

SPECIFICATIONS

I. GENERAL REQUIREMENTS

- A. THE PLANS AND SPECIFICATIONS ARE INTENDED TO GIVE A DESCRIPTION OF THE WORK. NO DEVIATION FROM THE PLANS AND SPECIFICATIONS SHALL BE MADE WITHOUT THE WRITTEN CONSENT OF EXCEL ENGINEERING, INC. THE CONTRACTOR IS TO CLARIFY ANY DISCREPANCIES WITH EXCEL ENGINEERING, INC. PRIOR TO BEGINNING WORK. THE CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING CONDITIONS AND ACCESS TO THE WORK AREA.
- B. THE CONTRACTOR HAS THE SOLE RESPONSIBILITY FOR AND SHALL HAVE CONTROL OF CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND SAFETY PRECAUTIONS AND PROCEDURES USED TO CONSTRUCT THE WORK.
- C. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL (INCLUDING TAXES) AND EQUIPMENT AS NECESSARY TO COMPLETE THE WORK. PERMITS SHALL BE OBTAINED AND PAID FOR BY THE RESPECTIVE CONTRACTOR, INCLUDING TEMPORARY OCCUPANCY PERMIT IF REQUIRED.
- D. THE CONTRACTOR SHALL FURNISH TEMPORARY BRACING OF ALL BUILDING ELEMENTS DURING CONSTRUCTION. TEMPORARY BRACING SYSTEMS SHALL BE DESIGNED TO WITHSTAND CODE DESIGN LOADS. CONTRACTOR SHALL RETAIN SERVICES OF A PROFESSIONAL ENGINEER TO DESIGN AND SUPERVISE BRACING INSTALLATION IF THEY DO NOT HAVE THE EXPERTISE REQUIRED.
- E. ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES AND REGULATIONS INCLUDING THE REQUIREMENTS OF THE AMERICAN WITH DISABILITIES ACT (A.D.A.) ARE MADE PART OF THESE SPECIFICATIONS AND SHALL BE COMPLIED WITH AS FAR AS THEY APPLY TO WORK UNDER THIS CONTRACT.
- F. IN AS MUCH AS THE SPECIFICATIONS ARE BRIEF, THE CONTRACTOR SHALL PROVIDE WORKMANSHIP THAT IS NEAT, SECURE AND OF THE BEST QUALITY WITH THE BEST POSSIBLE APPEARANCE AND UTILITY. FAULTY WORK SHALL BE REPAIRED OR REPLACED AT NO COST TO THE OWNER. INDUSTRY STANDARDS SHALL BE USED AS THE GUIDE FOR QUALITY OF MATERIALS AND WORKMANSHIP.
- G. REFERENCE TO MATERIALS OR SYSTEMS HEREIN BY NAME, MAKE OR CATALOG NUMBER IS INTENDED TO ESTABLISH A QUALITY STANDARD, AND NOT TO LIMIT COMPETITION. THE WORDS "OR APPROVED EQUIVALENT" ARE IMPLIED FOLLOWING EACH BRAND NAME/MODEL NUMBER UNLESS STATED OTHERWISE. "OR APPROVED EQUIVALENT" MATERIALS SHALL BE APPROVED BY EXCEL ENGINEERING, INC. PRIOR TO BIDS BEING ACCEPTED AND ACCEPTANCE FOR USE. PROVIDE A LETTER FROM THE MANUFACTURER CERTIFYING THAT THE PRODUCT MEETS OR EXCEEDS THE SPECIFIED PRODUCT.
- H. SUBMIT FIVE (5) COPIES OF STRUCTURAL (HVAC, PLUMBING, FIRE PROTECTION AND ELECTRICAL IF PART OF THIS PLAN) SHOP DRAWINGS TO EXCEL ENGINEERING, INC. FOR APPROVAL PRIOR TO FABRICATION AND INSTALLATION. SHOP DRAWINGS SHALL BE REVIEWED AND STAMPED BY THE CONTRACTOR PRIOR TO SUBMITTING FOR APPROVAL. SHOP DRAWING SUBMITTALS MUST BE 100% COMPLETE AND IN ONE (1) PACKAGE FOR THE ITEM BEING SUBMITTED. NON-COMPLETE SHOP DRAWINGS OR PARTIAL ITEM SHOP DRAWINGS WILL BE RETURNED TO THE CONTRACTOR WITHOUT COMMENT AND STAMPED "REJECTED - RESUBMIT". CONTRACTORS WHO KNOWINGLY WANT TO SUBMIT NON-COMPLETE SHOP DRAWINGS OR BREAK SINGLE ITEM SHOP DRAWINGS INTO MULTIPLE SUBMITTALS WILL BE RESPONSIBLE TO MAKE ARRANGEMENTS WITH EXCEL ENGINEERING, INC. PRIOR TO SUBMITTING THE SHOP DRAWINGS), TO COMPENSATE EXCEL ENGINEERING FOR THE EXTRA WORK INVOLVED. NON-STRUCTURAL ITEMS AND SAMPLES FOR FINISHES ARE TO BE SUBMITTED TO EXCEL ENGINEERING, INC. FOR APPROVAL PRIOR TO INSTALLATION.
- I. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL SUBMIT TO THE OWNER A CERTIFICATE OF INSURANCE FOR NOT LESS THAN THE FOLLOWING LIMITS:
 - 1. WORKER'S COMPENSATION AND EMPLOYERS LIABILITY
 - A. PER STATUTORY LIMITS
 - 2. COMMERCIAL GENERAL LIABILITY
 - A. GENERAL AGGREGATE: \$2,000,000
 - B. PRODUCTS AND COMPLETED OPERATIONS AGGREGATE: \$2,000,000
 - C. PERSONAL AND ADVERTISING INJURY: \$1,000,000
 - D. EACH OCCURRENCE: \$1,000,000
 - 3. COMPREHENSIVE AUTOMOBILE LIABILITY
 - A. COMBINED SINGLE LIMIT BODILY INJURY AND PROPERTY DAMAGE: \$1,000,000
 - B. NON-OWNED AND HIRED AUTOMOBILE: \$1,000,000
- J. THE CONTRACTOR SHALL OBTAIN THE OWNER'S APPROVAL OF THE CONSTRUCTION SCHEDULE PRIOR TO PROCEEDING WITH THE WORK.
- K. THE CONTRACTOR SHALL FURNISH TEMPORARY OFFICE, TOILET FACILITIES, WORKING TELEPHONE, ELECTRICITY, HEAT, WATER AND FIRE EXTINGUISHERS AS REQUIRED FOR COMPLETION OF THE WORK UNLESS THE OWNER HAS AGREED IN WRITING TO FURNISH OR WAIVE ANY OF THE ABOVE ITEMS.
- L. THE CONTRACTOR SHALL PROVIDE ALL LAYOUT AS REQUIRED, COMPETENT ON SITE SUPERVISION, AND BROOM CLEANING OF CONSTRUCTION SITE INCLUDING DUMPSTERS FOR REFUSE DISPOSAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY ON SITE AND PROTECTION OF SITE PER LOCAL, STATE AND FEDERAL REQUIREMENTS.
- M. NOTIFY ARCHITECT ONE WEEK IN ADVANCE TO SCHEDULE FINAL COMPLIANCE WALK-THRU PRIOR TO THIS WALK THRU, PROVIDE THE ARCHITECT WITH THE FIRE PROTECTION SYSTEM TEST REPORT AND A COPY OF THE ELEVATOR INSPECTION REPORT AS APPLICABLE. ALL COMPONENT SUBMITTALS SHOULD BE FILED AND AVAILABLE FOR REVIEW AT THE WALK-THRU. THE BUILDING SHALL BE COMPLETE AND ALL SYSTEMS OPERATIONAL AT THE TIME OF THE WALK THRU. IF THE ARCHITECT IS REQUIRED TO MAKE ADDITIONAL VISITS DUE TO NON-COMPLIANCE, THEY WILL BE CHARGED TO THE REQUESTING CONTRACTOR.
- N. THE CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER SUBSTANTIAL COMPLETION OF THE PROJECT. FURNISH MANUFACTURER'S WRITTEN WARRANTIES FOR SPECIFIED EQUIPMENT STATING EFFECTIVE WARRANTY DATE.
- O. THE CONTRACTOR SHALL FURNISH "AS-BUILT" DRAWINGS REFLECTING ALL CHANGES DURING CONSTRUCTION. PROVIDE TWO (2) COPIES OF OPERATING AND MAINTENANCE MANUALS TO OWNER FOR ALL FURNISHED EQUIPMENT.

