## LiteDeck

#### Forward and Introduction

#### Description of LiteDeck System

- 1.1 Materials
- 1.2 Floor/Roof Formwork Installation
- 1.3 Structural Engineering
- 1.4 Span Tables
- 1.5 Reinforcing Concrete
- 1.6 Concrete Placement
- 1.7 Temporary Shoring
- 1.8 Concentrated Loads
- 1.9 Maximum Ceiling Load / Steel Stud Load Capacity
- 1.10 Fire Resistance
- 1.11 Fire Performance Test w/ Drywall
- 1.12 Fire Performance Test w/o Drywall
- 1.13 Sound Transmission Class
- 1.14 R-Value
- 1.15 Impact Isolation Class
- 1.16 Patents
- 1.17 Imprints

#### FORWARD and INTRODUCTION

The Technical Evaluation data contained herein is provided for general information only. It is not to be construed as engineering advice on a particular project and does not replace the engineering judgment, interpretation or conclusions of the Engineer Of Record on a particular project.

#### **Tests and Reports**

The tests provided herein were conducted by independent firms and facilities and are warranted to have been done in full compliance with the codes referenced for each test. Further related statements have been secured from information published by the firms, organizations or associations which are referenced herein.

#### **Local Building Codes**

The Lite-Deck concrete forming system is sold throughout several building code jurisdictions. Construction codes may be subject to various interpretations and periodic changes. Lite-Form Technologies does not warrant that the information contained herein complies with any specific local code or building regulation. The engineer, designer or installer must insure that all applications of Lite-Deck forms are in compliance with the appropriate local codes and regulations in the jurisdiction and for which the specific applications are being used.

#### **Errors and/or Omissions**

The information contained herein could include technical or typographical errors, omissions or other inaccuracies. Lite-Form Technologies reserves the right to make changes, correc-tions and/or improvements without notice. Lite-Form Technologies assumes no liability for the accuracy or completeness of the information contained herein. Further, Lite-Form Technologies, its' representatives or distributors disclaim any and all liability for damages incurred directly or indirectly as a result of such errors, omissions or inaccuracies.

#### Liability

Lite-Form Technologies, its' representatives or distributors shall not be held liable for any direct, indirect, incidental or consequential damages as a result of the interpretation and subsequent application of any information contained herein.

© 2008 Lite-Form Technologies – South Sioux City Nebraska. Lite-Deck is a registered trademark of Lite-Form Technologies.

Patent Number 6272749 and 6817150B1. Other Patents applied for or Pending.

### **Description of the Lite-Deck System**

Lite-Deck Floor/Roof System – Stay-in-Place EPS formwork for Concrete Construction

**General:** The Lite-Deck System consists of interlocking rigid polystyrene foam plastic panels with inserted steel stiffeners, and is a permanent formwork for reinforced concrete joists and slab. The system is an ICF (Insulated Concrete Form) panel for floors and roofs to be used in residential and commercial applications.

#### 1.1 Materials:

**Base Sections:** This profile consists of a wire-cut expanded polystyrene (EPS) foam-plastic panel with provision for load-bearing, concrete structural joists. The sides of the panels have an interlocking configuration. Cut-outs for the metal C-channel stiffeners are made on the bottom face of the base sections. The stiffener cut-outs are spaced 12 inches on center. The panels can be either 24 inches or 48 inches wide by lengths as needed. *See Detail Drawings in Section 3* 

The foam billets used to fabricate the base sections are molded from modified, expandable polystyrene beads that comply with Type 8 EPS classification in accordance with the latest ASTM C578 requirements. The foam plastic has a nominal density of 1.25 lbs. pcf and has a maximum flame-spread rating of 25 and maximum smoke-density rating of 450 when tested in accordance with ASTM E84 in a thickness of 4 inches.

**Top Hats:** This EPS profile is molded with 100% recycled EPS. During installation, it is attached to the top of the base sections in order to increase the depth of the load-bearing concrete joist. The top hats come in thicknesses of 2, 4 and 6-inches by 4 foot lengths. The foam plastic has a nominal density of 1.25 lbs. pcf. EPS has a maximum flame-spread rat-ing of 25 and a maximum smoke-density rating of 450 when tested in accordance with ASTM E84 in a thickness of 4 inches. See Detail Drawings Section 3; LD 2.3

**Steel C-channel:** The channels are formed from 18 gauge (0.0516") Type G90, galvanized steel in compliance with ASTM A653, Chemically Treated, Dry or lightly oiled. The nominal dimensions of the channels are 1 1/2" flange by 3 1/2" web with 3/8" thick return lip. The channels are inserted into the channel cutouts on the bottom face of the base sections. To maintain the base sections in place, 3 inch self-tapping screws with plastic insulation washers are fastened through the top face of the base section and into the stiffener. See Lite-Deck Detail Drawing Section 3; LD 2.1

#### 1.2 Floor/Roof Formwork Installation

Base Sections are installed over temporary shoring. Top hats are then installed on top of base sections as required by code or design. Reinforcing steel is then installed in the joist and in the top slab. Concrete is then placed on the Lite-Deck formwork. Once the concrete reaches the required strength, the temporary shoring is removed from under the Lite-Deck form. See Installation Manual in Section 4; Marketing Materials

#### **1.3 Structural Engineering**

Structural engineering for all projects using Lite-Deck formwork shall have the concrete joist engineered for the clear span and loads to be placed on the completed concrete joist. The design shall be in compliance with applicable building code. If the building code does not address concrete joists, the latest edition of (American Concrete Institute) ACI 318 shall be used to design the joist. Any variance from applicable building code or ACI code must be certified in advance by a Structural Engineer who is licensed for the jobsite location and specifications. *See Section 3; Detail Drawings* 

#### 1.4 Span Tables (Autocad and PDF Files of these drawings are located on liteform.com)

Lite-Deck span tables should not be used without first securing competent advice with respect to its suitability for any given application. The use of the informatnion disclosed in this diagram is subject to approval by the local building code authority. Although the information in this document is believed to be accurate, Lite-Form Technologies, nor any of their employees or representatives makes any warranty, guarantee or representation, ex-pressed for the direct or indirect damages arising from such use.

#### **1.5 Reinforcing of Concrete**

Placement and specifications of all reinforcing steel shall be designed in compliance with the latest editions of ACI 318 and CRSI (Concrete Reinforcing Steel Institute) standards. Any variance from ACI or CRSI standards must be certified in advance by a Structural Engineer who is licensed for the jobsite location and specifications.

#### **1.6 Concrete Placement**

Placement of concrete shall be in compliance with latest edition of ACI-614 Code (Handling) and ACI-301 and 306 Codes for cold and hot weather concrete placement. Any variance from ACI standards must be certified in advance by a Structural Engineer who is licensed for the jobsite location and specifications.

#### 1.7 Temporary Shoring (Full test available upon request)

All Lite-Deck formwork shoring shall be designed in compliance with the latest edition of ACI347R "Guide to Formwork for Concrete" (design chapter) using Load Table 1 as minimum requirements. Loads in Table 1 have a 2 to 1 safety factor included. Distance between support beams under Lite-Deck steel stiffener shall be determined by capacity of vertical shores and spacing between vertical shores. The maximum spacing between vertical shores shall be based on ASTM E72-05 Transverse Load Test, submitted as part of this Technical Evaluation. See Transverse Load Test: RADCO Test Report No. RAD-3860

#### 1.8 Concentrated Loads (Full test available upon request)

Maximum loads applied by foot traffic (from construction crews) to the Lite-Deck formwork shall be based on ASTM E661-03 Concentrated load Test, submitted as part of this Technical Evaluation. As required by ASTM standard, concentrated loads were placed on the "most vulnerable" portion of the Lite-Deck form. See Concentrated Load Test - RADCO Test Report No. RAD-3861

#### 1.9 Maximum Ceiling Load / Steel Stud Load Capacity.

The maximum ceiling load attached to steel C-channels inserted into the base sections shall be based on Steel Channel Withdrawal Test, submitted as part of this Technical Evaluation. See Ceiling Load Test (Channel Withdrawal) - RADCO Test Report No. RAD-3862

#### 1.10 Fire Resistance Rating (Full test available upon request)

Lite-Deck formwork has a 1.5 hour fire resistance rating based on the test results which were made in compliance with ASTM E 119-00. See Fire Resistance Rating Test (ASTM E 119-00) SwRI – Test Project No. 01.11579.01.001

#### 1.11 Fire Performance Evaluation with Drywall

(Complete Test Results are available on the attached Lite-Deck CD)

Foam plastic insulation used in the Lite-Deck formwork system has an average thickness which is in excess of 4 inches. Foam plastic insulation covered with 1/2 inch drywall is in compliance with UBC Standard 26-3, based on Fire Perform-ance Test, submitted as part of this Technical Evaluation. See Fire Performance Test (UBC 26-3) - SwRI – Test Project No. 01.10934.01.418a

#### 1.12 Fire Performance Evaluation without Drywall

(Complete Test Results are available on the attached Lite-Deck CD) Foam Plastic insulation used in the Lite-Deck formwork system has an average thickness which is in excess of 4 inches. Foam plastic insulation without 1/2 inch drywall covering is in compliance with UBC Standard 26-3, based on Fire Performance Test, submitted as part of this Technical Evaluation.

See Fire Performance Test (UBC 26-3)

SwRI – Test Project No. 01.10934.01.418b

#### 1.13 STC -Sound Transmission Class (Full test available upon request)

A concrete floor's ability to reduce the transmission of outside, ambient sound is rated by a Sound Transmission Class number. The higher the number, the better the barrier to ambient sound pollution.

#### Lite-Deck Floor with 3-inch Concrete Cover and 14-inch Load-Bearing Concrete Joist

STC by Test – 57 STC by Calculation – 54 – With  $\frac{1}{2}''$  Drywall attached direct to Lite-Deck stiffeners STC by Calculation – 67 – With  $\frac{1}{2}''$  Drywall attached with Resilient Clips

#### Lite-Deck Floor with 3-inch Concrete Cover, 14-inch Load-Bearing Concrete Joist, 1/2 " Carpet w/Pad

STC by Test – 48 STC by Calculation – 52 – With  $\frac{1}{2}''$  Drywall attached direct to Lite-Deck stiffeners STC by Calculation – 56 – With  $\frac{1}{2}''$  Drywall attached with Resilient Clips

#### 1.14 IIC - R-Value (Full Test located on enclosed CD)

The insulating value of Lite-Deck forms is achieved by its' use of EPS (Expanded Polystyrene) Insulation. By test (C177 or C518), the insulating value of the EPS used in Lite-Deck Base Sections is R-4.40 (@ 25-degrees f) per inch of thickness\*. Based on the above-referenced tests, the calculated, nominal insulating value of Lite-Deck Base Sections is R-26.4.

#### 1.15 IIC – Impact Insulation Class (Full test available upon request)

A concrete floor's ability to reduce the transmission of sound is rated by an Impact Insulation Class number. This rating quantifies the transmission of "impact sounds" such as foot traffic. The higher the number, the better the barrier to impact sounds.

