

TEXAS A & M SPECIAL EVENTS CTR \* LONGSPAN \* WED, 7-FEB-1996 16:18:41  
35-95-0624 \*TRIAL\* SUMMARY 7 8.0.0

J41 33VC1101/522/157 83- 4 5/8 J41

\*\*\*LONGSPAN JOIST DESIGN REQUIREMENTS\*\* SJI SPECS GRAPELAND 8.0.0

\*\*\*\* STRESS INCREASE ALLOWED \*\*\*\* ADD'L CONST. LOAD= 37. PLF

EXTL TC UNIFORM 1101/522/157 0-10 1/2  
MAIN TC UNIFORM 1030/522/157 83- 4 5/8  
EXTR TC UNIFORM 1101/522/157 0-10 1/2

LOAD CASES GENERATED:

1= T 2= NON\_CMPST\_DL 3= NON\_CMPST\_CONST\_D  
4= CMPST\_DL 5= ZERO\_T\_ZERO

\*\*\*JOIST LAYOUT\*\*

WORK LENGTH = 83- 0 5/8 EFF DEPTH = 30.5191

BRNG DEPTH LT= 8 0/0 RT= 8 0/0

WP TCXL END PANEL VAR PANEL HALF PANELS VAR PANEL END PANEL WP TCXR  
1- 0 1/2 5- 6 0/0 0- 3 1/4 26 @ 2- 9 0/0 0- 3 3/8 5- 6 0/0 1- 0 1/2

BCX HOLD BACK: LEFT STD RIGHT STD (STD EXT = 1- 5 1/2)

VERT REPL WEBS 2DL 3- 7 0/0 2DR 3- 7 0/0

\*\*\*COMPOSITE JOIST DESIGN\*\*

LEFT EXTERIOR SPACE	RIGHT INTERIOR SPACE	SLAB EFF WIDTH	CONC ABOVE DECK	CONC WT (PCF)	CONC F'C (KSI)	DECK TYPE	CMPST EFF DEPTH	CMPST JOIST IXX	SLIP COEFF
3- 4 0/0	8- 1 1/4	7- 4 5/8	4 1/4"	115.	4.0	2VLI	36.799	10647.	0.05

  

STUD DIA.	STUD LEN	STUD GAGE	SHEAR SCL	STUD CAP. DBL	TOTAL STUDS=	/	2 DBL@ 12",	15 SGL@ 12",
0.750	5 0/0	5 0/0	11.2	11.2 K/STUD	55 *	REGD \	2 DBL@ 12",	15 SGL@ 12"

MAX SLAB FORCE= 191125 FOR LC # 5

ALLOWABLE= 677981

STUD END DISTANCE: MIN= 0- 5 0/0 MAX= 1- 2 1/2

DEFL	TL(120)	LL(240)	LL(360)	MAINSPAN	CMPST DL DEFL= -0.59	RIGHT EXT	JOIST IXX	STD
LIM	-0.10	-0.05	+2.77		-0.10	-0.05	(IN**4)	CAMBER
MAX	0.00	0.00	-1.97		0.00	0.00	DEV	3099.

\*\*\*TCX DESIGN\*\*

LEFT	SEC	TC	LENGTH	DEV S	DEV I	EXTENSION DEPTH
	54		1- 0 1/2	2.131	5.323	8 0/0
	54	SEAT	1- 4 1/2			
RIGHT	54	TC	1- 0 1/2	2.131	5.323	8 0/0
	54	SEAT	1- 4 1/2			

\*\*\*CHORD DESIGN\*\* CHORD FY = 50000. PSI

SPAN/TCRY= 534.8

TC	SEC	CHORD DESCRIPTION	LENGTH	CHRD GAP	RYY	LYY
TC	54	L3-1/2X3-1/2X.344	85- 1 5/8	1"	1.8487	3- 0 0/0
BC	66	L 5 X 5 X 5/8	74-11 5/8	1"	2.4969	0- 0 0/0

  

