

GENERAL NOTES

1 GENERAL

- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE DRAWINGS AND ACI 301, LATEST EDITION.
- THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, WIND, SEISMIC, ETC. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGINGS, SHORING, AND PROTECTION OF ADJACENT PROPERTY STRUCTURES, STREETS, AND UTILITIES IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORINANCES.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND SHALL CHECK ALL DIMENSIONS. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT AND BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
- SHOP DRAWINGS REQUIRED BY THE CONSTRUCTION DOCUMENTS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW PRIOR TO FABRICATION.
- SEE ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF ALL FLOOR AND WALL OPENINGS, FLOOR FINISHES, ETC.
- SEE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS REQUIRED FOR DUCTS, PIPES AND PIPE SLEEVES, ELECTRICAL CONDUITS AND OTHER ITEMS TO BE EMBEDDED IN CONCRETE OR OTHERWISE INCORPORATED IN STRUCTURAL WORK. OPENINGS, POCKETS, ETC. LARGER THAN 2" SHALL NOT BE PLACED IN SLABS, DECKS, BEAMS, JOISTS, COLUMNS, WALLS, ETC. UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS, NOTIFY THE STRUCTURAL ENGINEER WHEN DRAWINGS BY OTHERS SHOW OPENINGS POCKETS, ETC., LARGER THAN 2" NOT SHOWN ON THE STRUCTURAL DRAWINGS BUT WHICH ARE LOCATED IN STRUCTURAL MEMBERS.
- CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT. PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH.
- ARCHITECTURAL PLANS ARE CONSIDERED A PART OF THE STRUCTURAL DESIGN DRAWINGS AND ARE TO BE USED TO DEFINE DETAILED CONFIGURATION INCLUDING, BUT NOT LIMITED TO, RELATIVE LOCATION OF MEMBERS, ELEVATIONS, LOCATIONS OF ALL OPENINGS, ETC.

2 - DESIGN CRITERIA

A. CODES

- INTERNATIONAL BUILDING CODE 2012
- FLORIDA BUILDING CODE 2014
- ASCE 7-2010
- ACI 318-2011

B. DESIGN LIVE LOADS

- PROVIDED BY TLC ENGINEERING FOR ARCHITECTURE, INC.

3 - CONCRETE

- ALL CONCRETE UNLESS OTHERWISE NOTED SHALL BE REGULAR WEIGHT HARD ROCK (150#/CU.FT.) AND CONFORM TO ASTM C-33. ALL CONCRETE SHALL CONFORM TO THE FOLLOWING:

| STRUCTURAL ELEMENT | MIN. COMP. STRENGTH AT 28 DAYS | TOTAL AIR | MAXIMUM W/C RATIO |
|-------------------------|--------------------------------|-----------|-------------------|
| PIERHEAD LEVEL 2 | 5000 PSI | 0% | 0.40 |
| PIERHEAD LEVEL 4 | 8000 PSI | 0% | 0.40 |
| PIERHEAD LEVEL 5 (ROOF) | 8000 PSI | 0% | 0.40 |
| EDUCATIONAL CENTER | 5000 PSI | 0% | 0.40 |
| TILTED LAWN | 5000 PSI | 0% | 0.40 |
| PAVILLION | 5000 PSI | 0% | 0.40 |

