

**EXAMPLE PRESTRESSING STRAND ELONGATION CALC. AND TENSIONING**  
(NOT TO BE USED FOR CONSTRUCTION)

SIZE & GRADE: 3/8" φ x 270 KSI  
 AREA: 0.085 IN<sup>2</sup>  
 TENSION: 17,200 LBS. EACH STRAND  
 GRIP TO GRIP: 120'-6" = 120.5'  
 E<sub>s</sub> = 28,600,000 PSI (ASSUMED FOR THESE CALCULATIONS; VALUE TO BE OBTAINED FOR STRAND SPOOL ACTUALLY USED)

EXAMPLE:  $\Delta = \frac{P_L}{AE} = \frac{(17,200 \times 3,000) \times 120.5 \times 12}{0.085 \times 28,600,000} = 8.45'$

THEREFORE: TOLERANCES: ± 5%  
 Δ UPPER LIMIT = 1.05 x 8.45' = 8.87' = 8 7/8"  
 Δ LOWER LIMIT = 0.95 x 8.45' = 8.03' = 8'

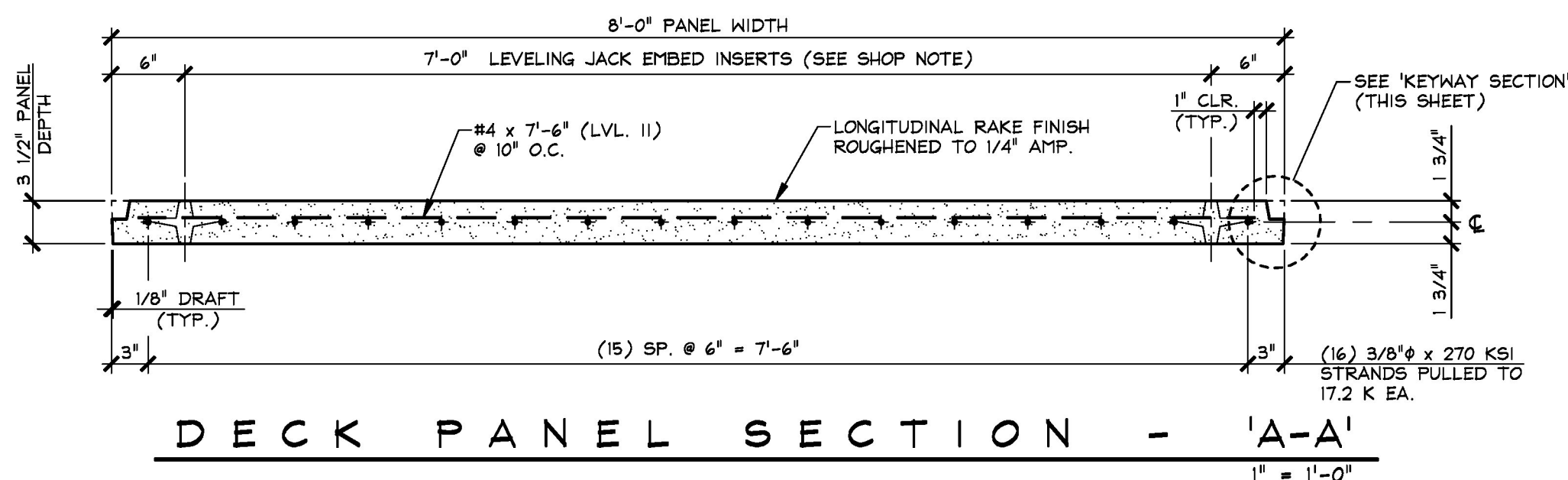
EXTRA FORCE REQUIRED TO COMPENSATE FOR 1/2" CHUCK SLIPPAGE:  
 Δ P =  $\frac{0.5 \times 14,200}{8.45} = 840$  LBS.

TOTAL TENSIONING FORCE = 17,200 + 840 = 18,040 LBS.

**STRAND TENSIONING PROCEDURE:**

- PULL EACH STRAND INITIALLY TO 3,000 LBS. AND MARK STRAND.
- THEN PULL EACH STRAND TO A TOTAL TENSION OF 18,040 LBS. AND MEASURE ELONGATION AFTER SEATING. IT MUST BE BETWEEN 8' AND 8 7/8'.

NOTE: FORCES READ ON STRESSING JACK GAUGES MUST BE MADE TO CORRESPOND TO ABOVE VALUES BASED ON CALIBRATION DATA FOR SPECIFIC JACK USED.



