PLUMBING NOTES

1. ALL NEW DOMESTIC HOT AND COLD WATER SUPPLY AND HOT WATER RETURN PIPES SHALL BE COPPER TUBING AND SHALL ORIGINATE ON THE SAME FLOOR FROM THE NEAREST WET COLUMN WITH PROPER ACCESS FOR MAINTENANCE. IF ATTACHED TO DISSIMILAR METAL, A CORROSION INHIBITOR IS TO BE PROVIDED.
2. INSULATE ALL NEW AND EXISTING DOMESTIC HOT AND COLD WATER SUPPLY AND HOT WATER RETURN PIPES.
3. WASTE LINES SHALL BE PROPERLY PITCHED TO PREVENT "TRAPPED" WATER. INSTALL WASTE LINE CONNECTIONS WITH LONG TERM OR 45° "Y" FITTINGS.
4. RETAIN EXISTING CLEAN OUT CONNECTIONS AND PROVIDE CLEAN OUT CONNECTIONS AT NEW FITTINGS.
5. WHEN CONNECTING NEW DOMESTIC HOT AND COLD WATER SUPPLY AND HOT WATER RETURN PIPES TO EXISTING RISERS, CONTRACTORS SHALL LEAVE A PLUGGED VALVED OUTLET FOR EACH, FOR FUTURE USE.
6. ALL NEW DOMESTIC HOT AND COLD WATER SUPPLY AND HOT WATER RETURN PIPES ATTENDANT FITTINGS MUST BE PROPERLY INSULATED AND COVERED.
7. INDIVIDUAL SHUT-OFF VALVES MUST BE SUPPLIED AND INSTALLED FOR EACH NEW FIXTURE, INCLUDING WATER COOLERS.
8. ALL NEW PIPES ARE TO BE SUPPORTED FROM SLAB OR STEEL BEAMS, NOT FROM EXISTING PIPES OR DUCT WORK.
9. ALL WATER SHUTDOWNS TO BE COORDINATED THROUGH THE BUILDING MANAGER. ALL WATER SHUTDOWNS ARE TO BE PERFORMED OR SUPERVISED BY BUILDING PERSONNEL, AT THE DISCRETION OF THE BUILDING MANAGER.
10. PLUMBER SHALL BE RESPONSIBLE THAT ENTIRE INSTALLATION IS IN ACCORDANCE WITH LOCAL AND STATE CODES.
11. PRIVATE BATHROOMS MUST BE INSTALLED ON MINIMUM 4" WASTE LINE.
12. ALL VALVES ARE TO BE PROPERLY TAGGED.
13. ALL DOMESTIC WATER PIPING SHALL BE PROPERLY LABELED.
14. ANY WET COLUMNS USED SHOULD BE PROVIDED WITH A 24" x 24" STEEL SURFACE MOUNTED ACCESS DOOR.
15. HOT WATER HEATERS SERVING PRIVATE BATHROOMS, KITCHENS, ETC. ARE TO BE SUPPLIED FROM THE WET COLUMN THAT SUPPLIES THE COLD WATER TO THESE AREAS.

LINE REPRESENTATION

- NEW COLD WATER PIPING
- NEW HOT WATER PIPING
- NEW HOT WATER PIPING WITH TEMPERATURE MAINTENANCE CABLE
- NEW HOT WATER RECIRCULATION PIPING
- NEW VENT PIPING
- NEW SANITARY OR STORM WATER PIPING ABOVE GROUND
- NEW SANITARY OR STORM WATER PIPING BELOW GROUND
- NEW GAS PIPING (G)
- NEW ACID WASTE PIPING (AW)
- EXISTING COLD WATER PIPING TO REMAIN
- EXISTING HOT WATER PIPING TO REMAIN
- EXISTING HOT WATER RECIRCULATION PIPING TO REMAIN
- EXISTING VENT PIPING TO REMAIN
- EXISTING SANITARY OR STORM WATER PIPING ABOVE GROUND TO REMAIN
- EXISTING SANITARY OR STORM WATER PIPING BELOW GROUND TO REMAIN
- EXISTING GAS PIPING (G)
- EXISTING ACID WASTE PIPING (AW)
- EXISTING PIPE TO BE REMOVED

DRAWING NOTATIONS

- DRAWING HEXAGON NOTE TAG (#)
- DRAWING CIRCLE NOTE TAG (1)
- TAG SECTION DESIGNATION ON DRAWING WHERE SECTION IS CUT A-SECTION DESIGNATION B-DRAWING NUMBER (A / B)
- POINT OF NEW CONNECTION TO EXISTING
- POINT OF DISCONNECTION FROM EXISTING
- REVISION SYMBOL (1)
- (F)
- PIPING FLOW DIRECTION

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BVA	BALANCING VALVE ASSEMBLY
CM	COFFEE MAKER
CODP	CLEAN OUT DECK PLATE
CW	COLD WATER
DIA	DIAMETER
DN	DOWN
EWC	ELECTRIC WATER COOLER
FAI	FRESH AIR INLET
FCW	FILTERED COLD WATER
FD	FLOOR DRAIN
FFD	FUNNEL FLOOR DRAIN
FL	FLOOR
FS	FLOOR SINK
G	GAS
HB	HOSE BIBB
HW	HOT WATER
HWR	HOT WATER RECIRCULATION
IM	ICE MAKER
LAV	LAVATORY
LDR	LEADER
MIN	MINIMUM
MR	MOP RECEPTOR
P	PLUMBING
RD	ROOF DRAIN
RPZ	REDUCED PRESSURE ZONE
RTU	ROOF TOP UNIT
S	SANITARY
SH	SHOWER SERVICE
SK	SINK
ST	STORM
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VIF	VERIFY IN FIELD
VTR	VENT THRU ROOF
W	WASTE
WH	WALL HYDRANT
WC	WATER CLOSET

PLUMBING LEGEND

- PIPE UP
- PIPE DROP
- BOTTOM CONNECTION
- TOP CONNECTION
- UNION
- PIPE SLEEVE
- CAP
- CLEANOUT
- CLEAN OUT DECK PLATE
- P-TRAP
- HOUSE TRAP
- FRESH AIR INLET
- SHOCK ABSORBER
- VACUUM BREAKER
- PRESSURE GAUGE
- THERMOMETER
- MANUAL AIR VENT (M)
- AUTOMATIC AIR VENT (A)
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- GATE VALVE
- GATE VALVE
- EXISTING GATE VALVE
- CHECK VALVE
- CHECK VALVE
- EXISTING CHECK VALVE
- BALL VALVE
- EXISTING BALL VALVE
- MIXING VALVE
- OS&Y VALVE
- PRESSURE REDUCING VALVE
- PRESSURE REDUCING VALVE
- SOLENOID VALVE
- BUTTERFLY VALVE
- STRAINER
- STRAINER WITH BLOWOFF
- RELIEF VALVE
- VALVE WITH HOSE BIBB
- PLUG VALVE
- DOMESTIC WATER METER
- DOUBLE DETECTOR CHECK VALVE (DDCV)
- BALANCING VALVE ASSEMBLY
- FLOOR DRAIN
- FLOOR DRAIN (ELEVATION)
- FUNNEL FLOOR DRAIN (ELEVATION)
- INLINE PUMP
- ROOF DRAIN (ELEVATION)
- PLANTER DRAIN (ELEVATION)
- VENT THROUGH ROOF (ELEVATION)
- TRENCH DRAIN (ELEVATION)
- WALL HUNG WATER CLOSET (ELEVATION)
- FLOOR MOUNTED WATER CLOSET (ELEVATION)
- FLOOR MOUNTED WATER CLOSET (ELEVATION)
- URINAL (ELEVATION)
- LAVATORY (ELEVATION)
- KITCHEN OR PANTRY SINK (ELEVATION)
- ELECTRIC WATER COOLER (ELEVATION)
- MOP RECEPTOR (ELEVATION)
- SLOP SINK (ELEVATION)
- BATHTUB (ELEVATION)
- 2 COMPARTMENT SINK (ELEVATION)
- 3 COMPARTMENT SINK (ELEVATION)

PLUMBING DRAWING LIST

PRESSURE VESSEL AND HEATER SCHEDULE

DESIGNATION	NO. REQUIRED	MANUFACTURER AND MODEL NUMBER	STORAGE WATER TEMPERATURE (DEG.F)	VOLUME/HEATER (GALS.)	RECOVERY/HEATER (GPH)	TEMPERATURE RISE (DEG. F)	CAPACITY/ FLOW (G.P.M.)	W.W.P. (PSIG.)	TEST PRESSURE (PSIG.)	DIAMETER (INCHES)	LENGHT/HEIGHT (INCHES)	WIDTH (INCHES)	INLET/OUTLET (INCHES)	GAS LOAD (CFH)	GAS PRESSURE REQ. (IN W.C.)	SHELL THICKNESS (INCH.)	HEAD THICKNESS (INCH.)	STEAM LOAD (LBS./HR./FTR.)	MAX. ALLOWABLE PRESS. THROUGH VALVE	STEAM VALVE (INCH.)	STEAM PRESSURE IN LINE (PSI)	ALLOWABLE PRESSURE DROP IN COIL (PSI)		LOCATION/REMARKS
DHW–1	2	AERCO INN 1060	140			100	20				42/75	28	2	1060	4										PLUMBING EQUIPMENT ROOM @ BASEMENT
ET–1	2	AMTROL ST–5–C		2						8	13														PLUMBING EQUIPMENT ROOM @ BASEMENT
DHW–2	2	AERCO INN 1350	120			80	33				42/75	28	2	1350	4										PLUMBING EQUIPMENT ROOM @ BASEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 ENERGY CONSERVATION

THIS PLAN IS APPROVED ONLY FOR THE WORK ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

GE Crotonville - Executive Residence Building Water Heater Replacement

Old Albany Post Road,
Ossining, NY

Seal

10/29/21 ISSUED FOR REVIEW

Date Issued Revision No.

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Drawing Title:
PLUMBING
LEGEND & NOTES

Scale:	Issue Date:
NOT TO SCALE	10/XX/2021
Proj. Manager:	Proj. Engineer:
RR	-

AMA Project No:
G003-03-017

Drawing No.
P-001

NYC DOB NUMBER

PLUMBING SPECIFICATIONS

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS:

A. THE LATEST EDITION OF AIA DOCUMENTS A201 GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, OR AS REQUIRED BY THE ARCHITECTURAL DOCUMENTS AND/OR THE STRUCTURAL ENGINEERS DOCUMENTS ARE PART OF THE CONTRACT.

B. PROVIDE ALL PLUMBING WORK SHOWN ON THE CONTRACT DOCUMENTS. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE UNIFORM CONSTRUCTION CODE (NJAC 5:23), 2015 INTERNATIONAL BUILDING CODE AS ADOPTED BY NEW JERSEY, 2015 NATIONAL STANDARD PLUMBING CODE, 2015 INTERNATIONAL FUEL GAS CODE AS ADOPTED BY NEW JERSEY, LANDLORD'S BUILDING STANDARDS, AND ALL AUTHORITIES HAVING JURISDICTION (AHJ). APPLICABLE NATIONAL, STATE AND LOCAL CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK SHALL BE INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS.

C. ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THIS WORK. FINAL ACCEPTANCE SHALL BE DEFINED AS THE TIME AT WHICH THE PLUMBING WORK IS TAKEN OVER AND ACCEPTED BY THE OWNER. ENGAGE THE SERVICES OF VARIOUS MANUFACTURERS SUPPLYING THE EQUIPMENT FOR THE PROPER STARTUP, OPERATION AND TRAINING OF ALL SYSTEMS INSTALLED. INSTRUCT THE OWNERS PERSONNEL IN THE PROPER OPERATION AND SERVICING OF THE EQUIPMENT.

D. BIDDERS SHALL VISIT AND CAREFULLY EXAMINE THE AREA AFFECTED BY THIS WORK TO FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND THE DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THIS WORK BEFORE SUBMITTING PROPOSALS. EXAMINE THE CONTRACT DOCUMENTS OF THIS TRADE AND ALL OTHER TRADES FOR THIS PROJECT. VERIFY ALL EXISTING CONDITIONS AT THE SITE, AND BECOME FULLY INFORMED AS TO THE EXTENT AND CHARACTER OF THE WORK IN THE BUILDING. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT, OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO BID. IF DISCREPANCIES ARE NOT RESOLVED TO CONTRACTORS SATISFACTION THEY SHALL BE QUALIFIED IN THEIR BID SUBMISSION.

E. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN CONTRACT. IT IS NOT INTENDED TO SPECIFY OR TO SHOW EVERY OFFSET, FITTING, OR COMPONENT. HOWEVER, CONTRACT DOCUMENTS REQUIRE COMPONENTS AND MATERIALS WHETHER OR NOT INDICATED OR SPECIFIED AS NECESSARY TO MAKE THE INSTALLATION COMPLETE AND OPERATIONAL. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICT. THE CONTRACTOR SHALL, WITHOUT EXTRA COST TO THE OWNER, MAKE ALL REASONABLE MODIFICATIONS IN THE WORK AS MAY BE REQUIRED TO PREVENT CONFLICT WITH THE WORK OF OTHER TRADES, OR FOR THE PROPER INSTALLATION OF THE WORK.

F. INTERRUPTION OF EXISTING BUILDING SERVICES IN ORDER TO CONNECT NEW PIPING TO EXISTING SHALL BE MADE AT SUCH TIME AS TO CAUSE THE LEAST INTERFERENCE WITH ESTABLISHED BUILDING OPERATING PROCEDURE. ALL EXISTING SERVICE SHUTDOWNS SHALL BE SUPERVISED AND DIRECTED BY BUILDING MANAGEMENT. THE CONTRACTOR SHALL GIVE NOTICE 48 HOURS PRIOR TO ANY SHUTDOWN.

G. ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN OR SHOWN ON THE DRAWINGS, ANY EQUIPMENT, MATERIALS, ACCESSORIES, OR LABOR REQUIRED FOR A CODE COMPLIANT AND COMPLETE INSTALLATION OF THE PLUMBING WORK SHALL BE FURNISHED AND INSTALLED AS PART OF THE ORIGINAL BID.

H. PATCH AND/OR REPLACE DAMAGED ARCHITECTURAL COMPONENTS AS A RESULT OF PLUMBING SYSTEMS INSTALLATION. CLEAN UP THE CONSTRUCTION SITE DAILY DURING CONSTRUCTION SO AS NOT TO INTERFERE WITH THE WORK OF OTHER TRADES, AND AFTER THE COMPLETION OF INSTALLATION AND TESTING.

I. ALL NECESSARY CUTTING AND PATCHING IN FLOOR SLABS, ROOF SLABS, WALLS, AND CEILINGS FOR THE PLUMBING WORK SHALL BE PERFORMED BY THIS CONTRACTOR. RESTORE TO MATCH EXISTING CONDITIONS.

J. REMOVAL, TEMPORARY CONNECTIONS AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE INSTALLATION OF THE NEW SYSTEMS. ALL EXISTING CONDITIONS ARE NOT COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND MAKE ALL NECESSARY CHANGES REQUIRED BASED ON EXISTING CONDITIONS FOR PROPER INSTALLATION OF NEW WORK.

K. ALL EQUIPMENT INSTALLED OR CONNECTED INTO THE BUILDING STACKS, RISERS, PLUMBING SYSTEMS AND INFRASTRUCTURE SHALL BE APPROVED IN ADVANCE BY THE BUILDING PRIOR TO INSTALLATION. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING PIPING TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING MANAGEMENT.

L. GUARANTEE: THE CONTRACTOR SHALL GUARANTEE AND SERVICE THE ENTIRE INSTALLATION FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE FINAL ACCEPTANCE OF THE INSTALLATION. THE CONTRACTOR SHALL, DURING THE PERIOD OF THE GUARANTEE, REPLACE OR REPAIR AT HIS OWN EXPENSE ANY PIECE OF EQUIPMENT AND/OR MATERIAL WHICH IS FOUND TO BE DEFECTIVE. THE REPLACEMENT OR REPAIR SHALL BE PERFORMED THE SAME DAY OF NOTIFICATION IN AN EMERGENCY FASHION WHEN NOTIFIED BY THE OWNER OR AUTHORIZED REPRESENTATIVE. THE CONTRACTOR SHALL ALSO REPAIR ALL DAMAGE TO SURROUNDING WORK CAUSED BY THE FAILURE, REPAIR OR REPLACEMENT OF DEFECTIVE EQUIPMENT. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS DEMONSTRATED THAT HIS WORK FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATION, AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVALS.

1.02 SCOPE OF WORK

A. THE CONTRACTOR SHALL FURNISH AND INSTALL PLUMBING WORK COMPLETE WITH ALL EQUIPMENT, FIXTURES, PIPING, VALVES, AND ACCESSORIES AND ASSOCIATED WORK IN ACCORDANCE ALL NATIONAL, STATE AND LOCAL AUTHORITIES HAVING JURISDICTION, BUILDING MANAGEMENT, DESIGN DRAWINGS AND THIS SPECIFICATION. THE SCOPE OF WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

1. <ADD IF REQUIRED> DISCONNECT AND REMOVE PLUMBING EQUIPMENT, FIXTURES, PIPING AND SUPPORTS. REMOVE PIPING BACK TO EXISTING STACKS AND RISERS AND CAP.
2. FURNISH AND INSTALL NEW FIXTURES, PIPING, VALVES, SUPPORTS, SEISMIC BRACING AND RELATED EQUIPMENT. MAKE ALL REQUIRED PLUMBING CONNECTIONS TO APPLIANCES OR EQUIPMENT FURNISHED BY OTHERS.
3. PREPARE AND SUBMIT "AS-BUILT" DRAWINGS INDICATING ACTUAL LOCATIONS OF EQUIPMENT, PIPING, AND VALVES. "AS-BUILT" DRAWINGS SHALL BE SUBMITTED TO THE OWNER UPON COMPLETION OF INSTALLATION AND TESTING. SUBMIT DIGITAL COPIES IN PDF FORMAT AND .DWG AUTOCAD FORMAT.
4. PERFORM CUTTING, CORING, AND ROUGH PATCHING REQUIRED TO ACCOMMODATE PLUMBING INSTALLATION.
5. PERFORM MAINTENANCE AND PROPER OPERATION OF EXISTING BASE BUILDING SYSTEMS WITHIN THE CONTRACT AREA IN ACCORDANCE WITH THE REQUIREMENTS OF BUILDING MANAGEMENT.
6. PROVIDE INSULATION OF PIPING, FITTINGS, VALVES. PROVIDE PIPING SYSTEMS IDENTIFICATION. PROVIDE VALVE TAGS AND CHART.
7. COORDINATION WITH WORK OF OTHER TRADES.
8. SCAFFOLDING AND RIGGING.
9. TESTING AS REQUIRED BY APPLICABLE CODES AND STANDARDS.
10. SECURING OF ALL PERMITS AND APPROVALS AND PAYMENT OF FEES.

1.03 SHOP DRAWINGS, EQUIPMENT SUBMISSION, MAINTENANCE MANUALS.

A. SUBMIT ONE (1) PRINT OF THE PLUMBING PIPING LAYOUT, CERTIFIED BY ALL TRADES THAT COORDINATION HAS BEEN ESTABLISHED. SUBMIT MANUFACTURER'S CATALOG CUTS OF THE FOLLOWING:

1. PIPING AND FITTINGS
2. INSULATION
3. FIXTURES, SUPPORTS, TRIM
4. VALVES
5. VALVE TAGS AND CHART
6. BACKFLOW PREVENTION DEVICES
7. HANGERS AND SUPPORTS, SEISMIC SUPPORTS
8. FLOOR DRAINS, FLOOR SINKS, FUNNEL DRAINS, CLEANOUTS
9. ROOF DRAINS, OVERFLOW ROOF DRAINS
10. HOSE BIBBS,
11. ESCUTCHEONS AND SLEEVES
12. WATER HEATER(S)
13. LEAK DETECTION SYSTEM
14. WATER METERS
15. HOT WATER TEMPERATURE MAINTENANCE CABLE
16. OPERATION AND MAINTENANCE MANUALS
17. MANUFACTURER'S CATALOG CUTS OF ALL EQUIPMENT

B. UPON REQUEST, THE ENGINEER MAY FURNISH DESIGN DRAWINGS TO THE CONTRACTOR TO AID IN DEVELOPMENT OF PIPING SHOP DRAWINGS. THESE SHALL BE FURNISHED IN THE SAME FORMAT FOR WHICH THE DESIGN DRAWINGS WERE CREATED.

1.04 SUBSTITUTIONS

A. NO SUBSTITUTE MATERIAL OR MANUFACTURER OF EQUIPMENT SHALL BE PERMITTED WITHOUT A FORMAL WRITTEN SUBMITTAL TO THE ENGINEER WHICH INCLUDES ALL DIMENSIONAL, PERFORMANCE AND MATERIAL SPECIFICATIONS. ANY CHANGES IN LAYOUT, STRUCTURAL REQUIREMENTS, OR DESIGN DUE TO THE USE OF A SUBSTITUTION SHALL BE SUBMITTED TO THE ENGINEER AS PART OF THIS PROPOSAL. THE CONTRACTOR TAKES FULL RESPONSIBILITY FOR THE SUBSTITUTION AND ALL CHANGES RESULTING FROM SUBSTITUTION. ALL ITEMS SHALL BE SUBMITTED FOR REVIEW IN CONJUNCTION WITH THE SUBMITTAL OF THE ALTERNATE. ANY SUBSTITUTION MUST BE SUBMITTED WITH AN EXPLANATION WHY SUBSTITUTION IS BEING UTILIZED. IF THE SUBSTITUTED ITEM DEVIATES FROM THE SPECIFIED ITEM, THOSE DEVATIONS ARE TO BE IDENTIFIED ON A LINE BY LINE BASIS. IF THE SUBSTITUTION IS BEING UTILIZED FOR FINANCIAL REASONS, THE ASSOCIATED CREDIT MUST BE SIMULTANEOUSLY SUBMITTED.

B. ALL SUBSTITUTED MATERIAL SHALL CONFORM TO SPACE REQUIREMENTS AND PERFORMANCE REQUIREMENTS SHOWN ON CONTRACT DOCUMENTS.

C. CONTRACTOR SHALL SUBMIT HIS BID BASED ON THE SPECIFIED ITEMS AND SHALL SUPPLY AS AN ADD OR DEDUCT ALTERNATE PRICE FOR ANY SUBSTITUTIONS.

1.05 QUALITY ASSURANCE

A. ALL PIPES SHALL BE MARKED TO INDICATE MANUFACTURER AND ASTM STANDARD. EACH FULL PIPE LENGTH SHALL HAVE THE MANUFACTURER'S NAME CAST, STAMPED OR ROLLED ON.

B. EACH FITTING SHALL HAVE THE MANUFACTURER'S SYMBOL & PRESSURE RATING CAST, STAMPED OR ROLLED ON.

C. ALL NEW COMPONENTS OF THE PLUMBING SYSTEM MUST CONFORM TO LOCAL AND STATE BUILDING AND PLUMBING CODES AND BUILDING STANDARDS.

1.06 COORDINATION WITH BUILDING MANAGEMENT

A. THE PLUMBING CONTRACTOR IS TO OBTAIN A COPY OF THE BUILDING RULES AND REGULATIONS FOR TENANT ALTERATIONS PRIOR TO BID SUBMISSION IN ORDER TO DETERMINE THE BUILDING MANAGEMENTS MINIMUM MATERIAL REQUIREMENTS AND THE EXTENT OF WORK REQUIRED TO BE PERFORMED ON PREMIUM TIME, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:

1. SHUT-DOWNS OF BUILDING SERVICES
2. NOISY WORK, INCLUDING CORE DRILLING
3. WORK IN OTHER TENANTS SPACES

B. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR ADHERING TO THE BUILDING OWNER'S RULES AND REGULATIONS, ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND THE BUILDING'S RULES AND REGULATIONS SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER WITH THE BID FOR REVIEW.

C. PRIOR TO THE START OF ANY BUILDING PLUMBING SYSTEM MODIFICATIONS, THE PROPERTY MANAGER SHALL BE PROVIDED WITH A MINIMUM OF 24-HOURS NOTICE IN ORDER. INTERRUPTION OF EXISTING BUILDING SERVICES IN ORDER TO CONNECT NEW PIPING TO EXISTING SHALL BE MADE AT SUCH TIME AS TO CAUSE THE LEAST INTERFERENCE WITH ESTABLISHED BUILDING OPERATING PROCEDURE. THE CONTRACTOR SHALL NOT INTERRUPT THE SERVICE WITHOUT WRITTEN PERMISSION OF BUILDING MANAGEMENT.

D. DURING THE PROJECT DURATION, THE BUILDING MANAGEMENT OFFICE AND ITS DESIGNATED REPRESENTATIVE SHALL BE ABLE TO INSPECT THE WORK IN PROGRESS. ANY WORK WHICH THE BUILDING MANAGEMENT DEEMS UNACCEPTABLE SHALL BE REMOVED AND REPLACED AT THE EXPENSE OF CONTRACTOR/TENANT.

1.07 AS-BUILT DRAWINGS:

A. CONTRACTOR SHALL MAINTAIN RECORD DRAWING PRINTS ON JOB SITE AND RECORD, AT TIME OF OCCURRENCE, DEVIATIONS FROM CONTRACT DOCUMENTS.

B. AT THE COMPLETION OF WORK AND BEFORE FINAL ACCEPTANCE, PROVIDE AS-BUILT DRAWINGS OF THE INSTALLATION, IN AUTO-CAD 2014 OR NEWER. AN ELECTRONIC COPY (AUTOCAD FORMAT) OF ALL PLUMBING DRAWINGS WILL BE PROVIDED TO THE PLUMBING CONTRACTOR BY THE CONSULTANT AT NO COST. (ARCHITECTURAL DRAWINGS IN AUTOCAD FORMAT MUST BE OBTAINED FROM THE ARCHITECT). THE DRAWINGS WILL REFLECT THE BID AND/OR CONSTRUCTION SET OF DRAWINGS. SHOULD THE CONTRACTOR REQUIRE ADDITIONAL ELECTRONIC COPIES DURING CONSTRUCTION, A COST OF $250.00 PER DRAWING WILL BE CHARGED BY THE CONSULTANT.

