DEPARTMENT OF DEVELOPMENT SERVICES – PLANNING DIVISION
REPORT: Bushnell Park Pumphouse, 60 Elm Street
For consideration September 22, 2020

STAFF REPORT

TO: **Planning & Zoning Commission**
FROM: Aimee Chambers, Director of Planning
Email: oneplan@hartford.gov

PROJECT: Bushnell Park, 5 Trinity St. and 0 Elm St.
PARCEL IDS: 224-431-014 & 24 -3 4-001

ZONE: OS Open Space

TYPE: Special Permit and Site Plan Review per Section 1.3.4 of Zoning Regulations last amended June 5, 2020

APPLICANT: Maier Design Group

OWNER: City of Hartford

City GIS Map

BACKGROUND INFORMATION

The request is for site plan review for the rehabilitation and renovation of the Pump House within Bushnell Park. In partnership with Maier Design Group, Bushnell Park Foundation (BPF), iQuilt Partnership, and the Department of Public Works seek approval for modifications to the Bushnell Park Pumphouse. This comes along with the recent approval of a partnership agreement for Bushnell Park Foundation's use of the Pump House.

Figure 1. Google Streetview, dated June 2019, from Elm St. Depicts existing curb-cut on Elm St. with concrete pavement leading to the gated courtyard behind the Pump House Gallery park building.

Figure 2. Google Streetview of Pump House Gallery at Bushnell Park from Wells St., dated June 2019.

LEGAL STANDARD

The Commission reviews Special Permits in accordance with Zoning Regulations section 1.3.4. Special Permits may be approved, approved with conditions, or denied. Considerations the Commission may weigh in Special Permit review include: harmony with the plan of conservation & development; compliance with the purposes of the district; effect on existing development; creation of safety hazards in vehicular and pedestrian circulation; effects on traffic; compatibility with adjacent properties; suitability of arrangement of buildings, open space, and provision of light and air; impact on essential services; impact on stormwater runoff; impact on city services and infrastructure; tree and landscape provision; and pedestrian amenities. The Commission may deviate from the minimum requirements for building siting, height, street facades, accessory structures dimensions, tree installation, landscape installation, buffers, fencing, lighting, parking, signage, and street design by up to 15% upon certain findings.

STANDARD SPECIFIC TO THE USE

1.3.3.A - Site Plan Review - Any project in the OS District valued at $50,000 or more.
3.3.3.D.4(c) - Uses within park building may include community spaces, gyms, fitness facilities, classrooms, and park offices. Other uses may be approved through a special use permit.
3.3.3.D.5 - Parking - Parking lots are not permitted in parks other than in the following parks: Colt, Elizabeth, Goodwin, Keney, Pope, and Riverside Parks, and Charter Oak Landing.

FINDING OF FACTS

On 07/28/20, the Planning & Zoning Commission voted in support of an 8-24 Review request from Council for a proposed use agreement between the Bushnell Park Foundation (BPF) and the City.

The Pump House was built in 1 47 by the Army Corps of Engineers as part of the Connecticut River Flood Control Program. The Pump House continues to be an essential part of the nine-mile conduit of the Park River and Hartford's flood control system. Part of this building is known as the Pump House Gallery, which has been used by the City and the Bushnell Park Foundation for public events.

The applicants seeks to rehabilitate the structure and make interior and exterior repairs to the building including: new windows, new flashing and gutters, new decorative gates, grilles, and carriage doors, improved ADA access, masonry repointing, and slate roof repair. The applicant also seeks to improve drainage on site, improve ADA access in the surrounding courtyard and paths, and repair/replace curbing in various locations on the site. Finally, the applicant will update the electrical panels, update the HVAC system, and improve site safety by installing new locks and increasing visability/transparency through windows and doors.

COMMENTS RECEIVED (None received as of August 14, 2020)

ANALYSIS

The Pump House Gallery renovations intend to improve functionality, safety and usability for the Bushnell Park Foundation (BPF), who will assume full time use of the space through a Use Agreement approved by the Planning & Zoning Commission and City Council. Interior renovations will create enough flexibility so that the building can serve as office space and event space as well as gallery space for park memorabilia.

Proposed renovations to the Pump House Gallery, as described in the narrative provided by Mary Zeman, Bushnell Park Foundation Manager, are likely to support the goals to "improve user experience, increase visitation, and "generate enthusiastic private support" for the Park (POCD p. 55).

STAFF RECOMMENDATION

Staff recommends approval of this application.

A draft resolution follows.

ATTACHMENTS

A. Project Narrative from Bushnell Park Foundation
B. Proposed Plans
C. Bushnell Park Foundation Pump House Gallery Illustrative Detail from Maier Design Group

REVIEWED,

Aimee Chambers, Director

Digitally signed by Aimee Chambers
DN: cn=Aimee Chambers, o=City of Hartford, ou=Director of Planning, email=aimee.chambers@hartford.gov, c=US
Date: 2020.09.17 23:06:17 -04'00'

PLANNING & ZONING COMMISSION RESOLUTION
60 ELM STREET
SITE PLAN REVIEW AND SPECIAL PERMIT PROPOSAL

Whereas, The City of Hartford Planning & Zoning Commission reviewed the proposal for rehabilitation at 60 Elm Street; and

Whereas, The structure is located in Bushnell Park, and

Whereas, The structure is a 1 story brick and masonry cottage with a surrounding courtyard; and

Whereas, The applicant proposes to rehabilitate the structure and make interior and exterior repairs to the building; and

Whereas, The repairs are valued at greater than $50,000; and

Whereas, The repairs and sitework will imrpove energy efficiency, usability, and ADA accessibility; and

Whereas, The structure will be used for office space, event space, and gallery space for park memorabilia; and

Whereas, The proposed modifications and use are consistent with the City's Zoning Regulations;

Whereas, The proposed modification and use are consistent with the City's Plan of Conservation and Development;

Now therefore Be It

Resolved, The City of Hartford Planning & Zoning Commission hereby approves the proposed work as submitted.

Be It Further,

Resolved, This 22th day of September 2020.

Attachment A: Project Narrative

Pump House Gallery Renovations

The goal of the renovations of the Pump House Gallery is to make it into functional, safe and usable space for the Bushnell Park Foundation (BPF). The space should be designed with enough flexibility so that it can serve as office space for 2-3 people on a regular basis, while also being able to host larger working groups, small meetings (such as regular board meetings) as well as for small events, such as intimate fund raising parties.

- Create flexible office space, with tables and chairs that can be moved around, but some dedicated, secure storage space for laptops, file, printers, etc. If possible, having a separate, small lockable storage closet to accommodate BPF's office storage needs would be preferred.
- Replace lighting in gallery and update and relocate the electrical panel. Design lighting so it can be used for close tasks at table tops as well as for display of memorabilia or wall art reflecting the Park's history.
- Include a modest sound system and audio/visual capabilities with a wall mounted monitor. Land line needed for conference calls.
- New windows in Pump House Gallery. Large window on East side of Gallery will need some additional security once new windows are put in. Also add in new windows for Pump House side in the budget (but not a priority).
- Replace large wooden door. Design the large door to have a solid outside door which closely matches the one on the Pump House, but also have a glass inner door that can be seen when the large wooden doors are open, to either let more light in when they are closed or to open directly out to the courtyard. Locking device is extremely important to keep doors closed.
- Replace main entrance door; preferably with top half glass so you can see who is trying to gain access.
- Renovate bathroom. Suggest combining it with adjacent bathroom to make one ADA complaint gender neutral bathroom. Or alternatively, develop inside access to the two existing ADA compliant bathrooms and eliminate the single use bathroom.
- Assess if there is additional space above Gallery (crawl space) or in Pump House that BPF could use for storage. A 5'x5' area with shelving would be sufficient for BPF uses.
- Find a solution for the dust and humidity that comes through the trench openings in the floor along the back wall, currently covered by steel plates. At minimum the plates need to be sand blasted and repainted.
- Assess if roof repairs are needed on building, including new gutters
- Assess patio (courtyard) and drainage issues
- Update HVAC in Pump House Gallery and two exterior bathrooms. Assuring there is adequate heating without the noise.
- Upgrade electrical in Pump House Gallery and the electrical panel
- Add additional electrical on the north exterior wall with dedicated circuit.
- Add electrical outlet on east side of courtyard…either internal to courtyard or outside the wall
- Assess condition of three iron gates.

A top priority is to allow iQuilt to continue to use the space for Winterfest activities, such as for a game room. That use is consistent with this outline. Other current uses are essentially storage-related and are

not consistent with the future vision stated here for the space, so other larger-scale storage areas will need to be contemplated elsewhere.

Attachment #B: Proposed Plans of Pump House Building

CITY OF HARTFORD

MAYOR
LUKE BRONIN

BUSHNELL PARK PUMP HOUSE RENOVATION
HARTFORD, CT

DPW# 21-07
MDG PROJECT#2020.002
07-24-2020

CITY OF HARTFORD
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HARTFORD, CT 06106

MEP ENGINEER
RZ DESIGN ASSOCIATES, INC.
750 OLD MAIN STREET SUITE 202
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ABBREVIATIONS

@	AT
A.B.	ANCHOR BOLT
A/C	AIR CONDITIONING
AC.	ACOUSTICAL
AC.T.	ACOUSTICAL TILE
ADJ.	ADJUSTABLE
A.F.F.	ABOVE FINISHED FLOOR
AGGR.	AGGREGATE
A.H.U.	AIR HANDLING UNIT
ALT.	ALTERNATE
ALUM.	ALUMINUM
ANOD.	ANODIZED
APPR.	APPROVED
ASPH.	ASPHALT
BSMT.	BASEMENT
BD.	BOARD
BEV.	BEVEL
B.F.	BOTTOM OF FOOTING
BITUM.	BITUMINOUS
BLDG.	BUILDING
BLK.	BLOCK
BLKG.	BLOCKING
BM.	BEAM
BOT.	BOTTOM
BRK.	BRICK
B.U.R.	BUILT UP ROOFING
CAB.	CABINET
C.B.	CATCH BASIN
CEM.	CEMENT
CER.	CERAMIC
C.I.	CAST IRON
C.J.	CONTROL JOINT
CLG.	CEILING
CL.	CLOSET
C.M.U.	CONCRETE MASONRY UNIT
C.O.	CLEAN OUT
COL.	COLUMN
CONC.	CONCRETE
CONF.	CONFERENCE
CONT.	CONTINUOUS
COORD.	COORDINATE
CORR.	CORRIDOR, CORRUGATED
CPT.	CARPET
CTR.	CENTER
C.Y.	CUBIC YARD
DEPT.	DEPARTMENT
DETL.	DETAIL
D.F.	DRINKING FOUNTAIN
DIA.	DIAMETER
DIM.	DIMENSION
DN.	DOWN
DR.	DOOR
DS.	DOWNSPOUT
D.S.P.	DRY STANDPIPE
DWG.	DRAWING
DWL.	DOWEL
EA.	EACH
E.J.	EXPANSION JOINT
EL.	ELEVATION
ELEC.	ELECTRIC
ELEV.	ELEVATOR
EMERG.	EMERGENCY
ENCL.	ENCLOSURE
E.P.	ELECTRICAL PANEL
EQ.	EQUAL, EQUIVALENT
EQUIP.	EQUIPMENT
E.W.	EACH WAY
E.W.C.	ELECTRIC WATER COOLER
EXP.	EXPANSION
EXT.	EXTERIOR
F.A.	FIRE ALARM
F.A.P.	FIRE ALARM PANEL
F.BRK.	FACE BRICK
F.F.	FINISH FLOOR
F.D.	FLOOR DRAIN
FDN.	FOUNDATION
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
F.H.	FIRE HYDRANT
F.H.C.	FIRE HOSE CABINET
FIN.	FINISHED
FL.	FLOOR
FIXT.	FIXTURE
FLASH.	FLASHING
FLEX.	FLEXIBLE
FLUOR.	FLUORESCENT
F.O.C.	FACE OF CONCRETE
F.O.M.	FACE OF MASONRY
FPRFG.	FIREPROOFING
F.R.	FIRE RETARDANT TREATED
FT.	FEET
F.T.R.	FINNED TUBE RADIATION
FURR.	FURRING
GA.	GAUGE
GALV.	GALVANIZED
G.B.	GRAB BAR
G.C.	GENERAL CONTRACTOR
GL.	GLASS
GLZ.	GLAZING
GMU.	GLAZED MASONRY UNIT
GRD.	GROUND
GR.	GRADE
GWB	GYPSUM WALLBOARD
H.B.	HOSE BIBB
HC	HANDICAPPED
H.C.	HOLLOW CORE
HDWD.	HARDWOOD
HDWE.	HARDWARE
HM.	HOLLOW METAL
HORIZ.	HORIZONTAL
HTG.	HEATING
HGT.	HEIGHT
HYD.	HYDRANT
H.R.	HANDRAIL
I.D.	INSIDE DIAMETER
I.F.	INSIDE FACE
INCAND.	INCANDESCENT
INCL.	INCLUDE
INFO.	INFORMATION
INSUL.	INSULATION
INT.	INTERIOR
INV.	INVERT
I.P.S.	IRON PIPE SIZE
J.C.	JANITOR CLOSET
JST.	JOIST
JT.	JOINT
LAD.	LADDER
LAM.	LAMINATED
LAV.	LAVATORY
LKR.	LOCKER
LF.	LINEAR FOOT
LL.	LIVE LOAD
LT.	LIGHT
MAINT.	MAINTENANCE
MAS.	MASONRY
MATL.	MATERIAL
MECH.	MECHANICAL
MEMB.	MEMBRANE
MET.	METAL
MEZZ.	MEZZANINE
MFR.	MANUFACTURER
MIN.	MINIMUM
MIR.	MIRROR
MISC.	MISCELLANEOUS
M.O.	MASONRY OPENING
MTD.	MOUNTED
M.U.	MASONRY UNIT
MULL.	MULLION
N.	NORTH
N.I.C.	NOT IN CONTRACT
NO. #	NUMBER
NOM.	NOMINAL
N.R.C.	NOISE REDUCTION COEFFICIENT
N.T.S.	NOT TO SCALE
O.A.	OUTSIDE AIR
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OFF.	OFFICE
OHD.	OVERHEAD
OPG.	OPENING
OPP.	OPPOSITE
OZ	OUNCE
PRTN.	PARTITION
PL.	PLATE
P. LAM.	PLASTIC LAMINATE
PLAS.	PLASTER
PLYWD.	PLYWOOD
PR.	PAIR
PREFAB.	PREFABRICATED
PROJ.	PROJECT
PROP.	PROPERTY
PTD.	PAINTED
P.T.D.	PAPER TOWEL DISPENSER
Q.T.	QUARRY TILE
R.	RADIUS
R.A.	RETURN AIR
RESIL.	RESILIENT
RECPT.	RECEPTACLE
REF.	REFERENCE
REFL.	REFLECTED
REF.	REFRIGERATOR
REG.	REGISTER
REINF.	REINFORCING
REQ'D.	REQUIRED
RESIL.	RESILIENT
RET.	RETAINING
REV.	REVISION
R.O.	ROUGH OPENING
R.O.W.	RIGHT OF WAY
R.T.	RUBBER TILE
R.W.L.	RAIN WATER LEADER
S. FPFG.	SPRAYED ON FIREPROOFING
S.C.	SOLID CORE
SCHED.	SCHEDULE
S.D.	SOAP DISPENSER
SECT.	SECTION
S.F.	SQUARE FOOT
SH.	SHELF
SHWR.	SHOWER
SHT.	SHEET
SIM.	SIMILAR
SAN.	SANITARY
S.N.D.	SANITARY NAPKIN DISPENSER
SPEC.	SPECIFICATIONS
SPKLR.	SPRINKLER
S.P.R.	SINGLE PLY ROOF
SQ.	SQUARE
S.F.	SQUARE FEET
S.S.	SERVICE SINK
ST. STL.	STAINLESS STEEL
STA.	STATION
STD.	STANDARD
ST. FTG.	STEP FOOTING
STIFF.	STIFFENERS
STL.	STEEL
STL. JST.	STEEL JOIST
STOR.	STORAGE
S.T.C.	SOUND TRANSMISSION CLASS
STRUCT.	STRUCTURAL
SURF.	SURFACE
SUSP.	SUSPEND
S. & V.	STAIN & VARNISH
SYM.	SYMMETRICAL
SYS.	SYSTEM
TR.	TREAD
T & B	TOP & BOTTOM
T. BD.	TACKBOARD
TB.	TOWEL BAR
TECH.	TECHNICAL
T / C	TOP OF CURB
TEL.	TELEPHONE
TEMP.	TEMPORARY
TERR.	TERRAZZO
T / FOUND.	TOP OF FOUNDATION
T & G	TONGUE & GROOVE
THK.	THICK
THRES.	THRESHOLD
TLT.	TOILET
T.P.	TOILET PAPER DISPENSER
T / PR.	TOP OF PIER
T / S	TOP OF SLAB
T / SHLF	TOP OF SHELF
T / STL.	TOP OF STEEL
T / CONC.	TOP OF CONCRETE
T.V.	TELEVISION
TYP.	TYPICAL
U.H.	UNIT HEATER
U.L.	UNDERWRITERS LABORATORY
UNFIN.	UNFINISHED
U.O.N.	UNLESS OTHERWISE NOTED
UR.	URINAL
U.V.	UNIT VENTILATOR
VB.	VINYL BASE
V.C.T.	VINYL COMPOSITION TILE
VERT.	VERTICAL
VEST.	VESTIBULE
V.G.	VERTICAL GRAIN
V.I.F.	VERIFY IN FIELD
VOL.	VOLUME
V.W.C.	VINYL WALL COVERING
W /	WITH
W.C.	VINYL WALL COVERING
WD.	WOOD
WIND.	WINDOW
W / O	WITHOUT
WP.	WATERPROOFING
W. PT.	WORKING POINT
W.L.	WORKING LINE
W.S.	WALL SLEEVE
WAINS.	WAINSCOT
WT.	WEIGHT
WWF.	WELDED WIRE FABRIC
YD.	YARD

ACCESSIBILITY

EGRESS KEY

- "Exit"shown thus. (per IBC Chapter10)
- Entrance to an "Exit" shown thus.
- "Common Path of Travel" portion of exit access shown thus.
- "Travel Distance" shown thus.
- Total length of travel distance to exit entrance indicated thus (50 FT Travel Distance)
- Travel direction
- Number of people (1) / Capacity of EXIT (120)
- Use group
- Occupant load
- Room Name: A | 35 / 509 | 15N
- Load factor
- Square footage
- Accessible Exit

DOOR EGRESS

Nominal Width	Egress Capacity
2'-10"	155
3'-0"	165
3'-2"	174
3'-4"	183
3'-6"	195
3'-10"	215
4'-0"	225
2'-10" Pair	310
3'-0" Pair	330
3'-6" Pair	390
4'-0" Pair	450

1 EGRESS PLAN
1/8" = 1'-0"

LIST OF DRAWINGS:

T-1	Title Sheet	0.	Issued 07/24/2020
G-1	Egress Plan and Code Information	0.	Issued 07/24/2020
G-2	Specifications	0.	Issued 07/24/2020
G-3	Specifications	0.	Issued 07/24/2020
G-4	Specifications	0.	Issued 07/24/2020
G-5	Specifications	0.	Issued 07/24/2020

ARCHITECTURE:

AD1.1	Demolition Ground Floor Plan	0.	Issued 07/24/2020
AD1.2	Demolition Reflected Ceiling Plan	0.	Issued 07/24/2020
AD3.1	Demolition Exterior Elevations	0.	Issued 07/24/2020
AX7.2	Existing Window Details	0.	Issued 07/24/2020
A0.1	Proposed Site Improvements Plan	0.	Issued 07/24/2020
A1.1	Proposed Ground Floor Plan	0.	Issued 07/24/2020
A1.2	Proposed Roof Plan	0.	Issued 07/24/2020
A2.1	Proposed Reflected Ceiling Plan	0.	Issued 07/24/2020
A3.1	Proposed Exterior Elevations	0.	Issued 07/24/2020
A3.2	Proposed Exterior Elevations	0.	Issued 07/24/2020
A5.1	Proposed Interior Elevations	0.	Issued 07/24/2020
A6.1	Construction Details	0.	Issued 07/24/2020
A6.2	Window Details	0.	Issued 07/24/2020
A7.1	Door and Window Schedules	0.	Issued 07/24/2020

PLUMBING:

P0.1	Plumbing General Notes and Symbol List	0.	Issued 07/24/2020
P0.2	Plumbing Specifications	0.	Issued 07/24/2020
P1.0	Plumbing Demolition and New Work Plan	0.	Issued 07/24/2020

MECHANICAL:

M0.1	Mechanical General Information	0.	Issued 07/24/2020
M0.2	Mechanical Specifications	0.	Issued 07/24/2020
MD1.1	Ground Floor Mechanical Demolition Plan	0.	Issued 07/24/2020
M1.1	Ground Floor Mechanical Plan	0.	Issued 07/24/2020

ELECTRICAL:

E0.1	Abbreviations, General Notes and Symbol List	0.	Issued 07/24/2020
E0.2	Electrical Specifications	0.	Issued 07/24/2020
ED1.1	Ground Floor Power & Lighting Demolition Plan	0.	Issued 07/24/2020
E1.1	Ground Floor Lighting RCP	0.	Issued 07/24/2020
E2.1	Ground Floor Power Plan	0.	Issued 07/24/2020
E3.0	Electrical Details and Schedules	0.	Issued 07/24/2020

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CITY OF HARTFORD

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Title:

EGRESS PLAN AND CODE INFORMATION

Project Number: 2020.002	Issue Date: 07/24/20
Scale: As indicated	CAD file:
Drawn By: JBJ	Checked By: MV

Revisions:

G.1

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00600 – SUPPLEMENTAL GENERAL REQUIREMENTS

A AIA Document A201-2017 General Conditions of the Contract for Construction shall be in force for the work of this contract including subcontractor agreements. The terms, conditions and provisions of AIA Document A201 shall be considered to be a part of this work. The following notes and specifications are intended to supplement AIA A201, not supersede it. In the event of a conflict, AIA Document A201 shall take precedence over notes in the Contract Documents.

B All work shall comply with all applicable codes, laws, standards and regulations including but not limited to the Connecticut State Building Code, NFPA 101 Life Safety Code, ADAAG, Connecticut General Statutes, and local ordinances and zoning.

C Contractor shall pay for and obtain all permits prior to commencing ANY work. The contractor shall indicate the permit value on the bid form. Any changes to permit fees due to change orders shall be handled as a SINGLE change order at the end of the job.

D Bidder shall be held to have examined the project location and to have compared it with the Drawings and Specifications and to have satisfied himself of the conditions existing at the site, the storage and handling of materials and all other matters that may be incidental to the Work under the Contract before submitting his proposal. Submission of a proposal will be considered as evidence that an examination has been made. No allowance will subsequently be made to the Contractor by reason of any error on his part due to his neglect to comply with the requirements of this clause.

E Submission of bid will be considered presumptive evidence that each bidder is conversant with local facilities and difficulties, the requirements of the documents and of pertinent Local and State codes, state of labor and material markets, and has made due allowance in his bid for all contingencies.

F Reservered

G No compensation will be allowed for any difficulties which the bidder could have discovered or reasonably anticipated prior to bidding.

H The contractor shall assume full responsibility for his sub-contractors. Performance, timely completion of work, and adherence to the contract documents shall be monitored at all times by the contractor. Sub-contractors shall not be allowed to work unsupervised unless approval is given by the Architect and the Owner.

I Before performing Work or ordering any materials, Contractor shall verify all dimensions of any existing and new Work and shall be responsible for their accuracy. Any differences found shall be submitted to the Architect for consideration before proceeding with the Work. No extra compensation will be permitted because of differences between actual dimensions and measurements indicated on the project Drawings.

J The project limits are established on the Drawings. Contractor shall confine his operations within the project limits and shall utilize the area in an efficient and orderly manner.

K The Contractor is responsible for coordinating the use of building facilities and utilities with the Owner and is prohibited from interrupting any occupant's day to day activities. Hours of operation, use of parking, access to facilities contained within the building and placement of dumpsters and other equipment will be dictated by the Owner. The Contractor will comply with these requirements.

L The Contractor shall coordinate ALL work included in the Contract with the Owner and shall perform ALL work in a manner that does not affect any existing maintenance or service agreements. The Contractor shall make every effort to employ sub-contractors recommended by the Owner.

M Extreme care must be taken to minimize and contain noise, dust and construction debris. Materials may be stored on site at a location to be determined by the Owner, however materials must not exceed beyond the designated area. All materials and equipment required for the work shall be stored or placed so as not to endanger the general public, the Owner's employees and clients, or the Contractors own workers.

N The Contractor shall provide suitable protection for the general public and their own workers for the duration of the work. No exits shall be blocked, adequate lighting shall be maintained throughout all areas affected by the work, and all life safety and security equipment and systems must remain fully operational and accessible.

O All manufactured articles, material, and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned, as directed by manufacturer's instructions unless specified herein to the contrary.

P Wherever possible, building standard materials shall be utilized unless specifically designated otherwise by these documents. In case of a discrepancy between apparent building standards and specified products, request written clarification from the Architect prior to proceeding.

Q Contractor shall and does hereby warrant and/or guarantee the Work as follows: For a period of 1 year from the date of Final Completion, and Owner acceptance, the Contractor shall and does hereby guarantee all Work whether Work is performed by his Subcontractors or performed by him directly. (Nothing in the above intends or implies that this guarantee shall apply to Work which has been abused or neglected by the Owner or his successors in interest.) Individual components and assemblies specified herein with warrantee periods greater than 1 year shall be provided with warrantee periods as called for in their specific specification section(s).

R Any dimensions, finishes or materials noted M.E., Match Existing, VIF, Verify, or +/- shall be checked and confirmed by the Contractor in the field. Errors or omissions attributable to inadequate or incomplete field measurements or field determinations made by the Contractor or any of his agents, are the sole responsibility of the Contractor.

S Where conflicts between the drawings and/or specifications occur, the Contractor shall notify the Architect during the bidding period for a clarification. In the absence of a clarification during the bidding process, the more restrictive and/or more costly option shall apply unless specifically noted otherwise by the Architect.

01110 – GENERAL REQUIREMENTS

A PROJECT DESCRIPTION
1. The work includes but is not limited to the historic window replacement of the entire building, removal and re-installation of existing slate roof tiles, new gutters and ADA path to existing gallery floor. The interior work includes but is not limited to; selective demolition work, installing a new ADA bathroom, installing a new AHU and gallery lighting.

B CONTRACTOR QUALIFICATIONS
1.The Contractor shall have been regularly engaged in construction and the installation and fabrication of the type work set forth in the Contract Documents for a period of not less than five (5) years prior to the Bid date set forth in the Contract Documents.

2.The Contractor shall have adequate equipment, facilities and personnel for the proper performance of the work set forth in the Contract Documents, and all such equipment, facilities and personnel shall be subject to the approval of the Owner.

3.The Owner shall be the sole judge and shall have the final privilege to approve or disapprove the qualifications of the Contractor, and to approve or disapprove his equipment, facilities and personnel available to perform the work required by the Contract Documents.

C WORK SEQUENCE

1. The building may be occupied throughout the duration of the project. Work must be closely coordinated and scheduled with the Owner.

2. On-Site storage of any/all materials must be approved by the Owner and the Owner's Representative. A site logistic plan must be prepared and approved by the Owner and the Owner's Representative. All storage costs are borne by the Contractor. Any long term storage locations must be coordinated with the Owner and the Owner's Representative.

3. No exterior building penetrations may remain open to the elements overnight. All such openings or penetrations must be fully secured at the end of each work day.

D JOB SITE SAFETY

1. Caution shall be exercised by the Contractor at all times for the protection of persons and property and all safety regulations and other provisions of applicable Federal, State and local laws, Building and Construction codes, including the requirements of the Occupational Safety and Health Administration shall be observed.

2. The drawings and specifications do not include standards or guidelines for construction safety. The Contractor is responsible for the adequacy and safety of all construction methods and the safe prosecution of the Work, including but not limited to forms, false-work, scaffolding, protective barricades, temporary paths, protective rails and warning lights. It is expressly stipulated that any examination and/or approval by the Architect and/or their consultants of the contractor's plans for such items as well as for any other items needed for the prosecution of the work will cover only general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Contractor shall assume full and complete responsibility for safe prosecution of the Work at all times and for obtaining satisfactory results.

3. Design, engineering, construction, maintenance, repair, and inspection of all temporary work is the sole responsibility of the Contractor. Any review or comments made by the Architect and/or their consultants in regards to temporary work shall not be construed of as acceptance or design of such work.

4. During the course of the performance of the Work, if any operation, practice, or condition is deemed by the Architect and/or their consultants to be unsafe, the Contractor, whether notified verbally or in writing, shall take such corrective action immediately as appropriate.

5. Nothing in the above paragraphs or this specification in general shall be construed as relieving the Contractor from full responsibility of safe prosecution of the Work at all times. In the event the Owner, the Architect and/or their consultants are held by court of administrative body to be liable for personal injuries or damages to property arising from deficiencies in the job-site safety, the Contractor shall promptly indemnify and hold the Owner, the Architect and their consultants harmless.

E INSPECTIONS, CODES AND REGULATIONS

1. The Contractor shall comply with all codes and regulations of the local Municipality, the State of Connecticut, all utility companies (including but not limited to telephone and cable companies) and all other governing agencies having jurisdiction over the project.

2. The Contractor shall be responsible for the proper inspection of his work during its installation by his workmen, his sub-contractors, all lawful authorities, other workmen which may be engaged by the Owner.

3. The Contractor shall, prior to the acceptance of all work by the Owner, furnish written proof of the acceptance of all work by the local Municipality, the Utility Companies, the State of Connecticut, and all other governing agencies having jurisdiction over the Project.

4. The Contractor shall obtain and pay for all necessary permits, f fees, and other requirements prior to commencing any work. This includes all fees in connection with the installation of the work and any fees charged by the local Municipality, by Utility Companies, and all other governing Agencies having jurisdiction over the Project.

5. The Contractor shall comply with all laws relative to persons employed by him or his sub-contractors.

6. The Contractor shall perform all work in accordance with the Owner's Rules and Regulations and the Terms of Conditions of their contract with the Owner.

F CLEANING, REMOVAL OF DEBRIS

1. The Contractor shall periodically and as directed during the progress of the work, remove and properly dispose of all debris, and shall keep the premises clean and clear of all obstructions. Upon completion of the work, he shall remove all temporary construction, facilities and materials, and shall leave the Building and the Project Site in a neat and clean condition.

2. All debris due to removal and installation of new work shall be removed daily from the Job Site by the Contractor.

G INTERPRETATION OF DRAWINGS & SPECIFICATIONS

1. Any questions or disagreements arising as to the true intent of this specification or the Drawings, or the kind and quality of work required thereby, shall be decided by the Architect, whose interpretations thereof shall be final, conclusive, and binding on all parties.

2. In the case of any discrepancies between Drawings and Specifications, or within either document itself, the better quality, greater quantity or more costly work shall be included in the Contract Price, and shall be furnished and installed in the performance of the required work.

H PROTECTION OF WORK & PROPERTY

1. The Contractor shall be responsible for the maintenance and protection of all equipment, materials, and tools, supplied by him and stored or installed on the job site, from loss or damage of all causes, until final acceptance.

2. The Contractor shall be responsible for the protection of any finished work of other trades from damage or defacement by his operations and must remedy any such injury at his own expense.

I CONTRACTOR CONDUCT

1. All contractors and their employees shall conduct themselves in a manner that is lawful, courteous, businesslike, and respectful of all Owner employees, guests, and visitors.

2. Contractors and their employees shall not engage in behavior that is rude, threatening, or offensive. Use of profane or insulting language is prohibited. Harassment of any type, including sexual harassment is strictly prohibited. Abusive, derogatory, obscene or improper language, gestures, remarks, whistling, cat calls or other disrespectful behavior will not be tolerated. Roughhousing, fighting, fisticuffs, physical threats, destruction of property, vandalism, littering, or physical abuse of anyone on site is not permitted under any circumstance.

3. The use, possession, distribution, or sale of any weapon, alcohol, illegal drug, or controlled dangerous substance by any contractor or contractor's employee is prohibited. Offenders will be removed from the site and/or reported to the local police department.

4. Contractors and their employees are not permitted to smoke in or near the building.

5. The use of radios, "boom boxes" and similar units shall not be permitted on-site at any time.

6. Contractors and their employees are required to wear appropriate work wear, hard hats, safety gear and footwear while on-site. Articles of clothing shall not display offensive or inappropriate language, symbols or graphics.

7. The Contractor is responsible for his/her employees, agents, consultants and guests. If prohibited conduct does occur, the contractor shall take all necessary steps to stop and prevent any future occurrence. Any breach of these conditions will result in the removal of the person responsible from the premises and prohibited actions could result in the termination of any contract or agreement with the Owner. The Contractor is required to report any matter involving a violation of these rules of conduct to the Owner or the Owner's Representative.

01200 - PROJECT COORDINATION

A GENERAL
1. Coordinate construction activities included under various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection, and operation.
a. Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.
b. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
c. Make adequate provisions to accommodate items scheduled for later installation.
2. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
a. Prepare similar memoranda for the Owner and separate Contractors where coordination of their Work is required.
3. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following

a. Preparation of schedules.
b. Installation and removal of temporary facilities.
c. Delivery and processing of submittals.
d. Progress meetings.
e. Project Close-out activities.

4. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

a. Salvage materials and equipment involved in performance of, but not actually incorporated in, the Work. Refer to other sections for disposition of salvaged materials that are designated as Owner's property.

5. Efficiency: Verify supplied products specified in other sections have a minimum or higher efficiency to comply with EPA's Energy Star, D.O.E. and CNG requirements for HVAC, lighting/controls; building envelope and appliances.

B SUBMITTALS

1. Coordination Drawings: Prepare and submit coordination Drawings where close and careful coordination is required for installation of products and materials fabricated off-site by separate entities, and where limited space availability necessitates maximum utilization of space for efficient installation of different components.

a.Show the interrelationship of components shown on separate Shop Drawings.
b. Indicate required installation sequences.

2. Staff Names: Submit within 3 days after "Notice to Proceed" a list of the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses, telephone numbers and include a copy of their resumes.

a. Post copies of the list in conspicuous locations in the Work Area including Project meeting rooms, temporary field offices, and at temporary telephone locations.

C COORDINATION

1. Coordinate in field with affected trades for proper relationship to Work based on Project conditions.

2. Notify Architect of conflicts and other coordination issues requiring resolutions prior to commencing construction in each affected area.

3. Submit Contractor's certification to Architect that Coordination Drawings have been completed and coordination issues have been identified and resolved prior to commencing construction in each affected area.

4. Make Coordination Drawings available in field office for review by Architect and Owner during entire period on construction.

5. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

6. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.

7. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.

8. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.

9. Visual Effects: Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.

10. Re-check measurements and dimensions, before starting each installation.

11. Install each component to ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.

12. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.

13. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

D CLEANING AND PROTECTION

1. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

2. Clean and maintain job site and completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

3. Limiting Exposures: Supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

01400 - QUALITY CONTROL

A GENERAL

1. The Contractor shall monitor and control quality of the work, and shall coordinate suppliers, manufacturers, products, services, site conditions and workmanship in order to produce work of specified quality.

2. Contractor shall comply with manufacturer's handling and installation instructions. Conflicts between manufacturer's instructions and the Contract Documents shall be brought to the attention of the Architect prior to proceeding with any work.

3. The contractor shall be responsible for providing any layout, surveying, testing or inspections necessary to complete the work specified herein. Any additional required testing or inspections of structural repairs, structural modifications, hazardous or otherwise controlled materials shall be performed as required by an independent firm appointed, employed and paid for by the Owner. Reports shall be submitted by the independent firm in duplicate to the Architect and Contractor indicating the results of all tests and indicating compliance or non-compliance with the Contract Documents. The Contractor shall cooperate fully with the independent testing firm and allow the firms' agents full access to the Work. Contractor shall furnish or supply samples, mix designs, equipment, storage and incidental labor (within traditional and accepted standards) as requested by the independent testing firm, at the Contractor's cost. Testing does not relieve the Contractor from the requirements to perform the work as specified herein. Re-testing required because of non-conformance to specified requirements or defective work shall be performed by the same independent testing firm on instructions by the Architect or Engineer and shall be paid for by the Owner and charged back to the Contractor by deducting the cost of the tests from the Contract Sum/Price.

01600 – SUBMITTAL PROCEDURES

A SHOP DRAWINGS

1. Prior to delivery to the job site, but sufficiently in advance of requirements necessary to allow the Architect ample time for review, the Contractor shall submit for review one (1) hardcopy and one (1) electronic copy (PDF) of shop drawings and product information for all equipment, materials, hardware, fixtures, equipment, etc., and further shall obtain review approval for same from the Architect before installing any of the same in the work of the Project.

2. The review shall be only for general conformance with the design concept and general compliance with the information given in the Contract Documents. It shall not include review of quantities, dimensions, weights or gauges, fabrication processes, construction methods, etc., all of which shall be the sole responsibility of the Contractor. The Contractor shall not be relieved from furnishing materials or work as may be required for the completion of all items of work intended by the Owner.

3. Prior to submission of shop drawings, the Contractor shall thoroughly check each shop drawing and shall reject those not conforming to the Contract Documents and shall indicate by his signature thereon that the shop drawings submitted in his opinion meet the full requirements of the Contract Documents.

B SUBSTITUTIONS
1. Substitutions of equipment or materials other than those indicated on the Drawings or in the Specifications, shall be confined to only those manufacturer's listed, or those otherwise indicated, and may be made only upon written approval from the Architect.
2. The Contractor shall submit his substitution for approval before releasing order for fabrication and/or shipment. Submittal will be forwarded with a letter of transmittal or cover letter listing all items for approval. The Architect reserves the right to disapprove such substitution, provided, in his opinion, the item offered is not equal to the item specified.
3. Where a Contractor proposes to use an item of material or equipment other than that specified or detailed on Drawings, and which requires any redesign of the roof and/or structure, or architectural lay-out, all such redesign and all new drawings and details required thereof shall, with the approval of the Architect be prepared by the Contractor at his own expense.
4. Where such approved deviation requires a different quantity and arrangement of material and equipment from that specified or indicated on the drawings, subject to the approval of the Architect, the Contractor shall provide any such material, structural supports, and any other items at no additional cost to the Owner.
5. Wherever any product is specified in the Contract Documents by a reference to the name, trade name, make or catalog number of any manufacturer or supplier, "or approved equal", the Owner in conjunction with the Architect shall be sole judges as to whether a proposed equal is to be approved as such. For the purposes of these documents, the word "equal" shall be defined as "equivalent". Contractor shall have the burden of proving, at his own expense and to the satisfaction of the Owner and Architect, that the proposed determination is equal to the named product. In making such determination the Architect may establish such objective and appearance criteria he may deem proper in order for the proposed product to be approved. This applies to ALL trades and ANY substitutions.

01700 – PROGRESS CLEANING

A GENERAL

1. Maintain areas under the General Contractor's control free of waste materials, debris, and rubbish. Maintain in a clean and orderly condition.

2. Remove debris and rubbish from beneath access floor, pipe chases, plenums, crawl spaces, and other closed or remote spaces before closing the space.

3. Periodically clean areas before start of surface finishing and continue cleaning on an as-needed basis.

4. The General Contractor shall control cleaning operations so that dust and other particulates will not adhere to wet or newly-coated surfaces.

5. Remove waste materials, debris, and rubbish from site daily and dispose of legally off-site. No scrap/debris shall remain inside the building or anywhere on site upon final acceptance of the project.

02072 - DEMOLITION

A Dashed lines indicate existing construction to be removed or modified. Exercise care during demolition activities to maintain adjacent spaces and construction designated to remain. Take care during selective demolition not to damage or disturb any items to remain.

B Patch and repair all existing surfaces and finishes intended to remain where damaged by demolition or construction activities. Patched surfaces to match and align with existing surfaces. Unfinished surfaces exposed by demolition or construction activities not specifically noted to receive new finishes shall be refinished to match nearest (or adjacent) similar surfaces. Painted surfaces requiring patching shall be repainted completely to nearest corner or edge. Other finish materials shall be repaired or replaced to nearest existing natural edge, joint or corner.

C The Contractor shall provide any shoring required during demolition and construction activities. Design and construction of shoring shall be the responsibility of the Contractor and shall be reviewed and approved by a licensed structural engineer.

D Owner shall have first right of refusal of all items. All fixtures, casework or other elements indicated to be removed and not specifically called out to be reused or salvaged are to be disposed of as follows: Where Owner requests items to be retained, Contractor shall return those items to a location (on site) designated by the Owner. Other items shall be appropriately disposed of by Contractor in accordance with the General Conditions.

E Exercise care to insure that all items designated in the drawings (or specified herein) to be reused are carefully removed, stored and protected until they can be re-installed by the appropriate trade. Take note of any materials or items requiring special handling or repair before reinstallation and notify Owner and Architect before proceeding.

F Provide and maintain temporary barriers and signage as required to protect the general public and building occupants from the demolition areas. Erect weatherproof enclosures at any exterior openings and provide temporary egress routes as necessary to maintain safety for building occupants.

G Disconnect, remove and cap any utilities uncovered within the demolition areas. Contractor shall remove all switches and receptacles located in walls scheduled to be removed. Wiring and feeds shall be removed back to nearest accessible junction box or fixture housing, assuring power is maintained to other fixtures or receptacles on the same circuit. Existing thermostats located on walls to be removed shall remain connected and operational (coil excess wiring and tie-off). Existing electric and communications outlets within the demolition area shall be disconnected. Fill voids in floors and ceilings and patch with appropriate materials prior to applying finish floors.

H Fire alarm initiation and signaling devices, emergency fixtures and other similar appurtenances located on walls to be removed shall be disconnected and returned to the Owner. Disconnection of any items shall not compromise the integrity and functionality of devices not being removed.

I Conform to procedures applicable when hazardous or contaminated materials are discovered or uncovered. The presence of hazardous materials shall be brought to the attention of the Owner and Architect promptly for evaluation by a LEP.

J It is assumed that lead based paint is present in this project and the Contractor shall adhere to the Federal Lead PRE Rule. The contractor shall also adhere to the OSHA Lead in Construction Standard (OSHA 29 CFR 1926.62) when impacting any painted surfaces during renovation and/or demolition activities. The contractor shall conform to the "Guidance for the Management and Disposal of Lead Contaminated Materials Generated in the Lead Abatement, renovation, and Demolition Industries" issued by the Connecticut Department of Environmental Protection (CT DEP) on November 4, 1994 for all debris material created by paint removal procedures.

K Removal of the lead containing materials must be accomplished by workers who have completed OSHA Lead Training (4 HR course) in accordance with OSHA regulations 1926.62 and shall have and maintain current Connecticut EPA RRP Certification and Training.

L The Contractor shall ensure personnel handling hazardous materials shall have the proper hazardous material/OSHA training. All personnel shall be equipped and dressed in OSHA approved garments when handling hazardous materials.

M Proceed with Work in an orderly, careful, safe manner. Remove material as Work progresses, leaving area clean at completion of demolition activities.

N Provide X-Ray or Sono-graphic testing of all slab areas to be demolished and or core bored prior to initiating demolition activities. If diagnostic results indicate presence of structural steel, utilities or other cast-in-slab encumbrances to demolition, immediately notify Project Manager and Architect for direction.

030130 - EXTERIOR CONCRETE CLEANING

GENERAL
1.1 SECTION INCLUDES

A. The work of this section consists of exterior cast-in-place concrete cleaning systems as required to restore and clean existing exterior concrete. Dirt, grime and other coatings shall be removed from the masonry without damaging the underlying material and to give the concrete a clean uniform appearance without blotches, streaks, runs or spotty appearance.

B. The extent of concrete cleaning work is as shown on the Drawings notes and as specified herein. The drawings endeavor to show the extent of concrete cleaning work required. The contractor shall review the Drawings, Photographs and make a Pre-bid field visit to verify all work whether shown or not shown on the Drawings. Questions regarding the scope of cleaning shall be posed prior to submitting a bid.

1.3 REFERENCES

A. Codes:
1. Comply with the current Connecticut Building Code (2018 IBC with the 2018 Connecticut Supplement).
2. Comply with all applicable OSHA safety rules while performing work for this project.

1.4 SUBMITTALS

A. Refer to Section 01600 "Submittal Procedures".

B. Submit the following:
1. Submit manufacturer's current technical literature (data sheets) for each product including the following:
a. Product characteristics
b. Material Data Safety Sheets
c. Storage and handling requirements
d. Application methods
e. Cautions and limitations

C. Certificates: Submit documentation by the producers of the materials certifying that all materials supplied comply with all the requirements of these specifications and the appropriate standards.

D. Procedure: Submit a written cleaning procedure detailing the process by which the masonry will be cleaned including schedule, duration, methods of application of the products, and proposed protection of surrounding building and site during operations. Describe in detail material methods and equipment to be used for restoration work

1.5 TEST AREA

A. Prior to start of general masonry cleansing, provide a 2'x2' test area on building where directed by Architect. Obtain Architect's acceptance of visual qualities before proceeding with the work. Retain acceptable panels in undisturbed condition, suitably marked, during restoration as a standard for judging completed work.

B. The test area shall be done in a location that will be exposed to the same weathering conditions as the primary work area. Test areas should be observed over a sufficient period of time so that both the immediate and long term effects of cleaning can be determined.

030130 - EXTERIOR CONCRETE CLEANING (Continued)

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Material manufacturers shall have a minimum of ten (10) years experience in the production specified products.

B. Contractor Qualifications: Work must be performed by a firm having not less than 5 years successful experience in comparable masonry cleaning projects and employing personnel skilled in the cleaning process and operations indicated.

C. Comply with all municipal and federal regulations governing work described in this section including waste disposal, product safety, scaffolding and protection.

1.7 DELIVERY, STORAGE AND HANDLING

A. Delivery: Deliver materials in manufacturer's original, unopened, undamaged packaging with identification labels intact.

B. Storage: Store materials on dry, level, firm, and clean surface. Solvent-based materials, and materials used with solvent-based materials shall be stored and disposed of in accordance with requirements of local authorities having jurisdiction. Store all materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect materials from freezing.

C. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

D. Disposal:

1. Never pour leftover coating down any sink or drain. Use up material on the job or seal can and store safely for future use.

2. Do not incinerate closed containers.

3. For specific disposal or recycle guidelines, contact the local waste management agency or district. Recycle whenever possible.

1.8 JOB CONDITIONS

A. Protect and cover all adjacent architectural features and work completed by other trades.

B. Insure that environmental conditions (temperature, humidity, and ventilation) are all within limits recommended by the manufacturer for optimum results. Do not proceed under environmental conditions outside manufacturer's absolute limits.

