	187.251	187.273
T	440+576.043	0.000	187.223	187.240
U	440+579.043	0.000	187.195	187.203
℄ S. Brg. Pier 2	440+581.660	0.000	187.170	187.170
℄ Pier 2	440+582.043	0.000	187.166	187.166

Notes:

1. Work this sheet with Sheet No. 10 of 42 sheets.
2. All elevations and offsets are in meters (m).

THIS SHEET FOR INFORMATION ONLY

DESIGNED	MEA
CHECKED	JY
DRAWN	LK
CHECKED	JY

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
TOP OF SLAB ELEVATIONS-2
SPANS 1 & 2 UNIT 2
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

HNTB

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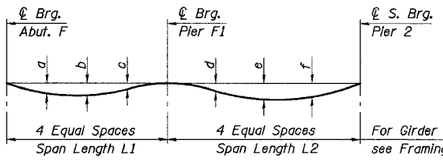
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	28
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 13
42 SHEETS

* 2004-133F
CONTRACT NO. 62898



For Girder Span Lengths L1, L2 see Framing Plan and Girder Elevation Drawings Sheet Nos. 34 and 35 of 42

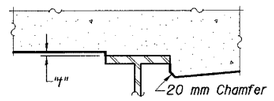
DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of slab & parapet-no future wearing surface)

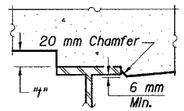
DEAD LOAD DEFLECTION TABLE

Girder No. \ Deflection	Span F1 (L1) a	b	c	Span F2 (L2) d	e	f
1	10	11	4	10	20	17
2	12	13	6	9	18	16
3	13	15	7	8	17	14
4	14	16	7	7	15	13
5	15	18	9	5	13	11
6	17	20	10	4	11	10

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 in the "Top of Slab Elevations" tables. All offsets shown in the "Top of Slab Elevations" tables are in meters.



At Minimum Fillet



At Maximum Fillet

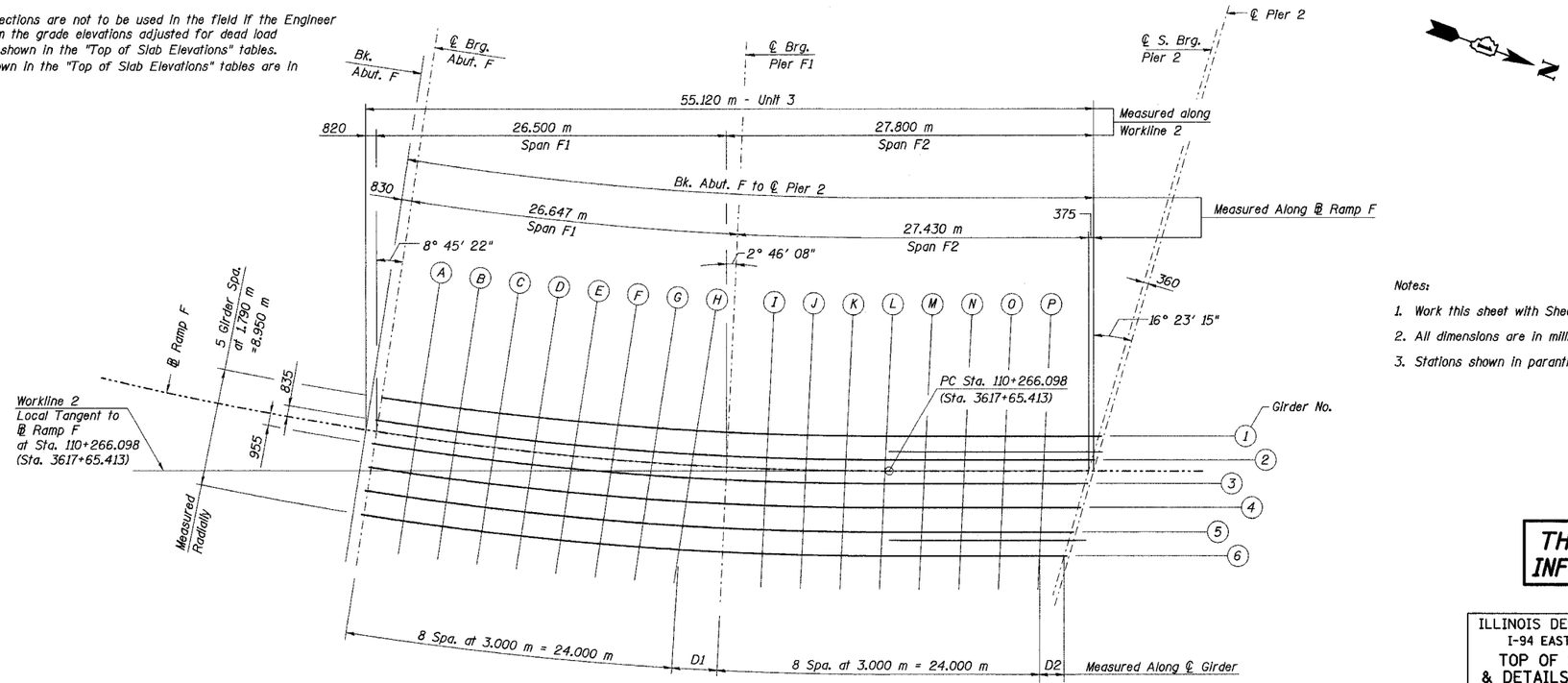
END OF SPAN DIMENSIONS

(Values in Meters)

Location	D1	D2
Girder 1	2.373	4.074
Girder 2	2.560	3.635
PGL & BL Ramp F	2.647	3.430
Girder 3	2.747	3.194
Girder 4	2.934	2.755
Girder 5	3.121	2.315
Girder 6	3.308	1.875

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

FILLET HEIGHTS



ELEVATION GRID

Notes:

1. Work this sheet with Sheet Nos. 14-15 of 42 sheets.
2. All dimensions are in millimeters (mm) unless otherwise noted.
3. Stations shown in parantheses are in English units.

THIS SHEET FOR INFORMATION ONLY

DESIGNED	PJE
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
TOP OF SLAB ELEVATIONS, GRID & DETAILS, SPANS 1F & 2F - UNIT 3
RAMP F OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2845
DATE 05/16/05
SCALE ---

HNTB

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	29
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

* 2004-133F CONTRACT NO. 62898

SHEET NO. 14
42 SHEETS

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. Abut. F	110+305.898	2.625	186.553	186.553
CL Brg. Abut. F	110+305.068	2.625	186.559	186.559
A	110+302.037	2.625	186.583	186.589
B	110+299.006	2.625	186.607	186.617
C	110+295.974	2.625	186.631	186.642
D	110+292.943	2.625	186.655	186.667
E	110+289.912	2.625	186.679	186.689
F	110+286.881	2.625	186.703	186.710
G	110+283.850	2.625	186.734	186.737
H	110+280.818	2.625	186.768	186.768
CL Pier F1	110+278.421	2.625	186.794	186.794
I	110+275.390	2.625	186.828	186.831
J	110+272.359	2.625	186.862	186.870
K	110+269.327	2.625	186.896	186.910
L	110+266.296	2.625	186.929	186.948
M	110+263.294	2.625	186.963	186.984
N	110+260.294	2.625	186.996	187.017
O	110+257.294	2.625	187.030	187.047
P	110+254.294	2.625	187.063	187.074
CL S. Brg. Pier 2	110+250.220	2.625	187.107	187.107
CL Pier 2	110+249.845	2.625	187.111	187.111

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. Abut. F	110+305.898	0.835	186.660	186.660
CL Brg. Abut. F	110+305.068	0.835	186.667	186.667
A	110+302.058	0.835	186.690	186.697
B	110+299.048	0.835	186.714	186.725
C	110+296.038	0.835	186.738	186.751
D	110+293.029	0.835	186.762	186.776
E	110+290.019	0.835	186.786	186.797
F	110+287.009	0.835	186.809	186.818
G	110+283.999	0.835	186.835	186.839
H	110+280.989	0.835	186.862	186.863
CL Pier F1	110+278.421	0.835	186.885	186.885
I	110+275.411	0.835	186.912	186.914
J	110+272.401	0.835	186.939	186.946
K	110+269.391	0.835	186.966	186.979
L	110+266.382	0.835	186.993	187.010
M	110+263.381	0.835	187.019	187.039
N	110+260.381	0.835	187.046	187.065
O	110+257.381	0.835	187.073	187.088
P	110+254.381	0.835	187.100	187.109
CL S. Brg. Pier 2	110+250.746	0.835	187.132	187.132
CL Pier 2	110+250.371	0.835	187.135	187.135

PGL & ℄ RAMP F

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. Abut. F	110+305.898	0.000	186.710	186.710
CL Brg. Abut. F	110+305.068	0.000	186.717	186.717
A	110+302.068	0.000	186.740	186.747
B	110+299.068	0.000	186.764	186.776
C	110+296.068	0.000	186.788	186.801
D	110+293.068	0.000	186.812	186.826
E	110+290.068	0.000	186.835	186.848
F	110+287.068	0.000	186.859	186.868
G	110+284.068	0.000	186.883	186.887
H	110+281.068	0.000	186.906	186.908
CL Pier F1	110+278.421	0.000	186.927	186.927
I	110+275.421	0.000	186.951	186.953
J	110+272.421	0.000	186.975	186.982
K	110+269.421	0.000	186.999	187.011
L	110+266.421	0.000	187.022	187.039
M	110+263.421	0.000	187.046	187.064
N	110+260.421	0.000	187.070	187.087
O	110+257.421	0.000	187.093	187.108
P	110+254.421	0.000	187.117	187.126
CL S. Brg. Pier 2	110+250.991	0.000	187.144	187.144
CL Pier 2	110+250.616	0.000	187.147	187.147

GIRDER 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. Abut. F	110+305.898	-0.955	186.768	186.768
CL Brg. Abut. F	110+305.068	-0.955	186.774	186.774
A	110+302.079	-0.955	186.798	186.805
B	110+299.090	-0.955	186.821	186.833
C	110+296.102	-0.955	186.845	186.859
D	110+293.113	-0.955	186.869	186.884
E	110+290.124	-0.955	186.892	186.905
F	110+287.135	-0.955	186.916	186.926
G	110+284.146	-0.955	186.937	186.942
H	110+281.158	-0.955	186.957	186.959
CL Pier F1	110+278.421	-0.955	186.976	186.976
I	110+275.432	-0.955	186.996	186.998
J	110+272.443	-0.955	187.016	187.022
K	110+269.455	-0.955	187.036	187.048
L	110+266.466	-0.955	187.056	187.072
M	110+263.467	-0.955	187.076	187.094
N	110+260.467	-0.955	187.097	187.113
O	110+257.467	-0.955	187.117	187.130
P	110+254.467	-0.955	187.137	187.144
CL S. Brg. Pier 2	110+251.273	-0.955	187.159	187.159
CL Pier 2	110+250.898	-0.955	187.161	187.161

GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. Abut. F	110+305.898	-2.745	186.875	186.875
CL Brg. Abut. F	110+305.068	-2.745	186.881	186.881
A	110+302.100	-2.745	186.905	186.912
B	110+299.132	-2.745	186.928	186.941
C	110+296.164	-2.745	186.952	186.967
D	110+293.196	-2.745	186.975	186.992
E	110+290.228	-2.745	186.999	187.013
F	110+287.260	-2.745	187.022	187.033
G	110+284.292	-2.745	187.040	187.046
H	110+281.324	-2.745	187.053	187.055
CL Pier F1	110+278.421	-2.745	187.066	187.066
I	110+275.453	-2.745	187.080	187.082
J	110+272.485	-2.745	187.093	187.099
K	110+269.517	-2.745	187.107	187.117
L	110+266.549	-2.745	187.120	187.134
M	110+263.554	-2.745	187.134	187.149
N	110+260.554	-2.745	187.147	187.159
O	110+257.554	-2.745	187.161	187.168
P	110+254.554	-2.745	187.174	187.175
CL S. Brg. Pier 2	110+251.799	-2.745	187.187	187.187
CL Pier 2	110+251.424	-2.745	187.189	187.189

GIRDER 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. Abut. F	110+305.898	-4.535	186.982	186.982
CL Brg. Abut. F	110+305.068	-4.535	186.989	186.989
A	110+302.120	-4.535	187.012	187.020
B	110+299.173	-4.535	187.035	187.049
C	110+296.225	-4.535	187.059	187.075
D	110+293.278	-4.535	187.082	187.101
E	110+290.330	-4.535	187.105	187.122
F	110+287.383	-4.535	187.129	187.141
G	110+284.435	-4.535	187.143	187.151
H	110+281.487	-4.535	187.150	187.153
CL Pier F1	110+278.421	-4.535	187.157	187.157
I	110+275.473	-4.535	187.164	187.165
J	110+272.526	-4.535	187.171	187.175
K	110+269.578	-4.535	187.178	187.186
L	110+266.631	-4.535	187.184	187.196
M	110+263.640	-4.535	187.191	187.205
N	110+260.640	-4.535	187.198	187.211
O	110+257.640	-4.535	187.205	187.215
P	110+254.640	-4.535	187.212	187.217
CL S. Brg. Pier 2	110+252.325	-4.535	187.218	187.218
CL Pier 2	110+251.950	-4.535	187.219	187.219

Notes:

1. *Work this sheet with Sheet No. 13 of 42 sheets.*
2. *All elevations and offsets are in meters (m).*

THIS SHEET FOR INFORMATION ONLY

DESIGNED	PJE
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
TOP OF SLAB ELEVATIONS-1
SPANS 1F & 2F - UNIT 3
RAMP F OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2845
DATE 05/16/05
SCALE ---

HNTB

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	30

FED. ROAD DIST. NO. 1 | ILLINOIS | FED. AID PROJECT-

* 2004-133F   CONTRACT NO. 62898

SHEET NO. 15
42 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. Abut. F	110+305.898	-6.325	186.996	186.996
CL Brg. Abut. F	110+305.068	-6.325	187.003	187.003
A	110+302.141	-6.325	187.026	187.034
B	110+299.213	-6.325	187.049	187.064
C	110+296.286	-6.325	187.072	187.091
D	110+293.358	-6.325	187.095	187.116
E	110+290.431	-6.325	187.118	187.137
F	110+287.504	-6.325	187.142	187.156
G	110+284.576	-6.325	187.156	187.165
H	110+281.649	-6.325	187.162	187.165
CL Pier F1	110+278.421	-6.325	187.168	187.168
I	110+275.494	-6.325	187.173	187.174
J	110+272.566	-6.325	187.178	187.182
K	110+269.639	-6.325	187.184	187.191
L	110+266.711	-6.325	187.189	187.200
M	110+263.727	-6.325	187.195	187.207
N	110+260.727	-6.325	187.201	187.212
O	110+257.727	-6.325	187.206	187.214
P	110+254.727	-6.325	187.212	187.215
CL S. Brg. Pier 2	110+252.852	-6.325	187.215	187.215
CL Pier 2	110+252.477	-6.325	187.216	187.216

Notes:

1. Work this sheet with Sheet No. 13 of 42 sheets.
2. All elevations and offsets are in meters (m).

THIS SHEET FOR INFORMATION ONLY

DESIGNED	PJE
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

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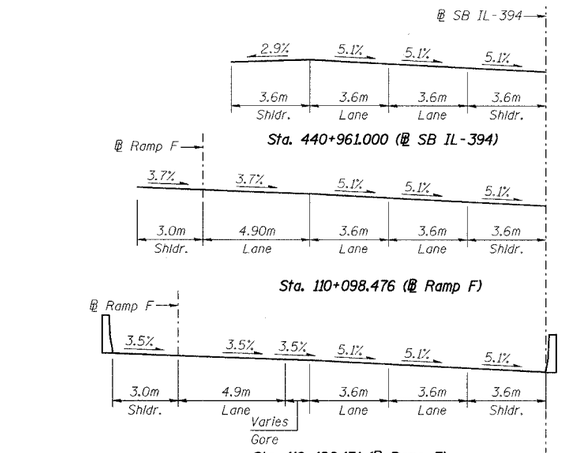
ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
TOP OF SLAB ELEVATIONS-2
SPANS 1F & 2F - UNIT 3
RAMP F OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2845
DATE 05/16/05
SCALE ---
HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	10203.1 & 0352-706WR-3	COOK	90	31
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

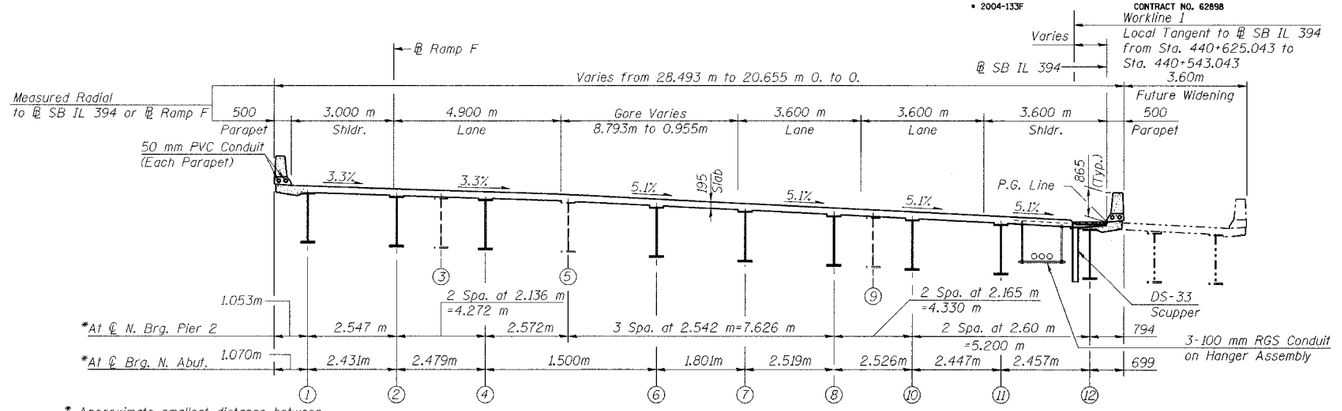
SHEET NO. 16
42 SHEETS
• 2004-133F
CONTRACT NO. 62898



CROSS SLOPE & SUPERELEVATION TRANSITION

(Looking North)

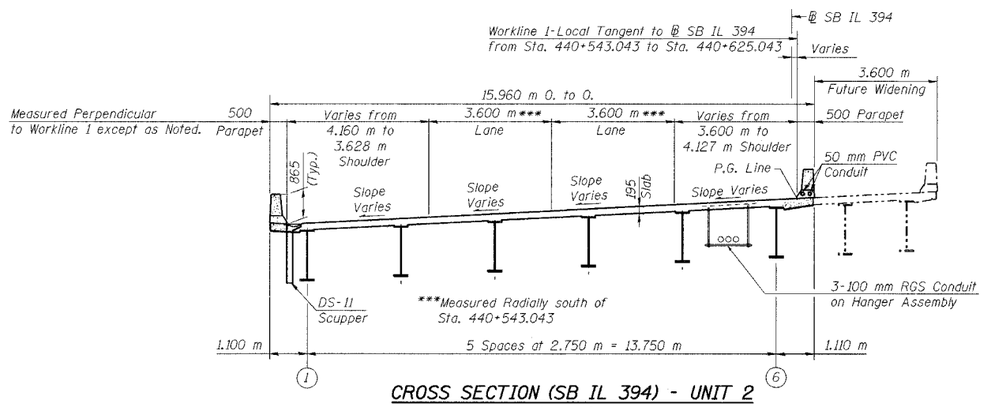
Lane and shoulder widths are measured along reference lines shown in cross sections.



* Approximate smallest distance between girders and outline of parapet

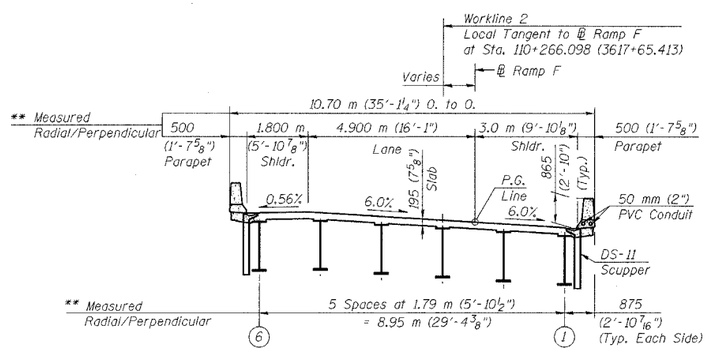
CROSS SECTION - UNIT 1

(Looking Up Station)
Cross Slopes Shown at Sta. 440+651.000



CROSS SECTION (SB IL 394) - UNIT 2

(Looking Up Station)



CROSS SECTION (RAMP F) - UNIT 3

(Looking Up Station)
Cross Slopes Shown at, and South of, Sta. 110+286.000 (3618+30.709)
** to ℄ Ramp F Alignment

THIS SHEET FOR INFORMATION ONLY

NOTES:

1. All dimensions are in millimeters (mm) except as noted.
2. Dimensions and stations shown in parantheses are in English units

DESIGNED	DD
CHECKED	PCA
DRAWN	LK/DCB
CHECKED	PCA

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
DECK CROSS SECTIONS & CROSS SLOPE TRANSITION
SB IL ROUTE 394 / RAMP F OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800/2845
DATE 05/16/05
SCALE ---

HNTB

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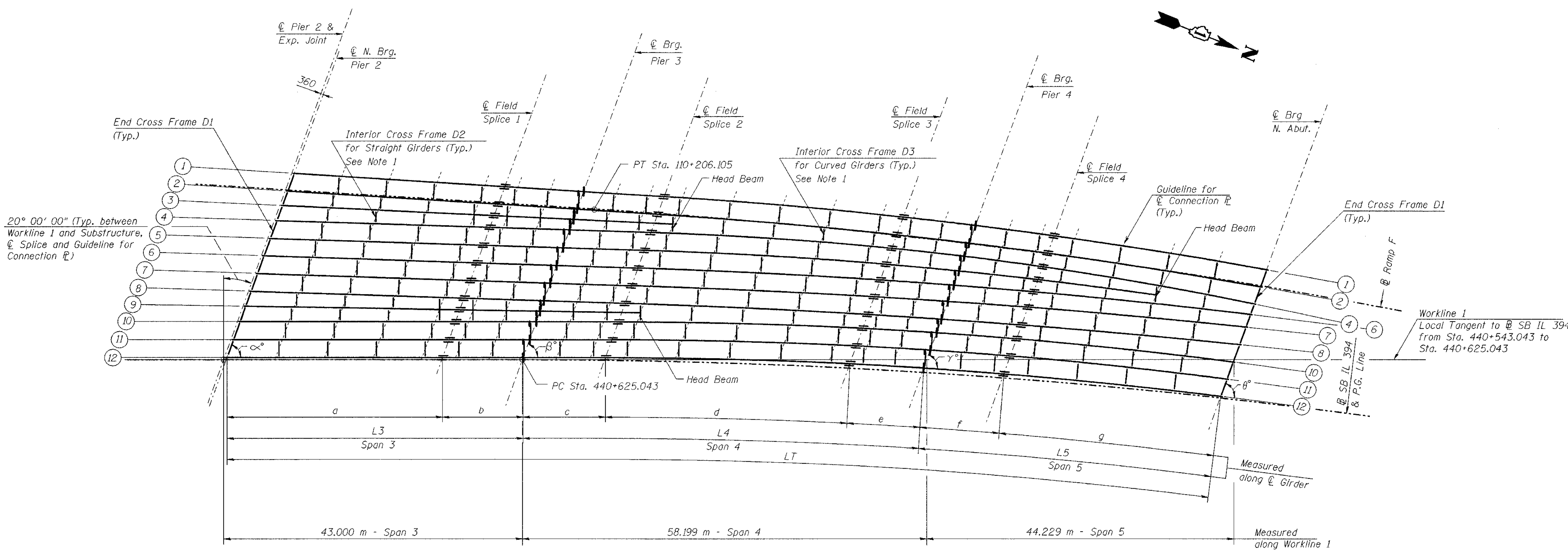
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	32
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

• 2004-133F CONTRACT NO. 62898

SHEET NO. 17
42 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FRAMING PLAN

GIRDER GENERAL DIMENSIONS (Length in meters)

	Span 3			Span 4				Span 5			Total LT = L3+L4+L5	Radius R	Angle of Girder Orientation			
Girder	a	b	L3 =a+b	c	d	e	L4=c+d+e	f	g	L5=f+g			$\alpha°$	$\beta°$	$\gamma°$	$\theta°$
1	30.381	11.362	41.743	11.607	34.550	10.478	56.635	11.407	30.986	42.393	140.771	750.377	73° 36' 46"	73° 36' 46"	77° 03' 03"	80° 17' 17"
2	30.381	11.362	41.743	11.607	34.555	10.481	56.643	11.411	31.000	42.411	140.797	768.670	73° 36' 46"	73° 36' 46"	76° 58' 11"	80° 07' 52"
3	30.527	11.417	41.944	14.318	-	-	14.318	-	-	-	56.262	-	72° 42' 18"	72° 42' 18"	-	-
4	30.680	11.474	42.154	11.721	34.748	10.491	56.960	11.403	30.899	42.302	141.416	503.863	71° 48' 23"	71° 48' 23"	76° 57' 03"	81° 45' 40"
5	30.680	11.474	42.154	11.721	34.829	10.541	57.091	11.466	17.101	28.567	127.812	661.475	71° 48' 23"	71° 48' 23"	75° 44' 11"	-
6	30.680	11.474	42.154	11.721	34.920	10.599	57.240	11.542	31.358	42.900	142.294	993.453	71° 48' 23"	71° 48' 23"	74° 25' 54"	76° 54' 21"
7	30.680	11.474	42.154	11.721	34.956	10.623	57.300	11.574	31.471	43.045	142.499	1233.121	71° 48' 23"	71° 48' 23"	73° 55' 27"	75° 55' 27"
8	30.680	11.474	42.154	11.721	34.958	10.624	57.303	11.575	31.475	43.050	142.507	1242.425	71° 48' 23"	71° 48' 23"	73° 54' 30"	75° 53' 37"
9	30.845	11.536	42.381	14.467	-	-	14.467	-	-	-	56.848	-	70° 53' 45"	70° 53' 45"	-	-
10	31.017	11.600	42.617	11.850	35.181	10.635	57.666	11.562	31.329	42.891	143.174	672.128	70° 00' 00"	70° 00' 00"	73° 54' 20"	77° 33' 43"
11	31.017	11.600	42.617	11.850	35.189	10.641	57.680	11.569	31.351	42.920	143.217	690.950	70° 00' 00"	70° 00' 00"	73° 48' 01"	77° 21' 34"
12	31.017	11.600	42.617	11.850	35.197	10.645	57.692	11.575	31.373	42.948	143.257	709.488	70° 00' 00"	70° 00' 00"	73° 42' 07"	77° 10' 13"

Notes:

1. Girder 3 and 9 are straight Girders. All the remaining Girders are straight from Pier 2 to Field Splice 2 and curved from Field Splice 2 to N. Abut. with their Radii shown in the table.
2. Angle of Girder Orientation is the Angle between ℄ Brg and Local Tangent to ℄ Girder at the intersection of ℄ Brg and ℄ Girder.
3. Dimension "c" for G3 and G9, Dimension "g" for G5 are measured to ℄ Head Beams.
4. The contractor shall submit the proposed method of erection of the steel girders and cross frames for approval by the Engineer prior to start of this work.
5. Work this sheet with Sheet Nos. 18 - 24 of 42.

DESIGNED	JY
CHECKED	MEA
DRAWN	LK
CHECKED	MEA

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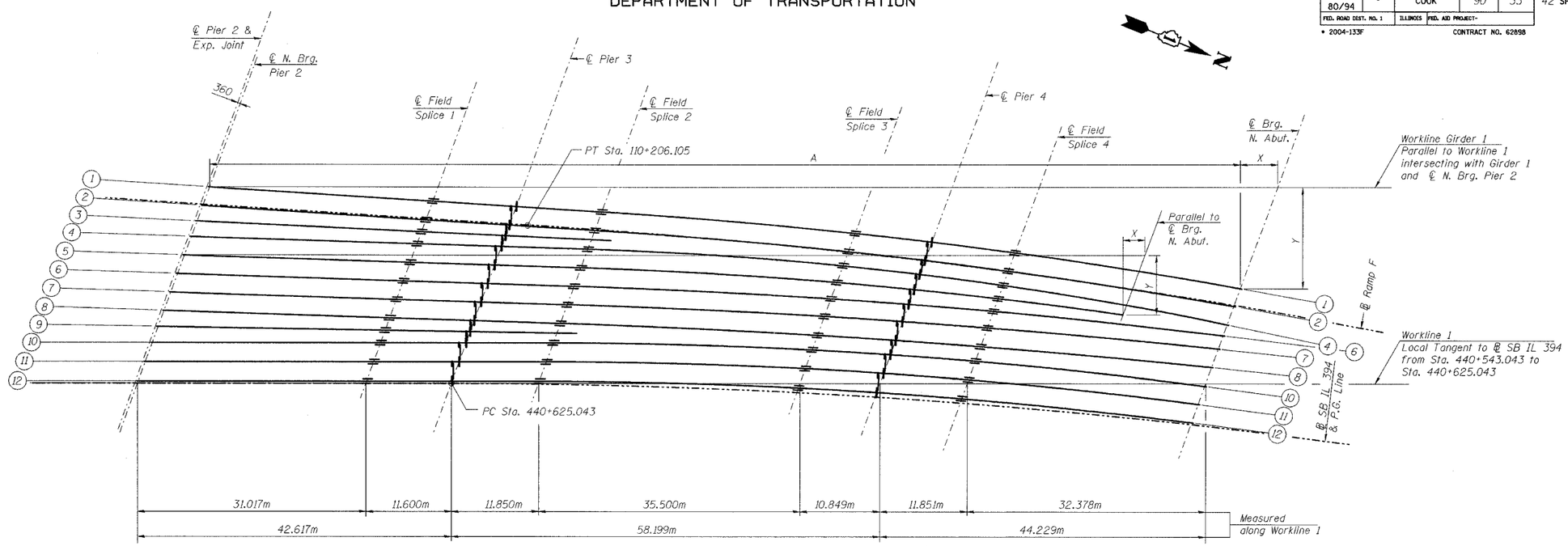
ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
GENERAL FRAMING PLAN
SPANS 3-5 - UNIT 1
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---
HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	33
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 18
42 SHEETS

• 2004-133F
CONTRACT NO. 62898



GIRDER LAYOUT

LAYOUT DIMENSIONS (Length In Meters)

Girder	Station** / Radius*	N. Brg. Pier 2 Sta. 440+582.426			FS 1 Sta. 440+613.443			Pier 3 Sta. 440+625.043			FS 2 Sta. 440+636.866			FS 3 Sta. 440+671.980			Pier 4 Sta. 440+682.627			FS 4 Sta. 440+694.217			Brg. N. Abut. or End of G5 Sta. 440+725.679		
		A	X	Y	A	X	Y	A	X	Y	A	X	Y	A	X	Y	A	X	Y	A	X	Y	A	X	Y
1	750.377	0.000	0.000	0.000	31.017	0.697	1.914	42.617	0.957	2.630	54.467	1.224	3.362	89.967	2.305	6.332	100.816	2.746	7.545	112.667	3.287	9.032	145.045	5.072	13.935
2	768.670	0.000	0.000	0.000	31.017	0.697	1.914	42.617	0.957	2.630	54.467	1.224	3.362	89.967	2.298	6.313	100.816	2.735	7.514	112.667	3.270	8.983	145.045	5.030	13.819
3	-	0.000	0.000	0.000	31.017	0.524	1.441	42.617	0.721	1.979	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	503.863	0.000	0.000	0.000	31.017	0.352	0.967	42.617	0.484	1.329	54.467	0.618	1.698	89.967	1.452	3.990	100.816	1.875	5.151	112.667	2.424	6.659	145.045	4.377	12.026
5	661.475	0.000	0.000	0.000	31.017	0.352	0.967	42.617	0.484	1.329	54.467	0.618	1.698	89.967	1.351	3.712	100.816	1.704	4.682	112.667	2.157	5.927	127.465	2.966	8.150
6	993.453	0.000	0.000	0.000	31.017	0.352	0.967	42.617	0.484	1.329	54.467	0.618	1.698	89.967	1.242	3.412	100.816	1.520	4.175	112.667	1.868	5.133	145.045	3.062	8.412
7	1233.121	0.000	0.000	0.000	31.017	0.352	0.967	42.617	0.484	1.329	54.467	0.618	1.698	89.967	1.199	3.295	100.816	1.447	3.977	112.667	1.755	4.823	145.045	2.792	7.671
8	1242.425	0.000	0.000	0.000	31.017	0.352	0.967	42.617	0.484	1.329	54.467	0.618	1.698	89.967	1.198	3.292	100.816	1.445	3.970	112.667	1.752	4.813	145.045	2.784	7.648
9	-	0.000	0.000	0.000	31.017	0.176	0.482	42.617	0.241	0.663	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	672.128	0.000	0.000	0.000	31.017	0.000	0.000	42.617	0.000	0.000	54.467	0.000	0.000	89.967	0.335	0.921	100.816	0.568	1.561	112.667	0.891	2.600	145.045	2.128	5.845
11	690.950	0.000	0.000	0.000	31.017	0.000	0.000	42.617	0.000	0.000	54.467	0.000	0.000	89.967	0.326	0.896	100.816	0.553	1.519	112.667	0.867	2.383	145.045	2.072	5.692
12	709.488	0.000	0.000	0.000	31.017	0.000	0.000	42.617	0.000	0.000	54.467	0.000	0.000	89.967	0.318	0.873	100.816	0.539	1.481	112.667	0.845	2.322	145.045	2.020	5.549

* Girder 3 and 9 are straight Girders. All the remaining Girders are straight from Pier 2 to Field Splice 2 and curved from Field Splice 2 to N. Abut. with their Radii shown in the table.

** Station along ℄ SB IL 394.

Note:

1. Coordinate system shown for Girder 1. Typical for all Girders with parallel worklines with Workline 1 intersecting with ℄ Girders and ℄ N. Brg. Pier 2.
2. Work this sheet with Sheet No. 17 of 42.

DESIGNED	JY
CHECKED	MEA
DRAWN	LK
CHECKED	MEA

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
GIRDER LAYOUT
SPANS 3-5 - UNIT 1
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

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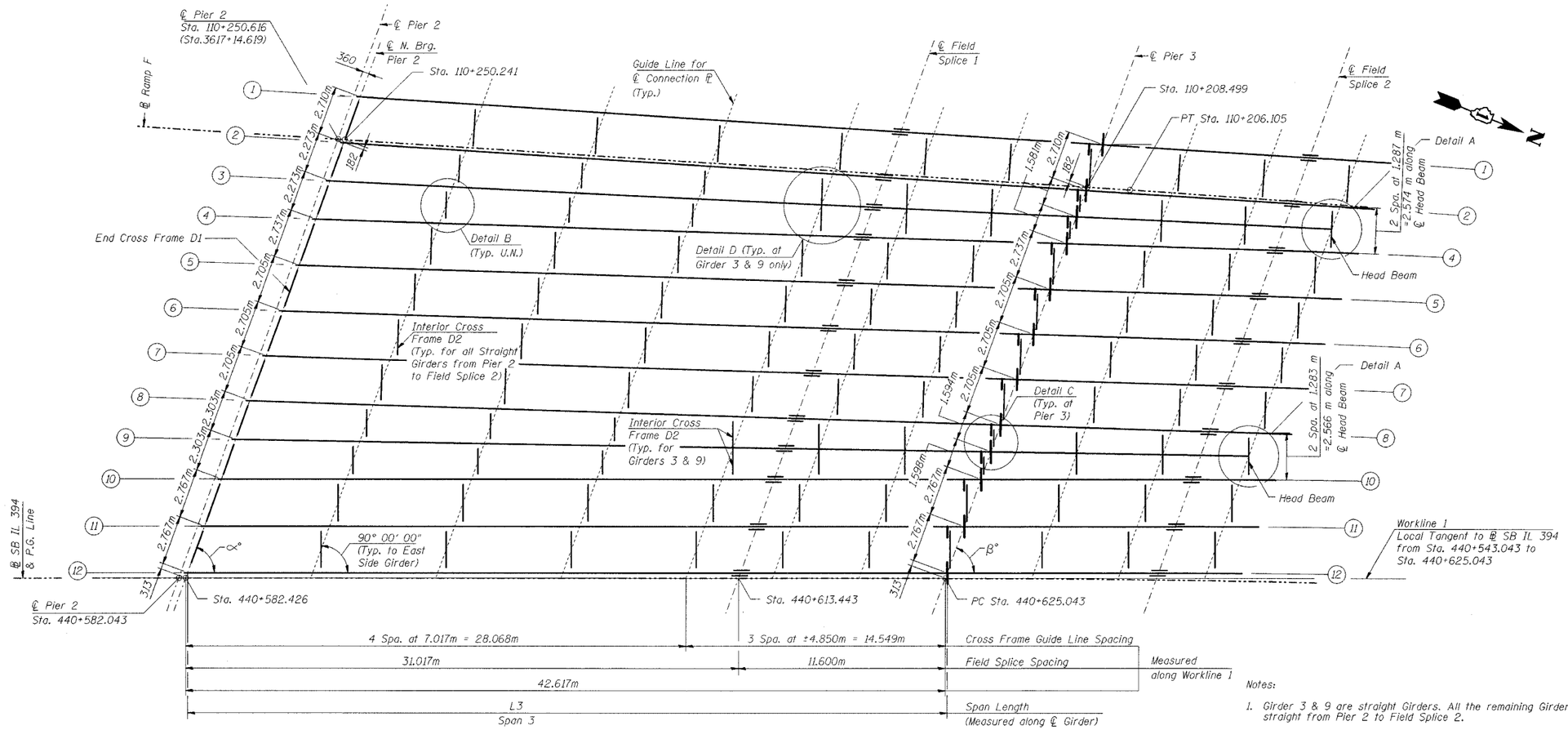
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	34
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 19
42 SHEETS

• 2004-133F
CONTRACT NO. 62898



FRAMING PLAN - SPAN 3

Notes:

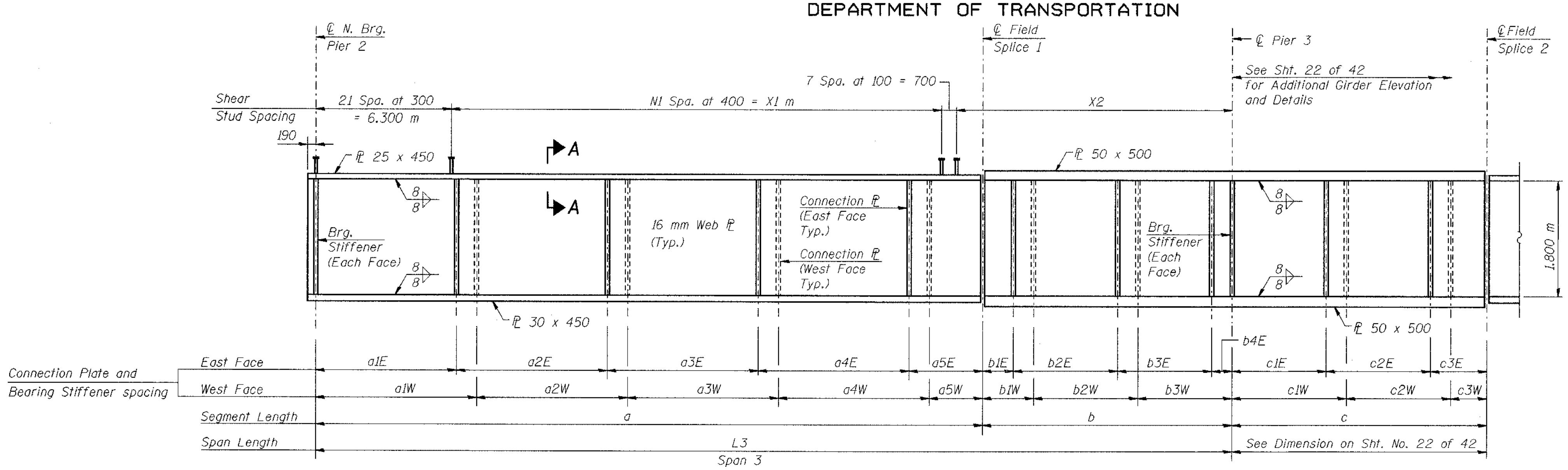
1. Girder 3 & 9 are straight Girders. All the remaining Girders are straight from Pier 2 to Field Splice 2.
2. Place all interior cross frames perpendicular to centerlines of east side Girders.
3. See Sht. 17 of 42 for Girder General Dimensions.
4. See Sht. 25 & 26 of 42 for Details A - D
5. Work this Sheet with sheet Nos. 20 & 27 of 42.

DESIGNED	JY
CHECKED	MEA
DRAWN	LK
CHECKED	MEA

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
FRAMING PLAN
SPAN 3
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

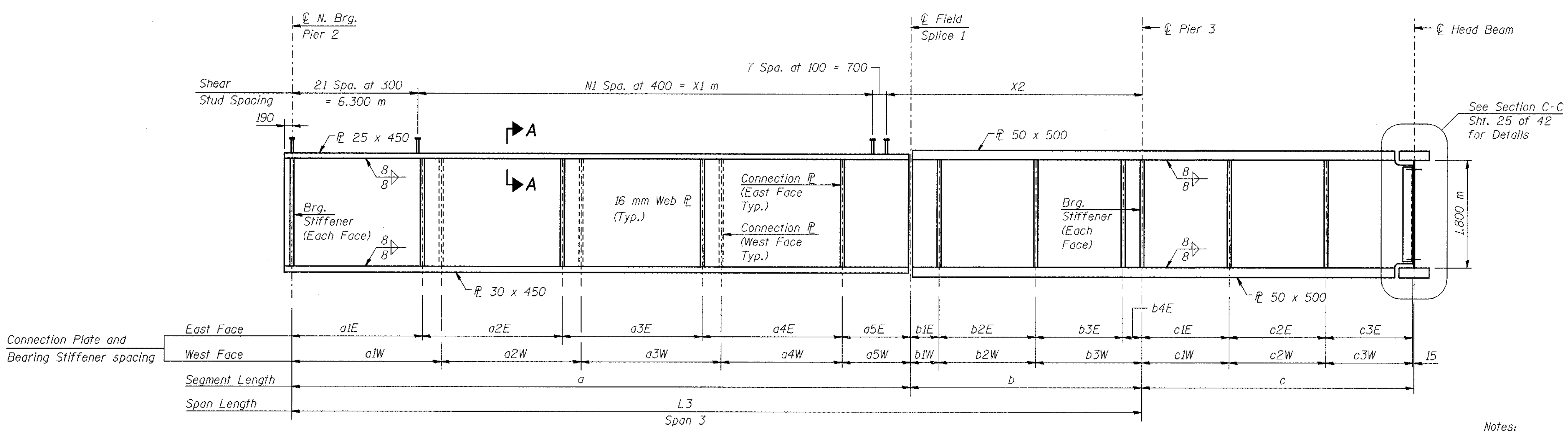
HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION - GIRDERS 1 THRU 12 EXCEPT 3 & 9

(All Plates AASHTO M270M Grade 345, N.T.R.)
Looking West, Girder East Face shown



ELEVATION - GIRDERS 3 & 9

(All Plates AASHTO M270M Grade 345, N.T.R.)
Looking West, Girder East Face shown

GIRDER CONNECTION PLATE & BEARING STIFFENER SPACING (Meters)

Girder No.	Girder East Side												Girder West Side										
	a1E	a2E	a3E	a4E	a5E	b1E	b2E	b3E	b4E	c1E	c2E	c3E	a1W	a2W	a3W	a4W	a5W	b1W	b2W	b3W	c1W	c2W	c3W
1	6.491	6.873	6.873	6.873	3.271	1.480	4.750	4.373	0.759	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	6.552	6.890	6.890	6.592	3.457	1.319	4.775	4.804	0.464	-	-	-	7.255	6.873	6.873	6.873	2.507	2.244	4.750	4.368	-	-	-
3	6.569	6.924	6.924	7.208	2.902	1.871	4.773	4.285	0.488	4.773	4.690	4.840	7.227	6.889	6.889	6.619	2.903	1.871	4.773	4.773	4.773	4.690	4.840
4	6.514	6.941	6.941	6.941	3.343	1.453	4.797	4.375	0.849	-	-	-	7.278	6.923	6.923	7.207	2.349	2.423	4.773	4.278	-	-	-
5	6.518	6.941	6.941	6.941	3.339	1.458	4.797	4.380	0.839	-	-	-	7.368	6.941	6.941	6.941	2.489	2.308	4.797	4.369	-	-	-
6	6.518	6.941	6.941	6.941	3.339	1.458	4.797	4.380	0.839	-	-	-	7.363	6.941	6.941	6.941	2.494	2.303	4.797	4.374	-	-	-
7	6.518	6.941	6.941	6.941	3.339	1.458	4.797	4.380	0.839	-	-	-	7.363	6.941	6.941	6.941	2.494	2.303	4.797	4.374	-	-	-
8	6.583	6.960	6.960	6.632	3.545	1.280	4.825	4.854	0.515	-	-	-	7.363	6.941	6.941	6.941	2.494	2.303	4.797	4.374	-	-	-
9	6.604	6.998	6.998	7.313	2.932	1.890	4.823	4.281	0.542	4.823	4.823	4.806	7.336	6.959	6.959	6.659	2.932	1.890	4.823	4.823	4.823	4.823	4.806
10	6.544	7.017	7.017	7.017	3.422	1.428	4.850	4.377	0.945	-	-	-	7.391	6.997	6.997	7.312	2.320	2.503	4.823	4.274	-	-	-
11	6.544	7.017	7.017	7.017	3.422	1.428	4.850	4.382	0.940	-	-	-	7.490	7.017	7.017	7.017	2.476	2.374	4.850	4.376	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	7.490	7.017	7.017	7.017	2.476	2.374	4.850	4.376	-	-	-

SHEAR CONNECTOR NUMBERS
"NOT IN CONTRACT"

Girder No.	N1
1	54
2	56
3	56
4	56
5	55
6	54
7	54
8	57
9	57
10	57
11	57
12	57

SHEAR CONNECTOR LOCATIONS (Meters)
"NOT IN CONTRACT"

Girder No.	X1	X2
1	21.600	12.343
2	22.400	11.943
3	22.400	12.144
4	22.400	11.954
5	22.000	12.754
6	21.600	13.154
7	21.600	12.754
8	22.800	11.954
9	22.800	12.181
10	22.800	12.017
11	22.800	12.817
12	22.800	12.817

Notes:

1. All dimensions are in millimeters (mm) except as noted.
2. See Sht. No. 25 of 42 for Section A-A.
3. See Sht. No. 17 of 42 for Dimension a, b, c and L3.
4. Work this sheet with Sheet Nos. 19, 27, 28 - 30 of 42.
5. N.T.R. denotes notch toughness requirements are applicable.

DESIGNED	JY
CHECKED	MEA
DRAWN	LK
CHECKED	MEA

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

GIRDER ELEVATION AND DETAILS
SPAN 3

SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

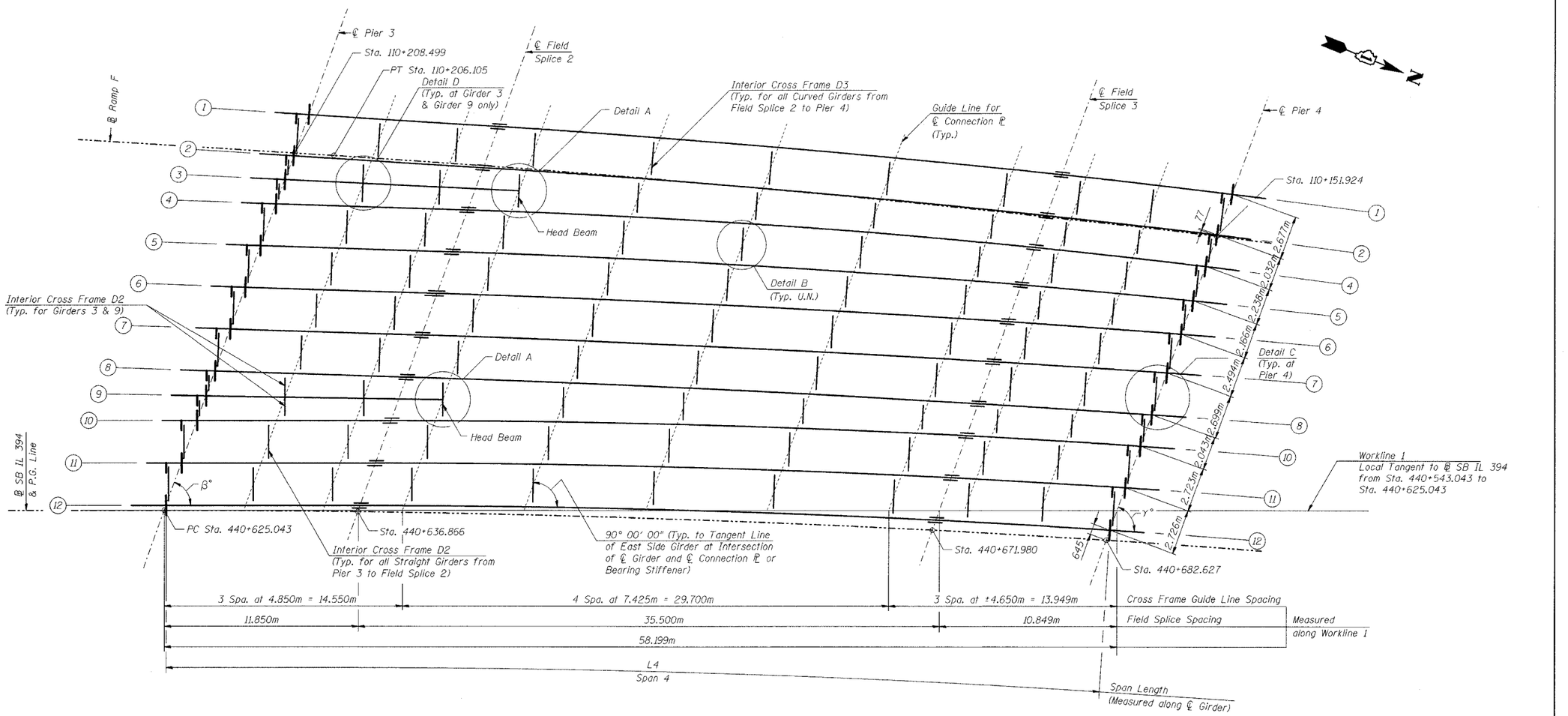
HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	36
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 21
42 SHEETS

• 2004-133F
CONTRACT NO. 62898



FRAMING PLAN - SPAN 4

Notes:

1. Girder 3 & 9 are straight Girders. All the remaining Girders are straight from Pier 3 to Field Splice 2 and curved from Field Splice 2 to Pier 4.
2. Place all interior cross frames perpendicular to tangent lines of east side Girders at intersection of ℄ Girder and ℄ Connection ℄ or Bearing Stiffener.
3. See Sht. 17 of 42 for Girder General Dimensions.
4. See Sht. Nos. 25 & 26 of 42 for Details A - D.
5. Work this sheet with Sht. Nos. 22 & 27 of 42.