C. CLEARLY INDICATE THE WORDS "AS-BUILT" IN THE TITLE BLOCK COLUMN OF THE DRAWINGS AS WELL AS THE PLUMBING CONTRACTOR'S NAME AND ADDRESS.

D. SUBMIT A SINGLE PRINT TO CONSULTANT FOR REVIEW. WHEN FOUND ACCEPTABLE BY THE CONSULTANT, SUBMIT THREE SETS OF PRINTS TOGETHER WITH THE CAD DISK FOR PRESENTATION TO THE LANDLORD AND TENANT.

1.08 OPERATION AND MAINTENANCE MANUALS:

A. PROVIDE TWO) SETS OF OPERATION AND MAINTENANCE MANUALS OF ALL PLUMBING EQUIPMENT SUBMITTED IN HARD COVER 3-RING BINDERS. INCLUDE THE FOLLOWING INFORMATION IN THE OPERATIONS AND MAINTENANCE MANUALS:

1. NAMES AND ADDRESS OF LOCAL SUPPLIERS FOR THE ITEMS INCLUDED.
2. TECHNICAL DATA, PRODUCT DATA, SUPPLEMENTED BY BULLETINS, COMPONENT ILLUSTRATIONS, EXPLODED VIEWS, TECHNICAL DESCRIPTIONS OF ITEMS, AND PARTS LISTS. ADVERTISING OR SALES LITERATURE IS NOT ACCEPTABLE.
3. THE CONSULTANTS REVIEWED SHOP DRAWINGS.
4. CERTIFICATE(S) OF ACCEPTANCE FROM THE AUTHORITIES INSPECTION DEPARTMENT.

B. REVIEW INFORMATION PROVIDED IN THE MAINTENANCE INSTRUCTIONS AND MANUALS WITH THE TENANT'S OPERATING PERSONNEL AND LANDLORD'S OPERATING PERSONNEL WHERE BASE BUILDING SYSTEMS ARE REVISED, TO ENSURE A COMPLETE UNDERSTANDING OF THE ELECTRICAL EQUIPMENT AND SYSTEMS AND THEIR OPERATION.

1.09 MATERIALS AND EQUIPMENT

A. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY AND MANUFACTURED TO THE STANDARDS SPECIFIED.

1.10 INSURANCE

A. PROVIDE AND MAINTAIN INSURANCE TO PROTECT THE LANDLORD, TENANT AND TRADES FROM ALL POSSIBLE CLAIMS. SUBMIT WITH BID FOR AN AMOUNT ACCEPTABLE TO LANDLORD AND TENANT.

1.11 CONTRACT DOCUMENTS

A. THE DRAWINGS FOR THE PLUMBING WORK ARE DIAGRAMMATIC PERFORMANCE DRAWINGS ONLY, INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE THE GENERAL ARRANGEMENT AND APPROXIMATE SIZE AND LOCATION OF PLUMBING AND EQUIPMENT. THE DRAWINGS DO NOT INTEND TO SHOW ARCHITECTURAL, INTERIOR DESIGN, MECHANICAL, STRUCTURAL OR BASE BUILDING DETAILS. CONTRACTOR IS TO BE RESPONSIBLE FOR A THOROUGH KNOWLEDGE OF SAME BEFORE PROCEEDING WITH THE WORK.

B. DO NOT SCALE OR MEASURE DRAWINGS, BUT OBTAIN INFORMATION REGARDING ACCURATE DIMENSIONS FROM THE DIMENSIONS SHOWN ON THE DESIGN CONSULTANT/ARCHITECTS DRAWINGS, OR BY SITE MEASUREMENTS.

C. ANY DISCREPANCIES BETWEEN DRAWINGS AND/OR SPECIFICATIONS AND EXISTING CONDITIONS, MUST BE REFERRED TO THE DESIGN CONSULTANT/ARCHITECT BEFORE ANY WORK AFFECTED IS BEGUN.

D. COOPERATE AND COORDINATE WITH OTHER CONTRACTORS IN LAYING OUT WORK SO AS NOT TO CONFLICT WITH THE WORK OF OTHER CONTRACTORS. CARRY OUT WORK PROMPTLY AS PER CONSTRUCTION SCHEDULE AND COORDINATE WITH WORK OF OTHER CONTRACTORS.

E. MAKE, AT NO ADDITIONAL COST, ANY CHANGES OR ADDITIONS TO MATERIALS AND EQUIPMENT NECESSARY TO ACCOMMODATE STRUCTURAL CONDITIONS (OFFSETS AROUND BEAMS, COLUMN, ETC.)

1.12 INTENT

A. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS THAT THE CONTRACTOR IS TO PROVIDE COMPLETE AND OPERATIONAL SYSTEMS.

B. ANY MISCELLANEOUS ITEMS, VALVES, FITTINGS, GAUGES, HARDWARE, ETC., NOT SPECIFICALLY DESCRIBED, BUT REQUIRED FOR THE OPERATION OF THE PLUMBING SYSTEMS, MUST BE PROVIDED AND INCLUDED AS PART OF THE BID.

1.13 ACCESS DOORS.

A. WHEREVER ANY BASE BUILDING EQUIPMENT OR NEW EQUIPMENT, VALVES, ETC. REQUIRES ACCESSIBILITY, MAINTENANCE OR ADJUSTMENT, PROVIDE ACCESS DOORS APPROVED BY DESIGN CONSULTANT/ARCHITECT AND LANDLORD. ARRANGE FOR ACCESS DOOR INSTALLATION BY THE DIVISION IN WHOSE WORK IT OCCURS.

B. PROVIDE ACCESS PANELS, MINIMUM 18" X 18", FOR ALL NEW AND EXISTING VALVES, EQUIPMENT, ETC. AS REQUIRED.

1.14 CORE DRILLING

A. BEFORE CORE DRILLING FLOOR SLAB OR STRUCTURAL WALLS, X-RAY SLABS OR WALLS AND HAVE THE LOCATIONS APPROVED BY THE LANDLORD IN WRITING.

B. ANY EXISTING BUILDING SERVICE DAMAGED BY CORE DRILLING SHALL BE REPAIRED IMMEDIATELY AT NO COST TO LANDLORD OR TENANT.

C. FLOOR DRILLING TO BE PERFORMED AFTER NORMAL WORKING HOURS AND AT A TIME ACCEPTABLE TO LANDLORD AND ALLOWANCES FOR THIS WORK SHALL BE INCLUDED IN BID PRICE SUBMITTED.

1.15 INTERRUPTION OF SERVICES

A. INTERRUPTION OF EXISTING PLUMBING SERVICES TO ANY PART OF THE BUILDING SHALL OCCUR ONLY BY PRE-ARRANGEMENT WITH AND AT TIMES SUITABLE TO THE LANDLORD.

B. INTERRUPTIONS SHALL ONLY OCCUR DURING PREMIUM TIME PERIODS; ALL ALLOWANCES FOR THIS SHALL BE INCLUDED IN THE PRICE SUBMITTED.

1.16 VALUATION OF CHANGES

A. PROVIDE COMPLETE BREAKDOWN OF MATERIAL, LABOR, OVERHEAD, PROFIT, ETC., WHEN SUBMITTING QUOTATIONS FOR CHANGE ORDERS ON THIS PROJECT.

B. THE HOURLY LABOR RATE SHALL BE INCLUSIVE OF ALL CHARGES FOR SUPERVISION, VARIABLE LABOR FACTORS, HAND TOOLS, PAYROLL BURDENS, HEIGHT FACTORS, WARRANTIES, STORAGE, RENTALS, ADDITIONAL BONDING, PARKING, CLEAN-UP, AS-BUILT DRAWINGS, HOISTING, FREIGHT AND DELIVERY, BUT EXCLUSIVE OF OVERHEAD AND PROFIT.

1.17 COMPLETION OF CONTRACT

A. ALL EQUIPMENT MUST BE CLEANED AND TESTED BEFORE FINAL ACCEPTANCE BY THE CONSULTANT.

B. DEFECTS AND DEFICIENCIES WHICH ORIGINATE OR BECOME EVIDENT DURING THE WARRANTY PERIOD MUST BE REPAIRED OR REPLACED, AT NO COST.

1.18 DEMOLITION

A. VISIT THE SITE, EXAMINE THE EXISTING CONDITIONS AND BECOME FAMILIAR WITH THE EXTENT OF THE NECESSARY REMOVAL, RELOCATION, RECONNECTING AND REROUTING OF PLUMBING EQUIPMENT AND PIPING AS NECESSARY FOR THE COMPLETION OF THE PROJECT.

B. REVIEW AND CONFIRM WITH THE ARCHITECT/DESIGNER'S DRAWINGS FOR THE COMPLETE EXTENT OF DEMOLITION AND ALTERATION.

C. ENSURE THAT ALL EXISTING PLUMBING PIPING OR SYSTEMS, IN AREAS OUTSIDE THE AREAS OF THIS WORK, THAT ARE REQUIRED TO REMAIN IN SERVICE, SHALL DO SO.

D. RELOCATE ANY PLUMBING PIPING OR EQUIPMENT THAT IS REQUIRED TO REMAIN IN SERVICE, THAT IS SECURED TO EXISTING WALLS, FLOORS OR CEILINGS TO BE DEMOLISHED.

E. ALL EXISTING PLUMBING EQUIPMENT OR PIPING WHICH IS NO LONGER REQUIRED SHALL BE REMOVED AND DISPOSED OF, OFF SITE.

F. BE RESPONSIBLE AND PAY FOR ANY DAMAGE TO THE BASE BUILDING INCURRED BY WORK OF THIS DIVISION. OR REPAIR TO THE SATISFACTION OF THE CONSULTANT.

G. CARRY OUT THE WORK WITH MINIMUM OF NOISE, DUST AND DISTURBANCE.

1.19 UNIT PRICES

A. SUBMIT THE FOLLOWING LIST OF UNIT PRICES (FURNISH AND INSTALL):

1. FIXTURES - $ FOR EACH TYPE IN THE DOCUMENTS (INCLUDE ROUGHING)
2. PIPING - $/LF FOR EACH SIZE AND TYPE REQUIRED (INCLUDE HANGERS & INSULATION WHERE APPLICABLE)

PART 2 MATERIALS

2.01 PIPING AND FITTINGS

A. SANITARY DRAINAGE AND VENT PIPING, STORM DRAINAGE

1. ABOVEGROUND - CAST IRON HUBLESS PIPE AND FITTINGS COMPLYING WITH CAST IRON CAST IRON SOIL PIPE (CISPI) STANDARD 301 AND/OR ASTM A-888 AND SHALL BE MADE IN THE UNITED STATES, AND MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE AND LISTED BY NSF INTERNATIONAL. ALL PIPE AND FITTINGS SHALL BE BY THE SAME MANUFACTURER.

   JOIN HUBLESS CAST-IRON SOIL PIPING ACCORDING TO CISPI 310 AND CISPI'S "CAST IRON SOIL PIPE AND FITTINGS HANDBOOK" FOR HUBLESS-COUPLING JOINTS. USE HEAVY DUTY SHIELDED COUPLINGS HAVING NEOPRENE GASKET CONFORMING TO ASTM C 1540 WITH 3" WIDE 304 STAINLESS STEEL CORRUGATED SHIELD AND FOUR STAINLESS STEEL BANDS FOR SIZES 1-1/2" THROUGH 4" (SIX STAINLESS STEEL BANDS FOR SIZES 5" AND LARGER). ALL COUPLINGS SHALL BE ANACO-HUSKY SERIES HD 2000 HEAVY DUTY OR APPROVED EQUAL.

   HORIZONTAL PIPE AND FITTINGS 5" DIA. AND LARGER MUST BE SUITABLY BRACED TO PREVENT HORIZONTAL MOVEMENT. THIS MUST BE DONE AT EVERY BRANCH OPENING OR CHANGE OF DIRECTION BY THE USE OF BRACES, BLOCKS, RODDING, OR OTHER SUITABLE METHOD. IN ORDER TO PREVENT MOVEMENT OR JOINT SEPARATION PER CHAPTER IV OF THE CISPI HANDBOOK.

2. UNDERGROUND - CAST IRON HUB AND SPIGOT SERVICE WEIGHT PIPE AND FITTINGS COMPLYING WITH CISPI STANDARD HS-67 AND/OR ASTM A-74-66 AND SHALL BE MADE IN THE UNITED STATES, AND MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE AND LISTED BY NSF INTERNATIONAL. ALL PIPE AND FITTINGS SHALL BE BY THE SAME MANUFACTURER.

   JOIN HUB-AND-SPIGOT, CAST-IRON SOIL PIPING WITH GASKETED JOINTS ACCORDING TO CISPI'S "CAST IRON SOIL PIPE AND FITTINGS HANDBOOK" FOR COMPRESSION JOINTS. JOINTS SHALL BE MADE WITH PUSH-ON NEOPRENE RUBBER COMPRESSION GASKET CONFORMING TO CISPI STANDARD HSN-76.

B. DOMESTIC HOT AND COLD WATER PIPING, INDIRECT WASTE PIPING

1. PIPING (SOLDERED JOINTS): TYPE L HARD COPPER TUBE, DRAWN TEMPER, COMPLYING WITH ASTM B-88 AND NSF 61.
2. FITTINGS (SOLDERED JOINTS): WROUGHT COPPER SOLDER JOINT PRESSURE TYPE FITTINGS COMPLYING WITH ASME B.16.22.
3. SOLDER FILLER METALS: ALLOY SN95 OR ALLOY SN94: TIN (SN) APPROXIMATELY 95%, AND SILVER (AG) APPROXIMATELY 5%, HAVING 0.10% MAXIMUM LEAD (PB) CONTENT.
4. SOLDERING FLUX: APPLY ASTM B 813, WATER-FLUSHABLE FLUX TO END OF TUBE. JOIN COPPER TUBE AND FITTINGS ACCORDING TO ASTM B 828 OR CDA'S "COPPER TUBE HANDBOOK.
5. ALL EXPOSED PIPING SHALL BE CHROME PLATED BRASS. ALL PIPE PASSING THROUGH WALLS, FLOORS, CEILINGS, AND PARTITIONS SHALL BE PROVIDED WITH CHROME PLATED BRASS ESCUTCHEONS HELD IN PLACE WITH SET SCREWS.

C. FUEL GAS PIPING

1. PIPING: ASTM A 53/A 53M, BLACK STEEL, SCHEDULE 40, TYPE E OR S, GRADE B.
2. MALLEABLE-IRON THREADED FITTINGS: ASME B16.3, CLASS 150, STANDARD PATTERN. PIPING UP TO 4" DIAMETER AND BELOW ½ PSIG.
3. WROUGHT-STEEL WELDING FITTINGS: STM A 234/A 234M FOR BUTT WELDING AND SOCKET WELDING. COMPLY WITH AWS D10.12/D10.12M FOR WELDING MATERIALS APPROPRIATE FOR WALL THICKNESS AND CHEMICAL ANALYSIS OF STEEL PIPE BEING WELDED. PIPING 4" AND LARGER AT ANY PRESSURE AND ANY SIZE PIPING WITH GAS PRESSURE ABOVE ½ PSIG SHALL BE WELDED.
4. PROTECTIVE COATING FOR UNDERGROUND PIPING: FACTORY-APPLIED, THREE-LAYER COATING OF EPOXY, ADHESIVE, AND PE. JOINT COVER KITS: EPOXY PAINT, ADHESIVE, AND HEAT-SHRINK PE SLEEVES.
5. WHERE PIPING IS EXPOSED TO EXTERIOR, PROVIDE WITH FACTORY APPLIED PROTECTIVE COATING OR USE SCH. 40 GALVANIZED STEEL PIPE AND FITTINGS. AFTER GALVANIZED PIPING THREADS HAVE BEEN CUT AND FITTINGS CONNECTED PAINT THE EXPOSED THREADS AND PIPING WITH AN EXTERIOR, NON-RUSTING PAINT TO PROTECT THE AREA OF PIPING WHERE THE GALVANIZATION HAS BEEN REMOVED.

D. EJECTOR AND SUMP PUMP DISCHARGE PIPING (IF INSTALLED)

1. SCHEDULE 40 GALVANIZED STEEL PIPE ASTM A-53, GALVANIZED CAST IRON DRAINAGE FITTINGS ASME B 16.2, AND THREADED JOINTS OR GROOVED-END STEEL PIPE, GROOVED-JOINT SYSTEM FITTINGS AND COUPLINGS, AND GROOVED JOINTS.
2. INSTALL CHECK VALVE AND GATE VALVE ON EACH PUMP DISCHARGE.
3. INSTALL SPRING LOADED, SILENT CHECK VALVE BETWEEN PUMP AND SHUTOFF VALVE ON EACH PUMP DISCHARGE.

2.02 VALVES - DOMESTIC WATER

A. SHUT-OFF VALVES - 3" AND SMALLER: TWO PIECE, FULL PORT, LEAD-FREE BRONZE BALL VALVES, 600 PSI NON-SHOCK CWP, NSF/ANSI-61-8 WITH THE CAPABILITY OF ACCEPTING EXTENDED OPERATING HANDLES. MILWAUKEE MODEL UPBA100S FOR THREADED ENDS OR UPBA150SF FOR SOLDERED ENDS.PROVIDE EXTENDED OPERATING HANDLE WHEN INSTALLING ON INSULATED PIPE.

B. SHUT-OFF VALVES - 3" AND LARGER: LEAD-FREE BRONZE GATE VALVE, NON-RISING STEM, SOLID WEDGE, 300 PSI NON-SHOCK CWP, NSF/ANSI-61-8. NIBCO T-113-LF FOR THREADED ENDS OR S-113-LF FOR SOLDER ENDS.

C. CHECK VALVES - 2" AND SMALLER: LEAD-FREE BRONZE, Y-PATTERN, HORIZONTAL SWING, WITH RENEWABLE SEAT AND DISC. 200 PSI CWP NON-SHOCK, NSF/ANSI-61-8. NIBCO T-413-Y-LF FOR THREADED ENDS OR S-413-Y-LF FOR SOLDER ENDS.

D. CHECK VALVES - 2-1/2" & 3": LOW LEAD, BRONZE BODY, SWING CHECK VALVE, 200 PSIG, NON-SHOCK, ASME B16.1, MILWAUKEE UP567 FOR THREADED ENDS, UP568 FOR SOLDERED ENDS.

E. CHECK VALVES ON PUMP DISCHARGE: SILENT CECK VALVE, FLANGED, CLASS 125, STAINLESS STEAL SPRING & SCREWS, CAST IRON BODY, MILWAUKEE MODEL 1800.

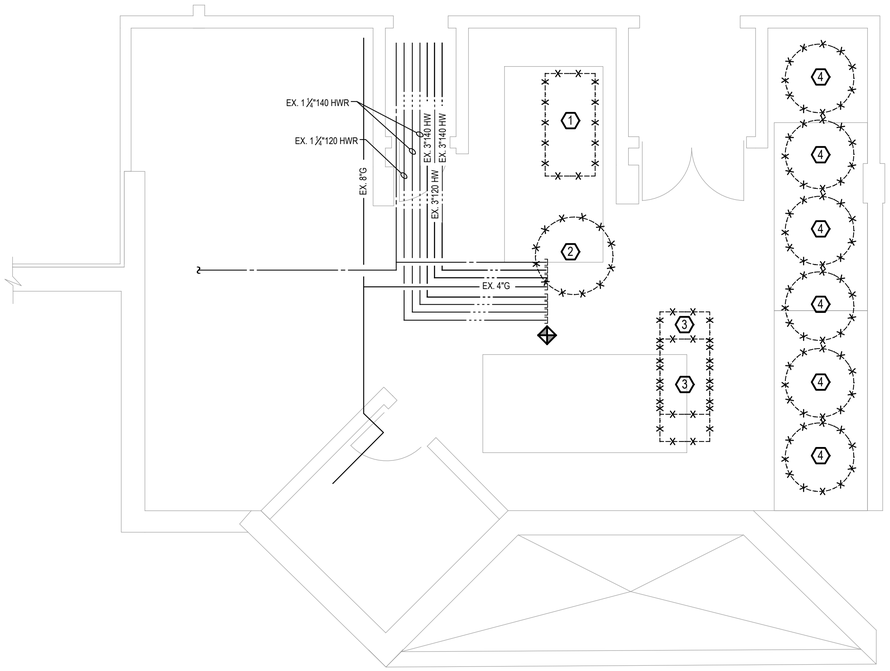
F. SOLENOID VALVE - DE-ENERGIZED CLOSED, ASCO MODEL #8210G003, 120 V., WITH BRONZE BODY.

G. PRESSURE REDUCING VALVE - ½" to 2": LEAD FREE, ASSE 1003 LISTED, DIRECT ACTING PRESSURE REDUCING VALVE WITH STRAINER. VALVE SHALL BE WATTS SERIES LF223S.

H. PRESSURE REDUCING VALVE - 2½" AND 3": LEAD FREE, ASSE 1003 LISTED, DIRECT ACTING PRESSURE REDUCING VALVE WITH STRAINER. VALVE SHALL BE WATTS SERIES LF223SS

2.03 VALVE TAGS AND CHART

A. PROVIDE FOR EACH VALVE, EXCEPT STOP VALVES AT FIXTURES, A 2 INCH DIAMTER BRASS TAG WITH 1 INCH HIGH NUMERAL STAMPED THEREON, S



PLUMBING DEMOLITION NOTES

1. GENERAL

A. PRIOR TO PROPOSAL SUBMISSION, THIS CONTRACTOR SHALL VISIT THE SITE TO REVIEW THE EXISTING CONDITIONS ASSOCIATED WITH THE SCOPE OF WORK AND ADJACENT AREAS TO ASCERTAIN THE DIFFICULTIES WHICH WILL AFFECT THE EXECUTION OF THE WORK OF THIS CONTRACT.

B. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT THE ABOVE SITE EXAMINATION HAS BEEN MADE AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.

C. DEMOLITION WORK SHALL INCLUDE ALL MATERIALS, LABOR, EXTENSIONS, CONNECTIONS, CUTTING, REPAIRING, ADAPTING AND OTHER PLUMBING WORK REQUIRED TO MAINTAIN SERVICE PENDING THE COMPLETION OF THE PERMANENT WORK. COORDINATE THE EXTENT OF DEMOLITION WORK WITH THE ARCHITECT AND BUILDING MANAGEMENT.

2. SCOPE OF WORK

A. ALL EXISTING WORK REQUIRED TO REMAIN BUT INTERFERING WITH PROPOSED NEW PLUMBING (AS WELL AS ELECTRICAL, MECHANICAL AND GENERAL CONSTRUCTION WORK) SHALL BE RELOCATED AND RECONNECTED USING MATERIALS CONFORMING TO STANDARDS OF THIS CONTRACT.

B. REMOVE BASE BUILDING PIPING AS INDICATED BELOW:

a. REMOVE ALL ABANDONED BASE BUILDING PIPING BACK TO THE EXISTING WET COLUMNS OR SHAFTS, OR AS NOTED ON DRAWINGS.

b. CONTRACTOR TO CONTACT BUILDING MANAGEMENT AND TENANT REGARDING REMOVAL SCOPE OF WORK TO MAINTAIN CONTINUITY OF ALL SERVICES TO ALL TENANTS WHO ARE TO REMAIN OPERATIONAL AND NOT BE AFFECTED BY DEMOLITION WORK.

c. ALL EXISTING BUILDING VALVES FOR DOMESTIC WATER MAINS AT SHAFTS ARE TO REMAIN.

C. PROVIDE ADDITIONAL SUPPORT FOR ALL EXISTING PIPING TO REMAIN WHICH ARE AFFECTED BY DEMOLITION OF EXISTING CEILING AND PARTITIONS.

D. ALL MATERIALS AND EQUIPMENT SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS AND ENVIRONMENTAL REGULATIONS.

E. COORDINATE WITH OWNER TO DETERMINE WHETHER EQUIPMENT IS TO BE TURNED OVER FOR FUTURE USE AND STORED IN THEIR ASSOCIATED STORAGE LOCATIONS.

F. CONTRACTOR TO DISCONNECT ALL ELECTRICAL CIRCUITING AND CONTROLS AS NECESSARY.

PLUMBING KEY NOTES

1. CONTRACTOR SHALL DECOMMISSION AND REMOVE EXISTING GAS-FIRED WATER HEATER. DISCONNECT AND REMOVE ALL EXISTING CW, HW & HWR PIPING FROM THE WATER HEATER TO THE STORAGE TANK.

2. CONTRACTOR SHALL DECOMMISSION AND REMOVE EXISTING 750 GALLONS HOT WATER STORAGE TANK. DISCONNECT AND REMOVE ALL EXISTING CW, HW & HWR PIPING FROM THE STORAGE TANK TO POINT OF DISCONNECTION TO THE EXISTING.

3. CONTRACTOR SHALL DECOMMISSION AND REMOVE EXISTING TWO (2) GAS-FIRED WATER HEATER. DISCONNECT AND REMOVE ALL EXISTING CW, HW & HWR PIPING FROM THE WATER HEATER TO THE STORAGE TANK.

4. CONTRACTOR SHALL DECOMMISSION AND REMOVE EXISTING SIX (6) 500 GALLONS HOT WATER STORAGE TANK. DISCONNECT AND REMOVE ALL EXISTING CW, HW & HWR PIPING FROM THE STORAGE TANK TO POINT OF DISCONNECTION TO THE EXISTING.

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 ENERGY CONSERVATION

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GE Crotonville - Executive Residence Building Water Heater Replacement

Old Albany Post Road,
Ossining, NY

Seal

10/29/21 ISSUED FOR REVIEW

Date Issued Revision No.