#### Lite-Deck Floor with 3-inch Concrete Cover and 14-inch load-bearing Concrete Joist

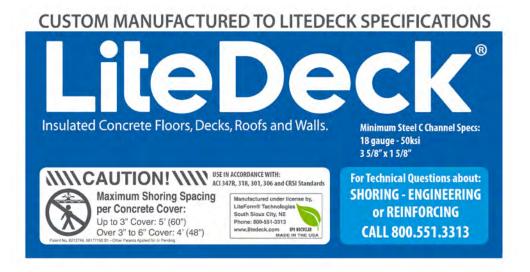
IIC by Test – 44
IIC by Calculation – 48 – With ½" Drywall attached direct to Lite-Deck stiffeners
IIC by Calculation – 61 – With ½" Drywall attached with Resilient Clips
Lite-Deck Floor with 3-inch Concrete Cover, 14-inch load-bearing Concrete Joist, 1/2 " Carpet w/Pad
IIC by Test – 82
IIC by Calculation – 86 – With ½" Drywall attached direct to Lite-Deck stiffeners
IIC by Calculation – 90 – With ½" Drywall attached with Resilient Clips

#### 1.16 Patents

©2020 – Lite-Form Technologies – Lite-Deck is a registered Trademark of Lite-Form Technologies, South Sioux City Nebraska U.S. – Patent Numbers 6272749 and 681750B1. Other Patents applied for or Pending.

#### 1.17 Lite-Deck Imprints

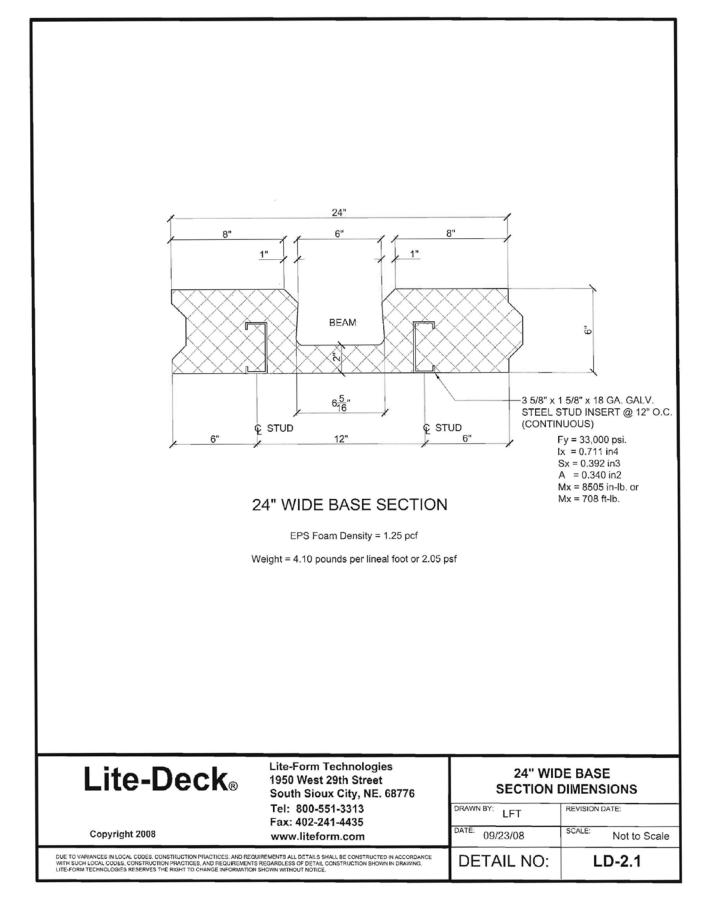
This sticker label is present on all LiteDeck products that leave the South Sioux City, NE. manufacturing facility.

