

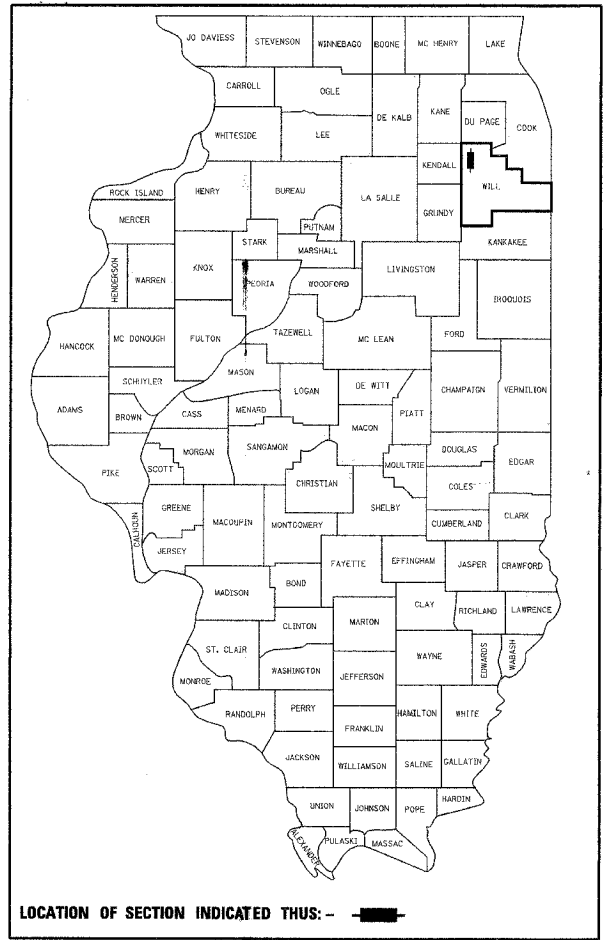
CONTRACT NO. 60D30	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	114 B-I	WILL.	15	1

D-91-124-02

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

# PROPOSED HIGHWAY PLANS (FAP 338) IL ROUTE 59 BRIDGE OVER THE DUPAGE RIVER BEAM FABRICATION

SECTION 114 B-I  
PROJECT NO: *BRF-0338(031)*  
BRIDGE REPLACEMENT  
WILL COUNTY  
C-91-374-07



**INDEX OF SHEETS**

SEE SHEET NO. 2

**TRAFFIC DATA**

ADT (IL RTE 59) = 30,600 = SPEED LIMIT 45 MPH

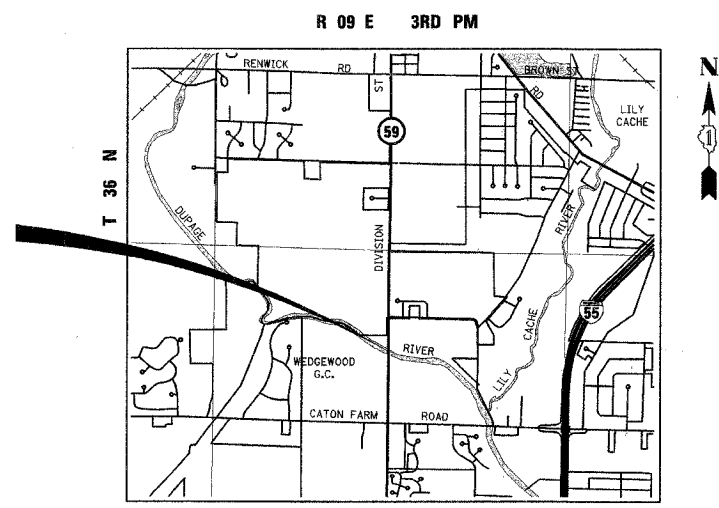
**PROJECT LOCATION**

CITY OF JOLIET  
WILL COUNTY

**DESIGN DESIGNATION**

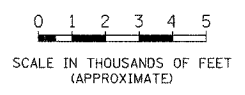
1.745 (24) OTHER PRINCIPAL ARTERIAL 11.85 (PCC-20)

BEAM FABRICATION  
FOR IL 59 STRUCTURE  
OVER THE DUPAGE RIVER  
☉ STA. 3209 + 85  
SN 099-0143 (EXISTING)  
SN 099-0339 (PROPOSED)



PLAINFIELD TOWNSHIP

LOCATION MAP



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

CONTRACT NO. 60D30

PROJECT COORDINATOR: MS. KIM HARVEY (847)-705-4055



SIGNED: *William P. Murphy*  
William P. Murphy, S.E. Il. Lic. No. 081-004491  
Expires 11/30/2008

DATE: *6/29/07*

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED *July 3, 2007*  
*Diane O'Keefe/crl* DISTRICT ENGINEER

*August 17, 2007*  
*Eric E. Haran* ENGINEER OF DESIGN AND ENVIRONMENT

*August 17, 2007*  
*Milton R. Sees, P.E.* DIRECTOR, DIVISION OF HIGHWAYS

Plans Prepared By:  
**KNIGHT**  
Engineers & Architects

221 North LaSalle Street  
Suite 300  
Chicago, IL 60601-1211  
Phone: (312) 577-3300

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

CONTRACT NO. 60D30

FAP NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	114 B-I	WILL	15	2
STA.		TO STA.		
FED. ROAD DIST. NO.	BILLINGS	FED. AID PROJECT		

**INDEX OF SHEETS**

SHT NO.	TITLE
S-01	Title Sheet
S-02	Index of Sheets & Summary of Quantities
S-03	General Plan & Elevation
S-04	Stage Construction Details
S-05	Top of Slab Elevations
S-06	Top of Slab Elevations
S-07	Top of Slab Elevations
S-08	Top of Slab Elevations
S-09	Top of Slab Elevations
S-10	Top of Slab Elevations
S-11	Deck Cross Section
S-12	Deck Diaphragm Details
S-13	Framing Plan Details
S-14	48" PPC I-Beam
S-15	48" PPC I-Beam Details

**SUMMARY OF QUANTITIES**

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	URBAN: 80% FEDERAL, 20% STATE	
				CONSTRUCTION TYPE CODE	
				IDOT	
				BRIDGE X081-2A	
* X032584-8	FURNISHING PRECAST PRESTRESSED CONCRETE I-BEAMS, 48 INCH	FOOT	2880	2880	
* X032584-9	STORAGE OF PRECAST PRESTRESSED CONCRETE I-BEAMS, 48 INCH	CAL DA	30	30	

\* DENOTES NON-STANDARD PAY ITEM  
REFER TO SPECIAL PROVISIONS

SHT. S-02 of 15

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION <b>INDEX OF SHEETS &amp; SUMMARY OF QUANTITIES</b> ILLINOIS ROUTE 59 OVER DuPAGE RIVER FAP ROUTE 338 SECTION 114 B-I WILL COUNTY STATION 3209+85.00 STRUCTURE NUMBER 099-0339
NAME	DATE	
		SCALE: NONE DATE: 06/29/07 DESIGNED BY: TB CHECKED BY: WPM DRAWN BY: TB CHECKED BY: WPM



FILE: I:\16532.02\Cor\1\Sheets\Roadway\_Structure.as\Bridg\1653202INDEX.DGN

Bench Mark: BM#20 □ cut in SE corner of concrete base of traffic signal control box on NW corner of IL Route 59 and Caton Farm Road. Elev. 603.85

CONTRACT NO. 60D30

F.P. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	114 B-1	WILL	15	3
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

Existing Structure: SN 099-0143 built in 1933 as SBI Route 59, Section 114B. Superstructure and substructure widening in 1954 as SBI Route 59, Section 114BY. Superstructure replaced in 1977 as FA Route 108, Section 114BY-R. Structure consists of three span PPC deck beams on closed abutments and solid pile supported piers. 172'-9" back-to-back abutments. 33'-0" out-to-out deck. Structure to be removed and replaced using stage construction.

No Salvage

**LOADING HS20-44**

Allow 50#/sq. ft. for future wearing surface.

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications for Highway Bridges

**DESIGN STRESSES**

**FIELD UNITS**

$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)

**PRECAST PRESTRESSED UNITS**

$f'_c = 6,000$  psi  
 $f'_{ci} = 5,000$  psi  
 $f'_s = 270,000$  psi ( $\frac{1}{2}$ " low lax strands)  
 $f'_{si} = 201,960$  psi ( $\frac{1}{2}$ " low lax strands)

