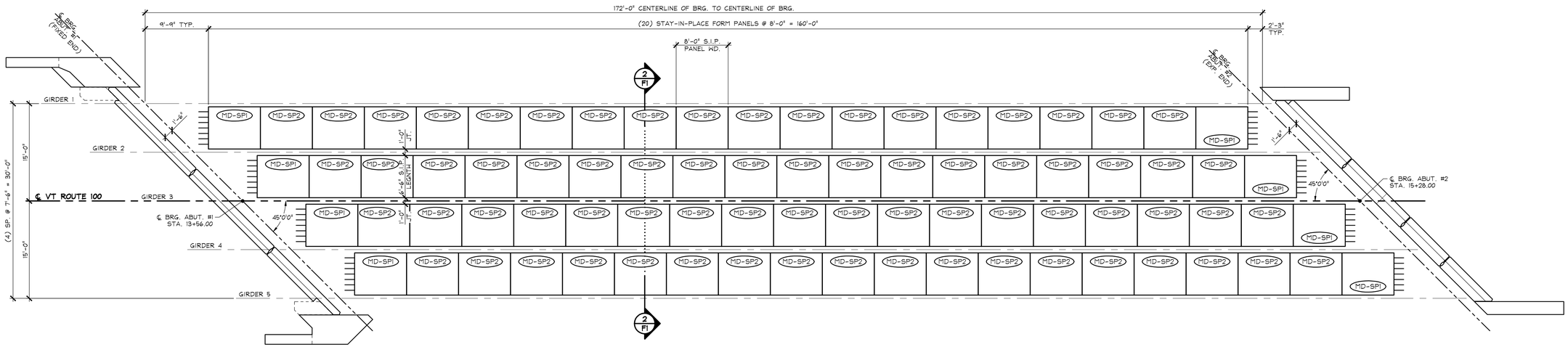
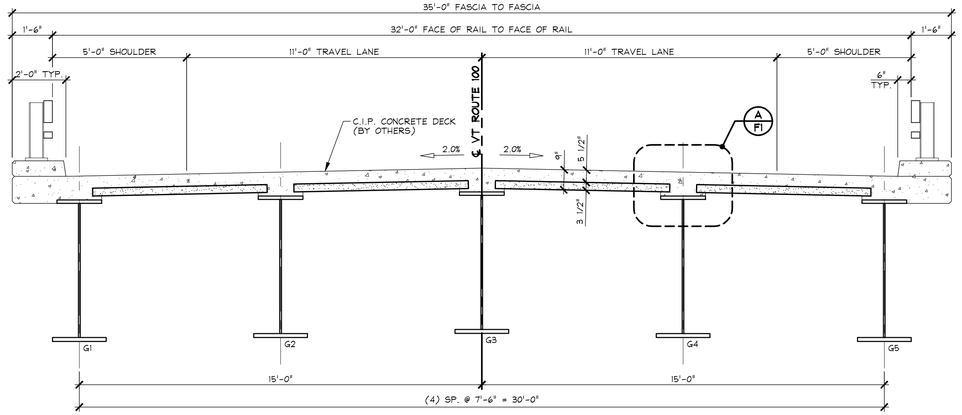


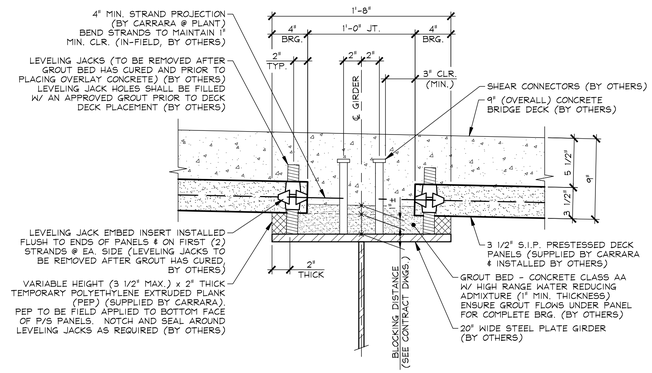
1 F1 PRESTRESSED STAY-IN-PLACE FORM PANEL LAYOUT

1/8" = 1'-0"



