PROTOTYPE 7198 S.F. - LEFT HAND

SECTION 09510 – ACOUSTICAL CEILINGS

1. ACOUSTICAL PANELS:

A) SIZE: 24" X 24" X 5/8" AND 24" X 48" X 5/8" X 5/8"

B) EDGES: SQUARE CUT.

C) WHITE CEILING TILE BY U.S.G. RADAR BASIC 2110, 2310.

2. GYPSUM BOARD PANELS – (KITCHEN AREAS);

A) SIZE: 24" X 48" X ½"

B) EDGES: SQUARE CUT

C) COLOR: WHITE; 2 MIL VINYL FACING; STIPPLE FINISH.

D) BASIS OF DESIGN; USG GYPSUM CEILING PANELS "CLIMAPLUS" (#3270).

3. SUSPENSION SYSTEM:

A) EXPOSED, DIRECT HUNG, PER ASTM C635.

1) EXPOSED GRID MEMBERS SHALL BE PREFINISHED, LOW GLASS FINISH; COLOR TO MATCH CEILING PANELS. PROVIDE USG'S "DONN AX" ALUMINUM GRID (WHITE) WITH STAINLESS STEEL LOCKING TEE ENDS IN KITCHEN AREAS; STEEL FOR ALL OTHER AREAS.

2) CONCEALED GRID MEMBER SHALL BE ELECTRO –GALVANIZED.

B) STRUCTURAL CLASSIFICATION: INTERMEDIATE DUTY.

C) SEISMIC DESIGN CATEGORY A–C; C INTERMEDIATE DUTY. D,E,F HEAVY DUTY.

1. MISCELLANEOUS MATERIALS:

A) HANGER WIRE: GALVANIZED CARBON STEEL WIRE, ASTM A641, SOFT TEMPER, PRESTRECHED, CLASS I COATING, SIZED SO THAT STRESS OF 3–TIMES HANGER DESIGN LOAD (ASTM C635, TABLE I, DIRECT HUNG), WILL BE LESS THEN YIELD STRESS OF WIRE, BUT PROVIDE NOT LESS THAN 12 GAUGE.

B) EDGE MOLDINGS AND TRIM: METAL OF TYPES AND PROFILES INDICATED OR, IF NOT INDICATED, PROVIDE MANUFACTURER'S STANDARD MOLDING FOR EDGES AND PENETRATIONS ON CEILING WHICH FITS WITH TYPE OF EDGE DETAIL AND SUSPENSION SYSTEM SPECIFIED.

5. INSTALLATION:

A) INSTALL SUSPENSION SYSTEMS TO COMPLY WITH ASTM C636. LOCATE HANGERS NOT LESS THAN 6" FROM EACH END AND SPACED 4'–0" ALONG EACH CARRYING CHANNEL OR DIRECT–HUNG RUNNER, UNLESS OTHERWISE INDICATED, LEVELING TO TOLERANCE OF 1/8" IN 12'–0". IN KITCHEN AREAS, HANGERS SHALL BE SPACED 3'–0" ALONG OR TO INSERTS EYE SCREWS, OR OTHER DEVICES WHICH ARE SECURE AND APPROPRIATE FOR SUBSTRATE, AND WHICH WILL NOT DETERIORATE OR FAIL WITH AGE OR ELEVATED TEMPERATURES.

B) SECURE WIRE HANGERS BY LOOPING AND WIRE–TYPING, EITHER DIRECTLY TO STRUCTURES EACH CARRYING CHANNEL OF DIRECT–HUNG RUNNER TO OBTAIN LOAD CAPACITY OF 16 LBS./L.F. PROVIDE HANGER WIRE AT EACH CORNER OF EACH RECESSED FLUORESCENT FIXTURE.

C) INSTALL HANGERS PLUMB AND FREE FROM CONTACT WITH INSULATION OR OTHER OBJECTS WITHIN CEILING PLENUM WHICH ARE NOT PART OF SUPPORTING STRUCTURAL OR CEILING SUSPENSION SYSTEM. SPLAY HANGERS ONLY WHERE REQUIRED TO MISS OBSTRUCTIONS AND OFFSET RESULTING HORIZONTAL FORCE BY BRACING, COUNTER SPLAYING OR OTHER EQUALLY EFFECTIVE MEANS.

D) INSTALL EDGE MOLDINGS OF TYPE INDICATED AT PERIMETER OF ACOUSTICAL CEILING AREA AND AT LOCATIONS WHERE NECESSARY TO CONCEAL EDGES OF ACOUSTICAL UNITS. PROVIDE HOLD–DOWN CLIPS ON CEILING PANELS IN VESTIBULE.

E) CLEAN EXPOSED SURFACES OF ACOUSTICAL CEILINGS, INCLUDING TRIM, EDGE MOLDINGS, AND SUSPENSION MEMBERS; COMPLY WITH MANUFACTURER'S INSTRUCTIONS FOR CLEANING AND TOUCHUP OF MINOR FINISH DAMAGE. REMOVE AND REPLACE WORK WHICH CANNOT BE SUCCESSFULLY CLEANED AND REPAIRED TO PERMANENTLY ELIMINATE EVIDENCE OF DAMAGE.

SECTION 09900 – PAINTING

1. PROVIDE LABOR, MATERIALS, EQUIPMENT AND RELATED ITEMS REQUIRED TO COMPLETE THE EXTERIOR AND INTERIOR ITEMS AND SURFACES THROUGHOUT THE PROJECT INCLUDING FILLING, SEALING, PRIMING, AND FINISHING.

2. MECHANICAL AND ELECTRICAL WORK TO BE PAINTED INCLUDES THE FOLLOW (BUT NOT LIMITED TO):

A) EXPOSED PIPING AND/OR PIPE INSULATION, INSIDE AND OUTSIDE BUILDING.

B) MECHANICAL EQUIPMENT SUPPORTS

C) EXPOSED CONDUIT, BOXES, PANEL FRONTS.

3. ENSURE SURFACE TEMPERATURE AND THE SURROUNDING AIR TEMPERATURE ARE ABOVE 50 DEGREES F. BEFORE APPLYING PAINT MATERIALS.

4. PROVIDE ADEQUATE CONTINUOUS VENTILATION AND SUFFICIENT HEATING FACILITIES TO MAINTAIN TEMPERATURES ABOVE 45 DEGREES F. FOR 24 HOURS BEFORE, DURING AND 48 HOURS AFTER APPLICATION OF PAINT AND MATERIALS.

5. PROVIDE MINIMUM 25 FOOT CANDLES OF LIGHTING ON SURFACES TO BE PAINTED.

6. ACCEPTABLE MANUFACTURER

A) SHERWIN–WILLIAMS

7. PERFORM PREPARATION, FILLING SEALING, SANDING AND CLEANING OF SURFACES SCHEDULED TO BE PAINTED IN ACCORDANCE WITH PAINT MANUFACTURER'S INSTRUCTIONS.

8. REMOVE HARDWARE AND ACCESSORIES, FITTING AND FASTENINGS, ELECTRICAL PLATES, LIGHTING FIXTURE AND SIMILAR ITEMS. REINSTALL REMOVED ITEMS AFTER COMPLETION OF PAINTING.

9. DO NOT PAINT OVER DIRT, DUST, STAINS, RUST, SCALE, OIL, GREASE, MOISTURE, SCUFFED SURFACES, OR OTHER CONTAMINATION OR CONDITIONS DETRIMENTAL TO FORMATION OF A DOUBLE PAINT FILM.

10. BACKPRIME WOODWORK AS FOLLOWS:

A) EXTERIOR PAINTED WOOD: "EXTERIOR LATEX WOOD PRIMER".

11. APPLY PAINT IN ACCORDANCE WITH PAINT MANUFACTURER'S INSTRUCTIONS AND AS HEREIN SPECIFIED.

12. APPLY EACH COAT OF PAINT AT NO LESS THAN SPREADING RATE INDICATED IN MANUFACTURER'S INSTRUCTIONS.

13. SAND LIGHTLY BETWEEN ENAMEL COATS.

14. COMPLY COVER ITEMS/SURFACES SCHEDULED TO BE PAINTED TO PROVIDE A SMOOTH SURFACE OF UNIFORM FINISH, COLOR, APPEARANCE AND PAINT MATERIAL COVERAGE FREE FROM CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, RUNS, STREAKS, SAGS, ROPINESS AND OTHER SURFACE IMPERFECTIONS.

15. PAINT ITEMS/SURFACES LISTED FOR EACH OF THE FOLLOWING SUBSTRATES WITH THE SYSTEM OF PAINT COATS AND COLORS AS INDICATED.

INTERIOR

A) WOOD WALLS & TRIM – 2 COATS MACHINE APPLIED FLOW COATED, AMTECO #1501 CEDAR TONE

B) WOOD FLOORS AND PINE BASE – APPLY ONE COAT OF CHARCOAL STAIN – SEMI–TRANSPARENT. APPLY BY BRISTLE BRUSH OR LAMBSKIN APPLICATOR. DO NOT ALLOW TO PUDDLE OR APPLY EXCESSIVELY HEAVY COAT.

C) CEILING (CEDAR PLANK CEILING) – SUPERDECK #1907, COLOR CANYON BROWN WITH TRANSPARENT STAIN & SEALER

D) NOT USED

E) RESTROOM DOOR FRAME – SHERWIN WILLIAMS – SW 6090 JAVA
RESTROOM DOORS – TO MATCH CEILING STAIN

F) OFFICE & LIQUOR STORAGE DOORS AND FRAMES, AND HANDRAILS – GAS LINES – CLEAN TO REMOVE ALL OILS AND DIRT. PRIME WITH ONE COAT OF #299 ZINC DUST PRIMER THEN APPLY TWO COATS OF SHERWIN WILLIAMS – ENAMEL BLACK GLOSS

G) ½ WALL TOP CAP & TRIM
FIRST COAT: STAIN TO MATCH CEILING STAIN
APPLY WITH BRISTLE BRUSH OR WITH SOFT RAG
SECOND COAT: APPLY BY BRUSH ONE COAT OF #OLYMPIC PREMIUM OIL POLYURETHANE #43884 – CLEAR GLOSS
ALLOW 24 HOURS TO DRY
THIRD COAT: APPLY A FULL UNTHINNED COAT OF OLYMPIC PREMIUM OIL POLYURETHANE #43884, CLEAR GLOSS

H) VESTIBULE WOOD DOORS – MINWAX IPSWICH PINE WOOD STAIN #221, AND 2 COATS OF OLYMPIC PREMIUM OIL POLYURETHANE #43884 CLEAR GLOSS ON ALL SIDES TO SEAL DOORS

EXTERIOR

A) WOOD CEDAR SIDING, WINDOW TRIM, AND WOOD SHUTTERS – 2 COATS PRESTAINED WITH TWO COATS OF AMTECO #1501 CEDARTONE STAIN, CAULK OSI #224 (GEMINI)

B) METAL TRIM AND METAL FLASHING CONSTRUCTED OF GALVANIZED STEEL, GUTTERS AND CEDAR TRIM – APPLY TWO COATS OF SHERWIN WILLIAMS – GREEN ENAMEL OIL OR ACRYLIC BASE

C) METAL DOORS AND FRAMES, ELECTRICAL BOXES, BOLLARDS & DUMPSTER GATES
IF GALVANIZED METAL, CLEAN TO REMOVE ALL OILS THEN TREAT WITH #5, GALVAPREP PHOSPHORIC ACID BASED PRE–TREATMENT. SCRUB SURFACE, RINSE, ALLOW TO DRY AND PRIME WITH ONE COAT OF #299
– ZINC DUST PRIMER. ALLOW TO DRY THEN APPLY TWO COATS OF SHERWIN WILLIAMS – ENAMEL GLOSS BLACK OR ACRYLIC BLACK.