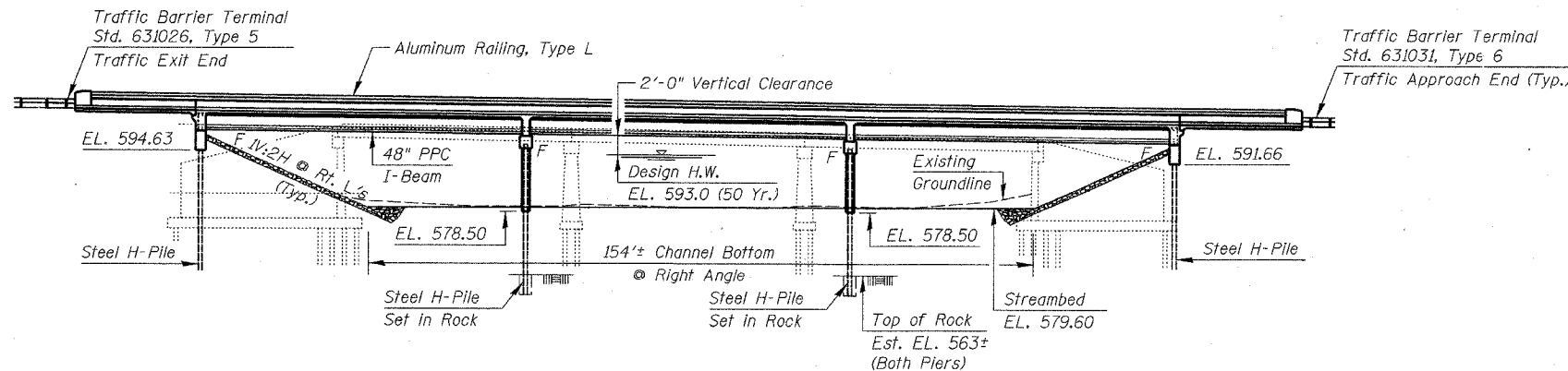
**SEISMIC DATA**

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

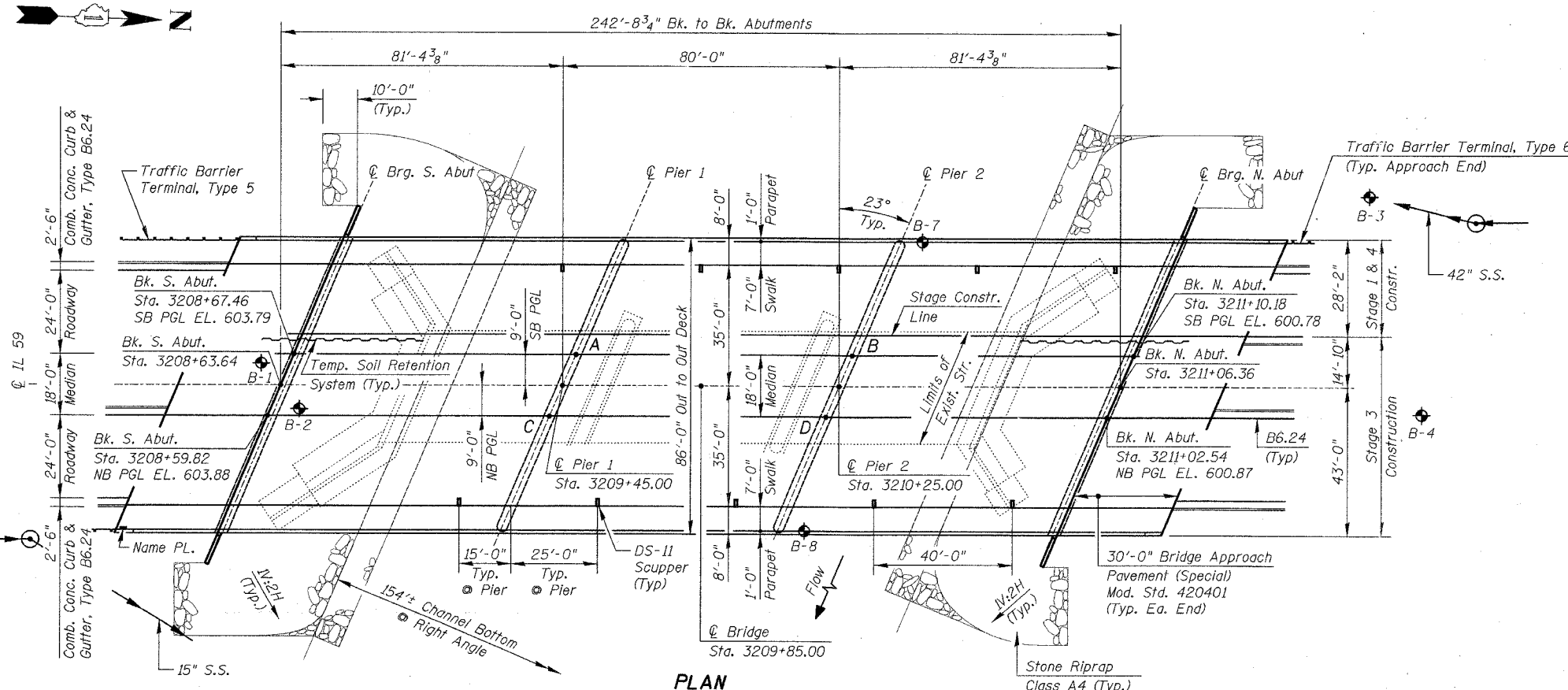
STATION 3209+85.00  
 BUILT 20 BY  
 STATE OF ILLINOIS  
 F.A.P. RT. 338 SEC. 114 BY-R-1  
 LOADING HS20  
 STR. NO. 099-0339

**NAME PLATE**

See Std. 515001



**ELEVATION**



**PLAN**

**Legend:**  
 ◆ Soil Borings

**WATERWAY INFORMATION**

Drainage Area = 267 Sq. Miles Low Grade Elev. 594.18 @ Sta. 3215+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.		Head - Ft.		Headwater El.		
			Exist.	Prop.	H.W.E.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	10	8303	1670	1807	591.4	0.15'	0.13'	591.6	591.5		
Base	50	11750	1904	2101	593.0	0.26'	0.25'	593.2	593.2		
Overtopping (Exist.)	100	13434	1993	2216	593.5	0.68'	0.32'	594.2	593.9		
Max. Calc.	500	17050	2170	2450	594.7	0.73'	0.48'	595.5	595.2		

**DESIGN SCOUR ELEVATION TABLE**

Design Scour Elevation (ft.)	S. Abut.	Pier 1	Pier 2	N. Abut.
	591.6	572.6	572.6	588.7

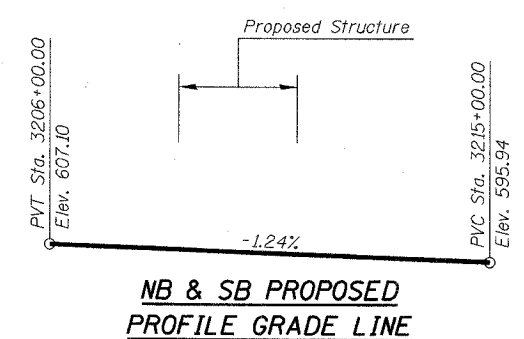
**PROFILE GRADE LINE ELEVATIONS**

POINT	STATION	LOCATION	ELEVATION
A	3209+48.82	☉ Pier 1, SB PGL	602.78
B	3210+28.82	☉ Pier 2, SB PGL	601.78
C	3209+41.18	☉ Pier 1, NB PGL	602.87
D	3210+21.18	☉ Pier 2, NB PGL	601.88



**BILL OF MATERIAL**

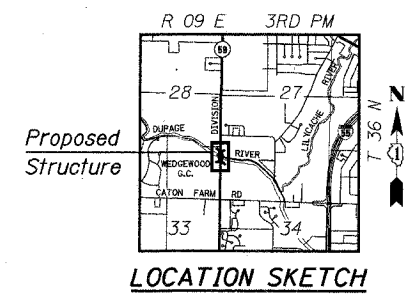
ITEM	UNIT	TOTAL
Furnishing Precast Prestressed Concrete I-Beams, 48 IN.	Foot	2880



**NB & SB PROPOSED PROFILE GRADE LINE**

STATE OF ILLINOIS  
 WILLIAM P. MURPHY  
 081-004491  
 CHICAGO  
 LICENSED PROFESSIONAL ENGINEER  
 William P. Murphy  
 Exp. 11/30/08

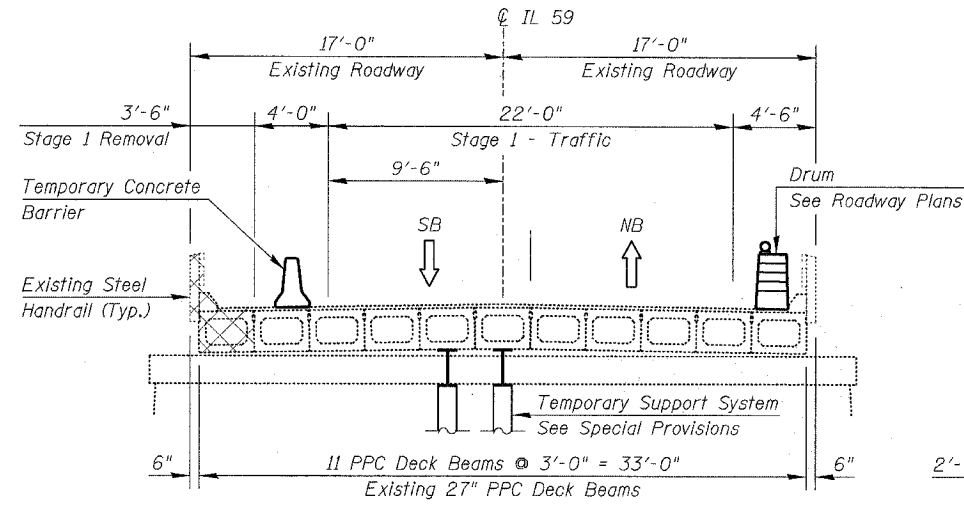
**APPROVED**  
 FOR STRUCTURAL ADEQUACY ONLY  
 Ralph E. Anderson  
 ENGINEER OF BRIDGES AND STRUCTURES



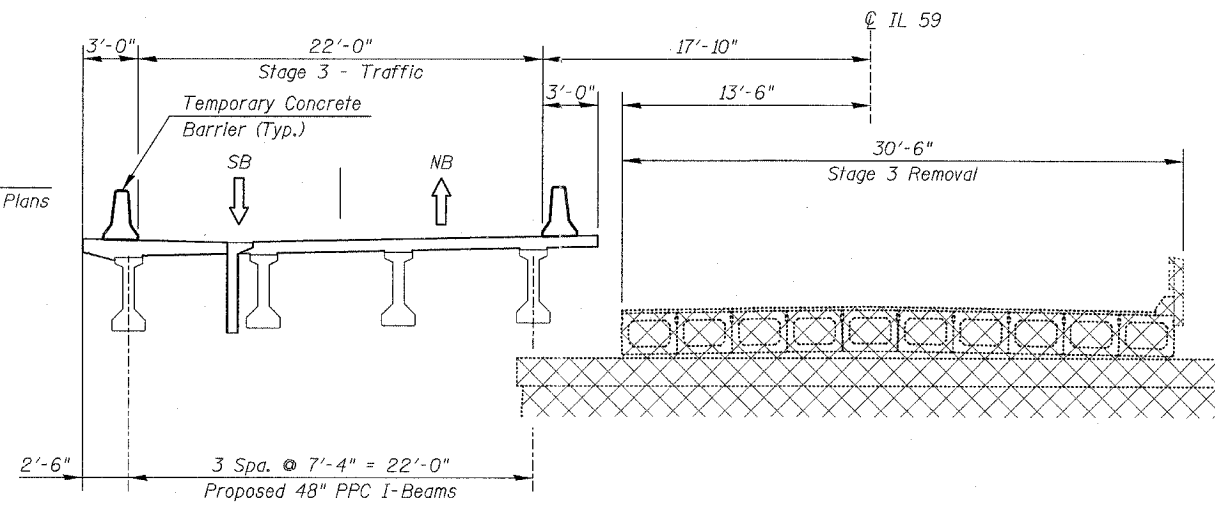
REVISIONS	
NAME	DATE

SHT. S-03 of 15  
 ILLINOIS DEPARTMENT OF TRANSPORTATION  
**GENERAL PLAN & ELEVATION**  
 ILLINOIS ROUTE 59 OVER DUPAGE RIVER  
 FAP ROUTE 338 SECTION 114 B-1  
 WILL COUNTY  
 STATION 3209+85.00  
 STRUCTURE NUMBER 099-0339  
 SCALE: NONE  
 DATE: 06/29/07  
 DESIGNED BY: TB  
 CHECKED BY: WPM  
 DRAWN BY: TB  
 CHECKED BY: WPM

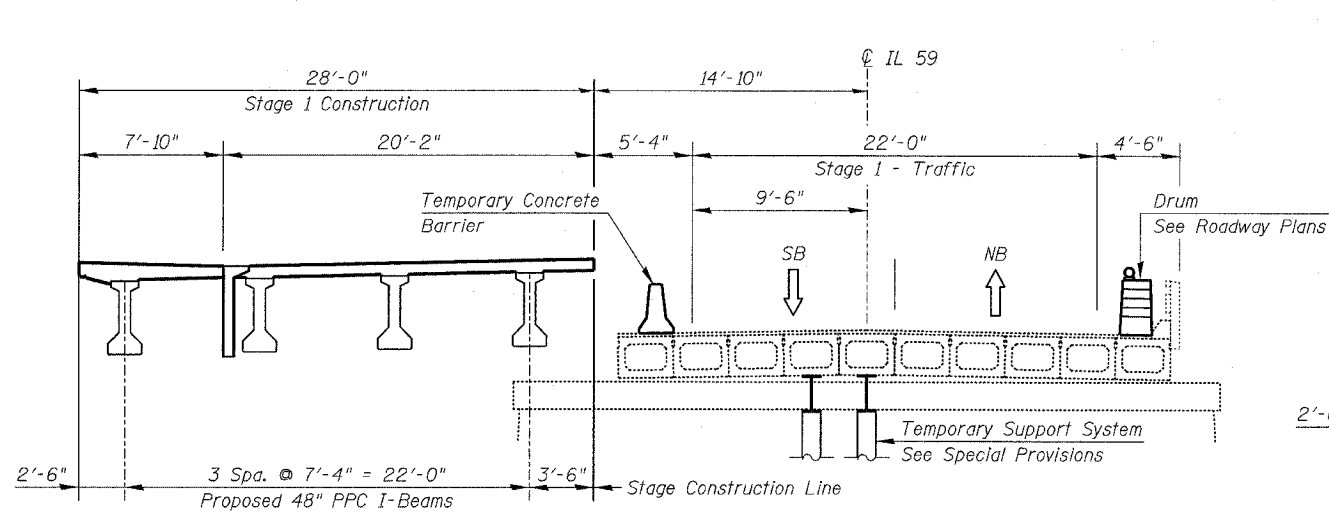
FAP DIST.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	114 B-1	WILL	15	4
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	



