# HALB BKUW®

# 110 HIGH STREET - 6TH FL ROOF DECK

110 HIGH STREET, BOSTON MA

# **JONES LANG LASALLE**

FOR CONSTRUCTION 10/17/2018

Project No. 18.0325

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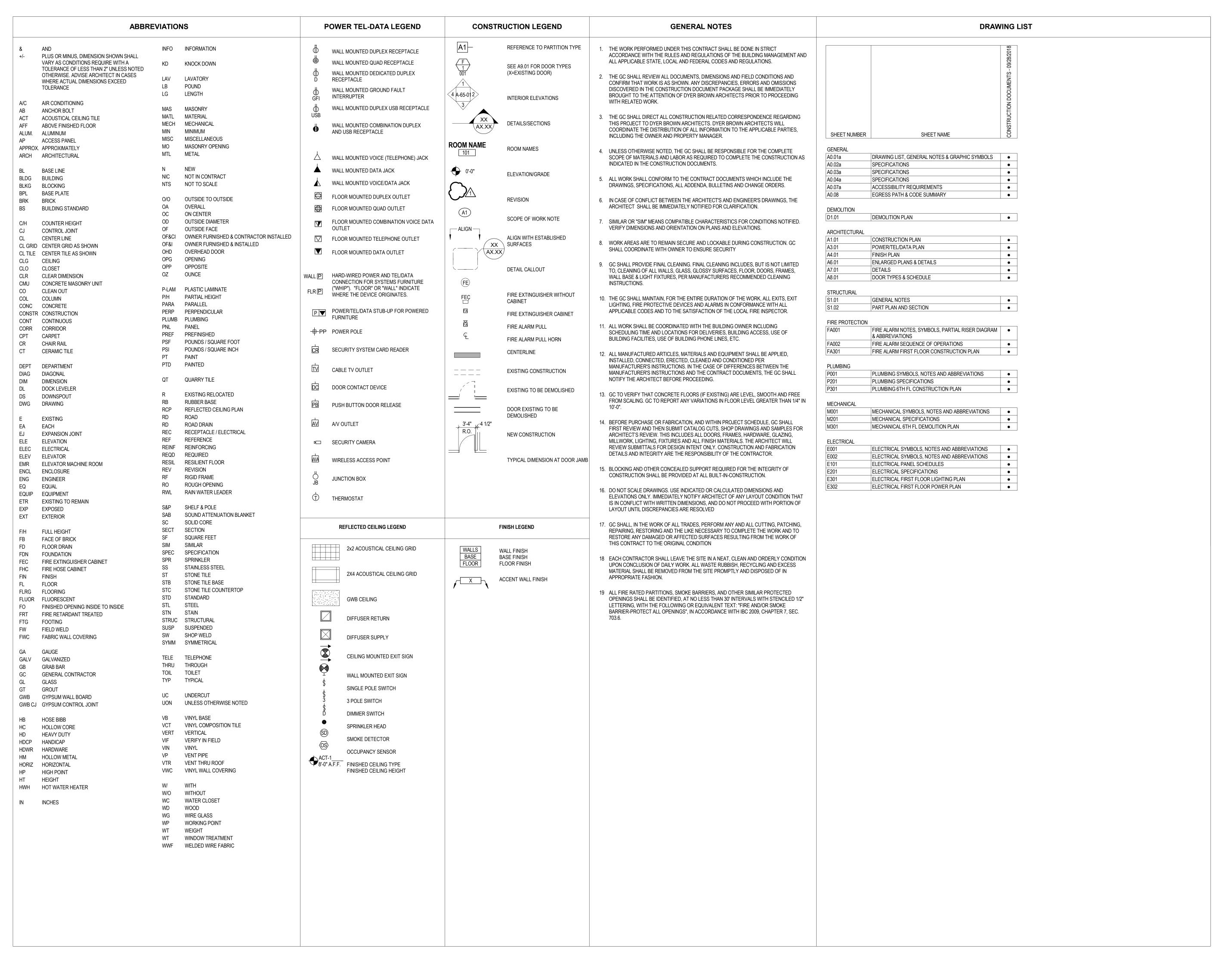
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**REVISIONS** 

**ISSUED FOR PERMIT** 

# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

110 HIGH STREET, BOSTON MA

TITLE

DRAWING LIST, GENERAL NOTES & **GRAPHIC SYMBOLS** 

**DATE** 

10/17/2018

**JOB** NO. 18.0325

**DRAWING NO.** 

FOR CONSTRUCTION

# **SECTION 0010000 - PROJECT REQUIREMENTS**

A. Project Requirements:

- 1. Requirements for Sequence of Work, Phasing, and
- 2. Prior or Concurrent Work by Owner or Others:
- 3. Existing Site Conditions and Restrictions: 4. Contractor's Use of Premises and Adjacent Facilities:
- 5. Pre-purchased and Pre-ordered Items: 6. Owner Furnished and Owner Installed Items:
- 7. Owner Furnished and Contractor Installed Items:
- 8. Special Mock Ups:
- 9. Related Future Work: 10. Reference Drawings and Reports:
- 11. Owner's Building Standards: 12. LEED V4 for Commercial Interiors:
- B. Allowances: Include scheduled allowances in the project cost; allowance is for cost for materials, installation and all other costs. Submit invoices to indicate actual quantities of materials delivered
- and costs. Indicate amounts of applicable trade discounts. 1. Allowance No. 1: Provide Allowance for Existing Roof
  - Membrane Patching. 2. Allowance No. 2: Provide Allowance for Existing Roof Insulation Infill (If existing)
  - 3. Allowance No. 3: Provide Allowance for Fireproofing Patching

- C. Alternates: Submit price for each alternate. Include cost of modifications to other work to accommodate alternate. Include statement of impact on schedule, if any. Architect and Owner will determine which alternates are accepted.
  - 1. Alternate No. 1: Provide alternate procing for ballasted stone roof system where indicated on plan (see image on sheet A6.01) 2. Alternate No. 2: Provide alternate pricing for "liveroof" planting system where indicated on plan (see image on sheet A6.01)
  - 3. Alternate No. 3: Provide alternate pricing for equipment screening at existing large exhaust fan unit (refer to basis of design images on A6.01.
  - 4. Alternate No. 4: Provide alternate pricing to remove existing parapet wall electrical penetrations and infill with new brick to match
  - 5. Alternate No. 5: Provide alternate pricing to demolish and relocate / reroute existing roof exhaust penetration (coordinate with MEP
  - 6. Alternate No. 6: Provide breakout pricing for new interior ADA

D. Conditions of Contract: As required by the Owner. AIA A201-2007 General Conditions for the Contract for Construction is included as if bound

E. Site Visit: Prior to submission of cost proposals or bids, Contractors and Subcontractors shall arrange, through the Building Owner, to visit the site of the proposed work to fully acquaint themselves with existing conditions affecting their work.

F. Usage LEED V4: Refer to scoreboard available from the Architect. The Contractor shall submit an action plan for achieving each credit assigned to the Contractor. Update Monthly.

# **GENERAL REQUIREMENTS**

Trades: It is not the intent of these specifications to assign responsibility for various aspects of the work to specific subcontractors. The General Contractor has prime responsibility and shall coordinate all work and contract for same in whatever manner he deems expedient.

Execution: Work shall be executed in conformance with manufacturers' specifications and standard trade practice. by mechanics skilled in the work and familiar with the materials to be installed.

Definitions: The use of the word "provide" or "provided" in connection with any item specified is intended to mean, unless otherwise noted, that such item shall be furnished and installed with all required accessories, and connected where so required.

Jurisdiction and Codes: Design and construction performed shall conform to the Specifications set forth in this Schedule and shall comply with applicable statutes, ordinances, regulations, laws and codes including, without limitations, the foregoing: The National Electric Code; The Guide of the American Society of Heating, Refrigerating and Air Conditioning Engineers; requirements of Owner's fire insurance underwriter; Massachusetts State Building Code-Current Edition, Massachusetts Architectural Access Board Americans with Disabilities Act; and all other applicable governmental building and safety codes, orders and ordinances.

Permits: Prior to the commencement of construction, Permits shall be obtained by the Contractor and posted in a prominent place within the Premises and copies there of supplied to the Owner.

Building Regulations: Work shall be carried out in compliance with the Owner's building construction regulations, which are hereby incorporated into this contract. Prior to commencement of the work, the Contractor shall submit all necessary construction permits and certificates of insurance to the Owner.

Building Operations: Construction performed shall not unreasonably interfere with the operation of the Building and its Tenants. Construction equipment and materials shall be located in confined areas and truck traffic shall be routed in and from the site as directed by the Owner so as not to burden the operation of the Building. The Owner shall have the right to designate parking areas for the Contractor.

Schedules and Meetings: The General Contractor shall furnish a construction schedule to the Landlord and the Architect, indicating projected commencement and completion dates for all major phases of the work. Weekly job meetings shall occur on site between Contractor, Architect and a Tenant Representative. The Contractor shall periodically advise the Landlord of his progress in relation to the schedule and update same to reflect any changes.

# General Meeting Requirements:

1. The Contractor shall take meeting minutes and distribute copies within two days to the Owner, Architect and all attendees. Distribute copies to other parties as appropriate. 2. All representatives attending meetings shall be authorized to act

on behalf of the entity each represents 3. Make physical arrangements for weekly meeting. Prepare an agenda with copies for all parties.

Field Measurements: Each Contractor shall check and verify all dimensions and conditions at the job site, and the General Contractor shall notify the Architect and request clarification with regard to any discrepancies between the Drawings, these notes and field conditions. Dimensions shown on the plan indicate finish (not

rough) measurements. Do not scale the Drawings.

Work Outside of Project Lines: Wherever work is required within adjacent occupied spaces or occupied spaces on the floor below, the Contractor shall obtain permission from the Owner in order to schedule the work. Such work is to be performed during nonbusiness hours if required by the Owner and the Contractor shall be responsible for protection and moving of furniture and equipment as may be required. Upon completion of the work, the Contractor shall dust and vacuum and otherwise restore the premises to its original condition prior to the commencement of each business day.

Shop Drawings and Submittals: Shop drawings shall be submitted by the General Contractor only to the Architect, in electronic format, accompanied by an appropriate transmittal form. Each shop drawing shall be thoroughly checked by the General Contractor for accuracy and conformity with the certification appearing on each shop drawing that the General Contractor has made such a check. References on Shop Drawings to other trade(s) shall designate such trade(s), and the term "by others" shall not be used.

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Shop Drawings, product data, and sample submissions shall clearly identify by note, mark or labels, the specification sections by CSI number applicable to each product. The Contractor shall be required to issue and maintain a submittal log. Submittals are required for, but not limited to, the following:

1. Flooring materials, paints, finishes, and wall coverings, doors, frames and finish hardware. Samples are required.

2. Custom casework, acoustical ceiling tiles and grids. Samples are required.

3. Fire Protection, Electrical and Lighting, Plumbing, Mechanical and HVAC cut sheet and product data are required.

Cutting and Patching: The General Contractor shall coordinate cutting, fitting and patching of work that may be required to make all parts come together properly and fit to receive or be received by work of other contractors shown upon or reasonably implied by the Drawings and notes.

1. Existing and/or new openings through the floor slab to facilitate piping, cabling, etc., shall be packed solid with firesafing insulation making the openings smoke-tight.

2. Holes in the floor slab at abandoned or removed floor outlets piping, etc., shall be filled solid with concrete.

Temporary Lighting and Power: The Contractor shall provide adequate temporary lighting and power in as required for the proper execution of

Cleaning: Maintain construction area in a clean and orderly manner. Remove trash and debris promptly from the building on a daily basis. 1. The Contractor shall, upon completion of construction, just prior to turning the space over to the Owner, thoroughly clean all glass, floor covering, vinyl base and other materials installed under the contract.

Closeout Procedures: The General Contractor shall deliver the following documents to the Architect for transmission to the Owner at the close of the project prior to final payment:

 Record drawings. 2. Certificate of Substantial Completion AIA Document G704 3. Contractor's Affidavit of Payment of Debts and Claims AIA

Document G706. 4. Contractor's Affidavit of Release of Liens AIA Document G706A. 5. Certificate of Occupancy issued by the City/Town Inspectional Services Department.

Attic Stock: The General Contractor shall provide to the Owner/Tenant, if requested by the Owner or Tenant, the following quantities of attic stock of flooring materials, in new, un-opened packaging:

1. 2% of carpet goods and carpet tile (one full box minimum), for every

type, color, and pattern installed. 2. 2% (one full box minimum) of resilient floor tile and ceramic tile, for every type, color, and pattern installed, including bullnose edges,

corners, and other accessories. 3. 1% (one full box minimum) of resilient base for every type, color, and pattern installed.

Temporary Protection: Wherever work takes place within occupied areas, the Contractor is to provide protective coverings for carpet, furnishing and equipment, and provide temporary barriers to isolate the construction area. Except as may be required for incidental access beyond the immediate work area, the moving of furniture and equipment shall be the responsibility of the tenant. The occupied areas are to be dusted and vacuumed daily. Upon completion of work construction materials, equipment and debris are to be removed.

1. Where temporary barriers are required for protection of persons or property, or to isolate work in phased operations, they shall be constructed of air-tight, heavy weight polyethylene sheeting or equivalent secured to the floor, ceiling and adjacent walls with continuous wood cleats. All seams are to be tape-sealed and all such barriers are to be maintained for the duration of the work. 2. All temporary doors opening into building corridors or lobbies are to match Building Standard doors and frames. All temporary doors to occupied tenant areas are to be equipped with locks. All such doors and frames are to be returned undamaged to the Owner upon completion of the work

3. The Contractor shall provide and maintain adequate protective coverings around existing finished items scheduled to remain in the completed space, including but not limited to, doors and frames and HVAC cabinet enclosures. 4. Building lobbies and public corridors used for delivery and access

to the construction site shall be protected and maintained by the Contractor in a clean and dust-free condition at all times. Said lobbies and corridors shall not be used to temporarily store construction materials or equipment. Any damage that occurs in these areas as a result of construction activities shall be repaired to its original condition, at no expense to the Building Owner. 5. During the construction phase of a project within an occupied area, required temporary barriers and doors shall be located so as to permit unobstructed egress from the space to the building exitways and exit way access corridors, all to be in conformance with code requirements.

#### 024100 **DEMOLITION**

#### Summary:

1. Provide selective demolition of interior partitions, systems, and building components designated to be removed.

2. Provide selective demolition and patching required for the work of this Contract, whether or not specifically noted on these Drawings. 3. Refer to the Engineer's Drawings for scope of mechanical. plumbing, fire protection and electrical demolition.

4. Protect portions of building, site and adjacent structures affected by demolition operations. 5. Remove hollow items or items which could collapse.

6. Remove abandoned utilities and wiring systems.

7. Cut new holes for penetrations required by other work. 8. Notify Owner of schedule of shut off of utilities which serve occupied spaces.

9. Provide temporary protection for the public from demolition

10. Provide pollution control during demolition operations. 11. Provide removal and legal disposal of materials.

12. The construction area shall be maintained by the Contractor in a clean and orderly condition and trash and debris is to be promptly removed from the building.

#### Submittals:

1. Submit demolition schedule. Include methods for protecting adjacent work and location of temporary partitions if applicable. 2. Submit proposed location for disposal of materials, and permit if

3. Salvaged Items: Identify existing items of work, hardware and devices schedules to remain, or to be salvaged for reuse.

# Products: Provide list of salvaged items.

1. Coordinate salvage with Owner prior to demolition and save as directed. Items not salvageable by Owner shall be disposed of by the General Contractor.

2. Storage of Salvaged Items: Properly store and protect materials to be reused or to be retained by the Owner. Items scheduled to be salvaged for reuse shall be removed with care, stored and protected from damage until salvaged items are incorporated into the new work. It shall be the Contractor's responsibility to replace and/or restore any items scheduled for salvage and reuse that are damaged during the course of contract operations. The Owner shall be the sole judge of suitability of these salvaged items for reuse in the work.

3. Prior to reinstallation, salvaged items shall be cleaned and restored to the highest quality possible.

4. Hazardous Materials: It is not intended, nor the responsibility of these notes. Drawings and specifications for the discovery. handling or removal of hazardous materials in any form from the project site, including, but not limited to asbestos products, polychlorinated biphenyl CPCB or other toxic substances. If hazardous materials are suspected, notify owner in writing and stop work in that area until owner's response is received.

# Demolition:

1. Prior to commencing any demolition of mechanical or electrical systems, the Contractor shall review the extent of work with the Owner to ensure that said work will not adversely affect existing systems. The Contractor shall be responsible for the safe separation and shut down of utilities while providing temporary services as required

2. Demolition work shall be performed in accordance with state and local regulations. Secure required demolition permits. Arrange with Owner and/or appropriate utilities for service shutoffs before beginning demolition operations. Take special care to control dust and noise to avoid disturbing nearby persons or property. Obtain Owner's and Architect's approval of dust and noise control measures prior to performing demolition work.

3. Survey existing conditions and correlate with Drawings and specifications to verify extent of demolition required. The use of the word "remove" or "removed" relative to any items so indicated on the Drawings is intended to mean, unless otherwise noted, that such item is to be demolished, disconnected and/or disassembled in its entirety including adhesives, fasteners, hangers and accessories and removed from the premises and legally disposed of, or turned over to the Owner if so specified.

4. Verify conditions at site to determine whether demolition methods proposed for use will not endanger existing structures by overloading, failure, or unplanned collapse. 5. Provide temporary protection of adjacent work to remain, including dust partitions to protect adjacent areas. 6. Perform demolition operations by methods which do not endanger adjacent spaces, structures, or the public. Proceed with demolition in a systematic and orderly manner.

# 042000

UNIT MASONRY

1. Concrete Design Mixes, ASTM C 94, 28 Day Compressive

a. Slabs on Grade: 4000 psi.

b. Slabs on Grade: 3500 psi.

c. Concrete on Metal Deck: 4000 psi.

d. Concrete on Metal Deck: 3500 psi.

e. Formwork: Plywood or metal panel formwork sufficient for structural and visual requirements.

f. Special forms for textured finish concrete.

g. Metal, plastic or paper tubes for cylindrical columns and supports. 2. Reinforcing Materials a. Reinforcing Bars: ASTM A 615, Grade 60, deformed.

b. Steel Wire: ASTM A 82.

c. Steel Wire Fabric: ASTM A 497, welded, deformed. 3. Concrete Materials: ASTM C 150, Type I, Portland cement; potable water.

a. Normal weight aggregates, ASTM C 33. 4. Concrete Admixtures: Containing less than 0.1 percent chloride

a. Air Entraining Admixture: ASTM C 260, for exterior exposed

concrete and foundations exposed to freeze thaw. b. Water Reducing Admixture: ASTM C 494, Type A, for placement

and workability. Auxiliary Materials:

a. Vapor Retarder: ASTM E 154 polyethylene sheet, 8 mils. b. Bonding Compound: Polyvinyl acetate or acrylic base.

c. Epoxy Adhesive: ASTM C 881, two component material.

1. Provide Unit Masonry Construction: a. Brick veneer on wood studs.

b. Brick veneer cavity wall on metal studs.

c. Brick and concrete block composite walls.

d. Brick and concrete block cavity walls. e. Concrete block bearing walls and non bearing partitions.

f. Stone trim built into masonry walls.

g. Freestanding site masonry walls.

2. Remodel existing masonry construction as required for new construction.

3. Repair damaged masonry and repoint damage joints.

Submittals: Submit product data, samples, shop drawings, 4 foot by 4 foot mockup, test reports.

# Face Brick:

1. Standard size, 3 5/8 inches thick by 2 1/4 inches high by 8 inches 2. Standard modular size, 3 5/8 inches thick by 2 1/4 inches high by 7 5/8 inches long

3. Oversize, 3 5/8 inches thick by 2 3/4 inches high by 7 5/8 inches 4. Economy size 3 5/8 inches thick by 3 5/8 inches high by 7 5/8

inches long.

5. Match existing size. 6. Grade: ASTM C 216, Grade SW, severe weathering type areas subject to freeze thaw and ASTM C 216, Grade MW, moderate

weathering type elsewhere. 7. Type: ASTM C 216, Type FBS, for general exposed use. 8. Type: ASTM C 216, Match existing

9. Special Shapes: As required by building configuration.

# 10. Bond Pattern: Match existing bond pattern.

Concrete Masonry Units: 1. Concrete Masonry Units: ASTM C 90, 1500 f'm compressive

strength, normal weight. 2. Prefaced Concrete Block: ASTM C 90, 1500 f'm compressive strength, normal weight.

3. Size: Face dimension of 7 5/8 inches high by 15 5/8 inches long

by width required for application. 4. Concrete Building Brick: ASTM C 55.

5. Special Finish: As indicated on the Drawings. 6. Special Shapes: As required by building configuration.

# 7. Bond Pattern: Match existing bond pattern.

# Mortar and Grout:

1. Mortar Mix: ASTM C 270, Type S, for reinforced masonry, masonry below grade and masonry in contact with earth and ASTM C 270, Type N, for above grade loadbearing and nonloadbearing walls and parapet walls and for interior loadbearing and nonloadbearing partitions.

2. Mortar Materials: Portland cement, ASTM C 150, Type I or II

3. Mortar Aggregate: Natural, ASTM C 144. 4. Grout Aggregate: ASTM C 404.

7. Color: Colored pigmented mortar.

5. Hydrated Lime: ASTM C 207, Type S. 6. Color: Natural

# Reinforcing Steel:

1. Reinforcing Bars: ASTM A 615, Grade 60.

2. Deformed Reinforcing Wire: ASTM A 496. 3. Plain Welded Wire Fabric: ASTM A 185.

#### Joint Reinforcing: Welded wire with deformed side rods. 1. Steel Wire: 9 gage (.1875 inch) galvanized

2. Type: Ladder or truss type.

# Ties and Anchors:

1. Bent Wire Ties: Galvanized steel.

2. Rigid Anchors: Galvanized steel straps. 3. Masonry to Concrete Frame: Two piece galvanized steel anchor. 4. Masonry to Steel Frame: Anchor with crimped wire anchor

section for welding to steel. 5. Adjustable Masonry Veneer Anchors: Screw attached two piece galvanized triangular or rectangular wire tie and metal anchor. 6. Screws for Steel Studs: ASTM C 954 organic polymer coated

10. Post installed Anchors: Chemical or expansion anchors.

7. Unit Type Masonry Inserts in Concrete: Malleable iron. 8. Dovetail Slots: Galvanized sheet metal.

9. Anchor Bolts: ASTM A 307, Grade A, galvanized.

Masonry Accessories:

1. Nonmetallic expansion joint strips.

2. Preformed control joint gaskets.

3. Bond breaker strips.

4. Weep sash and tubes.

Installation:

1. Comply with PCA Recommended Practices for Laying Concrete Block, Brick Institute of America Tech Notes, and NCMA TEK

2. Comply with cold weather and warm weather protection

procedures as recommended in BIA Tech Notes. 3. Provide fire rated assemblies complying with ASTM E 119. Sawcut units when required. Maintain uniform joint width.

Provide full bed, head and collar joints except at weepholes.

6. Coordinate installation of flashings. 7. Comply with applicable codes and regulations for spacing of ties

5. Install lintels and accessories in masonry construction.

and horizontal reinforcing. 8. Provide expansion and control joints in accordance with

referenced publications. Remove and replace damaged units.

10. Clean brick using bucket and brush method, BIA Tech Note 20. 11. Clean concrete masonry by dry brushing, NCMA TEK No. 28.

# **METALS**

Alterations and/or additions and reinforcements to the building structure to accommodate new construction shall be subject to prior written approval of the Owner. The Contractor shall leave the building structure as strong as or stronger than the original design and with all finishes unimpaired.

No equipment and machinery shall be installed and/or placed on the roof without Owner approval.

Tenant shall not cut into the concrete floor slab without Owner

Selected General Contractor to provide miscellaneous iron design required to support new slab openings. General Contractor and Architect will review options for support during demolition.

Cut, patch and fill new concrete openings as required for new layout.

Existing and/or new openings through the floor slab required to facilitate piping, cabling etc. shall be packed solid with fire safing insulation and caulk. Openings to be smoke tight. See Engineer's Drawings for additional information and requirements.

**METAL FABRICATIONS** 

tolerance, 1/16 inch.

Summary: Provide metal fabrications 1. Miscellaneous steel trim 2. Provide miscellaneous metal supports for framing of partial height

3. Remodel existing metal fabrications as required for new 4. Tolerances: Fabrication tolerance 1/8 inch in 10 feet; erection

1. Submit signed and sealed shop drawings for any work not fully

Submittals: Submit product data, shop drawings.

detailed on the Construction Documents.

# 110 HIGH STREET - 6TH FL

**JOB** NO.

**DRAWING NO.** 

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**REVISIONS** 

**ISSUED FOR PERMIT** 

**ROOF DECK** 

JONES LANG LASALLE

110 HIGH STREET, BOSTON MA

TITLE **SPECIFICATIONS** 

DATE

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#### 061000 **ROUGH CARPENTRY**

#### Summary:

- 1. Wood grounds, nailers, and blocking, fire-rated.
- 2. Wood furring.
- 3. Backing panels.

#### Submittals: Submit product data.

4. Remodel existing rough carpentry.

- 1. Lumber Standards and Grade Stamps: PS 20, American Softwood Lumber Standard and inspection agency grade stamps. Lumber shall be FSC certified.
- 2. Construction Panel Standards: PS 1, U.S. Product Standard for Construction and Industrial Plywood; APA PRP 108; with no added urea-formaldehyde.
- 3. Fire Retardant Treatment: AWPA C20 for lumber and AWPA C27 for plywood; noncorrosive type.
- 4. Boards:
- a. Concealed Boards: 19 percent moisture content.
- 5. Miscellaneous Lumber, Blocking and Nailers:
- a. Moisture Content: 19 percent.
- b. Grade: Standard grade light framing.
- 6. Construction Panels:
- a. Plywood Backing Panels: APA C D Plugged Exposure 1 with exterior glue, fire retardant treated.

- 1. Comply with APA Design and Construction Guide, Residential and Commercial Construction.
- 2. Provide nailers, blocking and grounds where required. Set work plumb, level and accurately cut.
- 3. Comply with manufacturer's requirements for treated materials.

#### 071300 SHEET WATERPROOFING

1. Provide sheet membrane waterproofing.

1. Submit product data, warranty.

- 1. Rubberized Asphalt Sheet Waterproofing: Self adhering rubberized asphalt and polyethylene sheet membrane, 56 mils thick, tensile strength 250 psi.
- 2. Flashing Materials and Protection Board: Compatible with
- membrane waterproofing. 3. Insulating Drainage Panels: Extruded-polystyrene board ASTM C
- 578; Type IV, 1.6-lb/cu. ft. 25-psi compressive strength; shiplap or tongue-and-groove edges and with drainage channels one side. faced with geotextile fabric.

- 1. Install materials and systems in proper relation with adjacent construction. Coordinate with other work.
- 2. Restore damaged components and test waterproofing for leaks. 3. Clean and protect work from damage.

# 071400

FLUID-APPLIED WATERPROOFING

1. Provide fluid-applied membrane waterproofing.

Submittals:

# 1. Submit product data, warranty.

- Products: 1. Reinforced Hot Rubberized-Asphalt Waterproofing: Single-
- component reinforced rubberized-asphalt membrane waterproofing. 100 percent solids, 215 mils mil thick coating.
- 2. Flashing Materials and Protection Board: Compatible with membrane waterproofing.
- 3. Insulating Drainage Panels: Extruded-polystyrene board ASTM C 578; Type IV, 1.6-lb/cu. ft. 25-psi compressive strength; shiplap or tongue-and-groove edges and with drainage channels one side, faced with geotextile fabric.

# Installation:

- 1. Install materials and systems in proper relation with adjacent
- construction. Coordinate with other work.
- 2. Restore damaged components and test waterproofing for leaks. 3. Clean and protect work from damage.

# THERMAL INSULATION

- Summary: Provide building insulation and vapor retarders:
- 1. Thermal insulation in exterior cavity walls, board type.
- 2. Thermal insulation in masonry cells, loose fill type.
- 3. Thermal insulation in exterior walls, blanket type. 4. Thermal insulation at underside of roofs, over heated spaces and
- over soffits, blanket type.
- 5. Thermal insulation over unheated areas, blanket type. 6. Sheet vapor retarders.

# Submittals: Submit product data.

# 1. Board Insulation:

- a. Extruded polystyrene, rigid, ASTM C 578.
- b. Mineral fiber board, ASTM C 612, types IA and IB. 2. Blanket/Batt Insulation:
- a. Glass fiber or mineral slag fiber, ASTM C 665, Type I (unfaced).
- b. Glass fiber or mineral slag fiber, ASTM C 665, Type III (foil scrim
- kraft vapor retarder membrane).
- 3. Loose Fill Insulation:
- a. Loose granular perlite, ASTM C 549, Type II.
- b. Loose granular vermiculite, ASTM C 516, Type II.

# APPLIED FIREPROOFING

Summary: Patch fireproofing disturbed by remodeling operations. 1. In buildings where structural steel has been covered with sprayed fireproofing material, the Contractor is to patch and repair said material where it has been damaged or removed during the course of this work. Any areas of fireproofing which are observed to be damaged or missing upon commencement of this project are to be brought to the attention of the Architect prior to beginning work in the area involved. The Contractor is to notify the Architect for final inspection of the fireproofing prior to installation of the ceiling.

## Submittals: Submit product data, test reports.

Products: Fire Performance: ASTM E 119, and local regulations. Cementitious type for Concealed Use: 15 pounds per cubic foot dry density, ASTM E 605.

Installation: Inspect existing and new structural members for proper fireproofing prior to close in of ceilings and walls. Provide material thicknesses necessary to provide fire resistance ratings indicated or required by authorities having jurisdiction.

# **FIRESTOPPING**

- Summary: Provide firestopping at the following locations:
- 1. Penetrations through fire resistance rated floor construction. 2. Penetrations through fire resistance rated walls and partitions. 3. Penetrations through smoke barriers and construction enclosing
- compartmentalized areas. 4. Sealant joints in fire resistance rated construction.
- 5. Repair existing conditions disturbed prior to start of construction. Investigate and notify Architect and Owner of any previously damaged firestopping prior to start of construction. Provide pricing and document scope for Building Owner/Tenant review.

Submittals: Submit product data, test reports, mockup of each type

Products: Fire Performance: ASTM E 119, ASTM E 814, and local

- 1. Through Penetration Firestop Systems:
- a. Ceramic Fiber and Mastic Coating.
- b. Endothermic, Latex Compounds.
- c. Intumescent Latex Sealant. d. Intumescent Putty.
- 2. Fire Resistive Elastomeric Joint Sealants:
- a. Single component, neutral curing, silicone sealant.
- b. Multicomponent, nonsag, urethane sealant.
- c. Single component, nonsag, urethane sealant.

Installation: Inspect existing and new work for proper firestopping prior to close in of ceilings and walls. Provide material thicknesses necessary to provide fire resistance ratings indicated or required by authorities having jurisdiction.

# JOINT SEALANTS

Summary: Provide joint sealers at interior vertical and horizontal

Submittals: Submit product data, mockup of each joint type, adhesion test results for each joint type.

# Products:

- 1. Silicone Elastomeric Joint Sealants:
- a. Type and Application: One part nonacid curing silicone sealant, ASTM C 920, for vertical and horizontal joints, modulus as required for application, exterior and interior use.
- b. Type and Application: One part mildew resistant silicone sealant, ASTM C 920, for sanitary applications, interior use.
- 2. Latex Joint Sealants:
- a. Acrylic Type: Acrylic emulsion, ASTM C 834. b. Silicone Type: Silicone emulsion, ASTM C 834, and ASTM C
- c. Application: Interior joints in vertical and overhead surfaces with
- 3. Specialty Sealants: Synthetic rubber acoustical sealant for concealed joints.
- 4. Auxiliary Materials:
- a. Plastic foam joint fillers.
- b. Elastomeric tubing backer rods. c. Bond breaker tape.

Installation: Test sealant adhesion for each substrate required. Install in proper relation with adjacent work. Clean adjacent surfaces soiled with sealant immediately.

# 079500

**EXPANSION CONTROL** 

# 1. Provide expansion joint cover assemblies.

# 1. Submit product data, shop drawings, sample of finish.

Summary:

- 1. Fire Performance: ANSI/UL 263, NFPA 251, UBC 43-1, ASTM E
- 119, and ASTM E 814 as applicable.
- 2. Type: Metal assembly with wearing surface cover plate.

- 3. Stainless Steel: ASTM A 666, Type 304 for plates, sheet, and
- 4. Strip Seals: Elastomeric membrane ASTM E 1783.
- 5. Compression Seals: Preformed, elastomeric extrusions ASTM E
- 6. Elastomeric Sealant: ASTM C 920, Use T.
- 7. Seismic Seals: Preformed, elastomeric extrusions ASTM E 1612. 8. Fire Barriers: Based on fire performance standards.

1. Take field measurements prior to fabrication, where possible. Form to required shapes and sizes with true, straight edges, lines and angles. Provide light-tight, hairline joints. 2. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of

other sections. 3. Coordinate with work of other sections; provide inserts and templates as needed. Install work plumb and level with uniform appearance.

## OPENINGS, GENERAL

Summary: Refer to Construction Plans for door locations. Refer to Finish Plans for door and frame finishes. Doors without reference are existing to remain.

METAL DOORS AND FRAMES

Summary: Interior doors and frames. Remodel existing doors and frames. Refinish existing doors and frames.

Submittals: Submit product data, shop drawings.

- Products: Provide steel products with recycled content. Match base building standard and comply with the following. 1. Standards: ANSI/SDI 100, Recommended Specifications for
- Standard Steel Doors and Frames. 2. Fire Rated Assemblies: NFPA 80, and acceptable testing agency
- 3. Manufacturers: Ceco Door Products, Curries Company, Kewanee Corp., Steelcraft, or Windsor Republic Doors. 4. Steel Doors: Standard seamless steel doors with hollow or
- composite construction. a. Interior Doors: ANSI/SDI A250.8, Grade II, heavy duty, minimum
- 18 gage cold rolled steel, 1 3/4 inches thick. b. Accessories: Sightproof stationary louvers and glazing stops. c. Finish: Factory primed and field painted
- 5. Steel Frames: a. Interior Frames at Fire-Rated Doors, Door and Sidelite Combinations: Welded type.

frames wider than 5 feet. 16 gage.

- b. Interior Frames at Smoke-Control and Non-Fire-Rated Doors: Knockdown type. c. Material: Sheet steel, mitered or coped corners. 14 gage for
- d. Accessories: Door silencers and plaster guards. e. Finish: Factory primed and field painted.

Installation: Comply with SDI 100, and NFPA 80 for fire-rated

ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

assemblies.

1. Provide aluminum-framed entrances and storefronts.

# Submittals:

1. Submit product data, shop drawings.

## Products: 1. Door Style: Stile and rail doors.

- 2. Storefront Frames: Thermal break type at exterior. 3. Aluminum Members: ASTM B 221, B 209 and B 211. 4. Steel Reinforcement: ASTM A 36, ASTM A 611, and ASTM A
- 570. 5. Closers: Concealed. 6. Hardware: Push/pulls, door stops, overhead holders, and
- deadlocks, weatherstripping and thresholds, exit devices. Refer to Hardware Sets in Section 087100. 7. Aluminum Finish: Clear anodized.

# 8. Aluminum Finish: 2-coat kynar color finish.

- 1. Anchor securely in place; install plumb, level and in true alignment.
- 2. Isolate dissimilar metals. 3. Coordinate with glazing work and hardware requirements. 4. Install assemblies complete with all hardware, anchors, inserts,

supports and accessories.

5. Test and adjust operation.

# **ALL-GLASS ENTRANCES**

1. Provide all-glass entrances and sidelites.

# Submittals:

1. Submit product data, shop drawings.

Products:

## 1. Glass: Tempered safety glass, ASTM C 1048, Kind FT. 2. Glass Color: Clear

- 3. Stainless Steel Door Fittings: Stainless steel cladding, ASTM A 666, alloy 302 laminated to aluminum extrusions. 4. Aluminum Door Fittings: Aluminum, ASTM B 221, alloy 6063 T
- 5. Hardware: Concealed closers, push pull sets, locks, panic hardware. 6. Threshold: Matching door fittings.
- 7. Accessory fittings for overhead door stop, transom bracket, sidelight fittings.
- 8. Stainless Steel Finish: AISI No. 4, bright directional polish. 9. Stainless Steel Finish: AISI No. 6, polished directional polish.

#### 10. Aluminum Finish: Clear anodized. 11. Aluminum Finish: 2-coat fluoropolymer.

- 1. Anchor securely in place; install plumb, level and in true
- 2. Isolate dissimilar metals. 3. Coordinate with glazing work and hardware requirements. 4. Install assemblies complete with all hardware, anchors, inserts,
- supports and accessories. 5. Test and adjust operation.

# 087100

## DOOR HARDWARE

accepted.

1. Product Requirements:

1. Provide hardware for swinging, sliding, and bifold doors.

# 2. Remodel existing hardware.

3. Comply with code and accessibility requirements. 4. Door hardware shall be re-used and/or new to match existing as required and as noted in Door Schedule. Locks are to be keyed by General Contractor and in accordance with keying standards. Refer to door schedule and below for specified items required.

Submittals: Submit product data, samples, proposed hardware schedule, maintenance data.

Products: Match existing and comply with building standards. Provide manufacturers items as specified. No substitutions will be

- a. Hardware for Fire Rated Openings: NFPA 80, and local
- c. Materials and Application: ANSI A156 series standards.
- d. Quality Level: Commercial. 2. Locksets and Latchsets: Mortise type. Verify and coordinate lock 6. Cementitious backer boards for application of tile. function with Building Owner.

b. Handicapped Accessibility: ANSI A117.1, ADAAG, and local

- 3. Lock Cylinders: Interchangeable type. 4. Keying: Owner's and Tenant's requirements; match existing keying and key control system.
- 5. Hinges and Butts: Full mortise type with nonremovable pins at exterior, entrance and security doors. 6. Closers: Barrier free type.
- 7. Hardware Finishes: Match existing and comply with building
- standards. 8. Stops for each door.
- 9. Floor Stops provide carpet risers at carpet locations.
- 10. Silencers. 11. Soundstripping. 12. Coordinate security system hardware installation with security
- vendor, including existing doors. 13. Exit devices: doors shall be operable from the inside without use of a key, special knowledge, or effort.
- 14. Public Area Doors (new or existing): ADA approved Lever action C 1178, Type X, 5/8 inch thick. hardware set mounted 36" to 42" AFF. 15. Hardware Sets/Schedule: Refer to drawings for Hardware Sets

# and Schedule.

- 1. Comply with DHI "Recommended Locations for Builder's
- 2. Refer to the Door Schedule for hardware sets. 3. The maximum effort required to operate interior exit doors and fire a. Provide steel framing with recycled content. doors shall not exceed 15 lbs.

Hardware" and hardware manufacturers instructions.

# GLAZING

Summary: Provide glass and glazing for units not factory glazed.

Products: As selected by Architect complying with the following:

- wire glass, ASTM C 1036. b. Heat Treated Glass Products: Heat strengthened, tempered,
- coated, and spandrel glass, ASTM C 1048.
- 2. Plastic:
- absorber, ASTM D 4802, Type UVA.
- 4. Setting blocks, spacers, and compressible filler rods. 5. Glazing Film: 2 mil minimum thickness.

# Installation:

1. Comply with GANA's Glazing Manual and manufacturer's

- additional requirements. 2. Drawings listed under 'Drawing Index' on TA0.1 shall be referenced in conjunction with this Drawing for complete information.
- 3. Confirm with Architect that these drawings are the most current issue before beginning layout and construction. 4. Exceptions to specifications are noted in Legends or Drawings.
- 6. The descriptions of finishes contain the following information: abbreviations, material, manufacturer, models, style and color. 7. Finishes Schedule – Refer to the drawings for Finish Schedule for

- 3. Steel suspension systems for ceilings and soffits. 4. Moisture-resistant gypsum board
- 7. Remodeling gypsum drywall systems at areas of new
- construction. 8. Gypsum board finishes.

# 11. Installation of access panels.

- joint treatment.
- 1. Gypsum Board: Provide gypsum board with recycled content. a. Gypsum Wallboard: ASTM C 36, regular, foil backed, and fire

2. Glass Mat Water Resistant Gypsum Backing Board: Type: ASTM

- b. Joint Treatment: ASTM C 475 and ASTM C 840, 3 coat system. c. Installation Standard: ASTM C 840.
- b. Thickness: 5/8 inch nominal. 4. Trim Accessories:
- c. Decorative Profiles: Aluminum reveals and channels. 5. Steel Framing for Walls and Partitions:
- d. Furring Channels: ASTM C 645: 25 gage (.0179 inch). e. Auxiliary Framing Components: Furring brackets, resilient furring channels, Z furring members, and non corrosive fasteners.
- a. Furring Channels: ASTM C 645: 25 gage (0.0179 inch), resilient

b. Steel Studs: Match steel studs used for walls.

c. Accessories: Hangers and inserts.

b. Concealed acoustical sealant.

- c. Mineral fiber sound attenuation blankets by CertainTeed or equal. 8. Partition Types and Details – refer to the drawings for partition types, stud dimensions, partition assemblies and ratings. Products:
- b. Joint Treatment: ASTM C 475 and ASTM C 840, 3 coat system. c. Installation Standard: ASTM C 840.

- Submittals: Submit product data, samples, shop drawings, warranty, maintenance data.
- a. Primary Glass Products: Clear float, tinted float, patterned, and
- c. Laminated Glass Units: Polyvinyl butyl interlayer. d. Mirrors: Silvering and protective coatings.
- a. Acrylic Plastic Glazing: Monolithic acrylic sheet with ultraviolet b. Polycarbonate Glazing: Extruded monolithic polycarbonate
- 3. Glazing: Preformed glazing tape glazing.
- 2. Set mirrors on stainless steel channels and adhere to wall with

FINISHES, GENERAL

- 1. Refer to General Conditions, Specifications and Schedules for
- 5. Refer to Drawings for exact locations, stops, starts and patterns

# all areas.

# **GYPSUM BOARD ASSEMBLIES**

- 1. Interior walls, partitions, and ceilings for tape and joint compound
- 2. Interior partition steel framing, steel framed and furred enclosures and columns and beams.
- 5. Microbial-resistant gypsum board.
  - 9. Sound attenuation insulation. 10. Concealed acoustical sealants.
- Submittals: Submit product data, 4 foot by 4 foot mockup showing
- rated types: 5/8 inch typical thickness.
- 3. Cementitious Backer Units: a. Type: ANSI A 118.9, cement coated Portland cement panels.
- a. Material: Metal. b. Types: Cornerbead, edge trim, and control joints.
- b. Steel Studs and Runners: ASTM C 645: 25 gage (.0179 inch). c. Typical Depth: 3 5/8 inch
- f. Installation Standard: ASTM C 754. 6. Steel Framing for Suspended and Furred Ceilings:
- d. Installation Standard: ASTM C 754. 7. Auxiliary Materials: a. Gypsum board screws, ASTM C 1002.
- 1. Gypsum Board: Provide gypsum board with recycled content. a. Gypsum Wallboard: ASTM C 36, regular, foil backed, and fire rated types: 5/8 inch typical thickness.
- 2. Glass Mat Water Resistant Gypsum Backing Board: Type: ASTM C 1178, Type X, 5/8 inch thick.

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**Dver Brown Architects** One Winthrop Square

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Boston, MA 02110-

# **ISSUED FOR PERMIT** 110 HIGH STREET - 6TH FL

110 HIGH STREET, BOSTON MA

JONES LANG LASALLE

**ROOF DECK** 

TITLE

DATE

10/17/2018

**DRAWING NO.** 

**SPECIFICATIONS** 

**JOB** NO.

18.0325

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FOR CONSTRUCTION

- 3. Cementitious Backer Units:
- a. Type: ANSI A 118.9, cement coated Portland cement panels.
- b. Thickness: 5/8 inch nominal.
- 4. Trim Accessories:
- a. Material: Metal.
- b. Types: Cornerbead, edge trim, and control joints.
- c. Decorative Profiles: Aluminum reveals and channels. 5. Steel Framing for Walls and Partitions:
- a. Provide steel framing with recycled content.
- b. Steel Studs and Runners: ASTM C 645:
- c. 25 gage (.0179 inch).
- d. Typical Depth:
- e. 3 5/8 inch f. Furring Channels: ASTM C 645:
- g. 25 gage (.0179 inch).
- h. Auxiliary Framing Components: Furring brackets, resilient furring channels, Z furring members, and non corrosive fasteners.
- i. Installation Standard: ASTM C 754.
- 6. Steel Framing for Suspended and Furred Ceilings:
- a. Furring Channels: ASTM C 645: 25 gage (0.0179 inch), resilient
- b. Steel Studs: Match steel studs used for walls.
- c. Accessories: Hangers and inserts.
- d. Installation Standard: ASTM C 754.
- 7. Auxiliary Materials:
- a. Gypsum board screws, ASTM C 1002.
- b. Concealed acoustical sealant.
- c. Mineral fiber sound attenuation blankets by CertainTeed or equal. 8. Partition Types and Details – refer to the drawings for partition types, stud dimensions, partition assemblies and ratings.

- 1. The General Contractor shall schedule and notify the Architect upon installation of partition runners, and prior to commencement of any stud and drywall work, for field verification and approval of the partition layout.
- 2. Comply with standards referenced above and ASTM C 840 and
- 3. Install joints only over framing members. 4. Provide blocking for items such as railings, grab bars, casework,
- toilet accessories, and similar items. 5. Provide acoustical sealant at runner tracks, wall perimeters,
- openings, expansion, and control joints. 6. Install gypsum board assemblies true, plumb, level and in proper
- relation to adjacent surfaces. 7. Where new partitions meet existing construction, remove existing
- cornerbeads to provide smooth transition.
- 8. Provide 3 coat joint treatment such that, after finishing, joints are not visible.
- a. Sand and leave ready for finish painting and wall treatment.
- 9. Gypsum board partitions shall be constructed of zinc-coated steel
- "C" studs 16" O.C. in depths as indicated on the drawings, and shall extend to the heights indicated. Secure studs to compatible runner tracks properly fastened to the floor and faced each side with one layer of gypsum drywall in thicknesses indicated, screwed to each stud 12" O.C. Where drywall partitions extend to the underside of
- the finished ceiling, the top edge is to be finished with metal "J" bead. Provide 3-1/2" thick sound attenuation blanket, as shown on the Drawings. Additional metal stud framing is to be provided where necessary for attachment of dimensioned electrical outlets and as required by height conditions. Power fastening of runner tracks is to be performed during non-business hours - verify with Property
- 10. Where new or existing ductwork passes through or over drywall partitions, the metal studs are to be framed around the ductwork. In no instance are metal studs or drywall to be fastened to the ductwork. Fire dampers are to be installed in areas where duct work
- passes through rated walls. 11. Provide beadex at drywall ends and full height partitions.
- Provide slip joints at full height partitions. 12. Outside corners are to be provided with metal corner beads and the entire partition assembly is to be taped, spackled and sanded to provide a smooth and even surface to receive paint or other finish as
- specified. 13. Tapered drywall edge shall not be installed against door.
- 14. At areas to receive shelving and/or counters or other wallmounted items, provide fire-rated wood back-up, screw fastened to
- the metal studs at appropriate heights. 15. Wood blocking shall be fire-retardant treated.
- 16. Where corridor and demising partitions are called for, the drywall is to be made tight to the underside of the floor above with voids in the metal deck and around pipe, cable, duct, beam and joist
- penetrations sealed with fire-safing insulation. 17. Where openings are encountered above ceilings in existing partitions other than for return air flow, they are to be patched and sealed as required in a similar manner.
- 18. Except where expansion joints are noted, where new drywall abuts existing wall corners, the existing metal corner bead is to be removed. The new wallboard is to be taped over and brought flush
- with the adjacent existing surface. 19. Existing partitions stripped of old base and adhesive shall be patched and/or repaired to provide a smooth and uniform surface for b. System: 1 coat interior alkyd enamel undercoat, 1 coat latex new base installation. Such preparation shall be performed even if
- the new base is to be installed under a separate contract. 20. Existing partitions shall be completely repaired and patched as required to receive new finish or touch-up as scheduled. Such preparation shall be performed throughout, even if the new finish is

to be installed under a separate contract.

