## COMMON RENOVATION REQUIREMENTS ≥ PLUMBING

- REFER TO ARCHITECTURAL SPECIFICATIONS FOR PLUMBING FIXTURE SPECIFICATIONS.
- THIS PROJECT COMPRISES OF ALTERATIONS AND RENOVATIONS TO THE EXISTING BUILDING, THE EXISTING BUILDING IS CURRENTLY OCCUPIED AND THE PROJECT WILL PROCEED IN A MANNER WHICH WILL MINIMIZE ANY INCONVENIENCE TO THE BUILDING OCCUPANTS. COORDINATE THE TIME SCHEDULE WITH THE ARCHITECT AND GENERAL.
- PROVIDE ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY TO COMPLETE THE WORK OUTLINED ON THESE CONTRACT DOCUMENTS. THE CONTRACTOR IS TO NOTE HAT THESE DOCUMENTS ARE DIAGRAMMATIC ONLY AND THAT FINAL PLACEMENT OF EQUIPMENT OR DEVICES IN THE FIELD MAY NOT DIRECTLY CORRESPOND TO THAT WHICH IS SHOWN ON THE DRAWINGS. IF A CONFLICT IN POSITIONING OCCURS THE CONTRACTOR IS TO NOTIFY THE ENGINEER IMMEDIATELY TO ASCERTAIN WHAT THE INTENT WAS BY THE DESIGN PROFESSIONAL. IT IS THE INTENT OF THE SPECIFICATIONS AND DRAWINGS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION, ANY APPARATUS APPLIANCE, MATERIAL OR WORK NOT SHOWN ON DRAWINGS BUT MENTIONED IN THE SPECIFICATIONS, OR VICE VERSA FOR ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE AND PERFECT IN ALL RESPECTS AND READY FOR OPERATION AS DETERMINED BY GOOD TRADE PRACTICE EVEN IF NOT PARTICULARLY SPECIFIED, SHALL BE FURNISHED, DELIVERED AND INSTALLED UNDER THEIR RESPECTIVE DIVISIONS WITHOUT ANY ADDITIONAL EXPENSE TO THE OWNER
- ALLWORK SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST EDITION OF ALL APPLICABLE STATE AND LOCAL BUILDING CODES INCLUDING THE NEW YORK CITY BUILDING, MECHANICAL, PLUMBING, FUEL GAS, ELECTRICAL AND ENERGY CONSERVATION CODE:
- 5 THE FOLLOWING DEFINITIONS APPLY TO THIS CONTRACT:

INSTALLATION, AND SIMILAR OPERATIONS."

A LEGAL MANNER."

- A FURNISH THE TERM FURNISH MEANS TO "SUPPLY AND DELIVER TO THE PROJECT SITE READY FOR UNLOADING, UNPACKING, ASSEMBLY,
- B. INSTALL THE TERM INSTALL IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL JUNLOADING, UNPACKING ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR,
- C. PROVIDE THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL COMPLETE AND READY FOR THE INTENDED USE."
- D. REMOVE: THE TERM "REMOVE" MEANS TO DISCONNECT FROM ITS PRESENT POSITION, REMOVE FROM THE PREMISES AND TO DISPOSE OF IN
- E. SUBSTITUTIONS: ALTERNATE EQUIPMENT OR MANUFACTURERS ARE REQUESTS FOR CHANGES IN PRODUCTS, MATERIALS AND METHODS OF CONSTRUCTION AS PROPOSED BY THE CONTRACTOR AFTER AWARD OF THE CONTRACT
- F. FINISHED ALL ROOMS AND AREAS TO BE SPECIFIED TO RECEIVE ARCHITECTURAL TREATMENT AS INDICATED ON THE DRAWINGS. ALL ROOMS AND AREAS NOT COVERED, INCLUDING UNDERGROUND TUNNELS AND AREAS ABOVE CEILINGS SHALL BE CONSIDERED NOT FINISHED, UNLESS
- OTHERWISE NOTED. G. SUBCONTRACTOR: THE TERM "SUBCONTRACTOR" MEANS SPECIFICALLY THE SUBCONTRACTOR WORKING UNDER THIS DIVISION. OTHER CONTRACTORS ARE SPECIFICALLY DESIGNATED PLUMBING SUBCONTRACTOR", "GENERAL CONTRACTOR" AND SOLON, NOTE: TAKE CARE TO

ASCERTAIN LIMITS OF RESPONSIBILITY FOR CONNECTING EQUIPMENT WHICH REQUIRES CONNECTIONS BY TWO OR MORE TRADES.

- H. BUILDING: THE TERM BUILDING MEANS THE BUILDING STAFF AND THE MANAGING AGENT
- INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGING FOR INSPECTIONS AND BEING AVAILABLE FOR INSPECTIONS BY THE AUTHORITY HAVING JURISDICTION.
- 8 SUBMIT TO THE OWNER AN OFFICIAL CERTIFICATE OF INSURANCE FOR THEIR RECORDS.
- DO NOT BURNIWASTE MATERIALS. DO NOT BURY DEBRIS OR EXCESS MATERIALS ON THE OWNER'S PROPERTY. DO NOT DISCHARGE YOUATILE. HARMFUL OR DANGEROUS MATERIALS INTO DRAINAGE SYSTEMS. REMOVE AND DISPOSE OF ALL WASTE MATERIALS, PACKAGING MATERIAL. SKIDS ETC.
- 10. PROVIDE TEMPORARY HEAT, COOLING HUMIDIFICATION, AND DEHUMIDIFICATION DURING CONSTRUCTION PERIOD AS REQUIRED TO MAINTAIN THE BUILDING TEMPERATURE ABOVE 50 DEGREES F 30 PERCENT RH AND BELOW 85 DEGREES AND 50 PERCENT RH. PROVIDE TEMPORARY

VENTILATION AS REQUIRED TO MAINTAIN TOLERABLE WORKING CONDITIONS IN RESPECT TO FRESHAIR, TEMPERATURE AND FILTRATION.