- ALL PHASES OF WORK PERTAINING TO THE CONCRETE CONSTRUCTION SHALL CONFORM TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-LATEST EDITION) WITH MODIFICATIONS AS NOTED IN THE DRAWINGS OR SPECIFICATIONS.
- CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY AND SHALL BE APPROVED BY THE STRUCTURAL ENGINEER.
- CLEAR COVERAGE OF CONCRETE OVER OUTER REINFORCING BARS SHALL BE AS FOLLOWS (UNLESS OTHERWISE NOTED ON DRAWINGS):
 - SLAB 2" CLEAR (TOP)
 - SLAB..... 1" CLEAR (BOTTOM)
- ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.
- AIR ENTRAINMENT PERCENTAGES ARE MEASURED AT POINT OF PLACEMENT OF CONCRETE. REFER TO ACI FOR AIR TOLERANCES.
- FLYASH CONTENT SHALL NOT EXCEED 25% OF THE TOTAL WEIGHT OF CEMENT PLUS FLYASH.
- TOTAL OF FLYASH OR OTHER POZZOLANS, AND SLAG SHALL NOT CONSTITUTE MORE THAN 50% OF THE TOTAL WEIGHT OF CEMENTITIOUS MATERIAL.
- CONSTITUENT COMPONENTS OF THE MIX INCLUDING ADMIXTURES SHALL BE FREE OF CHLORIDE IONS EXCEPT FOR TRACE AMOUNTS WHICH SHALL NOT EXCEED THE AMOUNTS GIVEN IN ACI 4.4.1.
- PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL OPENINGS IN CONCRETE BEFORE PLACING. DO NOT CUT ANY REINFORCING WHICH MAY CONFLICT. CORING IN CONCRETE IS NOT PERMITTED EXCEPT AS SHOWN. NOTIFY THE STRUCTURAL ENGINEER IN ADVANCE OF CONDITIONS NOT SHOWN ON THE DRAWINGS.
- CONDUIT OR PIPE SIZE (O.D.) SHALL NOT EXCEED 20 PERCENT OF SLAB THICKNESS AND SHALL BE PLACED BETWEEN THE TOP AND BOTTOM REINFORCING UNLESS SPECIFICALLY DETAILED OTHERWISE. CONCENTRATIONS OF CONDUITS OR PIPES SHALL BE AVOIDED EXCEPT WHERE DETAILED OPENINGS ARE PROVIDED.
- CURING COMPOUNDS USED ON CONCRETE THAT IS TO RECEIVE A RESILIENT TILE FINISH SHALL BE APPROVED BY THE TILE MANUFACTURER BEFORE USE.
- ALL ROUGHENED SURFACES SHALL BE MADE WITH AMPLITUDE OF 1/4 INCH.
- VIBRATE ALL CONCRETE AS IT IS PLACED WITH A MECHANICAL VIBRATOR OPERATED BY EXPERIENCED PERSONNEL. THE VIBRATOR SHALL BE USED TO CONSOLIDATE THE CONCRETE, NOT TRANSPORT IT.
- CONCRETE SHALL NOT FREE-FALL MORE THAN SIX FEET. USE TREMIE PUMP OR OTHER APPROVED METHODS.
- CONCRETE SHALL BE MAINTAINED IN A MOIST CONDITION FOR A MIN. OF 5 DAYS AFTER PLACEMENT.
- EXPOSED CORNERS OF BEAMS, WALLS COLUMNS, ETC. SHALL BE FORMED WITH 3/4 INCH CHAMFER UNLESS OTHERWISE NOTED ON ARCHITECTURAL DRAWINGS.

4 - REINFORCING STEEL

- ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-LATEST EDITION), THE ACI DETAILING MANUAL, S-66, AND THE CRSI MANUAL OF STANDARD PRACTICE.
- ANCHOR BOLTS, DOWELS AND OTHER EMBEDDED ITEMS ARE TO BE SECURELY TIED IN PLACE BEFORE CONCRETE IS POURED.
- ALL REINFORCING BAR BENDS SHALL BE MADE COLD.
- WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A-185. WELDED WIRE FABRIC IN SUSPENDED SLABS SHALL HAVE Fy=60 KSI, LAP # MINIMUM OR ONE FULL MESH, WHICHEVER IS GREATER FOR SLABS ON GRADE.
- REINFORCING SPLICES SHALL BE MADE ONLY WHERE INDICATED ON THE DRAWINGS. WHERE TENSION SPLICES ARE NOTED, A MECHANICAL SPLICE MAY BE USED WHICH SHALL DEVELOP 125 PERCENT OF THE TENSILE STRENGTH OF THE REINFORCING BAR.
- DOWELS BETWEEN FOOTING AND WALL OR COLUMNS SHALL BE THE SAME GRADE, SIZE AND SPACING OR NUMBER AS THE VERTICAL REINFORCING, RESPECTIVELY, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- WELDING OF REINFORCING STEEL SHALL CONFORM TO AWS D1.4 "AWS STRUCTURAL WELDING CODE - REINFORCING STEEL" OF THE AMERICAN WELDING SOCIETY. REINFORCING STEEL WHICH IS WELDED SHALL CONFORM TO ASTM A706. REINFORCING STEEL NOT CONFORMING TO ASTM A706 MAY BE USED IF MATERIAL PROPERTIES OF THE REINFORCING STEEL CONFORM TO AWS D1.4.
- CONTRACTOR SHALL SUBMIT REINFORCING BAR LAYOUT AND DETAIL DRAWINGS FOR ARCHITECT'S REVIEW PRIOR TO FABRICATION. FABRICATE FROM REVIEWED DRAWINGS ONLY.
- REINFORCING BARS SHALL BE AS LONG LENGTHS AS PRACTICABLE AND AS DETAILED AND SHALL BE LAPPED AT SPLICES AND CORNERS NOT LESS THAN 32 BAR DIAMETERS (24" MINIMUM), UNLESS OTHERWISE SHOWN, STAGGER HORIZONTAL