21. Wherever partitions abut mullions at the exterior window wall, the partition closure detail, unless otherwise detailed, shall match existing building standard and all joints shall be acoustically sealed. 22. At fire and smoke rated partitions, stencil identifying label above lay-in ceiling as required by code.

# PAINTING AND COATING

5. Provide painting of entire area.

on actual surfaces to be painted.

best practices of the trade.

match the color of the frame.

necessary and finished.

unless otherwise noted.

primer, 2 coats latex finish

8. Gypsum Drywall Ceilings:

9. Metal Doors and Frames:

10. Wood for Painted Finish:

enamel, 2 coats latex enamel

a. Gloss: Semi-gloss.

Wet Areas:

latex primer.

a. Gloss: Flat

a. Gloss: Semi

a. Gloss: Semi

exists on the glass.

numbers.

paint used.

regulations.

1. Provide painting and surface preparation for interior unfinished

1. Submit product data, samples, 4 foot by 4 foot mockup of each

color, extra stock consisting of 1 unopened gallon of each type of

Products: Paint materials shall be professional grade, best quality.

regulations. For LEED projects, comply with LEED V4 requirements.

1. Provide field applied mock ups of each color and finish selected

4. Sand before painting until smooth and flat and sand between

5. Apply paint to achieve manufacturer's recommended dry film

1. Regulations: Compliance with VOC and environmental

2. VOC Content: Products shall comply with the applicable

3. First line commercial quality products for coating systems.

2. Test sample area for adhesion for each type of paint. 3. Remove cover plates and protect hardware and adjacent

6. Paint entire surface where patch painting is required.

8. Clean paint spatter from adjacent surfaces and glass.

9. Touch up damaged surfaces at completion of construction.

10. Materials scheduled to receive paint are to be filled, sanded and

otherwise prepared for priming and finishing in accordance with the

12. Access and electrical panels to be painted out (with appropriate

13. Continue finishes into closets within rooms/spaces sharing room

14. Where hollow metal frames do not fit tightly against the drywall.

the Contractor is to fill any such gaps with latex caulking compound,

tool compound flush with the back of the frame, and paint it in to

15. Existing metal doors, frames, wall access panels, fire hose

cabinets, etc., to be repainted, shall be sanded and prepared as

16. Millwork to be painted is to be properly prepared, primed and

Schedule: Interior finishes are keyed to the Drawings at typical locations. The finishes apply to locations that are not keyed - in and

are of the same construction and scope of work. The Contractor

discrepancies exist or qualification is required the Contractor is to

and subcontractors are responsible to coordinate the location of

typical finish materials and install the work indicated. If

2. Paint metal doors and frames P-2 unless otherwise noted.

3. Paint GWB ceilings Benjamin Moore; ceiling white, flat finish,

5. Gypsum Drywall Walls: Gloss: Eggshell. System: 1 coat latex

6. Gypsum Drywall Walls and Ceilings in Bathrooms, Kitchens and

7. Gypsum Drywall Walls to Receive Wall Covering: System: 1 coat

notify the Architect to obtain clarification. 1. Paint walls P-1 unless otherwise noted.

4. Paint GWB soffits P-1, unless otherwise noted.

b. System: 1 coat latex primer, 2 coats latex finish

b. System: 1 coat latex primer, 2 coats latex finish.

b. System: 1 coat latex primer, 2 coats latex finish

11. The Contractor shall install protective coverings and properly

mask adjoining pre-finished materials, including glass, prior to

applying paint finish. The Contractor shall not tape protective

coverings directly to the exterior window glass where solar film

paint product) to match the wall it is mounted on.

7. Recoat areas which show bleed through or defects.

- surfaces as scheduled. 2. Provide painting and surface preparation of exposed mechanical
- 2. Provide blocking and rough-in electrical to coordinate with and electrical piping, conduit, ductwork, and equipment. specialty signage. 3. Provide repainting and surface preparation at areas of
- Submittals: Submit product data, samples, plan indicating 4. Provide painting of entire surface where patch painting is locations. Finish to match building standard.
  - Products: Refer to Drawings.

101400

SIGNAGE

#### Panel Signs: Refer to Drawings.

Materials: Interior acrylic signs, UON. Refer to Drawings.

- Accessories: Concealed metal fasteners for entrance and exit signs, non-corrosive to sign material or mounting surface.

1. Provide building signage to comply with code and accessibility

1. Copy: Raised text, Braille and English 2. Minimum size: Minimum required by code.

- 1. Comply with all applicable federal, state and municipal codes. laws and regulations regarding signage for exits and handicapped
- 2. Confirm sign locations and heights prior to installation. 3. Clean and prepare substrates prior to installation of signs.
- 4. Install signs plumb, level and securely.
- 5. Install signs uniformly and consistently. 6. Clean and polish signs after installation.

FIRE PROTECTION SPECIALTIES

# Summary:

- 1. Fire extinguishers.
- 2. Fire extinguisher cabinets.
- Fire extinguisher mounting brackets.

#### Submittals: Submit product data.

Products: As selected by Architect complying with the following:

- 1. Standards: UL and FM listed products.
- 2. Fire Extinguishers:
- a. Type: Multipurpose dry chemical.
- b. Rating: Sized for project requirements.
- c. Public Area Mounting: Cabinet mounted.
- d. Service Area Mounting: Metal brackets.
- a. Mounting: Recessed, unless noted otherwise.
- b. Trim: Trimless.
- c. Doors: Enameled steel, baked enamel.
- d. Door Style: Duo panel. e. Accessories: Glass breaker or fire handle.
- Installation: Comply with manufacturer's recommendations and Fire

# Marshal's requirements.

# FIRE PROTECTION

Summary: Refer to Engineer's Drawings and Specifications.

# PLUMBING

210000

Summary: Refer to Engineer's Drawings and Specifications.

#### 230000 **HVAC**

Summary: Refer to Engineer's Drawings and Specifications.

#### 260000 **ELECTRICAL**

Summary: Refer to Engineer's Drawings and Specifications.

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**REVISIONS** 

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# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

110 HIGH STREET, BOSTON MA

TITLE

**SPECIFICATIONS** 

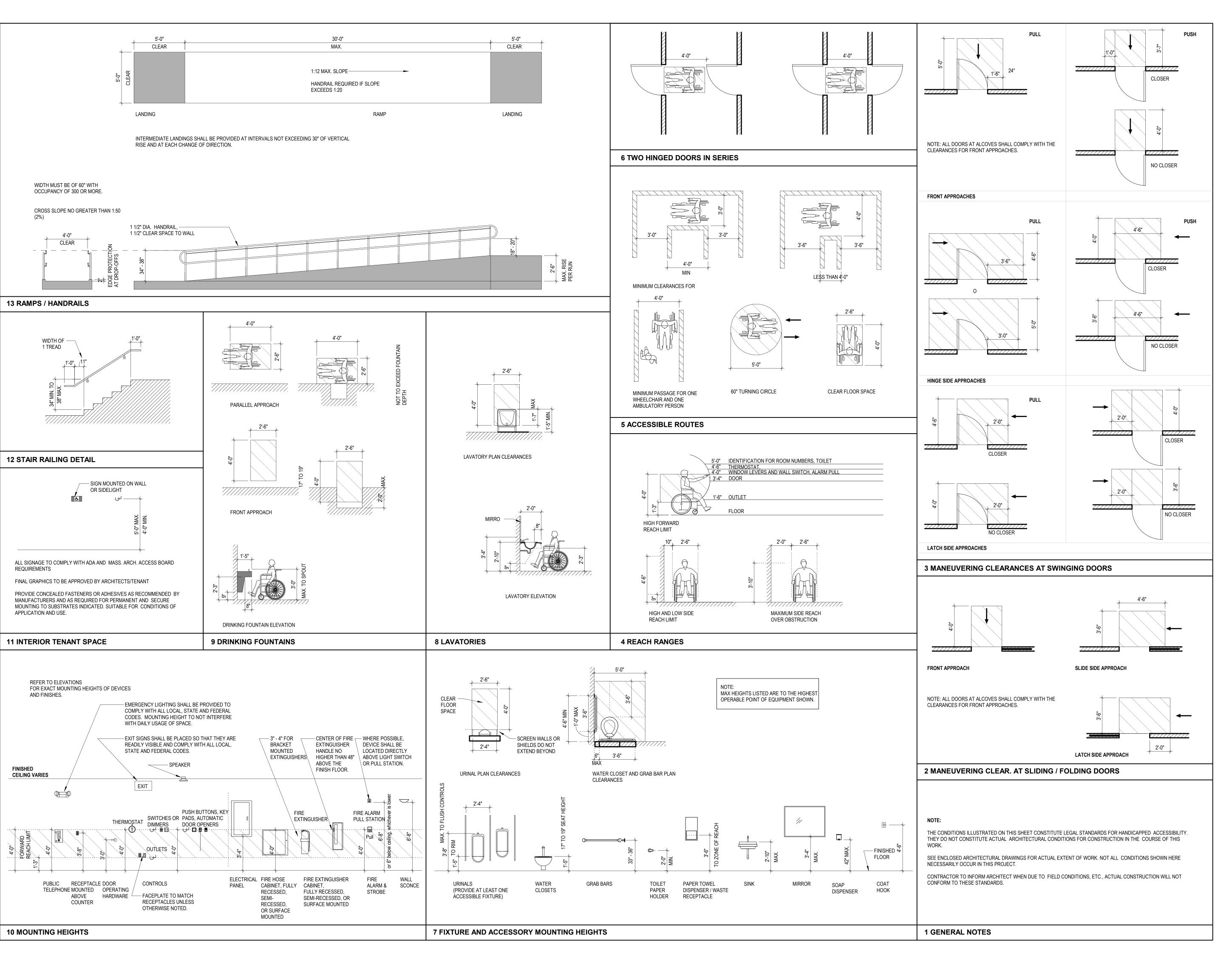
**DATE** 

**JOB** NO. 18.0325

**DRAWING NO.** 

10/17/2018

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**ACCESSIBILITY REQUIREMENTS** 

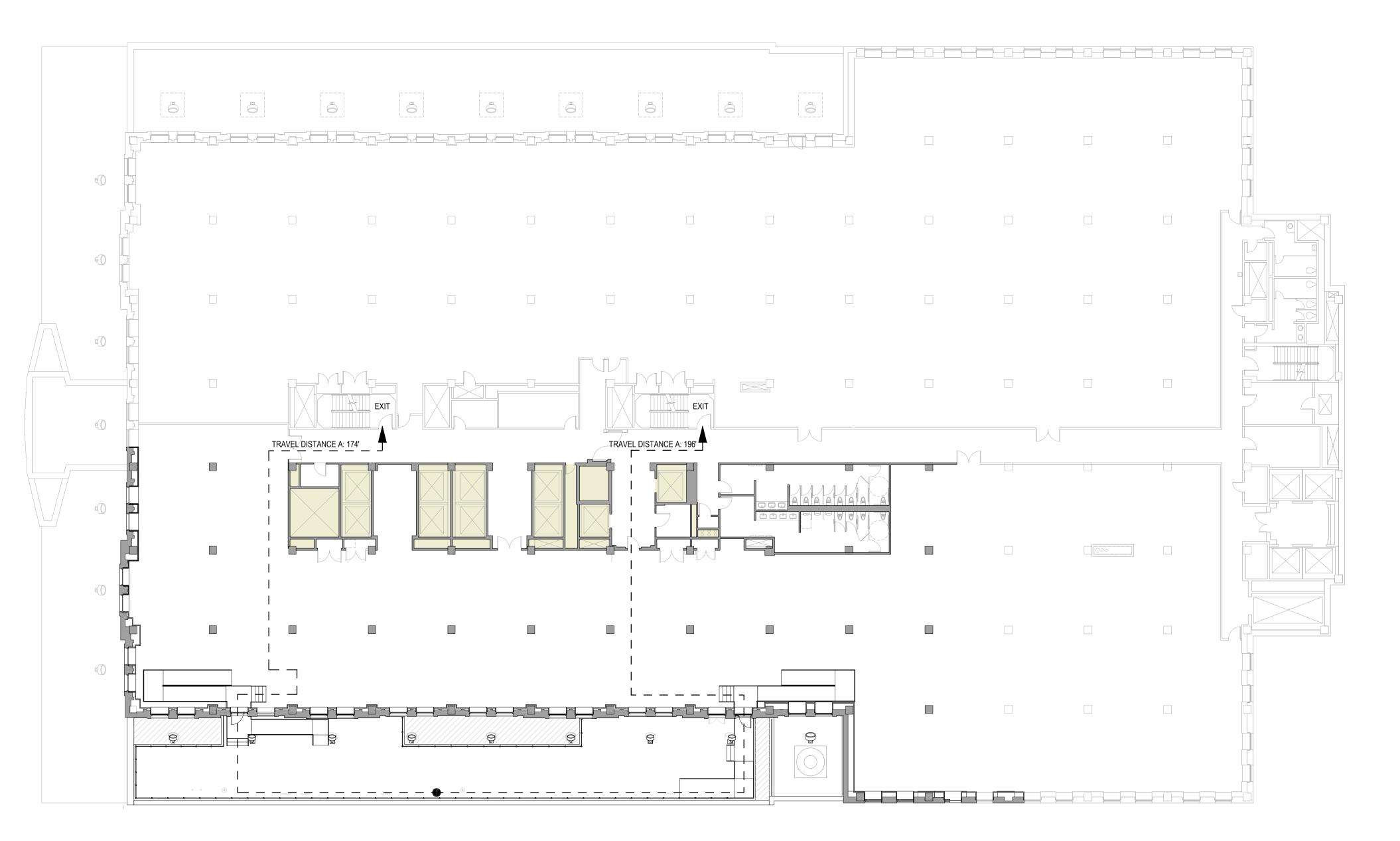
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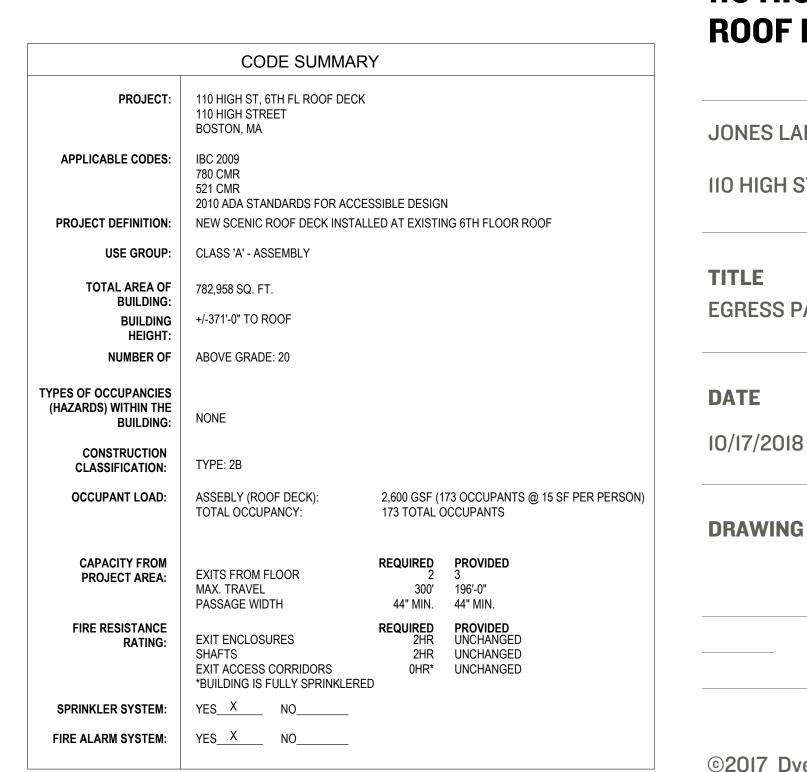
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1/16" = 1'-0"



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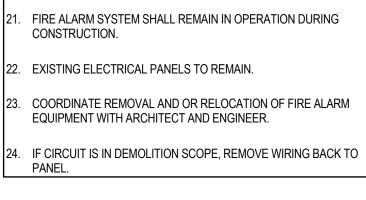
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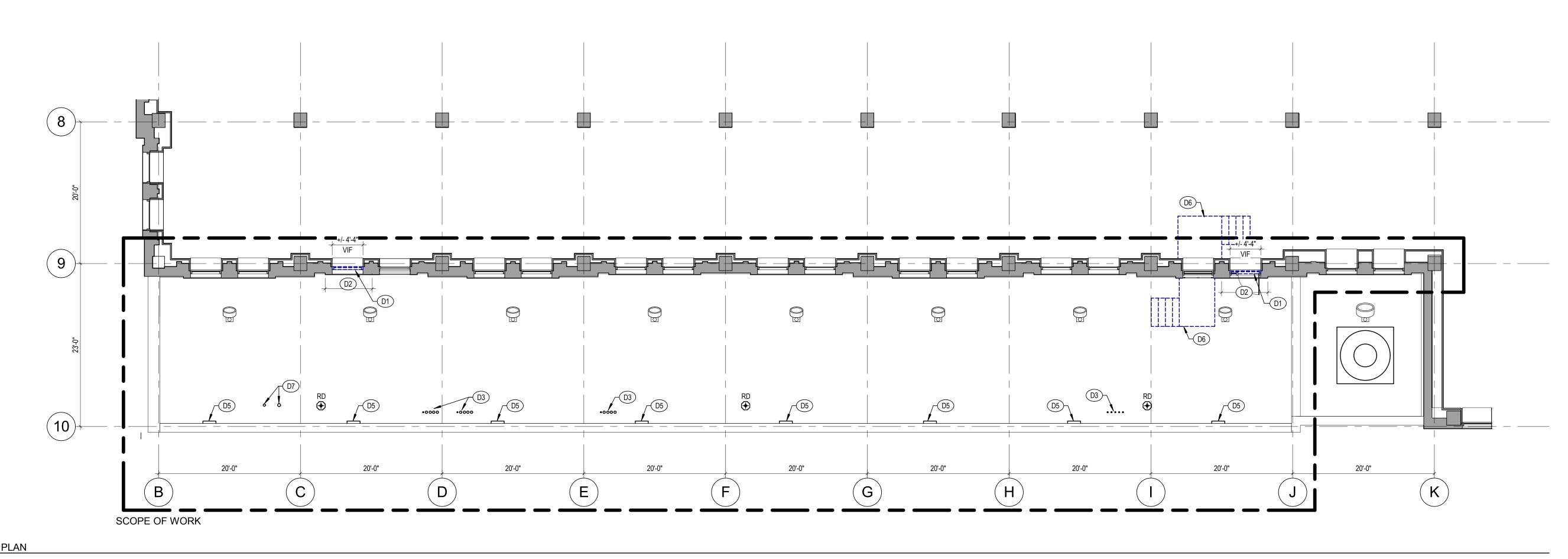
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FOR CONSTRUCTION

18.0325





## **DEMOLITION NOTES**

- DEMOLITION NOTES BELOW APPLY TO THE ENTIRE PLAN AREA SHOWN WITHIN THE SCOPE OF WORK LINE.
- COORDINATE DEMOLITION WITH NEW WORK. G.C. TO REVIEW CONSTRUCTION DOCUMENTS WITH EXISTING CONDITIONS AND NOTIFY ARCHITECT IMMEDIATELY OF ANY CONFLICTS.

CONTRACTOR TO MAINTAIN SECURITY OF ALL SPACES DURING

- DEMOLITION AND THROUGHOUT CONSTRUCTION.
- EXISTING APPLIED FLOORING, TILES, BASE, CARPETING, SHEET RUBBER, ETC, TO REMAIN UNLESS NOTED OTHERWISE.
- REMOVE BUILT-IN MILLWORK AS INDICATED.
- REMOVE ALL TELEPHONE WIRING AND EQUIPMENT. REMOVAL TO BE COORDINATED WITH DATA VENDOR.
- REMOVE CABINETS AND SHELVING, AS INDICATED.
- REMOVE EXISTING ENTRY DOOR(S) AND SIDELITE. COORDINATE WITH INSTALLATION OF NEW ENTRY DOORS TO MAINTAIN SECURITY.
- EXISTING DOORS TO REMAIN UNLESS NOTED OTHERWISE.
- 10. SALVAGE ALL WOOD DOORS AND FRAMES FOR REUSE.
- THRESHOLDS TO REMAIN UNLESS NOTED OTHERWISE.
- STRIP WALLCOVERING FROM WALLS TO REMAIN. UNLESS NOTED OTHERWISE.
- CAREFULLY REMOVE ALL ABANDONED MISCELLANEOUS ACCESSORIES, SIGNAGE, APPURTENANCES, HOOKS, BRACKETS, SHELVING, ETC.
- REMOVE ALL MISCELLANEOUS ITEMS ATTACHED TO COLUMNS ("I.E" WIRE MOLD, OUTLETS, BASE, MOLDINGS, ETC) UNLESS NOTED OTHERWISE.
- REMOVE WINDOW TREATMENTS AND HARDWARE. CLEAN AND STORE FOR REUSE.
- SALVAGE ALL FIRE EXTINGUISHERS AND CABINETS FOR POSSIBLE
- . PROTECT EXISTING RADIATOR COVERS TO REMAIN.
- . REMOVE PIPING WHERE INDICATED. COORDINATE DEMOLITION WITH ENGINEERING DRAWINGS.
- 19. REMOVE LAVATORY PIPING. FIXTURES AND FITTINGS, AS INDICATED.
- REMOVE PIPING IN CHASES OR COLUMNS STRIPPED OF FURRING AS INDICATED. COORDINATE WITH DEMOLITION WITH ENGINEERING
- FIRE ALARM SYSTEM SHALL REMAIN IN OPERATION DURING
- 22. EXISTING ELECTRICAL PANELS TO REMAIN.
- COORDINATE REMOVAL AND OR RELOCATION OF FIRE ALARM

DEMOLITION PLAN KEYNOTES							
NOTE	DESCRIPTION						
D1	DEMOLISH AND REMOVE EXISTING STOREFRONT OPENING, REFER TO ELEVATION DETAILS ON SHEET A6.01						
D2	DEMOLISH AND REMOVE EXISTING STONE MASONRY SILL, REFER TO ELEVATION DETAILS ON SHEET A6.01.						
D3	CUT AND CAP EXISTING ROOF PENETRATION TO TOP OF ROOF ASSEMBLY, REFER TO MEP DRAWINGS FOR CLARIFICATION.						
D5	ALTERNATE: REFER TO ALTERNATES ON SHEET A0.02 (DEMOLISH EXISTING IN WALL ELECTRICAL PENETRATIONS AND INFILL WITH NEW BRICK TO MATCH EXISTING, COORDINATE WITH MEP AS REQUIRED)						
D6	DEMOLISH AND REMOVE EXISTING TEMPORARY STAIR						
D7	PROVIDE SEPARATE LINE ITEM PRICING TO DEMOLISH AND RELOCATE EXISTING EXHAUST PENETRATIONS, COORDINATE SCOPE WITH MEP DRAWINGS AND BUILDING MANAGEMENT.						

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**REVISIONS** 

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# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

110 HIGH STREET, BOSTON MA

TITLE **DEMOLITION PLAN** 

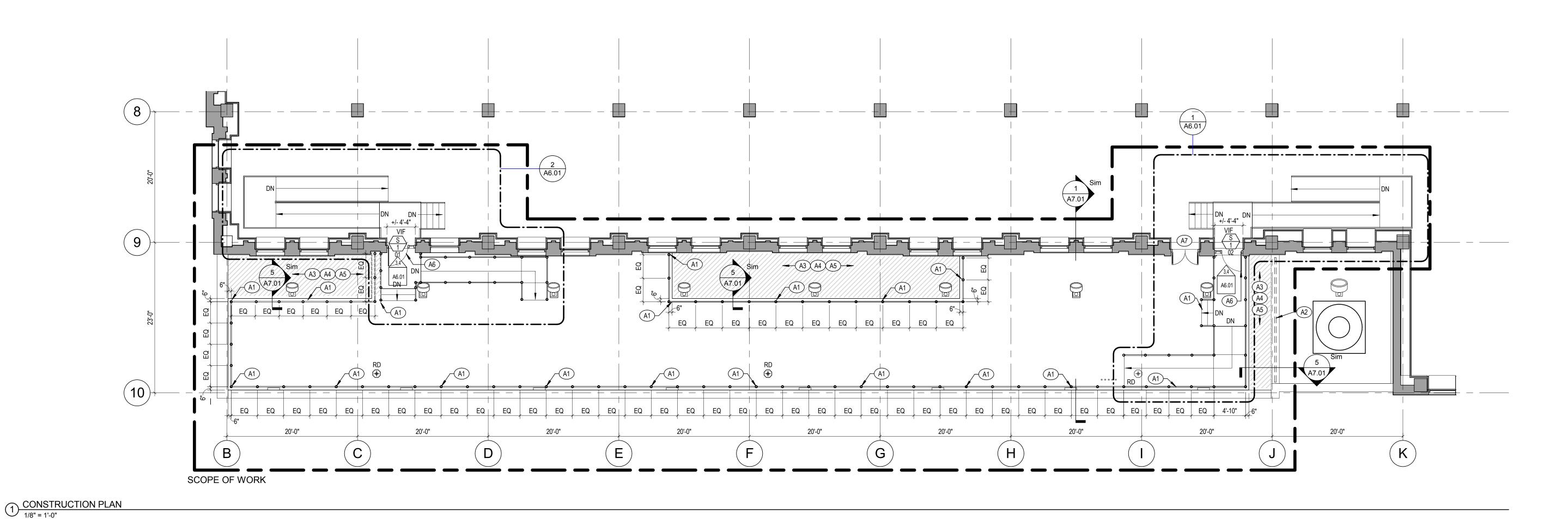
**DATE** 

10/17/2018

**JOB** 18.0325

**DRAWING NO.** 

FOR CONSTRUCTION



#### CONSTRUCTION PLAN KEYNOTES CONSTRUCTION PLAN NOTES DESCRIPTION A1 RAIL POST WITH INTEGRAL DRIVER (16'-0" MAX. DIMENSION SHOWN ARE TO FACE OF FINISH BETWEEN LOCATIONS). REFER TO SECTION DETAILS. DRYWALL/MASONRY UNLESS NOTED OTHERWISE

A2 ALTERNATE: REFER TO ALTERNATE #3 ON SHEET A0.02 (EQUIPMENT SCREEN) IF WOOD BLOCKING IS USED IT SHALL BE FIRE A3 BASE BID: EXISTING ROOFING MEMEBRANE SHALL RETARDANT TREATED LUMBER. REMAIN UNCHANGED IN AREAS SHOWN WITH

DIAGONAL HATCH PATTERN PATCH EXISTING FIREPROOFING OR USE A A4 ALTERNATE: REFER TO ALTERNATE ON SHEET A0.02 COMPATIBLE MATERIAL THAT PROVIDES EQUAL (INSTALL BALLASTED STONE ROOF SYSTEM, GC TO FIRE RATING ON FIREPROOFING AT ALL EXISTING CONFIRM MEMBRANE REQUIREMENTS) STEEL EXPOSED BY DEMOLITION UNLESS NOTED A5 ALTERNATE: REFER TO ALTERNATE ON SHEET A0.02 OTHERWISE. (INSTALL "LIVEROOF" PLANTING SYSTEM, GC TO

CONFIRM MEMBRANE REQUIREMENTS)

STOREFRONT SYSTEM (COORDINATE STOREFRONT DEPTH WITH EXISTING STOREFRONT DEPTH AT

A7 EXISTING ACCESS WINDOW & DOOR ASSEMBLY TO

A6 BASIS OF DESIGN: OLD CASTLE RELIANCE

HEADER CONDITION)

REMAIN

VERIFY THAT ALL PENETRATIONS IN THE FLOOR AND FIRE RATED WALLS ARE PROPERLY RATED.

ELEVATIONS SHOWN ON DRAWINGS ARE

RELATIVE TO FINISH DECK.

CANNOT BE ACHIEVED.

CONTRACTOR SHALL ADVISE ARCHITECT OF ANY DIMENSIONAL CONFLICTS BEFORE PROCEEDING WITH AFFECTED WORK.

STUD AND CMU DIMENSIONS SHOWN ARE NOMINAL. VERIFY WITH ARCHITECT ACTUAL DIMENSIONS AND LAYOUT TO AVOID CUMULATIVE

ADVISE ARCHITECT IF 'MIN.' DIMENSION SHOWN

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# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

110 HIGH STREET, BOSTON MA

TITLE

**CONSTRUCTION PLAN** 

**DATE** 

**JOB** NO. 18.0325

**DRAWING NO.** 

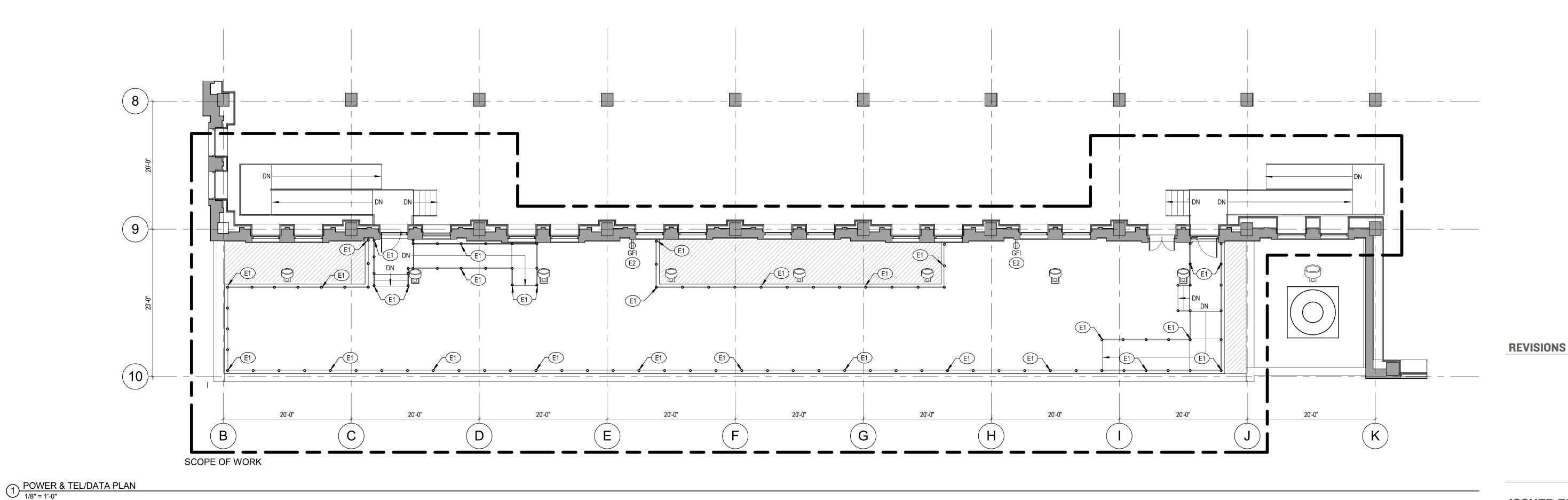
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FURNITURE SHOWN FOR REFERENCE ONLY. ARCHITECT NOT SPECIFYING FURNITURE AND TAKES NO RESPONSIBILITY

# POWER TEL-DATA NOTES

ALL DEVICES TO BE NEW UNLESS NOTED AS "EX" FOR EXISTING TO REMAIN. ANY DEVICES NOT SHOWN ON PLAN ARE EXISTING TO REMAIN.

GC RESPONSIBLE FOR REMOVAL OF ALL DEVICES IN THEIR ENTIRETY IF NOTED ON PLAN TO BE DEMOLISHED. BLANK COVER PLATES ARE NOT ACCEPTABLE. PATCH WALL AS REQUIRED FOR FINAL FINISH.

ALL DEVICES TO BE MOUNTED AT 18" AFF UNLESS NOTED

VERIFY LOCATION OF FLOOR-MOUNTED OUTLETS / FLOOR CORES WITH ARCHITECT IN FIELD PRIOR TO CORING.

OUTLETS SHOWN ABOVE COUNTERS (COFFEE STATIONS,

KITCHENS) TO BE MOUNTED AT 44" AFF TO CENTER LINE UNLESS NOTED OTHERWISE. CENTER ALL THERMOSTATS OVER CENTER LINE OF SWITCH OR SWITCH BANK WHERE APPLICABLE.

AFFIX DEVICE BOXES TO CLOSEST STUD UNLESS SPECIFIC DIMENSION SHOWN.

STAGGER DEVICE BOXES IN STUD BAYS.

SEE ENGINEERING DRAWINGS FOR EMERGENCY LIGHTING, EXIT SIGNS AND SMOKE DETECTORS. COORDINATE WITH ENGINEERING DRAWINGS.

THIS DRAWING IS FOR LOCATION PURPOSES ONLY. COORDINATE WORK WITH MEP/FP DRAWINGS. REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH AFFECTED WORK.

THERMOSTAT MOUNTING HEIGHTS TO BE 54" AFF UNLESS NOTED OTHERWISE.

THERMOSTAT AND OUTLET DIMENSIONS ARE TO CENTER OF

SWITCH MOUNTING HEIGHT TO BE 48" AFF UNLESS NOTED

14. GC SHALL REVIEW ALL LIGHTING AND POWERED FIXTURES TO CONFIRM AND PROVIDE CORRECT MOUNTING AND INSTALLATION CLEARANCES AND CONSTRUCTION, COMPLYING WITH MANUFACTURERS SPECIFICATIONS.

POWER TEL-DATA NOTES

SWITCHES SHOWN FOR LOCATION ONLY; SEE ENGINEERING DRAWINGS FOR SWITCHING REQUIREMENTS AND DETAIL.

# POWER PLAN KEYNOTES

DESCRIPTION E1 RAIL POST WITH INTEGRAL DRIVER (16'-0" MAX. BETWEEN LOCATIONS). REFER TO SECTION DETAILS E2 NEW EXTERIOR GFI OUTLET. COORDINATE WITH

ELECTRICAL DRAWINGS AND TENANT.

# **ISSUED FOR PERMIT**

# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

**IIO HIGH STREET, BOSTON MA** 

TITLE

POWER/TEL/DATA PLAN

**DATE** 

10/17/2018

**JOB** NO. 18.0325

**DRAWING NO.** 

FOR CONSTRUCTION

		SPECIF	FICATION	
FINISH ID	MFR	STYLE	COLOR	REMARKS
HANDRAIL				
HR-1	EFFICIENT-TEC INTERNATIONAL. LLC	FELLE	S3-SS-2-EM-GLL1-AS-2-1-1 -2-XX	ILLUMINATED LED RAIL, 316 STAINLESS STEEL WITH NO. 6 SATIN FINISH, 1.90" O.D. STAINLESS STEEL 1 1/2" PIPE RAIL, EMBED MOUNT SEE DETAILS, FELLE STD. GLASS CLAMP IN 1/2 TEMPERED GLASS, STANDARD LIGHT DISTRIBUTION, MEDIUM LED OUTPUT, OPAL WHITE WITH DIFFUSERS LENS, 2700K WARM WHITE ILLUMINATION COLOR, INTEGRAL DRIVER, GC TO COORDINATE LENGTH REQUIRED. ALL VERTICAL POST TO BE 3/8" DIAMETER TO MATCH INTEGRAL DRIVER POST.

# FINISH PLAN NOTES

REFER TO FINISH LEGEND FOR FINISHES. SEE SPECIFICATION SHEETS FOR GENERAL MATERIAL SPECIFICATION REQUIREMENTS AND INSTALLATION INSTRUCTIONS.

SUBMIT SAMPLES OF FINISH MATERIALS AS SPECIFIED TO ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.

REFER TO ELEVATIONS FOR SPECIAL PAINT OR WALL COVERING DETAILS.

J. REF	PER TO ELEVATIONS FOR SPECIAL PAINT OR WALLCOVERING DETAILS.
	FINISH PLAN KEYNOTES
NOTE	DESCRIPTION
F1	NEW ROOF DECK (+/- 2,600 SF). SEE DETAIL SHEET
F2	CROSS HATCH AREA INDICATES EXISTING ROOF MEMBRANE TO REMAIN (REFER ALSO TO ADI ALTERNATE #1 AND #2)
F3	ALTERNATE: REFER TO ADD ALTERNATE #1 ON SHEET A0.02
F4	ALTERNATE: REFER TO ADD ALTERNATE #2 ON SHEET A0.02

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**REVISIONS** 

# 110 HIGH STREET - 6TH FL **ROOF DECK**

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JONES LANG LASALLE

IIO HIGH STREET, BOSTON MA

TITLE FINISH PLAN

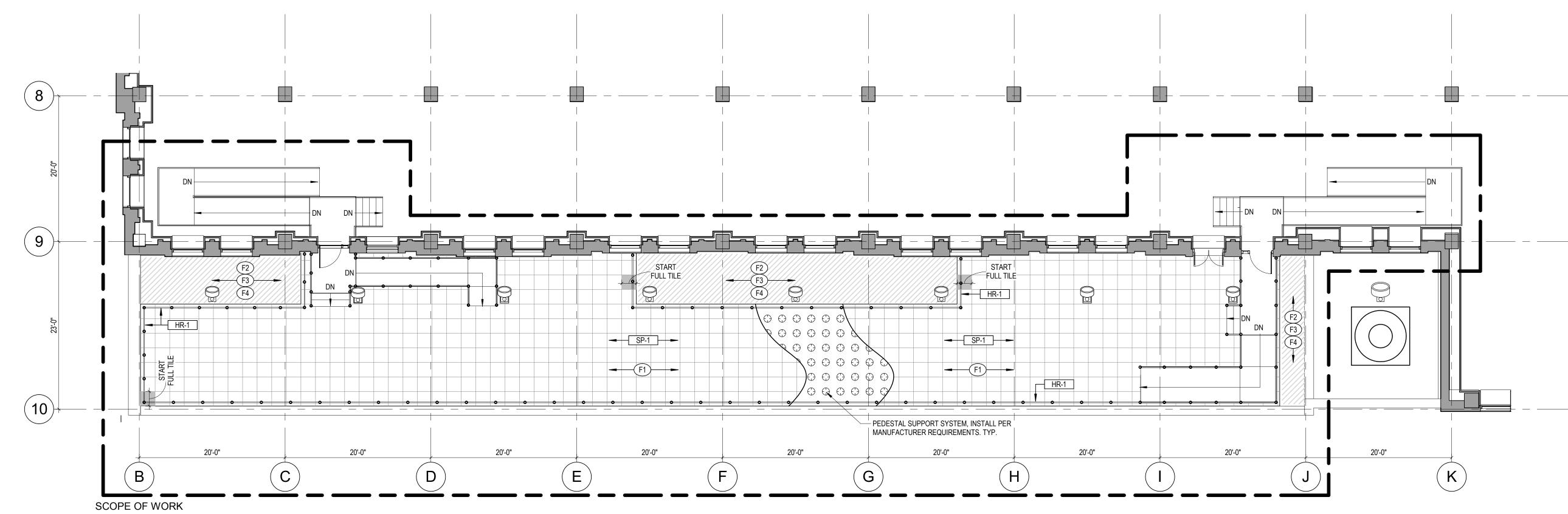
DATE 10/17/2018

JOB **NO**. 18.0325

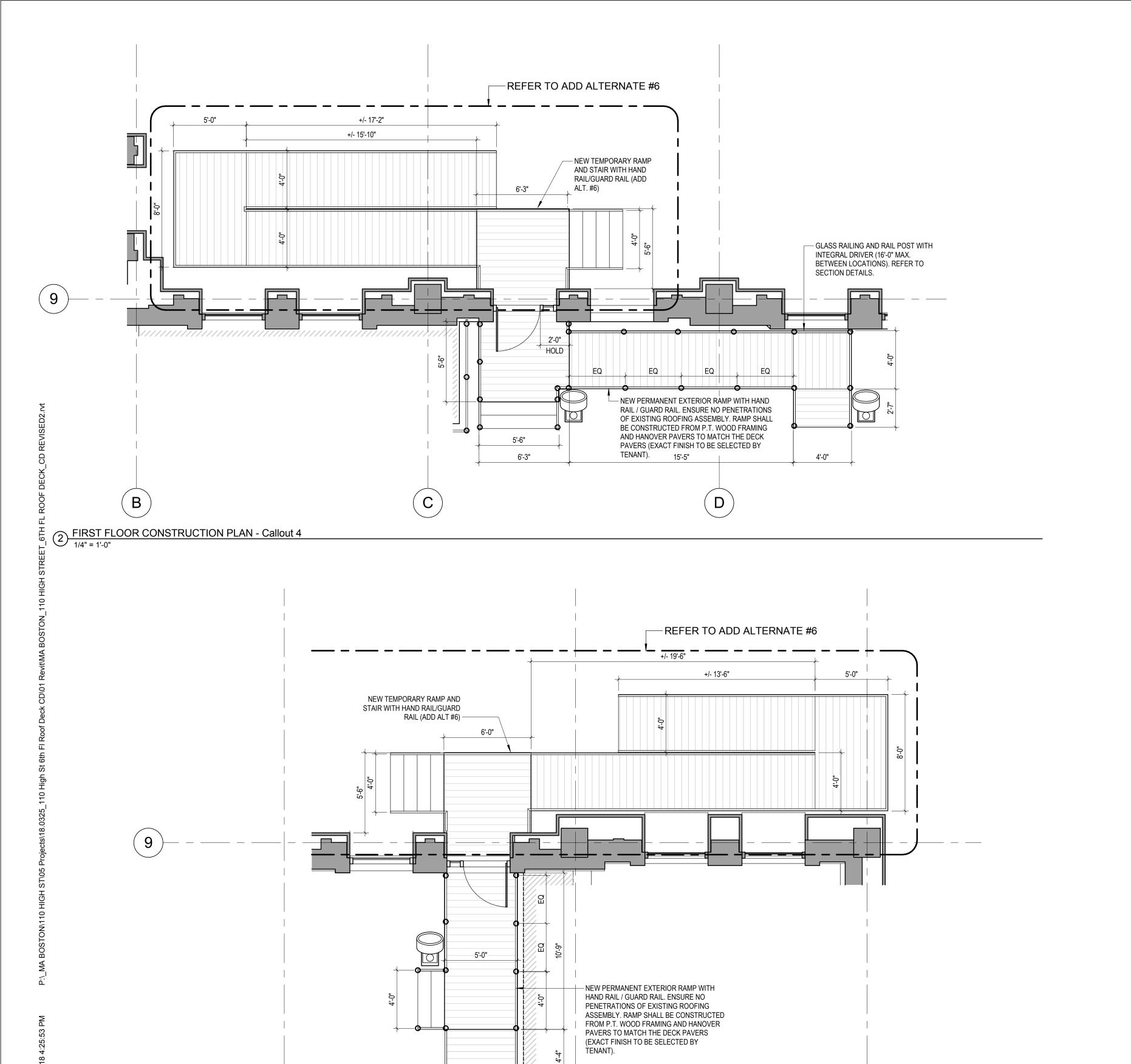
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1/8" = 1'-0"



— GLASS RAILING AND RAIL POST WITH INTEGRAL DRIVER (16'-0" MAX. BETWEEN LOCATIONS). REFER TO SECTION DETAILS.