C. Wood, glass and painted surfaces of every description shall be carefully protected against damage from mechanical, acid, alkali and/or pressure rinsing operations.

PART 2 -

PRODUCTS

2.1 CLEANING AGENTS
See Editing Instruction No. 1 in the Evaluations for cautions about naming manufacturers and products.

A. Prosoco Dicone 15 Gel

B. Prosoco SureKlean Restoration Cleaner.

2.2 OTHER MATERIALS
A. Water: Clean and potable.
B. Polyethylene sheeting.
C. Liquid Strippable Masking Agent: Cleaning agent manufacturer's standard or recommended liquid film forming strippable masking material for protection glass, metal and polished stone surfaces from the cleaning process.

D. Natural fiber bristle brushes. Wire brushes and or steel wool is strictly prohibited.

PART 3 - EXECUTION

3.1 BASE STANDARDS

A. For the purposes of this contract the term "clean" means to remove all organic and inorganic contaminants from the surface and pores of the substrate returning the material to its natural color. The surfaces shall be evenly cleaned with no evidence of streaking or bleaching.

B. The cleaning process shall not affect the density, porosity or the color of the substrate. The rinsing cycle shall flush deep into the pores of the substrate removing all traces of acidity or alkalinity.

C. The use of wire brushes, steel wool or sandblasting for cleaning is not permitted.

D. The cleaning materials and systems shall be from one of the specified manufacturers or approved equal.

E. Always follow the manufacturer's recommendations and application procedures including protection of adjacent surfaces; many cleaning solutions are concentrates so it is imperative that a small patch test be conducted.

F. Certain products are required by the Manufacturer to be cut with water; the only way to determine the best mixture is to conduct patch tests on the substrate to be cleaned. After rinsing the patches, allow them to dry thoroughly and observe the cleanliness of the patch and any discoloration or whitening of the substrate. Whitening indicates the cleaner is too strong and must be cut with water.

3.2 PROTECTION

A. Since the possibility of etching glass does exist, all glass windows, doors and anodized aluminum surfaces shall be masked with polyethylene sheeting. Concrete cleaners should not be sprayed on very windy days as they could be deposited on unmasked glass.

B. Take all necessary precautions and measures to protect surrounding materials on the site, surfaces of the building not being cleaned, adjacent buildings, pedestrians and vehicles from coming in contact with cleaning chemicals, over-spray or runoff. Any damage to materials caused by the cleaning operations or the work in this section is unacceptable and shall be repaired (or replaced in kind) by the Contractor to the satisfaction of the Architect and Owner at no additional cost.

C. Provide protection from water damage to new work, the building and building contents as required.

D. Protect trees and plants around the building from contamination and or damage. The Contractor shall be responsible for replacing any damaged plantings from new stock.

E. Test all drains and other water removal systems to assure they are functioning properly prior to commencing any cleaning operations. Notify the Architect if any drains or systems are found to be stopped or blocked; do not begin cleaning operations until drains are operational.

F. Provide adequate protection for drains to prevent them from being blocked or damaged by cleaning operations including but not necessarily limited to preventing solids from entering the drains or drainage systems. The Contractor shall be responsible for cleaning out any drains and drainage systems that become blocked or filled because of cleaning operations.

3.3 APPLICATION

A. Cleaning agents shall be applied with the gentlest methods possible. Use very low pressure water (50 PSI or less) and chemical cleanser shall be used in conjunction with natural or synthetic bristle brushes. NO METAL BRUSHES shall be used.

B. Under no circumstance should sandblasting or high pressure water be applied to the masonry during the cleaning process.

C. Start at the bottom of the structure and apply an even coating. Keep all surfaces below the point of cleaning wet to avoid streaking caused by dirty water or effluent.

D. After a dwell time determined during testing (normally as little as three minutes and as much as thirty minutes) rinse the product off with a low pressure (300 PSI MAXIMUM) rinse. Rinse from the bottom of the treated area to the top, flushing each section of the surface with a concentrated low pressure stream of water. Keep the bottom sections of the wall wet and rinsed free of cleaner and residue to avoid streaking. It is extremely important that all surface staining matters and cleaning agent residue are thoroughly flushed from the treated surfaces, leaving the surface with a neutral pH.

E. Where grains of masonry or sand appear in the cleaning effluent, immediately lower water pressure to avoid further damage of existing masonry.

END OF SECTION 030130

035400 - CEMENTITIOUS UNDERLAYMENT

Part 1 - General

1.01 Summary

This is the recommened specification for Sika® Level-325 SELF-LEVELING UNDERLAYMENT CONCRETE for use over specified interior and exterior substrates.

1.02 Quality Assurance

A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.

B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by manufacturer's representative

C. Acceptable to the manufacturer: Installers will be experienced in performing work of this section and specialized in work similar tot hat required for this project; INSTALL certified or equal.

D. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage, and Handling

A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.

C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 50oF (10oC) and rising.

B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

C. Material may be placed interior and exterior but must be covered prior to opening up to traffic. Material is not a direct wearing surface.

1.05 Submittals

A. Submit two copies of manufacturer's literature, to include: Product Data Sheets (PDS), and appropriate Safety Data Sheets (SDS).

B. Submit copy of Certificate of Approved Contractor status by manufacturer.

1.06 Warranty

Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project. Part 2 - Products Spec Component: 03 54 00 Sika® Level-325 2/8/2018 2

Part 2 - Product

2.01 Manufacturer

Sika® Level-325, as manufactured by Sika® Corporation, is considered to conform to the requirements of this specification.

2.02 Materials

A. The cement-based self-leveling underlayment shall be Sika® Level-325 SELF-LEVELING UNDERLAYMENT CONCRETE.

B. Primer for standard absorbent concrete shall be Sika® Level-01 Primer Plus.

C. Primer for standard non-absorbent concrete shall be Sika® Level-02 EZ Primer.

2.03 Performance Criteria
Properties of the cured polymer-modified portland cement coating:

1. Yield, approximately .49 cu. ft. per 55 lb. bag
2. Color, concrete gray
3. Density (wet mix) (ASTM C-18), 133 ibs/cu.ft.
4. Mixing Ratio, 9.5 pints of water per 55 lb. bag
5. Application Thickness, Min. 1/8" (3mm); Max. 3" (76mm) with aggregates
6. Application Temp. Min 50F (10C); Max. 86F (30C)
7. Working Time, 25-30 min. at 1/8" (3mm) thickness
8. Setting Times (ASTM C-191), Initial set - 70-80 min.
9. Compressive Strength (ASTM C-109) 28 days @ 73F (23C), 5,300 (37 MPa)
10. Flexural Strength 28 days (ASTM C-580), 1,500 psi (10 MPa)
11. Final Drying Time, Foot Traffic ~ 4 hours

Part 3 – Execution

3.01 Surface Preparation

A. Substrate

All concrete and cement substrates must be primed using Sika® Level-01 Primer Plus (dilution 1:3) and all difficult-to-bond to substrates, including wood subfloors, ceramic, quarry and vinyl tiles and cut back adhesive must be primed using Sika® Level-02 EZ Primer in accordance with the Product Data Sheet.

The substrate must be dry, clean and stable before priming and applying the underlayment materials. Remove all existing treatments such as coatings, sealers, wax, latex compounds, impregnations and curing agents, together with all contaminants i.e. dirt, dust, laitance, grease, oils, and foreign matter, which will interfere with the penetration of the primer and the adhesion of Sika® Level-325.

B. Concrete & Dense Substrates

Prepare concrete, cement and dense substrates., including ceramic, quarry and vinyl tiles by mechanical means, such as shotblasting, sandblasting, water-jetting, scarifying, or other appropriate methods, to achieve an open-textured, fine-gripping surface (ICRI - CSP 3 minimum). Weak concrete should be removed and surface defects such as blowholes and spalls fully exposed and repaired Sika® Level Skim/Coat or Sika® Quick mortar prior to priming and levelling. All cracks and holes should be similarly filled to prevent seepage of the primer through to lower areas.
Consult Sika® Technical Sales for recommendations.

3.02 Mixing and Application

A. Pour 9.5 pints of cool, potable water into a suitably sized and clean mixing container, using a calibrated measuring jug, or similar, to ensure strict control of the water content (do not over-water). Cool water 70oF (21oC) serves to maximize the working time; if available water is not at this temperature, then consideration should be given to cooling the water. Add Sika® Level-325 to the water, while slowly mixing, adding the complete contents of the 55 lb. bag. Once all the powder has been added, continue mixing until a lump-free and uniform consistency is achieved. This should typically take no more than 5 minutes.

B. If mixing in a barrel or similar container, employ the water to powder ratio as stated above and use a high-speed electric mixer (min. 650 rpm) and egg beater style mixing paddle to blend water and powder for a minimum of 3 minutes, until a uniform mix has been produced.

C. When pump-mixing, ensure that the mechanical mixers and pumps are in sound working order. Pre-clean and test the equipment, checking that the mixing and pumping elements are fully functional and that meshes are in place to prevent foreign matter from entering the hopper or being dispensed onto the floor.

D. Prior to placing the underlayment, ensure that all sources of premature drying or direct sunlight are blocked off to avoid accelerated curing and reduced physical properties. The stated ambient and substrate application temperatures are to be achieved before installation and should be maintained for a period of at least 3 days thereafter. Should colder conditions prevail, make allowances for the use of indirect and vented heaters to achieve and maintain the application temperatures required. Where temperatures exceed 86oF (30oC), refer to and follow ACI hot weather application and protection guidelines.

Spec Component: 03 54 00 Sika® Level-325 2/8/2018 4

E. The material can be extended by adding up to 30% of 20/30 grade sand during mixing to achieve up to 3" in one lift. A reduction in flow, approximately 15%, can be expected. The final layer should be neat to allow for a smooth finished floor. When adding aggregate, expect coverage to increase by approximately 16 cu.ft. per 25 lbs of aggregate.

F. Pre-washed 3/8" p

SECTION 040120 - MASONRY CLEANING

GENERAL

1.1 SECTION INCLUDES

A. The work of this section consists of exterior masonry cleaning systems as required to restore and clean existing brick masonry. Dirt, grime and other coatings shall be removed from the masonry without damaging the underlying material and to give the masonry a clean uniform appearance without blotches, streaks, runs or spotty appearance.

B. The extent of masonry cleaning work is as shown on the Drawings and as specified herein. The drawings endeavor to show the extent of masonry cleaning work required. The contractor shall review the Drawings, Photographs and make a Pre-bid field visit to verify all work whether shown or not shown on the Drawings. Questions regarding the scope of cleaning shall be posed prior to submitting a bid.

1.2 RELATED SECTIONS

A. Section 040513 "Masonry Restoration"

If allowances apply to work of this Section, insert brief paragraph here to alert Contractor and reference appropriate Division 1 Section for specific details.
Retain paragraph and subparagraphs below if unit prices are specified for access doors. Include sizes, material, lock or latch type, hinge type, and other salient features. Include separate unit prices for each type if required.

1.3 REFERENCES

A. Codes:

1. Comply with the current Connecticut Building Code (2018 IBC with the 2018 Connecticut Supplement).

2. Comply with all applicable OSHA safety rules while performing work for this project.

1.4 SUBMITTALS

A. Refer to Section 013300 "Submittal Procedures".

B. Submit the following:

1. Submit manufacturer's current technical literature (data sheets) for each product including the following:
   a. Product characteristics
   b. Material Data Safety Sheets
   c. Storage and handling requirements
   d. Application methods
   e. Cautions and limitations

C. Certificates: Submit documentation by the producers of the materials certifying that all materials supplied comply with all the requirements of these specifications and the appropriate standards.

D. Procedure: Submit a written cleaning procedure detailing the process by which the masonry will be cleaned including schedule, duration, methods of application of the products, and proposed protection of surrounding building and site during operations.

1.5 TEST AREA

A. Prior to start of general masonry cleansing, provide a 2'x2' test area on building where directed by Architect. Obtain Architect's acceptance of visual qualities before proceeding with the work. Retain acceptable panels in undisturbed condition, suitably marked, during restoration as a standard for judging completed work.

B. The test area shall be done in a location that will be exposed to the same weathering conditions as the primary work area. Test areas should be observed over a sufficient period of time so that both the immediate and long term effects of cleaning can be determined.

1.6 QUALITY ASSURANCE
If retaining below, also retain "Schedule" Paragraph in "Submittals" Article.

A. Manufacturer Qualifications: Material manufacturers shall have a minimum of ten (10) years experience in the production specified products.

B. Contractor Qualifications: Work must be performed by a firm having not less than 5 years successful experience in comparable masonry cleaning projects and employing personnel skilled in the cleaning process and operations indicated.

C. Comply with all municipal and federal regulations governing work described in this section including waste disposal, product safety, scaffolding and protection.

1.7 DELIVERY, STORAGE AND HANDLING

A. Delivery: Deliver materials in manufacturer's original, unopened, undamaged packaging with identification labels intact.

B. Storage: Store materials on dry, level, firm, and clean surface. Solvent-based materials, and materials used with solvent-based materials shall be stored and disposed of in accordance with requirements of local authorities having jurisdiction. Store all materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect materials from freezing.

C. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

D. Disposal:

1. Never pour leftover coating down any sink or drain. Use up material on the job or seal can and store safely for future use.
2. Do not incinerate closed containers.
3. For specific disposal or recycle guidelines, contact the local waste management agency or district. Recycle whenever possible.

1.8 JOB CONDITIONS

A. Protect and cover all adjacent architectural features and work completed by other trades.

B. Insure that environmental conditions (temperature, humidity, and ventilation) are all within limits recommended by the manufacturer for optimum results. Do not proceed under environmental conditions outside manufacturer's absolute limits.

C. Wood, glass and painted surfaces of every description shall be carefully protected against damage from mechanical, acid, alkali and/or pressure rinsing operations.

PART 2 - PRODUCTS

2.1 CLEANING AGENTS

A. Prosoco Dicone 15 Gel
B. Prosoco SureKlean Restoration Cleaner.

2.2 OTHER MATERIALS

A. Water: Clean and potable.
B. Polyethylene sheeting.
C. Liquid Strippable Masking Agent: Cleaning agent manufacturer's standard or recommended liquid film forming strippable masking material for protection glass, metal and polished stone surfaces from the cleaning process.

D. Natural fiber bristle brushes. Wire brushes and or steel wool is strictly prohibited.

PART 3 - EXECUTION

3.1 BASE STANDARDS

A. For the purposes of this contract the term "clean" means to remove all organic and inorganic contaminants from the surface and pores of the substrate returning the material to its natural color. The surfaces shall be evenly cleaned with no evidence of streaking or bleaching.

B. The cleaning process shall not affect the density, porosity or the color of the substrate. The rinsing cycle shall flush deep into the pores of the substrate removing all traces of acidity or alkalinity.

C. The use of wire brushes, steel wool or sandblasting for cleaning is not permitted.

D. The cleaning materials and systems shall be from one of the specified manufacturers or approved equal.

E. Always follow the manufacturer's recommendations and application procedures including protection of adjacent surfaces; many cleaning solutions are concentrates so it is imperative that a small patch test be conducted.

F. Certain types of brick require the product to be cut with water; the only way to determine the best mixture is to conduct patch tests on the substrate to be cleaned. After rinsing the patches, allow them to dry thoroughly and observe the cleanliness of the patch and any discoloration or whitening of the substrate. Whitening indicates the cleaner is too strong and must be cut with water.

SECTION 040120 - MASONRY CLEANING (Continued)

3.2 PROTECTION

A. Since the possibility of etching glass does exist, all glass windows, doors and anodized aluminum surfaces shall be masked with polyethylene sheeting. Brick, granite and sandstone cleaners should not be sprayed on very windy days as they could be deposited on unmasked glass.

B. Take all necessary precautions and measures to protect surrounding materials on the site, surfaces of the building not being cleaned, adjacent buildings, pedestrians and vehicles from coming in contact with cleaning chemicals, over-spray or runoff. Any damage to materials caused by the cleaning operations or the work in this section is unacceptable and shall be repaired (or replaced in kind) by the Contractor to the satisfaction of the Architect and Owner at no additional cost.

C. Provide protection from water damage to new work, the building and building contents as required.

D. Protect trees and plants around the building from contamination and or damage. The Contractor shall be responsible for replacing any damaged plantings from new stock.

E. Test all drains and other water removal systems to assure they are functioning properly prior to commencing any cleaning operations. Notify the Architect if any drains or systems are found to be stopped or blocked; do not begin cleaning operations until drains are operational.

F. Provide adequate protection for drains to prevent them from being blocked or damaged by cleaning operations including but not necessarily limited to preventing solids from entering the drains or drainage systems. The Contractor shall be responsible for cleaning out any drains and drainage systems that become blocked or filled because of cleaning operations.

3.3 APPLICATION

A. Cleaning agents shall be applied with the gentlest methods possible. Use very low pressure water (50 PSI or less) and chemical cleanser shall be used in conjunction with natural or synthetic bristle brushes. NO METAL BRUSHES shall be used.

B. Under no circumstance should sandblasting or high pressure water be applied to the masonry during the cleaning process.

C. Start at the bottom of the structure and apply an even coating. Keep all surfaces below the point of cleaning wet to avoid streaking caused by dirty water or effluent.

D. After a dwell time determined during testing (normally as little as three minutes and as much as thirty minutes) rinse the product off with a low pressure (300 PSI MAXIMUM) rinse. Rinse from the bottom of the treated area to the top, flushing each section of the surface with a concentrated low pressure stream of water. Keep the bottom sections of the wall wet and rinsed free of cleaner and residue to avoid streaking. It is extremely important that all surface staining matters and cleaning agent residue are thoroughly flushed from the treated surfaces, leaving the surface with a neutral pH.

E. Where grains of masonry or sand appear in the cleaning effluent, immediately lower water pressure to avoid further damage of existing masonry.

END OF SECTION 040120

SECTION 040513 - MASONRY RESTRORATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. The work of this section consists of exterior masonry restoration as required to restore existing brick masonry in a historically compatible manner.

B. All work shall be completed in such a way as to protect existing architectural features from damage and to retain as much historic fabric as possible.

C. The scope of work includes but is not necessarily limited to repointing of the existing exterior brick surfaces.

D. The extent of masonry restoration work is as shown on the Drawings and as specified herein. The drawings endeavor to show the extent of restoration work required. The contractor shall review the Drawings, Photographs and make a Pre-bid field visit to verify all work whether shown or not shown on the Drawings.

1.2 RELATED SECTIONS

A. Section 040120 – "Masonry Cleaning"

1.3 REFERENCES
A. Codes:
1. Comply with the current Connecticut Building Code (2018 IBC with the 2018 Connecticut Supplement).
2. Comply with all applicable OSHA safety rules while performing work for this project.

B. Industry Standards:
1. ASTM E2260-30 (2012) – Standard Guide for Repointing Historic Masonry
2. ASTM C270-12a – Standard Specification for Mortar for Unit Masonry
3. National Parks Department Preservation Brief #2 on the Repointing Historic Masonry.

1.4 SUBMITTALS

A. Refer to Section 01 33 00 Submittal Procedures.

B. Submit the following:
1. Submit manufacturer's current technical literature (data sheets) for each product including the following:
   a. Product characteristics
   b. Material Data Safety Sheets
   c. Storage and handling requirements
   d. Application methods
   e. Cautions and limitations

C. Certificates: Submit documentation by the producers of the materials certifying that all materials supplied comply with all the requirements of these specifications and the appropriate standards.

D. Procedure: Submit a written procedure detailing the process by which the masonry will be repointed including schedule, duration, methods of application of the products, and proposed protection of surrounding building and site during operations. Describe in detail material methods and equipment to be used for restoration work.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Pre-installation meeting: Conduct a pre-installation meeting at the job site attended by Owner, Architect, Manufacturer's Technical Representatives, Installer, and Contractors of related trades. Coordinate support requirements in relation to repair area, staging and work procedures, and other requirements specific to the project.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Material manufacturers shall have a minimum of ten (10) years experience in the production specified products.

B. Contractor Qualifications: Work must be performed by a firm having not less than 5 years successful experience in comparable masonry restoration projects and employing personnel skilled in the repointing (tuckpointing) process and operations indicated.

1. Only skilled journeymen masons who are familiar and experienced with the materials and methods specified and are familiar with the design requirements shall be used for masonry restoration.

1.7 TEST AREA

A. Prepare 2 separate sample areas of approximately 5' high by 5' wide for each type of repointing required, one for demonstrating methods and quality of workmanship expected in removal of mortar from joints and the other for demonstrating quality of materials and workmanship expected in pointing mortar joints. Sample areas shall be located in an inconspicuous yet readily accessible place.

1.8 DELIVERY, STORAGE AND HANDLING

A. Delivery: Deliver materials in manufacturer's original, unopened, undamaged packaging with identification labels intact. Labels shall include type and names of products, manufacturers, color numbers and batch numbers.

B. Storage: Store materials on dry, level, firm, and clean surface. Store all materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect materials from freezing.

C. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

D. Protect grout, mortar and other materials from deterioration by moisture and temperature. Store in a dry location or in waterproof containers. Keep containers tightly closed and away from open flames. Protect liquid components from freezing. Comply with manufacturer's recommendations for minimum and maximum temperature requirements for storage.

E. Comply with the manufacturer's written specifications and recommendations for mixing, application, and curing of grouts and patching materials.

1.9 JOB CONDITIONS

A. Protect and cover all adjacent architectural features and work completed by other trades.

B. Insure that environmental conditions (temperature, humidity, and ventilation) are all within limits recommended by the manufacturer for optimum results. Do not proceed under environmental conditions outside manufacturer's absolute limits.

C. Do not perform any masonry patching unless air temperatures are between 50 degrees Fahrenheit (10 deg. C) and 90 degrees Fahrenheit (32 deg. C) and will remain so for at least 48 hours after completion of work.

D. Prevent masonry patching materials from staining the face of masonry or other surfaces to be left exposed. Immediately remove all patching materials that come in contact with such surfaces.

E. Cover partially completed work when work is not in progress.

F. Protect sills, ledges and projections from droppings.

PART 2 - PRODUCTS

2.1 MATERIAL

A. Repointing mortar pre-mixed, pre-colored, custom-matched cement-lime based mixture formulated to comply with the requirements of ASTM C-270 Type N mortar.
1. Formulate blend as required to produce color to match existing.
2. Sand shall conform to ASTM C144, and shall be hard, sharp, clean, well graded, and free of organic material.
3. Lime shall conform to ASTM C207, Type S, Hydrated lime for Masonry Purposes. Air entrained lime shall not be used.
4. Cement shall conform to ASTM C150, Type II Portland Cement and shall not contain more than 0.6 percent alkali to avoid efflorescence. Air entrained mortar shall not be used.
5. The use of admixtures will not be permitted without the prior written approval of Architect/Engineer.
6. Pigments shall not exceed 5 percent of masonry cement by weight.

B. Water: Clean, potable and free from acids, alkalis, or organic materials.

C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

PART 3 - EXECUTION

3.1 JOINT PREPARATION

A. Remove old mortar from bed and head joints to a depth of 2 to 2-1/4 times the width of the joint - typically 1/4 to 1 inch.

B. Remove additional mortar below this depth if loose or disintegrated until sound mortar is encountered.

C. Remove old mortar by means of a toothing chisel or a pointer's grinder. Take care not to damage edges of existing masonry units through use of proper tools and use of experienced, skilled workmen.

D. Rinse joints with clean water to remove dust and debris. Joints should be damp but free of standing water when filled. Pre-dampen extremely porous substrates for up to several hours, if necessary, to avoid rapid drying.

E. No work shall occur when environmental conditions are outside those specified in Paragraph 1.9.C above

3.2 MORTAR PREPARATION

A. Use only prepackaged lime mortar as specified and water. Mix with clean water, free of oils. acids, alkali, salts, organic materials, or any other substance that may be deleterious to mortar or metal in the masonry assembly. Admixtures such as coloring pigments, air entraining agents, accelerators, retarders, water repellents, anti-freeze compounds and other admixtures should not be added to mortar unless specified and approved by manufacturer and Architect. Do not add cement bonding agents, plasticizers or other materials unless specifically authorized.

B. Add approximately half the volume of mixing water required to a mechanical mortar mixer, and mix for 5 minutes. Add the remaining water, a little at a time, until the desired working consistency is reached. Total water may vary slightly from batch to batch, depending on weather conditions. Use the minimum amount of water required to produce the desired workability, in order to minimize shrinkage and facilitate placement.

C. Use all mixes within 30 minutes of final mixing, and discard unused portion at that time. Do not re-temper (Do not add more water).

3.3 FILING AND TOOTHING JOINTS

A. Fill in 1/4 inch "lifts". Start by filling deeper sections and compacting each layer, packing it into the rear and corners of the joint. Mechanical auger-type pointing guns can also be used without addition of special admixtures. Filling should still be performed in lifts, however.

B. As soon as the mortar reaches "thumbprint" hardness, apply the next layer at 1/4 inch thickness. Several layers may be required.

C. Allow each layer time to harden before proceeding to the next. Most of the shrinkage in mortar occurs during this hardening stage, and proper timing will minimize overall shrinkage and cracking.

D. When the final lift is thumbprint hard, tool to specified profile. For localized repointing, match to adjacent, existing profile, or as instructed.

E. Proper tooling and timing is important for uniform color. If the mortar is tooled when too soft, colors may tend to dry lighter, and hairline cracks may occur. If tooled when too hard, dark streaks or "tool burns" may occur, and good bond with the masonry may not be achieved.

F. To avoid changing the appearance of the building, it may be necessary to slightly recess the mortar from the masonry surface, as flush filling of joints in worn masonry may result in a visually wider joint than the original.

G. After tooling, new joints may be lightly brushed to provide a rougher, more weathered appearance. Use nylon or natural bristle brushes, never metal brushes.

3.4 CURING

A. The higher the lime content of the mortar, the more critical the curing. Rapid drying may cause chalking, poor adhesion, low strength and poor durability. Joints must be repeatedly dampened in order for the lime to carbonate effectively.

B. When necessary, tooled joints should be misted periodically for at least a day or two after tooling. The frequency of misting will depend on weather conditions and substrate moisture retention, but may initially be required every hour or so, gradually reducing this to every three or four hours. Alternatively, walls may be tented or covered with wet burlap. Do not place plastic sheeting in direct contact with new mortar.

3.5 PROTECTION AND CLEANING

A. Protect newly pointed joints from rain until pointed joints are sufficiently hard enough to prevent damage.

B. Remove excess mortar and smears using a stiff natural bristle brush and water before it has set (typically within 1 or 2 hours).

C. Do not use chemical cleaning agents unless specifically instructed, carefully tested and controlled. Improper use of cleaning agents may result in chemical attack on mortar and/or masonry, smearing of mortar, and efflorescence. Masonry should always be pre-soaked with water prior to use of chemical cleaning agents, and thoroughly flushed with clean water afterwards. Some acidic cleaning agents may require neutralization with an alkaline detergent solution, particularly if masonry coatings are to be installed subsequently. Carefully follow the cleaning agent manufacturer's instructions for dilution and use. Many cleaning products are hazardous materials and must be handled in accordance with the manufacturer's published safety guidelines.

D. Use of muriatic acid for cleaning is prohibited.

E. Allow mortar to fully cure before cleaning masonry walls. Usually 28 days will be sufficient, depending on temperature. Longer cure time is required in colder weather. Only low pressures should be used to avoid damaging newly re-pointed joints.

END OF SECTION 040513

SECTION 042131 - EXTERIOR BRICK MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawing and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 RELATED SECTIONS

A. Section 040120 – "Masonry Cleaning"

B. Section 040513 – "Masonry Restoration"

1.3 QUALITY ASSURANCE

A. Furnish Sample Panel:

1. Approximately 4 ft. (1.2 m) long by 3 ft. (1 m) high, showing the proposed color range, texture, bond, mortar and workmanship. All brick shipped for the sample shall be included in the panel.
2. Erect panel in the presence of the Architect/Engineer before installation of materials.
3. When required, provide a separate panel for each type of brick or mortar.
4. Do not start work until Architect/Engineer has accepted sample panel.
5. Use panel as standard of comparison for all masonry work built of same material.
6. Do not destroy or move panel until work is completed and accepted by Owner.

1.4 SUBMITTALS

A. Samples: Furnish not less than five individual brick as samples, showing extreme variations in color and texture.

B. Test Reports:
1. Test reports for each type of building and facing brick are to be submitted to the Architect Engineer for approval.
2. Testing and reports are to be completed by an independent laboratory.
3. Test reports shall show:
   a. Compressive strength.
   b. 24 - hr. cold water absorption.
   c. 5 - hr. boil absorption.
   d. Saturation coefficient.
   e. Initial rate of absorption (suction).

C. Certificates: Prior to delivery, submit to Architect/Engineer certificates attesting compliance with the applicable specifications for grades, types or classes included in these specifications.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Store brick off ground to prevent contamination by mud, dust or materials likely to cause staining or other defects.

B. Cover materials when necessary to protect from elements.

C. Protect reinforcement from elements.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Protection of Work:
1. Wall covering:
   a. During erection, cover top of wall with strong waterproof membrane at end of each day or shutdown.
   b. Cover partially completed walls when work is not in progress
   c. Extend cover minimum of 24 in. (610 mm) down both sides.
   d. Hold cover securely in place.
2. Load application:
   a. Do not apply uniform floor or roof loading for at least 12 hr. after building masonry columns or walls.
   b. Do not apply concentrated loads for at least 3 days after building masonry columns or walls.

B. Staining:
1. Prevent grout or mortar from staining the face of masonry to be left exposed or painted:
   a. Remove immediately grout or mortar in contact with face of such masonry.
   b. Protect all sills, ledges and projections from droppings of mortar, protect door jambs and corners from damage during construction.

C. Protection:
1. Preparation:
   a. If ice or snow has formed on masonry bed, remove by carefully applying heat until top surface is dry to the touch.
   b. Remove all masonry deemed frozen or damaged.
2. Products
   a. When brick suction exceeds recommendations of Section 1.03.B.3, sprinkle with heated water:
   1) When units are above 32o F. (0o C.), heat water above 70oF. (21o C.).
   2) When units are below 32o F. (0o C.), heat water above 130o F. (54o C.).
   b. Use dry masonry units.
   c. Do not use wet or frozen units.
3. Construction requirements while work is progressing:
   a. Air temperature 40o F. (4o C.) to 32o F. (0o C.):
   1) Heat sand or mixing water to produce mortar temperatures between 40o F. (4o C.) and 120o F. (49o C.).
   b. Air temperature 32o F. (0o C.) to 25o F. (-4o C.):
   1) Heat sand and mixing water to produce mortar temperatures between 40o F. (4o C.) and 120o F. (49o C.).
   2) Maintain temperatures of mortar on boards above freezing.
   c. Air temperatures 25o F. (-4o C.) to 20o F. (-7o C.):
   1) Heat sand and mixing water to produce mortar temperatures between 40o F. (4o C.) and 120o F. (49o C.).
   2) Maintain mortar temperatures on boards above freezing.
   3) Use salamanders or other heat sources on both sides of walls under construction.
   4) Use windbreaks when wind is in excess of 15 mph.
   d. Air temperature 20o F. (-7o C.) and below:
   1) Heat sand and mixing water to produce mortar temperatures between 40o F. (4o C.) and 120o F. (49o C.).
   2) Provide enclosures and auxiliary heat to maintain air temperature above 32o F. (0o C.).
   3) Minimum temperature of units when laid: 20o F. (-7o C.).
4. Protection requirements for completed masonry and masonry not being worked on:
   a. Mean daily air temperature 40o F. (4o C.) to 32o F. (0o C.):
   1) Protect masonry from rain or snow for 24 hr. by covering with weather-resistive membrane.
   b. Mean daily air temperature 32o F. (0o C.) to 25o F. (-4o C.):
   1) Completely cover masonry with weather-resistive membrane for 24 hr.
   c. Mean daily air temperature 25o F. (-4o C.) to 20o F. (-7o C.):
   1) Completely cover masonry with insulating blankets or equal protection for 24 hr.
   d. Mean daily air temperature 20o F. (-7o C.) and below:
   1) Maintain masonry temperature above 32o F. (0o C.) for 24 hr. by:
   2) Enclosure and supplementary heat.

PART 2 - PRODUCTS

2.1 BRICK

A. Brick: Blend of

1. Watson Town Brick Company Pennsylvania Collection Philadelphia Molded Type 1 Standard Brick.
2. Watson Town Brick Company Pennsylvania Collection Alverton Molded Type 1 Standard Brick

B. Provide brick similar in texture and physical properties to those available for inspection at the Architect/Engineer's office.

C. Do not exceed variations in color and texture of samples accepted by the Architect/Engineer.

2.2 REINFORCEMENT

A. Cold-drawn steel wire

2.3 ANCHORS AND TIES

A. Coated or corrosion-resistant metal meeting or exceeding applicable standard:
1. Zinc-coating flat metal
2. Zinc-coating of wire
3. Copper-coated wire
4. Stainless steel

B. Types:
1. Multi-wythe wall ties:
   a. Prefabricated welded joint reinforcement.
   b. Longitudinal cross tie wire:
      1) 9 gauge
      2) Spaced 16 in. (406 mm) o.c.

2.4 CLEANING AGENTS

A. Do not use cleaning agent other than water on brick, except with concurrence of Architect/Engineer.

PART 3 - EXECUTION

3.1 PREPARATION

A. Wetting Brick:
1. Wet brick with absorption rates in excess of 30 g./30 sq. in./min. (30 g./194 cm2/min.) determined by, so that rate of absorption when laid does not exceed this amount.
2. Recommended procedure to insure that brick are nearly saturated, surface dry when laid is to place a hose on the pile of brick until the water runs from the pile. This should be done one day before brick are to be used. In extremely warm weather, place hose on pile several hours before brick are to be used.

B. Cleaning Reinforcement: Before being placed, remove loose rust, ice and other coatings from reinforcement.

3.2 GENERAL ERECTION REQUIREMENTS

A. Pattern Bond:
1. Lay exposed masonry in running bond.
2. Bond unexposed masonry units in a wythe by lapping at least 2 in. (51 mm).

B. Joining of Work:
1. Where fresh masonry joins partially set masonry:
   a. Remove loose brick and mortar.
   b. Clean and lightly wet exposed surface of set masonry.
2. Stop off horizontal run of masonry by racking back 1/2 length of unit in each course.

C. Tooling and Tuck Pointing:
1. Tooling:
   a. Tool exposed joints when "thumb-print" hard with a round jointer, slightly larger than width of joint.
   b. Trowel-point or concave-tool exterior joints below grade.
   c. Flush cut all joints not tooled.
2. Tuck pointing:
   a. Rake mortar joints to a depth of not less than 1/2 in.(12.7 mm) nor more than 3/4 in. (19 mm).
   b. Saturate joints with clean water.
   c. Fill solidly with pointing mortar.
   d. Tool joints

D. Flashing:
1. Clean surface of masonry smooth and free from projections which might puncture flashing material.
   a. Place through-wall flashing on bed of mortar.
   b. Cover flashing with mortar.

E. Weep Holes:
1. Provide weep holes in head joints in first course immediately above all flashing by: (a) Leaving head joint free and clean of mortar
   a. Maximum spacing: 24 in. (610 mm) o.c.
   b. Keep weep holes and area above flashing free of mortar droppings.

F. Sealant Recesses
1. Leave joints around outside perimeters of exterior doors, window frames and other wall openings:
   a. Depth: uniform 3/4 in. (19 mm).
   b. b. Width: 1/4 in. (6.4 mm) to 3/8 in. (9.5 mm).

G. Movement Joints:
1. Keep clean from all mortar and debris.
2. Locate as shown on drawings.

H. Cutting Brick:
1. Cut exposed brick with motor-driven saw.

I. Mortar Joint Thickness:
1. Lay all brick with joint to match existing original brickwork.

3.3 NON-REINFORCED BRICK MASONRY

A. Brick Installation:
1. Lay brick plumb and true to lines.
2. Lay with completely filled mortar joints.
3. Do not furrow bed joints.
4. Butter ends of brick with sufficient mortar to fill head joints.
5. Rock closures into place with head joints thrown against two adjacent brick in place.
6. Fill vertical, longitudinal joints, except in cavity walls:
7. Do not pound corners and jambs to fit stretcher units after they are set in position. Where an adjustment must be made after mortar has started to harden, remove mortar and replace with fresh mortar.

3.4 GROUTING

A. Low-Lift Grouting:
1. Keep grout core clean from mortar and drippings.
2. Grout spaces less than 2 in. (51 mm) in width at intervals of not more than 24 in. (610 mm) in lifts of 6 to 8 in. (152 to 203 mm) as the wall is built.
3. In grout spaces more than 2 brick in thickness:
   a. Place or float brick in grout.
   b. Minimum grout between brick: 3/8 in. (9.5 mm).
4. Agitate or puddle grout during and after placement to insure complete filling.
5. Stop grout 1/2 in. (38 mm) below top of masonry:
   a. If grouting is stopped for 1 hr. or more.
   b. Except when completing grouting of finished wall.
   6. If brick headers are used for ties in low-lift grouting space:
7. Maximum: 8% of wall area.

3.5 CLEANING

A. Cut out any defective joints and holes in exposed masonry and repoint with mortar.

B. Clean all exposed unglazed masonry:
1. Apply cleaning agent to sample wall area of 20 sq. ft. (2 m2) in location acceptable to the Architect/Engineer.
2. Do not proceed with cleaning until sample area is approved by Architect/Engineer.
3. Clean initially with stiff brushes and water.
4. When cleaning agent is required:
   a. Follow brick manufacturer's recommendations.
   b. Thoroughly wet surface of masonry on which no green efflorescence appears.
   c. Scrub with acceptable cleaning agent.
   d. Immediately rinse with clear water.
   e. Do small sections at a time.
   f. Work from top to bottom.
   g. Protect all sash, metal lintels and other corrodible parts when masonry is cleaned with acid solution.
   h. Remove green efflorescence in accordance with brick manufacturer's recommendations.

END OF SECTION 042131

SECTION 050513 - SHOP-APPLIED COATINGS FOR METAL

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Shop-applied coatings for architectural metals.

B. Related Sections:
1. N/a

1.2 REFERENCES

A. American Architectural Manufacturers Association (AAMA):

1. AAMA 621 - Voluntary Specification for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) and Zinc-Aluminum Coated Steel Substrates.

B. ASTM International (ASTM):

1. ASTM B 117 - Practice for Operating Salt Spray (Fog) Apparatus.
2. ASTM G 85 annex 5 – Modified Salt Spray Cyclic Fog Test
3. ASTM D 7901 - Standard Test Method for Nondestructive Measurement of Dry Film Thickness of Nonconductive Coatings Applied to a Nonferrous Metal Base.
4. ASTM D 1654 - Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
5. ASTM D 2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
6. ASTM D 2247 - Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
7. ASTM D 3363 - Standard Test Method for Film Hardness by Pencil Test.
8. ASTM D 4214 - Test Methods for Evaluating Degree of Chalking of Exterior Paint Films.

1.3 PERFORMANCE REQUIREMENTS

A. Solar Reflective Index: Provide metal roof panel coatings with solar reflectance index of not less than 78 for slopes of 2:12 or less and 29 for slopes greater than 2:12, per ASTM E 1980.

B. Energy Star Compliance: Provide metal roof panel coatings identical to those listed on U.S Department of Energy's ENERGY STAR Roof Products Qualified Product List.

C. CEC-Title 24 Compliance: Provide metal roof panel coatings with initial solar reflectance not less than [0.70] and emissivity not less than [0.75] per CRRC-1.

1.4 SUBMITTALS

A. Product Data: For each type of coating product specified.

B. Submittals:
1. Product Test Reports for Credit SS 7.2: For metal roof panel coatings to document compliance with solar reflectance index requirement.

C. Samples for Selection: For each color, gloss specified.

D. Samples for Verification: For each coating product, for each color, gloss, and texture specified, on specified substrate.

E. Product test reports.

F. Qualifications: For shop-applied coatings Applicator.

G. Maintenance data.

H. Warranty: Sample of special warranty.

1.5 QUALITY ASSURANCE

A. Applicator Qualifications: Coating manufacturer's certified Applicator who is equipped, trained and approved for application of coatings required for this Project, and is approved to provide warranty specified in this Section.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver, unload, and store shop-coated items so that they remain free of damage or deformation. Package and protect items during shipping and handling. Protect stored items from water; stack to facilitate drainage. Keep shop-coated items out of contact with materials that may adversely affect the coating.

B. Protect shop-coated items with protective covering until installed.

1.7 COORDINATION

A. Coordinate submittal and selection procedures for items to receive shop-applied coatings. Where items are indicated to match coatings selected for other items, adjust formulations as required to achieve match. Submit samples for verification indicating compliance with matching requirements.

1.8 WARRANTY

A. Coating Warranty: Coating Applicator's warranty in which Applicator agrees to repair finish or replace coated items that demonstrate deterioration of shop-applied finishes within warranty period indicated.
1. Exposed Coating: Deterioration includes but is not limited to:

   a. Color fading in excess of 5 Delta E Hunter units per ASTM D 2244.
   b. Peeling, checking, or cracking of coating adhesion to metal.
   c. Chalking in excess of a No. 8 per ASTM D 4214, when tested per Method D 659.
   d. Corrosion of substrate in excess of a No. 6 on cut edges and a No. 8 on field surfaces, when measured per ASTM D 1654.
2. Warranty Period: [10] [20] [25] [30] years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: Provide shop-applied coatings manufactured by PPG Industries, Inc., Pittsburgh, PA, (888) 774-4332, Email: ideascapes@ppg.com; Website: www.ppgideascapes.com or comparable products of another manufacturer approved by Architect prior to bid.

2.2 APPROVED COATING APPLICATORS

A. Acceptable Applicators: Provide shop-applied coatings applied by one of the following manufacturer-certified applicators:
1. GC to provide certified credentials of sub-contractor to perform the work.

2.8 FINISHES

A. Pretreatment: Mechanically clean and chemically pretreat fabricated items in accordance with coating manufacturer's requirements and AAMA requirements for finish indicated.

B. Application: Apply primer and finish coats in accordance with coating manufacturer's requirements for finish indicated.

2.9 SHOP-APPLIED COATINGS SCHEDULE

A. Powder-Coat Finish for Existing Steel Items Fabricated from Shapes and Plates:

1. Coated Items: All existing steel window grilles, (3) arched topped entry gates, all diamond plate floor plates and (1) passage gate into courtyard.
2. Color: Black
3. Gloss: Semi-Gloss
4. Surface: Smooth

PART 3 - EXECUTION

3.1 INSTALLATION

A. Refer to individual specifications sections for installation requirements for items receiving shop applied coatings.
B. Install with new stainless steel screws with security star type pan head and washers of appropriate length and diameter
C. Make final adjustments to ensure latching hardware performs correctly and is in good working order.

3.2 PROTECTION

A. Remove protective wrap from coated items at time of installation.
B. Leave area clean.

[END OF SECTION 050513

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Title:

SPECIFICATIONS

Project Number: 2020.002	Issue Date: 07/24/20
Scale:	CAD file:
Drawn By: Author	Checked By: Checker

Revisions:

G.3

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06010 – WOOD RESTORATION

A GENERAL

1. This section includes restoration of rotted, decayed, damaged or deteriorated wood with epoxy consolidants and wood replacement compound. It is the specific Intent of this Section that at completion of the Work, all Wood component structures shall be completely restored to mirror the original wood in appearance and operability

2. Work includes removal of exterior finish at areas of wood restoration, application of borate wood preservative, application of epoxy consolidants, application of epoxy filler and restoration of wood profile.

3. Restored wood shall be capable of being sawn, planed, sanded, nailed with carpentry nails and otherwise worked like wood.

4. Restored wood shall retain paint and or stain and should match existing wood appearance.

5. Where wood replacement compound has been applied, the material shall form a permanent seamless bond with the wood

B SUBMITTALS

1. Submit product brochure, technical data, manufacturer's product and application instructions, Material Safety Data Sheets (MSDS), and Greenguard certifications. (2) samples required, see note G.6 below.

C MATERIALS

1. Wood Preservative shall be Abatron, Inc. "Bora-Care" boron-based concentrated wood preservative.

2. Wood Consolidant shall be Abatron, Inc. "LiquidWood" low viscosity,two component, penetrating epoxy compound.

3. Wood Replacement Compound shall be Abatron, Inc. "WoodEpox" light-weight, thixotropic epoxy adhesive.

4. Wood and Epoxy Primer shall be Abatron, Inc. "Primkote 8006-1" penetrating primer for wood and epoxy surfaces.

D STORAGE AND PROTECTION

1. Store unused materials in tightly sealed containers between 55° and 85° F.

2. Avoid contamination of component products by introducing any object which has been in contact with another product such as gloves or tools.

3. Keep flammable solvents away from the products.

E PREPARATION

1. Remove paint, dirt, wax, sealants and other debris from work area.

2. Wire brush loose wooden material from surfaces, or use a vacuum for complete cleanliness as necessary.

3. Remove hardware in the way of the repair and bag it for later restoration and reuse, identifying the component that it came from.

4. Protect adjacent surfaces from spills with masking tape and plastic sheeting.

5. If deterioration is more than superficial, drill small holes, approximately 1/8 inch in diameter, into areas to be consolidated being careful not to drill completely through the wood.

6. Apply wood preservative solution to the decayed wood and allow 48-72 hours to dry.

7. Prior to the application of the epoxy consolidant, test the moisture content of the wood for a moisture content of not more than 20%

F EPOXY CONSOLIDATION

1. Mix the two part consolidant according to the manufacturer's instructions allowing sufficient time (5-10 minutes) for an induction period prior to application. Mix only an amount that will be used within 50 minutes. The pot life of the consolidant is approximately 30-50 minutes after which time the batch should be disposed of and another batch mixed where necessary.

2. Apply the consolidant according to the manufacturer's instructions.

3. Where only the surface of the wood to be restored is rotted or deteriorated, the consolidant can be applied by brush. More than one application is recommended to thoroughly consolidate the wood.

4. Where deterioration extends beyond the surface of the wood, pour the consolidant directly into holes drilled into the wood using an applicator such as a plastic bottle with a narrow spout or a syringe. Wait for the consolidant to be absorbed into the wood. Follow with additional applications of consolidant until the wood is saturated and no more consolidant is absorbed.

5. Brush out the excess consolidants on the surface of the wood to insure thorough saturation of the wood surface.

G WOOD REPLACEMENT COMPOUND APPLICATION

1. Apply mixed wood replacement compound according to manufacturer's instructions.

2. Apply wood replacement compound to areas which have been consolidated. Apply compound when consolidant is tacky and not completely hardened.