FROM THE SITE AND DISPOSE OF IN A LAWFUL MANNER IN ACCORDANCE WITH MUNICIPAL, STATE AND FEDERAL REGULATIONS.

- TIL PROVIDE FIRESTOPPING AROUND ALL MECHANICAL PENETRATIONS THROUGH FIRE RATED PARTITIONS. PROVIDE ASBESTOS FREE FIRESTOPPING SYSTEM CAPABLE OF MAINTAINING AN EFFECTIVE BARRIER AGAINST FLAME AND GASES. SYSTEM SHALL BE ULL LISTED AND COMPLY WITH ASTME 814.
- 12. THE CONTRACTOR SHALL BE REQUIRED TO PROPERLY STORE MATERIALS AND EQUIPMENT SO AS TO AVOID THEFT OR VANDALISM. IF

THEFT OR VANDALISM OCCURS, THE CONTRACTOR SHALL REPAIR OR REPLACE SUCH ITEMS AT THE DIRECTION OF THE ENGINEER.

- 13. ACCESS DOORS SHALL BE PROVIDED IN CEILINGS, WALLS AND FLOORS AT ALL VALVES, CONTROL DEVICES, AND OTHER APPARATUS AND
- ENGINEER FOR FINAL APPROVAL

EQUIPMENT REQUIRING PERIODIC SERVICE AND INSPECTION, PROVIDE SHOP DRAWING SHOWING TYPE AND LOCATION WITH ARCHITECT AND

- 14. SPECIFIC, DIMENSION DETAILS OF ALL PENETRATION WORK MUST BE SUBMITTED AND INCLUDE FLASHING, LINTEL AND WATERPROOFING PROCEDURES. NO ONE MAY PENETRATE THE EXTERIOR BRICK OR FACADE OF THE BUILDING WITHOUT SUBMITTING ALL THE PROPOSED PENETRATIONS AND OBTAINING APPROVAL FOR EVERY PROCEDURE.
- 15. DEMOLITION WORK SHALL COMPLY WITH ALL BUILDING NOISE ABATEMENT REGULATIONS.
- A. NO ELECTRICAL JACKHAMMERS AND OTHER SIMILAR IMPACT, PERCUSSION DEVICES MAY BE USED. SLEDGEHAMMERS ARE LIMITED TO THE SIZE THAT CAN BE USED WITH ONE HAND, ELECTRIC SAWS OR OTHER POWER TOOLS, WHICH MAY CAUSE UNDUE DISTURBANCE TO THE TENANTS MAY NOT BE USED WITHOUT THE PRIOR WRITTEN APPROVAL BY THE CORPORATION.
- 17. THE BUILDING MAY AT ANY TIME RESTRICT OR PROHIBIT THE USE OF EQUIPMENT, MATERIALS OR PROCEDURES THAT ARE IN THE CORPORATION'S SOLE OPINION, A NUISANCE, CAUSE EXCESSIVE NOISE OR MAY BE POTENTIALLY HARMFUL TO THE BUILDING OR ITS
- FLOORS MUST BE KEPT PADDED DURING THE CONSTRUCTION PERIOD
- 19 NO CUTTING OR CHANNELING OF CONCRETE CEILING OR FLOOR SLABS IS PERMITTED UNLESS SPECIFICALLY NOTED ON THE
- 20 CONTACTORS ARE RESPONSIBLE FOR THE PROTECTION OF THE INTERIOR WALLS OF THE ELEVATORS WITH E.G. MASONITE, DROP CLOTHES, PLASTIC, ETC.
- THE WORK MUST BE CONFINED TO THE APARTMENT AND MUST NOT CREATE DUST, DIRT, OR ANY OTHER TYPE OF NUISANCE TO OTHER APARTMENTS OR COMMON AREAS.
- 22. PRIOR TO ORDERING ANY MATERIALS AND EQUIPMENT, THOROUGHLY REVIEW THE SITE CONDITIONS TO DETERMINE IF ADEQUATE CLEARANCES AND ACCESS IS ALLOWED TO INSTALL THE COMPONENTS, LORDER EQUIPMENT BROKEN DOWN AS NECESSARY TO ALLOW FOR PROPER HANDLING THROUGH THE PROJECT AREA. PROVIDE ALL NECESSARY ALTERATIONS TO THE STRUCTURE OF THE BUILDING AS NECESSARY TO RIG THE. QUIPMENT IN PLACE, CAREFULLY INSPECTALL BUILDING ELEMENTS PRIOR TO CUTTING OR DRILLING INTO WALL, FLOORS OR CEILINGS. PATCH AND PAINT SURFACES DISTURBED BY WORK UNDER THIS CONTRACT AS REQUIRED TO RESTORE THEM TO THEIR ORIGINAL CONDITION.
- 23 CONTACT THE LOCAL UTUILITY COMPANIES FOR NECESSARY COORDINATION OF SERVICE REQUIREMENTS AND PAY FOR ALL RELATED CHARGES FOR ALL SERVICE INSTALLATIONS.
- 24 AFTER RECEIVING OWNERS APPROVAL, CONTRACTORS MUST SUBMIT ALL REQUESTS FOR RISER SHUT-OFFS TO THE RESIDENT MANAGER'S OFFICE IN WRITING AT A MINIMUM OF FOUR WORKING DAYS PRIOR TO THE DATE REQUESTED FOR THE SHUT-OFF TO INSURE ADEQUATE NOTICE TO THE TENANTS WHO WILL BE AFFECTED THEREBY. THE CONTRACTOR SHALL BE LIABLE FOR THE CHARGES OF THE HOUSE PLUMBERS WHENEVER THEY ARE REQUESTED TO PERFORM A RISER SHUT-OFF OR STANDBY DURING THE SHUT-OFF PERIOD.
- 25. THE BUILDING PROHIBITS ANY RELOCATION OF MODIFICATION OF THE EXISTING GAS, PLUMBING, OR OTHER UTILITY SERVICE RISERS UNLESS SHOWN ON THE CONTRACT DOCUMENTS.
- WHERE NEW PLUMBING FIXTURES ARE INSTALLED. ALL NEW ROUGHING AND CONVENIENTLY LOCATED SHUT-OFF VALVES ARE TO BE PROVIDED.
- 27. WHENEVER A PLUMBING FIXTURE IS REPLACED AND/OR RELOCATED, THE BRANCH LINES FOR WATER SUPPLY, WASTE AND VENTING MUST BE REPLACED BACK-TO THE BUILDING'S WASTE AND VENT RISER STACK BY A LICENSED PLUMBER, ABANDONED PLUMBING LINES ARE TO BE REMOVED AND CAPPED AT THE RISERS. (ALL SUCH CONTRACTOR PROPOSED BRANCH LINE MODIFICATIONS MUST BE CLEARLY SHOWN ON THE SHOP DRAWINGS.
- 28 SHUT-OFF VALVES MUST BE INSTALLED FOR ALL APPLIANCES/EQUIPMENT CONNECTED TO THE BUILDING'S PLUMBING SYSTEMS AND ACCESS PANELS MUST BE PROVIDED FOR SERVICING THESE VALVES.
- THE CONTRACTOR MUST SUBMIT THE FOLLOWING ITEMS AFTER DEMOLITION AND PRIOR TO CONSTRUCTION: A MEASURED STATIC PRESSURE B RESIDUAL PRESSURE, C. FLOW AT EACH RISER TAP, D. RISER AND TAP SIZE
- 30. ALL HOT, COLD, WASTE, VENT, AND RAIN WATER RISER SIZES AND BRANCH TAPS ARE TO BE INCLUDED IN THE SHOP, COORDINATION, AND AS BUILT SUBMITTAL PROCESS.

