



**State of Rhode Island
Department of Administration / Division of Purchases
One Capitol Hill, Providence, Rhode Island 02908-5855
Tel: (401) 574-8100 Fax: (401) 574-8387**

**Solicitation Information
February 14, 2013**

ADDENDUM # 1

RFQ# 7506367PHSE2

**CONSTRUCTION NEW LGBTQ CENTER, INCLUDE DEMOLITION RUGGELS HOUSE –
URI**

BID OPENING: Friday February 21, 2014 at 11:00 am (Local Time)

Notice to Vendors:

**ATTACHED INCLUDES ADDITIONAL INFORMATION AND
CLARIFICATION**

**INTERESTED PARTIES SHOULD MONITOR THE WEBSITE FOR ANY INFORMATION
CONTRACTORS MUST COMPLY WITH THE STATE'S PUBLIC COPY REQUIREMENT**

**Thomas Bovis
Interdepartmental Project Manager**

Solicitation Number:
7506367PHSE2

Addendum #1

Date 12 November 2013
Project 1203 URI- LGBTQ Center
Description Addendum #1

To: All Prospective Bidders

From: LLB Architects

Part 1 - General

The attention of Bidders submitting proposals for the **LGBTQ Center** is called to the following Addendum to the Construction Documents and Project Manual Dated **January 28, 2014** prepared by LLB Architects

The items set forth herein, whether of revision, omission, addition, substitution, deletion, or clarification are all to be included in the bid.

The addendum modifies the original **Contract Documents and Project Manual** dated **January 28, 2014**. Portions of the Contract Documents and Project Manual not altered by this addendum shall remain in full force.

The number of the addendum (**Addendum No.1**) must be entered in the appropriate spaces on the required bid form(s).

Part 2 – Notes and Clarifications

1. Projection screen in Multi-Purpose Room 001 shall be provided and installed by the General Contractor. On Drawing D6/A4.01 and B1/A4.01 **DELETE** the following note "PROJECTION SCREEN N.I.C."
2. Bicycle Racks have been eliminated from the Project Scope. **DELETE** all references to bicycle racks as illustrated next to the enclosed dumpster area on site plans on drawings L2.00 and A6/A1.00
3. Countertop and backsplash in Kitchen Room 004H shall be Plastic Laminate. **DELETE** all notes referencing to granite countertop and backsplash in this room. Refer to SKA-003 for plastic laminate countertop and backsplash profiles.
4. **REVISE** Drawing Detail number "D1/A9.20" to "D2/A9.20"

Part 3 – Project Manual

Item #	Section#	Drawing Description
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Action

S01 00010 Table of Contents

REVISE

Division 28- Electronic Safety and Security "283111 URI MASTER Fire Alarm" to "283700 Fire Alarm"

S02 00100 Invitation to Bid

REVISE Project Description

Complete new construction of 4,303 square foot, one story, wood framed building, including all essential mechanical, plumbing, fire protection, HVAC, electrical systems, and site work.

S03 00410 Bid Form **(REISSUED IN ENTIRETY)**

S04 01201 Attachment A- Price and Payment Procedures

Part D. Alternates

ADD new Alternate #1 as follows:

1. Alternate 1: Add water-based fire suppression system as indicated on Drawings C-0.03 and FP-1.00 and Specification 211000, and all associated work required to install a fully automatic sprinkler system. Base bid is no fire service line, no sprinkler system, and no associated water-based fire suppression system work, but includes- additional heat detectors as noted on the revised Electrical drawings.

Renumber remaining alternates and paragraphs 2, 3 and 4 respectively.

S05 085200 Clad Wood Windows and Doors

DELETE the following statement from Part 1.5 A "... and who is certified for chain of custody by an FSC-accredited certification body."

DELETE Part 1.5 B

S06 115200 Audio Visual Equipment **(REISSUED IN ENTIRETY)**

S07 123640 Stone Countertops **(ISSUED IN ENTIRETY)**

S08 23816 Split-System Air Conditioners **(REISSUED IN ENTIRETY)**

S09 265100 Interior Lighting **(REISSUED IN ENTIRETY)**

S10 323210 Boulder Placement **(REISSUED IN ENTIRETY)**

Part 4 – Drawings ALL DRAWINGS ISSUED IN ENTIRETY

Item #	Drawing#	Drawing Description
		<u>Action</u>
D01	C0.03	Drainage Utility and Erosions and Sedimentation Control Plan (SEE REVISION CLOUDS)
D02	L1.00	Landscape Materials and Grading Plans (SEE REVISION CLOUDS)
D03	L1.01	Hardscape Details (SEE REVISION CLOUDS)
D04	L2.00	Landscape Plan (SEE REVISION CLOUDS)
D05	L2.01	Landscape Planting Details (SEE REVISION CLOUDS)
D06	S1.0	Foundation Plan (SEE REVISION CLOUDS)
D07	G0.01	REVISE Table of Contents- Delete Sheet A11.11 Signage
D08	A9.10	Opening Types (SEE REVISION CLOUDS)
D09	A11.10	Signage (SEE REVISION CLOUDS)
D10	A11.11	Signage (DELETED)
D11	M1.00	HVAC Plans (SEE REVISION CLOUDS)
D12	M2.00	Schedules and Details-HVAC (SEE REVISION CLOUDS)
D13	E2.00	Electrical Lighting, Power and Systems Plan (REISSUED IN ENTIRETY)
D14	E2.01	Electrical Fire Alarm and Mechanical Power Plans (REISSUED IN ENTIRETY)
D15	E3.01	Electrical Details (REISSUED IN ENTIRETY)
D16	AV000	AV Drawing List and Responsibility Schedule (REISSUED IN ENTIRETY)
D17	AV001	AV General Notes and Legend (REISSUED IN ENTIRETY)
D18	AV002	AV First Floor Scope (REISSUED IN ENTIRETY)
D19	AV101	Conference Room 002 (REISSUED IN ENTIRETY)
D20	AV102	Conference Room 002 AV Conduit Riser (REISSUED IN ENTIRETY)
D21	AV103	Multipurpose Room 001 (REISSUED IN ENTIRETY)

D22	AV104	Multipurpose Room 001 (REISSUED IN ENTIRETY)
D23	AV105	Multipurpose Room 001 AV Conduit Riser (REISSUED IN ENTIRETY)
D24	AVA	AV Details (REISSUED IN ENTIRETY)
D25	SKA-001	Partial First Floor Plan REVISES Detail A6/A1.00
D26	SKA-002	Access Panel at West Vestibule ADD Detail D3/A2.00 and REVISES Detail D4/A10.00
D27	SKA-003	Window A4 Enlarged Plan REVISES Detail A6/A6.00
D28	SKA-004	Wall Section at Window A4 REVISES Detail B3/A5.00
D29	SKA-005	Jamb and Corner Mullion detail at Multipurpose Room Window Box REVISES Detail C1/A9.20
D30	SKA-006	Window A4 Head and Sill Detail ADD Detail B2/A9.20
D31	SKA-007	Detail at Trellis Post REVISES Detail D4/A10.00
D32	SKA-008	Detail at Kitchen 004H countertop REVISES Detail A3/A11.01

End of ADDENDUM refer to attachments

Attachments

32 Drawings total

10 Specification Sections total

DOCUMENT 00410 - BID FORM

Date: _____

To: Dept. of Administration
 Division of Purchases
 One Capitol Hill
 Providence, RI 02908

Project: URI LGBTQ Center
 University of Rhode Island, Kingston Campus

Submitted by: _____
 (include address,
 tel. & FAX nos., _____
 and license no.
 if applicable) _____

1. **BID**

Having examined the Place of The Work and all matters referred to in the Bid Documents and in the Contract Documents prepared by LLB Architects for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:

_____ (\$ _____.)
 (written, and numerically)

- We have included the specified Allowances from Section 01200 in Division 1 of the Specifications in the above Bid sum as follows:

Hazardous Materials	\$5,000.00
Testing and Inspection	\$10,000.00
Site Utilities	\$5,000.00
<u>Sitework</u>	<u>\$10,000.00</u>
Total Allowances	\$30,000.00

- We have included the required Bid security in the above Bid Sum. We have included 100% Payment and Performance Bonds in the above Bid Sum.
- We have included the original Bid and required additional **“public copy”** if required by Document 00210 – Supplemental Instructions to Bidders.

2. ALTERNATES

We propose to modify the above Bid Sum by the following amount(s) as identified by (a) numbered Alternative(s) specified in Section 01200 of the Specifications, and as may be selected by the Owner:

Add Alternate No. 1 – Fire Suppression Sprinkler System and all associated work

Add: _____ (\$ _____.)
 (written, and numerically)

Add Alternate No. 2 – Landscape Plantings

Add: _____ (\$ _____.)
 (written, and numerically)

Add Alternate No. 3 – Motorized Shades in Multipurpose Room and Conference Room

Add: _____ (\$ _____.)
 (written, and numerically)

Add Alternate No. 4 – Exposed Aggregate Terrace

Add: _____ (\$ _____.)
 (written, and numerically)

3. UNIT PRICES

Per Section 01200, provide unit prices/SF or each as noted for the following items:

None.

4. ACCEPTANCE

This offer shall be open to acceptance and is irrevocable for sixty days from the bid closing date.

If this bid is accepted by the Owner within the time period stated above, we will:

- Proceed under the Agreement, subject to compliance with required State regulatory agency approvals as described in the Bid Documents.
- Furnish the required bonds in compliance with amended provisions of the Instructions to Bidders.
- Commence work within seven days after receipt of a Purchase Order from URI Purchasing.

If this bid is accepted within the time stated, and we fail to commence the Work, or we fail to provide the required Bonds, the security deposit shall be forfeited to the Owner by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.

In the event our bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

5. CONTRACT TIME

If this Bid is accepted, we will achieve Substantial Completion of the Work by December 21, 2014, with an anticipated P.O. issuance of March 21, 2014. We have included all premium time or additional staffing required to accommodate this schedule.

6. LIQUIDATED DAMAGES

Time is of the Essence: If we fail to achieve certification of Substantial Completion at the expiration of the agreed upon Contract Time indicated above, we acknowledge that we will be assessed Liquidated Damages for each calendar day the project continues to be in default of Substantial Completion, as follows:

\$ 250 per calendar day.

7. REQUIREMENT FOR LICENSE NUMBER

In compliance with the requirements of Rhode Island General Law, Section 5-65-23, my Rhode Island license number for the work to be performed by this firm as prime contractor is:

LICENSE NUMBER: _____ .

8. ADDENDA

The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.

Addendum No. 1, dated February 12, 2014.

9. BID FORM SIGNATURE(S)

(Bidder's name)

By: _____

Title: _____

Corporate Seal:

END OF DOCUMENT

SECTION 115200**AUDIO-VISUAL EQUIPMENT****PART 1 - GENERAL**

1.1 GENERAL PROVISIONS

- A. The Work of this Section includes furnishing and installing complete infrastructure required to support the audio-video (AV) components as described in these specifications and in the AV-series drawings, following all applicable Codes and Contract Documents. This work includes, but is not limited to, electrical power in conduit, junction boxes with blank-off plates, empty electrical boxes with conduit and pull strings for low voltage components, switches, and other equipment as noted in the Responsibility Schedule on Sheet AV000 and as shown on drawings, in particular the AV Conduit Riser drawings. Unless noted otherwise in Specifications or Drawings, assume each AV component will require one electrical junction box, supplied with power and blank-off plate, and one low-voltage box connected to empty conduit with pull strings. Empty conduit shall run from the device to the control zone as noted in these Specifications or shown on AV Drawings, credenza, wall box, or AV equipment closet. In addition to this minimum requirement, additional electrical and low-voltage requirements are included in these specifications and on the AV Drawings.
- B. These AV specifications are included to provide information about the AV components requiring this infrastructure; the AV components themselves will be purchased and installed under a future contract with a separate specification.**
- C. Projection Screen for the Multi-Purpose room will be provided and installed by the GC/EC.**

1.2 Scope of Work

- A. This document describes the products and execution requirements relating to furnishing and installing audiovisual equipment in support of the LGBTQ Center at the URI campus in Kingston, RI.
- B. The University of Rhode Island is building a new Center for the university's LGBTQ community. A new building, it is approximately 5,000 square feet and wood framed construction. Included in the AV scope of work are a Multi-purpose space and a Conference/Library space. Both spaces will receive audiovisual presentation systems for playback of computer and video sources. The Conference /Library will also have full video and audio teleconferencing capabilities.
- C. AV Contractors should examine all drawings and read all divisions of this specification in order to avoid omissions or duplications and to ensure a complete job. Discrepancies between drawings and specifications or obvious omissions shall be referred to ACT Associates in written form at least four business days prior to the bid due date.

- D. Failure to request clarifications will assume that the successful AV Contractor has a clear understanding of the entire project, and with that assumes the responsibility to ensure a complete and working system. Drawings pertaining to this specification shall be considered part of this specification. These drawings are not limited to all audiovisual drawings released with this specification.

1.3 Regulatory Requirements

- A. Work shall be carried out in conformance with applicable Building and Electrical Codes, the requirements of OSHA and the applicable provisions of Underwriters Laboratories (U.L.), ANSI, Electronic Industries Association, and National Fire Protection Association. All work shall be in accordance with all applicable codes, local, state, and national.
- B. Provide site labor compatible with on-site trade's people.
- C. In addition to conformance with the codes stated above, adhere to the following standards and practices in every aspect of the project:
 - 1. FCC-Federal Communications Commission
 - 2. AES-Audio Engineering Society
 - 3. BICSI- Building Industry Consulting Services International
 - 4. IEEE/ANSI –Recommended Practices for grounding
 - 5. AES-Audio Engineering Society
 - 6. SMPTE-Society of Motion Picture Engineers
- D. It is the awarded AV Contractor's responsibility to obtain any permits or certificates required for completing this project as well as associated costs.

1.4 Quality Assurance

- A. The client expects that the system shall comply in product, performance and practice as outlined within this specification. The AV Contractor shall certify compliance by furnishing affidavits prepared by individuals on behalf of the AV Contractor with recognized industry qualifications, namely CTS-D and/or CTS-I (Certified Technology Specialist Design, Installation). Affidavits shall reflect that the system passed a Design Review, Staging, and the Commissioning battery of tests without defect before the system can be accepted.
- B. In addition, some of the AV systems included in this RFP have been designed using Crestron Digital Media components. The systems were designed in accordance with the specifications and design criteria as documented in the Digital Media Design Guide. The installation of these systems must be installed and commissioned by a Digital Media Certified Engineer (DMC-E) prior to system acceptance by the consultant at the end of the project.
- C. Prospective bidders must attest that they possess, and are skilled in the use of, all the necessary test equipment for verifying that the performance of the system is in compliance with performance tests outlined within this document. The Bid Response must include the

name of the certified qualified individual(s) assigned to the project, so that credentials may be verified on the InfoComm International Association's website.

- D. No final payment will be made until the final system acceptance commissioning report has been signed by the AV Consultant and provided to the client or his representative. The AV Contractor's final payment may be offset by the cost of corrective actions as well as third party re-testing.

1.5 Project Meetings/Schedule

- A. The AV Contractor selected shall attend on-site project construction meetings as required by the Project Manager during the installation implementation phase. AV Project Manager will submit a weekly project status report detailing completed work, issues that need to be addressed, upcoming scheduled work, etc. This Project Status Report should be submitted each Monday morning during the entire course of the project. This is **MANDATORY**.
- B. It shall be the responsibility of the AV Contractor to cooperate with all appropriate parties in order to achieve a well-coordinated project and satisfactory final results. The AV contractor shall watch for conflicts with the work of other contractors on the job and execute moderate moves or changes as are necessary to accommodate other equipment, preserve symmetry, or aesthetic appearance.
- C. It shall be the responsibility of the AV Contractor to report any design or installation irregularities to the Project Manager immediately, including architectural elements that interfere with the proper installation and operation of any hardware or systems so that appropriate action may be taken.
- D. Equipment racks shall conform to any detailed drawings and/or millwork drawings, and allows for proper installation and serviceability.
- E. AV Contractor shall provide coordination that will be required for the proper integration of base building electrical, low voltage, conduits and back boxes, for audiovisual equipment in the floors, walls, and ceilings.
- F. Coordination is required among the AV Contractor, Architect, Electrical Contractor, and Millwork providers to ensure proper installation of all AV elements, equipment, accessories, 120V, and low-voltage wiring needs. Pre-purchase equipment needed by Millwork providers, as needed. Coordinate and install AV equipment in credenzas, tables, counter tops and other areas in scope.
- G. Completion of this project is defined as fully tested, commissioned, and documented and client trained operable AV systems.

1.6 Submittals

- A. The contractor shall prepare a submission for approval prior to beginning fabrication. The submission shall show evidence that a cross-functional design review has been performed, including calculations to conform the performance of the system that will be installed and include a signed affidavit from the project manager with CTS-D qualifications. Approval of shop drawings does not relieve the contractor of meeting the specifications in product, performance, and practices. The submission shall be delivered in electronic format to the AV Consultant and shall also include:
1. Plain-language functional narrative, preferably signed by client.
 2. A complete set of engineering drawings, prepared in CAD, including but not limited to AV flow, control flow, panel/user interface layouts with button by button script and/ or "Programmers Design Kit" (control system specification), rack elevations, wiring details, conduit details, I/O and user interface plates, and reflected ceiling plans, AV layouts, and elevations as required to clearly show the system in an unambiguous manner such that it may be reviewed, fabricated, installed, and calibrated.
 3. Control panel layouts, when not defined by the client, must conform to the industry's "Dashboard Controls" recommendations.
 4. List of major items of equipment being provided.
 5. Function list (i.e., playback of DVD disc, presentation of computer video and audio, etc.).
 6. Calculations verifying the predicted performance.
 7. Certificate of review and compliance
- B. The successful AV Contractor shall submit a list of all long lead-time items within four business days of award of the contract to the Project Manager with a copy to the AV Consultant.
- C. Include all engineering costs associated with review, submittals, checkout, etc.
- D. The University of Rhode Island will not be held responsible for items ordered prior to the approval of submitted shop drawings.
- E. Samples
1. Confirmation of color and materials for wall plates being provided shall be submitted and approved by the project team prior to ordering.
 2. Table mics and table boxes may be needed by the furniture/millwork company prior to installation for their use in building specific furniture.

1.7 QUALIFICATIONS

- A. Upon award, the successful AV Contractor shall submit a listing of the key personnel who will be assigned to this project, along with a brief job description and resume of their career related backgrounds and experience. A minimum of five years experience in similar projects with a CTS-D on staff is required. These key personnel must remain directly involved in all aspects of the project until total completion, and be responsible for all work performed. These individuals will hold any other certifications as indicated. A single point of contact will be identified and remain constant through the duration of the project.

- B. No subcontractors shall be allowed to be used in the fabrication or installation of the audiovisual systems for this project. All personnel must be directly employed by the AV Contractor.
- C. Each AV Contractor shall own, as a minimum requirement, the following test equipment, as well as being familiar in their operation, application and use:
1. Sensitive AC voltmeter, -80 dBu sensitivity, 20-30 kHz response, able to measure signal to noise ratio, THD, electrical audio levels within the system. Note that some systems require measurements up to 100 volts and may require an external pad.
 2. Sound Pressure Level Meter, ANSI Type II, with A and C weighting filters, fast or time-averaged.
 3. Audio Signal generator, 20-30 kHz, sine wave, pink noise.
 4. Amplified loudspeaker 100 mm producing 60 dBA at one meter, and 70 dBA at one meter, pink noise, sine wave, speech files.
 5. 200MHz oscilloscope, with TV sync.
 6. Analog Video Signal Generator NTSC/PAL, plus computer patterns at all required resolutions and refresh rates required for the systems under test. For systems with composite video, include PLUGE pattern.
 7. Digital Video Signal Generator for computer patterns for all resolutions and refresh rates required for the systems under test, HDMI/DVI. HDCP encryption on/off.
 8. The ability to measure STI-PA (source and analyzer).
 9. Colorimeter/luminance meter, 10% accuracy.
 10. Infrared Thermometer.
 11. Test Media with known levels (audio, video, etc): CD's, VHS, DVD's, etc.
 12. AC/DC MultiMeter.
 13. Light meter, lux/footcandles.
 14. Outlet tester (to test power outlet wiring).
 15. Cable sets, cable assemblies, adapters as required to sample and measure in-or out of circuit as required.

1.8 System PERFORMANCE REQUIREMENTS

- A. Unless restricted by the published specifications of a particular piece of equipment, the following performance standards shall be met by each system:
1. Audio - THD < 0.5% Record results for all sources
 2. Audio - S/N > 60 dB Record results for all sources
 3. Video levels - 1v P-P +/- 10% (or 700 mV for computer video) for all sources
 4. Video - Verify that there are no lost or stuck "on" pixels when Full White Test signal is displayed (7 pixels maximum per quadrant, or follow manufacturer's spec). Note number and location of lost pixels, if any.
 5. Digital Video - Confirm that an acceptable HDMI/DVI signal is being displayed on the monitor from each source using a Digital Video Signal Generator with HDCP. 1920x1200@60, 1920x1080@60, 1280x720@60, 1366x768@60, 1024x768@60, 800x600@60, 1600x1200@60. Inspect each, leaving the signal on for three minutes (no "sparklies" or other artifacts). HDCP should be turned on for a complete digital video test to verify cables and display input.

6. Control - Confirm control system functions not obvious from the control flow diagrams (i.e., lighting presets that are activated when the control system enters a videoconferencing mode).
7. Heat - Thermal gradient inspected; all equipment operating within manufacturers' guidelines.

PART 2 - PRODUCTS

- 2.1 Products to be supplied and installed by the General Contractor, Electrical Contractor and Low voltage Contractor:
 - A. All conduits, junction boxes, LCD monitor back boxes and pull areas, as well as, wall blocking as listed on AV Conduit Riser Diagrams.
 - B. Please refer to AV Drawing AV000 AV Responsibility Schedule for overall description of who is providing and who is installing AV related equipment.
- 2.2 Products to be supplied and installed by the AV contractor: (To be provided at a future date)
 - A. Prospective AV bidders shall furnish with their response a complete list of equipment costs for each item to be furnished, as well as a breakdown in labor costs for each category of labor: Project Management, Engineering, Drafting, Programming, Rack Fabrication and Staging, Installation and Commissioning, Training, Warranty and Preventive Maintenance Visits.
 - B. Indicate total price for equipment and labor in separate bid specification addendum provided by the AV Consultant. All bidders must submit the provided excel spreadsheet with equipment pricing to Consultant to be used in the bid evaluation in unprotected electronic format. Please provide excel spreadsheet via email to Peter@act-associates.com, Kevin@act-associates.com .
 - C. All equipment is to be new from the factory.
 - D. ***Appendix B – Equipment List and Labor Pricing (to be provided at a future date under a separate contract).***

PART 3 - EXECUTION

3.1 General

- A. Installation shall include all rack fabrication and assemblies, staging/testing, troubleshooting, delivery, unloading, setting in place, fastening to walls, floors, ceilings, counters, or other structures where required. Interconnecting wiring of the system components, equipment alignment and adjustment, and all other work whether or not expressly required herein, which is necessary to result in operational systems. Refer to "Responsibility Schedule" on Drawing AV00.
1. Provide on-site labor compatible with on-site trade's people.
 2. Keep all parties informed on the schedule of the project.
 3. Provide a detailed schedule of completion showing milestones at the project kick off meeting.

3.2 Staging

- A. Before delivery to the jobsite, the system shall be staged completely in the successful bidder's shop. A test of the AV system, with peripheral equipment and working control system programming shall be scheduled, and the owner may elect to inspect the staging.

3.3 Physical installation

- A. All equipment shall be firmly secured in place unless requirements of portability dictate otherwise.
- B. All boxes, equipment, etc. shall be secured plumb and square.
- C. In the installation of equipment and cable, consideration shall be given not only to operational efficiency, but also to overall aesthetic factors.
- D. All structural support and hardware to support loads plus a safety factor of five.
- E. Racks shall be "clean" - grease markings removed, etc., all vents and blanks installed, and all engravings fastened.
- F. Small racks installed into credenzas shall have carpet tiles or sliders on bottom to avoid scratching credenzas.

3.4 Cable installation

- A. All field cable is to be plenum rated and acceptable to local jurisdiction. For this project, the infrastructure cable is being provided and installed by the Low Voltage Contractor and is not part of the AV Contractor scope of work.

- B. All cables, regardless of length, shall be marked with printed (no write-on labels will be accepted) wrap-around numbers and shrink-wrap at both ends. There shall be no unmarked cables at any place in the system. Marking codes used on cables shall correspond to codes shown on drawings, run sheets, and patch panels.
- C. All the equipment shall be able to be pulled for repair or replacement without hindrance, equipment without IEC removable power cords are not to be tie-wrapped to the cabinet, and there are to be no obstructions to the item being pulled from the front of the rack. Further, terminations are such that it is relatively easy to find their proper terminating points when the item is re-installed.
- D. If there are obstructions prohibiting the disconnection of terminations on the back of the unit, there must be sufficient cabling to permit the equipment to be pulled from the front, and disconnected there.
- E. All inter-rack cabling shall be neatly strapped, dressed, and adequately supported. Terminal blocks and connectors shall be furnished for all cables that interface with racks, cabinets, consoles, or equipment modules.
- F. Tie wraps shall be snug but not so tight as to deform the cable. UTP cables are to be formed with Velcro ties.
- G. Terminations are to be free from stress due to gravity acting on the form.
- H. Terminations shall have a sufficient service loop, allowing a re-termination or two without having to open a form to lay in a new cable.
- I. Cable supports are to be used when unsupported cable lengths exceed 12 inches (depending on size and stiffness of cables).
- J. Screw terminals shall have spade or ring lugs on wires.
- K. Cables shall have "signal separation"; that is, cables carrying voltages varying by 20 dB or more are in different forms separated by at least 4 inches to prevent cross talk.
- L. RJ terminations are solid in their connectors.
- M. As a general practice, on the left side of the rack as viewed from the rear, group in separate harnesses with approximately three inches between each harness:
 - 1. AC power connection
 - 2. Loudspeaker and high level wiring
 - 3. Control cables RS-232,RS-422,RS-485,IR, and Relay
- N. On the right side of the rack as viewed from the rear, group in separate harnesses with approximately three inches between each harness:
 - 1. Line level audio cables
 - 2. Video base band cables
 - 3. Broadband RF video cables

4. Ethernet and Fiber Optic Cables

- O. All cables (except video cables, which must be cut to an identical length) shall be cut to the length dictated by the run. For equipment mounted in racks, drawers, or on slides, the interconnecting cables shall be provided with a service loop of appropriate length. No cable shall be installed with a bend radius less than that recommended by the cable manufacturer.
- P. All wires and cables used in assembling custom panels and equipment racks shall be formed into harnesses, which are tied and supported in accordance with accepted engineering practice.
- Q. Harnessed cables shall be combed straight. Harnesses with intertwined members will be deemed unacceptable. Each cable that breaks out from a harness for termination will be neatly tie wrapped.
- R. Harnessed cables shall be found in either a vertical or a horizontal relationship to equipment, controls, components, or terminations.
- S. All drain wires will be covered in a sleeve. Over each end of wire, the heat shrink should be a minimum of 1" and shall be brought up against the connector.

3.5 Connection plate receptacles

- A. Unless otherwise detailed herein, the following types of panel receptacles shall be used on all connection boxes, panels, plates, and wire ways:
 - 1. Audio (-10 dBm unbalanced Isolated solder RCA pin type)
 - 2. Audio (microphone or balanced line Audio +4 level - XLR type)
 - 3. Audio (loudspeaker level) – Speak-on connector. Jack shall be insulated from panel type.
 - 4. Video – BNC Receptacles shall be insulated from panel type.
 - 5. RF video - F type connector insulated from panel type
 - 6. Patch Panel Assignments - All patch panels shall be wired so that signal "sources" (outputs from) appear on the upper row of a row pair, and all "loads" (inputs to) appear on the lower row of a row pair.

3.6 Patch panel designations

- A. All patch panels shall be permanently labeled with legible lettering. The designations shall be by the recognized generic name of the equipment device. Horizontal row numbers and vertical patch point must also label each patch panel.
- B. Identification of each patch point shall be included on the as-built drawings, as well as on reproductions of these drawings, which shall be mounted in an appropriate location near the equipment racks.

3.7 grounding procedures

- A. In order to minimize problems resulting from improper grounding, and to achieve maximum signal-to-noise ratios, the following grounding procedures shall be adhered to:
1. System Grounds: A single primary "system ground" shall be established for the systems in each particular area. All grounding conductors in that area shall connect to this primary system ground. The system ground shall be provided in the audio equipment rack for the area.
 2. The contractor is responsible to insure that the power is on the same electrical phase for all audiovisual equipment, and that a technical ground has been provided. The contractor shall be responsible for determining if the metallic conduit is properly electrically bonded to the building ground system.
 3. Under no condition shall the AC neutral conductor, either in the power panel or in a receptacle outlet, be used for a system ground.
 4. Verify resistance is less than 1 Ohm from ground buss bar to the chassis of each rack-mounted component. Verify less than 1 Ohm from ground buss bar to audio ground terminal of each rack-mounted component's input and output connector.
 5. Audio Cable Shields: All audio cable shields shall be grounded at one point only. There are no exceptions. For inter- and intra-rack wiring, this requires that the shield be connected at one end only.
 6. Video Receptacles: All video receptacles that are provided and installed by the AV Contractor shall be ground insulated from the mounting panel, outlet box, or wire way. Unless otherwise detailed herein, this shall be accomplished by using insulated-from-panel type receptacles. Video cable and connectors shall be 75 Ohm.

3.8 SYSTEMS ACCEPTANCE

- A. System Acceptance Tests will not be performed until the AV Contractor's System Checkout has been completed. The Consultant and project team representatives will supervise the System Acceptance Tests and prepare a final punch list, as needed, for items to be addressed by the AV Contractor prior to final payment. They will consist of the following:
1. A physical inventory will be taken of all equipment on-site and will be compared to equipment lists in the contract documents.
 2. The AV Contractor shall coordinate this period with the project team and their representatives so that the room is available for testing. The project team shall provide for free access to all areas, lighting, and electrical power, as needed. If this testing involves working other than normal hours, it will be accomplished without claim for extra payment.
 3. The AV Contractor is responsible for ensuring that the area in which his work has been performed is completed according to his contract and is in a clean and orderly condition ready for acceptance.
 4. The AV Contractor shall be prepared to verify the performance of any portions of the system by demonstration.
 5. The AV Contractor shall make additional mechanical and electrical adjustments within the scope of the work, which are deemed necessary by the project team and their representatives.