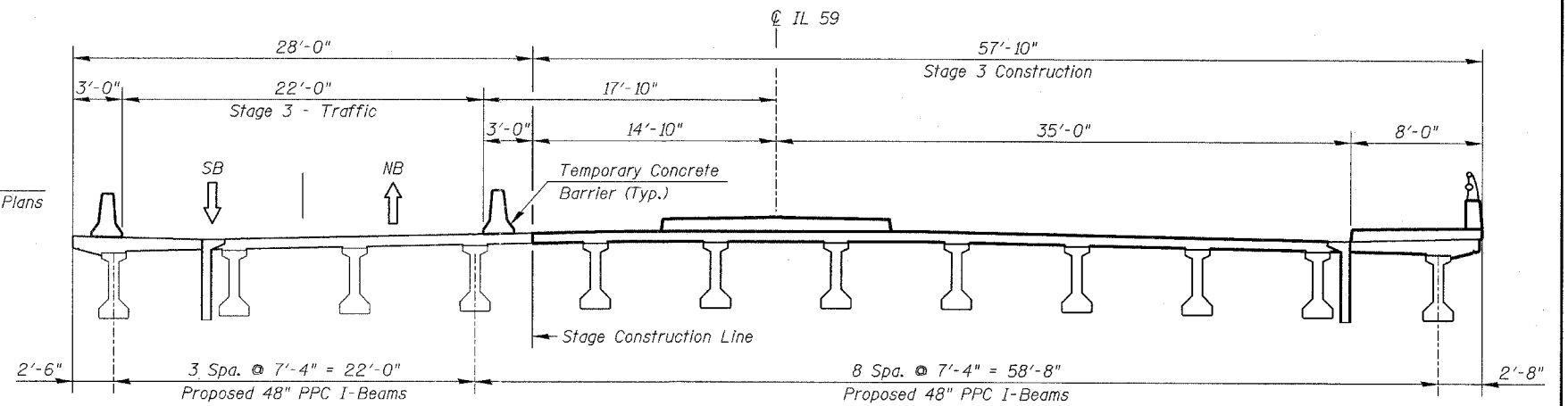
**STAGE 1 - REMOVAL**  
(Existing Cross-Section)



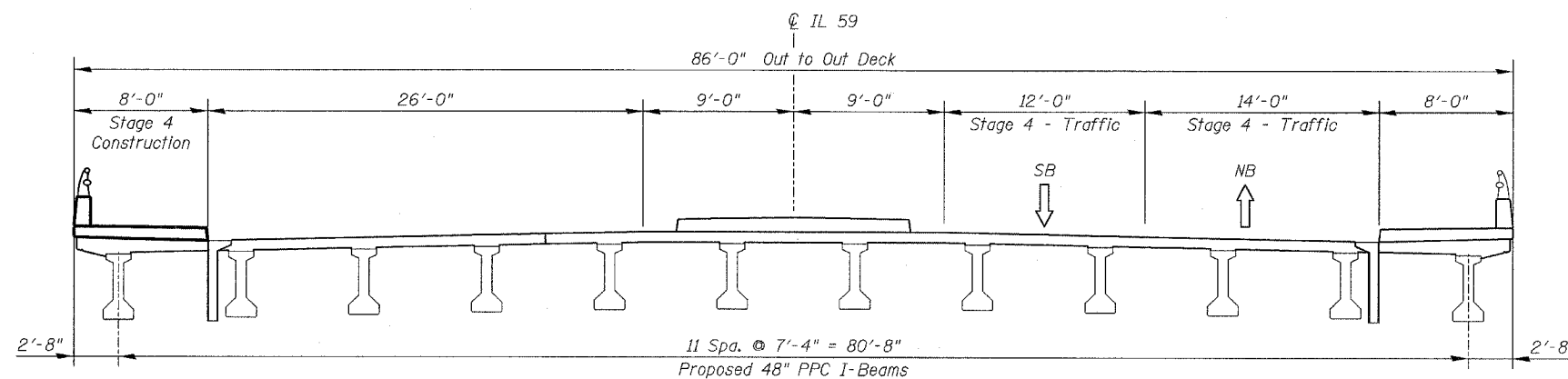
**STAGE 3 - REMOVAL**



**STAGE 1 - CONSTRUCTION**



**STAGE 3 - CONSTRUCTION**



**STAGE 4 - CONSTRUCTION**

**Notes:**

See Special Provisions for Removal of Existing Structures for additional removal plan and procedure requirements.

Staging details for Approach Spans are the same as shown for the Main Structure.

For quantity of Temporary Concrete Barrier, See Roadway Plans.

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

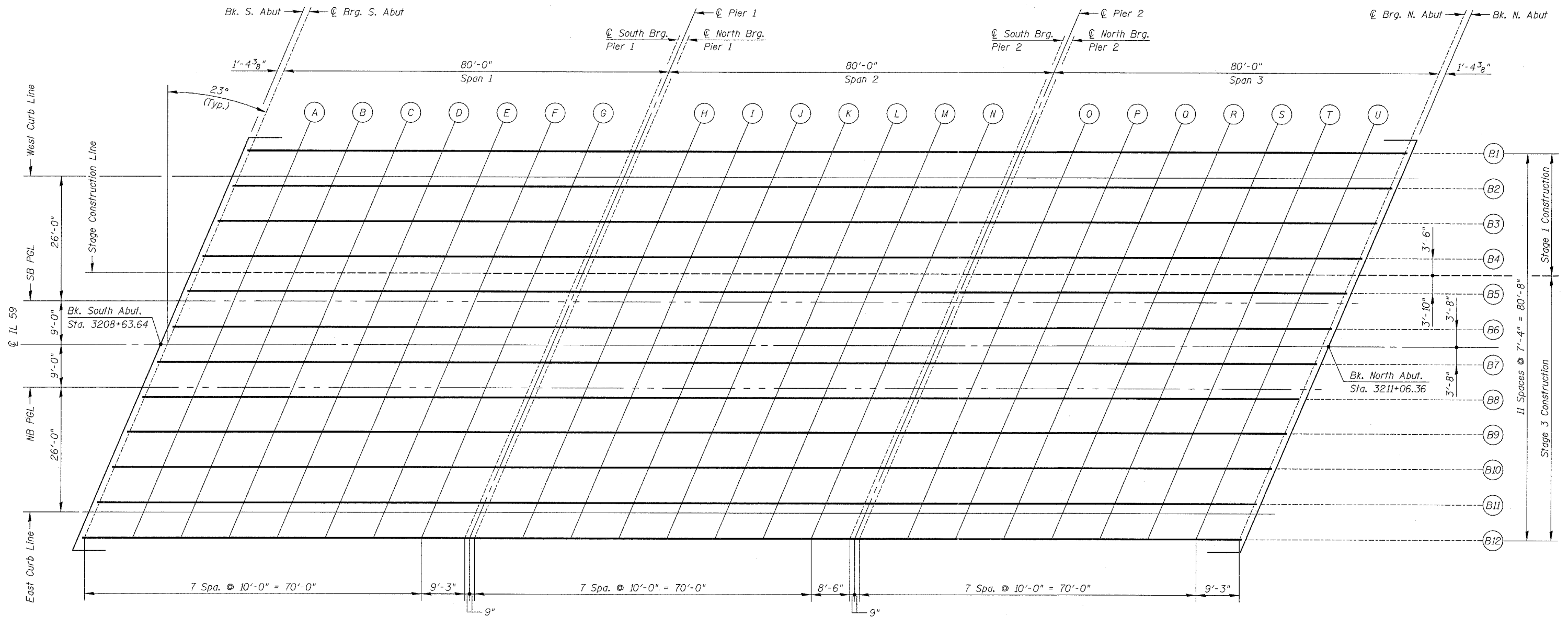
SHT. S-04 of 15

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION <b>STAGE CONSTRUCTION DETAILS</b> ILLINOIS ROUTE 59 OVER DuPAGE RIVER FAP ROUTE 338 SECTION 114 B-1 WILL COUNTY STATION 3209+85.00 STRUCTURE NUMBER 099-0339
NAME	DATE	
		SCALE: NONE
		DESIGNED BY: TB
		DRAWN BY: TB
		DATE: 06/29/07
		CHECKED BY: WPM
		CHECKED BY: WPM

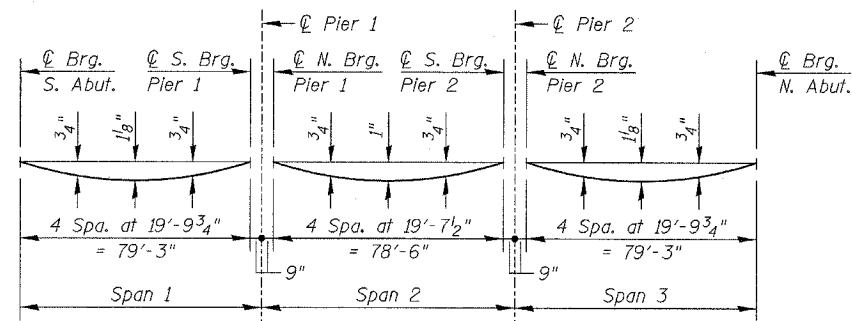
**FOR INFORMATION ONLY**

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FAP NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	114 B-I	WILL	15	5
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



PLAN



DEAD LOAD DEFLECTION DIAGRAM  
(Includes weight of concrete, excluding beams)

**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 TABLES.

**FOR INFORMATION ONLY**

SHT. S-05 of 15

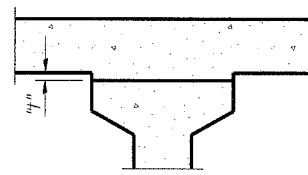
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**TOP OF SLAB ELEVATIONS**  
 ILLINOIS ROUTE 59 OVER DUPAGE RIVER  
 FAP ROUTE 338 SECTION 114 B-I  
 WILL COUNTY  
 STATION 3209+85.00  
 STRUCTURE NUMBER 099-0339

SCALE: NONE      DESIGNED BY: SB      DRAWN BY: TL  
 DATE: 06/29/07      CHECKED BY: WPM      CHECKED BY: SB

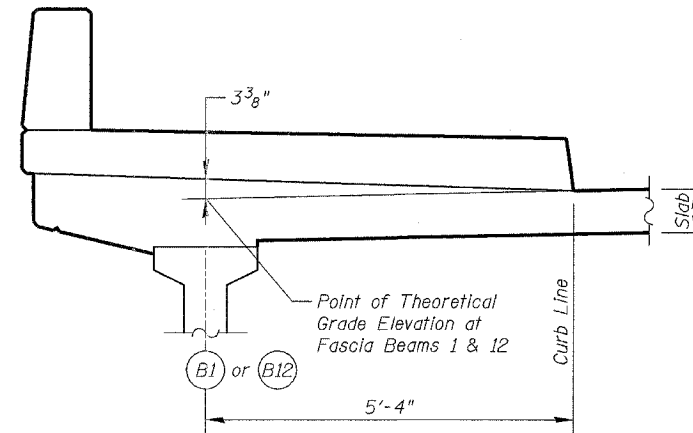
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FAP ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
338	114 B-1	WILL	15	6
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



To determine "t": After all precast prestressed beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" shown below, minus slab thickness, equals the fillet heights "t" above top flanges of beams.