DESIGNED	JY
CHECKED	MEA
DRAWN	LK
CHECKED	MEA

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
FRAMING PLAN
SPAN 4
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

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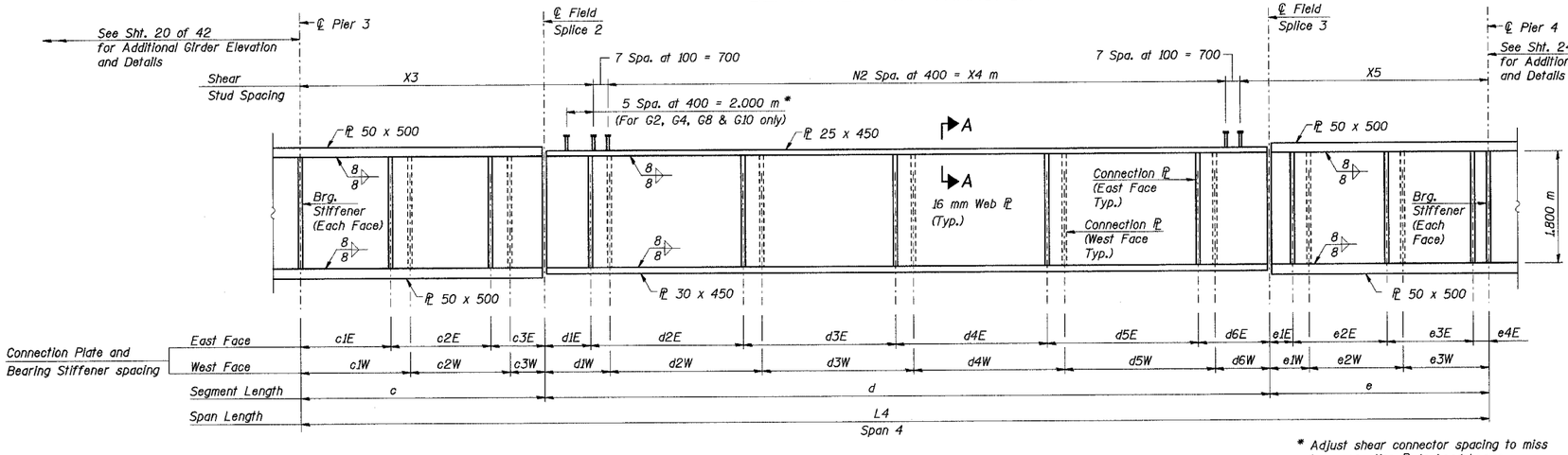
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	37
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	
• 2004-133F			CONTRACT NO. 62898	

SHEET NO. 22
42 SHEETS



* Adjust shear connector spacing to miss top connection PL to head beams.

ELEVATION - GIRDERS 1 THRU 12 EXCEPT 3 & 9

(All Plates AASHTO M270M Grade 345, N.T.R.)
Looking West, Girder East Face shown

GIRDER CONNECTION PLATE & BEARING STIFFENER SPACING (Meters)

Girder No.	Girder East Side												Girder West Side											
	c1E	c2E	c3E	d1E	d2E	d3E	d4E	d5E	d6E	e1E	e2E	e3E	e4E	c1W	c2W	c3W	d1W	d2W	d3W	d4W	d5W	d6W	e1W	e2W	e3W
1	4.368	4.750	2.489	2.266	7.268	7.248	7.230	7.212	3.326	1.181	4.501	4.198	0.598	-	-	-	-	-	-	-	-	-	-	-	-
2	4.281	4.692	2.634	2.231	7.304	7.277	7.251	7.227	3.265	1.249	4.506	4.273	0.453	5.133	4.750	1.724	3.020	7.243	7.224	7.205	7.187	2.676	1.817	4.486	4.178
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	4.370	4.797	2.554	2.247	7.333	7.304	7.276	7.250	3.338	1.189	4.518	4.238	0.546	5.266	4.689	1.766	3.081	7.266	7.242	7.219	7.197	2.743	1.752	4.488	4.251
5	4.375	4.797	2.549	2.251	7.340	7.318	7.297	7.277	3.346	1.202	4.540	4.224	0.575	5.225	4.797	1.699	3.090	7.304	7.275	7.248	7.223	2.689	1.822	4.502	4.217
6	4.375	4.797	2.549	2.250	7.340	7.325	7.309	7.295	3.401	1.160	4.555	4.199	0.685	5.220	4.797	1.704	3.087	7.311	7.290	7.270	7.252	2.710	1.823	4.525	4.251
7	4.375	4.797	2.549	2.250	7.340	7.326	7.312	7.299	3.429	1.135	4.560	4.186	0.742	5.220	4.797	1.704	3.089	7.321	7.306	7.291	7.276	2.673	1.876	4.544	4.203
8	4.279	4.825	2.617	2.212	7.381	7.358	7.337	7.317	3.353	1.219	4.565	4.279	0.561	5.220	4.797	1.704	3.090	7.324	7.311	7.297	7.284	2.652	1.903	4.550	4.171
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	4.377	4.850	2.623	2.231	7.414	7.386	7.360	7.334	3.456	1.124	4.571	4.187	0.753	5.369	4.823	1.658	3.156	7.351	7.332	7.313	7.294	2.735	1.823	4.552	4.260
11	4.377	4.850	2.623	2.231	7.414	7.387	7.361	7.336	3.460	1.122	4.573	4.186	0.760	5.323	4.850	1.677	3.165	7.386	7.358	7.332	7.306	2.642	1.922	4.554	4.165
12	-	-	-	-	-	-	-	-	-	-	-	-	-	5.323	4.850	1.677	3.165	7.387	7.360	7.334	7.309	2.642	1.924	4.556	4.165

SHEAR CONNECTOR NUMBERS

"NOT IN CONTRACT"

Girder No.	N2
1	74
2	72
3	-
4	72
5	76
6	76
7	76
8	72
9	-
10	72
11	76
12	76

SHEAR CONNECTOR LOCATIONS (Meters)

"NOT IN CONTRACT"

Girder No.	X3	X4	X5
1	12.753	29.600	12.882
2	14.499	28.800	11.944
3	-	-	-
4	15.157	28.800	11.603
5	13.078	30.400	12.213
6	13.177	30.400	12.263
7	12.956	30.400	12.544
8	14.747	28.800	12.356
9	-	-	-
10	15.004	28.800	12.462
11	12.925	30.400	12.955
12	12.951	30.400	12.941

Notes:

1. All dimensions are in millimeters (mm) except as noted.
2. See Sht. No. 25 of 42 for Section A-A.
3. See Sht. No. 17 of 42 for Dimension c, d, e and L4.
4. Work this sheet with Sheet Nos. 21, 27, 28 - 30 of 42.
5. N.T.R. denotes notch toughness requirements are applicable.

DESIGNED	JY
CHECKED	MEA
DRAWN	LK
CHECKED	MEA

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
GIRDER ELEVATION AND DETAILS
SPAN 4
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

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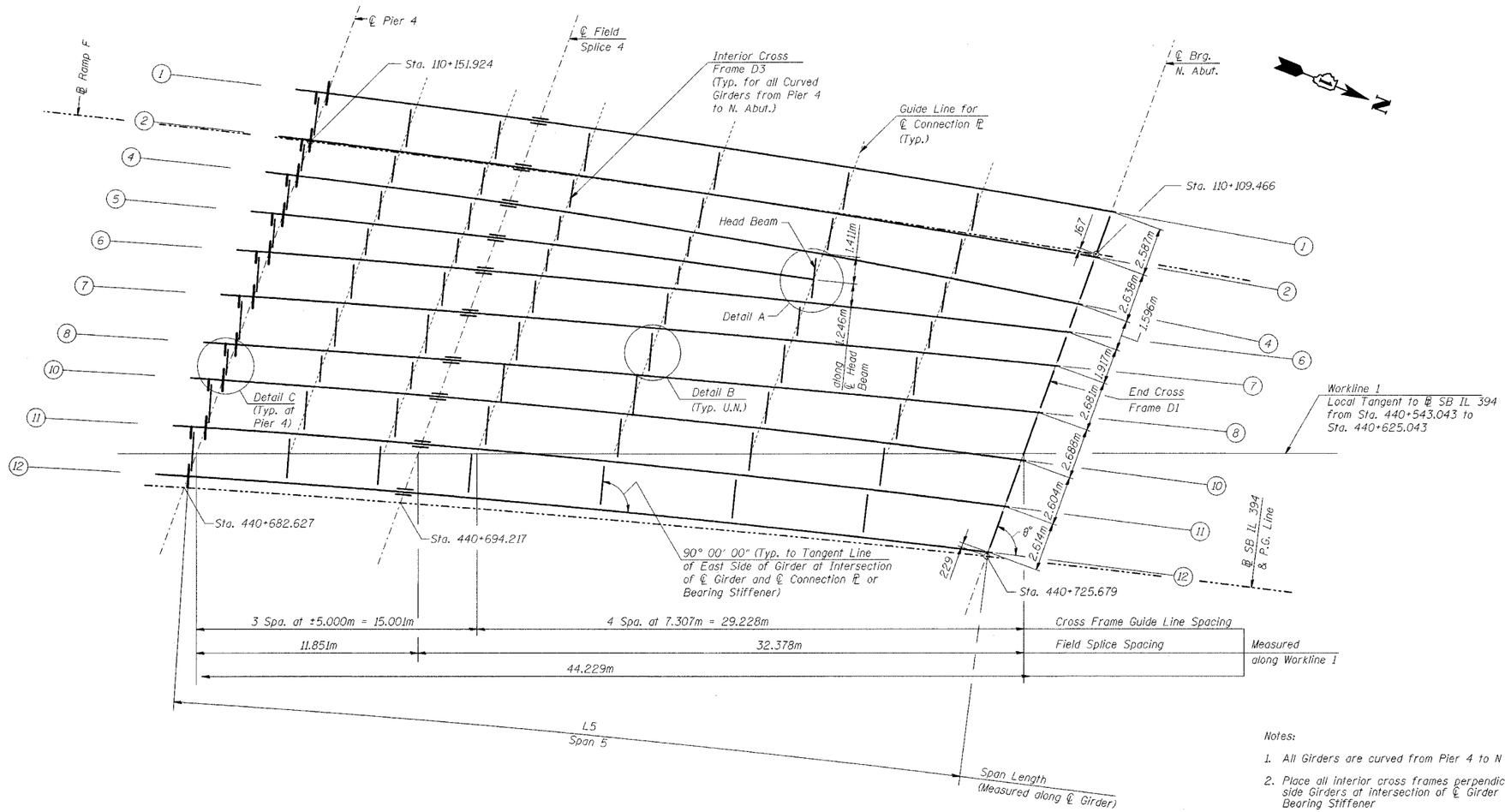
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	38
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 23
42 SHEETS

• 2004-133F
CONTRACT NO. 62898



FRAMING PLAN - SPAN 5

Notes:

1. All Girders are curved from Pier 4 to N Abutment.
2. Place all interior cross frames perpendicular to tangent lines of east side Girders at intersection of ℄ Girder and ℄ Connection ℄ or Bearing Stiffener
3. See Sht. No. 17 of 42 for Girder General Dimensions.
4. See Sht. Nos. 25 & 26 of 42 for Details A - C.
5. Work this sheet with Sht. Nos. 24 & 27 of 42.

DESIGNED	JY
CHECKED	MEA
DRAWN	LK
CHECKED	MEA

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
FRAMING PLAN
SPAN 5
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

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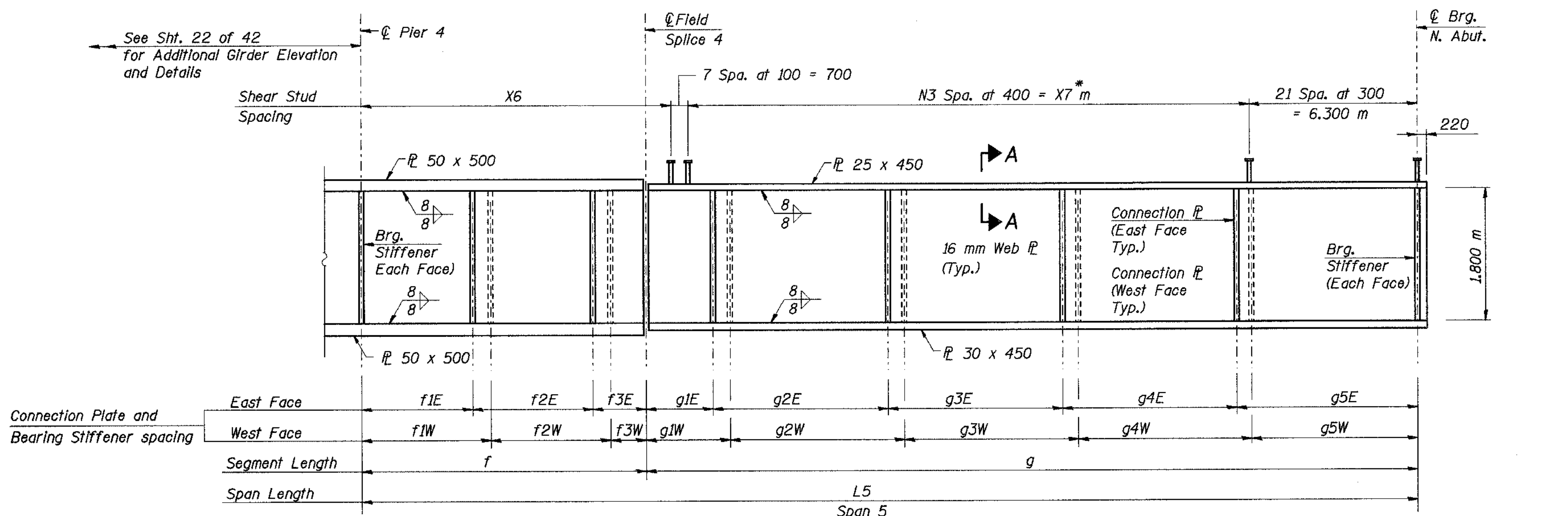
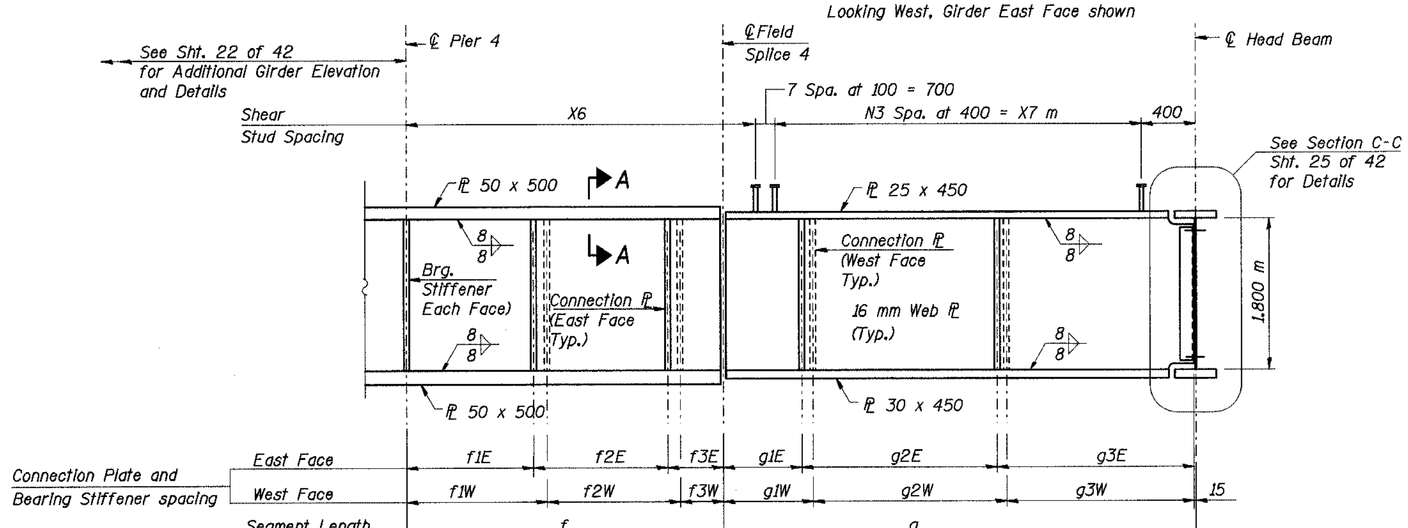
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



* Adjust shear connector spacing to miss top connection ℞ to head beams at Girder 4 & Girder 6.

ELEVATION - GIRDERS 1 THRU 12 EXCEPT 3, 5 & 9

(All Plates AASHTO M270M Grade 345, N.T.R.)
Looking West, Girder East Face shown



ELEVATION - GIRDER 5

(All Plates AASHTO M270M Grade 345, N.T.R.)
Looking West, Girder East Face shown

SHEAR CONNECTOR NUMBERS
"NOT IN CONTRACT"

Girder No.	N3
1	57
2	57
3	-
4	53
5	27
6	51
7	57
8	58
9	-
10	58
11	58
12	58

SHEAR CONNECTOR LOCATIONS (Meters)
"NOT IN CONTRACT"

Girder No.	X6	X7
1	12.593	22.800
2	12.611	22.800
3	-	-
4	14.102	21.200
5	16.667	10.800
6	15.500	20.400
7	13.245	22.800
8	12.850	23.200
9	-	-
10	12.691	23.200
11	12.720	23.200
12	12.748	23.200

GIRDER CONNECTION PLATE & BEARING STIFFENER SPACING (Meters)

Girder No.	Girder East Side								Girder West Side							
	f1E	f2E	f3E	g1E	g2E	g3E	g4E	g5E	f1W	f2W	f3W	g1W	g2W	g3W	g4W	g5W
1	4.526	4.820	2.061	2.752	7.022	7.009	6.997	7.206	-	-	-	-	-	-	-	-
2	4.600	4.820	1.991	2.820	7.018	7.004	6.991	7.167	5.112	4.803	1.496	3.301	6.999	6.986	6.973	6.741
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	4.556	4.837	2.010	2.811	7.028	6.812	7.093	7.155	5.039	4.800	1.564	3.229	6.989	6.972	6.957	6.752
5	4.599	4.857	2.010	2.844	7.069	7.173	-	-	5.090	4.821	1.555	3.250	7.006	6.830	-	-
6	4.552	4.880	2.110	2.764	7.112	7.100	7.088	7.294	5.120	4.845	1.577	3.265	7.055	7.223	6.971	6.844
7	4.519	4.887	2.168	2.713	7.124	7.113	7.102	7.419	5.211	4.869	1.494	3.369	7.097	7.085	7.074	6.846
8	4.612	4.886	2.077	2.801	7.117	7.103	7.089	7.365	5.257	4.876	1.442	3.430	7.109	7.098	7.087	6.751
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	4.518	4.886	2.158	2.717	7.109	7.090	7.072	7.341	5.163	4.871	1.528	3.335	7.094	7.078	7.063	6.759
11	4.517	4.888	2.164	2.715	7.114	7.095	7.077	7.350	5.257	4.867	1.445	3.413	7.083	7.064	7.046	6.745
12	-	-	-	-	-	-	-	-	5.263	4.870	1.442	3.419	7.088	7.069	7.052	6.745

Notes:

1. All dimensions are in millimeters (mm) except as noted.
2. See Sht. No. 25 of 42 for Section A-A.
3. See Sht. No. 17 of 42 for Dimensions f, g and L5.
4. Work this sheet with Sheet Nos. 23, 28 - 30 of 42.
5. N.T.R. denotes notch toughness requirements are applicable.

DESIGNED	JY
CHECKED	MEA
DRAWN	LK
CHECKED	MEA

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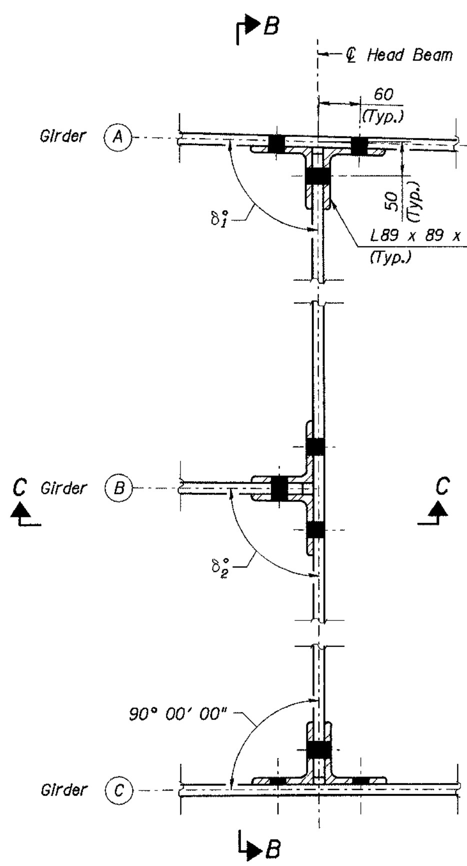
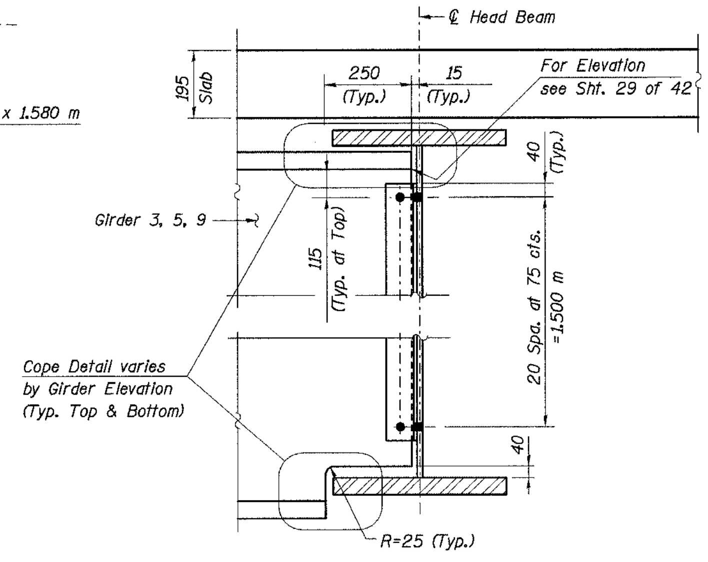
ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
GIRDER ELEVATION AND DETAILS
SPAN 5
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

HNTB

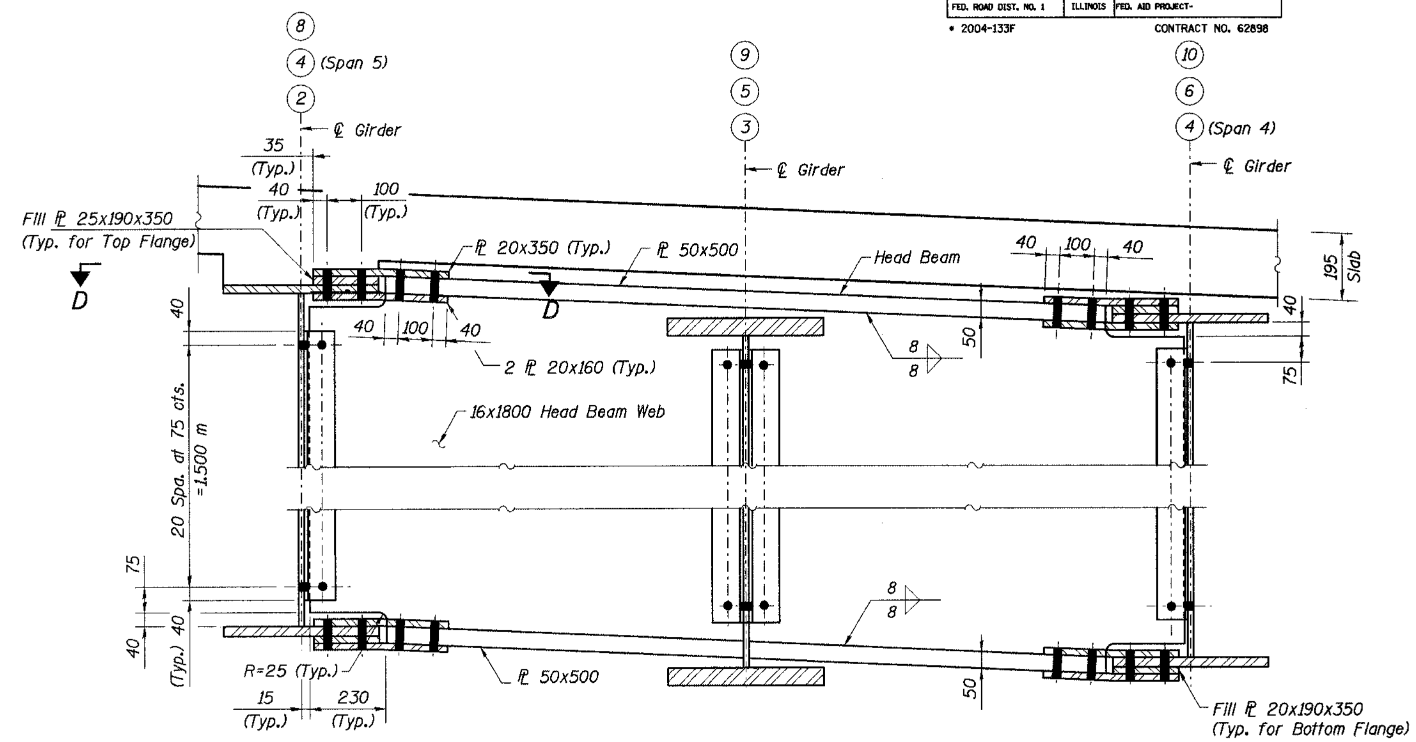
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DETAIL A



SECTION C-C

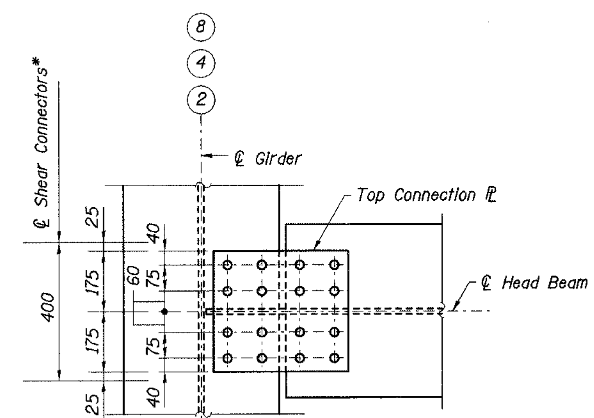


SECTION B-B

ANGLE BETWEEN HEAD BEAM AND GIRDERS

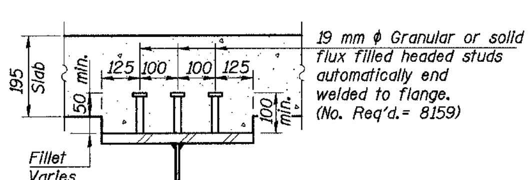
A-B-C	δ°1	δ°2
2-3-4	91° 37' 21"	90° 32' 54"
4-5-6	94° 01' 54"	92° 06' 06"
8-9-10	91° 38' 22"	90° 37' 36"

Angles shown in the table are between ℄ Head Beam and Girder Tangent Line at Intersection of ℄ Girder and ℄ Head Beam.

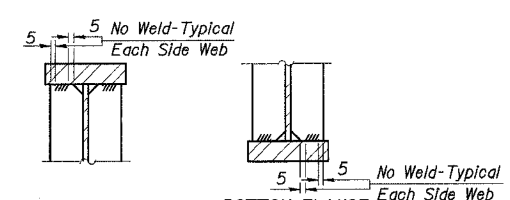


SECTION D-D

*Adjust Shear Connector Spacing to miss Top Connection Plate.

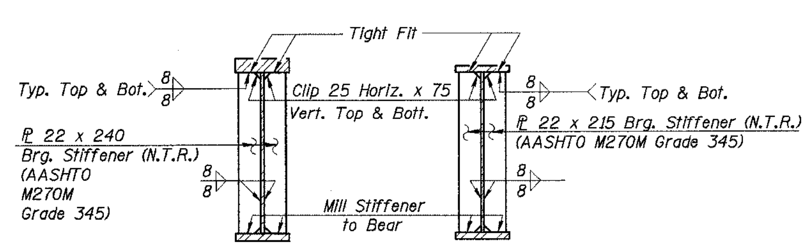


SECTION A-A
"NOT IN CONTRACT"



STIFFENER TO FLANGE WELD

Typical for Bearing Stiffeners



BEARING STIFFENERS

Notes:

1. All dimensions are in millimeters (mm) except as noted.
2. All Head Beam Connections to have 28 mm ϕ oversized holes for M22 H.S. Bolts. Two hardened washers shall be required over each oversized hole.
3. All Head Beams and Connection Angles to be AASHTO M270M, Grade 345 and meet N.T.R.
4. N.T.R. denotes plates to which notch toughness requirements are applicable.
5. Work this sheet with Sheets Nos. 19-24 & 27 of 42.

DESIGNED	JY
CHECKED	MEA
DRAWN	LK
CHECKED	MEA

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ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
CONNECTION DETAILS - 1
SPANS 3-5 - UNIT 1
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

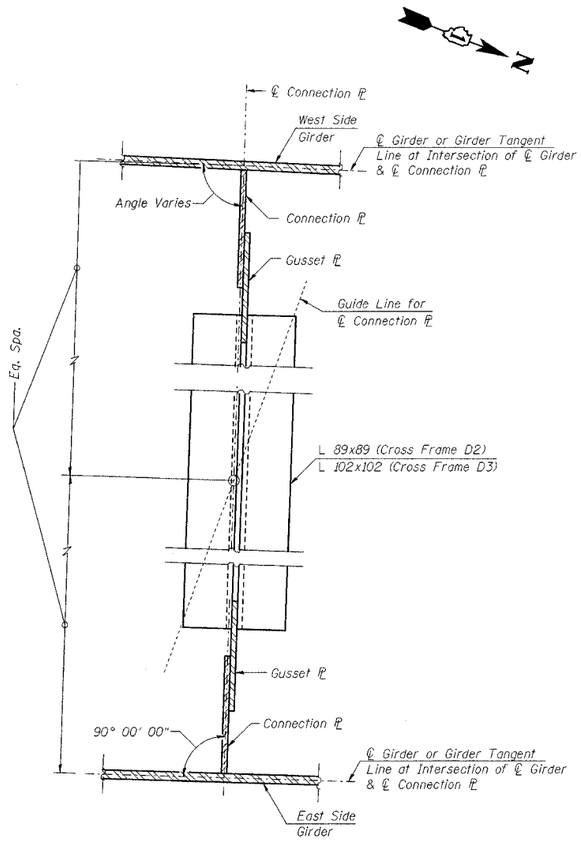
HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

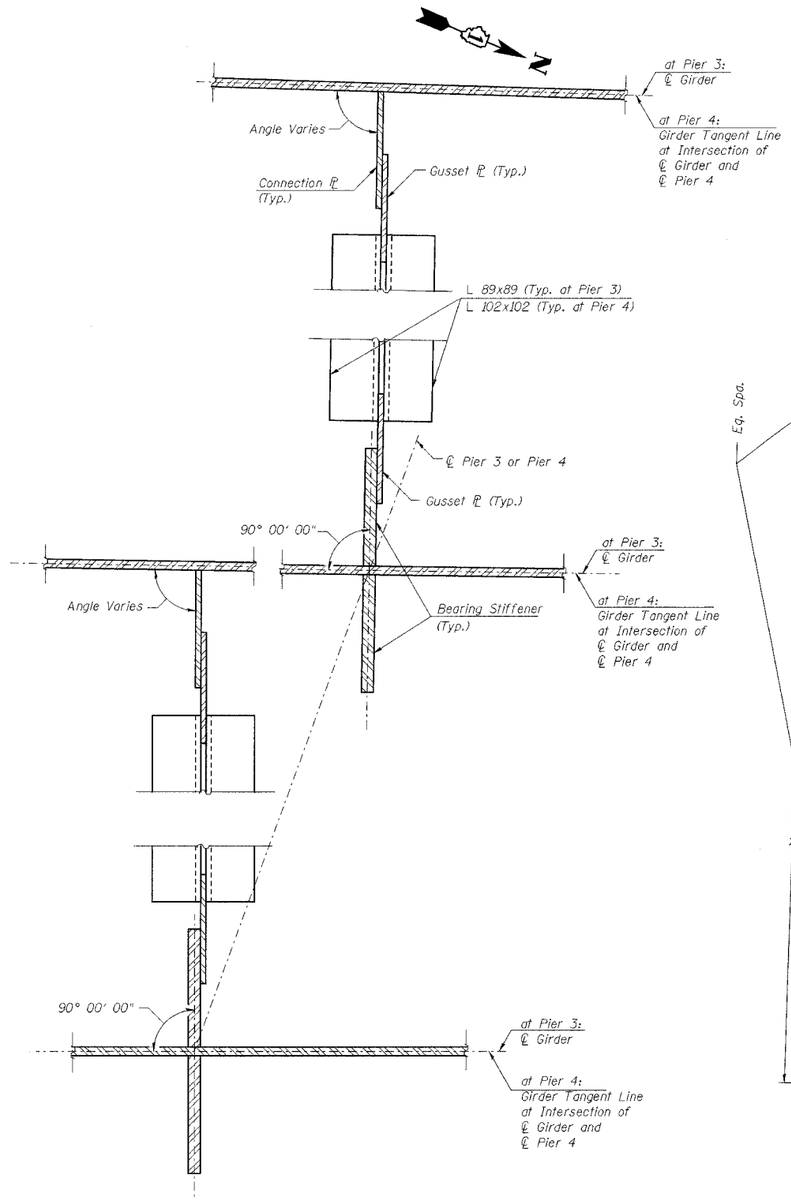
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	41
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 26
42 SHEETS

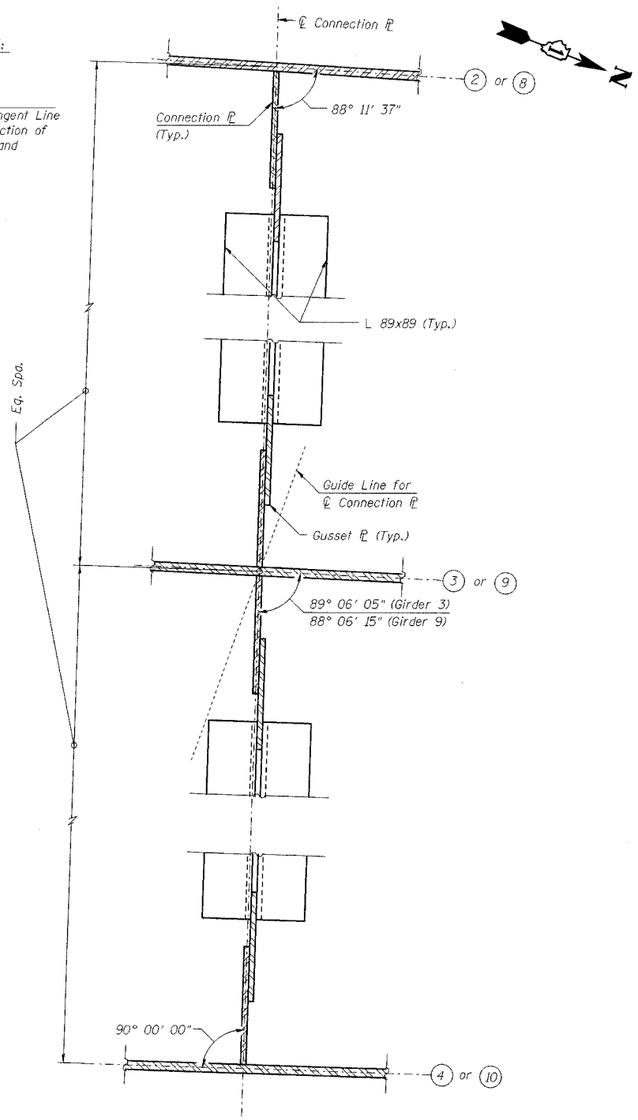
• 2004-133F
CONTRACT NO. 62898



DETAIL B
(Interior Cross Frame Connection with Girders within spans)



DETAIL C
(Interior Cross Frame Connection with Girders at Pier 3 & Pier 4)



DETAIL D
(Interior Cross Frame Connection with Girders 3 & 9 only within spans)

DESIGNED	JY
CHECKED	MEA
DRAWN	LK
CHECKED	MEA

Notes:

1. Work this sheet with sheet No. 19, 21 & 23 of 42.
2. See sheet 27 of 42 for Cross Frame Details.

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
CONNECTION DETAILS - 2
SPANS 3-5 - UNIT 1
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

HNTB

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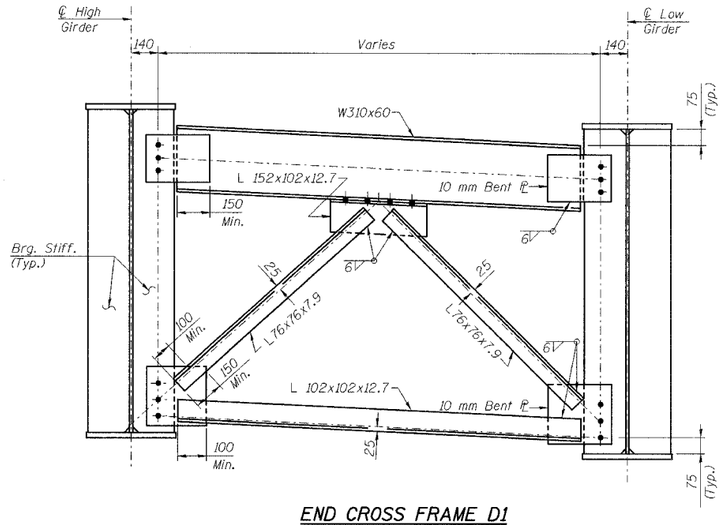
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

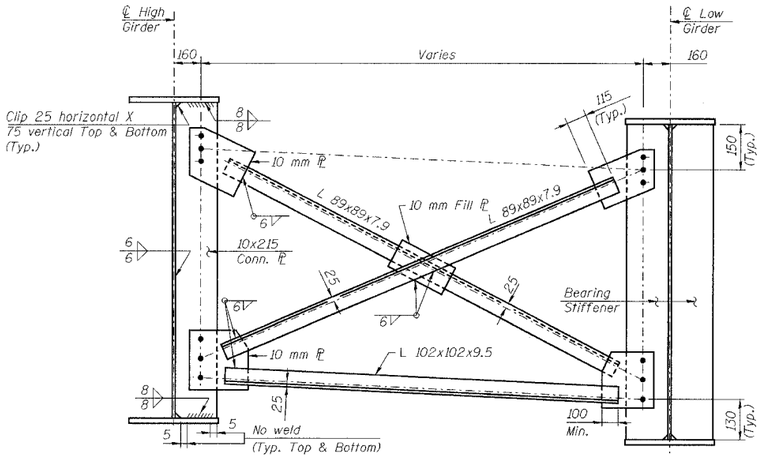
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	42
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 27
42 SHEETS

• 2004-133F
CONTRACT NO. 62698



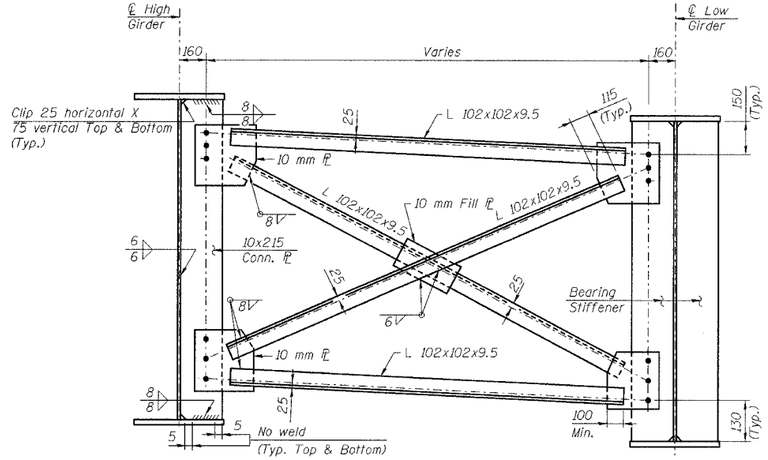
END CROSS FRAME D1
(All Materials AASHTO M270M Grade 345, N.T.R.)



AT CONNECTION PLATE

AT BEARING STIFFENER

INTERIOR CROSS FRAME D2
(For Straight Girders)
(All Materials AASHTO M270M Grade 345, N.T.R. except Fill PL)



AT CONNECTION PLATE

AT BEARING STIFFENER

INTERIOR CROSS FRAME D3
(For Curved Girders)
(All Material AASHTO M270M Grade 345, N.T.R. except Fill PL)

Notes:
1. All dimensions are in millimeters (mm) except as noted.
2. All cross frame connections to have 28 mm ϕ oversized holes for all M22 H.S. Bolts.
3. Two hardened washers shall be required over each oversized hole.
4. See Sheet No. 25 of 42 for bearing stiffener details.
5. N.T.R. denotes members to which notch toughness requirements are applicable.

DESIGNED	JY
CHECKED	MEA
DRAWN	LK
CHECKED	MEA

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
CROSS FRAMING DETAILS
SPANS 3-5 - UNIT 1
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

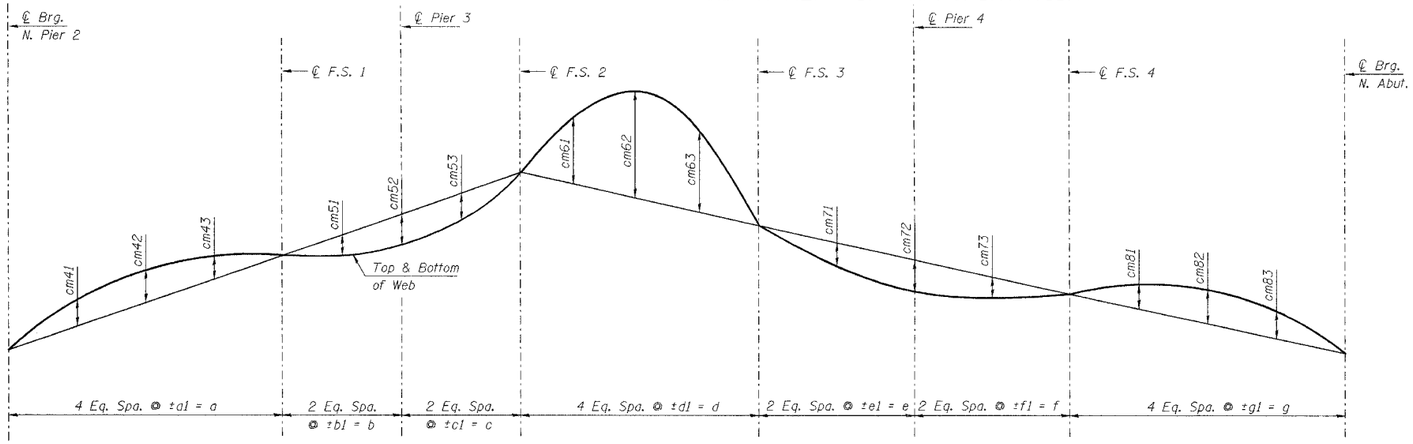
HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	43
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 28
42 SHEETS

* 2004-133F
CONTRACT NO. 62898



CAMBER DIAGRAM- GIRDERS 1 THRU 12 EXCEPT 3, 9 & 5

(For dimensions a, b, c, d, e, f, g see Sheet No. 17 of 42.)

CAMBER VALUES

Girder	cm41	cm42	cm43	cm51	cm52	cm53	cm61	cm62	cm63	cm71	cm72	cm73	cm81	cm82	cm83
1	18	25	18	14	20	14	96	128	94	13	20	13	21	30	22
2	18	26	18	12	18	13	92	126	93	13	20	13	22	34	25
4	19	28	19	13	19	13	95	130	96	12	18	13	17	27	19
6	19	27	19	16	23	16	96	131	96	13	20	14	16	24	18
7	20	28	19	16	23	16	89	122	88	14	22	15	19	28	21
8	18	27	19	13	19	13	78	107	78	14	21	15	22	33	24
10	20	29	21	12	19	13	77	106	77	13	20	14	23	33	24
11	21	29	20	15	23	16	76	103	74	15	22	15	23	33	24
12	19	27	19	14	21	14	66	89	64	14	21	15	20	30	22

CAMBER SPACING (Meters)

Girder	a1	b1	c1	d1	e1	f1	g1
1	7.595	5.681	5.804	8.638	5.239	5.704	7.747
2	7.595	5.681	5.804	8.639	5.241	5.706	7.750
4	7.670	5.737	5.861	8.687	5.246	5.702	7.725
6	7.670	5.737	5.861	8.730	5.300	5.771	7.840
7	7.670	5.737	5.861	8.739	5.312	5.787	7.868
8	7.670	5.737	5.861	8.740	5.312	5.788	7.869
10	7.754	5.800	5.925	8.795	5.318	5.781	7.832
11	7.754	5.800	5.925	8.797	5.321	5.785	7.838
12	7.754	5.800	5.925	8.799	5.323	5.788	7.843

TOP OF WEB ELEVATIONS FOR FABRICATION (Meters)

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

Girder	℄ N. Brg. Pier 2	℄ F.S. 1	℄ Pier 3	℄ F.S. 2	℄ F.S. 3	℄ Pier 4	℄ F.S. 4	℄ Brg. N. Abut.
1	186.874	187.114	187.172	187.273	186.953	186.805	186.686	186.370
2	186.908	187.088	187.120	187.189	186.872	186.725	186.606	186.285
4	186.973	187.056	187.067	187.115	186.813	186.663	186.537	186.197
6	186.949	186.926	186.904	186.930	186.660	186.520	186.411	186.144
7	186.936	186.859	186.815	186.817	186.551	186.421	186.326	186.073
8	186.926	186.796	186.729	186.698	186.419	186.296	186.207	185.946
10	186.918	186.716	186.634	186.588	186.322	186.200	186.109	185.819
11	186.918	186.655	186.553	186.497	186.201	186.074	185.981	185.696
12	186.921	186.597	186.476	186.396	186.075	185.948	185.854	185.572

BEARING SEAT ELEVATIONS (Meters)

Girder	℄ N. Brg. Pier 2	℄ Pier 3	℄ Pier 4	℄ Brg. N. Abut.
1	184.861	185.081	184.647	184.346
2	184.895	185.032	184.567	184.261
4	184.960	184.979	184.507	184.173
6	184.936	184.816	184.364	184.120
7	184.905	184.727	184.265	184.049
8	184.905	184.641	184.140	183.922
10	184.905	184.543	184.044	183.795
11	184.905	184.462	183.918	183.672
12	184.905	184.385	183.792	183.548

Notes:

1 Work this Sheet with Sheets Nos. 17, 20, 22 & 24 of 42.

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

DESIGNED	PJE/TL
CHECKED	MA
DRAWN	LK
CHECKED	MA

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
CAMBER AND TOP OF WEB ELEVATIONS-1
SPANS 3-5 - UNIT 1
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

HNTB

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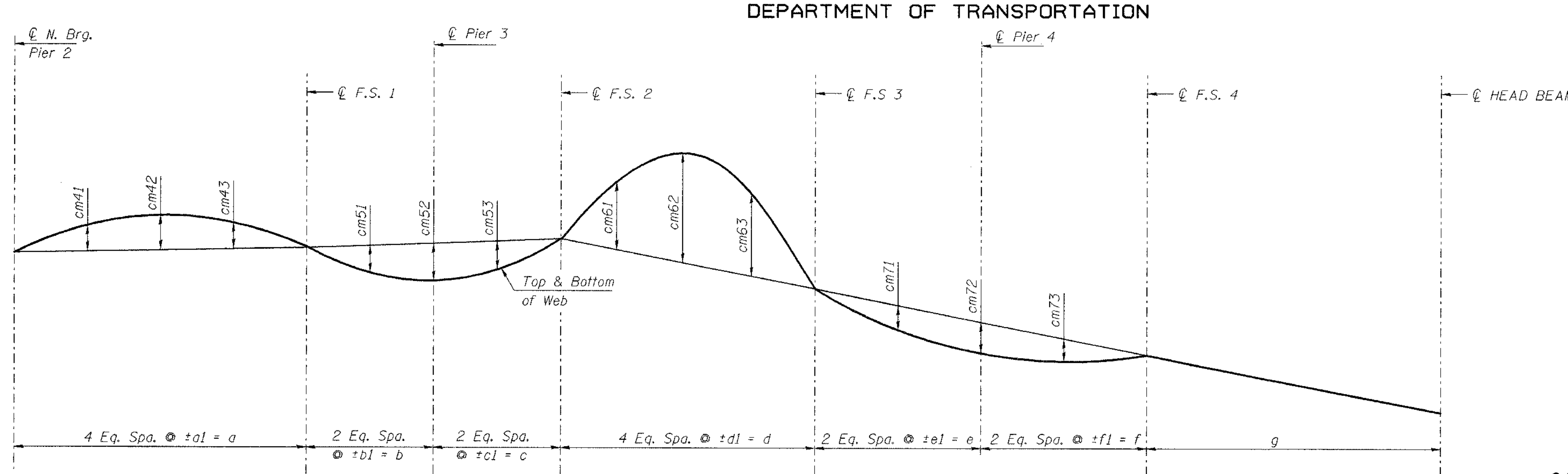
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	44
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

* 2004-133F CONTRACT NO. 62898

SHEET NO. 29
42 SHEETS

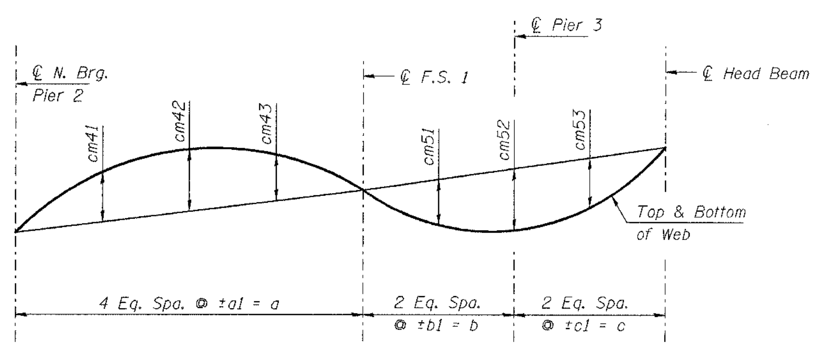


CAMBER DIAGRAM - GIRDER 5

(For dimensions a, b, c, d, e, f, g see Sheet No. 17 of 42)

CAMBER SPACING (Meters)

Girder	a1	b1	c1	d1	e1	f1
3	7.632	5.709	7.159	-	-	-
5	7.670	5.737	5.861	8.707	5.271	5.733
9	7.711	5.768	7.234	-	-	-



CAMBER DIAGRAM - GIRDERS 3 & 9

(For dimensions a, b, c see Sheet No. 17 of 42)

CAMBER VALUES

Girder	cm41	cm42	cm43	cm51	cm52	cm53	cm61	cm62	cm63	cm71	cm72	cm73
3	16	24	17	12	18	14	-	-	-	-	-	-
5	19	29	20	15	21	15	99	135	101	11	16	12
9	17	24	18	12	18	15	-	-	-	-	-	-

TOP OF WEB ELEVATIONS FOR FABRICATION (Meters) - GIRDERS 3 & 9

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

Girder	℄ N. Brg. Pier 2	℄ F.S. 1	℄ Pier 3	℄ Head Beam*
3	186.939	187.072	187.090	187.155
9	186.920	186.756	186.675	186.618

BEARING SEAT ELEVATIONS (Meters)

Girder	℄ N. Brg. Pier 2	℄ Pier 3	℄ Pier 4
3	184.926	185.002	-
5	184.936	184.909	184.441
9	184.905	184.584	-

Notes:

1. Work this Sheet with Sheets Nos. 17, 20, 22, 24 & 25 of 42.
2. All dimensions are in millimeters (mm) except as noted.