TC MEM	REQ MP AXIAL	KL/R	PP RATIO	MP RATIO	GOV LC	BC MEM	REQ MP AXIAL	KL/R	PP RATIO	MP RATIO	GOV LC
1	EF +	0	19.5	0.0103	0.0103	1	+ 75031	37.1	0.3040	0.2134	5
2	-	89387	59.6	0.6507	0.9444	5	+136077	67.5	0.4630	0.3871	5
3	-	29373	30.8	0.2845	0.2388	5	+186893	67.5	0.5930	0.5316	5
4	-	43828	36.0	0.3720	0.3706	5	+227545	67.5	0.6942	0.6472	5
5	-	43828	36.0	0.4543	0.3690	1	+258036	67.5	0.7665	0.7340	5
6	-	66787	36.0	0.5354	0.5595	1	+278367	67.5	0.8099	0.7918	5
7	-	66787	36.0	0.6072	0.5594	1	+288537	67.5	0.8244	0.8207	5
8	-	85578	36.0	0.6719	0.7150	1	+288546	67.5	0.8244	0.8208	5

J41

J41

TC	REQ MP	KL/R	PP	MP	GOV	BC	REQ MP	KL/R	PP	MP	GOV
MEM	AXIAL		RATIO	RATIO	LC	MEM	AXIAL		RATIO	RATIO	LC
9	-85578	36.0	0.7289	0.7150	1	9	+278396	67.5	0.8099	0.7919	5
10	-100193	36.0	0.7783	0.8360	1	10	+258084	67.5	0.7666	0.7341	5
11	-100193	36.0	0.8201	0.8360	1	11	+227613	67.5	0.6944	0.6474	5
12	-110635	36.0	0.8543	0.9224	1	12	+186980	67.5	0.5933	0.5319	5
13	-110635	36.0	0.8809	0.9224	1	13	+136182	67.5	0.4632	0.3874	5
14	-116901	36.0	0.8999	0.9743	1	14	+75157	37.2	0.3044	0.2138	5
15	-116901	36.0	0.9113	0.9743	1						
16	-118992	36.0	0.9151	0.9916	1						
17	-118992	36.0	0.9151	0.9916	1						
18	-116909	36.0	0.9113	0.9744	1						
19	-116909	36.0	0.8999	0.9744	1						
20	-110650	36.0	0.8810	0.9226	1						
21	-110650	36.0	0.8544	0.9226	1						
22	-100217	36.0	0.8202	0.8362	1						
23	-100217	36.0	0.7784	0.8362	1						
24	-85609	36.0	0.7291	0.7152	1						
25	-85609	36.0	0.6721	0.7153	1						
26	-66827	36.0	0.6075	0.5597	1						
27	-66827	36.0	0.5357	0.5598	1						
28	-43875	36.0	0.4546	0.3694	1						
29	-43875	36.0	0.3723	0.3710	5						
30	-29372	30.9	0.2846	0.2390	5						
31	-89388	59.6	0.6507	0.9443	5						
32	EF + 0	19.5	0.0103	0.0103	1						

