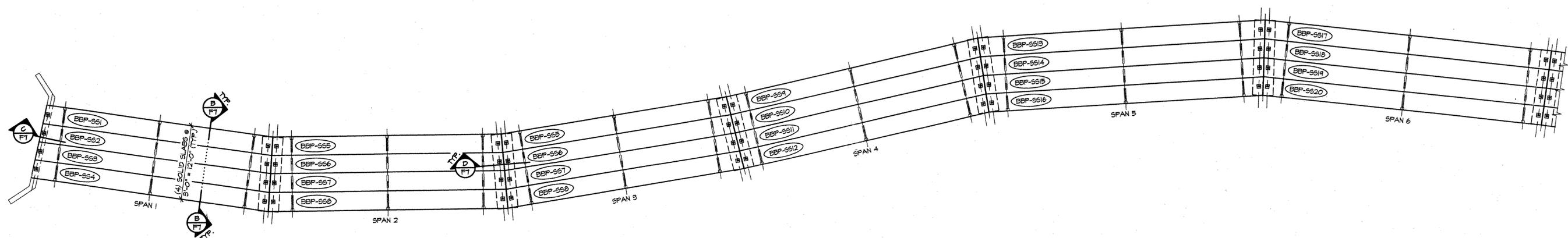


1 PARTIAL P/S PILE CAP PLAN  
1/8" = 1'-0"



2 PARTIAL P/S SOLID SLAB PLAN  
1/8" = 1'-0"

**GENERAL NOTES**

- MIN. CONCRETE STRENGTH AT 28 DAYS SHALL BE 6,000 PSI FOR BOTH PILE CAPS & SOLID SLABS.
- MIN CONCRETE STRENGTH AT STRESS TRANSFER SHALL BE 3,000 PSI FOR PILE CAPS & 4,000 PSI FOR SOLID SLABS.
- REINFORCING STEEL SHALL BE GR-60, ASTM A-615 (AASHTO M31) AND SHALL BE BLACK STEEL.
- PRESTRESSING STRANDS SHALL CONFORM TO ASTM A-416 (AASHTO M208) AND SHALL CONSIST OF 0.60" x 270 KSI 7 WIRE LOW RELAXATION STRANDS.
- PRESTRESSING STRANDS SHALL EACH BE FULLED TO HAVE A NET TENSION OF 44,000 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 BE CUT FLUSH WITH END OF SOLID SLABS AND EPOXY PAINTED.
- ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
- THE TOPS OF THE PILE CAPS & SOLID SLABS SHALL RECEIVE A SMOOTH FLOAT FINISH OR STIFF BROOM FINISH (AS NOTED).
- SHEAR KEY SURFACES SHALL BE BLASTED CLEAN.
- SLABS SHALL BE HANDLED AND ERECTED USING THE LIFTING LOOPS ONLY. THE MINIMUM SLING ANGLE FROM THE HORIZONTAL SHALL BE 60°. SLABS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS WITHIN 2'-0" OF THE SLAB ENDS, UNLESS APPROVED BY J.P. CARRARA & SONS INC.
- MATERIAL SPECIFICATION AND MIX DESIGN SHALL CONFORM TO VERMONT SPEC. PS10.02 AND PS10.05 RESPECTIVELY.  
DESIGN MIX: J.P.C. BRIDGE MIX #450  
752 LBS. TYPE III CEMENT - GLENS FALLS CEMENT  
1215 LBS. FINE AGGREGATE  
1650 LBS. COARSE AGGREGATE  
28 GAL. WATER - 235 LBS.  
7% (± 2%) AIR CONTENT (5.5 OZ. DAREX II) ADJUST AS REQUIRED  
6.0 OZ. ADVA PER 100 LBS. CEMENT, MAX. 1" SLUMP  
3 OZ. DARACEM PER 100 LBS. CEMENT  
9/2 OZ. DCl
- QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS. J.P. CARRARA & SONS INC. IS A PCI CERTIFIED PLANT.
- CURING METHOD: AS SOON AS THE TOP OF THE SLAB IS FINISHED, A COVER OF POLY AND A LAYER OF HOMOSOTE (OR BLUE BOARD) WILL BE PLACED OVER THE SLAB. THE DESIRED CURING TEMPERATURE RANGE SHALL NOT DROP BELOW 70 DEGREES F. THE TEMPERATURE SHALL BE RECORDED BY AUTOMATIC SENSOR INSTRUMENTS ON GRAPH CHARTS, SPACED NOT MORE THAN 100' APART AND WILL CONTINUE UNTIL RELEASE STRENGTH IS ACHIEVED (NATURAL CURE WITH NO EXTERNAL HEAT APPLIED). EACH CHART SHALL BE MARKED.
- TRANSVERSE POST-TENSIONING SEQUENCE:  
A. ERECT SOLID SLABS.  
B. POST-TENSION TENDONS TO 32,000 LBS.  
C. GROUT SHEAR KEYS.

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

SIZE & GRADE: 0.60" x 270 KSI  
AREA: 0.217 IN<sup>2</sup>  
TENSION: 44,000 LB EACH STRAND  
GRIP TO GRIP: 142'-4 3/4" = 142.813'  
Es = 28,800,000 PSI (ASSUMED FOR THESE CALCULATIONS; VALUE TO BE OBTAINED FOR STRAND SPOOL ACTUALLY USED)

EXAMPLE:  
$$\Delta = \frac{PL}{AE} = \frac{(44,000 - 3,000) \times 142.813 \times 12}{0.217 \times 28,800,000} = 15.24"$$

TOLERANCES: ± 5%  
THEREFORE  $\Delta$  UPPER LIMIT = 1.05 x 15.24" = 16.05" = 16 1/16"  
 $\Delta$  LOWER LIMIT = 0.95 x 15.24" = 14.53" = 14 1/2"

EXTRA FORCE REQUIRED TO COMPENSATE FOR 1/2" CHUCK SLIPPAGE.  
$$\Delta P = \frac{0.5 \times 41,000}{15.24} = 1341 \text{ LB}$$

TOTAL TENSIONING FORCE = 44,000 + 1341 = 45,341 LB

**STRAND TENSIONING PROCEDURE:**

- PULL EACH STRAND INITIALLY TO 9,000\* LB AND MARK STRAND.
  - THEN PULL EACH STRAND TO A TOTAL TENSION OF 45,341\* LB AND MEASURE ELONGATION AFTER SEATING. IT MUST BE BETWEEN 14 1/2" & 16 1/16".
- \*NOTE: FORCES READ ON STRESSING JACK GAUGES MUST BE MADE TO CORRESPOND TO ABOVE VALUES BASED ON CALIBRATION DATA FOR SPECIFIC JACK USED.

J.P. CARRARA & SONS, INC.  
NOV 12 2003  
ISSUED FOR PRODUCTION

APPROVAL STAMP:

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J.P. CARRARA & SONS INC. PRECAST & PRESTRESS MANUFACTURER  
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KUBRICKY CONSTRUCTION CORP. CONTRACTOR  
GLENS FALLS, NEW YORK

STATE OF VERMONT AGENCY OF TRANSPORTATION  
TOWN OF COLCHESTER  
PROJECT NUMBER: STP BIKE (48)

P/S PILE CAP & SOLID SLAB LAYOUTS (SPANS 1-6)

DATE: SEPT. 26, 2003  
SCALE: NOTED  
CHKD: DFTM: B.L.  
JOB NO: 23169-03  
DWG. NO: F1  
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