



REQUEST

FOR

BIDS

RVCC LEBANON LNA/LPN LAB RENOVATIONS

at

RIVER VALLEY COMMUNITY COLLEGE

15 Hanover Street, Lebanon, NH

A COMPONENT OF THE

Community College System of New Hampshire

26 College Drive, Concord, NH

Project# RVC 20-01

February 19, 2020

DOCUMENT 00015

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END OF SECTION

SECTION 00010 - INVITATION TO BID – CCSNH

Electronic Bids will be accepted by email to Matthew Moore, Director of Capital Planning and Development at memooore@ccsnh.edu until **Monday March 9, 2020 at 2:00pm** for the following project:

RVC20-01 RVCC Lebanon LNA/LPN Lab Renovations
at River Valley Community College, 15 Hanover Street, Lebanon, NH
a Component of the Community College System of New Hampshire
26 College Drive, Concord, NH
Project # RVC20-01

Description: This project consists of a renovation of an existing 740 SF classroom area to be a new LNA/LPN Lab.

The Project will include but not be limited to the Disciplines of demolition, wood construction, fire protection, flooring, mechanical, electrical and plumbing.

Plans and specifications will be available from the Community College System of New Hampshire, **February 19, 2020 on the CCSNH website** www.ccsnh.edu/about-ccsnh/bidding-rfp/

Plans and specifications will also be available at the following printers:

- Signature Press and Blueprinting, Inc., 45 Londonderry Turnpike, Rte. 28 Bypass, Hooksett, NH 03106;
- Construction Summary of NH: Inc., 734 Chestnut Street, Manchester, NH 03104;
- Infinite Imaging: 933 Islington Street, Portsmouth, NH 03801
- Minuteman Press: 109 Gosling Road, Newington, NH 03801;
- Works in Progress, 20 Farrell Street, Suite 103, South Burlington, VT 05403
- The Blue Book, <http://www.thebluebook.com/>
- Community College System of New Hampshire website www.ccsnh.edu/about-ccsnh/bidding-rfp/

BIDDERS SHOULD ACT PROMPTLY AND SUBMIT ALL QUESTIONS IN WRITING TO: MATTHEW MOORE, DIRECTOR OF CAPITAL PLANNING AND DEVELOPMENT, E-MAIL memooore@ccsnh.edu .

A MANDATORY SITE VISIT WILL NOT BE HELD.

To schedule a non-mandatory visit contact James Reiman at jreiman@ccsnh.edu (603) 543-4455

Project substantial completion date is **May 15, 2020.**

Proposals must be completed in both words and figures on forms furnished by the College, or on previously-approved, substantially-identical forms generated by computer software, which shall be submitted electronically in an e-mail titled: **“Bid for: RVC20-01 RVCC Lebanon LNA/LPN Lab Renovations”** received by MATTHEW MOORE at memooore@ccsnh.edu as specified no later than **2:00 PM, Monday, March 9, 2020.**

Companies, corporations or trade names, except sole proprietorships must be registered with the Secretary of

State (Corporate Division, Telephone No. 603/271-3244) in order to do business with the State of New Hampshire.

Bidders must show three recent years' experience with installations of a similar complexity and cost and prior experience with installations of the materials within 50 miles of the project site.

The successful bidder will be required to comply with State of New Hampshire RSA#21-1:81-a. The successful bidder will be required to furnish a 100% payment and 100% performance bond prior to execution of contract.

The award will be based on the proposal that best meets the needs of the college. Factors included will be the cost, completeness of the proposal, quality of the technology provided, and experience of the contractor and installation team. The college reserves the right to waive any informality in or to reject any or all proposals.

All contract documents can be found on the CCSNH website at

www.ccsnh.edu/about-ccsnh/bidding-rfp/

Before your submission, always check for any addenda or other materials that may have been issued which would affect the invitation to bid by checking the CCSNH website at

www.ccsnh.edu/about-ccsnh/bidding-rfp/

CCSNH reserves the right to waive any and all informalities in its best interest or to reject any or all proposals.



Matthew Moore, PE,
Director of Capital Planning & Development
Community College System of New Hampshire

END OF DOCUMENT

DOCUMENT 001153 - REQUEST FOR QUALIFICATIONS

1.1 PURPOSE, LAWS, AND REGULATIONS

- A. The purpose of the Prequalification Procedure described in this Document is to provide Owner with a mechanism to evaluate and determine whether Prospective Bidders are qualified to participate in the construction of Project. Evaluation will be limited to that office of the Prospective Bidder that is proposed to perform the Work.

1.2 DEFINITIONS

- A. Prospective Bidder: A Prospective Bidder is a person or entity who submits a Submittal of Qualifications to Owner.

1.3 QUALIFICATION PROCEDURES

- A. Prospective Bidders shall complete all required forms and attachments described in the Prequalification Documents, entering "Not Applicable" where information does not apply. These forms MUST be included with the Bid Proposal Form. Absence of any of the forms included in the Prequalification Documents will be reason for possible disqualification.
- B. Status of Prospective Bidders:
 - 1. Proprietors submitting bids shall indicate their status as proprietors.
 - 2. Prospective Bidders submitting qualifications for partnerships shall indicate their status as partners and shall submit a certified copy of the power of attorney authorizing the executor of the submittal to bind the partnership.
 - 3. Prospective Bidders submitting qualifications for corporations shall indicate their status as corporations and shall submit a certified copy of the board of directors' authorization for the Prospective Bidder to bind the corporation and shall affix the corporate seal on the submittal.
 - 4. Prospective Bidders shall provide the following:
 - a. Names and addresses of proprietors, of all members of a partnership, or of the corporation's officers.
 - b. Name of jurisdiction where the partnership is registered or where the corporation is incorporated. Corporations must be licensed to do business in Project state at the time of executing the Contract.

1.4 WITHDRAWAL

- A. A Qualification Statement may be withdrawn on personal request received from the Prospective Bidder.

1.5 QUALIFICATION STATEMENT

- A. The undersigned submits answers to the following questions to enable the Community College System of New Hampshire to judge experience and ability in the work proposed to be done.

1. The work, if awarded to you, will have the resident personal supervision of whom? State his/her name, title, and their special qualifications.

2. (a) Provide a brief history of your firm. (b) Demonstrate that your firm has provided satisfactory work on similar projects.

a)

b)

3. How many years has your organization been in business as a contractor under the name in which you propose to execute this contract?

4. Has your present organization ever failed to complete any work awarded to it? If so, state when, where and why:

5. Provide three (3) Examples of Experience with full responsibility for work of a similar size to this project and within 50 miles of the project site.

Qualifications to perform the work: List Three

Experience with full responsibility for work of a similar size and within 50 miles of the project site.

Bidders are to provide evidence of qualifications with the bid.

NAME OF REFERENCE PROJECT _____

Location of Project _____

Date work performed _____

Name of Owner _____

Contact Name & Phone Number _____

Description of Project _____

Approx. Contract value _____

NAME OF REFERENCE PROJECT _____

Location of Project _____

Date work performed _____

Name of Owner _____

Contact Name & Phone Number _____

Description of Project _____

Approx. Contract value _____

NAME OF REFERENCE PROJECT _____

Location of Project _____

Date work performed _____

Name of Owner _____

Contact Name & Phone Number _____

Description of Project _____

Approx. Contract value _____

DOCUMENT 00204

INSTRUCTIONS TO BIDDERS – Community College System of New Hampshire (CCSNH)
Issued 2-05-2004; Revised as noted

Revised 4/17/18

PART	ITEM
1	DEFINITIONS
2	PREPARATION AND SUBMISSION OF BIDS
3	RECEIPT AND OPENING OF BIDS
4	WITHDRAWAL OF BIDS
5	PROPOSAL GUARANTY (intentionally omitted)
6	CONDITIONS AT SITE OR BUILDING
7	EXPLANATION TO BIDDERS
8	REJECTION OF BIDS
9	CONTRACT BOND
10	CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE
11	BIDDING DOCUMENTS
12	SUBSTITUTIONS
13	AWARD OF CONTRACT
14	PERMITS AND FEES

PART 1 DEFINITIONS

- 1.1 Refer to Document 00708: General Conditions – CCSNH:

PART 2 PREPARATION AND SUBMISSION OF BIDS

- 2.1 The Bidder is required to bid on all items called for in the Proposal. If Alternates are included, the Bidder shall set forth in the space provided the amount to be added to or deducted from the Lump Sum Base Bid or the Lump Sum Grand Total. If an Alternate called for does not involve a change in price, the Bidder shall so indicate in the space provided.
- 2.2 Bids shall be submitted upon the Proposal Form furnished and shall be signed in ink. The Bidder shall specify a unit price, both in words and figures, for each item called for in the Lump Sum Grand Total Proposal. All of the words and figures shall be in ink or typed. If a unit price or a Lump Sum Grand Total already entered by the Bidder on the Proposal Form is to be altered, it should be crossed out with ink, the new unit price and the Lump Sum Grand Total bid entered above or below it and initialed by the Bidder; also in ink. In case of discrepancy between the prices written in words and those written in figures, the prices written in words shall govern. Bids containing any conditions, omissions, unexplained erasures or alterations, or items not called for in the Proposal or irregularities of any kind may be rejected by the Chancellor as being incomplete non-conforming, or non-responsive.
- 2.3 Each bid must contain the full business address of the Bidder and be signed by him/her with his/her usual signature.
- A. Bids by a partnership of any form must furnish the full names of all partners, and must be signed in the partnership name by one of the members of the partnership or by an authorized representative, followed by the designation of the person signing. All Contracts with partnerships must include a certificate of authorization demonstrating that the partner(s) or authorized individuals have been authorized by the partnership to enter into the Contract on behalf of the partnership.
- B. Bids by a corporation of any form must be signed with the legal name of the corporation, followed by the name of the State of incorporation and by the signature and designation of the president, secretary or other person authorized to bind it in the matter. The name of each person signing shall also be typed or printed below the signature. *[A bid by a person who affixes to his/her signature, the word "President," "Secretary," "Agent" or other designation, without disclosing whom he/she is representing if other than the contracting entity noted above, may be held to the bid of the individual signing.]*
- C. Bids by proprietorships (individuals), or by individuals with a registered trade name, or doing business under an assumed name (aka d/b/a), shall be executed by the individual in their name, with reference to the trade name or assumed name.

- 2.4 Bids to be scanned and transmitted by electronic mail to memmoore@ccsnh.edu no later than the bid deadline.

PART 3 RECEIPT AND OPENING OF BIDS

- 3.1 The bid opening officer will decide when the specified time has arrived, and no bid received or presented thereafter will be considered. No responsibility or liability will be attached to any officer for the premature opening of a bid not properly addressed and identified.

PART 4 WITHDRAWAL OF BIDS

- 4.1 A bid may be withdrawn upon written request received from the bidder at the Director of Capital Planning and Development office at 26 College Drive, Concord, NH 03301-7407, with reasonable time prior to the time fixed for opening. Negligence on the part of the bidder in preparing the bid confers no right for the withdrawal of the bid after it has been opened.

PART 5 PROPOSAL GUARANTY (intentionally omitted)

PART 6 CONDITIONS AT SITE OR BUILDING

- 6.1 Bidders shall visit the site and be responsible for having ascertained pertinent local conditions; such as location, accessibility and general character of the site or building, the character and extent of existing work within or adjacent to the site, and any other work being performed thereon at the time of submitting the bid.

PART 7 EXPLANATION TO BIDDERS

- 7.1 No oral explanation in regard to the meaning of the Bidding Documents will be made and no oral instructions will be given before the award of the Contract. Discrepancies, omissions or doubts as to the meanings of Bidding Documents shall be communicated in writing to the Director of Capital Planning and Development for interpretation no later than five (5) working days before the hour and date set for the bid opening. Any interpretations will be in the form of an Addendum to the Bidding Documents that will be forwarded to all Bidders of record and sent to all other locations identified in the Invitation to Bid where documents are made available.

PART 8 REJECTION OF BIDS

- 8.1 The Chancellor reserves the right to reject any or all bids, to waive technicalities or to advertise for new bids, if in his/her judgment, the best interests of the State will be promoted thereby. The Chancellor reserves the right to reject the bid of a Bidder who is not in a position to perform the Contract.
- 8.2 The Chancellor reserves the right to waive any informality in bids received, if in the best interest of the CCSNH.
- 8.3 The Chancellor reserves the right to reject any Bidders not meeting all stated requirements.

PART 9 CONTRACT BOND

- 9.1 The successful Bidder, at the time of the execution of the Contract, must deposit with the Chancellor, Surety in the sum equal to one hundred percent (100%) of the amount of the Contract as required by RSA 447:16. The form of Bond shall be that provided for by the CCSNH and the Surety shall be acceptable to the Chancellor. The Contract Bond must be written by a Company licensed to do business in New Hampshire at the time the policy is issued. In addition, the Company issuing the bond shall be listed on the current list of "Surety Companies Acceptable on Federal Bonds" as published by the U.S. Department of the Treasury, Financial Management Services, Circular Number 570. see <http://www.fms.treas.gov/c570/index.html>

PART 10 CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE

- 10.1 The Contractor shall deliver to the Chancellor at the time of submitting a signed Contract, certificates of all insurance required hereunder. The certificates of insurance shall contain a description of the project, including the project name and number, and shall state that the companies issuing insurance will mail to the Chancellor thirty (30) days' notice of cancellation, alteration of material change of any listed policies or ten (10) days in cases of non-payment of premium. The Contractor shall keep in force the insurance required herein for the period of the Contract, through the Warranty period, and Owners and Contractors Protective (OCP) Liability coverage shall be kept in force through the date of Substantial Completion, or longer at the Director of Capital Planning and Development's direction. The Contractor shall have a continuing duty to provide new certificates of insurance as policies are amended or renewed. At the request of the Chancellor, the Contractor shall promptly make available a copy of any and all listed insurance policies. The required insurance must be written by a Company licensed to do business in the State of New Hampshire at the time the policy is issued. In addition, the company must have a rating of no less than A- based on the current A.M. Best with a size of VIII and satisfying and the terms and conditions described below or the minimum limits required of the Prime Contractor under the Contract Documents.
- 10.2 Prior to the start of the Contractor's Work, the Contractor and any subcontractors, consultants or third parties approved to perform Services pursuant to this contract, will carry, in full force and effect during the entire term of this Agreement, insurance with a carrier rated at minimum "A-" by A.M. Best with a size of VIII and satisfying and the terms and conditions described below or the minimum limits required of Prime Contractor under the Contract Documents.
- A. Commercial General Liability (CGL) with limits of Insurance of not less than \$1,000,000 each occurrence and \$2,000,000 Annual Aggregate.
- .1) If the CGL coverage contains a General Aggregate Limit, such General Aggregate shall apply separately to each project.
 - .2) CGL coverage shall be written on ISO Occurrence form CG 00 01 (10/93) or a substitute form providing equivalent coverage and shall cover liability arising from premises, operations, independent contractors, products- completed operations, and personal and advertising injury.
 - .3) Owner and all other parties required of the Contractor, shall be included as insured's on the CGL, using ISO Additional Insured Endorsement CG 20 10 (11/85) or CG 2010 (10/93) **AND** CG 20 37 (10/01) or CG2033(10/01) **AND** CG2037 (10/01) or an endorsement providing equivalent coverage to the additional insured's. This insurance for the additional insured's shall be as broad as the coverage provided for the named insured Contractor. It shall apply as Primary and non-contributing Insurance before any other insurance or self-insurance, including any deductible, maintained by, or provided to, the additional insured.
 - .4) Contractor shall maintain CGL coverage for itself and all additional insured's for the duration of the project and maintain Completed Operations coverage for itself and each additional insured for at least 7 years after completion of the Work.

- .5) If Contractor is performing snow removal the policy must include the addition of CG 22 92 12 07 for Snow Removal Operations Coverage or equivalent

10.3 Commercial Automobile Liability

- .1) Business Auto Liability with limits of at least \$1,000,000 for each accident.
- .2) Business Auto coverage must include coverage for liability arising out of all owned, leased, hired and non-owned automobiles.
- .3) Owner and all other parties required of the Contractor, shall be included as additional insured's on the auto policy.

10.4 Commercial Umbrella

- .1) Umbrella limits must be at least \$2,000,000.
- .2) Umbrella coverage must include as insured's all entities that are additional insured's on the CGL and coverage shall be as broad as provided on the underlying coverages.

10.5 Workers Compensation and Employers Liability

- .1) Employers Liability Insurance limits of at least \$500,000 each accident for bodily injury by accident and \$500,000 each employee for injury by disease.
- .2) Where applicable, U.S. Longshore and Harborworkers Compensation Act Endorsement shall be attached to the policy.
- .3) Where applicable, the Maritime Coverage Endorsement shall be attached to the Policy.
- .4) All employees, including the Owner, partners and officers, shall provide proof of workers' compensation coverage prior to working on the job site.

10.6 Waiver of Subrogation

- .1) To the fullest extent permitted by law, Contractor waives all rights against Owner and Architect and their agents, officers, directors and employees for recovery of damages to the extent these damages are covered by commercial general liability, commercial umbrella liability, business auto liability or workers compensation and employers liability insurance where acceptable by law.

10.7 Pollution Liability Insurance

- .1) Pollution Limits with at least \$1,000,000 each occurrence, claim or wrongful act with an aggregate of \$1,000,000 for bodily injury, property damage, pollution or environmental harm arising out of the work, asbestos, lead, or silica related claims, claims arising out of microbial matter or bacteria, testing, monitoring, measuring operations or laboratory analyses, or liability arising out of treatment facility. If a motor vehicle is used in connection with the work,

the business automobile policy will include coverage at least as broad as ISO CA 99 48 and be endorsed to include Motor Carrier Act Endorsement MCS 90.

.2) The policy must meet all other insurance requirements applicable to general liability, including, but not limited to additional insured, waiver of subrogation and cancellation notification.

.3) If there is a retroactive date, claims made will apply back to the first date of services provided to the Owner.

.4) The coverage shall be effective for 5 years following completion of the engagement.

.5) Proof of Pollution Liability Insurance shall be provided on a certificate acceptable to the Owner.

- 10.8 Attached to each certificate of insurance shall be a copy of the Additional Insured Endorsement that is part of the Contractor's Commercial General Liability Policy. These certificates and the insurance policies required shall contain a provision that coverage afforded under the policies will not be canceled or allowed to expire until at least 30 days prior written notice has been given to the Owner. Any subcontractors, consultants or third parties performing services for Contractor as contemplated herein, shall also maintain insurance as required above. Notwithstanding the foregoing, the Owner, in its sole and absolute discretion and taking into account the scope and character of the Services to be provided by Contractor, may reduce the required liability insurance minimums. Such reduction in the required liability insurance minimum of Contractor

shall be evidence by a written instrument specifically referencing this Exhibit I and signed by the Owner.

- 10.9 The Contractor shall require each Subcontractor employed on the Project to maintain the coverage listed above unless the Contractor's insurance covers activities of the Subcontractor on the Project.
- 10.10 No operations under this Contract shall commence until certificates of insurance attesting to the above listed requirements have been filed with the Chancellor and a Notice to Proceed is issued.
- A. If blasting and/or demolition is required by the Contract, the Contractor or subcontractor shall obtain the respective coverage for those activities, and shall furnish to the Chancellor a Certificate of Insurance evidencing the required coverages prior to commencement of any operations involving blasting or demolition or both.
- B. Owner's and Contractor's Protective Liability (OCP) coverage for the benefit of the Community College System of New Hampshire.
1. Limits of Liability:
- a. \$2,000,000 Each Occurrence
- b. \$3,000,000 Aggregate
- ***** [OR] *****
- c. \$2,000,000 Bodily Injury & Property
- C. Property and Builder's Risk Insurance (Fire and Extended Coverage):
1. The Community College System of New Hampshire shall insure the work included in the Contract, including extras and change orders, on an "All Risk" basis, on one hundred percent (100%) completed value basis of the Contract, as modified. Builder's Risk coverage shall include materials located at the Contractor's premises, on-site, in-transit, and at any temporary site. The policy by its own terms or by endorsement shall specifically permit partial or beneficiary occupancy prior to completion or acceptance of the entire work. The policies shall be in the names of the Community College System of New Hampshire and the Contractor. The policies shall provide for the inclusion of the names of all other Contractors, Subcontractors, and others employed on the premises as insureds. The policies shall stipulate that the insurance companies shall have no right of subrogation against any Contractors, Subcontractors or other parties employed on the premises.
2. CCSNH is not responsible to insure Contractor's owned or leased equipment/property.
- D. General Insurance Conditions
1. Failure to secure and maintain, or add by endorsement, Owner and all subsidiaries, agents, and employees as required shall not act as a defense to the enforcement of the terms of this Contract. Any such insurance policy shall apply separately to each insured against whom claim is made or suit is brought and shall contain no provision which excludes coverage of a claim made by one insured under the policy against another insured under the policy.
2. Each policy shall contain a clause prohibiting cancellation or modifications of the policy earlier than thirty (30) days or ten (10) days in cases of non-payment of premium after written notice thereof has been received by CCSNH.

- E. Indemnification:
1. To the fullest extent of the law the Contractor shall indemnify, defend, and hold harmless the Community College System of New Hampshire, its Officers, and its agents and employees from and against any and all claims, liabilities, suits or penalties arising out of (or which may be claimed to arise out of) acts or omissions of the Contractor or subcontractors in the performance of work covered by the Contract. This covenant shall survive the termination of the Contract. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the Community College System of New Hampshire, which immunity is hereby reserved by the Community College System of New Hampshire. The covenant in paragraph I shall survive the termination of this Agreement.
- F. Additional Insurance for Design/Build Contracts:
1. In addition to the insurance requirements listed in the above paragraphs, the Designer/Builder Team shall provide the following coverage.
 - a. The Designer/Builder Team, or the Designer shall purchase and maintain professional liability coverage for this project. The coverage shall provide the CCSNH with protection against design errors and omissions and shall have an annual aggregate limit of no less than \$2,000,000. The coverage shall be maintained through the legal statute of repose period, currently stipulated to be three (3) years from the date of Substantial Completion. If the professional liability coverage is maintained by other than the firm holding the prime contract with the CCSNH for this project, the prime contractor shall provide evidence of indemnifications, approved by the CCSNH, that indicate that this insurance coverage is in place and available for the protection of the CCSNH. The indemnification may not create a re-assignment of contractual responsibilities between the CCSNH and the prime contractor.

PART 11 BIDDING DOCUMENTS

- 11.1 Bidders shall use only complete sets of Bidding Documents in preparation of bids; the CCSNH assumes no responsibility for mistakes due to the use of incomplete sets of Bidding Documents.

PART 12 SUBSTITUTIONS

- 12.1 Where Bidding Documents stipulate particular Products, substitution requests will ONLY be considered before receipt of Bids. Refer to specification section 01600 – Product Requirements.

PART 13 AWARD OF CONTRACT

- 13.1 The Contract will be Awarded as soon as possible to the Responsible Bidder on the basis of the Highest Score, see Score Sheet in Section 00300.
- A. The CCSNH may request a Negotiated Price from the Highest Score Responsible Bidder.

- 13.2 The signed Contract, together with the Contract Bond, and certificate of insurance shall be returned to the CCSNH within 10 days after the date of notice that the Proposal has been accepted.
- A. If the successful bidder fails to execute the Contract and submit acceptable bond and required attachments within 20 days after the date of notice of acceptance of the Proposal, the CCSNH may cancel the notice of award. Contract award may then be made to the next lowest responsible bidder or the Work may be re-advertised.
- 13.3 Prior to the issuance of Notice to Proceed, each Bidder shall be prepared, if so requested by the Chancellor, to present evidence of his/her experience, qualifications, and financial ability to carry out the terms of the Contract.
- 13.4 A Contract that has been Awarded with required attachments is not executed until submitted and approved by the CCSNH Board of Trustees, if required, and issuance of the Notice to Proceed by the CCSNH.

PART 14 PERMITS AND FEES

- 14.1 CCSNH shall secure and pay for all Permits and Fees required by the Work of this Contract.

END OF DOCUMENT 002004

SECTION 00300 – BID PROPOSAL FORM – CCSNH**PROPOSAL – STIPULATED BASE LUMP SUM GRAND TOTAL BID – GENERAL CONSTRUCTION**

PROPOSAL TO: **Received no later than 2:00 PM, Monday, March 9, 2020.**
Matthew Moore, PE
memoore@ccsnh.edu
Director of Capital Planning & Development
Community College System of New Hampshire
26 College Drive, Concord, New Hampshire 03301

SUBJECT: Project # RVC 20-01
RVCC Lebanon LNA/LPN Lab Renovations

1. CERTIFICATION: The undersigned Prime Contractor

Name of Firm: _____

Signature: _____

Name and Title: _____
(Contractor's Name Printed Here)

Address & Phone _____

certifies that they have examined and fully comprehend the requirements and intent of the Bidding and Contract Documents for this Project, including any and all Addenda issued, and also certifies that they have visited the location of the Project work and examined all conditions at the site which will affect the work.

2. BASE BID (STIPULATED LUMP SUM GRAND TOTAL)

The undersigned Contractor proposes to furnish all labor, materials, equipment, services and related items necessary for, or incidental to, the proper execution and completion of the Work in strict conformance with the Bidding and Contract Documents, on or before the time of completion specified, for the Stipulated Sum for Materials plus Labor of:

LUMP SUM GRAND TOTAL BID AMOUNT:_____
(Words)_____
DOLLARS (\$) _____
(Figures)

3. ADDENDUM RECEIPT

The undersigned Contractor acknowledges the receipt of the following Addenda to the Bidding and Contract Documents, but he agrees that he is bound by all Addenda, whether or not listed herein:

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

STATEMENT OF NON-COLLUSION

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief: (1) The prices in this bid have been arrived at independently without collusion, consultation, communications, or agreement, for the purpose of restricting competition as to any matter relating to such prices with any other bidder or with any competitor; (2) Unless required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any other competitor, and (3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

SIGNATURE: _____

NAME: _____

TITLE: _____

DATE: _____

PHONE: _____

EMAIL: _____

Corporate Seal:

DOCUMENT 00708

GENERAL CONDITIONS – COMMUNITY COLLEGE SYSTEM OF NEW HAMPSHIRE (CCSNH)

PART	ITEM
1	DEFINITIONS
2	CONTRACT DOCUMENTS
3	NOTICE
4	ACCESS TO THE WORK
5	ACCIDENT PROTECTION
6	HAZARDOUS MATERIALS
7	SUBCONTRACTS
8	RESPONSIBILITY OF CONTRACTOR TO ACT IN EMERGENCY
9	MUTUAL RESPONSIBILITY OF CONTRACTORS
10	PAYMENTS TO CONTRACTOR
11	CONTRACTOR'S TITLE TO MATERIALS
12	CHANGES IN WORK
13	ASSIGNMENTS
14	SUPERINTENDENCE BY CONTRACTOR
15	FAILURE TO COMPLETE WORK ON TIME
16	SUBSTANTIAL COMPLETION AND FINAL INSPECTION
17	DEFAULT AND TERMINATION OF CONTRACT
18	TERMINATION OF CONTRACT WITHOUT FAULT
19	ASSIGNMENT PROVISION

PART 1 DEFINITIONS

- A. **Addendum.** Written and/or graphic information issued before opening *Proposals* that modifies or interprets the *Bidding Documents* by additions, deletions, clarifications or corrections.
- B. **Advertisement.** A public announcement in the form of an *Invitation to Bid*, inviting *Bids* for *Work* to be performed and/or *Materials* to be furnished.
- C. **Alteration Order.** A written agreement between the *Contractor* and the *Community College System of New Hampshire* that amends the *Contract* and identifies *Work* that affects either the *Contract Sum*, *Completion Date*, *Credit*, or any combination thereof.
- D. **Alternate.** A proposed change in the *Work* described in the *Contract Documents* providing the *Community College System of New Hampshire* with an option to select between alternative materials, products or systems, or to add or delete portions of *Work*.
- E. **Architect.** As defined in RSA 310-A:28, a person who, by reason of having acquired through professional education and practical experience an advanced training in building construction and architectural design and an extensive knowledge of building standards created to safeguard the public from hazards such as fire, panic, structural failure, and unsanitary conditions, is technically and legally qualified to practice architecture and who is licensed by the State of New Hampshire Board of Licensure for Architects to engage in the practice of architecture. The Architect has no contractual agreement with the *Contractor* and therefore shall not directly interact with the *Contractor*.
- F. **Award.** The acceptance of a *Bid* prior to execution of *Contract*.
- G. **Bid.** A complete and properly signed *Proposal*, submitted in accordance with the *Bidding Requirements*, to perform the *Work* for the amount or amounts stipulated therein.
- H. **Bid Bond.** One form of a *Proposal Guaranty* executed by the *Bidder* and a *Surety* to guarantee that the *Bidder* will enter into a *Contract* within a specified time.
- I. **Bid Opening Officer.** An authorized representative of the Community College System of New Hampshire, who is responsible for opening and reading of *Bids*.
- J. **Bidder.** A *Corporation*, *Partnership*, or *Proprietorship* submitting a *Proposal*, subsequent to meeting the Community College System of New Hampshire's *Bidding Requirements*.
- K. **Bidding Documents.** Collectively, the *Invitation to Bid*, *Bidding Requirements*, *Specifications*, *Drawings*, and *Addendum*.
- L. **Bidding Requirements.** The documents that contain information regarding bidding procedures with which a *Bidder* must conform and a *Proposal* that a *Bidder* shall use to submit a *Bid*.
- M. **Builders Risk Insurance.** A specialized form of property insurance that provides coverage for loss or damage during the course of construction.

