

APPENDIX A - TECHNICAL SPECIFICATIONS  
RFQ 97154 RENOVATION OF DISTRICT II BUILDINGS 1 & 3

**SCOPE OF WORK**

This contract is executed between JEA and the General Contractor to perform HVAC, Lighting, Millwork, Ceiling Grid and Bathroom renovation services including, but not limited to: demolition of existing fixtures, installation of new LED lighting, ceiling tiles, cabinets, new fixtures, replacement of flooring, patching and painting walls, plumbing, installation of water heater, duct work and air conditioning system. The Contractor shall execute work in a timely manner. **Deadline for completion of work is September 6, 2019.** JEA may take action to perform work in house and, thereby, reduce Contractor workload. These specifications are not intended to supersede Federal, State, or local regulations to which the Contractor must comply.

**PART 1 GENERAL**

- 1.1 DEFINITIONS**
- 1.2 SUBMITTALS**
- 1.3 QUALIFICATIONS**
- 1.4 QUALITY ASSURANCE**
- 1.5 DELIVERY, STORAGE, AND HANDLING**
- 1.6 SAFETY**
- 1.7 SECURITY**
- 1.8 ENVIRONMENTAL REQUIREMENTS**
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**PART 2 PARTS AND PRODUCTS**

- 2.1 APPROVAL**

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- 3.1 GENERAL CONSTRUCTION REQUIREMENTS**
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- 3.3 PROJECT EXECUTION**
- 3.4 PROJECT COMPLETION**

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**PART 1 GENERAL**

**1.1 DEFINITIONS**

CERTIFIED GENERAL CONTRACTOR	As issued by the State of Florida (FAC 489.111).
FLORIDA BUILDING CODE	Most recently published version (6 <sup>th</sup> Edition or later).
JEA STANDARDS	JEA Standards are identified on JEA's public website ( <a href="http://www.JEA.com">www.JEA.com</a> ).

**1.2 SUBMITTALS**

Contractor shall deliver the following submittal items in a timely manner to the JEA Contract Administrator for approval.

**SUBMITTAL 01 – JEA SAFETY QUALIFICATION**

The Contractor shall submit applicable safety documents and receive approval from the JEA Contract Administrator prior to the start of work.

**SUBMITTAL 02 – MATERIALS FOR COMPLETION OF RENOVATION**

If materials are not listed on JEA-provided engineering drawings, the Contractor shall submit materials for approval to the JEA Contract Administrator.

**SUBMITTAL 03 - INVOICING DOCUMENTS**

Following the completion of work, the Contractor shall submit invoicing documents in accordance with all applicable sections of this technical specification.

**1.3 QUALIFICATIONS**

- 1.3.1 Contractor shall possess a valid Certified General Contractor License issued by the State of Florida. Contractor shall also possess a current business license issued by the City of Jacksonville/Duval County.
- 1.3.2 Contractor shall meet all minimum qualifications as identified in JEA solicitation documents.
- 1.3.3 Contractor must obtain permission of JEA Contract Administrator prior to subcontracting of work.

**1.4 QUALITY ASSURANCE**

- 1.4.1 Contractor shall ensure that all work is to JEA standards. It is the contractor's responsibility to review JEA standards for applicable work. Contractor shall be aware of all JEA Standards that apply to the tasks executed by the Contractor. Standards are available to the public on JEA's website, [www.JEA.com](http://www.JEA.com).
- 1.4.2 On all installations and repairs, the Contractor shall confirm that the installation and/or repairs comply with accepted practice as specified in the most update versions of the Florida Building Code. The Contractor shall apply all applicable ASTM standards.
- 1.4.3 Work that does not conform to expected levels of craftsmanship or the specifications shall be redone at Contractor's expense.
- 1.4.4 The Contractor shall be in possession of a valid General Contractor Certification. Any worker employed by the Contractor, who exhibits inadequate experience and knowledge or is incapable in his/her field, shall be removed from the work site at the discretion of the JEA Contract Administrator.

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- 1.4.5 JEA reserves the right to add/delete quantities, as required. Pricing for added quantities will be set at the current bid price. JEA may take action to perform work in house and, thereby, reduce contractor workload.
- 1.4.6 The Contractor shall submit invoicing documents annotated on the contractor's letterhead. The invoice (containing company name and address) shall include JEA purchase order and work order numbers. The Contractor shall include the following information on the invoice: date, location, description of service provided, amount payable, and JSEB forms (if applicable). JEA will not provide payment for deficient invoices that do not contain required information.
- 1.4.7 Contractor's invoiced pricing must agree with the contract bid pricing established in the agreement between the Contractor and JEA.
- 1.4.8 The administrative cost, profit, travel time, and other indirect contractor costs will not be permitted as separate billable costs. These costs must be included in the bid price provided by the Contractor in the bid workbook.
- 1.4.9 JEA Contract Administrators will evaluate vendor performance through a Vendor Performance Scorecard. In the event of a deficiency, JEA will coordinate mandatory vendor conference and take any other steps required to resolve the performance deficiency.
- 1.4.10 Contractors shall work in accordance with the JEA Hot Works Permit Program. JEA Security requires at least two (2) days' notice for putting fire and sprinkler systems into test, and the JEA Contract Administrator shall be notified prior to initiating.

**1.5 DELIVERY, STORAGE, AND HANDLING**

- 1.5.1 The Contractor must dispose of all waste generated as a result of the contract at an officially permitted location. Any fees and/or charges associated with this disposal should be included in bid price of work. JEA will not pay additional charges/fees for waste disposal.
- 1.5.2 The Contractor shall prevent access by the public to materials, tools, and equipment during the course of the work.

**1.6 SAFETY**

- 1.6.1 The Contractor shall become JEA Safety Qualified prior to beginning actual work at JEA. All employees of the Contractor, including Project Managers, who perform work on JEA property, shall be JEA Safety Qualified. Supervisors may be required to have additional training. Site specific training may be required to work at certain job sites (i.e. substations). Contractor is responsible for ensuring ALL personnel have received the appropriate training prior to beginning work.
- 1.6.2 The Contractor shall familiarize all workers with all fire and safety regulations recommended by OSHA and other industry or local governmental groups at the Federal, State, and local levels.
- 1.6.3 Contractor shall maintain a safe work environment at all times.
- 1.6.4 The Contractor shall furnish JEA with material safety data sheets on all chemical products utilized.
- 1.6.5 The Contractor shall also adhere to current JEA Safety and Training regulations at all times.
- 1.6.6 Contract workers are required to wear proper Personal Protective Equipment (PPE). PPE minimums include safety footwear with steel toes, hard hat and safety glasses. Hearing protection is required while operating machinery or equipment (including saws). Ripped jeans, shorts, tennis shoes, sleeveless shirts, and shirts with offensive logos or messages are not permitted.
- 1.6.7 The Contractor shall keep the work area free from accumulation of waste materials or rubbish.
- 1.6.8 The nature of work (cutting, sanding and general work) to be performed may produce heat, smoke, steam, dust or vapors, which may result in the activation of an alarm. To avoid

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Contractor caused alarms, the Contractor shall notify the JEA Contract Administrator, whom will issue a hot work permit (permit valid for one (1) day only) before any procedure. After such procedures are concluded, Contractor shall notify the JEA Contract Administrator who will inspect, and re-arm the alarm system.

- 1.6.9 If the Contractor's negligence results in a release of a Clean Agent (i.e. FM 200), the Contractor shall be responsible for all costs incurred to refill and restore the fire suppression system.

## **1.7 SECURITY**

- 1.7.1 A JEA issued security badge shall be visible at all times while on JEA property.
- 1.7.2 JEA issued security badges will become deactivated after 90 days of non-activity. It is the Contractor's responsibility to ensure all employees have active badges prior to commencement of work.
- 1.7.3 Contractors shall check in and check out with JEA Security and the JEA Contract Administrator daily.
- 1.7.4 When available, Contractor shall wear uniforms/t-shirts displaying company logo whenever working for JEA.
- 1.7.5 The Contractor shall ensure subcontracted employees obtain background checks, training, and active badge status prior to the start of work.
- 1.7.6 Drawings, sketches, plans, and other items detailing JEA Facilities are to be considered sensitive items. Contractor shall not release associated documents to any 3<sup>rd</sup> party without the prior consent of JEA.

## **1.8 ENVIRONMENTAL REQUIREMENTS**

- 1.8.1 The Contractor shall conform to environmental regulations of public agencies, including local, state and Federal jurisdiction.
- 1.8.2 Contractor shall be accountable for timely clean-up and remediation associated with any contaminant spills, accidental or otherwise, including, but not limited to diesel fuel, gasoline, lubricants, and cleaning fluids, etc.

## **1.9 WARRANTY**

- 1.9.1 Upon successful completion of work, the Contractor shall extend the manufacturer warranty on all parts to JEA.
- 1.9.2 The Contractor shall warrant workmanship for one (1) calendar year from the substantial completion date.

## **PART 2 PARTS AND PRODUCTS**

### **2.1 APPROVAL**

- 2.1.1 Contractor shall utilize materials as designated in JEA Standards and the accompanying JEA-provided engineering drawings.
- 2.1.2 Where no material is specified, Contractor shall prepare submittal for the JEA Contract Administrator prior to purchasing or installing materials.
- 2.1.3 Residential grade materials will not be accepted.

## **PART 3 EXECUTION**

### **3.1 GENERAL CONSTRUCTION REQUIREMENTS**

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- 3.1.1 Contractor shall provide all labor, tools and equipment needed for the scope of work. Unsafe tools and equipment are never permitted on JEA sites. Hand tools shall be secured with lanyard or safety device to prevent tools from falling off of swing scaffolding.
- 3.1.2 The Contractor shall obtain all permits required by local agencies and pay all fees which may be required for the performance of the work and removal/disposal of hazardous materials. Bid prices should include this cost.
- 3.1.3 Contractor shall verify existing conditions and dimensions prior to starting work. Any discrepancies must be brought to the attention of the JEA Contract Administrator. It is the Contractor's responsibility to remove and/or provide additional items as required to comply with the contract documents.
- 3.1.4 Construction schedules are to be provided by the Contractor and agreed to by all parties before work proceeds. Changes in the schedule shall be coordinated through the JEA Contract Administrator and updated on Smartsheets.
- 3.1.5 Contractor shall provide any and all dust curtains, temporary partitions, walk-off mats or any other barricade or process necessary to keep site clean.
- 3.1.6 Job sites are to be kept clean at all times. Contractor shall supply necessary cleaning products. In office environments, site shall be vacuumed at the end of work each day and at the end of the job. In field environments, areas shall be kept broom-clean.
- 3.1.7 All work shall meet or exceed applicable building codes.
- 3.1.8 All doors, lids, and gates shall be locked and secured at all times when unattended.
- 3.1.9 Parking is the responsibility of the Contractor, however, requests may be made to the Contract Administrator to park on JEA property, and shall be granted/denied at the sole discretion of the Contract Administrator.

**3.2 PREPARATORY WORK**

- 3.2.1 Contractor must receive verbal and/or written agreement from JEA Contract Administrator prior to commencement of construction activities.
- 3.2.2 Contractor must attend all pre construction meetings prior to the commencement of work.
- 3.2.3 Power and Water are NOT to be turned off at any time, except emergencies, without prior notification and approval by the Project Administrator. Any work interfering with building occupants' use of space must be coordinated in advance.
- 3.2.4 Loading, unloading, material delivery, and contractor site access points will be determined by the Project Administrator. Use of other areas is prohibited.
- 3.2.5 Contractors are responsible for furnishing sanitary items (temporary toilets, hand-washing stations, clean drinking water, etc.) for their work force. JEA makes no guarantees that access to existing bathrooms will be granted.

**3.3 PROJECT EXECUTION**

- 3.3.1 Contractor shall provide JEA weekly progress reports outlining the following:
  - a. Work completed & work remaining
  - b. Delays due to weather and other causes (identify causes)
  - c. Plan to complete work by scheduled date
  - d. Weekly walk-through's as designated by the JEA Contract Administrator
- 3.3.2 Contractor shall conduct work in accordance with JEA standards, JEA-provided engineering drawings, and instructions of the JEA Contract Administrator.
- 3.3.3 Contractor shall upload weekly progress reports to Project Smartsheet weekly and provided

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schedule in excel format to Project Administrator weekly.

**3.4 PROJECT COMPLETION**

- 3.4.1 Punch lists will be created by the Project Administrator, with input as necessary from the Client. The Project Administrator is the deciding authority on punch list matters. Final punch list items will be completed before final invoice is processed for payment.
- 3.4.2 Final cleaning is to be provided by the Contractor. This includes lay-down areas; loading docks; and stairways, hallways, or other paths of travel used by the contractor during the job. All debris caused by the construction, both interior and exterior, will be removed from the premises and properly disposed of.
- 3.4.3 Contractor is responsible for organizing and presenting to JEA, in a neat and accessible format, all information concerning warranties, key schedules, installation and operation manuals, engineer signed as-built drawings, wiring diagrams and other documentation before final invoice will be processed.
- 3.4.4 Contractor shall remove all debris, demolished items, and construction waste, including the proper and legal disposing of such. At the completion of the work, the building interior, exterior and landscaping, where affected by Contractor work, shall be restored.
- 3.4.5 Prior to leaving the site, the contractor shall contact JEA Contract Administrator to confirm completion of work activities. Unless otherwise instructed by the JEA Contract Administrator, Contractor must fully exit JEA property following completion of work.

**APPENDIX B - MINIMUM QUALIFICATION FORM  
RFQ 97154 RENOVATION OF CEDAR BAY DISTRIC II BUILDINGS 1 & 3**

**GENERAL**

**THE MINIMUM QUALIFICATIONS SHALL BE SUBMITTED ON THIS FORM. IN ORDER TO BE CONSIDERED A QUALIFIED BIDDER BY JEA YOU MUST MEET THE MINIMUM QUALIFICATIONS LISTED BELOW, AND BE ABLE TO PROVIDE ALL THE SERVICES LISTED IN THIS SOLICITATION.**

**THE BIDDER MUST COMPLETE THE BIDDER INFORMATION SECTION BELOW AND PROVIDE ANY OTHER INFORMATION OR REFERENCE REQUESTED. THE BIDDER MUST ALSO PROVIDE ANY ATTACHMENTS REQUESTED WITH THIS MINIMUM QUALIFICATIONS FORM.**

**THE BIDDER SHALL SUBMIT ALL OF THE REQUIRED BID FORMS ELECTRONICALLY TO SHEREA HARPER AT [HARPSB@JEA.COM](mailto:HARPSB@JEA.COM).**

**BIDDER INFORMATION**

COMPANY NAME:\_\_\_\_\_

BUSINESS ADDRESS:\_\_\_\_\_

CITY, STATE, ZIP CODE:\_\_\_\_\_

TELEPHONE:\_\_\_\_\_

FAX:\_\_\_\_\_

E-MAIL:\_\_\_\_\_

PRINT NAME OF AUTHORIZED REPRESENTATIVE:\_\_\_\_\_

SIGNATURE OF AUTHORIZED REPRESENTATIVE:\_\_\_\_\_

TITLE OF AUTHORIZED REPRESENTATIVE:\_\_\_\_\_

**MINIMUM QUALIFICATIONS:**

Bidder shall have the following Minimum Qualifications to be considered eligible to submit a Bid in response to this SOLICITATION.

It is the responsibility of the Bidder to ensure and certify that it meets the Minimum Qualifications stated below. A Bidder not meeting all of the following criteria may have their Bids rejected.

- **Bidder shall possess a valid Certified General Contractor License issued by the State of Florida.**

Certified General Contractor Number: \_\_\_\_\_

**APPENDIX B - MINIMUM QUALIFICATION FORM  
RFQ 97154 RENOVATION OF CEDAR BAY DISTRICT II BUILDINGS 1 & 3**

- **Bidder must have completed at least two (2) similar projects in a Commercial setting in the last two (2) years valued at least \$100,000 each. Both projects must have been completed under the Contractor's Certified General Contractor License issued by the State of Florida. Only one (1) of the two projects can be work performed for JEA. Bidder shall provide valid references for each contract listed.**
- **Bidder shall have a local office located within a fifty (50) mile radius of JEA Headquarters located at 21 W. Church St., Jacksonville, FL 32202.**

**Please note, any Contractor whose contract with JEA was terminated for default within the last two (2) years shall not be determined to be a responsible Bidder and will not be identified on the bid list.**

**Please provide the reference verification information requested below pertaining to this contract.**

**1. REFERENCE**

Reference Name \_\_\_\_\_

Reference Phone Number \_\_\_\_\_

Reference Company Name \_\_\_\_\_

Address of Work \_\_\_\_\_

Reference E-Mail Address \_\_\_\_\_

Dates of Work/\$ Amount \_\_\_\_\_

Description of Work \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Building name(s) (if applicable) \_\_\_\_\_

Physical site address(es) \_\_\_\_\_

Number of stories \_\_\_\_\_



**APPENDIX B - MINIMUM QUALIFICATION FORM**  
**RFQ 97154 RENOVATION OF CEDAR BAY DISTRICT II BUILDINGS 1 & 3**

**2. REFERENCE**

Reference Name \_\_\_\_\_

Reference Phone Number \_\_\_\_\_

Reference Company Name \_\_\_\_\_

Address of Work \_\_\_\_\_

Reference E-Mail Address \_\_\_\_\_

Dates of Work/\$ Amount \_\_\_\_\_

Description of Work \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Building name(s) (if applicable) \_\_\_\_\_

Physical site address(es) \_\_\_\_\_

Number of stories \_\_\_\_\_

**APPENDIX B – BID FORM**  
**RFQ 97154 RENOVATION OF CEDAR BAY DISTRICT II BUILDINGS 1 & 3**

Submit **Bid Form** along with other required documents in an email to:  
Sherea Harper ([harpsb@jea.com](mailto:harpsb@jea.com))

Company Name: \_\_\_\_\_

Company's Address \_\_\_\_\_

Phone Number \_\_\_\_\_ FAX No: \_\_\_\_\_ EMAIL Address: \_\_\_\_\_

**BID SECURITY REQUIREMENTS**

☒ **None required**

☐ Certified Check or Bond

\_\_\_\_\_ % \$ \_\_\_\_\_

**TERM OF CONTRACT**

☒ **One-Time Purchase**

☐ Annual Requirements

☐ Other, Specify

**SAMPLE REQUIREMENTS**

☒ **None required**

☐ Samples required prior to Bid Opening

☐ Samples may be required subsequent to Bid Opening

**SECTION 255.05, FLORIDA STATUTES CONTRACT BOND**

☒ **None required**

☐ Bond required \$ \_\_\_\_\_ % of Bid Award

**QUANTITIES**

☒ **Quantities indicated are exacting**

☐ Quantities indicated reflect the approximate quantities to be purchased throughout Contract period and are subject to fluctuation in accordance with actual requirements

**INSURANCE REQUIREMENTS**

☐ None required

☒ **Insurance required**

Quote the following materials **F.O.B.: Jacksonville, FL**

Item No.	ENTER YOUR BID FOR THE FOLLOWING DESCRIBED ARTICLES OR SERVICES	TOTAL BID PRICE
1	Total Cost for <b>Renovation of Cedar Bay District II Buildings 1 &amp; 3 (as described in Appendix A – Technical Specifications)</b>	\$ _____
		<b>LUMP SUM TOTAL</b>

\_\_\_\_ I have read and understood the Sunshine Law/Public Records clauses contained within this solicitation. I understand that in the absence of a redacted copy my proposal will be disclosed to the public “as-is”.

**Bidder's Certification**

By submitting this bid, the bidder certifies that the bidder has read and reviewed all of the documents pertaining to this Request For Quote, that the person signing below is an authorized representative of the Company, that the Company is legally authorized to do business in the State of Florida, and that the Company maintains in active status an appropriate contractor's license for the work. The Bidder also certifies that the Bidder complies with all sections (including but not limited to Conflict Of Interest and Ethics) of this Request For Quote.

We have received addenda

\_\_\_\_\_ through \_\_\_\_\_

\_\_\_\_\_  
Handwritten Signature of Authorized Officer of Firm or Agent

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name and Title

**APPENDIX B – LIST OF SUBCONTRACTORS FORM**  
**RFQ 97154 RENOVATION OF CEDAR BAY DISTRICT II BUILDINGS 1 & 3**

JEA RFQ 97154 requires certain major Subcontractors be listed on this form, unless the work will be self-performed by the Company.

The undersigned understands that failure to submit the required Subcontractor information on this form may result in bid rejection, and the Company agrees to employ the Subcontractors specified below: (Use additional sheets as necessary)

Note: This list of Subcontractors shall not be modified subsequent to bid opening, without a showing of good cause and the written consent of JEA.

<b>Type of Work</b>	<b>Corporate Name of Subcontractor</b>	<b>Subcontractor Primary Contact Person &amp; Telephone Number</b>	<b>Subcontractor's License Number (if applicable)</b>	<b>Percentage of Work or Dollar Amount</b>

**Signed:**\_\_\_\_\_

**Company:**\_\_\_\_\_

**Address:**\_\_\_\_\_

**Date:**\_\_\_\_\_



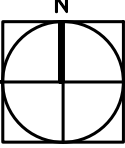
JEA CEDAR BAY RESULTS LAB  
for JEA  
1840 Cedar Bay Rd  
Jacksonville, Florida



PROJECT  
LOCATION

LOCATION PLAN

NTS



ttv architects, inc.

115 EAST FORSYTH ST  
JACKSONVILLE, FLORIDA 32202  
T 904.788.8333  
F 904.788.8335  
www.ttvarch.com

FL Lic#AA0002809

architecture planning interior design

PROJECT ARCHITECT  
CHRISTOPHER P. NOEL

LICENSE NO: #AR--092560

CONSULTANTS:

NO.	DATE	REVISION
1	09.27.18	BOX SUBMITTAL
2	01.31.19	BOX SUBMITTAL
3	03.01.19	DOOR SUBMITTAL
4	03.22.19	REVISED 100% SUBMITTAL
5	-	-
6	-	-
7	-	-

JEA CEDAR BAY RESULTS LAB

JEA  
1840 Cedar Bay Rd. JACKSONVILLE, FLORIDA

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DATE:	08.28.18
DRAWN BY:	TS
CHECKED BY:	TAG
COMMISSION NO:	1832

COVER SHEET

03.22.19 REVISED 100%  
SUBMITTAL

PROJECT INFORMATION

PROJECT: CEDAR BAY RESULTS LAB  
PROJECT LOCATION: 1820 CEDAR BAY RD  
JACKSONVILLE, FL  
OWNER: JEA  
CONTACT PERSON: WILLIAM BREADON--  
ARCHITECT: TTV ARCHITECTS, INC.  
CONTACT PERSON: CHRISTOPHER P. NOEL-- TELEPHONE (904) 798.8333

DEFINITIONS

- "OWNER", REFERS TO JEA.
- "OWNER'S CONTRACTOR REFERS TO VENDOR EMPLOYED DIRECTLY BY OWNER.  
IT IS G.C. RESPONSIBILITY TO COORDINATE WORK WITH OWNER'S CONTRACTOR.  
"CONTRACTOR", "GC" REFERS TO THE SUCCESSFUL CONTRACTOR.
- "ARCHITECT" REFERS TO TTV ARCHITECTS, INC.
- "PROVIDE" REFERS TO SUPPLY AND INSTALL UNLESS OTHERWISE NOTED.

GENERAL NOTES

DESCRIPTION OF WORK: THE WORK CONSISTS OF THE RENOVATION OF THE EXISTING LAB  
SPACE, CEILINGS, HVAC, LAND LIGHTING IN BUILDING 1 AND A RESTROOM RENOVATION IN  
BUILDING 3

- GC SHALL PERFORM ALL WORK IN COMPLIANCE WITH ALL APPLICABLE CODES
- UNLESS REQ'D. DIFFERENTLY BY JEA, GC SHALL PROCURE AND PAY FOR PERMITS,  
UTILITY CONNECTIONS, INSPECTIONS, LICENSES, BONDS, INSURANCE, FURNISHING MATERIALS,  
PRODUCTS, LABOR, SUPERINTENDENT, TOOLS, MACHINERY, EQUIPMENT, SCAFFOLD, HOIST,  
TRANSPORTATION, SERVICES AND INCIDENTALS. NECESSARY TO SUCH PERFORMANCE.  
UPON COMPLETION, ALL EQUIPMENT, FIXTURES AND DEVICES SHALL BE IN OPERATING  
CONDITION WITH FINAL CONNECTIONS OF UTILITIES MADE THERETO, INSPECTED AND  
APPROVED, BUILDING SHALL BE IN OPERATING CONDITION WHEN TURNED OVER TO THE  
OWNER.
- GC SHALL FURNISH BONDS COVERING FAITHFUL PERFORMANCE OF THE CONTRACT AND  
PAYMENT OF THE OBLIGATIONS ARISING THEREUNDER. THE AMOUNT OF EACH BOND  
SHALL BE EQUAL TO 100% OF THE CONTRACT SUM.
- APPLICATION FOR PAYMENT TO GC SHALL BE MADE ON AIA DOCUMENT G702 AND SHALL BE  
NOTARIZED. A 10% RETAINAGE SHALL APPLY TO THE GC'S APPLICATION FOR PAYMENT.  
THIS RETAINAGE WILL BE RETURNED TO THE GC AS PART OF THE FINAL PAYMENT AFTER  
ALL THE PUNCH LIST ITEMS ARE COMPLETED. A PUNCH LIST IS A LIST OF DEFICIENCIES  
FOUND DURING THE WALK-THROUGH BETWEEN OWNER, ARCHITECT, AND GC.
- CLEANING: MAINTAIN THE SITE IN A NEAT AND ORDERLY CONDITION AT ALL TIMES TO THE  
APPROVAL OF THE OWNER. CONTRACTOR TO CLEAN UP THE SITE ON A DAILY BASIS AFTER  
EACH DAY'S WORK. AT THE COMPLETION OF THE JOB, FINAL CLEANING SHALL BE  
PROVIDED. ALL THE DEBRIS CAUSED BY THE CONSTRUCTION, BOTH INTERIOR AND  
EXTERIOR, SHALL BE REMOVED FROM THE PREMISES. THE SPACE SHALL BE VACUUED  
AND MOPPED READY FOR OCCUPATION. GC IS REQUIRED TO USE GC'S CLEANING EQUIPMENT  
AND SUPPLIES.
- CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO STARTING WORK.  
IN THE EVENT THAT DRAWINGS ARE DIFFERENT FROM THE BUILT CONDITIONS, IT IS THE GC  
RESPONSIBILITY TO FIELD VERIFY ALL EXISTING CONDITIONS AND REMOVE/PROVIDE ADDITIONAL  
ITEMS AS REQUIRED TO COMPLY WITH DRAWINGS.

- GC TO COORDINATE ALL WORK WITHIN THE EXISTING FACILITY SO AS NOT TO INTERFERE WITH  
DAILY OPERATIONS-- UNLESS PRIOR ARRANGEMENTS ARE MADE WITH THE OWNER IN ADVANCE.
- CONTRACTOR IS REQUIRED TO PROVIDE TEMPORARY PARTITIONS, DUST CURTAINS AS  
REQUIRED, AND TO KEEP THE SITE CLEAN AT ALL TIMES.
- CONTRACTOR IS REQUIRED TO PROVIDE WHATEVER MEANS NECESSARY TO ENSURE THAT  
THE FACILITY IS SECURE AT ALL TIMES DURING CONSTRUCTION.
- PROJECT CLOSE-OUT: UNLESS SPECIFIED ELSEWHERE BY OWNER, AT A MINIMUM PROVIDE 2  
COPIES OF TABBED & COLLATED PROJECT BINDER CONTAINING ALL APPLICABLE OPERATING  
& MAINTENANCE MANUALS, WARRANTIES, SHOP DRAWINGS, & 1 FULL SIZE SET OF DIGITAL  
(AutoCAD & PDF FORMAT) AS-BUILT DRAWINGS-- TO BE PROVIDED AS PART OF OR PRIOR  
TO SUBMISSION OF FINAL APPLICATION FOR PAYMENT. PROVIDE ONE (1) PACKAGE OF  
REFERENCED MATERIAL TO JEA PLANNING DEPARTMENT & ONE (1) PACKAGE TO JEA PM  
(904-665-4486).
- ALL DIMENSIONS ARE TO FACE OF STUD OR FACE OF CMU UNLESS NOTED OTHERWISE.  
GC TO CONTACT ARCHITECT WHEN EXISTING DIMENSIONS VARY BY MORE THAN 4" FROM  
DIMENSIONS NOTED ON DRAWINGS.
- PROVIDE SOLID BLOCKING IN WALL WHERE REQUIRED, AND SPECIFICALLY WHERE WALL  
CABINETS, GRAB BARS, AND OTHER WALL MOUNTED ITEMS ARE SPECIFIED.
- FINISHES: EXISTING FINISHES SHALL REMAIN UNLESS DAMAGED BY CONSTRUCTION. IN  
THIS CASE, TOUCH-UP OR PATCH DAMAGED AREAS AS REQ'D. TO MATCH EXISTING  
ADJACENT AREAS. REFER TO DRAWINGS FOR FINISH SPECIFICATIONS.  
A. PAINTING: PROVIDE AS A MINIMUM NUMBER OF COATS SPECIFIED HERE IN. PROVIDE  
NUMBER OF COATS AS REQUIRED TO PROVIDE FULL COVERAGE  
B. GYPSUM WALLBOARD: PROVIDE PRIMER AND SEALER AND 2 COATS OF LATEX FINISH COAT  
C. METAL SUBSTRATES: PROVIDE APPROPRIATE PRIMER AND SEALER IN AS A MINIMUM  
NUMBER OF COATS AS REQUIRED TO PROVIDE FULL COVERAGE. CLEAN & PREPARE  
SUBSTRATE AS PER PAINT MFR DIRECTIONS.  
D. FLOORS-- PREP EXISTING FLOOR AS REQUIRED FOR PROPER ADHESION. PROVIDE 1  
PRIMER COAT OF SHERWIN WILLIAMS ARMORSEAL 1000HS AND 2 FINISH COATS OF  
SHERWIN WILLIAMS ARMORSEAL 1000HS WITH SAND INTEGRATED FOR SLIP RESISTANCE.  
PREP EXISTING FLOOR AS REQUIRED FOR PROPER ADHESION.
- DOORS: PROVIDE INTERIOR SOLID WOOD CORE DOORS, 1-3/4" THICK, FLUSH TYPE,  
TO BE PAINTED. PROVIDE EXTERIOR STEEL DOORS TO BE ASTM A526, GALVANIZED STEEL SHEETS,  
WITH 16 GAGE FACE PANELS, TO VE FACTORY PRIMED TO RECIEVE PAINT.
- DOOR HARDWARE: PROVIDE NEW DOOR HARDWARE FOR NEW DOORS TO MEET ADA REQUIREMENTS.  
LOCK SETS SHALL HAVE FUNCTIONS AS LISTED ON DOOR SCHEDULE. HINGES TO BE STANLEY, OR  
EQUIVALENT BY HAGER, LAWRENCE OR MCKINNEY (COMMERCIAL, HEAVY DUTY GRADE HINGES TO  
MATCH EXISTING) PROVIDE BALL BEARING TYPE HINGES, 1 1/2 PAIR, 4 1/2"x4 1/2" FOR EACH DOOR  
WITH FINISH TO MATCH LOCK SET. CLOSERS TO MATCH EXISTING (MINIMUM YALE 3500 SERIES). ALL  
DOOR HARDWARE SHALL MEET ADA AND FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION.
- ASBESTOS-- ASBESTOS CONTAINING MATERIALS (ACM) ARE POSSIBLE FOUND AT THE FACILITY. OWNER IS TO  
DETERMINE IF THERE ARE ACMs PRESENT WITHIN THE AREA OF WORK.  
A. OWNER'S ASBESTOS ABATEMENT CONTRACTOR WILL HANDLE ANY AND ALL TESTING AND ABATEMENT  
WITHIN THE AREA OF WORK. GC IS TO COORDINATE PROJECT SCHEDULE WITH ANY ASBESTOS TESTING  
AND ABATEMENT EFFORTS.  
B. DURING THE COURSE OF CONSTRUCTION, IF THE GC DISCOVERS ANY ADDITIONAL MATERIALS SUSPECTED  
TO CONTAIN ACMs-- GC TO CONTACT JEA PROJECT MANAGER IMMEDIATELY TO COORDINATE TESTING.

- ELECTRICAL:  
A. REFER TO DRAWINGS.
- MECHANICAL:  
A. REFER TO DRAWINGS.
- PLUMBING:  
A. REFER TO DRAWINGS.
- ALL FURNITURE IS N.I.C. UNO, TYP.

KEY PLAN



BLDG 1  
BLDG 3

KEY PLAN

NTS

DRAWING INDEX

GENERAL

- G1.0 COVER SHEET
- G1.1 LIFE SAFETY PLAN

ARCHITECTURAL

- A1.0 DEMO & NEW FLOOR PLAN - BLDG 1
- A1.1 DEMO & NEW FLOOR PLAN - BLDG 3
- A1.2 REFLECTED CEILING PLAN
- A2.0 ACCESSORY PLAN & INT ELEV
- A2.1 SECTION AND DETAILS

MECHANICAL

- M1.0 MECH NOTES, DETAILS, LEGEND AND SCHED
- M2.0 MECHANICAL FLOOR PLANS - EXISTING
- M3.0 MECHANICAL FLOOR PLANS - NEW
- M4.0 MECHANICAL SPECIFICATIONS

PLUMBING

- P1.0 PLUMBING NOTES, DETAILS AND LEGEND
- P2.0 PLUMBING FLOOR PLANS - DEMO AND NEW
- P3.0 PLUMBING SPECIFICATIONS

ELECTRICAL

- E1.0 ELECTRICAL LEGEND, NOTES & DETAILS
- E2.1 ELECTRICAL LIGHTING - DEMO & NEW WORK
- E3.1 ELECTRICAL - LIGHTING, POWER  
DEMO & NEW WORK
- E4.1 ELECTRICAL SPECIFICATIONS

ABBREVIATIONS

ABB.	DESCRIPTION	ABB.	DESCRIPTION	ABB.	DESCRIPTION	ABB.	DESCRIPTION
A.C.T.	ACOUSTICAL CEILING TILE	EA.	EACH	JT.	JOINT	SHT	SHEET
ADJ.	ADJUSTABLE	E.W.C.	ELECTRIC WATER COOLER	LAM.	LAMINATE	SIM.	SIMILAR
A.F.F.	ABOVE FINISHED FLOOR	EL.	ELEVATION	LAV.	LAVATORY	S.O.	SLAB OPENING
A.H.U.	AIR HANDLING UNIT	EQ.	EQUAL	M.O.	MASONRY OPENING	STL.	STEEL
ALT.	ALTERNATE	EXP. JT.	EXPANSION JOINT	MATL	MATERIAL	T&G	TONGUE AND GROOVE
ALUM.	ALUMINUM	EXT	EXTERIOR	MAX.	MAXIMUM	TYP.	TYPICAL
C.J.	CONTROL JOINT	FIN. CLG	FINISH CEILING	MECH.	MECHANICAL	U.N.O.	UNLESS NOTED OTHERWISE
CLG	CEILING	FIN. FLR	FINISH FLOOR	MTL	METAL	V.C.T.	VINYL COMPOSITION TILE
CONC.	CONCRETE	F.E.C.	FIRE EXTINGUISHER CABINET	MIN.	MINIMUM	VERT.	VERTICAL
CONT	CONTINUOUS	GALV.	GALVANIZED	N.I.C.	NOT IN SCALE	V.W.C.	VINYL WALL COVERING
CPT	CARPET	GA.	GAUGE	N.T.S.	NOT TO SCALE		
C.T.	CERAMIC TILE	GWB	GYPSUM BOARD	NO.	NUMBER		
C.M.U.	CONCRETE MASONRY UNIT	G.C.	GENERAL CONTRACTOR	O.C.	ON CENTER		
DED.	DEDICATED	HGT	HEIGHT	P.L.	PLASTIC LAMINATE		
DIA.	DIAMETER	H.M.	HOLLOW METAL	P.T.	PRESSURE TREATED		
DRS.	DOORS	INSUL.	INSULATION	REQD.	REQUIRED		
DWG	DRAWING	JAN.	JANITOR	R.O.	ROUGH OPENING		

SYMBOL LEGEND

NORTH  
ARROW

INDICATES DIRECTION TO NORTH

ROOM

NUMBER INDICATES ROOM

SECTION

DIRECTION OF SECTION  
NUMBER OF SECTION  
SHEET WHERE SECTION IS LOCATED

DOOR TAG

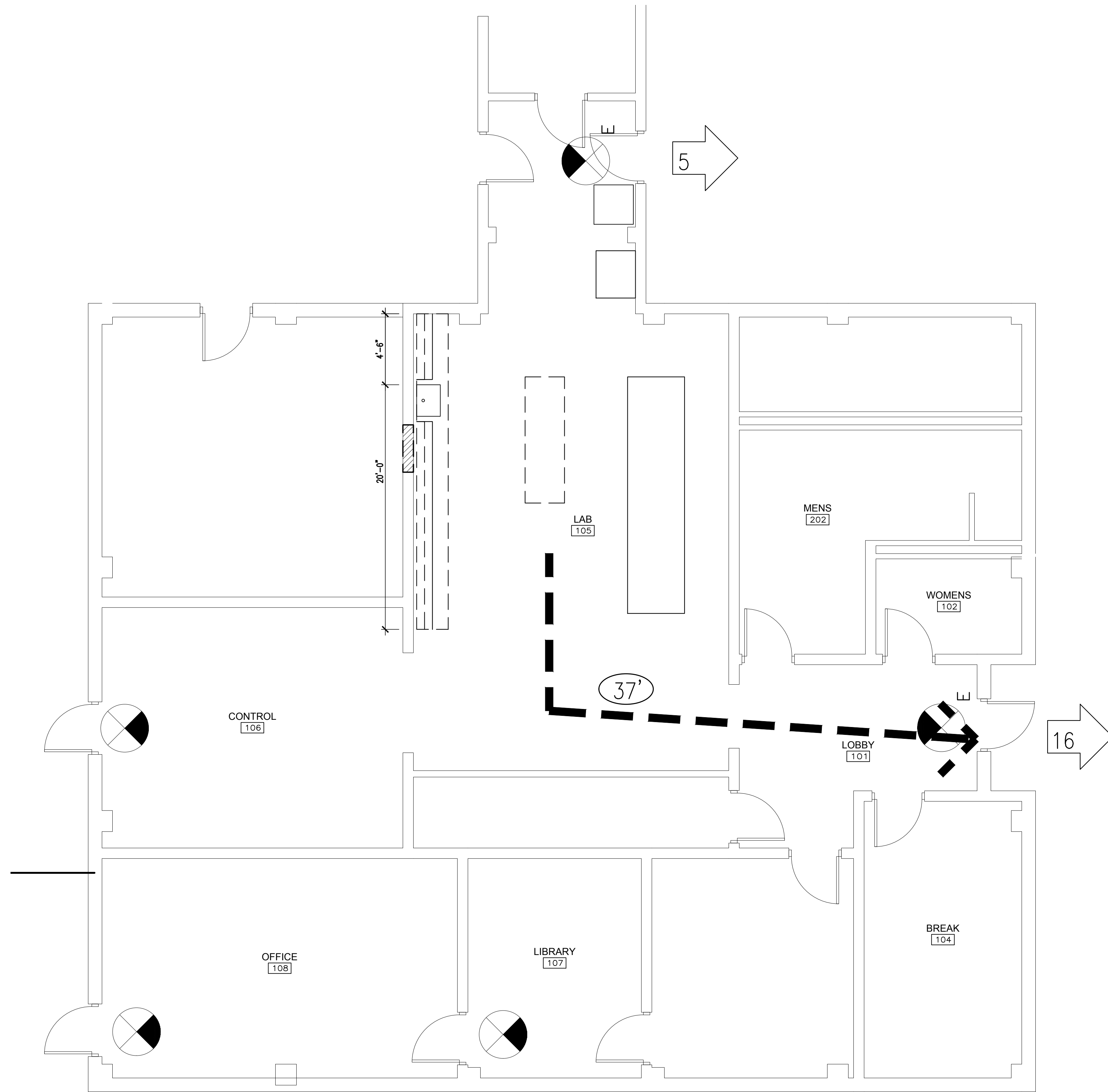
NEW DOOR  
DOOR NUMBER

ELEVATION

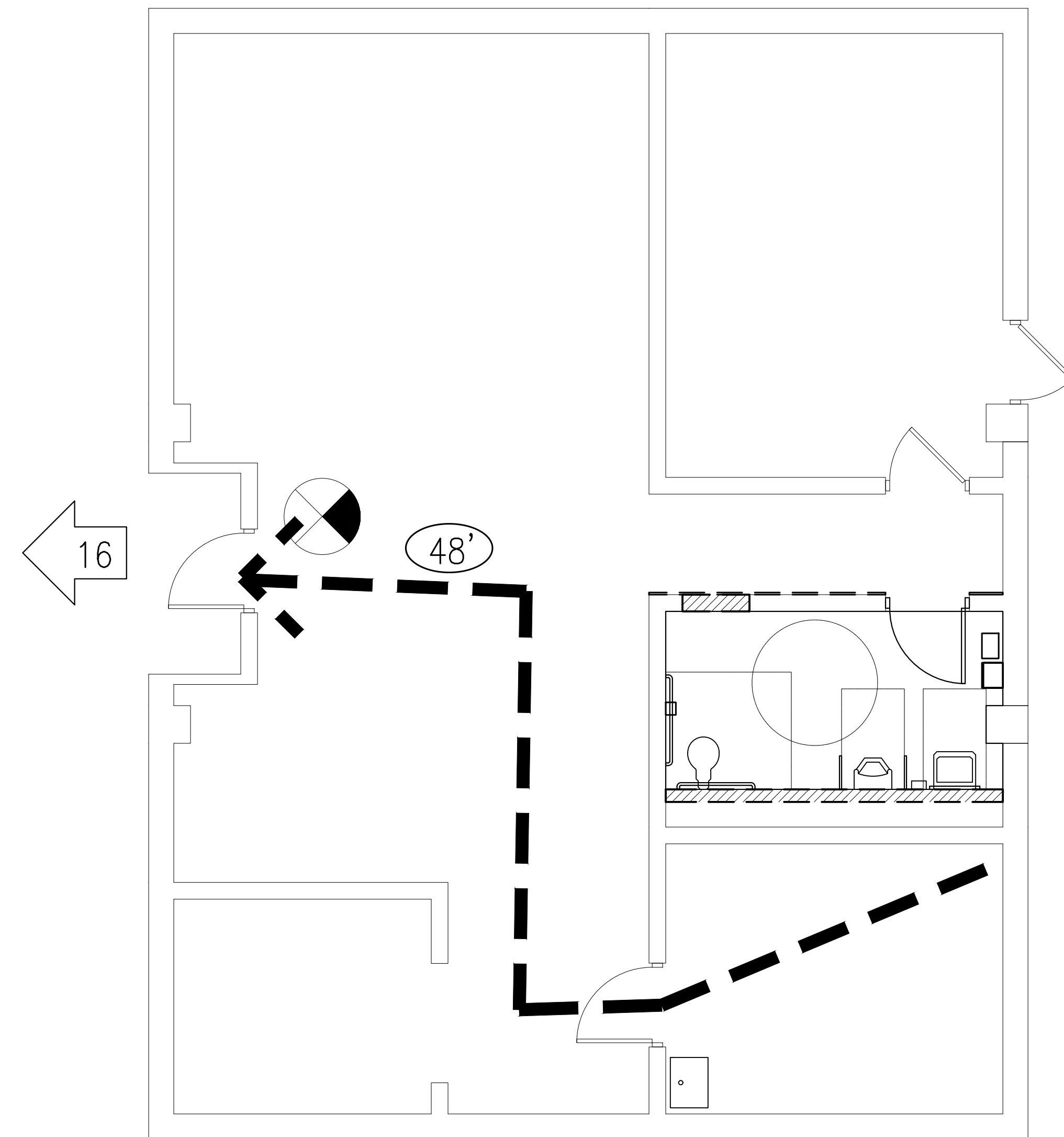
DIRECTION OF ELEVATION  
NUMBER OF INT. ELEVATION  
SHEET WHERE INT. ELEVATION IS LOCATED