TOP OF WEB ELEVATIONS FOR FABRICATION (Meters) - GIRDER 5

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

Girder	℄ N. Brg. Pier 2	℄ F.S. 1	℄ Pier 3	℄ F.S. 2	℄ F.S. 3	℄ Pier 4	℄ F.S. 4	℄ Head Beam*
5	186.965	187.000	186.997	187.037	186.752	186.597	186.469	186.295

*Top of web elevations given at intersection of ℄ of girder and ℄ of head beam. Dimension does not take into account coping at girder interface with head beam

DESIGNED	PJE/TL
CHECKED	MA
DRAWN	LK
CHECKED	MA

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

CAMBER AND TOP OF WEB ELEVATION-2
SPAN 3-5 - UNIT 1

SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800

DATE 05/16/05
SCALE ---

HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER MOMENT TABLE — GIRDER 11*

		0.4 Sp.3	Pier 3	0.5 Sp.4	Pier 4	0.6 Sp.5
Is	(10^6 mm^4)	28366	50568	28366	50568	28366
Ic (n)	(10^6 mm^4)	60990	-	60990	-	60990
Ic (3n)	(10^6 mm^4)	44432	-	44432	-	44432
Ss	(10^3 mm^3)	31835	53229	31835	53229	31835
Sc (n)	(10^3 mm^3)	42531	-	42531	-	42531
Sc (3n)	(10^3 mm^3)	38342	-	38342	-	38342
Sb_l	(10^3 mm^3)	-	-	1013	2083	1013
Z	(10^3 mm^3)	-	59210	-	-	-
DL	(kN/m)	17.50	28.49	17.50	28.49	17.50
MDL	(kN·m)	1878	7345	2129	7463	1913
sDL	(kN/m)	8.55	-	8.55	-	8.55
MsDL	(kN·m)	989	-	1130	-	997
MLL	(kN·m)	2057	2508	2345	2701	1867
M (Imp)	(kN·m)	387	434	469	540	467
5/3 [MLL + M (Imp)]	(kN·m)	4073	4903	4691	5401	3889
Ma	(kN·m)	9021	15921	10335	16723	8839
Mb_l	(kN·m)	-	-	47	34	40
Mu	(kN·m)	11502	-	-	-	-
fs DL (non-comp)	(MPa)	59	138	67	140	60
fs DL (comp)	(MPa)	26	-	29	-	26
fs 5/3 [MLL + M (Imp)]	(MPa)	96	92	110	101	91
f_l	(MPa)	-	-	46	16	39
fs (Overload)	(MPa)	181	230	206	241	177
fs (Total)	(MPa)	-	299	268	313	230
Fcr (Overload)	(MPa)	-	-	328	311	328
VR	(kN)	298	-	312	-	302
Fcr	(MPa)	-	-	283	327	283

GIRDER MOMENT TABLE — GIRDER 5

		0.4 Sp.3	Pier 3	0.5 Sp.4	Pier 4	0.4 Sp.5
Is	(10^6 mm^4)	28366	50568	28366	50568	28366
Ic (n)	(10^6 mm^4)	60990	-	60990	-	53680
Ic (3n)	(10^6 mm^4)	44432	-	44432	-	39632
Ss	(10^3 mm^3)	31835	53229	31835	53229	31835
Sc (n)	(10^3 mm^3)	42531	-	42531	-	40893
Sc (3n)	(10^3 mm^3)	38342	-	38342	-	36734
Sb_l	(10^3 mm^3)	-	-	1013	2083	1013
Z	(10^3 mm^3)	-	59210	-	-	-
DL	(kN/m)	17.50	27.56	16.35	22.11	12.71
MDL	(kN·m)	1794	7028	2003	5808	68
sDL	(kN/m)	12.26	-	6.73	-	4.80
MsDL	(kN·m)	1073	-	1007	-	38
MLL	(kN·m)	1955	2309	1755	1915	1067
M (Imp)	(kN·m)	368	393	439	383	213
5/3 [MLL + M (Imp)]	(kN·m)	3872	4503	3656	3829	2134
Ma	(kN·m)	8759	14990	8666	12528	2913
Mb_l	(kN·m)	-	-	41	26	14
Mu	(kN·m)	11502	-	-	-	-
fs DL (non-comp)	(MPa)	56	132	63	109	2
fs DL (comp)	(MPa)	28	-	26	-	1
fs 5/3 [MLL + M (Imp)]	(MPa)	91	85	86	72	52
f_l	(MPa)	-	-	40	13	14
fs (Overload)	(MPa)	175	217	175	181	55
fs (Total)	(MPa)	-	282	228	235	72
Fcr (Overload)	(MPa)	-	-	328	309	328
VR	(kN)	289	-	266	-	220
Fcr	(MPa)	-	-	283	327	283

GIRDER MOMENT TABLE — GIRDER 3 & 9

		0.4 Sp.3	Pier 3
Is	(10^6 mm^4)	28366	50568
Ic (n)	(10^6 mm^4)	53680	-
Ic (3n)	(10^6 mm^4)	39632	-
Ss	(10^3 mm^3)	31835	53229
Sc (n)	(10^3 mm^3)	40893	-
Sc (3n)	(10^3 mm^3)	36734	-
Z	(10^3 mm^3)	-	59210
DL	(kN/m)	14.05	20.78
MDL	(kN·m)	1648	5640
sDL	(kN/m)	6.63	-
MsDL	(kN·m)	735	-
MLL	(kN·m)	1264	1027
M (Imp)	(kN·m)	238	175
5/3 [MLL + M (Imp)]	(kN·m)	2503	2002
Ma	(kN·m)	6350	9935
Mu	(kN·m)	14227	-
fs DL (non-comp)	(MPa)	52	106
fs DL (comp)	(MPa)	20	-
fs 5/3 [MLL + M (Imp)]	(MPa)	61	38
fs (Overload)	(MPa)	133	144
fs (Total)	(MPa)	-	187
VR	(kN)	182	-

GIRDER REACTION TABLE — GIRDER 11*

		Pier 2	Pier 3	Pier 4	N. Abut.
RDL	(kN)	432	1495	1462	380
RLL	(kN)	234	512	528	226
Imp.	(kN)	44	96	132	68
R (Total)	(kN)	710	2103	2122	674

GIRDER REACTION TABLE — GIRDER 5

		Pier 2	Pier 3	Pier 4	Head Beam
RDL	(kN)	428	1455	1172	58
RLL	(kN)	228	483	361	118
Imp.	(kN)	43	92	90	35
R (Total)	(kN)	699	2030	1623	211

GIRDER REACTION TABLE — GIRDER 3 & 9

		Pier 2	Pier 3	Head Beam
RDL	(kN)	317	1105	342
RLL	(kN)	179	273	101
Imp.	(kN)	34	51	25
R (Total)	(kN)	530	1429	468

* Girder 11 has the largest forces among all girders. Parapet weight is distributed evenly among 3 exterior girders at each side although interior girders are designed with uniformly distributed parapet load.

Fcr - Critical average flange stress (smaller of Fcr1 or Fcr2 for partially braced flanges and Fy for continuously braced flanges) computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges (Sections 5.2, 5.3 and 5.4).

Fcr (Overload) - Critical average flange stress at overload computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges Section 9.5.

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total and Overload).

Ic(n) and Sc(n) are the moment of inertia and section modulus of the composite section used in computing stresses due to live load.

Ic(3n) and Sc(3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead load (see AASHTO 10.38).

VR is the maximum LL + impact shear range in span.

Sb_l is the section modulus for one flange plate for lateral bending.

MDL - Moment due to dead loads on non-composite section.

MsDL - Moment due to dead loads on composite section.

MLL - Moment due to live load on non-composite or composite section.

M (Imp) - Moment due to live load impact on non-composite or composite section

Mb_l is the lateral bending moment for flange plate (factored).

Ma (Applied Moment) = 1.3 [MDL + MsDL + 5/3 (MLL + M (Imp))]

fs (Overload) is the sum of stresses due to MDL + MsDL + 5/3 (MLL + M (Imp))

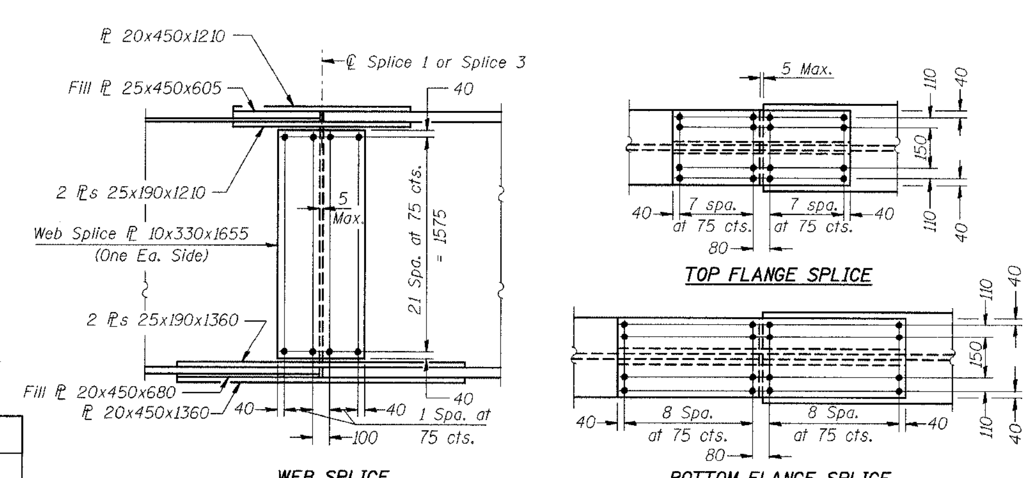
fs (Total) is the sum of stresses due to 1.3 [MDL + MsDL + 5/3 (MLL + M (Imp))]

f_l is the calculated normal stress at the edge of flange due to lateral bending (factored).

MLL and RLL include the effects of centrifugal force and superelevation.

Z is the plastic section modulus used to determine the Fully Plastic Moments in the non-composite areas.

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



FIELD SPLICE 1, 2,3 & 4
(Splice 1, 3 shown. Splice 2, 4 opposite hand)

Notes:
1. All field splice plates, except fill plates to be AASHTO M270M, Grade 345 and meet N.T.R.
2. N.T.R. denotes plates to which notch toughness requirements are applicable.

DESIGNED	JY
CHECKED	MEA
DRAWN	LK
CHECKED	MEA

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

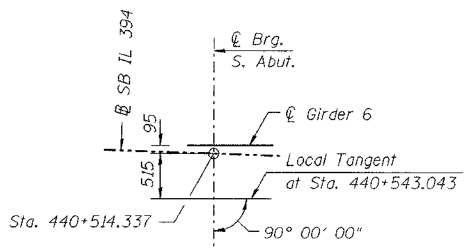
MOMENT & REACTION TABLES & FIELD SPLICES, SPANS 3-5 - UNIT 1

SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800

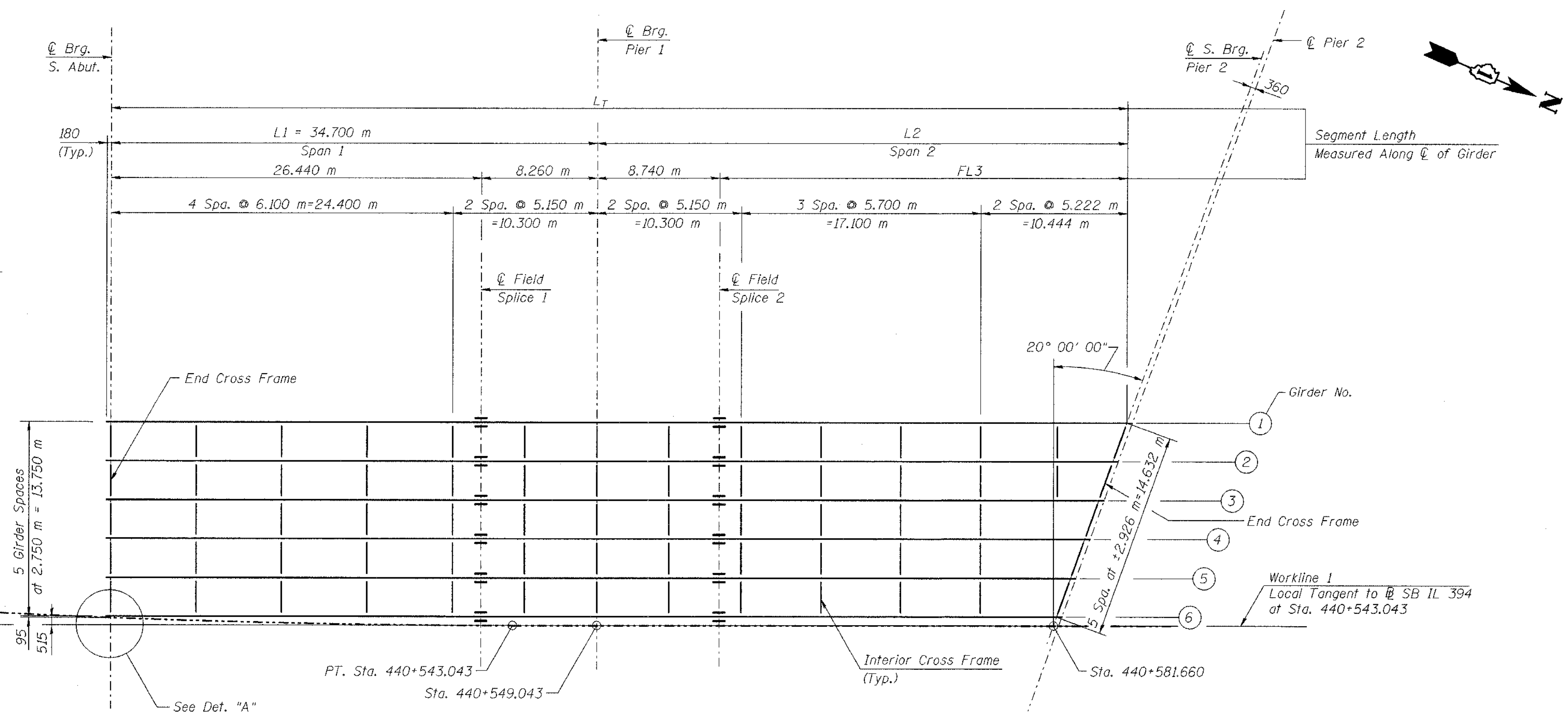
DATE 05/16/05
SCALE ---

HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DETAIL "A"



FRAMING PLAN

GIRDER DIMENSIONS (Meters)

Girder	Span 2 FL3	Span 2 L2	LT
1	29.104	37.844	72.544
2	28.103	36.843	71.543
3	27.102	35.842	70.542
4	26.101	34.841	69.541
5	25.100	33.840	68.540
6	24.099	32.839	67.539

Notes:

1. All dimensions are in millimeters (mm) except noted otherwise.
2. Work this sheet with Sheets Nos. 32 & 33 of 42.

DESIGNED	MEA
CHECKED	JY
DRAWN	LK
CHECKED	JY

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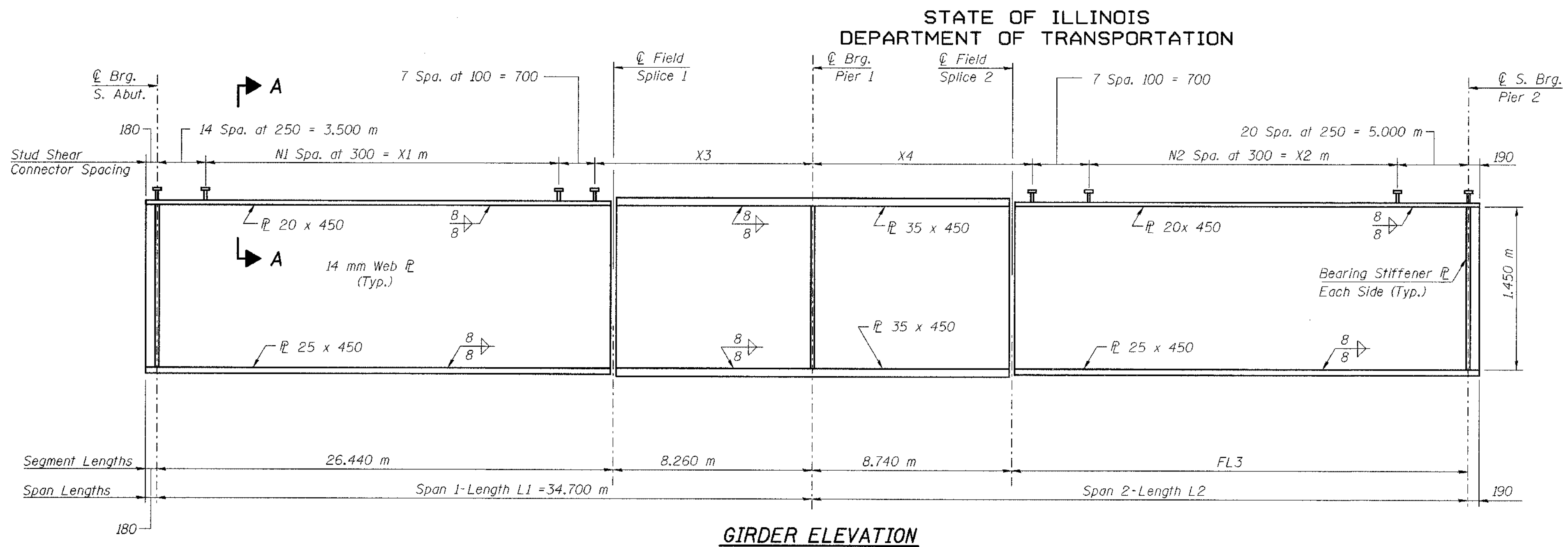
ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
FRAMING PLAN
SPANS 1 & 2 - UNIT 2
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



GIRDER ELEVATION

(All Plates AASHTO M270M Grade 345, N.T.R.)
"N.T.R." denotes notch toughness requirements are applicable

SHEAR CONNECTOR NUMBERS

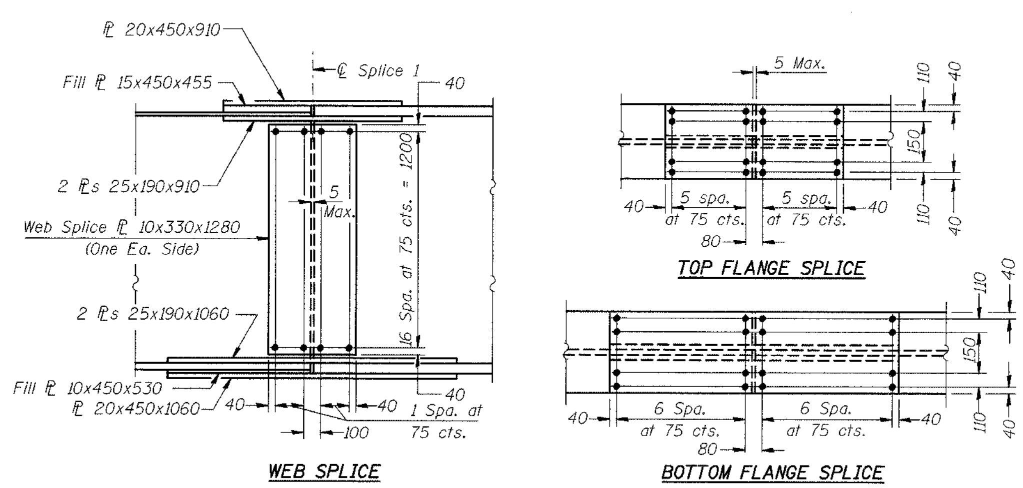
"NOT IN CONTRACT"

Girder	N1	N2
1	69	76
2	69	72
3	69	69
4	71	66
5	71	62
6	71	59

SHEAR CONNECTOR LOCATIONS

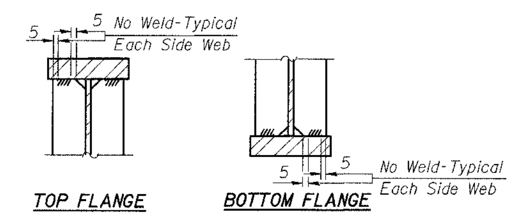
(Meters)
"NOT IN CONTRACT"

Girder	X1	X2	X3	X4
1	20.700	22.800	9.800	9.344
2	20.700	21.600	9.800	9.543
3	20.700	20.700	9.800	9.442
4	21.300	19.800	9.200	9.341
5	21.300	18.600	9.200	9.540
6	21.300	17.700	9.200	9.439



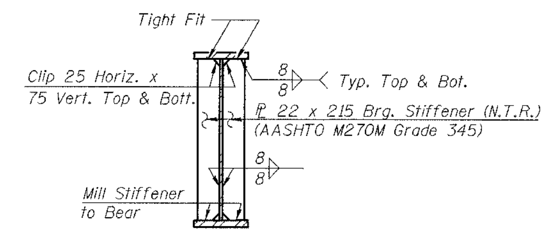
FIELD SPLICE 1 & 2

(Splice 1 shown, Splice 2 opposite hand)



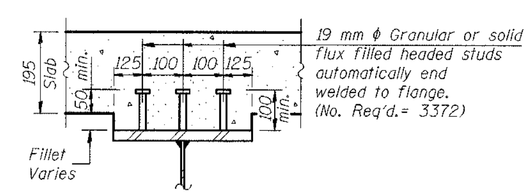
STIFFENER TO FLANGE WELD

Typical for Bearing Stiffeners



BEARING STIFFENERS

(At Piers 1 & 2 & S. Abut.)



SECTION A-A

"NOT IN CONTRACT"

Notes:

1. For Dimensions L2 & FL3, see Sheet No. 31 of 42.
2. All Field Splice Plates, except Fill Plates, shall be AASHTO M270M Grade 345 and shall meet the Notch Toughness Requirements (N.T.R.)
3. All dimensions are in millimeters (mm) except noted otherwise.

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp.1	Pier	0.6 Sp.2
Is	$(10^6\ mm^4)$	14,469	20,926	14,469
Ic (n)	$(10^6\ mm^4)$	33,450	---	33,450
Ic (3n)	$(10^6\ mm^4)$	24,487	---	24,487
Ss	$(10^3\ mm^3)$	20,421	27,534	20,421
Sc (n)	$(10^3\ mm^3)$	27,501	---	27,501
Sc (3n)	$(10^3\ mm^3)$	25,053	---	25,053
Z	$(10^3\ mm^3)$	---	30,747	---
D	(kN/m)	17.51	27.42	17.51
MD	(kN·m)	1,215	4,183	1,503
sD	(kN/m)	8.91	---	8.91
MsD	(kN·m)	687	---	848
ML	(kN·m)	1,652	1,435	1,769
M (Imp)	(kN·m)	347	301	371
5/3[ML+M(Imp)]	(kN·m)	3,332	2,893	3,567
Ma	(kN·m)	6,804	9,199	7,693
Mu	(kN·m)	8,544	---	8,544
fsD (non-comp)	(MPa)	59	152	74
fsD (comp)	(MPa)	27	---	34
fs5/3 [ML+M(Imp)]	(MPa)	121	105	130
fs(Overload)	(MPa)	207	257	238
fs (Total)	(MPa)	---	334	---
VR	(kN)	295	---	302

INTERIOR GIRDER REACTION TABLE				
		S. Abut.	Pier 1	Pier 2
R D	(kN)	310	1,124	353
R L	(kN)	247	453	251
Imp.	(kN)	52	63	53
R (Total)	(kN)	609	1,640	657

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total and Overload).

Ic(n) and Sc(n) are the moment of inertia and section modulus of the composite section used in computing stresses due to live load.

Ic(3n) and Sc(3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead load (see AASHTO 10.38).

VR is the maximum L + impact shear range within the composite portion of the span.

Z is the plastic section modulus used to determine the Fully Plastic Moments in the non-composite areas.

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

fs (Total) is the sum of stresses due to 1.3 [MD + MsD + 5/3 (ML + M (Imp))]

fs (Overload) is the sum of the stressed due to MD+MsD+5/3 (ML+M(Imp))

MD-Moment due to dead loads on non-composite section.

MsD-Moment due to dead loads on composite section

ML Moment due to live load on non-composite or composite section

M (Imp) Moment due to live load impact on non-composite or composite section

Ma (Applied Moment) = 1.3[MD+MsD+5/3 (ML+M(Imp))]

Forces in Moment Table are taken from the Girder producing the maximum forces. (Girder 2).

DESIGNED	MEA
CHECKED	JY
DRAWN	LK
CHECKED	JY

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
GIRDER ELEVATION & DETAILS
SPANS 1 & 2 - UNIT 2
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---
HNTB

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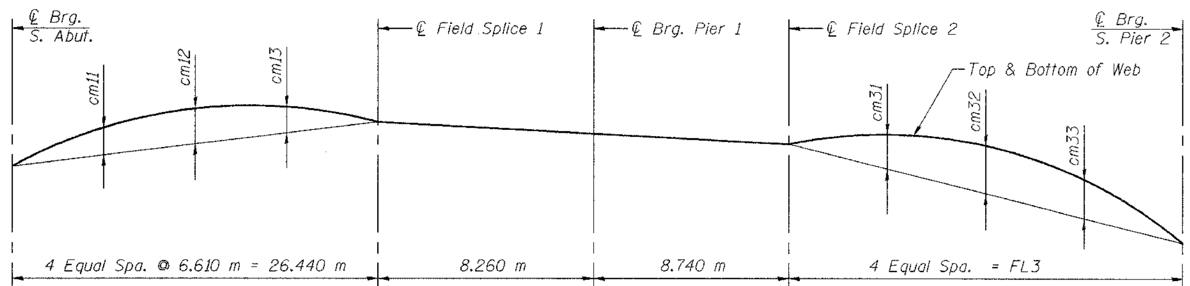
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



CAMBER DIAGRAM

CAMBER VALUES

Girder	from ℄ Brg. S. Abut. to ℄ Sp. 1			from ℄ Splice 2. to ℄ S. Brg. Pier 2		
	cm11	cm12	cm13	cm31	cm32	cm33
1	15	20	14	31	47	35
2	16	23	15	28	43	31
3	17	24	16	24	35	26
4	17	24	17	22	32	22
5	18	25	17	19	27	19
6	19	25	18	16	21	16

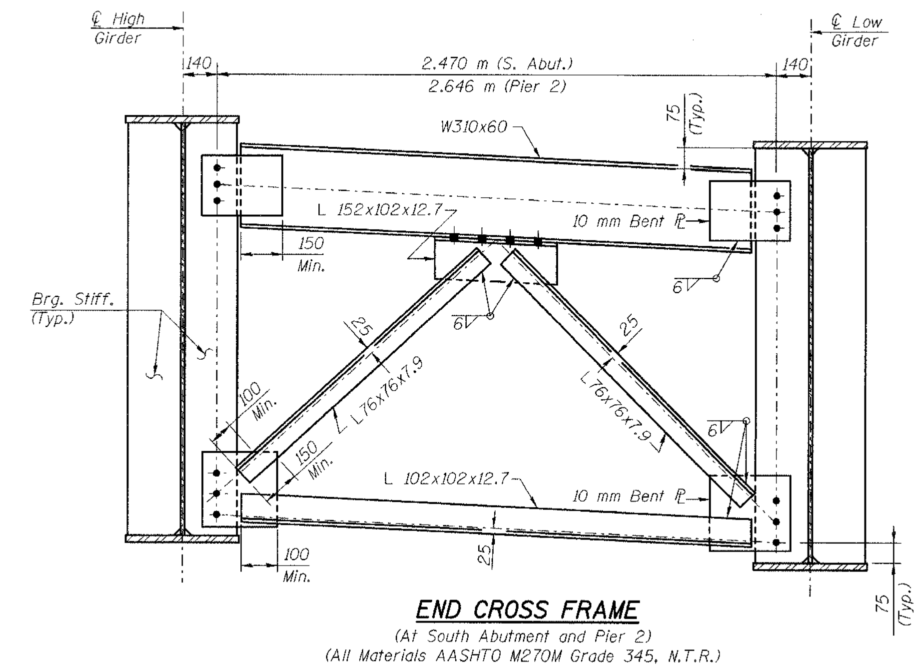
TOP OF WEB ELEVATIONS FOR FABRICATION (Meters)

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

Girder	℄ Brg. S Abut.	℄ F.S. 1	℄ Pier 1	℄ F.S. 2	℄ Brg. S. Pier 2
1	186.891	186.868	186.886	186.901	186.938
2	187.024	186.950	186.949	186.944	186.927
3	187.156	187.030	187.012	186.987	186.919
4	187.288	187.112	187.074	187.029	186.916
5	187.420	187.193	187.137	187.071	186.916
6	187.551	187.272	187.200	187.114	186.920

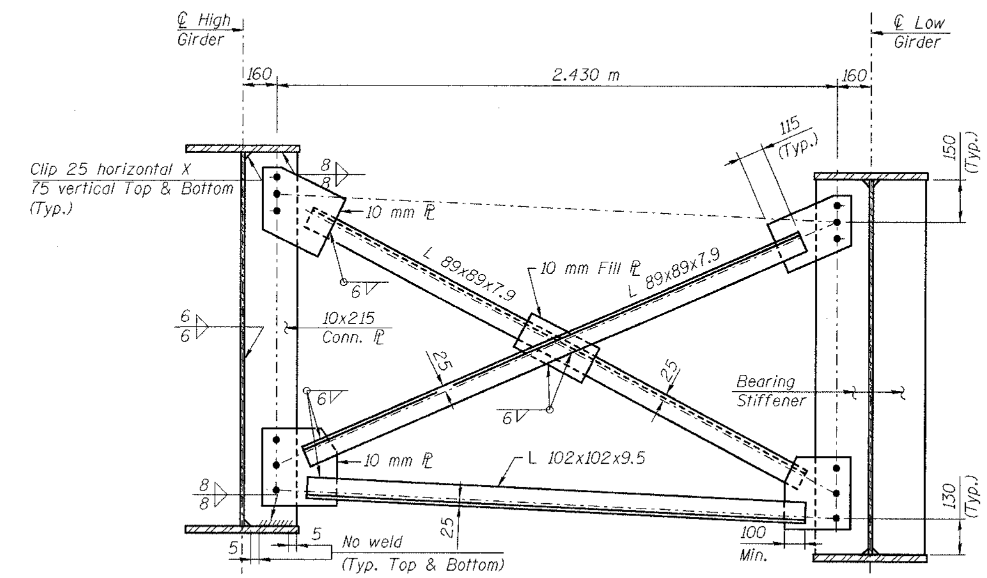
BEARING SEAT ELEVATIONS (Meters)

Girder	℄ Brg. S Abut.	℄ Pier 1	℄ S. Brg. Pier 2
1	185.273	185.273	185.282
2	185.406	185.336	185.282
3	185.538	185.399	185.282
4	185.670	185.461	185.282
5	185.802	185.524	185.282
6	185.933	185.587	185.282



END CROSS FRAME

(At South Abutment and Pier 2)
(All Materials AASHTO M270M Grade 345, N.T.R.)



AT CONNECTION PLATE

AT BEARING STIFFENER

INTERIOR CROSS FRAME

(At Pier 1 and within span)
(All Materials AASHTO M270M Grade 345, N.T.R. except Fill ℄)

Notes:
1. All dimensions are in millimeters (mm) except as noted.
2. All cross frame connections to have 28 mm ϕ oversized holes for all M22 H.S. Bolts.
3. Two hardened washers shall be required over each oversized hole.
4. See Sheet No. 32 of 42 for bearing stiffener details.
5. N.T.R. denotes members to which notch toughness requirements are applicable.
6. For Dimensions FL3 see Sht. No. 31 of 42.

DESIGNED	MEA
CHECKED	JY
DRAWN	LK
CHECKED	JY

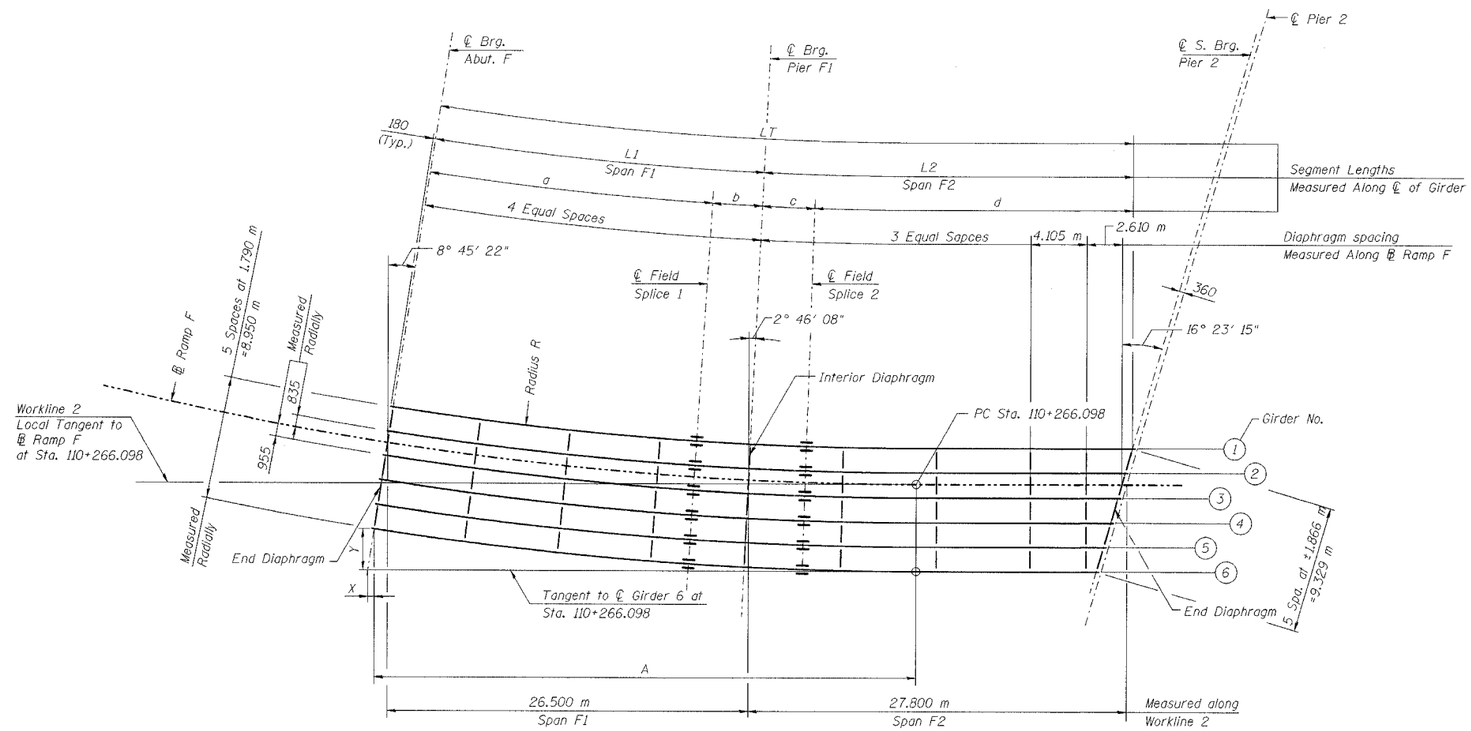
ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
CAMBER, TOP OF WEB ELEVATIONS & CROSS FRAME DETAILS - UNIT 2
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---
HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	49
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 34
42 SHEETS

* 2004-133F
CONTRACT NO. 62698



FRAMING PLAN

GIRDER DIMENSIONS (Meters)

Girder	Radius R		Span F1			Span F2			
		A	a	b	L1=a+b	c	d	L2=c+d	LT
1	252.375	38.419	22.431	3.942	26.373	4.130	23.945	28.075	54.448
2	254.165	38.692	22.590	3.970	26.560	4.159	23.475	27.634	54.194
3	255.955	38.964	22.749	3.998	26.747	4.188	23.006	27.194	53.941
4	257.745	39.237	22.908	4.026	26.934	4.217	22.538	26.755	53.689
5	259.535	39.509	23.067	4.054	27.121	4.247	22.068	26.315	53.436
6	261.325	39.782	23.226	4.082	27.308	4.276	21.599	25.875	53.183
℄ Ramp F	255.000	-	-	-	26.647	-	-	27.429	54.076

LAYOUT DIMENSIONS (Meters)

Girder	℄ Brg. Pier 2		Splice 2		℄ Pier F1		Splice 1		℄ Brg. Abut. F	
	X	Y	X	Y	X	Y	X	Y	X	Y
1	0.000	0.000	0.004	0.129	0.014	0.295	0.033	0.516	0.453	2.941
2	0.000	0.000	0.004	0.130	0.014	0.297	0.033	0.519	0.456	2.962
3	0.000	0.000	0.004	0.131	0.014	0.299	0.033	0.523	0.459	2.983
4	0.000	0.000	0.004	0.132	0.015	0.301	0.034	0.527	0.463	3.004
5	0.000	0.000	0.004	0.133	0.015	0.303	0.034	0.530	0.466	3.025
6	0.000	0.000	0.004	0.133	0.015	0.305	0.034	0.534	0.469	3.046

Notes:

1. Coordinate system (x, y) shown in Framing Plan is for Girder 6. Typical for all Girders with local tangent to each girder at Sta. 110+266.098 ℄ Ramp F.
2. Place all interior diaphragms radially.
3. The Contractor shall submit the proposed method of erection of the steel girders and cross frames for approval by the engineer prior to the start of this work.
4. All dimensions are in millimeters (mm) except noted otherwise.

DESIGNED	ML
CHECKED	MAS
DRAWN	LK
CHECKED	MAS

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
FRAMING PLAN
SPANS 1F & 2F - UNIT 3
RAMP F OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2845
DATE 05/16/05
SCALE ---

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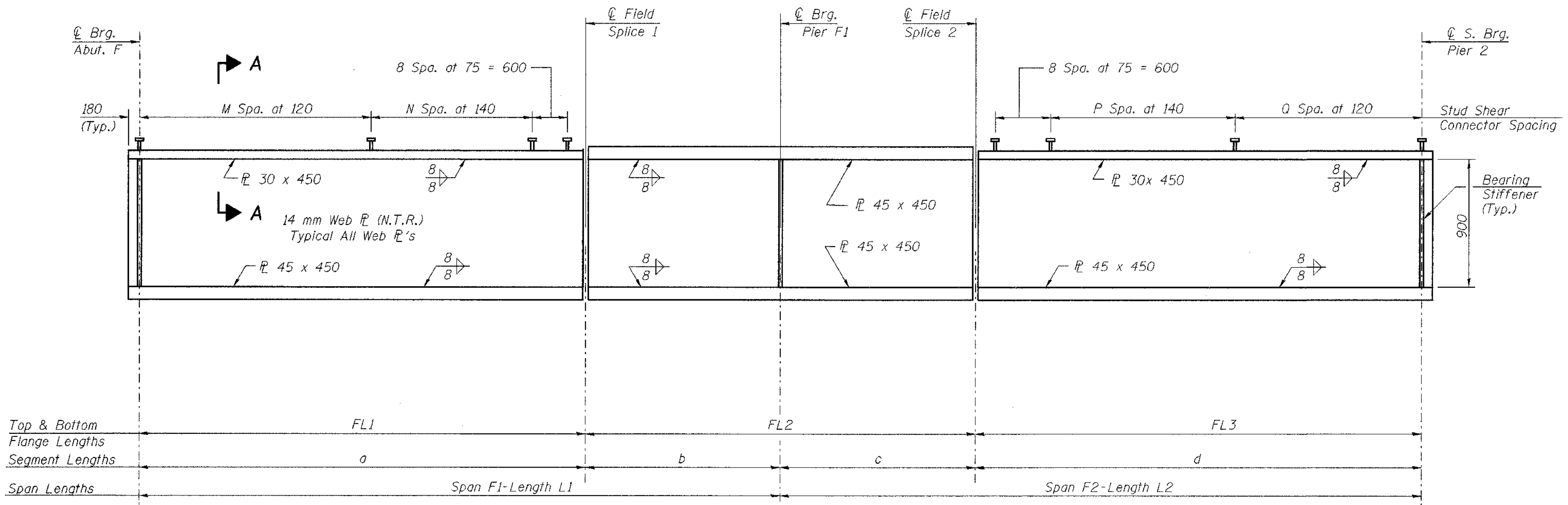
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	50
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 35
42 SHEETS

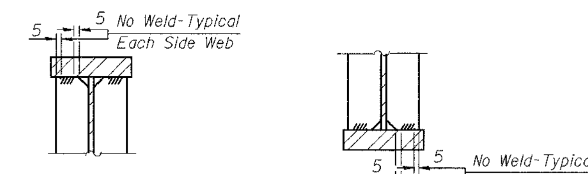
* 2004-133F
CONTRACT NO. 62898

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



GIRDER ELEVATION

(All PLates shall be N.T.R.)
"N.T.R." denotes notch toughness requirements are applicable

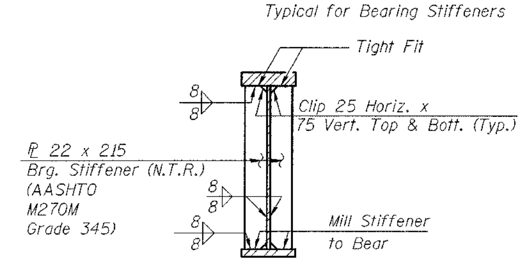


TOP FLANGE

BOTTOM FLANGE

STIFFENER TO FLANGE WELD

Typical for Bearing Stiffeners



AT PIERS F1 & 2 & ABUTMENT F

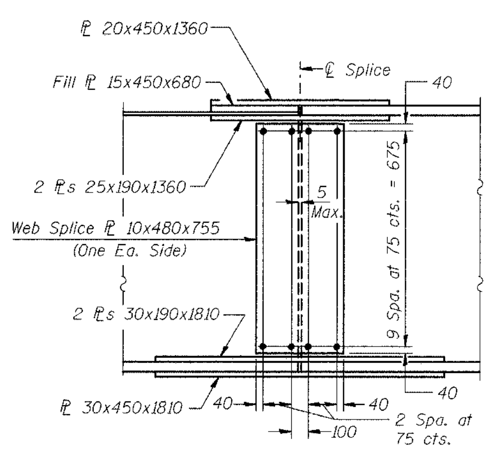
BEARING STIFFENERS

SHEAR CONNECTOR NUMBERS
"NOT IN CONTRACT"

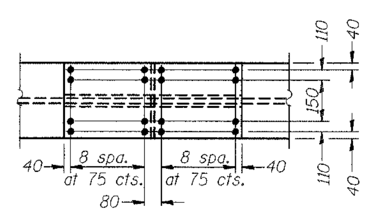
Girder	Span F1		Span F2	
	M	N	P	Q
1	64	93	100	69
2	65	94	98	68
3	65	94	95	66
4	66	95	93	65
5	67	97	90	64
6	67	97	88	63

GIRDER TOP AND BOTTOM FLANGE LENGTHS (Meters)

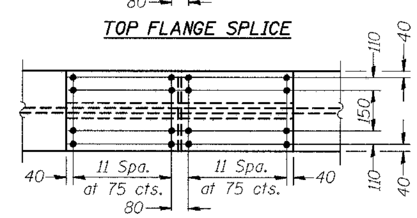
Girder	FL1	FL2	FL3
1	22.431	8.072	23.945
2	22.590	8.129	23.475
3	22.749	8.186	23.006
4	22.908	8.243	22.538
5	23.067	8.301	22.068
6	23.226	8.358	21.599



WEB SPLICE

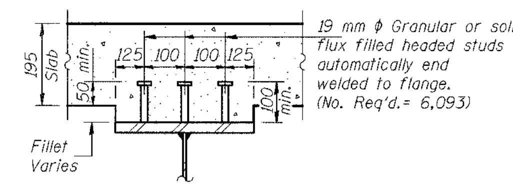


TOP FLANGE SPLICE



BOTTOM FLANGE SPLICE

FIELD SPLICE 1 & 2



SECTION A-A
"NOT IN CONTRACT"

INTERIOR GIRDER MOMENT TABLE		0.4 Sp.F1	Pier	0.6 Sp.F2
Is	(10^6 mm^4)	8,116	9,885	8,116
Ic (n)	(10^6 mm^4)	19,602	-	19,602
Ic (3n)	(10^6 mm^4)	13,621	-	13,621
Ss	(10^3 mm^3)	19,075	19,976	19,075
Sc (n)	(10^3 mm^3)	25,859	-	25,859
Sc (3n)	(10^3 mm^3)	23,270	-	23,270
Sb_ℓ	(10^3 mm^3)	1,516	-	1,516
D	(kN/m)	12.6	17.4	12.6
MD	(kN·m)	701	1,751	730
sD	(kN/m)	5.3	-	5.3
MsD	(kN·m)	309	-	346
ML	(kN·m)	1,153	911	1,114
M (Imp)	(kN·m)	289	228	279
5/3[ML+M(Imp)]	(kN·m)	2,403	1,897	2,322
Ma	(kN·m)	4,436	4,742	4,417
Mb_ℓ	(kN·m)	3	-	-
fsD (non-comp)	(MPa)	37	88	38
fsD (comp)	(MPa)	13	-	15
fs 5/3 [ML+M(Imp)]	(MPa)	93	95	90
f_ℓ	(MPa)	1.8	-	-
fs(Overload)	(MPa)	143	183	143
fs (Total)	(MPa)	186	238	186
Fcr(Overload)	(MPa)	327	223	327
VR	(kN)	498	-	498
Fcr	(MPa)	345	305	345

INTERIOR GIRDER REACTION TABLE		Ramp F Abut.	Pier F1	Pier 2
RD	(kN)	180	605	198
RL	(kN)	225	285	208
Imp.	(kN)	67	86	62
R (Total)	(kN)	472	976	468

Fcr - Critical average flange stress (smaller of Fcr1 or Fcr2 for partially braced flanges and Fy for continuously braced flanges) computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges (Sections 5.2, 5.3 and 5.4).

Fcr (Overload) - Critical average flange stress at overload computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges Section 9.5.

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total and Overload).

Ic(n) and Sc(n) are the moment of inertia and section modulus of the composite section used in computing stresses due to live load.

Ic(3n) and Sc(3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead load (see AASHTO 10.38).

VR is the maximum L + impact shear range in span.

Ma (Applied Moment) = 1.3 [MD + MsD + 5/3 (ML + M (Imp))]

fs (Overload) is the sum of stresses due to MD + MsD + 5/3 (ML + M (Imp))

fs (Total) is the sum of stresses due to 1.3 [MD + MsD + 5/3 (ML + M (Imp))]

Sb_ℓ is the section modulus for one flange plate for lateral flange bending.

Mb_ℓ is the lateral bending moment for flange plate (factored).

f_ℓ is the calculated normal stress at the edge of flange due to lateral bending (factored).

ML and RL include the effects of centrifugal force and superelevation.

Notes:

1. For Span Lengths L1, L2 & Segment Lengths a thru d, see Sheet No. 34 of 42.
2. All Flange Plates & Web Plates shall be AASHTO M270M Grade 345.
3. All Field Splice Plates, except Fill Plates, shall be AASHTO M270M Grade 345 and shall meet the Notch Toughness Requirements (N.T.R.).
4. All dimensions are in millimeters (mm) except noted otherwise.

DESIGNED	ML
CHECKED	MAS
DRAWN	LK
CHECKED	MAS

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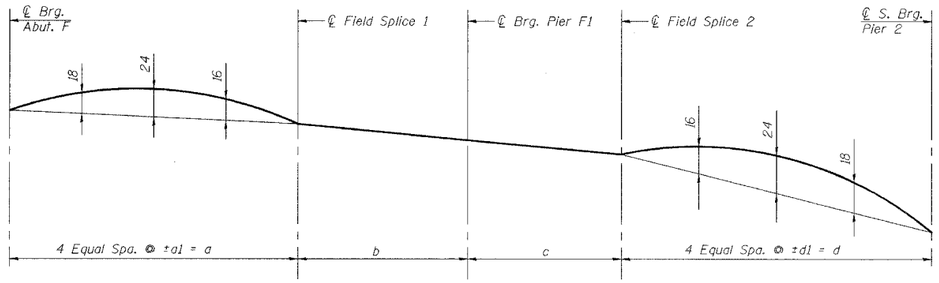
ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
GIRDER ELEVATION & DETAILS
SPAN 1F & 2F - UNIT 3
RAMP F OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2845
DATE 05/16/05
SCALE ---
HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	51
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 36
42 SHEETS

* 2004-133F
CONTRACT NO. 62698



CAMBER DIAGRAM

(For dimensions a, b, c, and d, see Sheet No. 34 of 42).

