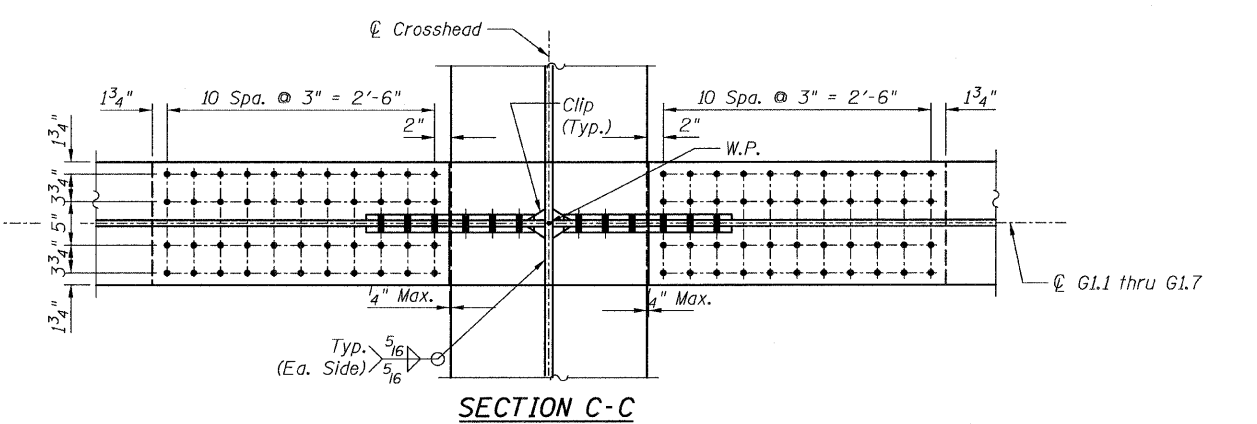
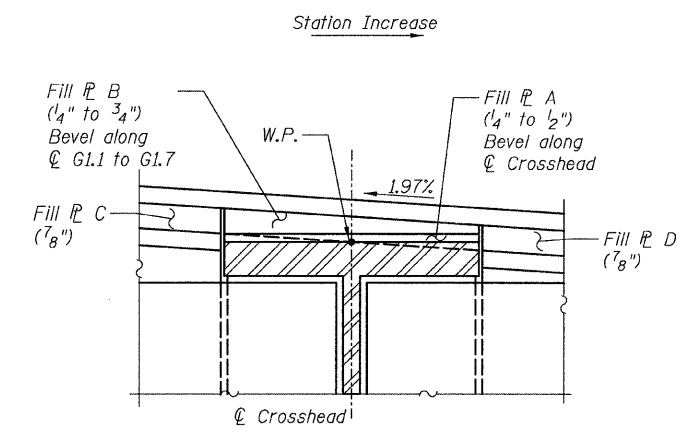
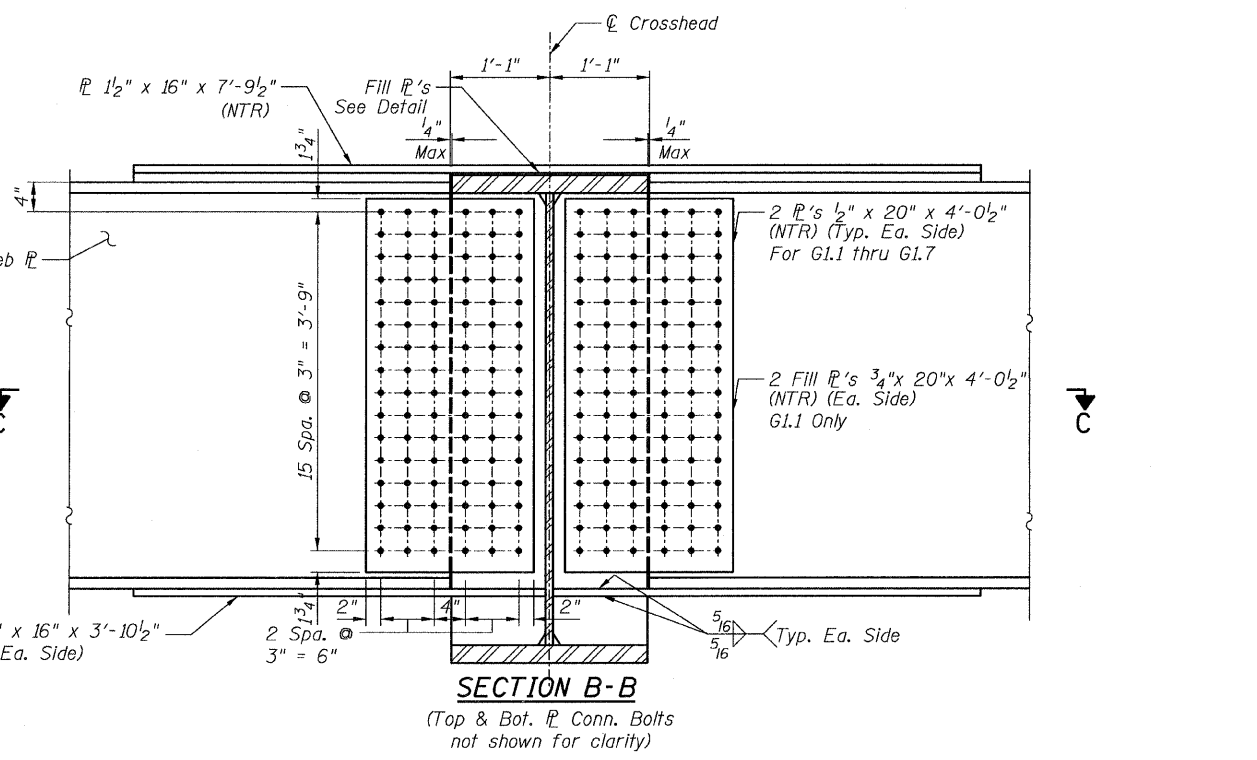
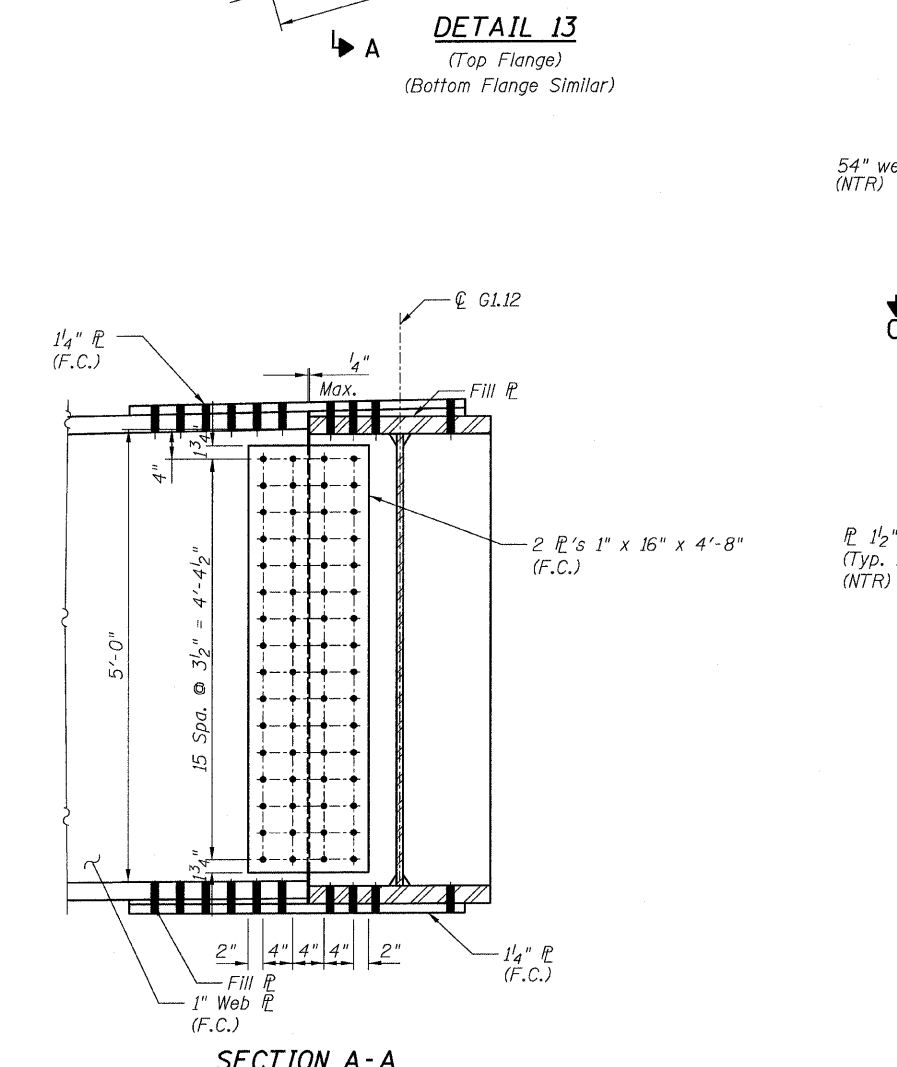
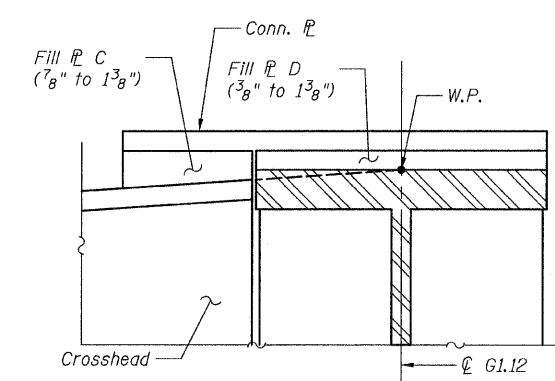
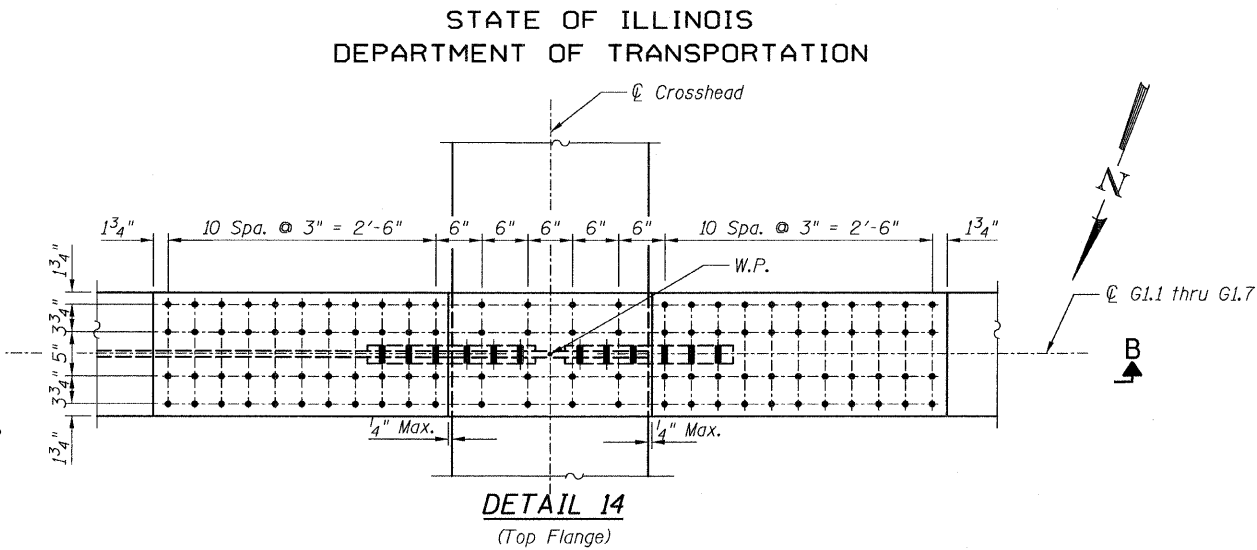
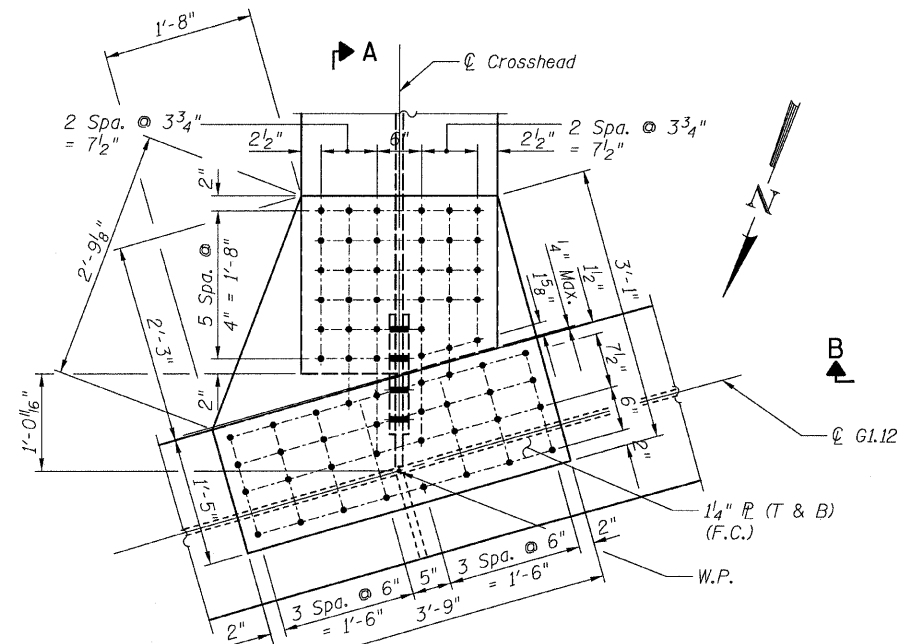


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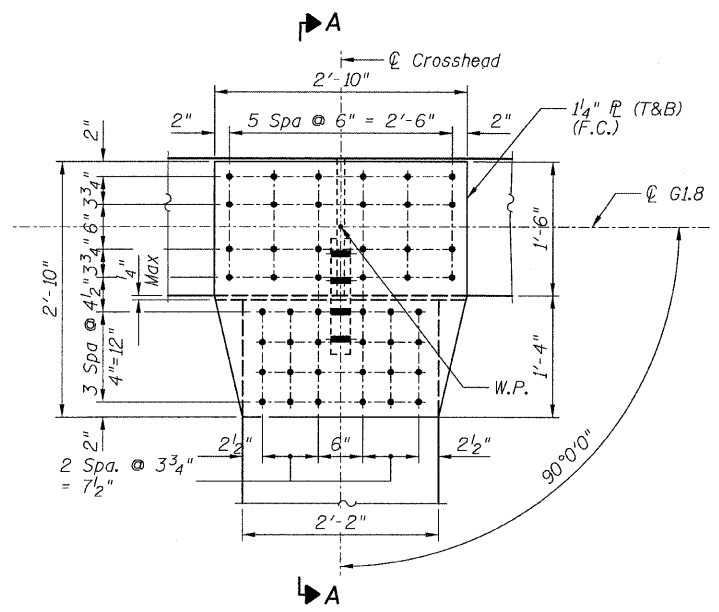
- NOTES:**
- All steel shall be AASHTO M270 Grade 50.
 - For Details 13 and 14 locations, see Sheet 41.
 - F.C. - denotes Fracture Critical Material, AASHTO Zone II.
 - Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

**CONNECTION DETAILS 13&14
RAMP 1 FLARE
STRUCTURE NO. 016-0724**

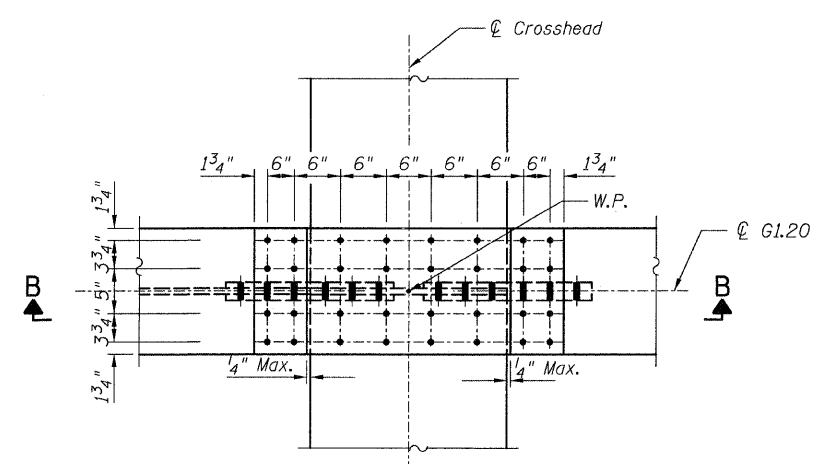
TYLIN INTERNATIONAL	DESIGNED - EKH, JMA	REVISIONS		SHEET NO. 71 137 SHEETS	F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 101	
	CHECKED - AMD,	NAME	DATE							CONTRACT NO. 60L39
	DRAWN - EKH, JMA									
	CHECKED - AMD,									
	DATE - 08/02/10				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

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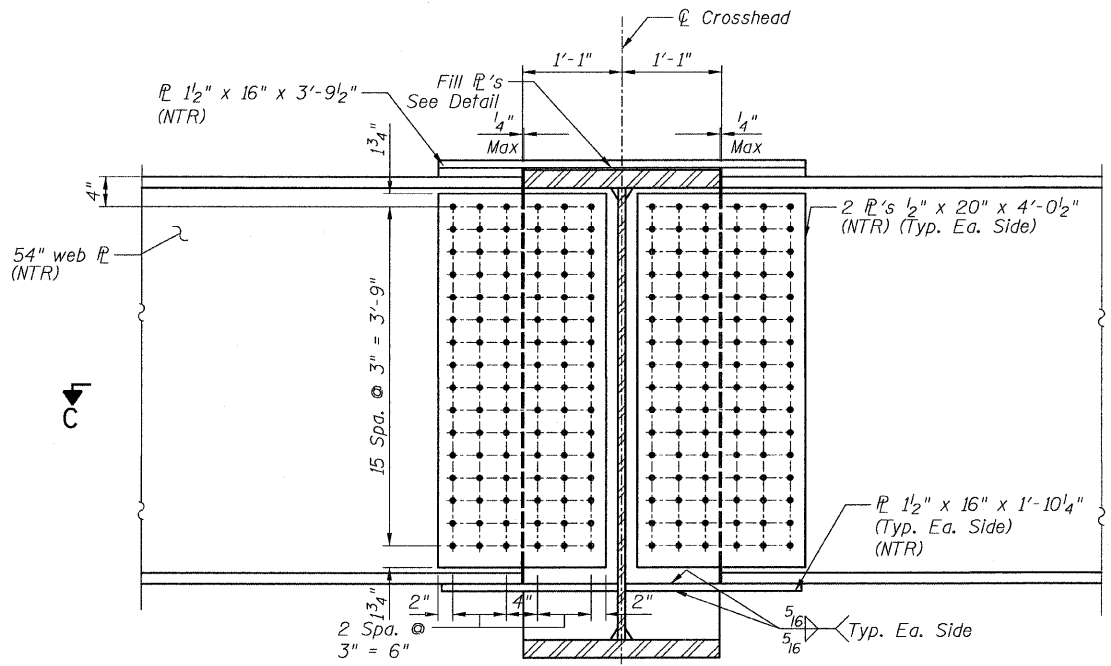
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



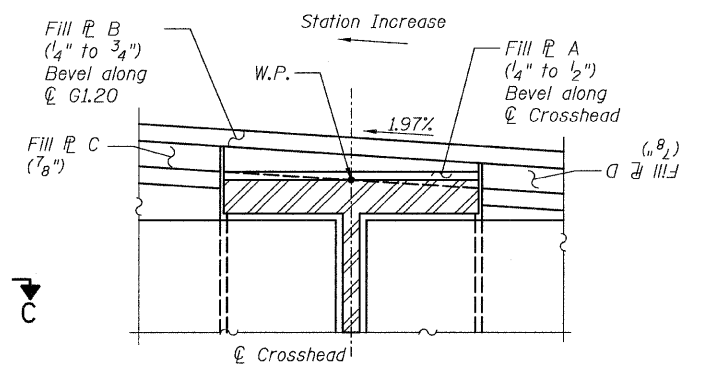
DETAIL 15
(Top Flange)
(Bot. Flange Similar)



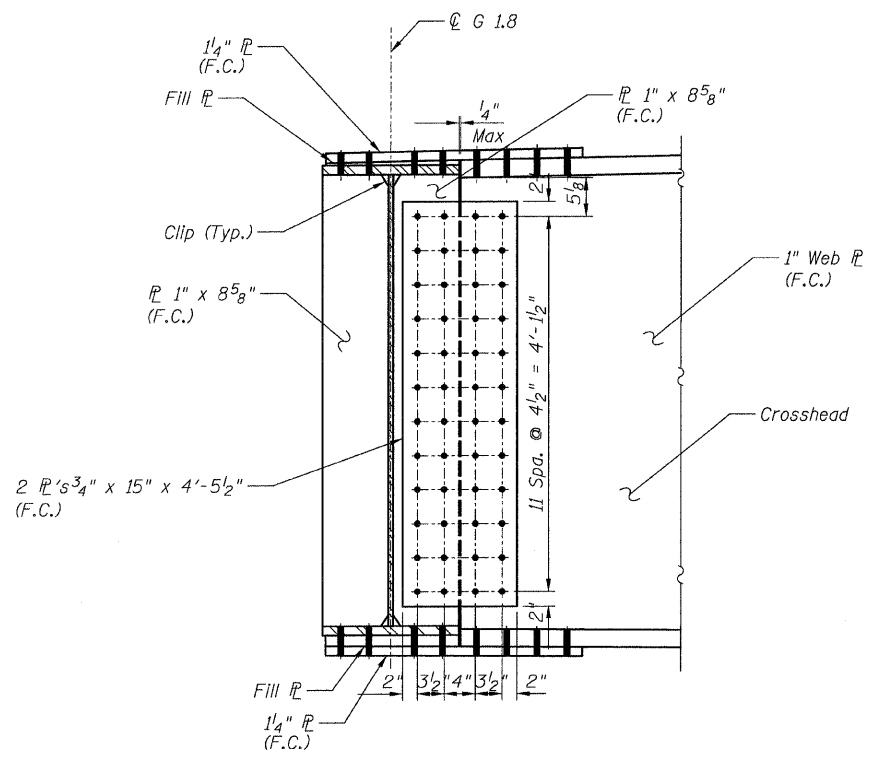
DETAIL 16
(Top Flange)



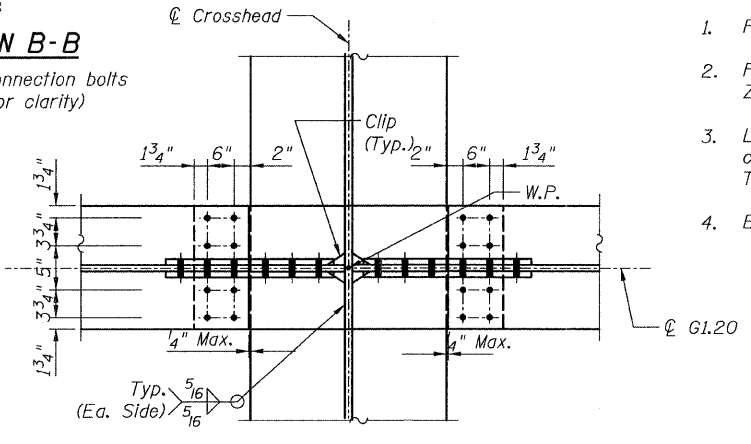
SECTION B-B
(Top & bottom connection bolts not shown for clarity)



FILL P DETAIL



SECTION A-A



SECTION C-C

NOTES:

1. For Details 15 and 16 locations, see Sheet 41.
2. F.C. - denotes Fracture Critical Material, AASHTO Zone II.
3. Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
4. Bolts for connection detail 15 shall be 1" φ with 1/16" holes.

CONNECTION DETAILS 15&16
RAMP 1 FLARE
STRUCTURE NO. 016-0724

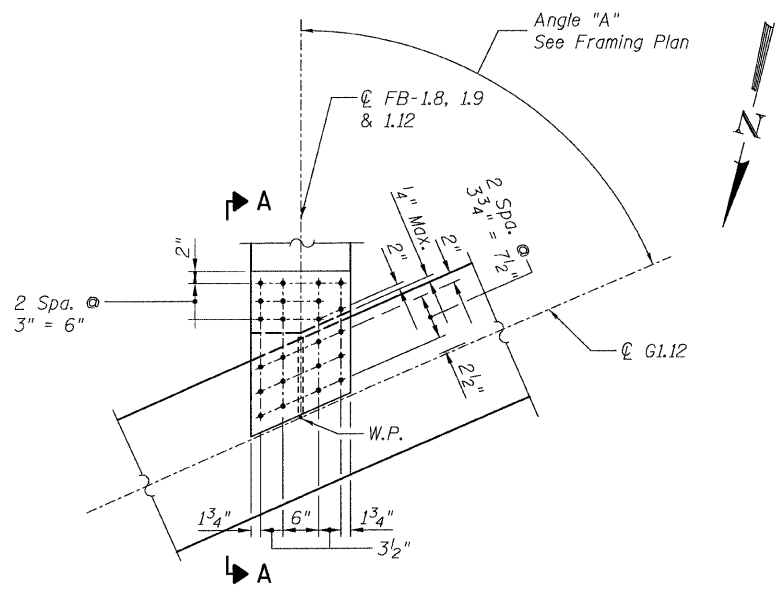
TYLIN INTERNATIONAL

DESIGNED -	EKH, JMA	REVISIONS	
CHECKED -	AMD,	NAME	DATE
DRAWN -	EKH, JMA		
CHECKED -	AMD,		
DATE -	08/02/10		

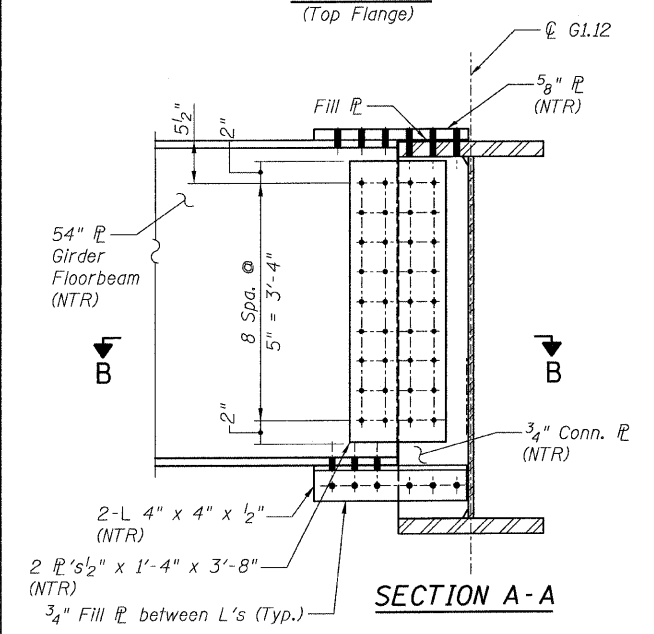
SHEET NO. 72	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
137 SHEETS	55	0711.2R & 1011.1BR	COOK	200	102
			CONTRACT NO. 60L39		
FED. ROAD DIST. NO. 1			ILLINOIS FED. AID PROJECT		

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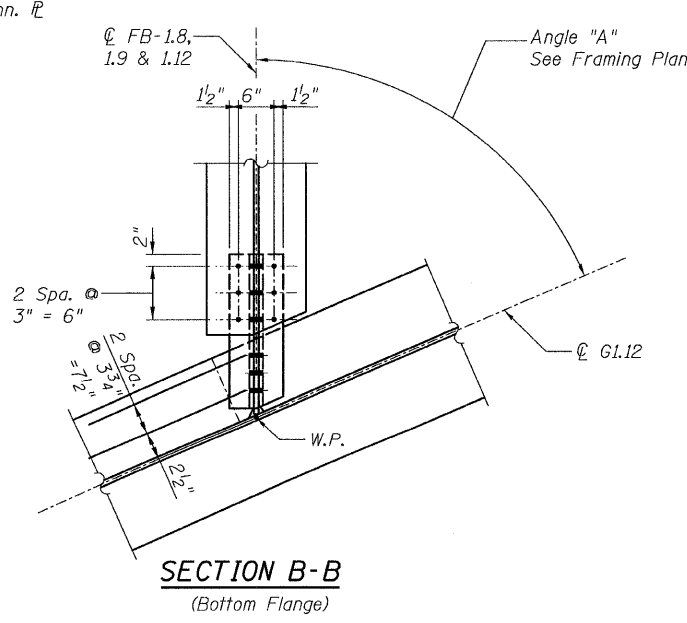
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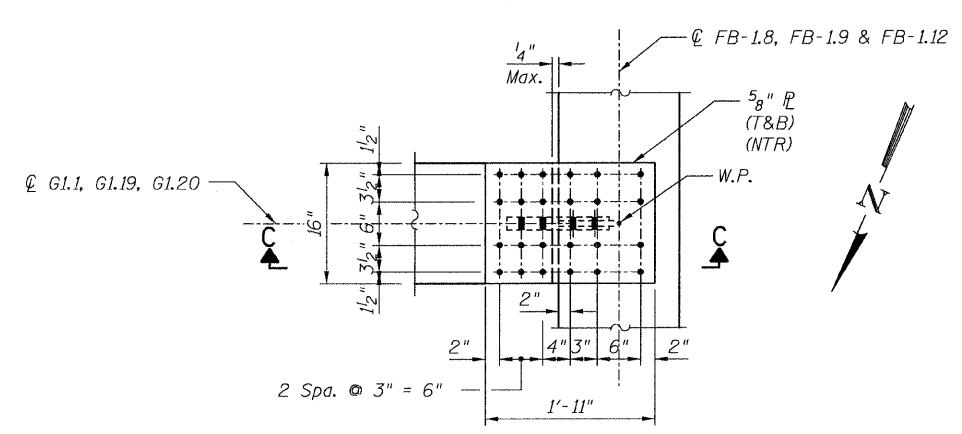
DETAIL 17
(Top Flange)



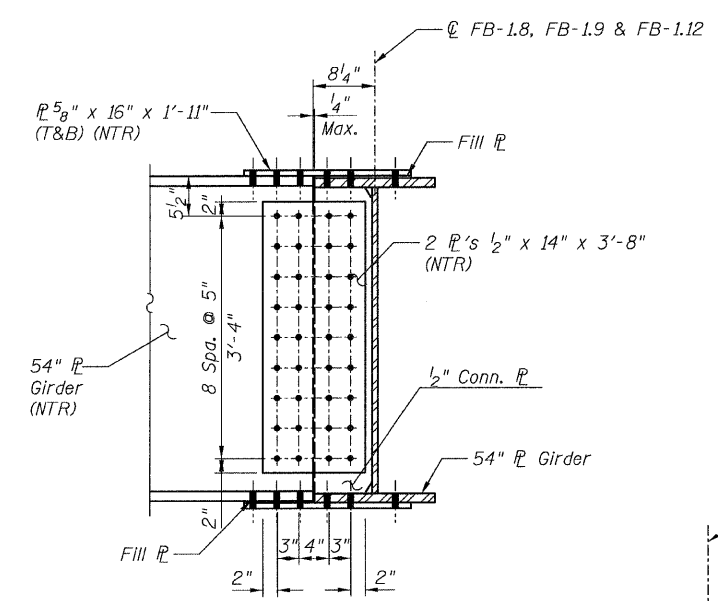
SECTION A-A



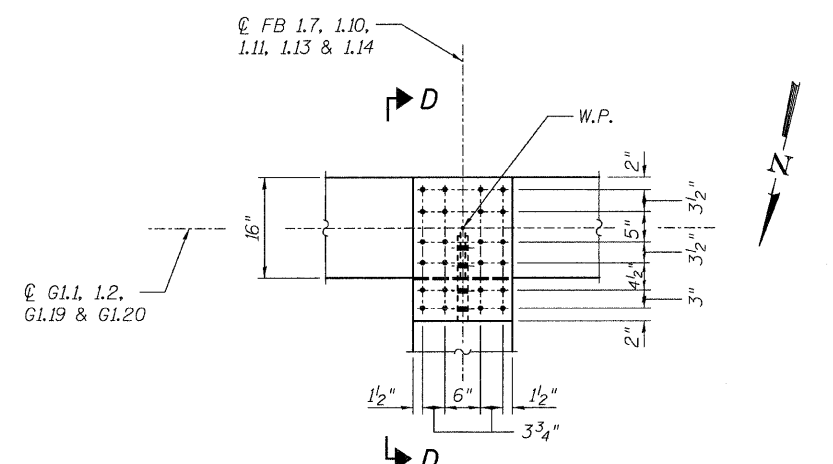
SECTION B-B
(Bottom Flange)



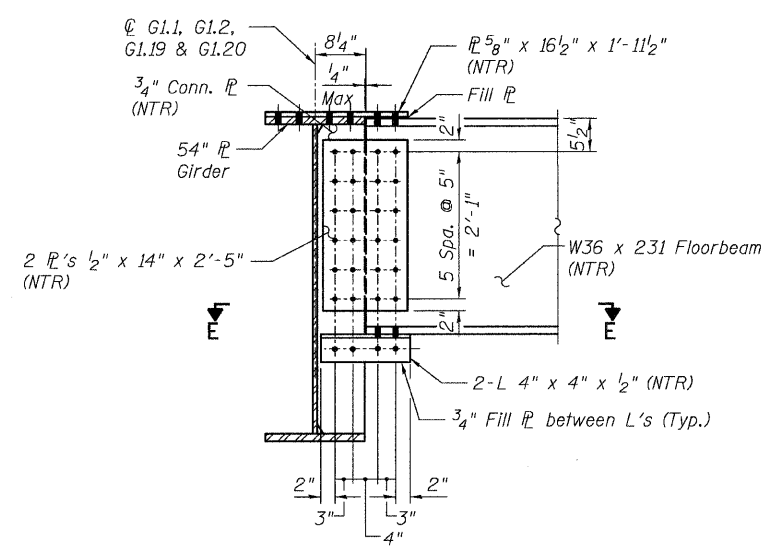
DETAIL 18
(Top Flange)
(Bottom Flange is similar.)



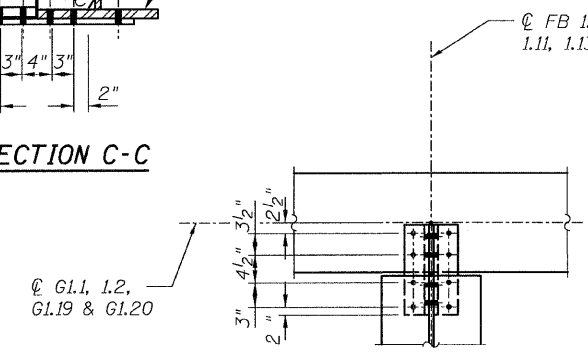
SECTION C-C



DETAIL 19
(Top Flange)



SECTION D-D



SECTION E-E

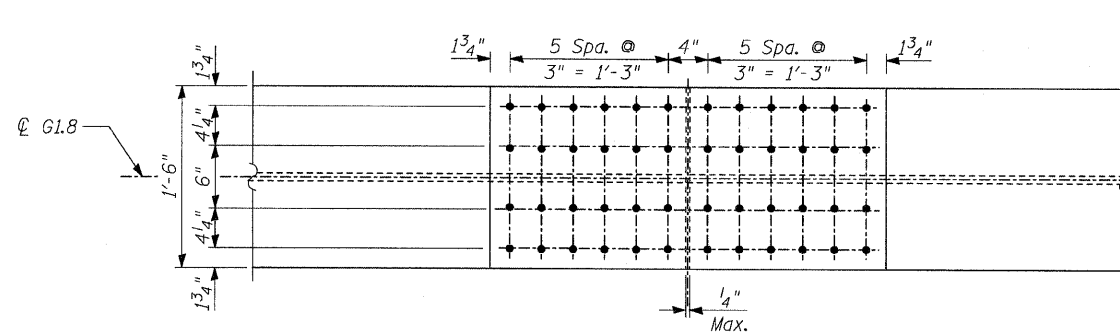
- NOTES:**
- All steel shall be AASHTO M270 Grade 50.
 - For Details 17, 18 & 19 locations, see Sheet 41.
 - Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

CONNECTION DETAILS 17, 18 & 19
RAMP 1 FLARE
STRUCTURE NO. 016-0724

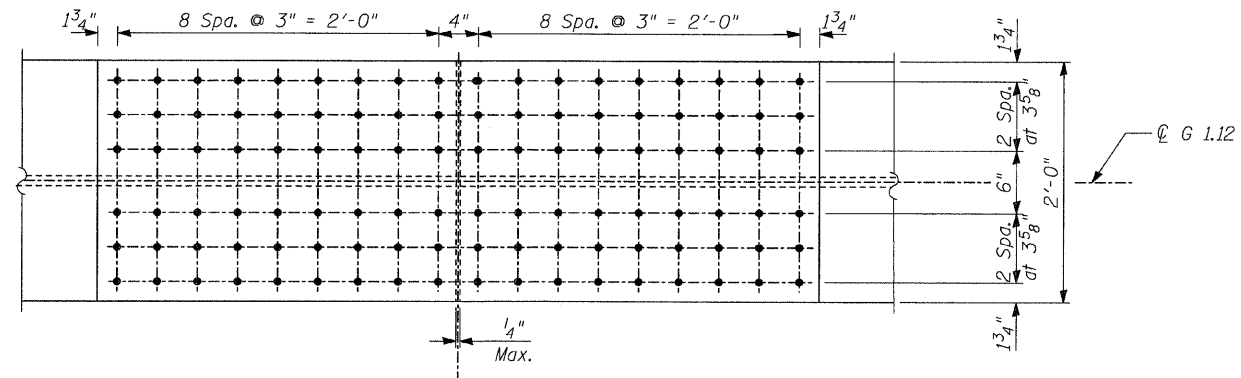
TYLIN INTERNATIONAL	DESIGNED - EKH, JMA	REVISIONS		SHEET NO. 72A 137 SHEETS	F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 102A						
	CHECKED - AMD,	NAME	DATE							CONTRACT NO. 60L39					
	DRAWN - EKH, JMA									FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
	CHECKED - AMD,														
	DATE - 08/02/10														

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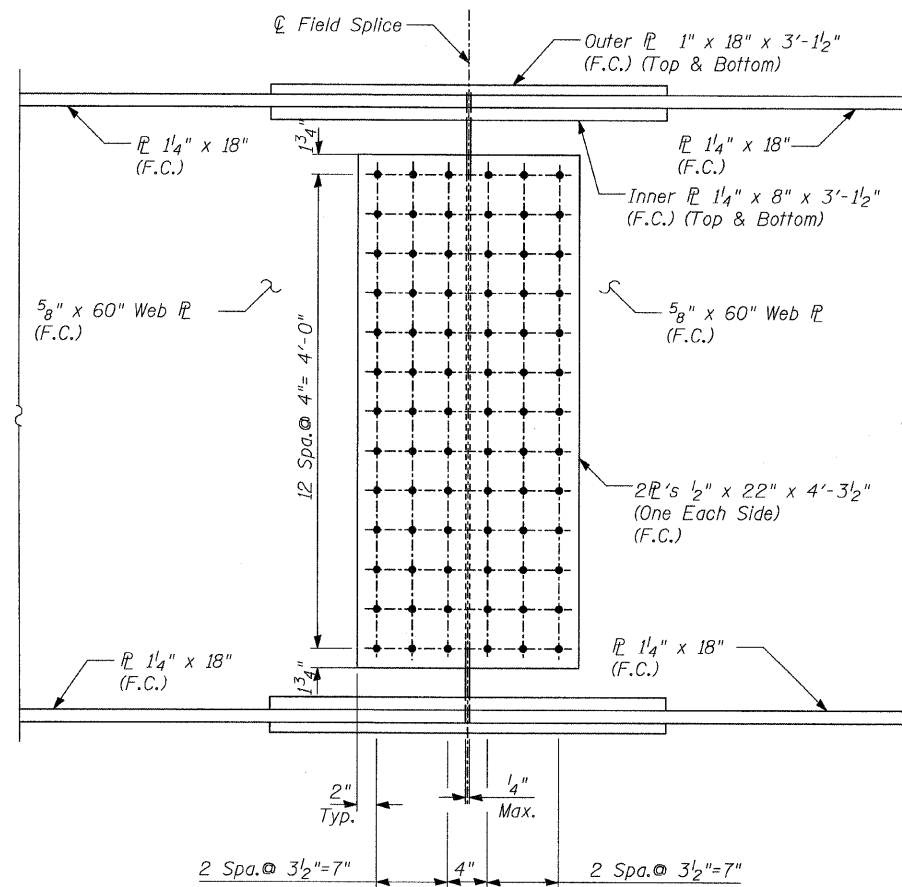
STATE OF ILLINOIS
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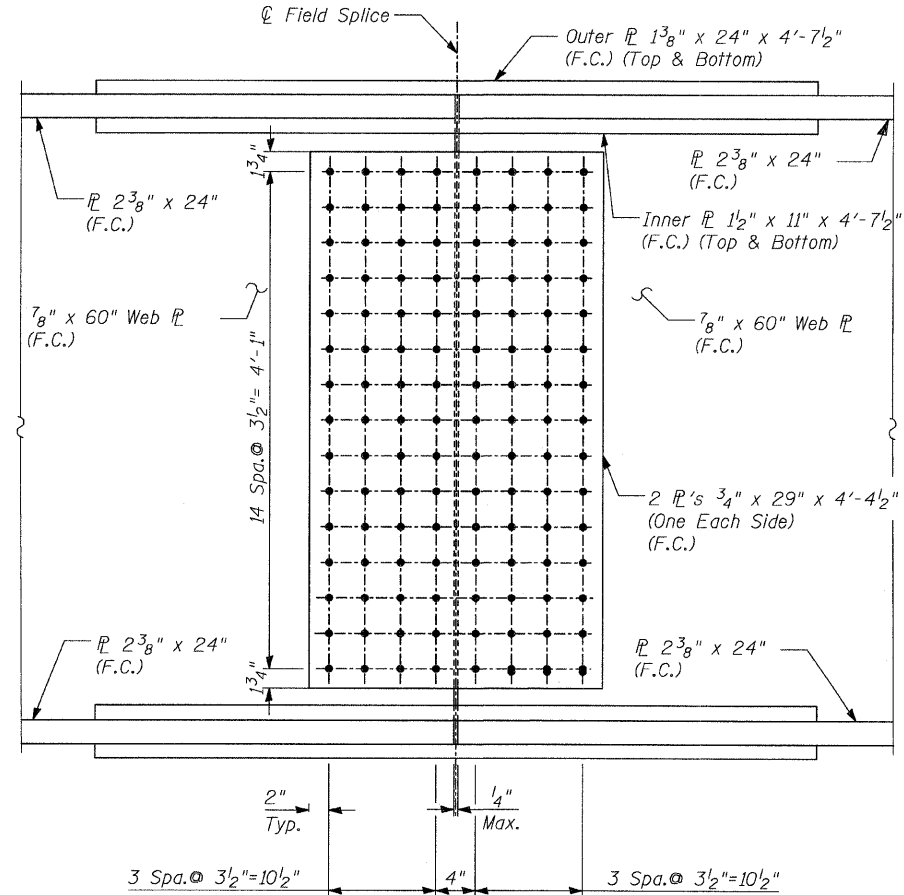
PLAN - TOP & BOTTOM FLANGE
FIELD SPLICE FS-1.1



PLAN - TOP & BOTTOM FLANGE
FIELD SPLICE FS-1.2 & 1.3



ELEVATION



ELEVATION

NOTES:

- All steel shall be AASHTO M270 Grade 50.
- F.C. denotes Fracture Critical Material, AASHTO Zone 2.

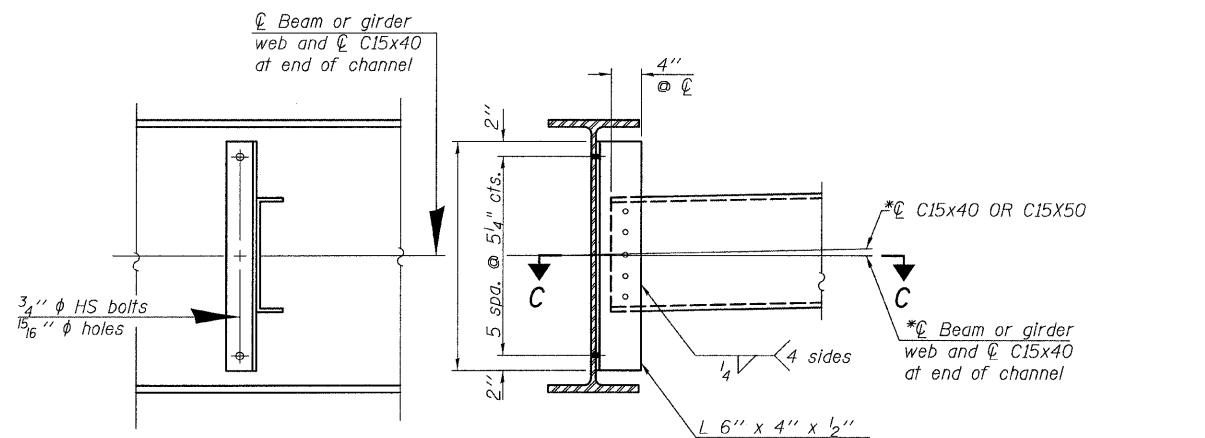
FIELD SPLICES
RAMP 1
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL

DESIGNED	REVISIONS
EKH, JMA	NAME
CHECKED - AMD,	DATE
DRAWN - EKH, JMA	
CHECKED - AMD,	
DATE - 08/02/10	

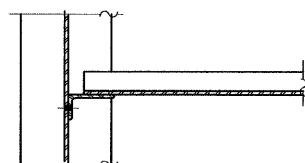
SHEET NO. 73	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
137 SHEETS	55	0711.2R & 1011.1BR	COOK	200	103
			CONTRACT NO. 60L39		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

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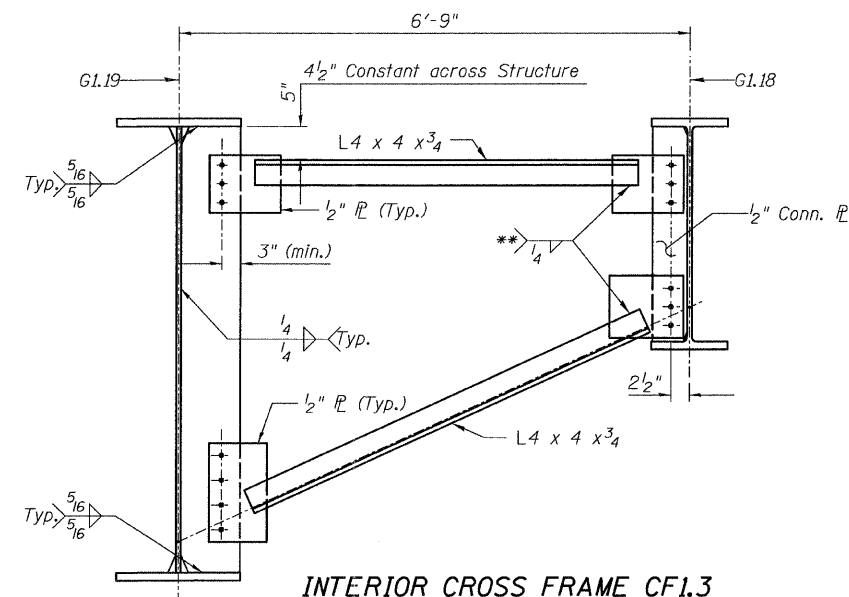


INTERIOR DIAPHRAGM D1.2

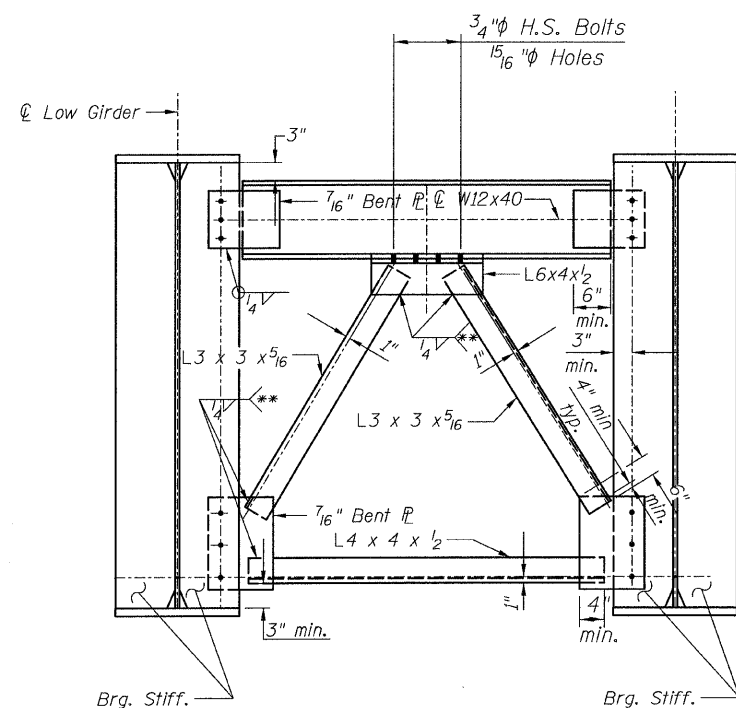
*Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.



SECTION C-C

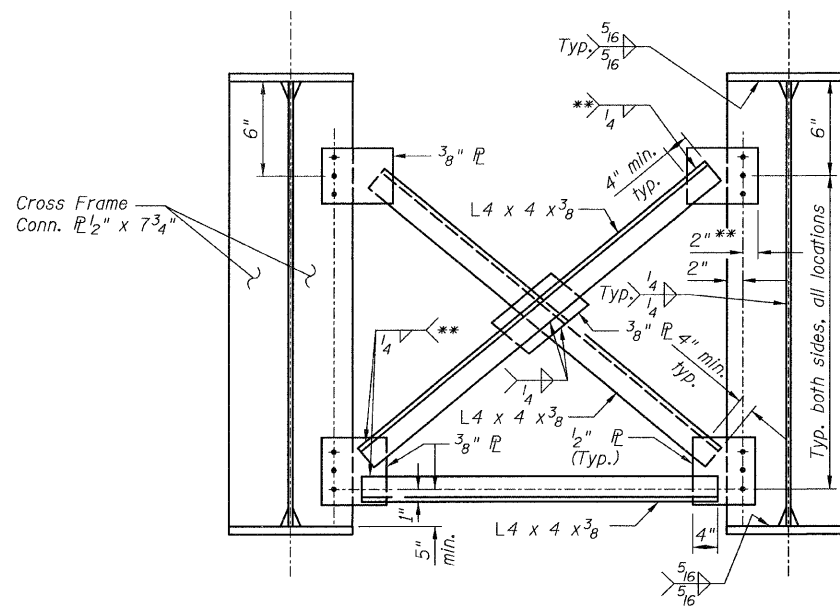


INTERIOR CROSS FRAME CF1.3
(4 Required)



END CROSS FRAME CF1.1
(7 Required)

Note:
Place CrossFrame with channel Flanges and outstanding angle legs outward from abutment backwall. Weld on near side for 7/16\"/>



INTERIOR CROSS FRAME CF1.2
(85 Required)

** Fillet weld angle along 3 sides on one face of gusset plate.

NOTES:

1. All bolts shall be 3/4\"/>
2. Two hardened washers shall be required over all oversize holes for diaphragms.
3. All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

**DIAPHRAGMS & DETAILS
RAMP 1 FLARE
STRUCTURE NO. 016-0724**

TYLIN INTERNATIONAL	DESIGNED - EKH, JMA	REVISIONS		SHEET NO. 74 137 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD,	NAME	DATE		55	0711.2R & 1011.1BR	COOK	200	104	
	DRAWN - EKH, JMA				CONTRACT NO. 60L39					
	CHECKED - AMD,				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
	DATE - 08/02/10									

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GIRDER MOMENT TABLE - RAMP 2 FLARE

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in.⁴ and in.³).
 $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in.⁴ and in.³).
 $I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in.⁴ and in.³).
 Z : Plastic Section Modulus of the steel section in non-composite areas (in.³).
 \bar{D} : Un-factored non-composite dead load (kips/ft.).
 $M\bar{D}$: Un-factored moment due to non-composite dead load (kip-ft.).
 $s\bar{D}$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
 $M_s\bar{D}$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
 $M\bar{L}$: Un-factored live load moment (kip-ft.).
 M_I : Un-factored moment due to impact (kip-ft.).
 M_a : Factored design moment (kip-ft.).
 $1.3 [M\bar{D} + M_s\bar{D} + \frac{5}{3} (M\bar{L} + M_I)]$
 M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).
 f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $M\bar{D} + M_s\bar{D} + \frac{5}{3} (M\bar{L} + M_I)$
 f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.3 [M\bar{D} + M_s\bar{D} + \frac{5}{3} (M\bar{L} + M_I)]$
 VR : Maximum \bar{L} + impact shear range within the composite portion of the span for stud shear connector design (kips).
 S_I : Section modulus of one flange plate for lateral flange bending (in.³).
 M_{bl} : Factored lateral bending moment for flange plate (kip-ft.).

	Girder 2.1		Girder 2.2			Girder 2.3 to 2.8			Girder 2.9	Girder 2.11	Girder 2.17	Cross Head Girder	
	0.5 Sp. R2-2	0.5 Sp. R2-1	0.6 Sp. R2-2	R2 Pier	0.4 Sp. R2-1	0.6 Sp. R2-2	R2 Pier	0.4 Sp. R2-1	0.4 Sp. R2-2	0.5 Sp. R2-2	0.5 Sp. R2-2	0.4 Span	at G22
I_s	(in ⁴)	15,000	15,000	15,000	15,000	15,000	15,000	15,000	49,795	15,000	9,040	131,400	131,400
$I_c(n)$	(in ⁴)	31,876	31,876	31,876		31,876	31,876		31,876	88,605	29,661		
$I_c(3n)$	(in ⁴)	23,429	23,429	23,429		23,429	23,429		23,429	67,636	21,883		
S_s	(in ³)	837	837	837	837	837	837	837	1,747	837	504	4,074	4,074
$S_c(n)$	(in ³)	1,096	1,096	1,096		1,096	1,096		1,096	2,110	1,073		
$S_c(3n)$	(in ³)	995	995	995		995	995		995	1,948	971		
Z	(in ³)				943							4541	4541
\bar{D}	(k/ft)	0.98	1.18	0.89	1.57	1.42	0.98	1.38	0.98	1.41	1.11	1.29	
$M\bar{D}$	(k)	705.0	318.0	396.0	1,111.0	584.0	671.0	1243.0	340.0	1644.0	228.0	357.0	2758.0
$s\bar{D}$	(k/ft)	0.40	0.40	0.36		0.57	0.40		0.40	0.60	0.80		
$M_s\bar{D}$	(k)	288.0	113.0	179.0		249.0	292.0		157.0	708.0	147.0		
$M\bar{L}$	(k)	640.0	329.0	565.0	348.0	560.0	703.0	413.0	560.0	857.0	270.0	334.0	1049.0
$M(Imp)$	(k)	160.0	95.0	141.0	87.0	139.0	162.0	103.0	140.0	197.0	81.0	96.0	262.0
$5_3[M\bar{L} + M(Imp)]$	(k)	1,333.3	706.7	1,177.0	725.0	1,165.0	1,441.7	860.0	1,166.7	1,756.7	585.0	716.7	2,185.0
M_a	(k)	3,024.2	1,479.0	2,278.0	2,387.0	2,598.0	3,126.1	2,734.0	2,162.8	5,341.3	1,248.0	1,395.8	6,425.9
M_u	(k)	5,073.0	5,073.0	5,073.0	3,429.0	5,073.0	5,073.0		5,073.0	10,286.0	4,897.0	2,397.0	18,920.0
$f_s \bar{D}$ (non-comp)	(ksi)	10.1	4.6	5.7	16.0	8.4	9.6	17.8	4.9	11.3	3.3	8.5	8.1
$f_s \bar{D}$ (comp)	(ksi)	3.5	1.4	2.2	-	3.0	3.5	-	1.9	4.4	1.8	-	-
$f_s 5_3(\bar{L} + Imp)$	(ksi)	14.6	7.7	12.9	10.4	12.8	15.8	12.3	12.8	10.0	6.5	17.1	6.4
f_s (Overload)	(ksi)	28.2	13.7	20.8	26.4	24.2	28.9	30.1	19.5	25.6	11.6	25.6	14.6
f_s (Total)	(ksi)							39.2					
VR	(k)	52.6	49.9	55.4		55.5	52.2		56.5	53.0	46.0		

* Compact section
 ** Braced non-compact and partially braced section

GIRDER REACTION TABLES - RAMP 2 FLARE

	Girder 2.1				Girder 2.2			Girder 2.3 to 2.8			Girder 2.9	Girder 2.11	Girder 2.17	Cross Head Girder				
	Carrier Girder	Pier R2 (West)	Pier R2 (East)	FB 2.4	Carrier Girder	Pier R2	Q Bearing Abutment	Carrier Girder	Pier R3	Q Bearing Abutment	Carrier Girder	Pier R2	Q N. Brg C. Abut 1	G2.9	Carrier Girder & FB2.6	South Bearing	North Bearing	
R_{DL}	(k)	53.2	53.2	36.0	34.5	41.6	138.2	47.7	52.5	147.6	38.3	88.3	78.5	39.6	39.4	31.1	554.0	1034.0
R_{LL}	(k)	41.8	41.8	38.6	38.6	40.8	47.0	40.8	42.0	51.2	41.0	42.8	38.3	35.4	35.4	38.6	100.0	160.0
R_I	(k)	10.4	10.4	11.1	11.1	10.3	11.7	10.2	9.6	12.2	10.2	9.8	8.8	10.6	10.6	11.2	25.0	40.0
R_{TOTAL}	(k)	105.4	105.4	85.7	84.2	92.7	196.9	98.7	104.1	211.0	89.5	140.9	125.6	85.6	85.4	80.9	679.0	1234.0

	Girder 2.12			
	0.6 Span R2-2	R2 Pier	0.4 Sp. R2-1	
I_s	(in ⁴)	78,863	78,863	78,863
$I_c(n)$	(in ⁴)	127,048	85,300	127,048
$I_c(3n)$	(in ⁴)	99,626	3,100	99,626
S_s	(in ³)	2719	2719	2719
$S_c(n)$	(in ³)	3154	85,300	3154
$S_c(3n)$	(in ³)	2941	3,100	2941
Z	(in ³)	161	161	161
\bar{D}	(k/ft)	3.1	2.1	1.6
$M\bar{D}$	(k)	784	1358	765
$s\bar{D}$	(k/ft)	1.3	0.73	0.5
$M_s\bar{D}$	(k)	326	497	246
$M\bar{L}$	(k)	512.0	470.0	626.0
$M(Imp)$	(k)	133.0	117.0	150.0
$5_3[M\bar{L} + M(Imp)]$	(k)	1075.0	979.0	1294.0
M_a	(k)	2841.0	3685.0	2997.0
M_{bl}	(k)	26.0	73	42.0
$f_s \bar{D}$ (non-comp)	(ksi)	3.5	6.0	3.4
$f_s \bar{D}$ (comp)	(ksi)	1.4	2.0	1.0
$f_s 5_3(\bar{L} + Imp)$	(ksi)	4.1	3.8	5.0
f_s (Overload)	(ksi)	2.0	5.4	3.1
f_s (Total)	(ksi)	11.7	15.4	12.3
F_{cr} (Overload)	(ksi)	47.5	47.5	47.5
VR	(k)	59.1		56.3
F_{cr}	(ksi)	49.3	32.3	44.3

	Girder 2.12		
	G1	R2 Pier	R2 Abut.
R_{DL}	71.0	254.0	59.0
R_{LL}	41.0	55.0	42.0
R_I	10.0	14.0	10.0
R_{TOTAL}	122.0	323.0	111.0

MOMENT TABLE
 RAMP 2 FLARE
 STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 75	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	CHECKED - AMD,	NAME	DATE						
	DRAWN - MAU								
	CHECKED - AMD,								
DATE - 08/02/10				137 SHEETS	55	0711.2R & 1011.1BR	COOK	200	105
							CONTRACT NO. 60L39		
							FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT		

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DEPARTMENT OF TRANSPORTATION

TOP OF BEAM ELEVATIONS

Girder	CL G22	CL S Brg C Abut 4	CL G2.11	CL G2.9 at WP	CL G2.12	CL FB 2.6	CL FB 2.5	CL Cross Head	CL FB 2.4	CL FB 2.2	CL Brg R2 Abut
G2.11		627.99		627.30							
G2.10A	628.14		627.81								
G2.10	628.11		627.54								
G2.8	628.18							625.45			623.39
G2.7	628.14							625.54			623.49
G2.6	628.11							625.64			623.59
G2.5	628.14							625.73			623.68
G2.4	628.11							625.83			623.78
G2.3	628.07							625.92			623.88
G2.2	628.04							626.02			623.98
G2.1	628.01							626.11		625.01	
G2.20	627.97							626.21	625.87		
G2.19	627.94							626.30			
G2.18	627.90						626.55				
G2.17	627.84					626.80					
G2.16	627.79				626.91						
G2.15	627.73				627.09						
G2.14	627.68				627.26						
G2.13	627.63				627.43						

(For fabrication only)

TOP OF WEB ELEVATIONS

Girder	CL G22	CL Cross Head	CL FS 3.1	CL Brg R3 Abut
G2.12	627.41	626.26	625.95	623.91
G2.9	628.10	625.25		

(For fabrication only)

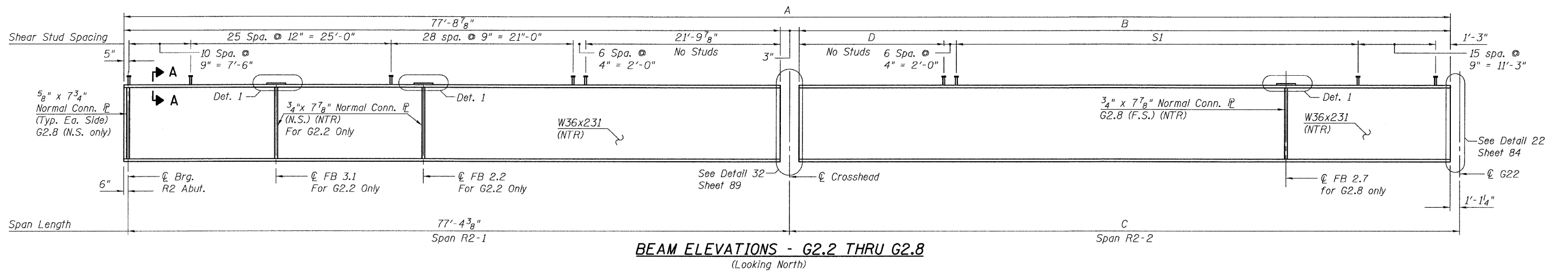
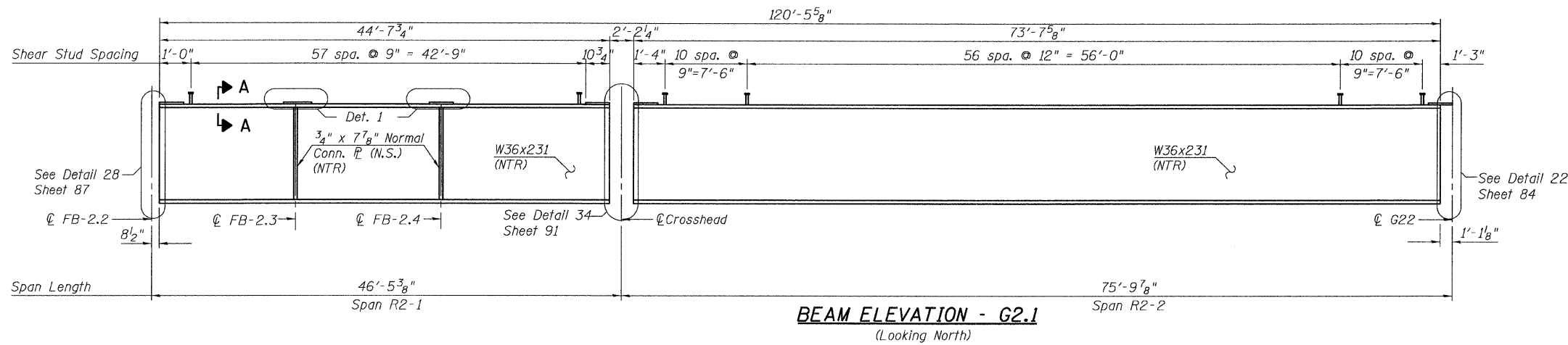
**STEEL ELEVATIONS
RAMP 2 FLARE
STRUCTURE NO. 016-0724**

TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 76	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.						
	CHECKED - AMD,	NAME	DATE							137 SHEETS	0711.2R & 1011.1BR	COOK	200	106	
	DRAWN - MAU														CONTRACT NO. 60L39
	CHECKED - AMD,														
DATE - 08/02/10			FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT										

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TABLE OF BEAM DIMENSIONS
(G2.2 THRU G2.8)

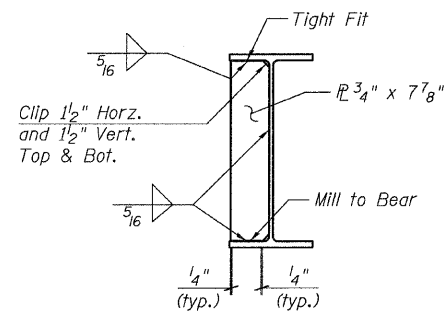
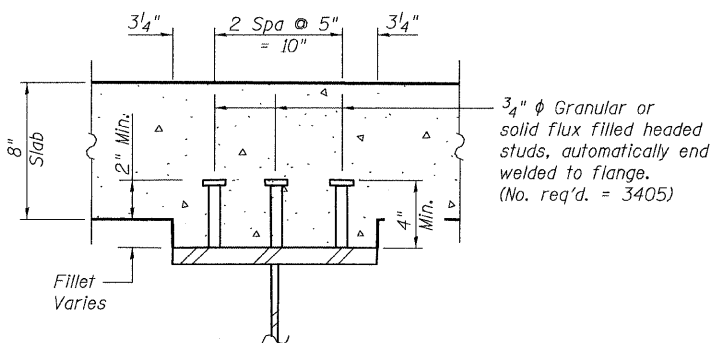
Girder	A	B	C
G2.2	155'-2 ¹ / ₁₆ "	77'-2 ³ / ₁₆ "	78'-4 ¹⁵ / ₁₆ "
G2.3	157'-9 ¹ / ₁₆ "	79'-9 ¹ / ₁₆ "	80'-11 ³ / ₄ "
G2.4	160'-4"	82'-4 ¹ / ₈ "	83'-6 ³ / ₄ "
G2.5	162'-10 ¹⁵ / ₁₆ "	84'-11 ¹ / ₁₆ "	86'-1 ¹ / ₁₆ "
G2.6	165'-5 ¹⁵ / ₁₆ "	87'-6 ¹ / ₁₆ "	88'-8 ¹ / ₁₆ "
G2.7	168'-0 ¹⁵ / ₁₆ "	90'-1"	91'-3 ⁵ / ₈ "
G2.8	170'-7 ¹ / ₈ "	92'-7 ¹⁵ / ₁₆ "	93'-10 ³ / ₁₆ "



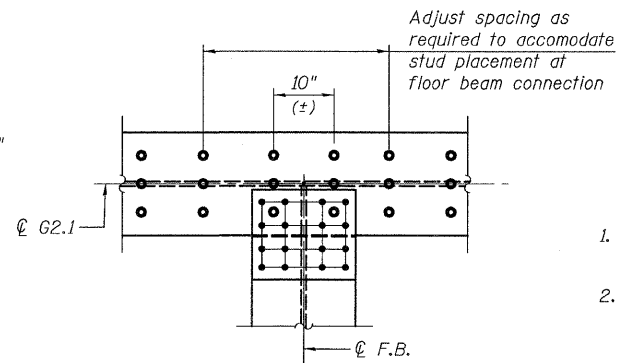
SHEAR STUD SPACING

Girder	S1	*D
G2.2	46 spa. @ 12" = 46'-0"	16'-9"
G2.3	46 spa. @ 12" = 46'-0"	19'-4"
G2.4	48 spa. @ 12" = 48'-0"	19'-11"
G2.5	50 spa. @ 12" = 50'-0"	20'-6"
G2.6	53 spa. @ 12" = 53'-0"	20'-1"
G2.7	55 spa. @ 12" = 55'-0"	20'-8"
G2.8	58 spa. @ 12" = 58'-0"	20'-2"

* Indicates rounded to nearest inch



CONN. PLATE DETAILS
(W36X231)



DETAIL 1

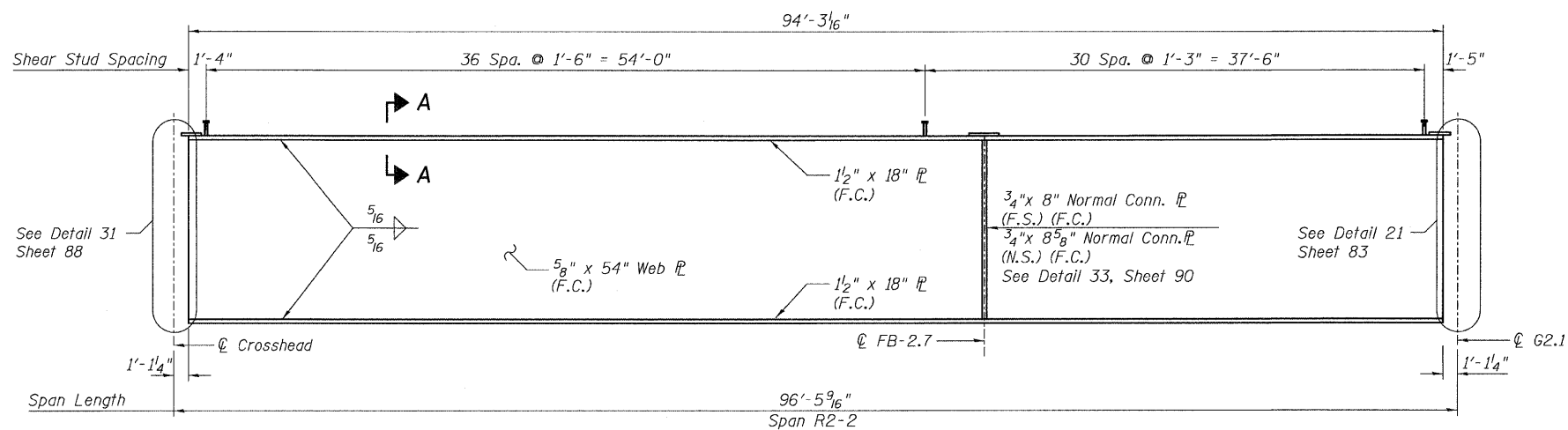
NOTES:

- All steel shown on this sheet shall be Conform to the requirements of AASHTO M270 GR 50.
- Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

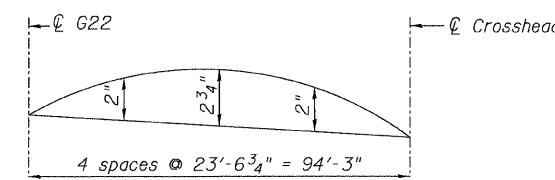
GIRDER ELEVATIONS 1
RAMP 2 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 77	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.						
	CHECKED - AMD,	NAME	DATE							137 SHEETS	0711.2R & 1011.1BR	COOK	200	107	
	DRAWN - DJR														CONTRACT NO. 60L39
	CHECKED - AMD,														
DATE - 08/02/10			FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT										

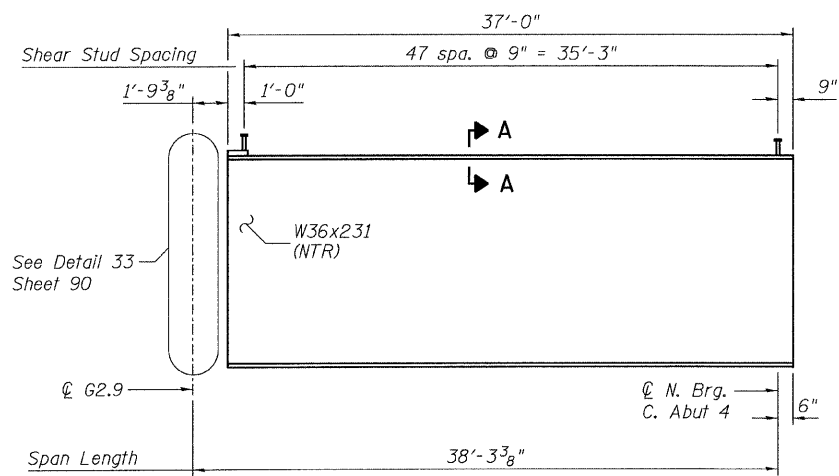
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



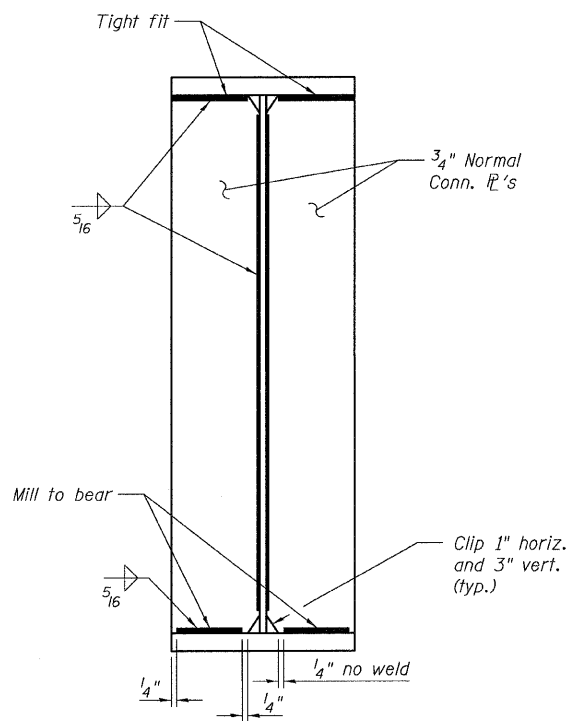
GIRDER ELEVATION - G2.9
(Looking North)



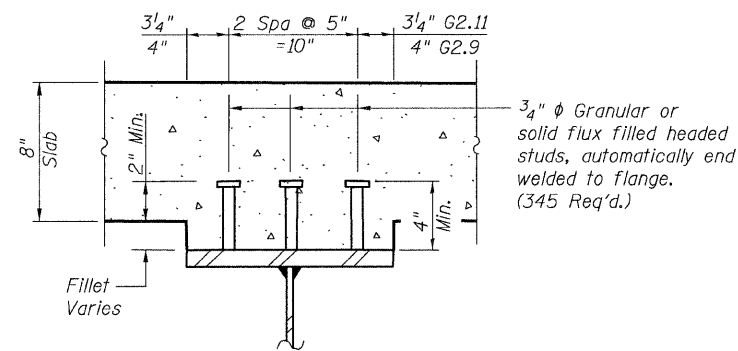
CAMBER DIAGRAM
Girder G2.9



GIRDER ELEVATION - G2.11
(Looking North)



CONNECTION P



SECTION A-A
(Not in contract)

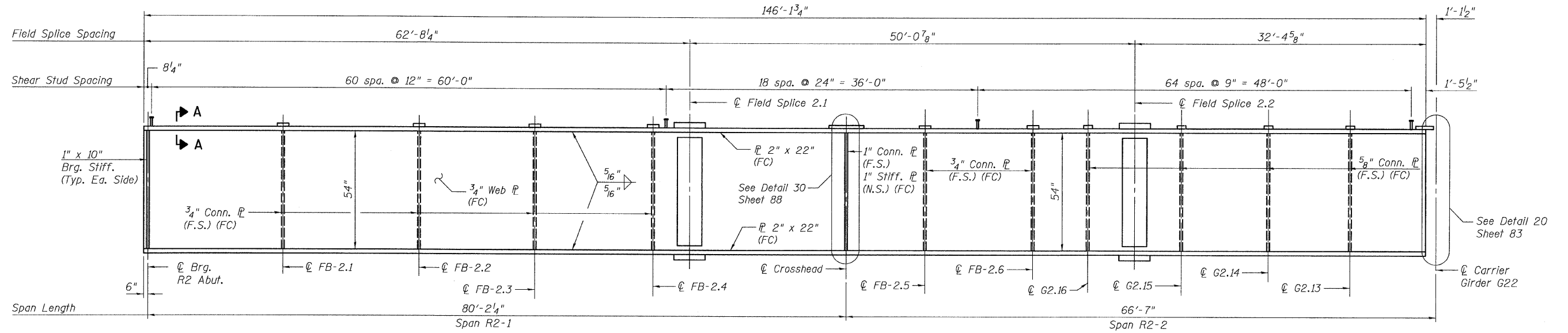
NOTES:

- All steel shown on this sheet shall be conform to the requirements of AASHTO M270 GR 50.
- Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- F.C. denotes Fracture Critical Material AASHTO Zone II.

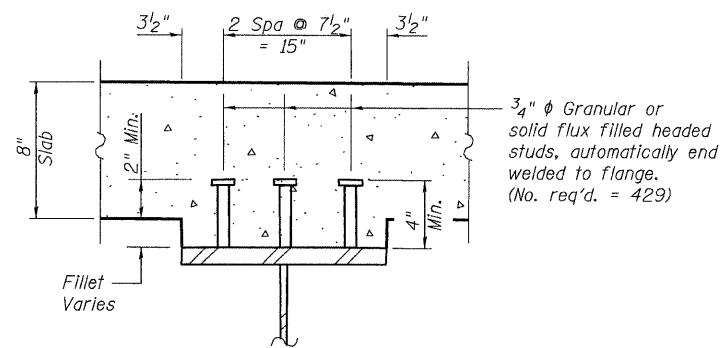
GIRDER ELEVATIONS 2
RAMP 2 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 78	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD,	NAME	DATE							CONTRACT NO. 60L39
	DRAWN - MAU									
	CHECKED - AMD,									
DATE - 08/02/10			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT							

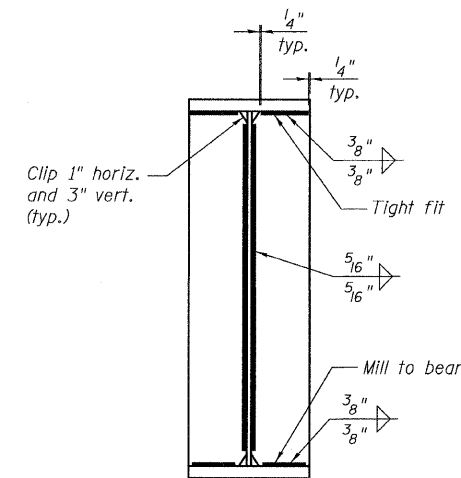
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



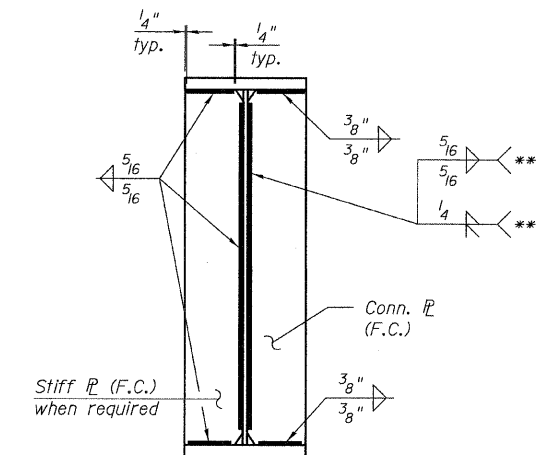
GIRDER ELEVATION - G2.12
(Looking North)



SECTION A-A
(Not in contract)



BEARING STIFFENER



** Weld type based on angle between web and connection plate where angles warrant combination of fillet and groove welds. Fillet weld is acute angle and groove weld is obtuse angle.

**TYPICAL CONNECTION
PLATE DETAIL**

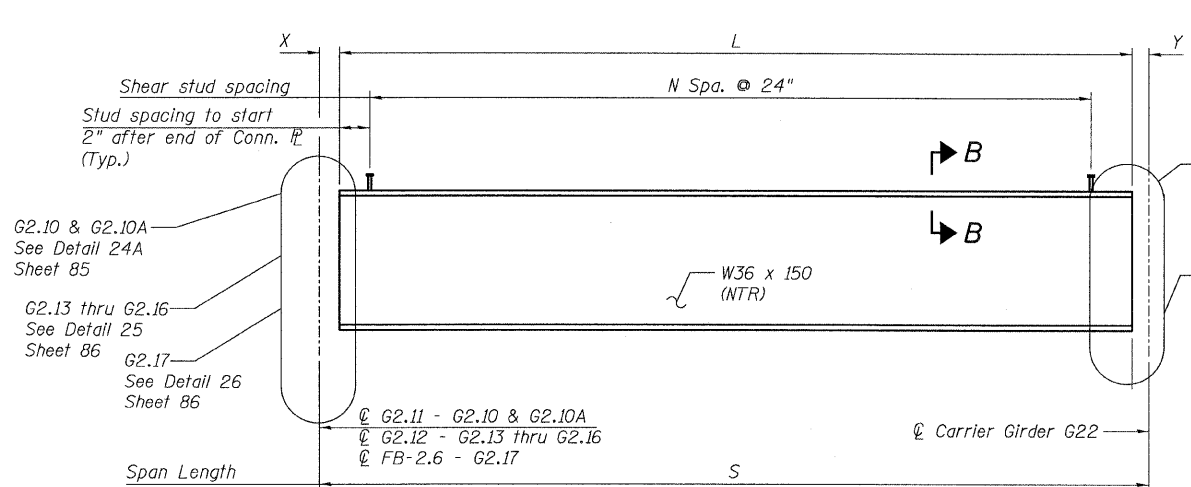
NOTES:

- All steel shown on this sheet shall be Conform to the requirements of AASHTO M270 GR 50.
- F.C. denotes Fracture Critical Material, AASHTO Zone II.
- For Field Splice details, See Sheet 92.

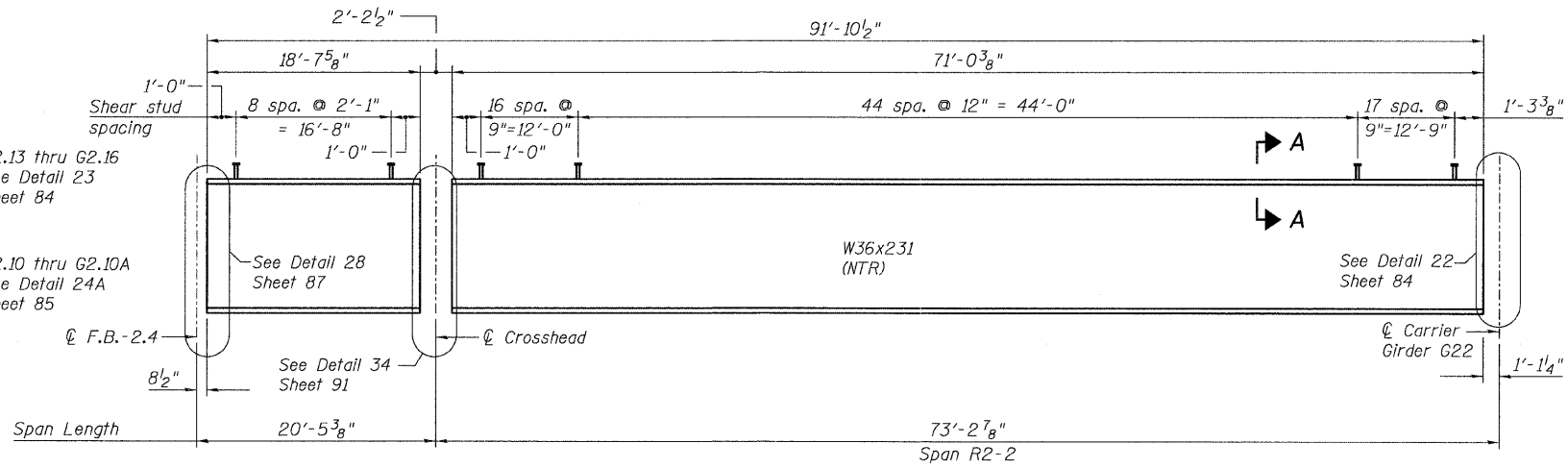
**GIRDER ELEVATIONS 3
RAMP 2 FLARE
STRUCTURE NO. 016-0724**

TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 79	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD,	NAME	DATE		137 SHEETS	55	0711.2R & 1011.1BR	COOK	200	109
	DRAWN - MAU				CONTRACT NO. 60L39					
	CHECKED - AMD,				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
	DATE - 08/02/10									

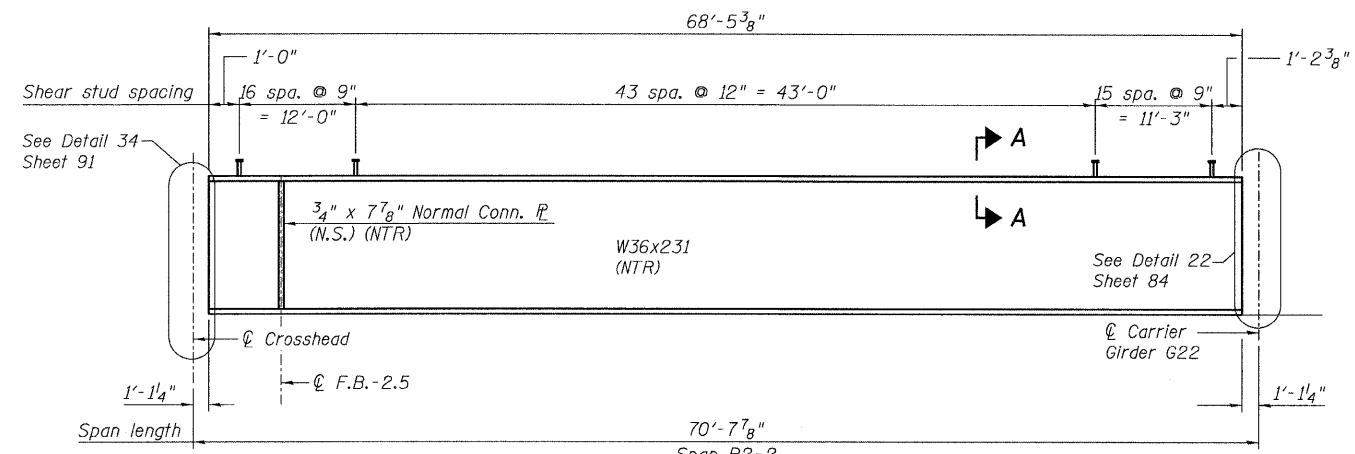
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



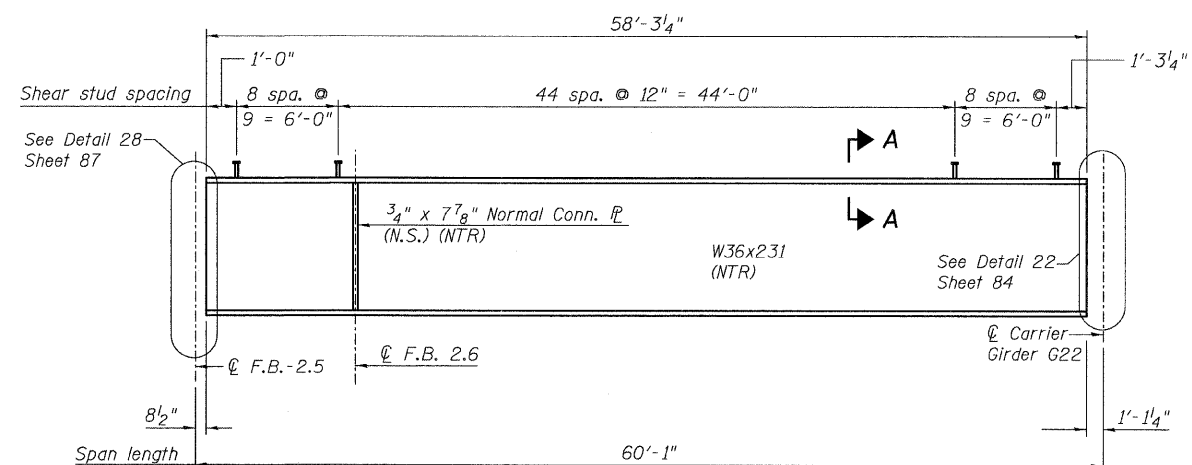
GIRDER ELEVATIONS - G2.10, G2.10A & G2.13 THRU G2.17
(Looking North)



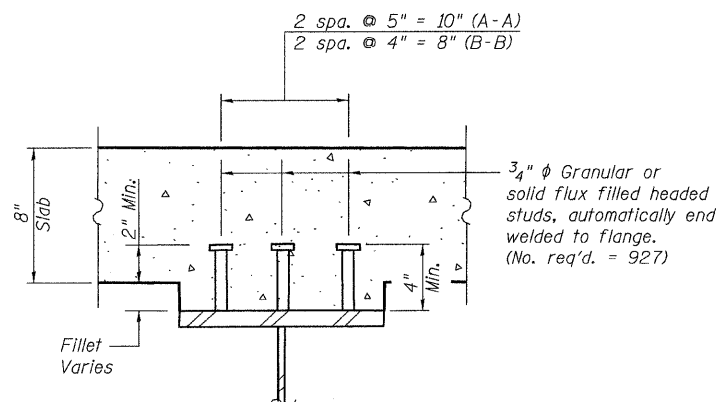
GIRDER ELEVATION - G2.20
(Looking North)



GIRDER ELEVATION - G2.19
(Looking North)



GIRDER ELEVATION - G2.18
(Looking North)



SECTION A-A & B-B
(Not in contract)

TABLE OF GIRDER VALUES

Girder	L	S	X	Y	N
G2.10	28'-3 1/4"	29'-6 3/8"	2"	1'-1 1/8"	12
G2.10A	17'-11 1/6"	19'-2 3/8"	2"	1'-1 1/8"	7
G2.13	6'-1"	8'-5 3/4"	1'-3 5/8"	1'-1 1/8"	2
G2.14	15'-4 3/8"	17'-10 1/8"	1'-4 9/16"	1'-1 1/8"	7
G2.15	25'-5 1/2"	27'-11 1/8"	1'-5 1/16"	1'-1 1/8"	12
G2.16	36'-5 1/4"	39'-1 1/2"	1'-7 1/8"	1'-1 1/8"	17
G2.17	45'-1 3/8"	46'-11"	8 1/2"	1'-1 1/8"	22

NOTES:

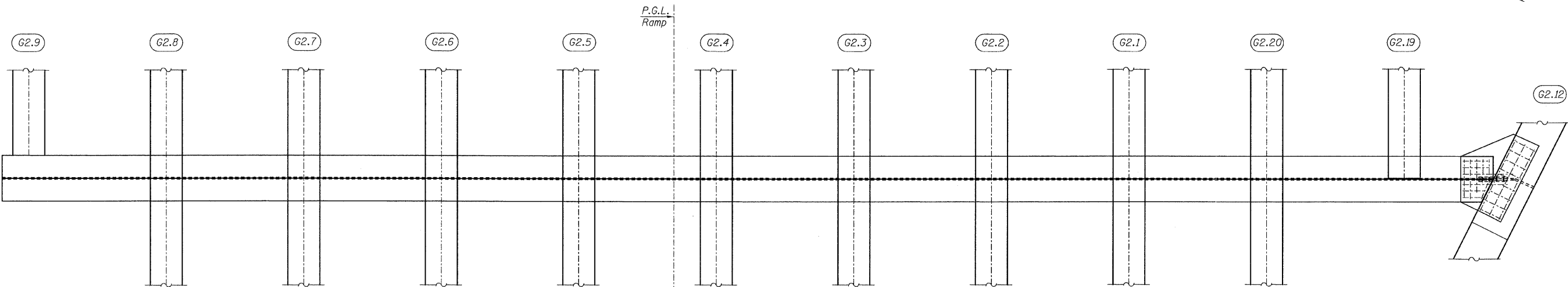
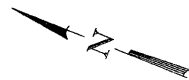
- All steel shown on this sheet shall be Conform to the requirements of AASHTO M270 GR 50.
- Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- For Connection Plate Detail see "Girder Elevations 1" Sheet 77.

GIRDER ELEVATIONS 4
RAMP 2 FLARE
STRUCTURE NO. 016-0724

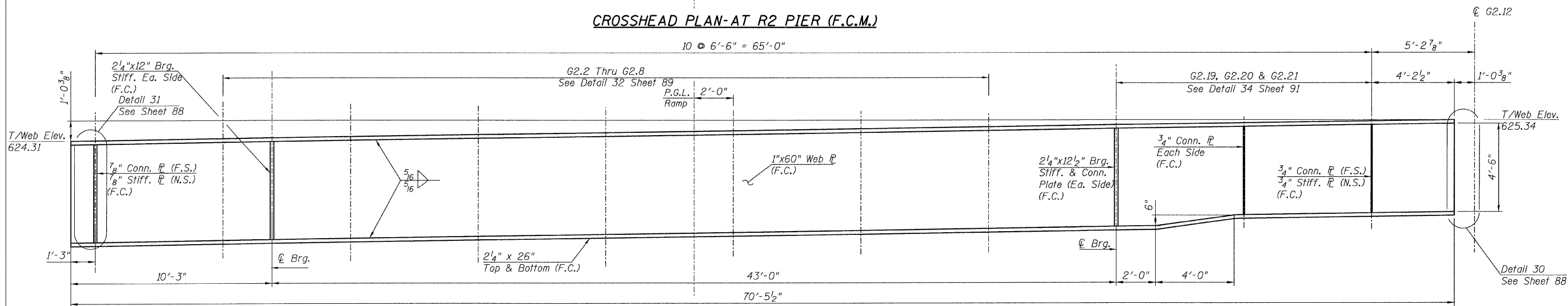
TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 80	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.				
	CHECKED - AMD,	NAME	DATE		55					0711.2R & 1011.1BR	COOK	200	110
	DRAWN - MAU				CONTRACT NO. 60L39								
	CHECKED - AMD,				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT								
	DATE - 08/02/10												

p:\01345\beam and bearing fabrication\55f2framed\6.dwg 2:47:04 PM 8/5/2010

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



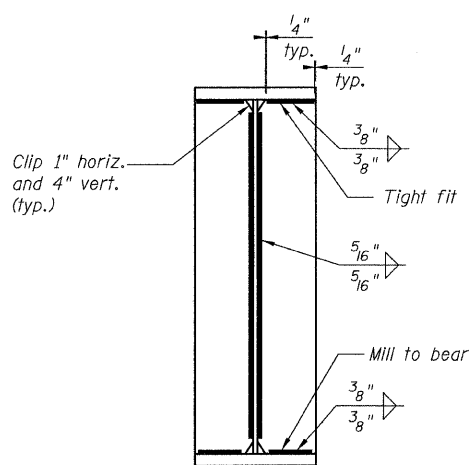
CROSSHEAD PLAN-AT R2 PIER (F.C.M.)



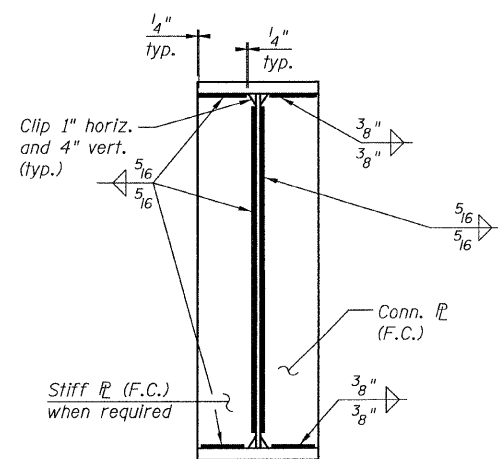
CROSSHEAD ELEVATION-AT R2 PIER (F.C.M.)
(LOOKING EAST)

NOTES:

- All steel shown on this sheet shall be AASHTO M 270 Grade 50.
- Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- F.C. Indicates Fracture Critical Material, AASHTO Zone II.