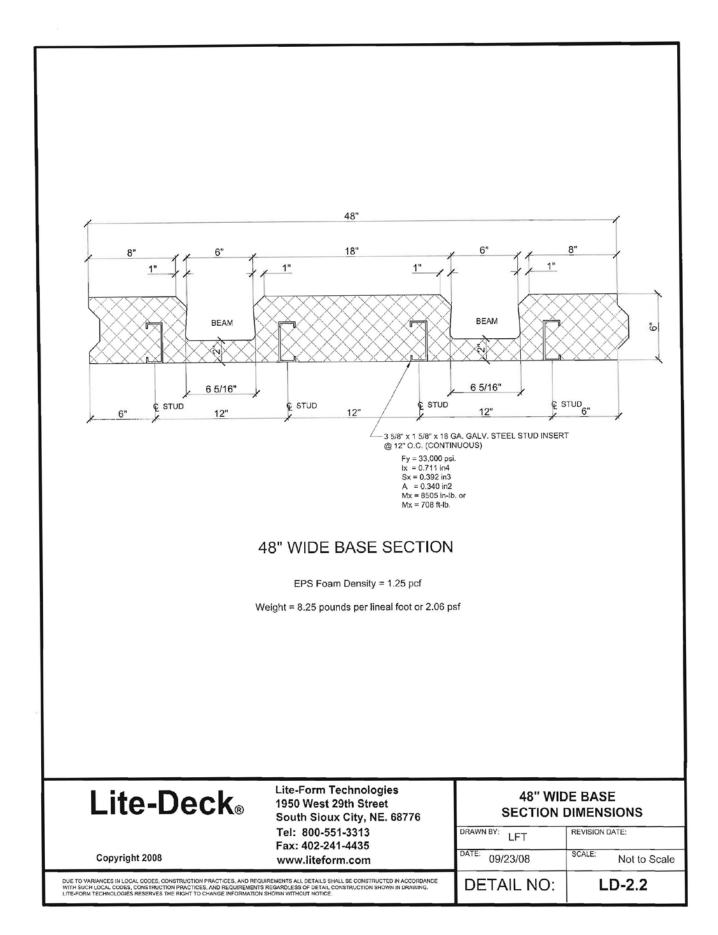


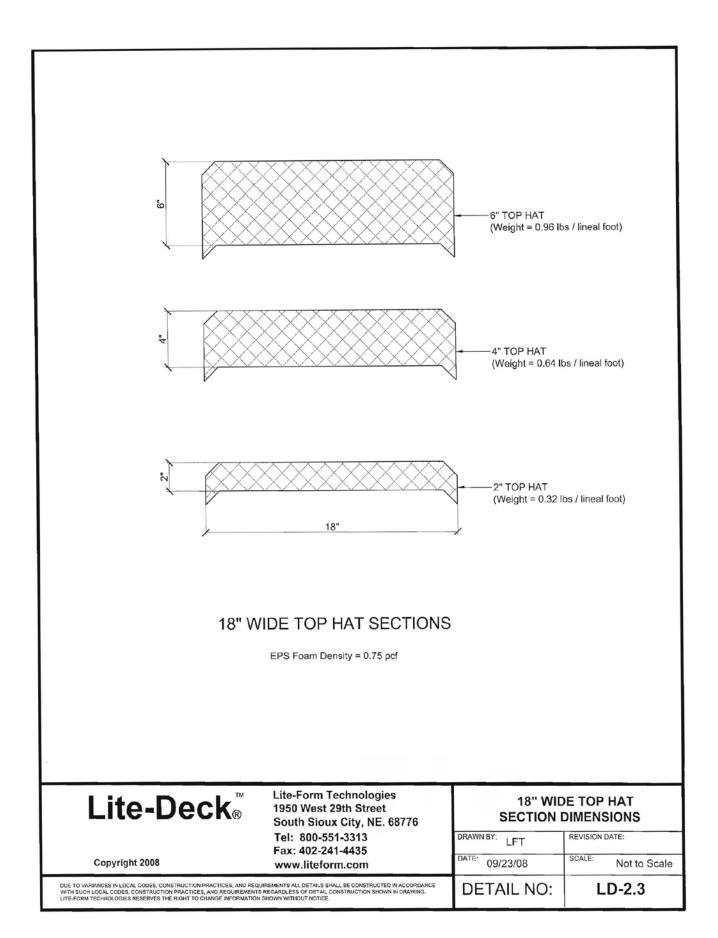


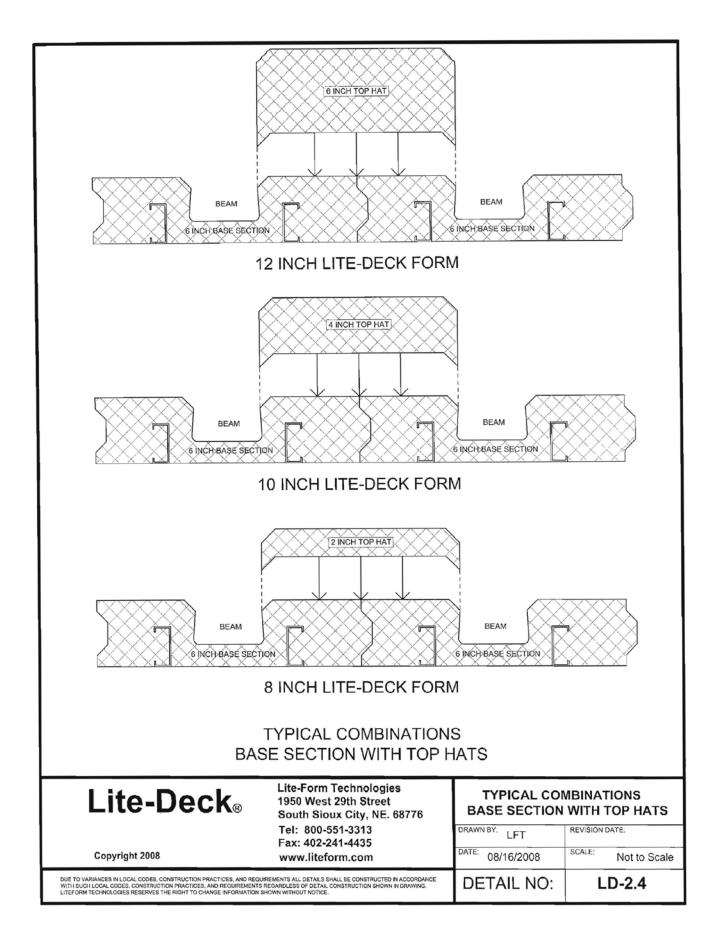
#### Detail Drawings

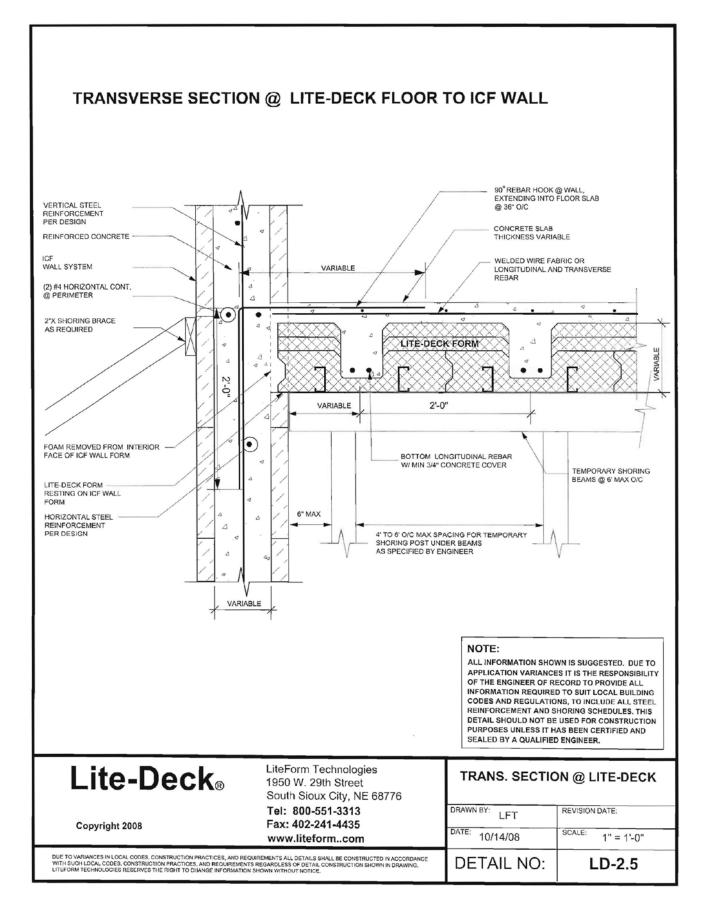
LD-2.1 - 24" Wide Base Section Dimension
LD-2.2 - 48" Wide Base Section Dimension
LD-2.3 - 18" Wide Top Hat Section Dimension
LD-2.3.1 - 26" Wide Top Hat Section Dimension
LD-2.4 - Typical Combination of Base Section and Top Hats
LD-2.5 - Trans. Section @ LiteDeck
LD-2.6 - Trans. Section @ LiteDeck Floor to ICF Wall
LD-2.7 - Long. Section @ LiteDeck Floor to ICF Wall (Resting)
LD-2.8 - Long. Section @ LiteDeck Floor to ICF Wall (Abutment)
LD-2.9 - Trans. Section @ Interior ICF Wall
LD-2.10 - Longitudinal Section @ Interior ICF Wall
LD-2.10 - Longitudinal Section @ Interior ICF Wall LD-2.11 - Trans Section @ LiteDeck Floor to CMU Wall (Abutment)
0
LD-2.11 - Trans Section @ LiteDeck Floor to CMU Wall (Abutment)
LD-2.11 - Trans Section @ LiteDeck Floor to CMU Wall (Abutment) LD-2.12 - Long. Section @ LiteDeck Floor to CMU Wall (Resting)
LD-2.11 - Trans Section @ LiteDeck Floor to CMU Wall (Abutment) LD-2.12 - Long. Section @ LiteDeck Floor to CMU Wall (Resting) LD-2.13 - Trans. Section @ Interior CMU to LiteDeck Floor
LD-2.11 - Trans Section @ LiteDeck Floor to CMU Wall (Abutment) LD-2.12 - Long. Section @ LiteDeck Floor to CMU Wall (Resting) LD-2.13 - Trans. Section @ Interior CMU to LiteDeck Floor LD-2.14 - Long. Section @ Interior CMU Wall to LiteDeck Floor
LD-2.11 - Trans Section @ LiteDeck Floor to CMU Wall (Abutment) LD-2.12 - Long. Section @ LiteDeck Floor to CMU Wall (Resting) LD-2.13 - Trans. Section @ Interior CMU to LiteDeck Floor LD-2.14 - Long. Section @ Interior CMU Wall to LiteDeck Floor LD-2.15 - One Sided Trans. Sect. @ Flush Concrete Beam
LD-2.11 - Trans Section @ LiteDeck Floor to CMU Wall (Abutment) LD-2.12 - Long. Section @ LiteDeck Floor to CMU Wall (Resting) LD-2.13 - Trans. Section @ Interior CMU to LiteDeck Floor LD-2.14 - Long. Section @ Interior CMU Wall to LiteDeck Floor LD-2.15 - One Sided Trans. Sect. @ Flush Concrete Beam LD-2.16 - Longitudinal Section @ Flush Concrete Beam
LD-2.11 - Trans Section @ LiteDeck Floor to CMU Wall (Abutment) LD-2.12 - Long. Section @ LiteDeck Floor to CMU Wall (Resting) LD-2.13 - Trans. Section @ Interior CMU to LiteDeck Floor LD-2.14 - Long. Section @ Interior CMU Wall to LiteDeck Floor LD-2.15 - One Sided Trans. Sect. @ Flush Concrete Beam LD-2.16 - Longitudinal Section @ Flush Concrete Beam LD-2.17 - Transverse Section @ Dropped Concrete Beam