- WALL BAR SPLICES 4 FT IN GENERAL, BAR SPLICES SHALL BE MADE AT POINTS OF MINIMUM STRESS. IN BEAMS AND SLABS, SPLICE TOP BARS AT MIDSPAN, BOTTOM BARS OVER SUPPORTS, UNLESS OTHERWISE SHOWN.
- REINFORCING STEEL SHALL BE FREE FROM LOOSE RUST AND SCALE AND CONFORM TO ASTM A-615 GRADE 60 UNLESS NOTED OTHERWISE.
 - ALL ACCESSORIES SHALL BE PLASTIC OR SHALL BE PLASTIC TIPPED. ALL ACCESSORIES SUPPORTING EPOXY COATED BARS SHALL BE PLASTIC.
 - SUPPORT BARS SHALL BE #4 OR GREATER WITH SPACING NOT TO EXCEED 4FT. LAP SPLICE ALL SUPPORT BARS 24" MINIMUM. ENDS OF PRINCIPAL REINFORCING SHALL NOT EXTEND MORE THAN 18" BEYOND OUTERMOST SUPPORT.
 - PROVIDE ACCESSORIES TO INSURE THAT VERTICAL COLUMN REINFORCING BARS ARE MAINTAINED 2 INCHES CLEAR OF FORMWORK.
 - BARS DESIGNATED AS CONTINUOUS OR BARS REQUIRED TO BE SPLICED FOR PLACEMENT SHALL BE LAPPED AS FOLLOWS: CONCRETE REINFORCEMENT: CLASS B TENSION SPLICE MASONRY REINFORCEMENT: 48 BAR DIAMETERS
 - PROVIDE CORNER BARS AT ALL CONTINUOUS FOOTING INTERSECTIONS. WALL AND BOND BEAM CORNERS, AT A MINIMUM, BARS SHALL BE THE SAME SIZE AND SPACING AS HORIZONTAL REINFORCING IN EACH DIRECTION.

5 - POST-TENSIONING

- PRESTRESSING STEEL SHALL BE SEVEN-WIRE, LOW-RELAXATION STRAND FOR PRESTRESSED CONCRETE MANUFACTURED IN ACCORDANCE WITH ASTM A416 AND FREE FROM CORROSION HAVING A GUARANTEED MINIMUM ULTIMATE TENSILE STRENGTH OF 270 KSI.

| | |
|-------------------------|--------------|
| NOMINAL DIAMETER | 1/2 INCH |
| AREA | 0.153 SQ.IN. |
| MODULUS OF ELASTICITY | 28,500 KSI |
| ULTIMATE STRENGTH | 41.3 KIPS |
| MAXIMUM TEMPORARY FORCE | 33.0 KIPS |
| ANCHORING FORCE | 28.9 KIPS |
| FINAL EFFECTIVE FORCE | 27.0 KIPS |

- POST-TENSIONING TENDONS AND ANCHORAGES SHALL CONFORM TO REQUIREMENTS IN ACI 423.7-07 SPECIFICATION FOR UNBONDED SINGLE STRAND TENDON MATERIALS AND COMMENTARY. POST-TENSIONING MATERIALS SHALL BE MANUFACTURED BY A PTI CERTIFIED FABRICATION FACILITY.
- POST-TENSIONING TENDONS AND ANCHORAGES SHALL BE COMPLETELY ENCAPSULATED IN ACCORDANCE WITH ACI 423.7-07.