6. In the event further adjustment is required, or defective equipment must be repaired or replaced, tests may be suspended or continued at the discretion of the project team and their representatives.
 7. If the AV Contractor requests the systems to be commissioned and the AV Consultant and/or the project team representative makes the trip in to do the commissioning to find the systems not ready, the AV Contractor will be charged for a return trip by the AV Consultant and/or project team representative.
 8. The AV Contractor's personnel performing these tests are to be thoroughly familiar with all details of the system. The test team is to include the AV Contractor's project manager and project engineer who were in charge during the course of the installation work.
 9. Acceptance tests will include subjective evaluations by audiovisual design engineer and the project team. To permit accurate and fair evaluation of the system, these individuals will review the various visual materials, computer sources provided by the AV Contractor and the project team.
- B. Video System Acceptance: The testing procedure shall consist of using the test signal generator and pre-recorded alignment sources to verify paths. Where inputs are from connection plates or patch bays use the specified video generator. Measure all inputs to all outputs. Record loss, gain, response, noise, and timing of each video component. Test every input to every output of a router, and take measurement at various stages of the signal path. All measurements are to be made under typical operating conditions 75 Ohm + 1 Ohm. Measure each path using the following test signals and adhere to the approved performance standards described:
1. Program operating level at full white shall be set to 100 IRE, (+ 2 IRE).
 2. Program operating level for black shall be set to 7.5 IRE (+2.5 IRE).
 3. Program operating level for sync shall be set to -40 IRE (+ 2 IRE).
 4. Program operating level for burst shall be set to 40 IRE (+ 2 IRE).
 5. Burst pedestal shall be set as not to exceed + 2 IRE.
 6. Test signal of windowed pulse and bar, 130 lines at the center of the field at input; <3% tilt at output, DC restoration off.
 7. Test signal of 12.5T chrominance (sine-squared) pulse at input; <5 IRE loss at output.
 8. 75 Ohm + 1 Ohm input; <50 dB noise at output.
 9. When HDMI signals are included in the system, confirm that an acceptable signal is being displayed on the monitor from each source position (use the Alt Pixel test image (pixel-on, pixel-off): 1920x1200@60, 1920x1080@60, 1280x720@60, 1366x768@60, 1024x768@60, 800x600@60, 1600x1200@60. Inspect each, leaving the signal on for three minutes. There should be no "sparklies" or other artifacts.
 10. If the digital signal is going to a codec, HDCP should be turned off (codecs do not support HDCP). If the signal is going to a display, HDCP should be turned on for a complete HDMI test to verify cables and display input.
- C. RF Systems Acceptance: Measure all inputs to all outputs. Record output level and slope (if applicable) of each video component. The RF system shall meet or exceed Federal Communications Commission (FCC) rules pertaining to cable television systems, specifically FCC Rules 47 USC part 76.

1. For NTSC sources, placing a test generator at each source shall produce 1-volt peak-to-peak to each destination +/- 10% (or 1dB). (If requested only) record results at each destination using NTSC bars, peak white, and 5-step multiburst (0.5, 1.0, 2.0, 3.0, 3.58, and 4.2 MHz).
 2. Test signal of 1V Peak-to-Peak, 75% color bars at input to each modulator.
 3. All modulators connected and set to 3 dB below maximum output.
 4. Measure all inputs and outputs of modulators, combiners, splitters, and amplifiers use a 6-dBmv RF input (modulated color bars) at the lowest and highest rated channel for the system and document on the as built drawing package.
- D. Audio Systems: The testing procedure shall consist of using the test signal generator and pre-recorded alignment sources to verify paths. Begin testing by recording ambient noise, A-weighted, slow. Test inputs in connection plates and/or patch bays use the specified audio generator. Measure all inputs to all outputs. Record frequency response, maximum input level, maximum output level, output noise, and THD.

Test every input to every output of a router, and take measurement at various stages of the signal path. All measurements are to be made under typical operating conditions with varying frequencies 300Hz, 1 kHz, and 5KHz. Measure each path using the following test signals and adhere to the performance standards described.

1. No power amplifier shall have its rated load exceeded. Record the impedance of each loudspeaker line on each power amplifier. 63, 250, and 1,000 Hz are recommended if available. (Loudspeaker Impedance Test)
2. Produce a nominal operating level of 65 dB SPL for conference speech, 60 dB SPL for program material, A-weighted at all listeners' ears +/-2 dB ("Uniformity of Coverage" or at least 15 dB above the ambient noise, A-weighted, whichever is greater, with the control system volume control indicating "normal" or default setting. Record results for each channel and source. All program levels shall be set to within .5dB as measured at the input of the routers/switchers in a system.
3. Be capable of producing an additional 15 dB above this level 80 dB SPL for each audio source, with less than 0.5% THD plus noise. Measure THD plus noise when source is at 15 dB above nominal operating level at each "destination", for all sources selected. Develop a noise level that is electrically 55 dB below the normal operating level for all audio sources. "Noise" refers to hum, electrostatic noise, RF interference, etc.
4. Program loudspeakers shall be connected in the same polarity, and speech reinforcement systems shall be polarized such that a positive acoustic pressure on a microphone results in a positive acoustic pressure at the loudspeaker ("Polarity Test").
5. Produce no more than a 1 dB variance in program source levels, when each program source is playing a calibrated media (CD, video tape, setup test tone, etc.).
6. There shall be no audible vibration caused by improper mechanical installation. Use continuous sweep signal at headroom level (from generator or test CD) pass/ fail result or which device at what frequencies. (Buzzes and Rattles Test).
7. The speech reinforcement system shall be stable (no feedback).
8. For audio conference systems, adjust microphone input gain so as to demonstrate that "standard talker" (60 dB SPL at 1 m), positioned at each talker position in the room, produces a "0 dB" level at the input of the mixer bus of the audio conference DSP device. Record test results as pass/fail. Record level across analog telephone line.

- Inspect DSP mixer telephone line levels, both transmit and receive, when normal speech is encountered in the room.
9. For conferencing mode, at the 65 dB SPL listening level, be able to demonstrate full duplex operation, with no reports of echo or "speech trails" (as detected from the far end).
 10. For wireless microphone systems, with all wireless microphones turned on, confirm that throughout the specified operating area for the transmitter, there are no dropouts, inter-modulation interaction between wireless systems, or RF caused artifacts.
 11. Confirm RF immunity at areas where users are expected to operate cell phones and messaging PDA's, smart phones, etc.
- E. Display Systems: All displays shall meet the manufactures published specifications for the following: brightness, contrast, focus, etc.
1. Display devices shall be installed and adjusted so that images are free from keystone and barrel distortion using the crosshatch, checker box, H pattern and SMPTE bars (can be SMPTE RP 133)
 2. The display devices shall perform as specified to all vertical and horizontal frequencies within their specified range.
 3. Confirm optimum brightness, contrast, and color in displays using SMPTE source with PLUGE (Picture Line Up Generation Equipment) display.
 4. When several displays are visible in the same space, demonstrate consistencies in colors across all of them. For composite video signals use NTSC bars with PLUGE signal to all. For RGB and digital video signals use a colorimeter and test color signal software to confirm consistent images.
 5. For RGB sources, demonstrate 700 mV +/- 10% (or 1 dB) from each source to each destination. (If requested only) record results using a flat-field pattern signal at the highest resolution specified, or at least 1024 by 768 resolution (VESA 8). For RGB sources measure and record peak-to-peak voltage for peak white signal, and record "peak" and "Level" control settings on any interface at the positions whereby the 700 mV voltages were attained.
 6. Displays are focused, centered, and evenly illuminated. If requested, confirm using the calibrated light meter that the brightest measurement locations shall be no more than +10% above average, and the dimmest locations no less than -5% below average measurement.
- F. Control Systems:
1. The Control System performs all the functions as indicated on the function list provided, with stability, and in sync with the equipment being controlled without the need to reset any item of equipment.
 2. A button-by-button system check shall be accomplished with proper operation actuated, and discrepancies noted.
 3. When system is powered down, system "up" sequence presents the system in a desirable state with no objectionable anomalies.

3.9 System documentation

- A. System User Manuals: The AV Contractor will supply one manual containing one of each room type for a User's Manual with the following subdivided topics. This book is mostly for use by the AVC for trouble shooting and on-site documentation when needed.
 - 1. User Instructions unique to the system or helpful in operation, describing required system operation.
 - 2. System Schematics and as-built drawings with all wiring identified and labeled. A copy of final test report.
 - 3. Manufacturer's Manual filed alphabetically.
 - 4. Equipment list and serial numbers.
 - 5. Electronic Crestron Programming Code
 - 6. Warranties and Service notes: Manufacturer's warranty information, registration cards, suggested maintenance schedules, and four pages of a blank service log.
 - 7. Complete sets of reduced size drawings of all systems and sub-assemblies.
- B. Instructional User Manuals:
 - 1. Each room to be provided with a user manual and quick start instructions.
- C. Training
 - 1. Upon completion and acceptance of the system, the AV Contractor will provide on-site, complete, and thorough training to the project team designated personnel, totaling a minimum of 16 hours. After 30 days of use, offer four additional training sessions of 2 hours each for those needing more help now that they have been using the systems. During the training sessions, user's guides shall be available for reference.
 - 2. In order to familiarize the project team personnel with installation, equipment, and maintenance, the project team may assign personnel to observe the AV Contractor's work during installation provided this can be done without delaying the work.

3.10 Preventive Maintenance and Warranty

- A. Warranties:
 - 1. All work shall be guaranteed for one year from acceptance against defects in materials and workmanship. If manufacturers' warranties exceed one year, these warranties will apply. A complete maintenance history shall be maintained, and an engineering review shall take place at the end of the period.
 - 2. All equipment will carry the manufacturers' warranties, which will be handled by the AV Contractor on-site during the first year of operation. In addition, the AV Contractor will guarantee the entire system as assembled for one year from date of acceptance. During that time, equipment or system problems will be repaired or replaced at no cost to the University of Rhode Island.
 - 3. On-site response time will be within 24 hours of notification for non-critical problems or 4 hours for emergency problems during room available scheduling. The AV Contractor will maintain a telephone "hotline" with qualified personnel and duplicate sets of documentation to assist the University of Rhode Island personnel in emergencies. A hotline number shall be clearly marked in the user manual and technical touch panel pages.

- B. Emergency Service and Preventative Maintenance:
1. As part of the first year warranty period, the AV Contractor will, within one hour of a trouble call, have an AV technician call back the client to troubleshoot the problem. If an on-site service call is required, a technician shall be dispatched and is on-site within 4 business hours of the initial call. Open service tickets shall be monitored and pursued until the problem is rectified by the AV Contractor.
 2. A summary of services included in the first year warranty period shall be as follows:
 - a. All replacement parts
 - b. Unlimited emergency on-site service
 - c. Unlimited telephone support
 - d. Guaranteed response time (one-hour call back/8 business hours on-site). Service desk hours shall be available 8 am to 5 pm.
 - e. An after-hours emergency number will be provided in the user documentation, as well as, on the technical touch panel pages.
 - f. Semi-annual preventive maintenance visits
 3. All equipment racks shall be labeled as follows:
 - a. System Designed by ACT Associates LLC, 922F Stafford Road, Storrs, CT 06268 P: 860-429-5938
 - b. System Installed by (AV Contractor), (Address), (Phone #)

3.11 Workmanship

- A. The contractor is responsible for keeping the jobsite clean, and removes all rubbish at the end of each day. The contractor must cooperate with building officials to keep the disruption to the jobsite at a minimum, and shall be responsible for all damages and marring of finishes caused by the installation. Upon final completion of the systems, clean all stains, remove all masking, protections, equipment, material, and debris from the work and storage areas, and leave those areas in an undamaged and acceptable condition.

END OF SECTION 115200

SECTION 123640**STONE COUNTERTOPS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes stone countertops at the following locations including:
 - 1. Recycling center in the Connector.
 - 2. Reception Desk.

1.3 ACTION SUBMITTALS

- A. Product Data: For each variety of stone, stone accessory, and manufactured product.
- B. Shop Drawings: Include plans, sections, details, and attachments to other work.
 - 1. Show locations and details of joints.
 - 2. Show direction of veining, grain, or other directional pattern.
- C. Samples for Verification:
 - 1. For each stone type indicated, in sets of Samples not less than 12 inches square. Include two or more Samples in each set and show the full range of variations in appearance characteristics expected in completed Work.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For fabricator.
- B. Material Test Reports:
 - 1. Stone Test Reports: For each stone variety proposed for use on Project, by a qualified testing agency, indicating compliance with required physical properties, according to referenced ASTM standards. Base reports on testing done within previous five years.
 - 2. Sealant Compatibility and Adhesion Test Report: From sealant manufacturer indicating that sealants will not stain or damage stone.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For stone countertops to include in maintenance manuals. Include product data for stone-care products used or recommended by Installer, and names, addresses, and telephone numbers of local sources for products.

1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate stone countertops similar to that required for this Project, and whose products have a record of successful in-service performance.
- B. Installer Qualifications: Fabricator of stone countertops.
- C. Mockup: Build mockup to demonstrate aesthetic effects and to set quality standards for fabrication and execution.
 - 1. Build mockup of typical countertop as shown on Drawings.
 - 2. Subject to compliance with requirements, approved mockup may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 FIELD CONDITIONS

- A. Field Measurements: Verify dimensions of construction to receive stone countertops by field measurements before fabrication and indicate measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations for Stone: Obtain each variety of stone, from a single quarry with resources to provide materials of consistent quality in appearance and physical properties.
 - 1. For stone types that include same list of varieties and sources, provide same variety from same source for each.
 - 2. Make stone slabs available for examination by Architect.
 - a. Architect will select aesthetically acceptable slabs and will indicate aesthetically unacceptable portions of slabs.
 - b. Segregate slabs selected for use on Project and mark backs indicating approval.

2.2 GRANITE

- A. Material Standard: Comply with ASTM C 615.
- B. Description: Uniform, medium-grained stone.
- C. Cut: Vein.
- D. Cut stone from contiguous, matched slabs in which natural markings occur.
- E. Finish: Polished.
- F. Match Architect's samples for color, finish, and other stone characteristics relating to aesthetic effects.

2.3 ADHESIVES, GROUT, SEALANTS, AND STONE ACCESSORIES

- A. General: Use only adhesives formulated for stone and ceramic tile and that are recommended by their manufacturer for the application indicated.
- B. Water-Cleanable Epoxy Adhesive: ANSI A118.3, with a VOC content of 65 g/L or less.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Boiardi Products; a QEP company.
 - b. Bonstone Materials Corporation.
 - c. Bostik, Inc.
 - d. C-Cure.
 - e. Custom Building Products.
 - f. Jamo Inc.
 - g. Laticrete International, Inc.
 - h. MAPEI Corporation.
 - i. Mer-Krete Systems; ParexLahabra, Inc.
 - j. Prospec; Bonsal American; a division of Oldcastle Architectural Products Group.
 - k. Summitville Tiles, Inc.
 - l. TEC, Specialty Construction Brands, Inc.; an H. B. Fuller company.
- C. Water-Cleanable Epoxy Grout: ANSI A118.3, chemical-resistant, water-cleanable, tile-setting and -grouting epoxy.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Boiardi Products; a QEP company.
 - b. Bostik, Inc.
 - c. C-Cure.
 - d. Custom Building Products.
 - e. Jamo Inc.
 - f. Laticrete International, Inc.
 - g. MAPEI Corporation.
 - h. Mer-Krete Systems; ParexLahabra, Inc.
 - i. Prospec; Bonsal American; a division of Oldcastle Architectural Products Group.
 - j. Summitville Tiles, Inc.
 - k. TEC, Specialty Construction Brands, Inc.; an H. B. Fuller company.
- D. Sealant for Countertops: Manufacturer's standard sealant of characteristics indicated below that complies with applicable requirements in Section 079200 "Joint Sealants" and will not stain the stone it is applied to.
 - 1. Mildew-Resistant Joint Sealant: Mildew resistant, single component, nonsag, neutral curing, silicone.
 - 2. Joint Sealant: Single component, nonsag, neutral curing, silicone; Class 25.
 - 3. Color: As selected by Architect from manufacturer's full range.

- E. Stone Cleaner: Specifically formulated for stone types, finishes, and applications indicated, as recommended by stone producer and, if a sealer is specified, by sealer manufacturer. Do not use cleaning compounds containing acids, caustics, harsh fillers, or abrasives.
- F. Stone Sealer: Colorless, stain-resistant sealer that does not affect color or physical properties of stone surfaces, as recommended by stone producer for application indicated.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Bostik, Inc.
 - b. Custom Building Products.
 - c. Hillyard, Inc.
 - d. HMK Stone Care System.
 - e. Miracle Sealants Company.
 - f. Stone Care International Inc.
 - g. Summitville Tiles, Inc.

2.4 STONE FABRICATION, GENERAL

- A. Select stone for intended use to prevent fabricated units from containing cracks, seams, and starts that could impair structural integrity or function.
 - 1. Repairs that are characteristic of the varieties specified are acceptable provided they do not impair structural integrity or function and are not aesthetically displeasing, as judged by Architect.
- B. Fabricate stone countertops in sizes and shapes required to comply with requirements indicated.
 - 1. For granite, comply with recommendations in NBGQA's "Specifications for Architectural Granite."
 - 2. Clean sawed backs of stones to remove rust stains and iron particles.
 - 3. Dress joints straight and at right angle to face unless otherwise indicated.
 - 4. Cut and drill sinkages and holes in stone for anchors, supports, and attachments.
 - 5. Provide openings, reveals, and similar features as needed to accommodate adjacent work.
 - 6. Fabricate molded edges with machines having abrasive shaping wheels made to reverse contour of edge profile to produce uniform shape throughout entire length of edge and with precisely formed arris slightly eased to prevent snipping, and matched at joints between units. Form corners of molded edges as indicated with outside corners slightly eased unless otherwise indicated.
 - 7. Finish exposed faces of stone to comply with requirements indicated for finish of each stone type required and to match approved Samples and mockups. Provide matching finish on exposed edges of countertops, splashes, and cutouts.
- C. Carefully inspect finished stone units at fabrication plant for compliance with requirements for appearance, material, and fabrication. Replace defective units.

2.5 STONE COUNTERTOPS

- A. General: Comply with recommendations in MIA's "Dimension Stone - Design Manual VI."
- B. Nominal Thickness: Provide thickness indicated, but not less than 1-1/4 inches. Gage backs to provide units of identical thickness.
- C. Edge Detail: As indicated.
- D. Joints: Fabricate countertops without joints.
- E. Cutouts and Holes:
 - 1. Fittings: Drill countertops in shop for grommets, recycling openings and similar items.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates to receive stone countertops and conditions under which stone countertops will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of stone countertops.
- B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of stone countertops.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Before installing stone countertops, clean dirty or stained stone surfaces by removing soil, stains, and foreign materials. Clean stone by thoroughly scrubbing with fiber brushes and then drenching with clear water. Use only mild cleaning compounds that contain no caustic or harsh materials or abrasives. Allow stone to dry before installing.

3.3 CONSTRUCTION TOLERANCES

- A. Variation from Level: Do not exceed 1/8 inch in 96 inches, 1/4 inch maximum.
- B. Variation in Joint Width: Do not vary joint thickness more than one-fourth of nominal joint width.
- C. Variation in Plane at Joints (Lipping): Do not exceed 1/64-inch difference between planes of adjacent units.
- D. Variation in Line of Edge at Joints (Lipping): Do not exceed 1/64-inch difference between edges of adjacent units, where edge line continues across joint.

3.4 INSTALLATION OF COUNTERTOPS

- A. General: Install countertops over plywood subtops with full spread of water-cleanable epoxy adhesive.
- B. Do necessary field cutting as stone is set. Use power saws with diamond blades to cut stone. Cut lines straight, true, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.
- C. Set stone to comply with requirements indicated. Shim and adjust stone to locations indicated, with uniform joints of widths indicated and with edges and faces aligned according to established relationships and indicated tolerances. Install anchors and other attachments indicated or necessary to secure stone countertops in place.
- D. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Use power saws with diamond blades to cut stone. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.
- E. Apply sealant to joints; comply with Section 079200 "Joint Sealants." Remove temporary shims before applying sealant.

3.5 ADJUSTING AND CLEANING

- A. In-Progress Cleaning: Clean countertops as work progresses. Remove adhesive, grout, mortar, and sealant smears immediately.
- B. Remove and replace stone countertops of the following description:
 - 1. Broken, chipped, stained, or otherwise damaged stone. Stone may be repaired if methods and results are approved by Architect.
 - 2. Defective countertops.
 - 3. Defective joints, including misaligned joints.
 - 4. Interior stone countertops and joints not matching approved Samples and mockups.
 - 5. Interior stone countertops not complying with other requirements indicated.
- C. Replace in a manner that results in stone countertops matching approved Samples and mockups, complying with other requirements, and showing no evidence of replacement.
- D. Clean stone countertops no fewer than six days after completion of installation, using clean water and soft rags. Do not use wire brushes, acid-type cleaning agents, cleaning compounds with caustic or harsh fillers, or other materials or methods that could damage stone.
- E. Sealer Application: Apply stone sealer to comply with stone producer's and sealer manufacturer's written instructions.

END OF SECTION 123640

SECTION 238126**SPLIT-SYSTEM AIR-CONDITIONERS****PART 1 - GENERAL**

1.1 SUMMARY

- A. This Section includes split-system air-conditioning and heat pump units consisting of separate evaporator-fan and compressor-condenser components. Units are designed for exposed or concealed mounting, and may be connected to ducts.

1.2 SUBMITTALS

- A. Product Data: For each unit indicated. Include performance data in terms of capacities, outlet velocities, static pressures, sound power characteristics, motor requirements, and electrical characteristics.
- B. LEED Submittals:
 - 1. Product Data for Credit EA 4: Documentation required by Credit EA 4 indicating that equipment and refrigerants comply.
 - 2. Product Data for Prerequisite EQ 1: Documentation indicating that units comply with ASHRAE 62.1-2004, Section 5 - "Systems and Equipment."
- C. Operation and maintenance data.

1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1-2004, Section 5 - "Systems and Equipment" and Section 7 - "Construction and Startup."
- C. ASHRAE/IESNA 90.1-2004 Compliance: Applicable requirements in ASHRAE/IESNA 90.1-2004, Section 6 - "Heating, Ventilating, and Air-Conditioning."

1.4 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace split-system air-conditioning units that fail in materials and workmanship within 5 years from date of Substantial Completion.

PART 2 - PRODUCTS**2.1 MANUFACTURERS**

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Mitsubishi was used as a basis of design. Subject to compliance with requirements, provide products by one of the following:
 - 1. Mitsubishi Electric
 - 2. Carrier - Toshiba
 - 3. Daiken
 - 4. LG

2.2 EVAPORATOR-FAN UNIT

- A. Concealed Unit Chassis: Galvanized steel with flanged edges, removable panels for servicing, and insulation on back of panel.
 - 1. Insulation: Faced, glass-fiber duct liner.
 - 2. Drain Pans: Galvanized steel, with connection for drain; insulated and complying with ASHRAE 62.1-2004.
 - 3. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1-2004.
- B. Floor-Mounting, Unit Cabinet: Enameled steel with removable panels on front and ends.
 - 1. Discharge Grille: Steel with surface-mounted frame.
 - 2. Insulation: Faced, glass-fiber, duct liner.
 - 3. Drain Pans: Galvanized steel, with connection for drain; insulated and complying with ASHRAE 62.1-2004.
 - 4. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1-2004.
- C. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins, complying with ARI 210/240, and with thermal-expansion valve.
- D. Water Coil: Copper-tube water coil, with mechanically bonded aluminum fins spaced no closer than 0.1 inch; leak tested to 300 psig underwater; and having a 2-position control valve.
- E. Electric Coil: Helical, nickel-chrome, electric-resistance heating elements with refractory ceramic support bushings; automatic-reset thermal cutout; built-in magnetic contactors; manual-reset thermal cutout; airflow proving device; and one-time fuses in terminal box for overcurrent protection.
- F. Evaporator Fan: Forward-curved, double-width wheel of galvanized steel; directly connected to motor.

- G. Fan Motor: Multispeed.
- H. Filters: 1 inch thick, in fiberboard frames with ASHRAE 52.2 MERV rating of 6 or higher.

2.3 AIR-COOLED, COMPRESSOR-CONDENSER UNIT

- A. Casing steel, finished with baked enamel, with removable panels for access to controls, weep holes for water drainage, and mounting holes in base. Provide brass service valves, fittings, and gage ports on exterior of casing.
- B. Compressor: Hermetically sealed scroll type with crankcase heater and mounted on vibration isolation. Compressor motor shall have thermal- and current-sensitive overload devices, start capacitor, relay, and contactor.
 - 1. Refrigerant: R-410A.
 - 2. Refrigerant: R-407C or R-410A.
- C. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins, complying with ARI 210/240, and with liquid subcooler.
- D. Heat Pump Components: Reversing valve and low-temperature air cut-off thermostat.
- E. Fan: Aluminum-propeller type, directly connected to motor.
- F. Motor: Permanently lubricated, with integral thermal-overload protection.
- G. Low Ambient Kit: Permits operation down to 45 deg F.
- H. Mounting Base: Polyethylene.
- I. Minimum Energy Efficiency: Comply with ASHRAE/IESNA 90.1-2004, "Energy Standard for Buildings except Low-Rise Residential Buildings."

2.4 ACCESSORIES

- A. Thermostat: Low voltage with subbase to control compressor and evaporator fan.
- B. Refrigerant Line Kits: Soft-annealed copper suction and liquid lines factory cleaned, dried, pressurized, and sealed; factory-insulated suction line with flared fittings at both ends.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install evaporator-fan components using manufacturer's standard mounting devices securely fastened to building structure.

- B. Install ground-mounted, compressor-condenser components on 4-inch thick, reinforced concrete base; 4 inches larger on each side than unit. Concrete, reinforcement, and formwork are specified in Division 03 Section "Cast-in-Place Concrete." Coordinate anchor installation with concrete base.
- C. Install ground-mounted, compressor-condenser components on polyethylene mounting base.
- D. Install compressor-condenser components on restrained, spring isolators with a minimum static deflection of 1 inch (25 mm). Refer to Division 23 Section "Vibration and Seismic Controls for HVAC Piping and Equipment."

3.2 CONNECTIONS

- A. Connect precharged refrigerant tubing to component's quick-connect fittings. Install tubing to allow access to unit.
- B. Connect supply and return water coil with shutoff-duty valve and union or flange on the supply connection and with throttling-duty valve and union or flange on the return connection.
- C. Connect supply and return condenser connections with shutoff-duty valve and union or flange on the supply connection and with throttling-duty valve and union or flange on the return connection.
- D. Install refrigerant piping and condensate drain line in wall cavity from the back of the unit.

3.3 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust field-assembled components and equipment installation, including connections, and to assist in field testing. Report results in writing.
- B. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
- C. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation. Remove malfunctioning units, replace with new components, and retest.
- D. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

END OF SECTION 238126

SECTION 265100**INTERIOR LIGHTING****PART 1 - GENERAL**

1.1 SUMMARY

A. This Section includes the following:

1. Interior lighting fixtures with lamps and ballasts.
2. Lighting fixtures mounted on exterior building surfaces with lamps and ballasts.
3. Accessories, plaster rings, fasteners, etc.
4. Lamps in equipment (regardless of which specification Division that the equipment is supplied under). This includes lamps in fan/light combinations, heat lamps, lamps in medicine cabinets, etc.

1.2 RELATED DOCUMENTS:

- A. The General Conditions, Supplementary Conditions, and applicable portions of Division 1 of the specification are part of this section which shall consist of all labor, equipment, materials and other costs necessary to complete all **INTERIOR LIGHTING** work indicated on the drawings, herein specified or both.
- B. The applicable portions of section 260500 BASIC ELECTRICAL MATERIALS AND METHODS are hereby made a part of this section. It is important that you read that section carefully because it expands upon the requirements herein.

1.3 SUBMITTALS

- A. Product Data: For each type of lighting fixture scheduled, arranged in order of fixture designation. Include data on features, accessories, and finishes.
- B. Shop Drawings: Show details of nonstandard or custom fixtures. Indicate dimensions, weights, methods of field assembly, components, features, and accessories.
- C. Operation and maintenance data.

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

- C. FMG Compliance: Fixtures for hazardous locations shall be listed and labeled for indicated class and division of hazard by FMG.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.

2.2 LIGHTING FIXTURES

- A. See schedules on drawings.
- B. Manufacturer substitution of the following light fixtures are acceptable. However, the Engineer's decision is final:
 - 1. Type EBU
Evenlite
Dualite
 - 2. Type K
Mercury
LSI
 - 3. Type M4
Pinnacle
Ledalite
 - 4. Type M8
Pinnacle
Ledalite
 - 5. Type M16
Pinnacle
Ledalite
 - 6. Type P
Louis Poulsen
 - 7. Type RD2
Finelite
Ledalite
 - 8. Type RD4

- Finelite
Ledalite
- 9. Type RH
Evenlite
Dualite
- 10. Type RT4
Finelite
Ledalite
- 11. Type RT4A
Finelite
Ledalite
- 12. Type S
Mercury
LSI
- 13. Type WA
Louis Poulsen
- 14. Type WA1
Louis Poulsen
- 15. Type X
Dualite
Evenlite
- 16. Type Z
Finelite
Ledalite

2.3 FIXTURE SUPPORT COMPONENTS

- A. Comply with Division 26 Section "Basic Electrical Materials and Methods" for channel- and angle-iron supports and nonmetallic channel and angle supports.
- B. Single-Stem Hangers: 1/2-inch (13-mm steel tubing with swivel ball fittings and ceiling canopy. Finish same as fixture).
- C. Twin-Stem Hangers: Two, 1/2-inch (13-mm) steel tubes with single canopy designed to mount a single fixture. Finish same as fixture.
- D. Wires: ASTM A 641/A 641M, Class 3, soft temper, zinc-coated, 12 gage 2.68 mm.