3. On wood that is sound and wood that has been previously consolidated, apply primer as specified to the wood and consolidated material prior to the application of the wood replacement compound.

4. Apply wood replacement compound by pressing into place, troweling, or pressing into a form. The repaired area should be slightly overfilled so that it can be sanded or planed after hardening. Apply additional compound if there are voids or depressions after smoothing.

5. After hardening for 12 hours or longer, the wood replacement compound can be sanded, or planed and carved to correspond to the contour of the surrounding wood.

6. After hardening for 24 hours, paint as specified in Section 09900 if applicable. Or stain wood replacement compound to match field wood color. (2) Sample pieces no shorter than 12" should be submitted and reviewed by Architect, 5 work days min. prior to starting the work. One sample should have been blended with dry pigment during the installation of the wood replacement compound and stained with opaque stain to best match existing wood trim. Second sample should be reserved for architect to make modifications to color suggestions whether that be stain color or dry pigment.

7. Note: hardened consolidant and wood replacement compound should be tack-free and firm to the touch.

8. Protect all work from cold temperatures and moisture elements until all epoxy work has cured.

9. Following all applications of epoxy, leave all areas free and clean of epoxy. Discard unused epoxy, containers, tools and towels in accordance with local, state and federal regulations.

06114 - BLOCKING

A GENERAL

1. The contractor shall coordinate locations of concealed blocking with all other trades. Blocking shall be provided as called out in the drawings AND as necessary to securely fasten any wall mounted items.

2. Blocking shall be securely fastened to framing members using galvanized nails or screws.

3. At all existing walls which are scheduled to receive new wall mounted items, the contractor shall open up wall cavities as necessary (and patch as described in Section 02072 Demolition) to install new blocking in any condition where an existing stud cannot be utilized.

4. Toggle and expansion type anchors are NOT a substitute for providing blocking and will NOT be accepted.

B MATERIALS

2. Acceptable materials shall include any NELMA graded, kiln dried (KD) dimension framing lumber.

06400 - EXTERIOR ARCHITECTURAL TRIM

A GENERAL
1. Provide solid wood, species should be spanish cedar for all exterior paint grade trim applications including panels, boards, moldings and trim pieces as detailed on drawings. Finger-jointed material will be rejected. Cut ends should be primed prior to installation.

2. All materials shall be protected from moisture, warping, distortion, undue loading or other damage.

3. Contractor shall take expansion and contraction of materials into consideration during erection, paying particular attention to manufacturer's recommendations for jointing based on ambient temperature at the time of installation. Joints between sections of running trim to be appropriately sized bevel or shiplap joints only – NO BUTT JOINTS SHALL BE ACCEPTABLE.

4. Contractor shall follow Manufacturer's published installation procedures and all related technical bulletins for any exterior trim product specified herein.

5. Trim carpenter shall visit site and verify dimensions and conditions prior to beginning installation. Any deviations or unacceptable substrate conditions shall be noted and brought to the attention of the Architect. By accepting substrate, contractor accepts responsibility for quality of trim installation.

B MATERIALS

1. Spanish cedar solid wood trim, no finger-joints allowed.

2. Use planed smooth finish boards, installer to use best face and avoid installation of any loose knots or split sections.

C FABRICATION/INSTALLATION

1. Products are to be cut and shaped with standard woodworking tools.

2. Fasteners are to be ring shank stainless steel nails, 6d, 7d or 8d according to application or trimhead stainless steel screws. Installer using screws shall countersink screw and fill hole/head with two-part wood filler to be painted. Fasten to a solid, flat substrate at no more than 16" o.c., lengthwise, 4" o.c. within width of board, no more than 2" from ends of board. Pre-drill in cold weather with drill 1/2 diameter of fastener shank.

073012 - ROOFING UNDERLAYMENT

PART 1 — GENERAL

1.1 SUMMARY

A. This Section specifies a self-adhering sheet membrane used as underlayment for sloped roofs.
1. High temperature application, 300F resistance, extended period, Ultra™.

B. Related Sections: Refer to the following specification sections for coordination:
1. Section 061000 - Rough Carpentry.
2. Section 073113 - Asphalt Shingles.
3. Section 073116 - Metal Shingles.
4. Section 073119 - Mineral-Fiber Cement Shingles.
5. Section 073126 - Slate Shingles.
6. Section 073129 - Wood Shingles and Shakes.
7. Section 073200 - Roof Tiles.
8. Section 076100 - Sheet Metal Roofing.

C. Referenced Standards: Comply with the requirements of the following standards published by ASTM International to the extent referenced in this section.
1. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension.
2. ASTM D461 - Standard Test Methods for Felt.
3. ASTM D 903 - Standard Test Method for Peel or Stripping Strength of Adhesive Bonds.
4. ASTM D1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
5. ASTM D3767 - Standard Practice for Rubber—Measurement of Dimensions.
6. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
7. ASTM G90 – EMMAqua test.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions.

1.3 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with requirements of authorities having jurisdiction and applicable codes at the location of the project.

B. Manufacturer: Minimum 10 years experience producing roofing underlayment.

C. Installer: Minimum 2 years experience with installation of similar underlayment.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver materials and products in unopened factory labeled packages. Protect from damage.

B. Cover materials and store in dry condition between temperatures of 40 and 90 degrees F (5 and 32 degrees C). Use within one year of date of manufacture. Do not store at elevated temperatures as that will reduce the shelf life of the product.

PART 2 — PRODUCTS

2.1 MANUFACTURER

A. Manufacturer: GCP Applied Technologies, Inc. 62 Whittemore Avenue, Cambridge, MA 02140, Toll Free 866-333-3726, www.gcpat.com.

2.2 MATERIALS

A. Self-Adhering Sheet Membrane Roof Underlayment: Provide Ultra by GCP Applied Technologies, Inc with the following characteristics:

1. Material: Cold applied, self-adhering membrane composed of a high strength polyethylene film coated on one side with a layer of butyl rubber adhesive and interwound with a disposable release sheet. An embossed, slip resistant surface is provided on the polyethylene.
2. Color: Gray-black.
3. Membrane Thickness: 30 mil (0.76 mm) ASTM D3767 method A.
4. Tensile strength, Membrane: 250 psi (1720 kN/m2) ASTM D412 (Die C modified).
5. Elongation, Membrane: 250% ASTM D412 (Die C modified).
6. Low Temperature Flexibility: Unaffected @ -20°F (-29°C) ASTM D1970.
7. Adhesion to Plywood: 3.0 lbs/in width (525 N/m) ASTM D903.
8. Permeance (max): 0.05 Perms (2.9 ng/m2s Pa) ASTM E96.
9. Material Weight Installed (max): 0.22 lb/ft2 (1.1 kg/m2) ASTM D461.
10. Service Temperature: 300 degrees F (148.8 degrees C) per ASTM D1204
10. Primer: Water-based Perm-A-Barrier WB Primer by GCP Applied Technologies, Inc.

11. Code and Standards Compliance: Ultra meets the following requirements:
a. ICC ESR-1677 approval according to AC-48 Acceptance Criteria for Self-Adhered underlayments used as Ice Barriers
b. Underwriters Laboratories, Inc. R13399 Class A fire classification under fiberglass shingles and Class C under organic felt shingles.
c. Underwriters Laboratories, Inc. Classified Sheathing Material Fire Resistance Classification Design Numbers P225, P227, P230, P237, P259, P508, P510, P512, P514, P701, P711, P717, P722, P723, P732, P734, P742, P824.

PART 3 — EXECUTION

3.1 EXAMINATION

A. Prior to start of installation, inspect existing conditions to ensure surfaces are suitable for installation of roofing underlayment. Verify flashing has been installed. Starting work indicates installers acceptance of existing conditions.

3.2 INSTALLATION

A. Installation: Install roofing underlayment on sloped surfaces at locations indicated on the Drawings, but not less than at hips, ridges, eaves, valleys, sidewalls and chimneys, and surfaces over interior space within 36 inches (914 mm) from the inside face of the exterior wall. Strictly comply with manufacturer's installation instructions including but not limited to the following:
1. Schedule installation such that underlayment is covered by roofing within the published exposure limit of the underlayment.
2. Do not install underlayment on wet or frozen substrates.
3. Install when surface temperature of substrate is a minimum of 40 degrees F (5 degrees C) and rising.
4. Remove dust, dirt, loose materials and protrusions from deck surface.
5. Install membrane on clean, dry, continuous structural deck. Fill voids and damaged or unsupported areas prior to installation.
6. Prime concrete and masonry surfaces using specified primer at a rate of 500-600 square feet per gallon (12-15 sqm/L). Priming is not required for other suitable clean and dry surfaces.
7. Install membrane such that all laps shed water. Work from the low point to the high point of the roof at all times. Apply the membrane in valleys before the membrane is applied to the eaves. Following placement along the eaves, continue application of the membrane up the roof. Membrane may be installed either vertically or horizontally after the first horizontal course.
8. Side laps minimum 3-1/2 inches (89 mm) and end laps minimum 6 inches (152 mm) following lap lines marked on underlayment.
9. Patch penetrations and damage using manufacturer's recommended methods.

3.3 CLEANING AND PROTECTION

A. Protection: Protect from damage during construction operations and installation of roofing materials. Promptly repair any damaged or deteriorated surfaces.

B. Repair minor damage to eliminate all evidence of repair. Remove and replace work which cannot be satisfactorily repaired in the opinion of the Architect.

C. Provide temporary protection to ensure work being without damage or deterioration at time of final acceptance. Remove protective film and reclean as necessary immediately before final acceptance.

076300 - SHEET METAL ROOFING SPECIALITIES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Metal roofing systems.
B. Clamps and brackets.
C. Fasteners.
D. Sealants.
E. Accessories.

1.2 RELATED SECTIONS

A. Sub-contractor will be responsible to alert GC of hidden conditions that involve other trade coordination or materials that need to be repaired or replaced.

1.3 REFERENCES

A. ASTM International:
1. ASTM A653 - Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
2. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate and Flat Bar.
3. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
4. ASTM C1513 - Standard Specification for Steel Tapping Screws for Cold-Formed Steel Framing Connections.
5. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs.
6. ASTM D395 - Standard Test Methods for Rubber Property - Compression Set.
7. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension.
8. ASTM D 903 - Standard Test Method for Rubber - Deterioration in an Air Oven.
9. ASTM D624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
10. ASTM D1171 - Standard Test Method for Rubber Deterioration - Surface Ozone Cracking Outdoors or Chamber (Triangular Specimens).
11. ASTM D1418 - Standard Practice for Rubber and Rubber Latices - Nomenclature.
12. ASTM D2137 - Standard Test Method for Rubber Property - Brittleness Point of Flexible Polymers and Coated Fabrics.

b. Copper Development Association (CDA):
1. Copper in Architecture Handbook.

1.4 PERFORMANCE REQUIREMENTS
A. General: Provide metal roof panels, cleats, clips, anchors and fasteners, flashing, drainage components and accessories as indicated and as required for a weathertight installation.

B. Fabricate and install roofing capable of resisting forces required by the local building code.

C. Thermal Movements: Allow for thermal movements resulting from a maximum change (range) of 120 degrees F ambient temperature and 180 degrees F material surface temperature.

D. Sheet metal roofing system as installed shall not allow water infiltration into the building interior or exterior wall or roof assemblies.

E. Sustainable Design Requirements:
1. Solar Reflectance Index (SRI): Not less than 29 when calculated to ASTM E1980.

1.5 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's current data sheets on each product to be installed, including:
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

C. Sustainable Design Submittals:
1. Product test reports indicating Solar Reflectance Index (SRI).
2. Manufacturer's product data and costs for metals having recycled content.

D. Shop Drawings: Submit shop drawings showing layout, profiles and product components, including anchorage, accessories, finish colors and textures.

E. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

F. Verification Samples:
1. Sheet Metal Roofing: Minimum 12 inches long by full width including finished seams, fasteners, cleats, closures, and other accessories.
2. Finishes: minimum size 6 x 6 inches for each finish specified.
3. Accessories: Full-size sample.

G. Qualifications: For installer and manufacturer.

H. Close Out Submittals:
1. Maintenance Data.
2. Warranty.

1.6 QUALITY ASSURANCE

A. Source Limitations: Obtain components for roofing system from or approved by roofing system manufacturer.

B. Sheet Metal Roofing Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.

C. Manufacturer Qualifications: Minimum 5 years experience manufacturing similar products.

D. Installer Qualifications: Minimum 2 years experience installing similar products.

E. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
1. Finish areas designated by Architect.
2. Do not proceed with remaining work until workmanship is approved by Architect.
3. Refinish mock-up area as required to produce acceptable work.

F. Pre-Installation Meeting: Convene at the Project site minimum two weeks prior to starting work of this section. Review methods and procedures related to roofing system installation, insurance, and warranty requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging identified with the manufacturer and brand name until ready for installation.

B. Unload, store, and handle to prevent twisting, bending, abrasion, scratching and denting. Do not allow standing moisture on panels, elevate one side for moisture to drain off.

C. Handle materials to avoid damage.

1.8 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

B. Do not proceed with installation of sealants unless sealant manufacturer's requirements can be met including extreme temperature conditions that would cause joint openings to be minimum or maximum widths, or if heavy wind loads are forecast.

1.9 WARRANTY

A. Manufacturer's Warranty: Except where longer warranty periods are specified, provide manufacturer's standard warranty document executed by authorized company official covering finish, including color, fade, chalking and film integrity.
1. Warranty Period, Typical Coatings: 20 years.
2. Warranty Period, Metallic Coatings: 20 years, crack, chip, and peel only.

B. Installers Warranty: Provide in form acceptable to the Owner in which Installer agrees to repair or replace components that fail in structure, weather-tightness, materials or workmanship within the specified warranty period.
1. Warranty Period: 5 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Custom decorative metal installer with 5 years minimum experience installing architectural metals on historic buildings.

B. Substitutions: Not permitted.

2.2 MATERIALS
A. Substrate: Of sufficient structural integrity and density to meet fastener pull out requirements of the local building authority.

B. Metals:
1. Aluminum, not permitted.
2. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653, up to 18 ga. thickness.
3. Stainless Steel: up to 18 ga. thickness.
4. Copper: ASTM B370, cold-rolled copper sheet, H00 temper, up to 30 oz. thickness.
5. Zinc: up to 30 oz.
6. Freedom Gray Copper: up to 32 oz.

C. EPDM: Ethylene Propylene Diene Monomer (EPDM) synthetic rubber, ASTM D1418 class M and to meet or exceed the following:
1. ASTM D395.
2. ASTM D412.
3. ASTM D573.
4. ASTM D624.
5. ASTM D1171.
6. ASTM D2137.
7. UL94.

2.3 METAL ROOFING SYSTEMS

A. Standing Seam Panels - AMS-200: 2 inch mechanically seamed roof panels designed for a wide variety of applications in the commercial, institutional and military construction markets.
1. Material: Match existing
2. Profile: Match existing

2.7 ACCESSORIES

A. Underlayment: Self-adhering, high-temperature sheet minimum 30 to 40 mils thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.

B. Metal Pipe Flashings:
1. Imported from Germany.
2. Fits 5 inch and smaller vent pipes
3. Provide in Copper or Zinc as selected by the Architect.

C. Copper Gutters:
1. Match existing profile
2. 16oz and 20oz Freedome Gray Copper as selected by the Architect.
3. Size as shown on the Drawings.

D. Conductor Heads:
1. Style A: Provide in 16oz soldered Freedom Gray Copper, if applicable to matching existing conditions.

E. Downspouts:
1. 4" round plain round in 20 oz soldered Freedom Gray Copper, provide elbows, offets, outlets, etc. in matching approved material to perform installation based on existing field conditions.

F. Downspout Hook:
1. Provide 4" plain round tinned downspout hook with matching wire ties, installer to verify that all metals are compatible

2.8 FABRICATION
A. General:
1. Fabricate sheet metal roofing with true and accurate lines and corners aligned to the building structure as shown on the Drawings.
2. Form exposed faces flat and free from buckles, waves and tool marks.
3. Provide uniform seams with concealed fastener or fully soldered joints
4. Fabricate with adequate provision for expansion, supports, and anchorage.

PART 1 - EXECUTION

1.1 EXAMINATION

A. Verify that substrates are acceptable for roofing installation in accordance with manufacturer's instruction

B. Do not begin installation until substrates have been properly prepared.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

1.2 PREPARATION

A. Clean surfaces prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer.

1.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install with lines and corners true and accurate in alignment and location. Coordinate metal roofing with other work, including but not limited to drainage, flashing and trim, substrates, parapets, copings, walls, and other adjoining work.

C. Install to provide a permanent weather-tight, secure, and non-corrosive installation.
1. Install panel supports according to manufacturer's instructions.
2. Install self-adhering sheet underlayment in accordance with the underlayment manufacturer's written instructions, apply primer if required. Roll laps with roller.
3. Install flashings as required to complete metal roof panel system.
4. Conceal fasteners and expansion joints, locate to minimize the possibility of leakage.

D. Pipe flashing installation:
1. Cut flashing at appropriate dimensions and factory markings.
2. Slide flashing down over the pipe.
3. Apply sealant on the underside of the flexible aluminum base.
4. Press flashing base into the contours of the panel.
5. Fasten to the roof panel surface using EPDM washers and self-drilling fasteners.
6. Seal around the base with additional sealant.

E. Separate between dissimilar metals using EPDM flashing in the area of potential contact.

F. Clean metal surfaces of traces of flux and neutralize as recommended by the metal alloy manufacturer. Clean surfaces of substances that will cause deterioration of the metal finish.

1.4 FIELD QUALITY CONTROL

A. Post Installation Testing: Owner reserves right to perform post installation testing of installed sheet metal roofing

B. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with manufacturer's instructions.

1.5 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

08100 - STANDARD STEEL DOORS AND FRAMES

A SUBMITTALS

1. Submit door shop drawings indicating opening criteria, elevations, sizes, type, swing, and any special requirements.
2. Submit frame shop drawings indicating layout, finish and reinforcement locations.
3. Submit product data showing frame anchor types, door core material, door and frame reinforcement locations, construction type and installation instructions.

B PRODUCTS

1. Frameless Glass System: Interior frameless tempered 3/4" thick glass panels with polished edges all sides. Brushed stainless steel hardware, dry glazed rails, overhead concealed door closer with double acting swing; bottom pivots and 2 sets of glass mounted pull handles; manufacturer to be Dorma or equal. Prep for schedules hardware and coordinate with city vendor.

2. Exterior Stile and Rail Doors: Entry wood door to match design intent. Match window wood species, factory prime exterior door, prep for interior stain grade finish. 1 3/4" thick slab, prep for weather stripping and scheduled hardware.

3. Interior Flush Door: Plain sliced African Mohogany, full flush, solid core varies - 28-34lb particleboard – Meets or exceeds requirements of ANSI A208.1 and CS236-66, 1 3/4" slab w/ bevel edge.

C DOOR CONSTRUCTION

1. Door construction if applicable shall meet requirements of ANSI A250.8 (SDI 100).

2. Hardware preparation and reinforcements shall be in accordance with ANSI A250.6. Locations shall be in accordance with ANSI/DHI A115 except where conforming to existing conditions or additional hardware overrides.

3. Door thickness shall be minimum 1-3/4 inch. Refer to Door Schedule for thicker door requirements.

D FRAME CONSTRUCTION

1. Fabricate frames as welded (SUA) unit, with hardware reinforcement plates welded in place and push-in style silencers installed on strike side of door.

2. Fabricate frames as solid wood construction. Species to match door/window manufacture, submitted as historic. Frames to be prepped for weatherstripping and hardware as scheduled.

3. Frameless glass door system to be installed in new drywall door jamb/wall assembly to allow for consealed hardware installation. All blocking and holding supports connected directly to structure. Modify existing brick floor to allow for in-floor hardware mounts.

B INSTALLATION

1. Coordinate door and frame preparation with Section 08710 – Door Hardware, field conditions and drawing schedule.

2. Install doors and frames in accordance with manufacturer's published instructions, ANSI A250.11 and HMMA 840.

084210 - GLASS ENTRANCES

PART 1 - GENERAL

1.01 SUMMARY

A. This section includes:

1. Interior entrance doors.

B. Related work in other sections:

1. Panic Handles, Deadbolt Handles, Locking Ladder Pulls, and Push/Pull
Handles for tempered glass entrance doors are specified in Division 08 7100
section "Door Hardware". Some limitations may apply due to finished door height.

1.02 SUBMITTALS

A. Product Data: Submit Manufacturer's product data for all glass entrance systems including:

1. Manufacturer's standard details and fabrication method.
2. Data on finishing, hardware and accessories.
3. Recommendations for maintenance and cleaning of exterior finish surfaces.
4. Test data on fabricated door.

B. Shop drawings for each all glass entrance system are required, including:

1. Layout and installation details.
2. Elevations at 1/4-inch scale.
3. Detail sections of Wedge-Lock™ Glass Securing System to be submitted to city vendor for approval.
4. Hardware mounting heights.
5. Anchorage and reinforcement.
6. Glazing details.

C. Samples for approval:

1. Submit pairs of samples of each specified metal color and finish on 9-inch long
sections of extrusions or formed shapes.
2. Submit samples of glass approximately 12 inches square showing the edge conditions.

1.03 QUALITY ASSURANCE

A. Installer qualifications: Engage an experienced installer who has completed installations of all glass entrances similar in design and extent to those required for the project and whose work has resulted in construction with a record of successful in service performance.

B. Manufacturer's qualifications: Provide all glass entrances produced by a firm experienced in manufacturing entrance systems that are similar to those indicated for this project and that have a record of successful in-service performance. All door systems must be tested.

C. Single source responsibility: Obtain all glass entrance systems from a single manufacturer to ensure full compatibility and warranty of parts.

D. Design criteria: The drawings indicate the size, profile and dimensional requirements of the all glass entrance system required and are based on the specific types and models indicated. All glass entrances by other manufacturers may be considered, provided deviations in dimensions and profiles are minor and do not change the design concept as judged by the Architect. The burden of proof of equality is on the proposer.

E. Safety glass standard: Provide tempered glass components that comply with ANSI Z97.1 and testing requirements of CPSC 16CFR Part 1201 for Category II materials.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver all glass entrances and related components in the manufacturer's original protective packaging. Do not deliver entrance units until the work is ready for their installation.

1. Inspect components for damage upon delivery. Unless minor defects in metal components can be made to meet the Architect's specifications and satisfaction, damaged parts should be removed and replaced.

1.05 PROJECT CONDITIONS

A. Field Measurements: Check opening by accurate field measurement before fabrication. Show recorded measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of the work and possible damage to the finished product.

1. Where necessary, proceed with fabrication without measurement and coordinate fabrication tolerances to insure proper fit.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURER'S

A. Basis of design: Design is based on the 1202 Series "All-Glass" Entrance Door System
available up to 8'-0" (2.44 m) high manufactured by:

C.R. Laurence Co., Inc. (CRL) / Blumcraft
Tel: (800) 421-6144 Fax: (800) 587-7501
Email: HYPERLINK "mailto:architectural@crlaurence.com" architectural@crlaurence.com
HYPERLINK "http://www.crlaurence.com" www.crlaurence.com

B. Subject to compliance with requirements, "all-glass" entrances from other manufacturers meeting the specified requirements may be acceptable.

2.02 MATERIALS

A. Aluminum Clad, Stainless Steel Clad, Brass or Bronze Clad

B. Glass and Glazing
1. Comply with ASTM C1048, Kind FT (fully tempered), Condition A
(uncoated), Type I (transparent, flat), Class 1 (clear), Quality q3
glazing select). Provide glass complying with requirements of
CPSC 16CFR, Part 1201 for Category II materials.
2. Thickness: 3/8" to 1/2" (10 to 12 mm) only in clear
3. All glass fabrication to be completed before tempering.
4. Exposed edges to be bright flat polish.
5. Glass to be tempered horizontally, visible tong marks or tong mark distortions are not permitted.

2.03 HARDWARE

A. Vertical Stile: 2" (51 mm) diameter full height of door.
B. Handles and Locks: Refer to Section 08 7100 Door Hardware for hardware set,
application, and finish as selected by the Architect and supplied by C.R. Laurence.

C. Closers: integrated closer in the vertical stile of the door.

D. Sidelite Systems: Provide sidelite systems with matching glass.

E. Anchors and Fasteners: Manufacturer's standard concealed anchors and fastenings. Do not use exposed fasteners.

F. Weather stripping: Can be applied to edges of glass or vertical stile to help reduce air infiltration. The weather stripping shall be pile and replaceable without removing doors from opening.

2.04 FABRICATION

A. General: Fabricate all glass entrance components to designs and sizes indicated. Size of
door and profile requirements of hardware are indicated on the drawings.

1. Locate and provide holes and cutouts in glass to receive hardware before tempering glass. Do not permit cutting, drilling or other alterations to glass after tempering.
2. Fabricate work to accommodate required hardware, anchors, reinforcement, and accessory items.

B. Prefabrication: Complete fabrication, assembly, finishing, hardware application and other work to the greatest extent possible before shipment to the project site. Disassemble components only as necessary for shipment and installation.

C. Continuity: Maintain accurate relation of planes and angles with hairline fit of contracting members.

2.05 MATERIAL FINISHES

A. Aluminum Clad:
1. Satin clear anodized

B. Stainless Steel Clad:
1. Satin #4 directional polish (US32D)

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates and supports with the installer, present for compliance with requirements indicated, installation tolerances and other conditions that affect the installation of all glass entrances and storefronts. Correct unsatisfactory conditions before proceeding with the installation.

1. Do not proceed with installation until unsatisfactory conditions are corrected.

3.02 INSTALLATION

A. Install all glass entrance door and associated components in accordance with manufacturer's printed instructions and recommendations.

1. Verify unit is level, plumb and true line.
2. Lubricate hardware and other moving parts as required.

3.03 ADJUSTING

A. Adjust doors and hardware to provide a tight fit at meeting points and at weather-stripping for smooth operation and weather tight closure.

B. Hardware: Adjust operating hardware to ensure proper operation. Coordinate cylinder installation and verify with City Vendor.

3.04 CLEANING

A. Clean door and frame surfaces after installation, exercising care to avoid damage to the finish.

B. Clean glass surfaces after installation, complying with requirements contained in the "Glass and Glazing" section for cleaning and maintenance. Remove excess glazing sealant compounds, dirt or other substances.

3.05 PROTECTION

A. Institute protective measures required throughout the remainder of the construction period to ensure that the all glass entrances do not incur any damage or deterioration, other than normal weathering, at the time of acceptance.

END OF SECTION

08710 - DOOR HARDWARE

A PRODUCTS
1. Cylinder sets shall be Corbin Russwin CL3500 Series, heavy duty bored locksets with "Armstrong" lever/rose trim and interchangeable core in BHMA 626 Satin Chomium Plated.

2. Exit device shall be non-dogging, Corbin Russwin ED5800 Series concealed vertical rod exit device with "Armstrong" lever trim and interchangeable core in BHMA 626 Satin Chomium Plated. Provide exit devices at security controlled openings and coordinate with city vendor.

3. Hinges shall be Stanley Lifespan CB168(US26D) satin stainless steel 5 knuckle heavy weight, full mortise, full ball bearing hinges.

4. Continuous hinges shall be Stanley 650 Series satin stainless steel (US32D) continuous pinned hinges with security fasteners.

5. Closers shall be LCN 4040 Series Super Smoothee closer, mounted on secure side of door. Provide optional parallel arm mounting on push side applications and include optional PA-SHOE.

6. Door stop with keeper to be Assa Abloy Rockwood [472EXP for exterior doors] [476 for interior doors] both in US26D.

7. Flush bolts Assa Abloy Rockwood 630-24, US26D top and bottom on double wood door inside leaf. Install hole catch on outside of ramp to allow for hold open. Coordinate latching leaf hardware with city vendor.

8. Silencers shall be Stanley SP57-5480 push-in style rubber silencers.

9. Kick plates shall be Rockwood K1062 10 inch high stainless steel kick plates full width of door.

10. 1 1/4" DIAM. locking ladder pulls for interior/exterior glass entry system to be fully ADA compatible in Stainless Steel. All locking to be coordinated with City Vendor. Ladder pulls to be glass mounted at latch with floor mounted flat strike and header mounted PK strike with Key access cylinder out / thumb latch in, if approved by City Vendor

B SUBMITTALS

1. Submit hardware schedule indicating locations, function, finish, options and mounting requirements for each specified type of hardware. Include all pertinent electrical characteristics and connection requirements.

C MOUNTING HEIGHTS

1. Mount hardware to suit door elevations. Unless otherwise directed by the Architect, install hardware at the following mounting heights:

a. Locksets: 40 inches AFF to centerline of lever.

b. Exit Devices: 40 inches AFF, match lockset locations.

c. Push Plates: 45 inches AFF to centerline of plate.

d. Pull Handles: 42 inches AFF to centerline of grip.

e. Deadlocks: 48 inches AFF to centerline.

f. Where doors have intermediate rails, align locksets or exit devices with centerline of rail if between 38 and 42 inches AFF, consult Architect if out of that range.

g. Hinges and other hardware: in accordance with BHMA guidelines and standards.

D SCHEDULE

1. Refer to Drawings for Hardware Schedule

09260 - GYPSUM WALLBOARD SYSTEMS (METAL FRAMING)

A MATERIALS

1. Low to Medium Height (14 FT) non-load bearing interior studs and tracks shall be GA-216, GA-2600, 33mil, galvanized sheet steel, "C" shape profile (studs), with knurled faces in widths as indicated in the drawings. Maximum height for standard 362S125-33 studs is 14 FT, PLEASE NOTE THAT GAUGE EQUIVALENT STUDS ARE NOT AN ACCEPTABLE ALTERNATE AND THAT MATERIAL THICKNESS SHALL BE 33 MILS OR GREATER.

2.Fasteners shall be ANSI/ASTM C1002 bugle-head Type "S" screws in lengths to suit application.

3. Fire rated interior gypsum wallboard shall be 5/8" thick, ASTM

4. Standard (non-rated) interior gypsum wallboard shall be same as fire rated gypsum board.

5. Moisture resistant (MR) gypsum wallboard shall be 5/8" thick ASTM C630/C 1396 with Type FSW core and UL-rated and shall be used throughout all bathrooms, damp areas and behind all cabinets with sinks or drinking fountains.

6. Acoustic insulation shall be unfaced, friction fit type, ASTM C665 pre-formed mineral wool insulation bearing a UL-label, thickness to match wall cavity.

7. Acoustic sealant shall be non-hardening, non-skinning type for use in conjunction with gypsum board panels.

8. Edge trim, control joints and corner beads shall be USG zinc accessories as required unless specifically noted to be vinyl.

9. Joint materials shall be ASTM C475, GA-201, GA-216 reinforcing tape, joint compound, adhesive and water.

10. Refer to drawings for other accessories.

B INSTALLATION

1. GWB installation shall be in accordance with GA-201, GA-216, GA-600 and manufacturer's recommendations, over studs at 16 inch O.C. (unless specifically noted otherwise).

2. Refer to Drawings for indications of partitions extending to finish ceilings only and for partitions extending through ceilings to structure above. Maintain clearance under structural members to avoid deflection transfer to studs.

3. Coordinate blocking installation and locations with Section 06114.

4. Exposed edges and joints shall be taped, filled and sanded smooth to receive finish treatment.

5. Feather tape and joint coats to achieve 1/16 inch maximum camber and install GWB to achieve maximum variation from true flatness of less than 1/8 inch in 10 feet in any direction.

6. Finish gypsum panels in accordance with ASTM C840 and GA-214 as follows: Level 0 - Not used, Level 1 - Ceiling plenums and concealed space, Level 2 - Not used, Level 3 - Not used, Level 4 - Standard minimum finish level throughout project, Level 5 - Standard minimum finish level behind all wallcovering or painted Whiteboard finishes.

RZ Design Associates, Inc.
MECHANICAL, ELECTRICAL AND STRUCTURAL ENGINEERING
750 OLD MAIN STRE

09300 - TILE

A TILE

1. All tile shall be ANSI A137.1-1998 polished and unpolished modular porcelain tile. All floor tiles shall be unpolished, all wall tiles shall be polished. Contractor shall include all necessary trim pieces required to complete the work.

2. Floor tile shall be slip resistant with a wet coefficient of friction of not less than 0.60 in accordance with ANSI NFSI B101-201 and a minimum Dynamic Coefficient of Friction (DCOF) of 0.42 WET when measured in accordance with TCNA DCOF AcuTest.

A.1 TILE-STONE
1. Existing stone tile at covered entry to be removed, cleaned and prepped to be re-installed. Contractor to thick set stone and grout with exterior crack resistant sanded grout.

B ADDITIONAL MATERIALS

1. Floor tile mortar shall be ANSI A118.4 latex portland cement mortar.

2. Floor tile grout shall be ANSI A118.6, sanded tile grout with latex additive, color to be selected from grout manufacturer's standard selection.

3. James Hardie "HardieBacker" tile backer board (1/2" thick for walls, 1/4" thick for floors) with 2 inch wide coated glass fiber tape reinforcement for joints and corners and high strength screw fasteners as recommended by manufacturer.

4. Uncoupling membrane (anti-fracture) shall be Laticrete HydroBan or equal TCNA Extra Heavy Service rated antimicrobial single component self curing liquid rubber polymer crack isolation membrane.

C WATERPROOFING SYSTEM

1. Waterproof membrane required at all wet areas including bathroom floors and tub/shower enclosure walls.

2. Provide fabric reinforced Laticrete 9235 Waterproofing Membrane at all floors surfaces to receive tile finish and extend membrane in a continuous cove up wall surfaces a minimum 8" above finish floor or 1/2" below tile base if applicable and lower than 8"

D PROCEDURES

1. Perform subsurface preparation in accordance with ANSI A108.01 and adhere to ANSI A108.02 for general tile requirements for materials, environment and workmanship. Flatness and lippage shall comfort with TCNA Field and Installation Requirements.

a. Field verify existing conditions conform to ACI 302.1 FF35/FL25 for thin-set tile or FF20/FL15 for mud-set tile. If existing conditions do not meet these criteria, use appropriate underlayment compatible with tile setting material and subfloor to achieve specified level and flatness of subsurface.

3. All tile work shall comply with ANSI A137.1 and the TCNA Handbook requirements for the specified setting bed.

4. Install uncoupling membrane in strict accordance with manufacturer's instructions. Instructions contained within this specification that do not concur with the manufacturer's specifications shall be brought to the attention of the Architect.

5. Install waterproofing in strict accordance with manufacturer's instructions. Refer to Section 06112 for sheathing material selections. Instructions contained within this specification that do not concur with the waterproofing specifications shall be brought to the attention of the Architect.

09900 - PAINTING [AND STAINING]

A SUBMITTALS

1. Submit 10" x 10" samples of all paints on GWB substrate illustrating color, sheen and texture.

2. Submit 10" x 10" samples of all stains illustrating color and sheen on each different substrate specified. Substrates shall match wood species specified for stained finishes.

3. Submit all manufacturer's instructions indicating required surface preparation and conditions required for application and finish types.

B MATERIALS

1. Sherwin Williams, or equivalent, latex enamel paint as called out herein and in the drawings [and to match existing colors adjacent to areas requiring new finish].

2. (leave for semi-transparent stain systems) Sherwin Williams, or equivalent, oil based stain as called out herein and in the drawings [and to match existing colors adjacent to areas requiring new finish].

3. Sherwin Williams, or equivalent, water reducible polyurethane varnish as called out herein and in the drawings [and to match existing colors adjacent to areas requiring new finish].

4. Primers, sealers, cleaning agents and accessory materials shall be as recommended and required by the paint or stain manufacturer.

C PROCEDURE

1. All surfaces shall be finished and prepared as recommended by the paint or stain manufacturer. By beginning the work, the Painting sub-contractor accepts the quality of the substrate being painted.

2. All surfaces to be painted shall receive primer coat and finish coat(s) as scheduled.

D SCHEDULE (SHERWIN WILLIAMS BOD)

1. Drywall Walls: Eggshell finish. 1st coat: Sherwin Williams PrepRite 200 Latex Primer, 2nd coat: Sherwin Williams ProMar 200 Latex Eg-Shel, 3rd coat: Sherwin Williams ProMar 200 Latex Eg-Shel.

2. Drywall Ceilings and Soffits: Flat finish. 1st coat: Sherwin Williams PrepRite 200 Latex Primer, 2nd coat: Sherwin Williams ProMar 200 Latex Flat, 3rd coat: Sherwin Williams ProMar 200 Latex Flat.

3. Dryfall Ceiling: Flat Finish. Sherwin Williams B42W1 Flat White Dryfall tinted to match scheduled color. Provide Kem Bond HS or DTM Acrylic Primer at steel and galvanized surfaces.

4. Interior Wood Casing and Trim: Semi-gloss finish. 1st coat: Sherwin Williams PrepRite Classic Primer, 2nd coat: Sherwin Williams Duration Home Semi-Gloss, 3rd coat: Sherwin Williams Duration Home Semi-Gloss.

5. Exterior Wood Trim: Satin finish. 1st coat: Sherwin Williams A-100 Exterior Oil Stain Blocking Primer VERIFY USE, ALKYD PAINT NOT ALLOWABLE IN CT, 2nd coat: Sherwin Williams Duration K33 Series Exterior Latex Coating, 3rd coat: Sherwin Williams Duration K33 Series Exterior Latex Coating.

6. Hardboard Faced Doors: Semi-gloss finish. 1st coat: Sherwin Williams PrepRite Wall & Wood Oil Primer/Undercoater VERIFY USE, ALKYD PAINT NOT ALLOWABLE IN CT, 2nd coat: Sherwin Williams Duration Home Semi-Gloss, 3rd coat: Sherwin Williams Duration Home Semi-Gloss.

7. Fiberglass Doors: Water-borne epoxy semi-gloss finish. No Primer required. 1st coat: Sherwin Williams Water Based Catalyzed Epoxy B70/B60V25 Series, 2nd coat: Sherwin Williams Water Based Catalyzed Epoxy B70/B60V25 Series.

8. Metal Surfaces: Semi-gloss finish. 1st coat: Sherwin Williams Pro-Industrial Pro-Cryl Universal Primer B66-310 Series. 2nd coat: Sherwin Williams Metalatex Semi-Gloss Coating (B42 Series). 3rd coat: Sherwin Williams Metalatex Semi-Gloss Coating (B42 Series).

9. Interior vertical wood surfaces, transparent finish. 1st coat: Sherwin Williams WoodClassics Waterborne Polyurethane Varnish, A68 Series. 2nd coat: Sherwin Williams WoodClassics Waterborne Polyurethane Varnish, A68 Series, apply at a rate of 400-500 SF per gallon.

10. Interior vertical wood surfaces, semi-transparent finish. 1st coat: Sherwin Williams WoodClassics Oil Stain, A49 Series, apply at a rate of 400-500 SF per gallon. 2nd coat: Sherwin Williams WoodClassics Waterborne Polyurethane Varnish, A68 Series. 3rd coat: Sherwin Williams WoodClassics Waterborne Polyurethane Varnish, A68 Series, apply at a rate of 400-500 SF per gallon.

11. Non-passivated Galvanized Steel Decking, Ductwork and Equipment: Clean with a water-based industrial strength cleaner and apply an adhesion promoter followed by a clean water rinse. Alternately, wipe down surfaces using clean, lint-free cloths saturated with xylene or lacquer thinner; followed by wiping the surface dry using clean, lint-free cloths. Finish with two coats Benjamin Moore Eco SpecWB Interior Latex SemiGloss #376.

09900 - PAINTING [AND STAINING] (Continued)

12. Passivated Galvanized Steel Decking, Ductwork and Equipment: Clean with water-based industrial strength cleaner. After the surface has been prepared, apply recommended primer to a small area. Allow primer to cure for 7 days, and test adhesion using the "cross-hatch adhesion tape test" method in accordance with ASTM D 3359. If the adhesion of the primer is positive, finish with two coats Benjamin Moore Eco SpecWB Interior Latex SemiGloss #376.

13. Interior Concrete Slabs: Water-borne epoxy eggshell finish: No Primer Required. 1st Coat: Sherwin Williams Multi-Mil Water Based Epoxy B71-100/V110 Series 4-6 mils dry, 2nd coat: Sherwin Williams Multi-Mil Water Based Epoxy B71-100/V110 Series 4-6 mils dry.

14. Concrete Masonry (CMU): Satin Finish. 1st coat: Sherwin Williams PrepRite Block Filler B25W25, 16 mils wet, 8 mils dry. 2nd coat: Sherwin Williams A-100 Exterior Latex Satin A82 Series. 3rd coat: Sherwin Williams A-100 Exterior Latex Satin A82 Series, 4 mils wet, 1.4 mils dry per coat.

B PRODUCTS

1. See equipment schedule for all products. Contractor to submit as such for approval.

C SUBMITTALS

1. Submit manufacturer's original product literature showing each specified component, mounting requirements and finish information.

D GENERAL

1. Contractor shall field verify dimensions and quanties prior to ordering.

2. Contractor shall install solid wood blocking within wall cavities as necessary to accommodate all accessories. Coordinate blocking locations in the field with all other trades. Refer to Section 06114 for further information.

SECTION 099113 - EXTERIOR PAINT

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Exterior paint systems including surface preparation.

1.2 RELATED SECTIONS

A. Section 055200 – "Metal Fabrications"
B. Section 079200 – Joint Sealants.

1.3 REFERENCES
A. MPI (APL) – Master Painters Institute.
B. SCAQMD 1168 – South Coast Air Quality Management District Rule #1168; October 3, 2003.
C. 40 CFR 59, Subpart D – National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

1.4 DEFINITIONS
A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523, a matte flat finish.
B. Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523, a high-side sheen flat, velvet-like finish.
C. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523, an eggshell finish.
D. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523, a satin-like finish.
E. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523, a semi-gloss finish.
F. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523, a gloss finish.

1.5 SUBMITTALS

A. Submit under provisions of Section 013000.

B. Product Data: Provide a complete list of all products to be used, with the following information for each:
1. Manufacturer's name, product name, catalog number, and general product category.
2. Cross-reference to specified paint system(s) that the product is to be used in; include description of each system.

C. Samples: Submit three paper samples, 8 inches by 8 inches in size, illustrating selected colors for each color and system selected with specified coats cascaded.

D. Manufacturer's Instructions: Indicate special surface preparation procedures.

E. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: a single manufacturer with a minimum of ten (10) years experience will supply all primary products specified in this section.

B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five (5) years demonstrated experience in installing products of the same type and scope as specified.

C. Paint all exposed surfaces. If a color of finish, or if a surface is not specifically mentioned, Architect will select from standard colors and finishes available.

D. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels unless indicated.

1.7 DELIVERY, STORAGE AND HANDLING

A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information:

1. Product name and type (description).
2. Application and use instructions.
3. Surface preparation.
4. VOC content.
5. Environmental issues.
6. Batch date.
7. Color number.

B. Storage: Store products in manufacturer's unopened packaging until ready for installation. Store solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction

C. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

D. Disposal:
1. Dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction
2. Never pour leftover coating down any sink or drain. Use up material on the job or seal can and store safely for future use.
3. Do not incinerate closed containers.
4. For specific disposal or recycle guidelines, contact the local waste management agency or district. Recycle whenever possible.

1.8 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 WARRANTY

A. At project closeout, provide to the Owner or owner's representative an executed copy of the Manufacturer's standard form outlining the terms and conditions of and any exclusions to their Limited Warranty against Manufacturing Defect.

B. Minimum warranty period shall be one year from substantial completion including labor and materials.

1.10 EXTRA MATERIALS

A. At project closeout, provide the color mixture name and code to the Owner for accurate future color matching.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Sherwin-Williams (basis of design)
B. Benjamin Moore
C. PPG/Pittsburgh

2.2 SOURCE LIMITATIONS

A. Obtain paint materials from single source from single listed manufacturer.

2.3 MATERIALS - GENERAL

A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."

B. Material Compatibility:
1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

C. Paints and Coatings:
1. Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
2. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color. Or follow manufactures product instructions for optimal color conformance.

D. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.

E. Volatile Organic Compound (VOC) Content:
1. Provide coatings that comply with the most stringent requirements specified in the following:
a. 40 CFR 59, Subpart D-National Volatile Organic Compound Emission Standards for Architectural Coatings.
b. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

F. Coating Application Accessories: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer's specifications.

G. Compatibility: Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

H. Color: Refer to Finish Schedule or Drawings for paint colors. Select paragraph above or one of first two paragraphs below.

2.4 MIXING AND TINTING

A. Except where specifically noted in this section, all paint shall be ready-mixed and pre-tinted.

B. Agitate all paint prior to and during application to ensure uniform color, gloss, and consistency.

C. Thinner addition shall not exceed manufacturer's printed recommendations. Do not use kerosene or other organic solvents to thin water-based paints.

D. Where paint is to be sprayed, thin according to manufacturer's current guidelines.

2.5 EXTERIOR SURFACES

A. Metal – Water Based Light Industrial Coating including Ferrous Metal (MPI EXT 5.1M), Galvanized Metal (MPI EXT 5.3J) and Aluminum (MPI EXT 5.4G) Substrates.: Semi-Gloss Finish.

1. Primer: MPI water-based anti-corrosive metal primer. Sherwin Williams Pro Industrial Pro-Cryl Universal Primer, B66-310 Series, at 5.0 to 10.0 mils wets, 2.0 to 4.0 mils dry.
2. 1st Coat: MPI water-based, semi-gloss, exterior light industrial coating. Sherwin Williams Pro Industrial Acrylic Semi-Gloss Coating, B66-650 Series, at 2.5 to 4.0 mils dry per coat.
3. 2nd Coat: MPI water-based, semi-gloss, exterior light industrial coating. Sherwin Williams Pro Industrial Acrylic Semi-Gloss Coating, B66-650 Series, at 2.5 to 4.0 mils dry per coat.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared; notify Architect of unsatisfactory conditions before proceeding. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

B. Ensure that surfaces to receive paint are dry immediately prior to application.

C. Ensure that moisture-retaining substrates to receive paint have moisture content within tolerances allowed by coating manufacturer.

D. Examine surfaces to receive coatings for surface imperfections and contaminants that could impair performance or appearance of coatings, including but not limited to, loose primer, rust, scale, oil, grease, mildew, algae, or fungus, stains or marks, cracks, indentations, or abrasions.