6 - ANCHORAGES

- ALL PRESTRESSING ANCHORAGES SHALL MEET THE MINIMUM REQUIREMENTS SET FORTH IN ACI STANDARD BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI-318-LATEST EDITION).
- ANCHORAGES WITH REUSABLE SPLIT GROMMETS SHALL BE USED AT CONSTRUCTION JOINTS WHERE TENDONS WILL BE STRESSED INTERMEDIATELY.
- ANCHORAGES WITH SHOP PRE-SEATED WEDGES SHALL BE USED FOR ALL DEAD-END ANCHORAGES.

7 - TENDON FABRICATION

- TENDONS SHALL BE FABRICATED WITH SUFFICIENT LENGTH BEYOND THE EDGE FORM TO ALLOW STRESSING. A MINIMUM LENGTH OF 24 INCHES AT EACH STRESSING END IS REQUIRED.
- TENDONS THAT ARE STRESSED FROM ONE END ONLY SHALL HAVE DEAD-END ANCHORAGES ATTACHED TO ONE END PRIOR TO SHIPMENT.
- TENDONS SHALL BE CLEARLY IDENTIFIED BY COLOR CODE AS CALLED FOR ON THE PLACING DRAWINGS FOR EASE OF PLACEMENT.
- EACH TENDON SHIPMENT SHALL BE ACCOMPANIED BY A CUTTING LIST INDICATING THE NUMBER OF TENDONS, THEIR LENGTH, COLOR CODE AND TOTAL NUMBER OF ANCHORAGES, WEDGES, GROMMETS AND SUPPORT CHAIRS SHIPPED.
- TENDONS WILL BE FABRICATED IN SUCH SEQUENCE AND QUANTITY AS TO AVOID LENGTHY STORAGE AT JOBSITE.
- PURCHASER SHALL PROPERLY UNLOAD TENDON SHIPMENT UPON ARRIVAL. USE OF NYLON SLING IS RECOMMENDED TO PREVENT DAMAGE TO THE SHEATHING. PURCHASER SHALL SATISFACTORILY PROTECT TENDONS AT THE JOBSITE FROM CORROSION PRIOR TO PLACEMENT.

8 - TENDON PLACEMENT

- TENDONS SHALL BE PLACED ACCORDING TO NUMBER AND SPACING AS SHOWN ON THE PLACING DRAWINGS. SLIGHT DEVIATION IN SPACING IS PERMITTED WHERE REQUIRED TO AVOID OPENINGS AND INSERTS WHICH ARE SPECIFICALLY LOCATED.
- WHERE TENDONS INTERFERE WITH EACH OTHER, ONE TENDON MAY BE MOVED HORIZONTALLY IN ORDER TO AVOID THIS INTERFERENCE. WHERE THERE IS INTERFERENCE BETWEEN TENDONS AND ANY CONDUIT THE TENDON PROFILE GOVERNS.
- PLACEMENT OF MILD STEEL REINFORCEMENT SHALL BE COORDINATED WITH THE PLACEMENT OF POST-TENSIONING TENDONS. PROPER TENDON PLACEMENT HAS PRIORITY.
- SUFFICIENT SUPPORT STEEL, SIZE AND SPACING AS INDICATED ON THE PLACING DRAWINGS, SHALL BE PROVIDED. MAXIMUM SPACING OF SUPPORT BARS SHALL NOT EXCEED 4 FT. THESE BARS ARE USED TO PREVENT LATERAL MOVEMENT OF THE TENDONS DURING CONCRETE PLACEMENT AND TO MAINTAIN, BY CHAIRING, THE PROPER PROFILE.
- ALL SUPPORT STEEL AND POST-TENSION TENDONS SHALL BE FIRMLY SECURED IN FORMS TO OBTAIN DIMENSIONS AND LOCATIONS SHOWN ON THE PLACING DRAWINGS. EACH INTERSECTION OF A SUPPORT BAR AND A TENDON SHALL BE CHAIRED.
- SUPPORT BARS FOR ALL UNIFORMLY DISTRIBUTED TENDONS SHALL BE CONTINUOUS WITH MIN. 2'-0" LAP SPLICES.
- SUFFICIENT BAR CHAIRS SHALL BE PROVIDED AS REQUIRED TO HOLD THE TENDONS IN TRUE VERTICAL POSITION.
- ONE CONTINUOUS BAR SHALL BE PLACED ON TOP AND BOTTOM OF THE ANCHORAGES. SEE TYPICAL DETAILS FOR SIZE.
- IT SHALL BE THE POST-TENSION STEEL PLACERS RESPONSIBILITY TO MAINTAIN ALIGNMENT OF THE TENDONS BEFORE, DURING AND AFTER CONCRETE PLACEMENT.
- THE POST-TENSIONING SYSTEM SHALL BE SHIPPED, STORED, HANDLED, AND INSTALLED IN ACCORDANCE WITH ACI 423.6-01.