- E. Wires For Humid Spaces: ASTM A 580/A 580M, Composition 302 or 304, annealed stainless steel, 12 gage (2.68 mm).
- F. Rod Hangers: 3/16-inch (5-mm) minimum diameter, cadmium-plated, threaded steel rod.
- G. Hook Hangers: Integrated assembly matched to fixture and line voltage and equipped with threaded attachment, cord, and locking-type plug.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Fixtures: Set level, plumb, and square with ceilings and walls. Install lamps in each fixture.
- B. Provide Unistrut support as necessary where the structure or other trades conflict.
- C. Support for Fixtures in or on Grid-Type Suspended Ceilings: Use grid for support.
 - 1. Install a minimum of four ceiling support system rods or wires for each fixture. Locate not more than 6 inches (150 mm) from fixture corners.
 - 2. Fixtures of Sizes Less Than Ceiling Grid: Install as indicated on reflected ceiling plans or center in acoustical panel, and support fixtures independently with at least two 3/4-inch (20-mm) metal channels spanning and secured to ceiling tees.
 - 3. Provide additional support, independent of ceiling grid for all fixtures (including incandescent) by use of jack chain having breaking strength of 3 times the weight of the fixture (minimum of #12). Fixtures over one foot in length shall be supported at all four corners.
 - 4. See section 260548, "Seismic Controls" for additional requirements.
- D. Suspended Fixture Support: As follows:
 - 1. Pendants and Rods: Where longer than 48 inches (1200 mm), brace to limit swinging.
 - 2. Stem-Mounted, Single-Unit Fixtures: Suspend with twin-stem hangers.
 - 3. Continuous Rows (stem mounted): Use tubing or stem for wiring at one point and tubing or rod for suspension for each unit length of fixture chassis, including one at each end.
 - 4. Continuous Rows (cable mounted): Suspend from cable.
 - 5. Support: Per NEC 410-16.
- E. Air-Handling Fixtures: Install with dampers closed and ready for adjustment.
- F. Adjust aimable fixtures to provide required light intensities. Adjust all fixtures to the satisfaction of the Engineer. Adjustments required at night shall be done at no additional charge. Provide all equipment needed including scaffolding, if required.

END OF SECTION 265100

Section 32 32 10

BOULDER PLACEMENT**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- B. Related Sections: The following sections contain requirements that relate to this section.
 - 1. Division 31 Section "Earthwork" for subgrade preparation, grading and subbase occurs.

1.2 DESCRIPTION OF WORK

- A. Provide all materials, equipment and labor necessary to complete the work as indicated on the drawings or as specified herein.
- B. The principal work of this section includes, but may not be limited to, the following:
 - 1. Layout and Excavation of Areas
 - 2. Placement of Boulders in Landscape
 - 3. Placement of Boulders in Pavement

1.3 QUALITY ASSURANCE

- A. The Landscape Architect reserves the right to inspect all materials and placement of materials for compliance with specifications, and to reject unsatisfactory or defective materials and/or layout at any time during progress of work.
- B. Do not make substitutions without written approval. If specified landscape material is not available, obtain approval for substitution from the Landscape Architect.

1.4 SUBMITTALS

- A. A sample Boulder be selected by the Landscape Architect through the Contractor to show the texture, finish, and anticipated range of color and size to be supplied and shall be stored on site.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Protect all products from weather or other damaging or deteriorating conditions.
- B. Product will be stored in location specified by General Contractor.

PART 2 - PRODUCTS

2.1 BOULDER IN LANDSCAPE

- A. Boulder sizes per plans and details.
- B. Boulder colors will be grey and tan in color. Variations in color shall be approved by the Landscape Architect.

- C. Boulders will be more rounded in form. See figures 2.1-2.2 for photos of the range of acceptable boulder shapes and colors.



Figures 2.1 and 2.2

- D. Texture and finish shall be within the range of samples approved by the Landscape Architect.
- E. Boulders shall be selected from the stockpile located on the URI campus.
 1. The stockpile is located northwest of the recently completed Plains Road extension between West Alumni Ave. and the west end of Flagg Road. See photo and map below
 2. The contractor may drive through the field to access the boulders.



Fig. 2.3

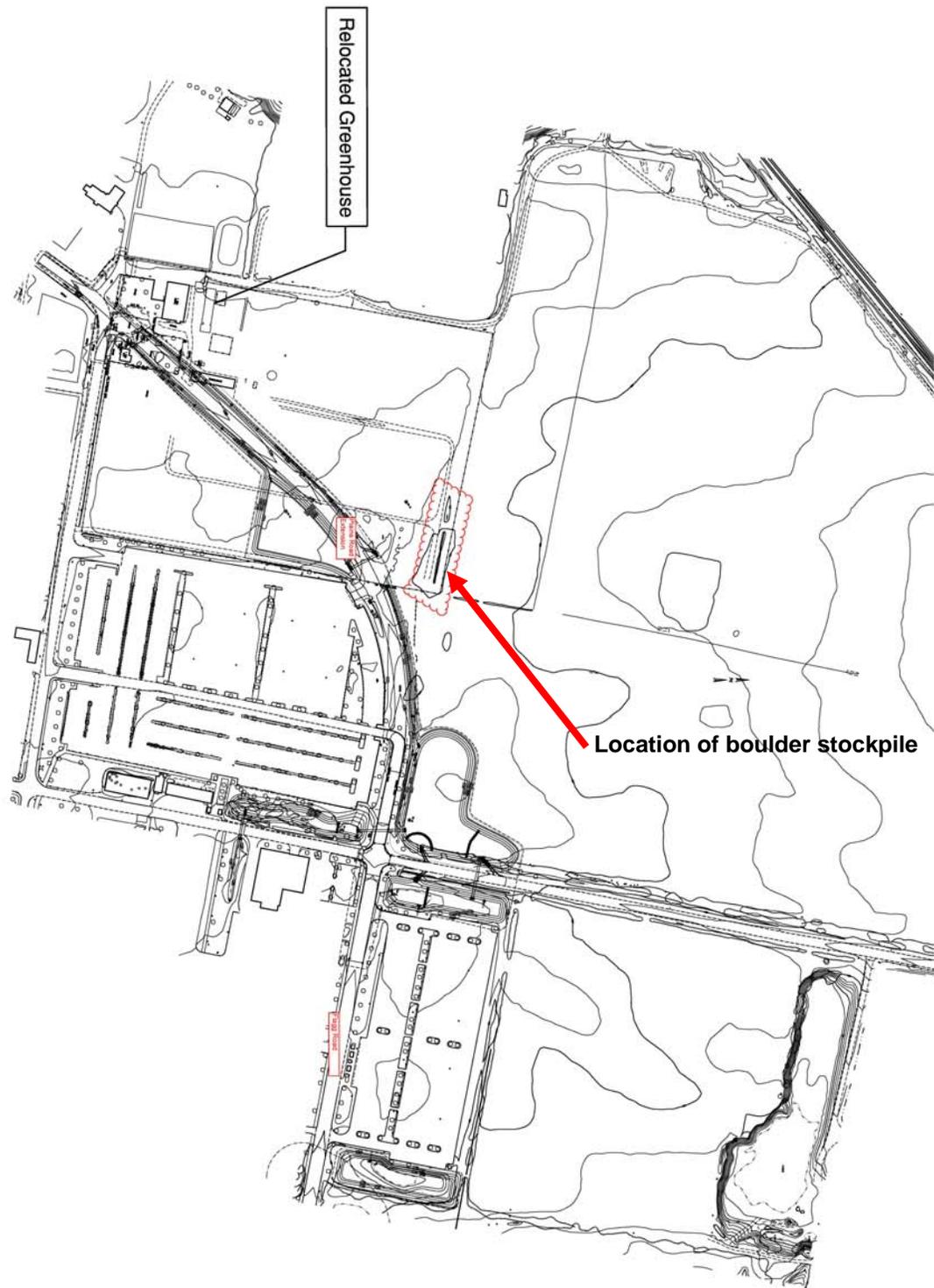


Fig. 2.4

PART 3 - EXECUTION

3.1 PLACEMENT OF BOULDER

- A. Contractor is responsible for transport of boulders from stockpile to the project site.
- C. Boulder shall be placed on compacted sand gravel fill per the drawings.
- D. Boulder will be placed as indicated on the plans.
- E. Boulder shall be buried in accordance with the drawings and details.

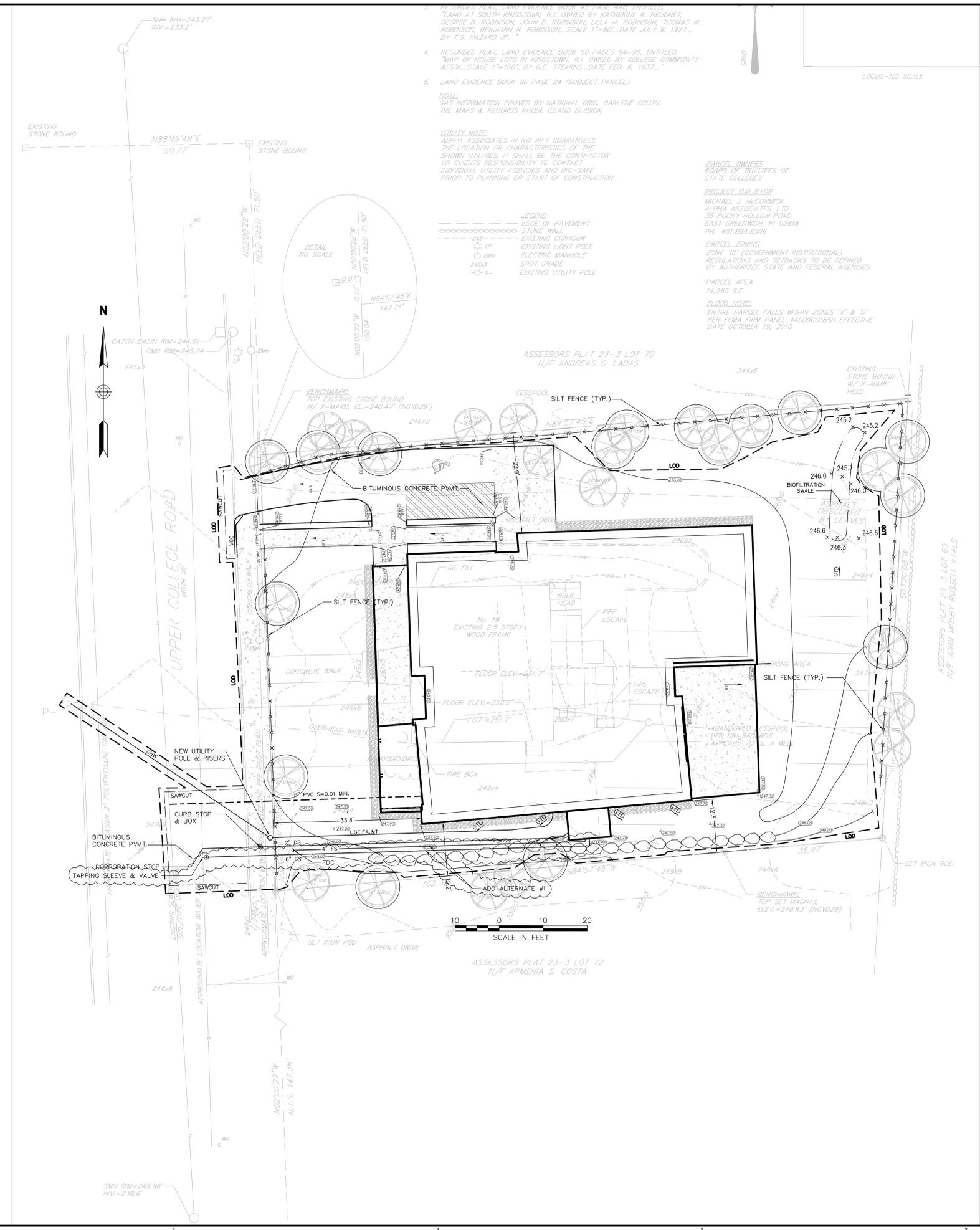
END OF SECTION



Notes:

General

1. SITE GRADING, SITE LAYOUT, AND MATERIALS ARE SHOWN FOR INFORMATIONAL PURPOSES. SEE PLANS BY OTHERS FOR SITE GRADING, LAYOUT, AND MATERIALS.
2. BUILDING LAYOUT DIMENSIONS ARE FROM FACE OF BUILDING.
3. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING SOIL WITHIN THE LIMITS OF THE PROPOSED BUILDING AND 5 FEET BEYOND TO ELEVATION 244.2.



3. RECORDED PLAT, LAND EVIDENCE BOOK 95 PAGE 48, ENTITLED "LAND AT SOUTH KINGSTOWN, R.I. OWNED BY KATHERINE R. PEIGNET, GEORGE B. ROBINSON, JOHN B. ROBINSON, LILLA M. ROBINSON, THOMAS W. ROBINSON, BENJAMIN R. ROBINSON, SCALE 1"=80', DATE JULY 9, 1927... BY T.G. HAZARD JR..."

4. RECORDED PLAT, LAND EVIDENCE BOOK 50 PAGES 94-95, ENTITLED, "MAP OF HOUSE LOTS IN KINGSTOWN, R.I. OWNED BY COLLEGE COMMUNITY ASSN., SCALE 1"=100', BY D.E. STEARNS, DATE FEB. 6, 1937..."

5. LAND EVIDENCE BOOK 86 PAGE 24 (SUBJECT PARCEL)

NOTE:
GAS INFORMATION PROVIDED BY NATIONAL GRID, DARLENE COUTU, THE MAPS & RECORDS RHODE ISLAND DIVISION

UTILITY NOTE:
ALPHA ASSOCIATES IN NO WAY GUARANTEES THE LOCATION OR CHARACTERISTICS OF THE SHOWN UTILITIES. IT SHALL BE THE CONTRACTOR OR CLIENTS RESPONSIBILITY TO CONTACT INDIVIDUAL UTILITY AGENCIES AND DIG-SAFE PRIOR TO PLANNING OR START OF CONSTRUCTION

LEGEND
--- EDGE OF PAVEMENT
--- STONE WALL
--- EXISTING CONTOUR
○ LP EXISTING LIGHT POLE
○ EMH ELECTRIC MANHOLE
○ 245x3 SPOT GRADE
○ P- EXISTING UTILITY POLE

PARCEL OWNERS BOARD OF TRUSTEES OF STATE COLLEGES
PROJECT SURVEYOR
MICHAEL J. MCCORMICK
ALPHA ASSOCIATES LTD.
35 ROCKY HOLLOW ROAD
EAST GREENWICH, RI 02818
PH: 401.884.8506

PARCEL ZONING
ZONE "G" (GOVERNMENT INSTITUTIONAL)
REGULATIONS AND SETBACKS TO BE DEFINED BY AUTHORIZED STATE AND FEDERAL AGENCIES

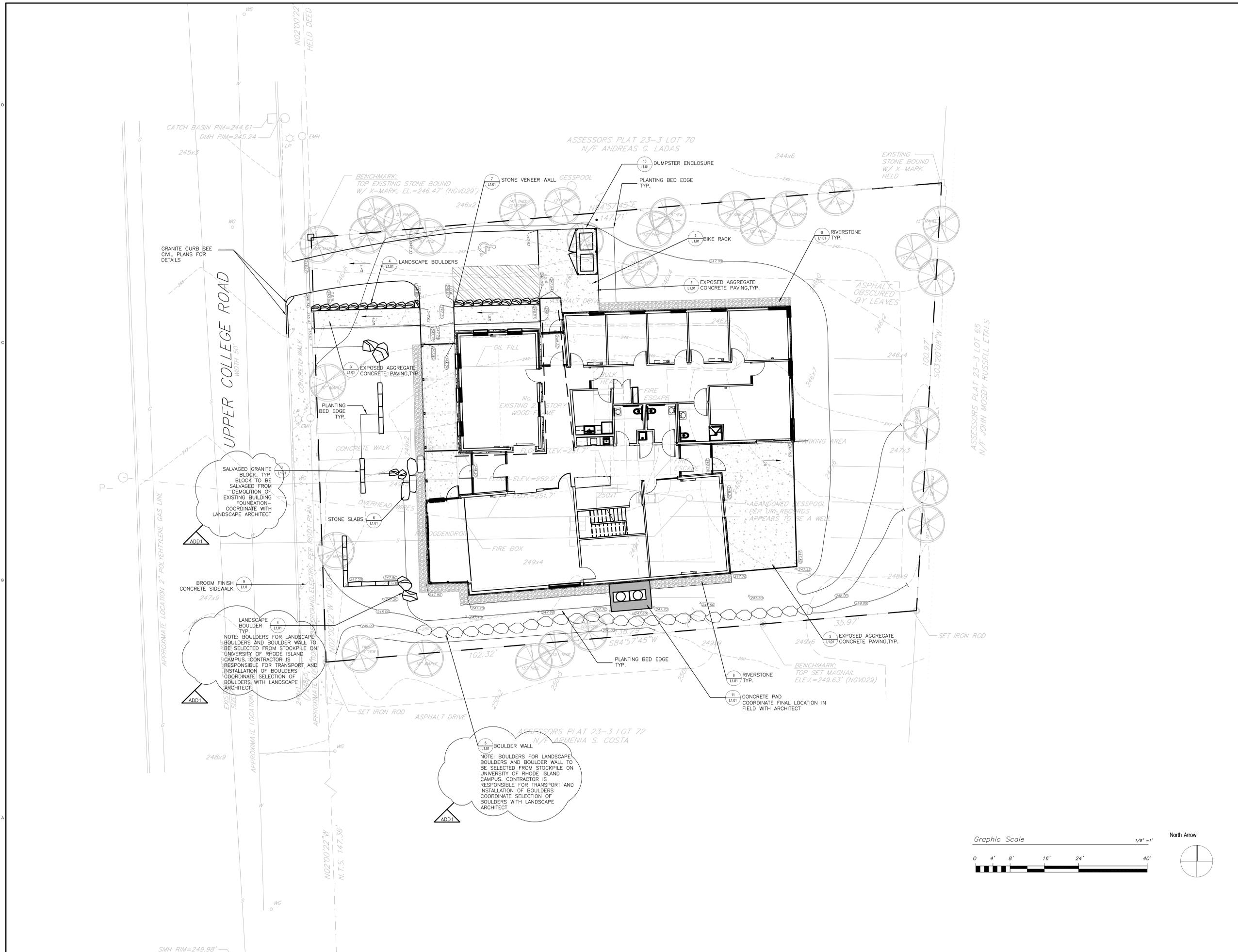
PARCEL AREA
14,285 S.F.

FLOOD NOTE:
ENTIRE PARCEL FALLS WITHIN ZONES 'X' & 'D'
PER FEMA FIRM PANEL 44099C0185H EFFECTIVE DATE OCTOBER 19, 2010.

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ISSUED FOR BID
01/28/2014
REVISIONS
02/12/2014 - REVISION 1

DRAINAGE AND UTILITY PLAN



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ADDENDUM 1
2/12/2014

REVISIONS

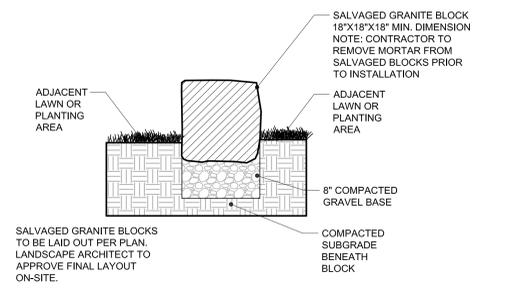
LANDSCAPE MATERIALS
AND GRADING PLAN

Graphic Scale 1/8" = 1'

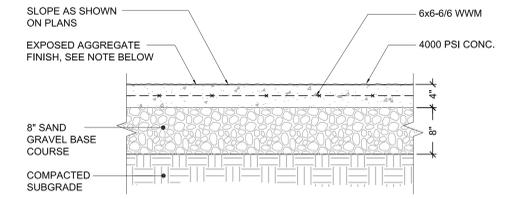


North Arrow



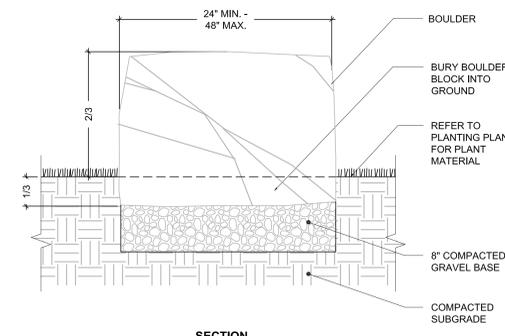


1 SALVAGED GRANITE BLOCK
SCALE: 3/4"=1'



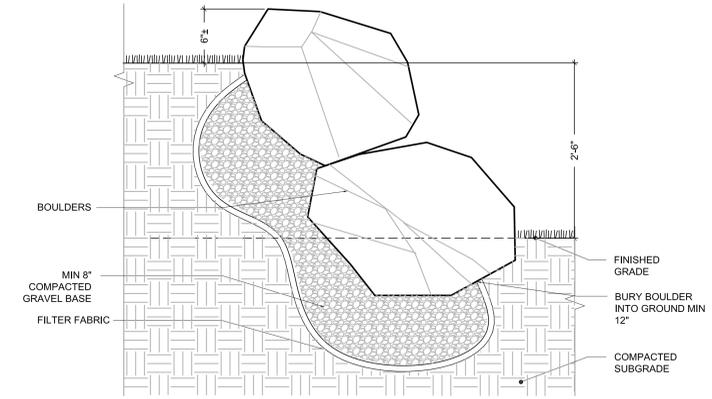
NOTES:
1. SEE SPECIFICATIONS FOR AGGREGATE SIZE, COLOR, SHAPE AND SAMPLE REQUIREMENTS.
2. EXPANSION JOINTS SHALL BE INSTALLED AS NOTED ON THE PLANS.
3. THOROUGHLY WASH AND CLEAN ALL SURFACES AND REMOVE ALL DEBRIS AFTER SAWCUTTING.
4. SAWCUT CONTROL JOINTS SHALL BE PLACED AS NOTED ON THE PLANS.

2 EXPOSED AGGREGATE CONCRETE PAVING
SCALE: 1"=1'



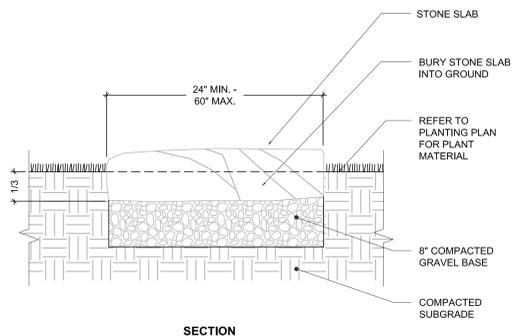
NOTES:
1. BOULDER LOCATIONS SHALL BE FIELD VERIFIED BY LANDSCAPE ARCHITECT PRIOR TO FINAL INSTALLATION.
2. SEE SPECIFICATIONS FOR BOULDERS AND DECORATIVE BOULDERS.
3. SEE PLANS FOR LOCATIONS OF DECORATIVE BOULDERS.

3 LANDSCAPE BOULDER
SCALE: 1"=1'



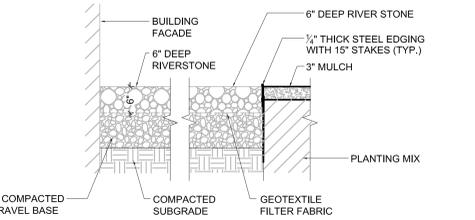
NOTES:
1. BOULDER LOCATIONS SHALL BE FIELD VERIFIED BY LANDSCAPE ARCHITECT PRIOR TO FINAL INSTALLATION.
2. SEE SPECIFICATIONS FOR BOULDER TYPE, COLOR, ETC.

4 BOULDER WALL
SCALE: 1"=1'



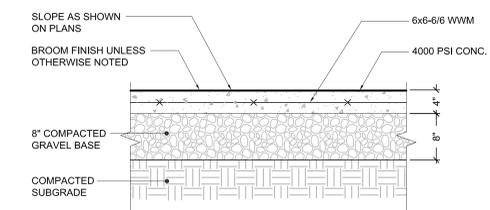
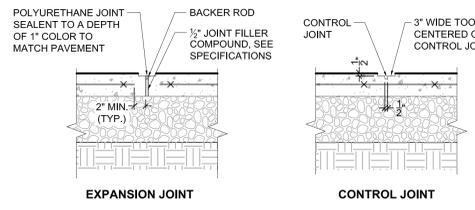
NOTES:
1. STONE SLAB SIZE, COLOR AND LOCATIONS SHALL BE FIELD VERIFIED BY LANDSCAPE ARCHITECT PRIOR TO FINAL INSTALLATION.
2. STONE SLAB TO BE NATIVE STONE APPROVED BY LANDSCAPE ARCHITECT.
3. SEE PLANS FOR LOCATIONS OF STONE SLABS

5 STONE SLAB
SCALE: 1"=1'



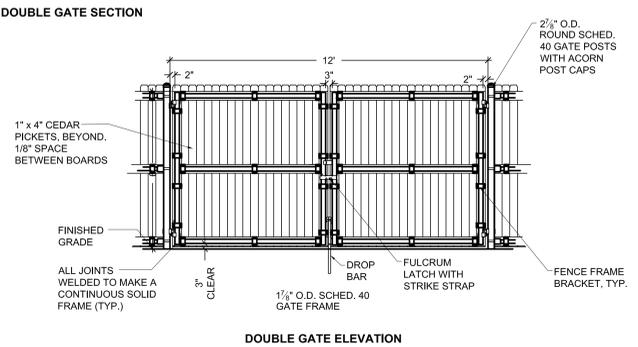
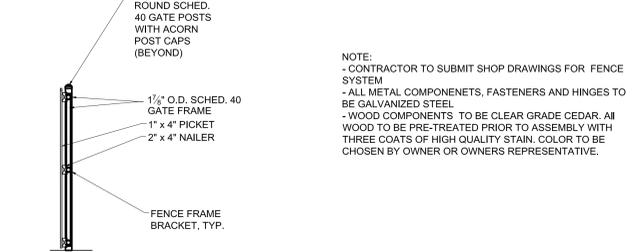
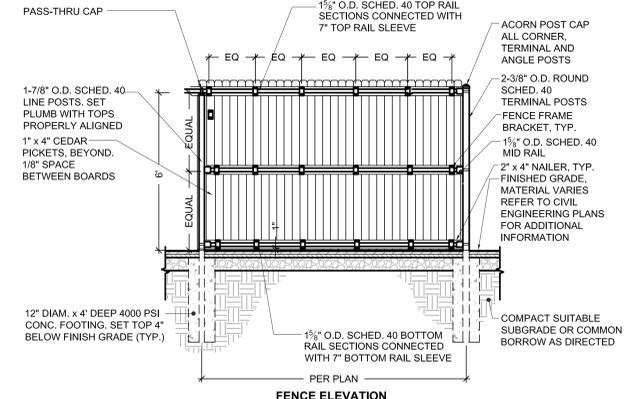
NOTES:
1. RIVER STONE COLOR TO BE IN WARM TONES OF BUFF, TAN AND BEIGE. SUBMIT SAMPLE TO LANDSCAPE ARCHITECT FOR APPROVAL.
2. STEEL EDGING SHALL BE 1/2" x 5" STEEL WITH POWDER COATED BLACK FINISH. 15' STAKES SHALL BE USED.
3. STEEL EDGING NOT TO BE USED IN AREAS ASSOCIATED WITH RAIN GARDENS.

6 RIVER STONE
SCALE: 3/4"=1'

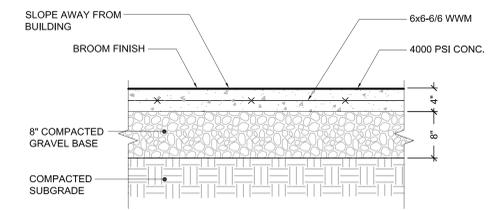
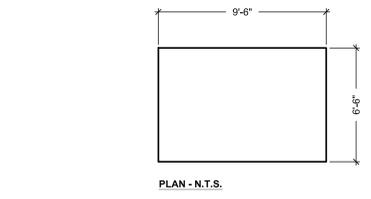


NOTES:
1. EXPANSION JOINTS SHALL BE 20' O.C. UNLESS OTHERWISE NOTED ON THE PLANS.
2. CONTROL JOINTS SHALL BE 5' O.C. UNLESS OTHERWISE NOTED ON THE PLANS.