RFQ 97154 RENOVATION OF DISTRICT II BUILDINGS 1 & 3





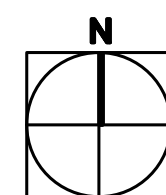
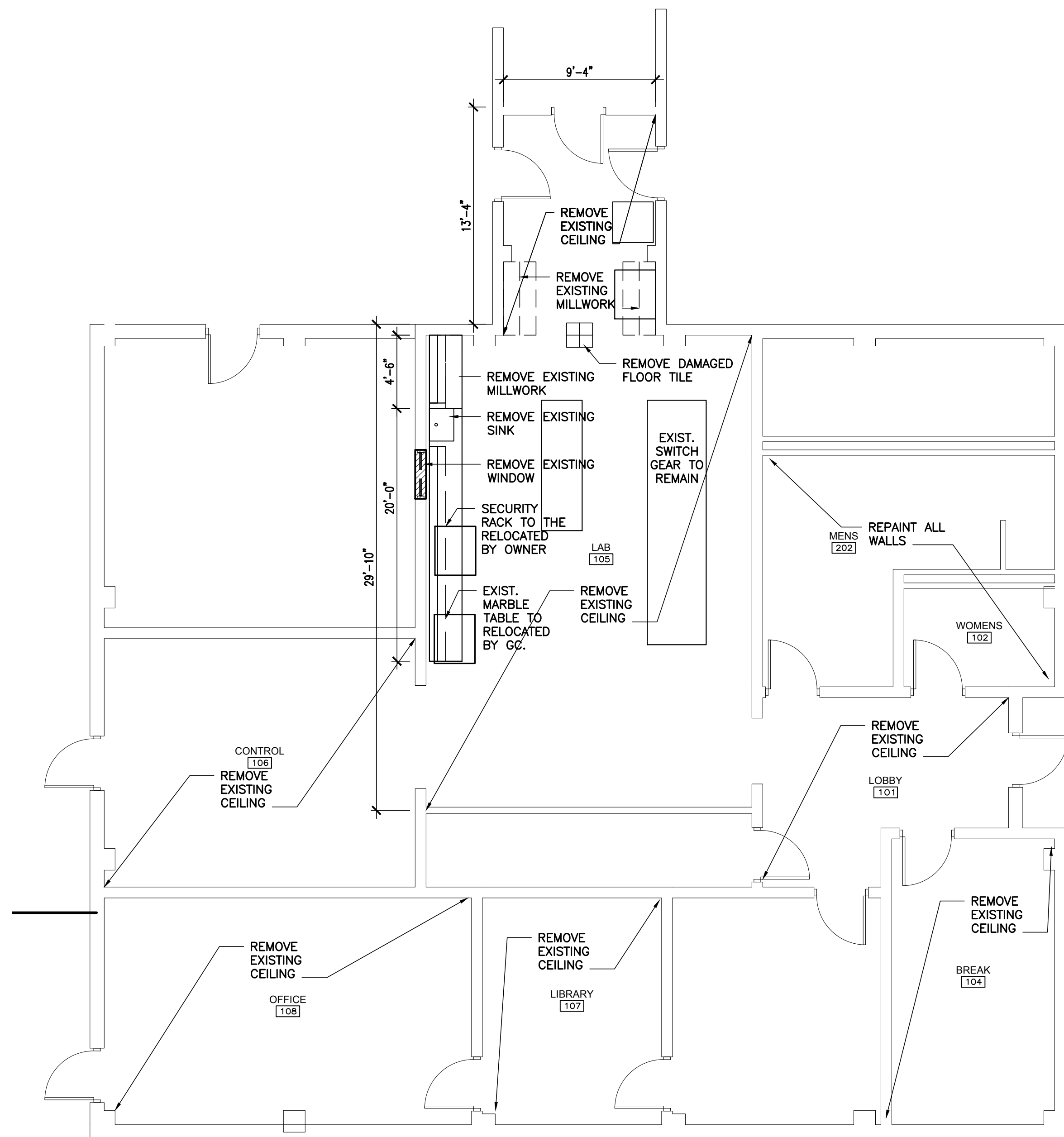
**1 LIFE SAFETY PLAN @ BLDG 1**  
1/4"=1'-0"



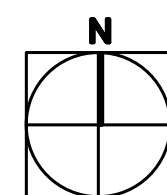
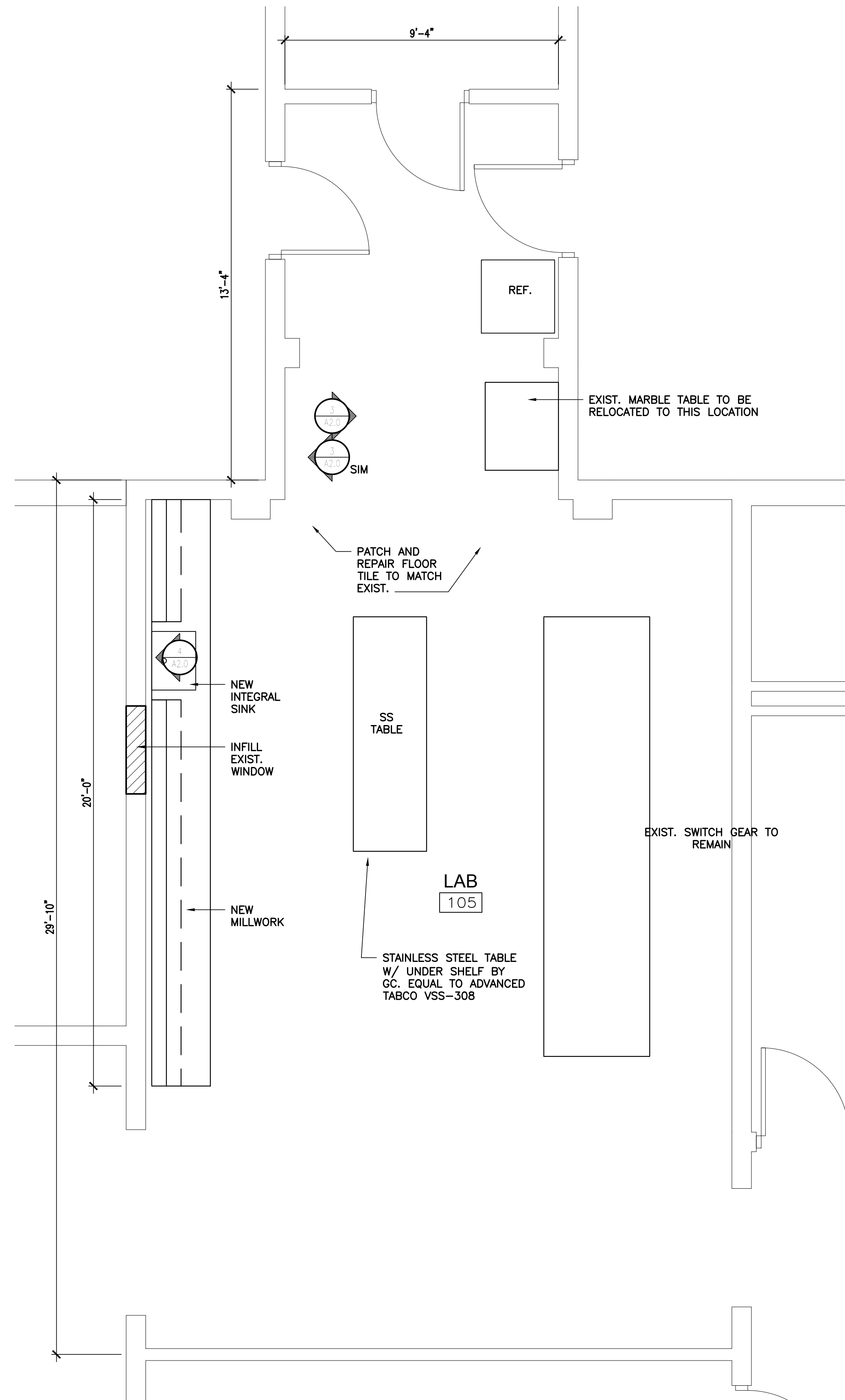
**2 LIFE SAFETY PLAN @ BLDG 2**  
1/4"=1'-0"

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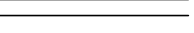
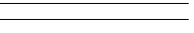

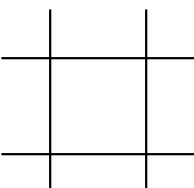




**1 DEMO PLAN @ BLDG 1**  
3/8"=1'-0"



**2 NEW FLOOR PLAN @ BLDG 1**  
3/8"=1'-0"

## PLAN LEGEND

-  ITEM TO BE REMOVED
-  EXISTING WALL TO REMAIN
-  NEW WALL
-  NEW ACT GRID TO MATCH EXISTING
-  WALL TYPE REFER TO 3/A1.2
-  AREA OF DEMOLITION OF EXISTING FLOORING AND CEILINGS

REFER TO ENGINEER DRAWINGS FOR ADDITIONAL WORK

## GENERAL NOTES

- ALL WORK SHALL BE COMPLETE AND OPERATIONAL.
- ALL DIMENSIONS ARE TO FACE OF STUD UNO.
- CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO STARTING WORK.
- CONTRACTOR TO PATCH, REPAIR, & PREP ALL EXISTING SURFACES TO REMAIN (WHETHER INDICATED OR NOT) THAT ARE SCHEDULED TO RECEIVE NEW FINISHES, TYP.
- DEMOLITION WORK SHALL BE AS REQUIRED TO ACHIEVE A CLEAN, SMOOTH, AND PLUMB NEW WORK. FOR EXAMPLE IT IS REQUIRED THAT ITEMS SUCH AS EXISTING SCREWS ON WALLS TO BE REMOVED IN ORDER TO INSTALL NEW DRYWALL OR FINISHES. ANOTHER EXAMPLE IS THAT IF A NEW THERMOSTAT IS SPECIFIED, THE EXISTING THERMOSTAT IF NOT SCHEDULED TO BE REUSED WILL HAVE TO BE REMOVED BY THE CONTRACTOR WHETHER IT IS SHOWN ON THE DRAWINGS OR NOT.
- WHEN PARTIAL DEMOLITION IS MADE TO EXISTING WALL OR FLOOR, A SAW CUT THRU EXISTING SURFACE IS REQUIRED TO PREVENT UNNECESSARY DAMAGE TO ADJACENT AREAS.
- CONTRACTOR SHALL INVESTIGATE EXISTING CONDITIONS PRIOR TO STARTING WORK TO DETERMINE THE LOCATION OF LOAD BEARING WALLS AND STRUCTURAL COLUMNS. WHEN SUCH ITEMS ARE SCHEDULED TO BE DEMOLISHED, SHORE UP SYSTEM PROPERLY PRIOR TO REMOVING THEM. WHEN IN DOUBT, CONTACT ARCHITECT PRIOR TO REMOVING ANY ITEMS IN QUESTION.
- NOTE THAT THE DEMOLITION PLAN IS NOT ALL INCLUSIVE AND THE CONTRACTOR SHALL VISIT THE SITE AND INCLUDE ALL WORK NECESSARY FOR COMPLETE AND FULLY OPERATIONAL CONDITION.
- CONTRACTOR IS RESPONSIBLE FOR REROUTING ANY CONDUITS, WIRING, PLUMBING, OR PIPING AS REQUIRED TO ACHIEVE THE DESIRED LAYOUT SHOWN. NEW REROUTING LOCATIONS SHALL BE CONCEALED WITHIN WALL WHEN IT IS IMPOSSIBLE TO CONCEAL ITEMS, LOCATE ITEMS TIGHT AGAINST WALLS--ENCLOSE ITEMS WITH GWB WITHOUT DISRUPTION OF SERVICE TO OTHER AREAS.
- SUPPORT ALL WALL AND CEILING MOUNTED ITEMS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. COORDINATE WITH WALL AND CEILINGS TYPES, TYPICAL.
- REFER TO ENGINEERING DRAWINGS FOR ADDITIONAL WORK TO OCCUR.
- ALL WORK MUST BE PHASED JEA STAFF WILL REQUIRE ACCESS AND SPACE WITHIN THE BUILDING 24/7 COORDINATE W/ JEA PM IN ADVANCE.



**ttv architects, inc.**

115 EAST FORSYTH ST  
JACKSONVILLE, FLORIDA 32202  
T 904.788.8333  
F 904.788.8335  
www.ttvarch.com

FL Lic#AA002809

architecture planning interior design

**PROJECT ARCHITECT**  
CHRISTOPHER P. NOEL

LICENSE NO: #AR-092560

CONSULTANTS:

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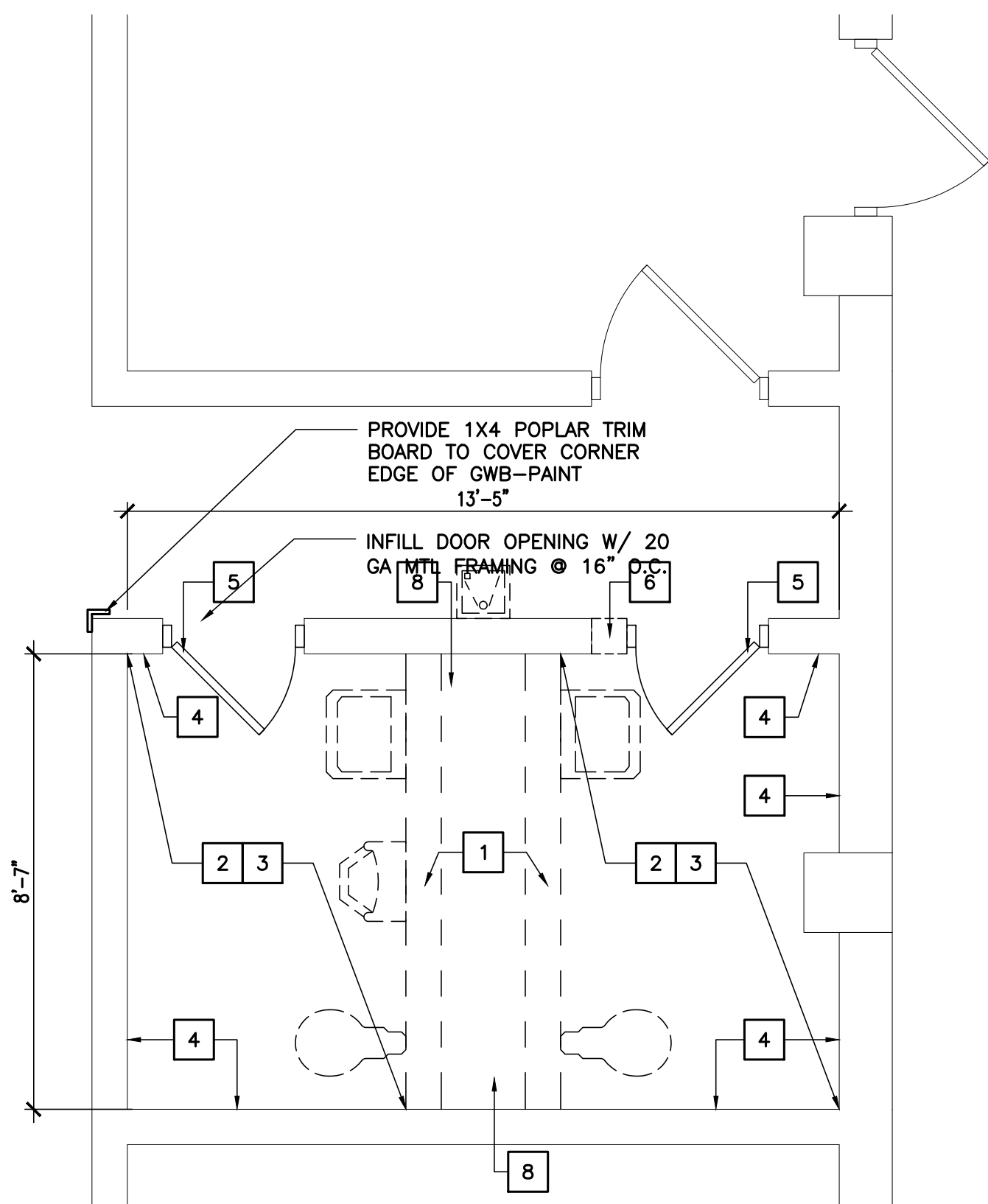
**NEW FLOOR  
PLAN - BLDG 1**

**A1.0**

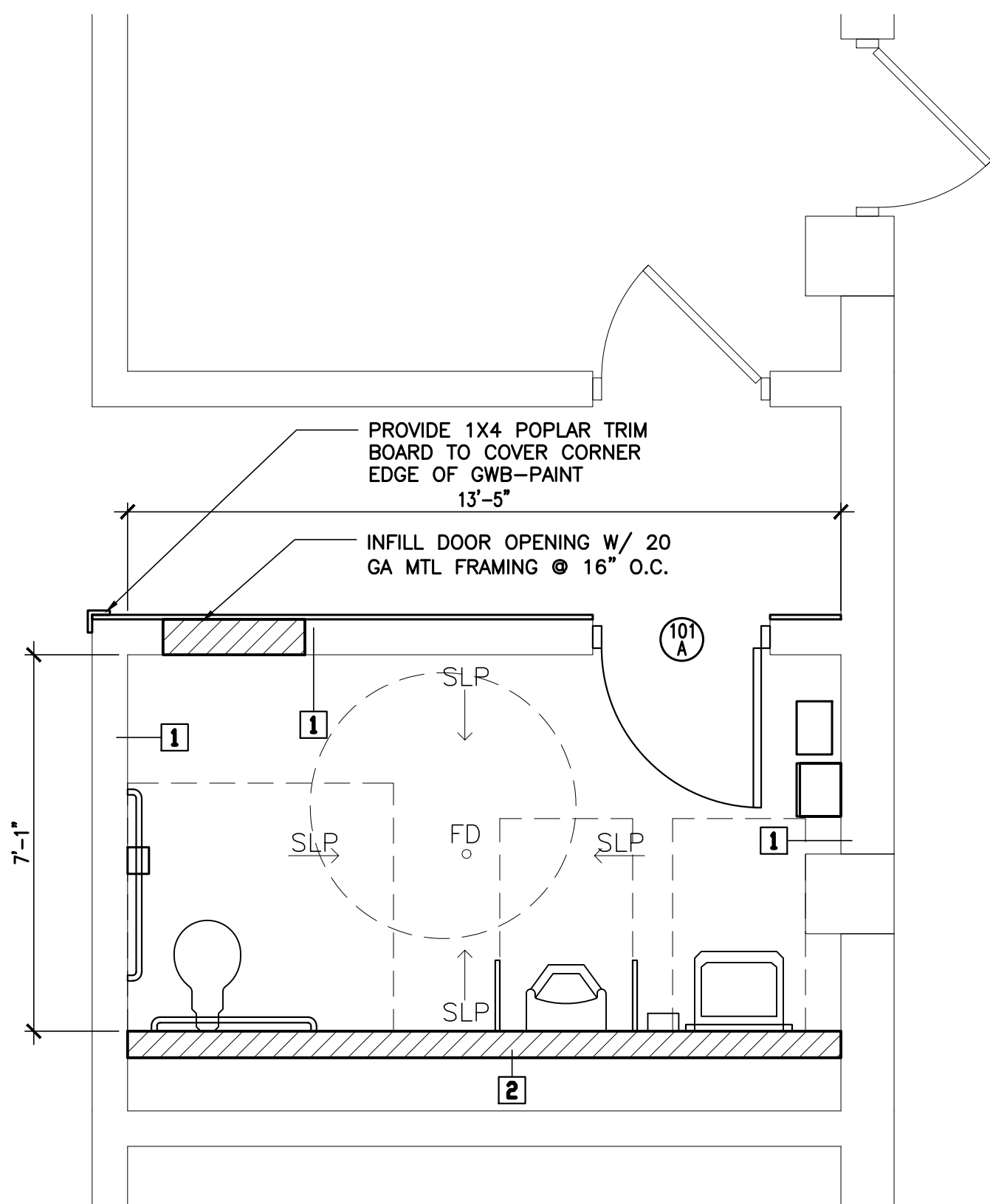
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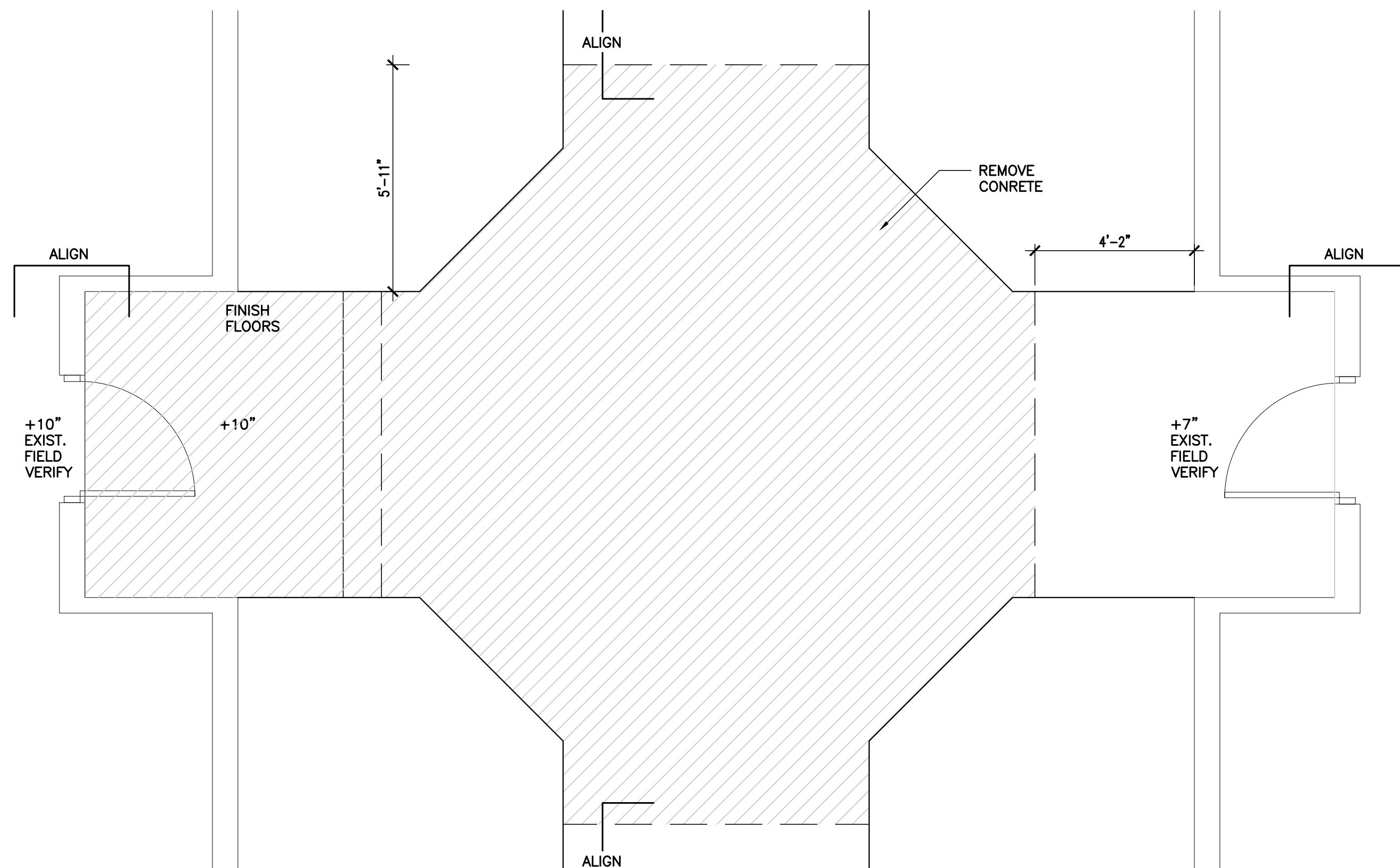
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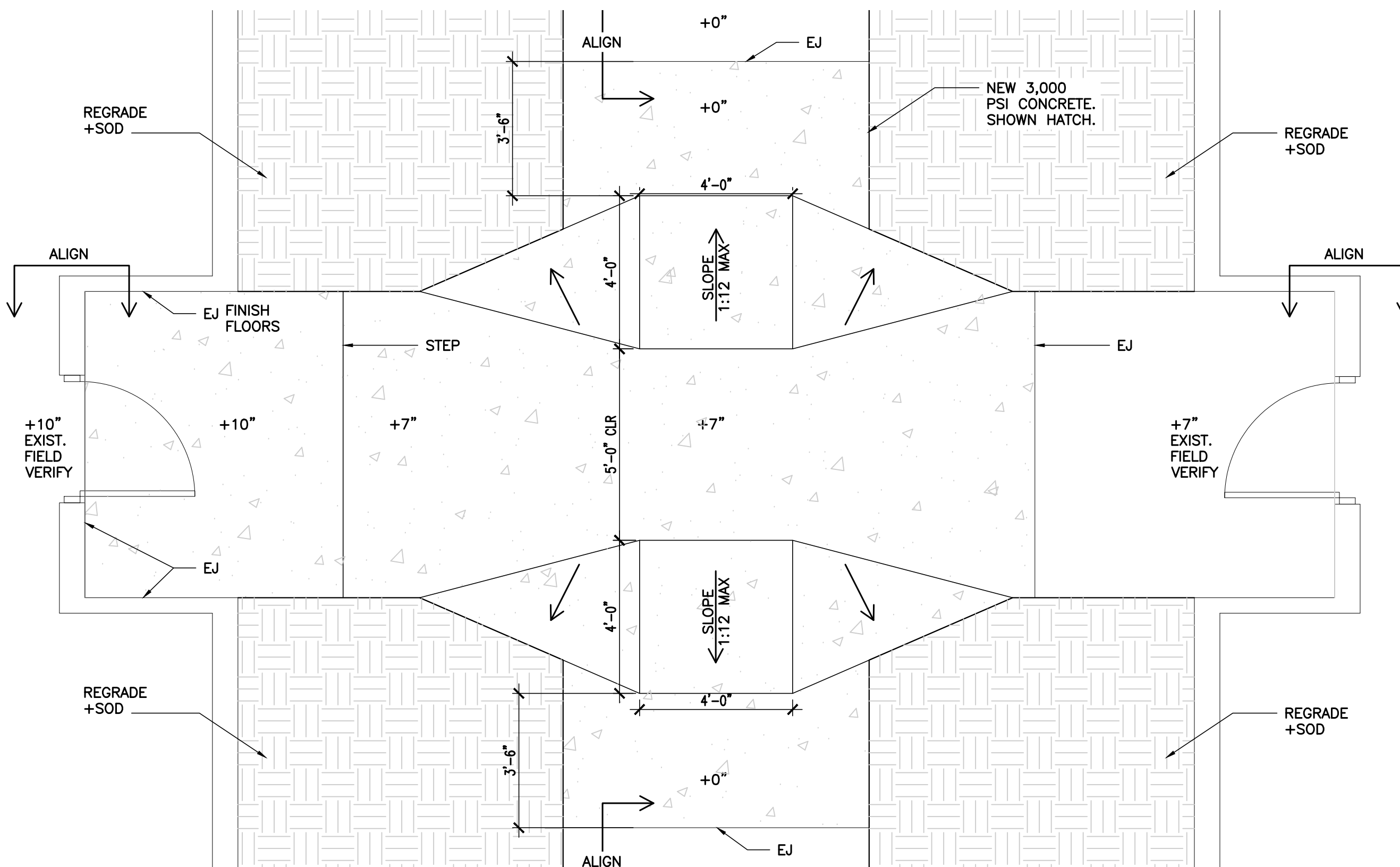
**1 DEMO PLAN @ BLDG 3 BATHROOM**  
3/8"=1'-0"



**3 NEW FLOOR PLAN @ BLDG 3 BATHROOM**  
3/8"=1'-0"



**2 DEMO PLAN @ RAMP**  
3/8"=1'-0"



**4 NEW FLOOR PLAN @ RAMP**  
3/8"=1'-0"

## DEMOLITION GENERAL NOTES

- CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO STARTING WORK. CONSULT ARCHITECT WHEN DISCREPANCIES, OR UNUSUAL CONDITIONS NOT SHOWN ON DRAWINGS ARE DISCOVERED.
- CONTRACTOR SHALL SCHEDULE AND COORDINATE ALL CONSTRUCTION ACTIVITIES, INCLUDING BUILDING ACCESS, TRASH DISPOSAL AND SECURITY CLEARANCE FOR PERSONNEL WITH PROJECT MANAGERS. THE DESIGNATED WORK AREA WILL NOT BE ABLE TO SERVE AS THE STAGING OR MATERIAL STORAGE AREA. COORDINATE OTHER SPACE WITH OWNER.
- DEMOLITION WORK SHALL BE AS REQD. TO ACHIEVE A CLEAN, SMOOTH, AND PLUMB NEW WORK. ANOTHER EXAMPLE IS THAT IF A NEW THERMOSTAT IS SPECIFIED, THE EXISTING THERMOSTAT IF NOT SCHEDULED TO BE REUSED WILL HAVE TO BE REMOVED BY THE CONTRACTOR WHETHER IT IS SHOWN ON THE DRAWINGS OR NOT.
- REMOVE ABANDONED ARCHITECTURAL, ELECTRICAL, PLUMBING, & MECHANICAL ITEMS, AS REQ'D. BY CONTRACT DOCUMENTS.
- WHEN PARTIAL DEMOLITION IS MADE TO EXISTING ITEMS SUCH AS WALL, FLOOR, OR CEILING, ETC., SAW CUT THRU EXISTING WALL OR FLOOR IS REQUIRED TO PREVENT UNNECESSARY DAMAGE TO ADJACENT AREAS. ANY EXISTING AREAS DAMAGED DUE TO DEMOLITION SHALL BE PATCHED, REPAIRED AND/OR REPLACED AS REQUIRED TO MATCH EXISTING, U.N.O.
- DO NOT DEMOLISH ANY ITEMS SERVING OR CONNECTING TO OTHER AREAS, SUCH AS CONDUITS AND PLUMBING PIPING-UNLESS NOTED OTHERWISE.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING CLEAN, SMOOTH WALL, FLOOR, AND CEILING SURFACES, ETC.
- CAP OFF ANY UNUSED PIPING OR CONDUITS AS REQUIRED.
- GC TO PATCH AND REPAIR ALL EXISTING SURFACES DAMAGED OR DISTURBED AS PART OF THIS PROJECT TO MATCH EXISTING, WHETHER SPECIFICALLY INDICATED OR NOT.

## DEMOLITION GENERAL NOTES

- |   |                                   |
|---|-----------------------------------|
| 1 | DEMO EXIST. WALL                  |
| 2 | DEMO EXIST. FLOOR                 |
| 3 | DEMO EXIST. CEILING               |
| 4 | REMOVE TILE ON EXIST. WALL        |
| 5 | DEMO EXIST. DOOR                  |
| 6 | DEMO WALL TO ACCOMMODATE NEW DOOR |
| 7 | REMOVE FIXTURES                   |
| 8 | DEMO CHASE AND ENCASED PIPING     |

## DEMOLITION LEGEND

- ITEMS TO BE REMOVED  
 EXISTING ITEMS TO REMAIN



**ttv architects, inc.**  
115 EAST FORSYTH ST  
JACKSONVILLE, FLORIDA 32202  
T 904.788.8333  
F 904.788.8335  
www.ttvarch.com  
FL Lic#AA002809

architecture planning interior design

**PROJECT ARCHITECT**  
CHRISTOPHER P. NOEL

LICENSE NO: #AR-092560

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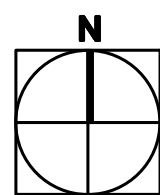
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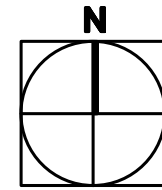
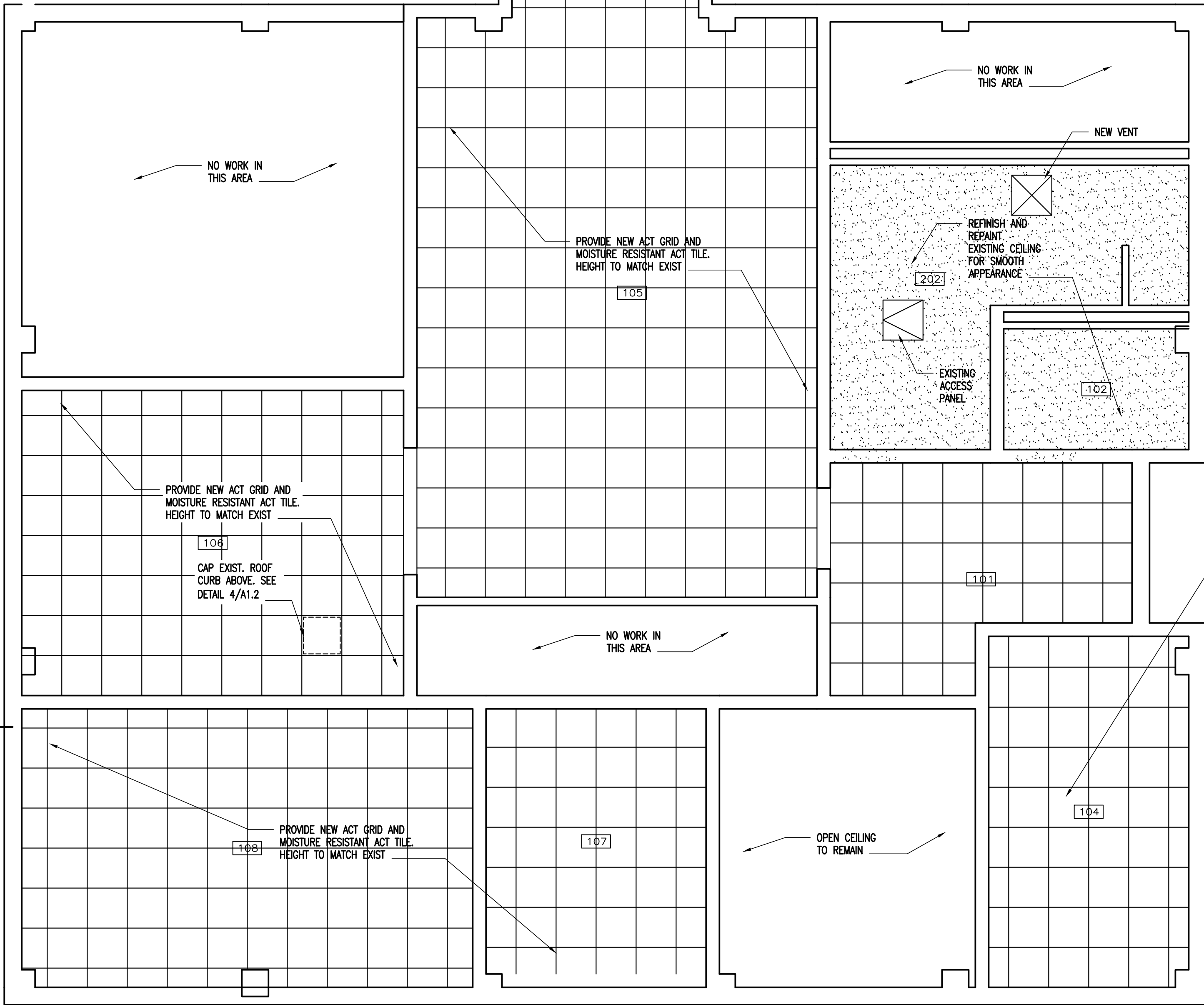
**DEMO & NEW  
FLOOR PLAN -  
BLDG 2**

**A1.1**  
04 OF 05

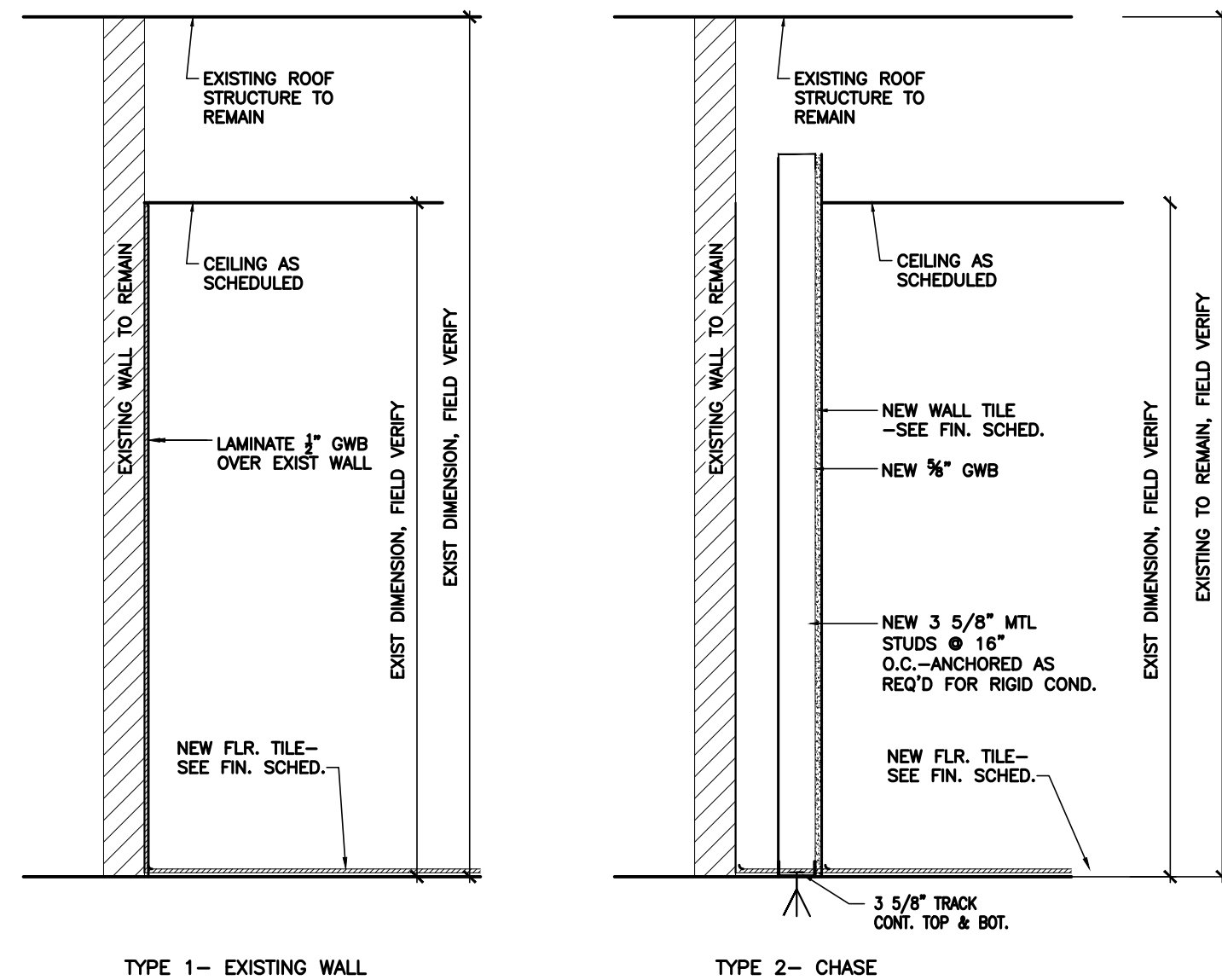
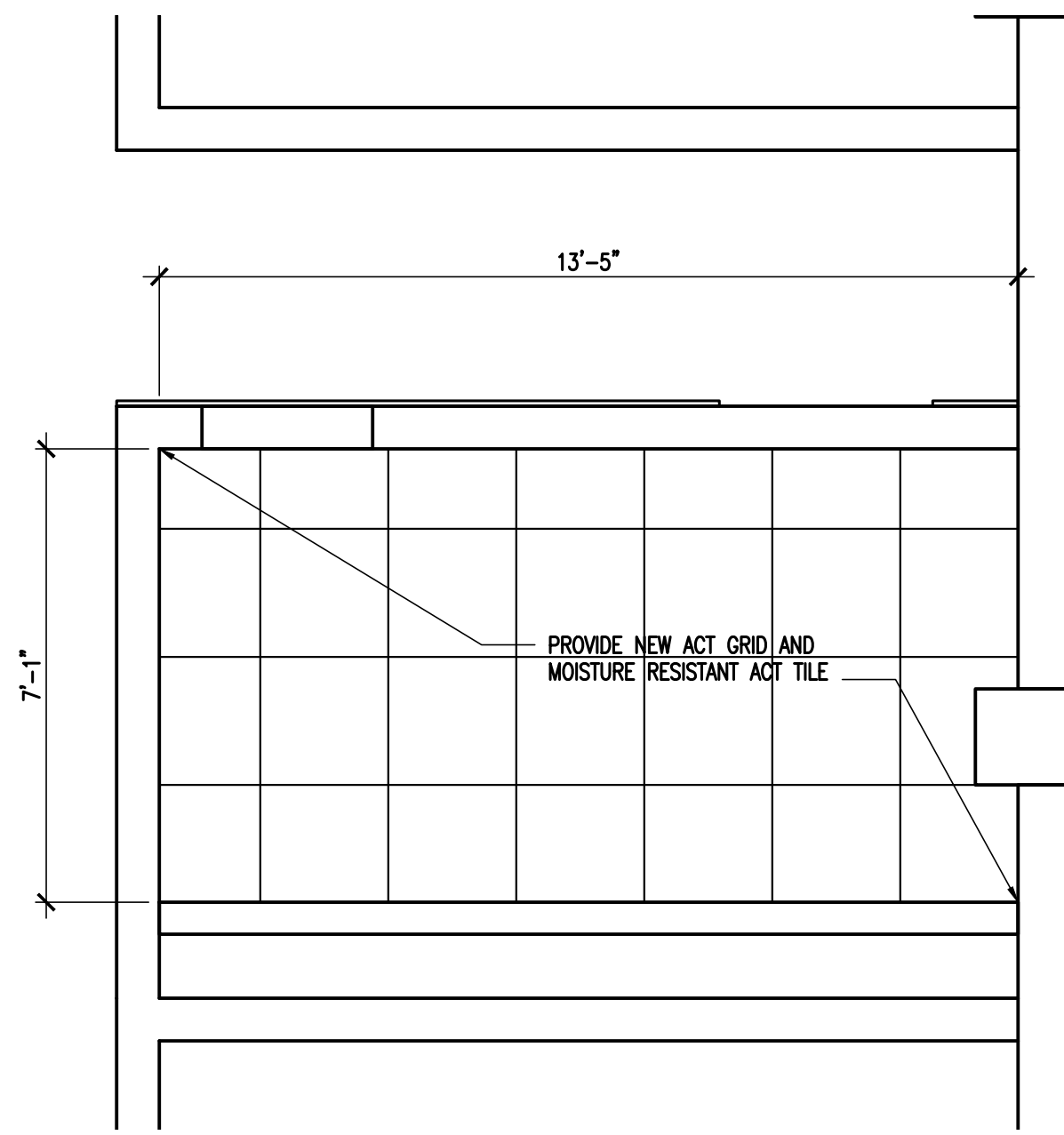
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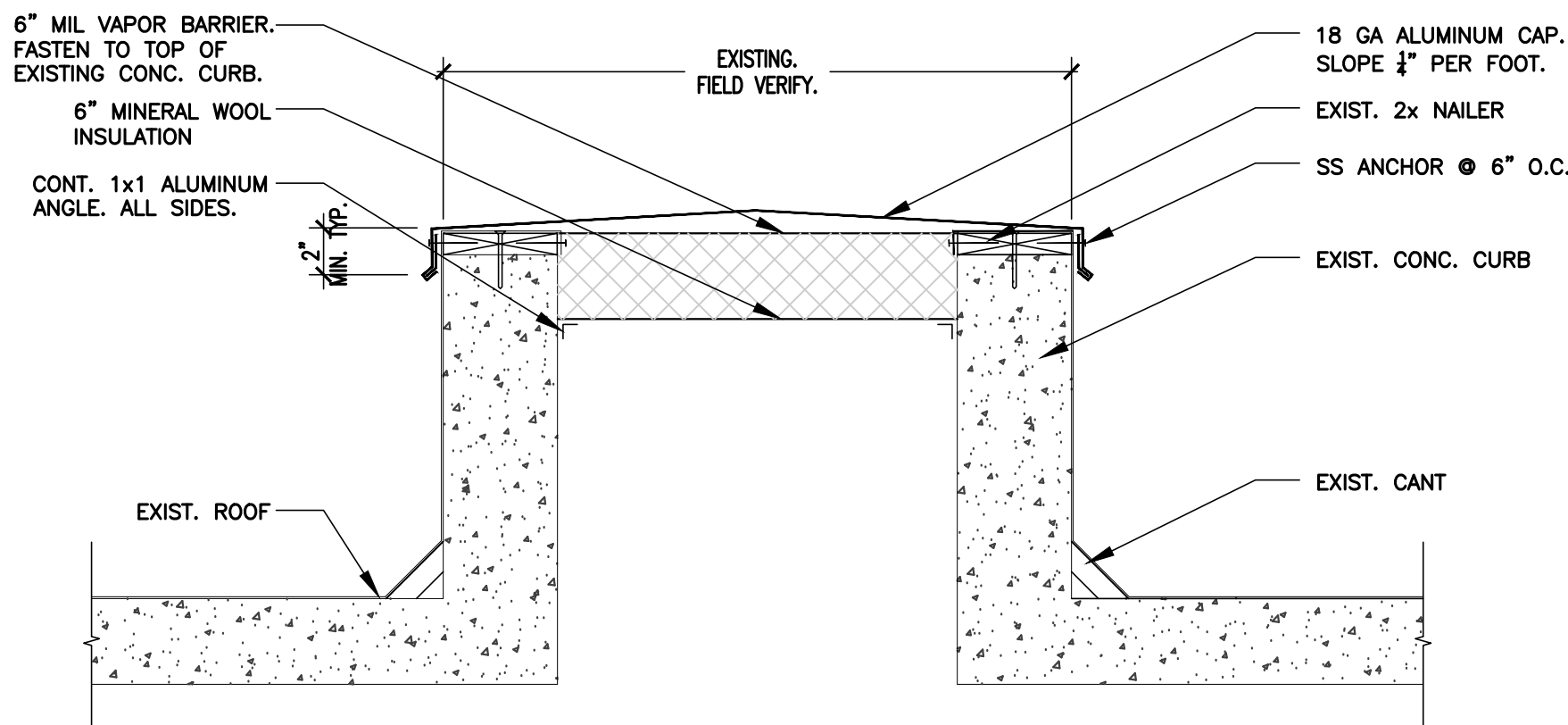
**1 REFLECTED CEILING PLAN @ BLDG 1**  
3/16"=1'-0"



**2 REFLECTED CEILING PLAN @ BLDG 3**  
3/8"=1'-0"



**3 PARTITION TYPES**  
3/8"=1'-0"



**4 CAP AT EXIST. ROOF CURB @ BLDG 1**  
3/8"=1'-0"

## GENERAL PARTITION NOTES

1. GENERAL - IT IS THE INTENT OF THE CONTRACT DOCUMENTS TO PROVIDE SUBSTANTIAL FIRE RESISTIVE INSTALLATIONS CONFORMING TO REQUIREMENTS OF THE INDICATED FIRE TEST AND RECOMMENDATIONS OF UNDERWRITER'S LABORATORIES (U.L.), THE GYPSUM ASSOCIATION AND WALLBOARD MANUFACTURER. INSTALLATIONS NOT CONFORMING TO THOSE STANDARDS SHALL BE CORRECTED AT NO COST TO THE GOVERNMENT.
2. WALL TYPES - ALL STUDS AND RUNNERS SHALL (MIN.) 20 GA. HOT DIP GALV. STEEL STUDS PER ASTM A525, UNLESS NOTED OTHERWISE.
3. CONSTRUCTION - CONTRACTOR SHALL AT ALL TIMES ENDEAVOR TO CONSTRUCT THE FACILITY IN STRICTEST ACCORDANCE TO SOUND PRACTICES OF GYPSUM ASSOCIATION. DEVIATIONS FROM RECOMMENDATIONS OF THE MANUFACTURER OR THE GYPSUM ASSOCIATION SHALL BE CORRECTED AT NO ADDITIONAL COST TO THE GOVERNMENT.
4. ENCLOSURES - COORDINATE INSTALLATION OF PLUMBING, VENT STACKS AND CONDUIT TO PERMIT INSTALLATION OF RECESSED TOILET ACCESSORIES, FIRE EXTINGUISHER CABINETS AND OTHER RECESSED EQUIPMENT. WHERE SUCH ITEMS ARE RECESSED IN FIRE OR FIRE/SMOKE WALLS, THEY SHALL BE INSTALLED IN OPENINGS LINED WITH 5/8" FIRE RESISTIVE GYPSUM BOARD SCREWED TO STUDS AND CHANNEL HEADERS ON TOP, BOTTOM, SIDES AND BACK OF RECESS IN LAYERS EQUAL TO THE RATING OF THE WALL IN WHICH THEY OCCUR, TO CREATE A FIVE SIDED ENCLOSURE. ALLOW FOR AN AIRSPACE BETWEEN THE BACK OF THE LAYERS OF WALLBOARD OF THE ENCLOSURE AND REVERSE SIDE OF THE WALL.
5. CONTROL JOINTS - IN ALL CONTINUOUS, UNINTERRUPTED GYPSUM BOARD PARTITIONS, PROVIDE CONTROL JOINTS AT INTERVALS AS RECOMMENDED BY THE MANUFACTURER, 30'-0" MAXIMUM. VERIFY WITH THE ARCHITECT EXACT LOCATIONS OF ALL CONTROL JOINTS, UNLESS INDICATED ON THE DRAWINGS. REFER TO THE DRAWINGS FOR DETAILS. IF NO DETAIL IS SHOWN, USE MANUFACTURERS STANDARD DETAIL.
6. ALL DRYWALL PARTITIONS CONTAINING SOUND ATTENUATION BLANKETS SHALL BE PERIMETER SEALED, TYPICAL. PROVIDE ONE CONTINUOUS CAULK BEAD AT THE HEAD AND SILL, UNDER THE METAL RUNNERS, AND ON EACH SIDE OF THE DRYWALL TO FILL THE GAP BETWEEN THE GYPSUM WALL BOARD AND THE FLOOR AND CEILING. AT VERTICAL INTERSECTIONS, ONE CONTINUOUS CAULK BEAD SHALL BE RUN UNDER THE VERTICAL METAL STUD AND ON EACH SIDE TO FILL THE GAP WHERE THE GYPSUM WALL BOARD MEETS A COLUMN OR PARTITION ELEMENT. NO GAPS OR VOIDS ARE PERMITTED.
7. ALL DRYWALL PARTITIONS CONTAINING SOUND ATTENUATION BLANKETS SHALL CONTAIN A PRE-MOLDED FILLER (OF A FIRE RESISTIVE MATERIAL AT FIRE RATED PARTITIONS) PACKED BETWEEN THE TOP OF THE PARTITION AND THE VOIDS IN THE METAL DECK CORRUGATIONS.
8. PROVIDE FIRE STOPPING AS REQUIRED.
9. ALL WALL TYPES LIST THE DESIGN NUMBERS AND MINIMUM STC REQUIRED FOR SOUND CONTROL.
10. ALL WOOD BLOCKING BE FIRE RETARDANT TYPE, TYP.
11. PROVIDE BRACING AND ADDITIONAL FRAMING AT ALL WALL MOUNTED ITEMS AS REQUIRED FOR RIGID CONDITIONS

## GENERAL REFLECTED CEILING NOTES

1. ALL LED LAMPS TO MATCH JEA STANDARD
2. ALL NEW CEILINGS TO BE INSTALLED TO MATCH EXISTING CEILING HEIGHT, TYP. UNO.
3. GO TO CENTER ALL CEILING MOUNTED DEVICES IN CEILING TILES, TYPICAL.
4. REFER TO MECHANICAL, ELECTRICAL, AND FIRE PROTECTION DRAWINGS FOR ADDITIONAL REQUIREMENTS.