D) GAS LINE ON ROOF – PAINT YELLOW
(INDUSTRIAL ENAMEL)

E) DOWNSPOUTS –PAINT TO MATCH COLOR OF WALL BEHIND.

DIVISION 10 – SPECIALITIES

SECTION 10150 – TOILET COMPARTMENTS

1. SOLID PLASTIC–FF FULL FLUSH, AMERICAN SANITARY PARTITION CO. COLOR – BLACK HDPE.

2. INSTALL PARTITIONS SECURE, PLUMB, LEVEL AND SQUARE.

3. MOUNT PANELS, DOOR AND URINAL SCREENS WITH BOTTOM EDGES 12 INCHES ABOVE THE FLOOR.

4. MOUNT HEADRAILS FOR BRACING 12 INCHES ABOVE TOPS OF DOORS AND PANELS.

5. ATTACH PANEL BRACKETS SECURELY TO WALLS USING APPROPRIATE ANCHORAGE DEVICES.

6. ATTACH PANEL AND PILASTERS TO BRACKETS WITH THROUGH BOLTS AND NUTS.

7. ANCHOR URINAL SCREENS TO WALLS TO SUPPORT 150 POUND LOADS REQUIRED IN RR–P–1352.

8. CONCEAL FLOOR FASTENINGS WITH PLASTER SHOES.

9. EQUIP EACH DOOR WITH HINGES, LATCH, KEEPER AND STOP, DOOR PULL AND COAT HOOK WITH BUMPER.

10. ADJUST AND ALIGN HARDWARE TO UNIFORM CLEARANCE AT VERTICAL EDGES OF DOORS AND EXCEEDING 3/16 INCH.

11. ADJUST HINGES TO LOCATE DOORS IN PARTIAL OPEN POSITION WHEN UNLATCHED.

A. SET HANDICAP DOORS TO RETURN WITHIN 5 DEGREES OF CLOSED POSITION.
B. SET ALL OTHER DOORS TO RETURN WITHIN 30 DEGREES OF CLOSED POSITION.

SECTION 10800 – TOILET ACCESSORIES

1. ALL TOILET ACCESSORIES ARE FURNISHED AND INSTALLED BY OTHERS UNLESS OTHERWISE NOTED – SEE SHEET A13. COORDINATE ROUGH–IN, OPENINGS AND WOOD BLOCKING.

2. INSTALL FIXTURES, ACCESSORIES AND ITEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, AND WHERE AFFECTED, AT HEIGHTS OR LOCATIONS FOR THE HANDICAPPED AS INDICATED OR SPECIFIED HEREIN.

3. INSTALL TRUE, PLUMB AND LEVEL, SECURELY AND RIGIDLY ANCHORED TO SUBSTRATE.

4. SEE FINISH SCHEDULES FOR ACCESSORIES.

5. BABY CHANGING STATION TO FURNISHED AND INSTALLED BY OTHERS.

DIVISION 15– MECHANICAL

SECTION 15100 – GENERAL MECHANICAL REQUIREMENTS

1. SCOPE OF WORK

A) THE WORK TO BE ACCOMPLISHED UNDER THIS SECTION OF SPECIFICATIONS INCLUDES THE FURNISHING OF ALL LABOR, MATERIALS, SUPERVISION AND EQUIPMENT FOR THE COMPLETE INSTALLATION OF AIR CONDITIONING, HEATING, VENTILATING, PLUMBING, FIRE PROTECTION TOGETHER WITH ALL THE NECESSARY AUXILIARIES AND APPURTENANCE. GENERALLY THE WORK SHALL CONSIST OF, BUT IS NOT LIMITED TO, ITEMS LISTED IN THE FOLLOWING PARAGRAPH.

B) AIR CONDITIONING AND HEATING: FACTORY BUILT AIR CONDITIONING AND HEATING UNITS OF THE SINGLE ZONE ROOF TOP PACKAGE, FILTERS, FANS, MOTORS, DRIVES, H.V.A.C. UNITS, HOODS, ETC.

C) AIR DISTRIBUTION SYSTEMS: SHEETMETAL DUCTWORK, VOLUME DAMPERS, SPLITTER DAMPERS, TURNING VANES, AIR CONTROL DEVICES, GRILLES, REGISTERS, DIFFUSERS, FLEXIBLE DUCT.

D) PLUMBING: SOIL, WASTE AND VENT PIPING, DOMESTIC HOT AND COLD WATER DISTRIBUTION, HOT WATER GENERATORS, FIXTURES, GREASE TRAPS, VENTS, CONDENSATE LINES OF HVAC AND MISCELLANEOUS EQUIPMENT, UNDERFLOOR OR OVERHEAD SODA, REFRIGERANT LINE CONDUIT AND/OR ROOF LEADERS.

E) MISCELLANEOUS: SUPPLY AND EXHAUST FANS, MAKE–UP AIR UNITS, TEMPERATURE CONTROLS, THERMAL INSULATION, APPARATUS FOUNDATIONS AND SUPPORTS, PIPE HANGERS AND SUPPORTS AND ALL NECESSARY TOOLS, ACCESSORIESAND APPLIANCES REQUIRED TO MAKE ALL SYSTEMS COMPLETE AND OPERATIVE.

2. PRODUCTS AND EXCECUTION

A) ELECTRICAL PROVISIONS FOR MECHANICAL WORK: EXCEPT FOR SUCH ITEMS AS ARE NORMALLY WIRED UP AT THEIR POINT OF MANUFACTURE AND SO DELIVERED, AND UNLESS SPECIFICALLY NOTED TO THE CONTRARY HEREIN, THE ELECTRICAL SUBCONTRACTOR WILL DO ALL ELECTRIC WIRING OF EVERY CHARACTER FOR POWER SUPPLY. CONTROL WIRING SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL SUBCONTRACTOR. THIS SUBCONTRACTOR SHALL ERECT ALL MOTORS IN PLACE READY FOR CONNECTION. EXCEPT FOR SUCH ITEMS AS ARE NORMALLY SUPPLIED WITH STARTERS INSTALLED (HVAC UNITS, DISHWASHERS, ETC.) AT THEIR POINT OF MANUFACTURE. ALL OTHER STARTERS NOT FURNISHED WITH EQUIPMENT TO BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. THE ELECTRICAL SUBCONTRACTOR WILL MOUNT ALL SUCH STARTERS, AS DIRECTED, FURNISHING SUPPORTING STRUCTURES, WHERE NECESSARY. THE OWNER AND OTHER CONTRACTORS SHALL FURNISH WITH EACH ITEM REQUIRING ELECTRICAL CONNECTIONS, THE NECESSARY INSTRUCTIONS AND WIRING DIAGRAMS TO THE ELECTRICAL SUBCONTRACTOR. THE ELECTRICAL SUBCONTRACTOR SHALL REFER TO THE SPECIFICATIONS TO DETERMINE THE SCOPE OF THE WORK.

B) CHASES AND OPENINGS: VARIOUS DIVISIONS. HOWEVER, THE LOCATIONS OF ALL INSERTS AND OPENINGS SHALL BE DETERMINED AND COORDINATED WITH OTHER DIVISIONS IN AMPLE TIME TO AVOID CUTTING NEW CONSTRUCTION.

C) ROOF FLASHING OF DUCTS AND CURBS: DIVISION 7. HOWEVER, PLUMBING VENT FLASHING AND COUNTER FLASHING SHALL BE PROVIDED UNDER THIS DIVISION AND PER ROOF MANURFACTURER RECOMMENDATIONS.

D) OPENING IN ROOF DECK: WHERE PIPING, DUCTS, VENTS OR ANY OTHER MECHANICAL APPARATUS PENETRATES ROOF DECK AND OPENING IS NOT SPECIFICALLY SHOWN ON STRUCTURAL DRAWINGS, OBTAIN ARCHITECT'S APPROVAL OF LOCATION AND SIZE. HAVE ROOF DECK INSTALLER DO CUTTING AND PAY INSTALLER COST OF CUTTING OPENING.

3. PERMITS, FEES AND CODE REGULATIONS

A) PERMITS: OBTAIN ALL PERMITS REQUIRED TO DO THIS WORK AND PAY ANY FEES REQUIRED TO SUCH PERMITS.

B) REGULATIONS: CONFORM TO ALL STATE AND LOCAL ORDINANCES AND RULINGS, APPLICABLE TO THIS WORK AND IN EFFECT AT THE TIME THE WORK IS PERFORMED. APPROVAL OF VARIOUS INSURING AND INSPECTION AUTHORITIES SHALL BE OBTAINED. WHEN REQUESTED, COMPETENT EVIDENCE OF INSPECTION AUTHORITIES SHALL BE OBTAINED. WHEN REQUESTED, COMPETENT EVIDENCE OF COMPLIANCE, WITH APPLICABLE CODES, SHALL BE FURNISHED.

C) CONFLICTS: IF A CONFLICT EXISTS BETWEEN THE DRAWINGS AND/OR SPECIFICATIONS AND ANY ABOVE MENTIONED AUTHORITY, THE CONTRACTOR SHALL ADVISE THE ARCHITECT/ENGINEER IN WRITING FIVE (5) DAYS PRIOR TO PRESENTING PROPOSAL OR STAND ANY COST REQUIRED TO MEET REGULATIONS.

4. STRUCTURAL AND SPACE CONDITION

A) THE SPECIFICATIONS AND ACCOMPANYING DRAWINGS ARE INTENDED TO ENCOMPASS A SYSTEM THAT WILL NOT INTERFERE WITH THE STRUCTURAL, ELECTRICAL AND ARCHITECTURAL DESIGN OF THE BUILDING, AND WHICH WILL FIT INTO THE SEVERAL AVAILABLE SPACES. AS IT IS NOT WITHIN THE SCOPE OF THE DRAWINGS TO SHOW ALL NECESSARY OFFSETS AND OBSTRUCTIONS OF STRUCTURAL CONDITIONS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL HIS WORK IN SUCH A MANNER THAT IT WILL CONFORM TO THE STRUCTURE, AVOID OBSTRUCTIONS AND INTERFERENCES WITH OTHER TRADES, PRESERVE HEADROOM, AND KEEP OPENINGS AND PASSAGEWAYS CLEAR.

B) DO NOT RUN PIPING OR DUCTWORK, OR LOCATE EQUIPMENT (WITH RESPECT TO SWITCHBOARDS, PANELBOARDS, POWER PANELS, MOTOR CONTROL CENTERS OR DRY TYPE TRANSFORMERS) WITHIN 42" IN FRONT OF EQUIPMENT, OVER EQUIPMENT OR WITHIN 36" HORIZONTALLY OF SAME SPACE.