TOP OF WEB ELEVATIONS FOR FABRICATION (Meters)

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

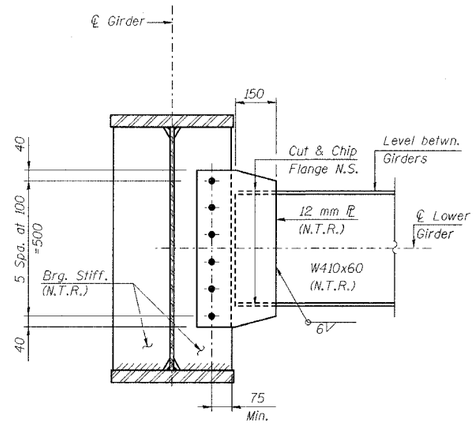
Girder	℄ Brg. Abut. F	℄ F.S. 1	℄ Pier F1	℄ F.S. 2	℄ S. Brg. Pier 2
1	186.307	186.454	186.500	186.548	186.862
2	186.415	186.555	186.591	186.629	186.886
3	186.522	186.656	186.683	186.710	186.913
4	186.629	186.757	186.774	186.792	186.941
5	186.737	186.856	186.864	186.873	186.972
6	186.759	186.868	186.875	186.882	186.969

CAMBER SPACING (Meters)

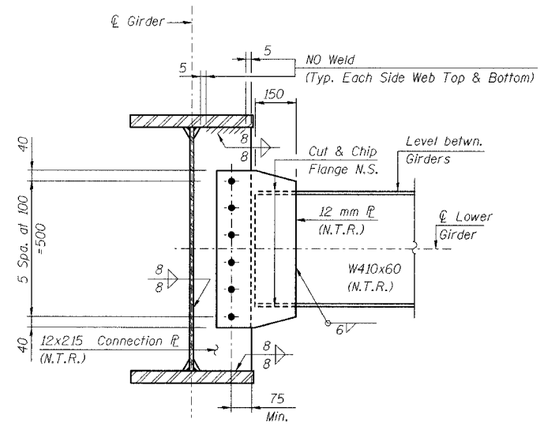
Girder	a1	d1
1	5.608	5.986
2	5.648	5.869
3	5.687	5.752
4	5.727	5.635
5	5.767	5.517
6	5.807	5.400

BEARING SEAT ELEVATIONS (Meters)

Girder	℄ Brg. Abut. F	℄ Pier F1	℄ S. Brg. Pier 2
1	185.235	185.457	185.790
2	185.343	185.548	185.814
3	185.450	185.640	185.841
4	185.557	185.731	185.869
5	185.665	185.821	185.897
6	185.687	185.821	185.897



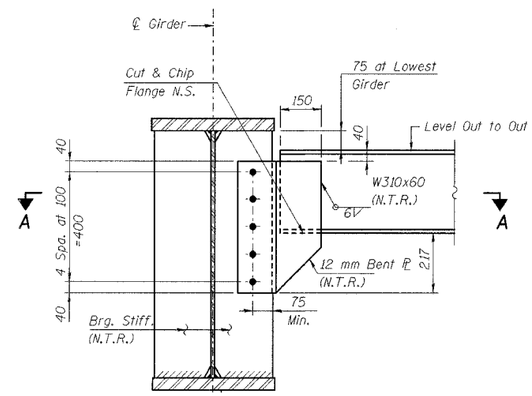
AT BEARING STIFFENER



AT CONNECTION PLATE

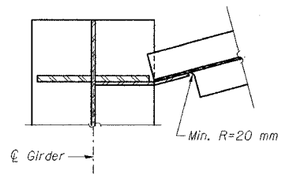
INTERIOR DIAPHRAGM

(At Pier F1 and within Span F1 & F2)
(AASHTO M270M Grade 345, N.T.R.)



END DIAPHRAGM

(At Pier 2 and Abut. F)
(AASHTO M270M Grade 345, N.T.R.)



SECTION A-A

(At Pier 2)

Notes:

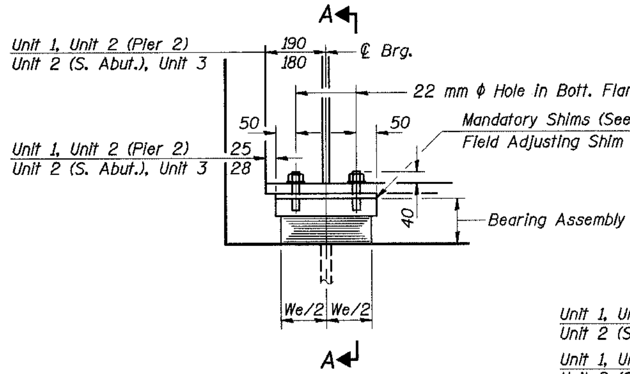
1. All dimensions are in millimeters (mm) except as noted.
2. See Sheet No. 35 of 42 for bearing stiffener details and weld requirements.
3. N.T.R. denotes members to which notch toughness requirements are applicable.
4. All diaphragm connections to have 28 mm ϕ oversized holes for all M22 H.S. bolts.
5. Two hardened washers shall be required over all oversized holes.

DESIGNED	ML/PJE
CHECKED	MAS
DRAWN	LK
CHECKED	MAS

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
CAMBER, TOP OF WEB ELEVATIONS, & DIAPHRAGM DETAILS - UNIT 3
RAMP F OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2845
DATE 05/16/05
SCALE ---

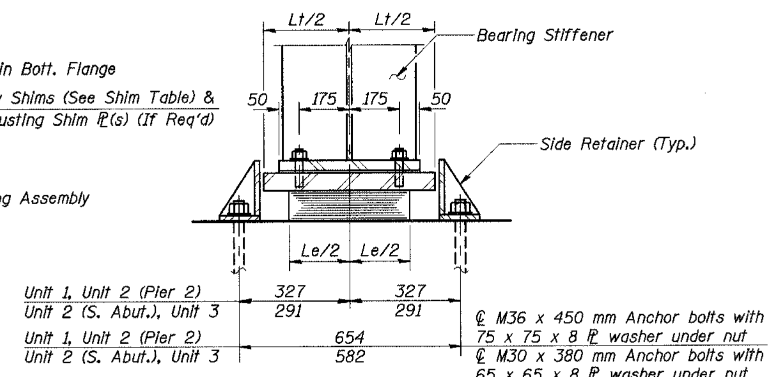
HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION AT S. ABUT., ABUT. F & PIER 2

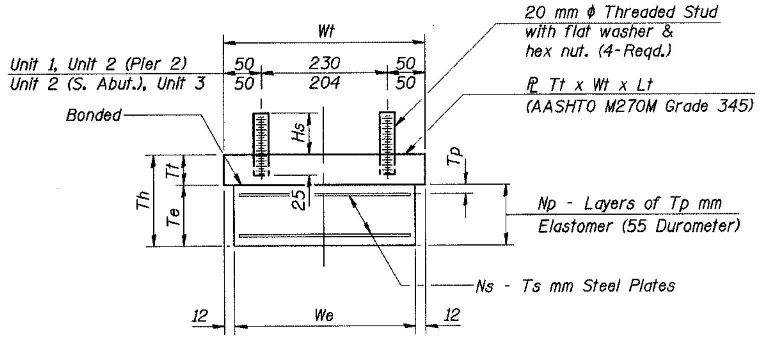
(Looking West)
(Bearings at Abutments shown, Bearings at Piers similar)



SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

(S. Abut., Abut. F, Pier 2)



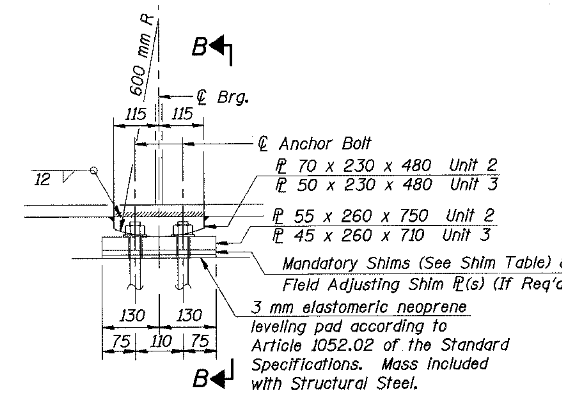
BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.

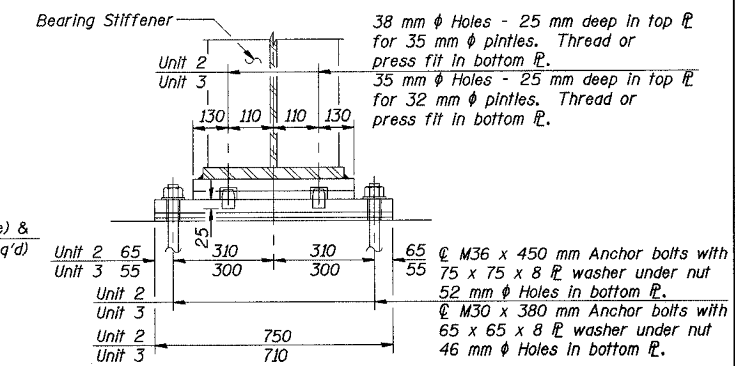
Notes: Anchor bolts at fixed bearings may be built into the masonry.
See sheet No. 42 of 42 sheets for Anchor Bolt Installation.
All dimensions are in millimeters (mm) except as noted.

TYPE I ELASTOMERIC EXP. BRG. LOCATIONS

Unit	Location	No. of Brgs. Req'd
1	Pier 2	12
2	S. Abut.	6
2	Pier 2	6
3	Abut. F	6
3	Pier 2	6



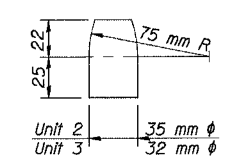
ELEVATION AT PIERS 1 & F1



SECTION B-B

FIXED BEARING

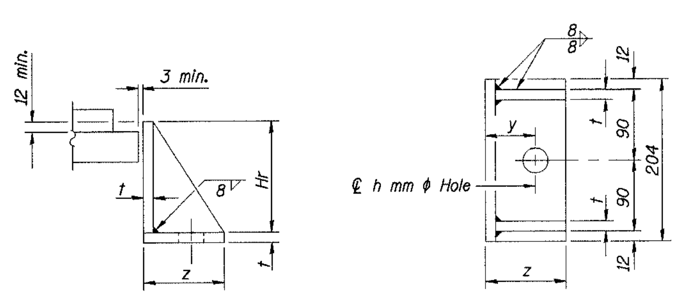
(Pier 1, Pier F1)
(Structural Steel AASHTO M 270M Grade 345.
Mass included with Furnishing Structural Steel)



PINTLE

LOW PROFILE FIXED BRG. LOCATIONS

Unit	Location	No. of Brgs. Req'd
2	Pier 1	6
3	Pier F1	6



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.
Mass included with Furnishing Structural Steel for Units 1 and 2.
Mass included with Furnishing Elastomeric Bearing Type I ($800 in^3 < V < 1000 in^3$) for Unit 3.

SHIM TABLE

Unit	Location	Shim
1	Pier 2, G5	16
1	Pier 2, G7	18
1	Pier 2, G8	8
1	Pier 2, G9	2
1	Pier 2, G12	3
2	Pier 2, G1	22
2	Pier 2, G2	11
2	Pier 2, G3	3
2	Pier 2, G6	4
3	Pier F1, G6	11
3	Pier 2, G5	3

ELASTOMERIC BEARING ASSEMBLY DIMENSIONS

Member	Dimension	Unit				
		1	2		3	
		Pier 2	S. Abut.	Pier 2	Abut. F	Pier 2
Top Plate	Lt	508	456	508	456	456
	Wt	330	304	330	304	304
	Tt	55	50	50	50	50
Bearing	Le	458	406	458	406	406
	We	306	280	306	280	280
	Te	128	93	109	77	77
	Tp	14	13	14	13	13
	Np	7	6	6	5	5
	Ts	5	3	5	3	3
	Ns	6	5	5	4	4
	Th	183	143	159	127	127
Side Retainer	y	70	60	70	60	60
	z	140	120	140	120	120
	t	16	14	16	14	14
	h	44	38	44	38	38
	Hr	179	141	155	125	125
Threaded Stud	Hs	76	71	71	91	91

BILL OF MATERIAL

Item	Unit	Quantity
Furnishing Elastomeric Bearing Assembly, Type I	Each	24
Furnishing Elastomeric Bearing Type I ($800 in^3 < V < 1000 in^3$)	Each	12

DESIGNED	TRL
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

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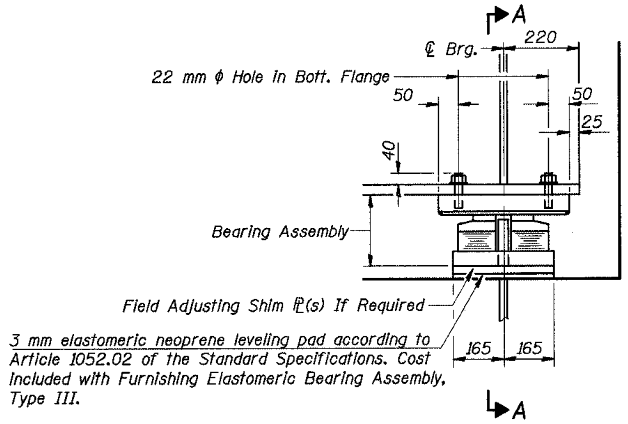
ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
ELASTOMERIC EXP. BRGS. TYPE I
& LOW PROFILE FIXED BRGS.
SB IL ROUTE 394 / RAMP F OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800/2845
DATE 05/16/05
SCALE ---
HNTB

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	53
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

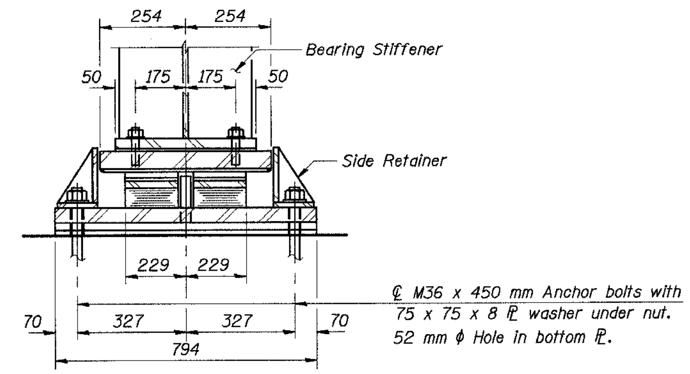
SHEET NO. 38
42 SHEETS

* 2004-133F CONTRACT NO. 62898

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



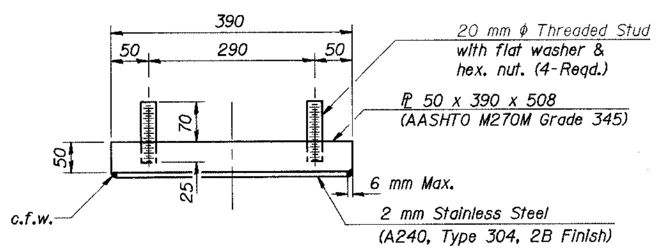
ELEVATION AT N. ABUT.
(Looking West)



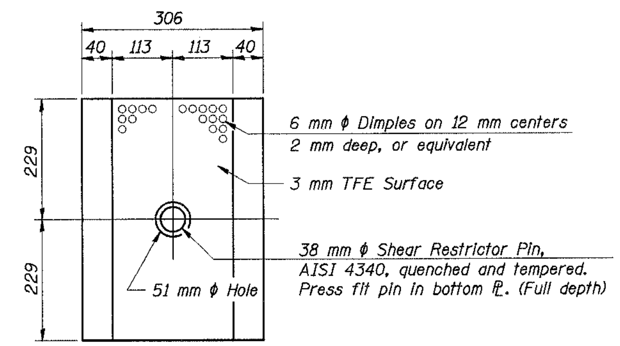
SECTION A-A

TYPE III ELASTOMERIC EXP. BRG.
(N. Abut.)

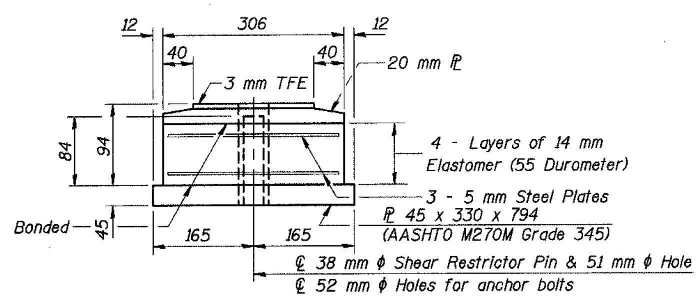
Notes: See sheet No. 42 of 42 for Anchor Bolt Installation.
All dimensions are in millimeters (mm) except as noted.



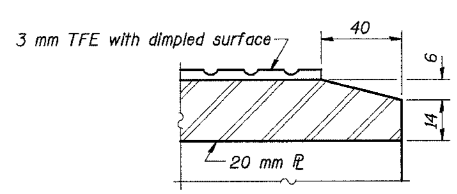
TOP BEARING ASSEMBLY



PLAN-TFE ELASTOMERIC BRG.

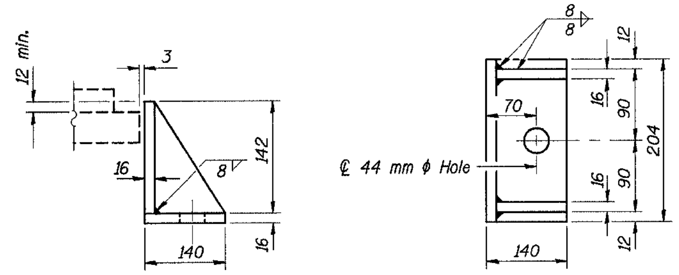


BOTTOM BEARING ASSEMBLY

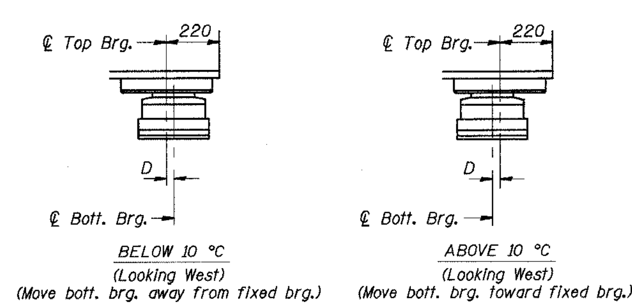


SECTION THRU TFE

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



SIDE RETAINER
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.
Mass included with Furnishing Structural Steel.



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.

TYPE III ELASTOMERIC EXP. BRG. LOCATIONS

Unit	Location	No. of Brgs. Req'd
1	N. Abut.	9

BILL OF MATERIAL

Item	Unit	Quantity
Furnishing Elastomeric Bearing Assembly, Type III	Each	9

DESIGNED	TRL
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
ELASTOMERIC EXPANSION BEARINGS TYPE III
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---
HNTB

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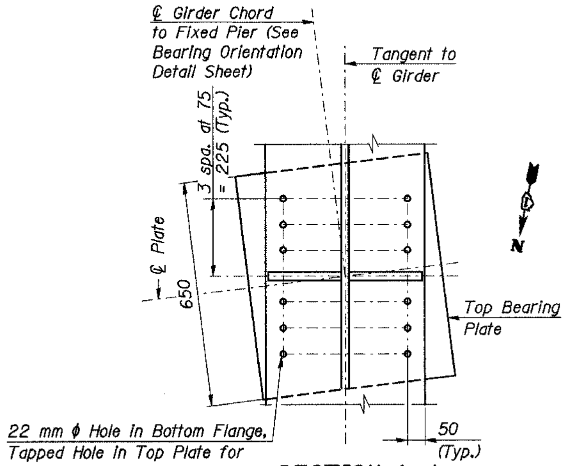
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	54
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

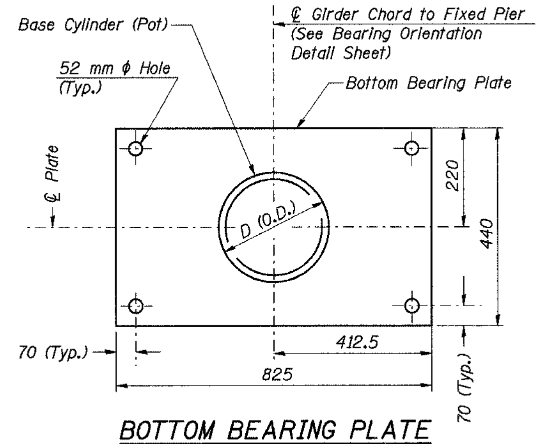
* 2004-133F CONTRACT NO. 62898

SHEET NO. 39 42 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

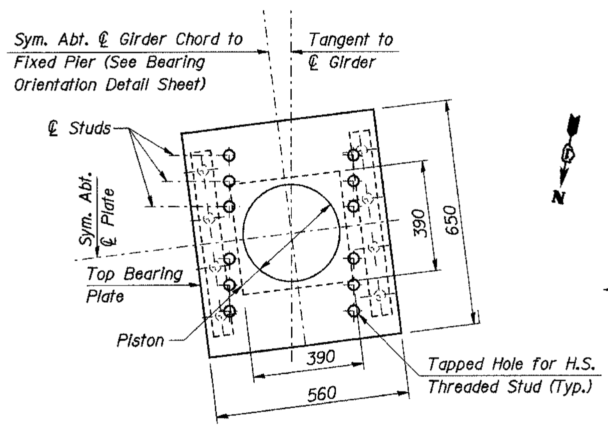


SECTION A-A



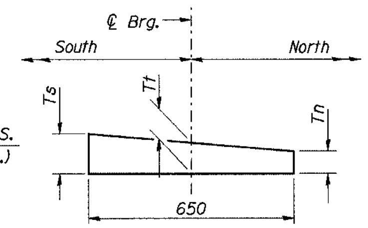
BOTTOM BEARING PLATE AND BASE CYLINDER PLAN

Note: Bottom Plate and cylinder are parallel to ℄ Girder Chord, and not parallel to ℄ Girder.

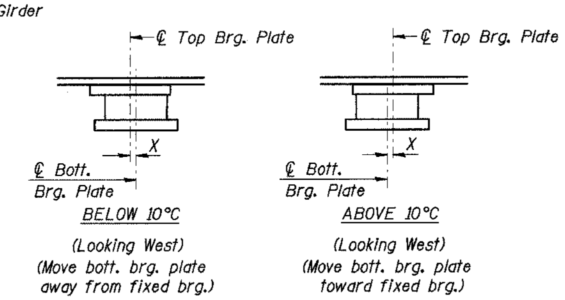


TOP BEARING PLATE AND PISTON PLAN

Note: Plate and piston are parallel to ℄ Girder Chord, and not parallel to ℄ Girder.

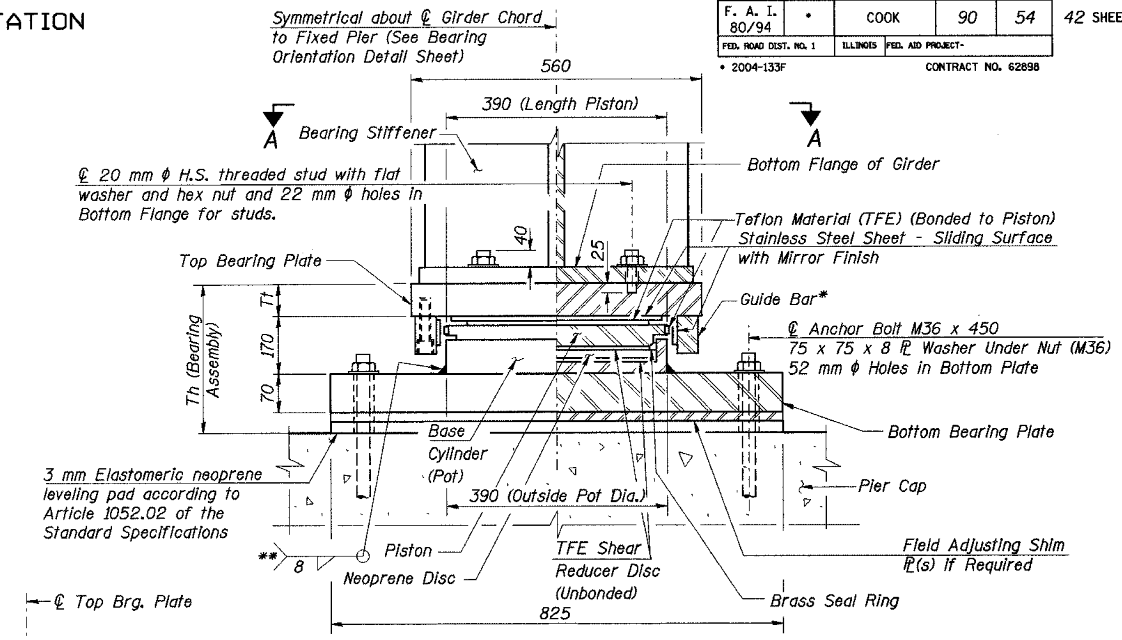


TOP BEARING PLATE BEVEL



SETTING ANCHOR BOLTS AT EXP. BEARINGS

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



HALF SECTION THRU GUIDED EXPANSION BEARING

(Pier 4)

Note: Tt and Th are measured at ℄ Bearing
Th includes 3 mm 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.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing Floating Bearings, Guided Expansion, 2000 kN	Each	10

BEARING ASSEMBLY DIMENSIONS

Member	Dimension	Location - Pier 4									
		Girder 1	Girder 2	Girder 4	Girder 5	Girder 6	Girder 7	Girder 8	Girder 10	Girder 11	Girder 12
Top Plate	Tn	60	60	60	60	60	60	60	60	60	60
	Tt	65	65	63	63	63	63	63	63	63	63
	Ts	70	70	65	65	65	65	65	65	65	65
Bearing Assembly	Th	308	308	306	306	306	306	306	306	306	306

Notes:
1. All dimensions are in millimeters (mm) except as shown.
2. The structural steel for the top and bottom bearing plates shall be AASHTO M 270M Grade 345.
3. Cost of top and bottom bearing plates, 3mm Elastomeric Neoprene, shim plates and threaded studs with washer shall be included with Floating Bearings.
4. See sheet No. 42 of 42 sheets for Anchor Bolt Installation.

FLOATING EXP. BRG. LOCATIONS

Unit	Location	No. of Brgs. Req'd
1	Pier 4	10

BEARING DESIGN INFORMATION

Design Information	Location Pier 4
Vertical Design Load (kN)	1985
Pay Item Size (kN)	2000
Total Required Movement (mm)	104

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

DESIGNED	TRL
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

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

FLOATING EXPANSION BEARINGS

SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800

DATE 05/16/05
SCALE ---

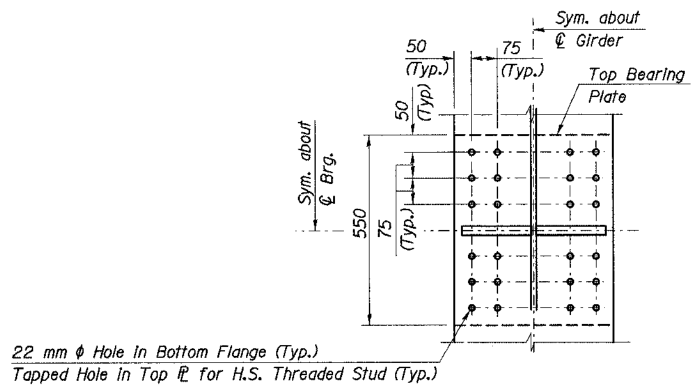
HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

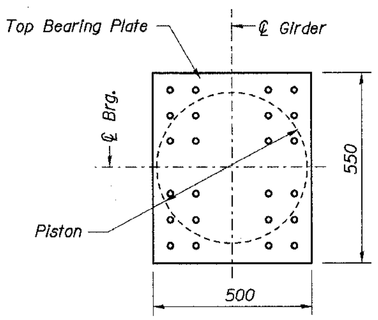
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	55

FED. ROAD DIST. NO. 1 | ILLINOIS | FED. AID PROJECT-
* 2004-133F CONTRACT NO. 62898

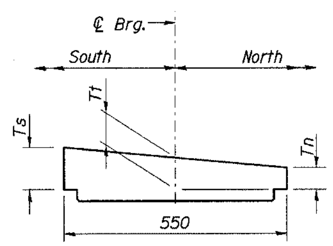
SHEET NO. 40
42 SHEETS



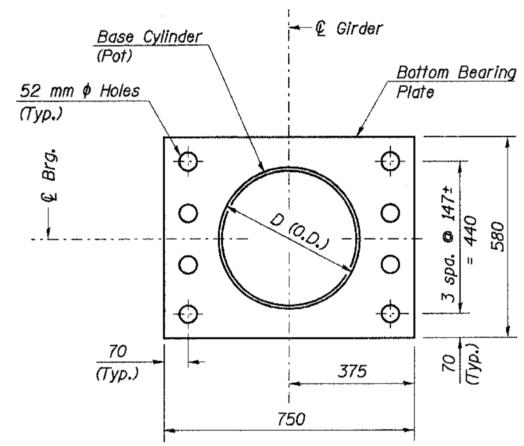
SECTION A-A



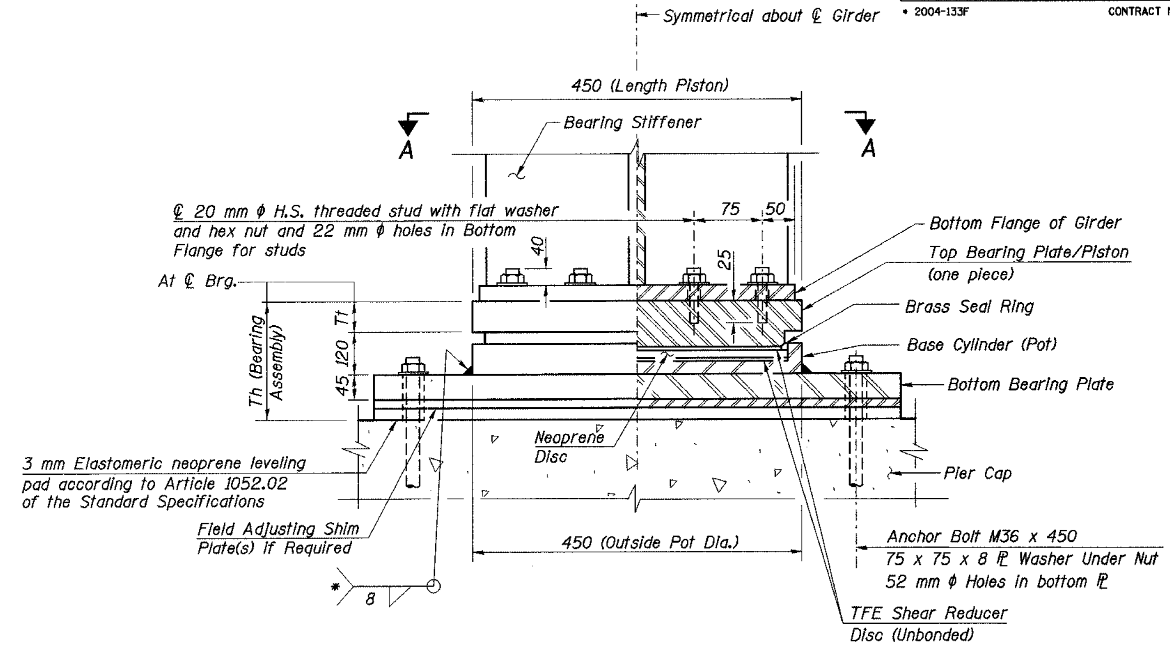
TOP BEARING PLATE / PISTON PLAN



TOP BEARING PLATE / PISTON BEVEL



BOTTOM BEARING PLATE AND BASE CYLINDER PLAN



HALF SECTION THRU FIXED BEARING
(Pier 3)
* Weld may be omitted if base cylinder is recessed into bottom bearing plate

BEARING ASSEMBLY DIMENSIONS

Member	Dimension	Location - Pier 3											
		Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6	Girder 7	Girder 8	Girder 9	Girder 10	Girder 11	Girder 12
Top Plate	Tn	75	70	70	70	70	70	70	70	70	70	70	70
	Tt	73	70	70	70	70	70	70	70	73	73	73	73
	Ts	70	70	70	70	70	70	70	70	75	75	75	75
Bearing Assemby	Th	241	238	238	238	238	238	238	238	241	241	241	241

BEARING DESIGN INFORMATION

Design Information	Location Pier 3
Vertical Design Load (kN)	2038
Pay Item Size (kN)	2250
Longitudinal Lateral Load (kN)	735

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

FLOATING FIXED BRG. LOCATIONS

Unit	Location	No. of Brgs. Req'd
1	Pier 3	12

Notes:
1. All dimensions are in millimeters (mm) except as shown.
2. The structural steel for the top bearing plate/piston and bottom bearing plate shall be AASHTO M 270M Grade 345.
3. Cost of top and bottom bearing plates, 3 mm elastomeric neoprene, and threaded studs with washer shall be included in Floating Bearings.
4. For anchor bolt type and details, see Sht. No. 42 of 42 sheets.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing Floating Bearings, Fixed, 2250 kN	Each	12

DESIGNED	TRL
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

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

FLOATING FIXED BEARINGS

SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800

DATE 05/16/05
SCALE ---

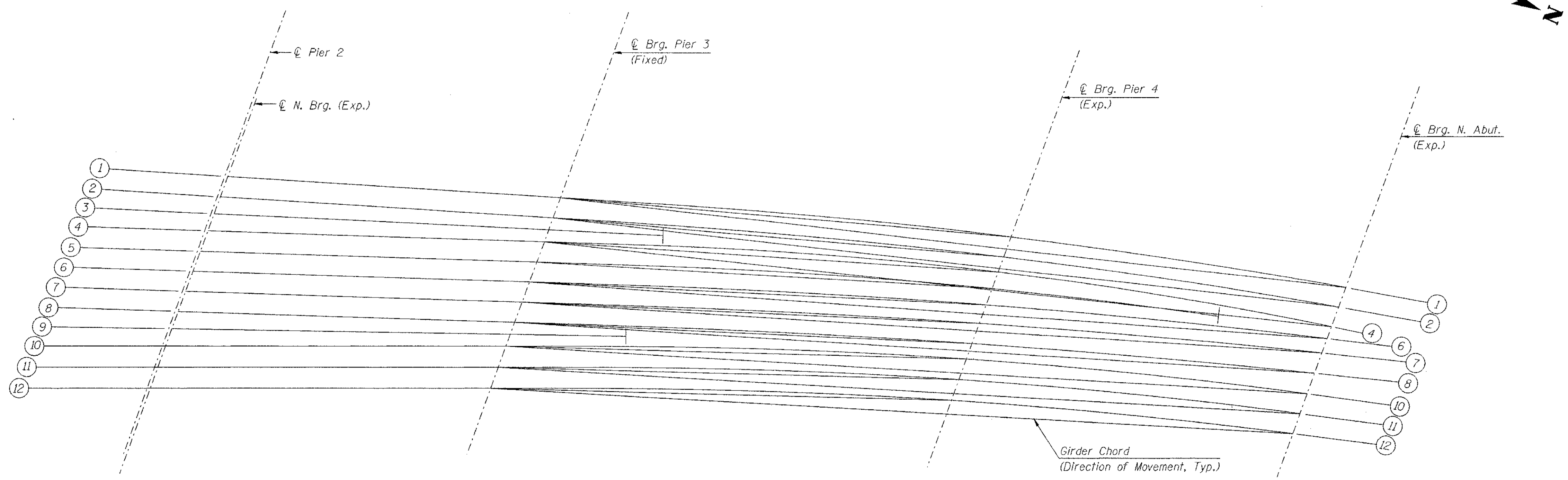
HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	56
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

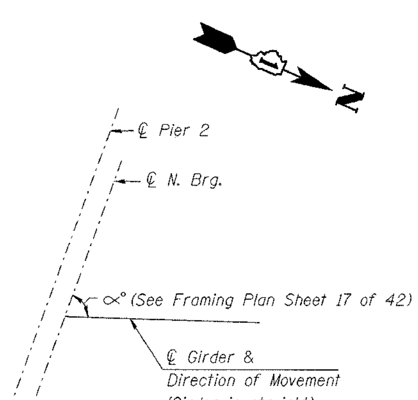
SHEET NO. 41
42 SHEETS

* 2004-133F
CONTRACT NO. 62698

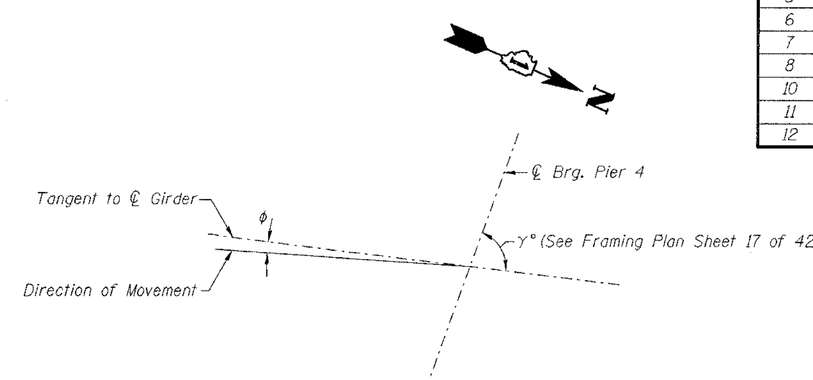


BEARING LAYOUT PLAN - UNIT 1

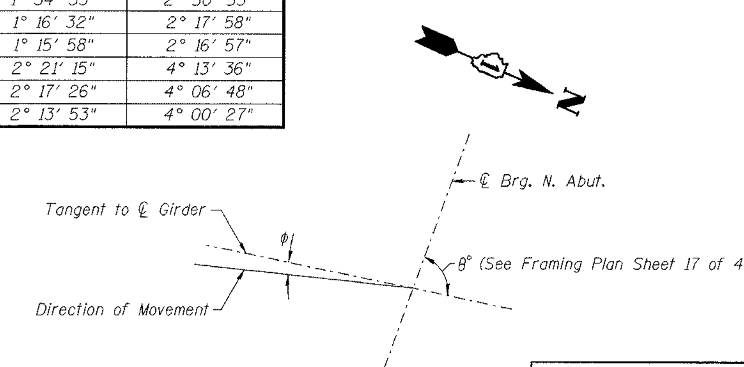
Girder	φ	
	Pier 4	N. Abut.
1	2° 04′ 17″	3° 43′ 44″
2	2° 01′ 21″	3° 38″ 28″
4	3° 06′ 05″	5° 33′ 55″
5	2° 22′ 06″	---
6	1° 34′ 53″	2° 50′ 53″
7	1° 16′ 32″	2° 17′ 58″
8	1° 15′ 58″	2° 16′ 57″
10	2° 21′ 15″	4° 13′ 36″
11	2° 17′ 26″	4° 06′ 48″
12	2° 13′ 53″	4° 00′ 27″



PIER 2



PIER 4



N. ABUT.

BEARING ORIENTATION

DESIGNED	TRL
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

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ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
BEARING ORIENTATION DETAILS
SPANS 3-5 - UNIT 1
SB IL ROUTE 394 OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800
DATE 05/16/05
SCALE ---

HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

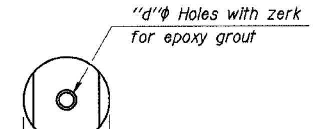
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	57
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

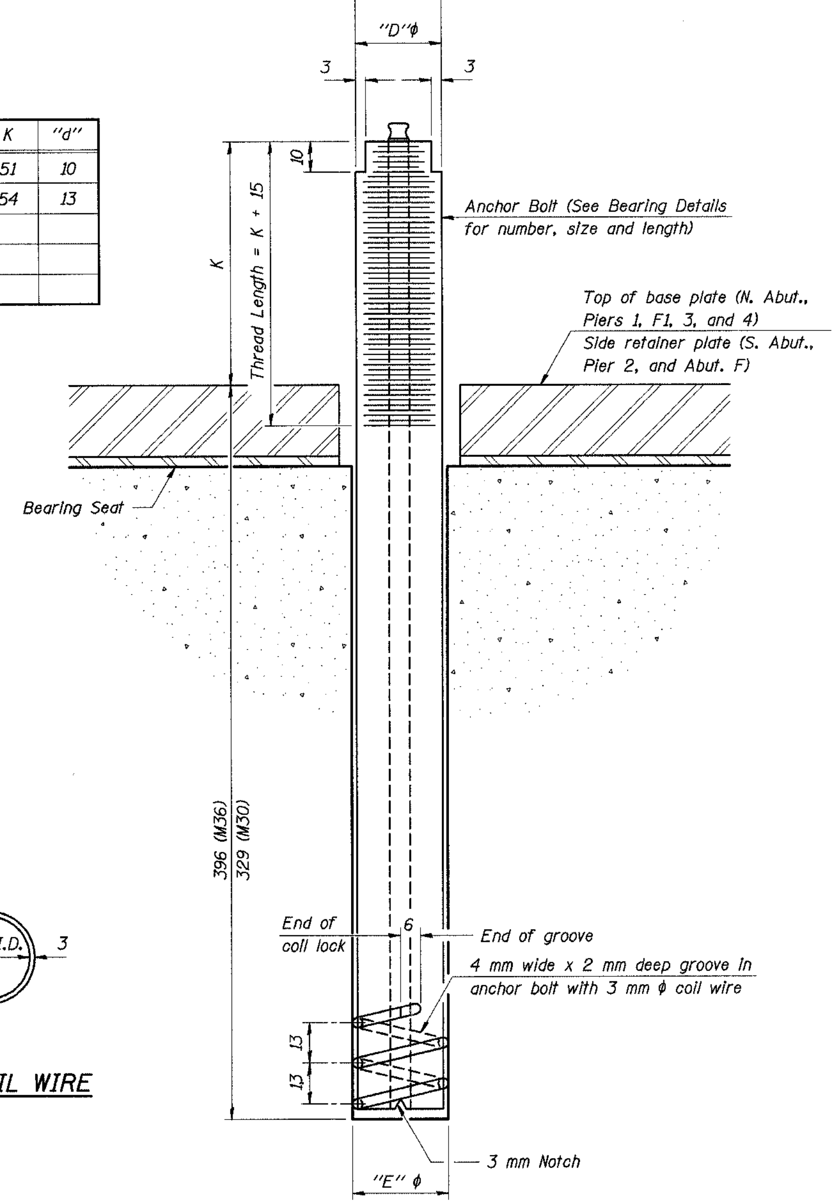
SHEET NO. 42
42 SHEETS

* 2004-133F   CONTRACT NO. 62898

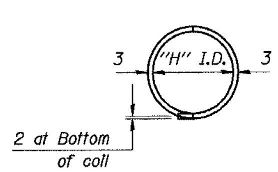
The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
30	33	26	51	10
36	39	32	54	13





ILLINOIS COIL-LOCK ANCHOR BOLT



PLAN-COIL WIRE

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system comforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

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

2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

1. *A threaded rod stud with nut and washer of the type specified.*
2. *A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.*

LOCATION		TYPE
Unit 1	Pier 2	M36 x 450mm (A307)
	Pier 3	M36 x 450mm (A307)
	Pier 4	M36 x 450mm (A307)
	N. Abut.	M36 x 450mm (A307)
Unit 2	S. Abut.	M30 x 380mm (A307)
	Pier 1	M36 x 450mm (A307)
	Pier 2	M36 x 450mm (A307)
Unit 3	Abut. F	M30 x 380mm (A307)
	Pier F1	M30 x 380mm (A307)
	Pier 2	M30 x 380mm (A307)

ASTM F 1554 (Fy = 724 MPa), ASTM A 449 and AASHTO M 314 (Fy = 724 MPa) anchor bolts may be substituted for the anchor bolts shown above.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing & Erecting Structural Steel".

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

THIS SHEET FOR INFORMATION ONLY

DESIGNED	TRL
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

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

ANCHOR BOLT DETAILS

SB IL ROUTE 394 / RAMP F OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2800/2845

DATE 05/16/05
SCALE ---

HNTB

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	58
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

• 2004-133F CONTRACT NO. 62898

SHEET NO. 1 21 SHEETS

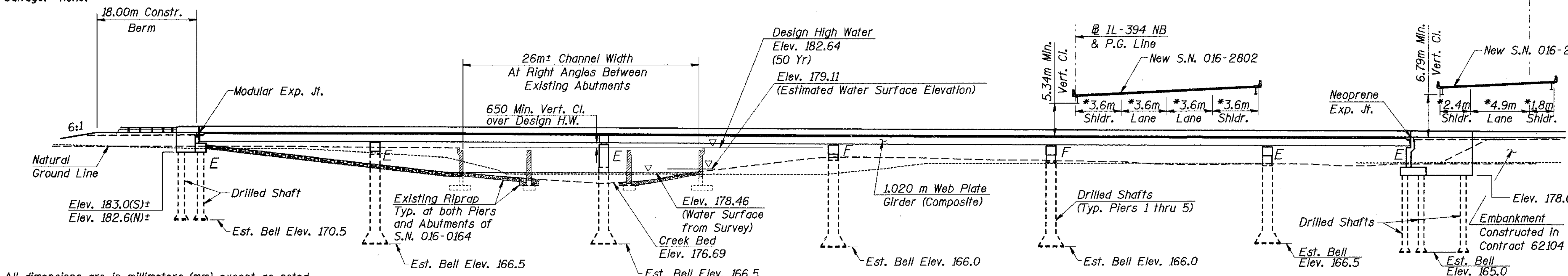
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

Benchmark: TBM #316 Set cut box on foundation of overhead sign truss (C3) NE corner of exit ramp to I-80 westbound: approximately mile marker 74.30 Elev. = 183.274

Existing Structure: S.N. 016-0164, three-span continuous 39.49 m Bk. to Bk. abutments, variable width from 21.60 m to 23.4 m out-to-out. Haunched R.C. slab on multicolumn piers and closed abutments founded on timber piles. Built as S.A. Route 66, Sec. 066-0303.1-MFT at Station 4+61.67 (English) in 1945. Bridge was widened in 1969 and deck was rehabilitated in 1995. The Contractor shall remove in stages the existing superstructure and substructure and replace with new structures (SN 016-2807, 2800/2845) while maintaining traffic on the existing structure using staged construction.

Salvage: None.

* At Right Angles to ℄ Roadway



ELEVATION

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

Staging: Prior to the beginning of construction of the new bridge, the two existing lanes of EB I-94 traffic will be shifted to the southern half of the existing bridge. The SB IL394 Traffic will be shifted to the new NB IL394 lanes. The northern half of the existing bridge will then be removed and construction of the new bridge will begin.

LOADING MS18 & ALT.

Allow 2.4 kN/m² for future wearing surface.

DESIGN SPECIFICATIONS

2002 AASHTO

2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges

DESIGN STRESSES

FIELD UNITS

f'_c = 24 MPa

f_y = 400 MPa (reinforcement)

f_y = 345 MPa (structural steel) (M270M Grade 345)

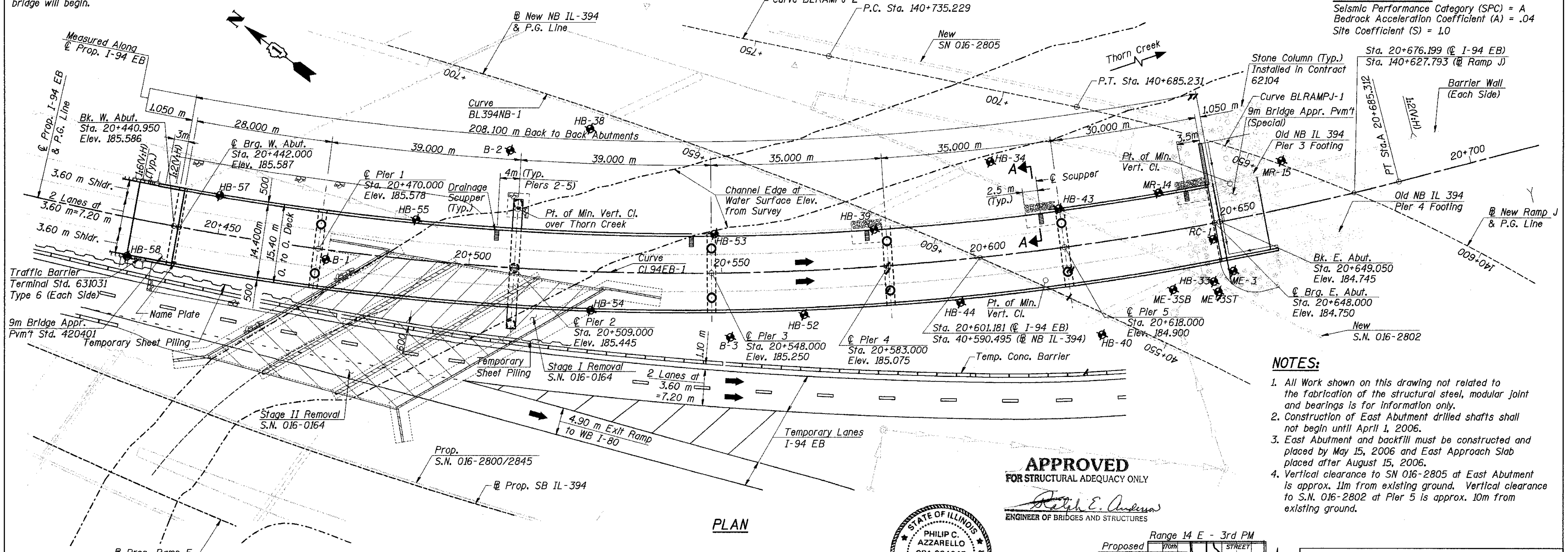
f_y = 250 MPa (structural steel) (M270M Grade 250)

SEISMIC DATA

Seismic Performance Category (SPC) = A

Bedrock Acceleration Coefficient (A) = .04

Site Coefficient (S) = 1.0



PLAN

NOTES:

1. All Work shown on this drawing not related to the fabrication of the structural steel, modular joint and bearings is for information only.
2. Construction of East Abutment drilled shafts shall not begin until April 1, 2006.
3. East Abutment and backfill must be constructed and placed by May 15, 2006 and East Approach Slab placed after August 15, 2006.
4. Vertical clearance to SN 016-2805 at East Abutment is approx. 11m from existing ground. Vertical clearance to S.N. 016-2802 at Pier 5 is approx. 10m from existing ground.

