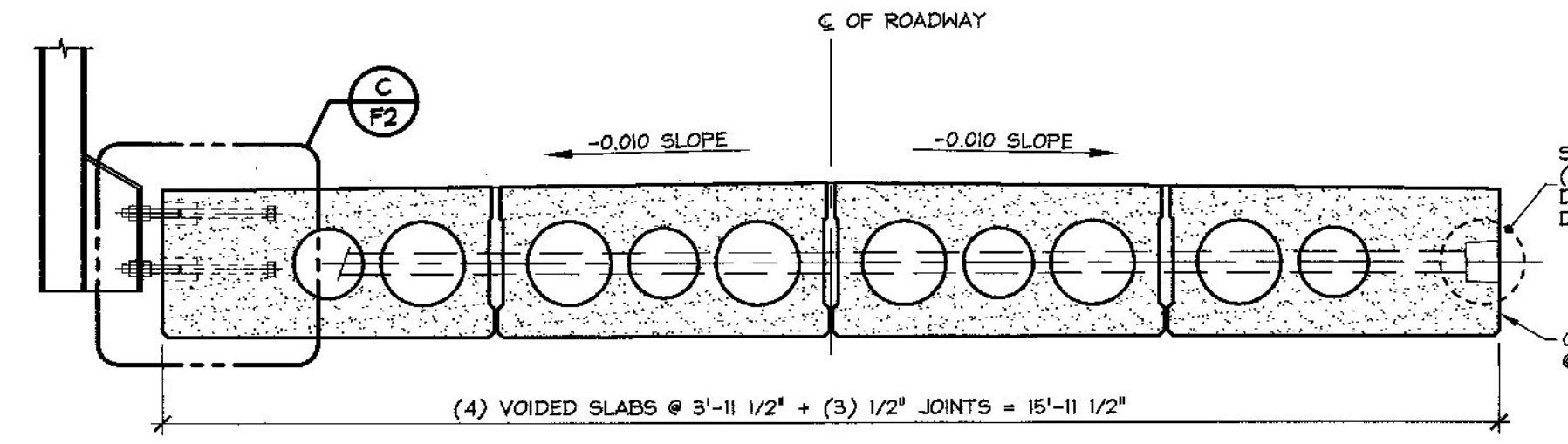
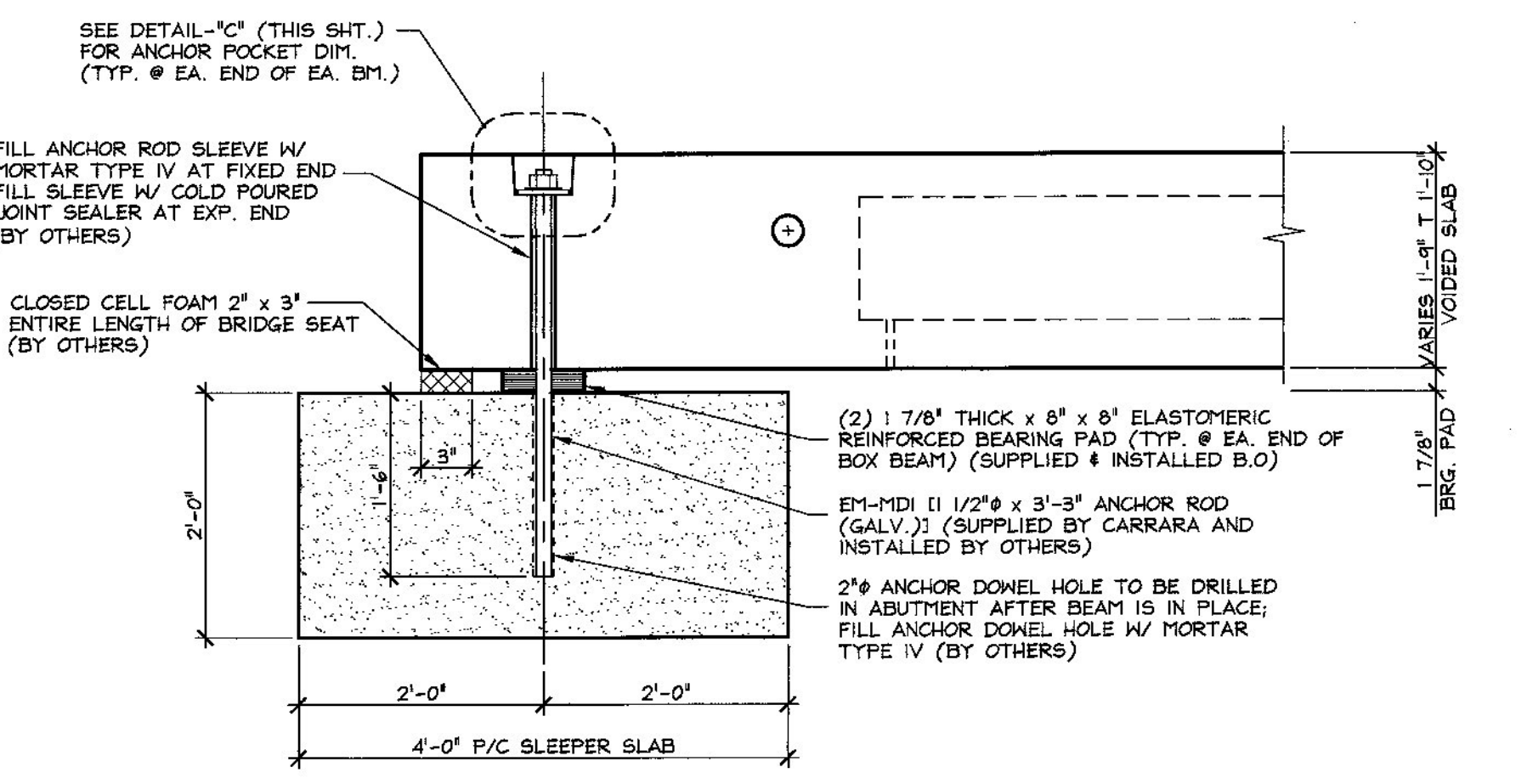