5. DRAWINGS

A) THE DRAWINGS AS PREPARED ARE DIAGRAMMATIC BUT SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION OF THE PROJECT AND THE WORK OF THE TRADES WILL PERMIT. CHANGES FROM THE DRAWINGS NECESSARY TO FIT THE WORK OF VARIOUS TRADES, TO CONFORM TO EQUIPMENT ACTUALLY BEING INSTALLED, OR TO CONFORM TO THE RULES OF THE AUTHORITIES HAVING JURISDICTION SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER.

6. AS–BUILT DRAWINGS

A) PROVIDE AND KEEP UP–TO–DATE, A COMPLETE RECORD SET OF BLUE LINE PRINTS WHICH SHALL BE CORRECTED DAILY WITH DATED NOTATIONS, AND SHALL SHOW EVERY CHANGE FROM THE ORIGINAL CONTRACT DRAWINGS. THIS SET OF PRINTS SHALL BE KEPT ON THE JOB SITE AND SHALL BE USED ONLY AS A RECORD SET.

7. PROTECTION OF MATERIALS

A) TAKE SUCH PRECAUTIONS AS ARE NECESSARY TO PROTECT ALL EQUIPMENT AND MATERIALS FROM DAMAGE.

8. WORKMANSHIP

A) LABOR SHALL BE PERFORMED IN A WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE PARTICULAR TRADES.

9. MATERIALS AND EQUIPMENT

A) ALL MATERIALS SHALL BE NEW AND OF THE BEST QUALITY. WHERE MANUFACTURER'S NAMES AND MODEL NUMBERS ARE MENTIONED IN THE SPECIFICATIONS, IT IS INTENDED TO SET A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED TO LIMIT COMPETITION UNLESS SPECIFICALLY STATED IN DRAWINGS TO DISCRIMINATE AGAINST "EQUAL" PRODUCTS OF OTHER MANUFACTURE. THE WORDS "OR APPROVED EQUAL" ARE TO FOLLOW EACH MATERIAL SPECIFICATION WHERE A SUBSTITUTION WILL BE CONSIDERED. ANY PROPOSED SUBSTITUTION MUST BE SUBMITTED FOR COMPARISON AND IT IS UNDERSTOOD THAT THE ENGINEER SHALL BE THE SALE JUDGE IN THE MATTER.

10. VIBRATION AND NOISE

A) EACH OF THE VARIOUS PIECES OF EQUIPMENT SHALL OPERATE WITHOUT OBJECTIONABLE VIBRATION OR NOISE. ALL ROTATING EQUIPMENT SHALL BE STATIC AND DYNAMIC BALANCE AND SHALL BE MOUNTED, SUPPORTED AND FASTENED SO THAT NO EQUIPMENT VIBRATION WILL BE TRANSMITTED TO THE BUILDING. THE SPECIFIC SIZE OF VIBRATION ISOLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION AND SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL. IF, IN THE OPINION OF THE ARCHITECT, OBJECTIONABLE VIBRATION OR TRANSMISSION THEREOF TO THE BUILDING OCCURS, THE CONTRACTOR SHALL EXECUTE REMEDIAL MEASURES AS MAY BE NECESSARY TO ELIMINATE SUCH INSATISFACTORY OPERATING CONDITIONS, AT THE CONTRACTOR'S EXPENSE.

11. OPERATING INSTRUCTIONS

A) BROCHURES: WRITTEN INSTRUCTIONS, ASSEMBLED AND BOUND IN BROCHURES, SHALL BE FURNISHED IN TRIPLICATE FOR OPERATING AND MAINTAINING ALL EQUIPMENT FURNISHED UNDER THIS DIVISION OF THE SPECIFICATIONS. INSTRUCTIONS SHALL INCLUDE ALL NORMAL ADJUSTMENTS, A LIST OF LUBRICATING POINTS WITH THE TYPE AND FREQUENCY OF LUBRICATION REQUIRED. PARTS LISTS SHALL BE FURNISHED.

B) DEMONSTRATIONS: UPON COMPLETION AND ACCEPTANCE OF WORK BY THE OWNER, THE CONTRACTOR SHALL INSTRUCT THE OPERATING PERSONNEL IN THE OPERATION OF THE ENTIRE INSTALLATION. TWO SESSION SHALL BE HELD, ONE FOR SUMMER OPERATION AND ONE FOR WINTER OPERATION, EACH IN THE RESPECTIVE SEASONS.

C) EQUIPMENT LOCATION AND USE: PROVIDE, IN TRIPLICATE, SUITABLY BOUND OPERATING BOOK CONTAINING ALL EQUIPMENT, ITS LOCATION, USE AND DESCRIPTION AND BUILDING SCHEMATICS. SUBMIT TO ARCHITECT FOR APPROVAL BEFORE PRINTING IN FINAL FORM.

D) CONTRACTOR SHALL INSTRUCT MANAGER ON THE PROGRAMMING OF ALL THERMOSTATS. THIS SHALL BE A HANDS ON EXPLANATION. CONTRACTOR SHALL ALSO PROVIDE MANAGER WITH BOOKLET SHOWING PROGRAMMING INSTRUCTIONS.

12. FINAL INSPECTION

A) SCHEDULE: UPON COMPLETION OF CONTRACT, THERE SHALL BE A FINAL INSPECTION OF THE COMPLETED INSTALLATION. PRIOR TO THIS INSPECTION, ALL WORK UNDER THIS DIVISION SHALL HAVE BEEN COMPLETED, TESTED, BALANCED, AND ADJUSTED AND IN FINAL OPERATING CONDITION.

B) PERSONNEL: A QUALIFIED PERSON REPRESENTING THE CONTRACTOR MUST BE PRESENT AT THIS FINAL INSPECTION TO DEMONSTRATE THE SYSTEM AND APPROVE THE PERFORMANCE OF THE EQUIPMENT.

13. CUTTING AND PATCHING

A) WHERE CUTTING AND PATCHING BECOMES NECESSARY TO PERMIT THE INSTALLATION OF ANY WORK UNDER THE CONTRACT, OR SHOULD IT BECOME NECESSARY TO REPAIR ANY DEFECTS THAT MAY APPEAR IN PATCHING UP TO THE EXPIRATION OF THE GUARANTEE, SUCH CUTTING SHALL BE DONE UNDER THE SUPERVISION OF THE OWNER BY THE TRADE OF SUBCONTRACTOR WHOSE WORK IS TO BE DISTURBED. AFTER THE NECESSARY WORK HAS BEEN COMPLETED, DAMAGE SHALL BE REPAIRED BY THE TRADE OF SUBCONTRACTOR WHOSE WORK HAS BEEN DISTURBED. THE COST OF ALL CUTTING AND PATCHING SHALL BE PAID BY THE TRADE OF SUBCONTRACTOR REQUIRING IT TO BE DONE.

14. EXCAVATING AND BACKFILLING

A) PROVIDE NECESSARY EXCAVATING AND BACKFILLING FOR THE INSTALLATION OF WORK SPECIFIED IN THE DIVISION. TRENCHES FOR UNDERGROUND PIPING AND CONDUITS SHALL BE EXCAVATED TO REQUIRED DEPTHS WITH BELL HOLES PROVIDED AS NECESSARY TO ENSURE UNIFORM BEARING. CARE SHOULD BE TAKEN NOT TO EXCAVATE BELOW DEPTH, AND ANY EXCAVATION BELOW DEPTH SHALL BE REFILLED WITH SAND OR GRAVEL FIRMLY COMPACTED. WHERE ROCK OR HARD OBJECTS ARE ENCOUNTERED, THEY SHALL BE EXCAVATED TO A GRADE SIZE INCHES (6" BELOW AS SPECIFIED. AFTER THE PIPE HAS BEEN INSTALLED, TESTED AND APPROVED, THE TRENCHES SHALL BE BACKFILLED TO GRADE WITH APPROVED MATERIAL, WELL TAMPED OR PUDDLE COMPACTLY IN PLACE. DO NOT PROCEED WITH BACKFILL OPERATIONS UNTIL PIPING HAS BEEN INSPECTED BY THE OWNER OR BY THE LOCAL INSPECTOR OF THE MUNICIPALITY IN WHICH THE WORK IS BEING PERFORMED. DO NOT PERFORM BACKFILLING OPERATIONS EXCEPT IN THE PRESENCE OF THE OWNER OR INSPECTOR. ALL PIPING OUTSIDE THE BUILDING SHALL BE INSTALLED BELOW THE FROST LINE. WHERE STREETS, SIDEWALKS, ETC. ARE DISTURBED, CUT OR DAMAGED BY THIS WORK, THE EXPENSE OF REPAIRING SAME IN A MANNER APPROVED BY THE OWNERS SHALL BE A PART OF THIS CONTRACT.

15. GUARANTEE

C) THE GUARANTEE PROVISION OF THIS SPECIFICATION REQUIRES PROMPT REPLACEMENT OF ALL DEFECTIVE WORKMANSHIP AND MATERIALS OCCURRING WITHIN ONE YEAR OF JOB ACCEPTANCE. THIS INCLUDES ALL WORK REQUIRED TO REMOVE AND REPLACE THE DEFECTIVE ITEM AND TO MAKE ALL NECESSARY ADJUSTMENTS TO RESTORE THE ENTIRE INSTALLATION TO ITS ORIGINAL SPECIFIED OPERATING CONDITION AND FINISH AT THE TIME OF ACCEPTANCE.

SECTION 15400 – PLUMBING

1. SCOPE OF WORK

A) FURNISHING OF ALL LABOR, MATERIALS, TOOLS, TRANSPORTATION SERVICES, ETC. NECESSARY TO COMPLETE THE INSTALLATION OF THE PLUMBING SYSTEM AND AS DESCRIBED IN THESE SPECIFICATIONS, AS ILLUSTRATED ON THE ACCOMPANYING DRAWINGS, OR AS DIRECTED BY THE ARCHITECT.

B) ALL HOT AND COLD WATER SYSTEMS WITH COMPLETE CONNECTIONS FROM THE WATER METER TO ALL PLUMBING FIXTURES AND EQUIPMENT REQUIRING WATER CONNECTIONS. THESE SYSTEMS WILL BE COMPLETE WITH CONTROLS, VALVES, EQUIPMENT, DEVICES AND INSULATION.

C) ALL SOIL, WASTE, AND VENT SYSTEMS OUTSIDE AND INSIDE THE BUILDING AND SEWER CONNECTIONS TO MUNICIPAL SYSTEM AS INDICATED ON DRAWINGS.

D) FURNISH AND SET PLUMBING FIXTURES, INCLUDING ALL THE REQUIRED TRIM AND SUPPORTS.

E) TRENCHING, PIPE BEDDING AND BACKFILLING.

F) ALL ROUGH–IN AND FINAL CONNECTION TO EQUIPMENT IN THE KITCHEN, BAR AND SERVICE AREAS IF INDICATED ON THE DRAWINGS, INCLUDING NECESSARY TRAPS AND MISCELLANEOUS ITEMS AS REQUIRED. COORDINATE W/ OWNER AND K.E.C.