## PLUMBING SPECIFICATIONS

- CONTRACTOR PRODUCED SUBSTITUTION REQUESTS PLUMBING
- SUBSTITUTIONS: AS A SEPARATE REQUEST, WITHIN THE CONTRACTORS BASE BID, THE CONTRACTOR MUST INCLUDE ANY PROPOSED. DEVIATION FROM THE SPECIFIED EQUIPMENT OR MATERIALS. THE REQUEST MUST INCLUDE THE AMOUNT OF CREDIT OR EXTRA COST OR IMPACT TO SCHEDULE INVOLVED INCLUDING OTHER AFFECTED TRADES. THE BASE BID SHALL BE BASED ON USING THE MATERIALS AND EQUIPMENT AS SPECIFIED WITH NO EXCEPTIONS.
- WHERE THE CONTRACTOR PROPOSES TO USE AN ITEM OF EQUIPMENT OTHER THAN SPECIFIED OR DETAILED ON THE DRAWINGS WHICH REQUIRES ANY REDESIGN OF THE STRUCTURE, PARTITIONS, FOUNDATIONS, PIPING, WIRING OR ANY OTHER PART OF THE MECHANICAL ELECTRICAL OR ARCHITECTURAL LAYOUT, ALL SUCH REDESIGN, ALL NEW DRAWINGS AND DETAILS, ALL NEW BUILDING REVIEW REQUESTS, AND ALL DEPARTMENT OF BUILDING PERMIT SUBMITTALS REQUIRED THEREFORE SHALL BE PREPARED BY THE DESIGNERS OF RECORD AT THE EXPENSE OF THE CONTRACTOR AND AT NO ADDITIONAL COST TO THE OWNER.
- SUBSTITUTION REQUEST SUBMITTAL REQUESTS FOR SUBSTITUTION WILL BE CONSIDERED IF RECEIVED WITHIN 45 DAYS AFTER COMMENCEMENT OF THE WORK, REQUESTS RECEIVED MORE THAN 45 DAYS AFTER COMMENCEMENT OF THE WORK MAY BE CONSIDERED OR REJECTED AT THE DISCRETION OF THE ENGINEER.
- SUBMITS GOPIES OF EACH REQUEST FOR SUBSTITUTION FOR CONSIDERATION. IDENTIFY THE PRODUCT! OR THE FABRICATION OR INSTALLATION METHOD TO BE REPLACED IN EACH REQUEST. INCLUDE RELATED DRAWING NUMBERS. PROVIDE NARRATIVE BRIEFLY COMPARING THE DIFFERENCE BETWEEN THE SPECIFIED AND THE CONTRACTOR PROPOSED SUBSTITUTION AND INCLUDE THE FOLLOWING APPLICABLE ITEMS: PRODUCT SUBMITTAL DATA, SAMPLES, IMPACTS OF OTHER TRADES, IMPACT TO SCHEDULE, NET CHANGES IN CONTRACT SUM, CONTRACTOR'S CERTIFICATION THAT THE PROPOSED IS EQUAL TO OR BETTER IN EVERY SIGNIFICANT RESPECT TO THE SPECIFIED PRODUCT, AND CONTRACTOR'S WAIVER OF RIGHTS TO ADDITIONAL PAYMENT OR TIME NECESSARY FOR FAILURE TO MEET THE SUBSTITUTION REQUIREMENTS.
- ENGINEER'S ACTION. WITHIN ONE WEEK OF RECEIPT OF THE REQUEST FOR SUBSTITUTION THE ENGINEER WILL REQUEST ADDITIONAL INFORMATION OR DOCUMENTATION NECESSARY FOR EVALUATION OF THE REQUEST. WITHIN 2 WEEKS OF RECEIPT OF THE REQUEST, OR ONE WEEK OF RECEIPT OF THE ADDITIONAL INFORMATION OF DOCUMENTATION, WHICHEVER IS LATER, THE ENGINEER WILL NOTIFY THE CONTRACTOR OF ACCEPTANCE OR REJECTION OF THE PROPOSED SUBSTITUTION, IF A DECISION ON USE OF A PROPOSED SUBSTITUTE. CANNOT BE MADE OR OBTAINED WITH THE TIME ALLOCATED, USE THE PRODUCT SPECIFIED BY NAME, ACCEPTANCE OF A PRODUCT SUBSTITUTION WILL BE IN THE FORM OF A CHANGE ORDER.
- OTHER CONDITIONS: THE CONTRACTOR'S SUBSTITUTION REQUEST WILL BE RECEIVED AND CONSIDERED BY THE ENGINEER WHEN ONE OR MORE OF THE FOLLOWING CONDITIONS ARE SATISFIED, AS DETERMINED BY THE ENGINEER; OTHERWISE REQUESTS WILL BE RETURNED WITHOUT ACTION EXCEPT TO RECORD NONCOMPLIANCE WITH THESE REQUIREMENTS.
  - A. THE REQUEST IS DIRECTLY RELATED TO AN "OR EQUAL" CLAUSE OR SIMILAR LANGUAGE IN THE CONTRACT DOCUMENTS. B. THE SPECIFIED PRODUCTION METHOD OF CONSTRUCTION CANNOT BE PROVIDED WITHIN THE CONTRACT TIME. THE REQUEST WILL NOT BE CONSIDERED IF THE PRODUCT, OR METHOD CANNOT BE PROVIDED AS A RESULT, OF FAILURE TO PURSUE THE WORK PROMPTLY OR COORDINATE
  - C. A SUBSTANTIAL ADVANTAGE IS OFFERED TO THE OWNER IN TERMS OF COST TIME, ENERGY CONSERVATION OR OTHER CONSIDERATIONS OF MERIT, AFTER DEDUCTING OFFSETTING RESPONSIBILITIES THE OWNER MAY BE REQUIRED TO BEAR, ADDITIONAL RESPONSIBILITIES FOR THE OWNER MAY INCLUDE ADDITIONAL COMPENSATION TO THE ENGINEER FOR REDESIGN AND EVALUATION SERVICES, INCREASED COST OF OTHER CONSTRUCTION BY THE OWNER OR SEPARATE CONTRACTORS, AND SIMILAR CONSIDERATIONS.

