

**CENTRAL AVENUE
IMPROVEMENTS FROM
135TH ST. W. TO 119TH ST. W.**

**135TH ST. WEST
BRIDGE
BILL OF
REINFORCING**
SHEET TITLE
472-84017
PROJECT NUMBER

DESIGN BY: JAG
DRAWN BY: DMU
CHECKED BY: KJS

ISSUED: November 9, 2012
REVISED:

SHEET NO.
115 of 220

**BILL OF REINFORCING STEEL
Epoxy Coated - Grade 60**

Substructure	Pier	Column	Straight Bars				Bent Bars			
			Mark	Size	Number	Length	Mark	Size	Number	Length
			PW4	#10	14	⊗	P5	#9	136	16'-4"
			PB2	#5	32	17'-5" Δ ₁	PB1	#5	144	7'-10"
			PW1	#5	144	16'-1"	PW7	#5	112	7'-4"
			PW2	#5	128	6'-7" Δ ₂	PW8	#5	104	3'-6"
			PW3	#5	80	24'-9" Δ ₃				
			PW5	#5	8	40'-0"				
			PW6	#5	16	20'-4"				

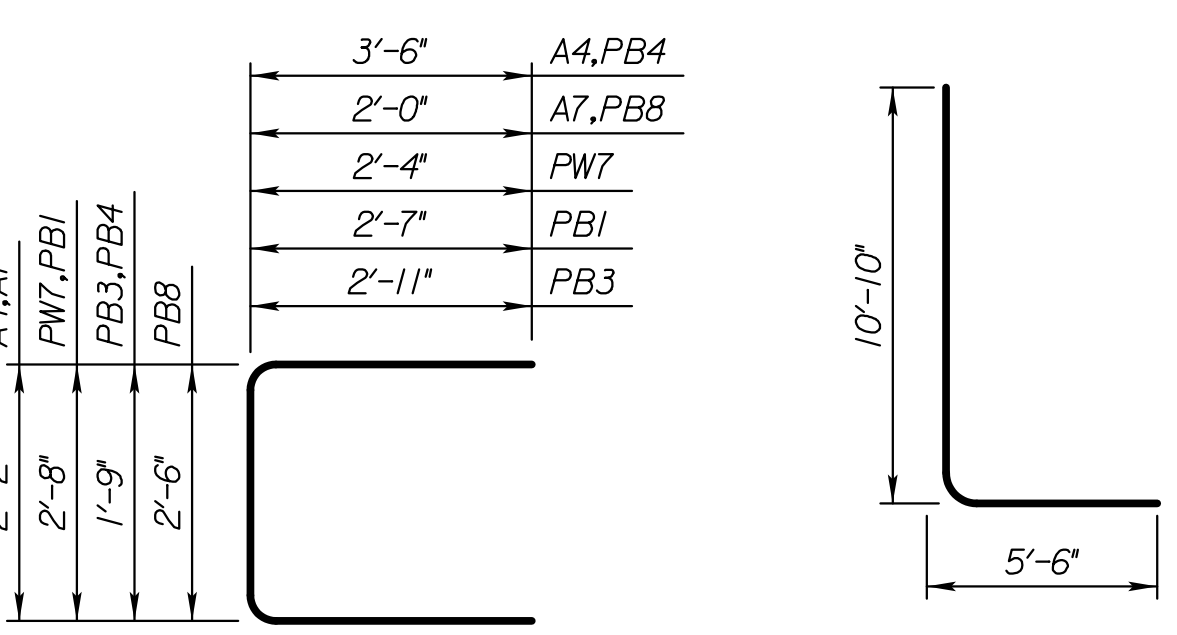
**BILL OF REINFORCING STEEL
Non-Epoxy Coated - Grade 60**

Substructure	Pier	Footing	Straight Bars				Bent Bars			
			Mark	Size	Number	Length	Mark	Size	Number	Length
			P1	#9	34	⊗				
			P2	#9	274	8'-6"				
			P3	#6	34	⊗				
			P4	#6	274	8'-6"				