G) FURNISH ALL FINAL PLUMBING CONNECTIONS TO HEATING AND AIR CONDITIONING EQUIPMENT, AND KITCHEN BAR EQUIPMENT INCLUDING CONDENSATE DRAINS, INDIRECT WASTE AND GAS PIPING. SEE "FS" DRAWINGS FOR REQUIREMENTS.

H) METERS AND UTILITY CONDITIONS:

1) WATER: COORDINATE WORK WITH THE LOCAL WATER COMPANY. FURNISH ALL LABOR AND/OR MATERIAL (NOT FURNISHED BY THE WATER COMPANY) WHICH IS REQUIRED TO CONNECT TO EXISTING LINE AND/OR SET METER. INSTALL ALL PERMANENT WATER SUPPLY LINES FROM THE POINT OF CONNECTION AND COMPLETE THE WORK AS SHOWN, ALL IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL WATER COMPANY. TAP FEES SHALL BE PAID BY OWNER. (IF REQUIRED) PLUMBING CONTRACTOR SHALL BAY ALL WORK RELATED INSPECTION FEES BY AUTHORITY HAVING JURISDICTION.

2) SEWER CONNECTIONS: COORDINATE WORK WITH THE LANDLORD AND/OR LOCAL UTILITY COMPANY. ALL WORK AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL GOVERNING AUTHORITY. TAP FEES SHALL BE PAID BY OWNER (IF REQUIRED). PLUMBING CONTRACTOR SHALL PAY ALL WORK RELATED INSPECTION FEES BY AUTHORITY HAVING JURISDICTION (IF REQUIRED).

3) GAS: COORDINATE WORK WITH LOCAL UTILITY AND FURNISH ALL LABOR AND/OR MATERIALS (NOT FURNISHED BY UTILITY WHICH IS REQUIRED TO PROVIDE A WORKING UTILITY FOR OWNER, INCLUSIVE OF METER AND/OR REGULATOR. FURNISH SYSTEM FROM TAPPING POINT TO AND IN THE BUILDING AS REQUIRED AND SHOWN ON DRAWINGS. TAP FEES SHALL BE PAID BY OWNER. PLUMBING CONTRACTOR SHALL PAY ALL WORK RELATED INSPECTION FEES.

4) GAS PIPING TO HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT, AND WATER HEATER.

2. SHOP DRAWINGS

A) WITHIN 15 DAYS AFTER AWARD OF CONTRACT, AND BEFORE ANY PLUMBING MATERIALS ARE DELIVERED TO THE JOB SITE, SUBMIT TO THE OWNER THREE (3) COMPLETE SHOP DRAWINGS IN ACCORDANCE WITH THE PROVISIONS OF SECTION 01300 OF THESE SPECIFICATIONS, INCLUDING ALL PLUMBING FIXTURES, TRIM, DRAINS, CLEANOUTS, PIPING, VALVES, INSULATION, HANGERS, SUPPORTS, EQUIPMENT AND DEVICES PROPOSED TO BE FURNISHED AND INSTALLED. SHOP DRAWINGS SHALL NOT BE REVIEWED UNLESS THEY BEAR THE REVIEW STAMP OF THE GENERAL CONTRACTOR.

3. PRODUCT HANDLING

A) IN THE EVENT OF DAMAGE, IMMEDIATELY MAKE ALL REPAIRS AND REPLACEMENTS NECESSARY TO THE APPROVAL OF, AND AT NO ADDITIONAL COST TO THE OWNER.

4. EXAMINATION OF THE SITE

A) ALL CONTRACTORS SUBMITTING PROPOSALS FOR THIS WORK SHALL FIRST EXAMINE THE SITE AND ALL CONDITIONS, INCLUDING LOCAL RULES & REGULATIONS, THEREON AND/OR THEREIN. ALL PROPOSALS SHALL HAVE TAKEN INTO CONSIDERATION ALL CONDITIONS THAT MAY EFFECT THE WORK UNDER THIS CONTRACT. LACK OF THIS INFORMATION WILL NOT BE CONSIDERED AS JUSTIFICATION FOR EXTRA COST OR ALLOWANCES TO THE CONTRACT PRICE.

5. GUARANTEE

A) ALL WORK PERFORMED UNDER THIS SECTION SHALL BE GUARANTEED TO BE FREE OF DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE WORK BY THE OWNER.

B) UPON NOTICE RECEIVED FROM THE OWNER, ARCHITECT OR ENGINEER, OF FAILURE OF ANY PART OF THE GUARANTEED EQUIPMENT DURING THE GUARANTEE PERIODS, THE AFFECTED PART OR PARTS SHALL BE PROMPTLY REPLACED WITH NEW PARTS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ALL LABOR REQUIRED WITH NEW PARTS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ALL LABOR REQUIRED TO PERFORM GUARANTEED SHALL BE INCLUDED AS PART OF THE COMPLETE WARRANTY.

6. PRODUCTS

A) DESCRIPTION

1) SOIL, WASTE AND VENT PIPING: BELOW FLOOR TO 5'0" OUTSIDE BUILDING AND YARD PIPING SHALL BE A.B.S. OR P.V.C. SCHEDULE 40 PIPE AND FITTINGS IF APPROVED BY LOCAL AUTHORITY, OR STANDARD WEIGHT COATED CAST IRON SOIL PIPE AND CAST IRON/NEOPRENE GASKET FITTINGS. YARD PIPING, WHERE UNDER A SUPERIMPOSED LOAD CONDITION SUCH AS A DRIVEWAY OR PARKING AREA, SHALL BE SERVICE WEIGHT CAST IRON SOIL PIPE AND CAST IRON/NEOPRENE GASKET FITTINGS.

2) ABOVE FLOOR SHALL BE A.B.S. OR P.V.C. SCHEDULE 40 IF APPROVED BY LOCAL AUTHORITY, OR STANDARD WEIGHT COATED CAST IRON PIPE WITH NEOPRENE RUBBER GASKETS, OR HUBLESS CAST IRON PIPE WITH NEOPRENE RUBBER GASKETS AND STAINLESS STEEL CLAMPS (CLAMPS ALL OR EQUAL).

3) HOT AND COLD WATER PIPING:

A) ABOVE THE FLOOR SHALL BE TYPE "L" COPPER WITH 95/5 SWEAT SOLDERED AND WROUGHT COPPER FITTINGS. UNDER BUILDING SLAB SHALL BE TYPE "K" SOFT DRAWN COPPER TUBING WITHOUT JOINTS UNDER FLOOR. LOOP FROM WALL TO WALL.

4) CONDENSATE DRAIN PIPING:

A) CONDENSATE DRAIN PIPING SHALL BE GALVANIZED SCHEDULE 40 OR P.V.C. FROM HVAC OR ROOF AND OTHER EQUIPMENT UNLESS STATED OTHERWISE.

B) CONTRACTOR SHALL FURNISH AND INSTALL 3/4" OR 1" COPPER CONDENSATE DRAINS ON COOLER/FREEZER EVAPORATOR COILS, WITH TRAP ASSEMBLY AND 2" AIR GAP ABOVE DRAIN AS SHOWN ON THE DRAWINGS. FREEZER CONDENSATE PIPING SHALL BE WRAPPED WITH HEAT TAPE WITH A MINIMUM RATING OF 5 WATTS PER LINEAL FOOT FOR ITS ENTIRE LENGTH WITHIN THE FREEZER COMPARTMENT.

5) INDIRECT WASTE PIPING SHALL BE P.V.C. SCHEDULE 40, EXCEPT AT DISHWASHING MACHINE WHICH SHALL BE TYPE "L" COPPER WITH 95/5 SWEAT SOLDER AND WROUGHT COPPER FITTINGS.

6) GAS PIPING:

A) GAS PIPING INCLUDING TAP AND SERVICE SHALL BE INCLUDED. COORDINATE METER LOCATION WITH LOCAL AUTHORITY.

B) GAS PIPING ABOVE GROUND SHALL BE SCHEDULE 40 BLACK STEEL WITH 125 LB. BLACK MALLEABLE IRON SCREWED FITTINGS AND SUPPORTED AT INTERVALS NOT TO EXCEED 8'–0" AND AT EACH CHANGE IN HORIZONTAL OR VERTICAL DIRECTION. GAS PIPING COMPOUND AT JOINTS SHALL BE IN COMPLIANCE WITH NFPA BULLETIN NO. 54 AND LOCAL APPLICABLE CODES AND SUITABLE FOR NATURAL GAS SERVICE.

C) GAS PIPING SHALL SUPPLY HVAC UNITS, WATER HEATER AND KITCHEN EQUIPMENT IF INDICATED ON DRAWINGS BY THIS CONTRACTOR.

D) MOISTURE TRAPS SHALL BE INSTALLED ON EACH PIPING DROP FOR HVAC UNITS, WATER HEATER AND KITCHEN EQUIPMENT.

7) STORM DRAIN LEADER: SAME AS SOIL, WAIST & VENT PIPING.

8) INSULATION

A) ALL WATER PIPES, RAIN LEADERS AND ETC., SHALL BE INSULATED. PIPING SHALL BE INSULATED TO PREVENT EXCESSIVE HEAT LOSS AND TO PREVENT CONDENSATION AND SWEATING. ALL PIPING SHALL BE INSULATED WITH AT LEAST ½" THICK FOAM INSULATION AS MANUFACTURED BY ARMSTRONG ARMAFLEX OR APPROVED EQUAL AS INDICATED ON PLANS AND NOTES. AS MUCH OF THE INSULATION AS POSSIBLE SHALL BE SLIPPED ON TO THE PIPING AS THE PIPING IS BEING CONNECTED IN ORDER TO AVOID CUTTING THE INSULATION. ALL BUTT ENDS AND ANY NECESSARY LONGITUDINAL JOINTS SHALL BE SEALED WITH RUBBER BASED ADHESIVE.

7. FIXTURES

A) SEE DRAWINGS FOR SPECIFICATIONS.

8. FLASHINGS

A) ALL PIPING AND VENTS PASSING THROUGH ROOF SHALL BE FLASHED WATERTIGHT WITH SIX POUND TO THE SQUARE FOOT LEAD USING SLEEVE FLASHING WITH BASE EXTENDING AT LEAST 12 INCHES IN THE DIRECTION BEYOND THE OUTSIDE DIAPHRAGM OF THE PIPE. TURN SLEEVE DOWN A MINIMUM OF 1–1/2" INTO TOP OF VENT PIPE WITH LEAD FITTING SNUGLY INSIDE THE PIPE. WRAP MEMBRANE ROOF UP PIPE AND CLAMP. ALL GAS VENT CAPS SHALL BE FITTED WITH LEAD FITTING SNUGLY INSIDE OF PIPE. ALL VENT CAPS SHALL BE VANDAL PROOF. VERIFY APPROVED FLASHING MATERIAL AND METHODS WITH ROOFING CONTRACTOR TO ENSURE A COMPLETE JOB. SEE DETAILS ON ARCH. SHEETS.