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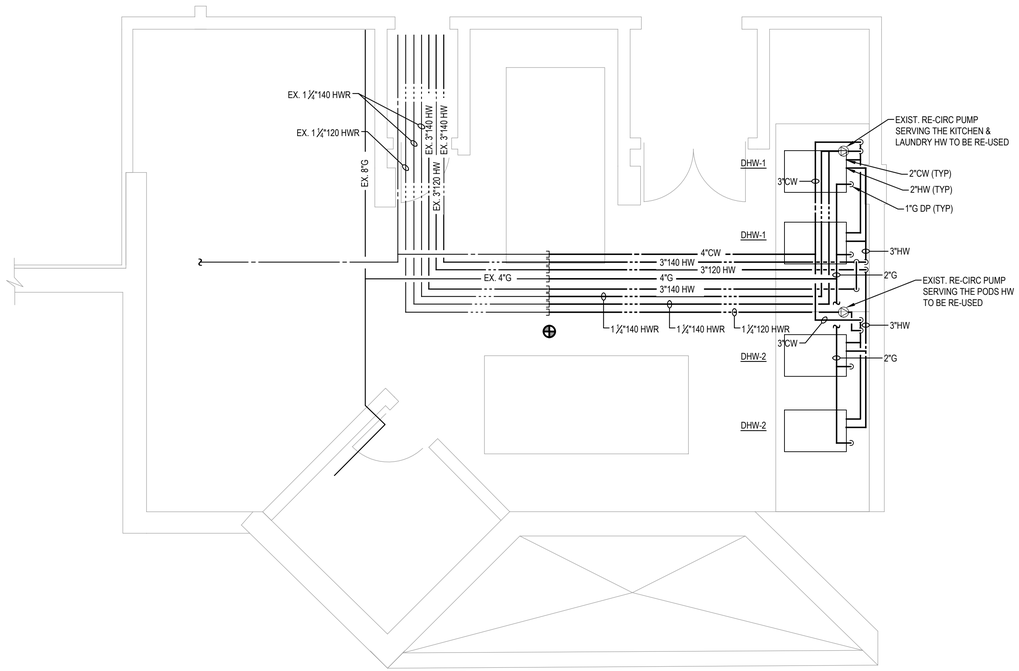
Drawing Title:
PLUMBING
BASEMENT FLOOR
DEMOLITION PART PLAN

Scale	Issue Date
1/2"=1'-0"	10/XX/2021
Proj. Manager: RR	Proj. Engineer: RD

AMA Project No.: G003-03-017

Drawing No.: P-201

NYC DOB NUMBER

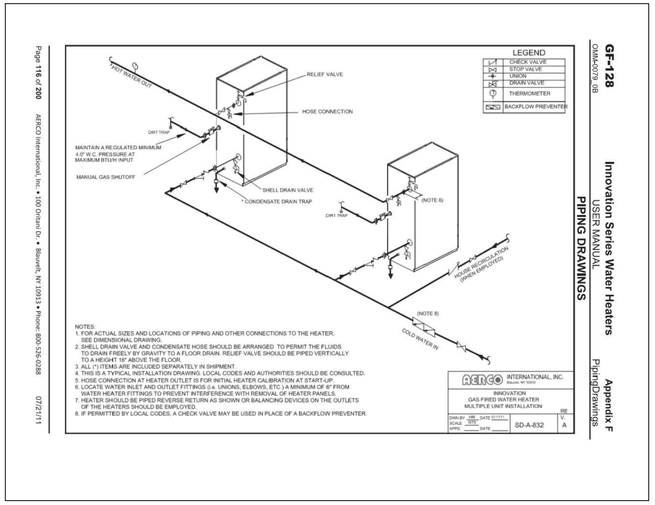


PLUMBING - BASEMENT PART PLAN

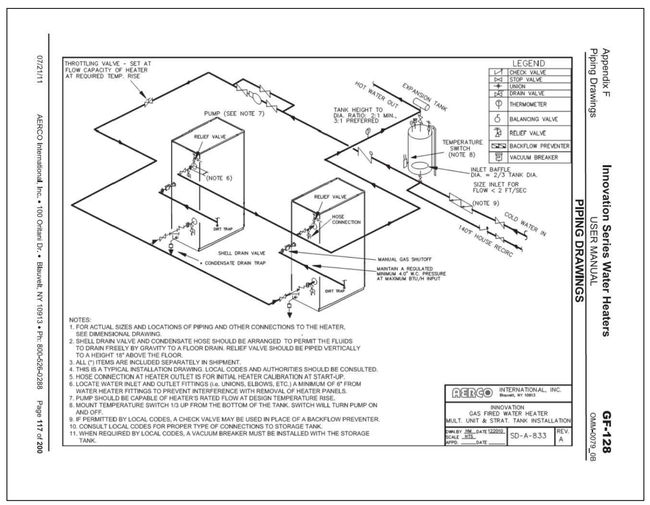
SCALE: 1/2"=1'-0"

PLUMBING GENERAL NOTES

1. ROUTING OF WASTE, VENT, AND DOMESTIC WATER PIPING IS SHOWN DIAGRAMMATICALLY ONLY. PLUMBING CONTRACTOR MUST DETERMINE EXACT ROUTING OF NEW PIPING COORDINATED WITH ALL NEW AND EXISTING CONDITIONS. FIELD VERIFY EXACT SIZES OF THE EXIST. CW, HW, HWR PIPING.
2. THE PLUMBING CONTRACTOR SHALL COORDINATE ALL NEW WORK WITH THE EXISTING CONDITIONS AND THE NEW WORK OF ALL OTHER TRADES ON THE JOB SITE AND SHALL BE RESPONSIBLE TO REPAIR AND REPLACE ANY EXISTING SUSPENDED CEILINGS AND / OR FINISHES DAMAGED BY THE INSTALLATION OF EQUIPMENT, PIPING, FIXTURES, ETC. UNDER THE PLUMBING CONTRACT.CONTRACTOR TO VERIFY ON SITE THE EXACT LOCATION OF EXISTING SAN, VENT CW & HW RISER PIPE BEFORE INSTALLING ANY NEW WORK.
3. ALL FIRE PROOFING WORK AFFECTED BY NEW INSTALLATION ARE TO BE RESTORED TO ITS ORIGINAL CONDITION AND THE REQUIRED RATING.
4. PLUMBING INSTALLATION SHALL BE IN ACCORDANCE WITH LOCAL BUILDING CODES AND BUILDING STANDARD FOR ALTERATION CONSTRUCTION.
5. ANY HOT AND COLD WATER REQUESTS FOR SHUT RISER DOWNS SHALL BE MADE TO THE BUILDING 2 WEEKS IN ADVANCE.
6. CONTRACTOR SHALL PROVIDE AN ALLOWANCE IN HIS BID PRICE TO MODIFY EXISTING PLUMBING SYSTEM UPON THE REQUEST OF THE CLIENT TO ACCOMMODATE THE NEW SCOPE OF WORK.
7. CONTRACTOR SHALL COORDINATE WITH THE ELECTRICIAN FOR ANY POWER REQUIREMENT ON WATER HEATER AND CIRCULATION PUMP.
8. REMOVE EXISTING TEMPERATURE MIXING VALVE AND RELATED TEMPERED WATER. HOT & COLD WATER SERVICES LINES TO EXISTING WATER HEATERS. CAP EXISTING HW, CW, HWR LINES IN THE CEILING WHERE INDICATED ON THE FLOOR PLAN.
9. CONTRACTOR TO COORDINATE WITH THE ELECTRICIAN ALL NEW CONNECTIONS/RECONNECTIONS OF ANY ELECTRICAL CIRCUITING AND CONTROLS AS NECESSARY, I.E., CIRCULATION PUMP, AQUASTAT, ETC.
10. CONTRACTOR TO PROVIDE AN ALLOWANCE IN HIS BID PRICE TO FURNISH & INSTALL NEW CIRCULATION PUMPS UPON THE REQUEST OF THE CLIENT.



DWH-1: AERCO INNO 1060 - MANUFACTURER'S PIPING DETAIL (FOR REFERENCE)



DWH-2: AERCO INNO 1350 - MANUFACTURER'S PIPING DETAIL (FOR REFERENCE)

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GE Crotonville - Executive Residence Building Water Heater Replacement

Old Albany Post Road,
Ossining, NY

Seal

Date	Issued	Revision No.
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Drawing Title:
PLUMBING
BASEMENT FLOOR PART PLAN

Scale	Issue Date
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AMA Project No.: G003-03-017

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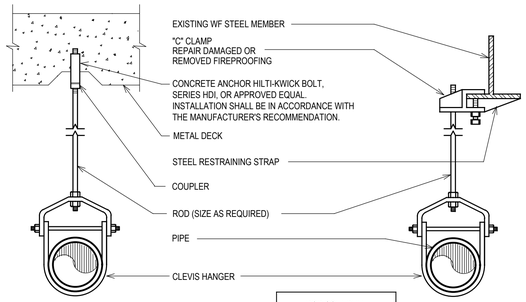


NOTES:

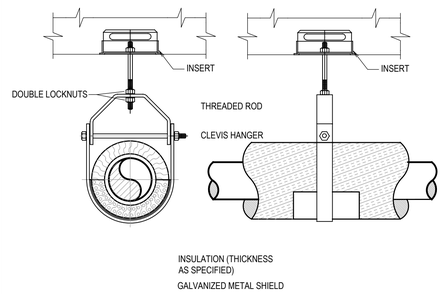
1. CLEVIS HANGERS REQUIRED ON PIPING LARGER THAN 1"
2. ANY DAMAGED OR MISSING FIREPROOFING TO BE REPAIRED/REPLACED.
2. HANGER, ROD, SLEEVE, & INSERT SHALL BE DIPPED IN ZINC CHROMATE PRIMER PRIOR TO INSTALLATION.

ROD SCHEDULE	
PIPE SIZE	ROD SIZE
1/2" TO 4"	3/8"
5" TO 8"	1/2"
10" TO 12"	5/8"

TYPICAL HANGER DETAILS

NOT TO SCALE

PL-002



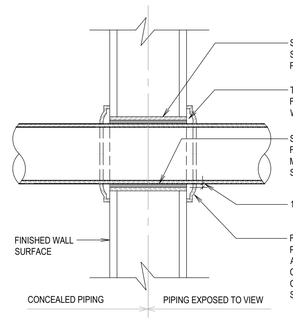
WITH INCOMPRESSIBLE INSULATING BLOCK AT HANGER		
PIPE DIAMETER	SHIELD LENGTH	SHIELD THICKNESS USSG
UP TO 3"	6"	18
4" TO 6"	8"	16
8" & LARGER	12"	16

WITHOUT INCOMPRESSIBLE INSULATING BLOCK AT HANGER		
PIPE DIAMETER	SHIELD LENGTH	SHIELD THICKNESS USSG
UP TO 3"	12"	18
4"	15"	16
5"	18"	16
6"	21"	16
8" & LARGER	24"	14

TYPICAL PIPE INSULATION DETAIL

NOT TO SCALE

PL-009



SLEEVES AND ESCUTCHEONS

A. SLEEVES FOR PIPING THROUGH MASONRY WALLS SHALL BE SCHEDULE 40, STANDARD GALVANIZED STEEL PIPE; IN FRAMED PARTITIONS SHALL BE 20 GAUGE SHEET METAL. THE SPACE BETWEEN THE PIPE AND ITS SLEEVE SHALL NOT EXCEED ONE-HALF INCH. THE SLEEVE SHALL HAVE A SUFFICIENT LENGTH TO BE FLUSH WITH THE FINISHED WALL SURFACE.

B. EXPOSED PIPING PASSING THROUGH WALLS, FLOORS OR CEILING SHALL BE FITTED WITH CHROMIUM-PLATED CAST BRASS ESCUTCHEONS WITH FASTENING SET SCREWS.

CUTTING AND PATCHING

A. PIPING PASSING THROUGH WALLS SHALL HAVE A TRIM OPENING CUT NO GREATER THAN NECESSARY FOR THE INSTALLATION OF A SLEEVE SECURED THEREIN.

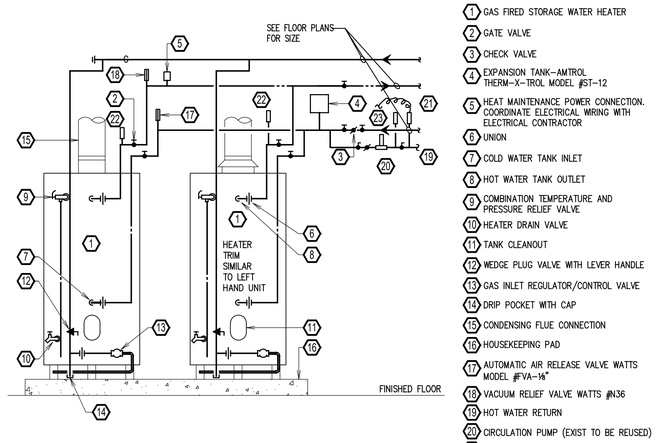
B. PIPING PASSING THROUGH CONCRETE FLOORS SHALL HAVE AN OPENING CORE DRILLED SO THAT THE SPACE BETWEEN THE OPENING AND THE PIPE SHALL NOT EXCEED ONE-HALF INCH.

C. ANNULAR SPACES BETWEEN PIPING AND SLEEVES OR CORE DRILLED FLOOR OPENINGS SHALL BE PACKED WITH MINERAL WOOL AND SEALED, TO RETAIN THE FIRE INTEGRITY OF THE WALLS AND FLOORS, WITH A NON-HARDENING COMPOUND SIMILAR OR EQUAL TO DUXSEAL AS MANUFACTURED BY THE J.M. CLIPPER CORP.

TYPICAL DETAIL OF PIPE INSTALLATION THRU RATED WALL

NOT TO SCALE

PL-005



1. GAS FIRED STORAGE WATER HEATER
2. GATE VALVE
3. CHECK VALVE
4. EXPANSION TANK–AMTROL THERM–X–TROL MODEL #ST–12
5. HEAT MAINTENANCE POWER CONNECTION. COORDINATE ELECTRICAL WIRING WITH ELECTRICAL CONTRACTOR
6. UNION
7. COLD WATER TANK INLET
8. HOT WATER TANK OUTLET
9. COMBINATION TEMPERATURE AND PRESSURE RELIEF VALVE
10. HEATER DRAIN VALVE
11. TANK CLEANOUT
12. WEDGE PLUG VALVE WITH LEVER HANDLE
13. GAS INLET REGULATOR/CONTROL VALVE
14. DRIP POCKET WITH CAP
15. CONDENSING FLUE CONNECTION
16. HOUSEKEEPING PAD
17. AUTOMATIC AIR RELEASE VALVE WATTS MODEL #FVA–16"
18. VACUUM RELIEF VALVE WATTS #N36
19. HOT WATER RETURN
20. CIRCULATION PUMP (EXIST TO BE REUSED)
21. AQUASTAT
22. THERMOSTAT

PIPING SCHEMATIC-DUPLEX GAS WATER HEATERS

FOR REFERENCE ONLY – NOT TO SCALE

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DETAILS

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Proj. Manager: RR
Proj. Engineer: RD
AMA Project No.: G003-03-017
Drawing No.: P-901
NYC DOB NUMBER:

XX OF XX

MECHANICAL SPECIFICATIONS

PART 1- GENERAL

1.01 GENERAL

A. THE LATEST EDITION OF AIA DOCUMENTS A201 GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, OR AS REQUIRED BY THE ARCHITECTURAL DOCUMENTS AND/OR THE STRUCTURAL ENGINEERS DOCUMENTS ARE PART OF THE CONTRACT.

B. BIDDERS SHALL VISIT AND CAREFULLY EXAMINE THE AREA AFFECTED BY THIS WORK TO FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND THE DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THIS WORK BEFORE SUBMITTING PROPOSALS. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT, OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO BID. IF DISCREPANCIES ARE NOT RESOLVED TO CONTRACTORS SATISFACTION THEY SHALL BE QUALIFIED IN THEIR BID SUBMISSION.

C. THIS CONTRACTOR SHALL REVIEW ALL CONSTRUCTION DOCUMENTS ASSOCIATED WITH THIS PROJECT INCLUDING GENERAL CONSTRUCTION, DEMOLITION, ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND SPRINKLER PLANS AND SPECIFICATIONS. ALL WORK REQUIRED IN THE BID WHICH IS INDICATED OR IMPLIED TO BE PERFORMED BY THIS TRADE IN OTHER SECTIONS OF THE WORK SHALL BE INCLUDED IN THEIR BID. IF A CONFLICT OCCURS IN THE BID SPECIFICATIONS AND/OR ON THE DRAWINGS, THE MORE STRINGENT SITUATION SHALL APPLY.

D. COORDINATE ALL WORK OF THE SECTION WITH EXISTING CONDITIONS AND THE WORK OF OTHER TRADES. THE CONTRACTOR SHALL THOROUGHLY ACQUAINT HIMSELF WITH THE WORK INVOLVED AND SHALL VERIFY AT THE BUILDING ALL MEASUREMENTS NECESSARY FOR THE PROPER INSTALLATION OF THE WORK, OBTAINING THE SAME WHEN NECESSARY FROM THE OTHER CONTRACTORS AND SECTIONS. CONTRACTOR SHALL ALSO BE PREPARED TO PROMPTLY FURNISH TO OTHER CONTRACTORS ANY INFORMATION RELATING TO THE WORK OF THIS SECTION NECESSARY FOR THE PROPER INSTALLATION OF OTHER CONTRACTS AND SHALL COOPERATE TO SECURE THE BEST PROGRESS OF, AND HARMONY BETWEEN, THE WORK OF THE DIFFERENT CONTRACTS AND SECTIONS IN THE INTERESTS OF THE INSTALLATION AS A WHOLE. CONFER WITH OTHER CONTRACTORS AND ENGINEER FOR ADJACENT WORK TO THIS SECTION AND ARRANGE TO HAVE VISIBLE PORTIONS OF WORK FIT AND HARMONIZE IN A MANNER SATISFACTORY TO THE OWNER'S REPRESENTATIVE.

E. THE SPECIFICATIONS ARE ACCOMPANIED BY DRAWINGS INDICATING THE GENERAL LOCATION OF EQUIPMENT AND CONNECTIONS THERETO. UNLESS SPECIFICALLY DIMENSIONED, LOCATIONS OF EQUIPMENT AND ROUTINGS ARE APPROXIMATE. SCALES ON DRAWINGS ARE INDICATED FOR BIDDING PURPOSES ONLY; DRAWINGS SHALL NOT BE SCALED FOR CONSTRUCTION AND MANUFACTURING DETAILS. CERTAIN SYSTEMS ARE DIAGRAMMATIC AND GIVE THE GENERAL ARRANGEMENT ONLY. NO ADDED COMPENSATION WILL BE PERMITTED FOR VARIATIONS DUE TO FIELD CONDITIONS. EXACT LOCATIONS AND ARRANGEMENTS SHALL BE DETERMINED IN THE FIELD ON THE BASIS OF DETAILS INDICATED ON APPROVED SHOP DRAWINGS, AND SUPPLEMENTARY INFORMATION ISSUED BY THE ENGINEER, AND SHALL PROVIDE FOR OPERATING EFFICIENCY, NEATNESS OF APPEARANCE, AND EASE OF MAINTENANCE.

F. GUARANTEE: THE CONTRACTOR SHALL GUARANTEE AND SERVICE THE ENTIRE INSTALLATION FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE FINAL ACCEPTANCE OF THE INSTALLATION. THE CONTRACTOR SHALL DURING THE PERIOD OF THE GUARANTEE, REPLACE OR REPAIR AT HIS OWN EXPENSE ANY PIECE OF EQUIPMENT AND/OR MATERIAL WHICH IS FOUND TO BE DEFECTIVE. THE REPLACEMENT OR REPAIR SHALL BE PERFORMED THE SAME DAY OF NOTIFICATION IN AN EMERGENCY FASHION WHEN NOTIFIED BY THE OWNER OR AUTHORIZED REPRESENTATIVE. THE CONTRACTOR SHALL ALSO REPAIR ALL DAMAGE TO SURROUNDING WORK CAUSED BY THE FAILURE, REPAIR OR REPLACEMENT OF DEFECTIVE EQUIPMENT. ALL REFRIGERATION COMPRESSORS SHALL HAVE A FACTORY GUARANTEE INCLUDING PARTS AND LABOR FOR FIVE YEARS TOTAL. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, BALANCED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATION, AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVALS.

G. EQUIPMENT AND MATERIALS: MOST ITEMS OF MECHANICAL AND ELECTRICAL EQUIPMENT AND MATERIAL ARE NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS WITH A MANUFACTURER'S NAME AND CATALOG NUMBER. THIS DESIGNATION IS USED TO SET THE STANDARD FOR CONSTRUCTION, PERFORMANCE, OPERATION AND APPEARANCE. PRODUCTS OF OTHER MANUFACTURERS WILL BE CONSIDERED AND RULED UPON BY THE ENGINEER. THE SUBMISSION OF A SUBSTITUTION IMPLIES THAT THE ITEM HAS ALL NECESSARY UNDERWRITERS' LABORATORIES, BOARD OF STANDARDS AND APPEALS, NATIONAL ELECTRICAL CODE, AND NEW YORK STATE ELECTRICAL CODES ETC. APPROVALS. SHOULD THE ITEM BE FOUND NOT TO HAVE SUCH APPROVAL, IT SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER

H. SUBSTITUTIONS: DEVIATIONS FROM CONTRACT DOCUMENTS AND SUBSTITUTION OF MATERIALS OR EQUIPMENT FOR THOSE SPECIFIED SHALL BE REQUESTED INDIVIDUALLY IN WRITING. FURNISH INFORMATION AS REQUIRED TO DEMONSTRATE THAT THE ARTICLE, MATERIAL, APPARATUS, PRODUCT OR PROCESS TO BE USED IS ADEQUATELY COMPARABLE TO THAT SPECIFIED IN QUALITY, FINISH, DESIGN, EFFICIENCY, DURABILITY AND GENERAL APPEARANCE, AND HAS BEEN ELSEWHERE DEMONSTRATED TO BE SERVICEABLE FOR THE PURPOSES FOR WHICH IT IS INTENDED. IF TESTS OR DEMONSTRATIONS ARE REQUIRED BY THE OWNER'S REPRESENTATIVES, THE COST OF SUCH TESTS OR DEMONSTRATIONS SHALL BE BORNE BY THE CONTRACTOR. DESCRIBE REASON FOR CHANGE, CONNECTIONS TO ADJACENT MATERIALS, ELECTRICAL SERVICES, SERVICE ACCESS REQUIREMENTS, DIFFERENCES IN OPERATING CHARACTERISTICS OR CYCLES AND ALL OTHER POINTS OF DEVIATION. CONTRACTOR TO ASSUME FULL RESPONSIBILITY FOR SAFETY, COORDINATION WITH OTHER TRADES, OPERATION AND PERFORMANCE OF ALTERED SYSTEM.

I. THIS CONTRACTOR IS TO OBTAIN A COPY OF THE BUILDING RULES AND REGULATIONS PRIOR TO BID SUBMISSION. ALL WORK MUST BE INSTALLED IN ACCORDANCE WITH THE BUILDING RULES AND REGULATIONS. DETERMINE REQUIREMENTS AND THE EXTENT OF PREMIUM TIME WORK REQUIRED BY BUILDING, FOR THE PURPOSE OF THE BID ASSUME ANY NOISY WORK (E.G., CHOPPING, CORE DRILLING, WELDING, BRAISING, SOLDERING, ETC.) AND BASE BUILDING SYSTEMS INTERRUPTIONS ARE TO BE PERFORMED OUTSIDE NORMAL BUSINESS HOURS.

J. REMOVAL, TEMPORARY CONNECTIONS AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE INSTALLATION OF THE NEW SYSTEMS. ALL EXISTING CONDITIONS ARE NOT COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND MAKE ALL NECESSARY CHANGES REQUIRED BASED ON EXISTING CONDITIONS FOR PROPER INSTALLATION OF NEW WORK.

K. WHERE PIPE AND/OR DUCTWORK PENETRATE RATED WALLS, THE SPACE BETWEEN THE INSULATION AND THE WALL SHALL BE CAULKED WITH NON-COMBUSTIBLE MATERIAL IN AN APPROVED MANNER. ALL PIPING AND/OR DUCTWORK TO BE INSTALLED ABOVE HUNG CEILING UNLESS OTHERWISE NOTED ON DRAWINGS. THE CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL DRAWINGS FOR ALL CEILING ELEVATIONS.

L. ACCESS DOORS IN FINISHED CONSTRUCTION: THE CONTRACTOR SHALL PREPARE A LIST OF ALL ACCESS DOORS (MINIMUM 18"X18") REQUIRED FOR OPERATION AND MAINTENANCE OF ALL CONCEALED EQUIPMENT AND OTHER DEVICES, WHICH SHALL BE SUPPLIED TO THE GENERAL CONTRACTOR FOR INSTALLATION. THE COST TO FURNISH AND INSTALL ACCESS DOORS SHALL BE INCLUDED IN THIS CONTRACTORS BID. THIS CONTRACTOR IN ADVANCE OF CEILING INSTALLATIONS SHALL SUITABLY FIELD TAG AND IDENTIFY ALL CONCEALED EQUIPMENT, VALVES, DAMPERS, ETC., WHICH REQUIRE ACCESS DOOR PROVISIONS.

M. NEW DUCTWORK SHALL ARRIVE ON THE CONSTRUCTION SITE SEALED AND REMAIN PROTECTED FROM DEBRIS THROUGHOUT CONSTRUCTION PRIOR TO FINAL INSTALLATION. AIR DISTRIBUTION ACCESSORIES AND INTERNAL COMPONENTS OF ALL HVAC EQUIPMENT SHALL BE SEALED AND PROTECTED FROM DEBRIS WHILE ON THE CONSTRUCTION SITE PRIOR TO FINAL CONNECTION AND START-UP.

N. ALL VOLATILE ORGANIC COMPOUND (VOC) LIMITS OF ADHESIVES, SEALANTS AND SEALANT PRIMERS MUST COMPLY WITH SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) RULE #1168, AMENDMENT DATE OF JANUARY 7, 2005.

1.02 SCOPE OF WORK

A. THE CONTRACTOR SHALL FURNISH AND INSTALL AN HVAC SYSTEM COMPLETE WITH ALL EQUIPMENT, DUCTWORK, PIPING, INSULATION, CONTROLS, ACCESSORIES AND ASSOCIATED WORK IN ACCORDANCE WITH THE NEW YORK STATE BUILDING CODE, ALL NATIONAL, STATE AND LOCAL AUTHORITIES HAVING JURISDICTION, BUILDING MANAGEMENT, DESIGN DRAWINGS AND THIS SPECIFICATION.

