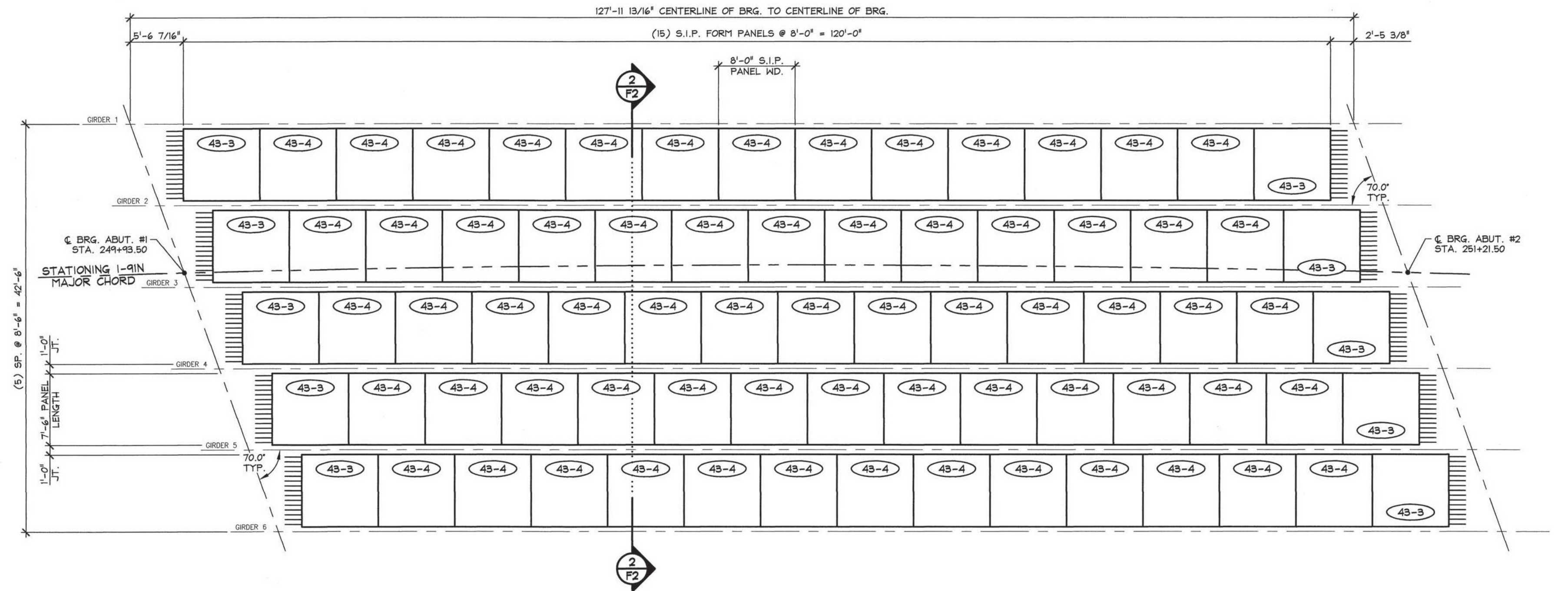


1 PRESTRESSED STAY-IN-PLACE FORM PANEL LAYOUT (BRIDGE 43S)  
1/8" = 1'-0"



2 PRESTRESSED STAY-IN-PLACE FORM PANEL LAYOUT (BRIDGE 43N)  
1/8" = 1'-0"

ASTM A 955 (See 2011 General Special Provisions Section 713.01(f) for allowable UNS Designations)