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS PHILIP C. AZZARELLO 081-004245 CHICAGO, ILLINOIS LICENSED STRUCTURAL ENGINEER

Philip C. Azzarello, S.E.
Ill. Reg. No. 081-004245
Expires 11-30-06
5-20-05

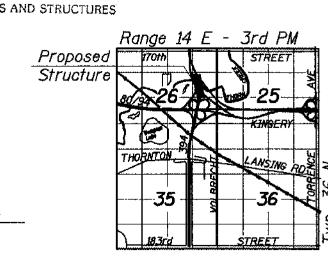
DESIGNED	JJK
CHECKED	PCA
DRAWN	LK
CHECKED	CJH

WATERWAY INFORMATION

Drainage Area = 274.4 km²	Prop. Low Grade Elev. 183.89	@ Sta. 20+100						
	Freq. Yr.	Q m³/s	Opening m² Exist.	Opening m² Prop.	Nat. H.W.E.	Head-m. Exist.	Head-m. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	124.6		201.3	181.94		0.01		181.95
Design	50	188.3		264.3	182.64		0.02		182.66
Base	100	213.5		294.8	182.94		0.02		182.96
Max. Calc.	500	280.3		328.6	183.74		0.02		183.76

LEGEND

- Existing Fence
- Existing Drainage Pipe
- Existing Manhole
- Existing Inlet
- Existing Catch Basin
- Boring
- Structure Removal



LOCATION SKETCH

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

GENERAL PLAN & ELEVATION

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	59
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 2
21 SHEETS

* 2004-133F
CONTRACT NO. 62898

GENERAL NOTES

THESE PLANS ARE FOR THE FABRICATION OF THE STRUCTURAL STEEL, BEARINGS AND MODULAR EXPANSION JOINT ALL WORK SHOWN THAT IS NOT RELATED TO THE FABRICATION IS FOR INFORMATION ONLY, IS NOT INCLUDED IN THIS CONTRACT, AND IS IDENTIFIED AS "NOT IN CONTRACT".

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

2. Fasteners shall be high strength bolts. Bolts M 22, open holes 24 mm ϕ, unless otherwise noted.

3. Calculated mass of structural steel = 605,650 kg for M 270M Grade 345 and 2,440 kg for M 270M Grade 250.

4. The organic zinc rich primer / epoxy / urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception that masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the field. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Reddish Brown, Munsell No. 2.5YR 3/4. See Special Provision for "Cleaning and Painting New Metal Structures."

* 5. Field welding of construction accessories will not be permitted to the beams or girders.

* 6. Anchor bolts shall be set before bolting diaphragms over supports.

7. The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the tension flanges and webs, the diaphragms and connection plates, and all splice plate material except fill plates.

* 8. Reinforcement bars shall conform to the requirements of AASHTO M 31M or M 322M Grade 400.

* 9. The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.

10. 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.

* 11. Bridge Seat Sealer shall be applied to the seat area of the West and East Abutments.

* 12. When the deck pour is stopped for the day at one or more of the transverse Bonded Construction Joints in the deck Pouring Sequence as shown, the next pour shall not be made until both of the following requirements are met:
   1. At least 72 hours shall have elapsed from the end of the previous pour.
   2. The concrete strength shall have attained a minimum flexural strength of 4.5 MPa or a minimum compressive strength of 24 MPa.

* 13. All construction joints shall be bonded.

* 14. The existing bearing structural steel coating may contain lead based paint. The Contractor should take appropriate precautions to deal with the presence of lead on this project. No additional compensation will be made to properly dispose of items containing lead.

* THIS WORK IS NOT INCLUDED IN THIS FABRICATION CONTRACT AND IS PROVIDED FOR INFORMATION ONLY.

INDEX OF DRAWINGS

Sht. No.	Sht. Title
1	General Plan & Elevation
2	General Notes, Index & Quantities
3	Offset Sketch, Profiles & Curve Data
4	Top of Slab Elevation Grid
5-7	Top of Slab Elevation
8	Deck Cross Section & Details
9	Modular Expansion Joint Details
10-11	Framing Plan & Girder Elevation
12	Girder Layout
13	Miscellaneous Structural Steel Details
14	Diaphragm Details
15	Camber and Top of Web Elevations
16	Pier 2 Cap Beam Details
17	Pier 2 Bearing Details
18	Floating Fixed Bearings
19	Floating Expansion Bearings
20	Bearing Orientation Details
21	Anchor Bolt Details

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Furnishing Structural Steel	L Sum	0.28	---	0.28
Furnishing Floating Bearings, Guided Expansion 750 kN	Each	---	12	12
Furnishing Floating Bearings, Guided Expansion 1250 kN	Each	---	2	2
Furnishing Floating Bearings, Guided Expansion 1500 kN	Each	---	12	12
Furnishing Floating Bearings, Guided Expansion 8000 kN	Each	---	1	1
Furnishing Floating Bearings, Fixed 1500 kN	Each	---	12	12
Furnishing Modular Expansion Joint 160 mm	Meter	14.7	---	14.7
Storage of Structural Steel (a)	Unit	912	---	912
Storage of Floating Bearings (b)	Cal Da	---	15	15
Storage of Modular Expansion Joints (c)	Cal Da	45	---	45

(a) For Storage of Structural Steel, one Unit shall be equal to 5 metric tons. The quantity was calculated based on the assumption that 25% of the steel mass is stored for 30 calendar days.

(b) 15 Calendar Days was estimated for storage of bearings to establish unit bid price.

(c) 45 Calendar Days was estimated for Storage of Modular Expansion Joint to establish unit bid price.

DESIGNED	PCA
CHECKED	JJK
DRAWN	LK
CHECKED	PCA

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

GENERAL NOTES, INDEX & QUANTITIES

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

jkolis
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	60
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

* 2004-133F CONTRACT NO. 62898

SHEET NO. 3
21 SHEETS

CURVE DATA CL94EB-1

PI STA. = 20+452.899
Δ = 51°-16'-46"
D = 10°-13'-53"
R = 560.000 m
T = 268.785 m
L = 501.197 m
E = 61.164 m
S.E. = 6.0%
PC STA. = 20+184.114
PT STA. = 20+685.312
S.E. IN = STA. 20+148 to STA. 20+206
S.E. OUT = STA. 20+664 to STA. 20+712

CURVE DATA BL394NB-1

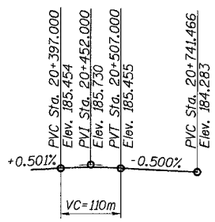
PI STA. = 40+402.644
Δ = 38°-44'-03"
D = 5°-43'-47"
R = 1,000.000 m
T = 351.510 m
L = 676.039 m
E = 59.981 m
S.E. = 4.8%
PC STA. = 40+051.134
PT STA. = 40+727.173
S.E. IN = STA. 40+000 to STA. 40+081
S.E. OUT = STA. 40+708 to STA. 40+821

CURVE DATA BLRAMPJ-1

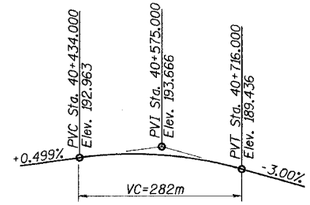
PI STA. = 140+553.29
Δ = 115°-02'-32"
R = 302.000 m
T = 474.431 m
L = 606.376 m
E = 260.395 m
PC STA. = 140+078.859
PT STA. = 140+685.231
S.E. Transition: 0.02 m/m @ STA. 140+000 to 0.06 m/m @ STA. 140+090
Full S.E. = 0.06 m/m from STA. 140+090 to STA. 140+625

CURVE DATA BLRAMPJ-2

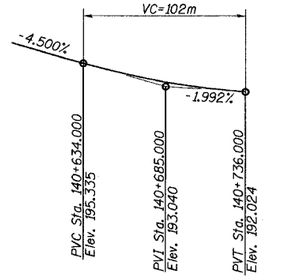
PI STA. = 140+781.248
Δ = 2°-38'-11"
R = 2,000.000 m
T = 46.019 m
L = 92.022 m
E = 0.529 m
PC STA. = 140+735.229
PT STA. = 140+827.252
S.E. Transition: 0.06 m/m @ STA. 140+625 to 0.00 m/m @ STA. 140+707.5
From 0.0 m/m @ Sta 140+707.5 to 0.02 m/m @ STA. 140+735
Constant S.E. 0.02 m/m from STA. 140+735



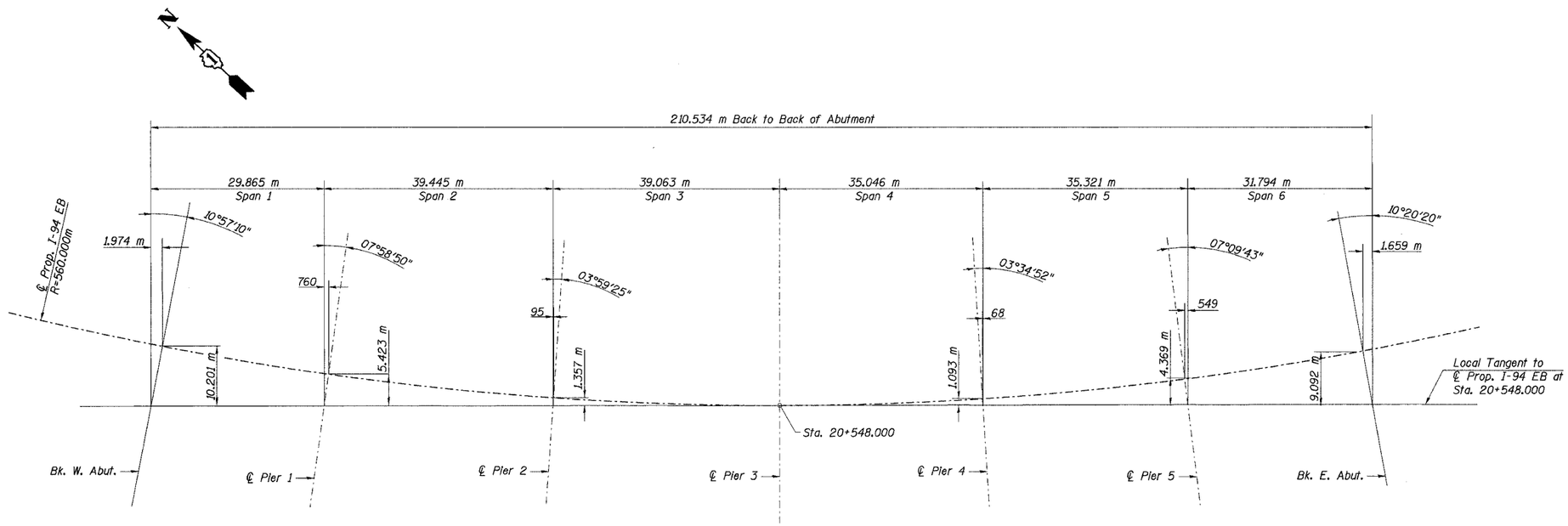
PROPOSED PROFILE GRADE I-94 EB



PROFILE GRADE IL RTE. 394 NB



PROFILE GRADE RAMP J



OFFSET SKETCH

NOTES:

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

DESIGNED	JJK
CHECKED	PCA
DRAWN	LK
CHECKED	CJH

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
OFFSET SKETCH, PROFILES & CURVE DATA
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

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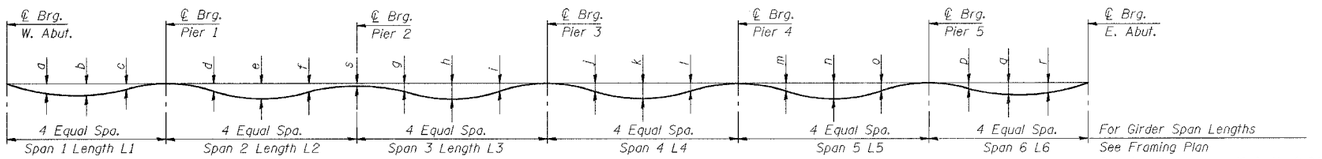
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	61
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

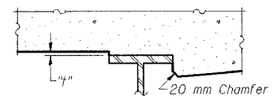
SHEET NO. 4
21 SHEETS

• 2004-133F
CONTRACT NO. 62898

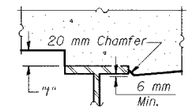


DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of slab & parapet-no future wearing surface)



At Minimum Fillet



At Maximum Fillet

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

DEAD LOAD DEFLECTION TABLE

(Values in Millimeters)

Girder No. \ Deflection	Span 1 (L1)			Span 2 (L2)			Pier 2	Span 3 (L3)			Span 4 (L4)			Span 5 (L5)			Span 6 (L6)		
	a	b	c	d	e	f	s	g	h	i	j	k	l	m	n	o	p	q	r
1	10	11	4	18	29	17	4	17	29	17	7	15	9	10	17	9	9	19	16
2	11	12	5	19	31	18	3	17	30	19	8	16	10	11	18	10	10	21	18
3	11	13	5	20	32	17	1	17	32	20	9	17	10	11	19	10	11	23	19
4	12	13	5	20	33	18	1	18	33	20	9	18	10	12	20	11	12	23	19
5	12	13	5	21	33	19	3	18	33	20	9	18	10	12	20	11	12	24	20
6	12	13	5	21	34	19	3	19	33	20	9	18	10	12	20	10	12	24	20

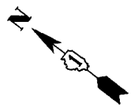
Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown in the "Top of Slab Elevations" tables. All offsets shown in the "Top of Slab Elevations" tables are in meters.

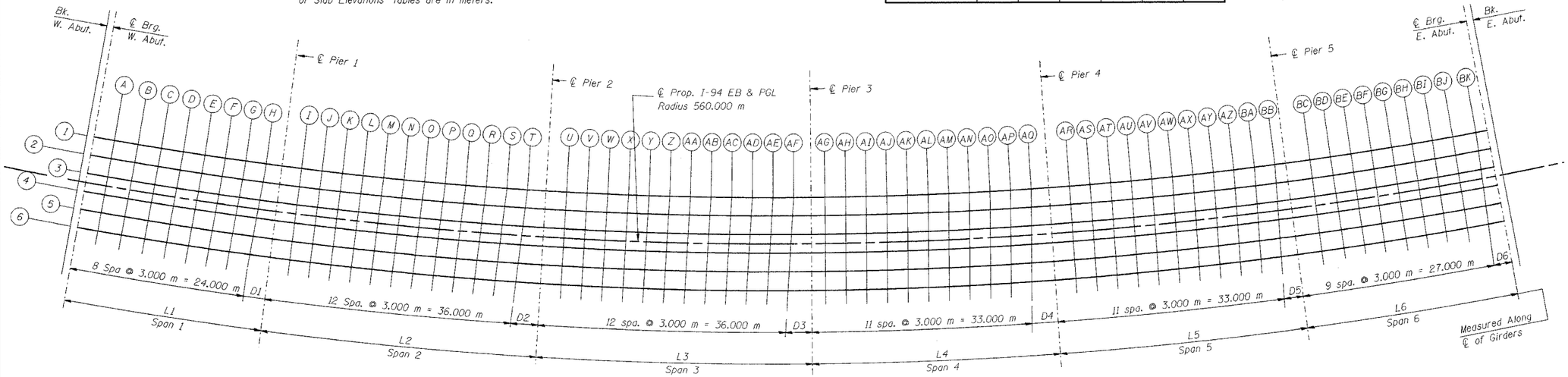
END OF SPAN DIMENSIONS

(Values in Meters)

Girder	D1	D2	D3	D4	D5	D6
1	3.665	2.533	2.533	1.581	1.581	2.641
2	3.799	2.720	2.720	1.748	1.748	2.784
3	3.933	2.907	2.907	1.916	1.916	2.928
4	4.067	3.093	3.093	2.084	2.084	3.072
5	4.021	3.280	3.280	2.251	2.251	3.215
6	4.335	3.467	3.467	2.419	2.419	3.359

FILLET HEIGHTS





ELEVATION GRID

Notes:

1. Work this sheet with Sheet Nos. 5, 6 & 7 of 21 sheets.
2. All dimensions are in millimeters (mm) unless otherwise noted.

THIS SHEET FOR INFORMATION ONLY

DESIGNED	R.A.
CHECKED	M.R.
DRAWN	R.A.
CHECKED	M.R / H.T.

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

TOP OF SLAB ELEVATION GRID

EB I-94 OVER THORN CREEK
F.A.I. 94 SECTION 2004-133F
COOK COUNTY
STA. 20+809.000 STRUCTURE NO. 016-2807

DATE: 05/16/05
SCALE: NTS

Soodan

Soodan & Associates, Inc.
100 North LaSalle Street, Suite 1800
Chicago, Illinois 60602

ikalita
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	62
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 5
21 SHEETS

• 2004-133F
CONTRACT NO. 62898

GIRDER 1

Location	Station	Offset (m)	Theoretical Grade Elev.	Theoretical Grade Elev. Adjusted for Dead Load Defln.
Bk. W. Abut.	20+440.950	-6.700	185.185	185.185
℄ Brg. W. Abut.	20+442.000	-6.700	185.186	185.186
A	20+445.037	-6.700	185.188	185.193
B	20+448.073	-6.700	185.190	185.199
C	20+451.109	-6.700	185.190	185.202
D	20+454.146	-6.700	185.190	185.202
E	20+457.182	-6.700	185.189	185.199
F	20+460.218	-6.700	185.187	185.194
G	20+463.255	-6.700	185.185	185.189
H	20+466.291	-6.700	185.181	185.182
℄ Pier 1	20+470.000	-6.700	185.176	185.176
I	20+473.037	-6.700	185.170	185.174
J	20+476.073	-6.700	185.164	185.174
K	20+479.109	-6.700	185.157	185.173
L	20+482.146	-6.700	185.149	185.171
M	20+485.182	-6.700	185.140	185.167
N	20+488.218	-6.700	185.131	185.160
O	20+491.255	-6.700	185.120	185.149
P	20+494.291	-6.700	185.109	185.135
Q	20+497.327	-6.700	185.097	185.118
R	20+500.364	-6.700	185.084	185.099
S	20+503.400	-6.700	185.070	185.079
T	20+506.436	-6.700	185.056	185.061
℄ Pier 2	20+509.000	-6.700	185.043	185.047
U	20+512.037	-6.700	185.028	185.033
V	20+515.073	-6.700	185.013	185.023
W	20+518.109	-6.700	184.997	185.013
X	20+521.145	-6.700	184.982	185.003
Y	20+524.182	-6.700	184.967	184.993
Z	20+527.218	-6.700	184.952	184.980
AA	20+530.254	-6.700	184.937	184.965
AB	20+533.291	-6.700	184.922	184.948
AC	20+536.327	-6.700	184.906	184.927
AD	20+539.363	-6.700	184.891	184.906
AE	20+542.400	-6.700	184.876	184.884
AF	20+545.436	-6.700	184.861	184.864
℄ Pier 3	20+548.000	-6.700	184.848	184.848
AG	20+551.036	-6.700	184.833	184.834
AH	20+554.073	-6.700	184.818	184.822
AI	20+557.109	-6.700	184.802	184.810
AJ	20+560.145	-6.700	184.787	184.799
AK	20+563.182	-6.700	184.772	184.786
AL	20+566.218	-6.700	184.757	184.772
AM	20+569.254	-6.700	184.742	184.756
AN	20+572.291	-6.700	184.727	184.738
AO	20+575.327	-6.700	184.711	184.718
AP	20+578.363	-6.700	184.696	184.699
AQ	20+581.400	-6.700	184.681	184.682
℄ Pier 4	20+583.000	-6.700	184.673	184.673
AR	20+586.037	-6.700	184.658	184.660
AS	20+589.073	-6.700	184.643	184.649
AT	20+592.109	-6.700	184.627	184.637
AU	20+595.146	-6.700	184.612	184.626
AV	20+598.182	-6.700	184.597	184.613
AW	20+601.218	-6.700	184.582	184.599
AX	20+604.255	-6.700	184.567	184.582
AY	20+607.291	-6.700	184.552	184.564
AZ	20+610.327	-6.700	184.536	184.544
BA	20+613.364	-6.700	184.521	184.524
BB	20+616.400	-6.700	184.506	184.506
℄ Pier 5	20+618.000	-6.700	184.498	184.498
BC	20+621.036	-6.700	184.483	184.486
BD	20+624.073	-6.700	184.468	184.475
BE	20+627.109	-6.700	184.452	184.464
BF	20+630.145	-6.700	184.437	184.454
BG	20+633.182	-6.700	184.422	184.441
BH	20+636.218	-6.700	184.407	184.427
BI	20+639.254	-6.700	184.392	184.410
BJ	20+642.291	-6.700	184.377	184.390
BK	20+645.327	-6.700	184.361	184.368
℄ Brg. E. Abut.	20+648.000	-6.700	184.348	184.348
Bk. E. Abut.	20+649.050	-6.700	184.343	184.343

GIRDER 2

Location	Station	Offset (m)	Theoretical Grade Elev.	Theoretical Grade Elev. Adjusted for Dead Load Defln.
Bk. W. Abut.	20+440.950	-4.020	185.346	185.346
℄ Brg. W. Abut.	20+442.000	-4.020	185.347	185.347
A	20+445.022	-4.020	185.349	185.355
B	20+448.044	-4.020	185.350	185.360
C	20+451.065	-4.020	185.351	185.364
D	20+454.087	-4.020	185.351	185.364
E	20+457.109	-4.020	185.350	185.362
F	20+460.131	-4.020	185.348	185.356
G	20+463.152	-4.020	185.346	185.350
H	20+466.174	-4.020	185.342	185.343
℄ Pier 1	20+470.000	-4.020	185.337	185.337
I	20+473.022	-4.020	185.331	185.335
J	20+476.044	-4.020	185.325	185.336
K	20+479.065	-4.020	185.318	185.336
L	20+482.087	-4.020	185.310	185.334
M	20+485.109	-4.020	185.301	185.330
N	20+488.131	-4.020	185.292	185.323
O	20+491.152	-4.020	185.282	185.312
P	20+494.174	-4.020	185.270	185.297
Q	20+497.196	-4.020	185.258	185.280
R	20+500.217	-4.020	185.246	185.261
S	20+503.239	-4.020	185.232	185.241
T	20+506.261	-4.020	185.217	185.222
℄ Pier 2	20+509.000	-4.020	185.204	185.207
U	20+512.022	-4.020	185.189	185.194
V	20+515.044	-4.020	185.174	185.184
W	20+518.065	-4.020	185.158	185.174
X	20+521.087	-4.020	185.143	185.165
Y	20+524.109	-4.020	185.128	185.155
Z	20+527.130	-4.020	185.113	185.143
AA	20+530.152	-4.020	185.098	185.128
AB	20+533.174	-4.020	185.083	185.111
AC	20+536.195	-4.020	185.068	185.091
AD	20+539.217	-4.020	185.053	185.069
AE	20+542.239	-4.020	185.038	185.047
AF	20+545.260	-4.020	185.022	185.026
℄ Pier 3	20+548.000	-4.020	185.009	185.009
AG	20+551.022	-4.020	184.994	184.995
AH	20+554.043	-4.020	184.979	184.983
AI	20+557.065	-4.020	184.963	184.972
AJ	20+560.087	-4.020	184.948	184.961
AK	20+563.108	-4.020	184.933	184.948
AL	20+566.130	-4.020	184.918	184.934
AM	20+569.152	-4.020	184.903	184.918
AN	20+572.174	-4.020	184.888	184.900
AO	20+575.195	-4.020	184.873	184.881
AP	20+578.217	-4.020	184.858	184.862
AQ	20+581.239	-4.020	184.843	184.844
℄ Pier 4	20+583.000	-4.020	184.834	184.834
AR	20+586.022	-4.020	184.819	184.821
AS	20+589.044	-4.020	184.804	184.810
AT	20+592.065	-4.020	184.788	184.799
AU	20+595.087	-4.020	184.773	184.788
AV	20+598.109	-4.020	184.758	184.776
AW	20+601.131	-4.020	184.743	184.761
AX	20+604.152	-4.020	184.728	184.745
AY	20+607.174	-4.020	184.713	184.726
AZ	20+610.196	-4.020	184.698	184.706
BA	20+613.217	-4.020	184.683	184.687
BB	20+616.239	-4.020	184.668	184.668
℄ Pier 5	20+618.000	-4.020	184.659	184.659
BC	20+621.022	-4.020	184.644	184.647
BD	20+624.044	-4.020	184.629	184.637
BE	20+627.065	-4.020	184.613	184.626
BF	20+630.087	-4.020	184.598	184.616
BG	20+633.109	-4.020	184.583	184.604
BH	20+636.130	-4.020	184.568	184.590
BI	20+639.152	-4.020	184.553	184.573
BJ	20+642.174	-4.020	184.538	184.553
BK	20+645.195	-4.020	184.523	184.531
℄ Brg. E. Abut.	20+648.000	-4.020	184.509	184.509
Bk. E. Abut.	20+649.050	-4.020	184.504	184.504

GIRDER 3

Location	Station	Offset (m)	Theoretical Grade Elev.	Theoretical Grade Elev. Adjusted for Dead Load Defln.
Bk. W. Abut.	20+440.950	-1.340	185.506	185.506
℄ Brg. W. Abut.	20+442.042	-1.340	185.507	185.507
A	20+445.049	-1.340	185.510	185.515
B	20+448.056	-1.340	185.511	185.521
C	20+451.063	-1.340	185.512	185.524
D	20+454.071	-1.340	185.512	185.525
E	20+457.078	-1.340	185.511	185.522
F	20+460.085	-1.340	185.509	185.517
G	20+463.092	-1.340	185.506	185.510
H	20+466.099	-1.340	185.503	185.504
℄ Pier 1	20+470.000	-1.340	185.497	185.497
I	20+473.008	-1.340	185.492	185.496
J	20+476.015	-1.340	185.486	185.496
K	20+479.022	-1.340	185.479	185.497
L	20+482.029	-1.340	185.471	185.496
M	20+485.036	-1.340	185.462	185.493
N	20+488.044	-1.340	185.453	185.486
O	20+491.051	-1.340	185.443	185.475
P	20+494.058	-1.340	185.432	185.461
Q	20+497.065	-1.340	185.420	185.443
R	20+500.072	-1.340	185.407	185.423
S	20+503.080	-1.340	185.394	185.402
T	20+506.087	-1.340	185.379	185.381
℄ Pier 2	20+509.000	-1.340	185.365	185.365
U	20+512.007	-1.340	185.350	185.353
V	20+515.015	-1.340	185.335	185.344
W	20+518.022	-1.340	185.319	185.336
X	20+521.029	-1.340	185.304	185.328
Y	20+524.036	-1.340	185.289	185.318
Z	20+527.043	-1.340	185.274	185.306
AA	20+530.051	-1.340	185.259	185.291
AB	20+533.058	-1.340	185.244	185.274
AC	20+536.065	-1.340	185.229	185.254
AD	20+539.072	-1.340	185.214	185.232
AE	20+542.079	-1.340	185.199	185.210
AF	20+545.087	-1.340	185.184	185.188
℄ Pier 3	20+548.000	-1.340	185.170	185.170
AG	20+551.007	-1.340	185.155	185.155
AH	20+554.014	-1.340	185.140	185.144
AI	20+557.022	-1.340	185.124	185.133
AJ	20+560.029	-1.340	185.109	185.122
AK	20+563.036	-1.340	185.094	185.110
AL	20+566.043	-1.340	185.079	185.095
AM	20+569.050	-1.340	185.064	185.079
AN	20+572.058	-1.340	185.049	185.061
AO	20+575.065	-1.340	185.034	185.042
AP	20+578.072	-1.340	185.019	185.023
AQ	20+581.079	-1.340	185.004	185.005
℄ Pier 4	20+583.000	-1.340	184.995	184.995
AR	20+586.008	-1.340	184.980	184.982
AS	20+589.015	-1.340	184.965	184.971
AT	20+592.022	-1.340	184.949	184.961
AU	20+595.029	-1.340	184.934	184.950
AV	20+598.036	-1.340	184.919	184.938
AW	20+601.044	-1.340	184.904	184.923
AX	20+604.051	-1.340	184.889	184.907
AY	20+607.058	-1.340	184.874	184.888
AZ	20+610.065	-1.340	184.859	184.868
BA	20+613.072	-1.340	184.844	184.848
BB	20+616.080	-1.340	184.829	184.830
℄ Pier 5	20+618.000	-1.340	184.820	184.820
BC	20+621.007	-1.340	184.805	184.807
BD	20+624.015	-1.340	184.790	184.798
BE	20+627.022	-1.340	184.774	184.788
BF	20+630.029	-1.340	184.759	184.778
BG	20+633.036	-1.340	184.744	184.766
BH	20+636.043	-1.340	184.729	184.752
BI	20+639.050	-1.340	184.714	184.734
BJ	20+642.058	-1.340	184.699	184.714
BK	20+645.065	-1.340	184.684	184.692
℄ Brg. E. Abut.	20+647.981	-1.340	184.670	184.670
Bk. E. Abut.	20+649.050	-1.340	184.664	184.664

THIS SHEET FOR INFORMATION ONLY

DESIGNED	R.A.
CHECKED	M.R.
DRAWN	R.A.
CHECKED	M.R / H.T.

Notes:

1. *Work this sheet with Sheet No. 4, 6 & 7 of 21 sheets.*
2. *All elevations and offsets are in meters (m).*

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

TOP OF SLAB ELEVATION - 1

EB I-94 OVER THORN CREEK
F.A.I. 94 SECTION 2004-133F
COOK COUNTY
STA. 20+809.000 STRUCTURE NO. 016-2807

DATE: 05/16/05
SCALE: NTS

Soodan

Soodan & Associates, Inc.
100 North LaSalle Street, Suite 1800
Chicago, Illinois 60602

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	63
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 6
21 SHEETS

• 2004-133F
CONTRACT NO. 62898

PGL

Location	Station	Offset (m)	Theoretical Grade Elev.	Theoretical Grade Elev. Adjusted for Dead Load Defln.
Bk. W. Abut.	20+440.950	0.000	185.587	185.587
℄ Brg. W. Abut.	20+442.000	0.000	185.588	185.588
A	20+445.000	0.000	185.590	185.596
B	20+448.000	0.000	185.592	185.602
C	20+451.000	0.000	185.592	185.605
D	20+454.000	0.000	185.592	185.605
E	20+457.000	0.000	185.591	185.602
F	20+460.000	0.000	185.589	185.597
G	20+463.000	0.000	185.587	185.591
H	20+466.000	0.000	185.584	185.584
℄ Pier 1	20+470.000	0.000	185.578	185.578
I	20+473.000	0.000	185.572	185.576
J	20+476.000	0.000	185.566	185.577
K	20+479.000	0.000	185.559	185.577
L	20+482.000	0.000	185.552	185.577
M	20+485.000	0.000	185.543	185.573
N	20+488.000	0.000	185.534	185.566
O	20+491.000	0.000	185.523	185.556
P	20+494.000	0.000	185.512	185.541
Q	20+497.000	0.000	185.500	185.524
R	20+500.000	0.000	185.488	185.504
S	20+503.000	0.000	185.474	185.483
T	20+506.000	0.000	185.460	185.462
℄ Pier 2	20+509.000	0.000	185.445	185.445
U	20+512.000	0.000	185.430	185.433
V	20+515.000	0.000	185.415	185.424
W	20+518.000	0.000	185.400	185.416
X	20+521.000	0.000	185.385	185.408
Y	20+524.000	0.000	185.370	185.398
Z	20+527.000	0.000	185.355	185.386
AA	20+530.000	0.000	185.340	185.372
AB	20+533.000	0.000	185.325	185.355
AC	20+536.000	0.000	185.310	185.335
AD	20+539.000	0.000	185.295	185.313
AE	20+542.000	0.000	185.280	185.291
AF	20+545.000	0.000	185.265	185.269
℄ Pier 3	20+548.000	0.000	185.250	185.250
AG	20+551.000	0.000	185.235	185.236
AH	20+554.000	0.000	185.220	185.224
AI	20+557.000	0.000	185.205	185.213
AJ	20+560.000	0.000	185.190	185.202
AK	20+563.000	0.000	185.175	185.190
AL	20+566.000	0.000	185.160	185.176
AM	20+569.000	0.000	185.145	185.160
AN	20+572.000	0.000	185.130	185.142
AO	20+575.000	0.000	185.115	185.123
AP	20+578.000	0.000	185.100	185.104
AQ	20+581.000	0.000	185.085	185.086
℄ Pier 4	20+583.000	0.000	185.075	185.075
AR	20+586.000	0.000	185.060	185.062
AS	20+589.000	0.000	185.045	185.051
AT	20+592.000	0.000	185.030	185.041
AU	20+595.000	0.000	185.015	185.031
AV	20+598.000	0.000	185.000	185.018
AW	20+601.000	0.000	184.985	185.004
AX	20+604.000	0.000	184.970	184.987
AY	20+607.000	0.000	184.955	184.969
AZ	20+610.000	0.000	184.940	184.949
BA	20+613.000	0.000	184.925	184.929
BB	20+616.000	0.000	184.910	184.910
℄ Pier 5	20+618.000	0.000	184.900	184.900
BC	20+621.000	0.000	184.885	184.888
BD	20+624.000	0.000	184.870	184.878
BE	20+627.000	0.000	184.855	184.869
BF	20+630.000	0.000	184.840	184.859
BG	20+633.000	0.000	184.825	184.847
BH	20+636.000	0.000	184.810	184.833
BI	20+639.000	0.000	184.795	184.815
BJ	20+642.000	0.000	184.780	184.795
BK	20+645.000	0.000	184.765	184.773
℄ Brg. E. Abut.	20+648.000	0.000	184.750	184.750
Bk. E. Abut.	20+649.050	0.000	184.745	184.745

GIRDER 4

Location	Station	Offset (m)	Theoretical Grade Elev.	Theoretical Grade Elev. Adjusted for Dead Load Defln.
Bk. W. Abut.	20+440.950	1.340	185.667	185.667
℄ Brg. W. Abut.	20+442.000	1.340	185.668	185.668
A	20+444.993	1.340	185.670	185.676
B	20+447.986	1.340	185.672	185.682
C	20+450.979	1.340	185.673	185.685
D	20+453.972	1.340	185.673	185.686
E	20+456.965	1.340	185.672	185.683
F	20+459.957	1.340	185.670	185.678
G	20+462.950	1.340	185.667	185.671
H	20+465.943	1.340	185.664	185.665
℄ Pier 1	20+470.000	1.340	185.658	185.658
I	20+472.993	1.340	185.653	185.657
J	20+475.986	1.340	185.647	185.657
K	20+478.979	1.340	185.640	185.658
L	20+481.972	1.340	185.632	185.657
M	20+484.965	1.340	185.623	185.654
N	20+487.957	1.340	185.614	185.647
O	20+490.950	1.340	185.604	185.636
P	20+493.943	1.340	185.593	185.622
Q	20+496.936	1.340	185.581	185.605
R	20+499.929	1.340	185.568	185.585
S	20+502.922	1.340	185.555	185.564
T	20+505.914	1.340	185.541	185.543
℄ Pier 2	20+509.000	1.340	185.525	185.525
U	20+511.993	1.340	185.510	185.513
V	20+514.986	1.340	185.495	185.504
W	20+517.979	1.340	185.481	185.497
X	20+520.972	1.340	185.466	185.489
Y	20+523.964	1.340	185.451	185.479
Z	20+526.957	1.340	185.436	185.467
AA	20+529.950	1.340	185.421	185.453
AB	20+532.943	1.340	185.406	185.435
AC	20+535.936	1.340	185.391	185.416
AD	20+538.929	1.340	185.376	185.394
AE	20+541.921	1.340	185.361	185.372
AF	20+544.914	1.340	185.346	185.350
℄ Pier 3	20+548.000	1.340	185.330	185.330
AG	20+550.993	1.340	185.315	185.316
AH	20+553.986	1.340	185.300	185.304
AI	20+556.979	1.340	185.286	185.294
AJ	20+559.971	1.340	185.271	185.283
AK	20+562.964	1.340	185.256	185.271
AL	20+565.957	1.340	185.241	185.257
AM	20+568.950	1.340	185.226	185.241
AN	20+571.943	1.340	185.211	185.223
AO	20+574.936	1.340	185.196	185.204
AP	20+577.928	1.340	185.181	185.184
AQ	20+580.921	1.340	185.166	185.166
℄ Pier 4	20+583.000	1.340	185.155	185.155
AR	20+585.993	1.340	185.140	185.142
AS	20+588.986	1.340	185.125	185.132
AT	20+591.979	1.340	185.111	185.122
AU	20+594.972	1.340	185.096	185.111
AV	20+597.965	1.340	185.081	185.099
AW	20+600.957	1.340	185.066	185.085
AX	20+603.950	1.340	185.051	185.068
AY	20+606.943	1.340	185.036	185.049
AZ	20+609.936	1.340	185.021	185.030
BA	20+612.929	1.340	185.006	185.010
BB	20+615.922	1.340	184.991	184.991
℄ Pier 5	20+618.000	1.340	184.980	184.980
BC	20+620.993	1.340	184.965	184.968
BD	20+623.986	1.340	184.950	184.958
BE	20+626.979	1.340	184.936	184.949
BF	20+629.971	1.340	184.921	184.939
BG	20+632.964	1.340	184.906	184.928
BH	20+635.957	1.340	184.891	184.913
BI	20+638.950	1.340	184.876	184.896
BJ	20+641.943	1.340	184.861	184.876
BK	20+644.936	1.340	184.846	184.854
℄ Brg. E. Abut.	20+648.000	1.340	184.830	184.830
Bk. E. Abut.	20+649.050	1.340	184.825	184.825

GIRDER 5

Location	Station	Offset (m)	Theoretical Grade Elev.	Theoretical Grade Elev. Adjusted for Dead Load Defln.
Bk. W. Abut.	20+440.950	4.020	185.828	185.828
℄ Brg. W. Abut.	20+442.000	4.020	185.829	185.829
A	20+444.979	4.020	185.831	185.837
B	20+447.958	4.020	185.833	185.843
C	20+450.936	4.020	185.834	185.846
D	20+453.915	4.020	185.833	185.846
E	20+456.893	4.020	185.832	185.844
F	20+459.872	4.020	185.831	185.839
G	20+462.851	4.020	185.828	185.832
H	20+465.829	4.020	185.825	185.826
℄ Pier 1	20+470.000	4.020	185.819	185.819
I	20+472.979	4.020	185.814	185.817
J	20+475.958	4.020	185.808	185.818
K	20+478.936	4.020	185.801	185.819
L	20+481.915	4.020	185.793	185.818
M	20+484.893	4.020	185.784	185.815
N	20+487.872	4.020	185.775	185.808
O	20+490.851	4.020	185.765	185.798
P	20+493.829	4.020	185.754	185.784
Q	20+496.808	4.020	185.742	185.766
R	20+499.787	4.020	185.730	185.747
S	20+502.765	4.020	185.717	185.726
T	20+505.744	4.020	185.702	185.705
℄ Pier 2	20+509.000	4.020	185.686	185.686
U	20+511.979	4.020	185.671	185.674
V	20+514.957	4.020	185.656	185.665
W	20+517.936	4.020	185.642	185.658
X	20+520.915	4.020	185.627	185.649
Y	20+523.893	4.020	185.612	185.640
Z	20+526.872	4.020	185.597	185.628
AA	20+529.850	4.020	185.582	185.614
AB	20+532.829	4.020	185.567	185.597
AC	20+535.808	4.020	185.552	185.577
AD	20+538.786	4.020	185.537	185.556
AE	20+541.765	4.020	185.522	185.534
AF	20+544.744	4.020	185.507	185.512
℄ Pier 3	20+548.000	4.020	185.491	185.491
AG	20+550.979	4.020	185.476	185.477
AH	20+553.957	4.020	185.461	185.465
AI	20+556.936	4.020	185.447	185.455
AJ	20+559.914	4.020	185.432	185.444
AK	20+562.893	4.020	185.417	185.432
AL	20+565.872	4.020	185.402	185.418
AM	20+568.850	4.020	185.387	185.402
AN	20+571.829	4.020	185.372	185.384
AO	20+574.808	4.020	185.357	185.365
AP	20+577.786	4.020	185.342	185.346
AQ	20+580.765	4.020	185.327	185.328
℄ Pier 4	20+583.000	4.020	185.316	185.316
AR	20+585.979	4.020	185.301	185.303
AS	20+588.958	4.020	185.286	185.293
AT	20+591.936	4.020	185.272	185.283
AU	20+594.915	4.020	185.257	185.272
AV	20+597.893	4.020	185.242	185.260
AW	20+600.872	4.020	185.227	185.246
AX	20+603.851	4.020	185.212	185.229
AY	20+606.829	4.020	185.197	185.211
AZ	20+609.808	4.020	185.182	185.191
BA	20+612.787	4.020	185.167	185.171
BB	20+615.765	4.020	185.152	185.153
℄ Pier 5	20+618.000	4.020	185.141	185.141
BC	20+620.979	4.020	185.126	185.129
BD	20+623.957	4.020	185.111	185.119
BE	20+626.936	4.020	185.097	185.110
BF	20+629.915	4.020	185.082	185.100
BG	20+632.893	4.020	185.067	185.089
BH	20+635.872	4.020	185.052	185.074
BI	20+638.850	4.020	185.037	185.057
BJ	20+641.829	4.020	185.022	185.038
BK	20+644.808	4.020	185.007	185.016
℄ Brg. E. Abut.	20+648.000	4.020	184.991	184.991
Bk. E. Abut.	20+649.050	4.020	184.986	184.986

THIS SHEET FOR INFORMATION ONLY

DESIGNED	R.A.
CHECKED	M.R.
DRAWN	R.A.
CHECKED	M.R / H.T.

Notes:

1. Work this sheet with Sheet No. 4, 5 & 7 of 21 sheets.
2. All elevations and offsets are in meters (m).

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

TOP OF SLAB ELEVATION - 2

EB I-94 OVER THORN CREEK
F.A.I. 94 SECTION 2004-133F
COOK COUNTY
STA. 20+809.000 STRUCTURE NO. 016-2807

DATE: 05/16/05
SCALE: NTS

Soodan

Soodan & Associates, Inc.
100 North LaSalle Street, Suite 1800
Chicago, Illinois 60602

lkalita
J:\34562\CADD\BI\SN_2807\cds\CTR_29_2807\Soodan_5-19-05\sp\90034e_2807.dgn
20-MAY-2005 14:29

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	64
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 7
21 SHEETS

• 2004-133F

CONTRACT NO. 62898

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER 6

Location	Station	Offset (m)	Theoretical Grade Elev.	Theoretical Grade Elev. Adjusted for Dead Load Defln.
Bk. W. Abut.	20+440.950	6.700	185.989	185.989
℄ Brg. W. Abut.	20+442.000	6.700	185.990	185.990
A	20+444.965	6.700	185.992	185.998
B	20+447.929	6.700	185.994	186.003
C	20+450.894	6.700	185.994	186.007
D	20+453.858	6.700	185.994	186.007
E	20+456.823	6.700	185.993	186.005
F	20+459.788	6.700	185.992	186.000
G	20+462.752	6.700	185.989	185.993
H	20+465.717	6.700	185.986	185.987
℄ Pier 1	20+470.000	6.700	185.980	185.980
I	20+472.965	6.700	185.974	185.978
J	20+475.929	6.700	185.968	185.979
K	20+478.894	6.700	185.962	185.979
L	20+481.858	6.700	185.954	185.979
M	20+484.823	6.700	185.946	185.976
N	20+487.788	6.700	185.936	185.969
O	20+490.752	6.700	185.926	185.959
P	20+493.717	6.700	185.915	185.945
Q	20+496.681	6.700	185.904	185.928
R	20+499.646	6.700	185.891	185.908
S	20+502.610	6.700	185.878	185.888
T	20+505.575	6.700	185.864	185.867
℄ Pier 2	20+509.000	6.700	185.847	185.847
U	20+511.965	6.700	185.832	185.835
V	20+514.929	6.700	185.817	185.826
W	20+517.894	6.700	185.803	185.818
X	20+520.858	6.700	185.788	185.810
Y	20+523.823	6.700	185.773	185.801
Z	20+526.787	6.700	185.758	185.789
AA	20+529.752	6.700	185.743	185.775
AB	20+532.716	6.700	185.728	185.758
AC	20+535.681	6.700	185.714	185.739
AD	20+538.645	6.700	185.699	185.718
AE	20+541.610	6.700	185.684	185.696
AF	20+544.575	6.700	185.669	185.674
℄ Pier 3	20+548.000	6.700	185.652	185.652
AG	20+550.965	6.700	185.637	185.638
AH	20+553.929	6.700	185.622	185.626
AI	20+556.894	6.700	185.608	185.616
AJ	20+559.858	6.700	185.593	185.605
AK	20+562.823	6.700	185.578	185.593
AL	20+565.787	6.700	185.563	185.579
AM	20+568.752	6.700	185.548	185.563
AN	20+571.716	6.700	185.533	185.546
AO	20+574.681	6.700	185.519	185.527
AP	20+577.645	6.700	185.504	185.508
AQ	20+580.610	6.700	185.489	185.490
℄ Pier 4	20+583.000	6.700	185.477	185.477
AR	20+585.965	6.700	185.462	185.464
AS	20+588.929	6.700	185.447	185.454
AT	20+591.894	6.700	185.433	185.444
AU	20+594.858	6.700	185.418	185.433
AV	20+597.823	6.700	185.403	185.421
AW	20+600.788	6.700	185.388	185.407
AX	20+603.752	6.700	185.373	185.391
AY	20+606.717	6.700	185.358	185.372
AZ	20+609.681	6.700	185.344	185.353
BA	20+612.646	6.700	185.329	185.333
BB	20+615.610	6.700	185.314	185.315
℄ Pier 5	20+618.000	6.700	185.302	185.302
BC	20+620.965	6.700	185.287	185.290
BD	20+623.929	6.700	185.272	185.280
BE	20+626.894	6.700	185.258	185.271
BF	20+629.858	6.700	185.243	185.261
BG	20+632.823	6.700	185.228	185.250
BH	20+635.787	6.700	185.213	185.236
BI	20+638.752	6.700	185.198	185.219
BJ	20+641.716	6.700	185.183	185.199
BK	20+644.681	6.700	185.169	185.178
℄ Brg. E. Abut.	20+648.000	6.700	185.152	185.152
Bk. E. Abut.	20+649.050	6.700	185.147	185.147

THIS SHEET FOR INFORMATION ONLY

Notes:

1. Work this sheet with Sheet No. 4, 5 & 6 of 21 sheets.
2. All elevations and offsets are in meters (m).

DESIGNED	R.A.
CHECKED	M.R.
DRAWN	R.A.
CHECKED	M.R / H.T.