- N. **Calendar Day.** A day shown on the calendar.
- O. **Certificate of Occupancy.** A document issued by the Office of the State Fire Marshal or its authorized representative certifying that all of, or a designated portion of a building, is approved for its designated use.
- P. **Certificate of Full or Partial Substantial Completion.** A document prepared by the *Community College System of New Hampshire* when the *Project* reaches *Substantial Completion* and only issued after review and acceptance of the *Contractor's Request for Certificate of Full or Partial Substantial Completion*.
- Q. **Chancellor.** The Chancellor of the Community College System of New Hampshire.
- R. **Change Order.** A written agreement between the *Contractor* and the *Community College System of New Hampshire* that identifies *Work* to be completed as part of an Allowance Item. Any change that affects either the *Contract Sum*, *Contract Time* or *Credit* shall be processed as an *Change Order*.
- S. **Clerk of the Works.** An authorized representative identified by the *Community College System of New Hampshire*, responsible for observing construction on the *Community College System of New Hampshire's* behalf for conformance with the *Contract Documents*.
- T. **College.** The college who is responsible for the facility and/or will occupy the facility after and/or during the *Work*. The College(s) has/have no contractual agreement with the *Contractor* and therefore shall not direct the *Contractor* in any way.
- U. **Commercial General Liability Insurance.** A broad form of liability insurance covering claims for bodily injury and property damage which combines under one policy coverage for business liability exposures, except those specifically excluded.
- V. **Completion Date.** The last day of the time allotted or the specific date established as identified in the *Contract Documents* for *Substantial Completion* of the *Work*, including any authorized extensions.
- W. **Consultant.** The *Architect*, *Engineer*, and/or professional engaged to develop/provide *Drawings*, *Specifications* and/or other services for the *Project*. The Consultant has no contractual agreement with the *Contractor* and therefore all interaction between any Consultant and the *Contractor* shall be done thru the *Contract Representative*.
- X. **Contract.** The written agreement between the *Community College System of New Hampshire* and the *Contractor* setting forth the obligations of the parties as outlined in the *Contract Documents*.
- Y. **Contract Representative.** The *Community College System of New Hampshire's* appointed representative is the CCSNH Director of Capital Planning and Development having specific authority to act on the *Community College System of New Hampshire's* behalf and shall be responsible for general supervision, control, and direction over all matters pertaining to design, construction, maintenance standards, preservation, and administration of the *Contract*. The *Architect* does not have such authority.

- Z. **Contract Bond.** The approved form of security to the Community College System of New Hampshire (political subdivision) in compliance with RSA 447:16 executed by the *Contractor* and their *Surety* or Sureties, guaranteeing complete execution of the contract and all supplemental agreements pertaining thereto including the payment of all legal debts pertaining to the construction of the *Project*.
- AA. **Contract Documents.** Collectively, the *Invitation To Bid*, *Bidding Requirements*, *Contract Bond*, *Specifications*, *Drawings*, *Addendum*, and other documents included in the *Contract*, and modifications, clarifications, authorized *Alteration Orders* and *Change Orders* issued after the execution of the *Contract*, to complete the *Project*. All documents shall be written in English.
- BB. **Contract Sum.** The amount stated in the *Contract*. This sum shall be derived from the *Lump Sum Base Bid*, *Lump Sum Grand Total*, or *Negotiated Price*; modified to reflect the acceptance of any *Alternates*. The *Notice to Proceed* shall state the amount that the *Community College System of New Hampshire* is obligated to pay the *Contractor*.
- CC. **Contractor.** The *Corporation*, *Partnership*, or *Proprietorship*, or any combination thereof, contracting with the Community College System of New Hampshire for performance of prescribed work.
- DD. **Contractor's Request for Certificate of Full or Partial Substantial Completion.** A document prepared by the *Contractor* when the *Project* reaches *Substantial Completion*.
- EE. **Contractual Liability.** Liability assumed by the *Contractor* under a *Contract*.
- FF. **Corporation.** A legal entity organized under the laws of a particular jurisdiction who is legally authorized to do business in the State.
- GG. **Credit.** Any Change that results in a reduction in the *Contract Sum* or *Lump Sum Grand Total* Items. All credits shall be processed by an *Alteration Order* and may include modifications to *Lump Sum Grand Total* Items.
- HH. **Day.** Unless designated as a *Working Day*, or unless otherwise indicated, this term will mean a *Calendar Day*.
- II. **Drawings (Plans).** The graphic and pictorial documents or reproductions thereof, which show the location, character, dimensions, and details of the prescribed work.
- JJ. **Final Completion.** Term denoting that the *Work* has been completed in accordance with the terms and conditions of the *Contract Documents* and all *Punch List* items have been completed.
- KK. **Final Payment.** Payment made by the *Community College System of New Hampshire* to the *Contractor*, upon *Final Completion*.
- LL. **General Conditions.** The part of the *Contract Documents* establishing the rights, responsibilities and relationships of the parties.

- MM. **Hazardous Material.** Shall include any material regulated by federal or state law and shall include but not limited to asbestos, toxic or hazardous waste, PCBs, combustible gases and materials, petroleum or radioactive material, or any other substances under any conditions and in such quantities as would pose a substantial danger to persons or property exposed to such substances.
- NN. **Indemnification.** A contractual obligation by which one person or entity agrees to reimburse others for loss or damage arising from specified liabilities.
- OO. **Invitation to Bid.** A portion of the *Bidding Documents*; the *Advertisement* for *Proposals* for *Work* or *Materials* on which *Bids* are requested. The *Advertisement* will indicate the time and place of the opening of *Proposals*, the type and location of *Work* to be performed, the character and quantity of the *Material* to be furnished and provide information on how to obtain *Drawings*, *Specifications* and *Proposal*.
- PP. **Liability Insurance.** A contract under which an insurance company agrees to protect a person or entity against claims arising from a real or alleged failure to fulfill an obligation or duty to a third party who is a named or an incidental beneficiary.
- QQ. **Lump Sum Base Bid.** One type of *Proposal* where the *Bid* is established by a single item price to perform all *Work* excluding any *Alternates* that may or may not become part of the *Contract*.
- RR. **Lump Sum Grand Total.** One type of *Proposal* where the *Bid* is established as a total of various items to perform all *Work* excluding any *Alternates* that may or may not become part of the *Contract*.
- SS. **Low Bid.** The *Bid* stating the lowest price proposed for performance of the *Work*, conforming to the *Bidding Documents*.
- TT. **Lowest Responsible Bidder.** The *Bidder* who submits the lowest bona fide *Bid* and is considered by the Community College System of New Hampshire to be fully responsible and qualified to perform the *Work* for which the *Bid* is submitted.
- UU. **Material(s).** Any substance and/or product specified for use in the construction of the *Project* and its appurtenances.
- VV. **Negotiated Price.** A *Proposal* modified by the *Lowest Responsible Bidder* thru communication with the Community College System of New Hampshire in which changes are made to the *Proposal* and/or *Completion Date* as required to meet budget, funding or scheduling requirements.
- WW. **Notice to Proceed.** A written notice to the *Contractor* to proceed with a portion of or all of the *Contract Work*; including the beginning of *Contract* time when applicable. The Notice to Proceed shall act as the final step in awarding the *Contract* or portion thereof.
- XX. **Occurrence Policy.** An insurance policy that covers acts or omissions occurring during the policy term, regardless of when a claim against the insured is first asserted, even if the policy is no longer in existence.

- YY. **Owner's Protective Liability Coverage.** Third-party legal liability insurance coverage protecting the *Community College System of New Hampshire* from claims arising from the construction process.
- ZZ. **Partnership.** An association of two or more persons or entities to conduct a business that shares profits and losses at a certain proportion.
- AAA. **Professional Engineer.** Referred to as Engineer. As defined in RSA 310-A:2, a person who by reason of advanced knowledge of mathematics and the physical sciences, acquired by professional education and practical experience, is technically and legally qualified to practice engineering, and who is licensed by or otherwise authorized by State of New Hampshire Professional Engineers Board to engage in the practice of engineering. The Engineer has no contractual agreement with the *Contractor* and therefore shall not directly interact with the *Contractor*.
- BBB. **Project.** The total construction of the *Work* to be performed.
- CCC. **Proposal.** A *Bidder's* offer, on *Community College System of New Hampshire* prescribed forms, to perform stated work at the quoted price(s).
- DDD. **Proposal Guaranty.** The security furnished with a *Proposal*, which shall be a *Bid Bond*, certified check or cashier's check and which provide that the *Bidder* if awarded the *Contract* will execute such *Contract* in accordance with the requirements of the *Bidding Documents*.
- EEE. **Proprietorship (Individual).** A form of business organization that is owned entirely by one person.
- FFF. **Provide.** To furnish and install a product, materials, systems, and/or equipment, complete in place, fully tested and approved.
- GGG. **Punch List.** A written document attached to the *Certificate of Substantial Completion* listing items to be completed or corrected prior to the *Community College System of New Hampshire* approval of *Final Payment*.
- HHH. **Specifications.** The volume that is part of the *Contract Documents* which contain the *General Conditions*, *Supplementary General Conditions*, *Invitation to Bid*, and individual sections that consist of written requirements for material, equipment, construction systems, standards and workmanship, and other documents or reports as applicable.
- III. **State.** The State of New Hampshire.
- JJJ. **Subcontractor.** A *Corporation*, *Partnership*, *Proprietorship*, Joint Venture or any combination thereof, to whom the *Contractor* sublets any part of the *Contract*.
- KKK. **Substantial Completion.** As determined by an inspection by the *Contract Representative* that the work or portion thereof is substantially complete, in accordance with the *Contract Documents*, such that the *Community College System of New Hampshire* may occupy or utilize the *Work* for its intended use without disruption or interference by the *Contractor* in completing or correcting any remaining unfinished or unacceptable *Work*.

- LLL. **Substitution.** A *Material*, product or item of equipment in place of that specified.
- MMM. **Superintendent.** The *Contractor's* authorized representative responsible for field supervision, coordination, and completion of the *Work*.
- NNN. **Supplementary General Conditions.** A part of the *Contract Documents* which supplements and may also modify, change, add to or delete from provisions of the *General Conditions*.
- OOO. **Surety.** A *Corporation, Partnership, or Proprietorship* other than the *Contractor*, executing a bond furnished by the *Contractor*.
- PPP. **Umbrella Liability Insurance.** Insurance providing coverage in an amount above existing liability policies.
- QQQ. **Unit Price.** An amount stated in a *Lump Sum Grand Total Bid* as a price per unit for an item or portion of the contract or for specific materials and/or services described in the *Contract Documents*.
- RRR. **Work.** The construction and services required by the *Contract Documents* to furnish all labor, materials, equipment, and incidentals necessary to complete the duties, obligations, and requirements imposed by the *Contract*.
- SSS. **Workers' Compensation Insurance.** Insurance covering the liability of an employer to employees for compensation and other benefits required by workers' compensation laws with respect to injury, sickness, disease or death arising from their employment.
- TTT. **Working Day.** Any calendar day, except Saturdays, Sundays, and Contract designated legal holidays.

PART 2 CONTRACT DOCUMENTS

- 2.1 The Contract Documents consist of the Invitation to Bid, Contract Agreement, General Conditions, Supplementary General Conditions, Drawings and Specifications, including all Addenda issued prior to execution of the Contract, wage scales where applicable, Bonds where required, insurance certificates, other documents listed in the Agreement and Modifications issued after the execution of the Contract, Change Orders and Alteration Orders issued in accordance with Part 12 of the General Conditions.
- A. Hierarchy of the Contract Documents shall be interpreted according to the following classes:
1. Community College System of New Hampshire approved modifications to the Contract Documents after execution of the Contract.
 2. Addenda.
 3. Supplemental General Conditions.
 4. General Conditions.
 5. Division 1 – General Requirements.
 6. Remaining Specifications.
 7. Larger Scale Drawings & Details.
 8. Remaining Drawings.
- 2.2 A fully executed Contract shall not be in effect until the contract is approved and an issuance of the Notice to Proceed by the Community College System of New Hampshire.
- 2.3 This Contract is executed in a number of counterparts, each of which is an original and constitutes the entire agreement between the parties. This Contract shall be construed according to the laws of the State. No portion of this Contract shall be understood to waive the sovereign immunity of the *Community College System of New Hampshire*. This Contract shall not be amended, except as specified in Parts 13 and 20.
- 2.4 The Contract Documents are complementary and anything called for by one of the Contract Documents and not called for by the others shall be of like effect as if required by all.
- 2.5 Should the Contract Documents contain inconsistencies within a class identified in Item 2.1A, the Contractor shall provide the better quality or greater quantity of work and/or materials. The Contractor shall identify any perceived discrepancies to the Contract Representative prior to proceeding.
- 2.6 The Contractors and all Subcontractors shall refer to all of the Contract Documents, including those not specifically showing the work of their specialized trades, and shall perform all work reasonably inferable from them as being necessary to produce the intended results in compliance with applicable Federal, State, and Local codes.
- 2.7 All indications or notations which apply to one of a number of similar situations, materials or processes shall be deemed to apply to all such situations, materials or processes wherever they appear in the work, except where a contrary result is clearly indicated by the Contract Documents.
- 2.8 Where codes, standards, requirements, and publications of public and private bodies are referred to in the Contract Documents, such references shall be understood to be to the latest final and complete

revision at the time of receiving Bids unless specifically identified, except where otherwise indicated.

- 2.9 Where no explicit quality or standards for materials or workmanship is established for work, such work is to be consistent with the best quality workmanship standards of the applicable trade.
- 2.10 All manufactured articles, materials, and equipment shall be applied, assembled, installed, connected, erected, tested, cleaned, and conditioned in accordance with the manufacturer's written or printed directions and instructions, unless specifically indicated otherwise in the Contract Documents.
- 2.11 The Drawings are made to scale as identified therein, but all working dimensions shall be taken from the figured dimensions and by actual measurements at the job; in no case by scaling. The Contractor shall study and compare all of the Drawings and verify all figures before laying out or constructing work. The Contractor shall be responsible for errors in his/her work that might have been avoided thereby. Whether or not an error is believed to exist, deviation from the Drawings and the dimensions given thereon shall be made only after approval in writing from the Contract Representative.
- 2.12 All Drawings and Specifications and copies thereof are the property of the Community College System of New Hampshire and shall not be used by the Contractor or Subcontractor on other Projects.

PART 3 NOTICE

- 3.1 Any written notice by either party to the Contract shall be sufficiently given if delivered to or at the last known business address of the person, partnership or corporation constituting the other party to the Contract, or to his/her, their, or its duly authorized agent, representative, or officer, or when sent by registered mail to such last known business address. The last known business address shall be that location which is last provided in writing.
- 3.2 The parties shall provide their physical location/address, mailing address, telephone number, fax number, and, where available, pager number(s), email address(es), and other methods of contact for all persons associated with the Contract.

PART 4 ACCESS TO THE WORK

- 4.1 The Contractor shall provide for access to the work, at all times, for observation and/or inspection by the Community College System of New Hampshire, Architect, Consultant, Engineer and government officials having jurisdiction. The Contractor shall provide proper facilities for such access and inspection.

PART 5 ACCIDENT PROTECTION

- 5.1 It is a condition of this Contract, and shall be made a condition of each subcontract entered into pursuant to the Contract, that the Contractor, any Subcontractors, or Independent Contractors shall not require any laborer or mechanic employed in the performance of the Contract to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous to the laborer's health or safety as determined by construction safety and health standards of the Occupational Safety and Health Administration, United States Department of Labor, which standards include, by reference, the established Federal Safety and Health Regulations for Construction. These standards and regulations comprise Part 1910 and Part 1926 respectively of Title 29 of the Code of Federal Regulations, as may be revised from time to time. In the event any revisions in the Code of Federal Regulations are published, such revisions will be deemed to supersede the appropriate Part 1910 and Part 1926, and be effective as of the date set forth in the revised regulation.

PART 6 HAZARDOUS MATERIALS

- 6.1 The Contractor shall also be aware of laws and regulations relating to hazardous materials that may be encountered during construction operations, either within project limits or at material sites off the project. The health and safety of employees, the general public, and the potential of damage to the overall environment is possible if hazardous materials are not recognized, reported, and the appropriate action taken to dispose of, remove from the site, or otherwise contain the possible contaminants.
- 6.2 If any abnormal condition is encountered or exposed that indicates the presence of a hazardous material or toxic waste, construction operations shall be immediately suspended in the area and the Contract Representative notified. No further work shall be conducted in the area of the contaminated material until the site has been investigated and the Community College System of New Hampshire has given approval to continue the work in the area. The Contractor shall fully cooperate with the Community College System of New Hampshire and perform any remedial work as directed. Work shall continue in other areas of the Project unless otherwise directed.
- 6.3 Exposure to hazardous materials may result from contact with, but not necessarily limited to, such items as drums, barrels, and other containers, waste such as cars, batteries, and building construction debris. Containers leaking unknown chemicals or liquids, abandoned cars leaking petroleum products, batteries leaking acid, construction debris which may include asbestos, or any other source of suspected hazardous material found within excavation areas or stockpiled on land within construction limits shall be referred to the Department of Environmental Services and Contract Representative so that a proper identification of the materials may be made and disposal procedures initiated as required.
- 6.4 Disposition of the hazardous material or toxic waste shall be made under the requirements and regulations of the Department of Environmental Services. Work required to dispose of these materials and any remedial work shall be performed under a Supplemental Agreement or Contract item, if included in the Contract.

PART 7 SUBCONTRACTS

- 7.1 Nothing contained in the Specifications or Drawings shall be construed as creating any contractual relationship between any Subcontractor and the Community College System of New Hampshire. The Sections of the Specifications are not intended to control the Contractor in dividing the work among Subcontractors or to limit the work performed by any trade.
- 7.2 The Contractor shall be as fully responsible for the acts and omissions of Subcontractors and of persons employed by them, as he/she is for the acts and omissions of persons directly employed by him/her.
- 7.3 The Contractor shall, without additional expense to the Community College System of New Hampshire, utilize the services of specialty Subcontractors, as required to complete the work.
- 7.4 The Contract Representative will not undertake efforts to settle or resolve any differences between the Contractor and Subcontractors or between Subcontractors.
- 7.5 The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind Subcontractors to the Contractor by the terms of the General Conditions and other Contract Documents insofar as applicable to the work of Subcontractors and to give the Contractor the same power to terminate any subcontract that the Contract Representative may exercise over the Contractor under any provisions of the Contract Documents.

PART 8 RESPONSIBILITY OF CONTRACTOR TO ACT IN EMERGENCY

- 8.1 In case of any emergency that threatens loss or injury of property, and/or safety of life, the Contractor shall act as the situation may warrant. He/she shall notify the Contract Representative thereof immediately thereafter. Any compensation claimed by the Contractor together with substantiating documents in regard to expense, shall be submitted to the Contract Representative and the amount of compensation shall be determined by agreement.
- 8.2 In the event the Community College System of New Hampshire learns of an emergency that threatens loss or injury of property, and/or safety of life, the Community College System of New Hampshire shall notify the Contractor using the contact information provided pursuant to PART 3 herein. The Community College System of New Hampshire may, but shall have no duty to take reasonable steps to mitigate the damage or loss to the Contractor. In either event, the Community College System of New Hampshire shall have no duty to undertake any specific acts and shall have no liability for actions or inactions taken absent gross negligence.

PART 9 MUTUAL RESPONSIBILITY OF CONTRACTORS

- 9.1 If the Contractor or any of his/her Subcontractors or employees causes loss or damage to any separate Contractor or Subcontractor on the work, the Contractor or Subcontractor agrees to settle with such separate Contractor or Subcontractor by agreement, if he/she will so settle. If such separate Contractor or Subcontractor sues the Community College System of New Hampshire because of any loss so sustained, the Contract Representative shall notify the Contractor and/or their Subcontractors, who shall indemnify and hold harmless the Community College System of New Hampshire against any expenses or judgment arising therefrom.

PART 10 PAYMENTS TO CONTRACTOR

- 10.1 The Community College System of New Hampshire will process payments to the Contractor each month on the basis of duly certified and approved estimates of the work performed during the preceding period. In preparing estimates, the material delivered on the site and any preparatory work done may be taken into consideration. Payments will only be approved in an amount no greater than the percentage of project completion, as determined by the Contract Representative.
- 10.2 At least ten (10) days before the end of the billing period, the Contractor shall submit to the Contract Representative, an itemized Requisition for Payment, supported by such data substantiating the Contractor's right to payment as the Contract Representative may require. If payment is to be made for materials or equipment not incorporated in the work, but delivered and suitably stored at the site, or at some other location agreed upon in writing, such payment shall be conditional upon inspection and/or observation by the Community College System of New Hampshire and submission by the Contractor of bills of sale or such other procedure satisfactory to the Contract Representative to establish the Community College System of New Hampshire's title to such materials or equipment or otherwise protect the Community College System of New Hampshire's interest including applicable insurance and transportation to the site.
- 10.3 Immediately upon receipt of the Monthly Requisition for Payment, Contractor shall post same at the Contractor's Field Office or project site in a location where Subcontractors have clear access.
- 10.4 Retainage:
- A. Contract Payment Withheld: A 5% retainage shall be withheld from each Progress Payment until issuance of a Certificate of Substantial Completion. The balance remaining after the specified percentage has been retained, less all previous payments, will be certified for payment on each partial estimate.
- ***** [OR] *****
- B. Irrevocable Letter of Credit: In lieu of retainage for Projects amounting to Five Hundred Thousand (\$500,000.00) or more, the Contractor, with the approval of the Community College System of New Hampshire, may provide the Community College System of New Hampshire with a Letter of Credit in an amount equal to five percent (5%) of the total adjusted Contract amount at the time of such request. Any such Letter of Credit must be irrevocable (that is, it may be modified or revoked only with the consent of the Community College System of New Hampshire). It shall have a termination date at least one hundred twenty (120) days after the completion date specified in the underlying Contract, or as may be altered in accordance with the Contract Documents, whichever is later. The Letter of Credit shall authorize the Community College System of New Hampshire to require the issuing financial institution to deposit with the Community College System of New Hampshire an amount equal to the retainage that would have been deducted from payment to the Contractor, as specified in 10.4.A.1. The Community College System of New Hampshire may utilize the amount so deposited in the same manner as retainage.
- 10.5 Retainage will be released at Final Payment.
- A. After the Certificate of Substantial Completion has been issued, upon written application by the Contractor and with the approval of the Surety, the Contract Representative may release a portion of the retained amount.

10.6 Payment for Material On Hand:

- A. Partial payments are made for materials to be incorporated in the Work, provided the materials meet the requirements of the Contract and are delivered on, or in the vicinity of, the Project site and stored in acceptable places. Partial payments will not exceed 90 percent of the Contract unit price for the item or the amount supported by copies of paid invoices, freight bills, or other supporting documents required by the Community College System of New Hampshire. The quantity paid will not exceed the corresponding quantity estimate in the Contract. No partial payment will be made on living or perishable materials until incorporated in the Work.
- B. When material payments exceed \$100,000 or 10 percent (10%) of the total contract amount, whichever is less, notarized copies of paid invoices or copies of canceled checks for all such materials must be submitted to the Contract Representative within 45 days of the end date of the estimate on which the material allowance was paid. Failure to provide such documentation will result in the deduction of such material allowance from future estimates until documentation is provided.
- C. All material and work covered by partial payments made shall thereupon become the sole property of the Community College System of New Hampshire, but this provision shall not be construed as relieving the Contractor of the sole responsibility of all materials and work upon which payments have been made or the restoration of any damaged work or as a waiver of the right of the Community College System of New Hampshire to require the fulfillment of all the terms of the Contract.

10.7 Payment for Material Not on Hand:

- A. Upon receipt of a written request by the Contractor, partial payment may be made for acceptable, fully-fabricated, nonperishable materials not delivered that are unique to the Project provided the materials meet the requirements of the Contract and are stored in excess of 30 days at locations approved by the Community College System of New Hampshire, and provided all required certificates of compliance, mill test reports, shop inspector's acceptance and any other required materials certification have been furnished. Materials shall be identifiable and accessible for inspection. Storage areas shall provide adequate protection so that such materials will meet the Contract requirements upon delivery to the site.
- B. Partial payment will be based on the actual cost to the Contractor as indicated on invoices furnished to the Contract Representative. When material payments exceed \$100,000 or 10 percent of the total contract amount, whichever is less, notarized copies of paid invoices or copies of canceled checks for all such materials must be submitted to the Contract Representative within 45 days of the end date of the estimate on which the material allowance was paid. Failure to provide such documentation will result in the deduction of such material allowance from future estimates until documentation is provided. Payment shall not exceed 90 percent of the bid price. NO payment will be made on materials for any item in the contract whose total dollar value is less than \$5,000. Approval of partial payment will not constitute final acceptance of the materials for use in completing items of work.

10.8 Release of Claims:

- A. Neither the final payment nor any part of the retained percentage shall become due until the Contractor shall deliver a complete release of all claims arising under and by virtue of this Contract, including claims for all Subcontractors and suppliers of either materials or labor, plus a release of the Contract Bond and a statement that all Subcontractors and suppliers have been paid. The Commissioner, may pay any and all such claims, in whole or in part, and deduct the amount or amounts so paid from any partial or final payment.