E. The degree of surface deterioration (DSD) shall be assessed using the assessment criteria indicated in the MPI Maintenance Repainting Manual. In general the MPI DSD ratings and descriptions are as follows:
1. DSD-0: Sound Surface (may include visual (aesthetic) defects that do not affect film's protective properties).
2. DSD-1: Slightly Deteriorated Surface (may show fading; gloss reduction, slight surface contamination, minor pin holes scratches, etc.) / Minor cosmetic defects (runs, sags, etc.).
3. DSD-2: Moderately Deteriorated Surface (small areas of peeling, flaking, slight cracking, staining, etc.).
4. DSD-3: Severely Deteriorated Surface (heavy peeling, flaking, cracking, checking, scratches, scuffs, abrasion, small holes and gouges).
5. DSD-4: Substrate Damage (repair or replacement of surface required by others).

F. No repainting work shall commence until all adverse conditions and defects have been corrected and surfaces and conditions are acceptable to the Painting Subcontractor. Application of coatings will be considered as an acceptance of surface conditions.

3.2 PREPARATION – GENERAL
A. Clean surfaces thoroughly prior to coating application.

B. Do not start work until surfaces to be finished are in proper condition to produce finished surfaces of uniform, satisfactory appearance.

C. Stains and Marks: Remove completely, if possible, using materials and methods recommended by coating manufacturer; cover stains and marks which cannot be completely removed with isolating primer or sealer recommended by coating manufacturer to prevent bleed-through.

D. Remove Mildew, Algae, and Fungus using materials and methods recommended by coating manufacturer.

E. Remove dust and loose particulate matter from surfaces to receive coatings immediately prior to coating application.

F. Remove or protect adjacent hardware, electrical equipment plates, mechanical grilles and louvers, lighting fixture trim, and other items not indicated to receive coatings.

G. Move or protect equipment and fixtures adjacent to surfaces indicated to receive coatings to allow application of coatings.

H. Protect adjacent surfaces not indicated to receive coatings.

I. Prepare all new surfaces in accordance with MPI and paint manufacturer's instructions for specified coatings and indicated materials, using recommended methods and materials.

3.3 SURFACE PREPARATION

A. All surfaces: Clean surfaces free of loose particles, sand, efflorescence, laitance, form oil, curing compounds, and other substances which could impair coating performance or appearance.

B. Metals - Ferrous, Unprimed: Remove rust or scale, grease, oil, and other contaminants which could impair coating performance or appearance. Clean using methods recommended in writing for specific conditions by the paint manufacturer but not less than the following:
1. SSPC-SP 2 – Hand Tool Cleaning.

C. Metals - Ferrous, Shop-Primed: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

3.4 APPLICATION - GENERAL

A. Apply each coat to uniform thickness in accordance with manufacturer's instructions. Do not exceed manufacturer's specified maximum spread rate for indicated surface; thins, brush marks, roller marks, orange-peel, or other imperfections are not permitted.

B. Allow manufacturer's specified drying time, and ensure correct coating adhesion, for each coat before applying next coat.

C. Inspect each coat before applying next coat; touch-up surface imperfections with coating material, feathering, and sanding if required; touch-up areas to achieve flat, uniform surface without surface defects visible from 5 feet.

D. Remove dust and other foreign materials from substrate immediately prior to applying each coat.

E. Where paint application abuts other materials or other coating color, terminate coating with a clean sharp termination line without coating overlap.

F. Where color changes occur between adjoining spaces, through framed openings that are of same color as adjoining surfaces, change color at outside stop corner nearest to face of closed door.

G. Re-prepare and re-coat unsatisfactory finishes; refinish entire area to corners or other natural terminations.

H. Paint all exposed surfaces. If a color, finish, or surface is not specifically mentioned, the Architect will select from standard colors and finishes available.

I. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels unless indicated.

3.5 CLEANING

A. Clean excess coating materials, and coating materials deposited on surfaces not indicated to receive coatings, as construction activities of this section progress; do not allow to dry.

B. Re-install hardware, electrical equipment plates, grilles and louvers, lighting fixture trim, and other items that have been removed to protect from contact with coatings.

C. Reconnect equipment adjacent to surfaces indicated to receive coatings.

D. Relocate to original position equipment and fixtures that have been moved to allow application of coatings.

E. Remove protective materials.

3.6 PROTECTION

A. Protect completed coating applications from damage by subsequent construction.

B. Repair to Architect's acceptance coatings damaged by subsequent construction activities. Where repairs cannot be made to Architect's acceptance, re-apply finish coating to nearest adjacent change of surface plane, in both horizontal and vertical directions.

END OF SECTION 099113

SECTION 321413.15 – INTERLOCKING CONCRETE UNIT PAVING ON BITUMINOUS SETTING BED

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes
1. Work consists of furnishing and installing an Interlocking Concrete Pavement System in accordance with these specifications and in general conformance with the lines, grades, design, and dimensions shown on the plans.
2. Installation work includes:
a. Verifying the concrete/stone base and edge restraints are installed in general conformance with the lines, grades and site conditions depicted in the construction documents;
b. Furnishing and installing tack coat (optional for pedestrian applications), bituminous setting bed, modified asphalt adhesive (not required for pedestrian applications that do not pre-compact the bedding), concrete pavers, and joint filling sand to the lines and grades shown on the construction drawings

B. Related Requirements:
1. Section 31 32 19.23 Geotextile Layer Separation
2. Section 32 01 26.74 Concrete Overlays
3. Section 32 11 26Asphaltic Base Courses
4. Section 32 11 36Concrete Base Courses
5. Section 32 12 13.13 Tack Coats
6. Section 32 16 13Curbs and Gutters

1.2 REFERENCES

A. American Association of State Highway and Transportation Officials (AASHTO)
1. GDPS-4-M Guide for Design of Pavement Structures
2. AASHTO M81 Standard Specification for Cutback Asphalt (Rapid-Curing Type)

B. American Society of Civil Engineers (ASCE)
1. ASCE 58-16 Structural Design of Interlocking Concrete Pavement for Municipal Streets and Roadways

C. American Society for Testing and Materials (ASTM)
1. ASTM C33 Standard Specification for Concrete Aggregates
2. ASTM C94 Standard Specification for Ready-Mixed Concrete
3. ASTM C131 Resistance to Degradation of Small-Sized Course Aggregate by Abrasion and Impact in the Los Angeles Machine
4. ASTM C136 Sieve Analysis of Fine and Coarse-Grained Aggregates
5. ASTM C140 Sampling and Testing Concrete Masonry Units and Related Units
6. ASTM C144 Aggregate for Masonry Mortar
7. ASTM C920 Standard Specification for Elastomeric Joint Sealants
8. ASTM C936 Solid Concrete Interlocking Paving Units
9. ASTM C979 Pigments for Integrally Colored Concrete
10. ASTM C1645 Freeze-thaw and De-icing Salt Durability of Solid Interlocking Paving Units
11. ASTM D698 Laboratory Compaction Characteristics of Soil Using Standard Effort
12. ASTM D946 Penetration Graded Asphalt Cement for Use in Pavement Construction
13. ASTM D977 Emulsified Asphalt
14. ASTM D994 Preformed Expansion Joint Filler for Concrete (Bituminous Type)
15. ASTM D2028 Cutback Asphalt (Rapid Curing Type)
16. ASTM D2488 Description and Identification of Soils (Visual-Manual Procedure)
17. ASTM D3381 Viscosity Graded Asphalt Cement for Use in Pavement Construction
18. ASTM D6373 Performance Graded Asphalt Binder

D. American Association of State Highway and Transportation Officials (AASHTO):
1. AASHTO M288 Geotextile Specification for Highway Applications

E. Interlocking Concrete Pavement Institute (ICPI)
1. Tech Specs and Technical Bulletins.

1.3 SUBMITTALS
A. Contractor shall submit to the Architect for approval a minimum of four full-size samples of each concrete paver type/size/thickness/color/finish specified. The samples shall represent the range of shape, texture, and color permitted for the respective type. Color(s) will be selected by Architect/Engineer/Landscape Architect/City from Manufacturer's standard colors.

B. Contractor shall submit to the Architect/City for approval a representative sample of the pre-formed asphalt joint filler.

C. Prior to delivery of the associated material to the site, the Contractor shall submit the following product-specific documentation for approval:
1. Aggregates
a. Sieve analysis per ASTM C136 for bedding and joint aggregate materials
b. Minimum 3 lb. sample of each material for independent testing.
2. Concrete Pavers:
a. Test results from an independent testing laboratory for compliance with ASTM C936.
b. Manufacturer's catalog product data.
c. Safety Data Sheets (SDS).
3. Modified asphalt adhesive product catalog sheet with specifications.
4. Bituminous setting bed mix design in conformance with ASTM D3381.
5. Pre-formed asphalt joint filler in conformance with ASTM D944.

1.4 QUALITY ASSURANCE

A. Contractor Qualifications:
1. Contractor shall submit a list of five (5) previously constructed projects of similar size and magnitude prior to the bid date to be qualified. Contact names, telephone numbers, and date of completion shall be listed for each project.
2. The Contractor's site foreman shall hold a Certified Concrete Paver Installer Designation from the Interlocking Concrete Pavement Institute (ICPI). The site foreman shall be onsite for the entire installation.
3. Contractor shall conform to all local, state/provincial licensing and bonding requirements.

B. Mockups: Build mockups to verify selections made under submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Install a 10 ft x 10 ft paver area following the installation practices described in Article 3.2 to 3.4. This area shall be used to verify surcharge of the bituminous setting bed and adhesives, joint sizes; expansion joints; lines; laying pattern(s); stitching details (for mechanical installation); color(s); and, texture of the job.
2. To provide a proper representation of color blend, blending during installation of sample mock-up will be pulled from a minimum of 3 cubes.
3. This area shall be the standard by which the work will be judged.
4. Subject to approval by the Owner, the mock-up may be retained as part of the finished work. If mock-up is not retained, remove and dispose of mock-up at the completion of the project.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Contractor shall coordinate delivery and paving schedule to minimize interference with normal use of buildings adjacent to paving.

B. Contractor shall check all materials upon delivery to assure that the proper materials have been received and are in good condition before signing off on the manufacturer's packing slip.

C. Contractor shall protect all materials from damage or contamination due to job site conditions and in accordance with manufacturer's recommendations. Damaged or contaminated materials shall not be incorporated into the work.

D. Concrete pavers shall be delivered to the site in steel banded, plastic banded, or plastic wrapped cubes capable of transfer by forklift or clamp lift. Unload and store concrete pavers at the job site in such a manner that no damage occurs to the product.

E. Contractor shall handle and transport aggregates to avoid segregation, contamination, and degradation and keep different materials sufficiently separated as to prevent mixing. The material shall not be dumped or stored one material on top of another unless it is part of the installation process. Materials shall be covered to prevent removal by wind.

F. Tack Coat product(s) and Modifies Asphalt Adhesive shall be stored and handled per the Manufacturer's recommendations.

G. Geotextiles shall be delivered, stored and handled in accordance with ASTM D-4873.

1.6 ENVIRONMENTAL CONDITIONS

A. Pavers shall not be installed during heavy rain, freezing conditions or snowfall. Do not install bituminous setting bed when temperature is 40 degrees F and falling.

B. Base course shall not be installed on frozen soil subgrade.

1.7 MAINTENANCE MATERIALS

A. Provide (10) square feet additional paver material for use by City for maintenance and repair.

B. Store extra paver materials in Owner-designated location.

PART 2 - PRODUCTS

2.1 INTERLOCKING CONCRETE PAVERS

A. Interlocking Concrete Pavers Basis-of-Design:
1. Paver Name: Holland Stone 4 x 8
a. Thickness: 2-3/8 inches (60mm)
b. Color: Faneuil Hall or Fossil Beige color to be selected by Architect
c. Finish: Submit (2) smooth, and (2) shot blasted in each color listed above
d. Supplier: Contractor to be selected
e. Contact Person: N/a
f. Substitutions: Equal substitutions permitted.

B. Pavers shall meet the minimum material and physical properties set forth in ASTM C 936:
1. Measured length or width of test specimens shall not differ by more than +/- 0.063 in, while measured thickness shall not differ by more than +/- 0.125 in.
2. Average compressive strength of not less than 8,000 psi (55 MPa) with no individual unit under 7,200 psi (50 MPa) when tested in accordance with ASTM C140.
3. Average absorption of 5% or less with no unit greater than 7% when tested in accordance with ASTM C140.
4. [Freeze-thaw durable as tested in accordance with ASTM C1645. The average mass loss of all specimens tested shall not be greater than (A) 225 g/m2 when subject to 28 freeze-thaw cycles, or (b) 500 g/m2 when subject to 49 freeze-thaw cycles. Testing shall be conducted using a 3% saline solution.]
5. Efflorescence shall not be a cause for rejection.
6. Pigment in Concrete Pavers shall conform to ASTM C979.

2.2 BITUMINOUS SETTING BED

A. Asphalt cement shall conform to one of the following"
1. ASTM D946 with a penetration at 77 degrees F of minimum 3.35 inches (85 mm) and a maximum of 3.94 inches (100 mm).
2. ASTM D3381 – sample materials are AC 20 or AR-8000.
3. ASTM D6373 – sample material is PG 64-22.

B. Sands may be quarried or manufactured, if a sand mix is not available, a fine aggregate may be used as long as the maximum particle size does not exceed 1/4 inch (6 mm).
When concrete pavers are expected to be subjected to 1.5 million lifetime ESALs or greater include the following:

C. Verify gradation conforms to requirements listed in Table 1 as tested in accordance with ASTM C136.

Table 1

Gradation Requirements for Setting Bed

Sieve Size	Percent Passing
	3/8 inch (9.5 mm) 100
	No. 4 (4.75 mm) 80 to 100
	No. 8 (2.36 mm) 65 to 100
	No. 16 (1.18 mm) 40 to 85
	No. 30 (0.600 mm) 25 to 60
	No. 50 (0.300 mm) 7 to 30
	No. 100 (0.150 mm) 3 to 10
	No. 200 (0.075 mm) 2 to 1

2.3 JOINT FILLING SAND

A. Joint sand aggregate shall be clean, non-plastic sand, free from deleterious or foreign matter, and manufactured from crushed rock.
B. Screenings or stone dust shall not be utilized.
When concrete pavers are expected to be subjected to 1.5 million lifetime ESALs or greater include the following:

C. Verify gradation conforms to ASTM C144 requirements for concrete sand (listed in Table 2) as tested in accordance with ASTM C136.

Table 2
Gradation Requirements for Joint Filling Sand

Sieve Size	Percent Passing
	No. 4 (4.75 mm) 100
	No. 8 (2.36 mm) 95 to 100
	No. 16 (1.18 mm) 70 to 100
	No. 30 (0.600 mm) 40 to 100
	No. 50 (0.300 mm) 10 to 35
	No. 100 (0.150 mm) 2 to 15
	No. 200 (0.075 mm) 0 to 5

2.4 MODIFIED ASPHALT ADHESIVE

A. Use neoprene modified asphalt adhesive containing oxidizing asphalt combined with 2 percent neoprene, 10 percent long fibered mineral fibers, 88 percent asphalt that has a softening point of 155 degrees F.

2.5 TACK COAT

A. The following options are acceptable:
1. Cut back asphalt (rapid curing type) per ASTM D2028 and AASHTO M-81.
2. Anionic asphalt emulsion SS-1 or SS-1h per ASTM D977.

2.6 PREFORMED ASPHALT JOINT FILLER
A. Use 1/4-inch thick asphalt joint filler per ASTM D-994.
B. Use an elastomeric joint sealant per ASTM C-920.

2.7 EDGE RESTRAINTS

A. For vehicular applications, edge restraints shall be cast in place concrete curbs constructed at a minimum to the dimensions of the municipal standards.

B. For pedestrian or non-vehicular areas, aluminum or galvanized angles mechanically fastened to the concrete base may be used.

PART 3 - EXECUTION

Construction drawings and design calculations for the Interlocking Concrete Pavement System are typically prepared and stamped by a Professional Engineer registered in the state of the project. The engineering designs, techniques, and material evaluations should be completed in accordance with ASCE Standard 58-16 Structural Design of Interlocking Concrete Pavement for Municipal Streets and Roadways, or the AASHTO Guide for Design of Pavement Structures (whichever is applicable to the designer).
Compaction of the soil subgrade is recommended to at least 98% Standard Proctor Density per ASTM D698 for pedestrian areas, walkways, plazas and residential driveways. Compaction to at least 98% Modified Proctor Density per ASTM D1557 is recommended for areas subject to heavy vehicular traffic. Stabilization of the subgrade and/or base material, or addition of an impermeable layer, may be necessary with weak, saturated or expansive subgrade soils.

3.1 PREPARATION

A. Prior to commencement of any work, the Contractor shall conduct a pre-construction meeting with the Owner, Designer, and affected sub-trades. The pre-construction meeting should establish contractor responsibilities and at a minimum verify:
1. The location of the mock-up, and whether it will be part of the final construction or need to be removed.
2. The site layout is in general conformance with the onstruction documents.
3. The concrete/stone base and edge restraints are in general conformance with the lines, grades, and locations hown in the construction documents. The surface of the ase shall have a minimum slope of 1/4 inch per foot (2 ercent grade) and be within a tolerance of 0 to 3/16 inch ver a 10-foot straight edge. Surface to be free of dust, oil, rease, paint, wax, curing compounds, primer, sealer, form elease agents, cracks over 3/16 inch, or any deleterious substances and debris that may prevent or reduce bonding.
4. Asphalt shall be fully cured and free of hydrostatic pressure, control joints are located at the specified interval, and the moisture content is less than 5 Percent.
5. The location and spacing of weep holes and that weep holes are filled with pea gravel.
6. The subgrade lines and elevations are in general conformance with the construction documents. The subgrade elevations shall be within +/- 0.1 ft of the specified grades.
7. Subgrade soil conditions and grades meet the requirements in the construction documents.
8. The details of the site's erosion and sediment control plan

B. Contractor shall verify compaction of the subgrade and base is in general conformance with the construction documents prior to commencing work.

C. Once the Contractor has confirmed the base conditions are in general conformance with the requirements in the construction documents, the Contractor shall begin installing the bituminous bedding sand material. By initiating installation of the bedding sand, the Contractor acknowledges acceptance of the base.

3.2 BASE PREPARATION AND INSTALLATION OF TACK COAT
Installation of the tack coat is optional in pedestrian applications. Where tack coat is not used, delete steps A and E and remove TACK COAT from the section heading.
Emulsified asphalt primer tack coats are typically applied at a rate of 0.6 to 1.0 gal per 100 ft² (2.5 to 4.1 liters per 10.0 m²) to asphalt base, and 0.9 to 1.3 gal per 100 ft² (3.6 to 5.3 liters per 10.0 m²) to concrete base. Cutback asphalt tack coats are typically applied at a rate of 1.0 to 1.3 gal per 100 ft² (4.1 to 5.3 liters per 10.0 m²) to asphalt base, and 1.2 to 1.5 gal per 100 ft² (4.8 to 6.1 liters per 10.0 m²) to a concrete base.

A. Tack coat should only be installed when the ambient temperature is above 50 degrees F.

B. Fill any cracks under 3/16 inch wide in the concrete base with mortar, and in the asphalt base with the bituminous bedding course material.

C. Sweep the surface clean making sure not to sweep debris into the weep holes.

D. The surface of the base should be thoroughly clean and dry before application. Do not apply if rain is likely before placing the bituminous setting bed.

E. Thoroughly mix the tack coat in accordance with manufacturer's recommendations based on the type of base material. Install tack coat by spraying, brushing, or squeegeeing to the top of the base and to all surfaces that will be in contact with the bituminous setting bed. Once applied, the tack coat should not be disturbed and allowed to cure or break before covering with the bituminous setting bed.

3.3 INSTALLATION OF THE BITUMINOUS SETTING BED

A. Blend approximately 7% hot asphalt cement with 93% sand and heat to a minimum of 325 degrees F. Ensure final product is a uniform mixture with all the aggregate particles being evenly coated with asphalt cement.

B. Place the bituminous setting bed ensuring that the bituminous material will remain at least 250 degrees F during compaction.

C. The screed rails should be carefully set to ensure proper bituminous setting bed depth and finished paver grade. Use 1/2-inch high x 1-1/2 inch wide steel screed rails, and adjust to proper grade using thin wooden or plastic shims under the screed rails.

D. Place bituminous material between the parallel screed bars. Pull the material with the striking board over the screed bars several times. After each pass of the screed bar, any voids must be filled with fresh bituminous material to provide a smooth, firm, and even setting bed.

E.

1 DEMOLITION GROUND FLOOR PLAN
1/4" = 1'-0"

DEMOLITION KEY

Existing construction to remain shown thus, typical. Refer to Finish Plans and Notes for any required preparation or repairs.

Selective portions of existing construction to be removed or modified shown thus, typical.

Existing door and frame to be removed complete shown thus, typical. (Remove existing frames unless noted otherwise.)

DEMOLITION NOTES:

GEN 1	NUMBERED NOTES REFER TO THIS SHEET ONLY UNLESS SPECIFICALLY INDICATED OTHERWISE.
GEN 2	THE CONTRACTOR SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE FACILITY AND THE DRAWINGS PRIOR TO BEGINNING ANY DEMOLITION.
GEN 3	DASHED LINES INDICATE EXISTING CONSTRUCTION TO BE REMOVED OR MODIFIED. EXERCISE CARE DURING DEMOLITION ACTIVITIES TO MAINTAIN ADJACENT SPACES AND CONSTRUCTION DESIGNATED TO REMAIN. TAKE CARE DURING SELECTIVE DEMOLITION NOT TO DAMAGE OR DISTURB ANY ITEMS TO REMAIN.
DEMO 4	REMOVE EXISTING WINDOWS COMPLETELY AND PREPARE OPENING TO RECEIVE NEW WINDOWS. ALL EXISTING WINDOW GUARD BARS TO BE REMOVED. REFER TO NEW DETAIL 1/A6.1 FOR ADDITIONAL INFORMATION
DEMO 5	REMOVE EXISTING DOOR AND FRAME, PREPARE OPENING FOR NEW PROPOSED WOOD DOOR AND INTERIOR GLASS DOOR.
DEMO 6	EXISTING PLUMBING FIXTURES TO BE REMOVED PREPARE FOR NEW FIXTURES BASED ON PROPOSED WORK, REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION
DEMO 7	REMOVE EXISTING PLYWOOD INFILL AND PREPARE OPENING TO RECEIVE WINDOW CONSTRUCTION
DEMO 8	REMOVE (3) EXISTING METAL GATES AND FRAMES. REFER TO DETAIL 1/A6.1 FOR FURTHER INFORMATION
DEMO 9	REMOVE EXISTING BROWNSTONE CURBING TO ALLOW FOR PATIO TO BE RAISED AND NEW GRADING FOR HANDICAP WHEELCHAIR ACCESS. SALVAGE ALL PIECES FOR REINSTALLATION, REFER TO SHEET A0.1 FOR NEW SITE DETAILS
DEMO 10	REMOVE EXISTING PATIO STONES, CLEAN AND PREP FOR REINSTALLATION. DEMO/PREP PATIO FOR PROPOSED HEIGHT ADJUSTMENT. STONE PAVERS TO BE REINSTALLED. REFER TO SHEET A0.1 FOR NEW SITE DETAILS
DEMO 11	REMOVE EXISTING CONCRETE SURFACE TO ALLOW FOR NEW GRADING FOR HANDICAP WHEELCHAIR ACCESS. GC AND SUB-CONTRACTORS TO FURTHER COORDINATE THERE IS POSITIVE PITCH TO EXISTING DRAIN, ADJUST DRAIN GRATE AND ADDITIONAL CONCRETE SURFACE TO ACHIEVE DRAINAGE WITHOUT LOW POINTS
DEMO 12	REMOVE EXISTING TOILET AND PREPARE EXITING LOCATION FOR NEW TOILET, REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION
DEMO 13	EXERCISE CARE TO INSURE THAT ALL ITEMS DESIGNATED IN THE DRAWINGS (OR SPECIFIED HEREIN) TO BE REUSED ARE CAREFULLY REMOVED, STORED AND PROTECTED UNTIL THEY CAN BE REINSTALLED BY THE APPROPRIATE TRADE
DEMO 14	REMOVE EXISTING TILE COMPLETE. PREPARE SUBFLOOR FOR NEW TILE INSTALLATION.
DEMO 15	END OF DEMO WORK, EXISTING PLANTER TO REMAIN

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Title:

DEMOLITION
GROUND FLOOR
PLAN

Project Number: 2020.002	Issue Date: 07/24/20
Scale: As indicated	CAD file:
Drawn By: JBJ	Checked By: MV

Revisions:

AD1.1

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DEMOLITION CEILING KEY

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EXISTING WOOD CEILING TO REMAIN		EXISTING RECESSED DOWNLIGHT TO BE REMOVED AND REPLACED. REFER TO ELECTRICAL DRAWINGS FOR FURTHER INFORMATION.
	EXISTING CEILING TO BE REMOVED		EXISTING PENDANT LIGHT TO BE REMOVED AND REPLACED. REFER TO ELECTRICAL DRAWINGS FOR FURTHER INFORMATION.
	EXISTING TRACK TO BE REMOVED. REFER TO ELECTRICAL DRAWINGS FOR FURTHER INFORMATION.		

1 DEMOLITION REFLECTED CEILING PLAN
1/4" = 1'-0"

RCP DEMOLITION NOTES:

RCDemo 1	NUMBERED NOTES REFER TO THIS SHEET ONLY UNLESS SPECIFICALLY INDICATED OTHERWISE.
RCDemo 2	THE CONTRACTOR SHALL THOROUGHLY FAMILIARIZE WITH THE FACILITY AND THE DRAWINGS PRIOR TO BEGINNING ANY WORK.
RCDEMO 3	DASHED LINES INDICATE EXISTING CONSTRUCTION TO BE REMOVED OR MODIFIED. EXERCISE CARE DURING DEMOLITION ACTIVITIES TO MAINTAIN ADJACENT SPACES AND CONSTRUCTION DESIGNATED TO REMAIN. TAKE CARE DURING SELECTIVE DEMOLITION NOT TO DAMAGE OR DISTURB ANY ITEMS TO REMAIN.
RCDEMO 4	NUMBERED NOTES REFER TO THIS SHEET ONLY UNLESS SPECIFICALLY INDICATED OTHERWISE.
RCDEMO 5	DISCONNECTION OF ANY ITEMS SHALL NOT COMPROMISE THE INTERGRITY AND UNCTIONALITY OF DEVICE NOT BEING REMOVED.
RCDEMO 6	EXISTING PROJECTORS AND EQUIPMENT/BRACKET TO BE REMOVED COMPLETE. REMOVE ALL CABLING BACK TO SOURCE AND RETURN PROJECTORS AND EQUIPMENT TO OWNER. PREP FOR NEW WORK
RCDEMO 7	EXISTING TRACK COMPONENT TO REMAIN, REMOVED EXISTING LAMP HEADS, CLEAN AND PREP FOR NEW LIGHTING HEADS
RCDEMO 8	CEILING IN MARKED ROOMS TO BE DEMOED.
RCDEMO 9	WALL TO BE DEMOED UP TO CEILING.
RCDEMO 10	PORTION OF WALL TO BE DEMOED TO CREATE SPACE FOR NEW DOOR.
RCDEMO 11	EXISTING EXTERIOR DRYWALL CEILING IN COVERED ENTRY TO BE DEMOLISHED FOR INSTALLATION OF NEW EXTERIOR LIGHTING. NEW CEILING TO BE INSTALLED.

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Title:

DEMOLITION REFLECTED CEILING PLAN

Project Number: 2020.002	Issue Date: 07/24/20
Scale: 1/4" = 1'-0"	CAD file:
Drawn By: JBJ	Checked By: MV

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DEMOLITION ELEVATION NOTES:

GEN 1	REFER TO SPECIFICATIONS PRIOR TO BEGINNING ANY WORK FOR FURTHER INFORMATION REGARDING METHODS AND MATERIALS.
GEN 2	NOTES AND DRAWINGS ON THIS SHEET REFER TO EXTERIOR SHELL FEATURES OF THE EXISTING BUILDING ONLY.
DEMO 3	RESERVED
DEMO 4	REMOVE EXISTING DOOR AND FRAME. PREPARE MASONRY OPENING TO RECEIVE NEW DOOR AND FRAME ASSEMBLY.
DEMO 5	CLEAN ALL EXISTING MASONRY NOT DESIGNATED TO BE REMOVED.
DEMO 6	CLEAN ALL EXISTING CONCRETE/STONE PRIOR TO REPAIR WORK. REFER TO SPECIFICATION SECTION 030130. FOR FURTHER INFORMATION.
DEMO 7	(3) FRONT GATES AND FRAMES TO BE REMOVED AND PREPPED FOR NEW WORK. ADDITIONAL SIDE COURTYARD GATE TO BE REMOVED AND PREPARED FOR REINSTALLATION. SEE NEW DETAIL 1/A6.1
DEMO 8	BOTTOM OF FRONT METAL GATES TO BE TRIMMED TO MATCH THE INCREASE IN ELEVATION.
DEMO 9	METAL GRATES ON ALL WINDOWS TO BE REMOVED, CLEANED AND REINSTALLED.
DEMO 10	REMOVE EXISTING ROOF SLATE, SALVAGE AND REPLACE DAMAGED.

1 DEMOLITION EAST ELEVATION
1/8" = 1'-0"

2 DEMOLITION NORTH ELEVATION
1/8" = 1'-0"

3 DEMOLITION SOUTH ELEVATION
1/8" = 1'-0"

4 DEMOLITION WEST ELEVATION
1/8" = 1'-0"

6 DEMOLITION COVERED ENTRY ELEVATION
1/8" = 1'-0"

5 DEMOLITION NORTH ELEVATION 2
1/8" = 1'-0"

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DEMOLITION EXTERIOR ELEVATIONS

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WINDOW HEAD SECTION 14
SCALE: 1'-0"=1'-0"

WINDOW SASH SECTION 13
SCALE: 1'-0"=1'-0"

WINDOW MUNTIN SECTION 12
SCALE: 1'-0"=1'-0"

WINDOW SASH SECTION 11
SCALE: 1'-0"=1'-0"

WINDOW SILL SECTION 9
SCALE: 1'-0"=1'-0"

WINDOW MUNTIN SECTION 8
SCALE: 1'-0"=1'-0"

WINDOW MUNTIN SECTION 7
SCALE: 1'-0"=1'-0"

WINDOW SILL SECTION 6
SCALE: 1'-0"=1'-0"

Existing window details shown for Historic Documentation Purposes ONLY.

WINDOW SILL SECTION 10
SCALE: 1'-0"=1'-0"

WINDOW SILL SECTION 5
SCALE: 1'-0"=1'-0"

EXIST WOOD FRAME WINDOW 4
SCALE: 1"=1'-0"

EXIST WOOD FRAME WINDOW 3
SCALE: 1"=1'-0"

EXIST WINDOW @ STAIR 2
SCALE: 1"=1'-0"

EXIST STEEL FRAME WINDOW 1
SCALE: 1"=1'-0"

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EXISTING WINDOW DETAILS

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AX7.2

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6 CONCRETE STAIR DETAIL
1" = 1'-0"

5 CONCRETE LANDING DETAIL
1" = 1'-0"

4 DETAIL AT RAMP BASE
1" = 1'-0"

3 RAMP CROSS SLOPE DETAIL
1" = 1'-0"

2 BULLNOSE CURB DETAIL
1" = 1'-0"

1 PROPOSED SITE IMPROVEMENTS PLAN
3/16" = 1'-0"

SITE IMPROVEMENT NOTES:

Gen. 1 REFER TO SPEC SHEETS PRIOR TO BEGINNING ANY WORK FOR FURTHER INFORMATION, COORDINATE WITH OTHER TRADE

Gen. 2 NUMBERED NOTES REFER TO THIS SHEET UNLESS OTHERWISE NOTED

Site 1 REMOVE BROWNSTONE CURBING PREP STONES FOR PROPOSED WORK, REFER TO DETAILS AND WORK EXTENTS

Site 2 REMOVE COVERED PATIO FINISH STONE PAVER SURFACE, PREP STONES FOR RE-INSTALLATION. RAISE BASE MATERIAL HEIGHT TO HAVE FINISH SYSTEM MATCH EXISTING GALLERY LEVEL, REFER TO DETAILS

Site 3 LOW PRESSURE WASH WITH MILD DETERGENT AT EXISTING BRICK WALLS

Site 4 SAW CUT EXISTING CONCRETE COURTYARD AREA FOR NEW ACCESSIBLE ROUTE INTO GALLERY SPACE, PREP BASE AND ADJACENT FEATURES, REFER TO DETAILS

Site 5 NEW CONCRETE PAVERS, PITCH [1:20 MAX] AND BLEND CROSS SLOPE [1:50 MAX] BACK TO EXISTING COURTYARD PATIO HEIGHT

Site 6 PERIMETER OF GRADE AND CURBING TO BE SLOPED BETWEEN NEW COVERED PATIO ELEVATION AND EXISTING PLANTER AREA CURBING, SEE PLAN FOR EXTENTS

Site 7 GRIND LOOSE SURFACE MATERIALS, CLEAN AND PREP FOR RE-SURFACING OF CONCRETE SLAB. PRIME WITH APPROVED PRIMER, USE POLYMER MODIFIED SAND AND CEMENT RESURFACING MATERIAL. INSTALL PER MANUFACTURERS RECOMMENDATIONS

Site 8 NEW CONCRETE LANDING / STEPS OUT OF MAINTENANCE AREAS, ADJUST FINISH GRADE AS NEEDED

Site 9 REPAIR AND RE-SET EXISTING STONE CURBING

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PROPOSED SITE IMPROVEMENTS PLAN

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2 WALL TYPE A
3" = 1'-0"

CONSTRUCTION KEY

	NEW DOOR SHOWN AT 90 DEG.	W-?	WINDOW TAG, REFER TO SCHEDULES
	EXISTING DOOR TO REMAIN, SHOWN AT 45 DEG.	101	DOOR TAG, REFER TO SCHEDULES
	EXISTING WALL TO REMAIN	X'-xx"	SPOT ELEVATION TAG
	NEW WALL, REFER TO WALL TYPES	8	CONSTRUCTION NOTES TAG, REFER TO NUMBER AND NOTES
A	WALL TYPE TAG	A / A101	Detail No. / INTERIOR ELEVATION TAG / Sheet No.

1 PROPOSED GROUND FLOOR PLAN
1/4" = 1'-0"

CONSTRUCTION NOTES:

Gen. 1 REFER TO SPEC SHEETS PRIOR TO BEGINNING ANY WORK FOR FURTHER INFORMATION, COORDINATE WITH OTHER TRADE

Gen. 2 NUMBERED NOTES REFER TO THIS SHEET UNLESS OTHERWISE NOTED

Gen. 3 FIXTURES AND DEVICES SHOWN ON THIS PLAN ARE FOR ARCHITECTURAL COORDINATION PURPOSES ONLY. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DESIGN SPECIFICATIONS FOR FURTHER INFORMATION

Con. 4 ADJUST MASONRY OPENING FOR NEW DOOR INSTALLATION. INSTALL NEW MARBLE THRESHOLD FLUSH WITH BRICK AND TILE FLOOR

Con. 5 NEW FRAMELESS GLASS ENTRY DOOR SYSTEM WITH LOCKING HARDWARE AND DOUBLE ACTING HINGES, REFER TO HARDWARE SET LIST. GLASS SYSTEM TO BE INSTALLED IN GWB FRAME/JAMB W/ SOLID BLOCKING. COORDINATE FRAME INSTALLATION WITH GLASS DOOR INSTALLER TO ENSURE CONDITIONS ARE ACCEPTABLE

Con. 6 INSTALL NEW TILE, REFER TO ROOM FINISH SCHEDULE

Con. 7 EXISTING BATHROOMS (ROOM 107 AND 108) TO REMAIN AS IS UNLESS OTHERWISE NOTED

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PROPOSED GROUND FLOOR PLAN

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1 PROPOSED ROOF PLAN
1/4" = 1'-0"

ROOF NOTES:

Gen. 1 REFER TO SPEC SHEETS PROIR TO BEGINNING ANY WORK FOR FURTHER INFORMATION, COORDINATE WITH OTHER TRADE

Gen. 2 NUMBERED NOTES REFER TO THIS SHEET UNLESS OTHERWISE NOTED

Roof 3 EXISTING SLATE ROOF ACROSS ENTIRE BUILDING TO BE REMOVED, REPAIR AND REPLACE ROTTED OR DAMAGED SHEATHING, INSTALL NEW UNDERLAYMENT ON ENTIRE ROOF AND NEW VALLEY ROOF FLASHING, EXISTING ROOF SLATE TO BE RE-INSTALLED ON NEW 2-WAY VENTED WOOD NAILER FRAME, NEW SLATE PIECES SHOULD BE BLENDED INTO MAIN FIELD, THICKNESS OF NEW SLATE SHOULD BE ACCOUNTED FOR BASED ON LOCATION IN ROOF FIELD

Roof 4 INSTALLER TO REVIEW EXISTING FLASHING, REPLACE EXISTING FLASHING AS NEEDED, SOLDER AND RE-INSTALL NEW TO MATCH EXSTING MATERIAL AND EXPOSURE

Roof 5 NEW GUTTER SYSTEM TO MATCH EXISTING PROFILE. INSTALLER TO ADJUST FINAL DIMENSIONS BASED ON ROOF OVERHANG AND FASCIA PROFILE. GUTTERS AND D.S. TO BE FREEDOM GRAY COPPER (F.G.C.) 16OZ MIN. WITH 4" ROUND DOWNSPOUTS AND F.G.C. HOOKS AND WIRE TIES. ALL SEAMS TO BE CONTINUOUSLY SOLDERED.

Roof 6 INSTALL NEW 4" ROUND DOWNSPOUTS AT EXISTING GUTTER LOCATIONS, RECONNECT TO EXISTING DRAINAGE PIPING WITH TAPERED FITTING, CONNECT TO BUILD WITH F.G.C. HOOKS AND TIES

Roof 7 REMOVE EXISTING GUTTER SCREENING, CLEAN GUTTERS AND REPAIR SOLDER JOINTS AS NEEDED, REINSTALL SCREENING FASTEN AT REGULAR INTERVALS TO ACHIEVE BEST PRACTICE

Roof 8 ROOFER AND GC TO REVIEW EXISTING CONDITION OF STANDING SEAM ROOF. ALERT ARCHITECT AND DWP OF EXISTING CONDITIONS AND ASSESSMENT

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1 PROPOSED REFLECTED CEILING PLAN
1/4" = 1'-0"

CEILING KEY

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	NEW 5/8" GWB, PAINTED, REFER TO FINISH SCHEDULE		NEW LOW PROFILE PROJECTOR SCREEN LOCATION, TO BE INSTALLED BY A/V VENDOR
	NEW 5/8" EXTERIOR GWB, PAINTED, REFER TO FINISH SCHEDULE		NEW DOWNLIGHT, REFER TO LIGHTING PLAN
	EXISTING WOOD SLAT CEILING, REFER TO FINISH SCHEDULE		NEW LED LINEAR LIGHT, REFER TO LIGHTING PLAN
	NEW TRACK LIGHT SYSTEM AND HEADS, REFER TO LIGHTING PLAN		
	NEW PENDANT LIGHTING, REFER TO LIGHTING PLAN		

REFLECTED CEILING NOTES:

Gen. 1 REFER TO SPEC SHEETS PRIOR TO BEGINNING ANY WORK FOR FURTHER INFORMATION, COORDINATE WITH OTHER TRADE

Gen. 2 NUMBERED NOTES REFER TO THIS SHEET UNLESS OTHERWISE NOTED

RCP 3 NEW GWB CEILING, REFER TO FINISH SCHEDULE

RCP 4 RE-FRAME NEW ACCESS PANEL IN CEILING, ADD ACCESS PANEL WITH WEATHERSTRIPPING AND LATCHING HARDWARE

RCP 5 EXISTING WOOD BEAMS AND CEILING TO BE CLEANED

RCP 6 EXISTING CEILING TO REMAIN

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Title:

PROPOSED
REFLECTED CEILING
PLAN

Project Number:	Issue Date:
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2 NORTH ELEVATION - ENLARGED
1/4" = 1'-0"

EXTERIOR ELEVATION NOTES:

Note 1 NOTES AND DRAWINGS ON THIS SHEET REFER TO EXTERIOR SHELL FEATURES ONLY

Note 2 ALL EXTERIOR BRICK AND BROWNSTONE WALLS TO BE SCRUBBED WITH A MILD, NON-ETCHING, LIGHT DUTY MASONRY WASH, GC TO USE ON TEST AREA PRIOR TO STARTING WORK, SUBMIT LETTER FROM MANUFACTURE'S REP STATING COMPATIBILITY WITH EXISTING BRICK AND STONE. LOW-PRESSURE WASH AND FOLLOW MANUF. INSTRUCTIONS, TYPICAL ALL FACES OF ENTIRE BUILDING

Note 3 ALL EXISTING WINDOW GUARD BARS TO BE REMOVED, SAND BLASTED, PREPPED AND POWDER COATED, COLOR TO BE BLACK TO MATCH EXISTING

Note 4 NEW THERMALLY GLAZED WINDOWS WITH PROFILE AND SHADOW LINES TO MATCH ORIGINAL, TYPICAL

Note 5 REFER TO SHEET AX7.1 FOR WINDOW TYPES AND AX7.2 FOR WINDOW DETAILS

Note 6 NEW BRICK INFILL TO MATCH EXISTING MASONRY INFILL. NEW BRICK AND MORTAR COLOR TO MATCH ORIGINAL. PROVIDE 12X12 MOCKUP TO SHPO FOR REVIEW PRIOR TO PERFORMING ANY WORK

Note 7 PRIOR TO ANY GUTTER WORK, SCRAPE, CLEAN, PREP EXISTING TRIM/FASCIA/SOFFIT, REPAINT, COLOR TO MATCH EXISTING. REPAIR ALL EXISTING BUT NOT LIMITED TO IN-PLACE TAGS. ARCHITECT TO APPROVE COLOR VIA IN PLACE MOCKUP ON NORTH FACE OF BUILDING, GC TO COORDINATE REVIEW

Note 8 SPOT RE-POINT MISSING OR DAMAGED/LOOSE MORTAR. GRIND OUT MORTAR SHOWING SIGNS OF MOSS OR MOLD GROWTH, GC TO INSPECT ENTIRE EXTERIOR AND COORDINATE WITH SUB-CONTRACTOR AREAS OF WORK. ALL EXISTING DAMAGED, MISSING OR LOOSE BRICK TO BE REPAIRED WITH EITHER SALVAGED BRICK OR NEW BRICK UNITS TO MATCH EXISTING, SUBMIT MORTAR AND BRICK SAMPLES FOR APPROVAL

Note 9 EXTERIOR WOOD TIMBER TRIM TO BE REMOVED AT VARIOUS LOCATIONS, RECONSTITUTED AND RESTORED, REINSTALLED TO MATCH PREVIOUS, WOOD TO BE PREPPED FOR NEW OPAQUE STAIN TO MATCH EXISTING COLOR, FINAL STAINING SHOULD BE APPLIED TO ALL WOOD TIMBER TRIM, COLOR TO BE APPROVED BY ARCHITECT

1 NORTH ELEVATION 2 - ENLARGED
1/4" = 1'-0"

3 SOUTH ELEVATION - ENLARGED
1/4" = 1'-0"

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PROPOSED EXTERIOR ELEVATIONS

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2 WEST ELEVATION - ENLARGED
1/4" = 1'-0"

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4 WEST COVERED ENTRY ELEVATION ENLARGED
1/4" = 1'-0"

3 NORTH COVERED ENTRY ELEVATION ENLARGED
1/4" = 1'-0"

1 EAST ELEVATION - ENLARGED
1/4" = 1'-0"

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ROOM FINISH SCHEDULE

Room Number	Room Name	Floor Material	Finish: Base Material	Finish: Wall Finish	Finish: Ceiling Material/Finish	Comments
101	Gallery	BRICK	N/A	ETM	WOOD, ETM	
102	Bathroom	PORCELAIN TILE	FT-1	PT-1	WB-1, PT-2	REFER TO INTERIOR ELEVATIONS
103	Storage Closet	QUARRY TILE	QT-1	PT-1	WB-1, PT-2	MATCH EXISTING TILE, SALVAGE AND RE-INSTALL IF ADEQUATE SUPPLY IS AVAILABLE
104	Covered Entry	STONE PAVERS	FT-2	ETM	WB-2, PT-3	RE-INSTALL EXISTING STONE PAVERS, SET INTO NEW THICKSET BED
105	Stair	EXISTING TO REMAIN	ETM	PT-1	WB-1, PT-3	NEW CEILING FINISH TO ALLOW FOR NEW AHU TO BE INSTALLED. PATCH WALLS AND REPAINT
106	Pump House Mechanical	EXISTING TO REMAIN	ETM	ETM	ETM	NO WORK THIS AREA
106A	Pump House Vestibule	QUARRY TILE	ETM	PT-1	WB-1, PT-2	NEW CEILING ACCESS PANEL AND FINISH CEILING, PATCH WALL AND REPAINT. PATCH TILE FLOOR
107	Men's Restroom	EXISTING TO REMAIN	ETM	ETM	EXISTING TO REMAIN	CAULKING AND PAINTING REQUIRED AT NEW WINDOW INSTALLATION
108	Women's Restroom	EXISTING TO REMAIN	ETM	ETM	EXISTING TO REMAIN	CAULKING AND PAINTING REQUIRED AT NEW WINDOW INSTALLATION
110	Patio					

FINISH KEY

CODE	ITEM	MANUFACTURER/STYLE/COLOR	DESCRIPTION
PT-1	WALL PAINT	Sherwin Williams, PURE WHITE - SW7005	LATEX, EGGSHELL
PT-2	CEILING PAINT	Sherwin Williams, CEILING WHITE - SW7007	LATEX, MATTE
PT-3	CEILING PAINT	Sherwin Williams, CEILING WHITE - SW7007	EPOXY, EGGSHELL
FT-1	FLOOR TILE	American Olean, UNGLAZED COLOR BODY - A12	2x1 MOSAIC, GROUT TBD BASED ON SAMPLE, INSTALL COVE BASE WITH BULLNOSE CAP
FT-2	EXISTING TILE	-	EXISTING STONE PATIO TILE TO BE RE-USED
BR-X	EXISTING BRICK	-	CLEAN EXISTING BRICK FLOORS AND WALLS
QT-1	QUARRY TILE	American Olean, QUARRY TILE - RED CANYON	PATCH IN EXISTING AND/OR NEW AS NEEDED
WB-1	WALL BOARD	USG OR EQUAL, 5/8" Gypsum wall board	-
WB-2	WALL BOARD	USG OR EQUAL, 5/8" EXTERIOR, Type X	

SPECIALTY EQUIPMENT SCHEDULE

Type Mark	Description	Count	Finishes	Manufacturer	Model	Comments
MI	Mirror	1		American Specialties, Inc.		
GB2	48" Grab Bar	1	Stainless Steel	Bobrick	B-5806.99x48	
GB1	48" Grab Bar	1	Stainless Steel	Bobrick	B-5806.99x48	
GB3	18" Grab Bar	1	Stainless Steel	Bobrick	B-5806.99x18	Refer to Elevations.
BCS	Baby Changing Station	1	Gray	Koala Kare	KB200-01	Install new blocking in wall
TP	Toilet Tissue Dispenser	1	Stainless Steel	Bradley Corporation	5412	Recessed in wall, provide blocking

FINISH NOTES:

FIN. 1 REFER TO SPECIFICATIONS FOR FURTHER INFORMATION REGARDING MATERIALS AND METHODS

FIN 2 ALL DRYWALL CEILINGS INDICATED SHALL BE PAINTED WITH TWO COATS FLAT WHITE CEILING PAINT

FIN 3 ALL WALLS (AS INDICATED IN FINISH SCHEDULE) SHALL BE FINISHED WITH TWO COATS OF PREMIUM LATEX ENAMEL EGGSHELL PAINT. PAINT COLORS AS LISTED.