**GENERAL NOTES**

- MIN. CONCRETE STRENGTH AT 28 DAYS SHALL BE 5,000 PSI.
- MIN. CONCRETE STRENGTH AT STRESS TRANSFER SHALL BE 4,000 PSI.
- REINFORCING STEEL SHALL BE GR-60 (ASTM A-616 (AASHTO-M31)), AND SHALL BE STAINLESS STEEL.
- PRESTRESSING STRANDS SHALL CONFORM TO ASTM A-416 (AASHTO M209M), AND SHALL CONSIST OF 3/8" x 270 KSI 7 WIRE LOW RELAXATION STRANDS.
- PRESTRESSING STRANDS SHALL EACH BE PULLED TO HAVE A NET TENSION OF 17.2 K (U.N.O.) AFTER ACCOUNTING FOR CHUCK SLIPPAGE. TENSION SHALL BE VERIFIED BY MEASURING STRAND ELONGATION (SEE EXAMPLE ELONGATION CALCULATION AND TENSIONING PROCEDURE, THIS SHEET).
- ENDS OF PRESTRESSING STRANDS SHALL PROJECT 6" MIN. FROM EACH END OF PANEL.
- THE TOPS OF THE PANELS SHALL BE BROOMED TO A SURFACE ROUGHNESS OF 1/16" (U.N.O.) (BROOM DIRECTION PARALLEL TO STRANDS).
- PANELS SHALL BE HANDLED AND ERECTED USING THE LIFTING INSERTS ONLY. THE MINIMUM SLING ANGLE FROM THE HORIZONTAL SHALL BE 60°. PANELS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS WITHIN 2'-0" OF THE PANEL ENDS, UNLESS APPROVED BY J.P. CARRARA & SONS, INC.
- DESIGN MIX: J.P.C. BRIDGE MIX #425M (NO DCI)
- QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS, CONTRACT DOCUMENTS & SPECIFICATIONS. J.P. CARRARA & SONS, INC. IS A PCI CERTIFIED PLANT.
- THE ENGINEER WILL BE NOTIFIED AT LEAST 14 DAYS PRIOR TO THE SCHEDULED START OF CASTING AND AT LEAST 2 DAYS BEFORE THE ACTUAL WORK BEGINS.
- CURING METHOD: AS SOON AS THE TOP OF THE PANEL IS FINISHED A COVER OF POLY AND A LAYER OF HOPSOTE, (OR BLUEBOARD) WILL BE PLACED OVER THE PANEL IN A MANNER THAT WILL NOT DISTURB THE BROOM FINISH. THE DESIRED CURING TEMPERATURE RANGE SHALL NOT DROP BELOW 70°. THE TEMPERATURE SHALL BE RECORDED BY AUTOMATIC SENSOR INSTRUMENTS ON GRAPH CHARTS SPACED NOT MORE THAN 50 FEET APART & WILL CONTINUE UNTIL RELEASE STRENGTH IS ACHIEVED (NATURAL CURE WITH NO EXTERNAL HEAT APPLIED). EACH CHART SHALL BE MARKED AND GIVEN TO THE INSPECTOR (IF APPLICABLE).
- THE DRILLING OF HOLES OR USE OF POWER ACTUATED TOOLS ON PANELS SHALL NOT BE PERMITTED.
- THE PANELS SHALL BE ORIENTED AND ERECTED WITH THE MARK-END AS SHOWN ON PLANS.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR FORMING THE END OF THE DECK SLAB PRIOR TO CASTING DECK.

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

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

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

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

EXTRA FORCE REQUIRED TO COMPENSATE FOR 1/2" CHUCK SLIPPAGE:  
 $\Delta P = \frac{0.5 \times 17,200}{8.45} = 840$  LBS.

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

18,040 LBS

**STRAND TENSIONING PROCEDURE:**

- PULL EACH STRAND INITIALLY TO 3,000 LBS. & MARK STRAND.
  - THEN PULL EACH STRAND TO A TOTAL TENSION OF 18,040 LBS. & 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.

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APPROVAL STAMP:  
 Vermont Agency of Transportation  
**RECEIVED**  
 CK'D BY RK OK'D BY WL  
 January 23, 2015  
 RESUBMIT NO Approved AsNoted  
 BY KH DATE 2-18-2015

J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer 264 CASE ST., MIDDLEBURY, VERMONT 05753 Phone:(802)368-6361 Fax:(802)368-9010		PCL CONSTRUCTION CONTRACTOR TAMPA, FLORIDA	
STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF WINDSOR		DATE: JAN. 20, 2015	SCALE: NOTED
TOWN OF HARTFORD INTERSTATE 91 EXIT 11 BRIDGE NO.: 43 N/S PROJECT NO.: IM 091-2(79)		CHKD: - DFTM: B.L.	JOB NO: 23455-015
SUPERSTRUCTURE PLANS			DWG. NO: F1