9. CLEANOUTS

A) SEE DRAWINGS FOR SPECIFICATIONS.

10. EQUIPMENT

A) WATER HEATER: FURNISHED BY OWNER, INSTALLED BY PLUMBING CONTRACTOR (THIS NOTE DOES NOT APPLY TO FRANCHISE LOCATIONS – REFERENCES PLUMBING SHEETS AND CONSULT WITH FRANCHISEE (OWNER) TO DETERMINE SCOPE OF WORK).

1) SIZE, CAPACITY, TYPE AND MANUFACTURER AS INDICATED BY DRAWINGS. WATER HEATER SHALL BE GAS.

2) GAS WATER HEATER SHALL BE PROVIDED WITH CLASS "B" UL LABELED FLUE VENT SIMILAR TO METALBESTOS TYPE RV COMPLETE WITH PIPE FITTINGS, CEILING COLLAR, FIRE STOP, ROOF FLASHING, WEATHERTIGHT STORM COLLAR AND VENT CAP, INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

3) THE WATER HEATER, GAS OR ELECTRIC, SHALL BE PROVIDED WITH ALL TEMPERATURE AND SAFETY CONTROLS INCLUDING ASME AND ANSI Z21.22 RATED TEMPERATURE AND PRESSURE RELIEF VALVE, GAS PRESSURE REGULATOR (IF REQUIRED), DRAIN VALVE, EXPANSION TANK, ETC.

4) PLUMBER SHALL MAKE WATER, GAS AND RELIEF LINE CONNECTIONS WITH CUTOFF AND DIELECTRIC UNIONS IN WATER AND GAS LINES.

B) VALVES, COCKS AND FAUCETS

1) UNLESS SPECIFICALLY INDICATED ELSEWHERE, THE VALVES SHALL BE DESIGNED FOR NOT LESS THAN 126 LBS. WORKING PRESSURE. THE VALVES SHALL HAVE SUITABLE VALVE BODY PATTERNS FOR CONNECTION TO THE PIPE FOR WHICH THEY WILL OPERATE. ALL VALVES WITH RISING STEMS SHALL HAVE BACK SEATS FOR PACKING UNDER PRESSURE. APPROVED EQUAL GATE VALVES AND CHECK VALVES AS MANUFACTURED BY STOCKHAM, WALWORTH, LUNKENHEIMER, SCOTT, HAMMOND, CRANE OR WATTS WILL BE ACCEPTABLE.

2) GATE VALVES SHALL BE HAMMOND 1B634 SPLIT WEDGE OR APPROVED EQUAL.

3) CUTOFF VALVES UNDERNEATH LAVATORIES, TANK TYPE WATER CLOSETS, SANITARY SINKS AND WATER COOLERS SHALL BE CHROME PLATED ANGLE STOP VALUES WITH SOFT ANNEALED CHROME PLATED COPPER CONNECTION PIPES AND CHROME PLATED ESCUTCHEON PLATES.

4) GAS COCKS FOR ALL EQUIPMENT: SEE DRAWINGS FOR REQUIREMENTS.

5) WATER CUTOFF VALVE SHALL BE NIBCO #S–112 OR APPROVED EQUAL BRONZE SOLDER JOINT, 125 LB. WOG WITH RISING STEMS.

6) EXTERIOR HOSE COCKS AND VALVE FIXTURES TO BE NON–FREEZE TYPE, SUPPLY SHUT–OFF VALVES IF INDICATED ON PLANS.

11. EXCEUTION

A) PIPING

1) ALL PIPING SHALL BE RUN CONCEALED EXCEPT WHERE SHOWN OTHERWISE ON DRAWINGS.

2) VALVES, TRAPS, CLEANOUTS AND OTHER APPARATUS SHALL BE INSTALLED IN AN EASILY ACCESSIBLE LOCATION.

3) SOIL, WASTE AND VENT OFFSETS AND HOUSE DRAINS SHALL BE INSTALLED WITH A MINIMUM, UNIFORM GRADE OF 1/8" TO THE FOOT, UNLESS OTHERWISE INDICATED OR REQUIRED BY LOCAL CODES.

4) HOT AND COLD WATER LINES SHALL BE AT LEAST 6" APART WHERE PIPING IS PARALLEL.

5) ALL WATER LINES SHALL RUN OVERHEAD AND DOWN PARTITION WALLS UNLESS NO WALL IS PROVIDED; THEN RUN LINES UNDER SLAB TO POINT OF TERMINATION. ALL LINES SHALL BE CONCEALED UNLESS NOTED OTHERWISE ON PLANS.

B) HANGERS AND SUPORTS

1) COPPER PIPING SHALL BE SUPPORTED AT INTERVALS NOT TO EXCEED 7'–0" AND AT EACH CHANGE IN HORIZONTAL OR VERTICAL DIRECTION. HANGERS SHALL BE FEE & MASON PLASTIC COATED HANGER, FIG. 381 OR APPROVED EQUAL BY GRINNELL. HANGER ATTACHMENT TO STRUCTURE SHALL BE AS REQUIRED.

2) GAS PIPING SHALL BE SUPPORTED AT INTERVALS NOT TO EXCEED 8'–0" AND AT EACH CHANGE IN HORIZONTAL OR VERTICAL DIRECTION. STEEL PIPE HANGERS SHALL BE GRINNELL FIG. 104 OR FEE & MASON FIG. 199. ATTACHMENT TO STRUCTURE TO BE AS REQUIRED.

3) HANGER RODS SHALL BE STANDARD BOLT STEEL WITH MACHINE SCREW THREADS, 3/8" DIAMETER MINIMUM.

4) ALL PIPING UNDERGROUND SHALL BE FIRMLY BEDDED ON THE BODY OF THE PIPE, AND BELL HOLES PROVIDED TO EACH BELL. ALL PIPING SHALL BE INSTALLED IN GRADED TRENCH. EXCAVATE, BACKFILL AND SUPPORT PIPING AS HEREIN BEFORE SPECIFIED.

C) PLUMBING FIXTURES

1) FURNISH AND INSTALL ALL PLUMBING FIXTURES COMPLETE WITH ALL EQUIPMENT FITTINGS, TRIMMINGS AND ACCESSORIES, AS SPECIFIED. OPEN FRONT SEATS WITH NO COVERS AS MANUFACTURED BY CHURCH WILL BE ACCEPTABLE.

2) ALL FIXTURES SHALL BE GRADE A. THE NAME OR TRADE MARK OF THE MANUFACTURER SHALL BE PRINTED OR PRESSED ON ALL CLOSETS AND LAVATORIES, AND A LABEL, WHICH CANNOT BE REMOVED WITHOUT DESTROYING IT, CONTAINING THE MANUFACTURER'S NAME OR TRADEMARK AND THE QUALITY OR CLASS OF THE FIXTURES, SHALL BE AFFIXED TO ALL FIXTURES AND NOT REMOVED UNTIL AFTER THE WORK HAS BEEN ACCEPTED.

3) EXPOSED PIPING TO FIXTURES SHALL BE A PRODUCT OF THE FIXTURE MANUFACTURER OR APPROVED EQUAL AND SHALL BE:

A. WATER: CHROMIUM PLATED IRON PIPE SIZE RED BRASS.
B. WASTE: CHROMIUM PLATED TUBING, EXCEPT WASTE CONNECTIONS TO KITCHEN OR SCULLERY SINKS.

4) STOPS AS MANUFACTURED BY THE FIXTURE MANUFACTURE, WITH METAL TO METAL – METAL SEAT, SHALL BE PROVIDED FOR ALL FIXTURES AND EQUIPMENT. REFER TO SCHEDULE ON DRAWINGS FOR MANUFACTURER'S AND MODEL NUMBERS USED AS GUIDE SPECIFICATIONS. NUMBERS AS LISTED REPRESENT THE COMPLETE WORKABLE OUTFITS WITH ALL BRASS TRIM AS NECESSARY.

5) FIXTURES SHALL BE WHITE UNLESS OTHERWISE NOTED.

6) FIXTURES FURNISHED BY THIS CONTRACTOR OR BY THE OWNER SHALL BE FITTED WITH NECESSARY WATER SUPPLIES, VALVES AND TRAPS WITH CLEANOUT PLUGS UNDER SECTION OF THE SPECIFICATIONS.

D) TESTS

1) THE PLUMBING SYSTEM AND ASSOCIATED SYSTEMS SHALL BE SUBJECT TO CONSTANT INSPECTION AND FINAL APPROVAL OF THE CODE AUTHORITIES HAVING JURISDICTION. TEST, IN ADDITION TO THESE REQUIRED BY THIS SECTION, REQUIRED TO SHOW CODE COMPLIANCE, SHALL BE PERFORMED AS DIRECTED.

2) THE SOIL, WASTE AND VENT LINES OF THE SANITARY SYSTEMS SHALL BE SUBJECTED TO A WATER PRESSURE TEST OF NOT LESS THAN 10 FEET OF WATER HEAD PRESSURE OR 5 POUNDS OF AIR PRESSURE FOR A DURATION OF NOT LESS THAN 2 HOURS. DURING THE PRESSURE TESTS, EACH JOINT SHALL BE INSPECTED FOR LEAKS. THE LINES SHALL BE TESTED AS AN ENTIRE SYSTEM, BUT ALL THE UNDERGROUND AND CONCEALED LINES SHALL BE GIVEN THE ABOVE TEST AND APPROVED BEFORE THE LINES ARE COVERED.

3) THE DOMESTIC WATER PIPING SYSTEM SHALL BE SUBJECTED TO A WATER PRESSURE TEST OF NOT LESS THAN 150 PSI FOR A DURATION OF NOT LESS THAN 2 HOURS. THE WATER PIPING SHALL BE TESTED AS AN ENTIRE SYSTEM, BUT ALL UNDERGROUND AND CONCEALED LINES SHALL BE GIVEN THE ABOVE TEST AND APPROVED BEFORE THE LINES ARE COVERED.

4) THE GAS SYSTEM, FROM THE METER CONNECTION AND THROUGHOUT THE NEW WORK, SHALL BE SUBJECTED TO AN AIR PRESSURE TEST OF NOT LESS THAN 50 PSI FOR A DURATION OF NOT LESS THAN 4 HOURS AND AT THE SAME TIME EACH JOINT AND CONNECTION SHALL BE TESTED BY APPLYING SOAP SUDS TO EACH POINT. THE GAS PIPING SHALL BE TESTED AS AN ENTIRE SYSTEM, BUT ALL UNDERGROUND AND CONCEALED LINES SHALL BE GIVEN THE ABOVE TEST AND APPROVED BEFORE BEING COVERED. FURTHER, EACH EXPOSED JOINT SHALL BE TESTED WITH SOAP SUDS AFTER THE GAS HAS BEEN ADMITED INTO THE SYSTEM.

5) SHOULD THE CONTRACTOR REFUSE OR NEGLECT TO MAKE ANY TESTS NECESSARY TO SATISFY THE OWNER, HIS REPRESENTATIVE OR CODING OFFICIALS, THAT HE HAS CARRIED OUT THE TRUE INTENT AND MEANING OF THE SPECIFICATIONS, THE OWNER MAY TAKE SUCH TESTS AND CHARGE THE EXPENSE THEREOF TO THE CONTRACTOR.