7 BROOM FINISHED CONCRETE SIDEWALK
SCALE: 1"=1'

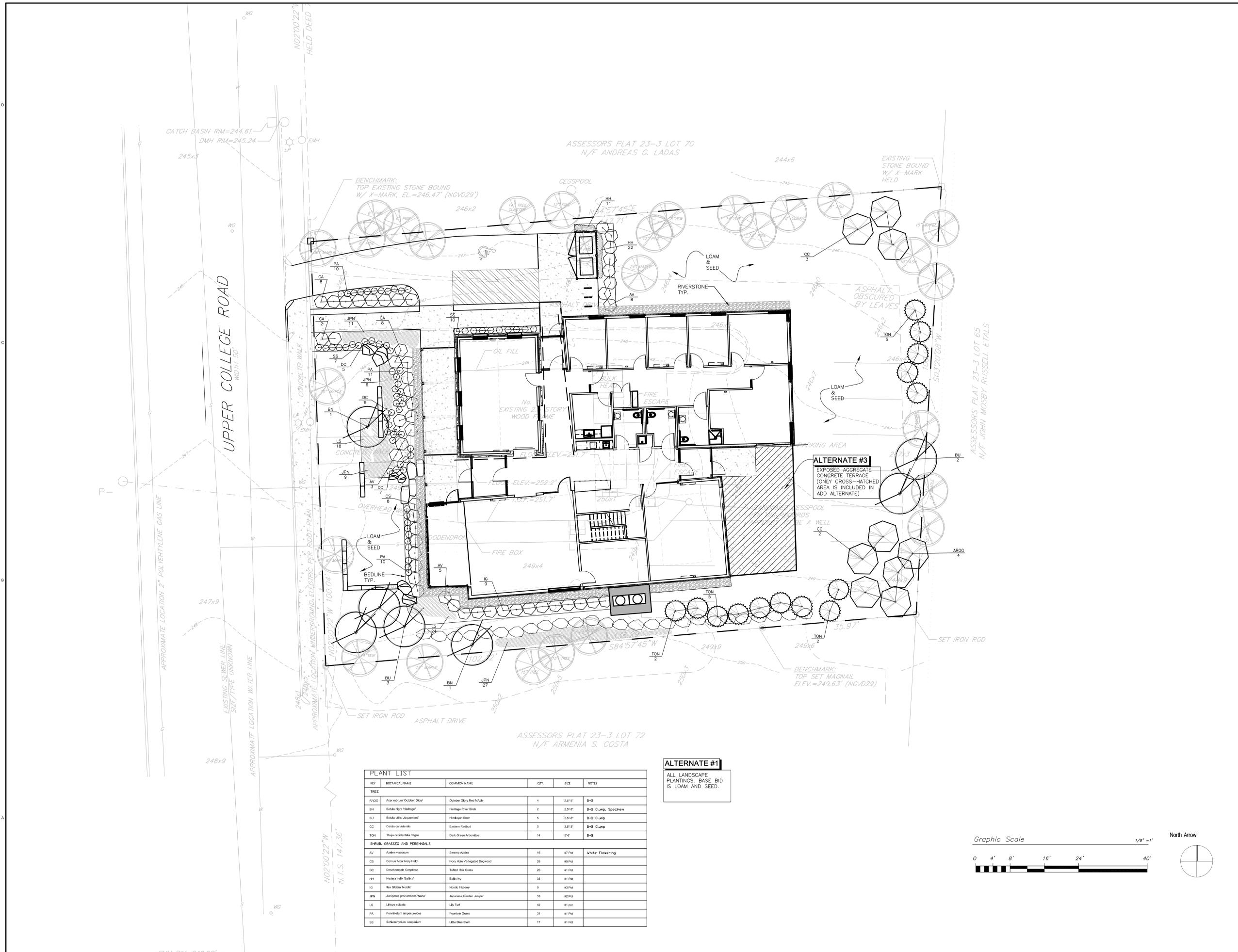


8 DUMPSTER ENCLOSURE
SCALE: 3/8"=1'



NOTES:
1. EXPANSION JOINTS SHALL BE 20' O.C. UNLESS OTHERWISE NOTED ON THE PLANS.
2. CONTROL JOINTS SHALL BE 5' O.C. UNLESS OTHERWISE NOTED ON THE PLANS.

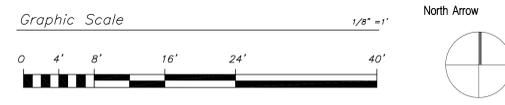
9 CONCRETE PAD
SCALE: 1"=1'



ALTERNATE #3
EXPOSED AGGREGATE CONCRETE TERRACE (ONLY CROSS-HATCHED AREA IS INCLUDED IN ADD ALTERNATE)

ALTERNATE #1
ALL LANDSCAPE PLANTINGS, BASE BID IS LOAM AND SEED.

KEY	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	NOTES
TREE					
AROC	Acer rubrum 'October Glory'	October Glory Red Maple	4	2.5'x3"	3#-3
BN	Betula nigra 'Heritage'	Heritage River Birch	2	2.5'x3"	3#-3 Clump, Specimen
BU	Betula nigra 'Jacksnaw'	Heritage River Birch	5	2.5'x3"	3#-3 Clump
EC	Cercis canadensis	Eastern Redbud	8	2.5'x3"	3#-3 Clump
TON	Thuja occidentalis 'Naniv'	Dark Green Arborvitae	14	9'x6"	3#-3
SHRUB, GRASSES AND PERENNIALS					
AV	Azalea speciosa	Swamp Azalea	16	#7 Pot	White Flowering
CS	Cornus Alba 'Ivory Halo'	Honey Haleb Vairegated Dogwood	26	#5 Pot	
DC	Deschampsia Cespitosa	Tufted Hair Grass	20	#1 Pot	
HH	Hedera helix 'Tidbit'	English Ivy	33	#1 Pot	
IG	Ilex glabra 'Neroli'	Wax Holly	9	#3 Pot	
JPN	Juniperus procumbens 'Nana'	Japanese Garden Juniper	53	#2 Pot	
LS	Lilippe spicata	Lily Turf	42	#1 pot	
PA	Pennisetum alpicoides	Fourteen Grass	31	#1 Pot	
SS	Schizanthus scopolium	Little Blue Stem	17	#1 Pot	

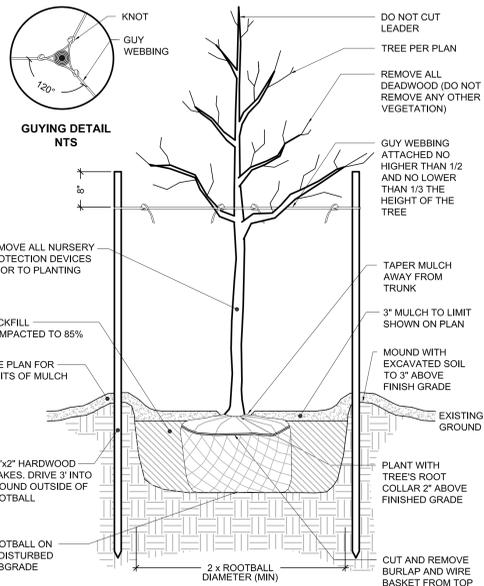


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ADDENDUM 1
2/12/2014

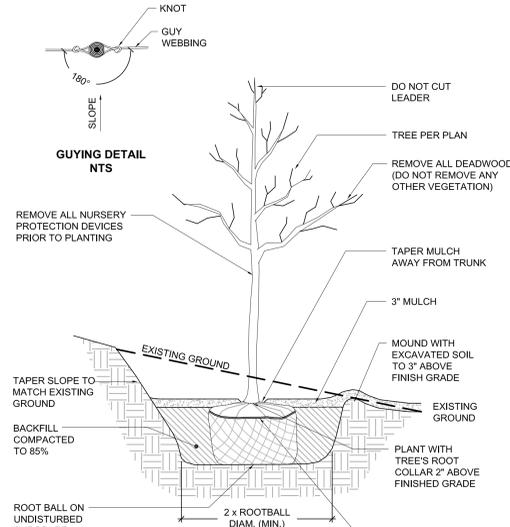
REVISIONS

LANDSCAPE PLAN



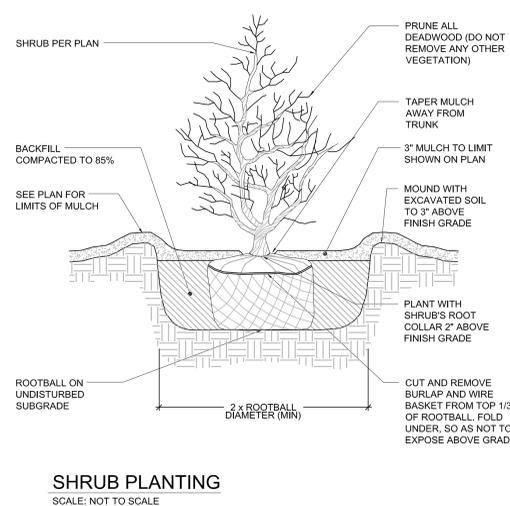
NOTE:
1. AFTER THE GUARANTEE PERIOD THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF STAKES AND GUY WEBBING.
2. ALL TREES NOT LOCATED WITHIN A LARGER MULCHED PLANTING BED SHALL RECEIVE A 5' DIAMETER MULCH BED AROUND THE BASE OF THE TREE.

DECIDUOUS TREE STAKING & PLANTING
SCALE: NOT TO SCALE

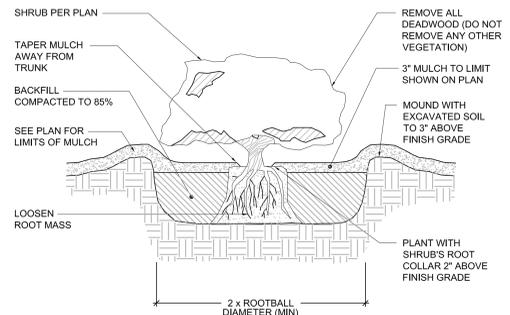


NOTE: SLOPE PLANTING STAKES SHALL BE PLACED PARALLEL TO SLOPE.

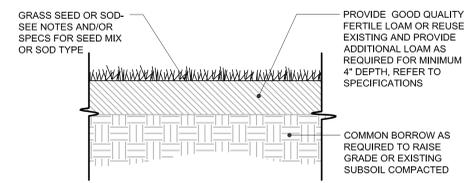
DECIDUOUS TREE PLANTING ON SLOPE
SCALE: NOT TO SCALE



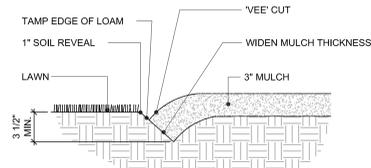
SHRUB PLANTING
SCALE: NOT TO SCALE



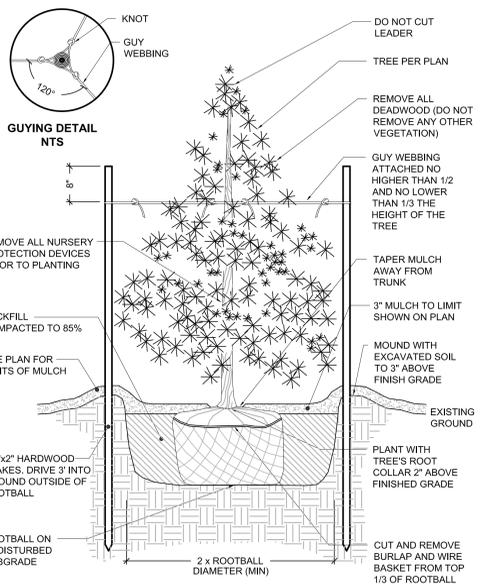
CONTAINER GROWN TREE & SHRUB PLANTING
SCALE: NOT TO SCALE



LOAM AND SEED OR LOAM AND SOD
SCALE: NOT TO SCALE

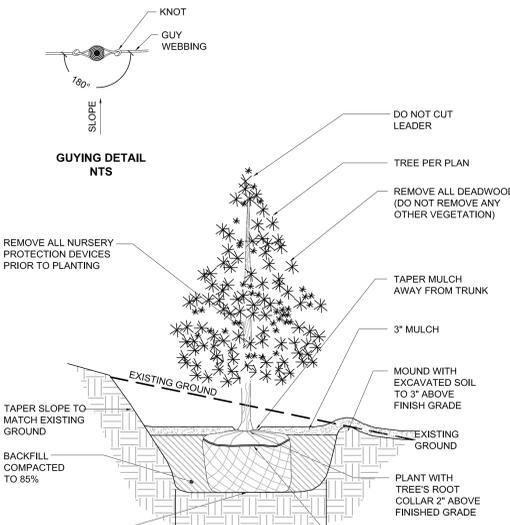


BEDLINE EDGE
SCALE: NOT TO SCALE



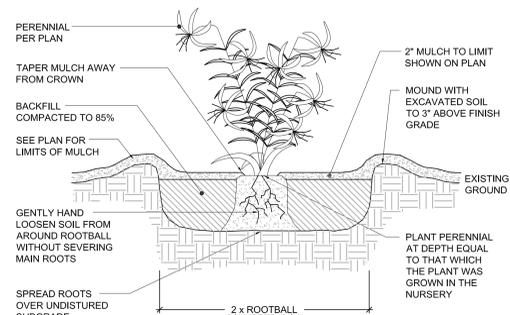
NOTE:
AFTER THE GUARANTEE PERIOD THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF STAKES AND GUY WEBBING.

EVERGREEN TREE STAKING & PLANTING
SCALE: NOT TO SCALE

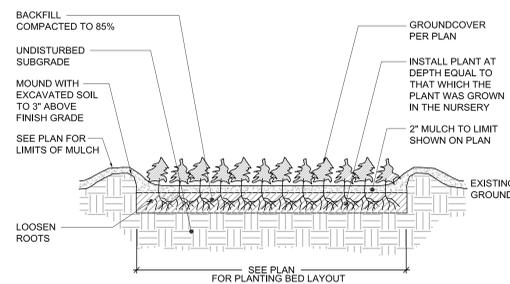


NOTE: SLOPE PLANTING STAKES SHALL BE PLACED PARALLEL TO SLOPE.

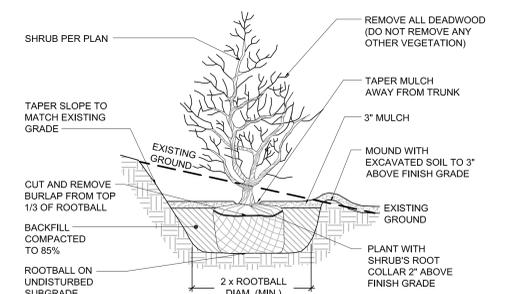
EVERGREEN TREE PLANTING ON SLOPE
SCALE: NOT TO SCALE



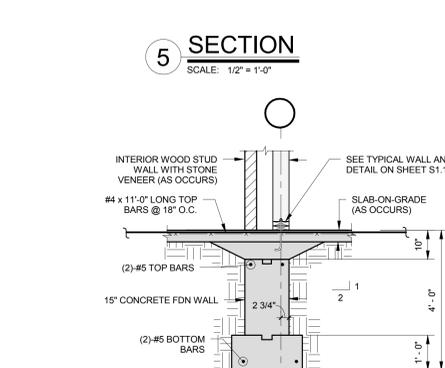
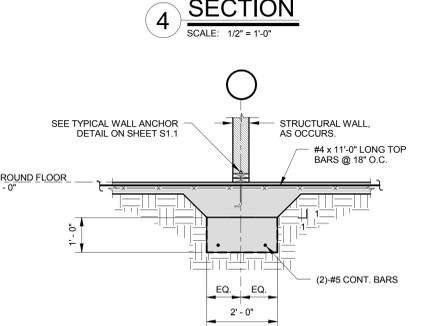
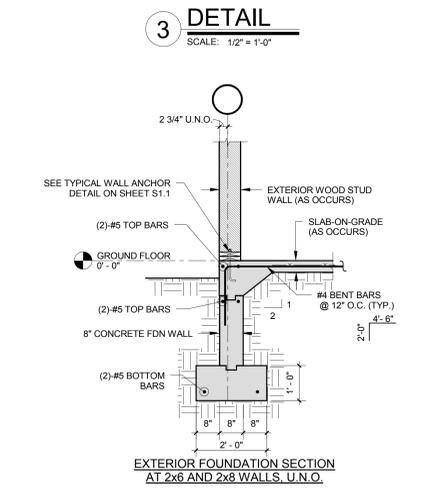
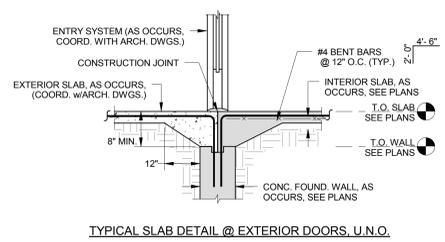
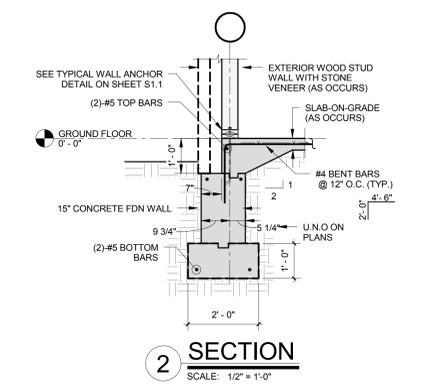
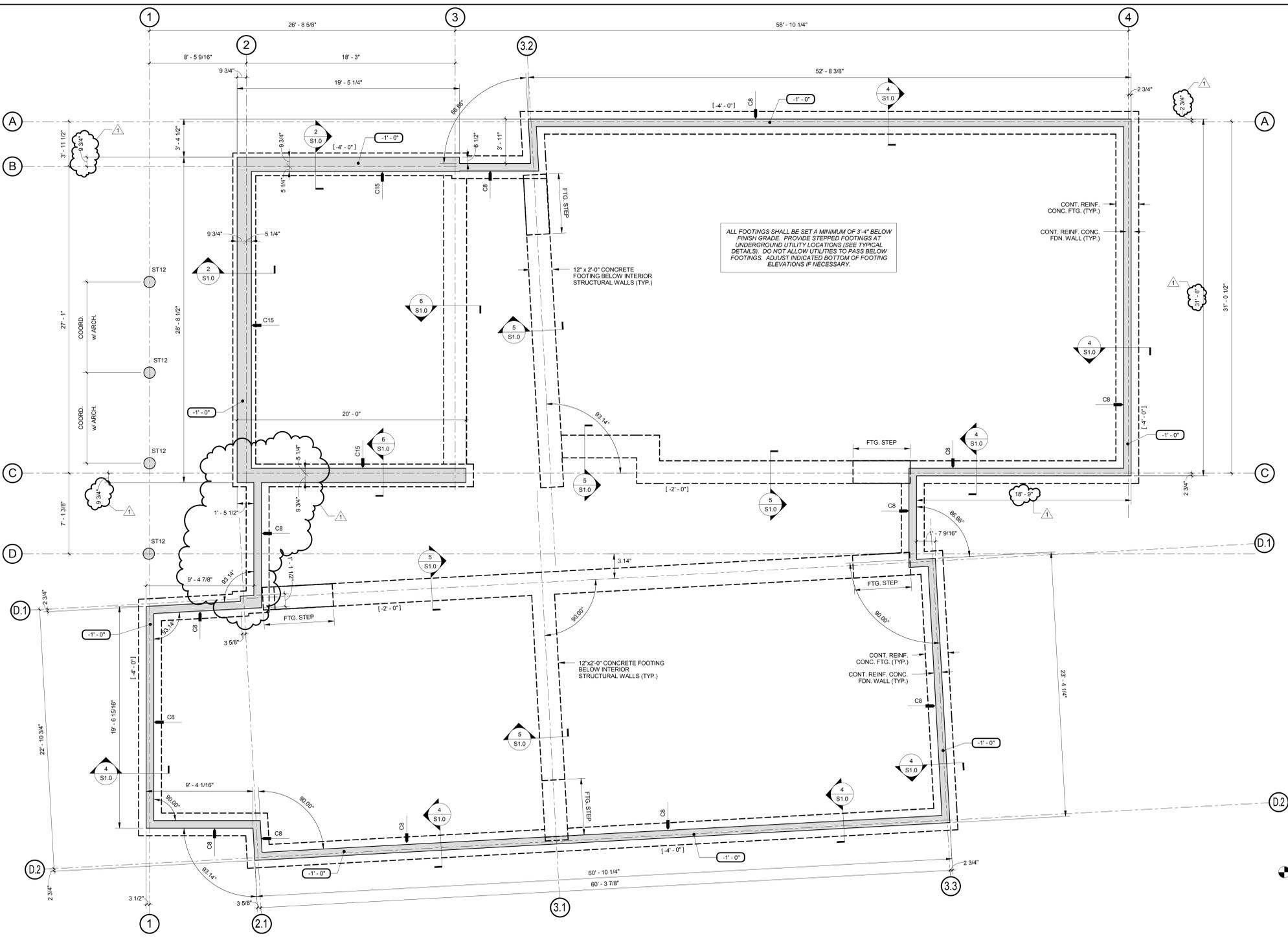
PERENNIAL & GRASS PLANTING
SCALE: NOT TO SCALE



GROUNDCOVER PLANTING
SCALE: NOT TO SCALE

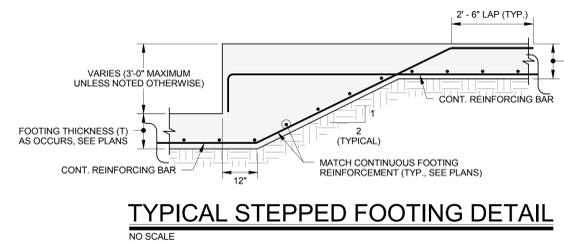
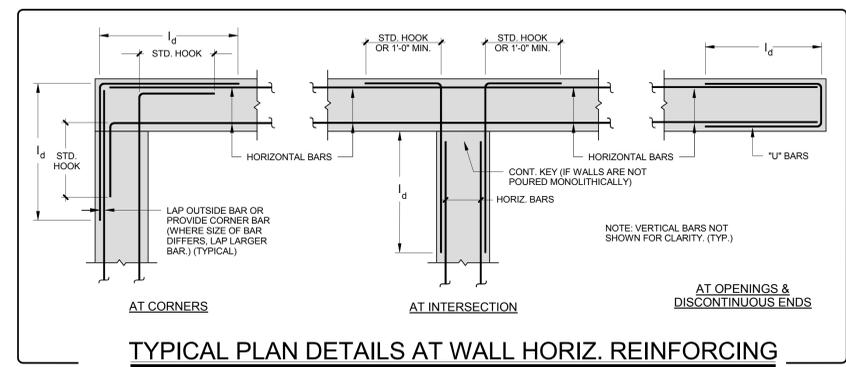


SHRUB PLANTING ON SLOPE
SCALE: NOT TO SCALE



1 FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

- NOTES:**
1. [Symbol] - INDICATES FLOOR ELEVATION (TYP., U.N.O.).
 2. ALL DIMENSIONS & ELEVATIONS INDICATED ON THIS DRAWING ARE FOR REFERENCE ONLY. COORDINATE ALL DIMENSIONS & ELEVATIONS WITH THE ARCHITECT PRIOR TO THE START OF WORK.
 3. [Symbol] : INDICATES TOP OF CONCRETE FOUNDATION WALL.
 4. [Symbol]] - INDICATES BOTTOM OF CONCRETE FOOTING ELEVATION.
 5. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE LOCATED A MINIMUM OF 3'-4" BELOW FINISH GRADE.
 6. ALL EXISTING STRUCTURES, FOUNDATIONS, AND SLABS SHALL BE COMPLETELY REMOVED FROM WITHIN THE LIMITS OF THE NEW BUILDING. ALL FOUNDATIONS SHALL BE SET UPON VIRGIN SOIL OR ENGINEERED COMPACTED FILL PREPARED AND/OR PLACED IN CONFORMANCE WITH THE REQUIREMENTS AND RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER.
 7. ALL FOUNDATION WALL DIMENSIONS INDICATED ON THIS PLAN ARE TO THE OUTSIDE FACE OF CONCRETE, U.N.O.
 8. UNDERGROUND UTILITIES SHALL NOT PASS BELOW OR THROUGH NEW CONCRETE FOOTINGS. STEP FOOTINGS AS NECESSARY AT UTILITY LOCATIONS TO ALLOW UTILITIES TO PASS THROUGH FOUNDATION WALLS ABOVE THE FOOTINGS (SEE TYPICAL DETAILS).
 9. ST# - INDICATES SONO-TUBE FOUNDATION TYPE. ST12 = 12" DIAMETER SONO-TUBE FOUNDATION (PROVIDE 1 #5 BERT. BAR IN ALL SONO-TUBE FOUNDATIONS)
 10. PROVIDE CAST-IN-PLACE HOLD-DOWN ANCHORS AT ALL BUILDING CORNERS AND AT THE BASES OF ALL POSTS DIRECTLY SUPPORTING ROOF FRAMING. SEE DRAWING S2.1 FOR DETAILS.



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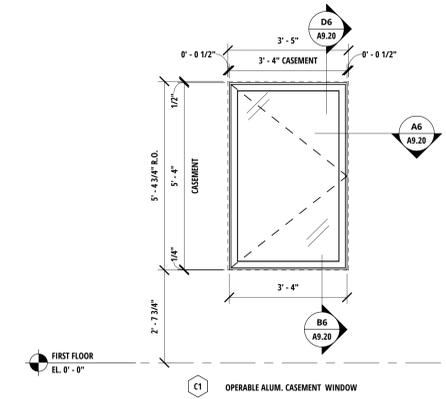
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01/28/2014
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1 February 12, 2014

FOUNDATION PLAN

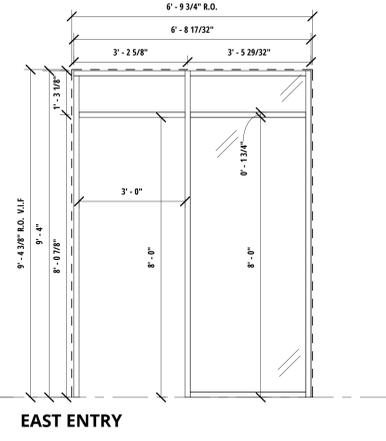
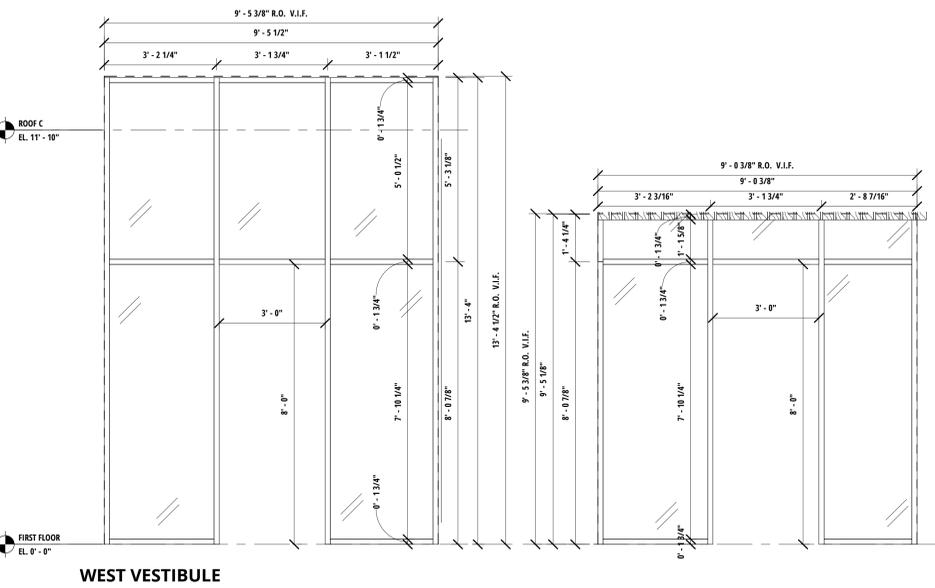
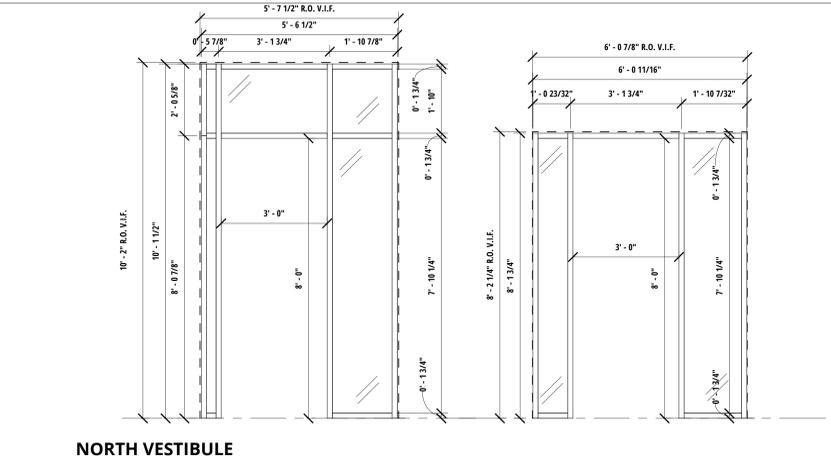
S1.0

GENERAL OPENING NOTES

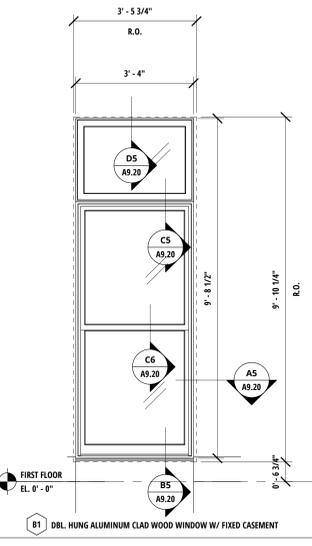
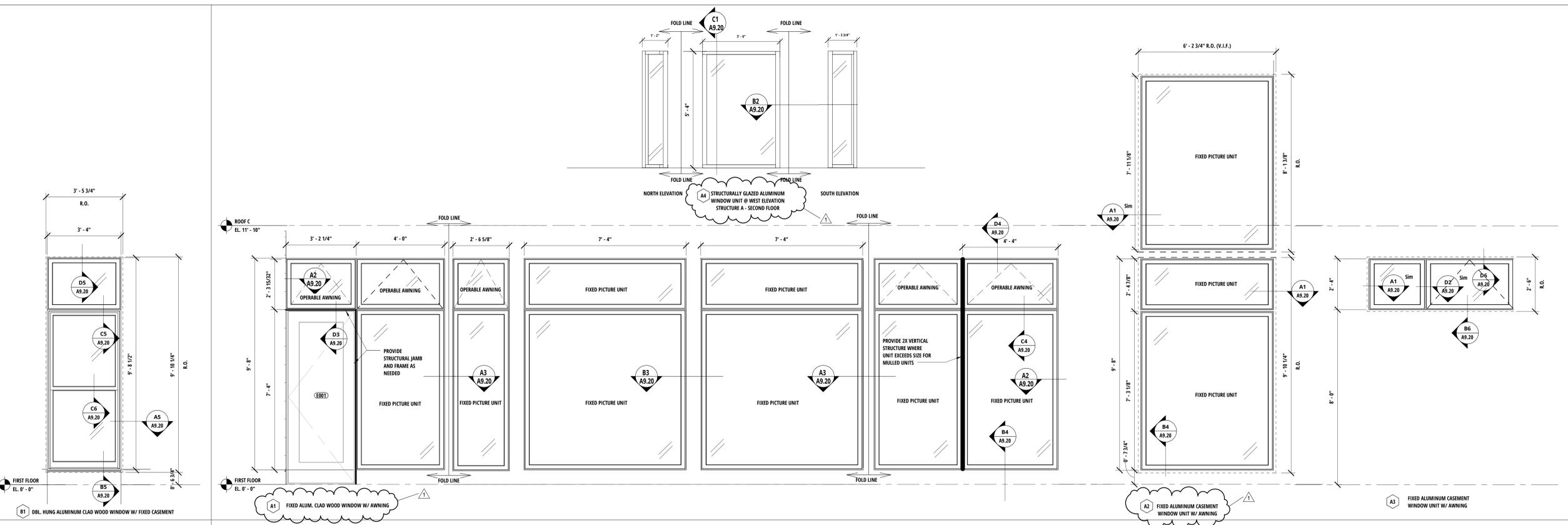
THE G.C. SHALL REVIEW ALIMENTS OF WALL, CEILING AND FLOOR FINISHES TO WINDOW AND STOREFRONTS AND COORDINATE AS CALLED FOR. REFER TO PLAN, WINDOW AND SECTION DETAILS.