**DETENSIONING SCHEDULE**  
N.T.S.

1	3	5	7	9	11	13	15	16	14	12	10	8	6	4	2
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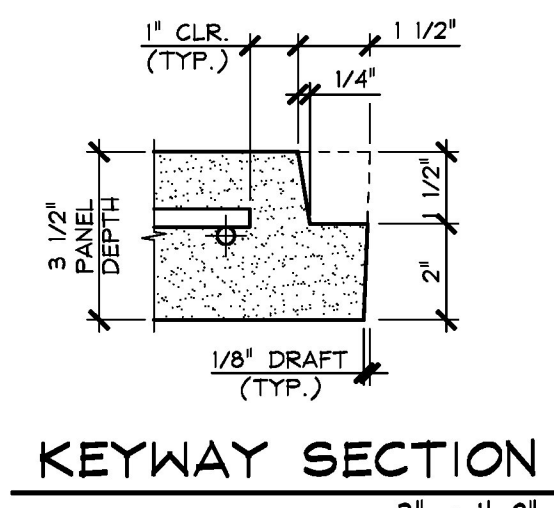
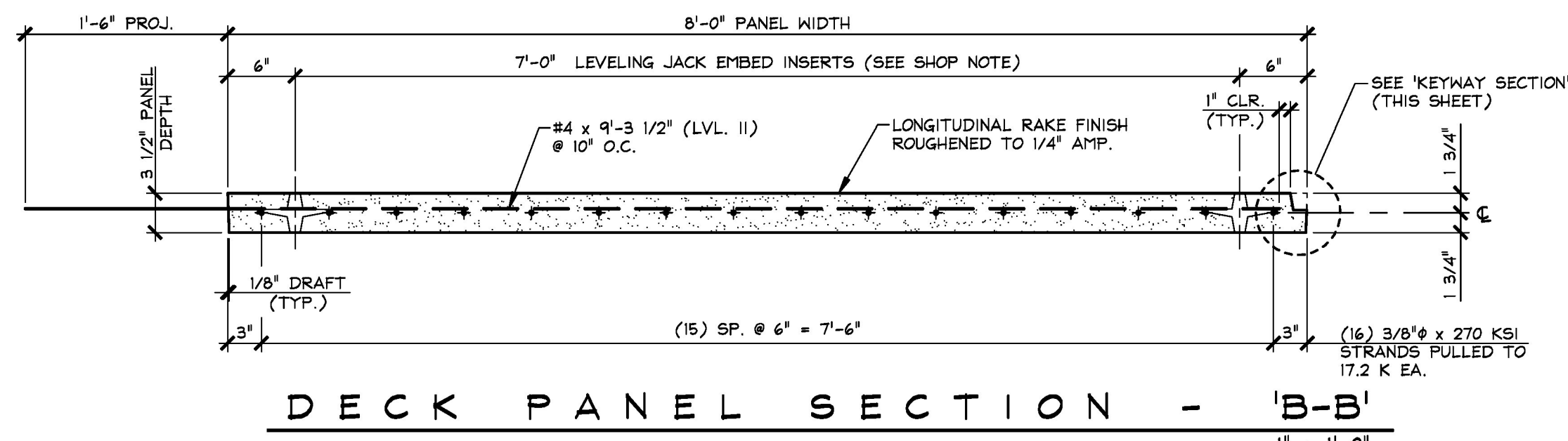
**T.Y. LIN INTERNATIONAL**  
THE STAMPED DOCUMENTS ARE HEREBY:

X - APPROVED  
 — APPROVED AS NOTED  
 — REVISE AND RESUBMIT

SEE TRANSMITTAL FOR ADDITIONAL INFORMATION AS APPLICABLE.

THIS REVIEW IS FOR GENERAL CONFORMANCE WITH DESIGN CONCEPT ONLY. ANY DEVIATION FROM THE PLANS OR SPECIFICATIONS NOT CLEARLY NOTED BY THE CONTRACTOR HAS NOT BEEN REVIEWED. REVIEW BY THE ENGINEER SHALL NOT RELIEVE THE CONTRACTOR OF THE CONTRACTUAL RESPONSIBILITY FOR ANY ERRORS OR DEVIATION FROM THE CONTRACT REQUIREMENTS.