9 - STRESSING PROCEDURE

- THE STRESSING OPERATION MUST BE UNDER THE IMMEDIATE CONTROL OF A PERSON EXPERIENCED IN THIS TYPE OF WORK. HE MUST EXERCISE CLOSE SUPERVISION AND KEEP RECORDS OF ALL OPERATIONS.
- THE STRESSING OPERATION SHALL NOT COMMENCE UNTIL CONCRETE TEST CYLINDERS, CURED UNDER JOBSITE CONDITIONS, HAVE BEEN TESTED AND INDICATE THAT THE CONCRETE IN THE MEMBER HAS ATTAINED A MINIMUM STRENGTH OF 3,500PSI.
- ALL PRESTRESSING STEEL SHALL BE STRESSED BY MEANS OF HYDRAULIC JACKS, EQUIPPED WITH ACCURATE READING AND CALIBRATED HYDRAULIC PRESSURE GAUGES. A CALIBRATION CHART SHALL ACCOMPANY EACH JACK AND GAUGE SHALL BE LESS THAN 6 MONTHS OLD.
- THE POST-TENSIONING OPERATION WILL BE CONDUCTED SO THAT ACCURATE ELONGATION OF THE PRESTRESSING STEEL CAN BE RECORDED AND COMPARED WITH COMPUTATIONS SUBMITTED TO THE STRUCTURAL ENGINEER.
- RECORDS SHALL BE KEPT OF ALL JACKING FORCES AND ELONGATIONS AND SUBMITTED PROMPTLY TO THE STRUCTURAL ENGINEER FOR REVIEW.
- THE MAXIMUM JACKING FORCE TO OVERCOME FRICTION SHALL NOT EXCEED 80 % OF THE ULTIMATE FORCE OF THE TENDON. (41.3 x .80 = 33.0 KIPS)
- TENDONS SHALL BE ANCHORED AT A FORCE NOT TO EXCEED 70 % OF THE ULTIMATE FORCE OF THE TENDON. (41.3 x .70 = 28.9 KIPS)
- THE STRESSING OPERATION SHALL PROCEED AS FOLLOWS:

- REMOVE GROMMETS AT THE STRESSING ENDS, CHECK INSIDE EACH GROMMET HOLE TO MAKE SURE THAT THE ANCHORAGES ARE FREE FROM CEMENT PASTE : IF NOT REMOVE PASTE FROM ANCHORAGE WITH A SCREWDRIVER.
- INSERTS WEDGES, SIDE BY SIDE, BY HAND INTO EACH ANCHORAGE.
- PUT A PAINT MARK ON EACH STRAND AT THE SLAB EDGE OR AT A FIXED DISTANCE FROM THE EDGE OF THE SLAB.
- DRESS THE STRAND TO OVERCOME FRICTION.
- SEAT THE WEDGES IN THE ANCHORAGE USING THE HYDRAULIC SEATING DEVICE BUILT INTO THE RAM.
- REMOVE THE RAM.
- MEASURE AND RECORD FINAL ELONGATION.
- IF THE DISCREPANCY BETWEEN THE CALCULATED ELONGATION AND THE MEASURED ELONGATION IS 7% OR LESS OR IF THE DISCREPANCY IS LESS THAN 0.25 INCH, THEN THE ELONGATION SHALL BE CONSIDERED ACCEPTABLE AND THE STRAND TAIL MAY BE CUT. DISCREPANCIES GREATER THAN 7% OR 0.25 INCH SHALL BE INVESTIGATED BY THE