EQ

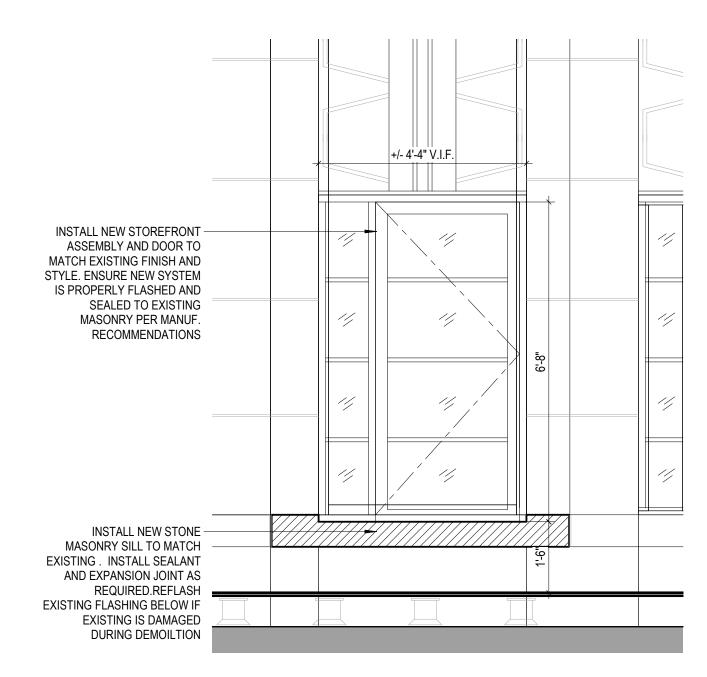
FIRST FLOOR CONSTRUCTION PLAN - Callout 3

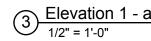
+/- 13'-8"

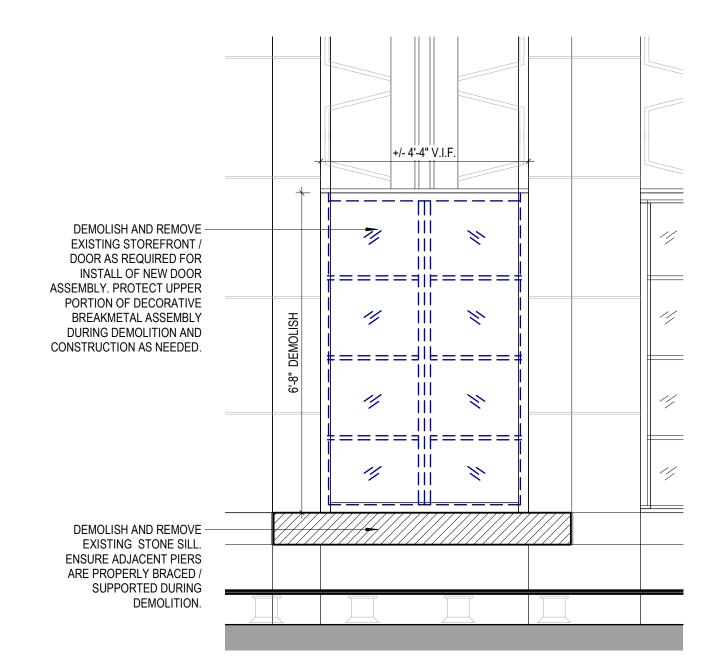
EQ

EQ

5'-0"







4 Elevation 1 - a Copy 1

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# 110 HIGH STREET - 6TH FL **ROOF DECK**

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110 HIGH STREET, BOSTON MA

TITLE

**ENLARGED PLANS & DETAILS** 

DATE

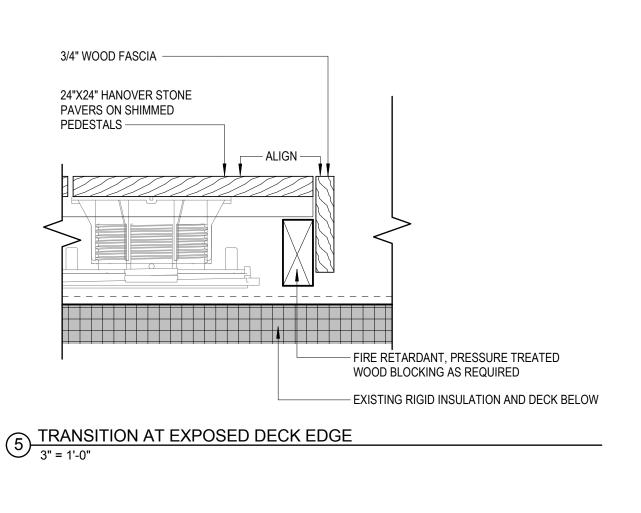
**JOB NO**. 18.0325

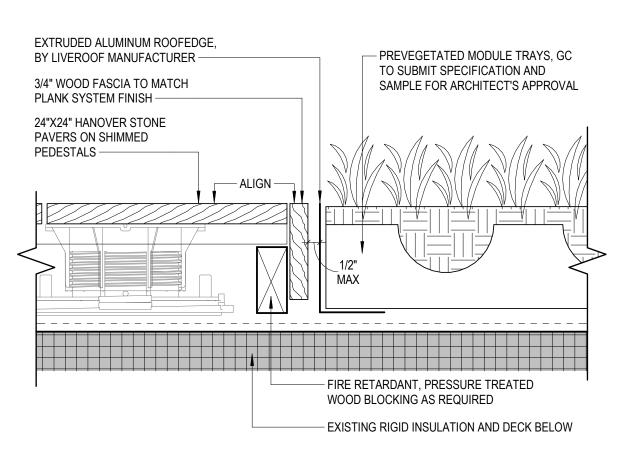
**DRAWING NO.** 

10/17/2018

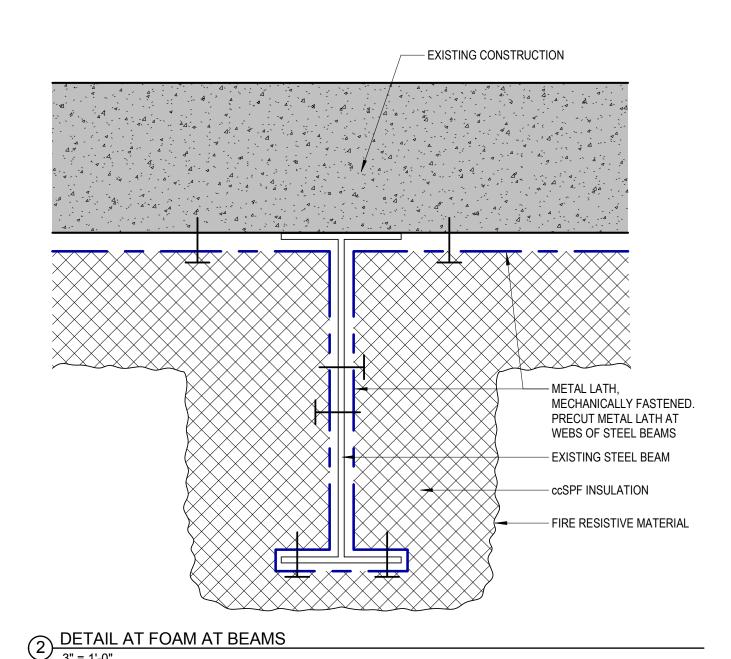
FOR CONSTRUCTION

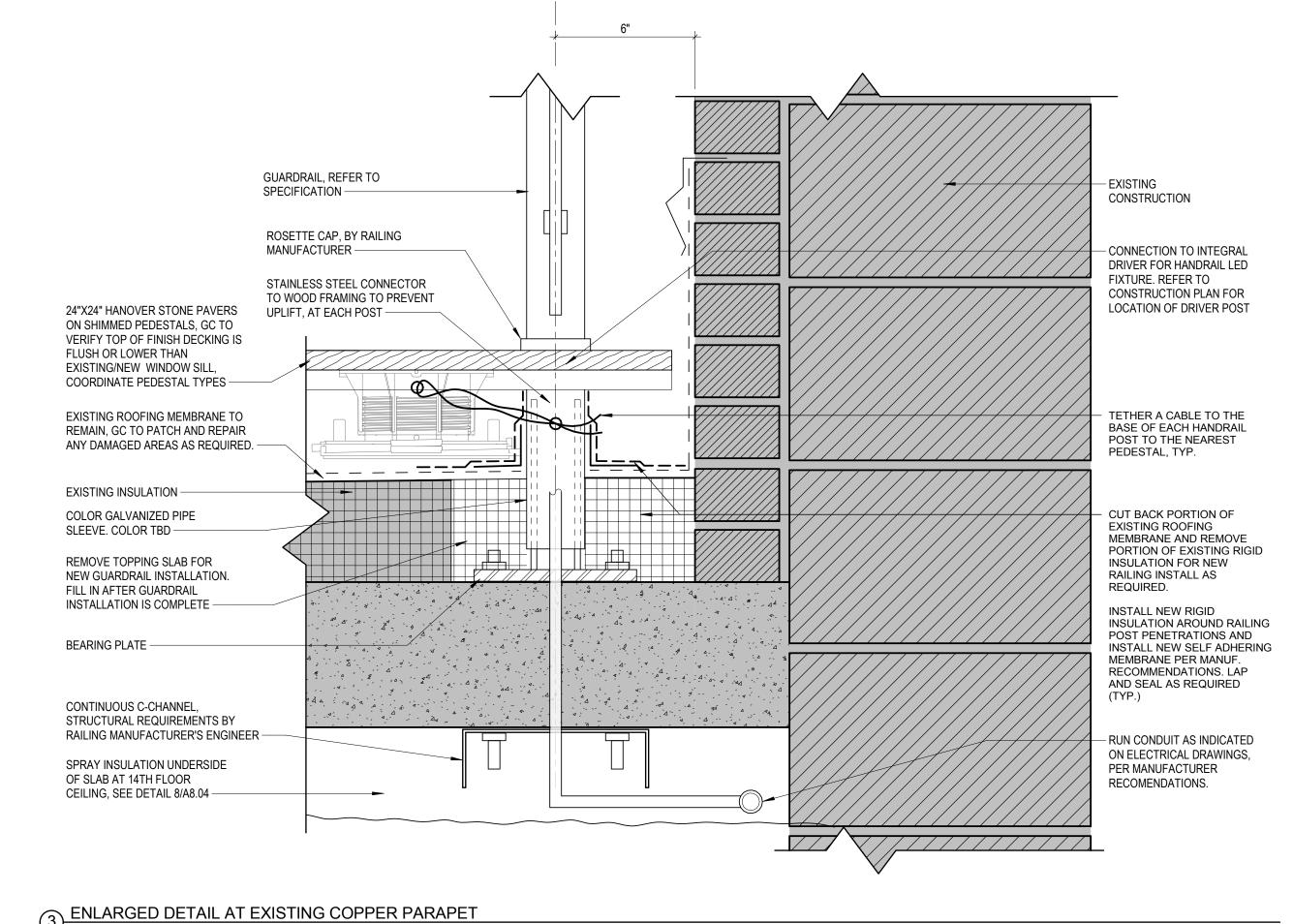






TRANSITION AT EXPOSED DECK EDGE - PREVEGETATED MODULE (ALT # 2)





NEW GUARDRAIL, REFER TO SPECIFICATION -4 4 4 - EXISTING WINDOWS EXISTING PARAPET CONSTRUCTION TO REMAIN -- EXISTING CONSTRUCTION EPDM FLASHING WITH BONDING ADHESIVE ON 1/2" EXTERIOR PLYWOOD AND OVER COPING; TURN DOWN 2" AT EXTERIOR SURFACE, WRAP UP UNDER EXISTING COPPER. - EXISTING BUILDING UP LIGHTING FIXTURE TO - EXISTING ROOFING - 24"X24" HANOVER STONE PAVERS ON SHIMMED PEDESTALS, GC TO VERIFY MEMBRANE TO REMAIN, REMAIN. CUT OPENING IN GC TO PATCH AND TOP OF FINISH DECKING IS FLUSH OR STONE PAVER PANELS AS REPAIR ANY DAMAGED LOWER THAN EXISTING/NEW WINDOW  $\frac{3}{A7.01}$ SILL, COORDINATE PEDESTAL TYPES. NEEDED AT EACH LOCATION. AREAS AS REQUIRED. - EXISTING ROOF CONSTRUCTION - CUT BACK PORTION OF EXISTING ROOFING MEMBRANE AND REMOVE PORTION OF EXISTING RIGID INSULATION FOR NEW RAILING INSTALL AS REQUIRED. REINSTALL NEW RIGID INSULATION AROUND RAILING POST PENETRATIONS AND INSTALL NEW SELF ADHERING MEMBRANE PER MANUF. RECOMMENDATIONS. LAP AND SEAL AS REQUIRED (TYP.) EXISTING T.O. STEEL EL: V.I.F. - EXISTING ROOF DRAIN EXISTING CONSTRUCTION TO REMAIN - SPRAY INSULATION UNDERSIDE OF VARIES SLAB, SEE DETAIL 8/A8.04 SEE FLOOR PLAN

1 DETAIL AT NEW DECK

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# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

110 HIGH STREET, BOSTON MA

TITLE **DETAILS** 

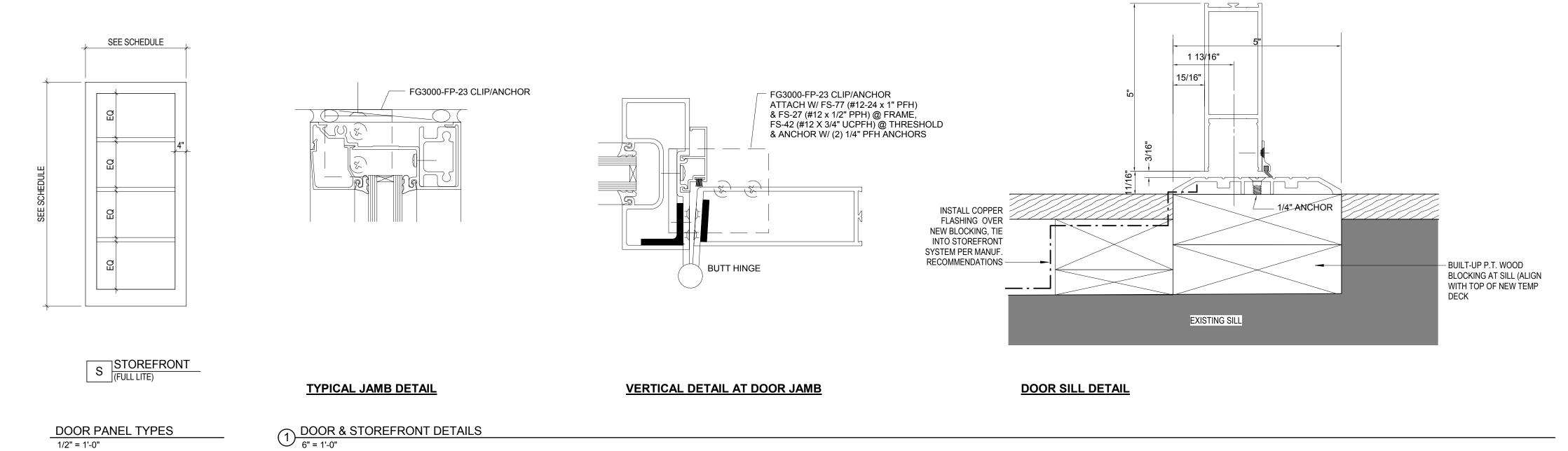
**DATE** 10/17/2018 **JOB NO**. 18.0325

**DRAWING NO.** 

FOR CONSTRUCTION

							DOOR AND	FRAME SCHEDULE					
LOCATI			I	DOOR			EINIGH			FRAME	0.051.101.15		
DOOR NO.	PANEL QTY	PANEL TYPE	PANEL WIDTH	HEIGHT	THICK	PUSH	FINISH	TYPE	PUSH	FINISH PULL	SIDELIGHT WIDTH	HARDWARE SET	COMMENTS
							-						
01	SINGLE	S	3'-0"	6'-8"	1"	MATCH EX.	MATCH EX	STOREFRONT	MATCH EX.	MATCH EX.	V.I.F.	1	EGRESS DOOR HARDWARE
02	SINGLE	S	3'-0"	6'-8"	1"	MATCH EX.	MATCH EX	STOREFRONT	MATCH EX.	MATCH EX.	V.I.F.	1	EGRESS DOOR HARDWARE
02	SINGLE	S	3'-0"	6'-4 1/2"	1"	MATCH EX.	MATCH EX	STOREFRONT	MATCH EX.	MATCH EX.		1	EGRESS DOOR HARDWARE

HARDWARE SETS						
KEY NAME	DESCRIPTION	SPECIFICATION	COMMENTS			
HS-1	BUTT HINGES 4-1/2" X 4-1/2"	MCKINNEY TA2314 NPR				
HS-1	LEVER - LOCK SET	SARGENT 8215 LNB 7/8" CTE				
HS-1	DOOR STOP - FLOOR MOUNTED	IVES FS436				
HS-1	DOOR SILENCER		GASKET TO BE GREY MOHAIR			



#### DOOR AND FRAME SCHEDULE NOTES

VERIFY ALL HARDWARE FUNCTIONS AND KEYING REQUIREMENTS WITH OWNER AND ARCHITECT PRIOR TO ORDERING HARDWARE.

PROVIDE DOOR AND/OR FRAME MOUNTING PLATES WHERE REQUIRED FOR PROPER CLOSER INSTALLATION (IF ANY).

PREPARE STEEL FRAMES TO RECEIVE FINISH HARDWARE INCLUDING CUTOUT, REINFORCEMENT, DRILLING AND TAPPING. ALL EXPOSED MITRED JOINTS TO BE WELDED CONTINUOUSLY; GRID AND DRESS TO MAKE ALL JOINTS SMOOTH, FLUSH AND INVISIBLE.

INTERIOR DOOR HARDWARE FINISHES TO MATCH EXISTING BUILDING STANDARD, UNLESS NOTED OTHERWISE IN HARDWARE SCHEDULE.

HOLLOW METAL FRAMES TO BE FACTORY PRIMED, HOLLOW METAL WELDED FRAME, UNLESS

UNLESS OTHERWISE NOTED, WOOD DOORS TO BE 5 PLY SOLID CORE; FINISH AS

G.C. TO SUBMIT PRODUCT DATA/SHOP DRAWINGS & DOOR AND HARDWARE SCHEDULES TO ARCHITECT FOR REVIEW FOR ALL DOORS, FRAMES, AND HARDWARE.

CAULK ALL AROUND HEAD, JAMB, AND SILL AT JUNCTURE OF HOLLOW METAL FRAME TO

VERIFY FRAME HEIGHTS BASED ON TOP OF SLAB AND FINISH FLOOR CONDITIONS AT EACH FRAME. GC TO COORDINATE FRAME HEIGHTS WITH CEILING HEIGHTS. NOTIFY ARCHTECTS OF ANY CONFLICTS.

PROVIDE 20 GA. DOUBLE STUD FRAMING AT DOOR JAMBS.

SHOP PRIME EXPOSED SURFACES.

DOOR UNDERCUTS SHALL BE KEPT TO A MINIMAL DIMENSION (1/2" OR LESS) AND SHALL BE UNIFORM THROUGHOUT PROJECT UNLESS NOTED OTHERWISE.

PROVIDE MINIMUM (3) JAMB ANCHORS AND ONE BASE ANCHOR PER JAMB AT GYPSUM WALLBOARD PARTITONS, TYP.

DOOR FRAMES SHALL BE SECURED RIDIGLY IN PLACE AND BRACED TO FLOOR AND STRUCTURE ABOVE TO PREVENT BREAK OUT FROM PARTITIONS.

PROVIDE FRAME ROUGH OPENINGS AS RECOMMENDED BY FRAME MANUFACTURER.

PROVIDE STANDARD DOOR FRAME PROFILES AS REQUIRED TO MEET ADJACENT CONDITIONS.

DOORS SHALL OPERATE FREELY WITHOUT BINDING.

NO THROUGH-BOLTING OF HARDWARE WILL BE ACCEPTED; USE DOOR TO BE REINFORCED

INSTALLATION OF ALL DOORS AND HARDWARE SHALL MEET ADA REQUIREMENTS. NOTIFY ARCHITECT IF ANY CLEARANCES CANNOT BE MET PRIOR TO CONSTRUCTION

ALL DOORS SHALL COMPLY WITH MINIMUM ADA REQUIRED APPROACH CLEARANCES. NOTIFY ARCHITECT IF MINIMUM CANNOT BE ACHIEVED.

ERECT ALL DOOR FRAMES AND ADJACENT WALLS TO CONFORM TO THE APPLICABLE PLAN CONFIGURATION. NOTIFY ARCHITECT OF ANY CONFLICTS PRIOR TO INSTALLATION OF DOOR FRAMES AND ADJACENT WALLS.

ALL HARDWARE SHALL BE UNLOCKED IN THE DIRECTION OF EGRESS, REGARDLESS OF OTHER LOCK FUNCTIONS.

HINGES SHALL BE FULL MORTISE, FIVE KNUCKLE, FLAT TIP, COMMERICAL BALL BEARING TYPE; STANLEY OR APPROVED EQUAL, UNLESS NOTED OTHERWISE IN HARDWARE

CONFIRM SECURITY REQUIREMENTS WITH OWNER AND OWNER'S SECURITY VENDOR PRIOR TO START OF CONSTRUCTION.

EXISTING DOOR HEIGHTS AND WIDTHS ARE SHOWN FOR REFERENCE ONLY.

MAGLOCK, PUSH BUTTON DOOR RELEASE, CARD READER, CLOSER, AND ANY OTHER ASSOCIATED EGRESS HARDWARE TO REMAIN ON EXISITNG DOORS UNLESS OTHERWISE NOTED. CONFIRM ALL HARDWARE IS FUNCTIONAL AND SUITABLE FOR REUSE.

ALL EXISTING DOORS TO BE REFINISHED AS NOTED.

REUSE SALVAGED DOORS AND FRAMES REMOVED DURING DEMOLITION WHERE APPLICABLE. OWNER AND ARCHITECT SHALL REVIEW ALL SALVALGED DOORS PRIOR TO

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# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

**IIO HIGH STREET, BOSTON MA** 

TITLE

DOOR TYPES & SCHEDULE

**DATE** 

**JOB** NO. 18.0325

**DRAWING NO.** 

10/17/2018

FOR CONSTRUCTION

- Massachusetts, Ninth Edition 2. Verify all dimensions and conditions in the field prior to commencing work. Where dimensions and elevations of existing construction could affect the new construction, it is the Contractor's responsibility to make field measurements in time for their incorporation in the Shop Drawings. Notify the Architect and
- Engineer of any discrepancies that may exist. 3. See architectural drawings for floor elevations, slopes, locations of depressed floor areas, and floor openings. Compare the structural drawings with the architectural drawings and report any discrepancy to the Architect and Engineer prior to construction.
- 4. Principal openings through the framing are shown on these drawings. Examine the structural, architectural and mechanical drawings for the required openings and verify size and location of all openings with the Mechanical Contractor. Provide all openings required by the Mechanical, Electrical, or Plumbing trades, whether shown or not shown in the structural drawings. Any deviation from the openings shown on the structural drawings shall be brought to the Engineer's attention for review.
- 5. Furnish and place all supports, temporary and permanent, whether shoring, bracing, needling, underpinning, or sheet piling, necessary to brace existing walls or framing to remain, so that no horizontal or vertical settlement occurs to the existing structures. Maintain temporary supports in place until permanent supports are installed. Design of these supports shall be by a registered Structural Engineer in the state of Massachusetts in the employ of the Contractor.
- 6. Alternate connection details may be approved if such details are submitted to the Engineer for review and acceptance is granted. However, the Engineer shall be the sole judge of acceptability and the Contractor's bid shall anticipate the use of those specific details shown on the drawings. Retain a registered Structural
- Engineer to be responsible for the design of any proposed alternate details. 7. Include work not indicated on a part of the drawings but reasonably implied to be similar to that shown at
- 8. The safety of adjacent structures, property, his workmen, and the public, as affected by the construction

of this project is the sole responsibility of the Contractor.

- 9. All Contractors are required to examine the drawings and specifications carefully, visit the site and fully inform themselves as to all existing conditions and limitations, prior to agreeing to perform the work. Failure to visit the site and familiarize themselves with the existing conditions and limitations will in no way relieve the Contractor from furnishing any materials or performing any work in accordance with drawings and specifications without additional cost to the Owner.
- 10. Structural drawings may represent construction with a reference scale. Due to the inherent process of drawing development and presentation not all work may be shown "exact" in that scale. Do not "scale" drawings to obtain any missing information or to interpret any information not specifically dimensioned for
- "exact" detailing or construction purposes. 11. The Contract Documents represent final conditions. Stability of the structure during construction and means and methods that impose temporary loading conditions on the incomplete structure is the sole responsibility of the General Contractor. This responsibility includes, but is not limited to, the design and furnish of any temporary supports, shoring, and/or bracing required for the safety and stability of the structure during construction
- 12. The existing conditions, dimensions, and elevations shown on these plans and details are based upon the construction documents of the structural addition (added level 5 and roof) by OKS Architects and Patti Associates Structural Engineers with original date of April 20, 1988 and revisions dated as recent as August 13, 1985. The construction documents for the original construction of the building are not available. The contractor shall familiarize themselves with these drawings and shall field verify all conditions for the purpose of preparing the bid and performing the new work detailed in the drawings.

	DESIGN LOADS					
sign Code: ASCE 7	-10					
k Category: II						
	_					
	Ground snow load, pg	40 psf				
	Flat roof snow load, p=0.7(Ce)(Ct)(Is)(pg)	30 psf				
Snow Loads	Snow exposure factore, Ce	0.9				
Onon Ecado	Thermal factor, Ct	1.0				
	Snow load importance factor, I	1.0				
	Snow drift conditions in accordance with Section 1608.0					
	Basic Wind Speed (3-Second gust)	128 mph				
	Wind Exposure = B	1.0				
Wind Loads	Design wind pressures for main wind force resisting system in accordance with ASCE 7-10 Chapter 27					
	Design wind pressures on components and cladding in accordance with ASCE 7-10 Chapter 30					
	Seismic importance factor, I	1.0				
	Spectral response acceleration, Ss	0.216				
	<u>'</u>	0.210				
	Spectral response acceleration, S1					
	Site class	D (assumed)				
	Design spectral response coefficient, Sds	0.230				
	Design spectral response coefficient, Sd	0.110				
	Seismic design category B					
	Basic Seismic force resisting system					
Earthquake Loads	East/West Direction: Concrete moment frame (Foundation - Original Roof). Steel (1988 Addition - Level 5 - Roof)	moment frame				
	North/South Direction: Concrete moment frame (Foundation - Original Roof). Steel (1988 Addition - Level 5 - Roof)	moment frame				
	Seismic component (MEP Unit) response modification factor, Rp	6.0 (East/West direction) 6.0 (North/South direction)				

LOADING SCHEDULE							
Occupancy	Superimposed Dead Load (psf)	Live Load (psf)	Live Load Reduction	Concentrated Load (lbs)			
Stairs	10	100	No				
Mechanical Areas	10	40	Yes	Equipment weight with pad bases			
Roof	17	30	No	All other roofs 300, on 6in <sup>2</sup>			
Roof Deck	50	100	No				
Green Roof	50	40	No				

# SUBMITTAL REVIEW:

- 1. Review of Contractor Submittals such as Shop Drawings, Product Data and Samples is for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Review of such submittals is not for the purpose of determining the accuracy and completeness of other information such as dimensions, quantities, and installation or performance of equipment or systems, which are c@ ÁÔ[}dæ&d[lopÁ^•][}•ñaājāciĖÁNJˇ¦Á^ça^, Ár@aḥlÁ;[oÁ&[}•cācic^Áæ]]¦[çæþÁ;Áræ^côÁ,¦^&æ\*cā[}•Á;¦ÉA;|^••Á;c@-¦;ã^specifically stated in the Contract Documents, of any construction means, methods, techniques, sequences of procedures. Approval of a specific item shall not indicate approval of an assembly of which the item is a
- component. Submittals and shop drawings are the property of the Contractor.
- Submittals will not be reviewed unless first reviewed by the Contractor and indicated as such on the submittal. Review is limited only to those elements listed on the transmittal that are indicated as being submitted for æ]]¦[çæ|ÐÁ^ç^}ÆiÁ;cœ|¦Á^|^{^}, oœ|Ád^Æi, &|`å^åÆi, È ÈÐÁdÆà; å8æ;[lopÁ;[å^|Á;¦Á\*|^&dā}}Á;|æ|DÐÁÔ@æ)\*^∙Á;Á;!^çā;ॉ•|^ reviewed elements are not reviewed unless requested as Revise and Resubmit or unless a design change bulletin creates a change to the element. In the event of a change bulletin, only those elements affected by that bulletin and which are clearly indicated as a change by clouds, or similar distinguishing means, are reviewed.
- Ù`à{ãoca‡•Ár^}oÁn@g|¦ÁÜ^&[¦å+Á∖¦Án@g|¦Án⊘ã^|åÁn∿^+Áse¢^Á,[oÁ^çã^\_^åÈ Structural Submittals are elements designed by the engineer of record and shown in the Contract Documents and
- they are reviewed in accordance with note 1. Structural Delegated Design Submittals are reviews of elements where the Contract Documents specifically require the Contractor to provide professional design services or certifications by a design professional related to systems, materials or equipment and the Contract Documents specify the appropriate performance and design seal and signature will be reviewed for conformance with the design criteria. The Engineer shall be entitled to rely
- provided by the delegated design professional. Non-Structural Component Submittals are reviewed for the effect on structure only. Indicate component loads on the structure directly on the submittal. The design of the components is not reviewed. Comments are limited to the effect on the building structure. The Engineer shall be entitled to rely upon the adequacy, accuracy and

upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or

completeness of the calculations and/or loading information provided. Model submittal review elements are reviewed parametrically in the model sent by the contractor. Status updates and comments are submitted as data via XML file, a PDF summary of which is provided with the submittal return transmission. In the event of a discrepancy between the XML file and the PDF summary, the PDF will govern.

- DRILLED-IN CONCRETE ANCHORS:
  - 1. Mechanical Anchors: Wedge type with current ICBO approval and published in ICC ESR Code Report and conforming to ICC ES AC193. Complete with required nuts, washers, and manufacturer's installation instructions. Size and manufacturer as indicated on drawings. Where anchor manufacturer is not indicated, subject to compliance with requirements and acceptance by Architect, provide one of the following listed in the Post Installed Anchor Table for cracked and un-cracked concrete (unless otherwise noted)
  - 2. Chemical Anchors: Threaded carbon steel or stainless steel rod complete with required nuts, washers, adhesive system and manufacturer's installation instructions. Current ICBO approval and published ICC ESR Code Report required and conforming to ICC ES AC308. Size and manufacturer as indicated on drawings. Where anchor manufacturer is not indicated, subject to compliance with requirements and acceptance by the Architect, provide one of the following listed in the Post Installed Anchor Table for cracked and un-cracked concrete (unless
  - 3. At locations where post installed anchors are being used in concrete, a survey shall be preformed to locate existing rebar, using ground penetrating radar. Survey results are to be coordinated with shop drawings. Alternatively, anchor rods are to be installed after which a template is to be created for use by the fabricator in the shop drawings. Notify Engineer of record (E.O.R.) if as-installed location varies more than 1/2" from theoretical.

GN - POST INSTALLED ANCHOR MATERIAL TABLE

Manufacture	Anchor Type	Name	Comments
Hilti	Mechanical	HAD ICC	-
Hilti	Mechanical	HSL-3	-
Hilti	Mechanical	Kwik Bolt TZ	-
Hilti	Mechanical	Kwik Bolt 3	un-cracked concrete only
Power Fasteners	Mechanical	Power-Stud + SD11 Category 1	1/4"Ø - uncracked concrete only, all others acceptable for both cracked and un-cracked concrete
Power Fasteners	Mechanical	Power-Stud + SD2 Category 1	-
Power Fasteners	Mechanical	Wedge-Bolt+ Category1	1/4"Ø - uncracked concrete only, all others acceptable for both cracked and un-cracked concrete
Power Fasteners	Mechanical	Snake+ Category 1	-
Power Fasteners	Mechanical	Vertigo + Category 1	-
Simpson Strong-Tie	Mechanical	Strong-Bolt	-
Simpson Strong-Tie	Mechanical	Titen HD	-
Simpson Strong-Tie	Mechanical	Titen HD Rod Hanger	3/8", 1/2"Ø only for both cracked and un-cracked concrete
ITW Red Head	Mechanical	Trubolt +	3/8", 1/2", 5/8"Ø only
ITW Red Head	Mechanical	Trubolt	1/4", 3/8", 1/2"Ø - uncracked concrete only, all others acceptable for both cracked and un-cracked concrete
Hilti	Chemical	HIT-RE 500 SD	-
Hilti	Chemical	HIT-HY 200 SAFE SET	1 1/4"Ø max. for both cracked and un-cracked concrete. Note: for embedment greater than 15" use HIT-RE 500 SD due to the quick setting time of the 200 SAFE SET.
Power Fasteners	Chemical	AC100+ Gold-Dry, Wet, Water-Filled	un-cracked concrete only
Power Fasteners	Chemical	PE1000+ -Dry, Wet, Water-Filled	3/8", 1", 1 1/4"Ø - acceptable for un-cracked concrete only, all others acceptable for both cracked and un-cracked concrete
Power Fasteners	Chemical	T308+	3/8" - 7/8"Ø - un-cracked concrete only, none acceptable for cracked concrete
Simpson Strong-Tie	Chemical	SET-XP	-
ITW Red Head	Chemical	EPCON G5	un-cracked concrete only

## STRUCTURAL STEEL:

- 1. Structural steel design conforms to "Specification for structural steel Building (AISC, Fourteenth Edition).
- 2. Structural steel rolled shapes, plates, and bars shall conform to ASTM designations, see Steel Material Table 3. All steel exposed to the weather in the completed building shall be hot-dip galvanized. All steel to receive spray fireproofing shall not be shop primed. Interior steel not spray fireproofed shall be shop primed with a primer compatible with the finish.
- 4. Filler beams shall be spaced equally between established dimensions, unless noted otherwise -5. Ù@[]Á&[}}^&cā[}•Á}|^••Á;|ぺ••Á;c@⊹¦ãr^Á;[c^å£Á;@eq|Áa^Á;aæå^Áa^Á,^|åā]\*ÉÁ;¦Áa^Á.•ā]\*Án-DÄ;ÁQ;ājā[\*{DÁ@at@Áid^}\*c@Áa[|o•Ê either installed snug tight or pre-tensioned meeting the requirements for slip critical faying surfaces in accordance with
- AISC 360-05 Section J3.8 with a Class B surface. 6. All shop and field welds shall be made by certified welders, and shall conform to "Structural Welding Code - Steel" (AWS D1.1 2004).
- 7. Electrodes for all field and shop welding shall conform to AWS E-70 Series. 8. Bolted field connections shall be made with 3/4" diameter A325 bolts, minimum, unless otherwise noted.
- 9. A325 bolts installed with the bolt tension (pre-tensioned) specified in Table J3.1 of the AISC LRFD Fourteenth Edition Specification, shall be used for bolted moment connections, bracing members, hangers, and connections noted as Type SC on the design drawings.
- 10. Bracing members, shall meet the requirements for slip-critical faying surfaces in accordance with AISC 360-05 Section J3.8 with a Class A surface. Oversized holes shall be permitted when the connections are designed as slip-critical joints, and the oversized holes are in one ply only. The available shear strength of bolted joints using standard holes shall be calculated as that for bearing-type joints, except that the nominal bearing strength at bolt holes shall not be taken greater than 2.4dtF.
- 11. All other A325 bolts shall not be pre-tensioned but shall be installed to the snug tight condition as defined by AISC. 12. Connections shown on these drawings are generally schematic. They are intended to define the spatial relationship of the framed members and show a feasible method of making the connection. Any connection that is not shown or is not completely detailed on the structural drawings shall be designed by a registered professional Engineer, retained by the fabricator. Details and
- connections may be designed to conform to AISC Manuals Fourteenth Edition LRFD or Fourteenth Edition ASD. See specifications or submittals section of the general notes for information required on shop drawings.
- 13. All rectangular HSS members to be orientated long side vertical unless noted otherwise 14. Details and connections completely detailed in the Contract Drawings may not be altered without written approval by the Engineer.
- Where approved, altered connections shall be completely detailed by the fabricator's engineer clearly on the shop drawings. 15. Alterations of schematic connection details may impact architectural concept and shall not be made without prior written approval
- 16. Minimum connection plate thickness shall be 3/8", unless otherwise indicated in the Contract Drawings.
- 17. Unless otherwise noted, beam to beam connections and beam to column connections shall be double angle (t=5/16") framed beam connections shop welded per Table 10-2, AISC Manual Fourteenth Edition - LRFD) using weld A, or shop bolted using Table 10-1 and using 3/4" diameter A325-N bolts in standard or horizontally slotted holes for the field connection. The number of rows of bolts, n, shall be in accordance with Table 4. The table applies to composite and non-composite beams. Where the Fabricator proposes an alternate connection, it shall have at least the shear capacity indicated in Table 4. Where reactions are indicated in the drawings (example: Ru=85k) they supersede Table 4 and the Fabricator shall provide a connection with a capacity at least equal to the reaction indicated. Seated beam connections will not be allowed unless the seat is used for erection purposes only. For other beam shapes (S, C, MC) provide a two bolt connection unless otherwise shown on the drawings. Where reactions are posted, they have been factored per State Building Code of the Commonwealth of Massachusetts, Ninth Edition.
- 18. The connection at the ends of tension or compression members shall develop the force due to the design load, but not less than 100% of the tension strength of the member where no design load is posted. Design forces, if posted, have been factored in accordance with the Governing Building Code and no stress increase is permitted. Tension strength of member = 0.9Fy x Ag, When design force is based on tension capacity of member, load is to be applied
- 19. Splicing of structural members where not detailed on the drawings is prohibited without prior approval of the Structural Engineer.
- 20. Provide welded stiffener plates on both sides of the web of beams at points of concentrated loads including beams supporting columns or running over the tops of columns or other beams. Minimum stiffener plate thickness shall be 5/8" or flange thickness of column above or below, whichever is greater.
- 21. Cuts, holes, coping, etc. required for work of other trades shall be shown on the shop drawings and made in the shop. Cuts or burning of holes in structural steel members in the field will not be permitted, unless specifically approved in each case by the Structural Engineer
- 22. All HSS shapes except diagonal bracing members (round, square rectangular, etc.) are to have a 1/4" cap plate at all exposed ends. Cap plates to be seal welded all around, unless noted otherwise
- 23. All weld sizes not shown in details herein shall be the minimum required size based on thickness of thinner part as per AISC, Tables J2.3 & J2.4. Exception: At member splices, welds or bolts shall develop full strength of the member or components being connected.
- 24. All around welds indicated herein shall be discontinuous at the flange tips of open sections.
- 25. All structural steel, including base plates and tops of anchor bolts, to be exposed to soil are to be coated with an approved coal tar epoxy. 16 mils minimum thickness.
- 26. Any alteration made by the detailer on the structural steel shop drawings to schematic or completely detailed connections shown on the contract drawings must be clearly identified by clouding or by direct note on the shop drawing by the detailer prior to submission to the engineer.
- 27. Any member sizes shown on the plans, and currently listed in the AISC Manual of Steel Construction, Fourteenth Edition, which are not currently available must be brought to the Architect and Structural Engineers attention prior to award of steel contract. No claim for additional cost will be accepted after the award, for member/built up member substitutions for these
- 28. Flat bar stock of equal thickness and material grade may be substituted for "fitted" stiffener plates at all locations. Width of bar may be within (-0", +3/4") of "fitted" plate dimension.

	GN - TABLE 1 - STE	EL MATERIAL		
Steel Element	ASTM/Type	Fy (ksi)	Fu (ksi)	Comments
Anchor rods in masonry	F1554 GR 36, F1554 GR 55, or A307 Grade A/C	36	58	Weldable, STD Hex Head
AS Hooked (Gravity)	F1554 GR 55	55	75	Weldable
AS Straight w/ plate washer (Lateral)	F1554 GR 105	105	125	Heavy hex headed
Baseplates ≤ 4in	A572	50	65	
Bolts	A325 or F1852	-	120	Bolts are 3/4"Ø UNO, use tension-controlled where possible
Deformed Bar Anchor	A496	70	80	-
Other shapes	A36	36	58	
Pipe	A53 GR B	35	60	-
Plates, UNO	A36	36	58	-
Rect HSS	A500 GR B	46	58	-
Round HSS	A500 GR B	42	58	-
Shear Connectors (Headed Anchor Stud)	A108	51	65	Studs are 3/4"Ø UNO
Welding electrodes, thickness of thinner part <= 0.1 inches (12 GA)	E60 or E70	-	-	Per AWS
Welding electrodes, thickness of thinner part > 0.1 inches (12 GA)	E70	-	-	Per AWS
Wide flanges, WT (UNO)	A992	50	65	<u> </u> -

GN - TA	ABLE 2 - LRFD	
Beam Size	n	Shear Ultimate Strength LRFD, kips
W8x10, W10x12	2	18.5
W8x13, 15, W10x15	2	24.0
W8x18, 21, 24 W10x17, 19, 22, 26	2	26.9
W8 ≥ 28, W10 ≥ 30	2	34.8
W12x14, W12x16	3	33.0
W14 ≤ 30, W12x19, 22, 26, 30	3	40.2
W12x35, 40, 45 W14x34, 38, 43, 48	3	52.1
W12 ≥ 50 W14 ≥ 53	3	63.0
W16x26, 31	4	60.0
W16x36, 40 W18x35, W18x40	4	71.9
W16 ≥ 45, W18x46, 50, 55	4	84.2
W18 ≥ 60, W21 ≤ 62, W24x55	5	106.7
W21 ≥ 68, W24x62, 68, 76	5	126.5
W24 ≥ 84, W27x84	6	151.8
W27 ≥ 94, W30x90, 99	7	195.0
W30 ≥ 108	8	230.0
W33	9	260.0
W36	10	290.0
W40, W44	11	319,0

#### DRILLED-IN CONCRETE ANCHORS:

- 1.- Mechanical Anchors: Wedge type with current ICBO approval and published in ICC ESR Code Report and conforming to ICC ES AC193. Complete with required nuts, washers, and manufacturer's installation instructions. Size and manufacturer as indicated on drawings.
- Where anchor manufacturer is not indicated, subject to compliance with requirements and acceptance by Architect. provide one of the following, for cracked and un-cracked concrete (unless otherwise noted):
  - Hilti Corporation
  - HAD ICC - HSL-3
  - Kwik Bolt TZ - Kwik Bolt 3 (un-cracked concrete only)
  - ĒÁÚ「.^¦ÉÚč åÉÁÚÖFFÁÔæc^\*[¦^ÁrÁÇFÐÄ; ÁÉÁ}&¦æ&\^åÁ&[}&¦~co^Á;}|^ÊÁcd|Á;co∞¦•Ácc&&^]cæà|^Á;¦
  - both cracked and un-cracked concrete - Power-Stud SD2 Category 1
  - EÁY ^å\* ^EÓ[|dÉÁÔææ^\*[| ^FÁQFEDÄ; ÁEÁ|}&|æ&\ ^åÁ&[] &| ^c^Á|] | ÉÁse||Á|; c@||• Áse&&^] cæà||^Á[| ¦Áà[ c@ cracked and un-cracked concrete)
- Snake+ Category 1 Vertigo+ Category 1
- Simpson Strong-Tie Company, Inc.:
- Strong-Bolt - Titen HD ËV㢠\ ÁPÖÁÜ | å ÁPæ) \* ^ \ ÁQ+Đ ÄŽÆFBOÄ; ÁI \ |^ÁI \ ÁB | @ÁS\ æ&\ ^å Áæ) å Á \ BE\ æ&\ ^å ÆI \ &\ ° D
- ËÁV¦ à [ | dÉÁQ+BÌ ÄËÁFBCÄĞÁ BÌ Ä; Á( ) | ^ D
- EÁV¦`à[|ơÁCFĐ ÄÁÁHĐ ÄÁÁHĐ ÄÁÁHĐ ÄÁÁHĐ ÄÁÁHÐ ÁÁÁK] & aæk ^åÁK[} & ^c^Á;}|^ÊÁæHÁ;c@\!•Áæ&&^] cæà|^Á;¦Ái[c@Ák]æ&k ^å
- 2.- Chemical Anchors: Threaded carbon steel or stainless steel rod complete with required nuts, washers, adhesive system and manufacturer's installation instructions. Current ICBO approval and published ICC ESR Code Report required and conforming to ICC ES AC308. Size and manufacturer as indicated on drawings.
- Where anchor manufacturer is not indicated, subject to compliance with requirements and acceptance by the
- Architect provide one of the following, for cracked and un-cracked concrete (unless otherwise noted): - HIT-RE 500 SD
  - ËËP QYËP ŸÁQ€€ÂÛQEZÒÂÛÒVÁÇFÁFÐ Ä: Á; æ¢ÈÁ; ¦Áà[ c@Ásiæ&\^åÁs) åÁ} ËSiæ&\^åÁs[} &i^¢^\È Note: for embedment greater than 15" use HIT-RE 500 SD due to the quick setting time of the 200 SAFE SET.
  - Power Fasteners:
  - AC100+ Gold-Dry, Wet, Water-Filled (un-cracked concrete only) ËÁÚÒF€€€ÉÆÖ¦^ÊÁY^¢ÉY 200°\ËØ#\åÁQ+ÐÀÄÁFÄÖÁFÁFÐÄ; ÆÆÆ&&^] 2000\AÁ; ¦Á}ÊЫ; 2000\AÁ; ¦Á}ÊЫ; 2000\åÁQ; }&!^¢ only, all others acceptable for both cracked and un-cracked concrete)

EÁVHEÌ ÉÁÇHÐ ÄÁEÁÐ À ÄÆÁ } ES¦æ&\^åÁ&[ } &¦^&^Á[ ] ^ÉÁ; [ } ^Áæ&&^] ææà|^Á[ ¦Á&¦æ&\^åÁ&[ } &¦^&\

- Simpson Strong-Tie Company, Inc.:
- ITW Red Head:
- EPCON G5 (un-cracked concrete only)
- 3.- At locations where post installed anchors are being used in concrete, a survey shall be preformed to locate existing rebar, using ground penetrating radar. Survey results are to be coordinated with shop drawings. Alternatively, anchor rods are to be installed after which a template is to be created for use by the fabricator in the shop drawings. Notify Engineer of record (E.O.R.) if as-installed location varies more than 1/2" from theoretical.

# INSPECTION - CONCRETE:

- 1.- Concrete inspection and testing will be made in accordance with building code requirements, Contract Documents, and will include the following:
  - a. Testing concrete for strength, slump, air content, temperature, and unit weight. b. Marking and testing concrete cylinders, including furnishing cylinder containers for specimens. c. Transporting and storing of all specimens involved in testing and inspection. Test cylinders are to be transported to laboratory not later than 24 hours after casting, not earlier than 16 hours after
  - d. Inspection of mixing and placing of concrete at the site, including recording of: amount and location of concrete placement, method of placing concrete, and any other pertinent information.

- 2.- The Testing laboratory will take specimens as follows: At least one set of four cylinders for each 50 cubic yards or fraction thereof of each class of concrete, but not less than one set for any one day's operations.
  - a. For concrete placed by pumping, test specimens and concrete used for determination of slump, air content, and weight are to be taken at the point of placement of concrete into the forms. b. Samples will be obtained in accordance with ASTM C172.
  - c. Marking, curing and subsequent handling of test cylinders, except as modified herein, shall be in accordance with ASTM C31. Testing shall be in accordance with ASTM C39. d. The cylinders shall be placed in laboratory storage under moist curing conditions at approximately F617 426 2187
  - 70 degrees F within 24 hours after molding, and maintain therein until tested. Tests will be as
  - 1.) Marking, curing and subsequent handling of test cylinders, except as modified herein, shall be in accordance with ASTM C31. Testing shall be in accordance with ASTM C39. 2.) Two cylinders shall be tested at 28 days for acceptance. The acceptance test results
  - shall be the average strength of these two cylinders. 3.) One cylinder shall be kept for eventual testing at 56 days to verify any marginal results
- of 28-day tests. If not required to be tested, cylinder will be discarded after 28 days. 3.- Test Reports: Reports of cylinder tests shall be submitted as specified herein within five days of laboratory testing. Test reports shall, as a minimum, include:
  - a. Results of field testing at time of sampling including date and time of sampling, amount of water added at site prior to sampling, ambient air temperature and concrete temperature,
  - concrete slump and air content, and concrete wet unit weight. b. For concrete placed by pumping, test specimens and concrete used for determination of slump, air content, and weight are to be taken at the point of placement of concrete into the forms. c. Results of laboratory testing including date test specimens were transported to laboratory, date compressive strength of tested cylinders, and specified design strength of concrete
- represented by the test. 4.- Additional Testing: Contractor shall bear the cost of testing and inspection resulting as a consequence of the following:
  - a. Work not in compliance with the Contract Documents.
  - b. Testing requested by the Contractor or Subcontractor such as additional cylinders for early
  - c. Testing to verify the adequacy of work done without prior notice, without proper supervision, or contrary to standard construction practice.
- 5.- Reinforcing Steel Inspection: Concrete reinforcing shall be inspected prior to closing of concrete form work or placing of concrete. Inspector to verify size, spacing, quantity of reinforcing per latest contract documents.

## **INSPECTION - STRUCTURAL STEEL:**

- 1.- Testing and inspection will be made by an approved testing laboratory selected and paid by the owner. Contractor shall furnish testing agency access to work, facilities and incidental labor required for testing and inspection. Retention by the Owner of an independent testing agency shall in no way relieve the Contractor of responsibility for performing all work in accordance with the contract requirements.
- 2.- Furnish the testing agency with the following:
- a. A complete set of shop and erection drawings.
- b. 48 hour advance notice of completed work prior to spray fireproofing (Where applicable). c. Full and ample means and assistance for testing all material.
- d. Proper facilities, including scaffolding, temporary work platforms, etc., for inspection of the work in the mills, shop and field.
- 3.- Each person installing connections shall be assigned an identifying symbol or mark, and all shop and field connections shall be identified so that the inspector can refer back to the person making the connection. 4.- The testing Agency's inspector will perform his duties in such a way that neither fabrication nor erection is unnecessarily delayed or impeded. In no case will the inspector recommend or prescribe the method of
- 5.- Field inspection by the Testing Agency of erected steel will be such as to assure that the work conforms to specified requirements and will include
- a. Inspection of field welding as required herein.
- b. Ascertainment of proper fit and alignment.
- c. Ascertainment that the welding is performed only by welding operators and welders who are properly certified. The Testing Agency shall witness such qualification testing of welding
- operators and welders, as may be required.

#### d. Ascertainment of proper installation and tensioning of bolts 6.- Welding and Materials:

repair of a defect

- Inspection of welding by the Testing Agency will be such as to assure that the work conforms to specified
- requirements, and will include: a. Ascertainment that electrodes used for manual shielded metal-arc welding and electrodes used for submerged arc welding conform to the requirements of this Section.
- b.Ascertainment that the approved welding procedure and the approved welding sequence is followed. c. Ascertainment that the welding is performed only by welding operators and welders who are properly certified. The Testing Agency shall witness such qualification testing of welding operators and
- d.Ascertainment that the fit-up, joint preparation, size, contour, extent of reinforcement, and length and location of welds conform to specified requirements of the contract drawings, and that no specified
- welds are omitted or unspecified welds added without approval. 7.- The Testing Agency shall test field welds in accordance with AWS D1.1 as follows:
  - a. All welds 100% visual.
- b. Fillet Welds (u.n.o.): One spot test per member; magnetic particle. c. Partial Penetration Welds: One spot test per weld; magnetic particle.
- d. Full Penetration Welds: All complete penetration groove welds contained in joints and splices shall be tested one hundred (100) percent by ultrasonic testing.
- e. All other welds: 10 percent magnetic particle.