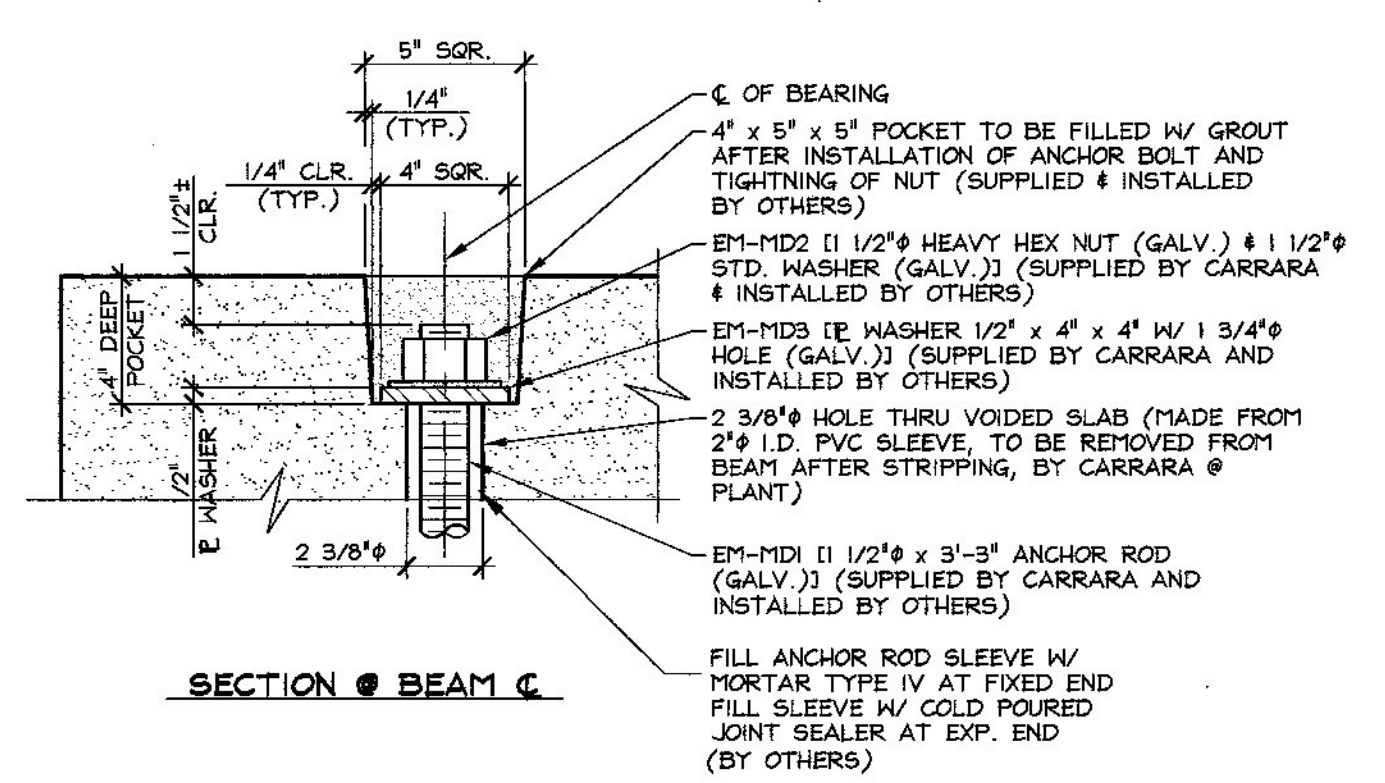
1 PRESTRESSED VOIDED SLAB LAYOUT
 F1
 1/4" = 1'-0"