BEARING STIFFENER



CONNECTION PLATE
DETAIL

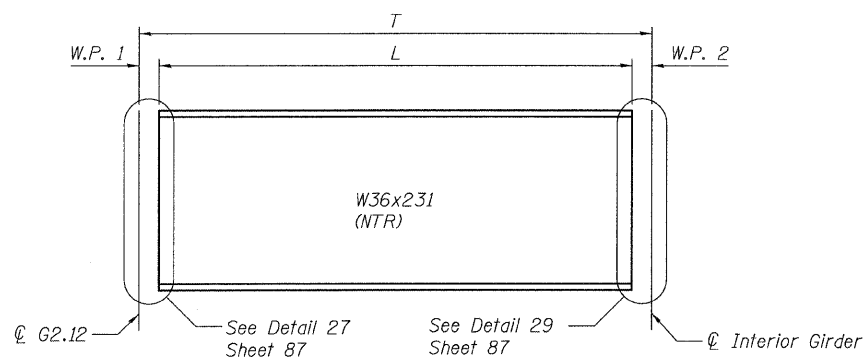
CROSSHEAD DETAILS
RAMP 2 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL

DESIGNED	JPN	REVISIONS	
CHECKED	AMD,	NAME	DATE
DRAWN	JMA		
CHECKED	AMD,		
DATE	08/02/10		

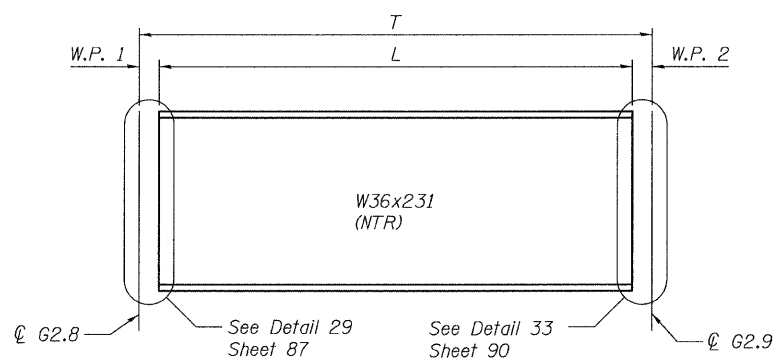
SHEET NO. 81 137 SHEETS	F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 111
	CONTRACT NO. 60L39				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FLOOR BEAM ELEVATION

(FB-2.1 & FB-2.3)
(Looking West)

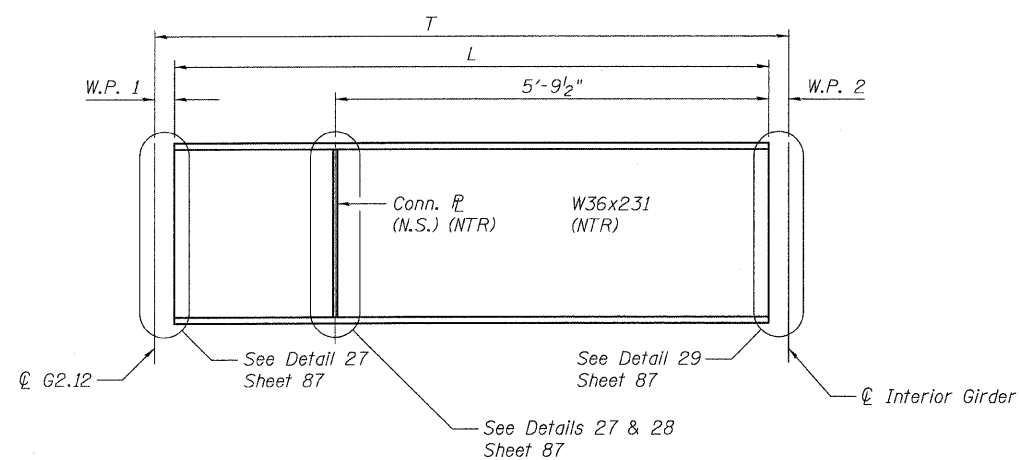


F.B. 2.7 ELEVATION

(Looking West)

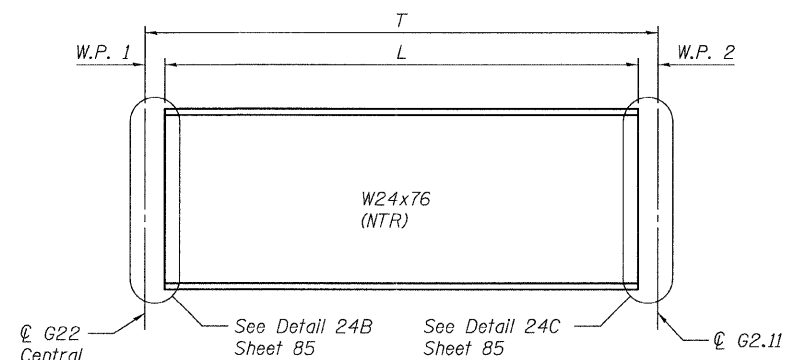
Floor Beam	W.P. 1	W.P. 2	L	T
FB-2.2	11'-8"	8'-2"	7'-8 3/8"	9'-4 1/4"
FB-2.4	11'-3 1/4"	8'-2"	8'-0 1/8"	9'-8 3/8"
FB-2.5	1'-0 3/4"	8'-2"	7'-9 1/16"	9'-6 5/16"
FB-2.6	1'-1 3/8"	8'-2"	7'-8 1/16"	9'-5 15/16"

Floor Beam	W.P. 1	W.P. 2	L	T
FB-2.1	11'-4"	8'-2"	5'-6 15/16"	7'-2 1/16"
FB-2.3	11'-2"	8'-2"	4'-0 13/16"	5'-8 15/16"
FB-2.7	8'-2"	9'-4"	5'-0 1/4"	6'-6"
FB-2.8	1'-0 1/4"	2"	11'-3 3/4"	12'-6"



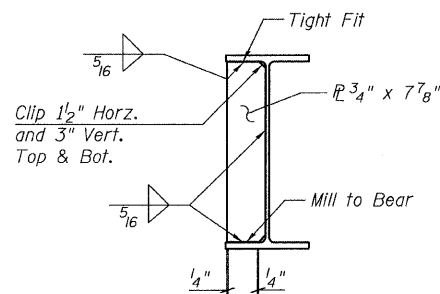
FLOOR BEAM ELEVATION

(FB-2.2, FB-2.4 thru FB-2.6)
(Looking West)



F.B. 2.8 ELEVATION

(Looking South)



CONN. PL DETAILS

(W36x231)

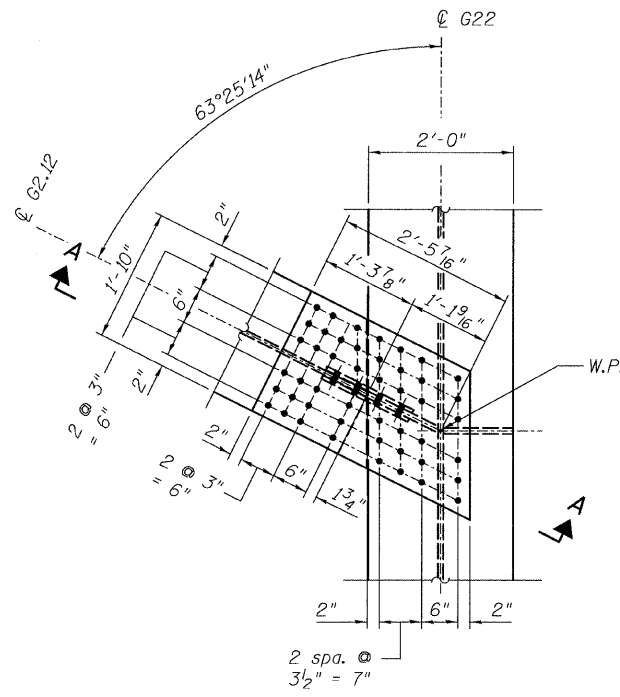
NOTES:

- All steel shown on this sheet shall be Conform to the requirements of AASHTO M270 GR 50.
- Load carrying components designated "NTR" shall conform to the supplemental requirements for Notch Toughness, Zone 2.

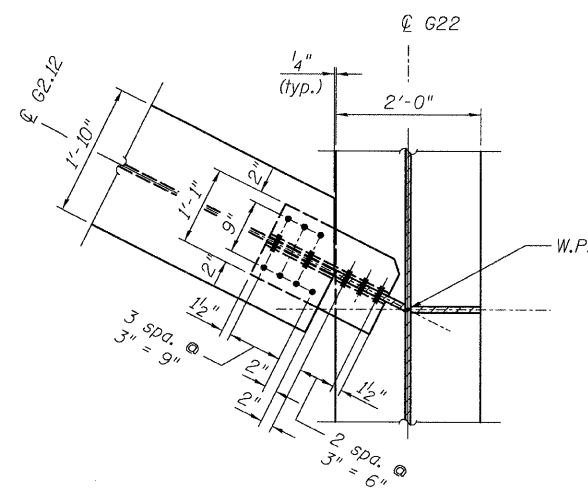
**FLOOR BEAM DETAILS
RAMP 2 FLARE
STRUCTURE NO. 016-0724**

TYLIN INTERNATIONAL	DESIGNED - MI	REVISIONS		SHEET NO. 82 137 SHEETS	F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 112		
	CHECKED - AMD, TD, MAI	NAME	DATE							CONTRACT NO. 60L39	
	DRAWN - DJR, SB, RLB									FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	
	CHECKED - AMD, TD, MAI										
	DATE - 08/02/10										

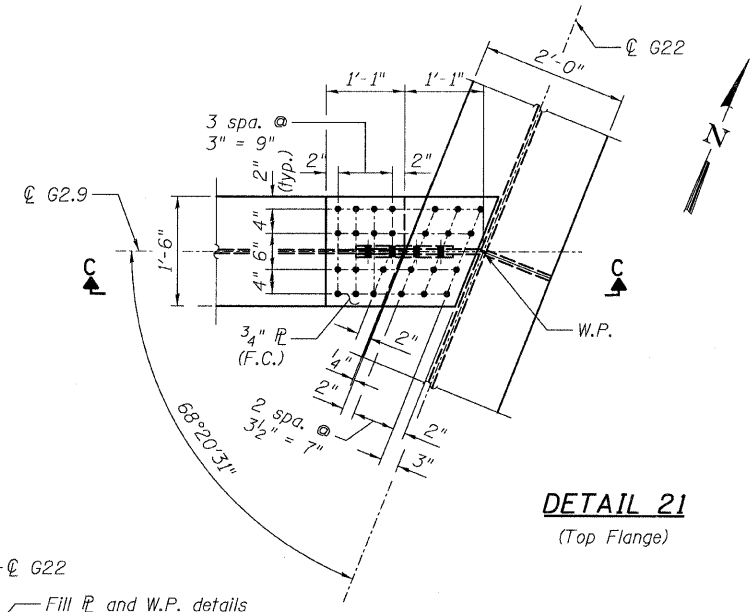
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



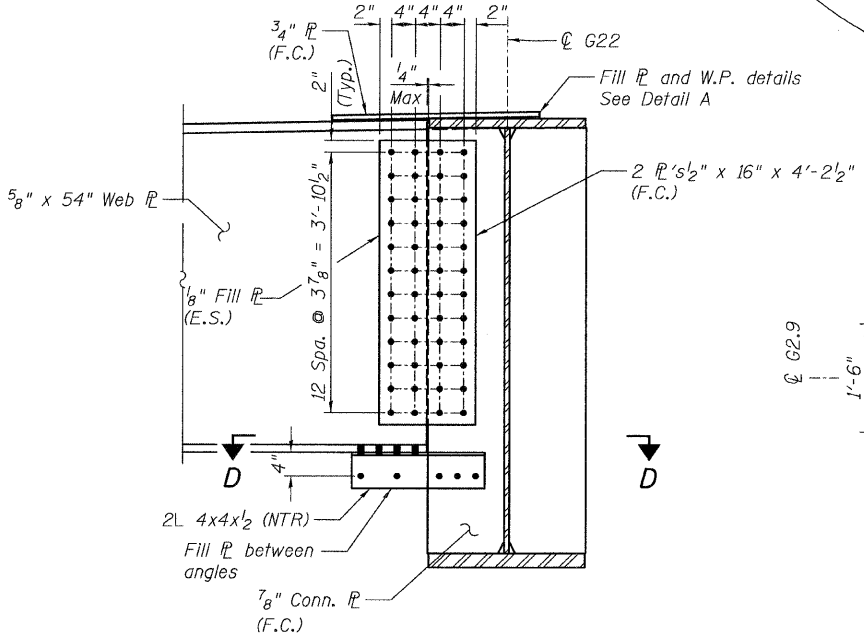
DETAIL 20
(Top Flange)



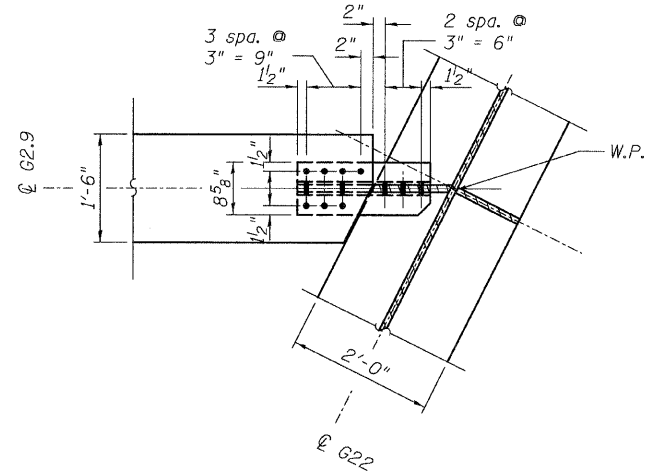
SECTION B-B
(Bottom Flange)



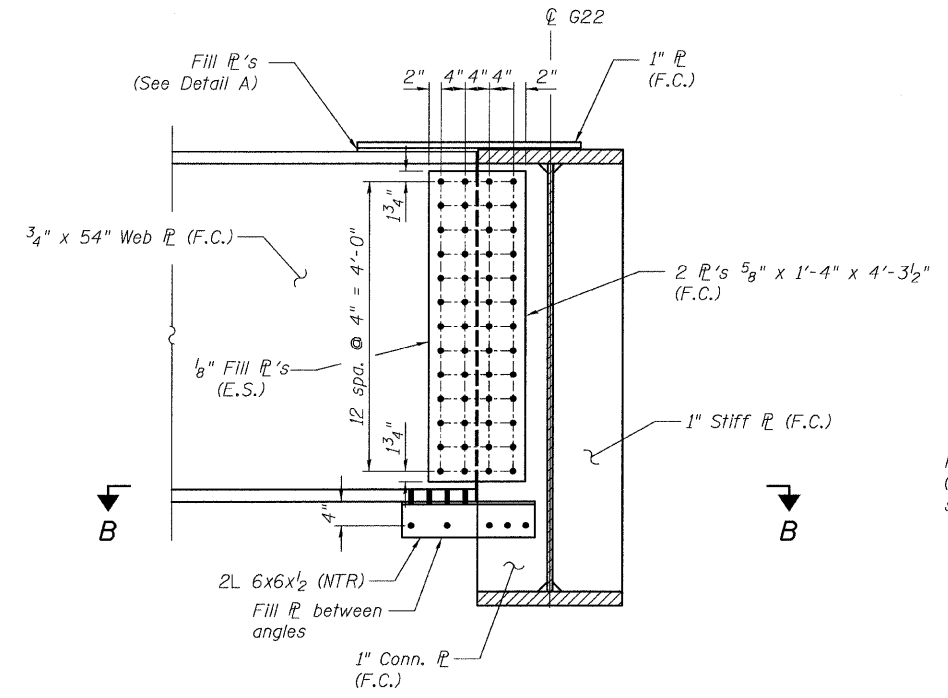
DETAIL 21
(Top Flange)



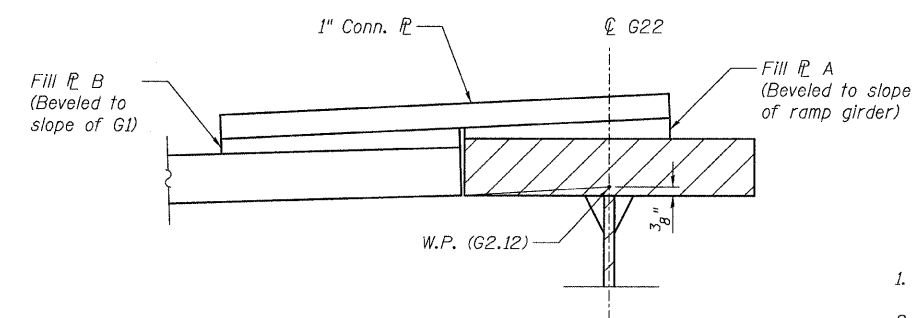
SECTION C-C



SECTION D-D
(Bottom Flange)



SECTION A-A



DETAIL A
(Not to scale)

NOTES:

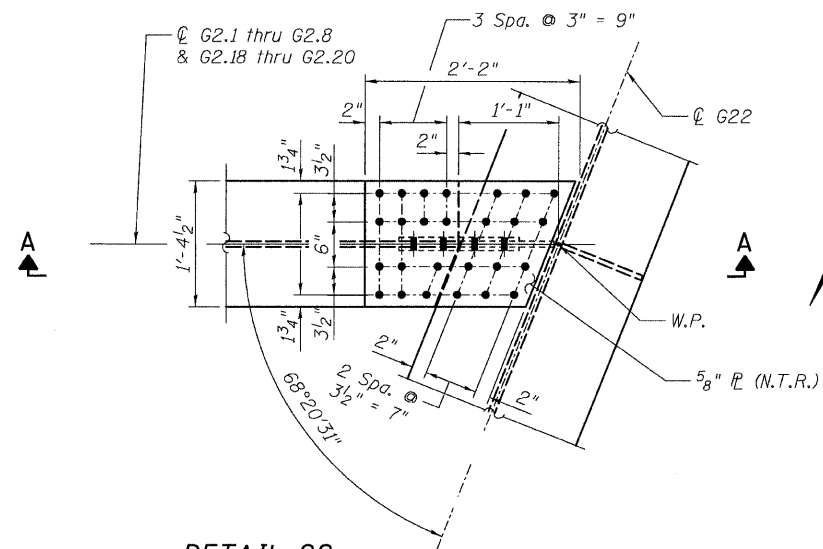
- All steel shall be AASHTO M 270 Grade 50.
- F.C. indicates Fracture Critical Material, AASHTO Zone 2.
- Load carrying components designated "N.T.R." shall conform to the supplemental requirements for Notch Toughness, Zone 2.

CONNECTION DETAILS 20 & 21
RAMP 2 FLARE
STRUCTURE NO. 016-0724

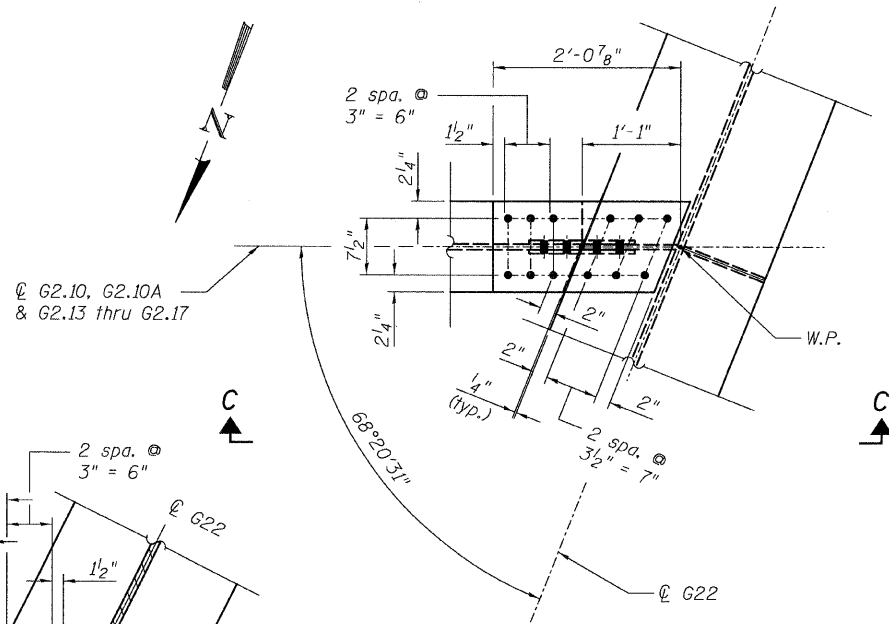
TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 83	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD,	NAME	DATE		137 SHEETS	55	0711.2R & 1011.1BR	COOK	200	113
	DRAWN - MAU				CONTRACT NO. 60L39					
	CHECKED - AMD,				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
	DATE - 08/02/10									

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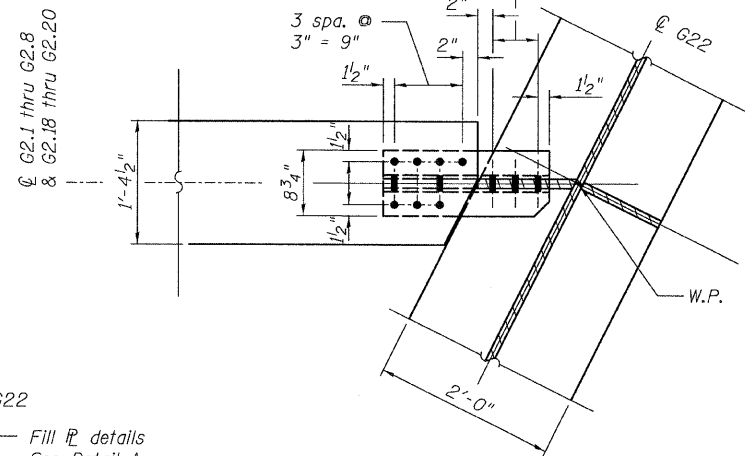
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



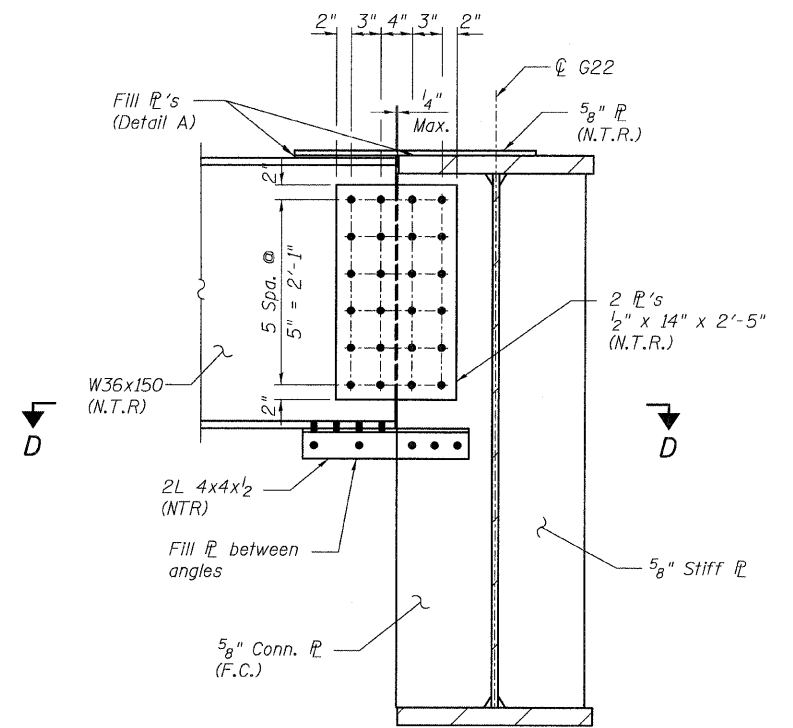
DETAIL 22
(Top Flange)



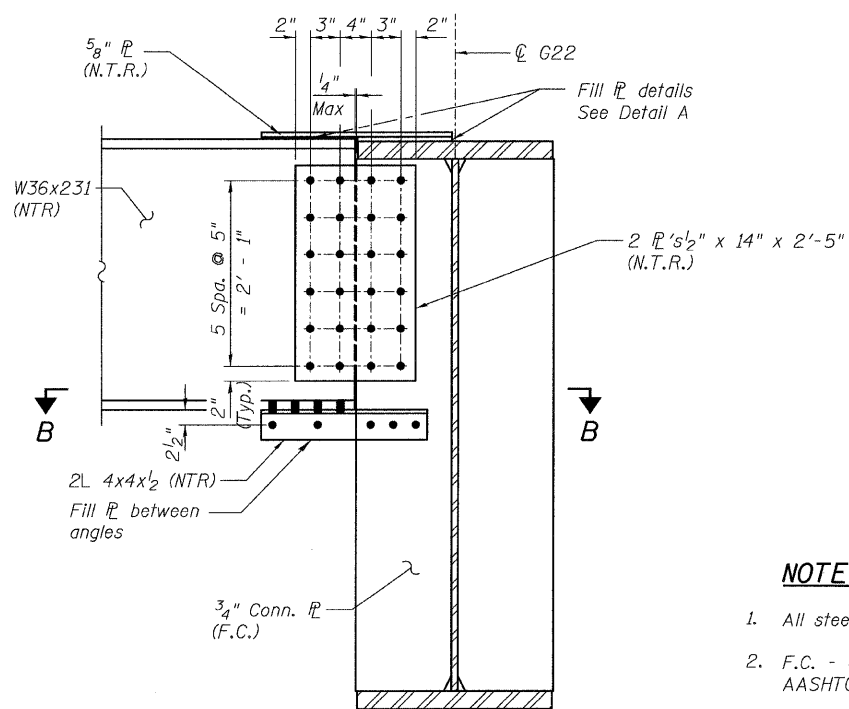
DETAIL 23
(Top Flange)



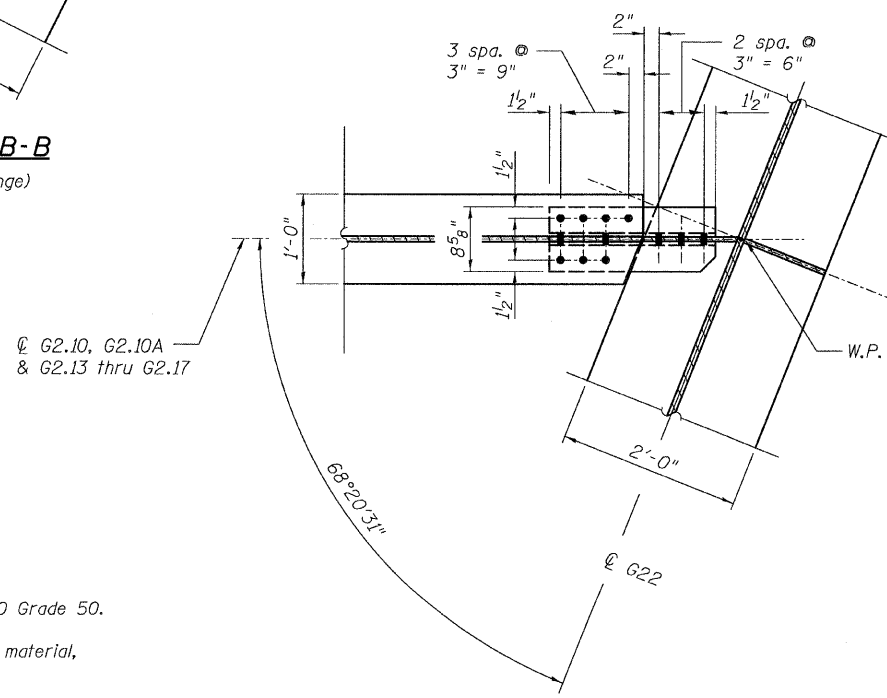
SECTION B-B
(Bottom Flange)



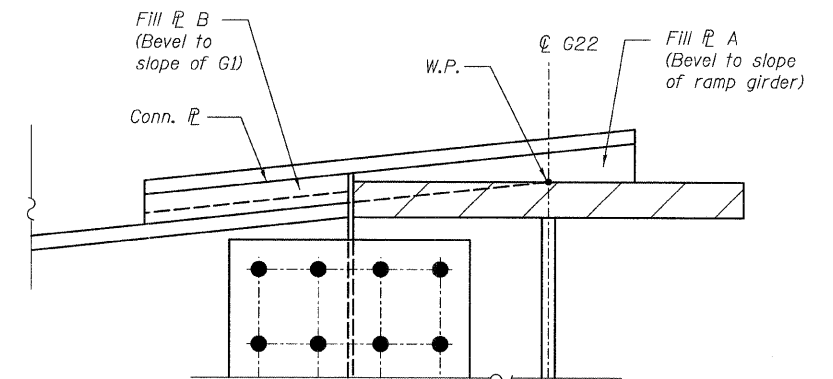
SECTION C-C



SECTION A-A



SECTION D-D
(Bottom Flange)



DETAIL A
(Not to scale)

NOTES:

- All steel shall be AASHTO M 270 Grade 50.
- F.C. - denotes Fracture Critical material, AASHTO Zone II.
- Load carrying components designated "N.T.R." shall conform to the supplemental requirements for Notch Toughness, Zone 2.

CONNECTION DETAILS 22 & 23
RAMP 2 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL

DESIGNED - JPN		REVISIONS	
NAME	DATE	NAME	DATE
CHECKED - AMD,			
DRAWN - MAU			
CHECKED - AMD,			
DATE - 08/02/10			

SHEET NO. 84
137 SHEETS

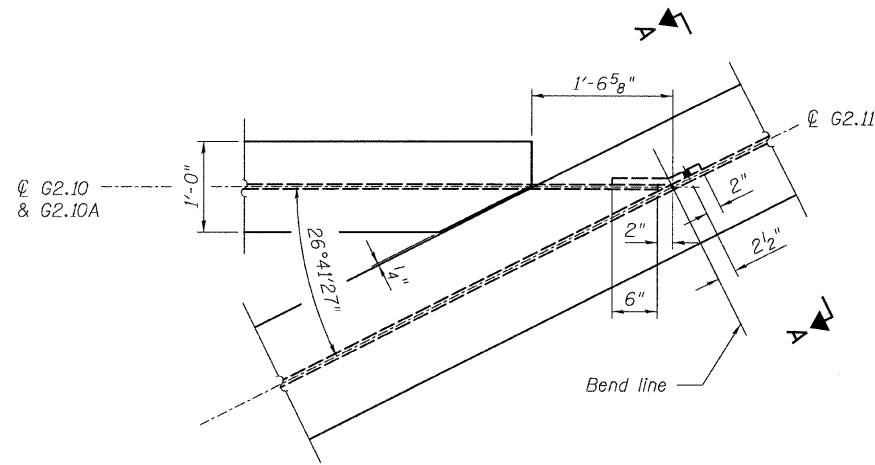
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	0711.2R & 1011.1BR	COOK	200	114
CONTRACT NO. 60L39				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

247409 PM

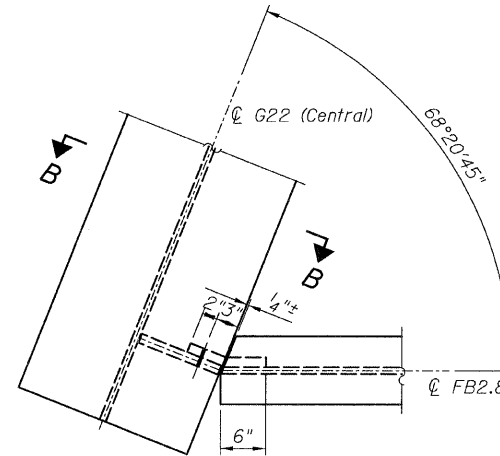
p:\01345\beam and bearing fabrication\55f2famedt110.dwg

8/5/2010

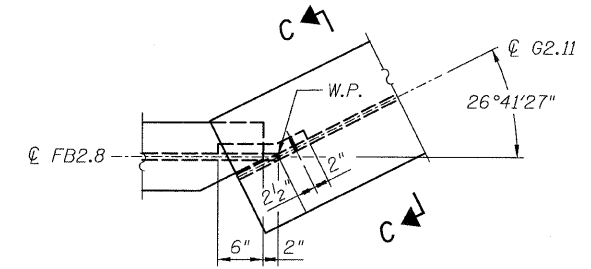
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



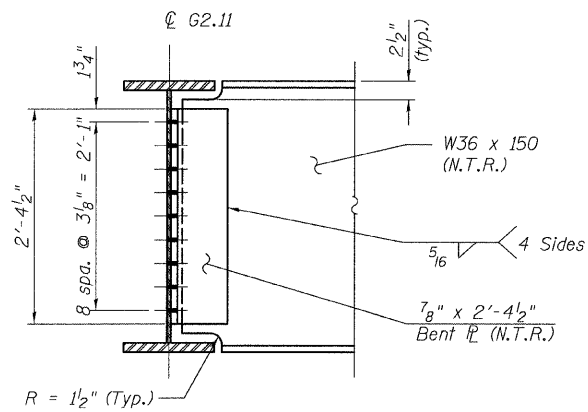
DETAIL 24A
(Top Flange)



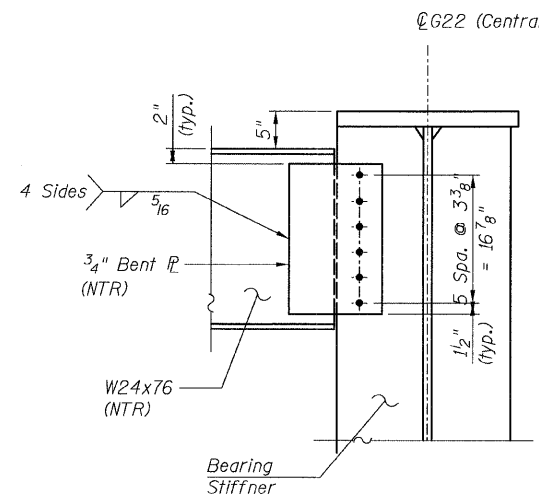
DETAIL 24B
(Top Flange)



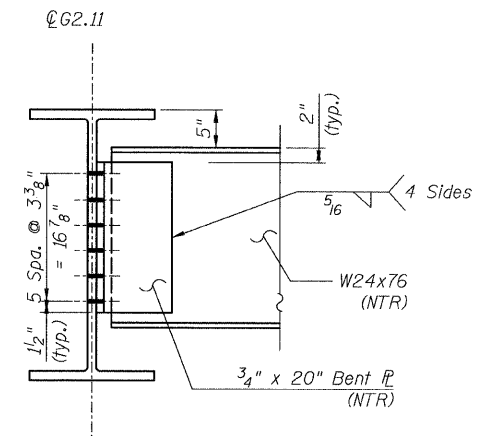
DETAIL 24C
(Top Flange)



SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

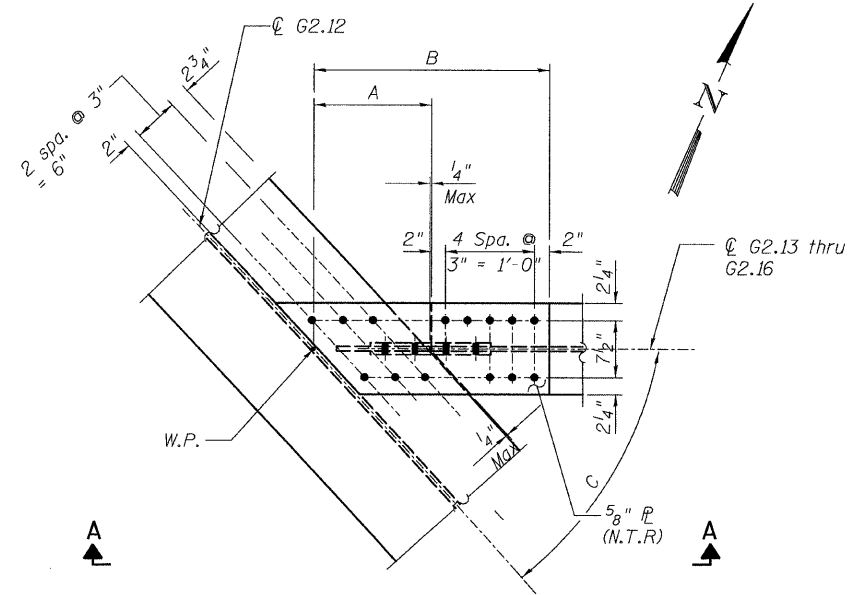
- All steel shall be AASHTO M 270 Grade 50.
- Load carrying components designated "N.T.R." shall conform to the supplemental requirements for Notch Toughness, Zone 2.

CONNECTION DETAIL 24
RAMP 2 FLARE
STRUCTURE NO. 016-0724

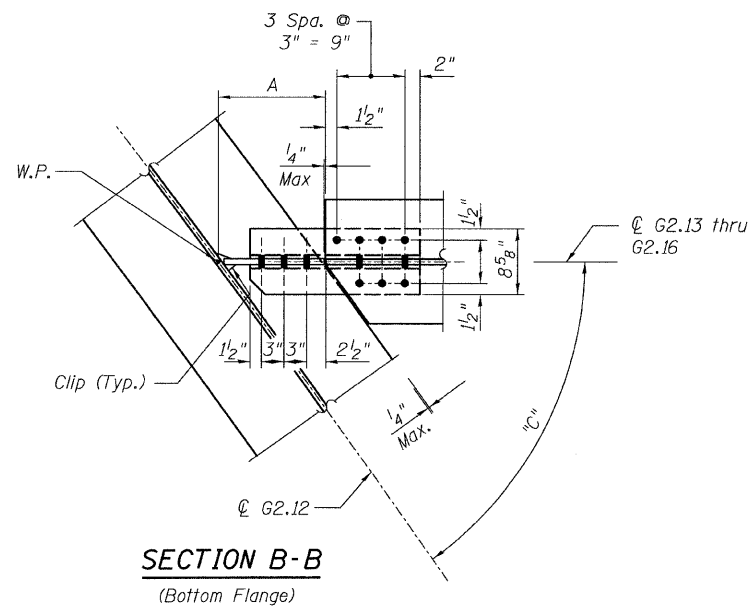
TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 85	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.					
	CHECKED - AMD,	NAME	DATE							55	0711.2R & 1011.1BR	COOK	200	115
	DRAWN - MAU									CONTRACT NO. 60L39				
	CHECKED - AMD,									FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
	DATE - 08/02/10			137 SHEETS										

8/2/2010 2:13:17 PM

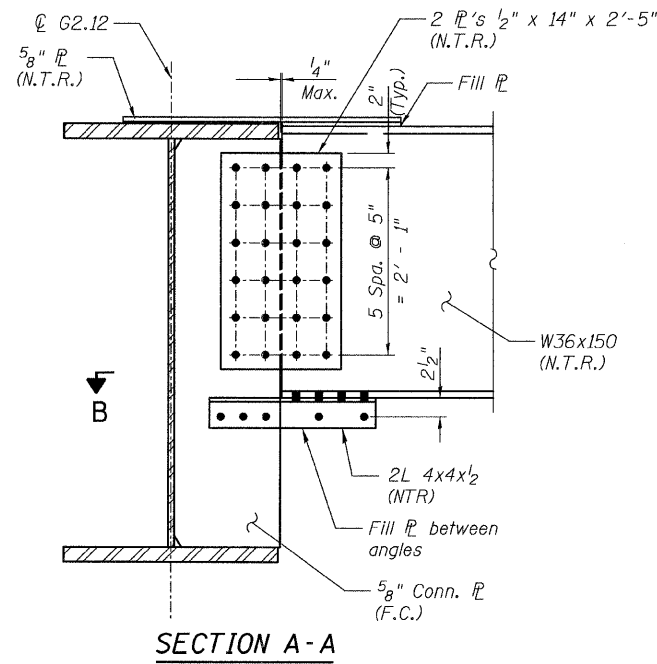
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DETAIL 25
(Top Flange)

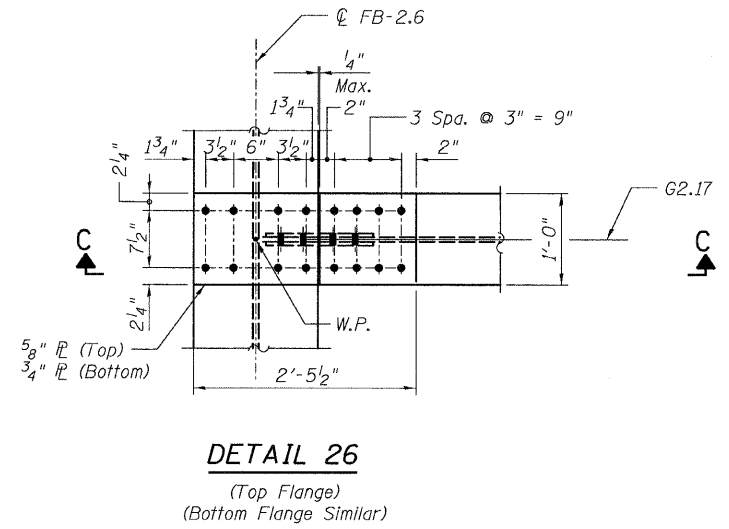


SECTION B-B
(Bottom Flange)

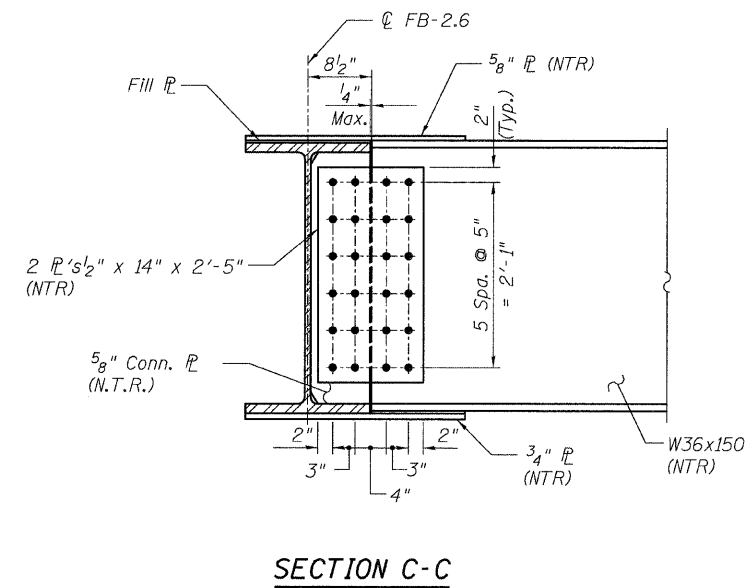


SECTION A-A

Girder	Dimensions		
	A	B	C
G2.13	1'-3 ⁵ / ₈ "	2'-7 ³ / ₄ "	45°20'28"
G2.14	1'-4 ⁹ / ₁₆ "	2'-8 ¹ / ₁₆ "	42°16'0"
G2.15	1'-5 ¹ / ₁₆ "	2'-9 ¹³ / ₁₆ "	38°59'55"
G2.16	1'-7 ¹ / ₈ "	2'-11 ⁵ / ₁₆ "	35°28'54"



DETAIL 26
(Top Flange)
(Bottom Flange Similar)



SECTION C-C

NOTES:

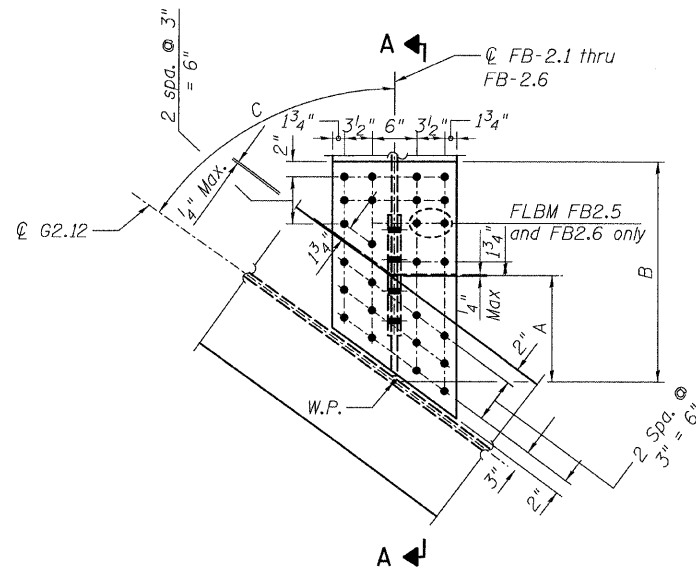
- All steel shall be AASHTO M 270 Grade 50.
- F.C. indicates Fracture Critical material, AASHTO Zone II.
- Load carrying components designated "N.T.R." shall conform to the supplemental requirements for Notch Toughness, Zone 2.

CONNECTION DETAILS 25 & 26
RAMP 2 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 86	F.A.I. RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 116
	CHECKED - AMD,	NAME	DATE						
	DRAWN - JMA								
	CHECKED - AMD,								
	DATE - 08/02/10			137 SHEETS	CONTRACT NO. 60L39				
					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

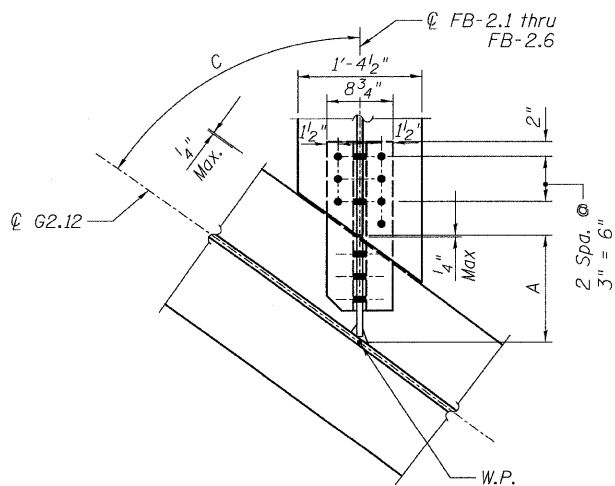
p:\01345\beam and bearing_fabrication\155f2framed\112.dwg 2:47:10 PM 8/5/2010

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

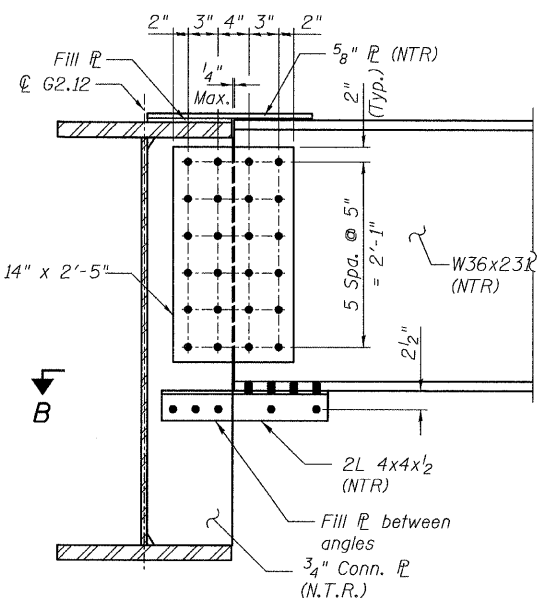


DETAIL 27
(Top Flange)

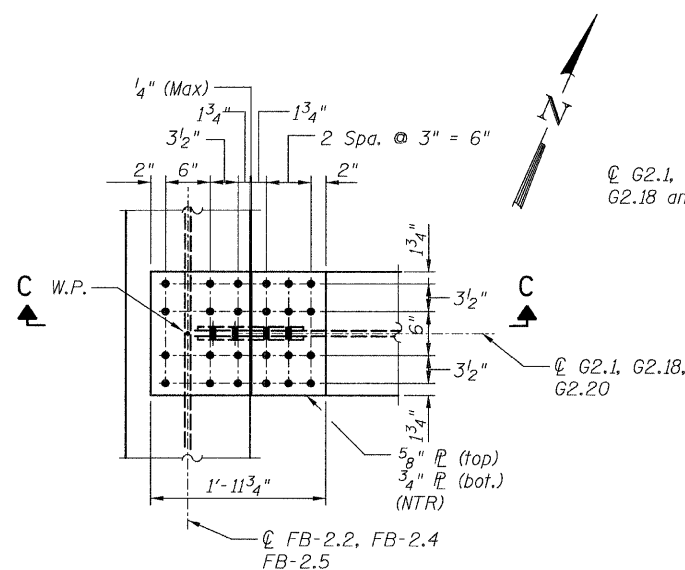
Floor Beam	Dimensions		
	A	B	C
FB-2.1	11 ³ / ₁₆ "	1'-9 ⁵ / ₈ "	84°48'52"
FB-2.2	11 ⁵ / ₁₆ "	1'-10 ³ / ₈ "	79°41'29"
FB-2.3	11 ¹ / ₂ "	1'-11 ¹ / ₈ "	75°19'51"
FB-2.4	11 ³ / ₄ "	2'-0"	70°52'53"
FB-2.5	1'-0 ³ / ₄ "	2'-2 ⁹ / ₁₆ "	60°39'14"
FB-2.6	1'-1 ⁵ / ₁₆ "	2'-2 ¹³ / ₁₆ "	56°35'41"



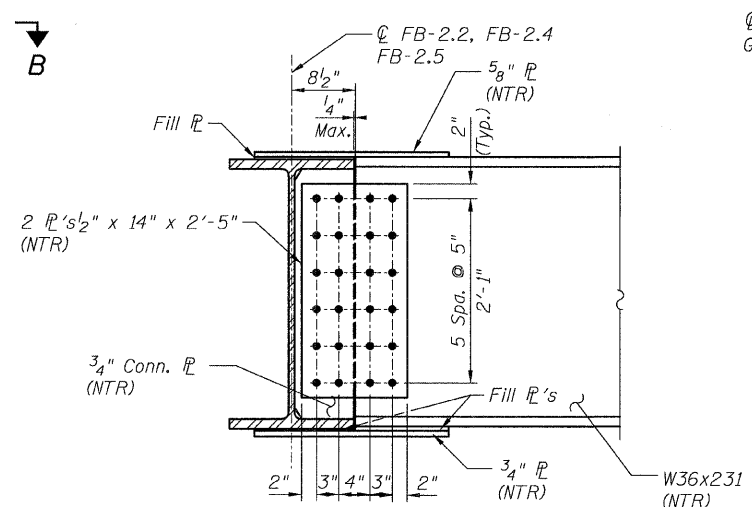
SECTION B-B
(Bottom Flange)



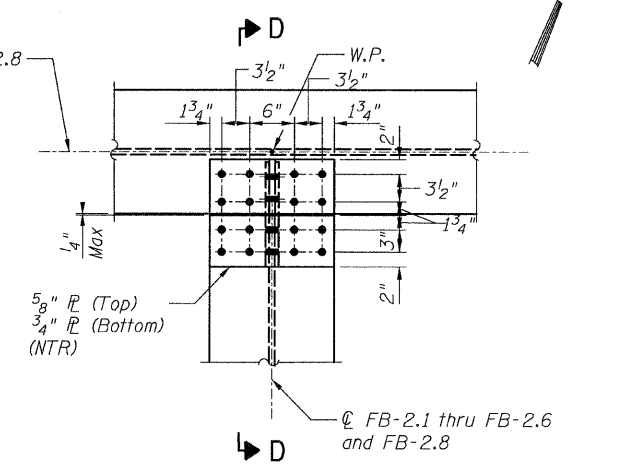
SECTION A-A



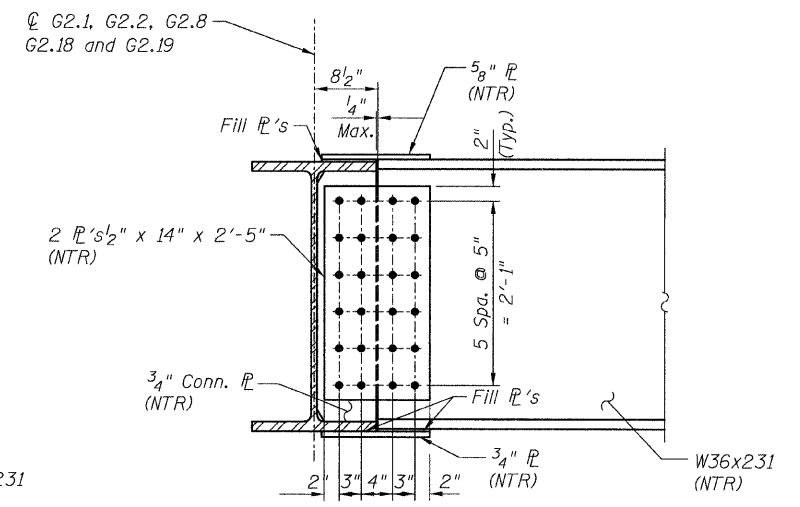
DETAIL 28
(Top Flange)
(Bottom Flange Similar)



SECTION C-C



DETAIL 29
(Top Flange)
(Bottom Flange Similar)



SECTION D-D

- NOTES:**
- All steel shall be AASHTO M 270 Grade 50.
 - Load carrying components designated "N.T.R." shall conform to the supplemental requirements for Notch Toughness, Zone 2.

CONNECTION DETAILS 27, 28 & 29
RAMP 2 FLARE
STRUCTURE NO. 016-0724

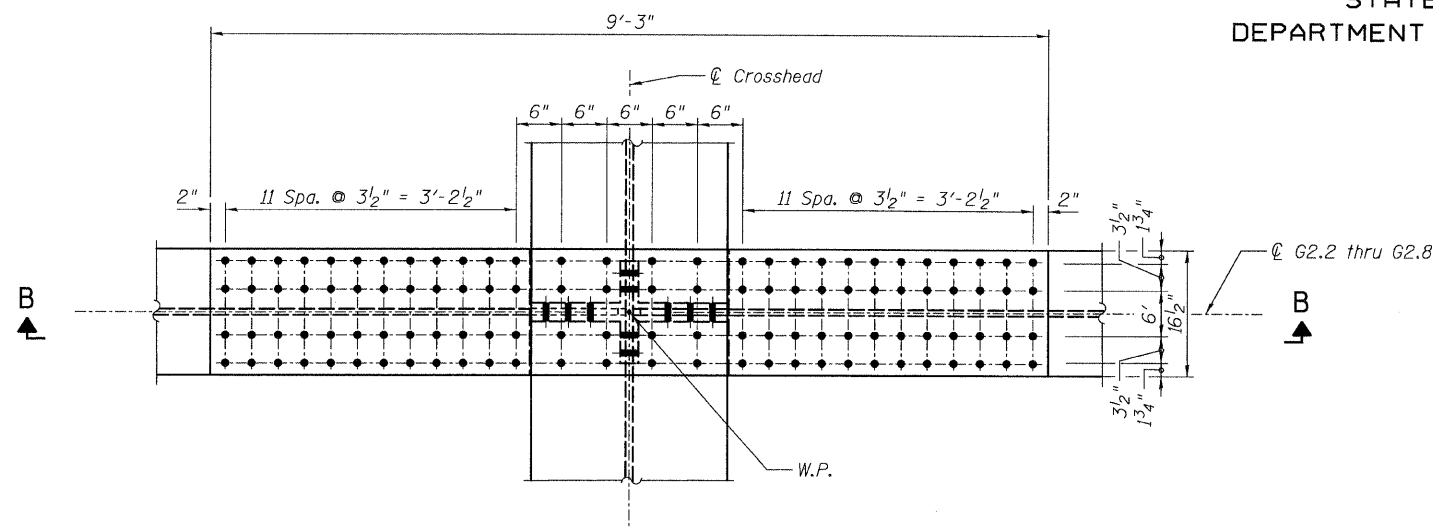
TYLIN INTERNATIONAL

DESIGNED - JPN	REVISIONS	
	NAME	DATE
CHECKED - AMD,		
DRAWN - JMA		
CHECKED - AMD,		
DATE - 08/02/10		

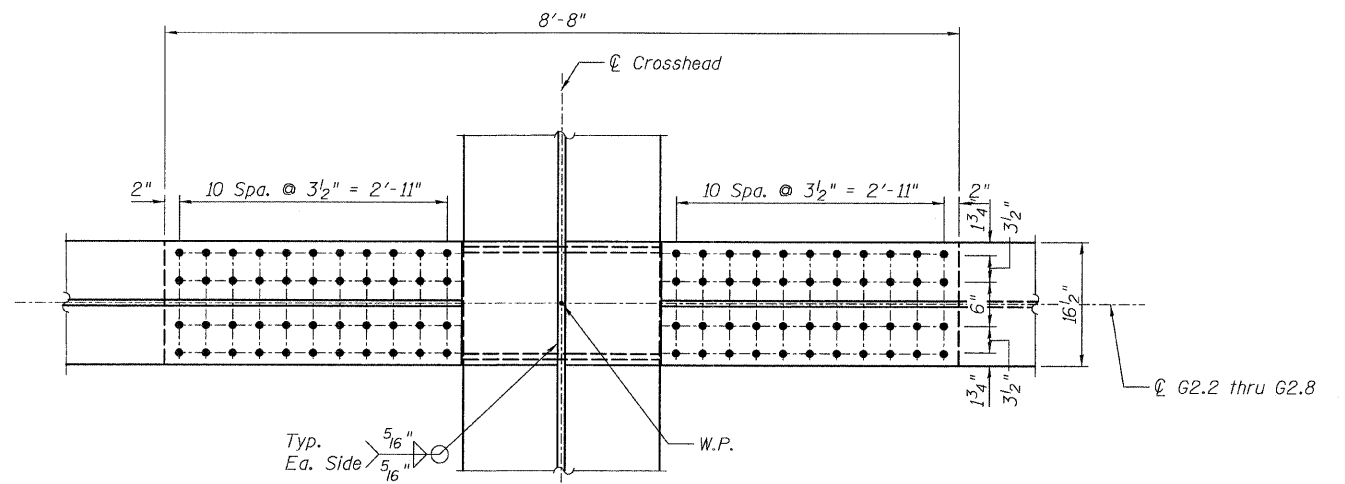
SHEET NO. 87	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	137 SHEETS	55	0711.2R & 1011.1BR	COOK	200
			CONTRACT NO. 60L39		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

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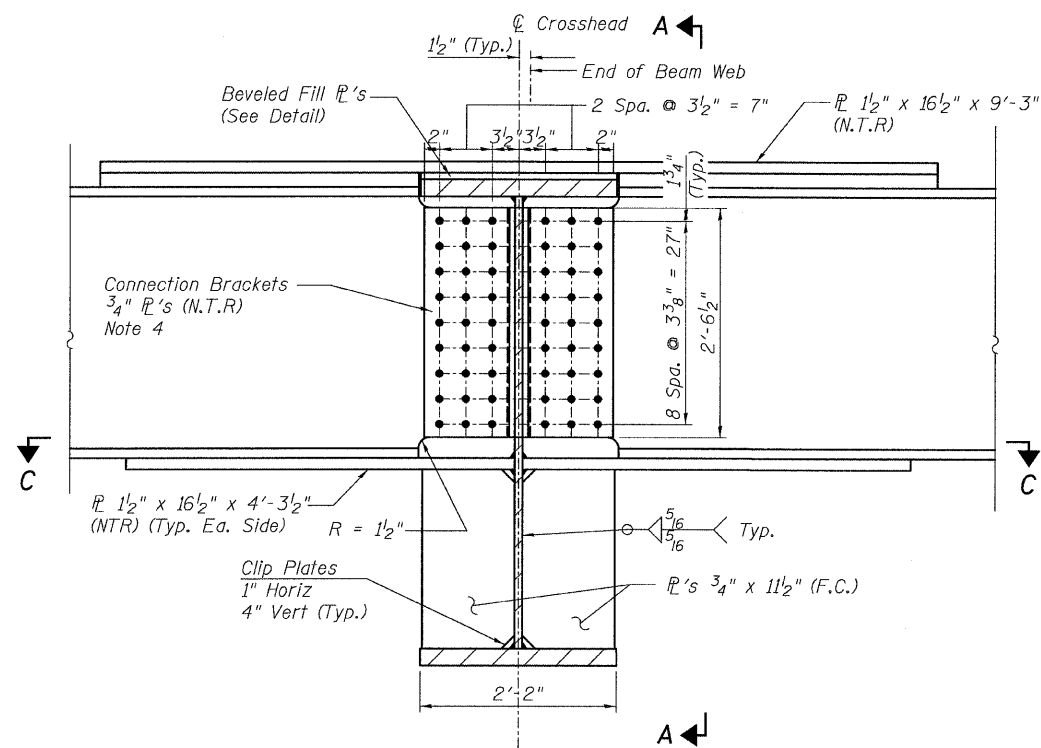
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



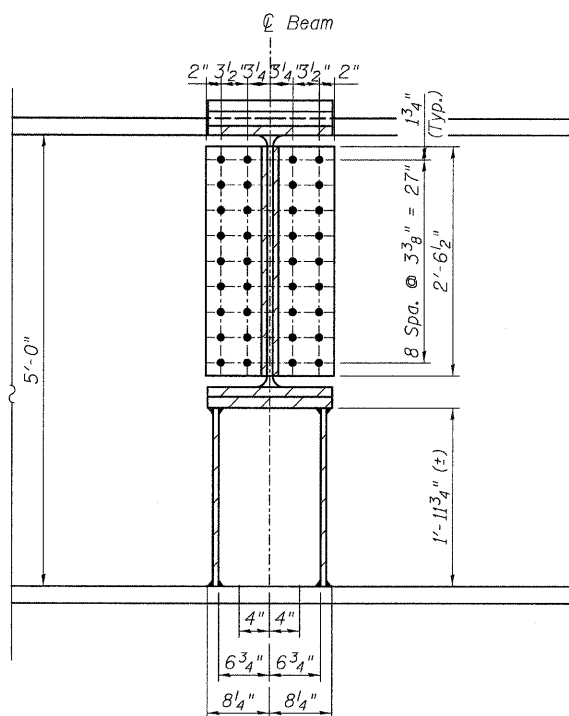
DETAIL 32
(Top Flange)



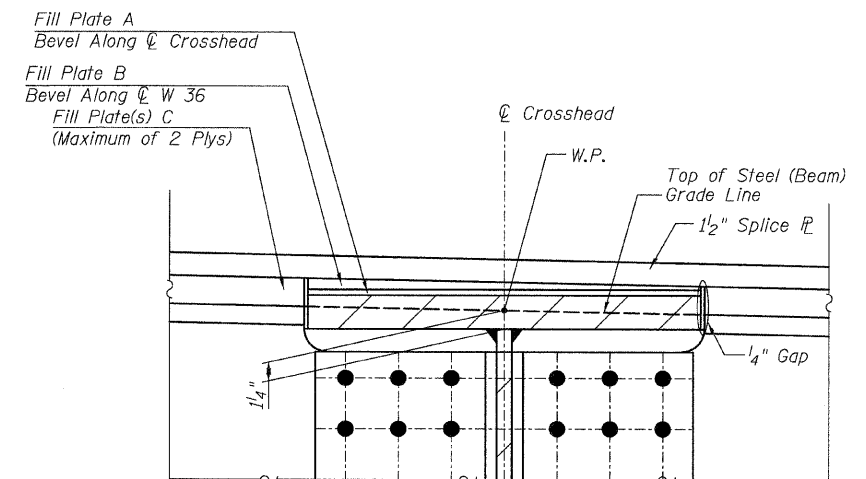
SECTION C-C
(Bottom Flange)



SECTION B-B



SECTION A-A



FILL PLATE DETAIL

NOTES:

1. All steel shall be AASHTO M 270 Grade 50.
2. All bolts shall be 1" ϕ with 1 1/16" ϕ holes.
3. Load carrying components designated "N.T.R." shall conform to the supplemental requirements for Notch Toughness, Zone 2.
4. 3/4" Connection brackets can be fabricated from single bent plate or 2 plates utilizing a pre-qualified, full penetration corner joint welded assembly.

TYLIN INTERNATIONAL

DESIGNED - JPN	REVISIONS	
	NAME	DATE
CHECKED - AMD,		
DRAWN - JMA		
CHECKED - AMD,		
DATE - 08/02/10		

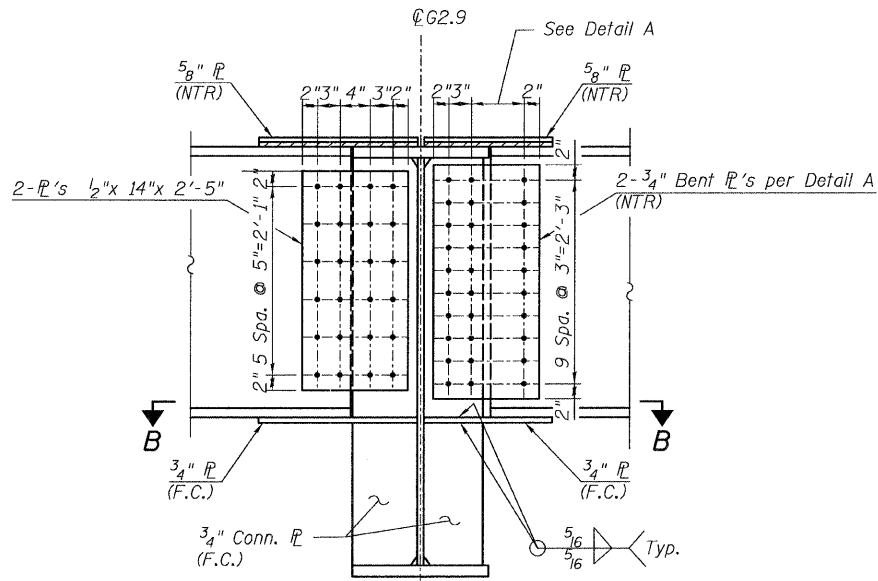
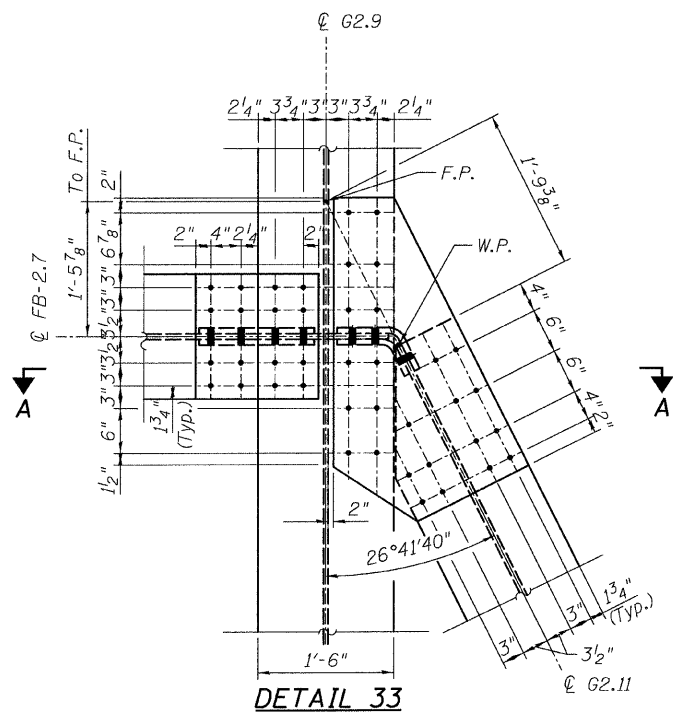
SHEET NO. 89	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	0711.2R & 1011.1BR	COOK	200	119
137 SHEETS	CONTRACT NO. 60L39				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

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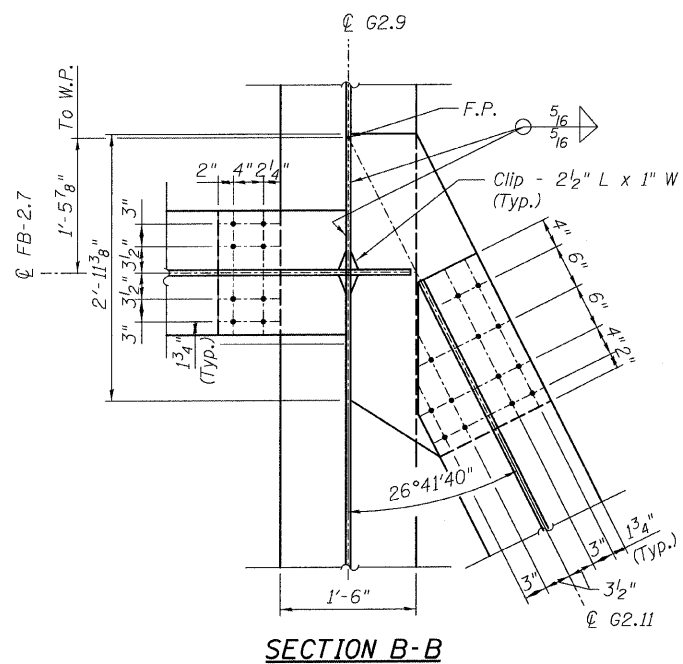
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NOTES:

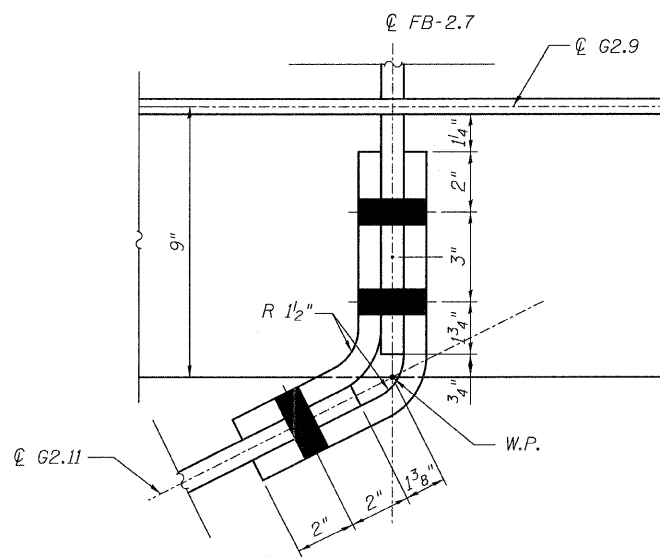
- All steel shall be AASHTO M 270 Grade 50.
- F.C. indicates Fracture Critical Material, AASHTO Zone 2.
- Load carrying components designated "N.T.R." shall conform to the supplemental requirements for Notch Toughness, Zone 2.



SECTION A-A



SECTION B-B



DETAIL A

**CONNECTION DETAIL 33
RAMP 2 FLARE
STRUCTURE NO. 016-0724**

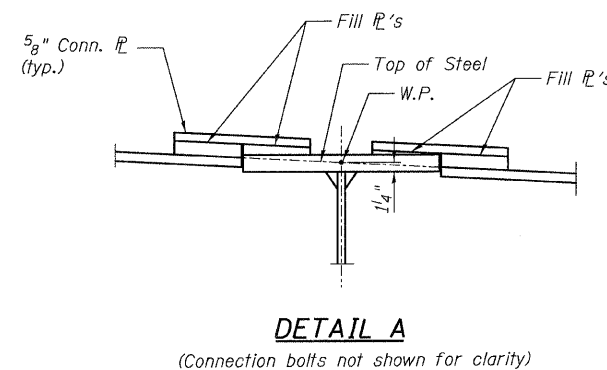
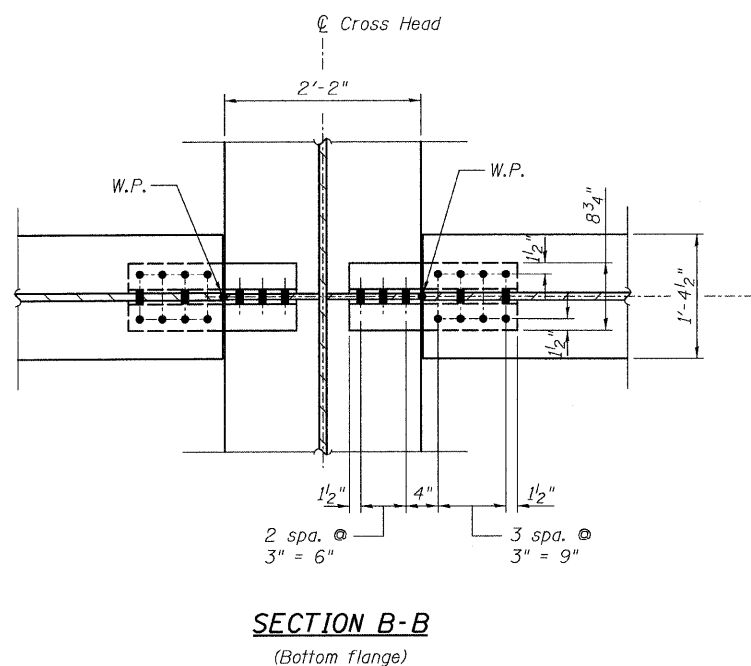
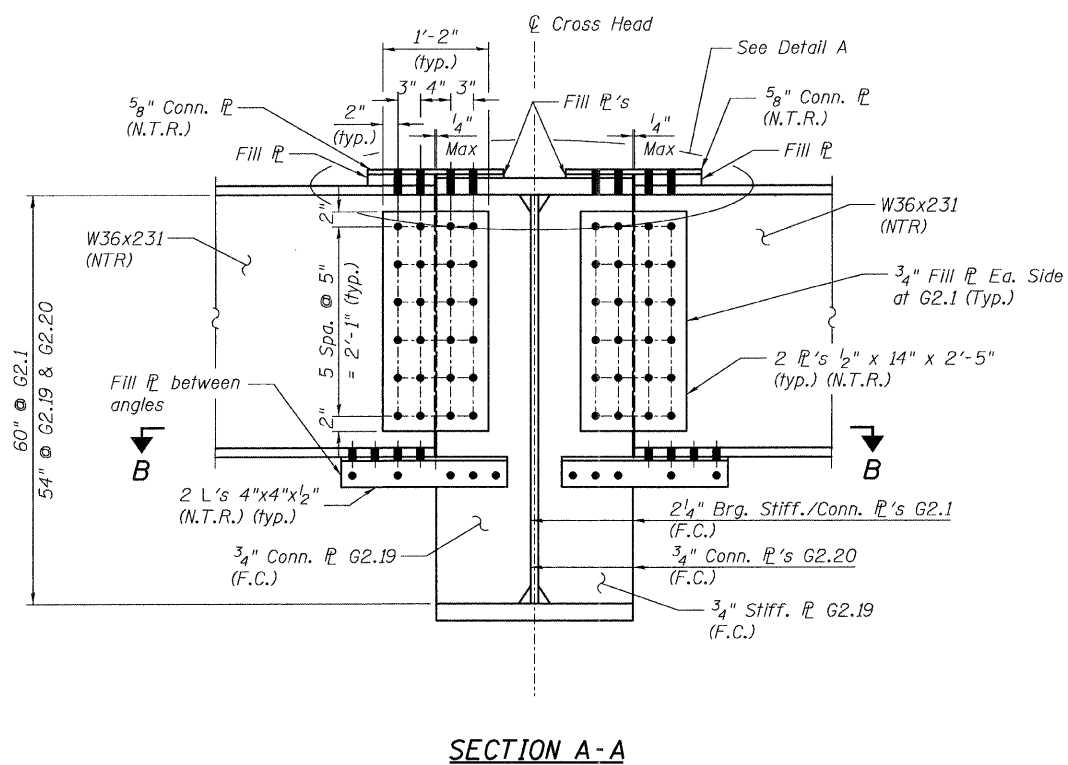
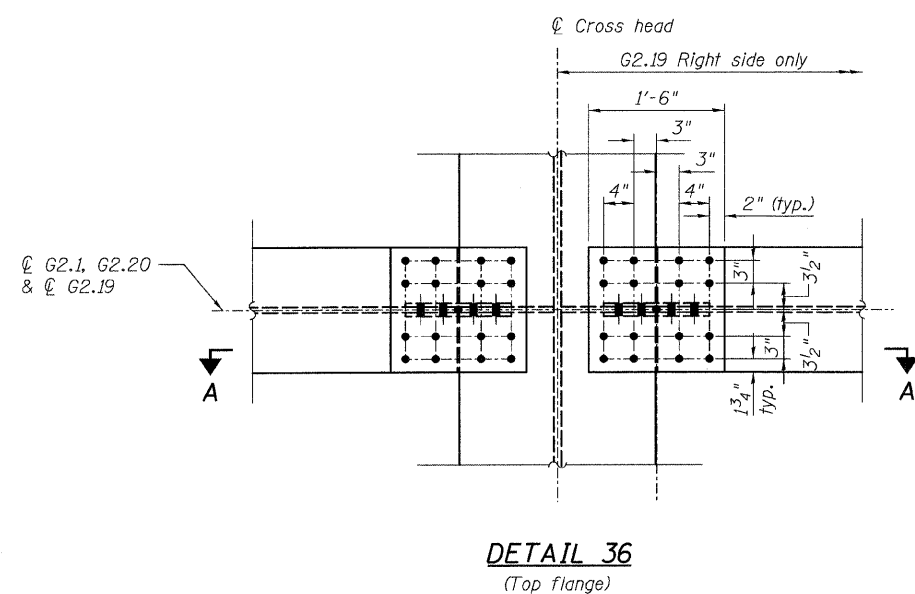
TYLIN INTERNATIONAL

DESIGNED - JPN	REVISIONS	
CHECKED - AMD,	NAME	DATE
DRAWN - JMA		
CHECKED - AMD,		
DATE - 08/02/10		

SHEET NO. 90
137 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	0711.2R & 1011.1BR	COOK	200	120
CONTRACT NO. 60L39				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

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DEPARTMENT OF TRANSPORTATION



NOTES:

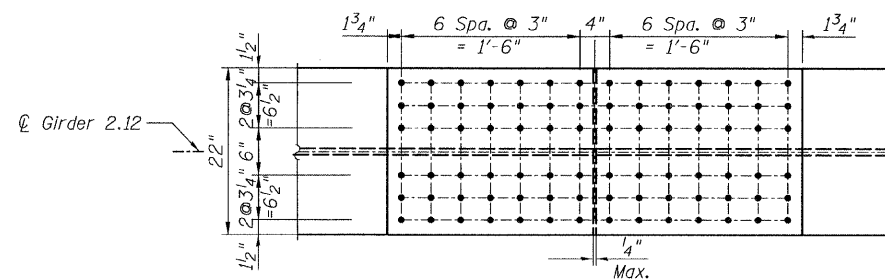
1. All steel shall be AASHTO M 270 Grade 50.
2. Load carrying components designated "N.T.R." shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
3. F.C. indicates Fracture Critical Material, AASHTO Zone 2.

**CONNECTION DETAILS 34
RAMP 2 FLARE
STRUCTURE NO. 016-0724**

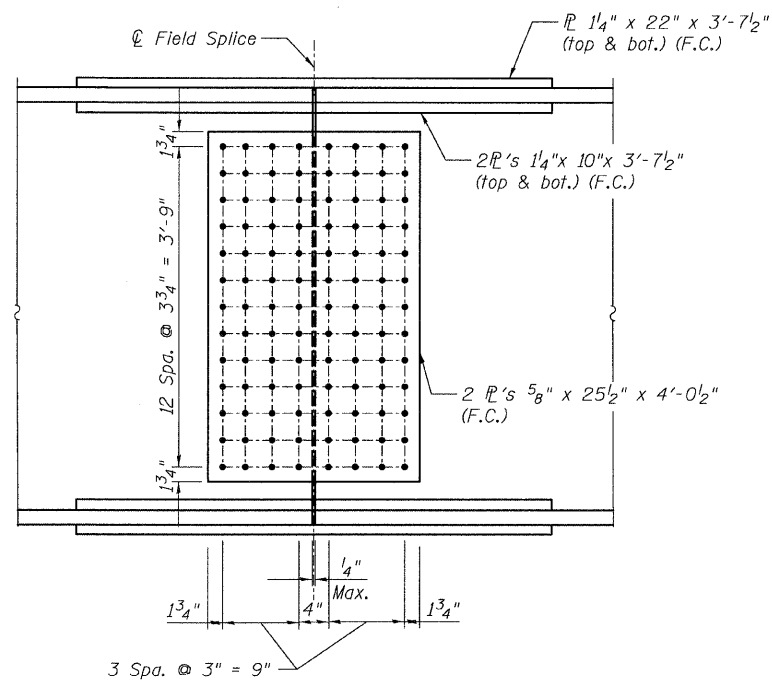
TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS	
	CHECKED - AMD,	NAME	DATE
	DRAWN - MAU		
	CHECKED - AMD,		
	DATE - 08/02/10		

SHEET NO. 91 137 SHEETS	F.A.I. RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 121
	CONTRACT NO. 60L39				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN - TOP & BOTTOM FLANGE



ELEVATION

FIELD SPLICE F.S.-2.1 & 2.2
(Girder 2.12)

NOTES:

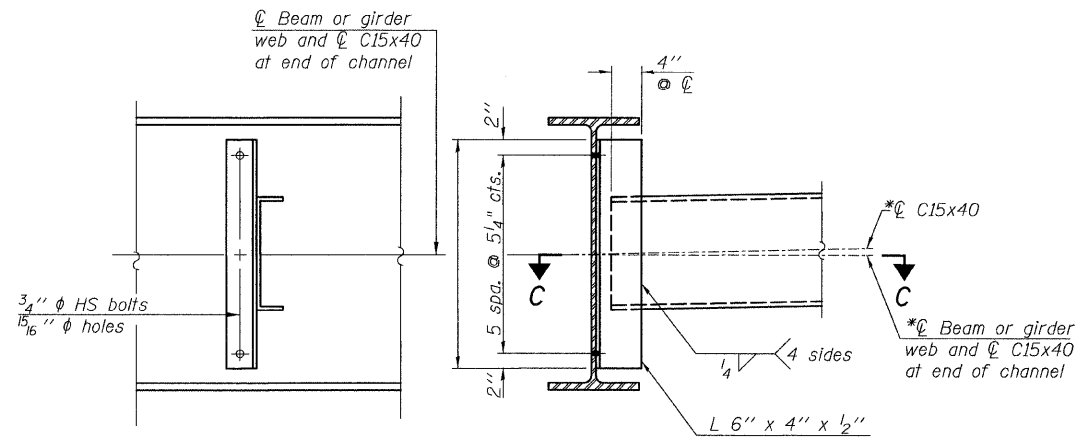
1. All steel shall be AASHTO M270 Grade 50.
2. F.C. denotes Fracture Critical Material, AASHTO Zone 2.

**FIELD SPLICES
RAMP 2 FLARE
STRUCTURE NO. 016-0724**

TYLIN INTERNATIONAL	DESIGNED - MAU	REVISIONS	
	CHECKED - AMD,	NAME	DATE
	DRAWN - MAU		
	CHECKED - AMD,		
	DATE - 08/02/10		

SHEET NO. 92 137 SHEETS	F.A.I. RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 122
	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			CONTRACT NO. 60L39	

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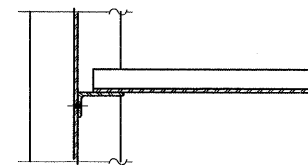


INTERIOR DIAPHRAGM

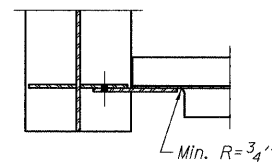
(D2.2)
(6 REQUIRED)

Note:

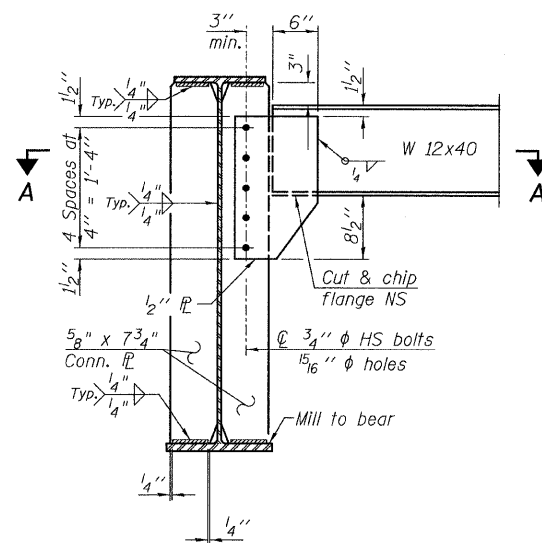
*Alternate channels C15x50 are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.



SECTION C-C

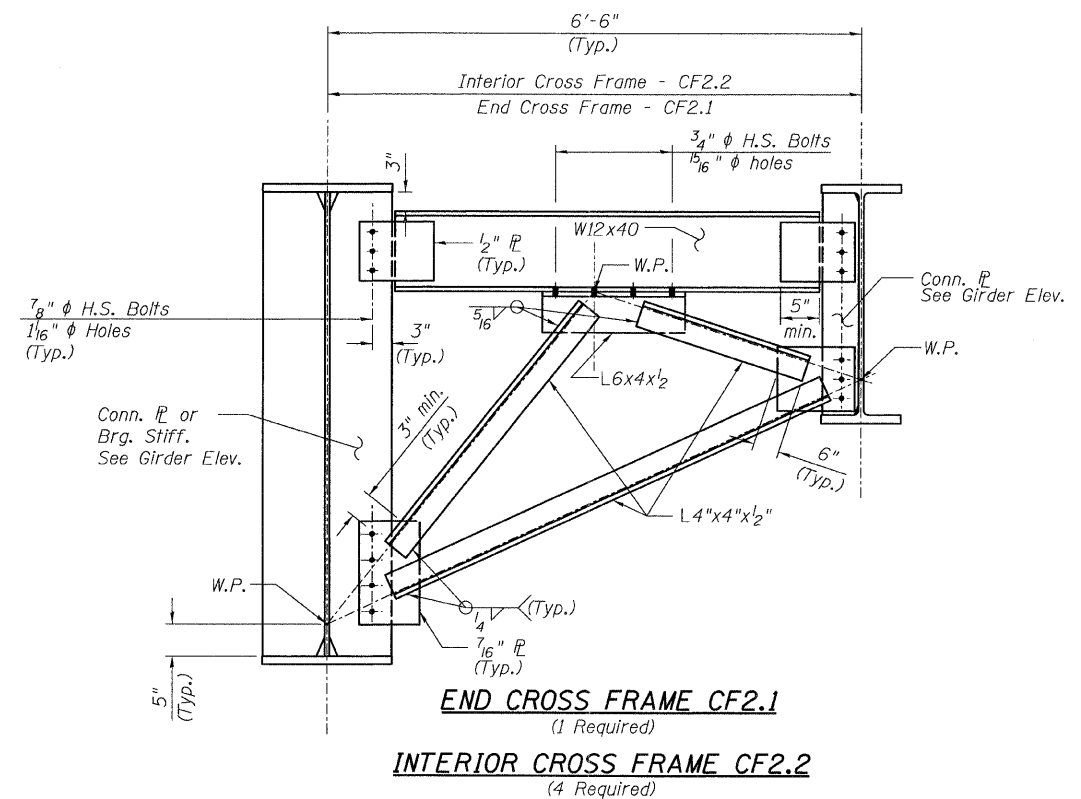


SECTION A-A



END DIAPHRAGM

(D2.1)
(6 REQUIRED)



END CROSS FRAME CF2.1

(1 Required)

INTERIOR CROSS FRAME CF2.2

(4 Required)

NOTES:

- Two hardened washers shall be required over all oversize holes for diaphragms.
- All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
- All bolts shall be 3/4" φ with 1 5/16" φ holes unless otherwise noted.

**DIAPHRAGMS & DETAILS
RAMP 2 FLARE
STRUCTURE NO. 016-0724**

TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS	
	CHECKED - AMD,	NAME	DATE
	DRAWN - MAU		
	CHECKED - AMD,		
	DATE - 08/02/10		

SHEET NO. 93 137 SHEETS	F.A.I. RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 123
	CONTRACT NO. 60L39				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER MOMENT TABLE - RAMP 3 FLARE

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in.⁴ and in.³).
 $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in.⁴ and in.³).
 $I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in.⁴ and in.³).
 Z: Plastic Section Modulus of the steel section in non-composite areas (in.³).
 ϕ : Un-factored non-composite dead load (kips/ft.).
 $M\phi$: Un-factored moment due to non-composite dead load (kip-ft.).
 $s\phi$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
 $M_s\phi$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
 M_L : Un-factored live load moment (kip-ft.).
 M_I : Un-factored moment due to impact (kip-ft.).
 M_a : Factored design moment (kip-ft.).
 $1.3 [M\phi + M_s\phi + \frac{5}{8} (M_L + M_I)]$
 M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).
 f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $M\phi + M_s\phi + \frac{5}{8} (M_L + M_I)$
 f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.3 [M\phi + M_s\phi + \frac{5}{8} (M_L + M_I)]$
 VR: Maximum $\frac{1}{4}$ + impact shear range within the composite portion of the span for stud shear connector design (kips).
 S_I : Section modulus of one flange plate for lateral flange bending (in.³).
 M_{bl} : Factored lateral bending moment for flange plate (kip-ft.).