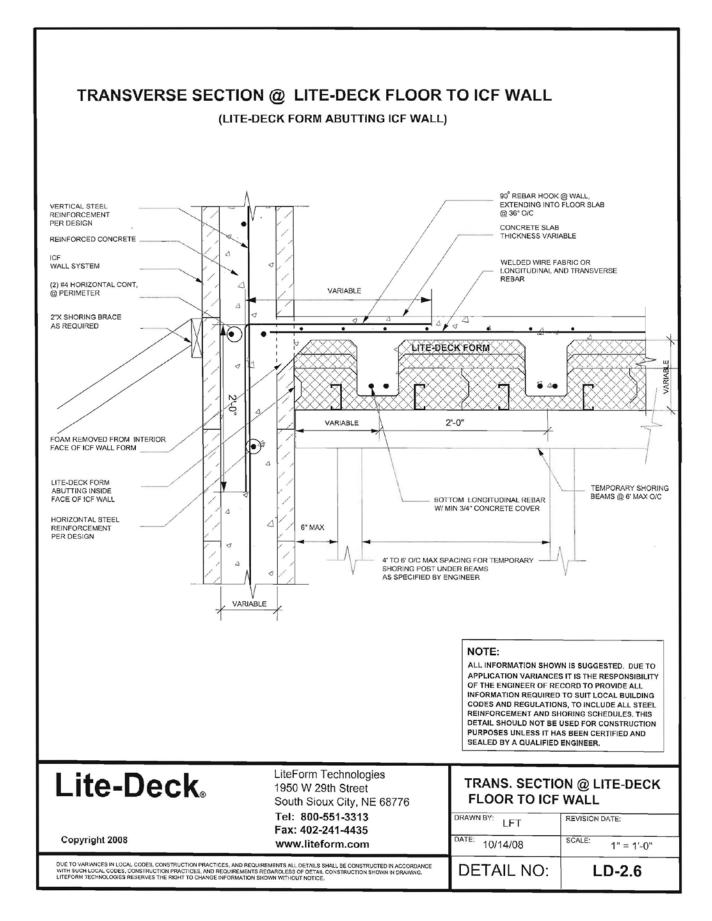


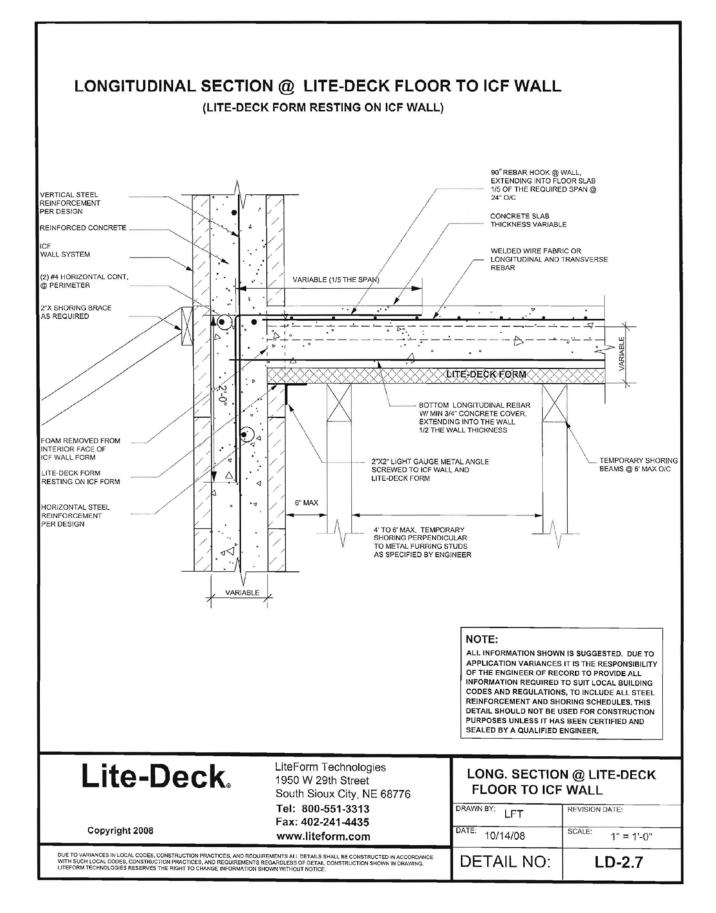


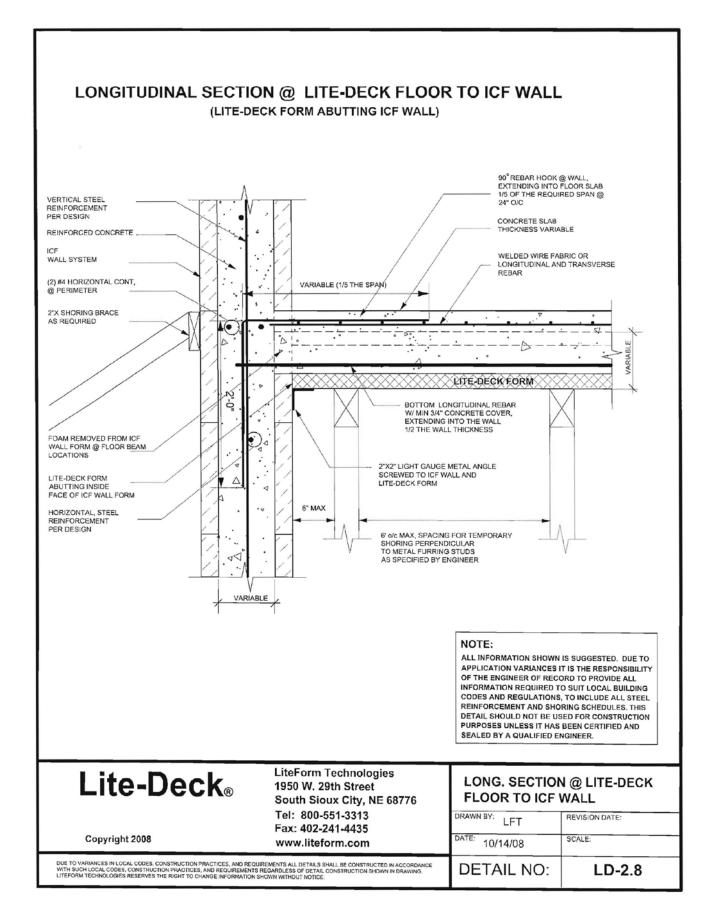


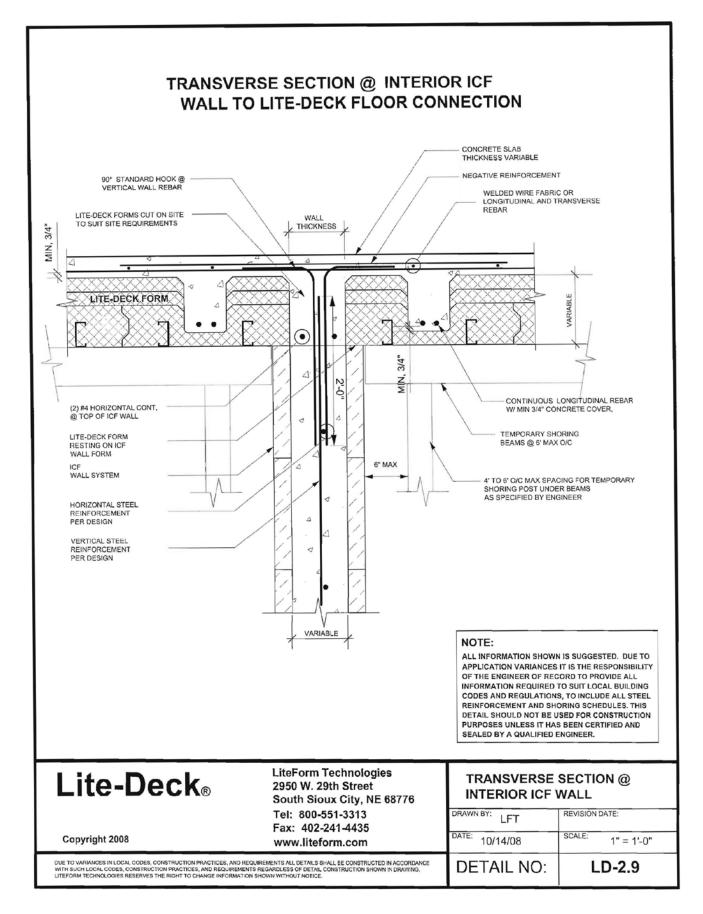


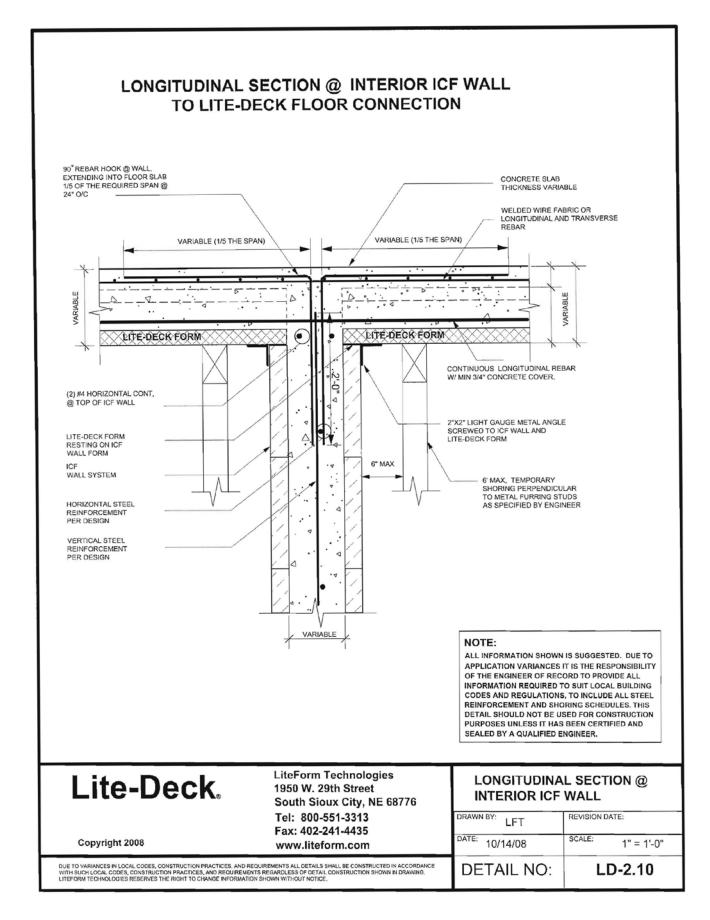


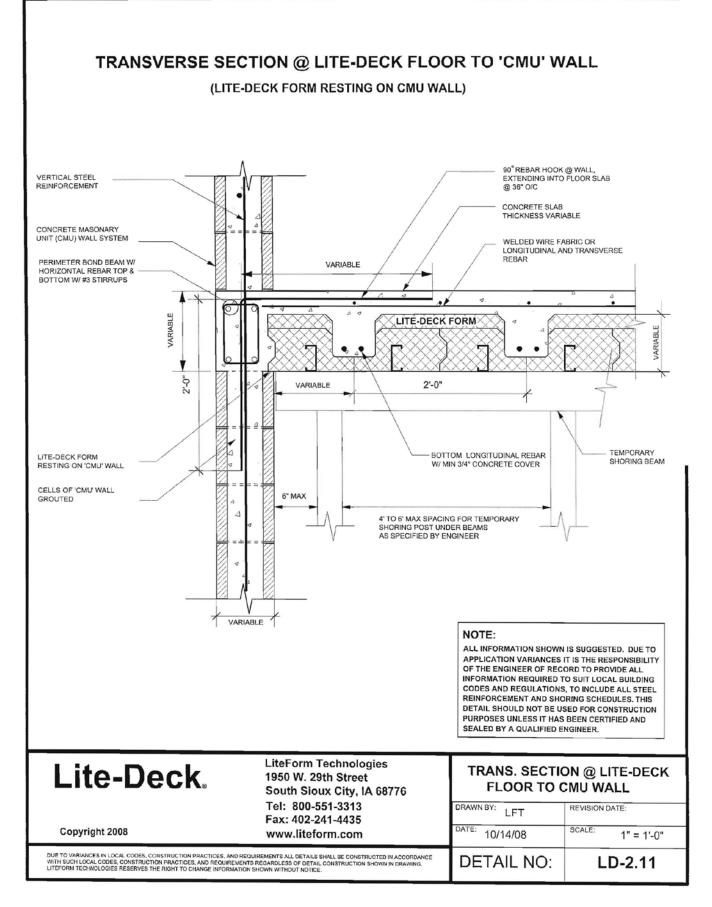


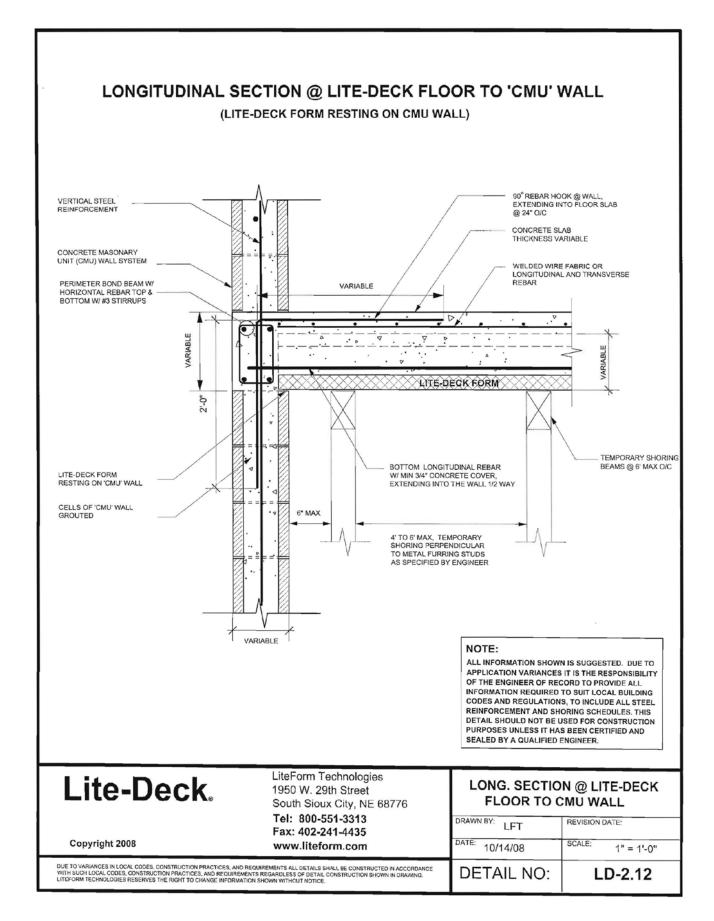


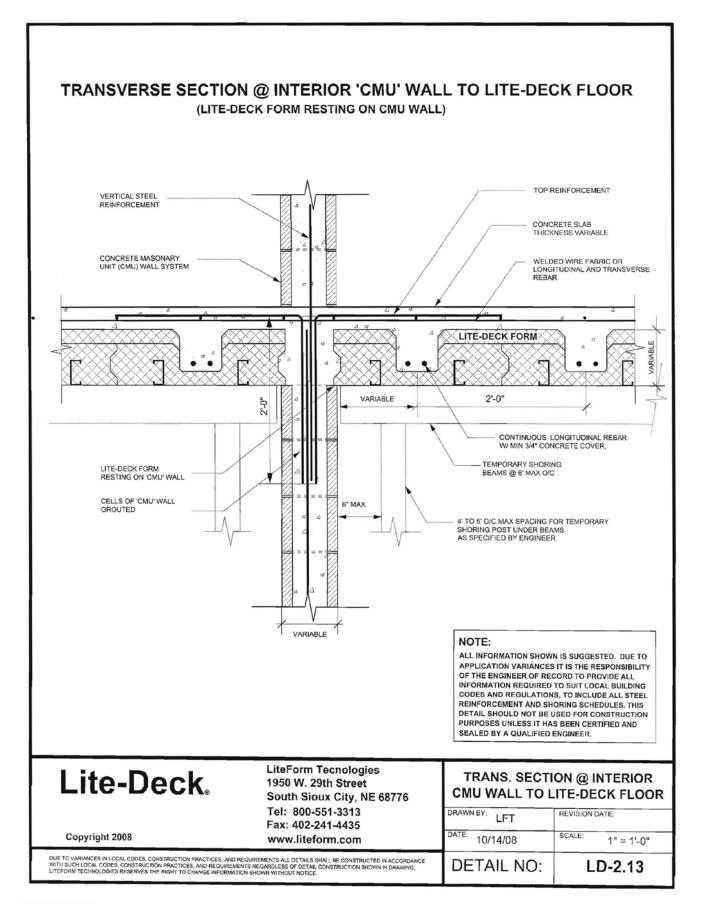


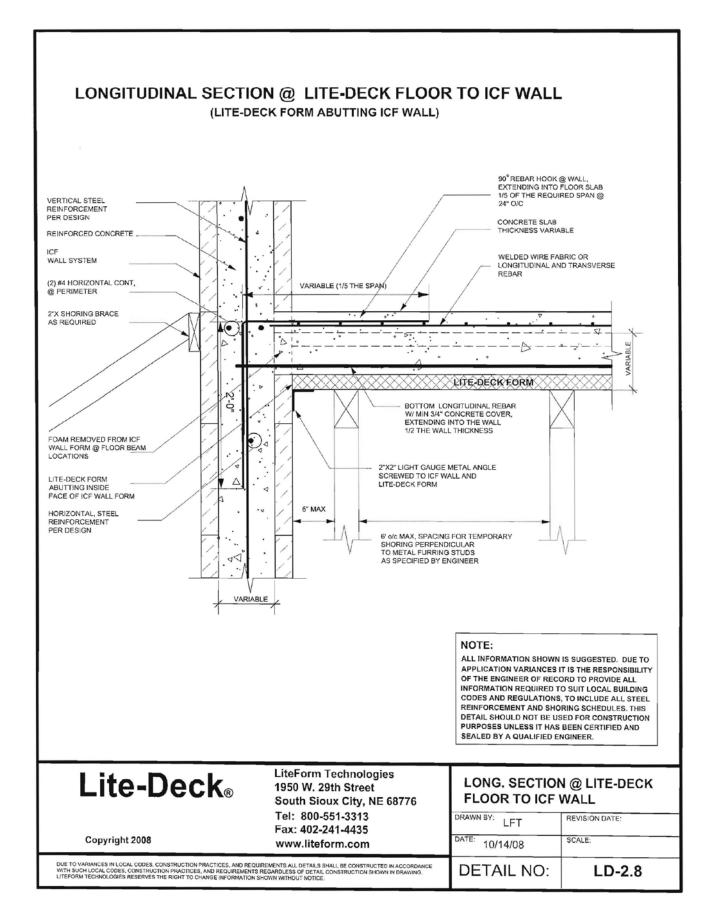


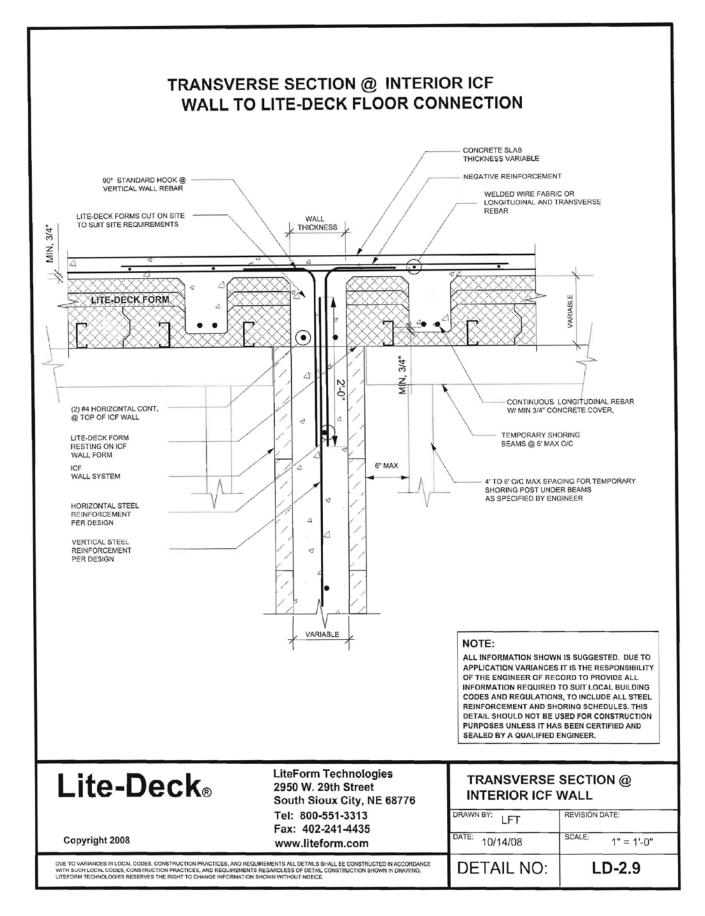


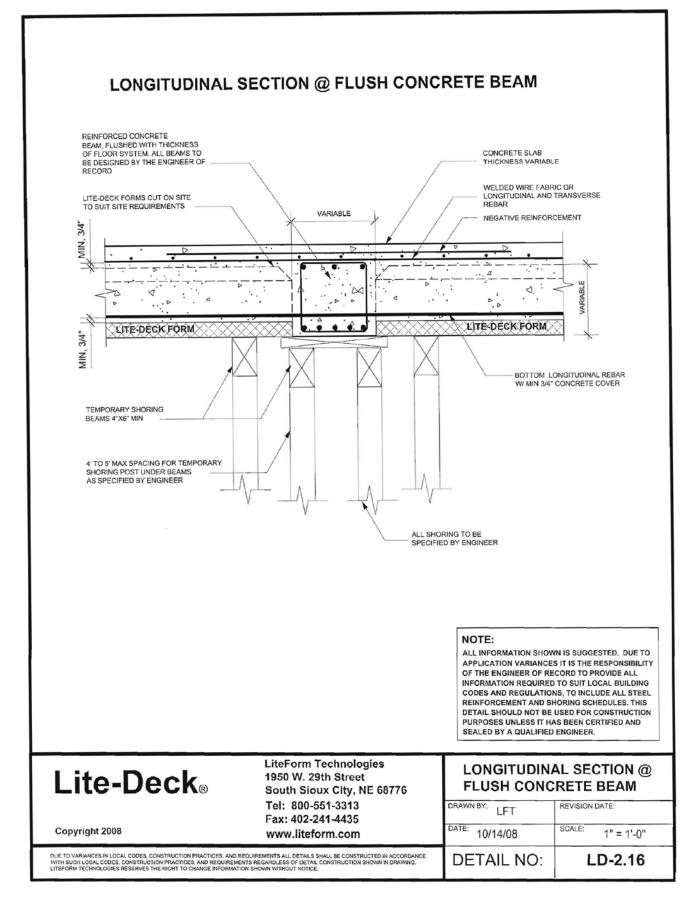


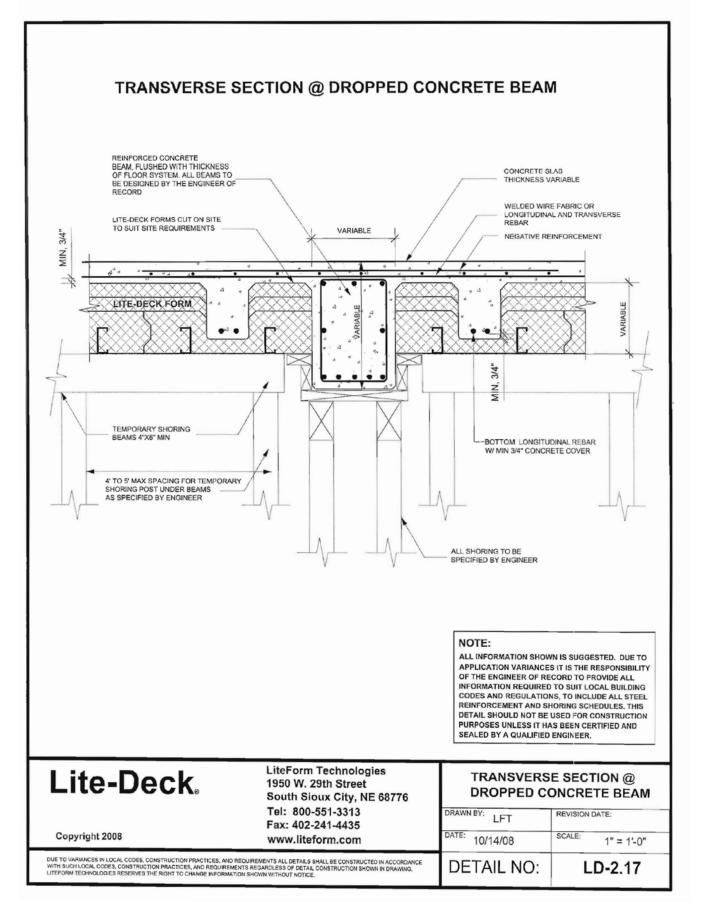


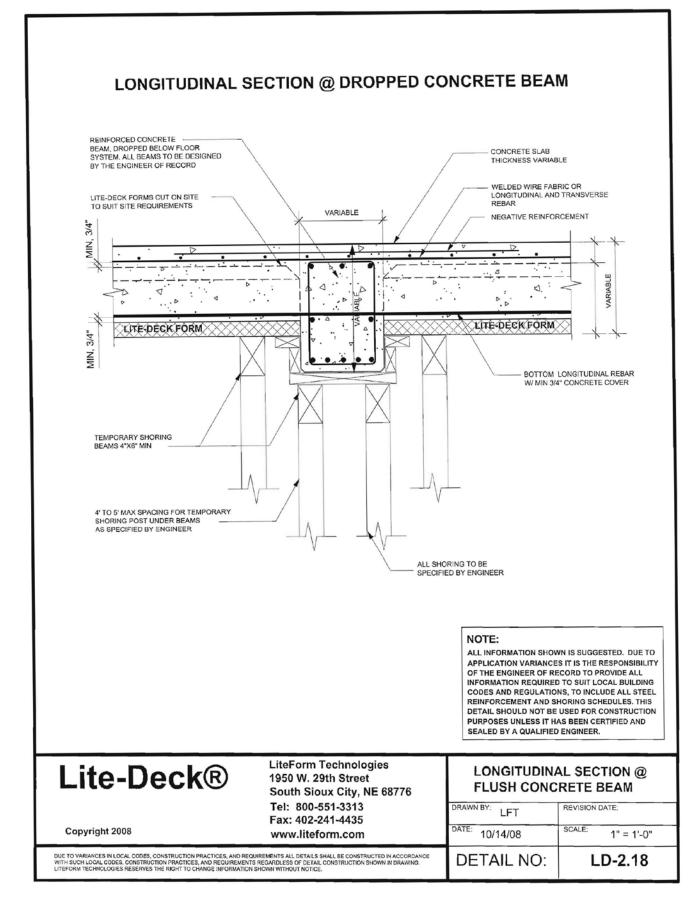


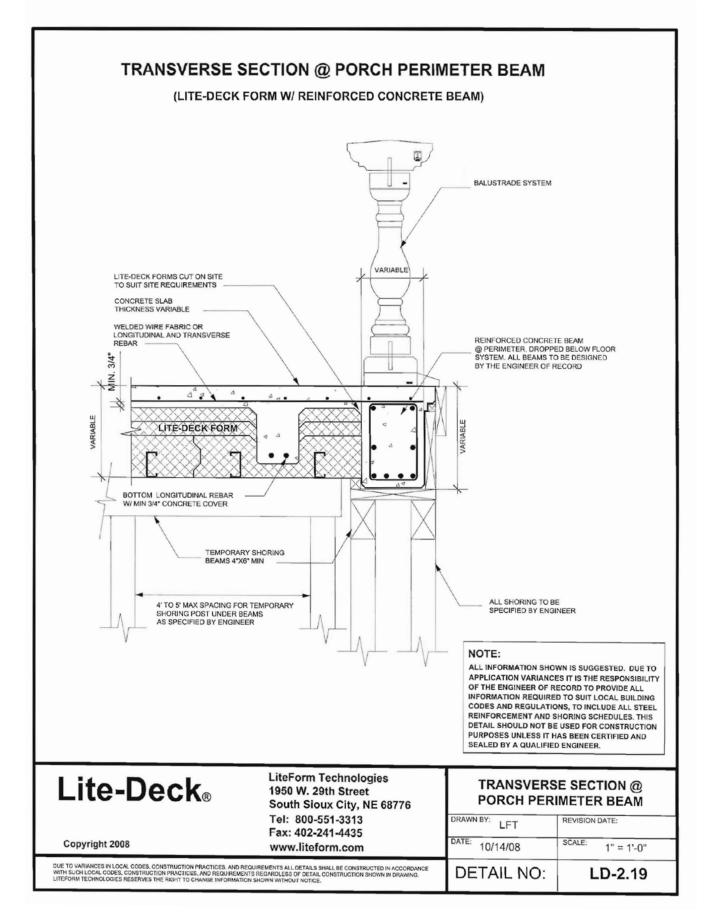






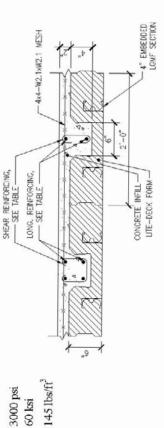






## Material Parameters Concrete Strength =

Reinforcement Strength = 60 ksi Normal Weight Concrete = 145 lbs/ff<sup>3</sup>



6" LITE-DECK FORM 2" CONCRETE SLAB

Tabulated spans between 8' and 17'

System 6+2

					Minir	num Reinf	orcing Stee	l Required	Minimum Reinforcing Steel Required For Given Span	Span		