10.9 Final Payment:

- A. Application for Final Payment received from the Contractor will be processed for payment not less than 90 days after project acceptance and final completion unless accompanied by a release of the Contract Bond. This payment shall be the amount of the Contract, amended by approved alteration orders, less previous payments minus liquidated damages, additional penalties or holdbacks. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

10.10 Acceptance of Final Payment Constitutes Release:

- A. The acceptance of the Final Payment by the Contractor shall be and shall operate as a release to the Contractor of all claims and of all liability to the Community College System of New Hampshire for all things done or furnished in connection with this work. No payment, however, final or otherwise, shall operate to release the Contractor and its Sureties from any obligations under this Contract or the Contract Bond. Acceptance of Final Payment shall not impact any warranties provided by the Contractor with respect to this project.

PART 11 CONTRACTOR'S TITLE TO MATERIALS

- 11.1 No materials or supplies for the work shall be purchased by the Contractor or any Subcontractor subject to any chattel mortgage or under a conditional sale or other agreement by which an interest is retained by the seller. The Contractor warrants that good title has been obtained for all materials and supplies for which partial payment has been accepted. If any claim is made with respect to materials provided by the Contractor, Subcontractors, or Independent Contractors, the Contractor shall defend any such claim and shall pay any judgment or settlement thereon.

PART 12 CHANGES IN WORK

- 12.1 No charge for any extra work or material will be allowed without a fully executed Alteration Order. (Refer to Specification Section 01200-Price and Payment Procedures)
- 12.2 The Commissioner may at any time, by a written order, and without notice to the Sureties, make changes in the Drawings and Specifications and Completion Date of the Contract and within the general scope thereof.
- 12.3 If any part of the work as installed be at variance with the Contract requirements, the Contract Representative may allow all or any part of such work to remain in place, if found to be in the best interest of the Community College System of New Hampshire, subject to proper adjustment in the

Contract Price. Acceptance of installed work in one instance or in any instance does not constitute a waiver of Specifications, General Conditions or contract requirements.

- 12.4 The Contractor shall hold the Community College System of New Hampshire and its officers, agents, servants, and employees harmless from liability of any nature including cost and expenses, for or on account of any patented or unpatented invention, process, article or applicable items manufactured or used in the performance of the Contract, including its use, unless otherwise specifically stipulated in the Contract Documents.

PART 13 ASSIGNMENTS

- 13.1 The Contractor shall not assign the whole or any part of this Contract or any monies due or to become due, hereunder, without the written consent of the Commissioner and of all Sureties executing any Bonds on behalf of the Contractor if in connection with said Contract.

PART 14 SUPERINTENDENCE BY CONTRACTOR

- 14.1 The Contractor shall have on the project site, at all times when work is being performed, a competent English speaking Superintendent capable of reading and thoroughly understanding the contract documents and thoroughly experienced in the type of work being performed, satisfactory to the Community College System of New Hampshire. The Contractor shall not change superintendents without permission from the Contract Representative and shall submit a request in writing with justification for such a change.
- A. The Superintendent shall be responsible for verifying that all materials, installation, coordination, and workmanship are in conformance with the contract documents.
 - B. Unless the Contract Representative has granted prior written approval, the Superintendent shall not, himself, engage in "hands-on" construction work.
 - C. In the event the Superintendent fails or refuses to perform functions mentioned above as determined by the Contract Representative, the Contractor agrees to a stipulated penalty of \$1,200.00 per day, in addition to any liquidated damages provided hereunder.

PART 15 FAILURE TO COMPLETE WORK ON TIME

- 15.1 If the Contractor fails to complete all of the work or sections of the Project, if sections are indicated, within the time specified in the Contract or within any additional time allowed, for each working day the Liquidated Damages identified in 16.3 will be deducted from any money due the Contractor. This deduction will be made, not as a penalty, but as fixed, agreed liquidated damages for inconvenience to the Community College System of New Hampshire and for reimbursing the Community College System of New Hampshire the cost of the Administration of the Contract, including personnel, time, engineering and inspection. Should the amount of money otherwise due the Contractor be less than the amount of such liquidated damages, the Contractor and its Surety shall be liable to the Community College System of New Hampshire for such deficiency.
- 15.2 If the Community College System of New Hampshire permits the Contractor to continue and finish the work after the time fixed for its completion, it shall in no way operate as a waiver on the part of the Community College System of New Hampshire of any of its rights under the Contract. When the final acceptance has been duly made by the Contract Representative, any liquidated damage charges shall end.
- 15.3 The fixed, agreed, liquidated damages shall be assessed in accordance with the following schedule:

Original Contract Amount, Plus Any Extras, Alteration Orders, and Alternates		Amount of Liquidated Damages Per Working Day
From More Than:	To and Including:	
\$0	\$25,000.00	\$200.00
\$25,000.00	\$50,000.00	\$250.00
\$50,000.00	\$100,000.00	\$400.00
\$100,000.00	\$500,000.00	\$450.00
\$500,000.00	\$1,000,000.00	\$800.00
\$1,000,000.00	\$2,000,000.00	\$1,200.00
\$2,000,000.00	\$5,000,000.00	\$1,600.00
\$5,000,000.00	\$10,000,000.00	\$2,000.00
\$10,000,000.00	and above	\$2,400.00

Revised 02-25-2007

PART 16 SUBSTANTIAL COMPLETION AND FINAL INSPECTION

Revised 12/08/04

- 16.1 The Contractor shall provide a signed Substantial Completion Application to the Contract Representative when the work is believed to be substantially complete, in accordance with specification section 01700, accompanied by a list of items, referred to as the Punch List, to be completed or corrected. The failure to include any items of such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents. On the basis of an inspection by the Contract Representative who determines that the work is substantially complete, a Certificate of Substantial Completion will be issued.
- A. The Certificate of Substantial Completion shall:
1. Include any modifications to the Punch List or value as determined by the Contract Representative.
 2. Establish the Date of Substantial Completion.
 - a. Warranties required by the Contract Documents shall commence on the Date of Substantial Completion unless otherwise provided in the Certificate of Substantial Completion.
 3. Identify the responsibilities of the Community College System of New Hampshire and the Contractor for security, maintenance, heat, utilities, and damage to the work and insurance.
 4. Fix the time limit within which the Contractor shall complete the items listed herein.
- 16.2 Partial Occupancy or Use: The Community College System of New Hampshire may take occupancy or use of completed or partially completed portions of the work upon written agreement between the Commissioner and the Contractor. Said partial occupancy or use shall have the approval of the insurer and Code enforcement authorities having jurisdiction. Said partial occupancy or use, (whether substantial completion has been obtained or not) provided the Contract Representative and Contractor have agreed upon written terms detailing each of the entities responsibilities in their entirety, may be exercised under these General Conditions.
- A. A Written agreement shall stipulate the time period for completion of all Work and the commencement date for all applicable contract warranties. Said written agreement shall be preceded by a Contractor generated listing of all incomplete Work, meeting with the approval of the Contract Representative, before partial occupancy or use is taken by the Community College System of New Hampshire with prior approval of the Division.
- 16.3 If the Contractor fails to complete the items on the "punch list," by the date specified on the Substantial Completion Certificate, then in addition to the corrective measures listed in the Certificate of Substantial Completion, the Community College System of New Hampshire may use the monies still due the Contractor to have such items completed and the Contractor shall lose any claim to the monies so used. The Surety may be notified of any delay or failure to complete the work.
- 16.4 Upon written notice that the work is ready for final inspection and acceptance, the Contract Representative shall promptly make such inspection, to determine the work is acceptable under the Contract Documents and the Contract fully performed. The Contractor shall submit a request for payment, specifically identifying Final Payment. The Contractor shall provide all certificates and reports, as required, throughout the contract and shall coordinate their preparation and submission

prior to request for final payment. Failure to submit such certificates and reports shall be considered default of contract.

PART 17 DEFAULT AND TERMINATION OF CONTRACT

17.1 If the Contractor:

- A. Fails to begin work under Contract within the time identified in specification section 01100.
- B. Fails to perform the work with sufficient workers and equipment, or with sufficient materials to assume prompt completion of said work, or
- C. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or
- D. Discontinues the prosecution of the work, or
- E. Fails to resume work, which has been discontinued, within a reasonable time after notice to do so, or
- F. Becomes insolvent or has declared bankruptcy, or commits any act of bankruptcy or insolvency, or
- G. Makes an assignment for the benefit of creditors, or
- H. For any other causes whatsoever, fails to carry on the work in an acceptable manner.

17.2 The Commissioner will give notice, in writing, to the Contractor and his Surety for such delay, neglect, and default for any item identified above.

- A. Upon receipt of Notification of Default and the Contractor or Surety does not proceed in accordance with said Notification, then the Commissioner will Terminate the Contract. Upon which, the Commissioner shall have full power and authority, without violating the Contract, to assume the prosecution of the work. The Commissioner may enter into one or more agreements for the completion of said Contract according to the terms and conditions thereof, or use such other methods as will be required for the completion of said Contract in an acceptable manner.
 - 1. All extra costs and charges incurred by the Community College System of New Hampshire as a result of such delay, neglect or default, together with the cost of completing the work under the Contract will be deducted from any monies due or which may become due said Contractor. If such expenses exceed the sum that would have been payable under the Contract, then the Contractor and the Surety shall be liable and shall pay to the Community College System of New Hampshire, the amount of such excess.

PART 18 TERMINATION OF CONTRACT WITHOUT FAULT

18.1 Except in cases controlled by the preceding section, the Commissioner, for any cause, including, but not limited to an order of any Federal authority or petition of the Contractor due to circumstances beyond its control may, by written notice to the Contractor and the Surety, with the

concurrence of the Governor and Council, terminate the Contract or any portion thereof subject to the Condition(s) A, B, C, and D provided below.

- 18.2 Notwithstanding anything to the contrary contained in these conditions, it is understood and agreed by the parties hereto that all obligations of the Community College System of New Hampshire hereunder, including the continuance of payments, are contingent upon the availability and continued appropriation of State and/or Federal Funds, and in no event shall the Community College System of New Hampshire be liable for any payments hereunder in excess of such available or appropriated funds. In the event of a reduction, termination or failure to appropriate any or all such available funds or appropriations or a reduction of expenditures of Community College System of New Hampshire funds by the Advisory Budget Control Committee, the Commissioner may, by written notice to the Contractor and Surety, immediately terminate this Contract in whole or in part in accordance with the following conditions:

- A. When a Contract, or portion thereof, is terminated before completion of all items of work in the Contract, payment will be made for the actual items of work completed. Payment of items of work not completed at time of termination shall be the greater of the following amounts:
 - 1. A percentage of the Contract unit price, which percentage shall be the percentage of completion of the particular item at time of termination.
 - 2. Such amount as shall be mutually agreed upon by the parties. No claim for loss of anticipated profits on items or units of work not completed will be allowed.
- B. Reimbursement for organization of the work and mobilization, when not otherwise included in the Contract, shall be made where the volume of work completed is too small to compensate the Contractor for these expenses under the Contract; the intent being that an equitable settlement be made with the Contractor.
- C. Acceptable materials, obtained or ordered by the Contractor for the work, and that are not incorporated in the work shall, at the option of the Contractor, be purchased from the Contractor based upon the delivered cost of the materials at such points of delivery as may be designated by the Contract Representative. The Contractor shall do everything possible to cancel unfilled orders.
- D. Termination of a Contract, or a portion thereof, shall not relieve the Contractor of its responsibilities for the work completed nor shall it relieve the Surety of its obligations for and concerning any claims arising out of the work performed.

PART 19 ASSIGNMENT PROVISION

- 19.1 The Contractor hereby agrees that it will assign to the Community College System of New Hampshire, all causes of action that it may acquire under the anti-trust laws of New Hampshire and the United States as a result of conspiracies, combinations of contracts in restraint of trade which affect the price of goods or services obtained by the Community College System of New Hampshire under this Contract, if so requested by the Community College System of New Hampshire.

END OF SECTION

SECTION 01100

SUMMARY

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Contract description.
- B. Work by College.
- C. College supplied products.
- D. Contractor's use of site.
- E. Work sequence.
- F. College occupancy.
- G. Specification Conventions.

1.2 CONTRACT DESCRIPTION

- A. This project consists of a renovation of an existing 740 SF classroom area to be a new LNA/LPN Lab.
- B. The Project will include but not be limited to the Disciplines of demolition, wood construction, fire protection flooring, mechanical, electrical and plumbing.
- C. Perform Work of Contract under stipulated lump sum grand total contract with the College in accordance with Conditions of Contract.
- D. The Contractor shall, except as otherwise specifically stated in the Contract Documents, provide and pay for all materials, labor, tools, equipment, water, heat, fuel, light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever necessary to execute, complete, and deliver the work within the specified time.

1.3 WORK BY COLLEGE

- 1. NONE

1.4 COLLEGE SUPPLIED PRODUCTS

1. NONE

1.5 CONTRACTOR'S USE OF SITE [AND PREMISES]

- A. Limit use of site and premises to allow:
 1. College occupancy.
 2. Work by Others and Work by College.
- B. Access to Site: Limited to: no work on Sunday and Monday, 8:30 – 9 Tuesday through Friday, and Saturday 8:30 – Noon.
- C. Construction Operations: Limited to areas as designated in the plans and specifications.
- D. Time Restrictions for Performing Work: Limited to: no work on Sunday and Monday, 8:30 – 9 Tuesday through Friday; and Saturday 8:30 – Noon, with the following restrictions:
 1. No access during the following observed holidays:
 - a. New Year's Day.
 - b. Martin Luther King Jr. Civil Rights Day.
 - c. Washington's Birthday.
 - d. Memorial Day.
 - e. Independence Day.
 - f. Labor Day.
 - g. Veterans' Day.
 - h. Thanksgiving Day.
 - i. Day after Thanksgiving.
 - j. Christmas Day.
 2. Access for work outside of normal working hours shall be requested in writing to the Contract Representative, at least one week in advance. The Contract Representative may accept or reject the request.
- E. Utility Outages and Shutdown: Shall be coordinated with the building users to minimize disruption of services and may require work to take place outside of normal working hours with request and approval.

1.6 WORK SEQUENCE

- A. Work shall commence within 7, days after issuance of Notice to Proceed. Failure to comply shall constitute Default of Contract.
- B. Construct Work to accommodate College's occupancy requirements during construction period, coordinate construction schedule and operations with CCSNH Contract Administrator:

1.7 COLLEGE OCCUPANCY

- A. The College intends to occupy the campus during the Project. The Contractor's guarantee of work identified in Section 1700 shall not commence until the Contractor is granted a Certificate of Substantial Completion.
- B. Cooperate with College to minimize conflict, and to facilitate College's operations.
- C. Schedule the Work to accommodate College occupancy.
- D. Partial Occupancy. The College will be permitted to partially occupy the premises as phases of the project are completed. Warranties for items contained within the areas subject to partial occupancy shall commence upon the College's use of those premises identified in the Partial Occupancy. Warranties on systems extending beyond the area subject to the Partial Occupancy shall not commence until all areas utilizing those system(s) are complete and fully functional.

1.9 SPECIFICATION CONVENTIONS

- E. These specifications are written in imperative mood and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The words "shall be" are included by inference where a colon (:) is used within sentences or phrases.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01200

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Allowances (intentionally omitted).
- B. Testing and inspection allowances. (intentionally omitted)
- C. Schedule of values.
- D. Requisition for payment.
- E. Change procedures.
- F. Defect assessment.
- G. Unit prices.
- H. Alternates (intentionally omitted).

1.2 ALLOWANCES (intentionally omitted).

1.3 TESTING AND INSPECTION ALLOWANCES (intentionally omitted)

1.4 SCHEDULE OF VALUES

- A. Submit printed schedule on AIA Form G703 - Continuation Sheet for G702. Contractor's standard form or electronic media printout will be considered.
- B. Submit Schedule of Values in duplicate within 15 days after date of issuance of Notice to Proceed. Failure to submit within specified time period will constitute Default of Contract.
- C. Format: Utilize Table of Contents of these Specifications. Identify each line item with number and title of major specification Section. Identify bonds and insurance, allowances, and alternates
- D. Include a separate line item for the amount of each Allowance and Alternates specified in this section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by unit cost to achieve total for each item.
- E. Revise schedule to list approved Change Orders, with each Requisitions For Payment.

1.5 REQUISITION FOR PAYMENT

- A. Submit one copy of each application.
- B. Content and Format: Items on the Requisition for Payment shall be consistent with the items on the Proposal Form. Utilize the Schedule of Values as documentation for payment items.
- C. Submit updated construction schedule with each Requisition for Payment.
- D. Payment Period: Submit at intervals stipulated in Document 00708 General Conditions. CCSNH
- E. Substantiating Data: When the Contract Representative requires substantiating information, submit data justifying dollar amounts in question.
- F. Include the following with Requisition for Payment, payment will not be processed if any items are missing or incomplete:
 - 1. Record documents as specified in Section 01700, for review by the Contract Representative, which will be returned to Contractor.
 - 2. Affidavits attesting to off-site stored products.
 - 3. Construction progress schedules, revised and current as specified in Section 01330.

1.6 CHANGE PROCEDURES

- A. Submittals: Submit name of individual authorized to receive change documents, and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.
- B. The Contract Representative will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time, or that may be necessary to carry out the work included in the Contract, by issuing supplemental instructions.
- C. The Contract Representative may issue a Proposal Request including a detailed description of proposed change(s) with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change. The Contractor will prepare and submit estimate within ten days.
- D. Contractor may propose changes by submitting a request for change(s) to the Contract Representative, describing proposed change and its full effect on the Work. Each request shall be a separate item and sequentially numbered. Include a statement describing reason for the change, and effect on Contract Sum/Price and Contract Time with full documentation and a statement describing effect on Work by separate or other Contractors.
- E. Stipulated Sum/Price Change Order: Based on Proposal Request and Contractor's fixed price quotation or Contractor's request for Change Order as approved by the Contract

Representative. Submit the breakdown of the following items on a Stipulated Sum/Price Change Order Form for review and approval by the Contract Representative:

1. The Contractor shall include the following indirect costs for work performed by the General Contractor as part the Contractors' price:
 - a. Worker's Compensation and Employee Liability.
 - b. Unemployment and Social Security Taxes.
2. In addition to the above indirect costs the General Contractor shall be allowed the following markups:
 - a. Ten percent (10%). Said ten percent (10%) shall be all inclusive for overhead, supervision, and profit for Work performed by the General Contractor
 - b. Five percent (5%) on that part of work performed by Subcontractors.
 - c. The same percentages above shall apply to Subcontractors.
3. On any change that involves a net credit to the State, no allowance for overhead, supervision and profit shall be figured.
4. Extension of Contract Time: State any requests for extension of Contract Time with justification for such a request.

F. Unit Price Change Order: For contract unit prices and quantities, the Change Order will be executed on fixed unit price basis. For unit costs or quantities of units of work which are not pre-determined, execute Work under Construction Change Directive. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.

G. Construction Change Directive : The Contract Representative may issue directive, signed by the Bureau Administrator or Assistant Administrator, instructing the Contractor to proceed with change in the Work, for subsequent inclusion in a Time and Material Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute change. Failure to comply will result in Default of Contract.

H. Time and Material Change Order: Submit itemized account and supporting data within 10 days of completion of change. The Contract Representative will determine change allowable in Contract Sum/Price and Contract Time as provided in Contract Documents.

1. Maintain detailed records of work done on Time and Material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.
2. Document each quotation for change in cost or time with sufficient data to allow evaluation of quotation. If acceptable, a Change Order for a Not to Exceed Amount will be prepared.
3. The Contractor as payment in full, including superintendence and overhead, shall accept the compensation herein provided and profit, for extra work performed. For all such work, the Contractor shall furnish certified copies of the payrolls on forms provided for that purpose, invoices of all materials, and such other information as may be required by the Contract Representative. Submit the breakdown of items on a Bureau Time and Material Change Order Form for review and approval by the Contract Representative:
 - a. Labor (Actual wage + 40%): The Construction Superintendent is responsible for logging the time for each individual. For all laborers and

- foremen engaged on the specific operation and entered directly on the Contractor's payroll, the Contractor will receive the actual rate of wage for each and every hour said laborers and Foremen are actually engaged in such work to which will be added an amount equal to forty percent (40%) of the sum thereof, which percentage shall include the cost percentages of the following items as applied to the labor cost involved:
- 1) Contract Bond Premium.
 - 2) Public Liability Insurance.
 - 3) Worker's Compensation Insurance.
 - 4) Federal Social Security.
 - 5) Unemployment Compensation Taxes
- b. Materials (Actual Cost + 10%): For all materials entering permanently into the work plus freight charges thereon, and for all labor not entered directly on his payroll, the Contractor will receive the actual cost, as shown by original receipted bills forwarded to the Contract Representative, to which cost will be added an amount equal to ten percent (10%) of the sum thereof. Bills presented by the Contractor for material taken back from his stock will be subject to the ten percent (10%) allowance if approved by the Contract Representative.
- c. Equipment (Reasonable Rental Charge + 0%): For any trucks, machinery or special equipment, other than small tools, the Contractor will receive a reasonable rental charge to which sum no percentage will be added. This rental charge shall be agreed upon in writing before the work is begun and shall include an operator and all fuel, lubricants, and the upkeep of the equipment.
4. In addition to the above costs the General Contractor shall be allowed the following markups:
- a. Ten percent (10%). Said ten percent (10%) shall be all inclusive for overhead, supervision, and profit for Work performed by the General Contractor
 - b. Five percent (5%) on that part of work performed by Subcontractors.
 - c. The same percentages above shall apply to Subcontractors.
5. Extension of Contract Time: State any requests for extension of Contract Time with justification for such a request.
- I. Any Changes that result in a credit to any portion of the contract and/or a change in the Contract Time must be processed as an Change Order except as provided for in Item 1.2E.
- J. Execution of Change Orders: CCSNH Contract Representative will issue Change Orders per the following procedures.
1. The Contract Representative reviews cost for Change in Work. If needed the Contract Representative will request additional items, back-up information, and request any possible changes or clarifications.
 2. Contract Representative will prepare a Change Order.
 3. Contract Representative will issue the Change Order to the Contractor for review and signature.
 4. Contractor submits signed Change Order to the Contract Representative.

5. The Contract Representative completes the Change Order with the signature of the College Representative
 6. A fully signed and executed Change Order is issued to Contract Representative, Clerk of the Works, and Contractor.
- K. Execution of Change Orders: The Contractor is responsible for preparing and updating a spreadsheet log itemizing all Proposed Changes. A separate spreadsheet shall be completed for each Allowance Item. The spreadsheet shall include columns for Proposed Change Number, Description, Amount of Change, (or initial order of magnitude), Status, and Approved Amounts. In addition, a current balance remaining shall be included. Change Orders will be processed per the following procedures:
1. The Contract Representative reviews cost for Change in Work with the College and Consultant(s). If needed the Contract Representative will request additional items, back-up information, and request any possible changes or clarifications.
 2. Contract Representative and College Representative signs Change Order.
 3. Contractor can proceed with Change Order Work with direction from the Contract Representative.
 4. Fully signed and executed Change Order is issued to the Contract Representative, Clerk of the Works, and Contractor.
- L. Correlation Of Contractor Submittals:
1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
 2. Promptly revise progress schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
 3. Promptly enter changes in Project Record Documents.

1.7 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of the Contract Representative, it is not practical to remove and replace the Work, the Contract Representative will direct appropriate remedy or adjust payment.
- C. The defective Work may remain, but unit sum/price will be adjusted to new sum/price at discretion of the Contract Representative.
- D. Defective Work will be repaired to instructions of and acceptance by the Contract Representative, and unit sum/price will be adjusted to new sum/price at discretion of the Contract Representative.
- E. Authority of the Contract Representative to assess defects and identify payment adjustments, is final.
- F. Non-Payment For Rejected Products: Payment will not be made for rejected products for any of the following:
 1. Products wasted or disposed of in a manner that is not acceptable.
 2. Products determined as unacceptable before or after placement.

3. Products not completely unloaded from transporting vehicle.
4. Products placed beyond lines and levels of required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling, and disposing of rejected products.

1.8 UNIT PRICES

A. NONE

1.9 ALTERNATES (intentionally omitted)

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01300

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Coordination and project conditions.
- B. Permits and fees.
- C. Field engineering.
- D. Preconstruction meeting.
- E. Site mobilization meeting.
- F. Progress meetings.
- G. Pre-installation meetings.
- H. Cutting and patching.
- I. Notification of Subcontractors and Workmen's Compensation Insurance (SB 78)
- J. Special procedures.

1.2 COORDINATION AND PROJECT CONDITIONS

- A. Coordinate scheduling, submittals, and Work of various sections of the Specifications to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. The Contractor shall comply with the "Underground Utility Damage Prevention System" by notification to DIG-SAFE SYSTEM of intent to excavate near or around any underground utility installations in public ways. The Contractor shall call 1-800/225-4977 at least seventy-two (72) hours in advance of starting any excavation. Saturday, Sundays, and legal holidays are not included in the computation of the required seventy-two (72) hour notice.
- C. Prior to any Work, the Contractor shall hire an independent company to locate utilities potentially affected by the Work and as shown and/or identified in the Contract Documents. All utilities shall be identified by the Contractor on the Record Drawings.
- D. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, operating equipment.

- E. Coordinate space requirements, supports, and installation of mechanical and electrical Work indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- F. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within construction. Coordinate locations of fixtures and outlets with finish elements.
- G. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion [and for portions of Work designated for State's [partial] occupancy].
- H. After State occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of State's activities.

1.3 PERMITS AND FEES

- A. The CCSNH shall obtain and pay for all permits, and impact fees as may be required by law for construction of CCSNH's facility. The Contractor shall pay for all fees and charges, and use of the property other than the site of the work for storage of materials or other purposes.
- B. The Contractor shall pay all applicable Federal, State, and Local sales and other taxes, except taxes and assessments on the real property comprising the site of the Project.

1.4 FIELD ENGINEERING (not used)

1.5 PRECONSTRUCTION MEETING

- A. The Contract Representative will schedule meeting at the Project site prior to Contractor occupancy.
- B. Attendance required (unless otherwise waived): Contract Representative, Clerk of the Works, Contractor, Contractor's Superintendent, and major Subcontractors.
- C. Potential Agenda Topics:
 - 1. Distribution of Contract Documents.
 - 2. Submission of list of Subcontractors, insurance carriers, subcontracting relationship, list of products, schedule of values, and progress schedule.
 - 3. Designation of personnel representing parties in Contract.
 - 4. Use of premises by CCSNH and Contractor.
 - 5. College's requirements and partial occupancy.
 - 6. Construction facilities and controls provided by CCSNH.
 - 7. Temporary utilities provided by CCSNH
 - 8. Security and housekeeping procedures.
 - 9. Schedules.
 - 10. Application for payment procedures.
 - 11. Procedures for maintaining record documents.

12. Requirements for start-up of equipment.
 13. Inspection and acceptance of equipment put into service during construction period.
- D. Contract Representative shall record minutes and distribute copies within two days after meeting to participants, with one copy to each person in attendance and one to those affected by decisions made.