II. CONCRETE

- A. DESIGN AND CONSTRUCTION OF ALL CAST-IN-PLACE CONCRETE WORK SHALL CONFORM TO ACI 318 BUILDING CODE AND CRSI MANUAL OF STANDARD PRACTICE.
- B. CONCRETE SLAB CONSTRUCTION TO BE PROVIDED PER MORE STRINGENT REQUIREMENTS OF GEOTECHNICAL REPORT OR CONSTRUCTION DOCUMENTS.
- C. DESIGN MIXES SHALL BE IN ACCORDANCE WITH ASTM C94.
 - 1. STRENGTH TO BE MIN. 3000 PSI AT 28 DAYS FOR FOOTINGS AND WALLS.
 - 2. STRENGTH TO BE MIN. 3500 PSI AT 28 DAYS FOR SLABS ON GRADE.
 - 3. STRENGTH TO BE MIN. 4000 PSI AT 28 DAYS FOR COLUMNS, BEAMS, EXTERIOR CONCRETE, STRUCTURAL SLABS, CONCRETE FILLED METAL DECK AND PRECAST TOPPING.
 - 4. SLUMP SHALL NOT EXCEED 4".
 - 5. ALL CONCRETE EXPOSED TO WEATHER SHALL BE AIR-ENTRAINED WITH 4-7% AIR CONTENT. NO OTHER ADMIXTURES SHALL BE USED WITHOUT APPROVAL OF EXCEL ENGINEERING, INC. CALCIUM CHLORIDE SHALL NOT BE USED.
 - 6. MAXIMUM AGGREGATE SIZE FOR FOOTING TO BE 1/2" AND MAXIMUM AGGREGATE SIZE FOR ALL OTHER WORK TO BE 3/4"
- D. PLACE SLABS ON GRADE WITH CONSTRUCTION JOINTS AT JOINTS AS INDICATED ON THE PLANS. SAW CUT TO BE DONE AS SOON AS POSSIBLE, BUT NOT LATER THAN 24 HOURS AFTER CONCRETE IS PLACED. ALL INTERIOR SLABS TO HAVE A TROWEL FINISH AND ALL EXTERIOR SLABS TO HAVE A LIGHT BROOM FINISH UNLESS NOTED OTHERWISE. PAINT FLOOR LEVEL AT WALLS AND PITCH SURFACES UNFORMLY TO DRAINS. ALL CONCRETE IS TO BE CURED FOR 7 DAYS. FLOORS TO BE STAINED, TO RECEIVE SEALER, OR TO RECEIVE ANOTHER FINISH THAT IS NOT COMPATIBLE WITH CURING COMPOUNDS ARE TO BE WET CURED OR CURED WITH AN ARMORLON TRANSGUARD 4000 WET CURE SEALER PER MANUFACTURER'S SPECIFICATION. EXTERIOR SLABS SHALL BE SEPARATED FROM BUILDINGS WITH CONTINUOUS 1/2" FIBER EXPANSION JOINT AND/OR 1/4" FIBER EXPANSION JOINT AT DECORATIVE MASONRY UNITS. INTERIOR SLABS SHALL BE SEPARATED FROM FOUNDATION WALLS AND PIERS WITH FORM RELEASE AGENT, 15 LB. FELT OR AS DETAILED ON PLANS.