	Superi	mposed	2' to 8'	91	10'	,11	12'	13'	14'	15'	16'	17'
Span	Live Load	Dead	Long.	Long.	Long.	Long.	Long.	Long.	Long.	Long.	Long.	Long.
Condition	(PSF)	Load	Reinf.	Reinf.	Reinf.	Reinf.	Reinf.	Reinf.	Reinf.	Reinf.	Reinf.	Reinf.
1 & 2 Span	40	10	1 - #4	1 - #4	1 - #4	1 - #5	1 - #5	1 - #6	1 - #6	2 - #5	2 - #5	2 - #6
3+ Span	40	10	1 - #4	1 - #4	1 - #4	1 - #4	1 - #5	1 - #5	1 - #5	1 - #6	1 - #6	2 - #5
1 & 2 Span	80	15	1 - #4	1 - #5	1 - #5	1 - #6	2 - #5	2 - #5	2 - #6	2		•
3+ Span	80	15	1 - #4	1 - #4	1 - #5	1 - #5	1 - #6	1 - #6	2 - #5	2 - #5	2 - #6	ł
1 & 2 Span	100	15	1 - #5	1 - #5	1 - #6	1 - #6	2 - #5	2 - #6	e	,		4
3+ Span	100	15	1 - #4	1 - #5	1 - #5	1 - #6	1 - #6	2 - #5	2 - #5	2 - #6	,	,

# Design Table Notes:

1. Design tables are for cost estimating purposes only. Final beam reinforcing to be designed by a licensed design professional in responsible charge.