	Girder 3.1		Girder 3.2			Girder 3.3 to 3.8			Girder 3.9	Girder 3.11	Girder 3.17	Cross Head Girder	
	0.5 Sp. R3-1	0.5 Sp. R3-2	0.4 Sp. R3-1	R3 Pier	0.6 Sp. R3-2	0.4 Sp. R3-1	R3 Pier	0.6 Sp. R3-2	0.4 Sp. R3-1	0.5 Sp. R3-1	0.5 Sp. R3-1	0.4 Span	at G1
I_s (in ⁴)	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	49,795	15,000	9,040	131,400	131,400
I_c (n) (in ⁴)	31,876	31,876	31,876		31,876	31,876		31,876	88,605	29,661			
I_c (3n) (in ⁴)	23,429	23,429	23,429		23,429	23,429		23,429	67,636	21,883			
S_s (in ³)	837	837	837	837	837	837	837	837	1,747	837	504	4,074	4,074
S_c (n) (in ³)	1,096	1,096	1,096		1,096	1,096		1,096	2,110	1,073			
S_c (3n) (in ³)	995	995	995		995	995		995	1,948	971			
Z (in ³)				943								4541	4541
ϕ (k/ft)	0.98	1.18	0.89	1.57	1.42	0.98	1.38	0.98	1.41	1.11	1.29		
$M\phi$ (k)	705.0	318.0	396.0	1,111.0	584.0	671.0	1243.0	340.0	1644.0	228.0	357.0	2758.0	5970.0
$s\phi$ (k/ft)	0.40	0.40	0.36		0.57	0.40		0.40	0.60	0.80			
$M_s\phi$ (k)	288.0	113.0	179.0		249.0	292.0		157.0	708.0	147.0			
M_L (k)	640.0	329.0	565.0	348.0	560.0	703.0	413.0	560.0	857.0	270.0	334.0	1049.0	1336.0
M (Imp) (k)	160.0	95.0	141.0	87.0	139.0	162.0	103.0	140.0	197.0	81.0	96.0	262.0	347.0
$5_3 [M\phi + M_s\phi + \frac{5}{8} (M_L + M_I)]$ (k)	1,333.3	706.7	1,177.0	725.0	1,165.0	1,441.7	860.0	1,166.7	1,756.7	585.0	716.7	2,185.0	2,805.0
M_a (k)	3,024.2	1,479.0	2,278.0	2,387.0	2,598.0	3,126.1	2,734.0	2,162.8	5,341.3	1,248.0	1,395.8	6,425.9	11,407.5
M_u (k)	5,073.0	5,073.0	5,073.0	3,429.0	5,073.0	5,073.0		5,073.0	10,286.0	4,897.0	2,397.0	18,920.0	18,920.0
$f_s \phi$ (non-comp) (ksi)	10.1	4.6	5.7	16.0	8.4	9.6	17.8	4.9	11.3	3.3	8.5	8.1	17.6
$f_s \phi$ (comp) (ksi)	3.5	1.4	2.2	-	3.0	3.5	-	1.9	4.4	1.8	-	-	-
$f_s 5_3 (\frac{1}{4} + Imp)$ (ksi)	14.6	7.7	12.9	10.4	12.8	15.8	12.3	12.8	10.0	6.5	17.1	6.4	8.3
f_s (Overload) (ksi)	28.2	13.7	20.8	26.4	24.2	28.9	30.1	19.5	25.6	11.6	25.6	14.6	25.8
f_s (Total) (ksi)							39.2						
VR (k)	52.6	49.9	55.4		55.5	52.2		56.5	53.0	46.0			

* Compact section
 ** Braced non-compact and partially braced section

GIRDER REACTION TABLES - RAMP 3 FLARE

	Girder 3.1				Girder 3.2			Girder 3.3 to 3.8			Girder 3.9	Girder 3.11	Girder 3.17	Cross Head Girder			
	Carrier Girder	Pier R3 (West)	Pier R3 (East)	FB 3.4	Carrier Girder	Pier R3	Q Bearing Abutment	Carrier Girder	Pier R3	Q Bearing Abutment	Carrier Girder	Pier R3	Q N. Brg C. Abut 1	G3.9	Carrier Girder & FB3.6	South Bearing	North Bearing
R_{DL} (k)	53.2	53.2	36.0	34.5	41.6	138.2	47.7	52.5	147.6	38.3	88.3	78.5	39.6	39.4	31.1	554.0	1034.0
R_{LL} (k)	41.8	41.8	38.6	38.6	40.8	47.0	40.8	42.0	51.2	41.0	42.8	38.3	35.4	35.4	38.6	100.0	160.0
R_I (k)	10.4	10.4	11.1	11.1	10.3	11.7	10.2	9.6	12.2	10.2	9.8	8.8	10.6	10.6	11.2	25.0	40.0
R_{TOTAL} (k)	105.4	105.4	85.7	84.2	92.7	196.9	98.7	104.1	211.0	89.5	140.9	125.6	85.6	85.4	80.9	679.0	1234.0

	Girder 3.12			
		0.4 Sp. R3-1	R3 Pier	0.6 Span R3-2
I_s (in ⁴)	78,863	78,863	78,863	
I_c (n) (in ⁴)	127,048	85,300	127,048	
I_c (3n) (in ⁴)	99,626	3,100	99,626	
S_s (in ³)	2719	2719	2719	
S_c (n) (in ³)	3154	85,300	3154	
S_c (3n) (in ³)	2941	3,100	2941	
S_I (in ³)	161	161	161	
ϕ (k/ft)	3.1	2.1	1.6	
$M\phi$ (k)	784	1358	765	
$s\phi$ (k/ft)	1.3	0.73	0.5	
$M_s\phi$ (k)	326	497	246	
M_L (k)	512.0	470.0	626.0	
M (Imp) (k)	133.0	117.0	150.0	
$5_3 [M\phi + M_s\phi + \frac{5}{8} (M_L + M_I)]$ (k)	1075.0	979.0	1294.0	
M_a (k)	2841.0	3685.0	2997.0	
M_{bl} (k)	26.0	73	42.0	
$f_s \phi$ (non-comp) (ksi)	3.5	6.0	3.4	
$f_s \phi$ (comp) (ksi)	1.4	2.0	1.0	
$f_s 5_3 (\frac{1}{4} + Imp)$ (ksi)	4.1	3.8	5.0	
f_I (ksi)	2.0	5.4	3.1	
f_s (Overload) (ksi)	9.0	11.8	9.4	
f_s (Total) (ksi)	11.7	15.4	12.3	
F_{cr} (Overload) (ksi)	47.5	47.5	47.5	
VR (k)	59.1		56.3	
F_{cr} (ksi)	49.3	32.3	44.3	

	Girder 3.12		
	G1	R3 Pier	R3 Abut
R_{DL}	71.0	254.0	59.0
R_{LL}	41.0	55.0	42.0
R_I	10.0	14.0	10.0
R_{TOTAL}	122.0	323.0	111.0

MOMENT TABLE
 RAMP 3 FLARE
 STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL

DESIGNED - JPN	REVISIONS	
	NAME	DATE
CHECKED - AMD,		
DRAWN - MAU		
CHECKED - AMD,		
DATE - 08/02/10		

SHEET NO. 94	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO. 60L39			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT		

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF BEAM ELEVATIONS

Girder	CL G1	CL N Brg C Abut 1	CL G3.11	CL G3.9 at WP	CL G3.12	CL FB 3.6	CL FB 3.5	CL Cross Head at R3 Pier	CL FB 3.4	CL FB 3.2	CL Brg R3 Abut
G3.11		625.91		625.78							
G3.10A	626.09		625.88								
G3.10	626.18		625.83								
G3.8	626.38							624.53			622.72
G3.7	626.48							624.62			622.82
G3.6	626.58							624.72			622.92
G3.5	626.74							624.81			623.01
G3.4	626.83							624.91			623.11
G3.3	626.92							625.00			623.21
G3.2	626.99							625.10			623.31
G3.1	627.06							625.19		624.12	
G3.20	627.13							625.29	624.79		
G3.19	627.20							625.38			
G3.18	627.27						625.73				
G3.17	627.33					626.14					
G3.16	627.40					626.41					
G3.15	627.47					626.76					
G3.14	627.54					627.09					
G3.13	627.61					627.39					

(For fabrication only)

TOP OF WEB ELEVATIONS

Girder	CL G1	CL Cross Head	CL FS 3.1	CL Brg R3 Abut
G3.12	627.51	625.34	624.75	623.24
G3.9	626.18	624.33		

(For fabrication only)

**STEEL ELEVATIONS
RAMP 3 FLARE
STRUCTURE NO. 016-0724**

TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 95 137 SHEETS	F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 125				
	CHECKED - AMD,	NAME	DATE							CONTRACT NO. 60L39			
	DRAWN - MAU									FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			
	CHECKED - AMD,												
	DATE - 08/02/10												

8/13/2010

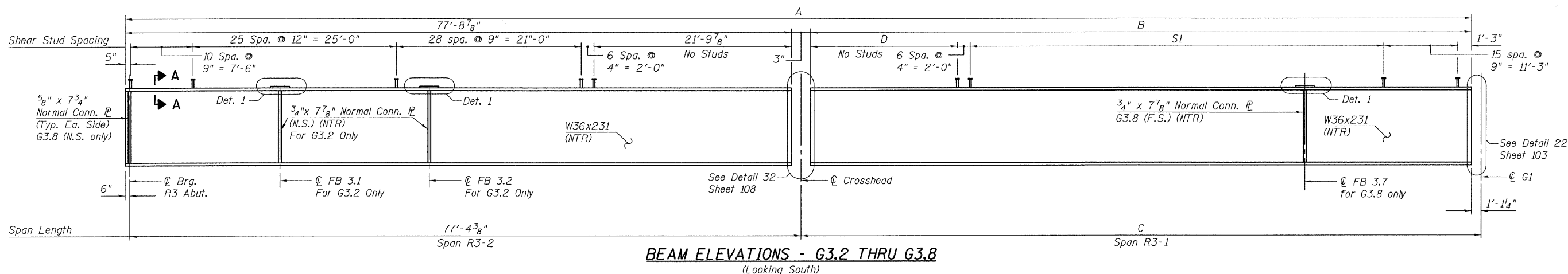
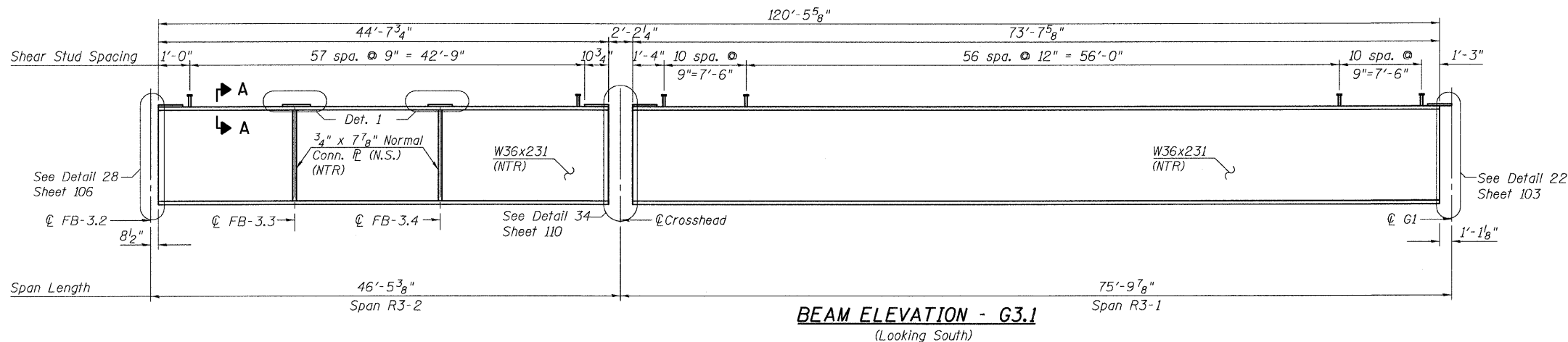
p:\01345\beam_and_bearing_fabrication\55f3f.amedt12.dgn

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TABLE OF BEAM DIMENSIONS
(G3.2 THRU G3.8)

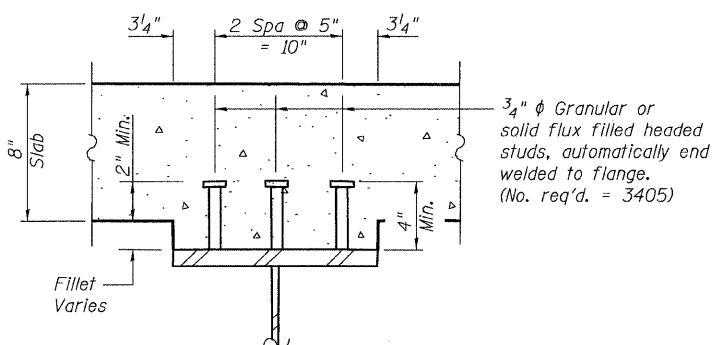
Girder	A	B	C
G3.2	155'-2 1/16"	77'-2 3/16"	78'-4 1/16"
G3.3	157'-9 1/16"	79'-9 1/16"	80'-11 3/4"
G3.4	160'-4"	82'-4 1/8"	83'-6 3/4"
G3.5	162'-10 1/16"	84'-11 1/16"	86'-1 1/16"
G3.6	165'-5 1/16"	87'-6 1/16"	88'-8 1/16"
G3.7	168'-0 1/16"	90'-1"	91'-3 5/8"
G3.8	170'-7 1/8"	92'-7 1/16"	93'-10 3/16"



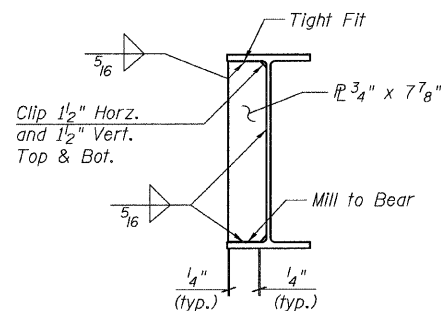
SHEAR STUD SPACING

Girder	S1	*D
G3.2	46 spa. @ 12" = 46'-0"	16'-9"
G3.3	46 spa. @ 12" = 46'-0"	19'-4"
G3.4	48 spa. @ 12" = 48'-0"	19'-11"
G3.5	50 spa. @ 12" = 50'-0"	20'-6"
G3.6	53 spa. @ 12" = 53'-0"	20'-1"
G3.7	55 spa. @ 12" = 55'-0"	20'-8"
G3.8	58 spa. @ 12" = 58'-0"	20'-2"

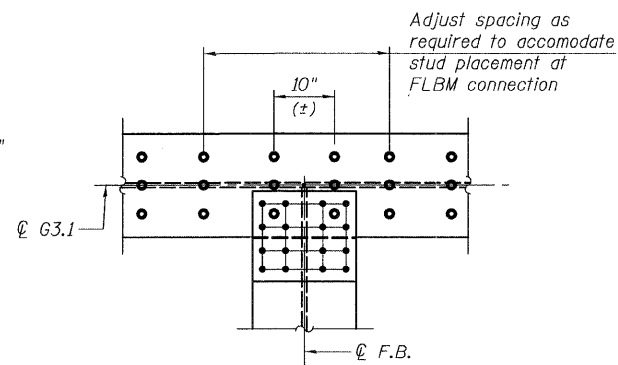
* Indicates rounded to nearest inch



SECTION A-A
(Not in contract)



CONN. P. DETAILS
(W36X231)



DETAIL 1

NOTES:

- All steel shown on this sheet shall be Conform to the requirements of AASHTO M270 GR 50.
- Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

GIRDER ELEVATIONS 1
RAMP 3 FLARE
STRUCTURE NO. 016-0724

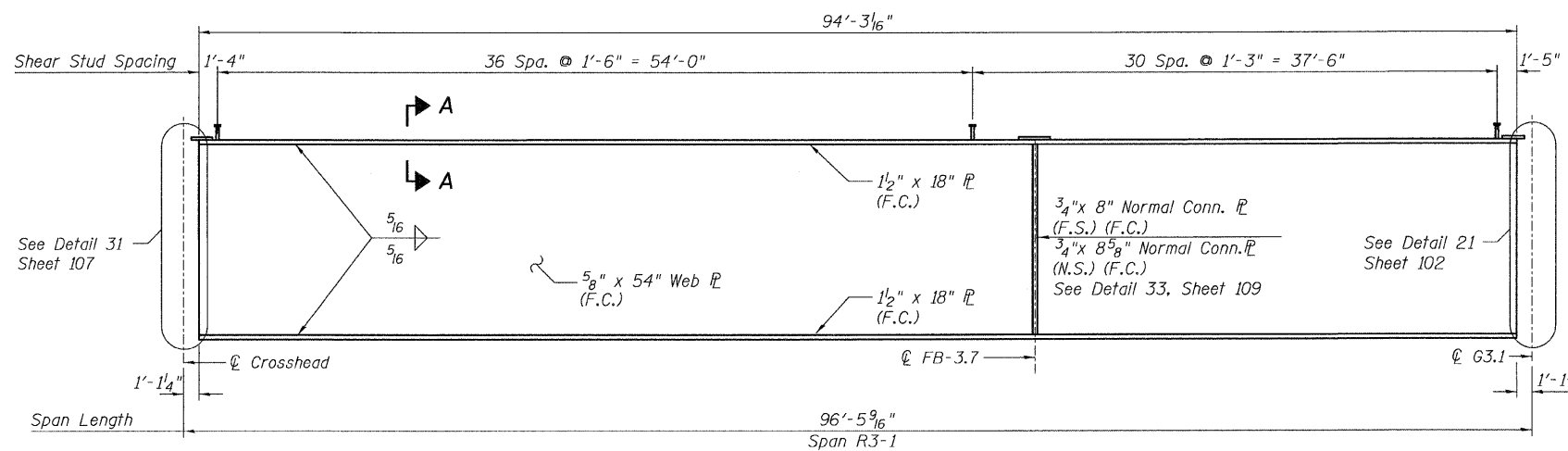
TYLIN INTERNATIONAL

DESIGNED - JPN	REVISIONS	
CHECKED - AMD,	NAME	DATE
DRAWN - JMA		
CHECKED - AMD,		
DATE - 08/02/10		

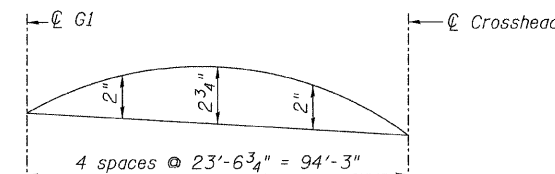
SHEET NO. 96 137 SHEETS	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	0711.2R & 1011.1BR	COOK	200	126
FED. ROAD DIST. NO. 1 ILLINOIS			FED. AID PROJECT		

CONTRACT NO. 60L39

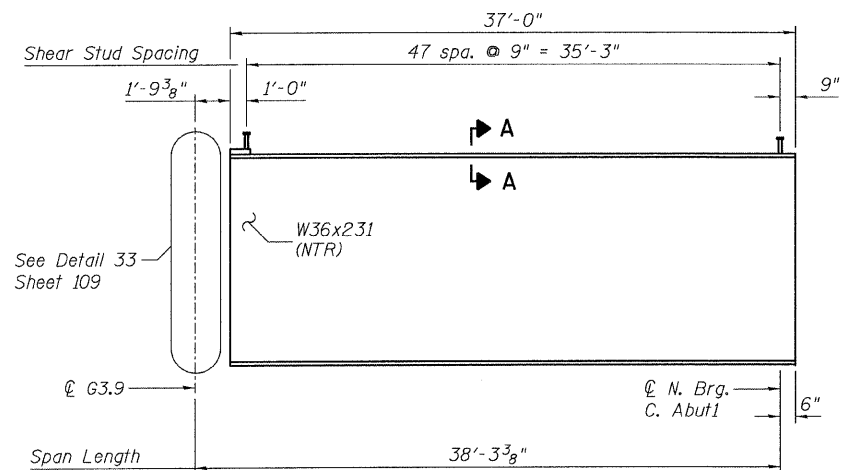
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



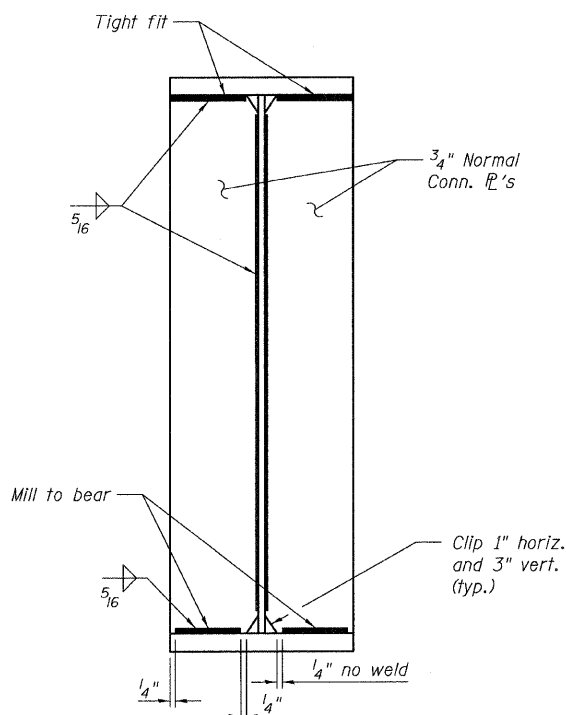
GIRDER ELEVATION - G3.9
(Looking South)



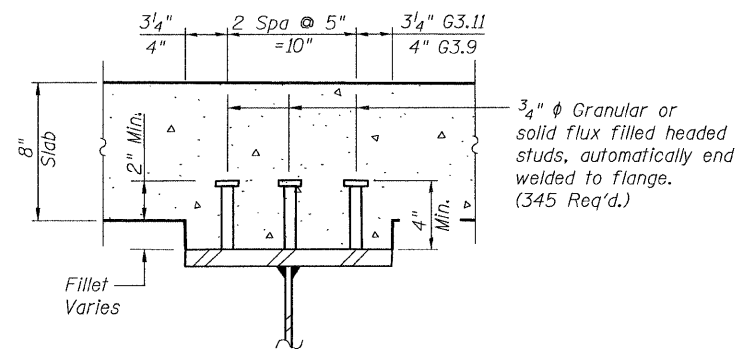
CAMBER DIAGRAM
Girder G3.9



GIRDER ELEVATION - G3.11
(Looking South)



CONNECTION P



SECTION A-A
(Not in contract)

NOTES:

- All steel shown on this sheet shall be Conform to the requirements of AASHTO M270 GR 50.
- Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- F.C. denotes Fracture Critical Material AASHTO Zone II.

GIRDER ELEVATIONS 2
RAMP 3 FLARE
STRUCTURE NO. 016-0724

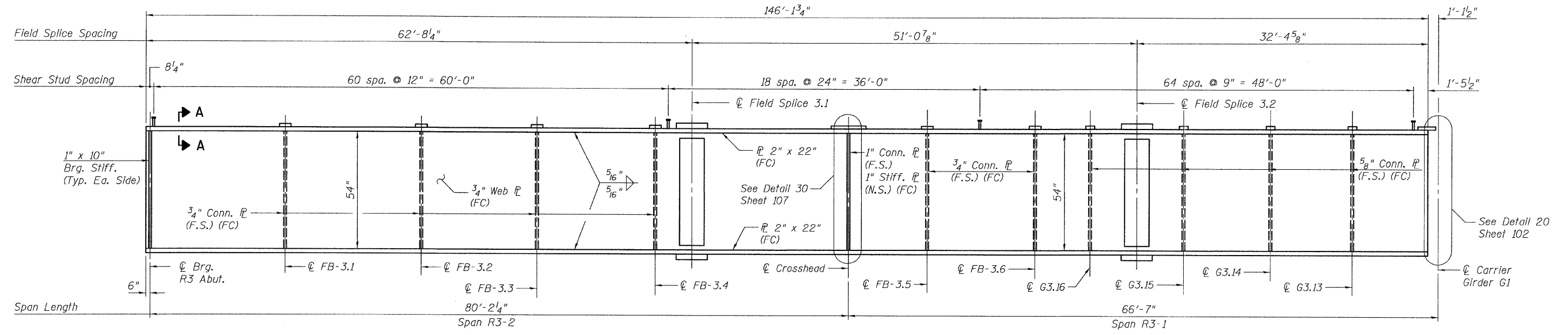
TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 97 137 SHEETS	F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 127			
	CHECKED - AMD,	NAME	DATE							CONTRACT NO. 60L39		
	DRAWN - MAU									FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT		
	CHECKED - AMD,											
	DATE - 08/02/10											

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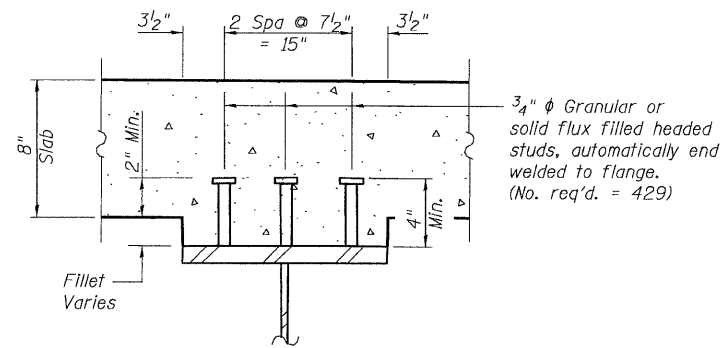
p:\01345\beam and bearing fabrication\55f3framed14.dgn

8/13/2010

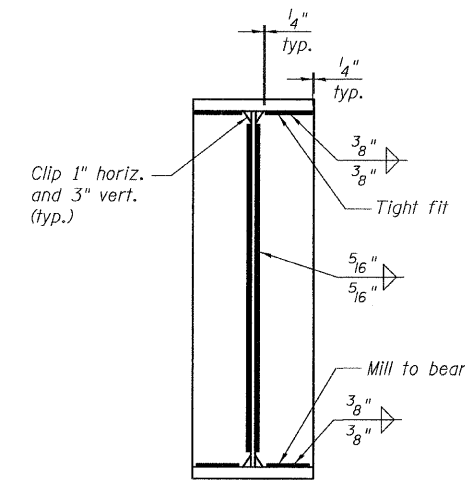
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



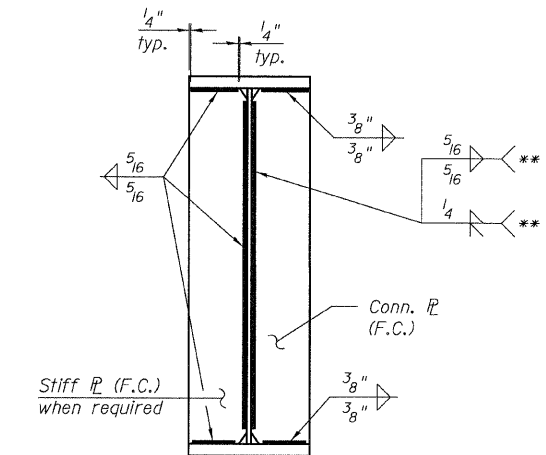
GIRDER ELEVATION - G3.12
(Looking South)



SECTION A-A
(Not in contract)



BEARING STIFFENER



** Weld type based on angle between web and connection plate where angles warrant combination of fillet and groove welds. Fillet weld is acute angle and groove weld is obtuse angle.

**TYPICAL CONNECTION
PLATE DETAIL**

NOTES:

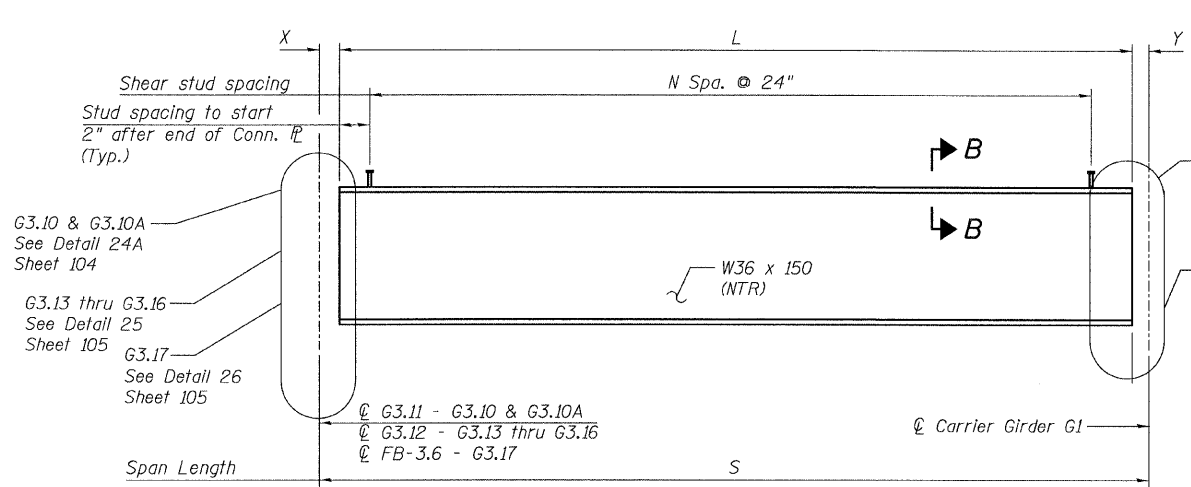
1. All steel shown on this sheet shall be Conform to the requirements of AASHTO M270 GR 50.
2. F.C. denotes Fracture Critical Material, AASHTO Zone II.
3. For Field Splice details, See Sheet 111.

**GIRDER ELEVATIONS 3
RAMP 3 FLARE
STRUCTURE NO. 016-0724**

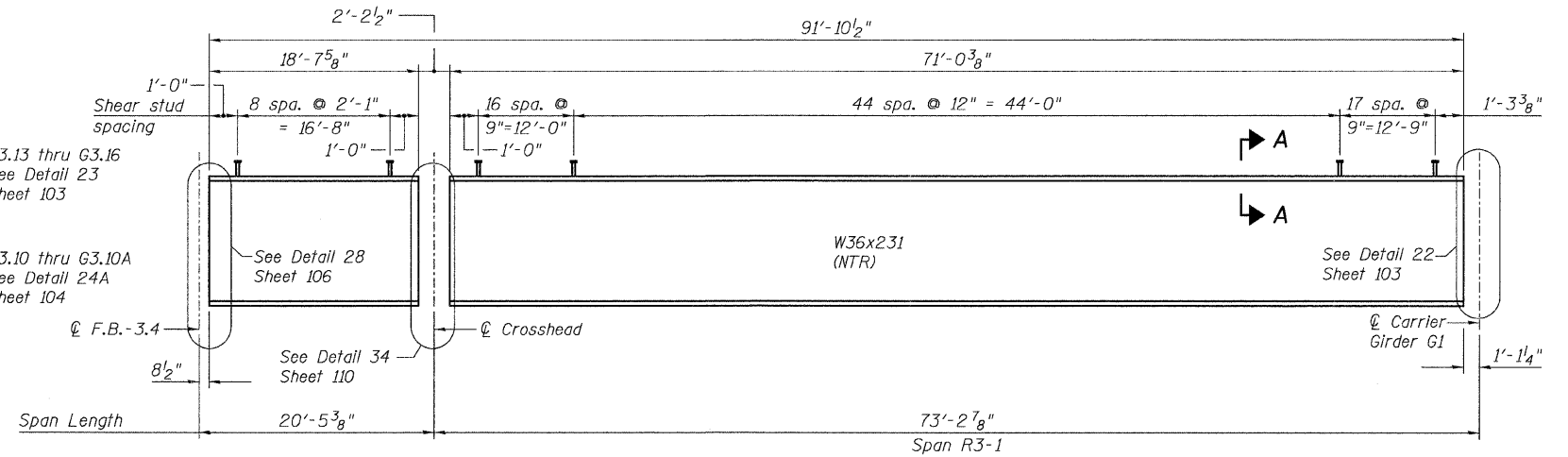
TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 98	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD,	NAME	DATE		137 SHEETS	55	0711.2R & 1011.1BR	COOK	200	128
	DRAWN - MAU				CONTRACT NO. 60L39					
	CHECKED - AMD,				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
	DATE - 08/02/10									

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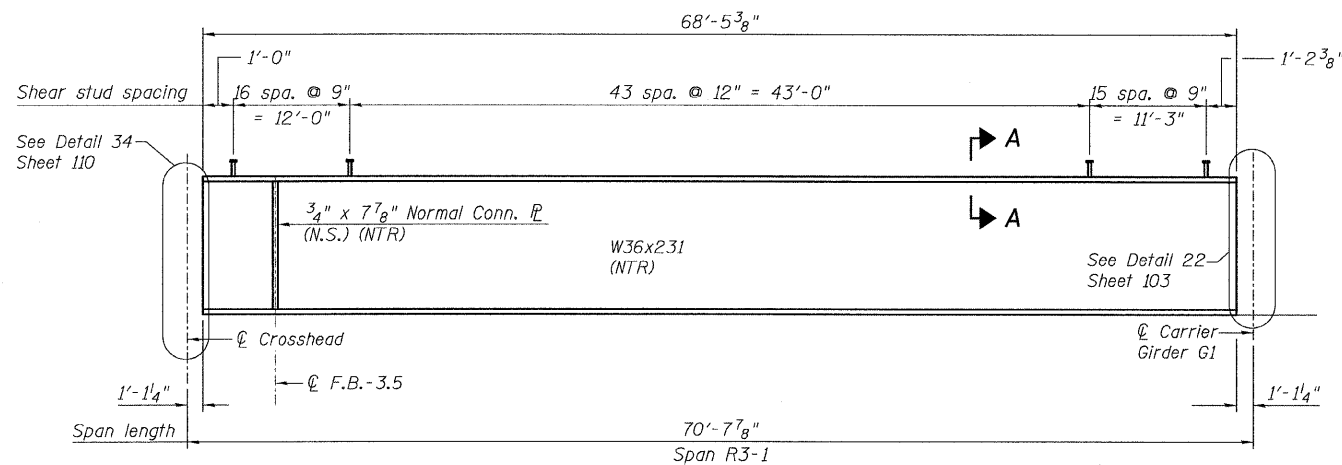
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



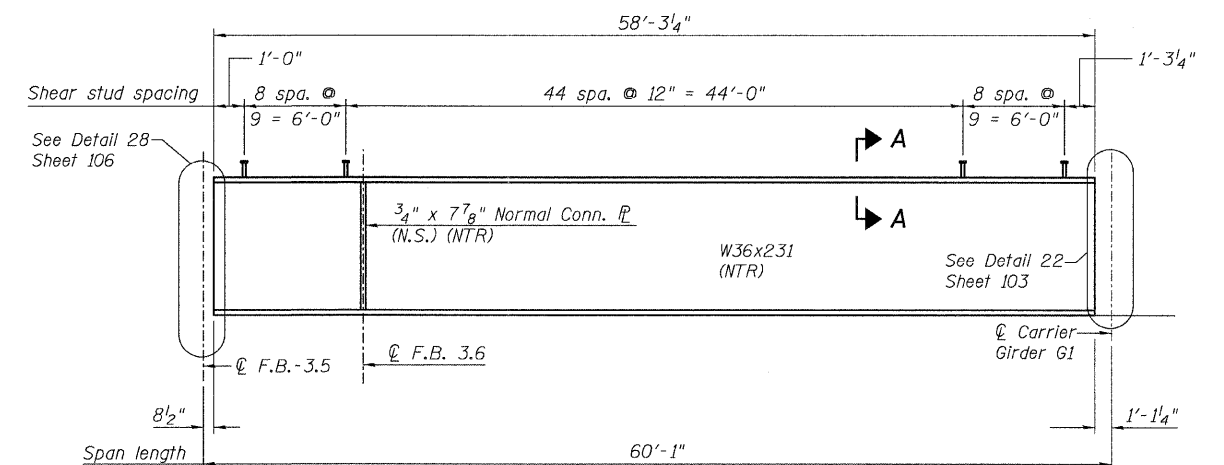
GIRDER ELEVATIONS - G3.10, G3.10A & G3.13 THRU G3.17
(Looking South)



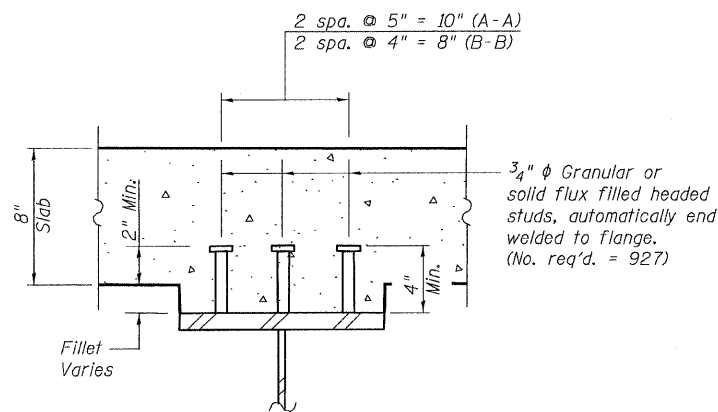
GIRDER ELEVATION - G3.20
(Looking South)



GIRDER ELEVATION - G3.19
(Looking South)



GIRDER ELEVATION - G3.18
(Looking South)



SECTION A-A & B-B
(Not in contract)

TABLE OF GIRDER VALUES

Girder	L	S	X	Y	N
G3.10	28'-3 1/4"	29'-6 3/8"	2"	1'-1 1/8"	12
G3.10A	17'-11 1/16"	19'-2 3/16"	2"	1'-1 1/8"	7
G3.13	6'-1"	8'-5 3/4"	1'-3 5/8"	1'-1 1/8"	2
G3.14	15'-4 3/8"	17'-10 1/16"	1'-4 3/16"	1'-1 1/8"	7
G3.15	25'-5 1/2"	27'-11 1/16"	1'-5 1/16"	1'-1 1/8"	12
G3.16	36'-5 1/4"	39'-1 1/2"	1'-7 1/8"	1'-1 1/8"	17
G3.17	45'-1 3/8"	46'-11"	8 1/2"	1'-1 1/8"	22

NOTES:

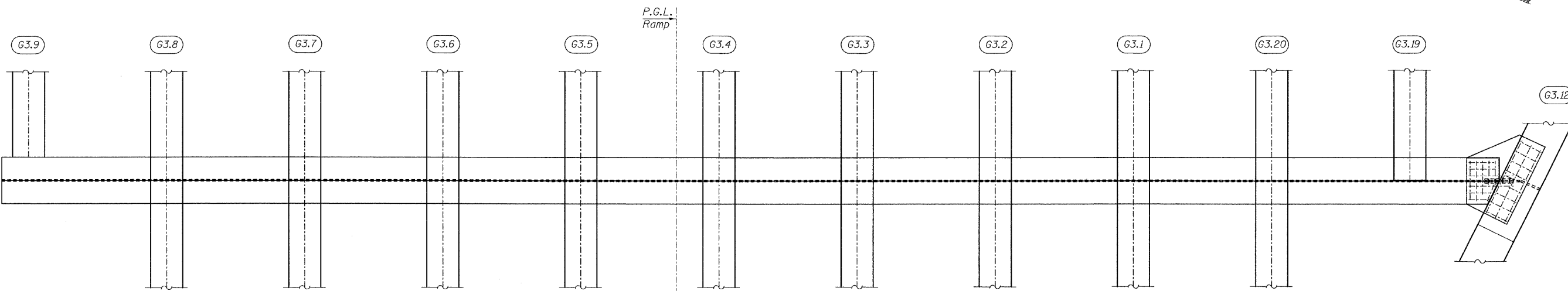
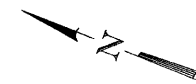
- All steel shown on this sheet shall be Conform to the requirements of AASHTO M270 GR 50.
- Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- For Connection Plate Detail see "Girder Elevations 1" Sheet 96.

GIRDER ELEVATIONS 4
RAMP 3 FLARE
STRUCTURE NO. 016-0724

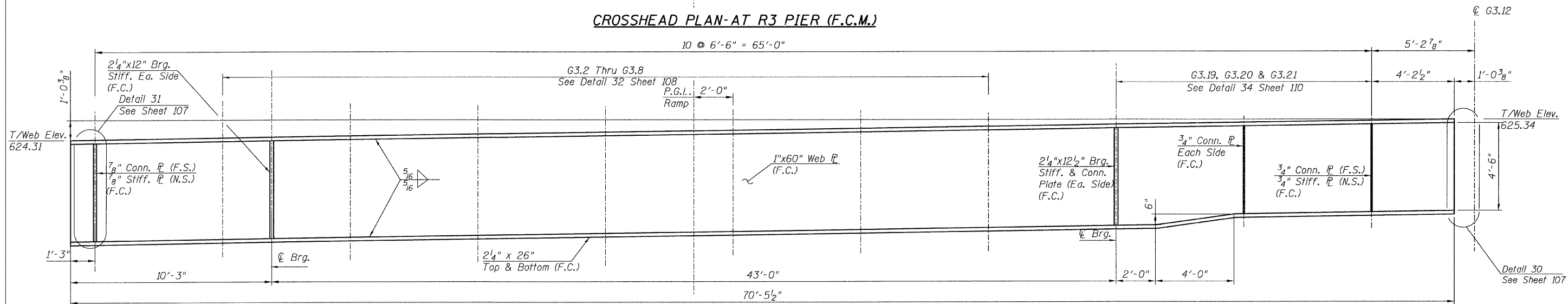
TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 99	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.				
	CHECKED - AMD,	NAME	DATE		55					0711.2R & 1011.1BR	COOK	200	129
	DRAWN - MAU				CONTRACT NO. 60L39								
	CHECKED - AMD,				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT								
	DATE - 08/02/10												

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



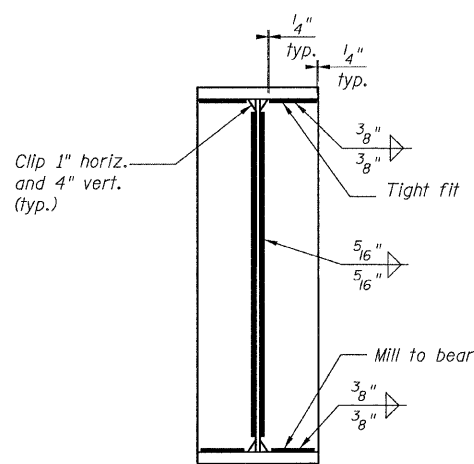
CROSSHEAD PLAN-AT R3 PIER (F.C.M.)



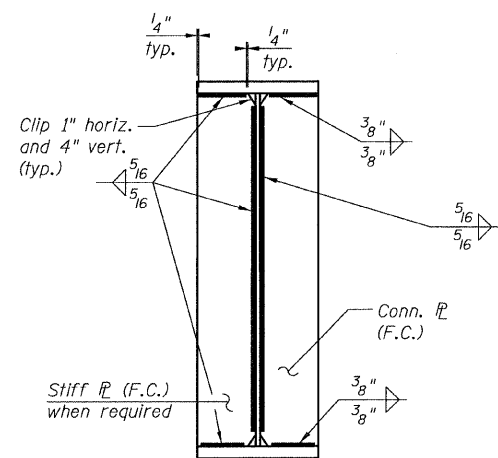
CROSSHEAD ELEVATION-AT R3 PIER (F.C.M.)
(LOOKING WEST)

NOTES:

- All steel shown on this sheet shall be AASHTO M 270 Grade 50.
- Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- F.C. indicates Fracture Critical Material, AASHTO Zone II.



BEARING STIFFENER



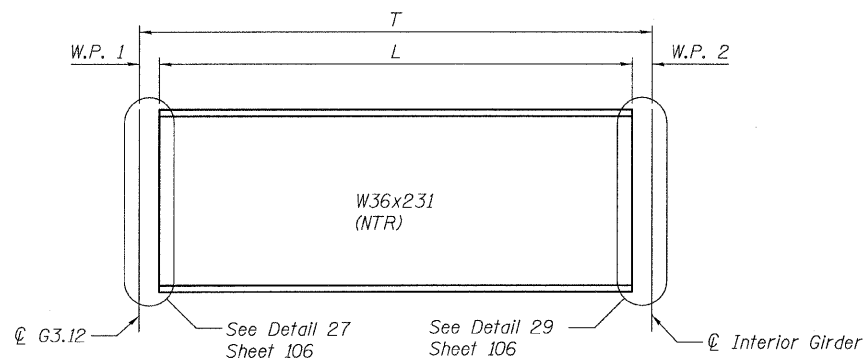
CONNECTION PLATE
DETAIL

CROSSHEAD DETAILS
RAMP 3 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 100 137 SHEETS	F.A.I. RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 130	
	CHECKED - AMD,	NAME	DATE		CONTRACT NO. 60L39 FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
	DRAWN - JMA									
	CHECKED - AMD,									
	DATE - 08/02/10									

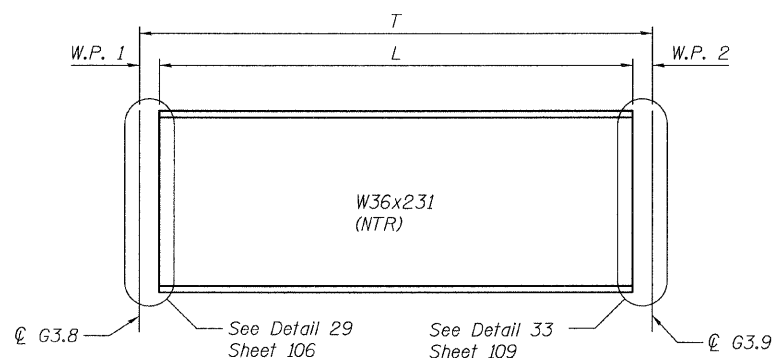
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8/13/2010

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FLOOR BEAM ELEVATION

(FB-3.1 & FB-3.3)
(Looking East)

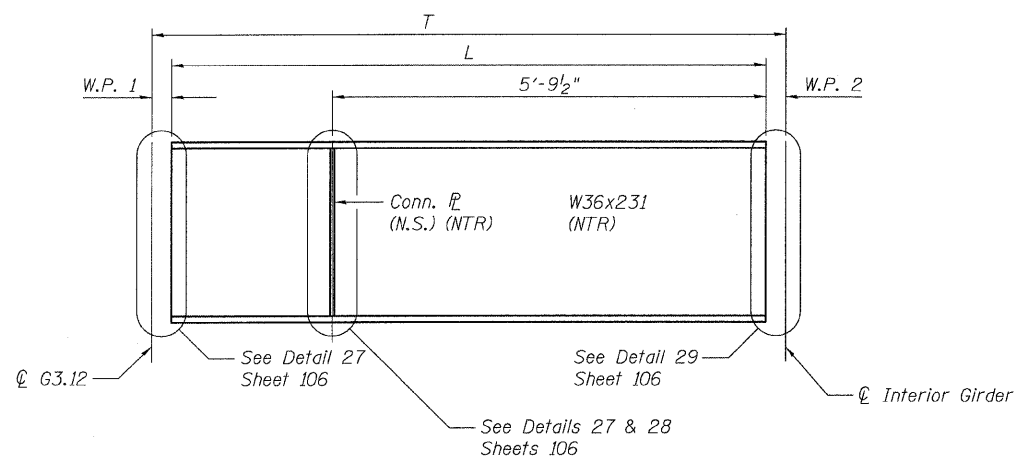


F.B. 3.7 ELEVATION

(Looking East)

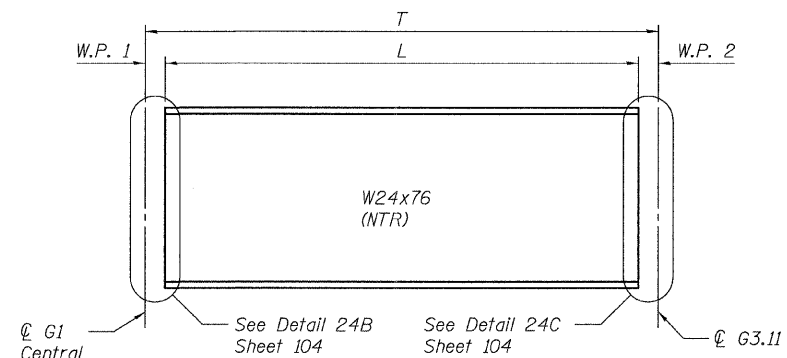
Floor Beam	W.P. 1	W.P. 2	L	T
FB-3.2	11'-8"	8'-2"	7'-8 3/8"	9'-4 1/4"
FB-3.4	11'-3 1/4"	8'-2"	8'-0 1/8"	9'-8 3/8"
FB-3.5	1'-0 3/4"	8'-2"	7'-9 1/16"	9'-6 5/16"
FB-3.6	1'-1 3/8"	8'-2"	7'-8 1/16"	9'-5 15/16"

Floor Beam	W.P. 1	W.P. 2	L	T
FB-3.1	11'-4"	8'-2"	5'-6 15/16"	7'-2 1/16"
FB-3.3	11'-2"	8'-2"	4'-0 13/16"	5'-8 15/16"
FB-3.7	8'-2"	9'-4"	5'-0 1/4"	6'-6"
FB-3.8	1'-0 1/4"	2"	11'-3 3/4"	12'-6"



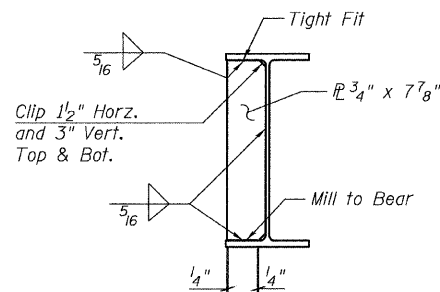
FLOOR BEAM ELEVATION

(FB-3.2, FB-3.4 thru FB-3.6)
(Looking East)



F.B. 3.8 ELEVATION

(Looking North)



CONN. PLATE DETAILS

(W36X231)

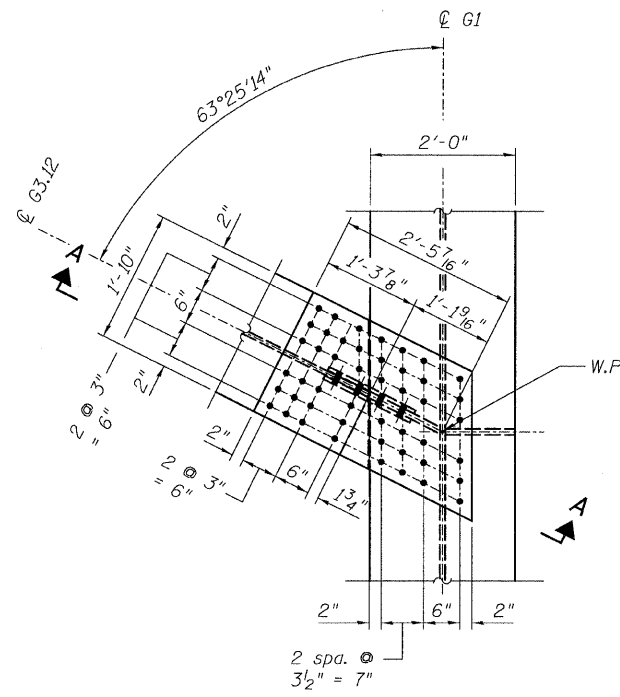
NOTES:

- All steel shown on this sheet shall be Conform to the requirements of AASHTO M270 GR 50.
- Load carrying components designated "NTR" shall conform to the supplemental requirements for Notch Toughness, Zone 2.

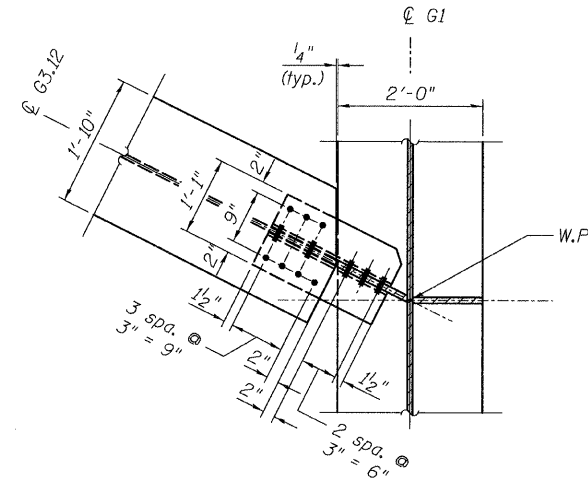
**FLOOR BEAM DETAILS
RAMP 3 FLARE
STRUCTURE NO. 016-0724**

TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 101	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.						
	CHECKED - AMD,	NAME	DATE							137 SHEETS	0711.2R & 1011.1BR	COOK	200	131	
	DRAWN - JMA														CONTRACT NO. 60L39
	CHECKED - AMD,														
DATE - 08/02/10			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT												

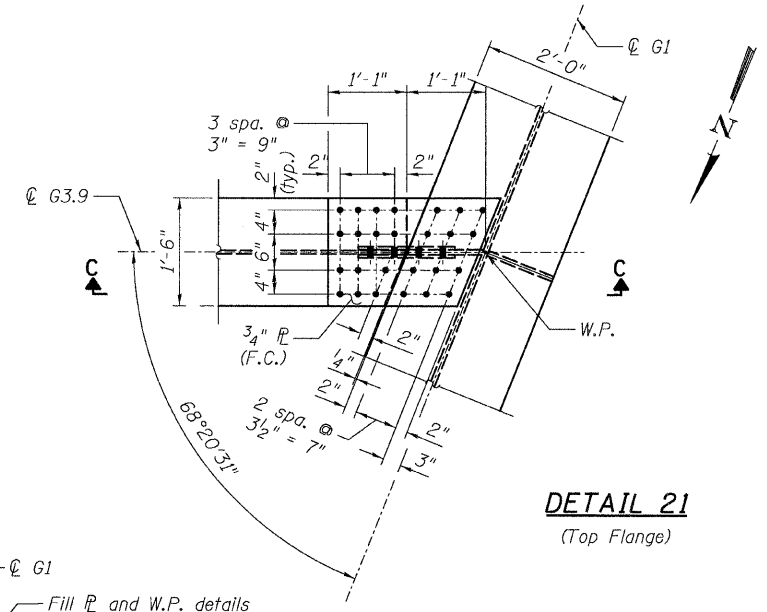
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



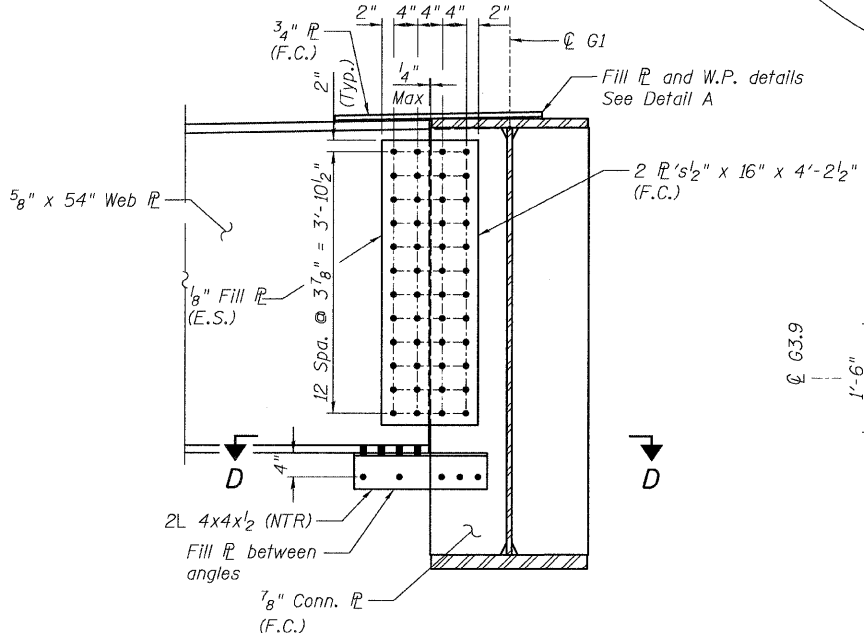
DETAIL 20
(Top Flange)



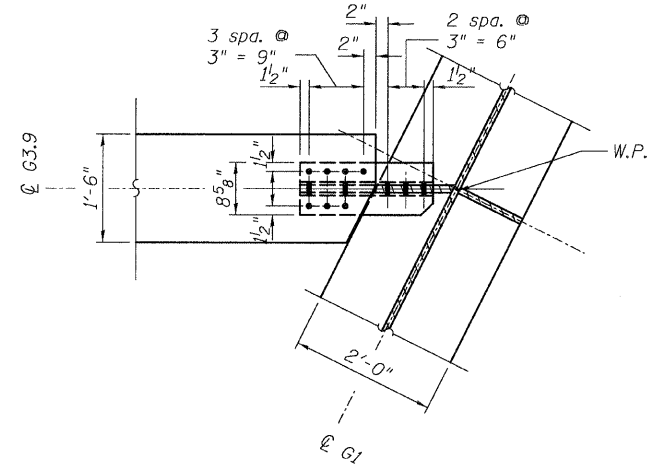
SECTION B-B
(Bottom Flange)



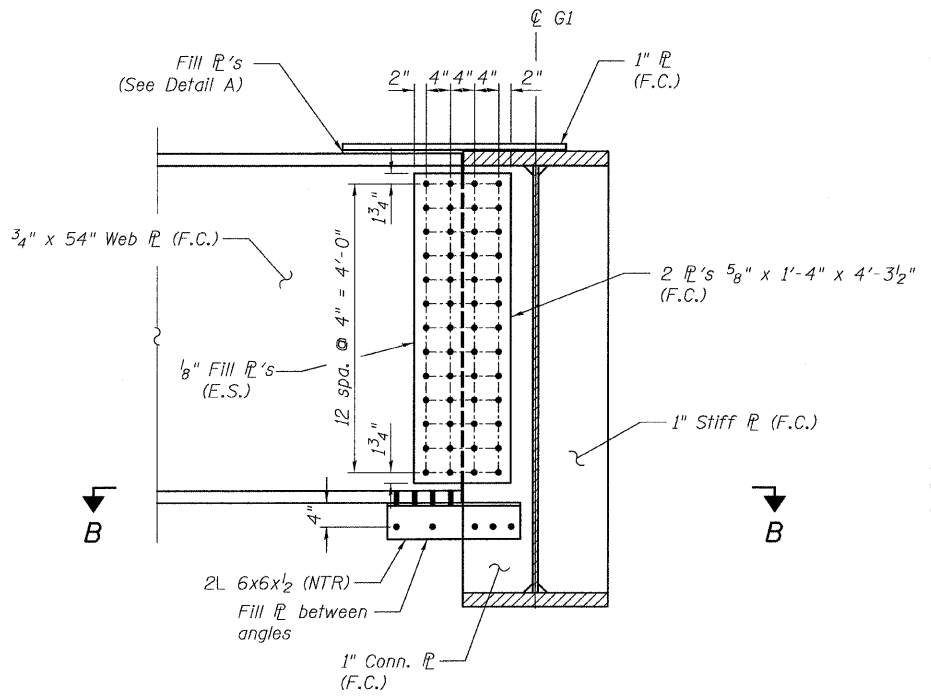
DETAIL 21
(Top Flange)



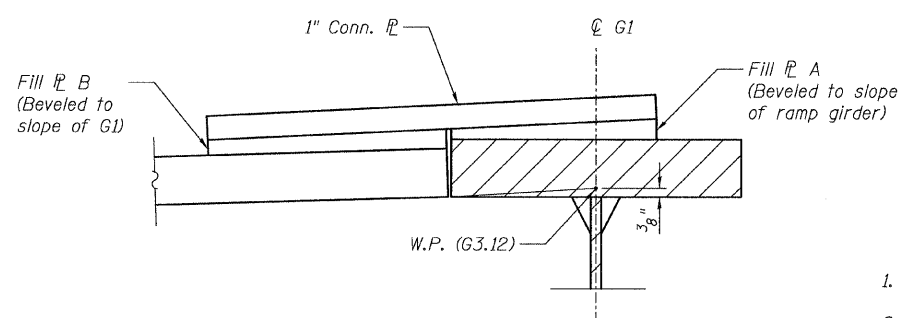
SECTION C-C



SECTION D-D
(Bottom Flange)



SECTION A-A



DETAIL A
(Not to scale)

NOTES:

- All steel shall be AASHTO M 270 Grade 50.
- F.C. indicates Fracture Critical Material, AASHTO Zone 2.
- Load carrying components designated "N.T.R." shall conform to the supplemental requirements for Notch Toughness, Zone 2.

CONNECTION DETAILS 20 & 21
RAMP 3 FLARE
STRUCTURE NO. 016-0724

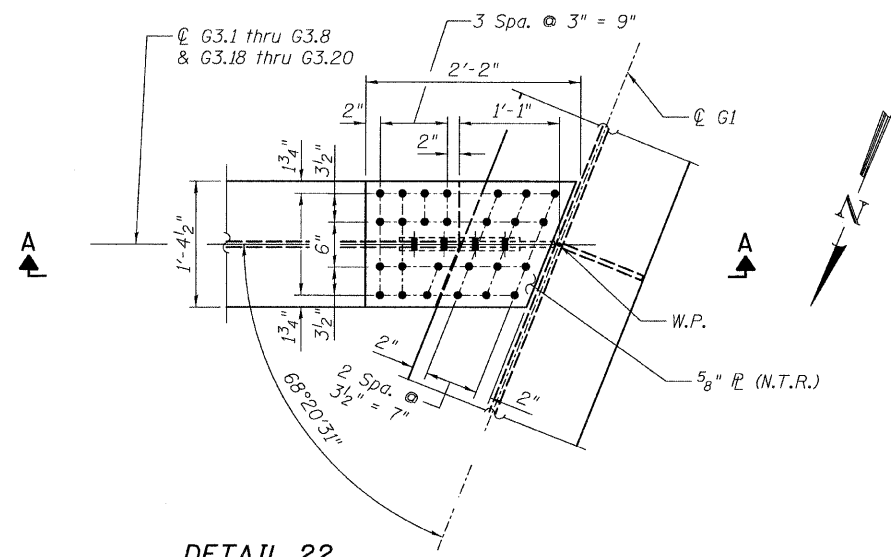
TYLIN INTERNATIONAL

DESIGNED - JPN	REVISIONS	
CHECKED - AMD,	NAME	DATE
DRAWN - MAU		
CHECKED - AMD,		
DATE - 08/02/10		

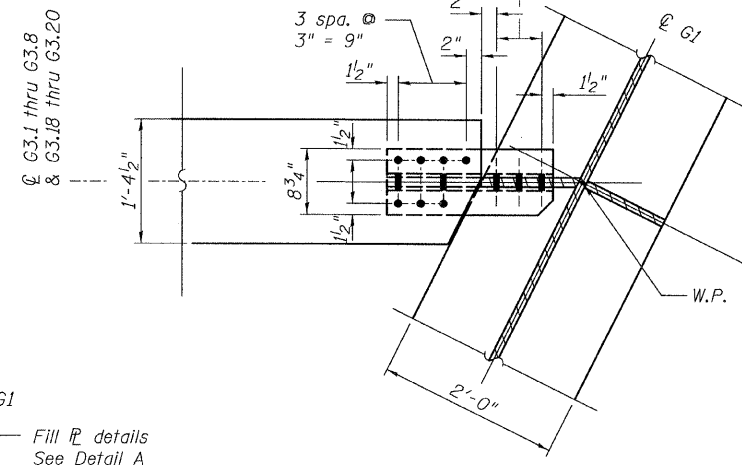
SHEET NO. 102 137 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	0711.2R & 1011.1BR	COOK	200	132
			CONTRACT NO. 60L39		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

8/5/2010 2:51:27 PM p:\21345\beam and bearing fabrication\155131\Framed113.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



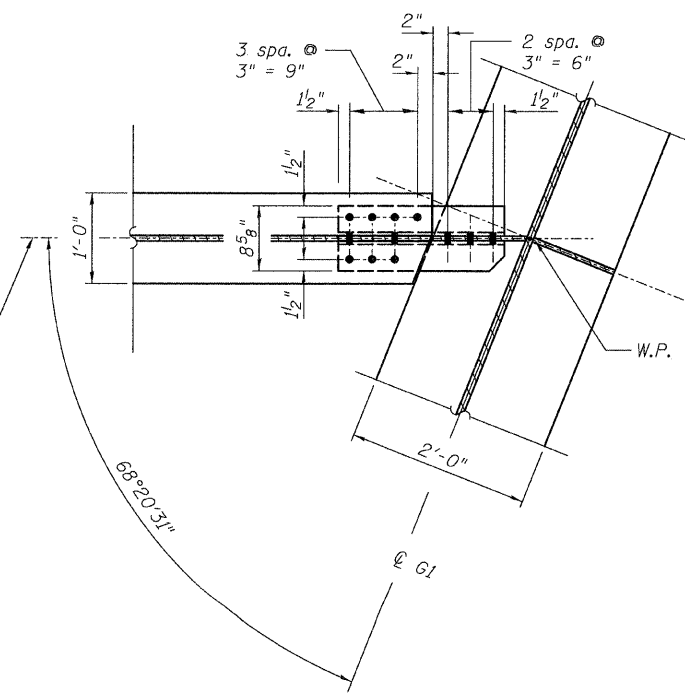
DETAIL 22
(Top Flange)



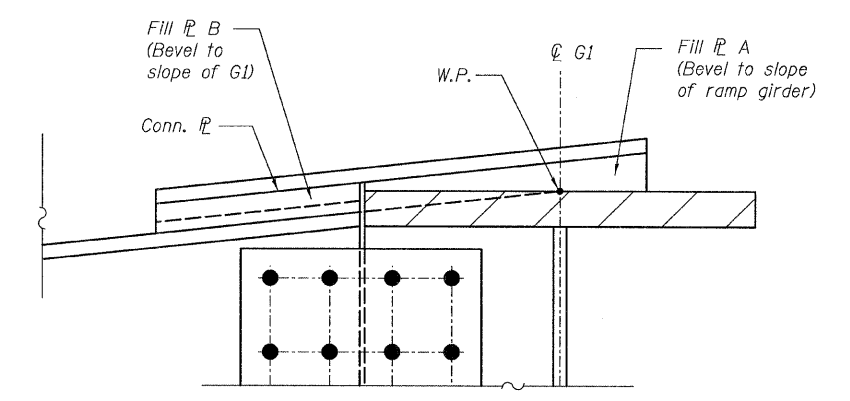
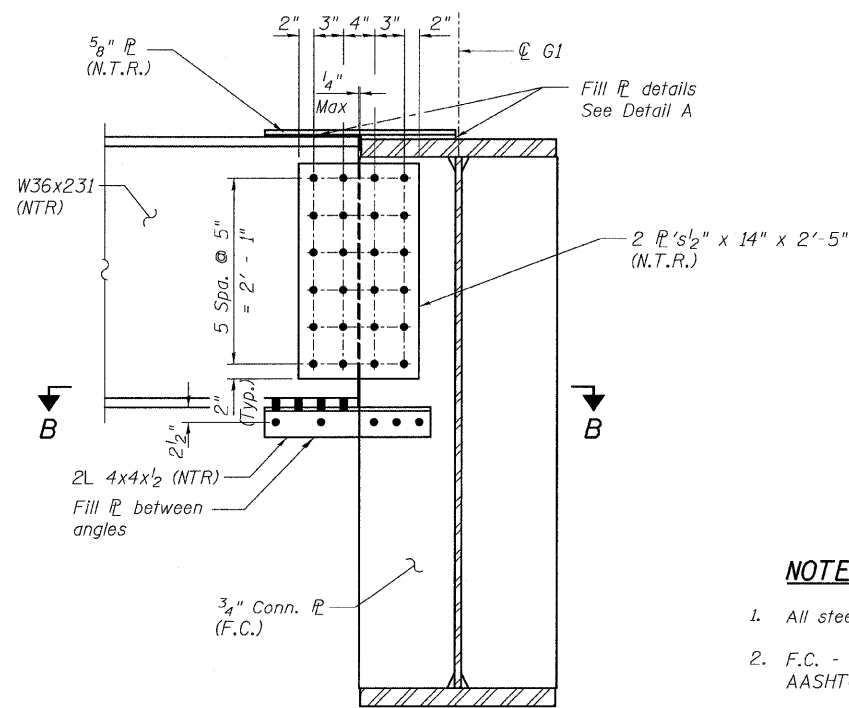
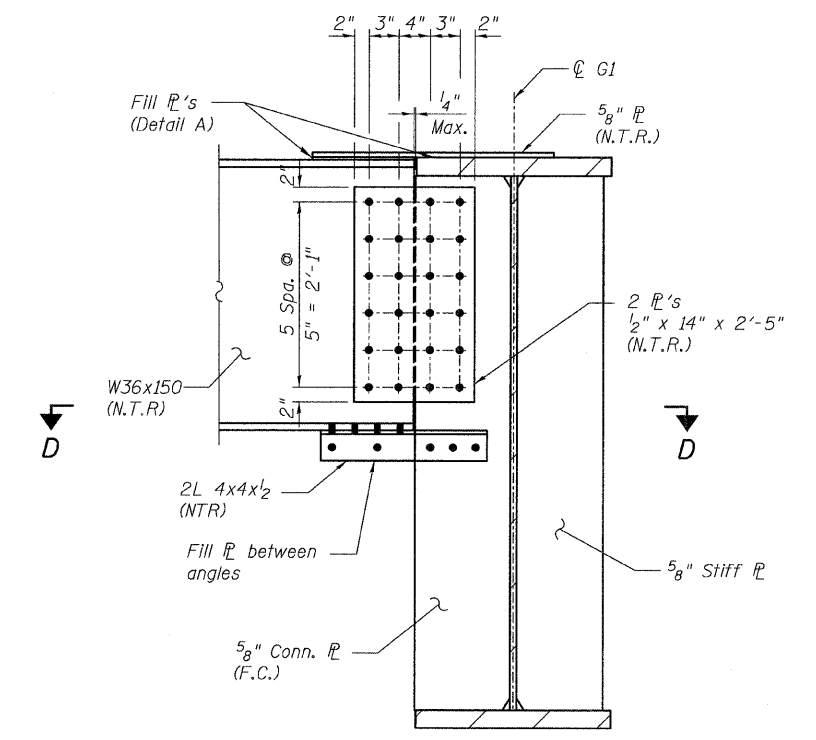
DETAIL 23
(Top Flange)

SECTION B-B
(Bottom Flange)

∅ G3.10, G3.10A & G3.13 thru G3.17



SECTION D-D
(Bottom Flange)



DETAIL A
(Not to scale)

NOTES:

- All steel shall be AASHTO M 270 Grade 50.
- F.C. - denotes Fracture Critical material, AASHTO Zone II.
- Load carrying components designated "N.T.R." shall conform to the supplemental requirements for Notch Toughness, Zone 2.

CONNECTION DETAILS 22 & 23
RAMP 3 FLARE
STRUCTURE NO. 016-0724

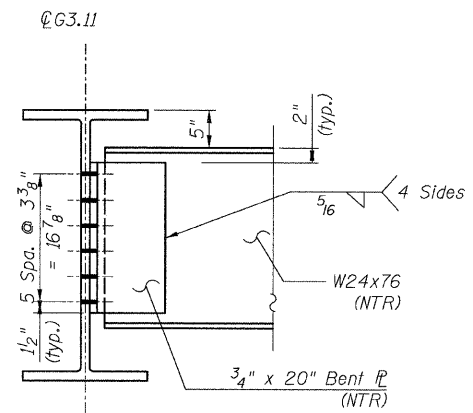
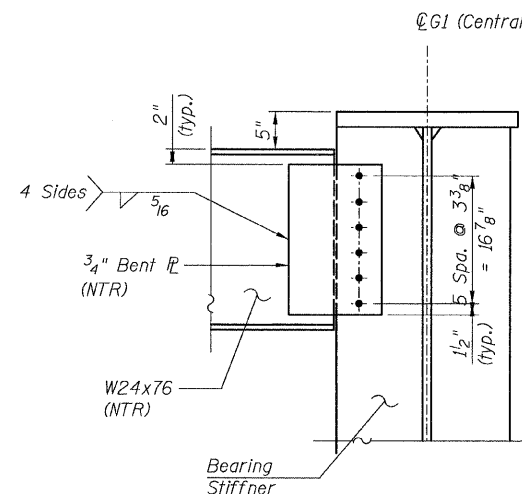
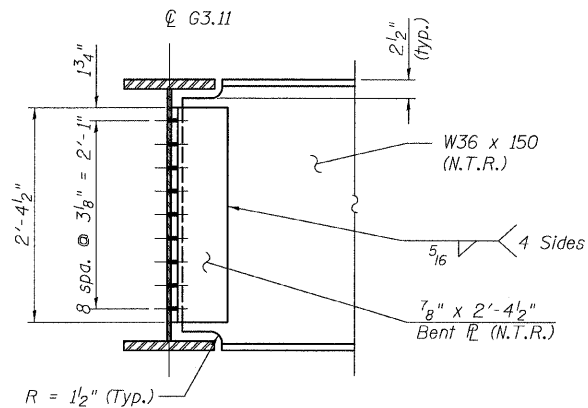
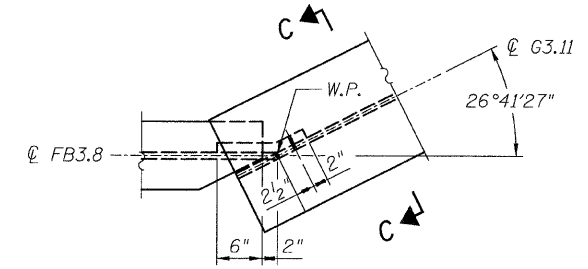
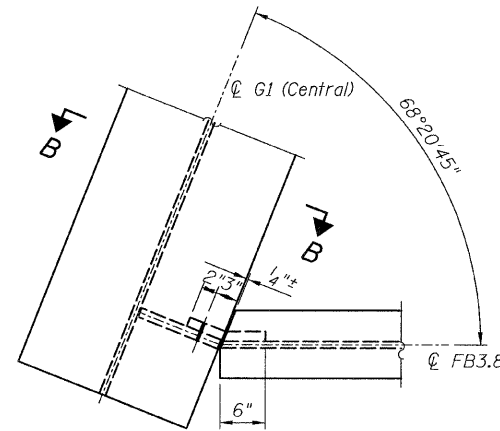
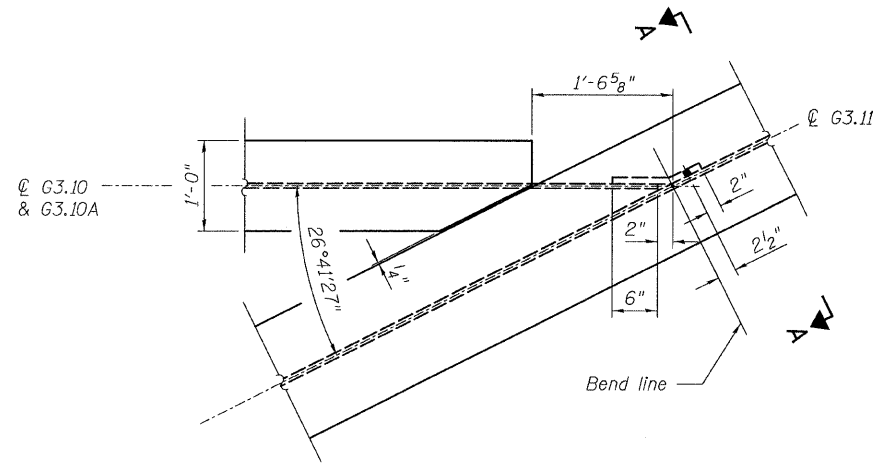
TYLIN INTERNATIONAL

DESIGNED - JPN	REVISIONS	
CHECKED - AMD,	NAME	DATE
DRAWN - MAU		
CHECKED - AMD,		
DATE - 08/02/10		

SHEET NO. 103 137 SHEETS	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	0711.2R & 1011.1BR	COOK	200	133
FED. ROAD DIST. NO. 1			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60L39					

8/5/2010 2:51:28 PM c:\01345\beam and bearing fabrication\15531framed\10.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NOTES:

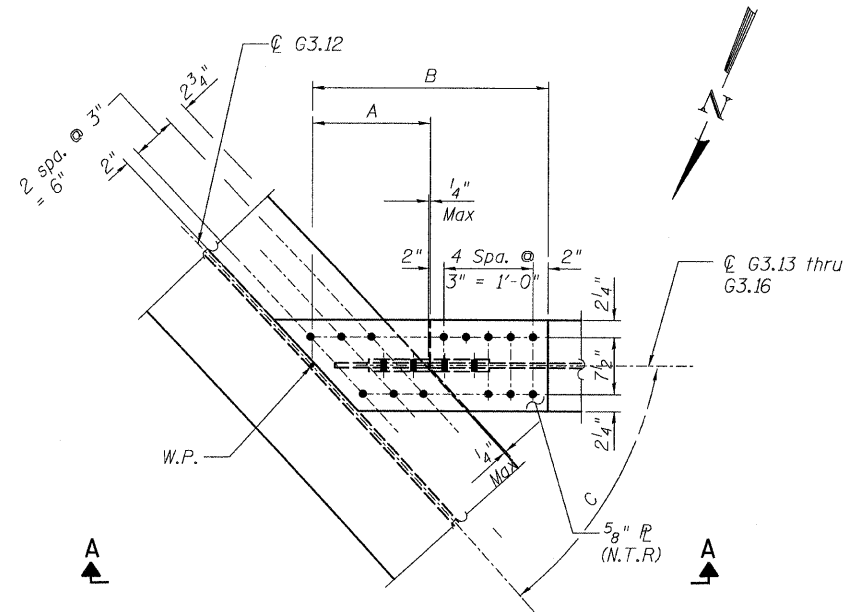
- All steel shall be AASHTO M 270 Grade 50.
- Load carrying components designated "N.T.R." shall conform to the supplemental requirements for Notch Toughness, Zone 2.

CONNECTION DETAIL 24
RAMP 3 FLARE
STRUCTURE NO. 016-0724

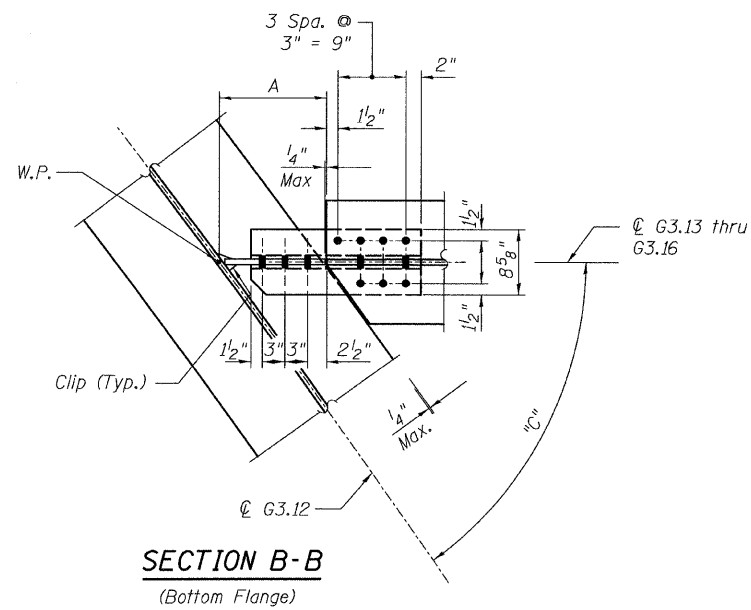
TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 104	F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 134
	CHECKED - AMD,	NAME	DATE						
	DRAWN - MAU								
	CHECKED - AMD,								
	DATE - 08/02/10				CONTRACT NO. 60L39				
					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

p:\01345\beam and bearing_fabrication\155f3f-amedt11i.dgn 8/2/2010 2:07:19 PM

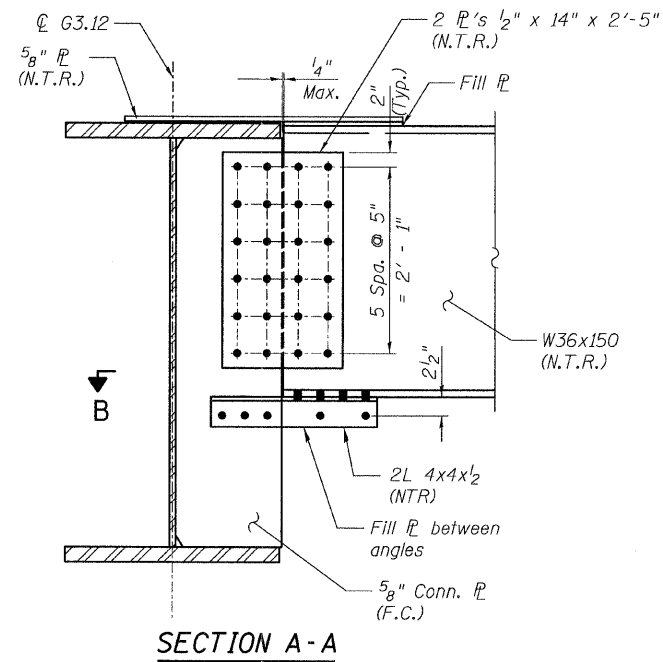
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DETAIL 25
(Top Flange)

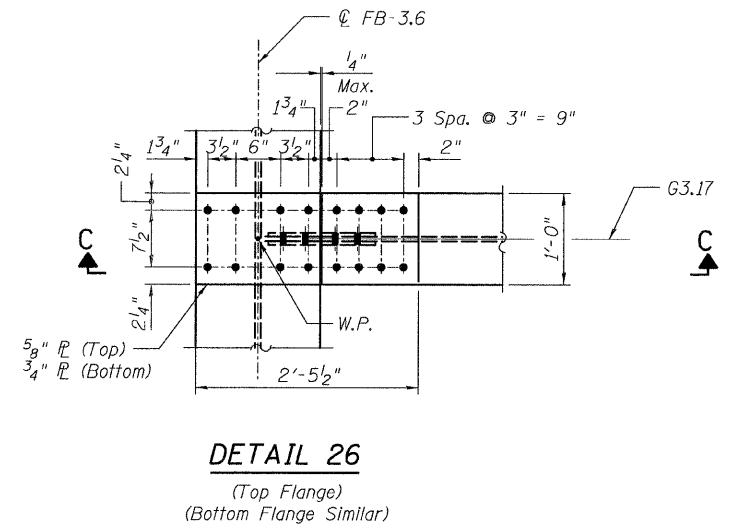


SECTION B-B
(Bottom Flange)

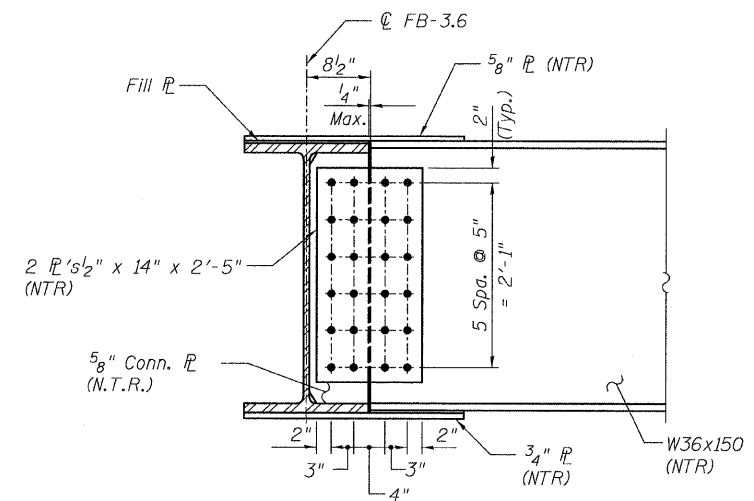


SECTION A-A

Girder	Dimensions		
	A	B	C
G3.13	1'-3 ⁵ / ₈ "	2'-7 ³ / ₄ "	45°20'28"
G3.14	1'-4 ⁹ / ₁₆ "	2'-8 ¹ / ₁₆ "	42°16'0"
G3.15	1'-5 ¹ / ₁₆ "	2'-9 ³ / ₁₆ "	38°59'55"
G3.16	1'-7 ¹ / ₈ "	2'-11 ⁵ / ₁₆ "	35°28'54"



DETAIL 26
(Top Flange)
(Bottom Flange Similar)



SECTION C-C

NOTES:

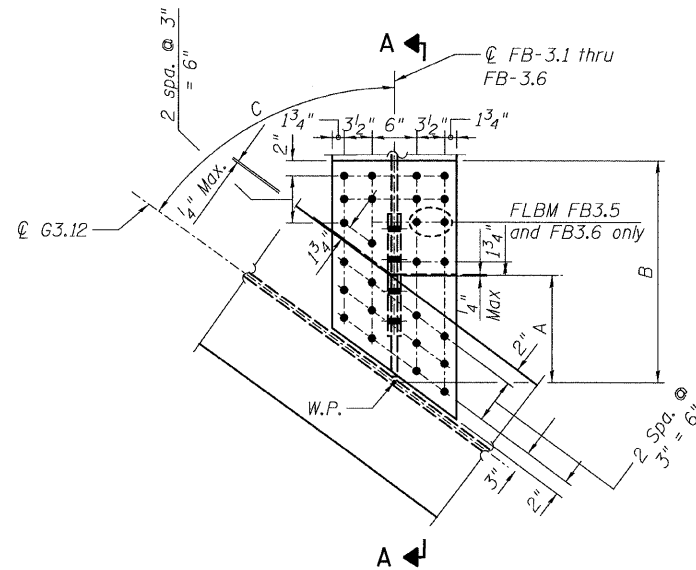
- All steel shall be AASHTO M 270 Grade 50.
- F.C. indicates Fracture Critical material, AASHTO Zone II.
- Load carrying components designated "N.T.R." shall conform to the supplemental requirements for Notch Toughness, Zone 2.

CONNECTION DETAILS 25 & 26
RAMP 3 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 105	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.					
	CHECKED - AMD,	NAME	DATE							55	0711.2R & 1011.1BR	COOK	200	135
	DRAWN - JMA									CONTRACT NO. 60L39				
	CHECKED - AMD,									FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
	DATE - 08/02/10			137 SHEETS										

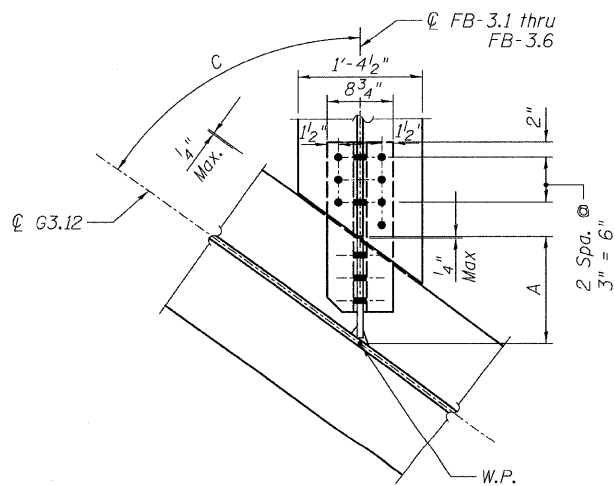
p:\01345\beam and bearing fabrication\155f3f-ramed112.dgn 8/5/2010 2:51:30 PM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

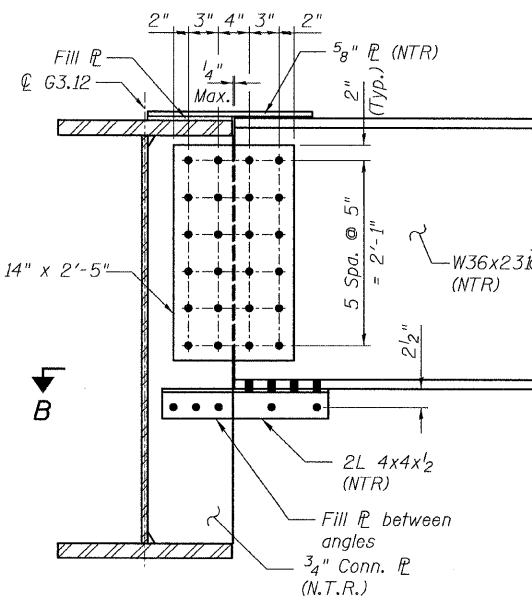


DETAIL 27
(Top Flange)

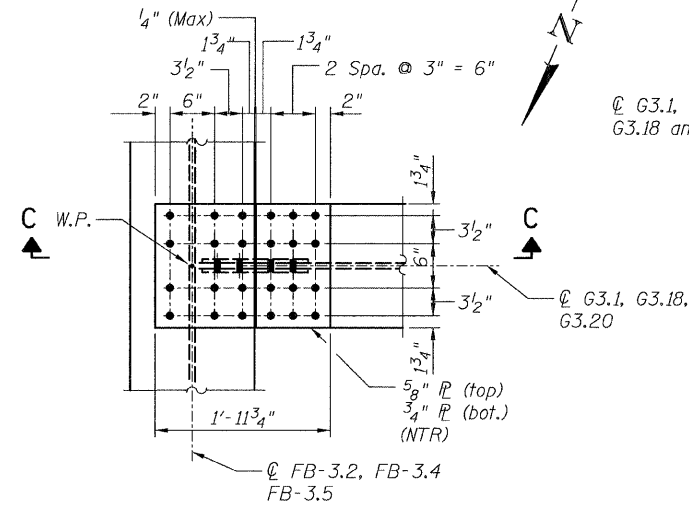
Floor Beam	Dimensions		
	A	B	C
FB-3.1	11 ³ / ₁₆ "	1'-9 ⁵ / ₈ "	84°48'52"
FB-3.2	11 ⁵ / ₁₆ "	1'-10 ³ / ₈ "	79°41'29"
FB-3.3	11 ¹ / ₂ "	1'-11 ¹ / ₈ "	75°19'51"
FB-3.4	11 ³ / ₄ "	2'-0"	70°52'53"
FB-3.5	1'-0 ³ / ₄ "	2'-2 ⁹ / ₁₆ "	60°39'14"
FB-3.6	1'-1 ⁵ / ₁₆ "	2'-2 ¹³ / ₁₆ "	56°35'41"



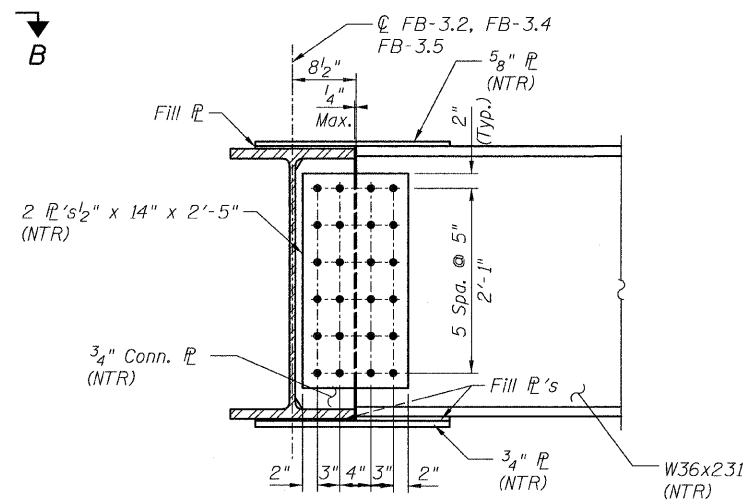
SECTION B-B
(Bottom Flange)



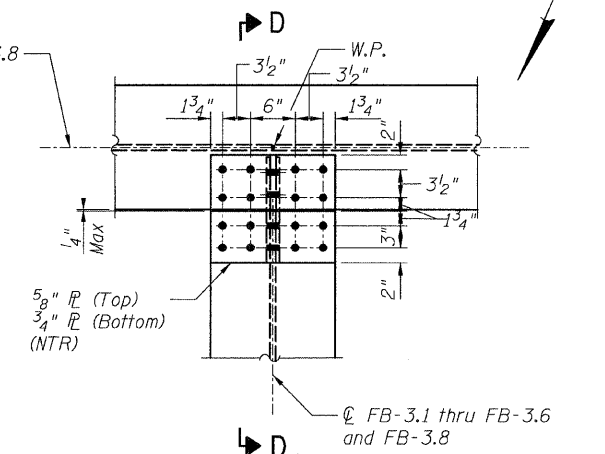
SECTION A-A



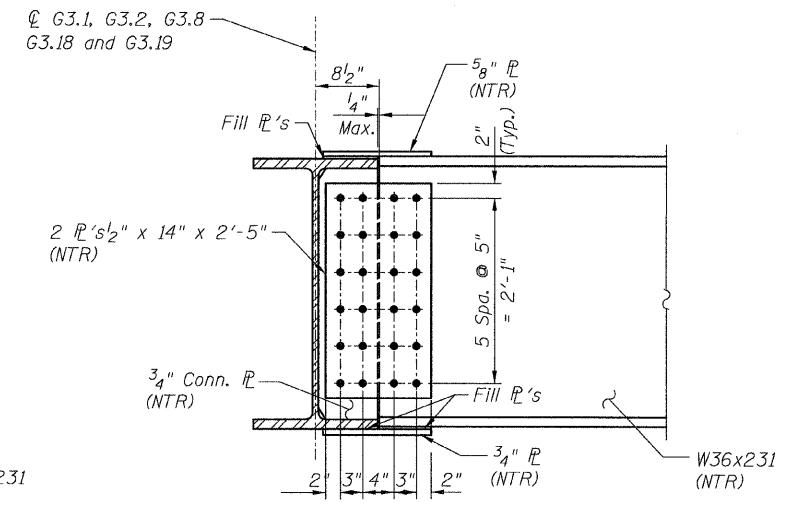
DETAIL 28
(Top Flange)
(Bottom Flange Similar)



SECTION C-C



DETAIL 29
(Top Flange)
(Bottom Flange Similar)



SECTION D-D

NOTES:

- All steel shall be AASHTO M 270 Grade 50.
- Load carrying components designated "N.T.R." shall conform to the supplemental requirements for Notch Toughness, Zone 2.

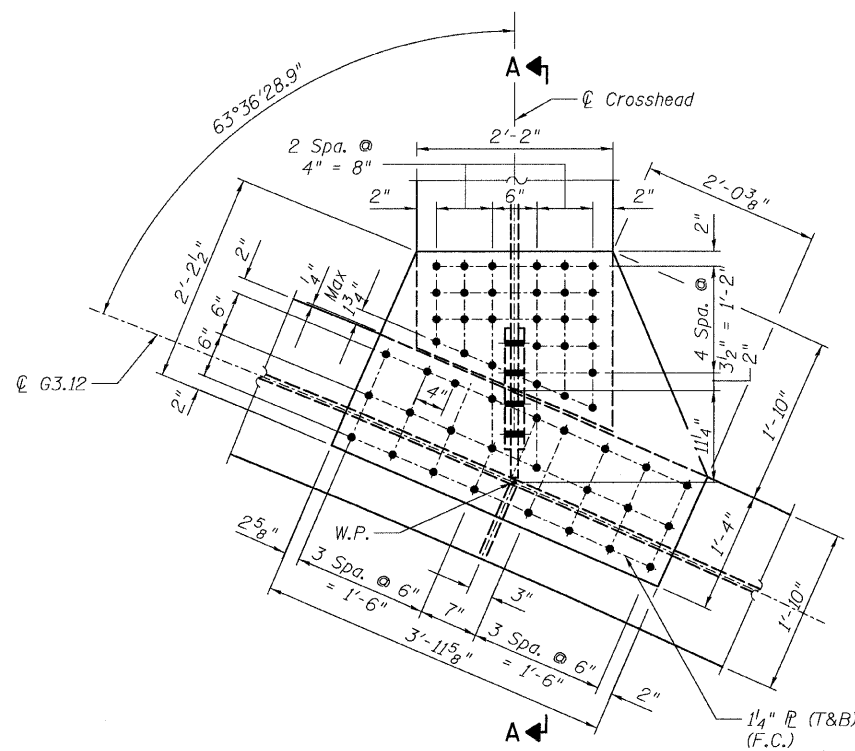
CONNECTION DETAILS 27, 28 & 29
RAMP 3 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL

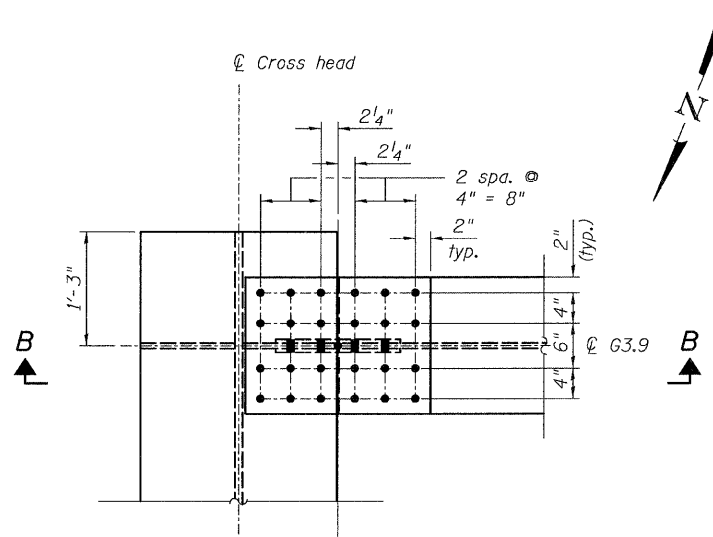
DESIGNED - JPN	REVISIONS	
	NAME	DATE
CHECKED - AMD,		
DRAWN - JMA		
CHECKED - AMD,		
DATE - 08/02/10		

SHEET NO. 106	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	137 SHEETS	55	0711.2R & 1011.1BR	COOK	200
			CONTRACT NO. 60L39		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

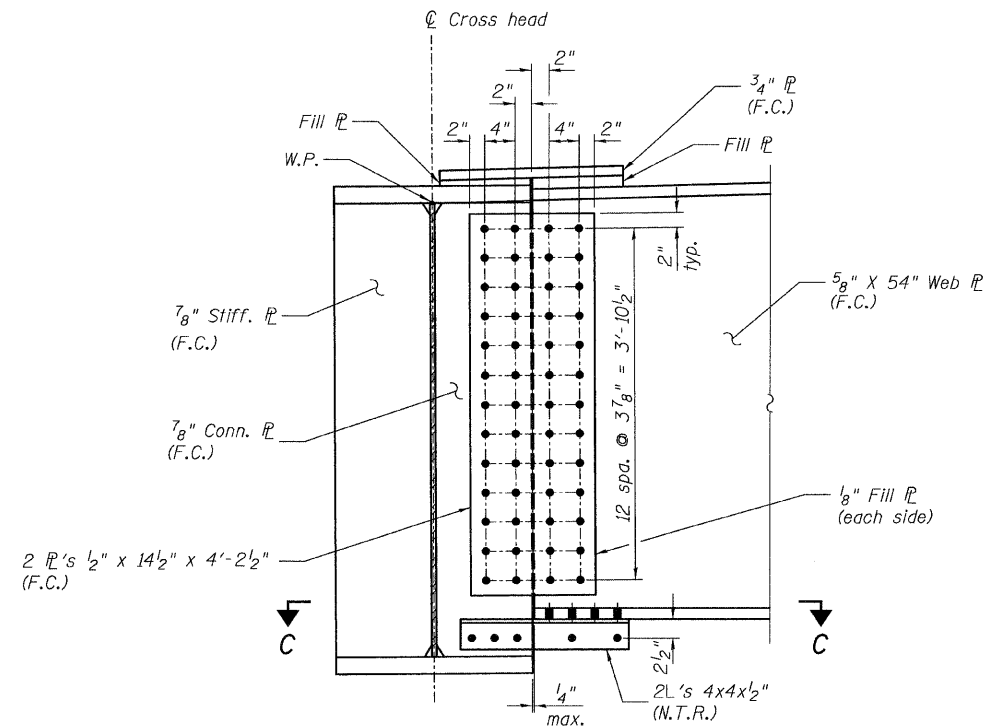
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



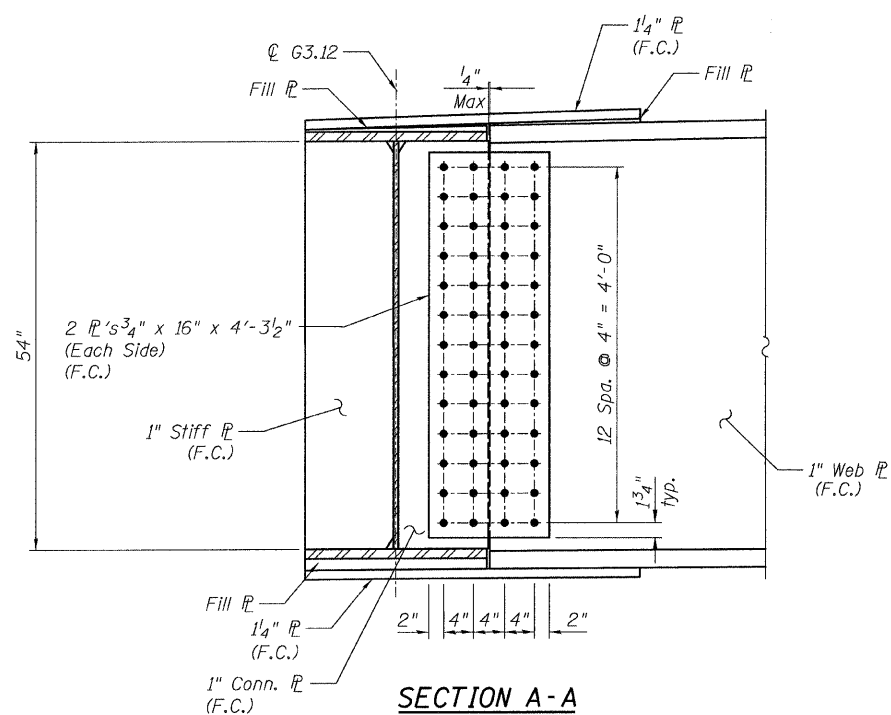
DETAIL 30
(Top Flange)
(Bottom Flange Similar)



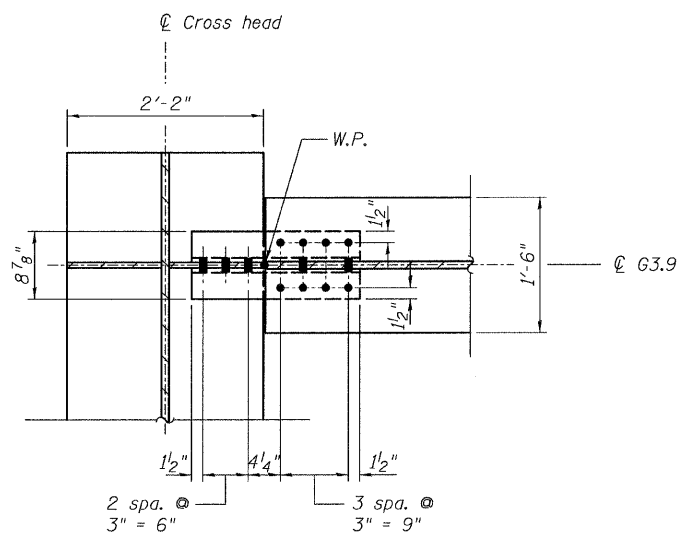
DETAIL 31
(Top flange)



SECTION B-B



SECTION A-A



SECTION C-C
(Bottom Flange)

NOTES:

1. All steel shall be AASHTO M 270 Grade 50.
2. F.C. indicates Fracture Critical Material, AASHTO Zone II.
3. Load carrying components designated "N.T.R." shall conform to the supplemental requirements for Notch Toughness, Zone 2.