- E. THE SLAB ON-GRADE FLOOR FLATNESS/LEVELNESS SHALL MEET TO THE FOLLOWING CRITERIA:
 - 1. TOP OF FLOOR ELEVATION SHALL BE WITHIN 3/4" OF DESIGN ELEVATION IN ACCORDANCE TO ACI 117 TOLERANCES.
 - 2. THE SPECIFIED OVERALL VALUE FOR THE FLOOR FLATNESS/LEVELNESS IS AS FOLLOWS:
 - A. NONCRITICAL MECHANICAL ROOMS, NONPUBLIC AREAS, AND PARKING - FF20 / FL15
 - B. CARPETED AREAS IN COMMERCIAL OFFICE, INDUSTRIAL BUILDING - FF25 / FL20
 - C. THIN-SET FLOORING, WAREHOUSE - FF35 / FL25
 - D. WAREHOUSE WITH AIR-PALLET USE, ICE RINKS - FF45 / FL35
 - E. CRITICAL AREAS AS INDICATED ON PLAN - >FF50 / >FL50
 - 3. THE MINIMUM LOCAL VALUE FOR THE FLOOR FLATNESS/LEVELNESS SHALL NOT BE LESS THAN 57% OF THE SPECIFIED OVERALL VALUE.
 - 4. CONTRACTOR SHALL REFACE AREAS THAT DO NOT MEET THESE CRITERIA.

- F. ALL REINFORCING BARS SHALL BE ASTM A615 GRADE 60. THICKNESS OF CONCRETE COVER OVER REINFORCEMENT SHALL BE NOT LESS THAN 3" WHERE CONCRETE IS DEPOSITED AGAINST THE GROUND WITHOUT THE USE OF FORMS AND NOT LESS THAN 1 1/2" IN ALL OTHER LOCATIONS. ALL REINFORCING SHALL BE LAPPED 36 DIAMETERS FOR UP TO #6 BARS, 60 DIAMETERS FOR #7 TO #10 BARS OR AS NOTED ON THE DRAWINGS AND EXTENDED AROUND CORNERS WITH CORNER BARS. PLACING AND DETAILING OF STEEL REINFORCING AND REINFORCING SUPPORTS SHALL BE IN ACCORDANCE WITH CRSI AND ACI MANUAL AND STANDARD PRACTICES. THE REINFORCEMENT SHALL NOT BE PAINTED AND MUST BE FREE OF GREASE/OIL, DIRT OR DEEP LUST WHEN PLACED IN THE WORK. ALL WELDED WIRE FABRIC SHALL MEET THE REQUIREMENTS OF ASTM A185. WELDED WIRE FABRIC SHALL BE PLACED 2" FROM TOP OF SLAB, UNLESS INDICATED OTHERWISE.

- G. CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO SAMPLE MATERIALS, PERFORM TESTS, AND SUBMIT TEST REPORTS DURING CONCRETE PLACEMENT. TESTS WILL BE PERFORMED ACCORDING TO ACI 301, CAST AND LABORATORY CURE ONE SET OF FOUR STANDARD CYLINDERS FOR EACH COMPOSITE SAMPLE FOR EACH DAY'S POUR OF EACH CONCRETE MIX EXCEEDING 5 CU. YD., BUT LESS THAN 25 CU. YD., PLUS ONE SET FOR EACH ADDITIONAL 50 CU. YD. OR FRACTION THEREOF. PERFORM COMPRESSIVE-STRENGTH TESTS ACCORDING TO ASTM C 39. TEST TWO SPECIMENS AT 7 DAYS AND TWO SPECIMENS AT 28 DAYS, PERFORM SLUMP TESTING ACCORDING TO ASTM C 143. PROVIDE ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.

- H. PROTECT FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURES. IN HOT, DRY, AND WINDY WEATHER, APPLY AN EVAPORATION-CONTROL COMPOUND ACCORDING TO MANUFACTURER'S INSTRUCTIONS AFTER SCREEDING AND BULL FLOUING, BUT BEFORE POWER FLOATING AND TROWELLING.

- I. LIMIT MAXIMUM WATER-CEMENTITIOUS RATIO OF CONCRETE EXPOSED TO FREEZING, THAWING AND DRAINING SALTS TO 0.45.

- J. APPLY TROWEL FINISH TO MONOLITHIC SLAB SURFACES TO BE EXPOSED TO VIEW AND SLAB SURFACES TO BE COVERED WITH RESILIENT FLOORING, CARPET, PAINT, OR OTHER THIN FILM-FINISH COATING SYSTEM. APPLY NONSLIP BROOM FINISH TO EXTERIOR CONCRETE PLATFORMS, STEPS, AND RAMPS, AND ELSEWHERE AS INDICATED.