1.6 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at weekly intervals.
- B. Attendance required (unless otherwise waived): Contract Representative, Clerk of the Works, Contractor, Contractor's Superintendent, and major Subcontractors.
- C. Potential Agenda Topics:
1. Review minutes of previous meetings.
 2. Review of Work progress.
 3. Field observations, problems, and decisions.
 4. Identification of problems impeding planned progress.
 5. Review of submittals schedule and status of submittals.
 6. Review of off-site fabrication and delivery schedules.
 7. Maintenance of progress schedule.
 8. Corrective measures to regain projected schedules.
 9. Planned progress during succeeding work period.
 10. Coordination of projected progress.
 11. Maintenance of quality and work standards.
 12. Effect of proposed changes on progress schedule and coordination.
 13. Other business relating to Work.
- D. Contract Representative shall record minutes and distribute copies within two days after meeting to participants, with one copy to each person in attendance and one to those affected by decisions made.

1.7 PRE-INSTALLATION MEETING(S)

- A. When required in individual specification sections, convene pre-installation meetings at Project site prior to commencing work of specific section.
- B. Require attendance of parties directly affecting, or affected by, Work of specific section.
- C. Notify the Contract Representative seven days in advance of meeting date.
- D. Contractor shall prepare agenda and preside at meeting:
1. Review conditions of installation, preparation and installation procedures.
 2. Review coordination with related work.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 CUTTING AND PATCHING

- A. Employ skilled and experienced installer to perform cutting and patching.
- B. Submit written request in advance of cutting or altering elements affecting:
 - 1. Structural integrity of element.
 - 2. Integrity of weather-exposed or moisture-resistant elements.
 - 3. Efficiency, maintenance, or safety of element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of CCSNH or separate contractor.
- C. Execute cutting, fitting, and patching [including excavation and fill,] to complete Work, and to:
 - 1. Fit the several parts together, to integrate with other Work.
 - 2. Uncover Work to install or correct ill-timed Work.
 - 3. Remove and replace defective and non-conforming Work.
 - 4. Remove samples of installed Work for testing.
 - 5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.
- D. Execute work by methods to avoid damage to other Work, and to provide proper surfaces to receive patching and finishing.
- E. Cut masonry and concrete materials using masonry saw or core drill.
- F. Restore Work with new products in accordance with requirements of Contract Documents.
- G. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H. Maintain integrity of wall, ceiling, roof, or floor construction; completely seal voids.
- I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with material in accordance with design and code requirements, to full thickness of penetrated element.
- J. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for assembly, refinish entire unit.
- K. Identify hazardous substances or conditions exposed during the Work to the Contract Representative for decision or remedy.

3.2 SPECIAL PROCEDURES

- A. Materials: As specified in product sections; match existing with new products [and salvaged products] for patching and extending work.
- B. Employ skilled and experienced installer to perform alteration work.
- C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.
- D. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- E. Remove debris and abandoned items from area and from concealed spaces.
- F. Prepare surface and remove surface finishes to permit installation of new work and finishes.
- G. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
- H. Remove, cut, and patch Work in manner to minimize damage and to permit restoring products and finishes to original condition.
- I. Refinish existing visible surfaces to remain in renovated rooms and spaces, to original condition for each material, with neat transition to adjacent finishes.
- J. Where new Work abuts or aligns with existing, provide smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
- K. When finished surfaces are cut so that smooth transition with new Work is not possible, terminate existing surface along straight line at natural line of division and submit recommendation to Contract Representative for review.
- L. Where change of plane of **1/4 inch** or more occurs, submit recommendation for providing smooth transition to Contract Representative for review.
- M. Trim existing doors to clear new floor finish. Refinish trim to original condition.
- N. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
- O. Finish surfaces as specified in individual product sections.

END OF SECTION

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Submittal procedures.
- B. Construction progress schedules.
- C. Subcontractor list.
- D. Proposed products list.
- E. Product data.
- F. Shop drawings.
- G. Samples.
- H. Design data.
- I. Test reports.
- J. Certificates.
- K. Manufacturer's instructions.
- L. Manufacturer's field reports.
- M. Erection drawings.
- N. Construction photographs.

1.2 SUBMITTAL PROCEDURES

- A. Transmit each submittal with CCSNH accepted form.
- B. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.
- C. Identify Project, Contractor, subcontractor and supplier; pertinent drawing and detail number, and specification section number, appropriate to submittal.

- D. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents. Incomplete items or items submitted without the Contractor's signed stamp of approval thereon will be returned rejected.
- E. Schedule submittals to expedite Project. Coordinate submission of related items. Deliver to:
 - Contract Representative
 - Matthew Moore
 - memmoore@ccsnh.edu
 - Director of Capital Projects & Planning
 - Community College System of New Hampshire
 - 26 College Drive
 - Concord, NH 03301
- F. For each submittal for review, allow 14 days excluding delivery time to and from Contract Representative.
 - 1. All shop drawings to be returned to Contractor from the Contract Representative. Direct return of shop drawings from Architect or Engineer to Contractor is not permitted.
- G. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of completed Work.
- H. Allow space on submittals for Contractor and Architect or Engineer review stamps.
- I. When revised for resubmission, identify changes made since previous submission.
- J. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.
- K. Submittals not requested will not be recognized or processed.
- L. Work shall not begin until [All] submittal items have been approved and returned to General Contractor by the Contract Representative.

1.3 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial schedules at PreConstruction Meeting.
- B. Submit revised Progress Schedules with each Application for Payment.
- C. Distribute copies of reviewed schedules to Project site file, subcontractors, suppliers, and other concerned parties.
- D. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

- E. Submit horizontal bar chart with separate line for each major portion of Work or operation\ and section of Work, identifying first work day of each week.
- F. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate early and late start, early and late finish, float dates, and duration.
- G. Indicate estimated percentage of completion for each item of Work at each submission.
- H. Submit separate schedule of submittal dates for shop drawings, product data, and samples, including CCSNH furnished products and dates reviewed submittals will be required from Contract Representative. Indicate decision dates for selection of finishes. Selection of finishes cannot occur until ALL finish items are submitted and products are approved.
- I. Indicate delivery dates for furnished products.
- J. Revisions To Schedules:
 - 1. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
 - 2. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
 - 3. Prepare narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect including effect of changes on schedules of separate contractors.

1.4 SUBCONTRACTOR LIST

- A. Submit list, at the PreConstruction Meeting, of subcontractors setting forth in detail the work for which they will be responsible. In addition, the General Contractor shall identify what work will be performed with the Bidder's own forces.
- B. Provide Subcontractor and Insurance information as required under SB 78.
 - 1. Subcontractor list is to include subcontracting relationship and the carrier of Workmen Compensation Insurance for all subcontractors, all tiers.
 - 2. Proof of Insurance is to be provided within 36 hours of request.
 - 3. Changes and additional to Subcontractor and Insurance is to be provided to the CCSNH within 36 hours of occurrence.
 - 4. The CCSNH will post this information in a publicly accessible website for the duration of the contract.

1.5 PRODUCT DATA

- A. Product Data: Submit for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
- B. Submit electronic copies to the Contract Representative. The copy for the CCSNH is separate from the copy the Contractor to provide as part of close out procedures.

- C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- D. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- E. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 01700.

1.6 SHOP DRAWINGS

- A. Shop Drawings: Submit for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
- B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Submit an electronic copy to the Contract Representative. The copy for the CCSNH is separate from the copy the Contractor to provide as part of close out procedures.
- D. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 01700.

1.7 SAMPLES

- A. Samples: Submit for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
- B. Samples For Selection as Specified in Product Sections:
 - 1. Submit to Contract Representative for aesthetic, color, or finish selection.
 - 2. Submit samples of finishes from full range of manufacturers' standard colors, in custom colors selected, textures, and patterns for Contract Representative and System approval.
- C. Submit samples to illustrate functional and aesthetic characteristics of Products, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- D. Include identification on each sample, with full Project information.
- E. Submit number of samples specified in individual specification sections; Contract Representative will retain one sample and Architect or Engineer will retain one sample.
- F. Reviewed samples which may be used in the Work are indicated in individual specification sections.
- G. Samples will not be used for testing purposes unless specifically stated in specification section.
- H. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes described in Section 01700.

1.8 DESIGN DATA

- A. Submit for Contract Representative's knowledge.
- B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.9 TEST REPORTS

- A. Submit for Contract Representative's knowledge.
- B. Submit test reports for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.10 CERTIFICATES

- A. When specified in individual specification sections, submit certification by manufacturer, installation/application subcontractor, or Contractor, to Contract Representative in quantities specified for Product Data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to the Contract Representative.

1.11 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, [start-up,] adjusting, and finishing, to the Contract Representative in quantities specified for Product Data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.12 MANUFACTURER'S FIELD REPORTS

- A. Submit reports for Contract Representative's and System's benefit.
- B. Submit report in duplicate within 7 days of observation to the Contract Representative for information.
- C. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.13 ERECTION DRAWINGS

- A. Submit to the Architect and Contract Representative for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

- B. Data indicating inappropriate or unacceptable Work may be subject to action by the Architect, Engineer, or Contract Representative.

1.14 CONSTRUCTION PHOTOGRAPHS

- A. Provide photographs of construction throughout progress of Work produced by an experienced] photographer, acceptable to the Contract Representative.
- B. Twice monthly submit photographs.
- C. Photographs: Submit digital images on 3-1/2" diskettes or on compact discs.
- D. Take multiple site photographs from differing directions and interior photographs indicating relative progress of the Work, three (3) days maximum prior to submitting.
- E. Identify each image. Identify name of Project, contract number phase orientation of view, date and time of view.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01600

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Products.
- B. Product delivery requirements.
- C. Product storage and handling requirements.
- D. Product options.
- E. Product substitution procedures.
- F. Equipment electrical characteristics and components.

1.2 PRODUCTS

- A. Furnish products of qualified manufacturers suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise.
- B. All materials and equipment shall be new, except as specifically permitted by Contract Documents.
- C. Furnish interchangeable components from same manufacturer for components being replaced.
- D. The use of asbestos containing materials shall be prohibited.

1.3 PRODUCT DELIVERY REQUIREMENTS

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

- A. Store and protect products in accordance with manufacturers' instructions.
- B. Store with seals and labels intact and legible.

- C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- D. For exterior storage of fabricated products, place on sloped supports above ground.
- E. Provide bonded off-site storage and protection when site does not permit on-site storage or protection only with prior approval from the Contract Representative.
- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- G. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.
- H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.5 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers with or without provision for substitutions: Products of one of manufacturers named and meeting specifications, no options or substitutions allowed. Submit request for substitution for any manufacturer not named in accordance with the following article.

1.6 PRODUCT SUBSTITUTION PROCEDURES

- A. Where Bidding Documents stipulate particular Products, substitution requests will ONLY be considered before receipt of Bids. Submit requests per the requirements specified in this section.
 - 1. All requests shall be submitted to the Contract Representative not later than five (5) business days before the hour and day set for bid opening. Incomplete requests or requests received after this deadline will not be considered.
 - 2. All requests that are approved and are acceptable to the Department will be issued as part of an Addendum to each Bidder who has received a set of bidding documents, so that all Bidders may avail themselves of the change in submitting their Proposals.
- B. Substitutions [may] be considered after bid opening when a product becomes unavailable through no fault of the Contractor. The Contractor shall apply to the Contract Representative, in writing, within ten (10) days of his realizing his inability to furnish the article specified, describing completely the substitution he desires to make. The Contractor shall include a dated written statement from the manufacturer outlining an explanation for the unavailability of the product. Substitutions for reasons of lead times, i.e., the time between when the Contractor orders necessary materials from the vendor

and anticipated delivery, will only be reviewed if the lead time is more than the length of the contract time. The Department may extend the contract time to accommodate the product specified. No additional costs from the Contractor will be considered due to the fact that the Contractor shall verify lead times and coordinate with contract time during the bidding phase.

- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that Bidder:
 - 1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
 - 2. Will provide same warranty for Substitution as for specified product.
 - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to the State.
 - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
 - 5. Will reimburse Department and Architect and/or Engineer for review or redesign services associated with re-approval by authorities having jurisdiction.
- E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals, without separate written request, or when acceptance will require revision to Contract Documents.
- F. Substitution Submittal Procedure:
 - 1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
 - 2. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.
 - 3. The Department will notify Bidders in writing of decision to accept by issuing an addendum.

PART 2 PRODUCTS

- A. Not used

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01700

EXECUTION REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Closeout procedures.
- B. Final cleaning.
- C. Protecting installed construction.
- D. Project record documents.
- E. Manual for materials and finishes.
- F. Product warranties and product bonds.
- G. Guarantee of work.

1.2 CLOSEOUT PROCEDURES

- A. Submit a signed Substantial Completion Application attesting that the Contract Documents have been reviewed, Work has been inspected, and that all Work is complete in accordance with Contract Documents and ready for Contract Representative review. The Substantial Completion Application for use by the Contractor is attached to the end of this specification section. The Contract Representative may modify this Agreement to accommodate any changes in Work.
 - 1. Provide submittals to the Contract Representative as required by the Contract Documents and as required by authorities having jurisdiction.
- B. Only after completion of all Punch List items and submission of all items the Contractor shall submit a Final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- C. College will occupy portions of building as specified in Section 01100.

1.3 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
- B. Clean debris from roofs, gutters, downspouts, and drainage systems.
- C. Clean site; sweep paved areas, rake clean landscaped surfaces.
- D. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.4 PROTECTING INSTALLED CONSTRUCTION

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic from landscaped areas.

1.5 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed Shop Drawings, Product Data, and Samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by State.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress, not less than weekly.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish [first] [main] floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 4. Field changes of dimension and detail.

5. Details not on original Contract drawings.

G. Submit documents to the Contract Representative at time of Substantial Completion.

1.6 MANUAL FOR MATERIALS AND FINISHES

- A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. The Contract Representative will review draft and return one copy with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by State, submit documents within ten days after acceptance.
- C. Submit one copy of completed volumes (15) fifteen days prior to Substantial Completion. Draft copy be reviewed and returned after Substantial Completion, with Architect/Engineer comments. Revise content of document sets as required prior to final submission.
- D. Submit one set of revised final volumes in final form prior to final inspection, and one electronic version.
- E. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Include information for re-ordering custom manufactured products.
- F. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- G. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.
- H. Additional Requirements: As specified in individual product specification sections.
- I. Include listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.7 PRODUCT WARRANTIES AND PRODUCT BONDS

- A. Obtain warranties and bonds executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after Substantial Completion. All warranties start dates shall be the Substantial Completion Date, if project is phased all warranties to start at the date of Substantial Completion of each phase.
- B. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.
- C. Verify documents are in proper form, contain full information, and are notarized.

- D. Co-execute submittals when required.
- E. Include Table of Contents and assemble in three D side ring binder with durable plastic cover.
- F. Submit prior to final Application for Payment.
- G. Time Of Submittals:
 - 1. For equipment or component parts of equipment put into service during construction with State's permission, submit documents within (10) ten days after acceptance.
 - 2. Make other submittals within (10) ten days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within (10) ten days after acceptance, listing date of acceptance as beginning of warranty or bond period.

1.8 GUARANTEE OF WORK

- A. Except as otherwise specified, all work shall be guaranteed by the Contractor against defects resulting from the use of inferior materials, equipment or workmanship for one (1) year from the Date of Substantial Completion of the work.
- B. If, within any guarantee period, repairs or changes are required in connection with guaranteed work, which in the opinion of the Contract Representative, is rendered necessary as a result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract shall, promptly upon receipt of notice from the Commissioner, and at his own expense:
 - 1. Place in satisfactory condition in every particular, all such guaranteed work, correct all defects therein.
 - 2. Make good all damage to the building or site, or equipment or contents thereof, which in the opinion of the Contract Representative, is the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract.
 - 3. Make good any work or material, or the equipment and contents of said building or site disturbed in fulfilling any such guarantee.
- C. In any case, wherein fulfilling the requirements of the Contract or of any guarantee, embraced in or required thereby, the Contractor disturbs any work guaranteed under another contract, he shall restore such disturbed work to a condition satisfactory to the Contract Representative and guarantee such restored work to the same extent as it was guaranteed under such other contracts.
- D. If the Contractor, after notice, fails to proceed promptly to comply with the terms of the guarantee, the Commissioner may have the defects corrected and the Contractor and his/her Surety shall be liable for all expense incurred.
- E. All special guarantees applicable to definite parts of the work that may be stipulated in the Specifications or other papers forming a part of the Contract shall be subject to the term of this paragraph during the first year of the life of such special guarantee.

- F. Failure to adhere to guarantee terms may result in suspension or barring from the prequalification list, or, alternatively, the requirement of a Letter of Credit or other guaranty equal to a percentage of the Contract amount.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION



Project #RVC20-01

EXHIBIT "A"

FOR

RVC20-01 RVCC Lebanon LNA/LPN Lab Renovations

AT

RIVER VALLEY COMMUNITY COLLEGE - LEBANON

15 Hanover Street, Lebanon, NH

A COMPONENT OF THE

Community College System of New Hampshire

26 College Drive, Concord, NH

PROJECT MANUAL

Attached to this exhibit:

- Project Drawings Dated January 31, 2020 and Specifications Dated February 19, 2020

RVCC LEBANON - LNA/LPN LAB
RENOVATIONS
15 HANOVER COURT
LEBANON, NH 03766

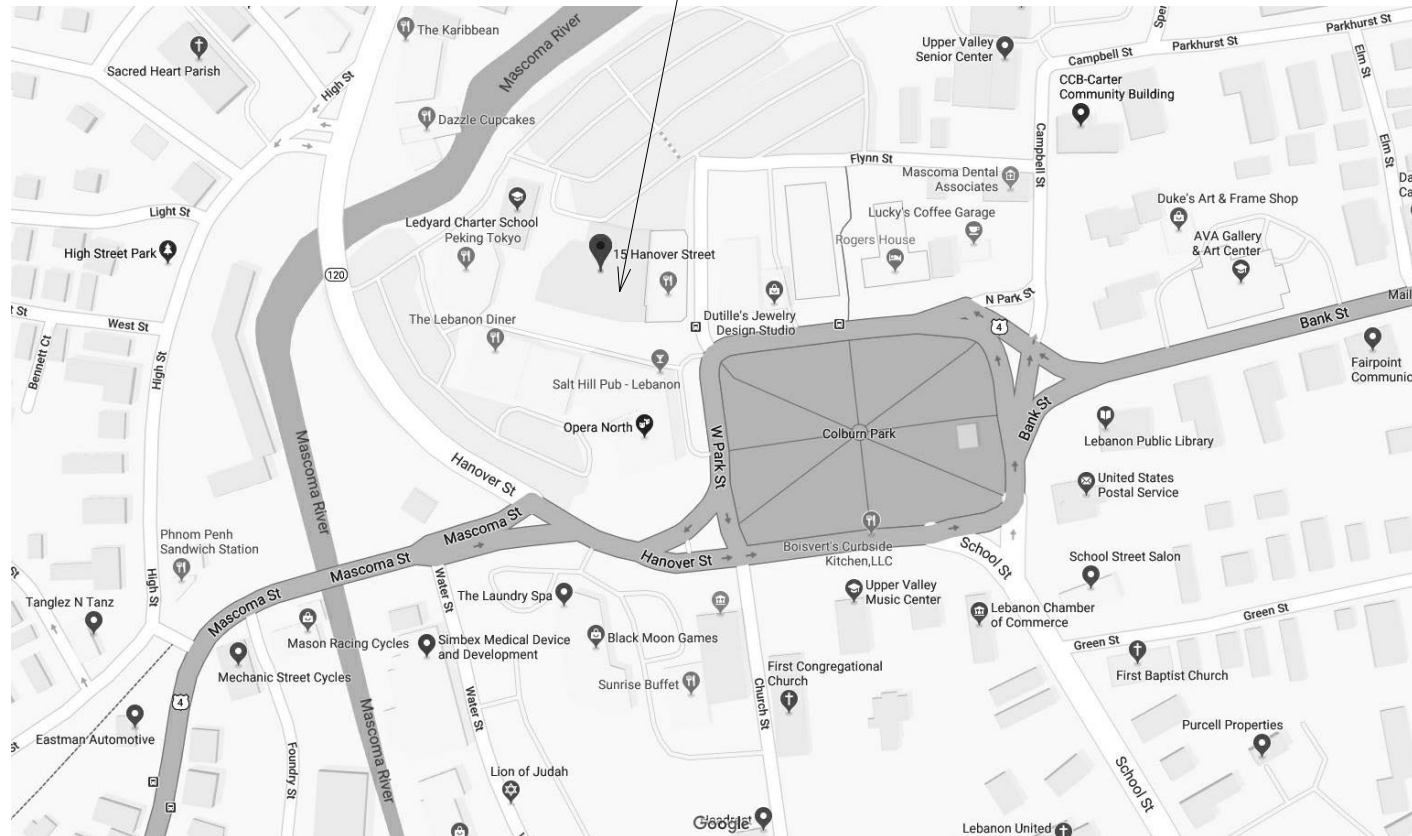



OWNER
COMMUNITY COLLEGE SYSTEM OF NH
26 COLLEGE DRIVE, CONCORD, NH 03301
P. (603) 230-3500 F. (603) 271-2725



GENERAL CONTRACTOR
T.B.D.

WARRENSTREET ARCHITECTS, INC.
PLANNERS, ARCHITECTS, LANDSCAPE ARCHITECTS, INTERIOR DESIGNERS
27 WARREN STREET, CONCORD, NH 03301
P. (603) 225-0640 F. (603) 225-0621

	PROJECT LOCATION MAP:		ARCHITECTURE	MECHANICAL/PLUMBING ELECTRICAL		PROJECT:	
	<div><div><div>SITE</div></div><div>SCALE: NTS</div></div>		WARRENSTREET ARCHITECTS, INC. 27 WARREN STREET CONCORD, NH 03301 P. (603) 225-0640 F. (603) 225-0621	WV ENGINEERING ASSOC. 11 KING CT KEENE, NH 03431 P: (603) 352-7007	WV ENGINEERING ASSOC. 11 KING CT KEENE, NH 03431 P: (603) 352-7007	RVCC LEBANON - LNA/LPN LAB RENOVATIONS PROJECT NUMBER: 3613 CCSNH PROJECT #: RVC20-01	
			OUTLINE SPECIFICATION & MATERIAL LIST ADA, CONVERSIONS, SYMBOLS, SIGNAGE & ABBREVIATIONS CODE REVIEW DEMOLITION FLOOR & REFLECTED CEILING PLANS FIRST FLOOR PLAN FIRST FLOOR FINISH PLAN & SCHEDULE, REFLECTIVE CEILING PLAN DOOR & WINDOW SCHEDULES, ELEVATIONS, DETAILS & PARTITION TYPES	A002 A003 A004 A101 A111 A131 A601	M-1 M-2 P-1 P-2	E-1 E-2 E-3 E-4	ISSUE: FOR CONSTRUCTION
						ISSUE DATE: JANUARY 31, 2020	
						ARCHITECT OF RECORD	
<div></div>							

three inches = one foot
one and one half inches = one foot
one inch = one foot
one inch = one foot
three quarter inch = one foot
one quarter inch = one foot
one eighth inch = one foot
one eighth inch = one foot

D:\rent\User Files\2010\613 RVCC LNA
Lin Central R19 26@warrenstreet.comp.nt
TEMPLATE DATE: 11/25/2019

ARCHITECTURAL OUTLINE SPECIFICATION

DIVISION 2 – EXISTING CONDITIONS

- 02 41 00 – Demolition**
- The Contractor shall provide all selective demolition of building elements for alterations purposes and as required for the complete and proper execution of the Work. Demolition scope may not be fully represented on the Construction Documents, therefore, either the Contractor or through his various subcontractors, shall thoroughly review all available documents and shall visit the site and existing building prior to bidding, as required to fully satisfy himself as to the types, locations and quantities of demolition work required. No pleas of misunderstanding resulting from the failure to adequately inspect existing conditions will be entertained and no additional expenses related thereto will be granted.
 - All methods, techniques and procedures of safety, shoring, barricading, fencing, protection, demolition, removal and disposal are left solely to the discretion of, and shall be the responsibility of the Contractor. Provide, erect, and maintain temporary barriers and security devices.
The Contractor shall field verify existing load bearing partitions, beams, columns, etc., prior to demolition and shall provide all necessary shoring and bracing. He shall immediately notify the Architect of any unanticipated or questionable conditions.
 - The Contractor shall be responsible for compliance with all applicable Local, State and Federal regulations, including but not limited to, NFPA 241, OSHA standards, and EPA National Emission Standard for Hazardous Air Pollutants. It shall be the Contractor's responsibility to obtain all permits and provide all inspections and notifications related thereto.
 - If uncovered conditions are not as anticipated, immediately notify the Architect and secure needed directions. Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.
 - Perform demolition in a manner that maximizes salvage and recycling of materials. Set aside reusable, recyclable, and salvagable materials, store and deliver to collection point or point of reuse. Coordinate selected salvaged items to be turned over to the Owner.
 - Separate demolition work areas from occupied areas. Provide, erect, and maintain temporary dustproof partitions. Maintain existing active plumbing, mechanical and electrical systems that are to remain in operation; maintain access to equipment and operational components. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service. Verify abandoned services serve only abandoned facilities before removal. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings, back to source of supply where possible, otherwise cap stub and tag with identification.
 - Protect existing work to remain Perform cutting to accomplish removals neatly and as specified for cutting new work. Repair adjacent construction and finishes damaged during removal work. Patch as specified for patching new work. Remove demolition debris to off-site recycling facility.

DIVISION 3 – CAST-IN-PLACE CONCRETE – (NOT USED)

DIVISION 4 – UNIT MASONRY – (NOT USED)

DIVISION 5 – METALS – (NOT USED)

DIVISION 6 – WOOD AND PLASTICS

- 06 20 00 - Finish Carpentry and 06 41 00 - Architectural Wood Casework**
- All millwork and custom casework shall be constructed in accordance with AWI standards, wood veneered item shall be Premium Grade; plastic laminate faced casework shall be Custom Grade. Electronic shop drawings required.
 - Products:

 - Hardwood Caps: Northern White (Rock) Maple; FAS grade.
 - Panel Cores for cabinets and panels below sinks: Medium density fiberboard (MDF) ANSI A208.2 Class MD or MD-EXT, no urea formaldehyde-added, 47 pcf density, moisture resistant type.
 - Plastic Laminate: VGS, 0.028" for exposed and semi-exposed faces; Manufacturers and colors to be selected by Architect. Laminate backer: 0.020" for concealed faces. Edge banding ABS or PVC 3 mm, except 0.5 mm at cabinet body semi-concealed edges.
 - Countertops: Postformed Plastic Laminate: HGS, NEMA LD3, 0.048 inch, integral backsplash, loose side splashes, double radius nosing, Futura by VT Industries or equal.
 - Adhesives: Suitable for purpose, no urea formaldehyde or VOC compounds.
 - Fasteners: Suitable for purpose, concealed where possible; stainless steel or hot dip galvanized. Threaded steel concealed joint fasteners.
 - Cabinet Hardware: KV 345 shelf pins; Stanley 4484 U pulls; CompX National cab door locks; silencers; Institutional hinges by Grass America, US26D Satin Chrome finish typical.
 - Fabricator and installer shall specialize in the products specified in this Section with minimum of five years of documented experience.
 - Millwork/Fabrication: Contractor shall be responsible to properly detail work for lasting strength and stability, and to accurately represent it on shop drawings. Assemble and install with concealed fasteners. Joints shall be tight and formed to conceal shrinkage. Edges shall be eased. All dimensions shall be confirmed in the field prior to fabrication. Provide cut-outs and openings as required. There shall be no unfinished wood products.
 - Cabinet Fabrication: All panels shall be 3/4" thickness except 1" for shelves over 36" long and tall cabinet doors; 1/2" for drawer backs; 3/8" for drawer bottoms. Flush overlay cabinet style; dovetail drawer joints. There shall be no unfinished wood products.
 - Installation: Verify adequacy of backing and support framing; verify in-place utilities. Install per AWI Standards, securely, rigid, plumb and level. Installation tolerances: 1/16" max variation from true and 1/32" max offset from true and abutting materials.