**FILLET HEIGHTS**



**SECTION THRU SIDEWALK**

**BEAM 1**

**BEAM 2**

**BEAM 3**

**BEAM 4**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection	Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection	Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection	Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	3208+80.76	-40.33	602.97	602.97	Bk. S. Abut.	3208+77.65	-33.00	603.16	603.16	Bk. S. Abut.	3208+74.54	-25.67	603.35	603.35	Bk. S. Abut.	3208+71.42	-18.33	603.54	603.54
Q Brg. S. Abut	3208+82.12	-40.33	602.95	602.95	Q Brg. S. Abut	3208+79.01	-33.00	603.14	603.14	Q Brg. S. Abut	3208+75.90	-25.67	603.33	603.33	Q Brg. S. Abut	3208+72.78	-18.33	603.52	603.52
A	3208+92.12	-40.33	602.82	602.86	A	3208+89.01	-33.00	603.02	603.05	A	3208+85.90	-25.67	603.21	603.24	A	3208+82.78	-18.33	603.40	603.43
B	3209+02.12	-40.33	602.70	602.76	B	3208+99.01	-33.00	602.89	602.96	B	3208+95.90	-25.67	603.08	603.15	B	3208+92.78	-18.33	603.28	603.34
C	3209+12.12	-40.33	602.58	602.66	C	3209+09.01	-33.00	602.77	602.85	C	3209+05.90	-25.67	602.96	603.04	C	3209+02.78	-18.33	603.15	603.24
D	3209+22.12	-40.33	602.45	602.54	D	3209+19.01	-33.00	602.64	602.73	D	3209+15.90	-25.67	602.84	602.93	D	3209+12.78	-18.33	603.03	603.12
E	3209+32.12	-40.33	602.33	602.41	E	3209+29.01	-33.00	602.52	602.60	E	3209+25.90	-25.67	602.71	602.79	E	3209+22.78	-18.33	602.90	602.99
F	3209+42.12	-40.33	602.20	602.26	F	3209+39.01	-33.00	602.40	602.46	F	3209+35.90	-25.67	602.59	602.65	F	3209+32.78	-18.33	602.78	602.84
G	3209+52.12	-40.33	602.08	602.11	G	3209+49.01	-33.00	602.27	602.30	G	3209+45.90	-25.67	602.46	602.49	G	3209+42.78	-18.33	602.66	602.69
S. Brg. Pier 1	3209+61.37	-40.33	601.97	601.97	S. Brg. Pier 1	3209+58.26	-33.00	602.16	602.16	S. Brg. Pier 1	3209+55.15	-25.67	602.35	602.35	S. Brg. Pier 1	3209+52.03	-18.33	602.54	602.54
Q Pier 1	3209+62.12	-40.33	601.96	601.96	Q Pier 1	3209+59.01	-33.00	602.15	602.15	Q Pier 1	3209+55.90	-25.67	602.34	602.34	Q Pier 1	3209+52.78	-18.33	602.53	602.53
N. Brg. Pier 1	3209+62.87	-40.33	601.95	601.95	N. Brg. Pier 1	3209+59.76	-33.00	602.14	602.14	N. Brg. Pier 1	3209+56.65	-25.67	602.33	602.33	N. Brg. Pier 1	3209+53.53	-18.33	602.52	602.52
H	3209+72.87	-40.33	601.82	601.85	H	3209+69.76	-33.00	602.01	602.05	H	3209+66.65	-25.67	602.21	602.24	H	3209+63.53	-18.33	602.40	602.43
I	3209+82.87	-40.33	601.70	601.76	I	3209+79.76	-33.00	601.89	601.95	I	3209+76.65	-25.67	602.08	602.14	I	3209+73.53	-18.33	602.27	602.33
J	3209+92.87	-40.33	601.57	601.65	J	3209+89.76	-33.00	601.77	601.84	J	3209+86.65	-25.67	601.96	602.04	J	3209+83.53	-18.33	602.15	602.23
K	3210+02.87	-40.33	601.45	601.53	K	3209+99.76	-33.00	601.64	601.73	K	3209+96.65	-25.67	601.83	601.92	K	3209+93.53	-18.33	602.03	602.11
L	3210+12.87	-40.33	601.33	601.40	L	3210+09.76	-33.00	601.52	601.59	L	3210+06.65	-25.67	601.71	601.79	L	3210+03.53	-18.33	601.90	601.98
M	3210+22.87	-40.33	601.20	601.26	M	3210+19.76	-33.00	601.39	601.45	M	3210+16.65	-25.67	601.59	601.64	M	3210+13.53	-18.33	601.78	601.83
N	3210+32.87	-40.33	601.08	601.11	N	3210+29.76	-33.00	601.27	601.30	N	3210+26.65	-25.67	601.46	601.49	N	3210+23.53	-18.33	601.65	601.68
S. Brg. Pier 2	3210+41.37	-40.33	600.97	600.97	S. Brg. Pier 2	3210+38.26	-33.00	601.17	601.17	S. Brg. Pier 2	3210+35.15	-25.67	601.36	601.36	S. Brg. Pier 2	3210+32.03	-18.33	601.55	601.55
Q Pier 2	3210+42.12	-40.33	600.96	600.96	Q Pier 2	3210+39.01	-33.00	601.16	601.16	Q Pier 2	3210+35.90	-25.67	601.35	601.35	Q Pier 2	3210+32.78	-18.33	601.54	601.54
N. Brg. Pier 2	3210+42.87	-40.33	600.95	600.95	N. Brg. Pier 2	3210+39.76	-33.00	601.15	601.15	N. Brg. Pier 2	3210+36.65	-25.67	601.34	601.34	N. Brg. Pier 2	3210+33.53	-18.33	601.53	601.53
O	3210+52.87	-40.33	600.83	600.86	O	3210+49.76	-33.00	601.02	601.06	O	3210+46.65	-25.67	601.21	601.25	O	3210+43.53	-18.33	601.41	601.44
P	3210+62.87	-40.33	600.71	600.77	P	3210+59.76	-33.00	600.90	600.96	P	3210+56.65	-25.67	601.09	601.15	P	3210+53.53	-18.33	601.28	601.35
Q	3210+72.87	-40.33	600.58	600.67	Q	3210+69.76	-33.00	600.77	600.86	Q	3210+66.65	-25.67	600.97	601.05	Q	3210+63.53	-18.33	601.16	601.24
R	3210+82.87	-40.33	600.46	600.55	R	3210+79.76	-33.00	600.65	600.74	R	3210+76.65	-25.67	600.84	600.93	R	3210+73.53	-18.33	601.03	601.12
S	3210+92.87	-40.33	600.33	600.42	S	3210+89.76	-33.00	600.53	600.61	S	3210+86.65	-25.67	600.72	600.80	S	3210+83.53	-18.33	600.91	600.99
T	3211+02.87	-40.33	600.21	600.27	T	3210+99.76	-33.00	600.40	600.47	T	3210+96.65	-25.67	600.59	600.66	T	3210+93.53	-18.33	600.79	600.85
U	3211+12.87	-40.33	600.09	600.12	U	3211+09.76	-33.00	600.28	600.31	U	3211+06.65	-25.67	600.47	600.50	U	3211+03.53	-18.33	600.66	600.69
Q Brg. N. Abut	3211+22.12	-40.33	599.97	599.97	Q Brg. N. Abut	3211+19.01	-33.00	600.16	600.16	Q Brg. N. Abut	3211+15.90	-25.67	600.36	600.36	Q Brg. N. Abut	3211+12.78	-18.33	600.55	600.55
Bk. N. Abut.	3211+23.48	-40.33	599.96	599.96	Bk. N. Abut.	3211+20.37	-33.00	600.15	600.15	Bk. N. Abut.	3211+17.26	-25.67	600.34	600.34	Bk. N. Abut.	3211+14.14	-18.33	600.53	600.53

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**FOR INFORMATION ONLY**

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**TOP OF SLAB ELEVATIONS**  
ILLINOIS ROUTE 59 OVER DuPAGE RIVER  
FAP ROUTE 338 SECTION 114 B-1  
WILL COUNTY  
STATION 3209+85.00  
STRUCTURE NUMBER 099-0339  
SCALE: NONE      DESIGNED BY: TB      DRAWN BY: TB  
DATE: 06/29/07      CHECKED BY: WPM      CHECKED BY: TL







F.W. DIST.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	114 B-I	WILL	15	9
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

**BEAM 9**

**BEAM 10**

**BEAM 11**

**BEAM 12**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	3208+55.86	18.33	603.73	603.73
☉ Brg. S. Abut	3208+57.22	18.33	603.72	603.72
A	3208+67.22	18.33	603.59	603.63
B	3208+77.22	18.33	603.47	603.53
C	3208+87.22	18.33	603.35	603.43
D	3208+97.22	18.33	603.22	603.31
E	3209+07.22	18.33	603.10	603.18
F	3209+17.22	18.33	602.97	603.03
G	3209+27.22	18.33	602.85	602.88
S. Brg. Pier 1	3209+36.47	18.33	602.73	602.73
☉ Pier 1	3209+37.22	18.33	602.73	602.73
N. Brg. Pier 1	3209+37.97	18.33	602.72	602.72
H	3209+47.97	18.33	602.59	602.62
I	3209+57.97	18.33	602.47	602.53
J	3209+67.97	18.33	602.34	602.42
K	3209+77.97	18.33	602.22	602.30
L	3209+87.97	18.33	602.10	602.17
M	3209+97.97	18.33	601.97	602.03
N	3210+07.97	18.33	601.85	601.87
S. Brg. Pier 2	3210+16.47	18.33	601.74	601.74
☉ Pier 2	3210+17.22	18.33	601.73	601.73
N. Brg. Pier 2	3210+17.97	18.33	601.72	601.72
O	3210+27.97	18.33	601.60	601.63
P	3210+37.97	18.33	601.48	601.54
Q	3210+47.97	18.33	601.35	601.43
R	3210+57.97	18.33	601.23	601.32
S	3210+67.97	18.33	601.10	601.19
T	3210+77.97	18.33	600.98	601.04
U	3210+87.97	18.33	600.86	600.89
☉ Brg. N. Abut	3210+97.22	18.33	600.74	600.74
Bk. N. Abut.	3210+98.58	18.33	600.72	600.72

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	3208+52.75	25.67	603.62	603.62
☉ Brg. S. Abut	3208+54.11	25.67	603.60	603.60
A	3208+64.11	25.67	603.48	603.51
B	3208+74.11	25.67	603.35	603.42
C	3208+84.11	25.67	603.23	603.31
D	3208+94.11	25.67	603.11	603.20
E	3209+04.11	25.67	602.98	603.06
F	3209+14.11	25.67	602.86	602.92
G	3209+24.11	25.67	602.73	602.77
S. Brg. Pier 1	3209+33.36	25.67	602.62	602.62
☉ Pier 1	3209+34.11	25.67	602.61	602.61
N. Brg. Pier 1	3209+34.86	25.67	602.60	602.60
H	3209+44.86	25.67	602.48	602.51
I	3209+54.86	25.67	602.35	602.41
J	3209+64.86	25.67	602.23	602.31
K	3209+74.86	25.67	602.11	602.19
L	3209+84.86	25.67	601.98	602.06
M	3209+94.86	25.67	601.86	601.91
N	3210+04.86	25.67	601.73	601.76
S. Brg. Pier 2	3210+13.36	25.67	601.63	601.63
☉ Pier 2	3210+14.11	25.67	601.62	601.62
N. Brg. Pier 2	3210+14.86	25.67	601.61	601.61
O	3210+24.86	25.67	601.49	601.52
P	3210+34.86	25.67	601.36	601.42
Q	3210+44.86	25.67	601.24	601.32
R	3210+54.86	25.67	601.11	601.20
S	3210+64.86	25.67	600.99	601.07
T	3210+74.86	25.67	600.87	600.93
U	3210+84.86	25.67	600.74	600.77
☉ Brg. N. Abut	3210+94.11	25.67	600.63	600.63
Bk. N. Abut.	3210+95.47	25.67	600.61	600.61