- K. TEST RESULTS WILL BE REPORTED IN WRITING TO ARCHITECT, READY-MIX PRODUCER, AND CONTRACTOR WITHIN 24 HOURS AFTER TESTS. REPORTS OF COMPRESSIVE STRENGTH TESTS SHALL CONTAIN THE PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF CONCRETE PLACEMENT, NAME OF CONCRETE TESTING SERVICE, CONCRETE TYPE AND CLASS, LOCATION OF CONCRETE BATCH IN STRUCTURE, DESIGN COMPRESSIVE STRENGTH AT 28 DAYS, CONCRETE MIX PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH AND TYPE OF BREAK FOR BOTH 7-DAY TESTS AND 28-DAY TESTS.

- 1. INCLUDE THIS SET OF PLANS WITH THE PROJECT AS BUILT PLANS.

III. LUMBER

- A. LUMBER SHALL BE GRADED AND STAMPED WITH MINIMUM STRUCTURAL DESIGN VALUES AS LISTED BELOW.
 - 1. #1/#2 DOUG FIR: 8500 PSI FB, 95 PSI FV, 1600 KSI E (BEAMS, LINTELS & HEADERS, UNLESS NOTED)
 - 2. #1/#2 S.P.F.: 875 PSI FB, 1150 PSI FC, 1400 KSI E (ALL STUDS & PLATES, UNLESS NOTED)
 - 3. LV @ 1800 KSI E OR MICRO-LAM @ 1900 KSI E, 2600 PSI FB, 285 PSI FV (OR AS NOTED ON THE PLANS)
 - 4. WOOD HEADER MATERIAL SHALL BE FREE OF ALL SPLITS, SHAKES AND CHECKS.
- B. MISCELLANEOUS LUMBER: PROVIDE NO. 3 OR STANDARD GRADE LUMBER OF ANY SPECIES FOR SUPPORT OR ATTACHMENT OF OTHER CONSTRUCTION, INCLUDING ROOFTOP EQUIPMENT CURBS AND SUPPORT BASES, CANT STRIPS, BUCKS, NAILERS, BLOCKING, AND SIMILAR MEMBERS.
- C. PROTECTION AGAINST DECAY WITH PRESERVATIVE-TREATED WOOD SHALL BE REQUIRED IN THE FOLLOWING AREAS:
 - 1. ALL WOOD SILL PLATES, FRAMING, AND FURRING STRIPS ATTACHED TO EXTERIOR BELOW GRADE MASONRY AND CONCRETE WALLS.
 - 2. ALL WOOD PLATES, BLOCKING, FRAMING AND FURRING STRIPS ATTACHED TO EXTERIOR, SINGLE-WYTHE MASONRY WALLS.
 - 3. ALL WOOD CAP FLASHING BLOCKING ATTACHED TO MASONRY OR CONCRETE PARAPETS.
 - 4. ALL WOOD SLEEPERS AND SILL PLATES ON CONCRETE SLABS IN DIRECT CONTACT WITH EARTH.
 - A. EXCEPTION: WOOD SILL PLATES ON CONCRETE SLABS SEPARATED FROM DIRECT CONTACT TO THE EARTH WITH A 10 MIL POLYETHYLENE VAPOR RETARDANT WILL NOT REQUIRE PRESERVATIVE-TREATMENT.
 - 5. ALL WOOD IN CONTACT WITH GROUND OR EXPOSED TO THE WEATHER.
- D. FINISHES FOR FASTENERS AND HARDWARE IN CONTACT WITH PRESERVATIVE-TREATED WOOD ARE BASED ON THE FOLLOWING ASSUMPTIONS:
 - 1. ALL INTERIOR-TREATED WOOD SHALL USE AN ACO-C, ACO-D (CARBENATE), CBA-A, OR CA-B TREATMENT WITH RETENTION LEVELS LESS THAN OR EQUAL TO 0.40 AND CLASS: 0-41 PCF, AND 0.21 PCF RESPECTIVELY.
 - 2. ALL CONNECTION HARDWARE AND FASTENERS IN CONTACT WITH INTERIOR-TREATED WOOD SHALL BE HOT-DIPPED GALVANIZED MECHANICALLY GALVANIZED, OR STAINLESS STEEL.
 - 3. ALL CONNECTION HARDWARE AND FASTENERS IN DIRECT CONTACT WITH EXPOSED EXTERIOR-TREATED WOOD, UNKNOWN TREATMENTS, SHALL BE STAINLESS STEEL.
 - 4. USE TAPCON CTRIM/SEAL FASTENERS ON CONCRETE, ACO-TREATED WOOD BLOCKING TO MASONRY OR CONCRETE PARTS.
- E. SHOP DRAWINGS FOR PRESERVATIVE-TREATED WOOD, HARDWARE AND FASTENERS:
 - 1. THE CONTRACTOR SHALL FURNISH MATERIAL CERTIFICATES FOR ALL PRESERVATIVE-TREATED WOOD TYPES, SPECIFYING THE NAME OF THE TREATING COMPANY, THE PRESERVATIVE, AND THE LEVEL OF TREATMENT (0.10, 0.25, 0.40, ETC.), THE INTENDED USE ABOVE GROUND, AND GROUND CONTACT, ETC.), AND A REFERENCE TO THE APPROPRIATE AWPA STANDARD.
 - 2. THE CONTRACTOR SHALL FURNISH MATERIAL DATA SHEETS FOR HARDWARE AND FASTENERS IN CONTACT WITH PRESERVATIVE-TREATED WOOD.