WINDOWS @ STRUCTURE C



STOREFRONT FRAMES



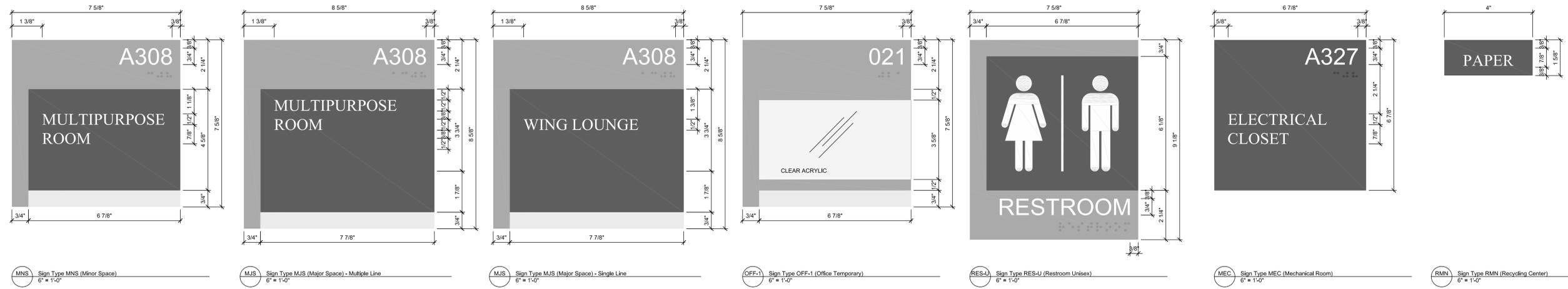
WINDOWS @ STRUCTURE B

WINDOWS @ STRUCTURE A

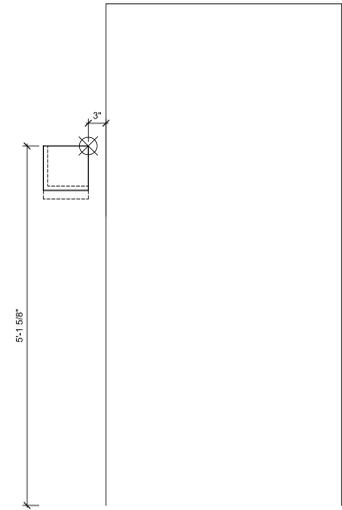
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1 02/12/14 Addendum 1

OPENING TYPES



REFER TO PROJECT MANUAL SECTION 101423
 PART 3.4 FOR PRELIMINARY SIGNAGE SCHEDULE



NOTE
 At non-panel, continuous wall finishes (glass, plaster), apply
 signage as indicated.

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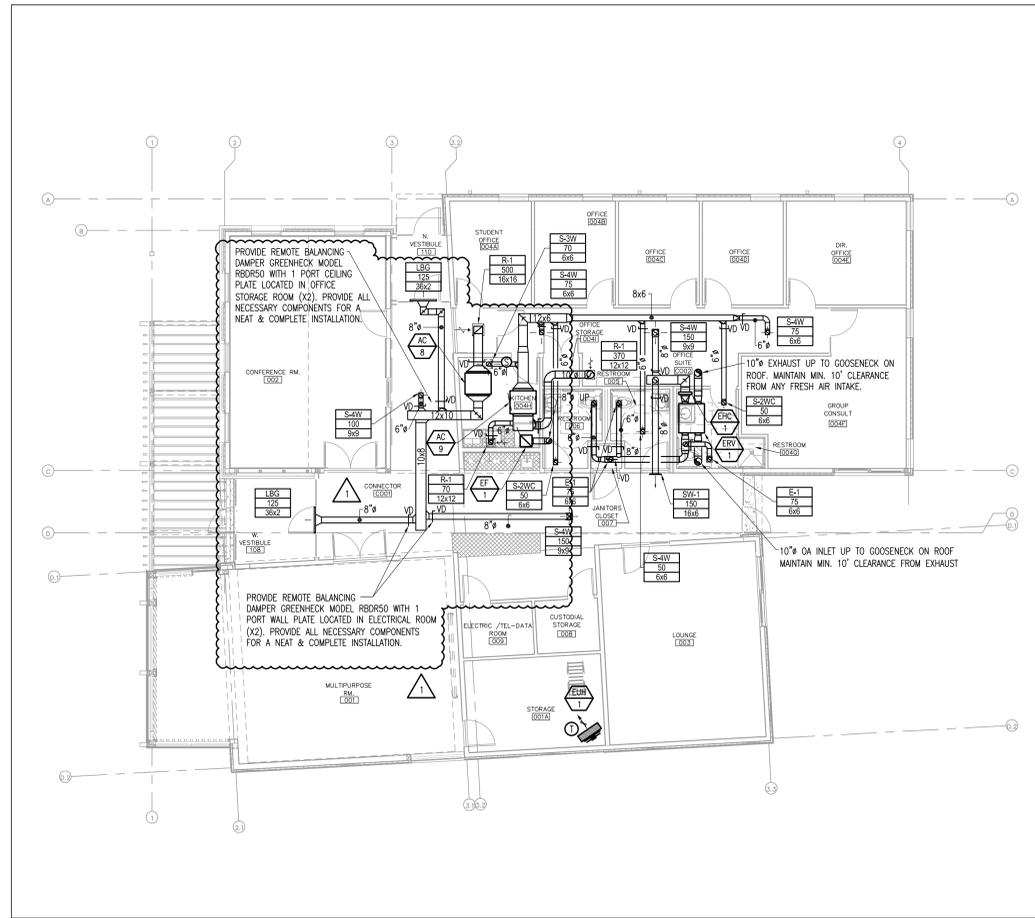
ISSUE FOR BID

01/28/2014

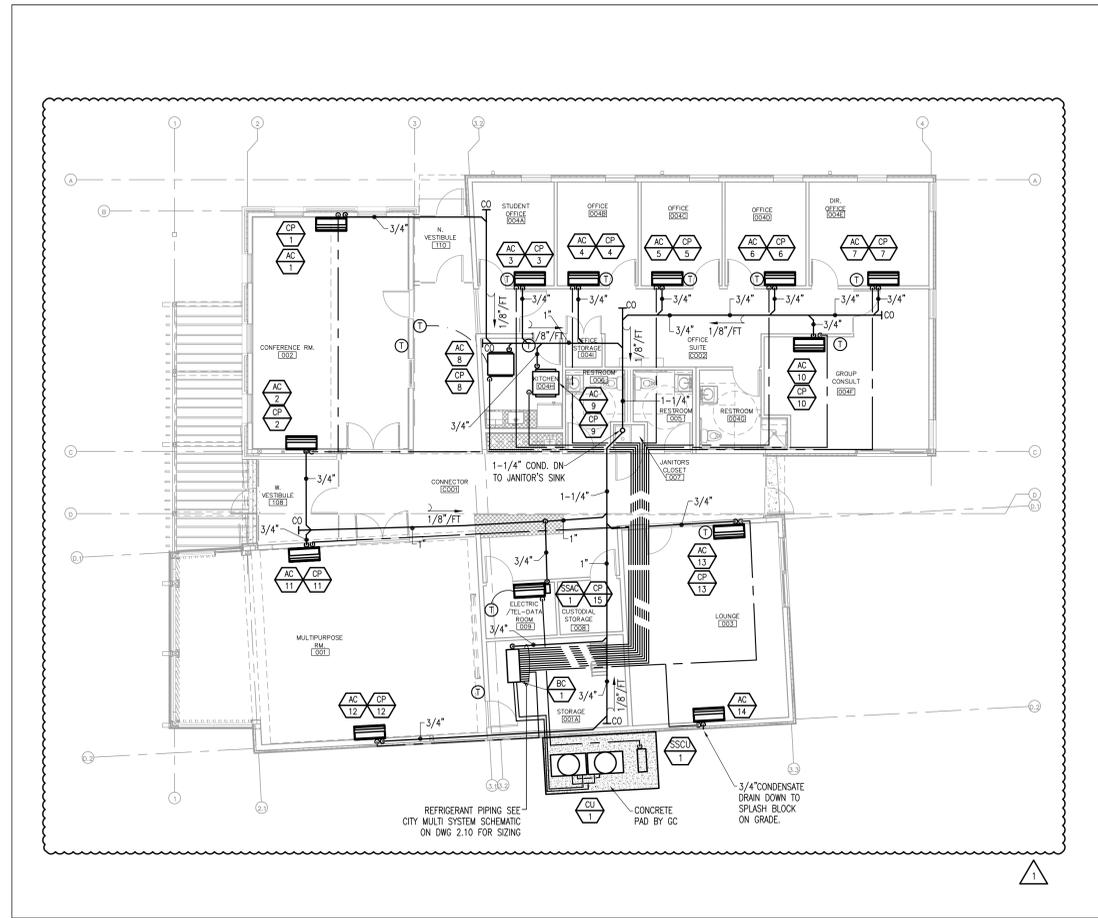
Revisions

▲ 02/12/14 ADDENDUM #1

SIGNAGE



A6
GROUND FLOOR - HVAC DUCTWORK
SCALE: 1/8" = 1'-0"



A3
GROUND FLOOR - HVAC PIPING
SCALE: 1/8" = 1'-0"

NOTE:

1. THE MITSUBISHI VRF SYSTEM WAS USED AS A BASIS OF DESIGN. IF ANOTHER MANUFACTURER IS SUBMITTED ON, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL NECESSARY COMPONENTS AND PIPING FOR A NEAT AND COMPLETE INSTALLATION.
2. ALL CONDENSATE DRAIN MAINS SHALL BE PVC AND PITCH 1/8" PER 1'. ALL PUMPED CONDENSATE BRANCH LINES FROM THE AC WALL UNIT TO THE CONDENSATE MAIN SHALL BE CLEAR POLYPROPYLENE TUBING.

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FLOOR PLANS - HVAC



G.A.S. # 120052

M1.00

TAG NO.		LOCATION	UNIT SERVED	SYSTEM DATA				SYSTEM ELECTRICAL DATA				MODULE ELECTRICAL DATA				WEIGHT (LBS.)	MANUFACTURER MODEL NO.	REMARKS					
				COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	REFRIGERANT	EER	COP	COOLING INPUT (KW)	COOLING RLA	HEATING INPUT (KW)	HEATING RLA	MODULE QTY	V	PH	HZ	MCA	MOCP	MCA	MOCP			
CU-1			BC-1	168.0	188.0	R-410A	12.1	3.63	12.8	39.4	14.91	45.9	2	208	3	60	34	50	23	35	1041	mitsubishi model no. PURY-P168TSMU-A	-

PROVIDE: TWINNING KIT.

TAG No.	SERVICE	CFM	REFRIG.	COOLING DATA TOTAL (BTU/H)	HEATING DATA TOTAL (BTU/H)	ELECTRICAL DATA				WEIGHT (LBS.)	MANUFACTURERS MODEL No.	REMARKS	
						MCA	MOCP	VOLTS	PH				HZ
AC-1	CONFERENCE ROOM	410	R-401A	15,000	17,000	0.38	15.0	208	1	60	29	MITSUBISHI MODEL No. PKFY-P15NMMU-E2	-
AC-2	CONFERENCE ROOM	410	R-401A	12,000	13,500	0.38	15.0	208	1	60	29	MITSUBISHI MODEL No. PKFY-P12NMMU-E2	-
AC-3	STUDENT OFFICE 004A	210	R-401A	6,000	6,700	0.19	15.0	208	1	60	22	MITSUBISHI MODEL No. PKFY-P06NMMU-E2	-
AC-4	OFFICE 004B	210	R-401A	6,000	6,700	0.19	15.0	208	1	60	22	MITSUBISHI MODEL No. PKFY-P06NMMU-E2	-
AC-5	OFFICE 004C	210	R-401A	6,000	6,700	0.19	15.0	208	1	60	22	MITSUBISHI MODEL No. PKFY-P06NMMU-E2	-
AC-6	OFFICE 004D	210	R-401A	6,000	6,700	0.19	15.0	208	1	60	22	MITSUBISHI MODEL No. PKFY-P06NMMU-E2	-
AC-7	DIRECTOR'S OFFICE	210	R-401A	8,000	9,000	0.19	15.0	208	1	60	22	MITSUBISHI MODEL No. PKFY-P08NMMU-E	-
AC-8	CONNECTOR CORRIDOR	500	R-401A	15,000	17,000	1.45	15.0	208	1	60	58	MITSUBISHI MODEL No. PEFY-P15NMMU-E2	-
AC-9	KITCHEN, RESTROOMS, CORRIDOR	370	R-401A	12,000	13,500	1.20	15.0	208	1	60	49	MITSUBISHI MODEL No. PEFY-P012NMMU-E2	-
AC-10	GROUP CONSULT	410	R-401A	12,000	13,500	0.38	15.0	208	1	60	29	MITSUBISHI MODEL No. PKFY-P12NMMU-E2	-
AC-11	MULTI PURPOSE	920	R-401A	30,000	34,000	0.63	15.0	208	1	60	46	MITSUBISHI MODEL No. PKFY-P30NMMU-E2	-
AC-12	MULTI PURPOSE	920	R-401A	30,000	34,000	0.63	15.0	208	1	60	46	MITSUBISHI MODEL No. PKFY-P30NMMU-E2	-
AC-13	LOUNGE	210	R-401A	8,000	9,000	0.19	15.0	208	1	60	22	MITSUBISHI MODEL No. PKFY-P08NMMU-E	-
AC-14	LOUNGE	210	R-401A	8,000	9,000	0.19	15.0	208	1	60	22	MITSUBISHI MODEL No. PKFY-P08NMMU-E	-

1. PROVIDE WITH PAR-30MAU CONTROLLER

TAG NO.	FAN TYPE	CFM	SONES	ESP (IN WC)	SPEED (RPM)		DRIVE	ELECTRICAL DATA			MANUFACTURER MODEL NUMBER	REMARKS	
					FAN	MOTOR		POWER	V	PH			HZ
EF-1	CEILING	150	1.4	0.25	759	-	DIRECT	48W	115	1	60	GREENHECK MODEL SP-A200	1,2

PROVIDE:
1. DISCONNECT SWITCH
2. ALUMINUM GRILLE

SUPPLY DIFFUSERS / GRILLE					
MARK	TYPE & MODEL	THROW/DEFLECTION	ACCESSORIES	MOUNTING SURFACE	SYMBOL
S-4W S-3W S-2W S-2WC S-1W	CEILING DIFFUSER PRICE - AMX (WITH INDUCTION VANES) ALUMINUM	4-WAY 3-WAY 2-WAY 2-WAY CORNER 1-WAY	INDUCTION VANES BEVELED FRAME AT EXPOSED APPLICATION SQUARE TO ROUND CONNECTIONS WHERE SHOWN	REFER TO PLANS	
LBO-1	LINEAR BAR GRILLE SUPPLY PRICE - LBP-16B 1/2" SPACING, 1/2" BORDER, LISTED LENGTH x WIDTH (IN.)	15'	CONCEALED MOUNTING SCREW BORDER ALUMINUM OPPOSED BLADE DAMPER DIRECTIONAL VANES	SIDE WALL	
SW-1	LOUVERED FACE SIDE WALL REGISTER PRICE - 620DAL w/ ALUMINUM OBD	DOUBLE DEFLECTION	-	SURFACE MOUNT	

RETURN / EXHAUST GRILLES					
MARK	TYPE & MODEL	THROW/DEFLECTION	ACCESSORIES	MOUNTING TYPE	SYMBOL
R/T/E-1	SIDEWALL OR CEILING GRILLE PRICE 635 - ALUMINUM 1/2" BLADE SPACING HORIZONTAL BLADE, NO SCREW HOLES	0° DOUBLE DEFLECTION	OPPOSED BLADE DAMPER	DROP CEILING	

TAG NO.	SERVICE	PORTS (QTY)	ELECTRICAL DATA				WEIGHT (LBS.)	MANUFACTURER MODEL NUMBER	REMARKS					
			COOLING INPUT (KW)	COOLING INPUT RLA	HEATING INPUT (KW)	HEATING INPUT RLA								
BC-1	CU-1	16	0.314	1.37	0.157	0.69	208	60	1	1.89	15.0	136	MITSUBISHI MODEL No. CMB-P1016NU-HB	-

TAG NO.	TOTAL CFM	OA CFM	SUPPLY FANS				RETURN FANS				ELECTRICAL DATA				WEIGHT (LB)	MANUFACTURER MODEL NUMBER	REMARKS			
			QTY.	ESP IN WC	TOTAL IN WC	FAN RPM	MOTOR HP	QTY.	ESP IN WC	TOTAL IN WC	FAN RPM	MOTOR HP	MCA	MOP				V	PH	HZ
ERV-1	300	300	1	0.60	-	-	0.52	1	0.60	-	-	0.52	1.8	15	208	1	60	73	LOSSNAY LGH-F300RXS-E	-

TAG NO.	COOLING CAPACITY (BTU/H)	HEATING CAPACITY (BTU/H)	AIRFLOW (CFM)	ELECTRICAL DATA				WEIGHT (LBS.)	MANUFACTURER MODEL NO.	REMARKS	
				MCA	MOCP	VOLTS	PH				HZ
SSAC-1	12,000	-	320/425	1.0	15	208	1	60	29	MITSUBISHI PKA-A12HA	1,2,4

TAG NO.	ELECTRICAL DATA				SEER	WEIGHT (LBS)	SUCTION LINE (IN. O.D.)	LIQUID LINE (IN. O.D.)	MANUFACTURER MODEL NUMBER	REMARKS	
	MCA	MOCP	VOLTS	PH							HZ
SSOU-1	13.0	15	208	1	60	15.2	82	1/2	1/4	MITSUBISHI PUY-A12NHA	2,5

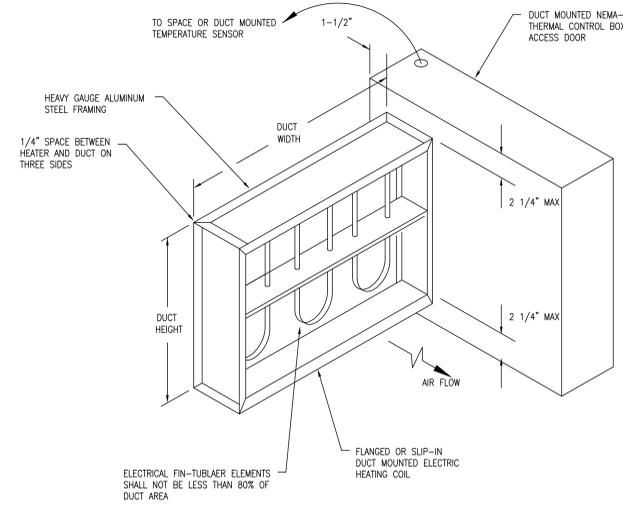
PROVIDE:
1. HARD WIRED WALL MOUNTED CONTROLLER
2. DISCONNECT SWITCH
3. BUILT-IN CONDENSATE PUMP
4. 410A REFRIGERANT
5. LOW AMBIENT KIT

TAG NO.	UNIT SERVED	RESERVOIR SIZE (GAL)	PUMP		ELECTRICAL DATA				WEIGHT (LBS)	MANUFACTURER MODEL NUMBER	REMARKS	
			QTY	GPH	HP	V	PH	HZ				
CP-1	AC-1	-	1	126	-	-	208	1	60	1	ASPEN MINI BLANC	-
CP-2	AC-2	-	1	126	-	-	208	1	60	1	ASPEN MINI BLANC	-
CP-3	AC-3	-	1	126	-	-	208	1	60	1	ASPEN MINI BLANC	-
CP-4	AC-4	-	1	126	-	-	208	1	60	1	ASPEN MINI BLANC	-
CP-5	AC-5	-	1	126	-	-	208	1	60	1	ASPEN MINI BLANC	-
CP-6	AC-6	-	1	126	-	-	208	1	60	1	ASPEN MINI BLANC	-
CP-7	AC-7	-	1	126	-	-	208	1	60	1	ASPEN MINI BLANC	-
CP-8	AC-8	1	1	309	12	1/10	208	1	60	11	HARTELL A3	-
CP-9	AC-9	1	1	309	12	1/10	208	1	60	11	HARTELL A3	-
CP-10	AC-10	-	1	126	-	-	208	1	60	1	ASPEN MINI BLANC	-
CP-11	AC-11	-	1	126	-	-	208	1	60	1	ASPEN MINI BLANC	-
CP-12	AC-12	-	1	126	-	-	208	1	60	1	ASPEN MINI BLANC	-
CP-13	AC-13	-	1	126	-	-	208	1	60	1	ASPEN MINI BLANC	-
CP-14											NOT USED	
CP-15	SSAC-1	-	1	126	-	-	208	1	60	1	ASPEN MINI BLANC	-

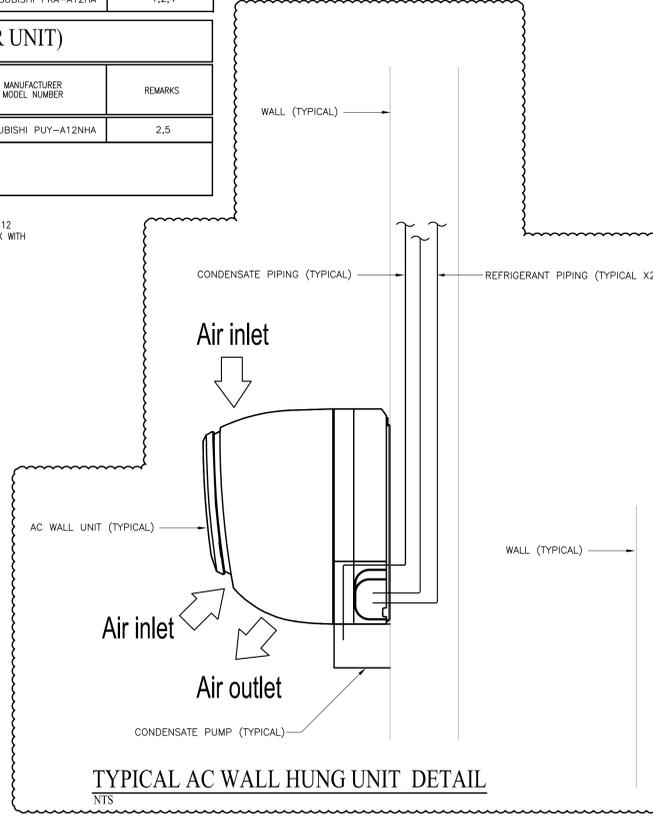
TAG NO.	AREA SERVED	UNIT SERVED	CFM	EAT (°F)	LAT (°F)	ELECTRICAL DATA			MANUFACTURER MODEL NUMBER	REMARKS		
						NO. STAGES	KW	V			PH	HZ
EHC-1	OFFICE SUITE/CONNECTOR	ERV-1	300	-	70	1	2	208	1	60	INDEECO QUA	-

TAG NO.	LOCATION	CAPACITY		EAT (°F)	LAT (°F)	FAN DATA				MANUFACTURER MODEL NUMBER	REMARKS	
		MBH	KW			CFM	HP	V	PH			HZ
1	STORAGE 001A	10.2	3.0	70	95	350	-	208	1	60	QMARK - MUH 0381	1

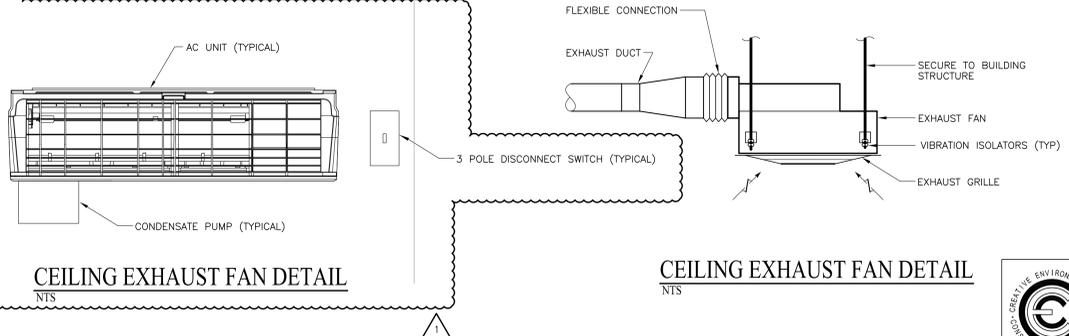
PROVIDE:
1. LINE VOLTAGE THERMOSTAT



TYPICAL REHEAT COIL INSTALLATION - VERTICAL
NTS



TYPICAL AC WALL HUNG UNIT DETAIL
NTS



CEILING EXHAUST FAN DETAIL
NTS

CEILING EXHAUST FAN DETAIL
NTS

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SCHEDULES & DETAILS - HVAC

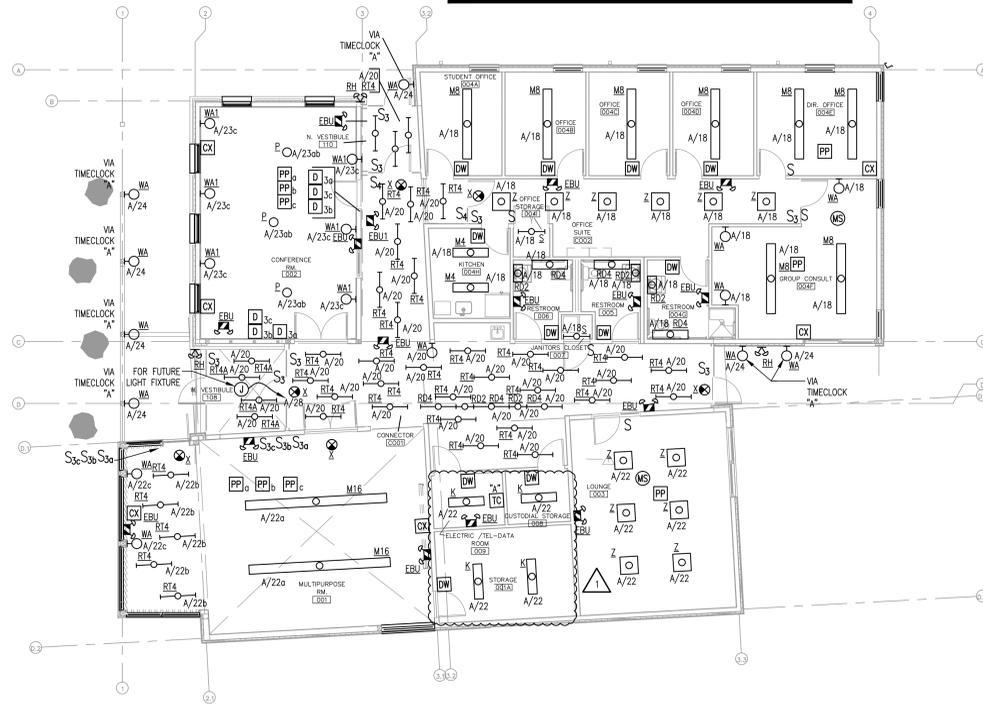


G.A.S. # 120052

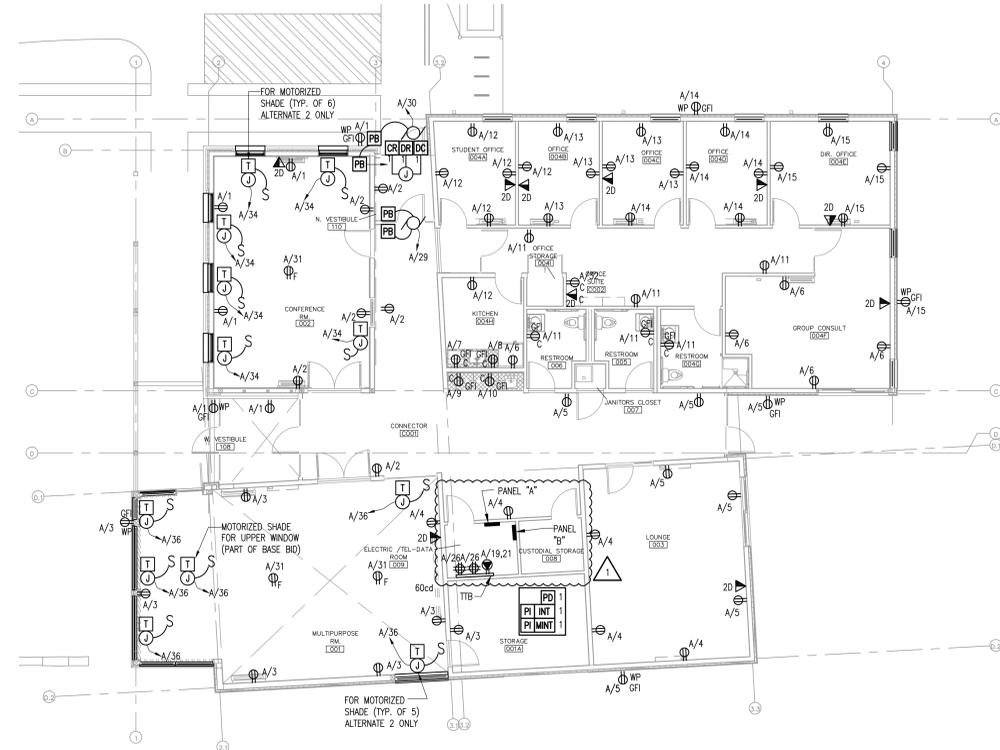
M2.00

LIGHTING NOTES

- WHERE SWITCH CONTROLS ("a", "b", ETC) ARE INDICATED, WIRE THE SWITCHES TO THE RESPECTIVE LIGHT FIXTURE. IF A FIXTURE HAS TWO OR MORE SWITCH DESIGNATIONS, WIRE FIXTURE SO THAT IT WILL BE CONTROLLED BY SWITCHES INDICATED.
- PROVIDE SEPARATE CIRCUITING OF ALL EXIT SIGNS. CIRCUIT SHALL BE A/25.
- WIRE ALL EMERGENCY LIGHTING BATTERY UNITS VIA AN UNSWITCHED LIGHTING CIRCUIT SERVING THE AREA.