E) CLEANING AND PROTECTION

1) THE CONTRACTOR SHALL REMOVE FROM THE JOB SITE ALL DEBRIS AND LEFTOVER MATERIALS FOR WHICH HE IS RESPONSIBLE, CLEAN ALL FIXTURES AND EQUIPMENT AND REPAIR ANY BLEMISHES IN THE FINISH. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR REPLACING FIXTURES WHERE DAMAGE RESULTS FROM FAILURE TO PROVIDE PROTECTION DURING INSTALLATION.

2) FLUSH OUT PIPES: AFTER THE PLUMBING PIPING HAS BEEN INSTALLED, INSPECTED AND APPROVED, THE PIPING SYSTEM SHALL BE FLUSHED TO REMOVE ANY FOREIGN MATTER FROM THE PIPES WITH CHLORINE OR HTH SOLUTION TO SANITIZE THE NEW PIPING OR AS REQUIRED BY THE LOCAL AUTHORITIES.

F) MAINTENANCE

1) ALL PARTS OF THE PLUMBING FIXTURES AND ASSOCIATED EQUIPMENT SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE GUARANTEE PERIOD. ONE MONTH AFTER FINAL ACCEPTANCE OF THE BUILDING BY THE OWNER, THE CONTRACTOR SHALL GO OVER ALL THE FIXTURES AND TEST ALL WORKING PARTS AND PUT EVERYTHING IN GOOD WORKING ORDER. ALL FIXTURES, INCLUDING TRAPS, SHALL BE THOROUGHLY CLEANED AND ALL PARTS PUT IN GOOD WORKING ORDER.

SECTION 15550 – SPRINKLER SYSTEM

1. SCOPE OF WORK

A) WORK INCLUDED UNDER THIS SECTION CONSISTS OF PROVIDING LABOR, MATERIALS, APPLIANCES, EQUIPMENT, TOOLS, TRANSPORTATION, SUPERINTENDENCE AND SERVICES REQUIRED TO CONSTRUCT AND INSTALL A LIMITED AREA SPRINKLER SYSTEM AS SPECIFIED, INDICATED AND ELSEWHERE REQUIRED.

B) THE LIMITED SPRINKLER SYSTEM SPECIFIED HEREIN IS REQUIRED TO MEET THE LOCAL BUILDING CODE.

C) REFER TO SECTION 15400, PLUMBING, FOR PIPING AND CHECK VALVES.

2. PRODUCTS

A) HANGERS

1) HANGERS MUST MEET NFPA APPROVED TYPE FOR CONSTRUCTION USED.

B) SPRINKLERS

1) SPRINKLERS SHALL BE APPROVED AUTOMATIC SPRAY SPRINKLERS TO COMPLY WITH NFPA 13. SPRINKLERS SHALL BE OF OPERATING TEMPERATURE AS REQUIRED BY NFPA AND THE FIRE MARSHAL'S OFFICE. PROVIDE ANIT–FREEZE LOOPS AT TOWERS. PROVIDE ANTI–FREEZE LOOP AT ENTRY VESTIBULE IN AREAS NORTH OF MASON DIXON LINE. VERIFY ALL FIRE MARSHALL REGULATIONS. PROVIDE APPROVED METAL CABINET WITH NUMBER OF REPLACEMENT HEADS OF VARIOUS TYPES AND QUANTITIES AS REQUIRED BY INSURING AGENCY.

2) SEMI–RECESSED SPRINKLERS WITH ½" DISCHARGE ORIFICE IN FINISHED AREAS WHERE SPRINKLERS ARE EXPOSED TO THE PUBLIC.

3) STANDARD CHROME PENDANT SPRINKLERS WITH SHORT ESCUTCHEON (1/2") ½" DISCHARGED ORIFICE IN KITCHEN & SERVICE AREAS.

C) WATER FLOW INDICATOR

1) PROVIDE AN ELECTRIC WATER FLOW INDICATOR WHERE INDICATED AND/OR REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. WATER FLOW INDICATOR SHALL BE PROVIDED WITH TIME DELAY MECHANISM WHICH ABSORBS FLUCTUATION CAUSED BY WATER SURGES. SWITCHES SHALL BE WIRED COMPATIBLE WITH SOLENOID VALVE INSTALLED IN DOMESTIC WATER LINE.

3. EXECUTION

A) INSTALLATION

1) DRAWINGS WERE PREPARED WITH INTENT THAT ALL LINES CLEAR OBSTRUCTIONS AS PIPES, BEAMS, LIGHTS, HANGERS AND SIMILAR ITEMS. EXAMINE BUILDING AND PLANS CONFIRMING DIMENSIONS BEFORE PIPE IS CUT, FABRICATED AND/OR INSTALLED, TO DETERMINE IF OFFSETS ARE NECESSARY. WHERE REQUIRED, OFFSETS SHALL BE MADE WITHOUT ADDITIONAL COST TO OWNER.

2) FOLLOWING GENERAL SCHEME SHALL BE EMPLOYED WHEN LOCATING SPRINKLER HEADS UNLESS RESTRICTED BY RULES AND REGULATING BODIES.

3) UNLESS OTHERWISE INDICATED, CONCEAL PIPING IN FINISHED PORTIONS OF BUILDING AND EXPOSE ELSEWHERE. LOCATE CONCEALED PIPING IN FURNISHINGS, PIPE SPACES, CHASES AND ABOVE SUSPENDED CEILINGS. INSTALL EXPOSED PIPING PARALLEL OR PERPENDICULAR TO WALLS.

4) LINES AT OR ABOVE CEILINGS SHALL BE HELD AS HIGH AS POSSIBLE AND BE RUN TO AVOID CONFLICTS. INCLUDE FITTINGS AND MATERIAL REQUIRED TO ACCOMPLISH THIS RESULT.

5) PROVIDE SLEEVES FOR PIPING PASSING THROUGH FLOORS, CEILINGS AND MASONRY OF CONCRETE WALLS. LOCATE, SET AND ANCHOR SLEEVES.

6) PROVIDE LINTELS REQUIRED TO PROPERLY COMPLETE SPRINKLER INSTALLATION.

7) PROVIDE PLATES ON LINES PASSING THROUGH FLOORS, CEILING OR WALLS.

8) HANGERS MUST BE PROPERLY SPACED AND SECURED TO BUILDING STRUCTURE TO ADEQUATELY SUPPORT LINES. SUPPORT FROM SUSPENDED CEILINGS AND/OR SIMILAR CONSTRUCTION WILL NOT BE ACCEPTED.

9) DEVICES SHALL BE IN ACCORDANCE WITH RULES AND REGULATIONS OF NFPA AND INSURING AGENCY AND SHALL BEAR THEIR LABEL OF APPROVAL.

10) REDUCING BUSHINGS ARE NOT PERMITTED IN MORE THAN ONE OUTLET OF ANY TEE OR ANY TWO OUTLETS OF ANY CROSS. BUSHINGS ARE NOT PERMITTED IN ANY ELBOWS OR WHEN THE REDUCTION IN SIZE OF THE OUTLET IS NOT LESS THAN ½".

11) INSTALL CHECK VALVE WHERE INDICATED ON PLANS.

B) TESTING

1) TEST SYSTEMS UNDER NORMAL OPERATING CONDITIONS AND DEMONSTRATE THAT PARTS ARE FUNCTIONING PROPERLY. CONDUCT TESTS AND SECURE FINAL CERTIFICATES OF APPROVAL. DELIVER COPIES OF CERTIFICATES TO ARCHITECT/ENGINEER & LANDLORD.

2) TEST SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

3) TWO HOUR, 200 POUND HYDROSTATIC TEST ABOVEGROUND SYSTEM.

4) INCLUDE COST AND RUN SUCH TESTS AS MAY BE NECESSARY TO DEMONSTRATE THAT EQUIPMENT EQUALS OR EXCEEDS CAPACITIES SPECIFIED UPON REQUEST.

5) NOTIFY ARCHITECT/ENGINEER TWENTY–FOUR HOURS BEFORE TESTING.

SECTION 15770 – HEATING, VENTILATING AND AIR CONDITIONING

1. WORK INCLUDED

A) HEATING, VENTILATING AND AIR CONDITIONING WORK REQUIRED, INCLUDING HOISTING OF EQUIPMENT TO THE ROOF AND SETTING IT IN PLACE, INCLUDES, BUT IS NOT NECESSARILY LIMITED TO:

1) PACKAGE HEATING, VENTILATING AND AIR CONDITIONING UNITS.

2) INSTALLATION OF OWNER FURNISHED EXHAUST HOOD.

3) ALL HVAC & HOOD EXHAUST DUCTS, DAMPERS, GRILLES, REGISTERS AND DIFFUSERS.

4) INSTALLATION OF DUCTS AND PIPING.

5) INSTALLATION OF OWNER FURNISHED EXHAUST FANS AND MAKE–UP AIR FANS. (DUCTWORK FURNISHED & INSTALLED BY CONTRACTOR).

6) HVAC CONTROLS.

B) GAS CONNECTIONS (IF REQUIRED SEE DRAWINGS): GAS WILL BE BROUGHT TO HEATING, VENTILATING AND AIR CONDITIONING AND FINAL TIE–IN TO HVAC BY PLUMBING CONTRACTOR.

2. INTENT OF DRAWINGS

A) THE DRAWINGS ARE DIAGRAMMATIC TO THE EXTENT THAT THEY DO NOT INDICATE OFFSETS, BENDS, SPECIAL FITTINGS AND EXACT LOCATIONS.

B) PIPING, DUCTWORK, APPARATUS AND EQUIPMENT SHALL BE INSTALLED TO AVOID OBSTRUCTIONS, PRESERVE HEADROOM, KEEP OPENINGS AND PASSAGEWAYS CLEAR AND MAKE ALL OPERATING EQUIPMENT ACCESSIBLE FOR MAINTENANCE.

C) GOVERNING CODES AND STANDARDS:

1) INSTALL ALL WORK IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE STANDARDS OF SAFETY, ADOPTED AND APPROVED BY THE INSURANCE UNDERWRITERS AND THE LATEST STANDARDS RECOGNIZED BY ASHRAE AND SMACNA AND IN ACCORDANCE WITH LOCAL CODE.

2) IN CASE OF CONFLICT BETWEEN SAID CODES AND THE DRAWINGS, THE CODES SHALL GOVERN IN ALL CASES; HOWEVER, NOTIFY OWNER, BEFORE MAKING SUCH CHANGES.

3. EXAMINATION OF DRAWINGS AND SITE

A) BEFORE COMMENCING THE WORK, THE CONTRACTOR SHALL CAREFULLY STUDY THE DRAWINGS, SPECIFICATIONS AND SITE. HE SHALL DEFIANTLY DETERMINE IN ADVANCE THE METHODS OF INSTALLING AND CONNECTING THE APPARATUS, THE MEANS FOR GETTING THE EQUIPMENT INTO PLACE, AND SHALL MAKE HIMSELF FAMILIAR WITH ALL OF THE REQUIREMENTS OF THE CONTRACT. EQUIPMENT SHALL PHYSICALLY FIT THE AREA ALLOCATED WITH AMPLE ACCESS FOR SERVICE.