B. THE WORK SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, HOISTING AND RIGGING, BREAKDOWN AND SETUP OF EQUIPMENT FOR INSTALLATION, SCAFFOLDING, AND SERVICES TO COMPLETE THE SYSTEM AND PROVIDE THE OWNER WITH A FULLY OPERATIONAL SYSTEM. ANY EQUIPMENT, PARTS, MATERIALS, ACCESSORIES, OR LABOR THAT IS NECESSARY FOR PROPER PERFORMANCE OF THE MECHANICAL WORK ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN OR SHOWN ON THE DRAWINGS SHALL BE FURNISHED AND INSTALLED WITHOUT ADDITIONAL COSTS. WHEN INSTALLATION OF A PART OF ANY SYSTEM (PLUMBING, HEATING, AIR CONDITIONING, ELECTRICAL OR OTHERWISE) REQUIRES A SHUTDOWN OF ANY OPERATING SYSTEM, CONNECT THE PARTIAL SYSTEM ONLY AFTER NOTIFICATION TO AND WITH APPROVAL OF THE OWNER. COORDINATE ACTIVITIES CLOSELY WITH THOSE OF SUBCONTRACTOR'S SO THE OPERATION IS RESTRICTED TO AS SHORT AN INTERVAL AS POSSIBLE AND "OUT OF SERVICE" TIME OF THESE FACILITIES IS KEPT TO A MINIMUM. ANY SHUTDOWN OF THE ELECTRICAL SYSTEM WILL BE DONE OUT OF HOURS AS APPROVED BY OWNER.

C. IT IS IMPERATIVE THAT EXISTING SYSTEMS BE MAINTAINED IN CONTINUOUS OPERATION DURING THE COURSE OF CONSTRUCTION; IF SHUTDOWNS ARE REQUIRED TO PERMIT THE DISCONNECTION AND REMOVAL OR RECONNECTION OF EXISTING WORK, OR FINAL CONNECTION TO BE MADE TO AN EXISTING SYSTEM, THEY SHALL OCCUR ONLY DURING OFF-HOURS AND ONLY AFTER PROPER PERMISSION HAS BEEN OBTAINED FROM BUILDING MANAGEMENT.

D. THE BUILDING MANAGEMENT REQUIRES NOT LESS THAN SEVEN DAYS NOTICE FOR SHUTDOWN OF ANY BUILDING SYSTEM.

E. MAKE AN ACCURATE TAKE-OFF ALL EXISTING EQUIPMENT, DUCTWORK, PIPING, CONDUIT, PANELBOARDS, WIRING DEVICES, AND OTHER ACCESSORIES BEING REMOVED DURING DEMOLITION AND INCLUDE THE COST FOR DISCONNECTING AND REMOVAL OF STATED EQUIPMENT, ETC. INTO THE BASE BID. REMOVALS SHALL BE AS SPECIFIED AND/OR AS INDICATED ON THE DRAWINGS. IN CERTAIN CASES, EQUIPMENT OR MATERIALS DESIGNATED FOR REMOVAL SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL BE TURNED OVER AT LOCATIONS IN THE BUILDING AS DIRECTED BY THE OWNER.

F. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING MANAGEMENT.

G. THIS TENANT/OWNER SHALL PROCURE THE SERVICES OF A THIRD PARTY INSPECTION COMPANY TO PERFORM ALL SPECIAL INSPECTIONS IN ACCORDANCE WITH THE NEW YORK CITY BUILDING CODE. SECURE ALL REQUIRED PERMITS AND APPROVALS AND TRANSMIT SAME TO THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES.

1.03 SHOP DRAWINGS, EQUIPMENT SUBMISSION, MAINTENANCE MANUALS

A. SUBMIT ONE (1) REPRODUCIBLE AND ONE (1) PRINT OF THE SHEET METAL AND PIPING SHOP DRAWINGS, 3/8" SCALE, CERTIFIED BY ALL TRADES THAT COORDINATION HAS BEEN ESTABLISHED.

B. SUBMIT THREE (3) COPIES OF ALL SHEET METAL AND PIPING SHOP STANDARDS LEAKAGE TEST CERTIFICATION, AIR AND WATER BALANCING REPORTS, AND CERTIFIED EQUIPMENT CUTS WITH CONSTRUCTION WIRING DIAGRAMS, AND AUTOMATIC TEMPERATURE CONTROL SHOP DRAWINGS INCLUDING CONTROL AND POWER WIRING DIAGRAMS, SEQUENCE OF OPERATIONS AND ALL CUTS OF EQUIPMENT AND DEVICES.

C. SUBMIT FOUR (4) BOOK BOUND OPERATING AND SERVICE MANUALS WHICH SHALL INCLUDE COPIES OF ALL AS-BUILT SHOP DRAWINGS FOLDED AND PLACED INTO BINDER POCKETS, AS-BUILT DRAWINGS IN ELECTRONIC FORMAT, COPIES OF REVIEWED EQUIPMENT CUTS FOR INSTALLED EQUIPMENT, COPIES OF EQUIPMENT START UP CHECKLISTS, AIR AND WATER BALANCING REPORTS, LEAK TESTS, HYDROSTATIC TESTS, WATER TREATMENT AND CHEMICAL CLEANING CERTIFICATION. CONTRACTOR SHALL INSTRUCT OWNERS PERSONNEL ON THE OPERATION OF ALL HVAC SYSTEMS.

D. AS WORK PROGRESSES AND FOR DURATION OF CONTRACTOR, MAINTAIN COMPLETE AND SEPARATE SET OF PRINTS OF CONTRACT DRAWINGS AT THE JOB SITE. RECORD WORK COMPLETED AND ALL CHANGES FROM ORIGINAL CONTRACT DRAWINGS CLEARLY AND ACCURATELY INCLUDING WORK INSTALLED AS A MODIFICATION OR ADDITION TO THE ORIGINAL DESIGN. RECORD VALVE TAGS AS THEY ARE INSTALLED. FINAL SUBMISSION OF REPRODUCIBLE AS-BUILT DRAWINGS ARE TO BE SIGNED AND CERTIFIED BY INSTALLING CONTRACTOR THAT THIS IS THE AS-BUILT CONDITION OF THE WORK. AS-BUILT SHOP DRAWINGS SHALL BE SUBMITTED IN DRAWING AND ELECTRONIC FORMAT (AUTOCAD 2007 MINIMUM).

PART 2- PRODUCT/APPLICATION

2.01 DUCTWORK

A. PROVIDE ALL SUPPLY, RETURN, EXHAUST, AND OUTSIDE AIR SHEET METAL DUCTWORK, FITTINGS, DAMPERS, TURNING VANES, ACCESS DOORS, PLENUMS, FLEXIBLE CONNECTIONS, AND SUPPORTS AND PERFORM LEAK TEST PER LATEST SMACNA STANDARDS AND NFPA90A AS MODIFIED BY NEW YORK STATE BUILDING CODE. ALL DUCTWORK JOINTS SHALL BE SEALED AIR TIGHT WITH APPROVED DUCT SEALANT, SIMILAR TO 3M-900.

B. PRE-FABRICATED BREECHING AND STACK:

1. PROVIDE DOUBLE WALL ALL FUEL RATED STAINLESS STEEL BREECHING AND STACK BY METALVENT, SECURITY CHIMNEY OR METALFAB.
2. SUPPLY ALL REQUIRED FITTINGS INCLUDING DRAFT INDUCER AS REQUIRED BY STACK/DRAFT CALCULATIONS AND STRUCTURAL SUPPORTS FOR A COMPLETE OPERATIONAL INSTALLATION. INSTALL SYSTEM AND MAKE IT SMOKE TIGHT IN STRICT CONFORMANCE TO MANUFACTURERS INSTRUCTIONS.
3. PROVIDE AN EXPLOSION RELIEF VALVE IN THE EXHAUST SYSTEM PER NFPA 37 AND A DRAIN CONNECTION AT THE FLUE BASE.
4. THE INNER AND OUTER PIPE JOINTS SHALL BE SEALED BY USE OF OVERLAPPING TYPE V-BANDS WITH PROPER SEALANTS FOR INTERIOR AND EXTERIOR INSTALLATIONS.
5. THE SYSTEM SHALL BE INSTALLED AS PER THE MANUFACTURERS RECOMMENDATIONS AND IN CONFORMANCE WITH THE MANUFACTURERS TEN (10) YEAR WARRANTY.
6. SUBMIT STACK CALCULATIONS FOR REVIEW AND APPROVAL BY THE ENGINEER.

PART 3- EXECUTION

3.01 A. PROVIDE AND INSTALL ALL EQUIPMENT AND ACCESSORIES OF THE SIZES AND CAPACITIES AS SCHEDULED AND AS INDICATED ON THE DRAWINGS AND IN ACCORDANCE WITH APPROVED SHOP DRAWINGS AND MANUFACTURERS RECOMMENDATIONS.

B. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL REQUIRED CLEARANCES FOR SERVICING AND MAINTENANCE. COORDINATE REQUIREMENTS WITH ALL TRADES.

MECHANICAL LEGEND

A(250)	DIFFUSER TYPE AND CFM (CUBIC FEET PER MINUTE). REFER TO SCHEDULE.
	DOUBLE LINE DUCT
	ACOUSTIC LINING IN DUCT
	FLEXIBLE DUCT
	WIRE MESH SCREEN
VD	VOLUME DAMPER
FD	FIRE DAMPER WITH DUCT ACCESS DOOR
BD	BACKDRAFT DAMPER
MD	MOTORIZED DAMPER WITH DUCT ACCESS DOOR
SD	SMOKE DAMPER WITH DUCT ACCESS DOOR
CD	COMBINATION FIRE/SMOKE DAMPER WITH DUCT ACCESS DOOR

ENERGY CODE PROGRESS INSPECTIONS

A LICENSED PROFESSIONAL ENGINEER OR ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF MECHANICAL/PLUMBING SYSTEMS AND CONDUCTING SUCH TESTS WILL FILE DOCUMENTATION AND REPORT OF TEST THAT THE SYSTEM COMPLIES WITH THE CONSTRUCTION DOCUMENTS AND APPLICABLE LAWS.

PROGRESS INSPECTIONS:

1. HVAC INSULATION AND SEALING

NEW YORK CITY BUILDING DEPARTMENT NOTES

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF THE BUILDING CODE, CITY OF NEW YORK, EFFECTIVE JANUARY 1, 2015 AND ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS TO DATE.

1. A TEST WILL BE CONDUCTED UNDER DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF THE MECHANICAL SYSTEM. THE TEST WILL SHOW COMPLIANCE WITH 2014 BUILDING CODE REQUIREMENTS AS OUTLINED IN SECTION [BC 1704].
2. THE LICENSED PROFESSIONAL ENGINEER OR ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF MECHANICAL SYSTEMS AND CONDUCTING SUCH TESTS WILL FILE DOCUMENTATION AND REPORT OF TEST THAT THE SYSTEM COMPLIES WITH THE CONSTRUCTION DOCUMENTS AND APPLICABLE LAWS.
3. SPECIAL INSPECTIONS:
   a. ALL MECHANICAL SYSTEMS, EQUIPMENT AND MATERIALS INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION [BC 1704.16] OF THE 2014 NYC BUILDING CODE.
4. SMOKE DETECTION SYSTEMS SHALL BE INSTALLED AND SEQUENCED TO FOLLOW CONTROLS OPERATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION [MC 606] OF THE 2014 NYC MECHANICAL CODE.
5. FIRE DAMPERS, SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS AND CEILING DAMPERS LOCATED WITHIN AIR DISTRIBUTION AND SMOKE CONTROL SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION [MC 607] OF THE 2014 NYC MECHANICAL CODE.
6. ALL FIRE DAMPERS SHALL BE ACCEPTED FOR USE BY THE NEW YORK CITY DEPARTMENT OF BUILDINGS AND SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF UL 555.
7. SMOKE DAMPERS SHALL BE ACCEPTED FOR USE BY THE NEW YORK CITY DEPARTMENT OF BUILDINGS AND SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF UL 555S.
8. COMBINATION FIRE/SMOKE DAMPERS SHALL BE ACCEPTED FOR USE BY THE NEW YORK CITY DEPARTMENT OF BUILDINGS AND SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF BOTH UL 555 AND UL 555S.
9. CEILING RADIATION DAMPERS SHALL BE ACCEPTED FOR USE BY THE NEW YORK CITY DEPARTMENT OF BUILDINGS AND SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF UL 555C.
10. THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
11. TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

LINE REPRESENTATION

	NEW PIPING, DUCTWORK OR EQUIPMENT
	EXISTING DUCTWORK
	EXISTING PIPING
	EXISTING PIPING, DUCTWORK OR EQUIPMENT TO BE REMOVED
	THERMOSTAT/SENSOR WIRING FROM SENSING DEVICE TO CONTROLLED DEVICE
	NEW EQUIPMENT
	EXISTING EQUIPMENT TO REMAIN
ER	EXISTING EQUIPMENT TO BE RELOCATED
RE	RELOCATED POSITION OF EXISTING EQUIPMENT
	EXISTING EQUIPMENT TO BE REMOVED

DRAWING NOTATIONS

#	DRAWING NOTE TAG
A / B	SECTION DESIGNATION ON DRAWING WHERE SECTION IS CUT A–SECTION DESIGNATION B–DRAWING NO.
	POINT OF NEW CONNECTION TO EXISTING WORK
	POINT OF DEMOLITION
	REMOVE AND PATCH EXISTING WORK
1	REVISION SYMBOL

ABBREVIATION

AC	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AF	AIR FILTER
AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
AL	ACOUSTIC LINING
ATC	AUTOMATIC TEMPERATURE CONTROL
AHC	ABOVE HUNG CEILING
BD	BACK DRAFT DAMPER
CD	CONDENSATE DRAIN
CFM	CUBIC FEET PER MINUTE
CG	CEILING GRILLE
CR	CEILING REGISTER
CW	COLD WATER
D	DRAIN
DN	DOWN
EF	EXHAUST FAN
FAI	FRESH AIR INTAKE
FC	FLEXIBLE CONNECTION
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FP-VAV	FAN POWERED VARIABLE AIR VOLUME
FSD	FIRE SMOKE DAMPER
GC	GENERAL CONTRACTOR
HWS&R	HOT WATER SUPPLY AND RETURN
MOD	MOTORIZED OUTSIDE AIR DAMPER
NK	NECK SIZE
OA	OUTSIDE AIR
OED	OPEN ENDED DUCT
RG	RETURN GRILLE
RA	RETURN AIR
TD/TRD	TRANSFER DUCT
TF	TRANSFER FAN
TR	TOP REGISTER
TG	TRANSFER GRILLE
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER (OPPOSED BLADE DAMPER)
WMS	WIRE MESH SCREEN

MECHANICAL DRAWING LIST

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 ENERGY CONSERVATION

THIS PLAN IS APPROVED ONLY FOR THE WORK ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

GE Crotonville - Executive Residence Building Water Heater Replacement

Old Albany Post Road,
Ossining, NY

Seal

10/29/21 ISSUED FOR REVIEW

Date Issued Revision No.

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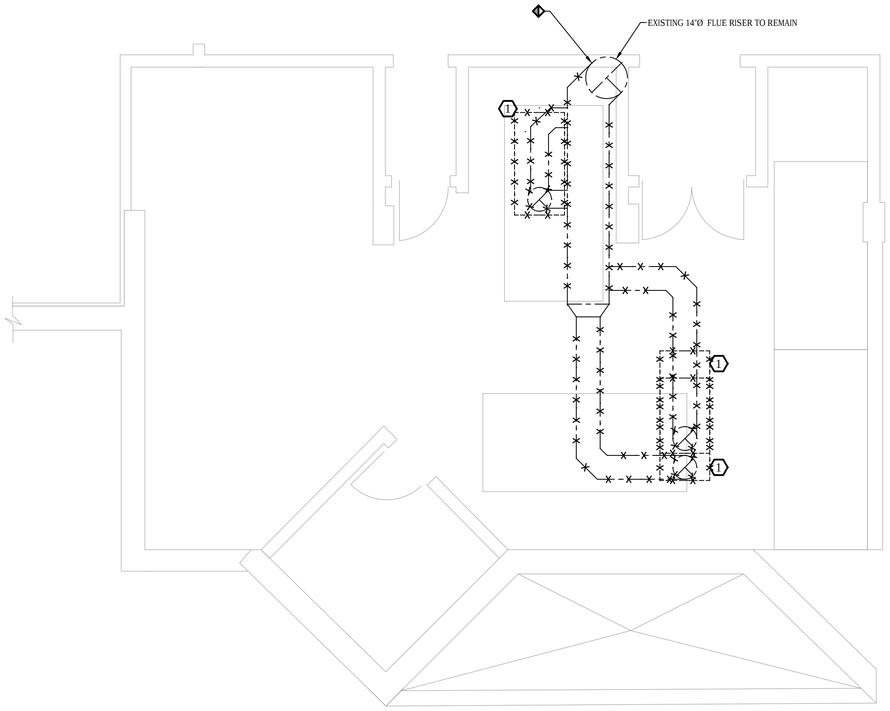
Drawing Title:
MECHANICAL
LEGEND & NOTES

Scale	Issue Date:
NOT TO SCALE	10/XX/2021
Proj. Manager: RR	Proj. Engineer: JJC

AMA Project No.
G003-03-017

Drawing No.
M-001

NYC DOB NUMBER



MECHANICAL DEMOLITION NOTES

1. GENERAL
   - A. PRIOR TO PROPOSAL SUBMISSION. THIS CONTRACTOR SHALL VISIT THE SITE TO REVIEW THE EXISTING CONDITIONS ASSOCIATED WITH THE SCOPE OF WORK AND ADJACENT AREAS TO ASCERTAIN THE DIFFICULTIES WHICH WILL AFFECT THE EXECUTION OF THE WORK OF THIS CONTRACT.
   - B. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT THE ABOVE SITE EXAMINATION HAS BEEN MADE AND LATER CLAIMS W NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD H BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.
   - C. DEMOLITION WORK SHALL INCLUDE ALL MATERIALS, LABOR, EXTENSIONS, CONNECTIONS, CUTTING REPAIRING, ADAPTING AND OTHER MECHANICAL WORK REQUIRED TO MAINTAIN SERVICE PENDING THE COMPLETION OF THE PERMANENT WORK. COORDINATE THE EXTENT OF DEMOLITION WORK WITH THE ARCHITECT AND BUILDING MANAGEMENT.
2. SCOPE OF WORK.
   - A. ALL EXISTING WORK REQUIRED TO REMAIN BUT INTERFERING WITH PROPOSED NEW MECHANICAL, PLUMBING, ELECTRICAL, AND GENERAL CONSTRUCTION WORK. INTERFERING WORK SHALL BE RELOCATED AND RECONNECTED USING MATERIALS CONFORMING TO STANDARDS OF THIS CONTRACT.
   - B. REMOVE EXISTING FLUE PIPE CONNECTED TO EXISTING HOT WATER HEATERS.PATCH FLUE UNTIL NEW CONNECTION IS MADE.
   - C. PROVIDE ADDITIONAL SUPPORT FOR ALL EXISTING DUCTS AND PIPING TO REMAIN WHICH ARE AFFECTED BY DEMOLITION OF EXISTING CEILIN AND PARTITIONS.
   - D. ALL MATERIALS AND EQUIPMENT SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS AND ENVIRONMENTAL REGULATIONS.
   - E. COORDINATE WITH OWNER TO DETERMINE WHETHER EQUIPMENT IS TO BE TURNED OVER FOR FUTURE USE AND STORED IN THEIR ASSOCIA STORAGE LOCATIONS.

MECHANICAL KEY NOTES

(1) PLUMBING CONTRACTOR SHALL DECOMMISSION AND REMOVE EXISTING GAS-FIRED WATER HEATER. DISCONNECT AND REMOVE EXISTING FLUE ASSOCIATED WITH GAS-FIRE WATER HEATER BACK TO FLUE MAIN. PATCH FLUE UNTIL RECONNECTION.

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 ENERGY CONSERVATION

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GE Crotonville - Executive Residence Building Water Heater Replacement

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Ossining, NY

Seal

Date	Issued	Revision No.
10/29/21	ISSUED FOR REVIEW	

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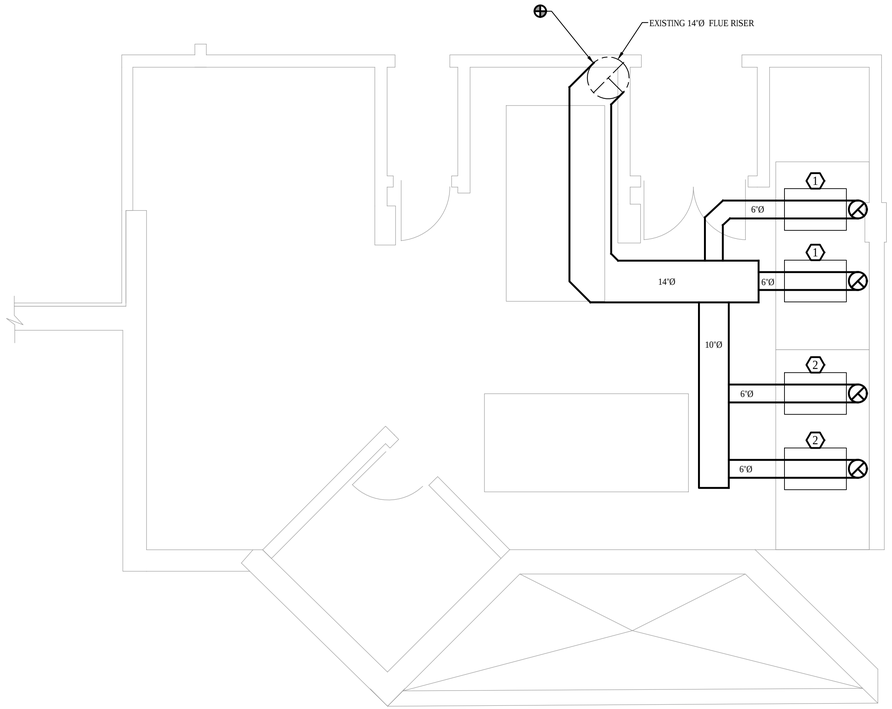
Drawing Title:
MECHANICAL
BASEMENT FLOOR
DEMOLITION PART PLAN

Scale	Issue Date
1/2"=1'-0"	10/XX/2021
Proj. Manager: RR	Proj. Engineer: JJC

AMA Project No.: G003-03-017

Drawing No.: M-201

NYC DOB NUMBER



MECHANICAL KEYED NOTES

1. PROVIDE NEW 6'Ø FLUE AND BREECHING FOR NEW AERCO MODEL INN 1350 HOT WATER HEATER. CONNECT TO EXISTING FLUE. COORDINATE FLUE CONNECTION TO HOT WATER HEATER WITH PLUMBING CONTRACTOR.
2. PROVIDE NEW 6'Ø FLUE AND BREECHING FOR NEW AERCO MODEL INN 1060 HOT WATER HEATER. CONNECT TO EXISTING FLUE. COORDINATE FLUE CONNECTION TO HOT WATER HEATER WITH PLUMBING CONTRACTOR.

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 ENERGY CONSERVATION

THIS PLAN IS APPROVED ONLY FOR THE WORK ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

GE Crotonville - Executive Residence Building Water Heater Replacement

Old Albany Post Road,
Ossining, NY

Seal

Date	Issued	Revision No.
10/29/21	ISSUED FOR REVIEW	

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Drawing Title:
MECHANICAL
BASEMENT FLOOR PART PLAN

Scale	Issue Date
1/2"=1'-0"	10/XX/2021
Proj. Manager: RR	Proj. Engineer: JJC

AMA Project No.: G003-03-017

Drawing No.: M-501

NYC DOB NUMBER

ELECTRICAL LEGEND

HOMERUN WITH PANEL DESIGNATION. NUMERAL WHERE USED INDICATES CIRCUIT NUMBER. IT SHALL CONSIST OF 2#12-s"C, UNLESS OTHERWISE NOTED.

CONCEALED WIRING (IN WALL OR CEILING)

CEILING MOUNTED JUNCTION BOX

WALL MOUNTED JUNCTION BOX

SLAB MOUNTED JUNCTION BOX

PULL/TAP BOX. *CSB*-CABLE SUPPORT BOX

WIREWAY

MOTOR

FINAL EQUIPMENT CONNECTION

TOGGLE-TYPE DISCONNECT SWITCH WITH FLEXIBLE EQUIPMENT CONNECTION.

ELECTRICAL SYMBOL FOR MISCELLANEOUS CONNECTION:

PS-PROJECTION SCREEN	PJ-PROJECTION EQUIPMENT	MS-MOTORIZED SHADE
MD-MOTORIZED DRAPE	SEC SECURITY EQUIPMENT	FA-FIRE ALARM

ELECTRICAL SYMBOL FOR MECHANICAL EQUIPMENT CONNECTION.

AHU-AIR HANDLING UNIT	FVAV-FAN POWERED VAV BOX	FCU-FAN COIL UNIT
AC-AIR CONDITIONING UNIT	VAV-VARIABLE AIR VOLUME BOX	UH-UNIT HEATER
EHC-ELECTRIC HEAT COIL	EWC-ELECTRIC WATER COOLER	MD-MOTORIZED DAMPER
HWH-HOT WATER HEATER	ECH-ELECTRIC CABINET HEATER	CP-CONDENSATE PUMP

UNFUSED DISCONNECT SWITCH U.O.N.

FUSED DISCONNECT SWITCH U.O.N.