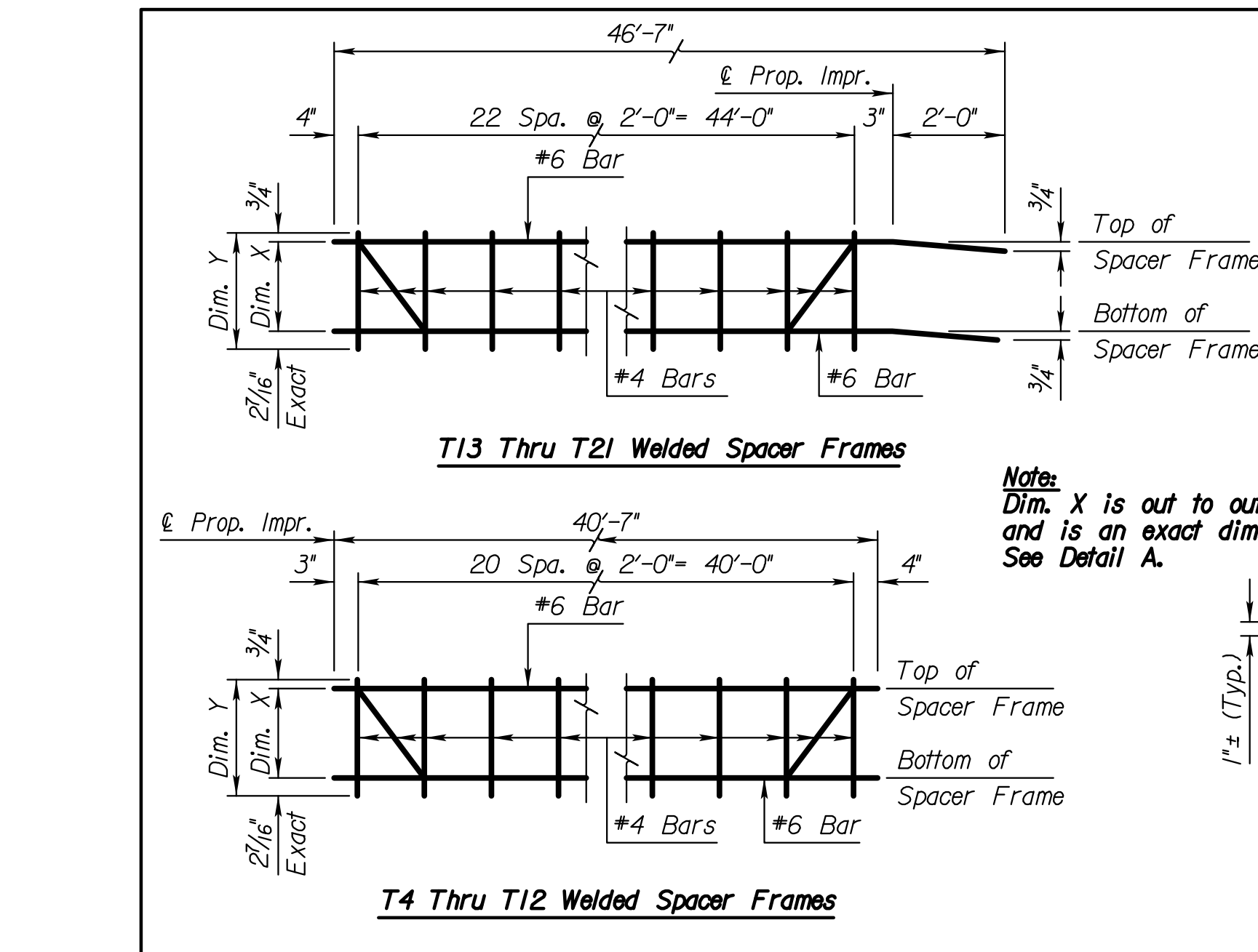
**BILL OF REINFORCING STEEL
Epoxy Coated - Grade 60**

Superstructure	Abutment	Deck	Rail	Straight Bars				Bent Bars			
				Mark	Size	Number	Length	Mark	Size	Number	Length
				S7	#11	134	51'-0"	S1	#8	142	15'-0"
				S4	#10	6	55'-6"	R1	#7	24	9'-3"
				S6	#10	142	54'-9"	R3	#7	252	7'-9"
				S8	#10	134	55'-6"	S2	#7	134	14'-0"
				S9	#10	108	50'-0"	S3	#7	134	12'-6"
				S10	#10	102	39'-6"				
				S15	#10	54	60'-0"	R2	#6	4	5'-8"
				S11	#9	100	37'-0"	A2	#5	168	3'-11"
				S12	#9	100	26'-0"				
				S14	#9	108	6'-0"	A4	#4	376	9'-2"
				S16	#9	51	42'-6"	A5	#4	168	6'-2"
				S17	#9	50	37'-0"	A7	#4	28	6'-2"
				S18	#9	50	25'-6"	R4	#4	252	3'-2"
				A1	#8	16	⊗	R5	#3	436	3'-3"
								R6	#3	60	2'-11"
				R8	#6	24	10'-10"	R7	#3	272	4'-5"
				R9	#6	168	9'-8"				
				S13	#6	102	12'-0"	T4-T21			⊗
				S19	#6	102	13'-3"				
				T1	#6	90	⊗				
				A3	#5	20	⊗				
				T2	#5	61	⊗				
				A6	#4	2	88'-6"				
				T3	#4	154	⊗				
				SCI	#4	84	6'-6"				
				PB6	#10	14	⊗	PB7	#10	14	⊗
				PB5	#5	20	⊗	PB3	#5	528	7'-7"
								PB4	#5	152	8'-9"
								PB8	#5	24	6'-6"

Δ₁ Average Length: Varies 17'-5" to 17'-10", cut 4 each length
 Δ₂ Average Length: Varies 3'-11" to 10'-11", cut 4 each length
 Δ₃ Average Length: Varies 18'-3" to 36'-9", cut 4 each length
 ⊗ See Bending Diagram