- 8.- Additional testing will be required: a. If more than 10 percent of the tested welds are rejected, then an additional 10 percent of all such welds shall be tested using the same method. This 10 percent additional testing process shall be repeated until the rejection rate drops below 1 in 10.
- b. All cost of additional inspection required by this paragraph shall be done at the Contractor's expense.
- 9.- In addition, if defective welds are discovered, the remaining uninspected welds shall receive such ultrasonic
- or magnetic particle inspection as may be required by the Structural Engineer.
- 10.- The welding inspector will have the authority to reject weldments. Such rejection may be based on visual inspection where in his opinion the weldment would not pass a more detailed investigation. 11.- Reports by the Testing Agency's inspector will contain, as a minimum, an adequate description of each weld tested,
- the identifying mark of the welder responsible for the weld, a critique of any defects noted by visual inspection or testing, and a statement regarding the acceptability of the weld tested, as judged by current A.W.S. standards. Reports shall be distributed as early as possible but not later than one work week after the tests have been performed. The Structural Engineer shall be notified by phone if, in the judgment of the inspector, test results
- require immediate comment.
- 12.- High Strength Bolts: a. The inspector shall determine the appropriate requirements of Sections J3 and M2 of the AISC
  - "Specification" are met. b. Standard Bolts: 1.) Verify Contractor's testing of installation procedures (turn of the nut) to achieve specified bolt tensions for each lot of bolts. Contractor to provide a calibrated device capable of indicating
  - 2.) Verify required bolt tension for all bolts in all connections. If rejectable bolts are found in any connection all the remaining bolts in that connection shall be inspected for tightness. Inspection procedure shall be
  - in accordance with "Specification for 3.) Structural Joints Using ASTM A325 or A490 Bolts" approved by Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation (Research Council on Structural Connections). Cost of additional inspection required by this paragraph shall be borne by the
  - c. Tension Control (Self-Indicating) Bolts:
  - Verify Contractor's testing of bolt capacity to achieve specified tensions for each lot of bolts. Perform a visual inspection of all high strength bolted connections to assure that all torque-off splines have been sheared.
- **INSPECTION METAL DECKING:**
- 1.- See specification section 05300 for further inspection requirements. Where general notes and specification differ the most stringent requirement shall control.
- 2.- The Testing Agency shall inspect stud connectors as follows:
- a. Verify spacing clearance, and quantity of studs.
- b. Inspect all studs acoustically. Strike studs that do not ring when struck with a hammer until it is bent 15 degrees. At minimum strike an additional 1 out of each 100 studs until it bends 15 degrees. If no fracture occurs at a bent stud, then stud will be considered acceptable and left bent.
- C. If at any time the number of rejectable studs exceeds 3%, increase test rate to 1 stud out of each 25 until reject rate falls below 3%. Cost of additional testing required by this paragraph shall be borne by the contractor.

UAED RKMAM

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REVISIONS

**ISSUED FOR PERMIT** 

# 110 HIGH STREET -6TH FLR ROOF DECK

JONES LANG LASALLE

110 HIGH STREET, BOSTON MA

**GENERAL NOTES** 

DATE JOB NO.

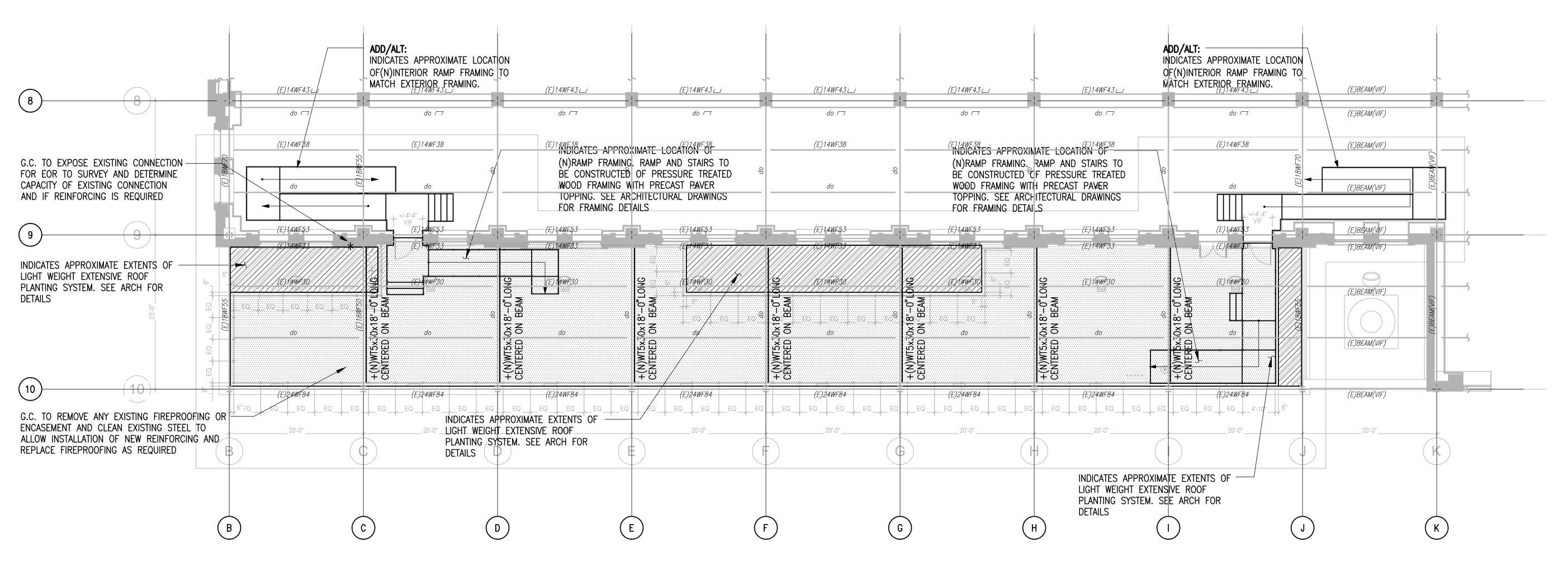
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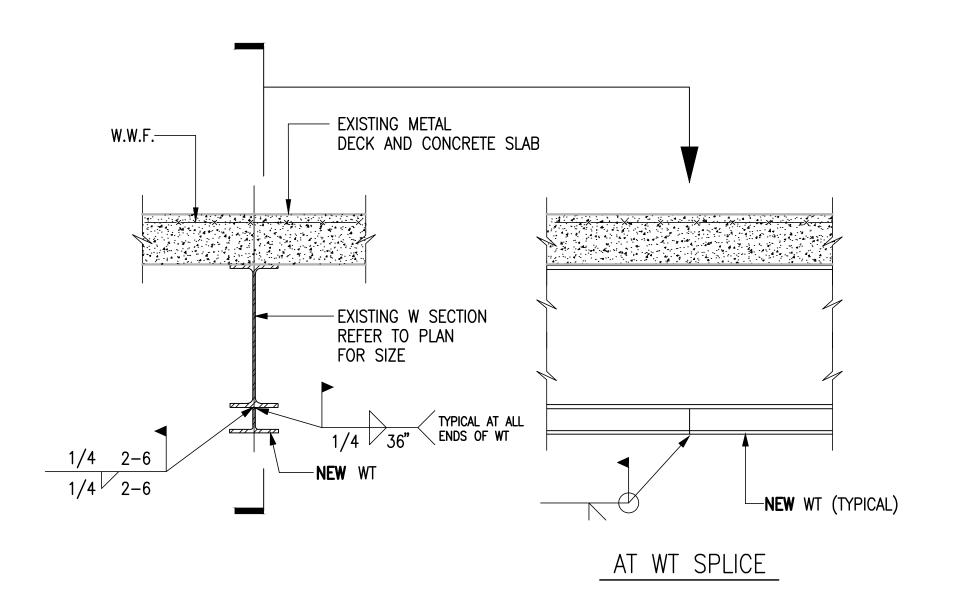
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**ISSUED FOR PERMIT** 

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PART PLAN AT LEVEL 6 FRAMING
SCALE: 1/8"=1'-0"



TYPICAL WT REINFORCEMENT DETAIL

# **UALB RKMAN**

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REVISIONS

**ISSUED FOR PERMIT** 

# 110 HIGH STREET -6TH FLR ROOF DECK

JONES LANG LASALLE

110 HIGH STREET, BOSTON MA

TITLE

PART PLAN AND SECTION

DATE

JOB NO.

10/17/2018 18106.000

DRAWING NO.

S1.02

**ISSUED FOR PERMIT** 

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PLUMBING SYMBOLS				
•—-	PIPE UP OR PIPE RISE			
<b></b>	PIPE DN OR PIPE DROP			

PLUMBING DRAWING ANNOTATIONS				
lack	LIMIT OF PIPING DEMOLITION			
•	CONNECT NEW PIPING TO EXISTING PIPING			
<u></u>	REVISION SYMBOL			
*	PIPE SLOPE			

# PLUMBING ABBREVIATIONS

W&T WASTE AND TRAP

ACT	ACOLICTICAL THE	LIVA/D	LIOT WATER RETURN
ACT	ACOUSTICAL TILE	HWR	
AD	AREA DRAIN	HZ	
AFF	ABOVE FINISH FLOOR	IE	_
ANSI	AMERICAN NATIONAL STANDARDS	IM	
	INSTITUTE	INV	INVERT
AP	ACCESS PANEL	INWG	INCHES WATER COLUMN
AUTO	AUTOMATIC	IW	INDIRECT WASTE
BMS	BUILDING MANAGEMENT SYSTEM	JC	JANITOR'S CLOSET
ВОР	BOTTOM OF PIPE	KW	KILOWATTS
BTUH	BRITISH THERMAL UNIT PER HOUR	LAV	LAVATORY
CFH	CUBIC FEET PER HOUR	LWT	LEAVING WATER TEMPERATURE
CI	CAST IRON	MAX	MAXIMUM
CLG	CEILING	MER	-
CLDI	CEMENT LINED DUCTILE IRON	MIN	MINIMUM
CM	COFFEE MAKER		NON FREEZE WALL HYDRANT
CO	CLEANOUT	NO	NUMBER
CONC		NPW	
CW	COLD WATER	NTS	
CTE	CONNECT TO EXISTING	NIC	
CWS	CISTERN WATER SYSTEM	OED	
D	DEMOLISH/DEMOLITION	ORD	
DCVA	DOUBLE CHECK BACKFLOW	OSD	OPEN SITE DRAIN
DEG	DEGREE	Р	PUMP
DIA	DIAMETER	PLBG	
DF	DRINKING FOUNTAIN	PSI	POUNDS PER SQUARE INCH
DFU	DRAINAGE FIXTURE UNIT	RD	ROOF DRAIN
DN	DOWN	REV	REVISE, REVISION
DP	DROP	RI	RISE
DW	DOMESTIC WATER	RM	ROOM
DWG	DRAWING	RPBP	REDUCED PRESSURE BACKFLOW
DWV	DRAINAGE WASTE AND VENT	RPM	REVOLUTIONS PER MINUTE
EC	ELECTRICAL CONTRACTOR	RTU	ROOFTOP UNIT
EFF	EFFICIENCY	RWL	RAIN WATER LEADER
EEW	EMERGENCY EYEWASH	SA	SHOCK ABSORBER
EWC	ELECTRIC WATER COOLER	SAN	SANITARY
EL		SD	
ELEV		SH	SHOWER
ENT	ENTERING	SK	SINK
EX	EXISTING	S	SOIL
EWC	ELECTRIC WATER COOLER		SPECIFICATION
EWH	ELECTRIC WATER HEATER	SQ IN	
EWT	ENTERING WATER TEMPERATURE	SS	
FAI	FRESH AIR INLET	SST	
FD	FLOOR DRAIN	TK	TANK
FFE	FINISH FLOOR ELEVATION	TOS	TOP OF SLAB
FIX	FIXTURE	TMV	THERMOSTATIC MIXING VALVE
FCO	FLOOR CLEANOUT	TP	TRAP PRIMER
FP	FIRE PROTECTION	TS	TAMPER SWITCH
FS	FLOOR SINK	TW	TEMPERED WATER
FV	FLUSH VALVE	TYP	TYPICAL
FT	FOOT, FEET	UL	UNDERWRITERS LABORATORY
GAL	GALLON	UNO	UNLESS NOTED OTHERWISE
GD	GARAGE DRAIN	UR	URINAL
GPF	GALLON PER FLUSH	V	VENT
GPH	GALLONS PER HOUR	VB	VACUUM BREAKER
GPM	GALLON PER MINUTE	VIF	VERIFY IN FIELD
GALV	GALVANIZED	VO	VALVED OUTLET
GC	GENERAL CONTRACTOR	VS	VENT STACK
GI	GREASE INTERCEPTOR	VTR	
GW	GRAY WATER	W	WASTE
GWH	GAS WATER HEATER	WC	WATER CLOSET
НВ	HOSE BIBB	WCO	
HC	HANDICAPPED	WFS	WATER FLOW SWITCH
HCLG	HUNG CEILING	WH	WALL HYDRANT

HP HORSEPOWER

HTR HEATER

HW HOT WATER

# INSTALLATION / COORDINATION NOTES

- PRIOR TO ROUGH-IN OF SYSTEMS EQUIPMENT, COORDINATE WITH THE GENERAL CONTRACTOR, EQUIPMENT SHOP DRAWINGS AND APPLICABLE EQUIPMENT INSTALLER FOR EXACT LOCATION AND WIRING REQUIREMENTS. PROVIDE ALL NECESSARY EQUIPMENT, WIRING AND ACCESSORIES FOR A COMPLETE INSTALLATION. MAKE ALL FINAL CONNECTIONS AS REQUIRED.
- IF EXACT LOCATION, MOUNTING OR ROUTINGS ARE NOT INDICATED OR ARE NOT CLEAR OR CONFLICT (LOCATION OR HEIGHT) COORDINATE WITH OTHER TRADES AND REQUEST CLARIFICATION PRIOR TO ROUGHING, OR INSTALLATION. DRAWINGS ARE DIAGRAMMATIC ONLY. EXACT LOCATION, MOUNTING HEIGHTS OF EQUIPMENT AND ROUTING SHALL BE COORDINATED WITH THE EQUIPMENT REQUIREMENTS AND FIELD CONDITIONS.
- EQUIPMENT & PIPING INSTALLATION NOT COORDINATED WITH ALL OTHER BUILDING SYSTEMS / BUILDING COMPONENTS WHICH CAUSES INTERFERENCE SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.
- VERIFY DIMENSIONS AND CLEARANCES AT BUILDING BEFORE COMMENCING WORK. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACTUAL LOCATION OF EXISTING STRUCTURAL MEMBERS AND COORDINATE INSTALLATION OF THE IMPROVEMENTS ACCORDINGLY.

# **GENERAL NOTES**

- PLUMBER SHALL BE RESPONSIBLE THAT ENTIRE INSTALLATION IS IN ACCORDANCE WITH LOCAL AND STATE CODES. CONTRACTOR TO OBTAIN AND PAY FOR ALL PERMITS INSPECTION AND FEES, ETC.
- THE SCOPE OF WORK SHALL INCLUDE PROVIDING ALL WORK INDICATED UNLESS OTHERWISE SPECIFICALLY INDICATED AS EXISTING OR WORK BY OTHERS, AND COORDINATION WITH ALL TRADES. SCOPE OF WORK IS INDICATED ON THE CONTRACT DOCUMENTS INCLUDING THE DRAWINGS AND THE SPECIFICATIONS, WHICH ARE COMPLIMENTARY. WORK INDICATED IN ANY CONTRACT DOCUMENT SHALL BE CONSIDERED PART OF THE SCOPE OF WORK, UNLESS SPECIFICALLY INDICATED AS EXISTING OR WORK BY OTHERS. IN GENERAL, WORK REQUIREMENTS ARE NOT INDICATED IN BOTH DOCUMENTS. WHERE DOCUMENTS CONFLICT WITHIN THEMSELVES OR WITH CODES AND REGULATIONS, PROVIDE THE HIGHER QUANTITY AND QUALITY AND FOLLOW THE STRICTER REQUIREMENTS.
- WORK, AT A MINIMUM, SHALL BE IN ACCORDANCE WITH THE STATE BUILDING AND PLUMBING CODE, OSHA, NFPA STANDARDS, THE ELECTRIC CODE AND THE LOCAL GOVERNING AUTHORITIES. THE DRAWINGS AND SPECIFICATIONS DO NOT ATTEMPT TO INDICATE ALL WORK REQUIRED BY CODES AND AUTHORITIES. DO NOT INSTALL WORK THAT DOES NOT MEET MINIMUM REQUIREMENTS. IF NECESSARY, REQUEST CLARIFICATION FROM ARCHITECT BEFORE PROCEEDING.
- 4. ALL WORK SHALL CONFORM TO THE BUILDING STANDARDS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MEET WITH BUILDING CONSTRUCTION MANAGER AND BUILDING ENGINEER IN ORDER TO BECOME TOTALLY FAMILIAR WITH BUILDING CONSTRUCTION RULES. THERE SHALL BE NO DEVIATION FROM THE BUILDING STANDARDS WITHOUT PRIOR WRITTEN APPROVAL FROM THE CONSTRUCTION MANAGER.
- 5. IT IS THE INTENT OF THESE PLANS AND /OR SPECIFICATIONS TO PROVIDE A WORKING INSTALLATION IN EVERY DETAIL AND ALL ITEMS REQUIRED FOR SUCH AN INSTALLATION SHALL BE PROVIDED WHETHER OR NOT SPECIFICALLY INDICATED OR
- VISIT THE SITE TO DETERMINE PRE-EXISTING CONDITIONS AND WORK NECESSARY PRIOR TO SUBMISSION OF BID PRICE. SUBMIT ANY QUESTIONS REQUIRED TO CLARIFY SCOPE PRIOR TO BID. INCLUDE ALL REQUIRED WORK IN BID PRICE.
- INCLUDE IN BID WHATEVER IS REQUIRED TO MEET SCHEDULE INCLUDING OVERTIME EXPRESS SHIPPING, EXPEDITING EQUIPMENT, ETC. PLAN PROJECT AND SUBMIT SHOP DRAWINGS AND ORDER EQUIPMENT IN A TIMELY MANNER, EQUIPMENT SHALL BE BASED ON THE SPECIFIED EQUIPMENT.
- 8. ANY EQUIPMENT TO BE SUBSTITUTED SHALL BE IDENTIFIED AT TIME OF BID.
- 9. TEST ALL EQUIPMENT AND SYSTEMS INSTALLED TO CERTIFY COMPLIANCE WITH DRAWINGS, SPECIFICATIONS, CODES, LOCAL AUTHORITIES AND REGULATIONS. INCLUDE LABOR AND COSTS FOR TESTING, REVIEWS, APPROVALS AND CERTIFICATIONS. TEST COMPLETED SYSTEM PER NFPA USING A CERTIFIED TESTING AGENCY. MEET THE REQUIREMENTS OF THE CONSTRUCTION MANAGER AND THE LOCAL AUTHORITIES. SUBMIT NFPA TESTING AND MAINTENANCE FORMS PRIOR TO APPLYING FOR OCCUPANCY PERMIT OR SUBMITTING AFFIDAVITS.
- 10. PROVIDE TRAINING TO OWNER ON ALL EQUIPMENT AND SYSTEMS INSTALLED.
- 11. IF EXISTING OR UNFORESEEN CONDITIONS PREVENT INSTALLATION OF EQUIPMENT, PIPING, OR OTHER SERVICES TO BE INSTALLED AS SHOWN PER THESE DOCUMENTS, A CLEAR SUBMISSION WITH ALTERNATE INSTALLATION METHODS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PROCUREMENT OF EQUIPMENT OR PREPARATION OF THE SUBJECT INSTALLATIONS.
- 12. ALL WATER SHUTDOWNS TO BE COORDINATED THROUGH THE BUILDING MANAGER ALL WATER SHUTDOWNS ARE TO BE PERFORMED OR SUPERVISED BY BUILDING PERSONNEL, AT THE DISCRETION OF THE BUILDING MANAGER.
- 13. PLUMBING CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING WET COLUMN RISERS AND BRANCH PIPING PRIOR TO ANY CONNECTIONS.
- 14. NO WORK IS TO BE REMOVED WITHOUT APPROVAL OF BUILDING MANAGEMENT.
- 15. PORTION OF MAINS TO BE REMOVED OR ABANDONED AS A RESULT OF DEMOLITION WORK, BUT WHICH ARE REQUIRED TO REMAIN ACTIVE SHALL BE CUT AT CONVENIENT LOCATIONS, RE ROUTED AND RECONNECTED.
- 16. THE CONTRACTOR SHALL NOTIFY THE BUILDING MANAGEMENT AT THE APPROPRIATE TIME OF THE PROJECTED DEMOLITION AND SCHEDULE SO THAT REMOVAL OR RELOCATION OF AFFECTED UTILITIES MAY BE CARRIED OUT IN COORDINATION WITH THE PROJECT REQUIREMENTS.
- 17. ALL EXISTING MATERIAL IN USEABLE CONDITION WHICH IS TO BE REMOVED UNDER THIS CONTRACT, SHALL BE PROTECTED AND REMAIN THE PROPERTY OF THE OWNER OR SHALL BE DISPOSED OF BY THIS CONTRACTOR, AS DIRECTED BY THE BUILDING MANAGEMENT.
- 18. ARRANGE TO WORK CONTINUOUSLY, INCLUDING OVERTIME, IF REQUIRED TO ASSURE THAT SYSTEMS WILL BE SHUT DOWN ONLY DURING THE TIME OF ACTUALLY REQUIRED TO MAKE THE NECESSARY CONNECTIONS TO THE EXISTING SYSTEMS.
- 19. ALL SERVICE SHUT DOWN SHALL BE COORDINATED WITH THE BUILDING MANAGEMENT.
- 20. MAINTAIN CONTINUITY OF ALL EXISTING DOMESTIC WATER AND SYSTEM WHICH SERVE ADJACENT AREA AND ARE NOT AFFECTED BY THIS CONTRACT.
- 21. DURING DEMOLITION PHASE OF THIS PROJECT, CONTRACTOR SHOULD PROTECT EXISTING PIPING LOCATED IN THE STUD WALL.

## **PLUMBING NOTES**

- ALL NEW HOT AND COLD WATER LINES TO BE RED BRASS PIPE OR COPPER TYPE 'L' TUBING ASTM B-88. IF ATTACHED OR CONNECTED TO A DISSIMILAR METAL SYSTEM, A DIELECTRIC FITTING SHALL BE PROVIDED.
- INSULATE ALL WATER LINES (INCLUDING BUT NOT LIMITED TO: HOT WATER, COLD WATER, HOT WATER RETURN, FILTERED, TRAP PRIMING DISTRIBUTION, HORIZONTAL AND VERTICAL STORM WATER PIPING).
- WASTE LINES SHALL BE PROPERLY PITCHED TO PREVENT "TRAPPED" WATER. INSTALL WASTE LINE CONNECTIONS WITH LONG RADIUS OR 45° "Y" FITTINGS.
- RETAIN EXISTING SYSTEM CLEAN OUT CONNECTIONS. PROVIDE NEW CLEAN OUT CONNECTIONS AT THE BASE OF ALL STACKS AND AT ALL CHANGES IN WASTE LINE DIRECTION 45° OR GREATER. PROVIDE PROPER CLEARANCES FOR CLEANOUT USE.
- WHEN CONNECTING NEW HOT AND COLD WATER LINES TO EXISTING RISERS, CONTRACTORS SHALL LEAVE A PLUGGED VALVED OUTLET FOR FUTURE USE. PLUGGED VALVE OUTLET SHALL BE EQUAL IN SIZE TO THE RISER SIZE OR AS DIRECTED BY THE BUILDING MANAGER.
- 6. INDIVIDUAL SHUT-OFF VALVES MUST BE SUPPLIED AND INSTALLED FOR EACH NEW FIXTURE, INCLUDING WATER COOLERS.
- 7. ALL NEW PIPES ARE TO BE SUPPORTED FROM SLAB OR STEEL BEAMS, NOT FROM EXISTING PIPES OR DUCT WORK
- 8. PROVIDE FIRE & SMOKE STOPPING FOR ALL PLUMBING PIPING PASSING THROUGH RATED WALLS OR SMOKE PARTITIONS.
- 9. ALL VALVES ARE TO BE PROPERLY TAGGED.
- 10. ANY WET COLUMNS USED SHOULD BE PROVIDED WITH A 18" x 18" STEEL SURFACE MOUNTED ACCESS DOOR.
- 11. THE GENERAL CONTRACTOR SHALL OBTAIN PERMISSION FROM THE BUILDING MANAGEMENT FOR INSTALLATION OF SANITARY PIPING AT THE CEILING OF THE
- 12. REFER TO ARCHITECTURAL DRAWING FOR PLUMBING FIXTURE SCHEDULE AND / OR COORDINATE WITH THE BUILDING STANDARDS.
- 13. ALL EXPOSED P-TRAPS, STOPS, SUPPLIES AND ASSOCIATED PIPING THAT SHALL BE PROVIDED WITH TRAP WRAP.
- 14. ALL SINKS SHALL BE EQUIPPED WITH THERMOSTATIC MIXING VALVES.
- 15. ALL EXISTING PLUMBING ASSOCIATED PIPING SHALL BE PROTECTED DURING ALL PHASE OF CONSTRUCTION. PROVIDE LABELING ON ALL EXISTING AND NEW PIPING COLD WATER, SANITARY AND VENT PIPING LOCATED IN THE AREA OF WORK.
- 16. STRUCTURAL ENGINEERING SHALL SPECIFY TYPES OF ANCHORS/METHODOLOGY TO USE FOR EVERY TYPE OF HANGING LOAD. (SANITARY PIPING, VENT PIPING, AND WATER PIPING.)
- 17. STRUCTURAL ENGINEERING SHALL REVIEW SUBMITTALS/CUT SHEETS FOR ALL ANCHORS TO BE USED FOR THE PLUMBING PIPING INSTALLATION.
- 18. THE BUILDING MANAGEMENT SHALL REVIEW A REPORT FROM TENANT STRUCTURAL ENGINEER STATING THEY OBSERVED DURING SITE VISITS THAT ANCHORS WERE INSTALLED IN ACCORDANCE WITH THE SPECIFICATION AND SUBMITTALS.
- 19. PROVIDE ADEQUATE SUPPORT ON ALL THE EXISTING HORIZONTAL HOT AND COLD WATER BRANCH PIPING LOCATED IN THE CORE TOILETS. (WHERE REQUIRED)
- 0. PROVIDE CLAMP SUPPORT ON ALL EXISTING VERTICAL SANITARY, VENT, HOT AND COLD WATER PIPING TO MATCH EXISTING. (WHERE REQUIRED)
- 21. PROVIDE INSULATION ON ALL EXISTING AND NEW HOT AND COLD WATER PIPING LOCATED IN THE AREA OF WORK. (WHERE REQUIRED)

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**CONSTRUCTION SET** 

# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

**IIO HIGH STREET, BOSTON MA** 

TITLE

PLUMBING SYMBOLS, NOTES & **ABBREVIATIONS** 

DATE

**JOB** NO.

10/17/2018

**DRAWING NO.** 

FOR CONSTRUCTION

02DBA.180716

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PLUMBING SHEET LIST SHEET NUMBER SHEET NAME PLUMBING SYMBOLS, NOTES & ABBREVIATIONS PLUMBING SPECIFICATIONS PLUMBING 6th CONSTRUCTION PLANS

## PLUMBING SPECIFICATION

## PART 1 - GENERAL

GENERAL PROVISIONS: DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK IN CONTRACT. PLUMBING CONTRACTOR IS RESPONSIBLE TO PROVIDE A CODE COMPLIANT SYSTEM REGARDLESS OF INTENT OF THE DESIGN DOCUMENTS AND STATE/LOCAL PLUMBING INSPECTORS

**SCOPE**: PERFORM WORK AND PROVIDE NEW MATERIAL AND EQUIPMENT AS SHOWN ON DRAWINGS AND AS SPECIFIED IN THE SECTION OF THE SPECIFICATIONS. PROVIDE ALL COMPONENTS AND MATERIALS, WHETHER SPECIFICALLY SHOWN OR NOT, THAT ARE NECESSARY TO MAKE THE SYSTEM COMPLETE AND FULLY OPERATIONAL AS INTENDED IN THE CONSTRUCTION DOCUMENTS. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING: a. THE DESIGN INTENT AS ILLUSTRATED ON THESE DRAWINGS.

b. ALL TESTING AND CERTIFICATIONS NECESSARY FOR COMPLIANCE AND ANY REQUIRED REMEDIAL ACTIONS AND RETESTING DUE TO FAILURE.

THIS PROJECT CONSISTS OF CONNECTION TO AN EXISTING DRAINAGE SYSTEM. CONTRACTOR SHALL HAVE THE PORTION OF THE EXISTING DRAINAGE SYSTEM. SERVING THIS SCOPE OF WORK, VIDEO INSPECTED AND JET-CLEANED PRIOR TO MAKING NEW CONNECTIONS. SUBMIT VIDEO INSPECTION AND CLEANING REPORTS AS A SUBMITTAL.

<u>SITE VISIT</u>: VISIT AND CAREFULLY EXAMINE SITE TO IDENTIFY EXISTING CONDITIONS THAT MAY AFFECT WORK OF THIS SECTION BEFORE SUBMITTING BID. NO EXTRA PAYMENT WILL BE ALLOWED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY DISCERNED BY AN

**RELATED WORK:** THE FOLLOWING WORK IS NOT INCLUDED IN THIS SECTION AND WILL BE PROVIDED UNDER OTHER SECTIONS:

- a. PAINTING, EXCEPT AS SPECIFIED OTHERWISE
- b. TEMPORARY LIGHT, POWER, WATER, HEAT, GAS AND SANITARY FACILITIES FOR USE DURING CONSTRUCTION
- c. ELECTRICAL POWER WIRING TO ALL EQUIPMENT

CODES, STANDARDS, AUTHORITIES AND PERMITS: CODES, LAWS AD ORDINANCES PROVIDE A BASIS FOR THE MINIMUM INSTALLATION CRITERIA. THESE DRAWINGS AND SPECIFICATIONS ILLUSTRATE THE SCOPE REQUIRED FOR THIS PROJECT, WHICH MAY EXCEED MINIMUM CODE, LAWS AND STANDARD CRITERIA. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK-CHARGES AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES HAVING JURISDICTION AS REQUIRED FOR THE EXECUTION OF ALL WORK ASSOCIATED WITH THIS PROJECT. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF:

- a. THE STATE BUILDING CODE
- b. THE STATE PLUMBING AND FUEL GAS CODE
- c. THE STATE ELECTRIC CODE
- e. DEPARTMENT OF ENVIRONMENTAL PROTECTION
- f. DEPARTMENT OF PUBLIC SAFETY CODES
- g. ARCHITECTURAL ACCESS BOARD
- h. ALL OTHER APPLICABLE CODES, REGULATIONS, STANDARDS AND LAWS, STATE AND FEDERAL GOVERNMENT AND OTHER AUTHORITIES HAVING JURISDICTION i. APPLICABLE BASE BUILDING STANDARDS AND SPECIFICATIONS

INTERPRETATIONS OF DOCUMENTS: WHERE DRAWINGS OR SPECIFICATIONS DO NOT COINCIDE WITH MANUFACTURERS RECOMMENDATIONS, OR ARE UNCLEAR AS TO THE INTENT, OR REQUIRED MATERIAL QUALITY, ADVISE THE ENGINEER IN WRITING BEFORE PROCEEDING WITH THE WORK. ALL COSTS FOR REWORK NECESSARY TO RESOLVE DISCREPANCIES SHALL BE RESPONSIBILITY OF THE CONTRACTOR.

REQUESTS FOR INFORMATION: ANY RFI FOR RESOLVING AN APPARENT CONFLICT OR UN-CLARITY, OR A REQUEST FOR AN ADDITIONAL DETAIL, SHALL INCLUDE A SKETCH OR EQUIVALENT DESCRIPTION OF CONTRACTORS PROPOSED SOLUTION.

SUBMITTALS: PROVIDE SPECIFIED ITEMS AND EQUIPMENT UNLESS "EQUAL" OR "APPROVED EQUAL" IS EXPLICITLY INDICATED ON THE DRAWINGS. DEVIATIONS TO SPECIFIED ITEMS SHALL BE AT THE SOLE RISK OF THE CONTRACTOR, WHO SHALL BE RESPONSIBLE FOR ALL ASSOCIATED CHANGES TO THIS AND OTHER TRADES. REVIEW OF THE SHOP DRAWINGS BY THE ENGINEER SHALL NOT ABSOLVE THE CONTRACTOR FROM MEETING THE FULL DESIGN INTENT OF THE ASSOCIATED SYSTEM(S). ALLOW ENGINEER A MINIMUM OF 10 WORKING DAYS FOR PROCESSING AND REVIEW OF EACH SUBMISSION. SUBMITTALS SHALL INDICATE PRIOR REVIEW AND APPROVAL BY THE RESPONSIBLE CONTRACTOR. SUBMIT FOR REVIEW PDF COPIES OR (6) SETS OF MANUFACTURER'S PRODUCT DATA FOR THE FOLLOWING ITEMS:

- a. PIPE MATERIALS, FITTINGS, HANGERS & VALVES
- b. TEST REPORTS
- c. ALL CERTIFICATES

**RECORD DRAWINGS**: CAD RECORD DRAWING FILES SHALL BE SUBMITTED AT THE COMPLETION OF THE PROJECT SHOWING THE "AS-BUILT" CONDITION INCLUDING WORK INSTALLED AND ALL MODIFICATIONS OR ADDITIONS TO ORIGINAL DESIGN. OBTAIN THE AUTOCAD FILES FOR PREPARATION OF AS-BUILT DRAWINGS FROM THE ARCHITECT. THE ARCHITECT AND ENGINEER ARE NOT GRANTING ANY OWNERSHIP OR PROPERTY INTEREST IN THE CAD DRAWINGS BY THE DELIVERY OF THE CAD FILES. THE CONTRACTOR'S PERFORMANCE IN ITS CONTRACTUAL OBLIGATIONS WITH RESPECT TO THIS PROJECT. ANY REUSE AND/OR OTHER USE BY THE CONTRACTOR WILL BE AT THE CONTRACTOR'S SOLE RISK AND WITHOUT LIABILITY TO THE ARCHITECT AND ENGINEER.

WARRANTIES: WARRANTY INSTALLATION IN WRITING FOR ONE YEAR FROM DATE OF OWNER'S ACCEPTANCE OF CERTIFICATE OF SUBSTANTIAL COMPLETION. WHERE INDIVIDUAL EQUIPMENT SECTIONS SPECIFY LONGER WARRANTEES, PROVIDE THE LONGER WARRANTEE. REPAIR, REPLACE OR PROVIDE TEMPORARY ACCOMMODATIONS FOR DEFECTIVE MATERIALS, EQUIPMENT WORKMANSHIP AND INSTALLATION THAT DEVELOP WITHIN 24-HOURS OF NOTIFICATION. WARRANTY SHALL INCLUDE A CONTACT PERSON (NAME AND 24 HOUR TELEPHONE NUMBER) FOR SERVICE REQUESTS. CORRECT DAMAGE CAUSED WHILE MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER WARRANTY PERIOD AT NO ADDITIONAL COSTS.

COORDINATION: CONFER WITH ALL OTHER TRADES RELATIVE TO LOCATION OF ALL APPARATUS AND EQUIPMENT TO BE INSTALLED AND SELECT LOCATIONS SO AS NOT TO CONFLICT WITH OR HINDER THE PROGRESS OF THE WORK OF OTHER SECTIONS. WORK INSTALLED THAT CREATES INTERFERENCE OR RESTRICTS ACCESS REQUIRED BY CODE OR MAINTENANCE AND/OR ADJUSTMENTS SHALL BE MODIFIED AT NO ADDITIONAL COSTS TO THE OWNER.

**SUPPORTS**: INCLUDE ALL STRUCTURAL STEEL SUPPORTS, HANGER BRACKET, ETC., REQUIRED FOR THE EXECUTION OF THE WORK OF THIS SECTION. THE WELDS AND EDGES OF ALL BRACKETS SHALL BE GROUND SMOOTH FOR PAINTING.

<u>CUTTING AND PATCHING</u>: INCLUDE ALL CORING, CUTTING, PATCHING AND FIREPROOFING NECESSARY FOR THE EXECUTION OF THE WORK OF THIS SECTION. STRUCTURAL ELEMENTS SHALL NOT BE CUT WITHOUT WRITTEN APPROVAL OF THE ARCHITECT. REPAIR AND PATCH AROUND THE WORK SPECIFIED HEREIN TO MATCH THE EXISTING ADJACENT SURFACES TO THE SATISFACTION OF THE ARCHITECT. FILL AND PATCH ALL OPENINGS OR HOLES LEFT IN THE EXISTING STRUCTURES BY THE REMOVAL OF EXISTING EQUIPMENT THAT IS PART OF THIS SECTION OR THE SPECIFICATIONS. PROVIDE FIRE STOPPING TO MAINTAIN THE FIRE RATING OF THE FIRE RESISTANCE RATED ASSEMBLY. ALL PENETRATIONS AND ASSOCIATED FIRE STOPPINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE FIRE STOPPING MANUFACTURER'S LISTED INSTALLATION DETAILS AND BE LISTED BY UL OR FM.

HOISTING, SCAFFOLDING AND PLANKING: INCLUDE THE FURNISHING, SET-UP AND MAINTENANCE OF ALL HOISTING MACHINERY, CRANES, SCAFFOLDS, STAGING AND PLANKING AS REQUIRED FOR THE EXECUTION OF WORK FOR THIS SECTION.

SAFETY PRECAUTIONS: LIFE SAFETY AND ACCIDENT PREVENTION SHALL BE A PRIMARY CONSIDERATION. COMPLY WITH ALL OF THE SAFETY REQUIREMENTS OF THE OWNER AND OSHA THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD OF THE PROJECT. FURNISH, PLACE AND MAINTAIN PROPER GUARDS AND ANY OTHER NECESSARY CONSTRUCTION REQUIRED TO SECURE SAFETY OF LIFE AND PROPERTY.

ACCESSIBILITY: ALL WORK PROVIDED UNDER THIS SECTION OF THE SPECIFICATION SHALL BE INSTALLED SO THAT PARTS REQUIRING PERIODIC INSPECTION, MAINTENANCE AND REPAIR ARE READILY ACCESSIBLE. WORK OF THIS TRADE SHALL NOT INFRINGE UPON CLEARANCES REQUIRED BY EQUIPMENT OF OTHER TRADES, ESPECIALLY CODE REQUIRED CLEARANCES TO ELECTRICAL EQUIPMENT.

PROTECTION OF WORK AND PROPERTY: THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE CARE AND PROTECTION OF ALL WORK INCLUDED UNDER THIS SECTION UNTIL THE COMPLETION AND FINAL ACCEPTANCE OF THIS PROJECT. PROTECT ALL EQUIPMENT AND MATERIALS FROM DAMAGE FROM ALL CAUSES INCLUDING, BUT NOT LIMITED TO, FIRE, VANDALISM AND THEFT. ALL MATERIALS AND EQUIPMENT DAMAGED OR STOLEN SHALL BE REPAIRED OR REPLACED WITH EQUAL MATERIALS OR EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER. PROTECT ALL EQUIPMENT, OUTLETS AND OPENINGS, AND ROOF PENETRATIONS WITH TEMPORARY PLUGS, CAPS AND COVERS. PROTECT WORK AND MATERIALS OF OTHER TRADES FROM DAMAGE THAT MIGHT BE CAUSED BY WORK OR WORKMEN UNDER THIS SECTION AND MAKE GOOD DAMAGE THUS CAUSED. DAMAGED MATERIALS ARE TO BE REMOVED FROM THE SITE; NO SITE STORAGE OF DAMAGED MATERIALS WILL BE ALLOWED. ANY DAMAGE TO EXISTING SYSTEMS AND EQUIPMENT CAUSED BY THIS CONTRACTOR DURING INSTALLATION SHALL BE REPAIRED AND/OR REPLACED AT THIS CONTRACTOR; EXPENSE TO THE COMPLETE SATISFACTION OF THE BUILDING OWNER.

SEISMIC RESTRAINT REQUIREMENTS: PROVIDE SEISMIC RESTRAINTS AS REQUIRED IN ACCORDANCE WITH THE STATE BUILDING CODE. A REGISTERED PROFESSIONAL STRUCTURAL ENGINEER, LICENSED IN THE APPLICABLE STATE FOR THE PROJECT LOCATION, SHALL PREPARE THE SEISMIC RESTRAINT DESIGN AND CERTIFY THAT THE DESIGN IS IN COMPLIANCE WITH THE STATE BUILDING CODE REQUIREMENTS.

**PROJECT CLOSEOUT**: A CERTIFICATE OF COMPLETION SHALL BE ISSUED BY THE CONTRACTOR INDICATING THAT THE INSTALLATION IS IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS AND ALL APPLICABLE LOCAL, STATE AND FEDERAL STATUTES AND CODES. ALL SUBMITTALS, AS-BUILTS, O&M MANUALS, AND TESTING & BALANCING REPORTS ARE TO BE PROVIDED FOR THE ENGINEERS REVIEW PRIOR TO REQUEST FOR COMPLETION CERTIFICATES. ALL PUNCH LIST ITEMS MUST BE COMPLETED TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR MUST VERIFY THAT ALL SEQUENCES OF OPERATIONS AND CONTROLS HAVE BEEN INCORPORATED AND ALL SYSTEMS AND EQUIPMENT ARE WORKING PER THE SPECIFIED SEQUENCES OF OPERATIONS. PREMATURE REQUESTS FOR FINAL INSPECTIONS THAT REQUIRE RE-INSPECTION OF DEFICIENT ITEMS WILL RESULT IN BACK CHARGES OF THE COSTS ASSOCIATED WITH THE RE-INSPECTION.

ELECTRICAL WORK: ALL ELECTRICAL APPARATUS AND CONTROLS FURNISHED AND THE INSTALLATION THERE OF, AS A PART OF PLUMBING WORK, SHALL CONFORM TO APPLICABLE REQUIREMENTS UNDER THE ELECTRICAL DRAWINGS AND SPECIFICATIONS.

#### PART 2 - PRODUCTS

PLUMBING FIXTURES AND TRIM: REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR TYPE, QUANTITIES, LOCATIONS AND MOUNTING HEIGHTS OF FIXTURES PROVIDED UNDER THIS SECTION. FIXTURE TRIM, TRAPS, FAUCETS, ESCUTCHEONS AND WASTE PIPES EXPOSED TO VIEW IN THE FINISHED SPACES SHALL BE IRON PIPE SIZE BRASS WITH POLISHED CHROMIUM PLATING OVER NICKEL FINISH.

- PIPE MATERIALS: a. ABOVE GRADE DRAINAGE & VENT (INCLUDING STORM WATER), SERVICE WEIGHT CAST IRON NO-HUB SOIL AND VENT PIPE, COATED INSIDE AND OUT, CONFORMING TO CISPI 301-69T SPECIFICATIONS, FOR ALL SOIL AND WASTE LINES ABOVE GROUND AND FOR ALL VENT LINES WITH INSIDE DIAMETER 2 INCHES AND LARGER. PIPE SHALL CONFORM TO CISPI STANDARD 301. STANDARD, SHIELDED, STAINLESS-STEEL COUPLINGS: CISPI 310, AND ASTM C 1277 WITH STAINLESS-STEEL CORRUGATED SHIELD; STAINLESS-STEEL BANDS AND TIGHTENING DEVICES; AND ASTM C 564, RUBBER SLEEVE WITH
- b. ALTERNATE ACCEPTABLE MATERIAL FOR ABOVE GRADE DRAINAGE AND VENT IS TYPE "L" COPPER TUBE, ASTM B 306, DRAINAGE TUBE, DRAWN TEMPER, WITH COPPER DRAINAGE FITTINGS: ASME B16.23, CAST COPPER OR ASME B16.29, WROUGHT-COPPER, SOLDER-JOINT FITTINGS.

#### **HANGERS, ANCHORS, CLAMPS AND INSERTS**

- 1. HANGERS SHALL BE INSTALLED, AS REQUIRED, TO MEET CODE COMPLIANCE AS TO LOCATIONS/SPACING AND MANUFACTURERS STANDARDIZATION SOCIETY (MSS), STANDARD PRACTICE BULLETINS SP-58 & 69.
- 2. HANGERS SHALL BE COMPATIBLE WITH PIPING MATERIALS WITH WHICH IT COMES IN CONTACT.

INTEGRATED CENTER STOP. COUPLINGS SHALL BEAR THE NSF TRADEMARK AND BE MANUFACTURED IN THE USA.

- 3. HANGERS SHALL BE INSTALLED, IN ADDITION TO THE ABOVE, AT ALL CHANGES OF DIRECTION (HORIZONTAL AND VERTICAL), VALVES AND EQUIPMENT CONNECTIONS, HANGERS SHALL BE LOCATED SO THAT THEIR REMOVAL IS NOT REQUIRED TO SERVICE, ASSEMBLE OR REMOVE EQUIPMENT.
- 4. VERTICAL SUPPORTS SHALL BE BY MEANS OF RISER CLAMPS (ANCHORS WITH SPLIT RING TYPE ALLOWABLE UP TO 2" SIZE ONLY) AND ADJUSTABLE PIPE
- SUPPORT WITH FLANGE ANCHORED TO FLOOR. 5. PROVIDE STEEL BAND HANGERS FOR PIPING 4" AND SMALLER. PIPING LARGER THAN 4" SHALL BE SUPPORTED WITH CLEVIS TYPE HANGERS. SUPPORT
- PIPING FROM BUILDING STRUCTURE TO MAINTAIN REQUIRED GRADE AND PITCH OF PIPE LINES, PREVENT VIBRATION AND SECURE PIPING IN PLACE. SECURE HANGERS TO INSERTS WHERE PRACTICAL. HANGER RODS SHALL HAVE MACHINE THREAD.
- 6. HANGER RODS SHALL BE CONNECTED TO BEAM CLAMPS, UL-APPROVED CONCRETE INSERTS, PHILLIPS OR APPROVED EQUAL EXPANSION SHIELDS. RAMSET OR POWDER DRIVEN INSERTS WILL NOT BE ALLOWED. 7. ALL HANGERS, RODS AND CLAMPS INSTALLED IN EXTERIOR LOCATIONS OR SUBJECT TO A CORROSIVE ATMOSPHERE SHALL BE ELECTRO-GALVANIZED
- 8. INSULATION PROTECTORS (SHIELDS) FOR HORIZONTAL PIPING SHALL BE CONSTRUCTED OR GALVANIZED STEEL FORMED TO A 180-DEGREE ARC AND 12" LONG, 18-GAUGE FOR HANGERS 5" IN SIZE AND SMALLER, 16-GAUGE FOR HANGERS LARGER THAN 5" IN SIZE.