COMBINATION MOTOR STARTER/DISCONNECT SWITCH

EXISTING SURFACE MOUNTED PANELBOARD

EXISTING FLUSH MOUNTED PANELBOARD

LIGHTING RELAY PANEL

NEW SURFACE MOUNTED PANELBOARD

NEW FLUSH MOUNTED PANELBOARD

ATS — AUTOMATIC TRANSFER SWITCH

VFD — VARIABLE FREQUENCY DRIVE

T — TRANSFORMER

LINE REPRESENTATION

NEW WIRING

EXISTING WIRING TO REMAIN

EXISTING WIRING BE REMOVED

NEW EQUIPMENT

(E) — EXISTING EQUIPMENT TO REMAIN

(ER) — EXISTING EQUIPMENT TO BE RELOCATED

(RE) — RELOCATED POSITION OF EXISTING EQUIPMENT

(X) — EXISTING EQUIPMENT TO BE REMOVED

DRAWING NOTATIONS

DRAWING NOTE TAG

SECTION DESIGNATION ON DRAWING WHERE SECTION IS CUT
A-SECTION DESIGNATION
B-DRAWING NO.

REVISION SYMBOL

ABBREVIATIONS

(NOT ALL ABBREVIATIONS ARE NECESSARILY USED ON THIS PROJECT)

A	AMP/AMPERE
ACU	AIR CONDITIONING UNIT
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FURNISHED FLOOR
AHJ	AUTHORITIES HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AV	AUDIO VISUAL
AWG	AMERICAN WIRE GAUGE
BDS	BATTERY DIAGNOSTIC SYSTEM
C, CDT	CONDUIT
CAC	COMPUTER ROOM GRADE AIR CONDITIONING UNIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CP	CONDENSATE PUMP
CT	COOLING TOWER
CU	COPPER
DISC	DISCONNECT
DWG	DRAWING
(E)	EXISTING TO REMAIN
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EHC	ELECTRIC HEAT COIL
ELEC	ELECTRICAL
EM	EMERGENCY
EPO	EMERGENCY POWER OFF
EWH	ELECTRIC HOT WATER HEATER
(ER)	EXISTING TO BE RELOCATED
FA	FIRE ALARM
FBO	FURNISHED BY OTHERS, INSTALLED AND WIRED BY THE ELECTRICAL CONTRACTOR
FCU	FAN COIL UNIT
FIBO	FURNISHED AND INSTALLED BY OTHERS, WIRED BY THE ELECTRICAL CONTRACTOR
FT	FEET
G, GND	GROUND
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
HZ	HERTZ
IG	ISOLATED GROUND
IDF	INFORMATION DISTRIBUTION FRAME
IT	INFORMATION TECHNOLOGY
JB	JUNCTION BOX
KVA	KILOVOLTAMPERE
KCMIL	THOUSAND CIRCULAR MILS
LCP	LIGHTING CONTROL PANEL
LD	LEAK DETECTOR
LDP	LEAK DETECTION PANEL
LTG	LIGHTING
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MER	MECHANICAL EQUIPMENT ROOM
MLO	MAIN LUG ONLY
MS	MOTORIZED SHADE
MTD	MOUNTED
N	NEUTRAL
(N)	NEW
(NE)	NEW TO REPLACE EXISTING
NF	NON-FUSED
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NTS	NOT TO SCALE
NYCEC	NEW YORK CITY ELECTRIC CODE
NYCECC	NEW YORK CITY ENERGY CONSERVATION CODE
P	POLE
PB	PULL BOX
PDU	POWER DISTRIBUTION UNIT
PH	PHASE
PS	PROJECTION SCREEN
PNL	PANEL
(RE)	RELOCATED EXISTING (NEW LOCATION)
RECEPT	RECEPTACLE
RGB	REFERENCE GROUND BAR
RM	ROOM
SD	SMOKE DETECTOR
SRG	SIGNAL REFERENCE GROUND BAR
SPEC	SPECIFICATION
SW	SWITCH
SWBD	SWITCHBOARD
TEL	TELEPHONE
TF	TRANSFER FAN
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UNF	UNFUSED
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT/VOLTAGE
VA	VOLTAMPERE
VAV	VARIABLE AIR VOLUME
W	WIRE
WP	WEATHERPROOF
(X)	REMOVE

GENERAL NOTES

1. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC. SIZES AND LOCATION OF EQUIPMENT AND WIRING ARE SHOWN TO SCALE WHERE POSSIBLE, BUT MAY BE DISTORTED FOR CLARITY ON THE DRAWINGS. FINAL LOCATION OF OUTLETS AND EQUIPMENT SHALL BE AS APPROVED BY THE ARCHITECT. IT IS NOT WITHIN THE SCOPE OF THE DRAWINGS TO SHOW ALL NECESSARY BENDS, OFFSET, PULL BOXES AND OBSTRUCTIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL THEIR WORK TO CONFORM TO THE STRUCTURE, PRESERVE HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAN.
2. REFER TO SPECIFICATIONS COVERING HVAC, PLUMBING AND FIRE PROTECTION WORK FOR POSSIBLE ADDITIONAL WORK TO BE PERFORMED UNDER THE ELECTRICAL CONTRACT.
3. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING THE FULL SET OF BID DOCUMENTS TO BE AWARE OF THE TOTAL SCOPE PRIOR TO SUBMITTING BID.
4. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WORK WITH HVAC, PLUMBING AND OTHER TRADES FOR EXACT LOCATION OF ALL CONTROL DEVICES. LOCATION AS SHOWN ON THE ELECTRICAL PLANS ARE APPROXIMATE. ALL FINIAL CONNECTIONS TO MOTOR TERMINALS SHALL BE DONE WITH A MINIMUM 18" OF LIQUID TIGHT FLEXIBLE CONDUIT USING THE APPROPRIATE FITTINGS. PROVIDE EXTERIOR GROUND WIRE WRAPPED AROUND FLEXIBLE CONDUIT WHERE REQUIRED BY CODE.
5. ALL NOTATIONS OF "SCALE" ARE INTENDED AS APPROXIMATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ASCERTAIN THE EXACT LOCATIONS OF ALL EQUIPMENT AND VERIFYING REQUIRED CLEARANCES.
6. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL LABOR AND MATERIALS REQUIRED TO PRODUCE COMPLETE AND WORKING SYSTEMS. THE CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE WIRING FOR LIGHTING, POWER, HVAC EQUIPMENT, ETC.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD MEASUREMENTS AND VERIFICATION OF FIELD CONDITIONS PRIOR TO PERFORMING ANY WORK. ALL CHANGES IN WORK NECESSITATED BY FAILURE OF THIS CONTRACTOR TO COMPLY WITH THIS CONDITION SHALL BE UNDERTAKEN BY THIS CONTRACTOR AT THEIR OWN EXPENSE.
8. ALL AREAS ABOVE PANELBOARDS SHALL BE FREE FROM WORK OF OTHER TRADES PER NEC/NYCEC SECTION 110.26(F).
9. ALL WORKING CLEARANCES FOR PANELBOARDS AND OTHER ELECTRICAL EQUIPMENT SHALL COMPLY WITH THE NEC ELECTRIC CODE AND ASSOCIATED TABLES.
10. NUMERAL INDICATED ADJACENT TO DEVICES AND EQUIPMENT INDICATES CIRCUIT NUMBER IN PANEL. PROVIDE WIRE AND CONDUIT TO INTERCONNECT THE AFOREMENTIONED, ASSOCIATED SWITCHES, AND CONTROL DEVICES WITH SAME CIRCUIT NUMBERS. ROUTE TO PANEL VIA CONDUIT HOMERUNS SHOWN.
11. ELECTRICAL CONTRACTOR SHALL PROVIDE UPDATED TYPEWRITTEN PANEL DIRECTORIES IN COMPLIANCE WITH NEC ARTICLE 408.4. THE IDENTIFICATION SHALL INCLUDE AN APPROVED DEGREE OF DETAIL THAT ALLOWS EACH CIRCUIT TO BE DISTINGUISHED FROM ALL OTHERS. CIRCUITS USED FOR THE SAME PURPOSE MUST BE IDENTIFIED BY THEIR LOCATION. UTILIZE ROOM NUMBERS, WORKSTATION NUMBERS, COLUMN GRID LINES, ETC. SUBMIT SCHEDULES TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION
12. PROVIDE TIE BARS ON ALL SINGLE POLE CIRCUIT BREAKERS SERVING MULTI-WIRE BRANCH CIRCUITS IN COMPLIANCE WITH NEC ARTICLE 210.4 (B). EXISTING CIRCUIT BREAKERS REQUIRING TIE HANDLES SHALL BE REPLACED WITH NEW TRIP FREE HANDLE BREAKERS. NEW BREAKERS SHALL MATCH BASE BUILDING STANDARDS, SHALL BE FROM SAME MANUFACTURER OF EXISTING BREAKERS THAT ARE TO REMAIN IN PANEL, AND SHALL BE COMPATIBLE WITH PANELBOARD. CONTRACTOR SHALL COORDINATE REQUIREMENTS IN FIELD WITH EXISTING EQUIPMENT.
13. ARMORED CABLE SHALL NOT BE INSTALLED EXPOSED IN ELECTRIC CLOSETS, MECHANICAL ROOMS, TELEPHONE CLOSETS, ETC. EMT OR CONDUIT SHALL BE UTILIZED FROM ELECTRIC CLOSET TO FIRST RECEPTACLE OR LIGHT FIXTURES.
14. THE CONTRACTOR SHALL DO NECESSARY CUTTING, CHOPPING AND PATCHING FOR WORK UNDER THIS CONTRACT. ALL CHOPPING, ETC. SHALL BE PERFORMED AFTER HOURS AND COORDINATED WITH BUILDING MANAGEMENT.
15. PROVIDE UNFUSED DISCONNECT SWITCHES FOR ALL MECHANICAL EQUIPMENT UNLESS OTHERWISE NOTED ON CONSTRUCTION DOCUMENTS OF HVAC SCHEDULES.
16. THE MINIMUM RATING OF DISCONNECT SWITCHES SHALL BE EQUAL TO OR GREATER THAN THE RATING OF THE PROTECTIVE DEVICE ON THE SUPPLY SIDE OF THE DISCONNECT SWITCH. MINIMUM DISCONNECT SWITCH SIZE IS 30 AMPERES.
17. WIRING IN ALL PLENUM HUNG CEILING INSTALLED WITHOUT CONDUIT OR EMT SHALL BE TEFLON JACKETED OR LISTED FOR INSTALLATION IN A PLENUM.
18. ALL CONTROL WIRING ASSOCIATED WITH MECHANICAL EQUIPMENT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
19. NO LOW VOLTAGE WIRING SHALL BE PERMITTED IN THE SAME RACEWAY AS POWER WIRING.
20. FURNISH AND INSTALL WIRING FOR EQUIPMENT FURNISHED BY OTHERS AS SHOWN ON ARCHITECTURAL, MECHANICAL, PLUMBING, AND/OR ELECTRICAL DRAWINGS. COORDINATE WITH OTHER TRADES FOR DETAILS OF INSTALLATION AND WIRING REQUIREMENTS.
21. PROVIDE FIRESTOPPING ON ALL NEW AND EXISTING PENETRATIONS THROUGH THE WALL AND FLOOR DUE TO DEMOLITION OR NEW CONSTRUCTION. THE FIRE RATING OF THE PENETRATION SEALING METHOD SHALL MATCH THE RATING OF THE WALL OR FLOOR. USE A UL LISTED SEALING METHOD WHICH IS ACCEPTABLE TO BUILDING MANAGEMENT.
22. BRANCH CIRCUIT HOMERUN CONDUCTORS SHALL BE INCREASED ONE SIZE TO COMPENSATE FOR VOLTAGE DROP WHEN 120V CIRCUITING EXCEEDS 100 FEET.
23. UPON COMPLETION OF ALL ELECTRICAL WORK, THE ELECTRICAL CONTRACTOR SHALL ADJUST AND TEST ALL CIRCUITS, RECEPTACLES, SWITCHES, LIGHTS, MOTORS AND ANY OTHER ELECTRICAL ITEMS INSTALLED. ANY DEFECTIVE ITEMS SHALL BE IMMEDIATELY REPAIRED OR REPLACED WITH NEW AND THAT PORTION OF THE SYSTEM RETESTED. ALL SUCH REMEDIAL WORK SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.
24. COORDINATE ANY REQUIRED SHUTDOWNS AND SERVICE CONNECTION POINTS WITH BUILDING MANAGEMENT IN ACCORDING WITH BUILDING RULES AND REGULATIONS OR AT LEAST TEN (10) BUSINESS DAYS' NOTICE PRIOR TO ANY WORK, WHICHEVER IS MORE STRINGENT.
25. EXISTING BASE BUILDING CORE DEVICES (LIGHTING, RECEPTACLES, ETC.) SHALL REMAIN ACTIVE. IF DEVICES HAVE BEEN DISCONNECTED BY DEMOLITION, DEVICES SHALL BE RECONNECTED AND RE-ENERGIZED UTILIZING SPARE CIRCUIT BREAKERS. ALL CORE DEVICES VISUAL TO TENANT SHALL BE REMOVED AND REPLACED WITH NEW DEVICES MATCHING PROJECT STANDARDS.

POWER NOTES

1. ELECTRICAL CONTRACTOR SHALL MAINTAIN THE CONTINUITY OF CIRCUITING IN AREAS WHICH ARE CONNECTED TO EXISTING ELECTRICAL DEVICES AND ELECTRICAL SERVICES STILL IN USE.
2. CIRCUIT NUMBERS ARE FOR CONTRACTOR'S REFERENCE ONLY AND MAY NOT NECESSARILY REFLECT THE EXACT CIRCUIT ARRANGEMENT IN PANELS. ELECTRICAL CONTRACTOR SHALL UTILIZE EXISTING SPARE CIRCUIT BREAKERS AND CIRCUIT BREAKERS MADE AVAILABLE FROM DEMOLITION FOR CIRCUITS INDICATED TO RESPECTIVE PANEL. CONTRACTOR SHALL ADJUST ACCORDINGLY IN THE FIELD TO BALANCE THE CIRCUITRY EVENLY ON ALL PHASES ON EACH PANEL. FINAL CIRCUIT NUMBERS AND ARRANGEMENT MUST BE INDICATED ON AS-BUILT DRAWINGS AS PER SPECIFICATIONS.
3. ANY DISCREPANCIES SHALL BE DIRECTED TO ARCHITECT PRIOR TO BIDDING. WHERE DISCREPANCIES CANNOT BE RESOLVED PRIOR TO SUBMITTING BIDS, CONTRACTOR SHALL PROCEED BASED ON MORE COSTLY OR RESTRICTIVE INTERPRETATIONS.

DRAWING LIST

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Drawing Title:
ELECTRICAL
BASEMENT FLOOR
LEGEND & NOTES

Scale: NOT TO SCALE
Issue Date: 10/XX/2021
Proj. Manager: RR
Proj. Engineer: VM
AMA Project No: G003-03-017
Drawing No: E-001.00
NYC DOB NUMBER

ELECTRICAL SPECIFICATIONS

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS:

A. ALL WORK SHALL COMPLY WITH REQUIREMENTS OF THE ELECTRICAL CODE OF THE CITY OF NEW YORK, THE NEW YORK CITY BUILDING CODE, BUILDING MANAGEMENT AND ALL AUTHORITIES HAVING JURISDICTION (AHJ), APPLICABLE NATIONAL, STATE AND LOCAL CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK SHALL BE INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS.

B. IF A CONFLICT OCCURS IN THE SPECIFICATIONS AND/OR ON THE DRAWINGS, THE MORE STRINGENT SITUATION SHALL APPLY.

C. ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THIS WORK. FINAL ACCEPTANCE SHALL BE DEFINED AS THE TIME AT WHICH THE ELECTRICAL WORK IS TAKEN OVER AND ACCEPTED BY THE OWNER. ENGAGE THE SERVICES OF VARIOUS MANUFACTURERS SUPPLYING THE EQUIPMENT FOR THE PROPER STARTUP, OPERATION AND TRAINING OF ALL SYSTEMS INSTALLED. INSTRUCT THE OWNERS PERSONNEL IN THE PROPER OPERATION AND SERVICING OF THE EQUIPMENT.

D. ELECTRICAL CONTRACTOR SHALL VISIT AND EXAMINE CAREFULLY THE EXISTING AREAS AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND WITH DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THE WORK. CONTRACTOR SHALL PERFORM THIS, PRIOR TO SUBMITTING THEIR PROPOSAL. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN UNDERTAKEN.

E. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL DEVICES INCLUDING DIMENSIONS AND ELEVATIONS. WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICTS.

F. ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN OR SHOWN ON THE DRAWINGS, ANY EQUIPMENT, MATERIALS, ACCESSORIES, OR LABOR REQUIRED FOR PROPER AND COMPLETE INSTALLATION OF THE ELECTRICAL WORK SHALL BE FURNISHED AND INSTALLED AS PART OF THE ORIGINAL BID.

G. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE LATEST COPY OF THE BUILDING RULES AND REGULATIONS TO DETERMINE THE EXTENT OF PREMIUM TIME WORK REQUIRED. BASE BUILDING SYSTEM INTERRUPTIONS ARE TO BE PERFORMED OUTSIDE OF NORMAL BUSINESS HOURS. COORDINATE WITH BUILDING OWNER FOR ANY SERVICE INTERRUPTION OF EXISTING SYSTEMS AND GIVE NOTICE AS REQUIRED BY BUILDING RULES AND REGULATIONS.

H. ANY DAMAGE TO EXISTING PARTITIONS, FLOORS, CEILINGS OR ANY PART OF THE BUILDING OR EQUIPMENT HOUSED THEREIN CAUSED BY THE WORK OF THE CONTRACTOR SHALL BE REPAIRED AT NO ADDITIONAL EXPENSE TO THE OWNER.

I. ALL NEW MATERIALS REQUIRED SHALL CONFORM WITH THE STANDARDS OF THE UNDERWRITERS LABORATORIES, INC. (UL) IN EVERY CASE WHERE SUCH A STANDARD EXISTS.

J. DURING THE PROJECT DURATION, THE BUILDING MANAGEMENT OFFICE AND ITS DESIGNATED REPRESENTATIVE SHALL BE ABLE TO INSPECT THE WORK IN PROGRESS. ANY WORK WHICH THE BUILDING MANAGEMENT DEEMS UNACCEPTABLE SHALL BE REMOVED AND REPLACED AT THE EXPENSE OF CONTRACTOR/TENANT.

K. ALL EQUIPMENT INSTALLED OR CONNECTED INTO THE BUILDING RISERS, SYSTEMS AND INFRASTRUCTURE SHALL BE APPROVED IN ADVANCE BY THE BUILDING PRIOR TO INSTALLATION.

1.02 SCOPE OF WORK:

A. PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR COMPLETE, SAFE INSTALLATION OF ALL ELECTRICAL WORK. THE SCOPE OF WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

1.
2. INSTALLATION OF NEW RACEWAY AND CONDUCTORS FOR LIGHTING AND POWER.
3. ADDITION OR MODIFICATION OF EXISTING ELECTRICAL DISTRIBUTION EQUIPMENT.
4. INSTALLATION OF MECHANICAL EQUIPMENT FEEDERS AND FINAL CONNECTIONS TO MECHANICAL EQUIPMENT.
5. GROUNDING OF ALL EQUIPMENT AS REQUIRED BY CODE AND AS SPECIFIED.
6. DEMOLITION AND REMOVAL OF ELECTRICAL EQUIPMENT AS REQUIRED INCLUDING ALL CONDUCTORS AND CONDUIT BACK TO THEIR SOURCE.
7. MAINTENANCE AND PROPER OPERATION OF EXISTING BASE BUILDING SYSTEMS WITHIN THE CONTRACT AREA IN ACCORDANCE WITH THE REQUIREMENTS OF BUILDING MANAGEMENT.
8. RECEIPT AND INSTALLATION OF DEVICES, EQUIPMENT, SYSTEMS, SUPPLIED BY OTHERS AS DETAILED.
9. COORDINATION WITH OTHER TRADES.

1.03 SUBSTITUTIONS:

A. NO SUBSTITUTE MATERIAL OR MANUFACTURER OF EQUIPMENT SHALL BE PERMITTED WITHOUT A FORMAL WRITTEN SUBMITTAL TO THE ENGINEER WHICH INCLUDES ALL DIMENSIONAL, PERFORMANCE AND MATERIAL SPECIFICATIONS. ANY CHANGES IN LAYOUT, MECHANICAL CHARACTERISTICS, STRUCTURAL REQUIREMENTS, OR DESIGN DUE TO THE USE OF A SUBSTITUTION SHALL BE SUBMITTED TO THE ENGINEER AS PART OF THIS PROPOSAL. THE CONTRACTOR TAKES FULL RESPONSIBILITY FOR THE SUBSTITUTION AND ALL CHANGES RESULTING FROM SUBSTITUTION. ALL ITEMS SHALL BE SUBMITTED FOR REVIEW IN CONJUNCTION WITH THE SUBMITTAL OF THE ALTERNATE. ANY SUBSTITUTION MUST BE SUBMITTED WITH AN EXPLANATION WHY SUBSTITUTION IS BEING UTILIZED. IF THE SUBSTITUTED ITEM DEVIATES FROM THE SPECIFIED ITEM, THOSE DEVIATIONS ARE TO BE IDENTIFIED ON A LINE BY LINE BASIS. IF THE SUBSTITUTION IS BEING UTILIZED FOR FINANCIAL REASONS, THE ASSOCIATED CREDIT MUST BE SIMULTANEOUSLY SUBMITTED.

B. ALL SUBSTITUTED EQUIPMENT SHALL CONFORM TO SPACE REQUIREMENTS AND PERFORMANCE REQUIREMENTS SHOWN ON CONTRACT DOCUMENTS.

C. CONTRACTOR SHALL SUBMIT BID BASED ON SPECIFIED ITEMS AND SHALL SUPPLY AS AN ALTERNATE PRICE ANY SUBSTITUTIONS.

D. ALL EQUIPMENT SHALL BE APPROVED FOR USE IN THE STATE OF NEW YORK.

1.04 SHOP DRAWINGS:

A. SHOP DRAWINGS SUBMISSION SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

1. DISTRIBUTION EQUIPMENT (PANELS, SWITCHES, ETC.).
2. OVERCURRENT PROTECTIVE DEVICES (FUSES AND CIRCUIT BREAKERS).
3. CONDUIT, RACEWAYS, WIREWAYS
4. WIRING
5. SCALED FIELD DRAWINGS.

B. ALL SUBMISSIONS SHALL BE MADE ELECTRONICALLY IN PDF FORMAT.

C. CHANGES MADE TO SHOP DRAWINGS BY THE CONSULTANT WILL NOT AFFECT THE CONTRACT PRICE.

1.06 COORDINATION

A. COORDINATE CHASES, SLOTS, INSERTS, SLEEVES, AND OPENINGS WITH GENERAL CONSTRUCTION WORK AND ARRANGE IN BUILDING STRUCTURE DURING PROGRESS OF CONSTRUCTION TO FACILITATE THE ELECTRICAL INSTALLATIONS THAT FOLLOW.

1. SET INSERTS AND SLEEVES IN POURED-IN-PLACE CONCRETE, MASONRY WORK, AND OTHER STRUCTURAL COMPONENTS AS THEY ARE CONSTRUCTED.

B. SEQUENCE, COORDINATE, AND INTEGRATE INSTALLING ELECTRICAL MATERIALS AND EQUIPMENT FOR EFFICIENT FLOW OF THE WORK. COORDINATE INSTALLING LARGE EQUIPMENT REQUIRING POSITIONING BEFORE CLOSING IN THE BUILDING.

C. COORDINATE ELECTRICAL SERVICE CONNECTIONS TO COMPONENTS FURNISHED BY UTILITY COMPANIES.

1. COORDINATE INSTALLATION AND CONNECTION OF EXTERIOR UNDERGROUND AND OVERHEAD UTILITIES AND SERVICES, INCLUDING PROVISION FOR ELECTRICITY-METERING COMPONENTS.
2. COMPLY WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION AND OF UTILITY COMPANY PROVIDING ELECTRICAL POWER AND OTHER SERVICES.

D. COORDINATE LOCATION OF ACCESS PANELS AND DOORS FOR ELECTRICAL ITEMS THAT ARE CONCEALED BY FINISHED SURFACES. ACCESS DOORS AND PANELS ARE SPECIFIED IN A SEPARATE DIVISION OF THE SPECIFICATIONS.

E. WHERE ELECTRICAL IDENTIFICATION DEVICES ARE APPLIED TO FIELD-FINISHED SURFACES, COORDINATE INSTALLATION OF IDENTIFICATION DEVICES WITH COMPLETION OF FINISHED SURFACE.

F. WHERE ELECTRICAL IDENTIFICATION MARKINGS AND DEVICES WILL BE CONCEALED BY ACOUSTICAL CEILINGS AND SIMILAR FINISHES, COORDINATE INSTALLATION OF THESE ITEMS BEFORE CEILING INSTALLATION.

1.07 AS-BUILT DRAWINGS:

A. CONTRACTOR SHALL MAINTAIN RECORD DRAWING PRINTS ON JOB SITE AND RECORD, AT TIME OF OCCURRENCE, DEVIATIONS FROM CONTRACT DOCUMENTS.

B. AT THE COMPLETION OF WORK AND BEFORE FINAL ACCEPTANCE, PROVIDE AS-BUILT DRAWINGS OF THE INSTALLATION, IN AUTO-CAD (VERSION AS REQUESTED BY CLIENT).

C. INCORPORATE ALL CHANGES AND DEVIATIONS FROM BID DRAWINGS, UTILIZING NORMAL RECOGNIZED DRAFTING PROCEDURES THAT MATCH THE ORIGINAL DRAFTING METHODOLOGY. AS-BUILT DRAWINGS SHALL INDICATE ACTUAL LOCATIONS OF ALL EQUIPMENT.

D. ALL MAIN BRANCH CONDUIT RUNS, JUNCTION BOX LOCATIONS, CONDUIT RUNS FOR ALL FLOOR OUTLETS, ETC., MUST BE REFLECTED ON THE DRAWINGS.

E. CLEARLY INDICATE THE WORDS "AS-BUILT" IN THE TITLE BLOCK COLUMN OF THE DRAWINGS AS WELL AS THE ELECTRICAL CONTRACTOR'S NAME AND ADDRESS.