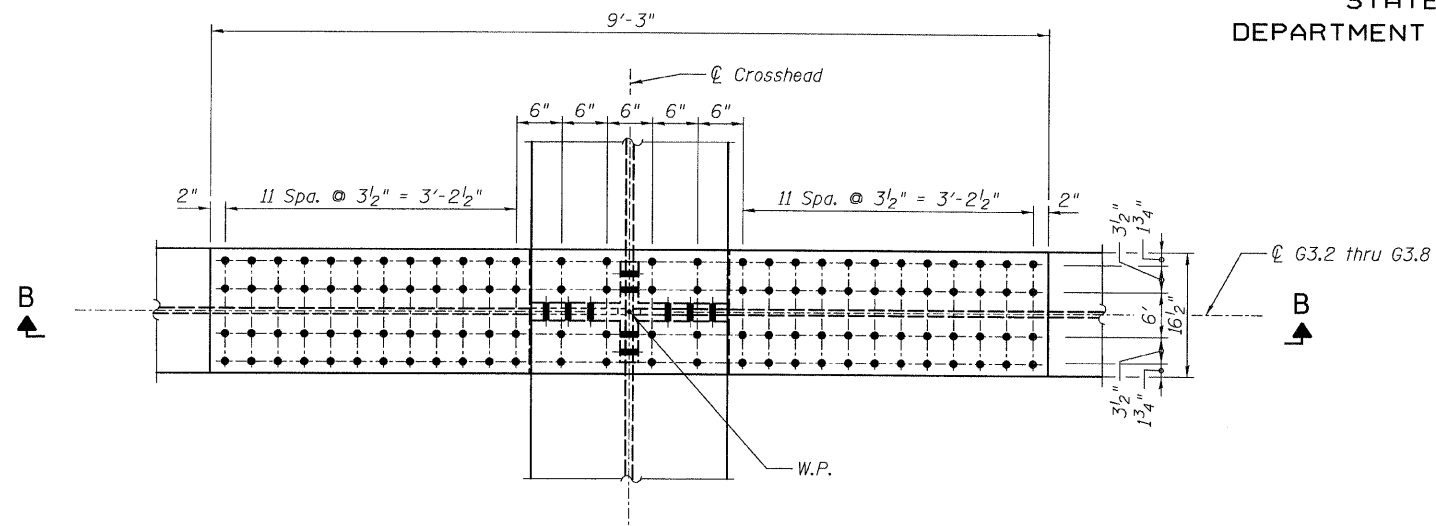
CONNECTION DETAILS 30 & 31
RAMP 3 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS	
	CHECKED - AMD,	NAME	DATE
	DRAWN - JMA		
	CHECKED - AMD,		
	DATE - 08/02/10		

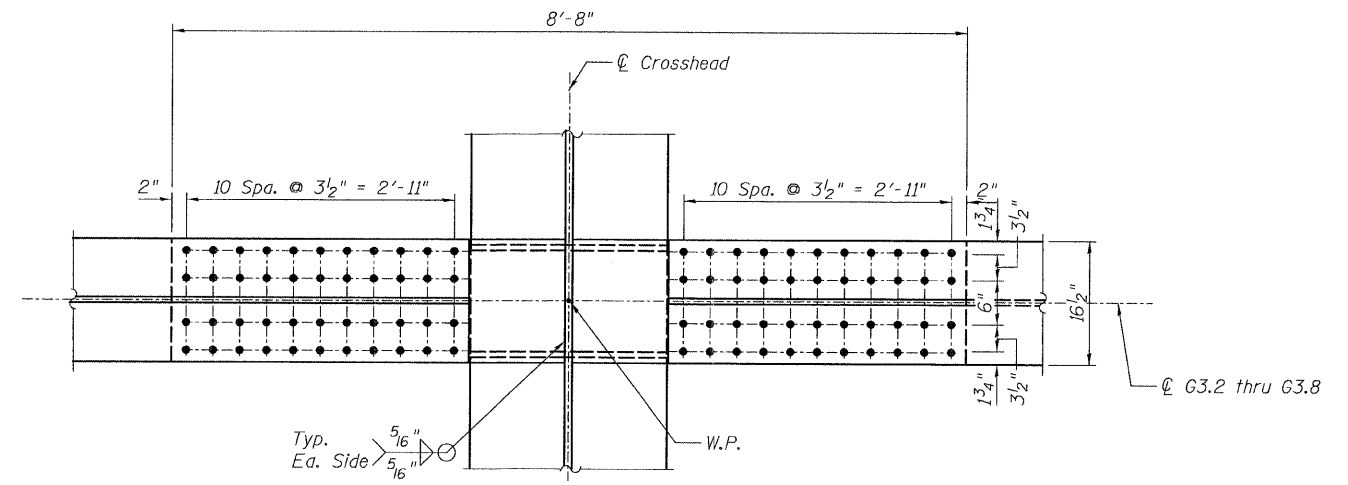
SHEET NO. 107 137 SHEETS	F.A.I. RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 137
	CONTRACT NO. 60L39				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

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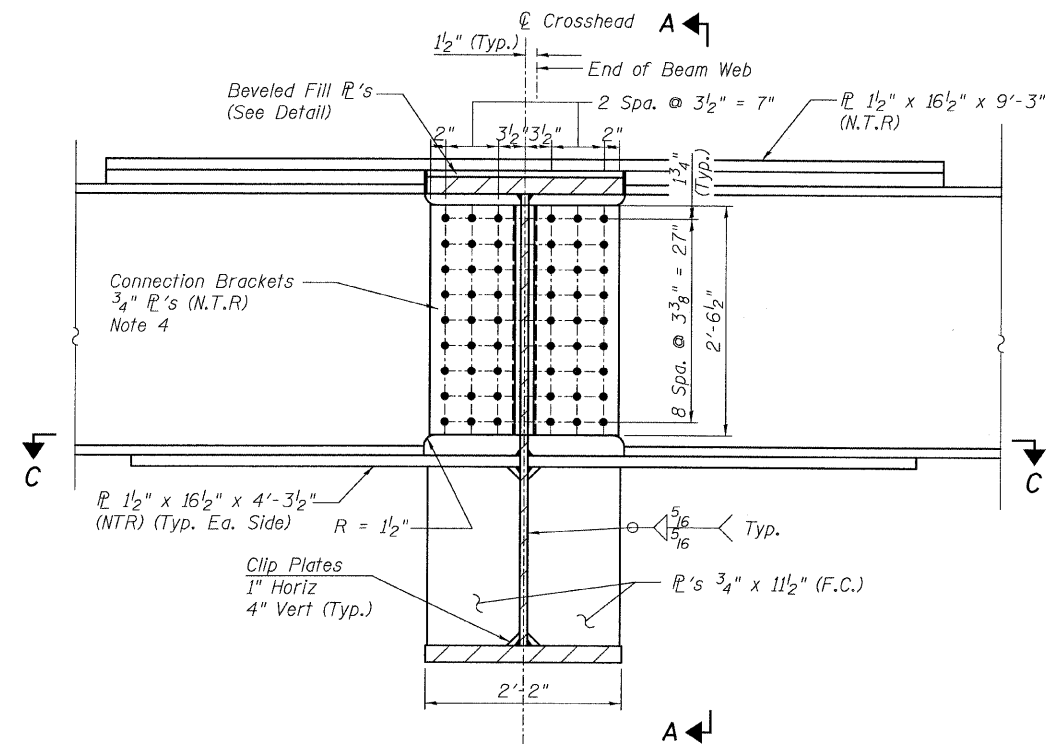
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



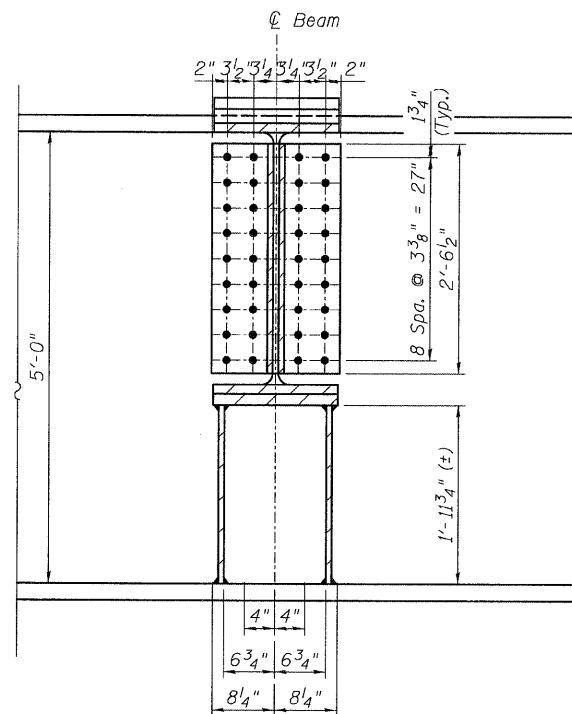
DETAIL 32
(Top Flange)



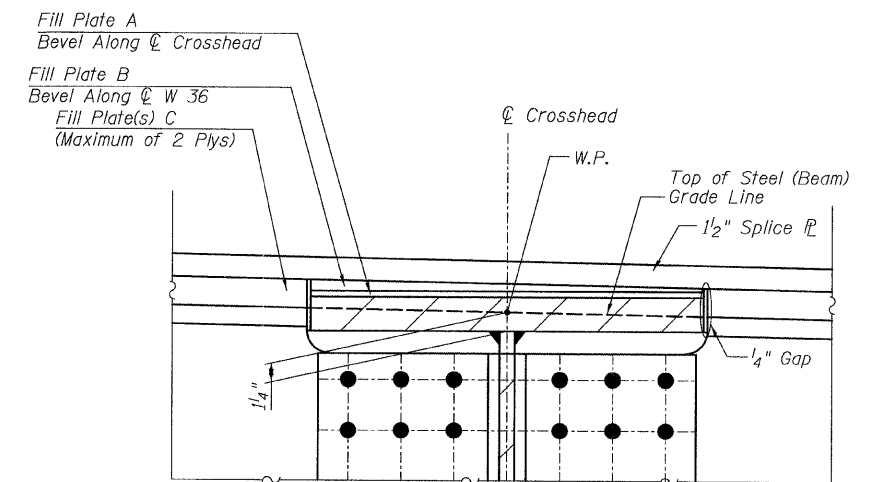
SECTION C-C
(Bottom Flange)



SECTION B-B



SECTION A-A



FILL PLATE DETAIL

NOTES:

- All steel shall be AASHTO M 270 Grade 50.
- All bolts shall be 1" ϕ with 1/16" ϕ holes.
- Load carrying components designated "N.T.R." shall conform to the supplemental requirements for Notch Toughness, Zone 2.
- 3/4" Connection brackets can be fabricated from single bent plate or 2 plates utilizing a pre-qualified, full penetration corner joint welded assembly.

TYLIN INTERNATIONAL

DESIGNED - JPN	REVISIONS	
	NAME	DATE
CHECKED - AMD,		
DRAWN - JMA		
CHECKED - AMD,		
DATE - 08/02/10		

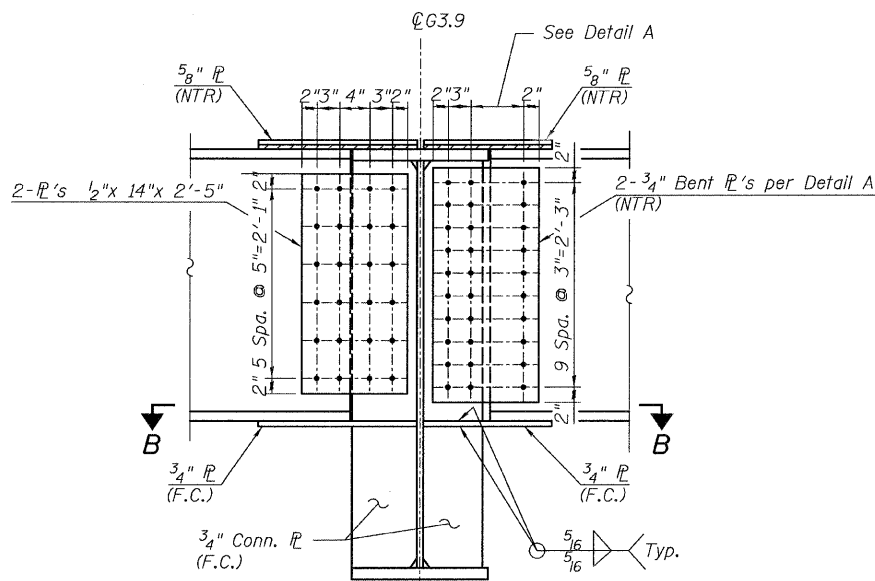
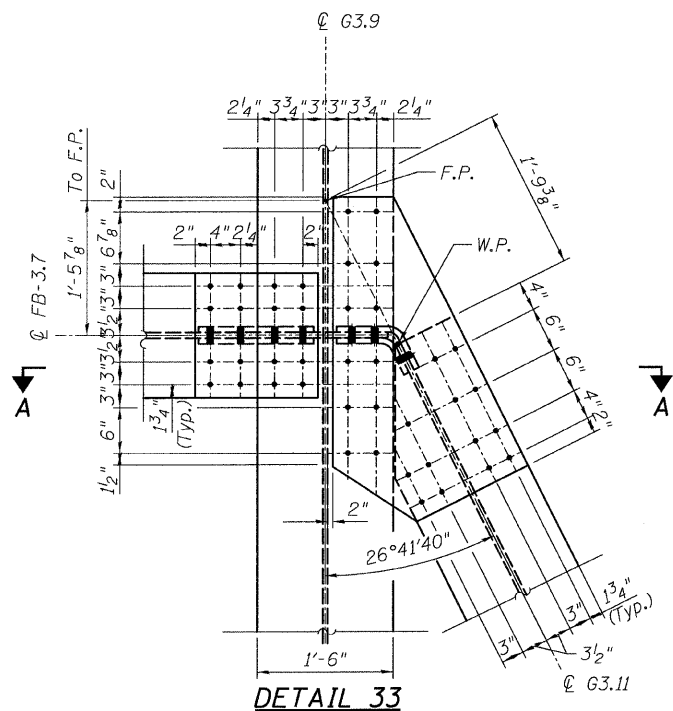
SHEET NO. 108 137 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	0711.2R & 1011.1BR	COOK	200	138
CONTRACT NO. 60L39					
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

CONNECTION DETAIL 32
RAMP 3 FLARE
STRUCTURE NO. 016-0724

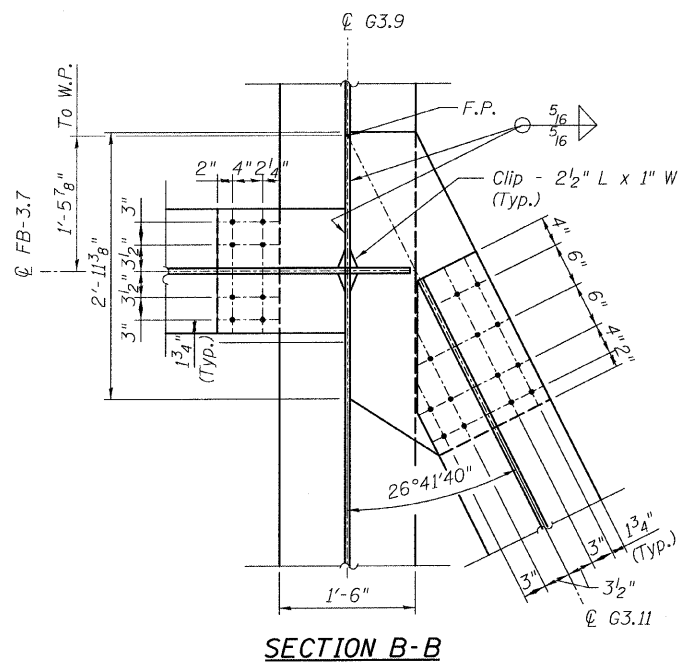
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NOTES:

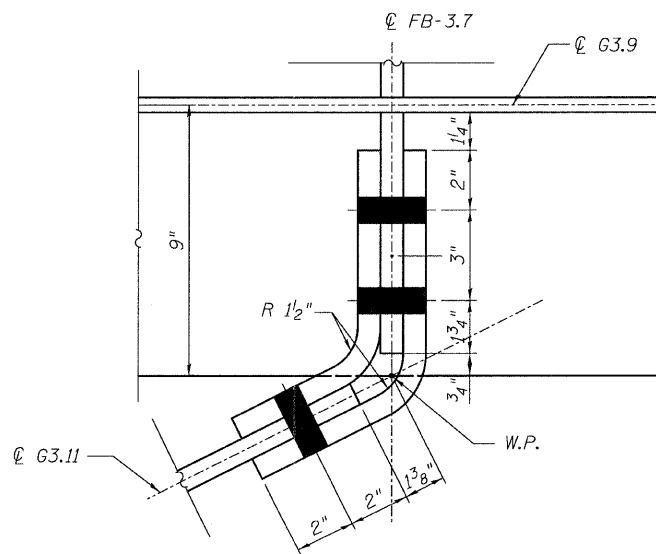
1. All steel shall be AASHTO M 270 Grade 50.
2. F.C. indicates Fracture Critical Material, AASHTO Zone 2.
3. Load carrying components designated "N.T.R." shall conform to the supplemental requirements for Notch Toughness, Zone 2.



SECTION A-A



SECTION B-B



DETAIL A

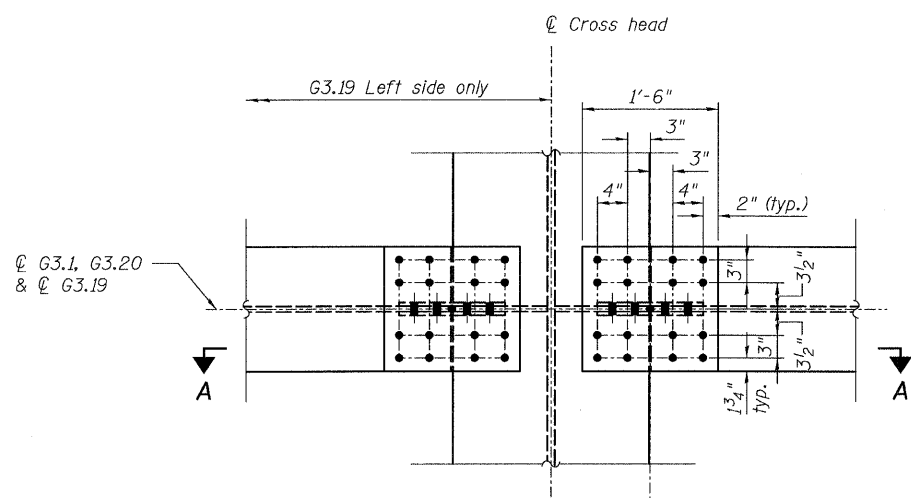
**CONNECTION DETAIL 33
RAMP 3 FLARE
STRUCTURE NO. 016-0724**

TYLIN INTERNATIONAL

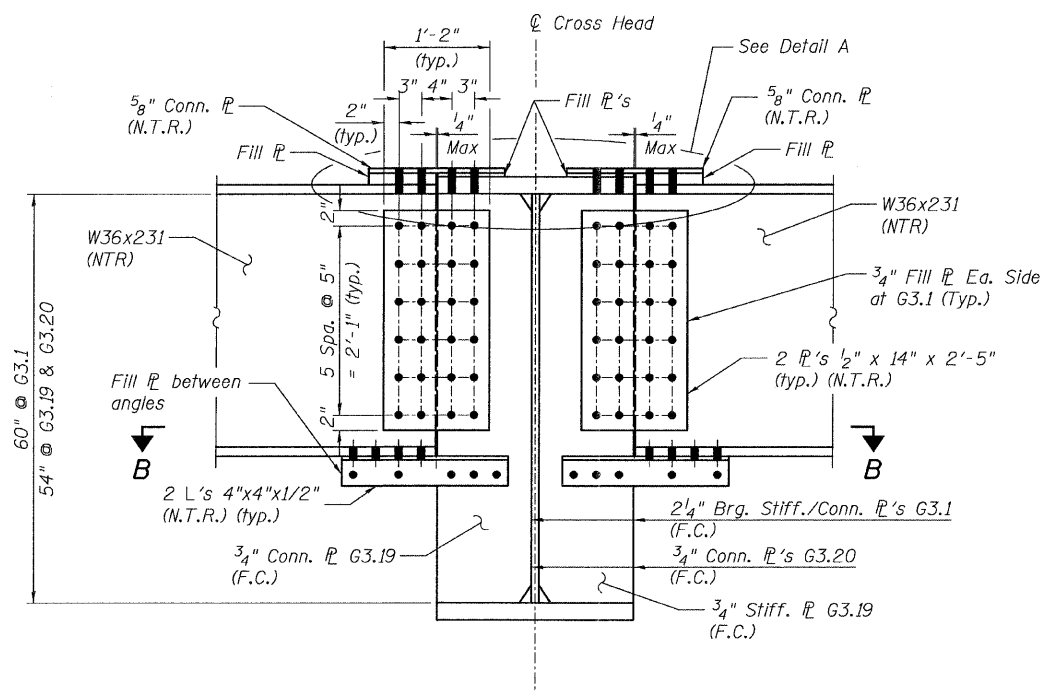
DESIGNED - JPN	REVISIONS	
CHECKED - AMD,	NAME	DATE
DRAWN - MAU		
CHECKED - AMD,		
DATE - 08/02/10		

SHEET NO. 109 137 SHEETS	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	0711.2R & 1011.1BR	COOK	200	139
FED. ROAD DIST. NO. 1 ILLINOIS			FED. AID PROJECT		
CONTRACT NO. 60L39					

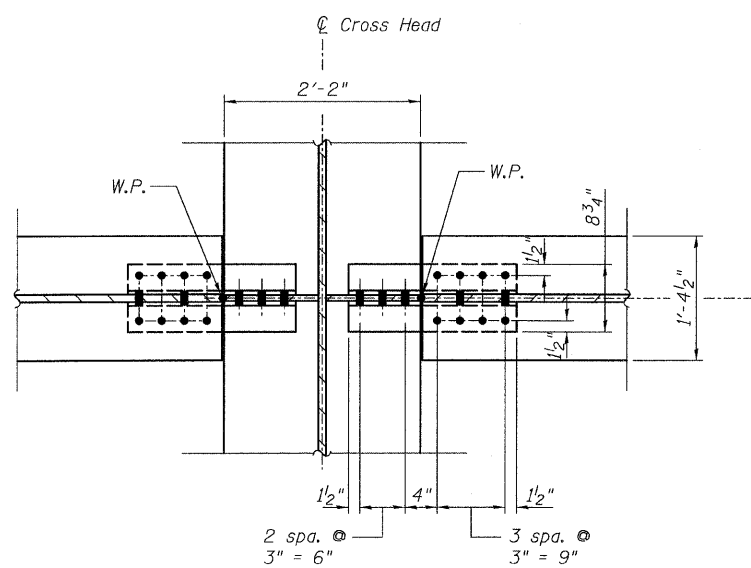
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



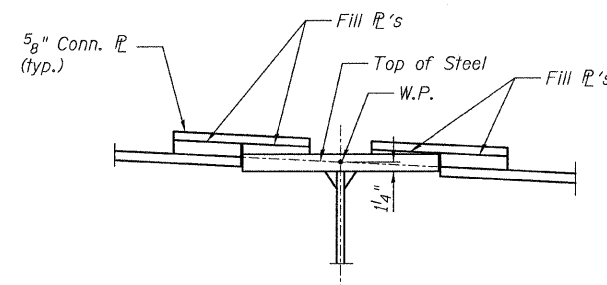
DETAIL 36
(Top flange)



SECTION A-A



SECTION B-B
(Bottom flange)



DETAIL A
(Connection bolts not shown for clarity)

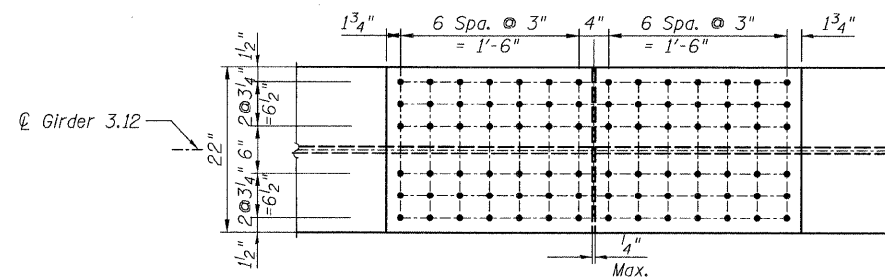
NOTES:

1. All steel shall be AASHTO M 270 Grade 50.
2. Load carrying components designated "N.T.R." shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
3. F.C. indicates Fracture Critical Material, AASHTO Zone 2.

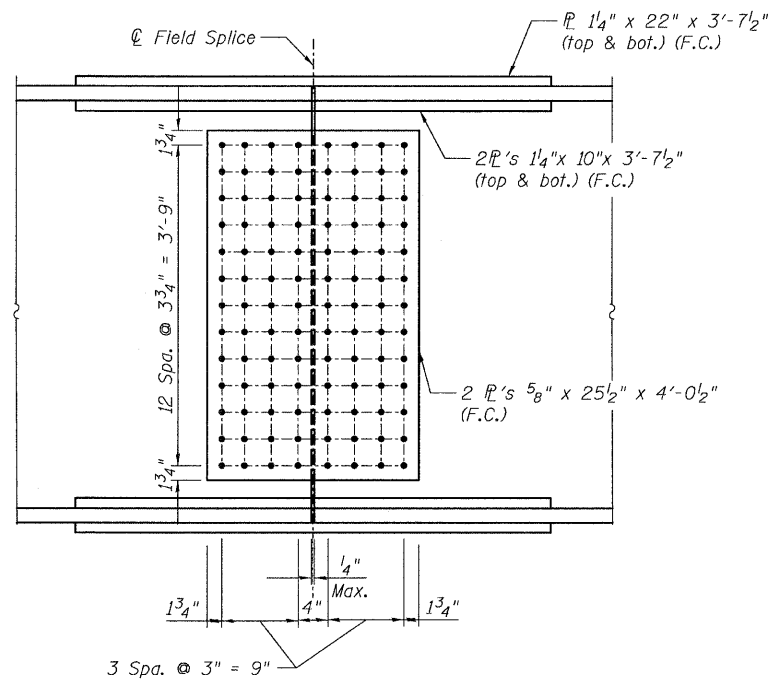
CONNECTION DETAILS 34
RAMP 3 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 110 137 SHEETS	F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 140		
	CHECKED - AMD,	NAME	DATE							CONTRACT NO. 60L39	
	DRAWN - JMA									FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	
	CHECKED - AMD,										
	DATE - 08/02/10										

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN - TOP & BOTTOM FLANGE



ELEVATION

FIELD SPLICE F.S.-3.1 & 3.2
(Girder 3.12)

NOTES:

1. All steel shall be AASHTO M270 Grade 50.
2. F.C. denotes Fracture Critical Material, AASHTO Zone 2.

FIELD SPLICES
RAMP 3 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - MAU	REVISIONS	
	CHECKED - AMD,	NAME	DATE
	DRAWN - MAU		
	CHECKED - AMD,		
	DATE - 08/02/10		

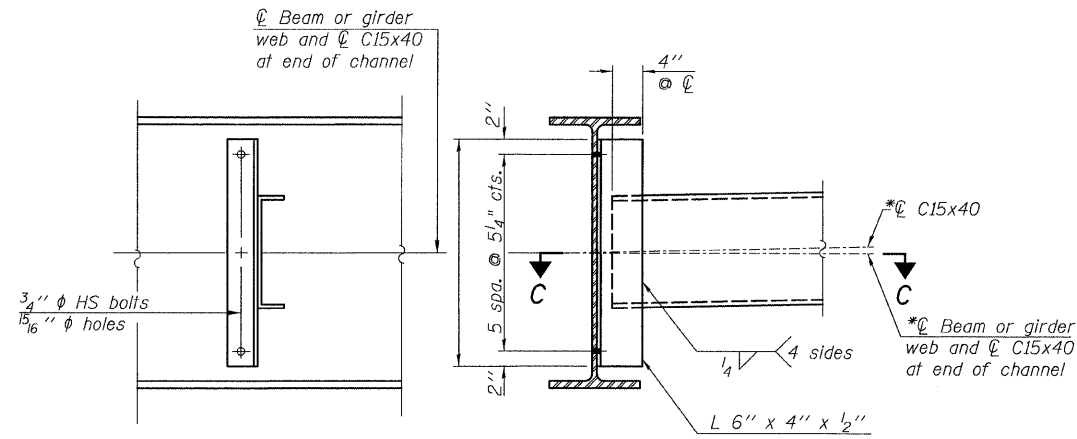
SHEET NO. 111 137 SHEETS	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	0711.2R & 1011.1BR	COOK	200	141
FED. ROAD DIST. NO. 1 ILLINOIS			FED. AID PROJECT		
CONTRACT NO. 60L39					

8/13/2010

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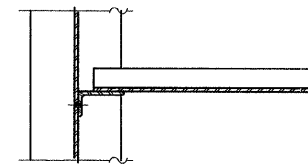
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



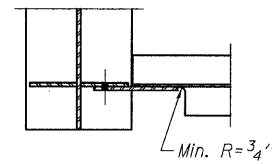
INTERIOR DIAPHRAGM

(D3.2)
(6 REQUIRED)

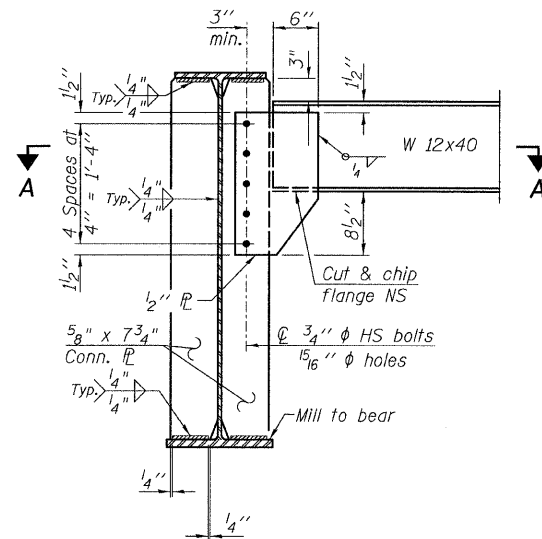
Note:
*Alternate channels C15x50 are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.



SECTION C-C

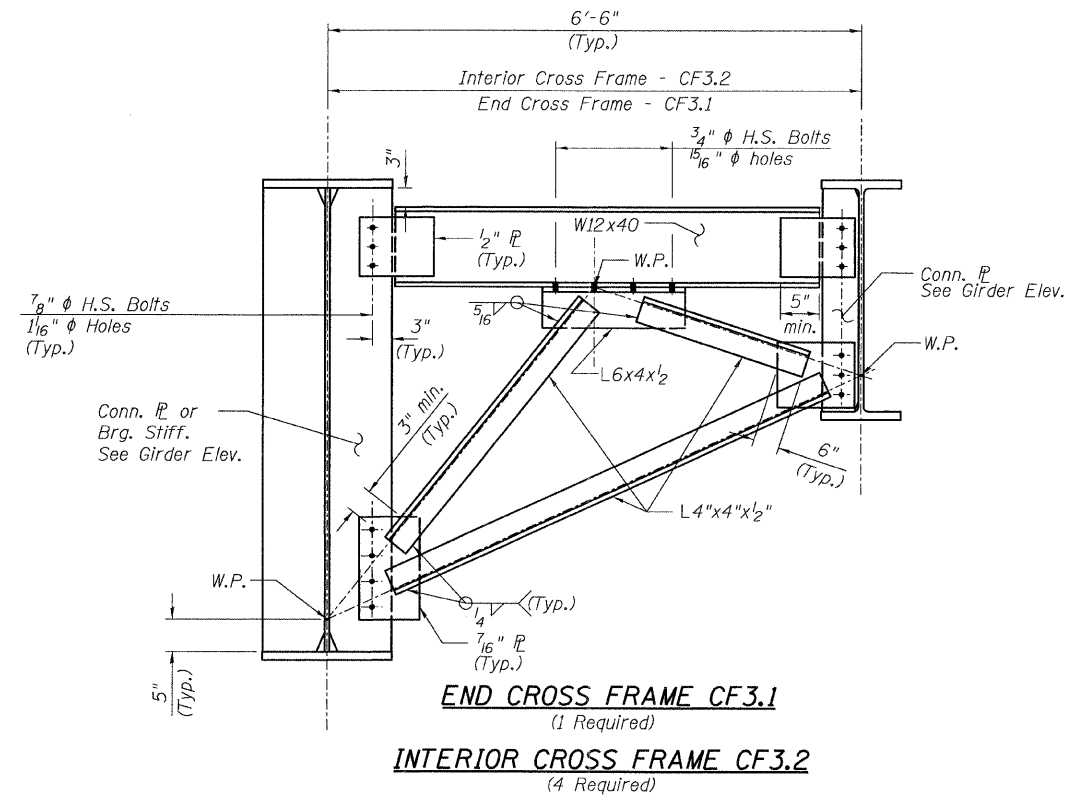


SECTION A-A



END DIAPHRAGM

(D3.1)
(6 REQUIRED)



END CROSS FRAME CF3.1

(1 Required)

INTERIOR CROSS FRAME CF3.2

(4 Required)

NOTES:

- Two hardened washers shall be required over all oversize holes for diaphragms.
- All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
- All bolts shall be 3/4 inch diameter with 15/16 inch holes unless otherwise noted.

**DIAPHRAGMS & DETAILS
RAMP 3 FLARE
STRUCTURE NO. 016-0724**

TYLIN INTERNATIONAL	DESIGNED - JPN	REVISIONS		SHEET NO. 112 137 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD.	NAME	DATE		55	0711.2R & 1011.1BR	COOK	200	142	
	DRAWN - JMA				CONTRACT NO. 60L39					
	CHECKED - AMD.				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
	DATE - 08/02/10									

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER MOMENT TABLE - RAMP 4 FLARE

	Girder 4.1			Girder 4.2			Girder 4.3 to 4.7			Girder 4.8			Girder 4.9 to 4.10A & 4.13 to 4.15	Girder 4.11 & 4.16 to 4.18	Girder 4.19 & 4.20	Crosshead Girder		
	0.4 Sp. R4-1	Pier	0.6 Sp. R4-2	0.4 Sp. R4-1	Pier	0.6 Sp. R4-2	0.4 Sp. R4-1	Pier	0.6 Sp. R4-2	0.4 Sp. R4-1	Pier	0.6 Sp. R4-2	0.5 Sp.	0.5 Sp.	0.5 Sp.	Bearing 1	0.5 Sp.	
I_s	(in ⁴)	30,764	30,764	30,764	30,764	30,764	30,764	30,764	30,764	53,461	53,461	53,461	9,040	15,000	40,988	138,181	138,181	
I_c (n)	(in ⁴)	63,774		63,774	63,774		63,774		63,774	97,867		97,867		31,861	93,600			
I_c (3n)	(in ⁴)	47,892		47,892	47,892		47,892		47,892	74,166		74,166		23,421	66,730			
S_s	(in ³)	1,099	1,099	1,099	1,099	1,099	1,099	1,099	1,099	1,711	1,711	1,711	504	837	1,788	4,268	4,268	
S_c (n)	(in ³)	1,408		1,408	1,408		1,408		1,408	2,109		2,109		1,096	2,271			
S_c (3n)	(in ³)	1,294		1,294	1,294		1,294		1,294	1,935		1,935		995	2,092			
Z	(in ³)												943					
$\bar{\rho}$	(k/')	0.93	1.32	1.27	0.93	1.32	1.12	0.93	1.32	0.93	2.2	1.3	0.94	1.57	1.10	1.14		
$M \bar{\rho}$	(k)	643.6	1066.3	132.1	436.8	1585.2	801.9	414.1	1431.8	743.6	890.1	1773.5	676.1	251.7	736.0	1286.5	6453.0	2361.0
$s \bar{\rho}$	(k/')	0.39		0.43	0.39		0.51	0.39		0.39	0.8		0.36		0.44	0.45		
$M_s \bar{\rho}$	(k)	286.4		65.9	205.4		410.8	199.0		339.9	228.6		274.9		296.2	503.8		
$M \bar{\rho}$	(k)	680.2	394.0	446.9	674.0	524.2	917.7	648.3	496.7	786.3	531.0	481.2	770.4	215.0	588.3	842.5	866.0	1188.2
M (Imp)	(k)	156.8	98.0	120.7	157.0	118.4	201.3	152.8	112.9	172.4	133.2	112.7	169.1	64.5	176.5	191.6	203.0	278.0
$S_3[M \bar{\rho} + M$ (Imp)]	(k)	1395.0	820.0	946.0	1385.0	1071.0	1865.0	1335.2	1016.0	1597.8	1107.0	989.8	1565.8	465.8	1274.7	1723.5	1781.7	2443.7
M_a	(k)	3022.5	2452.2	1487.2	2635.4	3453.1	4001.0	2532.8	3182.1	3485.7	2893.4	3592.3	3271.9	932.8	2998.9	4567.9	10705.1	6246.1
M_u	(k)	7179.0		7179.0	7179.0		7179.0		7179.0	10291.0		10291.0	3929.0	5068.0	9994.0			
$f_s \bar{\rho}$ (non-comp)	(ksi)	7.0	11.6	1.4	4.8	17.3	8.8	4.5	15.6	8.1	6.2	12.4	4.7	6.0	10.6	8.6	18.1	6.6
$f_s \bar{\rho}$ (comp)	(ksi)	2.7		0.6	1.9		3.8	1.8		3.2	1.4		1.7		3.6	2.9		
$f_s S_3 (\bar{\rho} + Imp)$	(ksi)	11.9	9.0	8.1	11.8	11.7	15.9	11.4	11.1	13.6	6.3	6.9	8.9	11.1	14.0	9.1	5.0	6.9
f_s (Overload)	(ksi)	21.6	20.6	10.1	18.5	29.0	28.5	17.7	26.7	24.9	14.0	19.4	15.4	17.1	28.1	20.6	23.2	13.5
f_s (Total)	(ksi)		26.8						34.7					22.2		30.1	17.6	
VR	(k)	54.6		59.3	57.2		58.6	56.7		55.5	52.1		49.4	46.7	52.6	53.0		

GIRDER REACTION TABLE - RAMP 4 FLARE

	Girder 4.1			Girder 4.2			Girder 4.3 to 4.7			Girder 4.8			Girder 4.9 to 4.10A & 4.13 to 4.15	Girder 4.11 & 4.16 to 4.18	Girder 4.19 & 4.20	Crosshead Girder		
	Carrier Girder	Pier	FB 4.12	Carrier Girder	Pier	R4 Abut.	Carrier Girder	Pier	R4 Abut.	Carrier Girder	Pier	R4 Abut.				Bearing 1	Bearing 2	
$R \bar{\rho}$	(k)	50.6	134.8	23.1	42.5	163.4	61.8	41.1	154.0	53.9	69.6	196.4	50.8	26.1	63.5	100.3	1201.6	573.1
$R \bar{\rho}$	(k)	41.5	53.4	40.0	41.8	59.9	44.5	41.7	58.5	42.4	36.2	56.5	37.8	35.9	40.0	42.8	163.0	120.9
Imp.	(k)	9.6	9.6	10.8	9.7	9.4	9.7	9.8	9.3	9.3	9.1	9.3	8.3	10.8	12.0	9.7	38.1	28.3
R (Total)	(k)	101.7	197.8	73.9	94.0	232.7	116.0	92.6	221.8	105.6	114.9	262.2	96.9	72.8	115.5	152.8	1402.7	722.3

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).
 $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).
 $I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).
Z: Plastic Section Modulus of the steel section in non-composite areas (in³).
 $\bar{\rho}$: Un-factored non-composite dead load (kips/ft.).
 $M \bar{\rho}$: Un-factored moment due to non-composite dead load (kip-ft.).
 $s \bar{\rho}$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
 $M_s \bar{\rho}$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
 $M \bar{\rho}$: Un-factored live load moment (kip-ft.).

M_1 : Un-factored moment due to impact (kip-ft.).
 M_a : Factored design moment (kip-ft.).
 $1.3 [M \bar{\rho} + M_s \bar{\rho} + \frac{1}{3} (M \bar{\rho} + M_1)]$
 M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).
 f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $M \bar{\rho} + M_s \bar{\rho} + \frac{1}{3} (M \bar{\rho} + M_1)$
 f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.3 [M \bar{\rho} + M_s \bar{\rho} + \frac{1}{3} (M \bar{\rho} + M_1)]$
VR: Maximum $\bar{\rho}$ + impact shear range within the composite portion of the span for stud shear connector design (kips).

MOMENT TABLE 1
RAMP 4 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - PK	REVISIONS		SHEET NO. 113	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD,	NAME	DATE							CONTRACT NO. 60L39
	DRAWN - PK									
	CHECKED - AMD,									
DATE - 08/02/10			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT							

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER MOMENT TABLE - RAMP 4 FLARE

Girder 4.12				
		0.4 Sp. R4-1	Pier	0.6 Sp. R4-2
I_s	(in ⁴)	126,687	126,687	126,687
$I_o(n)$	(in ⁴)	185,044	185,044	185,044
$I_o(3n)$	(in ⁴)	150,261	150,261	150,261
S_s	(in ³)	3913	3913	3913
$S_o(n)$	(in ³)	4410	4410	4410
$S_o(3n)$	(in ³)	4145	4145	4145
S_I	(in ³)	228	228	228
ϕ	(k/')	2.43	1.54	1.11
$M\phi$	(k)	1418	2783.5	646.6
$s\phi$	(k/')	0.91	0.53	0.34
$M_s\phi$	(k)	533.7	956.7	197.9
$M\phi$	(k)	803.4	828.5	722.9
M_I	(k)	156.7	170.7	157.6
$\frac{5}{3}[M\phi + M_I]$	(k)	1600.2	1665.3	1467.5
M_a	(k)	4617.4	7027.2	3005.6
M_{b1}	(k)	44.8	49.8	24.1
$f_s\phi$ (non-comp)	(ksi)	4.3	8.5	2.0
$f_s\phi$ (comp)	(ksi)	1.5	2.8	0.6
$f_s \frac{5}{3}[M\phi + M_I]$	(ksi)	4.4	4.5	4.0
f_I	(ksi)	2.4	2.6	1.3
f_s (Overload)	(ksi)	10.2	15.8	6.5
f_s (Total)	(ksi)	13.4	20.6	8.6
F_{cr} (Overload)	(ksi)	47.5	47.5	47.5
VR	(k)	70.4		69.1
F_{cr}	(ksi)	49.7	48.4	49.8

GIRDER REACTION TABLE - RAMP 4 FLARE

Girder 4.12				
		Carrier Girder	Pier	R4 Abut.
$R\phi$	(k)	66.4	371.7	50.2
$R\phi$	(k)	41.0	83.3	42.9
R_I	(k)	8.0	17.1	9.4
R_{Total}	(k)	115.4	472.1	102.5

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).

$I_o(n), S_o(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).

$I_o(3n), S_o(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).

S_I : Section modulus of one flange plate for lateral flange bending (in³).

ϕ : Un-factored non-composite dead load (kips/ft.).

$M\phi$: Un-factored moment due to non-composite dead load (kip-ft.).

$s\phi$: Un-factored long-term composite (superimposed) dead load (kips/ft.).

$M_s\phi$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

$M\phi$: Un-factored live load moment (kip-ft.).

M_I : Un-factored moment due to impact (kip-ft.).

M_a : Factored design moment (kip-ft.).

$1.3 [M\phi + M_s\phi + \frac{5}{3} (M\phi + M_I)]$

M_{b1} : Factored lateral bending moment for flange plate (kip-ft.).

f_I : Factored calculated normal stress at the edge of flange due to lateral bending (ksi).

f_s (Overload): Sum of stresses as computed from the moments below (ksi).

$M\phi + M_s\phi + \frac{5}{3} (M\phi + M_I)$

f_s (Total): Sum of stresses as computed from the moments below (ksi).

$1.3 [M\phi + M_s\phi + \frac{5}{3} (M\phi + M_I)]$

F_{cr} (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 (ksi).

F_{cr} : Critical average flange stress (smaller of F_{cr1} or F_{cr2} for partially braced flanges and F_y 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) (ksi).

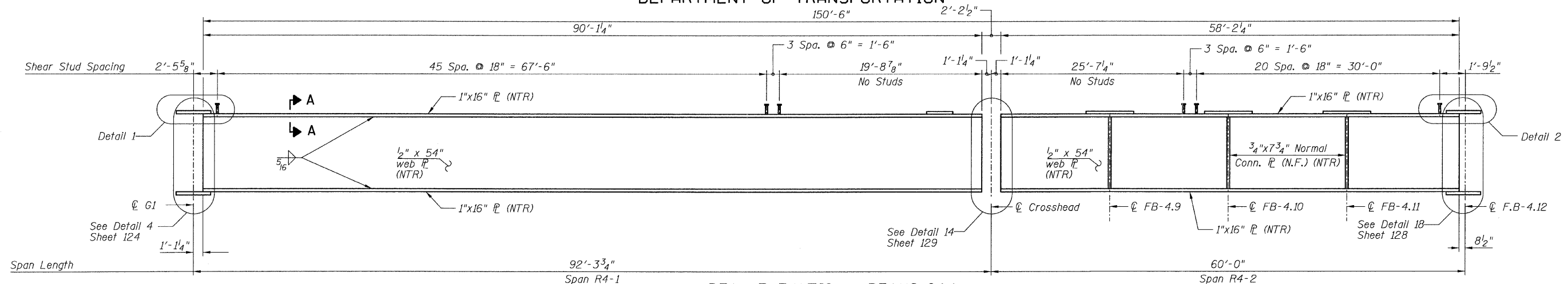
VR: Maximum impact shear range within span for stud shear connector design (kips).

Note:
 $M\phi$ and $R\phi$ include the effects of centrifugal force and superelevation.

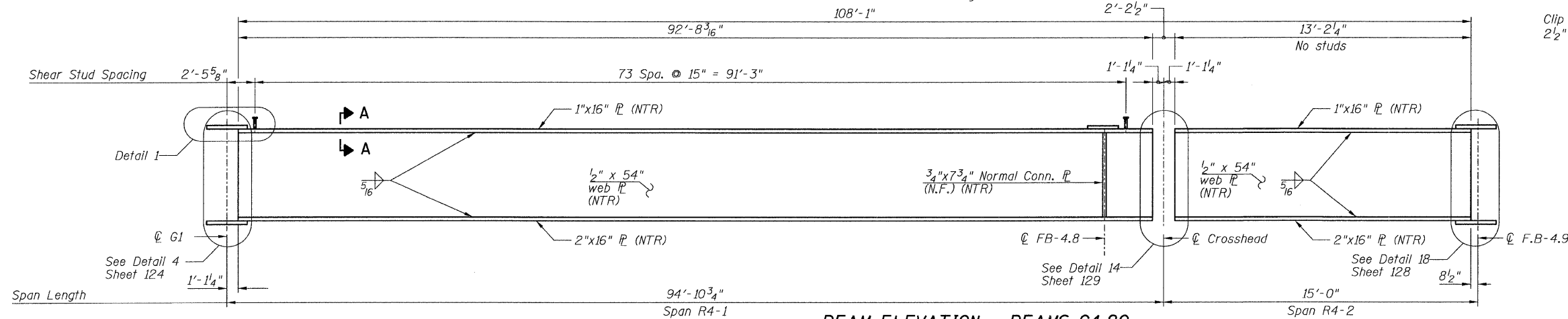
MOMENT TABLE 2
RAMP 4 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - PK	REVISIONS		SHEET NO. 114 137 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD,	NAME	DATE		55	0711.2R & 1011.1BR	COOK	200	144	
	DRAWN - PK				CONTRACT NO. 60L39					
	CHECKED - AMD,				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
	DATE - 08/02/10									

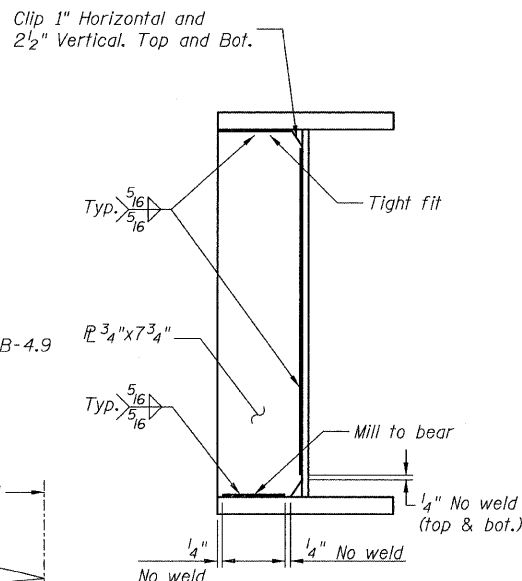
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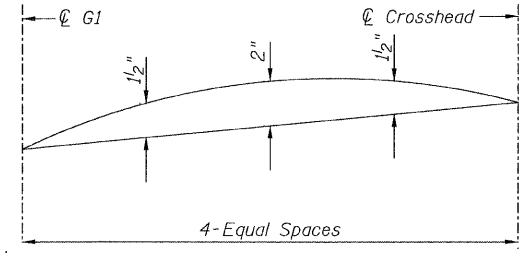
BEAM ELEVATION - BEAMS G4.1
(Looking North)



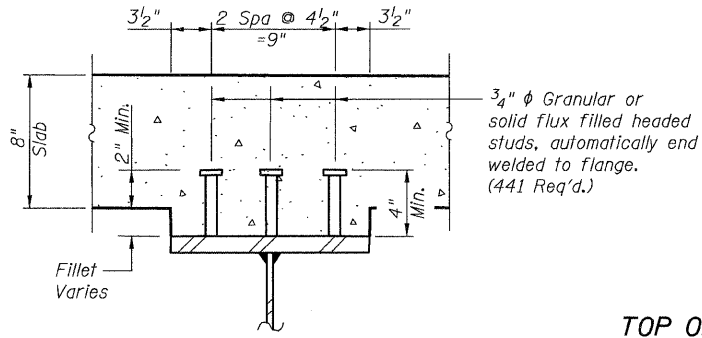
BEAM ELEVATION - BEAMS G4.2
(Looking North)



TYPICAL CONN. P. DETAIL
(Floor beams)



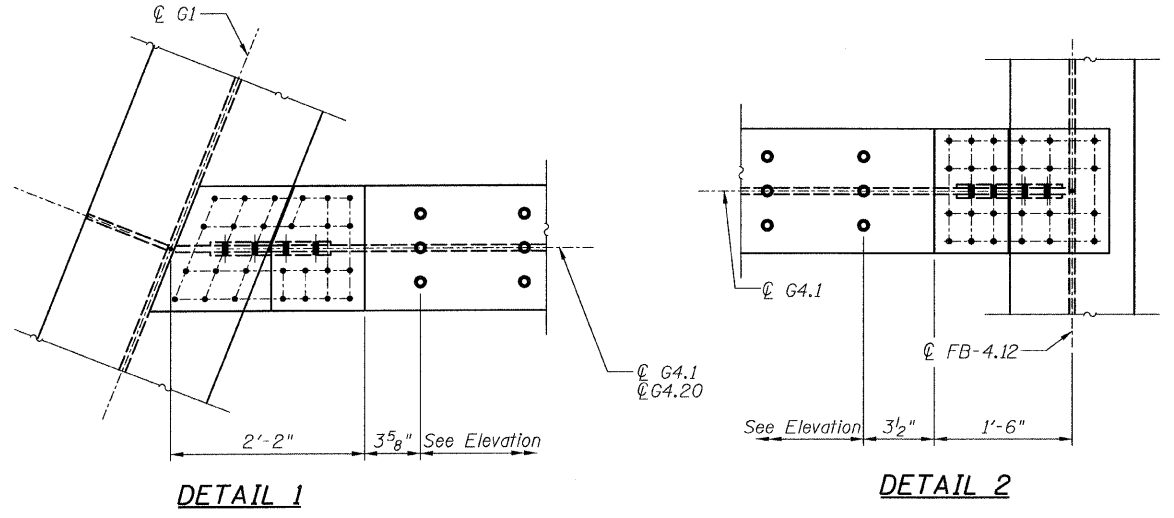
CAMBER DIAGRAMS



SECTION A-A
Not in contract

TOP OF WEB ELEVATIONS
(For Fabrication Only)

Location	Girder	G4.1	G4.20
Centerline G1		628.13	628.10
Centerline Crosshead		626.75	626.85
Centerline F.B.		625.86	626.65



DETAIL 1

DETAIL 2

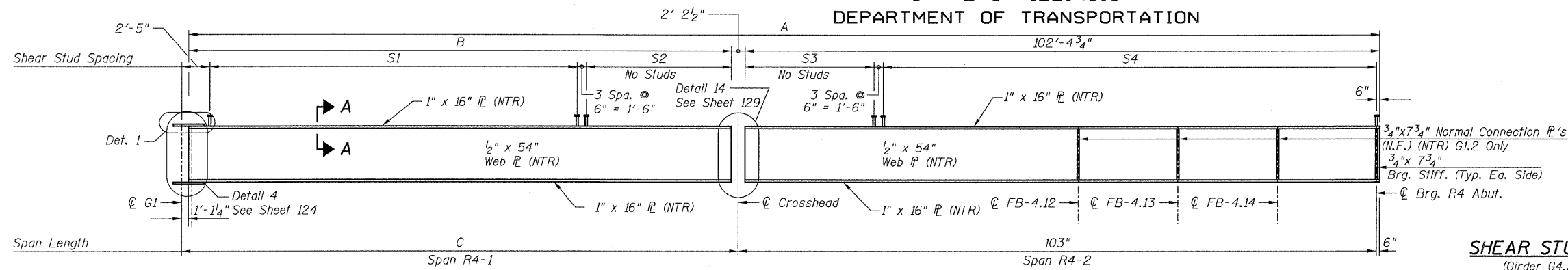
- NOTES:**
- All steel shown on this sheet shall conform to the requirements of AASHTO M270 GR 50.
 - Load carrying components designated "NTR" shall conform to the supplemental requirements for Notch Toughness, Zone 2.
 - N.F. denotes Near Face.
 - Girders shall not be cambered for spans R4-2.

GIRDER ELEVATIONS 1
RAMP 4 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - EKH, JMA, PK	REVISIONS		SHEET NO. 115 137 SHEETS	F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS	SHEET NO.
	CHECKED - AMD,	NAME	DATE					200	145
	DRAWN - EKH, JMA, PK							CONTRACT NO. 60L39	
	CHECKED - AMD,							FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	
	DATE - 08/02/10								

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STATE OF ILLINOIS
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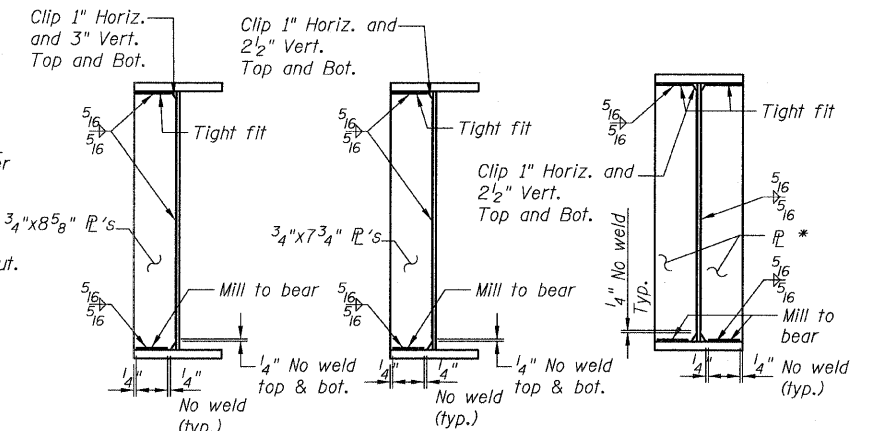
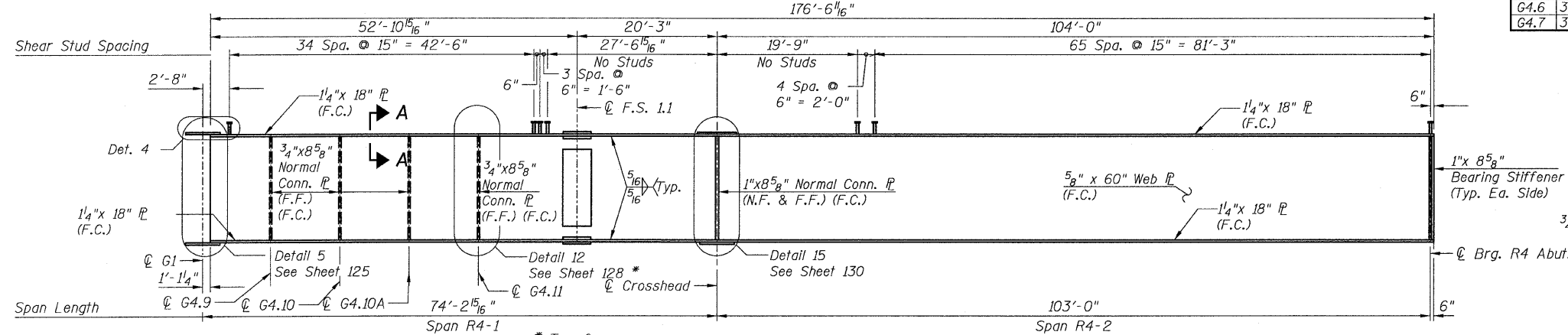
GIRDER DIMENSIONS
(Girder G4.2 thru G4.7)

	A	B	C
G4.2	193'-2 3/4"	87'-6 1/4"	89'-8 3/4"
G4.3	190'-7 1/8"	84'-11 5/16"	87'-1 1/8"
G4.4	188'-0 1/8"	82'-4 5/16"	84'-6 1/8"
G4.5	185'-5 7/8"	79'-9 3/8"	81'-11 7/8"
G4.6	182'-10 9/16"	77'-2 1/8"	79'-4 9/16"
G4.7	180'-4"	74'-7 1/2"	76'-10"

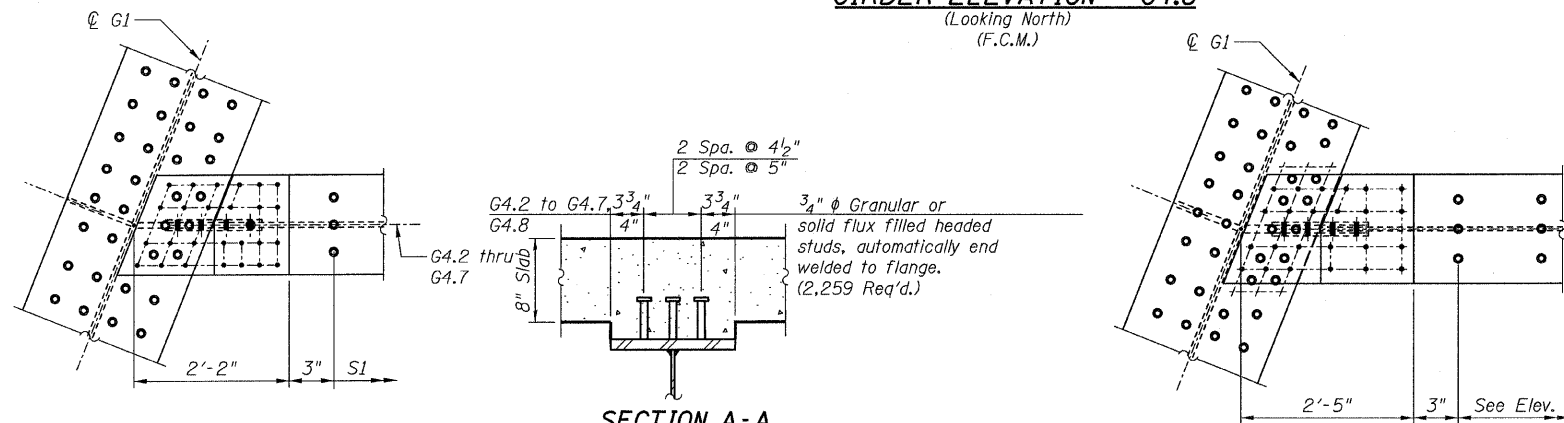
SHEAR STUD SPACINGS
(Girder G4.2 thru G4.7)

	S1	S2	S3	S4
G4.2	63 Spa. @ 15" = 78'-9"	5'-11 1/2"	36'-3 3/8"	51 Spa. @ 15" = 63'-9"
G4.3	45 Spa. @ 15" = 56'-3"	25'-10 3/16"	20'-5 7/8"	58 Spa. @ 18" = 79'-6"
G4.4	43 Spa. @ 15" = 53'-9"	25'-9 3/16"	20'-5 7/8"	58 Spa. @ 18" = 79'-6"
G4.5	41 Spa. @ 15" = 51'-3"	25'-8 3/16"	20'-5 7/8"	58 Spa. @ 18" = 79'-6"
G4.6	30 Spa. @ 18" = 45'-0"	29'-4 1/8"	20'-5 7/8"	58 Spa. @ 18" = 79'-6"
G4.7	36 Spa. @ 15" = 45'-0"	26'-9 3/4"	20'-5 7/8"	58 Spa. @ 18" = 79'-6"

GIRDER ELEVATION - G4.2 THRU G4.7
(Looking North)



GIRDER ELEVATION - G4.8
(Looking North)
(F.C.M.)



SECTION A-A
Not in contract

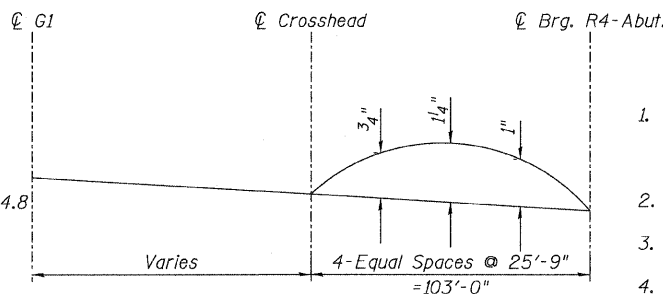
TOP OF WEB ELEVATIONS
(For Fabrication Only)

Location	Girder	G4.8
Centerline G1		628.30
Fieldsplice		626.66
Centerline Crosshead		626.05
Centerline Bearing R4-Abut.		624.19

TOP OF WEB ELEVATIONS
(For Fabrication Only)

Location	Girder	G4.2	G4.3	G4.4	G4.5	G4.6	G4.7
Centerline G1		628.16	628.19	628.23	628.26	628.23	628.27
Centerline Crosshead		626.66	626.56	626.46	626.36	626.27	626.17
Centerline Bearing R4-Abut.		624.79	624.70	624.60	624.50	624.40	624.31

CAMBER DIAGRAM
Girder G4.2 to G4.7



NOTES:

1. Load carrying components designated "NTR" shall conform to the supplemental requirements for Notch Toughness, Zone 2.
2. F.C. denotes Fracture Critical material, AASHTO Zone II.
3. For Field Splice details, See Sheet 131.
4. N.F. denotes Near Face.
5. F.F. denotes Far Face.
6. Girder G4.8 does not require camber.

GIRDER ELEVATIONS 2
RAMP 4 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - EKH, JMA, PK	REVISIONS		SHEET NO. 116	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD,	NAME	DATE		55	0711.2R & 1011.1BR	COOK	200	146	
	DRAWN - EKH, JMA, PK				137 SHEETS	CONTRACT NO. 60L39				
	CHECKED - AMD,					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
	DATE - 08/02/10									

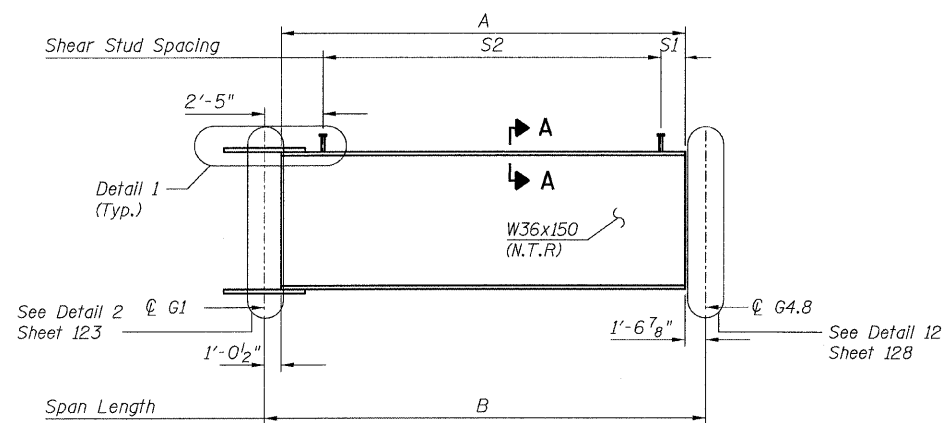
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER DIMENSIONS

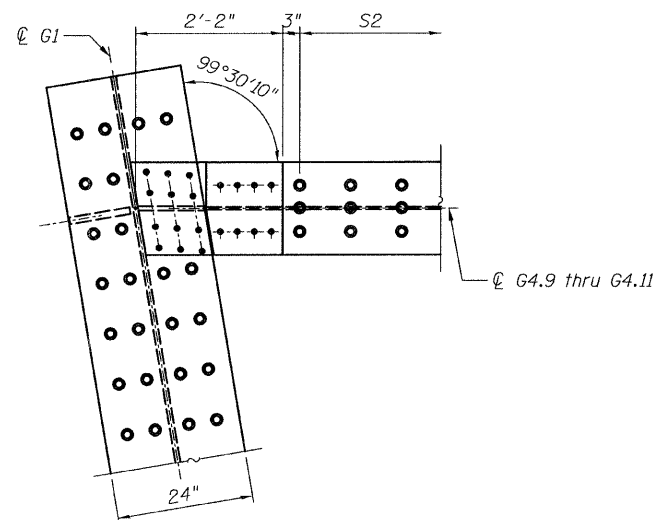
Girder	A	B
G4.9	8'-4 ⁵ / ₈ "	10'-9 ⁵ / ₈ "
G4.10	19'-1 ⁷ / ₈ "	21'-6 ⁷ / ₈ "
G4.10A	29'-11 ¹ / ₄ "	32'-4"

SHEAR STUD SPACING

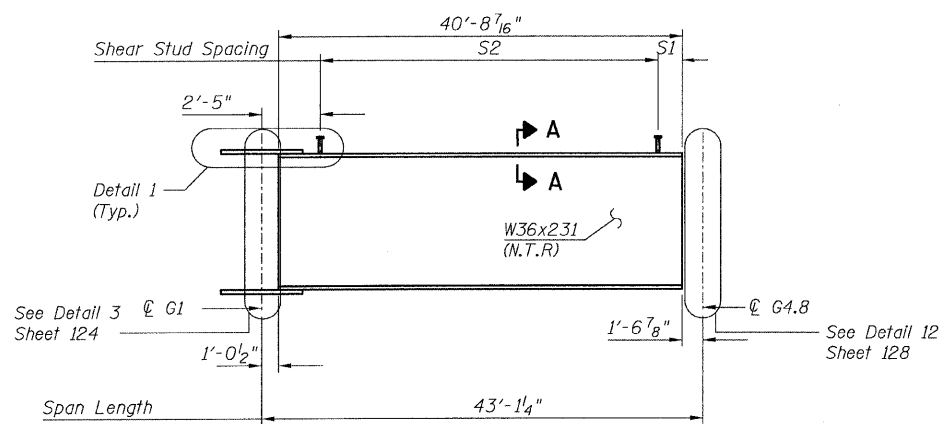
Girder	S1	S2
G4.9	9 ⁵ / ₈ "	3 Spa. @ 24" = 6'-0"
G4.10	1'-6 ⁷ / ₈ "	8 Spa. @ 24" = 16'-0"
G4.10A	4 ¹ / ₄ "	14 Spa. @ 24" = 28'-0"
G4.11	7 ¹ / ₂ "	77 Spa. @ 6" = 38'-6"



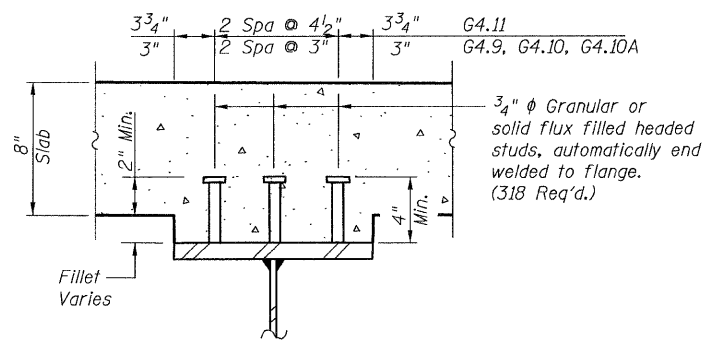
GIRDER ELEVATION - G4.9, G4.10 AND G4.10A
(Looking South)



DETAIL 1



GIRDER ELEVATION - G4.11
(Looking South)



SECTION A-A
Not in contract

TOP OF BEAM ELEVATIONS
(For Fabrication Only)

Location	Girder	G4.9	G4.10	G4.10A	G4.11
Centerline G4.8		628.03	627.69	627.35	627.00
Centerline G22		628.42	628.45	628.47	628.50

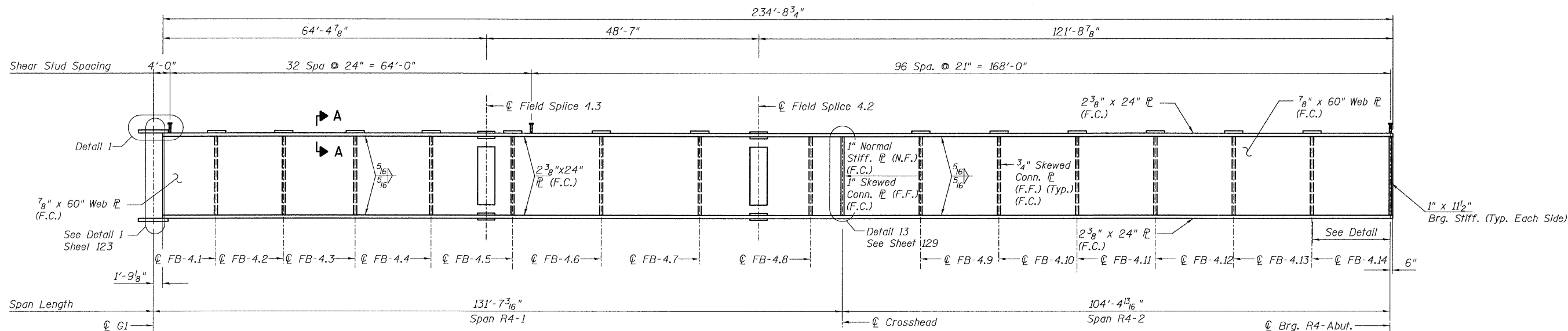
NOTES:

- All steel shown on this sheet shall conform to the requirements of AASHTO M270 GR 50.
- Load carrying components designated "NTR" shall conform to the supplemental requirements for Notch Toughness, Zone 2.
- N.F. - denotes Near Face.

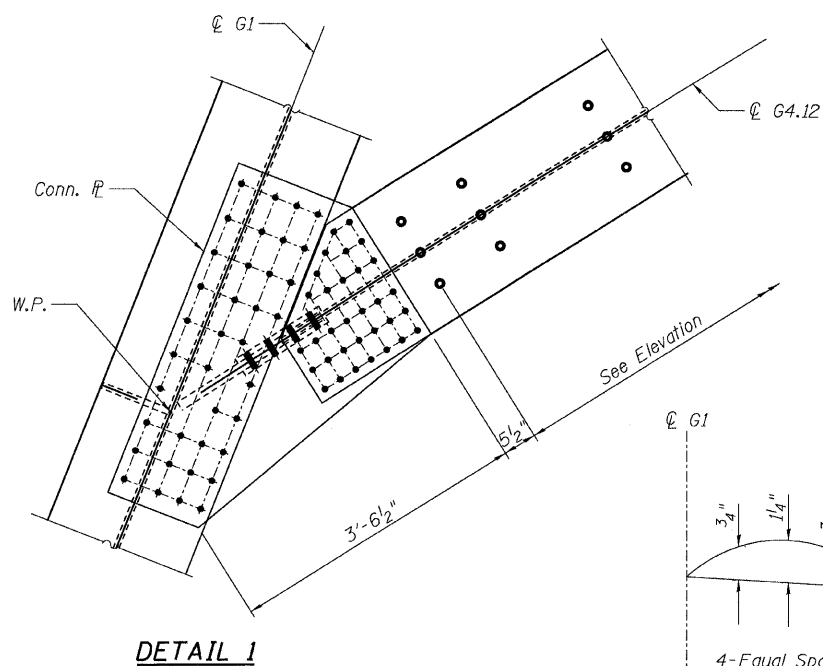
GIRDER ELEVATIONS 3
RAMP 4 FLARE
S.N. 016-0724

TYLIN INTERNATIONAL	DESIGNED - EKH, JMA, PK	REVISIONS		SHEET NO. 117	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD,	NAME	DATE		55	0711.2R & 1011.1BR	COOK	200	147	
	DRAWN - EKH, JMA, PK				137 SHEETS	CONTRACT NO. 60L39				
	CHECKED - AMD,				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
	DATE - 08/02/10									

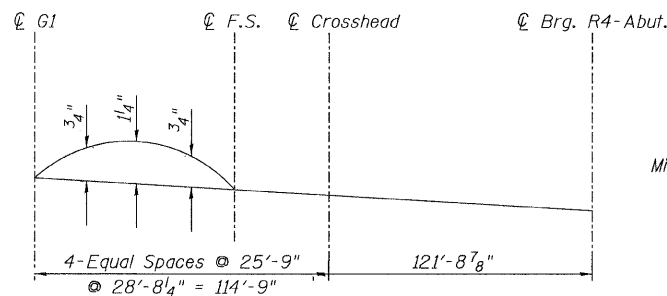
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



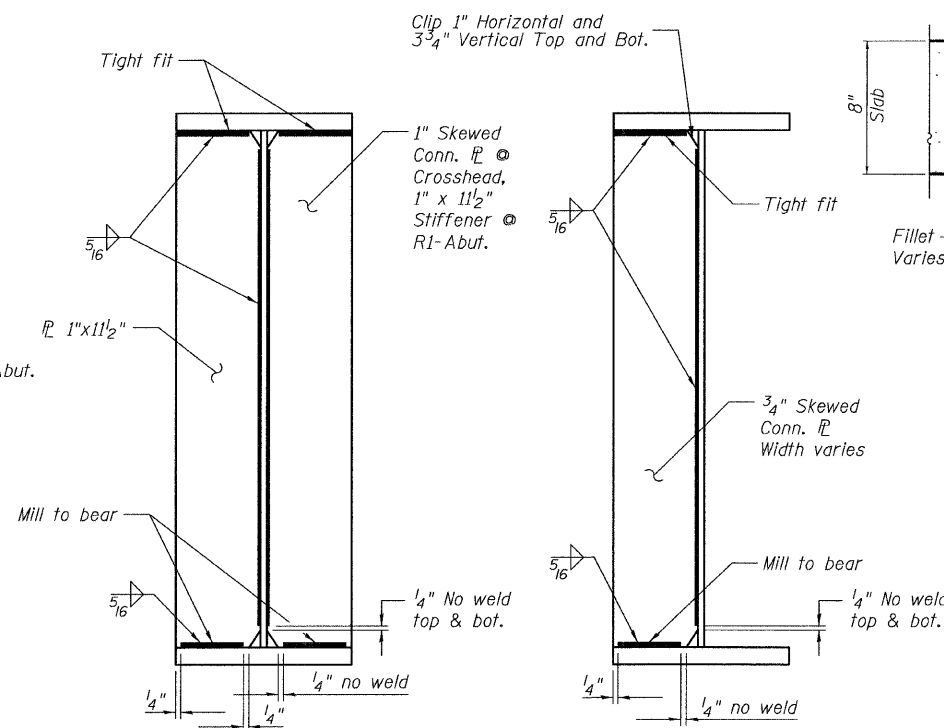
GIRDER ELEVATION - G4.12 (F.C.M)
(Looking South)



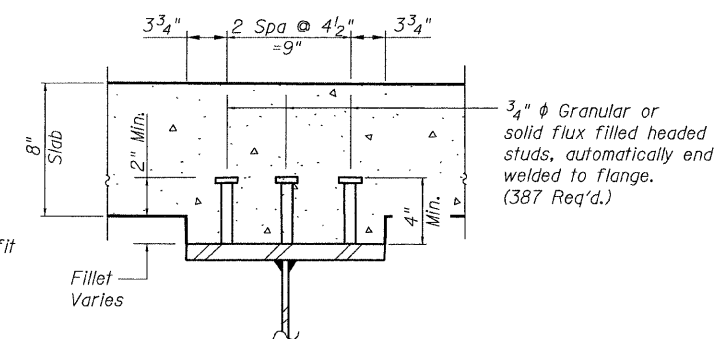
DETAIL 1



CAMBER DIAGRAM



BEARING STIFFENERS



SECTION A-A
Not in contract

TOP OF WEB ELEVATIONS
(For Fabrication Only)

Location	Girder	G4.12
Centerline G1		627.69
Field Splice 4.2		627.00
Centerline Crosshead		626.86
Centerline Bearing R4-Abut.		624.77

CONNECTION P

**GIRDER ELEVATIONS 4
RAMP 4 FLARE
STRUCTURE NO. 016-0724**

NOTES:

- All steel shown on this sheet shall conform to the requirements of AASHTO M270 GR 50.
- Load carrying components designated "NTR" shall conform to the supplemental requirements for Notch Toughness, Zone 2.
- For Field Splice details, See Sheet 131.
- FCM denotes Fracture Critical Member.
- F.C. denotes Fracture Critical Material, AASHTO Zone II.
- N.F. denotes Near Face.
- F.F. denotes Far Face.

TYLIN INTERNATIONAL

DESIGNED	EKH, JMA, PK	REVISIONS	
CHECKED	AMD,	NAME	DATE
DRAWN	EKH, JMA, PK		
CHECKED	AMD,		
DATE	08/02/10		

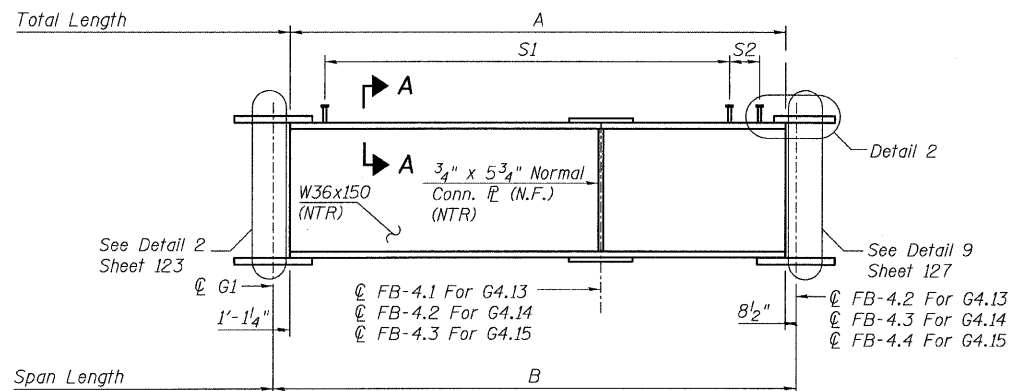
SHEET NO. 118 137 SHEETS	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	0711.2R & 1011.1BR	COOK	200	148
FED. ROAD DIST. NO. 1 ILLINOIS			FED. AID PROJECT		
CONTRACT NO. 60L39					

8/13/2010

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

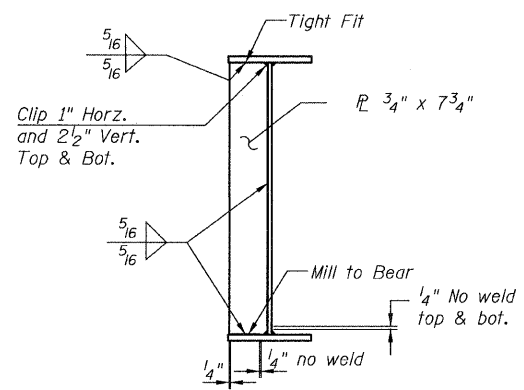


GIRDER ELEVATION - G4.13 THRU G4.15
(Looking South)

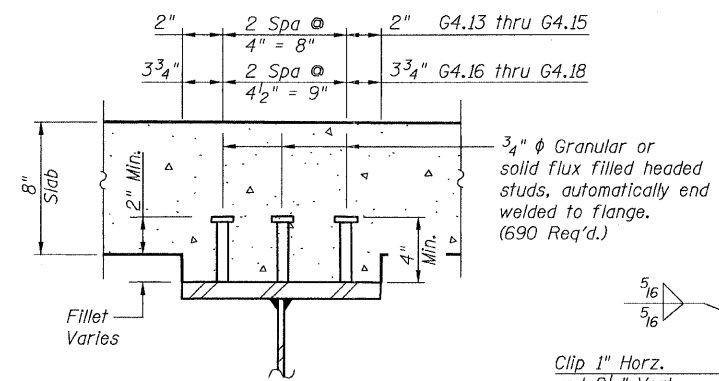
GIRDER DIMENSIONS

(Girders G4.13 thru G4.15)

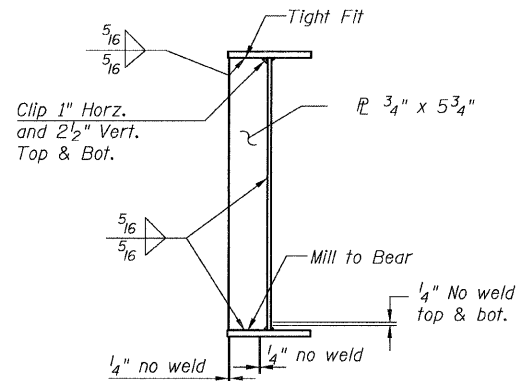
	A	B	S1	S2
G4.13	12'-13 3/4"	13'-11 1/2"		
G4.14	21'-6"	23'-4 1/2"		
G4.15	33'-11 1/8"	35'-9 5/8"		



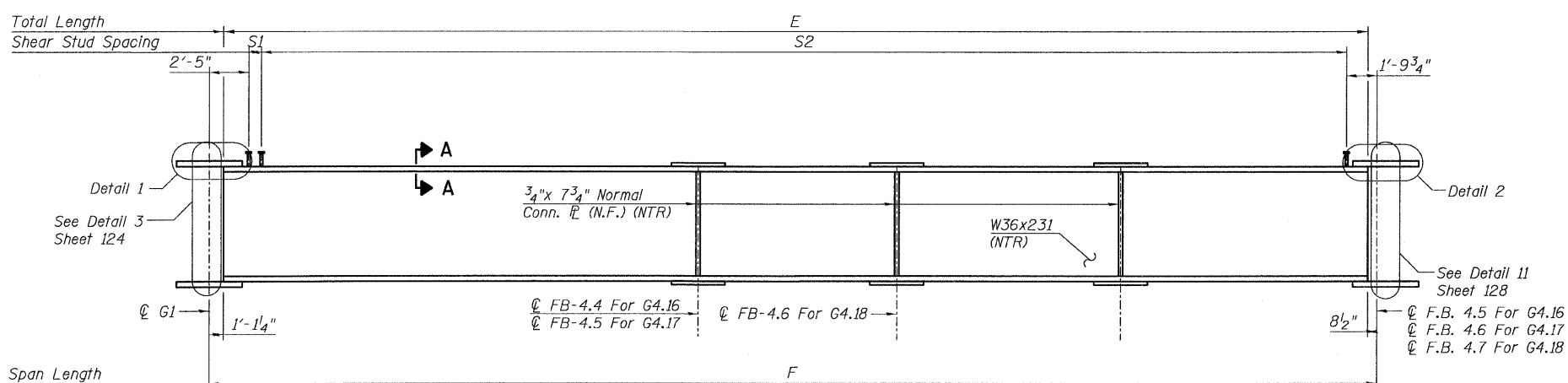
CONN. P DETAIL G4.16 THRU G4.18
(Floor beams & Cross frames)



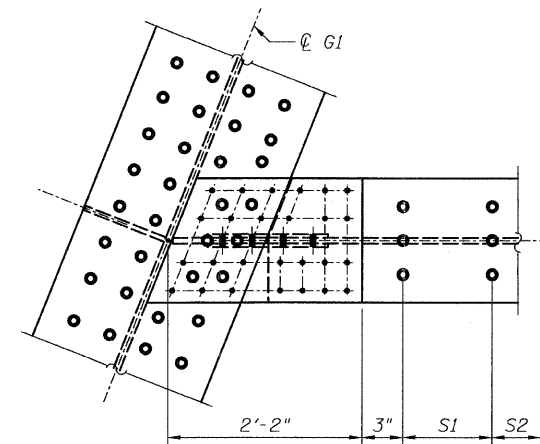
SECTION A-A
Not in contract



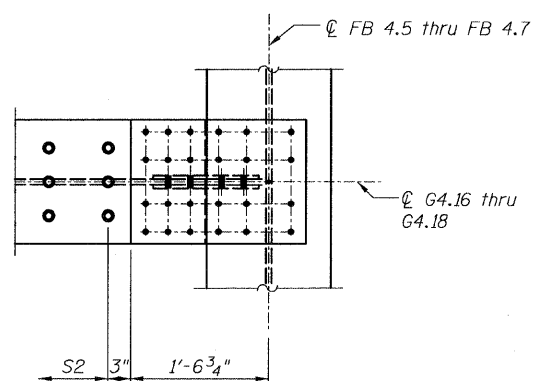
CONN. P DETAIL G4.13 THRU G4.15
(Floor beams)



GIRDER ELEVATION - G4.16 THRU G4.18
(Looking South)



DETAIL 1



DETAIL 2

SHEAR STUD SPACINGS

(Girders G4.16 thru G4.18)

	S1	S2
G4.16	5' 8"	58 Spa. @ 9" = 43'-6"
G4.17	1' 8"	75 Spa. @ 9" = 56'-3"
G4.18	6' 8"	91 Spa. @ 9" = 68'-3"

GIRDER DIMENSIONS

(Girders G4.16 thru G4.18)

	E	F
G4.16	46'-4 7/8"	48'-2 5/8"
G4.17	58'-9 7/8"	60'-7 5/8"
G4.18	71'-2 7/8"	73'-0 5/8"

TOP OF BEAM ELEVATIONS

(For Fabrication Only)

Location	Girder	G4.13	G4.14	G4.15	G4.16	G4.17	G4.18
Centerline G1		627.97	628.00	628.03	628.06	628.09	628.12
Centerline F.B.							

NOTES:

- All steel shown on this sheet shall conform to the requirements of AASHTO M270 GR 50.
- Load carrying components designated "NTR" shall conform to the supplemental requirements for Notch Toughness, Zone 2.
- N.F. denotes Near Face.

**GIRDER ELEVATIONS 5
RAMP 4 FLARE
STRUCTURE NO. 016-0724**

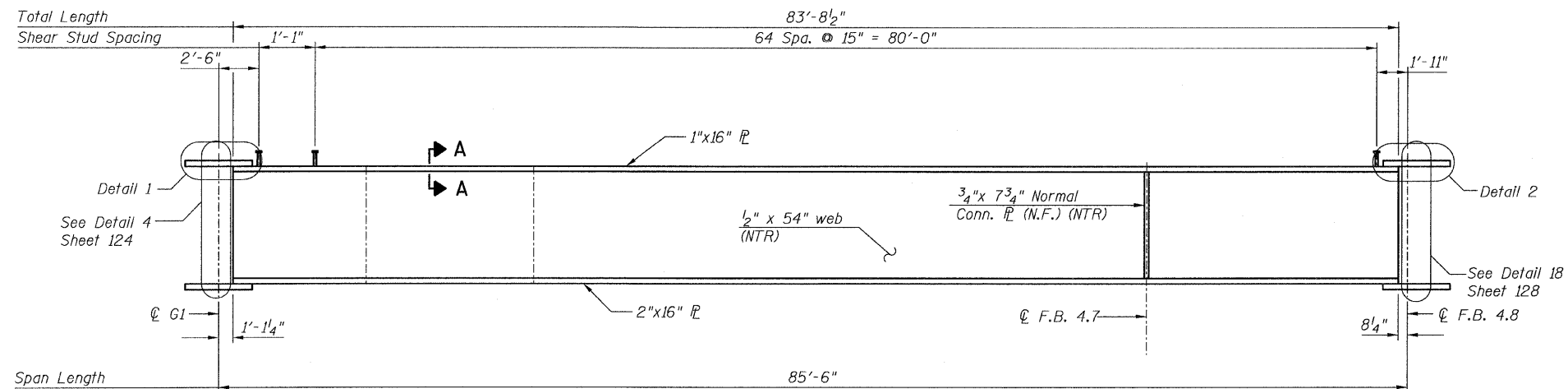
TYLIN INTERNATIONAL

DESIGNED	EKH, JMA, PK	REVISIONS	
CHECKED	AMD,	NAME	DATE
DRAWN	EKH, JMA, PK		
CHECKED	AMD,		
DATE	08/02/10		

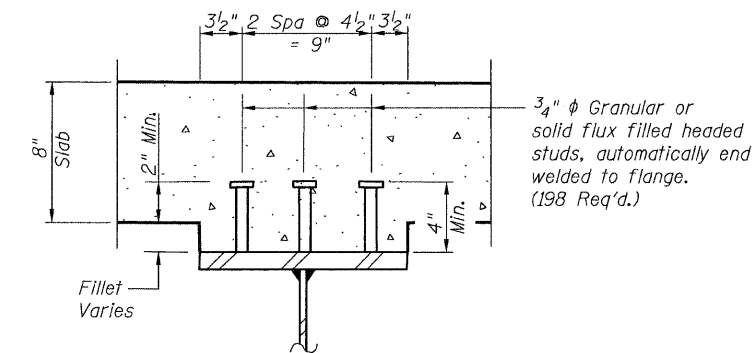
SHEET NO. 119 137 SHEETS	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	0711.2R & 1011.1BR	COOK	200	149
FED. ROAD DIST. NO. 1 ILLINOIS			FED. AID PROJECT		
CONTRACT NO. 60L39					

p:\01345\beam_and_bearing_fabrication\55744\frame.dwg 5/28/25 PM 8/13/2010

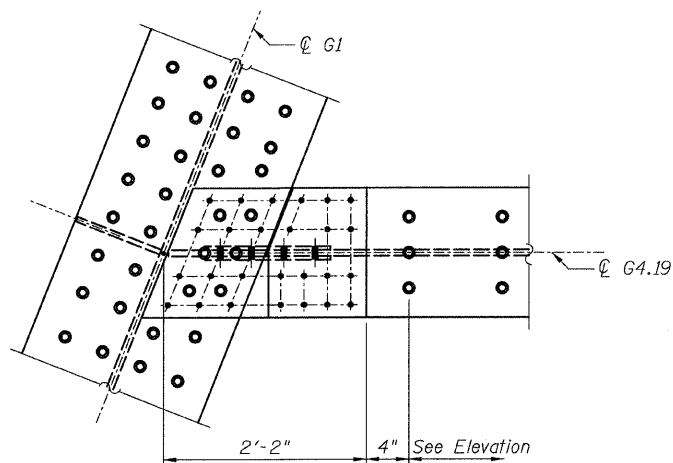
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



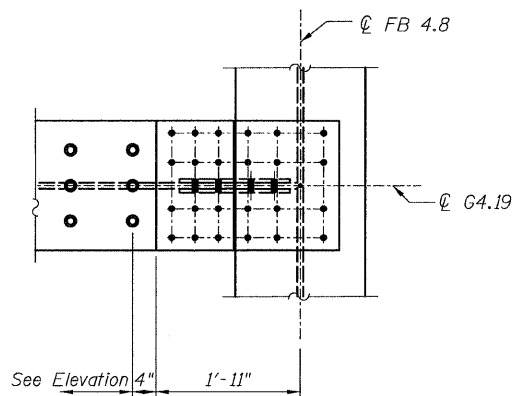
GIRDER ELEVATION - G4.19
(Looking South)



SECTION A-A
Not in contract



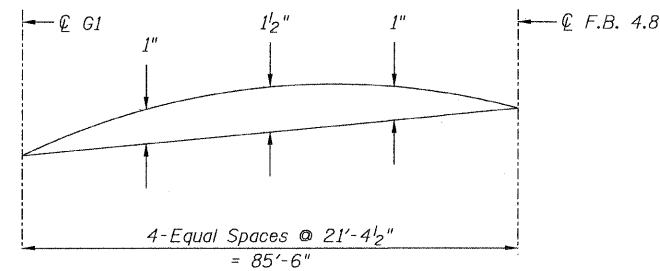
DETAIL 1



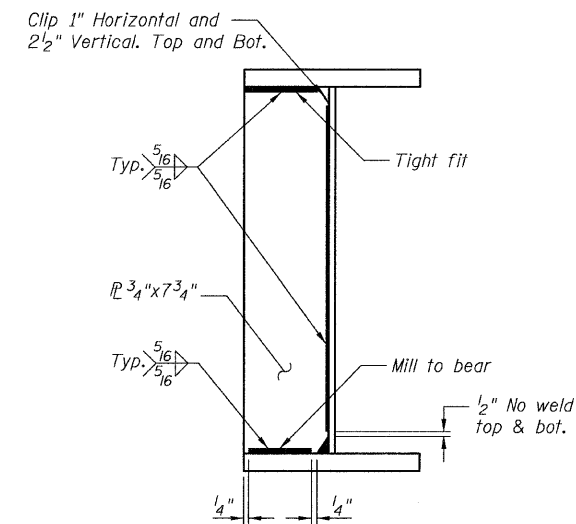
DETAIL 2

TOP OF WEB ELEVATIONS
(For Fabrication Only)

Location	Elevation
Centerline G1	626.35
Centerline F.B. 4.8	



CAMBER DIAGRAMS



TYPICAL CONN. F DETAIL
(Floor beams)

NOTES:

- All steel shown on this sheet shall conform to the requirements of AASHTO M270 GR 50.
- Load carrying components designated "NTR" shall conform to the supplemental requirements for Notch Toughness, Zone 2.
- N.F. denotes Near Face.