IV. EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)

- A. EIFS MATERIALS AND INSTALLATION SHALL COMPLY WITH LOCAL AND STATE CODES AND ALL OTHER APPLICABLE SPECIFICATIONS FOR EXTERIOR INSULATION AND FINISH SYSTEMS, CLASS PB WITH MOISTURE DRAINAGE.
- B. SUBMIT THE FOLLOWING ITEMS:
 - 1. PRODUCT DATA: PRODUCT DATA SHEETS DESCRIBING PRODUCTS TO BE USED ON PROJECT.
 - 2. SAMPLES: SAMPLES FOR EACH FINISH, TEXTURE, AND COLOR TO BE USED ON PROJECT.
 - 3. QUALITY ASSURANCE/CONTROL SUBMITTALS: MANUFACTURERS INSTALLATION INSTRUCTIONS.
- C. FOLLOW MANUFACTURERS INSTRUCTIONS ON PRODUCT STORAGE AND HANDLING.
- D. STORE MOISTURE SENSITIVE MATERIALS IN WEATHER PROTECTED ENCLOSURES.
- E. PROVIDE A COMPLETE EXTERIOR INSULATION AND FINISH SYSTEM, CLASS PB, CONSISTING OF, BUT NOT LIMITED TO, A AIR & MOISTURE BARRIER, AN ADHESIVE, EXPANDED POLYSTYRENE INSULATION BOARD, BASE COAT, REINFORCING MESH/GRID FINISH.

- F. INSTALL EIFS IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS AND AS SHOWN ON PLANS.

- G. ALL SURROUNDING AREAS, WHERE THE EIFS HAS BEEN INSTALLED, SHALL BE LEFT FREE OF DEBRIS AND FOREIGN SUBSTANCES RESULTING FROM THE WORK.

- H. PROTECT FINISHED WORK FROM INCREMENT WEATHER UNTIL DRY AND PERMANENT PROTECTION IN THE FORM OF FLASHINGS, SEALANTS, ETC. ARE INSTALLED.
- I. PROTECT FINISHED WORK FROM DAMAGE DURING REMAINDER OF CONSTRUCTION PERIOD.

V. AIR AND MOISTURE

- A. ALL AIR AND MOISTURE BARRIER MATERIALS AND INSTALLATION SHALL COMPLY WITH LOCAL AND STATE CODES.
- B. SUBMIT THE FOLLOWING ITEMS:
 - 1. PRODUCT DATA: MANUFACTURERS TECHNICAL BULLETINS.

- C. FOLLOW MANUFACTURERS INSTRUCTIONS ON PRODUCT STORAGE AND HANDLING.

- D. STORE MOISTURE SENSITIVE MATERIALS IN WEATHER PROTECTED ENCLOSURES.

- E. PROVIDE A COMPLETE AIR AND MOISTURE BARRIER SYSTEM USING A FLUID APPLIED THREE-PART SYSTEM. THE SYSTEM CONSISTS OF ADHESIVE MESH TAPE AND LIQUID FILL AND SPRAY WRAP.
 - 1. ACCEPTABLE PRODUCT: PROSOCO R-GUARD OR EQUAL.

- F. INSTALL AIR AND MOISTURE BARRIER IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS AND AS SHOWN ON PLANS.

- 1. APPLY R-GUARD TAPE OVER SHEATHING JOINTS AND SEAMS. FOLD AND APPLY R-GUARD TAPE TO ROUGH OPENINGS, INSIDE AND OUTSIDE CORNERS, USE A SEAM ROLLER OR OTHER BLUNT TOOL TO FIRMLY ADHERE TAPE TO SHEATHING.

- 2. UNIFORMLY COVER TAPE AND ABOUT 4 INCHES OF SHEATHING ON EITHER SIDE OF THE TAPE WITH R-GUARD FILL USING A TROWEL OR TROWEL SPRAYER. TROWEL SMOOTH. SPOT FILL FASTENERS AND SURFACE DEFECTS WITH R-GUARD FILL. LET DRY.

- 3. SPRAY OR ROLLER APPLY R-GUARD SPRAY WRAP TO THE ENTIRE SURFACE INCLUDING AREAS COVERED BY R-GUARD TAPE AND R-GUARD FILL TO A UNIFORM WET MIL THICKNESS (10 MILS); LET DRY. ON MASONRY CONSTRUCTION, WHEN SPRAY APPLYING, BACKROLL TO CLOSE PINHOLES AND ENSURE EVEN COVERAGE. APPLY NUMBER OF COATS AS REQUIRED BY MANUFACTURERS SPECIFICATIONS.

- G. ALL SURROUNDING AREAS, WHERE THE AIR AND MOISTURE BARRIER HAS BEEN INSTALLED, SHALL BE LEFT FREE OF DEBRIS AND FOREIGN SUBSTANCES RESULTING FROM THE WORK.

- H. PROTECT FINISHED WORK FROM DAMAGE DURING REMAINDER OF CONSTRUCTION PERIOD.

VI. INSULATION

- A. ALL INSULATION MATERIALS AND INSTALLATION SHALL COMPLY WITH LOCAL AND STATE CODES.

- B. PRODUCT: FIBERGLASS INSULATION TO BE FIBERGLASS BATT OR ROLL COMPLYING WITH ASTM C665 AND NON-COMBUSTIBLE PER ASTM E136. THICKNESS OR R VALUE AS INDICATED ON PLANS. IF THICKNESS IS NOT SHOWN ON PLANS, THICKNESS TO BE THE DEPTH OF THE RAFTER OR RAFTER SYSTEM.
 - 1. MANUFACTURER: CERTAINTED OR OWENS CORNING.