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	3208+49.63	33.00	603.50	603.50
☉ Brg. S. Abut	3208+50.99	33.00	603.49	603.49
A	3208+60.99	33.00	603.36	603.40
B	3208+70.99	33.00	603.24	603.30
C	3208+80.99	33.00	603.12	603.20
D	3208+90.99	33.00	602.99	603.08
E	3209+00.99	33.00	602.87	602.95
F	3209+10.99	33.00	602.74	602.80
G	3209+20.99	33.00	602.62	602.65
S. Brg. Pier 1	3209+30.24	33.00	602.50	602.50
☉ Pier 1	3209+30.99	33.00	602.50	602.50
N. Brg. Pier 1	3209+31.74	33.00	602.49	602.49
H	3209+41.74	33.00	602.36	602.39
I	3209+51.74	33.00	602.24	602.30
J	3209+61.74	33.00	602.11	602.19
K	3209+71.74	33.00	601.99	602.07
L	3209+81.74	33.00	601.87	601.94
M	3209+91.74	33.00	601.74	601.80
N	3210+01.74	33.00	601.62	601.64
S. Brg. Pier 2	3210+10.24	33.00	601.51	601.51
☉ Pier 2	3210+10.99	33.00	601.50	601.50
N. Brg. Pier 2	3210+11.74	33.00	601.49	601.49
O	3210+21.74	33.00	601.37	601.40
P	3210+31.74	33.00	601.25	601.31
Q	3210+41.74	33.00	601.12	601.20
R	3210+51.74	33.00	601.00	601.09
S	3210+61.74	33.00	600.87	600.96
T	3210+71.74	33.00	600.75	600.81
U	3210+81.74	33.00	600.63	600.66
☉ Brg. N. Abut	3210+90.99	33.00	600.51	600.51
Bk. N. Abut.	3210+92.35	33.00	600.49	600.49

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	3208+46.52	40.33	603.39	603.39
☉ Brg. S. Abut	3208+47.88	40.33	603.37	603.37
A	3208+57.88	40.33	603.25	603.28
B	3208+67.88	40.33	603.12	603.19
C	3208+77.88	40.33	603.00	603.08
D	3208+87.88	40.33	602.88	602.97
E	3208+97.88	40.33	602.75	602.83
F	3209+07.88	40.33	602.63	602.69
G	3209+17.88	40.33	602.50	602.54
S. Brg. Pier 1	3209+27.13	40.33	602.39	602.39
☉ Pier 1	3209+27.88	40.33	602.38	602.38
N. Brg. Pier 1	3209+28.63	40.33	602.37	602.37
H	3209+38.63	40.33	602.25	602.28
I	3209+48.63	40.33	602.12	602.18
J	3209+58.63	40.33	602.00	602.08
K	3209+68.63	40.33	601.88	601.96
L	3209+78.63	40.33	601.75	601.83
M	3209+88.63	40.33	601.63	601.68
N	3209+98.63	40.33	601.50	601.53
S. Brg. Pier 2	3210+07.13	40.33	601.40	601.40
☉ Pier 2	3210+07.88	40.33	601.39	601.39
N. Brg. Pier 2	3210+08.63	40.33	601.38	601.38
O	3210+18.63	40.33	601.26	601.29
P	3210+28.63	40.33	601.13	601.19
Q	3210+38.63	40.33	601.01	601.09
R	3210+48.63	40.33	600.88	600.97
S	3210+58.63	40.33	600.76	600.84
T	3210+68.63	40.33	600.64	600.70
U	3210+78.63	40.33	600.51	600.54
☉ Brg. N. Abut	3210+87.88	40.33	600.40	600.40
Bk. N. Abut.	3210+89.24	40.33	600.38	600.38

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**FOR INFORMATION ONLY**

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**TOP OF SLAB ELEVATIONS**  
 ILLINOIS ROUTE 59 OVER DUPAGE RIVER  
 FAP ROUTE 338 SECTION 114 B-I  
 WILL COUNTY  
 STATION 3209+85.00  
 STRUCTURE NUMBER 099-0339

SCALE: NONE      DESIGNED BY: TB      DRAWN BY: TB  
 DATE: 06/29/07      CHECKED BY: WPM      CHECKED BY: TL

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	114 B-I	WILL	15	10
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

**WEST CURB LINE**

**EAST CURB LINE**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	3208+78.50	-35.00	603.10	603.10
⊕ Brg. S. Abut	3208+79.86	-35.00	603.09	603.09
A	3208+89.86	-35.00	602.96	603.00
B	3208+99.86	-35.00	602.84	602.90
C	3209+09.86	-35.00	602.72	602.80
D	3209+19.86	-35.00	602.59	602.68
E	3209+29.86	-35.00	602.47	602.55
F	3209+39.86	-35.00	602.34	602.40
G	3209+49.86	-35.00	602.22	602.25
S. Brg. Pier 1	3209+59.11	-35.00	602.11	602.11
⊕ Pier 1	3209+59.86	-35.00	602.10	602.10
N. Brg. Pier 1	3209+60.61	-35.00	602.09	602.09
H	3209+70.61	-35.00	601.96	601.99
I	3209+80.61	-35.00	601.84	601.90
J	3209+90.61	-35.00	601.71	601.79
K	3210+00.61	-35.00	601.59	601.67
L	3210+10.61	-35.00	601.47	601.54
M	3210+20.61	-35.00	601.34	601.40
N	3210+30.61	-35.00	601.22	601.25
S. Brg. Pier 2	3210+39.11	-35.00	601.11	601.11
⊕ Pier 2	3210+39.86	-35.00	601.10	601.10
N. Brg. Pier 2	3210+40.61	-35.00	601.09	601.09
O	3210+50.61	-35.00	600.97	601.00
P	3210+60.61	-35.00	600.85	600.91
Q	3210+70.61	-35.00	600.72	600.81
R	3210+80.61	-35.00	600.60	600.69
S	3210+90.61	-35.00	600.47	600.56
T	3211+00.61	-35.00	600.35	600.41
U	3211+10.61	-35.00	600.23	600.26
⊕ Brg. N. Abut	3211+19.86	-35.00	600.11	600.11
Bk. N. Abut.	3211+21.22	-35.00	600.09	600.09

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	3208+48.78	35.00	603.47	603.47
⊕ Brg. S. Abut	3208+50.14	35.00	603.46	603.46
A	3208+60.14	35.00	603.33	603.37
B	3208+70.14	35.00	603.21	603.27
C	3208+80.14	35.00	603.08	603.17
D	3208+90.14	35.00	602.96	603.05
E	3209+00.14	35.00	602.84	602.92
F	3209+10.14	35.00	602.71	602.77
G	3209+20.14	35.00	602.59	602.62
S. Brg. Pier 1	3209+29.39	35.00	602.47	602.47
⊕ Pier 1	3209+30.14	35.00	602.46	602.46
N. Brg. Pier 1	3209+30.89	35.00	602.45	602.45
H	3209+40.89	35.00	602.33	602.36
I	3209+50.89	35.00	602.21	602.27
J	3209+60.89	35.00	602.08	602.16
K	3209+70.89	35.00	601.96	602.04
L	3209+80.89	35.00	601.83	601.91
M	3209+90.89	35.00	601.71	601.77
N	3210+00.89	35.00	601.59	601.61
S. Brg. Pier 2	3210+09.39	35.00	601.48	601.48
⊕ Pier 2	3210+10.14	35.00	601.47	601.47
N. Brg. Pier 2	3210+10.89	35.00	601.46	601.46
O	3210+20.89	35.00	601.34	601.37
P	3210+30.89	35.00	601.21	601.28
Q	3210+40.89	35.00	601.09	601.17
R	3210+50.89	35.00	600.97	601.06
S	3210+60.89	35.00	600.84	600.93
T	3210+70.89	35.00	600.72	600.78
U	3210+80.89	35.00	600.59	600.63
⊕ Brg. N. Abut	3210+90.14	35.00	600.48	600.48
Bk. N. Abut.	3210+91.50	35.00	600.46	600.46

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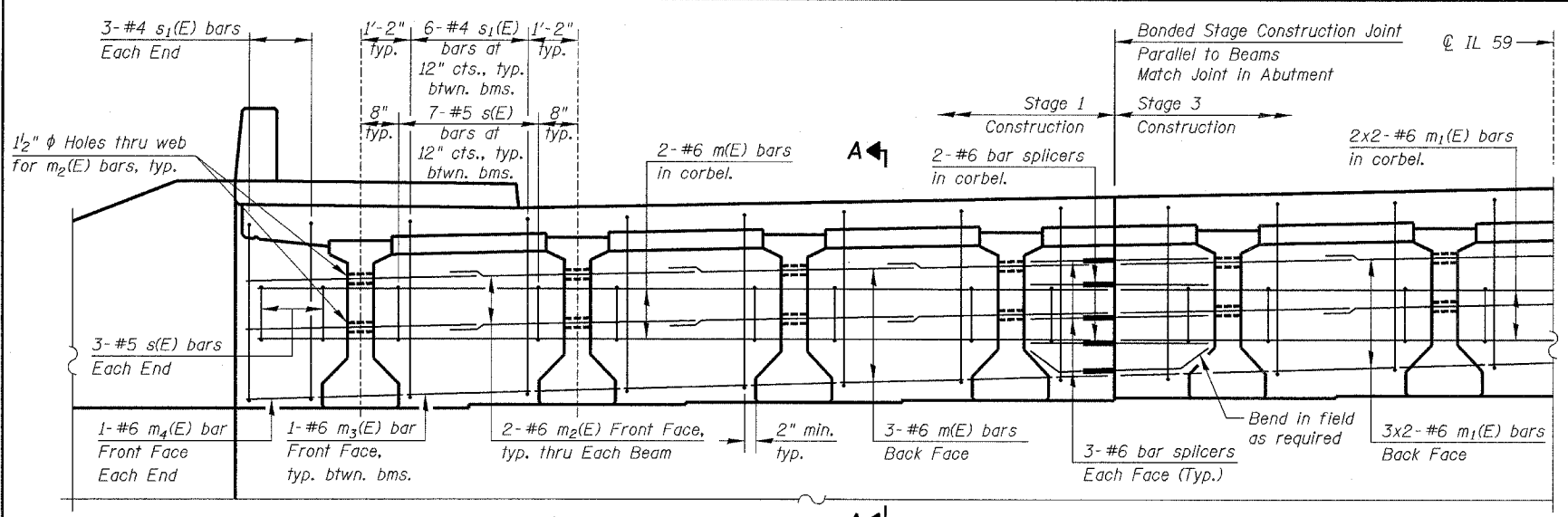