GIRDER ELEVATIONS 6
RAMP 4 FLARE
STRUCTURE NO. 016-0724

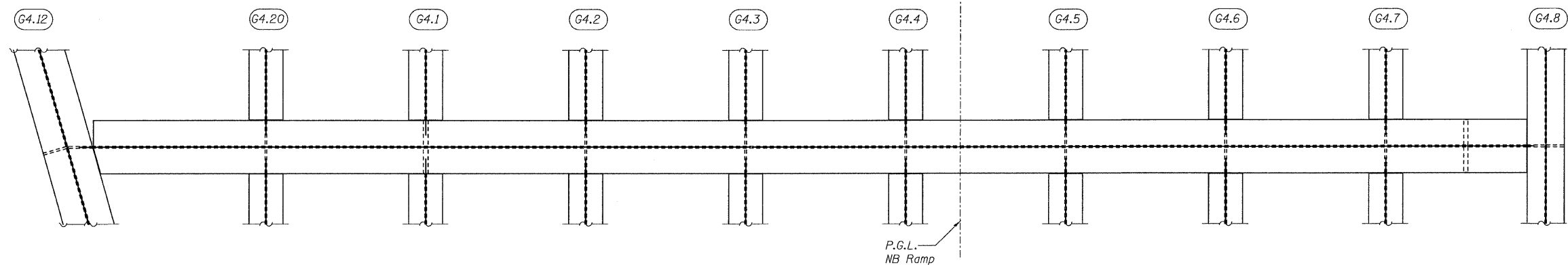
TYLIN INTERNATIONAL	DESIGNED - EKH, JMA, PK	REVISIONS		SHEET NO. 120	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD,	NAME	DATE		55	0711.2R & 1011.1BR	COOK	200	150	
	DRAWN - EKH, JMA, PK				CONTRACT NO. 60L39					
	CHECKED - AMD,				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
	DATE - 08/02/10									

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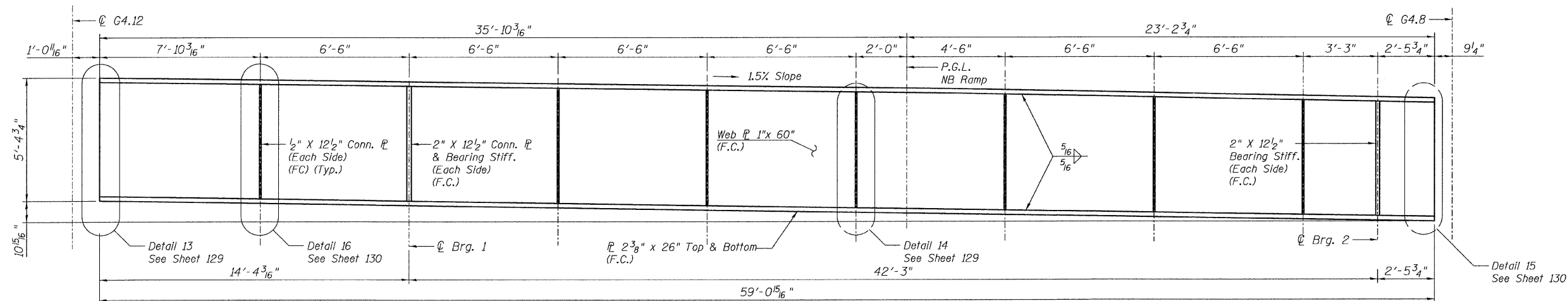
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8/13/2010

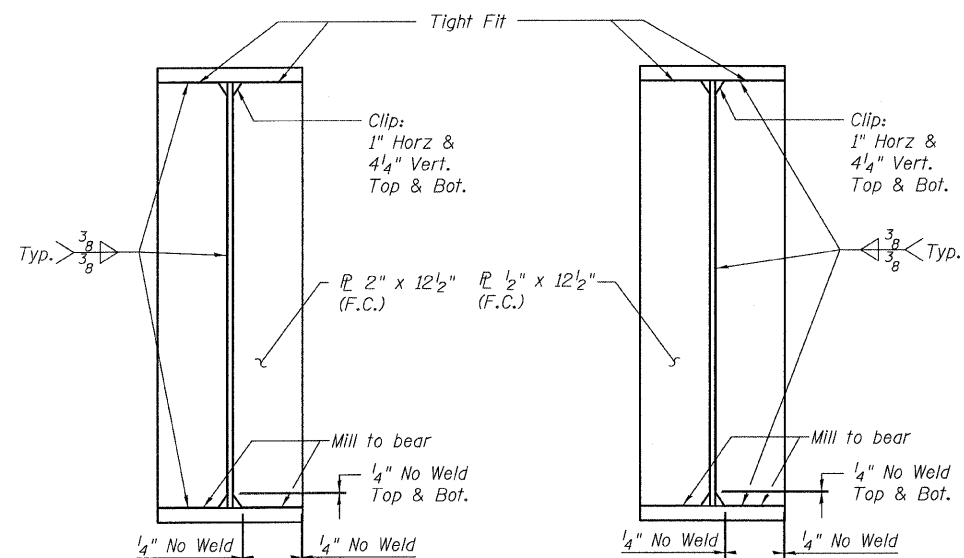
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



CROSSHEAD PLAN - AT R4 PIER
(Top Connection Plates Not Shown for Clarity)



CROSSHEAD ELEVATION - AT R4 PIER (F.C.M.)
(Looking West)



Bearing Stiffener Details

Conn. P. Details

TOP OF WEB ELEVATIONS
(For Fabrication Only)

LOCATION	ELEVATION
© Brg. 1	626.63
© Brg. 2	626.00

BEARING SEAT ELEVATIONS
(For Information Only)

LOCATION	ELEVATION
© Brg. 1	620.47
© Brg. 2	619.96

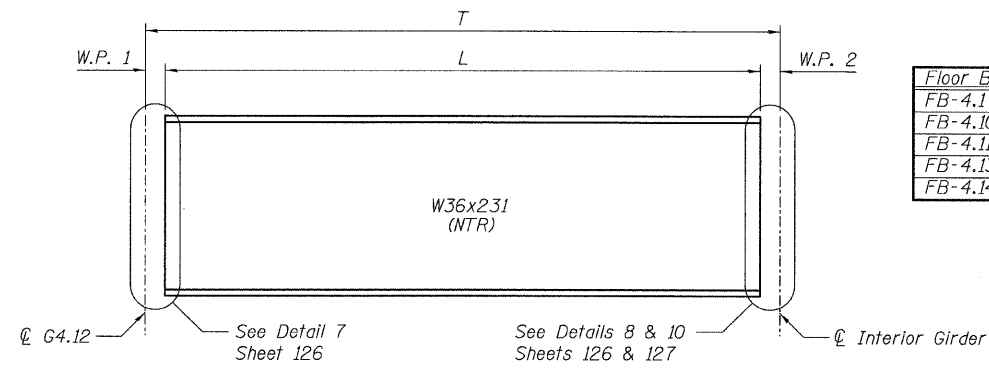
NOTES:

- All steel shown on this sheet shall conform to the requirements of AASHTO M270 GR 50.
- Load carrying components designated "NTR" shall conform to the supplemental requirements for Notch Toughness, Zone 2.
- F.C.M. denotes Fracture Critical Member.
- F.C. denotes Fracture Critical Material, AASHTO Zone II.
- Crosshead shall be cambered.

CROSSHEAD GIRDER DETAILS
RAMP 4 FLARE
STRUCTURE NO. 016-0724

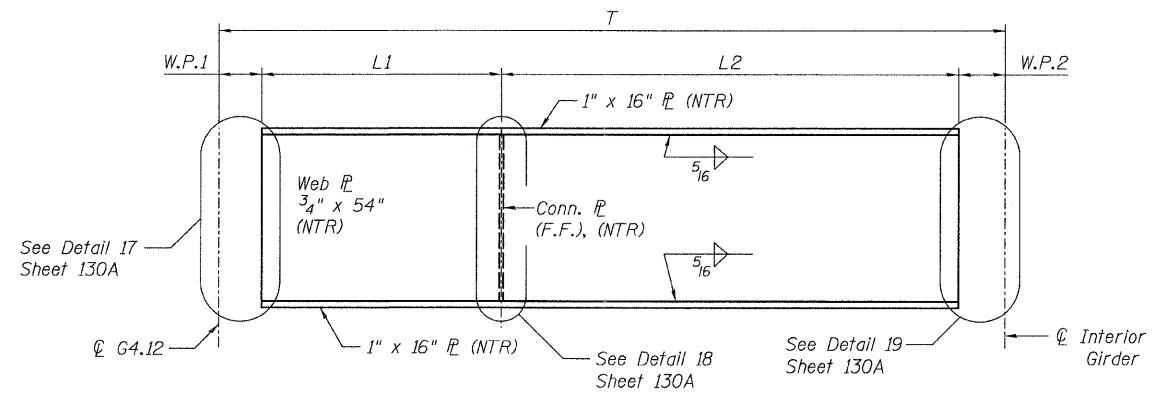
TYLIN INTERNATIONAL	DESIGNED - EKH, JMA, PK	REVISIONS		SHEET NO. 121	F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 151
	CHECKED - AMD,	NAME	DATE						
	DRAWN - EKH, JMA, PK								
	CHECKED - AMD,								
DATE - 08/02/10				137 SHEETS	CONTRACT NO. 60L39				
					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



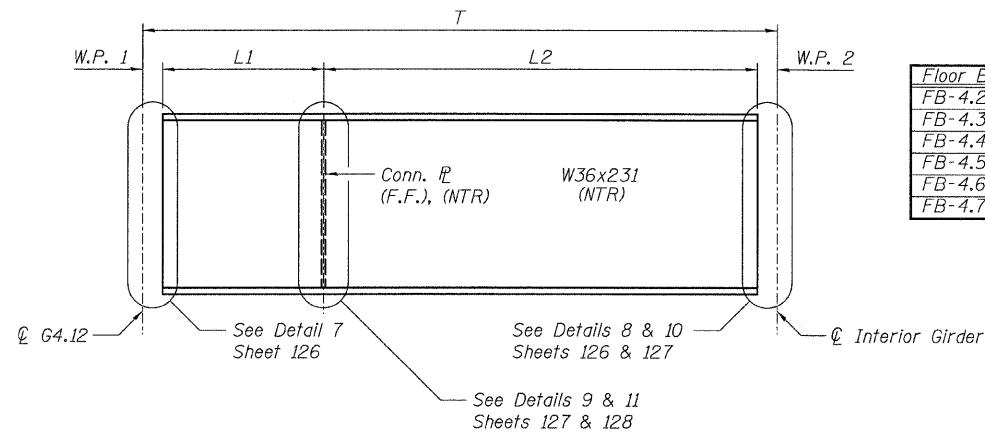
Floor Beam	W.P. 1	W.P. 2	L	T
FB-4.1	1'-2 1/4"	6 1/4"	7'-11 1/2"	9'-8"
FB-4.10	1'-0 1/2"	8 1/4"	6'-6 1/16"	8'-3 3/16"
FB-4.11	1'-0 1/16"	8 1/4"	3'-9 5/8"	5'-6 3/16"
FB-4.13	1'-0 3/16"	8 1/4"	6'-5 5/16"	8'-1 1/8"
FB-4.14	1'-0 1/4"	8 1/4"	5'-4 3/8"	7'-0 7/8"

FLOOR BEAM ELEVATION
(FB-4.1, FB-4.10, FB-4.11, FB-4.13, FB-4.14)



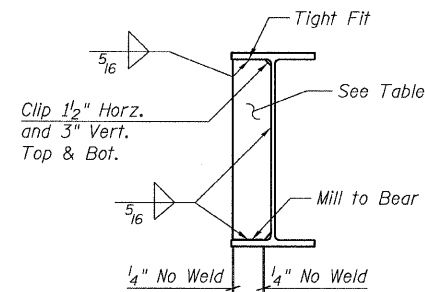
FLOOR BEAM ELEVATION
(FB-4.8, FB-4.9, FB-4.12)
(Looking West)

Floor Beam	W.P.1	W.P.2	L1	L2	T	Conn. P
FB-4.8	1'-0 13/16"	8 1/4"	4'-10"	7'-6 13/16"	12'-4 13/16"	5/8" x 7 3/4"
FB-4.9	1'-0 9/16"	8 1/4"	4'-0 1/8"	7'-6 1/2"	11'-6 3/8"	5/8" x 7 3/4"
FB-4.12	1'-0 3/8"	8 1/4"	2'-3 9/16"	5'-9 3/4"	9'-9 5/16"	3/4" x 7 3/4"

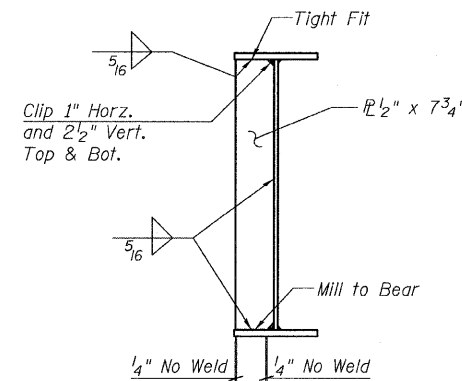


Floor Beam	W.P. 1	W.P. 2	L1	L2	T	Conn. P
FB-4.2	1'-2 1/8"	6 1/4"	3'-2 1/8"	5'-11 3/4"	10'-11"	5/8" x 7 3/4"
FB-4.3	1'-1 1/8"	6 1/4"	3'-2 5/16"	5'-4 3/4"	10'-10 3/16"	5/8" x 7 3/4"
FB-4.4	1'-1 9/16"	8 1/2"	2'-2 3/16"	5'-9 1/2"	9'-9 3/4"	5/8" x 7 3/4"
FB-4.5	1'-1 1/8"	8 1/2"	1'-10 1/2"	5'-9 1/16"	9'-5 13/16"	3/4" x 7 3/4"
FB-4.6	1'-1 1/8"	8 1/2"	2'-2 13/16"	5'-9 1/2"	9'-9 1/16"	3/4" x 7 3/4"
FB-4.7	1'-1"	8 1/4"	3'-2 1/16"	5'-9 3/4"	10'-9 1/16"	3/4" x 7 3/4"

FLOOR BEAM ELEVATION
(FB-4.2 thru FB-4.7)
(Looking West)



CONN. P DETAILS
(FB-4.2 to FB-4.7)



CONN. P DETAILS
(FB-4.8, FB-4.9, FB-4.12)

NOTES:

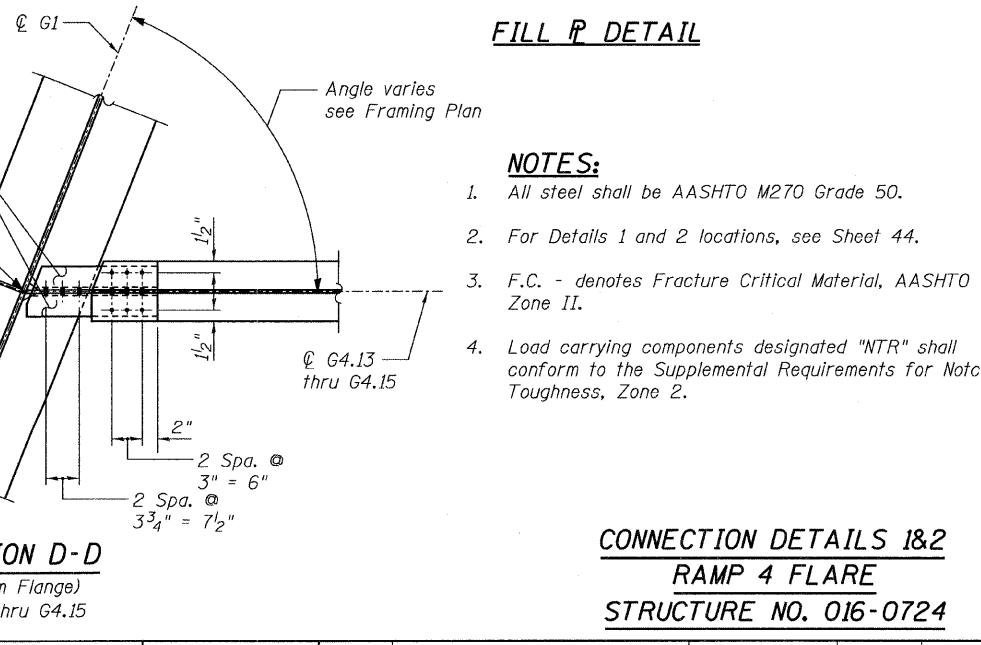
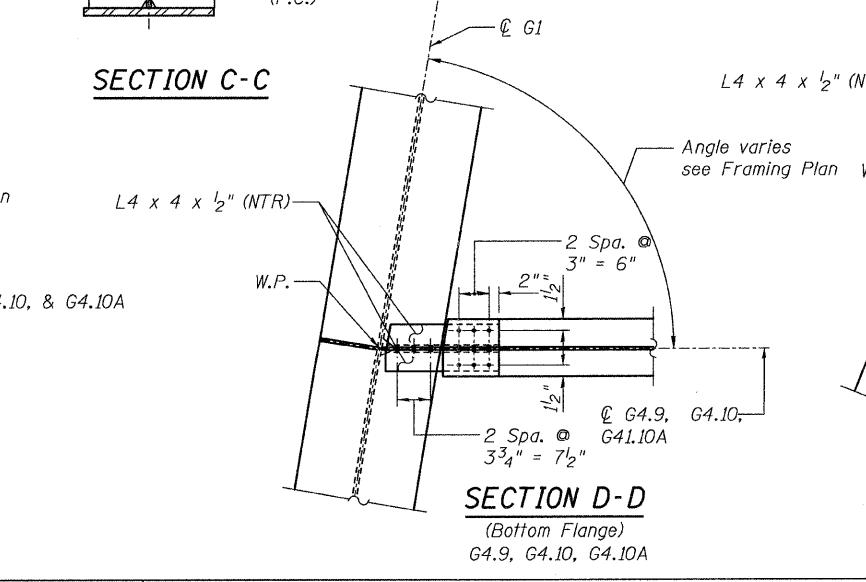
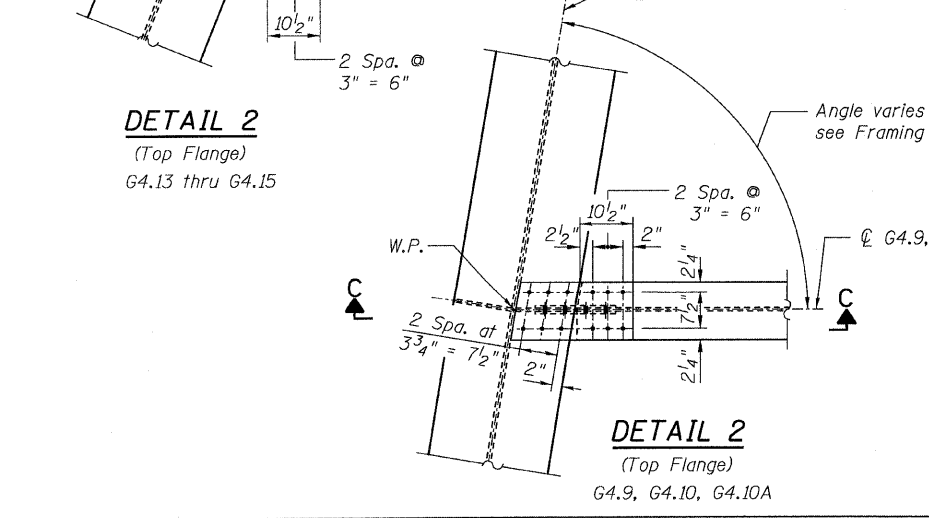
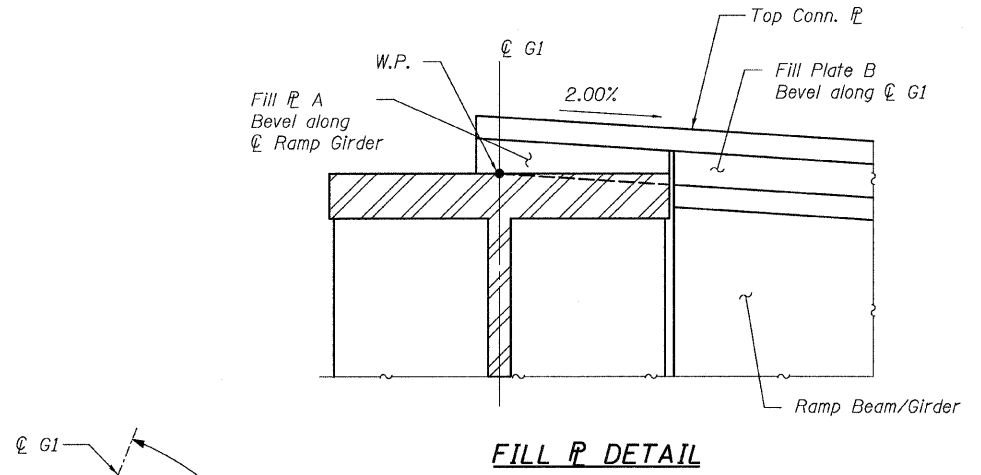
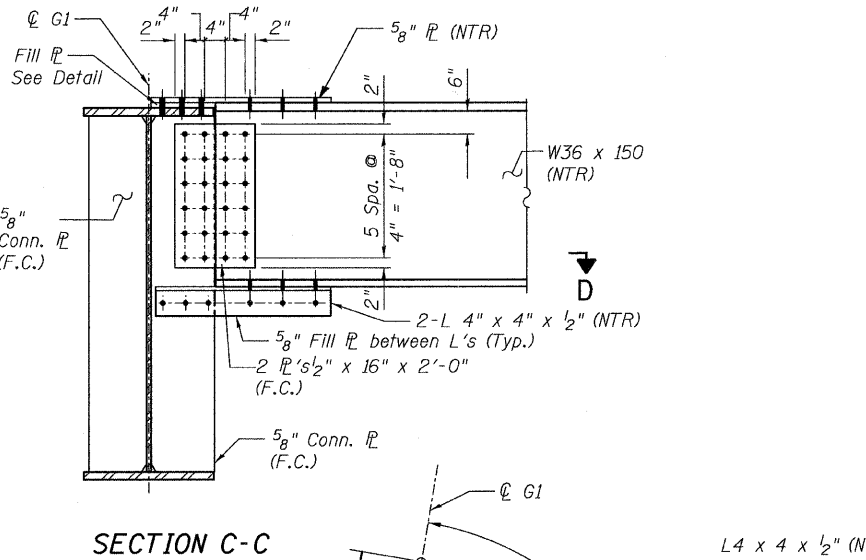
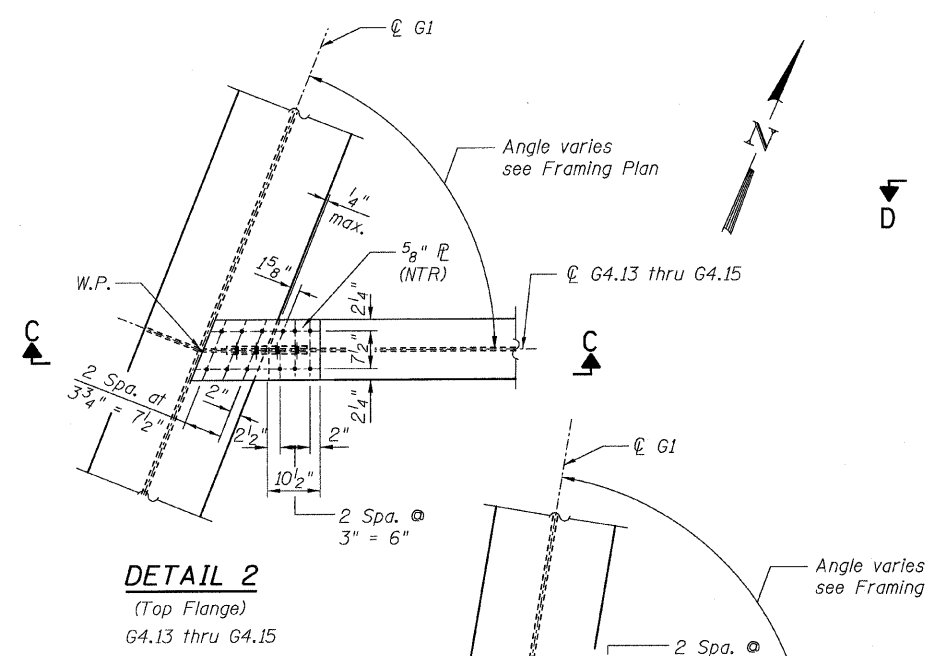
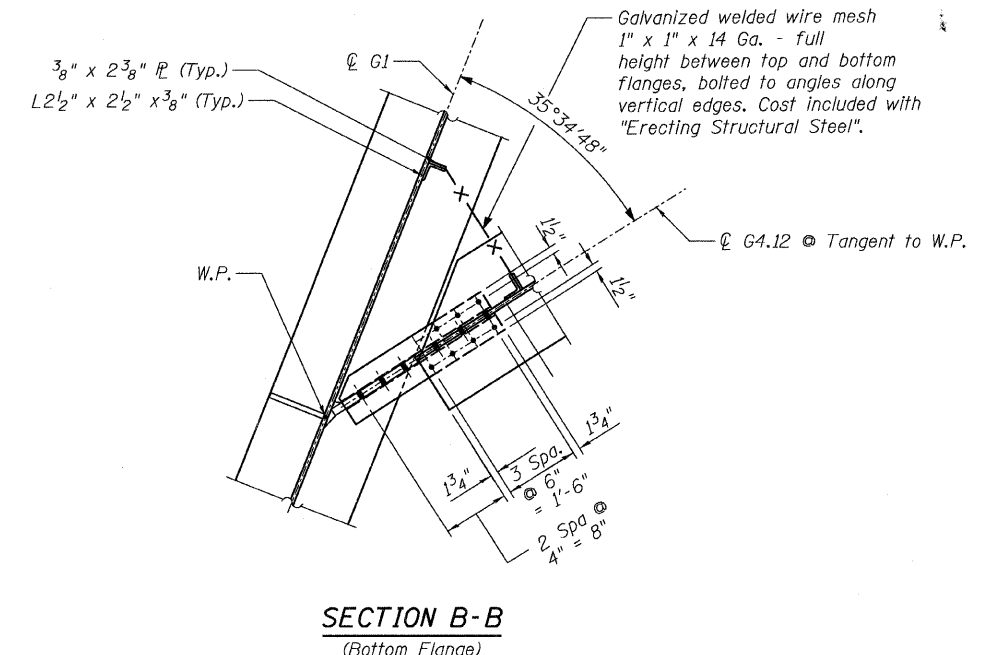
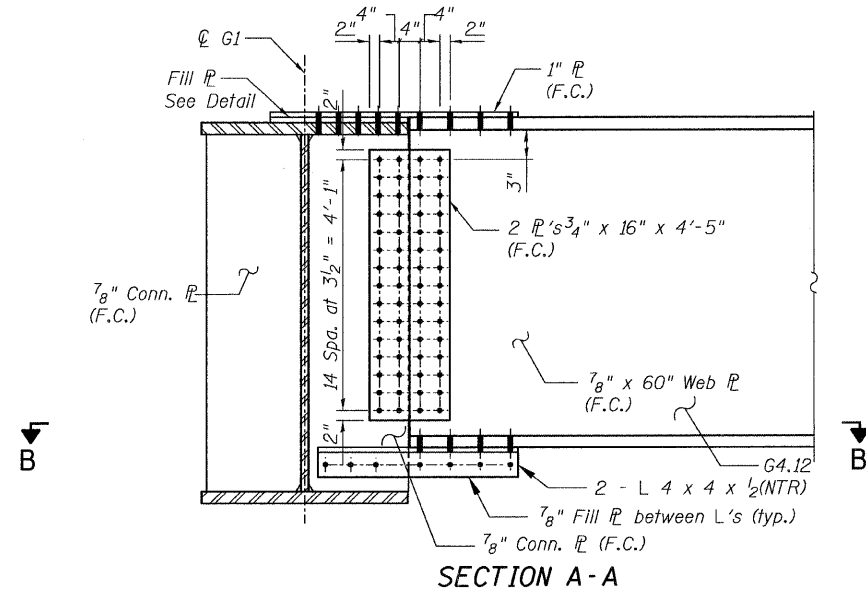
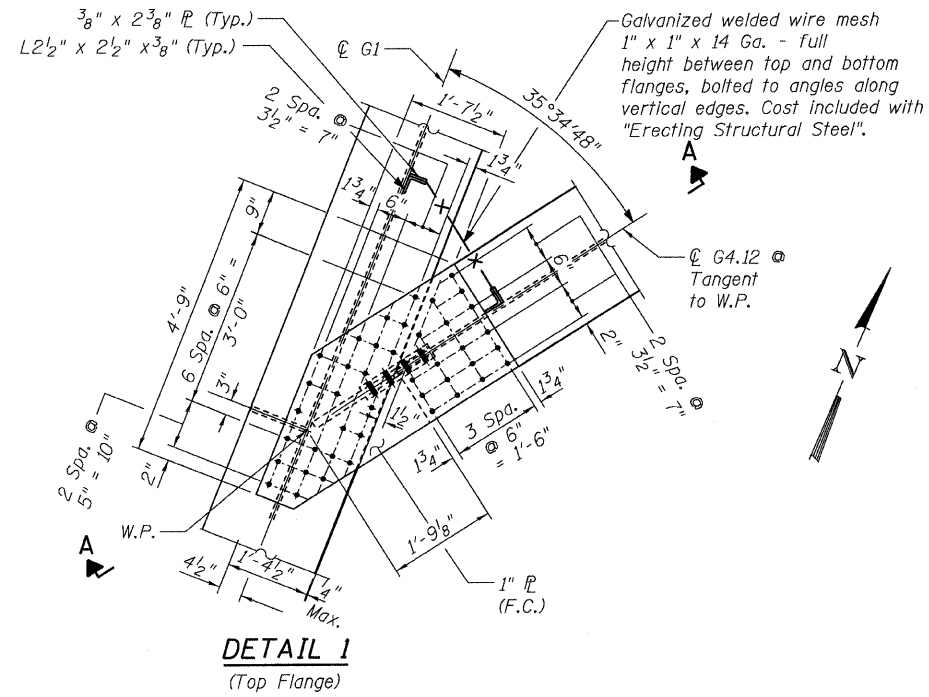
- All steel shown on this sheet shall conform to the requirements of AASHTO M270 GR 50.
- Load carrying components designated "NTR" shall conform to the supplemental requirements for Notch Toughness, Zone 2.
- F.F. denotes Far Face.

**FLOOR BEAM DETAILS
RAMP 4 FLARE
STRUCTURE NO. 016-0724**

TYLIN INTERNATIONAL	DESIGNED - EKH, JMA	REVISIONS		SHEET NO. 122	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD,	NAME	DATE		137 SHEETS	55	0711.2R & 1011.1BR	COOK	200	152
	DRAWN - EKH, JMA				CONTRACT NO. 60L39					
	CHECKED - AMD,				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
	DATE - 08/02/10									

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



- NOTES:**
- All steel shall be AASHTO M270 Grade 50.
 - For Details 1 and 2 locations, see Sheet 44.
 - F.C. - denotes Fracture Critical Material, AASHTO Zone II.
 - Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

**CONNECTION DETAILS 1&2
RAMP 4 FLARE
STRUCTURE NO. 016-0724**

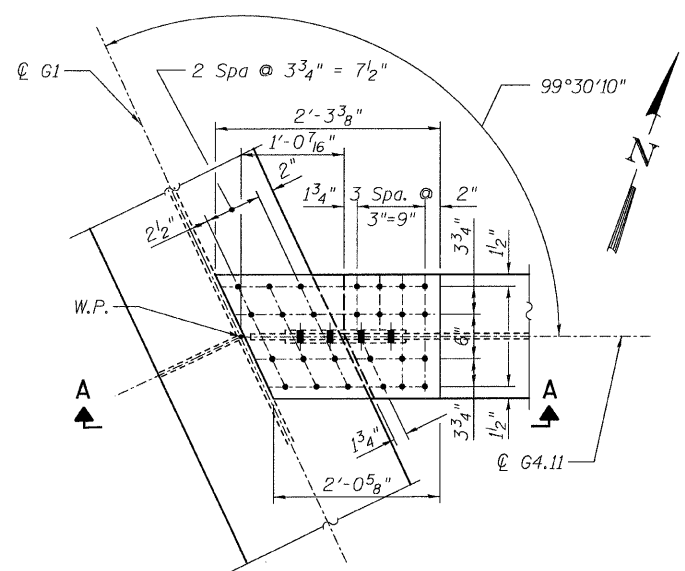
TYLIN INTERNATIONAL

	DESIGNED - EKH, JMA		REVISIONS	
	NAME	DATE	NAME	DATE
CHECKED - AMD,				
DRAWN - EKH, JMA				
CHECKED - AMD,				
DATE - 08/02/10				

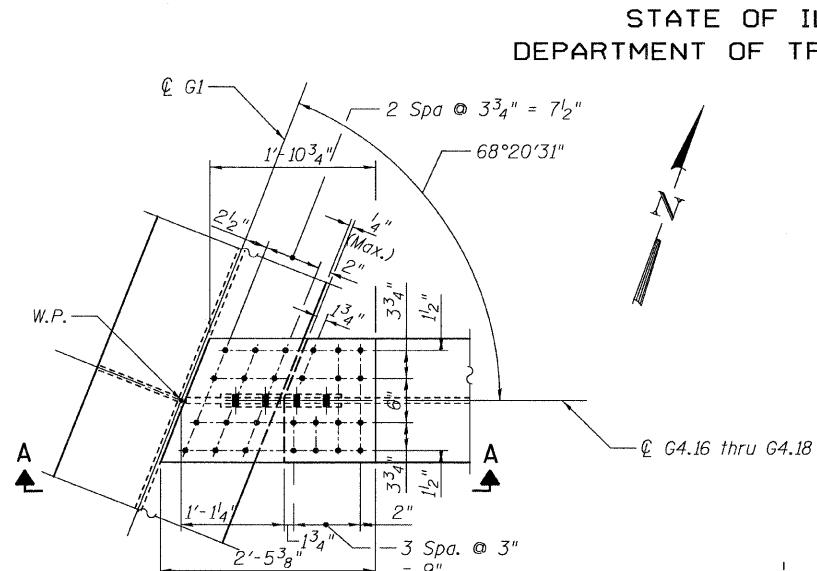
SHEET NO. 123 137 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	0711.2R & 1011.1BR	COOK	200	153
FED. ROAD DIST. NO. 1			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 60L39		

8/13/2010 8:15:58 PM p:\01345\beam_and_bearing_fabrication\55f4frame\111.dwg

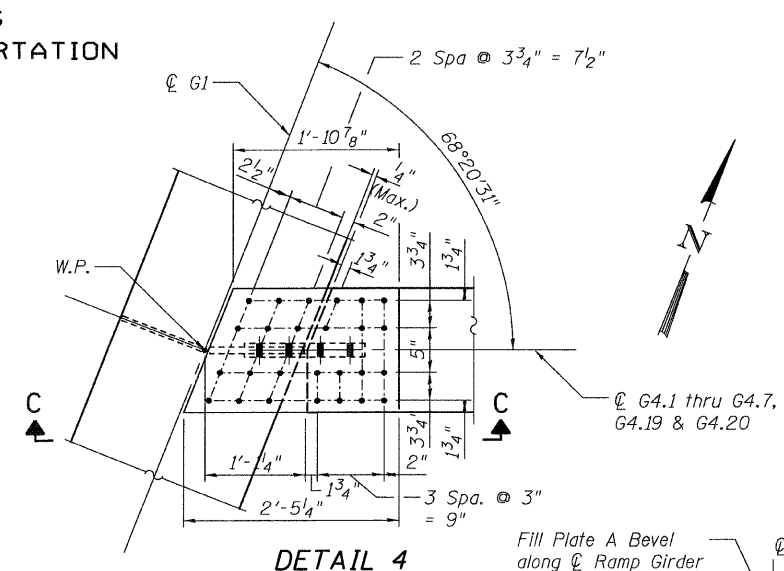
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



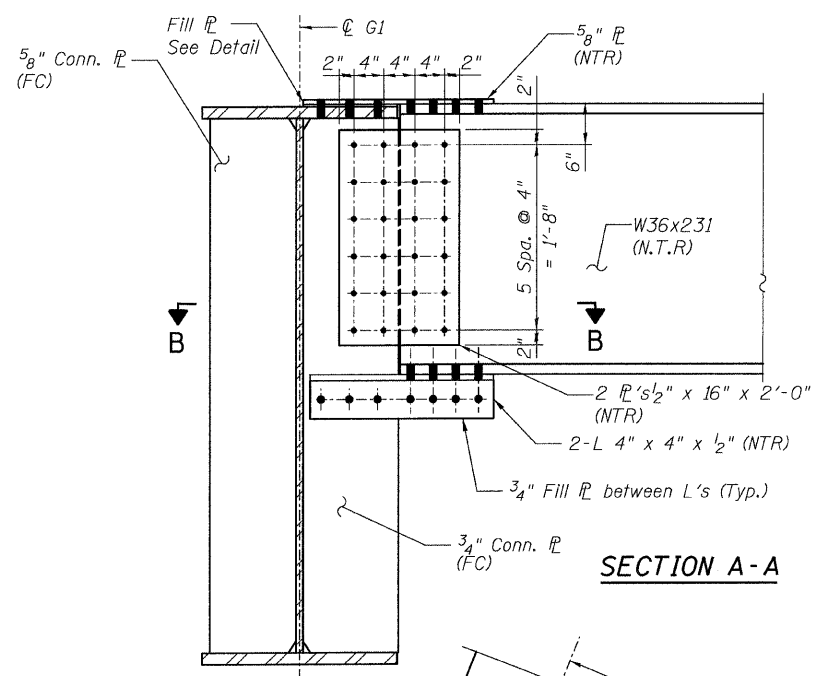
DETAIL 3
(Top Flange @ G4.11)



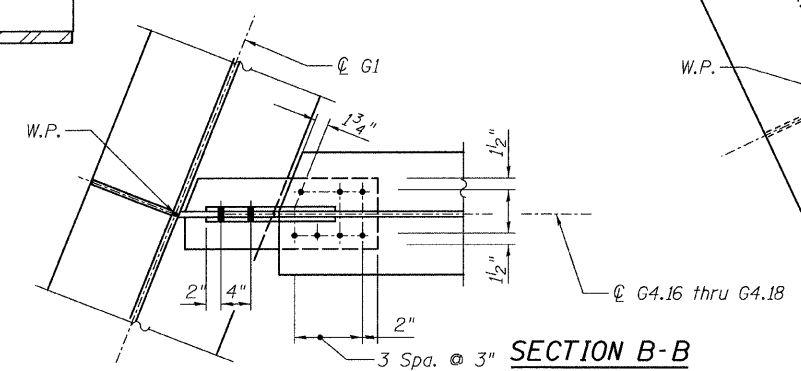
DETAIL 3
(Top Flange @ G4.16 thru G4.18)



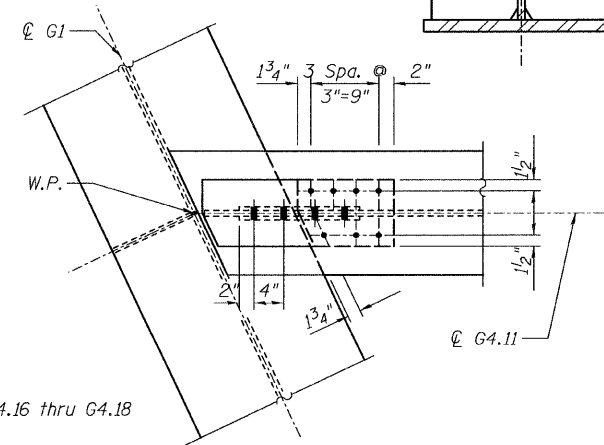
DETAIL 4
(Top Flange)



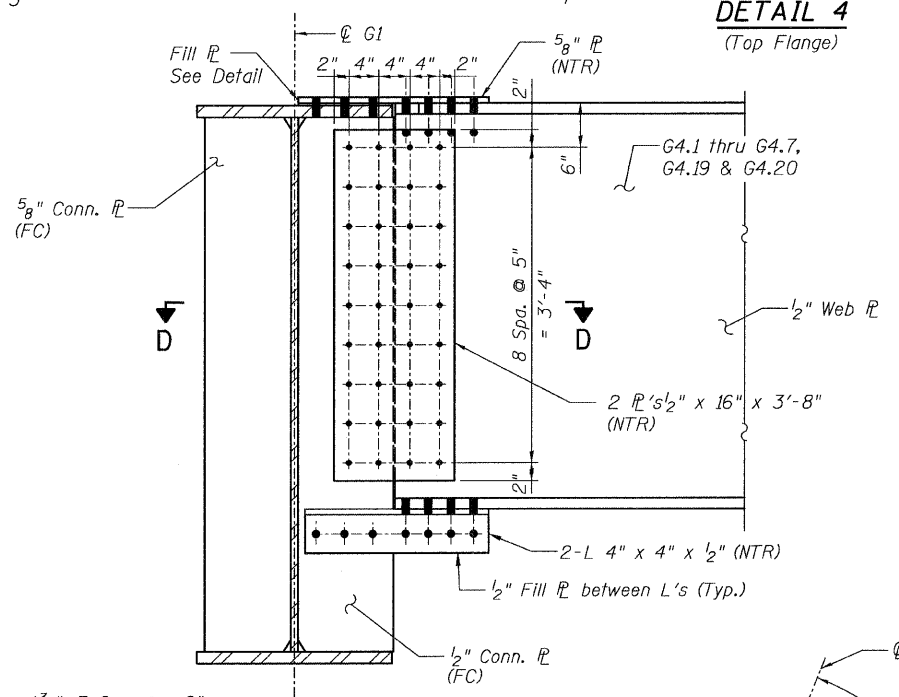
SECTION A-A



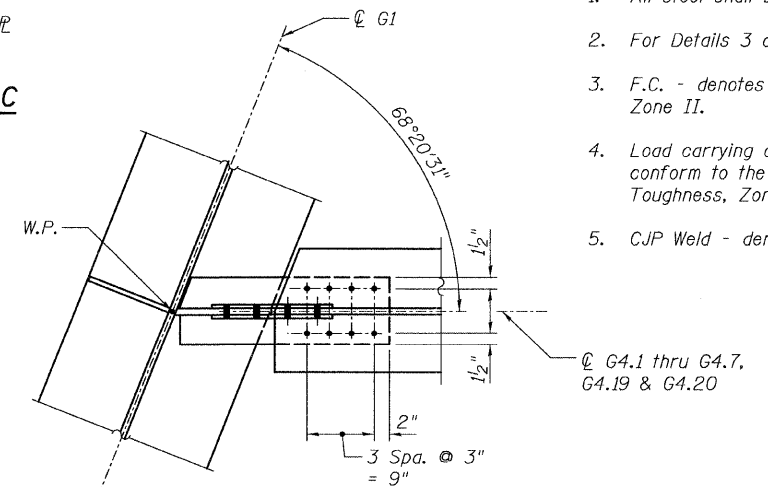
SECTION B-B
(@ G4.16 thru G4.18)



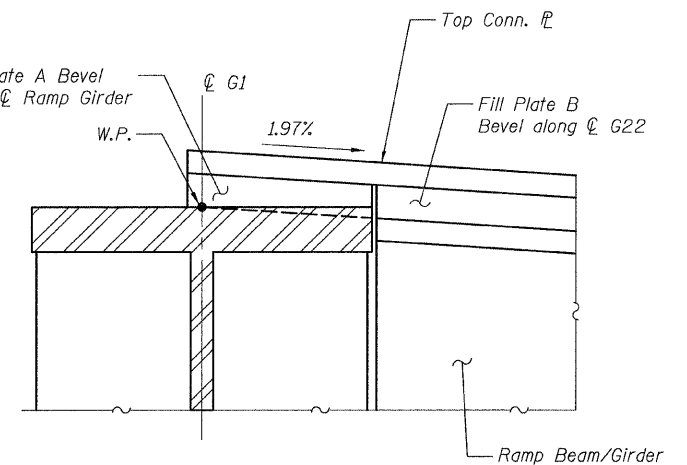
SECTION B-B
(@ G4.11)



SECTION C-C



SECTION D-D



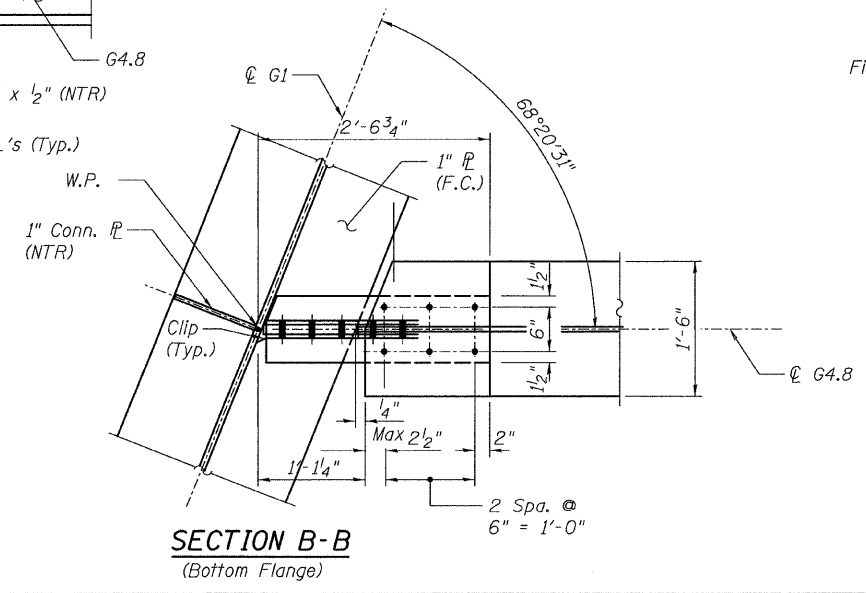
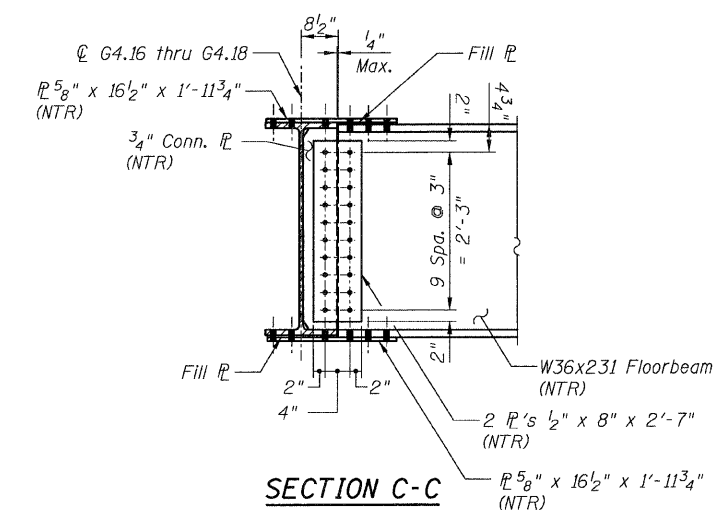
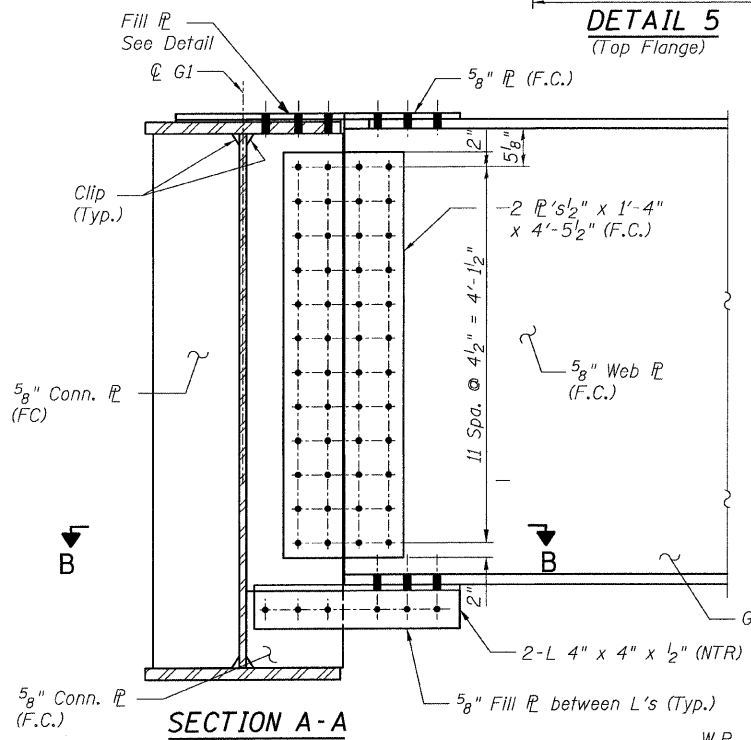
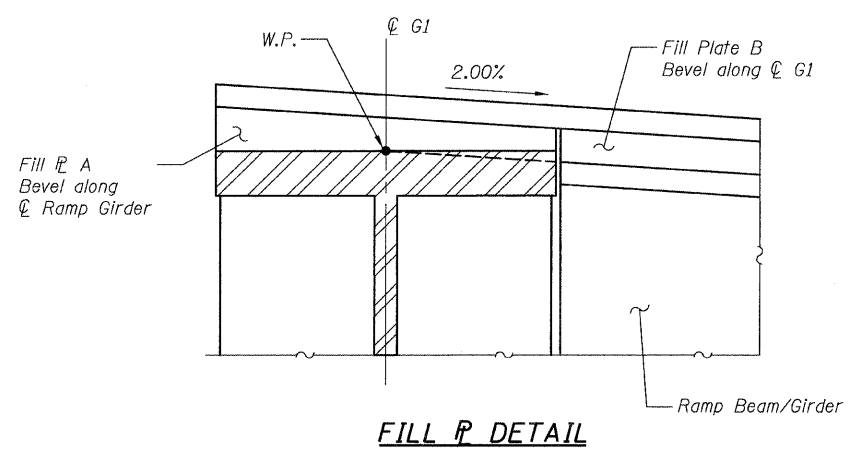
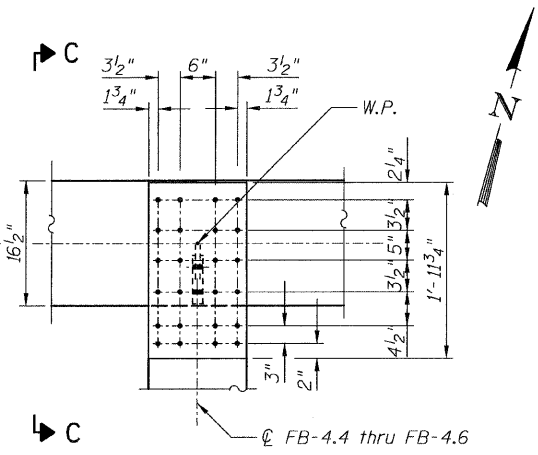
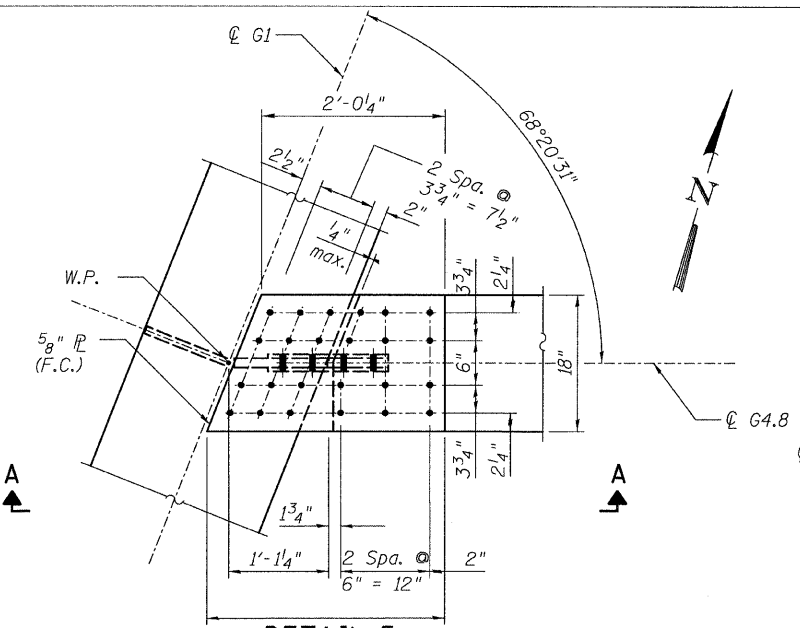
FILL P DETAIL

- NOTES:**
1. All steel shall be AASHTO M270 Grade 50
 2. For Details 3 and 4 locations, see Sheet 44.
 3. F.C. - denotes Fracture Critical Material, AASHTO Zone II.
 4. Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
 5. CJP Weld - denotes Complete Joint Penetration Weld.

CONNECTION DETAILS 3&4
RAMP 4 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - EKH, JMA	REVISIONS		SHEET NO. 174	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD,	NAME	DATE		137 SHEETS	55	0711.2R & 1011.1BR	COOK	200	154
	DRAWN - EKH, JMA				CONTRACT NO. 60L39					
	CHECKED - AMD,				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
	DATE - 08/02/10									

STATE OF ILLINOIS
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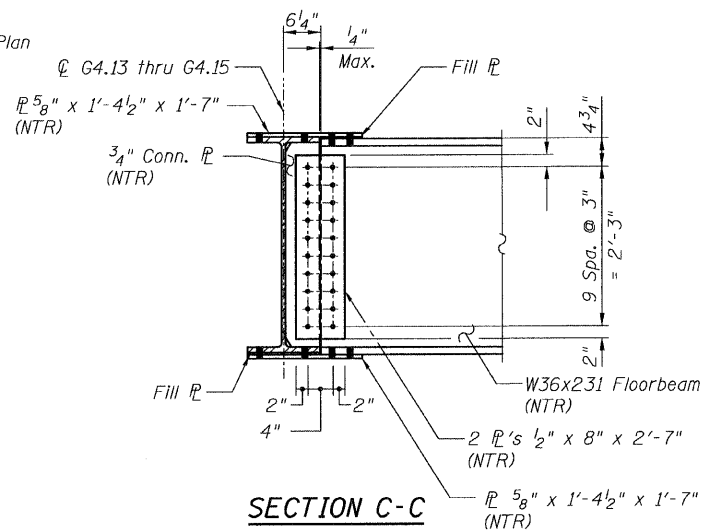
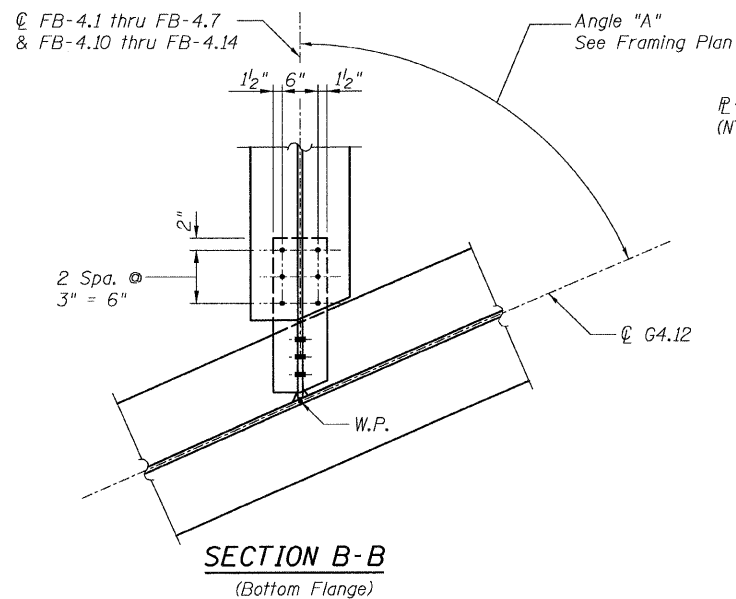
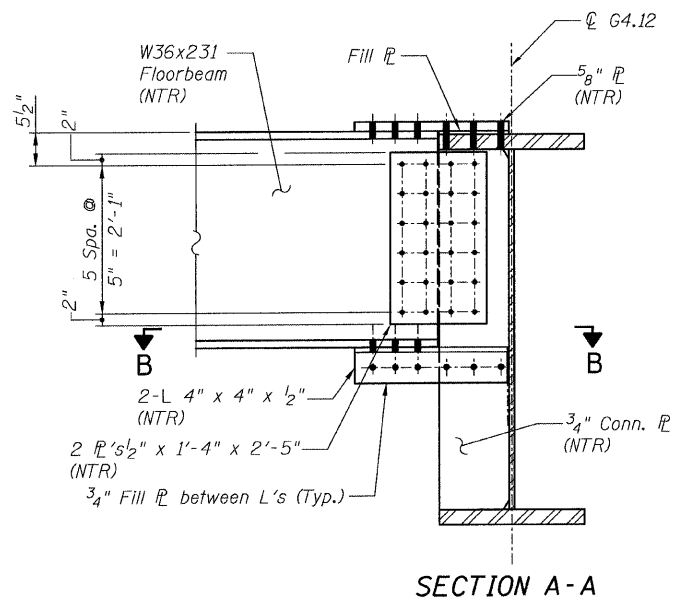
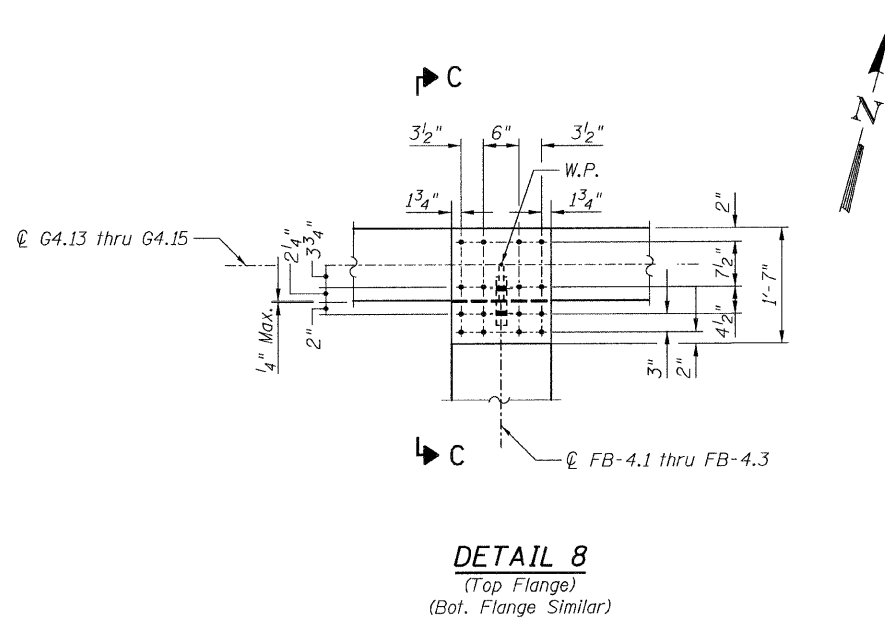
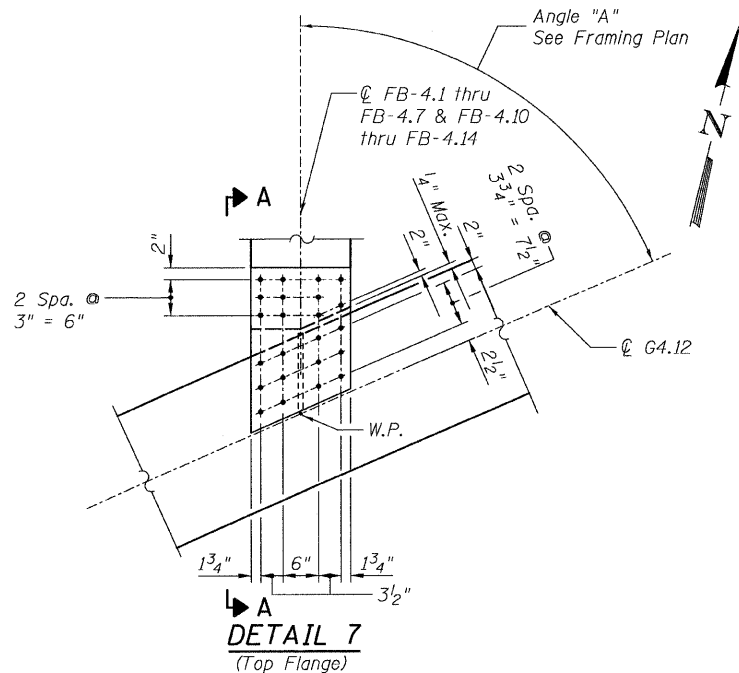
- NOTES:**
- All steel shall be AASHTO M270 Grade 50.
 - For Details 5 and 6 locations, see Sheet 44.
 - F.C. - denotes Fracture Critical Material, AASHTO Zone II.
 - Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

**CONNECTION DETAILS 5&6
RAMP 4 FLARE
STRUCTURE NO. 016-0724**

TYLIN INTERNATIONAL	DESIGNED - EKH, JMA	REVISIONS		SHEET NO. 125	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD,	NAME	DATE		55	0711.2R & 1011.1BR	COOK	200	155	
	DRAWN - EKH, JMA				137 SHEETS	CONTRACT NO. 60L39				
	CHECKED - AMD,					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
	DATE - 08/02/10									

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8/13/2010

STATE OF ILLINOIS
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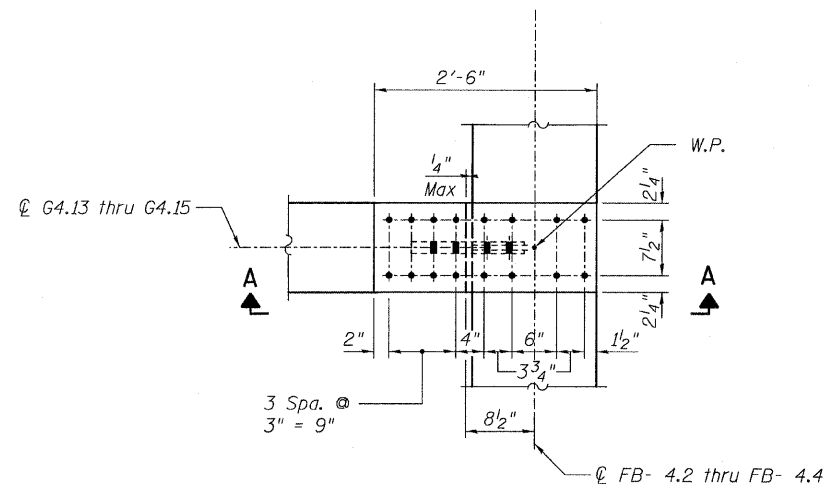
- NOTES:**
- All steel shall be AASHTO M270 Grade 50.
 - For Details 7 and 8 locations, see Sheet 44.
 - Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
 - CJP Weld - denotes Complete Joint Penetration Weld.

CONNECTION DETAILS 7&8
RAMP 4 FLARE
STRUCTURE NO. 016-0724

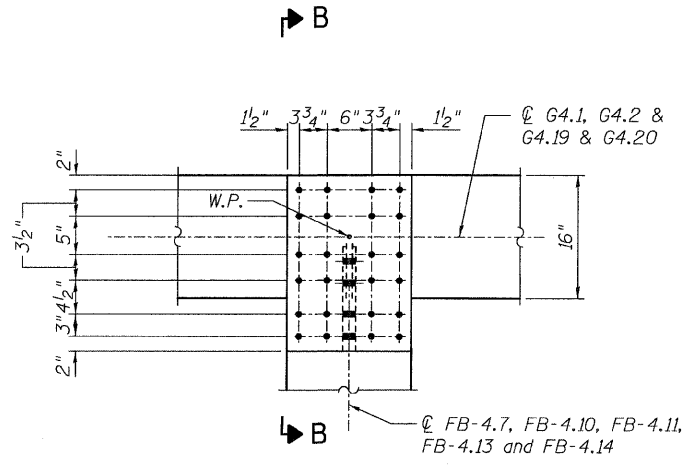
TYLIN INTERNATIONAL	DESIGNED - EKH, JMA	REVISIONS	
	CHECKED - AMD,	NAME	DATE
	DRAWN - EKH, JMA		
	CHECKED - AMD,		
	DATE - 08/02/10		

SHEET NO. 126 137 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	0711.2R & 1011.1BR	COOK	200	156
CONTRACT NO. 60L39					
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

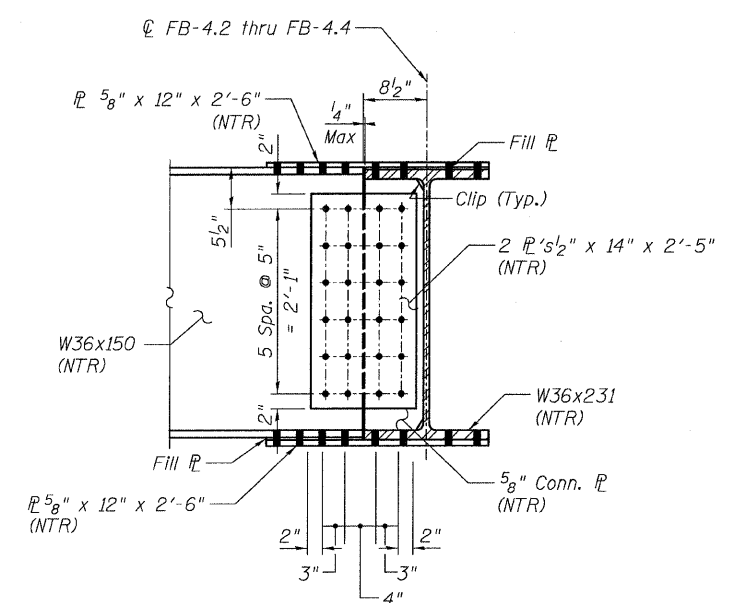
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



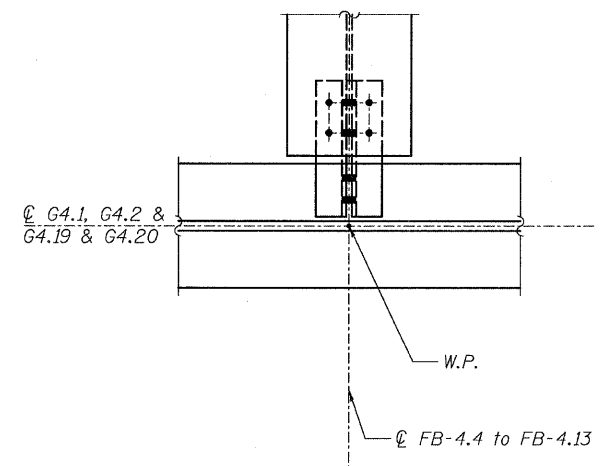
DETAIL 9
(Top Flange)
(Bottom Flange Similar)



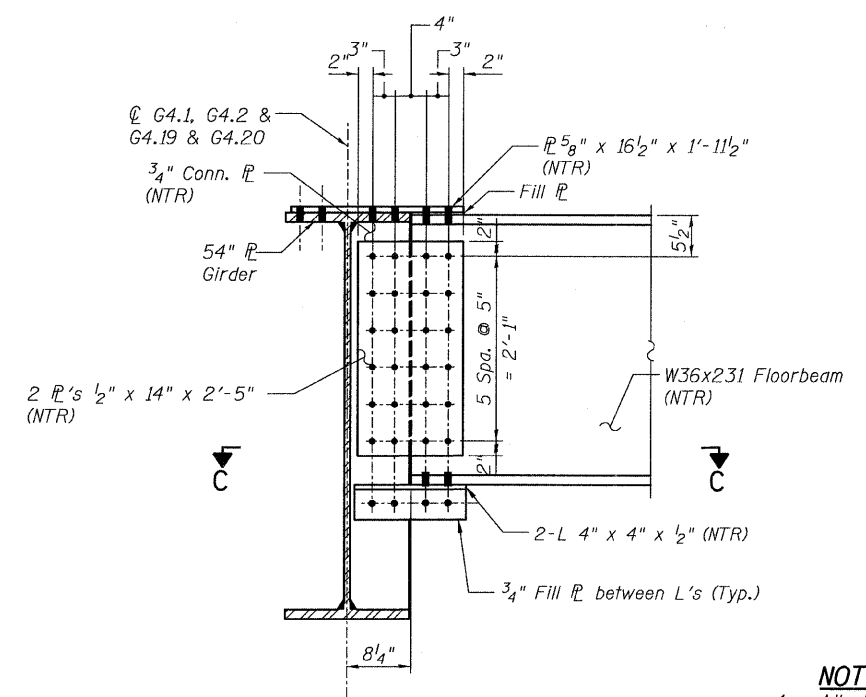
DETAIL 10
(Top Flange)



SECTION A-A



SECTION C-C



SECTION B-B

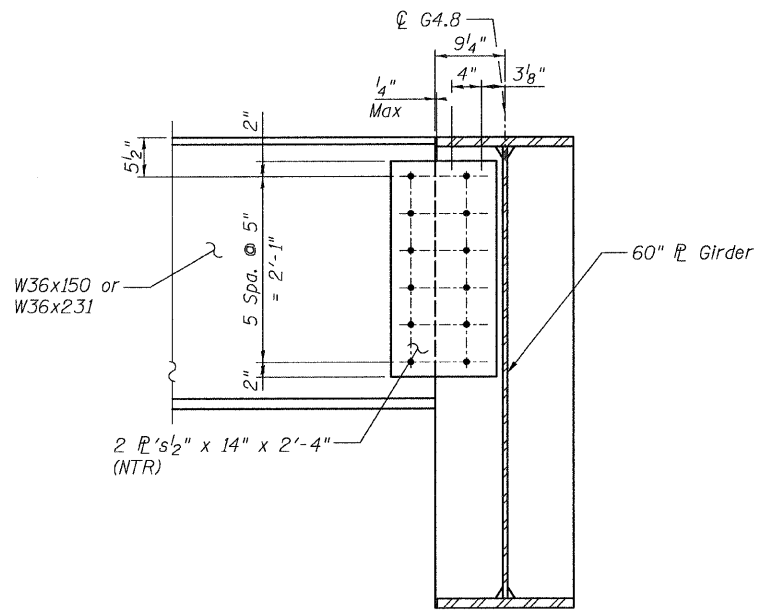
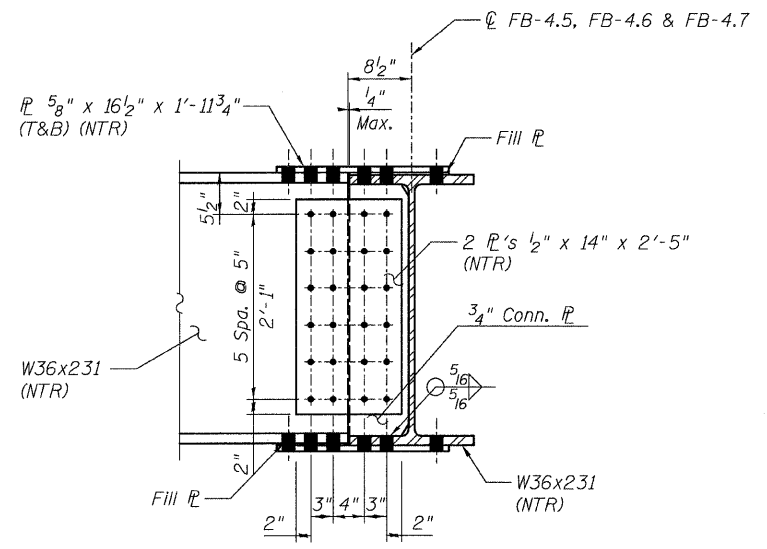
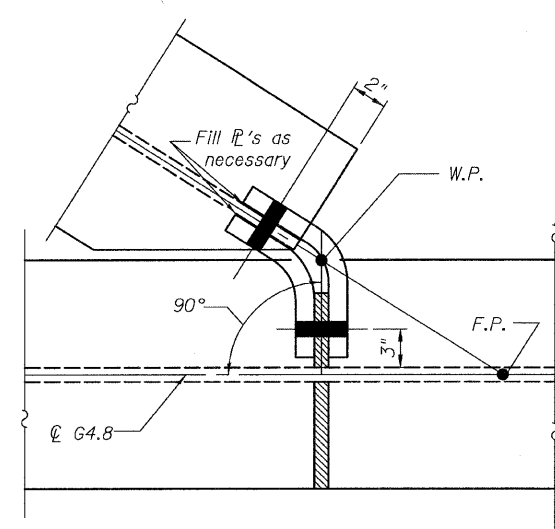
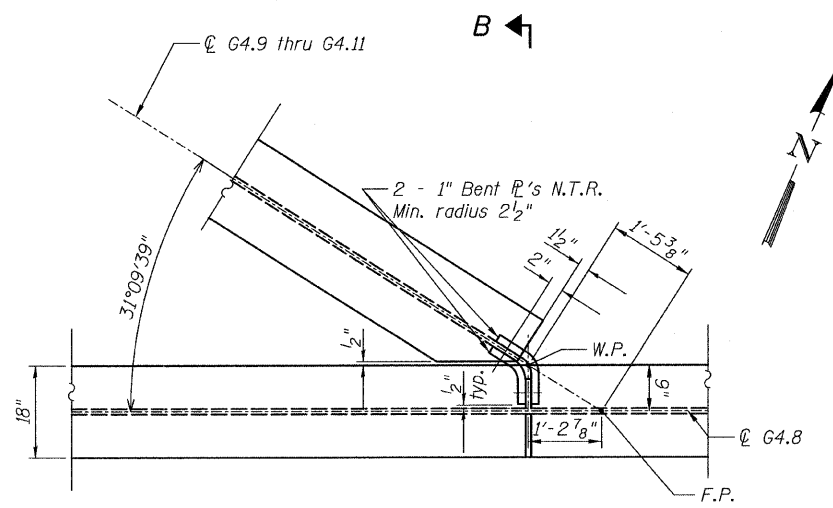
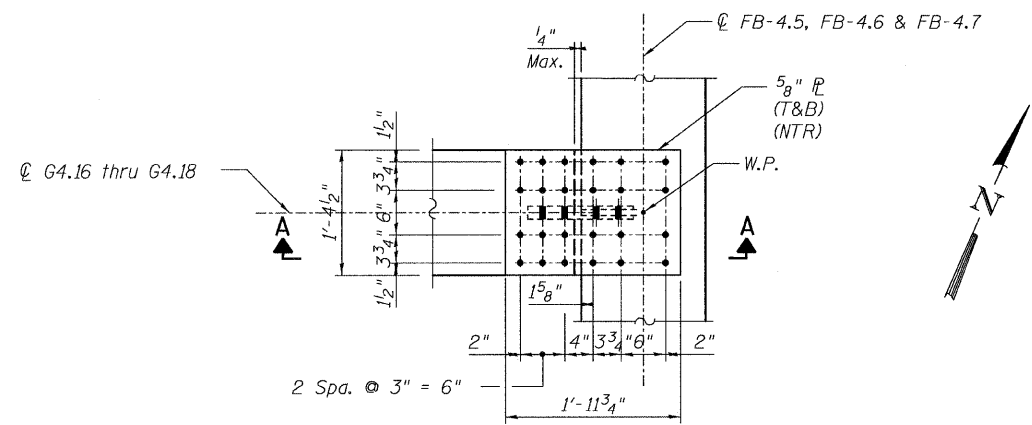
- NOTES:**
- All steel shall be AASHTO M270 Grade 50.
 - For Details 9 and 10 locations, see Sheet 44.
 - Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

CONNECTION DETAILS 9&10
RAMP 4 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - EKH, JMA	REVISIONS		SHEET NO. 127	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.								
	CHECKED - AMD,	NAME	DATE							137 SHEETS	55	0711.2R & 1011.1BR	COOK	200	157		
	DRAWN - EKH, JMA															CONTRACT NO. 60L39	
	CHECKED - AMD,																FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT
	DATE - 08/02/10																

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STATE OF ILLINOIS
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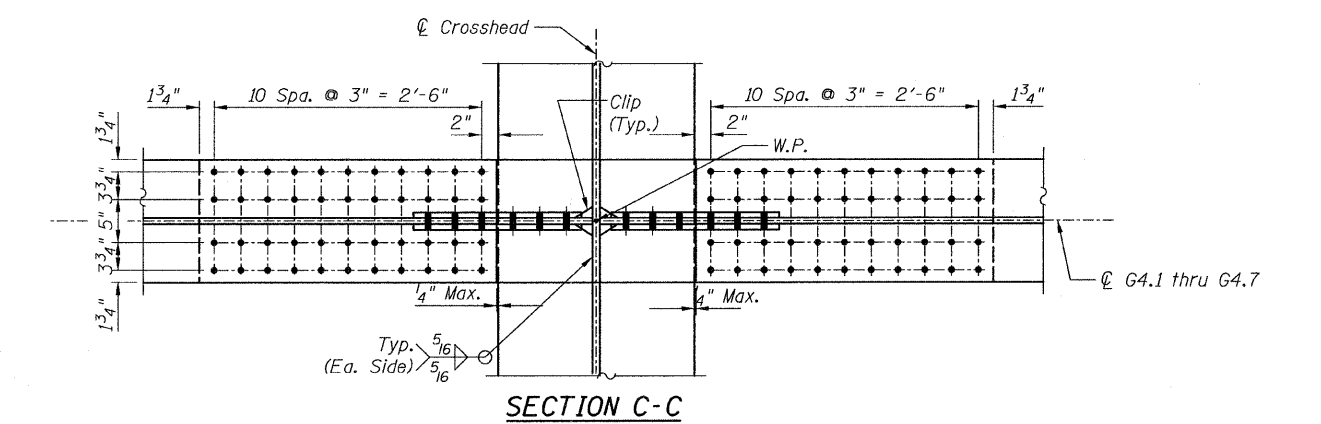
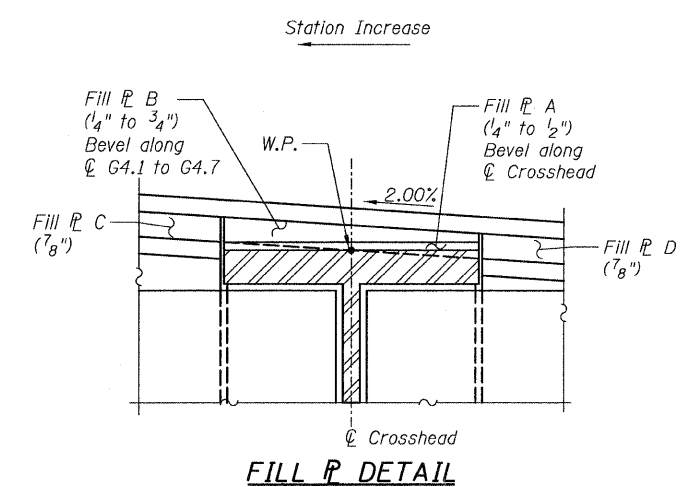
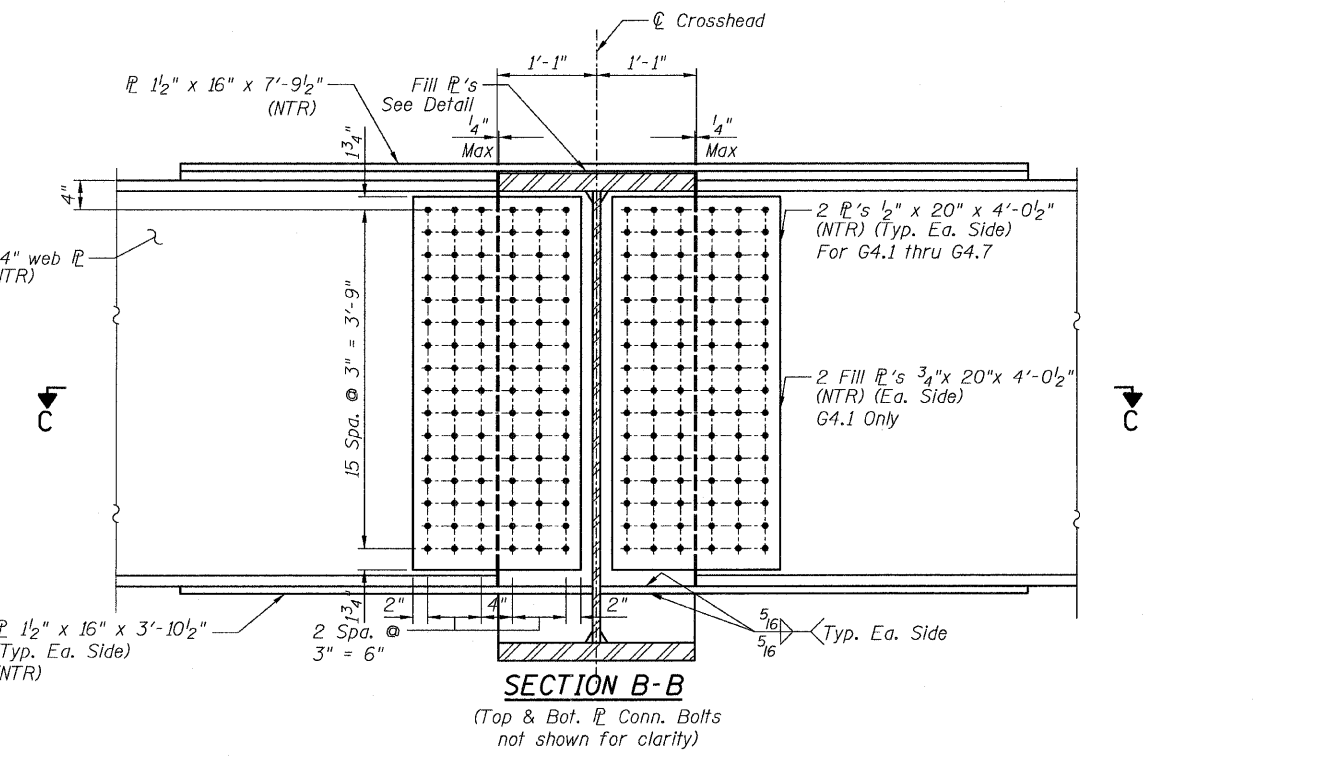
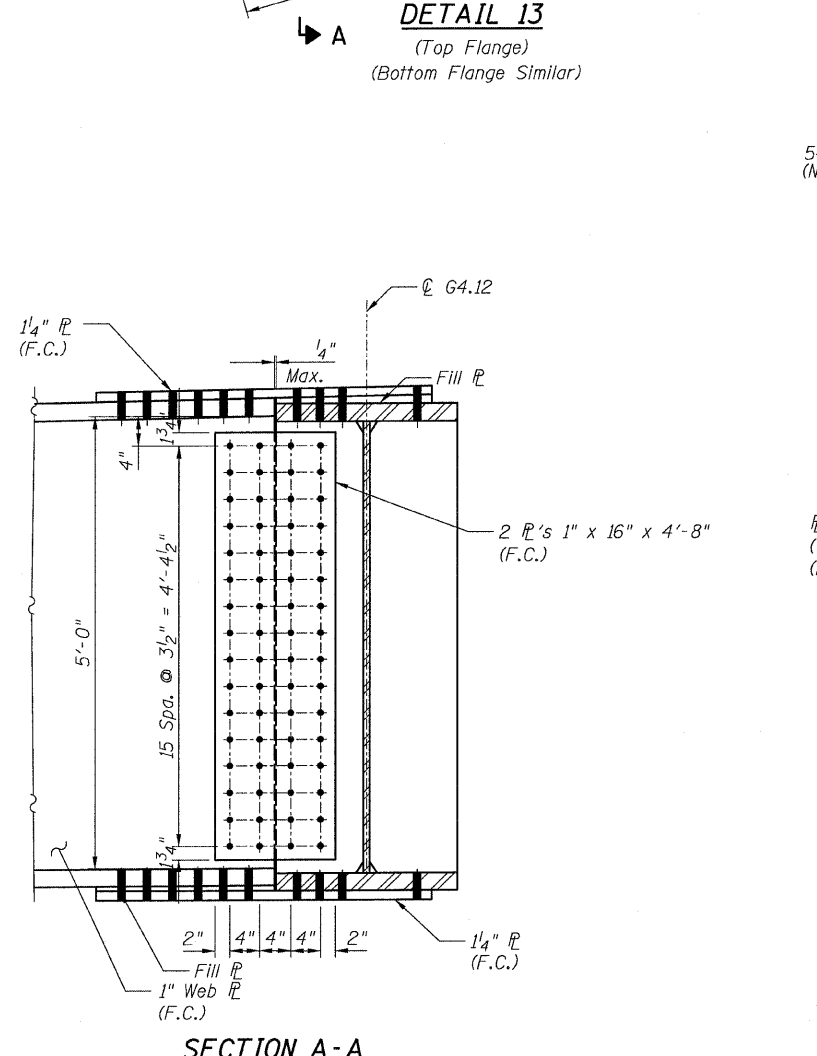
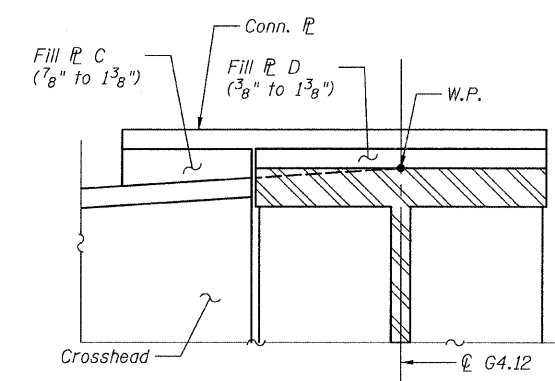
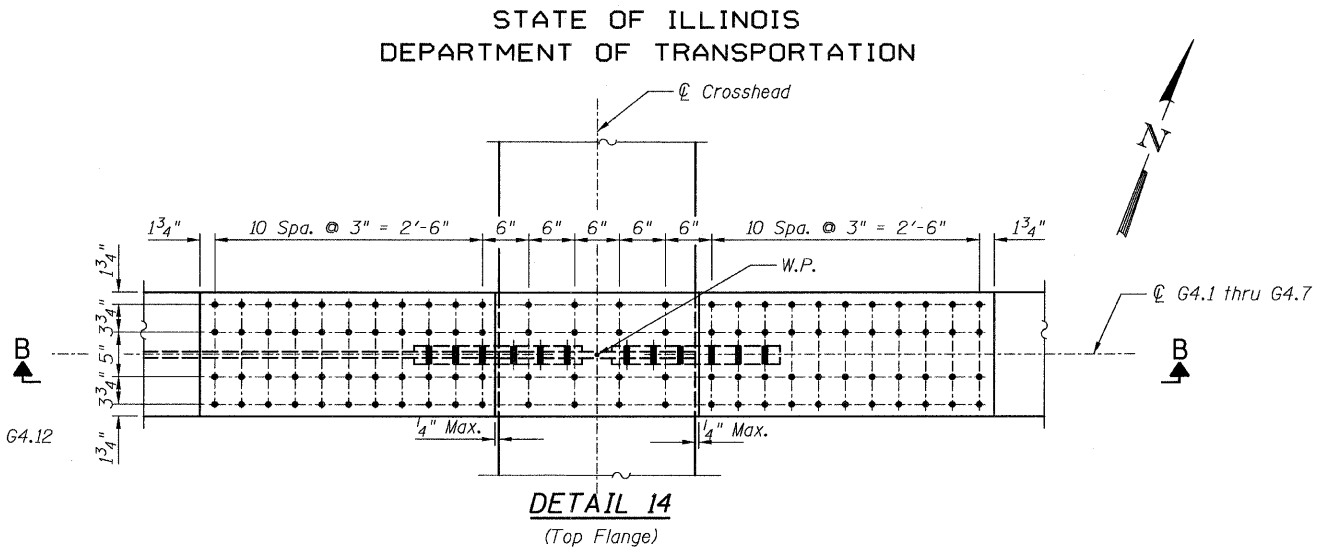
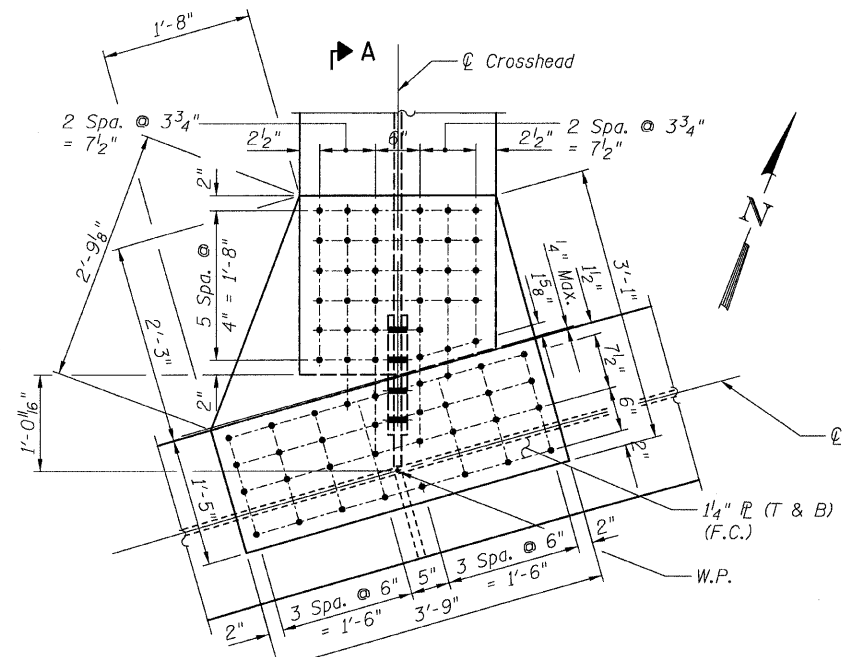
- NOTES:**
- All steel shall be AASHTO M270 Grade 50.
 - For Details 11 and 12 locations, see Sheet 44.
 - F.C. - denotes Fracture Critical Material, AASHTO Zone II.
 - Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

**CONNECTION DETAILS 11&12
RAMP 4 FLARE
STRUCTURE NO. 016-0724**

TYLIN INTERNATIONAL	DESIGNED - EKH, JMA	REVISIONS		SHEET NO. 28 137 SHEETS	F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 158				
	CHECKED - AMD,	NAME	DATE							CONTRACT NO. 60L39			
	DRAWN - EKH, JMA												
	CHECKED - AMD,												
	DATE - 08/02/10												
					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT								

p:\01345\beam and bearing fabrication\15f4\framedtl16.dgn 8/13/2010 5:26:26 PM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



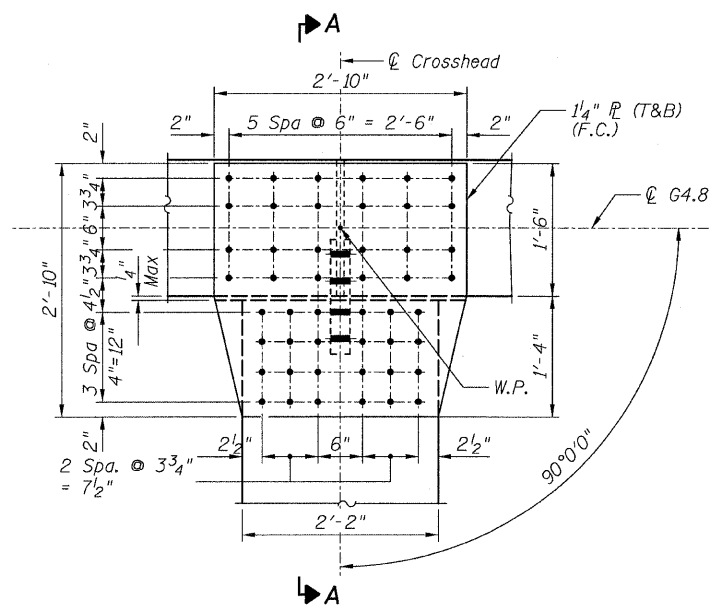
- NOTES:**
- All steel shall be AASHTO M270 Grade 50.
 - For Details 13 and 14 locations, see Sheet 44.
 - F.C. - denotes Fracture Critical Material, AASHTO Zone II.
 - Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

**CONNECTION DETAILS 13&14
RAMP 4 FLARE
STRUCTURE NO. 016-0724**

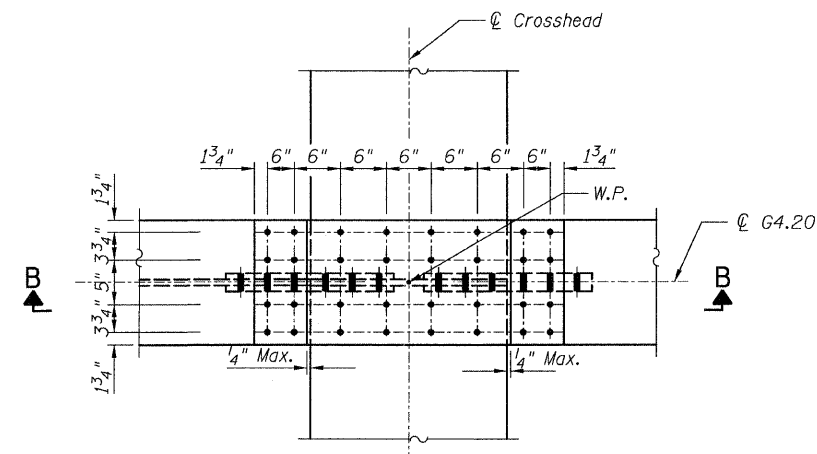
TYLIN INTERNATIONAL	DESIGNED - EKH, JMA	REVISIONS		SHEET NO. 129	F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 159	
	CHECKED - AMD,	NAME	DATE							CONTRACT NO. 60L39
	DRAWN - EKH, JMA									
	CHECKED - AMD,									
DATE - 08/02/10				137 SHEETS	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

8/13/2010 5:35:32 PM p:\01345\beam and bearing fabrication\55f4frame\edt17.dgn

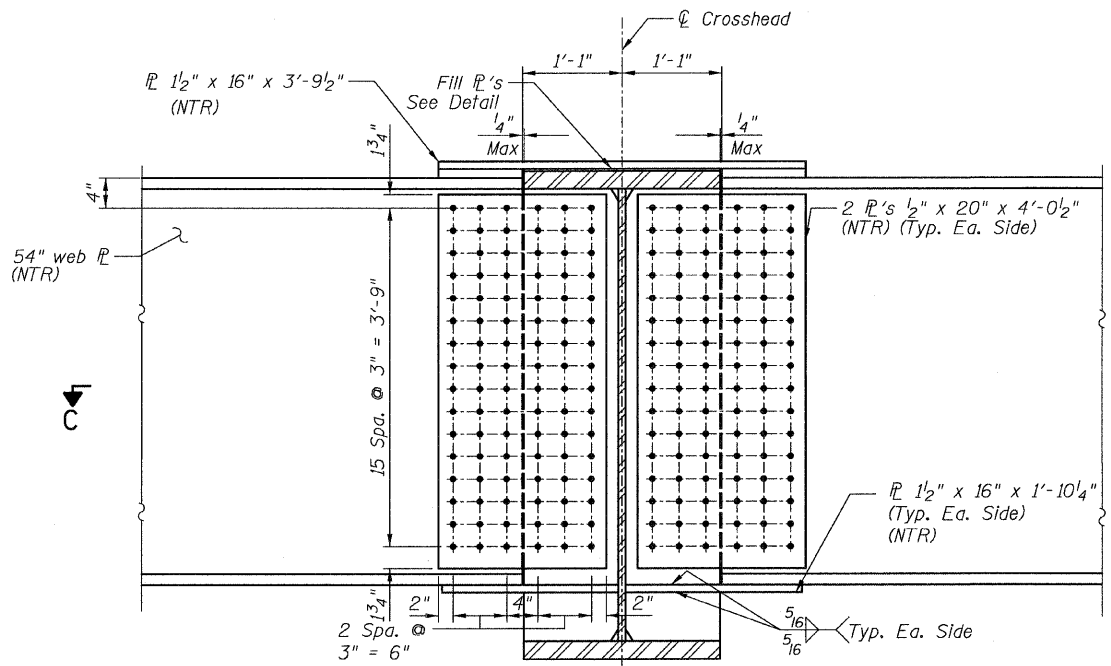
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



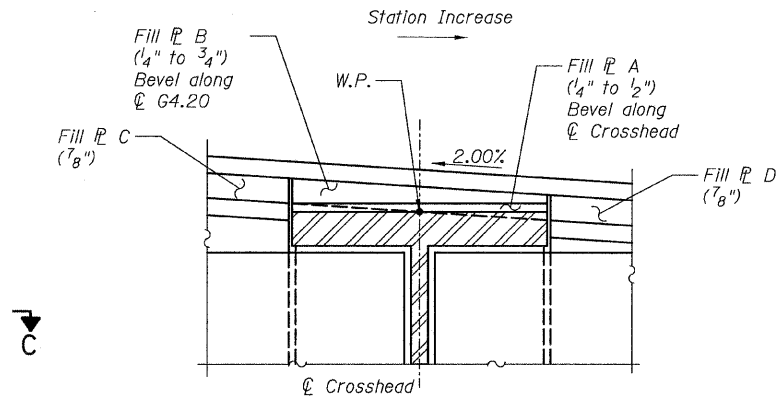
DETAIL 15
(Top Flange)
(Bot. Flange Similar)



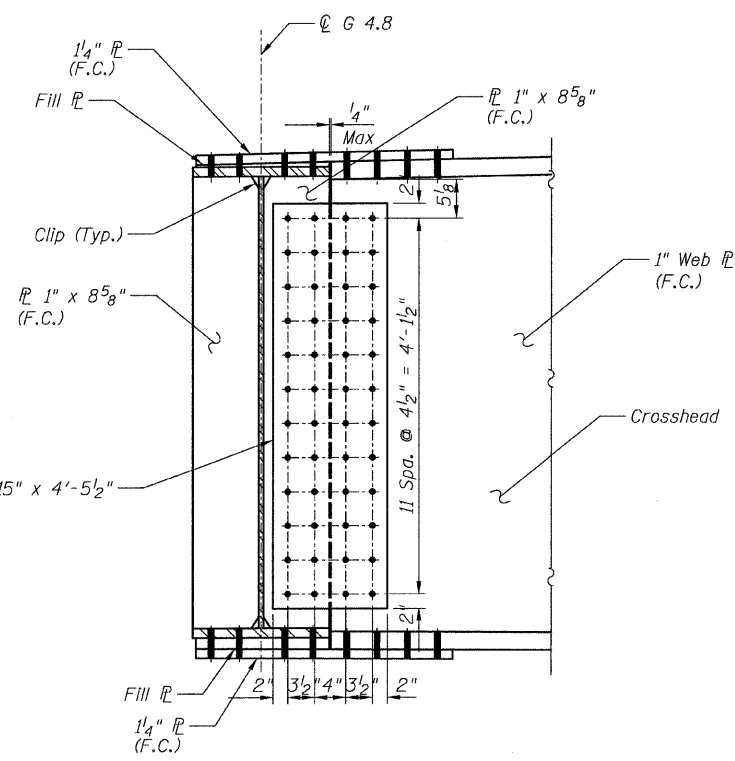
DETAIL 16
(Top Flange)



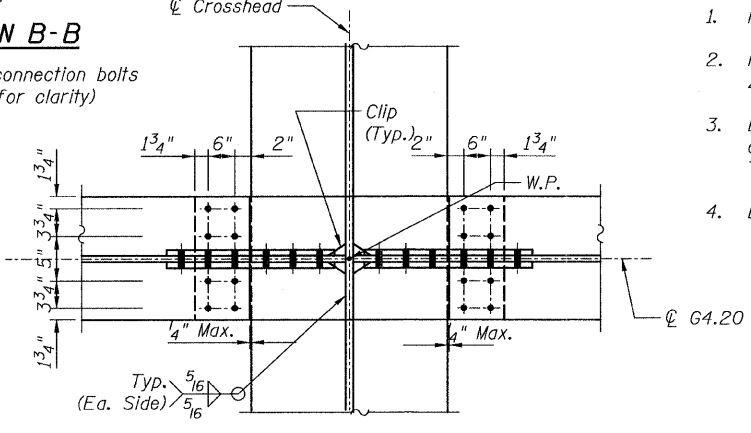
SECTION B-B



FILL PLATE DETAIL



SECTION A-A



SECTION C-C

NOTES:

1. For Details 15 and 16 locations, see Sheet 44.
2. F.C. - denotes Fracture Critical Material, AASHTO Zone II.
3. Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
4. Bolts for connection detail 15 shall be 1" φ with 1/16" holes.