ACTIVITIES PROPERLY

COORDINATION DRAWING PRIOR TO SUBMISSION.

AND SPECIFIED PRESSURE TESTS.

- CONTRACTOR PRODUCED SHOP DRAWING, COORDINATION DRAWINGS, AS BUILT RECORD DRAWINGS, AND OWNER OPERATION AND MAINTENANCE MANUALS E PLUMBING
- SHOP DRAWING AND COORDINATION DRAWING: SUBMIT NEWLY PREPARED INFORMATION, DRAWN TO ACCURATE SCALE OF 1/4"=1'0", HIGHLIGHT, ENCIRCLE, OF OTHERWISE INDIGATE DEVIATIONS FROM THE CONTRACT DOCUMENTS. DO NOT REPRODUCE CONTRACT DOCUMENTS OR COPY STANDARD INFORMATION AS THE BASIS OF SHOP DRAWINGS. STANDARD INFORMATION PREPARED WITHOUT SPECIFIC REFERENCE TO THE PROJECT IS NOT CONSIDERED SHOP DRAWINGS.
- SHOP DRAWINGS INCLUDE EQUIPMENT SUBMITTALS, FABRICATION AND INSTALLATION DRAWINGS, SETTING DIAGRAMS, SCHEDULES, PATTERNS TEMPLATES AND SIMILAR DRAWINGS, INCLUDE EACH, EQUIPMENT OF FIXTURE PERFORMANCE DATA, CLEARANCES, COORDINATION REQUIREMENTS, AND CONTRACTOR'S COORDINATION MEASUREMENTS
- EXAMINE ALL TRADE DRAWINGS FOR THIS SPECIFIC PROJECT AND MUTUALLY ARRANGE WORK SO AS TO AVOID INTERFERENCE WITH THE WORK OF OTHER TRADES TO FORM THE BASIS OF COORDINATION DRAWINGS, IN GENERAL, DUCTWORK, HVAC PIPING SPRINKLER PIPING AND DRAINAGE LINES TAKE PRECEDENCE OVER WATER, GAS AND ELECTRICAL CONDUITS. THE CONTRACTOR AND EACH SUBCONTRACTOR SHALL SIGN AND DATE EACH
- 4. THE ENGINEER SHALL MAKE FINAL DECISIONS REGARDING THE ARRANGEMENT OF WORK THAT CANNOT BE AGREED UPON BY THE CONTRACTORS.
- SUBMIT 3 BLACK-LINE PRINTS AND 2 ADDITIONAL PRINTS WHERE REQUIRED FOR MAINTENANCE MANUALS. PLUS THE NUMBER OF PRINTS NEEDED BY THE ENGINEER FOR DISTRIBUTION. ONE PRINT WILL BE RETAINED. THE REMAINDER RETURNED. ONE OF THE PRINTS RETURNED SHALL BE MARKED UP AND MAINTAINED AS A "RECORD DOCUMENT".
- DO NOT USE SHOP OR COORDINATION DRAWINGS WITHOUT AN APPROPRIATE FINAL STAMP INDICATING ACTION TAKEN IN CONNECTION WITH CONSTRUCTION. IF THE WORK UNDER A SECTION IS INSTALLED BEFORE COORDINATING WITH OTHER DIVISIONS OR SECTIONS OR SO AS TO CAUSE INTERFERENCE WITH WORK OF OTHER SECTIONS. THE NECESSARY CHANGES TO CORRECT THE CONDITION SHALL BE MADE BY THE CONTRACTOR. CAUSING THE INTERFERENCE WITHOUT EXTRA CHARGE TO THE OWNER,
- DO NOT ORDER ANY MATERIALS OR EQUIPMENT PRIOR TO RECEIVING FINAL APPROVED SHOP DRAWINGS.
- AS BUILT DRAWINGS: PRIOR TO CEILINGWALL/FLOOR CLOSE IN WALK THROUGH BY ARCHITECT AND ENGINEER PREPARE AS BUILT DRAWINGS TO A SCALE OF 1/4"=1"0" OR LARGER, DETAILING THE ACTUAL INSTALLATION OF MAJOR ELEMENTS, COMPONENTS, AND SYSTEMS OF MECHANICAL EQUIPMENT AND MATERIALS WHETHER OR NOT THEY WERE SHOWN ON THE CONTRACT. SHOP, OR COORDINATION DRAWINGS. WHERE SHOP DRAWINGS ARE USED, RECORD A CROSS REFERENCE AT THE CORRESPONDING LOCATION ON THE AS BUILT DRAWINGS AND REFERENCE ALL CHANGE ORDER NUMBERS. GIVE PARTICULAR ATTENTION TO CONCEALED ELEMENTS THAT WOULD BE DIFFICULT TO MEASURE AND REGORD AT A LATER DATE.
- PLUMBING AS BUILTS: INCLUDE BUT NOT LIMITED TO MAJOR PLUMBING EQUIPMENT/FIXTURES, MAIN GAS PIPING, MAIN HOT/COLD//HOT/AND COLD WATER RECIRC/WASTE/VENT PIPING SIZE AND ROUTING, ACCESS PANELS, VALVES, PUMPS AND ALL PERMITS, INSPECTIONS RECEIVED.
- ALL TRADES SHALL PROVIDE CUT SHEETS OR APPROVED SHOP DRAWINGS INDICATING MAKE/MODEL/OPTION FOR MAJOR EQUIPMENT AND EQUIPMENT ID TAG WHICH CORRESPONDS TO AS BUILT DRAWINGS.
- 1 WARRANTY: PROVIDE TWO COPIES OF THE MANUFACTURER'S STANDARD WARRANTIES, PROPERLY EXECUTED BY THE CONTRACTOR, FOR EACH PIECE OF EQUIPMENT INSTALLED AS PART OF THIS PROJECT. SUBMIT WRITTEN WARRANTIES TO THE ENGINEER PRIOR TO THE DATE CERTIFIED FOR SUBSTANTIAL COMPLETION. IF THE ENGINEER'S CERTIFICATE OF SUBSTANTIAL COMPLETION DESIGNATES A COMMENCEMENT DATE FOR WARRANTIES OTHER THAN THE DATE OF SUBSTANTIAL COMPLETION FOR THE WORK, OR A DESIGNATED PORTION OF THE WORK, SUBMIT WRITTEN WARRANTIES UPON REQUEST OF THE ENGINEER.
- 2 GUARANTEES: THE CONTRACTOR SHALL GUARANTEE ALL MATERIAL AND WORKMANSHIP UNDER THESE SPECIFICATIONS AND THE CONTRACT FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE BY OWNER. DURING THIS GUARANTEE PERIOD. IMMEDIATELY BY THIS CONTRACTOR WITHOUT EXPENSE TO THE OWNER. SUCH REPAIRS OR REPLACE-MENTS SHALL BE MADE TO THE ENGINEER'S SATISFACTION.

