



Appendix II

Prestressed Concrete 8" x 4' SpanDeck – U.L. – J917 (2" C.I.P. TOPPING)

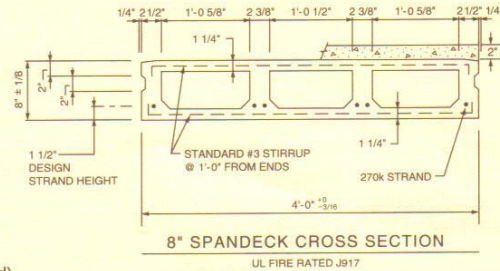
PHYSICAL PROPERTIES

Composite

$A' = 254 \text{ in.}^2$	$S'_b = 547 \text{ in.}^3$
$I' = 2944 \text{ in.}^4$	$S'_{t1} = 1124 \text{ in.}^3$ (At Top of SpanDeck)
$Y_{b1} = 5.38 \text{ in.}$	$S'_{tt} = 637 \text{ in.}^3$ (At Top of Topping)
$Y'_{t1} = 2.62 \text{ in.}$ (To Top of SpanDeck)	$Wt.' = 330 \text{ PLF}$
$Y'_{tt} = 4.62 \text{ in.}$ (To Top of Topping)	$Wt.' = 82.5 \text{ PSF}$

DESIGN DATA

- Precast Strength @ 28 days = 5000 PSI.
- Precast Density = 150 PCF
- Strand = $1/2"$ Ø, 270K Lo-Relaxation.
- Composite Strength = 3000 PSI.
- Composite Density = 150 PCF.
- Strand Height = 1.5 in.
- Ultimate moment capacities (when fully developed) . . .
 - 4 – $1/2"$ Ø, 270K = 94.6'K
 - 6 – $1/2"$ Ø, 270K = 133.3'K
- Maximum bottom tensile stress is $6\sqrt{f'_c} = 424 \text{ PSI}$.
- All superimposed load is treated as live load in the strength analysis of flexure and shear.
- Flexural strength capacity is based on stress/strain strand relationships.
- Load values to the left of the solid line are controlled by ultimate strength. Load values to the right are controlled by service stress.
- Shear values are the maximum allowable before shear reinforcement is required.
- Deflection limits were not considered when determining allowable loads in this table.
- All loads shown refer to allowable loads applied after topping has hardened.



8" SPANDECK W/2" TOPPING		ALLOWABLE SUPERIMPOSED LOAD (PSF)																						
STRAND PATTERN		SPAN (FEET)																						
		10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Flexure	4 – $1/2"$ Ø	795	718	650	590	500	426	366	317	275	240	210	184	162	142	125	110	96	84	73	60	49	39	30
Shear	4 – $1/2"$ Ø	571	509	458	415	378	347	320	296	275	257	240	222	199	178	160	145	133	126	115	103	93	84	77
Flexure	6 – $1/2"$ Ø	1155	1040	945	859	732	629	544	474	416	366	324	287	256	228	204	183	164	147	132	118	103	90	77
Shear	6 – $1/2"$ Ø	589	525	472	428	391	360	331	308	286	266	249	235	220	207	195	184	175	160	145	132	120	110	100



This table is for simple spans and uniform loads. Design data for any of these span-load conditions is available on request. Individual designs may be furnished to satisfy unusual conditions of heavy loads, concentrated loads, cantilevers, flange or stem openings and narrow widths.

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Prestressed Concrete 12" x 4' SpanDeck – U.L. – J917 (2" C.I.P. TOPPING)

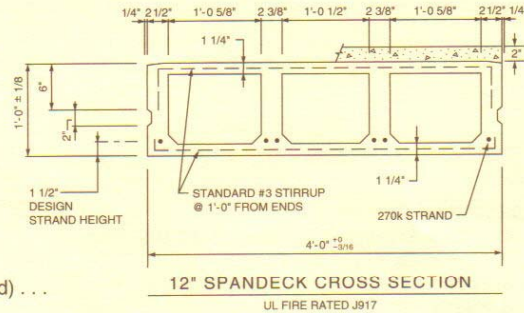
PHYSICAL PROPERTIES

Composite

<p>$A' = 293 \text{ in.}^2$</p> <p>$I' = 7164 \text{ in.}^4$</p> <p>$Y'_b = 7.65 \text{ in.}$</p> <p>$Y'_t = 4.35 \text{ in. (To Top of SpanDeck)}$</p> <p>$Y'_{tt} = 6.35 \text{ in. (To Top of Topping)}$</p>	<p>$S'_b = 936 \text{ in.}^3$</p> <p>$S'_t = 1649 \text{ in.}^3 \text{ (At Top of SpanDeck)}$</p> <p>$S'_{tt} = 1129 \text{ in.}^3 \text{ (At Top of Topping)}$</p> <p>Wt. = 410 PLF</p> <p>Wt. = 102.5 PSF</p>
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DESIGN DATA