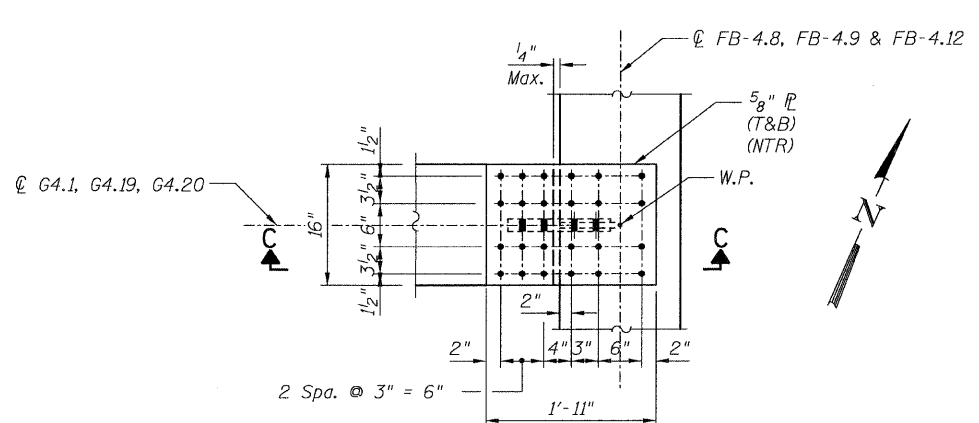
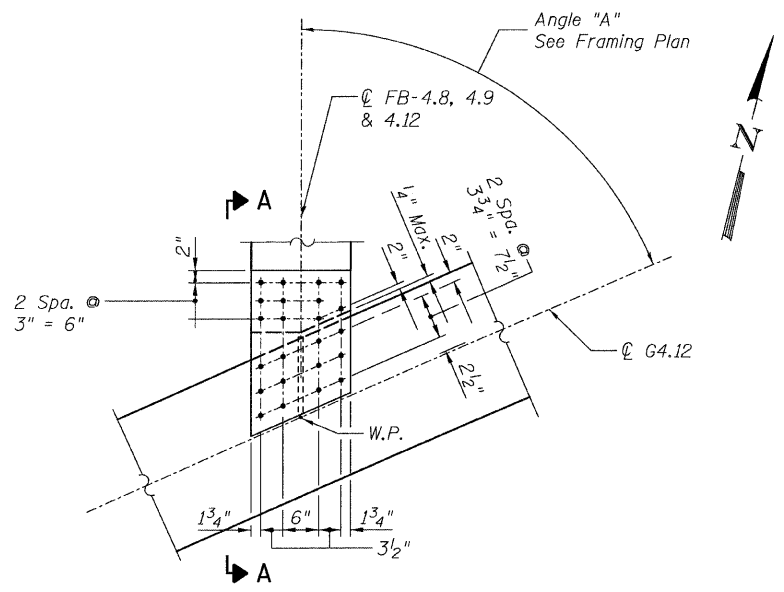
CONNECTION DETAILS 15&16
RAMP 4 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - EKH, JMA	REVISIONS	
	CHECKED - AMD,	NAME	DATE
	DRAWN - EKH, JMA		
	CHECKED - AMD,		
	DATE - 08/02/10		

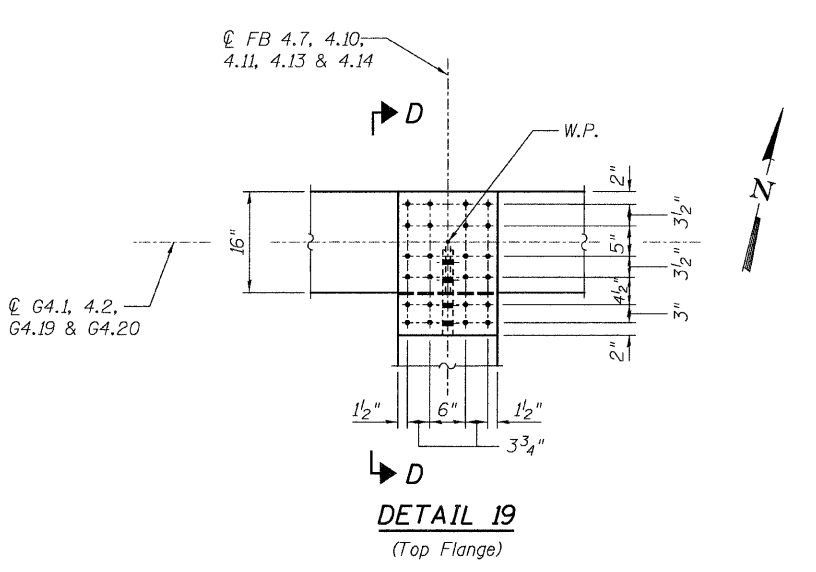
SHEET NO. 130 137 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	0711.2R & 1011.1BR	COOK	200	160
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			CONTRACT NO. 60L39		

8/13/2010 6:12:20 PM p:\01345\beam and bearing fabrication\55f4famedt118.dgn

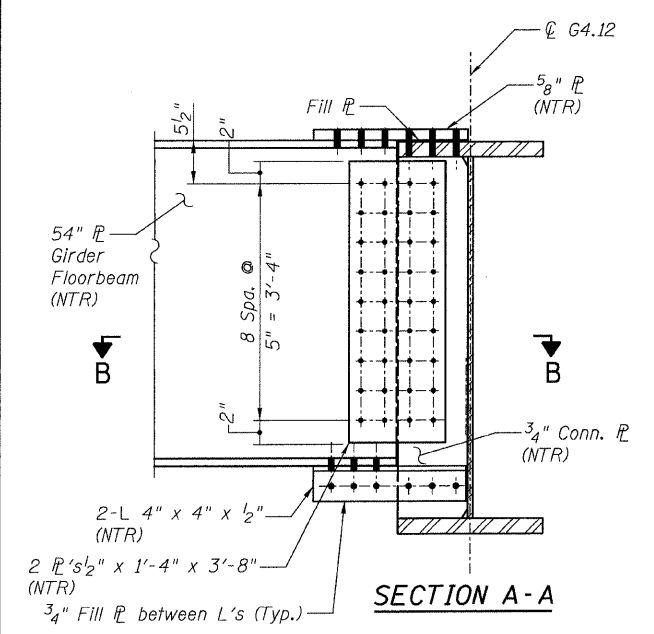
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



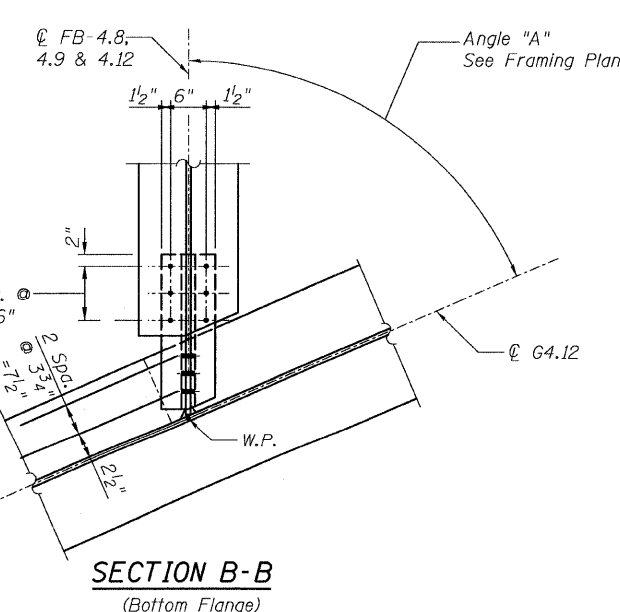
DETAIL 18
(Top Flange)
(Bottom Flange is similar.)



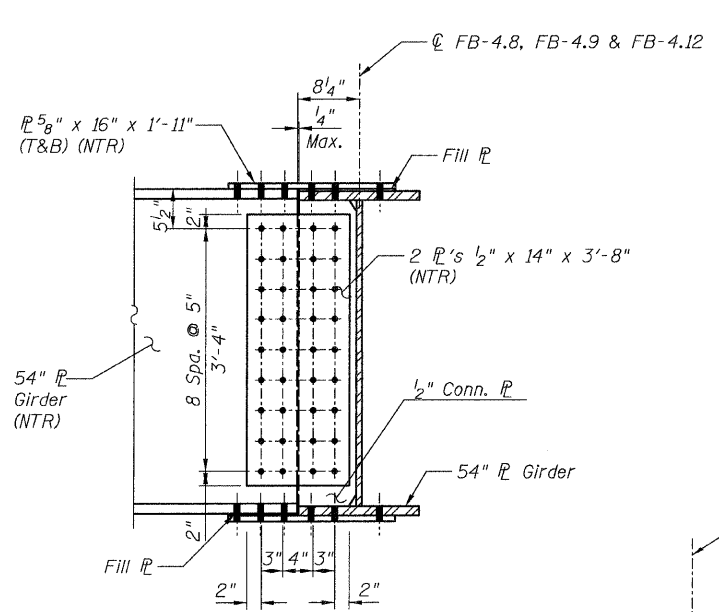
DETAIL 19
(Top Flange)



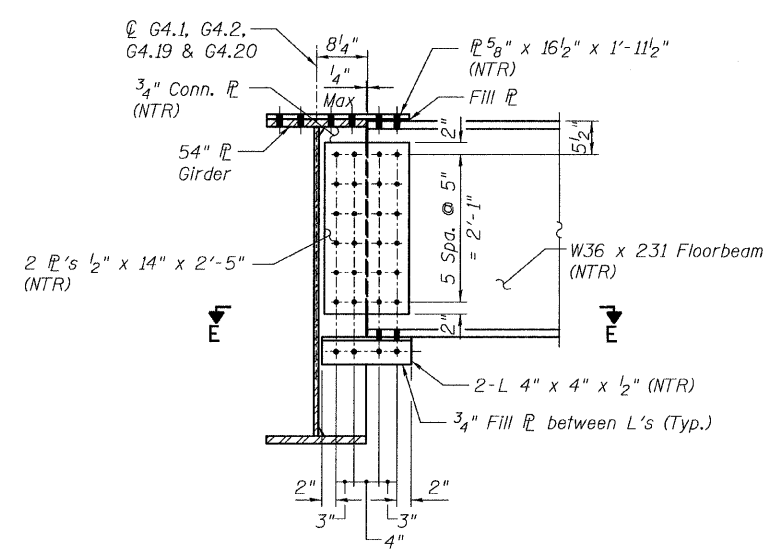
SECTION A-A



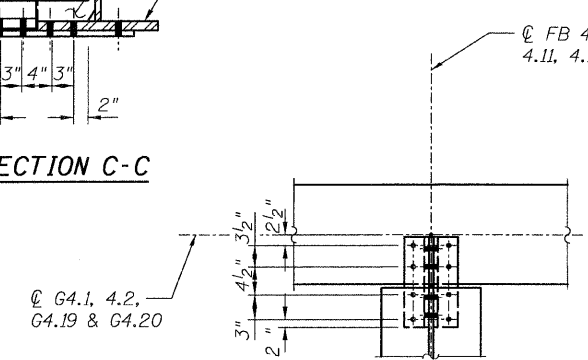
SECTION B-B
(Bottom Flange)



SECTION C-C



SECTION D-D



SECTION E-E

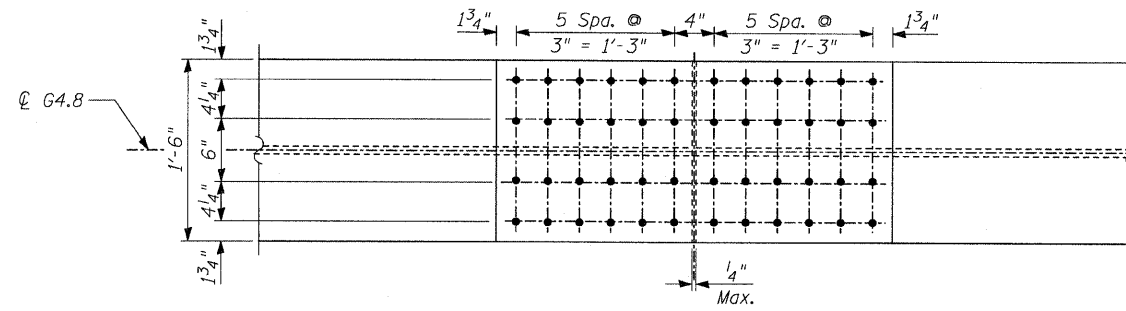
- NOTES:**
- All steel shall be AASHTO M270 Grade 50.
 - For Details 17 and 18 locations, see Sheet 44.
 - Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
 - CJP Weld - denotes Complete Joint Penetration Weld.

CONNECTION DETAILS 17, 18 & 19
RAMP 4 FLARE
STRUCTURE NO. 016-0724

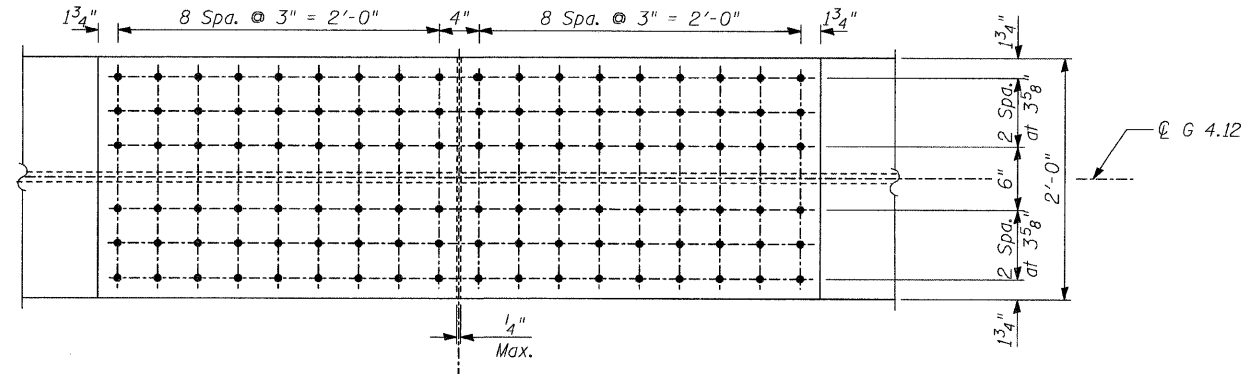
TYLIN INTERNATIONAL	DESIGNED - EKH, JMA	REVISIONS		SHEET NO.130A 137 SHEETS	F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 160A	
	CHECKED - AMD,	NAME	DATE							CONTRACT NO. 60L39
	DRAWN - EKH, JMA									
	CHECKED - AMD,									
	DATE - 08/02/10									
					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

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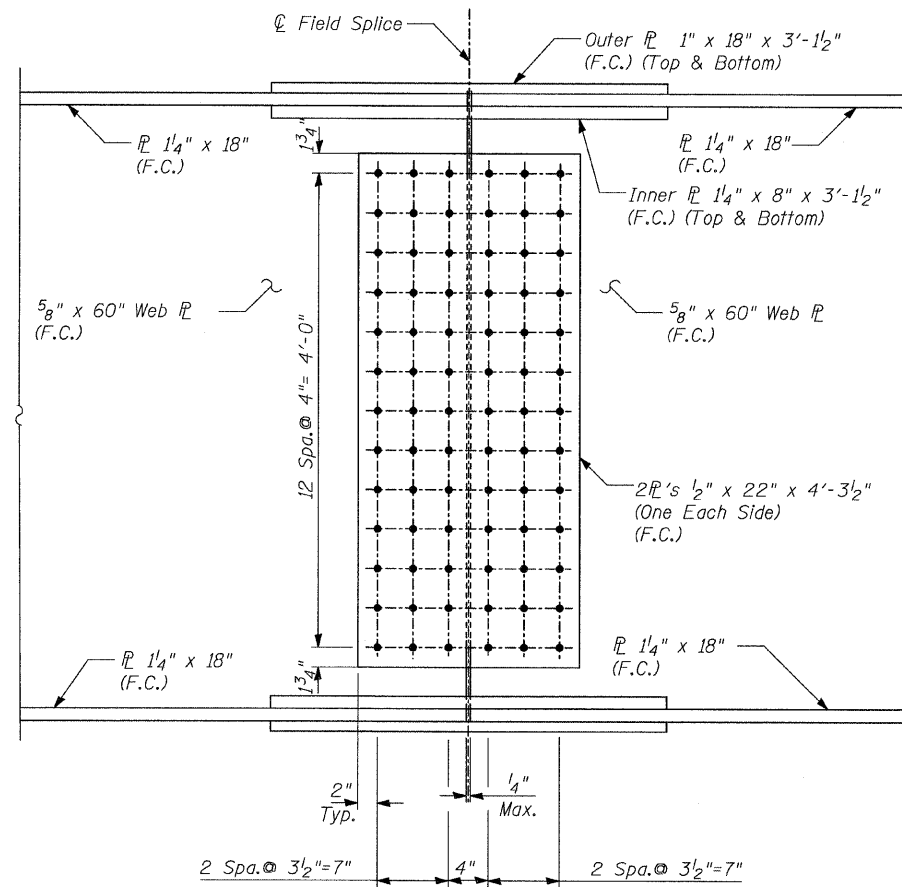
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



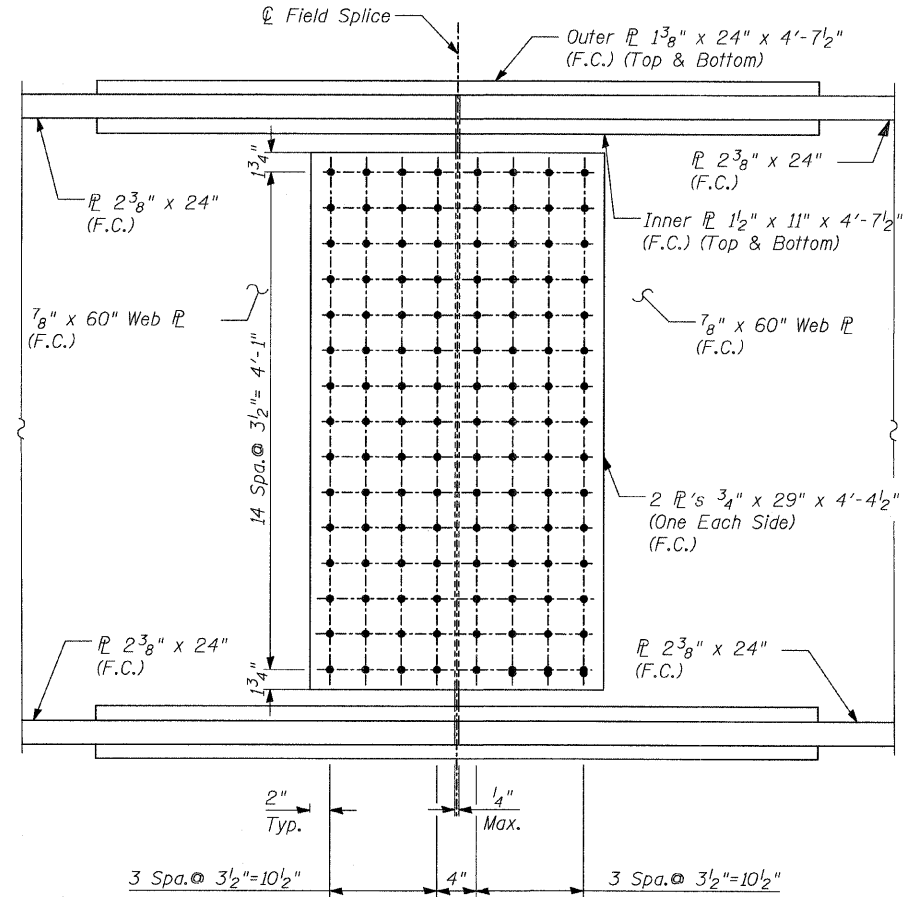
PLAN - TOP & BOTTOM FLANGE
FIELD SPLICE FS-4.1



PLAN - TOP & BOTTOM FLANGE
FIELD SPLICE FS-4.2 & 4.3



ELEVATION



ELEVATION

NOTES:

- All steel shall be AASHTO M270 Grade 50.
- F.C. denotes Fracture Critical Material, AASHTO Zone 2.

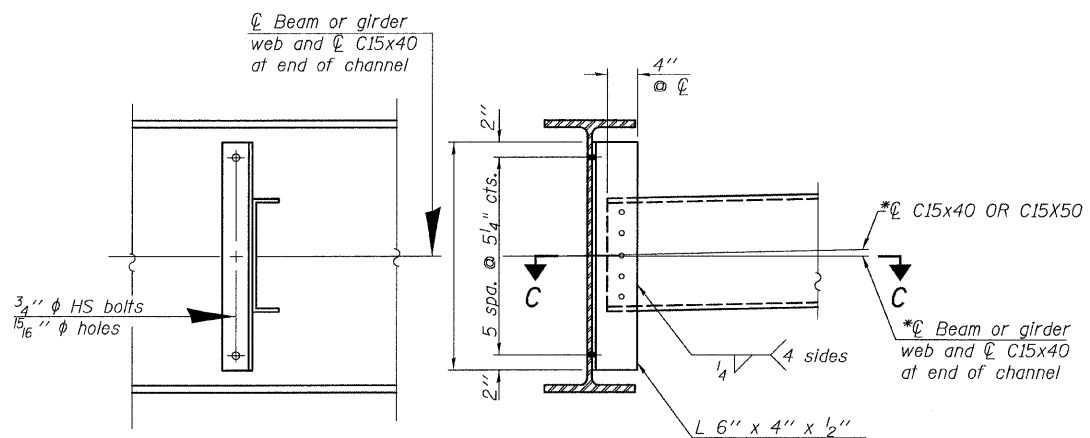
FIELD SPLICES
RAMP 4
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL

DESIGNED	REVISIONS
EKH, JMA	NAME
CHECKED - AMD,	DATE
DRAWN - EKH, JMA	
CHECKED - AMD,	
DATE - 08/02/10	

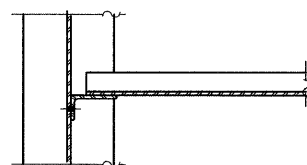
SHEET NO. 131	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
137 SHEETS	55	0711.2R & 1011.1BR	COOK	200	161
			CONTRACT NO. 60L39		
			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

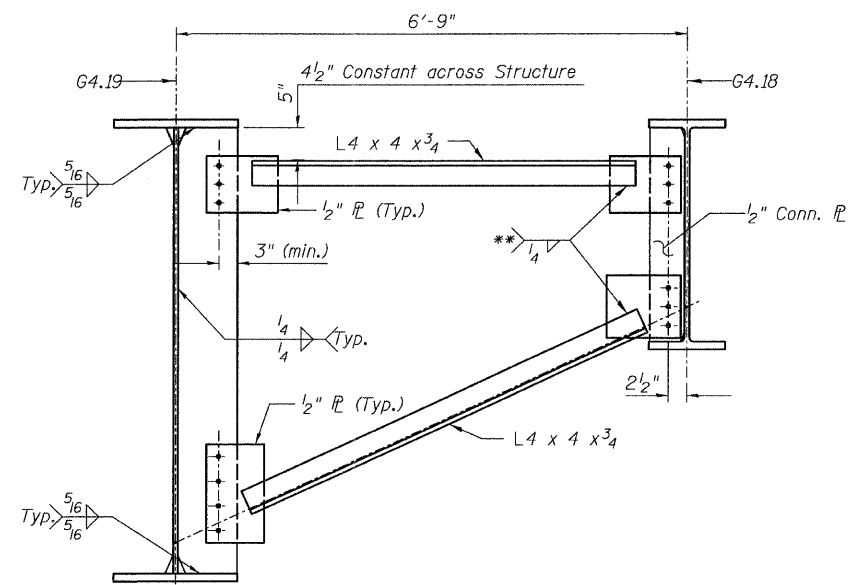


INTERIOR DIAPHRAGM D4.2

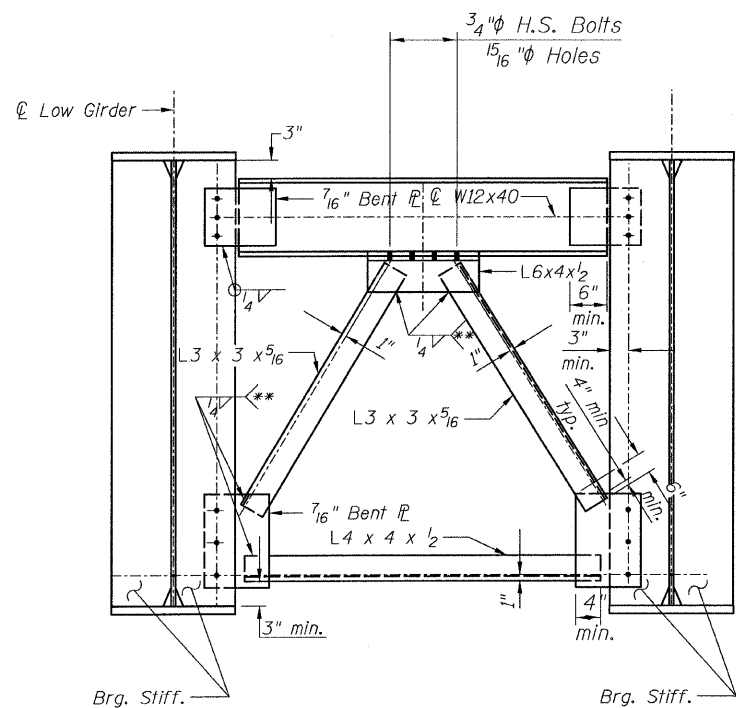
*Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.



SECTION C-C

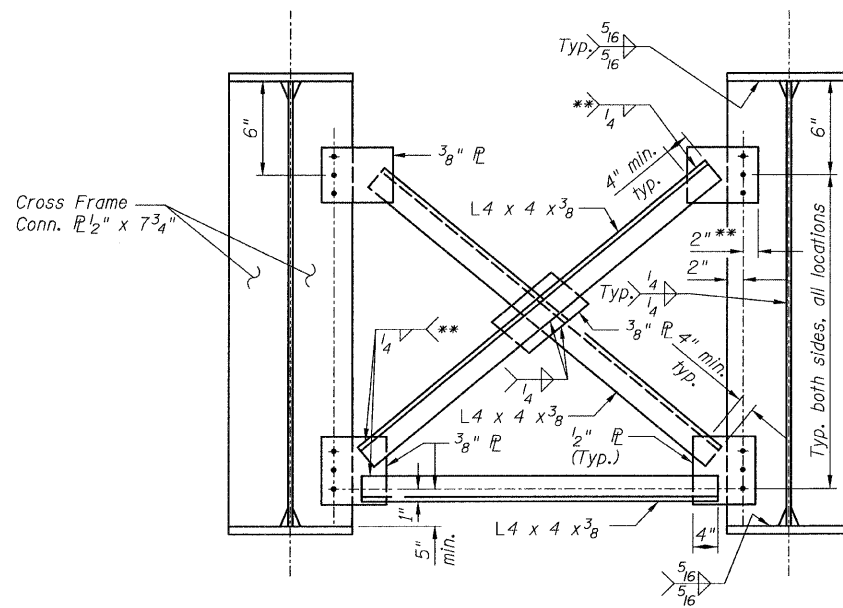


INTERIOR CROSS FRAME CF4.3
(4 Required)



END CROSS FRAME CF4.1
(7 Required)

Note:
Place CrossFrame with channel Flanges and outstanding angle legs outward from abutment backwall. Weld on near side for 7/16" plate.



INTERIOR CROSS FRAME CF4.2
(85 Required)

** Fillet weld angle along 3 sides on one face of gusset plate.

NOTES:

1. All bolts shall be 3/4" φ with 15/16" φ holes unless otherwise noted.
2. Two hardened washers shall be required over all oversize holes for diaphragms.
3. All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

DIAPHRAGMS & DETAILS
RAMP 4 FLARE
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL

DESIGNED - EKH, JMA	REVISIONS	
	NAME	DATE
CHECKED - AMD,		
DRAWN - EKH, JMA		
CHECKED - AMD,		
DATE - 08/02/10		

SHEET NO. 132	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	0711.2R & 1011.1BR	COOK	200	162
137 SHEETS	CONTRACT NO. 60L39				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

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8/13/2010

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

**THIS SHEET IS
NOT USED**

TYLIN INTERNATIONAL	DESIGNED - EKH, JMA	REVISIONS		SHEET NO. 133	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD,	NAME	DATE		55					0711.2R & 1011.1BR
	DRAWN - EKH, JMA				137 SHEETS	CONTRACT NO. 60L39				
	CHECKED - AMD,					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
	DATE - 08/02/10									

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

**THIS SHEET IS
NOT USED**

TYLIN INTERNATIONAL	DESIGNED - EKH, JMA	REVISIONS		SHEET NO. 134	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD,	NAME	DATE		55	0711.2R & 1011.1BR	COOK	200	164	
	DRAWN - EKH, JMA				137 SHEETS	CONTRACT NO. 60L39				
	CHECKED - AMD,				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
	DATE - 08/02/10									

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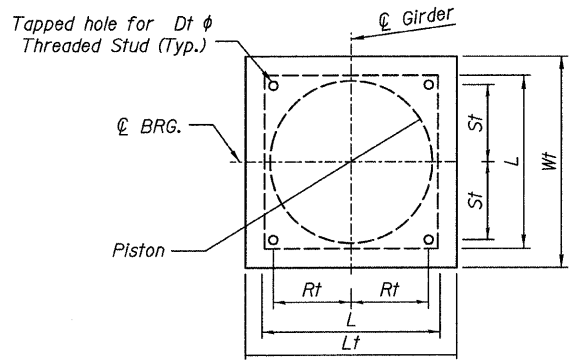
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9/2/2010

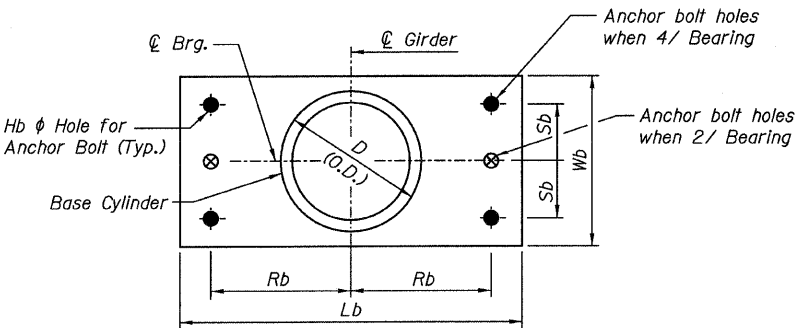
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NOTES:

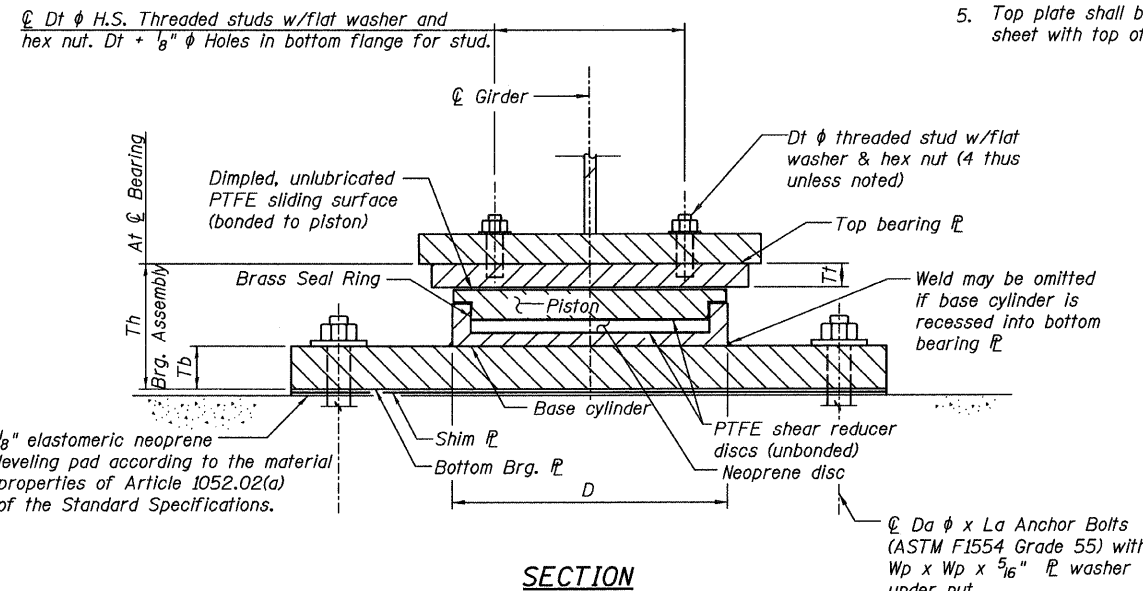
- All structural steel for the top and bottom bearing plates shall conform to the requirements of AASHTO M 270 Grade 50, unless otherwise noted.
- Anchor bolts shall be F1554, Gr. 55.
- Cost of top and bottom bearing plates, 1/8" elastomeric neoprene leveling pad, adjusting shims and threaded studs with washers shall be included in the unit price for "Furnishing HLMR BEARINGS," of the type selected.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- Top plate shall be beveled to match the slope of girder flanges. Work this sheet with top of steel elevation sheets.



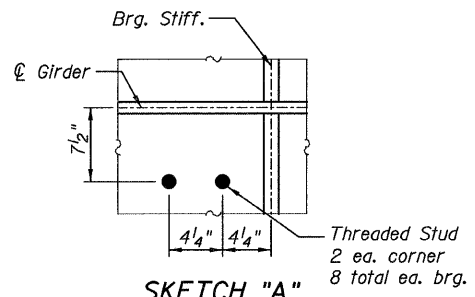
TOP BEARING PLATE - PISTON PLAN



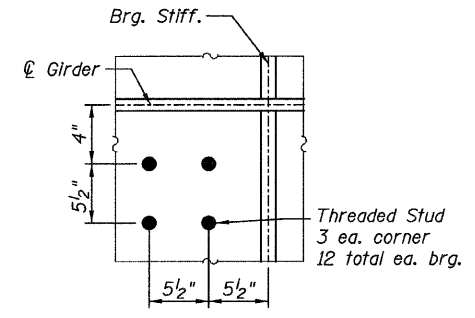
BOTTOM BEARING PLATE AND BASE CYLINDER PLAN



SECTION



SKETCH "A"



SKETCH "B"

BEARING SCHEDULE

Type	Vertical Capacity (kips)	Lateral Capacity (kips)	Quantity Each	Pier (R= Ramp)	Girders	Design Longitudinal Movement	Design Transverse Movement	D	L	Th	Top Plate / Bearing Assembly						Masonry Plate					Anchor Bolts					
											Wt	Lt	Tt	Dt	Ht	Rt	St	Wb	Lb	Tb	Rb	Sb	Hb	Qty per Brg.	Da	La	Wp
HLMR, Non-Guided Expansion	150	15	12	R1 & R4 Abut.	2-7	2"	2"	9 1/4"	9 1/4"	5 1/2"	11 3/4"	11 3/4"	1 1/2"	3/4"	7/8"	3 1/2"	4"	13"	24"	1 1/4"	10 1/4"	-	1 1/2"	2	1"	12"	2 1/4"
HLMR, Non-Guided Expansion	150	15	14	R2 & R3 Abut.	2-8	2"	2"	9 1/4"	9 1/4"	5 1/2"	11 3/4"	11 3/4"	1 1/2"	3/4"	7/8"	3 1/2"	4"	13"	24"	1 1/4"	10 1/4"	-	1 1/2"	2	1"	12"	2 1/4"
HLMR, Non-Guided Expansion	150	15	2	R1 & R4 Abut.	8	2"	2"	9 1/4"	9 1/4"	5 1/2"	11 3/4"	11 3/4"	1 1/2"	3/4"	7/8"	3 1/2"	4"	13"	26"	1"	11"	-	1 1/2"	2	1"	12"	2 1/4"
HLMR, Non-Guided Expansion	150	15	4	R1 thru R4 Abut.	12	2"	2"	9 1/4"	9 1/4"	6"	11 3/4"	11 3/4"	1 1/2"	3/4"	7/8"	3 1/2"	4"	13"	32"	1 3/4"	14"	-	1 1/2"	2	1"	12"	2 1/4"
HLMR, Non-Guided Expansion	150	15	2	R2 & R3	11	2"	2"	9 1/4"	9 1/4"	5 1/2"	11 3/4"	11 3/4"	1 1/2"	3/4"	7/8"	3 1/2"	4"	13"	24"	1 1/4"	10 1/4"	-	1 1/2"	2	1"	12"	2 1/4"
HLMR, Non-Guided Expansion	800	75	4	R1 thru R4 Brg. 2	Crosshead	2"	2"	19 1/2"	19 1/2"	10"	21 1/2"	21 1/2"	3"	1"	1 1/8"	Sketch A	Sketch A	22"	38"	2 1/2"	16 1/4"	8 1/4"	2"	4	1 1/2"	18"	3"
HLMR, Non-Guided Expansion	1500	140	4	R1 thru R4 Brg. 1	Crosshead	2"	2"	26 1/2"	26 1/2"	12 1/8"	28 1/4"	28 1/4"	4"	1"	1 1/8"	Sketch B	Sketch B	30"	42"	2 1/2"	17 1/2"	11 1/2"	2 1/2"	4	2"	24"	3 1/2"

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Furnishing HLMR, Non-guided Expansion, 150 kips	EACH	34
Furnishing HLMR, Non-guided Expansion, 800 kips	EACH	4
Furnishing HLMR, Non-guided Expansion, 1500 kips	EACH	4

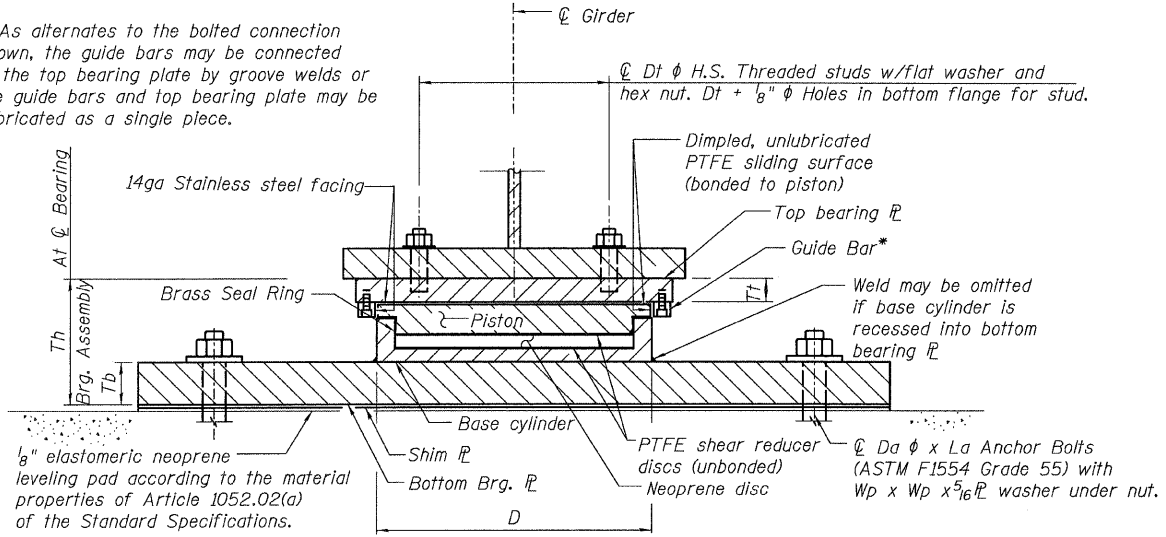
HIGH LOAD MULTI-ROTATIONAL
BEARINGS NON-GUIDED EXPANSION
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - EKH, PK	REVISIONS		SHEET NO. 135 137 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	CHECKED - AMD,	NAME	DATE		55	0711.2R & 1011.1BR	COOK	200	165
	DRAWN - EKH, PK				CONTRACT NO. 60L39				
	CHECKED - AMD,				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
	DATE - 08/02/10								

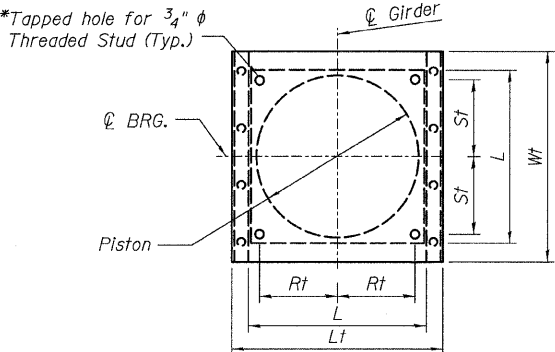
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

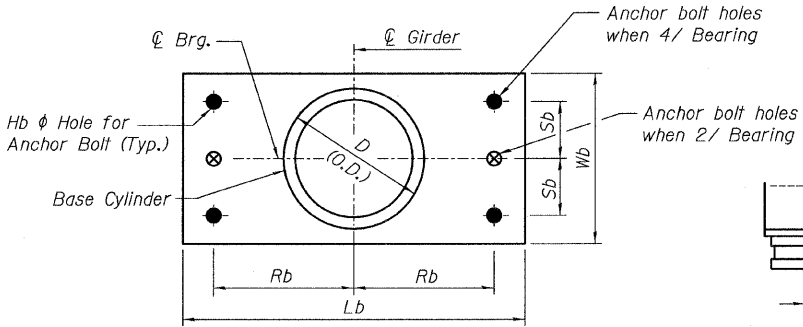
* As alternates to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.



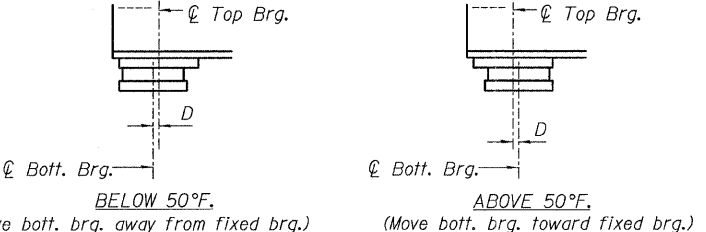
GUIDED EXPANSION HLMR BEARING



TOP BEARING P - PISTON PLAN



BOTTOM BEARING P AND BASE CYLINDER PLAN



SETTING ANCHOR BOLTS AT EXP. BRG.

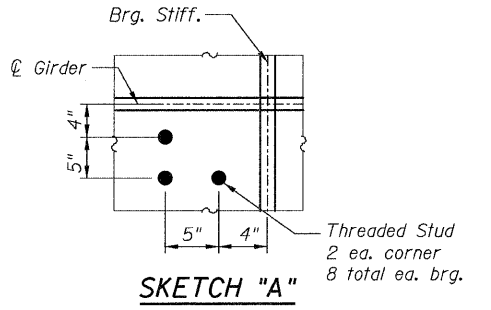
$D = \frac{1}{8}$ " per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Furnishing HLMR Bearings, Guided Expansion, 150 kips	EACH	40
Furnishing HLMR Bearings, Guided Expansion, 250 kips	EACH	40
Furnishing HLMR Bearings, Guided Expansion, 350 kips	EACH	4
Furnishing HLMR Bearings, Guided Expansion, 900 kips	EACH	4

NOTES:

- All structural steel for the top and bottom bearing plates shall conform to the requirements of AASHTO M 270 Grade 50, unless otherwise noted.
- Anchor bolts shall be F1554, Gr. 55.
- Cost of top and bottom bearing plates, 1/8" elastomeric neoprene leveling pad, adjusting shims and threaded studs with washers shall be included in the unit price for "Furnishing HLMR Bearings," of the type selected.
- Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- Top plate shall be beveled to match the slope of girder flanges. Work this sheet with top of steel elevation sheets.



SKETCH "A"

BEARING SCHEDULE

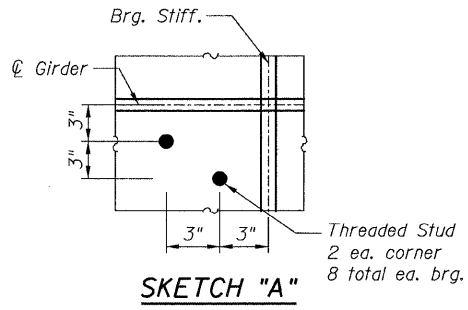
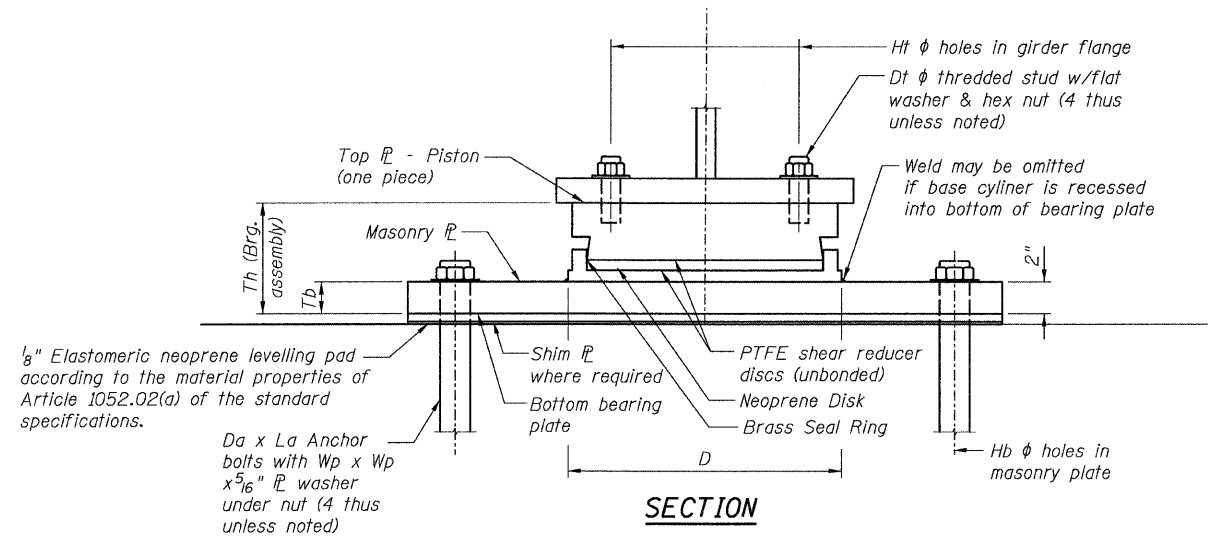
Type	Vertical Capacity (kips)	Lateral Capacity (kips)	Quantity Each	Location	Girders	Total Required Movement (in)	D (in)	L (in)	Th (in)	Top Plate / Bearing Assembly						Masonry Plate					Anchor Bolts			
										Wt (in)	Lt (in)	Tt (in)	Dt (in)	Rt (in)	St (in)	Wb (in)	Lb (in)	Tb (in)	Rb (in)	Sb (in)	Hb (in)	Qty per Brg.	Da (in)	La (in)
HLMR Guided Expansion	150	15	36	C. Abut. 1 & 4	G3 - G20	2.0	9"	9"	5 5/8"	14"	13 1/2"	1 1/2"	3 1/4"	4"	4"	12"	21"	1"	8 3/4"	1 1/2"	2	1"	12"	2 1/4"
HLMR Guided Expansion	250	25	36	C. Abut. 2 & 3	G3 - G20	1.0	11 1/4"	11 1/4"	6 5/8"	16 1/4"	16"	1 1/2"	3 1/4"	4"	4"	15"	24"	1 1/4"	10 1/4"	1 1/2"	2	1"	12"	2 1/4"
HLMR Guided Expansion	150	15	4	C. Abut 1 & 4	G2 and G21	2.0	9"	9"	6 5/8"	14"	13 1/2"	1 1/2"	3 1/4"	4 1/2"	4 1/2"	12"	28"	1 1/2"	12 1/4"	1 1/2"	2	1"	12"	2 1/4"
HLMR Guided Expansion	250	25	4	C. Abut 2 & 3	G2 and G21	1.0	11 1/4"	11 1/4"	6 5/8"	16 1/4"	16"	1 1/2"	3 1/4"	4 1/2"	4 1/2"	15"	28"	1 1/4"	12 1/4"	1 1/2"	2	1"	12"	2 1/4"
HLMR Guided Expansion	350	50	4	C. Abut 1 & 4	G1 and G22	2.0	13"	13"	8 5/8"	18"	18 1/2"	1 3/4"	1"	4 1/2"	4 1/2"	16"	34"	2 1/4"	14 3/4"	1 3/4"	2	1 1/4"	12"	2 3/4"
HLMR Guided Expansion	900	150	4	C. Abut 2 & 3	G1 and G22	1.0	20 1/4"	20 1/4"	11 3/8"	25 1/4"	27 1/2"	3"	1"	Sketch A	24"	36"	2 1/4"	15 1/4"	9 1/4"	2"	4	1 1/2"	18"	3"

**HIGH LOAD
MULTI-ROTATIONAL
BEARINGS GUIDED EXPANSION
STRUCTURE NO. 016-0724**

TYLIN INTERNATIONAL	DESIGNED - EKH, PK	REVISIONS		SHEET NO. 136	F.A.I R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.							
	CHECKED - AMD,	NAME	DATE							137 SHEETS	55	0711.2R & 1011.1BR	COOK	200	166	
	DRAWN - EKH, PK															CONTRACT NO. 60L39
	CHECKED - AMD,															
DATE - 08/02/10			FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT											

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BEARING SCHEDULE

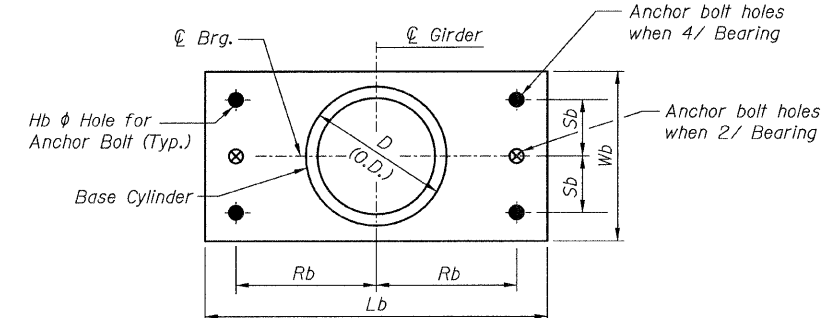
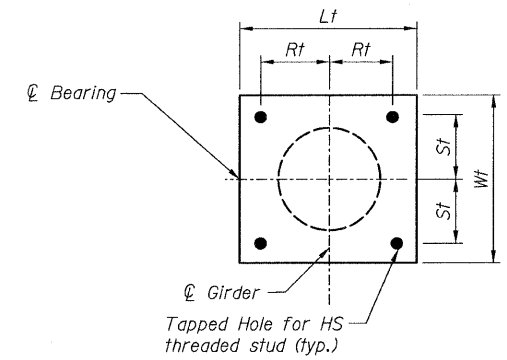
Type	Vertical Capacity (kips)	Lateral Capacity (kips)	Quantity Each	Pier	Girders	D	Th	Top Plate / Bearing Assembly						Masonry Plate														
								Wt	Lt	Tt	Dt	Ht	Rt	St	Wb	Lb	Tb	Da	Hb	La	Wp	Rb	Sb					
HLMR, Fixed	250	25	18	6	3-20	11.50"	6.25"	11.50"	11.50"	2"	.75"	0.875"	4.0"	4.0"	15.0"	20.0"	1.0"	1.0"	1.5"	1.2"	2.25"	8.25"						
HLMR, Fixed	250	25	2	6	2, 21	11.50"	6.50"	11.50"	11.50"	1.75"	.75"	0.875"	4.0"	4.0"	15.0"	28.0"	1.50"	1.0"	1.5"	1.2"	2.25"	12.25"						
HLMR, Fixed	500	75	2	6	1, 22	16.25"	9.25"	16.25"	16.25"	2.50"	1"	1.125"	Sketch A	20.0"	36.0"	2.25"	1.5"	2"	1.8"	3.0"	15.25"							

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Furnishing HLMR Bearing, Fixed, 250 kips	EACH	20
Furnishing HLMR Bearing, Fixed, 500 kips	EACH	2

NOTES:

- All structural steel for the top and bottom bearing plates shall conform to the requirements of AASHTO M 270 Grade 50.
- Anchor bolts shall be F1554, Gr. 55.
- Cost of top and bottom bearing plates, $\frac{1}{8}''$ elastomeric neoprene leveling pad, adjusting shims and threaded studs with washers shall be included in the unit price for "Furnishing HLMR BEARINGS," of the type selected.
- Two $\frac{1}{8}''$ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- Top plate shall be beveled to match the slope of girder flanges. Work this sheet with top of steel elevation sheets.



BOTTOM BEARING P AND BASE CYLINDER PLAN

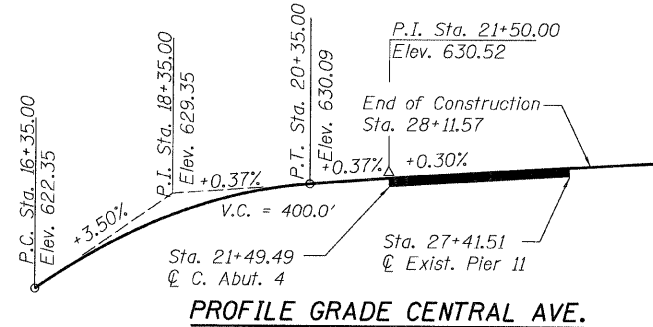
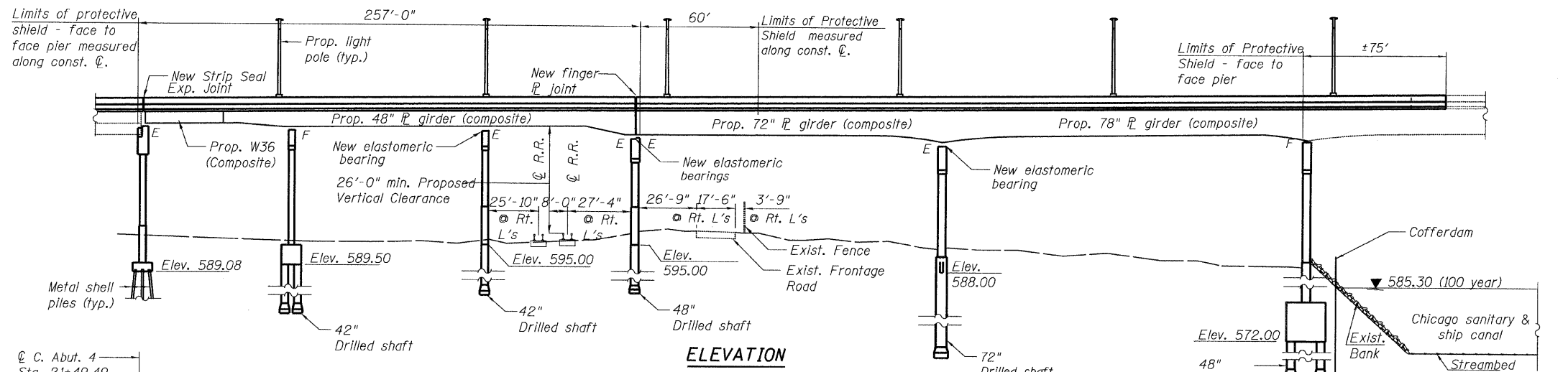
BOTTOM BEARING P AND BASE CYLINDER PLAN

HIGH LOAD MULTI-ROTATIONAL
BEARINGS FIXED
STRUCTURE NO. 016-0724

TYLIN INTERNATIONAL	DESIGNED - EKH, PK	REVISIONS		SHEET NO. 137	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD,	NAME	DATE		55	0711.2R & 1011.1BR	COOK	200	167	
	DRAWN - EKH, PK				137 SHEETS	CONTRACT NO. 60L39				
	CHECKED - AMD,					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
	DATE - 08/02/10									

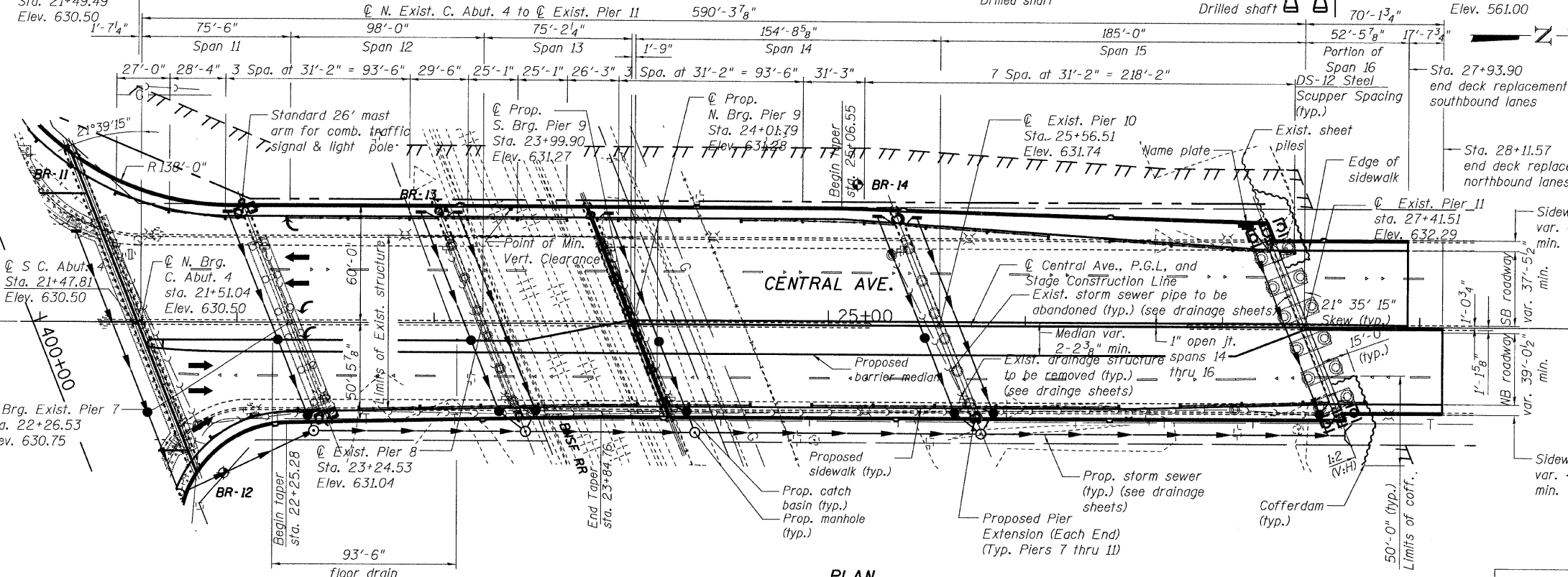
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



- SCOPE OF WORK**
- Widen the existing superstructure and substructure
 - Remove and replace the existing deck with a 7 1/2" deck.
 - Clean and paint the existing structural steel.
 - Remove and replace diaphragms located at expansion joints.
 - Reconstruct and widen existing Pier #9 above the crashwall.
 - Construct new pier extensions.
 - Perform formed concrete repairs on piers.
 - Replace existing expansion bearings with elastomeric bearings.
 - Install new expansion joints.
 - Remove and replace the drainage system.

- NOTES:**
1. No deck drains will be permitted in the span over tracks or within 10 ft of cross arms of a railroad pole line.
 2. For C. Abut. 4 details, see plans for S.N. 016-0724



BORING LOCATIONS

No.	Station	**Offset
BR-11	21+15.0	79.3' LT
BR-12	21+93.5	76.6' RT
BR-13	23+04.6	56.3' LT
BR-14	25+14.6	71.6' LT

** Offset from @ Central Avenue

LEGEND

◆ Boring Location

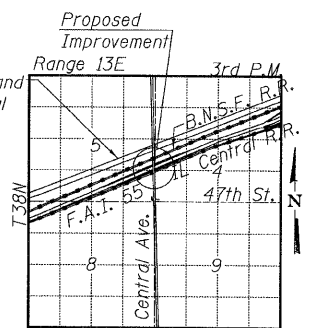


Signed *Anna M. Dukes*
Anna M. Dukes, S.E. IL Lic. No. 081-005598 Expires 11-30-2010
Date August 3, 2010

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

STATION 27+11.65
REBUILT 200 BY
STATE OF ILLINOIS
FAI ROUTE 55
SEC. 0711.2R & 1011.1BR
LOADING HS20-44
STR. NO. 016-3240

NAME PLATE
(See Std. 515001)*
*The existing Name Plate shall be cleaned and relocated next to the new Name Plate. Cost is included with Name Plates.



LOCATION SKETCH

GENERAL PLAN AND ELEVATION

STRUCTURE NO. 016-3240

TYLIN INTERNATIONAL

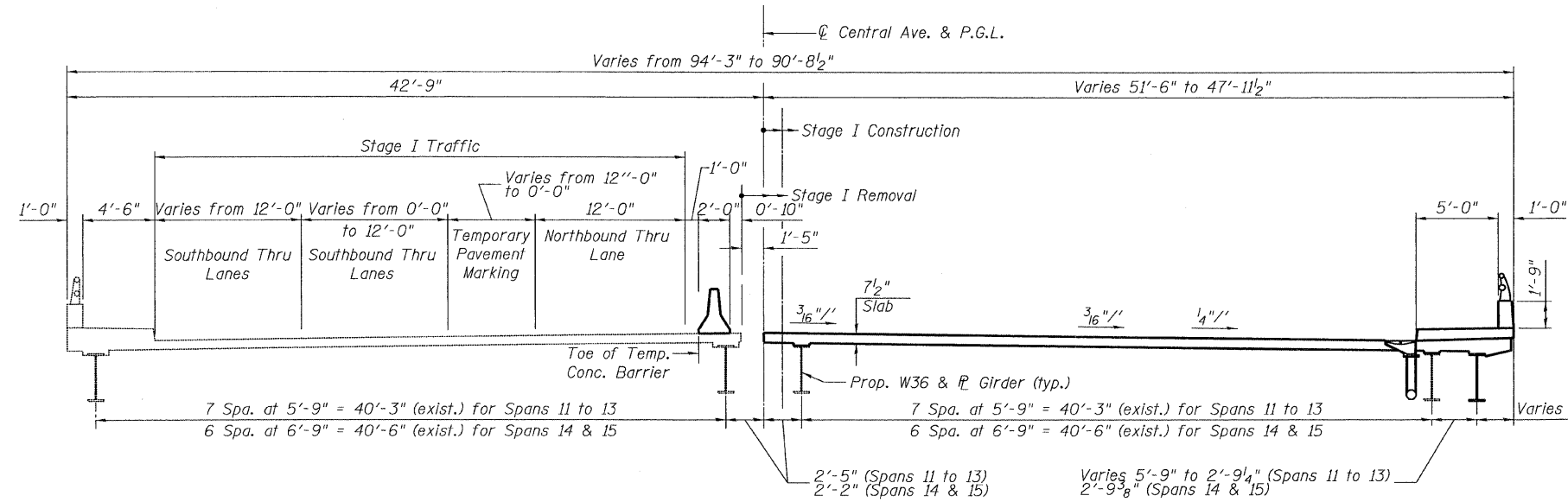
DESIGNED - DY, LS
CHECKED - AMD, LS
DRAWN - DY, LS
CHECKED - AMD, LS
DATE - 08/02/10

REVISIONS	
NAME	DATE

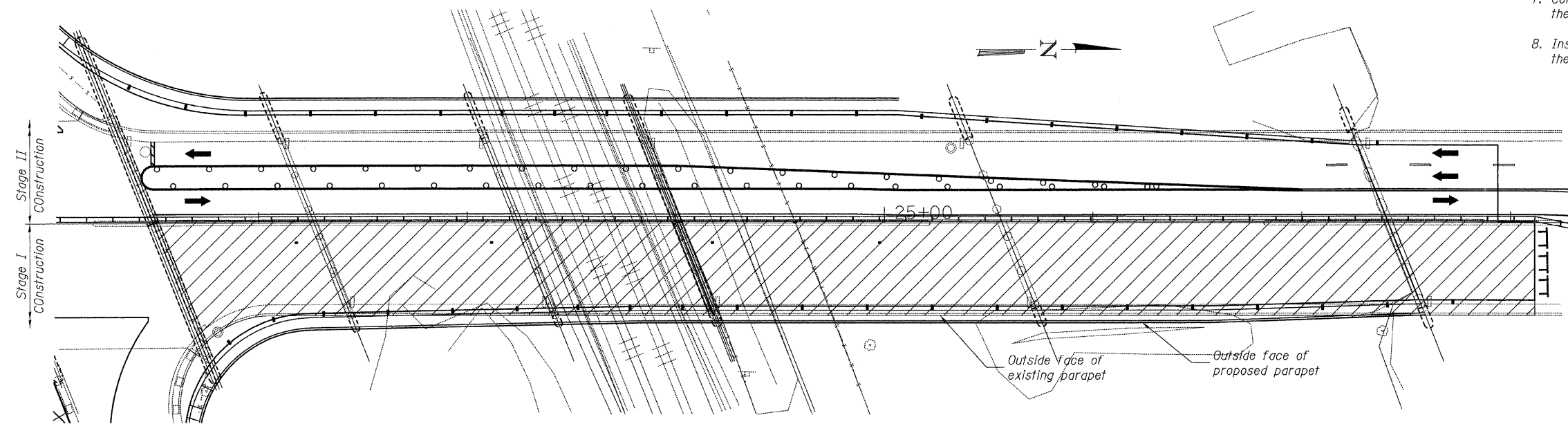
SHEET NO. 1	F.A.I. RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 168
33 SHEETS	CONTRACT NO. 60L39				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I CONSTRUCTION
(North Approach Looking North)



PLAN
(Stage I Construction)

- STAGE I REMOVAL**
1. Install temporary concrete barrier as shown and divert traffic to the existing Southbound bridge.
 2. Remove the existing concrete deck within the limits of Stage I.
 3. Remove C. Abutment 4 concrete above the crash wall within the limits of Stage I.
 4. Remove pier 9 concrete above the crashwall.
 5. Remove existing structural steel diaphragms at existing expansion joints.

- STAGE I CONSTRUCTION:**
1. Construct widened portion of Piers 7, 8, 10 and 11.
 2. Reconstruct and widen Pier 9 and C. Abutment 4 within limits of Stage I.
 3. Replace existing expansion bearings.
 4. Paint existing structural steel beams and diaphragms within limits of Stage I.
 5. Erect new structural steel diaphragms to replace the removed once at existing expansion joints.
 6. Erect new structural steel beams, girders (NG7-NG10 and NG13), cross frames and diaphragms within the limits of Stage I.
 7. Construct new concrete deck, sidewalk and parapet within the limits of Stage I.
 8. Install expansion joints at Pier 9 and C. Abutment 4 within the limits of Stage I.

LEGEND

Stage I Removal

- NOTES**
1. Installation of expansion joint at C. Abut. 4 shall be performed after the Stage I deck for the Central Ave./I-55 Mainline (S.N. 016-0724) has been completed.

THIS SHEET FOR INFORMATION ONLY

STAGE I CONSTRUCTION
STRUCTURE NO. 016-3240

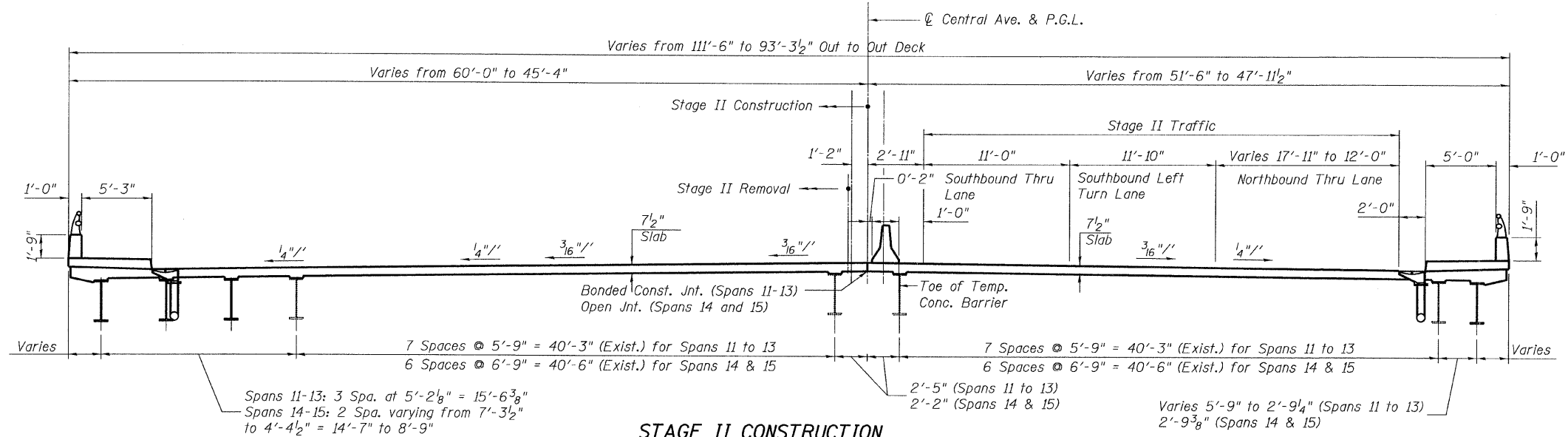
TYLIN INTERNATIONAL

DESIGNED - DY, LS	REVISIONS	
CHECKED - AMD, LS	NAME	DATE
DRAWN - DY, LS		
CHECKED - AMD, LS		
DATE - 08/02/10		

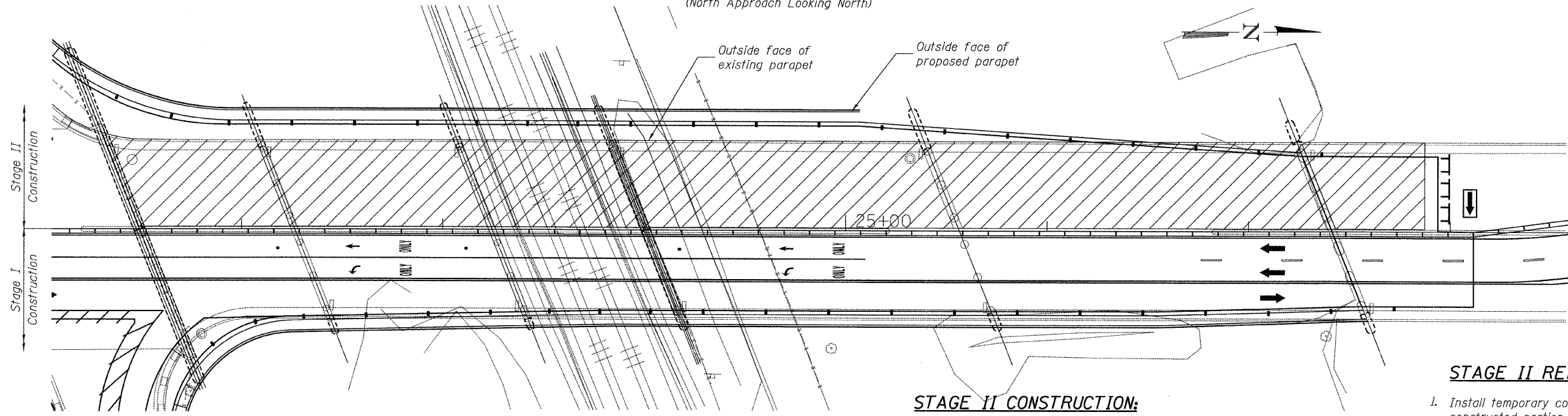
SHEET NO. 3 33 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	0711.2R & 1011.1BR	COOK	200	170
			CONTRACT NO. 60L39		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE II CONSTRUCTION
(North Approach Looking North)



PLAN
(Stage II Construction)

NOTES

1. Installation of expansion joint at C. Abut. 4 shall be performed after the Stage II deck for the Central Ave./I-55 Mainline (S.N. 016-0724) has been completed.

LEGEND

Stage II Removal

STAGE II CONSTRUCTION:

1. Construct the widened portion of pier 7, 8, 10 and 11.
2. Reconstruct and widen remainder of pier 9 and C- Abutment 4.
3. Replace remainder of existing expansion bearings.
4. Paint the remainder of existing structural steel beams and cross frames.
5. Erect new structural steel cross frames and diaphragms to replace the removed existing cross frames and diaphragms at existing expansion joints.
6. Erect new structural steel beams and girders (NG-1 through NG-6, NG-11, and NG-12).
7. Construct remainder of new concrete deck, sidewalk and parapet.
8. Install expansion joints at pier 9 and C-Abutment 4.

STAGE II REMOVAL

1. Install temporary concrete barrier and divert traffic to the constructed portion of the new bridge.
2. Remove the remainder of existing concrete deck.
3. Remove remainder of pier 9 and C- Abutment 4 above the crashwall.
4. Remove remainder existing structural diaphragms at existing expansion joints.

THIS SHEET FOR INFORMATION ONLY

**STAGE II CONSTRUCTION
STRUCTURE NO. 016-3240**

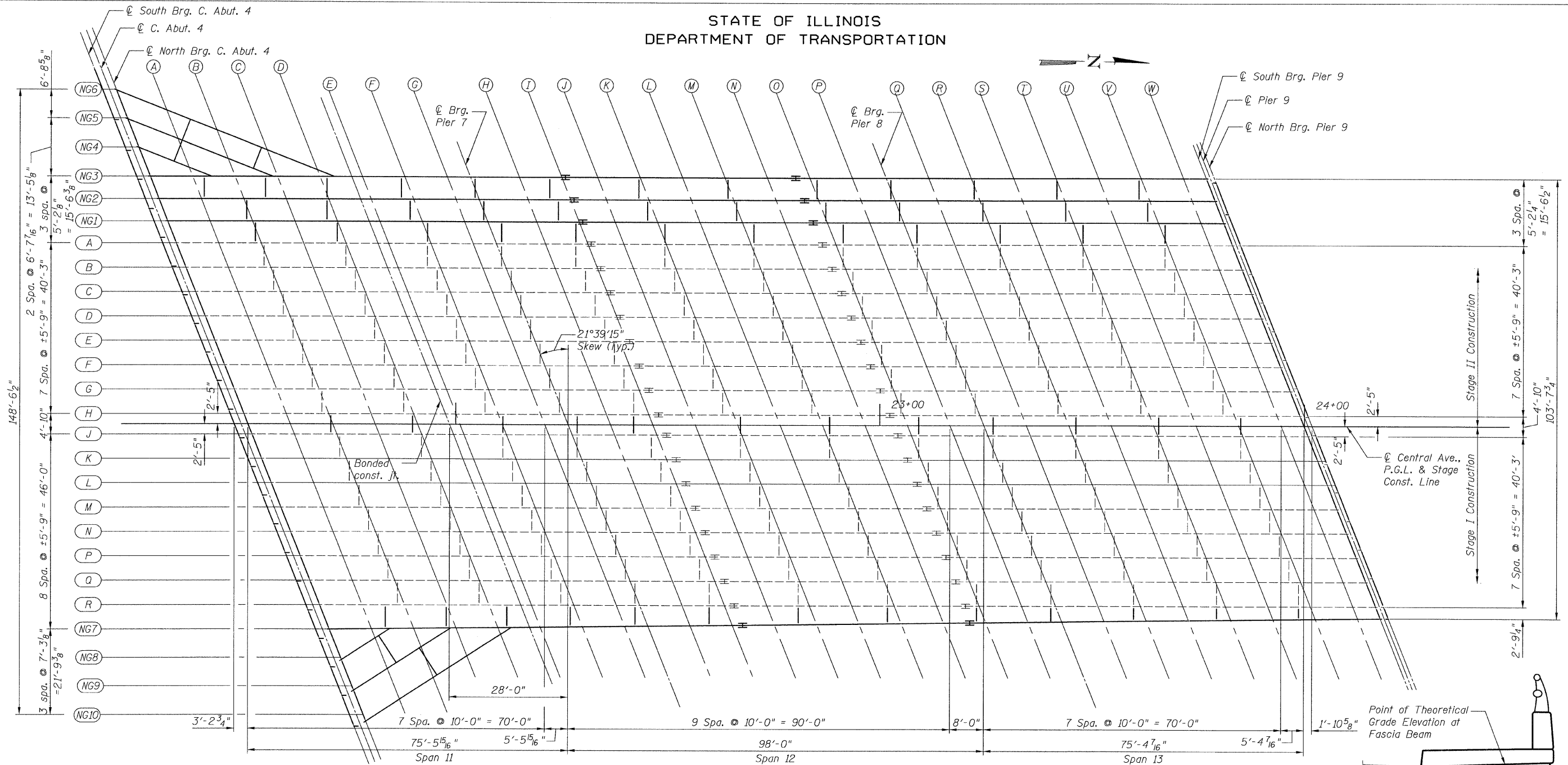
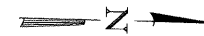
TYLIN INTERNATIONAL

DESIGNED	REVISIONS
- DY, LS	NAME
CHECKED - AMD, LS	DATE
DRAWN - DY, LS	
CHECKED - AMD, LS	
DATE - 08/02/10	

SHEET NO. 4 33 SHEETS	F.A.I. RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 171
	CONTRACT NO. 60L39			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	

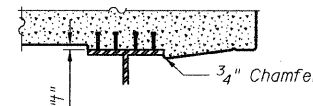
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

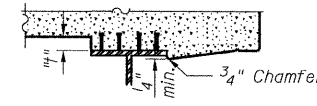


PLAN

To determine "h": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheets 7 thru 9, minus slab thickness, equals the fillet heights "h" above the top flange of beams.

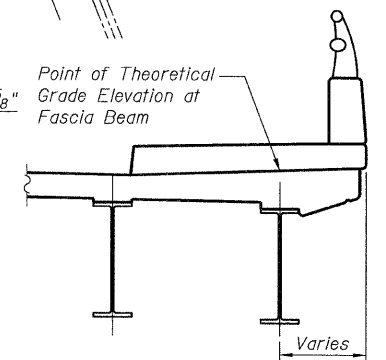


At Minimum Fillet



At Maximum Fillet

FILLET HEIGHTS



SECTION THRU PARAPET

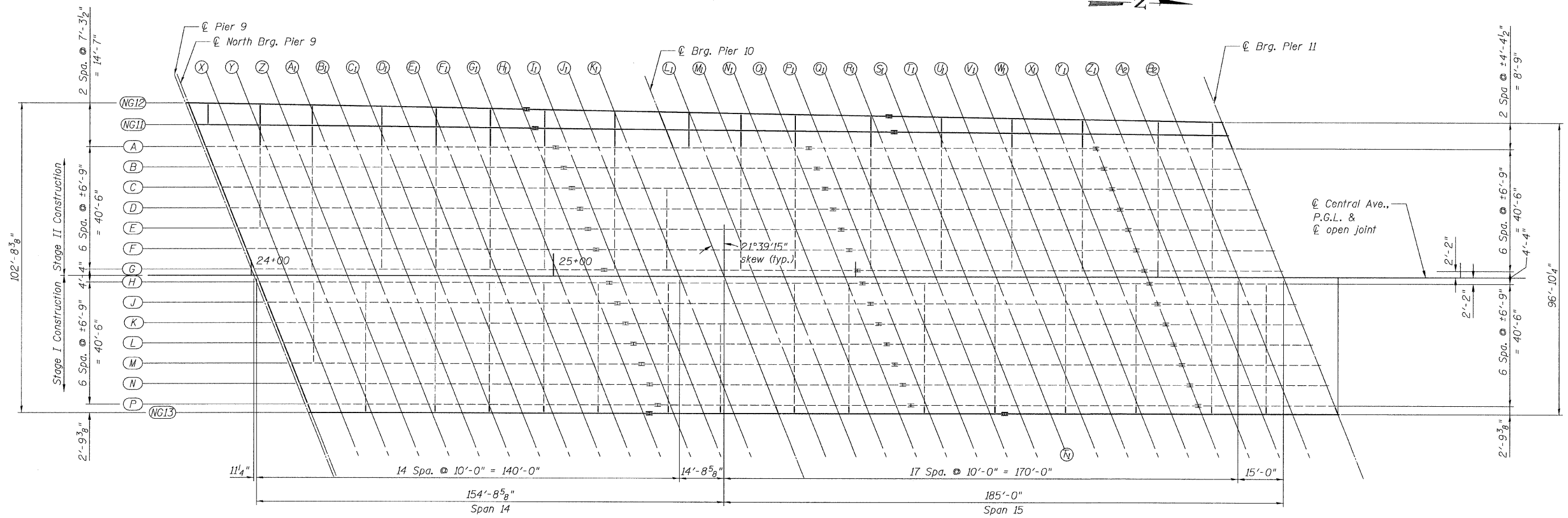
TOP OF SLAB ELEVATIONS
LAYOUT SPANS 11, 12 & 13
STRUCTURE NO. 016-3240

TYLIN INTERNATIONAL

DESIGNED - DY, LS	REVISIONS	
CHECKED - AMD, LS	NAME	DATE
DRAWN - DY, LS		
CHECKED - AMD, LS		
DATE - 08/02/10		

SHEET NO. 5 33 SHEETS	F.A.I. RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 172
	CONTRACT NO. 60L39			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



TOP OF SLAB ELEVATIONS
LAYOUT SPANS 14 & 15
STRUCTURE NO. 016-3240

TYL INTERNATIONAL

DESIGNED - DY, LS		REVISIONS	
CHECKED - AMD, LS	NAME	DATE	
DRAWN - DY, LS			
CHECKED - AMD, LS			
DATE - 08/02/10			

SHEET NO. 6 33 SHEETS	F.A.I. RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 173
	FED. ROAD DIST. NO. 1 ILLINOIS			CONTRACT NO. 60L39 FED. AID PROJECT	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER NG6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ C. Abut. 4	21+18.02	-79.09	628.93	628.93
☉ N. Brg. C. Abut. 4	21+19.94	-78.34	629.05	629.05
A	21+31.78	-73.70	629.25	629.28
B	21+43.62	-69.06	629.41	629.44
C	21+55.47	-64.42	629.52	629.55
D	21+67.31	-59.77	629.60	629.60

GIRDER NG5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ C. Abut. 4	21+20.69	-72.38	629.09	629.09
☉ N. Brg. C. Abut. 4	21+22.60	-71.63	629.11	629.11
A	21+34.45	-66.99	629.24	629.25
B	21+46.29	-62.34	629.38	629.39

GIRDER NG4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ C. Abut. 4	21+23.36	-65.66	629.23	629.23
☉ N. Brg. C. Abut. 4	21+25.27	-64.92	629.25	629.25
A	21+37.11	-60.27	629.39	629.39

GIRDER NG3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ C. Abut. 4	21+26.32	-58.20	629.39	629.39
☉ N. Brg. C. Abut. 4	21+27.93	-58.20	629.40	629.40
A	21+37.93	-58.20	629.43	629.50
B	21+47.93	-58.20	629.46	629.59
C	21+57.93	-58.20	629.50	629.65
D	21+67.93	-58.20	629.53	629.68
E	21+77.93	-58.20	629.56	629.68
F	21+87.93	-58.20	629.60	629.66
G	21+97.93	-58.20	629.63	629.65
☉ Brg. Pier 7	22+03.43	-58.20	629.65	629.65
H	22+13.43	-58.20	629.68	629.66
I	22+23.43	-58.20	629.71	629.69
J	22+33.43	-58.20	629.74	629.73
K	22+43.43	-58.20	629.77	629.77
L	22+53.43	-58.20	629.80	629.81
M	22+63.43	-58.20	629.83	629.84
O	22+73.43	-58.20	629.86	629.87
N	22+83.43	-58.20	629.89	629.89
P	22+93.43	-58.20	629.92	629.92
☉ Brg. Pier 8	23+01.43	-58.20	629.95	629.95
Q	23+11.43	-58.20	629.98	629.99
R	23+21.43	-58.20	630.01	630.03
S	23+31.43	-58.20	630.04	630.08
T	23+41.43	-58.20	630.07	630.11
U	23+51.43	-58.20	630.10	630.14
V	23+61.43	-58.20	630.13	630.16
W	23+71.43	-58.20	630.16	630.17
☉ S. Brg. Pier 9	23+76.80	-58.20	630.17	630.17
☉ Pier 9	23+78.68	-58.20	630.18	630.18

GIRDER NG2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ C. Abut. 4	21+28.38	-53.02	629.50	629.50
☉ N. Brg. C. Abut. 4	21+29.99	-53.02	629.51	629.51
A	21+39.99	-53.02	629.54	629.56
B	21+49.99	-53.02	629.57	629.62
C	21+59.99	-53.02	629.61	629.65
D	21+69.99	-53.02	629.64	629.68
E	21+79.99	-53.02	629.67	629.70
F	21+89.99	-53.02	629.71	629.72
G	21+99.99	-53.02	629.74	629.74
☉ Brg. Pier 7	22+05.48	-53.02	629.76	629.76
H	22+15.48	-53.02	629.79	629.80
I	22+25.48	-53.02	629.82	629.85
J	22+35.48	-53.02	629.85	629.90
K	22+45.48	-53.02	629.88	629.94
L	22+55.48	-53.02	629.91	629.98
M	22+65.48	-53.02	629.94	630.00
O	22+75.48	-53.02	629.97	630.02
N	22+85.48	-53.02	630.00	630.03
P	22+95.48	-53.02	630.03	630.04
☉ Brg. Pier 8	23+03.48	-53.02	630.06	630.06
Q	23+13.48	-53.02	630.09	630.09
R	23+23.48	-53.02	630.12	630.13
S	23+33.48	-53.02	630.15	630.17
T	23+43.48	-53.02	630.18	630.21
U	23+53.48	-53.02	630.21	630.24
V	23+63.48	-53.02	630.24	630.26
W	23+73.48	-53.02	630.27	630.27
☉ S. Brg. Pier 9	23+78.85	-53.02	630.28	630.28
☉ Pier 9	23+80.74	-53.02	630.29	630.29

GIRDER NG1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ C. Abut. 4	21+30.43	-47.84	629.61	629.61
☉ N. Brg. C. Abut. 4	21+32.04	-47.84	629.62	629.62
A	21+42.04	-47.84	629.65	629.68
B	21+52.04	-47.84	629.68	629.73
C	21+62.04	-47.84	629.72	629.76
D	21+72.04	-47.84	629.75	629.79
E	21+82.04	-47.84	629.78	629.81
F	21+92.04	-47.84	629.82	629.83
G	22+02.04	-47.84	629.85	629.85
☉ Brg. Pier 7	22+07.54	-47.84	629.87	629.87
H	22+17.54	-47.84	629.90	629.91
I	22+27.54	-47.84	629.93	629.96
J	22+37.54	-47.84	629.96	630.01
K	22+47.54	-47.84	629.99	630.05
L	22+57.54	-47.84	630.02	630.09
M	22+67.54	-47.84	630.05	630.11
O	22+77.54	-47.84	630.08	630.13
N	22+87.54	-47.84	630.11	630.14
P	22+97.54	-47.84	630.14	630.15
☉ Brg. Pier 8	23+05.54	-47.84	630.16	630.16
Q	23+15.54	-47.84	630.19	630.20
R	23+25.54	-47.84	630.22	630.24
S	23+35.54	-47.84	630.25	630.28
T	23+45.54	-47.84	630.28	630.32
U	23+55.54	-47.84	630.31	630.35
V	23+65.54	-47.84	630.34	630.37
W	23+75.54	-47.84	630.37	630.38
☉ S. Brg. Pier 9	23+80.91	-47.84	630.39	630.39
☉ Pier 9	23+82.79	-47.84	630.40	630.40

TOP OF SLAB ELEVATIONS 1
STRUCTURE NO. 016-3240

TYLIN INTERNATIONAL

DESIGNED - DY, LS	REVISIONS	
CHECKED - AMD, LS	NAME	DATE
DRAWN - DY, LS		
CHECKED - AMD, LS		
DATE - 08/02/10		

SHEET NO. 7	F.A.I. RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 174
33 SHEETS			CONTRACT NO. 60L39		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

P.G.L.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ C. Abut. 4	21+49.43	0.00	630.50	630.50
☉ N. Brg. C. Abut. 4	21+51.04	0.00	630.50	630.50
A	21+61.04	0.00	630.54	630.58
B	21+71.04	0.00	630.57	630.64
C	21+81.04	0.00	630.60	630.68
D	21+91.04	0.00	630.63	630.70
E	22+01.04	0.00	630.67	630.71
F	22+11.04	0.00	630.70	630.72
G	22+21.04	0.00	630.73	630.73
☉ Brg. Pier 7	22+26.53	0.00	630.75	630.75
H	22+36.53	0.00	630.78	630.79
I	22+46.53	0.00	630.81	630.84
J	22+56.53	0.00	630.84	630.89
K	22+66.53	0.00	630.87	630.94
L	22+76.53	0.00	630.90	630.98
M	22+86.53	0.00	630.93	631.00
O	22+96.53	0.00	630.96	631.01
N	23+06.53	0.00	630.99	631.02
P	23+16.53	0.00	631.02	631.03
☉ Brg. Pier 8	23+24.53	0.00	631.04	631.04
Q	23+34.53	0.00	631.07	631.08
R	23+44.53	0.00	631.10	631.12
S	23+54.53	0.00	631.13	631.17
T	23+64.53	0.00	631.16	631.21
U	23+74.53	0.00	631.19	631.24
V	23+84.53	0.00	631.22	631.26
W	23+94.53	0.00	631.25	631.27
☉ S. Brg. Pier 9	23+99.90	0.00	631.27	631.27
☉ Pier 9	24+01.79	0.00	631.28	631.28

GIRDER NG7

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ C. Abut. 4	21+68.65	48.42	629.73	629.73
☉ N. Brg. C. Abut. 4	21+70.27	48.42	629.73	629.73
A	21+80.27	48.30	629.77	629.84
B	21+90.27	48.18	629.80	629.93
C	22+00.27	48.06	629.84	629.99
D	22+10.27	47.94	629.87	630.02
E	22+20.27	47.82	629.97	630.09
F	22+30.27	47.70	630.02	630.09
G	22+40.27	47.58	630.06	630.08
☉ Brg. Pier 7	22+45.76	47.52	630.08	630.08
H	22+55.76	47.40	630.11	630.10
I	22+65.76	47.28	630.15	630.13
J	22+75.76	47.16	630.19	630.17
K	22+85.76	47.04	630.22	630.22
L	22+95.76	46.92	630.26	630.26
M	23+05.76	46.80	630.29	630.30
O	23+15.76	46.68	630.33	630.34
N	23+25.76	46.56	630.37	630.37
P	23+35.76	46.44	630.40	630.40
☉ Brg. Pier 8	23+43.76	46.34	630.43	630.43
Q	23+53.76	46.22	630.47	630.48
R	23+63.76	46.10	630.50	630.53
S	23+73.76	45.98	630.54	630.58
T	23+83.76	45.86	630.57	630.62
U	23+93.76	45.74	630.60	630.65
V	24+03.76	45.62	630.63	630.67
W	24+13.76	45.50	630.66	630.67
☉ S. Brg. Pier 9	24+19.13	45.44	630.68	630.68
☉ Pier 9	24+21.02	45.42	630.56	630.56

GIRDER NG8

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ C. Abut. 4	21+71.86	56.52	629.58	629.58
☉ N. Brg. C. Abut. 4	21+73.15	55.68	629.60	629.60
A	21+81.10	50.52	629.73	629.73

GIRDER NG9

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ C. Abut. 4	21+74.75	63.78	629.44	629.44
☉ N. Brg. C. Abut. 4	21+76.03	62.94	629.46	629.46
A	21+83.98	57.78	629.59	629.60
B	21+91.93	52.62	629.72	629.72

GIRDER NG10

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ C. Abut. 4	21+77.63	71.04	629.31	629.31
☉ N. Brg. C. Abut. 4	21+78.91	70.20	629.37	629.37
A	21+86.86	65.04	629.59	629.59
B	21+94.81	59.88	629.74	629.75
C	22+02.76	54.72	629.85	629.86
D	22+10.71	49.55	629.91	629.91

TOP OF SLAB ELEVATIONS 2
STRUCTURE NO. 016-3240

TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 8	F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 175		
	CHECKED - AMD, LS	NAME	DATE							33 SHEETS	CONTRACT NO. 60L39
	DRAWN - DY, LS										
	CHECKED - AMD, LS										
	DATE - 08/02/10										

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER NG12

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ Pier 9	23+78.13	-57.24	630.31	630.31
☉ N. Brg. Pier 9	23+79.07	-57.22	630.31	630.31
X	23+89.07	-57.05	630.34	630.38
Y	23+99.07	-56.88	630.37	630.44
Z	24+09.07	-56.71	630.39	630.50
A1	24+19.07	-56.54	630.42	630.54
B1	24+29.07	-56.37	630.45	630.58
C1	24+39.07	-56.20	630.48	630.61
D1	24+49.07	-56.03	630.50	630.63
E1	24+59.07	-55.86	630.53	630.64
F1	24+69.07	-55.68	630.56	630.64
G1	24+79.07	-55.51	630.59	630.65
H1	24+89.07	-55.34	630.61	630.65
I1	24+99.07	-55.17	630.64	630.65
J1	25+09.07	-55.00	630.68	630.67
K1	25+19.07	-54.83	630.73	630.72
☉ Brg. Pier 10	25+33.79	-54.58	630.81	630.81
L1	25+43.79	-54.41	630.86	630.88
M1	25+53.79	-54.24	630.91	630.96
N1	25+63.79	-54.07	630.96	631.05
O1	25+73.79	-53.89	631.01	631.15
P1	25+83.79	-53.72	631.07	631.25
Q1	25+93.79	-53.55	631.12	631.35
R1	26+03.79	-53.38	631.17	631.45
S1	26+13.79	-53.21	631.22	631.54
T1	26+23.79	-53.04	631.27	631.62
U1	26+33.79	-52.87	631.33	631.69
V1	26+43.79	-52.70	631.38	631.75
W1	26+53.79	-52.53	631.43	631.79
X1	26+63.79	-52.36	631.48	631.82
Y1	26+73.79	-52.18	631.53	631.83
Z1	26+83.79	-52.01	631.59	631.83
A2	26+93.79	-51.84	631.64	631.82
B2	27+03.79	-51.67	631.69	631.80
☉ Brg. Pier 11	27+18.79	-51.42	631.77	631.77

GIRDER NG11

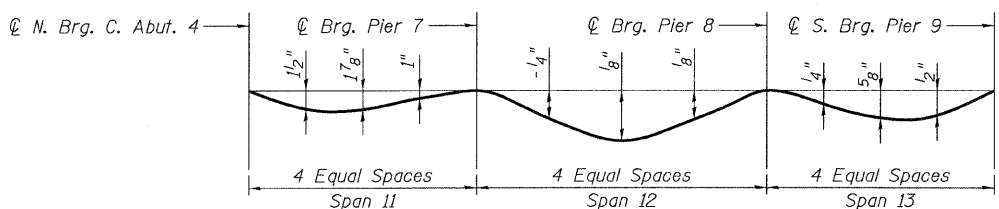
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ Pier 9	23+81.02	-49.94	630.35	630.35
☉ N. Brg. Pier 9	23+81.96	-49.94	630.35	630.35
X	23+91.96	-49.85	630.38	630.42
Y	24+01.96	-49.77	630.42	630.49
Z	24+11.96	-49.68	630.45	630.55
A1	24+21.96	-49.60	630.48	630.60
B1	24+31.96	-49.51	630.51	630.64
C1	24+41.96	-49.43	630.54	630.67
D1	24+51.96	-49.34	630.57	630.70
E1	24+61.96	-49.26	630.61	630.71
F1	24+71.96	-49.17	630.64	630.72
G1	24+81.96	-49.09	630.67	630.73
H1	24+91.96	-49.00	630.70	630.73
I1	25+01.96	-48.91	630.73	630.74
J1	25+11.96	-48.83	630.76	630.76
K1	25+21.96	-48.74	630.80	630.79
☉ Brg. Pier 10	25+36.68	-48.62	630.84	630.84
L1	25+46.68	-48.53	630.87	630.90
M1	25+56.68	-48.45	630.91	630.96
N1	25+66.68	-48.36	630.94	631.03
O1	25+76.68	-48.28	630.97	631.10
P1	25+86.68	-48.19	631.00	631.18
Q1	25+96.68	-48.10	631.04	631.27
R1	26+06.68	-48.02	631.09	631.36
S1	26+16.68	-47.93	631.15	631.45
T1	26+26.68	-47.85	631.20	631.53
U1	26+36.68	-47.76	631.25	631.60
V1	26+46.68	-47.68	631.31	631.66
W1	26+56.68	-47.59	631.36	631.71
X1	26+66.68	-47.51	631.41	631.73
Y1	26+76.68	-47.42	631.47	631.75
Z1	26+86.68	-47.34	631.52	631.75
A2	26+96.68	-47.25	631.57	631.75
B2	27+06.68	-47.16	631.63	631.73
☉ Brg. Pier 11	27+21.68	-47.04	631.71	631.71

PGL

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ Pier 9	24+00.85	0.00	631.27	631.27
☉ N. Brg. Pier 9	24+01.80	0.00	631.28	631.28
X	24+11.80	0.00	631.31	631.38
Y	24+21.80	0.00	631.34	631.48
Z	24+31.80	0.00	631.37	631.57
A1	24+41.80	0.00	631.40	631.64
B1	24+51.80	0.00	631.43	631.71
C1	24+61.80	0.00	631.46	631.76
D1	24+71.80	0.00	631.49	631.79
E1	24+81.80	0.00	631.52	631.81
F1	24+91.80	0.00	631.55	631.81
G1	25+01.80	0.00	631.58	631.80
H1	25+11.80	0.00	631.61	631.79
I1	25+21.80	0.00	631.64	631.77
J1	25+31.80	0.00	631.67	631.75
K1	25+41.80	0.00	631.70	631.74
☉ Brg. Pier 10	25+56.51	0.00	631.74	631.74
L1	25+66.51	0.00	631.77	631.75
M1	25+76.51	0.00	631.80	631.78
N1	25+86.51	0.00	631.83	631.81
O1	25+96.51	0.00	631.86	631.84
P1	26+01.51	0.00	631.87	631.87
Q1	26+06.51	0.00	631.89	631.89
R1	26+16.51	0.00	631.92	631.92
S1	26+26.51	0.00	631.98	631.98
T1	26+36.51	0.00	632.01	632.01
U1	26+46.51	0.00	632.04	632.03
V1	26+56.51	0.00	632.07	632.04
W1	26+66.51	0.00	632.10	632.06
X1	26+76.51	0.00	632.13	632.07
Y1	26+86.51	0.00	632.16	632.09
Z1	27+06.51	0.00	632.19	632.12
A2	27+16.51	0.00	632.22	632.15
B2	27+26.51	0.00	632.25	632.20
☉ Brg. Pier 11	27+41.51	0.00	632.29	632.29

GIRDER NG13

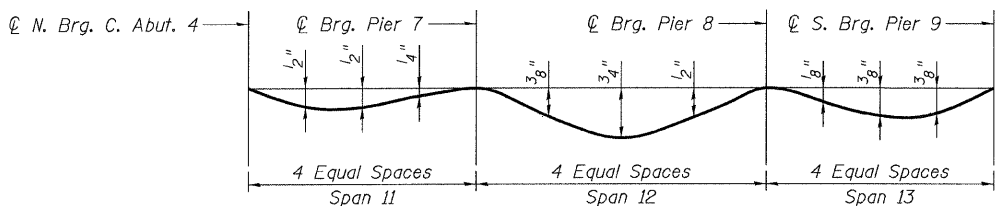
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ Pier 9	24+18.89	45.44	630.68	630.68
☉ N. Brg. Pier 9	24+19.84	45.44	630.68	630.68
X	24+29.84	45.44	630.71	630.73
Y	24+39.84	45.44	630.74	630.79
Z	24+49.84	45.44	630.77	630.83
A1	24+59.84	45.44	630.80	630.88
B1	24+69.84	45.44	630.83	630.91
C1	24+79.84	45.44	630.86	630.94
D1	24+89.84	45.44	630.89	630.96
E1	24+99.84	45.44	630.92	630.98
F1	25+09.84	45.44	630.95	630.99
G1	25+19.84	45.44	630.98	631.00
H1	25+29.84	45.44	631.01	631.01
I1	25+39.84	45.44	631.04	631.03
J1	25+49.84	45.44	631.07	631.05
K1	25+59.84	45.44	631.10	631.08
☉ Brg. Pier 10	25+74.55	45.44	631.14	631.14
L1	25+84.55	45.44	631.17	631.20
M1	25+94.55	45.44	631.20	631.26
N1	26+04.55	45.44	631.23	631.32
O1	26+14.55	45.44	631.26	631.39
P1	26+24.55	45.44	631.29	631.47
Q1	26+34.55	45.44	631.32	631.54
R1	26+44.55	45.44	631.35	631.61
S1	26+54.55	45.44	631.38	631.68
T1	26+64.55	45.44	631.42	631.74
U1	26+74.55	45.44	631.46	631.79
V1	26+84.55	45.44	631.50	631.84
W1	26+94.55	45.44	631.54	631.87
X1	27+04.55	45.44	631.58	631.88
Y1	27+14.55	45.44	631.62	631.89
Z1	27+24.55	45.44	631.66	631.88
A2	27+34.55	45.44	631.70	631.86
B2	27+44.55	45.44	631.74	631.84
☉ Brg. Pier 11	27+59.55	45.44	631.80	631.80



DEAD LOAD DEFLECTION DIAGRAM (GIRDER NG3 & NG7)

(includes weight of concrete only)

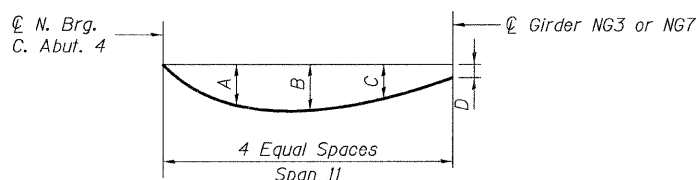
Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown above.