- 1. PIPE SLEEVES THROUGH FIRE-RATED CONSTRUCTION SHALL BE SCHEDULE 40 STEEL. SLEEVES THROUGH PARTITIONS AND NON-FIRE RATED
- CONSTRUCTION SHALL BE 22-GAUGE GALVANIZED STEEL WITH LOCK LONGITUDINAL SEAMS.
- 2. FIRE STOP PENETRATION SEALS IN FIRE-RATED CONSTRUCTION SHALL BE CERAMIC FIBER, MINERAL FIBER OR SILICONE FOAM. PROVIDE MINERAL FIBER BOARD, MATTING OR PUTTY FOR DAMMING AND FORMING. FINISH SEALS FLUSH TO WALL SURFACE AND FILL GAP'S WITH SILICONE ADHESIVE SEALANT
- 3. PACKING FOR SLEEVES THAT DO NOT REQUIRE MAINTENANCE OF FIRE RATING SHALL BE OAKUM, SILICATE FOAM, CERAMIC FIBER OR MINERAL FIBER WITH APPROVED SEALANT. PACK OR FOAM TO WITHIN 1" OF BOTH WALL SURFACES. SEAL PENETRATION PACKING WITH APPROVED CAULKING AND PAINTABLE WATER-PROOF MASTIC SURFACE FINISH OR SILICONE CAULKING.

#### PART 3 - EXECUTION

## DRAINAGE AND VENT PIPING SYSTEMS

- 1. INSTALL CAST-IRON SOIL PIPING ACCORDING TO CISPI'S "CAST IRON SOIL PIPE AND FITTINGS HANDBOOK," CHAPTER IV, "INSTALLATION OF CAST IRON SOIL PIPE AND
- 2. MAKE CHANGES IN DIRECTION FOR SOIL AND WASTE DRAINAGE AND VENT PIPING USING APPROPRIATE BRANCHES, BENDS, AND LONG-SWEEP BENDS. SANITARY TEES AND SHORT-SWEEP 1/4 BENDS MAY BE USED ON VERTICAL STACKS IF CHANGE IN DIRECTION OF FLOW IS FROM HORIZONTAL TO VERTICAL. USE LONG-TURN, DOUBLE Y-BRANCH AND 1/8-BEND FITTINGS IF 2 FIXTURES ARE INSTALLED BACK TO BACK OR SIDE BY SIDE WITH COMMON DRAIN PIPE. STRAIGHT TEES, ELBOWS, AND CROSSES MAY BE USED ON VENT LINES. DO NOT CHANGE DIRECTION OF FLOW MORE THAN 90 DEGREES. USE PROPER SIZE OF STANDARD INCREASERS AND REDUCERS IF PIPES OF DIFFERENT SIZES ARE CONNECTED. REDUCING SIZE OF DRAINAGE PIPING IN DIRECTION OF FLOW IS PROHIBITED.
- 3. INSTALL SOIL AND WASTE DRAINAGE AND VENT PIPING AT THE FOLLOWING MINIMUM SLOPES, UNLESS OTHERWISE INDICATED: BUILDING SANITARY DRAIN AND HORIZONTAL SANITARY DRAINAGE PIPING SHALL PITCH 2% (1/4" PER 1'-0") DOWNWARD IN DIRECTION OF FLOW FOR PIPING 3" AND SMALLER AND 1% (1/8" PER 1'-0") DOWNWARD IN DIRECTION OF FLOW FOR PIPING 4" AND LARGER
- 4. VENT PIPING SHALL PITCH 1% (1/8" PER 10'-0") DOWN TOWARD FIXTURE VENT OR UP TOWARD VENT STACK.
- 5. SLEEVES ARE NOT REQUIRED FOR CAST-IRON SOIL PIPING PASSING THROUGH CONCRETE SLABS-ON-GRADE IF SLAB IS WITHOUT MEMBRANE WATERPROOFING. 6. RUN HORIZONTAL SANITARY DRAINAGE PIPING AT A UNIFORM GRADE, UNLESS OTHERWISE NOTED. RUN HORIZONTAL WATER PIPING WITH AN ADEQUATE PITCH
- UPWARDS IN DIRECTION OF FLOW TO ALLOW COMPLETE DRAINAGE. 7. PROVIDE SUFFICIENT SWING JOINT, BALL JOINTS, EXPANSION LOOPS, AND DEVICES NECESSARY FOR A FLEXIBLE PIPING SYSTEM, WHETHER OR NOT SHOWN ON THE
- DRAWINGS.
- 8. SUPPORT PIPING INDEPENDENTLY AT EQUIPMENT, AND SIMILAR LOCATIONS, SO THAT THE WEIGHT OF THE PIPE WILL NOT BE SUPPORTED BY THE EQUIPMENT.
- 9. SECURELY BOLT ALL EQUIPMENT, ISOLATORS, HANGERS, AND SIMILAR ITEMS IN PLACE.
- 10. SUPPORT EACH ITEM INDEPENDENTLY FROM OTHER PIPES. DO NOT USE WIRE FOR HANGING OR STRAPPING PIPES.
- 11. PROVIDE COMPLETE DIELECTRIC ISOLATION BETWEEN FERROUS AND NON-FERROUS METALS.
- 12. INSTALL OFFSETS, SWING JOINTS, EXPANSION JOINTS, PIPE CLAMPS, AND ANCHORS AS REQUIRED TO PERMIT EXPANSION AND CONTRACTION OF PIPING SYSTEM. 13. INSTALL EQUIPMENT TO ALLOW MAXIMUM POSSIBLE HEADROOM UNLESS SPECIFIC MOUNTING HEIGHTS ARE NOT INDICATED.
- 14. DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT IS INSPECTED AND APPROVED BY AUTHORITIES HAVING JURISDICTION.

# a. FURNISH AND AFFIX APPROVED ADHESIVE BANDS IDENTIFYING THE SERVICE AND DIRECTION OF FLOW OF EACH PIPING SYSTEM INSTALLED UNDER THIS DIVISION.

**TESTING**: THE PLUMBING SYSTEM SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLUMBING CODE AND FUEL GAS CODE. TESTING OF DRAINAGE WASTE AND VENT SYSTEMS SHALL BE DONE BY HYDROSTATIC TESTING ONLY (10-FOOT MINIMUM), AIR TESTING IS NOT ACCEPTABLE. TEST DRAINAGE AND VENT SYSTEM IN SECTIONS. SUBMIT TEST REPORTS AND PLAN INDICATING PIPE SECTIONS TESTED AS PART OF PROJECT CLOSE OUT.

MATERIALS AND WORKMANSHIP: MAINTAIN MAXIMUM HEADROOM AT ALL TIMES. DO NOT RUN PIPES EXPOSED UNLESS SHOWN EXPOSED ON DRAWINGS. MATERIAL AND EQUIPMENT SHALL BE NEW AND INSTALLED ACCORDING TO MANUFACTURERS RECOMMENDED BEST PRACTICE SO THAT COMPLETED INSTALLATION SHALL OPERATE SAFELY AND EFFICIENTLY.

**CONTINUITY OF SERVICES**: DO NOT INTERRUPT EXISTING SERVICES WITHOUT OWNER'S APPROVAL.

TO THE ARCHITECT/ENGINEER REGARDING CERTIFICATION OF PERFORMANCE.

ACCESS: PROVIDE PROPER ACCESS TO EQUIPMENT THAT REQUIRE INSPECTION, REPLACEMENT OR REPAIR. ACCESS PANELS SHALL BE A MINIMUM OF 18"X18".

- a. CLEAN SYSTEMS THOROUGHLY BEFORE TESTING. FIXTURES, EQUIPMENT, PIPE, VALVES AND FITTINGS SHALL BE FREE OF GREASE, METAL CUTTINGS, DIRT AND OTHER FOREIGN MATERIAL.
- b. REPAIR DISCOLORATION AND DAMAGE TO PARTS OF BUILDING FINISH AND FURNISHINGS DUE TO FAILURE TO PROPERLY CLEAN PIPING SYSTEM.

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ITEMS ASSOCIATED WITH PROJECT CLOSEOUT. ALLOW SUFFICIENT TIME IN THE CONSTRUCTION SCHEDULE TO ENSURE THAT THE INSTALLATION IS SUBSTANTIALLY COMPLETE AND ALL REQUIRED TESTING AND ACCURATELY COMPLETED DOCUMENTATION IS DELIVERED TO THE ENGINEER AT LEAST TWO WEEKS PRIOR TO ENGINEERS SUBSTANTIAL COMPLETION SITE VISIT. FAILURE TO ADEQUATELY PLAN OR SUBMISSION OF
- INCOMPLETE/INCORRECT DOCUMENTATION WILL RESULT IN BACK CHARGES OF ALL COSTS ASSOCIATED WITH ADDED WORK PERFORMED BY ENGINEERS. 2. PROVIDE THE CONTRACTOR CERTIFICATE OF COMPLETION IN ACCORDANCE WITH 780CMR, INDICATING THAT THE INSTALLATION IS IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS AND APPLICABLE LOCAL, STATE AND FEDERAL STATUTES AND CODES. PROVIDE CERTIFICATION FROM BOTH THE GENERAL CONTRACTOR AND ASSOCIATED TRADE CONTRACTOR FOR COMPLIANCE WITH 780CMR.
- 3. THE WATER SYSTEM SHALL NOT BE PERMITTED FOR USE UNTIL FULL DISINFECTION OF THE ADDED PIPING IS PERFORMED. PROVIDE DOCUMENTATION TO THE
- ARCHITECT/ENGINEER REGARDING CERTIFICATION OF PERFORMANCE AS PART OF THE CERTIFICATE OF COMPLETION. 4. PROVIDE COPIES OF DRAINAGE WASTE AND VENT TESTING REPORTS FOR ALL SECTIONS OF WORK INSTALLED AS PART OF THE CERTIFICATE OF COMPLETION.
- 5. SUBSTANTIAL COMPLETION SITE VISIT BY THE ENGINEER SHALL BE CONDUCTED AFTER RECEIPT AND REVIEW OF THE CONTRACTOR'S CERTIFICATE OF COMPLETION REVISIONS
- 6. PREMATURE REQUESTS THAT REQUIRE ADDITIONAL/FOLLOW UP SITE VISITS BY THE ENGINEER OF DEFICIENT ITEMS (AREAS INCOMPLETE, SYSTEMS NOT OPERATIONS, ETC) WILL RESULT IN BACK CHARGES OF THE COSTS ASSOCIATED WITH ANY ADDED VISITS

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# **CONSTRUCTION SET**

# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

110 HIGH STREET, BOSTON MA

TITLE

PLUMBING SPECIFICATIONS

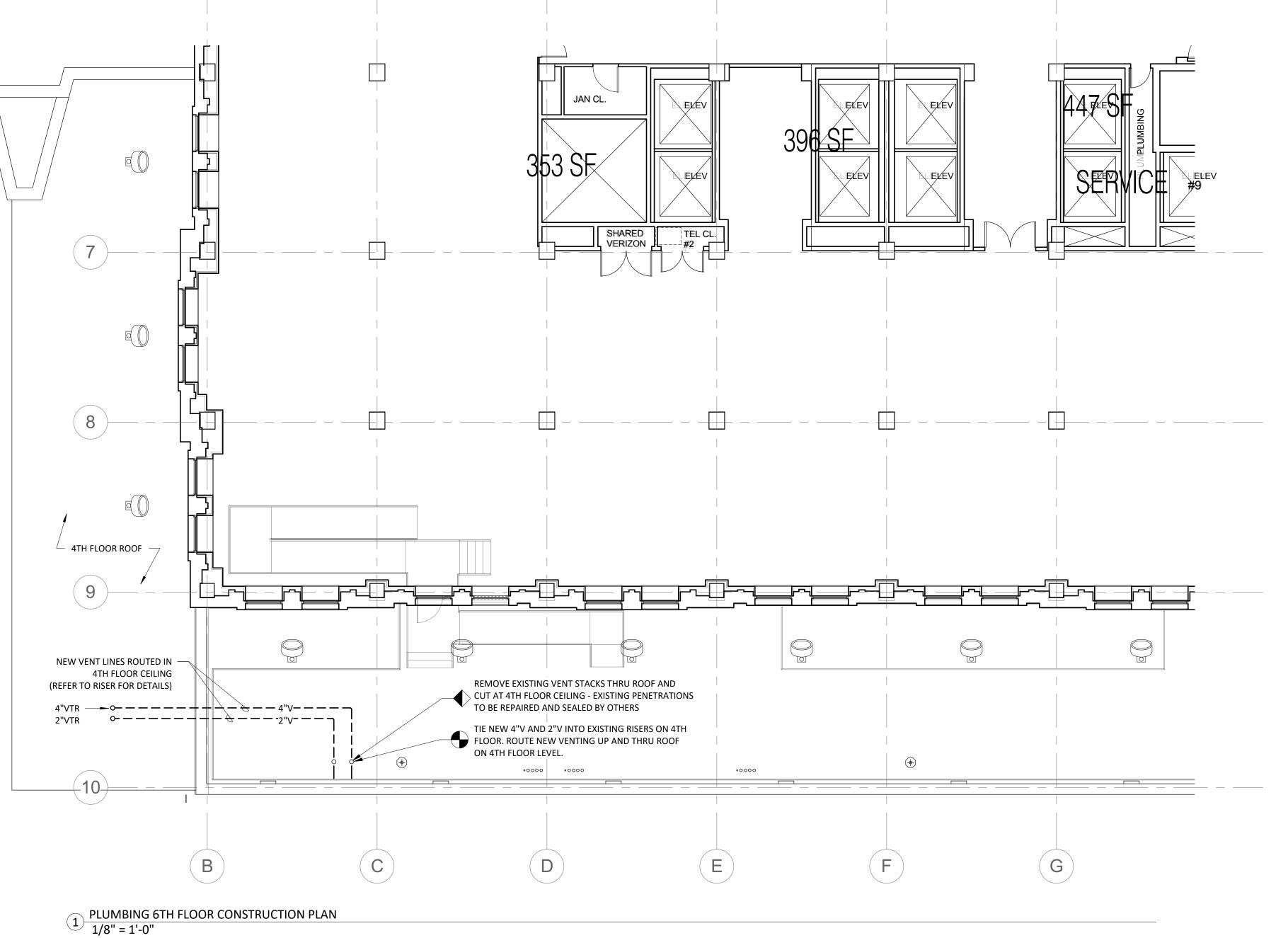
**DATE** 

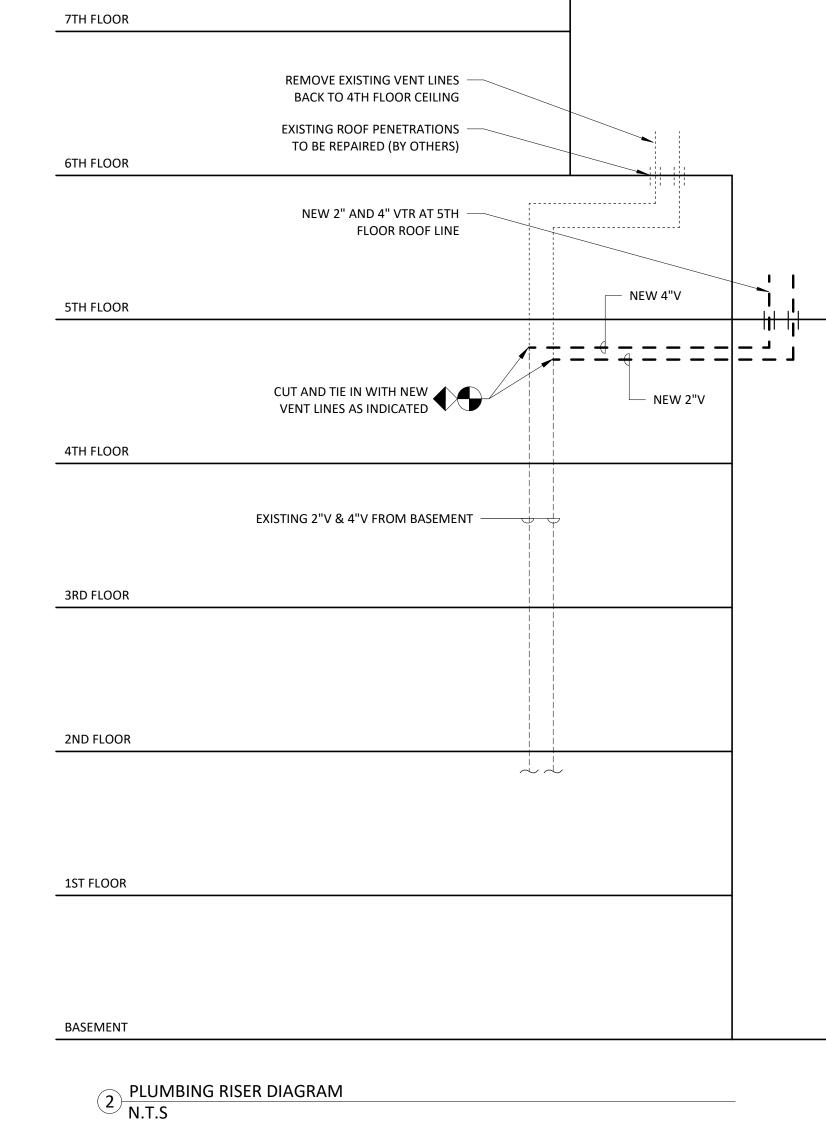
**JOB** NO.

10/17/2018 02DBA.180716

DRAWING NO.

FOR CONSTRUCTION





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**REVISIONS** 

**CONSTRUCTION SET** 

# 110 HIGH STREET - 6TH FL ROOF DECK

JONES LANG LASALLE

110 HIGH STREET, BOSTON MA

TITLE

PLUMBING 6th CONSTRUCTION PLANS

DATE

JOB NO.

10/17/2018 02DBA.180716

DRAWING NO.

P-30

FOR CONSTRUCTION

# **GENERAL NOTES**

- ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
- ALL DUCTWORK AND PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICES FOR ROUTING OF DUCTWORK AND PIPING TO AVOID OBSTRUCTIONS. EXACT LOCATIONS SUBJECT TO APPROVAL OF ENGINEER.
- SUPPORT ALL DUCTWORK AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OF SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL STEEL FRAMING.
- INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
- REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP WORK PROPOSAL.
- PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING OWNER. INSTALL ISOLATION VALVES AT POINT OF CONNECTION TO THE EXISTING PIPING. PROVIDE TEMPORARY DUCT CAPS AND/OR CONNECTIONS TO MINIMIZE SHUTDOWN TIME. ALL SHUT DOWNS SHALL BE ON OFF HOURS & INCLUDED IN BID.
- CONNECT NEW WORK TO EXISTING WORK IN NEAT AND APPROVED MANNER. RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY ENGINEER.
- DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT, AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW SYSTEM.
- THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND EXCESS DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK.
- SEAL OPENINGS AROUND DUCTS AND PIPING THROUGH PARTITIONS, WALLS AND FLOORS (NOT IN SHAFTS) WITH MINERAL WOOL OR OTHER NON-COMBUSTIBLE MATERIAL. SEE SPECIFICATIONS.
- PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, CONDUIT, AND EQUIPMENT.
- ALL EXISTING MATERIAL AND EQUIPMENT TO BE REMOVED UNDER THIS CONTRACT WILL REMAIN THE PROPERTY OF THE OWNER OR SHALL BE DISPOSED OF BY THIS CONTRACTOR AS DIRECTED BY THE OWNER.
- PROVIDE EQUIPMENT CURBS AND DUNNAGE STEEL AS REQUIRED.
- THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
- INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.
- 16. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED.
- SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC, WHICH AFFECT THIS WORK AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION.
- PROVIDE ALL REQUIRED LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY FOR A COMPLETE AND SAFE INSTALLATION OF HVAC IN FULL CONFORMITY WITH REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION; ALL AS INDICATED ON DRAWINGS AND/OR HEREIN SPECIFIED FOR THE SYSTEMS INCLUDED. WORK SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER. INCLUDE ALL COSTS FOR PERMITS, LICENSES, CERTIFICATES, FILING AND INSPECTIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION.
- THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF ACCEPTANCE BY OWNER THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

	/ OV 4 1 D O L C	
DUCTWORI	DOUBLE LINE	DESCRIPTION
		FLEXIBLE CONNECTION
	FC J	VANED ELBOW (PROVIDE ALL SQUARE OR RECTANG- ULAR ELBOWS WITH VANES EVEN IF SYMBOL IS MISSING)
Ţ		VANED ELBOW (SHORT RAD.)
		STANDARD RADIUS ELBOW
10/8	10/8	NEW OVAL DUCT (WIDTH / DEPTH)
10x8	10x8	NEW DUCT (WIDTH X DEPTH)
	<u> </u>	EXISTING DUCT TO REMAIN
	ţ	EXISTING DUCT TO BE REMOVED
<del></del>	{mmmm}	FLEXIBLE DUCTWORK (INSULATED)
		DUCT WITH SOUND LINING
		DUCTWORK WITH EXTERNAL INSULATION WRAP
	<b>↓ ↓ ↓ ↓</b>	MANUAL VOLUME DAMPER
		FIRE DAMPER
—— UP —— DN	UP DN	SUPPLY DUCT (UP & DOWN)
—— <b>□</b> UP —— <b>∃</b> DN	UP DN	EXHAUST DUCT (UP & DOWN)
		CONNECT NEW DUCT TO EXISTING DUCT
R R	R R	INCLINED RISE, IN DIRECTION OF AIR FLOW
<del></del>	<del>     -</del>	INCLINED DROP, IN DIRECTION OF AIR FLOW
<del></del>	<b>★</b>	LIMIT OF DEMOLITION
<b>ب</b>	<u> </u>	VERTICAL DUCT DROP
<del>د</del>	[X] — }	VERTICAL DUCT RISE

PIPING SY	INIROF2
SYMBOL	DESCRIPTION
	NEW PIPE
	EXISTING PIPE
	EXISTING PIPE TO BE REMOVED
	DIRECTION OF PIPE PITCH (DOWN)
	DIRECTION OF FLOW
<del></del>	REDUCER OR INCREASER
	ECCENTRIC REDUCER
<del></del>	PIPE DOWN
	PIPE UP
	TOP CONNECTION
<del></del>	BOTTOM CONNECTION
<del></del>	PIPE DROP
<b>─</b>	PIPE RISE
	UNION
1	FLANGED END
<u>-</u>	DEAD END - SCREWED CAP
<b>d</b> ——	DEAD END - WELDED CAP
<b>†</b>	AUTOMATIC AIR VENT
<b>^</b>	MANUAL AIR VENT
	STRAINER
<del></del>	THERMOMETER WELL
<b>∅</b> <del>-X</del>	PRESSURE GAGE WITH NEEDLE VALVE
<b>Q</b>	THERMOMETER
$\overline{\hspace{1cm}}$	GATE VALVE
	THERMAL EXPANSION VALVE
	SOLENOID VALVE
	FLOW CONTROL VALVE
	DRAIN VALVE
	GLOBE VALVE
	CHECK VALVE
77	SILENT CHECK VALVE
	BALL VALVE
	CIRCUIT SETTER
	2-WAY CONTROL VALVE
	PLUG VALVE
<u>—————————————————————————————————————</u>	MOTORIZED VALVE
<b>────────</b>	THREE-WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
R.♣	SAFETY OR PRESSURE RELIEF VALVE
	BUTTERFLY VALVE
	PITCH UP IN DIRECTION OF FLOW
<del></del>	PITCH DOWN IN DIRECTION OF FLOW
	·
	CALIBRATED BALANCING VALVES (CIRCUIT SETTERS

CALIBRATED BALANCING VALVES (CIRCUIT SETTERS)

GENERAL SYMBOLS		
SYMBOL	DESCRIPTION	
$\triangle$	REVISION NUMBER	
•	POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK	
<b>\$</b>	LIMIT OF DEMOLITION	
<b>©</b>	PUMP	
HMH	METER	
69	REFRIGERANT SIGHT GLASS	
T	THERMOSTAT	
Н	HUMIDITY SENSOR	
RI	REMOTE INDICATOR LIGHT	
	INDICATOR UNIT	
0	LEAK SENSOR	
(P)	CONDENSATE PUMP	
(7)	CURRENT TRANSDUCER	
<b>S</b> D	SMOKE DETECTOR/SENSOR	
Sw	SWITCH	
	VIBRATION ISOLATOR IN HANGER	
	DUCT UNDER PRESSURE (SUPPLY AIR OR FAN DISCHARGE)	
	DUCT UNDER NEGATIVE PRESSURE (RETURN, EXHAUST OR OUTSIDE AIR)	
CWP	CONDENSATE PUMP	
BG	BREAK GLASS STATION	
SECTION DESIGNATION  A101 DRAWING REFERENCE  NUMBER		

DIFFUSER SYMBOLS		
SYMBOL	DESCRIPTION	
$\boxtimes$	SUPPLY DIFFUSER	
	RETURN/EXHAUST GRILLE	
	3-WAY DIFFUSER	
lacktriangle	2-WAY DIFFUSER	
	2-WAY CORNER DIFFUSER	
	1-WAY DIFFUSER	
	LINEAR DIFFUSER	
<b>\\\\</b>	SIDEWALL DIFFUSER	

EQUIPMENT REQUIRING ELECTRIC SERVICE:
UNIT ABBREVIATION  #-#  UNIT DESIGNATION (FLOOR - UNIT #)
EQUIPMENT NOT REQUIRING ELECTRIC SERVICE:
UNIT ABBREVIATION  #-# UNIT DESIGNATION (FLOOR - UNIT #)
DIFFUSER, REGISTER OR GRILLE TAG:

CD-1 UNIT ABBREVIATION
### AIRFLOW (CFM)

А	AMPERES	KW	KILOWATT
AC	AIR CONDITIONING	L	LENGTH
AD	ACCESS DOOR	LAT	LEAVING AIR TEMP.
AFF	ABOVE FINISHED FLOOR	LBS	POUNDS
AL	ACOUSTICAL LINING	IN	INCHES
AP	ACCESS PANEL	LDB	LEAVING DRY BULB TEMP.
ВНР	BRAKE HORSEPOWER		SUPPLY & RETURN
BTU	BRITISH THERMAL UNIT	LWB	LEAVING WET BULB TEMP.
BTU/H	BTU PER HOUR	LRA	LOCKED ROTOR AMPS
CAP	CAPACITY	LWT	LEAVING WATER TEMP.
CD	CEILING DIFFUSER	М	AUTOMATIC DAMPER
CFM	CUBIC FEET PER MINUTE	<b>N</b> 4 A V	MOTOR ACTUATOR
CG	CEILING GRILLE	MAX	MAXIMUM
CHWR	CHILLED WATER RETURN	МВН	THOUSAND BTU PER HR
CHWS	CHILLED WATER SUPPLY	MCA	MINIMUM CKT AMPACITY
CLG	CEILING	MCC	MOTOR CONTROL CENTER
CP	CONDENSATE PUMP	MFS	MAXIMIM FUSE SIZE
COND	CONDENSATE	МНР	MOTOR HORSEPOWER
CWS&R	CONDENSER WATER	MIN	MINIMUM
	SUPPLY & RETURN	NK	NECK SIZE
D	DROP	OAI	OUTSIDE AIR INTAKE
DB	DRY BULB	OD	OUTSIDE DIAMETER
DN	DOWN	OED	OPEN END DUCT
DWG	DRAWING	PD	PRESSURE DROP
EAT	ENTERING AIR TEMP.	PH	PHASE
EDB	ENTERING DRY BULB	PSI	POUNDS PER SQUARE INCH
	TEMPERATURE	R	RISE
EF	EXHAUST FAN	RM	ROOM
EWB	ENTERING WET BULB	DDM	DEVOLUTIONS DED MINUTE

HR HOUR HZ HERTZ WG WATER GAUGE WMS WIRE MESH SCREEN WTS WEIGHTS  WG WATER GAUGE WMS WIRE MESH SCREEN WTS WEIGHTS  JONES LA				5. 2.1 2.12 2 5 5 1	
EDB ENTERING DRY BULB TEMPERATURE  EF EXHAUST FAN  EWB ENTERING WET BULB TEMPERATURE  ER EXISTING TO BE RELOCATED SD SMOKE DETECTOR  ESP EXTERNAL STATIC PRESSURE SENS SENSIBLE  ETR EXISTING TO REMAIN SQ.FT SQUARE FEET  "F DEGREES FAHRENHEIT TEMP TEMPERATURE  FC FLEXIBLE CONNECTION, FAN COIL  FLA FULL LOAD AMPS  FPS FEET PER SECOND  FT FEET  H HEIGHT  HWR HOT WATER RETURN  HWS HOT WATER SUPPLY HR HOUR  HZ HERTZ  WHECHANICAL SHEET LIST  SHEET NUMBER  PSI POUNDS PER SQUARE INCH  R RISE  RM ROOM  REVOLUTIONS PER MINUTE  REVISION  REVI	DWG	DRAWING	PD	PRESSURE DROP	
TEMPERATURE  EF EXHAUST FAN  EWB ENTERING WET BULB TEMPERATURE  ER EXISTING TO BE RELOCATED  ESP EXTERNAL STATIC PRESSURE  ETR EXISTING TO REMAIN  FC FLEXIBLE CONNECTION, FAN COIL  FLA FULL LOAD AMPS  FPS FEET PER SECOND  FT FEET  H HEIGHT HWR HOT WATER RETURN HWS HOT WATER SUPPLY HR HOUR HZ HERTZ  MECHANICAL SHEET LIST  MECHANICAL SHEET LIST  SHEET NUMBER  R RISE RM ROOM  RM ROOM  REVISION  R	EAT	ENTERING AIR TEMP.	PH	PHASE	
R RISE RM ROOM REWB ENTERING WET BULB TEMPERATURE SD SMOKE DETECTOR  ESP EXTERNAL STATIC PRESSURE ETR EXISTING TO BE RELOCATED SD SMOKE DETECTOR  ESP EXTERNAL STATIC PRESSURE ETR EXISTING TO REMAIN SQ FT SQUARE FEET  "F DEGREES FAHRENHEIT TEMP TEMPERATURE  FC FLEXIBLE CONNECTION, FAN COIL TYP TYPICAL  FLA FULL LOAD AMPS V VOLTS  FPS FEET PER SECOND FT FEET W WIDTH HHEIGHT HWR HOT WATER RETURN HWS HOT WATER RETURN WB WET BULB HWS HOT WATER SUPPLY HR HOUR HZ HERTZ WMS WIRE MESH SCREEN WIS WEIGHTS   MECHANICAL SHEET LIST  SHEET NUMBER SHEET NAME	EDB		PSI	POUNDS PER SQUARE INCH	
EWB ENTERING WET BULB TEMPERATURE  ER EXISTING TO BE RELOCATED  ESP EXTERNAL STATIC PRESSURE  ETR EXISTING TO REMAIN  "F DEGREES FAHRENHEIT  FC FLEXIBLE CONNECTION, FAN COIL  FLA FULL LOAD AMPS  FPS FEET PER SECOND  FT FEET  H HEIGHT  HWR HOT WATER RETURN  HWS HOT WATER SUPPLY HR HOUR HZ HERTZ  MECHANICAL SHEET LIST  SHEET NUMBER  RM ROOM  RPM REVOLUTIONS PER MINUTE  REVISION  REVISI			R	RISE	
TEMPERATURE  RPM REVOLUTIONS PER MINUTE  SD SMOKE DETECTOR  SENS SENSIBLE  SETR EXISTING TO REMAIN SQ FT SQUARE FEET  TEMP TEMPERATURE  FC FLEXIBLE CONNECTION, FAN COIL TYP TYPICAL  TYP TYPICAL  FLA FULL LOAD AMPS V VOLTS FPS FEET PER SECOND FT H HEIGHT W/ WIDTH WW WIDTH WW HOT WATER RETURN WB WET BULB WATER GAUGE WMS WIRE MESH SCREEN WTS WEIGHTS  MECHANICAL SHEET LIST SHEET NUMBER  SHEET NAME  REVISION  REVISION  REVISION  REVISION  REVISION  REVISION  REVISION  SMOKE DETECTOR  SHOW AND WATER FEET  WW WINTH WOUTH WOUTH WITH WATER GAUGE WMS WIRE MESH SCREEN WTS WEIGHTS  JONES LA  IIO HIGH ST  IIIO HIGH ST  IIIII HIGH ST  IIII HIGH ST  IIII HIGH ST  IIII HIGH ST  IIII HIGH			RM	ROOM	
ER EXISTING TO BE RELOCATED SD SMOKE DETECTOR  ESP EXTERNAL STATIC PRESSURE SENS SENSIBLE  ETR EXISTING TO REMAIN SQ FT SQUARE FEET  "F DEGREES FAHRENHEIT TEMP TEMPERATURE  FC FLEXIBLE CONNECTION, FAN COIL  TYP TYPICAL  WIGHTS    CONSTENTATION OF THE TYPICAL  TYP TYP TYP	EWB		RPM	REVOLUTIONS PER MINUTE	
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FC FLEXIBLE CONNECTION, FAN COIL  TYP TYPICAL  TYP TYPICAL  V VOLTS  FPS FEET PER SECOND  FT FEET  H HEIGHT  HWR HOT WATER RETURN  HWS HOT WATER SUPPLY  HR HOUR  HZ HERTZ  WHS WIRE MESH SCREEN  WTS WEIGHTS  TTRANSFER DUCT  TYP TYPICAL  V VOLTS  V VOLTS  V VOLTS  V WITH  WW WIDTH  WW WITH  TO TRANSFER DUCT  TYP TYPICAL  W WITH  TYP TYPICAL  W WITH  W WITH  W WITH  W WITH  W WITH  W WATER GAUGE  WMS WIRE MESH SCREEN  WTS WEIGHTS  TO NOTE:  TO N	ETR	EXISTING TO REMAIN	SQ FT	SQUARE FEET	
FAN COIL  FLA  FULL LOAD AMPS  V  VOLTS  FPS  FEET PER SECOND  FT  FEET  H  HEIGHT  HWR  HOT WATER RETURN  HWS  HOT WATER SUPPLY  HR  HOUR  HZ  HERTZ  WHS  WITH  WB  WATER GAUGE  WMS  WIRE MESH SCREEN  WIS  WIEGHTS   JONES LA  IIO HIGH S  WEIGHTS	°F	DEGREES FAHRENHEIT	TEMP	TEMPERATURE	
FLA FULL LOAD AMPS  FPS FEET PER SECOND  FT FEET  H HEIGHT  HWR HOT WATER RETURN  HWS HOT WATER SUPPLY HR HOUR  HZ HERTZ  WHS WIRE MESH SCREEN  WHS WEIGHTS  TYP TYPICAL  V VOLTS  VD VOLUME DAMPER  WW WIDTH  WW WITH  WW WITH  WW WATER GAUGE  WMS WIRE MESH SCREEN  WTS WEIGHTS  JONES LA  IIO HIGH ST	FC	FLEXIBLE CONNECTION,	TD	TRANSFER DUCT	
FPS FEET PER SECOND  VD VOLUME DAMPER  FT FEET  H HEIGHT  HWR HOT WATER RETURN  HWS HOT WATER SUPPLY  HR HOUR  HZ HERTZ  WW WIDTH  W/ WITH  WB WET BULB  WG WATER GAUGE  WMS WIRE MESH SCREEN  WTS WEIGHTS  JONES LA  IIO HIGH S		FAN COIL	TYP	TYPICAL	
FT FEET  H HEIGHT  W WIDTH  W/ WITH  WB WET BULB  HWS HOT WATER SUPPLY  HR HOUR  HZ HERTZ  WMS WIRE MESH SCREEN  WMS WEIGHTS  WOONSTE  W/ WITH  WB WET BULB  WG WATER GAUGE  WMS WIRE MESH SCREEN  WTS WEIGHTS  JONES LA  IIO HIGH ST	FLA	FULL LOAD AMPS	V	VOLTS	
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H HEIGHT  HWR HOT WATER RETURN  HWS HOT WATER SUPPLY  HR HOUR  HZ HERTZ  W/ WITH  WB WET BULB  WG WATER GAUGE  WMS WIRE MESH SCREEN  WTS WEIGHTS  JONES LA  SHEET  NUMBER  SHEET NAME	FT	FEET	W	WIDTH	CONSTRII
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HWS HOT WATER SUPPLY HR HOUR HZ HERTZ WMS WIRE MESH SCREEN WTS WEIGHTS  WEIGHTS  JONES LA SHEET NUMBER SHEET NAME	HWR	HOT WATER RETURN	WB	WET BULB	440 - 110
HR HOUR HZ HERTZ WMS WIRE MESH SCREEN WTS WEIGHTS  JONES LA SHEET NUMBER SHEET NAME	HWS	HOT WATER SUPPLY			110 HIGI
MECHANICAL SHEET LIST  SHEET NUMBER  NUMBER  WTS WEIGHTS  JONES LA IIO HIGH S	HR	HOUR			ROOF D
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NUMBER SHEET NAME	_	NICAL SHEET LIST			
	NUMBER			NS .	IIO HIGH STI
M-201 MECHANICAL SPECIFICATIONS I				··· <del>·</del>	
M-301 MECHANICAL 6TH FLOOR DEMOLITION PLAN			 ΓΙΟΝ PLAN		

BTU	BRITISH THERMAL UNIT	LWB	LEAVING WET BULB TEMP.	
BTU/H	BTU PER HOUR	LRA	LOCKED ROTOR AMPS	
CAP	CAPACITY	LWT	LEAVING WATER TEMP.	
CD	CEILING DIFFUSER	M	AUTOMATIC DAMPER MOTOR ACTUATOR	
CFM	CUBIC FEET PER MINUTE	MAX	MAXIMUM	
CG	CEILING GRILLE	МВН	THOUSAND BTU PER HR	
CHWR	CHILLED WATER RETURN	MCA	MINIMUM CKT AMPACITY	
CHWS	CHILLED WATER SUPPLY	MCC	MOTOR CONTROL CENTER	
CLG	CEILING	MFS	MAXIMIM FUSE SIZE	
СР	CONDENSATE PUMP	MHP		
COND	CONDENSATE		MOTOR HORSEPOWER	
CWS&R	CONDENSER WATER	MIN	MINIMUM	
	SUPPLY & RETURN	NK	NECK SIZE	
D	DROP	OAI	OUTSIDE AIR INTAKE	
DB	DRY BULB	OD	OUTSIDE DIAMETER	
DN	DOWN	OED	OPEN END DUCT	
DWG	DRAWING	PD	PRESSURE DROP	
EAT	ENTERING AIR TEMP.	PH	PHASE	
EDB	ENTERING DRY BULB TEMPERATURE	PSI	POUNDS PER SQUARE INCH	
E.F.		R	RISE	
EF	EXHAUST FAN	RM	ROOM	
EWB	ENTERING WET BULB TEMPERATURE	RPM	REVOLUTIONS PER MINUTE	
ER	EXISTING TO BE RELOCATED	SD	SMOKE DETECTOR	
ESP	EXTERNAL STATIC PRESSURE	SENS	SENSIBLE	
ETR	EXISTING TO REMAIN	SQ FT	SQUARE FEET	
°F	DEGREES FAHRENHEIT	TEMP	TEMPERATURE	
FC	FLEXIBLE CONNECTION,	TD	TRANSFER DUCT	
	FAN COIL	TYP	TYPICAL	
FLA	FULL LOAD AMPS	V	VOLTS	
FPS	FEET PER SECOND	VD	VOLUME DAMPER	
FT	FEET	W	WIDTH	
Н	HEIGHT	W/	WITH	
HWR	HOT WATER RETURN	WB	WET BULB	
HWS	HOT WATER SUPPLY	WG	WATER GAUGE	
HR	HOUR	WMS	WIRE MESH SCREEN	
HZ	HERTZ	WTS	WEIGHTS	

# **CONSTRUCTION SET** 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

110 HIGH STREET, BOSTON MA

MECHANICAL NOTES, SYMBOLS, & **ABBREVIATIONS** 

**DATE** 

**JOB** NO.

**UALB RKMAN**<sub>®</sub>

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**DRAWING NO.** 

FOR CONSTRUCTION

#### B. CODES, PERMITS AND INSPECTIONS:

- 1. ALL WORK SHALL COMPLY WITH REQUIREMENTS OF LOCAL BUILDING CODE, BUILDING DEPARTMENT, BUILDING MANAGEMENT, AND ALL AUTHORITIES HAVING JURISDICTION. APPLICABLE NATIONAL, STATE AND LOCAL CODES, LAWS, AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK SHALL BE INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS. CONTRACTOR IS TO INFORM ENGINEER OF ANY EXISTING WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED AT CONTRACTOR'S EXPENSE BY THIS CONTRACTOR AND AT NO EXPENSE TO THE OWNER.
- 2. THIS CONTRACTOR SHALL PERFORM ALL CONTROLLED INSPECTIONS IF REQUIRED AND OBTAIN ALL EQUIPMENT USE PERMITS AS REQUIRED BY STATE AND LOCAL AUTHORITIES. PERMITS SHALL BE TURNED OVER TO OWNER AT JOB COMPLETION.

#### C. SITE VERIFICATION:

1. PRIOR TO SUBMISSION OF THE BID, THIS CONTRACTOR SHALL VISIT THE JOB SITE TO ASCERTAIN THE ACTUAL FIELD CONDITIONS AS THEY RELATE TO THE WORK INDICATED ON THE DRAWINGS AND DESCRIBED HEREIN. DISCREPANCIES, IF ANY, SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO SUBMISSION OF THE BID, AND IF NOT RESOLVED TO SATISFACTION, SHALL BE SUBMITTED AS A WRITTEN QUALIFICATION OF THE BID. SUBMISSION OF A BID SHALL BE EVIDENCE THAT SITE VERIFICATION HAS BEEN PERFORMED AS DESCRIBED ABOVE.

#### D. CONTRACT DOCUMENTS:

- 1. PRIOR TO SUBMISSION OF THE BID, THIS CONTRACTOR SHALL REVIEW ALL DRAWINGS OF THE ENTIRE PROJECT INCLUDING GENERAL CONSTRUCTION, DEMOLITION, ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND SPRINKLER AND SHALL INCLUDE ANY WORK REQUIRED IN THE BID WHICH IS INDICATED OR IMPLIED TO BE PERFORMED BY THIS TRADE IN OTHER SECTIONS OF THE WORK.
- 2. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK AND APPROXIMATE LOCATION OF EQUIPMENT. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS AND COORDINATE FINAL LOCATIONS OF DIFFUSERS, GRILLES, REGISTERS, THERMOSTATS, SENSORS, SWITCHES AND ANY WALL MOUNTED DEVICES. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICT.
- 3. IF A CONFLICT OCCURS IN THE SPECIFICATIONS AND/OR ON THE DRAWINGS, THE MORE STRINGENT SITUATION SHALL APPLY.
- 4. ANY EQUIPMENT, PARTS, MATERIALS, ACCESSORIES, OR LABOR THAT IS NECESSARY FOR PROPER PERFORMANCE OF THE MECHANICAL WORK ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN OR SHOWN ON THE DRAWINGS, SHALL BE FURNISHED AND INSTALLED WITHOUT ADDITIONAL COSTS.

#### E. GUARANTEE:

- 1. ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THIS WORK. FINAL ACCEPTANCE SHALL BE DEFINED AS THE TIME AT WHICH THE MECHANICAL WORK IS TAKEN OVER AND ACCEPTED BY THE OWNER, AND IS UNDER CARE, CUSTODY, AND CONTROL OF THE OWNER. ENGAGE THE SERVICES OF VARIOUS MANUFACTURERS SUPPLYING THE EQUIPMENT FOR THE PROPER STARTUP AND OPERATION OF ALL SYSTEMS INSTALLED. INSTRUCT THE OWNERS PERSONNEL IN THE PROPER OPERATION AND SERVICING OF THE SYSTEM.
- 2. THE CONTRACTOR SHALL GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN THE GUARANTEE PERIOD. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL INCLUDE RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THIS CONTRACTOR.
- 3. THIS CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND OPERATION OF ALL SYSTEMS UNTIL THE FINAL ACCEPTANCE OF THE WORK.
- 4. ALL AIR CONDITIONING UNIT COMPRESSORS AND REFRIGERATION COMPONENTS SHALL HAVE A 5-YEAR WARRANTY
- 5. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION" AIA DOCUMENT A201, LATES EDITION. OR AS REQUIRED BY THE ARCHITECT DOCUMENTS. AND/OR THE STRUCTURAL ENGINEER'S DOCUMENTS, AS APPLICABLE, ARE PART OF THIS CONTRACT.

# F. DEFINITIONS:

- 1. MECHANICAL CONTRACTOR, "THIS CONTRACTOR": THE PARTY OR PARTIES THAT HAVE BEEN DULY AWARDED THE CONTRACT FOR AND ARE THEREBY MADE RESPONSIBLE FOR THE MECHANICAL WORK AS DESCRIBED HEREIN.
- 2. "THIS CONTRACT", "THE CONTRACT": THE AGREEMENT COVERING THE WORK TO BE PERFORMED BY "THIS CONTRACTOR".
- 3. "APPROVED", "EQUAL", "SATISFACTORY", "ACCEPTED", "ACCEPTABLE", "EQUIVALENT": SUITABLE FOR USE ON THE PROJECT, AS DETERMINED BY THE ENGINEER BASED ON DOCUMENTS PRESENTED FOR SUCH DETERMINATION.
- 4. "THESE SPECIFICATIONS": "THIS SECTION, PART, AND DIVISION" (OF THE SPECIFICATION): THE DOCUMENT SPECIFYING THE WORK TO BE PERFORMED BY "THIS CONTRACTOR".
- 5. "THE MECHANICAL WORK", "THIS WORK": ALL LABOR MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES, AND OTHER ITEMS REQUIRED FOR A PROPER AND COMPLETE INSTALLATION BY THE MECHANICAL CONTRACTOR.
- 6. "ARCHITECT", "ENGINEER", "OWNER'S REPRESENTATIVE": THE PARTY OR PARTIES RESPONSIBLE FOR INTERPRETING, ACCEPTING AND OTHERWISE RULING ON THE PERFORMANCE UNDER THIS CONTRACT.
- 7. "FURNISH": PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT, ALL AS PART OF THE MECHANICAL WORK. 8. "INSTALL": UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO
- ESTABLISH SECURE MOUNTING INSTALLATION AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT, ALL AS PART OF THE MECHANICAL WORK.
- 9. "PROVIDE": "FURNISH" AND "INSTALL"
- 10. "NEW": MANUFACTURED WITHIN THE PAST TWO YEARS AND NEVER BEFORE USED.
- 11. "RELOCATE": MOVE EXISTING EQUIPMENT AND ALL ACCESSORIES AS REQUIRED.
- 12. "REMOVE": DISMANTLE AND CART AWAY FROM SITE INCLUDING ALL RELATED ACCESSORIES. ALL ITEMS SHALL BE LEGALLY DISPOSED OF. ALL OTHER EQUIPMENT AND OPERATIONS IN ANY WAY AFFECTED BY THE REMOVAL IS TO REMAIN IN FULL OPERATION. PROVIDE ALL NECESSARY COMPONENTS TO MAINTAIN SUCH OPERATION.

# 01100 - SCOPE OF WORK

- A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, AND CONTRACTOR'S SERVICES NECESSARY FOR THE COMPLETE, SAFE INSTALLATION OF ALL MECHANICAL WORK. THE SCOPE OF WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
  - 1. DEMOLITION AND REMOVAL OF ITEMS AS REQUIRED.
  - 2. DUCTWORK AND DUCTWORK ACCESSORIES.
  - 3. AIR DISTRIBUTION SYSTEM (AIR OUTLETS, VAV BOXES, FAN POWERED BOXES, ETC.).
  - 4. PIPING AND PIPING ACCESSORIES INCLUDING ALL VALVING.
  - 5. EQUIPMENT (PUMPS, AIR CONDITIONING UNITS, FANS, VARIABLE FREQUENCY DRIVES, ETC.)
  - 6. INSULATION OF PIPING, EQUIPMENT AND DUCTWORK.
  - 7. SOUND ATTENUATORS AND SOUND LINING. 8. AUTOMATIC TEMPERATURE CONTROLS.
  - 9. TESTING AND BALANCING
  - 10. CUTTING AND PATCHING

- 11. SHOP DRAWINGS
- 12. AS-BUILT DRAWINGS.
- 13. OPERATING AND MAINTENANCE MANUALS
- 14. FULL COORDINATION WITH OTHER TRADES.