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

07 21 00 - Insulation

- Acoustic batts
- Products:

 - Acoustic Battis: Unfaced formaldehyde-free glass fiber, 3" thickness.

Product: Sound Shield Free by Johns Manville, EcoBatt by Knauf, OR

 - Acoustic Battis: Unfaced mineral fiber, 3" thickness.

Product: Rockwool AFB by Rockwool.

07 90 05 – Joint Sealing

- Sealants and joint backing, installed by company specializing in this scope with min five years of experience by trained applicators in accordance with manufacturer's recommendations.
- Products:

 - Interior Sealant: Acrylic Latex 834 by Tremco for sound and smoke sealing and joints with minimal movement.
 - Interior Sanitary Sealant: Tremsil 200 by Tremco for counters and plumbing fixtures.
 - Back-up & Primers: As recommended by sealant manufacturer.
- Installation: Installer specializing in this work with a min of 5 years of experience. Provide installer's two year warranty covering all types of sealant failures in addition to manufacturer's warranties.

DIVISION 8 – DOORS AND WINDOWS

08 11 13 - Hollow Metal Doors and Frames

- Metal Doors: Smooth faces, welded face and edges, spot welded vertical steel stiffeners, primed for field painting, ANSI A25.9 Level 2, physical performance Level B, Model, 2
- Metal Door Frames and Glazed Metal Frames: Knocked-down, 16-gauge for interior frames 42" wide and less; 14-gauge for frames wider than 42", shop primed, UL listed for fire-rated openings as indicated.
- Manufacturers: Republic, Curries, Ceco, Steelcraft

08 14 16 – Flush Wood Doors

- Flush Wood Doors: AWI Custom Grade, Select White Maple veneer, 5-ply, solid core, 1-3/4" thickness, factory finished transparent catalyzed polyurethane, match wood glazing stops, field glazed. Life-time warranty.
- Manufacturers: Algoma, Graham, Eggers, Marshfield, VT Industries.

08 71 00 - Door Hardware

- Finish Hardware: For all hollow metal and wood doors, and cylinders for other types of doors. Contractor shall provide appropriate hardware for all Project doors subject to Owner and Architect review and shall be responsible to determine quantities required. Submit finish hardware schedule shop drawings. US26D Satin chrome finish.
- Products:

 - Butt Hinges: Five knuckle, ball bearing by Stanley, McKinney or Hager.
 - Bored Lever Locksets: Schlage D Series, Rhodes lever.
 - Keying: Key from existing grandmaster key system.
 - Closers: LCN 4011 #4111.
 - Gaskets & Acoustical Shoe: National Guard STC Seal Set #1 – 5050 & 2525 Seals, 312V X 131N Shoe, (2) 60FP corner seals.
 - Stops: Ives 407B wall or floor. Provide for each door.

08 80 00 - Glass

- Glazing for interior doors, and window.
- Products:

 - G-5 - Interior Glass: 1/4" clear tempered glass.
 - M-1 - Two-way Mirror Glass: 1/4" tempered mirrored safety glass, grey tinted glass (11% VLT) with 70% reflective coating, one side.

DIVISION 9 – FINISHES

09 21 16 - Gypsum Board Assemblies

- Interior metal stud wall framing, gypsum wallboard, joint treatment, accessories, acoustic construction.
- Products:

 - Gypsum Board: US Gypsum Co., Dometar, Gold Bond, GP
 - ASTM C1396, Type X, 5/8" thickness; moisture-resistant at walls adjacent to sinks.
 - Finishing and Fasteners: Finishing accessories ASTM C1047 galv steel or rolled zinc including casing beads, corner beads, edge beads, reveal trim, control joints. Finish all gypsum board per GA-214 Level 4. Self-tapping type gypsum fasteners black oxide and zinc plated chromate for wet areas.
 - Interior Metal Studs & Misc Framing: MarinoVWare or Dietrich.
 - ASTM C545 steel, channel type, ASTM A653, G-60 galv coated, widths as indicated, mil thickness per engineering to meet the following criteria:
 - Typical lateral deflection: L/240 max.
 - Lateral deflection with ceramic tile finish: L/360 max.
 - Typical lateral load (for all partition types): 5 psf
 - Special Load, shelving: 20 PLF per shelf applied vertically 6" from wall face.
 - Special Load, counters: 100 PLF applied vertically 12" from wall face.
 - Deflection Head Tracks: Single long-leg runners with continuous stud bridging, or double-runner system.
 - Blocking: SPF, S4S, No 2, kiln dried.
- Installation: Gypsum Association GA-216 "Application and Finishing of Gypsum Board" and "Installation of Screw-Type Steel Framing Members to Receive Gypsum Board"
 - Partitions: Provide deflection head track with 3/4" min clear space where framing attaches to structure & deck. Do not fasten studs and GWB to deflection head. Double studs at all door & window openings. Reinforce openings for extra heavy doors. Max stud spacing 16" o.c. Construct fire-rated partitions & ceilings per UL tested assemblies.
 - Installation Tolerances: 1/8" in 10 feet variation of finished gyp board surface from true flat in any direction.

09 51 00 - Acoustic Ceilings

- Suspended metal grid systems, trims and acoustical ceiling tiles.
- Products C1: 2'x4', white, square lay-in, School Zone Fine Fissured 1755 by Armstrong with white 15/16" intermediate duty grid, Prelude by Armstrong and 1" molding.
- Installation: Per ASTM C635, C636, E580, CISCA recommendations and manufacturer's instructions. Support fixtures with supplemental hangers. Installation Tolerance: 1/8" per 10 feet max variation from flat and level. Two degree max variation from plumb for grid members.

09 65 00 - Resilient Flooring

- Resilient Plank Flooring, base, substrate preparation.
- Substrate Preparation Testing: Owner shall submit existing slab testing for record. Contractor shall use test results to determine slab acceptability for flooring and adhesives manufacturers. Contractor shall obtain instructions from flooring manufacturers if test results are not within their recommendation limits. Testing shall include: 1) Internal relative humidity rates per ASTM F2170. 2) Alkalinity, pH rates per ASTM 710. 3) Adhesive bond tests. 4) Water absorption tests.
- Substrate Preparation Products:
 - Self-Leveling Underlayment: K-15 by Ardex.
- Substrate Preparation: Prepare subfloor surfaces as recommended by flooring and adhesive manufacturers. Completely remove existing adhesive by manual scraping, fill, repair bumps, spots, cracks, joints, coatings, and other defects and incompatible substances.
Subfloor Surface Tolerances: 1/16" per foot and 1/8" variation per 10 feet in any direction. Floors intended to slope to drains shall be laser verified for proper pitch. Areas of transition for flooring of different thicknesses shall be filled and feathered at max slope of 1/16" per foot.
- Flooring Products: Colors for each type of flooring and base shall are indicated on the drawings.

 - Resilient Plank Flooring: Unite plank, Style Cove 0927V by Armstrong.
 - Base: 4" Type TP, Traditional Rubber Wall Base by Johnsonite,
 - Adhesives: Low VOC, full spread adhesive recommended by flooring base manufacturer (95% RH adhesive, Armstrong 4151 or equal).
 - Transition Strips: Resilient type by Johnsonite.
- Flooring Installation: Install per manufacturer's instructions. Fit joints tightly. Install terminations where flooring type changes.

09 90 00 - Painting

- All necessary surface preparation and painting in the Work area and existing painted disturbed surfaces. Colors as selected by the Architect.
- Interior Paint Systems:

 - HM Doors & Frames: Primer and 2 coats semi-gloss high performance acrylic enamel.
 - Gypsum Board Walls & Concrete Columns: Primer and 2 coats eggshell latex.
 - Wood Transparent: Sealer, stain, 2 coats waterborne polyurethane.
- Products: Sherwin Williams best commercial grade, meeting state and EPA VOC requirements.
- Installation: Painter shall have a minimum of five years of successful commercial painting experience. Finish a sample room for review and approval prior to proceeding with the Work.

DIVISION 10 – SPECIALTIES

10 14 00 – Interior Signage

- Interior signage shall be plastic, ADA compliant type. Colors to match existing
- Product: MP Plastic Door Signage by Mohawk; borderless, square edge, vinyl tape mounting.
- Style: Helvetica Medium Upper Case, Grade 2 Braille, Text to be upper left justified.
- Color: Copy – White, Background – 117 Dark Blue.

DIVISION 11 – EQUIPMENT-- (NOT USED)

DIVISION 12 – FURNISHINGS – (NOT USED)

DIVISION 14 – CONVEYING EQUIPMENT – (NOT USED)

END OF ARCHITECTURAL OUTLINE SPECIFICATIONS



OWNER
COMMUNITY COLLEGE SYSTEM OF NH
26 COLLEGE DRIVE
CONCORD, NH 03301
P. (603) 230-3500 F. (603) 271-2725

GENERAL CONTRACTOR

T.B.D.

PLAN KEY:

PROJECT TITLE / ADDRESS:

**RVCC LEBANON - LNA/LPN
LAB RENOVATIONS**

15 HANOVER COURT
LEBANON, NH 03766



SCALE: AS NOTED DWN BY: ZB/KL

JOB #: 3613 CHK BY: ZB

CCSNH PROJECT NUMBER: RVCC20-01

PRINT DATE: 2/7/2020 4:00:42 PM

ISSUE DATE:

**JANUARY 31, 2020
FOR CONSTRUCTION**

REVISION	DATE	COMMENTS

**OUTLINE SPECIFICATION &
MATERIAL LIST**

A002

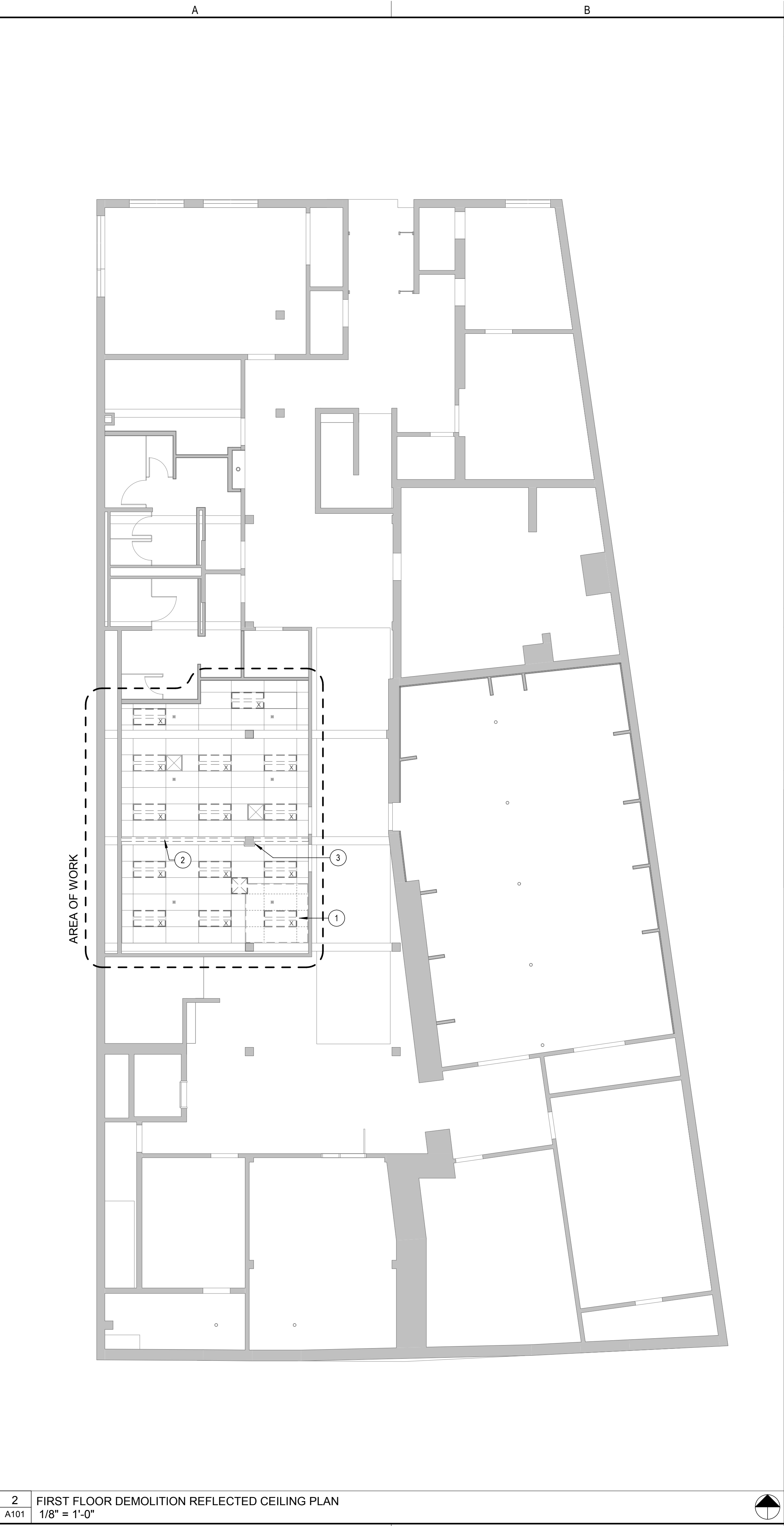
SHEET NUMBER: 2 OF 8 ARCHITECTURAL

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one and one half inches = one foot
one inch = one foot
three quarter inch = one foot
one quarter inch = one foot
one eighth inch = one foot

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Lna_Ceiling_R19_20@warrenstreet.coop.rvt
TEMPLATE DATE: 11/25/2019



2 FIRST FLOOR DEMOLITION REFLECTED CEILING PLAN
A101 1/8" = 1'-0"

DEMO RCP GENERAL NOTES

1. THE DEMOLITION DRAWINGS SHOW THE OVERALL CONCEPT OF THE DEMOLITION SCOPE. THEY ARE NOT INTENDED AS A COMPREHENSIVE DESCRIPTION OF THE SCOPE OF DEMOLITION REQUIRED FOR THE PROJECT. THE FULL DOCUMENT SET, INCLUDING SPECIFICATIONS AND DRAWINGS MUST BE CONSIDERED IN DETERMINING THE SCOPE OF DEMOLITION.
2. EXISTING CONDITIONS SHOWN ON THE DRAWINGS ARE BASED ON LIMITED FIELD OBSERVATIONS AND MEASUREMENTS. NOTIFY ARCHITECT OF ANY DISCREPANCY WITH CONDITIONS ENCOUNTERED OR UNCOVERED IN THE FIELD.
3. PROVIDE TEMPORARY BARRICADES AND PROTECTION TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT CONSTRUCTION TO REMAIN.
4. DURING DEMOLITION ACTIVITIES, MAINTAIN BUILDING SO IT REMAINS WATER TIGHT AND WEATHER TIGHT.
5. UNLESS DEMOLISHED MATERIAL IS INDICATED TO REMAIN, REMOVE MATERIAL FROM PROJECT SITE AND DISPOSE OF LEGALLY.
6. PROTECT ALL ADJACENT SURFACES THAT ARE TO REMAIN DURING DEMOLITION. PATCH AND REPAIR ALL ADJACENT SURFACES DAMAGED DURING DEMOLITION.
7. WHEN UTILITY SYSTEMS ARE REMOVED, PROVIDE CAP, VALVE, PLUG, OR SEAL TO MEET CODE REQUIREMENTS AND MAINTAIN CONTINUUM OF THE SYSTEM.

RCP ANNOTATION LEGEND

- KEYNOTE: SEE FLOOR PLAN KEYNOTE LEGEND
- EXISTING CONSTRUCTION TO BE REMOVED
- EXISTING CONSTRUCTION TO REMAIN

FIXTURE LEGEND

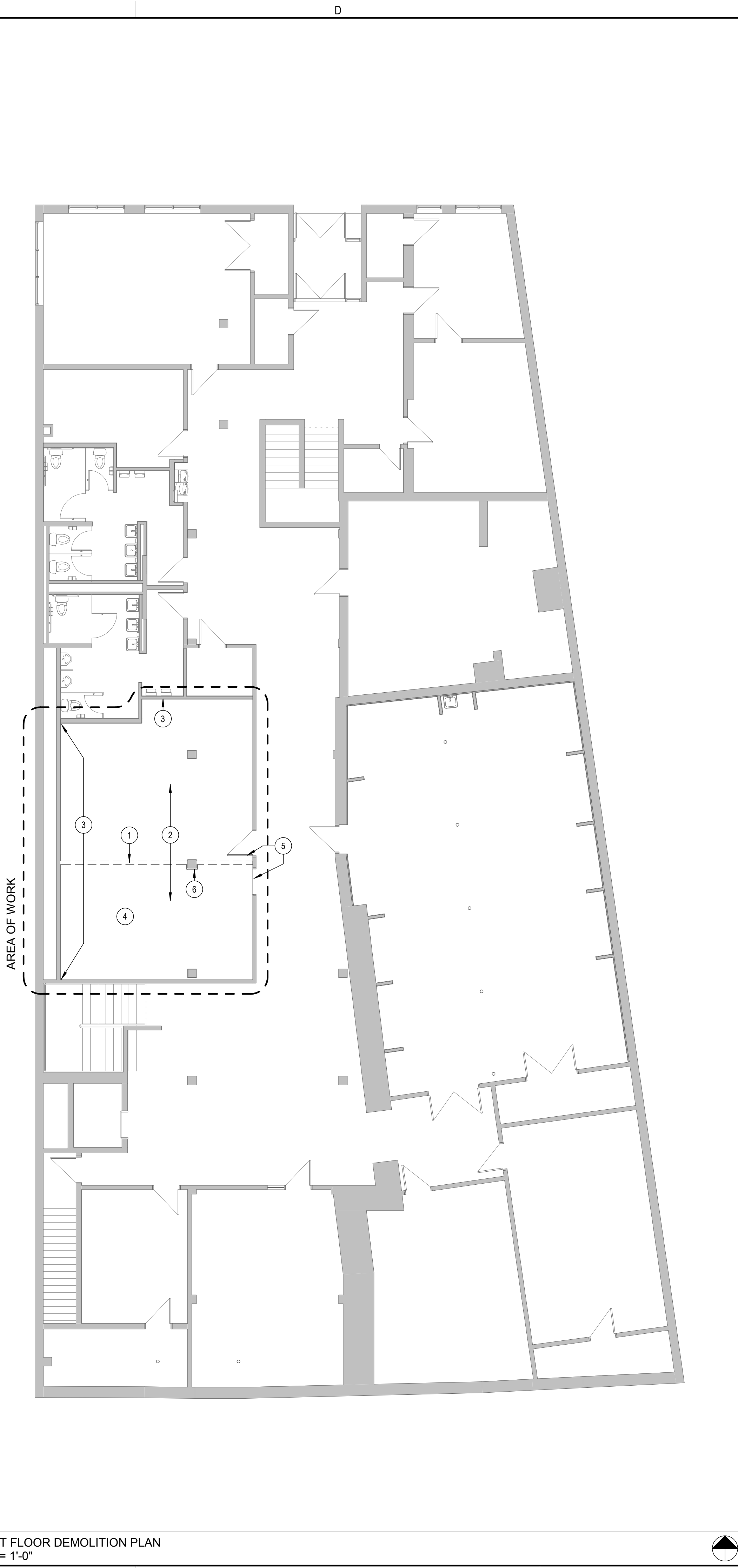
LIGHT FIXTURE PHASE DESIGNATIONS

- DEMOLISH FIXTURE

DEMO RCP KEYNOTES

- | KEY # | DESCRIPTION |
|-------|--|
| 1 | REMOVE PORTION OF EXISTING ACT. SALVAGE PANELS FOR REUSE |
| 2 | REMOVE EXISTING GWB PARTITION TO UNDERSIDE OF EXISTING SOFFIT, REMOVE ELECTRICAL DEVICES AND ASSOCIATED CONDUIT AND WIRING COMPLETE. |
| 3 | REMOVE FURRING AT COLUMN, MODIFY CEILING GRID TO FIT CONCRETE COLUMN |

1 FIRST FLOOR DEMOLITION PLAN
A101 1/8" = 1'-0"



GENERAL DEMOLITION NOTES

1. THE DEMOLITION DRAWINGS SHOW THE OVERALL CONCEPT OF THE DEMOLITION SCOPE. THEY ARE NOT INTENDED AS A COMPREHENSIVE DESCRIPTION OF THE SCOPE OF DEMOLITION REQUIRED FOR THE PROJECT. THE FULL DOCUMENT SET, INCLUDING SPECIFICATIONS AND DRAWINGS MUST BE CONSIDERED IN DETERMINING THE SCOPE OF DEMOLITION.
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3. PROVIDE TEMPORARY BARRICADES AND PROTECTION TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT CONSTRUCTION TO REMAIN.
4. DURING DEMOLITION ACTIVITIES, MAINTAIN BUILDING SO IT REMAINS WATER TIGHT AND WEATHER TIGHT.
5. UNLESS DEMOLISHED MATERIAL IS INDICATED TO REMAIN, REMOVE MATERIAL FROM PROJECT SITE AND DISPOSE OF LEGALLY.
6. PROTECT ALL ADJACENT SURFACES THAT ARE TO REMAIN DURING DEMOLITION. PATCH AND REPAIR ALL ADJACENT SURFACES DAMAGED DURING DEMOLITION.
7. WHEN UTILITY SYSTEMS ARE REMOVED, PROVIDE CAP, VALVE, PLUG, OR SEAL TO MEET CODE REQUIREMENTS AND MAINTAIN CONTINUUM OF THE SYSTEM.

DEMOLITION LEGEND

- KEYNOTE: SEE FLOOR PLAN KEYNOTE LEGEND
- EXISTING CONSTRUCTION TO BE REMOVED
- EXISTING CONSTRUCTION TO REMAIN

DEMOLITION NOTE LEGEND

- | KEY # | DESCRIPTION |
|-------|---|
| 1 | REMOVE EXISTING GWB PARTITION, REMOVE ELECTRICAL DEVICES AND ASSOCIATED CONDUIT AND WIRING COMPLETE. |
| 2 | REMOVE EXISTING CARPET TILES STOCKPILE FOR OWNER'S USE |
| 3 | REMOVE EXISTING GWB AS NEEDED TO PERMIT INSTALLATION OF NEW DUCT WORK OR BLOCKING. SALVAGE BATT INSULATION FOR LATER REINSTALLATION |
| 4 | REMOVE EXISTING RUBBER BASE, TYP. |
| 5 | EXISTING DOORS TO REMAIN |
| 6 | REMOVE FURRING & GWB |



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GENERAL CONTRACTOR
T.B.D.

PLAN KEY:

PROJECT TITLE / ADDRESS:

RVCC LEBANON - LNA/LPN
LAB RENOVATIONS
15 HANOVER COURT
LEBANON, NH 03766



SCALE: AS NOTED DWN BY: ZB/KL
JOB #: 3613 CHK BY: ZB
CCSNH PROJECT NUMBER: RVC20-01
PRINT DATE: 2/7/2020 4:00:47 PM

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FOR CONSTRUCTION

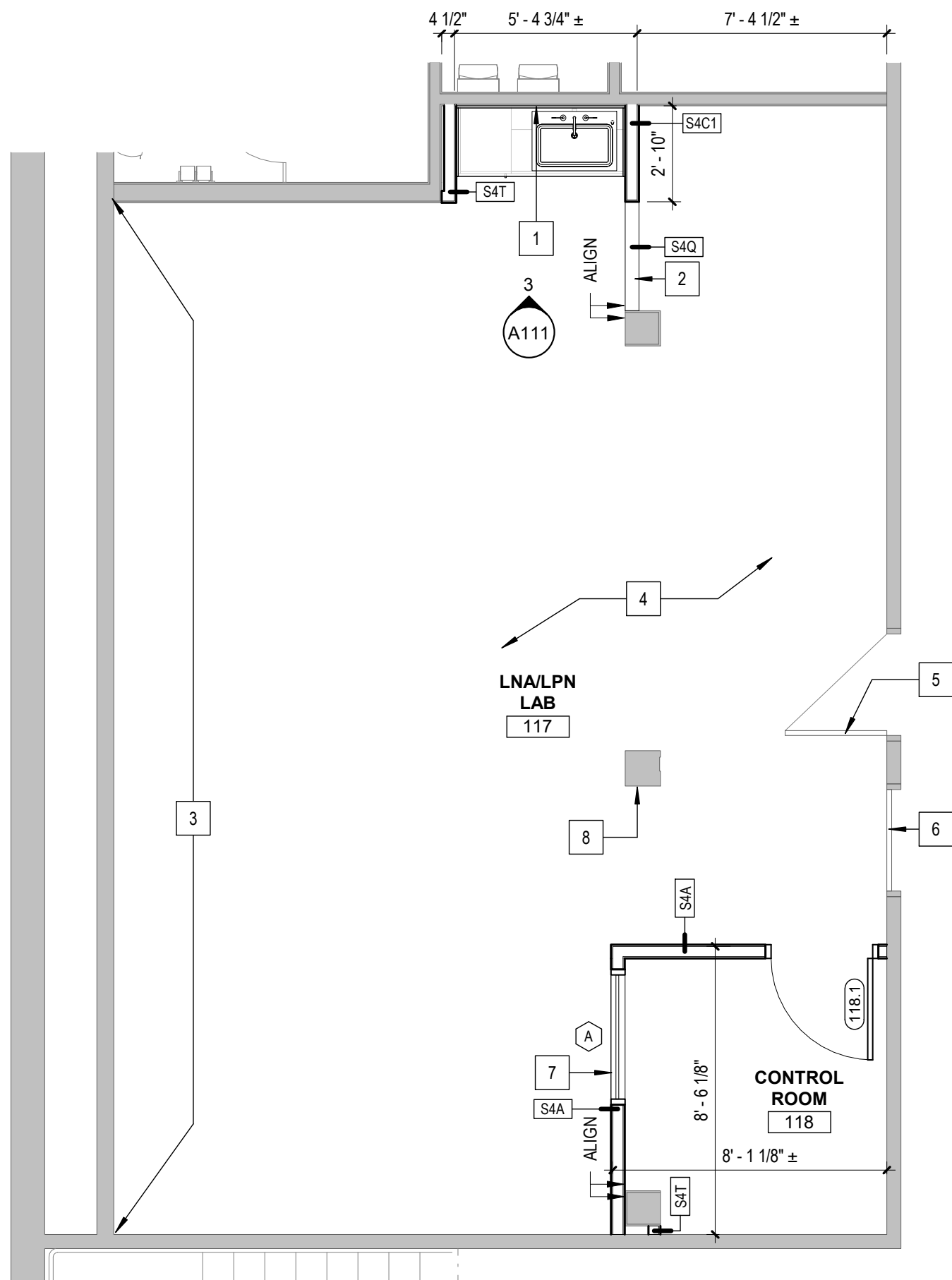
REVISION	DATE	COMMENTS

DEMOLITION FLOOR &
REFLECTED CEILING PLANS

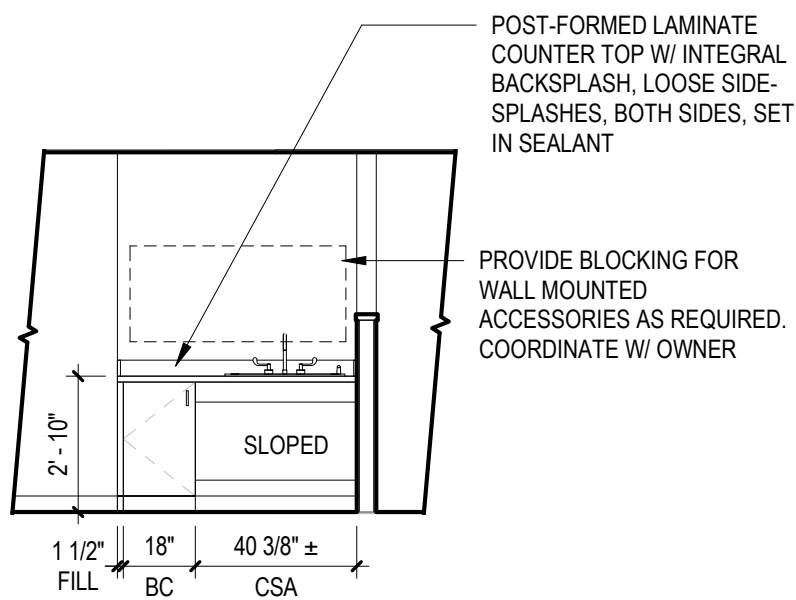
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one inch = one foot
three quarter inch = one foot
one quarter inch = one foot
one eighth inch = one foot
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LNA_Central_R19_20@warrenstreet.coop.rvt
TEMPLATE DATE: 11/25/2019



2 ENLARGED FLOOR PLAN
A111 1/4" = 1'-0"



3 SINK ELEVATION
A111 1/4" = 1'-0"

INTERIOR ELEVATION NOTES

- REVIEW PRIOR TO ROUGH-IN. ANY CONFLICT OF ENGINEERING TRADE DEVICES WITH ARCHITECTURAL DETAILS AND BRING THOSE DISCREPANCIES TO THE ARCHITECT FOR REVIEW.
- PROVIDE BLOCKING FOR MILLWORK, MECHANICAL FIXTURES, PLUMBING FIXTURES AND OTHER ITEMS IDENTIFIED IN THE CONSTRUCTION DOCUMENTS.
- CONFIRM DIMENSIONS OF OWNER SUPPLIED APPLIANCES OR EQUIPMENT PRIOR TO ORDERING FIXED CASEWORK.