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

TOP OF SLAB ELEVATION - 3

EB I-94 OVER THORN CREEK
F.A.I. 94 SECTION 2004-133F
COOK COUNTY
STA. 20+809.000 STRUCTURE NO. 016-2807

DATE: 05/16/05
SCALE: NTS

Soodan

Soodan & Associates, Inc.
100 North LaSalle Street, Suite 1800
Chicago, Illinois 60602

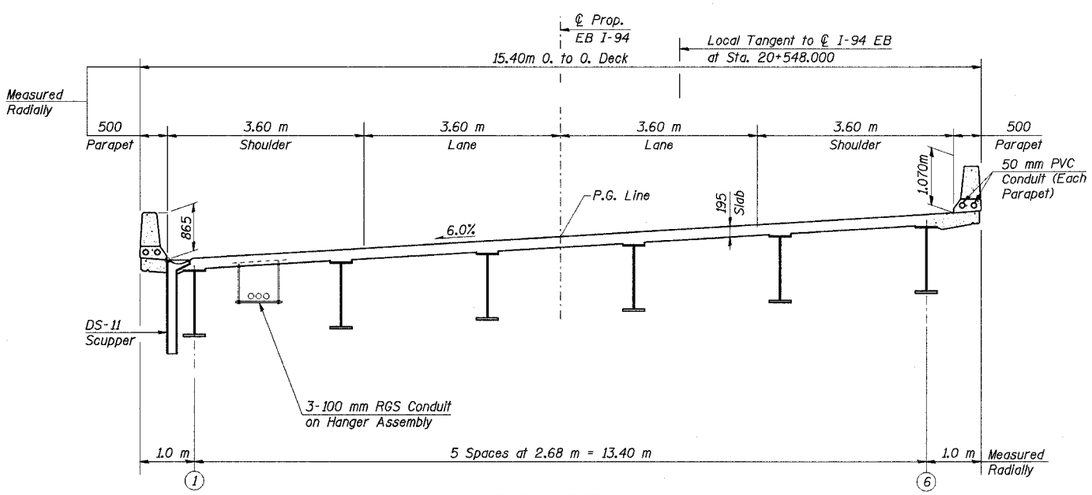
Plotted: 20-MAY-2005 14:30
J:\34562\CADD\BI\SN.2807\cds\CTR_29_2807\Soodan_5-19-05\spl90044a_2807.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

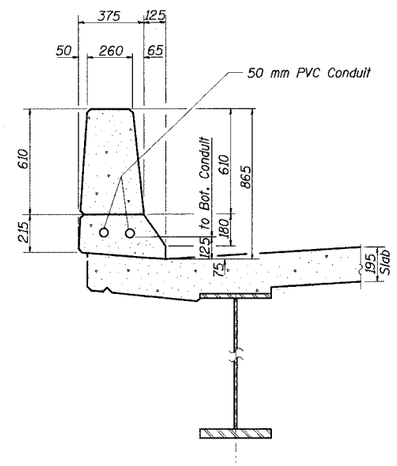
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	a	COOK	90	65
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 8
21 SHEETS

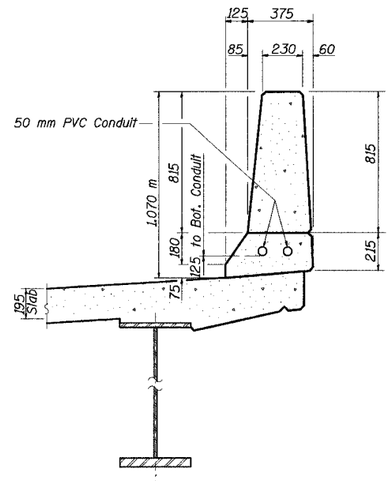
* 2004-133F
CONTRACT NO. 62898



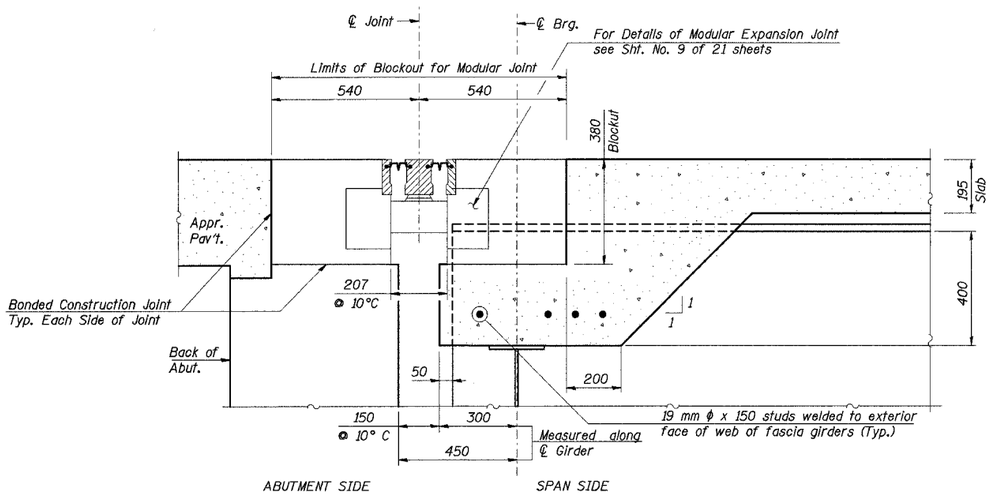
CROSS SECTION
(Looking Up Station)



SECTION THRU NORTH PARAPET



SECTION THRU SOUTH PARAPET



SECTION THRU DECK AT WEST ABUTMENT

DESIGNED	JJK
CHECKED	PCA
DRAWN	LK
CHECKED	PCA

jkelze
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NOTES:

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

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

DECK CROSS SECTION & 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 ----

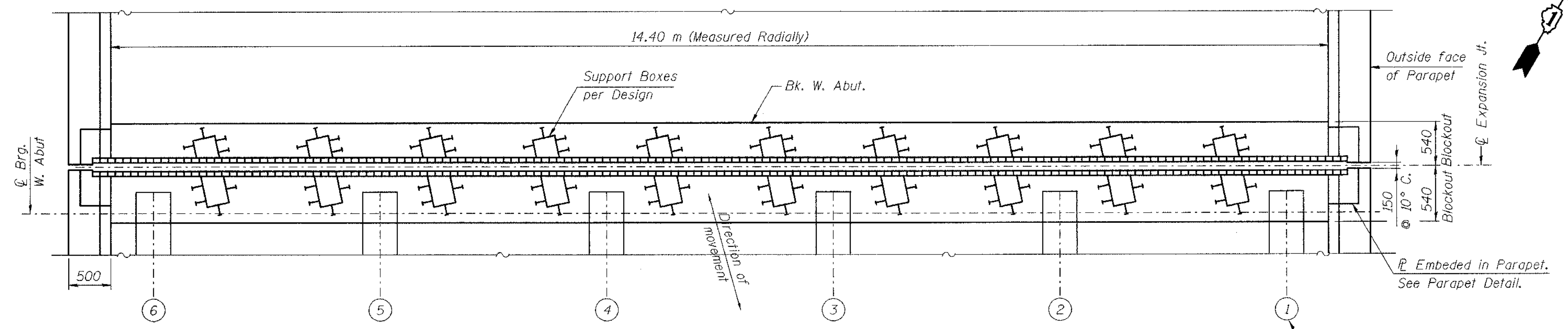
HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

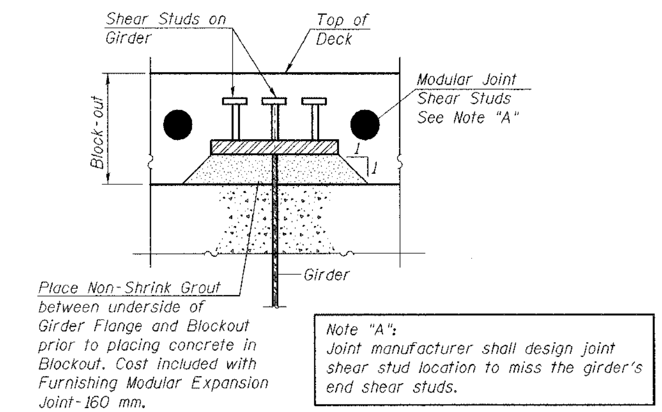
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	66
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

* 2004-133F   CONTRACT NO. 62898

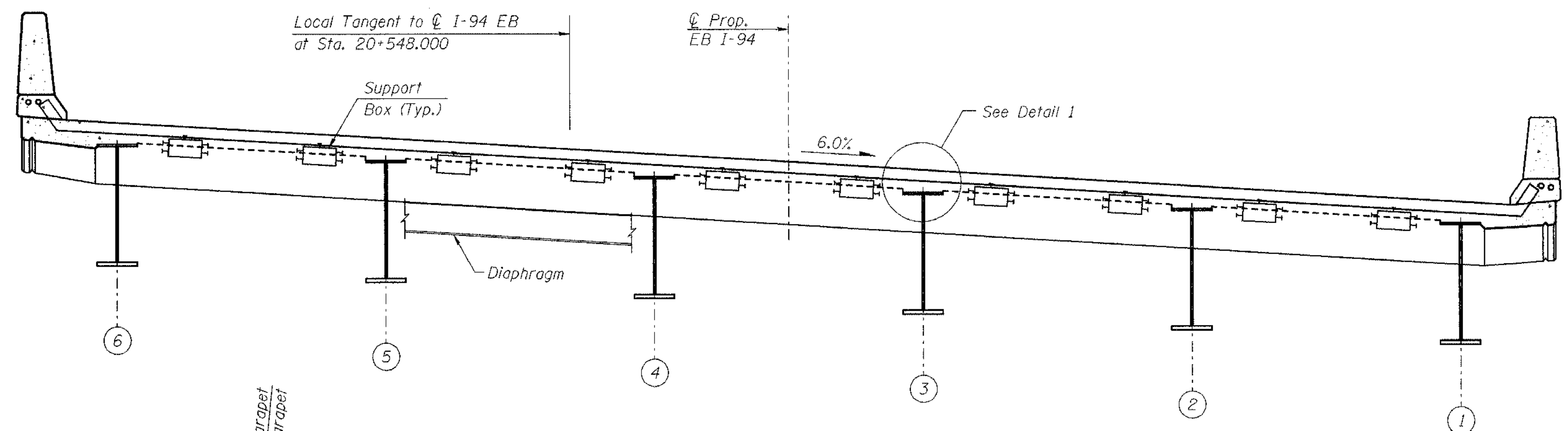
SHEET NO. 9
21 SHEETS



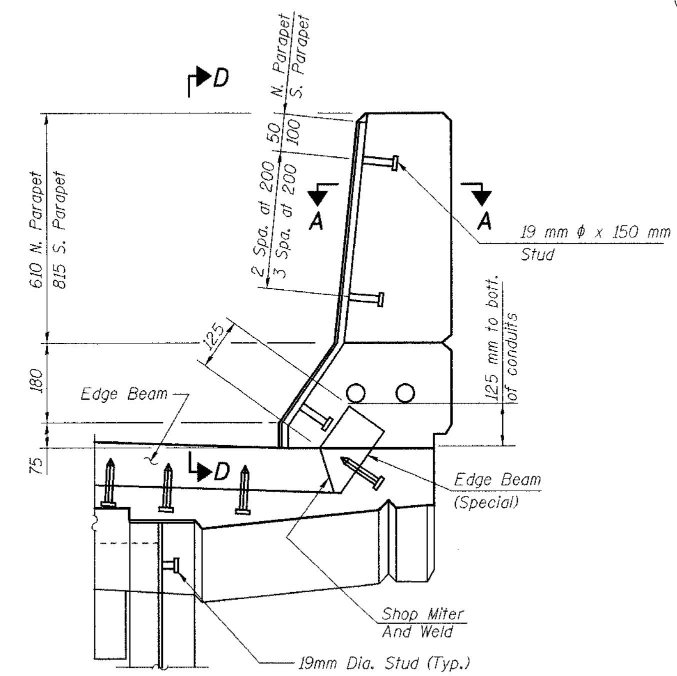
PLAN VIEW AT WEST ABUTMENT



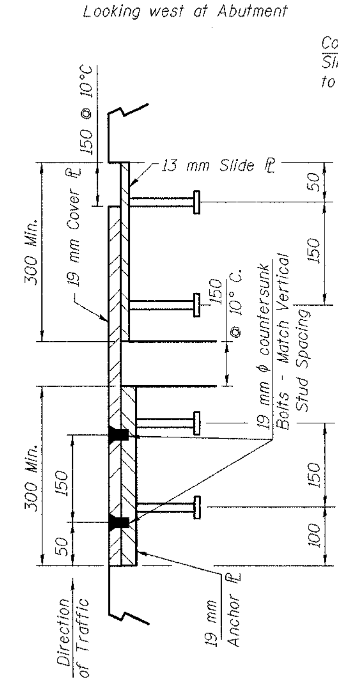
DETAIL 1



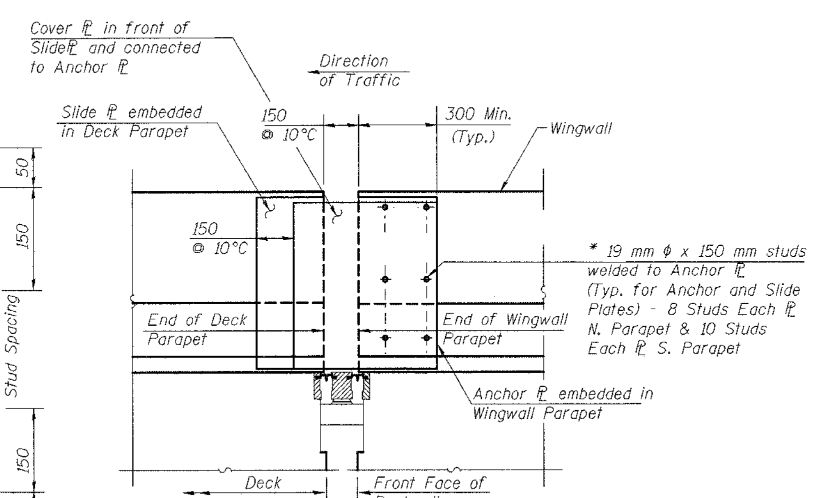
CROSS SECTION
Looking west at Abutment



PARAPET DETAIL



SECTION A-A



ELEVATION VIEW D-D
South Parapet shown (Looking South)
North Parapet similar

* Countersunk Bolts 20 mm ϕ not shown for clarity.

Notes:

1. Modular Expansion Joint shall be designed in accordance with the latest AASHTO Specifications for MS-18 truck loading with impact.
2. The expansion joint device shall be prefabricated modular assembly with multiple support bars and separator beams, providing a continuous seal across the deck.
3. Joint shall be fabricated and installed according to the manufacturer's recommendations and as shown in Special Provisions for Modular Expansion Joint and as approved by the Engineer.
4. Joint shall be fabricated to conform to the roadway profile and cross-slope.
5. All exposed structural steel elements such as separator and edge beams support bars and cover plate shall be fabricated with AASHTO M270M Grade 345 Steel unless specified otherwise by the manufacturer.
6. The Cost of Furnishing the Barrier Plates, the Countersunk bolts, and the Stud Anchors, and installing of the sliding plate assembly at the parapets, shall be included with Furnishing Modular Expansion Joint - 160mm. The Sliding Plate Assembly shall be galvanized.
7. Modular expansion joint shall be shipped in one piece unless noted.
8. No aluminum components shall be allowed.
9. All splices of center beams and edge beams shall be full penetration welds (Upturn splices may be partial penetration welds).
10. See Deck Cross Section & Details drawing for section thru joint.
11. All dimension are in millimeters (mm) except as noted.
12. Countersunk bolts and Concrete inserts to be Hot-Dipped Galvanized according to AASHTO M232.
13. Stud anchors shall be according to Article 1006.32 of the Standard Specifications.
14. Cost of all stud anchors shall be included with Furnishing Modular Expansion Joint-160 mm (unless noted otherwise).
15. Joint openings shall be adjusted according to Article 503.10(c) of the Standard Specificaions when the blockout is cast at an ambient temperature other than 10°C.

BILL OF MATERIAL

Item	Unit	Total
Furnishing Modular Expansion Joint - 160 mm	m	14.7

DESIGNED	PCA
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

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

MODULAR EXPANSION JOINT 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

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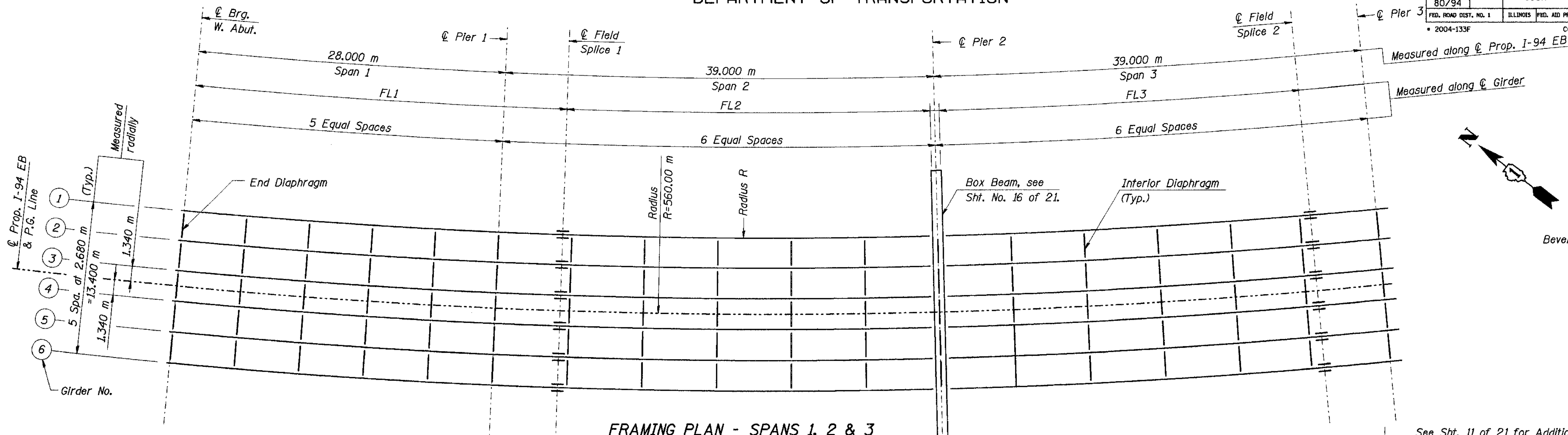
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	67

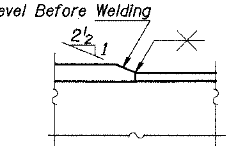
SHEET NO. 10
21 SHEETS

* 2004-133F CONTRACT NO. 62898

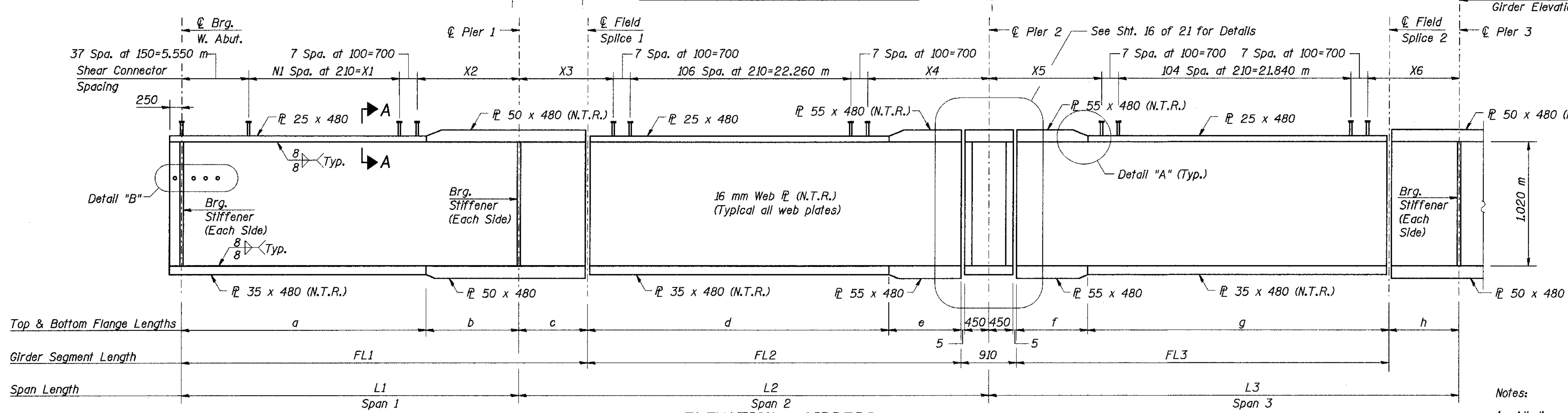
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



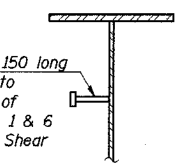
FRAMING PLAN - SPANS 1, 2 & 3



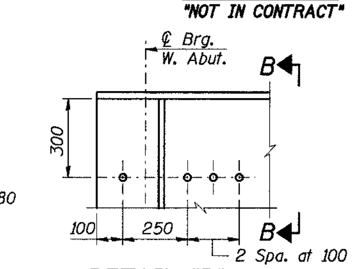
DETAIL "A"
(Typ. Top & Bott. Flange)



ELEVATION - GIRDERS
(All Plates AASHTO M270 Grade 345)
(N.T.R. denotes plates to which notch toughness requirements are applicable)



SECTION B-B
"NOT IN CONTRACT"



DETAIL "B"

Notes:

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

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

"NOT IN CONTRACT"

GIRDER DIMENSIONS (Meters)

		Span 1		Span 2			Span 3		
Girder	Radius R	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

DESIGNED	MIL/JY
CHECKED	MAS
DRAWN	LK
CHECKED	KGN

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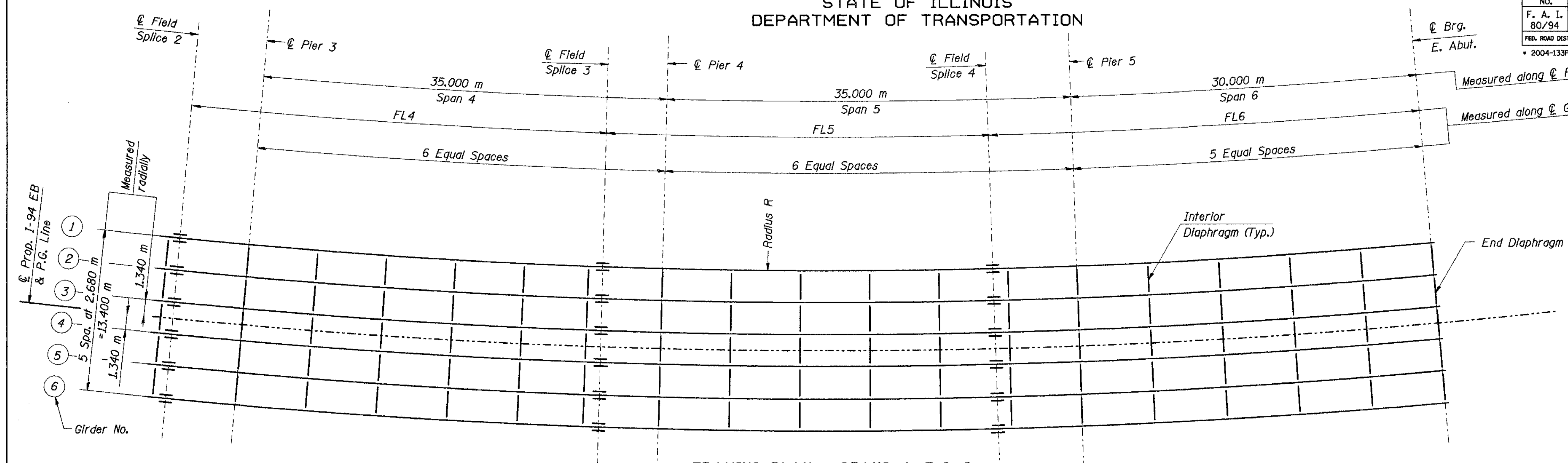
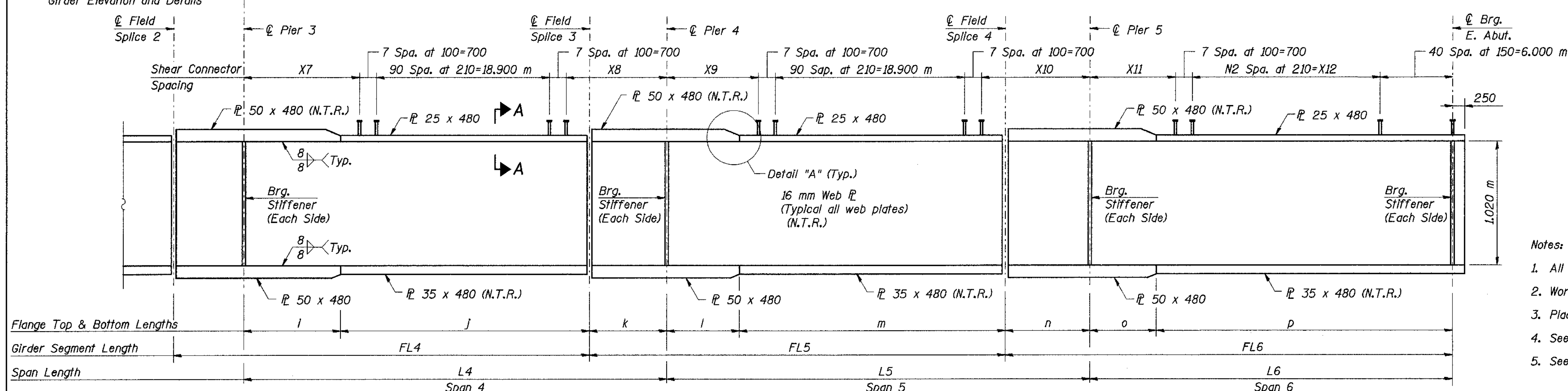
ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
FRAMING PLAN & GIRDER ELEVATION
1 OF 2
EB I-94 OVER THORN CREEK
F.A.I. 94 SECTION 2004-133F
COOK COUNTY
STA. 20+509.000 STRUCTURE NO. 016-2807
DATE 05/16/05
SCALE ---
HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FRAMING PLAN - SPANS 4, 5 & 6

See Sht. 10 of 21 for Additional Girder Elevation and Details



Notes:

1. All dimensions are in millimeters (mm) except as noted.
2. Work this sheet with Sheet Nos. 10 & 12 of 21.
3. Place all diaphragms radially.
4. See Section A-A on Sht. No. 13 of 21.
5. See Detail A on Sht. No. 10 of 21.

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	L4	L5	L6
1	34.581	34.581	29.641
2	34.749	34.749	29.785
3	34.916	34.916	29.928
4	35.084	35.084	30.072
5	35.251	35.251	30.215
6	35.419	35.419	30.359

SHEAR CONNECTOR SPACING (Length in Meters)

Girder	N2	X7	X8	X9	X10	X11	X12
1	82	8.098	6.183	6.396	7.885	5.721	17.220
2	82	8.105	6.344	6.504	7.945	5.865	17.220
3	83	8.146	6.470	6.524	8.092	5.798	17.430
4	85	8.231	6.553	6.646	8.138	5.522	17.850
5	85	8.376	6.575	6.864	8.087	5.665	17.850
6	85	8.467	6.652	6.793	8.326	5.809	17.850

"NOT IN CONTRACT"

GIRDER DIMENSIONS (Meters)

		Span 4			Span 5			Span 6	
Girder	Radius R	i	j	k	l	m	n	o	p
1	553.300	7.745	21.946	4.891	5.928	21.734	6.919	5.285	24.356
2	555.980	7.782	22.052	4.914	5.957	21.840	6.952	5.311	24.474
3	558.660	7.820	22.159	4.938	5.986	21.945	6.986	5.336	24.592
4	561.340	7.857	22.265	4.962	6.014	22.050	7.019	5.362	24.710
5	564.020	7.895	22.371	4.986	6.043	22.156	7.053	5.387	24.828
6	566.700	7.932	22.477	5.009	6.072	22.261	7.086	5.413	24.946

GIRDER SEGMENT LENGTH (Meters)

Girder	FL4	FL5	FL6
1	35.184	32.553	36.560
2	35.355	32.711	36.737
3	35.525	32.869	36.914
4	35.696	33.026	37.091
5	35.866	33.184	37.268
6	36.036	33.342	37.445

DESIGNED	JY
CHECKED	MAS
DRAWN	LK
CHECKED	KGN

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ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
FRAMING PLAN & GIRDER ELEVATION
2 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 ---

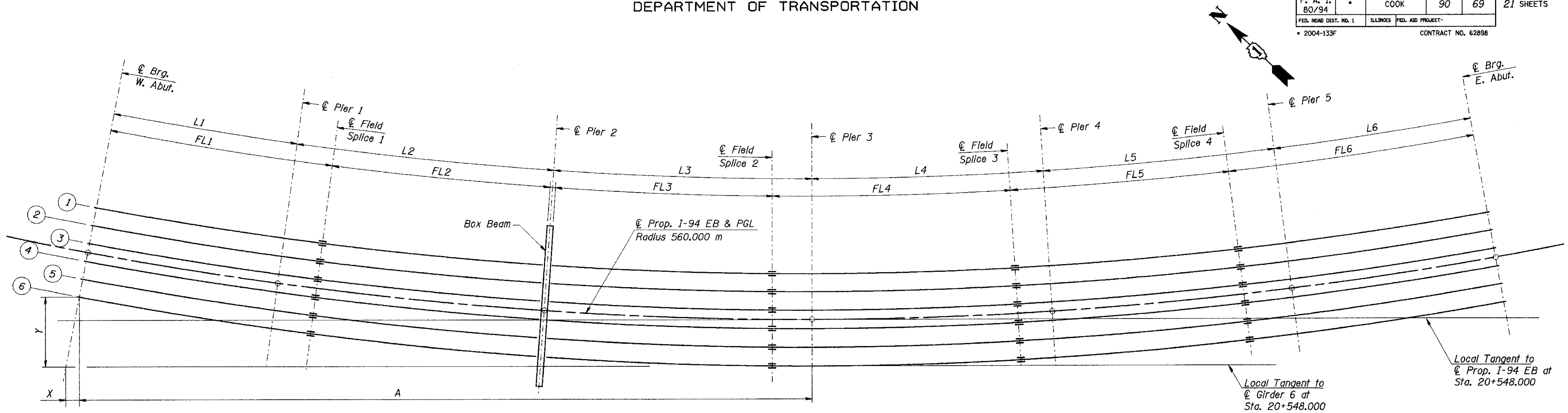
HNTB

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	69
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

* 2004-133F CONTRACT NO. 62898

SHEET NO. 12
21 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



GIRDER LAYOUT PLAN

LAYOUT DIMENSIONS (Meters)

Girder	Radius	℄ Brg. W. Abut			℄ Pier 1			℄ FS 1			End of Segment at Box Beam (North)			℄ Pier 2		
		A	X	Y	A	X	Y	A	X	Y	A	X	Y	A	X	Y
1	553.300	104.107	1.893	9.883	76.818	0.751	5.358	71.407	0.602	4.627	38.956	0.097	1.373	38.502	0.094	1.341
2	555.980	104.612	1.902	9.930	77.190	0.755	5.384	71.753	0.605	4.650	39.143	0.097	1.380	38.689	0.094	1.348
3	558.660	105.116	1.912	9.978	77.562	0.759	5.410	72.099	0.608	4.672	39.329	0.098	1.386	38.875	0.094	1.354
℄	560.000	105.368	1.916	10.002	77.748	0.760	5.423	72.272	0.609	4.683	39.422	0.098	1.389	38.968	0.095	1.357
4	561.340	105.620	1.921	10.026	77.934	0.762	5.436	72.445	0.611	4.694	39.516	0.098	1.393	39.062	0.095	1.361
5	564.020	106.125	1.930	10.074	78.306	0.766	5.462	72.791	0.614	4.717	39.702	0.099	1.399	39.248	0.095	1.367
6	566.700	106.629	1.939	10.122	78.678	0.769	5.488	73.136	0.617	4.739	39.889	0.099	1.406	39.435	0.096	1.374

Girder	End of Segment at Box Beam (South)			℄ FS 2			℄ Pier 3			℄ FS 3			℄ Pier 4		
	A	X	Y	A	X	Y	A	X	Y	A	X	Y	A	X	Y
1	38.048	0.090	1.310	5.494	0.000	0.027	0.000	0.000	0.000	29.676	0.043	0.796	34.559	0.068	1.080
2	38.235	0.091	1.316	5.520	0.000	0.027	0.000	0.000	0.000	29.820	0.043	0.800	34.726	0.068	1.086
3	38.421	0.091	1.323	5.547	0.000	0.028	0.000	0.000	0.000	29.964	0.043	0.804	34.894	0.068	1.091
℄	38.515	0.091	1.326	5.560	0.000	0.028	0.000	0.000	0.000	30.036	0.043	0.806	34.977	0.068	1.093
4	38.608	0.092	1.329	5.574	0.000	0.028	0.000	0.000	0.000	30.107	0.043	0.808	35.061	0.069	1.096
5	38.794	0.092	1.336	5.600	0.000	0.028	0.000	0.000	0.000	30.251	0.044	0.812	35.228	0.069	1.101
6	38.981	0.093	1.342	5.627	0.000	0.028	0.000	0.000	0.000	30.395	0.044	0.816	35.396	0.069	1.106

LAYOUT DIMENSIONS (Meters)

Girder	Radius	℄ FS 4			℄ Pier 5			℄ Brg. E. Abut.		
		A	X	Y	A	X	Y	A	X	Y
1	553.300	62.113	0.395	3.497	68.983	0.542	4.317	98.279	1.588	8.798
2	555.980	62.414	0.397	3.514	69.317	0.545	4.338	98.755	1.596	8.841
3	558.660	62.714	0.399	3.531	69.651	0.548	4.359	99.231	1.603	8.884
℄	560.000	62.865	0.400	3.540	69.818	0.549	4.369	99.469	1.607	8.905
4	561.340	63.015	0.401	3.548	69.985	0.550	4.380	99.707	1.611	8.926
5	564.020	63.316	0.403	3.565	70.319	0.553	4.401	100.183	1.619	8.969
6	566.700	63.617	0.405	3.582	70.653	0.556	4.422	100.659	1.627	9.011

Notes:

1. Coordinate system (x, y) shown for Girder 6. Typical for all Girders with local tangent to each girder at ℄ Sta. 20+548.000.
2. See Dimensions of span length (L1) and Segment Length (FL1) on Sht. Nos. 10 and 11 of 21.

DESIGNED	TRL
CHECKED	KGN
DRAWN	LK
CHECKED	KGN

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

GIRDER LAYOUT

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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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	70
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 13
21 SHEETS

• 2004-133F CONTRACT NO. 62898

GIRDER 3 MOMENT TABLE

		0.4 Sp.1	Pier 1	0.5 Sp.2	Pier 2	0.5 Sp.3	Pier 3	0.5 Sp.4	Pier 4	0.5 Sp.5	Pier 5	0.6 Sp.6
Is	(10^6 mm^4)	9219	15164	9219	16683	9219	15164	9219	15164	9219	16683	9219
Ic (n)	(10^6 mm^4)	22451	-	22451	-	22451	-	22451	-	22451	-	22451
Ic (3n)	(10^6 mm^4)	16004	-	16004	-	16004	-	16004	-	16004	-	16004
Ss	(10^3 mm^3)	18909	27078	18909	29527	18909	27078	18909	27078	18909	27078	18909
Sc (n)	(10^3 mm^3)	25540	-	25540	-	25540	-	25540	-	25540	-	25540
Sc (3n)	(10^3 mm^3)	23222	-	23222	-	23222	-	23222	-	23222	-	23222
Sb$_t$	(10^3 mm^3)	1344	1920	1344	2112	1344	1920	1344	1920	1344	1920	1344
ℓD	(kN/m)	16.84	27.68	16.84	27.68	16.84	27.68	16.84	27.68	16.84	27.68	16.84
Mℓ	(kN·m)	859	2913	1102	3665	1096	2902	816	2525	857	2838	1104
sℓ	(kN/m)	9.15	-	9.15	-	9.15	-	9.15	-	9.15	-	9.15
Msℓ	(kN·m)	453	-	574	-	571	-	430	-	449	-	581
M$_L$	(kN·m)	1253	1157	1231	1658	1234	1161	1247	1066	1245	1098	1372
M (Imp)	(kN·m)	313	231	308	332	308	232	312	213	311	220	343
$^5/_3$[M$_L$ +M (Imp)]	(kN·m)	2611	2315	2564	3317	2570	2322	2598	2133	2594	2195	2859
Ma	(kN·m)	5099	6797	5512	9076	5509	6791	4997	6054	5070	6543	5907
Mb$_t$	(kN·m)	28	50	41	67	41	50	30	36	30	41	37
fs ℓ(non-comp)	(MPa)	45	108	58	124	58	107	43	93	45	105	58
fs ℓ(comp)	(MPa)	19	-	25	-	25	-	19	-	19	-	25
fs$^5/_3$[M$_L$ + M (Imp)]	(MPa)	102	85	100	112	101	86	102	79	102	81	112
f$_t$	(MPa)	21	26	30	32	30	26	22	19	22	21	28
fs (Overload)	(MPa)	166	193	183	236	184	193	164	172	166	186	195
fs (Total)	(MPa)	216	251	238	307	239	251	213	224	216	242	254
Fcr (Overload)	(MPa)	328	278	328	278	328	278	328	290	328	287	328
VR	(kN)	328	-	285	-	291	-	275	-	275	-	327
Fcr	(MPa)	338	312	335	312	335	312	337	318	337	316	336

GIRDER 3 REACTION TABLE

		W. Abut.	Pier 1	Pier 2*	Pier 3	Pier 4	Pier 5	E. Abut.
Rℓ	(kN)	261	977	567	965	895	967	298
R$_L$	(kN)	223	362	246	364	349	359	225
Imp.	(kN)	67	91	74	91	87	90	68
R (Total)	(kN)	551	1430	887	1420	1331	1416	591

* Shear Force at Connection Location between Box Beam and Girders. The larger Shear Force at either side of Box Beam is shown.

GIRDER 5 MOMENT TABLE

		0.4 Sp.1	Pier 1	0.5 Sp.2	Pier 2	0.5 Sp.3	Pier 3	0.5 Sp.4	Pier 4	0.5 Sp.5	Pier 5	0.6 Sp.6
Is	(10^6 mm^4)	9219	15164	9219	16683	9219	15164	9219	15164	9219	16683	9219
Ic (n)	(10^6 mm^4)	22451	-	22451	-	22451	-	22451	-	22451	-	22451
Ic (3n)	(10^6 mm^4)	16004	-	16004	-	16004	-	16004	-	16004	-	16004
Ss	(10^3 mm^3)	18909	27078	18909	29527	18909	27078	18909	27078	18909	27078	18909
Sc (n)	(10^3 mm^3)	25540	-	25540	-	25540	-	25540	-	25540	-	25540
Sc (3n)	(10^3 mm^3)	23222	-	23222	-	23222	-	23222	-	23222	-	23222
Sb$_t$	(10^3 mm^3)	1344	1920	1344	2112	1344	1920	1344	1920	1344	1920	1344
ℓD	(kN/m)	16.84	27.68	16.84	27.68	16.84	27.68	16.84	27.68	16.84	27.68	16.84
Mℓ	(kN·m)	858	2913	1090	3395	1074	2980	807	2563	858	2642	1112
sℓ	(kN/m)	9.15	-	9.15	-	9.15	-	9.15	-	9.15	-	9.15
Msℓ	(kN·m)	447	-	562	-	554	-	419	-	444	-	577
M$_L$	(kN·m)	1378	1210	1335	1634	1368	1207	1366	1110	1344	1127	1509
M (Imp)	(kN·m)	316	242	306	327	314	241	313	222	308	225	346
$^5/_3$[M$_L$ +M (Imp)]	(kN·m)	2824	2420	2735	3268	2802	2413	2799	2219	2754	2253	3092
Ma	(kN·m)	5367	6932	5703	8662	5760	7012	5233	6217	5271	6364	6215
Mb$_t$	(kN·m)	30	52	42	65	43	52	31	37	32	40	39
fs ℓ(non-comp)	(MPa)	45	108	58	115	57	110	43	95	45	98	59
fs ℓ(comp)	(MPa)	19	-	24	-	24	-	18	-	19	-	25
fs$^5/_3$[M$_L$ + M (Imp)]	(MPa)	111	89	107	111	110	89	110	82	108	83	121
f$_t$	(MPa)	22	27	32	31	32	27	23	19	24	21	29
fs (Overload)	(MPa)	175	197	189	226	191	199	171	177	172	181	205
fs (Total)	(MPa)	228	256	246	294	248	259	222	230	224	235	267
Fcr (Overload)	(MPa)	328	277	328	277	328	277	328	290	328	287	328
VR	(kN)	352	-	304	-	309	-	296	-	293	-	350
Fcr	(MPa)	337	311	334	311	334	311	337	318	337	316	335

GIRDER 5 REACTION TABLE

		W. Abut.	Pier 1	Pier 2*	Pier 3	Pier 4	Pier 5	E. Abut.
Rℓ	(kN)	260	979	521	982	914	951	299
R$_L$	(kN)	244	367	267	368	352	362	247
Imp.	(kN)	67	92	73	92	88	91	68
R (Total)	(kN)	571	1438	861	1442	1354	1404	614

DESIGNED	JY
CHECKED	MIL
DRAWN	LK
CHECKED	JY

jkelso
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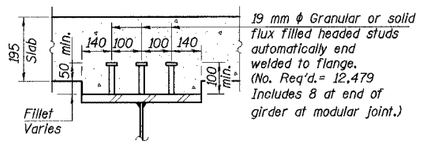
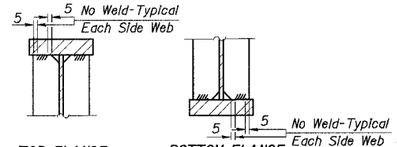
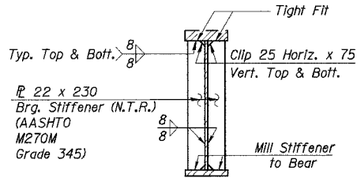


19 mm ϕ Granular or solid flux filled headed studs automatically end welded to flange. (No. Req'd.= 12.479 Includes 8 at end of girder at modular joint.)

SECTION A-A
"NOT IN CONTRACT"



STIFFENER TO FLANGE WELD
Typical for Bearing Stiffeners



BEARING STIFFENERS
(At Abutments & Piers except Pier 2)

Fcr - Critical average flange stress (smaller of Fcr1 or Fcr2 for partially braced flanges and Fy for continuously braced flanges) computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges (Sections 5.2, 5.3 and 5.4).

Fcr (Overload) - Critical average flange stress at overload computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges Section 9.5.

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total and Overload).

Ic(n) and Sc(n) are the moment of inertia and section modulus of the composite section used in computing stresses due to live load.

Ic(3n) and Sc(3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead load (see AASHTO 10.38).

VR is the maximum L+ impact shear range in span.

Sb$_t$ is the section modulus for one flange plate for lateral bending.

Mℓ - Moment due to dead loads on non-composite section.

Msℓ - Moment due to dead loads on composite section.

M$_L$ - Moment due to live load on non-composite or composite section.

M (Imp) - Moment due to live load impact on non-composite or composite section

Mb$_t$ is the lateral bending moment for flange plate (factored).

Ma (Applied Moment) = 1.3 [Mℓ + Msℓ + 5/3 (M$_L$ + M (Imp))]

fs (Overload) is the sum of stresses due to Mℓ + Msℓ + 5/3 (M$_L$ + M (Imp))

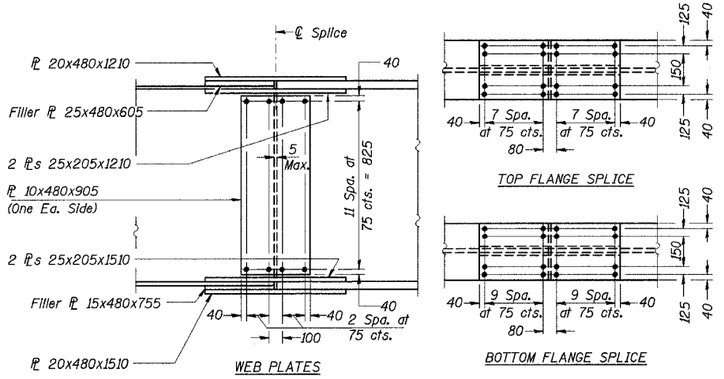
fs (Total) is the sum of stresses due to 1.3 [Mℓ + Msℓ + 5/3 (M$_L$ + M (Imp))]

f$_t$ is the calculated normal stress at the edge of flange due to lateral bending (factored).

M$_L$ and R$_L$ include the effects of centrifugal force and superelevation.

Notes:

1. All Field Splice Plates, except Fill ℄ shall be AASHTO M270M Grade 345 and shall meet NTR.
2. NTR denotes notch toughness requirements are applicable.
3. All dimensions are in millimeters (mm) unless otherwise noted.



FIELD SPLICE 1, 2, 3 & 4
(Splice 2, 3, 4 shown. Splice 1 opposite hand)

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

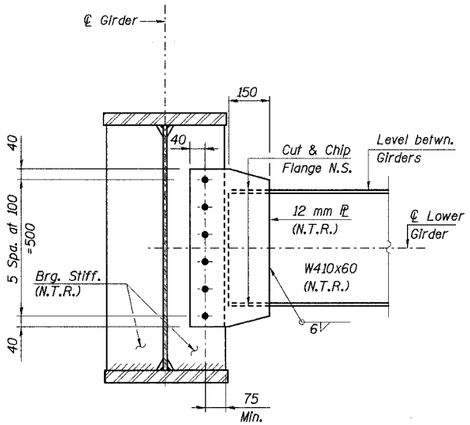
HNTB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

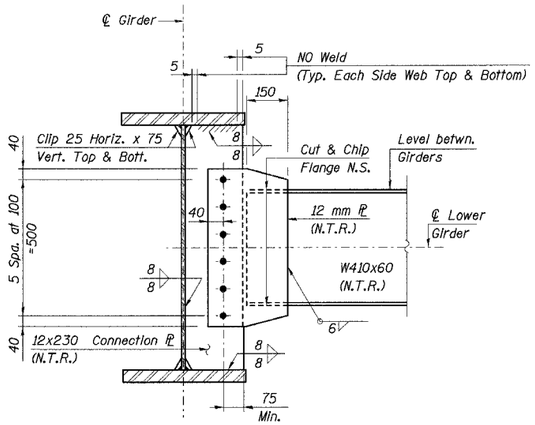
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	71
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 14
21 SHEETS

* 2004-133F
CONTRACT NO. 62898



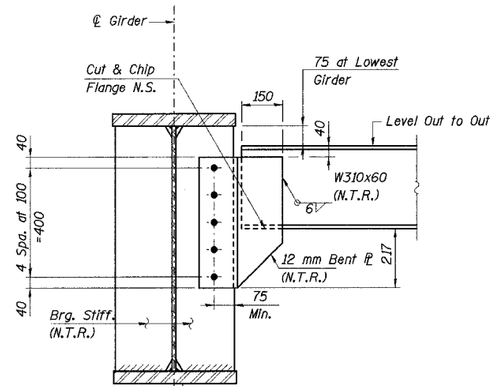
AT BEARING STIFFENER



AT CONNECTION PLATE

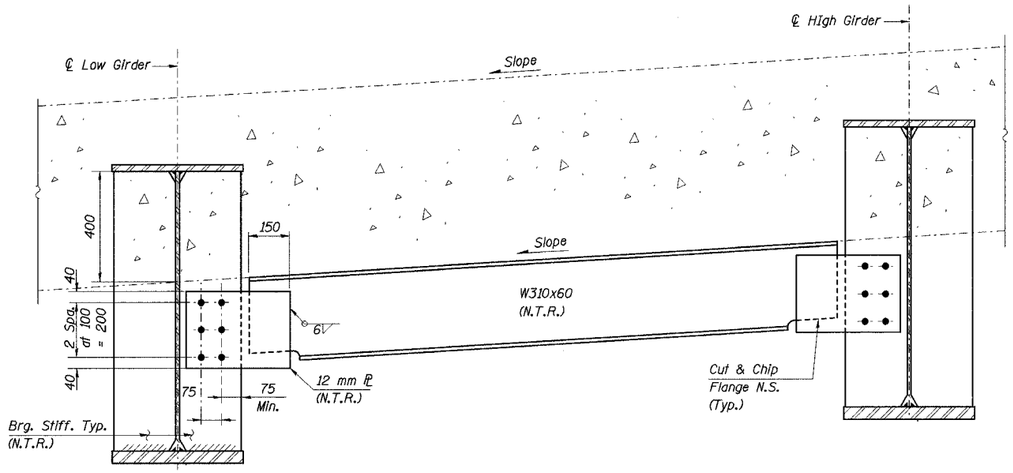
INTERIOR DIAPHRAGM

(AASHTO M270M Grade 345)



END DIAPHRAGM - EAST ABUTMENT

(AASHTO M270M Grade 345)



END DIAPHRAGM - WEST ABUTMENT

(AASHTO M270M Grade 345)

Notes:

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

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

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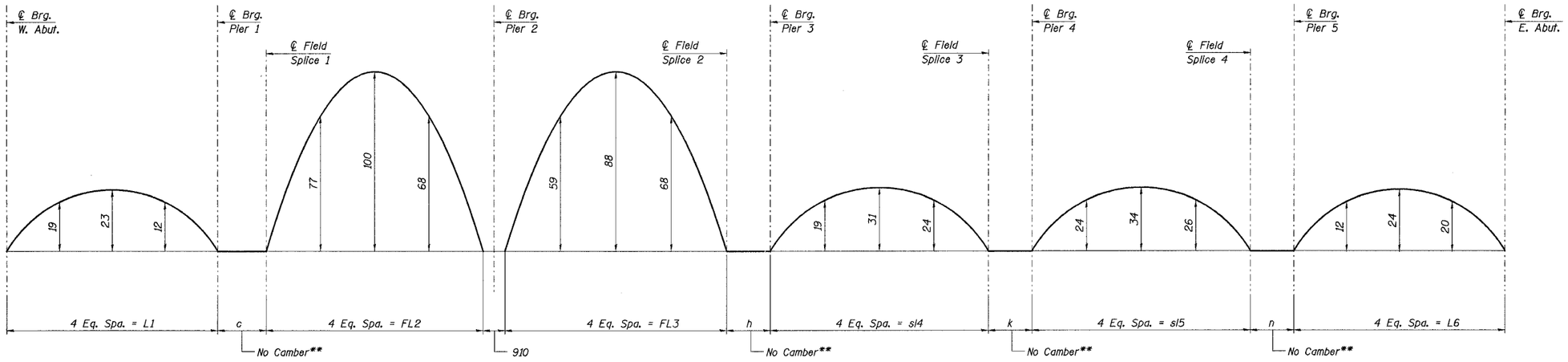
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

SHEET NO. 15
21 SHEETS

* 2004-133F
CONTRACT NO. 62898



CAMBER DIAGRAM

(For Dimensions c, h, L1, FL2, FL3, see Sheet 10 of 21. For Dimensions k, n, L6, see Sheet 11 of 21.)
***Computed cambers are no greater than 7mm in regions denoted "No Camber".*

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	sl4	sl5
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	183.550
South	184.445

Notes:

1. *All dimensions are in millimeters (mm) except as noted.*
2. *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

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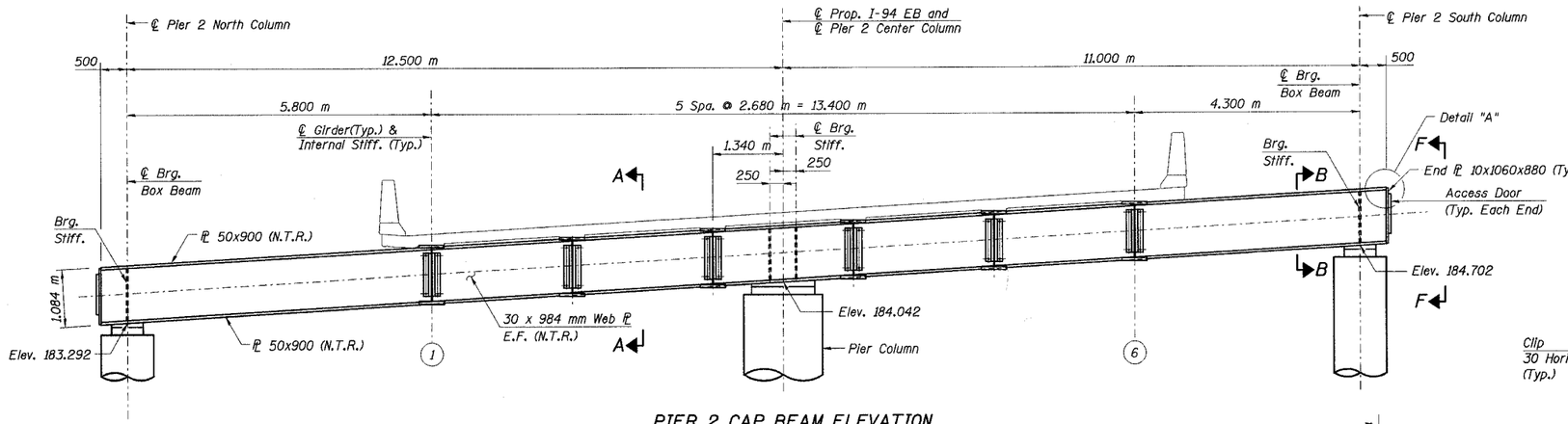
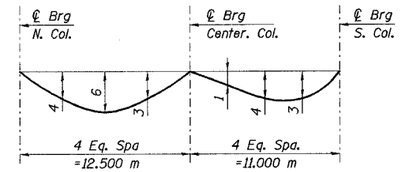
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

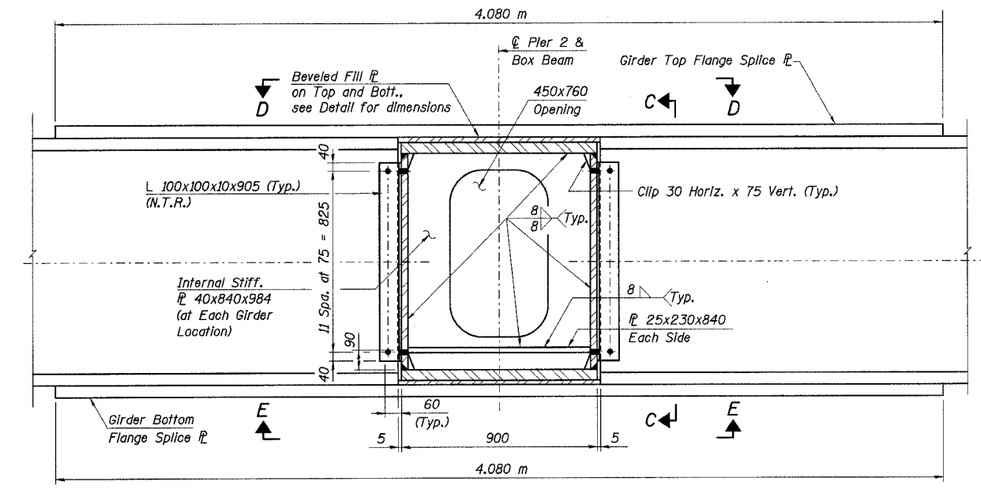
SHEET NO. 16
21 SHEETS
• 2004-133F
CONTRACT NO. 62696



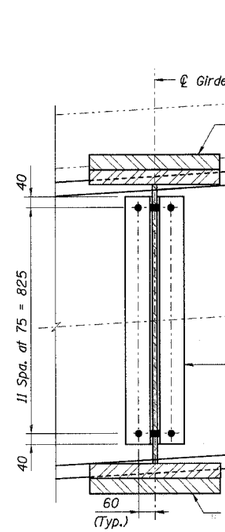
PIER 2 CAP BEAM ELEVATION
(Looking Up Station)



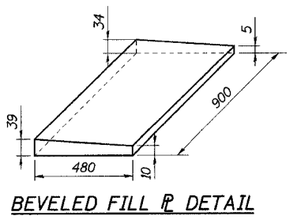
DEAD LOAD DEFLECTION
(Includes weight of slab and parapet)



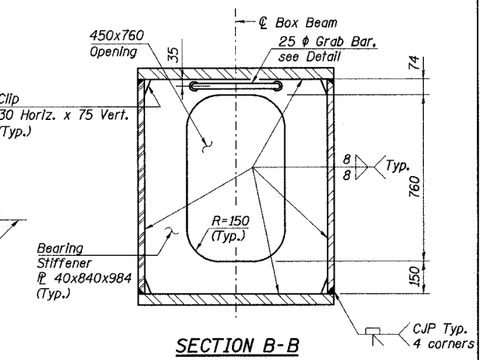
SECTION A-A



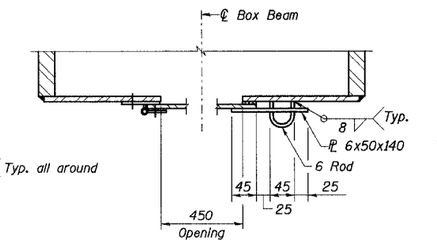
VIEW C-C



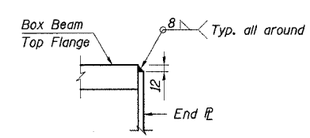
BEVELED FILL PL DETAIL



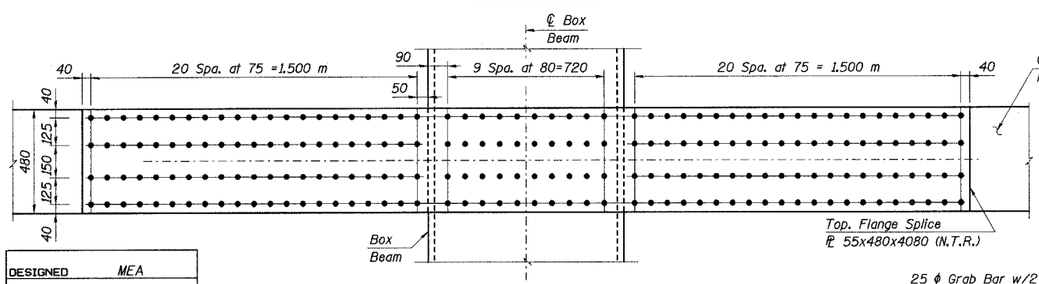
SECTION B-B
(Bearing Stiffener Detail)



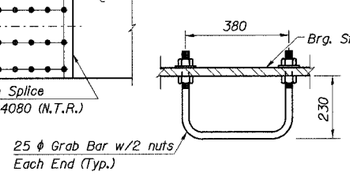
SECTION G-G



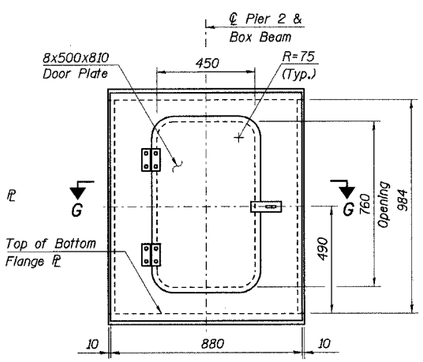
DETAIL A



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



GRAB BAR DETAIL
1 required at Each Door.
Place Bar to face door



VIEW F-F

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 ASTM A325 Bolts.
4. Contact surface of Splice Plates must satisfy Class B requirements.
5. All Bolts are 22 mm ASTM A325 H.S. Bolts with 24 mm holes.