**A4, A7, PBI, PB3
PB4, PBB, & PW7**

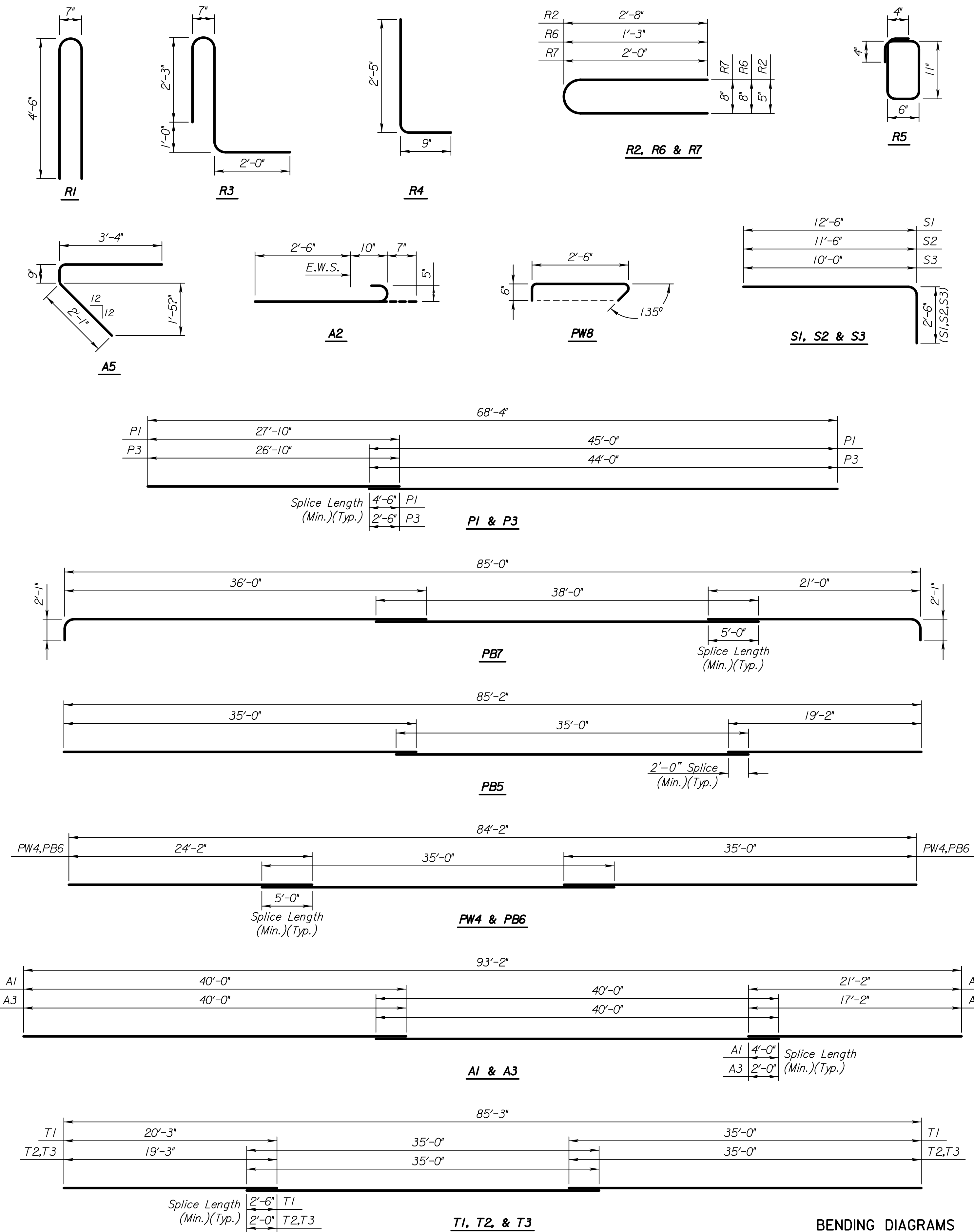


**SPACER FRAMES
(Epoxy Coated)**

Mark	No.	Ea.	Dim. X	Dim. Y
T4, T13	8	11 3/8"	1'-2 3/16"	
T5, T14	4	11 1/2"	1'-2 1/16"	
T6, T15	4	11 5/16"	1'-3 3/8"	
T7, T16	4	1'-0 3/8"	1'-4"	
T8, T17	4	1'-2 1/8"	1'-5 5/16"	
T9, T18	4	1'-3 3/8"	1'-7 1/8"	
T10, T19	4	1'-6 1/8"	1'-9 3/4"	
T11, T20	4	1'-8 1/16"	1'-11 7/8"	
T12, T21	4	1'-11 5/16"	2'-3 3/8"	

Weight of spacer frames included in the weight of reinforcing steel.

Note:
Dim. X is out to out and is an exact dim. See Detail A.



BENDING DIAGRAMS
(All dimensions are out to out of bars)