1. Precast Strength @ 28 days = 5000 PSI.
2. Precast Density = 150 PCF.
3. Strand = 1/2"Ø, 270K Lo-Relaxation.
4. Composite Strength = 3000 PSI.
5. Composite Density = 150 PCF.
6. Strand Height = 1.5 in.
7. Ultimate moment capacities (when fully developed) . . .
 - 4 – 1/2"Ø, 270K = 146.2'K
 - 6 – 1/2"Ø, 270K = 208.1'K
8. Maximum bottom tensile stress is $6\sqrt{f'_c} = 424 \text{ PSI}$.
9. All superimposed load is treated as live load in the strength analysis of flexure and shear.
10. Flexural strength capacity is based on stress/strain strand relationships.
11. Load values to the left of the solid line are controlled by ultimate strength. Load values to the right are controlled by service stress.
12. Shear values are the maximum allowable before shear reinforcement is required.
13. Deflection limits were not considered when determining allowable loads in this table.
14. All loads shown refer to allowable loads applied after the topping has hardened.



12" SPANDECK W/2" TOPPING		ALLOWABLE SUPERIMPOSED LOAD (PSF)																						
		SPAN (FEET)																						
STRAND PATTERN		18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Flexure	4 – 1/2"Ø	446	392	345	305	271	240	214	190	170	151	134	120	106	94	83	73	64						
Shear	4 – 1/2"Ø	436	408	379	357	335	309	281	257	234	214	195	181	172	162	149	136	125						
Flexure	6 – 1/2"Ø	671	593	527	470	421	378	340	307	277	251	227	206	187	170	154	140	127	115	104	94	85	76	66
Shear	6 – 1/2"Ø	453	423	397	373	351	331	313	297	282	268	255	237	218	201	186	171	158	146	136	124	118	113	108



This table is for simple spans and uniform loads. Design data for any of these span-load conditions is available on request. Individual designs may be furnished to satisfy unusual conditions of heavy loads, concentrated loads, cantilevers, flange or stem openings and narrow widths.

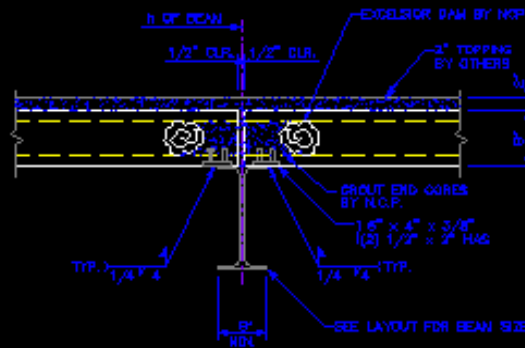
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NITNERHOUSE

SPANDECK HOLLOW CORE PLANK CONNECTION DETAIL OF BEARING ON STEEL BEAM



NOTES:

1. N.C.P. WILL PROVIDE A BROOVED FINISH IN ORDER TO CREATE A COMPOSITE TOPPING. C.P. TOPPING BY OTHERS IS TO BE 3,000 PSI (NORMAL WEIGHT CONCRETE).
2. THE DESIGN OF CONNECTIONS FOR SPANDECK TO OTHER BUILDING COMPONENTS IS THE RESPONSIBILITY OF THE ENGINEER OF RECORD, SINCE THEY ARE PART OF THE GLOBAL DESIGN OF THE STRUCTURE.
3. CONSULT N.C.P.'S ENGINEERING DEPARTMENT FOR CANTILEVER RECOMMENDATIONS.
4. N.C.P. WILL PROVIDE A SMOOTH FINISH FOR INSTALLATION OF ROOFING MATERIALS BY OTHERS.
5. WELD PLATES ARE FOR BRACING THE COMPRESSION FLANGE OF THE STEEL BEAM AND FOR TRANSFERRING DIAPHRAGM FORCES. THEY ARE NOT TO HOLD THE PLANKS ON THE STEEL BEAMS. THE CONTRACT DRAWINGS SHALL INDICATE THE REQUIRED SPACING IN 4'-0" INCREMENTS.