B) THE CONTRACTOR SHALL REFER ANY DISCREPANCIES TO THE ARCHITECT FOR DECISION BEFORE PROCEEDING WITH THE WORK.

4. SUBMITTALS

A) MATERIALS LIST: THE CONTRACTOR SHALL SUBMIT, AT HIS EXPENSES, THREE (3) COPIES OF EQUIPMENT BROCHURES IN INDEX FORM WITHIN FIFTEEN (15) DAYS AFTER CONTRACT IS SIGNED. ALL EQUIPMENT AND MATERIAL SUBMITTALS SHALL BE SUBMITTED AT ONE TIME. THE DRAWINGS SUBMITTED SHALL BEAR THE STAMP OF APPROVAL OF THE CONTRACTOR AS EVIDENCE THAT THE DRAWINGS HAVE BEEN CHECKED BY THE CONTRACTOR AND COMPLY WITH THE REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS.

5. GUARANTEE

A) FURNISH WRITTEN, CERTIFIED GUARANTEE, IN ACCEPTABLE FORM, TO THE OWNER, AGAINST DEFECTIVE WORKMANSHIP, MATERIALS, AND OPERATING EQUIPMENT; FURTHER, GUARANTEE TO REBALANCE AND ADJUST ENTIRE SYSTEM OR ANY PART THEREOF, AS REQUIRED FOR PERFECT OPERATION FOR A PERIOD OF AT LEAST ONE (1) YEAR AFTER ACCEPTANCE, INCLUDING COST OF REFRIGERANT CHARGE. REPAIR, REPLACE AND MAKE SATISFACTORILY OPERATIVE ANY AND ALL DEFECTIVE ITEMS AND WORK HOLDING OWNER FREE FROM ANY COST AND LIABILITY IN CONNECTION THEREWITH FOR THE TERMS OF GUARANTEE. THE MANUFACTURER SHALL PROVIDE A WARRANT ON HIS UNIT COMPRESSORS FOR A PERIOD OF FIVE (5) YEARS.

6. COORDINATION WITH OTHER TRADES

A) THE WORK UNDER THIS SECTION SHALL BE COORDINATED WITH OTHER TRADES TO MAINTAIN A RAPID AND SMOOTH CONSTRUCTION PROGRESS WITH A MINIMUM OF INTERFERENCE.

7. PAINTING

A) APPLY ONE (1) COAT OF ZINC CHROMATE, OR RUSTOLEUM TO BARE METAL SURFACES OF SUPPORTS, ETC. COLOR TO MATCH UNIT'S COLOR OR AS DIRECTED BY ARCHITECT OR OWNER.

8. CLEAN UP

1) ALL EQUIPMENT AND EXPOSED SURFACES SHALL BE LEFT SMOOTH AND CLEAN. ALL PLATE WORK SHALL BE POLISHED AND THE ENTIRE PREMISES SHALL BE CLEANED OF UNUSED MATERIALS, RUBBISH, DEBRIS AND GREASE SPOTS.

9. PRODUCTS

A) GENERAL

1) ALL EQUIPMENT SHALL BE THE CAPACITY AND TYPE SHOWN ON THE EQUIPMENT SCHEDULE ON THE DRAWINGS AND SHALL BE AS MANUFACTURED BY ONE OF THE MANUFACTURERS DESIGNATED ON THAT SCHEDULE OR SHALL BE AN EQUAL APPROVED IN ADVANCE BY THE ARCHITECT.

B) SHEETMETAL WORK

1) SHEETMETAL: PRIME STEEL SHEETS, HOT DIPPED GALVANIZED OF THE FOLLOWING GAUGES:

A. UP TO 12" WIDE OR DIAMETER, #26.

B. 13" TO 30" WIDE OR DIAMETER, #24.

C. 31" TO 60" WIDE OR DIAMETER, #22.

D. PARTITIONS FORMING PLENUM OR SUCTION CHAMBERS, #18 GAUGE WITH 1–1/2" X 1–1/2" X 3/16" GALVANIZED IRON ANGLE AND RIVETS FOR SEAM CONNECTION AND STIFFENING.

E. EXPOSED BRANCH ROUND DUCT SHALL BE SPIRAL TYPE SIMILAR TO SEMCO "SS" 75 SINGLE WALL ROUND PIPE WITH ALL REQUIRED FITTINGS. PIPE SHALL BE 24–26 GA.

2) DUCT CONSTRUCTION:

A. LONGITUDINAL JOINTS: PITTSBURGH CORNER SEAMS OR SNAP LOCK.

B. TRANSVERSE JOINTS: GOVERNMENT LOCKS RIVETED AT CORNERS, CONSTRUCTED OF METAL ONE GAUGE HEAVIER THAN THAT JOINTING DUCT SECTIONS. DUCTS UNDER 20" MAY BE JOINED WITH TRANSVERSE CAPSTRIPS.

C. SUPPORTS: EXCEPT AS OTHERWISE SPECIFIED, ALL DUCT HANGERS SHALL BE CONSTRUCTED OF 3/4" NO. 16 GALVANIZED STRAP, SPACING NOT TO EXCEED EIGHT FOOT INTERVALS. WHERE DUCT HANGERS EXCEED SIX FEET IN LENGTH, PROVIDE ADEQUATE SWAY BRACING. ALL VERTICAL DUCTS SHALL BE SUPPORTED ON ANGLE IRON BRACKETS.

D. ELBOWS: MADE FOR AN EASY FLOW OF AIR FOR MINIMUM FRICTION, INSIDE RADIUS EQUAL TO WIDTH OF DUCT. PROVIDE ELBOWS WITH APPROVED DUCT TURNS WHERE INDICTED ON PLANS OR WHERE SPACE DOES NOT PERMIT REQUIRED RADIUS.

E. FLEXIBLE CONNECTION: AT ALL FANS, CONNECTIONS SHALL BE NEOPRENE COATED GLASS FIBER CLOTH ENDS WHICH ARE TO BE TURNED INTO ABUTTING ENDS OF SHEETMETAL OR ANGLE IRON FRAMES SO AS TO FORM A GASKET TO FORM AN AIR TIGHT JOINT.

3) WORKMANSHIP AND CONSTRUCTION SHALL MEET AND EXCEED THE STANDARDS AS SET FORTH BY SMACNA.

C) GRILLES, REGISTERS AND DIFFUSERS

1) SIZES: AS INDICATED ON DRAWINGS.

2) SUPPLY DIFFUSERS: AS INDICATED ON DRAWINGS.

3) RETURN AIR REGISTERS; AS INDICATED ON DRAWINGS.

D) DUCT INSULATION

1) INSULATE ALL SUPPLY, MAKE–UP AIR AND RETURN AIR DUCTS WITH FOIL FACED BLANKET, SEE PLANS FOR ADDITIONAL INFORMATION.

2) MAXIMUM 25 FLAME SPREAD 50 SMOKE DEVELOPED.

3) GENERAL:

A. INSTALL ALL EQUIPMENT WHERE INDICATED ON THE APPROVED CONTRACT DRAWINGS.

B. AVOID INTERFERENCE WITH STRUCTURE AND THE WORK OF OTHER TRADES: DO NOT CUT INTO LOAD CARRYING MEMBERS WITHOUT THE SPECIFIC APPROVAL OF THE ARCHITECT.

C. TEMPERATURE CONTROL SYSTEM SHALL BE AS SHOWN ON THE DRAWINGS.

E) ACCEPTANCE

1) THE SYSTEM SHALL NOT BE CONSIDERED FOR ACCEPTANCE UNTIL THE MECHANICAL SUBCONTRACTOR HAS COMPLETE WORK AND DEMONSTRATED TO THE REPRESENTATIVE OF THE OWNER, PROPER OPERATION OF THE SYSTEM AND STRICT COMPLIANCE WITH THE SPECIFICATIONS, PARTICULARLY IN REFERENCE TO THE FOLLOWING ARTICLES OF THESE SPECIFICATIONS.

A. TESTING

B. CLEANING

C. INSTRUCTIONS AND OPERATING MANUALS

D. TRAINING OF OPERATING PERSONNEL

E. AS–BUILT DRAWINGS

F. GUARANTEE CERTIFICATES

G. START UP AND TEST DOCUMENT

F) AIR CONDITIONING UNIT START UP AND TEST

1) ALL AIR CONDITIONING EQUIPMENT SHALL BE STARTED AND CHECKED BY AN AUTHORIZED FACTORY SERVICE REPRESENTATIVE. ANY PROBLEMS ARISING WITH THE EQUIPMENT SHALL BE CORRECTED BY THE MANUFACTURER. THE MANUFACTURER SHALL PROVIDE A CHECK LIST OR REPORT ON THE OPERATION OF THE EQUIPMENT WHICH SHALL BE FORWARDED TO THE ARCHITECT.

G) GUARANTEE

1) THE GUARANTEE PROVISION OF THIS SPECIFICATION REQUIRES PROMPT REPLACEMENT OF ALL DEFECTIVE WORKMANSHIP AND MATERIALS OCCURRING WITHIN ONE YEAR OF JOB ACCEPTANCE. THIS INCLUDES ALL WORK REQUIRED TO REMOVE AND REPLACE THE DEFECTIVE ITEM AND TO MAKE ALL NECESSARY ADJUSTMENTS TO RESTORE THE ENTIRE INSTALLATION TO ITS ORIGINAL SPECIFIED OPERATING CONDITION AND FINISH AT THE TIME OF ACCEPTANCE.

3. EXHAUST HOOD AND FAN SYSTEM

KITCHEN HOODS, KITCHEN SUPPLY AND KITCHEN EXHAUST FANS, ALL COMPLETE WITH ROOF MOUNTING CURBS, COLLARS AND DAMPERS WILL BE FURNISHED TO THE JOB SITE BY THE OWNER. THE CONTRACTOR WILL HANG THE HOODS, SET FAN CURBS AND FANS, AND FURNISH AND INSTALL ALL INTERCONNECTING SHEET METAL DUCTWORK AS REQUIRED BY CODE AND PER HOOD MANUFACTURER'S CUT SHEETS.

4. TESTING, ADJUSTING AND BALANCING

THE TESTING, ADJUSTING AND BALANCING OF THE AIR CONDITIONING AND HOOD SYSTEM WILL BE PROVIDED BY THE OWNER. THE AIR CONDITIONING CONTRACTOR SHALL PROVIDE AND COORDINATE THE SERVICES OF QUALIFIED RESPONSIBLE MECHANICS AND OTHER PERSONNEL AS REQUIRED TO CORRECT, REPAIR OR REPLACE ALL DEFICIENT ITEMS OR CONDITIONS FOUND DURING THE TESTING AND BALANCING PERIOD.