15. WARRANTY AND GUARANTY.

- B. PHASING AS REQUIRED BY OWNER, CONSTRUCTION MANAGER, AND GENERAL CONTRACTOR, OR BUILDING MANAGEMENT
- C. PREMIUM TIME FOR WORK TO BE PERFORMED AFTER-HOURS AS REQUIRED BY BUILDING MANAGEMENT AND/OR OWNER.
- D. FILING, PERMITS, CONTROLLED INSPECTIONS.
- E. FULL TESTING AND STARTUP OF ALL SYSTEMS.
- F. SECURE PERMITS, PAY ALL FEES AND CHARGES FOR ALL WORK INSTALLED, CERTIFYING

## 01310 - COORDINATION WITH BUILDING MANAGEMENT

- A. THE CONTRACTOR SHALL OBTAIN A COPY OF THE BUILDING RULES AND REGULATIONS PRIOR TO BID SUBMISSION TO DETERMINE REQUIREMENTS AND THE EXTENT OF PREMIUM TIME WORK REQUIRED BY THE BUILDING. FOR THE PURPOSE OF THE BID, ASSUME ANY NOISY WORK (E.G., CHOPPING, CORE DRILLING, ETC., AND BASE BUILDING SYSTEM INTERRUPTIONS ARE TO BE PERFORMED OUTSIDE NORMAL BUSINESS HOURS.
- B. THE CONTRACTOR SHALL ADHERE TO THE BUILDING OWNER'S RULES AND REGULATIONS. ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND THE BUILDING RULES AND REGULATIONS SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT/ENGINEER FOR REVIEW, WITH BID SUBMISSION.
- C. COORDINATE WITH BUILDING OWNER FOR ANY SERVICE INTERRUPTION OF EXISTING SYSTEMS AND GIVE NOTICE AS REQUIRED BY BUILDING RULES AND REGULATIONS OR A MINIMUM OF TWO (2) DAYS PRIOR TO ANY WORK, WHICHEVER IS MORE STRINGENT.

#### 01330 - SHOP DRAWINGS

- A. SUBMIT SHOP DRAWINGS CERTIFIED BY ALL TRADES THAT COORDINATION HAS BEEN COMPLETED. SUBMIT ALL CERTIFIED EQUIPMENT CUTS WITH CONSTRUCTION WIRING DIAGRAMS AND AUTOMATIC TEMPERATURE CONTROL REQUIREMENTS. SHOP DRAWINGS SUBMISSION SHALL INCLUDE, BUT NOT BE LIMITED, TO THE FOLLOWING:
- 1. DUCTWORK PROVIDE DUCT SHOP STANDARDS AND LEAKAGE TEST CERTIFICATION, AS REQUIRED, AND 3/8 SCALE DUCT LAYOUT.
- 2. PIPING LAYOUT AND APPURTENANCES PROVIDE PIPING, VALVING, CHEMICAL TREATMENT, SHOP
- STANDARDS AND 3/8 SCALE PIPING LAYOUT WITH ALL VALVING. INSULATION FOR DUCTWORK, PIPING AND EQUIPMENT.
- 4. CERTIFIED AIR AND WATER BALANCING REPORT
- 5. EQUIPMENT CATALOG CUTS FOR ALL ITEMS TO BE UTILIZED ON PROJECT (FANS, PUMPS, AC UNITS, VARIABLE FREQUENCY DRIVES, VAV BOXES, ETC.)
- 6. AIR OUTLETS (DIFFUSERS, REGISTERS, GRILLES, ETC.)
- 7. AUTOMATIC TEMPERATURE CONTROL DIAGRAMS, DEVICES AND SEQUENCE OF OPERATION
- B. AS-BUILT DRAWINGS IN AUTOCAD 2007 FORMAT AT PROJECT COMPLETION SHOWING THE INSTALLED CONDITION OF WORK.
- C. THE QUANTITY OF SHOP DRAWINGS SHALL AS A MINIMUM BE FOUR (4) COPIES OF 8-1/2"X11" SUBMISSIONS AND ONE (1) REPRODUCIBLE AND ONE (1) PRINT OF ALL DRAWINGS. SPECIFIC JOB REQUIREMENTS MAY BE MORE STRINGENT AND CONTRACTOR IS RESPONSIBLE TO OBTAIN REQUIREMENTS FROM CONSTRUCTION MANAGER, GENERAL CONTRACTOR OR ARCHITECT.

## 01633 - SUBSTITUTIONS

- A. NO SUBSTITUTE MATERIAL OR MANUFACTURER OF EQUIPMENT SHALL BE PERMITTED WITHOUT A FORMAL WRITTEN SUBMITTAL TO THE ENGINEER WHICH INCLUDES ALL DIMENSIONAL, PERFORMANCE AND MATERIAL SPECIFICATIONS. ANY CHANGES IN LAYOUT, ELECTRICAL CHARACTERISTICS, STRUCTURAL REQUIREMENTS, OR DESIGN DUE TO THE USE OF A SUBSTITUTION SHALL BE SUBMITTED TO THE ENGINEER AS PART OF THIS PROPOSAL. THE CONTRACTOR TAKES FULL RESPONSIBILITY FOR THE SUBSTITUTION AND ALL CHANGES RESULTING FROM SUBSTITUTION. ALL ITEMS SHALL BE SUBMITTED FOR REVIEW IN CONJUNCTION WITH THE SUBMITTAL OF THE SUBSTITUTION. ANY SUBSTITUTION MUST BE SUBMITTED WITH AN EXPLANATION WHY A SUBSTITUTION IS BEING UTILIZED. IF THE SUBSTITUTED ITEM DEVIATES FROM THE SPECIFIED ITEM, THOSE DEVIATIONS ARE TO BE IDENTIFIED ON A LINE BY LINE BASIS. IF THE SUBSTITUTE IS BEING UTILIZED FOR FINANCIAL REASONS, THE ASSOCIATED CREDIT MUST BE SIMULTANEOUSLY SUBMITTED.
- B. ALL SUBSTITUTED EQUIPMENT SHALL CONFORM TO SPACE REQUIREMENTS AND PERFORMANCE REQUIREMENTS SHOWN ON CONTRACT DOCUMENTS. CONTRACTOR SHALL REPLACE ANY EQUIPMENT THAT DOES NOT MEET THESE REQUIREMENTS AT HIS OWN EXPENSE. ANY MODIFICATIONS TO ASSOCIATED SYSTEMS OR ADDITIONAL COSTS ATTRIBUTED TO THIS SUBSTITUTION SHALL BE AT THIS CONTRACTOR'S EXPENSE.
- C. CONTRACTOR SHALL SUBMIT BID BASED ON SPECIFIED ITEMS AND SHALL SUPPLY AS AN ALTERNATE PRICE ANY SUBSTITUTIONS.

# 01732 - DEMOLITION, REMOVAL AND RELOCATION

- A. REMOVAL, TEMPORARY CONNECTIONS AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE INSTALLATION OF THE NEW SYSTEMS. ALL EXISTING CONDITIONS ARE NOT COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND MAKE ALL NECESSARY CHANGES REQUIRED BASED ON EXISTING CONDITIONS FOR PROPER INSTALLATION OF NEW WORK.
- B. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT, AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW SYSTEM.
- C. EQUIPMENT REQUIRED TO BE TEMPORARILY DISCONNECTED AND RELOCATED SHALL BE CAREFULLY REMOVED, STORED, CLEANED, REINSTALLED, RECONNECTED AND MADE OPERATIONAL.
- D. ALL EXISTING WORK NOT INDICATED FOR DEMOLITION SHALL BE PROTECTED FROM DAMAGE. WHERE EXISTING WORK TO REMAIN IS DAMAGED OR DISTURBED, CONTRACTOR SHALL REPAIR OR REPLACE TO OWNER'S AND BUILDING MANAGER'S SATISFACTION AT NO COST TO THE OWNER OR BUILDING MANAGEMENT.
- E. GENERAL CONTRACTOR TO REMOVE ALL CEILING IN AREAS WHERE NEW DUCTWORK OR PIPING IS TO BE INSTALLED OR EXISTING IS ALTERED, AS PER ARCHITECT'S INSTRUCTIONS.
- F. NECESSARY CUTTING AND PATCHING TO ACCOMMODATE THE NEW HVAC WORK SHALL BE PERFORMED BY THIS CONTRACTOR AND COORDINATED WITH BUILDING MANAGEMENT SO AS TO MINIMIZE DISRUPTION OF EXISTING TENANTS AND SERVICES. UPON COMPLETION OF DEMOLITION, ALL SUPPLY DUCTWORK MUST BE PATCHED AND SEALED. RESTORE ALL ITEMS TO MATCH EXISTING CONDITIONS.
- G. ALL EXISTING MATERIAL AND EQUIPMENT TO BE REMOVED UNDER THIS CONTRACT WILL REMAIN THE PROPERTY OF THE OWNER OR SHALL BE LEGALLY DISPOSED OF BY THIS CONTRACTOR AS DIRECTED BY THE ARCHITECT OR OWNER. REFRIGERATION CONTAINED IN EXISTING EQUIPMENT TO BE REMOVED SHALL BE RECLAIMED OR LEGALLY DISPOSED OF IN ACCORDANCE WITH EPA REQUIREMENTS AND ASHRAE.
- H. PROVIDE FOR LEGAL REMOVAL AND DISPOSAL OF ALL RUBBISH AND DEBRIS FROM THE BUILDING AND SITE. COORDINATE ALL DEMOLITION AND REMOVALS WITH BUILDING MANAGEMENT.

# 01735 - CONNECTIONS TO EXISTING WORK

- A. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING MANAGEMENT. INSTALL ISOLATION VALVES AT POINT OF CONNECTION TO THE EXISTING PIPING. INSTALL ISOLATION DAMPERS AT CONNECTION TO EXISTING DUCTWORK. PROVIDE TEMPORARY DUCTWORK AND PIPING CONNECTIONS AS REQUIRED TO MINIMIZE SHUTDOWN TIME.
- B. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND APPROVED MANNER. RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY ARCHITECT AND BUILDING MANAGER.
- C. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES.

## 01781 - AS-BUILT DRAWINGS

- A. CONTRACTOR SHALL MAINTAIN RECORD DRAWING PRINTS ON JOB SITE AND RECORD, AT TIME OF OCCURRENCE, DEVIATIONS FROM CONTRACT DOCUMENTS DUE TO FIELD COORDINATION, BULLETINS, OR
- B. CONTRACTOR SHALL REVISE SHOP DRAWINGS TO CONFORM TO RECORD DRAWINGS AND SUBMIT AS-BUILT CONDITION (PIPING AND DUCTWORK) DRAWINGS UPON COMPLETION OF THE PROJECT. FINAL SUBMISSION OF REPRODUCIBLE AS-BUILT DRAWINGS ARE TO BE SIGNED AND CERTIFIED BY INSTALLING CONTRACTOR THAT THIS IS THE AS-BUILT CONDITION OF THE WORK. CONTRACTOR SHALL SUPPLY THE RECORD DRAWINGS IN AUTOCAD 2007 FORMAT.

#### 08311 - ACCESS DOORS IN GENERAL CONSTRUCTION

A. THIS CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR APPROVAL A PLAN INDICATING THE SIZE (MINIMUM 18"X 18") AND LOCATION OF ALL ACCESS DOORS REQUIRED FOR OPERATION AND MAINTENANCE OF ALL CONCEALED EQUIPMENT, DEVICES, VALVES, DAMPERS AND CONTROLS. CONTRACTOR SHALL ARRANGE FOR FURNISHING AND INSTALLING OF ALL ACCESS DOORS IN FINISHED CONSTRUCTION AND INCLUDE COSTS IN THE

#### 15060 - HANGERS AND SUPPORTS:

- A. PROVIDE ALL PIPE HANGERS, HANGER RODS SUPPORTS, INSERTS, ATTACHMENTS, CLAMPS, GUIDES, SUPPLEMENTAL STEEL AND ANCHORS AS REQUIRED TO INSTALL PIPING SYSTEM SIZED TO ACCOMMODATE THE SYSTEM LOADS. HANGERS AND SUPPORTS ARE TO BE IN ACCORDANCE WITH MSS RECOMMENDATIONS.
- B. PROVIDE INSULATED PROTECTIVE SADDLES FOR INSULATED PIPING.
- C. PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH RECOMMENDATIONS OF MSS SP-69 AND ALL APPLICABLE CODES. ALL THREADED ROD IS TO BE GALVANIZED. PROVIDE 2" VERTICAL ADJUSTMENT FOR ALL HANGERS. PROVIDE ADDITIONAL SUPPORTS AT CHANGES IN DIRECTION, BRANCH PIPING OVER 5 FEET, AND CONCENTRATED LOADS DUE TO VALVES, STRAINERS AND OTHER ACCESSORIES.
- D. HANGER AND SUPPORTS SHALL BE MANUFACTURED BY GRINNELL OR APPROVED EQUAL

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**REVISIONS** 

**CONSTRUCTION SET** 

# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

110 HIGH STREET, BOSTON MA

TITLE

MECHANICAL SPECIFICATIONS I

DATE

**JOB** NO.

10/17/2018 02DBA.180716

DRAWING NO.

FOR CONSTRUCTION



# MECHANICAL GENERAL DEMOLITION NOTES:

1. THIS CONTRACTOR SHALL VISIT THE SITE AND ADJOINING AREAS TO EXAMINE THE EXISTING CONDITIONS AND TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS TO DETERMINE THE DIFFICULTIES WHICH WILL AFFECT THE EXECUTION OF THE WORK OF THIS CONTRACT. THIS CONTRACTOR SHALL PERFORM THIS PRIOR TO THE SUBMISSION OF THEIR PROPOSAL. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED DUE TO DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AND EXAMINATION BEEN MADE.

2. THE DEMOLITION WORK SHALL INCLUDE, PROVIDING ALL MATERIALS, ALL NECESSARY EXTENSIONS, CONNECTIONS, CUTTING, REPAIRING, ADAPTING AND OTHER MECHANICAL WORK PENDING THE COMPLETION OF THE PERMANENT WORK. NOTES AND GRAPHIC AREA PRESENTATION SHALL NOT LIMIT THE EXTENT OF DEMOLITION REQUIRED. EXTENT OF DEMOLITION WORK SHALL BE COORDINATED WORK WITH THE ARCHITECT AND BUILDING MANAGEMENT.

3. REFER TO ARCHITECTS PLANS FOR AREA OF WORK. CONTRACTOR IS RESPONSIBLE FOR WORK SHOWN ON THESE PLANS THAT IS OUTSIDE OF THE ARCHITECT'S PLAN FOR AREA OF WORK.

4. PROVIDE A METHOD OF FILTRATION FOR THE BASE BUILDING RETURN AIR TO PREVENT ENTRAINMENT OF DUST INTO BASE BUILDING SYSTEMS.

5. CONTRACTOR SHALL PATCH ALL DUCTWORK AS NECESSARY WHERE DISCONNECTION IS CALLED FOR. CONTRACTO SHALL ALSO DISCONNET AND REMOVE MEDIUM PRESSURE BRANCHES THAT ARE

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

7. PROVIDE ADDITIONAL SUPPORT AND INSULATION FOR ALL EXISTING AND NEW SUPPLY DUCTS TO REMAIN WHICH ARE AFFECTED BY DEMOLITION.

8. CONTRACTOR SHALL COORDINATE ANY NECESSARY BUILDING SHUTDOWNS WITH THE BUILDING MANAGEMENT AND CONFORM TO ALL BUILDING STANDARDS AND PROCEDURES.

9. ALL EXISTING SUPPLY/RETURN AND EXHAUST DUCTWORK THAT WILL BE EXPOSED IN THE NEW ARCHITECTURAL LAYOUT SHALL HAVE THE EXISTING INSULATION REMOVED.

# MECHANICAL DEMOLITION KEYED NOTES:

CAP SEALED WEATHER TIGHT.

ADD/ALTERNATE PRICING: DEMO AND REMOVE EXISTING ROOF CURB MOUNTED EXHAUST FAN, ROOF CURB, AND DUCTWORK FITTINGS. CAP EXISTING DUCTWORK BELOW ROOF AND PROVIDE SHEET METAL

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**REVISIONS** 

**CONSTRUCTION SET** 

# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

**IIO HIGH STREET, BOSTON MA** 

TITLE

**MECHANICAL 6TH FLOOR DEMOLITION** PLAN

**DATE** 

**JOB** NO.

10/17/2018

**DRAWING NO.** 

02DBA.180716

FOR CONSTRUCTION

SYMBOL	DESCRIPTION		
CR	SECURITY SYSTEM CARD READER		
MS	MOTION SENSOR		
DR	DOOR RELEASE		
ML	MAGNETIC LOCKSET		
НО	DOOR HOLD OPEN		
РВ	PUSH BUTTON		
	CAMERA		
SECURITY NOTES:			
<ol> <li>FOR ALL SECURITY DEVICES PROVIDE 1" CONDUIT FROM DEVICE TO 6" WITHIN NEAREST HUNG CEILING SPACE.</li> </ol>			
2. PROVIDE PULL STRINGS WITHIN ALL EMPTY CONDUITS.			
<ol> <li>PROVIDE PROTECTIVE GROMMETS ON ENDS OF ALL OPEN CONDUITS.</li> <li>COORDINATE EXACT QUANTITIES, SIZES, LOCATIONS, MOUNTING HEIGHTS AND EXACT</li> </ol>			

POWE	R ONE LINE DIAGRAM SYMBOLS	
SYMBOL	DESCRIPTION	
100A	FIXED TRIP CIRCUIT BREAKER	
100AF 100AT	ADJUSTABLE TRIP CIRCUIT BREAKER	
100AF 100AT	DRAWOUT TYPE CIRCUIT BREAKER	
\$ <sup>100A</sup>	SWITCH	
100A	FUSE	
100A 100A	SWITCH AND FUSE UNIT	
	GENERATOR	
M	UTILITY METER	
<u>₩</u> ^	TRANSFORMER	
<u>•</u>	GROUND	
PANEL LA	BRANCH CIRCUIT PANELBOARD	
N• •E •L	AUTOMATIC TRANSFER SWITCH	
<u>=</u>	BATTERY	
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR	

## CIRCUITRY, RACEWAYS, AND FEEDERS LEGEND SYMBOL ----EXISTING FEEDER (CONDUIT & WIRE) TO REMAIN EXISTING FEEDER (CONDUIT & WIRE) TO BE DISCONNECTED AND REMOVED. NEW FEEDER/BRANCH CIRCUIT (CONDUIT & WIRE) HOMERUN - NUMERALS WHERE USED INDICATE CIRCUIT NUMBER FOR REFERENCE ONLY. CONTRACTOR SHALL BALANCE PANELS LOAD EQUALLY OVER THREE (3) CONDUIT TURNING UP CONDUIT TURNING DOWN 48 VOLT DC WIRING BUS DUCT-VERTICAL RUN

TEL/D	TEL/DATA LEGEND		
SYMBOL DESCRIPTION			
<b>T</b>	WALL MOUNTED TEL/DATA COMMUNICATIONS OUTLET WITH 1"E.C. RUN TO 6" WITHIN NEAREST HUNG CEILING SPACE. PROVIDE PROTECTIVE GROMMET ON ENDS OF ALL OPEN CONDUITS.		
•	WALL MOUNTED DATA COMMUNICATIONS OUTLET WITH 1"E.C. RUN TO 6" WITHIN NEAREST HUNG CEILING SPACE. PROVIDE PROTECTIVE GROMMET ON ENDS OF ALL OPEN CONDUITS.UON. REFER TO ARCH. DRAWINGS FOR EXACT MOUNTING HEIGHT.		
W	WALL MOUNTED TELEPHONE OUTLET MOUNTING HEIGHT AS PER ARCH. DRAWINGS. PROVIDE ¾" E.C. TO 6" WITHIN NEAREST HUNG CEILING SPACE OR TO NEAREST TELEPHONE CLOSET AS INDICATED.		
V	CEILING MOUNTED TEL/DATA COMMUNICATIONS OUTLET WITH 1"E.C. RUN TO 6" WITHIN NEAREST HUNG CEILING SPACE. PROVIDE PROTECTIVE GROMMET ON END OF ALL OPEN CONDUITS.		

KEY LE	GEND
SYMBOL	DESCRIPTION
	KEYED DRAWING NOTE DESIGNATION
#	FEEDER SCHEDULE DESIGNATION. REFER TO ONE-LINE DIAGRAM.
X DWG.	REFERENCE DESIGNATION.  X - INDICATES DETAIL NUMBER DESIGNATION  DWG - INDICATES DRAWING REFERENCE NUMBER

	<del></del>
SYMBOL	DESCRIPTION  DUPLEX CONVENIENCE RECEPTACLE OUTLET -120V, 20A, NEMA 5-20R, HUBBELL
ф	5362 SERIES OR APPROVED EQUAL, FLUSH MOUNT VERTICALLY @ 18" AFF U.O.N. DECORATOR STYLE WHITE COVER PLATE U.O.N "IG" INDICATES ISOLATED GROUND FAULT RECEPTACLE, HUBBELL IG5362
	SERIES OR APPROVED EQUAL.  DOUBLE DUPLEX RECEPTACLE OUTLET - 120V, 20A, NEMA 5-20R (QUAD) HUBBELL
#	5362 SERIES OR APPROVED EQUAL, FLUSH MOUNT @ 18" AFF U.O.N  DECORATOR STYLE WHITE COVER PLATE U.O.N.  DUPLEX & USB (TYPE A AND TYPE C) CONVENIENCE RECEPTACLE OUTLET -120V,
•	20A, NEMA 5-20R, HUBBELL USB20AC5W SERIES OR APPROVED EQUAL, FLUSH MOUNT VERTICALLY @ 18" AFF U.O.N. DECORATOR STYLE WHITE COVER PLATE U.O.N.
•	DEDICATED DUPLEX RECEPTACLE OUTLET -120V, 20A, NEMA5-20R HUBBELL 5362 SERIES OR APPROVED EQUAL, FLUSH MOUNT VERTICALLY @ 18" AFF U.O.N DECORATOR STYLE WHITE COVER PLATE.
<b>m</b>	GFI DUPLEX RECEPTACLE - 120V, 20A, NEMA 5-20R HUBBELL GFR5362 SERIES OR APPROVED EQUAL, FLUSH MOUNT VERTICALLY @ 18" AFF U.O.N DECORATOR STYLE WHITE COVER PLATE
φ	SIMPLEX RECEPTACLE - 120V, 20A, NEMA 5-20R HUBBELL HBL5261 SERIES OR APPROVED EQUAL
(1)	DUPLEX RECEPTACLE, CEILING MOUNTED HUBBELL 5362 SERIES OR APPROVED
 	EQUAL.  SPECIAL PURPOSE RECEPTACLE - REFER TO POWER DRAWING FOR ADDITIONAL
	INFORMATION.  SINGLE CLOCK OUTLET. COORDINATE MOUNTING HEIGHT WITH ARCHITECT
<u>©</u>	AND EXACT LOCATION WITH AV CONTRACTOR.
H	RECESSED 4-GANG TV BACKBOX WITH DUPLEX POWER, DATA AND AV. WIREMOLD EVOLUTION EFSB4 SERIES OR APPROVED EQUAL. PROVIDE ONE (1) 1 1/4" EMT CONDUIT FOR DATA AND ONE (1) 2" EMT CONDUIT FOR AV TO 6" WITHIN NEAREST HUNG CEILING SPACE. ALL PLATE CONFIGURATIONS SHALL BE COORDINATED PRIOR TO PURCHASE. PROVIDE PULL STRINGS AND PROTECTIVE
	GROMMETS ON ENDS OF ALL OPEN CONDUITS.  CABLE TV OUTLET - DOUBLE GANG BOX WITH 3/4" E.C. TO 6" WITHIN NEAREST
-CATV	HUNG CEILING SPACE. COORDINATE MOUNTING HEIGHT WITH ARCHITECT AND
	EXACT LOCATION WITH AV CONTRACTOR.  AV OUTLET - DOUBLE GANG BOX WITH 1 1/4" E.C. TO 6" WITHIN NEAREST HUNG
¥	CEILING SPACE. COORDINATE MOUNTING HEIGHT WITH ARCHITECT AND EXACT LOCATION WITH AV CONTRACTOR.
	WALL MOUNTED COMBINATION J-BOX TO SERVE FURNITURE POWER AND AND TEL/DATA (1¼" C.). THE G.C. SHALL COORDINATE WITH FURNITURE VENDOR FOR ALL REQUIREMENTS. THE NUMBER ADJACENT TO THE BOXES INDICATES THE NUMBER OF WORKSTATIONS SERVED THROUGH THE CONNECTION.
D P	FLUSH FLOOR MOUNTED FIRE RATED POKE-THRU DEVICE TO SERVE FURNITURE POWER AND TEL/DATA (1½"C.). THE G.C. SHALL COORDINATE WITH FURNITURE VENDOR FOR ALL REQUIREMENTS. THE NUMBER ADJACENT TO THE BOXES INDICATES THE NUMBER OF WORKSTATIONS SERVED THROUGH THE CONNECTION
P	POWER POLE TO SERVE FURNITURE POWER AND TEL/DATA (2"C.). THE G.C. SHALL
	COORDINATE WITH FURNITURE VENDOR FOR ALL REQUIREMENTS.  FLUSH FLOOR MOUNTED FIRE RATED 6" POKE THRU DEVICE WITH DUPLEX POWER
<b>₽</b>	AND DATA. POWER AND DATA. WIREMOLD EVOLUTION 6AT SERIES OR HUBBELL S1R6PT SERIES OR APPROVED EQUAL. PROVIDE ONE (1) 1½" EMT CONDUIT FOR DATA AND BOTTOM HOUSING ASSEMBLY AS REQUIRED TO ACCOMMODATE DATA CONDUITS. ALL PLATE CONFIGURATIONS SHALL BE COORDINATED PRIOR TO
	PURCHASE. PROVIDE PULL STRINGS AND PROTECTIVE GROMMETS ON ENDS OF ALL OPEN CONDUITS.
<b>7</b>	FLUSH FLOOR MOUNTED FIRE RATED 6" POKE THRU DEVICE WITH DOUBLE DUPLE) POWER AND DATA. WIREMOLD EVOLUTION 6AT SERIES OR HUBBELL S1R6PT SERIES OR APPROVED EQUAL. PROVIDE ONE (1) 1½" EMT CONDUIT FOR DATA AND BOTTOM HOUSING ASSEMBLY AS REQUIRED TO ACCOMMODATE DATA CONDUITS ALL PLATE CONFIGURATIONS SHALL BE COORDINATED PRIOR TO PURCHASE.
	PROVIDE PULL STRINGS AND PROTECTIVE GROMMETS ON ENDS OF ALL OPEN
	CONDUITS.  FLUSH FLOOR MOUNTED FIRE RATED 8" POKE THRU DEVICE WITH DOUBLE DUPLEY POWER, DATA AND AV. WIREMOLD EVOLUTION 8AT SERIES OR HUBBELL S1R8PT
	SERIES WITH S1R8JNC10 FITTING OR APPROVED EQUAL. PROVIDE ONE (1) 1¼"
AV 🔽	EMT CONDUIT FOR DATA AND ONE (1) 2" EMT CONDUIT FOR AV TO 6" WITHIN NEAREST HUNG CEILING SPACE. PROVIDE BOTTOM HOUSING ASSEMBLIES
	AS REQUIRED TO ACCOMMODATE DATA AND AV CONDUITS. ALL PLATE CONFIGURATIONS SHALL BE COORDINATED PRIOR TO PURCHASE. PROVIDE PULL
	STRINGS AND PROTECTIVE GROMMETS ON ENDS OF ALL OPEN CONDUITS.
$\overline{\mathbf{A}}$	FLOOR CORE/STUB UP WITHIN TABLE LEG LOCATION WITH POWER AND DATA TO CONNECT TO DEVICE AT TABLE SERVICE. PROVIDE ONE (1) 1¼" EMT CONDUIT
	FOR TEL/DATA TO 6" WITHIN NEAREST HUNG CEILING SPACE. PROVIDE DUPLEX RECEPTACLE MOUNTED TO TABLE LEG. COORDINATE EXACT LOCATION WITH
	ARCHITECT.
AV V	FLOOR CORE/STUB UP WITHIN TABLE LEG LOCATION WITH POWER, AV AND DATA TO CONNECT TO DEVICE AT TABLE SERVICE. PROVIDE ONE (1) 1 1/4" EMT CONDUITED TO THE CONTRACT OF THE CONTRA
اللللل	FOR TEL/DATA AND ONE (1) 2" EMT CONDUIT FOR AV TO 6" WITHIN NEAREST HUNG CEILING SPACE. PROVIDE DUPLEX RECEPTACLE MOUNTED TO TABLE LEG
	AND FIRE PROOFING OF FLOOR PENETRATIONS AS REQUIRED. COORDINATE EXACT LOCATION WITH ARCHITECT.
	RECESSED FLOOR BOX DEVICE WITH DUPLEX POWER AND DATA. WIREMOLD
	EFB6 SERIES OR HUBBELL CFB6 SERIES OR APPROVED EQUAL. PROVIDE ONE (1) 1 COORDINATE EXACT LOCATION WITH ARCHITECT. ALL PLATE CONFIGURATIONS
	SHALL BE COORDINATED PRIOR TO PURCHASE. PROVIDE PULL STRINGS AND PROTECTIVE GROMMETS ON ENDS OF ALL OPEN CONDUITS.
	RECESSED FLOOR BOX DEVICE WITH DOUBLE DUPLEX POWER AND DATA.
	WIREMOLD EFB6 SERIES OR HUBBELL CFB6 SERIES OR APPROVED EQUAL.  PROVIDE ONE (1) 1½" EMT CONDUIT FOR DATA TO 6" WITHIN NEAREST HUNG
السست	CEILING SPACE. COORDINATE EXACT LOCATION WITH ARCHITECT. ALL PLATE CONFIGURATIONS SHALL BE COORDINATED PRIOR TO PURCHASE. PROVIDE PULL
	STRINGS AND PROTECTIVE GROMMETS ON ENDS OF ALL OPEN CONDUITS.  RECESSED FLOOR BOX DEVICE WITH DOUBLE DUPLEX POWER, DATA AND AV.
	WIREMOLD EFB6 SERIES OR HUBBELL CFB6 SERIES OR APPROVED EQUAL.
AV V	PROVIDE ONE (1) 1¼" EMT CONDUIT FOR DATA AND TWO (2) 1¼" EMT CONDUITS FOR AV TO 6" WITHIN NEAREST HUNG CEILING SPACE. COORDINATE
	EXACT LOCATION WITH ARCHITECT. ALL PLATE CONFIGURATIONS SHALL BE
	COORDINATED PRIOR TO PURCHASE. PROVIDE PULL STRINGS AND PROTECTIVE GROMMETS ON ENDS OF ALL OPEN CONDUITS.
SC	PROJECTION SCREEN CONTROL. E.C. TO PROVIDE BACK BOX AND 1" EMPTY CONDUIT STUBBED 6" ABOVE CEILING.
	*

BY ELEC. CONTRACTOR

SOLENOID VALVE

MOTORIZED DAMPER FURNISHED AND INSTALLED BY HVAC AND WIRED

SYMBOL	DESCRIPTION
A P#  A P#  ra1  A P#  rb1	TYPICAL LIGHTING FIXTURE SYMBOL. REFER TO ARCHITECTS PLAN FOR COMPLETE LIST OF SYMBOLS AND FIXTURE SPECIFICATIONS  A - UPPER CASE LETTER DENOTES FIXTURE TYPE  a - LOWER CASE LETTER DENOTES SWITCH CONTROL  ra1 - INDICATES 277V RELAY NUMBER DESIGNATION  rb1 - INDICATES 120V RELAY NUMBER DESIGNATION
• EM	SHADED FIXTURE INDICATES EMERGENCY LIGHTING FIXTURE. REFER TO PLANS FOR ADDITIONAL INFORMATION REGARDING BATTERIES OR LIFE SAFETY CIRCUITRY EM - DENOTES EMERGENCY/LIFE SAFETY FIXTURE NL - DENOTES UN-SWITCHED NIGHT LIGHTING FIXTURE
	SINGLE FACE EXIT SIGN, CEILING OR WALL MOUNTED. DIRECTIONAL ARROWS AS INDICATED ON FLOOR PLANS.
	DOUBLE FACE EXIT SIGN, CEILING OR WALL MOUNTED. DIRECTIONAL ARROWS AS INDICATED ON FLOOR PLANS.
	WALL MOUNTED EMERGENCY BATTERY PACK LIGHT UNIT WITH CHARGER & BATTERY TEST SWITCH.
\$ <sup>4</sup>	SWITCH (SINGLE POLE) HUBBELL CSB SERIES OR APPROVED EQUAL  3 - DENOTES THREE WAY SWITCH  4 - DENOTES FOUR WAY SWITCH  P - PILOT LIGHT  a - INDICATES ON/OFF CONTROL OF LIGHTING FIXTURES OF CONTROL ZONE 'a'  D - INDICATES DIMMING CONTROL OF LIGHTING FIXTURES. DIMMER SHALL BE  COMPATIBLE WITH RESPECTIVE DIMMING BALLAST OR DRIVER.  MS - INDICATES LOW VOLTAGE MOMENTARY SWITCH FOR ON/OFF CONTROL  WITH VACANCY SENSOR.  MS,D - INDICATES LOW VOLTAGE MOMENTARY SWITCH FOR ON/OFF  AND 0-10V DIMMING CONTROL WITH VACANCY SENSOR. LEVITON  #IP710-LFZ OR APPROVED EQUAL.
\$ ra1 \$ LV	LOW VOLTAGE SWITCH PER LIGHTING CONTROL VENDOR REQUIREMENTS. REFER TO LIGHTING CONTROL RELAY PANEL SCHEDULE FOR ADDITIONAL INFORMATION. ra1 - INDICATES ON/OFF CONTROL OF LIGHTING FIXTURES WIRED THROUGH RELAY "ra1" ra1,ra2,ra3 - INDICATES MULTIPLE SWITCHES WITHIN SAME SWITCH BOX. PROVIDE QUANTITY OF SWITCHES TO MATCH INDICATED QUANTITY OF ZONES"
<\$1>	D,LV - INDICATES DIMMING CONTROL OF LIGHTING FIXTURES CEILING MOUNTED, DUAL- TECHNOLOGY VACANCY SENSOR (MANUAL ON) FOR AREAS (UP TO 1000 sf) WITH 360° COVERAGE PATTERN. PIR & US SENSING WITH SELF- ADJUSTING SENSITIVITY. PROVIDE MANUAL ON POWER PACK. PROVIDE LOW VOLTAGE MOMENTARY MANUAL SWITCH FOR ON/OFF CONTROL OF SENSOR. HUBBELL ATD-1000C OR APPROVED EQUAL.
<b>\\$2</b> >	CEILING MOUNTED, DUAL- TECHNOLOGY VACANCY SENSOR (MANUAL ON) FOR AREAS (UP TO 2000 sf) WITH 360° COVERAGE PATTERN. PIR & US SENSING WITH SELF- ADJUSTING SENSITIVITY. PROVIDE MANUAL ON POWER PACK. PROVIDE LOW VOLTAGE MOMENTARY MANUAL SWITCH FOR ON/OFF CONTROL OF SENSOR. HUBBELL ATD-2000C OR APPROVED EQUAL.
S1>AUTO	CEILING MOUNTED, DUAL- TECHNOLOGY OCCUPANCY SENSOR (AUTO ON). PROVIDE AUTO ON POWER PACK. REFER TO TAG FOR REQUIRED COVERAGE.
LV ra1	LOW VOLTAGE CEILING MOUNTED OCCUPANCY SENSOR. REFER TO TAG FOR REQUIRED COVERAGE.  ra1 - CONTROLLING LIGHTING FIXTURES WIRED THROUGH RELAY "ra1"
\$ <sup>VS1</sup>	SINGLE SWITCH, WALL MOUNTED, DUAL- TECHNOLOGY VACANCY SENSOR (MANUAL ON). LEVITON #OSSMD SERIES OR APPROVED EQUAL.
\$VS1	SINGLE SWITCH, WALL MOUNTED, DUAL- TECHNOLOGY VACANCY SENSOR (MANUAL ON) WITH 0-10V DIMMER. SENSOR SWITCH #WSX-PDT-D-SA OR APPROVED EQUAL.
\$ <sup>VS2</sup>	DUAL SWITCH, WALL MOUNTED, DUAL- TECHNOLOGY VACANCY SENSOR (MANUAL ON). LEVITON #OSSMD SERIES OR APPROVED EQUAL.
PC	PHOTOCELL PHOTOCELL
TC	TIME CLOCK

SYMBOL	DESCRIPTION
_	DISTRIBUTION PANELBOARD
_	LIGHTING AND APPLIANCE PANELBOARD
Т	DRY TYPE TRANSFORMER - kVA RATING AS INDICATED
(J)	JUNCTION BOX
VFD	VARIABLE FREQUENCY DRIVE MOTOR CONTROLLER (STARTER) FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR
-	SPLICE BOX
	GROUNDING BAR (SEE DETAIL)
/ <b>#</b> /	MOTOR - "#" INDICATES HORSEPOWER RATING
\$ <sub>T</sub>	THERMAL RATED MOTOR SWITCH
□- ##A/#P	DISCONNECT SWITCH ##A - INDICATES AMPERAGE RATING #P - INDICATES NUMBER OF POLES 3R - INDICATES NEMA 3R RATING
□- ##AS/##AF	FUSED DISCONNECT SWITCH ##AS - INDICATES SWITCH SIZE ##AF - INDICATES FUSE SIZE 3R - INDICATES NEMA 3R RATING
⊠- ##AS/##AF	COMBINATION MOTOR STARTER AND DISCONNECT SWITCH ##AS - INDICATES SWITCH SIZE ##AF - INDICATES FUSE SIZE
•~	FLEXIBLE METAL OR LIQUIDTIGHT METAL CONDUIT WHIP - 3 FEET MAX
VAV	VAV BOX ELECTRICAL CONNECTION
(P)	CONDENSATE PUMP ELECTRICAL CONNECTION; PROVIDE (1) J-BOX WITH THERMAL OVERLOAD SWITCH. CIRCUIT AS INDICATED ON PLAN. COORDINATE LOCATION WITH MECHANICAL/PLUMBING CONTRACTOR.
(II)	LEAK DETECTION SYSTEM ELECTRICAL CONNECTION; PROVIDE (1) J-BOX WITH THERMAL OVERLOAD SWITCH. CIRCUIT AS INDICATED ON PLAN. COORDINATE LOCATION WITH MECHANICAL/PLUMBING CONTRACTOR.
MD	MOTORIZED DAMPER ELECTRICAL CONNECTION; PROVIDE (1) J-BOX WITH 120V/20A CIRCUIT AS INDICATED ON PLAN. COORDINATE LOCATION WITH MECHANICAL CONTRACTOR.

**EQUIPMENT LEGEND** 

SYMBOL	DESCRIPTION
STIVIBUL	DESCRIPTION
E	EXISTING DEVICE/EQUIPMENT TO REMAIN.
Х	EXISTING EQUIPMENT SHALL BE DISCONNECTED AND REMOVED. CUT BACK AND MAKE SAFE ALL ASSOCIATED BRANCH CIRCUIT WIRING CONDUIT BACK TO POWER SOURCE AND LABEL BREAKER IN PANELBOARD AS SPARE. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CIRCUITRY TO DEVICES UNAFFECTED BY DEMOLITION.
ER	EXISTING EQUIPMENT SHALL BE DISCONNECTED, REMOVED AND RELOCATED AS SHOWN. CUT BACK AND/OR EXTEND EXISTING BRANCH CIRCUIT WIRING AND CONDUIT AS REQUIRED SO AS TO PROVIDE A COMPLETE OPERATIONAL INSTALLATION.
RE	NEW LOCATION OF RELOCATED EXISTING EQUIPMENT.

ELECTRICAL SHEET LIST

E-101 | ELECTRICAL PANEL SCHEDULES

ELECTRICAL SPECIFICATIONS

E-301 ELECTRICAL FIRST FLOOR LIGHTING PLAN E-302 ELECTRICAL FIRST FLOOR POWER PLAN

E-001 ELECTRICAL NOTES, SYMBOLS, & ABBREVIATIONS

E-002 ELECTRICAL NOTES, SYMBOLS, & ABBREVIATIONS

SHEET NAME

SHEET

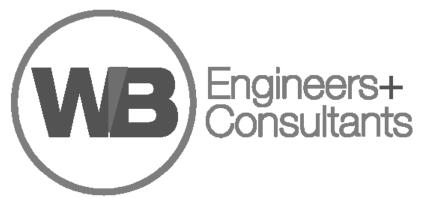
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**CONSTRUCTION SET** 

# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

**IIO HIGH STREET, BOSTON MA** 

TITLE

**ELECTRICAL NOTES, SYMBOLS, & ABBREVIATIONS** 

DATE

**JOB** 

NO.

10/17/2018 02DBA.180716

**DRAWING NO.** 

FOR CONSTRUCTION

## **ELECTRICAL GENERAL NOTES**

- 1. ALL WORK SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NEC ELECTRICAL AND LOCAL BUILDING CODE, NFPA, UL, BUILDING MANAGEMENT RULES AND REGULATIONS, AND ALL OTHER GOVERNING AGENCIES HAVING JURISDICTION.
- 2. ALL WORK SHALL BE INSTALLED CONCEALED UNLESS OTHERWISE NOTED.
- 3. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS OF FINISHED CONSTRUCTION PRIOR TO FABRICATION AND INSTALLATION OF FIXTURES AND EQUIPMENT.
- 4. MOUNTING HEIGHTS OF EQUIPMENT AND DEVICES SHALL BE AS INDICATED ON THE ARCHITECTURAL DRAWINGS. WHERE MOUNTING HEIGHTS ARE NOT GIVEN ON THE ARCHITECTURAL DRAWINGS, UTILIZE THE FOLLOWING MOUNTING HEIGHTS UNLESS OTHERWISE NOTED (ALL DIMENSIONS TO CENTERLINE OF BOX):
- A. RECEPTACLES (WALL MOUNTED) 18" A.F.F.
- B. RECEPTACLES (COUNTER HEIGHT) HORIZONTAL 6" ABOVE COUNTER
- C. TELEPHONE/DATA OUTLETS SAME HEIGHT AS RECEPTACLES
- D. LIGHTING SWITCHES AND CONTROLS 48" A.F.F.E. MANUAL FIRE ALARM STATIONS 48" A.F.F.
- F. FIRE ALARM HORN/SPEAKER AND STROBE UNITS 80" A.F.F.

G. PANELBOARD -78" TO TOP OF ENCLOSURE

- 4. WHERE EQUIPMENT, LIGHTING FIXTURES AND WIRING DEVICES ARE SHOWN WITH CIRCUIT NUMBERS ONLY, THE MINIMUM BRANCH CIRCUITING REQUIREMENTS SHALL BE AS FOLLOWS:
- A. LIGHTING FIXTURES 2#12, #12 GRD.- 3/4" C.
- B. RECEPTACLES 2#12, #12 GRD.- 3/4" C.
- C. BRANCH CIRCUIT BREAKERS (120 VOLT) 1P, 20AD. BRANCH CIRCUIT BREAKERS (277 VOLT) 1P, 20A
- 5. EXISTING EQUIPMENT AFFECTED BY THE WORK OF THIS CONTRACT SHALL BE COMPLETELY IDENTIFIED IN ACCORDANCE WITH THE REQUIREMENTS OF THIS CONTRACT.
- 6. FINAL LOCATION OF CEILING MOUNTED EQUIPMENT SHALL BE IN ACCORDANCE WITH ARCHITECTURAL REFLECTED CEILING PLANS.
- 7. SEPARATELY MOUNTED OUTLET BOXES AND FLEXIBLE CONDUIT PIGTAIL CONNECTIONS SHALL BE PROVIDED FOR LIGHTING FIXTURES RECESSED IN HUNG CEILINGS. IN ACCESSIBLE TILE HUNG CEILING AREAS A SINGLE OUTLET BOX MAY SERVE UP TO A MAXIMUM OF FOUR (4) LIGHTING OUTLET BOX MAY SERVE UP TO A MAXIMUM OF FOUR (4) LIGHTING FIXTURES USING FLEXIBLE CONDUIT PIGTAIL CONNECTIONS WITH A MAXIMUM LENGTH OF 6'-0".
- 8. WIRING IN AIR PLENUM HUNG CEILINGS INSTALLED WITHOUT CONDUIT OR EMT SHALL BE TEFLON JACKETED.
- 9. COORDINATE WITH OTHER TRADES TO DETERMINE THE EXACT LOCATION OF MOTORS, MOTOR TERMINAL BOXES, AND OTHER EQUIPMENT TO BE INSTALLED BY OTHER TRADES BEFORE CONDUIT WORK IS STARTED. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS OF ALL MECHANICAL EQUIPMENT.
- 10. NO LOW VOLTAGE WIRING SHALL BE PERMITTED IN THE SAME RACEWAY AS POWER WIRING.
- 11. EMERGENCY SERVICES SHALL BE RUN IN SEPARATE RACEWAYS FROM ALL OTHER
- 12. WHERE LIGHTING SWITCH INDICATIONS ARE NOT SHOWN, SWITCHES SHALL BE CONNECTED TO CONTROL ALL SWITCHED FIXTURES WITHIN THE CORRESPONDING SPACE.
- 13. AT ALL EMPTY CONDUITS PROVIDE BUSHINGS AT ENDS AND DRAG WIRES.
- 14. PROVIDE SEPARATE NEUTRALS FOR ALL LIGHTING FIXTURES WITH ELECTRONIC BALLASTS AND FOR CIRCUITS WITH INSULATED GROUND (IG).
- 15. ALL LIGHTING FIXTURES CONTROLLED BY DIMMER SWITCHES SHALL BE PROVIDED WITH SEPARATE NEUTRAL CONDUCTORS.
- 16. ELECTRICAL CONTRACTOR SHALL PROVIDE AN ELECTRICAL INSPECTION APPROVAL CERTIFICATE TO BUILDING MANAGEMENT UPON COMPLETION OF WORK.
- 17. REFER TO ARCHITECTURAL DRAWINGS FOR DESCRIPTION OF ANY SYMBOL NOT LISTED ON THIS DRAWING BUT IS SHOWN ON THE POWER OR LIGHTING PLANS.
- 18. REFER TO ARCHITECTURAL DRAWINGS FOR FIXTURE TYPE DESIGNATIONS IF THEY ARE NOT SHOWN ON LIGHTING PLANS.
- 19. CONTRACTOR TO MAINTAIN THE CONTINUITY OF ALL ELECTRICAL SERVICES TO EXISTING AREAS WHICH ARE TO REMAIN. COORDINATE WITH CLIENT/BLDG. MANAGEMENT.
- 20. CIRCUIT ASSIGNMENTS FOR LIGHTING FIXTURES, RECEPTACLES, WIRING DEVICES, AND ELECTRICAL EQUIPMENT ARE DESIGNATED BY THE NUMBER SHOWN ADJACENT TO THESE DEVICES / EQUIPMENT. PROVIDE CONDUITS, WIRES AND BOXES REQUIRED TO ENERGIZE THE EQUIPMENT AS SHOWN.
- 21. CIRCUIT NUMBERS ARE FOR REFERENCE ONLY. CIRCUIT NUMBERS ARE INTENDED TO BE USED FOR QUANTITIES AND FOR DESIGNATING WHAT OUTLETS (FIXTURES, EQUIPMENT, ETC.) WILL BE ON THE SAME CIRCUIT. CONTRACTOR SHALL REARRANGE CIRCUITS PER FIELD CONDITIONS AND TO BALANCE THE LOADS AT THE PANELS PER SPECIFICATIONS. THE ELECTRICAL CONTRACTOR SHALL PROVIDE CIRCUITS WITH PROPER PHASE SEQUENCES FOR EVERY REQUIRED NEUTRAL WIRE THAT IS SHARED. ELECTRICAL CONTRACTOR SHALL DOCUMENT ALL AFFECTED CIRCUITS, LABEL EACH OUTLET COVER WITH ACTUAL PANEL DESIGNATION AND CIRCUIT NUMBER, AND PROVIDE "AS-BUILT" PANEL DIRECTORIES AND DRAWINGS PER SPECIFICATIONS.
- 22. THE OPERATION OF THE ELECTRICAL INSTALLATION DOES NOT CONSTITUTE AN ACCEPTANCE OF THE WORK BY THE OWNER. FINAL ACCEPTANCE IS TO BE MADE AFTER THE CONTRACTOR HAS DEMONSTRATED THAT THE WORK FULFILLS THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS AND HAS FURNISHED ALL REQUIRED CERTIFICATES OF APPROVAL FROM THE STATE AUTHORITIES, MUNICIPAL AUTHORITIES AND UNDERWRITERS.
- 23. START OF WORK AND ALL ACCESS TO BUILDING ELECTRICAL CLOSETS MUST BE COORDINATED WITH BUILDING OFFICE. ANY ELECTRICAL CONTRACTOR WORKING IN AN ELECTRIC CLOSET WITHOUT CONSENT OF THE BUILDING OFFICE WILL BE BARRED FROM WORKING IN THE BUILDING.