**ttv architects, inc.**  
115 EAST FORSYTH ST  
JACKSONVILLE, FLORIDA 32202  
T 904.788.8333  
F 904.788.8335  
www.ttvarch.com  
FL Lic#AA002809

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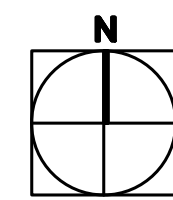
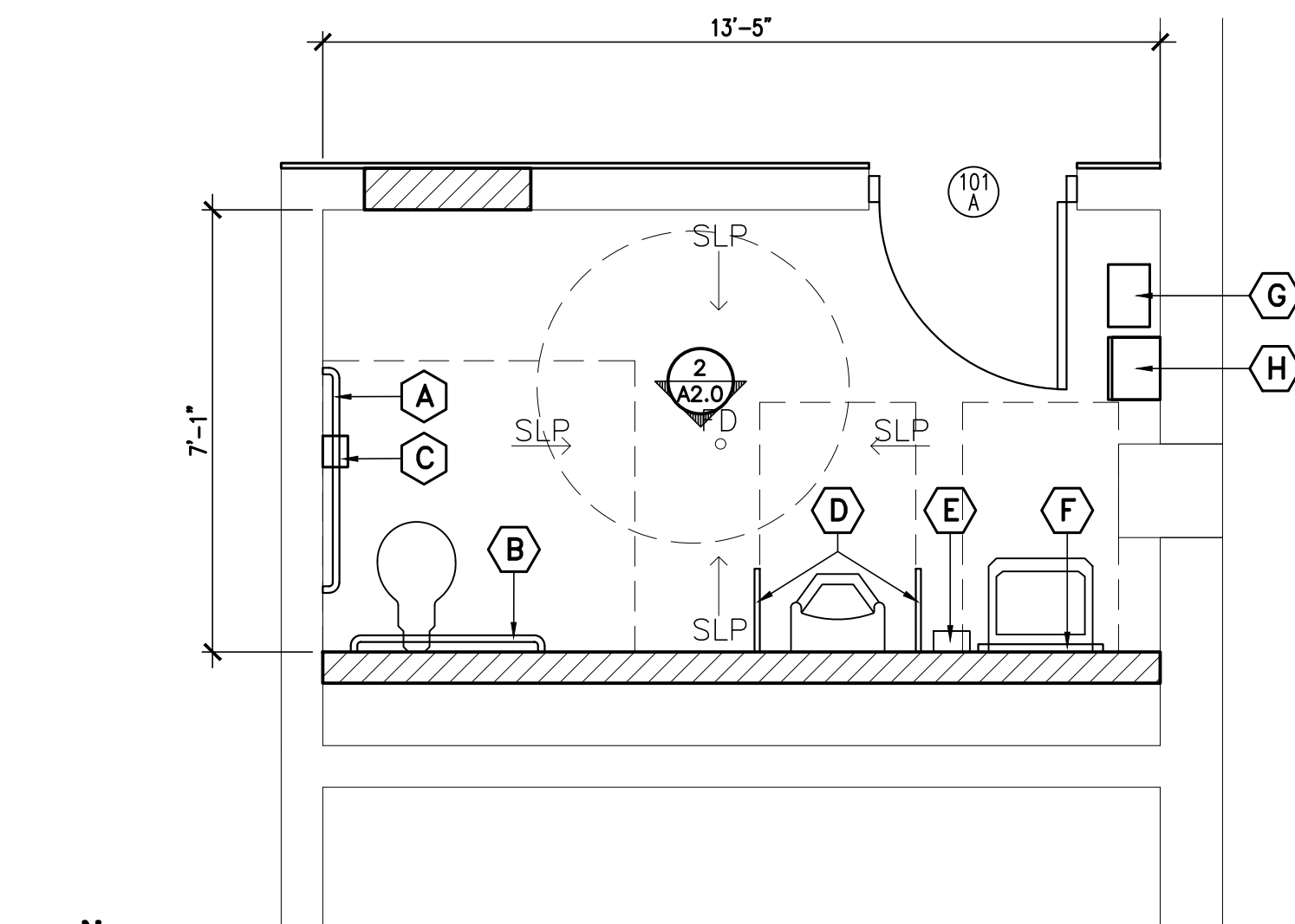
DATE:	08.28.18
DRAWN BY:	TS
CHECKED BY:	TAG
COMMISSION NO:	1832

**REFLECTED  
CEILING PLAN**

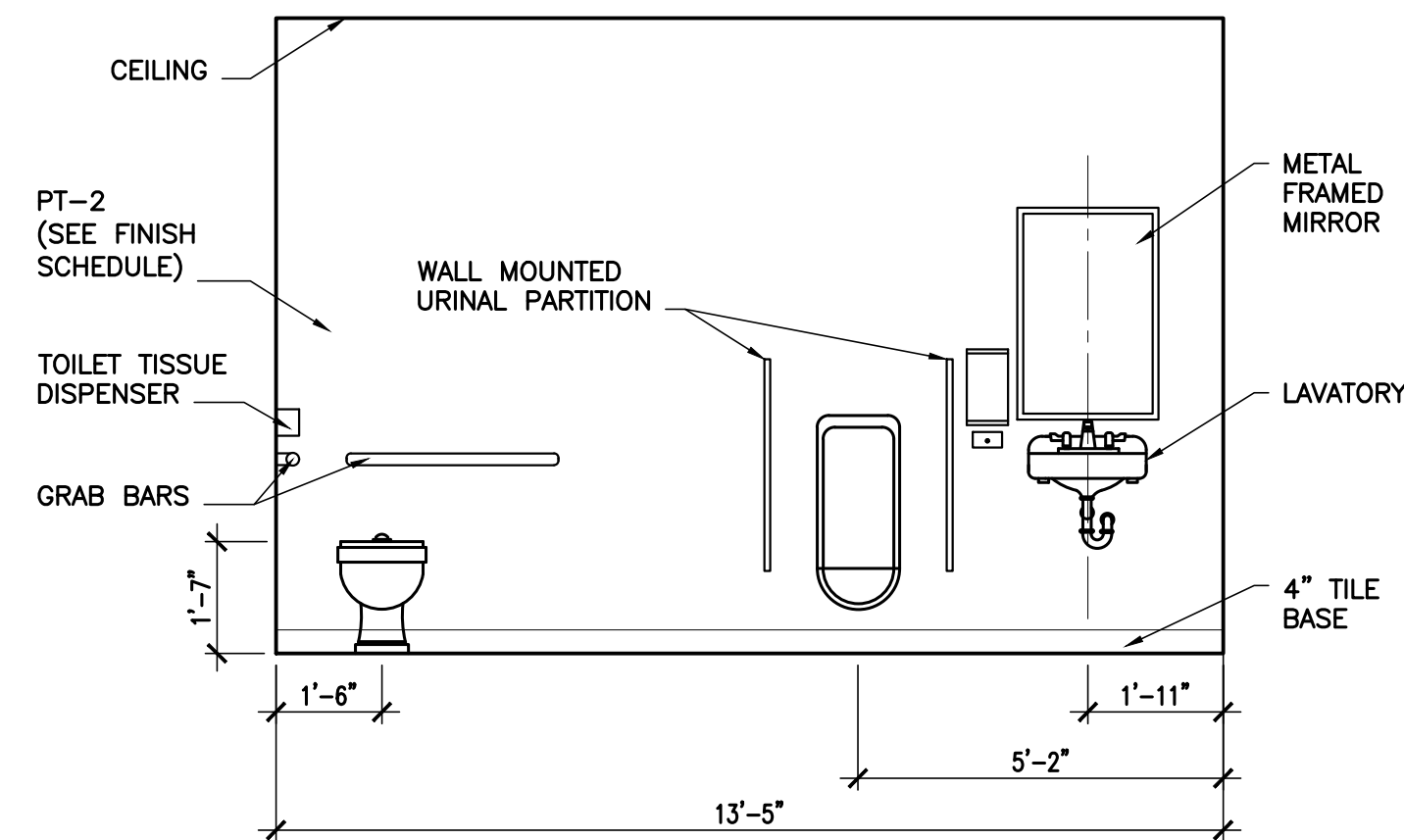
**A1.2**  
05 OF 05

**03.22.19 REVISED 100%  
SUBMITTAL**

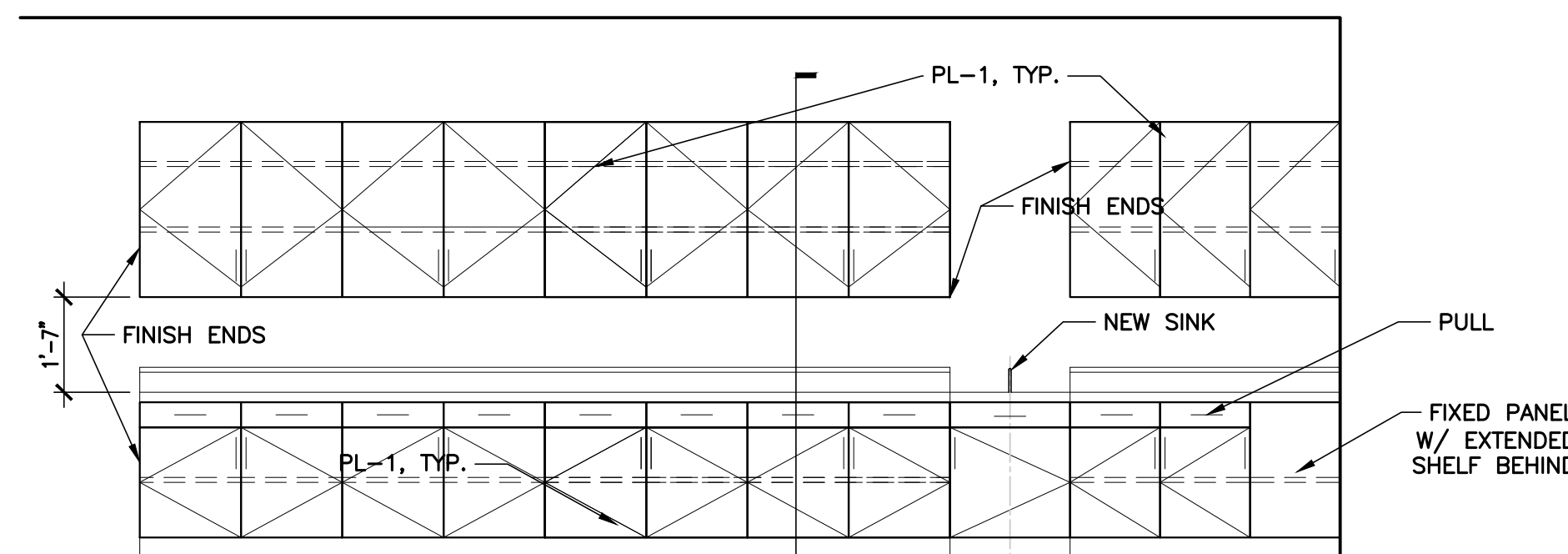




**1 FLOOR PLAN @ BLDG 3 BATHROOM**  
3/8"=1'-0"



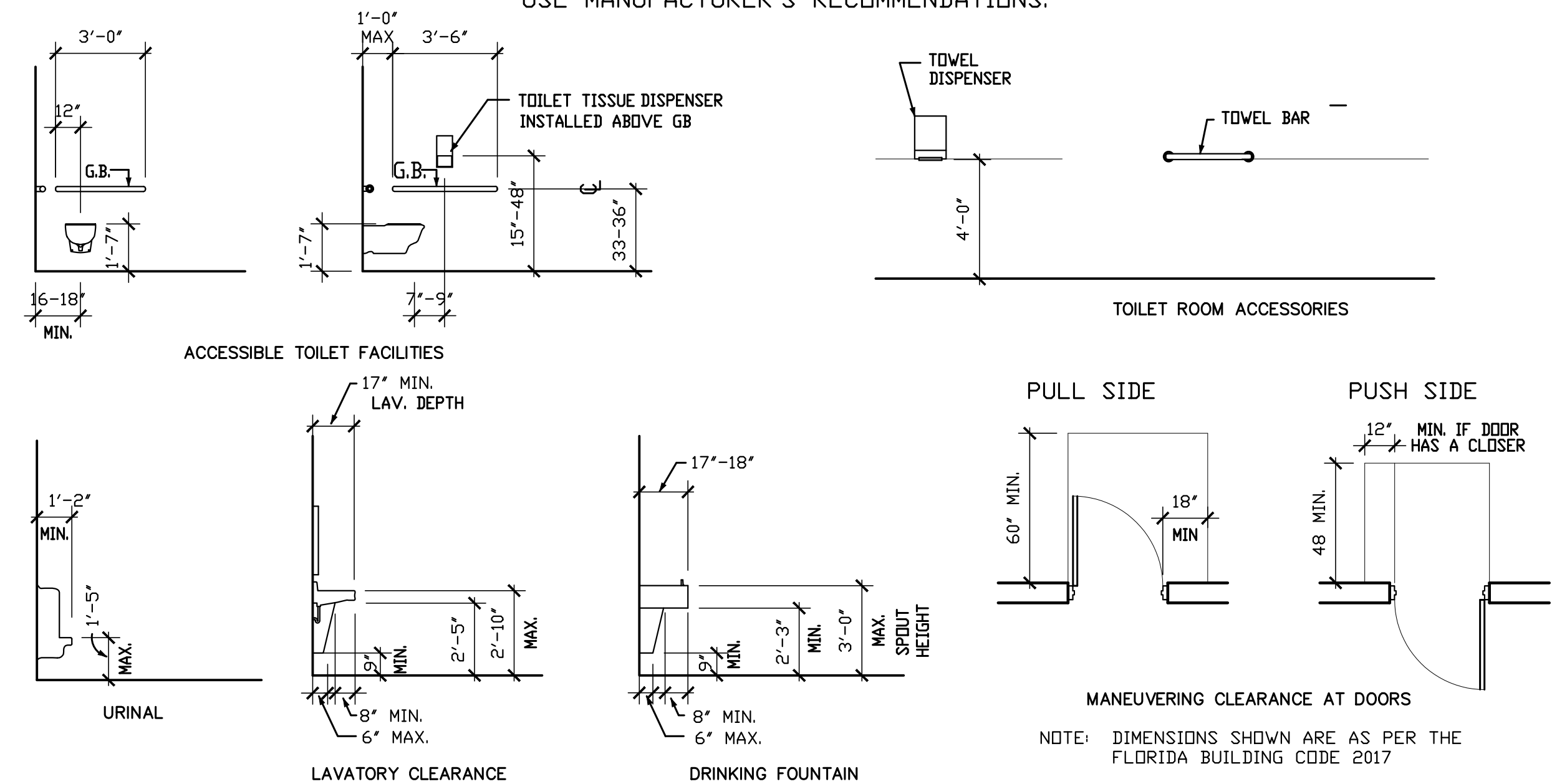
**2 ELEVATION @ BLDG 3 BATHROOM**  
3/8"=1'-0"



**3 ELEVATION @ CABINETS**  
3/8"=1'-0"

## TYPICAL ACCESSIBLE MOUNTING HEIGHTS

NOTE: MOUNTING HEIGHTS ARE FOR HANDICAPPED ACCESSIBLE FIXTURES ONLY. FOR STANDARD MOUNTING HEIGHTS, USE MANUFACTURER'S RECOMMENDATIONS.



TOILET ROOM ACCESSORIES		PROVIDE ACCESSORIES FROM BRADLEY OR APPROVED EQUAL UNLESS OTHERWISE NOTED			
TAG	TYPE	MANUF.	MODEL	REMARKS	PROVIDED BY
A	42" ADA GRAB BAR				
B	36" ADA GRAB BAR				
C	TOILET TISSUE DISPENSER	TORK	247549A	TWIN JUMBO BATHROOM TISSUE DISPENSER INSTALLED ABOVE GRAB BAR	
D	URINAL DIVIDERS	AMERICAN SANITARY		SOLID PLASTIC or SOLID PHENOLIC COLOR: #64 BRONZE or #60 STRATA GRAY	
E	SOAP DISPENSER	GOJO	TFX-12	DISPENSER BLACK	
F	24"W X 36"H FRAMED MIRROR	BRADLEY	MODEL 780-243C	40" MAX. TO BOTTOM OF MIRROR	
G	WASTE RECEPTACLE	RUBBERMAID	RB 95600 G4		
H	HAND TOWEL ROLL DISPENSER	TORK	5510282		



ttv architects, inc.

115 EAST FORSYTH ST  
JACKSONVILLE, FLORIDA 32202  
T 904.788.8333  
F 904.788.8335  
www.ttvarch.com

FL Lic#AA002809

architecture planning interior design

PROJECT ARCHITECT  
CHRISTOPHER P. NOEL

LICENSE NO: #AR-092560

CONSULTANTS:

NO.	DATE	REVISION
1	09.27.18	BOX SUBMITTAL
2	01.31.19	BOX SUBMITTAL
3	03.01.19	100% SUBMITTAL
4	03.22.19	100% SUBMITTAL
5		
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8		
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10		

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1840 Cedar Bay Rd. JACKSONVILLE, FLORIDA

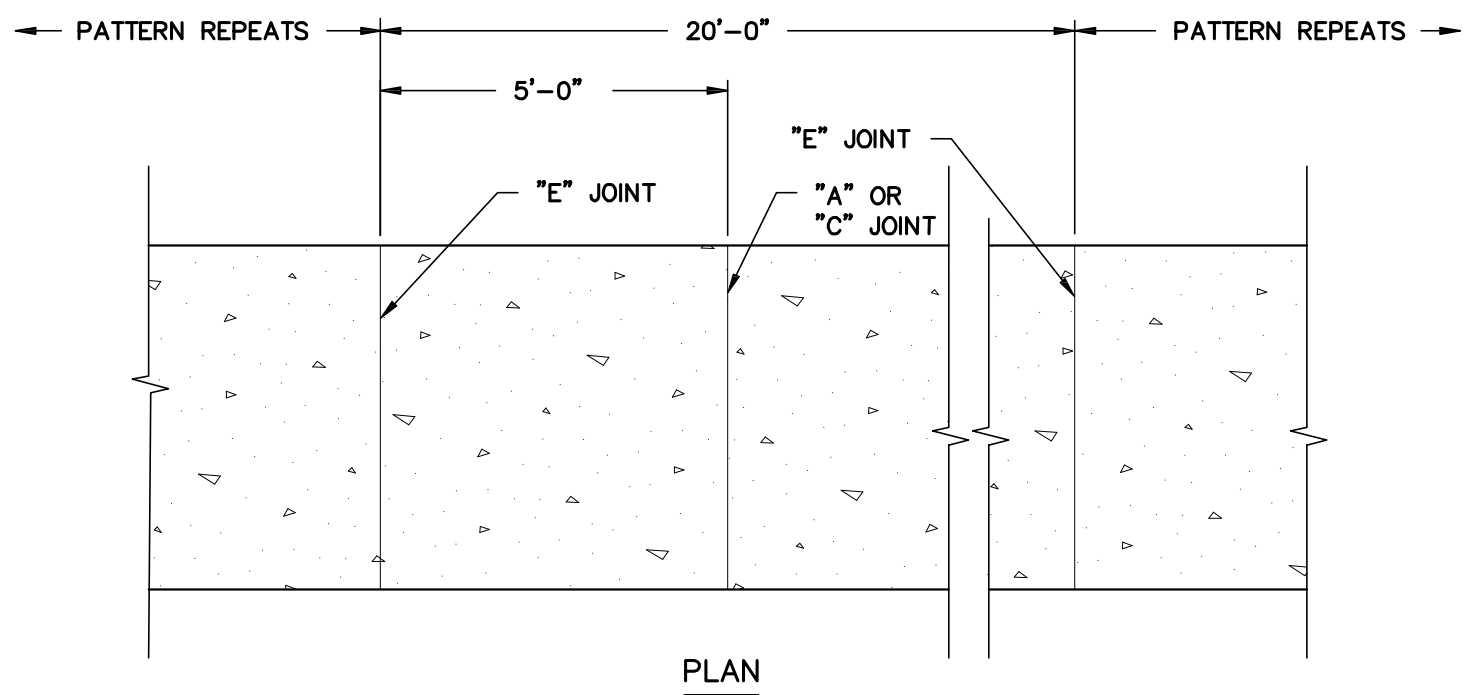
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DRAWN BY:	TS
CHECKED BY:	TAG
COMMISSION NO:	1832

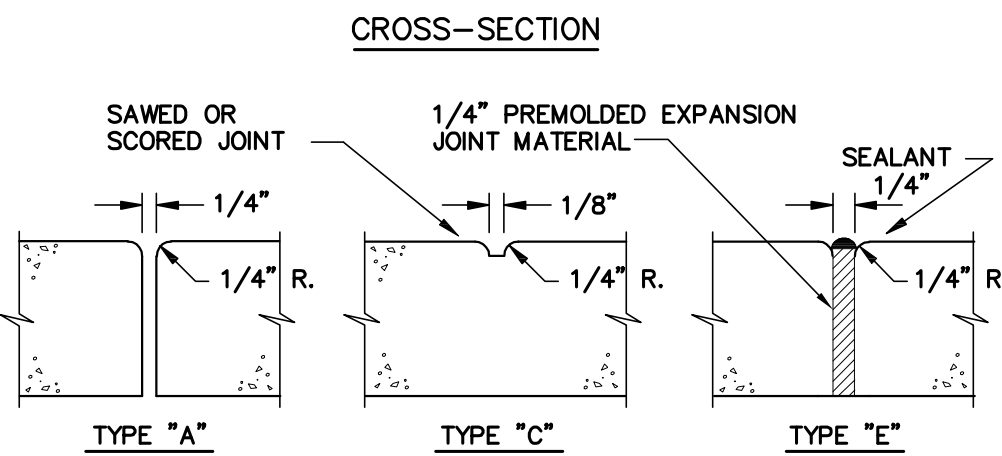
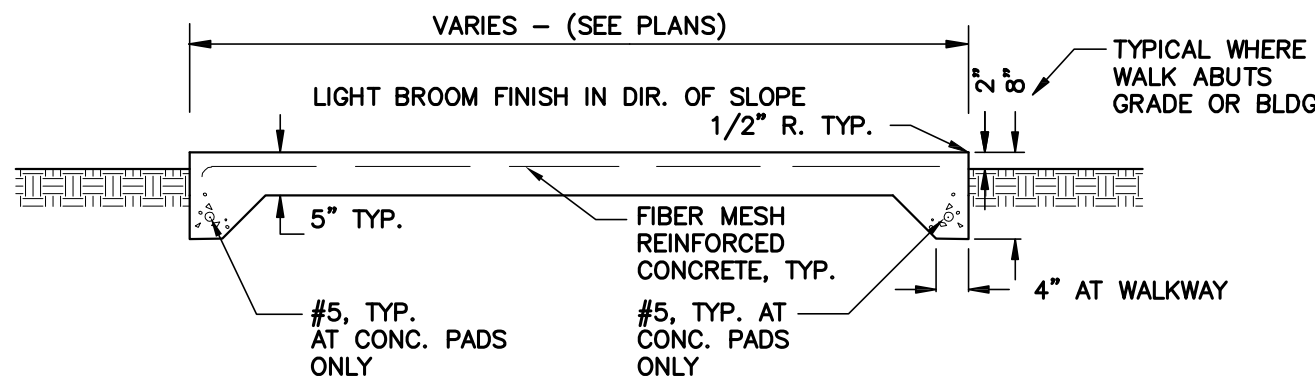
ACCESSORY  
PLAN &  
INTERIOR  
ELEVATIONS

03.22.19 REVISED 100%  
SUBMITTAL

A2.0  
04 OF 05

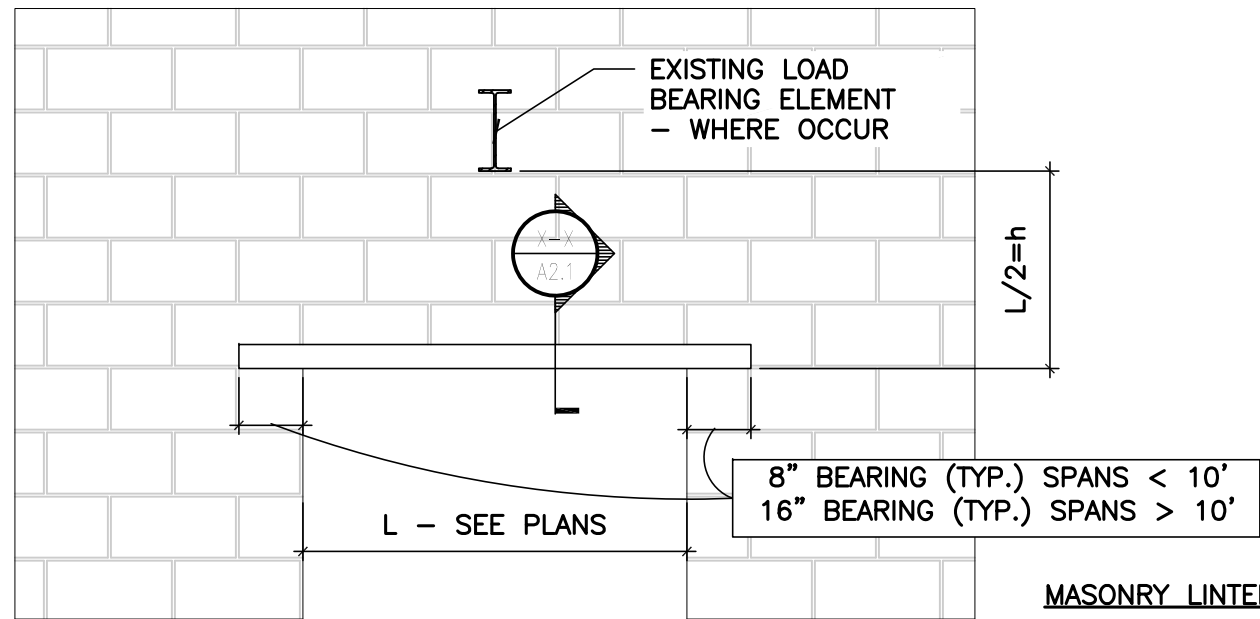


NOTES:  
ALL WALKS ARE TO BE BROOM FINISHED IN THE DIRECTION PERPENDICULAR OF THE SLOPE OF THE WALK.  
CONCRETE DESIGN STRENGTH TO BE 3000 PSI  
PROVIDE "E" JOINTS EVERY 20'-0"

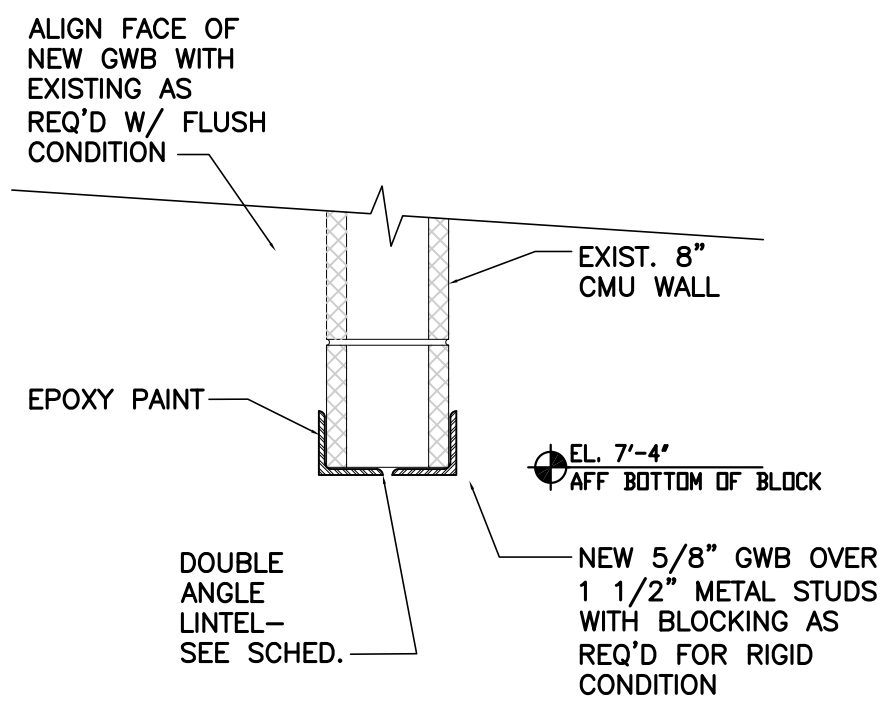


## 1 TYPICAL SIDEWALK DETAILS

1 1/2"=1'-0"



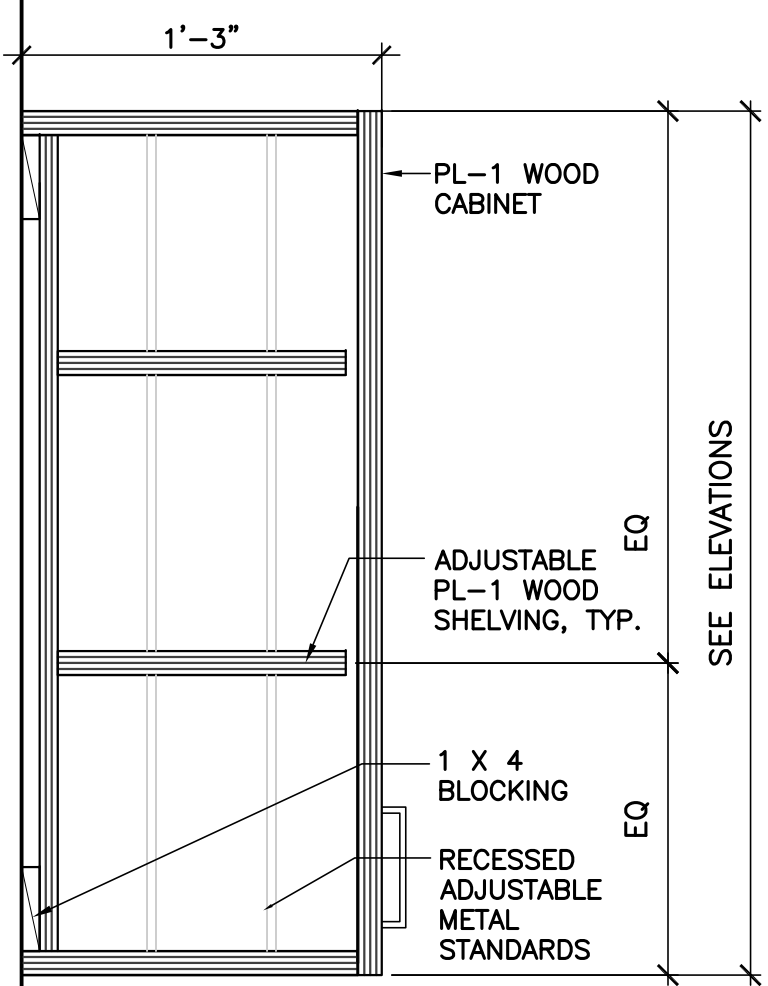
## ELEVATION



## SECTION X-X

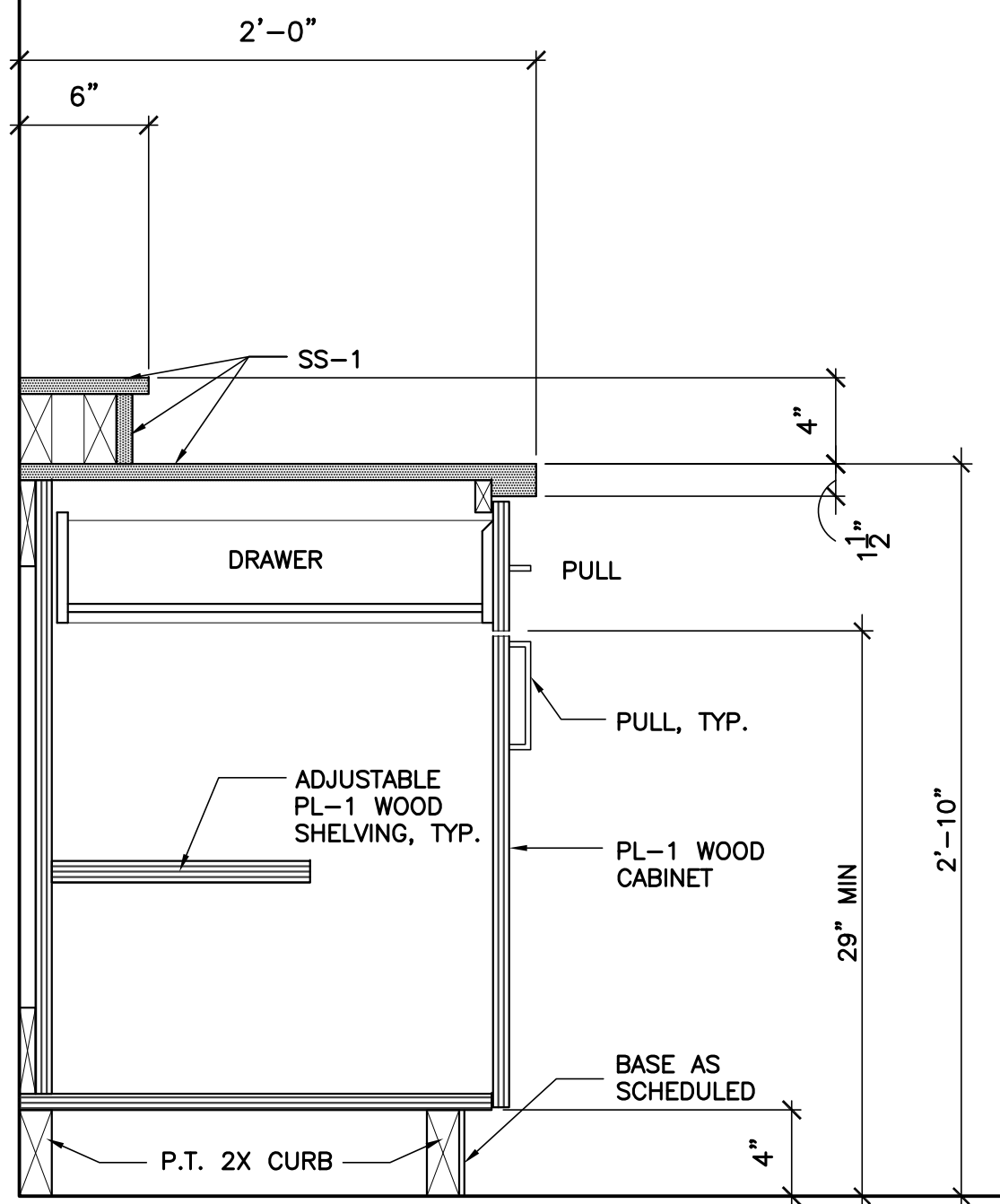
## 2 TYP METAL ANGLE LINTEL DETAIL

1 1/2"=1'-0"



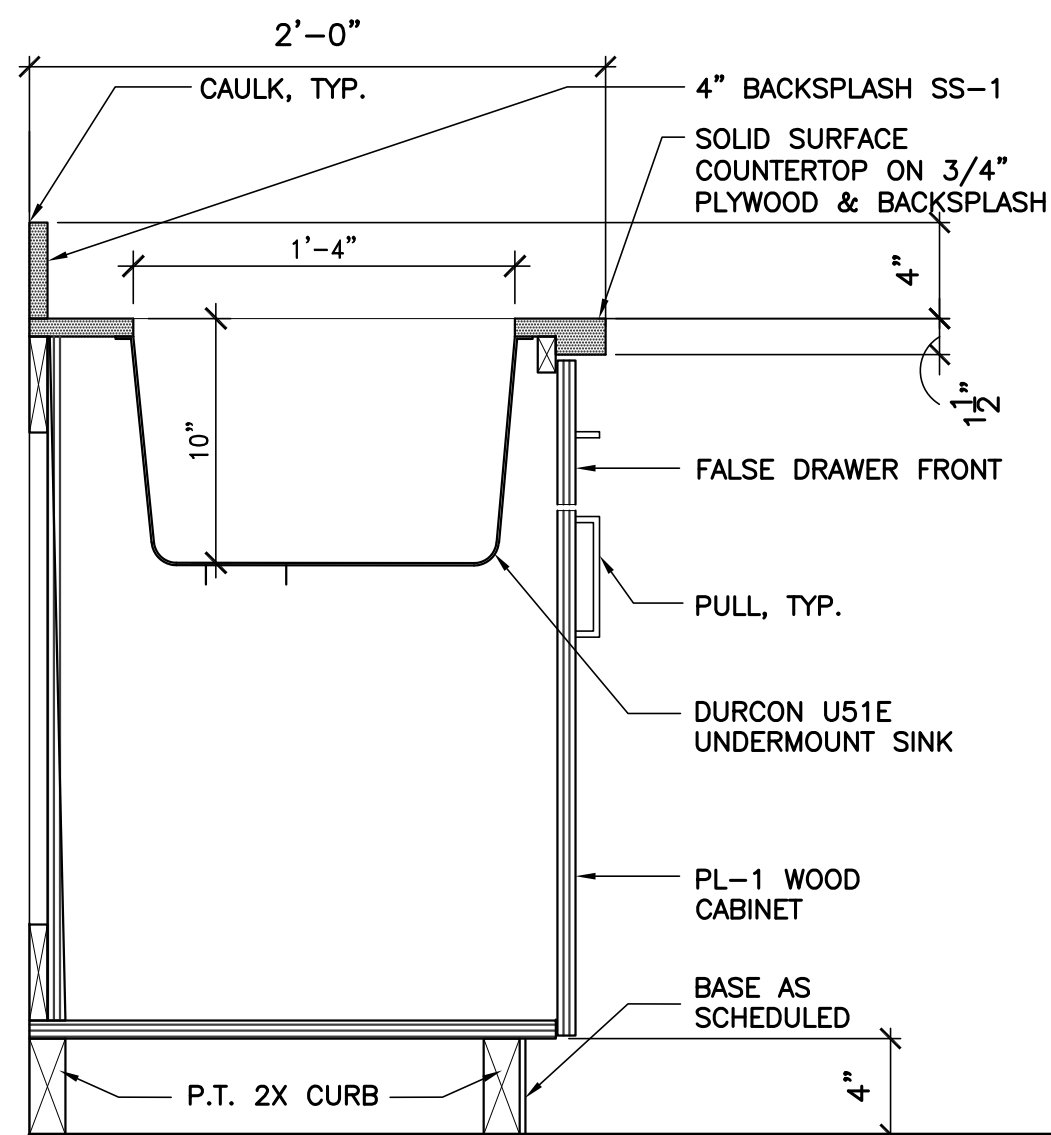
## 3 SECTION @ LAB CABINET

1 1/2"=1'-0"



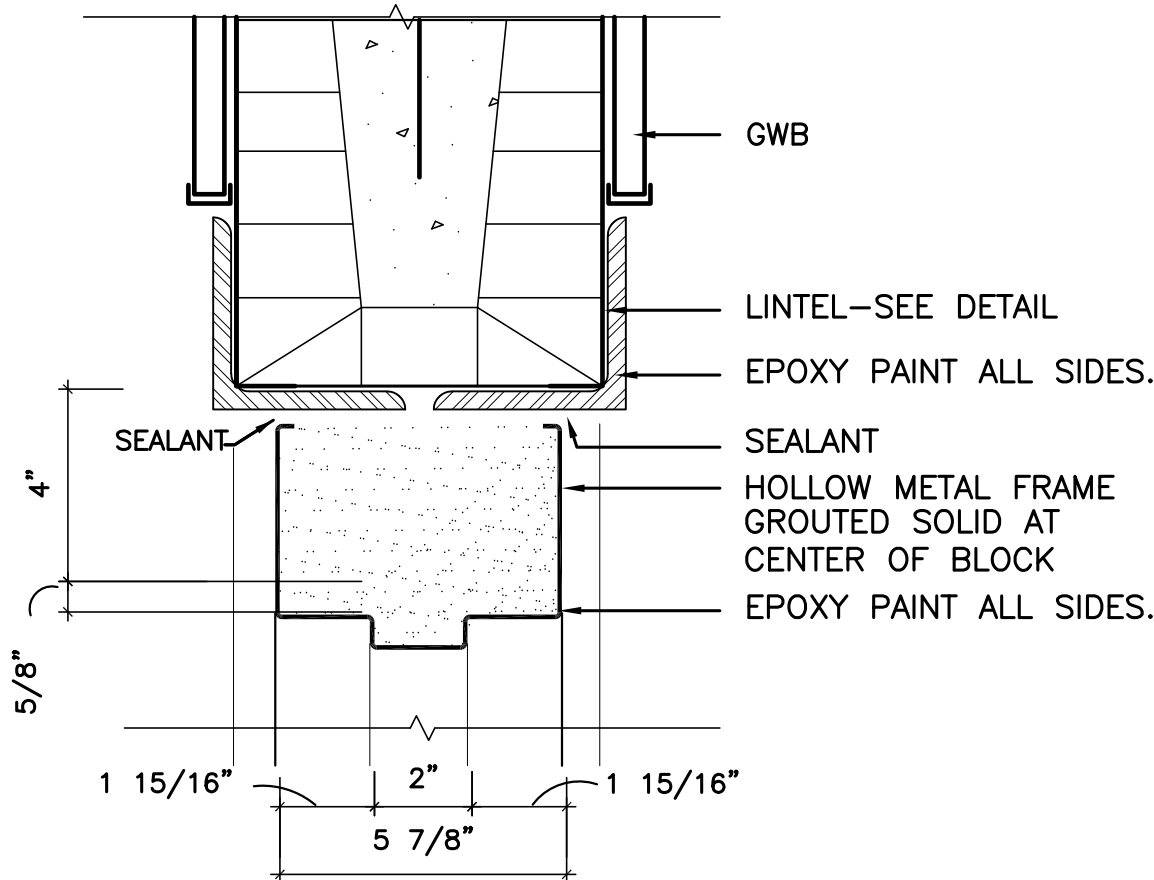
## 4 SECTION @ LAB CABINET

1 1/2"=1'-0"