For 1 span condition, longitudinal reinforcing steel only required in bottom of beam.
 For 2 and 3+ span conditions, longitudinal reinforcing required in both top and bottom of beam.

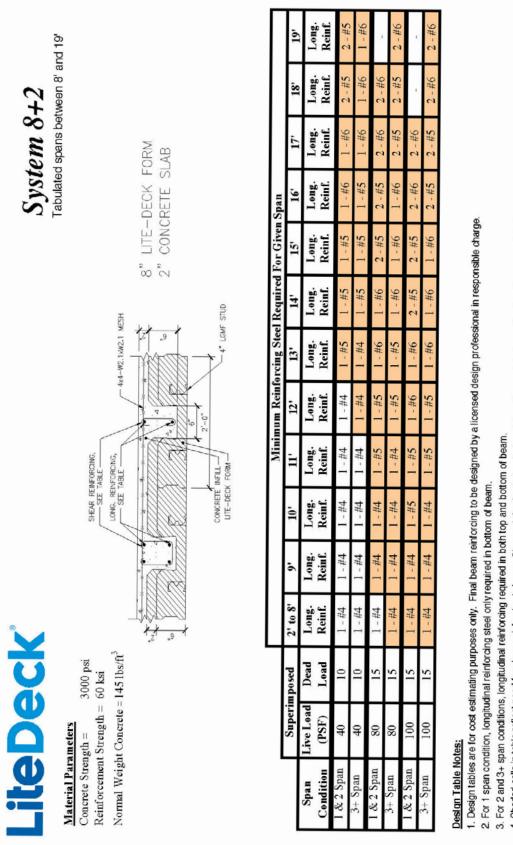
4. Shaded cells in table reflect need for shear reinforcing in beam. Shear reinforcing to be designed by a licensed design professional in responsible charge.

5. For 2 and 3+ span conditions, center long. reinforcing in bottom of beam at midspan and in top beam at support.

Provide 3/4" minimum concrete cover to all reinforcing steel for interior exposure. Refer to the latest ACI318 for minimum clearance for other exposures. ý.

7. Multiple span reinforcing is valid for same length spans only.

21'				Γ	21.	Long. Reinf.	2 - #6	1.1	ì	2 - #7	ē	5	]
A and		ORM			20'	Long. Reinf.	2 - #6	1	3	2 - #6	ę	2 - #7	
<b>6+</b> 4		LITE-DECK FORM CONCRETE SLAB			19'	Long. Reinf.	2 - #5	2 - #5	2 - #7	2 - #6	r	2 - #7	
System 6+4 Tabulated spans between <sup>81</sup> and 21		LITE-C CONCF		_	18'	Long. Reinf.	2 - #5	1 - #6	2 - #6	2 - #6	2 - #7	2 - #6	a. Sharge. sures.
Sys Tabulat		.0°4		Minimum Reinforcing Steel Required For Given Span	17'	Long. Reinf.	2 - #5	1 - #6	2 - #6	2 - #5	<i>L#-</i> 7	2 - #6	lible charg
	21 MESH	/ <sub>«⁺</sub> / <sub>"↑</sub>	4" LGMF STUD	ed For G	16'	Long. Reinf.	1 - #6	1 - #6	2 - #6	2 - #5	2 - #6	2 - #5	in respons iional in re- irance for c
	4×4W2.1×W2.1		**	I Require	15'	Long. Reinf.	1 - #6	1 - #5	2 - #5	1 - #6	2 - #6	2 - #5	ofessional gn profess iimum cles
	Ĺ		2'-0.	cing Stee	14'	Long. Reinf.	1 - #5	1 - #5	2 - #5	1 - #6	2 - #5	1 - #6	design pr ensed desi upport. 318 for min
	CING,		*	Reinfor	13'	Long. Reinf.	1 - #5	1 - #4	1 - #6	1 - #5	1 - #6	1 - #6	a licensed ed by a lice bearn at s latest ACK
	SHEAR REINFORCING, SEE TABLE LONG, REINFORCING, SEE TABLE		CONCRETE INFILL	Ainimum	12'	Long. Reinf.	1 - #5	1 - #4	1 - #6	1 - #5	1 - #6	1 - #5	signed by n of beam. be design and in top
	S D		00 =	V	11'	Long. Reinf.	1 - #4	1 - #4	1 - #5	1 - #5	1 - #5	1 - #5	ng to be de of beam. and bottom nforcing to trimidspan bosure. Re
					10'	Long. Reinf.	1 - #4	1 - #4	1 - #5	1 - #4	1 - #5	1 - #4	n reinforcti in bottom both top Shear reit of beam ∉ interior ext
	_	₩ ₩ ₩ ₩			9'	Long. Reinf.	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	Final bear ly required g in beam. J in bottom g steel for ns only.
¢					2' to 8'	Long. Reinf.	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	ses only. ig steel onl reinforcing reinforcing reinforcing reinforcing ength spar
Ť	3000 psi 60 ksi 145 Ibs/ft <sup>3</sup>				nposed	Dead Load	10	10	15	15	15	15	imating purpo linal reinforcin longitudinal I eed for shear center long. te cover to all lid for same I
De	meters gth = Strength = Concrete =				Superimposed	Live Load (PSF)	40	40	80	80	100	100	les: re for cost est dition, longitud dition, longitud an conditions table reflect n an conditions an conditions infording is va
LiteDeck	Material Parameters Concrete Strength = 3000 psi Reinforcement Strength = 60 ksi Normal Weight Concrete = 145 Ibs/ft <sup>3</sup>					Span Condition	1 & 2 Span	3+ Span	1 & 2 Span	3+ Span	1 & 2 Span	3+ Span	<ul> <li>Design Table Notes:</li> <li>1. Design tables are for cost estimating purposes only. Final beam reinforcing to be designed by a licensed design professional in responsible charge.</li> <li>2. For 1 span condition, longitudinal reinforcing steel only required in bottom of beam.</li> <li>3. For 2 and 3+ span conditions, longitudinal reinforcing required in bottom of beam.</li> <li>4. Shaded cells in table reflect need for shear reinforcing in beam. Shear reinforcing to be designed by a licensed design professional in responsible charge.</li> <li>5. For 2 and 3+ span conditions, center long. reinforcing in beam. Shear reinforcing to be designed by a licensed design professional in responsible charge.</li> <li>6. For 2 and 3+ span conditions, center long. reinforcing in bottom of beam at midspan and in top beam at support.</li> <li>6. Provide 34<sup>st</sup> minimum concrete cover to all reinforcing steel for interior exposure. Refer to the latest ACI318 for minimum clearance for other exposures.</li> <li>7. Multiple span reinforcing is valid for same length spans only.</li> </ul>
							Т	echr	nical	Desi	ign	Mar	nual © Copyright 2024 LiteForm Te



4. Shaded cells in table reflect need for shear reinforcing in beam. Shear reinforcing to be designed by a licensed design professional in responsible charge.

5. For 2 and 3+ span conditions, center long, reinforcing in bottom of beam at midspan and in top beam at support.

6. Provide 3/4" minimum concrete cover to all reinforcing steel for interior exposure. Refer to the latest ACB18 for minimum clearance for other exposures.

7. Multiple span reinforcing is valid for same length spans only.

č	22		Γ	23'	Long. Reinf.	9#-0	2 - #5	2 - #7	2 - #6	,	2 - #7	
4	I abulated spans between 8' and 23'			22'	Long. Reinf.	2 - #C	2 - #5	2 - #7	2 - #6	2 - #7	2 - #6	
System 8+4	s betwee	W B		21'	Long. Reinf.	2 #5	1 - #6	2 - #6	2 - #6	2 - #7	2 - #6	
tem	ed span	LITE-DECK FORM CONCRETE SLAB		20'	Long. Reinf.	2 - #5	1 - #6	2 - #6	2 - #5	2 - #7	2 - #6	
Sys		E-DEC NCRET	IJ	19'	Long. Reinf.	2 - #5	1 - #6	2 - #6	2 - #5	2 - #6	2 - #5	ej vi
		8" LIT 4" CO	Minimum Reinforcing Steel Required For Given Span	18'	Long. Reinf.	1 - #6	1 - #6	2 - #5	2 - #5	2 - #6	2 - #5	charge. sible char r exposure
	Ŧ		d For G	17'	Long. Reinf.	1 - #6	1 - #5	2 - #5	1 - #6	2 - #5	2 - #5	ponsible in respon
	4x4-W2.1xW2.1 MESH	+	Require	16'	Long. Reinf.	1 - #5	1 - #5	2 - #5	1 - #6	2 - #5	1 - #6	mal in res fessional clearance
	- 4x4-W2.1		Ig Steel	15'	Long. 1 Reinf. 1	1 - #5	1 - #5	1 - #6	5#-1	2 - #5	9# - 1	professic
		2'-0"	einforciı	14'	Long. 1 Reinf. 1	- #5	- #4	9# - 1	S# - 1	9# - 1	- #5	ed design licensed c Cl318 for
	SCING,		mum Ro	13'	Long. 1 Reinf. 1	- #4	- #4	- #5	- #5	9# -	- #5	y a licens n. po beam e e latest A
	SHEAR REINFORCING, — SEE TABLE — SEE TABLE — LONG. REINFORCING, — SEE TABLE —	CONCRETE INFILL-	Mini	-	Long. I Reinf. F	- #4	- #4	- #5 1	- #4 ]	- #5 1	- #5 1	esigned b m of bear of and in to teler to th
	SH				Long. I Reinf. R	- #4 ]	- #4 1	- #4 1	- #4 1	- #5 1	- #4 1	ig to be d of beam. and botto forcing to forcing to forcing to sosure. B oosure.
				-	Long. I Reinf. R	- #4 1	- #4 1	- #4 1	- #4 1	- #4 1	- #4 1	reinforcin In bottom both top Shear rein of beam a nterior exp
				-	Long. L Reinf. R	- #4 1	- #4 1	- #4 1	- #4 1	- #4 1	- #4 1	nal beam required in aquired in beam. ( beam. ( steel for ii steel for ii only.
0		1 <sub>2</sub> , "8 1		_	Long. L Reinf. R	- #4 1	- #4 1	- #4 1	- #4 1	- #4 1	- #4 1	s only. Fl steel only relation inforcing in inforcing it inforcing it spans
X	psi ss/ft <sup>3</sup>		Т	Т		) 1	1	5 1	5 1	1	5 1	j purpose Inforcing ( udinal reli r shear re r long. rel same len, same len,
ŏ	3000 psi = 60 ksi = 145 lbs/f			Î	d Dead Load	10	10	15	15	15	15	estimating tudinal re ons, longit ons, cente ons, cente crete covi valid for
ă	<u>meters</u> gth = : Strength = t Concrete			Super	Live Load (PSF)	40	40	80	80	100	100	ites: are for cost diffican, longi pan conditic pan conditic inimum con einforcing is
LiteDeck	<u>Material Parameters</u> Concrete Strength = 3000 psi Reinforcement Strength = 60 ksi Normal Weight Concrete = 145 lbs/ft <sup>3</sup>			1	Span Condition	1 & 2 Span	3+ Span	1 & 2 Span	3+ Span	1 & 2 Span	3+ Span	<ul> <li>Design Table Notes:</li> <li>1. Design tables are for cost estimating purposes only. Final beam reinforcing to be designed by a licensed design professional in responsible charge.</li> <li>2. For 1 span condition, longitudinal reinforcing steel only required in bottom of beam.</li> <li>3. For 2 and 3+ span conditions, longitudinal reinforcing required in bottom of beam.</li> <li>4. Shaded cells in table reflect need for shear reinforcing in beam. Shear reinforcing to be designed by a licensed design professional in responsible charge.</li> <li>5. For 2 and 3+ span conditions, center long, reinforcing in beam. Shear reinforcing to be designed by a licensed design professional in responsible charge.</li> <li>6. Provide 3/4" minimum concrete cover to all reinforcing steel for interior exposure. Refer to the latest ACI316 for minimum dearance for other exposures.</li> <li>7. Multiple span reinforcing is valid for same length spans only.</li> </ul>
							Tec	hnio	cal [	)esi	gn N	Aanual © Copyright 2024 LiteForm Technologies