- 24. DURING THE PROJECT DURATION, THE BUILDING MANAGEMENT OFFICE AND IT'S DESIGNATED REPRESENTATIVE WILL INSPECT THE WORK IN PROGRESS. ANY WORK WHICH IS JUDGED UNSATISFACTORY FOR ANY REASON OR NOT IN COMPLIANCE WITH BUILDING STANDARDS SHALL BE REMOVED AND REPLACED AT THE EXPENSE OF THE CONTRACTOR.
- 25. PERFORM THE WORK AT SUCH TIME AND IN SUCH MANNER AS TO MINIMIZE INTERFERENCE WITH BUILDING'S NORMAL OPERATION. NOTIFY OWNER'S REPRESENTATIVES IN ADVANCE EACH TIME A SERVICE OUTAGE OR INTERRUPTION WILL BE REQUIRED FOR THE PERFORMANCE OF SOME PHASE OF THE WORK. SCHEDULE SUCH SERVICE OUTAGES OR INTERRUPTIONS ONLY AFTER HAVING RECEIVED APPROVAL OF DATE, HOUR, AND TIME INTERVAL REQUIRED THEREOF. SCHEDULE OF WORK AS DIRECTED SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. ALL CORING, CHOPPING, CHASING OF CONCRETE AND WORK WHICH RESULTS IN NOISE SHALL BE ACCOMPLISHED DURING 8:00 P.M. TO 6:00 A.M., DURING NORMAL WORKING DAYS OR ON WEEKENDS. COORDINATE AND OBTAIN APPROVAL FROM BUILDING MANAGEMENT FOR ALL WORK SCHEDULE.
- 26. UPON COMPLETION OF THE WORK, A SET OF "AS-BUILT" DRAWINGS SHALL BE SUBMITTED. PROVIDE 'AS-BUILT' DRAWINGS ON DISK, AUTOCAD 14 AND FULL SIZE PRINT DRAWINGS SHOWING ALL FEEDERS AND BRANCH CIRCUITS WIRE SIZE, CONDUIT, ACTUAL EQUIPMENT/DEVICES CIRCUIT NUMBERING OF ALL ELECTRICAL WORK AS ACTUALLY INSTALLED. CADD BACKGROUNDS TO BE SUPPLIED BY WB ENGINEERING & CONSULTING.
- 27. IN CONNECTION WITH THE ALTERATIONS TO THE EXISTING BUILDING, THERE WILL BE CERTAIN REMOVALS AND RELOCATIONS OF THE EXISTING ELECTRICAL WORK NECESSARY FOR THE SATISFACTORY PERFORMANCE OF THE WORK. THESE CHANGES CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS, BUT SHOULD BE TAKEN INTO CONSIDERATION BY THE CONTRACTOR IN PREPARING HIS PROPOSAL FOR THIS WORK.

EQUIP

**EQUIPMENT** 

- 28. ELECTRICAL CONTRACTOR SHALL VISIT AND EXAMINE CAREFULLY THE EXISTING AREAS AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND WITH DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THE WORK. CONTRACTOR SHALL PERFORM THIS, PRIOR TO SUBMITTING HIS PROPOSAL SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.
- 29. ALL NEW MATERIALS REQUIRED SHALL CONFORM WITH THE STANDARDS OF THE UNDERWRITERS LABORATORIES, INC. IN EVERY CASE WHERE SUCH A STANDARD HAS BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIAL IN QUESTION, UNLESS OTHERWISE NOTED.
- 30. BUILDING FIRE ALARM SYSTEM INTEGRITY SHALL BE MAINTAINED AT ALL TIMES (BEFORE, DURING AND AFTER DEMOLITION AND/OR CONSTRUCTION).
- 31. ALL WORK IS NEW UNLESS OTHERWISE NOTED. THE DRAWINGS INDICATE SIZE AND GENERAL LOCATION OF WORK. SCALE DIMENSIONS SHALL NOT BE USED. THE EXACT LOCATION AND ELEVATION OF ALL RECEPTACLES AND TELEPHONE/DATA OUTLETS, ETC., SHALL BE DETERMINED FROM THE ARCHITECT'S DRAWINGS, U.O.N.
- 32. ALL ELECTRIC POWER MUST BE DISCONNECTED BEFORE STARTING DEMOLITION.
- 33. FILE PLANS WITH THE BUILDING DEPARTMENT AND OBTAIN ALL PERMITS AND SIGNOFFS.
- 34. ELECTRICAL CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES AND CONFER WITH OTHER CONTRACTORS WHOSE WORK MIGHT AFFECT THIS INSTALLATION.
- 35. ELECTRICAL METALLIC TUBING (E.M.T.) SHALL BE USED WITH COMPRESSION TYPE FITTINGS ONLY.
- 36. PANEL DIRECTORIES SHALL BE UPDATED TO CONFORM TO WORK COMPLETED.
- 37. ELECTRIC PANEL COVERS ARE NOT TO BE LEFT OFF AT ANY TIME UNLESS MEN ARE WORKING ON SAME. COVERS SHALL BE REPLACED EACH NIGHT BEFORE LEAVING JOB SITE.
- 38. GREENFIELD MAY BE USED FOR FINAL CONNECTION TO MOTORS AND RECESSED FIXTURES ONLY. LENGTH SHALL NOT EXCEED 6 FEET.
- 39. WHEN USING TEMPORARY LIGHTING, THE CONTRACTOR SHALL CLEARLY LABEL PANELS AND BREAKERS USED FOR LIGHTING. LOCATION OF PANELS TO BE SHOWN ON FLOOR PLAN POSTED AT ENTRANCE TO WORK AREA. PROPER TEMPORARY LIGHTING AND POWER MUST BE INSTALLED AND MAINTAINED IN ALL WORK AREAS. TEMPORARY LIGHT AND POWER STRINGERS SHALL UTILIZE C-TAP TERMINATIONS. LAMPHOLDS SHALL HAVE LEFT HANDED SCREW SHELL LAMP HOLDERS AND NON-METALLIC LAMP GUARDS. CONNECTIONS TO EXISTING STAIRWELL AND EXIT LIGHT SYSTEMS ARE NOT PERMITTED.
- 40. THIS CONTRACTOR, BEFORE INSTALLING ANY OF THE WORK, SHALL SEE THAT IT DOES NOT INTERFERE WITH CLEARANCES REQUIRED FOR FINISHED COLUMNS, HUNG CEILINGS PILASTER, PARTITIONS, WALLS, ETC., AS SHOWN IN THE ARCHITECTURAL DRAWINGS AND DETAILS. IF ANY WORK IS SO INSTALLED AND IT LATER DEVELOPS THAT SUCH DETAILS OR DESIGN CANNOT BE FOLLOWED, THIS CONTRACTOR AT HIS OWN EXPENSE SHALL MAKE SUCH CHANGES IN THE WORK AS DIRECTED BY THE ARCHITECT, AS WELL AS TO PERMIT THE INSTALLATION OF THE ARCHITECTURAL WORK AS SHOWN ON THE PLANS AND DETAILS.
- 41. THE CONTRACTOR SHALL MAINTAIN CONTINUITY OF SERVICE ON ALL CIRCUITS WHICH ALSO SERVE AREAS NOT AFFECTED BY THESE CHANGES. WHENEVER IT IS REQUIRED THAT AN EXISTING CIRCUIT BE REVISED, DISCONNECTED OR REMOVED, IT SHALL BE UNDERSTOOD THAT THE CIRCUIT SHALL BE RECONNECTED AND SERVICE RE-ESTABLISHED IN THE REMAINING PORTION OF THE CIRCUIT WHICH IS OUTSIDE OF THE AREA AFFECTED BY THIS ALTERATION.
- 42. THE CONTRACTOR SHALL CUT BACK TO THE FLOOR, WALL OR CEILING, REMOVE WIRING AND PLUG BOTH ENDS OF CONCEALED CONDUITS MADE OBSOLETE BY THIS ALTERATION. EXPOSED CONDUITS, WIREWAYS, OUTLET BOXES, PULL BOXES, HANGERS, ETC. MADE OBSOLETE BY THE ALTERATION WORK SHALL BE REMOVED, UNLESS OTHERWISE NOTED.
- 43. PROVIDE GROUND WIRES IN ALL BRANCH CIRCUITS AND FEEDERS.

ELECTR	RICAL ABBREVIATIONS				
Α	AMPERES	FACP	FIRE ALARM CONTROL PANEL	MAX	MAXIMUM
AF	AMPERE FRAME	FBO	FURNISH BY OTHER DIVISION OF WORK	MCB	MAIN CIRCUIT BREAKER
AFF	ABOVE FINISH FLOOR	FCO	FUSED CUTOUT BOX	MECH	MECHANICAL
AT	AMPERE TRIP	FCS	FIRE COMMAND STATION	MER	MECHANICAL EQUIPMENT ROOM
ATS	AUTOMATIC TRANSFER SWITCH	FIXT	FIXTURE	MFS	MAIN FUSED SWITCH
AWG	AMERICAN WIRE GAUGE	FL	FLOOR	MIN	MINIMUM
BLDG	BUILDING	FLEX	FLEXIBLE	MLO	MAIN LUGS ONLY
С	CONDUIT	FT	FEET OR FOOT	MTD	MOUNTED
CAT	CATALOG	GA	GAUGE GROUND	N	NEUTRAL
СВ	CIRCUIT BREAKER	G, GRD	GROUND	NC	NORMALLY CLOSED
CD	CANDELA	GC	GENERAL CONTRACTOR	NIC	NOT IN CONTRACT
CFSD	COMBINATION FIRE/SMOKE DAMPER	GFI	GROUND FAULT INTERRUPTER	NO	NUMBER
CKT	CIRCUIT	HP	HORSEPOWER	NL	NIGHT LIGHT
CLG	CEILING	HVAC	HEATING, VENTILATING AND AIR	NTS	NOT TO SCALE
CO	CONDUIT ONLY		CONDITIONING	Р	POLE
CL	CLOSET		DIVISION OF WORK	PNL	PANEL
CU	COPPER	HZ	HERTZ	Ø	PHASE
DACS	DIGITAL ALARM COMMUNICATION SYSTEM	JB	JUNCTION BOX	SW	SWITCH
DACT	DIGITAL ALARM COMMUNICATION TERMINAL	KVA	KILOVOLT AMPERES	SWBD	SWITCHBOARD
DGP	DATA GATHERING PANEL	KW	KILOWATTS	TEL	TELEPHONE
DISC	DISCONNECT	LEMCS	LOCAL EMERGENCY CONTROL SYSTEM	TYP	TYPICAL
DN	DOWN	LP	PANEL DESIGNATION	UON	UNLESS OTHERWISE NOTED
DWG	DRAWING	LTG	LIGHTING	UL	UNDERWRITERS LABORATORIES
E	EXISTING DEVICE TO REMAIN			VESDA	VERY EARLY SMOKE DETECTION API
ELEC	ELECTRICAL			V	VOLTAGE

WEATHERPROOF

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REVISIONS

**CONSTRUCTION SET** 

# 110 HIGH STREET - 6TH FL ROOF DECK

JONES LANG LASALLE

110 HIGH STREET, BOSTON MA

TITLE

ELECTRICAL NOTES, SYMBOLS, & ABBREVIATIONS

DATE

JOB NO.

10/17/2018 02DBA.180716

DRAWING NO.

E-00

FOR CONSTRUCTION

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# 110 HIGH STREET - 6TH FL ROOF DECK

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110 HIGH STREET, BOSTON MA

TITLE

**ELECTRICAL PANEL SCHEDULES** 

DATE

JOB NO.

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DRAWING NO.

E-10

FOR CONSTRUCTION

#### 260500 GENERAL REQUIREMENTS

- A. ALL WORK SHALL COMPLY WITH REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, LOCAL BUILDING CODE AND BUILDING MANAGEMENT RULES AND REGULATIONS. CONTRACTOR IS TO INFORM ENGINEER OF ANY EXISTING WORK OR MATERIALS THAT VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED AT CONTRACTOR'S EXPENSE BY THIS CONTRACTOR AND AT NO EXPENSE TO THE OWNER.
- B. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE EXISTING BUILDING CONSTRUCTION STANDARDS
- C. PRIOR TO SUBMISSION OF BID, THIS CONTRACTOR SHALL VISIT THE JOB SITE TO ASCERTAIN THE ACTUAL FIELD CONDITIONS AS THEY RELATE TO THE WORK AS INDICATED ON THE DRAWINGS AND DESCRIBED HEREIN. DISCREPANCIES IF ANY, SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO SUBMISSION OF HIS BID, AND IF NOT RESOLVED TO SATISFACTION SHALL BE SUBMITTED AS A WRITTEN QUALIFICATION OF THE BID. SUBMISSION OF A BID SHALL BE EVIDENCE THAT SITE VERIFICATION HAS BEEN PERFORMED AS DESCRIBED ABOVE. REQUEST FOR ADDITIONAL COMPENSATION DUE TO CONTRACTOR'S FAILURE TO EXAMINE THE SITE PRIOR TO SUBMISSION OF BID SHALL NOT BE CONSIDERED.
- D. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK AND APPROXIMATE LOCATION OF EQUIPMENT. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS FOR FINAL LOCATIONS OF EQUIPMENT AND DEVICES, ETC. WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICTS. IF A CONFLICT OCCURS IN THE SPECIFICATIONS AND/OR ON THE DRAWINGS, THE MORE STRINGENT SITUATION SHALL APPLY.
- E. PRIOR TO SUBMISSION OF BID, THIS CONTRACTOR SHALL REVIEW ALL DRAWINGS OF THE ENTIRE PROJECT INCLUDING GENERAL CONSTRUCTION, DEMOLITION, ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING, AND SHALL INCLUDE ANY WORK REQUIRED IN THE BID THAT IS INDICATED OR IMPLIED TO BE PERFORMED BY THIS TRADE IN OTHER SECTIONS OF THE WORK.
- F. ANY EQUIPMENT, PARTS, MATERIALS, ACCESSORIES, OR LABOR THAT IS NECESSARY FOR PROPER PERFORMANCE OF THE ELECTRICAL WORK, ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN, OR SHOWN ON THE DRAWINGS, SHALL BE FURNISHED AND INSTALLED AS IF CALLED FOR IN DETAIL WITHOUT ADDITIONAL COST.
- G. ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THIS WORK. FINAL ACCEPTANCE SHALL BE DEFINED AS THE TIME THAT THE ELECTRICAL WORK IS TAKEN OVER AND ACCEPTED BY THE OWNER, AND IS UNDER CARE, CUSTODY, AND CONTROL OF THE OWNER. ENGAGE THE SERVICES OF VARIOUS MANUFACTURERS SUPPLYING THE EQUIPMENT FOR THE PROPER STARTUP AND OPERATION AND SERVICING OF THE EQUIPMENT
- H. ALL MATERIALS SHALL BE NEW AND SHALL CONFORM TO THE STANDARDS OF THE UNDERWRITERS' LABORATORIES INC. MATERIALS SHALL BE FABRICATED IN ACCORDANCE WITH THE SPECIFICATIONS AND APPROVED RULES AND REGULATIONS OF NEMA AND SHALL BEAR THE UL INSPECTION LABEL. MATERIAL AND APPARATUS FOR LIKE SHALL BE BY THE SAME MANUFACTURER.
- I. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND CONTRACTOR'S SERVICES NECESSARY FOR COMPLE SAFE INSTALLATION OF ALL ELECTRICAL WORK. THE SCOPE OF WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
- 1. DISCONNECTION AND REMOVAL OF ELECTRICAL EQUIPMENT AS REQUIRED FOR NEW INSTALLATION, INCLUDING ALL CONDUCTORS AND CONDUIT BACK TO THEIR SOURCE. (SEE DEMOLITION NOTES)
- 2. PROVIDING OF LIGHT FIXTURES AND LAMPS INCLUDING EXIT AND EMERGENCY LIGHTING AND ALL ASSOCIATED COMPONENTS AND BRANCH CIRCUITING. PROVIDE FLUORESCENT LIGHT FIXTURES WITH ELECTRONIC BALLASTS CLASS P, HIGH POWER FACTOR ETL AND CBM APPROVED.
- 3. PROVIDING OF NEW RACEWAY AND CONDUCTORS FOR LIGHTING AND POWER
- 4. CUTTING, CHANNELING AND CHASING REQUIRED TO ACCOMMODATE THE ELECTRICAL INSTALLATION AND ROUGH PATCHING.
- 5. ADDITIONS AND MODIFICATIONS TO EXISTING ELECTRICAL POWER DISTRIBUTION EQUIPMENT AND RELATED FEEDERS.
- 6. PROVIDING POWER WIRING AND FINAL CONNECTIONS TO HVAC. PLUMBING AND FIRE PROTECTION EQUIPMENT.
- 7. PROVIDING OF CONDUIT, JUNCTION BOXES, PULL BOXES, ETC., REQUIRED FOR THE AFOREMENTIONED
- 8. MAINTENANCE AND PROPER OPERATION OF EXISTING BASE BUILDING SYSTEMS WITHIN THE CONTRACT AREA DURING CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF BUILDING
- 9. GROUNDING OF ALL EQUIPMENT AS REQUIRED BY NATIONAL ELECTRICAL CODE AND AS SHOWN ON THE
- 10.MAINTAIN CONTINUITY OF EXISTING CIRCUITING TO ADJACENT AREAS NOT AFFECTED BY THE NEW
- 11.PROVIDING TELEPHONE/DATA AND SIGNAL EMPTY CONDUIT, PULLBOXES, OUTLETS, SLEEVES AND FISHWIRES.
- ADDITIONS AND MODIFICATIONS TO THE EXISTING BUILDING FIRE ALARM SYSTEM.

12.COORDINATE WITH BUILDING FIRE ALARM MAINTENANCE CONTRACTOR AND PROVIDE ALL REQUIRED

- 13.PROVIDING RECEPTACLES, LIGHT SWITCHES, DISCONNECT SWITCHES, FUSES, DIMMERS, OUTLET BOXES, CONTACTORS AND OTHER WIRING DEVICES INCLUDING RELATED BRANCH CIRCUIT WIRING.
- 14.PROVIDING ENGRAVED LAMICOID NAMEPLATES FOR NEW PANELBOARDS, DISCONNECT SWITCHES, CABINETS, MOTOR STARTERS, ETC.
- 15.PROVIDING TEMPORARY LIGHT AND POWER DURING CONSTRUCTION.
- J. PERFORM ANY NOISY WORK (E.G., CHOPPING, CORE DRILLING, DEMOLITION, ETC.) AND BASE BUILDING SYSTEM TEMPORARY SHUTDOWNS OUTSIDE OF NORMAL BUSINESS HOURS ON SAFE TIME (PREMIUM TIME). SAFE TIME WORK SHALL BE PERFORMED WHEN AND AS DIRECTED BY THE BUILDING MANAGEMENT.
- K. FOLLOW THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION AIA DOCUMENT A201 LATEST EDITION, OR AS REQUIRED BY THE ARCHITECTS DOCUMENTS AND/OR ENGINEERS DOCUMENTS.
- L. SUBMIT SHOP DRAWINGS CERTIFIED BY ALL TRADES THAT COORDINATION HAS BEEN ESTABLISHED. SUBMIT ALL CERTIFIED EQUIPMENT CUTS WITH CONSTRUCTION WIRING DIAGRAMS. PROVIDE A MINIMUM OF SIX (6) COPIES OF 8-1/2"X11" SUBMISSIONS AND ONE (1) REPRODUCIBLE AND ONE (1) PRINT OF ALL DRAWINGS.
- M. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:
- 1. FIRE ALARM DEVICES.
- 2. LIGHTING FIXTURES AND LAMPS. 3. SWITCHES AND FUSES.
- 4. PANELBOARDS AND CIRCUIT BREAKERS. WIRING DEVICES.
- 6. ANY OTHER ITEM THAT MAY BE REQUIRED BY ARCHITECT.
- N. SUBMIT FOUR (4) LOOSE-LEAF BOUND OPERATING AND MAINTENANCE MANUALS WITH INDEX AND INDEX TABS TO INCLUDE ALL SHOP DRAWINGS AND OPERATING AND MAINTENANCE INSTRUCTIONS ON ALL
- O. CONTRACTOR SHALL REVISE DRAWINGS TO CONFORM TO RECORD DRAWINGS AND SUBMIT AS-BUILT CONDITION (DEVICES, EQUIPMENT, CIRCUITRY, ETC.), DRAWINGS UPON COMPLETION OF THE PROJECT. FINAL SUBMISSION OF REPRODUCIBLE AND ACAD DISKETTE OF AS-BUILT DRAWINGS ARE TO BE SUBMITTED TO THE OWNER AND WB ENGINEERING REVIEW AND RECORDS.
- P. SUBSTITUTE MATERIAL OR MANUFACTURER OF EQUIPMENT SHALL NOT BE PERMITTED WITHOUT A FORMAL WRITTEN SUBMITTAL TO THE ENGINEER THAT INCLUDES ALL DIMENSIONAL, PERFORMANCE AND MATERIAL SPECIFICATIONS. ANY CHANGES IN LAYOUT, ELECTRICAL CHARACTERISTICS, STRUCTURAL REQUIREMENTS, OR DESIGN DUE TO THE USE OF A SUBSTITUTION SHALL BE SUBMITTED TO THE ENGINEER AS PART OF THIS PROPOSAL. THE CONTRACTOR TAKES FULL RESPONSIBILITY FOR THE SUBSTITUTION AND ALL CHANGES RESULTING FROM SUBSTITUTION.
- Q. REMOVAL. TEMPORARY CONNECTIONS AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE INSTALLATION OF THE NEW SYSTEMS. ALL EXISTING CONDITIONS ARE NOT COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND MAKE ALL NECESSARY CHANGES

- REQUIRED BASED ON EXISTING CONDITIONS FOR PROPER INSTALLATION OF NEW WORK PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS
- R. AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING MANAGEMENT. PROVIDE TEMPORARY FEEDERS, CIRCUITRY, ETC., AS REQUIRED TO MINIMIZE DOWNTIME, RK.
- S. DEFINITIONS:
- 1. "ELECTRICAL CONTRACTOR", "THIS CONTRACTOR" THE PARTY OR PARTIES HAVE BEEN DULY AWARDED THE CONTRACT FOR AND ARE THEREBY MADE RESPONSIBLE FOR THE ELECTRICAL WORK AS DESCRIBED
- 2. "ARCHITECT", "ENGINEER", "OWNER'S REPRESENTATIVE" THE PARTY OR PARTIES RESPONSIBLE FOR INTERPRETING, ACCEPTING AND OTHERWISE RULING ON THE PERFORMANCE UNDER THIS CONTRACT.
- 3. "FURNISH" PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT, ALL AS PART OF THE ELECTRICAL WORK.
- 4. "INSTALL" UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING INSTALLATION AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT, ALL AS PART OF THE ELECTRICAL WORK.
- 5. "PROVIDE" "FURNISH" AND "INSTALL"
- 6. "RELOCATE" MOVE EXISTING EQUIPMENT/DEVICES/FIXTURE AND ALL ACCESSORIES AS REQUIRED, INCLUDING THE EXTENSION OF EXISTING OR PROVIDING NEW CIRCUIT/CONDUCTORS/WIRING AS REQUIRED
- 7. "REMOVE" DISMANTLE AND CART AWAY FROM SITE INCLUDING ALL RELATED ACCESSORIES. ALL OTHER EQUIPMENT AND OPERATIONS IN ANY WAY EFFECTED BY THE REMOVAL IS TO REMAIN IN FULL OPERATION. PROVIDE ALL NECESSARY COMPONENTS TO MAINTAIN SUCH OPERATION.
- U. ACCEPTABLE MANUFACTURERS:
- DISCONNECT SWITCHES: ITE, CUTLER HAMMER, GE OR SQUARE "D".

FIRE RATED POKE-THROUGH: HUBBELL, WIREMOLD OR STEEL CITY.

- FUSES: BUSSMAN OR GOULD SHAWMUTT. DRY TYPE TRANSFORMERS: ACME ELECTRIC CORP., CUTLER-HAMMER, GE OR SQUARE D.
- RACEWAY: NATIONAL WIRE PRODUCTS, TRIANGLE OR REPUBLIC. WIRE/CABLE: ROME PHELPS DOGGE, GENERAL CABLE, SIMPLEX.
- PANELBOARDS: ITE, SQUARE 'D', GE OR CUTLER HAMMER. JUNCTION/PULL BOXES: APPLETOWN ELECTRIC, CROUSE HINDS OR O.Z. GEDNEY CO.
- FIRE STOP MATERIAL: HILTI. 3M (NOTE: MATERIAL MUST BE ACCEPTABLE TO LOCAL AHJ) FITTINGS, COUPLINGS, BUSHINGS, CONNECTORS: O.Z. GEDNEY, BURNDY, NEPCO, THOMAS AND BETTS.

## 260519 WIRE AND CABLE

- A. ALL CONDUCTORS SHALL BE COPPER, TYPE THHN/THWN INSULATED. ALL CONDUCTORS SHALL HAVE 600 VOLT RATED INSULATION. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID WIRE. CONDUCTORS AND #8 AWG AND LARGER SHALL BE STRANDED WIRE.
- B. METAL CLAD CABLE (TYPE MC) IS PERMISSIBLE FOR CONCEALED BRANCH CIRCUITRY WHERE PERMITTED BY CODE AND BUILDING MANAGEMENT.
- C. BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED AND INSTALLED FOR A MAXIMUM VOLTAGE DROP OF 3%. CONTRACTOR SHALL PROVIDE #10AWG CONDUCTORS FOR ALL 120V CIRCUITS GREATER THAN 100 FEET IN LENGTH AND #10AWG CONDUCTORS FOR ALL 277V CIRCUITS GREATER THAN 200 FEET IN LENGTH.
- D. PROVIDE ALL BRANCH CIRCUITS WITH DEDICATED GROUND WIRES.
- E. COLOR CODING OF 120/208 VOLT WIRING SYSTEM:
- 1. BLACK FOR A PHASE
- 2. RED FOR B PHASE
- 3. BLUE FOR C PHASE 4. WHITE FOR NEUTRAL
- 5. GREEN FOR EQUIPMENT GROUND
- F. COLOR CODING OF 277/480 VOLT WIRING SYSTEM:
- BROWN FOR A PHASE
- 2. ORANGE FOR B PHASE . YELLOW FOR C PHASE
- 4. GRAY FOR NEUTRAL 5. GREEN FOR EQUIPMENT GROUND
- G. PROVIDE FLAMEPROOF IDENTIFICATION TAGS IN ALL JUNCTION BOXES, PULL BOXES AND PANELBOARDS FOR ALL FEEDERS, BRANCH CIRCUIT AND CONTROL WIRING. TAGS SHALL IDENTIFY CONDUCTOR SIZES, SOURCE AND TERMINATION POINTS.
- H. INSTALL NO MORE THAN 3 LIGHTING OR CONVENIENCE BRANCH CIRCUITS IN ONE CONDUIT OR HOMERUN UNLESS OTHERWISE NOTED.
- I. NEUTRAL CONDUCTORS SHALL NOT BE USED FOR MORE THAN ONE (1) BRANCH CIRCUIT, FOR MORE THAN ONE (1) MULTIWIRE BRANCH CIRCUIT, OR FOR MORE THAN ONE (1) SET OF UNGROUNDED FEEDER CONDUCTORS. SEE NEC ARTICLE 200 FOR ADDITIONAL INFORMATION.

# 260523 TELEPHONE AND DATA EMPTY CONDUIT SYSTEM

- A. PROVIDE LABOR. MATERIALS AND SERVICES FOR A COMPLETE AND SAFE INSTALLATION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ALL APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION FOR THE SYSTEM INCLUDING THE FOLLOWING:
- CONDUIT
- 2. PULL BOXES
- 3. OUTLET BOXES SLEEVES
- B. PROVIDE MINIMUM 2" DEEP 2 GANG OUTLET BOXES. DEVICES BY OTHERS.
- C. ALL RACEWAY SHALL BE EMT WITH BUSHED TERMINATIONS AT HUNG CEILING WITH FISH WIRE (NYLON
- D. ALL RECEPTACLES AND COVERPLATES COLOR SHALL BE AS SELECTED BY ARCHITECT.

# 260526 GROUNDING

- A. SYSTEM SHALL BE INSTALLED WITH METHODS AND MATERIALS IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS AND ABLE TO CONDUCT GROUND FAULT CURRENTS TO THE GROUNDED NEUTRAL OF ELECTRICAL DISTRIBUTION SYSTEMS AND LIMIT POTENTIAL DIFFERENCES BETWEEN CONDUCTIVE SYSTEMS UNDER FAULT CONDITIONS. ALL EXPOSED, NON-CURRENT CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, THE RACEWAY SYSTEM, AND THE NEUTRAL CONDUCTOR OF THE WIRING SYSTEM SHALL BE
- B. FEEDER AND BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTORS SHALL HAVE GREEN INSULATION.
- C. CABLE CONNECTION TO STRUCTURAL STEEL AND GROUNDING RODS: THERMAL FUSION TYPE.
- D. GROUNDING RODS: COPPER CLAD STEEL, 5/8" DIAMETER BY 10FT. LONG. E. INSTALL AN INSULATED EQUIPMENT GROUNDING CONDUCTOR IN NON-METALLIC RACEWAYS.

GROUNDED IN ACCORDANCE WITH THE MASSACHUSETTS ELECTRICAL CODE.

F. CLAMP, CONNECTORS, BOLTS, NUTS, AND OTHER HARDWARE, SHALL BE HIGH CONDUCTIVITY COPPER ALLOY PRODUCTS, AS MANUFACTURED BY O-Z/GEDNY, THOMAS & BETTS CO, ERICO OR EQUAL.

# 260533 RACEWAY AND BOXES

- A. CONDUIT FOR INDOOR BRANCH CIRCUITS SHALL BE THIN WALL TUBING (EMT), WITH COMPRESSION FITTINGS SIZED PER DRAWING, 3/4" DIA. MINIMUM. (MAXIMUM 3 CIRCUITS PER HOMERUN EXCEPT AS NOTED).
- B. FLEXIBLE STEEL CONDUIT MAY BE USED ONLY FOR:
- 1. SHORT CONNECTIONS WHERE RIGID CONDUIT IS IMPRACTICABLE.
- 2. FROM OUTLET BOX TO RECESSED LIGHTING FIXTURE: MINIMUM 4 FT. MAXIMUM 6 FT. LENGTHS.
- 3. TRANSFORMERS AND OTHER VIBRATING EQUIPMENT. MAXIMUM LENGTH 18 IN. WITH SLACK. CONNECT GROUND CONDUCTOR TO ENCLOSURE OR RACEWAY AT EACH END.

- 4. FOR EXPANSION JOINT CROSSINGS, CROSS AT RIGHT ANGLES AND ANCHOR ENDS.
- 5. CONNECT GROUND CONDUCTOR TO ENCLOSURE OR RACEWAY AT EACH END.
- C. LIQUID TIGHT FLEXIBLE STEEL CONDUIT MAY BE USED ONLY FOR:
- 1. FOR FINAL CONNECTION(S) TO MOTOR TERMINAL BOX(ES), WITH POLYVINYL SHEATHING AND GROUND CONDUCTOR. CONNECT GROUND CONDUCTOR TO ENCLOSURE OR RACEWAY AT EACH END.
- D. EXPANSION FITTINGS: INSTALL AT RIGHT ANGLES WITH CLIP CENTERED IN EXPANSION JOINT. PROVIDE LENGTH OF RUNS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- E. RACEWAYS PASSING THROUGH FIRE-RATED CONSTRUCTION: SEAL OPENING WITH FIRE SEALANT AS
- REQUIRED TO MAINTAIN THE EXISTING FIRE RATING.
- F. PROVIDE FISH OR PULL WIRE IN ALL EMPTY CONDUITS OVER 10 FEET LONG.
- G. MAINTAIN GROUND CONTINUITY OF ALL INTERRUPTED RACEWAYS WITH GROUND CONDUCTOR. H. ALL WIRING WITHIN ELECTRICAL CLOSET AND IN BUILDINGS CORE CEILINGS SHALL BE INSTALLED IN
- I. INSTALL ACCESSIBLE JUNCTION AND PULLBOXES CLEAR OF OTHER TRADES AND SUPPORTED FROM BUILDING STRUCTURE INDEPENDENT OF CONDUIT.
- J. PULL BOXES, JUNCTION BOXES AND OUTLET BOXES SHALL BE MANUFACTURED FROM GALVANIZED INDUSTRY STANDARD GAUGE SHEET STEEL.
- K. PROVIDE PULL BOXES AND JUNCTION BOXES IN LONG STRAIGHT RUNS OF RACEWAY TO ASSURE THAT CABLES ARE NOT DAMAGED WHEN THEY ARE PULLED, TO FULFILL REQUIREMENTS AS TO THE NUMBER OF BENDS PERMITTED IN RACEWAY BETWEEN CABLE ACCESS POINTS, THE ACCESSIBILITY OF CABLE JOINTS AND SPLICES, AND THE APPLICATION OF CABLE SUPPORTS.
- L. PULLBOXES AND JUNCTION BOXES SHALL BE SIZED SO THAT THE MINIMUM BENDING RADIUS CRITERIA SPECIFIED FOR THE WIRES AND CABLE ARE MAINTAINED.
- M. ALL EQUIPMENT, DEVICE BOXES, JUNCTION BOXES, PULLBOXES AND OUTLET BOXES SHALL BE INSTALLED SO AS TO ALLOW ACCESS TO THE BOX. IF NECESSARY AND APPROVED BY ARCHITECT, PROVIDE ACCESS DOOR OR COVERPLATES IN AREAS WHERE UNOBSTRUCTED ACCESS IS NOT POSSIBLE.
- N. USE WEATHERPROOF BOXES, JUNCTION BOXES AND DEVICES FOR ALL REQUIRED WEATHERPROOF INSTALLATION.

## 260923 LIGHTING CONTROL DEVICES

- A. TIME SWITCH: SHALL BE DIGITAL WITH PROGRAMMABLE CONTROLLER IN AM/PM FORMAT, IN ONE MINUTE RESOLUTION, CAPABLE OF 99 SET POINTS, SEPARATE SCHEDULING FOR EACH DAY OF WEEK, DAYLIGHT SAVING AND STANDARD TIME, AUTOMATIC LEAP YEAR CORRECTION, 30 DAY BACKUP FOR REAL TIME USING, MANUAL OVERRIDE ON OR OFF TO THE NEXT SCHEDULED EVENT, LCD TYPE DISPLAY IN NEMA 3 ENCLOSURE. REFER TO PLANS FOR MANUFACTURER AND SPECIFICATIONS.
- B. OCCUPANCY SENSORS: SHALL BE SUPPLIED FROM A SINGLE MANUFACTURER. REFER TO PLANS FOR MANUFACTURER AND SPECIFICATIONS
- 1. ALL COMPONENTS SHALL BE UL LISTED AND OFFER A FIVE (5) YEAR WARRANTY.
- 2. WALL OR CEILING SENSORS SHALL DUAL TECHNOLOGY: INFRA-RED AND ULTRASONIC.
- 3. WALL SWITCH SENSORS SHALL BE CAPABLE OF DETECTION OF OCCUPANCY AT DESKTOP LEVEL UP TO 300 SQUARE FEET, AND GROSS MOTION UP TO 1000 SQUARE FEET.
- 4. WALL SWITCH SENSORS SHALL ACCOMMODATE LOADS FROM 0 TO 800 WATTS AT 120V; 0 TO 1200 WATTS AT 277V AND SHALL HAVE 180° COVERAGE CAPABILITY.
- 5. WALL SWITCH PRODUCTS SHALL UTILIZE ZERO CROSSING CIRCUITRY WHICH INCREASES RELAY LIFE, PROTECTS FROM THE EFFECTS OF INRUSH CURRENT, AND INCREASES SENSOR'S LONGEVITY.
- 6. WHERE SPECIFIED, SENSORS SHALL OFFER DAYLIGHTING FOOTCANDLE ADJUSTMENT CONTROL AND BE
- 7. ALL SENSORS SHALL BE CAPABLE OF OPERATING NORMALLY WITH ELECTRONIC BALLASTS, PL LAMP
- SYSTEMS AND RATED MOTOR LOADS. 8. ALL SENSORS SHALL HAVE READILY ACCESSIBLE, USER ADJUSTABLE SETTINGS FOR TIME DELAY AND SENSITIVITY. SETTINGS SHALL BE LOCATED ON THE SENSOR (NOT THE CONTROL UNIT) AND SHALL BE
- 9. IN THE EVEN OF FAILURE, A BYPASS MANUAL OVERRIDE SHALL BE PROVIDED ON EACH SENSOR. WHEN BYPASS IS UTILIZED, LIGHTING SHALL REMAIN ON CONSTANTLY OR CONTROL SHALL DIVERT TO A WALL SWITCH UNTIL SENSOR IS REPLACED.
- 10.ALL SENSORS SHALL HAVE AN INTERNAL ADDITIONAL ISOLATED RELAY WITH NORMALLY OPEN, NORMALLY CLOSED AND COMMON OUTPUTS FOR USE WITH HVAC CONTROL, DATA LOGGING AND OTHER CONTROL OPTIONS.

# 262200.1 DRY TYPE TRANSFORMER

- A. THREE PHASE TRANSFORMERS SHALL BE 480 VOLT DELTA PRIMARY, 208/120 VOLT, 3 PHASE, 4 WIRE SECONDARY, U.O.N. TRANSFORMERS 30 kVA AND LARGER SHALL HAVE A MINIMUM OF TWO 2 1/2 PERCENT FULL CAPACITY TAPS ABOVE AND FOUR 2 1/2 PERCENT FULL CAPACITY TAPS BELOW NORMAL RATED
- PRIMARY VOLTAGES. B. TRANSFORMERS 30KVA AND ABOVE SHALL BE 150 C TEMPERATURE RISE ABOVE 40 C AMBIENT UON.
- C. CLASS 220 INSULATION.

ABLE TO ACCOMMODATE DUAL LEVEL LIGHTING.

RECESSED TO LIMIT TAMPERING.

- D. TRANSFORMERS SHALL COMPLY WITH NEMA ST20 AND UL 1561. E. TRANSFORMERS 30 kVA AND LARGER SHALL BE IN A HEAVY GAUGE SHEET STEEL, VENTILATED ENCLOSURE, IN ACCORDANCE WITH UL, NEMA, AND NATIONAL ELECTRICAL CODE STANDARDS FOR VENTILATED
- F. TRANSFORMER WINDINGS SHALL BE OF COPPER, WITHOUT SPLICES, EXCEPT FOR TAPS.

# 262416 PANELBOARDS

ENCLOSURE.

- A. FURNISH AND INSTALL THREE-PHASE, 4 WIRE COPPER BUS PANELBOARDS AS INDICATED ON PANEL
- B. PANELBOARDS SHALL BE IN INSTALLED IN ENCLOSURES FABRICATED OF CODE GAUGE GALVANIZED SHEET STEEL WITHOUT KNOCKOUTS.
- C. ALL MAIN AND BRANCH BUS BARS, NEUTRAL AND GROUND BUS BARS, CABLE LUGS AND ALL CONNECTORS TO BE MADE OF COPPER. PANELBOARD BUS BARS SHALL BE COPPER AND PROPORTIONED FOR A CURRENT
- DENSITY OF 1000 AMPERES PER SQUARE INCH OF CROSS SECTIONAL AREA. D. THE MAIN AND BRANCH CIRCUIT OVERCURRENT PROTECTIVE DEVICE SHALL BE MOLDED CASE CIRCUIT BREAKERS, LISTED IN ACCORDANCE WITH UL 489 AND WITH INTERRUPTING CAPACITY TO MEET AVAILABLE FAULT CURRENTS. THE CIRCUIT BREAKERS SHALL BE THERMAL-MAGNETIC WITH INVERSE TIME-CURRENT ELEMENT FOR LOW LEVEL OVERLOADS AND INSTANTANEOUS MAGNETIC TRIP FOR SHORT CIRCUITS. FOR
- E. CIRCUIT WIRING IN PANELBOARDS SHALL BE TRIMMED AND DRESSED IN A NEAT AND WORKMANLIKE MANNER. ALL WIRING SHALL BE TAGGED. PANELBOARDS SHALL BE PROVIDED WITH A DETAILED TYPE

BRANCH CIRCUITS PROVIDE BOLT-ON TYPE BREAKERS FOR FRAMES 125 A OR SMALLER.

F. CABINETS: CODE GAUGE GALVANIZED STEEL WITH DOOR IN DOOR LOCKABLE TRIM. LAP AND RIVET CORNERS OR FORM AS APPROVED. BACKBOX AND TRIM TO BE PRIMED AND PAINTED WITH GREY ENAMEL. PANEL TRIM (OUTER DOOR) SHALL BE MOUNTED VIA TRIM CLAMPS OR SHALL BE SCREW MOUNTED. DOOR SHALL BE MOUNTED WITH FULL LENGTH PIANO HINGES AND SHALL BE PROVIDED WITH MULTI-PIN

CYLINDER LOCKS WITH MILLED KEYS. ALL PANELS TO BE KEYED ALIKE, AND KEYS TO BE CUT AS DIRECTED.

- G. DIRECTORY HOLDER: METAL FRAME WITH NON BREAKABLE TRANSPARENT COVER AND DIRECTORY CARD. PROVIDE TYPEWRITTEN PANELBOARD CIRCUIT DIRECTORY ON THE INSIDE OF THE DOOR AND UPDATE EXISTING PANELBOARD DIRECTORIES AS REQUIRED BY NEW WORK.
- H. MINIMUM SHORT CIRCUIT RATINGS:

- 1. 120/208 VOLT PANELS: MINIMUM SHORT CIRCUIT RATING 10,000 AMPERES, RMS SYMMETRICAL
- 2. 277/480 VOLT PANELS: MINIMUM SHORT CIRCUIT RATING 14,000AMPERES, RMSSYMMETRICAL.
- I. MINIMUM GUTTER SPACE: BOX SHALL BE OF SUFFICIENT SIZE TO ALLOW A GUTTER AT LEAST 5-3/4" IN WIDTH ENTIRELY SURROUNDING EACH SECTION OF BOARD. INCREASE GUTTER SIZE TO ACCOMMODATE FEEDER AND FEEDER TAPS.
- J. PANELS SHALL HAVE ENGRAVED WHITE CORE, BLACK LAMICOID NAMEPLATE AFFIXED WITH EPOXY CEMENT. RATINGS OF BRANCH CIRCUIT BREAKERS AS SCHEDULED ON PANEL SCHEDULES.

#### 262726.1 FIRE RATED POKE-THROUGH

- A. THROUGH FLOOR FITTING SHALL BE CAPABLE OF HANDLING POWER AND/OR VOICE/DATA SERVICE IN A SINGLE FITTING. THE UNIT SHALL BE INSTALLED IN A CORE DRILLED HOLE AND SHALL COVER REQUIRED FLOOR THICKNESS. IT SHALL BE UL LISTED MINIMUM FOR 2 HOUR RATED OR AS REQUIRED. THE RATED INSERT SHALL CONTAIN A RETAINER FOR SECURING THE DEVICE IN THE SLAB AS WELL AS THE ORGANIC INTUMESCENT MATERIAL.
- B. POWER AND COMMUNICATION ISOLATION SHALL BE CONTINUED THROUGH THE DEVICE WITH TERMINATION IN AN ACCESSIBLE BOX.
- C. FLUSH FIRE-RATED POKE THROUGH DEVICES SHALL BE BRASS, U.O.N., COORDINATE WITH ARCHITECT.
- D. FOR ABOVE FLOOR SERVICE PROVIDE PEDESTAL TYPE SERVICE HEAD IN ALUMINUM
- E. ALL UNITS SHALL BE MEET REQUIREMENTS OF UL 514A FOR SCRUB WATER PROTECTION.

## 262726.2 <u>ELECTRIFIED FURNITURE SYSTEMS</u>

A. THE ELECTRIFIED FURNITURE VENDOR WILL SUPPLY ALL RECEPTACLES, FURNITURE TASK LIGHTING FIXTURES, WIRING HARNESSES, CONNECTORS AND FITTINGS TO THE ELECTRICAL CONTRACTOR FOR THE COMPLETE WIRING INSTALLATION. ALL WIRING AND COMPONENTS SHALL BE INSTALLED AS DIRECTED BY VENDOR. ELECTRICAL CONTRACTOR SHALL FURNISH 18" MAXIMUM LIQUIDTIGHT FLEXIBLE CONDUIT CONNECTIONS WITH REQUIRED PHASE CONDUCTORS, NEUTRAL AND GROUND CONDUCTORS FROM WALL OR FLOOR OUTLETS AS INDICATED ON PLANS.

## 262816 SWITCHES, FUSES, AND CIRCUIT BREAKERS

- A. SWITCHES SHALL BE QUICK-BREAK HEAVY DUTY IN NEMA 1 ENCLOSURE FUSED OR UNFUSED, AS INDICATED ON THE DRAWINGS. FUSES FOR SWITCHES SHALL BE CURRENT LIMITING TYPE WITH AN INTERRUPTING CAPACITY OF RMS SYMMETRICAL AMPERES AND OF THE CONTINUOUS (200,000) CURRENT RATING AS SHOWN ON THE DRAWINGS.
- B. CIRCUIT BREAKERS SHALL BE 'THERMAL MAGNETIC' TYPE, QUICK-MAKE, QUICK-BREAK WITH NON-WELDING CONTACTS COMPENSATED FOR AMBIENT TEMPERATURES AND SHALL HAVE A MINIMUM SHORT CIRCUIT RATING OF 10,000 SYMMETRICAL AMPERES FOR 120/280V PANELS AND 14,000 SYMMETRICAL AMPERES FOR 277/480V PANELS.