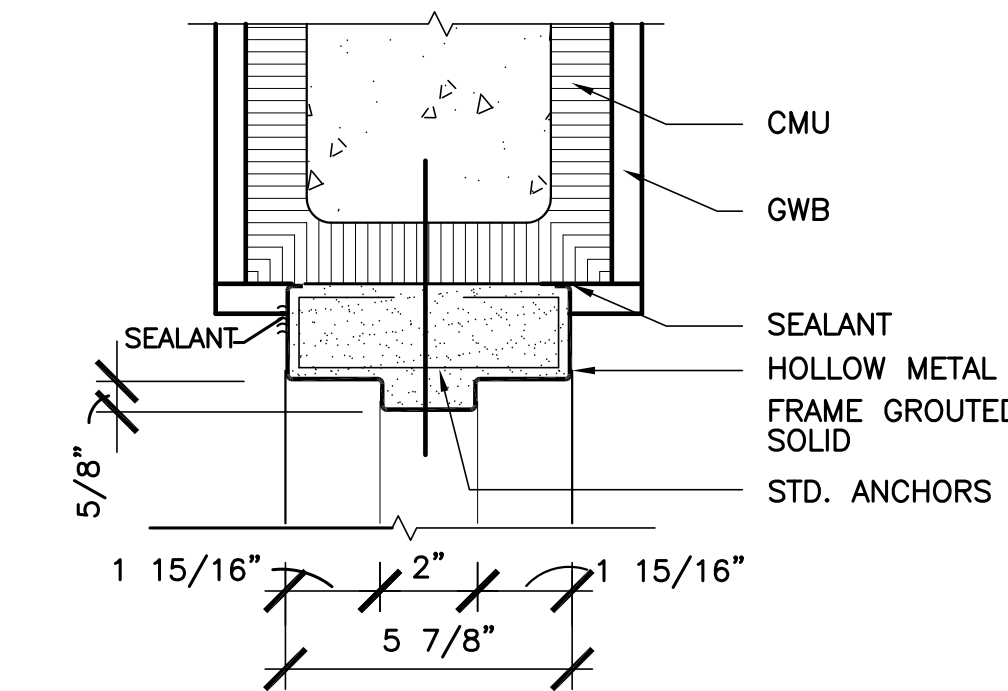
## 5 HEAD DETAIL

3"=1'-0"



## 6 JAMB DETAIL

3"=1'-0"



## FINISHES: REMARKS

1. PAINT RESTROOM CEILING WITH ACT WITH MOISTURE RESISTANCE.
2. PAINT ALL EXISTING DOORS AND FRAME- BOTH SIDES WITHIN THE AREA OF WORK

## FINISHES: GENERAL NOTES

1. GWB TO BE MOISTURE RESISTANT TYPE.
2. REFER TO THIS SHEET FOR GENERAL NOTES REGARDING FINISHES.

## FINISH SPECIFICATIONS

PAINT	GENERAL, TYP.	TILE
P-1	MANUFACTURER: SHERWIN WILLIAMS COLOR MATCH ICI: "WATER CHESNUT" 645 FINISH: EGGSHELL	CT-1 (FLOOR): 2X2 DATILE TILE-UPDOWN TAUPE SPECKLED
P-2	DOORS & TRIM, TYP. MANUFACTURER: SHERWIN WILLIAMS PRO INDUSTRIAL WATER BASED EPOXY COLOR MATCH ICI: "FORTRESS STONE" 472 FINISH: SEMI-GLOSS EPOXY	CT-2 (WALL): 4X4 DATILE TILE-ALMOND GT-1 EPOXY GROUT SPECTRALOCK PRO MANUFACTURER: LATICRETE COLOR:
ACT-1	2x4 FLAT MR TILE MANUFACTURER: ARMSTRONG PRODUCT: CERAMAGUARD FINE FISSURED GRID: PRELUDE PLUS XL ALUMINUM 15/16" EXPOSED TEE	PL-1 MANUFACTURER: WILSONART LAMINATE COLOR: "DESERT ZEPHYR" 4841-60 SS-1 MANUFACTURER: DURCON PRODUCT: EPOXY RESIN LABORATORY WORKSURFACE COLOR: BLACK

## GENERAL MILLWORK NOTES:

1. CABINET WORK SHALL COMPLY WITH AWI SECTION 400 PREMIUM GRADE
2. FIELD VERIFY ALL MILLWORK DIMENSIONS BEFORE FABRICATION.
3. LOCATIONS FOR OWNER-PROVIDED EQUIP. SHOWN APPROX.-VERIFY EQUIP. SIZES & FINAL LOCATIONS W/ OWNER PRIOR TO MILLWORK FABRICATION.
4. ELEC. & DATA OUTLET LOCATIONS SHOWN APPROX-COORDINATE & VERIFY LOCATIONS W/ OWNER-PROVIDED EQUIP. VENDOR PRIOR TO INSTALLATION.
5. PROVIDE BLOCKING FOR MILLWORK AS REQ'D FOR RIGID CONDITION.
6. ALL MILLWORK FACES TO BE PL-1, UNLESS NOTED OTHERWISE. ALL COUNTERTOPS & BACKSPLASHES ARE TO BE SS-1, UNLESS NOTED OTHERWISE. ALL GRAIN PATTERN TO BE VERTICAL IN ELEVATION, HORIZ. SURFACE GRAIN PATTERN TO BE INSTALLED SO THAT GRAIN IS PARALLEL IN DIRECTION TO VERTICAL GRAIN PATTERN.
7. ALL CABINET DOORS TO BE FULL OVERLAY W/ BLUM "CLIP" 170 HINGES.
8. ALL VISIBLE MILLWORK SURFACES SHALL RECEIVE PLASTIC LAMINATE, TYPICAL.
9. ALL MILLWORK SURFACES SHALL RECEIVE PLASTIC LAMINATE PL-1 AS SPECIFIED, ON 3/4" PLYWOOD UNLESS OTHERWISE NOTED.
10. TYPICAL CABINET CONSTRUCTION SHALL BE FLUSH OVERLAY CONSTRUCTION.
11. ALL FASTENERS SHALL BE CONCEALED
12. WHERE WOOD/GLASS CABINET IS SPECIFIED, CONTRACTOR TO PROVIDE NEW CABINET TO MATCH EXISTING (WOOD SPECIES, APPEARANCE, FINISH AND HARDWARE). PROVIDE DOOR PULL AT HEIGHT SPECIFIED TO MATCH ADA.
13. WHERE WOOD-FINISHED CABINET IS SPECIFIED, CONTRACTOR TO PROVIDE NEW CABINET TO MATCH EXISTING (WOOD SPECIES, APPEARANCE, FINISH AND HARDWARE).

## BUILDING 1 ROOM FINISH SCHEDULE

ROOM NO	ROOM NAME	FLOOR	WALLS								CEILING			Remarks
			MAT.	FIN.	MAT.	FIN.	MAT.	FIN.	MAT.	FIN.	MAT.	FIN.	HGT	
101	LOBBY	---	---	---	---	---	---	---	---	---	ACT-1	---	EXIST.	---
102	WOMENS	---	---	---	PT	---	PT	---	PT	---	PT	---	EXIST.	PAINT EXISTING CEILING TO MATCH
104	BREAK	---	---	---	---	---	---	---	---	---	ACT-1	---	EXIST.	---
105	LAB	---	REPAIR TILE	---	---	---	PT	---	---	---	ACT-1	---	EXIST.	REPAINT ENTIRE WALL TO MATCH EXIST.
106	CONTROL	---	---	---	---	---	---	---	---	---	ACT-1	---	EXIST.	---
107	LIBRARY	---	---	---	---	---	---	---	---	---	ACT-1	---	EXIST.	---
108	OFFICE	---	---	---	---	---	---	---	---	---	ACT-1	---	EXIST.	---
202	MENS	---	---	---	---	PT	---	PT	---	PT	---	PT	EXIST.	PAINT EXISTING CEILING/WALL TO MATCH

## BUILDING 3 ROOM FINISH SCHEDULE

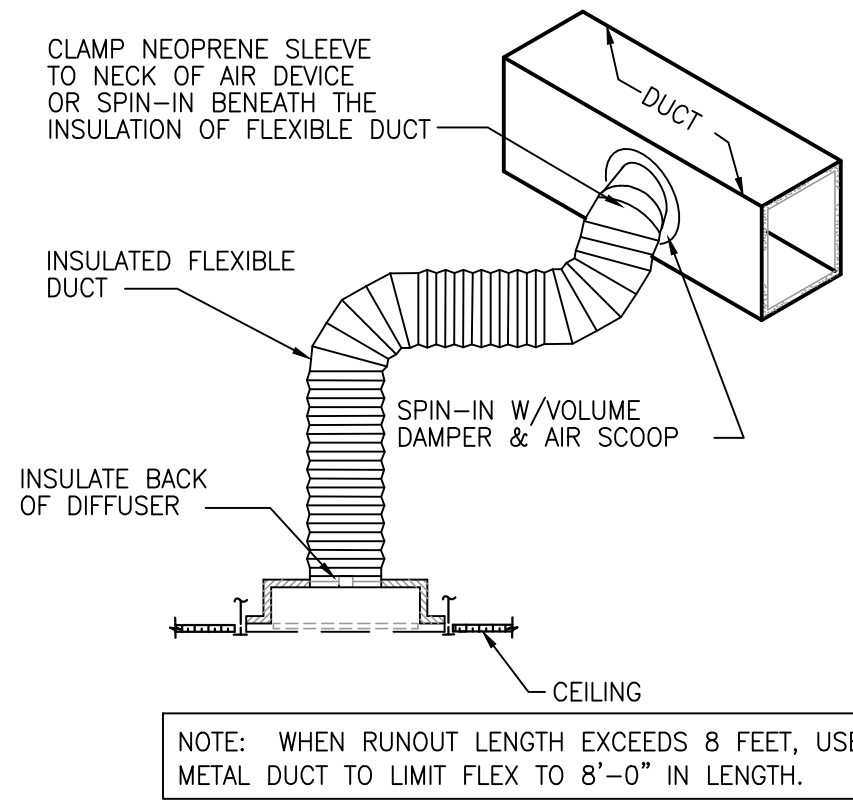
ROOM NO	ROOM NAME	FLOOR		WALLS								CEILING			Remarks
				TOP		RIGHT		BOTTOM		LEFT					
		MAT.	FIN.	MAT.	FIN.	MAT.	FIN.	MAT.	FIN.	MAT.	FIN.	MAT.	FIN.	HGT	
101	BATHROOM	CT-1	--	GWB	PT-1	GWB	PT-1	--	GWB	GWB	PT-1	ACT-1	--	8'-6"	--

## DOOR SCHEDULE

MARK	OPENING			DOOR			FRAME	DETAIL			LABEL	HDW SET #	Remarks
	WD	HGT	THK	TYPE	MATL	Leaf #		HEAD	JAMB	SILL			
101A	3'-0"	7'-0"	1 3/4"	FLUSH	FRP	1	HM	4/A2.1	5/A2.1	---	---	1	---

## HARDWARE SETS

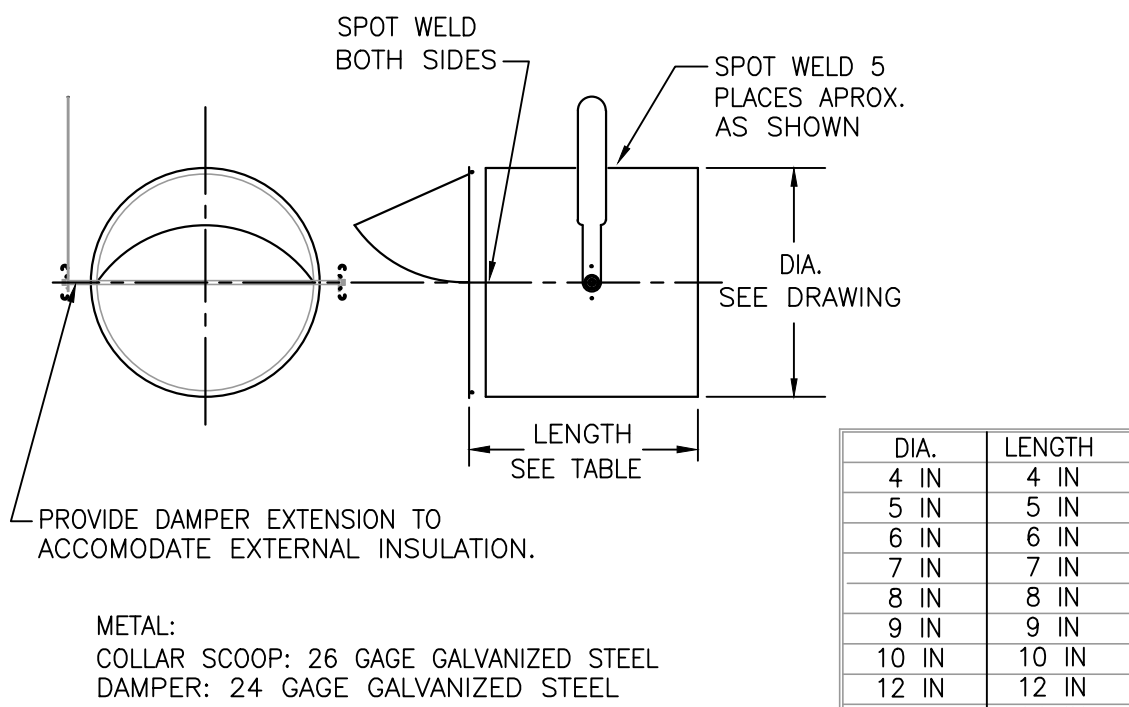
SET 1	
1	CONTINUOUS HINGE
3	SILENCERS
1	PRIVACY LOCKSET WW OVERRIDE
1	CLOSER



### SUPPLY DIFFUSER DETAIL

NOT TO SCALE

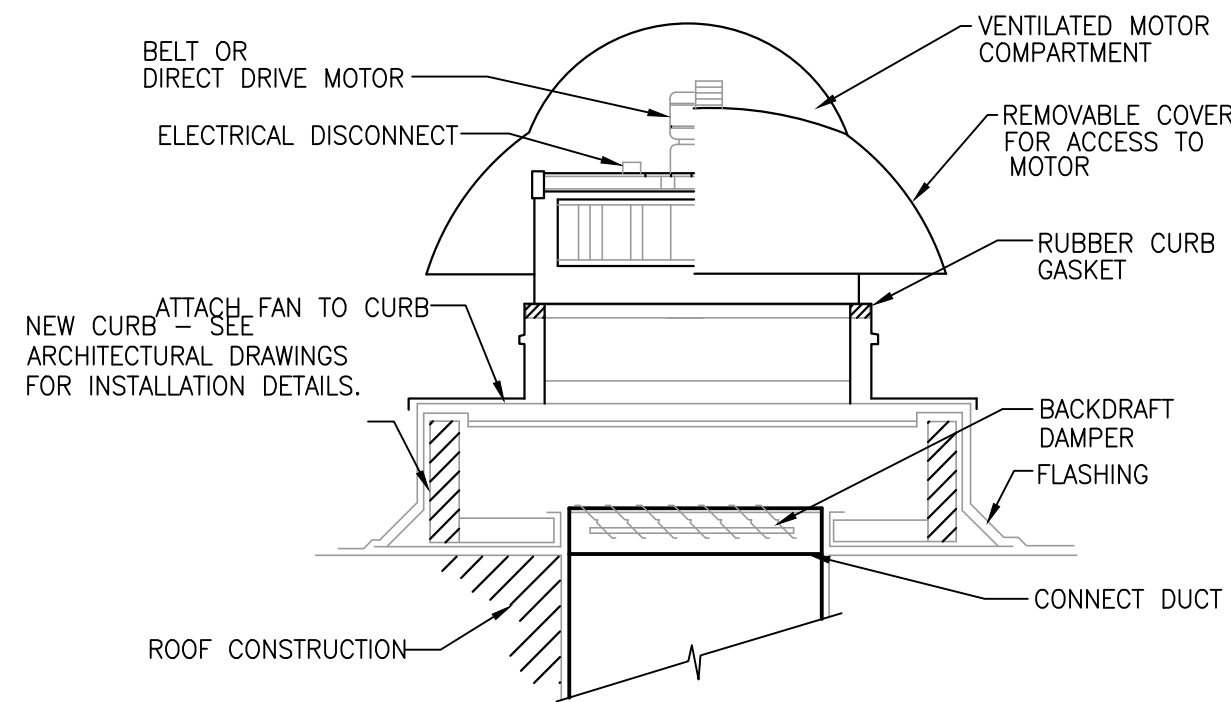
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M1.0



### SPIN-IN COLLAR DETAILS

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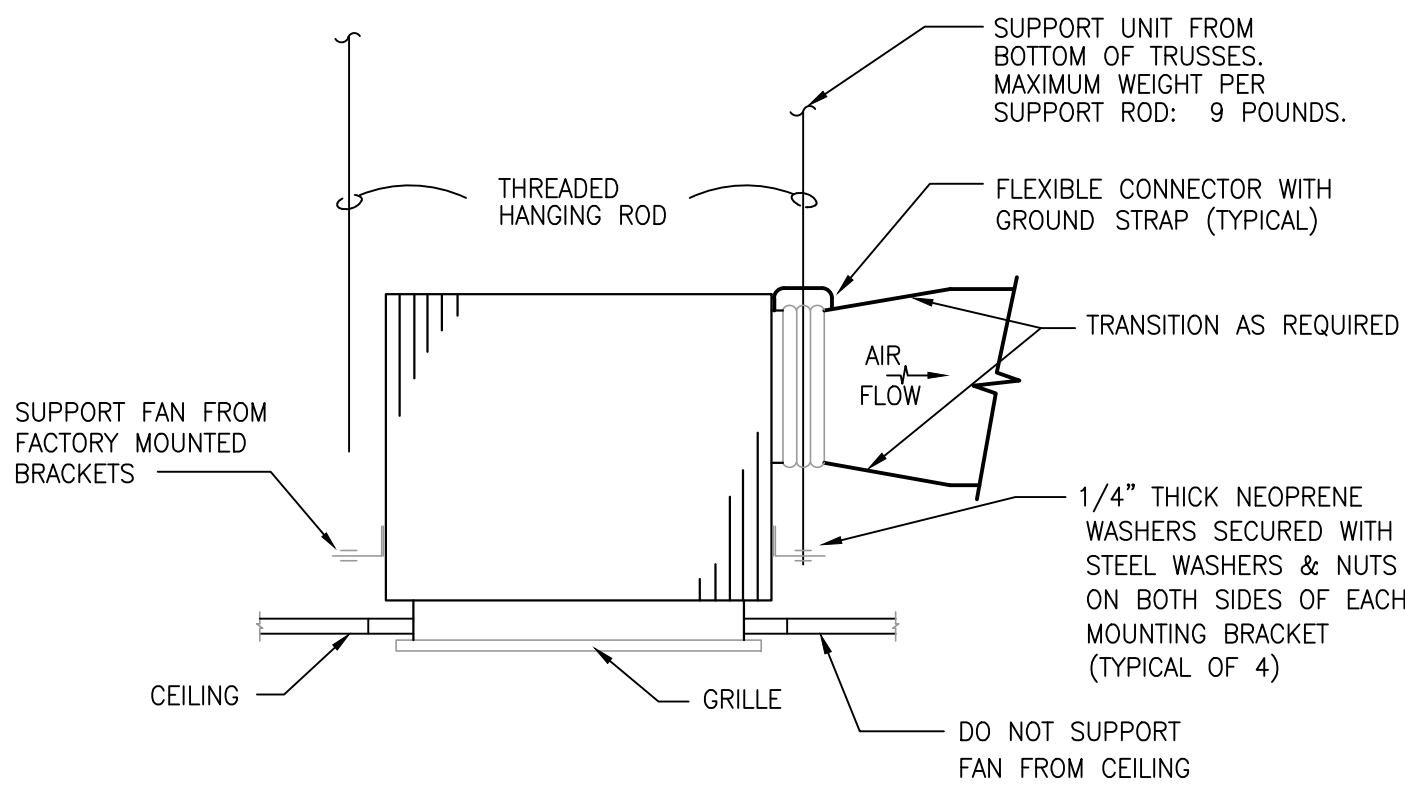
2  
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### ROOF CENTRIFUGAL EXHAUST FAN DETAIL

NOT TO SCALE

3  
M1.0



### CABINET FAN MOUNTING DETAIL

NOT TO SCALE

4  
M1.0

AIR DISTRIBUTION SCHEDULE						
MARK	TYPE	FACE SIZE	BORDER TYPE	MANUFACTURER	MODEL NO.	NOTES
A	LOUVER FACED DIFFUSER	24X24	LAY-IN	PRICE	ASCD-3	1, 2
B	SIDEWALL DIFFUSER	8X8	SURFACE	PRICE	22DAL	1
C	EGGCRATE FACE RETURN	24X24	SURFACE	PRICE	81-DAL	1, 2
D	SIDEWALL REGISTER	SEE DRAWINGS	SURFACE	PRICE	95	1
NOTES: 1. PROVIDE OPPOSED BLADE DAMPER. 2. PROVIDE DAMPER AT FITTING OF LOW PRESSURE DUCTWORK.						

EXHAUST FAN SCHEDULE		
UNIT NO.	EF-1	EF-2
TYPE	INLINE	UPLBAST
AIR FLOW (CFM)	100	250
EXTERNAL S.P. (IN. W.G.)	0.125	0.125
FAN DATA		
HP (WATTS)	(16)	1/60
DRIVE	DIRECT	DIRECT
MAXIMUM SONES	1	4
VOLTS/PHASE/HERTZ	120/1/60	120/1/60
MANUFACTURER	GREENHECK	GREENHECK
MODEL NO.	CSP-A110	G-070-G
NOTES	1, 2	1, 2, 3
NOTES: 1. PROVIDE BACKDRAFT DAMPER, VIBRATION ISOLATION, BIRD SCREEN AND MANUAL VOLUME DAMPER TO BALANCE SYSTEM. 2. INTERLOCK WITH LIGHT SWITCH. 3. FALL SHALL RUN CONTINUOUSLY.		

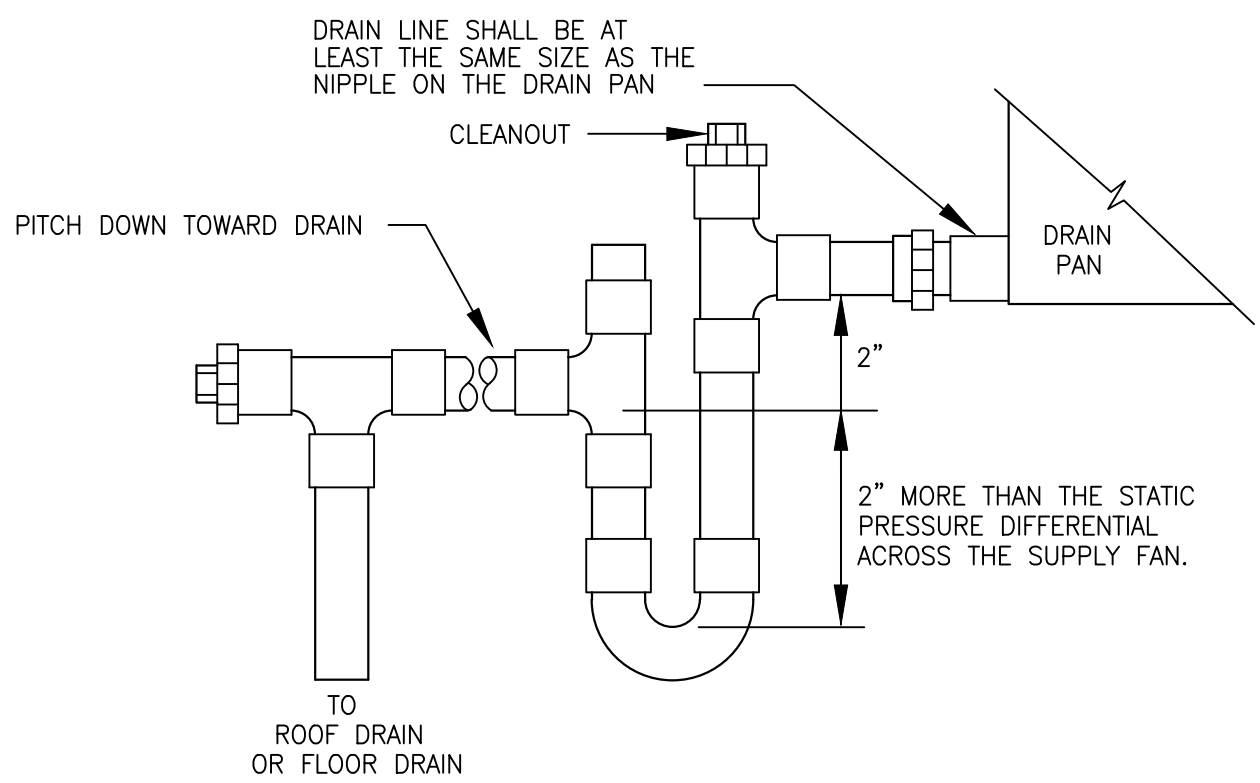
WSHP SCHEDULE	
UNIT NO.	WSHP-1
NOMINAL TONNAGE	10
SUPPLY AIR (CFM)	4300
OUTSIDE AIR (CFM)	300
EXTERNAL S.P. (IN. W.G.)	0.5
FAN DATA	
MAX. POWER	2 HP
DRIVE TYPE	DIRECT
VOLTS/PHASE/HERTZ	460/3/60
COOLING DATA	
TOTAL CAPACITY (MBH)	119.9
SENSIBLE CAPACITY (MBH)	107.1
ENT. AIR TEMP. (FdB/FwB)	76.3 / 63.1
LVG. AIR TEMP. (FdB/FwB)	54.8 / 53.5
HEATING DATA	
TOTAL CAPACITY (MBH)	64.5
AIR TEMP ENT/LVG (F)	64.6 / 99.9
WATER FLOW RATE (GPM)	30
MAX PRESSURE DROP (FT W.G.)	15
MANUFACTURER	CARRIER
MODEL NO. (AHU/HPU)	50VQP120BCC6A1AB
NOTES	1, 2, 3, 4, 5, 6, 7, 8
NOTES: 1. PROVIDE AUXILIARY DRAINPAN UNDER WSHP WITH FLOAT SWITCH FOR WSHP SHUTDOWN UPON DETECTION OF WATER. 2. PROVIDE SINGLE POINT ELECTRICAL CONNECTION. 3. ELECTRICAL TO PROVIDE DISCONNECT. 4. PROVIDE CONDENSATE DRAIN TO FLOOR DRAIN. 5. PROVIDE MOTORIZED DAMPER IN OUTSIDE AIR DUCT. 6. PROVIDE SMOKE DETECTOR IN SUPPLY AIR DUCT. 7. BOTH THE CONDENSER AND EVAPORATOR COILS SHALL BE DIPPED IN BRONZE GLOW (PLATINUM) COATING. 8. PROVIDE SEVEN DAY PROGRAMMABLE THERMOSTAT. 9. EXISTING PIPING AND VALVE TO BE REUSED.	

### HVAC GENERAL NOTES

- CONNECTION TO EQUIPMENT SHALL BE VERIFIED WITH MANUFACTURER CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
- VERIFY INSTALLED STRUCTURE PRIOR TO FABRICATION OF DUCTWORK AND THE HANGING OF DUCTWORK. COORDINATE ALL DUCTWORK WITH JOIST SPACING.
- SEE SPECIFICATIONS FOR GAGES AND BRACING REQUIREMENTS OF DUCTWORK. ALL DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS.
- ACCESS PANELS IN DUCT WORK AND CEILINGS SHALL BE PROVIDED FOR OPERATION AND MAINTENANCE OF ALL FANS, HEATERS, VALVES, DAMPERS, AND MECHANICAL EQUIPMENT.
- THE CENTERLINE OF THE SENSORS SHALL BE LOCATED AT 46" AFF.
- ALL DUCTS AND PIPING SHALL BE INSTALLED AS TIGHT AS POSSIBLE TO WALLS AND BEAMS.
- FLEXIBLE DUCT CONNECTIONS SHALL BE PROVIDED ON ALL DUCT CONNECTIONS TO FANS AND AIR HANDLING UNITS. FLEX SHALL BE A MINIMUM OF 4" AND A MAXIMUM OF 8" IN LENGTH.
- INSIDE OR OUTSIDE OF DUCT VISIBLE THROUGH GRILLES, REGISTERS, AND DIFFUSERS OR EXPOSED DUCT AND EQUIPMENT SHALL BE PAINTED FLAT BLACK.
- ALL EQUIPMENT, PIPING, AND DUCTWORK SHALL BE SUPPORTED AS DETAILED AND SPECIFIED. ADDITIONAL SUPPORTS SHALL BE PROVIDED AS REQUIRED TO PROVIDE A VIBRATION FREE INSTALLATION.
- INSULATE THE BACKS OF EACH RETURN REGISTER AND SUPPLY DIFFUSER WITH A 2" THICK DUCTWRAP INSULATION. MINIMUM R-VALUE = R-6.
- FLEXIBLE DUCT CONNECTING MAIN DUCT TO SUPPLY DIFFUSER SHALL NOT EXCEED 8 FEET IN LENGTH. IF THE DISTANCE EXCEEDS THIS LIMIT, AN INSULATED METAL DUCT OF REQUIRED LENGTH AND EQUAL DIAMETER SHALL BE INSTALLED WITH AIR SCOOP AND DAMPER AT MAIN DUCT TO REDUCE FLEXIBLE DUCT TO A MAXIMUM LENGTH OF 8 FEET. THE FLEXIBLE DUCT SHALL BE UL 181 RATED. MINIMUM INSTALLED R-VALUE = R-6.
- PROVIDE SPIN-IN CONE WITH LOCKING DAMPER AT EACH FLEXIBLE DUCT RUN OUT CONNECTING SUPPLY DUCT TO DIFFUSER. PROVIDE DAMPER EXTENSIONS TO ACCOMMODATE EXTERNAL INSULATION.
- COORDINATE WITH ALL TRADES INVOLVED. PROVIDE OFFSETS AND TRANSITIONS AROUND OBSTRUCTIONS AT NO ADDITIONAL COST TO THE OWNER.
- REFER TO TYPICAL DETAILS FOR INSTALLATION OF EQUIPMENT.
- REFRIGERANT PIPE IS SIZED IN ACCORDANCE WITH ASHRAE'S RECOMMENDATIONS. APPROVED ALTERNATE EQUIPMENT SHALL HAVE THE PIPE SIZES REVISED IN ACCORDANCE WITH MANUFACTURER'S AND ASHRAE'S RECOMMENDATIONS. LINE LOSS SHALL NOT EXCEED ONE DEGREE FAHRENHEIT.
- ALL FINISHES DAMAGED OR REMOVED FOR THE INSTALLATION OF WORK SHALL BE REPLACED TO MATCH ADJACENT FINISHES.
- LOAD CALCULATIONS ARE BASED ON TRANE TRACE COMPUTER PROGRAM. ALL OUTSIDE AIR CALCULATIONS ARE BASED ON ASHRAE 62-2013.
- OUTDOOR DESIGN AMBIENT FOR ALL EQUIPMENT IS 95 DEGREES FdB/ 77 DEGREES FwB IN SUMMER AND 32 DEGREES FAHRENHEIT IN WINTER.
- SET ALL HVAC SUPPLY, RETURN, AND EXHAUST SYSTEM AIR FLOW RATE TOLERANCES TO WITHIN PLUS 10 PERCENT (10%) OR MINUS ZERO PERCENT (0%).
- MECHANICAL CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS AND ACCESSORIES WITH ELECTRICAL CONTRACTOR PRIOR TO PURCHASE AND INSTALLATION AND SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF ENGINEER.

DUCT HEATER SCHEDULE											
SELECTION DATA						ELECTRICAL DATA			GENERAL DATA		
TAG	MANUF. / MODEL	SERVES	TYPE	CFM	APD (*WG)	KW/BTUH	STEPS	VOLTAGE	MCA/MOCP	DUCT SIZE	ACCESSORIES
EDH-1	NAILOR* / DHR	WSHP-1	SLIP-IN	2210	.02	9/30717	2	460/3/60	SEE ELEC.	26X12	T'STAT 1 THRU 9
EDH-2	NAILOR* / DHR	WSHP-1	SLIP-IN	4300	.02	10/34130	2	460/3/60	SEE ELEC.	32X12	T'STAT 1 THRU 9
(*) EQUAL MANUFACTURER: BRASCH, HEATRIX, WARREN ACCESSORIES: 1. PROVIDE AIRFLOW SWITCH 2. PROVIDE CONTROL TRANSFORMER WHERE REQUIRED 3. PROVIDE THERMOSTAT 4. PROVIDE MIN. 16 GAUGE CONSTRUCTION 5. PROVIDE HIGH GRADE NI-CHROME ELEMENTS 6. PROVIDE AUTO RESET 7. PROVIDE DISCONNECT SWITCH BY MANUFACTURER 8. PROVIDE UL LISTING 9. PROVIDE CONTROL PANEL WITH HINGED COVER GENERAL NOTES: 1. SINGLE POINT POWER CONNECTION INCLUDING DISCONNECT CONTACTORS AND CONTROLS. 2. CONTRACTOR TO VERIFY DUCT SIZES. PROVIDE TRANSITIONS AND OFFSETS AS REQUIRED.											

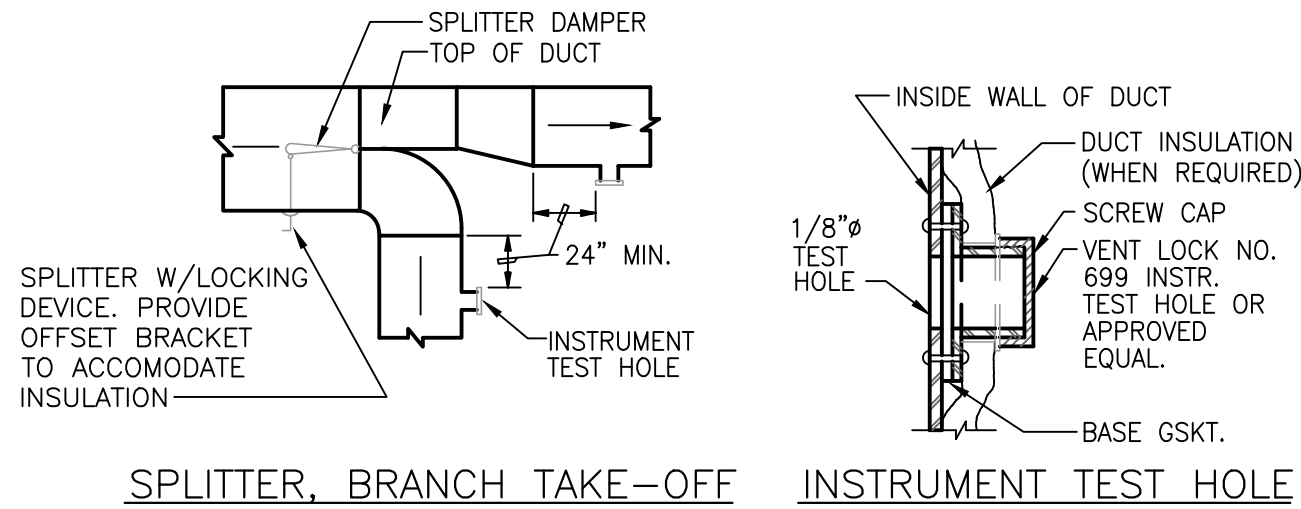
HVAC LEGEND	
CFM	CUBIC FEET PER MINUTE
EF-1	EXHAUST FAN #1
ESP	EXTERNAL STATIC PRESSURE
HP	HORSEPOWER
WG	WATER GAUGE
WSHP	WATER SOURCE HEAT PUMP
A	NECK SIZE CFM
●	POINT OF CONNECTION



### AIR HANDLING UNIT DRAIN TRAP

NOT TO SCALE

5  
M1.0

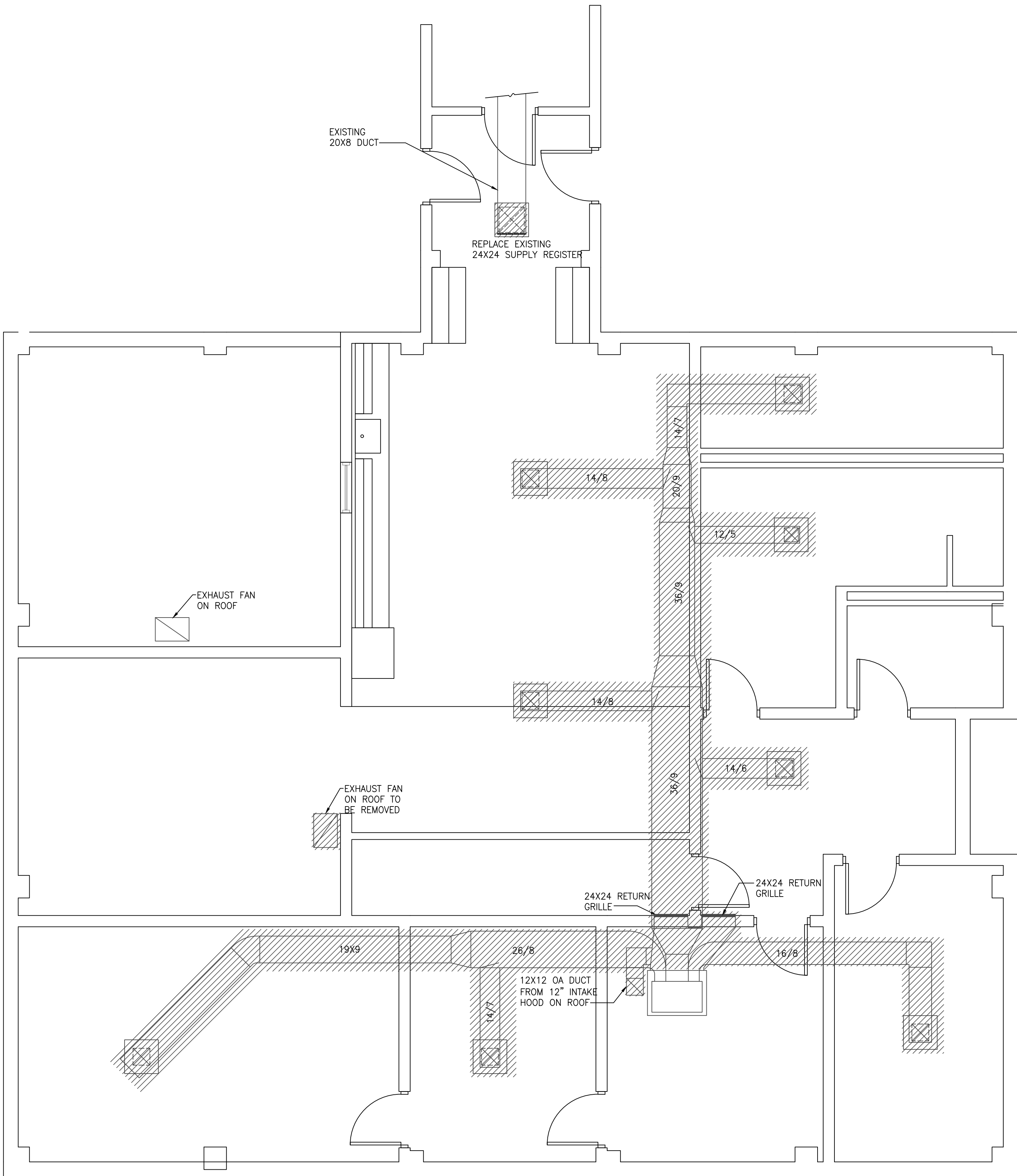


### LOW PRESSURE DUCT FITTINGS

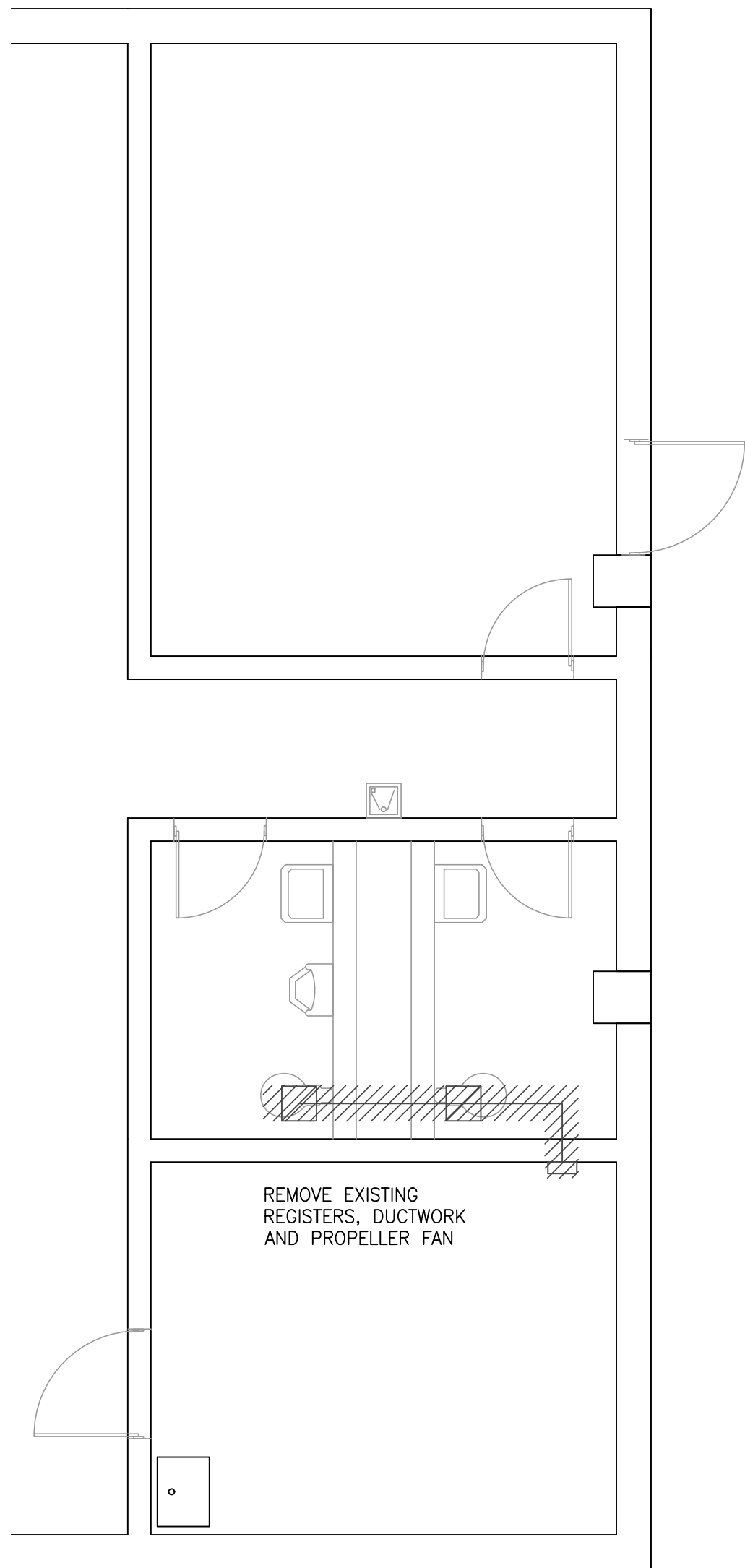
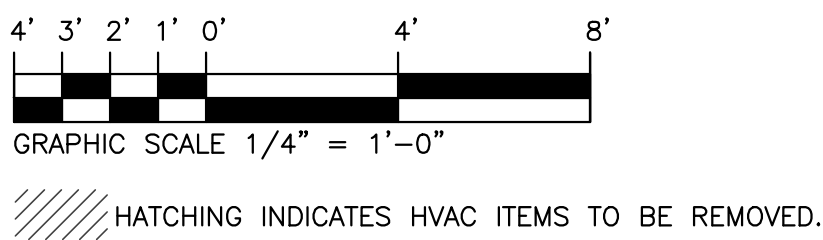
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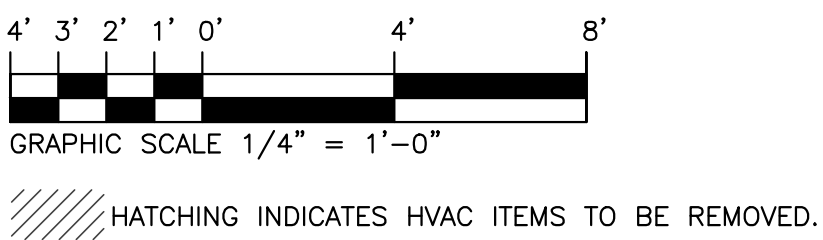
03.22.19 REVISED 100% SUBMITTAL