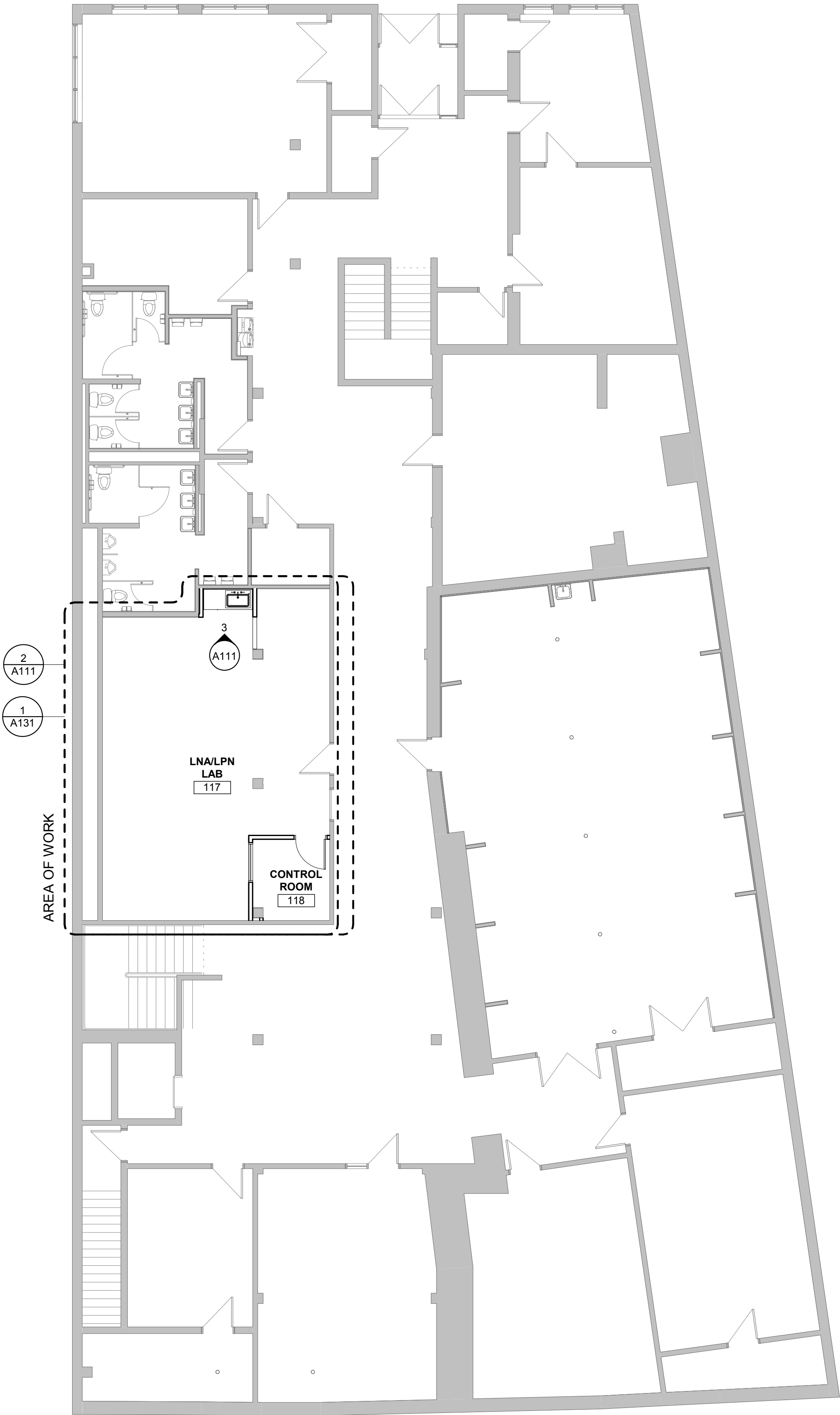
PLAN & ELEVATION LEGEND

- 101 DOOR TAG, SEE DOOR SCHEDULE
- X WINDOW TAG, SEE WINDOW SCHEDULE
- 11 ACCESSORY TAG, SEE ACCESSORY TYPES & INTERIOR ELEVATIONS
- P1 MATERIAL TAG, SEE MATERIAL SCHEDULE
- 30' OCB CASEWORK TAG, SEE CASEWORK TYPES
- A KEYNOTE, SEE PLAN & ELEV KEYNOTE LEGEND

- NEW CONSTRUCTION
- EXISTING CONSTRUCTION TO REMAIN

PLAN & ELEV KEYNOTES

KEY #	DESCRIPTION
1	PROVIDE 58" TYPE 'X' MOISTURE RESISTANT GWB AT WALLS ADJACENT TO SINK
2	WOOD CAP AT HALF WALL HEIGHT. SEE PARTITION TYPE DETAIL
3	REPLACE GWB & SALVAGED INSULATION REMOVED FOR INSTALLATION OF DUCT WORK
4	PROVIDE BLANK PLATES AT ABANDONED ELECTRICAL DEVICES. PATCH GWB WHERE REQUIRED, TYP.
5	PROVIDE NEW CLOSER AT EXISTING DOOR
6	NO WORK AT EXISTING DOOR
7	REFLECTIVE COATING TO FACE LAB SIDE
8	FILL HOLES FROM REMOVED FASTENERS, PREP FOR PRIMER/PAINT



1 FIRST FLOOR PLAN
A111 1/8" = 1'-0"

GENERAL PLAN NOTES

- ARCHITECTURAL DATUM = 100'-0". THE ARCHITECTURAL DATUM IS INDEPENDENT OF ELEVATIONS SHOWN ON THE CIVIL DRAWINGS. SEE CIVIL DRAWINGS FOR CORRESPONDING DATUM IN HEIGHT ABOVE SEA LEVEL.
- ALL DIMENSIONS AT NEW WALLS ARE TO OUTSIDE FACE OF STUD, FACE OF CONCRETE, FACE OF MASONRY, OR CENTER OF OPENING, U.N.O. AT EXISTING WALLS DIMENSIONS ARE TO FINISH FACE OF WALL.
- DO NOT SCALE DRAWINGS. CONTACT ARCHITECT FOR ANY DISCREPANCY PRIOR TO COMMENCING WITH ANY WORK.
- VERIFY FIELD CONDITIONS PRIOR TO COMMENCEMENT OF EACH PORTION OF THE WORK. NOTIFY ARCHITECT OF DISCREPANCIES.

FLOOR PLAN LEGEND

- NEW CONSTRUCTION
- EXISTING CONSTRUCTION
- NEW DOOR
- EXISTING DOOR

WA
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PLAN KEY:

PROJECT TITLE / ADDRESS:
RVCC LEBANON - LNA/LPN
LAB RENOVATIONS
15 HANOVER COURT
LEBANON, NH 03766



SCALE: AS NOTED DWN BY: ZB/KL
JOB #: 3613 CHK BY: ZB
CCSNH PROJECT NUMBER: RVCC20-01
PRINT DATE: 2/7/2020 4:00:50 PM

ISSUE DATE:
JANUARY 31, 2020
FOR CONSTRUCTION

REVISION	DATE	COMMENTS

FIRST FLOOR PLAN

A111

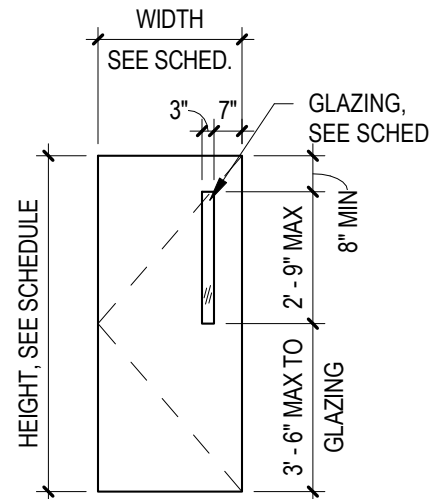
SHEET NUMBER: 6 OF 8 ARCHITECTURAL
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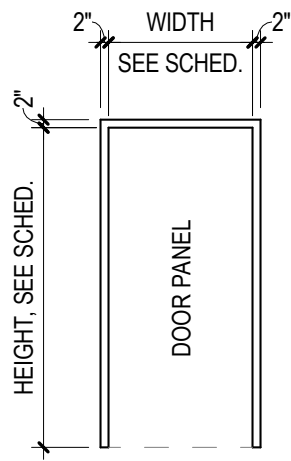
DOOR AND FRAME SCHEDULE

TAG #	LOCATION				DOOR								FRAME						FIRE RATING	HARDWARE		HARDWARE	SIGNAGE		COMMENTS
	FROM (KEY SIDE)		TO (SECURE SIDE)		OPENING SIZE		TYPE	MATL	FINISH	GLAZING TYPE	THICK	CONFIG	TYPE	MATL	FINISH	DETAILS				ANSI FUNCTION	FUNCTION DESCRIPTION	SET #	TYPE	TEXT	
	ROOM #	ROOM NAME	ROOM #	ROOM NAME	WIDTH	HEIGHT										SILL									
																	3' - 0"	7' - 0"							
118.1	ROOM #	118	ROOM NAME	117	3' - 0"	7' - 0"	N	WD	CLR	G-5	1 3/4"	SINGLE	F1	HM	PTD, P3	1/A601	2/A601	-	F82A	FUNCTION - CYLINDER	1	B	CONTROL ROOM		

DOOR PANEL ELEVATIONS



DOOR FRAME ELEVATIONS



HARDWARE SETS

SET #1 - SINGLE INTERIOR - OFFICE
3 HINGES
1 CYLINDRICAL LEVER LOCKSET
1 INTERCHANGEABLE CORE
1 ACOUSTIC SEAL SET & DOOR SHOE
1 WALL DOOR STOP

GENERAL NOTES

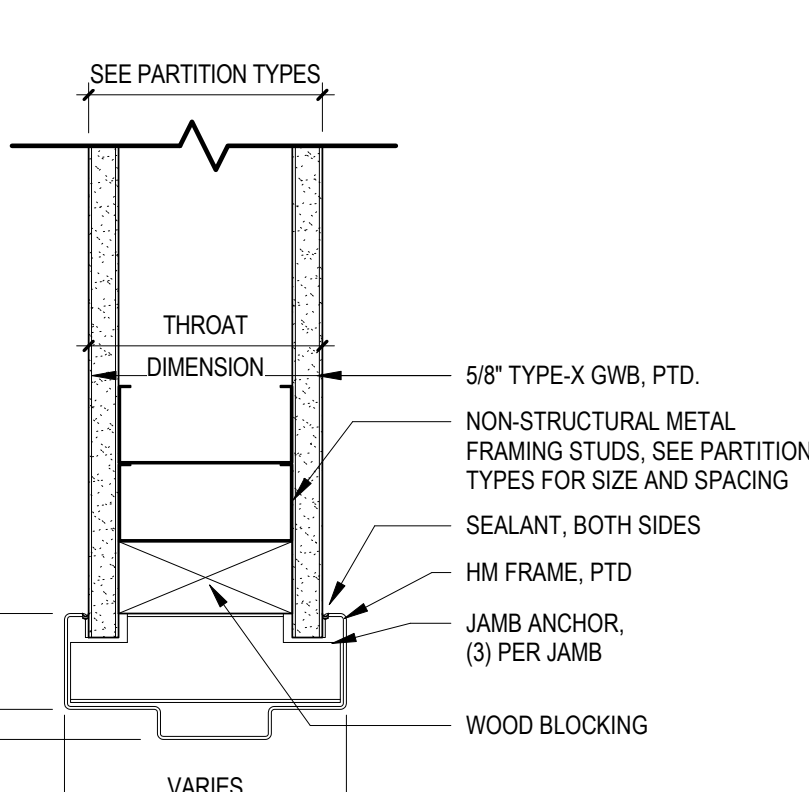
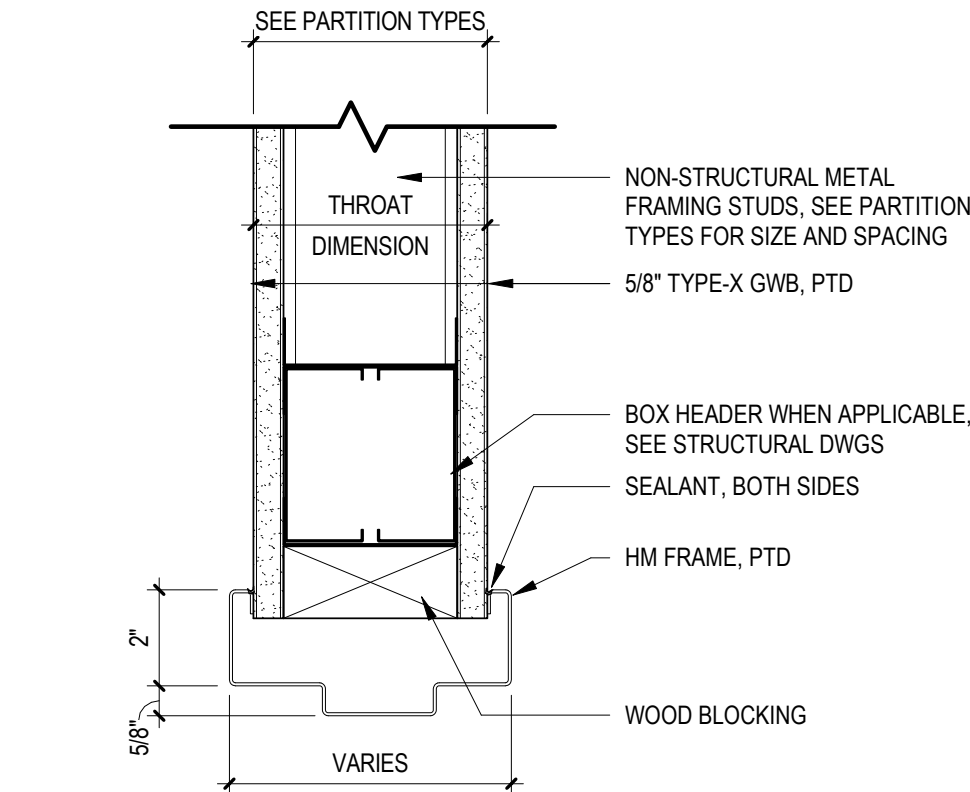
- SEE SHEET A002 FOR GLAZING TYPES.
- COORDINATE ALL HOLLOW METAL FRAME THROAT DIMENSIONS WITH PARTITION TYPES
- DOORS SHALL BE WHITE MAPLE W/ CLEAR FINISH.

DOOR SCHEDULE LEGEND

HM	HOLLOW METAL
PTD	PAINTED; SEE INTERIOR FINISH KEY FOR COLOR CODE REFERENCE.

GLAZING TYPES

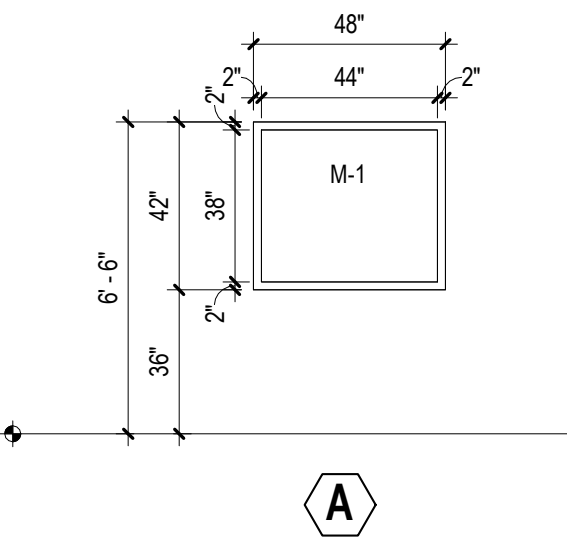
TAG	TYPE
M-1	TWO-WAY MIRROR
G-5	MONOLITHIC SAFETY GLAZING: NON-FIRE RATED



WINDOW SCHEDULE

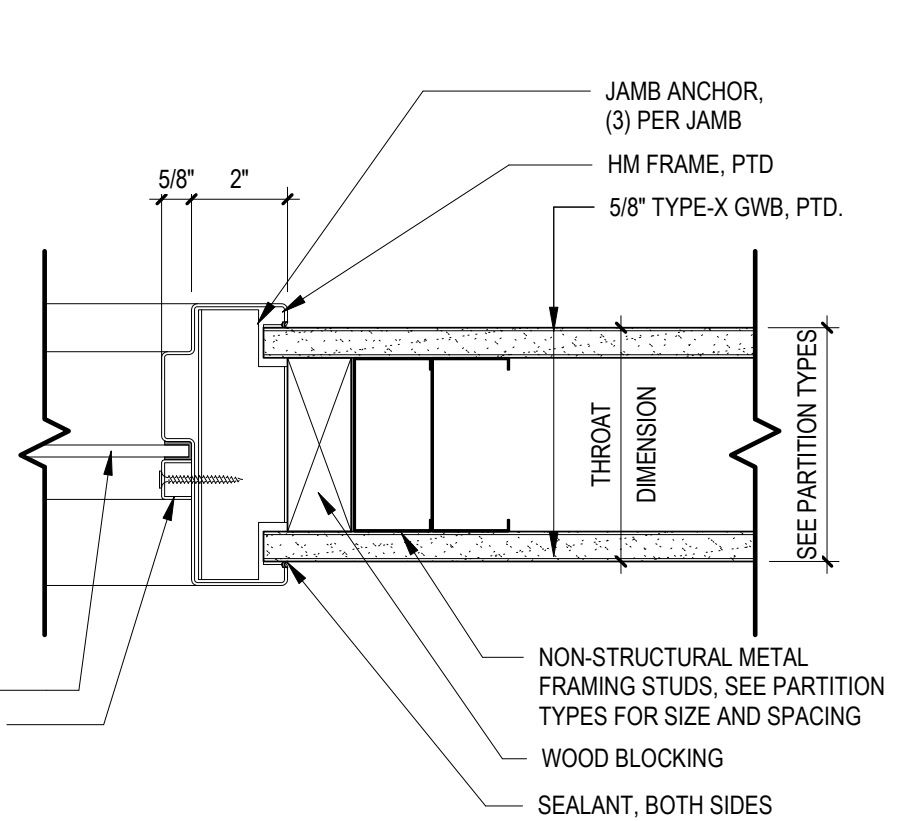
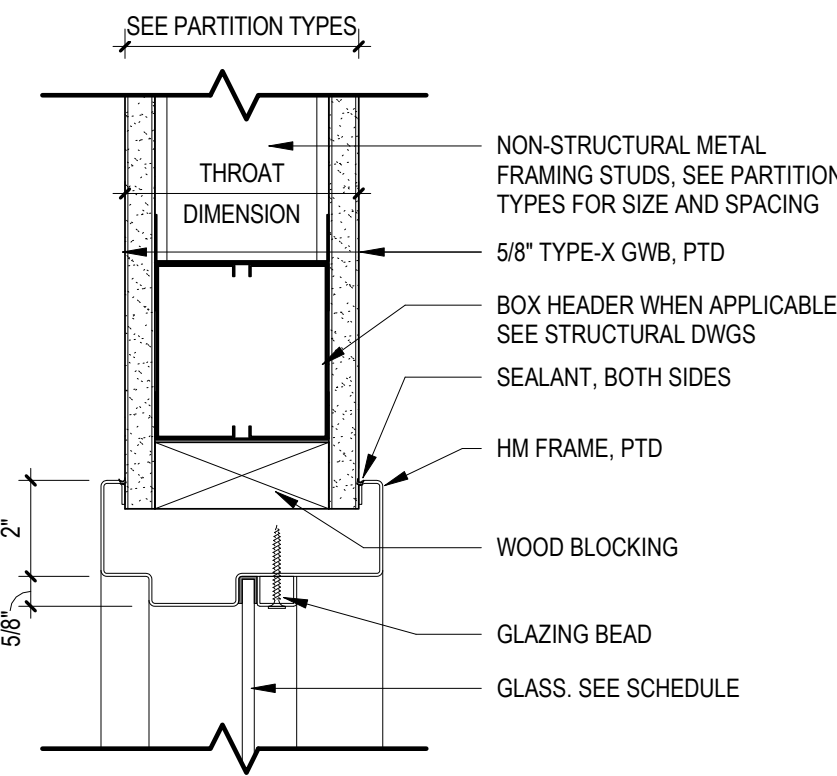
LETTER	MANUF. NUMBER	FRAME		GLAZING	REMARKS
		MATERIAL	FINISH		

A	FIXED FRAME	HM	PTD - P3	M-1	
---	-------------	----	----------	-----	--



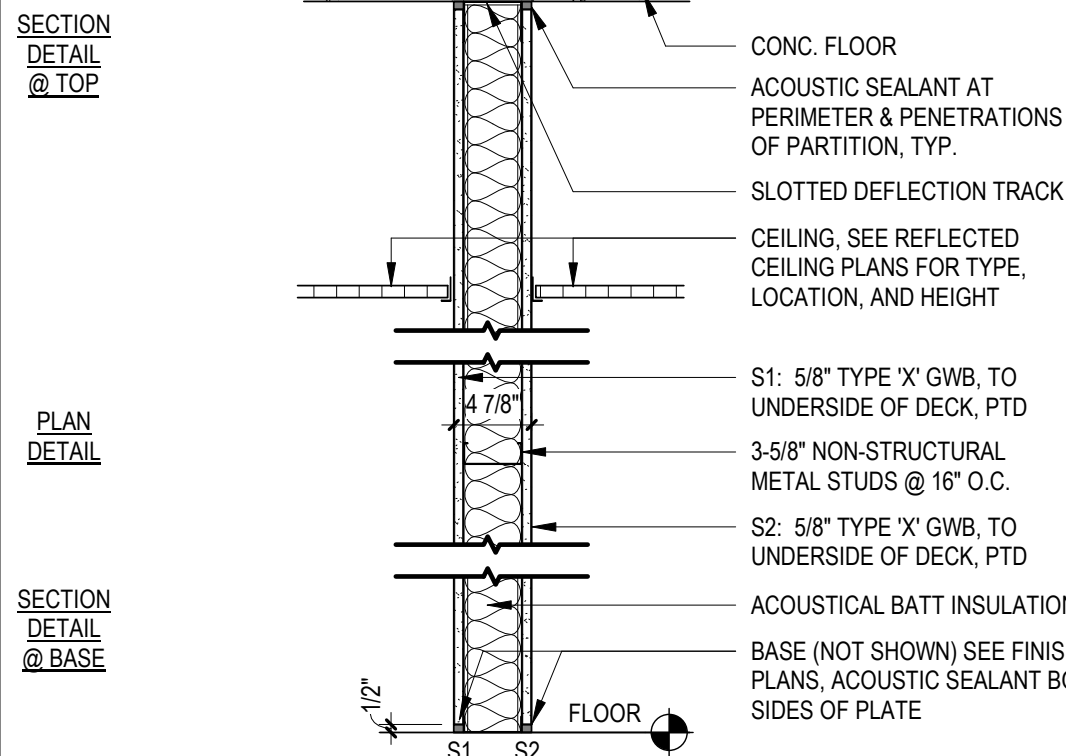
GENERAL WINDOW NOTES

- ALL WINDOW OPENINGS ARE TO BE FIELD VERIFIED. FRAME DIMENSIONS MAY VARY DUE TO FIELD MEASUREMENTS, WINDOW MANUFACTURERS, CONSTRUCTION TOLERANCES, ETC.