FIN 4 DOOR FRAMES TO RECEIVE (2) COATS SEMI-GLOSS PAINT, DO NOT PAINT OVER DOOR LABELS.

9 GALLERY - SOUTH INTERIOR ELEV.
1/4" = 1'-0"

8 GALLERY - WEST INTERIOR ELEV.
1/4" = 1'-0"

7 GALLERY - NORTH INTERIOR ELEV.
1/4" = 1'-0"

6 GALLERY - EAST INTERIOR ELEV.
1/4" = 1'-0"

5 LAV - WEST INTERIOR ELEV.
1/2" = 1'-0"

4 LAV - SOUTH INTERIOR ELEV.
1/2" = 1'-0"

3 LAV - NORTH INTERIOR ELEV.
1/2" = 1'-0"

2 LAV - EAST INTERIOR ELEV.
1/2" = 1'-0"

1 NEW PROPOSED BATHROOM PLAN
1/2" = 1'-0"

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Title:
PROPOSED INTERIOR ELEVATIONS

Project Number:	Issue Date:
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Scale: As indicated	CAD file:
Drawn By: JBJ	Checked By: MV

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10 DETAIL AT TRENCH
1" = 1'-0"

9 ROOF GUTTER DETAIL
1 1/2" = 1'-0"

8 STANDING SEAM ROOF EDGE
1 1/2" = 1'-0"

3 DETAIL AT BRICK BASE
1 1/2" = 1'-0"

6 DETAIL AT RIDGE
1 1/2" = 1'-0"

5 DETAIL AT PARAPET
1 1/2" = 1'-0"

1 SOUTH ELEVATION - GATE DETAIL
1/2" = 1'-0"

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CONSTRUCTION DETAILS

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4 WINDOW DETAIL 2 - HEAD
3" = 1'-0"

3 WINDOW DETAIL 1 - HEAD
3" = 1'-0"

5 WINDOW DETAIL 2 - SILL
3" = 1'-0"

2 WINDOW DETAIL 1 - SILL
3" = 1'-0"

6 WINDOW DETAIL 2 - JAMB
3" = 1'-0"

1 WINDOW DETAIL 1 - JAMB
3" = 1'-0"

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Title:
WINDOW DETAILS

Project Number:	Issue Date:
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DOOR SCHEDULE

Type Mark	Key	Location	Size	Frame Size	Thickness	Material	Finish	Elevation	Frame Elevation	Frame Material	Frame Finish	Throat	Jamb	Head	Sill	Set	Function	Notes
101-A	NEW	Gallery	FIELD VERIFY	FIELD VERIFY	0' - 1 3/4"			B					3/A7.1		4/A7.1	D	Exterior	LOCKING AND KEYING BY CITY CONTRACTOR
101-B	NEW	Gallery	PR 4'-0'X8'-10"	N/A	0' - 0 3/4"	GLASS		C	SEE INTERIOR ELEV.							F	Interior	FRAMELESS GLASS DOOR ASSEMBLY DB. ACTING HINGES
102-A	NEW	Bathroom	3'-0" x 7'-0"	3'-4" x 7'-2"	0' - 1 3/4"	SCWOOD	PAINTED	A					2/A7.1		5/A7.1	A	Interior	SOLID CORE, PAINTED DOOR, WELDED HOLLOW METAL FRAME
103-A	NEW	Storage Closet	3'-0" x 7'-0"	3'-4" x 7'-2"	0' - 1 3/4"	SCWOOD		A					2/A7.1		5/A7.1	C	Interior	
104-A	NEW	Covered Entry	3'-0" x 7'-0"	3'-3" x 7'-2"	0' - 1 3/4"	WOOD-STAINED	STAIN INTERIOR, PAINT EXTERIOR	E					3/A7.1		4/A7.1	B	Exterior	LOCKING AND KEYING BY CITY CONTRACTOR
104-B	EXISTING	Covered Entry	EXISTING	EXISTING		STEEL	POWDER COAT	EXISTING	EXISTING		EXISTING					E	Exterior	REINSTALL GATES AND FRAMES, ADJUST LATCH AS NEEDED
104-C	EXISTING	Covered Entry	EXISTING	EXISTING		STEEL	POWDER COAT	EXISTING	EXISTING		EXISTING					E	Exterior	REINSTALL GATES AND FRAMES, ADJUST LATCH AS NEEDED
104-D	EXISTING	Covered Entry	EXISTING	EXISTING		STEEL	POWDER COAT	EXISTING	EXISTING		EXISTING					E	Exterior	REINSTALL GATES AND FRAMES, ADJUST LATCH AS NEEDED

DOOR ELEVATIONS
1/4" = 1'-0"

HARDWARE SET

SET A CYLINDER LOCKSET WITH LEVER HANDLE AND IN-USE INDICATOR ON LOCK, 3 HINGES, SILENCERS, ADA COMPLIANT DELAY ACTION CLOSER, 10" HIGH STAINLESS STEEL KICK PLATE BOTH SIDES, WALL STOP.

SET B FIRE RATED RIM PANIC DEVICE WITH LEVER HANDLE, FULL MORTISE CONTINUOUS HINGE, ADA COMPLIANT DELAY ACTION CLOSER, 10" HIGH STAINLESS STEEL KICKPLATE (INTERIOR), WALL STOP/HOLD OPEN LATCH, FINAL KEYING TO BE COORDINATED WITH CITY VENDOR

SET C CYLINDER LOCKSET WITH LEVER HANDLE AND KEYED DEADBOLT, 3 HINGES, SILENCERS, 10" HIGH STAINLESS STEEL KICK PLATE BOTH SIDES, WALL STOP.

SET D LOCKSET TO BE COORDINATED WITH CITY VENDOR AND SPECIALTY HARDWARE. INSTALL (1) LEAF FULL MORTISED FLUSH SLIDE BOLT INTO BRICK FLOOR, LOCKING HARDWARE FROM INTERIOR OF WOOD SWING DOORS.

SET E GATE HARDWARE TO BE COORDINATED WITH CITY VENDOR IF APPLICABLE

SET F FRAMELESS GLASS DOOR HARDWARE WITH DOUBLE ACTING SHELF CLOSING HARDWARE, WITH THUMB LOCK AND STAINLESS STEEL PUSH/PULL HARDWARE. INSTALL HOLD OPEN, COORDINATE IN FIELD WITH OUTTER WOOD DOOR. COORDINATE FINAL KEYING AND THUMB LOCK WITH CITY VENDOR

DOOR NOTES:

No. 1 GC TO VERIFY ALL LOCKSET FUNCTIONS AND COORDINATE KEYING REQUIREMENTS WITH CITY VENDOR

No. 2 WOOD VENEER SOLID CORE FLUSH SLAB DOOR, STAIN COLOR TO BE SELECTED BY ARCHITECT

No. 3 VERIFY ALL THROAT AND ANCHORING CONDITIONS IN THE FIELD PRIOR TO ORDERING ANY FRAMES.

No. 4 VERIFY ALL EXISTING ROUGH OPENING DIMENSIONS PRIOR TO ORDERING ANY FRAMES.

No. 5 FRAMES TO BE WELD HOLLOW METAL FRAMES SET WITH MASONRY ADJUSTABLE STRAPS, ANY EXPOSED SCREWS USED TO FASTEN FRAME SHOULD BE COUNTERSUNK AND FILLED AND PAINTED

5 THRESHOLD DETAIL 2
3" = 1'-0"

4 THRESHOLD DETAIL 1
3" = 1'-0"

3 WOOD FRAME AT MASONRY
3" = 1'-0"

2 HM FRAME AT MASONRY
3" = 1'-0"

WINDOW SCHEDULE

Number	Item	Catalog Number	Rough Opening*	Clear Opening**	Egress?	Notes
W-1	Casement		1'-10 3/4" W 3'-5 1/2" H	N/A N/A	NO	All window openings to be field verified by Window Manufacturer prior to fabrication
W-2	Casement		1'-10 3/4" W 3'-5 1/2" H	N/A N/A	NO	All window openings to be field verified by Window Manufacturer prior to fabrication
W-3	Casement		6'-4 1/2" W 3'-5 1/2" H	N/A N/A	NO	All window openings to be field verified by Window Manufacturer prior to fabrication
W-4	Casement		4'-4 3/4" W 2'-8" H	N/A N/A	NO	All window openings to be field verified by Window Manufacturer prior to fabrication
W-5	Casement		1'-6 1/2" W 2'-8 3/4" H	N/A N/A	NO	All window openings to be field verified by Window Manufacturer prior to fabrication
W-6	Casement		2'-5" Dia.	N/A N/A	NO	All window openings to be field verified by Window Manufacturer prior to fabrication
W-7	Casement		5'-10 1/2" W 2'-7 1/2" H	N/A N/A	NO	All window openings to be field verified by Window Manufacturer prior to fabrication
W-8	Operable		4'-3" W 8'-5 3/4" H	N/A N/A	NO	All window openings to be field verified by Window Manufacturer prior to fabrication
W-9	Operable		4'-3" W 7'-4" H	N/A N/A	NO	All window openings to be field verified by Window Manufacturer prior to fabrication
W-10	Casement		3'-7 1/2" W 3'-8 1/2" H	N/A N/A	NO	All window openings to be field verified by Window Manufacturer prior to fabrication

WINDOW NOTES:

* Verify Rough Opening Dimensions with instructions packaged with window units

** Verify Clear Opening Dimensions with actual units.

No. 1 Refer to Exterior Elevations for additional tempered glass units. Windows tagged denoted with a "T" indicate tempered glass.

No. 2 Provide opening limiters on all operable sashes.

No. 3 Provide ASTM F2090 window fall prevention devices at all operable windows.

EXISTING WINDOW ELEVATIONS
1/2"=1'-0"

0 2' 5'

1

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DOOR AND WINDOW SCHEDULES

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ELECTRICAL SYMBOL LIST

NOTE: ALL MOUNTING HEIGHTS GIVEN ARE TO CENTERLINE OF DEVICE UNLESS NOTED OTHERWISE.

SYMBOL	DESCRIPTION
	PENDANT MOUNTED LIGHT FIXTURE
	PENDANT MOUNTED LIGHT FIXTURE
	CEILING MOUNTED LIGHT FIXTURE
	WALL MOUNTED LIGHT FIXTURE
	SURFACE MOUNTED LIGHT FIXTURE
	RECESSED DOWN LIGHT FIXTURE
	RECESSED 2'X4' LIGHT FIXTURE
	TRACK LIGHTING SYSTEM
	WALL MOUNTED FIXTURE
	LIGHT HEAD FOR TRACK LIGHTING SYSTEM
	SINGLE FACE EXIT SIGN WITH BATTERY AND DIRECTIONAL ARROWS UNIVERSAL MOUNT
	DOUBLE FACE EXIT SIGN WITH BATTERY AND DIRECTIONAL ARROWS UNIVIVERSAL MOUNT
	EMERGENCY BATTERY UNIT WITH TWO DIRECTIONAL HEADS
	EMERGENCY REMOTE, WEATHERPROOF, WITH DOUBLE DIRECTIONAL HEADS
S	SINGLE POLE TOGGLE SWITCH
S_3	THREE WAY TOGGLE SWITCH
S_4	FOUR WAY TOGGLE SWITCH
S_K	SINGLE POLE KEYED TOGGLE SWITCH
S_{3K}	THREE WAY KEYED TOGGLE SWITCH MOUNT
S_{4K}	FOUR WAY KEYED TOGGLE SWITCH MOUNT
S_T	THERMAL OVERLOAD SWITCH - MOUNT AT FRACTIONAL HP MOTORS
S_D	DIMMER SWITCH
S_S	SCENE SLECTOR SWITCH
S_{OC}	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH
B	DOORBELL BUZZER/CHIME - MOUNT 7'-0" A.F.F.
OS OS LS	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR
VC	CEILING MOUNTED DUAL TECHNOLOGY VACANCY SENSOR
PC	PHOTOCELL
E/G	EMERGENCY ELECTRIC/GAS SHUTOFF PUSHBUTTON OPERATOR
	GROUNDED DUPLEX RECEPTACLE
A	GROUNDED DUPLEX RECEPTACLE - MOUNT ABOVE COUNTER OR BACKSPLASH 42" A.F.F.
C	GROUNDED DUPLEX RECEPTACLE - MOUNT AT CEILING
GFI	GROUNDED DUPLEX GFI RECEPTACLE
WP	GROUNDED DUPLEX GFI RECEPTACLE "WEATHERPROOF WHILE IN-USE" COVER
S	GROUNDED DUPLEX RECEPTACLE - STUB UP TO 24" A.F.F. ON 1" (MIN) RGS CONDUIT
PM	VERTICAL PLUGMOLD WITH OUTLETS AT 12" O.C. - 5' LONG
MW	GROUNDED GFI DUPLEX RECEPTACLE DEDICATED FOR MICROWAVE OVEN - VERIFY EXAC MOUNTING LOCATION
	GROUNDED DOUBLE DUPLEX RECEPTACLE
	GROUNDED 240V RECEPTACLE
USB	GROUNDED GFI DUPLEX RECEPTACLE WITH INTERGRAL USB CHARGING PORT
	GROUNDED SIMPLEX RECEPTACLE
	SPECIAL PURPOSE RECEPTACLE - MATCH NEMA CONFIGURATION OF EQUIPMENT SERVED
	FLOOR MOUNTED DEVICES AS LISTED ABOVE
	RECESSED MOUNTED PANELBOARD
	SURFACE MOUNTED PANELBOARD
PP	COMBINATION POWER/TEL/DATA POLE
	TELEPHONE/DATA OUTLETS
	TELEPHONE OUTLET.
F	MANUAL FIRE ALARM PULL STATION - MOUNT AT 48" A.F.F.
H	HEAT DETECTOR
H 200°	HEAT DETECTOR 200°
S	AREA SMOKE DETECTOR
S_D	DUCT SMOKE DETECTOR
S_{CO}	AREA COMBINATION SMOKE AND CARBON MONOXIDE DETECTOR
S_E	ELEVATOR RETURN SMOKE DETECTOR
CO	FIRE ALARM CARBON MONOXIDE DETECTOR
RTS	FIRE ALARM REMOTE TEST SWITCH
M	MAGNETIC DOOR HOLDER
	FIRE ALARM VISUAL ONLY INDICATING UNIT - MOUNT AT 6'-6" A.F.F.
	FIRE ALARM SPEAKER/VISUAL INDICATING UNIT - MOUNT AT 6'-6" A.F.F.
R	LIGHTING CONTROL RELAY
AOM	FIRE ALARM ADDRESSABLE OUTPUT MODULE
AIM	FIRE ALARM ADDRESSABLE INPUT MODULE
S_{VC}	SPEAKER VOLUME CONTROL
FACP	FIRE ALARM CONTROL PANEL
FAA	FIRE ALARM REMOTE ANNUNCIATOR PANEL
HGMP	HAZARDOUS GAS MONITOR PANEL FURNISHED BY DIV. 25, WIRED BY DIV. 26
	EMERGENCY "CALL-FOR-AID" BUZZER/LIGHT - MOUNT AT 7'-6" A.F.F.
S_A	EMERGENCY "CALL-FOR-AID" SWITCH - MOUNT 48" A.F.F. WITH PULL CORD TO 6" A.F.F.

SYMBOL	DESCRIPTION
M/S	EMERGENCY SWITCH - MOUNT AT 48" A.F.F. - M=MASTER - S=SLAVE
J	JUNCTION BOX
J TC	JUNCTION BOX WITH 120V POWER FOR TEMPERATURE CONTROLS
	JUNCTION BOX FOR CATV OUTLET WITH 1 1/4" CONDUIT TO CEILING
	MOTOR
	NON-FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	MAGNETIC MOTOR STARTER
	COMBINATION DISCONNECT SWITCH/MAGNETIC MOTOR STARTER
S	JUNCTION BOX FOR SPEAKER CONTROL
	BRANCH CIRCUIT WIRING
	BRANCH CIRCUIT FEEDER
	ELECTRICAL GROUND
	FLEXIBLE EQUIPMENT CONNECTION
	FIXED/HARD - WIRED EQUIPMENT CONNECTION
INV	EMERGENCY LIGHTING INVERTER
C	CONTACTOR
	SECURITY SYSTEM CAMERA
DL	SECURITY SYSTEM DOOR LOCK
	SECURITY SYSTEM MOTION SENSOR
CR	SECURITY SYSTEM CARD READER
DC	SECURITY SYSTEM DOOR CONTACT
KP	SECURITY SYSTEM KEY PAD
FS	FLOW SWITCH
TS	TAMPER SWITCH
PS	PRESSURE SWITCH
S	WALL MOUNTED SPEAKER LOCATION
S	CEILING MOUNTED SPEAKER
IC	INTERCOM STATION
	COMBINATION SPEAKER/CLOCK
	CLOCK

GENERAL

1. REQUIREMENTS SPECIFIED ON COVER SHEET, ALONG WITH ELECTRICAL SPECIFICATIONS AND ALL ITS SECTIONS, COMPRISE THE CONTRACT DOCUMENTS FOR THE ELECTRICAL CONTRACT. DRAWINGS AND ALL THEIR REVISIONS UP TO THE BID SUBMITTAL DATE BECOME A BINDING PART OF THE CONTRACT, ALONG WITH THESE SPECIFICATIONS AS THOUGH THEY WERE ONE, AND ANYTHING IMPLIED BY THE SPECIFICATIONS SHALL BE INTERPRETED AS ALSO IMPLIED BY THE DRAWINGS AND VICE VERSA. PROVIDE NECESSARY ITEMS FOR A COMPLETE INSTALLATION OF ALL ELECTRICALLY OPERATED EQUIPMENT LISTED IN THE SPECIFICATIONS OR SHOWN ON THE CONTRACT DRAWINGS.

2. THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND EQUIPMENT DRAWINGS AND SPECIFICATIONS ARE INCORPORATED INTO, AND BECOME A PART OF THIS DIVISION. THIS CONTRACTOR SHALL EXAMINE ALL SUCH DRAWINGS AND SPECIFICATIONS AND BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS CONTAINED THEREIN. THE SUBMISSION OF HIS BID SHALL INDICATE SUCH KNOWLEDGE.

3. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC. THEY ARE INTENDED TO SHOW THE APPROXIMATE LOCATIONS OF EQUIPMENT AND CONDUIT. DIMENSIONS GIVEN ON THE PLANS, IN FIGURES, SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND SHALL BE VERIFIED IN THE FIELD. THE ELECTRICAL CONTRACTOR SHALL LAYOUT ALL EQUIPMENT ROOMS TO MAKE SURE THE EQUIPMENT, AS PURCHASED, FITS IN THE ROOM OR SPACE SHOWN. EXACT LOCATION OF ALL EQUIPMENT SHALL BE VERIFIED IN THE FIELD AND ROUTING OF CONDUITS SHALL SUIT FIELD CONDITIONS.

4. UNTIL THE TIME OF INSTALLATION, THE ARCHITECT RESERVES THE RIGHT TO MAKE MINOR CHANGES IN THE LOCATION OF CONDUIT AND EQUIPMENT WITHOUT ADDITIONAL COST TO THE CONTRACT.

5. THE ELECTRICAL DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER. MATERIAL AND LABOR NECESSARY TO THE PROJECT SHALL BE FURNISHED AND INSTALLED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. LABOR AND/OR MATERIALS NEITHER SHOWN NOR SPECIFIED, BUT EVIDENTLY NECESSARY FOR THE COMPLETION AND PROPER FUNCTIONING OF THE SYSTEM, SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AT NO ADDITIONAL COST.

6. ARRANGE ALL EQUIPMENT SUBSTANTIALLY AS SHOWN ON THE DRAWINGS. MAKE DEVIATIONS ONLY WHERE NECESSARY TO AVOID INTERFERENCE. CHECK ALL EQUIPMENT SIZES AGAINST AVAILABLE SPACE PRIOR TO SHIPMENT TO AVOID INTERFERENCE.

7. EXAMINE THE WORK OF OTHER TRADES INSOFAR AS THEIR WORK COMES IN CONTACT WITH OR IS COVERED BY THIS WORK. IN NO CASE ATTACH TO, OR FINISH AGAINST ANY DEFECTIVE WORK OR INSTALL WORK IN A MANNER WHICH WILL PREVENT PROPER INSTALLATION OF THE WORK OF OTHER TRADES.

8. ELECTRICAL CONTRACTOR SHALL VERIFY WITH OTHER TRADES ALL ELECTRICAL CHARACTERISTICS OF EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS. CONTRACTOR SHALL VERIFY VOLTAGE, PHASE AND HORSEPOWER AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO START OF WORK. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECTING MEANS AND OVERLOAD PROTECTION FOR ALL EQUIPMENT, UNLESS FURNISHED INTEGRAL WITH EQUIPMENT PACKAGE.

9. IT IS THE INTENT OF THESE DRAWINGS THAT THIS BE A COMPLETE ELECTRICAL JOB. ANY ERRORS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BIDDING THE JOB.

VISIT TO THE SITE

1. THE CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING HIS WORK. THE SUBMISSION OF HIS PROPOSAL SHALL INDICATE SUCH KNOWLEDGE. NO ADDITIONAL PAYMENT SHALL BE MADE ON CLAIMS THAT ARISE FROM A LACK OF KNOWLEDGE OF THE EXISTING CONDITIONS.

CODE AND PERMITS

1. INSTALLATION SHALL BE IN FULL ACCORDANCE WITH ALL CODES, RULES AND REGULATIONS OF MUNICIPAL, CITY, COUNTY, STATE AND PUBLIC UTILITIES AND ALL OTHER AUTHORITIES HAVING JURISDICTION OVER THE PREMISES.

2. COMPLY WITH ANY SPECIFICATION REQUIREMENTS THAT ARE IN EXCESS BUT NOT IN CONFLICT WITH CODE REQUIREMENTS.

3. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, PLAN REVIEWS AND CERTIFICATES OF INSPECTION IN CONNECTION WITH HIS WORK, REQUIRED BY THE FOREGOING AUTHORITIES. BEFORE FINAL PAYMENT OF THE CONTRACT IS ALLOWED, ALL CERTIFICATES SHALL BE DELIVERED TO THE ARCHITECT IN DUPLICATE.

4. ELECTRICAL MATERIAL AND EQUIPMENT SHALL BEAR THE UL LABEL EXCEPT WHERE UL DOES NOT LABEL SUCH TYPES OF MATERIAL AND EQUIPMENT.

SHOP DRAWINGS SUBMITTALS

1. THE ELECTRICAL CONTRACTOR SHALL SUBMIT FIVE (5) SETS OF SHOP DRAWINGS. THE SHOP DRAWINGS OF THE FOLLOWING EQUIPMENT USING THE INDICATED NUMBERING SYSTEM AND TITLES, SHALL BE SUBMITTED THROUGH THE ARCHITECT TO THE ENGINEER AND THEN RESUBMITTED FOR FINAL APPROVAL. IF NECESSARY. SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS:

   A. WIRING DEVICES
   B. PANELBOARDS AND SAFETY SWITCHES INCLUDING FAULT CURRENT STUDY BASED ON EQUIPMENT BEING SUPPLIED.
   C. CONTACTORS, TIME SWITCHES AND PHOTOCELL
   D. LIGHTING FIXTURES
   E. SUPERVISORY ALARM SYSTEM

2. ALL SUBMITTED SHOP DRAWINGS (MANUFACTURERS "EQUIPMENT DESCRIPTIVE SHEETS OR VENDORS" PREPARED DRAWINGS) SHALL HAVE THE GENERAL CONTRACTOR'S OR SUBCONTRACTOR'S "STAMP OF APPROVAL" INDICATING THAT THE ITEM SUBMITTED IS AS CALLED FOR ON THE PLANS AND SPECIFICATIONS, IS APPROVED BY THE GENERAL CONTRACTOR OR SUBCONTRACTOR, THE DATE OF APPROVAL AND INITIALED BY THE PERSON APPROVING THE SUBMITTAL AND THE NAME OF THE COMPANY SUBMITTING SAID EQUIPMENT FOR APPROVAL.

3. SUBMIT BOUND BROCHURES COMPLETE WITH A TABLE OF CONTENTS. LOOSE OR STAPLED TOGETHER SHEETS ARE NOT ACCEPTABLE. ANY SUBMITTALS NOT IN BROCHURE FORM OR NOT AS SPECIFIED SHALL BE RETURNED AT THE CONTRACTOR'S EXPENSE FOR RESUBMITTAL.

4. ALL DESCRIPTIVE LITERATURE SHALL BE SUBMITTED IN A THREE (3) HOLE BROCHURE WITH A COVER IDENTIFYING THE FOLLOWING:

   A. NAME OF THE JOB.
   B. LOCATION OF THE JOB, ADDRESS, CITY AND STATE.
   C. NAME AND ADDRESS OF THE COMPANY SUBMITTING THE BROCHURES.
   D. DATE OF THE SUBMITTAL.

5. EVERY EFFORT SHALL BE MADE, IN CHECKING THE SHOP DRAWINGS, TO DETECT AND CORRECT ALL ERRORS, OMISSIONS AND INACCURACIES. FAILURE TO DO THIS WILL NOT RELIEVE THE ELECTRICAL CONTRACTOR OF THE RESPONSIBILITY FOR THE PROPER AND COMPLETE INSTALLATION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

RECORD DRAWINGS

1. SUBMIT TO THE ARCHITECT ONE SET OF REPRODUCIBLE (MYLARS) ELECTRICAL DRAWINGS SHOWING THE RECORD CONDITIONS.

STANDARDS AND SUBSTITUTIONS

1. WHEREVER THE WORDS "APPROVED BY", "APPROVED EQUAL", "AS DIRECTED" OR SIMILAR PHRASES ARE USED IN THE FOLLOWING SPECIFICATIONS, THEY SHALL BE UNDERSTOOD TO REFER TO THE OWNER AS THE APPROVING AGENCY. THE NAME OR MAKE OF ANY EQUIPMENT OR MATERIALS NAMED IN THIS SPECIFICATION (WHETHER OR NOT THE WORDS "OR APPROVED EQUAL" ARE USED) SHALL BE KNOWN AS THE "STANDARD".

2. THESE SPECIFICATIONS ESTABLISH QUALITY STANDARD OF MATERIALS AND EQUIPMENT TO BE PROVIDED. SPECIFIC ITEMS ARE IDENTIFIED BY MANUFACTURER, TRADE NAME OR CATALOG DESIGNATION. THIS CONTRACTOR SHALL SUBMIT HIS BASE BID PRICE BASED UPON STANDARD SPECIFIED EQUIPMENT DESCRIBED HEREIN AND AS DETAILED ON DRAWINGS AND ASSOCIATED CONTRACT DOCUMENTS. THESE SPECIFICATIONS ARE NOT TO BE CONSIDERED PROPRIETARY THE CONTRACTOR MAY SUBMIT INFORMATION ON MATERIALS AND MANUFACTURERS (OTHER THAN THOSE LISTED) FOR REVIEW BY THE ARCHITECT AND ENGINEER NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. IN ADDITION, SAMPLES OF PROPOSED EQUIPMENT MAY BE REQUIRED TO BE SUBMITTED TO THE ENGINEER FOR REVIEW NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. MANUFACTURERS OF PRODUCTS ACCEPTED BY THE ARCHITECT AND ENGINEER WILL BE LISTED IN AN ADDENDUM TO THE SPECIFICATIONS AS AN ACCEPTABLE SUBSTITUTION EQUIPMENT ACCEPTED AS DETAILED BELOW AND SHALL BE SHOWN AS A SEPARATE ADD OR DEDUCT PRICE TO BE FACTORED INTO THE BASE BID PRICE BY THE ARCHITECT AND OWNER IF ACCEPTED.

3. SHOULD THE CONTRACTOR PROPOSE TO FURNISH MATERIALS AND EQUIPMENT OTHER THAN THOSE SPECIFIED OR APPROVED BY ADDENDUM, SUBMIT A WRITTEN REQUEST FOR SUBSTITUTIONS TO THE ARCHITECT AT THE BID OPENING. THE REQUEST SHALL BE AN ALTERNATE TO THE ORIGINAL BID, BE ACCOMPANIED WITH COMPLETE DESCRIPTIVE (MANUFACTURER, BRAND NAME, CATALOG NUMBER, ETC.) AND TECHNICAL DATA FOR ALL ITEMS. FAILURE BY THIS CONTRACTOR TO SUBMIT THE REQUISITE DOCUMENTATION DETAILED ABOVE SHALL BE UNDERSTOOD BY THE ARCHITECT AND ENGINEER TO INDICATE THAT SUBSTITUTE EQUIPMENT WILL NOT BE PRESENTED BY THE CONTRACTOR FOR CONSIDERATION. SUCH SUBSTITUTIONS WILL NOT BE CONSIDERED AFTER THE BID OPENING DATE AND DELAY OF PROJECT WILL NOT BE PERMITTED FOR FURTHER INSPECTION AND EVALUATION AFTER THIS DATE.

4. WHERE SUCH SUBSTITUTIONS ALTER THE DESIGN OR SPACE REQUIREMENTS INDICATED ON THE DRAWINGS, INCLUDE ALL ITEMS OF COST FOR THE REVISED DESIGN AND CONSTRUCTION INCLUDING COST OF ALL ALLIED TRADES INVOLVED.

5. ACCEPTANCE OR REJECTION OF THE PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO APPROVAL OF THE ARCHITECT AND ENGINEER. IF REQUESTED, THE CONTRACTOR SHALL SUBMIT AT HIS COST) INSPECTION SAMPLES OF BOTH THE SPECIFIED AND PROPOSED SUBSTITUTE ITEMS.

6. IN ALL CASES WHERE SUBSTITUTIONS ARE PERMITTED, THE CONTRACTOR SHALL BEAR ANY EXTRA COST OF EVALUATING THE QUALITY OF THE MATERIAL AND EQUIPMENT TO BE PROVIDED, INCLUDING ALL ARCH/ENGINEER FEES ASSOCIATED WITH CHANGE.

TESTING AND PLACING IN SERVICE

1. ANY MATERIAL OR EQUIPMENT FAILING A TEST SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.

2. TESTS SHALL INCLUDE THE FOLLOWING:

   A. MEASURE THE LOAD ON EACH PHASE OF THE MAIN SERVICE AND EACH PHASE OF EVERY FEEDER UNDER FULL LOAD CONDITIONS.
   B. MEASURE THE NO-LOAD AND FULL-LOAD VOLTAGES (PHASE TO PHASE, PHASE TO NEUTRAL AND PHASE TO GROUND FOR EACH PHASE OF EACH SERVICE, OF EACH SEPARATELY DERIVED SYSTEM, AND AT EACH PANELBOARD OR TRANSFORMER).
   C. MEASURE THE GROUND RESISTANCE OF THE MAIN SERVICE GROUNDING ELECTRODE AND THE GROUND RESISTANCE OF EACH SEPARATELY DERIVED SYSTEM'S GROUNDING ELECTRODE.
   D. MAKE INSULATION RESISTANCE TESTS ON ALL DRY TYPE TRANSFORMERS AND MOTORS.

INTERFERENCES

1. BEFORE THE INSTALLATION OF ANY ITEM BEGINS, THE ELECTRICAL CONTRACTOR SHALL CAREFULLY ASCERTAIN THAT IT DOES NOT INTERFERE WITH CLEARANCES FOR THE ERECTION OF FINISH BEAMS, COLUMNS, PILASTERS, WALLS OR OTHER STRUCTURAL OR ARCHITECTURAL MEMBERS AS SHOWN ON THE ARCHITECTURAL DRAWINGS. IF ANY WORK IS INSTALLED AND THE ARCHITECTURAL DESIGN CANNOT BE FOLLOWED, THIS CONTRACTOR SHALL, AT HIS OWN EXPENSE, MAKE CHANGES IN HIS WORK AS DIRECTED BY THE ARCHITECT TO PERMIT THE COMPLETION OF THE ARCHITECTURAL WORK IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS.

2. IT SHALL BE THE DUTY OF THIS CONTRACTOR TO REPORT ANY INTERFERENCES BETWEEN HIS WORK AND THAT OF ANY OF THE OTHER CONTRACTORS AS SOON AS THEY ARE DISCOVERED. THE ARCHITECT SHALL DETERMINE WHICH EQUIPMENT WILL BE RELOCATED, REGARDLESS OF WHICH WAS INSTALLED FIRST. HIS DECISION WILL BE FINAL.

QUALITY ASSURANCE

1. ALL PRODUCTS SHALL BE NEW AND OF THE TYPE AND QUALITY SPECIFIED. WHERE MATERIALS, EQUIPMENT, APPARATUS OR OTHER PRODUCTS ARE SPECIFIED BY MANUFACTURER BRAND NAME, TYPE OF CATALOG NUMBER, SUCH DESIGNATION SHALL ESTABLISH THE STANDARDS OF THE DESIRED QUALITY AND STYLE. IT IS THE INTENT OF THESE SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY OF MATERIALS AND EQUIPMENT INSTALLED.

NAMEPLATES

1. FURNISH AND MOUNT ON EACH PANELBOARD, SWITCHBOARD (INCLUDING BRANCH SWITCHES), LARGE JUNCTION BOX, SAFETY SWITCH, STARTER, REMOTE CONTROL, PUSH BUTTON STATION, AND ALL SIMILAR CONTROLS, A NAMEPLATE DESCRIPTIVE OF THE EQUIPMENT OR EQUIPMENT CONTROLLED.

2. PROVIDE BLACK AND WHITE NAMEPLATES CONSTRUCTED FROM LAMINATED PHENOLIC WITH A WHITE CENTER CORE. LETTERS SHALL BE ENGRAVED IN THE PHENOLIC TO FORM WHITE LETTERS 3/8" HIGH. FASTEN THE NAMEPLATES WITH SCREWS AND AN ADHESIVE TYPE FASTENER.

MOUNTING ACCESSORIES

1. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL ANGLE IRON, CHANNEL IRON, RODS, SUPPORTS, HANGERS, CONCRETE OR PLYWOOD REQUIRED TO INSTALL, MOUNT AND SUPPORT ANY ELECTRICAL EQUIPMENT OR DEVICE CALLED FOR ON THE PLANS.

2. SUPPORTING MATERIAL SHALL BE COMPLETE WITH HANGERS, CONNECTORS, BOLTS, CLAMPS AND NECESSARY ACCESSORIES TO MAKE A COMPLETE INSTALLATION. SUPPORTING MATERIAL SHALL BE GALVANIZED, PAINTED OR OTHERWISE SUITABLY FINISHED. PRODUCTS BY BRINKLEY, STEEL CITY OR RACO WILL BE ACCEPTABLE.

3. ALL SURFACE-MOUNTED EQUIPMENT ON BLOCK WALLS SHALL BE MOUNTED ON 3/4" PLYWOOD BACKBOARD. ALL FLOOR-MOUNTED EQUIPMENT SHALL BE INSTALLED ON A 4" HIGH CONCRETE HOUSEKEEPING PAD.

EXECUTION

1. THE ELECTRICAL WORK FOR CONSTRUCTION PROPOSED SHALL CONFORM TO ALL FEDERAL (OSHA), STATE, ALL SPECIFIC SAFETY REQUIREMENTS AND THE REQUIREMENTS OF THE CURRENT EDITION OF THE NEC.

2. CHECK THE HVAC AND PLUMBING SPECIFICATIONS FOR ELECTRICAL REQUIREMENTS AND INCLUDE THE SAME IN THE CONTRACT COST.

3. EQUIPMENT CONNECTIONS, STARTERS, DISCONNECT SWITCHES, CONTROL TRANSFORMERS AND PUSHBUTTON STATIONS FOR THE EQUIPMENT FURNISHED BY THE OWNER OR UNDER A SEPARATE CONTRACT SHALL BE INSTALLED AND CONNECTED UNDER THIS DIVISION, AS INDICATED ON THE CONTRACT DRAWINGS.

4. ALL CUTTING, PATCHING, EXCAVATING, BACKFILLING AND CONCRETE WORK RELATED TO THIS CONTRACT WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. THIS CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF PROVIDING THE SLEEVES, CHASES AND OPENINGS NECESSARY FOR THE ELECTRICAL INSTALLATION AND FOR THEIR REPAIR IN AN ACCEPTABLE MANNER, AS DETERMINED BY THE ARCHITECT. ALL HOLES SHALL BE CORE-DRILLED. PROVIDE FIRE STOP IN ALL OPENINGS CREATED THROUGH FIRE-RATED WALLS, FLOORS OR CEILINGS.

5. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL REQUIRED ACCESS PANELS NECESSARY FOR HIS WORK, COORDINATE WITH ARCHITECT PRIOR TO INSTALLATION.

MATERIALS AND WORKMANSHIP

1. ALL WORK SHALL BE INSTALLED IN A PRACTICAL AND WORKMANLIKE MANNER, BY MECHANICS SKILLED IN THE SEVERAL TRADES NECESSARY.

2. ALL MATERIALS SHALL BE NEW AND FREE FROM DEFECTS AND SHALL BE THE BEST OF THEIR SEVERAL KINDS UNLESS SPECIFIED OR INDICATED ON THE DRAWINGS TO HE CONTRARY.

3. DURING EACH PHASE AND AT THE COMPLETION OF THE CONSTRUCTION, THIS CONTRACTOR SHALL REMOVE ALL DEBRIS AND EXCESS MATERIALS CAUSED BY HIS WORK. HE SHALL LEAVE THE AREA OF OPERATION BROOM CLEAN.

4. ALL ELECTRICAL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OR ETL LABEL.

5. THIS CONTRACTOR SHALL GUARANTEE HIS WORKMANSHIP AND MATERIAL (LAMPS EXCEPTED) FOR A PERIOD OF ONE YEAR FROM THE DATE OF BUILDING OPENING AND LEAVE HIS WORK IN PERFECT ORDER AT THE COMPLETION. SHOULD DEFECTS DEVELOP WITHIN THE GUARANTEE PERIOD, THE CONTRACTOR SHALL, UPON NOTICE OF THE SAME, REMEDY THE DEFECTS AND HAVE ALL DAMAGES TO OTHER WORK OR FURNISHINGS CAUSED BY THE REPAIRS CORRECTED AT HIS EXPENSE TO THE CONDITION BEFORE SUCH DAMAGE.

SCOPE OF WORK

1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, STORAGE, UNPACKING AND PLACEMENT; TO INCLUDE BUT NOT BE LIMITED TO, THE FOLLOWING ITEMS:

   A. COMPLETE POWER AND LIGHTING DISTRIBUTION SYSTEM INCLUDING ALL PANELS AND FEEDERS.
   B. COMPLETE BRANCH CIRCUIT WIRING SYSTEM.
   C. COMPLETE POWER WIRING FOR ALL AIR CONDITIONING EQUIPMENT, PLUMBING SYSTEM, HEATING EQUIPMENT, VENTILATING AND EXHAUST EQUIPMENT.
   D. LIGHTING FIXTURE INSTALLATION, INCLUDING ALL FLUORESCENT LAMPS.
   E. COMPLETE TELEPHONE AND COMMUNICATION CONDUIT SYSTEM INCLUDING PULL BOXES, OUTLET BOXES, AND CONDUIT AS SPECIFIED, SHOWN ON THE DRAWINGS AND REQUIRED BY THE LOCAL TELEPHONE COMPANY AND/OR OWNER. FROM EACH OUTLET PROVIDE A 1" EMPTY EMT CONDUIT ROUTED INTO THE CEILING CAVITY OR TO THE CLOSEST TELECOMMUNICATIONS CLOSET. PROVIDE A DRAG LINE IN EACH RUN AND TERMINATE IN A BUSED ELBOW.
   F. TEMPORARY ELECTRICAL POWER AND LIGHTING AS REQUIRED FOR CONSTRUCTION.
   G. TESTING OF ALL CABLES AND CIRCUIT WIRING AFTER INSTALLATION.
   H. EXIT LIGHT SYSTEM.
   I. WIRING DEVICES.
   J. LIGHTING CONTROLS.
   K. GROUNDING OF THE ELECTRICAL SYSTEM.
   L. IDENTIFY RACEWAYS AND CABLES WITH COLOR BANDING AS FOLLOWS:

2. COLORS:

   A. FIRE ALARM SYSTEM: RED
   B. SECURITY SYSTEM: BLUE AND YELLOW.
   C. TELECOMMUNICATION SYSTEM: GREEN AND YELLOW.

GROUNDING AND BONDING

1. GROUND ALL EQUIPMENT PER N.E.C.

2. ALL CONDUITS SHALL CONTAIN A CODE-SIZED GROUND WIRE SIZED PER N.E.C. IN ADDITION TO THE CONDUCTORS SHOWN ON THE PLANS. WHERE CIRCUIT CONDUCTORS ARE INCREASED IN SIZE FOR VOLTAGE DROP, THE GROUND WIRE SIZE SHALL BE INCREASED PROPORTIONATELY.

3. AFTER INSTALLING GROUNDING SYSTEM BUT BEFORE PERMANENT ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, TEST FOR COMPLIANCE WITH REQUIREMENTS.

WIRE AND CABLE

1. COLOR CODE CONDUCTORS (EXCEPT CONTROL AND INSTRUMENTATION CONDUCTORS) AS FOLLOWS:

   208/120V SYSTEM:

   A. PHASE A BLACK;
   B. PHASE B RED;
   C. PHASE C BLUE;
   D. NEUTRAL WHITE;
   E. GROUND GREEN.

      a. #12 AND #10 CONDUCTORS SHALL HAVE CONTINUOUS INSULATION COLOR, AS LISTED ABOVE.
      b. COLOR CODE CONDUCTORS LARGER THAN ABOVE, WHICH DO NOT HAVE CONTINUOUS INSULATION COLOR BY APPLICATION OF AT LEAST TWO LAPS OF COLORED TAPE ON EACH CONDUCTOR AT ALL POINTS OF ACCESS INCLUDING JUNCTION BOXES. COLOR TAPE SHALL BE THE EQUAL OF 3M PRODUCTS SCOTCH #35.
      c. CONDUCTORS SHALL BE SOFT ANNEALED COPPER INSULATED FOR 600 VOLTS UNLESS SPECIFICALLY INDICATED OTHERWISE. ALUMINUM CONDUCTORS ARE NOT ALLOWED ON THIS PROJECT.

2. INSULATION TYPE SHALL BE TYPE THWN FOR WIRE SIZES #8 AWG AND LARGER AND THHN OR THWN FOR #10AWG AND SMALLER. THHN SHALL NOT BE USED IN WET OR DAMP LOCATIONS.

3. FLEXIBLE CORD SHALL BE HEAVY DUTY TYPE SO WITH AN EQUIPMENT GROUND CONDUCTOR IN ADDITION TO THE CURRENT CARRYING CONDUCTORS.

4. PROVIDE #12 CONDUCTORS, UNLESS OTHERWISE INDICATED.

   A. CONTROL CONDUCTORS SHALL BE #14 MINIMUM FOR NEC CLASS I AND #16 FOR NEC CLASS II.

5. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED.

6. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID.

7. INSTALL WIRING IN CONDUIT. CONCEALED WIRING IN WALLS OR ABOVE CEILINGS, OR EXPOSED IN UNFINISHED AREAS (WHERE NOT SUBJECT TO PHYSICAL DAMAGE) MAY BE RUN IN MC OR AC CABLE.

8. CONNECT #10 AND SMALLER WIRES WITH CONSTANT PRESSURE EXPANDABLE SPRING TYPE CONNECTORS, "SCOTCHLOK" BY 3M OR B-CAP BY BUCHANAN.

9. CONNECT #8 AND LARGER WIRES WITH COMPRESSION CONNECTORS OR SPLICES AS MANUFACTURED BY BURNDY OR T&B.

10. INSULATE SPLICING CONNECTORS TO AT LEAST 200% OF THE WIRE INSULATION. USE PRE-STRETCHED TUBING CONNECTOR INSULATORS, 3M PST FOR #2 AND LARGER CONDUCTORS.

11. PULL CONDUCTORS USING RECOGNIZED METHODS AND EQUIPMENT LEAVING AT LEAST 6" WIRE AT ALL JUNCTION BOXES FOR CONNECTIONS.

   A. CLEANOUT EACH CONDUIT SYSTEM BEFORE PULLING WIRE.

12. FORM AND TIE ALL WIRING IN PANELBOARDS.

13. THERE SHALL BE NO WIRENUT JOINTS OR SPLICES MADE INSIDE SWITCHBOARDS/PANELBOARDS.

14. BRANCH CIRCUIT WIRE SIZES (AND CONDUITS) SHALL BE INCREASED FROM THOSE INDICATED ON THE PLANS TO PREVENT EXCESSIVE VOLTAGE DROP. BRANCH CIRCUITS SHALL BE INSTALLED WITH WIRES OF SUFFICIENT SIZE SO THAT VOLTAGE DROP BETWEEN THE PANEL AND THE LOADS DOES NOT EXCEED LIMIT OF 3%.

15. WIRE SIZES SHALL BE BASED ON THE 75 DEGREES C. AMPACITIES.

16. CIRCUITS MAY BE MULTI-PLEXED IN CONDUIT PROVIDED WIRE IS PROPERLY DERATED AND CONDUIT SIZED PER CODE. UNDER NO CIRCUMSTANCE SHALL MORE THAN (8) CURRENT CARRYING CONDUCTORS BE RUN IN A SINGLE CONDUIT.

RACEWAYS

1. ALL WIRE SHALL BE RUN IN ACCORDANCE WITH CODE IN CORROSION RESISTANT, RIGID, THREADED, METAL CONDUIT OR ELECTRICAL METALLIC TUBING (E.M.T.) UNLESS OTHERWISE SPECIFICALLY STATED HEREIN.