BUILDING 1 EXISTING FLOOR PLAN - MECHANICAL



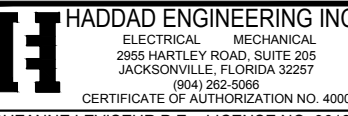
BUILDING 3 EXISTING FLOOR PLAN - MECHANICAL





**ttv architects, inc.**  
115 EAST FORSYTH ST  
JACKSONVILLE, FLORIDA 32202  
T 904.798.8333  
F 904.798.8335  
www.ttvarch.com  
FL Lic#AA0002609

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**HADDAD ENGINEERING INC.**  
ELECTRICAL MECHANICAL  
2865 WINTLEY ROAD, SUITE 203  
JACKSONVILLE, FLORIDA 32218  
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NO.	DATE	REVISION
1	08.27.18	60% SUBMITTAL
2	01.04.19	90% SUBMITTAL
3	03.01.19	100% SUBMITTAL
4	03.22.19	REVISED 100% SUBMITTAL
5		
6		
7		

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DATE:	08.28.18
DRAWN BY:	JB
CHECKED BY:	SL
COMMISSION NO.:	1832

MECHANICAL  
FLOOR PLANS –  
EXISTING

**M2.0**

03.22.19 REVISED 100% SUBMITTAL

REQ 07151 RENOVATION OF DISTRICT II BUILDINGS 1 & 3

9

NO	DATE	REVISION
	09.27.18	60% SUBMITTAL
	01.04.19	90% SUBMITTAL
	03.01.19	100% SUBMITTAL
	03.22.19	REVISED 100% SUBMITTAL

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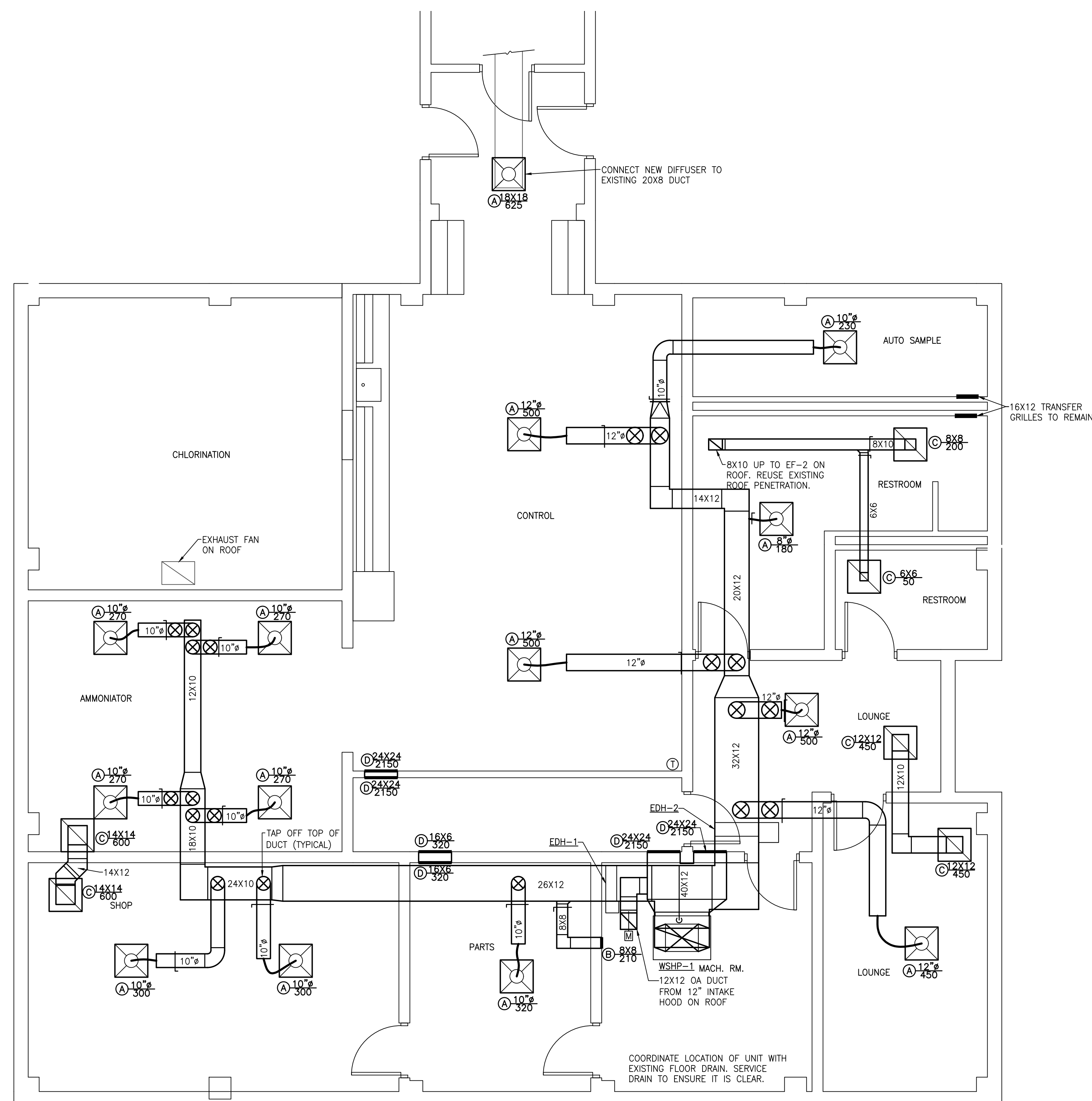
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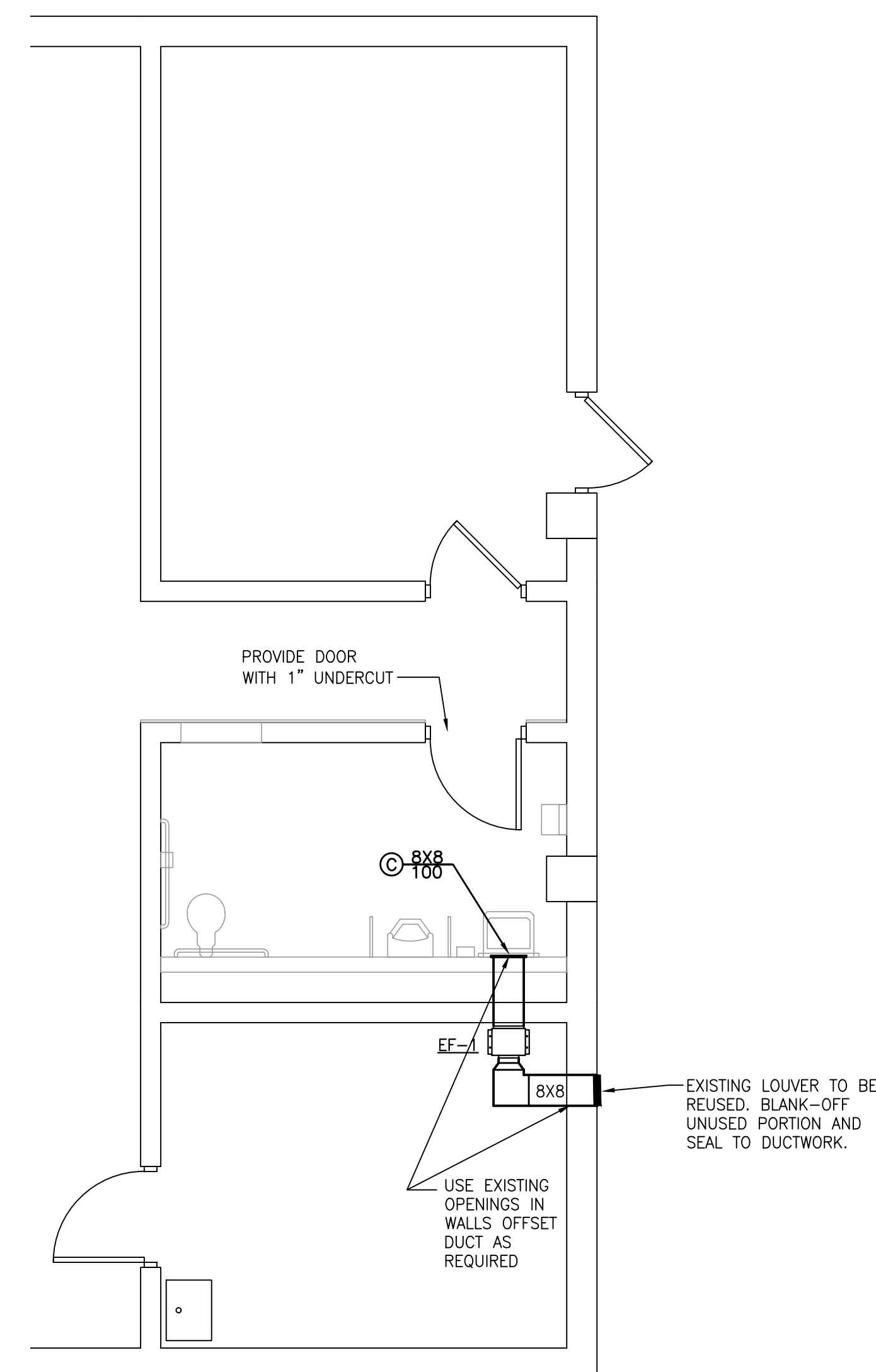
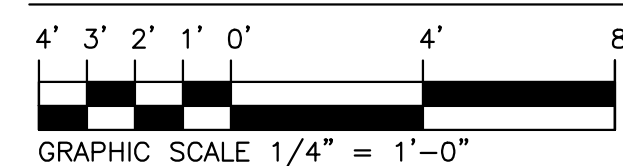
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MECHANICAL  
FLOOR PLANS —  
NEW

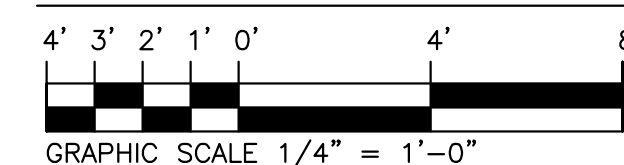
### M3.0



BUILDING 1 NEW FLOOR PLAN - MECHANICAL



## BUILDING 3 NEW FLOOR PLAN - MECHANICAL





I. MECHANICAL GENERAL PROVISIONS

PART 1 GENERAL

WORK INCLUDED:

A. FURNISH ALL MATERIALS, EQUIPMENT, ACCESSORIES, LABOR, SUPERVISION AND ALL RELATED ITEMS NECESSARY TO COMPLETE THE SCOPE OF THE WORK AS INDICATED ON THE DRAWINGS AND/OR SPECIFIED HEREIN.

B. THE FOLLOWING DATA WAS USED FOR THE THERMAL LOAD CALCULATIONS FOR THIS BUILDING: --INDOOR DESIGN: SUMMER 75 DB @ 50% RH --OUTDOOR DESIGN: 95 DEG. F&B/ 77 DEG. F&B IN SUMMER AND 32 DEG. F IN WINTER.

CODES AND STANDARDS:

A. ALL MECHANICAL SYSTEMS, AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS, SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE LOCAL BUILDING CODE, ALL OTHER APPLICABLE STATE, COUNTY AND LOCAL ORDINANCES AND ALL APPLICABLE SECTIONS OF THE FOLLOWING STANDARDS, LATEST EDITION: "ASHRAE", "AMCA", "ANSI", "ARI", "ASME", "ASTM", "CTI", "NFPA", "SMACNA", "UL".

B. THE ABOVE STANDARDS AND CODES ARE USED AS A MINIMUM DESIGN CRITERIA AND NO REDUCTIONS WILL BE PERMITTED, EVEN IF ALLOWED BY APPLICABLE CODES, WITHOUT WRITTEN PERMISSION BY ENGINEER. DRAWINGS: A. IN GENERAL, MECHANICAL PLANS ARE DIAGRAMMATIC IN NATURE AND SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, PLUMBING, ELECTRICAL, FIRE PROTECTION, STRUCTURAL AND ALL OTHER ASSOCIATED PLANS AND SHALL BE CONSIDERED AS ONE SET OF DOCUMENTS. DUCTWORK AND PIPING OFFSETS, BENDS AND TRANSITIONS OF EQUIVALENT SIZE WILL BE REQUIRED IN ORDER TO PROVIDE A COMPLETE, FUNCTIONAL MECHANICAL SYSTEM AND SHALL BE PROVIDED BY THE CONTRACTOR WITH NO ADDITIONAL COST TO THE OWNER. PLANS SHALL NOT BE SCALED. B. AS-BUILT DRAWINGS AND RECORDS: CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS TO THE ARCHITECT/OWNER AT THE COMPLETION OF THE PROJECT REFLECTING THE ACTUAL CONDITION OF THE MECHANICAL SYSTEM INSTALLATION AND ANY DEVIATION FROM THE ORIGINAL CONSTRUCTION DOCUMENTS. MAINTAIN A COMPLETE SET OF MECHANICAL PRINTS FOR INDICATING ALL CHANGES. USE COLORS TO MAKE CHANGES AT THE TIME OF EXECUTION. DELIVER SET TO ARCHITECT PRIOR TO ISSUANCE OF FINAL PAYMENT AND/OR CERTIFICATE OF OCCUPANCY. ELEVATIONS, INVERTS AND DIMENSIONED LOCATIONS OF UNDERGROUND WORK SHALL BE INDICATED, DIMENSION TO PERMANENT REFERENCES.

SUBMITTALS:

A. SHOP DRAWINGS: CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND APPROVAL 1 COPY, INCLUDING MANUFACTURER SUBMITTAL DATA SHEET (MDS) OF ALL EQUIPMENT, MATERIALS, DEVICES, ACCESSORIES AND FINISHES AS SPECIFIED BY THE ENGINEERING CONSTRUCTION DOCUMENTS. REVIEW OF EQUIPMENT AND MATERIAL SUBMITTAL SHALL IN NO WAY RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO COMPLY WITH PLANS, SPECIFICATIONS AND CODE REQUIREMENTS. ANY SUBSTITUTIONS SHALL BE PRE-APPROVED BY ARCHITECT AND OWNER AND SHALL BE CONTRACTOR'S RESPONSIBILITY TO INSURE FULL COMPLIANCE WITH THE ORIGINAL DESIGN PER PLANS AND SPECIFICATIONS.

B. MANUFACTURER'S MANUALS: SUBMIT MANUALS FOR APPROVAL AS INDICATED. MANUALS SHALL INCLUDE OPERATING AND MAINTENANCE INSTRUCTIONS, PARTS LISTS, MANUFACTURERS' AND LOCAL SUPPLIERS ADDRESSES AND PERTINENT DESCRIPTIVE DATA. MANUALS SHALL BE LOOSE-LEAF BOUND AND INDEXED.

PERMITS AND FEES:

A. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND NECESSARY ACCESSORIES (I.E. WIRING, CONTROLS, DEVICES, ETC.) AND SHALL PAY FOR ALL PERMITS, FEES, INSPECTIONS AND ALL OTHER INCIDENTAL COSTS AND SERVICES NECESSARY FOR THE INSTALLING AND TESTING OF A COMPLETE OPERABLE AND SERVICABLE MECHANICAL SYSTEM.

MANUFACTURER'S WARRANTY:

A. CONTRACTOR SHALL PROVIDE WARRANTY FOR A PERIOD OF (1) ONE YEAR AFTER BUILDING C.O. FOR ALL MECHANICAL SYSTEMS, DUCTWORK, CONTROLS, ACCESSORIES AND ALL OTHER EQUIPMENT, PARTS AND LABOR UNDER THESE DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL PROVIDE WARRANTY FOR COMPRESSORS FOR (5) FIVE YEARS, ANY REPAIRS REQUIRING SYSTEM SHUT DOWN WILL BE DONE DURING NON-OPERATIONAL PERIODS OR AS AGREED WITH OWNER.

CONTRACTOR'S GUARANTEE:

A. ALL WORK AND MATERIALS TO BE PROVIDED UNDER THESE PLANS AND SPECIFICATIONS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF BENEFICIAL OCCUPANCY.

B. CONTRACTOR SHALL PROVIDE MAINTENANCE AND OPERATION MANUAL ON ALL MECHANICAL EQUIPMENT AND SYSTEMS, AND TRAINING TO THE OWNER'S PERSONNEL AS NECESSARY OR REQUIRED FOR PROPER OPERATION.

PART 2 PRODUCTS

MATERIALS:

A. ALL MATERIALS SHALL BE NEW AND OF GOOD QUALITY OF U.S. MANUFACTURING WHENEVER POSSIBLE. ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, PRODUCT APPROVALS, RULES AND ORDINANCES. ALL EMPLOYED INSTALLING PROCEDURES, METHODS AND TECHNOLOGIES SHALL CONFORM TO ESTABLISHED INDUSTRY STANDARDS AND GOOD ENGINEERING PRACTICE. ANY DAMAGED EQUIPMENT SHALL BE REPLACED OR RESTORED TO ITS ORIGINAL CONDITION WITH NO ADDITIONAL COST TO THE OWNER.

B. ALL MECHANICAL EQUIPMENT AND MATERIALS SHALL BE RATED FOR THE REQUIRED SERVICE, PRESSURES, TEMPERATURES, VOLTAGE, ETC. AND SHALL BE CERTIFIED AND/OR LISTED WHERE APPLICABLE. PROVIDE ALL NECESSARY ACCESSORIES, CONTROLS, TRANSFORMERS, VALVES, CONNECTIONS, GAUGES, ETC. FOR PROPER OPERATION AND SERVICE.

C. SUBSTITUTIONS MUST BE REQUESTED IN CONFORMANCE WITH GENERAL CONDITIONS PER ARCH. SPECIFICATIONS.

D. ALL HARDWARE AND ACCESSORY FITTINGS SHALL BE OF A TYPE DESIGNED, INTENDED OR APPROPRIATE FOR USE AND COMPLEMENT ITEMS WITH WHICH THEY ARE USED, AND SHALL HAVE CORROSION PROTECTION SUITABLE FOR ATMOSPHERE IN WHICH THEY ARE INSTALLED. ALL SUCH HARDWARE SHALL BE U.S. STANDARD SIZES.

E. EQUIPMENT OF A SIMILAR NATURE SHALL BE IDENTICAL AND FIT ALLOTTED SPACE PROVIDED.

F. STORE AND PROTECT ALL MATERIALS FROM DAMAGE. MATERIALS SHALL NOT BE STORED DIRECTLY ON GROUND OR FLOOR AND SHALL BE KEPT CLEAN AND DRY, FREE FROM DETERIORATION BY ELEMENTS. DAMAGED MATERIALS SHALL NOT BE INSTALLED.

G. ALL EQUIPMENT AND MATERIALS SHALL BE SET LEVEL, PROPERLY ALIGNED, SECURED FIRMLY IN PLACE AND BOLTED TOGETHER WHERE IN SECTIONS, AND INSTALLED COMPLETE.

H. ALL OUTSIDE EXPOSED, VISIBLE MECHANICAL EQUIPMENT AND DEVICES SUCH AS GRILLES, PIPING, ETC. SHALL BE PAINTED TO MATCH SURROUNDING

TEXTURES AND COLOR AS REQUIRED BY ARCHITECT AND/OR OWNER. PAINT ALL OUTSIDE EXPOSED MECHANICAL EQUIPMENT WITH CORROSION PROTECTIVE PAINT WHENEVER NECESSARY OR REQUIRED, ALL EXPOSED FASTENERS SHALL BE STAINLESS STEEL OR CADMIUM PLATED. ALL FASTENING DEVICES SHALL BE MADE UP TIGHT.

I. FOLLOW INSTALLATION DIRECTIONS AND RECOMMENDATIONS OF MATERIAL AND EQUIPMENT MANUFACTURERS.

J. MATERIALS DAMAGED DURING INSTALLATION SHALL BE REPAIRED TO A NEW CONDITION OR SHALL BE REPLACED. FINISHES ON EQUIPMENT WHICH HAVE BEEN SCRATCHED OR MARRED SHALL BE TOUCHED UP TO MATCH ORIGINAL FINISH OR SHALL BE COMPLETELY REFINISHED.

K. ALL ENCLOSURES, ACCESS PANELS, CABINETS, FIXTURES AND ALL OTHER EXPOSED EQUIPMENT OR ACCESSORIES SHALL BE FACTORY PAINTED OR FINISHED EXCEPT AS INDICATED ON DRAWINGS.

L. GROUP MOUNTED ITEMS SHALL BE SIMILAR IN FINISH AND COLOR.

PART 3 EXECUTION

GENERAL:

A. CONTRACTOR MUST COMMENCE HIS WORK AS SOON AS BUILDING HAS SUFFICIENTLY ADVANCED IN CONSTRUCTION LAYOUT.

B. LOCATIONS OF EQUIPMENT AND PIPING MAY BE SHOWN ON DRAWINGS IN CERTAIN POSITIONS. CONTRACTOR SHALL BE GUIDED BY ARCHITECTURAL DETAILS AND CONDITIONS EXISTING AT JOB, CORRELATING THIS WORK WITH THAT OF OTHERS AND SHALL CAREFULLY EXAMINE ANY EXISTING CONDITIONS, EXISTING PIPING AND PREMISES AND COMPARE THE CONTRACT DOCUMENTS WITH EXISTING CONDITIONS.

C. LOCATION OF ELECTRICAL OUTLETS, PIPING, DUCTS, CEILING DIFFUSERS, ETC. SHALL BE COORDINATED BEFORE MATERIAL OR EQUIPMENT IS INSTALLED SO THAT THERE WILL BE NO INTERFERENCE. IN CASE ANY INTERFERENCE DEVELOPS, THE ARCHITECT/ENGINEER WILL DECIDE WHICH EQUIPMENT SHALL BE RELOCATED AT NO COST TO OWNER, REGARDLESS OF WHICH EQUIPMENT WAS INSTALLED FIRST.

D. CONTRACTOR SHALL CHECK ALL ELECTRICAL CONTROL CONNECTIONS OF EQUIPMENT FURNISHED UNDER THIS SECTION OF THE SPECIFICATIONS TO INSURE PROPER OPERATION OF EQUIPMENT.

E. CONTRACTOR SHALL VERIFY FIELD CONDITIONS PRIOR TO BIDDING, ORDERING, FABRICATION AND INSTALLATION OF MATERIALS AND EQUIPMENT AND SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF ARCHITECT AND ENGINEER.

F. SUBMITTAL OF BID SHALL INDICATE THE CONTRACTOR HAS INCLUDED ALL REQUIRED ALLOWANCE IN HIS BID. NO ALLOWANCE SHALL BE MADE FOR ANY ERROR RESULTING FROM CONTRACTOR'S FAILURE TO VISIT JOB SITE AND TO REVIEW DRAWINGS.

G. LAYOUT: WORK LINES AND ESTABLISHED HEIGHTS SHALL BE IN STRICT ACCORDANCE WITH PLANS AND SPECIFICATIONS. SET ALL SLEEVES, ANCHORS, BOLTS, AND/OR INSERTS BEFORE CONCRETE IS POURED.

H. ALL MATERIALS AND LABOR REGARDING SITE WORK, STRUCTURAL STEEL, WEATHER PROOFING, PAINTING, WALL AND ROOF OPENINGS, CUTTING, PATCHING, ETC. SHALL BE DONE BY THE GENERAL CONTRACTOR.

I. WATERPROOFING: WHERE WORK MUST PIERCE WATERPROOFING, IT SHALL BE DONE WITH CARE AND AFTER ITEM PIERCING WATERPROOFING HAS BEEN SET IN PLACE. THE OPENING MADE FOR THIS PURPOSE SHALL BE SEALED AND MADE ABSOLUTELY WATERPROOF.

J. BALANCING: ALL SYSTEMS UNDER THIS SECTION SHALL BE FULLY BALANCED BEFORE FINAL ACCEPTANCE TO ACHIEVE OPTIMUM PERFORMANCE CHARACTERISTICS. ALL WATER SYSTEMS SHALL BE FREE FROM WATER HAMMER UPON COMPLETION OF WORK.

K. PROVIDE CONNECTIONS TO ALL EQUIPMENT (INCLUDING KITCHENS) FURNISHED BY OWNER OR OTHER CONTRACTORS, INCLUDING MATERIALS AND NECESSARY APPURTENANCES REQUIRED TO COMPLETE THE INSTALLATION.

L. ALL OPENINGS IN BUILDING STRUCTURES FOR PASSING OF MECHANICAL DUCTWORK, PIPING, ETC. SHALL BE 1/2" LARGER ON ALL SIDES (OR AS REQUIRED FOR FIRE-STOPPING) THAN OUTSIDE DIMENSIONS OF PASSING ELEMENT. INTERSTITIAL VOIDS SHALL BE FILLED WITH FIRE RETARDANT MATERIAL AS MANUFACTURED BY "PYROSAFE", "THERMOFIRE", "3M" OR OTHER APPROVED MANUFACTURER.

M. CONTRACTOR SHALL UNDERCUT DOORS 1/2" (MAX. 50 CFM) TO PROVIDE REQUIRED VENTILATION FOR UTILITY ROOMS, STORAGE ROOMS, ELECTRICAL ROOMS, TOILETS, ETC. WHEN TRANSFER GRILLES OR DUCTS ARE NOT PROVIDED.

II. HEATING, VENTILATION AND AIR CONDITIONING

PART 1 GENERAL

WORK INCLUDED:

A. GENERAL REQUIREMENTS: THE GENERAL CONDITIONS AND PROVISIONS ARE HEREBY MADE A PART OF THIS SECTION OF THE SPECIFICATIONS.

B. WORK INCLUDED: THIS SECTION IS INTENDED TO DESCRIBE A COMPLETE SYSTEM OF AIR CONDITIONING, VENTILATING, AND ALL COMPONENTS THEREOF. SYSTEMS SHALL MEET REQUIREMENTS OF APPLICABLE CODES AND REGULATIONS AND SHALL BE COMPLETE IN EVERY RESPECT.

PROVISIONS:

A. THE FOLLOWING CODES AND REGULATIONS SHALL, IN ADDITION TO THOSE LISTED ABOVE, APPLY TO WORK AND SYSTEMS COVERED BY THIS SECTION.

- NFPA 90A & 90B -- AIR CONDITIONING AND VENTILATION SYSTEMS, LATEST ED.
- NFPA 91 -- BLOWER AND EXHAUST SYSTEMS, LATEST ED.
- NFPA 101 -- LIFE SAFETY CODE, LATEST ED.
- NFPA 703 -- FIRE RETARDANT TREATMENTS OF BUILDING MATERIALS.
- NFPA 255 -- BUILDING MATERIALS TEST OF SURFACE BURNING CHARACTERISTICS.
- MECHANICAL REFRIGERATION CODE.
- ASTM E8475 -- METHOD OF TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS
- UL -- 723.

B. ALL THERMOSTATS SHALL BE INSTALLED AS INDICATED ON PLANS OR AS REQUIRED/APPROVED BY OWNER AND ENGINEER. ALL THERMOSTATS SHALL BE INSTALLED AS PER THE A.D.A. CODE REQUIREMENTS WHERE APPLICABLE.

C. PROVIDE HIGH EFFICIENCY MOTORS WITH MATCHING NON- FUSIBLE DISCONNECT SWITCH TYPE COMBINATION MOTOR STARTERS (AS COORDINATED WITH ELECTRICAL CONTRACTOR) AS FOLLOWS, UNLESS OTHERWISE RECOMMENDED BY MOTOR OR EQUIPMENT MANUFACTURER: -- ACROSS THE LINE VOLTAGE STARTING BELOW 25 HP -- REDUCED VOLTAGE STARTING FROM 25 HP AND ABOVE -- OVERLOAD PROTECTION -- 1/3 HP AND ABOVE FOR ALL PHASES WHERE SPECIFIED. PROVIDE MOTORS WITH MATCHING VARIABLE FREQUENCY DRIVES FOR QUIET OPERATION. ALL STARTERS SHALL HAVE PHASE LOSS AND UNBALANCE PROTECTION.

## MECHANICAL SPECIFICATIONS

D. PROVIDE A MIN. OF 36" CLEARANCE IN FRONT OF ALL 120-208 VOLT PANELS AND 42" CLEARANCE IN FRONT OF ANY 240-480 VOLT PANELS WITH ADEQUATE SIDE CLEARANCE PER NEC REQUIREMENTS.

E. PROVIDE MIN. 10'-0" CLEARANCE BETWEEN OUTSIDE AIR INTAKES AND ANY EXHAUST OPENINGS. EQUIPMENT, ETC., COORDINATE WITH PREVAILING WIND DIRECTION FOR THE DESIGN AREA.

F. FOR ALL EXHAUST FANS PROVIDE BACK-DRAFT DAMPERS WITH TIGHT SEAL IF NOT OTHERWISE SPECIFIED ON SCHEDULES AND PLANS.

G. ALL MECHANICAL EQUIPMENT SHALL BE PROVIDED WITH VIBRATION ISOLATORS AS SPECIFIED ON SCHEDULES AND PLANS OR AS RECOMMENDED BY MANUFACTURER FOR NORMAL OPERATION WITHIN PRESCRIBED NOISE AND VIBRATION LIMITS.

H. PROVIDE FLEXIBLE CONNECTORS BETWEEN DISTRIBUTION SYSTEM AND AIR OR WATER MOVING EQUIPMENT: AHU'S, FANS, PUMPS, ETC.

I. OUTDOOR INSTALLED EQUIPMENT SHALL COMPLY WITH ALL LOCAL NOISE REGULATIONS AND ORDINANCES. IT SHALL NOT EXCEED A NOISE LEVEL OF 65 DECIBELS AS MEASURED RADIALLY 30 FEET FROM THE EQUIPMENT IN ALL DIRECTIONS. IF REQUIRED, PROVIDE ACOUSTIC INSULATION.

PRODUCT DELIVERY, STORAGE AND HANDLING

A. DELIVERY: DELIVER PRODUCTS TO JOB SITE IN THEIR ORIGINAL UNOPENED CONTAINERS CLEARLY LABELED WITH THE MANUFACTURER'S NAME AND BRAND DESIGNATION, REFERENCED SPECIFICATION NUMBER, TYPE, AND CLASS AS APPLICABLE.

B. STORAGE: STORE PRODUCTS IN AN APPROVED DRY AREA; PROTECT FROM CONTACT WITH SOIL AND FROM EXPOSURE TO THE ELEMENTS. KEEP PRODUCTS DRY AT ALL TIMES.

C. HANDLING: HANDLE PRODUCTS IN A MANNER THAT WILL PREVENT BREAKAGE OF CONTAINERS AND DAMAGE TO PRODUCTS.

PART 2 -- PRODUCTS

DX-SPLIT SYSTEM UNITS:

A. GENERAL: COOLING PERFORMANCE SHALL BE RATED IN ACCORDANCE WITH ARI TESTING PROCEDURE. ALL UNITS SHALL BE FACTORY ASSEMBLED, INTERNALLY WIRED, FULLY CHARGED WITH R-410A AND 100% RUN TESTED TO CHECK COOLING OPERATION, FAN AND BLOWER ROTATION AND CONTROL SEQUENCE BEFORE LEAVING THE FACTORY.

B. CASING: UNIT CASING SHALL BE CONSTRUCTED OF ZINC COATED, HEAVY GAUGE, GALVANIZED STEEL. ALL COMPONENTS SHALL BE MOUNTED IN WEATHER RESISTANT STEEL CABINET WITH A PAINTED EXTERIOR. CABINET CONSTRUCTION SHALL ALLOW FOR ALL MAINTENANCE ON ONE SIDE OF THE UNIT. THE INDOOR AIR SECTION SHALL BE COMPLETELY INSULATED WITH FIRE RESISTANT, PERMANENT, ODORLESS GLASS FIBER MATERIAL.

C. FILTERS: TWO INCH, THROWAWAY FILTERS SHALL BE STANDARD ON ALL UNITS.

D. COMPRESSORS: ALL UNITS SHALL BE DIRECT-DRIVE HERMETIC TYPE COMPRESSORS WITH OIL PUMP PROVIDING POSITIVE LUBRICATION TO MOVING PARTS. CRANKCASE HEATER, INTERNAL TEMPERATURE AND CURRENT SENSITIVE MOTOR OVERLOADS SHALL BE INCLUDED FOR MAXIMUM PROTECTION. THE UNITS SHALL HAVE INTERNAL SPRING ISOLATION AND SOUND MUFFLING TO MINIMIZE VIBRATION TRANSMISSION AND NOISE. LOW PRESSURE SWITCHES SHALL BE STANDARD.

E. REFRIGERANT CIRCUITS: EACH REFRIGERANT CIRCUIT SHALL HAVE INDEPENDENT THERMAL EXPANSION VALVES, SERVICE PRESSURE PORTS AND REFRIGERANT LINE FILTER DRIERS FACTORY-INSTALLED AS STANDARD. AN ACCESS AREA SHALL BE PROVIDED FOR REPLACEMENT OF SUCTION LINE DRIERS.

F. EVAPORATOR AND CONDENSER COILS: INTERNALLY FINNED COPPER TUBES MECHANICALLY BONDED TO CONFIGURED ALUMINUM PLATE FIN SHALL BE STANDARD. ON ALL MULTIPLE COMPRESSOR MODELS, THE EVAPORATOR COIL SHALL BE INTERTWINED CONFIGURATION OF FULL FACE ACTIVE DESIGN.

G. OUTDOOR FANS: THE OUTDOOR FAN SHALL BE DIRECT-DRIVE STATICALLY AND DYNAMICALLY BALANCED, DRAW THROUGH IN THE VERTICAL DISCHARGE POSITION. THE FAN MOTORS SHALL BE PERMANENTLY LUBRICATED AND HAVE BUILT-IN THERMAL OVERLOAD PROTECTION.

H. INDOOR FAN: UNITS SHALL HAVE DIRECT DRIVE, FC, CENTRIFUGAL FANS WITH ADJUSTABLE MOTOR SHEAVES. ALL MOTORS SHALL BE THERMALLY PROTECTED.

J. ACCESSORIES

1. ELECTRIC HEATERS -- ELECTRIC HEAT MODULES SHALL BE AVAILABLE FOR INSTALLATION WITHIN BASIC UNIT. ELECTRIC HEATER ELEMENTS SHALL BE CONSTRUCTED OF HEAVY DUTY NICKEL CHROMIUM ELEMENTS AND SHALL HAVE AUTOMATICALLY RESET HIGH LIMIT CONTROL OPERATING THROUGH HEATING ELEMENT CONTRACTORS. POWER ASSEMBLIES SHALL PROVIDE SINGLE-POINT CONNECTION. ELECTRIC MODULES SHALL BE UL LISTED OR CSA CERTIFIED

2. MOTORIZED OUTSIDE AIR DAMPERS -- OUTSIDE AIR DAMPERS SHALL FULLY CLOSE WHEN INDOOR FAN SHUTS DOWN.

SHEETMETAL DUCTWORK

A. DUCTWORK SHALL BE GALVANIZED SHEETMETAL WITH SEALED SEAMS AND JOINTS WITH EXTERNAL BLANKET INSULATION. PROVIDE PROTECTIVE JACKET & SEAL WHERE EXPOSED. THE HVAC CONTRACTOR SHALL PROVIDE ALL SHEETMETAL DUCTWORK, HANGERS, AUXILIARY SUPPORT STEEL, ETC. ALL FLEX DUCT SHALL BE RATED CLASS I, UL-181 LISTED WITH METALIZED INNER AND OUTER FOIL LINERS.

B. ALL METAL DUCTS SHALL BE FABRICATED IN ACCORDANCE WITH ALL RECOMMENDATIONS AND ILLUSTRATIONS IN THE LATEST ISSUE OF THE DUCT MANUAL AND SHEET METAL CONSTRUCTION FOR VENTILATING AND AIR CONDITIONING SYSTEMS BOOK, LOW & MEDIUM VELOCITY SYSTEMS, PUBLISHED BY SMACNA. EXCEPTIONS AND OPTIONS OF FABRICATION METHODS SHALL BE AS STATED HEREIN. FOR ANY ITEMS THAT ARE COVERED IN THIS PUBLICATION, USE THE RECOMMENDATIONS PUBLISHED IN THE LATEST EDITION OF THE GUIDE AND DATA BOOK OF THE AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS (ASHRAE).

C. DUCT GAUGES FOR SHEET METAL WORK SHALL CONFORM TO TABLES IN SMACNA MANUAL, EXCEPT NO PLAIN "S" OR HEMMED "S" WILL BE ALLOWED ON DUCTS OVER 16". LONGITUDINAL SEAMS SHALL BE OF PITTSBURGH LOCK.

D. ANGLE REINFORCEMENT SHALL BE ON 4 FOOT CENTERS FOR ALL DUCTS OVER 48 INCHES AND SHALL CONFORM TO TABLE 1. ANGLES SHALL BE LOCATED AT THE CENTER OF CROSS-BREAK ON ALL FOUR SIDES OF DUCT.

E. DUCT HANGERS SHALL BE AS PER SMACNA MANUAL. SHOOTING OF HANGERS SHALL NOT BE PERMITTED.

F. VOLUME DAMPERS WHICH ARE SHOWN OR REQUIRED SHALL BE AS DETAILED. VOLUME DAMPER TO BE COMPLETE WITH LOCKING QUADRANT SHOWING ALL POSITIONS. PROVIDE DAMPER INSULATION BRACKET EXTENSION.

G. TURNING VANES SHALL BE INSTALLED IN ALL BENDS OVER 45 DEGREES WHERE INSIDE RADIUS OF DUCT BEND OR DUCT SEGMENT BEND IS LESS THAN THE DIFFERENCE BETWEEN THE INSIDE AND OUTSIDE RADIUS. ANGLE DUCT BENDS SHALL NOT BE USED. TURNING VANES OVER 16" LONG SHALL BE DOUBLE THICKNESS AIR FOIL TYPE. ALL BENDS AND DUCT RAISES SHALL BE O.G. TYPE FITTINGS OR RADIUS ELBOWS.

H. SHEET METAL DUCT CONNECTIONS TO EACH VIBRATION ISOLATED EQUIPMENT ITEM SHALL BE MADE WITH FIREPROOF FLEXIBLE CONNECTIONS. FLEXIBLE CONNECTORS OUTDOORS SHALL BE NEOPRENE GLASS CLOTH REINFORCED FABRIC SECURELY FASTENED TO METAL CONNECTORS. INDOOR FLEXIBLE CONNECTIONS MAY BE GLASS FABRIC, TREATED HEAVY CANVAS FABRIC, SUITABLE FOR DUCT AIR PRESSURES WITH SECURELY ATTACHED METAL CONNECTORS.

I. DUCT SUPPORTS SHALL BE NOT LESS THAN THE SIZES IN THE FOLLOWING TABLE:

MAXIMUM DUCT DIMENSION	BAND SPACING	BAND SIZE
1 THRU 8"	8'-0"O.C.	18 GAUGE 1" WIDE
19 THRU 30"	8'-0"O.C.	16 GAUGE 1" WIDE
31 THRU 38"	6'-0"O.C.	1/8X1-1/2"

J. ALL DUCTS SHALL BE REINFORCED (CROSS-BROKEN OR BEADED) AS REQUIRED BY SMACNA.

K. VOLUME CONTROL DAMPERS: AT ALL POINTS WHERE BRANCH DUCTS TAKE OFF FROM A MAIN TRUNK DUCT OR WHERE A DUCT DIVIDES, FURNISH AND INSTALL AN ADJUSTABLE SPLITTER DAMPER OF GALVANIZED STEEL, SECURELY FASTENED TO A 3/8" SQUARE STEEL OPERATING ROD. WHERE INDICATED ON THE DRAWINGS, FURNISH AND INSTALL BUTTERFLY TYPE AND OPPOSED BLADE TYPE MANUAL VOLUME DAMPERS IN BRANCH DUCTS. FURNISH AND INSTALL INDICATING TYPE DAMPER REGULATORS FOR ALL MANUAL VOLUME AND SPLITTER DAMPERS. VOLUME DAMPERS USED WITH AUTOMATIC CONTROLS SHALL BE AS SPECIFIED HEREINAFTER.

FLEXIBLE DUCT

PROVIDE UL 181, CLASS 1 AIR DUCTS MANUFACTURED WITH A DOUBLE LAMINATION OF POLYESTER WHICH ENCAPSULATES A STEEL WIRE HELIX THAT IS THEN WRAPPED IN MULTIPLE THICKNESS OF FIBERGLASS INSULATION WITH A METALLIZED POLYESTER JACKET. MINIMUM R VALUE OF 6.0.

DUCTWORK INSULATION

A. AIR CONDITIONING SHEETMETAL DUCTS SHALL BE INSULATED WITH 2 INCH THICK, 1-1/2 POUND DENSITY (R-6) FIBERGLASS, DUCT INSULATION WITH A UL APPROVED FIRE RESISTING REINFORCED ALUMINUM FOIL VAPOR SEAL FACING. JOINTS SHALL BE SEALED WITH FIRE RESISTING MASTIC. DUCT TAPE IS NOT ACCEPTABLE.

B. MANUFACTURERS SHALL BE JOHNS-MANVILLE, OWENS-CORNING, ARMSTRONG OR APPROVED EQUAL.

C. PROVIDE INSULATION OVER CLEAN DRY SURFACES WITH JOINTS FIRMLY BUTTED TOGETHER. FOR PRESIZED GLASS CLOTH OR VAPOR BARRIER JACKETS, LONGITUDINAL LAP SHALL OVERLAP NOT LESS THAN 1-1/2 INCH. BUTT JOINTS SHALL BE WRAPPED WITH A 3 INCH WIDE STRIP OF THE SAME MATERIAL AS JACKET.

D. INSULATION SHALL BE AS SPECIFIED HEREIN AND AS PER MANUFACTURER'S RECOMMENDATIONS.

E. INSULATION SHALL NOT BE APPLIED UNTIL THE ENTIRE SYSTEM HAS BEEN TESTED AND APPROVED.

F. INSULATION SHALL HAVE A FIRE/SMOKE RATING LESS THAN 25/50.

G. VAPOR BARRIER SHALL BE INTACT AND CONTINUOUS. USE GLASS CLOTH AND MASTIC FOR VAPOR BARRIER SEALANT. THE USE OF TAPE IS NOT PERMITTED.

H. DUCT TAPE OR INTERNAL DUCT LINER INSULATION IS NOT PERMITTED.

EXHAUST FANS

A. GENERAL: PROVIDE DIRECT DRIVE CENTRIFUGAL FANS OF QUANTITIES, SIZES, ARRANGEMENTS, AND TYPES AS INDICATED ON THE DRAWINGS, AS SCHEDULED AND SPECIFIED.

B. COMPLETE FAN UNITS: PROVIDE FACTORY DESIGNED, ASSEMBLED, AND TESTED FANS, EACH CONSISTING OF A HOUSING, FANWHEEL, SHAFT, BEARINGS, STRUCTURAL SUPPORTS, MOTOR, AND ACCESSORIES SPECIFIED OR SCHEDULED.

C. HOUSINGS: PROVIDE HEAVY GAUGE ALUMINUM HOUSINGS WITH EXTERNAL FASTENERS OF STAINLESS STEEL. ALL OTHER PARTS SHALL BE ZINC PLATED AND CHROMATE TREATED STEEL TO PREVENT CORROSION.

D. WHEELS: PROVIDE SINGLE WIDTH, SINGLE INLET CENTRIFUGAL WHEELS ON ALL FANS, AS SCHEDULED.

- PROVIDE FORWARD CURVED ALUMINUM WHEELS.
- STATICALLY AND DYNAMICALLY BALANCE ALL WHEELS.

E. MOTORS: PROVIDE A NO OPEN DRIP-PROOF TEFC MOTOR.

F. PROVIDE NON-FUSED DISCONNECT SWITCH COMPLETE WITH FACTORY WIRING AND MOUNTING.

G. PROVIDE VIBRATION ISOLATION HANGERS AND FLEXIBLE CONNECTIONS.

AIR DISTRIBUTION PRODUCTS:

A. AIR DISTRIBUTION PRODUCTS: GRILLES, REGISTERS AND DIFFUSERS SHALL BE THE PRODUCTS OF ONE MANUFACTURER, SIZES AND PATTERNS INDICATED ON THE DRAWINGS AND SCHEDULES. EQUIVALENT MODELS AND UNITS ARE AS MANUFACTURED BY : PRICE, KRUEGER, TUTTLE & BAILEY, OR METALAIR, MEETING THE SAME PERFORMANCE SOUND AND DIFFUSION CHARACTERISTICS, EACH OUTLET TO BE SIZED IN ACCORDANCE WITH MAXIMUM AND MINIMUM AIR VOLUME, THROW, PRESSURE DROP, SOUND (MAXIMUM NC RATING PER SCHEDULE) AND TERMINAL VELOCITY OF THE OUTLET USED. DIFFUSERS, GRILLES AND REGISTERS SHALL BE CONSTRUCTED ENTIRELY OF ALUMINUM WITH CLEAN ACRYLIC LACQUER FINISH (COLOR SUBJECT TO ARCHITECT'S APPROVAL).

B. CEILING DIFFUSERS SHALL BE AS SCHEDULED WITH OPPOSED BLADE DAMPER KEY OPERATED THROUGH FACE OF REGISTER OR AS APPROVED, WITH FRAME TYPE COMPATIBLE WITH CEILING TYPE.