- C. PRODUCT: VAPOR RETARDER TO BE MEMBRANE VAPOR RETARDER IN CONTACT WITH WARM (NORMALLY INSIDE) FACE OF THE INSULATION.
 - 1. MANUFACTURER: CERTAINTED.

- D. PRODUCT: ACOUSTICAL WALL INSULATION TO BE THE REDUCER SOUND CONTROL BATT IN WOOD FRAME CONSTRUCTION WALLS. INSULATION TO BE CERTIFIED SOUND ATTENUATION BATT IN METAL FRAMED WALLS AND PARTITIONS. ACCORDING TO SOUND BATTS TO BE CERTASOUND.
 - 1. MANUFACTURER: CERTAINTED.

- E. FOLLOW MANUFACTURERS INSTRUCTIONS ON PRODUCT STORAGE AND HANDLING.

- F. INSTALL INSULATION IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS AND AS SHOWN ON PLANS.

VII. SEALANTS

- A. CAULK AROUND ALL WINDOWS, DOORS, VENT OPENINGS, WHERE DIFFERENT MATERIALS MEET, ROOF OPENINGS, EAVES, JOISTS, JOINTS, COUNTERTOPS, DOOR FRAMES, ETC. AND AS REQUIRED FOR A WATER-TIGHT CONNECTION. PROVIDE SONNEBORN SONOLASTIC NP2 FOR PL/CMU CONTROL JOINTS. PROVIDE TREMCO DYMERIC 240 FC AT ALL NON-FINISH INTERIOR EXTERIOR LOCATIONS. SEE FLOOR PLAN. CAULK TO BE INSTALLED AFTER FINISH IS APPLIED TO SURFACES PER MANUFACTURER.

VIII. DOORS, WINDOWS AND FRAMES

- A. REQUIREMENTS
 - 1. FINISH AND INSTALL ALL DOORS AND WINDOW ASSEMBLIES AS INDICATED ON THE PLANS ALONG WITH ALL HARDWARE INDICATED AND THAT MAY BE REQUIRED FOR A COMPLETE JOB.
 - 2. ALL DOORS AND WINDOWS SHALL OPERATE SMOOTHLY WITHOUT BIND AND BE INSTALLED PLUMB AND TRUE.
 - 3. ALL HARDWARE SHALL FIT PROPERLY AND BE ADJUSTED AS REQUIRED.
 - 4. PROVIDE INSECT SCREENS ON ALL OPERABLE WINDOW UNITS.

IX. HARDWARE

- A. REQUIREMENTS
 - 1. ALL LOCKSETS SHALL BE LEVER TYPE AS REQUIRED TO MEET REQUIREMENTS OF A.D.A.
 - 2. ALL OTHER HARDWARE SHALL CONFORM TO THE REQUIREMENTS OF A.D.A.
 - 3. ALL EXIT DOORS SHALL BE EQUIPPED WITH LEVER TYPE OR PANIC TYPE EXIT HARDWARE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A LATCH, KEY OR BOLT.
 - 4. CONTRACTOR TO COORDINATE KEYSING SCHEDULE WITH OWNER.

X. SAFETY GLAZING

- A. PROVIDE SAFETY GLASS IN ALL GLAZING AS LISTED BELOW UNLESS NOTED OTHERWISE:
 - 1. WHERE REQUIRED BY FEDERAL, STATE AND LOCAL CODES.

- B. SAFETY GLASS REQUIREMENTS
 - 1. SAFETY GLASS SHALL BE, BUT NOT LIMITED TO
 - A. TEMPERED GLASS
 - B. LAMINATED GLASS
 - C. SAFETY PLASTIC
 - D. SAFETY INSULATING UNITS WHICH MEET THE TEST REQUIREMENTS OF ANSI Z97.1, AND WHICH ARE CONSTRUCTED, TREATED, OR COMBINED WITH OTHER MATERIALS SO AS TO MINIMIZE THE LIKELIHOOD OF CUTTING AND PIERCING INJURIES RESULTING FROM HUMAN IMPACT WITH THE GLAZING MATERIAL.
 - 2. ALL SAFETY GLAZING MATERIAL SHALL BE LABELED PER LOCAL, STATE, AND FEDERAL REQUIREMENTS.

XI. DRYWALL STUDS (INTERIOR NON-BEARING)

- A. REQUIREMENTS
 - 1. STUDS SHALL BE SECURED TO TOP AND BOTTOM TRACK WITH #1) #8ML SCREW IN EACH FLANGE UNLESS A SLIP TRACK IS REQUIRED AT THE TOP OF THE WALL.
 - 2. PROVIDE SLIP TRACK AT TOP OF FULL HEIGHT PARTITIONS.
 - 3. STUDS SHALL BE INSTALLED PER "GYPSUM CONSTRUCTION HANDBOOK" AS PUBLISHED BY UNITED STATES GYPSUM COMPANY LATEST EDITION.
 - 4. DRYWALL STUDS SHALL BE INDICATED ON THE PLANS.

XII. DRYWALL

- A. DRYWALL SHALL BE INSTALLED PER THE LATEST EDITIONS OF "RECOMMENDED SPECIFICATIONS FOR THE APPLICATION AND FINISHING OF GYPSUM BOARD" GA-216 AS PUBLISHED BY THE GYPSUM ASSOCIATION AND THE "GYPSUM CONSTRUCTION HANDBOOK" AS PUBLISHED BY UNITED STATES GYPSUM COMPANY.