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

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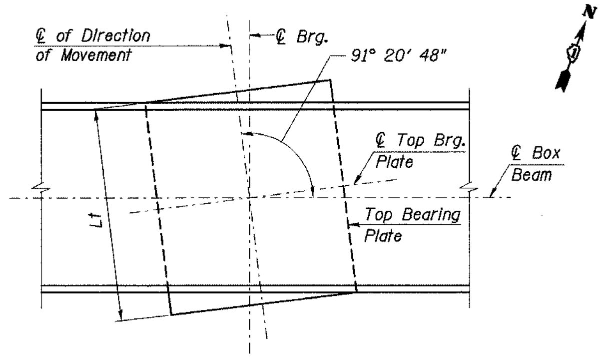
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

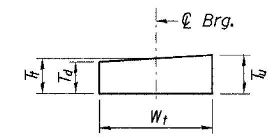
SHEET NO. 17
21 SHEETS

* 2004-133F CONTRACT NO. 62898

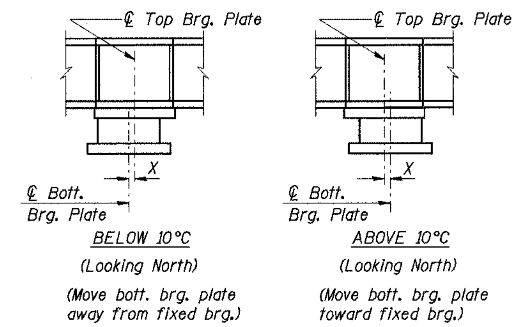


SECTION A-A

(Brg. at Center Column shown; East Column and West Column Brg. similar)

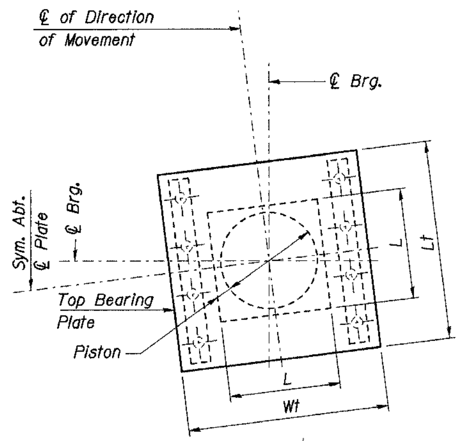


TOP PLATE BEVEL DETAIL



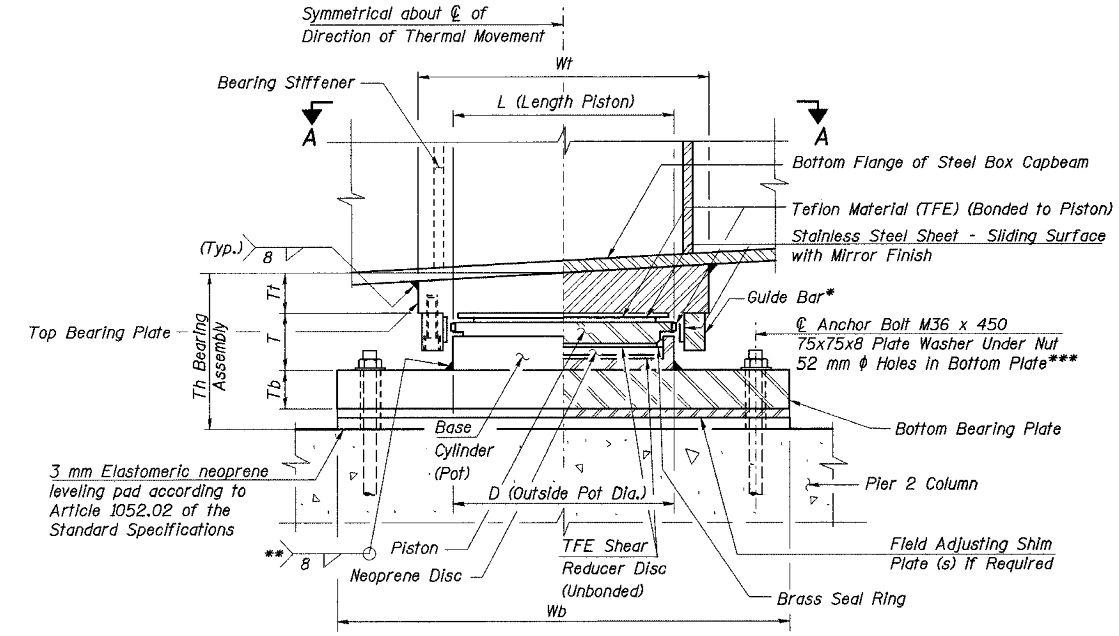
ANCHOR BOLT SETTING DETAILS AT EXPANSION BEARINGS

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



TOP BEARING PLATE AND PISTON PLAN

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



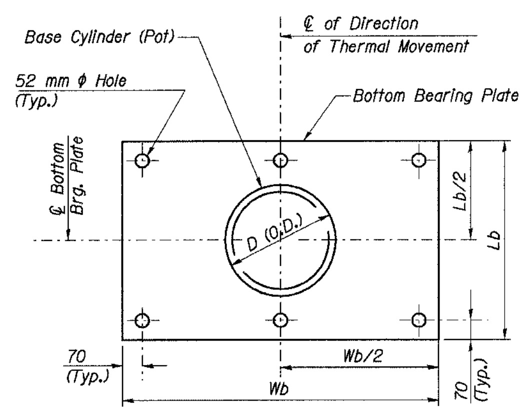
HALF SECTION THRU GUIDED EXPANSION BEARING

Note: Th & Tt are measured at ℄ 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.

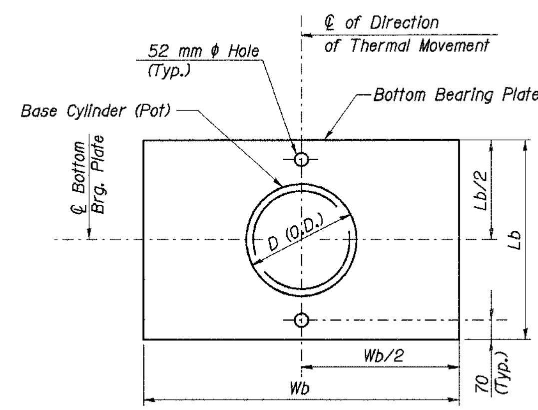
***Note: North and South Column anchor bolts are A307 and Center Column anchor bolts are A325. See Note 4.



BOTTOM BEARING PLATE AND BASE CYLINDER PLAN

(Center Column)

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



BOTTOM BEARING PLATE AND BASE CYLINDER PLAN

(East and West Column)

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

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
Bottom Plate	Wb	510	1000	485
	Lb	1100	1255	1100
	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:
1. All dimensions are in millimeters (mm) except as shown.
2. The structural steel for the top and bottom bearing plates shall be AASHTO M 270M Grade 345.
3. Cost of top and bottom bearing plates, 3mm Elastomeric Neoprene, shim plates and threaded studs with washer shall be included with Furnishing Floating Bearings.
4. For anchor bolt type and details, see Anchor Bolt Details Sht. No. 21 of 21 Shts.

DESIGNED	JFA
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

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

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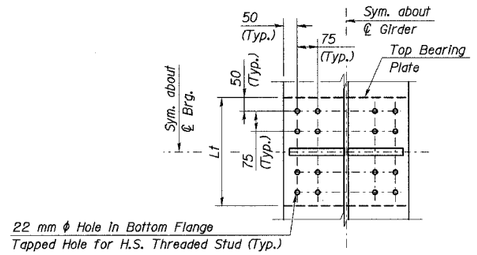
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

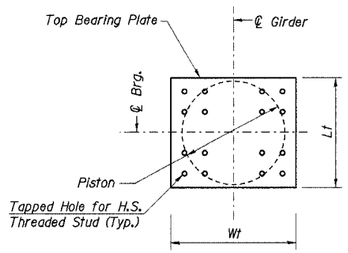
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	75
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 18
21 SHEETS

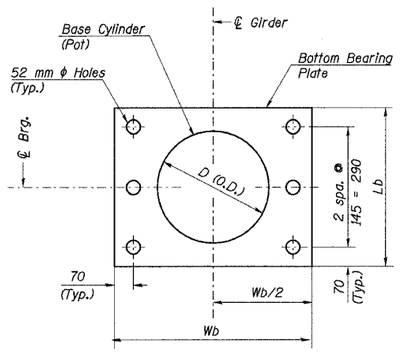
• 2004-133F
CONTRACT NO. 62898



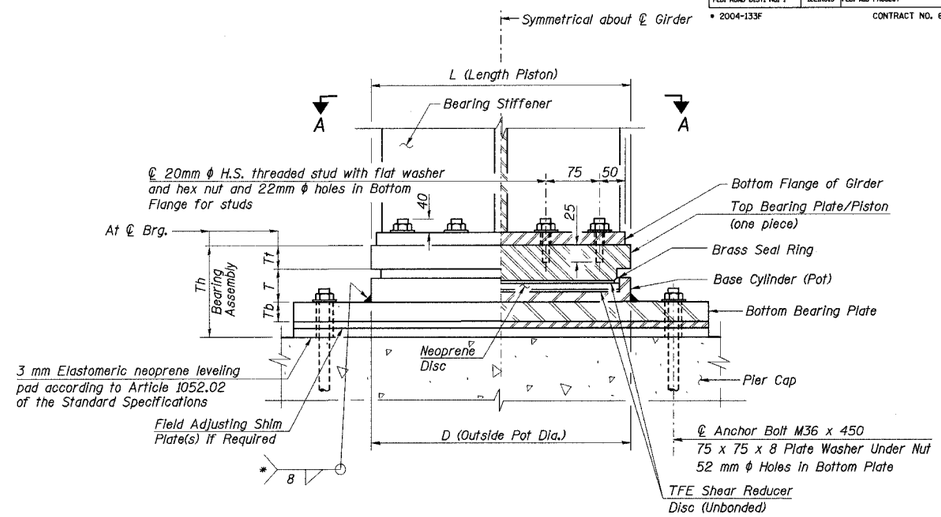
SECTION A-A



TOP BEARING PLATE / PISTON PLAN



BOTTOM BEARING PLATE AND BASE CYLINDER PLAN



HALF SECTION THRU FIXED BEARING

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

BEARING ASSEMBLY DIMENSIONS

Member	Dimension	Location	
		Pier 3	Pier 4
Top Plate	Wt	480	480
	Lt	400	400
	Tt	70	65
Bearing	D	380	380
	L	380	380
	T	110	110
Bottom Plate	Wb	750	750
	Lb	430	430
	Tb	55	55
Bearing Assembly	Th	238	233

BEARING DESIGN INFORMATION

Design Information	Location	
	Pier 3	Pier 4
Vertical Design Load (kN)	1352	1271
Pay Item Size (kN)	1500	1500
Longitudinal Lateral Load (kN)	551	551

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

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing Floating Bearings, Fixed, 1500 kN	Each	12

Notes:
1. All dimensions are in millimeters (mm) except as shown.
2. The structural steel for the top bearing plate/piston and bottom bearing plate shall be AASHTO M 270M Grade 345.
3. Cost of top and bottom bearing plates, 3 mm elastomeric neoprene, and threaded studs with washer shall be included with Furnishing Floating Bearings.
4. For anchor bolt type and details, see Sht. No. 21 of 21 sheets.

DESIGNED	TRL
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

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

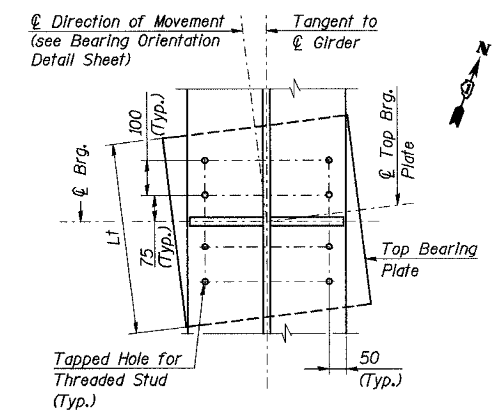
FLOATING FIXED BEARINGS

EB I-94 OVER THORN CREEK
F.A.I. 94 SECTION 2004-133F
COOK COUNTY
STA. 20+509.000 STRUCTURE NO. 016-2807

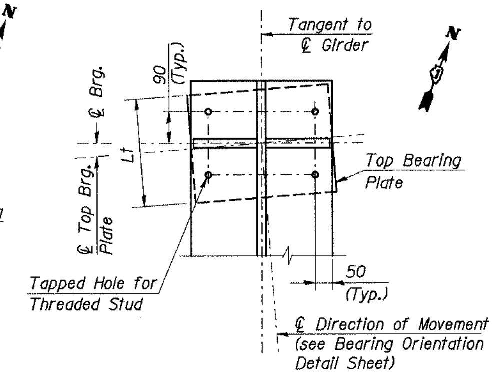
DATE 05/16/05
SCALE ---

HNTB

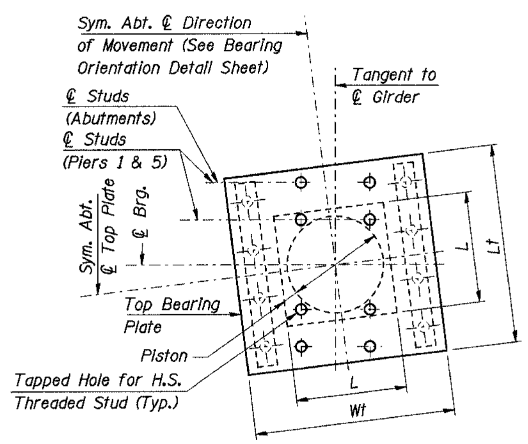
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION A-A
(Brg. at Pier 1 shown; Pier 5 similar)

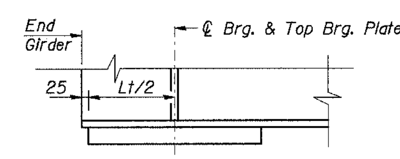


SECTION A-A
(Brg. at West Abut. shown; East Abut. similar)

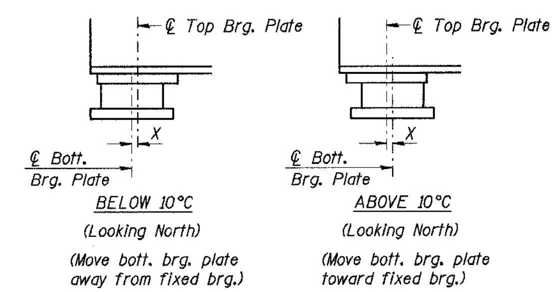


TOP BEARING PLATE AND PISTON PLAN

Note: Plate and piston are parallel to ℄ Direction of Movement, and not parallel to ℄ Girder.

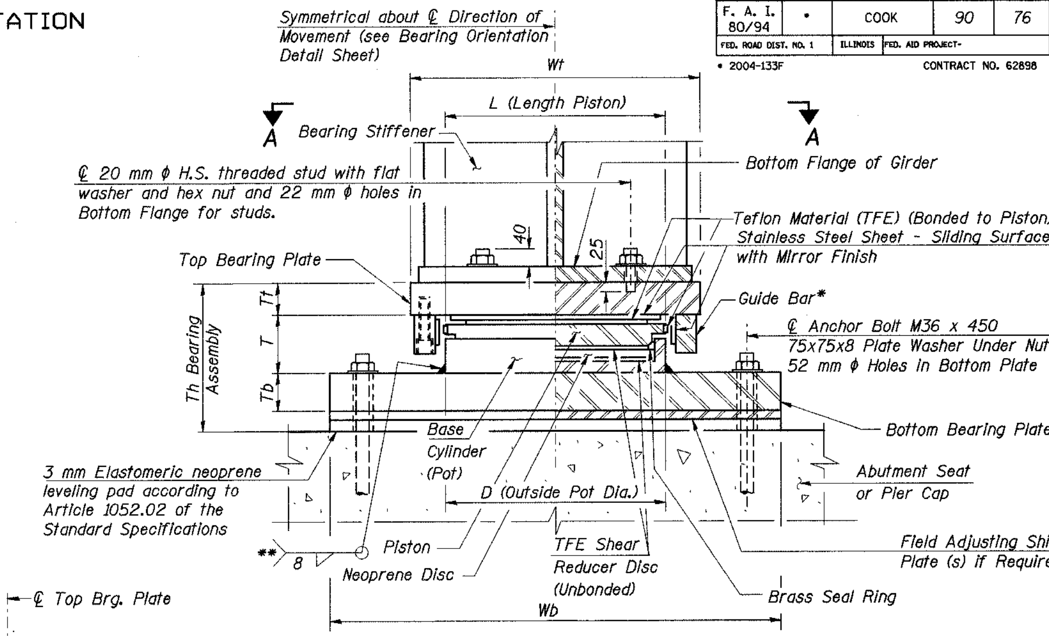


TOP PLATE/END GIRDER DETAIL AT ABUTMENTS



ANCHOR BOLT SETTING DETAILS AT EXPANSION BEARINGS

(Bearings at West Abut. Shown; Bearings at East Abut. & Piers Similar)
X=1 mm per each 10 m of expansion for every 8 °C temperature change from the normal temp. of 10 °C.



HALF SECTION THRU GUIDED EXPANSION BEARING

Note: Tt and Th are measured at ℄ 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.

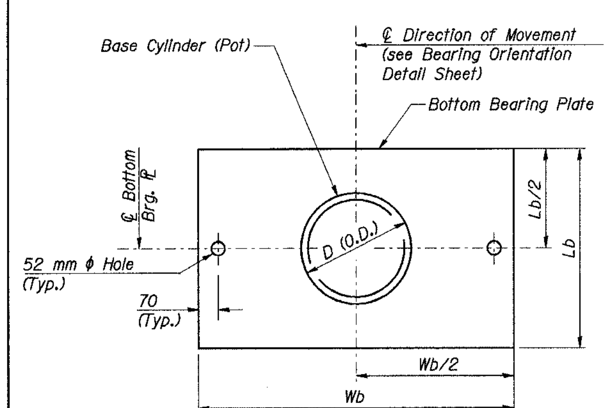
** Weld may be omitted if base cylinder is recessed into bottom bearing plate.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing Floating Bearings, Guided Expansion, 750 kN	Each	12
Furnishing Floating Bearings, Guided Expansion, 1,500 kN	Each	12

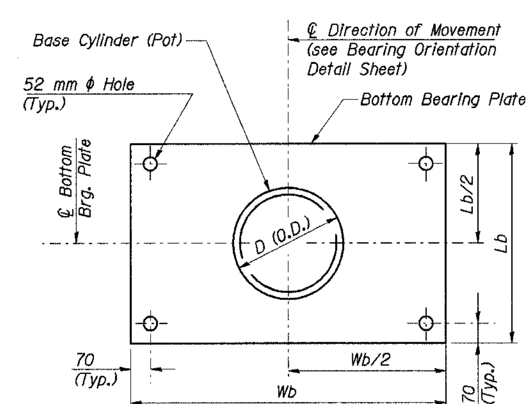
BEARING ASSEMBLY DIMENSIONS

Member	Dimension	Location W. Abut.	Pier 1	Pier 5	E. Abut.
Top Plate	Wt	480	510	510	480
	Lt	450	580	580	450
	Tt	40	55	55	40
Bearing	D	255	350	350	255
	L	255	350	350	255
	T	130	150	150	130
Bottom Plate	Wb	750	750	750	750
	Lb	310	400	400	310
	Tb	55	65	65	60
Bearing Assembly	Th	228	273	273	233



BOTTOM BEARING PLATE AND BASE CYLINDER PLAN
(Abutments)

Note: Bottom Plate and cylinder are parallel to ℄ Direction of Movement, and not parallel to ℄ Girder.



BOTTOM BEARING PLATE AND BASE CYLINDER PLAN
(Piers 1 & 5)

Note: Bottom Plate and cylinder are parallel to ℄ Direction of Movement, and not parallel to ℄ Girder.

BEARING DESIGN INFORMATION

Design Information	Location W. Abut.	Pier 1	Pier 5	E. Abut.
Vertical Design Load (kN)	519	1346	1332	556
Pay Item Size (kN)	750	1500	1500	750
Total Required Movement (mm)	130	101	74	105

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

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

DESIGNED	TRL
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

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

FLOATING EXPANSION BEARINGS

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

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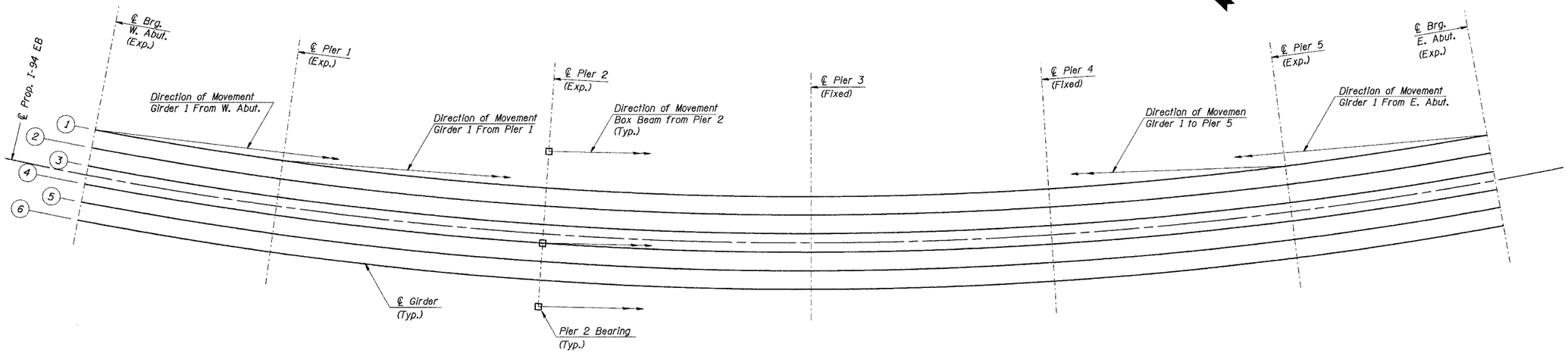
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

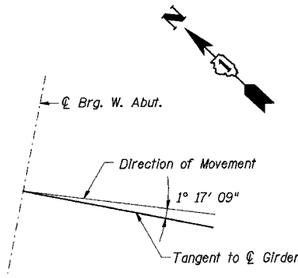
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	77
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 20
21 SHEETS

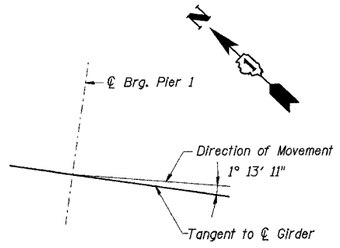
* 2004-133F
CONTRACT NO. 62898



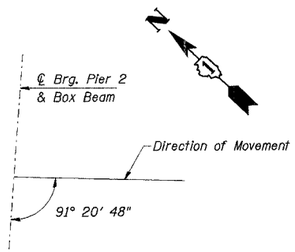
BEARING LAYOUT PLAN



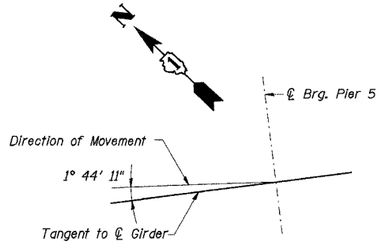
WEST ABUTMENT



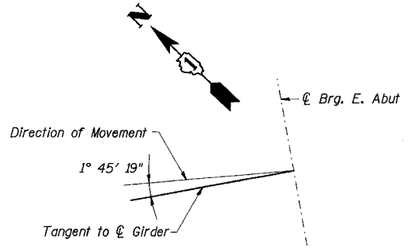
PIER 1



PIER 2



PIER 5



EAST ABUTMENT

BEARING ORIENTATION

Notes:

1. *See Sheet 17 of 21 for Pier 2 bearing orientation details.*

DESIGNED	TRL
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

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

BEARING ORIENTATION 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 ---

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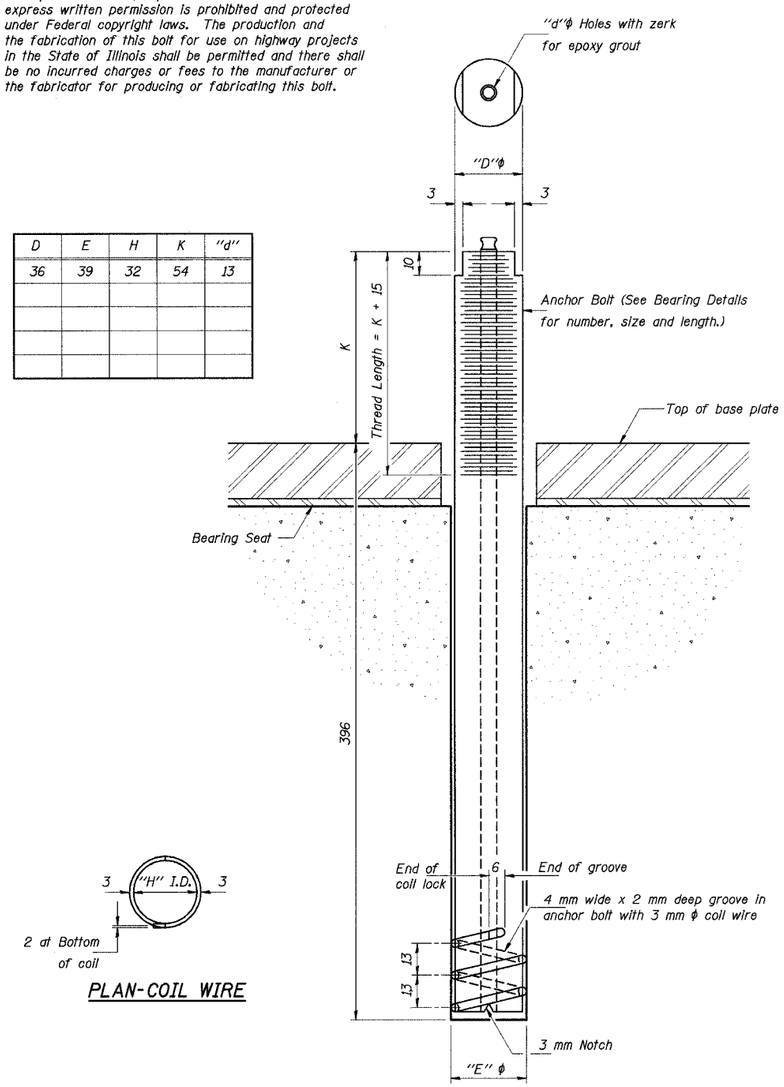
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	•	COOK	90	78
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 21
21 SHEETS

• 2004-133F
CONTRACT NO. 62898



D	E	H	K	"d"
36	39	32	54	13

PLAN-COIL WIRE

ILLINOIS COIL-LOCK ANCHOR BOLT

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system comforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

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

LOCATION	TYPE (A307)	TYPE (A325)
W. Abut.	M36 x 450	-
Pier 1	M36 x 450	-
Pier 2-N. Col.	M36 x 450	-
Pier 2-C. Col.	-	M36 x 450
Pier 2-S. Col.	M36 x 450	-
Pier 3	M36 x 450	-
Pier 4	M36 x 450	-
Pier 5	M36 x 450	-
E. Abut.	M36 x 450	-

ASTM F 1554 (Fy = 724 MPa), ASTM A 449 and AASHTO M 314 (Fy = 724 MPa) anchor bolts may be substituted for the anchor bolts shown above.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel".

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

THIS SHEET FOR INFORMATION ONLY

DESIGNED	TRL
CHECKED	JJK
DRAWN	LK
CHECKED	JJK

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

ANCHOR BOLT 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

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80-94	2004-133F	LAKE COUNTY, INDIANA	90	79
	ILLINOIS	FED. AID PROJECT-		

SHEET NO. S-1

28 SHEETS

CONTRACT NO. 62898 INDOT DES. NO. 9910630

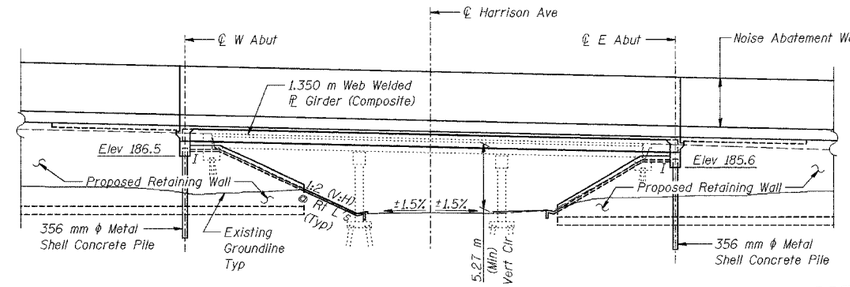
BENCHMARK:
TBM 102: Set cut box at Northeast corner of Northeast wingwall over Little Calumet River Bridge, Westbound I-80/94 mile marker 0.4. Station 8+587.2, Offset 22.4 Lt. Elevation = 191.619.

EXISTING STRUCTURE:
SN I-80-I-3805E (EBL & WBL) originally built in 1949 as FAI Route 80/94 over Harrison Avenue by the State Highway Commission of Indiana. The structure was renovated in 1966, 1982, 1990, and 1996. The existing structure is a three span, dual-structure bridge, 33.657 m back-to-back of abutments, with a reinforced concrete deck superstructure with a maximum total width of 48.330 m. The deck is supported by continuous wide flange steel beams on multi-column concrete piers and open abutments with a 15°-28' left skew angle.

STAGING:
See sections on Sheet No 2 for staging.

SALVAGE:
None.

NOTE:
All dimensions millimeters (mm) except as noted.



ELEVATION
(Looking North)

GARY S. POWELL
REGISTERED
No. 10403944
STATE OF INDIANA
PROFESSIONAL ENGINEER

GARY S. POWELL, P. E.
IN. LIC. NO. 10403944
EXP 07-31-2006
DATE 06-15-2005

LICENSED STRUCTURAL ENGINEER
GARY S. POWELL
081-004771
CHICAGO
ILLINOIS
STATE OF ILLINOIS

GARY S. POWELL, S.E.
IL. LIC. NO. 081-004771
EXP 11-30-2006
DATE 06-15-2005

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges.

1989 AASHTO Guide Specifications for Structural Design of Sound Barriers and 1992 Interims.

DESIGN LOADING

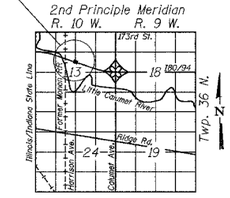
Roadway Live Load: MS-18, Alt Military, and Indiana Toll Road Truck Loads
Future Wearing Surface = 2.4 kN/sq m
Wind Load on Noise Wall = 1.7 kPa

DESIGN STRESSES

FIELD UNITS
Concrete, A, Substructure (Indiana): f'c = 24 MPa
Concrete, C, Superstructure (Indiana): f'c = 28 MPa
Reinforcement: fy = 400 MPa
Structural Steel: fy = 345 MPa (M 270M grade 345W)

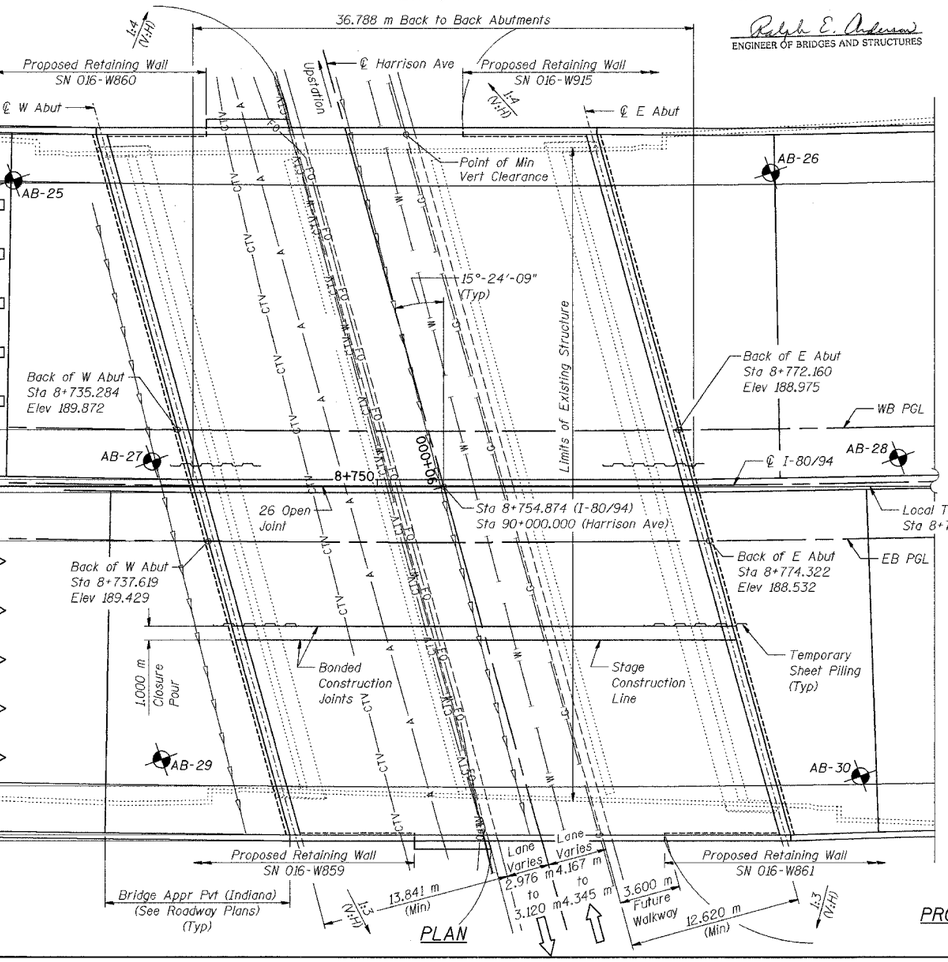
SEISMIC DATA

Seismic Performance Category (SPC): A
Bedrock Acceleration Coefficient (A): 0.04g
Site Coefficient (S): 1.0



LOCATION SKETCH

NOTES:
All dimensions measured at right angles to ℄ Structures except as noted.
(*) Radial dimensions are normal to I-80/94.



PLAN

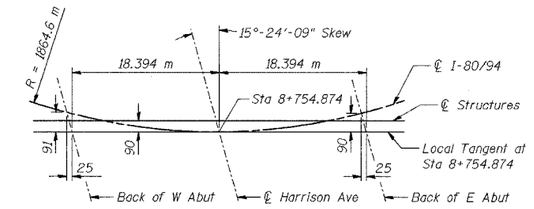
CURVE DATA

(℄ I-80/94)
Δ = 20°-51'-41"
T = 343.250 m
L = 678.899 m
E = 31.331 m
R = 1,864.600 m
SE = 3.0%
PC = Sta 8+603.684
PT = Sta 9+282.583
PI = Sta 8+946.934

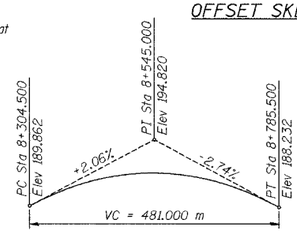
LEGEND

EB - Eastbound Traffic
WB - Westbound Traffic
I - Integral Bearing
- Proposed Sewer
- Soil Borings
- Temporary Sheet Piling
- Drainage Structure
- Existing Sewer
CTV - Cable TV
G - Gas
W - Water Main
FO - Fiber Optic
A - Aerial Line

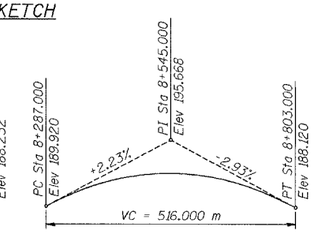
DESIGNED	BHS
CHECKED	KFA
DRAWN	MJB
CHECKED	GSP



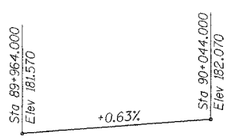
OFFSET SKETCH



PROFILE GRADE I-80/94 EB



PROFILE GRADE I-80/94 WB



PROFILE GRADE ℄ HARRISON AVE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. ROUTE 80/94 (BORMAN EXPRESSWAY)
OVER HARRISON AVENUE

GENERAL PLAN AND ELEVATION
SECTION 2004-133F
LAKE COUNTY, INDIANA
STATION 8+754.874
STRUCTURE NO. I-80-I-8461 (EB & WB)
DATE 05/05 **(016-1005 & 016-1006)**

AMERICAN CONSULTING ENGINEERS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80/94	2004-133F	LAKE COUNTY, INDIANA	90	80
		ILLINOIS	FED. AID PROJECT-	

SHEET NO. S-2
28 SHEETS

CONTRACT NO. 62898 INDOT DES. NO. 9910630

GENERAL NOTES

1. Fasteners shall be high strength bolts (AASHTO M164 type 3). Bolts M22 ϕ, open holes 24 mm ϕ, unless otherwise noted.
2. Calculated mass of Structural Steel (M 270M, Grade 345W) = 334,090 kg
3. All structural steel shall be AASHTO M 270M Grade 345W.
* 4. Field welding of construction accessories will not be permitted to the girders.
5. The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the tension flanges and webs of plate girders.
* 6. Reinforcement bars shall conform to the requirements of AASHTO M 31M or M 322M Grade 400.
* 7. Slope wall shall be reinforced with welded wire fabric. 152 x 152 - MW25.8 x MW25.8, with a mass of 2.91 kg/sq m.
* 8. The contractor shall drive 2-356 ϕ Metal Shell test piles in a permanent location. One each at the East and West Abutments, as directed by the Engineer before ordering the remainder of piles.
9. All dimensions are in millimeters (mm) except as noted.
* 10. The existing structural steel coating contains lead. The Contractor should take appropriate precautions to deal with the presence of lead on this project. No additional compensation will be made to properly dispose of the existing structure containing lead.
11. AASHTO M 270M Grade 345W structural steel shall only be painted, at the ends of the beams, for a distance equal to 675 mm. Those areas shall be primed in the shop with an inorganic zinc rich primer per AASHTO M 300, Type I. No field painting shall be required. All structural steel shall be cleaned as specified in the special provision for "Surface Preparation and Painting Requirements for Weathering Steel". The top of the top flanges shall not be painted.
* 12. All construction joints shall be bonded.

INDEX OF SHEETS

- S-1 General Plan
- S-2 General Notes, Index of Sheets and Total Bill of Material
- * S-3 Stage Construction Details - Substructure
- S-4 Stage Construction Details - Superstructure
- * S-5 Temporary Concrete Barrier for Stage Construction
- S-6 Top of Deck Elevations - Layout
- S-7 Top of Deck Elevations (1 of 4)
- S-8 Top of Deck Elevations (2 of 4)
- S-9 Top of Deck Elevations (3 of 4)
- S-10 Top of Deck Elevations (4 of 4)
- * S-11 Deck Plan - Eastbound
- * S-12 Deck Plan - Westbound
- * S-13 Parapet Elevations
- * S-14 Superstructure Details
- S-15 Framing Plan
- S-16 Framing Details
- S-17 Anchor Bolt Details
- * S-18 West Abutment - Eastbound
- * S-19 West Abutment - Westbound
- * S-20 East Abutment - Eastbound
- * S-21 East Abutment - Westbound
- * S-22 Abutment Details
- * S-23 Bar Splicer (Coupler) Details
- * S-24 Concrete Pile Details
- * S-25 Boring Logs (1 of 4)
- * S-26 Boring Logs (2 of 4)
- * S-27 Boring Logs (3 of 4)
- * S-28 Boring Logs (4 of 4)

- S-XX Bearing Seat Elevations (For Information Only)

TOTAL BILL OF MATERIAL

	ITEM	UNIT	SUPER	SUB	TOTAL
* (IN)	Present Structure, Str. No. I-80-1-8461, Remove Portions	L. Sum			
* (IN)	Field Welded Stud Shear Connector	Each			
* (IN)	Test Pile, 356 mm	Each			
* (IN)	Structure Backfill	m^3			
* (IN)	Excavation, Foundation, Unclassified	m^3			
* (IN)	Concrete, A, Substructure	m^3			
* (IN)	Concrete, C, Superstructure	m^3			
* (IN)	Surface Seal	L. Sum			
* (IN)	Reinforcing Bars, Epoxy Coated	kg			
* (IN)	Pile, Concrete, Steel Shell Encased, 6.35 mm, 356 mm	m			
* (IN)	Threaded Tie Bar Assembly, Epoxy Coated	Each			
* (IN)	Anchor Bolt	Each			
*	Noise Abatement Wall Anchor Rod Assembly	Each			
	Furnishing Structural Steel	L. Sum	0.16		
*	Erecting Structural Steel	L. Sum			
	Storage of Structural Steel	**	501		
* (IN)	Masonry Coat	L. Sum			

** For Storage of Structural Steel one unit shall be equal to 5 metric tons. The quantity was calculated based on the assumption that 25% of the steel mass has to be stored for 30 calendar days.

(IN) Indiana Pay Items, denoted by "(Indiana)" in Special Provisions and Summary of Quantities.

DESIGNED	BHS
CHECKED	KFA
DRAWN	BHS
CHECKED	GSP

*** NOT INCLUDED IN CONTRACT**

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. ROUTE 80/94 (BORMAN EXPRESSWAY)
OVER HARRISON AVENUE
GENERAL NOTES, INDEX OF SHEETS AND TOTAL BILL OF MATERIAL
SECTION 2004-133F
LAKE COUNTY, INDIANA
STATION 8+754.874
STRUCTURE NO. I-80-1-8461 (EB & WB)
DATE 05/05 **(016-1005 & 016-1006)**

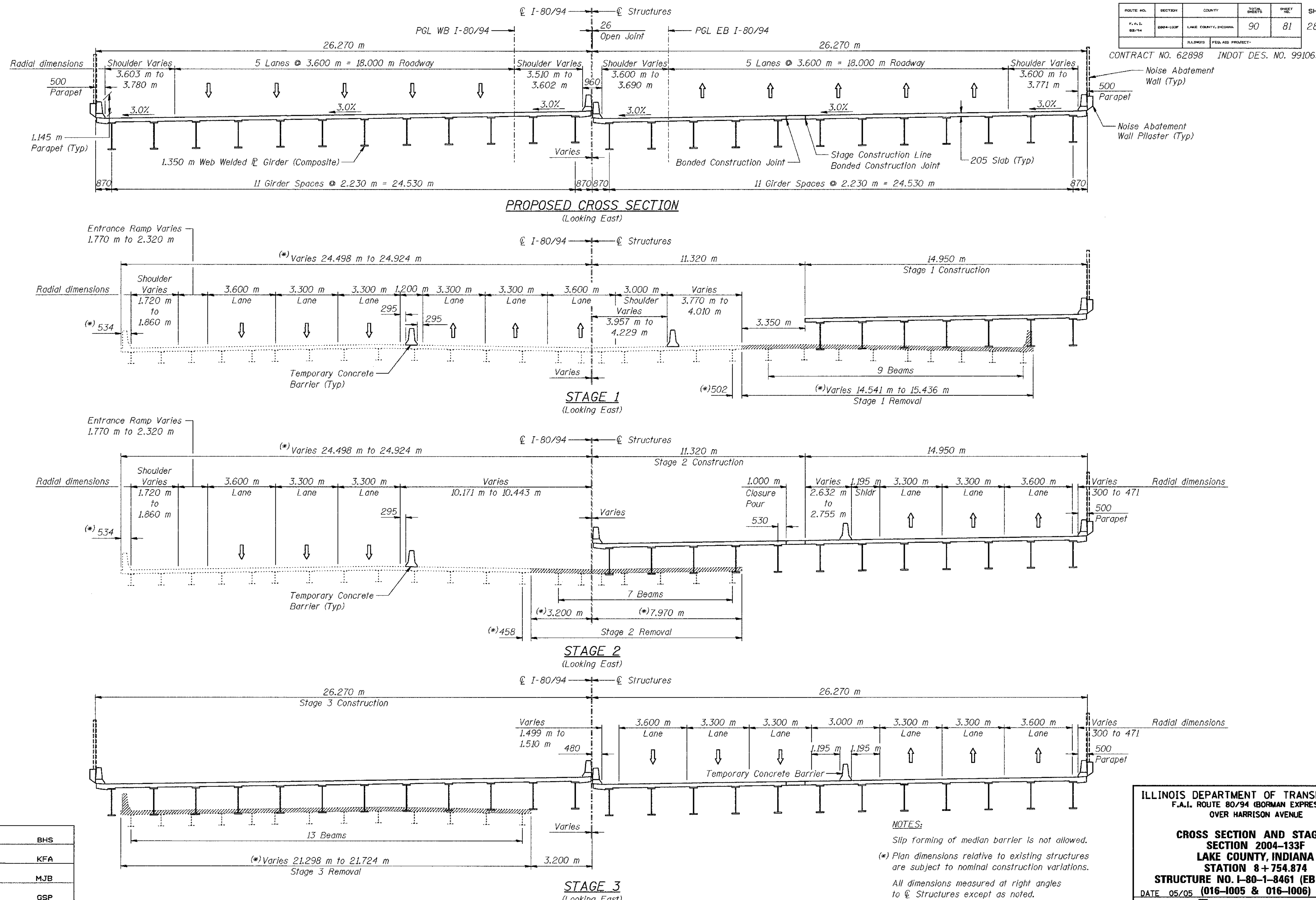
AMERICAN CONSULTING ENGINEERS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80/94	2004-133F	LAKE COUNTY, INDIANA	90	81
		ILLINOIS	FED. AID PROJECT-	

SHEET NO. S-4

28 SHEETS

CONTRACT NO. 62898 INDOT DES. NO. 9910630



NOTES:

Slip forming of median barrier is not allowed.

(*) Plan dimensions relative to existing structures are subject to nominal construction variations.

All dimensions measured at right angles to ℄ Structures except as noted.

Radial dimensions are normal to I-80/94.