DEAD LOAD DEFLECTION DIAGRAM (GIRDER NG1 & NG2)

(includes weight of concrete only)

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



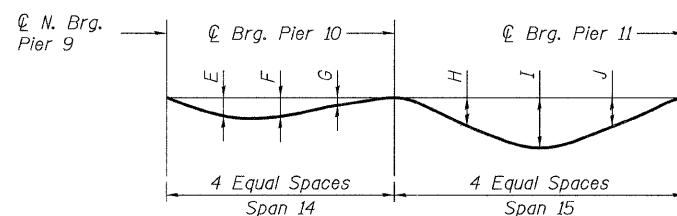
DEAD LOAD DEFLECTION DIAGRAM

(GIRDERS NG4 THRU NG6 AND NG8 THRU NG10)

(includes weight of concrete only)

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

Girder	A	B	C	D
NG6	1/4"	3/8"	1/4"	1 3/4"
NG5	0"	0"	0"	1 7/8"
NG4	0"	0"	0"	1 1/2"
NG8	0"	0"	0"	1 1/8"
NG9	0"	0"	0"	1 5/8"
NG10	1/8"	0"	0"	1 1/2"



DEAD LOAD DEFLECTION DIAGRAM

(GIRDER NG11 THRU NG13)

(includes weight of concrete only)

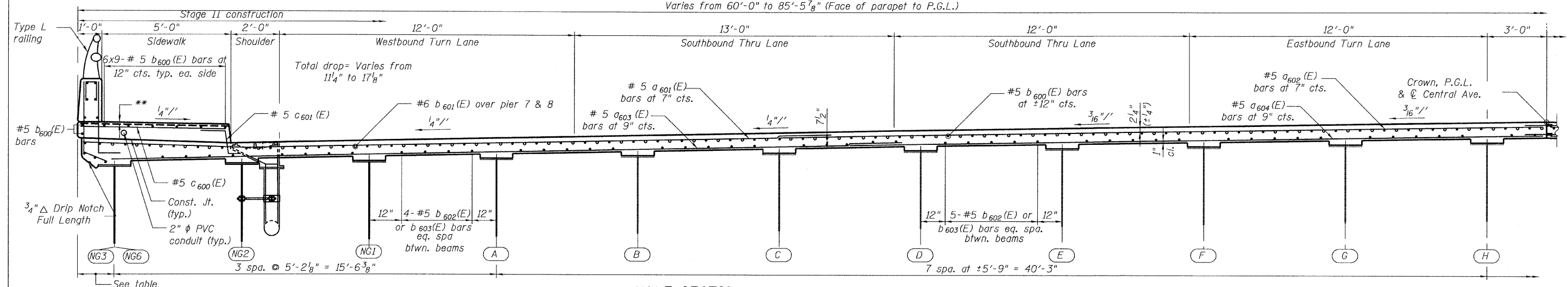
Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown above.

Girder	F	F	G	H	I	J
NG12	1 3/8"	1 3/8"	1/4"	2"	4 1/4"	3 5/8"
NG11	1 3/8"	1 3/8"	1/4"	1 7/8"	4"	3 1/2"
NG13	0"	1/8"	3/4"	1 7/8"	3 7/8"	3 1/4"

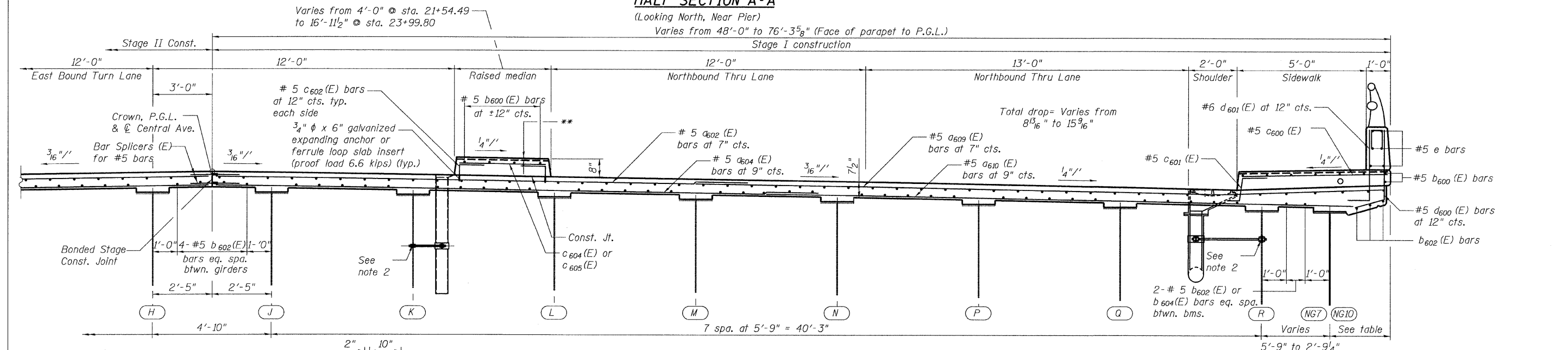
**TOP OF SLAB ELEVATIONS 3
STRUCTURE NO. 016-3240**

TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 9	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.					
	CHECKED - AMD, LS	NAME	DATE		55					0711.2R & 1011.1BR	COOK	200	176	
	DRAWN - DY, LS				33 SHEETS					CONTRACT NO. 60L39				
	CHECKED - AMD, LS									FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
	DATE - 08/02/10													

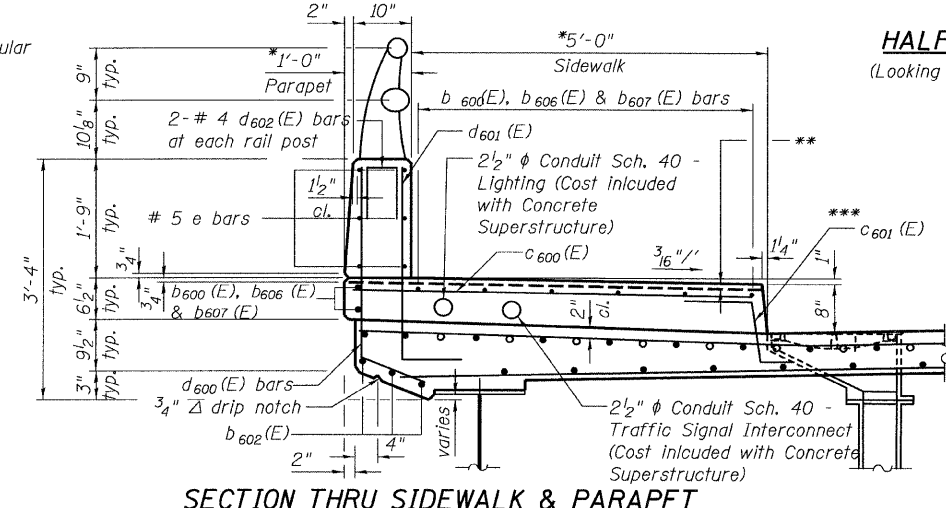
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
Varies from 60'-0" to 85'-5 7/8" (Face of parapet to P.G.L.)



HALF SECTION A-A
(Looking North, Near Pier)



HALF SECTION A-A
(Looking North, Near Midspan)



SECTION THRU SIDEWALK & PARAPET

NOTES

- The cost of galvanized expansion anchors/inserts to be included with "Reinforcement Bars, Epoxy Coated".
- Drill 7/8" hole for 3/4" as required. Drilled holes should be around to remove sharp edges and burrs. Paint holes and surrounding surface areas.

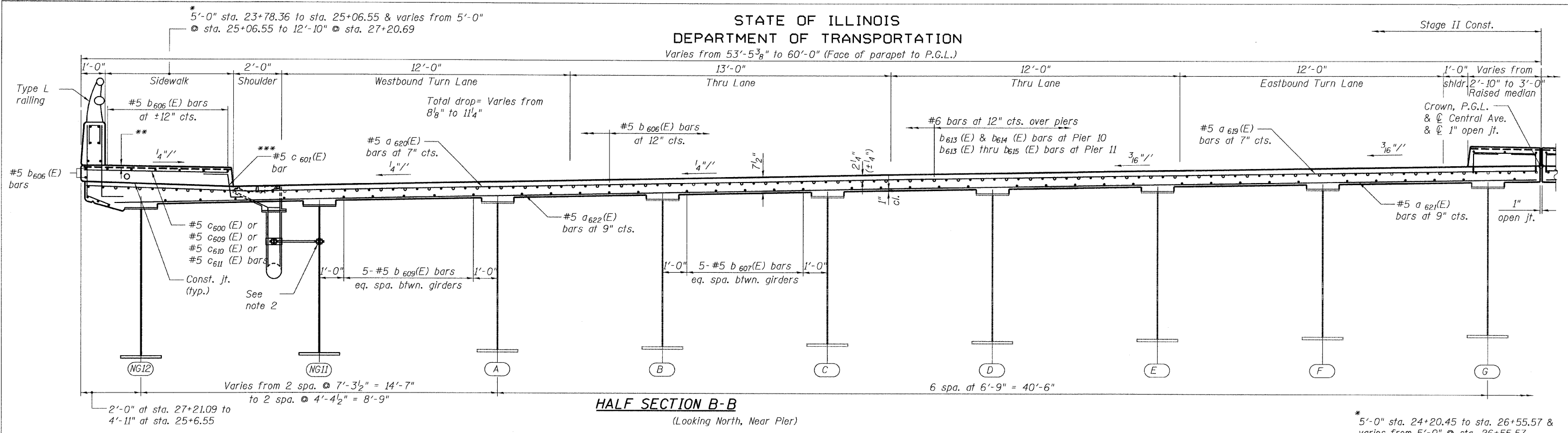
OVERHANG

Girder	Station	Overhang
NG6	21+19.94 to 21+71.32	1'-4" to 4'-0 1/2"
NG3	21+71.32 to 23+76.79	1'-9 5/8" to 4'-0 1/2"
NG7	22+13.25 to 24+17.95	2'-2" to 5'-0 1/2"
NG10	21+78.91 to 22+13.25	1'-4" to 5'-0 1/2"

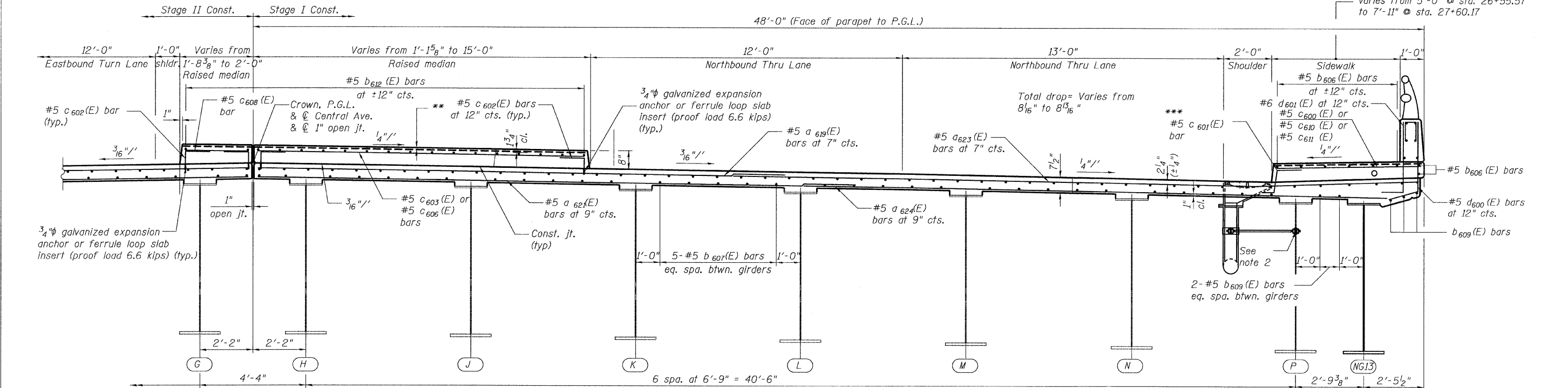
THIS SHEET FOR
INFORMATION ONLY

TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 10	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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	CHECKED - AMD, LS				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
	DATE - 08/02/10									

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DEPARTMENT OF TRANSPORTATION



HALF SECTION B-B
(Looking North, Near Pier)



HALF SECTION B-B
(Looking North, Near Midspan)

- NOTES:**
- The cost of galvanized expansion anchor/inserts to be included with "Reinforcement Bars, Epoxy Coated".
 - Drill $\frac{7}{8}$ " hole for $\frac{3}{4}$ " as required. Drilled holes should be around to remove sharp edges and burrs. Paint holes and surrounding surface areas.

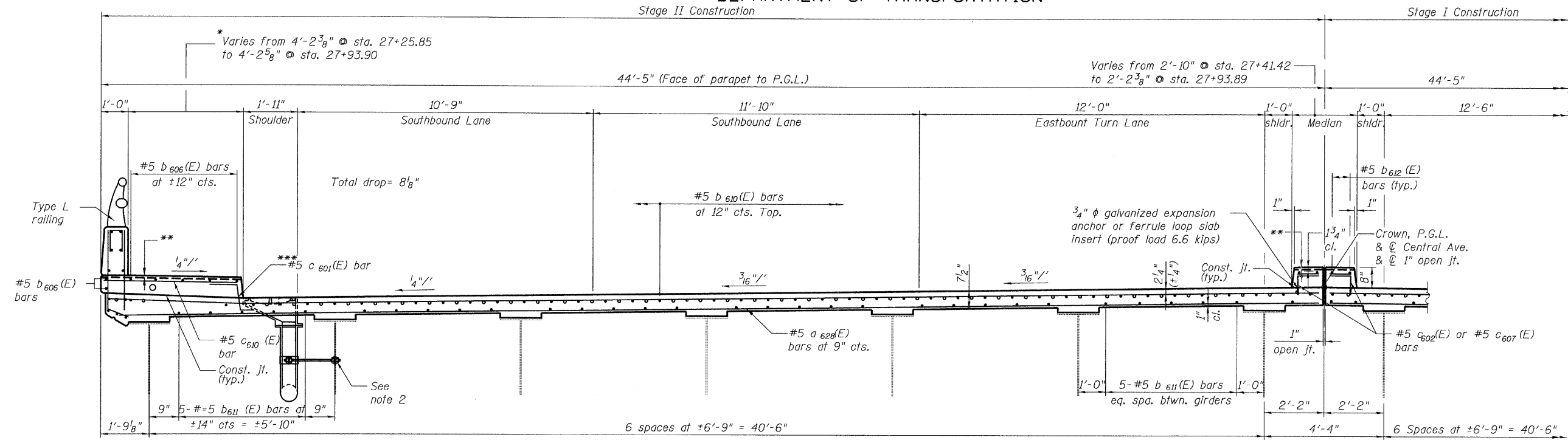
THIS SHEET FOR INFORMATION ONLY

SUPERSTRUCTURE CROSS SECTION SPANS 14 & 15 STRUCTURE NO. 016-3240

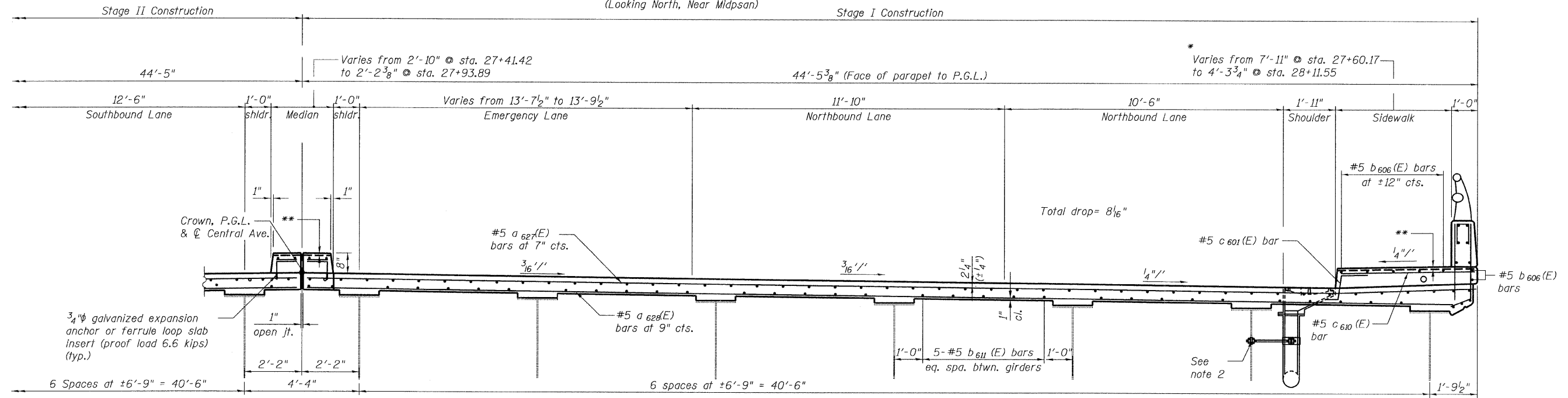
TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 11	F.A.I. RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 178
	CHECKED - AMD, LS	NAME	DATE						
	DRAWN - DY, LS								
	CHECKED - AMD, LS								
	DATE - 08/02/10			33 SHEETS	CONTRACT NO. 60L39				
					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

11/19/02 PM
pi:\01345\beam_and_bearing_fabrication\156c3decksec2.dgn
8/2/2010

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DEPARTMENT OF TRANSPORTATION



HALF SECTION C-C
(Looking North, Near Midpsan)



HALF SECTION C-C
(Looking North, Near Midpsan)

* Measured perpendicular to face of parapet.

** 1/4"x3/4" formed joint with concrete sealer (full width along joint-backer rod not required) at piers and either side.

*** In lieu of bottom leg c601(E) bars may be cored and set according to article 509.06 of the Standard Specifications. Cored holes shall be roughened or scored per Manufacturer's Recommendations, maximum depth of cored hole shall not exceed 4".

NOTES:

1. The cost of galvanized expansion anchor/inserts to be included with "Reinforcement Bars, Epoxy Coated".
2. Drill 7/8" φ hole for 3/4" φ as required. Drilled holes should be around to remove sharp edges and burrs. Paint holes and surrounding surface areas.

THIS SHEET FOR
INFORMATION ONLY

TYLIN INTERNATIONAL

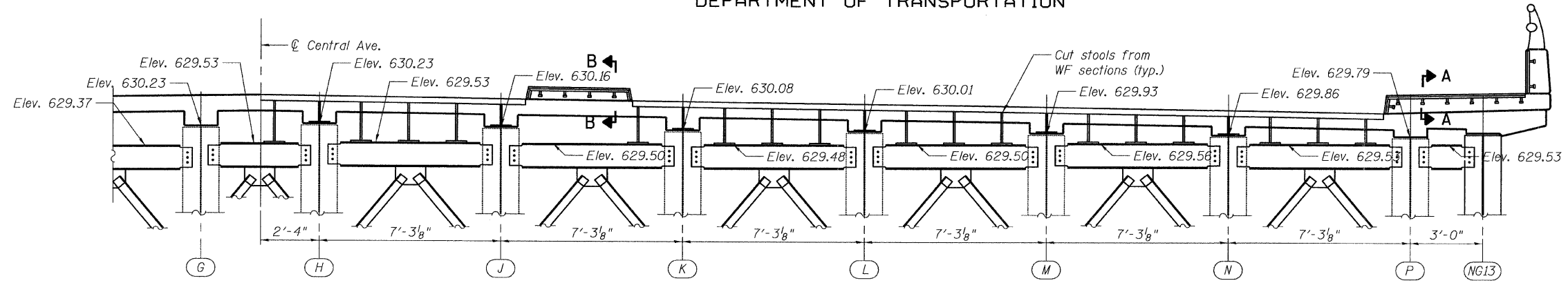
DESIGNED - DY, LS		REVISIONS	
CHECKED - AMD, LS	NAME	DATE	
DRAWN - DY, LS			
CHECKED - AMD, LS			
DATE - 08/02/10			

SHEET NO. 12 33 SHEETS	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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			CONTRACT NO. 60L39		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

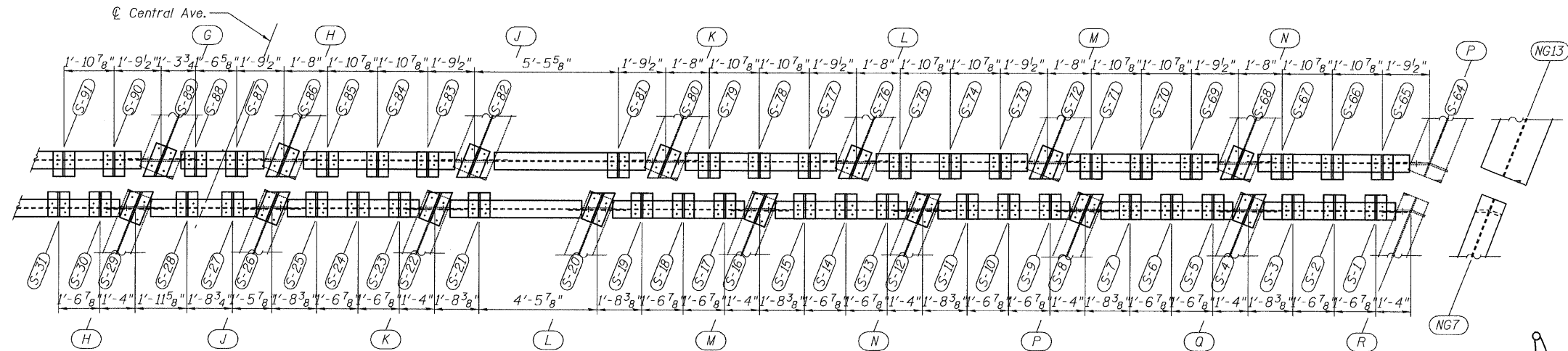
SUPERSTRUCTURE CROSS
SECTION SPAN 16
STRUCTURE NO. 016-3240

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8/2/2010

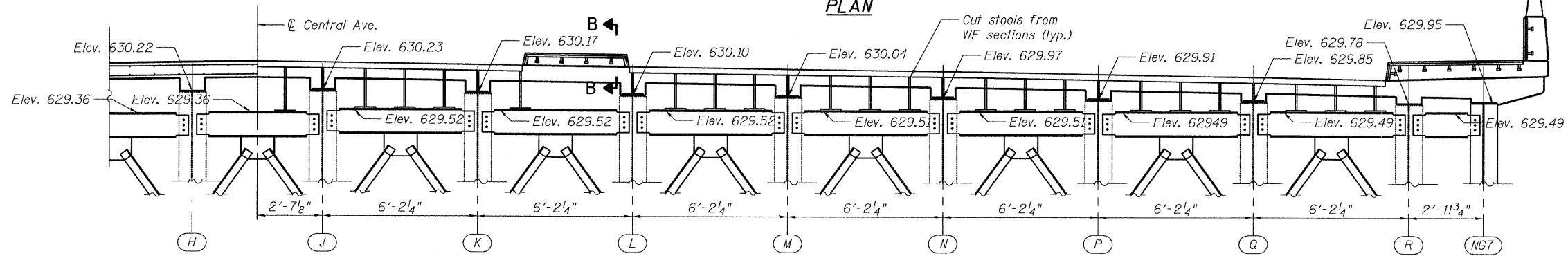
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



CROSS FRAME DIAPHRAGMS AT PIER 9
(Span 14, Looking North)



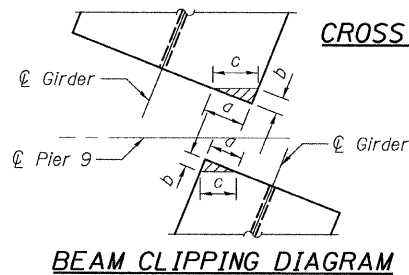
PLAN



CROSS FRAME DIAPHRAGMS AT PIER 9
(Span 13, Looking North)

BEAM CLIPPING DIMENSIONS

Girder	Span	a	b	c
NG7	11 thru 13	1 1/4"	1/2"	1 3/8"
A thru R	11 thru 13	2 3/4"	1 1/8"	3"
NG1, NG2, NG3	11 thru 13	1 3/8"	1/2"	1 3/8"
A thru P	14 thru 15	3 1/2"	1 3/8"	3 3/4"
NG13	14 thru 15	3 1/2"	1 1/2"	3 3/4"
NG11 & NG12	14 thru 15	3 1/2"	1 3/8"	3 3/4"



BEAM CLIPPING DIAGRAM

NOTES:

1. For Section A-A & B-B, see Sheet 15.
2. Holes in new diaphragms are to be field drilled using holes in existing connection as template.
3. According to existing plans, the end diaphragm is level. The contractor shall verify in Field before ordering Materials.

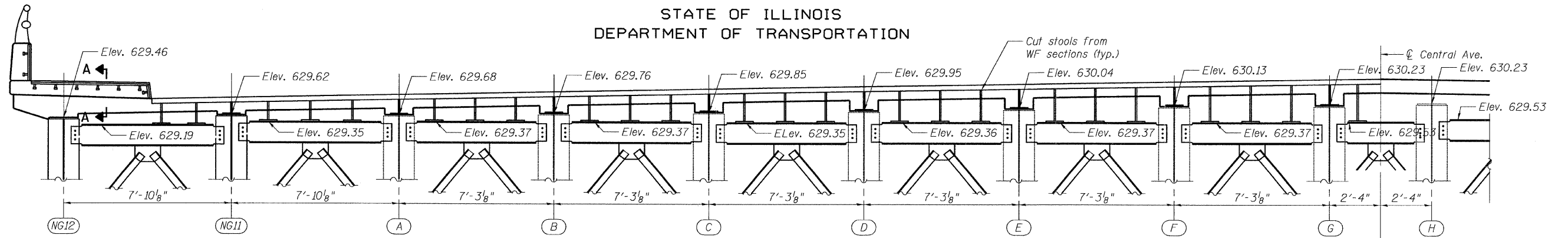
**FINGER PLATE PLAN &
SECTIONS - EAST
STRUCTURE NO. 016-3240**

TYLIN INTERNATIONAL

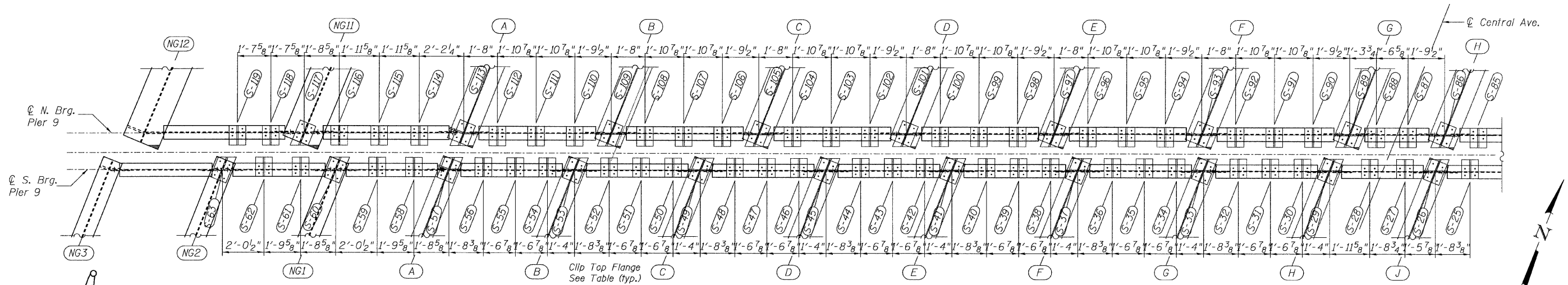
DESIGNED	REVISIONS
- DY, LS	NAME
CHECKED - AMD, LS	DATE
DRAWN - DY, LS	
CHECKED - AMD, LS	
DATE - 08/02/10	

SHEET NO. 13	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
33 SHEETS	55	0711.2R & 1011.1BR	COOK	200	180
			CONTRACT NO. 60L39		
			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT		

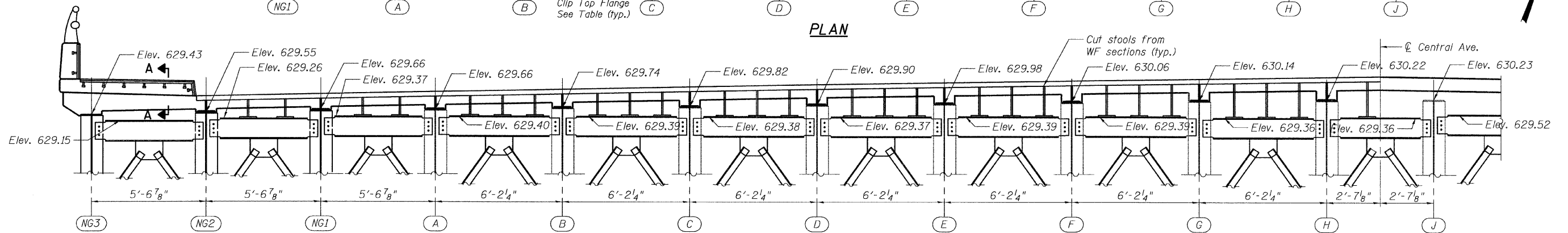
STATE OF ILLINOIS
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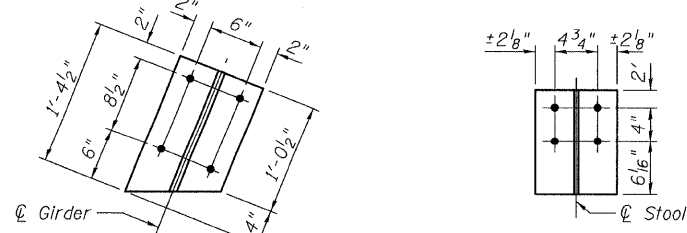
CROSS FRAME DIAPHRAGMS AT PIER 9
(Span 14, Looking North)



PLAN



CROSS FRAME DIAPHRAGMS AT PIER 9
(Span 13, Looking North)



STOOLS OVER GIRDERS

STOOLS OVER DIAPHRAGMS

STOOLS DIMENSIONS

(Stools shall be fabricated from 3/4\"/>

NOTES:

- For Section A-A, see Sheet 15.
- Holes in new diaphragms are to be field drilled using holes in existing connection as template.
- According to existing plans, the end diaphragm is level. The contractor shall verify in Field before ordering Materials.

**FINGER PLATE PLAN &
SECTIONS - WEST
STRUCTURE NO. 016-3240**

TYLIN INTERNATIONAL

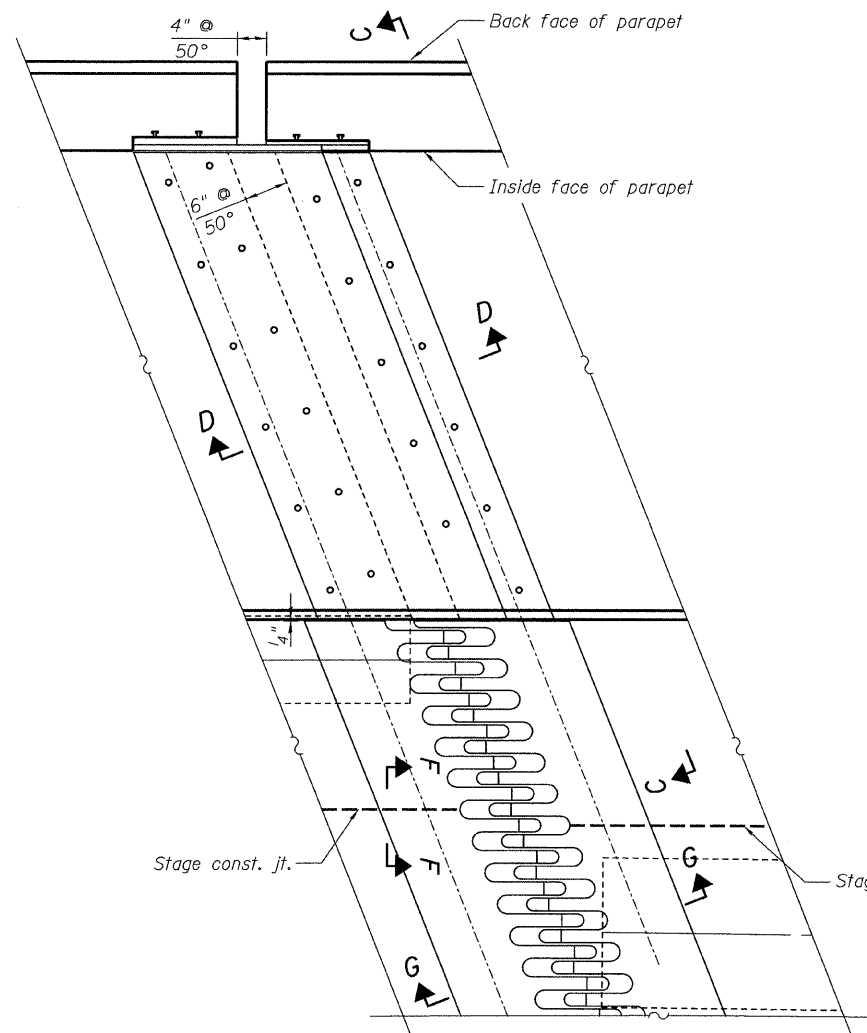
DESIGNED - DY, LS
CHECKED - AMD, LS
DRAWN - DY, LS
CHECKED - AMD, LS
DATE - 08/02/10

REVISIONS	
NAME	DATE

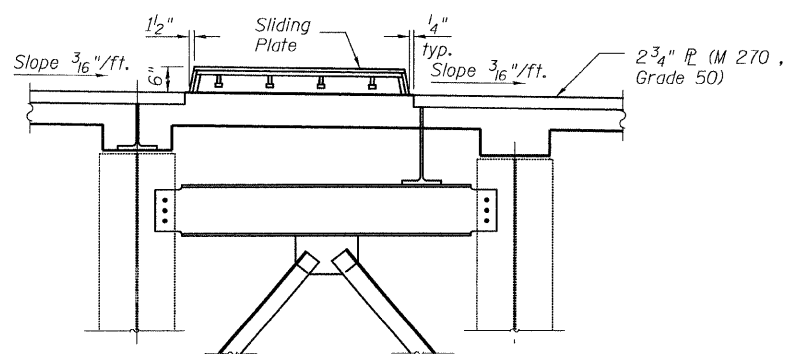
SHEET NO. 14
33 SHEETS

F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 181
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			CONTRACT NO. 60L39	

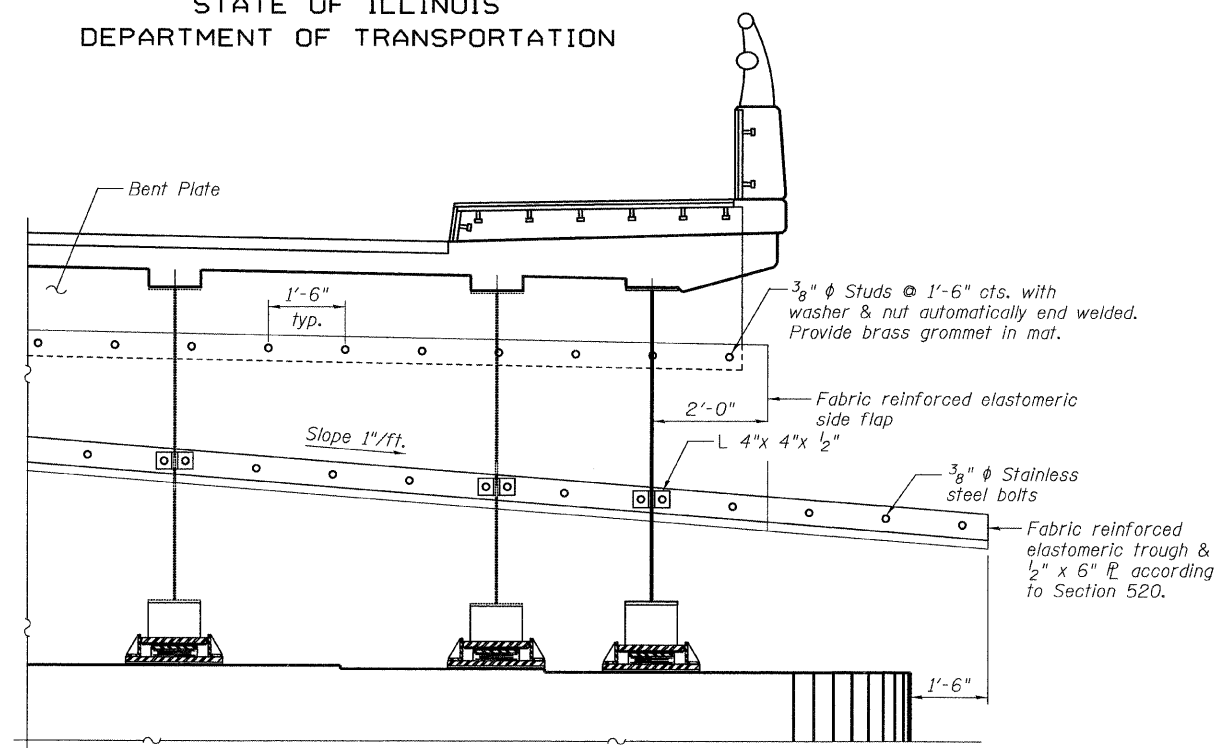
STATE OF ILLINOIS
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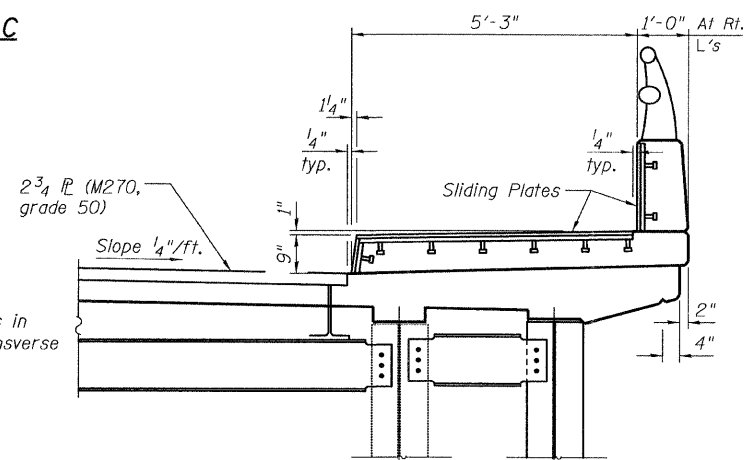
PLAN AT PIER 9
(at 50°)



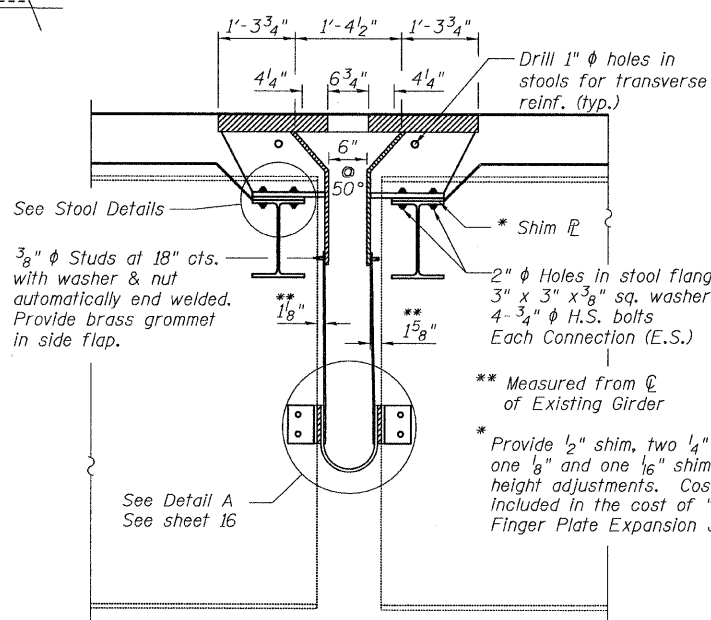
SECTION B-B THRU RAISED MEDIAN
(Looking North - Showing Sliding Plates)



SECTION C-C



SECTION A-A THRU SIDEWALK AND PARAPET
(East Side Looking North - Showing Sliding Plates)



SECTION G-G THRU PIER 9
(Looking West)

STOOL DIMENSIONS

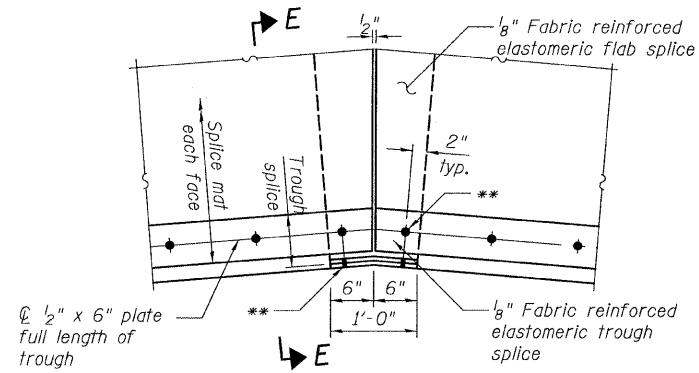
(South Side)		(North Side)	
Stool	Ht. (in.)	Stool	Ht. (in.)
S-1	10 1/2	S-64	6 5/8
S-2	10 7/8	S-65	10 1/4
S-3	11 1/4	S-66	10 5/8
S-4	7 3/8	S-67	11
S-5	11 7/8	S-68	7 1/2
S-6	12 1/4	S-69	11 1/2
S-7	12 5/8	S-70	11 7/8
S-8	7 7/8	S-71	12 1/4
S-9	13	S-72	8 7/8
S-10	13 1/4	S-73	13 3/4
S-11	13 5/8	S-74	14
S-12	8 3/8	S-75	14 3/8
S-13	14 1/2	S-76	8 5/8
S-14	14 3/8	S-77	15 1/4
S-15	14 5/8	S-78	15 1/2
S-16	8 5/8	S-79	15 7/8
S-17	15	S-80	8 7/8
S-18	15 1/4	S-81	16 7/8
S-19	15 1/2	S-82	9 7/8
S-20	8 7/8	S-83	17
S-21	16 1/2	S-84	17 1/4
S-22	9 7/8	S-85	17 1/2
S-23	17	S-86	9 3/8
S-24	17 1/4	S-87	18 7/8
S-25	17 1/2	S-88	17 7/8
S-26	9 3/8	S-89	9 3/8
S-27	20	S-90	19 3/8
S-28	19 7/8	S-91	19
S-29	9 3/8	S-92	18 5/8
S-30	19 3/8	S-93	9 7/8
S-31	19 7/8	S-94	18
S-32	18 7/8	S-95	17 5/8
S-33	9 7/8	S-96	17 1/4
S-34	17 7/8	S-97	8 7/8
S-35	17 3/8	S-98	16 3/4
S-36	17 3/8	S-99	16 3/8
S-37	8 7/8	S-100	16
S-38	16 3/4	S-101	8 5/8
S-39	16 1/2	S-102	15 1/2
S-40	16 7/8	S-103	15 3/8
S-41	8 3/4	S-104	14 5/8
S-42	15 7/8	S-105	8 1/4
S-43	15 1/2	S-106	13 5/8
S-44	15 1/4	S-107	13 7/8
S-45	8 1/2	S-108	12 3/4
S-46	14 1/2	S-109	7 5/8
S-47	14 1/8	S-110	11 7/8
S-48	13 1/4	S-111	11 3/8
S-49	8	S-112	10 7/8
S-50	12 7/8	S-113	6 7/8
S-51	12 1/2	S-114	10 1/4
S-52	12 7/8	S-115	10 1/4
S-53	7 1/2	S-116	9 3/4
S-54	11 1/4	S-117	5 5/8
S-55	10 7/8	S-118	10 3/8
S-56	10 1/2	S-119	10
S-57	7		
S-58	10		
S-59	9 5/8		
S-60	5 5/8		
S-61	10		
S-62	9 1/2		
S-63	5 5/8		

FINGER PLATE
DETAILS I
STRUCTURE NO. 016-3240

TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 15	F.A.I. RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 182
	CHECKED - AMD, LS	NAME	DATE						
	DRAWN - DY, LS								
	CHECKED - AMD, LS								
	DATE - 08/02/10			33 SHEETS		CONTRACT NO. 60L39			
								FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	

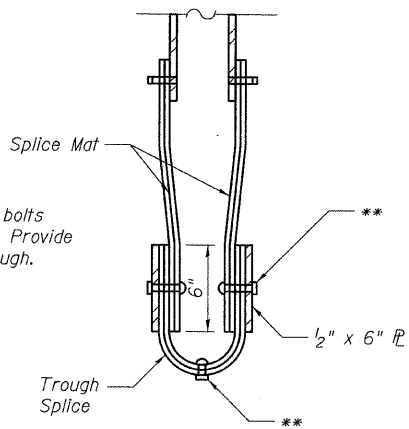
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STATE OF ILLINOIS
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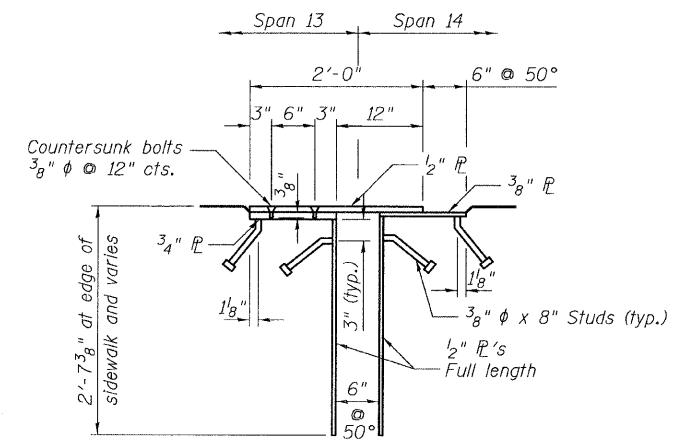


TROUGH SPLICE DETAIL

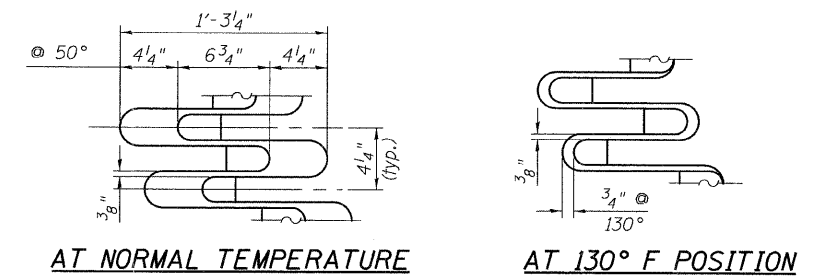
**
3/8" φ Stainless steel bolts with washers & nuts. Provide brass grommet in trough.



SECTION E-E

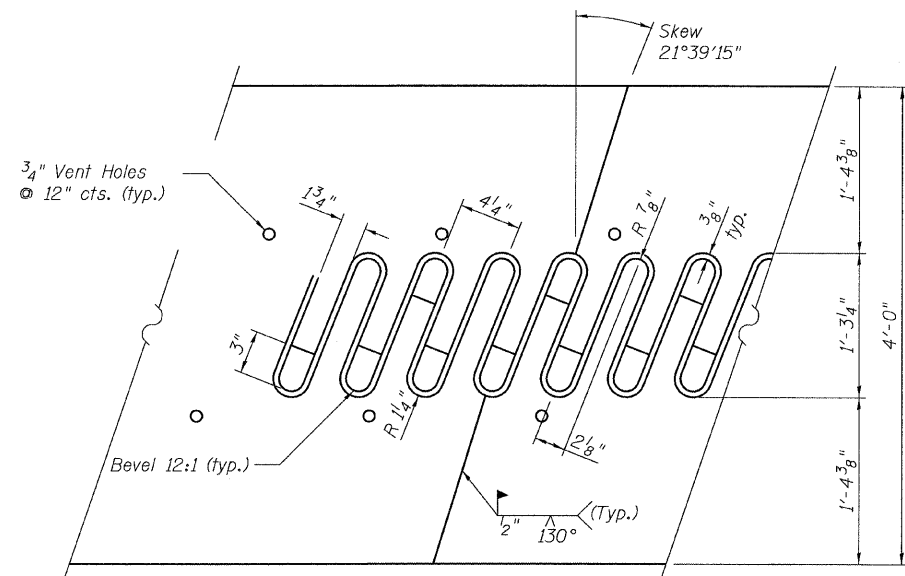


**SECTION D-D
SIDEWALK PLATE ASSEMBLY DETAIL**



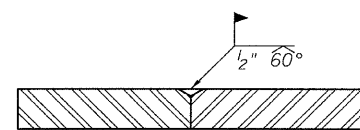
FINGER PLATE DETAILS

Temperature Range = -30° to 130°
with 50° = Normal
Coeff. of Linear Expansion = 0.0000065/° F

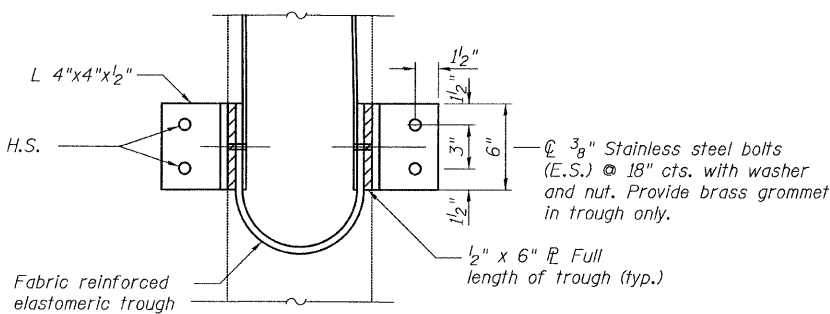


FLAME CUTTING DIAGRAM

Cut from 1/2" x 2 3/4" x 4'-0" x 69'-2 1/4" for West Side
& 1/2" x 2 3/4" x 4'-0" x 31'-0 3/4" for East Side



STAGE CONSTRUCTION JOINT - SECTION F-F
(When Required)



DETAIL "A"

NOTES

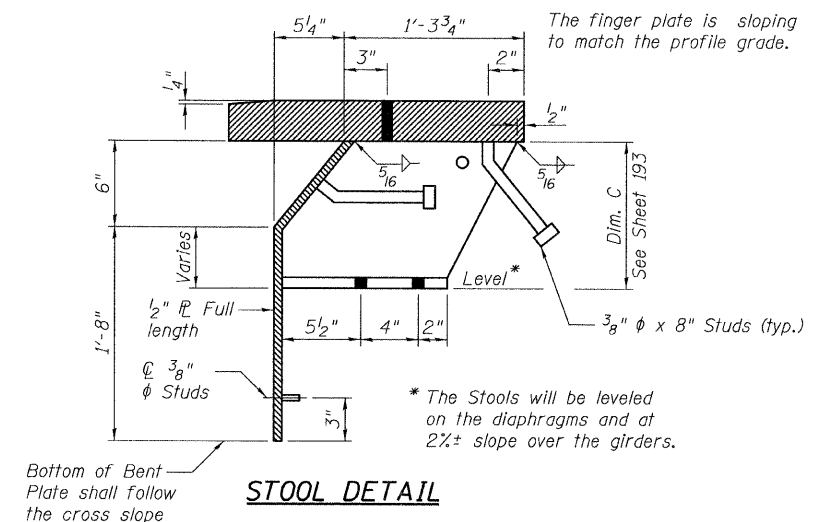
1. For stool locations, see sheet 13 & 14.
2. For View C-C, see sheet 15.
3. According to existing plans the diaphragms are level. The Contractor shall verify in field before ordering material's.
4. See sheets 24 & 25 for W12X40 diaphragm details.
5. Finger plate expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.

LEGEND

E.S. - Denotes Each Side
F.F - Denotes Front Face

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Furnishing Finger Plate Expansion Joint, 6"	FOOT	116



STOOL DETAIL

**FINGER PLATE
DETAILS 2
STRUCTURE NO. 016-3240**

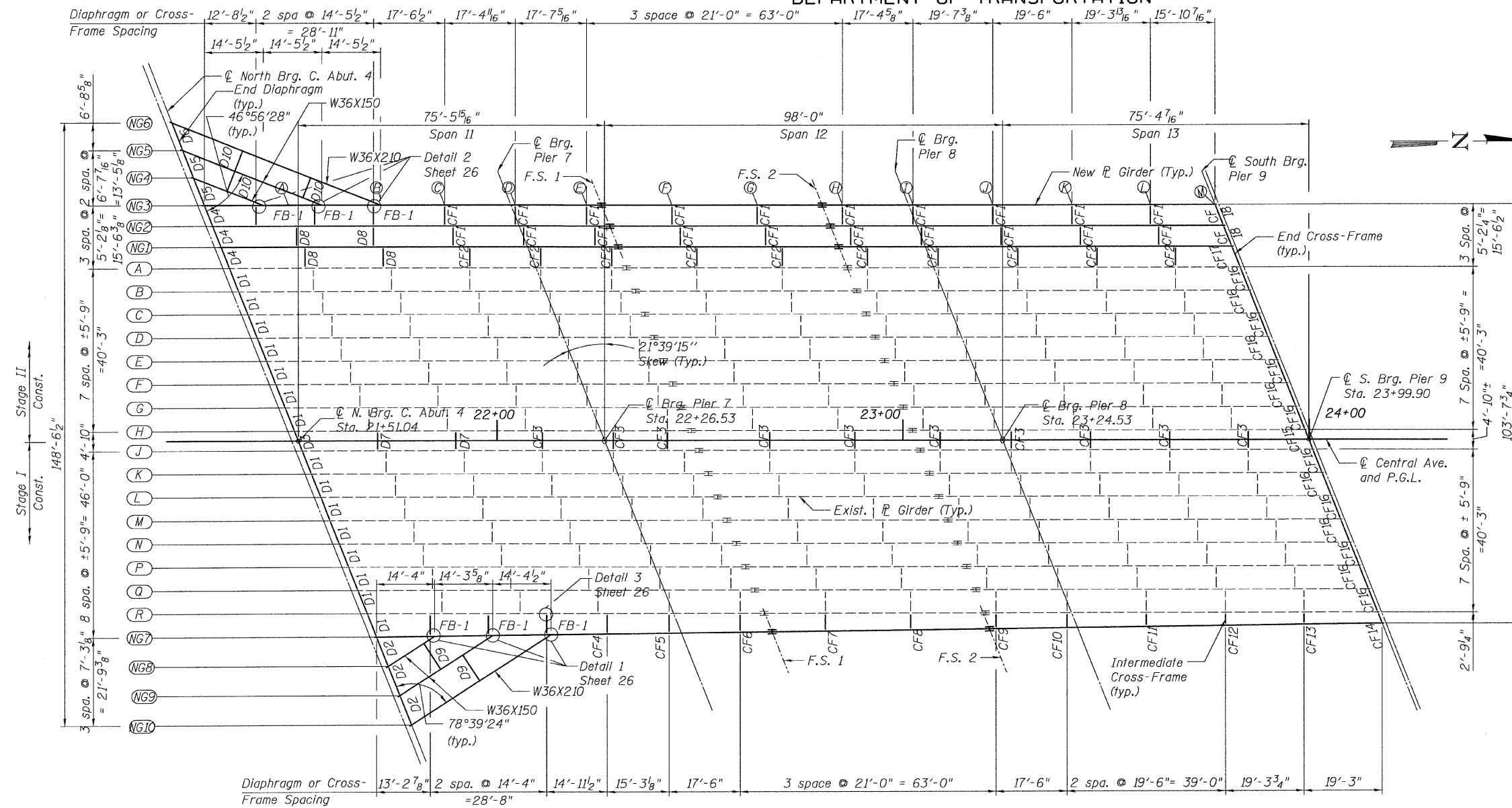
TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 16	F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 183
	CHECKED - AMD, LS	NAME	DATE						
	DRAWN - DY, LS								
	CHECKED - AMD, LS								
	DATE - 08/02/10			33 SHEETS	CONTRACT NO. 60L39				
					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

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BEARING SEAT ELEVATIONS
"FOR INFORMATION ONLY"

Girder Line	℄ brg. N. abut. C	℄ brg. pier 7	℄ brg. pier 8	℄ brg. S. pier 9
NG6	624.86	-	-	-
NG5	624.99	-	-	-
NG4	625.14	-	-	-
NG3	625.29	624.24	624.39	622.50
NG2	625.40	624.35	624.50	622.61
NG1	625.52	624.47	624.61	622.73
A	625.51	623.63	623.92	622.73
B	625.59	623.71	624.00	622.81
C	625.67	623.79	624.08	622.89
D	625.75	623.87	624.16	622.97
E	625.83	623.95	624.24	623.05
F	625.91	624.03	624.32	623.13
G	625.99	624.11	624.40	623.21
H	626.07	624.19	624.48	623.30
J	626.07	624.20	624.49	623.30
K	626.01	624.13	624.42	623.23
L	625.95	624.07	624.36	623.17
M	625.88	624.00	624.29	623.10
N	625.82	623.94	624.23	623.04
P	625.76	623.88	624.17	622.98
Q	625.67	623.81	624.10	622.91
R	625.56	623.75	624.04	622.85
NG7	625.63	624.60	624.88	623.00
NG8	625.49	-	-	-
NG9	625.35	-	-	-
NG10	625.18	-	-	-



FRAMING PLAN

TOP OF BEAM & WEB ELEVATIONS

Beam	℄ N. Brg. C. Abut. 4	℄ Brg. Pier 7	Field Splice 1	Field Splice 2	℄ Brg. Pier 8	℄ S. Brg. Pier 9
NG6	628.31	-	-	-	-	-
NG5	628.38	-	-	-	-	-
NG4	628.53	-	-	-	-	-
NG3	628.68	628.78	628.73	629.00	629.12	629.37
NG2	628.79	628.89	628.92	629.14	629.24	629.48
NG1	628.91	629.01	629.03	629.26	629.35	629.60
NG7	629.02	629.22	629.20	629.49	629.62	629.89
NG8	628.88	-	-	-	-	-
NG9	628.74	-	-	-	-	-
NG10	628.64	-	-	-	-	-

* For Fabrication Only

FIELD SPLICE LAYOUT

(Measured from ℄ Brg.)

Girder	F.S. 1	F.S. 2
NG7	97'-5 ⁵ / ₁₆ "	53'-6 ¹ / ₈ "
NG1	97'-9 ⁹ / ₁₆ "	54'-3 ⁷ / ₈ "
NG2	97'-9 ⁹ / ₁₆ "	54'-3 ⁷ / ₈ "
NG3	97'-9 ⁹ / ₁₆ "	54'-3 ⁷ / ₈ "

NOTES:

- Structural steel for beams, girders, splices and diaphragms marked 'FB' and associated connection plates shall conform to the requirements of AASHTO M270 Grade 50. All other structural steel shall conform to the requirements of AASHTO M270 Grade 36.
- All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts. Individual cross frames or diaphragms at support may be temporarily disconnected to install bearing anchor rods.
- Existing end diaphragms, bent plates and bolts to be removed as indicated. See Jacking Details Sheet for details cost included with structural steel removal.
- For Bill of Material, see Sheet 2.
- For Girder Elevations, see Sheets 20 thru 21.
- For Diaphragms lengths, spacing and details, see Sheet 23.
- For Cross Frame Details, see Sheet 24.
- For Field Splice Details, see Sheet 27.
- For Shear Stud Details, see Section A-A on Sheet 23.
- F.S. - denotes girder Field Splice.
- E.G.- denotes Existing Girder.

FRAMING PLAN
SPANS 11, 12 & 13
STRUCTURE NO. 016-3240

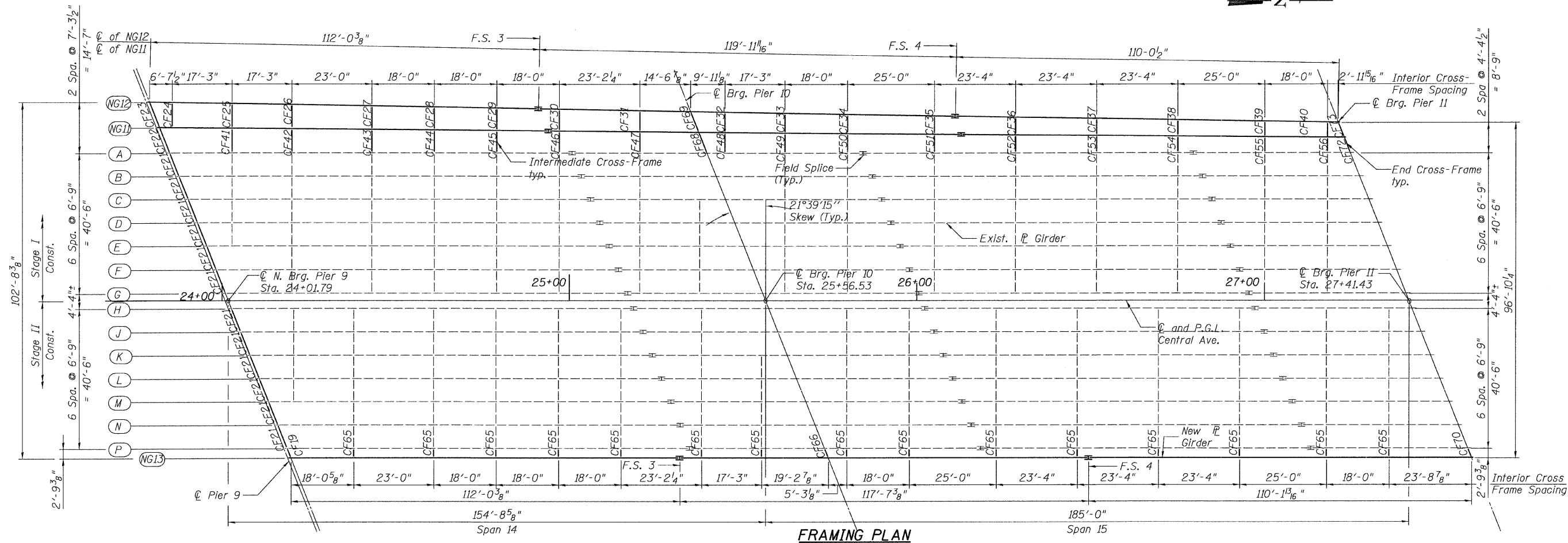
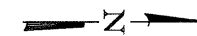
TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 17 33 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD, LS	NAME	DATE		55	0711.2R & 1011.1BR	COOK	200	184	
	DRAWN - DY, LS				CONTRACT NO. 60L39					
	CHECKED - AMD, LS				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
	DATE - 08/02/10									

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FRAMING PLAN

FRAMING PLAN

1. For Bill of Material, see Sheet 2.
2. For Girder Elevations, see Sheet 22.
3. For Cross Frame Details, see Sheet 25.
4. For Field Splice Details, see Sheet 28.
5. For Shear Stud Details, see Sheet 23.
6. F.S. - denotes girder Field Splice.
7. E.G.- denotes Existing Girder.

TOP OF WEB ELEVATIONS*

Beam	¢ N. Brg. Pier 9	Field Splice 3	¢ Brg. Pier 10	Field Splice 4	¢ Brg. Pier 11
NG11	629.49	629.78	629.92	630.41	630.89
NG12	629.49	629.64	629.91	630.52	630.83
NG13	629.72	630.05	630.27	630.65	630.90

* For Fabrication Only

BEARING SEAT ELEVATIONS

"FOR INFORMATION ONLY"

Girder Line	¢ brg. N. pier 9	¢ brg. pier 10	¢ brg. pier 11
NG12	622.47	620.75	619.71
NG11	622.47	620.75	619.64
A	622.58	620.13	618.11
B	622.67	620.23	618.21
C	622.76	620.32	618.30
D	622.86	620.42	618.40
E	622.95	620.51	618.49
F	623.05	620.60	618.58
G	623.14	620.70	618.68
H	623.14	620.70	618.68
J	623.07	620.63	618.61
K	623.00	620.55	618.53
L	622.92	620.48	618.46
M	622.85	620.40	618.38
N	622.77	620.33	618.31
P	622.70	621.11	619.65
NG13	622.70	621.11	619.65

FRAMING PLAN
SPANS 14 & 15
STRUCTURE NO. 016-3240

TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 18 33 SHEETS	F.A.I RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 185			
	CHECKED - AMD, LS	NAME	DATE							CONTRACT NO. 60L39		
	DRAWN - DY, LS									FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT		
	CHECKED - AMD, LS											
	DATE - 08/02/10											

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
MOMENT TABLE SPANS 11, 12 & 13**

	Proposed Interior Girder Moment Table - NG1						Proposed Exterior Girder Moment Table - NG3						Existing Interior Girder Moment Table - F					NG6
	0.4 Span 11	Pier 7	0.5 Span 12	Pier 8	0.6 Span 13		0.4 Span 11	Pier 7	0.5 Span 12	Pier 8	0.6 Span 13		0.4 Span 11	Pier 7	0.5 Span 12	Pier 8	0.6 Span 13	
I_s	(in ⁴)	14,812	26,667	15,303	19,016	19,016	14,812	26,667	15,303	19,016	19,016	7,941	17,864	12,323	17,862	12,323	13,200	
$I_c(n)$	(in ⁴)	29,231	-	34,851	-	40,397	29,974	-	32,343	-	37,480	19,280	-	29,474	-	29,474	25,206	
$I_c(3n)$	(in ⁴)	21,640	-	25,711	-	30,018	22,147	-	23,739	-	27,869	14,082	-	22,175	-	22,175	18,592	
S_s	(in ³)	825	1,046	618	761	761	825	1,046	618	761	761	446	715	501	714	501	719	
$S_c(n)$	(in ³)	1,055	-	853	-	1,002	1,104	-	833	-	980	634	-	691	-	692	934	
$S_c(3n)$	(in ³)	958	-	770	-	912	996	-	748	-	888	570	-	633	-	633	836	
Z	(in ³)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
$\bar{\rho}$	(k/')	0.82	1.15	0.73	1.11	0.74	0.87	1.02	0.60	0.98	0.61	0.75	1.12	0.72	1.11	0.72	0.63	
$M\bar{\rho}$	(k)	289.0	954.0	270.7	806.6	281.5	709.6	1322.4	113.1	576.3	271.2	258.8	907.0	265.4	857.5	258.3	234.4	
$s\bar{\rho}$	(k/')	0.37	-	0.37	-	0.36	0.37	-	0.37	-	0.36	0.37	-	0.37	-	0.36	0.46	
$M_s\bar{\rho}$	(k)	138.2	-	171.1	-	146.6	388.3	-	105.7	-	161.9	142.8	-	171.6	-	142.2	161.5	
$M\bar{L}$	(k)	451.9	402.0	526.3	360.5	475.1	478.6	370.3	384.4	297.6	364.2	466.7	401.4	542.1	398.6	489.7	325.0	
MIM	(k)	112.7	94.9	118.0	85.2	118.7	119.4	87.4	86.2	70.3	91.0	116.4	94.8	121.5	94.2	122.3	91.2	
${}^3_3 [M\bar{L} + I]$	(k)	941.0	828.3	1,073.8	742.7	989.6	996.7	762.9	784.4	613.2	758.7	971.9	827.1	1,105.9	821.3	1,020.1	693.8	
M_a	(k)	1,778.6	2,316.9	1,970.2	2,014.2	1,842.9	2,722.9	2,710.8	1,304.0	1,546.3	1,549.5	1,785.5	2,254.2	2,005.8	2,182.4	1,846.7	1,416.5	
M_u	(k)	4,895.5	-	4,630.1	-	4,748.4	4,969.4	-	4,230.5	-	4,803.5	2,041.7	-	3,024.6	-	2,183.9	3,984.9	
$f_s \bar{\rho}$ non-comp	(ksi)	4.2	10.9	5.3	12.7	4.4	10.3	15.2	2.2	9.1	4.3	7.0	15.2	6.4	14.4	6.2	3.9	
$f_s \bar{\rho}$ (comp)	(ksi)	1.7	-	2.7	-	1.9	4.7	-	1.7	-	2.2	3.0	-	3.3	-	2.7	2.3	
$f_s {}^3_3 [M\bar{L} + M_I]$	(ksi)	10.7	9.5	15.1	11.7	11.8	10.8	8.8	11.3	9.7	9.3	18.4	13.9	19.2	13.8	17.7	8.9	
f_s (Overload)	(ksi)	16.6	20.5	23.0	24.4	18.2	25.8	23.9	15.2	18.8	15.8	28.4	29.1	28.8	28.2	26.6	15.1	
f_s (Total)	(ksi)	-	26.6	-	31.8	-	-	31.1	-	24.4	-	37.9	-	36.7	-	-	-	
VR	(k)	42.8	-	37.8	-	43.1	44.9	-	28.3	-	39.8	44.4	-	40.0	-	45.4	37.6	

* Compact section
** Braced non-compact and partially braced section

MOMENT TABLE SPANS 14 & 15

	Proposed Interior Girder Moment Table			Proposed Exterior Girder Moment Table			Existing Interior Girder Moment Table					
	0.4 Span 14	Pier 10	0.5 Span 15	0.4 Span 14	Pier 10	0.5 Span 15	0.4 Span 14	Pier 10	0.5 Span 15	Pier 11	0.5 Span 16	Pier 12
I_s	(in ⁴)	78,063	257,397	93,371	78,063	257,397	63,402	149,583	75,095	348,332	146,346	359,812
$I_c(n)$	(in ⁴)	142,083	-	157,053	142,866	-	160,623	137,886	-	150,089	-	269,283
$I_c(3n)$	(in ⁴)	107,966	-	121,212	108,480	-	123,294	100,193	-	111,611	-	201,681
S_s	(in ³)	2,110	5,148	2,334	2,110	5,148	2,013	3,053	1,990	5,349	3,511	5,613
$S_c(n)$	(in ³)	2,604	-	2,823	2,608	-	2,842	2,545	-	2,522	-	4,277
$S_c(3n)$	(in ³)	2,388	-	2,588	2,392	-	2,604	2,345	-	2,308	-	3,934
Z	(in ³)	-	-	-	-	-	-	-	-	-	-	-
$\bar{\rho}$	(k/')	1.04	1.56	0.91	1.06	1.66	0.95	0.97	1.51	0.99	1.67	1.10
$M\bar{\rho}$	(k)	1,235.9	6,221.6	1,893.6	1,253.9	6,464.2	1,993.8	1,681.8	3,834.6	602.1	6,290.6	3,208.8
$s\bar{\rho}$	(k/')	0.41	-	0.41	0.41	-	0.41	-	0.41	-	0.41	-
$M_s\bar{\rho}$	(k)	499.3	-	908.3	504.5	-	916.8	744.4	-	363.7	-	1,245.2
$M\bar{L}$	(k)	1,306.6	1,825.0	1,427.5	1,293.4	1,947.4	1,583.6	1,477.0	1,684.6	1,433.3	2,525.9	2,687.6
MIM	(k)	233.1	308.8	229.8	230.2	328.9	254.3	264.4	284.7	231.2	374.1	368.2
${}^3_3 [M\bar{L} + I]$	(k)	2,566.2	3,556.4	2,762.3	2,539.5	3,793.9	3,063.2	2,902.3	3,282.3	2,774.2	4,833.4	5,092.9
M_a	(k)	5,591.8	12,711.3	7,233.5	5,587.1	13,335.4	7,766.0	6,927.1	9,251.9	4,862.0	14,461.2	12,411.1
M_u	(k)	12,689.4	-	12,172.5	12,830.1	-	12,635.8	8,678.5	-	10,417.4	-	15,728.8
$f_s \bar{\rho}$ non-comp	(ksi)	7.0	14.5	9.7	7.1	15.1	10.2	10.0	15.1	3.6	14.1	11.0
$f_s \bar{\rho}$ (comp)	(ksi)	2.5	-	4.2	2.5	-	4.2	3.8	-	1.9	-	3.8
$f_s {}^3_3 [M\bar{L} + M_I]$	(ksi)	11.8	8.3	11.7	11.7	8.8	12.9	13.7	12.9	13.2	10.8	14.3
f_s (Overload)	(ksi)	21.4	22.8	25.7	21.3	23.9	27.4	27.5	28.0	18.7	25.0	24.1
f_s (Total)	(ksi)	-	29.6	-	31.1	-	-	36.4	-	32.4	-	31.3
VR	(k)	58.0	-	46.9	53.4	-	48.0	59.2	-	54.5	-	66.1

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).
 $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).
 $I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).
Z: Plastic Section Modulus of the steel section in non-composite areas (in³).
 $\bar{\rho}$: Un-factored non-composite dead load (kips/ft.).
 $M\bar{\rho}$: Un-factored moment due to non-composite dead load (kip-ft.).
 $s\bar{\rho}$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
 $M_s\bar{\rho}$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
 $M\bar{L}$: Un-factored live load moment (kip-ft.).
 M_I : Un-factored moment due to impact (kip-ft.).
 M_a : Factored design moment (kip-ft.).
 $1.3 [M\bar{\rho} + M_s\bar{\rho} + \frac{5}{8} (M\bar{L} + M_I)]$
 M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).
 f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $M\bar{\rho} + M_s\bar{\rho} + \frac{5}{8} (M\bar{L} + M_I)$
 f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.3 [M\bar{\rho} + M_s\bar{\rho} + \frac{5}{8} (M\bar{L} + M_I)]$
VR: Maximum \bar{L} + impact shear range within the composite portion of the span for stud shear connector design (kips).

REACTION TABLE SPANS 11, 12 & 13

	Proposed Interior Girder				Proposed Exterior Girder				Existing Interior Girder				NG6	
	N. Brg. C Abut. 4	Pier 7	Pier 8	S. Brg. Pier 9	N. Brg. C Abut. 4	Pier 7	Pier 8	S. Brg. Pier 9	N. Brg. C Abut. 4	Pier 7	Pier 8	S. Brg. Pier 9		N. Brg. C Abut. 4
R $\bar{\rho}$	(k)	32.9	111.9	103.5	31.7	63.4	139.9	83.2	29.8	30.9	107.8	105.0	30.8	31.0
R \bar{L}	(k)	31.3	45.4	44.8	31.6	30.3	39.4	34.6	29.4	32.7	46.8	47.0	32.9	29.1
R \bar{I}	(k)	7.8	10.7	10.6	7.9	7.5	9.3	8.2	7.3	8.1	11.1	11.1	8.2	8.2
R \bar{Total}	(k)	72.0	168.0	158.8	71.2	101.2	188.6	126.0	66.6	71.7	165.7	163.1	72.0	68.3

REACTION TABLE SPANS 14 & 15

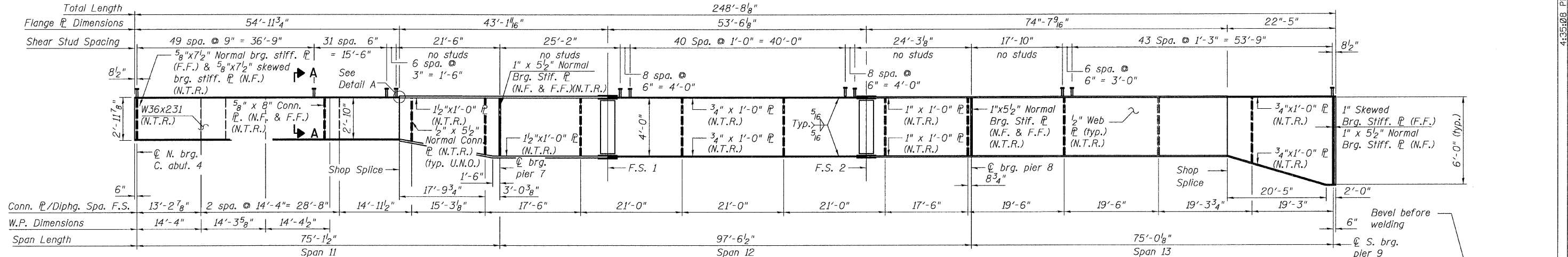
	Proposed Interior Girder			Proposed Exterior Girder			Existing Interior Girder				
	N. Brg. Pier 9	Pier 10	Pier 11	N. Brg. Pier 9	Pier 10	Pier 11	N. Brg. Pier 9	Pier 10	Pier 11	Pier 12	
R $\bar{\rho}$	(k)	75.1	322.3	91.3	73.3	337.6	92.7	82.3	252.2	328.6	331.4
R \bar{L}	(k)	46.5	92.3	39.9	42.2	100.4	39.4	47.5	98.1	116.6	118.0
R \bar{I}	(k)	8.3	15.6	6.4	7.5	17.0	6.3	8.5	16.6	18.8	17.5
R \bar{Total}	(k)	130.0	430.3	137.6	123.0	455.0	138.4	138.4	366.9	464.0	466.8

**MOMENT & REACTION TABLES
STRUCTURE NO. 016-3240**

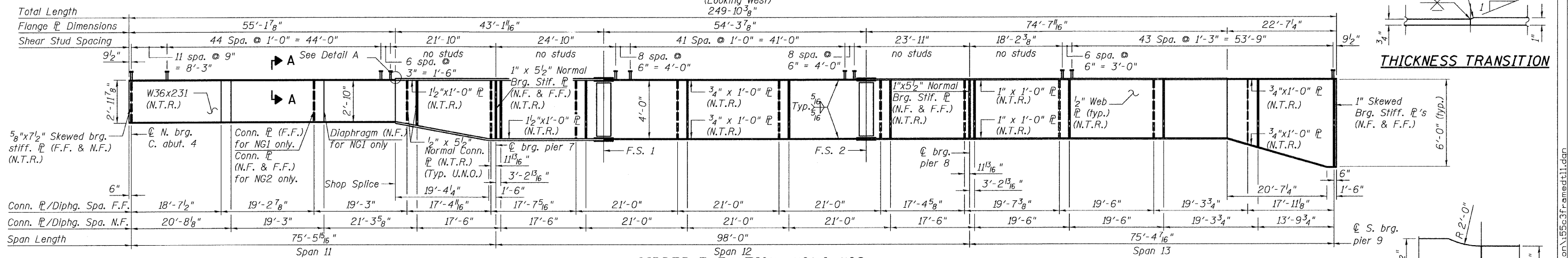
TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 19	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.					
	CHECKED - AMD, LS	NAME	DATE		55					0711.2R & 1011.1BR	COOK	200	186	
	DRAWN - DY, LS				33 SHEETS					CONTRACT NO. 60L39				
	CHECKED - AMD, LS				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT									
	DATE - 08/02/10													

p:\01345\beam and bearing fabrication\15c31.momenttables.dgn 8/13/2010 4:35:08 PM

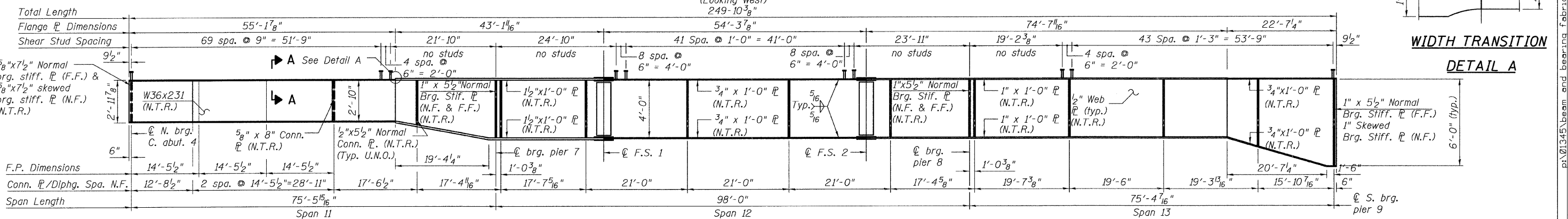
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



GIRDER ELEVATION - NG7
(Looking West)



GIRDER ELEVATION- NG1 & NG2
(Looking West)



GIRDER ELEVATION - NG3
(Looking West)

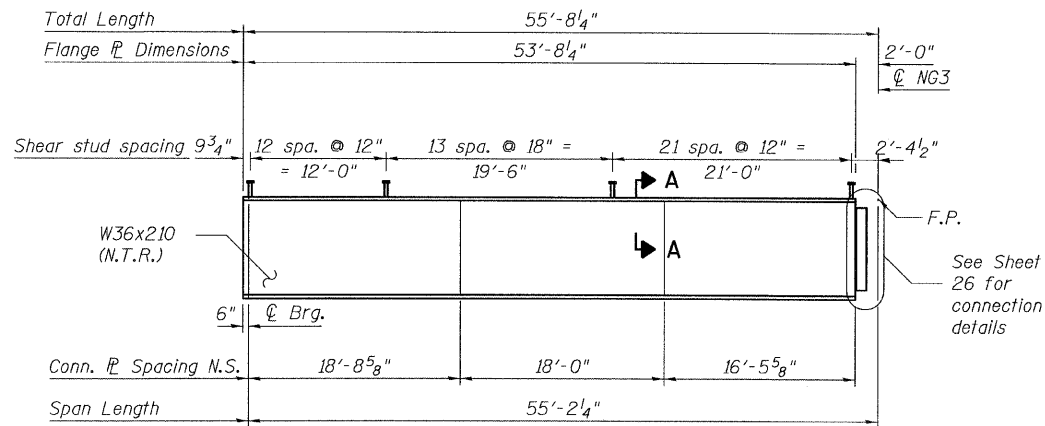
NOTES:

- All structural steel on this sheet shall conform to the requirements of AASHTO M270 Grade 50.
- For Top of Beam/Web Elevations and Camber Diagram, see Sheets 17 & 29.
- For Bearing Stiffener Detail, Intermediate Stiffener Detail and Connection Plate Detail, see Sheets 23 thru 26.
- Load carrying components designated "N.T.R." shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- For Field Splices 1 and 2 details, see Sheet 27.
- For Section A-A, see Sheet 23.
- N.F. Denotes Near Face.
- F.F. Denotes Far Face.
- U.N.O. Denotes Unless Noted Otherwise.

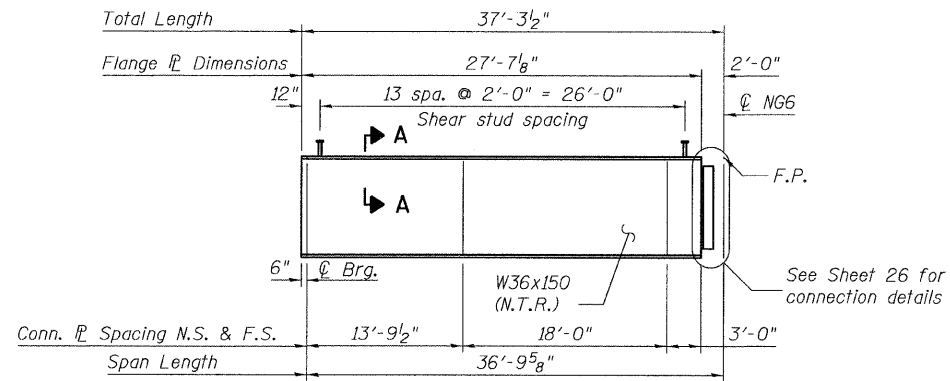
GIRDER ELEVATIONS
SPANS 11, 12 & 13
STRUCTURE NO. 016-3240

TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 20	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	CHECKED - AMD, LS	NAME	DATE		55	0711.2R & 1011.1BR	COOK	200	187
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	CHECKED - AMD, LS				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
	DATE - 08/02/10								

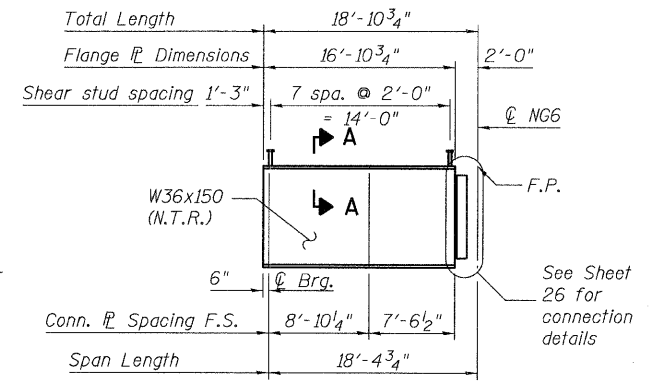
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



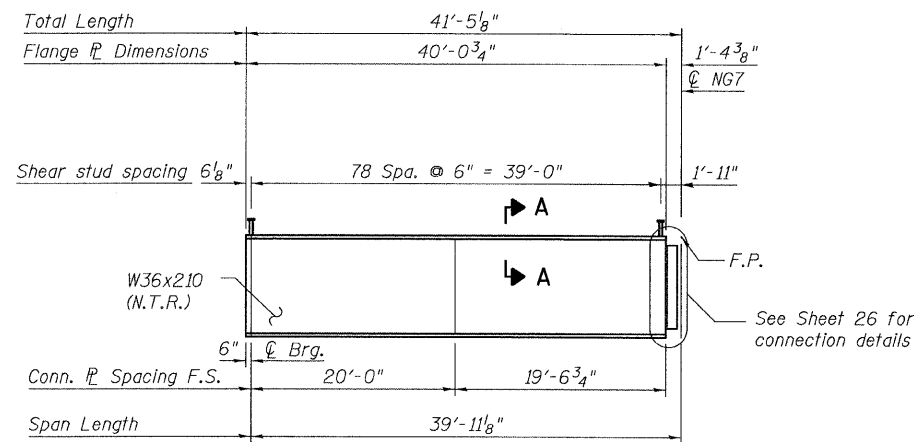
GIRDER ELEVATION - NG6
(Looking West)



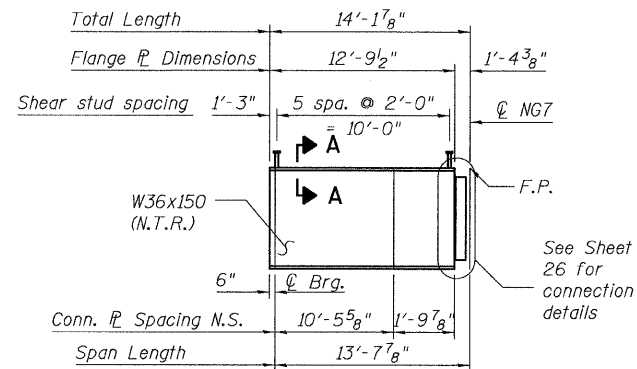
GIRDER ELEVATION - NG5
(Looking West)



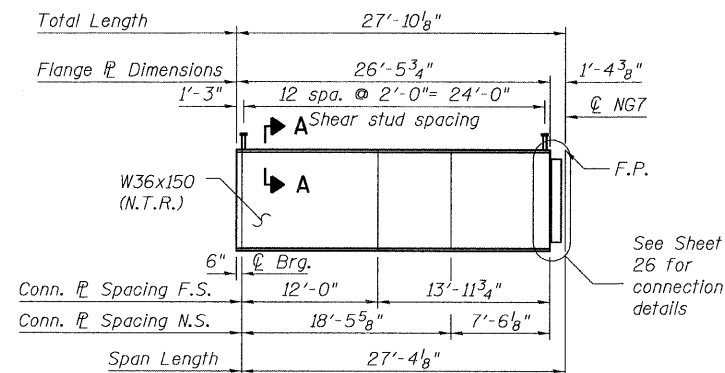
GIRDER ELEVATION - NG4
(Looking West)



GIRDER ELEVATION - NG10
(Looking West)



GIRDER ELEVATION - NG8
(Looking West)



GIRDER ELEVATION - G9
(Looking West)

NOTES:

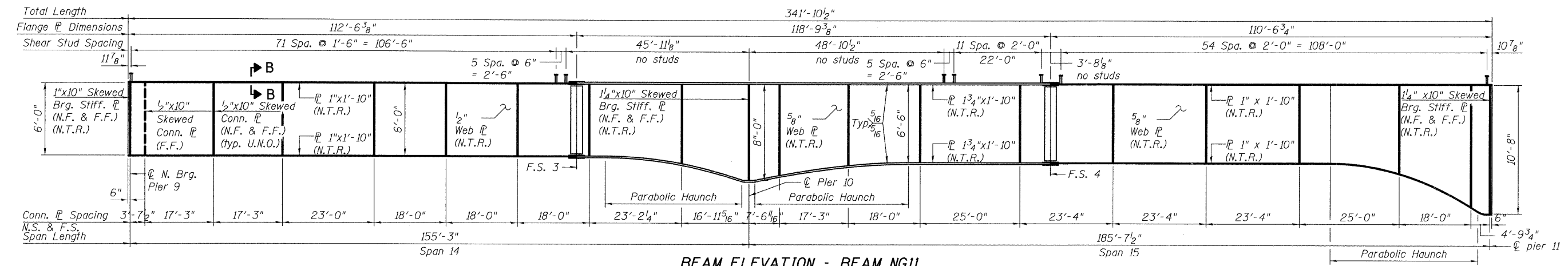
- All structural steel on this sheet shall conform to the requirements of AASHTO M270 Grade 50.
- Load carrying components designated "N.T.R." shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- For Connections details, see Sheet 26.
- For Section A-A, see Sheet 23.
- F.S. - denotes Far Side.
- N.S. - denotes Near Side
- F.P. - denotes Framing Point.