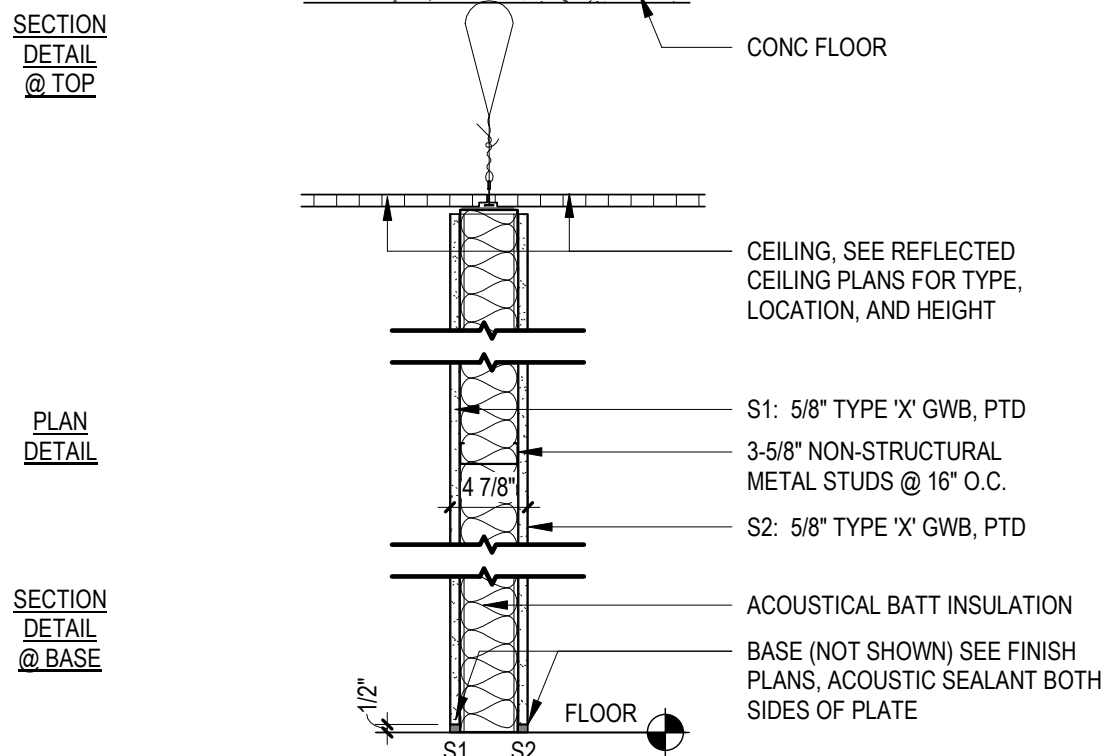


INTERIOR HM WINDOW DETAIL

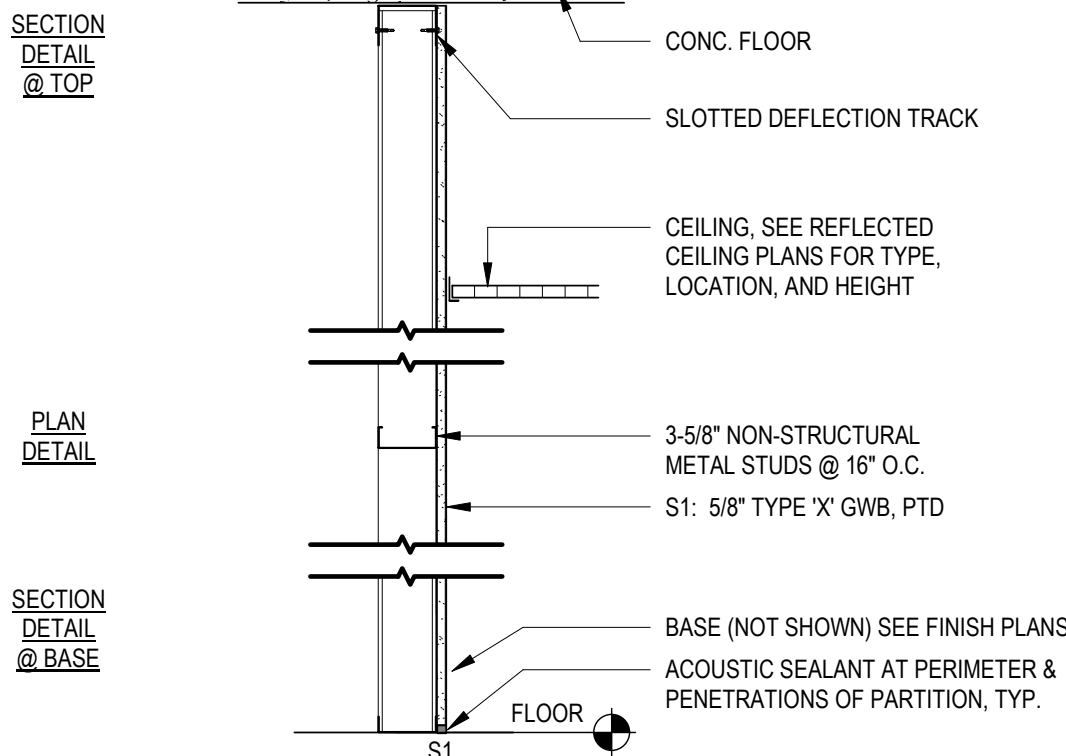
3" = 1'-0"



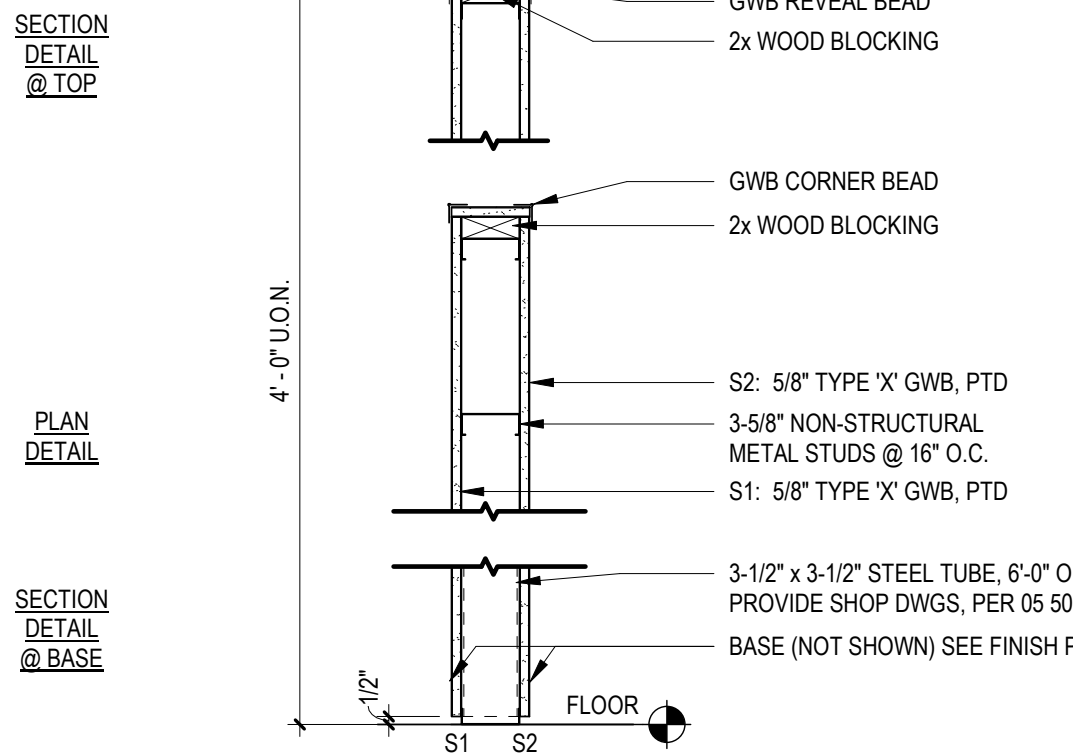
NON-RATED PARTITION	TAG	ASSEMBLY REFERENCE	STC RATING	WALL HEAD TYPE	REMARKS
S4A	S4A	ACOUSTIC CONSTRUCTION	37	AS SHOWN	...
	S4A1	NONE	32	AS SHOWN	OMIT ACOUSTIC BATT INSULATION & SEALANT



NON-RATED PARTITION	TAG	ASSEMBLY REFERENCE	STC RATING	WALL HEAD TYPE	REMARKS
S4C	S4C	ACOUSTIC CONSTRUCTION	37	AS SHOWN	...
	S4C1	NONE	32	AS SHOWN	OMIT ACOUSTIC BATT INSULATION & SEALANT



NON-RATED PARTITION	TAG	ASSEMBLY REFERENCE	STC RATING	WALL HEAD TYPE	REMARKS
S4T	S4T	NONE	...	AS SHOWN	...
	S4T1	NONE	...	AS SHOWN	...



PARTIAL HEIGHT WALL	TAG	ASSEMBLY REFERENCE	STC RATING	WALL HEAD TYPE	REMARKS
S4Q	S4Q	NONE
	S4Q1	NONE

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T.B.D.

PLAN KEY:

PROJECT TITLE / ADDRESS:
RVCC LEBANON - LNA/LPN
LAB RENOVATIONS
15 HANOVER COURT
LEBANON, NH 03766



SCALE: AS NOTED DWN BY: ZB/KL
JOB #: 3613 CHK BY: ZB
CCSNH PROJECT NUMBER: RVC20-01
PRINT DATE: 2/7/2020 4:00:52 PM

ISSUE DATE:
JANUARY 31, 2020
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DOOR & WINDOW
SCHEDULES, ELEVATIONS,
DETAILS & PARTITION TYPES

A601

SHEET NUMBER: 8 OF 8 ARCHITECTURAL
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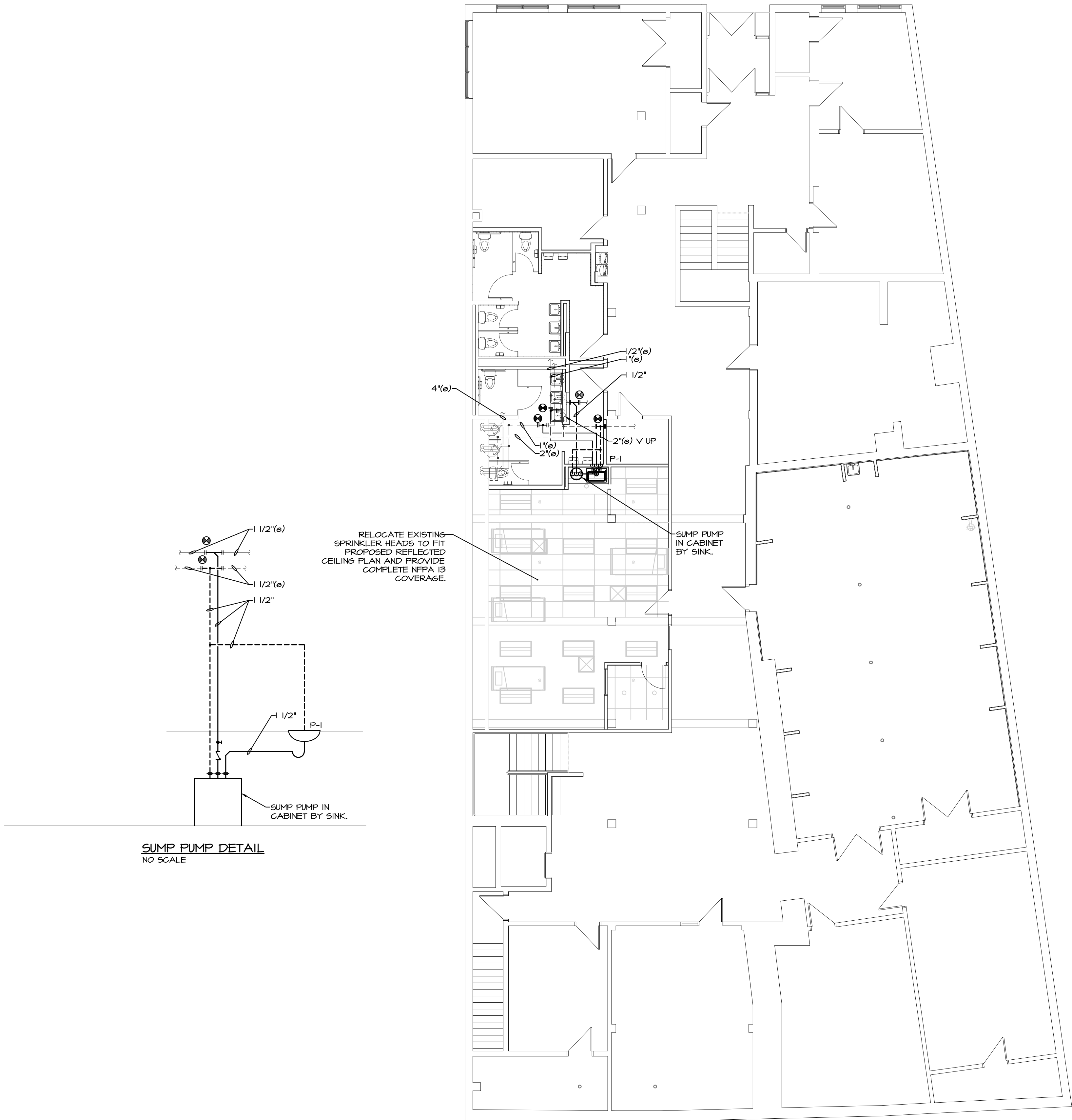
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E



PLUMBING FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"



PLUMBING SYMBOL LIST			
ALL SYMBOLS ARE NOT NECESSARILY USED			
SYMBOLS	DESCRIPTION	ABBREVIATION	
	SANITARY SOIL AND WASTE ABOVE GROUND	SW	
	SANITARY SOIL AND WASTE BELOW GROUND/SLAB	SW	
	SANITARY VENT	V	
	VENT BELOW GROUND/SLAB	V	
	COLD WATER	CW	
	HOT WATER	HW	
	HOT WATER RECIRC	HWR	
	SHUTOFF VALVE		
	SHUTOFF VALVE		
	CHECK VALVE	CV	
	GLOBE VALVE	GLV	
	FLOW (BALANCING VALVE)	FBV	
	CONTROL VALVE	CLV	
	PRESSURE REDUCING VALVE	PRV	
	WATER METER	WM	
	PIPING DROP OR DOWN THROUGH FLOOR	DROP, DN	
	PIPING RISE OR UP THROUGH CEILING	RISE, UP	
	CLEANOUT	CO	
	WALL CLEANOUT	WCO	
	DECK PLATE CLEANOUT	DPCO	
	FLOOR OR ROOF DRAIN	FD, RD	
	WATER HAMMER ARRESTER	WHA	
	FUEL GAS	G	
	LIQUID PETROLEUM GAS	LPG	
	PRESSURE & TEMPERATURE RELIEF VALVE	PTV	
	PRESSURE RELIEF VALVE	RV	
	STRAINER		
	UNION		
	PRESSURE GAUGE		
	THERMOMETER		
	WATER HYDRANT	WH	
	HOSE BIBB	HB	
	NEW TO EXISTING CONNECTION		
	NEW TO FUTURE CONNECTION		
PG	PUMPED CONDENSATE	AR	ARGON
PD	PUMPED DISCHARGE	O2	OXYGEN
COND	COIL CONDENSATE	VAC	VACUUM
CA	COMPRESSED AIR	N2	NITROGEN
DI	DEIONIZED WATER		

FIXTURE CONNECTION SCHEDULE								
SYM	FIXTURE	SUP	TRP	MINIMUM BRANCH SIZE				REMARKS
				WASTE	VENT	COLD	HOT	
P-1	SINK	3/8	1-1/4	1-1/2	1-1/2	1/2	1/2	DROP IN, ADA COMPLIANT

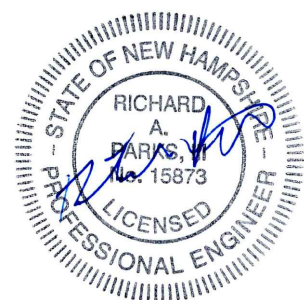


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PLUMBING FIRST
FLOOR PLAN

P-1

SHEET NUMBER: - OF ? PLUMBING

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SECTION 22 40 00 - PLUMBING SPECIFICATION

1.0 PART 1 - GENERAL

- 1.1 THE SCOPE OF WORK IS TO PROVIDE LABOR, MATERIALS, SERVICES, SUPPLIES, TOOLS, EQUIPMENT, PERMITS, TRANSPORTATION AND FACILITIES NECESSARY TO FURNISH AND MODIFY EXISTING AND INSTALL THE COMPLETE AND OPERABLE SYSTEMS AS CALLED FOR.
- 1.2 THE COMPLETE INSTALLATION SHALL BE IN COMPLIANCE WITH THE APPLICABLE LATEST OR ACCEPTED EDITION OF THE INTERNATIONAL BUILDING CODE AS ADOPTED BY THE STATE OF NEW HAMPSHIRE, NFPA, AND OTHER APPLICABLE RULES AND REGULATIONS AS PRESCRIBED BY THE ADMINISTRATIVE AUTHORITY.
- 1.3 THESE DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND EQUIPMENT. BASIC DESIGN CONCEPTS MUST BE FOLLOWED OR BETTERED. DO NOT SCALE DRAWINGS. FIELD VERIFY DIMENSIONS AND FIELD CONDITIONS.
- 1.4 IT IS NOT INTENDED THAT DRAWINGS SHOW EVERY DETAIL. PROVIDE OFFSETS, CHANGES IN ELEVATION AND ITEMS NECESSARY FOR PROPER INSTALLATION AND OPERATION OF SYSTEM SO THAT WORK WILL BE COMPLETE AND READY FOR OPERATION.
- 1.5 COORDINATE WORK WITH OTHER TRADES, BUILDING CONDITIONS AND STRUCTURAL CONDITIONS PRIOR TO INSTALLATION.
- 1.6 COORDINATE UTILITY SERVICE WORK WITH LOCAL SERVICE PROVIDERS AND THE OWNER'S GAS SERVICE PROVIDER. CONTACT UTILITY COMPANY PRIOR TO SUBMISSION OF BID. INCLUDE ALL UTILITY FEES AND COSTS TO THIS PROJECT BID.
- 1.7 IN THE EVENT OF A DISCREPANCY, IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE. DO NOT PROCEED WITH INSTALLATION IN AREAS OF DISCREPANCY UNTIL SUCH DISCREPANCIES HAVE BEEN RESOLVED.
- 1.8 PROVIDE IDENTIFICATION TAGS FOR VALVES, PANELS, STARTERS, AND EQUIPMENT WITH A CHART AND SCHEDULE OF LOCATION AND FUNCTION.
- 1.9 EXECUTE WORK IN A NEAT AND WORKMANLIKE MANNER IN CONFORMANCE WITH BEST MODERN TRADE PRACTICE, (I.E. ASME, ANSI, ASPE, AGA, API) BY COMPETENT, EXPERIENCED MECHANICS, PRESENTING A NEAT APPEARANCE WHEN COMPLETED. REPLACE WORK NOT APPROVED BY OWNER'S REPRESENTATIVE WITHOUT ADDITIONAL CHARGE.
- 1.10 SUBMIT ELECTRONIC PDF COPY OF COMPLETE CATALOG INFORMATION FOR MATERIALS AND EQUIPMENT. INFORMATION REQUIRED INCLUDES MANUFACTURER, CAPACITY, TYPE, CURVES, CERTIFICATION, ACCESSORIES, PHYSICAL AND PERFORMANCE DATA, FINISHES, MATERIALS AND LOCATION. CONFIRM DIMENSIONS AT JOB SITE TO INSURE THAT ITEMS TO BE FURNISHED FIT THE SPACE AVAILABLE. SUBMIT SHOP DRAWING PRIOR TO INSTALLATION OR PURCHASE WITH THE DATE, CONTRACTORS STAMP AND SIGNATURE PROVIDED. NO INSTALLATION IS PERMITTED PRIOR TO REVIEW.
- 1.11 MAINTAIN AT THE SITE ONE RECORD SET OF DRAWINGS, SPECIFICATIONS, APPENDS, CHANGE ORDERS, ACCEPTED SHOP DRAWINGS AND ACCEPTED SUBMITTALS TO REMAIN AS RECORD DRAWINGS OF THE WORK AS INSTALLED. PROVIDE ONE FULL SIZE SET OF THE CORRECTED RECORD DRAWINGS.
- 1.12 OPERATING AND MAINTENANCE MANUALS: BEFORE FINAL ACCEPTANCE OF PROJECT SUBMIT THREE (3) COPIES OF COMPLETE OPERATING INSTRUCTIONS AND SERVICE MANUALS NEATLY BOUND AND CONSISTING OF THE FOLLOWING: NEATLY TYPEWRITTEN INDEX, INSTRUCTIONS ON EQUIPMENT OPERATION, PARTS REPLACEMENT INFORMATION, GUARANTEES AND WARRANTIES, TESTING AND BALANCING REPORTS, SERVICE MANUALS, AUTOMATIC TEMPERATURE CONTROL DRAWINGS AND DIAGRAMMATIC CHARTS.
- 1.13 EQUIPMENT SHALL MEET UL AND NEC STANDARDS. EQUIPMENT AND MATERIALS FOR WHICH THERE IS A LISTING SERVICE SHALL BEAR A UL LABEL. MATERIALS SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPMENT RATING OF 50 OR LESS. MATERIAL SHALL BE ASBESTOS FREE.
- 1.14 CONCEAL CONTRACT WORK ABOVE CEILINGS AND IN WALL CHASES UNLESS OTHERWISE CALLED FOR.
- 1.15 PROVIDE CUTTING AND PATCHING AS REQUIRED FOR THE INSTALLATION OF CONTRACT WORK. PATCHING MATERIALS AND METHODS SHALL MATCH ADJACENT MATERIALS.
- 1.16 FIRE STOPPING FOR OPENINGS THROUGH FIRE AND SMOKE RATED WALL AND FLOOR ASSEMBLIES. PROVIDE MATERIALS AND PRODUCTS LISTED OR CLASSIFIED BY AN APPROVED INDEPENDENT TESTING LABORATORY FOR "THROUGH-PENETRATION FIRESTOP SYSTEMS". THE SYSTEMS SHALL MEET THE REQUIREMENTS OF "FIRE TESTS OF THROUGH-PENETRATIONS FIRESTOPS" DESIGNATED ASTM E814. PROVIDE FIRESTOP SYSTEM SEALS AT LOCATIONS WHERE PIPING, TUBING, CONDUIT, ELECTRICAL CABLES AND WIRES, DUCTWORK AND SIMILAR UTILITIES PASS THROUGH OR PENETRATE FIRE RATED WALL OR FLOOR ASSEMBLY. THE MINIMUM REQUIRED FIRE RESISTANCE RATINGS OF THE WALL OR FLOOR ASSEMBLY SHALL BE MAINTAINED BY THE FIRESTOP SYSTEM. THE INSTALLATION SHALL PROVIDE AN AIR AND WATER TIGHT SEA. PENETRATION OPENINGS SHALL BE AS SMALL AS POSSIBLE. MAKE: DON CORNING FIRESTOP SYSTEM FOAMS AND SEALANTS, NELSON ELECTRIC FIRESTOP SYSTEM PUTTY, CKL AND WRP, 3M BRAND FIRE BARRIER SYSTEM.
- 1.17 MOTORS SHALL BE SINGLE PHASE, 60 HZ, IN COMPLIANCE WITH NEMA, CLASS B TEMPERATURE RISE, 1.15 MINIMUM SERVICE FACTOR, 20,000 HR. BEARINGS. PREMIUM EFFICIENCY TYPE, IEEE STANDARD 112 METHOD B. MOTORS FOR GENERAL PURPOSES SHALL BE OPEN-DRIP-PROOF, DUSTY OR OPEN TO WEATHER SHALL BE TEFC, BELOW GRADE, DAMP OR HIGH HUMIDITY SHALL BE TEFC OR ENCAPSULATED. GENERAL ELECTRIC, GOULD, LINCOLN, RELIANCE OR WESTINGHOUSE.
- 1.18 STARTERS, CONTACTORS AND CONTROLLERS SHALL COMPLY WITH NEMA STANDARDS. SHORT CIRCUIT PROTECTION SHALL BE TIME DELAY MANUAL RESET TYPE. THERMAL OVERLOADS SHALL BE MANUAL RESET TYPE. PILOT LIGHTS SHALL BE SIX VOLT EXTENDED LIFE. EACH STARTER SUBJECT TO ELECTRICAL INTERLOCK OR AUTOMATIC CONTROL SHALL HAVE THE NECESSARY AUXILIARY CONTACTS, EQUIP WITH SELF-CONTAINED FUSED AND GROUNDED 120 VOLT CONTROL TRANSFORMERS.
- 1.19 MANUAL STARTERS SHALL BE TOGGLE OPERATED, SINGLE POLE LINE TO NEUTRAL, TWO POLE LINE TO LINE, FLUSH MOUNTED UNLESS OTHERWISE CALLED FOR.
- 1.20 DISCONNECTS SHALL BE HEAVY DUTY 250 VOLT. GENERAL PURPOSE ENCLOSURES SHALL BE NEMA 1. ALLEN-BRADLEY, CUTLER-HAMMER, GENERAL ELECTRIC, ITE, SQUARE D, WESTINGHOUSE.
- 1.21 PROVIDE WIRING CIRCUITS UP TO AND INCLUDING 120 VOLTS FOR EQUIPMENT IN DIVISION 22 "PLUMBING", INCLUDING POWER, CONTROL AND COMMUNICATION WIRING TO AND BETWEEN PANELS AND DEVICES. REFER TO E-SERIES DRAWINGS "ELECTRICAL" AND NEC FOR REQUIREMENTS FOR CONDUCTORS, RACEWAY AND WIRING DEVICES.
- 1.22 ALL OTHER POWER WIRING SHALL BE PROVIDED AS PART OF THE WORK OF E-SERIES DRAWINGS "ELECTRICAL".
- 1.23 PROVIDE COMPLETE WIRING DIAGRAMS FOR EQUIPMENT AND SYSTEMS. DELIVER WIRING DIAGRAMS TO PROPER PARTIES IN TIME FOR ROUGHING OF CONDUIT AND EQUIPMENT CONNECTIONS TO AVOID DELAY IN CONSTRUCTION SCHEDULE. WIRING DIAGRAMS AND ROUGHING INFORMATION TO CLEARLY INDICATE ITEMS TO BE MOUNTED AND/OR WIRED AS PART OF THE WORK OF E-SERIES DRAWINGS, "ELECTRICAL".

2.0 PART 2 - PIPING AND PIPING ACCESSORIES

- 2.1 COPPER PIPE AND SOLDER FITTINGS: HARD TEMPER, ASTM B88, TYPE K, L, M, OR DRY, AS CALLED FOR. COPPER IS NOT ALLOWED FOR URINAL WASTE. WROUGHT COPPER OR CAST BRONZE; SOLDER END CONNECTIONS; ASTM B62, ANSI B16.22, UNIONS FOR 2 INCH AND SMALLER, SOLDER TYPE, CAST BRONZE; GROUND JOINT, 150 LB. SWP, FLANGES FOR 2-1/2 INCH AND LARGER, CAST BRONZE, COMPANION TYPE, ASME DRILLED, SOLDER CONNECTION, 150 LB. SWP. SOLDER MATERIALS, NO-LEAD SOLDER, USING ALLOYS MADE FROM TIN, COPPER, SILVER AND NICKEL. HARRIS "STAT-SAFE 50" AND "BRIGHT" ENGLEHART "SILVERBRIGHT 100". WILLARD INDUSTRIES "SILVER SAFE" (SILVER BEARING), CANFIELD "WATERSAFE", COPPER OR COPPER ALLOY MECHANICAL COUPLINGS ASME B16.18 OR ASME B16.22, EPDM SEALING ELEMENT, INSTALLED WITH MANUFACTURERS APPROVED CLAMPING TOOL.
- 2.2 MECHANICAL PRESS FITTINGS COPPER ALLOY, ASME B16.22, PRESS FIT HNER SEALING ELEMENT, APPLIED AND INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURER. VIEGA "PRO PRESS" OR APPROVED EQUAL.