**FOR INFORMATION ONLY**

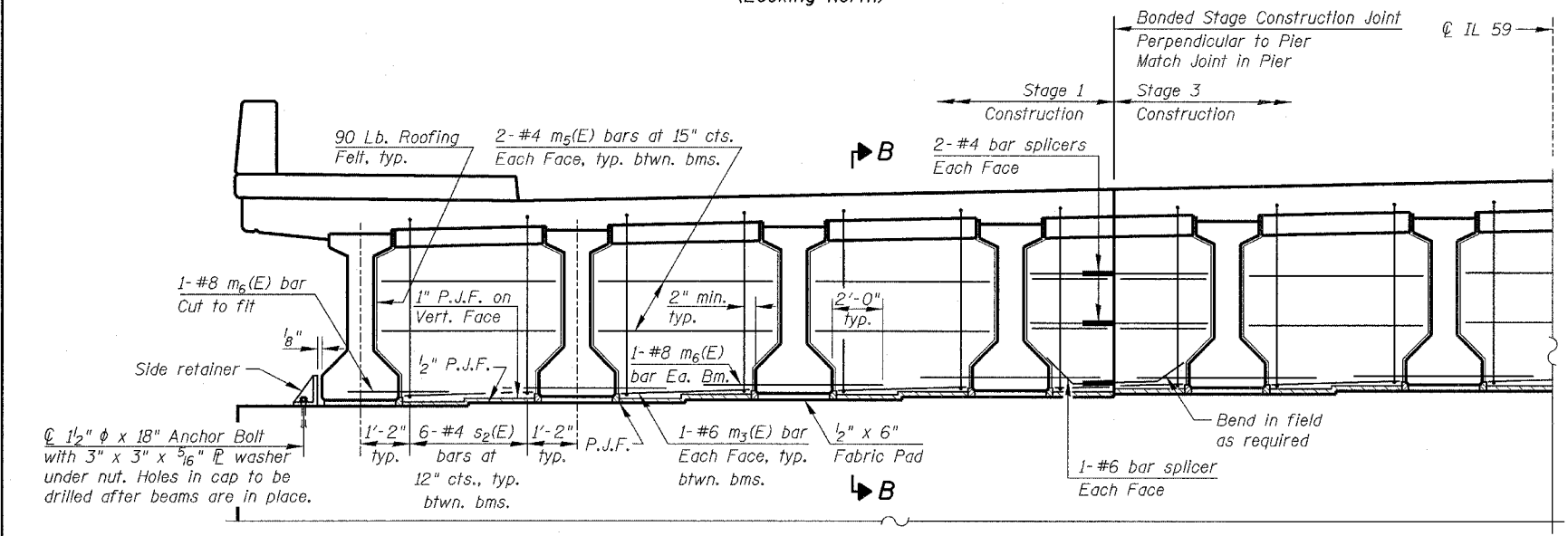
REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION <b>TOP OF SLAB ELEVATIONS</b> ILLINOIS ROUTE 59 OVER DuPAGE RIVER FAP ROUTE 338 SECTION 114 B-I WILL COUNTY STATION 3209+85.00 STRUCTURE NUMBER 099-0339
NAME	DATE	

SCALE: NONE      DESIGNED BY: TB      DRAWN BY: TB  
DATE: 06/29/07      CHECKED BY: WPM      CHECKED BY: TL

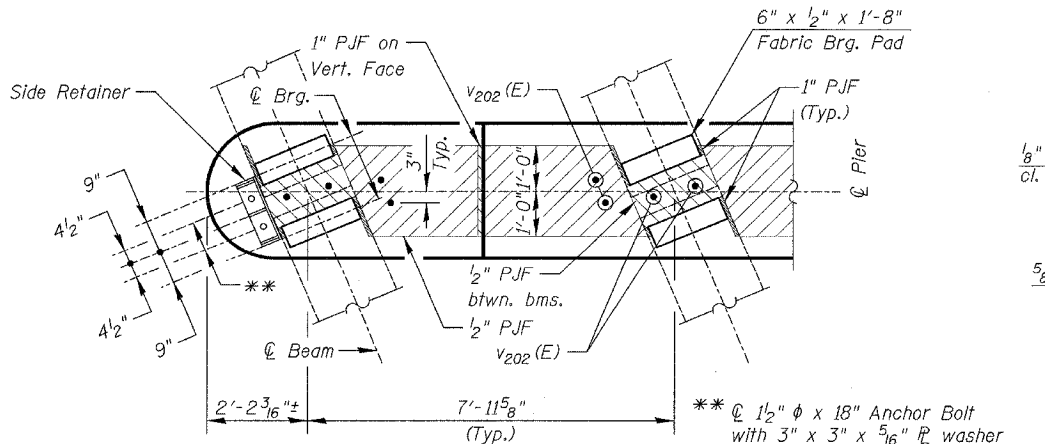




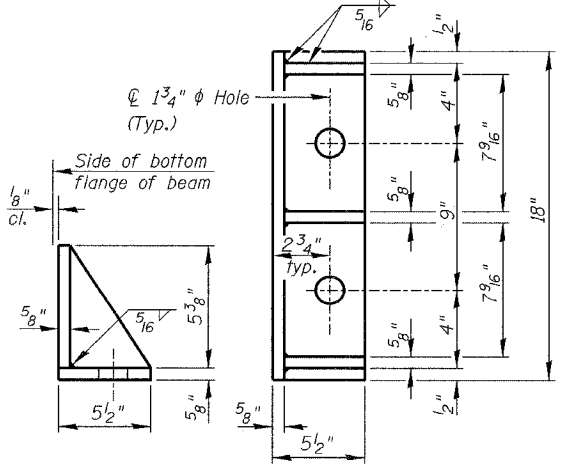
**DIAPHRAGM ELEVATION AT ABUTMENT**  
(Looking North)



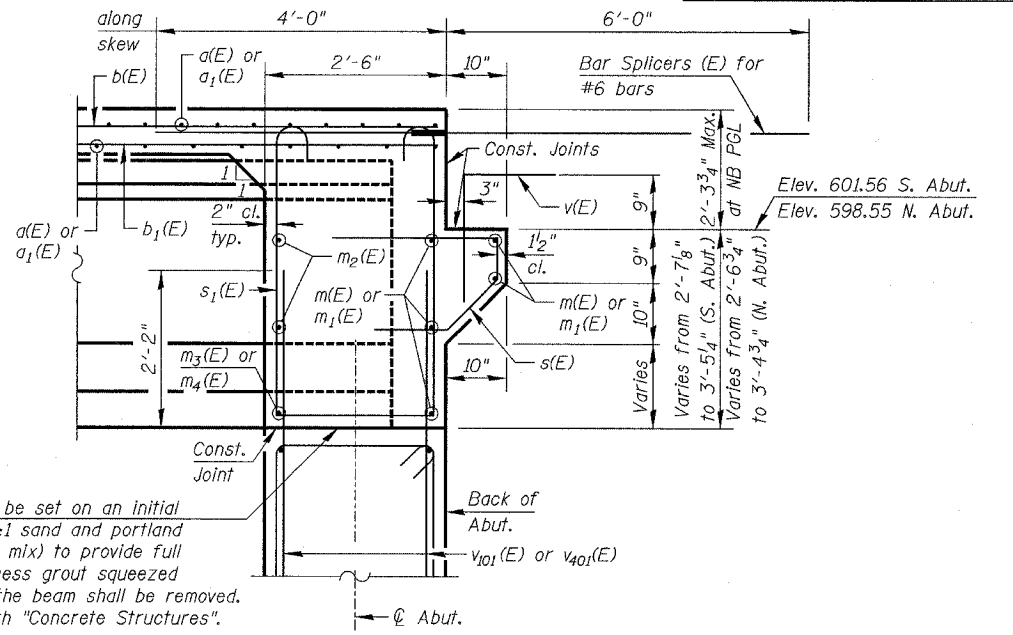
**DIAPHRAGM ELEVATION AT PIER**  
(Looking North)



**PLAN AT PIER**  
(Showing bearing pad and P.J.F. details)



**SIDE RETAINER**  
(4 Required)  
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



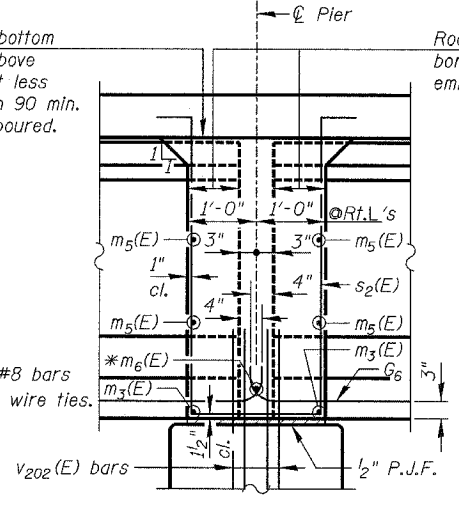
**SECTION A-A**

Dimensions at right angles to abutment, except as shown.

Beam ends shall be set on an initial 1/2" min. grout (2:1 sand and portland cement, very dry mix) to provide full bearing. Any excess grout squeezed out from under the beam shall be removed. Cost included with "Concrete Structures".

Four diaphragm flush with bottom of slab. Concrete in slab above this line shall be placed not less than 45 min. nor more than 90 min. after diaphragm has been poured.

Roofing felt shall be bonded to side of beam embedded into diaphragm.



**SECTION B-B**

Dimensions along centerline of beam, except as shown.

**Notes:**

- The s(E), s1(E) and s2(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
- Cost of 90 Lb. roofing felt is included with "Concrete Superstructure".
- The side retainer shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. Cost of side retainer and anchor bolts shall be included with "Concrete Structures".
- Reinforcement Bars designated (E) shall be epoxy coated.
- Cost of Fabric Bearing Pad included with "Concrete Superstructure".

**MIN. BAR LAP**  
#6 bar = 2'-9"

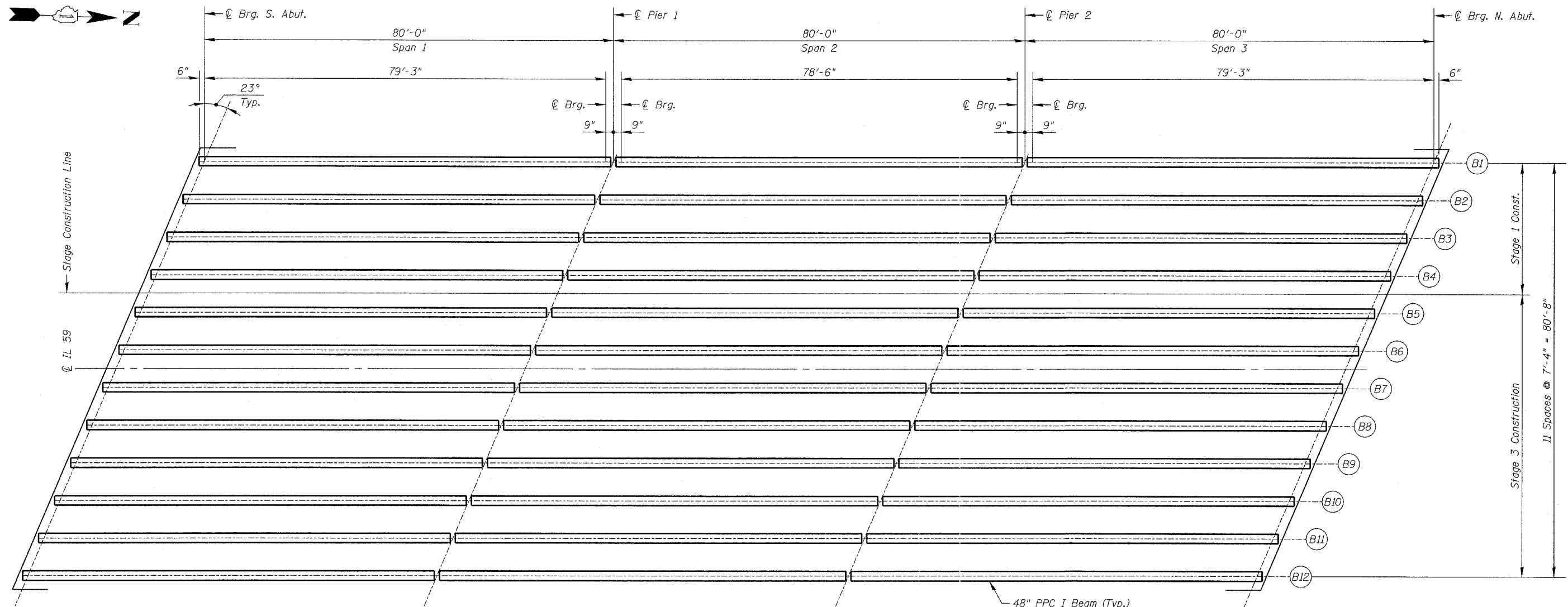
SHT. S-12 of 15

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**DECK DIAPHRAGM DETAILS**  
ILLINOIS ROUTE 59 OVER DuPAGE RIVER  
FAP ROUTE 338 SECTION 114 B-1  
WILL COUNTY  
STATION 3209+85.00  
STRUCTURE NUMBER 099-0339  
SCALE: NONE      DESIGNED BY: SB      DRAWN BY: TL  
DATE: 06/29/07      CHECKED BY: WPM      CHECKED BY: SB