## SPECIFIC INSTALLATION REQUIREMENTS - PLUMBING

- ELECTRICAL CONNECTIONS: UNLESS OTHERWISE SPECIFIED; ALL POWER WIRING SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL SUB CONTRACTOR ALL POWER WIRING SHALL BE FURNISHED AND INSTALLED COMPLETE FROM POWER SOURCE TO MOTOR OR EQUIPMENT JUNCTION BOX INCLUDING POWER WIRING THROUGH
- WHEN SPECIFIED, ALL PLUMBING CONTROL WIRING, INTERLOCK WIRING AND EQUIPMENT CONTROL WIRING FOR THE EQUIPMENT FURNISHED UNDER THIS DIVISION SHALL BE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF DIVISION 16.
- PIPING AND FITTINGS: DOMESTIC WATER AND CONDENSATE PIPING SHALL BE COPPER TUBING TYPE LWITH COPPER OR BRASS FITTINGS. SOLDER FILLER METALS SHALL BE LEAD FREE! WASTE AND VENT PIRING SHALL BE HUBLESS, SERVICE WEIGHT, CAST IRON SOIL. SLOPE WASTE LINES BETWEEN 1/8 TO 1/4 INCH PER FOOT. NATURAL GAS PIPING SHALL BE SCHEDULE 40, CARBON STEEL PIPE, WITH THREADED JOINTS AND FITTINGS. REFER TO PLUMBING RISER DIAGRAMS FOR ADDITIONAL REQUIREMENTS. OFFSET VENT PIPING AT LAVATORIES TO ACCOMMODATE THE INSTALLATION OF MEDICINE CABINETS.
- THE CLOTHES WASHER SHALL HAVE A DEDICATED 2" VENTED STANDING WASTE LINE AND BRANCH LINE TO THE RISER. THE CLOTHES WASHER SHALL HAVE A PRESSURE TYPE VACUUM BREAKER AND A CHECK VALVE FOR BOTH HOT AND COLD WATER SUPPLY READILY ACCESSIBLE TO THE BUILDING'S MANTENANCE STAFF, SEPARATE SHUT-OFF VALVES TO THE CLOTHES WASHER SHALL BE TURNED OFF AFTER EVERY USE TO PREVENT HOSE RUPTURE (FLOODS)
- PIPING INSTALLATIONS: INSTALL UNIONS OF FLANGES IN PIPES ADJACENT TO EACH VALVE, CONTROL DEVICE AND AT FINAL CONNECTIONS EACH PIECE OF EQUIPMENT, INSTALL DIELECTRIC UNIONS TO JOIN DISSIMILAR METALS, INSTALL AND ANCHOR PIPING TO ENSURE PROPER EXPANSION AND CONTRACTION.
- PIPE HANGERS AND SUPPORTS SHALL MEET THE REQUIREMENTS OF MSS SP- 69 AND SP-89 DEVELOPED BY THE MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVES AND FITTINGS INDUSTRY INC. SUPPORT HORIZONTAL RIPING AT INTERVALS NOT EXCEEDING: 12FT O.C. FOR COPPER, 6FT O.C. FOR COPPER TUBING SMALLER THAN 11 1/4", AND 10 FT O.C. FOR COPPER TUBING LARGER THAN 11 1/4", SUPPORT VERTICAL PIPING AT EVERY FLOOR. OR CEILING PENETRATED.