A6 GROUND FLOOR LIGHTING PLAN
E2.00 SCALE: 1/8" = 1'-0"



A3 GROUND FLOOR POWER & SYSTEMS PLAN
E2.00 SCALE: 1/8" = 1'-0"

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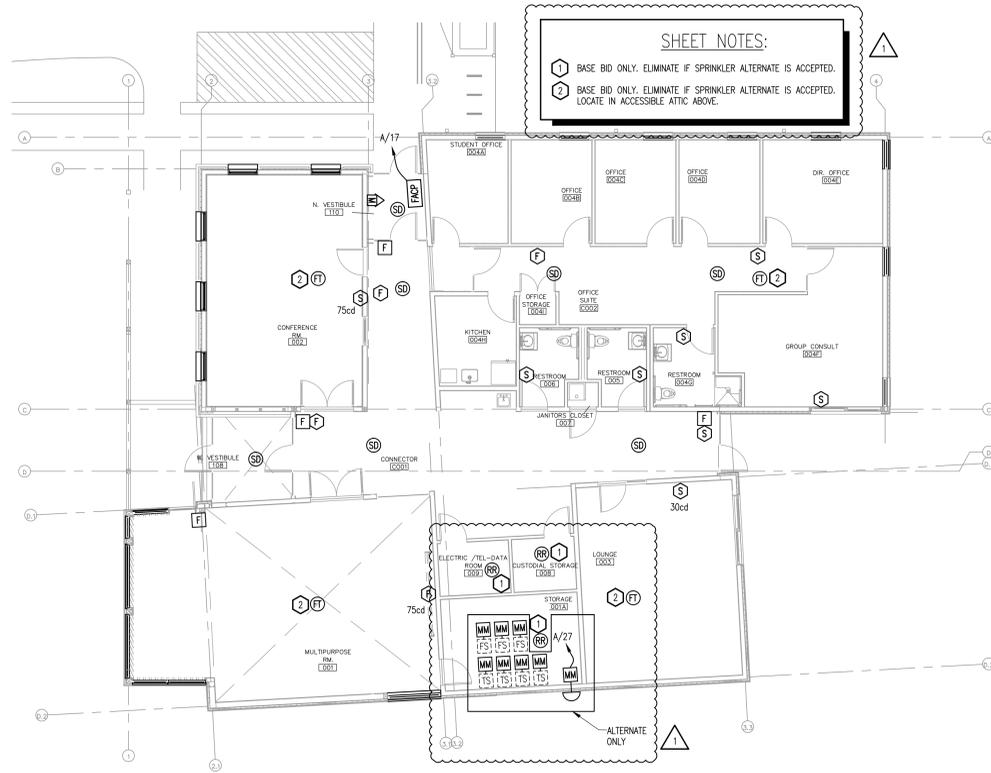
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ELECTRICAL LIGHTING,
POWER & SYSTEMS PLANS

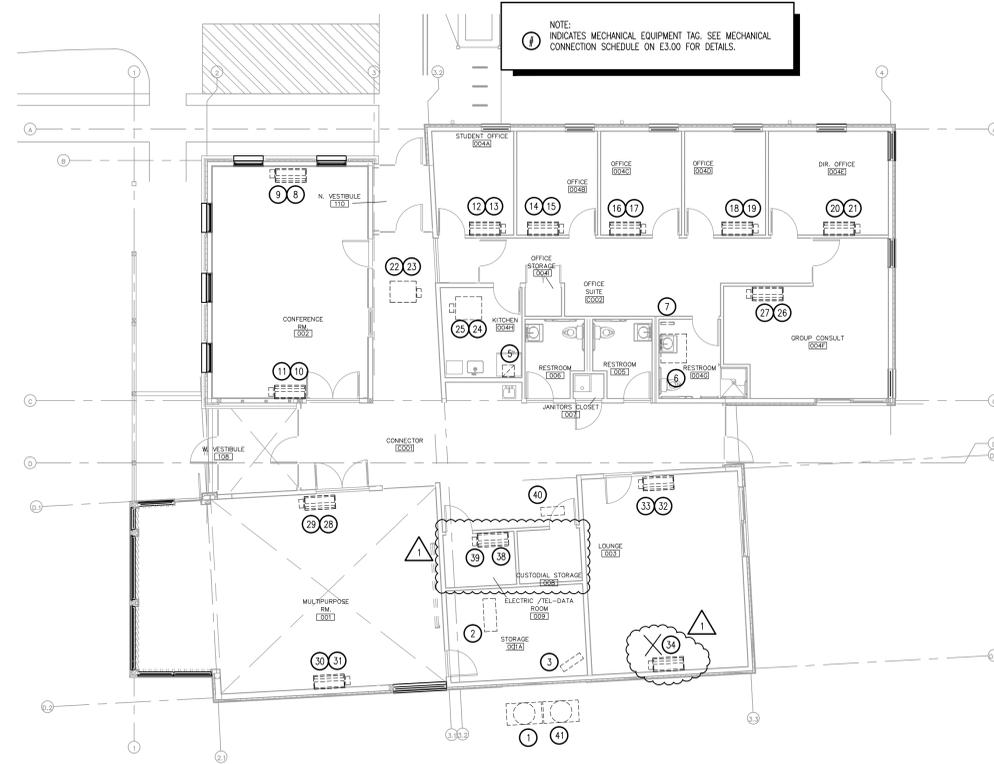


G.A.S. # 120052

E2.00



A6 GROUND FLOOR FIRE ALARM PLAN
SCALE: 1/8" = 1'-0"



A3 GROUND FLOOR MECHANICAL POWER PLAN
SCALE: 1/8" = 1'-0"

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**ELECTRICAL FIRE ALARM
AND MECHANICAL POWER
PLANS**



G.A.S. # 120052

E2.01

ELECTRICAL SYMBOL LEGEND

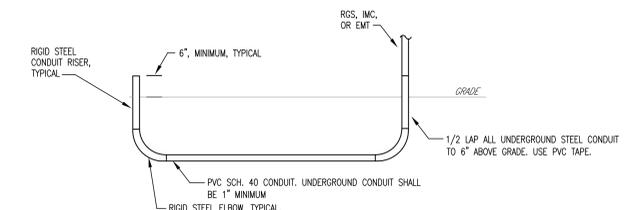
LIGHTING	POWER	ABBREVIATIONS
FLUORESCENT 1'x4' LIGHTING FIXTURE—LETTER INDICATES TYPE, SUBSCRIPT DENOTES CONTROL AND CIRCUIT NUMBER	JUNCTION BOX	A AMPS
FLUORESCENT 2'x2' LIGHTING FIXTURE—LETTER INDICATES TYPE, SUBSCRIPT DENOTES CONTROL AND CIRCUIT NUMBER	SINGLE RECEPTACLE	AF ABOVE FINISHED FLOOR
FLUORESCENT 2'x4' LIGHTING FIXTURE—LETTER INDICATES TYPE, SUBSCRIPT DENOTES CONTROL AND CIRCUIT NUMBER	DUPLEX RECEPTACLE MTD 18" A.F.F. TO CENTER. "C" INDICATES MTD 6" ABOVE COUNTER TOP. "ST" INDICATES GROUND FAULT INTERRUPTING TYPE. "F" INDICATES FLOOR MOUNTED. "G" INDICATES ISOLATED GROUND TYPE. "EWC" INDICATES ELECTRIC WATER COOLER.	AFG ABOVE FINISHED GRADE
INCANDESCENT/FLUORESCENT/HID LIGHTING FIXTURE—LETTER INDICATES TYPE, SUBSCRIPT DENOTES CONTROL AND CIRCUIT NUMBER	DUPLEX RECEPTACLE ONE HALF SWITCHED	AHJ AUTHORITY HAVING JURISDICTION
WALL MOUNTED LIGHTING OUTLET—LETTER INDICATES TYPE, SUBSCRIPT DENOTES CONTROL AND CIRCUIT NUMBER	SAME AS ABOVE EXCEPT QUADRUPLEX	ATS AUTOMATIC TRANSFER SWITCH
EXIT SIGN, ONE OR TWO FACED. ARROWS DENOTE DIRECTION. SHADING DENOTES NUMBER AND ORIENTATION OF SIGN FACE(S).	RANGE RECEPTACLE	BFG BELOW FINISHED GRADE
EMERGENCY LIGHTING BATTERY UNIT, SEE FIXTURE SCHEDULE	SPECIAL PURPOSE OUTLET WITH NEMA CONFIGURATION TO MATCH EQUIPMENT	BOF BOTTOM OF FIXTURE
REMOTE EMERGENCY HEAD	FIRE-O-MATIC SWITCH, MTD. OVER BURNER & WATER HEATER. O.MOC CAT. #; TC-1	C CAT CATALOG
POLE MOUNTED LIGHTING	BOILER EMERGENCY SWITCH, ARROW-HART #; CS120 W/ MILLBERRY 41020 PLATE	CB CIRCUIT BREAKER
BOLLARD LIGHTING	SINGLE POLE MOTOR RATED SWITCH W/ OVERLOAD HEATER (MANUAL MOTOR STARTER).	CBA COLOR BY ARCHITECT
SINGLE POLE SWITCH MTD. 48" A.F.F. ("K" INDICATES KEY TYPE, "P" INDICATES WITH PILOT LIGHT)	FUSED DISCONNECT SWITCH WITH RATINGS	CD CANDELA
3-WAY SWITCH MTD. 48" A.F.F.	NEMA RATING. "WP" INDICATES RAIN TIGHT INDICATES DUAL ELEMENT FUSES	CU COPPER
FOUR WAY SWITCH MTD. 48" A.F.F.	FUSE SIZE. "NF" INDICATES NON FUSED SWITCH SIZE	DN DOWN
PHOTOELECTRIC CELL	UTILITY COMPANY ELECTRIC METER, OR AS NOTED	DWG DRAWING
DIMMER SWITCH, MTD. 48" A.F.F. DIMMER SHALL MATCH THE LIGHT FIXTURE BALLAST IT SERVES. PROVIDE ALL NECESSARY WIRING.	ELECTRIC PANEL, SURFACE MOUNTED	EGPS EMPTY CONDUIT W/ PULL STRING
OCCUPANCY SENSOR POWER PACK, MOUNTED ABOVE ACCESSIBLE CEILING. PROVIDE A WATSTOPPER #BE-150, OR APPROVED EQUAL.	ELECTRIC PANEL, FLUSH MOUNTED	EG EQUIPMENT GROUND
WATSTOPPER #DW-100 OCCUPANCY SENSOR, WALL MOUNTED AT 48" AFF.	TIME CLOCK	EWC ELECTRIC WATER COOLER
WATSTOPPER #CX-100 OCCUPANCY SENSOR, WALL MOUNTED AT 12" BELOW CEILING.	TELECOMMUNICATIONS GROUND BAR	EX EXISTING
WATSTOPPER #DT-200 OCCUPANCY SENSOR, WALL/CEILING MOUNTED.	TRANSIENT VOLTAGE SURGE SUPPRESSOR	FA FIRE ALARM
CEILING MOUNTED MOTION SENSOR, PROVIDE A WATSTOPPER #DT-300, OR APPROVED EQUAL.	WIRING RUN TURNING UP	FACFP FULL LOAD AMPS
EMERGENCY LIGHTING CONTROL— PROVIDE A WATSTOPPER #ELCU-100, OR APPROVED EQUAL.	WIRING RUN TURNING DOWN	G GROUND
TIME CLOCK	TEL/DATA OUTLET, PROVIDE A 4" SQUARE BOX WITH A SINGLE DEVICE RAISED COVER OPENING, MOUNTED 18" A.F.F. TO CENTER. "W" INDICATES 54" A.F.F., "F" INDICATES 47" A.F.F., "F" INDICATES FLOOR MOUNTED, "C" INDICATES MOUNTED 6" ABOVE COUNTER TOP. ALSO PROVIDE BLANK PLATE	GFI GROUND FAULT CIRCUIT INTERRUPTER
WALL MOUNTED LIGHTING TOUCHPAD	CABLE TELEVISION OUTLET MOUNTED 18" A.F.F. TO BOTTOM	HOA HAND-OFF-AUTOMATIC SWITCH
WALL MOUNTED 8 ZONE LIGHTING CONTROL UNIT	FIRE ALARM SERVICE	HP HORSEPOWER
FIRE ALARM SMOKE DETECTOR. "D" INDICATES DUCT TYPE	TEL/DATA SERVICE	HVAC HEATING, VENTILATING, AND AIR CONDITIONING
FIRE ALARM PULL STATION	PRIMARY ELECTRIC POWER	IG ISOLATED GROUND
HORN/STROBE COMBINATION, MTD 80" A.F.F. TO BOTTOM OF STROBE LENS. "CLG" INDICATES CEILING TYPE. "WP" INDICATES WEATHERPROOF. CANDELA RATING SHALL BE 15/75, UNLESS OTHERWISE NOTED.	SECONDARY ELECTRIC POWER	IC KILOWATT
FIRE ALARM STROBE ONLY, MTD. 80" A.F.F. TO BOTTOM OF STROBE LENS. "CLG" INDICATES CEILING TYPE. CANDELA RATING SHALL BE 15/75, UNLESS OTHERWISE NOTED.	SITE LIGHTING WIRING, 24" BELOW GRADE	MD MOUNTED
INTERMEDIATE RELAY, PROVIDE AS NEEDED.	TELEPHONE POLE	N NEUTRAL
KEY ACCESS BOX	HOME RUN TO PANELBOARD. "A" DESIGNATES PANEL, "3" DESIGNATES CIRCUIT NUMBER	NA NOT APPLICABLE
FIRE ALARM SYSTEM MASTERBOX	CROSS-HATCHING INDICATES NUMBER OF CURRENT CARRYING CONDUCTORS IF MORE THAN TWO ARE REQUIRED. LONGER MARK INDICATES NEUTRAL GROUNDWIRE IS ALWAYS INSTALLED AND NEVER INDICATED. NO CROSS-HATCHING INDICATES 1 HOT, 1 NEUTRAL AND 1 GROUND, ALL #12 THHN.	NEC NATIONAL ELECTRICAL CODE
FIRE ALARM ISOLATION MODULE	CARD READER	NF NOT FUSIBLE
FIRE ALARM MONITOR MODULE	DOOR RELEASE	NG NATIONAL GRID (ELECTRIC UTILITY)
FIRE ALARM CONTROL MODULE. PROVIDE AN INTERMEDIATE RELAY TO SUIT LOAD.	DOOR CONTACTOR	NIC NOT IN CONTRACT
FIRE ALARM SPRINKLER FLOW SWITCH, BY OTHERS	POWER SUPPLY FOR DOOR RELEASE.	NL NIGHT LIGHT
FIRE ALARM SPRINKLER PRESSURE SWITCH, BY OTHERS	POWER SUPPLY FOR INTERFACE.	NTS NOT TO SCALE
FIRE ALARM SPRINKLER TAMPER SWITCH, BY OTHERS	DOOR INTERFACE.	P POLE
FIRE ALARM CONTROL PANEL	MAIN INTERFACE.	PH PHASE
FIRE ALARM THERMODETECTOR, RATE-OF-RISE TYPE.	TRANSFORMER	REC(S) RECEPTACLE(S)
FIRE ALARM THERMODETECTOR, COMBINATION 190 DEGREE FIXED TEMPERATURE.		TEL TELEPHONE

- #### NOTES
- DISCONNECT, REMOVE, AND MAKE SAFE ALL CONDUIT AND WIRING NOT IN SERVICE.
 - VERIFY ALL EQUIPMENT NAMEPLATE LOADS AND INSURE PROPER SIZING OF CONDUCTORS AND OVERCURRENT PROTECTION. NOTIFY ENGINEER OF DISCREPANCIES.
 - USE #10 CONDUCTORS FOR ALL HOMERUNS OVER 100 FEET IN LENGTH.
 - BALANCE THE PHASES IN EACH ELECTRICAL PANEL.

ELECTRICAL CONNECTION SCHEDULE FOR MECHANICAL EQUIPMENT

MECH (09)	DESCRIPTION	EQUIPMENT CHARACTERISTICS						PANEL	CIRCUIT	BREAKER SIZE	FEEDER AND CONDUIT	EQUIPMENT LOCATION	DISCONNECT SWITCH			MOTOR CONTROL	NOTES
		VOLTS	PH	AMPS	HP	KW	MCA						MOCF	CFM	SIZE		
1	CU-1 (MODULE #1)	208	3			34	50	B	1,3.5	50A 3P	(4)#6 & (1)#10G IN 1" C	OUTSIDE	60	NF	3	3R	
2	BC-1	208	1			1.89	15	B	7.9	20A 2P	(3)#12 & (1)#12G IN 1/2" C	STORAGE 001A	30	NF	2	1	
3	EHU-1	208	1		3			B	8.10	20A 2P	(3)#12 & (1)#12G IN 1/2" C	STORAGE 001A	30	NF	2	1	
4	NOT USED																
5	EF-1	120	1		0.048						(2)#12 & (1)#12G IN 1/2" C	KITCHEN 004H	NA	NA	NA	NA	1,2
6	ERV-1	208	1			1.8	15	B	12.14	20A 2P	(3)#12 & (1)#12G IN 1/2" C	BATHROOM 004G	NA	NA	NA	NA	St
7	EH-1	208	1		2			B	15.17	20A 2P	(3)#12 & (1)#12G IN 1/2" C	BATHROOM 004G	NA	NA	NA	NA	St
8	AC-1	208	1			0.38	15	B	16.18	20A 2P	(3)#12 & (1)#12G IN 1/2" C	CONFERENCE RM. 002	NA	NA	NA	NA	St
9	CP-1	208	1		0.016			B	19.21	20A 2P	(3)#12 & (1)#12 IN 1/2" C	CONFERENCE RM. 002	NA	NA	NA	NA	St
10	AC-2	208	1			0.38	15	B	16.18		(3)#12 & (1)#12G IN 1/2" C	CONFERENCE RM. 002	NA	NA	NA	NA	St
11	CP-2	208	1		0.016			B	19.21		(3)#12 & (1)#12 IN 1/2" C	CONFERENCE RM. 002	NA	NA	NA	NA	St
12	AC-3	208	1			0.19	15	B	16.18		(3)#12 & (1)#12G IN 1/2" C	STUDENT OFFICE 004A	NA	NA	NA	NA	St
13	CP-3	208	1		0.016			B	19.21		(3)#12 & (1)#12 IN 1/2" C	STUDENT OFFICE 004A	NA	NA	NA	NA	St
14	AC-4	208	1			0.19	15	B	16.18		(3)#12 & (1)#12G IN 1/2" C	OFFICE 004B	NA	NA	NA	NA	St
15	CP-4	208	1		0.016			B	19.21		(3)#12 & (1)#12 IN 1/2" C	OFFICE 004B	NA	NA	NA	NA	St
16	AC-5	208	1			0.19	15	B	16.18		(3)#12 & (1)#12G IN 1/2" C	OFFICE 004C	NA	NA	NA	NA	St
17	CP-5	208	1		0.016			B	19.21		(3)#12 & (1)#12 IN 1/2" C	OFFICE 004C	NA	NA	NA	NA	St
18	AC-6	208	1			0.19	15	B	16.18		(3)#12 & (1)#12G IN 1/2" C	OFFICE 004D	NA	NA	NA	NA	St
19	CP-6	208	1		0.016			B	19.21		(3)#12 & (1)#12 IN 1/2" C	OFFICE 004D	NA	NA	NA	NA	St
20	AC-7	208	1			0.19	15	B	16.18		(3)#12 & (1)#12G IN 1/2" C	DIRECTOR'S OFFICE	NA	NA	NA	NA	St
21	CP-7	208	1		0.016			B	19.21		(3)#12 & (1)#12 IN 1/2" C	DIRECTOR'S OFFICE	NA	NA	NA	NA	St
22	AC-8	208	1			1.45	15	B	16.18		(3)#12 & (1)#12G IN 1/2" C	CONNECTOR CORRIDOR	NA	NA	NA	NA	St
23	CP-8	208	1		1/10			B	19.21		(3)#12 & (1)#12 IN 1/2" C	CONNECTOR CORRIDOR	NA	NA	NA	NA	St
24	AC-9	208	1			1.2	15	B	16.18		(3)#12 & (1)#12G IN 1/2" C	KITCH., REST. RMS., CORR.	NA	NA	NA	NA	St
25	CP-9	208	1		1/10			B	19.21		(3)#12 & (1)#12 IN 1/2" C	KITCH., REST. RMS., CORR.	NA	NA	NA	NA	St
26	AC-10	208	1			0.38	15	B	16.18		(3)#12 & (1)#12G IN 1/2" C	GROUP CONSULT 004F	NA	NA	NA	NA	St
27	CP-10	208	1		0.016			B	19.21		(3)#12 & (1)#12 IN 1/2" C	GROUP CONSULT 004F	NA	NA	NA	NA	St
28	AC-11	208	1			0.63	15	B	16.18		(3)#12 & (1)#12G IN 1/2" C	MULTI PURPOSE 001	NA	NA	NA	NA	St
29	CP-11	208	1		0.016			B	19.21		(3)#12 & (1)#12 IN 1/2" C	MULTI PURPOSE 001	NA	NA	NA	NA	St
30	AC-12	208	1			0.63	15	B	16.18		(3)#12 & (1)#12G IN 1/2" C	MULTI PURPOSE 001	NA	NA	NA	NA	St
31	CP-12	208	1		0.016			B	19.21		(3)#12 & (1)#12 IN 1/2" C	MULTI PURPOSE 001	NA	NA	NA	NA	St
32	AC-13	208	1			0.19	15	B	16.18		(3)#12 & (1)#12G IN 1/2" C	LOUNGE 003	NA	NA	NA	NA	St
33	CP-13	208	1		0.016			B	19.21		(3)#12 & (1)#12 IN 1/2" C	LOUNGE 003	NA	NA	NA	NA	St
34	AC-14	208	1			0.19	15	B	16.18		(3)#12 & (1)#12G IN 1/2" C	LOUNGE 003	NA	NA	NA	NA	St
35	NOT USED																
36	NOT USED																
37	NOT USED																
38	SSAC-1	208	1			1	15	B	20.22	20A 2P	(3)#12 & (1)#12G IN 1/2" C	TEL/DATA CLOSET 202	NA	NA	NA	NA	St
39	CP-15	208	1		0.016			B	20.22		(3)#12 & (1)#12G IN 1/2" C	TEL/DATA CLOSET 202	NA	NA	NA	NA	St
40	SSCU-1	208	1			1.3	15	B	20.22		(3)#12 & (1)#12G IN 1/2" C	OUTSIDE	30	NF	2	3R	
41	CU-1 (MODULE #2)	208	3			23	35	B	2,4.6	40A 3P	(4)#8 & (1)#10G IN 1" C	OUTSIDE	60	NF	3	3R	

- NOTES:
1. MEANS OF DISCONNECT IS PROVIDED BY OTHERS, AND WIRED BY THE ELECTRICAL CONTRACTOR.
2. CONNECT TO LIGHTING CIRCUIT. CONTROL VIA TIME DELAY SWITCH PROVIDED BY OTHERS, WIRED BY ELECTRICAL CONTRACTOR.



UNDERGROUND CONDUIT DETAIL, TYPICAL

PANEL: B 125 A 208Y/120 V 3PH 4W 60HZ

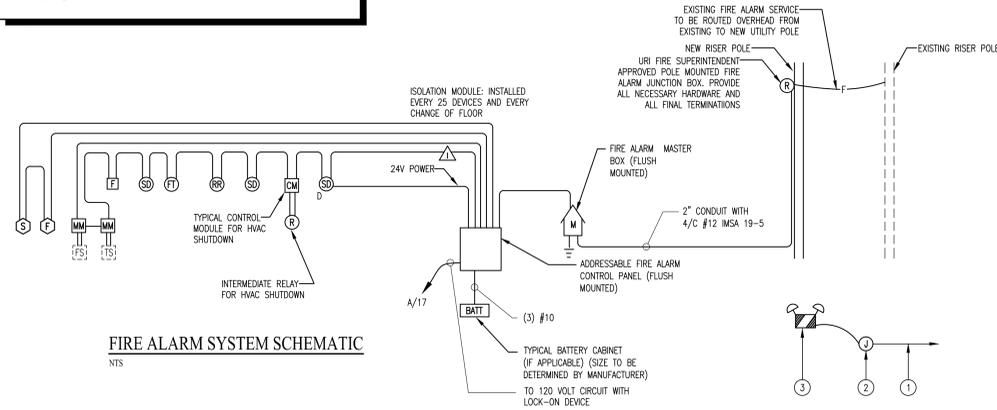
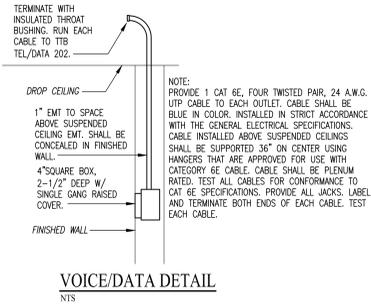
CKT No.	Load Type	LOAD DESCRIPTION	WIRE SIZE	LOAD KVA	CIRCUIT BREAKER	CKT No.	Load Type	LOAD DESCRIPTION	WIRE SIZE	LOAD KVA	CIRCUIT BREAKER	SHUNT TRIP MAIN		
												150% RATED NEUTRAL	ISOLATED GROUND	FEED THRU LOADS
1						2	M	CU-1 (MODULE #1)	6	12.2	1			
3	M	BC-1	12	0.4	1	4	M	CU-1 (MODULE #2)	8	8.3	1			
5						6								
7	M	EH-1	12	0.4	1	8	M	ERV-1	12	0.4	1			
9						10								
11						12	M	AC-1 THRU AC-15	12	1.4	1			
13						14								
15	M	EH-1	12	0.4	1	16	M	SSAC-1, SSCU-1, CP-16	12	2.9	1			
17						18								
19	M	CP-1 THRU CP-15	12	0.9	1	20								
21						22								
23						24								

GENERAL NOTES

1. LOCATIONS SHOWN FOR CONNECTIONS TO EQUIPMENT ARE DIAGRAMMATIC. INSTALL FOR EASE OF MAINTENANCE AND TO SUIT EQUIPMENT.
2. PROVIDE ALL REQUIRED PULL BOXES, JUNCTION BOXES, AND DISCONNECT SWITCHES.
3. DO NOT INSTALL OUTLET BOXES BACK TO BACK.
4. COLOR CODE ALL WIRING.
5. PROVIDE CONDUIT SLEEVES AS REQUIRED. THROUGH FIRE RATED SEPARATIONS, FIRE SEAL AFTER WIRING IS COMPLETE.
6. SUPPORT EACH LIGHTING FIXTURE INDEPENDENTLY OF THE SUSPENDED CEILING SYSTEM AND COORDINATE LOCATIONS WITH REFLECTED CEILING PLAN AND OTHER TRADES TO AVOID CONFLICT.
7. VERIFY ALL CEILING TYPES AND MATERIALS BEFORE ORDERING ANY LIGHTING FIXTURES.
8. THE LOCATIONS OF HVAC EQUIPMENT SHOWN ON THESE DRAWINGS ARE APPROXIMATE. FOR EXACT LOCATIONS REFER TO HVAC DRAWINGS AND SHOP DRAWINGS.
9. CONCEAL ALL WIRING UNLESS OTHERWISE NOTED.
10. PROVIDE ALL GROUNDING INCLUDING GREEN EQUIPMENT GROUND IN ALL RACEWAYS. GROUND BUILDING SERVICE ACCORDING TO 2011 NEC 250.50 AND ALSO TO STREET SIDE OF WATER METER AND TO APPROVED GROUND ROD.
11. CIRCUIT NUMBERS INDICATE PANEL AND CIRCUIT BREAKER FOR EQUIPMENT CONNECTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSTALL ALL REQUIRED WIRING PER NATIONAL ELECTRIC CODE AND PROJECT SPECIFICATIONS TO PROPERLY ENERGIZE THE ELECTRICAL SYSTEM. ALL WIRING SHALL BE RUN IN A NEAT AND ORDERLY MANNER.
12. WIRING SHALL NOT BE LAD ON, OR ATTACHED TO THE SUSPENDED CEILING OR ITS SUPPORT WIRES. ALL CABLES SHALL BE RUN PARALLEL, OR PERPENDICULAR TO WALLS. DO NOT RUN CABLES DIAGONALLY THROUGH ANY SPACE.
13. WHERE THE NUMBER OF CURRENT CARRYING CONDUCTORS IN A RACEWAY OR CABLE EXCEEDS THREE, THE ALLOWABLE AMPACITY SHALL BE REDUCED PER NATIONAL ELECTRIC CODE TABLE BASED ON NO DIVERSITY. CONSIDER NEUTRALS TO BE CURRENT CARRYING CONDUCTORS.
14. DO NOT COMBINE CIRCUITS OR USE COMMON NEUTRALS.
15. LABEL ("BROTHER P-TOUCH LABELING SYSTEM" OR APPROVED EQUAL) OR ENGRAVE EACH RECEPTACLE PLATE WITH PANEL DESIGNATION AND CIRCUIT NUMBER.
16. PROVIDE GROUNDING AND BONDING BUSHINGS FOR SERVICE RACEWAYS PER 2011 NEC 250.92(B). SIZE THE BONDING JUMPER PER 2011 NEC 250.102.
17. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS. NO CLAIM FOR EXTRA COMPENSATION SHALL BE ENTERTAINED FOR WORK WHICH A PRELIMINARY EXAMINATION WOULD HAVE REVEALED. THE SUBMISSION OF A BID WILL BE CONSIDERED AS ACKNOWLEDGMENT ON THE PART OF THE BIDDER OF HIS VISITATION TO THE SITE.
18. OBTAIN ALL NECESSARY PERMITS AND CERTIFICATES. PRESENT SATISFACTORY PROOF OF FINAL INSPECTION AND APPROVAL BY AUTHORITIES HAVING JURISDICTION.
19. MAINTAIN CORRECT PHASE SEQUENCE OF ALL FEEDERS AND CIRCUITS BY ESTABLISHING PHASE IDENTIFICATION AND MAINTAINING CORRECT RELATIONSHIP THROUGHOUT THE SYSTEM. PROVIDE LINE BALANCE WITHIN 10% OF NORMAL LOADS.