\*\*\*WEB DESIGN\*\* WEB FY = 50000. PSI END REACTION = 43906.9 LBS  
MIN VERT SHEAR = 10976.7 LBS

WEB	SEC	QTY	K	KL/R	REQ	GOV	REQ FILLET	AVBL	WELD	CLIP
					AXIAL	LC	WELD SIZE			
2	48	2	1.00	123.4	+ 98481.	0.9221	26.5X0.250	31.4	W7B	B
2DL	26	1	0.75	74.9	- 11352.	0.9361	4.7X0.163	4.7		
3	31	2*	1.00	39.2	- 38060.	0.8389	13.6X0.188	13.7		
4	31	2	1.00	114.7	+ 52318.	0.9975	18.7X0.188	20.0	W/B	
V2	23	1	0.75	66.3	- 8781.	0.7936	3.8X0.155	4.7		
5	36	2*	1.00	45.5	- 47948.	0.9712	17.9X0.181	20.5	W/B	
6	31	2	1.00	114.7	+ 43821.	0.8355	15.7X0.188	20.3	W/B	
V3	23	1	0.75	66.3	- 8781.	0.7936	3.8X0.155	4.7		
7	31	2*	1.00	57.4	- 39637.	0.9788	14.2X0.188	15.0		
8	26	2	1.00	113.8	+ 35469.	0.9452	14.7X0.163	15.0		
V4	23	1	0.75	66.3	- 8781.	0.7936	3.8X0.155	4.7		
9	28	2*	1.00	57.1	- 31296.	0.9455	11.3X0.187	14.5		
10	23	2	1.00	130.3	+ 27124.	0.8719	11.8X0.155	15.0		
V5	23	1	0.75	66.3	- 8781.	0.7936	3.8X0.155	4.7		
11	26	2*	1.00	56.9	- 22953.	0.8211	9.5X0.163	15.0		
12	11	2*	1.00	117.2	+ 18781.	0.9943	9.5X0.133	15.1		
V6	23	1	0.75	66.3	- 8781.	0.7936	3.8X0.155	4.7		
13	18	2*	1.00	76.3	- 16167.	0.9283	7.0X0.155	14.5		
14	11	2*	1.00	117.2	+ 16167.	0.8559	8.2X0.133	15.1		
V7	23	1	0.75	66.3	- 8781.	0.7936	3.8X0.155	4.7		
15	18	2*	1.00	76.3	- 16167.	0.9283	7.0X0.155	14.5		
16	11	2*	1.00	117.2	+ 16167.	0.8559	8.2X0.133	15.1		
V8	23	1	0.75	66.3	- 8781.	0.7936	3.8X0.155	4.7		
16R	11	2*	1.00	117.2	+ 16167.	0.8559	8.2X0.133	15.1		
15R	18	2*	1.00	76.3	- 16167.	0.9283	7.0X0.155	14.5		
V9	23	1	0.75	66.3	- 8781.	0.7936	3.8X0.155	4.7		
14R	11	2*	1.00	117.2	+ 16167.	0.8559	8.2X0.133	15.1		
13R	18	2*	1.00	76.3	- 16167.	0.9283	7.0X0.155	14.5		
V10	23	1	0.75	66.3	- 8781.	0.7936	3.8X0.155	4.7		
12R	11	2*	1.00	117.2	+ 18765.	0.9935	9.5X0.133	15.1		
11R	26	2*	1.00	56.9	- 22937.	0.8205	9.5X0.163	15.0		
V11	23	1	0.75	66.3	- 8781.	0.7936	3.8X0.155	4.7		
10R	23	2	1.00	130.3	+ 27109.	0.8714	11.8X0.155	15.0		
9R	28	2*	1.00	57.1	- 31280.	0.9450	11.3X0.187	14.5		
V12	23	1	0.75	66.3	- 8781.	0.7936	3.8X0.155	4.7		
8R	26	2	1.00	113.8	+ 35453.	0.9448	14.6X0.163	15.0		
7R	31	2*	1.00	57.4	- 39621.	0.9784	14.2X0.188	15.0		
V13	23	1	0.75	66.3	- 8781.	0.7936	3.8X0.155	4.7		
6R	31	2	1.00	114.7	+ 43805.	0.8352	15.7X0.188	20.3	W/B	
5R	36	2*	1.00	45.5	- 47932.	0.9709	17.9X0.181	20.5	W/B	
V14	23	1	0.75	66.3	- 8781.	0.7936	3.8X0.155	4.7		
4R	31	2	1.00	114.7	+ 52301.	0.9971	18.7X0.188	20.0	W/B	

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WEB	SEC	QTY	K	KL/R	REQ AXIAL	RATIO	GOV LC	REQ FILLET WELD SIZE	AVBL WELD	CLIP
3R	31	2*	1.00	39.2	= 38073.	0.8393	1	13.6X0.188	13.7	
2DR	26	1	0.75	74.9	= 11352.	0.9361	1	4.7X0.163	4.7	
2R	48	2	1.00	123.4	+ 98482.	0.9221	5	26.5X0.250	31.4 W/B	B

NOTE: ALL TENSION WEBS (EXCLUDING THE W2 WEBS) HAVE BEEN DESIGNED  
TO RESIST A VERTICAL SHEAR EQUAL TO AT LEAST 12% OF THE  
END REACTION IN COMPRESSION.

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\*\*BRIDGING REQUIREMENTS\*\*

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\*\*WEIGHT, COST, TIME\*\*

TC STRESS ALLOW LYY= 6.3 FT

UNIT LABOR COST= N. A.

TOTAL WT= N. A.

MATERIAL COST= N. A.

TOTAL COST= N. A.

WT/FT= 65.91 LBS

TOTAL TIME= N. A.

3 ROWS (TOTAL) BOLTED-X  
2 ROWS EX-BRIDGING REQ'D