- 7. PROVIDE MANUAL AIR VENTS AT ALL HIGH POINTS AND DRAIN VALVES AT ALL LOW POINTS.
- TALL WATER PIPING EXPOSED DURING THE WORK, BOTH NEW AND EXISTING, MUST BE WRAPPED WITH DURABLE, CONDENSATE ABSORBING, INSULATING MATERIAL AND SUPPORTED WITH NON-REACTIVE MATERIALS. A MINIMUM CLEAR DISTANCE OF 2" IS REQUIRED BETWEEN HOT AND COLD WATER PIPES AND THERE MUST BE NO METAL-TO-METAL CONTACT BETWEEN PIPING, CONDUIT, BX, ETC.
- INSULATION THICKNESS SHALL BE IN ACCORDANCE WITH LATEST EDITION OF ASHRAE 90 AND LATEST ENERGY CONCERVATION CODE. PIRE INSULATION SHALL BE KNAUF 1000 DEGREE (MAXIMUM THERMAL CONDUCTIVITY OF K=0.27 @75 DEG.F. FSR OF €25 OR LESS AND SDR OF €50 OR LESS BY ASTM E-84) OR APPROVED EQUAL, EACH SHALL BE FIBERGLASS INSULATION WITH REINFORCED WHITE KRAFT PAPER VAPOR BARRIER JACKET AND PRE-MOLDED FITTINGS. SECURE SEAMS WITH PRESSURE SENSITIVE TAPE CLOSURE AND BUT JOINTS WITH 3-INCH WIDE TAPE OF SAME MATERIAL AS VAPOR BARRIER JACKET PROVIDE NOT LESS THAN 1" FOR HW AND 1/2" FOR GW AND A MINIMUM R-2 FOR HWR SYSTEMS.
- PIPE INSULATION SHALL BE FIBERGLASS WITH VAPOR BARRIER JACKET. PROVIDE INSULATION FOR THE FOLLOWING PIPING SYSTEMS: HOT AND COLD DOMESTIC WATER PIPING, STORM WATER PIPING.
- MECHANICAL IDENTIFICATION WORK SHALL COMPLY WITH ANSIA 13.11 NAMES ABBREVIATIONS AND OTHER DESIGNATIONS USED IN MECHANICAL IDENTIFICATION WORK, SHALL CORRESPOND WITH ANSI A13, FOR OWNER'S STANDARDS.
- 12. WHERE IDENTIFICATION IS TO BE APPLIED TO SURFACES WHICH REQUIRE INSULATION, PAINTING OR OTHER COVERING OR FINISH, INSTALL IDENTIFICATION AFTER COMPLETION OF COVERING AND PAINTING. INSTALL IDENTIFICATION PRIOR TO INSTALLATION OF ACOUSTICAL CEILINGS AND SIMILAR REMOVABLE CONCEALMENT.
- PIPING SYSTEM IDENTIFICATION: PIPE MARKERS SHALL BE EITHER PRE-PRINTED. SEMI-RIGID SNAP-ON COLOR-CODED PLASTIC PIPE MARKERS. OR PRE-PRINTED, PERMANENT ADHESIVE, COLOR-CODED, PRESSURE-SENSITIVE VINYL PIPE MARKERS. INCLUDE ARROWS TO SHOW NORMAL.
- 14. L'OCATE PIPE MARKERS AND COLOR BANDS ON EXPOSED PIPING (OR CONCEALED BY REMOVABILE CEILING) AS FOULOWS: A. SPACE MARKERS A MAXIMUM OF 50 ALONG EACH PIPING RUN, OR 25 IN CONGESTED AREAS, B. NEAR EACH MAJOR EQUIPMENT ITEM, VALVE AND CONTROL DEVICE, C. NEAR EACH BRANCH, EXCLUDING SHORT TAKE-OFFS, D'NEAR LOCATIONS WHERE PIPES PASS THROUGH WALLS OR FLOORS/CEILINGS, OR ENTER NON-ACCESSIBLE ENCLOSURES E. AT ACCESS DOORS AND SIMILAR ACCESS POINTS WHICH PERMIT VIEW OF CONCEALED PIPING.
- 15 VALVE IDENTIFICATION: VALVE TAGS SHALL BE 1-1/2" DIAMETER, 19-GAGE POLISHED BRASS WITH STAMP ENGRAVED LETTERING, PROVIDE VALVE TAG ON EVERY ISOLATION VALVE, AND CONTROL DEVICE IN EACH PIPING SYSTEM; EXCLUDE CHECK VALVES AND SHUT-OFF VALVES AT PLUMBING FIXTURES, AND SIMILIAR ROUGH-IN CONNECTIONS OF END-USE FIXTURES AND UNITS.
- 16 SUBMIT VALVE SCHEDULE FOR EACH PIRING SYSTEM-TYPEWRITTEN AND REPRODUCED ON 8-1/2" X 1.1" BOND PAPER. TABULATE VALVE NUMBER PIPING SYSTEM SYSTEM ABBREVIATION (AS SHOWN ON TAG). LOCATION OF VALVE (ROOM OR SPACE), AND VARIATIONS FOR IDENTIFICATION (IF ANY). MARK VALVES WHICH ARE INTENDED FOR EMERGENCY SHUT-OFF AND SIMILAR SPECIAL USES, BY SPECIAL FLAGS. IN MARGIN OF SCHEDULES MOUNT VALVE SCHEDULE FRAMES AND SCHEDULES IN MACHINE ROOMS WHERE INDICATED OR, IF NOT OTHERWISE INDICATED, WHERE DIRECTED BY ARCHITECT/ENGINEER.
- ACCESS PANEL MARKERS SHALL BE 1/16" THICK ENGRAVED PLASTIC LAMINATE ACCESS PANEL MARKERS, WITH ABBREVIATIONS AND NUMBERS CORRESPONDING TO CONCEALED VALVE:
- CLEANING, FLUSHING, AND DISINFECTING: WITH THE EXCEPTION OF GAS PIPING, FLUSH AND DISINFECT ALL APPLICABLE PIPING SYSTEMS WITH WATER/LIQUID ALKALINE SOLUTION WITH EMULSIFYING AGENTS AND DETERGENTS. TO REMOVE DIRT, GREASE, GRIT, CHIPS, AND FOREIGN MATTER ENSURE PH OF WATER USED IS TREATED TO BE BETWEEN 7.4 AND 7.6 BY ADDING ALKALI OR HYDROCHLORIC ACID. PROVIDE SUFFICIENT QUANTITY AND FLOW OF DISINFECTANT WITH FREE CHLORINE TO OBTAIN 50 TO 80 mg/L/RESIDUAL AND PRODUCE A VELOCITY OF AT LEAST 2.5 FEET PER SECOND, BLEED WATER FROM 75 PERCENT OF THE OUTLETS TO ENSURE DISTRIBUTION AND MAINTAIN DISINFECTION FOR A MINIMUM OF 24 HOURS REPEAT 24 HOUR DISENFECTION PROCEDURE IF FINAL RESIDUAL TESTS LESS THAN 25 mg/L. FLUSH ENTIRE SYSTEM UNTIL DISCHARGE SOLUTIONS SHOWS NO DISCOLORATION, NO EVIDENCE OF FOREIGN MATERIAL, AND RESIDUAL TO THAT OF INCOMING WATER OR 1.0 mg/L. UPON COMPLETION, MANUALLY CLEAN ALL STRAINERS, FILTERS, AND BLOW DOWNS. TAKE FOLLOW UP SAMPLES NOT SOONER THAN 24 HOURS AFTER FINAL FLUSHING FROM 10 PERCENTIOF THE OUTLETS AND WATER ENTRY IN ACCORDANCE WITH AWWA C651,
- TESTING, ADJUSTING AND BALANCING, WITH THE EXCEPTIN OF GAS PIPING, ALL APPLICABLE PIPING SYSTEMS SHALL BE PRESSURE TESTED WITH CLEAN WATER, UNLESS NOTED OTHERWISE, TO INSURE TIGHTNESS, HYDROSTATIC TESTING DURATION SHALL NOT BE LESS THAN TWO HOURS, CARE MUST BE TAKEN TO EXPELIALLENTRAPPED AIR AND HAVE THE PIPING COMPLETELY FULL OF WATER, PRESSURE TESTING SHALL BE PERFORMED ACCORDING TO THE NEW YORK CITY PLUMBING CODE FOR EACH OF THE FOLLOWING APPLICABLE SYSTEMS AND PERFORMANCE LEVELS: A DOMESTIC WATER PIPING SHALL BE TESTED TO 100 PSIG) B DRAINAGE AND VENT PIPING SHALL BE TESTED TO 10 FOOT HEAD OF WATER.
- WHEN BRANCH GAS LINES ARE RELOCATED, EXTENDED, MODIFIED, OR NEW GAS APPLIANCES INSTALLED, PERFORM AND CERTIFY PRESSURE TEST WITH AIR, NITROGEN, OR CARBON DIOXIDE ACCORDING TO NEPA 54 AND NEW YORK CITY FUEL GASICODE. PRESSURIZE PIPING TO 11 1/2 TIMES THE PROPOSED MAXIMUM WORKING PRESSURE BUT NOT LESS THAN 3 PSIG FOR NOT LESS THAN ONE HALF HOUR FOR EACH 500 CUBIC FEET OF PIPE VOLUME. THE SHAREHOLDER IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH GAS LEAKS THAT MAY ARISE FROM ALTERATIONS. WORK THIS APPLIES TO GAS PIPING AFTER THE MAIN SHUT-OFF VALVE LOCATED IN THE APARTMENT.
- PROVIDE IN DIRECT FIRED WATER HEATERS WITH STAINLESS STEEL INNER TANKS AND STEAL OUTER TANK WITH A MINIMUM 2" FOAM INSULATION WITH PLASTIC JACKET. FEATERS ARE APPROXIMATELY 32 DIAMETER AND 72 ROUND.
- 22. REFER TO ARCHITECTURAL SPECIFICATIONS FOR ALL FIXTURES. FIXTURES SHALL HAVE AN OPERATING PRESSURE OF NOT LESS THAN 80 PSI REGARDLESS. OF ARCHITECTURAL SPECIFICATION, INSTALL FIXTURES AND FITTINGS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, PROVIDE CHROME PLATED STOPS AT ALL FIXTURES. PROVIDE ALL SHOWER AND TUB VALVES WITH ANTI-SCALD AND PRESSURE BALANCE DEVICE:
- 24. N/A
- 25. PROVIDE AN ONSITE PRO MODEL # FS3/8C WATER DETECTION SYSTEM SOLENOID VALVE, INTEGRAL WATER SENSOR, AND SECONDARY 2" TALL WELDED GALVANIZED DRAIN PAN FOR EACH OF THE FOLLOWING APPLICABLE ITEMS. STEAM GENERATOR, ICE MAKERS. REFRIGERATORS, AND HUMIDIFIERS.
- 26. PROVIDE AN AQUA PURE AP200 WATER FILTER AND SHUT OFFICE FOR EACH OF THE FOLLOWING APPLICABLE ITEMS: KITCHEN SINK
- 27. PROVIDE AN AQUA PURE AP717 WATER FILTER AND SHUT OFF VALVE FOR EACH OF THE FOLLOWING APPLICABLE ITEMS: HUMIDIFIER, ICE MACHINE, REFRIGERATOR AND STEAM GENERATORS.
- PROVIDE PRECISION PLUMBING PRODUCTS (PPP) ICE MAKER FLUSH VALVE BOX FOR EACH OF THE FOLLOWING APPLICABLE ITEMS: ICEMAKERS, REFRIGERATORS.
- PROVIDE ASSE 1010 SIOUX CHIEF HYDRA RESTER MODEL 652-A 1/2" WATER HAMMER ARRESTORS, ACCESS PANELS FOR EACH OF THE FOLLOWING COLD AND HOT WATER APPLICABLE LOCATIONS ALL FIXTURE GROUPS, CLOTHES WASH MACHINE, REFRIGERATOR, AND ICEMAKER SERVICES, AND ANY OTHER HIGH FLOW OR FAST ACTING SHUT OFF VALVE.