- 1. PROVIDE CONTROL JOINTS PER THESE REQUIREMENTS.
 - 2. PROVIDE M.R. DRYWALL AT ALL FR. CERAMIC WALL TILE, PORCELAIN WALL TILE, COOLER PANEL, FREEZER PANEL AND DAMP/WET LOCATIONS.
- B. DRYWALL FINISHES SHALL BE INSTALLED PER THE LATEST EDITION OF "RECOMMENDED LEVELS OF GYPSUM BOARD FINISH" GA-214-96 AS PUBLISHED BY THE AWCI PAINTING AND DECORATING CONTRACTORS OF AMERICA, GYPSUM ASSOCIATION AND CISCA. PROVIDE A LEVEL 1 FINISH AT ALL UNEXPOSED AREAS OR AS NOTED ON PLANS.

- C. LEVELS OF FINISH:
 - 1. LEVEL 4 JOINTS AND INTERIOR ANGLES HAVE TAPE EMBEDDED IN JOINT COMPOUND AND TWO SEPARATE COATS OF JOINT COMPOUND APPLIED OVER ALL FLAT JOINTS AND ONE SEPARATE COAT APPLIED OVER INTERIOR ANGLES; FASTENER HEADS AND ACCESSORIES ARE COVERED WITH THREE (3) SEPARATE COATS OF JOINT COMPOUND; NO TOOL MARKS OR RIDGES.

XIII. FINISHES

- A. REQUIREMENTS
 - 1. PROVIDE AND INSTALL ALL FINISHES AS INDICATED ON PLANS.
 - 2. INSTALL ALL MATERIALS PER MANUFACTURERS RECOMMENDATIONS AND SPECIFICATIONS.
 - 3. FINISH INSTALLER INSPECT SUBSURFACE AND PREPARE AS PER MANUFACTURER'S SPECIFICATIONS PRIOR TO INSTALLATION OF PRODUCT.
 - 4. ALL FINISHES TO MEET ALL CODE REQUIREMENTS AND REGULATIONS INCLUDING FLAME SPREAD AND SMOKE DEVELOPMENT.

XIV. PAINTING

- A. FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND SCAFFOLDING REQUIRED FOR COMPLETING SURFACE PREPARATION, PAINTING, FINISHING AND RELATED ITEMS.

- B. EXCESS MATERIALS, CONTAINERS AND OTHER ITEMS NECESSARY FOR THE COMPLETION OF THE WORK MUST BE DISPOSED OF IN A MANNER THAT MEETS OR EXCEEDS THE STRICTEST LAWS GOVERNING THE PROJECTS MUNICIPALITY AND/OR STATE. THE PAINTING CONTRACTOR IS RESPONSIBLE FOR COMPLETE ADHERENCE TO ALL LOCAL, STATE AND FEDERAL REGULATIONS.

- C. PAINT ALL EXPOSED MISCELLANEOUS ITEMS, FINISH OR UNFINISHED (EX. H.C. RET. AIR GRILLES, CONDULT, ETC.) TO MATCH ADJACENT FINISH SURFACES.
- D. CONTRACTOR TO VERIFY THAT PAINT IS COMPATIBLE WITH PRIMER OF UNPRIMED SURFACES. NOTIFY EXCEL ENGINEERING IF THERE ARE ANY INCOMPATIBILITY ISSUES.

- E. THE CONTRACTOR SHALL KEEP ALL CONTAINERS ON THE PROJECT SITE UNTIL ALL PRODUCTS ARE USED AND DISPOSED. THE CONTRACTOR SHALL LEAVE WITH THE OWNER ALL UNPAID PAINT CONTAINERS.

- F. EXTERIOR ITEMS:
 - 1. FERROUS METAL (PAINTED): STRUCTURAL STEEL, MISCELLANEOUS IRON, HANDRAILS, HOLLOW METAL DOORS AND FRAMES, ROOF STRUCTURE, EXPOSED ROOF PIPING, ETC.:
 - A. ALKYL SHOP PRIMER IN METAL
 - B. COAT S-W KEM-BOND UNIVERSAL METAL PRIMER B50 SERIES
 - C. COAT S-W METALATEX SEMI-GLOSS COATING B42 SERIES
 - D. GALVANIZED
 - E. COAT S-W METALATEX SEMI-GLOSS COATING B42 SERIES
 - F. COAT S-W LOXON XP A24W300 SERIES (8 MILS WET, 3.2 MILS DRY)
 - G. COAT S-W A-100 EXTERIOR LATEX SATIN A83 SERIES (4 MILS WET, 1.4 MILS DRY)