C. RETURN REGISTERS SHALL BE AS SCHEDULED OR AS APPROVED WITH SINGLE DEFLECTION BLADES AND OPPOSED BLADE DAMPER OPERABLE THRU FACE OF REGISTER. FRAME TYPE COMPATIBLE WITH CEILING TYPE. MINIMUM 70% FREE AREA.

E. FIRE DAMPERS: PROVIDE FIRE DAMPERS CONFORMING TO THE REQUIREMENTS OF NFPA 90A AND UL LISTED, LABELED AND RATED 1-1/2 HOURS. PROVIDE FUSIBLE LINKS 165°F, VIBRATION PROOF AND SECURED WITH CLINCHED "S" HOOKS OR STAINLESS STEEL BOLTS AND LOCK NUTS. ALL FIRE DAMPERS SHALL HAVE THE BLADES OUT OF THE AIR STREAM (TYPE B FIRE DAMPERS) EXCEPT FIRE DAMPERS LOCATED AT WALL GRILLES. THESE DAMPERS SHALL BE TYPE.

F. ACCESS DOORS: FURNISH AND INSTALL ACCESS DOORS IN DUCTS AT ALL CONTROLS, FIRE DAMPERS, OR OTHER APPARATUS TO PERMIT INSPECTION, OPERATION AND MAINTENANCE. PROVIDE DOUBLE PANEL INSULATED ACCESS DOORS FABRICATED OF MINIMUM 20 GAUGE METAL IN INSULATED DUCTS. PROVIDE SINGLE PANEL DOORS FABRICATED OF MINIMUM 18 GAUGE GALVANIZED METAL IN UN-INSULATED DUCTS. AIR DUCT SERVICE OPENINGS SHALL BE SIZED AND LABELED IN ACCORDANCE WITH NFPA 90A.

AUTOMATIC TEMPERATURE CONTROLS:

A. ALL CONTROLS SHALL BE INSTALLED, TESTED AND CALIBRATED BY THE CONTROL COMPANY, AS SPECIFIED ON PLANS.

B. PROVIDE NEW HONEYWELL T8 PRO SERIES HP/CONVENTIONAL THERMOSTAT. THERMOSTAT SHALL BE COOLING-HEATING COMBINATION OF STAGES MATCHING THE AIR CONDITIONING EQUIPMENT, WITH "COOL-AUTO-HEAT-OFF" AND FAN "AUTO-ON-OFF" SELECTOR SWITCHES. PROVIDE TAMPERPROOF COVER.

TESTING AND BALANCING:

GENERAL:

A. MECHANICAL CONTRACTOR SHALL PROVIDE AN INDEPENDENT TEST AND BALANCE OF ALL MECHANICAL EQUIPMENT (AHU'S, FANS, ETC.), AIR DISTRIBUTION DEVICES (DIFFUSERS, GRILLES, REGISTERS, EXTRACTORS, DAMPERS, ETC.) TO ACHIEVE THE DESIGN QUANTITIES AND FLOW RATES AS NOTED ON THE PLANS AND SCHEDULES. THE SUBMITTED T & B REPORT SHALL BE IN ACCORDANCE WITH THE AIR BALANCE COUNCIL STANDARDS INCLUDING, BUT NOT LIMITED TO, AIR AND WATER FLOW QUANTITIES AND TEMPERATURES AND SHALL BE SIGNED AND SEALED BY A STATE REGISTERED PROFESSIONAL ENGINEER. CONTRACTOR SHALL PROVIDE ALL DEVICES AND ACCESSORIES AS NECESSARY FOR FINAL BALANCING OF ALL SYSTEMS FOR PROPER OPERATION TO THE SATISFACTION OF OWNER AND ENGINEER.

B. TESTING AND BALANCING OF AIR CONDITIONING SYSTEMS AS DESCRIBED IN THIS SECTION SHALL NOT BE PERFORMED UNTIL ALL SYSTEM COMPONENTS HAVE BEEN INSTALLED INCLUDING CONTROL DEVICES.

C. AFTER COMPLETION OF TESTS, 1 COPY OF A TEST REPORT INCLUDING PROCEDURES, METHODS AND RECORDED RESULTS SHALL BE DELIVERED TO THE ARCHITECT/ENGINEER ELECTRONICALLY.

AIR BALANCING:

A. THE CONTRACTOR SHALL PERFORM THE FOLLOWING, TEST AND BALANCE OF THE SYSTEM IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS (PROVIDE WRITTEN SUBSTANTIATING DATA).

B. AIR VOLUME AND VELOCITIES: DETERMINE AND TABULATE AT EACH GRILLE, DIFFUSER, LOUVER, ETC. AND ADJUST DAMPERS, AND CONTROL DEVICES TO OBTAIN THE INDICATED AIR QUANTITIES. ADJUST OR MODIFY EACH SUPPLY GRILLE AND DIFFUSER DISTRIBUTION PATTERN AS REQUIRED TO MAINTAIN AIR MOTION, NOISE LEVEL AND TEMPERATURE VARIATIONS WITHIN ACCEPTABLE LIMITS THROUGHOUT EACH SPACE. CLEARLY AND PERMANENTLY MARK ALL DAMPERS AT FINAL SETTING FOR REPORTED AIR BALANCE.

C. SYSTEM COMPONENT CAPACITY: RECORD AND CALCULATE ALL DATA NECESSARY TO DEMONSTRATE CAPACITY UNDER ACTUAL OPERATING CONDITIONS, AND ADJUST DAMPERS, TO OBTAIN A SUITABLE OPERATING BALANCE FOR RECORD DATA FOR EACH ITEM OR EQUIPMENT, TOGETHER WITH COINCIDENT OUTSIDE AIR DRY BULB AND WET BULB TEMPERATURES, TO PERMIT EVALUATION OF TOTAL SYSTEM PERFORMANCE. DATA TO INCLUDE THE FOLLOWING:

- SUPPLY AND RETURN AIR QUANTITIES FOR EACH AIR GRILLE.
- ENTERING AND LEAVING AIR DRY BULB AND WET BULB TEMPERATURE
- TEST AND ADJUST EACH GRILLE REGISTER TO WITHIN PLUS 10 PERCENT (10%) OR MINUS ZERO PERCENT (0%).
- IN READING AND TEST OF DIFFUSERS, GRILLES AND REGISTERS, INCLUDE REQUIRED FPM VELOCITY, AND REQUIRED CFM AFTER ADJUSTMENTS.

TEMPERATURE MEASUREMENT:

A. SET ADJUSTMENTS OF ALL INSTALLED CONTROLLERS TO OPERATE AS INDICATED. MAKE 4 HOUR TEMPERATURE TRAVERSE OF EACH AREA OR ZONE. PROVIDE TESTING AGENCY PERSONNEL WITH INSTRUMENTS TO VERIFY REPORTS TO ARCHITECT/ENGINEER.

B. TESTS SHALL BE CONDUCTED BY USING AIR MEASURING DEVICES INSTALLED IN MAIN SUPPLY AND BRANCH DUCTS AS SHOWN ON DRAWINGS, AND A PORTABLE INCLINED METER. AIR FLOW AT OUTLETS SHALL BE MEASURED WITH AN AIR FLOW MEASURING CONE. DUCT AND OUTLET AIR FLOW MEASURING DEVICES AS MANUFACTURED BY AIR MONITOR CORP. OR EQUAL. THE RESULTS OF THESE TESTS SHALL BE SUCH THAT THE TOTAL SUM OF AIR SHALL BE WITHIN THE PRESCRIBED LIMITS OF THE TOTAL SHOWN ON THE SCHEDULES FOR THE PARTICULAR SYSTEM.

INSTRUCTIONS TO OWNER:

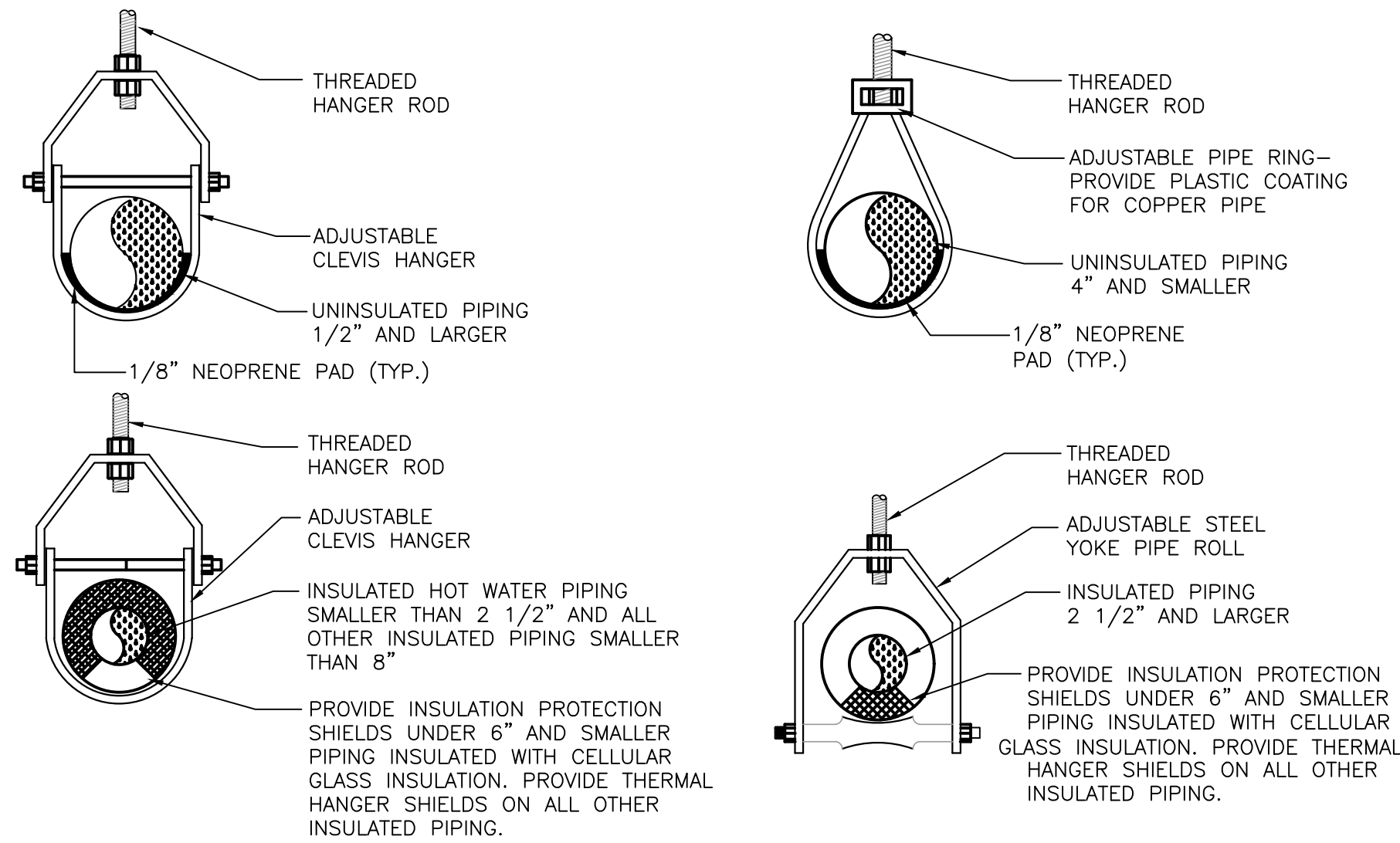
A. THE AIR CONDITIONING SUB CONTRACTOR SHALL DEMONSTRATE THAT ALL SYSTEMS ARE FUNCTIONAL DURING THE HEATING AND COOLING SEASONS, IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS, AND SHALL INSTRUCT THE OWNER OR HIS REPRESENTATIVE IN THE OPERATION OF THE SYSTEMS.



**ttv architects, inc.**  
115 EAST FORTSYTH ST  
JACKSONVILLE, FLORIDA 32202  
F 904.798.8335  
www.ttvarch.com  
FL Lic#AA0002609

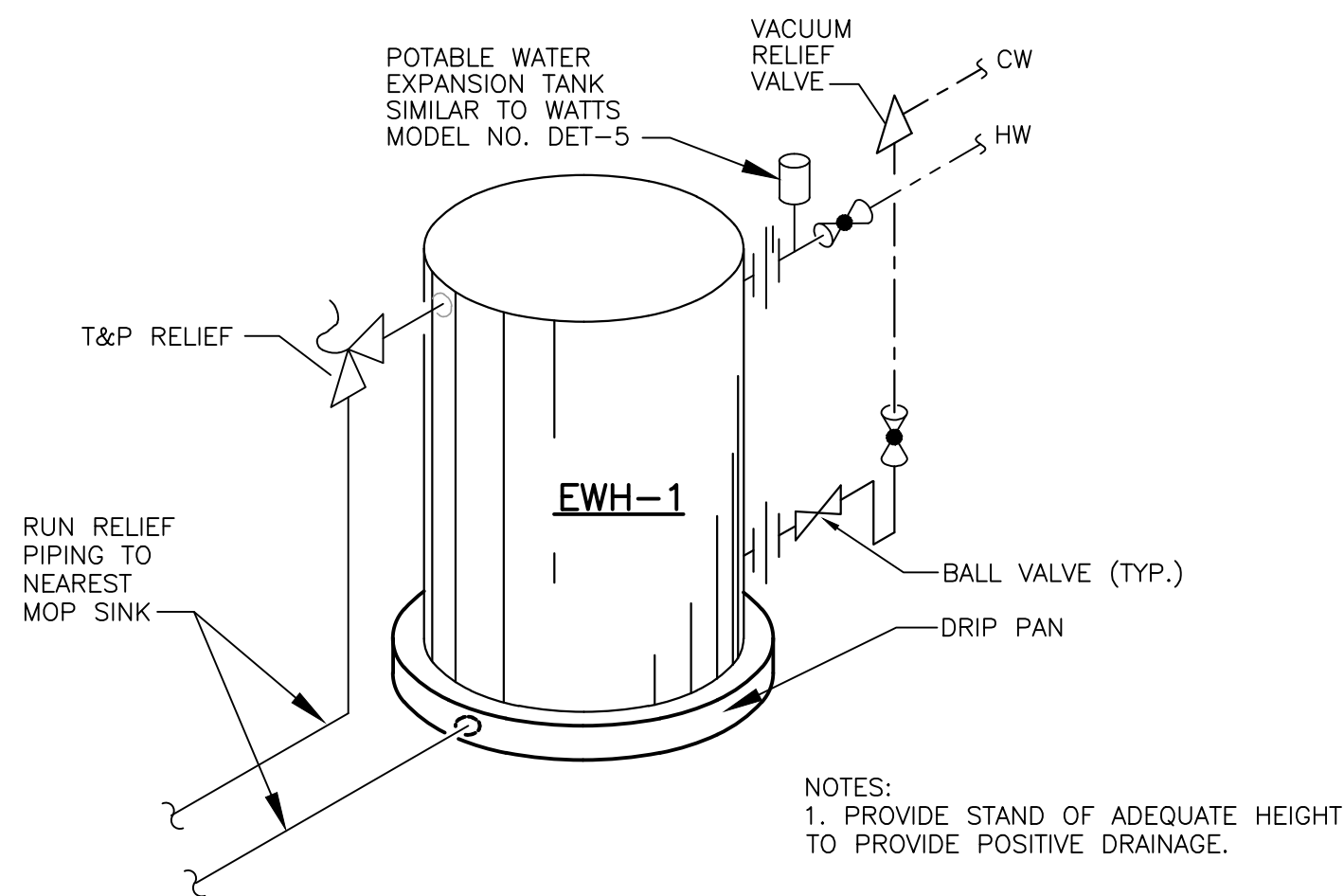
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PIPE HANGER DETAILS  
NOT TO SCALE

1  
P1.0



WATER HEATER DETAIL  
NOT TO SCALE

2  
P1.0

BASIS OF DESIGN

- WC-1 WATER CLOSET 1.6 GPF (FLOOR MOUNTED, FLUSH VALVE, HANDICAPPED) AMERICAN STANDARD HURON MODEL 3312.001 WITH ELONGATED FRONT, CHURCH MODEL 9500-SSC WHITE SOLID PLASTIC SEAT WITH STAINLESS STEEL SELF-SUSTAINING CHECK HINGE, SLOAN ROYAL 111-1.28YO FLUSH VALVE WITH WITH ATMOSPHERIC VACUUM BREAKER, BUMPER ON ANGLE STOP, AND CHROME FINISHED SUPPLY TUBE.
- LAV-1 LAVATORY (WALL HUNG, SINGLE LEVER FAUCET, HANDICAPPED) AMERICAN STANDARD MODEL 0355.012 LUCERNE WITH 4" FAUCET CENTER. PROVIDE RUBBERMAID FAUCET MODEL 1782742 MILANO IN POLISHED CHROME USING 120V POWER. PROVIDE STRAINER DRAIN WITH TAILPIECE AND BOCA FLOW REGULATORS FOR 1/2" GPM, ANGLE STOPS WITH LOOSE KEYS, ANNEALED CHROME PLATED VERTICAL COPPER SUPPLY TUBES AND 1-1/4" CAST BRASS P-TRAP AND TUBING OUTLET. PROVIDE ZURN MODEL Z-1231 CONCEALED ARM MOUNTING KIT. MOUNTING HEIGHT AS INDICATED ON THE ARCHITECTURAL DRAWINGS. PROVIDE TRUEBRO MODEL NUMBER 102W INSULATION KIT. FURNISH WITH LEONARD 170LF THERMOSTATIC MIXING VALVE.
- UR-1 URINAL (WALL HUNG, HANDICAPPED) AMERICAN STANDARD MODEL 6541.132 ALLBROOK, SIPHON JET TYPE WITH 3/4" TOP SPUD. PROVIDE SLOAN REGAL 186-1 FLUSH VALVE, ZURN MODEL Z-1221 ADJUSTABLE CARRIER, MOUNTING HEIGHT AS INDICATED ON THE ARCHITECTURAL DRAWINGS.
- EWH-1 ELECTRIC TANK TYPE WATER HEATER - PROVIDE RHEEM MODEL NO. XE10P060U20U0. 10 GALLON TANK WITH 2 KW HEATING ELEMENT AT 120V.
- S-1 SINK INTEGRAL WITH COUNTER. PROVIDE T&S BRASS B-2866-05-FC15 GOOSENECK FAUCET. PROVIDE STRAINER DRAIN WITH TAILPIECE AND BOCA FLOW REGULATORS FOR 1/2" GPM, ANGLE STOPS WITH LOOSE KEYS, ANNEALED CHROME PLATED VERTICAL COPPER SUPPLY TUBES AND 1-1/4" CAST BRASS P-TRAP AND TUBING OUTLET. FURNISH WITH LEONARD 170LF THERMOSTATIC MIXING VALVE.
- FD-1 FLOOR DRAIN ZURN MODEL Z-415S-P CAST IRON FLOOR DRAIN WITH FLANGE, TYPE S STRAINER, with RECTORSEAL
- TP TRAP PRIMER - ZURN MODEL TP2923-PC - MOUNT UNDER SINK. TRAP PRIMER PIPING TO BE PROTECTED WHEN IT PENETRATES THE FLOOR WITH A SLEEVE THAT EXTENDS AT LEAST 6" UP FROM FLOOR.

PLUMBING LEGEND

- WASTE PIPING  
VENT PIPING  
COLD WATER PIPING  
HOT WATER PIPING  
HOT WATER RECIRCULATION PIPING  
BALL VALVE  
CHECK VALVE  
UNION  
CW COLD WATER PIPING  
HW HOT WATER PIPING

PLUMBING GENERAL NOTES


- THE DRAWINGS ARE PARTLY DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW IN DETAIL ALL FEATURES OF THE WORK. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THESE SPECIFICATIONS, THE DRAWINGS AND LOCAL GOVERNING CODES.
- CONTRACTORS SHALL REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
- CONTRACTOR SHALL VISIT SITE AND VERIFY EXISTING ITEMS PRIOR TO BIDDING AND ADVISE ARCHITECT OF ANY DISCREPANCIES.
- ITEMS SHOWN AS PROVIDED UNDER ANOTHER DIVISION SHALL BE CONNECTED IN THIS WORK. OBTAIN EXACT ROUGH-IN INFORMATION BEFORE CONSTRUCTION ON ALL ITEMS REQUIRING PLUMBING CONNECTIONS.
- ALL CUTTING & PATCHING OF EXISTING FLOORS, WALL, CEILINGS, ETC. SHALL BE COORDINATED BY THE GENERAL CONTRACTOR OR AT HIS DIRECTION. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN UP AFTER EACH SESSION.
- THE WORK UNDER THIS SECTION OF THE SPECIFICATIONS INCLUDES ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY TO COMPLETE THE PLUMBING SYSTEM AS SHOWN ON THE DRAWINGS & HEREIN SPECIFIED. ALL WORK SHALL BE DONE IN A WORKMANLIKE MANNER IN ACCORDANCE WITH GOOD PRACTICE, MANUFACTURER'S RECOMMENDATIONS AND THE DEPARTMENT OF PUBLIC HEALTH.
- FURNISH (1) ONE YEAR SERVICE AND GUARANTEE ON ALL LABOR, MATERIALS AND EQUIPMENT.
- OFFSET PIPING TO AVOID STRUCTURAL MEMBERS, CANTS, FLASHINGS, MECHANICAL AND ELECTRICAL, EQUIPMENT, ETC.
- ALL VENTS THRU ROOF SHALL BE INSTALLED A MINIMUM OF 10'-0". FROM ALL FRESH AIR INTAKE TO AIR HANDLING EQUIPMENT AND OFFSET MINIMUM OF 3'-0" FROM EDGE OF ROOF LINE AND PARAPETS.
- INDIRECT WASTE PIPING FROM EQUIPMENT, WHICH PRODUCES A COLD WASTEWATER, (SUCH AS ICE MACHINES, COOLING COIL, DRAIN PANS, ETC.) SHALL BE INSULATED WITH 3/8" ARMAFLEX INSULATION. SEAL ALL LONGITUDINAL AND BUTT JOINTS WITH ADHESIVE APPROVED BY THE INSULATION MANUFACTURER.
- PROVIDE FLEX-LINE FOR FINAL CONNECTIONS TO EQUIPMENT ITEMS.
- ALL TESTING & STERILIZATION SHALL COMPLY W/LOCAL GOVERNING CODES & RECOMMENDATION OF THE AMERICAN WATER WORKS ASSOC. ALL PLUMBING TESTS SHALL BE WITNESSED BY THE PLUMBING INSPECTOR, AND A COPY OF THE DISINFECTION REPORT SHALL BE PROVIDED TO THE PLUMBING INSPECTOR.
- PROVIDE CHROME PLATED ESCUTCHEON PLATES FOR ALL EXPOSED PIPE PASSING THRU WALLS, FLOORS, OR CEILINGS. ALL EXPOSED PIPING AND FITTINGS SHALL BE CHROME PLATED AS WELL.
- ALL PIPING PENETRATIONS THRU FIRE RATED WALL SHALL BE SEALED WITH FIRE BARRIER CAULK (3M OR EQUAL).
- HOT & COLD WATER SUPPLIES TO EACH INDIVIDUAL OR GROUP OF PLUMBING FIXTURES SHALL BE FITTED WITH AIR CHAMBERS OF AMPLE SIZE TO PREVENT WATER HAMMER. AIR CHAMBERS SHALL NOT BE LESS THAN 12" LENGTH. WATER HAMMER ARRESTORS, ZURN SHOKTROL SIZED AND INSTALLED PER MANUFACTURER'S RECOMMENDATION, WILL ALSO BE ACCEPTABLE.
- PIPE HANGERS SHALL BE ADJUSTABLE TEARDROP TYPE HANGER AND RODS. GRINNELL OR EQUAL.
- PROVIDE ALL STOPS, TRAPS, ESCUTCHEONS, CONNECTIONS, CARRIERS, ETC., FOR ALL FIXTURES AS NECESSARY TO COMPLETE THE INSTALLATION OF EACH FIXTURE, WHETHER SUCH ITEMS ARE LISTED OR NOT.
- ALL FURNISHED EXPOSED FAUCETS, TRAPS CONNECTING PIPING, STOPS AND OTHER FIXTURE TRIM SHALL BE CHROME-PLATED BRASS UNLESS OTHERWISE SPECIFIED. ALL FASTENING SHALL BE CHROME-PLATED BRASS OR MAY BE 302 STAINLESS STEEL IF OF MATCHING COLOR AND FINISH.
- GENERAL CONTRACTOR SHALL HIRE A SURVEY/LOCATOR COMPANY TO LOCATE/IDENTIFY ALL UNDERGROUND PIPING, ETC.
- ALL FITTINGS SHALL BE INSTALLED BY NO LESS THAN A JOURNEYMAN LEVEL PLUMBER.
- NO HORIZONTAL DOUBLE-WYE FITTINGS ARE ACCEPTABLE.
- PROVIDE TRAP PRIMER CONNECTIONS ON ALL HUB DRAINS. ATTACH TRAP PRIMERS ON NEAREST SINK. SEE DETAIL.
- ALL WATER OUTLETS MUST TERMINATE A MINIMUM OF 1" OR TWICE THE DIAMETER OF THE OUTLET (WHICHEVER IS GREATER) ABOVE THE RIM OF THE BASIN WHICH THE OUTLET DISCHARGES INTO.

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**ttv architects, inc.**  
115 EAST FORSYTH ST  
JACKSONVILLE, FLORIDA 32202  
T 904.798.8335  
F 904.798.8335  
www.ttvarch.com  
FL Lic#AA0022609

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**HADDAD ENGINEERING INC.**  
ELECTRICAL   MECHANICAL  
3885 HAWLEY ROAD, SUITE 205  
JACKSONVILLE, FLORIDA 32207  
904.842.9068  
CERTIFICATE OF AUTHORIZATION NO. 4000  
SUZANNE LEVISEUR P.E. - LICENSE NO. 36120

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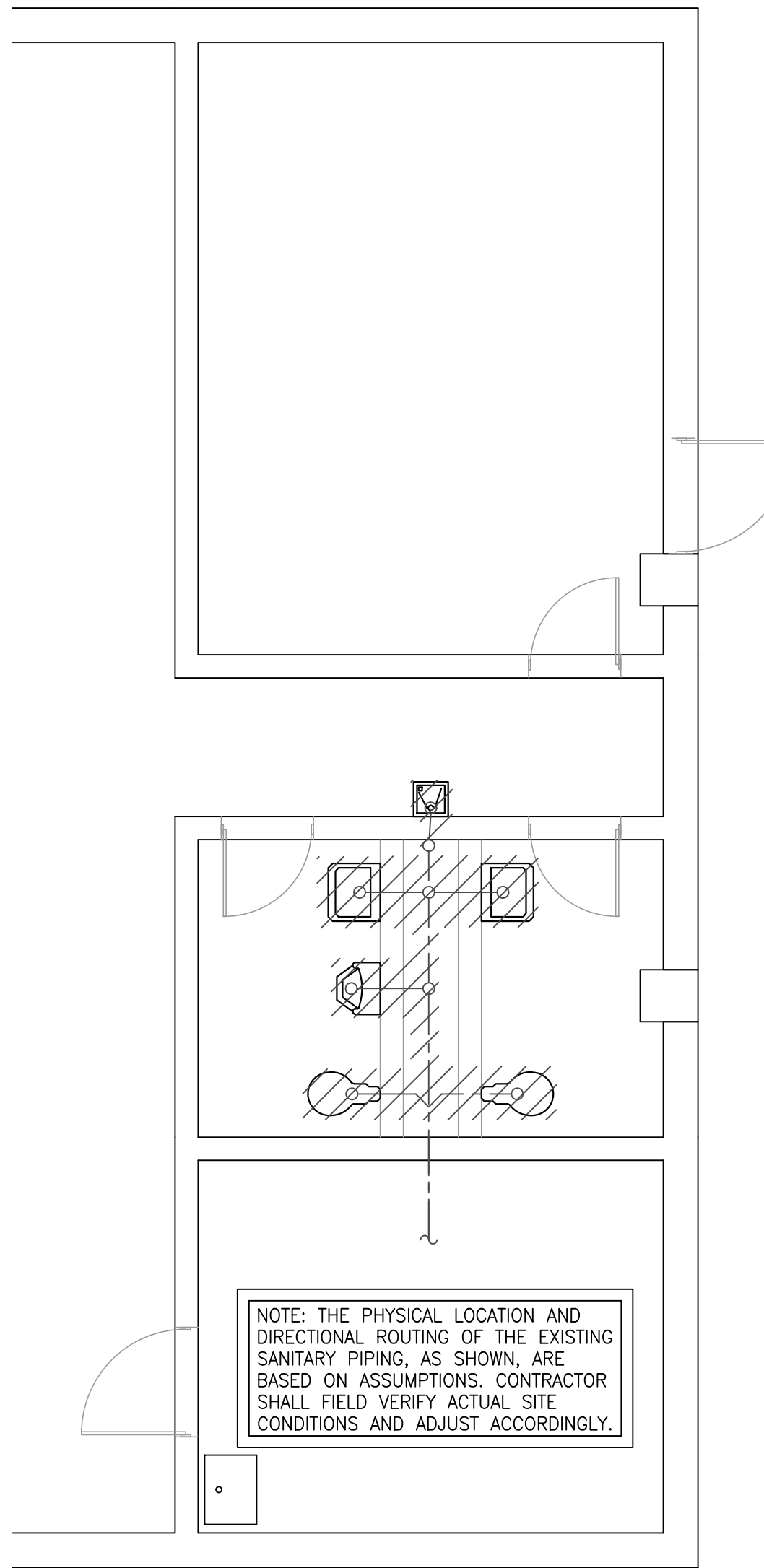
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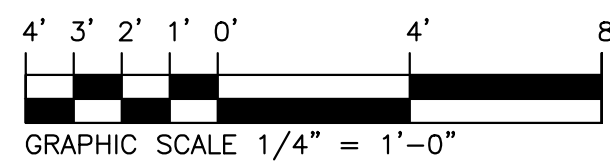
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PLUMBING NOTES,  
DETAILS AND LEGEND

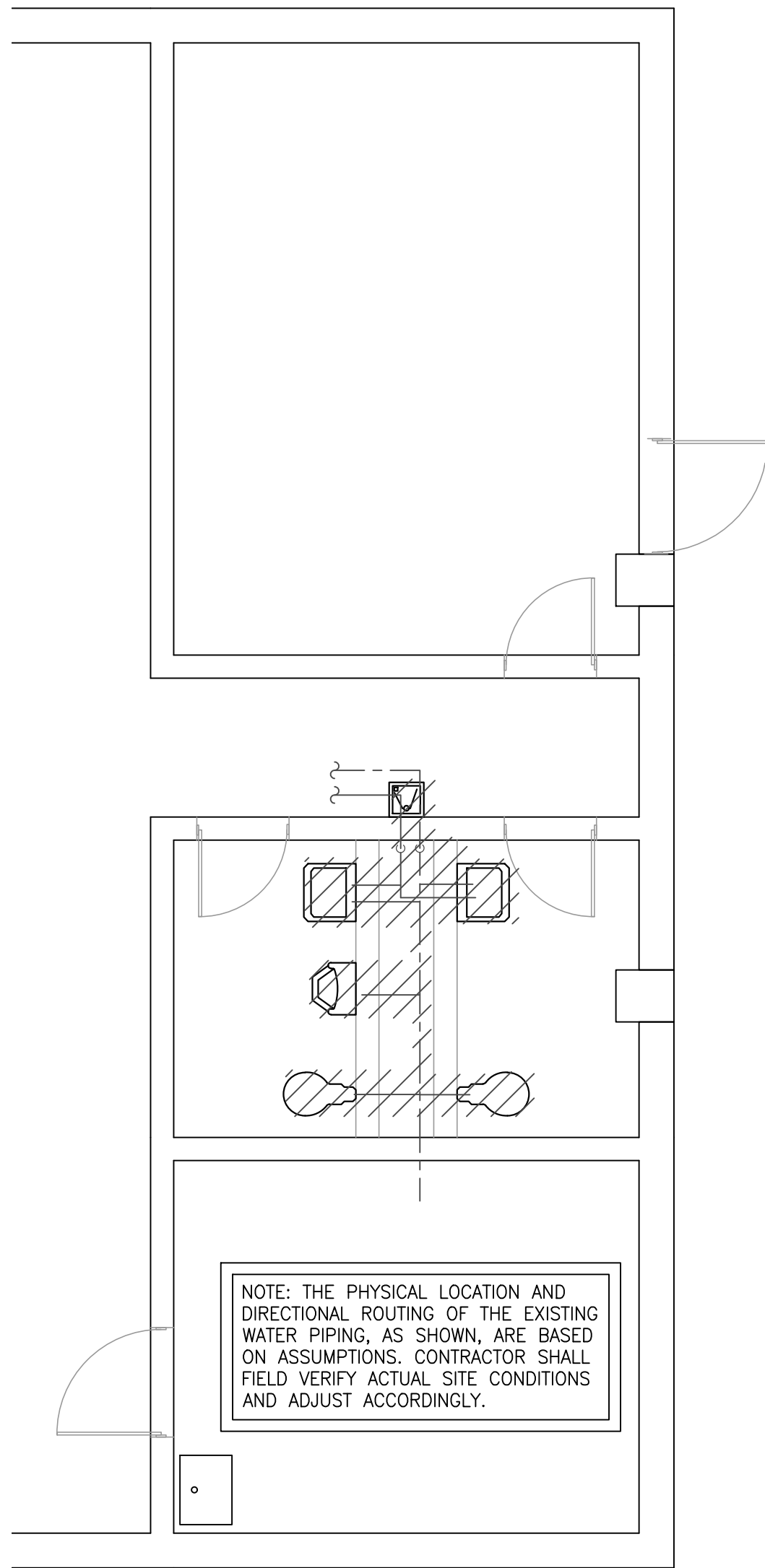
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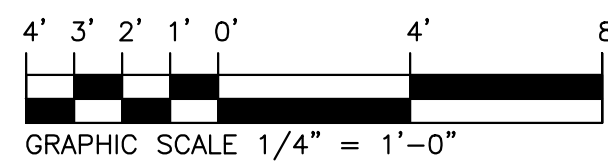
EXISTING FLOOR PLAN - SANITARY



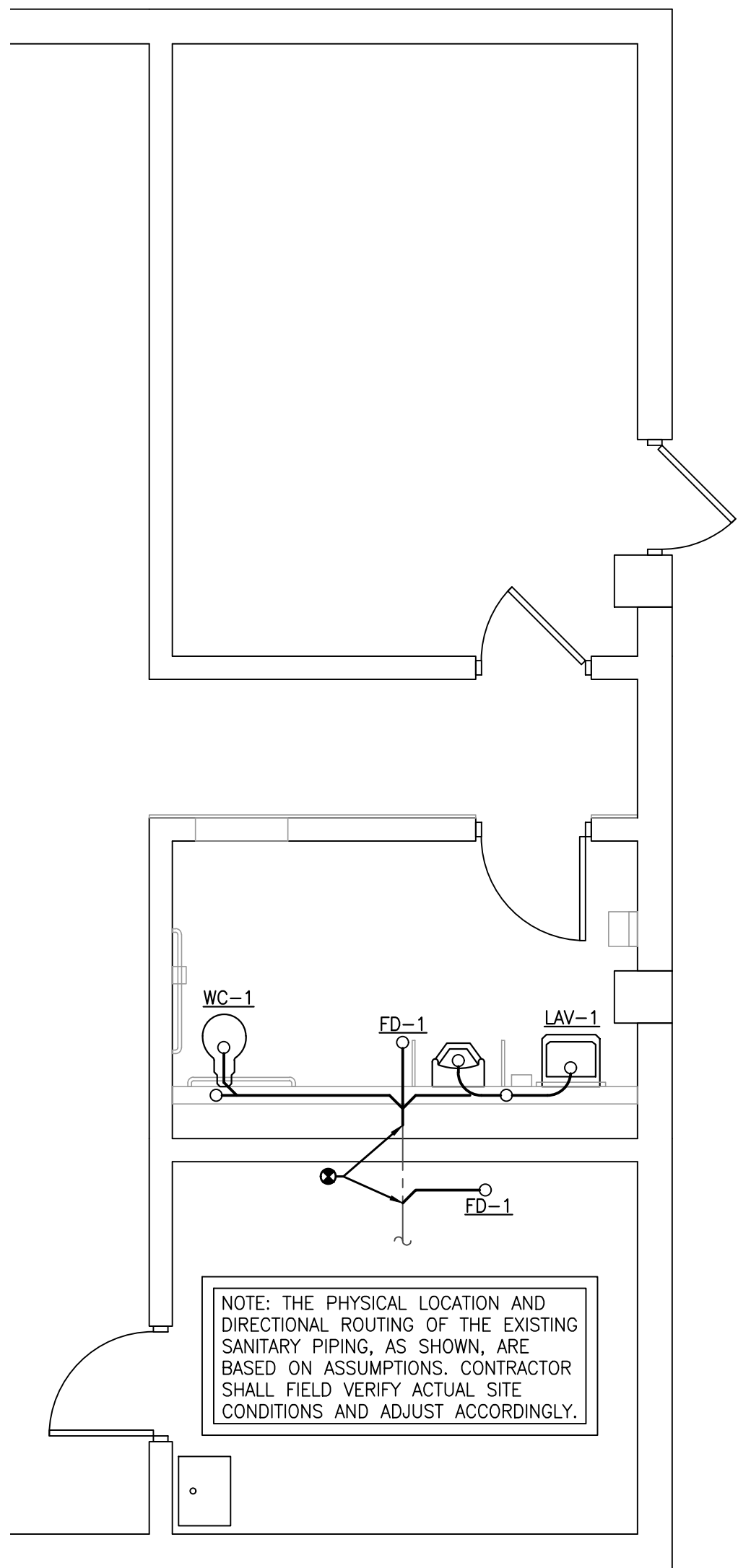
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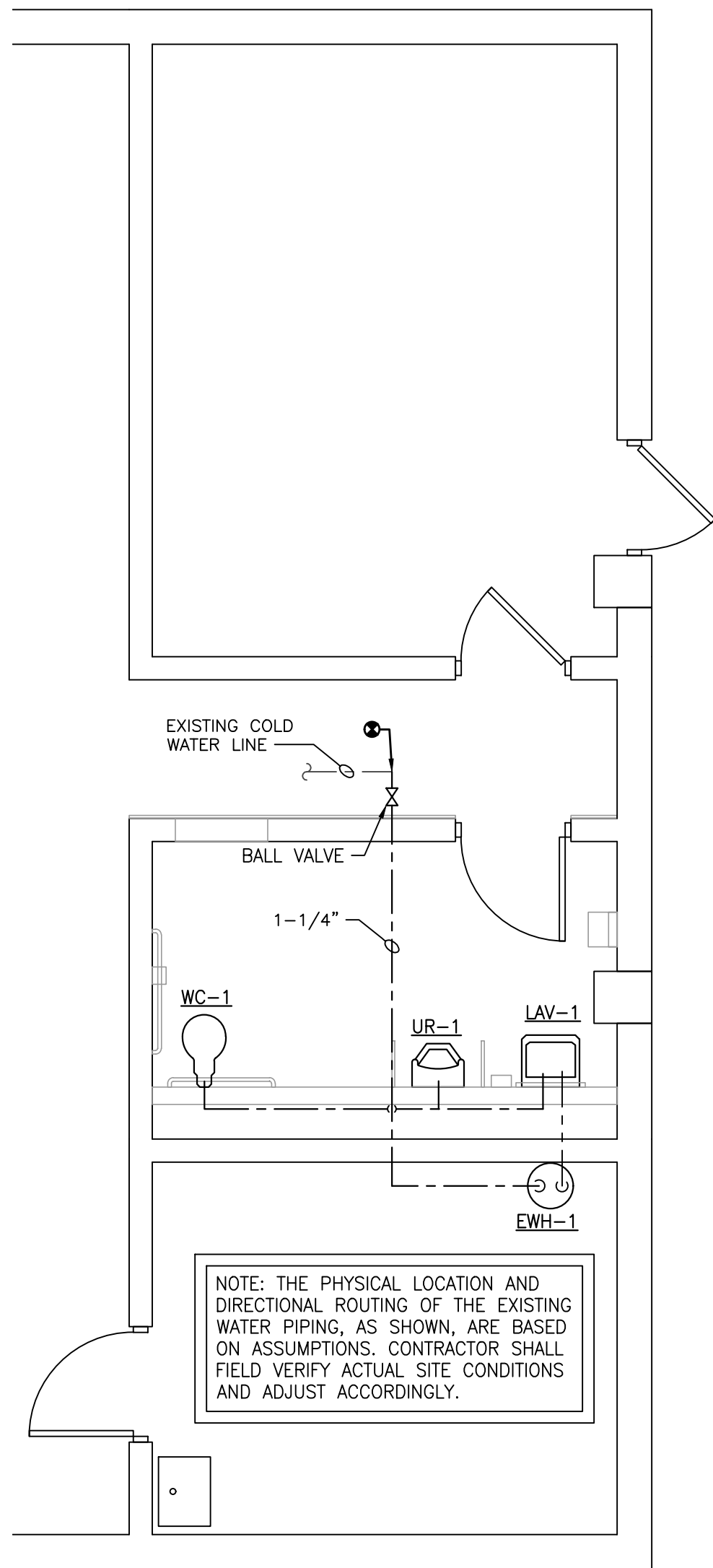
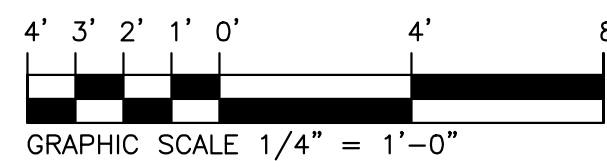
EXISTING FLOOR PLAN - DOMESTIC WATER



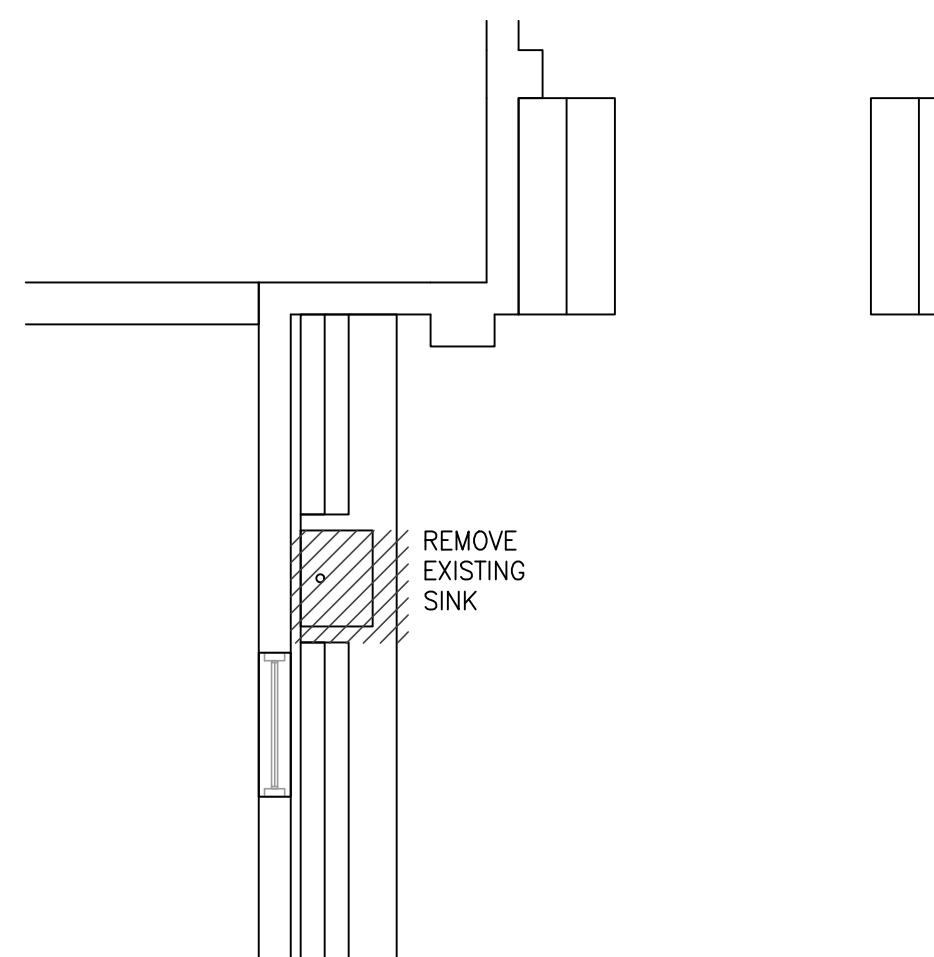
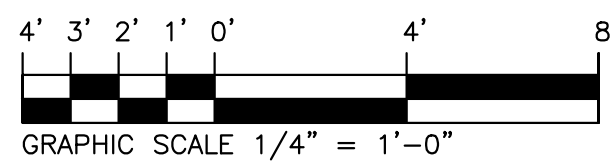
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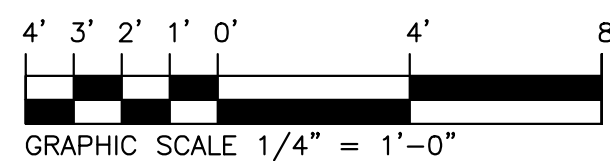
NEW FLOOR PLAN - SANITARY



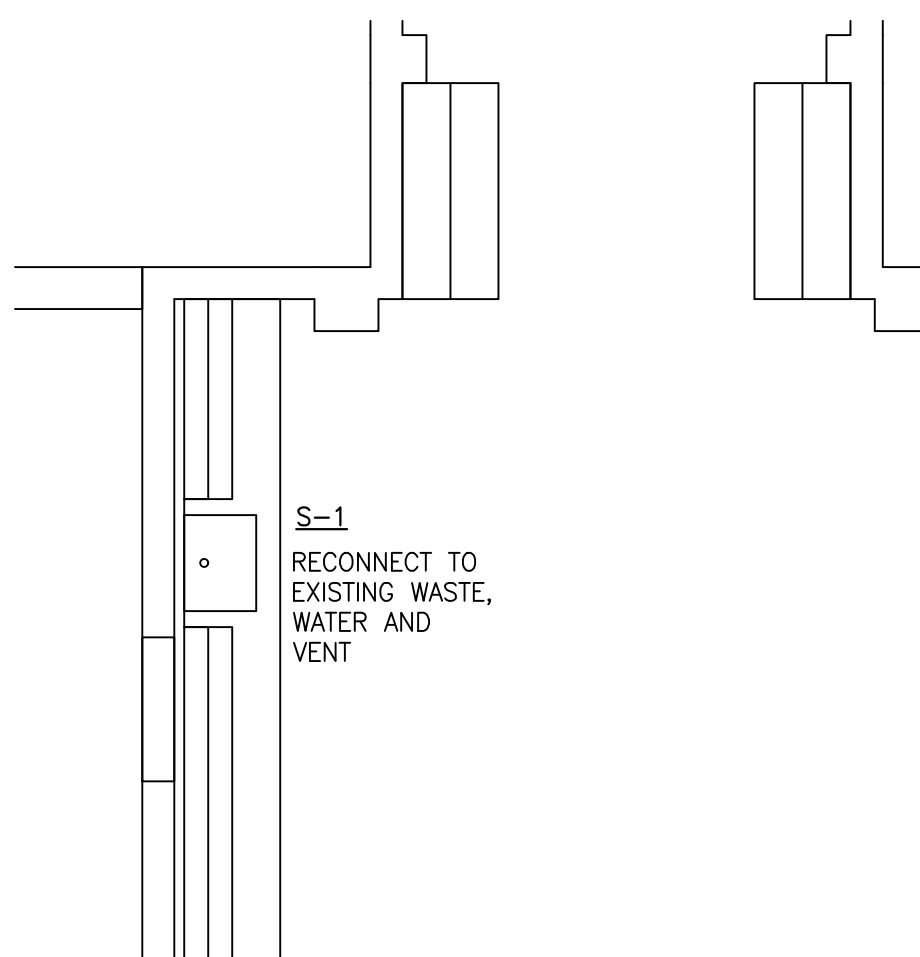
NEW FLOOR PLAN - DOMESTIC WATER



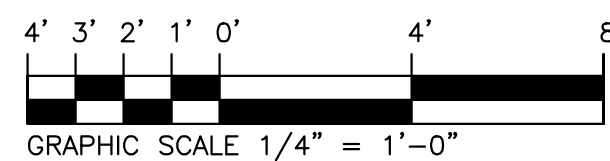
EXISTING FLOOR PLAN - PLUMBING



//////HATCHING INDICATES PLUMBING ITEMS TO BE REMOVED.