30. PROVIDE A WATTIS INTELLIFLOW AUTOMATIC WASHING MACHINE SHUTOFE VALVE LEAK SENSOR WITH WALLVALVE BOX AND SEPARATE 2. TALL

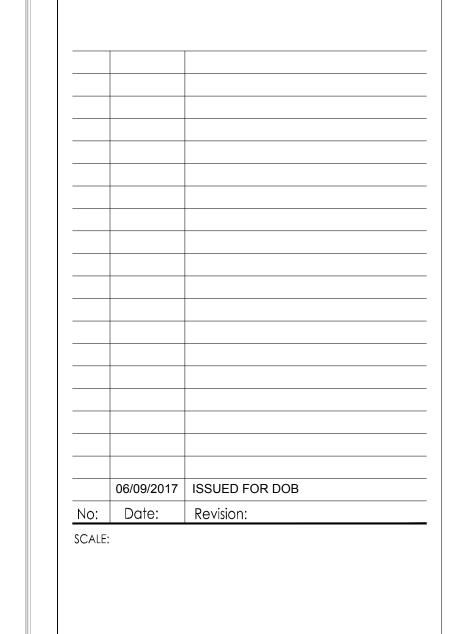
- WELDED GALVANIZED STEEL SECONDARY CONTAINTMENT PAN FOR EACH CLOTHES WASHER LOCATION. PROVIDE SECONDARY DRAIN PAN UNDER BOTH WASHER AND DRYER IN SIDE BY SIDE APPLICATIONS.
- PROVDIE TRAP PRIMERS ON ALL FUNNEL DRAINS FOR MECHANICAL EQUIPMENT, DRAIN PAN DRAINS AND ANY PLUMBING TRAP WHERE INTERMITTENT WATER FLOW IS ANTICIPATED. TRAP PRIPER SHALL BE PRECISION PLUMBING PRODUCTS (PPP) MODEL PR-500. PROVIDE DISTRIBUTION UNIT DU-X WHERE MORE THAN ONE TRAP IS FED FROM A SINGLE TRAP PRIMER.
- 32. PROVIDE AN INSIKERATOR EVOLUTION EXCEL-1HP STAINLESS STEEL GARBAGE DISPOSAL SERVING KITCHEN SINK-
- 33. PROVIDE BID ALTERNATE PRICING FOR THE REPLACEMENT OF THE EXISTING BUILDING INSULATION FOR EACH OF THE FOLLOWING APPLICABLE ITEMS: HW. CW. STEAM CONDENSER WATER HEATING WATER CHILLED WATER AND RAIN WATER RISERS AND OFFSETS, FOLLOW ALL OF THE SAME INSULATION SPECIFICATIONS LISTED.
- 34. PROVIDE BID ALTERNATE PRICING FOR THE REPLACEMENT OF THE EXISTING BUILDING RISERS AND OFFSET FOR EACH OF THE FOLLOWING APPLICABLE ITEMS: HW, CW, STEAM, CONDENSER WATER, HEATING WATER, CHILLED WATER, AND RAIN WATER RISERS AND OFFSETS. FOLLOW ALL OF THE SAME INSULATION SPECIFICATIONS LISTED.

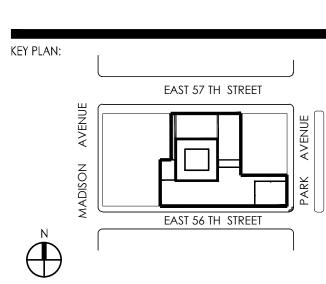
## CONTRACTOR SCHEDULING/TESTING/OWNER TRAINING

- THE CONTRACTOR'S CONSTRUCTION SCHEDULE MUST PROVIDE FOR NOTIFYING ENGINEER FOR WALK THROUGH FIELD OBSERVATIONS ONE WEEK PRIOR TO COMPLETING EACH OF THE FOLLOWING SEPARATE MILESTONES: WALL/FLOOR/CEILING/GROUND COVERING, DISINFECTION OF ALL PIPING, PRESSURIZING ALL PIPING SYSTEMS FOR LEAK CHECKS, SHOP DRAWING SUBMITTALS, COORDINATION DRAWING SUBMITTAL, AND AS BUILT DRAWINGS/DOCUMENTATION COMPLETED BY CONTRACTOR AND REVIEWED BY ENGINEERS
- PRE-FUNCTIONAL TESTING (MANUFACTURER START UP PROCEDURES): BOILERS, WATER HEATERS, STEAM SHOWERS, AND MEASURED TIME FOR EACH HOT WATER TAP TO DELIVER 110 DEG F. WATER.
- FUNCTIONAL TESTING ALL APPLICABLE WATER TEST AND BALANCING, COMMON ALARMS, INCLUDING OPERATE PLUMBING FIXTURES AND REVIEW PRESSURE, FLOW, DRAINAGE CONTROL SYSTEM, AND HOT, WATER TEMPERATURE MAINTENANCE SYSTEM.
- OWNER TRAINING: REVIEW GENERAL OPERATION OF THE FOLLOWING WITH THE OWNER: EQUIPMENT AND CONTROL OPERATION INCLUDING COMMON ALARMS, WATER MAIN AND GAS SHUT OFF VALVES, AND LOCATION OF O&M MANUALS.

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