F. SUBMIT ONE (1) PDF SET TO CONSULTANT FOR REVIEW. WHEN FOUND ACCEPTABLE BY THE CONSULTANT, SUBMIT THREE (3) SETS OF PRINTS TOGETHER WITH THE CAD AND PDF DISK FOR PRESENTATION TO THE LANDLORD AND TENANT.

1.08 OPERATION AND MAINTENANCE MANUALS:

A. PROVIDE TWO (2) SETS OF OPERATION AND MAINTENANCE MANUALS SUBMITTED IN HARD COVER 3-RING BINDERS. INCLUDE THE FOLLOWING INFORMATION IN THE OPERATIONS AND MAINTENANCE MANUALS:

1. NAMES AND ADDRESS OF LOCAL SUPPLIERS FOR THE ITEMS INCLUDED.
2. TECHNICAL DATA, PRODUCT DATA, SUPPLEMENTED BY BULLETINS, COMPONENT ILLUSTRATIONS, EXPLODED VIEWS, TECHNICAL DESCRIPTIONS OF ITEMS, AND PARTS LISTS. ADVERTISING OR SALES LITERATURE IS NOT ACCEPTABLE.
3. THE CONSULTANTS REVIEWED SHOP DRAWINGS.
4. CERTIFICATE(S) OF ACCEPTANCE FROM THE AUTHORITIES INSPECTION DEPARTMENT.
5. VERIFICATION REPORTS AND CERTIFICATE(S) FOR ANY NEW FIRE ALARM COMPONENTS OR TIE-INS AND ANY BASE BUILDING TIE-INS FOR MISCELLANEOUS SYSTEMS (I.E. SECURITY, LIGHTING CONTROL, DIGITAL METERING).
6. WRITTEN GUARANTEE.

B. REVIEW INFORMATION PROVIDED IN THE MAINTENANCE INSTRUCTIONS AND MANUALS WITH THE TENANT'S OPERATING PERSONNEL AND LANDLORD'S OPERATING PERSONNEL WHERE BASE BUILDING SYSTEMS ARE REVISED, TO ENSURE A COMPLETE UNDERSTANDING OF THE ELECTRICAL EQUIPMENT AND SYSTEMS AND THEIR OPERATION.

1.09 MATERIALS AND EQUIPMENT:

A. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY AND MANUFACTURED TO THE STANDARDS SPECIFIED.

B. WHERE THERE IS NO ALTERNATIVE TO SUPPLYING EQUIPMENT WHICH IS NOT NRTL CERTIFIED, OBTAIN SPECIAL APPROVAL FROM THE LOCAL ELECTRICAL SAFETY AUTHORITY.

1.10 INSURANCE:

A. PROVIDE AND MAINTAIN INSURANCE TO PROTECT THE LANDLORD, TENANT AND TRADES FROM ALL POSSIBLE CLAIMS. SUBMIT WITH BID FOR AN AMOUNT ACCEPTABLE TO LANDLORD AND TENANT.

1.11 CONTRACT DOCUMENTS:

A. THE DRAWINGS FOR THE ELECTRICAL WORK ARE DIAGRAMMATIC PERFORMANCE DRAWINGS ONLY, INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE THE GENERAL ARRANGEMENT AND APPROXIMATE SIZE AND LOCATION OF ELECTRICAL EQUIPMENT. THE DRAWINGS DO NOT INTEND TO SHOW ARCHITECTURAL, INTERIOR DESIGN, MECHANICAL, STRUCTURAL OR BASE BUILDING DETAILS. BE RESPONSIBLE FOR A THOROUGH KNOWLEDGE OF SAME BEFORE PROCEEDING WITH THE WORK.

B. DO NOT SCALE OR MEASURE DRAWINGS, BUT OBTAIN INFORMATION REGARDING ACCURATE DIMENSIONS FROM THE DIMENSIONS SHOWN ON THE DESIGN CONSULTANT/ARCHITECT'S DRAWINGS, OR BY SITE MEASUREMENTS.

C. ANY DISCREPANCIES BETWEEN DRAWINGS AND/OR SPECIFICATIONS AND EXISTING CONDITIONS, MUST BE REFERRED TO THE DESIGN CONSULTANT/ARCHITECT BEFORE ANY WORK AFFECTED IS BEGUN.

D. COOPERATE AND COORDINATE WITH OTHER CONTRACTORS IN LAYING OUT OF WORK SO AS NOT TO CONFLICT WITH THE WORK OF OTHER CONTRACTORS. CARRY OUT WORK PROMPTLY AS PER CONSTRUCTION SCHEDULE AND COORDINATE WITH WORK OF OTHER CONTRACTORS.

E. MAKE, AT NO ADDITIONAL COST, ANY CHANGES OR ADDITIONS TO MATERIALS AND EQUIPMENT NECESSARY TO ACCOMMODATE STRUCTURAL CONDITIONS (OFFSETS AROUND BEAMS, COLUMN, ETC.)

1.12 INTENT:

A. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS THAT THE CONTRACTOR PROVIDE COMPLETE AND OPERATIONAL SYSTEMS AS REQUIRED. WHERE DIFFERENCES OCCUR, THE MAXIMUM CONDITION SHALL GOVERN.

B. ANY MISCELLANEOUS ITEMS, HARDWARE, DEVICES, WIRING, ETC., NOT SPECIFICALLY DESCRIBED, BUT REQUIRED FOR THE OPERATION OF THE SYSTEM, MUST BE PROVIDED AND INCLUDED AS PART OF THE BID.

1.15 ACCESS DOORS:

A. WHEREVER ANY BASE BUILDING EQUIPMENT REQUIRES ACCESSIBILITY, MAINTENANCE OR ADJUSTMENT, PROVIDE ACCESS DOORS APPROVED BY DESIGN CONSULTANT/ARCHITECT AND LANDLORD. ARRANGE FOR ITS INSTALLATION BY THE DIVISION IN WHOSE WORK IT OCCURS.

1.16 DRY WALL CEILINGS:

A. IN ALL DRYWALL CEILING AREAS, DIVISION 16 IS TO REMOVE AND RELOCATE ALL EXISTING JUNCTION BOXES TO ACCESSIBLE CEILING SPACE.

B. PROVIDE ACCESS PANELS FOR ALL NEW AND EXISTING DEVICES AS REQUIRED

1.18 NOISE AND VIBRATION:

A. ELECTRICAL EQUIPMENT IS TO OPERATE WITHOUT OBJECTIONABLE NOISE OR VIBRATION. IF, IN THE OPINION OF THE LANDLORD, ARCHITECT OR CONSULTANT, THE EQUIPMENT OPERATES WITH EXCESSIVE NOISE OR VIBRATION, THEN THE EQUIPMENT MUST BE REPLACED OR NOISE OR VIBRATION ELIMINATED.

B. CONNECTIONS TO NOISE-PRODUCING AND VIBRATING EQUIPMENT MUST BE MADE WITH LIQUID-TIGHT FLEXIBLE CONDUIT AND ASSOCIATED CONNECTORS. THIS INCLUDES TRANSFORMERS, DIMMING EQUIPMENT RACKS, AND MOTORS. USE A MINIMUM OF 3 FT OF FLEXIBLE CABLE WITH SLACK AT EACH DEVICE.

C. VIBRATION ISOLATORS ARE TO BE PROVIDED WHERE INDICATED OR REQUIRED. TRANSFORMERS TO BE ISOLATED FROM THE STRUCTURE, WITH SPRING AND RUBBER ISOLATORS WHEN WALL MOUNTED OR SUSPENDED AND 1/2" HIGH DENSITY NEOPRENE SANDWICH PADS (TYPE MWP) WHEN FLOOR MOUNTED.

1.19 TENANT'S EQUIPMENT:

A. WHERE SPECIFIED, INSTALL ALL EQUIPMENT PROVIDED BY THE TENANT. RECEIVE, STORE AND INSTALL EQUIPMENT AND ACCEPT FULL RESPONSIBILITY FOR ITS CORRECT OPERATION. PROVIDE CONDUIT, WIRE, BOXES, SWITCHES, OUTLETS, DEVICES, FLEX CONNECTIONS, ETC., AS REQUIRED.

1.20 INTERRUPTION OF SERVICES:

A. INTERRUPTION OF ELECTRICAL SERVICE TO ANY PART OF THE BUILDING SHALL OCCUR ONLY BY PRE-ARRANGEMENT WITH AND AT TIMES SUITABLE TO THE LANDLORD.

B. INTERRUPTIONS SHALL ONLY OCCUR DURING PREMIUM TIME PERIODS; ALL ALLOWANCES FOR THIS SHALL BE INCLUDED IN THE PRICE SUBMITTED.

1.21 VALUATION OF CHANGES:

A. PROVIDE COMPLETE BREAKDOWN OF MATERIAL, LABOR, OVERHEAD, PROFIT, ETC., WHEN SUBMITTING QUOTATIONS FOR CHANGE NOTICES ON THIS PROJECT.

B. THE HOURLY LABOR RATE SHALL BE INCLUSIVE OF ALL CHARGES FOR SUPERVISION, VARIABLE LABOR FACTORS, HAND TOOLS, PAYROLL BURDENS, HEIGHT FACTORS, WARRANTIES, STORAGE, RENTALS, ADDITIONAL BONDING, PARKING, CLEAN-UP, AS-BUILT DRAWINGS, HOISTING, FREIGHT AND DELIVERY, BUT EXCLUSIVE OF OVERHEAD AND PROFIT.

1.22 ENGINEERS FINAL INSPECTION

A. FINAL INSPECTION IS IMPERATIVE. PRIOR TO CLOSING OF CEILINGS, THIS CONTRACTOR SHALL CONTACT AMA CONSULTING ENGINEERS. (212-944-7722) AND THE LANDLORD'S REPRESENTATIVE TO PERFORM A FINAL INSPECTION. WHEN CEILING TILES HAVE BEEN INSTALLED IT WILL BE NECESSARY FOR THE CONTRACTOR TO REMOVE PORTIONS FOR INSPECTION.

1.23 COMPLETION OF CONTRACT:

A. ALL EQUIPMENT MUST BE CLEANED AND TESTED BEFORE FINAL ACCEPTANCE BY THE CONSULTANT.

B. DEFECTS AND DEFICIENCIES WHICH ORIGINATE OR BECOME EVIDENT DURING THE WARRANTY PERIOD MUST BE REPAIRED OR REPLACED, AT NO COST.

C. REPLACE, AT NO COST, ALL INCANDESCENT LAMPS BURNED-OUT DURING A THIRTY (30) DAY PERIOD AND ALL BURNED-OUT LED AND HID LAMPS FOR A PERIOD OF NINETY (90) DAYS AFTER DATE OF ISSUANCE OF CERTIFICATE OF "SUBSTANTIAL PERFORMANCE" FOR THE CONTRACT FOR THE WORK.

D. IF, DURING THE WARRANTY PERIOD, TRANSFORMERS, BALLASTS OR OTHER NOISE AND VIBRATION PRODUCING EQUIPMENT ARE CONSIDERED BY THE CONSULTANT TO EXCEED ACCEPTABLE STANDARDS, THEN THESE MUST BE REPLACED WITHOUT DELAY OR ADDITIONAL COST TO THE TENANT. ALL WORK RELATING TO THE REPLACEMENT OF DEFECTIVE ITEMS, MUST BE CARRIED OUT AFTER NORMAL WORKING HOURS AND AT A TIME WHICH IS ACCEPTABLE TO THE TENANT.

1.24 DEMOLITION:

A. VISIT THE SITE, EXAMINE THE EXISTING CONDITIONS AND BECOME FAMILIAR WITH THE EXTENT OF THE NECESSARY REMOVAL, RELOCATION, RECONNECTING AND REROUTING OF ELECTRICAL EQUIPMENT AND WIRING AS NECESSARY FOR THE COMPLETION OF THE PROJECT.

B. MAKE SAFE AND DISCONNECT ALL POWER AND SYSTEMS, AS AND WHEN, AND TO THE EXTENT REQUIRED TO FACILITATE WITH THE DEMOLITION.

C. ENSURE THAT ALL ELECTRICAL, LIFE SAFETY SERVICES, AND SERVICES FOR EXISTING EQUIPMENT, IN AREAS OUTSIDE THE AREAS OF THIS WORK, THAT ARE REQUIRED TO REMAIN IN SERVICE, SHALL DO SO.

D. WHEN DELETING AND/OR MAKING SAFE EXISTING ELECTRICAL WORK, ENSURE THAT IT INCLUDES ALL CONDUITS AND WIRING BACK TO THE ASSOCIATED PANELBOARD OR CONTROL PANEL. WHERE FLOORBOXES ARE BEING REMOVED, ENSURE UNDER-FLOOR CONDUIT IS REMOVED BACK TO SOURCE AND FILL ALL CORE HOLES, IN FLOORS AND WIN WALLS, WITH APPROPRIATE CONCRETE.

E. DISCONNECT AND REMOVE EXISTING LIGHT FIXTURES, DEVICES, OUTLETS, ETC. WHICH ARE NOT TO BE REUSED. SUCH ITEMS SHALL BE CARTQNED AND TURNED OVER TO THE LANDLORD AT A PLACE DESIGNATED BY THE LANDLORD. CUT BACK AND CAP UNUSED RACEWAY AND OUTLETS AND REMOVED UNUSED WIRING BACK TO PANELBOARD IN AN APPROVED MANNER.

F. ALL EXISTING ELECTRICAL EQUIPMENT WHICH IS NO LONGER REQUIRED SHALL BE REMOVED AND DISPOSED OF, OFF SITE.

G. BE RESPONSIBLE AND PAY FOR ANY DAMAGE TO THE BASE BUILDING INCURRED BY WORK OF THIS DIVISION, OR REPAIR TO THE SATISFACTION OF THE CONSULTANT.

H. CARRY OUT THE WORK WITH MINIMUM OF NOISE, DUST AND DISTURBANCE.

1.25 WORK IN NEW AND RENOVATED AREAS:

A. WHEN DELETING AND/OR MAKING SAFE EXISTING ELECTRICAL WORK, ENSURE THAT IT INCLUDES REMOVAL OF ALL DISCONNECTED WIRING BACK TO THE ASSOCIATED PANELBOARD OR DISTRIBUTION EQUIPMENT.

B. DISCONNECT AND REMOVE EXISTING LUMINAIRES, DEVICES, OUTLETS, ETC., WHICH ARE NOT TO BE REUSED. SUCH ITEMS SHALL BE CARTONED AND TURNED OVER TO THE LANDLORD AT A PLACE DESIGNATED BY THE LANDLORD. CUT BACK AND CAP UNUSED RACEWAY AND OUTLETS AND REMOVE UNUSED WIRING BACK TO PANELBOARD IN AN APPROVED MANNER. REMOVE ALL REDUNDANT COMMUNICATIONS CABLES BACK TO HUB ROOMS AND/OR TELEPHONE RISER ROOMS.

C. ENSURE THAT ALL EXISTING EQUIPMENT WHICH IS TO BE REUSED AND/OR RELOCATED IS THOROUGHLY INSPECTED AND REFURBISHED TO ENSURE CORRECT OPERATION WHEN PUT BACK INTO SERVICE AND MEETS THE LOCAL ELECTRICAL SAFETY AUTHORITY'S APPROVAL. OUTLET BOXES AND WIRING AND/OR CONDUITS WHICH ARE CORRODED OR DAMAGED ARE TO BE REPLACED.

D. ALL EXISTING ELECTRICAL EQUIPMENT WHICH IS NO LONGER REQUIRED SHALL BE REMOVED AND DISPOSED OF, OFF SITE.

E. WHERE EXISTING OUTLET BOXES ARE REMOVED FROM EXISTING UNDERFLOOR DUCTS, PLUG AND CAP EXISTING HOLES FLUSH WITH FLOOR USING APPROVED FITTINGS. REMOVE ALL REDUNDANT WIRE AND CABLE BACK TO SERVICE.

F. BE RESPONSIBLE AND PAY FOR ANY DAMAGE TO THE BASE BUILDING INCURRED BY WORK OF THIS DIVISION, OR REPAIR TO THE SATISFACTION OF THE CONSULTANT.

G. CARRY OUT THE WORK WITH A MINIMUM OF NOISE, DUST AND DISTURBANCE.

H. PROVIDE TOOLS AND CLEAN UP EQUIPMENT. OBTAIN THE LANDLORD'S PERMISSION FOR THE USE OF ELECTRICAL, ELEVATOR, PLUMBING OR DRAINAGE OUTLETS.

I. PROVIDE DAILY CLEAN UP AND PROPER DISPOSAL OF DEBRIS GENERATED BY DAILY OPERATIONS. ON COMPLETION OF THE WORK, ALL TOOLS, SURPLUS MATERIALS AND WASTE MATERIALS SHALL BE REMOVED AND THE PREMISES LEFT IN A CLEAN AND PERFECT CONDITION.

J. REMOVE AND REROUTE EXISTING CONDUITS WHICH ARE TO REMAIN IN "FINISHED" AREAS WHICH ARE TO BE EXPOSED.

K. CONDUITS WHICH ARE TO BE CUT BACK ARE TO TERMINATE IN A JUNCTION BOX.

L. CLEAN LUMINAIRE REFLECTORS AND LENSES, LAMPS AND OTHER SURFACES THAT HAVE BEEN EXPOSED TO CONSTRUCTION DUST AND DIRT. CLEAN THE INSIDES AND OUTSIDES OF PANELBOARDS, SPLITTERS AND OTHER ELECTRICAL EQUIPMENT, AND COMPLETELY REMOVE ALL DEBRIS AND TOOLS FROM THE PROJECT.

PART 2 PRODUCT/APPLICATION

2.01 RACEWAYS:

A. EMT: ANSI C80.3, ZINC-COATED STEEL, WITH DOUBLE SET-SCREW OR COMPRESSION FITTINGS.

B. FMC: ZINC-COATED STEEL.

C. RMC: ANSI C80.1, HOT-DIPPED GALVANIZED STEEL WITH THREADED FITTINGS

D. IMC: ANSI C80.6, ZINC-COATED STEEL, WITH THREADED FITTINGS.

E. LFMC: ZINC-COATED STEEL WITH SUNLIGHT-RESISTANT AND MINERAL-OIL-RESISTANT PLASTIC JACKET.

F. RNC: NEMA TC 2, SCHEDULE 40/SCHEDULE 80 PVC, WITH NEMA TC3 FITTINGS.

G. RACEWAY FITTINGS: SPECIFICALLY DESIGNED FOR THE RACEWAY TYPE WITH WHICH USED.

H. ELECTRIC METALLIC TUBING SHALL BE INDUSTRY STANDARD THIN WALL CONDUIT, HOT DIPPED GALVANIZED STEEL (3/4" MIN, 4" MAX).

I. THE FLEXIBLE METALLIC CONDUIT SHALL BE OF THE GROUNDING TYPE. IT SHALL CONSIST OF GALVANIZED STEEL TAPE FORMED INTO AN INDUSTRY STANDARD INTERLOCKING COIL (3/4" MIN).

J. RIGID METAL CONDUIT SHALL BE INDUSTRY STANDARD STEEL CONDUIT (3/4" MIN, 4" MAX.)

K. THREADED FITTINGS SHALL BE USED WITH RIGID CONDUIT. DOUBLE SET SCREW OR COMPRESSION FITTINGS SHALL BE USED WITH EMT.

2.02 WIRE AND CABLE:

A. CONDUCTORS, NO. 10 AWG AND SMALLER: SOLID COPPER.

B. CONDUCTORS, LARGER THAN NO. 10 AWG: STRANDED COPPER.

C. INSULATION: THERMOPLASTIC, RATED AT 75 DEG C MINIMUM.

D. ALL CONDUCTORS SHALL BE SOFT 98% MINIMUM CONDUCTIVITY PROPERLY REFINED COPPER, TYPE THHN/THWN INSULATED FOR INDOOR USE AND TYPE XHHW-2 FOR OUTDOOR USE RATED AT 600V, UNLESS OTHERWISE NOTED.

E. REFER TO SECTION 3.11 FOR COLOR-CODING OF ALL WIRING.

2.03 SUPPORTING DEVICES

A. MATERIAL: COLD-FORMED STEEL, WITH CORROSION-RESISTANT COATING ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

B. METAL ITEMS FOR USE OUTDOORS OR IN DAMP LOCATIONS: HOT-DIP GALVANIZED STEEL.

C. SLOTTED-STEEL CHANNEL SUPPORTS: FLANGE EDGES TURNED TOWARD WEB, AND 9/16-INCH DIAMETER SLOTTED HOLES AT A MAXIMUM OF 2 INCHES O.C., IN WEBS.

D. SLOTTED-STEEL CHANNEL SUPPORTS: COMPLY WITH DIVISION 5 SECTION "METAL FABRICATIONS" FOR SLOTTED CHANNEL FRAMING.

1. CHANNEL THICKNESS: SELECTED TO SUIT STRUCTURAL LOADING.
2. FITTINGS AND ACCESSORIES: PRODUCTS OF THE SAME MANUFACTURER AS CHANNEL SUPPORTS.

E. NONMETALLIC CHANNEL AND ANGLE SYSTEMS: STRUCTURAL-GRADE, FACTORY-FORMED, GLASS-FIBER-RESIN CHANNELS AND ANGLES WITH 9/16-INCH- DIAMETER HOLES AT A MAXIMUM OF 8 INCHES O.C., IN AT LEAST ONE SURFACE.

1. FITTINGS AND ACCESSORIES: PRODUCTS OF THE SAME MANUFACTURER AS CHANNELS AND ANGLES.
2. FITTINGS AND ACCESSORY MATERIALS: SAME AS CHANNELS AND ANGLES, EXCEPT METAL ITEMS MAY BE STAINLESS STEEL.

F. RACEWAY AND CABLE SUPPORTS: MANUFACTURED CLEVIS HANGERS, RISER CLAMPS, STRAPS, THREADED C-CLAMPS WITH RETAINERS, CEILING TRAPEZE HANGERS, WALL BRACKETS, AND SPRING-STEEL CLAMPS OR CLICK-TYPE HANGERS.

G. PIPE SLEEVES: ASTM A 53, TYPE E, GRADE A, SCHEDULE 40, GALVANIZED STEEL, PLAIN ENDS.

H. CABLE SUPPORTS FOR VERTICAL CONDUIT: FACTORY-FABRICATED ASSEMBLY CONSISTING OF THREADED BODY AND INSULATING WEDGING PLUG FOR NONARMORED ELECTRICAL CABLES IN RISER CONDUITS. PLUGS HAVE NUMBER AND SIZE OF CONDUCTOR GRIPPING HOLES AS REQUIRED TO SUIT INDIVIDUAL RISERS. BODY CONSTRUCTED OF MALLEABLE-IRON CASTING WITH HOT-DIP GALVANIZED FINISH.

I. EXPANSION ANCHORS: CARBON-STEEL WEDGE OR SLEEVE TYPE.

J. TOGGLE BOLTS: ALL-STEEL SPRINGHEAD TYPE.

K. POWDER-DRIVEN THREADED STUDS: HEAT-TREATED STEEL

L. PROVIDE ALL STEEL SUPPORTING MEMBERS, HANGERS, BRACKETS OR OTHER SPECIAL DETAILS REQUIRED AND NECESSARY AS PER CODE.

M. EXCEPT FOR BRANCH CIRCUITRY INSTALL ALL CONDUIT IN HUNG CEILING SPACE ON ACCEPTABLE HANGERS AND INSERTS. CONDUIT OR MC CABLE FOR BRANCH CIRCUITRY SHALL BE SUPPORTED BY CLAMPS OR PIPE STRAPS SECURED TO THE CEILING SUPPORT SYSTEM (BLACK IRON - NYC), FROM STRUCTURAL MEMBERS OR FROM THE DECK. SUPPORT FROM CEILING TEES, CROSS TEES OR SUPPORT WIRES IS PROHIBITED.

N. SPACING OF SUPPORTS SHALL BE PER THE NEC/NYCEC.

O. INSERTS ARE TO BE OF A LEAD SHIELD TYPE.

P. HANGERS MUST NOT BE WELDED TO STRUCTURAL STEEL MEMBERS AND BURNING OF HOLES IN STRUCTURAL STEEL IS PROHIBITED.

Q. SLEEVES ARE TO BE OF A TYPE SUITABLE FOR THE APPLICATION AND BE SEALED AND MADE WATERTIGHT. SLEEVES THROUGH CONCRETE SHALL BE SCHEDULE 40 STEEL PIPE, SIZED FOR FREE PASSAGE OF CONDUIT AND INSTALLED FLUSH WITH UNDERSIZE OF CONCRETE SLAB AND EXTEND 4" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.

2.04 PULLBOXES, JUNCTION BOXES AND OUTLET BOXES:

A. PULLBOXES, JUNCTION BOXES AND OUTLET BOXES SHALL BE MANUFACTURED FROM GALVANIZED INDUSTRY STANDARD GAUGE SHEET STEEL.

B. PROVIDE PULL BOXES AND JUNCTION BOXES IN LONG STRAIGHT RUNS OF RACEWAY TO ASSURE THAT CABLES ARE NOT DAMAGED WHEN THEY ARE PULLED, TO FULFILL REQUIREMENTS AS TO THE N

PART 3 EXECUTION

3.01 GENERAL:

A. PERFORM THE WORK AT SUCH TIME AND IN SUCH MANNER AS TO MINIMIZE INTERFERENCE WITH BUILDING'S NORMAL OPERATION. NOTIFY BUILDING MANAGEMENT REPRESENTATIVES IN ADVANCE EACH TIME A SERVICE OUTAGE OR INTERRUPTION WILL BE REQUIRED FOR THE PERFORMANCE OF SOME PHASE OF THE WORK. SCHEDULE SUCH SERVICE OUTAGE OR INTERRUPTION, ONLY AFTER HAVING RECEIVED APPROVAL OF DATE, HOUR, AND TIME INTERVAL REQUIRED THEREOF. SCHEDULE OF WORK AS DIRECTED SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE.