- G. INTERIOR ITEMS:
 - 1. DRYWALL FINISH: EG-SHEL
 - A. 1 COAT S-W PREPRITE 200 LATEX PRIMER B28 SERIES (4 MILS WET, 1.2 MILS DRY)
 - B. 2 COATS S-W PROMAR 200 INTERIOR LATEX EG-SHEL B20 SERIES (4 MILS WET, 1.5 MILS DRY/COAT)
 - 2. DRYWALL FINISH: FLAT
 - A. 1 COAT S-W PREPRITE 200 LATEX PRIMER B28 SERIES (4 MILS WET, 1.2 MILS DRY)
 - B. 2 COATS S-W PROMAR 200 INTERIOR LATEX FLAT B30 SERIES (4 MILS WET, 1.4 MILS DRY/COAT)
 - 3. DRYWALL FINISH: SATIN
 - A. 1 COAT S-W PREPRITE 200 LATEX PRIMER B28 SERIES (4 MILS WET, 1.2 MILS DRY)
 - B. 2 COATS S-W DURATION HOME LATEX SATIN B97 SERIES (4 MILS WET, 1.5 MILS DRY/COAT)
 - 4. DRYWALL FINISH: SEMI-GLOSS
 - A. 1 COAT S-W PREPRITE 200 LATEX PRIMER B28 SERIES (4 MILS WET, 1.2 MILS DRY)
 - B. 2 COATS S-W PROMAR 200 INTERIOR LATEX SEMI-GLOSS B31 SERIES (4 MILS WET, 1.3 MILS DRY/COAT)
 - 5. DRYWALL FINISH: EPOXY SYSTEM SEMI-GLOSS
 - A. 1 COAT S-W PREPRITE CLASSIC LATEX PRIMER B28 SERIES (4 MILS WET, 1.2 MILS DRY)
 - B. 2 COATS S-W WATER BASED CATALYZED EPOXY B70 SERIES (2.5 3 MILS DRY/COAT)
 - 6. NEW WOOD STAINES:
 - A. 1 COAT S-W WOOD CLASSICS INTERIOR OIL STAIN A49 SERIES
 - B. 1 COAT S-W WOOD CLASSICS POLYURETHANE GLOSS VARNISH A67V1
 - C. 1 COAT S-W WOOD CLASSICS POLYURETHAN SATIN VARNISH A67 SERIES (4 MILS WET, 1.4 MILS DRY/COAT)
 - 7. NEW WOOD, PAINTED:
 - A. 1 COAT S-W PREPRITE CLASSIC INTERIOR LATEX PRIMER B28 SERIES (4 MILS WET, 1.6 MILS DRY)
 - B. 2 COATS S-W DURATION HOME LATEX SATIN B97 SERIES (4 MILS WET, 1.5 MILS DRY/COAT)
 - 8. FERROUS METAL (PRIMED, BRUSH/ROLLER) DOORS, FRAMES, HANDRAILS, MISC. METALS, ETC.: ACRYLIC
 - A. 1 COAT S-W DTM ACRYLIC PRIMER/FINISH B66W1 (2.5 4 MILS DRY/COAT)
 - B. 2 COATS S-W DTM ACRYLIC PRIMER/FINISH B66W1 (2.5 4 MILS DRY/COAT)
 - 9. FERROUS METAL (PRIMER, SPRAYED): ALL EXPOSED STRUCTURAL STEEL AND EXPOSED MECHANICAL/ELECTRICAL ITEMS: ACRYLIC
 - A. 1 COAT S-W DTM ACRYLIC PRIMER/FINISH B66W1 (2.5 4 MILS DRY/COAT)
 - B. 1-2 COATS S-W SUPER SAVE-LITE HI-TEC DRYWALL B48 SERIES (6 MILS WET, 3 MILS DRY)
 - 10. GALVANIZED:
 - A. BRUSH/ROLLER: 2 COATS S-W DTM ACRYLIC COATING SEMI-GLOSS B66 SERIES (2 MILS DRY/COAT)
 - B. SPRAYED: 1 COAT S-W GALVITE HS B50WZ30 (5 MILS WET, 3 MILS DRY) AND 2 COATS S-W SUPER SAVE-LITE HI-TEC DRYWALL B48 SERIES (4 MILS WET, 2 MILS DRY)
 - 11. ALUMINUM:
 - A. 2 COATS S-W METALATEX SEMI-GLOSS COATING B42 SERIES (4 MILS WET, 1.5 MILS DRY/COAT)

- H. REMOVE AND/OR PROTECT ALL HARDWARE, HARDWARE ACCESSORIES, MACHINED SURFACES, PLATES, LIGHTING FIXTURES, SPRINKLER HEADS AND SIMILAR ITEMS THAT ARE NOT TO BE PAINTED, BUT REQUIRE PROTECTION FROM THE PAINTING PROCESS. RE-INSTALL SAME AFTER COMPLETION OF PAINTING. MASK OFF ALL NAMEPLATES, EQUIPMENT IDENTIFICATION AND SIMILAR ITEMS. REMOVAL AND REINSTALL OF ITEMS IS TO BE DONE BY CONTRACTOR SKILLED IN SUCH WORK.

- I. SEAL TOPS, BOTTOMS AND CUTOUTS OF UNPRIMED WOOD DOORS WITH A HEAVY COAT OF SEALER IMMEDIATELY UPON DELIVERY TO THE PROJECT.

- J. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER PREPARATION OF ALL SURFACES PRIOR TO THE PAINTING INSTALLATION.

- K. THE FINISH PRODUCT SHALL HAVE A CONSISTENT, SMOOTH APPEARANCE OF THE SPECIFIED LUSTER.

- L. APPLY PAINT PER MANUFACTURERS TEMPERATURE AND HUMIDITY REQUIREMENTS.

- M. COMPLETED WORK SHALL BE FREE FROM DEFECTS AND FLAWS.

- N. PROVIDE A YELLOW STRIPED AREA, 3 DEEP BY THE WIDTH OF THE ELECTRICAL PANELS, ON THE CONCRETE FLOOR IN FRONT OF THE ELECTRICAL PANELS AND SWITCHGEAR IN THE RECEIVING AREA. AT THE SWITCHGEAR, PAINT THE EXPOSED PORTION OF THE CONCRETE HOUSEKEEPING PAD YELLOW.

XV. SIGNAGE

- A. REQUIREMENTS
 - 1. CONTRACTOR TO FURNISH AND INSTALL SIGNAGE PER LOCAL, STATE, AND FEDERAL CODES AND PER ROOM FINISH SCHEDULE.
 - 2. ALL SIGNAGE SHALL MEET THE REQUIREMENTS OF THE A.D.A. AND ANSI.
 - 3. WHERE PERMANENT IDENTIFICATION IS PROVIDED FOR ROOMS AND SPACES, SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR.