

POST - TENSIONING:

FIELD FOREMAN: THE FIELD FOREMAN RESPONSIBLE FOR THE PLACEMENT OF ALL POST-TENSIONING SHALL HAVE A MINIMUM OF THREE (3) YEARS IN THIS CAPACITY FOR THIS TYPE OF CONSTRUCTION.

PT STEEL QUALITY: ONE SAMPLE OF EACH REEL OR HEAT SHALL BE TESTED BY AN APPROVED LABORATORY. TEST RESULTS OR MILL CERTIFICATES SHALL BE SUBMITTED TO THE ENGINEER BEFORE STRESSING TENDONS. POST-TENSIONING TENDONS SHALL BE STRESS-RELIEVED OR BE OF LOW-RELAXATION QUALITY, AND SHALL CONFORM TO THE FOLLOWING:

SEVEN WIRE STRAND ASTM DESIGNATION......A-416 **ÜLTIMATE STRENGTH...**

TENDON STRESSES SHALL CONFORM TO THE FOLLOWING MAXIMUM JACKING STRENGTH ... MAXIMUM STRENGTH IMMEDIATELY AFTER PRESTRESS TRANSFER... MAXIMUM ANCHORAGE STRESS IMMEDIATELY

AFTER PRESTRESS TRANSFER....

EFFECTIVE FORCE: EFFECTIVE FORCE SHALL BE 24 KIPS PER STRESS-RELIEVED AND 26 KIPS PER LOW-RELAXATION TENDON WHEN TENDON LENGTH IS LESS THAN 100 FEET. FOR VARIANCE FROM THIS VALUE, CONTRACTOR SHALL PROVIDE FRICTION AND LONG-TERM LOSS CALCULATIONS FOR THE ENGINEER'S APPROVAL

PT HARDWARE QUALITY: ALL ANCHORAGE, COUPLERS AND MISCELLANEOUS HARDWARE SHALL BE STANDARD AND APPROVED BY GOVERNING AGENCIES AND THE ENGINEER.

TENDONS: UNBOUNDED STRANDS SHALL BE ENCASED IN SLIPPAGE SHEATHING WHICH SHALL CONSIST OF A SEALED DURABLE WATERPROOF PLASTIC TUBING CAPABLE OF PREVENTING THE PENTRATION OF MOISTURE AND CEMENT PASTE, AND WHICH WILL CONTAIN A RUST-INHIBITING GREASE COATING. TEARS IN THE SHEATHING SHALL BE REPAIRED TO RESTORE THE WATERTIGHTNESS OF THE SHEATHING. HEAT-SEALED SHEATHING SHALL NOT BE USED UNLESS THE WATERTIGHTNESS OF THE SHEATHING IS GUARANTEED BY THE CONTRACTOR.

<u>SHOP DRAWINGS:</u> THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING TENDON LAYOUT, DEAD-END AND STRESSING-END LOCATIONS, AND TENDON SUPPORT LAYOUTS WITH DETAILS NECESSARY FOR INSTALLATION FOR THE ENGINEER'S APPROVAL. A SET OF APPROVED SHOP DRAWINGS MUST BE FILED WITH THE CITY ENGINEER BY THE CONTRACTOR.

TENDON PLACEMENT: CARE SHALL BE TAKEN THAT TENDONS ARE LOCATED AND HELD IN THEIR DESIRED POSITIONS. TOLERANCES FOR THE LOCATION OF THE PRESTRESSING STEEL SHALL NOT BE MORE THAN ± 1/8" VERTICALLY, EXCEPT AS NOTED OR APPROVED BY THE ENGINEER. ACCESS TO STRESSING ENDS SHALL BE MAINTAINED WHERE SHOWN.

TENDON ADJUSTMENTS: SLIGHT DEVIATIONS IN THE HORIZONTAL SPACING OF THE SLAB TENDONS WILL BE PERMITTED WHEN REQUIRED TO AVOID OPENINGS, INSERTS, AND DOWELS WHICH ARE SPECIFICALLY LOCATED. WHERE LOCATIONS OF TENDONS SEEM TO INTERFERE WITH EACH OTHER, ONE TENDON MAY BE MOVED HORIZONTALLY IN ORDER TO AVOID THE INTERFERENCE.

TWISTING: TWISTING OR ENTWINING OF INDIVIDUAL WIRES OR STRAND WITHIN A BUNDLE OR BEAM SHALL NOT BE PERMITTED.

STRAND BUNDLES: THE MAXIMUM ALLOWABLE NUMBER OF STRANDS PER BUNDLE IS FOUR (4) FOR SLABS AND SIX (6) FOR

PROFILES: PROFILES SHALL CONFORM TO CONTROLLING POINTS SHOWN ON THE DRAWINGS AND SHOULD BE IN AN APPROXIMATE PARABOLIC DRAPE BETWEEN SUPPORTS, UNLESS NOTED OTHERWISE. LOW POINTS ARE AT MIDSPAN UNLESS NOTED OTHERWISE. HARPED TENDONS SHALL BE STRAIGHT BETWEEN HIGH AND LOW POINT CONTROLS.

PRESTRESS COVER: ALL DIMENSIONS SHOWING THE LOCATION OF PRESTRESSING TENDONS ARE TO THE CENTER OF GRAVITY OF THE TENDON (CGS) UNLESS NOTED OTHERWISE

MINIMUM CHAIRING: TENDONS SHALL BE SECURED TO A SUFFICIENT NUMBER OF POSITIONING DEVICES TO ENSURE CORRECT LOCATION DURING AND AFTER THE PLACING OF THE CONCRETE, AND SHALL BE SUPPORTED AT A MAXIMUM OF 3'-6" ON CENTER. CHAIRS GREATER THAN 2.5" IN SIZE SHALL BE STAPLED TO THE FORMWORK

ANCHORS: ANCHORAGES SHALL BE RECESSED A MINUMUM OF TWO (2) INCHES. PLACE TWO (2) CONTINUOUS #4 BARS BEHIND ALL ANCHORAGES, UNLESS NOTED OTHERWISE. SPLICES SHALL BE 24" MINIMUM AND STAGGERED.

BLOCKOUTS: ALL POCKETS OR BLOCKOUTS REQUIED FOR ANCHORAGE SHALL BE ADEQUATELY REINFORCED SO AS NOT TO DECREASE THE STRENGTH OF THE STRUCTURE. ALL POCKETS SHOULD BE WATERPROOFED TO ELIMINATE WATER LEAKAGE THROUGH OR INTO THE POCKET.

POST - TENSIONING cont:

CABLES.

PIPES: PLASTIC OR METAL CONDUITS MAY BE EMBEDDED IN THE SLAB PROVIDING THAT THE FOLLOWING CRITERIA ARE MET:

- A. DIAMETER DOES NOT EXCEED ONE-QUARTER OF THE SLAB THICKNESS.
- B. CONDUITS GREATER THAN OR EQUAL TO I" DIAMETER
- SHALL BE LOCATED WITHIN THE MIDDLE THIRD OF THE SLAB. C. CONDUITS SMALLER THAN I" DIAMETER MAY BE LOCATED

ANYWHERE WITHIN THE SLAB AS LONG AS THE MINIMUM

- COVER REQUIREMENTS ARE OBSERVED. D. CENTER-TO-CENTER SPACING OF THE CONDUIT IS NOT LESS THAN THREE (3) TIMES THE DIAMETER OF THE
- LARGEST CONDUIT. E. CONDUITS MUST NOT INTERRUPT THE POST-TENSIONING
- F. COLUMN AREAS SHOULD BE AVOIDED.
- G. IT IS UNDESIRABLE TO HAVE EXCESS AMOUNTS OF CONDUIT ENTERING THE SLAB FROM ONE LOCATION. IF THIS CONDITION EXISTS, THE CONDUITS MUST BE FANNED OUT IMMEDIATELY.

PENETRATIONS: PENETRATIONS SHALL NOT BE PERMITTED IN BEAMS OR DROP CAPS EXCEPT AS SHOWN IN PT DRAWINGS OR TYPICAL DETAILS.

INSERTS: ALL INSERTS AND SLEEVES SHALL BE CAST IN PLACE WHENEVER POSSIBLE. DRILLED AND POWER-DRIVEN FASTENERS WILL BE PERMITTED ONLY WHEN IT CAN BE SHOWN THAT THE INSERTS WILL NOT SPALL THE CONCRETE AND ARE LOCATED TO AVOID THE TENDONS AND ANCHORAGES. THE CONTRACTOR MUST LOCATE TENDONS ON THE SURFACE SLAB.

CHLORIDES: GROUT OR CONCRETE CONTAINING CHLORIDES SHALL NOT BE USED.

PUMPED CONCRETE: IF CONCRETE IS PLACED BY THE PUMP METHOD, THEN HORSES SHALL BE PROVIDED TO SUPPORT THE HOSE. THE HOSE SHALL NOT BE ALLOWED TO RIDE ON THE

CONCRETE CONSOLIDATION: THE CONTRACTOR SHALL TAKE PRECAUTIONS TO ASSURE COMPLETE CONSOLIDATION AND DENSIFICATION OF CONCRETE BEHIND ALL POST-TENSIONING

CONCRETE STRENGTH AT STRESSING: AT TRANSFER OF PRESTRESS, CONCRETE SHALL BE AS SPECIFIED IN THE CONCRETE QUALITY TABLE.

TENDON STRESSING: TENSIONING SHALL BE DONE BY JACKING UNDER IMMEDIATE CONTROL OF A PERSON EXPERIENCED IN THIS TYPE OF WORK. CONTINUOUS INSPECTION AND RECORDING OF ELONGATIONS IS REQUIRED DURING ALL STRESSING OPERATIONS.

CALIBRATION: THE RAM AND ATTENDANT GUAGE USED SHALL HAVE BEEN CALIBRATED WITHIN SIXTY (60) DAYS OF THEIR USE.

STRESSING SEQUENCE: UNIFORMLY DISTRIBUTED TENDONS SHALL BE STRESSED BEFORE CONCENTRATED BEAM STRIP (BANDED) TENDONS, AND SLAB TENDONS SHALL BE STRESSED BEFORE BEAM

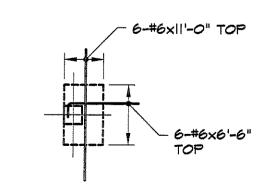
ELONGATIONS: INDIVIDUAL TENDON FIELD READINGS OF ELONGATIONS AND/OR STRESSING FORCES SHALL NOT VARY BY MORE THAN ±7% FROM CALULATED REQUIRED VALUES SHOWN ON THE SHOP DRAWINGS. IF THE MEASURED ELONGATIONS VARY FROM

H STRUCTURAL MEMBER SHALL NOT BE LESS THAN THE VALUES NOTED ON THE STRUCTURAL DRAWINGS. IN THIS CONTEXT, STRUCTURAL MEMBERS ARE BEAMS OR SLABS, WHETHER WITH BANDED OR DISTRIBUTED TENDONS, EACH SERVING THEIR RESPECTIVE TRIBUTARY.

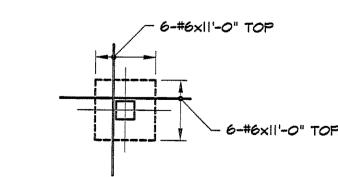
TENDON ENDS: DO NOT BURN OFF TENDON ENDS UNTIL THE ENTIRE FLOOR SYSTEM HAS BEEN SATISFACTORILY STRESSED AND THE ENGINEER'S APPROVAL IS OBTAINED. THE STRESSING END ANCHORS AND WEDGES SHALL BE SPRAY PAINTED WITH RUST-OLEUM OR A SIMILAR COATING FOR CORROSION PROTECTION. INSTALL GREASE CAPS WITHIN THE FOLLOWING 24-HOUR PERIOD.

GROUTING OF STRESSING POCKETS: STRESSING POCKETS SHALL BE FILLED NON-SHRINK GROUT AFTER STRESSING, PAINTING & GREASE-CAPPING TO STOP MOISTURE PENETRATION.

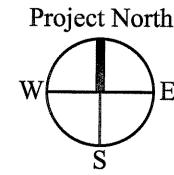
DE-SHORING: SLABS OR BEAMS MAY BE DE-SHORED WHEN ALL TENDONS HAVE BEEN SATISFACTORILY STRESSED AND THE ENGINEER'S APPROVAL IS OBTAINED, UNLESS SHORING IS REQUIRED TO CARRY FLOORS ON ABOVE LEVELS.







TYPICAL ADDITIONAL TOP REINF. AT INT. COLUMNS



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3