B. OPENINGS AROUND ELECTRICAL PENETRATIONS THROUGH FIRE RESISTANCE RATED WALLS, PARTITIONS, FLOORS, OR CEILINGS SHALL BE FIRE STOPPED USING APPROVED METHODS. SEALANT SHALL BE RATED FOR 3 HOURS. TELECOMMUNICATION CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING FIRE STOPPING IN 'IT' CONDUITS/SLEEVES/PENETRATIONS AFTER 'IT' WIRES ARE PULLED.

C. PROVIDE 277/480 VOLT DANGER LABELING AT ALL EQUIPMENT AND JUNCTION/PULL BOXES PER CODE.

D. MAINTAIN GROUND CONTINUITY THROUGHOUT ALL SYSTEMS.

E. MAINTAIN CONTINUITY AND PROTECT ALL EXISTING CIRCUITS TO REMAIN SERVING EQUIPMENT WITHIN BASE BUILDING CORE AREAS OR OTHER TENANT AREAS AFFECTED BY THE ALTERATION WORK. CONTRACTOR SHALL BE RESPONSIBLE TO TRACE ALL EXISTING CIRCUITS TO REMAIN ORIGINATING FROM PANELBOARDS, AND SUBMIT FINDINGS TO ENGINEER FOR CLARIFICATION PRIOR TO THE START OF ANY PANELBOARD WORK. WHENEVER IT IS REQUIRED THAT AN EXISTING CIRCUIT BE MODIFIED, REVISED, DISCONNECTED OR REMOVED IT SHALL BE UNDERSTOOD THAT THE CIRCUIT SHALL BE RECONNECTED AND SERVICE RE-ESTABLISHED IN THE REMAINING PORTION OF THE CIRCUIT AFFECTED BY THE ALTERNATION.

F. PRIOR TO ANY CHASING, CHOPPING, OR CORE DRILLING BEING PERFORMED, THE CONTRACTOR SHALL FIELD INVESTIGATE CONDITIONS AND COORDINATE WITH ALL APPROPRIATE TRADES TO ENSURE THAT WORK WILL BE IN HARMONY WITH OTHER WORK AND NOT AFFECTED ANY EXISTING BUILDING SYSTEMS. X-RAY SLABS IF REQUIRED. THIS WORK MUST BE APPROVED BY BUILDING MANAGEMENT PRIOR TO PROCEEDING. ALL CORING/CHASING WILL BE DONE ON OVERTIME.

G. FOR TEMPORARY POWER, FURNISH AND INSTALL WIRING FOR ADEQUATE LIGHT AND SMALL TOOLS POWER FOR THE PROJECT. THIS SHALL INCLUDE STRINGERS, LAMPS, OUTLETS, BREAKERS, AND FUSING, AS IT IS NECESSARY. ALL TEMPORARY WIRING SHALL BE REMOVED FROM SPACE AT COMPLETION OF PROJECT.

H. FURNISH AND INSTALL A MINIMUM 1" EMPTY CONDUIT FOR ALL WALL MOUNTED LOW VOLTAGE EQUIPMENT JUNCTION BOXES. CONDUIT SHALL BE STUBBED 6" ABOVE HUNG CEILING AND TURNED TOWARDS TERMINATION CLOSET ABOVE ACCESSIBLE CEILING AREA.

I. COORDINATE WITH THE BUILDING OWNER FOR ANY SERVICE INTERRUPTION OF EXISTING SYSTEMS AND GIVE NOTICE AS REQUIRED BY BUILDING RULES AND REGULATIONS OR A MINIMUM OF TEN (10) BUSINESS DAYS PRIOR TO ANY WORK, WHICHEVER IS MORE STRINGENT. CONTRACTOR IS TO PERFORM WORK ON PREMIUM TIME SO AS TO NOT DISTURB EXISTING TENANTS ON OTHER FLOORS.

J. PRIOR TO CONNECTING ANY NEW CIRCUITS TO EXISTING PANELBOARDS, CONNECTED TO FEEDERS WHICH SERVE OTHER TENANTS OR LOADS, PERFORM A 30 DAY CONTINUOUS METERING OF AMPERAGE ON ALL THREE PHASES PER NEC/NYCEC ARTICLE 220-87, EXCEPTION (1). SUBMIT INITIAL RESULTS TO ENGINEER FOR EVALUATION AFTER RECORDING OF 7 DAYS. NEW LOADS SHALL NOT BE CONNECTED TO AFFECTED PANELS PRIOR TO ENGINEER'S EVALUATION.

K. WHEN USING TEMPORARY LIGHTING, THE CONTRACTOR SHALL CLEARLY LABEL PANELS AND BREAKERS USED FOR LIGHTING. LOCATION OF PANELS TO BE SHOWN ON FLOOR PLAN POSTED AT ENTRANCE TO WORK AREA. PROPER TEMPORARY LIGHTING AND POWER MUST BE INSTALLED AND MAINTAINED IN ALL WORK AREAS. CONNECTIONS TO EXISTING STAIRWELL AND EXIT LIGHT SYSTEMS ARE NOT PERMITTED.

L. THE CONTRACTOR SHALL CUT BACK TO THE FLOOR, WALL OR CEILING, REMOVE WIRING AND PLUG BOTH ENDS OF CONCEALED CONDUITS MADE OBSOLETE BY THIS ALTERNATION. EXPOSED CONDUITS, WIREWAYS, OUTLET BOXES, PULL BOXES, HANGERS, ETC. MADE OBSOLETE BY THE ALTERNATION WORK SHALL BE REMOVED, UNLESS OTHERWISE NOTED.

M. IT IS POSSIBLE THAT THERE WILL BE CERTAIN REMOVALS AND RELOCATIONS OF THE EXISTING ELECTRICAL INSTALLATION NECESSARY FOR THE SATISFACTORY PERFORMANCE OF THE WORK. THESE CHANGES CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS, BUT MUST BE CONSIDERED BY THE CONTRACTOR WHILE REVIEWING THE EXISTING CONDITIONS AT THE SITE AND PREPARING THE PROPOSAL.

3.02 ELECTRICAL EQUIPMENT INSTALLATION

A. HEADROOM MAINTENANCE: IF MOUNTING HEIGHTS OR OTHER LOCATION CRITERIA ARE NOT INDICATED, ARRANGE AND INSTALL COMPONENTS AND EQUIPMENT TO PROVIDE THE MAXIMUM POSSIBLE HEADROOM.

B. MATERIALS AND COMPONENTS: INSTALL LEVEL, PLUMB, AND PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS, UNLESS OTHERWISE INDICATED.

C. EQUIPMENT: INSTALL TO FACILITATE SERVICE, MAINTENANCE, AND REPAIR OR REPLACEMENT OF COMPONENTS. CONNECT FOR EASE OF DISCONNECTING, WITH MINIMUM INTERFERENCE WITH OTHER INSTALLATIONS.

D. RIGHT OF WAY: GIVE TO RACEWAYS AND PIPING SYSTEMS INSTALLED AT A REQUIRED SLOPE.

3.03 RACEWAY APPLICATION

A. USE THE FOLLOWING RACEWAYS FOR INDOOR INSTALLATIONS:

1. EXPOSED: EMT.
2. CONCEALED: EMT (MC CABLE WHERE PERMISSIBLE ACCORDING TO SECTION 3.06B).
3. CONNECTION TO VIBRATING EQUIPMENT: FMC; EXCEPT IN WET OR DAMP LOCATIONS, USE LFMC.
4. DAMP OR WET LOCATIONS: IMC/RMC.
5. BOXES AND ENCLOSURES: NEMA 250, TYPE 1, UNLESS OTHERWISE INDICATED.

3.04 RACEWAY AND CABLE INSTALLATION

A. CONCEAL RACEWAYS AND CABLES, UNLESS OTHERWISE INDICATED, WITHIN FINISHED WALLS, CEILINGS, AND FLOORS.

B. INSTALL RACEWAYS AND CABLES AT LEAST 6 INCHES (150 MM) AWAY FROM PARALLEL RUNS OF FLUES AND STEAM OR HOT-WATER PIPES. LOCATE HORIZONTAL RACEWAY RUNS ABOVE WATER AND STEAM PIPING.

C. USE TEMPORARY RACEWAY CAPS TO PREVENT FOREIGN MATTER FROM ENTERING.

D. MAKE CONDUIT BENDS AND OFFSETS SO ID IS NOT REDUCED. KEEP LEGS OF BENDS IN THE SAME PLANE AND STRAIGHT LEGS OF OFFSETS PARALLEL, UNLESS OTHERWISE INDICATED.

E. USE RACEWAY AND CABLE FITTINGS COMPATIBLE WITH RACEWAYS AND CABLES AND SUITABLE FOR USE AND LOCATION.

F. INSTALL RACEWAYS EMBEDDED IN SLABS IN MIDDLE THIRD OF SLAB THICKNESS WHERE PRACTICAL, AND LEAVE AT LEAST 1-INCH CONCRETE COVER. OBTAIN STRUCTURAL ENGINEER'S APPROVAL PRIOR TO INSTALLATION.

1. SECURE RACEWAYS TO REINFORCING RODS TO PREVENT SAGGING OR SHIFTING DURING CONCRETE PLACEMENT.
2. SPACE RACEWAYS LATERALLY TO PREVENT VOIDS IN CONCRETE.
3. INSTALL CONDUIT LARGER THAN 1-INCH TRADE SIZE (DN27) PARALLEL TO OR AT RIGHT ANGLES TO MAIN REINFORCEMENT. WHERE CONDUIT IS AT RIGHT ANGLES TO REINFORCEMENT, PLACE CONDUIT CLOSE TO SLAB SUPPORT.
4. TRANSITION FROM SCHEDULE 40 NONMETALLIC TUBING TO SCHEDULE 80 NONMETALLIC CONDUIT, RIGID STEEL CONDUIT, OR IMC BEFORE RISING ABOVE FLOOR.
5. MAKE BENDS IN EXPOSED PARALLEL OR BANKED RUNS FROM SAME CENTERLINE TO MAKE BENDS PARALLEL. USE FACTORY ELBOWS ONLY WHERE ELBOWS CAN BE INSTALLED PARALLEL; OTHERWISE, PROVIDE FIELD BENDS FOR EXPOSED PARALLEL RACEWAYS.

G. INSTALL PULL WIRES IN EMPTY RACEWAYS. USE NO. 14 AWG ZINC-COATED STEEL OR MONOFILAMENT PLASTIC LINE WITH NOT LESS THAN 200-LB TENSILE STRENGTH. LEAVE AT LEAST 12 INCHES OF SLACK AT EACH END OF THE PULL WIRE.

H. INSTALL TELEPHONE AND SIGNAL SYSTEM RACEWAYS, 2-INCH TRADE SIZE AND SMALLER, IN MAXIMUM LENGTHS OF 100 FEET AND WITH A MAXIMUM OF TWO 90-DEGREE BENDS OR EQUIVALENT. SEPARATE LENGTHS WITH PULL OR JUNCTION BOXES WHERE NECESSARY TO COMPLY WITH THESE REQUIREMENTS, IN ADDITION TO REQUIREMENTS ABOVE.

I. CONNECT MOTORS AND EQUIPMENT SUBJECT TO VIBRATION, NOISE TRANSMISSION, OR MOVEMENT WITH A MAXIMUM OF 72-INCH (1830-MM) FLEXIBLE CONDUIT. INSTALL LFMC IN WET OR DAMP LOCATIONS. INSTALL SEPARATE GROUND CONDUCTOR ACROSS FLEXIBLE CONNECTIONS.

J. SET FLOOR BOXES LEVEL AND TRIM AFTER INSTALLATION TO FIT FLUSH TO FINISHED FLOOR SURFACE.

3.05 WIRING METHODS FOR POWER, LIGHTING, AND CONTROL CIRCUITS

A. FEEDERS: TYPE THHN/THWN INSULATED CONDUCTORS IN RACEWAY

B. UNDERGROUND FEEDERS AND BRANCH CIRCUITS: TYPE THWN OR SINGLE-WIRE, TYPE UF INSULATED CONDUCTORS IN RACEWAY.

C. BRANCH CIRCUITS: TYPE THW OR THHN/THWN INSULATED CONDUCTORS IN RACEWAY WHERE EXPOSED. METAL-CLAD CABLE SHALL BE PERMITTED WHERE PERMITTED BY AUTHORITIES HAVING JURISDICTION AND WHEN APPROVED BY LANDLORD RULES AND REGULATIONS AND BY TENANT. METAL-CLAD CABLE SHALL NOT BE INSTALLED WITHIN ELECTRIC CLOSETS OR DIRECTLY INTO PANELBOARDS.

D. REMOTE-CONTROL SIGNALING AND POWER-LIMITED CIRCUITS: TYPE THHN/THWN INSULATED CONDUCTORS IN RACEWAY FOR CLASSES 1, 2, AND 3, UNLESS OTHERWISE INDICATED. CONDUCTORS USED FOR LOW-VOLTAGE SYSTEMS INCLUDING LIGHTING CONTROLS, HVAC CONTROLS, ETC. SHALL NOT SHARE THE SAME RACEWAY/ENCLOSURE AS LINE VOLTAGE CONDUCTORS.

E. MULTI-WIRE BRANCH CIRCUITS SHALL BE PROVIDED WITH A MEANS TO DISCONNECT SIMULTANEOUSLY ALL UNGROUNDED CONDUCTORS AT THE PANELBOARD WHERE THE BRANCH CIRCUIT ORIGINATES.

3.06 WIRING INSTALLATION

A. ALL CONDUCTORS SHALL BE RUN IN CONDUIT. [SEE WIRE AND CABLE SECTION 3.06B FOR ALTERNATE PRICING TO UTILIZE MC CABLE WHERE PERMISSIBLE.]

B. METAL CLAD (TYPE MC) FOR CONCEALED BRANCH CIRCUITRY IN TENANT SPACE ONLY MAYBE USED WHEN APPROVED BY TENANT AND BUILDING MANAGEMENT AND WHERE PERMITTED BY CODE. EMT SHALL BE USED OUTSIDE TENANT SPACE AND IN BUILDING CLOSETS. CONTRACTOR SHALL SUBMIT A DEDUCT ALTERNATE PRICE FOR USE OF MC IN LIEU OF EMT THROUGHOUT IN SUBMISSION OF BID. METAL CLAD (TYPE MC) SHALL NOT BE INSTALLED INTO PANELBOARDS.

C. WIRE CONNECTORS AND SPLICES: UNITS OF SIZE, AMPACITY RATING, MATERIAL, TYPE, AND CLASS SUITABLE FOR SERVICE INDICATED.

D. THE MINIMUM WIRE SIZE FOR BRANCH CIRCUITS SHALL BE NO. 12 AWG EXCEPT 120 VOLT CIRCUITS OVER 100' IN LENGTH SHALL BE NO. 10 AWG.

E. ALL FEEDER CONDUCTORS SHALL BE SIZED FOR MAXIMUM 2% VOLTAGE DROP PER ASHRAE 90.1-2010 8.4.1.1. BRANCH CIRCUITS SHALL ALSO BE SIZED FOR 2.5% VOLTAGE DROP

F. TAG ALL FEEDERS IN ALL PULL BOXES, GUTTER SPACES, AND WIREWAYS THROUGH WHICH THEY PASS.

G. TERMINATE STRANDED CONDUCTORS NO. 8 AWG AND LARGER, AT SWITCHBOARDS, TRANSFORMERS, UPS SYSTEMS WITH COMPRESSION TYPE CONNECTORS. TERMINATE WITH MECHANICAL LUGS AT PANELBOARDS.

H. JOIN OR TAP STRANDED CONDUCTORS (NO. 6 AWG AND LARGER) WITH PRESSURE INDENT TYPE CONNECTORS BURNDY, NEPCO, OR O.Z./GEDNEY WITH COMPOSITION INSULATING COVERS.

I. SPLICES IN BRANCH WIRING (NO. 8 AWG AND SMALLER) SHALL BE TWISTED AND MADE MECHANICALLY TIGHT; THEN SECURED WITH PIGTAIL CONNECTORS, CRIMP TYPE CONNECTORS SHALL NOT BE USED. UTILIZE UL LISTED, "SILICON FILLED" PIGTAIL CONNECTORS WHERE LOCATED IN WET ENVIRONMENTS OR OUTDOORS.

J. SUPPORT CONDUCTORS IN VERTICAL RACEWAYS IN ACCORDANCE WITH THE NEC/NYCEC BASED ON CONDUCTOR SIZE AND VERTICAL DISTANCE.

K. WALL MOUNTED DEVICES SHALL BE FED VERTICALLY. HORIZONTAL RUNS THROUGH PARTITIONS SHALL NOT BE PERMITTED, EXCEPT IN LOW HEIGHT PARTITIONS OR WHERE NOTED ON DRAWINGS

L. INSTALL WIRING AT OUTLETS WITH AT LEAST 12 INCHES (300 MM) OF SLACK CONDUCTOR AT EACH OUTLET.

M. CONNECT OUTLET AND COMPONENT CONNECTIONS TO WIRING SYSTEMS AND TO GROUND. TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS, ACCORDING TO MANUFACTURER'S PUBLISHED TORQUE-TIGHTENING VALUES. IF MANUFACTURER'S TORQUE VALUES ARE NOT INDICATED, USE THOSE SPECIFIED IN UL 486A.

N. FOR ALL SIZES OF CONDUIT LARGER THAN 1-1/2", USE STANDARD ELBOW.

O. CONDUIT SHALL BE SECURELY FASTENED IN PLACE AND HANGERS, SUPPORTS OR FASTENINGS SHALL BE PROVIDED AT EACH ELBOW AND AT EACH END OF EACH STRAIGHT RUN TERMINATED AT A BOX OR CABINET.

P. PROVIDE EXPANSION FITTINGS IN EACH CONDUIT RUN WHEREVER IT CROSSES AN EXPANSION JOINT AND WHEREVER THE CONDUIT LENGTH EXCEEDS 200 FEET.

Q. UNLESS OTHERWISE INDICATED OR SPECIFIED, ALL WIRING SHALL BE INSTALLED CONCEALED.

R. FEEDERS AND BRANCH CIRCUITRY ABOVE HUNG CEILING AND IN PARTITIONS SHALL BE RUN IN ELECTRICAL METALLIC TUBING (EMT) UNLESS OTHERWISE NOTED. FINAL CONNECTIONS TO MOTORS, LIGHT FIXTURES, TRANSFORMERS, AND EQUIPMENT SUBJECT TO VIBRATION WILL BE DONE WITH FLEXIBLE METALLIC CONDUIT (GREENFIELD). LENGTH SHALL NOT EXCEED 6 FEET.

S. ALL CONDUIT IN MECHANICAL ROOMS, ELECTRICAL CLOSETS AND WHERE CONCEALED IN CONCRETE OR INSTALLED OUTDOORS SHALL BE RIGID THREADED REGARDLESS OF SIZE.

T. ALL CONDUITS INSTALLED IN CONCRETE OR OUTDOORS SHALL BE PROVIDED WITH WEATHERPROOF CONNECTORS.

U. ALL METAL CONDUIT TERMINATING IN A METAL ENCLOSURE SHALL HAVE AN INSULATED BUSHING. PROVIDE "GROUNDING" TYPE BUSHING WHERE REQUIRED.

V. WHERE CONDUITS ARE RUN IN THE CEILING SPACE OF THE FLOOR BELOW, THEY SHALL BE CONTINUOUS AND HAVE NO JUNCTION OR PULL BOXES UNLESS PRIOR APPROVAL IS GIVEN BY BUILDING MANAGEMENT/CLIENT.

W. INSTALL CONDUITS TO CONSERVE HEADROOM, PARALLEL AND PERPENDICULAR TO BUILDING LINES. DO NOT CLIP CONDUITS TO CEILING HANGER

X. INSTALL TWO (2) (1") SPARE CONDUITS UP TO CEILING SPACE FOR EACH RECESSED PANELBOARD. TERMINATE THESE CONDUITS IN A 6" X 6" X 4" COVERED JUNCTION BOX IN CEILING SPACE.

Y. WALL COMMUNICATIONS CONDUIT SHALL BE REAMED AND INSTALLED COMPLETE WITH INSULATED BUSHINGS AT EACH END.

3.09 ELECTRICAL SUPPORTING DEVICE APPLICATION

A. DAMP LOCATIONS AND OUTDOORS: HOT-DIP GALVANIZED MATERIALS OR NONMETALLIC, U-CHANNEL SYSTEM COMPONENTS.

B. DRY LOCATIONS: STEEL MATERIALS.

C. SUPPORT CLAMPS FOR PVC RACEWAYS: CLICK-TYPE CLAMP SYSTEM.

D. SELECTION OF SUPPORTS: COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

E. STRENGTH OF SUPPORTS: ADEQUATE TO CARRY PRESENT AND FUTURE LOADS, TIMES A SAFETY FACTOR OF AT LEAST FOUR; MINIMUM OF 200-LB (90-KG) DESIGN LOAD.

3.10 SUPPORT INSTALLATION

A. INSTALL SUPPORT DEVICES TO SECURELY AND PERMANENTLY FASTEN AND SUPPORT ELECTRICAL COMPONENTS.

B. INSTALL INDIVIDUAL AND MULTIPLE RACEWAY HANGERS AND RISER CLAMPS TO SUPPORT RACEWAYS. PROVIDE U-BOLTS, CLAMPS, ATTACHMENTS, AND OTHER HARDWARE NECESSARY FOR HANGER ASSEMBLIES AND FOR SECURING HANGER RODS AND CONDUITS.

C. SUPPORT PARALLEL RUNS OF HORIZONTAL RACEWAYS TOGETHER ON TRAPEZE- OR BRACKET-TYPE HANGERS.

D. SIZE SUPPORTS FOR MULTIPLE RACEWAY INSTALLATIONS SO CAPACITY CAN BE INCREASED BY A 25 PERCENT MINIMUM IN THE FUTURE.

E. SUPPORT INDIVIDUAL HORIZONTAL RACEWAYS WITH SEPARATE, MALLEABLE-IRON PIPE HANGERS OR CLAMPS.

F. INSTALL 1/4-INCH- (6-MM-) DIAMETER OR LARGER THREADED STEEL HANGER RODS, UNLESS OTHERWISE INDICATED.

G. SPRING-STEEL FASTENERS SPECIFICALLY DESIGNED FOR SUPPORTING SINGLE CONDUITS OR TUBING MAY BE USED INSTEAD OF MALLEABLE-IRON HANGERS FOR 1-1/2-INCH (38-MM) AND SMALLER RACEWAYS SERVING LIGHTING AND RECEPTACLE BRANCH CIRCUITS ABOVE SUSPENDED CEILINGS AND FOR FASTENING RACEWAYS TO SLOTTED CHANNEL AND ANGLE SUPPORTS.

H. ARRANGE SUPPORTS IN VERTICAL RUNS SO THE WEIGHT OF RACEWAYS AND ENCLOSED CONDUCTORS IS CARRIED ENTIRELY BY RACEWAY SUPPORTS, WITH NO WEIGHT LOAD ON RACEWAY TERMINALS.

I. SIMULTANEOUSLY INSTALL VERTICAL CONDUCTOR SUPPORTS WITH CONDUCTORS.

J. SEPARATELY SUPPORT CAST BOXES THAT ARE THREADED TO RACEWAYS AND USED FOR FIXTURE SUPPORT. SUPPORT SHEET-METAL BOXES DIRECTLY FROM THE BUILDING STRUCTURE OR BY BAR HANGERS. IF BAR HANGERS ARE USED, ATTACH BAR TO RACEWAYS ON OPPOSITE SIDES OF THE BOX AND SUPPORT THE RACEWAY WITH AN APPROVED FASTENER NOT MORE THAN 24 INCHES (610 MM) FROM THE BOX.

K. INSTALL METAL CHANNEL RACKS FOR MOUNTING CABINETS, PANELBOARDS, DISCONNECT SWITCHES, CONTROL ENCLOSURES, PULL AND JUNCTION BOXES, TRANSFORMERS, AND OTHER DEVICES UNLESS COMPONENTS ARE MOUNTED DIRECTLY TO STRUCTURAL ELEMENTS OF ADEQUATE STRENGTH.

L. INSTALL SLEEVES FOR CABLE AND RACEWAY PENETRATIONS OF CONCRETE SLABS AND WALLS UNLESS CORE-DRILLED HOLES ARE USED. INSTALL SLEEVES FOR CABLE AND RACEWAY PENETRATIONS OF MASONRY AND FIRE-RATED GYPSUM WALLS AND OF ALL OTHER FIRE-RATED FLOOR AND WALL ASSEMBLIES. INSTALL SLEEVES DURING ERECTION OF CONCRETE AND MASONRY WALLS.

M. SECURELY FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTS TO THE BUILDING STRUCTURE, UNLESS OTHERWISE INDICATED. PERFORM FASTENING ACCORDING TO THE FOLLOWING UNLESS OTHER FASTENING METHODS ARE INDICATED:

1. WOOD: FASTEN WITH WOOD SCREWS OR SCREW-TYPE NAILS.
2. MASONRY: TOGGLE BOLTS ON HOLLOW MASONRY UNITS AND EXPANSION BOLTS ON SOLID MASONRY UNITS.
3. NEW CONCRETE: CONCRETE INSERTS WITH MACHINE SCREWS AND BOLTS.
4. EXISTING CONCRETE: EXPANSION BOLTS.
5. INSTEAD OF EXPANSION BOLTS, THREADED STUDS DRIVEN BY A POWDER CHARGE AND PROVIDED WITH LOCK WASHERS MAY BE USED IN EXISTING CONCRETE.
6. STEEL: WELDED THREADED STUDS OR SPRING-TENSION CLAMPS ON STEEL.
   a. FIELD WELDING: COMPLY WITH AWS D1.1.
7. WELDING TO STEEL STRUCTURE MAY BE USED ONLY FOR THREADED STUDS, NOT FOR CONDUITS, PIPE STRAPS, OR OTHER ITEMS.
8. LIGHT STEEL: SHEET-METAL SCREWS.
9. FASTENERS: SELECT SO THE LOAD APPLIED TO EACH FASTENER DOES NOT EXCEED 25 PERCENT OF ITS PROOF-TEST LOAD.
10. PULL TESTING FOR ALL POST INSTALLED ANCHORS IN CONCRETE AND IN MASONRY SHALL BE IN ACCORDANCE WITH ACI 318, AC01, AC58, AC93, AC106 STANDARDS AND LOCAL BUILDING CODE. THE MINIMUM NUMBER OF ANCHORS TESTED SHALL BE THE GREATER OF 20% OR THE TOTAL OF THREE.