2 F1 TRANSVERSE SECTION

3/8" = 1'-0"



A F1 SECTION

1 1/2" = 1'-0"

GENERAL NOTES

1. MIN. CONCRETE STRENGTH AT 28 DAYS SHALL BE 5,000 PSI.
2. MIN. CONCRETE STRENGTH AT STRESS TRANSFER SHALL BE 4,000 PSI.
3. REINFORCING STEEL SHALL BE GR-60, ASTM A-615 (AASHTO M31), AND SHALL BE LEVEL II (DUAL COATED) AS NOTED ON SHOP TICKET.
4. PRESTRESSING STRANDS SHALL CONFORM TO ASTM A-416 (AASHTO M203M), AND SHALL CONSIST OF 3/8"ø x 270 KSI 7 WIRE LOW RELAXATION STRANDS.
5. 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, SHEET 'P1').
6. ENDS OF PRESTRESSING STRANDS SHALL PROJECT 4" MIN. FROM EACH END OF PANEL
7. THE TOPS OF THE PANELS SHALL RECEIVE A RAKE FINISH ROUGHENED TO 1/4" AMPLITUDE (U.N.O.) (DIRECTION PARALLEL TO STRANDS).
8. 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 BENEATH LIFTERS, UNLESS APPROVED BY J.P. CARRARA & SONS, INC.
9. MATERIAL SPECIFICATION AND MIX DESIGN SHALL CONFORM TO VERMONT SPEC. P510.02 AND P510.05 RESPECTIVELY.

   DESIGN MIX: J.P.C. BRIDGE MIX #425M (NO DCI)
   APPROVAL DATE: APRIL 13, 2015
10. QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS, CONTRACT DOCUMENTS & SPECIFICATIONS. J.P. CARRARA & SONS, INC. IS A PCI CERTIFIED PLANT.
11. CURING METHOD: AS SOON AS THE TOP OF THE PANEL IS FINISHED A COVER OF POLY AND A LAYER OF HOMOSOTE, (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°F. THE TEMPERATURE SHALL BE RECORDED BY AUTOMATIC SENSOR INSTRUMENT ON GRAPH CHART & WILL CONTINUE UNTIL RELEASE STRENGTH IS ACHIEVED (NATURAL CURE WITH NO EXTERNAL HEAT APPLIED). CHART SHALL BE MARKED AND GIVEN TO THE INSPECTOR (IF APPLICABLE). UNITS SHALL NOT BE EXPOSED TO TEMPERATURE DIFFERENTIAL GREATER THAN 40°F UNTIL DESIGN STRENGTH IS ACHIEVED.
12. THE DRILLING OF HOLES OR USE OF POWER ACTUATED TOOLS ON PANELS SHALL NOT BE PERMITTED.
13. THE PANELS SHALL BE ORIENTED AND ERECTED WITH THE MARK-END AS SHOWN ON PLANS.
14. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR FORMING THE END OF THE DECK SLAB PRIOR TO CASTING DECK.

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

A.L. ST. ONGE CONTRACTOR, INC.
CONTRACTOR
MORRISVILLE, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF WINDSOR

DATE: JAN. 12, 2016
SCALE: NOTED
CHKD: A.S. DFTM: B.L.
JOB NO: 23480-016

TOWN OF WAITSFIELD
VT ROUTE 100 (MINOR ARTERIAL)
BRIDGE NO.: 177 PROJECT NO.: BF 013-4(39)