DESIGNED	BHS
CHECKED	KFA
DRAWN	MJB
CHECKED	GSP

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. ROUTE 80/94 (BORMAN EXPRESSWAY)
OVER HARRISON AVENUE

CROSS SECTION AND STAGING
SECTION 2004-133F
LAKE COUNTY, INDIANA
STATION 8+754.874
STRUCTURE NO. I-80-1-8461 (EB & WB)
(016-I005 & 016-I006)

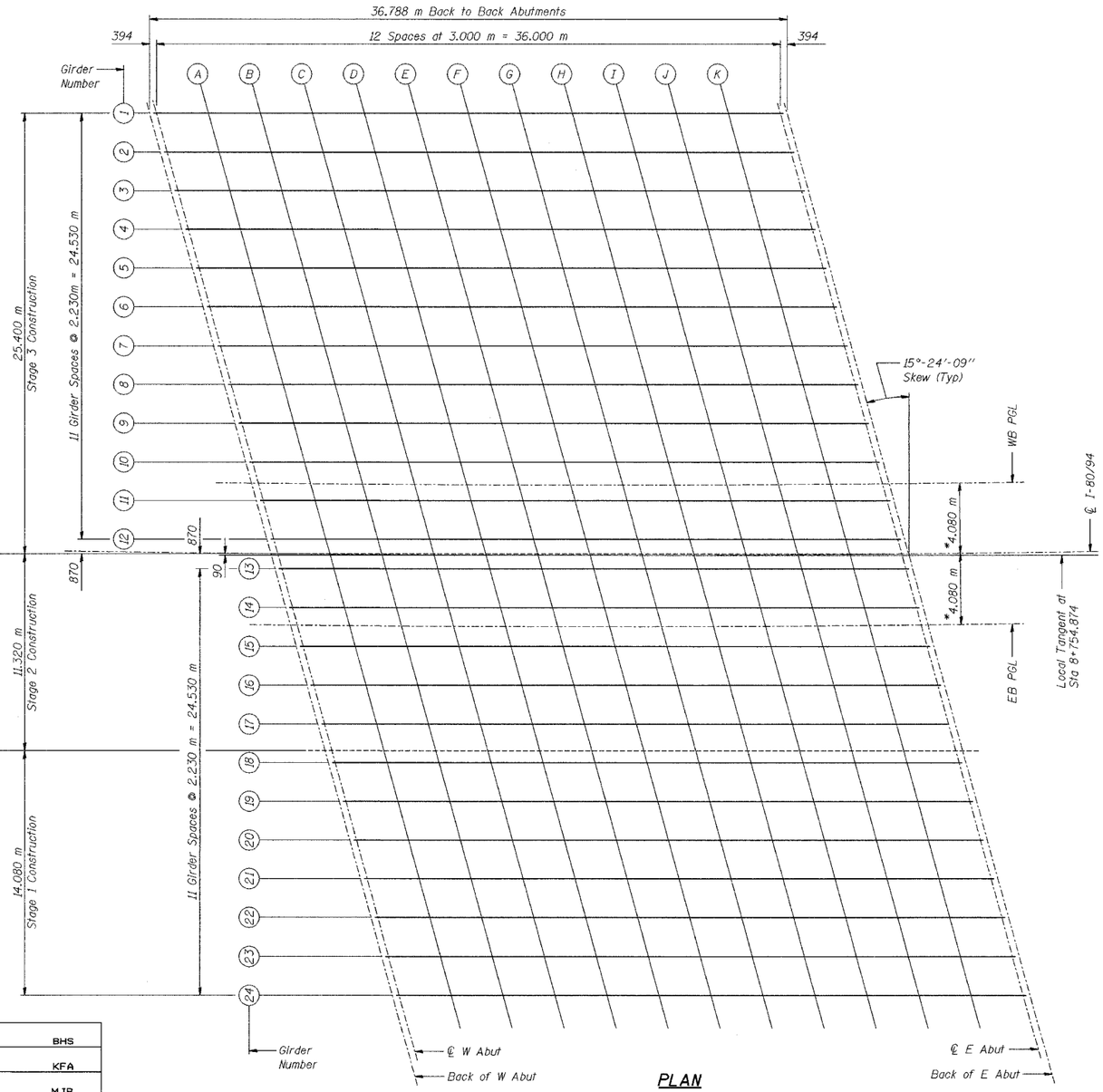
DATE 05/05

AMERICAN CONSULTING ENGINEERS

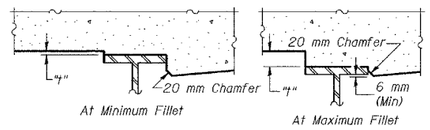
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80/94	2004-133F	LAKE COUNTY, INDIANA	90	82
		ILLINOIS FED. AID PROJECT-		

SHEET NO. S-6
28 SHEETS

CONTRACT NO. 62898 INDOT DES. NO. 9910630

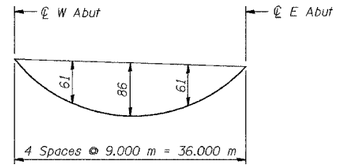


PLAN



To determine "t": 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 in Tables on Sheet S-7 thru S-10, minus slab thickness, equals the fillet heights "t" above top flange of girders.

FILLET HEIGHTS



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.

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

NOTES:

* Measured radial to ℄ I-80/94.

DESIGNED	BHS
CHECKED	KFA
DRAWN	MJB
CHECKED	GSP

FOR INFORMATION ONLY

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. ROUTE 80/94 (BORMAN EXPRESSWAY)
OVER HARRISON AVENUE

TOP OF DECK ELEVATIONS – LAYOUT
SECTION 2004-133F
LAKE COUNTY, INDIANA
STATION 8+754.874
STRUCTURE NO. I-80-1-8461 (EB & WB)
DATE 05/05 **(016-1005 & 016-1006)**

AMERICAN CONSULTING ENGINEERS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80/94	2004-133F	LAKE COUNTY, INDIANA	90	83
		ILLINOIS FED. AID PROJECT-		

SHEET NO. S-7
28 SHEETS

CONTRACT NO. 62898 INDOT DES. NO. 9910630

GIRDER 1

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+729.107	-25.314 m	189.372	189.372
CL W Abut	8+729.506	-25.320 m	189.363	189.363
A	8+732.547	-25.358 m	189.295	189.318
B	8+735.589	-25.392 m	189.226	189.269
C	8+738.630	-25.420 m	189.156	189.217
D	8+741.671	-25.444 m	189.085	189.160
E	8+744.713	-25.463 m	189.014	189.097
F	8+747.754	-25.477 m	188.942	189.028
G	8+750.796	-25.486 m	188.869	188.952
H	8+753.837	-25.490 m	188.795	188.870
I	8+756.879	-25.489 m	188.721	188.782
J	8+759.921	-25.483 m	188.646	188.689
K	8+762.962	-25.473 m	188.570	188.592
CL E Abut	8+766.004	-25.457 m	188.493	188.493
Back of E Abut	8+766.403	-25.455 m	188.483	188.483

GIRDER 2

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+729.760	-23.093 m	189.424	189.424
CL W Abut	8+730.159	-23.098 m	189.416	189.416
A	8+733.196	-23.136 m	189.347	189.370
B	8+736.234	-23.168 m	189.278	189.321
C	8+739.272	-23.196 m	189.208	189.269
D	8+742.309	-23.218 m	189.137	189.212
E	8+745.347	-23.236 m	189.066	189.149
F	8+748.385	-23.249 m	188.994	189.080
G	8+751.423	-23.257 m	188.921	189.004
H	8+754.461	-23.260 m	188.847	188.922
I	8+757.499	-23.258 m	188.772	188.834
J	8+760.537	-23.252 m	188.697	188.741
K	8+763.574	-23.240 m	188.621	188.644
CL E Abut	8+766.612	-23.224 m	188.544	188.544
Back of E Abut	8+767.011	-23.221 m	188.534	188.534

GIRDER 3

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+730.412	-20.871 m	189.477	189.477
CL W Abut	8+730.810	-20.876 m	189.468	189.468
A	8+733.844	-20.913 m	189.399	189.422
B	8+736.878	-20.944 m	189.330	189.374
C	8+739.912	-20.971 m	189.260	189.321
D	8+742.946	-20.992 m	189.189	189.264
E	8+745.980	-21.009 m	189.118	189.201
F	8+749.014	-21.021 m	189.046	189.131
G	8+752.048	-21.028 m	188.973	189.056
H	8+755.083	-21.030 m	188.899	188.973
I	8+758.117	-21.027 m	188.824	188.885
J	8+761.151	-21.020 m	188.749	188.792
K	8+764.185	-21.007 m	188.673	188.695
CL E Abut	8+767.219	-20.990 m	188.596	188.596
Back of E Abut	8+767.618	-20.987 m	188.585	188.585

GIRDER 4

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+731.062	-18.649 m	189.529	189.529
CL W Abut	8+731.460	-18.654 m	189.520	189.520
A	8+734.490	-18.690 m	189.452	189.474
B	8+737.520	-18.720 m	189.382	189.426
C	8+740.550	-18.746 m	189.312	189.373
D	8+743.581	-18.766 m	189.241	189.316
E	8+746.611	-18.782 m	189.170	189.253
F	8+749.642	-18.793 m	189.097	189.183
G	8+752.672	-18.799 m	189.024	189.107
H	8+755.703	-18.800 m	188.950	189.025
I	8+758.734	-18.796 m	188.876	188.937
J	8+761.764	-18.787 m	188.800	188.844
K	8+764.795	-18.774 m	188.724	188.747
CL E Abut	8+767.825	-18.755 m	188.647	188.647
Back of E Abut	8+768.223	-18.753 m	188.637	188.637

GIRDER 5

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+731.710	-16.427 m	189.581	189.581
CL W Abut	8+732.108	-16.432 m	189.572	189.572
A	8+735.134	-16.466 m	189.504	189.526
B	8+738.161	-16.496 m	189.435	189.478
C	8+741.188	-16.520 m	189.364	189.426
D	8+744.214	-16.540 m	189.293	189.368
E	8+747.241	-16.555 m	189.222	189.305
F	8+750.268	-16.564 m	189.149	189.235
G	8+753.295	-16.569 m	189.076	189.159
H	8+756.322	-16.569 m	189.002	189.077
I	8+759.349	-16.565 m	188.927	188.988
J	8+762.376	-16.555 m	188.852	188.895
K	8+765.402	-16.541 m	188.776	188.798
CL E Abut	8+768.429	-16.521 m	188.698	188.698
Back of E Abut	8+768.827	-16.518 m	188.688	188.688

GIRDER 6

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+732.357	-14.205 m	189.634	189.634
CL W Abut	8+732.754	-14.210 m	189.625	189.625
A	8+735.777	-14.243 m	189.556	189.579
B	8+738.800	-14.271 m	189.487	189.530
C	8+741.823	-14.295 m	189.416	189.478
D	8+744.846	-14.313 m	189.345	189.420
E	8+747.869	-14.327 m	189.274	189.357
F	8+750.893	-14.336 m	189.201	189.287
G	8+753.916	-14.340 m	189.128	189.211
H	8+756.939	-14.339 m	189.054	189.128
I	8+759.962	-14.333 m	188.979	189.040
J	8+762.986	-14.322 m	188.903	188.947
K	8+766.009	-14.307 m	188.827	188.850
CL E Abut	8+769.032	-14.287 m	188.750	188.750
Back of E Abut	8+769.429	-14.284 m	188.740	188.740

GIRDER 7

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+733.002	-11.983 m	189.686	189.686
CL W Abut	8+733.399	-11.987 m	189.677	189.677
A	8+736.418	-12.019 m	189.608	189.631
B	8+739.438	-12.047 m	189.539	189.582
C	8+742.457	-12.069 m	189.469	189.530
D	8+745.477	-12.086 m	189.397	189.472
E	8+748.496	-12.099 m	189.326	189.409
F	8+751.516	-12.107 m	189.253	189.339
G	8+754.535	-12.110 m	189.180	189.263
H	8+757.555	-12.108 m	189.106	189.180
I	8+760.575	-12.101 m	189.031	189.092
J	8+763.594	-12.090 m	188.955	188.998
K	8+766.614	-12.073 m	188.879	188.901
CL E Abut	8+769.633	-12.052 m	188.801	188.801
Back of E Abut	8+770.030	-12.049 m	188.791	188.791

GIRDER 8

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+733.646	-9.760 m	189.738	189.738
CL W Abut	8+734.042	-9.764 m	189.729	189.729
A	8+737.058	-9.795 m	189.661	189.683
B	8+740.074	-9.822 m	189.591	189.634
C	8+743.090	-9.843 m	189.521	189.582
D	8+746.106	-9.859 m	189.449	189.524
E	8+749.122	-9.871 m	189.378	189.461
F	8+752.137	-9.878 m	189.305	189.391
G	8+755.153	-9.880 m	189.231	189.314
H	8+758.169	-9.877 m	189.157	189.232
I	8+761.185	-9.869 m	189.082	189.143
J	8+764.201	-9.857 m	189.007	189.050
K	8+767.217	-9.839 m	188.930	188.953
CL E Abut	8+770.233	-9.817 m	188.853	188.853
Back of E Abut	8+770.629	-9.814 m	188.843	188.843

NOTES:

See Sheet No. S-6 for Plan.

All stations, offsets, and elevations are in meters.

DESIGNED	BHS
CHECKED	KFA
DRAWN	MJB
CHECKED	GSP

FOR INFORMATION ONLY

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. ROUTE 80/94 (BORMAN EXPRESSWAY)
OVER HARRISON AVENUE

TOP OF DECK ELEVATIONS (1 OF 4)
SECTION 2004-133F
LAKE COUNTY, INDIANA
STATION 8+754.874
STRUCTURE NO. I-80-1-8461 (EB & WB)

DATE 05/05 **(016-1005 & 016-1006)**

AMERICAN CONSULTING ENGINEERS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80-94	2004-133F	LAKE COUNTY, INDIANA	90	84
		ILLINOIS FED. AID PROJECT-		

SHEET NO. S-8
28 SHEETS

CONTRACT NO. 62898 INDOT DES. NO. 9910630

GIRDER 9

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+734.289	-7.537 m	189.791	189.791
CL W Abut	8+734.684	-7.541 m	189.782	189.782
A	8+737.696	-7.571 m	189.713	189.735
B	8+740.708	-7.596 m	189.643	189.687
C	8+743.721	-7.617 m	189.573	189.634
D	8+746.733	-7.632 m	189.501	189.576
E	8+749.745	-7.643 m	189.429	189.512
F	8+752.758	-7.649 m	189.357	189.443
G	8+755.770	-7.650 m	189.283	189.366
H	8+758.782	-7.646 m	189.209	189.284
I	8+761.795	-7.637 m	189.134	189.195
J	8+764.807	-7.624 m	189.058	189.102
K	8+767.819	-7.605 m	188.982	189.004
CL E Abut	8+770.831	-7.582 m	188.904	188.904
Back of E Abut	8+771.227	-7.579 m	188.894	188.894

GIRDER 10

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+734.929	-5.314 m	189.843	189.843
CL W Abut	8+735.325	-5.318 m	189.834	189.834
A	8+738.333	-5.347 m	189.765	189.788
B	8+741.342	-5.371 m	189.695	189.739
C	8+744.350	-5.390 m	189.625	189.686
D	8+747.359	-5.405 m	189.553	189.628
E	8+750.368	-5.415 m	189.481	189.564
F	8+753.376	-5.419 m	189.409	189.494
G	8+756.385	-5.419 m	189.335	189.418
H	8+759.394	-5.415 m	189.261	189.335
I	8+762.403	-5.405 m	189.186	189.247
J	8+765.411	-5.390 m	189.110	189.153
K	8+768.420	-5.371 m	189.033	189.056
CL E Abut	8+771.428	-5.347 m	188.956	188.956
Back of E Abut	8+771.824	-5.343 m	188.946	188.946

WB PGL

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+735.285	-4.080 m	189.872	189.872
CL W Abut	8+735.681	-4.080 m	189.863	189.863
A	8+738.696	-4.080 m	189.795	189.817
B	8+741.708	-4.080 m	189.726	189.769
C	8+744.720	-4.080 m	189.655	189.717
D	8+747.730	-4.080 m	189.584	189.659
E	8+750.740	-4.080 m	189.513	189.595
F	8+753.747	-4.080 m	189.440	189.526
G	8+756.754	-4.080 m	189.366	189.449
H	8+759.759	-4.080 m	189.292	189.366
I	8+762.762	-4.080 m	189.216	189.277
J	8+765.765	-4.080 m	189.140	189.184
K	8+768.766	-4.080 m	189.063	189.086
CL E Abut	8+771.765	-4.080 m	188.985	188.985
Back of E Abut	8+772.159	-4.080 m	188.975	188.975

GIRDER 11

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+735.569	-3.090 m	189.895	189.895
CL W Abut	8+735.963	-3.094 m	189.886	189.886
A	8+738.968	-3.122 m	189.817	189.840
B	8+741.973	-3.145 m	189.747	189.791
C	8+744.978	-3.164 m	189.677	189.738
D	8+747.983	-3.177 m	189.605	189.680
E	8+750.988	-3.186 m	189.533	189.616
F	8+753.994	-3.190 m	189.461	189.546
G	8+756.999	-3.189 m	189.387	189.470
H	8+760.004	-3.183 m	189.312	189.387
I	8+763.009	-3.172 m	189.237	189.298
J	8+766.014	-3.157 m	189.161	189.205
K	8+769.019	-3.136 m	189.085	189.107
CL E Abut	8+772.024	-3.111 m	189.007	189.007
Back of E Abut	8+772.419	-3.108 m	188.997	188.997

GIRDER 12

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+736.206	-0.867 m	189.948	189.948
CL W Abut	8+736.601	-0.871 m	189.939	189.939
A	8+739.602	-0.897 m	189.870	189.892
B	8+742.603	-0.920 m	189.800	189.843
C	8+745.605	-0.937 m	189.729	189.790
D	8+748.606	-0.949 m	189.658	189.732
E	8+751.608	-0.957 m	189.585	189.668
F	8+754.609	-0.960 m	189.512	189.598
G	8+757.611	-0.958 m	189.439	189.522
H	8+760.612	-0.951 m	189.364	189.439
I	8+763.614	-0.940 m	189.289	189.350
J	8+766.615	-0.923 m	189.213	189.256
K	8+769.617	-0.902 m	189.136	189.159
CL E Abut	8+772.618	-0.876 m	189.059	189.059
Back of E Abut	8+773.012	-0.872 m	189.049	189.049

GIRDER 13

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+736.703	0.869 m	189.354	189.354
CL W Abut	8+737.097	0.865 m	189.345	189.345
A	8+740.095	0.839 m	189.276	189.298
B	8+743.094	0.817 m	189.206	189.249
C	8+746.092	0.801 m	189.136	189.197
D	8+749.091	0.789 m	189.064	189.139
E	8+752.090	0.782 m	188.993	189.076
F	8+755.089	0.780 m	188.920	189.006
G	8+758.087	0.783 m	188.846	188.929
H	8+761.086	0.790 m	188.772	188.847
I	8+764.085	0.803 m	188.697	188.759
J	8+767.083	0.820 m	188.622	188.665
K	8+770.082	0.842 m	188.545	188.568
CL E Abut	8+773.081	0.869 m	188.468	188.468
Back of E Abut	8+773.475	0.873 m	188.458	188.458

GIRDER 14

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+737.338	3.093 m	189.406	189.406
CL W Abut	8+737.731	3.089 m	189.397	189.397
A	8+740.726	3.064 m	189.328	189.351
B	8+743.721	3.043 m	189.258	189.302
C	8+746.716	3.028 m	189.188	189.249
D	8+749.711	3.017 m	189.117	189.191
E	8+752.707	3.011 m	189.045	189.128
F	8+755.702	3.010 m	188.972	189.058
G	8+758.697	3.014 m	188.898	188.981
H	8+761.692	3.022 m	188.824	188.899
I	8+764.687	3.036 m	188.749	188.810
J	8+767.682	3.054 m	188.673	188.717
K	8+770.677	3.077 m	188.597	188.620
CL E Abut	8+773.672	3.105 m	188.520	188.520
Back of E Abut	8+774.066	3.109 m	188.510	188.510

EB PGL

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+737.620	4.080 m	189.429	189.429
CL W Abut	8+738.014	4.080 m	189.420	189.420
A	8+741.014	4.080 m	189.352	189.374
B	8+744.013	4.080 m	189.283	189.326
C	8+747.011	4.080 m	189.212	189.274
D	8+750.007	4.080 m	189.141	189.216
E	8+753.002	4.080 m	189.070	189.152
F	8+755.995	4.080 m	188.997	189.083
G	8+758.988	4.080 m	188.923	189.006
H	8+761.979	4.080 m	188.849	188.923
I	8+764.968	4.080 m	188.773	188.835
J	8+767.956	4.080 m	188.697	188.741
K	8+770.943	4.080 m	188.620	188.643
CL E Abut	8+773.929	4.080 m	188.542	188.542
Back of E Abut	8+774.321	4.080 m	188.532	188.532

NOTES:

See Sheet No. S-6 for Plan.

All stations, offsets, and elevations are in meters.

DESIGNED	BHS
CHECKED	KFA
DRAWN	MJB
CHECKED	GSP

FOR INFORMATION ONLY

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. ROUTE 80/94 (BORMAN EXPRESSWAY)
OVER HARRISON AVENUE

TOP OF DECK ELEVATIONS (2 OF 4)
SECTION 2004-133F
LAKE COUNTY, INDIANA
STATION 8+754.874
STRUCTURE NO. I-80-1-8461 (EB & WB)
DATE 05/05 **(016-I005 & 016-I006)**

AMERICAN CONSULTING ENGINEERS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80/94	2004-133F	LAKE COUNTY, INDIANA	90	85
	ILLINOIS	FED. AID PROJECT-		

SHEET NO. S-9
28 SHEETS

CONTRACT NO. 62898 INDOT DES. NO. 9910630

GIRDER 15

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+737.971	5.317 m	189.458	189.458
CL W Abut	8+738.364	5.313 m	189.449	189.449
A	8+741.356	5.289 m	189.380	189.403
B	8+744.347	5.270 m	189.310	189.354
C	8+747.339	5.255 m	189.240	189.301
D	8+750.330	5.246 m	189.169	189.243
E	8+753.322	5.241 m	189.097	189.180
F	8+756.313	5.241 m	189.024	189.110
G	8+759.305	5.245 m	188.950	189.033
H	8+762.297	5.255 m	188.876	188.951
I	8+765.288	5.269 m	188.801	188.862
J	8+768.280	5.288 m	188.725	188.769
K	8+771.271	5.312 m	188.649	188.671
CL E Abut	8+774.262	5.341 m	188.571	188.571
Back of E Abut	8+774.655	5.345 m	188.561	188.561

GIRDER 16

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+738.603	7.541 m	189.511	189.511
CL W Abut	8+738.996	7.538 m	189.502	189.502
A	8+741.984	7.515 m	189.433	189.455
B	8+744.972	7.496 m	189.363	189.406
C	8+747.960	7.483 m	189.292	189.353
D	8+750.948	7.474 m	189.221	189.295
E	8+753.936	7.470 m	189.149	189.232
F	8+756.924	7.471 m	189.076	189.162
G	8+759.912	7.477 m	189.002	189.085
H	8+762.900	7.487 m	188.928	189.002
I	8+765.888	7.503 m	188.853	188.914
J	8+768.875	7.523 m	188.777	188.820
K	8+771.863	7.548 m	188.700	188.723
CL E Abut	8+774.851	7.577 m	188.623	188.623
Back of E Abut	8+775.244	7.582 m	188.613	188.613

GIRDER 17

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+739.234	9.766 m	189.563	189.563
CL W Abut	8+739.626	9.763 m	189.554	189.554
A	8+742.610	9.741 m	189.485	189.507
B	8+745.594	9.723 m	189.415	189.458
C	8+748.579	9.711 m	189.344	189.405
D	8+751.563	9.703 m	189.273	189.347
E	8+754.548	9.700 m	189.201	189.284
F	8+757.532	9.702 m	189.128	189.214
G	8+760.517	9.709 m	189.054	189.137
H	8+763.501	9.720 m	188.980	189.054
I	8+766.486	9.736 m	188.905	188.966
J	8+769.470	9.757 m	188.829	188.872
K	8+772.454	9.783 m	188.752	188.775
CL E Abut	8+775.438	9.814 m	188.675	188.675
Back of E Abut	8+775.830	9.818 m	188.664	188.664

STAGE CONSTRUCTION LINE

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+739.665	11.292 m	189.599	189.599
CL W Abut	8+740.057	11.289 m	189.590	189.590
A	8+743.039	11.268 m	189.521	189.543
B	8+746.021	11.251 m	189.451	189.494
C	8+749.003	11.239 m	189.380	189.441
D	8+751.985	11.232 m	189.309	189.383
E	8+754.967	11.230 m	189.236	189.319
F	8+757.949	11.233 m	189.163	189.249
G	8+760.931	11.240 m	189.090	189.173
H	8+763.913	11.252 m	189.015	189.090
I	8+766.895	11.269 m	188.940	189.001
J	8+769.877	11.291 m	188.864	188.908
K	8+772.859	11.317 m	188.787	188.810
CL E Abut	8+775.840	11.349 m	188.710	188.710
Back of E Abut	8+776.232	11.353 m	188.700	188.700

GIRDER 18

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+739.863	11.991 m	189.616	189.616
CL W Abut	8+740.254	11.988 m	189.606	189.606
A	8+743.235	11.967 m	189.537	189.560
B	8+746.216	11.950 m	189.467	189.511
C	8+749.197	11.939 m	189.396	189.458
D	8+752.178	11.932 m	189.325	189.400
E	8+755.159	11.930 m	189.253	189.336
F	8+758.140	11.933 m	189.180	189.266
G	8+761.121	11.941 m	189.106	189.189
H	8+764.101	11.953 m	189.032	189.106
I	8+767.082	11.970 m	188.956	189.017
J	8+770.063	11.992 m	188.880	188.924
K	8+773.044	12.019 m	188.804	188.826
CL E Abut	8+776.024	12.051 m	188.726	188.726
Back of E Abut	8+776.416	12.055 m	188.716	188.716

GIRDER 19

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+740.490	14.216 m	189.668	189.668
CL W Abut	8+740.881	14.213 m	189.659	189.659
A	8+743.859	14.193 m	189.590	189.612
B	8+746.836	14.177 m	189.519	189.563
C	8+749.813	14.167 m	189.449	189.510
D	8+752.791	14.161 m	189.377	189.452
E	8+755.768	14.160 m	189.305	189.388
F	8+758.745	14.164 m	189.232	189.317
G	8+761.723	14.173 m	189.158	189.241
H	8+764.700	14.186 m	189.083	189.158
I	8+767.677	14.204 m	189.008	189.069
J	8+770.655	14.227 m	188.932	188.976
K	8+773.632	14.255 m	188.855	188.878
CL E Abut	8+776.609	14.288 m	188.778	188.778
Back of E Abut	8+777.000	14.292 m	188.768	188.768

GIRDER 20

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+741.116	16.441 m	189.720	189.720
CL W Abut	8+741.507	16.438 m	189.711	189.711
A	8+744.481	16.419 m	189.642	189.664
B	8+747.454	16.405 m	189.572	189.615
C	8+750.428	16.395 m	189.501	189.562
D	8+753.402	16.391 m	189.429	189.504
E	8+756.376	16.391 m	189.357	189.440
F	8+759.350	16.395 m	189.284	189.369
G	8+762.324	16.405 m	189.210	189.293
H	8+765.297	16.419 m	189.135	189.210
I	8+768.271	16.439 m	189.060	189.121
J	8+771.245	16.463 m	188.984	189.027
K	8+774.218	16.491 m	188.907	188.930
CL E Abut	8+777.192	16.525 m	188.829	188.829
Back of E Abut	8+777.583	16.530 m	188.819	188.819

GIRDER 21

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+741.741	18.667 m	189.773	189.773
CL W Abut	8+742.131	18.664 m	189.764	189.764
A	8+745.101	18.646 m	189.694	189.717
B	8+748.072	18.633 m	189.624	189.667
C	8+751.042	18.624 m	189.553	189.614
D	8+754.012	18.620 m	189.481	189.556
E	8+756.982	18.621 m	189.409	189.492
F	8+759.953	18.627 m	189.336	189.421
G	8+762.923	18.638 m	189.262	189.345
H	8+765.893	18.653 m	189.187	189.262
I	8+768.864	18.673 m	189.112	189.173
J	8+771.834	18.698 m	189.036	189.079
K	8+774.804	18.728 m	188.959	188.981
CL E Abut	8+777.774	18.762 m	188.881	188.881
Back of E Abut	8+778.164	18.767 m	188.871	188.871

NOTES:

See Sheet No. S-6 for Plan.

All stations, offsets, and elevations are in meters.

DESIGNED	BHS
CHECKED	KFA
DRAWN	MJB
CHECKED	GSP

FOR INFORMATION ONLY

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. ROUTE 80/94 (BORMAN EXPRESSWAY)
OVER HARRISON AVENUE

TOP OF DECK ELEVATIONS (3 OF 4)
SECTION 2004-133F
LAKE COUNTY, INDIANA
STATION 8+754.874
STRUCTURE NO. I-80-1-8461 (EB & WB)
DATE 05/05 **(016-I005 & 016-I006)**

AMERICAN CONSULTING ENGINEERS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	2004-133F	LAKE COUNTY, INDIANA	90	86
		ILLINOIS	FED. AID PROJECT-	

SHEET NO. S-10
28 SHEETS

CONTRACT NO. 62898 INDOT DES. NO. 9910630

GIRDER 22

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+742.364	20.892 m	189.825	189.825
CL W Abut	8+742.754	20.890 m	189.816	189.816
A	8+745.720	20.873 m	189.746	189.769
B	8+748.687	20.860 m	189.676	189.720
C	8+751.654	20.853 m	189.605	189.666
D	8+754.621	20.850 m	189.533	189.608
E	8+757.588	20.852 m	189.461	189.544
F	8+760.554	20.859 m	189.388	189.473
G	8+763.521	20.870 m	189.314	189.397
H	8+766.488	20.887 m	189.239	189.314
I	8+769.455	20.908 m	189.164	189.225
J	8+772.421	20.933 m	189.087	189.131
K	8+775.388	20.964 m	189.010	189.033
CL E Abut	8+778.354	21.000 m	188.933	188.933
Back of E Abut	8+778.744	21.005 m	188.923	188.923

GIRDER 23

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+742.985	23.118 m	189.878	189.878
CL W Abut	8+743.375	23.116 m	189.868	189.868
A	8+746.338	23.100 m	189.799	189.821
B	8+749.301	23.088 m	189.728	189.772
C	8+752.265	23.082 m	189.657	189.718
D	8+755.228	23.080 m	189.586	189.660
E	8+758.191	23.083 m	189.513	189.596
F	8+761.154	23.091 m	189.440	189.525
G	8+764.118	23.103 m	189.366	189.449
H	8+767.081	23.120 m	189.291	189.365
I	8+770.044	23.142 m	189.215	189.276
J	8+773.007	23.169 m	189.139	189.183
K	8+775.970	23.201 m	189.062	189.085
CL E Abut	8+778.933	23.237 m	188.984	188.984
Back of E Abut	8+779.322	23.242 m	188.974	188.974

GIRDER 24

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Back of W Abut	8+743.606	25.345 m	189.930	189.930
CL W Abut	8+743.994	25.342 m	189.921	189.921
A	8+746.954	25.327 m	189.851	189.874
B	8+749.914	25.317 m	189.781	189.824
C	8+752.874	25.311 m	189.710	189.771
D	8+755.834	25.310 m	189.638	189.712
E	8+758.793	25.314 m	189.565	189.648
F	8+761.753	25.323 m	189.492	189.577
G	8+764.713	25.336 m	189.418	189.501
H	8+767.673	25.355 m	189.343	189.417
I	8+770.632	25.377 m	189.267	189.328
J	8+773.592	25.405 m	189.191	189.234
K	8+776.551	25.438 m	189.114	189.136
CL E Abut	8+779.511	25.475 m	189.036	189.036
Back of E Abut	8+779.900	25.480 m	189.026	189.026

NOTES:

See Sheet No. S-6 for Plan.

All stations, offsets, and elevations are in meters.

DESIGNED	BHS
CHECKED	KFA
DRAWN	MJB
CHECKED	GSP

FOR INFORMATION ONLY

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. ROUTE 80/94 (BORMAN EXPRESSWAY)
OVER HARRISON AVENUE

TOP OF DECK ELEVATIONS (4 OF 4)
SECTION 2004-133F
LAKE COUNTY, INDIANA
STATION 8+754.874
STRUCTURE NO. I-80-1-8461 (EB & WB)
DATE 05/05 **(016-I005 & 016-I006)**

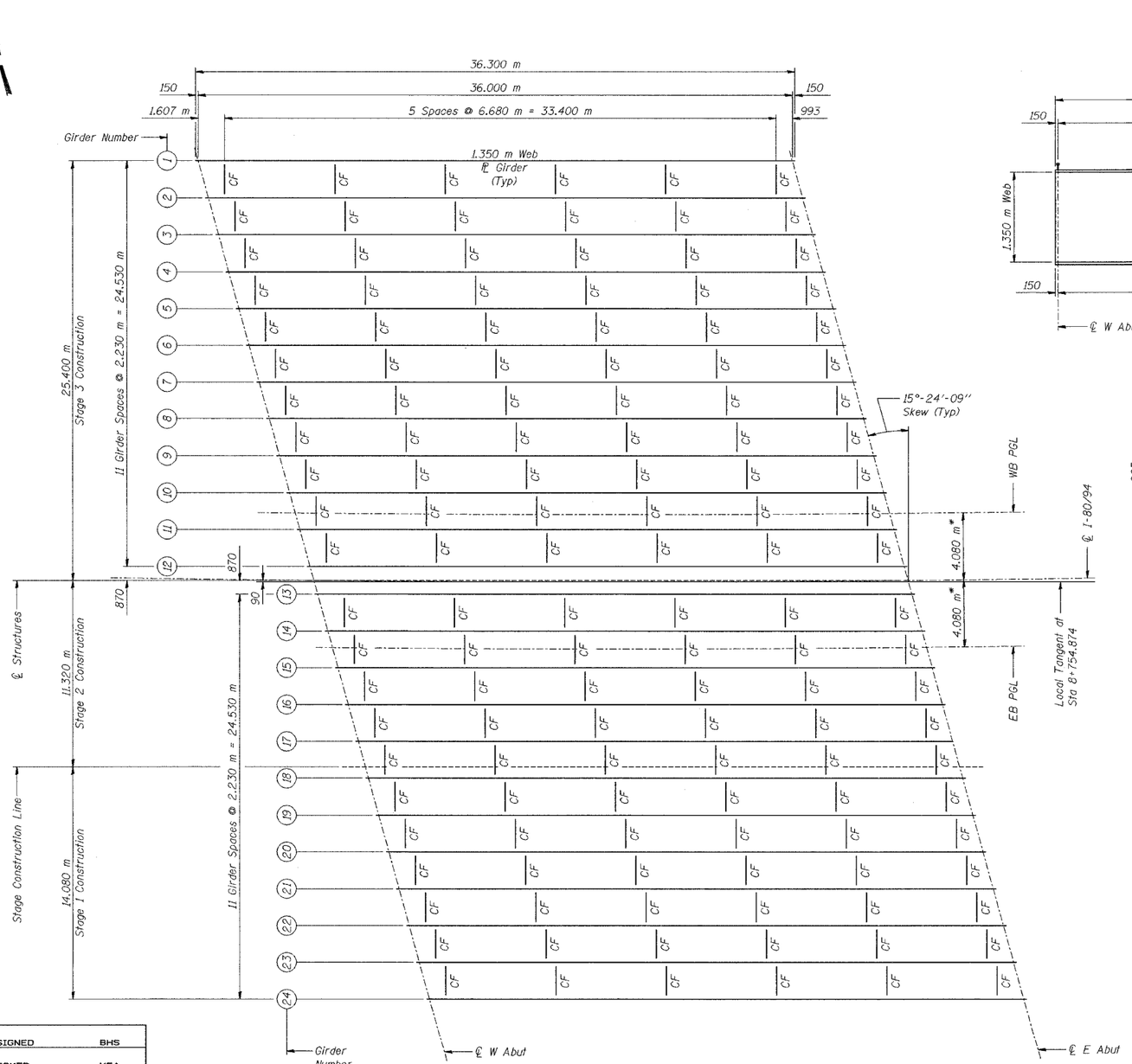
AMERICAN CONSULTING ENGINEERS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80/94	2004-133F	LAKE COUNTY, INDIANA	90	87
		ILLINOIS	FED. AID PROJECT-	

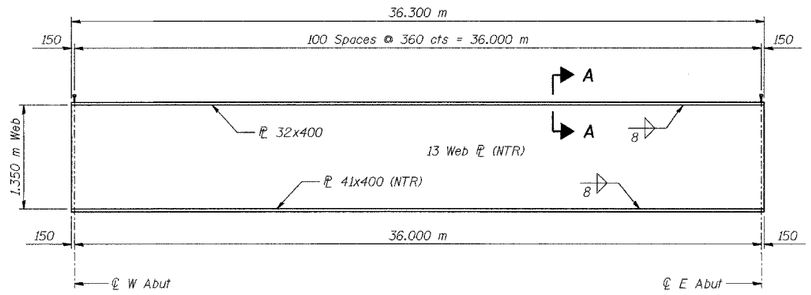
SHEET NO. S-15

28 SHEETS

CONTRACT NO. 62898 INDOT DES. NO. 9910630

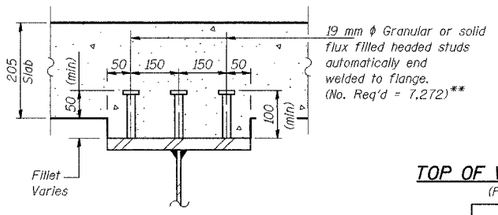


FRAMING PLAN



GIRDER ELEVATION

All structural steel on this sheet shall be AASHTO M 270M Grade 345W.

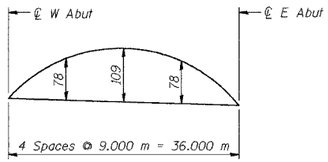


SECTION A-A

TOP OF WEB ELEVATION TABLE

(For Fabrication Use Only)

Girder	℄ W Abut	℄ E Abut
1	189.106	188.236
2	189.159	188.287
3	189.211	188.339
4	189.263	188.390
5	189.315	188.441
6	189.368	188.493
7	189.420	188.544
8	189.472	188.596
9	189.525	188.647
10	189.577	188.699
11	189.629	188.750
12	189.682	188.802
13	189.088	188.211
14	189.140	188.263
15	189.192	188.314
16	189.245	188.366
17	189.297	188.418
18	189.349	188.469
19	189.402	188.521
20	189.454	188.572
21	189.507	188.624
22	189.559	188.676
23	189.611	188.727
24	189.664	188.779



CAMBER DIAGRAM

NOTES:

See Sheet No. S-16 for cross frame details and table of moments and shears.

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

NTR denotes notch toughness requirements.

* Measured radial to ℄ I-80/94.

DESIGNED	BHS
CHECKED	KFA
DRAWN	MJB
CHECKED	GSP

****SHEAR CONNECTORS ARE NOT INCLUDED IN THIS CONTRACT**

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. ROUTE 80/94 (BORMAN EXPRESSWAY)
OVER HARRISON AVENUE

FRAMING PLAN
SECTION 2004-133F
LAKE COUNTY, INDIANA
STATION 8+754.874
STRUCTURE NO. I-80-1-8461 (EB & WB)

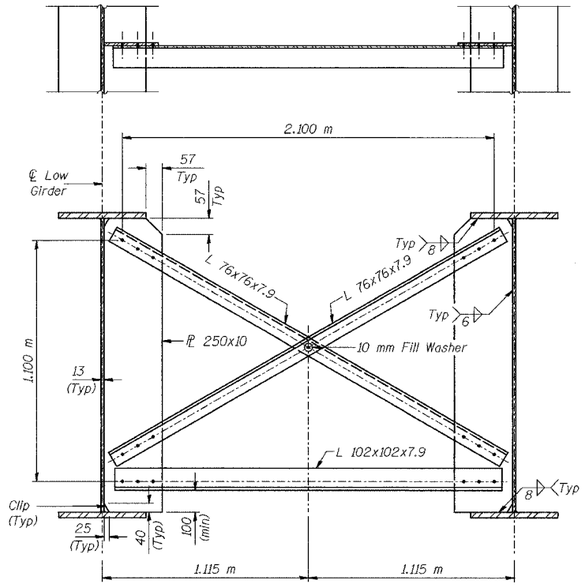
DATE 05/05 (016-I005 & 016-I006)

AMERICAN CONSULTING ENGINEERS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80/94	2004-133F	LAKE COUNTY, INDIANA	90	88
	ILLINOIS	FED. AID PROJECT-		

SHEET NO. S-16
28 SHEETS

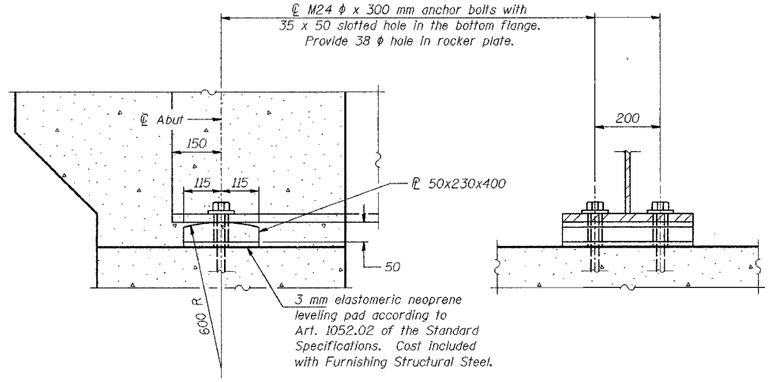
CONTRACT NO. 62898 INDOT DES. NO. 9910630



INTERIOR CROSS FRAME CF

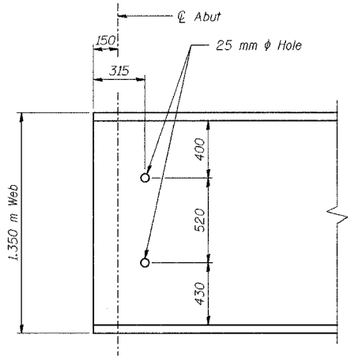
132 Required

Note: Assemble Cross Frame at Stage Construction Line after closure pour. Field drill holes in Girder 18 stiffeners on the side of Stage Construction Joint only.



INTEGRAL ABUTMENT ROCKER PLATE

48 Required



END OF GIRDER ELEVATION

INTERIOR BEAM MOMENT TABLE

		0.5 Span
Is	(10^6 mm^4)	16510
Ic (n)	(10^6 mm^4)	31120
Ic (3n)	(10^6 mm^4)	23385
Ss	(10^3 mm^3)	24988
Sc (n)	(10^3 mm^3)	30161
Sc (3n)	(10^3 mm^3)	27985
Z	(10^3 mm^3)	———
℄	(kN/m)	15.06
M℄	(kN·m)	2440
s℄	(kN/m)	11.42
Ms℄	(kN·m)	1851
M℄	(kN·m)	2128
M (Imp)	(kN·m)	438
$5/3[M℄+M(Imp)]$	(kN·m)	4276
Ma	(kN·m)	11137
Mu	(kN·m)	12258
fs℄ non-comp	(MPa)	98
fs℄ (comp)	(MPa)	66
$fs\,5/3(M℄+Imp)$	(MPa)	142
fs (Overload)	(MPa)	306
fs (Total)	(MPa)	———
VR	(kN)	216

INTERIOR BEAM REACTION TABLE

		W Abut	E Abut
R℄	(kN)	477	477
R℄	(kN)	241	241
Imp.	(kN)	50	50
R (Total)	(kN)	767	767

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).

$Ic_{(n)}$ and $Sc_{(n)}$ are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

$Ic_{(3n)}$ and $Sc_{(3n)}$ 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.

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

Ma (Applied Moment)=$1.3(M℄ + Ms℄ + 5/3(M℄ + M_{Imp}))$.

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 $M℄ + Ms℄ + 5/3(M℄ + M_{imp})$.

fs (Total) (Non-compact section) is the sum of the stresses due to $1.3(M℄ + Ms℄ + 5/3(M℄ + M_{imp}))$.

DESIGNED	BHS
CHECKED	KFA
DRAWN	MJB
CHECKED	GSP

NOTES:

All open holes shall be 28 mm ϕ for M22 HS bolts

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

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. ROUTE 80/94 (BORMAN EXPRESSWAY)
OVER HARRISON AVENUE

FRAMING DETAILS
SECTION 2004-133F
LAKE COUNTY, INDIANA
STATION 8+754.874
STRUCTURE NO. I-80-1-8461 (EB & WB)
DATE 05/05 **(016-1005 & 016-1006)**

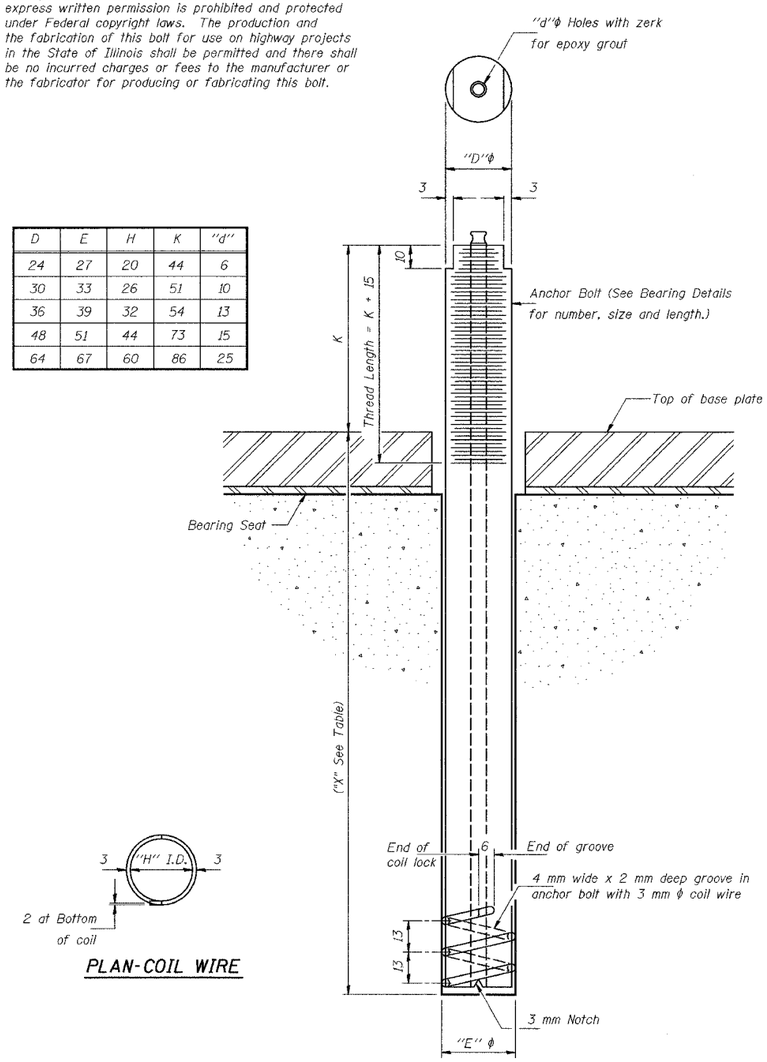
AMERICAN CONSULTING ENGINEERS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80/94	2004-133F	LAKE COUNTY, INDIANA	90	89
		ILLINOIS	FED. AID PROJECT-	

SHEET NO. S-17
28 SHEETS

CONTRACT NO. 62898 INDOT DES. NO. 9910630

D	E	H	K	"d"
24	27	20	44	6
30	33	26	51	10
36	39	32	54	13
48	51	44	73	15
64	67	60	86	25



ILLINOIS COIL-LOCK ANCHOR BOLT

PLAN-COIL WIRE

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system comforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

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

2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

1. *A threaded rod stud with nut and washer of the type specified.*
2. *A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.*

Location	Type	D	X
W Abut	A307	24	256
E Abut	A307	24	256

ASTM F 1554 (Fy = 724 MPa), ASTM A 449 and AASHTO M 314 (Fy = 724 MPa) anchor bolts may be substituted for the anchor bolts shown above.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for Anchor Bolt.

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

DESIGNED	BHS
CHECKED	KFA
DRAWN	MJB
CHECKED	GSP

ABB-1 (M) 4-30-99

FOR INFORMATION ONLY

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. ROUTE 80/94 (BORMAN EXPRESSWAY)
OVER HARRISON AVENUE

ANCHOR BOLT DETAILS
SECTION 2004-133F
LAKE COUNTY, INDIANA
STATION 8+754.874
STRUCTURE NO. I-80-1-8461 (EB & WB)
DATE 05/05 **(016-1005 & 016-1006)**

AMERICAN CONSULTING ENGINEERS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80/94	2004-133F	LAKE COUNTY, INDIANA	90	90
		ILLINOIS	FED. AID PROJECT-	

SHEET NO. XX
28 SHEETS

CONTRACT NO. 62898 INDOT DES. NO. 9910630

BEARING SEAT ELEVATIONS

WEST ABUTMENT (WESTBOUND)

GIRDER	ELEVATION
1	187.662
2	187.715
3	187.767
4	187.819
5	187.871
6	187.924
7	187.976
8	188.028
9	188.081
10	188.133
11	188.185
12	188.238

EAST ABUTMENT (WESTBOUND)

GIRDER	ELEVATION
1	186.792
2	186.843
3	186.895
4	186.946
5	186.997
6	187.049
7	187.100
8	187.152
9	187.203
10	187.255
11	187.306
12	187.358

WEST ABUTMENT (EASTBOUND)

GIRDER	ELEVATION
13	187.644
14	187.696
15	187.748
16	187.801
17	187.853
18	187.905
19	187.958
20	188.010
21	188.063
22	188.115
23	188.167
24	188.220

EAST ABUTMENT (EASTBOUND)

GIRDER	ELEVATION
13	186.767
14	186.819
15	186.870
16	186.922
17	186.974
18	187.025
19	187.077
20	187.128
21	187.180
22	187.232
23	187.283
24	187.335

DESIGNED	BHS
CHECKED	KFA
DRAWN	MJB
CHECKED	GSP

BEARING SEAT ELEVATIONS WILL BE SHOWN ON THE ABUTMENT DRAWINGS. THIS SHEET IS NOT PART OF THE PLAN SET, BUT IS BEING SHOWN FOR INFORMATION ONLY.

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. ROUTE 80/94 (BORMAN EXPRESSWAY)
OVER HARRISON AVENUE

BEARING SEAT ELEVATIONS
SECTION 2004-133F
LAKE COUNTY, INDIANA
STATION 8+754.874
STRUCTURE NO. I-80-1-8461 (EB & WB)
DATE 05/05 **(016-I005 & 016-I006)**

AMERICAN CONSULTING ENGINEERS