-		Ĩ	21'	Tong	Reinf.	- #5	- #6	- #6	- #5	x	2 - #6	Í
System 10+2 Tabulated spans between 8' and 21'	×		100	1.		1 - #6 2	1 - #6 1	2 - #6 2	2 - #5 2	2 - #6	2 - #5 2	
System 10+2 Tabulated spans between 8'	10" LITE-DECK FORM 2" CONCRETE SLAB		101	+-	Reinf.	1 - #6	1 - #5	2 - #5	2 - #5	2 - #6	2 - #5	
<i>tem</i> ed spans	DUCRETE		18'	Long.	Reinf.	1 - #6	1 - #5	2 - #5	1 - #6	2 - #5	2 - #5	
Sys	10" LI 2" CC	e-bear rusa. Minimum Reinforcing Steel Required For Civen Snon	171	Long.	Reinf.	1 - #5	1 - #5	2 - #5	1 - #6	2 - #5	1 - #6	
	MESH F STUD	od For C	16'	Long.	Reinf.	1 - #5	1 - #5	1 - #6	1 - #6	2 - #5	1 - #6	
	4x4-W2.1xW2.1 MESH	l Romby	15'	Long.	Reinf.	1 - #5	1 - #4	1 - #6	1 - #5	1 - #6	1 - #6	
		cina Stee	14'	Long.	Reinf.	1 - #4	1 - #4	1 - #5	1 - #5	1 - #6	1 - #5	
3	2-0-6	Reinfor	13'	Long.	Reinf.	1 - #4	1 - #4	1 - #5	1 - #5	1 - #5	1 - #5	
SHEAR RENFORCING.	LONG. REINFORCING.	Minimum	12'	Long.	Reinf.	1 - #4	1 - #4	1 - #5	1 - #4	1 - #5	1 - #4	
SHEAN	CONCI		11	Long.	Reinf.	1 - #4	1 - #4	1 - #4	1 - #4	1 - #5	1 - #4	
			10'	Long.	Reinf.	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	
			.6	Long.	Reinf.	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	
Ø	1 <sub>_</sub> ⊅ 1 <sub>29</sub> 3		2' to 8'	Long.	Reinf.	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	
	60 ksi 145 lbs/ft <sup>3</sup>		posed	Dead	Load	10	10	15	15	15	15	
	tt Concrete =		SuperImposed	Live Load	(PSF)	40	40	80	80	100	100	tes:
<b>Material Parameters</b> 2000 psi	Reinforcement Strength = 60 ksi Normal Weight Concrete = 145 lbs/ft <sup>3</sup>			Span	Condition	1 & 2 Span	3+ Span	1 & 2 Span	3+ Span	1 & 2 Span	3+ Span	Design Table Notes:
								_		_		4

Design tables are for cost estimating purposes only. Final beam reinforcing to be designed by a licensed design professional in responsible charge. 2. For 1 span condition, longitudinal reinforcing steel only required in bottom of beam.

3. For 2 and 3+ span conditions, longitudinal reinforcing required in both top and bottom of beam.

4. Shaded cells in table reflect need for shear reinforcing in beam. Shear reinforcing to be designed by a licensed design professional in responsible charge.

5. For 2 and 3+ span conditions, center long. reinforcing in bottom of beam at midspan and in top beam at support.

6. Provide 3/4" minimum concrete cover to all reinforcing steel for interior exposure. Refer to the latest ACI318 for minimum clearance for other exposures. 7. Multiple span reinforcing is valid for same length spans only.

0RM (B 23' 24' Long. Long. Long. Long. Long. Long. 2-#5 2-#5 1-#6 2-#6 2-#7 2-#6 2-#6 2-#6	<u>Material Parameters</u> Concrete Strength = 3000 psi Reinforcement Strength = 60 ksi Normal Weight Concrete = 145 lbs/ft <sup>3</sup>												abulat			leen 9'	and 25	-
Nimination Reinforcing Steal Required For Given Span           Superimposed         2'to 9'         10'         13'         14'         15'			+ <del>- + +</del> +			SHEAR RI SEE LLONG. PE CONCRETE UTE-DECI	PIBLE	22-0		22 13W2.1		10	CONC	CRETE	slae	W W		
Superimposed $2'$ ( $09'$ $10'$ $11'$ $12'$ $13'$ $14'$ $15'$ $15'$ $13'$ $21'$ $21'$ $21'$ $23'$ $24'$ Live Load         Dead         Long.         Long. <th></th> <th></th> <th></th> <th></th> <th></th> <th>M</th> <th>inimum</th> <th>Reinfor</th> <th>cing Ste</th> <th>el Requ</th> <th>nired Fc</th> <th>or Give</th> <th>n Span</th> <th></th> <th></th> <th>l</th> <th>l</th> <th></th>						M	inimum	Reinfor	cing Ste	el Requ	nired Fc	or Give	n Span			l	l	
Live Load         Long,	mposed	2' to 9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'	25'
40       10       1 - #4       1 - #6       1 - #6       2 - #5       2 - #5       2 - #5       2 - #6 <t< td=""><td>Live Load Dead (PSF) Load</td><td></td><td></td><td></td><td>10.00</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Long. Reinf.</td></t<>	Live Load Dead (PSF) Load				10.00													Long. Reinf.
40       10 $1 - \#4$ $1 - \#6$ $1 - \#6$ $2 - \#5$ $2 - \#5$ $2 - \#6$ </td <td>40</td> <td>1 - #4</td> <td>1 - #5</td> <td>1 - #5</td> <td>- #5 1</td> <td>- #6 ]</td> <td>9# -</td> <td></td> <td>2 - #5</td> <td></td> <td></td> <td></td> <td>2 - #6</td>	40	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	1 - #5	1 - #5	- #5 1	- #6 ]	9# -		2 - #5				2 - #6
80       15       1-#4       1-#4       1-#4       1-#4       1-#4       1-#4       1-#4       1-#4       1-#4       1-#4       1-#4       1-#5       1-#5       1-#6       1-#6       1-#6       2-#5       2-#5       2-#6 <th< td=""><td>40</td><td>1 - #4</td><td>1 - #4</td><td>1 - #4</td><td>1 - #4</td><td>1 - #4</td><td>1 - #4</td><td>1 - #4</td><td> #5 1</td><td>- #5 1</td><td>- #5 1</td><td>- #5</td><td>9# - 1</td><td>9# - 1</td><td>1 - #6</td><td>1 - #6</td><td>2 - #5</td><td>2 - #5</td></th<>	40	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	#5 1	- #5 1	- #5 1	- #5	9# - 1	9# - 1	1 - #6	1 - #6	2 - #5	2 - #5
80       15       1-#4       1-#4       1-#4       1-#4       1-#4       1-#5       1-#5       1-#6       1-#6       1-#6       2-#5       2-#5       2-#5       2-#6       2         100       15       1-#4       1-#4       1-#5       1-#5       1-#6       1-#6       2-#5       2-#5       2-#6       2-#6       2       2       7       2         100       15       1-#4       1-#4       1-#4       1-#4       1-#5       1-#5       1-#6       1-#6       2-#5       2-#5       2-#6       2-#6       2       46       2       2       47       2       2       46       2       2       46       2       47       2       46       2       47       2       2       46       2       46       2       46       2       46       2       47       2       47       2       46       2       47		1 - #4	1 - #4	1 - #4	1 - #4	1 - #5	1 - #5	1 - #6	- #6 1	- #6 2	- #5 2	- #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
100     15     1 - #4     1 - #4     1 - #5     1 - #5     1 - #6     1 - #6     2 - #5     2 - #5     2 - #6     2 - #6     2 - #7     2       100     15     1 - #4     1 - #4     1 - #4     1 - #5     1 - #5     1 - #6     1 - #6     2 - #5     2 - #5     2 - #5     2 - #6	-	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	1 - #5	1 - #5	- #5 1	- #6 1	- #6 ]	9# -	2 - #5	_	- #5	2 - #6	2 - #6	2 - #6
100 15 1 - #4 1 - #4 1 - #4 1 - #4 1 - #5 1 - #5 1 - #5 1 - #6 1 - #6 2 - #5 2 - #5 2 - #5 2 - #6 2 - #6 2	100	1 - #4	1 - #4	1 - #4	1 - #5	1 - #5	1 - #6	1 - #6 1	- #6 2	- #5 2	1.1	- #5	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	
		1 - #4	1 - #4	1 - #4	1 - #4	1 - #5	1 - #5	1 - #5 1	- #6 1	- #6 1	- #6 2	- #5	2 - #5	2 #5	2 - #6 2	2 - #6	2 - #6	2 - #7
	<ol> <li>Uesign tables are for cost estimating purpox</li> <li>For 1 shan condition longitudend reinforcion</li> </ol>	ses only.	Final bea	um reinfo	raing to b	e design	ed by a li	censed d	esign prof	essional	in respo	nsible ch	arge.					
<ol> <li>Design tables are for cost estimating purposes only. Final beam reinforcing to be designed by a licensed design professional in responsible charge.</li> <li>For 1 span condition formit deal reinforction duel not consistent in house of house.</li> </ol>	2.1 WI Spain contained, folge united relation cangicatered only required in portiom of peam.	ה אממו חוו	Ainhai Ai		M OI DES	Ē												

rcing required in both top and bottom of beam. 3. For 2 and 3+ span conditions, longitudinal reinfor

4. Shaded cells in table reflect need for shear reinforcing in beam. Shear reinforcing to be designed by a licensed design professional in responsible charge. 5. For 2 and 3+ span conditions, center long. reinforcing in bottom of beam at midspan and in top beam at support.