PRESTRESSED STAY-IN-PLACE FORM PANEL LAYOUT & DETAILS

DWG. NO: F1

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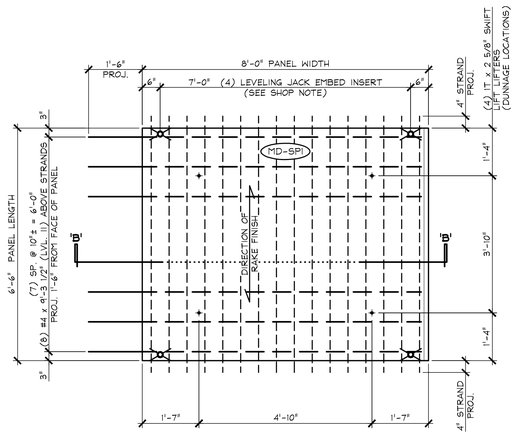
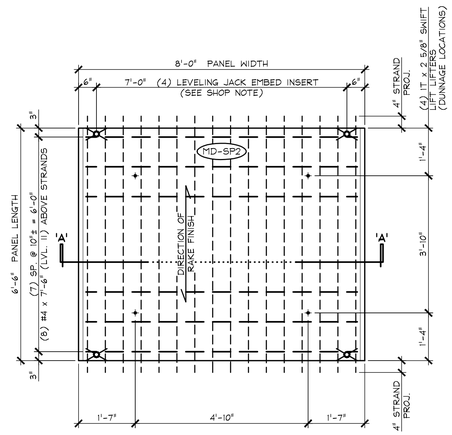


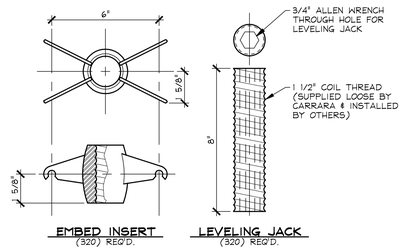
DECK PANEL - 'MD-SP1'

1/2" = 1'-0"



DECK PANEL - 'MD-SP2'

1/2" = 1'-0"



LEVELING EMBED & JACK DETAIL

PLASTIC N.T.S.

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^2

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%
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:

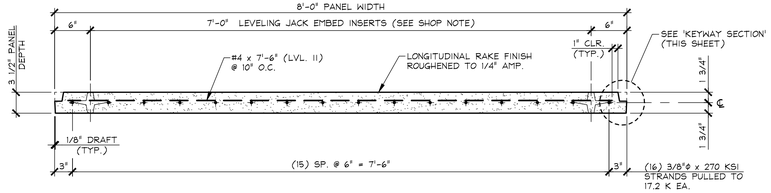
$\Delta P = \frac{0.5 \times 14,200}{8.45} = 840$ LBS.

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

STRAND TENSIONING PROCEDURE:

1. PULL EACH STRAND INITALLY TO 3,000 LBS.± AND MARK STRAND.
2. 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.



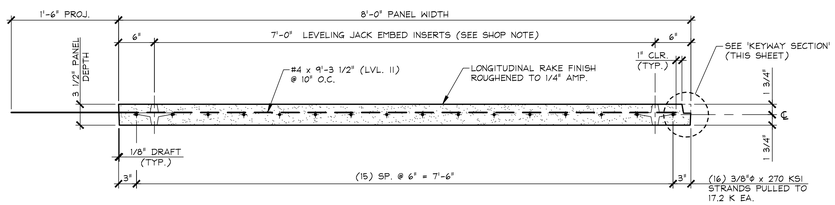
DECK PANEL SECTION - 'A-A'

1" = 1'-0"

① ③ ⑤ ⑦ ⑨ ⑪ ⑬ ⑮ ⑯ ⑭ ⑫ ⑩ ⑧ ⑥ ④ ②

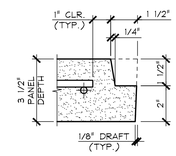
DETENSIONING SCHEDULE

N.T.S.



DECK PANEL SECTION - 'B-B'

1" = 1'-0"



KEYWAY SECTION

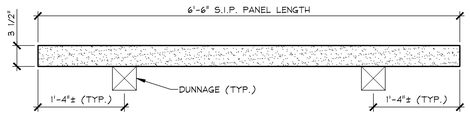
3" = 1'-0"

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-SP1	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-SP1	QTY./PANEL 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	IT x 2 5/8" SWIFT LIFT LIFTER (GALV.)	4	4	
9	LEVELING JACK EMBED INSERTS	4	4	
10				



TYP. STORAGE & SHIPPING DUNNAGE LOCATIONS

N.T.S.

APPROVAL STAMP:

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DATE: JAN. 12, 2016

SCALE: NOTED

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VT ROUTE 100 (MINOR ARTERIAL)
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PRESTRESSED STAY-IN-PLACE FORM PANEL DETAILS

DWG. NO: P1

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