3.11 IDENTIFICATION MATERIALS AND DEVICES

A. INSTALL AT LOCATIONS FOR MOST CONVENIENT VIEWING WITHOUT INTERFERENCE WITH OPERATION AND MAINTENANCE OF EQUIPMENT.

B. COORDINATE NAMES, ABBREVIATIONS, COLORS, AND OTHER DESIGNATIONS USED FOR ELECTRICAL IDENTIFICATION WITH CORRESPONDING DESIGNATIONS INDICATED IN THE CONTRACT DOCUMENTS OR REQUIRED BY CODES AND STANDARDS. USE CONSISTENT DESIGNATIONS THROUGHOUT PROJECT.

C. SELF-ADHESIVE IDENTIFICATION PRODUCTS: CLEAN SURFACES BEFORE APPLYING.

D. IDENTIFY RACEWAYS AND CABLES WITH COLOR BANDING AS FOLLOWS:

1. BANDS: PRETENSIONED, SNAP-AROUND, COLORED PLASTIC SLEEVES OR COLORED ADHESIVE MARKING TAPE. MAKE EACH COLOR BAND 2 INCHES (51 MM) WIDE, COMPLETELY ENCIRCLING CONDUIT, AND PLACE ADJACENT BANDS OF TWO-COLOR MARKINGS IN CONTACT, SIDE BY SIDE.
2. BAND LOCATIONS: AT CHANGES IN DIRECTION, AT PENETRATIONS OF WALLS AND FLOORS, AT 50-FOOT (15-M) MAXIMUM INTERVALS IN STRAIGHT RUNS, AND AT 25-FOOT (8-M) MAXIMUM INTERVALS IN CONGESTED AREAS.
3. COLORS: AS FOLLOWS:
   a. FIRE ALARM SYSTEM: RED.
   b. SECURITY SYSTEM: BLUE AND YELLOW.
   c. TELECOMMUNICATION SYSTEM: GREEN AND YELLOW.

E. TAG AND LABEL CIRCUITS DESIGNATED TO BE EXTENDED IN THE FUTURE. IDENTIFY SOURCE AND CIRCUIT NUMBERS IN EACH CABINET, PULL AND JUNCTION BOX, AND OUTLET BOX. COLOR-CODING MAY BE USED FOR VOLTAGE AND PHASE IDENTIFICATION.

F. INSTALL CONTINUOUS UNDERGROUND PLASTIC MARKERS DURING TRENCH BACKFILLING, FOR EXTERIOR UNDERGROUND POWER, CONTROL, SIGNAL, AND COMMUNICATION LINES LOCATED DIRECTLY ABOVE POWER AND COMMUNICATION LINES. LOCATE 6 TO 8 INCHES BELOW FINISHED GRADE. IF WIDTH OF MULTIPLE LINES INSTALLED IN A COMMON TRENCH OR CONCRETE ENVELOPE DOES NOT EXCEED 16 INCHES, OVERALL, USE A SINGLE LINE MARKER.

G. COLOR-CODE 208/120-V SYSTEM SECONDARY SERVICE, FEEDER, AND BRANCH-CIRCUIT CONDUCTORS THROUGHOUT THE SECONDARY ELECTRICAL SYSTEM SHALL BE SIMILAR TO (MATCHING BUILDING STANDARDS) :

1. PHASE A: BLACK.
2. PHASE B: RED.
3. PHASE C: BLUE.
4. NEUTRAL: WHITE
5. GROUND: GREEN

H. COLOR-CODE 480/277-V SYSTEM SECONDARY SERVICE, FEEDER, AND BRANCH-CIRCUIT CONDUCTORS THROUGHOUT THE SECONDARY ELECTRICAL SYSTEM SHALL BE SIMILAR TO (MATCHING BUILDING STANDARDS):

1. PHASE A: YELLOW.
2. PHASE B: BROWN.
3. PHASE C: ORANGE.
4. NEUTRAL: GRAY OR WHITE WITH A COLORED STRIPE (NOT GREEN),
5. GROUND: GREEN

I. INSTALL WARNING, CAUTION, AND INSTRUCTION SIGNS WHERE REQUIRED TO COMPLY WITH 29 CFR, CHAPTER XVII, PART 1910.145, AND WHERE NEEDED TO ENSURE SAFE OPERATION AND MAINTENANCE OF ELECTRICAL SYSTEMS AND OF ITEMS TO WHICH THEY CONNECT. INSTALL ENGRAVED PLASTIC-LAMINATED INSTRUCTION SIGNS WITH APPROVED LEGEND WHERE INSTRUCTIONS ARE NEEDED FOR SYSTEM OR EQUIPMENT OPERATION. INSTALL METAL-BACKED BUTYRATE SIGNS FOR OUTDOOR ITEMS.

J. INSTALL ENGRAVED-LAMINATED EMERGENCY-OPERATING SIGNS WITH WHITE LETTERS ON RED BACKGROUND WITH MINIMUM 3/8-INCH- (9-MM-) HIGH LETTERING FOR EMERGENCY INSTRUCTIONS ON POWER TRANSFER, LOAD SHEDDING, AND OTHER EMERGENCY OPERATIONS.

3.13 FIRESTOPPING

A. APPLY FIRESTOPPING TO CABLE AND RACEWAY PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES TO ACHIEVE FIRE-RESISTANCE RATING OF THE ASSEMBLY. PROVIDE FIELD APPLIED INTUMESCENT PUTTY (HILITI FS-ONE OR EQUAL) FIRESTOPPING AT ALL PENETRATIONS OF RATED ASSEMBLIES. FACTORY PRE-MANUFACTURED FIRESTOPPING DEVICES WILL NOT BE ACCEPTED. FIRESTOPPING MATERIALS AND INSTALLATION REQUIREMENTS ARE SPECIFIED IN A SEPARATE DIVISION OF THE SPECIFICATIONS.

3.16 DEMOLITION

A. PROTECT EXISTING ELECTRICAL EQUIPMENT AND INSTALLATIONS INDICATED TO REMAIN. IF DAMAGED OR DISTURBED IN THE COURSE OF THE WORK, REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL CAPACITY, QUALITY, AND FUNCTIONALITY.

B. ACCESSIBLE WORK: REMOVE EXPOSED ELECTRICAL EQUIPMENT AND INSTALLATIONS, INDICATED TO BE DEMOLISHED, IN THEIR ENTIRETY.

C. ABANDONED WORK: CUT AND REMOVE BURIED RACEWAY AND WIRING, INDICATED TO BE ABANDONED IN PLACE, 2 INCHES (50 MM) BELOW THE SURFACE OF ADJACENT CONSTRUCTION. CAP RACEWAYS AND PATCH SURFACE TO MATCH EXISTING FINISH.

D. REMOVE DEMOLISHED MATERIAL FROM PROJECT SITE.

E. REMOVE, STORE, CLEAN, REINSTALL, RECONNECT, AND MAKE OPERATIONAL COMPONENTS INDICATED FOR RELOCATION.

3.18 REFINISHING AND TOUCHUP PAINTING

A. REFINISH AND TOUCH UP PAINT. PAINT MATERIALS AND APPLICATION REQUIREMENTS ARE SPECIFIED IN A SEPARATE DIVISION OF THE SPECIFICATIONS.

1. CLEAN DAMAGED AND DISTURBED AREAS AND APPLY PRIMER, INTERMEDIATE, AND FINISH COATS TO SUIT THE DEGREE OF DAMAGE AT EACH LOCATION.
2. FOLLOW PAINT MANUFACTURER'S WRITTEN INSTRUCTIONS FOR SURFACE PREPARATION AND FOR TIMING AND APPLICATION OF SUCCESSIVE COATS.
3. REPAIR DAMAGE TO GALVANIZED FINISHES WITH ZINC-RICH PAINT RECOMMENDED BY MANUFACTURER.
4. REPAIR DAMAGE TO PVC OR PAINT FINISHES WITH MATCHING TOUCHUP COATING RECOMMENDED BY MANUFACTURER.

3.19 CLEANING AND PROTECTION

A. ON COMPLETION OF INSTALLATION, INCLUDING OUTLETS, FITTINGS, AND DEVICES, INSPECT EXPOSED FINISH. REMOVE BURRS, DIRT, PAINT SPOTS, AND CONSTRUCTION DEBRIS.

B. PROTECT EQUIPMENT AND INSTALLATIONS AND MAINTAIN CONDITIONS TO ENSURE THAT COATINGS, FINISHES, AND CABINETS ARE WITHOUT DAMAGE OR DETERIORATION AT TIME OF SUBSTANTIAL COMPLETION.

3.20 IDENTIFICATION OF EQUIPMENT:

A. ALL PANELBOARDS, CONTROL PANELS, AND CABINETS SPECIFIED HEREIN SHALL BE CLEARLY IDENTIFIED WITH THE EQUIPMENT DESIGNATION AND VOLTAGE RATING. IDENTIFICATION SHALL BE BY WHITE ON BLACK PLASTIC NAMEPLATE WITH 1/2" MINIMUM LETTERING ATTACHED BY SCREWS.

B. ALL PANELBOARDS, SPECIFIED HEREIN SHALL BE PROVIDED WITH A MEANS OF IDENTIFICATION OF THE MULTI-WIRE BRANCH CIRCUIT COLOR CODE IDENTIFICATION SYSTEM INSTALLED PER THE REQUIREMENTS OF NEC/NYCEC ARTICLE 210.5. REFER TO SPECIFICATION SECTION 3.09 FOR COLOR CODING DESIGNATIONS.

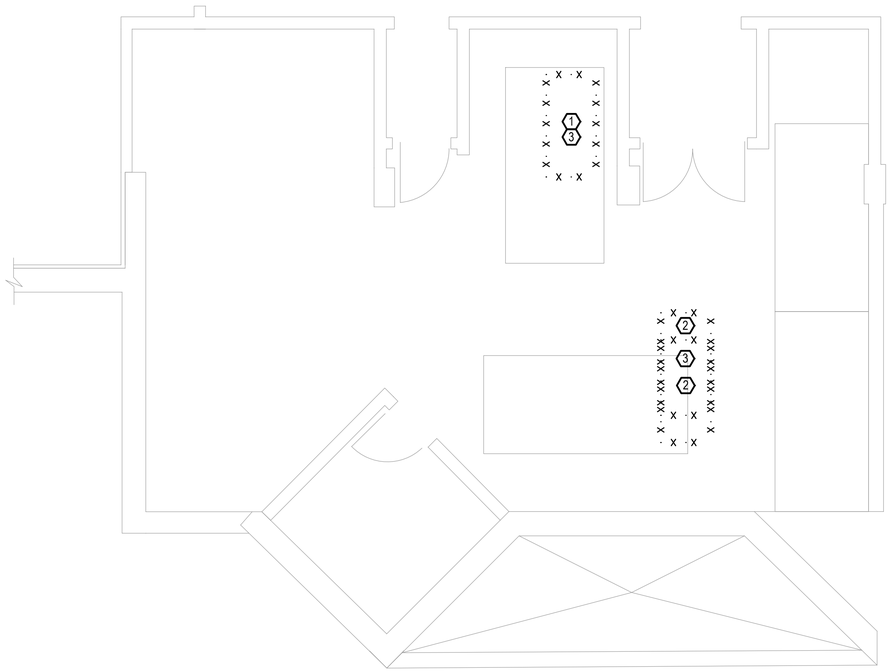
C. JUNCTION BOXES, SPLICE BOXES, ETC., SHALL BE IDENTIFIED WITH PANEL AND CIRCUIT NUMBERS, FOR CIRCUITS CONTAINED THEREIN. FACEPLATE OF SWITCHES FOR EQUIPMENT SUCH AS MOTORIZED SCREENS, ETC., SHALL BE IDENTIFIED WITH THE NAME OF THE DEVICE CONTROLLED. IDENTIFICATION SHALL BE BY INDELIBLE MARKER IN CONCEALED LOCATIONS AND ADHESIVE ('P' TOUCH TYPE) LABELS IN EXPOSED LOCATIONS. EMERGENCY DEVICES SHALL BE IDENTIFIED IN RED.

D. CLEARLY LABEL ALL EXPOSED CONDUIT, PULLBOXES, JUNCTION BOXES, ETC TO INDICATE THE NATURE OF THE SERVICE.

E. EMPTY CONDUITS SHALL BE IDENTIFIED WITH TAGS AT BOTH ENDS INDICATING THE LOCATION OF TERMINATION OF THE OPPOSITE END.

F. FIRE ALARM SYSTEM JUNCTION BOXES SHALL BE PAINTED FIRE DEPARTMENT RED. APPROVED IDENTIFICATION CARDS SHALL BE FURNISHED ADJACENT TO ALL CONTROL PANELS AND MANUAL STATIONS.

G. ALL RECEPTACLES SHALL HAVE CIRCUIT NUMBERS AND ASSOCIATED PANEL DESIGNATION CLEARLY I



DEMOLITION NOTES

1. PRIOR TO SUBMISSION OF BID, THIS CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS TO DETERMINE THEIR IMPACT ON THE EXECUTION OF THIS CONTRACT WORK. SUBMISSION OF PROPOSAL WILL BE CONSTRUED OF SUCH AS EXAMINATION AND ALL LATER CLAIMS WILL NOT BE RECOGNIZED FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH EXAMINATION. GC TO COORDINATE ALL AFTER HOUR WORK WITH TENANT AND LANDLORD.

2. ALL ELECTRIC POWER MUST BE DISCONNECTED PRIOR TO COMMENCEMENT OF DEMOLITION.

3. DEMOLITION WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, ANY & ALL MATERIALS, CONNECTIONS, EXTENSIONS, CUTTING, REPAIRING AND OTHER ELECTRICAL WORK, TEMPORARY OR PERMANENT, THAT MAY BE REQUIRED TO MAINTAIN SERVICE THROUGH THE COMPLETION OF THIS PROJECT. COORDINATE THE EXTENT OF THE DEMOLITION WORK WITH THE ARCHITECT.

4. EXISTING FEEDERS AND BRANCH CIRCUITRY PASSING THROUGH THE AREA OF DEMOLITION AND SERVING OCCUPIED ADJACENT AREAS AND INTERFERING WITH THE NEW WORK SHALL BE TRACED AND RELOCATED BY THIS CONTRACTOR. ALL NECESSARY SHUTDOWNS REQUIRED TO PERFORM THIS WORK SHALL BE COORDINATED WITH THE BUILDING MANAGEMENT. SHUT DOWN WILL NOT BE PERFORMED WITHOUT PRIOR APPROVAL.

5. WIRING, CONDUITS, AND SUPPORTS FOR FEEDERS AND BRANCH CIRCUITRY SHALL BE REMOVED BACK TO THEIR PANEL OF ORIGIN, WITH WIRE DISCONNECTED FROM UNDER THE PROTECTIVE DEVICE. COORDINATE REMOVALS WITH ARCHITECTURAL DOCUMENTS.

6. MAINTAIN THE CONTINUITY OF EXISTING BRANCH CIRCUITRY SERVING REMAINING ELECTRICAL DEVICES OUTSIDE THE SCOPE OF WORK WHERE PORTIONS OF EXISTING BRANCH CIRCUITRY ARE BEING REMOVED.

7. IDENTIFY AS SPARE ANY PROTECTIVE DEVICE IN EXISTING PANELS THAT ARE MADE SPARE DUE TO DEMOLITION. PANEL DIRECTORIES SHALL BE UPDATED ACCORDINGLY.

8. ELECTRICAL CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF ALL OTHER TRADES, AND CONFER WITH THE ARCHITECT.

9. ELECTRICAL PANEL COVERS ARE NOT TO BE LEFT OFF ANY TIME, UNLESS MEN ARE WORKING ON THEM.

10. BUILDING FIRE ALARM SYSTEM INTEGRITY SHALL BE MAINTAINED AT ALL TIMES. (BEFORE, DURING AND AFTER DEMOLITION) EXISTING DEVICES ARE INDICATED. CONTRACTOR TO ENSURE ALL DEVICES ARE PROTECTED.

11. FOR MECHANICAL EQUIPMENT REFER TO MECHANICAL DEMO PLAN. EQUIPMENT SHALL BE REMOVED BY OTHERS. ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE POWER AND SWITCHES.

12. DEMOLITION CONTRACTOR SHALL REMOVE FROM THE SITE ALL RESULTANT DEBRIS AND MATERIALS WHICH ARE NOT TO BE REUSED. IN CERTAIN CASES, EQUIPMENT OR MATERIALS DESIGNATED FOR REMOVAL SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL BE TURNED OVER AT LOCATIONS AS DIRECTED BY OWNER. THESE ITEMS SHALL INCLUDE, BUT ARE NOT LIMITED TO ALL SECURITY DEVICES, EQUIPMENT RACKS, WIRELESS ACCESS POINTS, ETC.

13. ON THE UNDERSIDE OF CEILING SLAB, THE CONTRACTOR SHALL LEAVE INTACT ALL CONDUITS NOT ASSOCIATED WITH THE AREA OF WORK. THESE RACEWAYS TO BE IDENTIFIED BY THE CONTRACTOR, MARKED FOR THE OWNER AND RE-SUPPORTED WITH A NEW KINDORF, HANGER RODS, STRAPS AND CLEVIS HOOKS BY THIS CONTRACTOR. COORDINATE IN THE FIELD PRIOR TO REMOVAL OF ANY CONDUITS IN THE CEILING.

DEMOLITION KEY NOTES

CONTRACTOR SHALL REMOVE EXISTING GAS-FIRED WATER HEATER SERVING KITCHEN/LAUNDRY. DISCONNECT ALL EXISTING ELECTRICAL CONNECTIONS. PULL WIRING BACK TO NEAREST DEVICE TO REMAIN, OTHERWISE LEAVE CIRCUIT IN CEILING JUNCTION BOX FOR CONNECTION TO NEW WATER HEATER.

CONTRACTOR SHALL REMOVE EXISTING TWO (2) GAS-FIRED WATER HEATER SERVING RESIDENCE. DISCONNECT ALL EXISTING ELECTRICAL CONNECTIONS. PULL WIRING BACK TO NEAREST DEVICE TO REMAIN, OTHERWISE LEAVE CIRCUITS IN CEILING JUNCTION BOX FOR CONNECTION TO NEW WATER HEATERS.

CONTRACTOR SHALL REMOVE AND RELOCATE EXISTING CIRCULATION PUMPS. DISCONNECT ALL EXISTING ELECTRICAL CONNECTIONS. PULL WIRING BACK TO NEAREST DEVICE TO REMAIN, OTHERWISE LEAVE CIRCUITS IN CEILING JUNCTION BOX FOR RE-CONNECTION.

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 ENERGY CONSERVATION

THIS PLAN IS APPROVED ONLY FOR THE WORK ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

GE Crotonville - Executive Residence Building Water Heater Replacement

Old Albany Post Road,
Ossining, NY

Seal

Date	Issued	Revision No.
10/29/21	ISSUED FOR REVIEW	

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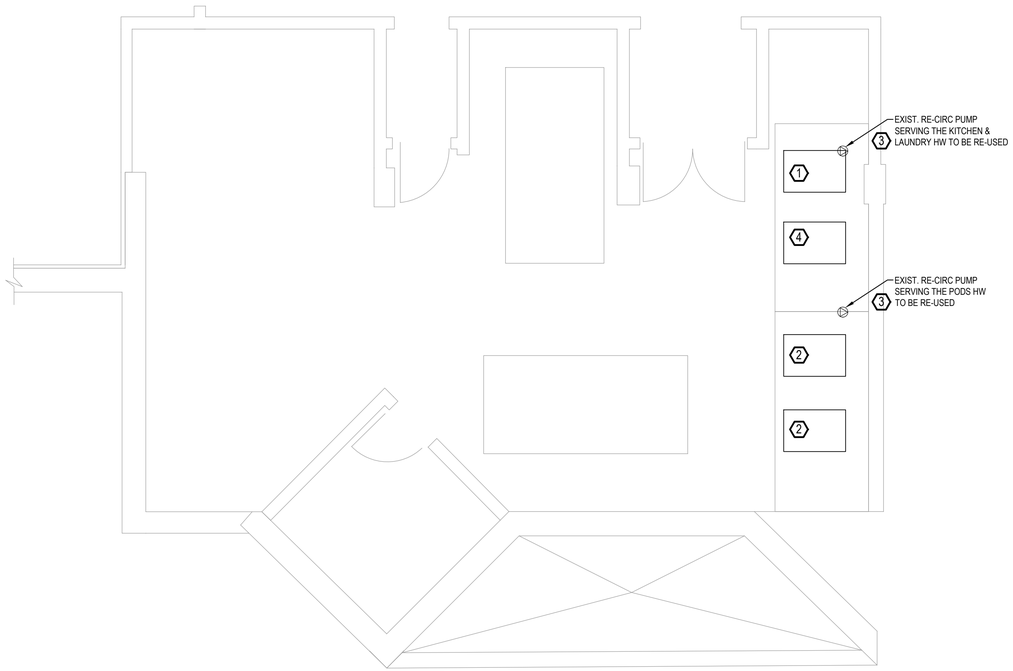
Drawing Title:
ELECTRICAL
BASEMENT FLOOR
DEMOLITION PART PLAN

Scale	Issue Date:
1/2"=1'-0"	10/XX/2021
Proj. Manager:	Proj. Engineer:
RR	VM

AMA Project No:
G003-03-017

Drawing No:
E-501.00

NYC DOB NUMBER



POWER NOTES

1. REFER TO DRAWING E-001 FOR GENERAL NOTES.
2. FOR EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT, REFER TO PLUMBING DRAWINGS.
3. ALL MECHANICAL EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY THE PLUMBING CONTRACTOR, WIRED BY THE ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL WIRE MECHANICAL EQUIPMENT AS PER AN APPROVED MANUFACTURES WIRING DIAGRAM. ALL CONTROL WIRING SHALL BE BY THE HVAC OR PLUMBING CONTRACTOR.
4. CONTRACTOR SHALL PROVIDE CIRCUITS AS DESIGNATED FOR CONDENSATE PUMPS, SOLENOID VALVES, ETC. COORDINATE WITH PLUMBING CONTRACTORS FOR ALL REQUIREMENTS. PROVIDED ADDITIONAL CIRCUIT(S) FROM AVAILABLE SPARES AS REQUIRED.
5. ALL HEAT TRACE CIRCUITS SHALL HAVE GFI PROTECTED BREAKERS AND TWO POLE LOCKABLE (TOGGLE) DISCONNECT IN ACCORDANCE WITH NEC. EC SHALL INCLUDE IN BID PRICING FOR WIRING OF HWAT POWER TO ALL COMPONENTS (CONTROLLER, TIMECLOCK, ETC.)
6. CONTRACTOR SHALL PROVIDE DISCONNECT SWITCHES FOR ALL MECHANICAL EQUIPMENT THAT IS NOT FACTORY SUPPLIED UNLESS OTHERWISE NOTED ON DRAWINGS. CONTRACTOR SHALL COORDINATE SIZE WITH MECHANICAL EQUIPMENT SPECIFICATIONS AND MECHANICAL EQUIPMENT CONTRACTOR. ASSUME LINE VOLTAGE WIRING IS REQUIRED TO THE CONTROLS AND FROM THE CONTROLS TO THE EQUIPMENT.
7. ALL MECHANICAL EQUIPMENT MUST MAINTAIN REQUIRED SERVICE CLEARANCE OF 36" FOR MECHANICAL EQUIPMENT IN FRONT OF CONTROL PANEL AND/OR DISCONNECT SWITCH PER NEC.
8. CONTRACTOR SHALL PROVIDE 120V POWER FROM MECHANICAL CIRCUIT INDICATED/NEARBY FOR POWER TO ANY AND ALL LEAK DETECTION SYSTEMS AND SOLENOID VALVES REQUIRED FOR OPERATION OF ALL ELECTRIC WATER HEATERS (REFER TO NOTE #4). PROVIDE CIRCUIT(S) AS INDICATED FOR ALL HEAT TRACE PIPING FOR DOWNSTREAM HOT WATER PIPING. ALL COMPONENTS INSTALLED IN CEILING SHALL BE PLENUM RATED.

KEY NOTES

CONTRACTOR SHALL CONNECT NEW GAS-FIRED WATER HEATER SERVING THE KITCHEN/LAUNDRY TO EXISTING CIRCUIT PREVIOUSLY FEEDING WATER HEATER. EXTEND CIRCUIT AS REQUIRED.

CONTRACTOR SHALL CONNECT NEW TWO (2) GAS-FIRED WATER HEATERS SERVING THE RESIDENCE TO EXISTING CIRCUITS PREVIOUSLY FEEDING WATER HEATERS. EXTEND CIRCUITS AS REQUIRED.

CONTRACTOR SHALL CONNECT RELOCATED CIRCULATION PUMPS TO EXISTING CIRCUITS PREVIOUSLY FEEDING CIRCULATION PUMPS. SPLICE/EXTEND CIRCUIT AS REQUIRED.

CONTRACTOR SHALL CONNECT NEW GAS-FIRED WATER HEATER SERVING THE KITCHEN/LAUNDRY TO A 120V-20A BREAKER WITH 2#12+#12G IN 3/4" CONDUIT. UTILIZE ANY SPARE BREAKERS OR BREAKERS MADE AVAILABLE FROM DEMOLITION FROM THE NEAREST 120V PANEL.

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 ENERGY CONSERVATION

THIS PLAN IS APPROVED ONLY FOR THE WORK ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

GE Crotonville - Executive Residence Building Water Heater Replacement

Old Albany Post Road,
Ossining, NY

Seal

Date	Issued	Revision No.
10/29/21	ISSUED FOR REVIEW	

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Drawing Title:
ELECTRICAL
BASEMENT FLOOR
NEW WORK PART PLAN

Scale	Issue Date:
1/2"=1'-0"	10/XX/2021
Proj. Manager:	Proj. Engineer:
RR	VM

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