FIRE ALARM SYSTEM NOTES:

1. ALL WIRING SHALL BE PER MANUFACTURER'S SPECIFICATIONS.
2. THIS SCHEMATIC IS TYPICAL. WIRE TO ALL DEVICES ON ALL ZONES AND CIRCUITS. SEE PLAN VIEWS FOR TYPES AND QUANTITIES OF DEVICES.
3. ALL FIRE ALARM WIRING SHALL BE RUN CONTINUOUS FROM DEVICE TO DEVICE. (SEE 2011 NFPA 72 13.8.10.6.2.1).
4. OUTGOING AND RETURN CONDUCTORS MUST BE RUN IN SEPARATE RACEWAYS. (SEE 2011 NFPA 72 13.8.10.6.2.2 AND 2002 NFPA 72 6-4.2.2.2)
5. PROVIDE ANY ADDITIONAL REMOTE POWER SUPPLIES AS NECESSARY. PROVIDE ADDITIONAL SMOKE DETECTORS AS NECESSARY PER NFPA.
6. PROVIDE HARDWARE AND PROGRAMMING SUCH THAT DURING ALARM, ALL HVAC UNITS WITH CFM >2000 WILL BE SHUTDOWN.
7. PROVIDE INTERMEDIATE RELAYS AS NEEDED.
8. SYNCHRONIZE ALL STROBE LIGHTS.
9. VERIFY WIRING TYPE FOR INITIATING LOOP.
10. VERIFY ADDITIONAL WIRING (e.g. 24V POWER FOR MODULES) WITH SPECIFIED MANUFACTURER.



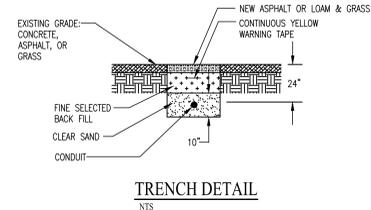
FIRE ALARM SYSTEM SCHEMATIC
NTS

LEGEND OF FEEDER SIZES
COPPER CONDUCTORS

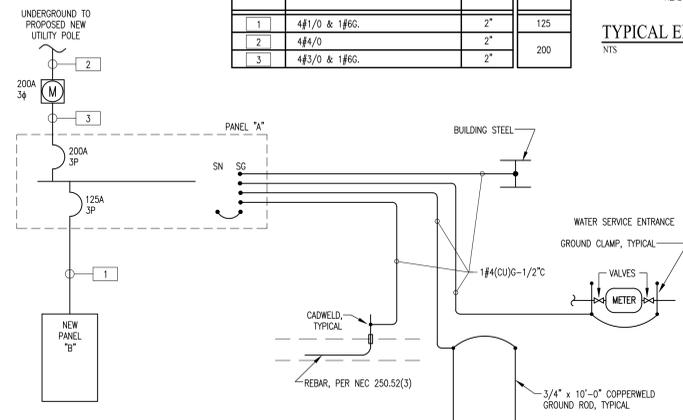
FEEDER NO.	CONDUCTOR SIZE	FEEDER LENGTH	LOAD
1	4#1/0 & 1#6G.	2"	125
2	4#4/0	2"	200
3	4#3/0 & 1#6G.	2"	

- 1 TO LOCAL UNSWITCHED EGRESS LIGHTING CIRCUIT. CONCEAL ALL WIRING.
- HARD WIRE TO JUNCTION BOX (DO NOT PLUG IN).
- BATTERY UNIT. SEE SPECIFICATIONS. SIZE UNIT TO HANDLE FULL LOAD FOR 1 1/2 HOURS TO 87 1/2% OF VOLTAGE OR PROVIDE ADDITIONAL UNITS TO ACCOMPLISH THIS. MOUNT SO THAT IT CAN BE READILY MAINTAINED AND TESTED.

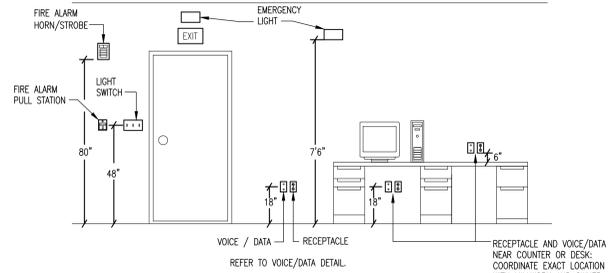
TYPICAL EMERGENCY BATTERY WIRING SCHEMATIC
NTS



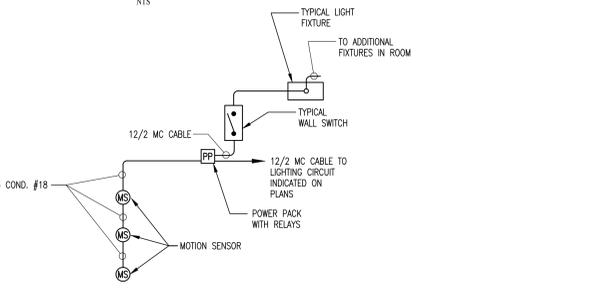
TRENCH DETAIL
NTS



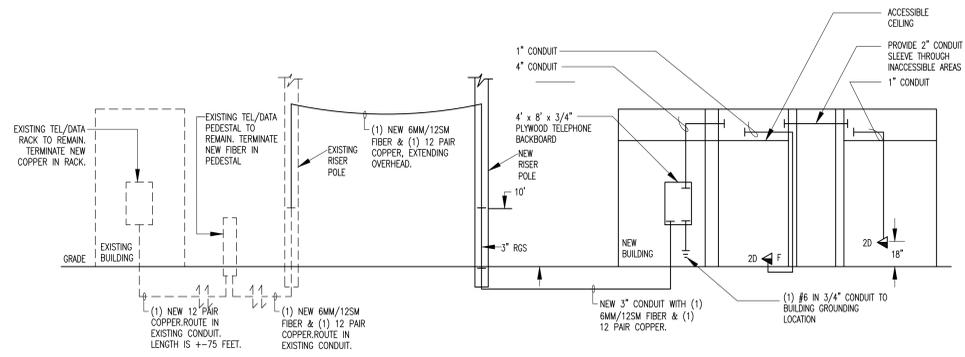
ONE-LINE DIAGRAM
NTS



TYPICAL MOUNTING HEIGHTS
NTS



TYPICAL MOTION SENSOR WIRING SCHEMATIC
NTS

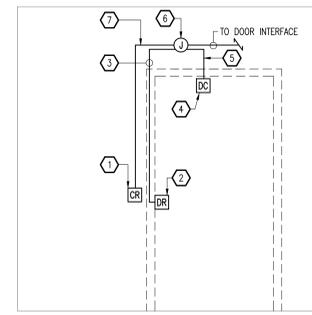


TEL/DATA SYSTEM SCHEMATIC
NTS

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	MOUNTING	LAMPS		REMARKS
			WATTS	TYPE	
EBU	EMERULITE RTM70-2(35H)-ADNA	WALL	2-35W	MR16	EMERGENCY BATTERY PACK FURNISHED BY OTHERS AND INSTALLED BY ELECTRICAL CONTRACTOR
K	WILLIAMS LIGHTING 17-4-232-A-EB2-UNV	SURFACE	2-32W	T8	FOUR FOOT WRAPAROUND
M4	FINELITE LIGHTING S14-000-4-278-SC-AA-120-AC-EE-C1-88	PENDANT	2-32W	T8	FOUR FOOT LINEAR FLUORESCENT SUSPENDED WITH AIRCRAFT CABLE
M8	FINELITE LIGHTING S14-000-8-278-SC-AA-120-AC-EE-C1-88	PENDANT	4-32W	T8	EIGHT FOOT LINEAR FLUORESCENT SUSPENDED WITH AIRCRAFT CABLE
M16	FINELITE LIGHTING S14-000-16-278-SC-AA-120-AC-EE-C1-88	PENDANT	8-32W	T8	SIXTEEN FOOT LINEAR FLUORESCENT SUSPENDED WITH AIRCRAFT CABLE
P	LBL LIGHTING-LAYOVER 2 LIGHT PENDANT P7985-077-DM	PENDANT	2-42W	PL	DIMMABLE DECORATIVE PENDANT
RD2	PINNACLE EV3A-178-2-SFS-UNV-1C-W	RECESSED	1-17W	T8	TWO FOOT RECESSED LINEAR FLUORESCENT
RD4	PINNACLE EV3A-178-4-SFS-UNV-1C-W	RECESSED	1-32W	T8	FOUR FOOT RECESSED LINEAR FLUORESCENT
RH	CHLORIDE DETEMOCOLORBYARCHITECT-Z	WALL	2-18W	PL	DECORATIVE EMERGENCY FIXTURE
RT4	MICRO SQUARE M0-1-1-F-1-0-A-N-4-1-1-E-A	SURFACE	1-28W	T5	FOUR FOOT SURFACE MOUNTED LINEAR FLUORESCENT
RT4A	MICRO SQUARE M0-0-6-F-1-1-A-N-4-1-1-E-A	PENDANT	2-28W	T5	FOUR FOOT PENDANT MOUNTED LINEAR FLUORESCENT
S	WILLIAMS LIGHTING 76-3-132-EB1-UNV	WALL	1-25W	T8	THREE FOOT FLUORESCENT STRIP
WA	FLORES WALL SCONCE 1803/OUTDOOR	WALL	1-13W	PL	WET LOCATION DECORATIVE FLUORESCENT WALL SCONCE
WA1	FLORES WALL SCONCE 1803	WALL	1-13W	PL	DECORATIVE FLUORESCENT WALL SCONCE
X	LITHONIA LIGHTING LRPLED1-GMR-120/277ELN	UNIVERSAL	2.3W	LED	EDGE LIT EXIT LIGHT WITH GREEN LETTERING
Z	PINNACLE AD22BF-278-G-120-1C-W	RECESSED	2-17W	T8	2X2 FLUORESCENT DECORATIVE TROFFER

- LIGHTING FIXTURE SCHEDULE NOTES:**
1. PROVIDE ALL LAMPS FOR ALL LIGHTING FIXTURES. LAMP COLOR SHALL BE 3500K.
 2. PROVIDE UNDERSTUT WHERE NEEDED TO MOUNT LIGHTING FIXTURE.
 3. ENSURE DIMMING SWITCHES ARE COMPATIBLE WITH LIGHTING FIXTURES BEFORE SUBMITTING SHOP DRAWINGS.
 4. SEE SPECIFICATIONS FOR APPROVED LIGHTING MANUFACTURER SUBSTITUTES.



CARD ACCESS SYSTEM DETAIL
NTS

- CARD ACCESS SYSTEM DETAIL NOTES:**
- 1 NEW SURFACE MOUNTED CARD READER. PROVIDE ALL NECESSARY MOUNTING HARDWARE. SEE SPECIFICATIONS.
 - 2 NEW HES #9600 12VDC DOOR RELEASE. PROVIDED BY OTHERS AND WIRED BY ELECTRICAL CONTRACTOR.
 - 3 PROVIDE (2)#16 TFFN, IN 1/2\"/>

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50 OFFICE PARKWAY
EAST PROVIDENCE, RI 02914
P: 401-438-7733
F: 401-438-7620
WWW.CEC-ENGINEERING.COM
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UNIVERSITY OF RHODE ISLAND
LGBTQ CENTER
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REVISIONS
02/12/2014-REVISION 1

ELECTRICAL DETAILS

E3.01

Drawing List	
Sheet Number	Sheet Name
AV000	AV Drawing List and Responsibility Schedule
AV001	AV General Notes and Legend
AV002	AV First Floor Scope
AV101	Conference Room 002
AV102	Conference Room 002 AV Conduit Riser
AV103	Multipurpose Room 001
AV104	Multipurpose Room 001
AV105	Multipurpose Room 001 AV Conduit Riser
AVA	AV Details

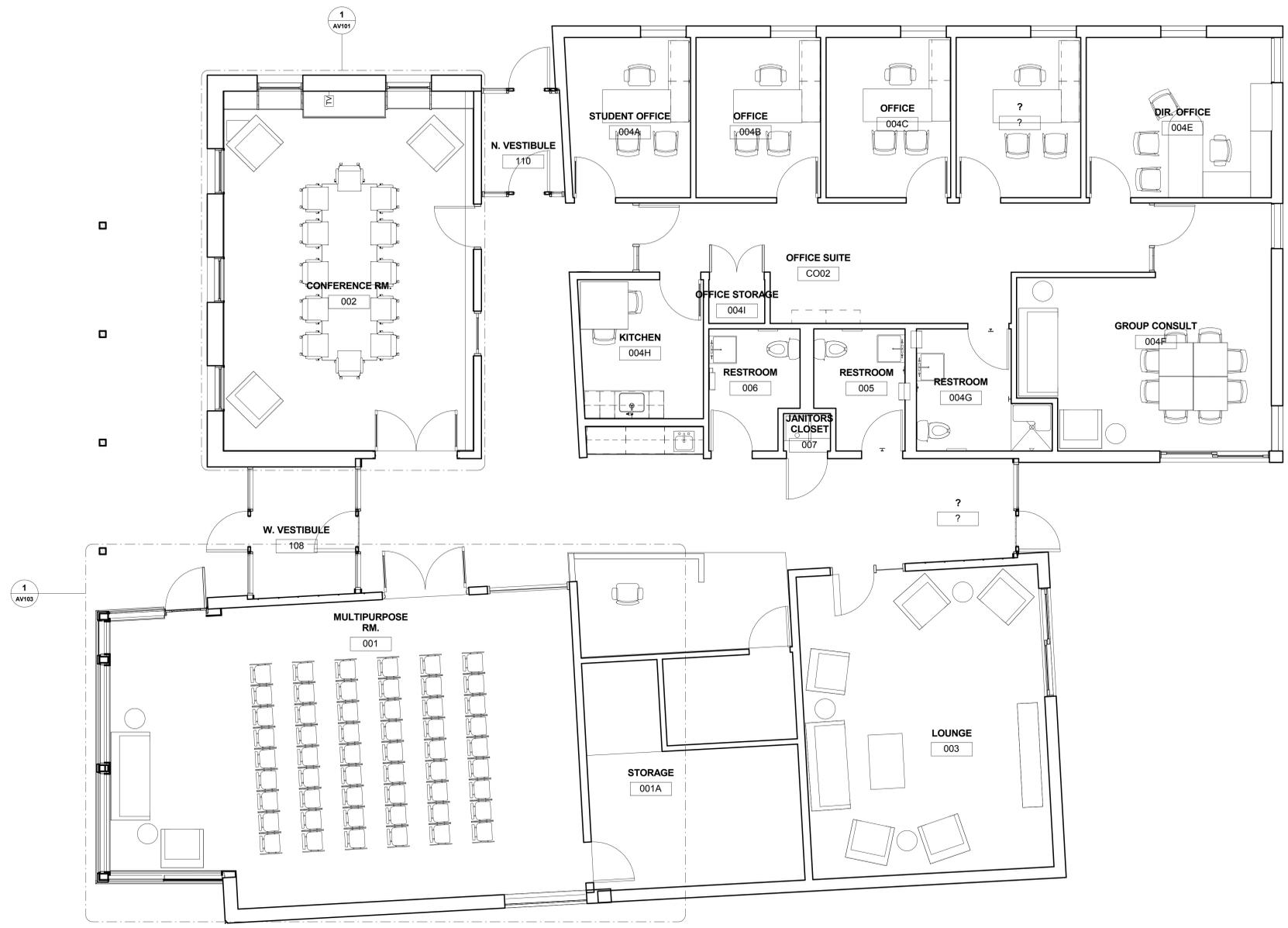
AUDIO VISUAL AND RELATED WORK RESPONSIBILITY SCHEDULE												
	SUPPLIED BY					INSTALLED BY					NOTES	
	G.C./G.T.	E.C.	A.V.C.	CLIENT	OTHER	G.C.	E.C.	A.V.C.	CLIENT	OTHER		
CEILING MOUNTED EQUIPMENT												
PROJECTION SCREENS	✓					✓						
PROJECTION SCREENS LVC AND SWITCH			✓					✓				
VIDEO PROJECTOR HARD POINTS	✓					✓						
VIDEO PROJECTOR MOUNTS												
PLASMA/LCD MONITOR ENCLOSURE												
PLASMA/LCD MONITOR CEILING MOUNTS												
PLASMA/LCD MONITORS												
SPEAKER HARDWARE AND BACKBOX												
SPEAKER RIGGING			✓					✓				
MICROPHONES												
MICROPHONES TERMINATED												
AV CAMERA HARDPOINTS												
AV CAMERA MOUNT												
LIGHT RIGGING	✓											
WALL MOUNTED EQUIPMENT												
SCREENS	✓					✓						
WALL AV CAMERA MOUNT			✓					✓				
PLASMA/LCD DISPLAYS												
PLASMA/LCD WALL MOUNT												
PLASMA/LCD BLOCKING AND BACK BOX	✓											
PROGRAM SPEAKERS			✓					✓				
PROGRAM SPEAKERS ENCLOSURES	✓											
PROGRAM SPEAKER CUT OUTS	✓											
PROGRAM SPEAKER GRILLE FABRIC												
VIDEO WALL OPENING/STRUCTURE												
VIDEO WALL BLOCKING												
TABLE/LECTERN MOUNTED DEVICES												
MICROPHONES			✓					✓				
MICROPHONE TABLE HOLE CUTOUTS												
MICROPHONES TERMINATED			✓					✓				
FLOOR BOXES												
FLOOR BOX AV TERMINATIONS			✓					✓				
POWER			✓					✓				
AV DEVICE CUTOUTS	✓											
INTERFACES												
ELECTRICAL (FOR AV REQUIREMENTS)												
AV ELECTRICAL OUTLETS AND CONNECTORS			✓					✓				
AV ELECTRICAL CONDUITS AND PULL STRINGS			✓					✓				
AV LOW VOLTAGE CABLES			✓					✓				
FLOOR CONCRETE POUR BOX OR FLOOR CORES			✓					✓				
FLOOR BOXES OR POKE-THRU DEVICES			✓					✓				
FLOOR BOX DIVIDERS			✓					✓				
FLOOR BOX AC OUTLETS AND TELE/DATA PLATES			✓					✓				
AV CONNECTORS			✓					✓				
AV INTERCONNECT WALL PLATES			✓					✓				
LIGHTING DIMMING SYSTEMS												
DIMMING EQUIPMENT			✓					✓				
DIMMING LVC FOR AV INTERFACE			✓					✓				
DIMMING LVC PROGRAMMED			✓					✓				
LIGHTING SCENES AND ZONE LEVELS CONFIGURED			✓					✓				
ALL LIGHTING AND DIMMER SYSTEMS TO BE SPECIFIED BY LIGHTING CONSULTANT												
TO BE COORDINATED WITH LIGHTING CONSULTANT												
MOTORIZED DRAPES / SHADES												
MOTOR LVC			✓					✓				
MOTOR LVC CABLE			✓					✓				
MOTOR LVC CABLE TERMINATED			✓					✓				
MOTOR LVC PROGRAMMED			✓					✓				
SHADES INCLUDED TYP.												
SHADES INCLUDED TYP.												
SHADES INCLUDED TYP.												
SHADES INCLUDED TYP.												
PERMANENT FURNISHINGS												
LECTERN												
EQUIPMENT CRENZAS												
STORAGE CUPBOARD												
VOICE NETWORK												
BACK BOX, CONDUIT, AND PULL STRINGS			✓					✓				
ISDN DISTRIBUTION FOR VIDEO TELECONFERENCING												
POTS 6000 ANALOG TELEPHONE SYSTEM												
PBX TELEPHONE DISTRIBUTION												
PBX TELEPHONE/VOICE SYSTEMS												
ISDN PROTOCOL												
SIP COMPATIBLE VOIP SYSTEM												
DATA NETWORK												
BACK BOX, CONDUIT, AND PULL STRINGS			✓					✓				
TELECOMMUNICATION CABLES			✓					✓				
TELECOMMUNICATION CONNECTORS TERMINATED			✓					✓				
TELECOMMUNICATION PLATES			✓					✓				
NETWORK SERVICES												
REPEATERS AND HUBS FOR DISTRIBUTION												
HIGH SPEED DATALINKS												
PLATES			✓					✓				
CABLES			✓					✓				
CONNECTORS			✓					✓				
BROADBAND VIDEO												
BACK BOX, CONDUIT, AND PULL STRINGS			✓					✓				
COAX RF PLATES												
COAX RF CABLE												
COAX RF DISTRIBUTION AMPLIFIERS												
COAX RF ISOLATION TAPS AND TERMINATORS												
	G.C.	E.C.	A.V.C.	CLIENT	OTHER	N/A	G.C.	E.C.	A.V.C.	CLIENT	OTHER	N/A
	INSTALLED BY					SUPPLIED BY						
GENERAL: 1. AV DRAWINGS ARE TO BE CLEARLY COORDINATED WITH ARCHITECTURAL, ELECTRICAL, AND LIGHTING PLANS. 2. GENERAL CONTRACTOR AND ELECTRICAL CONTRACTOR SHOULD REVIEW THE AV RESPONSIBILITY SCHEDULE THOROUGHLY. 3. THE ELECTRICAL CONTRACTOR SHALL PROVIDE POWER TO ALL DEVICES.												

THESE DRAWINGS ARE FOR THE AV INFRASTRUCTURE NECESSARY TO SUPPORT THE AUDIO-VISUAL EQUIPMENT INSTALLATION. THE AV EQUIPMENT WILL BE PROVIDED AND INSTALLED AT A LATER DATE UNDER A SEPARATE CONTRACT.

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AV Drawing List and Responsibility Schedule



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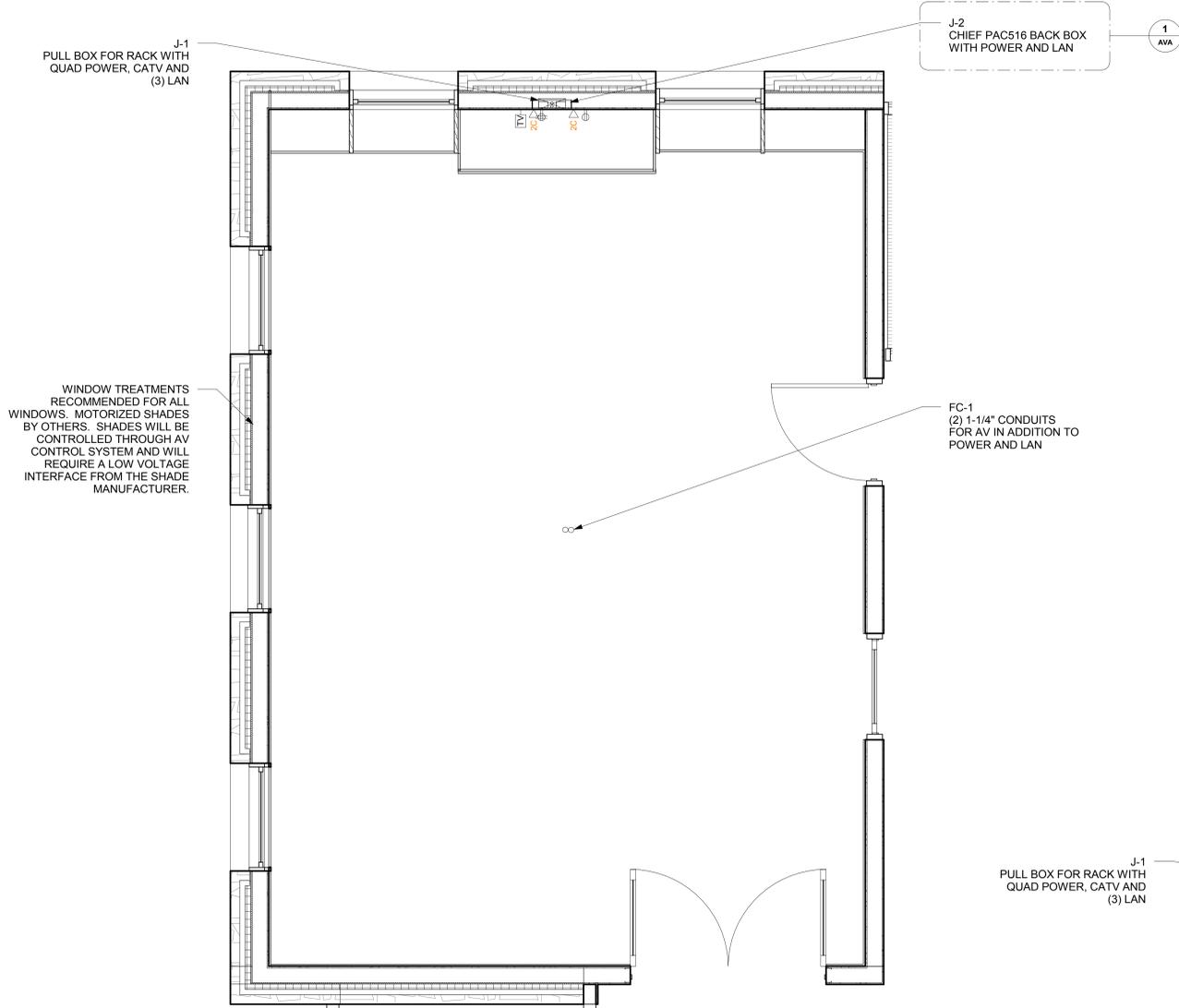
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AV First Floor Scope

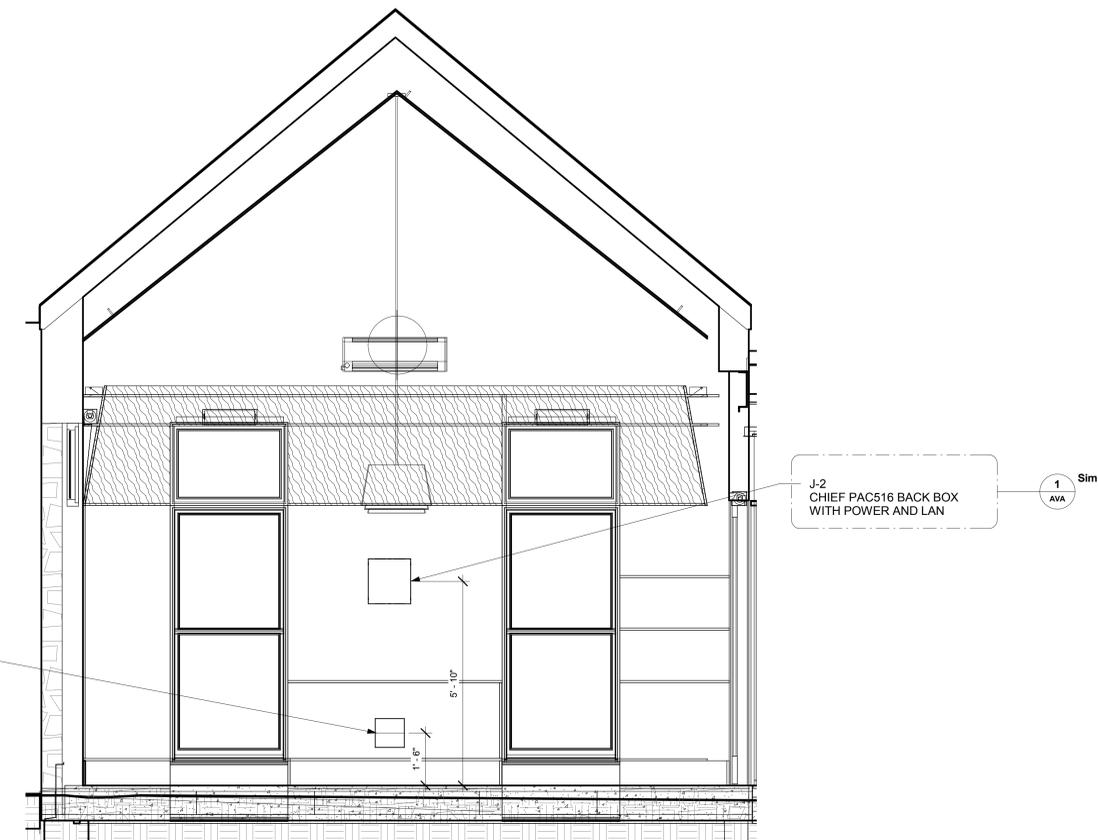
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5/24/2013

AV002



1 Conference Room 002 AV Floorplan
1/2" = 1'-0"



2 Conference Room 002 North Elevation
1/2" = 1'-0"

GENERAL NOTES:
1. ELECTRICAL SERVICES SHOWN ON THIS DRAWING ARE FOR AV REQUIREMENTS ONLY. THESE AV CIRCUITS SHOULD ALL BE ON THE SAME ELECTRICAL PHASE AND ON THEIR OWN DEDICATED CIRCUITS.
2. PLEASE REFER TO AV001 GENERAL NOTES AND LEGEND FOR ADDITIONAL INFORMATION AS IT PERTAINS TO THE AV INFRASTRUCTURE.
3. WALL MOUNTED LCD MONITORS SHOULD BE PROVIDED WITH WALL SUPPORT BLOCKING THAT IS RATED FOR 5 TIMES THE WEIGHT OF THE LCD MONITOR AND MOUNT.
4. WALL MOUNTED LCD MONITORS SHOULD PROTRUDE NO MORE THAN 4" FROM WALL TO MEET ADA REQUIREMENTS. PROVIDE WALL RECESS WITH A MINIMUM OF 2" CLEARANCE AROUND ENTIRE MONITOR FOR VENTILATION PURPOSES.