   A. CONDUIT IN EXTERIOR WALLS, BELOW FLOOR SLAB, OR UNDERGROUND SHALL BE RIGID, THREADED, GALVANIZED, HEAVY WALL TYPE.
   B. CARLON PVC TYPE 40 HEAVY WALL CONDUIT WITH GROUND WIRE MAY BE USED BELOW FLOOR SLAB OR UNDERGROUND IN LIEU OF RIGID, THREADED, GALVANIZED CONDUIT. PVC 40 CONDUIT SHALL NOT BE RUN IN OR ABOVE FLOOR SLAB. PVC CONDUIT SHALL TERMINATE BELOW FLOOR SLAB WITH RIGID, THREADED METAL CONDUIT ADAPTER. CONDUIT ABOVE SLAB SHALL BE METAL.
   C. CONDUIT RUN EXPOSED TO THE WEATHER SHALL BE HEAVY WALL, METAL THREADED TYPE.
   D. PROVIDE BRANCH CIRCUIT CONDUCTORS THAT ARE TYPE THHN OR THWN AS REQUIRED. MC CABLE CAN BE USED FOR LIGHT FIXTURE TO LIGHT FIXTURE.

2. CONDUIT SIZE SHALL BE 3/4" MINIMUM.

3. CONDUIT SHALL BE SECURELY FASTENED IN PLACE.

4. ALL CONDUIT SHALL BE CONCEALED IN WALLS, FLOOR AND CEILINGS WHEREVER POSSIBLE. EXPOSED CONDUIT IN FINISHED AREAS WILL NOT BE PERMITTED. EXPOSED CONDUIT WILL BE PERMITTED IN UNFINISHED AREAS WITH THE SPECIFIC APPROVAL OF THE ARCHITECT.

5. USE FLEXIBLE CONDUIT FOR THE CONNECTION TO RECESSED OR SEMI-RECESSED LIGHTING FIXTURES (6' LENGTH MAXIMUM). USE LIQUID TIGHT METAL CONDUIT FOR ALL CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SUBJECT TO VIBRATION AND IN AREAS SUBJECT TO MOISTURE.

6. USE WATERTIGHT JOINTS WITH BURIED AND CONCRETE ENCASED CONDUIT. ALL BURIED CONDUITS OUTSIDE OF BUILDINGS SHALL HAVE A MINIMUM OF 24" OF COVER. METAL CONDUITS BURIED IN EARTH SHALL BE PAINTED (TWO COATS) WITH HEAVY ASPHALTUM PAINT.

7. SUPPORT RUNS OF CONDUIT AS DETAILED IN THE APPROPRIATE TABLE OF THE NATIONAL ELECTRICAL CODE (NEC).

8. INSTALL EXPOSED RUNS OF CONDUIT AND CONDUIT ABOVE LAY-IN CEILINGS PARALLEL OR PERPENDICULAR TO THE WALLS, STRUCTURAL MEMBERS OF INTERSECTIONS OF VERTICAL PLANES AND CEILINGS. PROVIDE RIGHT ANGLE TURNS USING FITTINGS OR SYMMETRICAL BENDS. SUPPORT CONDUITS WITHIN 1" OF ALL CHANGES IN DIRECTION.

9. IF A CONDUIT IS SUSPENDED, IT SHALL BE SUPPORTED ON TRAPEZE HANGERS WHICH USE "ALL-THREAD" RODS FROM THE STRUCTURAL STEEL. THE USE OF CEILING SUPPORT WIRE OR SIMILAR MATERIAL WILL NOT BE ACCEPTED.

10. INSTALL EMPTY CONDUIT FOR FUTURE USE AS INDICATED ON THE DRAWINGS. CONDUIT SHALL BE COMPLETE WITH JETLINE OR PULL ROPE, JUNCTION/OUTLET BOXES, TILE RINGS AND APPROPRIATE COVER PLATES.

11. PROVIDE PITCH POCKETS WHERE CONDUITS PENETRATE THE ROOF.

12. THREAD LUBRICATION/SEALANT IS REQUIRED ON OUTDOOR AND UNDERGROUND THREADED METAL JOINTS.

13. INSTALL FIRE SEAL FITTINGS WHERE CONDUITS PENETRATE CONCRETE FLOOR SLABS OR MASONRY WALLS REQUIRED TO BE FIRE RATED.

14. HORIZONTAL PORTION OF CONDUIT EXPOSED ON THE ROOF AND FEEDING EQUIPMENT ON ROOF SHALL NOT BE MORE THAN 5'-0" UNLESS THE WRITTEN APPROVAL FROM ARCHITECT OR ENGINEER IS OBTAINED.

PULL AND JUNCTION BOXES

1. INSTALL PULL AND JUNCTION BOXES WHERE SHOWN ON THE DRAWINGS, AND WHERE REQUIRED FOR CHANGES IN DIRECTION, AT JUNCTION POINTS, AND TO FACILITATE WIRE PULLING. FURNISH BOX SIZES IN ACCORDANCE WITH NEC UNLESS LARGER BOXES ARE INDICATED.

2. PROVIDE STEEL BOXES AND REMOVABLE COVERS OF CODE GAUGE, HOT ROLLED SHEET STEEL, HOT DIPPED GALVANIZED INSIDE AND OUTSIDE, FOR ABOVE GROUND WORK. FURNISH WEATHERPROOF BOXES WHEN INSTALLED ABOVE GROUND OUTSIDE.

3. PROVIDE CAST IRON BOXES, HOT DIPPED GALVANIZED INSIDE AND OUTSIDE WHERE SHOWN ON THE DRAWINGS. FURNISH REMOVABLE COVERS WITH GASKETS AND STAINLESS STEEL, BRASS OR BRONZE SCREWS.

4. PROVIDE CONCRETE BOXES FOR UNDERGROUND WORK UNLESS OTHERWISE INDICATED ON THE DRAWINGS. FURNISH STEEL FRAMES AND COVERS WITH THE COVER ATTACHED TO THE FRAME WITH HEXAGON HEAD, BRASS OR BRONZE CAP SCREWS, 3/8" DIAMETER. PROVIDE A RUBBER GASKET FOR SEALING BETWEEN THE COVER AND THE FRAME. PAINT THE COVER WITH TWO COATS OF HEAVY ASPHALTUM.

OUTLET BOXES

1. USE SHEET STEEL BOXES, ZINC COATED OR CADMIUM PLATED, FOR CONCEALED INTERIOR WORK.

2. USE CAST BOXES, ZINC-CADMIUM FINISH MALLEABLE IRON, FOR EXPOSED INTERIOR WORK, AND FOR EXPOSED OR CONCEALED WORK IN WET, DAMP OR EXTERIOR LOCATIONS.

3. WALL BOX SIZES (MINIMUM) SHALL BE 4" SQUARE x 2-1/2" DEEP WHERE WALL CONSTRUCTION PERMITS. WHERE WALL CONSTRUCTION DICTATES, THE WIDTH MAY BE REDUCED TO 2-1/8" OR 1-1/2" UNDER SPECIAL CONDITIONS.

4. FIXTURE OUTLETS IN CEILINGS (MINIMUM) SHALL BE 4" OCTAGONAL x 1-1/2" DEEP (4-11/16" OCTAGONAL x 2-1/2" DEEP WHERE REQUIRED TO ACCOMMODATE LARGER CONDUIT OR LARGER NUMBER OF WIRES).

DEMOLITION WORK NOTES

1. EXISTING PANEL "GP-1" (GE TL18415C SURFACE MOUNTED LOAD CENTER) AND ALL BREAKERS TO BE REMOVED AND REPLACED NEW. REFER TO NEW WORK PLAN FOR ADDITIONAL INFORMATION AND PANEL SPECIFICATIONS.
2. UNLESS OTHERWISE NOTED, ALL LIGHTING AND LIGHTING CONTROLS WITHIN THE SPECIFIED AREA SHALL BE REMOVED INCLUDING ALL CONDUITS AND CONDUCTORS.
3. EXISTING RECEPTACLE OUTLET LOCATIONS WITHIN THE SPECIFIED AREA SHALL REMAIN, INCLUDING CIRCUIT CONDUCTORS AND RACEWAYS. ASSOCIATED DEVICES AND FACEPLATES ARE TO BE REMOVED AND REPLACED WITH NEW.
4. EXISTING TOGGLE SWITCHES AND PLATE TO BE REMOVED AND REPLACED. REFER TO NEW LIGHTING PLAN FOR ADDITIONAL INFORMATION.
5. EXISTING AIR HANDLER TO BE REMOVED AND REPLACED. DISCONNECT POWER AND MAKE SAFE FOR REMOVAL OF UNIT. RACEWAY, CONDUCTORS, AND DISCONNECT TO REMAIN FOR REUSE WITH NEW AIR HANDLER.
6. LIGHTING AND CONTROLS IN THIS AREA ARE EXISTING TO REMAIN.
7. EXIT SIGN WITH REMOTE EMERGENCY HEADS IS EXISTING TO REMAIN.
8. DEVICE LOCATIONS ARE EXISTING TO REMAIN. REMOVE DEVICE, AND BACKBOX. PROVIDE NEW DEVICES, FACEPLATES, AND WEATHERPROOF COVERS.
9. EXISTING CONDUIT PENETRATING WINDOW FRAME AT THIS LOCATION TO BE REMOVED AND RELOCATED BELOW WINDOW. REFER TO GROUND FLOOR POWER PLAN.
10. LIGHT FIXTURES TO BE REMOVED AND REPLACED WITH NEW IN SAME LOCATION. UNLESS OTHERWISE INDICATED, CONDUCTORS AND RACEWAYS SHALL REMAIN FOR REUSE.
11. SPECIFIED LOCATION REQUIRES NEW CIRCUIT CONDUCTORS. REFER TO GROUND FLOOR LIGHTING RCP FOR ADDITIONAL INFORMATION.

1 GROUND FLOOR POWER & LIGHTING DEMOLITION PLAN
1/4" = 1'-0"

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Title:
GROUND FLOOR POWER & LIGHTING DEMOLITION PLAN

Project Number:	Issue Date:
2020.02	07/24/20
Scale:	CAD file:
As indicated	MEP
Drawn By:	Checked By:
CKD	BJZ

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ED1.1

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ELECTRICAL LIGHTING WORK NOTES

1. SPECIFIED CIRCUIT SHALL BE WIRED TO ALL NEW FIXTURES SHOWN.
2. REFER TO LIGHTING CONTROLS DETAIL FOR INFORMATION AND REQUIREMENTS OF SCENE CONTROLLER AND DIMMER SWITCHES AND THEIR OPERATION.
3. LOCATION SHOWN FOR REFERENCE ONLY. COORDINATE LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.
4. LIGHT FIXTURES IN THIS ROOM ARE EXISTING TO REMAIN, AND NOT SHOWN FOR CLARITY.
5. PROVIDE NEW SWITCHES AND COVERPLATE IN SAME LOCATION AS SWITCHES REMOVED DURING DEMOLITION. SWITCH CONTROLLING PORCH LIGHT SHALL BE CHANGED TO A 3-WAY. PROVIDE NEW CIRCUIT CONDUCTORS AS REQUIRED FOR PROPER OPERATION OF 3-WAY SWITCHES.
6. EXIT SIGN WITH EMERGENCY LIGHTING HEADS IS EXISTING TO REMAIN. TEST FOR PROPER FUNCTION AND PROVIDE REPORT OF DEFICIENCIES TO OWNER WITH COST TO REMEDIATE.
7. THESE LIGHT FIXTURES ARE SHOWN IN THIS ROOM FOR REFERENCE ONLY, AND ARE TO BE LOCATED IN SPACE ABOVE THIS ROOM ON EITHER SIDE OF AIR HANDLER. FIELD ADJUST FOR MAXIMUM USABLE LIGHT. PROVIDE SWITCH AT ENTRANCE TO SPACE FOR CONTROL OF FIXTURES.
8. PROGRAM SWITCH FOR VACANCY OPERATION.

GENERAL NOTES

1. REFER TO DETAILS, NOTES, FIXTURE SCHEDULE AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. POWER PACKS NOT SHOW. PROVIDE POWER PACK FOR EACH SWITCHING ZONE AND EACH STAND-ALONE OCCUPANCY SENSOR AS REQUIRED FOR PROPER OPERATION.
3. COORDINATE ALL SWITCH LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
4. TYPE 'C' LIGHT FIXTURES ARE TO BE MOUNTED TO TOP SURFACE OF STRUCTURAL BEAM FACING UPWARDS. COORDINATE EXACT PLACEMENT WITH ARCHITECT.

1 GROUND FLOOR LIGHTING RCP
1/4" = 1'-0"

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1 GROUND FLOOR POWER PLAN
1/4" = 1'-0"

ELECTRICAL POWER WORK NOTES

1. NEW PANEL "GP1". PROVIDE NEW LOAD CENTER IN SIMILAR LOCATION AS REMOVED PANEL. COORDINATE EXACT PANEL LOCATION WITH ARCHITECTURAL PLANS TO AVOID CONFLICT WITH NEW DOOR. DESIGN BASED ON SQUARE-D QO.
2. CONNECT TO EXISTING FEEDER DISCONNECTED DURING DEMOLITION.
3. PROVIDE NEW CIRCUIT BREAKERS TO MATCH ALL CIRCUITS REMOVED DURING DEMOLITION OF EXISTING PANEL, AND RECONNECT TO ASSOCIATED CIRCUITS. PROVIDE 20A/1P SPARE CIRCUIT BREAKERS UNUSED SPACES.
4. EXISTING OUTLET TO REMAIN. PROVIDE NEW RECEPTACLE AND COVERPLATE. RECONNECT TO EXISTING CIRCUIT AND CONDUCTORS.
5. PROVIDE CIRCUIT BREAKER WITH SQUARE-D QO2PAF HANDLE PADLOCK ATTACHMENT. PROVIDE WIRING WITH 90 DEGREE INSULATION AS REQUIRED BY MANUFACTURER.
6. NEW AIR HANDLER UNIT. CONNECT TO EXISTING CIRCUIT AND CONDUCTORS SERVING PREVIOUS AIR HANDLER. EXTEND CONDUCTORS AND RACEWAYS AS REQUIRED AND PROVIDE ALL FINAL CONNECTIONS. EXAMINE EXISTING CONDUIT AND CONDUCTORS FOR SUITABILITY OF REUSE AND TEST LOCAL DISCONNECT FOR PROPER OPERATION. PROVIDE REPORT OF DEFICIENCIES TO OWNER WITH BREAKDOWN OF REMEDIATION COSTS.
7. DEVICES SHOWN SEPARATELY FOR CLARITY OF CIRCUIT INFORMATION. PROVIDE AS DOUBLE DUPLEX RECEPTACLE WITHIN 2-GANG BOX.
8. HAND DRYER CIRCUIT. COORDINATE LOCATION OF HAND DRYER WITH ARCHITECT AND PROVIDE ALL FINAL CONNECTIONS. HAND DRYER BASED ON DYSON AIRBLADE V MODEL HU02 WITH 120V SUPPLY.
9. PROVIDE COVER WITH LOCKING HASP.
10. TOP OF FACEPLATE SHALL BE ENGRAVE WITH "SUMP PUMP".
11. COORDINATE LOCATION WITH PROJECTOR.
12. COORDINATE LOCATION FOR PROPER CONNECTION OF TOUCHLESS SINK POWER CORD.
13. PROVIDE 2-GANG JUNCTION BOX WITH 1-1/4" CONDUIT TO JUNCTION BOX AT PROJECTOR LOCATION FOR PROJECTOR COMMUNICATIONS CABLING. PROVIDE CONDUIT IN OVERHEAD SPACE AND WIREMOLD SURFACE RACEWAY SYSTEM VERTICALLY ON WALL.
14. PROVIDE 2-GANG JUNCTION BOX WITH 1-1/4" CONDUIT TO JUNCTION BOX AT SPEAKER LOCATION FOR SPEAKER WIRING. EACH JUNCTION BOX WILL BE ASSOCIATED WITH ONE SPEAKER LOCATION, AND LABELED ACCORDINGLY. PROVIDE CONDUIT IN OVERHEAD SPACE AND WIREMOLD SURFACE RACEWAY SYSTEM VERTICALLY ON WALL.
15. PROVIDE JUNCTION BOX LOW ON ALL, AS REQUIRED TO RELOCATE CONDUIT PREVIOUSLY ROUTED THROUGH WINDOW FRAME. COORDINATE LOCATION OF NEW CONDUIT ROUTE, WALL PENETRATIONS, AND ALL REQUIRED JUNCTION BOXES WITH ARCHITECT. COORDINATE WITH DEMOLITION PLANS.
16. PROVIDE NEW DEVICES, COVERPLATES AND WEATHERPROOF COVERS FOR ALL DEVICES AT THIS LOCATION.
17. PRIOR TO INSTALLATION, MEASURE LOAD ON EXISTING PANEL AND ENSURE EXISTING SUPPLY BREAKER AND FEEDER ARE ADEQUATE TO SUPPORT ALL PROPOSED AND EXISTING LOADS. COORDINATE ANY DEFICIENCIES WITH ENGINEER.

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Title:
GROUND FLOOR POWER PLAN

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Scale: As indicated	CAD file: MEP
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SINGLE PHASE WIRE SCHEDULE

OVERCURENT RATING (1-POLE OR 2-POLE)	CONDUCTORS (1 PH, 2W) WITH GROUND	CONDUIT SIZE	CONDUCTORS (1 PH, 3W) WITH GROUND	CONDUIT SIZE
15A	2#12 & 1#12G	3/4"	3#12 & 1#12G	3/4"
20A	2#12 & 1#12G	3/4"	3#12 & 1#12G	3/4"
25A	2#10 & 1#10G	3/4"	3#10 & 1#10G	3/4"
30A	2#10 & 1#10G	3/4"	3#10 & 1#10G	3/4"
35A	2#8 & 1#10G	3/4"	3#8 & 1#10G	3/4"
40A	2#8 & 1#10G	3/4"	3#8 & 1#10G	3/4"
45A	2#6 & 1#10G	1"	3#6 & 1#10G	1"
50A	2#6 & 1#10G	1"	3#6 & 1#10G	1"
60A	2#4 & 1#10G	1"	3#4 & 1#10G	1-1/4"
70A	2#4 & 1#8G	1"	3#4 & 1#8G	1-1/4"
80A	2#3 & 1#8G	1-1/4"	3#3 & 1#8G	1-1/2"
90A	2#2 & 1#8G	1-1/4"	3#2 & 1#8G	1-1/2"
100A	2#1 & 1#8G	1-1/2"	3#1 & 1#8G	2"

NOTES:

1. UNLESS OTHERWISE INDICATED, CONDUCTOR SIZING SHALL MATCH THE SIZE INDICATED ABOVE FOR THE APPLICABLE OVERCURRENT DEVICE. PROVIDE LARGER CIRCUIT WHERE INDICATED.
2. PROVIDE MINIMUM SIZE CONDUIT INDICATED IN THE SPECIFICATIONS OR ON THE DRAWINGS.
3. PROVIDE A 1-PHASE 3-WIRE CIRCUIT UNLESS DEVICE SERVED DOES NOT HAVE PROVISIONS FOR A NEUTRAL.
4. MINIMUM SIZE CONDUIT UNDERGROUND IS 4 INCH EXCEPT FOR SITE BRANCH CIRCUITS SUCH AS LIGHTING AND MISCELLANEOUS POWER AND SYSTEMS WHICH SHALL BE A MINIMUM OF 1 INCH.
5. PROVIDE TYPE OF RACEWAY OR CABLE AS INDICATED IN THE SPECIFICATIONS OR ON THE DRAWINGS.
6. CONDUIT AND WIRE SIZES SHOWN IN SCHEDULE ABOVE ARE BASED ON MAXIMUM CIRCUIT LENGTH OF 150'. CONDUIT AND WIRE SIZES FOR CIRCUITS OVER 150' SHALL BE BASED ON THE NEXT AMERICAN WIRE GAUGE SIZE.

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	MODEL	LAMP WATTAGE	VOLTAGE	REMARKS
A	LIGHTOLIER	LLABS	10 W	120 V	TRACK LIGHTING SPOT LIGHT HEAD WITH 600 LUMENS, 3000K COLOR TEMP, 36 DEGREE FLOOD REFLECTOR BLACK FINISH ACCESSORY HOLDER FOR COMPATIBLE DIFFUSION FILTERS, DIMMING COMPATIBLE WITH SPECIFIED CONTROLS, RF REFLECTOR, SOLITE SOFT FOCUS LENS, ENERGY STAR RATED, 5 YEAR WARRANTY.
B	BASELITE	UL422	28 W	120 V	RLM PENDANT WITH 22" DIAMETER UPLIGHT SHADE, MATTE BLACK FINISH, 48" STEM MOUNT (VERIFY EXACT LENGTH WITH ARCHITECT), 25W LED SOURCE, 0-10V DIMMING.
C	HAFELE	LOOX LED 2029	11 W	120 V	45" SURFACE MOUNT LED STRIP LIGHT WITH LINKABLE CABLE, 90 CRI, 3000K COLOR TEMPERATURE, CLEAR ANODIZED ALUMINUM HOUSING WITH MILK LENS. EACH ROW OF FOUR PROVIDE ONE 60W DRIVER AND ONE 0-10V DIMMING INTERFACE MODULE. MUST BE COMPATIBLE WITH NLIGHT CONTROLS INDICATED. (ALTERNATE LENGTHS OF FIXTURE CAN BE USED TO ACCOMMODATE EXISTING FIELD CONDITIONS, AS LONG AS TOTAL LENGTH OF EACH RUN IS MAINTAINED AND SUM TOTAL WATTAGE OF THIS FIXTURE TYPE IS NOT INCREASED.)
D	GOTHAM	EVO6	22 W	120 V	6" DIAMETER OPEN ROUND DOWNLIGHT WITH 2000 LUMEN OUTPUT, WET LOCATION LISTED, 85 CRI, MEDIUM DISTRIBUTION, WHITE REFLECTOR AND FLANGE, SELF-FLANGED, SEMI-SPECULAR FINISH
EM	ISOLITE	BUG6	8 W	120 V	6 WATT DUAL HEAD LED EMERGENCY LIGHT WITH SELF DIAGNOSTICS
F	LITHONIA	ZL1D	40 W	120 V	4' SUSPENDED LED STRIP LIGHT WITH 5000 LUMENS, 80 CRI, DROP LENS, WHITE HOUSING. COORDINATE MOUNTING LOCATION IN FIELD TO AVOID CONFLICTS AND PROVIDE CHAIN OR CABLE MOUNTING AS REQUIRED FOR EACH LOCATION.
TL1	LIGHTOLIER	L650	400 W	120 V	STEM MOUNTED TRACK LIGHTING SYSTEM COMPATIBLE WITH SPECIFIED TRACK HEADS. PROVIDE MOUNTING KITS, FEED CONNECTORS, STEM EXTENSION KITS, "L" AND "T" CONNECTORS AS REQUIRED. PROVIDE WITH BLACK FINISH ON ALL COMPONENTS. COORDINATE EXACT LENGTH, CONFIGURATION, AND MOUNTING STEM LOCATIONS WITH ARCHITECT. PROVIDE TRACK LENGTHS AS REQUIRED. ENTIRE SYSTEM MUST BE WIRED THROUGH A SINGLE 480W POWER LIMITER WITH AN INTEGRAL 4A CIRCUIT BREAKER. INSTALL POWER LIMITER IN CLEARLY VISIBLE LOCATION WITH EASY ACCESS TO RESET SWITCH.
X	ISOLITE	RL-EM	5 W	120 V	UNIVERSAL MOUNT EXIT SIGN WITH WHITE HOUSING, RED FACE, SELF-DIAGNOSTICS, NI-CAD BATTERY BACKUP, DAMP LISTED, UNIVERSAL FACE PLATES.

Branch Panel: GP1

Location: Gallery 101
Supply From: EXISTING
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 22 KAIC
Mains Type: MLO
Mains Rating: 225 A

Notes:

Circuit breaker trip ratings for RELOCATED EXISTISTING circuits are shown for reference only and must be provided to match existing circuit breaker ratings, AS VERIFIED BY electrical contractor in the field. Circuits no longer in use shall be replaced with new 20A/1P spare breaker, and labeled accordingly.

CKT	Circuit Description	Type	Trip	Poles	A		B		C		Poles	Trip	Type	Circuit Description	CKT
1	EXISTING CIRCUIT - RELOCATED	--	15 A	1	0.0	0.0					1	20 A	--	EXISTING CIRCUIT - RELOCATED	2
3	EXISTING CIRCUIT - RELOCATED	--	15 A	1			0.0	0.0			1	20 A	--	EXISTING CIRCUIT - RELOCATED	4
5	EXISTING CIRCUIT - RELOCATED	--	15 A	1					0.0	0.0	1	15 A	--	EXISTING CIRCUIT - RELOCATED	6
7	EXISTING CIRCUIT - RELOCATED	--	15 A	1	0.0	0.0					1	20 A	--	EXISTING CIRCUIT - RELOCATED	8
9	EXISTING CIRCUIT - RELOCATED	--	20 A	1			0.0	0.0			1	20 A	--	EXISTING CIRCUIT - RELOCATED	10
11	EXISTING CIRCUIT - RELOCATED	--	20 A	1					0.0	0.0	1	20 A	--	EXISTING CIRCUIT - RELOCATED	12
13	EXISTING CIRCUIT - RELOCATED	--	20 A	1	0.0	0.0					1	15 A	--	EXISTING CIRCUIT - RELOCATED	14
15	RCPT - Bath 102 & Storage 103		20 A	1			0.5	0.4			1	20 A		RCPT - Gallery 101	16
17	Baseboard Heater - Bath 102		20 A	2					0.4	0.7	1	20 A		Gallery Lighting	18
19					0.4	0.1					1	20 A		Call For Aid - Bath 102	20
21	RCPT		20 A	1			0.2	0.2			1	20 A		RCPT	22
23	Baseboard Heater - Bath 102		15 A	1					1.0	0.2	1	20 A		RCPT	24
25	RCPT - Sump Pump		20 A	1	0.9	0.2					1	20 A		RCPT - Projector	26
27	RCPT - EXTERIOR		20 A	1			0.2	0.2			1	20 A		RCPT - EXTERIOR	28
29	RCPT - EXTERIOR		20 A	1					0.2	0.2	1	20 A		RCPT - EXTERIOR	30
31	RCPT - EXTERIOR		20 A	1	0.2	0.2					1	20 A		RCPT - EXTERIOR	32
33	Spare	--	20 A	1			0.0	0.0			1	20 A	--	Spare	34
35	Spare	--	20 A	1					0.0	0.0	1	20 A	--	Spare	36
37	Spare	--	20 A	1	0.0	0.0					1	20 A	--	Spare	38
39	Spare	--	20 A	1			0.0	0.0			1	20 A	--	Spare	40
41	Spare	--	20 A	1					0.0	0.0	1	20 A	--	Spare	42
			Total Load:		1.9 kVA		1.6 kVA		2.6 kVA						
			Total Amps:		16.1 A		13.5 A		22.3 A						

Legend:
Blank = Standard, AFI = Arc Fault Circuit Interrupter, GFI = Ground Fault Circuit Interrupter, EPD = Equipment Protection Device, ST = Shunt Trip Circuit Breaker, HACR = Heating, Air Conditioning, Refrigeration Circuit Breaker

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Motor	876 VA	125.00%	1,095 VA		
Other	1,100 VA	100.00%	1,100 VA	**Total Conn. Load:**	6,146 VA
MTR	750 VA	125.00%	938 VA	**Total Est. Demand:**	6,733 VA
RCPT	2,700 VA	100.00%	2,700 VA	**Total Conn.:**	17.1 A
LITES	720 VA	125.00%	900 VA	**Total Est. Demand:**	18.7 A

Notes:

WIRING LEGEND:

1. CAT-5E NLIGHT CONTROL WIRING
2. (2) #12 AWG, (1) #12 AWG GROUND (SWITCHED HOT/NEUTRAL) AND (2) #18 AWG (0-10V +/-)
3. (2) #12 AWG, (1) #12 AWG GROUND TO POWER FEED INDICATED ON FLOOR PLANS.

GENERAL NOTES:

1. PROVIDE ALL POWER PACKS AS SHOWN. POWER PACKS NOT SHOWN ON PLANS.
2. BASIS OF DESIGN IS ACUITY NLIGHT.
3. PROVIDE FACTORY ENGRAVING ON ALL WALL SWITCHES AND ROOM CONTROLLER BUTTONS AS INDICATED.
4. PROVIDE FACTORY COMMISSIONING OF ALL SENSORS, PHOTOCELLS AND CONTROLS.
5. REFER TO FLOOR PLANS FOR EXACT LIGHTING FIXTURES ON EACH ZONE, AND QUANTITY AND LOCATION OF ALL DEVICES.
6. ROOM OCCUPANCY SENSORS SHALL BE SET FOR AUTOMATIC ON OF TYPE "A" AND TYPE "B" FIXTURES, BUT SHALL DISABLE ALL FIXTURES AFTER TIME DELAY. TIME DELAY SHALL BE SET AT 30 MINUTES.
7. PROVIDE 4 HOURS OF TRAINING TO OWNER.
8. ALL WIRING TO BE INSTALLED IN CONDUIT PER THE SPECIFICATIONS.

3 LIGHTING CONTROLS DETAIL
NTS

5 PENDANT FIXTURE DETAIL
NTS

2 TYPICAL CALL FOR AID WIRING DETAIL
NTS

NOTES:

1. PROVIDE SENSOR WITH POWER PACK. POWER PACK NOT SHOWN ON PLANS.
2. SEQUENCE OF OPERATION:
   A. 100% AUTO-ON WHEN OCCUPANCY IS DETECTED BY CEILING SENSOR(S). REFER TO FLOOR PLANS FOR QUANTITY AND LOCATIONS.
   B. AUTO-OFF AFTER 30 MINUTES OF UNOCCUPIED SPACE.

4 STANDALONE OCCUPANCY SENSOR DETAIL
NTS

NOTES:

1. 4" STEEL PIPE MAXIMUM (REFER TO FLOOR PLANS FOR SIZE REQUIREMENTS).
2. 6" DIA. OPENING (MAX) WITH STEEL SLEEVE.
3. SLEEVE: 4" OF 4PCF MINERAL WOOL IN OPENING.
4. APPLY FIRE STOP SEALANT THICKNESS MANUFACTURE'S INSTALLATION INSTRUCTIONS. APPLY SEALANT OVER MINERAL WOOL ON EACH SIDE OF PENETRATION.

1 CONDUIT/SLEEVE WALL & FLOOR PENETRATION DETAILS
NTS

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ELECTRICAL DETAILS AND SCHEDULES

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ABBREVIATIONS

AC	AIR COMPRESSOR
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AMB	AMBIENT
APROX	APPROXIMATE
AS	AIR SEPERATOR
ATC	AUTOMATIC TEMPERATURE CONTROL
AVG	AVERAGE
AWT	AVERAGE WATER TEMPERATURE
BAS	BUILDING AUTOMATION SYSTEM
BDD	BACK DRAFT DAMPER
BFW	BOILER FEED WATER
BHP	BRAKE HORSEPOWER
BMS	BUILDING MANAGEMENT SYSTEM
BTUH	BRITISH THERMAL UNITS PER HOUR
CC	COOLING COIL
CD	CONDENSATE DRAIN
CDR	CONDENSER WATER RETURN
CDS	CONDENSER WATER SUPPLY
CFM	CUBIC FEET PER MINUTE
CFP	CHEMICAL FEED PUMPS
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CLG	CEILING
CO	CLEANOUT
CO2	CARBON DIOXIDE
COMP	COMPRESSOR
COND	CONDENSER
CONV	CONVECTOR
CP	CONDENSATE PUMP
CPU	CENTRAL PROCESSING UNIT
CT	COOLING TOWER
CU	CONDENSING UNIT
CU FT	CUBIC FEET
CUH	CABINET UNIT HEATER
CV	COEFFICIENT, VALVE FLOW
CV	CONSTANT VOLUME
D	DEPTH
DB	DRY BULB TEMPERATURE
dB	DECIBEL
DEG or °	DEGREE
DIA or Ø	DIAMETER
DN	DOWN
DP	DIFFERENTIAL PRESSURE
DWG	DRAWING
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EBB	ELECTRIC BASEBOARD RADIATION
EDR	EQUIVALENT DIRECT RADIATION
EF	EXHAUST FAN
EFF	EFFICIENCY
ELEC	ELECTRICAL
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EVAP	EVAPORATOR
EWB	ENTERING WET BULB TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
F	FAHRENHEIT
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FD	FLOOR DRAIN
FD/SB	FIRE DAMPER WITH INTEGRAL SECURITY BARS
FM	FLOW METER
FOB	FLAT ON BOTTOM
FOF	FUEL OIL FILL
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOT	FLAT ON TOP
FOV	FUEL OIL VENT
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOOR SINK
FSD	FIRE/SMOKE DAMPER
FT	FOOT OR FEET
G	GAS
GA	GAUGE
GAL	GALLONS
GND	GROUND
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRAINS
H	HEIGHT
H/C	HEATING/COOLING
HC	HEATING COIL
HD	HEAD
HP	HORSEPOWER
HPC	HIGH PRESSURE CONDENSATE
HPG	HIGH PRESSURE GAS
HPS	HIGH PRESSURE STEAM
HR	HOUR(S)
HT	HEAT
HTHW	HIGH TEMPERATURE HOT WATER

ABBREVIATIONS

HTHWR	HIGH TEMPERATURE HOT WATER RETURN
HTHWS	HIGH TEMPERATURE HOT WATER SUPPLY
HTR	HEATER
HUM	HUMIDIFIER
HV	HEATING/VENTILATION UNIT
HW	HOT WATER
HWR	HOT WATER RETURN
HWRP	HOT WATER RETURN PUMP
HWRR	HOT WATER REVERSE RETURN
HWS	HOT WATER SUPPLY
HX	HEAT EXCHANGER
HZ	FREQUENCY (CYC, PER SEC.)
ID	INSIDE DIAMETER
IN	INCHES
IN WG	INCHES OF WATER, GAUGE (PRESS.)
IW	INDIRECT WASTE
KEF	KITCHEN EXHAUST FAN
KW	KILOWATT
L	LENGTH
LA	LABORATORY COMPRESSED AIR
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LBS/HR	POUNDS PER HOUR
LF	LINEAR FEET
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
LV	LABORATORY VACUUM
LWT	LEAVING WATER TEMPERATURE
MA	MIXED AIR
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MBH	BTU PER HOUR (THOUSAND)
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MFR	MANUFACTURER
MH	METAL HALIDE
MIN	MINIMUM
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
N2	NITROGREN
N2O	NITROUS OXIDE
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
N.T.S.	NOT TO SCALE
N/A	NOT APPLICABLE
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
OA	OUTSIDE AIR
PCD	PUMPED CONDENSATE DRAIN (COOLING)
PCR	PUMPED CONDENSATE RETURN (STEAM)
PD	PRESSURE DROP
PH or Ø	PHASE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
RA	RETURN AIR
RG	REFRIGERANT GAS
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RHG	REFRIGERANT HOT GAS
RL	REFRIGERANT LIQUID
RM	ROOM
RPD	REDUCED PRESSURE DEVICE
RPM	REVOLUTIONS PER MINUTE
RTU	ROOFTOP UNIT
S&R	SUPPLY AND RETURN
SA	SUPPLY AIR
SCP	STEAM CONDENSATE PUMP
SD	SMOKE DAMPER
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
T'STAT	THERMOSTAT
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UH	UNIT HEATER
V	VOLTAGE
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VEL	VELOCITY
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
VOL	VOLUME
W	WATT
W	WIDTH
WB	WET BULB TEMPERATURE
WP	WEATHERPROOF
WPD	WATER PRESSURE DROP
WWM	WELDED WIRE MESH

HVAC SYMBOLS

	RECTANGULAR, FLAT OVAL OR ROUND AIR DUCT
	AIR DUCT WITH ACOUSTICAL LINING
	SUPPLY AIR DUCT UP
	SUPPLY AIR DUCT DOWN
	RETURN AIR DUCT UP
	RETURN AIR DUCT DOWN
	EXHAUST AIR DUCT UP
	EXHAUST AIR DUCT DOWN
	TURNING VANES
AD / AD	ACCESS DOOR
	FLEXIBLE DUCT CONNECTION
	CEILING SUPPLY DIFFUSERS
	CEILING RETURN / EXHAUST GRILLE
	HARD DUCTED DIFFUSER OR GRILLE WITH FULL SIZE BOTTOM TAKE-OFF
	DIRECTION OF SUPPLY OR OUTDOOR AIRFLOW
	DIRECTION OF RETURN OR EXHAUST AIRFLOW
	DOOR UNDERCUT
BDD	BACK DRAFT DAMPER
VD	VOLUME DAMPER
FD	FIRE DAMPER
FD/SB	FIRE DAMPER WITH INTEGRAL SECURITY BARS
FS	FIRE/SMOKE DAMPER
SD	SMOKE DAMPER SYSTEM AND ASSOCIATED DEVICES PER SPECIFICATIONS AND MEP DETAILS
M	MOTORIZED DAMPER
H	HUMIDIFIER TUBE/PANEL
XXX	SUPPLY PIPING, REFER TO ABBREVIATION LIST FOR DESIGNATION (XXX)
XXX	RETURN PIPING, REFER TO ABBREVIATION LIST FOR DESIGNATION (XXX)
DS	DUCT SMOKE DETECTOR WITH REMOTE INDICATING LIGHT AND TEST SWITCH
T	ROOM THERMOSTAT

FITTINGS AND VALVES

	BACKFLOW PREVENTOR
	STRAINER OR STRAINER WITH BLOW-DOWN VALVE HOSE END, CAP AND CHAIN
	PIPE ELBOW UP OR PIPE TEE UP
	PIPE ELBOW DOWN
	PIPE TEE DOWN
	TAKEOFF FROM BOTTOM OF MAIN PIPE
	TAKEOFF FROM TOP OF MAIN PIPE
	IN-LINE EXPANSION COMPENSATOR
	PIPE ANCHOR
	COMPANION FLANGE
	PIPE CAP OR CAPPED END OF PIPE
	UNION
	PIPE GUIDES
DUCT SIZING	
20x12	RECTANGULAR DUCT
20/12	FLAT OVAL DUCT
20"ø	ROUND DUCT

HVAC GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH CURRENT APPLICABLE CODES, ORDINANCES, THE REGULATORY AGENCIES HAVING JURISDICTION AND THE SPECIFICATIONS. THE SPECIFICATIONS MAY EXCEED THE REQUIREMENTS OF THE CODE, IN WHICH CASE, THE SPECIFICATION MUST BE FOLLOWED.
2. THE INTENT OF THESE DOCUMENTS IS FOR THE MEP TRADES TO FURNISH AND INSTALL COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS. THE SPECIFIED HVAC SYSTEM SHALL BE COMPLETE IN ALL RESPECTS; OPERATIONAL, TESTED, ADJUSTED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER.
3. THE TRADES SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS BEFORE SUBMITTING A BID. INFORMATION IS PROVIDED ON THE VARIOUS DRAWINGS, SCHEDULES, SPECIFICATIONS AND ALL OF THE VARIOUS DOCUMENTS IN THE BIDDING PACKAGE. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND FORM A TOTAL PROJECT DESIGN AND INFORMATION SOURCE FOR CONSTRUCTION PURPOSES.
4. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES BEFORE AND DURING CONSTRUCTION. ANY MODIFICATION TO THE EQUIPMENT LAYOUT, REQUIRED FOR INSTALLATION, IS TO BE PERFORMED UNDER THE CONTRACT AGREEMENT, AT NO ADDITIONAL COST. REFER TOP DETAILS, SCHEDULES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. THE CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES. THE DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL ARRANGEMENT OF EQUIPMENT AND PIPING. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF EQUIPMENT AND PIPING INSTALLATION WITH ALL THE TRADES BEFORE COMMENCING WORK.
6. EQUIPMENT SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS. WHEN EQUIPMENT MUST BE LOCATED ABOVE AN INACCESSIBLE CEILING (GYP BOARD OR EQUIVALENT), OR BEHIND A WALL, AN APPROPRIATE ACCESS DOOR SHALL BE PROVIDED. IF AN ACCESS DOOR IS REQUIRED, IT SHALL BE OF A RATING APPROPRIATE FOR THE WALL/CEILING IN WHICH IT IS TO BE INSTALLED. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF ACCESS PANELS FOR ALL VALVES AND DEVICES, REQUIRING ACCESS, WITH THE ARCHITECT. PRIOR TO INSTALLATION OF SUCH DEVICES OR OTHER APPURTENANCES.
7. WHERE A CONFLICT OCCURS BETWEEN THE DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
8. THIS CONTRACT SHALL INCLUDE ALL THE NECESSARY PIPING, FITTINGS, TRANSITIONS ETC. AS REQUIRED TO INSTALL PIPING AND EQUIPMENT, AND TO AVOID ANY CONFLICTS WITH OTHER TRADES AND THE BUILDING STRUCTURE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS HE MAKES AS A RESULT OF HIS FAILURE TO COORDINATE WITH OTHER TRADES OR BECOME FULLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES.
9. DO NOT INSTALL ANY PIPING OVER ELECTRICAL PANELS, TRANSFORMERS, SPECIAL EQUIPMENT, OR THROUGH ELECTRICAL ROOMS, DATA ROOMS, ELEVATOR MACHINE ROOM, STAIRWELL OR STAIRWELL WALLS THAT ARE NOT ASSOCIATED WITH OR SERVE THE RESPECTIVE ROOMS. COORDINATE THE LOCATION OF ELECTRICAL EQUIPMENT IN THE FIELD AND ADJUST AS NECESSARY.

HVAC DEMOLITION GENERAL NOTES

1. BEFORE SUBMITTING BID, THE CONTRACTORS SHALL VISIT THE JOB SITE AND BECOME FULLY FAMILIAR WITH THE EXISTING CONDITIONS AND THE DOCUMENTS OF OTHER TRADES UNDER WHICH THEIR WORK WILL BE ACCOMPLISHED. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS.
2. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE ANY DAILY INTERRUPTIONS OR SHUTDOWNS OF THE EXISTING SYSTEMS IN ADVANCE WITH OWNER'S DESIGNATED REPRESENTATIVE. THIS SHALL INCLUDE SERVICES INTERRUPTIONS, CONNECTIONS AND DISRUPTIONS EFFECTING OTHER TRADES (MECHANICAL AND ELECTRICAL). INCLUDE ALL WORK REQUIRED TO ALLOW PHASED CONSTRUCTION WHERE NECESSARY.
3. DEMOLITION DRAWINGS ARE STRICTLY DIAGRAMMATIC AND SHOW GENERAL ARRANGEMENT AND APPROXIMATE LOCATION OF EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT. IT IS NOT THE INTENT OF THESE DRAWINGS TO SHOW ALL EQUIPMENT, PIPING OR CONDUIT TO BE REMOVED. EQUIPMENT NOT BEING REUSED SHALL BE REMOVED, INCLUDING ALL ASSOCIATED HANGERS, SUPPORTS, PIPES, CONDUITS, WIRES, AND CONTROLS BACK TO THE POINT OF ORIGIN.
4. REFER TO THE ARCHITECTURAL DEMOLITION DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. THE FULL EXTENT OF THE DEMOLITION AND RECONSTRUCTION SCOPE OF WORK SHALL BE DETERMINED BY THE ENTIRE SET OF BID DOCUMENTS.
5. THE CONTRACTORS SHALL COORDINATE THE DEMOLITION SCOPE OF WORK WITH THE GENERAL CONTRACTOR'S OR CONSTRUCTION MANAGER'S PHASING SCHEDULE PRIOR TO COMMENCEMENT OF WORK. CARE MUST BE TAKEN SO AS NOT TO DESTROY, REMOVE OR DEMOLISH ANY EQUIPMENT, APPURTENANCES OR DEVICES INTENDED TO REMAIN. PROVIDE TEMPORARY SERVICES AND SYSTEM MODIFICATIONS TO ACCOMMODATE CONTINUOUS OPERATION OF ACTIVE SYSTEM.
6. THE LOCATION OF EXISTING HVAC SYSTEM SHOWN ON FLOOR PLANS, IS BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL FIELD VERIFY PRIOR TO COMMENCEMENT OF CONSTRUCTION, EXACT QUANTITY AND LOCATION(S) OF EXISTING EQUIPMENT, PIPING, DUCTWORK, ETC. TO BE REMOVED AND ADJUST AS NECESSARY.
7. ALL EQUIPMENT, AND ASSOCIATED PIPING INDICATED TO BE REMOVED OR RELOCATED, SHALL BE DISCONNECTED AND REMOVED, INCLUDING HANGERS AND OTHER COMPONENTS, UP TO NEAREST EXISTING ACTIVE MAIN OR BRANCH LINE AND CAPPED AS CLOSE TO THE ACTIVE LINE AS POSSIBLE. NO EQUIPMENT, PIPING, OR CONDUIT SHALL BE ABANDONED IN PLACE, UNLESS SPECIFICALLY NOTED.
8. ALL SYSTEMS TO BE REMOVED SHALL BE REMOVED BACK TO THE POINT OF SOURCE. THE CONTRACTOR SHALL VERIFY WHICH SYSTEMS MUST REMAIN ACTIVE TO SERVE ADJACENT SPACES DURING CONSTRUCTION. SHOULD THE CONTRACTOR ENCOUNTER, DURING DEMOLITION OF EXISTING WALLS OR CHASES, ANY PIPING OR CONDUIT WHICH MUST REMAIN ACTIVE, HE SHALL IMMEDIATELY GIVE NOTICE TO THE ENGINEER, GENERAL CONTRACTOR OR CONSTRUCTION MANAGER.
9. ALL SALVAGEABLE MATERIALS OR EQUIPMENT TO BE REMOVED SHALL BE TURNED OVER TO THE OWNER AT THE END OF EACH DAY. ITEMS REMOVED AND NOT REUSED OR CLAIMED BY THE OWNER SHALL BECOME PROPERTY OF THE TRADE CONTRACTOR AND SHALL BE TRANSPORTED FROM THE SITE. SITE STORAGE OF REMOVED ITEMS WILL NOT BE PERMITTED.
10. PROPERLY DISPOSE OF ALL DEMOLISHED EQUIPMENT IN COMPLIANCE WITH CODES AND REGULATIONS; THIS APPLIES TO HAZARDOUS MATERIALS AND CONTAMINATED ITEMS TO BE DEMOLISHED.
11. THE CONTRACTOR SHALL OBTAIN EXISTING MECHANICAL DRAWINGS FROM THE OWNER IF AVAILABLE TO HELP DETERMINE FULL SCOPE OF WORK.