JOSH OLUND 02/29/2016  
 REVIEWER DATE

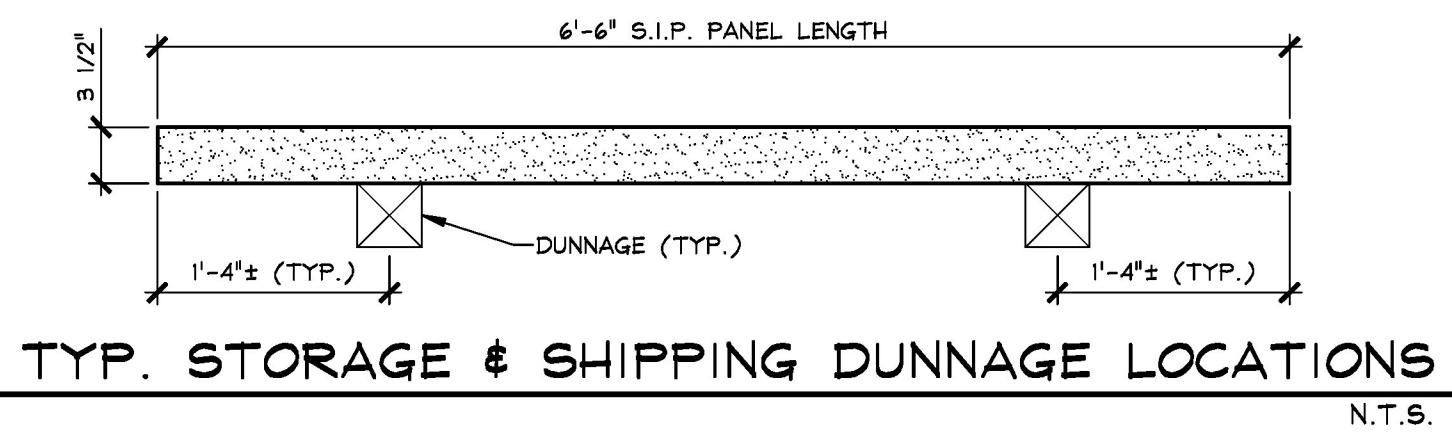


**SHOP NOTE:**  
INSTALL LEVELING JACK INSERTS FLUSH TO FORM AT ENDS OF PANELS ON FIRST TWO (2) STRANDS AT EA. SIDE OF PANEL.

MARK: MD-SPI	QTY.: 8	WT.: 1.12 T	VOL.: 0.56 cy
MARK: MD-SP2	QTY.: 72	WT.: 1.12 T	VOL.: 0.55 cy
MARK:	QTY.:	WT.:	VOL.:

**MATERIAL LIST / PANEL**

ITEM	DESCRIPTION	QTY./PANEL	
		MD-SPI	MD-SP2
1	#4 x 7'-6" (LEVEL II, DUAL COATED)		8
2	#4 x 9'-3 1/2" (LEVEL II, DUAL COATED)	8	
3			
4			
5			
6			
7			
8	1T x 2 5/8" SWIFT LIFT LIFTER (GALV.)	4	4
9	LEVELING JACK EMBED INSERTS	4	4
10			



Vermont Agency of Transportation  
**RECEIVED**  
 ON: February 25, 2016  
 and Checked for  
**CONFORMANCE**  
 BY: Rob Young DATE: 03/08/2016

X Reviewed for Conformance  
 — Rejected

This review is only for general conformance with the design concept and the information given in the Construction Documents. Corrections or comments made on the working drawings during the review do not relieve the Contractor from compliance with the requirements of the Plans and Specifications. Review of a specific item shall not include review of an assembly of which an item is a component. The Contractor is responsible for dimensions to be confirmed and corrected at the job site; information that pertains solely to the fabrication process or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of other trades and performing all Work in a safe and satisfactory manner.

McFarland Johnson, Inc. Date: 3/8/16  
 53 Regional Drive  
 Concord, NH 03301  
 (603) 225-2978  
 By: D. Kull

APPROVAL STAMP:

**J.P. CARRARA & SONS INC.** A.L. ST. ONGE CONTRACTOR, INC.  
 Precast & Prestress Manufacturer CONTRACTOR  
 284 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010 MORRISVILLE, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION DATE: JAN. 12, 2016  
 COUNTY OF WINDSOR SCALE: NOTED

TOWN OF WAITSFIELD  
 VT ROUTE 100 (MINOR ARTERIAL)  
 BRIDGE NO.: 177 PROJECT NO.: BF 013-4(39)  
 CHKD: A.S. DFTM: B.L.  
 JOB NO: 23480-016

PRESTRESSED STAY-IN-PLACE FORM PANEL DETAILS DWG. NO: P1