POST-TENSIONING SUPPLIER TO DETERMINE THE CAUSE AND RECOMMEND CORRECTIVE ACTION, THE POST-TENSIONING SUPPLIER SHALL SUBMIT THEIR RECOMMENDATIONS TO THE CONTRACTOR AND ENGINEER WITHIN 24 HOURS OF STRESSING.

- TENDONS STRESSED FROM ONE END ONLY SHALL BE SO INDICATED ON THE PLACING DRAWINGS. TENDONS THAT ARE STRESSED FROM BOTH ENDS NEED NOT BE STRESSED FROM BOTH ENDS SIMULTANEOUSLY. ELONGATION FROM BOTH ENDS MUST TOTAL THE ELONGATION SHOWN ON THE PLACING DRAWINGS.

- TAKE SAFETY PRECAUTIONS AS NECESSARY. DO NOT PERMIT WORKMEN TO STAND BEHIND JACKS WHILE STRESSING TENDONS.

10 - STRESSING SEQUENCE

- POST-TENSIONING TENDONS SHALL BE STAGED STRESSED IN THE FOLLOWING SEQUENCE:
 - STRESS 50% OF UNIFORM TENDONS AND 50% OF BANDED TENDONS WHEN CONCRETE COMPRESSIVE STRENGTH HAS REACHED A MINIMUM OF 3,000PSI.
 - STRESS REMAINING UNIFORM AND BANDED TENDONS.

11 - SEALING ANCHORAGE BLOCKOUTS

- AFTER STRESSING IS COMPLETED AND WITH REVIEW OF THE ELONGATION RECORDS FROM THE STRUCTURAL ENGINEER, OR IF ELONGATIONS ARE WITHIN TOLERANCES SPECIFIED HEREIN, TENDONS SHALL BE CUT OR BURNED OFF IN ACCORDANCE WITH POST-TENSIONING SUPPLIERS RECOMMENDATIONS.
- INSTALL GREASE FILLED END CAP IMMEDIATELY AFTER CUTTING TENDONS.
- EXPOSED STRESSING RECESS SHALL BE FILLED FLUSH WITH NON-SHRINK GROUT. PREPARE POCKET BY CLEANING EXPOSED SURFACES OF GREASE, DIRT AND LAITANCE PRIOR TO FILLING WITH GROUT. WHITE CEMENT MAY BE ADDED AS REQUIRED FOR THE FILLER TO MATCH ADJACENT CONCRETE WHEN FINISHED. THIS WORK SHALL BE PERFORMED WITHIN 1 WORKING DAY AFTER CUTTING TENDONS BY THE CONTRACTOR. GROUT MIXTURES CONTAINING CHLORIDES, FLUORIDES, SULFATES OR NITRATES SHALL NOT BE USED.

12 - MISCELLANEOUS

- ALL THE EQUIPMENT USED FOR HANDLING AND PLACING TENDONS SHALL BE SUCH THAT IT DOES NOT DAMAGE OR DETERIORATE THE PRESTRESSING STEEL OR THE ANCHORAGES.
- ALL INSERTS FOR SUSPENDED MECHANICAL AND ARCHITECTURAL WORK SHALL BE CAST IN PLACE. IF ADDITIONAL FASTENERS ARE REQUIRED, POWER DRIVEN FASTENERS WILL BE PERMITTED ONLY WHERE IT CAN BE SHOWN THAT THE INSERTS WILL NOT SPALL THE CONCRETE AND ARE LOCATED SO AS TO AVOID DAMAGING THE TENDONS. THE CONTRACTOR MUST DETERMINE THE LOCATION OF THE TENDONS AT THE SURFACE OF THE SLAB BEFORE DRIVING FASTENERS.
- "DRILL STOPS" SHALL BE USED FOR ALL DRILLING. TO PREVENT ACCIDENTAL DAMAGE TO TENDONS.
- ALL POCKETS AND CLOSURE STRIPS, REQUIRED FOR THE ANCHORAGE MUST BE ADEQUATELY REINFORCED SO AS NOT TO DECREASE THE STRENGTH OF THE STRUCTURE.