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MECHANICAL GENERAL INFORMATION

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GENERAL

1. WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT, AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.

2. IT IS THE INTENTION OF THE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR FINISHED WORK, TESTED AND READY FOR OPERATION.

3. ITEMS AND SERVICES NOT SHOWN ON DRAWINGS OR SPECIFICATIONS BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.

4. WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS. PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH, DELIVER AND INSTALL ALL WORK AS REQUIRED BY JOB CONDITIONS. WHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

5. DRAWINGS ARE DIAGRAMMATIC AND INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUB-CONTRACTOR DOCUMENTS. IT IS THE INTENT OF THESE DOCUMENTS TO INCLUDE THE PROVISION AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS BY THE CONTRACTOR. GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED. THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES AND EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION. DO NOT SCALE DRAWINGS. CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS. DO NOT SCALE THE DRAWINGS.

6. PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT GENERAL CONDITIONS AND IN COORDINATION WITH ALL OTHER TRADES. ALL WORK SHALL BE DONE IN CONFORMANCE AND PROVISIONS OF ALL APPLICABLE ADOPTED LOCAL, STATE AND FEDERAL CODES AND LAWS.

   CODES AND STANDARDS:
   - CONNECTICUT BUILDING CODE AND ALL SUPPLEMENTS
   - IBC INTERNATIONAL BUILDING CODE
   - IEBC INTERNATIONAL EXISTING BUILDING CODE
   - IMC INTERNATIONAL MECHANICAL CODE
   - IMP INTERNATIONAL PLUMBING CODE
   - IECC INTERNATIONAL ENERGY CONSERVATION CODE
   - NEC NATIONAL ELECTRICAL CODE / NFPA 70
   - NFPA NFPA-101 FIRE SAFETY CODE
   - ICC/ANSI A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES

7. WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIALS, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, FEES, LICENSES, AND ADMINISTRATIVE TASKS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.

8. STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE.

9. THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND SPECIFICATIONS RELATING TO THE WORK OF ALL DIVISIONS AND TRADES AND BECOME FULLY FAMILIAR AND INFORMED AS TO THE EXTENT AND CHARACTER OF WORK REQUIRED, AND ITS RELATIONSHIP TO THE REQUIREMENTS OF THIS DIVISION. INCLUDE ALL SUCH REQUIREMENTS AS PART OF THIS MECHANICAL WORK.

10. BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL VISIT THE SITE, AND SHALL BECOME THOROUGHLY FAMILIAR WITH ALL CONDITIONS UNDER WHICH THE WORK WILL BE INSTALLED. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO BECOME FAMILIAR WITH THE SITE AND EXISTING BUILDING AND THE CONTRACT DOCUMENTS.

PERMITS AND FEES

1. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS; AND PAY ALL GOVERNMENT AND STATE SALES TAXES AND FEES WHERE APPLICABLE, AND OTHER COSTS, INCLUDING UTILITY CONNECTIONS OR EXTENSIONS IN CONNECTION WITH THE WORK, FILE ALL NECESSARY DRAWINGS, PREPARE ALL DOCUMENTS AND OBTAIN ALL NECESSARY APPROVALS OF ALL GOVERNMENTAL AND STATE DEPARTMENTS HAVING JURISDICTION, OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTIONS FOR HIS WORK, AND DELIVER A COPY TO THE OWNER'S REPRESENTATIVE BEFORE REQUEST FOR ACCEPTANCE AND FINAL PAYMENT FOR THE WORK. REFER TO THE SUPPLEMENTARY GENERAL CONDITIONS FOR INFORMATION ON WAIVING OF PERMIT FEES.

ALTERATION WORK AND DEMOLITION

1. ALL EQUIPMENT, DUCTWORK, PIPING, CONTROL DEVICES ETC... TO BE REMOVED, SHALL BE DISPOSED OF, TURNED OVER TO THE OWNER, OR SALVAGED AS DIRECTED BY THE OWNER. EQUIPMENT, DUCTWORK, PIPING, CONTROL DEVICES, ETC. SHALL NOT BE REMOVED FROM THE PREMISES WITHOUT THE OWNERS APPROVAL. REMOVE ALL EXISTING COMPONENTS REQUIRED TO MEET THE FUNCTIONAL INTENT OF THE DESIGN DRAWINGS.

2. NO DEAD ENDS SHALL BE LEFT ON ANY DUCTWORK AND PIPING SYSTEMS UPON COMPLETION OF WORK. ALL DUCTWORK AND PIPING BEING REMOVED SHALL BE PROPERLY VALVED AND CAPPED AT THE MAINS.

3. ALL SYSTEMS SHALL BE LEFT IN WORKING ORDER TO THE SATISFACTION OF THE OWNER UPON COMPLETION OF ALL NEW WORK.

4. CONDUCT SELECTIVE DEMOLITION WORK IN A MANNER THAT WILL MINIMIZE NEED FOR DISRUPTION OF NORMAL OPERATIONS IN OTHER AREAS OF THE BUILDING. PROVIDE MINIMUM OF 48 HOURS ADVANCE NOTICE TO OWNER OF DEMOLITION OR SYSTEM SHUTDOWN ACTIVITIES THAT WILL AFFECT NORMAL OPERATIONS IN THE BUILDING OR REQUIRE THE INTERRUPTION OF UTILITY SERVICES.

5. DRAINING OF PIPING SYSTEMS: WHERE EXISTING PIPING SYSTEMS REQUIRE DRAINING OF FLUIDS FROM EQUIPMENT AND PIPING, ALL DRAINAGE SHALL BE DIRECTED BY HOSE OR PIPE TO SUITABLE, FREE FLOWING DRAINS OR SUITABLE CONTAINERS. DO NOT ALLOW EXCESSIVE FLUID/WATER BUILDUP ON FLOORS OR SITE AREA. ENSURE THAT EXISTING DRAINS ARE KEPT CLEAR OF DEBRIS TO PREVENT BLOCKAGES.

6. CERTAIN ITEMS OF EXISTING EQUIPMENT AND PIPING OR DUCTWORK MAY BE INDICATED FOR REMOVAL, RELOCATION OR ABANDONMENT. ITEMS NOTED FOR REMOVAL SHALL BE DISCONNECTED AND DISPOSED OF BY THE CONTRACTOR OR TURNED OVER TO THE OWNER IF THE OWNER SO REQUESTS. IF INSTRUCTED TO DISPOSE OF ITEMS, THE CONTRACTOR SHALL REMOVE THE ITEMS FROM THE PREMISES AND DISPOSE OF THEM IN A SAFE, LEGAL AND RESPONSIBLE MANNER AND LOCATION. ITEMS NOTED FOR RELOCATION ARE INTENDED FOR REUSE IN ANOTHER LOCATION AS DESIGNATED ON THE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE THE MATERIAL FROM ITS PRESENT LOCATION, STORE THE MATERIAL IN A SAFE PLACE, AND REINSTALL THE MATERIAL IN ITS NEW LOCATION. QUESTIONS REGARDING THE SUITABILITY OF THE MATERIAL OR EQUIPMENT SHALL BE BROUGHT, IN WRITTEN FORM, TO THE ATTENTION OF THE OWNER/ENGINEER. ABANDONMENT SHALL BE DEFINED AS LEAVING IN PLACE ANY ITEM SO DESIGNATED AND SHALL INCLUDE PROPER PIPING OR DUCTWORK TERMINATION WITHIN ANY OCCUPIED OR OPEN AREA. ALL ABANDONED PIPES AND DUCTS SHALL BE DISCONNECTED AND CAPPED AT THEIR MAINS.

COORDINATION WITH OTHER DIVISIONS

1. ALL WORK SHALL BE CARRIED OUT IN CONJUNCTION WITH OTHER TRADES AND FULL COOPERATION SHALL BE GIVEN IN ORDER THAT ALL WORK MAY PROCEED WITH A MINIMUM OF DELAY AND INTERFERENCE. PARTICULAR EMPHASIS IS PLACED ON TIMELY INSTALLATION OF MAJOR APPARATUS AND FURNISHING OTHER CONTRACTORS, ESPECIALLY THE CONSTRUCTION MANAGER, WITH INFORMATION AS TO OPENINGS, CHASES, SLEEVES, BASES, INSERTS, EQUIPMENT LOCATIONS, PANELS, ETC., REQUIRED BY OTHER TRADES.

2. THE CONTRACTORS ARE REQUIRED TO EXAMINE ALL OF THE PROJECT DRAWINGS, INCLUDING THE SITE, ARCHITECTURAL, STRUCTURAL AND THOSE OF OTHER MECHANICAL AND ELECTRICAL TRADES AND MUTUALLY ARRANGE WORK SO AS TO AVOID INTERFERENCE WITH THE WORK OF OTHER TRADES AND / OR EXISTING SYSTEMS AND EQUIPMENT. IN GENERAL, DUCTWORK, HEATING PIPING, SPRINKLER PIPING AND DRAINAGE LINES TAKE PRECEDENCE OVER WATER, GAS AND ELECTRICAL CONDUITS. THE ENGINEER SHALL MAKE FINAL DECISIONS REGARDING THE ARRANGEMENT OF WORK WHICH CANNOT BE AGREED UPON BY THE CONTRACTORS.

3. WHERE THE WORK OF THE CONTRACTOR WILL BE INSTALLED IN CLOSE PROXIMITY TO OR WILL INTERFERE WITH WORK OF OTHER TRADES, THE CONTRACTORS WILL COOPERATE IN WORKING OUT SPACE CONDITIONS TO MAKE A SATISFACTORY ADJUSTMENT.

4. IF THE WORK UNDER A SECTION IS INSTALLED BEFORE COORDINATING WITH OTHER DIVISIONS OR SECTIONS OR SO AS TO CAUSE INTERFERENCE WITH WORK OF OTHER SECTIONS, THE NECESSARY CHANGES TO CORRECT THE CONDITION SHALL BE MADE BY THE CONTRACTOR CAUSING THE INTERFERENCE WITHOUT EXTRA CHARGE TO THE OWNER.

SHUT DOWNS

1. WHEN INSTALLATION OF A NEW SYSTEM REQUIRES THE TEMPORARY SHUTDOWN OF AN EXISTING OPERATING SYSTEM, THE CONNECTION OF THE NEW SYSTEM SHALL BE PERFORMED AT SUCH TIME AS DESIGNATED BY THE ENGINEER OR THE OWNER'S REPRESENTATIVE.

2. THE ENGINEER AND THE OWNER SHALL BE NOTIFIED OF THE ESTIMATED DURATION OF THE SHUTDOWN PERIOD AT LEAST THREE (3) DAYS IN ADVANCE OF THE DATE THE WORK IS TO BE PERFORMED.

3. WORK SHALL BE ARRANGED FOR CONTINUOUS PERFORMANCE WHENEVER POSSIBLE. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY LABOR, INCLUDING OVERTIME IF REQUIRED, TO ASSURE THAT EXISTING OPERATING SERVICES WILL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE NECESSARY CONNECTIONS.

ELECTRICAL CONNECTIONS

1. UNLESS OTHERWISE SPECIFIED, ALL WIRING SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH DIVISION 26.

2. ALL POWER WIRING SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 26 COMPLETE FROM POWER SOURCE TO MOTOR OR EQUIPMENT JUNCTION BOX INCLUDING POWER WIRING THROUGH THE STARTERS. ALL STARTERS NOT FACTORY MOUNTED ON EQUIPMENT SHALL BE MOUNTED UNDER THE SPECIFICATION SECTION FURNISHING THE STARTER.

3. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPERATURE CONTROL WIRING, INTERLOCK WIRING AND EQUIPMENT CONTROL WIRING FOR THE EQUIPMENT FURNISHED UNDER THIS DIVISION.

4. UNLESS OTHERWISE SPECIFIED, THE MECHANICAL CONTRACTOR SHALL FURNISH STARTERS AND/OR DISCONNECTS TO THE ELECTRICAL CONTRACTOR FOR EQUIPMENT PROVIDED. THE MECHANICAL CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR THE PROPER SIZED OVERLOAD HEATERS IN ALL STARTERS THAT HE FURNISHES.

SHOP DRAWINGS

1. PRIOR TO DELIVERY TO THE JOBSITE AND SUFFICIENTLY IN ADVANCE TO ALLOW THOROUGH REVIEW, THE CONTRACTOR SHALL SUBMIT, FOR REVIEW, DETAILED SHOP DRAWINGS OF ALL EQUIPMENT AND MATERIAL SPECIFIED IN EACH SECTION AND COORDINATED DUCTWORK LAYOUTS. ALL DUCTWORK SHOP DRAWINGS, AUTOMATIC TEMPERATURE CONTROLS AND ALL DIAGRAMS AND RISERS SHALL BE SUBMITTED IN HARD COPY FORMAT. NO MATERIAL OR EQUIPMENT MAY BE DELIVERED TO THE JOB SITE OR INSTALLED UNTIL THE CONTRACTOR HAS RECEIVED SHOP DRAWINGS FOR THE PARTICULAR MATERIAL OR EQUIPMENT WHICH HAVE BEEN PROPERLY REVIEWED.

2. SHOP DRAWINGS SHALL BE SUBMITTED WITHIN 30 DAYS AFTER AWARD OF CONTRACT BEFORE ANY MATERIAL OR EQUIPMENT IS PURCHASED. THE CONTRACTOR SHALL SUBMIT FOR REVIEW COPIES OF ALL SHOP DRAWINGS TO BE INCORPORATED IN THE MECHANICAL CONTRACT. REFER TO THE GENERAL CONDITIONS AND SUPPLEMENTARY GENERAL CONDITIONS FOR THE QUANTITY OF COPIES REQUIRED FOR SUBMISSION. WHERE QUANTITIES ARE NOT SPECIFIED, PROVIDE SEVEN (7) COPIES FOR REVIEW.

3. PROVIDE SHOP DRAWINGS FOR ALL DEVICES SPECIFIED ON DRAWINGS IN EQUIPMENT SCHEDULES AND FOR ALL SYSTEMS INCLUDING DUCTWORK, PIPING, CONTROLS, ETC., OR WHERE CALLED FOR ELSEWHERE IN THE SPECIFICATIONS. SHOP DRAWINGS SHALL INCLUDE MANUFACTURERS' NAMES, CATALOG NUMBERS, CUTS, WIRING AND PIPING DIAGRAMS AND OTHER SUCH DESCRIPTIVE DATA AS MAY BE REQUIRED TO IDENTIFY AND ACCEPT THE EQUIPMENT, CERTIFIED DIMENSIONAL DRAWINGS, ACCURATE LAYOUT AND ARRANGEMENT DRAWINGS, LOCATIONS AND SIZES OF ALL CONNECTIONS, AND EQUIPMENT WEIGHTS ALL PERFORMANCE DATA REQUIRED TO VERIFY THE EQUIPMENT'S SUITABILITY SHALL BE CLEARLY PRESENTED. A COMPLETE LIST IN EACH CATEGORY (EXAMPLE: ALL DIFFUSERS) OF ALL SHOP DRAWINGS, CATALOG CUTS, MATERIAL LISTS, ETC., SHALL BE SUBMITTED TO THE ENGINEER AT ONE TIME, NO CONSIDERATION WILL BE GIVEN TO A PARTIAL SHOP DRAWING SUBMITTAL.

   A. EQUIPMENT SHOP DRAWINGS SHALL CONTAIN FULL RANGE PERFORMANCE CURVES, GRAPHS, TABLES OR OTHER PERTINENT DATA WHICH CLEARLY INDICATES OPERATIONAL RANGE OF A GIVEN UNIT SIZE. COMPUTER GENERATEDPLOTTED CURVES OR INFORMATION, BASED SOLELY ON THE DESIGN PERFORMANCE, WILL NOT BE ACCEPTED.

   B. ALL SUBMITTALS OF EQUIPMENT FURNISHED WITH MOTORS SHALL CONTAIN A COMPLETE DESCRIPTION OF THE MOTOR'S OPERATING CHARACTERISTICS (HORSEPOWER, VOLTAGE, PHASE, SERVICE FACTOR) AND THE NAMEPLATE MOTOR EFFICIENCY.

   C. SHOP DRAWING SUBMITTAL SHEETS WHICH MAY SHOW ITEMS THAT ARE NOT BEING FURNISHED SHALL HAVE THOSE ITEMS CROSSED OFF IN INK TO CLEARLY INDICATE WHICH ITEMS WILL BE FURNISHED AND WHICH WILL NOT BE FURNISHED.

4. ACCEPTANCE RENDERED ON SHOP DRAWINGS SHALL NOT BE CONSIDERED AS A GUARANTEE OF MEASUREMENTS OR BUILDING CONDITIONS. WHERE DRAWINGS ARE REVIEWED, REVIEW DOES NOT MEAN THAT DRAWINGS HAVE BEEN CHECKED IN DETAIL; SAID APPROVAL DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITY OR NECESSITY OF FURNISHING MATERIAL OR PERFORMING WORK AS REQUIRED BY THE CONTRACT DRAWINGS AND SPECIFICATIONS. VERIFY AVAILABLE SPACE PRIOR TO SUBMITTING SHOP DRAWINGS. ACCEPTANCE OF SHOP DRAWINGS SHALL NOT APPLY TO QUANTITY NOR RELIEVE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLY WITH INTENT OF DRAWINGS AND SPECIFICATIONS.

AS-BUILT DRAWINGS

1. PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.

2. PROVIDE "AS-BUILT DRAWINGS" INDICATING IN A NEAT AND ACCURATE MANNER A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:

   A. INCLUDE ALL CHANGES AND AN ACCURATE RECORD, ON REPRODUCTIONS OF THE CONTRACT DRAWINGS OR APPROPRIATE SHOP DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND THE WORK INSTALLED.

   B. MAINS AND BRANCHES OF PIPING SYSTEMS, WITH VALVES AND CONTROL DEVICES LOCATED AND NUMBERED, CONCEALED UNIONS LOCATED, AND WITH ITEMS REQUIRING MAINTENANCE LOCATED (I.E. TRAPS, STRAINERS, EXPANSION COMPENSATORS, TANKS, ETC...) VALVE LOCATION DIAGRAMS, COMPLETE WITH VALVE TAG CHART.

   C. EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.

   D. APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.

   E. CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.

3. SUBMIT FOR REVIEW BOUND SETS OF THE REQUIRED DRAWINGS, MANUALS AND OPERATING INSTRUCTIONS.

4. SUBMIT A COMPLETE MAINTENANCE MANUAL OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.

HANGERS AND SUPPORT

1. SEISMIC RESTRAINT: PROVIDE SEISMIC RESTRAINT AND EXPANSION OF ALL MECHANICAL EQUIPMENT AND SYSTEMS IN ACCORDANCE WITH STATE AND LOCAL BUILDING CODE REQUIREMENTS. SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT INDICATING ALL NECESSARY COMPONENT CUTS, PLAN LOCATIONS AND CALCULATIONS FOR A COMPLETE SYSTEM.

2. PROVIDE ALL NECESSARY STRUCTURAL MEMBERS INCLUDING ADDITIONAL STRUCTURAL SUPPORT TO SUPPORT PIPING AND EQUIPMENT. HANGERS AND SUPPORTS SHALL BE OF AN APPROVED DESIGN NECESSARY TO SUPPORT DUCTWORK, PIPING EQUIPMENT AND TO KEEP IN PROPER ALIGNMENT AND PREVENT TRANSMISSION OF INJURIOUS THRUSTS AND VIBRATIONS. IN ALL CASES WHERE HANGERS, BRACKETS, ETC. ARE SUPPORTED FROM CONCRETE CONSTRUCTION. DO NOT WEAKEN CONCRETE OR PENETRATE WATERPROOFING. ALL HANGERS AND SUPPORTS SHALL BE CAPABLE OF SCREW ADJUSTMENT AFTER PIPING IS ERECTED. HANGERS SUPPORTING PIPING EXPANDING INTO LOOPS, BENDS, AND OFFSETS SHALL BE SECURED TO THE BUILDING STRUCTURE IN SUCH A MANNER THAT HORIZONTAL ADJUSTMENT PERPENDICULAR TO THE RUN OF PIPING SUPPORTED MAY BE MADE TO ACCOMMODATE DISPLACEMENT DUE TO EXPANSION. ALL SUCH HANGERS SHALL BE FINALLY ADJUSTED BOTH IN THE VERTICAL AND HORIZONTAL DIRECTION, AS REQUIRED. HANGERS IN CONTACT WITH COPPER OR BRASS PIPE SHALL BE DIELECTRIC, COMPATIBLE WITH COPPER AND BRASS ALLOY OR PROVIDED WITH FELT SLEEVE.

3. PROVIDE ADDITIONAL SUPPORT FOR DUCTWORK, PIPING AND EQUIPMENT WHEN DECK IS NOT CAPABLE OF SUPPORT.

4. BEAM CLAMPS - HANGERS SUPPORTED FROM STEEL SHALL BE CENTER LOADING BEAM CLAMPS FOR HANGERS SUPPORTING PIPING 2 INCHES FOR 2-1/2 INCHES AND LARGER, I BEAM CLAMPS SHALL BE FORGED STEEL. "C" CLAMPS ARE NOT TO BE USED.

5. PROVIDE AND INSTALL EXPANSION COMPENSATION FOR ALL PIPING. SUBMIT PLANS, CALCULATIONS AND EQUIPMENT DATA.

DUCTWORK

1. DUCTWORK SHALL BE FABRICATED FROM HOT-DIPPED GALVANIZED STEEL SHEET CONFORMING TO ASTM A653, WITH G60 COATING. EXHAUST DUCTWORK SERVING TOILET/SHOWER SPACES SHALL BE ALUMINUM SHEET ALLOY 3003-H14, ASTM B 209, ALUMINUM CONNECTORS AND BAR STOCK: ALLOY 6061-T6 OR OF EQUIVALENT STRENGTH.

2. MANUFACTURED METAL DUCTWORK AND FITTINGS SHALL BE BY LINDAB, SEMCO OR UNITED McGILL CORP. FLAT OVAL AND ROUND DUCTS: MACHINE MADE FROM SPIRAL LOCKSEAM DUCT WITH LIGHT REINFORCING CORRUGATIONS; FITTINGS MANUFACTURED OF AT LEAST TWO GAUGES HEAVIER THAN METAL DUCT.

3. FABRICATE, SUPPORT, INSTALL AND SEAL IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, AND AS INDICATED. PROVIDE DUCT MATERIAL, GAUGES, REINFORCING AND SEALING FOR OPERATING PRESSURES INDICATED.

4. INSULATED FLEXIBLE DUCTS SHALL BE FABRICATED FROM MULTIPLE LAYERS OF ALUMINUM LAMINATE SUPPORTED BY HELICALLY WOUND SPRING STEEL WIRE WITH FIBERGLASS INSULATION AND POLYETHYLENE VAPOR BARRIER. PRESSURE RATING SHALL BE 10 INCH W.G. POSITIVE AND 1.0 INCH W.G. NEGATIVE. FLEXIBLE DUCTS SHALL NOT PASS THROUGH WALLS NOR EXCEED 8 FEET IN LENGTH. SECURE TO DUCT TAP WITH CLAMP OR DRAWBAND. PROPERLY SUPPORT SO AS NOT TO SAG OR KINK.

5. JOINT SEALERS AND SEALANTS SHALL BE NON-HARDENING, WATER, MILDEW AND MOLD RESISTANT. MAXIMUM FLAME SPREAD OF 25, SMOKE DEVELOPED OF 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84.

6. PROVIDE AIR FOIL TURNING VANES WHEN RECTANGULAR ELBOWS MUST BE USED.

7. ACCESS DOORS SHALL BE PROVIDED UNDER THIS SECTION AS REQUIRED TO PROVIDE ACCESS TO FIRE AND SMOKE DAMPERS, CONTROLS, HUMIDIFIERS, COILS VALVES, ETC., WHICH ARE LOCATED IN DUCTS.

8. ON ALL AIR HANDLING EQUIPMENT INCLUDING AIR HANDLERS, ERV UNITS, UTILITY AND CABINET FANS, FURNISH AND INSTALL FLEXIBLE DUCT CONNECTORS TO ISOLATE FAN VIBRATION FROM THE DUCT SYSTEM. (EXCEPTION: AIR HANDLING UNITS WITH INTERNAL FAN VIBRATION ISOLATORS AND FLEXIBLE CONNECTORS INSTALLED BETWEEN FAN AND HOUSING.)

9. ACCESSORY DUCTWORK MATERIALS SUCH AS TAPES, SEALANTS, FASTENERS, ETC., SHALL COMPLY WITH NFPA 90A WITH A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED RATING OF 50, AND SHALL BE SMACNA AND UL APPROVED.

DUCTWORK INSULATION

1. FACED FIBERGLASS DUCT WRAP SHALL BE APPLIED EXTERNALLY TO ALL CONCEALED DUCTS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. DUCT WRAP TO BE 1.5 PCF DENSITY WITH K VALUE OF 0.27 AT 75 DEG F, EQUAL TO OWENS CORNING TYPE 100 OR EQUIVALENT.

2. APPLY RIGID BOARD INSULATION TO ALL EXPOSED DUCTWORK AND PLENUMS, ETC., BY USING MECHANICAL, WELD-TYPE PIN FASTENERS. FASTENERS SHALL BE SPOTTED NOT LESS THAN 3 INCHES FROM THE EDGE OF THE DUCT AND ON 12-INCH CENTERS THROUGHOUT THE AREA OF THE DUCT. RIGID BOARD INSULATION SHALL BE 6.0 PCF DENSITY WITH K VALUE OF 0.22 AT 75 DEG F, EQUAL TO OWENS CORNING TYPE 705 OR EQUIVALENT.

3. APPLY 1" ACOUSTICAL DUCT LINER AND LINER BOARD TO THE INSIDE OF DUCTS AND PLENUMS AS SPECIFIED AND AS CALLED FOR ON DRAWINGS. ACOUSTICAL LINER SHALL BE 2.0 PCF DENSITY WITH K VALUE OF 0.26 AT 75 DEG F, EQUAL TO MANVILLE PERMACOTE LINACOUSTIC-HP OR EQUIVALENT.

4. THE FOLLOWING DUCTS SHALL BE INSULATED WITH KRAFT FOIL FACED DUCT WRAP INSULATION IN SUFFICIENT THICKNESS TO MEET THE REQUIREMENTS OF THE 2015 INTERNATIONAL ENERGY CODE:

   A. ALL CONCEALED SUPPLY AIR AND RETURN AIR DUCTWORK ABOVE CEILINGS WHETHER LINED OR UNLINED.

   B. ALL OUTDOOR AIR DUCTWORK.

   C. ALL EXHAUST DUCTWORK ON COLD SIDE OF BACKDRAFT OR MOTORIZED DAMPERS.

5. PROVIDE 1" ACOUSTICAL DUCT LINER ON FIRST 10' OF SUPPLY AIR DISCHARGE AND RETURN AIR INLET DUCTS OF ALL AIR HANDLING UNITS.

DUCTWORK CLEANING AND SANITIZING

1. ALL DUCTWORK CLEANING AND SANITIZING SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE NACDA-ACR, ASSESSMENT, CLEANING AND RESTORATION OF HVAC SYSTEMS.

2. PROTECT EQUIPMENT WHICH MAY BE HARMED BY EXCESSIVE DIRT WITH FILTERS, OR BYPASS DURING CLEANING. PROVIDE ACCESS IN EXISTING AND NEW DUCTWORK AS REQUIRED FOR CLEANING PURPOSES.

3. CLEAN DUCT SYSTEMS WITH HIGH POWER VACUUM MACHINES. VACUUM DEVICES THAT EXHAUST AIR INSIDE BUILDING, INCLUDING HAND-HELD AND WET VACUUMS: EQUIPPED WITH HEPA FILTRATION WITH 99.97 PERCENT COLLECTION EFFICIENCY FOR MINIMUM 0.3 MICRON SIZE PARTICLES AND DOP TEST NUMBER.

4. COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS.

5. USE CLEANING METHODS RECOMMENDED BY NADCA ACR. DO NOT USE METHODS PROHIBITED BY NADCA ACR, OR THAT WILL DAMAGE HVAC COMPONENTS OR OTHER WORK, OR THAT WILL SIGNIFICANTLY ALTER THE INTEGRITY OF THE SYSTEM.

6. REPAIR OPENINGS CUT IN THE VENTILATION SYSTEMS SO THAT THEY DO NOT SIGNIFICANTLY ALTER THE AIRFLOW OR ADVERSELY IMPACT THE FACILITY'S INDOOR AIR QUALITY. RESEAL OPENINGS IN ACCORDANCE WITH NADCA STANDARD 05.

7. SUBMIT EVIDENCE THAT ALL PORTIONS OF THE SYSTEMS REQUIRED TO BE CLEANED HAVE BEEN CLEANED SATISFACTORILY.

8. DISPOSE OF DEBRIS OFF-SITE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS.

9. SURFACE TREATMENT - ANTI-MICROBIAL MATERIALS EPA REGISTERED SPECIFICALLY FOR USE ON NON-POROUS HVAC SYSTEM SURFACES. APPLY ANTI-MICROBIAL TREATMENTS AND COATINGS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN RECOMMENDATIONS AND EPA REGISTRATION LISTING.

REGISTERS, GRILLES AND DIFFUSERS

1. REGISTERS, GRILLES AND DIFFUSERS SHALL BE AS SCHEDULED ON THE DRAWINGS. FINISH SHALL BE AS SELECTED BY THE ARCHITECT.

2. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

3. CHECK LOCATIONS OF OUTLETS AND INLETS AND MAKE NECESSARY ADJUSTMENTS IN POSITION TO CONFORM WITH ARCHITECTURAL FEATURES, SYMMETRY AND LIGHTING ARRANGEMENT. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR LOCATIONS OF REGISTERS, GRILLS AND DIFFUSERS.

4. INSTALL DIFFUSERS TO DUCTWORK WITH AIR TIGHT CONNECTION. PAINT INSIDE OF DUCT CONNECTION TO REGISTERS AND DIFFUSERS BLACK FOR A DISTANCE OF 18" WHEREVER SHINY SHEETMETAL IS VISIBLE FORM THE OCCUPIED SPACE.

5. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFFS TO DIFFUSERS, GRILLES AND REGISTERS, DESPITE WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER, GRILLE OR REGISTER ASSEMBLY.

PIPING

HYDRONIC PIPING SYSTEMS - STEAM & STEAM CONDENSATE

1. ALL STEAM DISTRIBUTION PIPING SHALL BE SCHEDULE 40 STEEL WITH SCREWED FITTINGS UP TO 2" AND FLANGED FITTINGS AT 2-1/2" AND LARGER. STEAM CONDENSATE PIPING SHALL BE SCHEDULE 80 STEEL WITH SCREWED FITTINGS

2. PIPING INSTALLATION:

   A. INSTALL STEAM PIPING IN ACCORDANCE WITH THE REQUIREMENTS OF THE INTERNATIONAL MECHANICAL CODE REFERENCED HERE-IN AND ANSI B31.9.

   B. REMOVE SCALE AND DIRT ON INSIDE AND OUTSIDE OF PIPE BEFORE ASSEMBLY.

   C. AFTER COMPLETION, FILL, CLEAN AND TREAT, AND VENT AIR FROM SYSTEM.

   D. ROUTE PIPING IN AN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE, AND MAINTAIN GRADIENT. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS. SLEEVE PIPING PASSING THROUGH PARTITIONS, WALLS AND FLOORS. SLOPE PIPING AND ARRANGE TO DRAIN AT LOW POINTS.

3. ISOLATION VALVES SHALL BE FULL-PORT, IRON BODY BY NIBCO, MILWAUKEE OR CONBRACO.

4. LOW PRESSURE CONDENSATE

   A. PIPE: SCHEDULE 80 BLACK STEEL PIPE CONFORMING TO ASTM A53, WITH WELDED OR THREADED JOINTS.

   B. FITTINGS: ASTM A234 WROUGHT STEEL WELDING TYPE FITTINGS OR ASTM B16.

DEMOLITION DRAWING NOTES:

1. REMOVE EXISTING EXH. GRILLE AND CAP THE DUCT.
2. REMOVE EXISTING EXH. GRILLE AND REPLACE IT WITH NEW.
3. REMOVE EXISTING STEAM RADIATOR AND CAP PIPING AT MAINS.
4. EXISTING STEAM RADIATOR TO REMAIN, REPLACE EXISTING CONTROL VALVE AND STEAM TRAP.
5. EXISTING AIR HANDLING UNIT TO BE REPLACED WITH NEW.
6. EXISTING STEAM COIL TO REMAIN. REPLACE EXISTING CONTROL VALVE, STEAM TRAP & CONTROL WIRING WITH NEW.
7. REPLACE EXISTING THERMOSTAT AND ASSOCIATED CONTROL WIRING WITH NEW.

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Title:

GROUND FLOOR MECHANICAL DEMOLITION PLAN

Project Number: 2020.02	Issue Date: 07/24/20
Scale: 1/4" = 1'-0"	CAD file: MEP
Drawn By: DS	Checked By: RR

Revisions:

MD1.1

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AIR HANDLING UNIT SCHEDULE

TAG	MANUFACTURER	MODEL NO.	TYPE	FANS SUPPLY FLOW (CFM)	ESP (in-wg)	TSP (in-wg)	QTY	POWER (hp)	RPM	ELECTRICAL DATA MCA	MOCP	VOLT	PH	REMARKS
AHU-1	TRANE	GAM5B0C48M41EA	INDOOR / HORIZONTAL	1500	0.50	0	1	0.8	1050	0 A	15 A	208 V	1	

GENERAL NOTES / ACCESSORIES:

1. ACCEPTABLE MANUFACTURERS BY: DAIKIN & JCI
2. PROVIDE 7-DAY TRANE PROGRAMMABLE THERMOSTAT MODEL XL 824 TCONT824AS52DB, WITH 4.3" COLOR TOUGH SCREEN.
3. PROVIDE DUCT TRANSITIONS AS NECESSARY.
4. PROVIDE VIBRATION SPRING ISOLATORS.
5. MULTI SPEED FAN.
6. DOIUBLE WALL FOAMED CABINET.
7. FUSED 24V POWER.
8. 10-YEAR WARRANTY.

ELECTRIC BASEBOARD SCHEDULE

TAG	MANUFACTURER	MODEL NO.	BTU/HR	LENGTH	ELECTRICAL DATA WATTS	VOLT	PHASE	REMARKS
EBR-1	Q-MARK	CBD758	2,560	2' - 10"	750 W	208 V	1	

GENERAL NOTES / ACCESSORIES:

1. ACCEPTABLE MANUFACTURERS BY: INDEECO, MARKEL & BERKO.
2. PROVIDE WALL MOUNTED T'STAT.
3. COORDINATE COLOR SELECTION WITH ARCHITECT.

GENERAL NOTES:

1. REPAIR EXISTING STEAM BOILER CONTROLS, REPLACE IF NECESSARY.
2. AT THE END OF THE PROJECT ALL EQUIPMENT (INCLUDING BUT NOT LIMITED TO, BOILER, AIR HANDLING UNIT, STEAM COIL, STEAM RADIATORS AND CONTROLS) SHALL BE FULLY OPERATIONAL.
3. ALL TOILET ROOMS SHALL HAVE 3/4" UNDERCUT DOORS.
4. INSPECT EXISTING DUCTWORK INSULATION AND REPLACE IF NECESSARY.
5. ALL EXISTING SUPPLY AND RETURN DUCTWORK SHALL BE THOROUGHLY VACUUMED, CLEANED AND SANITIZED.
6. ALL EXISTING RADIATOR CONTROL VALVES SHALL BE REPLACED WITH NEW HONEYWELL THERMOSTATIC VALVES WITH INTEGRAL SENSORS.

HVAC DRAWING NOTES:

1. FURNISH AND INSTALL NEW AIR HANDLING UNIT, FILTER AND CONTROLS. PROVIDE DUCT TRANSITIONS AS NECESSARY.
2. PROVIDE VIBRATION SPRING ISOLATORS.
3. FURNISH AND INSTALL NEW PROGRAMMABLE THERMOSTAT AND NEW CONTROL WIRING.
4. EXISTING STEAM COIL TO REMAIN, REPLACE EXISTING CONTROL VALVE, STEAM TRAP AND CONTROLS WITH NEW WASH AND COMB EXISTING COIL.
5. EXISTING CAST IRON RADIATOR TO REMAIN, REPLACE CONTROL VALVE AND STEAM TRAP WITH NEW, RADIATOR SHALL BE CLEANED AND REPAINTED, COORDINATE COLOR SELECTION WITH ARCHITECT.
6. FURNISH AND INSTALL NEW 8"x8" EXHAUST GRILLE AS MANUFACTURED BY PRICE MODEL #630.
7. FURNISH AND INSTALL TAMPER PROOF THERMOSTAT LOCKING BOX.
8. REPLACE EXISTING RADIATOR CONTROL VALVES AND STEAM TRAPS IN PUBLIC TOILETS WITH NEW.

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GROUND FLOOR MECHANICAL PLAN

Project Number:	Issue Date:
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Scale:	CAD file:
1/4" = 1'-0"	MEP
Drawn By:	Checked By:
DS	RR

Revisions:

M1.1

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ABBREVIATIONS

A	GENERAL SERVICE COMPRESSED AIR
A/AMP	AMPERE
AC	AIR COMPRESSOR
ACU	AIR CONDITIONING UNIT(S)
AD	ACCESS DOORS
AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AMB	AMBIENT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
AS	AIR SEPARATOR
AV	ACID VENT (CHEMICAL)
AVTR	ACID VENT THRU ROOF
AW	ACID WASTE
BFW	BOILER FEED WATER
BHP	BRAKE HORSEPOWER
BSMT	BASEMENT
BTU	BRITISH THERMAL UNITS
BTUH	BRITISH THERMAL UNITS/HOUR
C	CONNDESATE
C/B	CIRCUIT BREAKER
CER/CEG	CEILING EXHAUST REG./GRILLE
CFM	CUBIC FEET PER MINUTE
CFP	CHEMICAL FEED PUMP
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CI	CAST IRON
CLG	CEILING
CLPS	CLEAN LOW PRESSURE STEAM
CMPS	CLEAN MEDIUM PRESSURE STEAM
CMV	CEILING MOUNTED VENTILATOR
CO	CLEANOUT
CO2	CARBON DIOXIDE
COMP	COMPRESSOR
CP	CONDENSATE PUMP
CRU	COMPUTER ROOM UNIT
CT	COOLING TOWER
CU FT	CUBIC FEET
CUH	CABINET UNIT HEATER
CV	COEFFICIENT, VALVE FLOW
CW	COLD WATER
D	DEPTH
dB	DECIBEL
DC	DIRECT CURRENT
DCV	DOUBLE CHECK VALVE
DE	DEIONIZED PROCESS WATER
DEG or °	DEGREE
DI	DISTILLED WATER
DIA	DIAMETER
DN	DOWN
DWBP	DOMESTIC WATER BOOSTER PUMP
DWG	DRAWING
EF	EXHAUST FAN
EFF	EFFICIENCY
EHC	ELECTRICAL HEATING CABLES
ELEC	ELECTRICAL
ELEV	ELEVATOR
ETP	ELECTRIC TRAP PRIMER
EUH	ELECTRIC UNIT HEATER
EVAP	EVAPORATOR
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXH	EXHAUST
EXP	EXPANSION
F	FAHRENHEIT
FA	FIRE ALARM
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FHC	FIRE HOSE CABINET
FM	FLOW METER
FP	FIRE PUMP
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOOR SINK
FT	FOOR OR FEET
FVC	FIRE VALVE CABINET
G	GAS
GA	GAUGE
GAL	GALLONS
GND	GROUND
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRU	GREASE RECOVERY UNIT
GW	GREASE WASTE
H	HEIGHT
HD	HEAD
HP	HORSEPOWER
HPG	HIGH PRESSURE GAS
HPS	HIGH PRESSURE STEAM
HR	HOUR(S)
HT	HEAT
HTR	HEATER
HUM	HUMIDIFIER
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HW	HOT WATER
HWR	HOT WATER RETURN

ABBREVIATIONS

HWRP	HOT WATER RETURN PUMP
HWS	HOT WATER SUPPLY
HX	HEAT EXCHANGE
ID	INSIDE DIAMETER
IEF	IN-LINE EXHAUST FAN
IN	INCHES
IN WG	INCHES OF WATER, GAUGE (PRESSURE)
IW	INDIRECT WASTE
JP	JOCKEY PUMP
KEF	KITCHEN EXHAUST FAN
KVA	KILOVOLT AMPERE
KW	KILOWATT
KWH	KITCHEN WATER HEATER
L	LENGTH
LA	LABORATORY COMPRESSED AIR
LAV	LAVATORY
LBS/HR	POUNDS PER HOUR
LF	LINEAR FEET
LG	LABORATORY GAS
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
LV	LABORATORY VACUUM
MA	MEDICAL COMPRESSED AIR
MAGP	MASTER ALARM GAS PANEL
MAX	MAXIMUM
MBH	BTU PER HOUR (THOUSAND)
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MPS	MEDIUM PRESSURE STEAM
MUAU	MAKE UP AIR UNIT
MV	MEDICAL VACUUM
N2	NITROGEN
N2O	NITROUS OXIDE
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
O	OXYGEN
OA	OUTSIDE AIR
OD	OUTSIDE DIAMETER
ORD	OVERFLOW ROOF DRAIN
ORL	OVERFLOW RAIN LEADER
P	POLE
PH / Ø	PHASE
PRESS	PRESSURE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RD	ROOF DRAIN
REF	ROOF EXHAUST FAN
RM	ROOM
RO	REVERSE OSMOSIS WATER
RPD/RPZ	REDUCED PRESSURE DEVICE
RPM	REVOLUTIONS PER MINUTE
RTU	ROOF TOP UNIT
RV	RADON VENT
RL	RAIN LEADER
S	SOIL
SAC	SHOP AIR COMPRESSOR
SCP	STEAM CONDENSATE PUMP
SEP	SEWAGE EJECTOR PUMP
SP	STATIC PRESSURE
SP	SUMP PUMP
SPEC	SPECIFICATION
SQ	SQUARE
SS	SOIL/STACK
ST	STORM
STD	STANDARD
SWH	STEAM WATER HEATER
TAG	IDENTIFICATION OF EQUIPMENT
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
TP	TRAP PRIMER
TW	TEMPERED WATER
TWR	TEMPERED WATER RETURN
TYP	TYPICAL
UH	UNIT HEATER
UR	URINAL
V	VENT
VAC	VACUUM
VEL	VELOCITY
VFC	VARIABLE FREQUENCY CONTROLLER
VIF	VERIFY IN FIELD
VOL	VOLUME
VTR	VENT THRU ROOF
W	WASTE
WC	WATER CLOSET
WG	WIREGUARD
WH	WALL HYDRANT (HOSE BIBB)
WHA	WATER HAMMER ARRESTER
WI	WIDTH
WP	WEATHERPROOF
WTG	WALL TRANSFER GRILLE
WV	WASTE AND VENT COMBINATION

PLUMBING SYMBOLS

	COLD WATER
	HOT WATER
	HOT WATER RECIRCULATING
	VENT
S	SOIL OR WASTE PIPE
RV	RADON VENT
WV	COMBINATION WASTE & VENT
GW	GREASE WASTE
IW	INDIRECT WASTE
ORL	OVERFLOW RAIN LEADER
RL	RAIN LEADER
ST	STORM DRAIN
CD	CONDENSATE DRAIN
G	GAS PIPE
	HEAT TRACED PIPE
M	WATER METER ASSEMBLY
G	GAS METER ASSEMBLY
	FLOOR DRAIN
	ROOF DRAIN
TP	TRAP PRIMER
ETP	ELECTRONIC TRAP PRIMER

FITTINGS AND VALVES

	BALL VALVE
	DIRECTION OF FLUID FLOW
	GATE VALVE
	BUTTERFLY VALVE
	CALIBRATED BALANCING VALVE
	GAS COCK
	CHECK VALVE
	PRESSURE REDUCING VALVE
	THERMOSTATIC MIXING VALVE
	SOLENOID VALVE
	DRAIN VALVE WITH HOSE END, CAP & CHAIN OR HOSE BIBB
	WALL HYDRANT
	PIPE DROP WITH VALVE
	TAKEOFF FROM TOP OF MAIN PIPE
	TAKEOFF FROM BOTTOM OF MAIN PIPE
	UNION
	PIPE ELBOW UP OR PIPE TEE UP
	PIPE ELBOW DOWN
	PIPE TEE DOWN
	WALL CLEANOUT OR BLIND FLANGE
	FLOOR CLEANOUT
	"P" TRAP
	STRAINER OR STRAINER WITH BLOW-DOWN VALVE HOSE END, CAP AND CHAIN
	BACKFLOW PREVENTER (2" AND SMALLER)
	BACKFLOW PREVENTER (2 1/2" AND LARGER)
	PUMP
	WATER HAMMER ARRESTOR
	2-WAY CONTROL VALVE
	3-WAY CONTROL VALVE
	PIPE CAP OR CAPPED END OF PIPE
	STEEL PENETRATION / PIPE SLEEVE
	PIPE GUIDES
	AIR VENT
	PRESSURE RELIEF SAFETY VALVE
A	AQUASTAT
T	TEMPERATURE SENSOR WITH SEPARABLE SOCKET IN IMMERSIBLE WELL
T	TEMPERATURE GAUGE WITH SEPARABLE SOCKET IN IMMERSIBLE WELL
T	THERMOMETER WITH SEPARABLE SOCKET IN IMMERSIBLE WELL
P	PRESSURE GAUGE
	FLEXIBLE CONNECTOR