FURNITURE NOTES:
1. TABLE BOXES AND CUTOUTS PROVIDED AND INSTALLED BY TABLE MANUFACTURER. AV CONTRACTOR TO SUPPLY TABLE BOX TO MANUFACTURER FOR HOLE SIZE.
2. TABLE BOXES TO BE LOCATED DIRECTLY ABOVE TABLE PEDESTALS SO THAT BOX IS CONCEALED FROM BELOW WITHIN PEDESTAL.
3. PEDESTAL SHOULD HAVE REMOVABLE ACCESS PANEL FOR SERVICE.
4. CRENDENZA AV RACKS WILL REQUIRE ACTIVE VENTILATION.
5. POWER, LAN, AND AV CABLING WILL BE FED TO TABLE BOXES THROUGH THE TABLE CABLE MANAGEMENT SYSTEM. TYPICAL CONNECTIVITY WITHIN TABLE BOX INCLUDES A DUPLEX POWER OUTLET, PULL UP AV CABLES, AND PULL UP LAN.

LIGHTING / DRAPE NOTES:
1. PLEASE REFER TO AV001 FOR DETAILED NOTES ON VIDEO TELECONFERENCING LIGHTING REQUIREMENTS, AND WINDOW TREATMENTS.

Conference 002 BTU Load and Equipment Data						
Model	Power (in Watts)	BTU/hr	Width	Height	Depth	Weight (in lbs.)
LCD Monitor	270 W	921	73 1/2"	43 1/16"	5"	174.2
Rack	500 W	1705	19 1/4"	25 7/16"	18"	24
Grand total	770 W	2626				

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Conference Room 002

5/24/2013



JUNCTION BOX SCHEDULE					
BOX #:	SIZE:	FUNCTION:	LOCATION:	ADD'L CABLE BEYOND BOX	AFF
CONFERENCE ROOM 002					
J-1	8 x 8	CREDENZA PULL BOX	SEE AV FLOOR PLAN	10'-0"	18"
J-2	MANUF.	MONITOR PULL BOX	SEE AV FLOOR PLAN	10'-0"	70"
FC-1	MANUF.	FLOOR CORE	SEE AV FLOOR PLAN	15'-0"	N/A

- NOTES:**
1. ALL CONDUITS TO BE 1" DIAMETER UNLESS OTHERWISE SPECIFIED.
 2. ELECTRICAL CONTRACTOR TO INSTALL PULL STRING IN ALL CONDUITS
 3. THIS DRAWING INDICATES JUNCTION BOX NUMBERS, CABLE NUMBERS AND CONDUIT INTERCONNECT ONLY.
 4. THIS DRAWINGS DOES NOT INDICATE EXACT JUNCTION BOX LOCATION OR EXACT CONDUIT ROUTING.
 5. FOR FURTHER INFORMATION, REFER TO ARCHITECTURAL AND ELECTRICAL PRINTS.
 6. 120VAC SERVICES FOR EQUIPMENT RACKS, CEILING MOUNTED PROJECTORS, LCD OR PLASMA MONITORS, FLOOR BOXES WITH AV, AV WALL PLATES ETC TO SHARE SAME PHASE. THEY SHOULD NOT BE ON THE SAME PHASE AS COMPRESSORS, MOTORS OR LIGHT DIMMING SYSTEMS
 7. EC TO PROVIDE ALL CONDUITS AND JUNCTION BOXES AS INDICATED.
 8. SEE AV FLOOR PLAN FOR ALL AV RELATED POWER AND LAN CALL OUT LOCATIONS
 9. CONFIRM FINAL LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECTS PRIOR TO INSTALLATION OF ALL DEVICES.

1 Conference Room 002 Conduit Riser
NTS

ELECTRICAL SCHEDULE		
SYM.	DESCRIPTION	
[Symbol]	CEILING POWER OUTLET - 120V AC	STUBBED CONDUIT
[Symbol]	AC CLOCK RECEPTACLE - 120V AC	
[Symbol]	AC DUPLEX OUTLET - 120V AC	
[Symbol]	AC QUAD OUTLET - 120V AC	RIGID CONDUIT
[Symbol]	LAN WITH QUANTITY	
[Symbol]	ANALOG LINE WITH QUANTITY	
[Symbol]	WALL PHONE	PLENUM CABLE
[Symbol]	CATV	
[Symbol]	J-BOX	
[Symbol]	CEILING PULL AREA	FLOOR CORE
[Symbol]	SHADE LVC	
[Symbol]	LIGHTING LVC	
[Symbol]	SCREEN LVC	POKE-THRU
[Symbol]	LIGHT SWITCH	
[Symbol]	SCREEN SWITCH	

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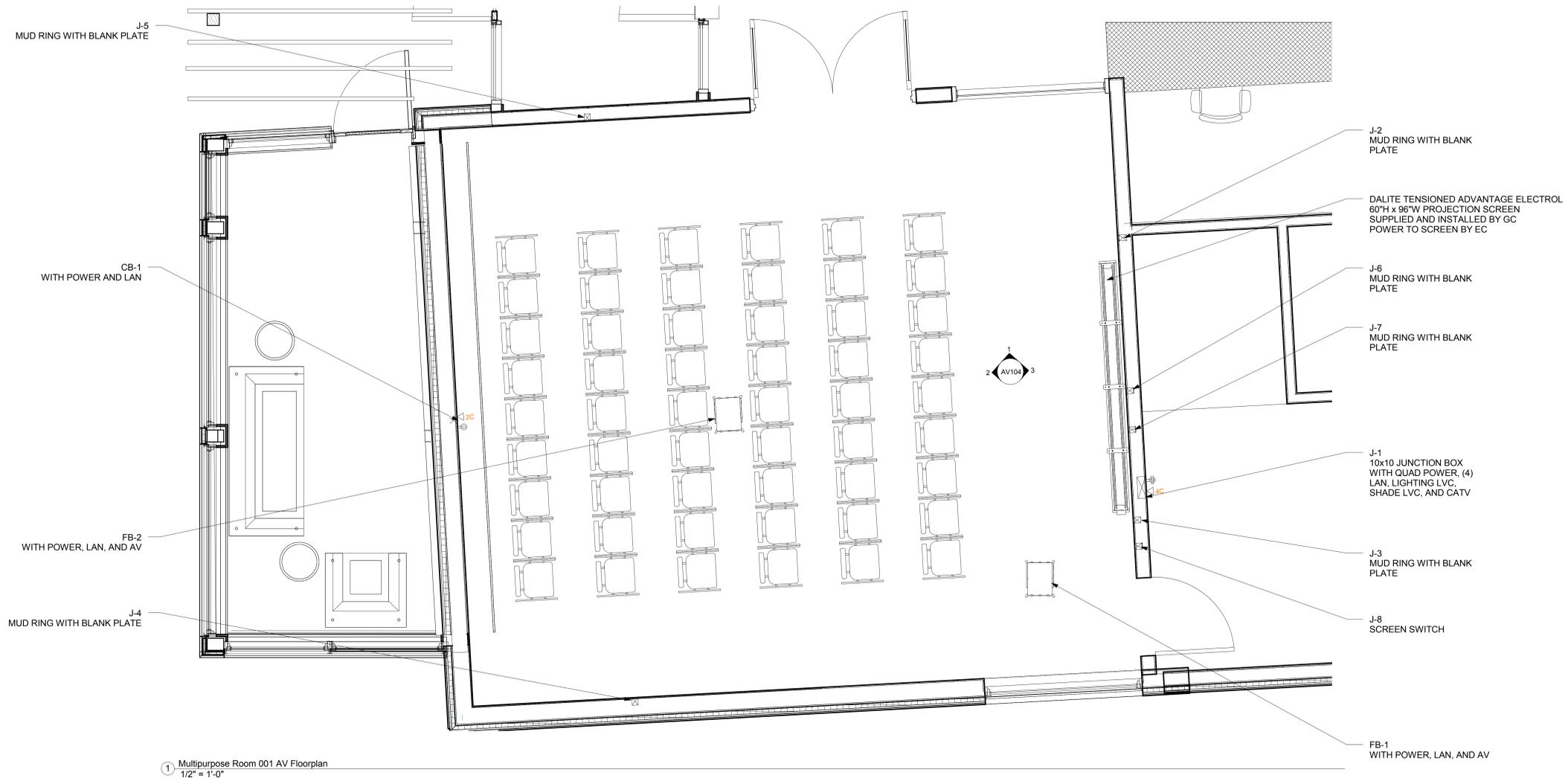
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Conference Room 002 AV Conduit Riser

05/20/13

AV102



1 Multipurpose Room 001 AV Floorplan
1/2" = 1'-0"

GENERAL NOTES:

1. ELECTRICAL SERVICES SHOWN ON THIS DRAWING ARE FOR AV REQUIREMENTS ONLY. THESE AV CIRCUITS SHOULD ALL BE ON THE SAME ELECTRICAL PHASE AND ON THEIR OWN DEDICATED CIRCUITS.
2. MECHANICAL DEVICES LOCATED WITHIN CEILING SHOULD NOT BE LOCATED NEAR PROJECTORS. THESE DEVICES COULD INDUCE VIBRATION AT THE PROJECTORS. TAKE PRECAUTION TO LIMIT ANY VIBRATION WITHIN THE CEILING THAT COULD BE TRANSFERRED TO THE PROJECTORS.
3. PLEASE REFER TO AV001 GENERAL NOTES AND LEGEND FOR ADDITIONAL INFORMATION AS IT PERTAINS TO THE AV INFRASTRUCTURE.

LIGHTING / DRAPE NOTES:

1. LIGHTING ZONES TO BE CIRCUITED AND DIMMABLE. FRONT ZONE OF LIGHTING CLOSEST TO PROJECTION SCREENS SHOULD BE ON A SEPARATE ZONE SO THAT IT CAN BE DIMMED OR SHUT OFF IF NECESSARY.
2. WINDOW TREATMENTS SHOULD BE PROVIDED WHERE AMBIENT LIGHT FROM OUTDOORS OR OTHER LIGHT SOURCES THAT HAVE THE POTENTIAL TO AFFECT THE PROJECTED IMAGES ON THE PROJECTION SCREENS.

Multipurpose Room BTU Load and Equipment Data						
Model	Power (In Watts)	BTU/hr	Width	Height	Depth	Weight (in lbs.)
G5650WNL	390 W	1330	18 1/2"	6"	12 5/16"	15
Rack	1500 W	5115	24 1/4"	48 1/8"	27 5/8"	0
Grand total	1890 W	6445				

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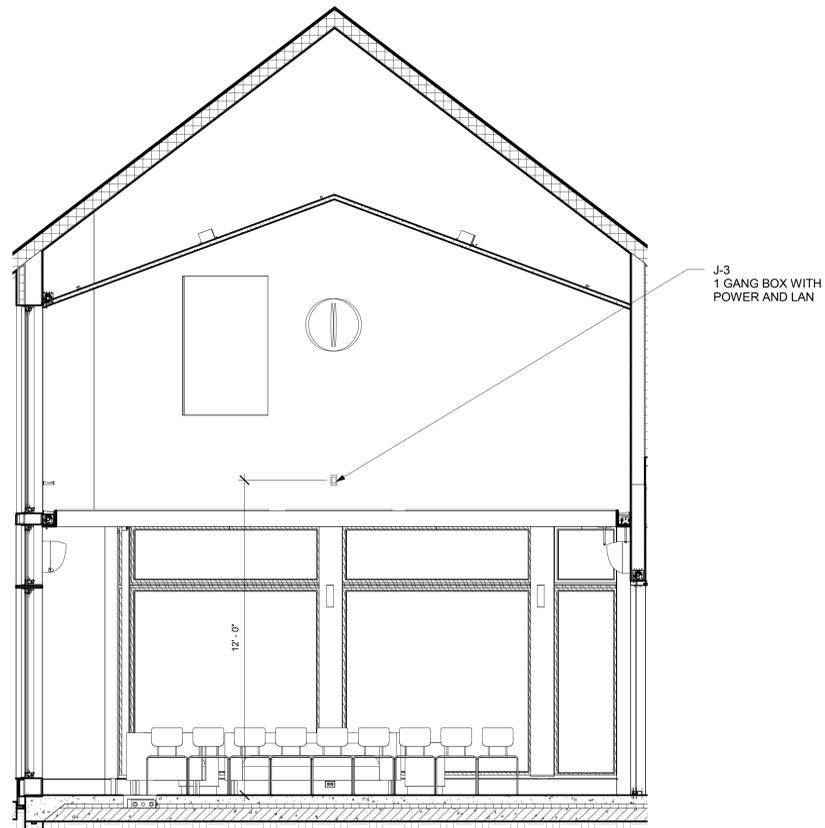
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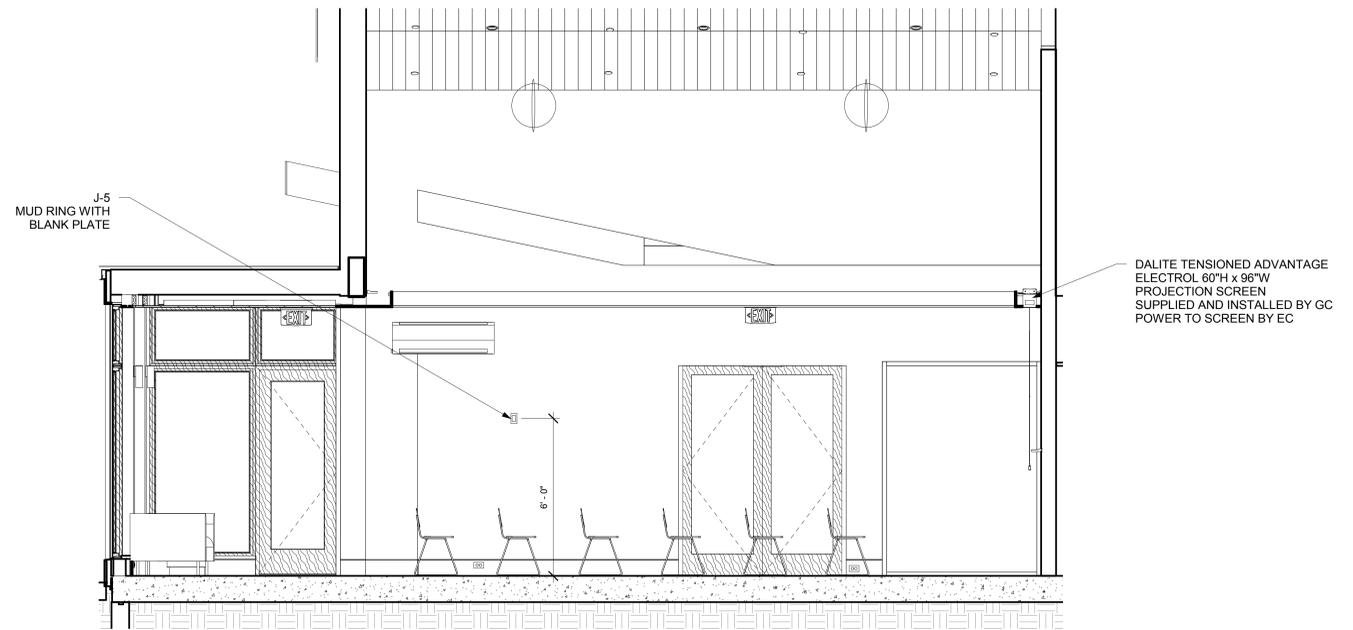
Multipurpose Room 001

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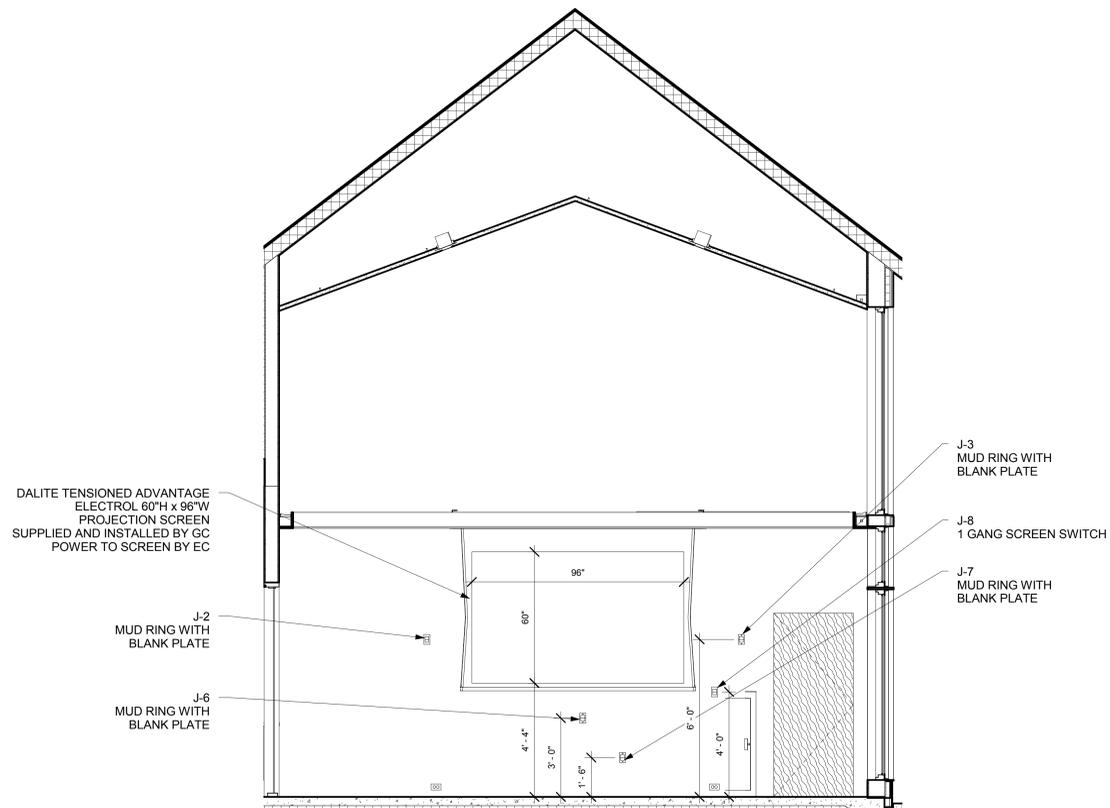
AV103



2 Multipurpose Room 001 West Elevation
3/8" = 1'-0"



1 Multipurpose Room 001 North Elevation
3/8" = 1'-0"



3 Multipurpose Room 001 East Elevation
3/8" = 1'-0"

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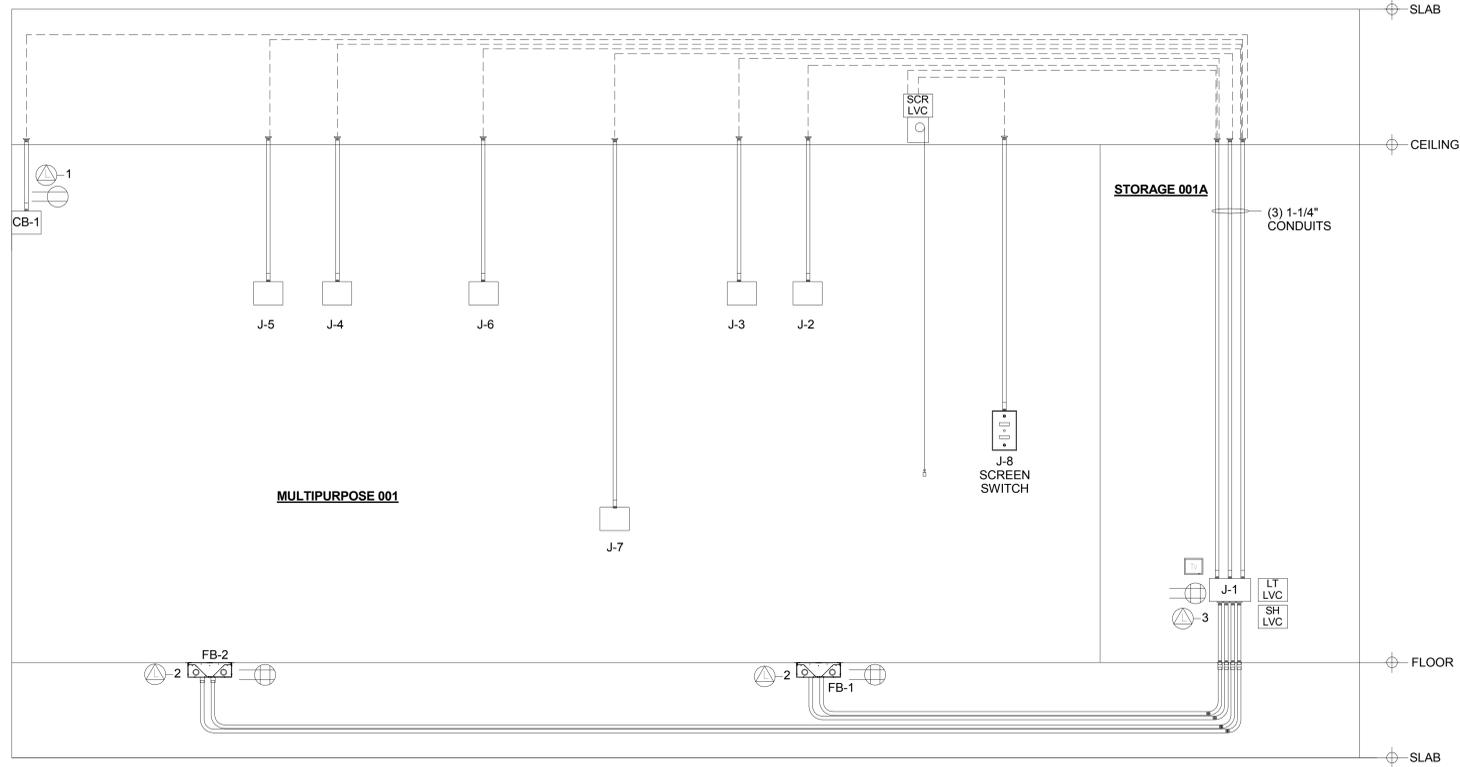
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Multipurpose Room 001

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AV104



JUNCTION BOX SCHEDULE					
BOX #:	SIZE:	FUNCTION:	LOCATION:	ADD'L CABLE BEYOND BOX	AFF
MULTIPURPOSE ROOM					
J-1	10x10	RACK PULL BOX	SEE AV FLOOR PLAN	15'-0"	18"
J-2	MUD RING	IN-WALL SPEAKER	SEE AV FLOOR PLAN	5'-0"	72"
J-3	MUD RING	IN-WALL SPEAKER	SEE AV FLOOR PLAN	5'-0"	72"
J-4	MUD RING	IN-WALL SPEAKER	SEE AV FLOOR PLAN	5'-0"	72"
J-5	MUD RING	IN-WALL SPEAKER	SEE AV FLOOR PLAN	5'-0"	72"
J-6	MUD RING	IN-WALL SPEAKER	SEE AV FLOOR PLAN	5'-0"	36"
J-7	MUD RING	IN-WALL SUBWOOFER	SEE AV FLOOR PLAN	5'-0"	18"
J-8	1 GANG	SCREEN SWITCH	FRONT WALL - SEE AV FLOOR PLAN	5'-0"	48"
FB-1	MANUF	FLOOR BOX	LOCATED AT LECTERN LOCATION - SEE AV FLOOR PLAN	15'-0"	N/A
FB-2	MANUF	FLOOR BOX	LOCATED AT SEATING LOCATION - SEE AV FLOOR PLAN	15'-0"	N/A
CB-1	1 GANG	PROJECTOR PULL	LOCATED AT REAR WALL - SEE AV FLOOR PLAN	10'-0"	12"

NOTES:
 1. ALL CONDUITS TO BE 1" DIAMETER UNLESS OTHERWISE SPECIFIED.
 2. ELECTRICAL CONTRACTOR TO INSTALL PULL STRING IN ALL CONDUITS
 3. THIS DRAWING INDICATES JUNCTION BOX NUMBERS, CABLE NUMBERS AND CONDUIT INTERCONNECT ONLY.
 4. THIS DRAWING DOES NOT INDICATE EXACT JUNCTION BOX LOCATION OR EXACT CONDUIT ROUTING.
 5. FOR FURTHER INFORMATION, REFER TO ARCHITECTURAL AND ELECTRICAL PRINTS.
 6. 120VAC SERVICES FOR EQUIPMENT RACKS, CEILING MOUNTED PROJECTORS, LCD OR PLASMA MONITORS, FLOOR BOXES WITH AV, AV WALL PLATES ETC TO SHARE SAME PHASE. THEY SHOULD NOT BE ON THE SAME PHASE AS COMPRESSORS, MOTORS OR LIGHT DIMMING SYSTEMS
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 8. SEE AV FLOOR PLAN FOR ALL AV RELATED POWER AND LAN CALL OUT LOCATIONS
 9. CONFIRM FINAL LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECTS PRIOR TO INSTALLATION OF ALL DEVICES.

ELECTRICAL SCHEDULE		
SYM.	DESCRIPTION	
[Symbol]	CEILING POWER OUTLET - 120V AC	STUBBED CONDUIT
[Symbol]	AC CLOCK RECEPTACLE - 120V AC	
[Symbol]	AC DUPLEX OUTLET - 120V AC	
[Symbol]	AC QUAD OUTLET - 120V AC	RIGID CONDUIT
[Symbol]	LAN WITH QUANTITY	
[Symbol]	ANALOG LINE WITH QUANTITY	
[Symbol]	WALL PHONE	PLENUM CABLE
[Symbol]	CATV	
[Symbol]	J-BOX	
[Symbol]	CEILING PULL AREA	FLOOR CORE
[Symbol]	SHADE LVC	
[Symbol]	LIGHTING LVC	
[Symbol]	SCREEN LVC	FLOOR CORE
[Symbol]	LIGHT SWITCH	
[Symbol]	SCREEN SWITCH	

1 Multipurpose Room AV Conduit Riser
12" = 1'-0"

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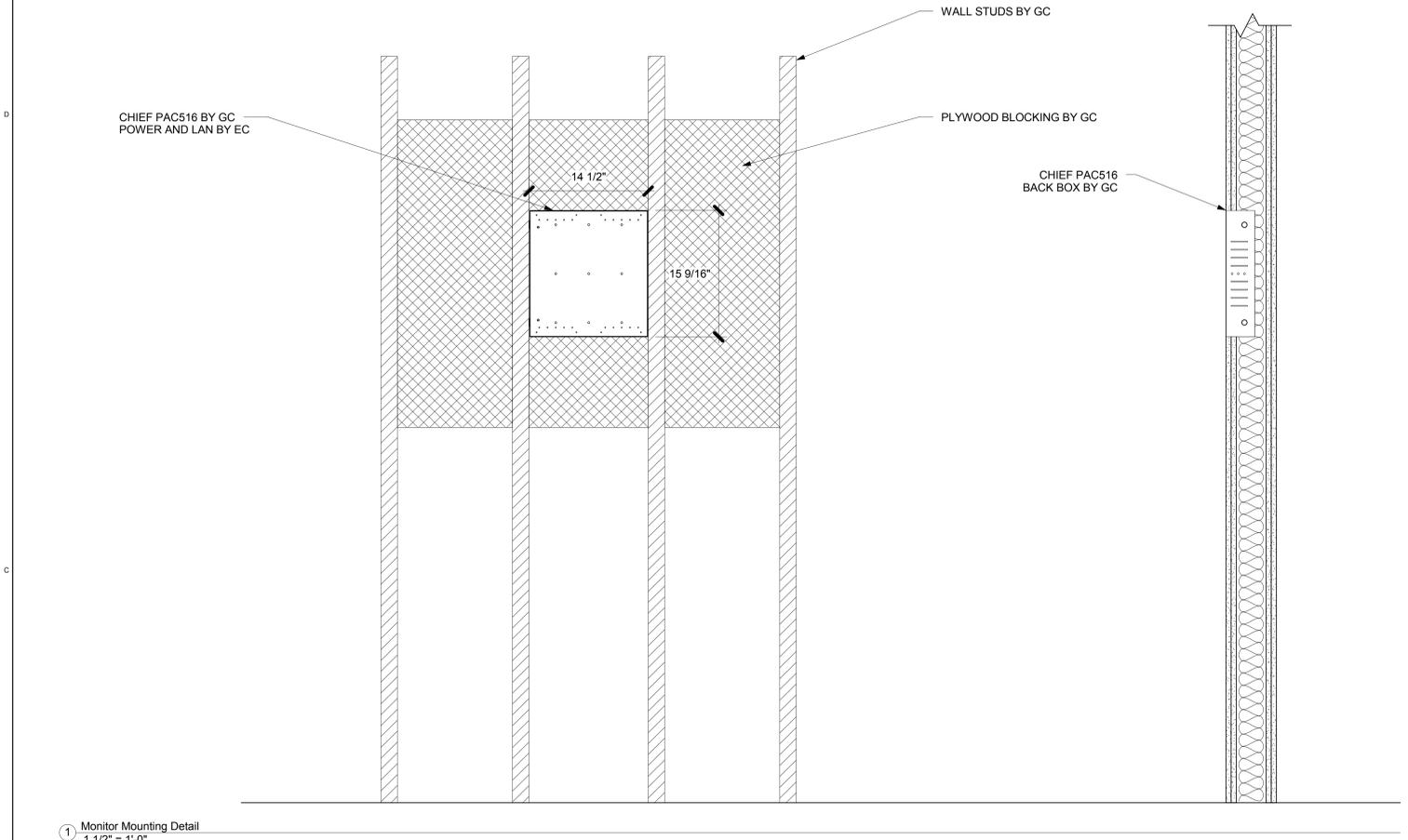
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Multipurpose Room 001
 AV Conduit Riser

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AV105



1 Monitor Mounting Detail
1 1/2" = 1'-0"

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AV Details

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AVA

D

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1