13 - PLACING

- TENDONS SHALL BE PROFILED TO APPROXIMATE A PARABOLIC PROFILE BETWEEN SUPPORTS AND SHALL CONFORM TO THE CONTROL POINTS SHOWN IN THE DRAWINGS. DIMENSIONS ARE FROM THE SLAB BOTTOM TO THE CENTER OF GRAVITY OF THE TENDON OR GROUP OF TENDONS. LOW POINTS ARE AT MID-SPAN UNLESS OTHERWISE NOTED. THE INFLECTION POINT IN THE TENDON PROFILE SHALL BE LOCATED 0.12 TIMES THE SPAN LENGTH FROM THE CENTER OF SUPPORT UNLESS OTHER WISE NOTED.

14 - INSPECTION AND RECORDS

- THE GENERAL CONTRACTOR SHALL PROVIDE CONTINUOUS QUALIFIED WRITTEN INSPECTION REPORTS OF ALL POST-TENSIONING WORK, SUCH AS THE FOLLOWING:
 - PLACING OF ALL POST-TENSIONING STEEL
 - JACKING PROCEDURES
 - CHECKING OF TENDON ELONGATION.
- RECORDS SHALL BE KEPT BY THE GENERAL CONTRACTOR OF ALL THE JACKING FORCES AND TENDON ELONGATIONS. COPIES OF THE RECORDS SHALL BE PROMPTLY SUBMITTED TO THE ARCHITECT.

15 - SHORING

- PRIOR TO STRESSING THE SLAB TENDONS, SUFFICIENT SHORES SHALL SUPPORT THE TOTAL WEIGHT OF THE SLAB.
- ALL POST-TENSIONING SLABS SHALL BE PROPERLY RE-SHORED IF THE FORMS ARE TO BE REMOVED IMMEDIATELY AFTER STRESSING.

16 - SHOP DRAWINGS

- SHOP DRAWINGS, REVIEWED AND APPROVED BY THE CONTRACTOR, SHALL BE SUBMITTED TO THE ARCHITECT INDICATING THE FOLLOWING:

A. POST-TENSIONING

- TENDON LAYOUT INCLUDING DRAPES AS WELL AS DIMENSIONS LOCATING TENDONS IN THE HORIZONTAL PLANE AT THE HIGH AND LOW POINTS. THE HORIZONTAL CURVATURE OF TENDONS AT BLOCKOUTS SHALL BE DETAILED. ALL OPENINGS IN SLABS SHALL BE SHOWN.
- TENDON PROFILES SHOWING CHAIR HEIGHTS AND LOCATIONS OF ANY PLACEMENT AS REQUIRED.
- DETAILS OF ANCHORAGE DEVICES, BLOCKOUT ASSEMBLY FORMWORK POCKETS AND CLOSURES.
- REQUIRED ELONGATION OF EACH TENDON AT EACH JACKING POINT.
- COMPLETE PRESTRESSING PROCEDURE TO INCLUDE:
 - JACKING FORCE AND JACKING PRESSURE.
 - MAXIMUM TEMPORARY JACKING FORCE AND JACKING PRESSURE.
 - CERTIFIED JACK CALIBRATION METHOD OF IDENTIFICATION OF JACK AND PUMP COMBINATION TO BE USED ON THE JOB.
- PT SHOP DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE JURISDICTION OF THE PROJECT.

B. MILD REINFORCING STEEL

- PLACING DRAWINGS AND BENDING DETAILS FOR ALL MILD STEEL CALLED FOR IN THE DRAWINGS.