**GIRDER ELEVATIONS
SPANS 11, 12 & 13
STRUCTURE NO. 016-3240**

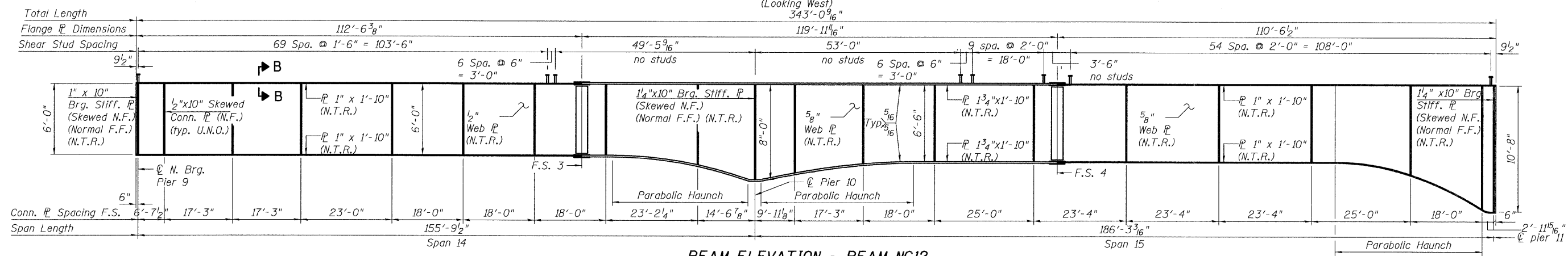
TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 21	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.				
	CHECKED - AMD, LS	NAME	DATE		55					0711.2R & 1011.1BR	COOK	200	188
	DRAWN - DY, LS				33 SHEETS					CONTRACT NO. 60L39			
	CHECKED - AMD, LS				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT								
	DATE - 08/02/10												

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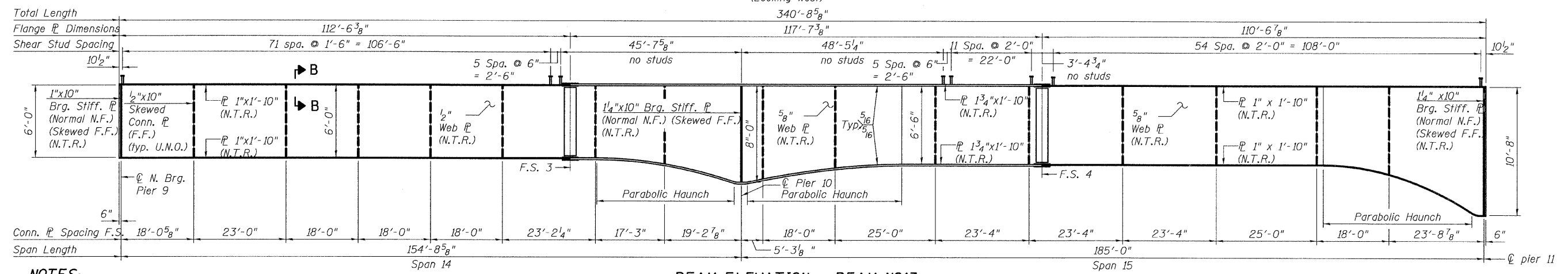
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BEAM ELEVATION - BEAM NG11
(Looking West)



BEAM ELEVATION - BEAM NG12
(Looking West)



BEAM ELEVATION - BEAM NG13
(Looking West)

NOTES:

- All structural steel on this sheet shall conform to the requirements of AASHTO M 270 Grade 50.
- For Top of Web Elevations and Camber Diagram, see Sheets 18 & 29.
- For Bearing Stiffener Detail, Intermediate Stiffener Detail and Connection Plate Detail, see Sheets 24 & 25.
- Load carrying components designated "N.T.R." shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- For Field Spllices 3 and 4 details, see Sheet 28.
- For Parabolic Haunch Details, see Sheet 29.
- For Section B-B, see Sheet 23.
- U.N.O. Denotes Unless Noted Otherwise.
- N.F. Denotes Near Face.
- F.F. Denotes Far Face.

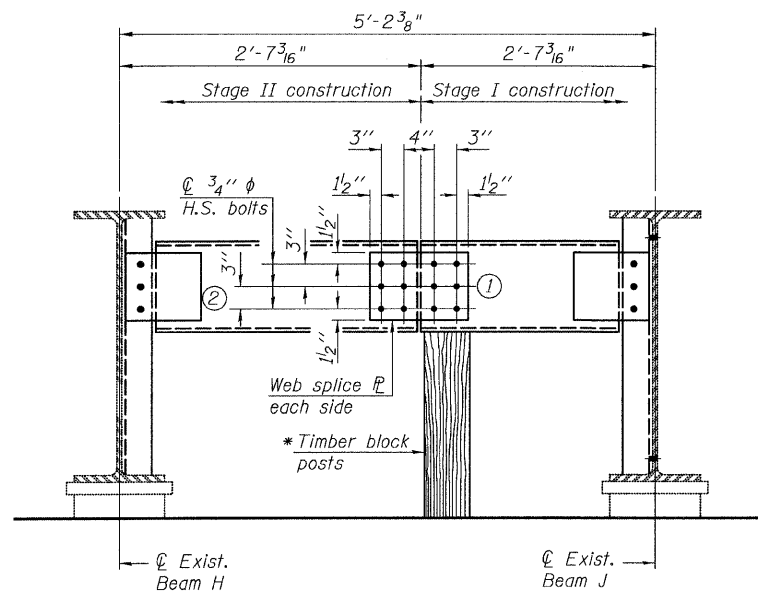
GIRDER ELEVATIONS
SPANS 14 & 15
STRUCTURE NO. 016-3240

TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 22	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	CHECKED - AMD, LS	NAME	DATE		33 SHEETS	55	0711.2R & 1011.1BR	COOK	200	189
	DRAWN - DY, LS				CONTRACT NO. 60L39					
	CHECKED - AMD, LS				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					
	DATE - 08/02/10									

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Cost of Timber Block Posts is included with "Erecting Structural Steel."



END DIAPHRAGM - D3

(At stage construction line, looking north)

CONSTRUCTION SEQUENCE

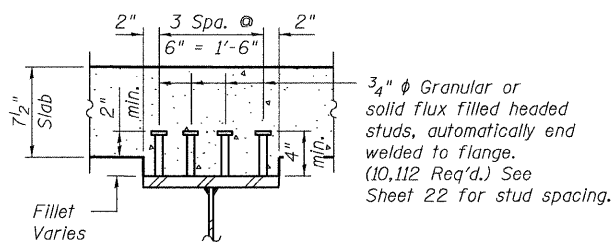
- 1.) Order diaphragm in two sections.
- 2.) Attach section ① of diaphragm to girder H
- 3.) Place timber block posts between section ① of diaphragm and abutment bearing seat.
- 4.) Attach section ② of diaphragm to beam J and section ① of diaphragm during stage II construction with splice plates.
- 5.) Remove timber block posts.

TABLE OF DIAPHRAGM DIMENSIONS

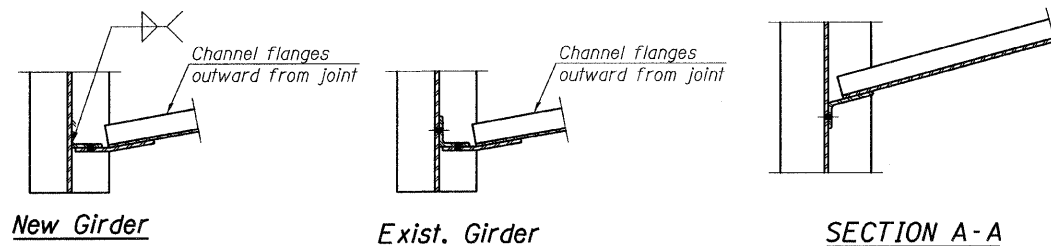
See Detail A

Diaphragm	* Length	Section	No. Req'd.
D1	6'-2 1/4"		15
D2	7'-9 3/4"		3
D3	5'-2 3/8"		1
D4	5'-6 7/8"		3
D5	7'-1 1/2"		2
D6	7'-2 3/4"		1
D7	4'-10"		2
D8	5'-2 1/2"		4
D9	7'-7 7/8"		2
D10	5'-3 3/8"		3

* Length determined from center girder to center girder



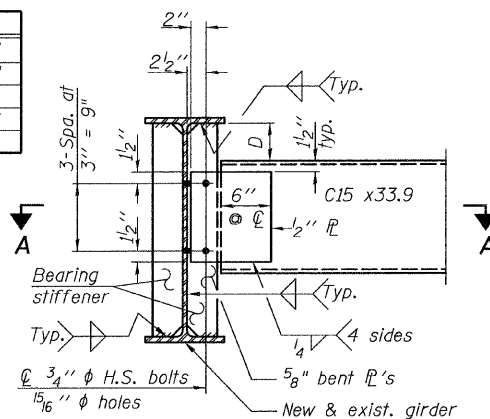
SECTION B-B
(NOT IN CONTRACT)



DIMENSION "D"

Girder	D
NG1 thru NG3, NG7	5 5/8"
A thru R (max.)	4 3/8"
NG4, NG5, NG8 & NG9	6 1/4"
NG10	6 3/8"
NG6	7"

SECTION A-A

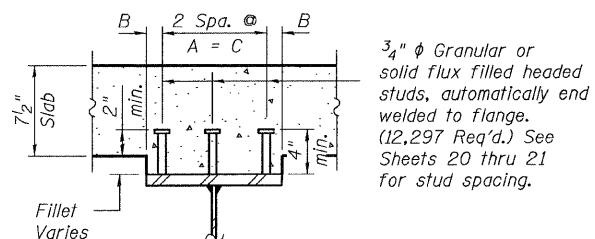


END DIAPHRAGM (D1-D2, D4-D6)

(At new and existing girders)

(24 required)

Note:
Two hardened washers required for each set of oversized holes.



SECTION A-A
(NOT IN CONTRACT)

DIMENSIONS A, B AND C

Girder	A	B	C
W36 x 150	3"	1 1/2"	9"
W36 x 210	3"	1 5/8"	9"
W36 x 231	5 1/4"	3"	10 1/2"

BILL OF MATERIAL

ITEM	UNIT	TOTAL
* Stud Shear Connectors	EACH	22,085

* NOT IN CONTRACT

INTERIOR DIAPHRAGM (D7-D10)

(At new and existing girders)
(11 required)

Note:

Two hardened washers required for each set of oversized holes.
*Alternate channels (C15 X 50) are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.
**3/4" diameter HS bolts, 1 5/16" diameter holes

SUGGESTED SEQUENCE OF CONSTRUCTION FOR INTERIOR DIAPHRAGMS (D7) AT STAGE CONSTRUCTION

1. Prior to Stage II deck work, connect diaphragm to girder J. Temporarily support the west end of the diaphragm with timber posts off the bottom flange of girder H.
2. Set slab forms and place reinforcement.
3. Place Stage II concrete slab. As girder H deflects, connect diaphragm to girder.

NOTES:

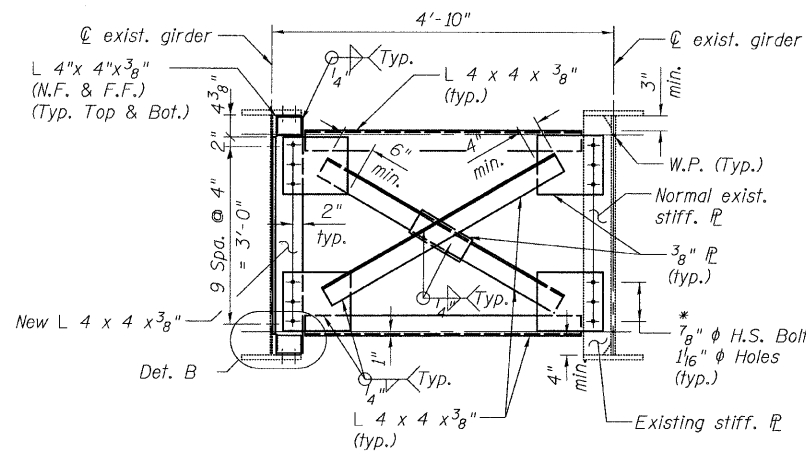
1. Two hardened washers shall be required over all oversize holes for diaphragms.
2. Provide 1 5/16" diameter holes for all H.S. bolted connections.
3. Cost of Field Drilling is included with "Erecting Structural Steel."

DIAPHRAGMS SPAN II
STRUCTURE NO. 016-3240

TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 23	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	CHECKED - AMD, LS	NAME	DATE		55	0711.2R & 1011.1BR	COOK	200	190
	DRAWN - DY, LS				CONTRACT NO. 60L39				
	CHECKED - AMD, LS				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
	DATE - 08/02/10			33 SHEETS					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Cost of Timber Block Posts is included with "Erecting Structural Steel."

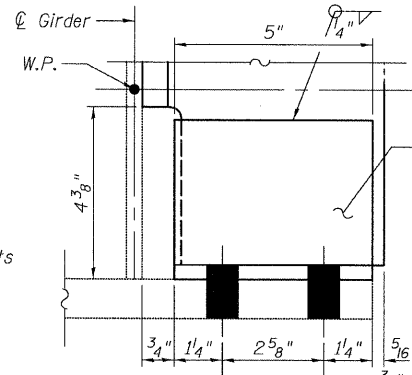


CROSS FRAMES CF3
(10 Required)

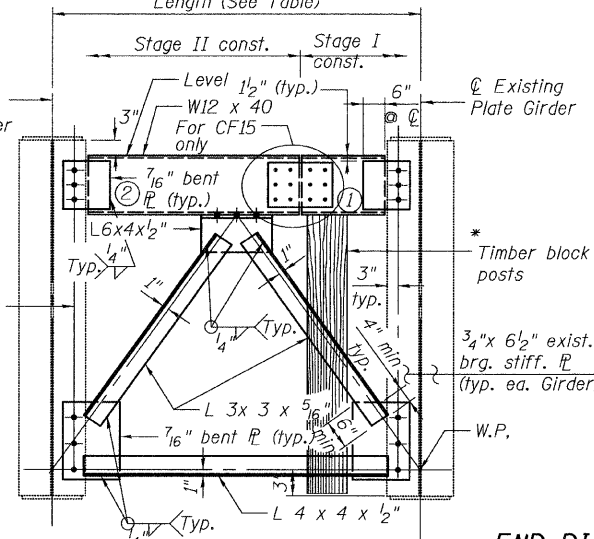
NOTE:

Provide Crossframes CF3 at the location of the existing stiffeners normal to girders. (Field verify the existing stiffener locations)

Provide 1 1/16" φ holes in the existing connection plate for Girder J and in the 3/8" cross frame plates. Provide 2" long slotted vertical x 1 1/16" wide holes in the new angle attached to Girder H. The slotted holes shall have 5/16" structural plate washers placed over them.



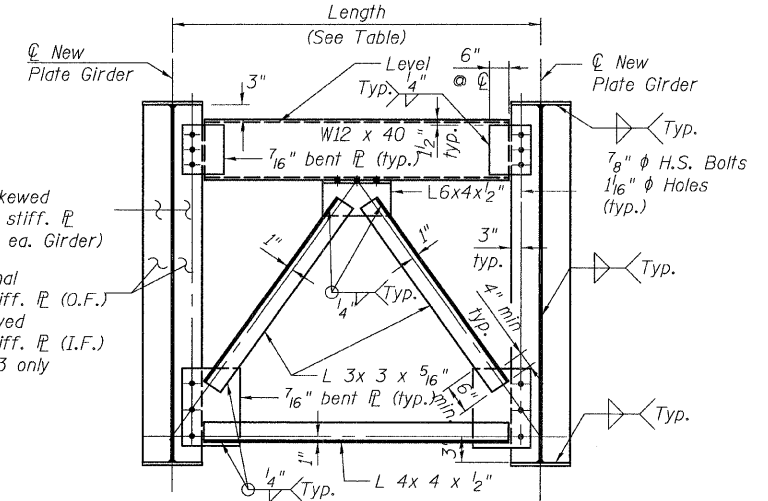
DETAIL B



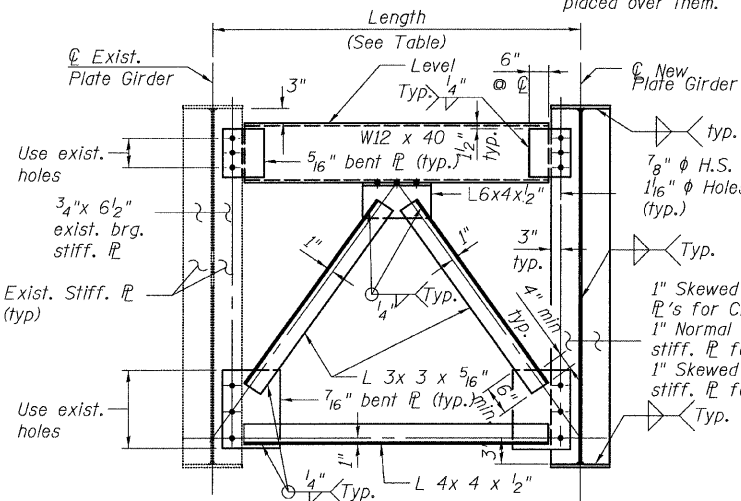
CROSS FRAMES CF15 & CF16
(At Pier 9) (15 Required)

END DIAPHRAGM STAGE CONSTRUCTION SEQUENCE

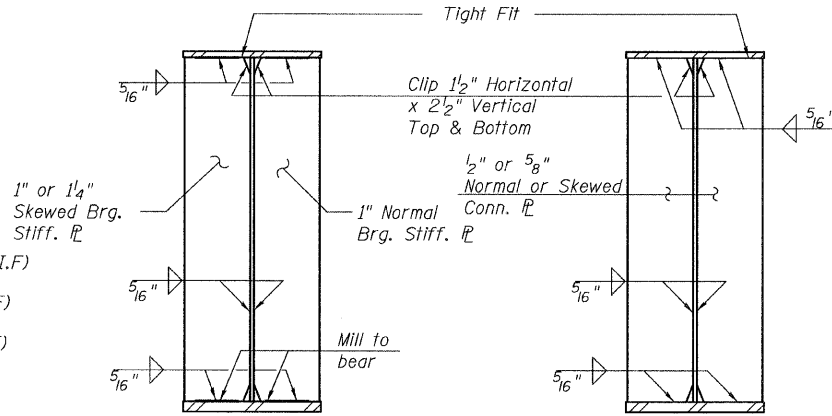
- 1.) Order diaphragm in two sections.
- 2.) Attach section ① of diaphragm to girder.
- 3.) Place timber block posts between section ① of diaphragm and pier bearing seat.
- 4.) Attach section ② of diaphragm to both girder and section ① of diaphragm during stage II construction with splice plates. Remove timber block posts.



CROSS FRAMES CF18
(At Pier 9)
(2 Required)



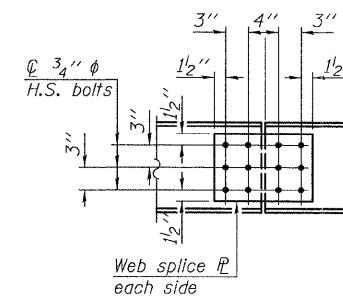
CROSS FRAMES CF14 & CF17
(At Pier 9) (2 Required)



****BEARING STIFFENER**

****INTERMEDIATE STIFFENER OR INTERIOR CONNECTION PLATE**

**For size, location and skew see Girder Elevation Details.



SPLICE PLATE DETAIL

TABLE OF CROSS FRAMES DIMENSIONS

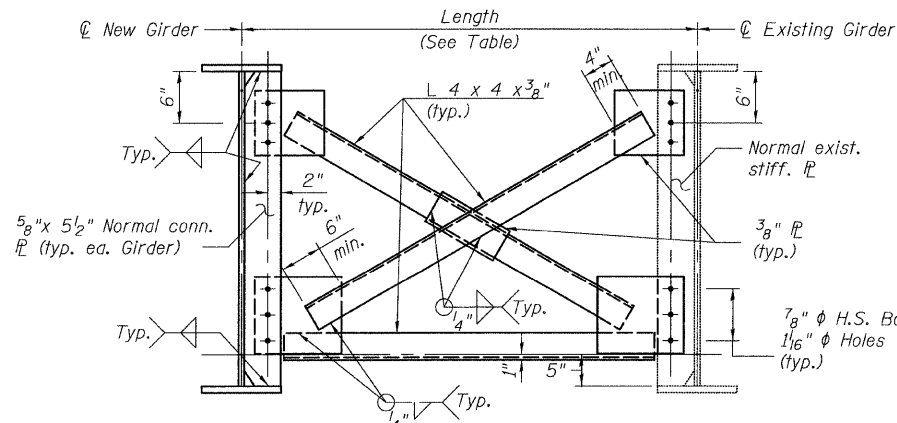
See Detail A

Cross Frame	Length (m)	No. Req'd.	Angle "A"	Angle "B"
CF1	5'-2 1/8"	20	90°0'0"	90°0'0"
CF2	*5'-2 1/8"	10	90°0'0"	90°0'0"
CF3	*4'-10"	10	90°0'0"	90°0'0"
CF4	*5'-1 1/8"	1	90°41'27"	90°0'0"
CF5	*4'-10 5/8"	1	90°41'27"	90°0'0"
CF6	*4'-8 1/8"	1	90°41'27"	90°0'0"
CF7	*4'-5"	1	90°41'27"	90°0'0"
CF8	*4'-2"	1	90°41'27"	90°0'0"
CF9	*3'-11"	1	90°41'27"	90°0'0"
CF10	*3'-8 3/8"	1	90°41'27"	90°0'0"
CF11	*3'-5 5/8"	1	90°41'27"	90°0'0"
CF12	*3'-2 3/4"	1	90°41'27"	90°0'0"
CF13	*3'-0"	1	90°41'27"	90°0'0"
CF14	*2'-11 3/4"	1	-	-
CF15	5'-2 3/8"	1	-	-
CF16	6'-2 1/4"	14	-	-
CF17	*5'-6 3/8"	1	-	-
CF18	5'-6 1/8"	2	-	-

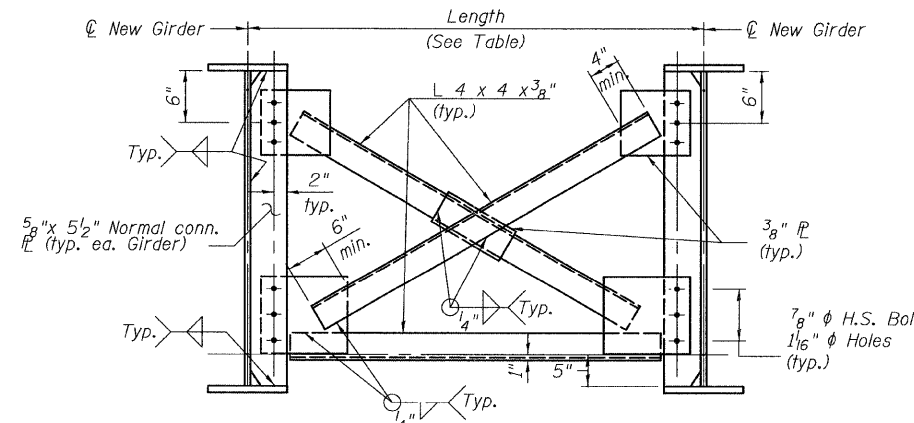
* Field verify lengths and locations prior to steel fabrication.

NOTES:

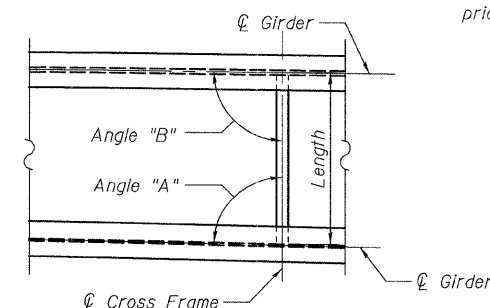
1. Two hardened washers required for each set of oversized holes.
2. O.F. denotes outside face.
3. I.F. denotes inside face.
4. N.F. denotes near face.
5. F.F. denotes far face.



CROSS FRAMES CF2 & CF4 THRU CF13
(20 Required)



CROSS FRAMES CF1
(20 Required)



DETAIL A

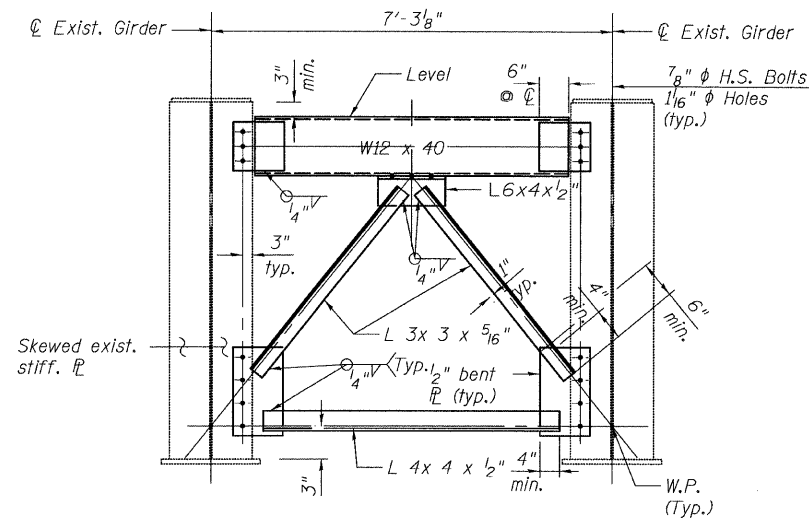
CROSS FRAMES SPANS 11, 12 & 13 STRUCTURE NO. 016-3240

TYLIN INTERNATIONAL

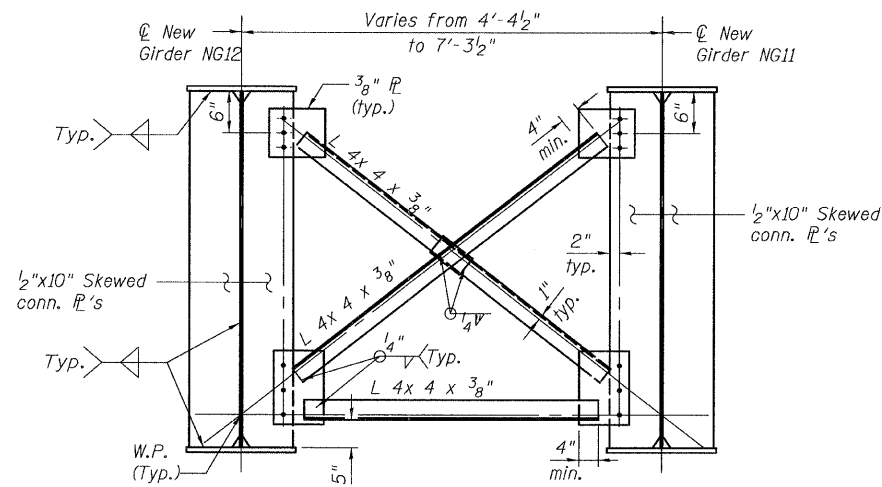
DESIGNED	BY	LS	REVISIONS	
CHECKED	BY	LS	NAME	DATE
DRAWN	BY	LS		
CHECKED	BY	LS		
DATE		08/02/10		

SHEET NO. 24	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
33 SHEETS	55	0711.2R & 1011.1BR	COOK	200	191
			CONTRACT NO. 60L39		
			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT		

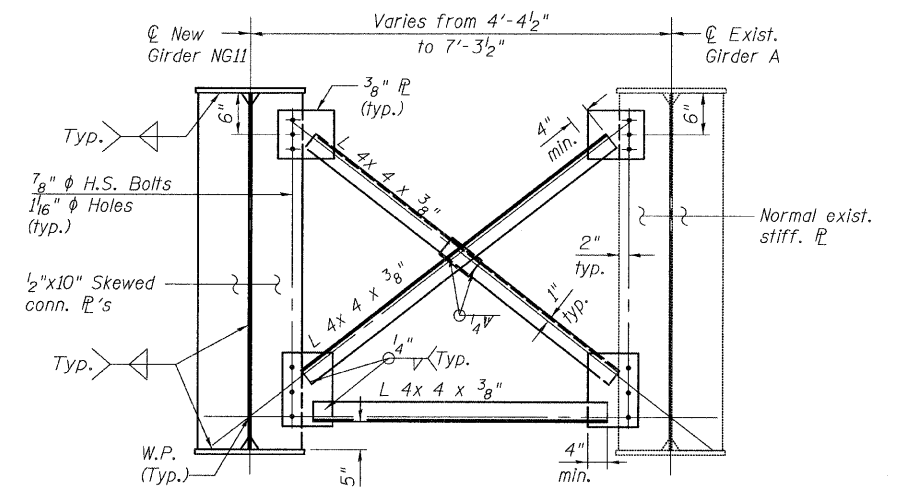
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



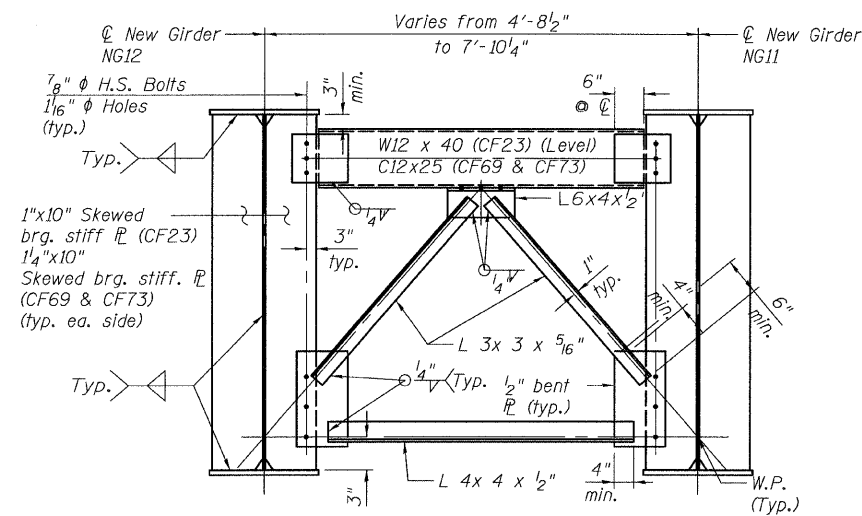
CROSS FRAME CF21
(12 Required)



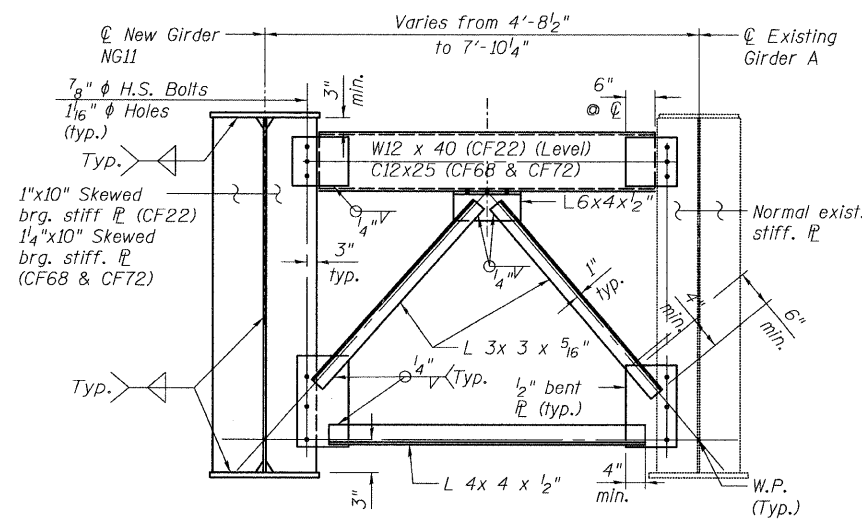
CROSS FRAME CF24 THRU CF40
(17 Required)



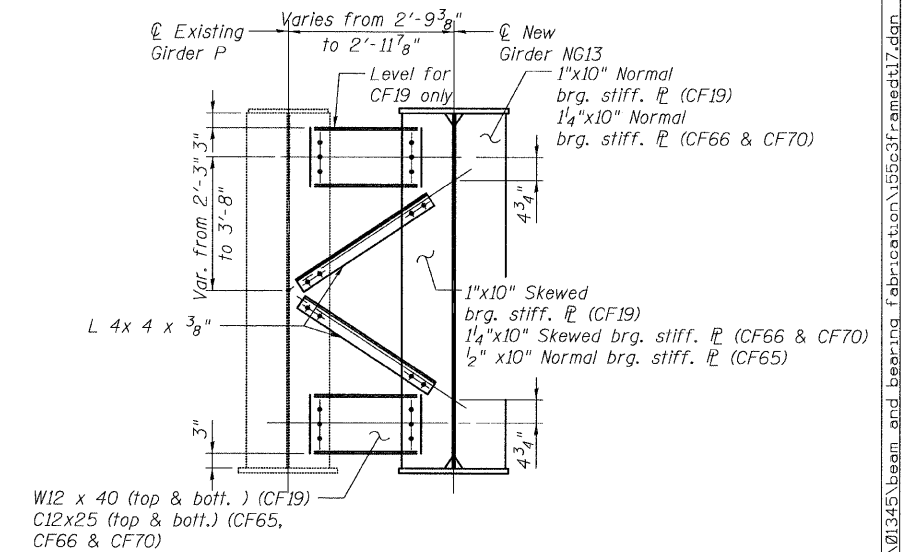
CROSS FRAME CF41 THRU CF56
(16 Required)



CROSS FRAME CF23, CF69 & CF73
(3 Required)



CROSS FRAME CF22, CF68 & CF72
(3 Required)



CROSS FRAME CF19, CF65, CF66 & CF70
(18 Required)

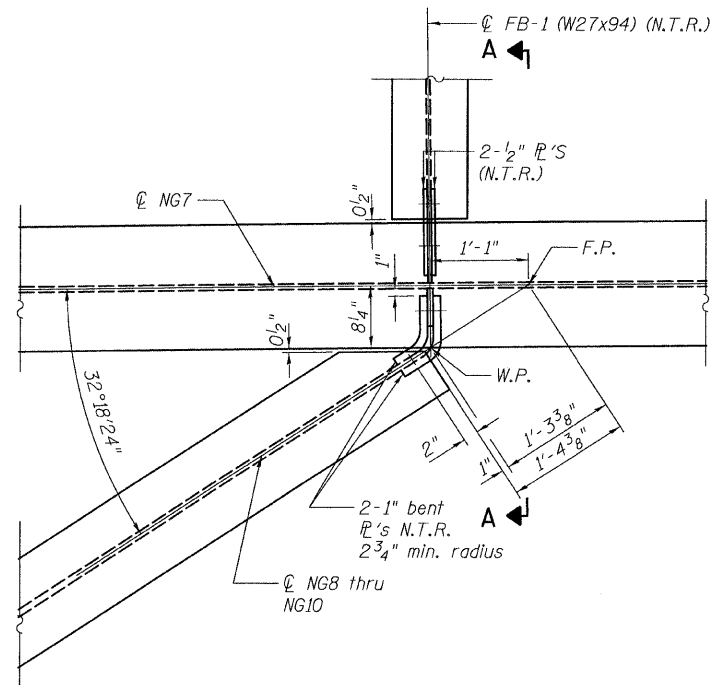
NOTES:

- Two hardened washers shall be required for each set of oversized.
- N.F. denotes Near Face
- F.F. denotes Far Face.

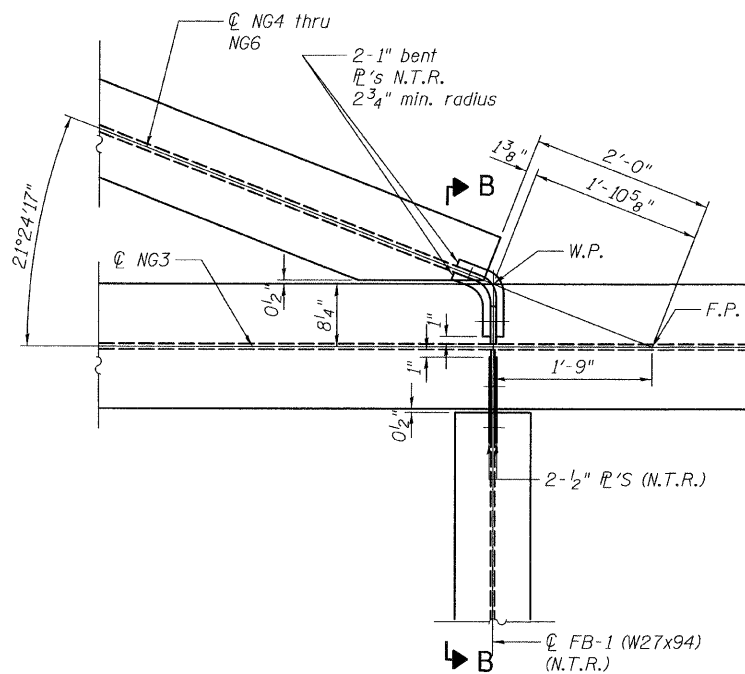
**CROSS FRAMES
SPANS 14 & 15
STRUCTURE NO. 016-3240**

TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 25	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.						
	CHECKED - AMD, LS	NAME	DATE							55	0711.2R & 1011.1BR	COOK	200	192	
	DRAWN - DY, LS									33 SHEETS	CONTRACT NO. 60L39				
	CHECKED - AMD, LS										FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
DATE - 08/02/10															

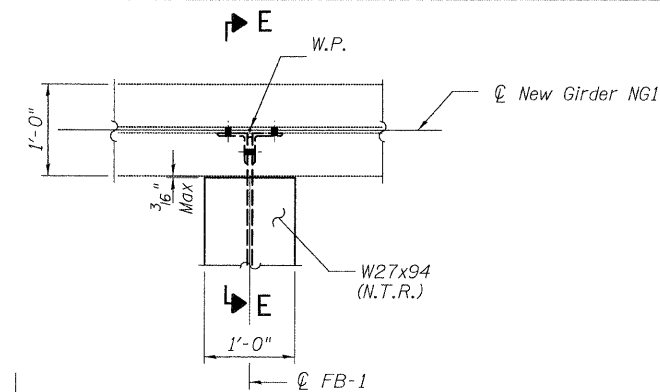
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



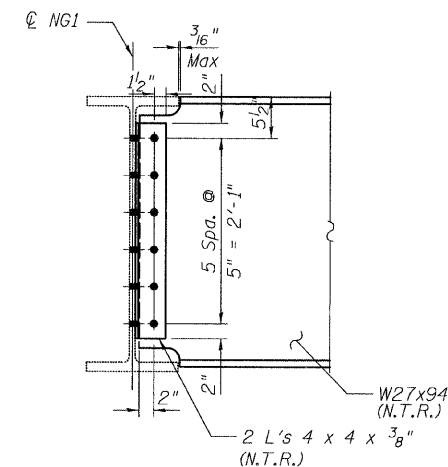
DETAIL 1



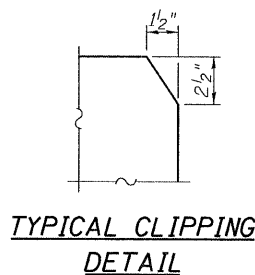
DETAIL 2



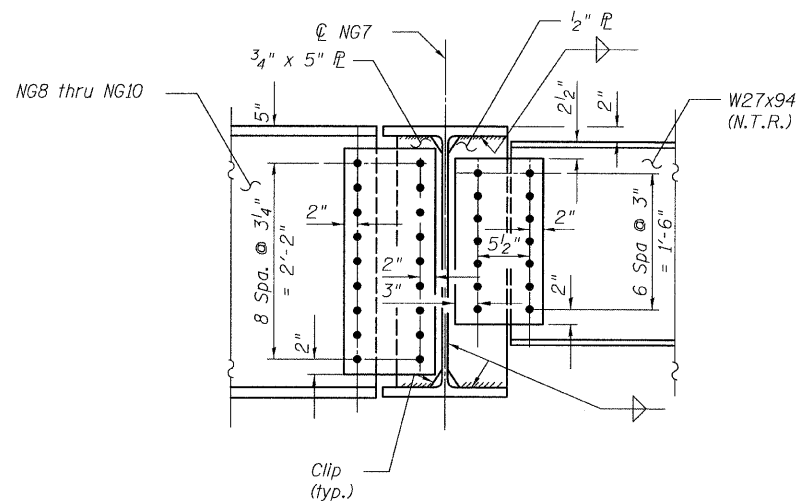
DETAIL 3
(Top Flange Shown)
(Bottom Flange Similar)



SECTION E-E



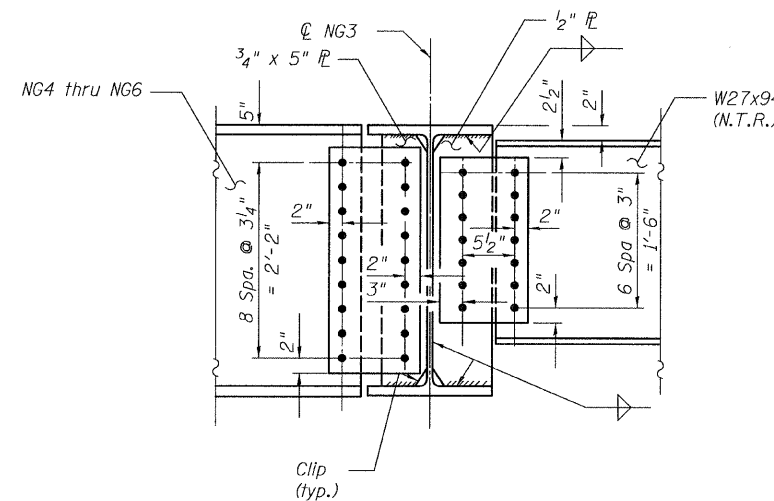
TYPICAL CLIPPING
DETAIL



SECTION A-A

All bolts shall be 7/8" ϕ . Holes shall be 15/16" ϕ in framing of NG7 with NG10. Holes shall be 1/16" ϕ in framing of NG7 with FB-1.

Two hardened washers required for each set of oversized holes.



SECTION B-B

All bolts shall be 7/8" ϕ . Holes shall be 15/16" ϕ in framing of NG3 with NG4. Holes shall be 1/16" ϕ in framing of NG3 with FB-1.

Two hardened washers required for each set of oversized holes.

NOTES:

1. Steel shall be AASHTO M 270 Grade 50.
2. For stud location see girder elevations.
3. Load carrying components designated "N.T.R." shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
4. CJP Weld - denotes Complete Joint Penetration Weld.
5. N.F. - denotes near face.
6. F.F. - denotes far face.
7. Work this sheet with sheets 17 & 21.
8. F.P. - denotes framing point.

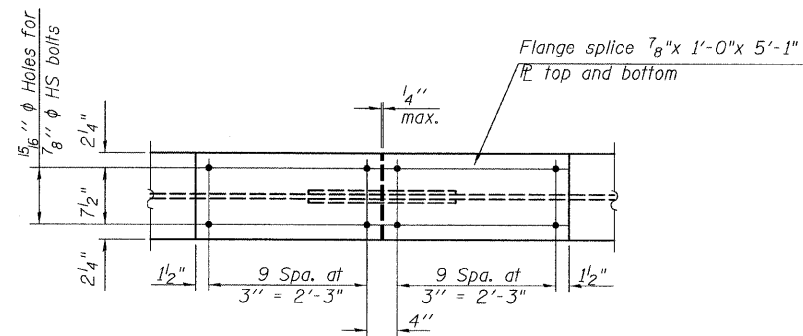
FRAMING DETAILS
CONNECTIONS
STRUCTURE NO. 016-3240

TYLIN INTERNATIONAL

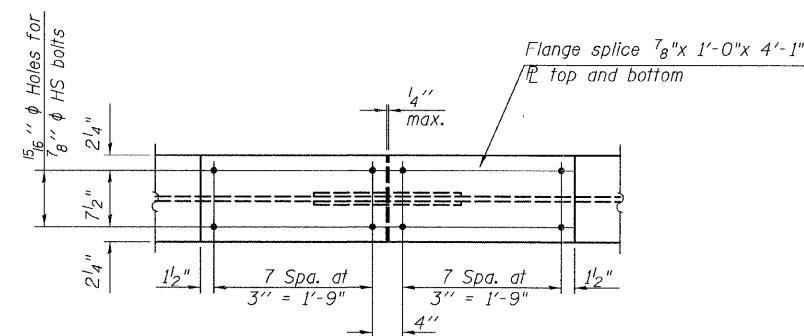
DESIGNED	DY, LS	REVISIONS	
CHECKED	AMD, LS	NAME	DATE
DRAWN	DY, LS		
CHECKED	AMD, LS		
DATE	08/02/10		

SHEET NO.	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
26	55	0711.2R & 1011.1BR	COOK	200	193
33 SHEETS			CONTRACT NO. 60L39		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

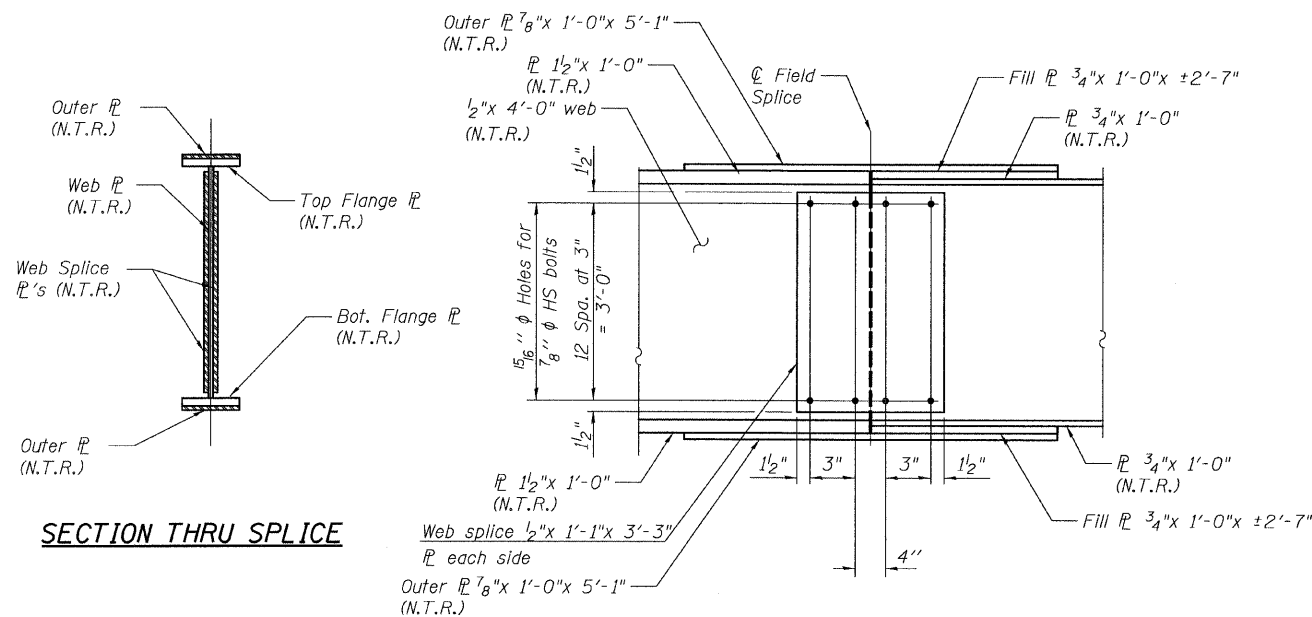
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN



PLAN

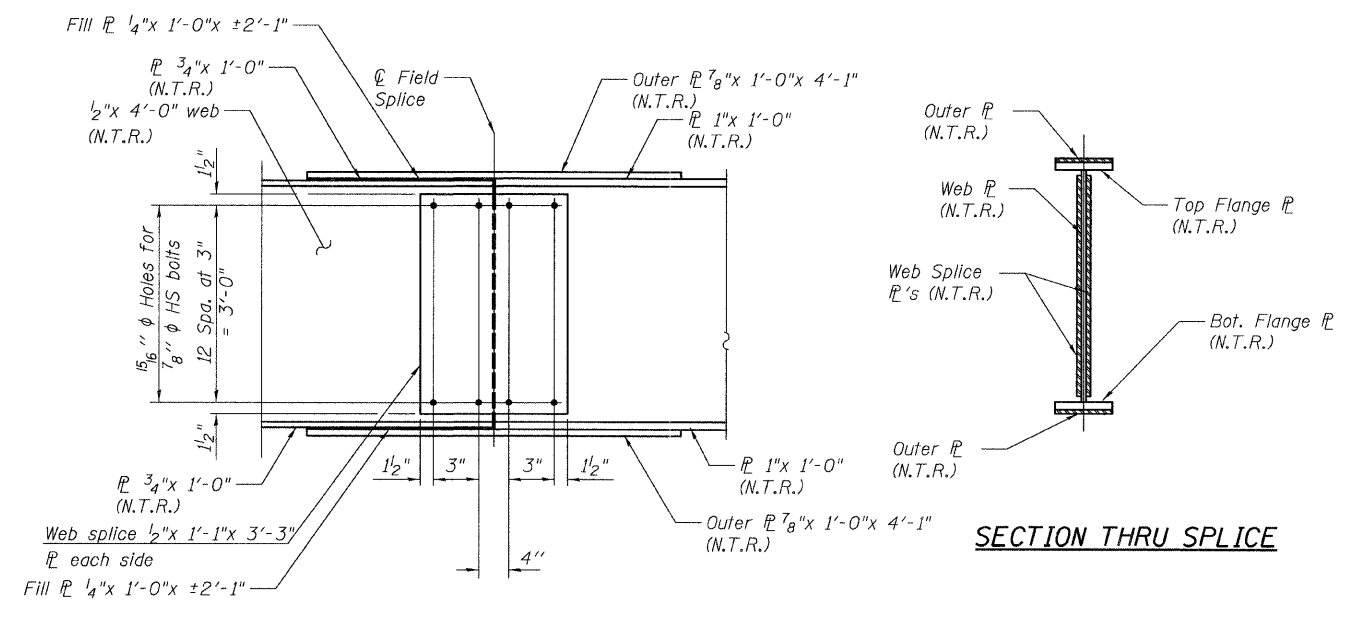


SECTION THRU SPLICE

ELEVATION

FIELD SPLICE - 1 DETAIL

(4 Required)

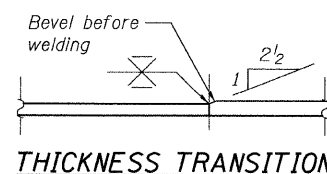


SECTION THRU SPLICE

ELEVATION

FIELD SPLICE - 2 DETAIL

(4 Required)



NOTES:

- All steel shall be AASHTO M 270 Grade 50.
- Load carrying components designated 'N.T.R.' shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

FRAMING DETAILS
FIELD SPLICES 1 & 2
STRUCTURE NO. 016-3240

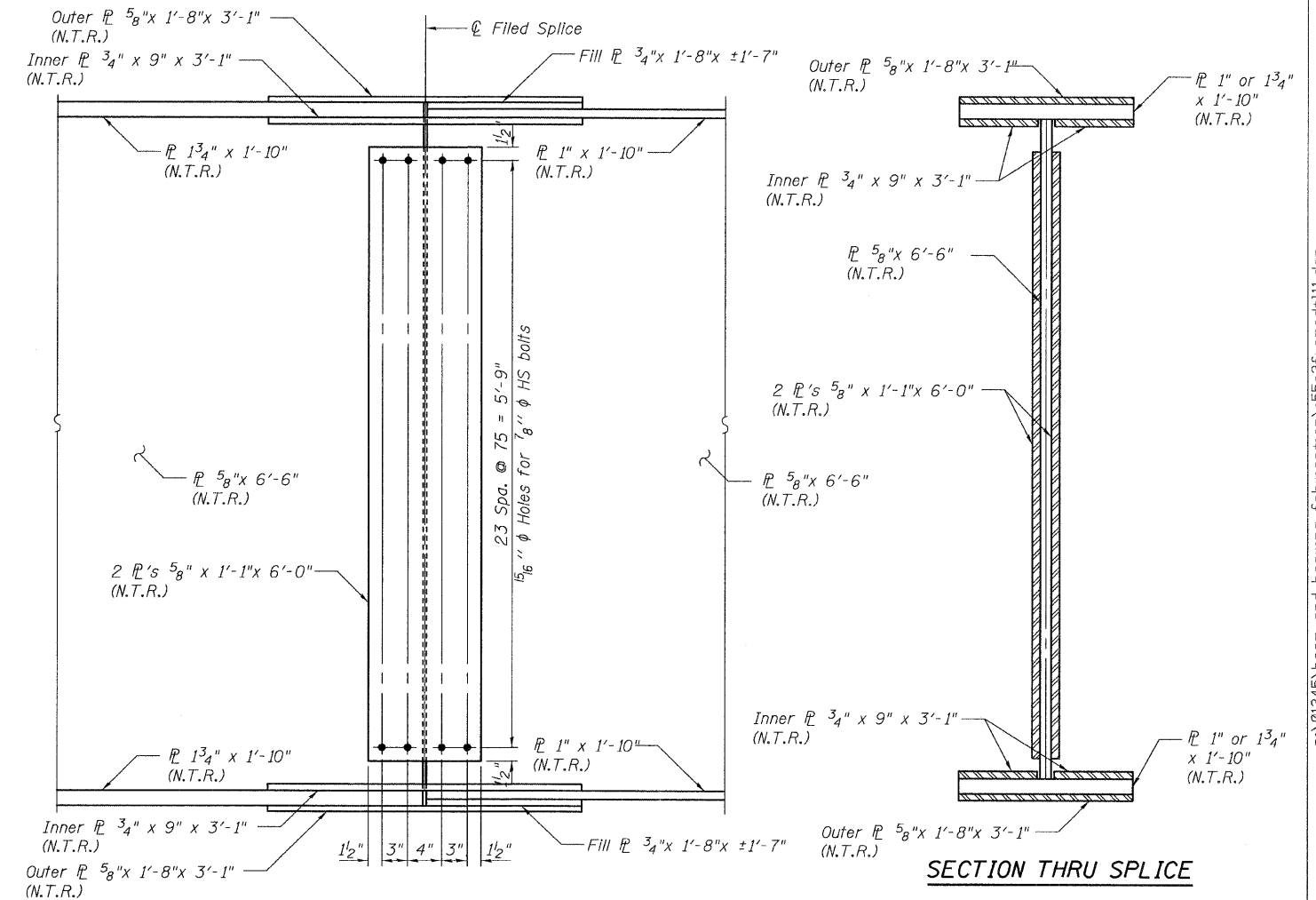
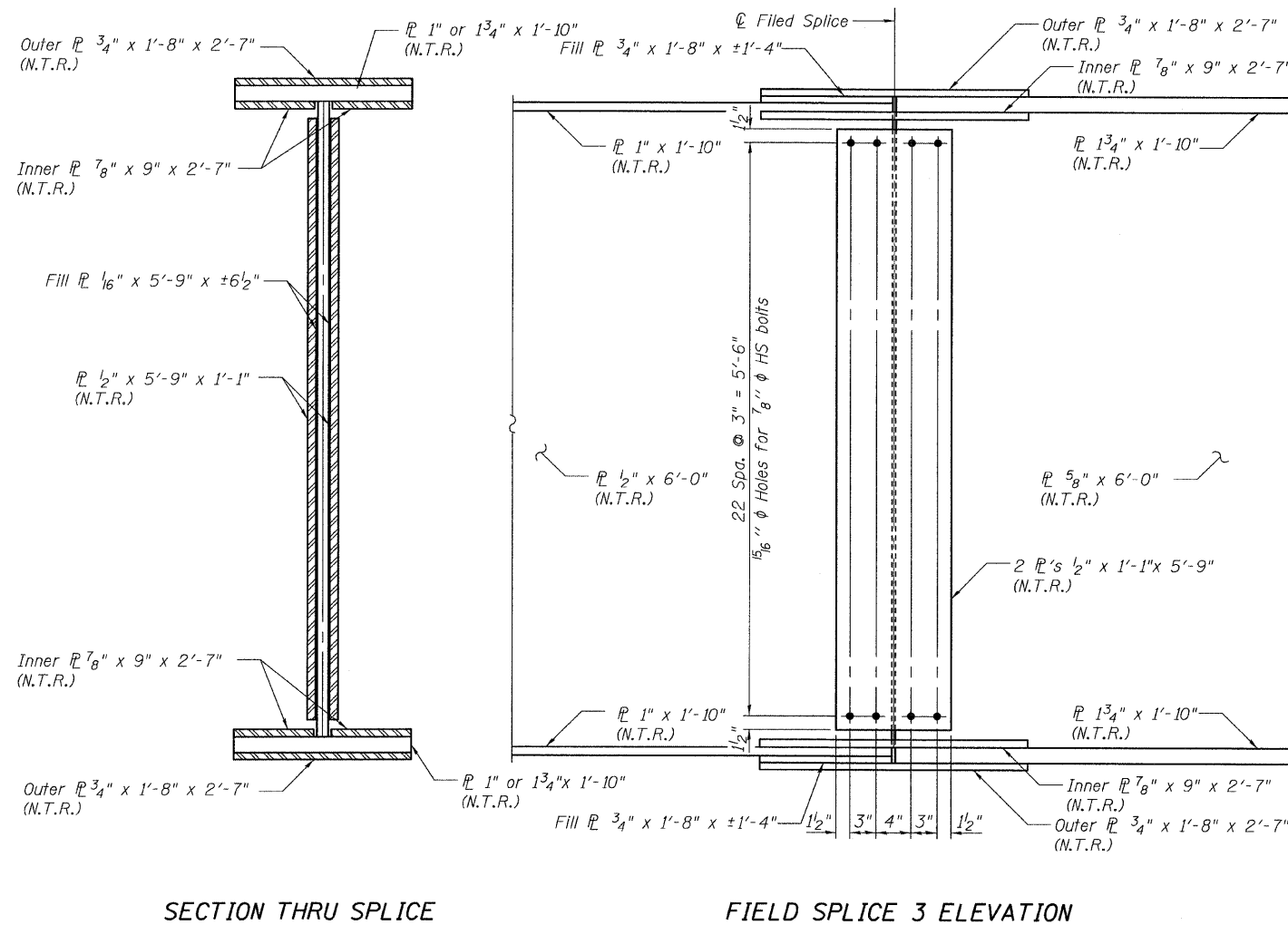
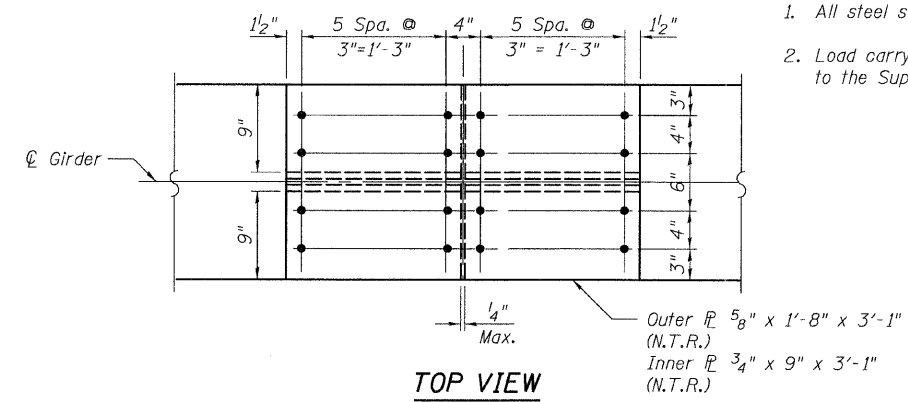
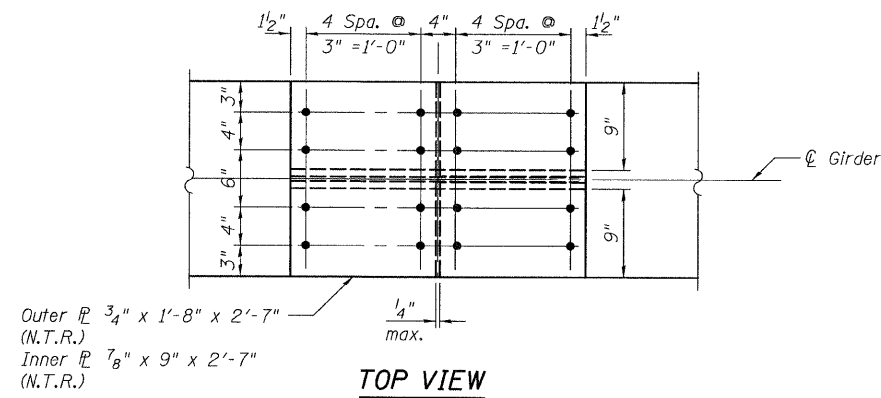
TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 27	F.A.I. RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 194
	CHECKED - AMD, LS	NAME	DATE						
	DRAWN - DY, LS								
	CHECKED - AMD, LS								
	DATE - 08/02/10			33 SHEETS	CONTRACT NO. 60L39				
					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

8/27/2010 p:\01345\beam_and_bearing_fabrication\155s3f Framed.tj10.dwg 1:59:19 PM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NOTES:

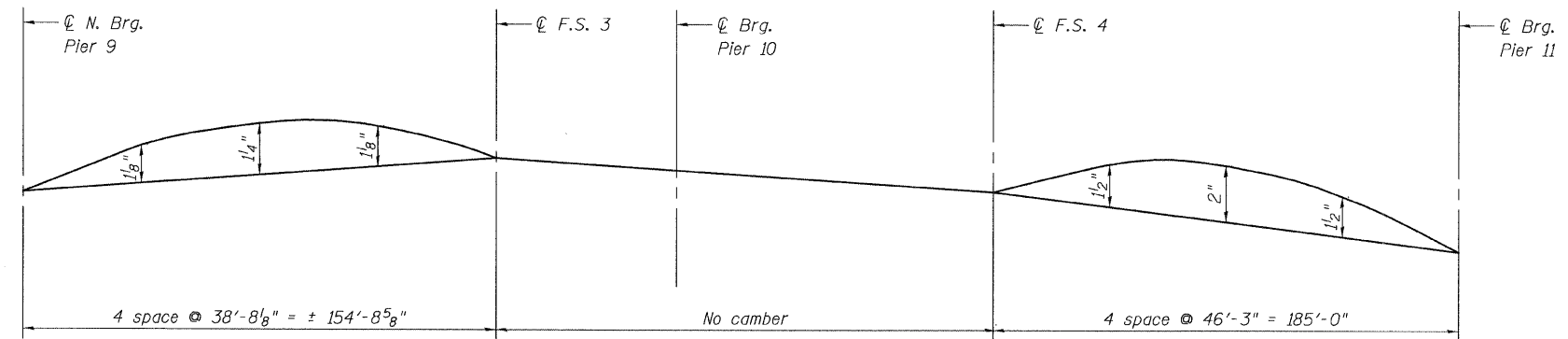
- All steel shall be AASHTO M 270 Grade 50.
- Load carrying components designated "N.T.R." shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.



FRAMING DETAILS
FIELD SPLICES 3 & 4
STRUCTURE NO. 016-3240

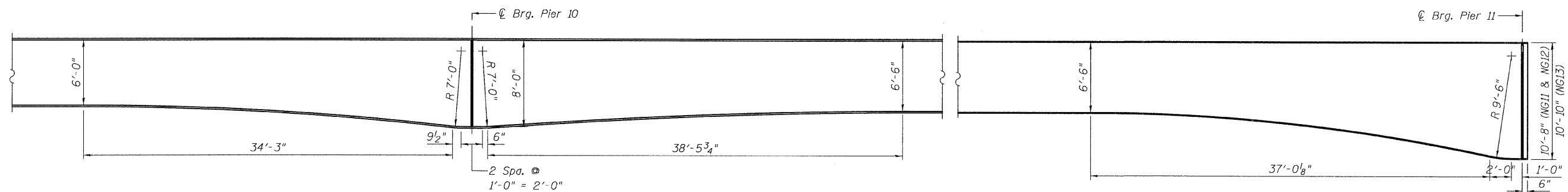
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	CHECKED - AMD, LS	NAME	DATE						
	DRAWN - DY, LS								
	CHECKED - AMD, LS								
	DATE - 08/02/10			33 SHEETS	CONTRACT NO. 60L39				
					FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



CAMBER DIAGRAM
(NG11, NG12 & NG13)

NOTE
No camber for girder NG1 thru NG10.



PARABOLIC HAUNCH DETAIL
(NG11, NG12 & NG13)

**CAMBER DIAGRAMS
& PARABOLIC HAUNCH DETAILS
STRUCTURE NO. 016-3240**

TYLIN INTERNATIONAL

DESIGNED - DY, LS	REVISIONS	
CHECKED - AMD, LS	NAME	DATE
DRAWN - DY, LS		
CHECKED - AMD, LS		
DATE - 08/02/10		

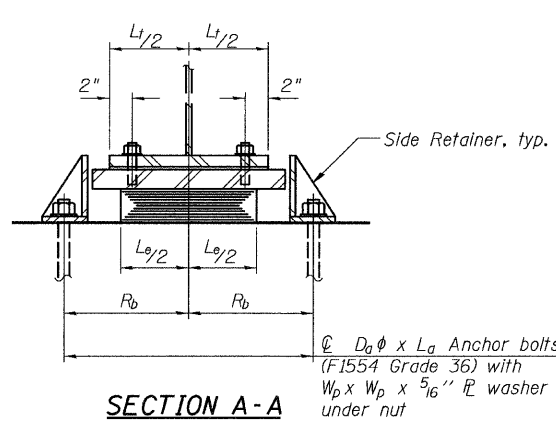
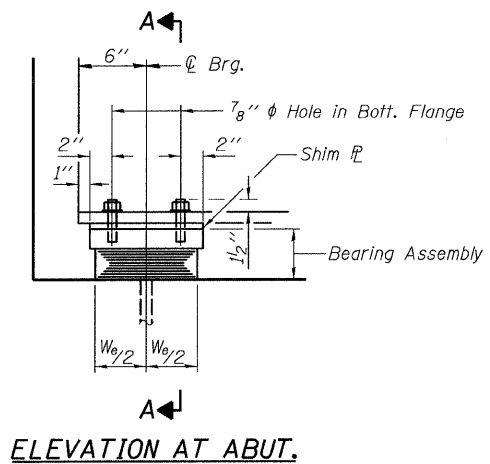
SHEET NO. 29 33 SHEETS	F.A.I. RTE. 55	SECTION 0711.2R & 1011.1BR	COUNTY COOK	TOTAL SHEETS 200	SHEET NO. 196
	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			CONTRACT NO. 60L39	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DIMENSION TABLE

Bearing Location	Beams	Type	No. Req'd.	T _h in.	Elastomer						Top Plate					Bottom Plate			Anchor Bolts				Pin/Pin			Side Retainers						
					W _e in.	L _e in.	T _e in.	T _p in.	N _p	T _s in.	N _s	W _t in.	L _t in.	T _{td} in.	T _{tu} in.	R _t in.	W _b in.	L _b in.	T _b in.	D _a in.	L _a in.	R _b in.	H _b in.	W _p in.	D _p in.	D _s in.	H _p in.	y in.	z in.	t in.	h in.	v in.
C. Abut. 4, N. Brqs.	NG4,NG5,NG8,NG9	I	4	5 3/16	9	12	3 3/16	3 9/16	7	3 3/16	6	10	14	2	2	6	-	-	-	-	-	2 1/4	-	-	-	2 1/8	4	1/2	1 1/4	5 3/16		
C. Abut. 4, N. Brqs.	NG1,NG2,NG3,NG6,NG7,NG10	I	6	5 1/4	10	14	3 1/4	3 1/8	6	1 1/8	5	11	16 1/2	2	2	7	-	-	-	-	-	2 1/4	-	-	-	2 1/8	4	1/2	1 1/4	5 1/4		
C. Abut. 4, N. Brqs.	A-R	I	16	5 3/16	9	12	3 3/16	3 9/16	7	3 3/16	6	10	14	2	2	6	-	-	-	-	-	2 1/4	-	-	-	2 1/8	4	1/2	1 1/4	5 3/16		
Pier 7	NG1,NG2,NG3,NG7	Fix	4	6	-	-	-	-	-	-	-	-	-	-	-	-	12 1/4	22 1/4	3	1 1/4	15	-	-	1 3/4	2 3/4	1 1/2	1 1/8	1 1/8	-	-		
Pier 7	A-R	Fix	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Pier 8	NG1,NG2,NG3,NG7	I	4	7 13/16	12	18	5 1/16	9 1/16	7	3 1/16	6	13	20	2 3/4	2 3/4	9	-	-	-	-	-	2 1/4	-	-	-	2 1/8	4	1/2	1 1/4	7 13/16		
Pier 8	A-R	I	16	7 13/16	12	18	5 1/16	9 1/16	7	3 1/16	6	13	20	2 3/4	2 3/4	9	-	-	-	-	-	2 1/4	-	-	-	2 1/8	4	1/2	1 1/4	7 13/16		
Pier 9, S. Brqs.	NG1,NG2,NG3,NG7	II	4	9 15/16	12	18	5 15/16	9 15/16	7	3 1/16	6	13 7/16	20	2	2	9 7/16	13	28 1/4	2	1	12	9 1/4	1 1/2	2 1/4	-	2 1/8	4	1/2	1 1/4	9 5/16		
Pier 9, S. Brqs.	A-R	II	16	9 15/16	12	18	5 15/16	9 15/16	7	3 1/16	6	13 7/16	20	2	2	9 7/16	13	28 1/4	2	1	12	9 1/4	1 1/2	2 1/4	-	2 1/8	4	1/2	1 1/4	9 5/16		
Pier 9, N. Brqs.	NG11, NG12, NG13	III	3	11 5/16	12	18	5 15/16	9 15/16	7	3 1/16	6	13 7/16	20	3	3	9 7/16	16	31 1/4	2 3/8	1 1/2	18	12 1/8	2	3	1 1/2	2	5 1/2	2 3/4	5 1/2	5 1/8	1 3/4	11 3/16
Pier 9, N. Brqs.	A-P	III	14	11 5/16	12	18	5 15/16	9 15/16	7	3 1/16	6	13 7/16	20	3	3	9 7/16	16	31 1/4	2 3/8	1 1/2	18	12 1/8	2	3	1 1/2	2	5 1/2	2 3/4	5 1/2	5 1/8	1 3/4	11 3/16
Pier 10	NG11, NG12, NG13	II	3	12 3/16	14	18	6 13/16	11 1/16	7	3 1/16	6	15 1/16	22	3	3	11 1/16	15	33 1/4	2 3/8	1 1/2	18	13 7/8	2	3	-	2 3/4	5 1/2	5 1/8	1 3/4	12 1/16		
Pier 10	A-N	II	13	12 3/16	14	18	6 13/16	11 1/16	7	3 1/16	6	15 1/16	22	3	3	11 1/16	15	33 1/4	2 3/8	1 1/2	18	13 7/8	2	3	-	2 3/4	5 1/2	5 1/8	1 3/4	12 1/16		
Pier 10	P	II	1	12 3/16	14	18	6 13/16	11 1/16	7	3 1/16	6	15 1/16	22	3	3	11 1/16	15	33 1/4	2 3/8	1 1/2	18	13 7/8	2	3	-	2 3/4	5 1/2	5 1/8	1 3/4	12 1/16		
Pier 11	NG11, NG12, NG13, P	Fix	4	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Pier 11	A-N	Fix	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

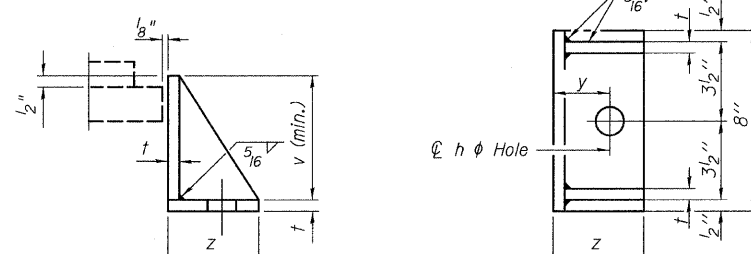
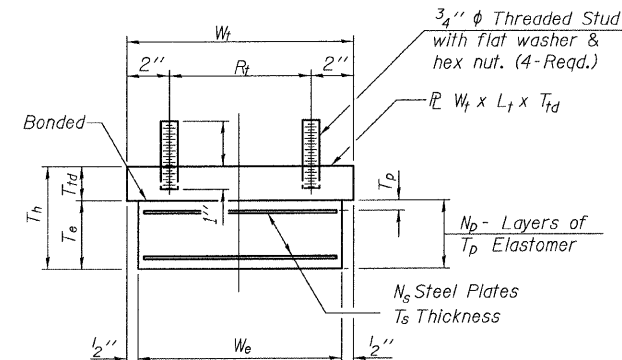
Notes:
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (F_y=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.
Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
Side retainers and other steel members required for the bearing assembly shall be included in the cost of "Furnishing Elastomeric Bearing Assembly, Type I".
The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 36.



ELEVATION AT ABUT.

SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

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

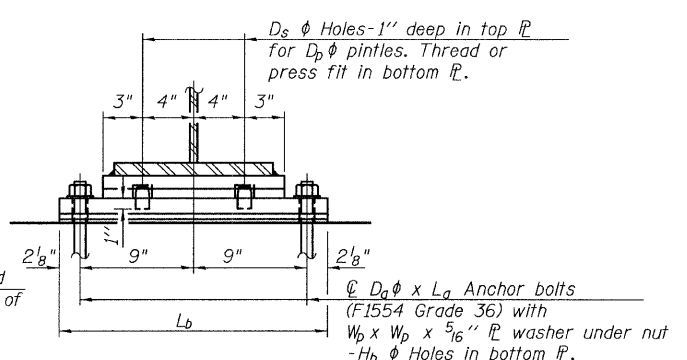
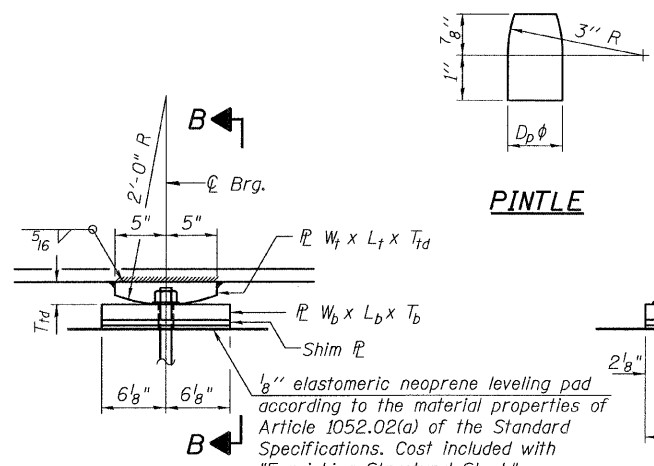
I-2E-1

11-1-09

BILL OF MATERIAL

Item	Unit	Total
Furnishing Elastomeric Bearing Assembly Type I	Each	46
* Anchor Bolts, 1"	Each	132
* Anchor Bolts, 1 1/4"	Each	8

* NOT IN CONTRACT



ELEVATION AT PIER

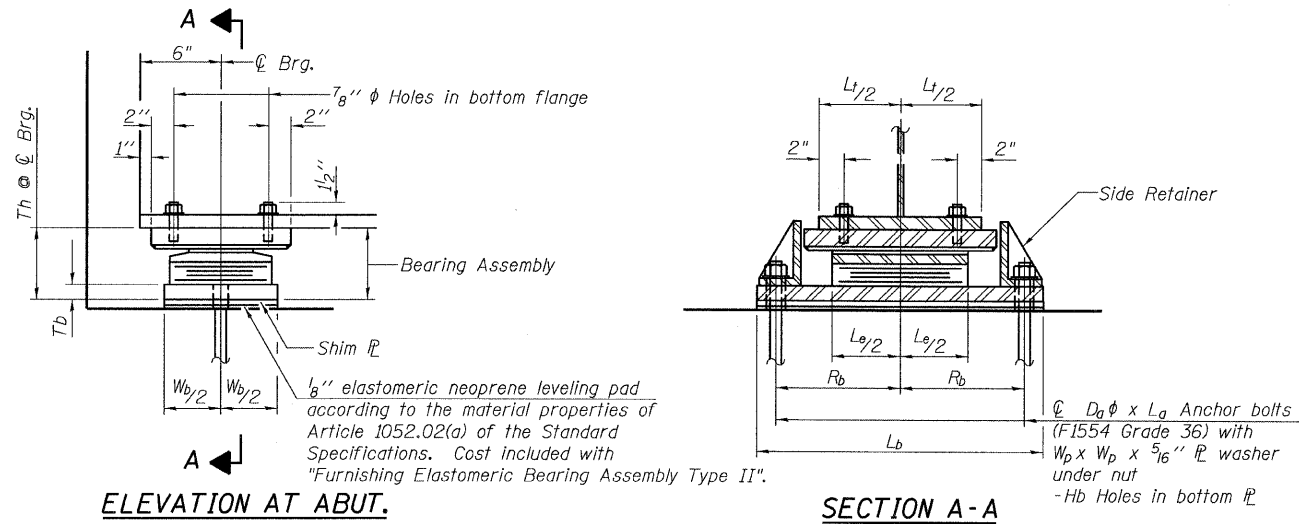
SECTION B-B

FIXED BEARING ASSEMBLY - PIER 7

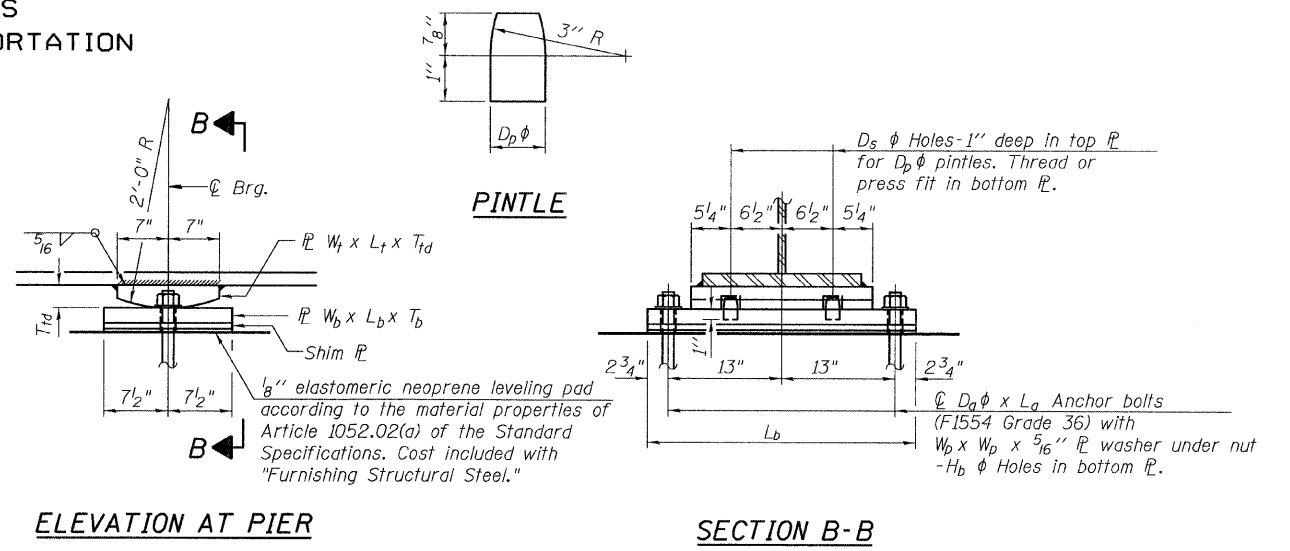
ELASTOMERIC BEARING TYPE I
STRUCTURE NO. 016-3240

TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 30	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.					
	CHECKED - AMD, LS	NAME	DATE							55	0711.2R & 1011.1BR	COOK	200	197
	DRAWN - DY, LS									CONTRACT NO. 60L39				
	CHECKED - AMD, LS									FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
	DATE - 08/02/10			33 SHEETS										

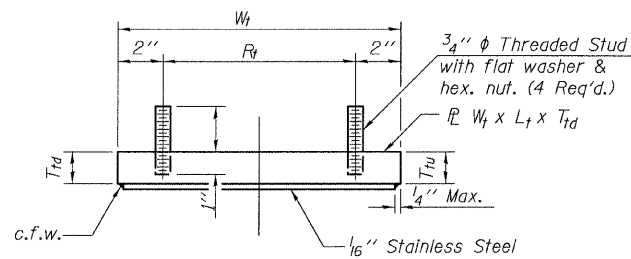
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



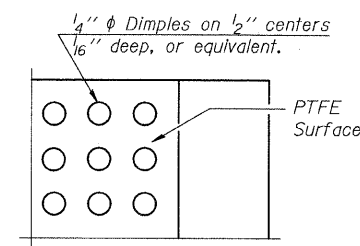
TYPE II ELASTOMERIC EXP. BRG.



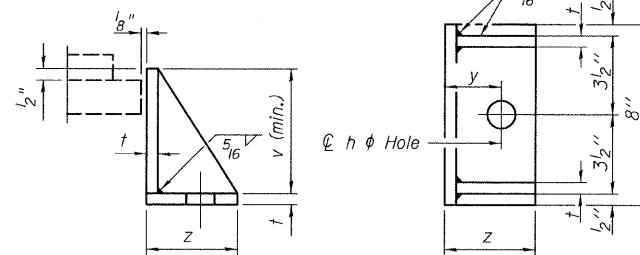
FIXED BEARING ASSEMBLY - PIER II



TOP BEARING ASSEMBLY

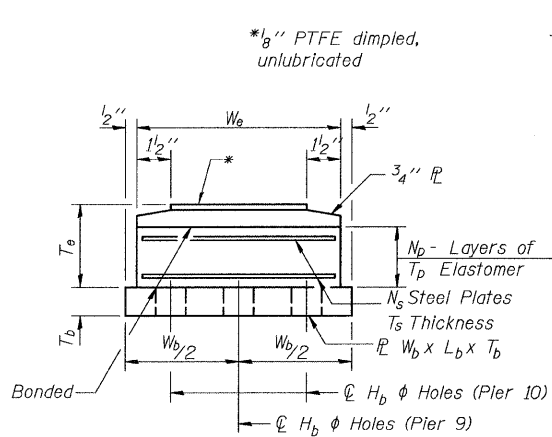


PLAN-PTFE SURFACE

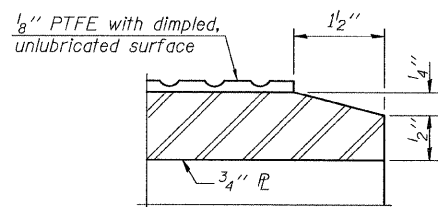


SIDE RETAINER - PIER 9 (SOUTH & NORTH) & PIER 10

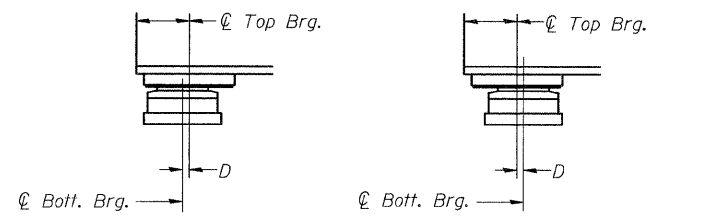
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



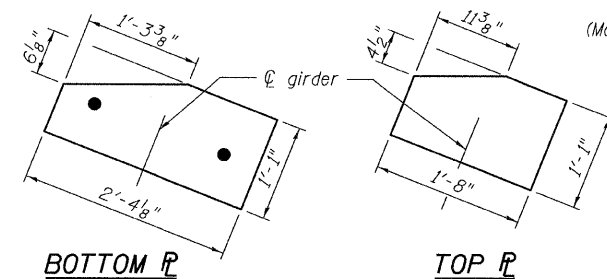
BOTTOM BEARING ASSEMBLY



SECTION THRU PTFE



SETTING ANCHOR BOLTS AT EXP. BRG.
 $D = 1/8$ " per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.



CLIPPING \mathcal{R} 'S @ S. PIER 9

BILL OF MATERIAL

Item	Unit	Total
Furnishing Elastomeric Bearing Assembly Type II	Each	37
* Anchor Bolts, 1/2"	Each	42

* NOT IN CONTRACT

Notes:
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
 Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.
 Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.
 Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
 Side retainers and other steel members required for the bearing assembly shall be included in the cost of "Furnishing Elastomeric Bearing Assembly, Type II".
 The 1/8" PTFE 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 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer. The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 36.
 For bearing dimensions refer to the table on sheet 30.

**ELASTOMERIC BEARING TYPE II
STRUCTURE NO. 016-3240**

I-2E-2

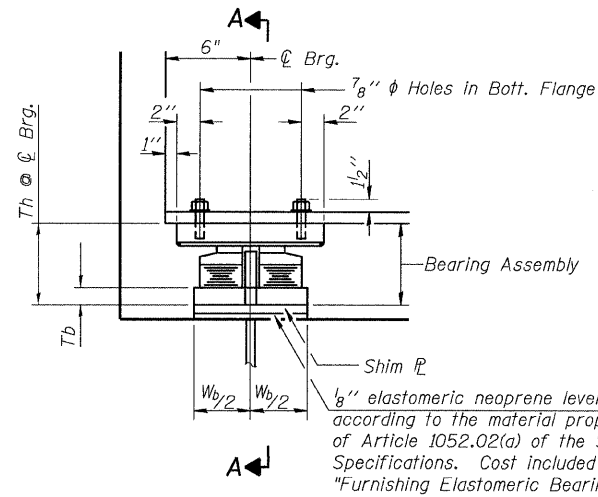
11-1-09

TYLIN INTERNATIONAL

DESIGNED	REVISIONS
- DY, LS	NAME
CHECKED - AMD, LS	DATE
DRAWN - DY, LS	
CHECKED - AMD, LS	
DATE - 08/02/10	

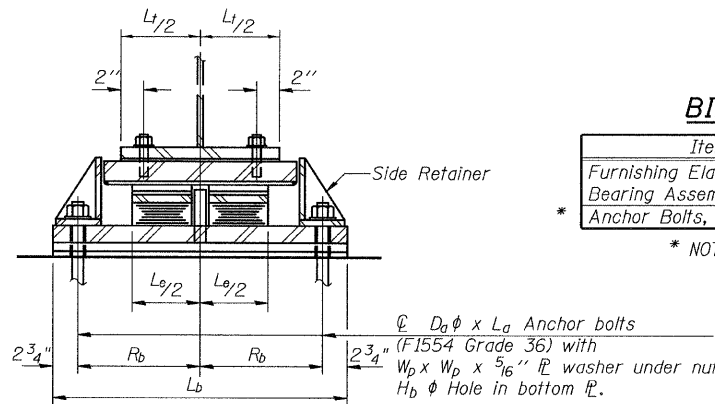
SHEET NO.	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31	55	0711.2R & 1011.1BR	COOK	200	198
33 SHEETS					
CONTRACT NO. 60L39					
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION AT ABUT.

TYPE III ELASTOMERIC EXP. BRG.

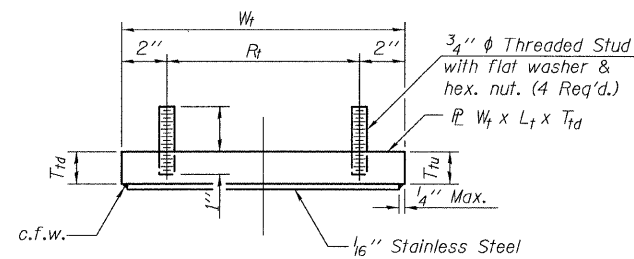


SECTION A-A

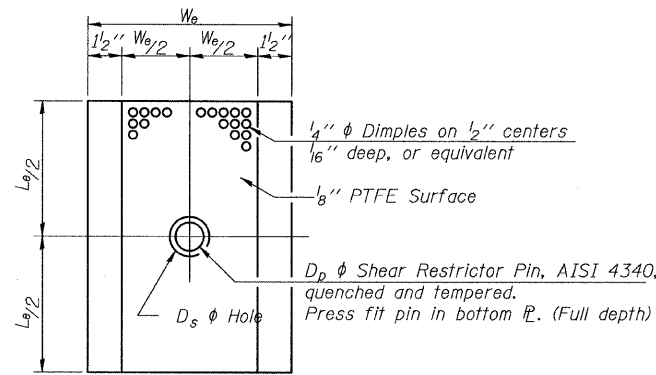
BILL OF MATERIAL

Item	Unit	Total
Furnishing Elastomeric Bearing Assembly Type III	Each	17
* Anchor Bolts, 1 1/2"	Each	34

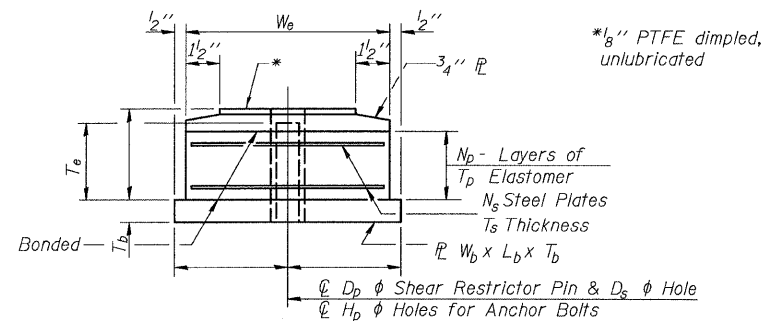
* NOT IN CONTRACT



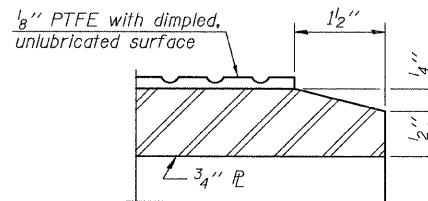
TOP BEARING ASSEMBLY



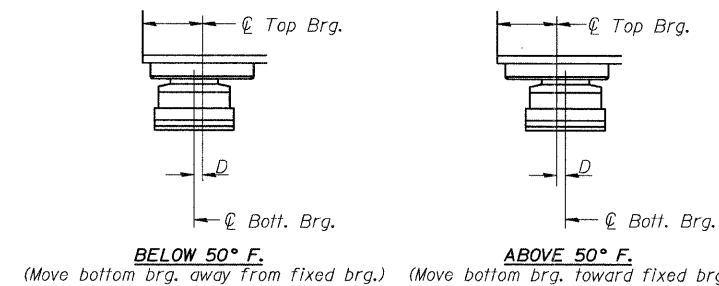
PLAN-PTFE ELASTOMERIC BRG.



BOTTOM BEARING ASSEMBLY



SECTION THRU PTFE



BELOW 50° F. (Move bottom brg. away from fixed brg.) **ABOVE 50° F.** (Move bottom brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50° F.

Notes:
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (F_y=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

Anchor bolts for Type III bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Side retainers and other steel members required for the bearing assembly shall be included in the cost of "Furnishing Elastomeric Bearing Assembly, Type III".

The 1/8" PTFE 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 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer. The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 36.

For bearing dimensions refer to the table on sheet 30.

**ELASTOMERIC BEARING TYPE III
STRUCTURE NO. 016-3240**

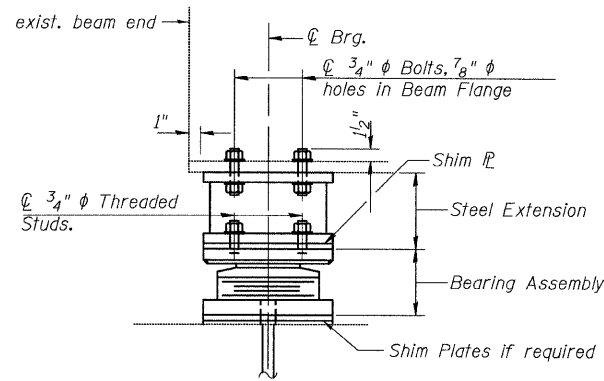
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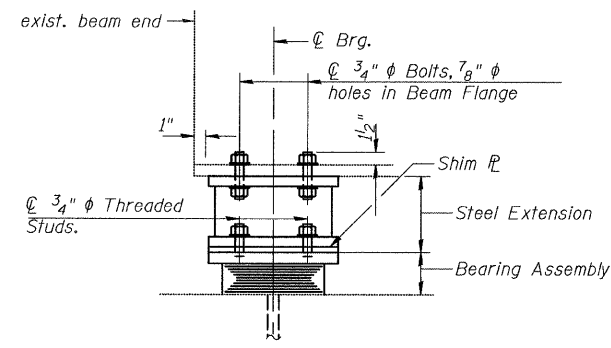
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	DRAWN - DY, LS									33 SHEETS	CONTRACT NO. 60L39			
	CHECKED - AMD, LS									FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				
	DATE - 08/02/10													

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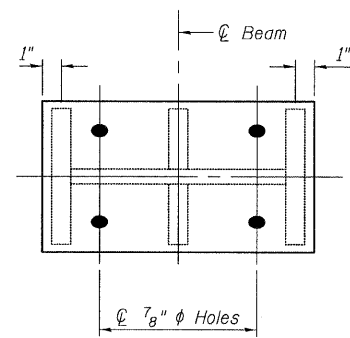
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



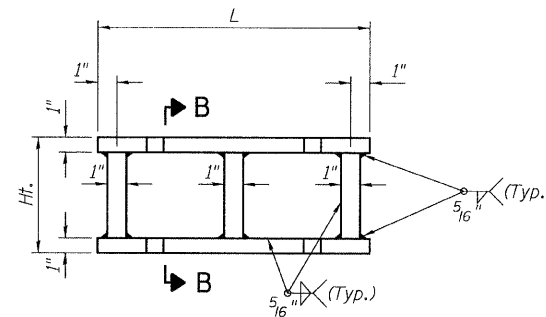
ELEVATION
TYPE II ELASTOMERIC EXP. BRG.



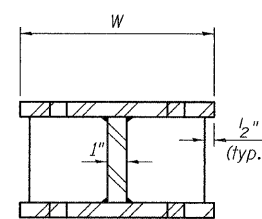
ELEVATION
TYPE I ELASTOMERIC EXP. BRG.



PLAN STEEL EXTENSION



ELEVATION STEEL EXTENSION
FABRICATED STEEL EXTENSION



SECTION B-B

Location	Girder No.	Brg. Type	Vertical Extension	Fabricated Steel Ext.				
				Top & Bot. W	Top & Bot. L	Top & Bot. Th	Top & Bot. Ht.	Shim P
Pier 8	R	I	8 3/8"	15"	20"	1"	8"	1/2"
	Q	I	8 3/8"	15"	20"	1"	8"	1/2"
	P	I	8 3/8"	15"	20"	1"	8"	1/2"
	N	I	8 3/8"	15"	20"	1"	8"	1/2"
	M	I	8 3/8"	15"	20"	1"	8"	1/2"
	L	I	8 3/8"	15"	20"	1"	8"	1/2"
	K	I	8 3/8"	15"	20"	1"	8"	1/2"
	J	I	8 3/8"	15"	20"	1"	8"	1/2"
	H	I	8 3/8"	15"	20"	1"	8"	1/2"
	G	I	8 3/8"	15"	20"	1"	8"	1/2"
	F	I	8 3/8"	15"	20"	1"	8"	1/2"
	E	I	8 3/8"	15"	20"	1"	8"	1/2"
	D	I	8 3/8"	15"	20"	1"	8"	1/2"
C	I	8 3/8"	15"	20"	1"	8"	1/2"	
B	I	8 3/8"	15"	20"	1"	8"	1/2"	
A	I	8 3/8"	15"	20"	1"	8"	1/2"	

Location	Girder No.	Brg. Type	Vertical Extension	Fabricated Steel Ext.				
				Top & Bot. W	Top & Bot. L	Top & Bot. Th	Top & Bot. Ht.	Shim P
Pier 10	P	II	0"	0"	0"	0"	0"	0"
	N	II	11 1/4"	15"	22"	1"	10"	1/2"
	M	II	11 1/4"	15"	22"	1"	10"	1/2"
	L	II	11 1/4"	15"	22"	1"	10"	1/2"
	K	II	11 1/4"	15"	22"	1"	10"	1/2"
	J	II	11 1/4"	15"	22"	1"	10"	1/2"
	H	II	11 1/4"	15"	22"	1"	10"	1/2"
	G	II	11 1/4"	15"	22"	1"	10"	1/2"
	F	II	11 1/4"	15"	22"	1"	10"	1/2"
	E	II	11 1/4"	15"	22"	1"	10"	1/2"
	D	II	11 1/4"	15"	22"	1"	10"	1/2"
	C	II	11 1/4"	15"	22"	1"	10"	1/2"
	B	II	11 1/4"	15"	22"	1"	10"	1/2"
A	II	11 1/4"	15"	22"	1"	10"	1/2"	

NOTES

Prior to ordering any materials, the contractor shall verify in the field all bearing height and shim thickness dimensions.
The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 36.

BEARING DETAILS
STRUCTURE NO. 016-3240

TYLIN INTERNATIONAL	DESIGNED - DY, LS	REVISIONS		SHEET NO. 33	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.				
	CHECKED - AMD, LS	NAME	DATE		55					0711.2R & 1011.1BR	COOK	200	200
	DRAWN - DY, LS				33 SHEETS					CONTRACT NO. 60L39			
	CHECKED - AMD, LS				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT								
	DATE - 08/02/10												

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