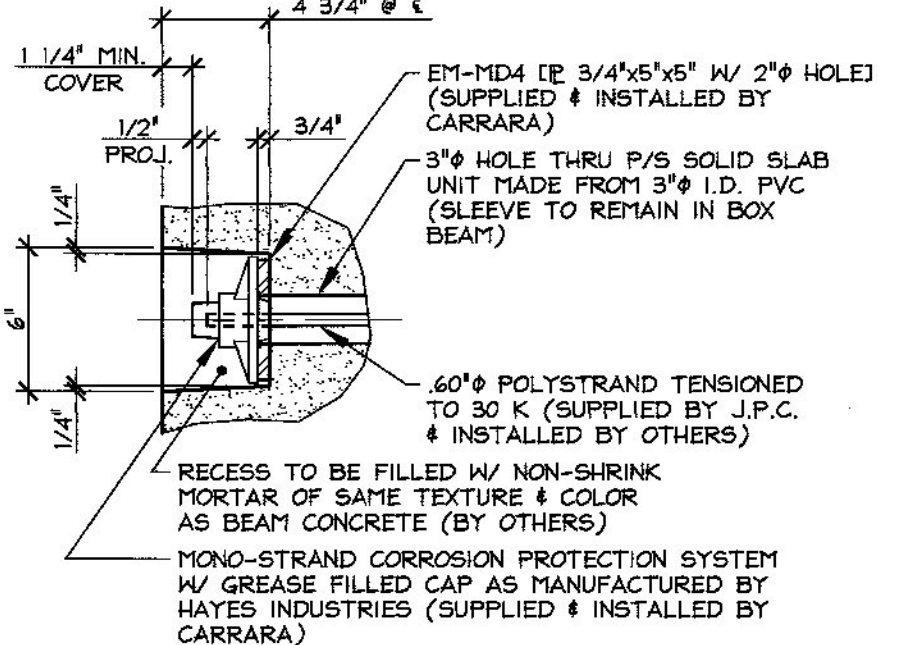
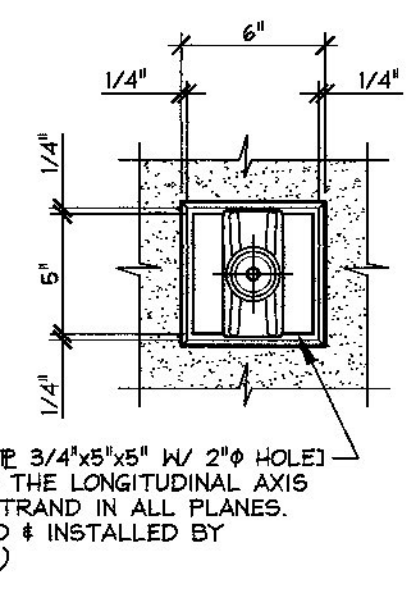
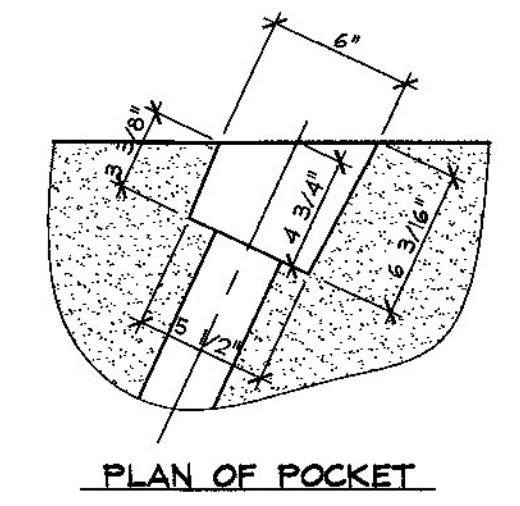
2 TRANSVERSE SECTION
 F1
 1/2" = 1'-0"



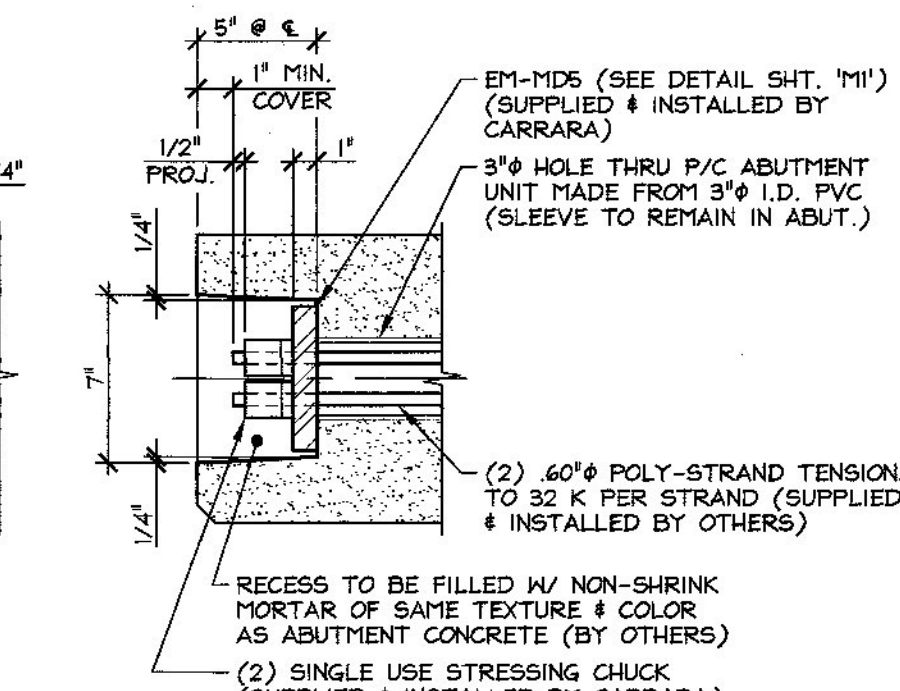
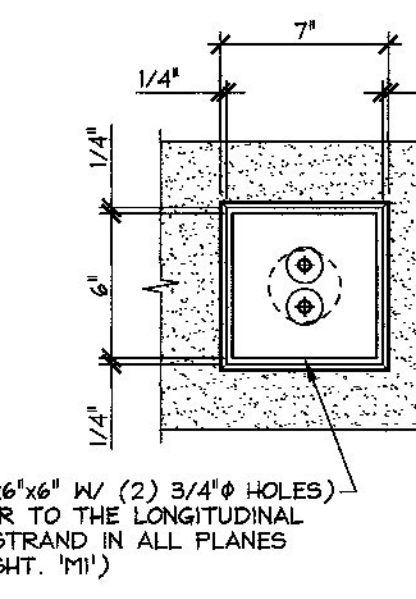
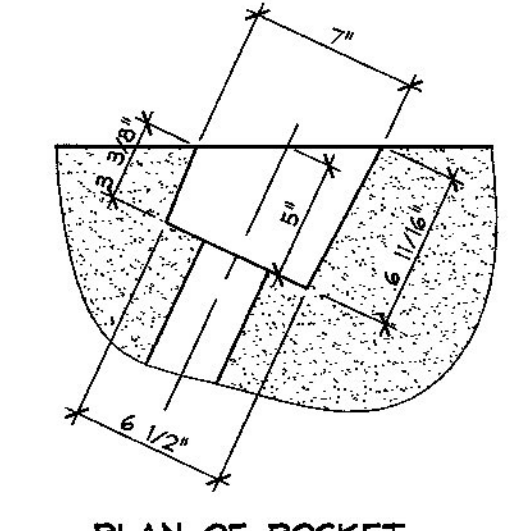
A BEARING SECTION
 F1
 3/4" = 1'-0"



DETAIL - "C"
 2" = 1'-0"



DETAIL - "A"
 1 1/2" = 1'-0"



DETAIL - "B"
 1 1/2" = 1'-0"

GENERAL NOTES

- MIN. CONC. STRENGTH AT 28 DAYS SHALL BE 7,000 PSI (VOIDED SLAB). MIN. CONC. STRENGTH AT 28 DAYS SHALL BE 5,000 PSI (SLEEPER SLAB).
- MIN. CONC. STRENGTH AT STRESS TRANSFER SHALL BE 5,500 PSI (V.S.). MIN. CONC. STRENGTH AT STRESS TRANSFER SHALL BE 3,500 PSI (SLS-5).
- REINFORCING STEEL SHALL BE GR-60, ASTM A-615 (AASHTO M31) AND SHALL BE EPOXY COATED FOR VOIDED SLABS AND BLACK STEEL FOR SLEEPER SLABS.
- PRESTRESSING STRANDS SHALL CONFORM TO ASTM A-416 (AASHTO M323) AND SHALL CONSIST OF 0.60" x 270 KSI 7-WIRE LOW RELAXATION STRANDS.
- PRESTRESSING STRANDS SHALL EACH BE PULLED TO HAVE A NET TENSION OF 44.0 K 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 RECESSED 3/4" AND PATCHED WITH APPROVED GROUT.
- ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
- THE TOP OF SLABS SHALL RECEIVE A LIGHT BROOM FINISH.
- SHEAR KEY SURFACES SHALL BE SAND BLASTED CLEAN.
- SLABS SHALL BE HANDLED AND ERECTED USING THE LIFTING EYES 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 BEAM ENDS, UNLESS APPROVED BY J.P. CARRARA & SONS, INC.
- MATERIAL SPECIFICATION AND MIX DESIGN SHALL CONFORM TO VERMONT SPEC. PS10.05 FOR VOIDED SLABS AND 540.05 FOR SLEEPER SLABS RESPECTIVELY.
 DESIGN MIX: J.P.C. BRIDGE MIX #426M NO DCI (VOIDED SLAB)
 J.P.C. BRIDGE MIX #445M5CC (SLEEPER SLAB)
- 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 SLAB IS FINISHED, A COVER OF POLY AND A LAYER OF HOSIOTITE (OR BLUE BOARD) WILL BE PLACED OVER THE SLAB. THE DESIRED CURING TEMPERATURE RANGE SHALL NOT DROP BELOW 70°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:
 - ERECT VOIDED SLABS.
 - POST TENSION TO 5,000 PSI.
 - GROUT SHEAR KEYS.
 - ONCE SHEAR KEY GROUT HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1,500 PSI; POST TENSION TENSIONS TO 44,000 LBS.

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

SIZE & GRADE: 0.60" x 270 KSI
 AREA: 0.217 in²
 TENSION: 44,000 LB. EACH STRANDS
 GRIP-TO-GRIP: 192'-9 3/4" = 192.813'
 E_s = 28,600,000 PSI (ASSUMED FOR THESE CALCULATIONS; VALUE TO BE OBTAINED FOR STRAND POOL ACTUALLY USED)
 EXAMPLE:
 $\Delta L = \frac{P_e L}{AE_s} = \frac{(44,000 - 3,000) \times 192.813 \times 12}{0.217 \times 28,600,000} = 15.29"$
 THEREFORE: (TOLERANCES ± 5%)
 ΔL UPPER LIMIT = 1.05 x 15.29" = 16.05" = 16 1/16"
 ΔL LOWER LIMIT = 0.95 x 15.29" = 14.53" = 14 1/2"
 EXTRA FORCE REQUIRED TO COMPENSATE FOR 1/2" CHUCK SLIPPAGE:
 $\Delta P = \frac{0.5 \times 41,000}{15.29} = 1,340$ LBS.
 TOTAL TENSIONING FORCE = 44,000 + 1,340 = 45,340 LBS.

STRAND TENSIONING PROCEDURE:

- PULL EACH STRAND INITIALLY TO 3,000+ LBS. AND MARK STRAND.
 - THEN PULL EACH STRAND TO A TOTAL TENSION OF 45,340+ LBS. 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.

Vermont Agency of Transportation
RECEIVED
 CK'D BY HIS OK'D BY MRU
 May 23, 2014
 RESUBMIT NO Approved
 BY Carolyn Carlson DATE June 4, 2014

APPROVAL STAMP:	J.P. CARRARA & SONS INC. AL ST. ONGE CONTRACTORS, INC. Precast & Prestress Manufacturer CONTRACTOR 244 GEE ST., MONTGOMERY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010 MONTGOMERY, VERMONT
STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN	DATE: MARCH 10, 2014 SCALE: NOTED
TOWN OF MONTGOMERY ROUTE NO. TH 10 CLASS 3 BRIDGE NO.: 36 PROJECT NO.: BHO 1448 (27)	CHKD: - DFTM: T.D. JOB NO: 23421-014
SUPERSTRUCTURE PLAN & SECTIONS DWG. NO: F1	