DIVISION 16 – ELECTRICAL

SECTION 16050 – GENERAL NOTES AND SPECIFICATIONS

1. GENERAL

A) CONTRACTOR SHALL PROVIDE ALL NECESSARY MATERIALS, LABOR, TOOLS, TRANSPORTATION, SUPERINTENDENCE AND RELATED ITEMS TO INSTALL A COMPLETE AND FULLY OPERATIVE INTERIOR AND EXTERIOR ELECTRICAL SYSTEM AS SPECIFIED HEREIN, SHOWN ON THE DRAWINGS AND ELSEWHERE REQUIRED.

B) ALL OUTLETS, FIXTURES AND EQUIPMENTS SHALL BE FULLY CONNECTED TO PROPER SOURCES OF POWER SUPPLY AND LEFT READY TO USE.

C) PROVIDE ALL EXCAVATION AND TAMP–BACKFILL AS REQUIRED TO COMPLETE WORK. CORRECT ANY SETTING DURING GUARANTEE PERIOD TO OWNER'S SATISFACTION.

D) PROVIDE ALL NECESSARY CUTTING AND PATCHING AS REQUIRED TO COMPLETE WORK. PATCHING SHALL BE DONE BY MECHANICS SKILLED AT THEIR WORK. ALL OPENINGS SHALL BE FILLED AND PATCHED TO CONFORM WITH FIRE REGULATIONS.

E) COOPERATE WITH OTHER TRADES: MAKE KNOWN TO OTHER TRADES ARRANGEMENT OF ELECTRICAL WORK AND EXAMINE WORK OF OTHER TRADES TO AVOID CONFLICTS. EXAMINE DRAWINGS OF OTHER TRADES TO DETERMINE EXACT EQUIPMENT LOCATIONS. EXAMINE MANUFACTURER'S SHOP DRAWINGS TO DETERMINE ROUGHING–IN REQUIREMENTS.

F) PERMITS – FEES–CODES: PAY ALL COST FOR PERMITS, FEES AND INSPECTIONS REQUIRED BY AUTHORIZED AGENCIES HAVING JURISDICTION OVER ELECTRICAL WORK. ELECTRICAL SYSTEM SHALL CONFORM TO REQUIREMENTS OF NATIONAL, STATE AND LOCAL ELECTRIC CODES, LOCAL AUTHORITIES AND UTILITY COMPANY.

G) EQUIPMENT MANUFACTURERS LISTED ARE TO INDICATE PRODUCT QUALITY; OTHER MANUFACTURERS OF EQUAL QUALITY WILL BE ACCEPTABLE UPON WRITTEN APPROVAL OF OWNER. ALL ELECTRICAL MATERIALS SHALL BE NEW, LISTED AND LABELED BY UL AND SHALL CONFORM TO INDUSTRY STANDARDS, PARTICULARLY NEMA, NFPA, N.E.C. & OTHERS.

H) PROVIDE TYPEWRITTEN DIRECTORIES IN PANELBOARDS WITH CLEAR PLASTIC SHIELDS. PROVIDE ENGRAVED PLASTIC LOAD NAMEPLATES ON ALL DISCONNECT SWITCHES, MOTOR STARTERS AND CONTROL DEVICES.

I) TESTS: ENTIRE ELECTRICAL SYSTEM SHALL BE FULLY TESTED AND CORRECTED OF ANY SHORT CIRCUITS, OPEN GROUNDS, FAULTY WIRING AND INCORRECT CONNECTIONS.

J) GUARANTEE: COMPLETE ELECTRICAL SYSTEM INCLUDING ALL MATERIALS, EQUIPMENT AND LABOR SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR BEGINNING WITH DATE OF ACCEPTANCE OF BUILDING BY OWNER.

K) EACH BIDDER SHALL, BEFORE SUBMITTING A PROPOSAL, VISIT AND EXAMINE THE SITE IN ACCORDANCE WITH DIVISION 1 TO SATISFY HIMSELF AS TO MATERIALS AND SCOPE OF THE NEW CONSTRUCTION AND ANY DIFFICULTY ATTENDING THE PERFORMANCE OF THE WORK.

L) THE SUBMISSION OF A PROPOSAL WILL BE CONSTRUCTED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. CLAIMS MADE SUBSEQUENT TO THE TIME OF SUBMISSION OF THE PROPOSAL FOR LABOR, EQUIPMENT AND MATERIAL REQUIRED FOR DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN HAS AN EXAMINATION BEEN MADE, WILL NOT BE RECOGNIZED.

M) WORKMANSHIP: ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN NEAT, WORKMANLIKE MANNER. UNSIGHTLY INSTALLATIONS SHALL BE REMOVED OR REWORKED AT NO ADDITIONAL EXPENSE TO THE OWNER.

SECTION 16121 – BASIC MATERIALS AND METHODS

1. GENERAL

A) SECTION 16A APPLIES TO ALL WORK HEREUNDER AND SHALL INCLUDE CONDUIT, BOXES, WIRE, WIRING DEVICES, LIGHTING FIXTURES AND RELATED MATERIALS.

2. MATERIALS

A) CONDUIT

1) CONNECTIONS TO EQUIPMENT WHICH SHALL BE MADE WITH THREE FEET FLEXIBLE LIQUIDTIGHT CONDUIT WITH LIQUIDTIGHT CONNECTORS.

2) CONNECTIONS TO RECESSED LIGHTING FIXTURES SHALL BE MADE WITH SIX FEET OF FLEXIBLE CONDUIT FROM A BOX. LOCATE BOX TO PROVIDE RELOCATION OF FIXTURES.

3) INTERMEDIATE GRADE CONDUIT WITH THREADED FITTINGS SHALL BE PROVIDED IN SLAB–ON–GRADE, OUTSIDE BUILDING, BURIED BELOW GRADE AND IN WET LOCATIONS.

4) "MC" CABLE MAY BE USED IN NON–VISIBLE LOCATIONS.

5) RIGID GALVANIZED CONDUIT MUST BE USED IN EXPOSED AREAS OF THE DINING ROOM.

6) ALL OTHER CONDUIT SHALL BE ELECTRIC METALLIC TUBING WITH COMPRESSION TYPE FITTINGS. EXCEPT EXTERIOR EXPOSED CONDUIT SHALL BE RIGID GALVANIZED CONDUIT.

B) BOXES

1) CONCEALED BOXES SHALL BE 4 INCH SQUARE GALVANIZED STEEL WITH GALVANIZED EXTENSION RINGS, TOTAL DEPTH OF NOT LESS THAN 2–1/2 INCHES.

2) SURFACE MOUNTED BOXES SHALL BE PRESSED GALVANIZED STEEL, UTILITY TYPE.

C) WIRE & CABLE (600V AND LESS)

1) THE WIRE MEETING REQUIREMENTS BELOW SHALL BE SUITABLE FOR SECONDARY POWER AND LIGHT CIRCUITS AND CONTROL CIRCUITS WITHIN THE LIMITATIONS OF THESE SPECIFICATIONS.

2) INSULATED WIRE NO. 8 AWG AND LARGER SHALL BE STRANDED.

3) ALL WIRE SHALL BE BROUGHT TO THE JOB IN UNBROKEN PACKAGES, AND SHALL BEAR THE DATE OF MANUFACTURING AND SHALL NOT BE OLDER THAN TWELVE MONTHS.

4) TYPE OF WIRE SHALL BE AS FOLLOWS:

A. UNLESS OTHERWISE SPECIFIED OR INDICATED OTHERWISE ON DRAWINGS, ALL #12 AND #10 WIRE SHALL BE THW OR THHN AND ALL WIRE #8 AND LARGER SHALL BE THHN–THWN TYPE.

B. WIRING ADJACENT TO HEAT PRODUCING EQUIPMENT SHALL BE TYPE AVA.

C. NO WIRE SMALLER THAN #12 GAUGE SHALL BE USED, EXCEPT FOR SIGNAL OR CONTROL SYSTEMS, OR WHERE OTHERWISE INDICATED. WIRE SHALL BE COPPER, 600 VOLT MINIMUM RATING, EXCEPT FOR SPECIAL SYSTEMS. HIGHER VOLTAGE RATING SHALL BE PROVIDED WHEN REQUIRED BY MANUFACTURES SUCH AS WIRING BETWEEN A LIGHT FIXTURE AND REMOTE BALLAST.

D. LOW VOLTAGE WIRING USED IN UNDERGROUND CONDUIT AND OTHER AREAS SUBJECT TO EXTREME DAMPNESS SHALL BE RHW OR XHHW TYPE INSULATION.

E. UNLESS NOTED OTHERWISE, ALL CONDUCTORS SHALL BE SOFT DRAWN COPPER CONFORMING TO THE LATEST ASTM SPECIFICATIONS AND THE LATEST REQUIREMENTS OF NEC. UNLESS OTHERWISE NOTED OR SPECIFIED, ALL INSULATION SHALL BE RATED 600 VOLT.

F. ALL WIRE SHALL BE AS MANUFACTURED BY GENERAL CABLE CO., PHELP DODGE, ANACONDA, OR A CABLE EQUIVALENT.

G. ALL WIRE SHALL BE INSTALLED IN CONDUIT AND COLOR CODED. ALL WIRE SHALL BE 98% CONDUCTIVE COPPER, RATED FOR MAXIMUM OF 600 VOLTS. ELECTRICAL WIRE TYPE SHALL BE COPPER, UNLESS OTHERWISE SPECIFIED ON THE RISER DIAGRAM SHOWN ON E3 AND IS ACCEPTABLE BY LOCAL CODES.

H. ALL EXTERIOR WIRE SHALL BE INSTALLED IN CONDUIT AND COLOR CODED. ALL WIRE SHALL BE ALUMINUM, RATED FOR MAXIMUM 600 VOLTS. ELECTRICAL WIRE TYPE SHALL BE ALUMINUM, UNLESS OTHERWISE SPECIFIED ON THE RISER DIAGRAM SHOWN ON E3 AND IS ACCEPTABLE BY LOCAL CODES.

D) WIRE CONNECTORS

1) WIRE CONNECTORS FOR SIZED #10 AWG AND LESS SHALL BE "PRESS–SNURE", IDEAL "WRAP–CAP". T & B "STAKONS" OR 3M "SCOTCHOLK". CONNECTORS FOR WIRE SIZE #8 AND LARGER SHALL BE T & B OR BURNDY METHODS USING HYDRAULIC PRESSES.

E) ELECTRIC TAPE SHALL BE JOHNS–MANVILLE "DUCH–BRAND" 3M "SCOTCH BRANCH" OR PLYMOUTH "SLIPKNOT BRAND".

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ISSUE/REVISION RECORD

DATE	DESCRIPTION
01/29/19	COORDINATION SET
02/20/19	HEALTH SUBMITTAL
04/24/19	HEALTH RESPONSE
05/03/19	PERMIT/BID SET

PROFESSIONAL SEAL

PROFESSIONAL IN CHARGE
S. KOUGIAS
PROJECT MANAGER
E. ARELLANO
QUALITY CONTROL
S. KOUGIAS
DRAWN BY
E. ARELLANO

PROJECT NAME
BUBBA'S 33

GASTONIA
NORTH CAROLINA

3287 E. FRANKLIN BLDVD.

PROJECT NUMBER
20181046.0

SHEET TITLE
SPECIFICATIONS

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