17 - SHORING SYSTEM

- THE FORM WORK AND SHORING SYSTEM SHALL BE DESIGNED BY A REGISTERED ENGINEER IN ACCORDANCE WITH ACI-347 "RECOMMENDED PRACTICE FOR CONCRETE FORMING"
- THE FORMWORK ENGINEER SHALL ENSURE THAT THE STRUCTURAL DESIGN LIVE LOADS ARE NOT EXCEEDED.
- SIGNED AND SEALED SHORING AND RESHORING DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL. THE BUILDING INSPECTOR SHALL BE PROVIDED A COPY OF THE FINAL APPROVED PLANS FOR HIS USE.
- POST-TENSIONED SLAB MAY BE STRIPPED AND RESHORED AFTER APPROVAL OF STRESSING RECORDS BY THE ENGINEER OF RECORD, OR WHEN ALL ELONGATIONS IN A THE AREA TO BE STRIPPED FALL WITHIN TOLERANCES SPECIFIED HEREIN.
- CONVENTIONALLY REINFORCED SLABS SHALL NOT BE STRIPPED AND RESHORED UNTIL THE CONCRETE HAS REACHED 75% OF THE 28 DAY STRENGTH.

ABBREVIATION

| | |
|---|--|
| ARCH. - ARCHITECTURAL | |
| BOT. - BOTTOM | |
| B.C. - BARRIER CABLE | |
| CGS - CENTER OF GRAVITY STEEL | |
| C.I.P. - CAST-IN-PLACE CONCRETE | |
| C.J. - CONTROL JOINT/CONSTRUCTION JOINT | |
| CLR - CLEAR | |
| CONC. - CONCRETE | |
| CONT. - CONTINUOUS | |
| C.M.U. - CONCRETE MASONRY UNIT | |
| DET. - DETAIL | |
| DI. - DIAMETER | |
| DIM. - DIMENSION | |
| DWGS. - DRAWINGS | |
| EA. - EACH | |
| E.F. - EACH FACE | |
| E.J. - EXPANSION JOINT | |
| EL. - ELEVATION | |
| EQ. - EQUAL | |
| E.S. - EACH SIDE | |
| E-W - EAST-WEST | |
| E.W. - EACH WAY | |
| EXT. - EXTERIOR | |
| F.D. - FLOOR DRAIN | |
| F.F. - FINISH FLOOR | |
| FND. - FOUNDATION | |
| FTG. - FOOTING | |
| GALV. - GALVANIZED | |
| HORIZ. - HORIZONTAL | |
| I.D. - INSIDE DIAMETER | |
| IN. - INCHES | |
| INT. - INTERIOR | |
| JT. - JOINT | |
| MECH. - MECHANICAL | |
| MIN - MINIMUM | |
| MISC. - MISCELLANEOUS | |
| N-S - NORTH-SOUTH | |
| N.T.S. - NOT TO SCALE | |
| O.C. - ON CENTER | |
| O.D. - OUTSIDE DIAMETER | |
| PT - POST-TENSIONING | |
| POLY. - POLYETHYLENE | |
| REF. - REFERENCE | |
| REINF. - REINFORCEMENT | |
| SCHED. - SCHEDULE | |
| SIM. - SIMILAR | |
| SOG - SLAB ON GROUND | |
| STD. - STANDARD | |
| SYM. - SYMMETRICAL | |
| T - TOP | |
| TYP. - TYPICAL | |
| U.N.O. - UNLESS NOTED OTHERWISE | |
| W - WITH | |

PT LEGEND

| | |
|--|-------------------|
| | DEAD END ANCHOR |
| | STRESS END ANCHOR |
| | ADDED TENDON |

TYPICAL SYMBOLS

| | |
|--|--|
| | SECTION MARKER SECTION DETAIL NO. DRAWING NUMBER |
| | DETAIL BUBBLE DETAIL NUMBER DRAWING NUMBER |
| | REVISION |

LEGEND

| | |
|--|--------------|
| | CMU |
| | CONCRETE |
| | TOP REBAR |
| | BOTTOM REBAR |

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GENERAL NOTES

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VSTRUCTURAL LLC (VSL) DESIGN

VStructural LLC is responsible only for the structural strength design of the post-tensioned members due to vertical loading. VStructural LLC certifies that its design is in accordance with criteria established by the engineer of record. This design is not to be used unless approved by the engineer of record, and VStructural LLC disclaims any liability for the design or details of others.

SCALE: 3/16" = 1'-0"

JOB NO: 2641

SHEET: S0.1