**FOR INFORMATION ONLY**

FMP NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	114 B-I	WILL	15	13
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	



**FRAMING PLAN**

**BEAM MOMENT TABLE**

	0.4 S1 0.6 S3	Pier 1 or 2	0.5 S2
I	(in <sup>4</sup> ) 144117		144117
I'	(in <sup>4</sup> ) 397956		397956
Sb	(in <sup>3</sup> ) 6834		6834
Sb'	(in <sup>3</sup> ) 11216		11216
St	(in <sup>3</sup> ) 5355		5355
St'	(in <sup>3</sup> ) 31786		31786
M <sub>D</sub>	(k') 1.320		1.320
M <sub>sD</sub>	(k') 1056		1056
s <sub>D</sub>	(k') 0.57	0.57	0.57
M <sub>sD</sub>	(k') 293	361	95
M <sub>L</sub>	(k') 617	490	506
M (Imp)	(k') 151	120	124

**INTERIOR BEAM REACTION TABLE**

	Abut.	Pier 1 Span 1 Pier 2 Span 3	Pier 1 Span 2 Pier 2 Span 2
R <sub>D</sub>	(k) 52.8	52.8	52.8
R <sub>sD</sub>	(k) 18.3	25.0	25.0
R <sub>L</sub>	(k) 41.0	29.2	29.2
Imp.	(k) 10.0	7.2	7.2
R (Total)	(k) 122.1	114.2	114.2

*I* and *I'* are the moment of inertia of the beam section.

*S<sub>b</sub>* and *S<sub>b'</sub>* are the non-composite and composite section modulus for the bottom fiber of the prestressed beam.

*S<sub>t</sub>* and *S<sub>t'</sub>* are the non-composite and composite section modulus for the top fiber of the prestressed beam.

*M<sub>D</sub>* is the moment due to the dead loads on the non-composite prestressed beam. It is conservatively calculated at 0.5 of the span.

*M<sub>sD</sub>* is the moment due to dead loads on the composite section.

*M<sub>L</sub>* is the moment due to live load on the composite section.

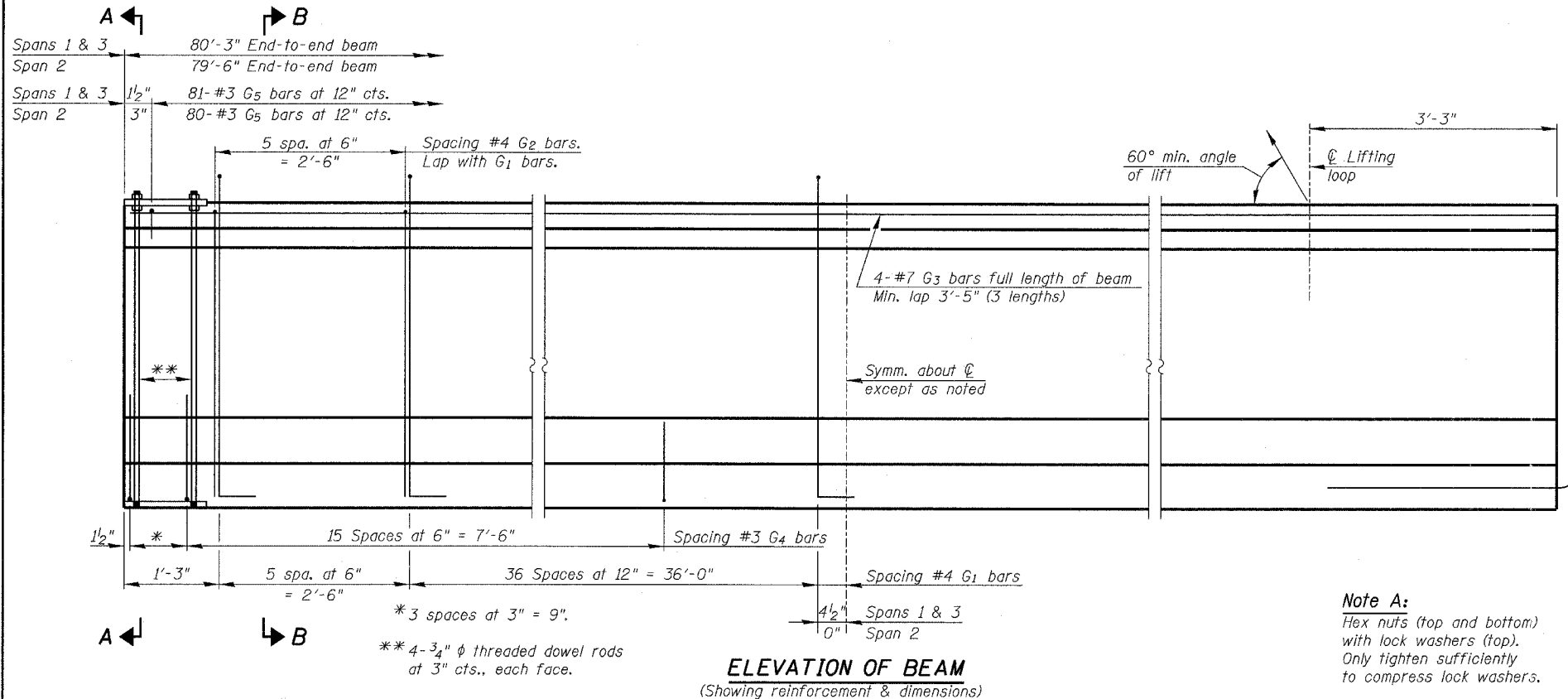
*M (Imp)* is the moment due to live load impact on the composite section.

SHT. S-13 of 15

REVISIONS	
NAME	DATE

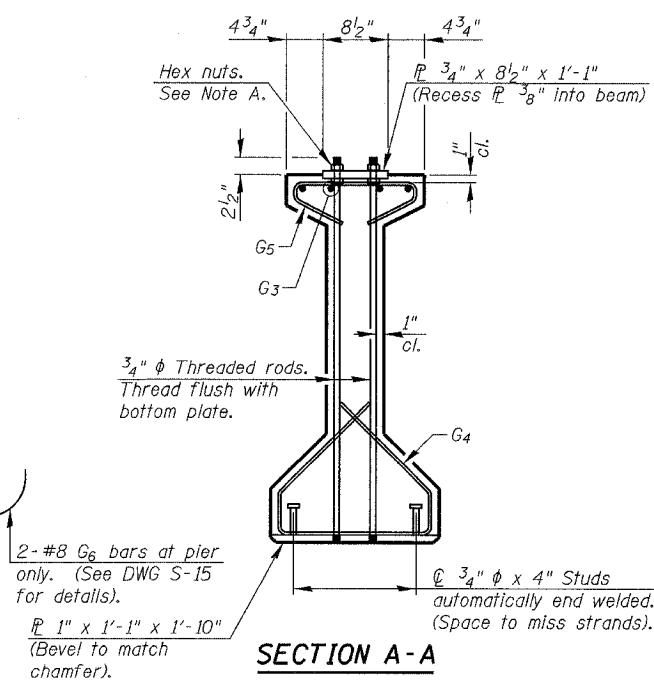
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**FRAMING PLAN DETAILS**  
 ILLINOIS ROUTE 59 OVER DUPAGE RIVER  
 FAP ROUTE 338 SECTION 114 B-I  
 WILL COUNTY  
 STATION 3209+85.00  
 STRUCTURE NUMBER 099-0339  
 SCALE: NONE      DESIGNED BY: SB      DRAWN BY: TL  
 DATE: 06/29/07      CHECKED BY: WPM      CHECKED BY: SB

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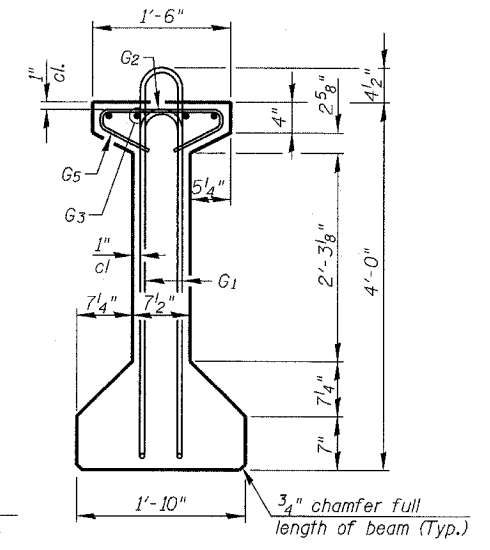


**ELEVATION OF BEAM**  
(Showing reinforcement & dimensions)

**Note A:**  
Hex nuts (top and bottom) with lock washers (top). Only tighten sufficiently to compress lock washers.



**SECTION A-A**



**SECTION B-B**

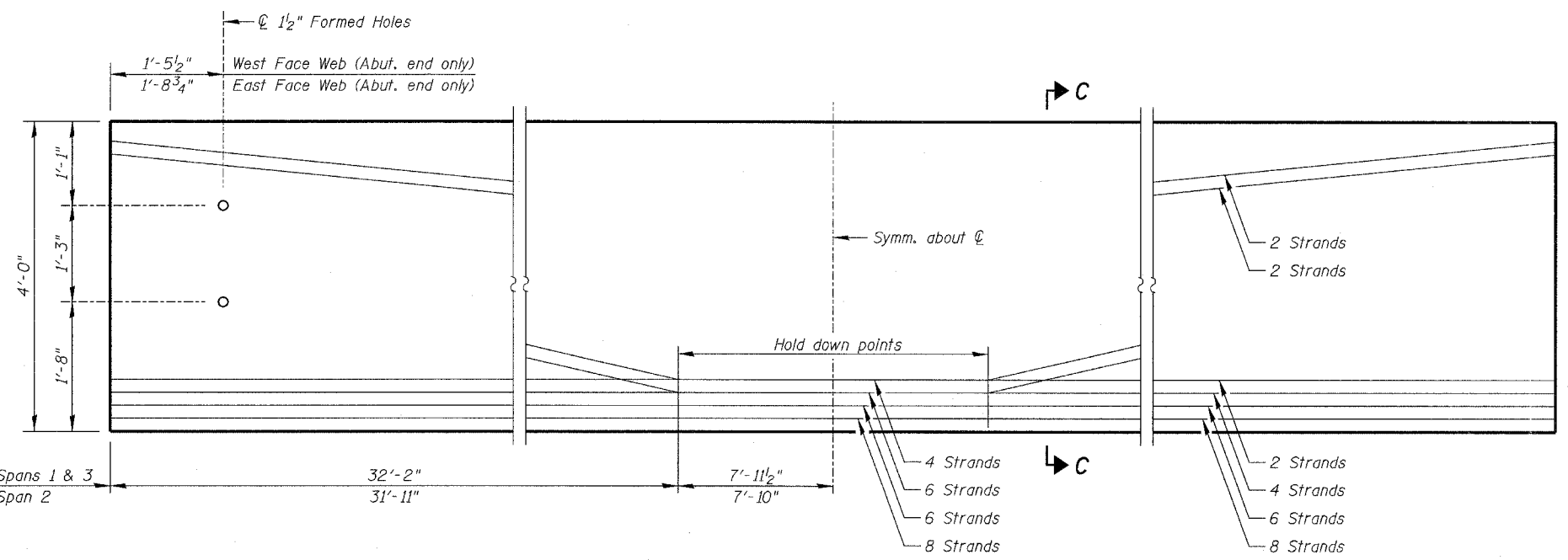
**BAR LIST ONE BEAM ONLY**  
(At Spans 1 or 3)