PLUMBING GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH CURRENT APPLICABLE CODES, ORDINANCES, THE REGULATORY AGENCIES HAVING JURISDICTION AND THE SPECIFICATIONS. THE SPECIFICATIONS MAY EXCEED THE REQUIREMENTS OF THE CODE, IN WHICH CASE, THE SPECIFICATION MUST BE FOLLOWED.
2. THE INTENT OF THESE DOCUMENTS IS FOR THE MEP TRADES TO FURNISH AND INSTALL COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS. THE SPECIFIED PLUMBING SYSTEM SHALL BE COMPLETE IN ALL RESPECTS; OPERATIONAL, TESTED, ADJUSTED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER.
3. THE TRADES SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS BEFORE SUBMITTING A BID. INFORMATION IS PROVIDED ON THE VARIOUS DRAWINGS, SCHEDULES, SPECIFICATIONS AND ALL OF THE VARIOUS DOCUMENTS IN THE BIDDING PACKAGE. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND FORM A TOTAL PROJECT DESIGN AND INFORMATION SOURCE FOR CONSTRUCTION PURPOSES.
4. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES BEFORE AND DURING CONSTRUCTION. ANY MODIFICATION TO THE EQUIPMENT LAYOUT, REQUIRED FOR INSTALLATION, IS TO BE PERFORMED UNDER THE CONTRACT AGREEMENT, AT NO ADDITIONAL COST. REFER TOP DETAILS, SCHEDULES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. THE CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES. THE DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL ARRANGEMENT OF EQUIPMENT AND PIPING. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF EQUIPMENT AND PIPING INSTALLATION WITH ALL THE TRADES BEFORE COMMENCING WORK.
6. EQUIPMENT SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS, WHEN EQUIPMENT MUST BE LOCATED ABOVE AN INACCESSIBLE CEILING (GYP BOARD OR EQUIVALENT), OR BEHIND A WALL, AN APPROPRIATE ACCESS DOOR SHALL BE PROVIDED. IF AN ACCESS DOOR IS REQUIRED, IT SHALL BE OF A RATING APPROPRIATE FOR THE WALL/CEILING IN WHICH IT IS TO BE INSTALLED. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF ACCESS PANELS FOR ALL VALVES AND DEVICES, REQUIRING ACCESS, WITH THE ARCHITECT, PRIOR TO INSTALLATION OF SUCH DEVICES OR OTHER APPURTENANCES.
7. WHERE A CONFLICT OCCURS BETWEEN THE DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
8. THIS CONTRACT SHALL INCLUDE ALL THE NECESSARY PIPING, FITTINGS, TRANSITIONS, OFFSETS, ETC. AS REQUIRED TO INSTALL PIPING, EQUIPMENT, MAINTAINING PROPER CLEARANCES AND TO AVOID ANY CONFLICTS WITH OTHER TRADES, AND THE BUILDING STRUCTURE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS HE MAKES AS A RESULT OF HIS FAILURE TO COORDINATE WITH OTHER TRADES OR BECOME FULLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES.
9. DO NOT INSTALL ANY PIPING OVER ELECTRICAL PANELS, TRANSFORMERS, SPECIAL EQUIPMENT, OR THROUGH ELECTRICAL ROOMS, DATA ROOMS, ELEVATOR MACHINE ROOM, STAIRWELL OR STAIRWELL WALLS THAT ARE NOT ASSOCIATED WITH OR SERVE THE RESPECTIVE ROOMS. COORDINATE THE LOCATION OF ELECTRICAL EQUIPMENT IN THE FIELD AND ADJUST AS NECESSARY.
10. IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW INDIVIDUAL BRANCH PIPING TO EACH PLUMBING FIXTURE; ONLY THE BRANCH PIPING TO GROUPS OF FIXTURES IS INDICATED. EACH AND EVERY FIXTURE SHALL BE PROPERLY PIPED TO WATER, WASTE, AND VENT PIPING SYSTEMS. REFER TO THE PLUMBING SCHEDULES FOR INDIVIDUAL PIPE SIZES TO EACH FIXTURE.
11. PROVIDE PROPER PIPING SYSTEM IDENTIFICATION LABELS, SLOPES FOR DRAIN PIPING, CLEANOUTS, HANGERS, ETC. IN ACCORDANCE WITH THE PLUMBING CODE.
12. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION AND MOUNTING HEIGHTS OF PLUMBING FIXTURES OR EQUIPMENT. ALL SUCH EQUIPMENT AND EQUIPMENT COLORS AND FINISHES SHALL BE COORDINATED WITH THE ARCHITECT. MOUNTING HEIGHTS SHALL BE APPROVED BY THE ARCHITECT.
13. INSTALL WATER HAMMER ARRESTORS (WHA) AT ALL QUICK CLOSING VALVES (FLUSH VALVES, SOLENOID VALVES, ETC.); SIZE SHALL BE BASED ON FIXTURE UNITS PER PDI STANDARDS AND INSTALLED PER MANUFACTURER'S RECOMMENDATION.
14. ALL PIPING, DRAINS, STRAINERS, FAUCETS, FAUCET AERATORS, FILTERS, ETC. SHALL BE THOROUGHLY CLEANED AND FLUSHED IMMEDIATELY BEFORE PROJECT COMPLETION. PROVIDE CERTIFICATION ON CONTRACTOR'S LETTER HEAD THAT THIS WORK HAS BEEN COMPLETED.
15. DOMESTIC WATER DROPS AND RISERS INSTALLED IN EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF INSULATION AND THE LOCATION SHALL BE MADE INFILTRATION FREE.
16. BEFORE INSTALLATION, COORDINATE THE WORK WITH OWNER-FURNISHED EQUIPMENT, INCLUDING REQUIRED SERVICE CONNECTIONS, FACTORY START UPS AND INSTALLATION OF FIELD DEVICES.
17. PIPE ALL CONDENSATE DRAINS FROM MECHANICAL EQUIPMENT COOLING COILS, BY GRAVITY (INTERIOR AIR HANDLING UNITS, FAN COIL UNITS, AC UNITS, ETC.) TO FLOOR DRAINS, JANITOR'S SINKS OR OTHER APPROVED LOCATION THROUGH AN AIR GAP. EACH CONDENSATE DRAIN SHALL BE TRAPPED AT THE EQUIPMENT DRAIN OUTLET, REFER TO TRAP DETAILS ON DRAWINGS. COORDINATE EXACT LOCATION OF EQUIPMENT WITH THE HVAC CONTRACTOR AND ADJUST AS NECESSARY.
18. INSULATE ALL WASTE ABOVE SLAB RECEIVING CONDENSATE FROM EQUIPMENT INCLUDING "P" TRAPS AND BRANCH WASTE PIPING
19. ALL INDIRECT WASTE DRAINS SHALL BE PIPED TO FLOOR DRAINS, FUNNELS OR FIXED AIR GAP FITTINGS, THROUGH AIR GAP OR TO A SINK DRAIN TAILPIECE.
20. INSTALL TRAP PRIMERS OR TRAP GUARD SEALER FOR FLOOR DRAINS, HUB DRAINS AND FIXED AIR GAP FITTINGS, WHERE TRAP IS SUBJECT TO LOSS OF SEAL BY EVAPORATION, CONNECT TRAP PRIMER TO COLD WATER LINE. PROVIDE ISOLATION VALVES AND EXTEND SLOPED PRIMING LINE TO DRAIN TRAPS.
21. COORDINATE ALL PLUMBING EQUIPMENT REQUIRING POWER, FOR EXACT LOCATION AND POWER REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
22. ALL EXTERIOR EXPOSED GAS PIPING SHALL BE PRIMED AND PAINTED.
23. FLOOR MOUNTED PLUMBING EQUIPMENT SHALL BE INSTALLED ON A 6" CONCRETE HOUSE-KEEPING PAD. COORDINATE SIZE AND FINAL LOCATION OF ALL CONCRETE PADS WITH THE STRUCTURAL ENGINEER. PADS SHALL BE MINIMUM 6" LARGER THAN THE EQUIPMENT IN BOTH HORIZONTAL DIRECTIONS.
24. COORDINATE EXACT LOCATION OF PLUMBING SERVICES ENTERING THE BUILDING WITH THE SITE CONTRACTOR AND UTILITY DRAWINGS PRIOR TO INSTALLATION. COORDINATE ALL FOUNDATION WALL PENETRATIONS AND INVERT ELEVATIONS WITH THE GENERAL CONTRACTOR AND/OR CONSTRUCTION MANAGER BEFORE COMMENCING WORK.
25. SEISMICALLY SUPPORT THE EQUIPMENT AS REQUIRED BY CODE, THE AUTHORITY HAVING JURISDICTION, AND/OR AS SPECIFIED. SUBMIT ENGINEERED INSTALLATION DETAILS PER THE SPECIFICATIONS. THE CONTRACTOR'S SEISMIC ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A DETAILED REPORT FOR THE RECORD.
26. PROVIDE PIPE EXPANSION COMPENSATION FOR THE VARIOUS PIPING SYSTEMS. SUBMIT ENGINEERED DETAILS FOR APPROVAL AND VERIFY INSTALLATION IS IN ACCORDANCE WITH THE CODE. THE CONTRACTOR'S CONSULTING ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A REPORT OF THE FINDINGS.

PLUMBING DEMOLITION GENERAL NOTES

1. BEFORE SUBMITTING BID, THE CONTRACTORS SHALL VISIT THE JOB SITE AND BECOME FULLY FAMILIAR WITH THE EXISTING CONDITIONS AND THE DOCUMENTS OF OTHER TRADES UNDER WHICH THEIR WORK WILL BE ACCOMPLISHED. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS.
2. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE ANY DAILY INTERRUPTIONS OR SHUTDOWNS OF THE EXISTING SYSTEMS IN ADVANCE WITH OWNER'S DESIGNATED REPRESENTATIVE. THIS SHALL INCLUDE SERVICES INTERRUPTIONS, CONNECTIONS AND DISRUPTIONS EFFECTING OTHER TRADES (MECHANICAL AND ELECTRICAL). INCLUDE ALL WORK REQUIRED TO ALLOW PHASED CONSTRUCTION WHERE NECESSARY.
3. DEMOLITION DRAWINGS ARE STRICTLY DIAGRAMMATIC AND SHOW GENERAL ARRANGEMENT AND APPROXIMATE LOCATION OF EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT. IT IS NOT THE INTENT OF THESE DRAWINGS TO SHOW ALL EQUIPMENT, PIPING OR CONDUIT TO BE REMOVED. EQUIPMENT NOT BEING REUSED SHALL BE REMOVED, INCLUDING ALL ASSOCIATED HANGERS, SUPPORTS, PIPES, CONDUITS, WIRES, AND CONTROLS BACK TO THE POINT OF ORIGIN.
4. REFER TO THE ARCHITECTURAL DEMOLITION DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. THE FULL EXTENT OF THE DEMOLITION AND RECONSTRUCTION SCOPE OF WORK SHALL BE DETERMINED BY THE ENTIRE SET OF BID DOCUMENTS.
5. THE CONTRACTORS SHALL COORDINATE THE DEMOLITION SCOPE OF WORK WITH THE GENERAL CONTRACTOR'S OR CONSTRUCTION MANAGER'S PHASING SCHEDULE PRIOR TO COMMENCEMENT OF WORK. CARE MUST BE TAKEN SO AS NOT TO DESTROY, REMOVE OR DEMOLISH ANY EQUIPMENT, APPURTENANCES OR DEVICES INTENDED TO REMAIN. PROVIDE TEMPORARY SERVICES AND SYSTEM MODIFICATIONS TO ACCOMMODATE CONTINUOUS OPERATION OF ACTIVE SYSTEM.
6. THE LOCATION OF EXISTING PLUMBING SYSTEM SHOWN ON FLOOR PLANS, IS BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL FIELD VERIFY PRIOR TO COMMENCEMENT OF CONSTRUCTION, EXACT QUANTITY AND LOCATION(S) OF EXISTING EQUIPMENT, PIPING, PLUMBING FIXTURES, ETC. TO BE REMOVED AND ADJUST AS NECESSARY.
7. ALL EQUIPMENT, PLUMBING FIXTURES AND ASSOCIATED PIPING INDICATED TO BE REMOVED OR RELOCATED, SHALL BE DISCONNECTED AND REMOVED, INCLUDING HANGERS AND OTHER COMPONENTS, UP TO NEAREST EXISTING ACTIVE MAIN OR BRANCH LINE AND CAPPED AS CLOSE TO THE ACTIVE LINE AS POSSIBLE. NO EQUIPMENT, PIPING, OR CONDUIT SHALL BE ABANDONED IN PLACE, UNLESS SPECIFICALLY NOTED.
8. ALL SYSTEMS TO BE REMOVED SHALL BE REMOVED BACK TO THE POINT OF SOURCE. THE CONTRACTOR SHALL VERIFY WHICH SYSTEMS MUST REMAIN ACTIVE TO SERVE ADJACENT SPACES DURING CONSTRUCTION. SHOULD THE CONTRACTOR ENCOUNTER, DURING DEMOLITION OF EXISTING WALLS OR CHASES, ANY PIPING OR CONDUIT WHICH MUST REMAIN ACTIVE, HE SHALL IMMEDIATELY GIVE NOTICE TO THE ENGINEER, GENERAL CONTRACTOR OR CONSTRUCTION MANAGER.
9. ALL SALVAGEABLE MATERIALS OR EQUIPMENT TO BE REMOVED SHALL BE TURNED OVER TO THE OWNER AT THE END OF EACH DAY. ITEMS REMOVED AND NOT REUSED OR CLAIMED BY THE OWNER SHALL BECOME PROPERTY OF THE TRADE CONTRACTOR AND SHALL BE TRANSPORTED FROM THE SITE. SITE STORAGE OF REMOVED ITEMS WILL NOT BE PERMITTED.
10. PROPERLY DISPOSE OF ALL DEMOLISHED EQUIPMENT IN COMPLIANCE WITH CODES AND REGULATIONS; THIS APPLIES TO HAZARDOUS MATERIALS AND CONTAMINATED ITEMS TO BE DEMOLISHED.
11. ANY UNDERGROUND PIPING CALLED FOR TO BE ABANDONED IN PLACE SHALL BE DISCONNECTED FROM ACTIVE MAINS, DRAINED AND CAPPED AT BOTH ENDS.
12. THE CONTRACTOR SHALL VERIFY EXACT LOCATION AND INVERT ELEVATION OF EXISTING BURIED SANITARY, WASTE OR STORM PIPING PRIOR TO ANY EXCAVATION FOR NEW PIPING CONNECTION AND SHALL NOTIFY ENGINEER OF ANY PROBLEMS.
13. EXISTING PIPING SERVING PLUMBING FIXTURES OR OTHER EQUIPMENT INDICATED TO REMAIN, BUT ARE IN CONFLICT WITH NEW EQUIPMENT INSTALLATION, SHALL BE REMOVED AND REROUTED AS NECESSARY TO ACCOMMODATE THE NEW SYSTEM INSTALLATION
14. THE CONTRACTOR SHALL OBTAIN EXISTING PLUMBING DRAWINGS FROM THE OWNER IF AVAILABLE TO HELP DETERMINE FULL SCOPE OF WORK.

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PLUMBING GENERAL NOTES AND SYMBOL LIST

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GENERAL

1. IT IS THE INTENT OF THE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR FINISHED WORK, TESTED AND READY FOR OPERATION.

2. WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS. PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH, DELIVER AND INSTALL ALL WORK AS SPECIFIED AND AS REQUIRED BY JOB CONDITIONS. WHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND THE FOLLOWING SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

3. ITEMS AND SERVICES NOT SHOWN ON THE DRAWINGS OR STATED IN THE SPECIFICATIONS, BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.

4. DRAWINGS ARE DIAGRAMMATIC AND ARE NOT TO BE SCALED. DRAWINGS INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUBCONTRACTOR DOCUMENTS. IT IS THE INTENT OF THESE DOCUMENTS TO INCLUDE THE PROVISION AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS BY THE CONTRACTOR.

5. GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED.

6. THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES, EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION.

7. THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED AND PAY ALL APPLICABLE FEES. INCLUDED SHALL BE ANY UTILITY COST ASSOCIATED WITH ANY NEW OR MODIFIED SERVICES. CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS.

8. PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT'S GENERAL CONDITIONS AND IN COORDINATION WITH ALL OTHER TRADES. ALL WORK SHALL BE DONE IN CONFORMANCE AND PROVISIONS OF ALL APPLICABLE ADOPTED LOCAL, STATE AND FEDERAL CODES AND LAWS AS REFERENCED OR STATED.

   CONNECTICUT CODES AND STANDARDS:
   - INTERNATIONAL BUILDING CODE
   - INTERNATIONAL ENERGY CONSERVATION CODE WITH AMENDMENTS
   - INTERNATIONAL EXISTING BUILDING CODE
   - INTERNATIONAL MECHANICAL CODE
   - INTERNATIONAL PLUMBING CODE
   - NATIONAL ELECTRICAL CODE (NFPA 70)
   - 1CC/ANSI A117.1-2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES

9. WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIAL, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS,AND ADMINISTRATIVE TASKS/DUTIES REQUIRED TO COMPLETE AND MAKE OPERABLE WORK SHOWN ON THE DRAWINGS OR SPECIFIED HEREIN.

10. STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE.

SEISMIC RESTRAINTS

1. THE PROJECT IS IN A SEISMIC ZONE AND ALL WORK SHALL BE INSTALLED, SUPPORTED, AND SEISMICALLY RESTRAINED IN ACCORDANCE WITH CURRENT SEISMIC REQUIREMENTS.

COORDINATION

1. CONTRACTOR IS REQUIRED TO OBTAIN COMPLETE SETS OF THE CONTRACT DOCUMENTS FOR COORDINATION WITH ALL OTHER TRADES.

SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER INITIAL REVIEW AND APPROVAL, REVISED IF REQUIRED AND RESUBMITTED AS PER ENGINEER'S COMMENTS PRIOR TO CONSTRUCTION.

2. ACCEPTANCE OF DEVIATIONS OR SUBSTITUTIONS FROM BASE SPECIFIED ITEMS OR EQUIPMENT SHALL BE AT THE ENGINEERS DISCRETION. ANY CHANGES REQUIRED FOR ACCOMMODATION SHALL BE AT NO ADDITIONAL COST.

OWNER'S MANUAL AND AS-BUILT DRAWINGS

1. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE AN OWNER'S MANUAL WITH AS-BUILT DRAWINGS REFLECTING INSTALLED CONDITIONS.

2. THE OWNER'S MANUAL SHALL CONSIST OF ALL DOCUMENTATION PROVIDED AS SHOP DRAWINGS, MANUALS PACKED WITH EQUIPMENT AND COMPLETE PARTS BREAKDOWN WITH PART NUMBERS AND DIAGRAMS. THE OWNER'S MANUALS SHALL BE IN A THREE RING BINDER. PROVIDE NAMES AND PHONE NUMBERS OF SUPPLY HOUSES WHERE PARTS MAY BE PURCHASED.

3. AS-BUILT DRAWINGS SHALL CONSIST OF FIELD MARK-UPS TO THE CONSTRUCTION DRAWINGS AND INCLUDE ANY ADDITIONAL DETAILS TO CLEARLY REFLECT INSTALLED CONDITIONS. ANY ISSUED OR SUPPLEMENTAL SKETCHES OR DIRECTIVES SHALL BE INCORPORATED INTO THE FINAL CONSTRUCTION MARK-UPS.

4. CONTRACTOR SHALL MAINTAIN, ON-SITE, A FIELD MARK-UP SET OF DOCUMENTS WHICH SHALL BE KEPT CURRENT WITH ANY CHANGES FROM THE ORIGINAL CONTRACT DOCUMENTS. THESE MARK-UPS ARE TO BE PROVIDED AS AS-BUILT DRAWINGS FOR COMPARISONS.

BASES, HANGERS AND SUPPORTS

1. THE CONTRACTOR SHALL PROVIDE, OR CAUSE TO BE PROVIDED BY ANOTHER CONTRACTOR, ALL REQUIRED BASES AND SUPPORTS FOR PIPING AND EQUIPMENT PROVIDED UNDER THESE SPECIFICATIONS.

2. PROVIDE ADJUSTABLE CLEVIS HANGERS FOR ALL SINGLE RUN PIPING. WHERE REQUIRED, OVERSIZE TO ACCOMMODATE INSULATION TO PASS THROUGH. PROVIDE INSULATION SHIELDS. WHERE POSSIBLE, GROUP PIPING TO ALLOW TRAPEZE HANGERS TO BE USED.

3. PROVIDE ALL ANCHORS, INSERTS AND BEAM CLAMPS REQUIRED FOR HANGERS AND SUPPORTS. IF ADDITIONAL STRUCTURAL MEMBERS OR SUPPORTS ARE REQUIRED, THE CONTRACTOR IS TO COORDINATE WITH THE STRUCTURAL CONTRACTOR FOR PROVISION OF THESE MEMBERS. ALL PIPING AND EQUIPMENT IS TO BE SECURELY FASTENED TO THE BUILDING STRUCTURE IN AN ACCEPTABLE MANNER.

4. ALL PIPING PASSING THROUGH WALLS AND FLOORS SHALL BE SLEEVED. THE SLEEVES SHALL HAVE AN INSIDE DIAMETER 1" LARGER THAN THE PIPE AND INSULATION, IF INSULATED. INSULATION SHALL PASS CONTINUOUS THROUGH THE SLEEVE.

PIPE SEALS AND FIRE-STOPS

1. SEAL ALL PIPING PASSING THROUGH FIRE AND/OR SMOKE RATED PARTITIONS, WALLS AND FLOORS WITH A UL LISTED, APPROVED AND TESTED FIRE AND/OR SMOKE SEALING MATERIAL EQUIVALENT TO THE RATING OF THE WALL, PARTITION OR FLOOR. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR COMPATIBILITY WITH WALL AND FLOOR CONSTRUCTION.

2. FOR INTERIOR PARTITIONS, WALLS AND FLOORS, SLEEVES SIZED TO ALLOW INSULATION TO PASS THROUGH CONTINUOUS WITH A MAXIMUM 1" ANNULAR SPACE BETWEEN THE INSULATION AND SLEEVE. SLEEVES TO BE CUT SMOOTH AND INSTALLED FLUSH WITH FINISHED WALLS AND 2" ABOVE FINISHED FLOORS. FILL THE ANNULAR SPACE WITH UL SEALING MATERIAL.

EQUIPMENT ACCESSIBILITY

1. LOCATE ALL EQUIPMENT WHICH MUST BE SERVICED, OPERATED OR MAINTAINED IN FULLY ACCESSIBLE POSITION WITH ADEQUATE CLEARANCES TO PROVIDE SERVICE OR REPAIR.

2. ACCESS DOORS OR PANELS IN WALLS, CEILINGS OR FLOORS SHALL BE FIELD COORDINATED AND INSTALLED FOR ACCESS TO CONCEALED VALVES, EQUIPMENT OR DEVICES.

CLEANING AND PROTECTION AGAINST FOREIGN MATTER

1. THE JOBSITE SHALL BE KEPT CLEAN AT ALL TIMES. CAP EXPOSED PIPING AND COVER FLOOR DRAINS TO INSURE ADEQUATE PROTECTION AGAINST THE ENTRANCE OF FOREIGN MATTER.

2. AT COMPLETION OF THE PROJECT, ALL EQUIPMENT, FIXTURES, ETC. SHALL BE CLEANED.

OPERATING INSTRUCTIONS

1. UPON THE COMPLETION OF ALL WORK, TESTING AND ADJUSTING THE CONTRACTOR SHALL FURNISH PERSONNEL TO INSTRUCT THE OWNER'S REPRESENTATIVES IN THE OPERATION, ADJUSTMENT AND MAINTENANCE OF THE EQUIPMENT AND SYSTEMS FURNISHED.

GUARANTEES

1. IN ADDITION TO THE CONTRACTOR'S GUARANTEE, PROVIDE ALL APPLICABLE EXTENDED GUARANTEES FOR EQUIPMENT.

PLUMBING PIPING INSULATION

1. PROVIDE 1" GLASS FIBER INSULATION FOR ALL NEW COPPER PIPING (HOT AND COLD WATER), INCLUDES INSULATION FOR FITTINGS AND VALVES.

2. INSULATION TO BE AS MANUFACTURED BY KNAUF, MANVILLE, OWENS-CORNING OR CERTAIN-TEED.

3. INSULATION TO HAVE A "K" VALUE OF 0.24 AT 75°F, FLAME SPREAD/SMOKE OF 5/50, MAX. 850°F RATING, VAPOR BARRIER WHITE KRAFT PAPER WITH GLASS FIBER YARN BONDED TO ALUMINIZED FILM.

3. AT ALL FITTINGS AND VALVES PROVIDE PRE-MOLDED PVC JACKET BY ZESTON.

4. BEFORE INSTALLING INSULATION, ALL REQUIRED PIPING IS TO BE TESTED AND APPROVED.

5. INSULATION IS TO PASS CONTINUOUSLY THROUGH HANGERS, WALLS, SLEEVES AND OTHER PIPE PENETRATIONS.

PLUMBING PIPING

1. PIPING MATERIAL SHALL BE AS FOLLOWS:

   A. SANITARY/WASTE PIPING ABOVE AND BELOW FLOOR SLAB - CAST IRON, HUBLESS, NEOPRENE GASKET, STAINLESS STEEL HEAVY DUTY CLAMP AND SHIELD COUPLING. CISPI 301.

   B. VENT PIPING ABOVE AND BELOW FLOOR SLAB - CAST IRON, HUBLESS, NEOPRENE GASKET, STAINLESS STEEL HEAVY DUTY CLAMP AND SHIELD COUPLING, CISPI 301.

   C. WATER PIPING - COPPER, TYPE L, ASTM B88, SOLDER OR PRESS CONNECTIONS.

   D. BALL VALVES SHALL BE BRONZE, TWO PIECE, FULL PORT, EXTENDED LEVER HANDLE FOR INSULATION, CLASS 150-400 PSI WOG, AS MANUFACTURED BY MILWAUKEE, NIBCO OR APOLLO.

2. NO PIPING SHALL BE COVERED UNTIL TESTED AND APPROVED BY THE AUTHORITIES HAVING JURISDICTION.

3. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR CONNECTED EQUIPMENT.

4. CONCEALED PIPING AND ACCESSORIES SHALL BE ARRANGED TO USE THE MINIMUM AMOUNT OF ACCESS DOORS AND PANELS.

5. PIPING SHALL BE RUN CONCEALED IN FURRED SPACES, CHASES, WALLS, ETC. CONTRACTOR SHALL OBTAIN PERMISSION TO RUN EXPOSED PIPING.

6. PROVIDE ISOLATION AND SHUT-OFF VALVES AT ALL BRANCH LINES AND EQUIPMENT.

7. PROVIDE LISTED AND APPROVED DIELECTRIC FITTINGS WHEN JOINING DISSIMILAR METALS.

8. RUN ALL SANITARY AND WASTE PIPING AT A MINIMUM OF 1/8" PER FOOT FOR PIPING. SLOPE VENT PIPING TO DRAIN.

9. PIPE HANGERS SHALL BE PLACED ADJACENT TO MOTOR DRIVEN EQUIPMENT.

10. HANGERS AND SUPPORTS SHALL BE AS FOLLOWS:

    A. COPPER PIPING

    - 1/2" TO 1-1/4" AT MAXIMUM 6'-0" SPACING
    - 1-1/2" TO 3" AT MAXIMUM 10'-0" SPACING

    B. CAST IRON PIPING

    - 1-1/2" TO 2" AT MAXIMUM 10'-0" SPACING
    - 2-1/2" AND ABOVE AT MAXIMUM 5'-0" SPACING

11. WATER PIPING IS TO BE FLUSHED AND DISINFECTED IN ACCORDANCE WITH LOCAL AND STATE HEALTH REGULATIONS. AFTER FLUSHING AND DISINFECTING, THE WATER IS TO BE TESTED BY THE CONTRACTOR THROUGH AN INDEPENDENT LAB WITH A WRITTEN REPORT.

12. ALL NEW WATER, SANITARY, WASTE, AND VENT PIPING SHALL BE PRESSURE TESTED AS FOLLOWS:

    A. SANITARY, WASTE, AND VENT PIPING - HYDROSTATIC TEST AT 10 FT HEAD FOR A MINIMUM 4 HOURS. SUBMIT WRITTEN/SIGNED TEST RESULTS.

    B. WATER PIPING - HYDROSTATIC TEST AT 125 PSI OR 1-1/2 TIMES OPERATING PRESSURE (WHICHEVER IS GREATER) FOR A MINIMUM 4 HOURS WITH MAXIMUM LOSS OF 2 PSI. SUBMIT WRITTEN/SIGNED TEST RESULTS. AIR TESTING WILL NOT BE ACCEPTABLE.

PLUMBING PIPING SPECIALTIES

1. CLEANOUTS IN INTERIOR FINISHED FLOORS SHALL HAVE A CAST IRON BODY WITH ANCHOR FLANGE, THREADED TOP ASSEMBLY AND ROUND GASKETED SCORED COVER. FOR FINISHED FLOORS PROVIDE DEPRESSED COVER TO ACCEPT FLOOR FINISH.

2. WATER HAMMER ARRESTORS SHALL BE STAINLESS STEEL CONSTRUCTION, BELLOWS TYPE, PRECHARGED. AIR CHAMBERS ARE NOT ACCEPTABLE. INSTALL WATER HAMMER ARRESTORS AT ALL QUICK CLOSING VALVES, ON HOT AND/OR COLD WATER SUPPLIES TO NEW INDIVIDUAL FIXTURES OR IN BANKS OF FIXTURES.

PLUMBING EQUIPMENT AND FIXTURES

1. ALL PLUMBING EQUIPMENT AND FIXTURES SHALL BE NEW, COMPLETE WITH ALL TRIM AS SPECIFIED. APPROVAL CERTIFICATION BY MASSACHUSETTS IS REQUIRED.

2. FOR ALL EQUIPMENT AND FIXTURES, INSTALL AS PER MANUFACTURER'S INSTRUCTIONS, AS REQUIRED BY CODE, AND IN COMPLIANCE WITH CONDITIONS FOR CERTIFICATION (IF ANY). RETAIN ALL INFORMATION, MANUALS AND PARTS DIAGRAMS PACKAGED WITH THE UNITS.

3. COORDINATE ALL RELATED ELECTRICAL WORK AND REQUIRED CONNECTIONS TO ACHIEVE AN OPERATIONAL SYSTEM. VERIFY THAT ELECTRICAL POWER HAS PROPER CHARACTERISTICS.

4. ALL EQUIPMENT SHALL BE UL TESTED AND APPROVED AND IF APPLICABLE SHALL HAVE NSF CERTIFICATION.

5. PLUMBING FIXTURES SHALL BE INSTALLED WITH TRIM, INCLUDING BUT NOT LIMITED TO, FAUCETS, CARRIERS, WATER SUPPLIES, SUPPLY STOPS, TRAPS, TAILPIECES, HARDWARE, HANGERS/SUPPORTS, AND FASTENING DEVICES.

6. PLUMBING FIXTURES AND TRIM SHALL BE OF THE MANUFACTURER LISTED ON THE DRAWINGS OR AN APPROVED EQUAL MEETING THE OPERATIONAL CHARACTERISTICS, FUNCTION, SIMILAR APPEARANCE AND QUALITY OF THE SPECIFIED ITEMS.

7. FOR ALL EXPOSED PIPING TO FIXTURES, PROVIDE CHROME PLATED PIPES, ESCUTCHEONS AT WALLS, SUPPLY TUBES AND SUPPLY STOPS. DRAIN PIPING SHALL BE MINIMUM 17 GA, CHROME PLATED CAST BRASS, P-TRAPS SHALL HAVE CLEANOUT PLUGS.

8. SEAL FIXTURES TO WALLS AND FLOOR WITH APPROVED SILICONE SEALANT, COLOR TO MATCH FIXTURE COLOR OR CLEAR.

9. UPON COMPLETION OF INSTALLATION OF PLUMBING EQUIPMENT AND FIXTURES, TEST TO DEMONSTRATE CAPABILITY AND COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND CODES. FOR ALL EQUIPMENT, REPAIR OR REPLACE ANY MALFUNCTIONING EQUIPMENT OR FIXTURES AND RETEST.

10. ADJUST WATER PRESSURES THROUGH VALVES OR STOPS TO OBTAIN PROPER FLOW RATES AND PRESSURES REQUIRED.

11. UPON COMPLETION OF INSTALLATION OF EQUIPMENT OR FIXTURES, THOROUGHLY CLEAN ALL EXPOSED SURFACES, TRIM AND PIPING, FLUSH STRAINERS AND VERIFY FINAL OPERATION.

12. PROVIDE ALL WARRANTIES AND GUARANTEES TO THE OWNER WITH ALL NAMES, ESTABLISHED DATES, AND ANY ADDITIONAL INFORMATION REQUIRED FOR ENFORCEMENT.

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PLUMBING SPECIFICATIONS

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1/8" = 1'-0"	MEP
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2 GROUND / BASEMENT PLUMBING DEMOLITION PLAN
1/4" = 1'-0"

PLUMBING KEYNOTES

P01 ALL DOMESTIC WATER AND SANITARY PIPE SHOWN IN THIS VIEW IS IN THE BASEMENT LEVEL UNLESS OTHER WISED NOTED. FIXTURES ARE LOCATED ON THE FLOOR ABOVE ON THE GROUND FLOOR

P02 REMOVE WASTE PIPING FROM LAVATORY AND CAP IN THE WALL ON THE GROUND FLOOR.

P03 REMOVE EXISTING WATER CLOSET AND CLOSET FLANGE. CAP SANITARY PIPING BELOW FLOOR IN THE BASEMENT.

P04 REMOVE EXISTING DOMESTIC WATER FROM LAVATORY AND CAP IN WALL AND BELOW FLOOR IN THE BASEMENT.

P05 REMOVE EXISTING DOMESTIC WATER FROM WATER CLOSET AND CAP WITHIN THE WALL AND BELOW FLOOR IN THE BASEMENT.

P08 EXTENT DOMESTIC COLD WATER WITH IN THE WALL ON THE GROUND FLOOR TO NEW FLUSH VALVE LOCATION.

P09 TIE NEW VENT INTO EXISTING VENT IN THE BASEMENT.

P10 INSTALL NEW COMBINATION WYE AND 8TH BEND INTO THE EXISTING SANITARY MAIN FOR NEW WATER CLOSET LOCATION.

P11 REMOVE EXIST DOMESTIC WATER FROM TO BELOW GROUND FLOOR.

P12 REMOVE WASTE PIPING FOR LAVATORY AND SANITARY TEE ON STACK IN THE WALL ON THE GROUND FLOOR.

P13 1/2" DHW AND DCW TO NEW LAVATORY LOCATION.

P14 TIE 1 1/2" PUMP DRAINAGE INTO EXISTING SANITARY LINE.

P15 SP-1 LOCATION IN TRENCH BELOW GALLERY FLOOR.

1 GROUND / BASEMENT NEW WORK PLAN
1/4" = 1'-0"

PLUMBING FIXTURE SCHEDULE

GENERAL NOTES:

PIPE SIZES SHOWN ARE FOR SUPPLY AND DRAINAGE ONLY. PROVIDE SUPPLIES WITH SCREWDRIVER STOPS, WALL ESCUTCHEON, 17-GAUAGE SEMICAST "P" TRAPS WITH CLEANOUT PLUGS, PLUMBING FIXTURE SUPPORTS AND NECESSARY FITTINGS TO MAKE FINAL CONNETION. REFER TO SPECIFICATIONS FOR EQUIVALENTS. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING ELEVATION OF PLUMBING FIXTURES, CLEARANCE BELOW SINKS AND LAVATORIES AND OFFSET DRAIN LOCATIONS. OFFSET DRAINS SHALL BE OFFSET LEFT REAR OR OFFSET RIGHT REAR. COORDINATE MOUNTING HEIGHTS FOR CHILDREN AND ADULT FIXTURES WITH ARCHITECTURAL DRAWINGS.

TAG	TYPE	ADA	MANUFACTURER	MODEL	COLD	HOT	SAN	VENT	DESCRIPTION
LAV-1A	LAVATORY	Yes	KOHLER	K-1997-1	1/2"	1/2"	2"	1 1/2"	WALL HUNG LAVATORY SHALL BE VITREOUS CHINA, DRILLED FOR CONCEALED ARM CARRIER, OVERALL NOMINAL DIMENSIONS 20-1/2"X18-1/4" BOWL SIZE 14-3/8"X12-5/16", SINGLE CENTERED HOLE DRILLING, REAR OVERFLOW, LAVATORY SHALL MEET ANSI A117.1 AND ADA REQUIREMENTS. FAUCET: KOHLER MODEL # K-13462-CP, TOUCHLESS. 1/2" I.P ADAPTER, 0.5 GPM AERATOR. TRIM: CHROME PLATED CAST BRASS OFFSET TAILPIECE AND 1-1/2" CHROME PLATED P-TRAP, MINIMUM 17 GA 3/8" N.P.T, ANGLE SUPPLY CONNECTION AND FOUR ARM HANDLE STOP CONSTRUCTION. PROVIDE TRUEBRO INSULATION KIT FOR DRAIN AND WATER PIPING PROVIDE ALL REQUIRED HARDWARE AND SUPPORTS TO INSTALL ON BRICK WALL.
WC-2A	WATER CLOSET	Yes	KOHLER	K-96057-B	1"		4"	2"	FLOOR MOUNTED, 12" ROUGH-IN, SIPHON JET FLUSH ACTION, WATER CLOSET, VITREOUS CHINA, ELONGATED BOWL, 1.28 GALLON FLUSH CYCLE, 1-1/2" TOP SPUD, FURNISH COMPLETE WITH GASKET, BOLTS AND CAPS. COLOR: WHITE SEAT: CHURCH 3155C: ELONGATED OPEN FRONT SEAT, WITHOUT COVER, ANTI-BACTERIAL. COLOR: WHITE FLUSH VALVE: KOHLER TRIPOINT, MODEL K-7531-CP WATER CLOSET FLUSH VALVE, 1.28 GPF, VACUUM BREAKER, 1-1/2" TOP SPUD, ANGLE VALVE SCREWDRIVER STOP, VANDAL RESIDTANT STOP CAP, BUMPER.

PLUMBING FIXTURE SCHEDULE

TYPE	SPECIALTY ITEM	MANUFACTURER	MODEL	DESCRIPTION
WCO-2"	WALL CLEANOUT	J.R. SMITH	#4450 WITH COVER	'CAST IRON CLEANOUT TEE AND COUNTERSUNK PLUG WITH CHROME PLATED, BRONZE ROUND FRAME AND SECURED COVER. PROVIDE WITH VANDAL PROOF SCREWS AND POLISED BRONZE FRAME AND COVER. MODEL 4550S: FACE OF WALL-TILE, MASONRY, DRY WALL. MODEL 4555S: FLUSH WITH WALL- PLASTER, WET WALL

SUMP PUMP SCHEDULE

ID	MANUFACTURER	MODEL NO.	PUMP		MOTOR		VOLT	PH	REMARKS
			FLOW	HEAD	POWER	RPM			
SP-1	LIBERTY PUMP	453	35.00 GPM	20.0 FT	0.5 hp	3450	115 V	1	QUICK-DISCONNECT 10' STANDARD POWER CORD PROVIDE WITH CHECK VALVE.

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CITY OF HARTFORD

Bushnell Park Pump House
Hartford, CT

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Title:
PLUMBING DEMOLITION AND NEW WORK PLAN

Project Number: 2020.02	Issue Date: 07/24/20
Scale: 1/4" = 1'-0"	CAD file: MEP
Drawn By: FSM	Checked By: Checker

Revisions:

P1.0

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Attachment C

Bushnell Park Pump House Gallery Renovations

60 Elm Street (Bushnell Park)

Hartford Historic Preservation Commission
July 30, 2020

MAIER design group, llc.
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ARCHITECTURAL WINDOW CORPORATION

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PUMP HOUSE
AND GALLERY
ELM ST
CLINTON ST
WEST ST
PULASKI CIR
WELLS ST
GOLD ST
MAIN
ATHENEUM SQ NORTH
Legend
Parcel ID
Duplicate Parcel ID
Exempt ID
Building ID
Parcels
Tax Map Grid
City Boundary Line
Building
Foundation
Greenhouse
Cement Pad
Deck
Patio
Pool
Tunnel
Trail
Railroad
Fence
Ruins
Coniferous Tree
Deciduous Tree
Hedge and Brush
Treeline
161507165 Parcel ID
7500 sf or Ac Parcel Area
88 Street Address
11-19 Condo Lot Range
11D Condo Unit
Driveway and Parking Lot Paved
Driveway and Parking Lot Unpaved
Sidewalk
Stairs and Ramps
Runway
Bridge
Road Edge Paved
Road Edge Unpaved
Wharf and Pier
Tank
Golf Course
Fairway
Green
Sand Trap
Tee
Swamp
Water
River or Stream

ZONING MAP

PUMP HOUSE (PARK) - NORTHWEST

PUMP HOUSE (COURTYARD) - SOUTH

Bushnell Park Pump House Gallery Renovations

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EXISTING CONDITIONS

IDENTIFYING REPAIRS AND RESTORATIONS -

HISTORIC WINDOW REPLACEMENT

FAILED FLASHING

ROTTED WOOD STRUCTURE

MASONRY REPOINTING AND WATER MANAGEMENT ISSUES

SLATE ROOF REPAIR

GOALS -

ADD ADA ACCESS TO GALLERY FLOOR

RESOLVE DRAINAGE ISSUES

MAINTAIN AND PRESERVE EXISTING MASONRY

INCREASE EGRESS SAFETY

PROPOSING -

HISTORIC WINDOW REPLACEMENT

RESTORING DECORATIVE GATES AND GRILLES

ADDING ADA ACCESS TO GALLERY FLOOR

INSTALL NEW CARRIAGE / ENTRY DOORS

1 PROPOSED ROOF PLAN
1/8" = 1'-0"

ROOF NOTES:

Gen. 1 REFER TO SPEC SHEETS PRIOR TO BEGINNING ANY WORK. FOR FURTHER INFORMATION, COORDINATE WITH OTHER TRADES

Gen. 2 NUMBERED NOTES REFER TO THIS SHEET UNLESS OTHERWISE NOTED.

Roof 3 EXISTING SLATE ROOF ACROSS ENTIRE BUILDING TO BE REMOVED, REPAIR AND REPLACE ROTTED OR DAMAGED SUBSTRATE. INSTALL NEW UNDERLAYMENT ON ENTIRE ROOF AND NEW VALLEY ROOF FLASHING. EXISTING ROOF SLATE TO BE RE-INSTALLED ON NEW 3-WAY VENTED WOOD SUBSTRATE. ALL NEW SLATE TO MATCH EXISTING SLATE INTO MAIN FIELD. THICKNESS OF NEW SLATE SHOULD BE ACCOUNTED FOR BASED ON LOCATION IN ROOF FIELD

Roof 4 INSTALLER TO REVIEW EXISTING FLASHING. REPLACE EXISTING FLASHING AS NEEDED. SOLDER AND RE-INSTALL NEW TO MATCH EXISTING MATERIAL AND EXPOSURE

Roof 5 NEW GUTTER SYSTEM TO MATCH EXISTING PROFILE. INSTALLER TO ALIGN AND PROPERLY SUPPORT ALONG ROOF EDGE. GUTTERS AND ACCESSORIES TO BE COPPER-BASED (I.E. TO BE FREEDOM GRAY COPPER IF G.C.) 16OZ MIN. WITH 4" ROUND DOWNSPOUTS AT EXISTING LOCATIONS AND NEW TEE. ALL SEAMS TO BE SOLDERED AND WATER TIGHT

Roof 6 INSTALL NEW 4" ROUND DOWNSPOUTS AT EXISTING GUTTER LOCATIONS. RECONNECT TO EXISTING DRAINAGE PIPING WITH TAPERED FITTING. CONNECT TO BUILD WITH P.V.C. HOOKS AND TEE

Roof 7 REMOVE EXISTING GUTTER SCREENING. CLEAN GUTTERS AND REPAIR SOLDER JOINTS AS NEEDED. REINSTALL SCREENING FASTEN AT REGULAR INTERVALS TO ACHIEVE BEST PRACTICE

Roof 8 ROOFER AND GC TO REVIEW EXISTING CONDITION OF ROOF. ROOFER TO PROVIDE A REPORT AND DEMO OF EXISTING CONDITIONS AND ASSESSMENT

PROPOSING -

REPAIR EXISTING SLATE ROOF

REPAIR FLASHING AND GUTTERS

INSTALL NEW GUTTERS AND DOWNSPOUTS (SELECT AREAS)

PROPOSING -

HISTORIC WINDOW REPLACEMENT

RESTORING DECORATIVE GATES AND GRILLES

REPOINTING AND CLEANING MASONRY

INSTALL NEW CARRIAGE / ENTRY DOORS

PROPOSING -

HISTORIC WINDOW REPLACEMENT

RESTORING DECORATIVE GATES AND GRILLES

REPOINTING AND CLEANING MASONRY

INSTALL NEW CARRIAGE / ENTRY DOORS

Bushnell Park Pump House Gallery Renovations

EXIST W-1 & W-2 WINDOW DETAILS

SCALE: 1"=1'-0"

PROPOSED W-1 & W-2 WINDOW DETAILS

SCALE: 1"=1'-0"

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Architectural Window Corporation has been serving the general contractors, property managers, and homeowners in the Northeast and Mid-Atlantic states since 1997. We are a full service window and door supplier offering a single source responsibility that includes furnish, installation, historic approvals, and shop drawings. We are sensitive to the historic fabric of the buildings and offer products and services that respect that tradition.

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Bushnell Park Pump House
Gallery Renovations

EXISTING ELEVATION

EXIST W-4 WINDOW DETAILS

SCALE: 1"=1'-0"

PROPOSED ELEVATION

PROPOSED W-4 WINDOW DETAILS

SCALE: 1"=1'-0"

EXISTING SECTION

EXISTING ELEVATION

EXIST W-5 WINDOW DETAILS

SCALE: 1"=1'-0"

PROPOSED SECTION

PROPOSED ELEVATION

PROPOSED W-5 WINDOW DETAILS

SCALE: 1"=1'-0"

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EXIST W-6 WINDOW DETAILS

SCALE: 1"=1'-0"

PROPOSED W-6 WINDOW DETAILS

SCALE: 1"=1'-0"

EXIST W-3 WINDOW DETAILS

SCALE: 1"=1'-0"

PROPOSED W-3 WINDOW DETAILS

SCALE: 1"=1'-0"

EXISTING CONDITIONS

EXIST W-10 WINDOW DETAILS

SCALE: 1"=1'-0"

PROPOSED

PROPOSED W-10 WINDOW DETAILS

SCALE: 1"=1'-0"

EXIST W-7 WINDOW DETAILS

SCALE: 1"=1'-0"

PROPOSED W-7 WINDOW DETAILS

SCALE: 1"=1'-0"

EXIST W-8 WINDOW DETAILS

SCALE: 1"=1'-0"

Bushnell Park Pump House
Gallery Renovations

PROPOSED W-8 WINDOW DETAILS

SCALE: 1"=1'-0"

PROPOSED W-8 WINDOW DETAILS

SCALE: 3"=1'-0"

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PROPOSED WOOD CARRIAGE DOOR

PROPOSED SIDE ENTRY DOOR

PROPOSING -

CARRIAGE DOOR MATERIALS AND PROFILES TO MATCH EXISTING

SIDE ENTRY DOOR DESIGN TO BE IN LINE WITH NEW CARRIAGE DOOR DESIGN AND MATERIALS WITH STEEL GRILLE TO MATCH EXISTING BUILDING

QUESTIONS AND COMMENTS...