Provide 3/4" minimum concrete cover to all reinforcing steel for interior exposure. Refer to the latest ACI318 for minimum clearance for other exposures.
 Multiple span reinforcing is valid for same length spans only.

1 26'		Г	26'	Long. Reinf.	- #6	- #5	,	2 - #6	,	2 - #6	1
System 12+2 Tabulated spans between 10' and 26'			25'	Long. L Reinf. R	-#5 2	2 - #5 2	x	9# -	Ņ	9# -	
System 12+2 Tabulated spans between 10			24'	Long. I Reinf. F	2 - #5 2	- #6 2	2 - #6	2-#6 2	ş	2-#6 2	
t <i>em</i> d spans			23'	Long. I Reinf. H	2 - #5 2	- #6 ]	2 - #6 2	2 - #5 2	2 - #6	2 - #6 2	
Sys	×.		22'	Long. 1 Reinf. 1	1 - #6	1 - #6	2 - #6	2 - #5	2 - #6	2 - #5	
	CK FOR	Span	21'	Long. Reinf.	] - #6	1 - #5	2 - #5	2 - #5	2 - #6	2 - #5	eg
	12" LITE-DECK FORM 2" CONCRETE SLAB	or Given	20'	Long. Reinf.	1 - #6	1 - #5	2 - #5	1 - #6	2 - #5	2 - #5	: charge. nsible cha
	2° COh	uired F	19'	Long. Reinf.	1 - #6	1 - #5	2 - #5	1 - #6	2 - #5	1 - #6	sponsible al in respo
	9	steel Rec	18'	Long. Reinf.	1 - #5	1 - #5	1 - #6	1 - #6	2 - #5	1 - #6	sional in re rofessiona m clearan
	44-M2.1AM2.1 MEH	forcing 5	17'	Long. Reinf.	1 - #5	1 - #4	1 - #6	1 - #6	1 - #6	1 - #6	gn profes: a design p at. or mhimu
	Ell-Pop	Minimum Reinforcing Steel Required For Given Span	16'	Long. Reinf.	1 - #5	1 - #4	1 - #6	1 - #5	1 - #6	1 - #5	a license desi a license at supp
		Minim	15'	Long. Reinf.	1 - #4	1 - #4	1 - #5	1 - #5	1 - #6	1 - #5	d by a licc eam. ssigned by n top bear o the lates
	SHEAR REVERTIONICS		14'	Long. Reinf.	1 - #4	1 - #4	1 - #5	1 - #5	1 - #5	1 - #5	e designe am. ottom of b ig to be de span and i Refer tt
	SFEAR RELAYERS SEE MARCE- LONG, SEE MARCE- SEE TABLE - SEE TABLE - UITE-DECK FORM.		13'	Long. Reinf.	1 - #4	1 - #4	1 - #5	1 - #4	1 - #5	1 - #4	orcing to t tom of bee top and b reinforcir m at mide f exposure
			12,	Long. Reinf.	1 - #4	1 - #4	1 - #4	1 - #4	1 - #5	1 - #4	earm reinf read in both ad in both arm. Shear torm of beer for interio
			11	Long. Reinf.	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	<ol> <li>Final b only require ing require cing in bet cing in bott cing steel</li> </ol>
2	+ <u>.</u> , + <u>.</u> , +	Ц	2' to 8'	Long. Reinf.	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	poses onl cing steel ar reinforc ar reinforc ar reinforc all reinforc e length s
<b>N</b>	3000 psi 60 ksi 145 lbs/ft <sup>3</sup>		posed	Dead	10	10	15	15	15	15	mating pur Inal reinfor Iongitudin eed for she center Ion e cover to e cover to iid for sam
	gth = 3 Strength = 6 Concrete = 1		Superimposed	Live Load (PSF)	40	40	80	80	100	100	tes: re for cost esti dition, longitudi aan conditions, table reflect n aan conditions, inimum concret ainforcing is va
LiteDeck Material Parameters	Concrete Strength = 3000 psi Reinforcement Strength = 60 ksi Normal Weight Concrete = 145 lbs/ft <sup>3</sup>	-		Span Condition	l & 2 Span	3+ Span	1 & 2 Span	3+ Span	1 & 2 Span	3+ Span	<ol> <li>Design Table Notes.</li> <li>1. Design tables are for cost estimating purposes only. Final beam reinforcing to be designed by a licensed design professional in responsible charge.</li> <li>2. For 1 span condition, longitudinal reinforcing steel only required in bottom of beam.</li> <li>3. For 2 and 3+ span conditions, longitudinal reinforcing required in bottom of beam.</li> <li>4. Shaded cells in table reflect need for shear reinforcing in beam. Shear reinforcing to be designed by a licensed design professional in responsible charge.</li> <li>5. For 2 and 3+ span conditions, center long. reinforcing in beam. Shear reinforcing to be designed by a licensed design professional in responsible charge.</li> <li>6. Provide 304* minimum concrete cover to all reinforcing to beam at midspan and in top beam at support.</li> <li>7. Multiple span reinforcing is valid for same length spans only.</li> </ol>
										_	
Technical Design N	Nanual © Copyright 2024 LiteForm Techr	nolog	gies								

nd 30'	Γ	30'	Long. Reinf.	2 - #6	2 - #6		2 - #7		2-#7	
System 12+4 Tabulated spans between 11' and 30'		29'	Long. Reinf.	2 - #6	2 - #6	2 - #7	2 - #7	,	2 - #7	
is between the performance of th		28'	Long. Reinf.	2 - #6	2 - #5	2 - #7	2 - #6	X	2 - #7	
System 12+4 Tabulated spans between 1		27'	Long. Reinf.	2 - #6	2 - #5	2 - #7	2 - #6	2 - #7	2 - #6	
		26'	Long. Reinf.	2 - #6	2 - #5	2 - #7	2 - #6	2 - #7	2 - #6	
		25'	Long. Reinf.	2 - #5	2 - #5	2 - #6	2 - #6	2 - #7	2 - #6	
FORM	=	24'	Long. Reinf.	2 - #5	1 - #6	2 - #6	2 - #5	2 - #6	2 - #6	
DECK   ETE SL	ven Spa	23'	Long. Reinf.	2 - #5	1 - #6	2 - #6	2 - #5	2 - #6	2 - #5	
ULITE-C	d For Gi	22'	Long. Reinf.	1 - #6	1 - #6	2 - #5	2 - #5	2 - #6	2 - #5	
12" LITE-DECK FORM 4" CONCRETE SLAB	Require	21'	Long. Reinf.	1 - #6	1 - #5	2 - #5	1 - #6	2 - #6	2 - #5	aures.
9	Minimum Reinforcing Steel Required For Given Span	20'	Long. Reinf.	1 - #6	1 - #5	2 - #5	1 - #6	2 - #5	1 - #6	ole charge ponsible d ther expo
4x4-W2.1MP2.1 MESH	einforcin	_	Long. Reinf.	1 - #6	1 - #5	2 - #5	1 - #6	2 - #5	1 - #6	rresponsi and in res
	imum Ro	_	Long. Reinf.	1 - #5	1 - #5	1 - #6	1 - #6	2 - #5	1 - #6	essional ir n profession mum clear
27	Mini		Long. Reinf.	1 - #5	1 - #4	1 - #6	1 - #5	1 - #6	1 - #6	esign prof sed design port. 8 for minin
SHEJAR REINFORCIMG, SEE THELLE SEE THELLE SEE THELLE SEE THELLE CONCRETE INFLLL		16'	Long. Reinf.	1 - #5	1 - #4	1 - #5	1 - #5	1 - #6	1 - #5	icensed d by a licen: am at sup est ACI31
SHEAR R SEE SEE SEE SEE CONCRET		_	Long. Reinf.	1 - #4	1 - #4	1 - #5	1 - #5	1 - #5	1 - #5	ned by a l beam. d in top be r to the lat
		_	Long. Reinf.	1 - #4	1 - #4	- #5	1 - #4	1 - #5	- #5	o be desig earn. Ling to ch do Ling to ch d depan an Line. Refe Line.
			Long. Reinf.	1 - #4	- #4	1 - #5	1 - #4	1 - #5	- #4	Inforcing to outom of b and and and the top and earn at m ior exposi
e t .o t .o t		_	Long. 1 Reinf. 1	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	1 - #4	al beam re quired in b arred in b beam. Sh ottom of t alfy.
×			Long. 1 Reinf. H	- #4	- #4	- #4	- #4	- #4 ]	- #4 1	only. Fine eel only reter forcting in b forcting ste forcting ste 1 spans on
stin <sup>3</sup>	Ч	T,	_	-	-	1	-	1	1	purposes forcing ste forcing terind shear reind tong, reind ane lengt
3000 psi = 145 lbs/f		ÊL	d Dead Load	10	10	15	15	15	15	stimating udinal reini need for i s, center i ralid for si ralid for si
Material Parameters Concrete Strength = 3000 psi Reinforcement Strength = 60 ksi Normal Weight Concrete = 145 lbs/ft <sup>3</sup>		Super	LIVE LOAD (PSF)	40	40	80	80	100	100	<ul> <li>Design Table Notes:</li> <li>1. Design tables are for cost estimating purposes only. Final beam reinforcing to be designed by a licensed design professional in responsible charge.</li> <li>1. For 1 span condition. Iongludinal reinforcing steel only required in bottom of beam.</li> <li>2. For 2 and 3+ span conditions. Iongludinal reinforcing in beam. Shear reinforcing to be designed by a licensed design professional in responsible charge.</li> <li>4. Shaded cells in table reflect need for shear reinforcing in beam. Shear reinforcing to be designed by a licensed design professional in responsible charge.</li> <li>5. For 2 and 3+ span conditions. Center long. reinforcing in beam. Shear reinforcing to be designed by a licensed design professional in responsible charge.</li> <li>5. For 2 and 3+ span conditions, center long. reinforcing in beam. Shear reinforcing to be designed by a licensed design professional in responsible charge.</li> <li>6. Provide 34* minimum concrete cover to all reinforcing steel for interior exposure. Refer to the latest ACI318 for minimum clearance for other exposures.</li> <li>7. Multiple span reinforcing is valid for same length spans only.</li> </ul>
Material Parameters Concrete Strength = Reinforcement Strength = Normal Weight Concre		T	Span Condition	l & 2 Span	3+ Span	& 2 Span	3+ Span	& 2 Span	3+ Span	Design T able Notes: 1. Design tables are fi 2. For 1 span condition 3. For 2 and 3+ span i 4. Shaded cells in tabl 5. For 2 and 3+ span i 7. Multiple span reinfo
Mate Conci Retinf		č	Con	1 &	3+	1 &	ъ.	1 &	ъ.	Design 1. Design 2. For 5. For 5. For 7. Multi 7. Multi