## 265100 LIGHTING FIXTURES AND LAMPS

- A. BALLASTS AND LAMPS SHALL ENERGY EFFICIENT COMPLYING WITH THE MASS. STATE ENERGY CODE.
- 1. PROVIDE COMPLETE LIGHT FIXTURES WITH ASSOCIATED LAMPS, MOUNTING ACCESSORIES, ETC., AS PER ARCHITECTS SPECIFICATIONS.
- 2. ALL EMERGENCY FIXTURES SHALL MEET MASSACHUSETTS STATE ENERGY CODE REQUIREMENTS.
- 3. PROVIDE DIMMABLE BALLASTS FOR ALL LIGHTING FIXTURES SHOWN/NOTED TO BE CONTROLLED BY DIMMING DEVICES/SYSTEMS.

## B. WIRING:

- 1. LUMINAIRE WIRING: 600 VOLT, 302 DEG F, TYPE SFF-2, BEGINNING AT SEPARATELY MOUNTED OUTLET
- 2. SPLICES: MECHANICAL BORING PRESSURE CONNECTOR OR CRIMP CONNECTOR, WIRE NUTS NOT BOX.
- 4. FLEXIBLE CONDUIT CONNECTIONS FOR RECESSED FIXTURES, MAXIMUM LENGTH: 6 FT. 0 IN.
- C. SUPPORTS: 1. INDIVIDUAL FIXTURES: CARRY WEIGHT OF FIXTURE TO BUILDING CONSTRUCTION, CLEAR OF DUCTS OR

2. PENDANT-MOUNTED FIXTURES: WITH CONDUIT STEMS SUPPORTED TO CEILING FRAMEWORK

3. FIXTURES FED FROM MORE THAN ONE PANEL: SEPARATE NEUTRAL TO EACH PANEL.

## SELF-LEVELING FITTINGS. D. BASE BID MANUFACTURERS:

- 1. BASE BID FOR LIGHTING FIXTURES SHALL BE BASED ON MANUFACTURERS LISTED IN LIGHTING FIXTURES
- SCHEDULE. E. ELECTRONIC BALLASTS
- 1. PROVIDE UL LISTED CLASS P, "A" SOUND RATED BALLASTS WITH HIGH POWER FACTOR WITH REQUIRED
- **VOLTAGE AND FREQUENCY.** 2. BALLAST TO HAVE A FIVE (5) YEAR WARRANTY INCLUDING REASONABLE REPLACEMENT LABOR COSTS.
- 3. THIRD HARMONICS DISTORTION SHALL BE LESS THAN 10%.
- 4. BALLAST TO CONTAIN REQUIRED FILTERING SO AS NOT TO INTERFERE WITH POWER LINE CARRIER
- 5. BALLAST SHALL BE RAPID START, FULL LIGHT OUTPUT.
- F. LOCATIONS:
- 1. LOCATIONS ON THE DRAWINGS ARE DIAGRAMMATIC. OTHER TRADES. 2. VERIFY WITH ARCHITECTURAL REFLECTED CEILING DRAWINGS & COORDINATE SPACE CONDITIONS WITH
- 3. FIXTURE ROWS SHALL BE IN STRAIGHT LINES EXCEPT AS NOTED. FIXTURE DOORS SHALL OPEN FROM

## SAME SIDE. G. MOUNTING:

MOUNTING ACCESSORIES.

- 1. FOR CEILING CONSTRUCTION, REFER TO ARCHITECTURAL DRAWINGS FOR FINISH SCHEDULES AND REFER TO MANUFACTURER'S INSTALLATION DETAILS AND APPLICABLE CODES FOR REQUIRED FIXTURE
- 2. VERIFY ALL CEILING TRIMS WITH ARCHITECTURAL DRAWINGS.

H. REPLACE BLEMISHED, DAMAGED OR UNSATISFACTORY FIXTURES AS DIRECTED.

I. REPLACE LAMPS THAT FAIL DURING CONSTRUCTION PRIOR TO OWNER'S ACCEPTANCE OF SPACE

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**REVISIONS** 

**CONSTRUCTION SET** 

# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

110 HIGH STREET, BOSTON MA

# TITLE

DATE

**ELECTRICAL SPECIFICATIONS** 

**JOB** 

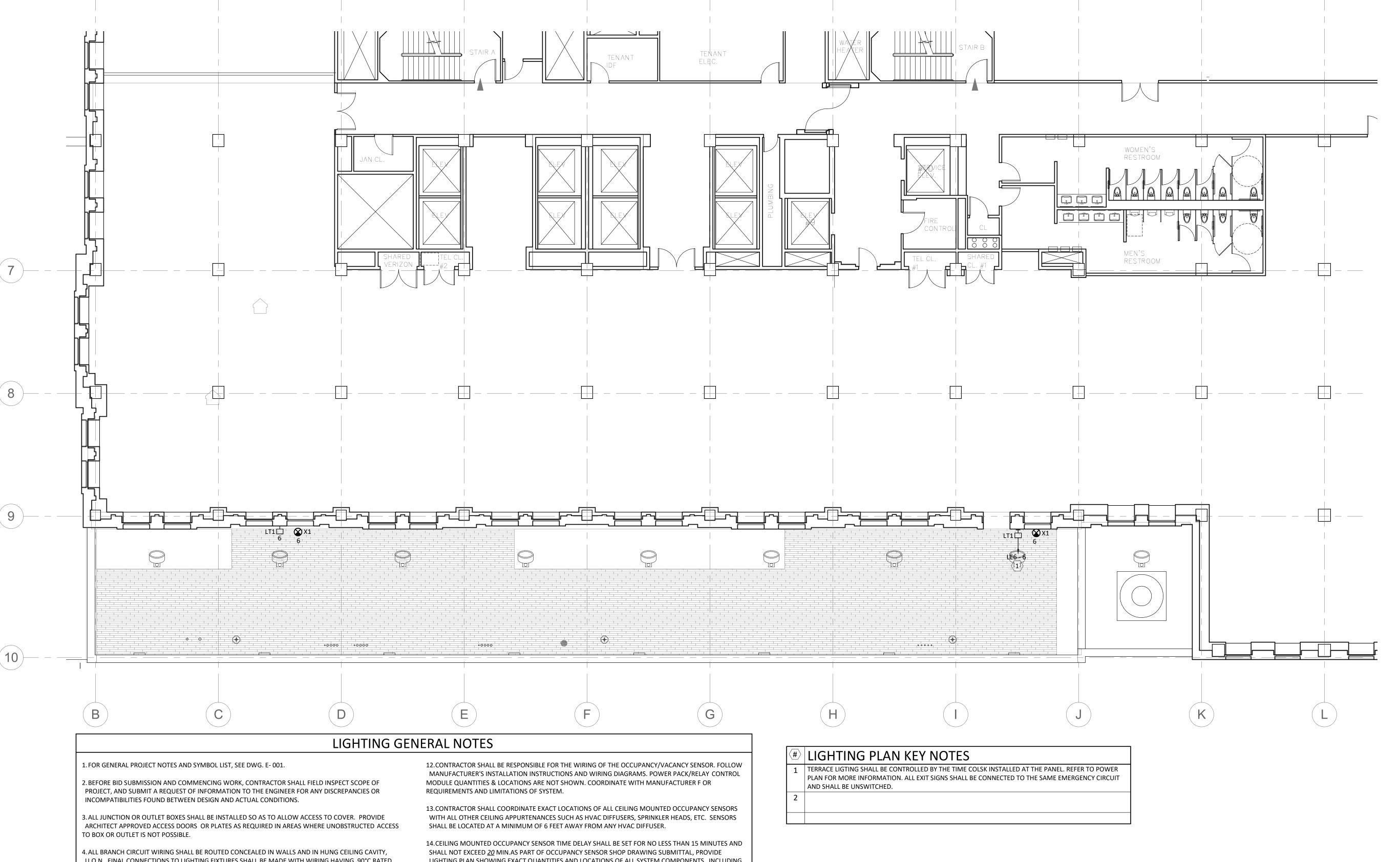
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**REVISIONS** 

**CONSTRUCTION SET** 

# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

**IIO HIGH STREET, BOSTON MA** 

TITLE

**ELECTRICAL FIRST FLOOR LIGHTING PLAN** 

**DATE** 

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U.O.N. FINAL CONNECTIONS TO LIGHTING FIXTURES SHALL BE MADE WITH WIRING HAVING 90°C RATED INSULATION.

5. FOR LIGHTING FIXTURE SCHEDULES (FOR REFERENCE ONLY), SEE DWG. E-001. COORDINATE TYPE,

QUANTITY & LOCATIONS WITH FINAL ARCHITECTURAL CEILING PLANS.

6. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES AND SWITCHES.

7. PRIOR TO ORDERING LIGHTING FIXTURES, COORDINATE WITH ARCHITECTURAL DRAWINGS AND SPECIFICATIONS. IF DISCREPANCIES EXIST BETWEEN ARCHITECTURAL AND ENGINEERING INFORMATION, OBTAIN CLARIFICATION PRIOR TO PROCEEDING.

8. MULTIPLE SWITCHES SHOWN IN SAME LOCATION SHALL BE GANGED TOGETHER WITH A COMMON FACEPLATE.

9. ALL LIGHTING FIXTURES CONTROLLED BY DIMMER SWITCHES SHALL BE PROVIDED WITH DEDICATED NEUTRAL CONDUCTOR AND DIMMING BALLAST OR DRIVER. PROVIDE FLUORESCENT DIMMING BALLASTS AS REQUIRED.

10.CONTRACTOR SHALL PROVIDE ALL REQUIRED JUNCTION BOXES, THROUGH WIRING, DROPS, CONDUIT, WIRING AS REQUIRED TO PROVIDE A COMPLETE AND OPERATIONAL INSTALLATION IN ACCORDANCE WITH LIGHTING MANUFACTURERS SHOP DRAWINGS, FIELD CONDITIONS, CODE REQUIREMENTS, BUILDING STANDARDS AND CONTRACT DOCUMENTS. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ALL REQUIRED WIRING BETWEEN THE LIGHT SWITCHES/OCCUPANCY/VACANCY SENSORS TO THE LIGHTING FIXTURES.

11.THE LOCATION OF SENSORS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC FOR WORK SCOPE PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY LOCATE, AIM, AND MASK THE SENSORS BASED ON MANUFACTURER'S RECOMMENDATIONS .ARRANGE FOR MANUFACTURER'S FIELD REPRESENTATIVE TO VISIT THE SITE AND SUPERVISE FINAL LOCATION AND ADJUSTMENTS AS REQUIRED.

LIGHTING PLAN SHOWING EXACT QUANTITIES AND LOCATIONS OF ALL SYSTEM COMPONENTS, INCLUDING SENSOR TYPES, POWER PACKS, CONTROLLERS, BRIDGES, GATEWAYS, ETC.

15.UPON COMPLETION OF THE INSTALLATION, THE COMPLETE LIGHTING CONTROL SYSTEM SHALL BE COMPLETELY COMMISSIONED BY THE MANUFACTURER'S FACTORY AUTHORIZED TECHNICIAN WHO WILL VERIFY ALL ADJUSTMENTS AND SENSOR PLACEMENT TO ENSURE SATISFACTORY OPERATION OF THE

16.THE CONTRACT SHALL ALSO SUPPLY, AT THE CLIENT'S FACILITY, THE TRAINING NECESSARY TO FAMILIARIZE THE CLIENT PERSONNEL WITH THE LIGHTING CONTROL SYSTEM OPERATION, ADJUSTMENT, AND PROBLEM RESOLUTION OF THE OCCUPANCY/VACANCY SENSORS AND SYSTEM.

17.ALL "EM", AND EXIT LIGHT FIXTURES SHALL BE EQUIPPED WITH A EMERGENCY BATTERY BALLAST/DRIVER WITH 90 MINUTES OF BACK-UP TIME, LED INDICATION LIGHT, AND PUSH-TO-TEST BUTTON.

18.ANY "SWITCHED" ROOMS WITH EMERGENCY LIGHTING FED VIA EMERGENCY CIRCUIT OR INVERTER (NOT BATTERY BACKUP) SHALL BE EQUIPPED WITH A TRANSFER SWITCH RELAY (BODINE GTD OR APPROVED EQUAL) AT EACH FIXTURE IN THE EVENT OF A POWER OUTAGE.

19.PROVIDE UNSWITCHED HOT LEG FOR ALL NIGHT LIGHTS, EXIT LIGHTS, AND EMERGENCY BATTERY PACKS.

20.COORDINATE FIXTURE TYPES, MODEL NUMBERS AND COMPATIBILITY WITH DROP CEILING WITH THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.

21.COLOR AND RENDERING INDEX OF ALL FLUORESCENT LAMPS SHALL BE SELECTED BY ARCHITECT.

22.CONTRACTOR SHALL CLEAN & RE-LAMP ALL EXISTING LIGHTING FIXTURES BEING RE-USED AS PART OF THIS PROJECT. COORDINATE EXACT LAMPING REQUIREMENTS IN FIELD WITH EXISTING LIGHTING FIXTURES.

23.ANY BALLASTS THAT ARE NOT FUNCTIONING WITHIN EXISTING LIGHTING FIXTURES SHALL BE REPLACED AS REQUIRED. CONTRACTOR SHALL PROVIDE A UNIT PRICE TO REPLACE ALL LAMPS AND BALLASTS PER FIXTURE.

ACCORDINGLY IN THE FIELD TO BALANCE THE CIRCUITS EVENLY ON ALL PHASES.

EQUIPMENT AS SHOWN.

20. 3/4" SHALL BE THE MINIMUM CONDUIT INSTALLED.

19. CIRCUITS ARE DESIGNATED BY THE NUMBER SHOWN ADJACENT TO EACH RECEPTACLE. WIRING IS SHOWN

21. ALL VOICE AND DATA CABLING SHALL BE PROVIDED BY OTHERS. THIS ELECTRICAL CONTRACTOR IS ONLY

RESPONSIBLE FOR PROVIDING CONDUIT AND BACKBOXES ASSOCIATED WITH VOICE AND DATA. REFER TO

TELECOM DRAWINGS FOR ADDITIONAL ELECTRICAL REQUIREMENTS. SUBMIT BID ACCORDINGLY.

ONLY UNDER SPECIAL CIRCUMSTANCES. PROVIDE CONDUITS, WIRES, AND BOXES REQUIRED TO ENERGIZE THE

CONDITIONS AND PROJECT SCOPE. DEVELOP AND DOUBLE CHECK RESPECTIVE METHODS OF PROCEDURE

10. UON, EXISTING OUTLETS NOT SHOWN ON THIS PLAN, WITHIN AREAS OF WORK, ARE TO REMAIN - PROTECT

11. CIRCUIT ALL NEW OUTLETS PER CIRCUITING NOTES. ALL OUTLETS (NEW AND EXISTING) SHALL BE LABELED

PROVIDE AS-BUILT DRAWINGS SHOWING FINAL CIRCUIT NUMBERS OF ALL DEVICES AT COMPLETION OF WORK.

WITH ITS SOURCE PANEL AND CIRCUIT NUMBER. SEE DEMOLITION PLAN FOR CIRCUIT TRACING SCOPE.

(MOP) PRIOR TO PERFORMING WORK.

AND MAINTAIN AS REQUIRED.

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**REVISIONS** 

# **CONSTRUCTION SET**

# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

**IIO HIGH STREET, BOSTON MA** 

TITLE

ELECTRICAL FIRST FLOOR POWER PLAN

DATE

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FOR CONSTRUCTION

# FIRE ALARM SPECIFICATIONS (283111)

- A. THIS SECTION INCLUDES MODIFICATION OF THE EXISTING BUILDING FIRE ALARM SYSTEM. THE EXISTING FIRE ALARM SYSTEM IS AN ADDRESSABLE VOICE EVACUATION 4 WIRE MULTIPLEX SYSTEM MANUFACTURED BY SIMPLEX/GRINNELL.
- **B. SHOP DRAWINGS:**
- 1. WIRING DIAGRAMS: PROVIDE DETAILED WIRING DIAGRAMS THAT DIFFERENTIATE BETWEEN MANUFACTURER INSTALLED AND FIELD-INSTALLED WIRING. INCLUDE DIAGRAMS DEPICTING ALL SYSTEM PANELS, DEVICES, ETC., WITH ALL TERMINALS AND INTERCONNECTIONS IDENTIFIED.
- 2. DEVICE ADDRESS LIST: COORDINATE SYSTEM PROGRAMMING, COORDINATED DEVICE ADDRESS LIST, CONNECTIONS OF ALL EQUIPMENT, AND SEQUENCE OF OPERATIONS WITH THE BUILDING FIRE ALARM VENDOR AND/OR MAINTENANCE CONTRACTOR. THEIR WORK SHALL BE INCLUDED AS PART OF THIS CONTRACT.
- C. MANUFACTURER QUALIFICATIONS: ALL EQUIPMENT SHALL BE COMPATIBLE WITH THE EXISTING BUILDING FIRE ALARM SYSTEM OR APPROVED EQUAL.
- D. COMPLIANCE WITH LOCAL REQUIREMENTS: COMPLY WITH NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), LOCAL ORDINANCES AND REGULATIONS, REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION AND LOCAL BUILDING CODE.
- E. PROVIDE NEW AND/OR UPGRADED POWER SUPPLIES AS NECESSARY TO SUPPORT THE INSTALLED SYSTEM. SUBMIT BATTERY CALCULATIONS AS PART OF THE SHOP DRAWING SUBMITTAL PACKAGE.
- F. ADDRESSABLE MANUAL DOUBLE ACTION PULL STATIONS SHALL BE ADA COMPLIANT.
- G. PRIMARY NOTIFICATION APPLIANCES: PROVIDE RED FLUSH OR SURFACE MOUNTED COMBINATION AUDIO/VISUAL SIGNALING APPLIANCES (AS REQUIRED BY SITE CONDITIONS) TO MATCH EXISTING SYSTEM. STAND-ALONE DEVICES MAY BE USED TO AUGMENT COMBINATION UNITS WHERE SHOWN OR REQUIRED. THE CONTRACTOR SHALL PROVIDE SURFACE MOUNT BACKBOXES AND OUTDOOR-RATED APPLIANCES WHERE AMBIENT CONDITIONS DICTATE. MINIMUM AUDIBLE AND VISUAL CHARACTERISTICS ARE AS FOLLOWS:
- 1. VISUAL SIGNALS: PROVIDE SYNCHRONIZED FLASHING XENON STROBES IN COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) APPLICATIONS GUIDELINES. VISUAL SIGNALS SHALL HAVE A MINIMUM EFFECTIVE INTENSITY RATING OF 15 CANDELA, EXCEPT PROVIDE 30, 75 OR 110 CANDELA AS OTHERWISE SHOWN ON DRAWINGS IN ACCORDANCE WITH NFPA 72. STROBES SHALL PRODUCE A MINIMUM OF ONE FLASH (MAXIMUM OF THREE) PER SECOND ACROSS THE LISTED VOLTAGE RANGE.
- 2. VOICE EVACUATION SPEAKERS: PROVIDE 4-INCH SPEAKERS SUITABLE FOR CONTINUOUSLY SUPERVISED CIRCUITRY WHERE INDICATED AND REQUIRED. SPEAKERS SHALL BE RED WITH A MINIMUM OF FOUR ADJUSTABLE POWER TAPS OF 1/4, 1/2, 1 AND 2 WATTS. EACH SPEAKER SHALL HAVE A FREQUENCY RESPONSE RANGE OF 400 TO 4000 HZ AND A SOUND OUTPUT LEVEL OF 84DB AT THE 1-WATT TAP SETTING. PROVIDE SURFACE MOUNT BACKBOXES WHERE REQUIRED. THE INSTALLATION SHALL UTILIZE FLEXIBLE CONDUIT CONNECTIONS AND ENCLOSED WIRING TERMINALS.
- H. VOICE EVACUATION:
- 1. PROVIDE A VOICE EVACUATION FIRE ALARM SYSTEM AS PART OF THE MAIN BUILDING FIRE ALARM SYSTEM.
- 2. SYSTEM SHALL ACTIVATE UPON ANY ALARM IN THE BUILDING. LOCATE MICROPHONE IN FIRE ALARM CONTROL PANEL/FIRE COMMAND CENTER AS DIRECTED BY THE LOCAL FIRE DEPARTMENT.
- 3. SYSTEM SHALL HAVE A DIGITALLY RECORDED MESSAGE ON PROGRAMMABLE READ ONLY MEMORY (PROM). THE MESSAGE SHALL BE GIVEN BY A FEMALE VOICE. THE

- SHALL BE AS REQUIRED BY THE LOCAL FIRE DEPARTMENT AND LOCAL AND STATE REGULATIONS. PROVIDE VOICE OVERRIDE. THE MICROPHONE SHALL BE USABLE WITH OR WITHOUT AN ALARM CONDITION. ALARM SHALL BE A SLOW-WHOOP ALARM WHEN THE MESSAGE IS NOT PLAYING.
- 4. PROVIDE TONE GENERATOR PRE-AMPLIFIER FOR AUXILIARY AUDIBLE ALERT OVER THE AREA OF ASSEMBLY AREA SPEAKERS AS INDICATED ON THE DRAWINGS AS AN ALL CALL DURING AN ALARM CONDITION. PREAMPLIFIER SHALL BE NRTL LISTED AND TESTED TO UL 864 AS A FIRE SIGNALING SYSTEM. SPEAKER LIGHTS SHALL BE UTILIZED.
- I. FIRE DEPARTMENT REQUIREMENTS:
- 1. COORDINATE WITH AND PROVIDE ALL ITEMS REQUIRED BY THE LOCAL FIRE DEPARTMENT. PAY ALL COSTS.
- 2. CONFIRM LOCATION OF OUTSIDE BEACON (IF REQUIRED), CABLE TERMINATIONS (IF REQUIRED) AND OPERATIONS WITH LOCAL FIRE DEPARTMENT AND PAY ALL BACK CHARGES.
- J ALL WIRING FOR THE SYSTEM SHALL BE IN ACCORDANCE WITH ALL CODE AND LOCAL REGULATIONS INCLUDING ARTICLES 760, 725, AND 800 OF THE NATIONAL ELECTRICAL
- K. PROVIDE COMPLETE WIRING BETWEEN ALL EQUIPMENT. ALL DEVICES SHALL BE MOUNTED UPON AND TERMINATIONS MADE IN NRTL LISTED BOXES. WIRING SPLICES AND TRANSPOSING OR CHANGING OF COLORS SHALL NOT BE PERMITTED.
- L. USE 14 AWG MINIMUM SIZE SOLID CONDUCTORS FOR FIRE ALARM DETECTION AND SIGNAL CIRCUIT CONDUCTORS UNLESS OTHERWISE REQUIRED BY THE MANUFACTURER. USE SHIELDED WIRING FOR INITIATING AND COMMUNICATION (DATA AND VOICE) CIRCUITS. PROVIDE SEPARATE CONDUITS OR CABLES FOR TRUNKS (COMMUNICATION BETWEEN PANELS), SIGNALING AND INITIATING CIRCUITS.
- M. PROVIDE SHIELDED WIRE FOR ALL SPEAKER CIRCUITS.
- N. TERMINATE CONDUCTORS USING RING TYPE COMPRESSION CONNECTORS ON LABELED AND NUMBERED TERMINAL BLOCKS. DO NOT SPLICE CONDUCTORS, LABEL CONDUCTORS AT ALL TERMINATIONS WITH TERMINAL NUMBER AND SYSTEM NUMBER.
- O. WIRING FOR THE FIRE ALARM SYSTEM SHALL BE IN TYPE MC CABLE, EXCEPT COMMUNICATIONS WIRING BETWEEN TRANSPONDER AND BETWEEN PANELS SHALL BE IN CONDUIT (3/4" DIA. MINIMUM). EMERGENCY CONTROL WIRING SHALL BE IN 2 HOUR RATED MI CABLE.
- P. FIRE ALARM WIRING SHALL BE INSTALLED IN A LOOP CONFIGURATION SO THAT ANY ONE BREAK IN THE LOOP SHALL ALLOW ALL DEVICES TO CONTINUE OPERATING NORMALLY. PROVIDE DIVERSE AND SEPARATE ROUTING AND SEPARATE RISER LOCATIONS MAINTAINING MAXIMUM SEPARATION SO THAT ONE EVENT SHALL NOT DISABLE LOOP.
- Q. FIRE ALARM JUNCTION BOXES AND TERMINAL CABINETS SHALL HAVE A CAPACITY FORTY PERCENT GREATER THAN THAT REQUIRED FOR THE WIRING AND TERMINAL BLOCKS. PAINT J-BOXES OR CABINETS FIRE ALARM RED AND IDENTIFY CABINETS WITH WHITE LETTERING ON THE COVER "FIRE ALARM SYSTEM". INDICATE LOCATIONS OF TERMINAL BOXES AND CABINETS ON RECORD DRAWINGS.
- R FIRE ALARM CONTROL SYSTEMS AND EQUIPMENT SHALL BE CONNECTED TO SEPARATE DEDICATED BRANCH CIRCUITS, SIZED AS REQUIRED FOR PROPER SERVICE. CIRCUITS SHALL BE LABELED 'FIRE ALARM'. PROVIDE CIRCUIT BREAKER LOCK ON DEVICES FOR EACH CIRCUIT BREAKER.
- S. PROVIDE NAME PLATES ON REMOTE STATUS LIGHTS AND TEST STATIONS AS TO UNIT
- U. AUDIBLE DEVICES SHALL BE SET FOR THE FOLLOWING MINIMUM DB LEVELS:
- 1. GENERAL AREAS 100 dB AT TEN FEET.

2. SET AS REQUIRED BY THE FIRE DEPARTMENT.

- V. VISUAL DEVICES SHALL HAVE MINIMUM EFFECTIVE INTENSITY RATINGS AS FOLLOWS:
- 1. ASSEMBLY AREAS 110 CANDELA. 2. AREA OVER 100 FEET IN BOTH DIRECTIONS - 110 CANDELA

- 5. EXTERIOR 110 CANDELA (EXCEPT ROTATING BEACON IS 150,000 CANDELA).
- W. LOCATE REMOTE INDICATING DEVICES (PILOT LIGHTS) OUTSIDE OF ROOM IN NORMAL VIEW ABOVE DOOR TO ISOLATED SPACE, ON CEILING, OR ON WALL AT SIX FEET (2M) ABOVE FINISHED FLOOR IN LOCATIONS APPROVED BY THE ARCHITECT.
- 1. PROVIDE EXTRA MATERIALS AS INDICATED BELOW:
- a. PROVIDE ONE SPARE SIGNALING AND INITIATION MODULE FOR EACH TYPE REQUIRED.
- b. 2 PULL STATIONS.
- c. 2 SMOKE DETECTORS AND BASES.
- d. 2 STROBE ONLY DEVICES. e. 2 SPEAKER/STROBE DEVICES.
- Y. MANUFACTURER'S FIELD SERVICES:
- 1. PROVIDE MANUFACTURER CERTIFIED AND TRAINED TECHNICIANS AND REPRESENTATIVES FOR TESTING, SUPERVISION AND ASSISTANCE IN THE INSTALLATION OF THE FIRE ALARM SYSTEM. CONNECTIONS AND TERMINATIONS SHALL BE MADE UNDER THE DIRECT SUPERVISION OF THE FIRE ALARM MANUFACTURER. EQUIPMENT MANUFACTURER SHALL BE RESPONSIBLE FOR TESTS, PROGRAMMING, ADJUSTMENT AND CALIBRATION OF THE EQUIPMENT.
- Z. ACCEPTANCE TESTING:

X. EXTRA MATERIALS:

- 1. PRE-TEST THE ENTIRE SYSTEM AND ALL FUNCTIONS TO VERIFY COMPLETE OPERATION. AFTER CORRECT OPERATION IS VERIFIED, NOTIFY THE FIRE DEPARTMENT, TESTING COMPANY AND THE ARCHITECT THAT SYSTEM IS COMPLETE AND READY FOR ACCEPTANCE TESTING. PROVIDE TESTING AT A TIME MUTUALLY AGREEABLE TO ALL PARTIES. PROVIDE A MINIMUM ONE WEEK NOTICE.
- 2. TESTING SHALL BE AS REQUIRED BY THE FIRE DEPARTMENT, LOCAL AUTHORITIES, THE OWNER AND THE ARCHITECT. AT A MINIMUM, OPERATE EVERY BUILDING FIRE ALARM DEVICE TO ENSURE PROPER OPERATION, CORRECT ANNUNCIATION AT EACH REMOTE ANNUNCIATOR AND CONTROL PANEL. THE INITIATING CIRCUIT AND SIGNALING CIRCUITS SHALL BE OPENED IN AT LEAST TWO LOCATIONS PER ZONE TO CHECK TO THE PRESENCE OF CORRECT SUPERVISORY CIRCUITRY.
- 3. THE ENTIRE FIRE ALARM SYSTEM SHALL BE TESTED BY SMOKE OR HEAT ACTIVATION OF EACH DEVICE AND SYSTEM SHORT CIRCUITING AT EACH REMOTE TEST POINT OF INITIATING ZONE AND ALARM CIRCUITS. TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE PROJECT FOREMAN, THE OWNER'S REPRESENTATIVE, FIRE AUTHORITY OF THE FIRE JURISDICTION AND THE REPRESENTATIVE OF THE FIRE ALARM SYSTEM MANUFACTURER.
- 4. THE ENTIRE SYSTEM SHALL BE MARKED PER DEVICE CIRCUIT TO INDICATE FUNCTION AND OPERATION FROM MANUFACTURER'S POINT-TO-POINT WIRING DIAGRAMS. DRAWINGS SHALL BE SIGNED BY THE INSTALLER, MANUFACTURER AND UL CERTIFIED TESTING COMPANY AND THE FIRE DEPARTMENT'S REPRESENTATIVE.
- 5. UPON COMPLETION OF TESTING, CO-SIGNED DRAWINGS AND REPORTS SHALL BE FORWARDED TO THE ARCHITECT FOR RECORD PURPOSES FOR FINAL ACCEPTANCE. TESTING AND REPORTS SHALL COMPLY WITH NFPA 72 STANDARD REQUIREMENTS.
- 6. PROVIDE UL CERTIFICATION OF THE SYSTEM.
- 7. PAY ALL COSTS FOR CERTIFICATION, TESTING AND FIRE DEPARTMENT APPROVALS.
- 8. LEAVE THE FIRE ALARM SYSTEM IN PROPER WORKING CONDITION.
- 9. PROVIDE COPIES OF TESTING REPORTS AND UL CERTIFICATION IN THE O & M MANUALS.

## FIRE DEPARTMENT NOTES

- 1. REFER TO FIRE PROTECTION NARRATIVE FOR FIRE ALARM NARRATIVE.
- 2. THE DOCUMENT SUBMITTAL PROCESS SHALL CONSIST OF THREE (3) TIERS AS REQUIRED BY THE MASSACHUSETTS STATE BUILDING CODE 9th EDITION, SECTION 780 CMR 901.2.1.
- a. TIER ONE (CONSTRUCTION DOCUMENTS): THESE CONSTRUCTION DOCUMENTS ARE BEING SUBMITTED IN ACCORDANCE WITH THE MASSACHUSETTS STATE BUILDING CODE. THE REQUIREMENTS INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
- a.a. FLOOR PLANS INDICATING THE USE OF ALL ROOMS.
- a.b. LOCATIONS OF ALARM-INITIATING DEVICES.
- a.c. LOCATIONS OF ALARM NOTIFICATION APPLIANCES, INCLUDING CANDELA RATINGS FOR VISIBLE ALARM NOTIFICATION APPLIANCES.
- a.d. LOCATION OF FIRE ALARM CONTROL UNIT, TRANSPONDERS AND NOTIFICATION POWER SUPPLIES.
- a.e. POWER SOURCE FOR ALL PANELS AND POWER SUPPLIES.
- a.f. INTERFACE OF FIRE SAFETY CONTROL FUNCTIONS SUCH AS DOOR UNLOCKING, SOUND SYSTEM SHUT-OFF AND ILLUMINATION TO 100% (WHERE REQUIRED)
- b. <u>TIER TWO</u> (SHOP DRAWINGS): CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE BUILDING OFFICIAL AND FIRE OFFICIAL AND SHALL CONTAIN, BUT NOT BE LIMITED TO:
- b.a. DETAILED DESIGN LAYOUT INCLUDING A NON-TYPICAL RISER
- b.b. BATTERY CALCULATIONS AND VOLTAGE DROP CALCULATIONS.
- b.c. MANUFACTURERS DATA SHEETS INDICATING MODEL NUMBERS AND LISTING INFORMATION FOR EQUIPMENT, DEVICES AND MATERIALS.
- b.d. SYSTEM SEQUENCE OF OPERATION.
- b.e. ANALYSIS TO SUBSTANTIATE THE DESIGN.
- b.f. NAME(S), LICENSE NUMBER(S) AND LICENSE EXPIRATION DATE(S) OF THE CONTRACTOR(S) INSTALLING THE PROTECTION SYSTEMS.
- b.g. DESIGN PROFESSIONALS SUBMITTAL REVIEW STAMP.
- c. <u>TIER THREE</u> (RECORD DRAWINGS): CONTRACTOR SHALL PROVIDE AS BUILT PLANS TO THE BUILDING OWNER FOR ALL FIRE PROTECTION AND LIFE SAFETY SYSTEMS AND SHALL CONTAIN, BUT NOT BE LIMITED TO:
- c.a. AS-BUILT PLANS INDICATING INSTALLED CONDITIONS, DEVICE ADDRESSES. FINAL TAP SETTINGS AND AUDIBLE AMBIENT AND TEST DB READINGS THROUGHOUT THE SPACE.
- c.b. SYSTEM SEQUENCE OF OPERATION
- c.c. O&M MANUAL PER NFPA 72 REQUIREMENTS.
- c.d. SYSTEM RECORD OF COMPLETION FORM PER NFPA 72.
- c.e. SYSTEM RECORD OF INSPECTION AND TESTING FORM PER NFPA 72.

# ADDITIONAL FIRE ALARM SCOPE

FIRE ALARM SHEET LIST

zzzFA-401 FIRE ALARM DETAILS

FIRE ALARM SEQUENCE OF OPERATIONS

FIRE ALARM FIRST FLOOR CONSTRUCTION PLAN

NUMBER

CONTRACTOR SHALL CARRY THE COST TO DISCONNECT, REMOVE AND REPLACE ALL EXISTING AUDIO/VISUAL DEVICES, ON THE PROJECT FLOOR(S), BEING SHALL MATCH EXISTING. CONTRACTOR SHALL COORDINATE EXACT QUANTITY IN FIELD. IN THE CASE THAT THE EXISTING DEVICE IS ABLE TO SYNCHRONIZE WITH ALL NEW AND EXISTING DEVICES ON THE PROJECT FLOOR(S), CONTRACTOR SHALL PROVIDE A DEDUCT-ALTERNATE TO RE-USE EXISTING DEVICE AND NOT PROVIDE NEW. CONTRACTOR SHALL COORDINATE EXACT REQUIREMENTS IN FIELD TO ENSURE THAT ALL AUDIO/VISUAL DEVICES ARE SYNCHRONIZED. PROVIDE UNIT COST FOR ADDITIONAL DEVICES NOT SHOWN ON PLAN.

SHEET NAME

FIRE ALARM NOTES, SYMBOLS, PARTIAL RISER DIAGRAM & ABBREVTIATIONS

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# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

**IIO HIGH STREET, BOSTON MA** 

TITLE

FIRE ALARM NOTES, SYMBOLS, PARTIAL RISER DIAGRAM & ABBREVTIATIONS

**DATE** 

**JOB** NO.

10/17/2018

**DRAWING NO.** 

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FOR CONSTRUCTION

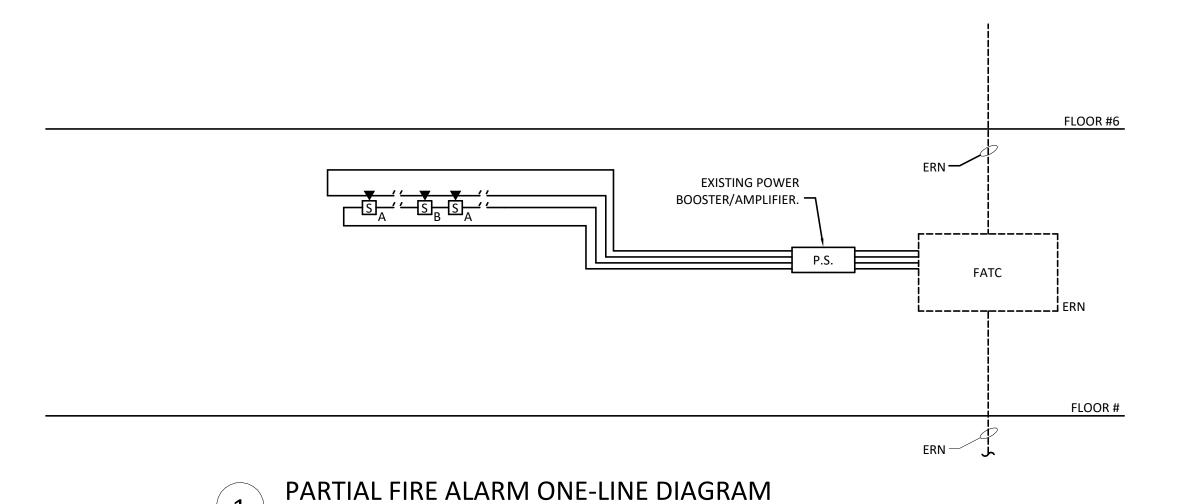
# FIRE DEPARTMENT NOTES

- 1. REFER TO FIRE PROTECTION NARRATIVE FOR FIRE ALARM NARRATIVE.
- 2. THE DOCUMENT SUBMITTAL PROCESS SHALL CONSIST OF THREE (3) TIERS AS REQUIRED BY THE MASSACHUSETTS STATE BUILDING CODE 8TH EDITION, SECTION 780 CMR 901.2.1.
- a. TIER ONE (CONSTRUCTION DOCUMENTS): THESE CONSTRUCTION DOCUMENTS ARE BEING SUBMITTED IN ACCORDANCE WITH THE MASSACHUSETTS STATE BUILDING CODE. THE REQUIREMENTS INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
- a.a. FLOOR PLANS INDICATING THE USE OF ALL ROOMS.
- a.b. LOCATIONS OF ALARM-INITIATING DEVICES.
- a.c. LOCATIONS OF ALARM NOTIFICATION APPLIANCES, INCLUDING CANDELA RATINGS FOR VISIBLE ALARM NOTIFICATION APPLIANCES.
- a.d. LOCATION OF FIRE ALARM CONTROL UNIT, TRANSPONDERS AND NOTIFICATION POWER SUPPLIES.
- a.e. POWER SOURCE FOR ALL PANELS AND POWER SUPPLIES.
- a.f. INTERFACE OF FIRE SAFETY CONTROL FUNCTIONS SUCH AS DOOR UNLOCKING, SOUND SYSTEM SHUT-OFF AND ILLUMINATION TO 100% (WHERE REQUIRED)
- b. TIER TWO (SHOP DRAWINGS): CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE BUILDING OFFICIAL AND FIRE OFFICIAL AND SHALL CONTAIN, BUT NOT BE LIMITED TO:
- b.a. DETAILED DESIGN LAYOUT INCLUDING A NON-TYPICAL RISER
- b.b. BATTERY CALCULATIONS AND VOLTAGE DROP CALCULATIONS.
- b.c. MANUFACTURERS DATA SHEETS INDICATING MODEL NUMBERS AND LISTING INFORMATION FOR EQUIPMENT, DEVICES AND MATERIALS.
- b.d. SYSTEM SEQUENCE OF OPERATION.
- b.e. ANALYSIS TO SUBSTANTIATE THE DESIGN.
- b.f. NAME(S), LICENSE NUMBER(S) AND LICENSE EXPIRATION DATE(S) OF THE CONTRACTOR(S) INSTALLING THE PROTECTION SYSTEMS.
- b.g. DESIGN PROFESSIONALS SUBMITTAL REVIEW STAMP.
- c. <u>TIER THREE</u> (RECORD DRAWINGS): CONTRACTOR SHALL PROVIDE AS BUILT PLANS TO THE BUILDING OWNER FOR ALL FIRE PROTECTION AND LIFE SAFETY SYSTEMS AND SHALL CONTAIN, BUT NOT BE LIMITED TO:
- c.a. AS-BUILT PLANS INDICATING INSTALLED CONDITIONS, DEVICE ADDRESSES, FINAL TAP SETTINGS AND AUDIBLE AMBIENT AND TEST DB READINGS THROUGHOUT THE SPACE.
- c.b. SYSTEM SEQUENCE OF OPERATION.
- c.c. O&M MANUAL PER NFPA 72 REQUIREMENTS.
- c.d. SYSTEM RECORD OF COMPLETION FORM PER NFPA 72.
- c.e. SYSTEM RECORD OF INSPECTION AND TESTING FORM PER NFPA 72.

SYMBOL	DESCRIPTION
<b>⑤</b>	ADDRESSABLE AREA SMOKE DETECTOR: CEILING MOUNTED
θ	ADDRESSABLE AREA HEAT DETECTOR: CEILING MOUNTED
⑤ <sub>EL</sub>	VERIFICATION TYPE ADDRESSABLE ELEVATOR LOBBY/ELEVATOR MACHINE ROOM SMOKE DETECTOR: CEILING MTD. (IONIZATION TYPE)
(FD)	ULTRA VIOLET FLAME DETECTOR: CEILING MOUNTED. DETRONICS MODEL XP2000.
S R S	ADDRESSABLE DUCT SMOKE DETECTOR - "S" INDICATES LOCATION WITHIN SUPPLY DUCTWORK. "R" INDICATES LOCATION WITHIN RETURN DUCTWORK. FURNISHED AND WIRED UNDER DIVISION 26 (ELECTRICAL), INSTALLED UNDER DIVISION 23 (HVAC).
	REMOTE TEST SWITCH S - DENOTES SUPPLY SIDE R - DENOTES RETURN SIDE
F	ADDRESSABLE MANUAL PULL STATION: DOUBLE ACTION TYPE
Ä	REMOTE INDICATOR LIGHT FLUSH WALL MOUNTED
WF	SPRINKLER WATERFLOW SWITCH
TS	SPRINKLER VALVE TAMPER SWITCH
PS	SPRINKLER PRESSURE SWITCH
▼ 30cd S	FIRE ALARM SYSTEM SPEAKER/STROBE DEVICE, WALL MOUNTED, RED - 1/2 WATT TAP U.O.N. CANDELA RATING AS INDICATED
● 30cd ST	FIRE ALARM SYSTEM STROBE ONLY DEVICE, WALL MOUNTED, RED. CANDELA RATING AS INDICATED
30cd	FIRE ALARM SYSTEM SPEAKER/STROBE DEVICE CEILING MOUNTED, RED - 1/2 WATT TAP U.O.N. CANDELA RATING AS INDICATED
30cd	FIRE ALARM SYSTEM STROBE ONLY DEVICE, CEILING MOUNTED, RED. CANDELA RATING AS INDICATED.
FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINAL CABINET
RAN	REMOTE ANNUNCIATOR PANEL
CM	ADDRESSABLE CONTROL RELAY/OUTPUT MODULE
MM	ADDRESSABLE INTERFACE INPUT MONITOR MODULE (SINGLE OR DUAL INPUT)
FSD ⊬	FIRE SMOKE DAMPER, SWITCH. T - INDICATES CIRCUIT NUMBER

EXISTIN	G FIRE ALARM EQUIPMENT LEGEND
SYMBOL	DESCRIPTION
E	EXISTING DEVICE/EQUIPMENT TO REMAIN.
х	EXISTING EQUIPMENT SHALL BE DISCONNECTED AND REMOVED. CUT BACK AND MAKE SAFE ALL ASSOCIATED BRANCH CIRCUIT WIRING CONDUIT BACK TO POWER SOURCE AND LABEL BREAKER IN PANELBOARD AS SPARE. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CIRCUITRY TO DEVICES UNAFFECTED BY DEMOLITION.
ER	EXISTING EQUIPMENT SHALL BE DISCONNECTED, REMOVED AND RELOCATED AS SHOWN. CUT BACK AND/OR EXTEND EXISTING BRANCH CIRCUIT WIRING AND CONDUIT AS REQUIRED SO AS TO PROVIDE A COMPLETE OPERATIONAL INSTALLATION

NEW LOCATION OF RELOCATED EXISTING EQUIPMENT.



		(	CONTROL UNIT ANNUNCIATION						NOTIFICATION				REQUIRED FIRE SAFETY CONTROL					SUPPLEMENTORY		
		ACTUATE COMMON ALARM SIGNAL INDICATOR	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE COMMON TROUBLE SIGNAL	ACTUATE FLOOR ALARM INDICATOR	ACTUATE FLOOR EVACUATION SIGNALS FOR FLOORS OF INCIDENT, FLOOR ABOVE AND BELOW	TRANSMIT FIRE ALARM SIGNAL TO SUPERVISING STATION	TRANSMIT SUPERVISORY SIGNAL TO SUPERVISING STATION	TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION	RELEASE MAGNETICALLY HELD SMOKE DOORS	RECALL ELEVATOR TO PRIMARY RECALL FLOOR	UNLOCK EXITS	ACTIVATE SMOKEPROOF ENCLOSURE VENTILATION	MUTE AUDIO OF AV SYSTEMS	ACTUATE EXTERIOR STROBE AT F.D. BEACON	CONTROL SIGNAL TO AHU	
		Α	В	С	D	Е	F	G	Н	ı	J	K	L	М	N	0	Р	Q	R	
1	MANUAL FIRE ALARM PULL BOXES	•	•					•	•	•			•		•	•	•	•		
2	SMOKE DETECTORS	•	•					•	•	•			•		•	•	•	•		
3	SMOKE DETECTORS ELEVATOR LOBBY & MACHINE ROOM	•	•					•	•	•			•	•	•	•	•	•		
4	DUCT TYPE SMOKE DETECTORS	•	•					•	•	•			•		•	•	•	•	•	
5	HEAT DETECTORS	•	•					•	•	•			•		•	•	•	•		
6	SPRINKLER WATERFLOW SWITCHES	•	•					•	•	•			•		•	•	•	•		
7	SPRINKLER TAMPER SWITCHES			•	•						•									
8	FIRE ALARM AC POWER FAILURE			•	•						•									
9	FIRE ALARM SYSTEM LOW BATTERY					•	•					•								
10	OPEN CIRCUIT					•	•					•								
11	GROUND FAULT					•	•					•								
12	NOTIFICATION APPLIANCE CIRCUIT SHORT					•	•					•								



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**CONSTRUCTION SET** 

# 110 HIGH STREET - 6TH FL **ROOF DECK**

JONES LANG LASALLE

110 HIGH STREET, BOSTON MA

TITLE

FIRE ALARM SEQUENCE OF OPERATIONS

DATE

**JOB** NO.

02DBA.180716 10/17/2018

**DRAWING NO.** 

FOR CONSTRUCTION

# LE ERN 9 110cd **S** 110cd **A** 10

# # FIRE ALARM KEY NOTES 1 PROVIDE WEATHERPROOF TYPE NOTIFICATION APPLIANCES 2

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**REVISIONS** 

**CONSTRUCTION SET** 

# 110 HIGH STREET - 6TH FL ROOF DECK

JONES LANG LASALLE

110 HIGH STREET, BOSTON MA

TITLE

FIRE ALARM FIRST FLOOR CONSTRUCTION PLAN

DATE

JOB NO.

10/17/2018 02DBA.180716

DRAWING NO.

**FA-301** 

FOR CONSTRUCTION