Bar	No.	Size	Length	Shape
G1	84	#4	9'-6"	∩ L
G2	12	#4	7'-11"	∩
G3	12	#7	30'-1"	—
G4	38	#3	5'-3"	∩
G5	81	#3	2'-9"	∩
G6	2	#8	3'-9"	∩

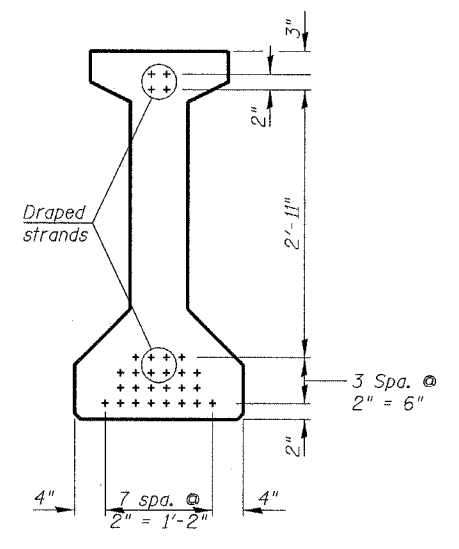
**BAR LIST ONE BEAM ONLY**  
(At Span 2)

Bar	No.	Size	Length	Shape
G1	83	#4	9'-6"	∩ L
G2	12	#4	7'-11"	∩
G3	12	#7	28'-9"	—
G4	38	#3	5'-3"	∩
G5	80	#3	2'-9"	∩
G6	4	#8	3'-9"	∩

**Notes:**  
See DWG. S-15 for additional details and Bill of Material.  
Required release strength, f'ci, shall be 5000 psi.



**ELEVATION OF BEAM**  
(Showing prestressing steel)

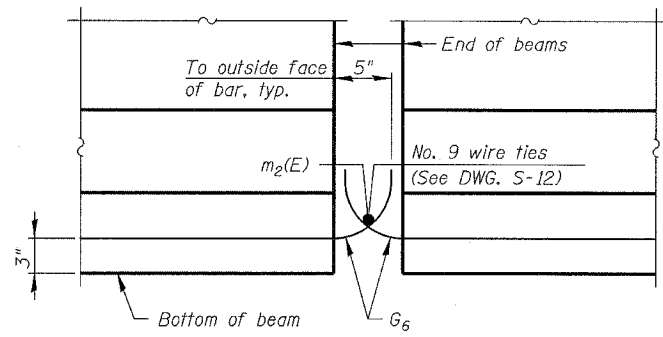


**SECTION C-C**

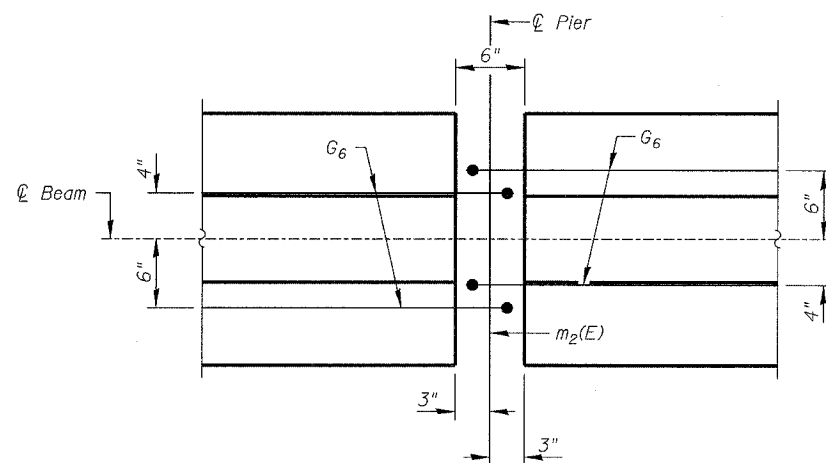
REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION <b>48" PPC I-BEAM</b> ILLINOIS ROUTE 59 OVER DuPAGE RIVER FAP ROUTE 338 SECTION 114 B-I WILL COUNTY STATION 3209+85.00 STRUCTURE NUMBER 099-0339
NAME	DATE	
		SCALE: NONE DESIGNED BY: SB DRAWN BY: TL DATE: 06/29/07 CHECKED BY: WPM CHECKED BY: SB

FILE: L:\6632.02\Cad\Sheets\Roadway\Structures\Bridges\663202-S0339-BW02.dgn

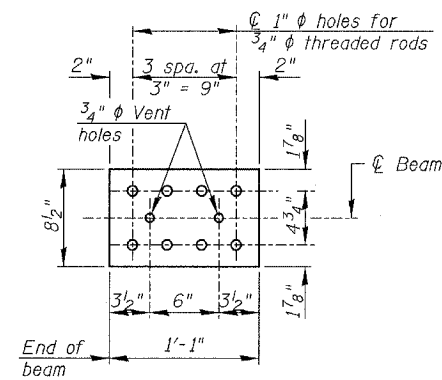
FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338	114 B-1	WILL	15	15
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



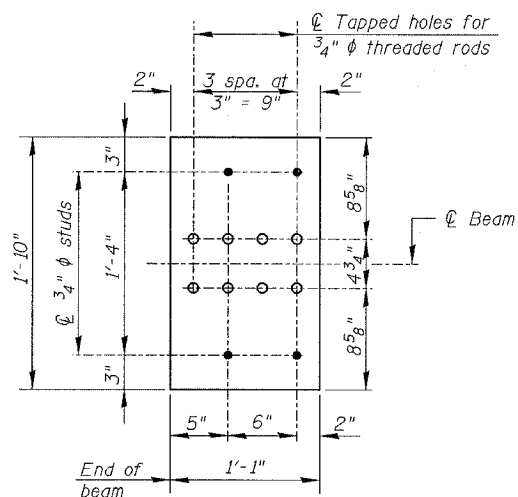
**ELEVATION OF BEAM AT PIER**



**PLAN OF BEAM AT PIER**

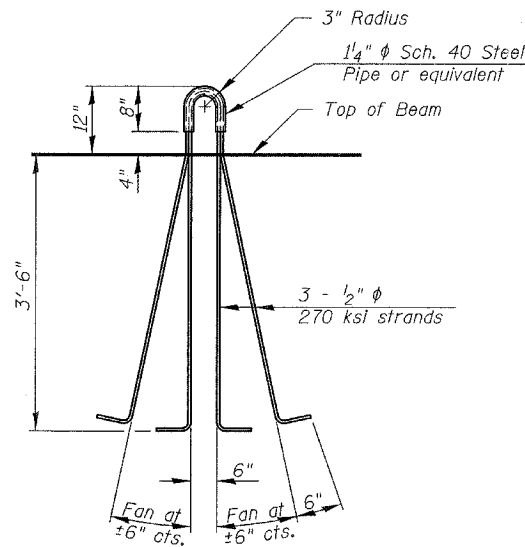


**TOP PLATE**

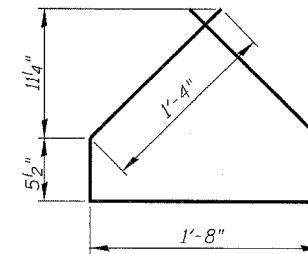


**BOTTOM PLATE**

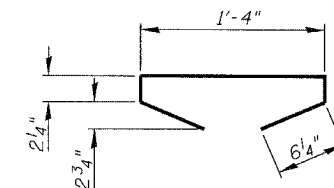
See bearing details for pintle hole locations when required.



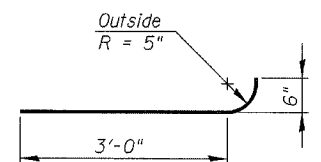
**LIFTING LOOP DETAIL**



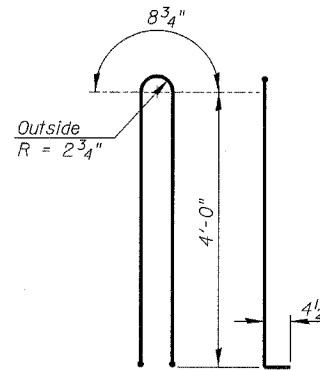
**BAR G4**



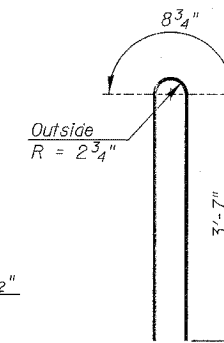
**BAR G5**



**BAR G6**



**BAR G1**



**BAR G2**

**NOTES**

Inserts for 3/4"  $\phi$  threaded dowel rods, when specified, are to be two strut, coil type for interior beams and single coil, flared loop type for exterior beams.  
 Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270.  
 The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.  
 Non-prestressing steel shall conform to AASHTO designation M-31 or M 322, Grade 60.  
 A minimum 2 1/2"  $\phi$  lifting pin shall be used to engage the lifting loops during handling.  
 Reinforcement bars designated (E) shall be epoxy coated.  
 Cut G6 bars when necessary to maintain 1/2" clearance.  
 The bottom plates and studs shall be galvanized according to AASHTO M11.  
 Threaded rods shall be ASTM F 1554 Grade 55.  
 The cut strands at each beam end shall be given two coats of zinc dust spray or paint meeting the requirements of ASTM A 780. The zinc dust spray or paint shall be applied before corrosion appears and allowed to dry according to the manufacturer's specifications prior to another coat of zinc. A concrete sealer meeting the requirements of Section 587 of the Standard Specifications shall be applied to all portions of the I-beam or Bulb-T beam, except the top surface of the top flange and the bottom surface of the bottom flange, starting at each beam end and extending out a distance of 48 inches. The sealer shall be applied after visible crack growth has subsided. This work shall be performed by the producer and included with the cost of the beam.

**BILL OF MATERIAL**

Item	Unit	Total
Furnishing Precast Prestressed Concrete I-Beams, 48 IN.	Foot	2880

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION <b>48" PPC I-BEAM DETAILS</b> ILLINOIS ROUTE 59 OVER DUPAGE RIVER FAP ROUTE 338 SECTION 114 B-1 WILL COUNTY STATION 3209+85.00 STRUCTURE NUMBER 099-0339
NAME	DATE	
		SCALE: NONE      DESIGNED BY: SB      DRAWN BY: TL
		DATE: 06/29/07      CHECKED BY: WPM      CHECKED BY: SB