NEW FLOOR PLAN - PLUMBING



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**ttv architects, inc.**  
 115 EAST FORSYTH ST  
 JACKSONVILLE, FLORIDA 32202  
 T 904.798.8333  
 F 904.798.8335  
 www.ttvarch.com  
 FL Lic# AA0002609

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**HADDAD ENGINEERING INC.**  
 6 ELECTRIC MECHANICAL  
 3885 HAVETLEY ROAD, SUITE 205  
 JACKSONVILLE, FLORIDA 32207  
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PLUMBING  
 FLOOR PLANS  
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PLUMBING SPECIFICATIONS

PART 1 – GENERAL

- 1.01 DESCRIPTION  
A. THE WORK INCLUDES THE PROVIDING OF ALL LABOR, MATERIALS, AND SERVICES NECESSARY TO INSTALL THE INDICATED SYSTEMS, COMPLETE WITH HANGERS, SUPPORTS, EQUIPMENT AND CONNECTIONS REQUIRED TO ANY FIXTURE OR EQUIPMENT INDICATED OR SPECIFIED.  
B. THE WORK INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:  
1. SANITARY WASTE AND VENT PIPING SYSTEMS.  
2. DOMESTIC WATER PIPING SYSTEMS.

- 1.02 ALL WORK  
A. SHALL BE PERFORMED BY MECHANICS SKILLED IN THE PARTICULAR CLASS OF WORK AND ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE WORK SHALL BE COORDINATED WITH OTHER TRADES AND RESPONSIBILITIES ESTABLISHED SO THAT THE WORK SHALL BE COMPLETED WITHOUT DELAYS OR INTERFERENCE WITH SCHEDULES.

- 1.03 CUTTING AND PATCHING  
A. WHERE REQUIRED, THE CONTRACTOR SHALL DO THE CUTTING AND PATCHING USING WORKERS WHO ARE SKILLED IN THE TRADE INVOLVED. THE COMPLETED WORK SHALL PRESENT A FINISHED WORKMANLIKE APPEARANCE.

- 1.04 PIPING AND DRAWINGS  
A. THE DRAWINGS ARE DIAGRAMMATIC AND NOT INTENDED TO SHOW IN DETAIL ALL FEATURES OF THE WORK. THE LOCATION OF ALL PIPING SHALL BE COORDINATED TO DETERMINE THAT IT CLEARS ALL OPENINGS AND STRUCTURAL MEMBERS, THAT PIPING INDICATED AS CONCEALED CAN BE PROPERLY CONCEALED IN WALLS OR PARTITIONS OF FINISHED ROOMS, AND THAT IT DOES NOT INTERFERE WITH LIGHTS OR EQUIPMENT HAVING FIXED LOCATIONS. CONCEAL ALL PIPING EXCEPT WHERE OTHERWISE INDICATED.

- 1.05 OPENINGS IN EXISTING CONCRETE CONSTRUCTION  
A. SHALL BE CORE DRILLED OR CUT WITH MASONRY SAW. PNEUMATIC TOOLS WILL NOT BE PERMITTED. THE INTEGRITY OF THE FIRE RATING OF WALLS, CEILINGS, AND FLOORS SHALL BE MAINTAINED AND SHALL MEET LIFE SAFETY AND LOCAL CODES.

- 1.06 EXCAVATION AND BACKFILL  
A. IN ACCORDANCE WITH THE CIVIL REQUIREMENTS.

- 1.07 TRAPS  
A. EACH FIXTURE, EQUIPMENT DRAIN OR FLOOR DRAIN SHALL BE SEPARATELY TRAPPED, UNLESS OTHERWISE INDICATED OR SPECIFIED.

- 1.08 UNIONS  
A. INSTALL ON ONE SIDE OF EACH VALVE OR CONNECTIONS TO EQUIPMENT.

- 1.09 SHOP DRAWINGS  
A. SEVEN (7) COPIES OF SHOP DRAWINGS OF EACH ITEM LISTED IN THE "EQUIPMENT SCHEDULES" OR ELSEWHERE ON THE DRAWINGS AND IN THE SPECIFICATIONS. (THESE SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT AND APPROVED BY HIM BEFORE THE CONTRACTOR MAY PURCHASE THE EQUIPMENT OR MATERIALS.) TWO SETS WILL BE RETAINED BY THE ARCHITECT.  
B. SHOP DRAWINGS SHALL BE SUBMITTED WITH ALL EQUIPMENT ITEMS COMPLETE AT ONE TIME. SHOP DRAWINGS SHALL BE PRESENTED IN BOOK FORM IN A HARDBACKED BINDER WITH HEAVY PAPER DIVIDERS FOR EACH PARAGRAPH OF THE SPECIFICATION Delineating AN ITEM OR ITEMS OF EQUIPMENT. DIVIDERS SHALL BE PROVIDED WITH SUBSTANTIAL STAGGERED INDEX TABS, WITH EACH TAB NUMBERED WITH THE SPECIFICATION PARAGRAPH NUMBER FOR THE INCLUDED ITEM(S) OF EQUIPMENT. IN ADDITION, AN INDEX LISTING EACH TAB DIVISION WITH EQUIPMENT COVERED SHALL BE PROVIDED AT THE FRONT OF THE SUBMITTAL BOOK. ITEMS PRESENTED SINGLY FOR APPROVAL WILL NOT BE ACCEPTABLE.  
C. COORDINATE THE LOCATION OF FLOOR DRAINS, PIPING AND OTHER PERTINENT ITEMS WITH THE WORK OF OTHER TRADES. INSTALLATION OF THESE ITEMS SHALL BE MADE AFTER RECEIPT OF AND IN ACCORDANCE WITH THE APPROVED SHOP DRAWINGS.

- 1.10 GUARANTEE  
A. ALL EQUIPMENT, MATERIAL, ACCESSORIES AND INSTALLATION SHALL CARRY A GUARANTEE AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE. EACH SYSTEM AS A WHOLE, AND IN ALL ITS PARTS, SHALL BE GUARANTEED TO FUNCTION CORRECTLY UP TO THE SPECIFIED CAPACITY. SHOULD A SYSTEM, OR ANY PART THEREOF, FAILS TO MEET THE PERFORMANCE REQUIREMENTS, NECESSARY REPLACEMENTS, ALTERATIONS OR REPAIRS SHALL BE MADE TO BRING PERFORMANCE UP TO SPECIFIED REQUIREMENTS. BUILDING CONSTRUCTION FINISHES DAMAGED OR MARRED SHALL BE RESTORED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE. ALL OF THE ABOVE DESCRIBED SHALL BE DONE WITHOUT COST TO THE OWNER.

PART 2 – PRODUCTS

- 2.01 GENERAL  
A. ALL MATERIALS SHALL BE NEW AND FREE FROM ALL DEFECTS. THESE SPECIFICATIONS LIST ALL OF THE ACCEPTABLE MATERIALS FOR A GIVEN SERVICE, ONE OF WHICH SHALL BE USED UNLESS OTHERWISE SPECIFICALLY NOTED.  
B. THE QUALITY AND WEIGHT OF MATERIALS FURNISHED AND INSTALLED SHALL COMPLY WITH THE REQUIREMENTS OF THE APPROPRIATE STANDARDS OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM), LIFE SAFETY CODE AND THE LOCAL PLUMBING CODE.

- 2.02 PIPE AND FITTINGS  
A. GENERAL: ALL PIPING SHALL BE RUN STRAIGHT, PLUMB AND PROPERLY GRADED IN DIRECTION INDICATED ON THE DRAWINGS. CUT PIPE SHALL BE SQUARELY CUT AND PROPERLY REAMED TO REMOVE ALL CUTTINGS AND BURRS BEFORE MAKING UP THE JOINTS. FITTINGS AND NIPPLES SHALL BE OF THE SAME MATERIALS AS THE PIPE.  
B. CPVC SCHEDULE 80 PIPE SHALL BE SUITABLE FOR USE AT MAXIMUM WORKING PRESSURE OF 150 PSI. ALL PIPE MUST MEET THE REQUIREMENTS OF ASTM D-1784, ASTM F-441, AND NSF STANDARD 14. SOCKET TYPE FITTINGS SHALL MEET ASTM F-439. THREADED FITTINGS SHALL MEET ASTM F-437 WITH THREADED BRASS INSERT BY IPT/HARBORSON OR ACCEPTABLE ALTERNATIVE. SOLVENT WELD MATERIAL SHALL BE SOLVENT CEMENT MEETING THE REQUIREMENTS OF ASTM F-493.  
C. PLASTIC PIPE AND FITTINGS: PIPE SHALL BE SCHEDULE 40 PVC CONFORMING TO ASTM D1785. FITTINGS SHALL BE PVC CONFORMING TO ASTM D2466. SOLVENT CEMENT SHALL CONFORM TO ASTM D2564. CELLULAR CORE PIPING IS NOT ACCEPTABLE.

- 2.03 VALVES  
A. GENERAL: VALVE NUMBERS ARE SPECIFIED TO ESTABLISH TYPE AND QUALITY. EQUIVALENT VALVES WILL BE CONSIDERED FOR APPROVAL.  
B. DOMESTIC WATER PIPING:  
1. BALL VALVES: 2" AND SMALLER  
2. CHECK VALVES: 2" IPS OR SMALLER – CRANE #37, 2-1/2" IPS OR LARGER – CRANE 373.  
3. HOSE BIBB: CHICAGO FAUCETS #307 WITH WATTS NO. 8A BACKFLOW PREVENTER, KEY OPERATED HANDLES.  
4. QUARTER TURN STOP VALVE: BRASS/ST-1 – 1/4 TURN BALL STOP (KEY SERIES), MCGRAW HILL – CONVERTIBLE 1/4 TURN BRASS BALL VALVE (LFBV SERIES), KEENEY MFG. QUARTER TURN VALVE (PCLF SERIES), LEAD FREE, BRASS BALL, STEM AND BODY CONSTRUCTION, CHROME PLATED FOR CORROSION PROTECTION.

- 2.04 CLEANOUTS  
A. WHERE INDICATED AND AT THE BASE OF ALL RISERS. ADDITIONAL CLEANOUTS AT THE CONTRACTORS' OPTION FOR THE CONVENIENCE OF TESTING AND ERECTION. CLEANOUTS INSTALLED IN FLOORS WITH WATERPROOF MEMBRANE SHALL BE PROVIDED WITH CLAMPING RINGS. INSTALL CLEANOUT FRAMES AND COVERS TO BE FLUSH WITH THE ADJOINING ARCHITECTURAL FINISHING MATERIAL. CLEAN-OUTS LOCATED OUTSIDE THE BUILDING SHALL BE TWO-WAY TYPE. JOSAM MODEL NUMBERS ARE INDICATED BELOW. COMPARABLE MODEL NUMBERS BY MADE OR J. R. SMITH WILL BE CONSIDERED FOR APPROVAL.  
B. CLEANOUT PLUGS: JOSAM 58540-20.  
C. CLEANOUTS IN WALL: JOSAM 58790-22.  
D. CLEANOUTS IN CONCRETE AND TERRAZZO FLOOR FINISHES: JOSAM 58460A-2.

- 2.05 PIPE HANGERS  
A. HANGERS SHALL BE OF THE CLEVIS TYPE, MSS SP-58, TYPE 1.

- 2.06 WATER HAMMER ARRESTORS  
A. IN CONFORMANCE WITH PLUMBING AND DRAINAGE INSTITUTE NO. PDI-WH-201 AND ASSE 1010.

- 2.07 PLUMBING FIXTURES  
A. GENERAL: ALL PLUMBING FIXTURES SHALL BE "FIRST QUALITY". ALL ENAMELED IRON FIXTURES SHALL HAVE ACID RESISTING WHITE ENAMEL. ALL FIXTURES AND FITTINGS PROPOSED SHALL BE FROM ONE MANUFACTURER AND OF SIMILAR CHARACTER. ESCUTCHEONS, HANDLES, ETC., ON THE DIFFERENT FIXTURES SHALL BE OF THE SAME DESIGN. ALL FIXTURES AND FITTINGS PROPOSED SHALL BE SUBMITTED FOR APPROVAL WITH CATALOG CUTS AND FULL DESCRIPTION. ALL EXPOSED METAL AND PIPING NOT OTHERWISE SPECIFIED SHALL BE POLISHED CHROMIUM ON BRASS OR BRONZE. ALL COLD WATER SUPPLY TO FIXTURES SHALL BE PROVIDED WITH STOPS OF THE LOOSE KEY TYPE.  
B. SEE DESIGN BASIS FOR FIXTURE SPECIFICATIONS. WHERE FIXTURE TYPES REFER TO THOSE MANUFACTURED BYAMERICAN STANDARD, UNLESS OTHERWISE NOTED, THESE NUMBERS ARE USED TO INDICATE TYPE AND QUALITY OF FIXTURES DESIRED. FIXTURES OF EQUAL QUALITY MANUFACTURED BY AMERICAN STANDARD, CRANE, ELJER OR KOHLER WILL BE CONSIDERED FOR APPROVAL. HANGER SUPPORTS AND CARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.

- 2.08 THERMAL INSULATION  
A. GENERAL: NO INSULATION SHALL BE INSTALLED UNTIL THE PIPING SYSTEMS HAVE BEEN CHECKED AND FOUND FREE OF ALL LEAKS. SURFACES SHALL BE CLEAN AND DRY BEFORE ATTEMPTING TO APPLY INSULATION. INSULATION SHALL BE INSTALLED BY A PROFESSIONAL INSULATION CONTRACTOR WITH ADEQUATE EXPERIENCE AND ABILITY TO PERFORM THE WORK. THE CONTRACTOR SHALL VERIFY THAT ALL MATERIALS COMPLY WITH THE SPECIFICATIONS.  
B. DOMESTIC WATER PIPING:  
1. MATERIAL: SHALL BE INSULATED WITH 3/4" AP ARMAFLEX BLACK LAPSEAL.  
2. APPLICATION: PRIOR TO INSTALLING THE INSULATION, THE PRESSURE RELEASE PAPER SHALL BE REMOVED FROM THE JACKET LAPS. PIPE INSULATION SHALL BE SECURED IN PLACE BY APPLYING PRESSURE TO THE PRESSURE SENSITIVE CLOSURE SYSTEM. ELBOWS SHALL BE INSULATED WITH JOHNS-MANVILLE UNIFIT PVC FITTING COVERS. VALVES AND OTHER IRREGULAR SHAPED FITTINGS SHALL BE INSULATED WITH PIPE INSULATION SEGMENTS AND FINISHED WITH A SKIM COAT OF AIR DRYING JOHNS-MANVILLE 375 CEMENT AND WHITE GLASS FABRIC DIPPED IN FOSTER'S 30-60 COATING OR EQUAL.

PART 3 – EXECUTION

- 3.01 SOIL, WASTE, AND VENT PIPING  
A. BURIED PIPING: SOIL AND WASTE PIPE AND FITTINGS BELOW THE FLOOR SLAB AND TO THE BUILDING FIVE FOOT LINE SHALL BE OF SCHEDULE 40 PVC PLASTIC AND SHALL BE PROVIDED WITH A LOCATOR WIRE #12 GAGE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.  
B. ABOVE GRADE: SOIL, WASTE, AND VENT PIPING AND FITTINGS SHALL BE SCHEDULE 40 PVC PLASTIC.

- 3.02 DOMESTIC WATER PIPING  
A. ALL PIPE AND FITTINGS SHALL BE SCHEDULE 80 CPVC.  
3.03 CLEANING AND PROTECTION OF PIPE  
A. BEFORE BEING PLACED IN POSITION, PIPE AND FITTINGS SHALL BE CLEANED CAREFULLY. ALL PIPE SHALL BE MAINTAINED IN A CLEAN CONDITION.

- 3.04 PIPE IN TRENCHES  
A. SEWER AND WATER PIPING SHALL BE PLACED IN SEPARATE TRENCHES.  
B. WATER PIPING SHALL BE BURIED AT A DEPTH OF SIX INCHES BELOW THE FROST LINE OR A MINIMUM OF 12 INCHES, WHICHEVER IS GREATER.

- 3.05 INSTALLATION OF SCREW-JOINTED PIPING (IF USED)  
A. ALL PIPING SHALL BE CUT ACCURATELY TO MEASUREMENTS ESTABLISHED BY THE CONTRACTOR AND SHALL BE WORKED INTO PLACE WITHOUT SPRINGING OR FORCING. PROPER PROVISION SHALL BE MADE FOR THE EXPANSION AND CONTRACTION OF ALL PIPE LINES. PIPE AND FITTINGS SHALL BE FREE FROM FINIS AND BURRS. SCREW JOINTS IN WATER PIPING SHALL BE MADE WITH A LUBRICANT APPLIED ON THE MALE THREADS ONLY. THREADS SHALL BE FULL CUT AND NOT MORE THAN THREE THREADS ON THE PIPE SHALL REMAIN EXPOSED. ALL FERROUS PIPE THREAD, AFTER BEING INSTALLED AND TESTED, SHALL BE GIVEN ONE COAT OF RED LEAD AND OIL PAINT. UNIONS AND UNION TYPE CONNECTIONS AND SHUT-OFF VALVES SHALL BE PROVIDED FOR ALL FIXTURES AND EQUIPMENT READY FOR DISCONNECTION. ON FERROUS PIPE 3 INCHES IN DIAMETER AND SMALLER, UNIONS SHALL BE 150 POUND STEAM-WORKING-PRESSURE MALLEABLE IRON GROUND JOINT TYPE. PIPE HUNG FROM CEILINGS SHALL BE SUPPORTED BY HEAVY, ADJUSTABLE HANGERS CONFORMING TO MSS SP-59. ALL HANGERS AND COLLARS SHALL BE OF SIZES SUITABLE FOR THE WEIGHT OF THE PIPE. ALL CHANGES IN SIZES OF PIPE SHALL BE MADE WITH REDUCING FITTINGS.

- 3.06 WATER HAMMER ARRESTORS  
A. WATER HAMMER ARRESTORS SHALL BE PROVIDED INSTEAD OF SITE-FABRICATED AIR CHAMBERS, AND SHALL BE SIZED AS REQUIRED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

- 3.07 SANITARY SYSTEMS  
A. SANITARY SYSTEMS SHALL BE PROVIDED WHERE APPLICABLE, WITH Y FITTINGS AND 1/8 OR 1/16 BENDS OR COMBINATION Y AND 1/8 BENDS. ALL FIXTURES NOT SPECIFIED TO BE PROVIDED WITH TRAPS AS INTEGRAL PARTS OF THEIR OUTFITS AND ALL DRAINS SHALL HAVE SEPARATE TRAPS WITH CLEANOUPS. WASTE LINES SHALL NOT BE LESS THAN 2 INCHES IN DIAMETER. ALL FIXTURES SHALL BE INDIVIDUALLY VENTED, OR SHALL BE CONNECTED TO A VENTED SOIL OR WASTE LINE. UNLESS INDICATED OTHERWISE, SANITARY PIPING SHALL FORM CIRCUIT OR LOOP-VENTS WITH NO DEAD ENDS OR INVERTED SIPHONS. CIRCUIT OR LOOP-VENT LINES SHALL BE CONNECTED AT A HEIGHT OF NOT LESS THAN 12 INCHES ABOVE THE FIXTURES SERVED. HORIZONTAL VENTS SHALL SLOPE DOWN TO WASTE OR SOIL BRANCH OR STACK. HORIZONTAL SOIL AND WASTE PIPING, GENERALLY, SHALL BE GRADED 1/8 INCH PER FOOT. VERTICAL STACKS SHALL BE EXTENDED FULL SIZE AS VENTS TO NOT LESS THAN 12 INCHES ABOVE THE ROOF AND SHALL BE PLACED IN POSITION BEFORE THE ROOFING IS APPLIED. WHERE PRACTICABLE, TWO OR MORE VENT LINES MAY BE CONNECTED AND EXTENDED AS ONE PIPE THROUGH THE ROOF. CLEANOUPS SHALL BE INSTALLED AT THE FOOT OF EACH SOIL OR WASTE LINE, AT CHANGES IN DIRECTION IN THE LINES, AND WHERE INDICATED; HOWEVER, WITHIN THE BUILDINGS, THE DISTANCE BETWEEN CLEANOUPS HORIZONTAL RUNS SHALL IN NO CASE EXCEED 6 FEET. CLEANOUPS IN FLOORS SHALL BE EXTENDED FULL SIZE TO THE FLOOR LEVEL WITH OUTLETS FITTED WITH TRAP SCREWS WITH COUNTERSUNK CAPS. CLEANOUPS SHALL BE PIPE SIZE EXCEPT NO CLEANOUP SHALL EXCEED 6 INCHES IN DIAMETER. VENT FLASHING AT THE ROOF SHALL EXTEND NOT LESS THAN 8 INCHES FROM THE VENT PIPE IN ALL DIRECTIONS. LEAD FLASHING SHALL BE TURNED DOWN INTO THE PIPES OR HUBS.

- 3.08 WATER SYSTEMS  
A. WATER SYSTEMS SHALL BE INSTALLED WITH A FALL TOWARDS THE SHUT-OFF VALVE OR THE LOWEST FIXTURE. BRANCHES FROM COLD WATER LINES SHALL BE PROVIDED TO FIXTURES AND OUTLETS AS INDICATED.

- 3.09 WATER VALVES  
A. WATER VALVES SHALL BE INSTALLED IN ACCESSIBLE PLACES AND SHALL BE LOCATED AS FOLLOWS:  
1. VALVE WITH HOSE CONNECTION ON THE BUILDING SIDE OF THE MAIN SHUT-OFF VALVE  
2. SHUT-OFF VALVE ON EACH SUPPLY TO EACH FIXTURE NOT PROVIDED WITH COMPRESSION STOP  
3. VALVES SHALL BE PROVIDED ON ALL BRANCHES SERVING MORE THAN ONE FIXTURE.

- 3.10 INSTALLATION OF FIXTURES  
A. CONNECTIONS BETWEEN WATER CLOSETS AND THE FLANGES ON SOIL PIPE SHALL BE MADE GAS AND WATER TIGHT WITH ONE PIECE SPECIAL MOLDED GASKET. ALL BULK MATERIAL INCLUDING PUTTY AND PLASTICS SHALL NOT BE USED. FLOOR DRAINS SHALL BE SECURED TO THE WATERPROOFING OR FLASHING IN A WATER TIGHT MANNER. EXACT ROUGH-IN LOCATIONS FOR FIXTURES AND FLOOR DRAINS SHALL BE DETERMINED FROM THE ARCHITECTURAL DRAWINGS.

- 3.11 SUPPORTS AND FASTENINGS  
A. PLUMBING FIXTURES, TRIMMINGS, ACCESSORIES AND APPURTENANCES SHALL BE SECURED TO CONCRETE BY 1/4 INCH BRASS EXPANSION BOLTS NOT LESS THAN 4 INCHES LONG, AND TO GYPSUM WITH STEEL PLATES 1/8 INCH THICK, 6 INCHES WIDE AND NOT LESS THAN 24 INCHES LONG AT THE BACK OF THE THROUGH BOLTS. EXPANSION BOLTS SHALL BE OF A LENGTH SUFFICIENT TO EXTEND AT LEAST 3 INCHES INTO SOLID CONCRETE. THROUGH BOLTS SHALL BE PROVIDED WITH PLATES OR WASHERS AT THE BACK AND SET SO THAT HEADS, NUTS, AND WASHERS WILL BE CONCEALED BY THE WALL MATERIAL. EXPOSED HEADS OF BOLTS, AND NUTS SHALL BE NICKEL-CHROMIUM PLATED HEXAGONS WITH ROUNDED TOPS. WHERE NECESSARY, NICKEL-CHROMIUM PLATED WASHERS SHALL BE PROVIDED.

- 3.12 PIPE SLEEVES  
A. PIPE SLEEVES SHALL BE PROVIDED WHERE PIPES PASS THROUGH MASONRY OR CONCRETE WALLS, FLOORS, ROOFS AND PARTITIONS. SLEEVES SHALL BE PLACED DURING CONSTRUCTION OF THE BUILDING AND AT NO TIME SHALL JACK HAMMERS BE USED. SLEEVES IN OUTSIDE WALLS BELOW AND ABOVE GRADE, OR IN FLOOR SLABS, SHALL BE ZINC-COATED SHEET STEEL. SPACE BETWEEN PIPE, TUBING OR INSULATION AND THE SLEEVE SHALL NOT LESS THAN 1/4 INCH. SLEEVES SHALL BE HELD SECURELY IN PROPER POSITION AND LOCATION BEFORE AND DURING CONSTRUCTION. ALL SLEEVES SHALL BE OF SUFFICIENT LENGTH TO PASS THROUGH ENTIRE THICKNESS OF WALLS, PARTITIONS OR SLABS. SLEEVES IN FLOOR SLABS SHALL EXTEND 2 INCHES ABOVE THE FINISHED FLOOR. SPACE BETWEEN THE PIPE AND THE SLEEVE SHALL BE FIRMLY PACKED WITH OAKUM AND CAULKED ON BOTH ENDS OF THE SLEEVE WITH INSULATING CEMENT. SLEEVES LOCATED IN WATERPROOFED CONSTRUCTION SHALL BE PROVIDED WITH FLANGE AND CLAMPING RING. SLEEVES ARE NOT REQUIRED IN FLOOR SLABS LOCATED ON GRADE EXCEPT THAT COPPER PIPE SHALL NOT COME INTO CONCRETE.

- 3.13 STERILIZATION  
A. PRIOR TO STARTING WORK, VERIFY SYSTEM IS COMPLETE, FLUSHED AND CLEAN.  
B. ENSURE PH OF WATER TO BE TREATED IS BETWEEN 7.4 AND 7.6 BY ADDING ALKALI (CAUSTIC SODA OR SODA ASH) OR ACID (HYDROCHLORIC).  
C. INJECT DISINFECTANT, FREE CHLORINE IN LIQUID, POWDER, TABLET OR GAS FORM, THROUGHOUT SYSTEM TO OBTAIN 50 TO 80 MG/L RESIDUAL.  
D. BLEED WATER FROM OUTLETS TO ENSURE DISTRIBUTION AND TEST FOR DISINFECTANT RESIDUAL AT MINIMUM 15 PERCENT OF OUTLETS.  
E. MAINTAIN DISINFECTANT IN SYSTEM FOR 24 HOURS.  
F. IF FINAL DISINFECTANT RESIDUAL TESTS LESS THAN 25 MG/L, REPEAT TREATMENT.  
G. FLUSH DISINFECTANT FROM SYSTEM UNTIL RESIDUAL EQUAL TO THAT OF INCOMING WATER OR 1.0 MG/L.  
H. TAKE SAMPLES NO SOONER THAN 24 HOURS AFTER FLUSHING, FROM 10 PERCENT OF OUTLETS AND FROM WATER ENTRY, AND ANALYZE IN ACCORDANCE WITH AWWA C651.  
I. A TESTING FIRM COMPANY SPECIALIZING IN TESTING POTABLE WATER SYSTEMS SHALL BE APPROVED BY THE STATE.  
J. A CERTIFICATE SHALL BE SUBMITTED TO OWNER THAT CLEANLINESS OF WATER DISTRIBUTION SYSTEM MEETS OR EXCEEDS STATE HRS REQUIREMENTS.

- 3.14 ANCHORING, GUIDING AND SUPPORTING OF PIPING  
A. ALL PIPING SHALL BE ANCHORED AND SUPPORTED IN A MANNER SUCH THAT EXPANSION AND CONTRACTING WILL TAKE PLACE IN THE DIRECTION DESIRED AND VIBRATION AND UNDOE STRAINS ON EQUIPMENT WILL BE PREVENTED BY USE OF VIBRATION DAMPERS. HANGERS USED FOR THE SUPPORT OF PIPING, 2 INCH NOMINAL PIPE SIZE AND LARGER, SHALL BE FABRICATED TO PERMIT ADEQUATE ADJUSTMENT AFTER ERECTION WHILE STILL SUPPORTING THE LOAD. WALL BRACKETS SHALL BE USED WHERE PIPES ARE ADJACENT TO WALL OR OTHER VERTICAL SURFACES THAT MAY BE USED FOR SUPPORTS. SUPPORTS SHALL BE PROVIDED WITH A TYPE 40 PIPE COVERING PROTECTION SADDLE AT EACH SUPPORT IN ACCORDANCE WITH TABLE 4 OF SP-69. PIPE SUPPORTS SHALL BE SPACED TO PROVIDE ADEQUATE SUPPORT FOR THE PIPES, THE MEDIUM IN THE PIPE, INSULATION, VALVES AND FITTINGS. SPACING OF SUPPORTS SHALL BE SUCH AS TO PREVENT THE FORMING OF POCKETS. THE MAXIMUM HORIZONTAL SPACING FOR METAL PIPING BETWEEN PIPE SUPPORTS SHALL CONFORM TO TABLE 3 OF MSS SP-69, EXCEPT THAT CAST IRON SOIL PIPE SHALL HAVE A MAXIMUM SPACING BETWEEN HANGERS OF 5 FEET. VERTICAL PIPING SHALL BE SUPPORTED BY BOLTED STEEL CLAMPS OR TYPE CONFORMING TO MSS SP-69. PIPE HANGERS SHALL BE ISOLATED FROM UNINSULATED METAL PIPE WITH NEOPRENE PADS SUCH THAT ORGAN MUSIC WILL NOT PERMIT OR CAUSE THE PIPE TO VIBRATE WITHIN THE SUPPORT.

- 3.15 INSTRUCTION MANUALS  
A. FURNISH FOUR COMPLETE COPIES OF INSTRUCTIONS EXPLAINING OPERATION AND MAINTENANCE AND REPLACEMENT PARTS LISTS FOR THE FAUCET TRIM, FLUSH VALVES, AND FIXTURES.

- 3.16 SAFETY CODE  
A. ALL PIPING IN ACCORDANCE WITH ANSI A13.1981.

- 3.17 AS-BUILT DRAWINGS  
A. PROVIDE A COMPLETE SET OF REPRODUCIBLE "AS-BUILT" DRAWINGS AT JOB COMPLETION. UPON REQUEST, THE ARCHITECT WILL PROVIDE THE CONTRACTOR WITH REPRODUCIBLE COPIES OF THE CONTRACT DRAWINGS FOR THE USE IN MAKING THESE "AS-BUILT" DRAWINGS.

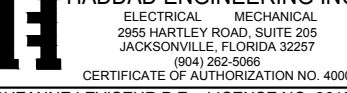
- 3.18 FIELD TESTS  
A. WATER SUPPLY PIPING SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST OF 100 PSI MINIMUM. PRESSURE SHALL BE MAINTAINED ON THE LINES FOR A PERIOD OF TIME SUFFICIENT TO EXAMINE THE ENTIRE SYSTEM BUT NOT LESS THAN ONE HOUR.  
B. SANITARY PIPING: BEFORE THE INSTALLATION OF ANY FIXTURES, THE VENTS OF THE SYSTEM SHALL BE CAPPED AND ALL LINES FILLED WITH WATER TO THE ROOF AND ALLOWED TO STAND UNTIL A THOROUGH INSPECTION HAS BEEN MADE. AFTER THE FIXTURES ARE SET, A SMOKE OR EQUIVALENT TEST SHALL BE MADE USING A SUITABLE APPARATUS.



**ttv architects, inc.**  
115 EAST FORSYTH ST  
JACKSONVILLE, FLORIDA 32202  
T 904.798.8335  
F 904.798.8335  
www.ttvarch.com

FL Lic#AA0002809

architecture    planning    interior design



**HADDAD ENGINEERING INC.**  
ELECTRICAL MECHANICAL  
388 WINTERLY ROAD, SUITE 203  
JACKSONVILLE, FLORIDA 32202  
(904) 798-8335  
FAX (904) 798-8335  
SUZANNE LEVISEUR, P.E. - LICENSE NO. 38120

NO.	DATE	REVISION
	08.27.18	60% SUBMITTAL
	01.04.19	90% SUBMITTAL
	03.01.19	100% SUBMITTAL
	03.22.19	REVISED 100% SUBMITTAL
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**JEA CEDAR BAY RESULTS LAB**

**JEA**  
1840 Cedar Bay Rd.  
JACKSONVILLE, FLORIDA

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DATE:	08.28.18
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CHECKED BY:	SL
COMMISSION NO:	1832

PLUMBING  
SPECIFICATIONS

**P3.0**























GENERAL NOTES:

- DO NOT TAKE POSSESSION OF OR DISPOSE OF ANY SALVAGEABLE ITEMS IN ASSOCIATION WITH THE WORK. ALL SALVAGEABLE ITEMS SHALL BE THE OWNER'S PROPERTY AT HIS OPTION. ALL UNSALVAGEABLE EQUIPMENT AND MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
- MAINTAIN ACCURATE RECORDS OF ANY MODIFICATIONS TO EXISTING AND NEW SYSTEMS AND SHALL, UPON COMPLETION, DELIVER "AS-BUILT" DRAWINGS TO THE OWNER INDICATING ALL SUCH CHANGES.
- DO NOT RE-USE ANY EXISTING WIRING OR CONDUIT SYSTEMS. WHERE FEEDERS ARE ABANDONED, WIRE SHALL BE PULLED OUT. REMOVE ALL EXPOSED CONDUIT THAT IS ABANDONED. ALL CONCEALED CONDUITS SHALL BE CAPPED AT POINT OF CONCEALMENT.
- PROVIDE ALL WORK REQUIRED TO PROVIDE COMPLETE CONDUIT SYSTEMS AND RUNS. THIS INCLUDES, BUT IS NOT LIMITED TO, ALL MATERIALS, INSTALLATION HARDWARE, DRILLING OF WALLS/BEAMS, TRENCHING, MOUNTING HARDWARE, LABOR, PAINTING, REPAIRING OF EXISTING SURFACES, FIRESTOPPING, AND ACCESSORIES. RESTORE DISTURBED CEILINGS/WALLS TO ITS ORIGINAL CONDITION. FINISH AND PAINT DAMAGED AREAS. PAINT SHALL MATCH EXISTING. REPAIR CABINETS, WALLS, AND SHELVES DAMAGED BY CONTRACTOR OPERATION. REPLACE DAMAGED CEILING TILES. PROVIDE NEW CEILING TILES AT ALL LOCATIONS WHERE EXISTING CEILING MOUNTED DEVICES ARE REMOVED. NEW CEILING TILES SHALL BE SAME TYPE AND QUALITY OF EXISTING TILES. TAPE OR SEAL CEILING TILES PENETRATED FOR NEW RACEWAYS TO KEEP BUGS OR DEBRIS FROM FALLING THROUGH THE OPENING OR GAP. PAINT ALL INTERIOR AND EXTERIOR, EXPOSED CONDUITS SAME COLOR AS SURFACE.
- CONTRACTOR SHALL VISIT SITE PRIOR TO PREPARING HIS BID AND DETERMINE THE EXTENT OF CHANGES TO EXISTING EQUIPMENT AND WIRING REQUIRED TO ACCOMMODATE THE NEW WORK. ALL NECESSARY REROUTING, RELOCATING, AND REMOVAL OF EXISTING EQUIPMENT, WIRING, ETC. SHALL BE INCLUDED IN THE SCOPE OF THIS WORK. ALL REQUIRED CHANGES TO EXISTING CONDITIONS SHALL BE INCLUDED UNDER THIS CONTRACT.
- CONDUITS SHALL BE CONCEALED IN WALLS, ABOVE CEILING SPACE. SURFACE MOUNTED CONDUITS WILL ONLY BE PERMITTED ON CONCRETE WALLS OR ON CEILINGS WITH NO CAVITY.
- ALL EXTERIOR JUNCTION BOXES SHALL BE CAST METAL, GASKETED, AND NEMA-3R. PAINT SAME COLOR AS SURFACE.
- IF NECESSARY, MODIFY EXISTING WALL OPENINGS TO SUITE NEW EQUIPMENT OR PANEL LOCATIONS.
- ALL DEVICE BOXES SHALL BE CONCEALED IN WALL OR CEILING WHEN POSSIBLE. FOR EXISTING CONCRETE WALLS, OR SIMILAR CONSTRUCTIONS, PROVIDE SURFACE MOUNTED BOXES. ALL EXPOSED DEVICE BOXES SHALL BE METAL WIREMOLD OR EQUAL STAMPED BOXES WILL NOT BE ACCEPTABLE FOR EXPOSED LOCATIONS. SURFACE MOUNTED BOXES FOR FIRE ALARMS SHALL BE RED. USE CAST METAL BOXES (GASKETED) FOR EXTERIOR DEVICES.
- IF EXISTING HOLES OR OPENINGS IN WALLS AND/OR CEILINGS ARE UTILIZED FOR CONDUIT ROUTING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PATCHING, CAULKING, FINISHING, OR OTHER MODIFICATIONS REQUIRED TO COMPLETELY REPAIR HOLE OR OPENING IN WALL AND/OR CEILING. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIRESTOPPING REQUIRED TO RE-ESTABLISH THE FIRE RESISTANCE RATING OF THE BARRIER.
- NEW DEVICES SHALL BE MOUNTED AT HEIGHTS AS SHOWN ON LEGEND AND MOUNTING DETAILS. NOTIFY ENGINEER OF ANY CONFLICTS WITH SPECIFIED MOUNTING HEIGHTS. DRAWINGS SHOW THE APPROXIMATE LOCATION OF DEVICES. EXACT LOCATIONS MAY BE ADJUSTED AT BUILDING SITE BY OWNER'S REPRESENTATIVES. THE OWNER SHALL RESERVE THE RIGHT TO RELOCATE ANY DEVICE TO A DISTANCE NOT EXCEEDING 15' FROM THE LOCATION ON THE DRAWING DURING ROUGH-IN. WORK SHALL BE ACCOMPLISHED AT NO ADDITIONAL COST TO OWNER.
- PROPERLY SEAL ALL NEW PENETRATIONS IN FIRE RATED ASSEMBLIES, BOTH VERTICAL AND HORIZONTAL, IN ACCORDANCE WITH SECTION 705 OF THE FLORIDA BUILDING CODE, WHICH REQUIRES THAT ALL INSTALLATIONS OF PENETRATIONS THROUGH FIRE RATED ASSEMBLIES OR FIRE STOP SYSTEMS SHALL BE AS TESTED BY ASTM E 119 & ASTM E 814.
- NOTIFY ENGINEER OF ANY ITEMS OF NON-COMPLIANCE, WHETHER IT IS THE RESULT OF NEW WORK OR IS AN UNCOVERED EXISTING CONDITION.
- USE OF PLASTIC ANCHORS IS PROHIBITED. DO NOT USE PLASTIC ANCHORS FOR SECURING PANELS, CONDUITS, OR ANY COMPONENTS.








DEMOLITION NOTES:

- THERE SHALL NOT BE ANY INTERRUPTION TO SERVICES TO THE EXISTING BUILDINGS WITHOUT PRIOR SCHEDULING OF SUCH OUTAGES WITH THE OWNER'S REPRESENTATIVE.
- THE CONTRACTOR SHALL NOT TAKE POSSESSION OF OR DISPOSE OF ANY SALVAGEABLE ITEMS IN ASSOCIATION WITH THE WORK. ALL SALVAGEABLE ITEMS SHALL BE THE OWNER'S PROPERTY AT HIS OPTION. ALL UNSALVAGEABLE EQUIPMENT AND MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
- THE ELECTRICAL CONTRACTOR SHALL MAINTAIN ACCURATE RECORDS OF ANY MODIFICATIONS TO EXISTING SYSTEMS AND SHALL UPON COMPLETION, DELIVER "AS-BUILT" DRAWINGS TO THE OWNER, INDICATING ALL CHANGES.
- WHERE FEEDERS ARE ABANDONED, WIRE SHALL BE PULLED OUT AND ALL EXPOSED SECTIONS OF CONDUITS REMOVED. ALL SWITCHES, PANELS, ETC. SHALL BE REMOVED. ALL CONCEALED CONDUITS SHALL BE CAPPED AT POINT OF CONCEALMENT.
- ALL EXISTING DEVICES AND FIXTURES IN THE PATH OF RENOVATION OR BUILDING ADDITIONS SHALL BE REMOVED BY THE CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN EXISTING CIRCUITRY TO ALL REMAINING DEVICES AND FIXTURES. FOR EACH DEVICE OR FIXTURE REMOVED AT THE END OF A CIRCUIT, CONTRACTOR SHALL REMOVE WIRING FROM LAST REMAINING DEVICE. FOR EACH DEVICE OR FIXTURE REMOVED IN THE MIDDLE OF A CIRCUIT, CONTRACTOR SHALL REMOVE WIRING FROM FIRST DEVICE OR FIXTURE BEFORE AND AFTER REMOVED DEVICE AND FIXTURE. NEW WIRING, SIZED THE SAME AS EXISTING, SHALL BE PULLED BETWEEN THE TWO REMAINING DEVICES OR FIXTURES.
- CONTRACTOR MAY REUSE EXISTING CONDUIT SYSTEM WHERE APPLICABLE, PROVIDING THE REUSED SYSTEMS MEET CURRENT CODES. REMOVE ALL UNUSED SURFACE MOUNTED CONDUIT. UNUSED CONDUITS STUBBING UP FROM FLOOR SHALL BE CUT FLUSH WITH FLOOR.
- EXISTING EQUIPMENT NOT SHOWN ON THESE PLANS AND NOT REMOVED BY OTHER TRADES SHALL BE RECONNECTED TO PANELS. EXISTING ELECTRICAL OR MECHANICAL EQUIPMENT TO REMAIN THAT HAS TO BE DISCONNECTED FOR CONSTRUCTION SHALL BE REINSTALLED.
- ELECTRICAL DRAWINGS DO NOT INDICATE ALL THE EXISTING INSTALLATIONS.
- ALL EXISTING SWITCHES, RECEPTACLES, LIGHTING FIXTURES, TELEPHONE OUTLETS, ETC. THAT DO NOT INTERFERE WITH RENOVATIONS SHALL REMAIN.
- CONTRACTOR SHALL VISIT THE SITE PRIOR TO PREPARING HIS BID AND DETERMINE THE EXTENT OF MODIFICATIONS TO EXISTING EQUIPMENT AND WIRING REQUIRED TO ACCOMMODATE CHANGES AND ADDITIONS. ALL THE NECESSARY REROUTING, RELOCATING, AND/OR REMOVAL OF EXISTING EQUIPMENT, WIRING, ETC. SHALL BE INCLUDED IN THE SCOPE OF THIS WORK. ANY VARIATION FROM EXISTING CONDITIONS SHALL BE INCLUDED UNDER THIS CONTRACT.
- UPDATE PANELBOARD DIRECTORIES OF EXISTING PANELS.




ELECTRICAL LEGEND

-  LED LIGHTING FIXTURE – RECESSED WITH JUNCTION BOX AND FLEXIBLE METALLIC CONDUIT CONNECTION.
-  LED LIGHTING FIXTURE – SURFACE MOUNTED.
-  LED LIGHTING FIXTURE – RECESSED.
-  LED LIGHTING FIXTURE – SURFACE OR WALL MOUNTED.
-  EMERGENCY LIGHTING FIXTURE. DO NOT SWITCH.
-  EXIT LIGHT – PROVIDE ARROWS AS INDICATED. SHADING DENOTES FACE ORIENTATION. DO NOT SWITCH.
-  TOGGLE SWITCH – SINGLE POLE – QUIET TYPE 20 AMP, 120/277 VOLT, HUBBELL NO. HBL12211 WITH NO. NP11 COVERPLATE – 46" MOUNTING HEIGHT, U.N.O.
-  VACANCY SENSOR – SWITCH, 120/277 VOLT, ADJUSTABLE DELAY OFF. WATT STOPPER #DW-100-I, IVORY COVERPLATE. 46" MOUNTING HEIGHT, U.N.O.
-  LOW VOLTAGE MANUAL ON SWITCH – 46" MOUNTING HT, U.N.O. IVORY SWITCH AND COVERPLATE
-  DIGITAL ON/OFF LIGHTING ROOM CONTROLLER. LOCATE IN ACCESSIBLE CEILING SPACE. SEE LIGHTING CONTROL DIAGRAMS.
-  CEILING MOUNTED COMBINATION PASSIVE INFRARED & ULTRASONIC LOW VOLTAGE CEILING SENCOR-WATTSTOPPER DT-305. PROVIDE POWER PACKS AS REQUIRED.
-  PLUG STRIP.
-  DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER, 20 AMP, 120 VOLT, 3 WIRE GROUNDING. HUBBELL NO. GFR53621TR WITH NO. NP26I COVERPLATE, 46" MOUNTING HEIGHT, U.N.O.
-  WEATHER RESISTANT DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER, 20 AMP, 120 VOLT, 3 WIRE GROUNDING. HUBBELL NO. GFR201 WITH NO. NP26I COVERPLATE, EXTERIOR LOCATIONS SHALL BE WEATHER RESISTANT LABELED "WR" PER NEC AND MOUNTED AT 18" A.F.F.
-  JUNCTION BOX SIZE PER NEC.
-  EQUIPMENT CONNECTION.
-  WIRING IN CONDUIT, RUN CONCEALED ABOVE CEILING OR IN WALLS.
-  HOMERUN TO PANELBOARD – NUMBER OF ARROWS DENOTES QUANTITY OF CIRCUITS. CROSSMARKS INDICATE QUANTITY OF NO. 12 CONDUCTORS. RUNS VOID OF CROSSMARKS ARE 1/2 INCH CONDUIT, 3 NO. 12, U.N.O. DO NOT COMBINE HOMERUNS EXCEPT AS SPECIFICALLY INDICATED ON THE PLAN. FOR SWITCHES PROVIDE TAYMAC 40110 COVERPLATE.
-  MOTOR, FAN, PUMP OR AIR CONDITIONING UNIT CONNECTION PER NEC.
-  WP DENOTES WEATHERPROOF – MOUNT RECEPTACLES HORIZONTALLY AND PROVIDE TAYMAC 60350 COVERPLATE, U.N.O. UNLESS NOTED OTHERWISE.
-  A.F.F. ABOVE FINISHED FLOOR.
-  GG GREEN GROUND CONDUCTOR.

EXISTING ELECTRICAL LEGEND

-  EXISTING FLUORESCENT LIGHTING FIXTURE – RECESSED
-  FLUORESCENT LIGHTING FIXTURE – SURFACE MOUNTED.
-  EXISTING PL FLUORESCENT, INCANDESCENT OR H.I.D. LIGHTING FIXTURE – RECESSED.
-  EXISTING PL FLUORESCENT, H.I.D. OR INCANDESCENT LIGHTING FIXTURE – SURFACE OR WALL MOUNTED.
-  EXISTING EMERGENCY LIGHTING FIXTURE. DO NOT SWITCH.
-  EXISTING EXIT LIGHT
-  EXISTING TOGGLE SWITCH – SINGLE POLE

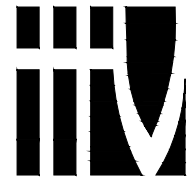
FIRE ALARM LEGEND

-  EXISTING FIRE ALARM VISUAL WARNING DEVICE, WALL MOUNTED. 80 INCH MOUNTING HEIGHT.
-  EXISTING CEILING MOUNTED SMOKE DETECTOR.
-  EXISTING CEILING MOUNTED SMOKE DETECTOR TO BE REMOVED.

LIGHTING FIXTURE SCHEDULE

T Y P E	MANUFACTURER	CATALOUGE NUMBER	LIGHT SOURCE			VOLTS	MOUNTING HEIGHT	REMARKS	NOTES
			TYPE/TEMP	WATTS	LUMENS				
A	COLUMBIA	TCAT-22-40LW-G-E-U	4000K	22	2646	120/208	CEILING	2 X 2 LED TROFFER	
B	COLUMBIA	TCAT-22-40VL-G-E-U	4000K	37	4514	120/208	CEILING	2 X 2 LED TROFFER	
C									
D	COLUMBIA	TCAT-22-40VLG-ED1-U	4000K	37	4514	120/208	CEILING	2 X 2 LED TROFFER – DIMABLE	
E	ALLIANCE	AL-1-R-WWL				120	CEILING	EXIT LIGHT	1
F	LITHONIA	ELM-2		3.4		120/208	7"-6" AFF	EMERGENCY LIGHT – 2 HEADS	
G	COLUMBIA	LCL-4-40ML-E-U	4000K	42	5411		CEILING	4' LONG LED LENSED STRIP LIGHT	

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ttv architects, inc.

115 EAST FORSYTH ST  
JACKSONVILLE, FLORIDA 32202  
T 904.798.8333  
F 904.798.8335  
www.ttvarch.com

FL LIC#AA0002609

architecture planning interior design

H HADDAD ENGINEERING INC.  
ELECTRICAL MECHANICAL  
300 HANLEY BLVD. SUITE 200  
JACKSONVILLE, FLORIDA 32207  
CERTIFICATE OF AUTHORIZATION NO. 4000  
NAMIR A. HADDAD P.E. - LICENSE NO. 31967

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1	03.01.19	100% SUBMITTAL
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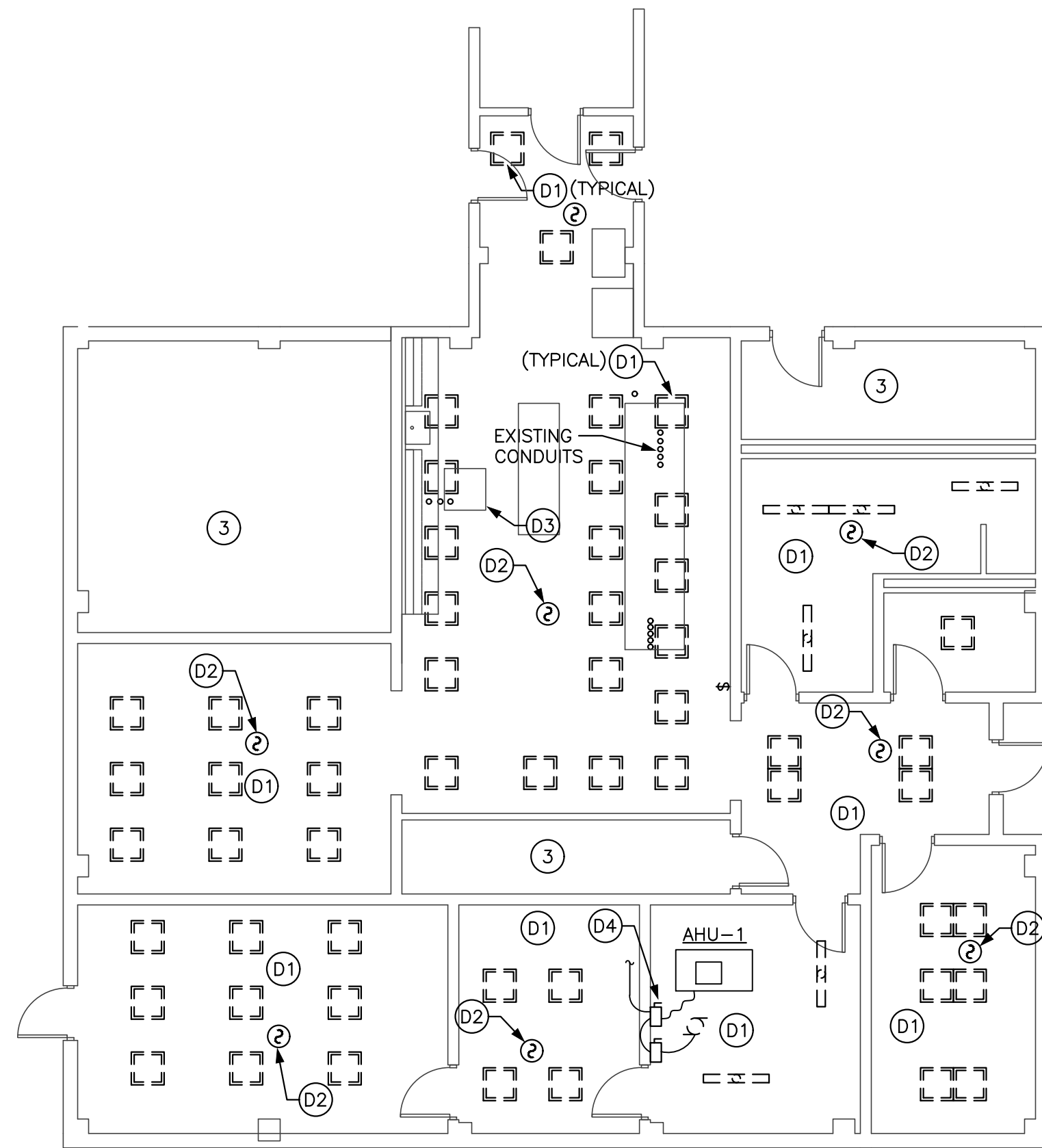
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ELECTRICAL  
LEGEND, NOTES  
& DETAILS

E1.0

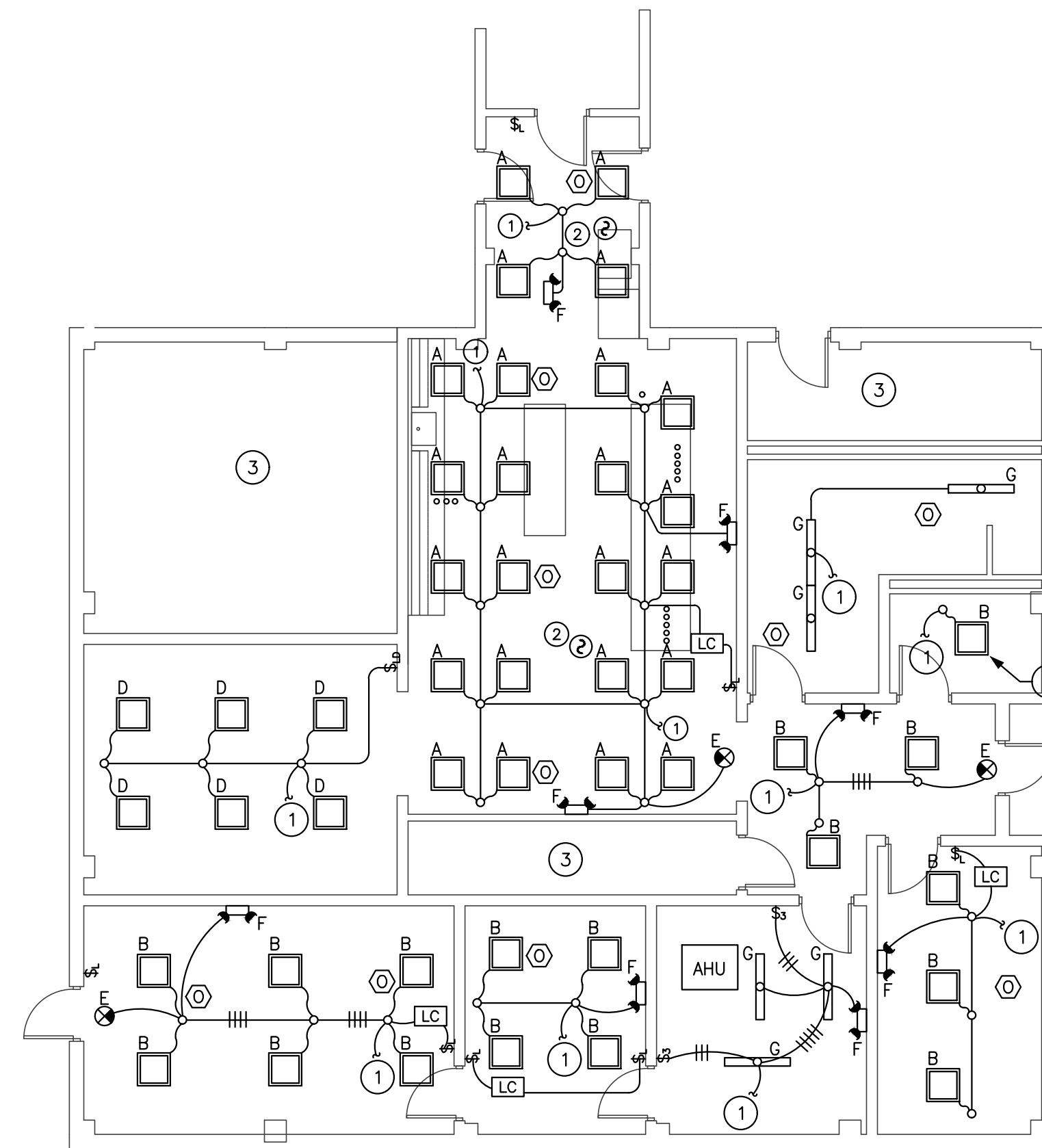


**ELECTRICAL FLOOR PLAN - DEMOLITION**

8' 6' 4' 2' 0' 8' 16'  
GRAPHIC SCALE: 1/8" = 1'-0"

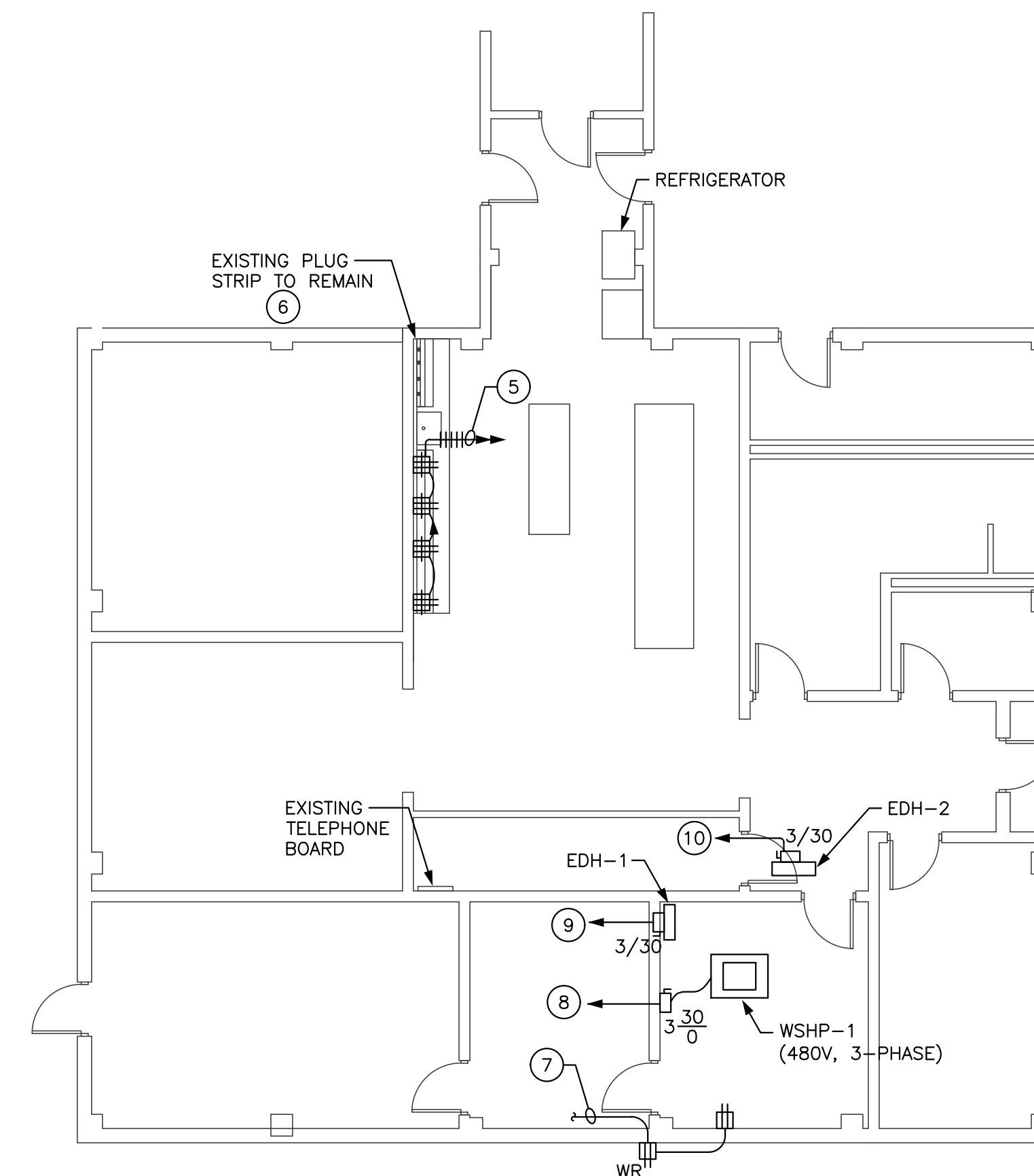
**NOTES:**

- ① REMOVE EXISTING LIGHTING FIXTURES.
- ② REMOVE EXISTING SMOKE DETECTOR FOR INSTALLATION OF NEW CEILING GRID. REINSTALL UPON INSTALLATION OF NEW CEILING.
- ③ EXISTING COMM/SECURITY CABINET TO BE REMOVED AND RELOCATED BY OTHERS.
- ④ REMOVE EXISTING DISCONNECT SWITCHES AND ASSOCIATED CONDUIT AND WIRE SERVING EXISTING AHU AND PUMP.
- ① RECONNECT TO EXISTING LIGHTING CIRCUIT.
- ② REINSTALL EXISTING FIRE ALARM DEVICE TO EXISTING CONDUCTORS.
- ③ NO WORK IN THIS ROOM.
- ④ PROVIDE FLANGE KIT FOR INSTALLATION IN HARD CEILING.
- ⑤ EXTEND TO EXISTING PANEL WITH 5 #10 AND 3/4" CONDUIT. PROVIDE TWO NEW 1-POLE, 20 AMP BRANCH BREAKERS AND CONNECT NEW CONDUIT AND WIRES.
- ⑥ ENSURE PLUG STRIP IS CONNECTED TO AN GFI BKR. PROVIDE NEW GFI IF REQUIRED.
- ⑦ EXTEND NEW 1/2" CONDUIT WITH 3 #12 AND CONNECT TO NEAREST 120V RECEPTACLE CIRCUIT.
- ⑧ EXTEND NEW 1/2" CONDUIT WITH 4 #10 TO EXISTING 480V PANEL SERVING EXISTING AC UNIT. PROVIDE NEW 3-POLE, 25 AMP BREAKER AND CONNECT NEW CONDUIT AND WIRE.
- ⑨ EXTEND NEW 1/2" CONDUIT WITH 4 #12 TO EXISTING 480V PANEL. PROVIDE NEW 3-POLE, 15 AMP BREAKER AND CONNECT NEW CONDUIT AND WIRE.
- ⑩ EXTEND NEW 1/2" WITH 4 #12 TO EXISTING 480V PANEL. PROVIDE NEW 3-POLE, 20 AMP BREAKER AND CONNECT NEW CONDUIT AND WIRE.



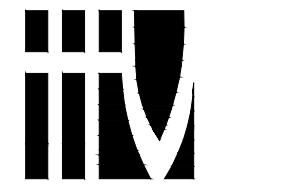
**ELECTRICAL FLOOR PLAN - LIGHTING - NEW WORK**

8' 6' 4' 2' 0' 8' 16'  
GRAPHIC SCALE: 1/8" = 1'-0"



**ELECTRICAL FLOOR PLAN - POWER - NEW WORK**

8' 6' 4' 2' 0' 8' 16'  
GRAPHIC SCALE: 1/8" = 1'-0"



**ttv architects, inc.**  
115 EAST FORSYTH ST  
JACKSONVILLE, FLORIDA 32202  
T 904.798.8333  
F 904.798.8333  
www.ttvarch.com  
FL Lic #AA0002609

architecture planning interior design

**HADDAD ENGINEERING INC.**  
ELECTRICAL MECHANICAL  
3000 HARBETLY ROAD, SUITE 200  
JACKSONVILLE, FLORIDA 32227  
(904) 450-1000  
NAMIIR A. HADDAD P.E. - LICENSE NO. 31987

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ELECTRICAL  
LIGHTING -  
DEMO & NEW  
WORK

**E2.1**





SECTION 16050 BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 GENERAL

1.1 SUMMARY

- A. GROUNDING AND BONDING.
- B. CONNECTION OF UTILIZATION EQUIPMENT.
- C. SUPPORTS.
- D. IDENTIFICATION.

1.2 SUBMITTALS

- A. PRODUCT DATA: FOR REVIEW; PROVIDE CATALOG DATA FOR GROUNDING AND BONDING DEVICES.

1.3 REGULATORY REQUIREMENTS

- A. CONFORM TO REQUIREMENTS OF NFPA 70, (2014 NEC)
- B. FURNISH PRODUCTS LISTED BY UL OR OTHER TESTING FIRM ACCEPTABLE TO AUTHORITY HAVING JURISDICTION.
- C. 2017 FLORIDA BUILDING CODE

1.4 PROJECT CONDITIONS

- A. VERIFY FIELD MEASUREMENTS AND CIRCUITING ARRANGEMENTS ARE AS SHOWN ON DRAWINGS.
- B. VERIFY REMOVAL OF EXISTING ELECTRIC WORK
- C. REPORT DISCREPANCIES TO ARCHITECT BEFORE DISTURBING EXISTING INSTALLATION.

PART 2 PRODUCTS

2.1 GROUNDING MATERIALS

- A. GROUND ROD: COPPER-CLAD STEEL 3/4-INCH DIAMETER 20 FEET LENGTH.
- B. MECHANICAL CONNECTORS: BRONZE, ABOVE GRADE ONLY.
- C. EXOTHERMIC WELDS: BELOW GRADE CONNECTORS.

2.2 BASIC MATERIALS

- A. STEEL CHANNEL: GALVANIZED
- B. MISCELLANEOUS HARDWARE: TREAT FOR CORROSION RESISTANCE.
- C. NAMEPLATES: ENGRAVED THREE-LAYER LAMINATED PLASTIC, BLACK LETTERS ON WHITE BACKGROUND.
- D. WIRE AND CABLE MARKERS: CLOTH MARKERS, SPLIT SLEEVE OR TUBING TYPE.

PART 3 EXECUTION

3.1 INSTALLATION

- A. INSTALL WORK ACCORDING TO NECA "STANDARD OF INSTALLATION."
- B. PROVIDE BONDING TO MEET REGULATORY REQUIREMENTS.
- C. MAKE ELECTRICAL CONNECTIONS TO UTILIZATION EQUIPMENT IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S INSTRUCTIONS.
  - 1. VERIFY THAT WIRING AND OUTLET ROUGH-IN WORK IS COMPLETE AND THAT UTILIZATION EQUIPMENT IS READY FOR ELECTRICAL CONNECTION, WIRING, AND ENERGIZING.
- D. MAKE WIRING CONNECTIONS IN CONTROL PANEL OR IN WIRING COMPARTMENT OF PRE-WIRED EQUIPMENT. PROVIDE INTERCONNECTING WIRING WHERE INDICATED.
- E. INSTALL AND CONNECT DISCONNECT SWITCHES, CONTROLLERS, CONTROL STATIONS, AND CONTROL DEVICES AS INDICATED.
- F. MAKE CONDUIT CONNECTIONS TO EQUIPMENT USING FLEXIBLE CONDUIT. USE LIQUIDTIGHT FLEXIBLE CONDUIT IN DAMP OR WET LOCATIONS.
- G. INSTALL PRE-FABRICATED CORD SET WHERE CONNECTION WITH ATTACHMENT PLUG IS INDICATED OR SPECIFIC, OR USE ATTACHMENT PLUG WITH SUITABLE STRAIN-RELIEF CLAMPS.
- H. PROVIDE SUITABLE STRAIN-RELIEF CLAMPS FOR CORD CONNECTIONS TO OUTLET BOXES AND EQUIPMENT CONNECTION BOXES.
- I. INSTALL SUPPORT SYSTEMS SIZED AND FASTENED TO ACCOMMODATE WEIGHT OF EQUIPMENT AND CONDUIT, INCLUDING WIRING, WHICH THEY CARRY.
  - 1. FASTEN HANGER RODS, CONDUIT CLAMPS, AND OUTLET AND JUNCTION BOXES TO BUILDING STRUCTURE USING PRECAST INSERT SYSTEM BEAM CLAMPS.
  - 2. USE TOGGLE BOLTS OR HOLLOW WALL FASTENERS IN HOLLOW MASONRY, PLASTER, OR GYPSUM BOARD PARTITIONS AND WALLS; EXPANSION ANCHORS OR PRESET INSERTS IN SOLID MASONRY WALLS; SELF-DRILLING ANCHORS OR EXPANSION ANCHOR ON CONCRETE SURFACES; SHEET METAL SCREWS IN SHEET METAL STUDS; AND WOOD SCREWS IN WOOD CONSTRUCTION.
  - 3. DO NOT FASTEN SUPPORTS TO PIPING, CEILING SUPPORT WIRES, DUCTWORK, MECHANICAL EQUIPMENT, OR CONDUIT.
  - 4. DO NOT USE POWDER-ACTUATED ANCHORS.
  - 5. DO NOT DRILL STRUCTURAL STEEL MEMBERS.
  - 6. FABRICATE SUPPORTS FROM STRUCTURAL STEEL OR STEEL CHANNEL.
- J. IDENTIFY ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT, AND LOADS SERVED, TO MEET REGULATORY REQUIREMENTS AND AS SCHEDULED.
  - 1. DECREASE AND CLEANUP TO RECEIVE NAMEPLATES AND TAPE LABELS.
  - 2. SECURE NAMEPLATES TO EQUIPMENT FRONTS USING SCREWS, RIVETS, OR ADHESIVE, WITH EDGES PARALLEL TO EQUIPMENT LINES. SECURE NAMEPLATE TO INSIDE FACE OF RECESSED PANELBOARD DOORS IN FINISHED LOCATIONS.
  - 3. USE NAMEPLATES WITH 1/8 INCH LETTERING TO IDENTIFY INDIVIDUAL SWITCHES AND CIRCUIT BREAKERS, RECEPTACLE CIRCUITS, AND LOADS SERVED.
  - 4. USE NAMEPLATES WITH 1/4 INCH TO IDENTIFY DISTRIBUTION AND CONTROL EQUIPMENT.
- K. INSTALL WIRE MARKERS ON EACH CONDUCTOR IN PANELBOARD GUTTERS, PULL BOXES, OUTLET AND JUNCTION BOXES, AND AT LOAD CONNECTIONS.
  - 1. USE BRANCH CIRCUIT OR FEEDER NUMBER TO IDENTIFY POWER AND LIGHTING CIRCUITS.
  - 2. USE CONTROL WIRE NUMBER AS INDICATED ON EQUIPMENT MANUFACTURER'S SHOP DRAWINGS TO IDENTIFY CONTROL WIRING.

SECTION 16100 WIRING METHODS

PART 1 GENERAL

1.1 SUBMITTALS

- A. PRODUCT DATA: FOR REVIEW.
  - 1. PROVIDE WIRING DEVICE CONFIGURATIONS, RATINGS, DIMENSIONS, AND COLOR SELECTIONS.
  - 2. PROVIDE SERVICE FITTING CONFIGURATIONS, DIMENSIONS, AND FINISH AND COLOR SELECTIONS.

1.2 REGULATORY REQUIREMENTS

- A. CONFORM TO REQUIREMENTS OF NFPA 70.
- B. FURNISH PRODUCTS LISTED BY UL OR OTHER TESTING FIRM ACCEPTABLE TO AUTHORITY HAVING JURISDICTION.

PART 2 PRODUCTS

2.1 PRODUCT REQUIREMENTS

- A. USE ONLY SPECIFIED RACEWAY IN THE FOLLOWING LOCATIONS:
  - 1. UNDERGROUND INSTALLATIONS MORE THAN 5 FEET FROM FOUNDATION PLASTIC CONDUIT. PROVIDE CONCRETE ENCASEMENT WHERE INDICATED.
  - 2. INSTALLATIONS IN OR UNDER CONCRETE SLAB, OR UNDERGROUND WITHIN 5 FEET FROM FOUNDATION WALL; PLASTIC CONDUIT.
  - 3. IN SLAB ABOVE GRADE; PLASTIC CONDUIT.
  - 4. EXPOSED OUTDOOR LOCATIONS: RIGID STEEL CONDUIT OR ELECTRICAL METALLIC TUBING. USE THREADED OR RAINLIGHT FITTINGS.
  - 5. WET INTERIOR LOCATIONS: RIGID STEEL CONDUIT OR ELECTRICAL METALLIC TUBING. USE THREADED OR RAINLIGHT FITTINGS FOR METAL CONDUIT.
  - 6. CONCEALED DRY INTERIOR LOCATIONS: RIGID STEEL CONDUIT OR ELECTRICAL METALLIC TUBING.
- B. EXPOSED DRY INTERIOR LOCATIONS: RIGID STEEL CONDUIT OR ELECTRICAL METALLIC TUBING.
- C. SIZE RACEWAYS FOR CONDUCTOR TYPE INSTALLED OR FOR TYPE THW CONDUCTORS, WHICHEVER IS LARGER.
  - 1. MINIMUM SIZE CONDUIT: 1/2-INCH
- D. USE WIRE AND CABLE IN LOCATIONS AS FOLLOWS:
  - 1. CONCEALED INTERIOR LOCATIONS: BUILDING WIRE IN RACEWAY.
  - 2. EXPOSED INTERIOR LOCATIONS: BUILDING WIRE IN RACEWAY.
  - 3. ABOVE ACCESSIBLE CEILINGS: BUILDING WIRE IN RACEWAY.
  - 4. WET OR DAMP INTERIOR LOCATIONS: BUILDING WIRE IN RACEWAY.
  - 5. EXTERIOR LOCATIONS: BUILDING WIRE IN RACEWAYS.
  - 6. UNDERGROUND LOCATIONS: BUILDING WIRE IN RACEWAY.
- E. USE NO WIRE SMALLER THAN 12 AWG FOR POWER AND LIGHTING AND NO SMALLER THAN 14 AWG FOR CONTROL WIRING. USE 10 AWG CONDUCTOR FOR 20 AMPERE, 120 VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 75 FEET; AND FOR 20 AMPERE, 277 VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 200 FEET.

2.2 CONDUIT AND FITTINGS

- A. CONDUIT:
  - 1. METAL CONDUIT AND TUBING: GALVANIZED STEEL.
  - 2. FLEXIBLE CONDUIT: STEEL
  - 3. LIQUID TIGHT FLEXIBLE CONDUIT: FLEXIBLE CONDUIT WITH PVC JACKET.
  - 4. PLASTIC CONDUIT AND TUBING: NEMA TC 2, PVC. USE SCHEDULE 40 CONDUIT.
- B. CONDUIT FITTINGS:
  - 1. METAL FITTINGS AND CONDUIT BODIES: NEMA FB 1.
  - 2. PLASTIC FITTINGS AND CONDUIT BODIES: NEMA TC 3.
  - 3. EMT FITTINGS: STEEL COMPRESSION TYPE

2.3 ACCESS PANELS

- A. PROVIDE CEILING ACCESS PANELS FOR EQUIPMENT, DEVICES, BOXES AND OTHER LIKE ITEMS REQUIRING ADJUSTMENT, MAINTENANCE OR ACCESSIBILITY THEY ARE NOT LOCATED OVER LAY-IN TYPE CEILING OR ARE NOT OTHERWISE ACCESSIBLE. OBTAIN APPROVAL FROM ARCHITECT FOR TYPE AND LOCATION OF ACCESS PANELS.

2.4 ELECTRICAL BOXES

- A. BOXES:
  - 1. SHEET METAL: NEMA OS 1, GALVANIZED STEEL.
  - 2. CAST METAL: CAST FERALLOY, DEEP TYPE, GASKETED COVER, THREADED HUBS.
- B. HINGED COVER ENCLOSURES: NEMA 250, TYPE 1, STEEL ENCLOSURE WITH MANUFACTURER'S STANDARD ENAMEL FINISH AND CONTINUOUS HINGE COVER, HELD CLOSED BY FLUSH LATCH OPERABLE BY SCREWDRIVER.
- C. LARGE CAST METAL BOXES:
  - 1. SURFACE-MOUNTED TYPE: NEMA 250, TYPE 4 AND TYPE 6, FLAT-FLANGED, SURFACE-MOUNTED JUNCTION BOX; GALVANIZED CAST IRON BOX AND COVER WITH GROUND FLANGE, NEOPRENE GASKET, AND STAINLESS STEEL COVER SCREWS.

2.5 BUILDING WIRE AND CABLE

- A. FEEDERS AND BRANCH CIRCUITS LARGER THAN 6 AWG: COPPER STRANDED CONDUCTOR, 600 VOLT INSULATION, THHN/THWN AND XHHW.
- B. FEEDERS AND BRANCH CIRCUITS 6 AWG AND SMALLER: COPPER CONDUCTOR, 600 VOLT INSULATION, THHN/THWN, XHHW 6 AND 8 AWG, STRANDED CONDUCTOR; SMALLER THAN 8 AWG, SOLID CONDUCTOR.
- C. CONTROL CIRCUITS: COPPER, STRANDED CONDUCTOR, 600 VOLT INSULATION, THW.
- D. ALL CONDUCTORS SHALL BE COPPER.

2.6 REMOTE CONTROL AND SIGNAL CABLE

- A. CONTROL CABLE FOR CLASS 1 REMOTE CONTROL AND SIGNAL CIRCUITS: COPPER CONDUCTOR, 600 VOLT INSULATION, RATED 60 DEGREE C, INDIVIDUAL CONDUCTORS TWISTED TOGETHER, SHIELDED, AND COVERED WITH PVC JACKET.
- B. CONTROL CABLE FOR CLASS 2 OR CLASS 3 REMOTE CONTROL AND SIGNAL CIRCUITS: COPPER CONDUCTOR, 300 VOLT INSULATION, RATED 60 DEGREE C, INDIVIDUAL CONDUCTORS TWISTED TOGETHER, SHIELDED, AND COVERED WITH PVC JACKET; UL LISTED.

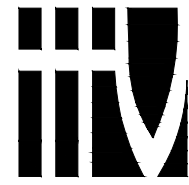
PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. VERIFY THAT SUPPORTING SURFACES ARE READY TO RECEIVE WORK.
- B. VERIFY THAT INTERIOR OF BUILDING IS PHYSICALLY PROTECTED FROM WEATHER.
- C. VERIFY THAT MECHANICAL WORK THAT IS LIKELY TO DAMAGE CONDUCTORS HAS BEEN COMPLETED.
- D. COMPLETELY AND THOROUGHLY SWAB RACEWAY SYSTEM BEFORE INSTALLING CONDUCTORS.
- E. ELECTRICAL BOXES ARE SHOWN ON DRAWINGS IN APPROXIMATE LOCATIONS UNLESS DIMENSIONED.
  - 1. OBTAIN VERIFICATION FROM ENGINEER OF FLOOR BOX LOCATIONS, AND LOCATIONS OF OUTLETS IN OFFICES AND WORK AREAS, PRIOR TO ROUGH-IN.
  - 2. IT SHALL BE UNDERSTOOD THAT ANY OUTLET MAY BE RELOCATED A DISTANCE NOT EXCEEDING 15FT FROM THE LOCATION SHOWN ON THE DRAWINGS PRIOR TO OR DURING ROUGH-IN, IF SO DIRECTED BY THE ARCHITECT-ENGINEER WITHOUT ADDITIONAL COST TO THE OWNER.
  - 3. LOCAL SWITCHES WHICH ARE SHOWN NEAR DOORS SHALL BE LOCATED AT THE STRIKE SIDE OF THE DOOR AS FINALLY HUNG, REGARDLESS OF SWING ON THE DRAWINGS.

3.2 INSTALLATION

- A. PERFORM WORK ACCORDING TO NECA STANDARD OF INSTALLATION.
- B. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND TO PRESENT NEAT APPEARANCE.
  - 1. ROUTE EXPOSED RACEWAY PARALLEL AND PERPENDICULAR TO WALLS AND ADJACENT PIPING.
  - 2. MAINTAIN MINIMUM 6-INCH CLEARANCE TO PIPING AND 2-INCH CLEARANCE TO HEAT SURFACES SUCH AS FLUES, STEAM PIPES, AND HEATING APPLIANCES.
  - 3. MAINTAIN REQUIRED FIRE, ACOUSTIC, AND VAPOR BARRIER RATING WHEN PENETRATING WALLS, FLOORS, AND CEILINGS.
  - 4. ROUTE CONDUIT THROUGH ROOF OPENINGS FOR PIPING AND DUCTWORK WHERE POSSIBLE OTHERWISE, ROUTE THROUGH ROOF WITH PITCH POCKET.
  - 5. GROUP IN PARALLEL RUNS WHERE PRACTICAL. USE RACK CONSTRUCTED OF STEEL CHANNEL. MAINTAIN SPACING BETWEEN RACEWAYS OR DERATE CIRCUIT AMPACITIES TO NFPA 70 REQUIREMENTS.
  - 6. USE CONDUIT HANGERS AND CLAMPS; DO NOT FASTEN WITH WIRE OR PERFORATED PIPE STRAPS.
  - 7. USE CONDUIT BODIES TO MAKE SHARP CHANGES IN DIRECTION.
  - 8. TERMINATE CONDUIT STUBS WITH INSULATED BUSHINGS.
  - 9. USE SUITABLE CAPS TO PROTECT INSTALLED RACEWAY AGAINST ENTRANCE OF DIRT AND MOISTURE.
  - 10. PROVIDE NO. 12 AWG INSULATED CONDUCTOR OR SUITABLE PULL STRING IN EMPTY RACEWAYS, EXCEPT SLEEVES AND NIPPLES.
  - 11. INSTALL EXPANSION JOINTS WHERE RACEWAY CROSSES BUILDING EXPANSION OR SEISMIC JOINTS.
  - 12. INSTALL PLASTIC CONDUIT AND TUBING ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
  - 13. USE STEEL COMPRESSION TYPE FITS ON CONDUITS.
- C. INSTALL AUXILIARY GUTTER AND WIREWAY ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
- D. INSTALL ELECTRICAL BOXES AS SHOWN ON THE DRAWINGS, AND AS REQUIRED FOR SPLICES, TAPS, WIRE PULLING, EQUIPMENT CONNECTIONS AND REGULATORY REQUIREMENTS.
  - 1. USE CAST OUTLET BOX IN EXTERIOR LOCATIONS EXPOSED TO WEATHER AND WET LOCATIONS.
  - 2. USE HINGED COVER ENCLOSURE FOR INTERIOR PULL AND JUNCTION BOX LARGER THAN 12 INCHES IN ANY DIMENSION.
  - 3. LOCATE AND INSTALL ELECTRICAL BOXES TO ALLOW ACCESS. PROVIDE ACCESS PANELS IF REQUIRED
  - 4. LOCATE AND INSTALL ELECTRICAL BOXES TO MAINTAIN HEADROOM AND TO PRESENT NEAT MECHANICAL APPEARANCE.
  - 5. INSTALL PULL BOXES AND JUNCTION BOXES ABOVE ACCESSIBLE CEILINGS OR IN UNFINISHED AREAS.
  - 6. PROVIDE KNOCKOUT CLOSURES FOR UNUSED OPENINGS.
  - 7. ALIGN WALL-MOUNTED OUTLET BOXES FOR SWITCHES, THERMOSTATS, AND SIMILAR DEVICES.
  - 8. COORDINATE MOUNTING HEIGHTS AND LOCATIONS OF OUTLETS ABOVE COUNTERS AND BACKSPASHES.
  - 9. USE RECESSED OUTLET BOXES IN FINISHED AREAS AND WHERE INDICATED.
  - 10. SECURE BOXES TO INTERIOR WALL AND PARTITION STUDS, ACCURATELY POSITIONING TO ALLOW FOR SURFACE FINISH THICKNESS.
  - 11. USE STAMPED STEEL STUD BRIDGES FOR FLUSH OUTLETS IN HOLLOW STUD WALL, AND ADJUSTABLE STEEL CHANNEL FASTENERS FOR FLUSH CEILING OUTLET BOXES.
  - 12. LOCATE BOXES IN MASONRY WALLS TO REQUIRE CUTTING CORNER COORDINATE MASONRY CUTTING TO ACHIEVE NEAT OPENINGS FOR BOXES.
  - 13. DO NOT INSTALL BOXES BACK-TO-BACK IN WALLS; PROVIDE 6 INCHES SEPARATION, MINIMUM; EXCEPT PROVIDE 24 INCHES SEPARATION, MINIMUM IN ACOUSTIC-RATED WALLS.
  - 14. DO NOT DAMAGE INSULATION.
- E. INSTALL CABLE AND WIRE ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
  - 1. NEATLY TRAIN AND SECURE WIRING INSIDE BOXES, EQUIPMENT, AND PANELBOARDS.
  - 2. USE WIRE PULLING LUBRICANT FOR PULLING 4 AWG AND LARGER WIRES.
  - 3. SUPPORT CABLES ABOVE ACCESSIBLE CEILINGS TO KEEP THEM FROM RESTING ON CEILING TILES.
  - 4. MAKE SPLICES, TAPS, AND TERMINATIONS TO CARRY FULL AMPACITY OF CONDUCTORS WITHOUT PERCEPTIBLE TEMPERATURE RISE.
  - 5. TERMINATE SPARE CONDUCTORS WITH ELECTRICAL TAPE.
- F. INSTALL WIRING DEVICES ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
- G. INSTALL WALL PLATES FLUSH AND LEVEL.
  - 1. INSTALL PLATES ON SWITCH, RECEPTACLE, AND BLANK OUTLETS IN FINISHED AREAS, USING JUMBO SIZE PLATES FOR OUTLETS INSTALLED IN MASONRY WALLS.
  - 2. INSTALL GALVANIZED STEEL PLATES ON OUTLET BOXES AND JUNCTION BOXES IN UNFINISHED AREAS, ABOVE ACCESSIBLE CEILINGS, AND ON SURFACE-MOUNTED OUTLETS.
- H. INSTALL SERVICE FITTINGS ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
- I. BEFORE INSTALLING RACEWAYS AND PULLING WIRE TO ANY MECHANICAL EQUIPMENT OR KITCHEN EQUIPMENT, VERIFY ELECTRICAL CHARACTERISTICS WITH FINAL SUBMITTAL ON EQUIPMENT TO ASSURE PROPER RATING AND AWG OF CONDUCTORS.
- J. UNDERGROUND CABLE AND CONDUIT INSTALLATION SHALL CONFORM TO ANSI C2 AND NEC EXCEPT AS OTHERWISE INDICATED. THE CONTRACTOR SHALL PROMPTLY REPAIR ANY UTILITY LINES OR SYSTEM DAMAGED BY HIS OPERATION. THE TOP OF UNDERGROUND CONDUIT SHALL NOT BE LESS THAN 24 INCHES BELOW GRADE. THE BOTTOM OF CONDUITS TRENCH SHALL BE GRADED SMOOTH, WHERE ROCK AND SHARP EDGED MATERIAL ARE ENCOUNTERED, THE BOTTOM SHALL BE EXCAVATED FOR ADDITIONAL 3 INCHES, FILLED AND TAMPED LEVEL TO THE ORIGINAL BOTTOM WITH SAND OR EARTH FREE FROM ROCKS AND SHARP MATERIALS. PROVIDE MAGNETIC YELLOW WARNING TAPE ABOVE THE ENTIRE LENGTH OF UNDERGROUND CONDUITS TAPE SHALL BE BURIED 12" BELOW GRADE.
- K. SURFACES DISTURBED DURING THE INSTALLATION OF UNDERGROUND CONDUITS SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS. PROVIDE SOD OF QUALITY EQUAL TO THAT REMOVED, PATCH PAVEMENT, SIDEWALK CURB, ETC. EXCAVATED MATERIAL NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED FROM PROJECT SITE. REMOVE WATER FROM EXCAVATION BY PUMPING OR OTHER APPROVED METHOD. BACKFILL SHALL BE FREE FROM LARGE CLOUDS OF EARTH OR STONES OVER 1 INCH IN SIZE.



ttv architects, inc.

115 EAST FORSYTH ST  
JACKSONVILLE, FLORIDA 32202  
T 904.788.8333  
F 904.788.8335  
www.ttvarch.com  
FL Lic#AA0002969

architecture planning interior design

H HADDAD ENGINEERING INC.  
REGISTERED PROFESSIONAL ENGINEER  
3034 HAWLEY AVE., SUITE 200  
JACKSONVILLE, FLORIDA 32227  
(904) 950-3400  
CERTIFICATE OF AUTHORIZATION NO. 4899

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