- 2.3 THERMOPLASTIC (PVC) PIPE AND FITTINGS: ASTM D1784 MATERIAL MANUFACTURED TO ASTM D1785 STANDARDS. SEAMLESS SCHEDULE 40 POLYVINYL CHLORIDE (PVC) TYPE 1, GRADE 1. SOCKET TYPE WELD COUPLINGS ASTM D2466, DR WITH INTEGRAL BELL END FOR SOLVENT CEMENTING ASTM D2672. SOLVENT CEMENT - ASTM D2564.
- 2.4 DIELECTRIC PIPE FITTINGS ASTM B16.8, UNION 250 PSI, FLANGED 175 PSI, EPC OR CAPITOL MANUFACTURING. PROVIDE AT ALL DISSIMILAR PIPING CONNECTIONS.
- 2.5 HANGERS SHALL BE ADJUSTABLE, WROUGHT MALLEABLE IRON OR STEEL. COPPER PLATED OR PVC COATED WHERE IN CONTACT WITH COPPER PIPING. CHROMIUM PLATED OR GALVANIZED FOR EXTERIOR. ADJUSTABLE RING TYPE WHERE PIPING IS INSTALLED DIRECTLY ON HANGER FOR PIPING 3-1/2 INCH AND SMALLER. ADJUSTABLE STEEL CLEVIS TYPE FOR PIPING 4 INCH AND LARGER.

PIPE SIZE	COPPER	PLASTIC	ROD SIZE
3/4" TO 1"	6'	3'	3/8"
1-1/4" TO 2"	8'	3'	3/8"

2.6 PROVIDE SEISMIC RESTRAINT FOR ALL PIPING EXCEPT WHERE HANGERS ARE 12 INCH LONG OR LESS, 1 INCH OR LESS IN BOILER AND MECHANICAL ROOMS OR 2 INCH OR LESS IN ALL OTHER AREAS. WHERE SEISMIC RESTRAINTS ARE REQUIRED SPACE AT 40 FT. FOR TRANSVERSE BRACING AND AT 80 FT. FOR LONGITUDUAL BRACING, SUBMIT CERTIFIED ENGINEER SHOP DRAWINGS PRIOR TO INSTALLATION.

2.7 SUPPORTS SPACED FOR A MAXIMUM OF 1000 LBS.: "DRILL-IN" INSERTS EQUAL TO PHILLIPS "RED HEAD" 1/2" CHANNEL, BEAM CLAMPS OR OTHER STRUCTURALLY REVIEWED SUPPORT. THE FACTOR OF SAFETY SHALL BE AT LEAST FOUR.

2.8 ESCUTCHEON PLATES: STEEL OR CAST IRON POLISHED CHROME, SPLIT HINGE TYPE WITH SETSCREW. HIGH PLATES WHERE REQUIRED FOR EXTENDED SLEEVES. CHROME PLATED IN VICINITY OF ALL FIXTURES.

2.9 PIPING MATERIALS SCHEDULE:

SERVICE	PIPE MATERIALS	FITTINGS	CONNECTIONS
DOMESTIC WATER INTERIOR HOT, COLD AND CIRCULATING	TYPE L COPPER	WROUGHT COPPER OR CAST BRONZE	NO-LEAD SOLDER
DOMESTIC WATER INTERIOR HOT, COLD AND CIRCULATING (OPTIONAL)	TYPE L COPPER	MECHANICAL FITTINGS	PRESS FITTINGS INSTALLED IN COMPLIANCE WITH MANUFACTURER
SANITARY, VENT AND STORM (ABOVE GRADE)	SCHEDULE 40 PVC	SOCKET TYPE	SOLVENT WELDED NOTE 1
EXTENSION OF EXISTING PIPING	MATCH EXISTING	MATCH EXISTING	EMPLOY MATERIALS AND METHODS TO MATCH EXISTING SYSTEMS

- NOTE 1: PROVIDE "THROUGH PENETRATION" PROTECTION AT FIRE RATED ASSEMBLIES, WRAP WITH INSULATION OR PROVIDE CAST IRON PIPE WHERE LOCATED IN RETURN AIR PLENUMS.
- 2.10 CHECK VALVES: 2 INCH AND SMALLER: BRONZE, SWING CHECK, 125 SWP. SCREENED ENDS, POWELL #570, SOLDER ENDS, POWELL #1825 OR KENNEDY, NIBCO.
- 2.11 BALL VALVES: 2 INCH AND UNDER, LEAD FREE CAST BODY WITH TYPE 316 STAINLESS STEEL STEM AND BALL. PTFE SEATS. END ENTRANCE, 225 PSI WP, W.O.G. SCREENED ENDS, MATTS LFB 6000, SOLDER ENDS, MATTS OR JAMESBURY, NIBCO, POWELL.
- 2.12 PIPE INSULATION (GLASS FIBER): FOUR POUND NOMINAL DENSITY FIBERGLASS. WHITE KRAFT OUTER JACKET BONDED TO ALUMINUM FOIL WITH FIBERGLASS YARN REINFORCEMENT. MAXIMUM THERMAL CONDUCTIVITY (K) SHALL BE 0.25 BTU/SQ. FT. HR. DEGREE F/INCH AT 75 DEGREE F MEAN TEMPERATURE. PREMOULDED "ZESTON" FITTING COVERS. CERTAINTED, KNUAF, MANVILLE, OMENS-CORNING.
- 2.13 PIPE INSULATION (FLEXIBLE ABOVE GRADE): FLEXIBLE UNICELLULAR ELASTOMERIC FOAM TYPE, FIRE RETARDANT INSULATION, 1/2 INCH THICKNESS. MAXIMUM THERMAL CONDUCTIVITY (K) ON A FLAT SURFACE SHALL BE 0.25 BTU/SQ. FT. HR. OF INCH AT 75 DEGREES F MEAN TEMPERATURE. ARMSTRONG, MANVILLE, RUBATEX.
- 2.14 PIPE INSULATION MATERIALS SCHEDULE:
- | SERVICE | MATERIAL | THICKNESS | REMARKS |
|--------------------------|-------------|---------------------------------|---------------|
| DOMESTIC COLD WATER | GLASS FIBER | 2 IN AND SMALLER.....1/2 IN | NOTES 1 AND 2 |
| DOMESTIC HOT WATER | GLASS FIBER | MAINS - 1 IN. BRANCHES - 1/2 IN | NOTE 1 |
| SANITARY AND WASTE LINES | GLASS FIBER | ALL SIZES - 1 INCH | NOTE 3 |
- NOTE 1: FLEXIBLE PIPE INSULATION OF SAME THICKNESS CALLED FOR MAY BE USED ON PIPING 2" AND SMALLER WHERE CONCEALED.
- NOTE 2: CONTINUOUS UNBROKEN VAPOR BARRIER.
- NOTE 3: INSULATE HORIZONTAL RUNS LOCATED ABOVE FINISHED CEILINGS AND 12 INCHES OVER VERTICAL RISER, INSULATE HUBS.
- 2.15 STERILIZATION: IN ACCORDANCE WITH ANWA C652 AND REQUIREMENTS OF STATE OF NEW HAMPSHIRE, PUBLIC WATER SUPPLY GUIDES, DIVISION OF SANITARY ENGINEERING, BUREAU OF PUBLIC WATER SUPPLY.
- 2.16 DOMESTIC WATER PIPING TESTS: PROVIDE ALL NECESSARY ITEMS TO COMPLETE PROPER TESTING OF ALL WATER PIPING. ISOLATE EXISTING SYSTEMS. TEST DOMESTIC WATER PIPING AT 125 PSI HYDROSTATIC FOR TWO HOURS. FLUSH PIPING TO REMOVE DEBRIS, SEDIMENT, ETC.
- 2.17 SANITARY DRAIN PIPING TEST: PROVIDE NECESSARY ITEMS TO COMPLETE PROPER TESTING OF SANITARY AND ROOF DRAIN PIPING. ISOLATE EXISTING SYSTEMS. MAINTAIN 5 PSI. SHOULD ANY LEAKS, DEFECTIVE JOINTS OR DEFECTIVE CONSTRUCTION BE FOUND THEY SHALL BE PROMPTLY MADE GOOD. SHOULD ANY DEFECTIVE PIPES OR SPECIALS BE DISCOVERED THEY SHALL BE REMOVED AND REPLACED WITH SOUND PIPES OR SPECIALS IN A SATISFACTORY MANNER AT THE CONTRACTOR'S EXPENSE.
- 2.18 PROVIDE WRITTEN CERTIFICATION THAT TESTS HAVE BEEN CONDUCTED AND SUCCESSFULLY COMPLETED. SUBMIT TO OWNER'S REPRESENTATIVE. PAY ALL COSTS OF TEST.

3.0 PART 3 - EQUIPMENT

- 3.1 DRAIN PUMP
- FACTORY ASSEMBLED, FULLY AUTOMATIC OPERATION. OIL FILED HERMETICALLY SEALED MOTOR WITH THERMAL OVERLOAD PROTECTION, POWER CORD PLUG-IN. CORROSION RESISTANT POLYOLEFIN RECEIVER. CAPACITY 10 GPM @ 15 FT. OF HEAD, 1/3 HP, 120 VOLT. LIBERTY MODEL 404 OR APPROVED EQUAL.
- 3.2 TYPE P-1 SINK: ELKAY LR4D 2521-65, 6-1/2 INCH DEEP, HANDICAPPED ACCESSIBLE, NICKEL TYPE 304 STAINLESS STEEL SINGLE BOWL SINK. 3 FAUCET HOLE, 18 GAUGE FOR COUNTER TOP INSTALLATION, SYMONS SK-6600 SERIES, EXTRACTABLE SPRAYER CERTIFIED LEAD FREE FAUCET, SWING SPOUT, 0.5 GPM VANDAL RESISTANT AERATOR. MCGUIRE 4320.024 STRAINER WITH REMOVABLE CUP, 1-1/2 IN. TAILPIECE, MCGUIRE 8412 SEMI-CAST BRASS ADJUSTABLE 1" TRAP, 1-1/2 IN. X 1-1/2 IN. WITH CLEANOUT PLUG, MCGUIRE BV2165 1/2 IN. SUPPLIES WITH 3/8 IN. FLEXIBLE RISERS, LOOSE KEY STOPS AND ESCUTCHEONS. TRAP AND SUPPLY HANDICAPPED INSULATION KIT, TRUBRO LAV-GUARD. ELKAT, JUST.

END OF SECTION 22 40 00

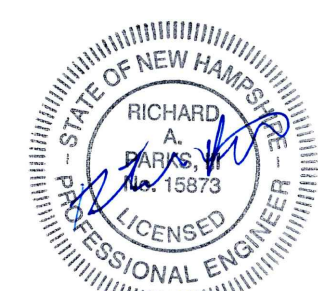


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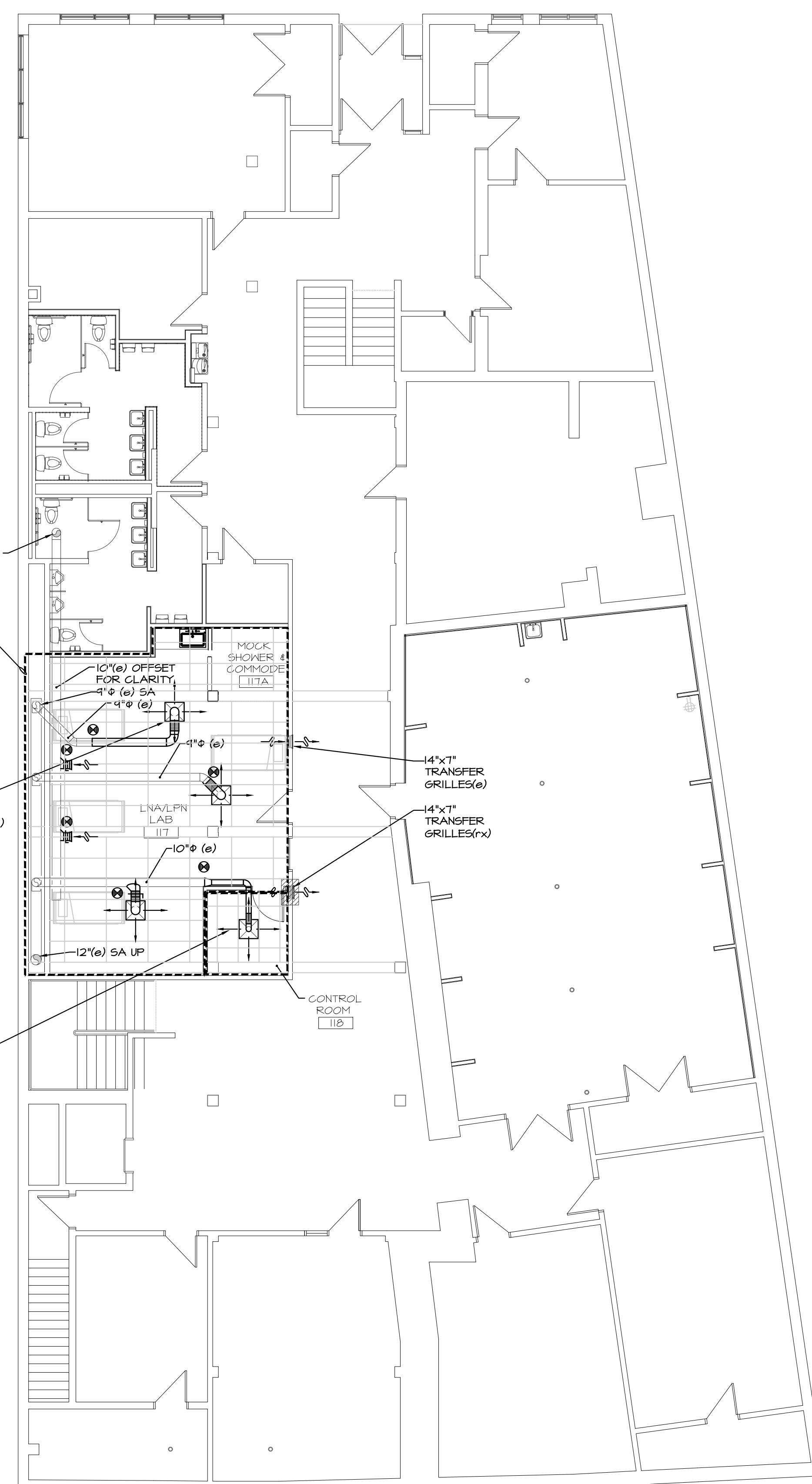
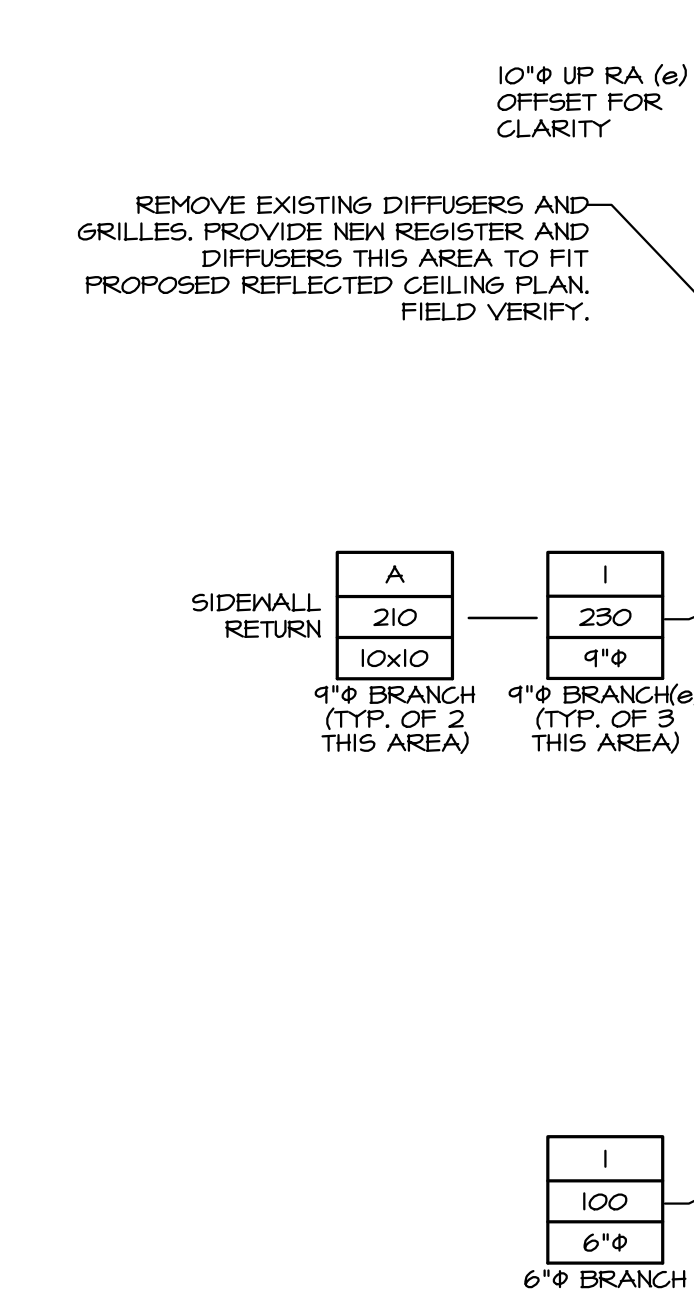
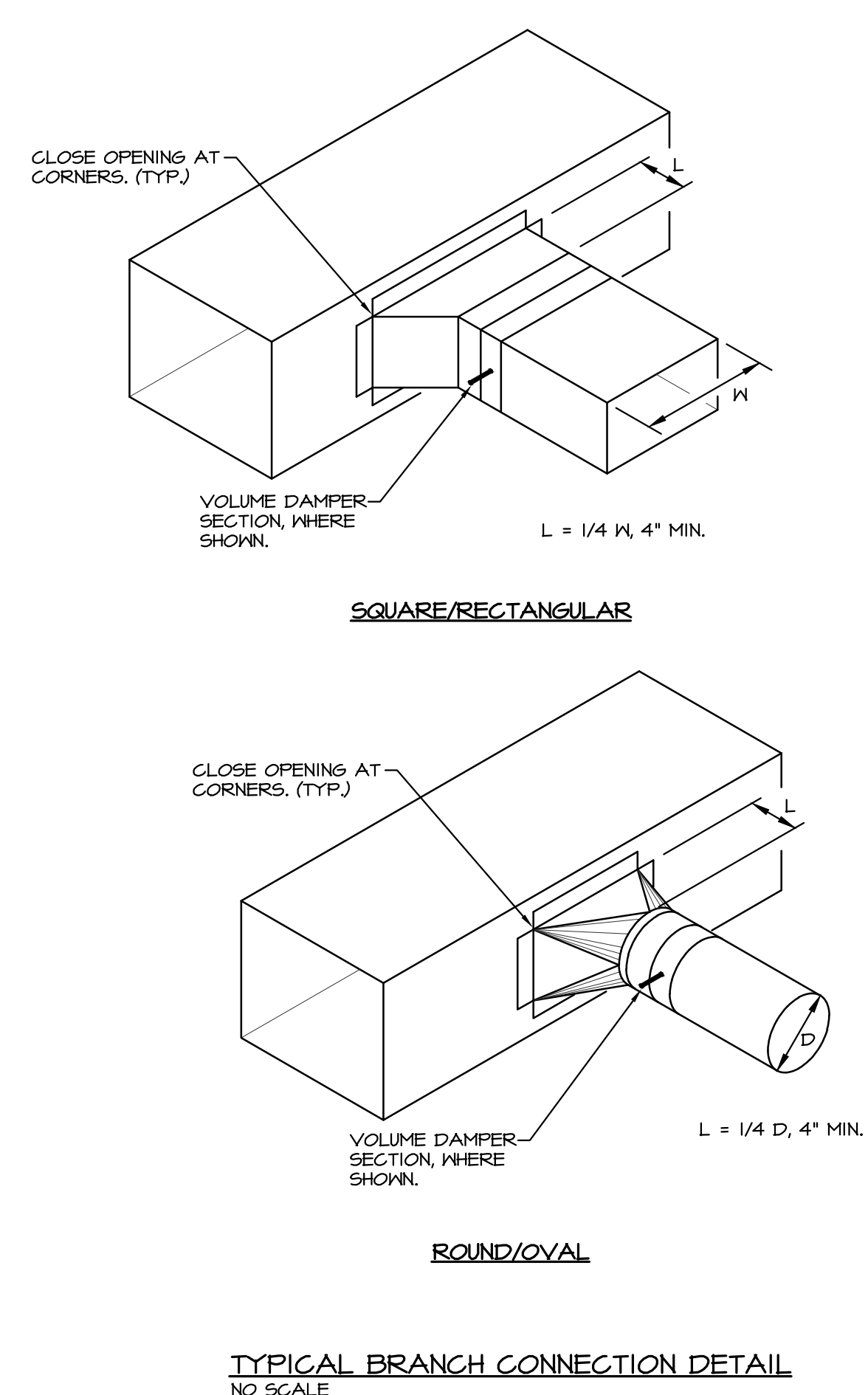
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SPECIFICATIONS

P-2

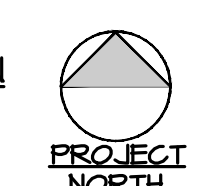
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FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"



DRAWING NOTES:

1) IT APPEARS THAT THE EXISTING MECHANICAL SYSTEMS UTILIZES THE CORRIDOR AS A RETURN AIR PLENUM. THESE SYSTEMS ARE NOT BEING MODIFIED AS PART OF THIS PROJECT.

HVAC SYMBOL LIST	
ALL SYMBOLS ARE NOT NECESSARILY USED	
— LPS —	LOW PRESSURE STEAM
— LPC —	LOW PRESSURE CONDENSATE
— MPS —	MEDIUM PRESSURE STEAM
— MPC —	MEDIUM PRESSURE CONDENSATE
— HPS —	HIGH PRESSURE STEAM
— HPC —	HIGH PRESSURE CONDENSATE
— HWS —	HOT WATER SUPPLY
— HWR —	HOT WATER RETURN
— HPWS —	HEAT PUMP WATER SUPPLY
— HPWR —	HEAT PUMP WATER RETURN
— CWS —	CHILLED WATER SUPPLY
— CWR —	CHILLED WATER RETURN
— GS —	GLYCOL SUPPLY
— GR —	GLYCOL RETURN
— CS —	CONDENSER WATER SUPPLY
— CR —	CONDENSER WATER RETURN
— PC —	PUMPED CONDENSATE
— BF —	BOILER FEED
— BBD —	BOILER BLOW DOWN
— D —	DRAIN
— ATV —	ATMOSPHERIC VENT
— VAC —	VACUUM
— RD —	REFRIGERANT DISCHARGE
— RL —	REFRIGERANT LIQUID
— RS —	REFRIGERANT SUCTION
— RHG —	REFRIGERANT HOT GAS
— A —	COMPRESSED AIR
— G —	GAS
— FOS —	FUEL OIL SUPPLY
— FOR —	FUEL OIL RETURN
— FOV —	FUEL OIL VENT
— FOF —	FUEL OIL FILL
— FOG —	FUEL OIL GAUGE
— —	DOMESTIC COLD WATER (CW)
— —	DIRECTION OF FLOW
— —	REDUCER
— —	CAP OR FLUG
— —	BOTTOM CONNECTION/TURN AWAY
— —	TOP CONNECTION/TURN TOWARDS
— —	UNION (OR FLANGE)
— —	VALVE (SHUT OFF)
— —	GLOBE VALVE
— —	CHECK VALVE
— —	CONTROL VALVE (2-WAY)
— —	PRESSURE RELIEF VALVE
— —	CONTROL VALVE (3-WAY)
— —	TRIPLE DUTY VALVE
— —	PRESSURE REDUCING VALVE
— —	BALANCING COCK
— —	FLOW BALANCER
— —	STRAINER
— —	THERMOSTATIC TRAP ASSEMBLY
— —	FLOAT & THERMOSTIC TRAP ASSEMBLY
— —	BUCKET TRAP ASSEMBLY
— —	THERMODYNAMIC TRAP
— —	THERMOMETER
— —	PRESSURE GAUGE
— —	AIR VENT
— —	TEMPERATURE SENSOR WELL
— —	BUTTERFLY VALVE
— —	PIPE PITCH UP/INCLINE RISE
— —	PIPE PITCH DOWN/INCLINE DROP
— —	FINNED TUBE RADIATION ELEMENT
— —	WALL TO WALL FIN TUBE ENCLOSURE
— —	TRANSITION-SQUARE TO ROUND
— —	SUPPLY DUCT SECTION
— —	RETURN OR EXHAUST DUCT SECTION
— —	ROUND DUCT SECTION
— —	FIRE DAMPER
— —	SMOKE DAMPER
— —	COMBINATION FIRE AND SMOKE DAMPER
— —	BACKDRAFT DAMPER
— —	VOLUME DAMPER
— —	MANUAL DAMPER
— —	MOTOR OPERATED DAMPER
CFM	CUBIC FEET/MINUTE
FFM	FEET/MINUTE
NTS	NOT TO SCALE
DSD	DUCT SMOKE DETECTOR
MBH	THOUSAND BTU/HOUR
(e)	EXISTING
SA	SUPPLY AIR
RA	RETURN AIR
EA	EXHAUST AIR
OA	OUTSIDE AIR
OED	OPEN ENDED DUCT
AFF	ABOVE FINISH FLOOR
BFC	BELOW FINISH CEILING
①	THERMOSTAT
②	ELECTRIC THERMOSTAT WITH MULTIPLE SET POINTS
③	TEMPERATURE SENSOR WITH A GUARD
④	SLAB SENSOR
⑤	STATIC PRESSURE SENSOR
⑥	HUMIDISTAT
— UCD —	UNDERCUT DOOR (1" BY THE G.C.)
— L # —	LOUVERED DOOR, INDICATES SQ. FT. FREE AREA
— —	AIR FLOW
— —	SHEET METAL CAP ON EXISTING DUCT
— —	ACCESS DOOR, MIN 1.0 SQ.FT.
— —	ACOUSTIC THERMAL LINING
— —	SOUND ATTENUATOR
— —	WORK TO BE REMOVED
— —	NEW TO EXISTING CONNECTION
— —	NEW TO FUTURE CONNECTION
— —	DIFFUSER W/ FLEX. DUCT CONNECTION (REG. SIMILAR)
— —	DIFFUSER W/ RIGID DUCT CONNECTION (REG. SIMILAR)
TYPE	REGISTER, DIFFUSER, OR GRILLE DESIGNATION
CFM	REGISTER, DIFFUSER, OR GRILLE
SIZE	DUCT SIZE SERVING REGISTER, DIFFUSER, OR GRILLE
X" BRANCH	DUCT SIZE SERVING REGISTER, DIFFUSER, OR GRILLE

WA

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PROJECT TITLE / ADDRESS:
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15 HANOVER COURT
LEBANON, NH 03766

SCALE: AS NOTED DWN BY: JMM
JOB #: 3613 CHK BY: RAP

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MECHANICAL LEGEND AND BASEMENT PLAN

M-1

SHEET NUMBER: - OF ? MECHANICAL

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three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarter inch = one foot
one quarter inch = one foot
one eighth inch = one foot
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A

B

C

D

E

SECTION 23 50 00 - MECHANICAL SPECIFICATION

1.0 PART 1 - GENERAL

- 1.1 THE SCOPE OF WORK IS TO PROVIDE LABOR, MATERIALS, SERVICES, SUPPLIES, TOOLS, EQUIPMENT, PERMITS, TRANSPORTATION AND FACILITIES NECESSARY TO FURNISH AND MODIFY EXISTING AND INSTALL THE COMPLETE AND OPERABLE SYSTEMS AS CALLED FOR.
- 1.2 THE COMPLETE INSTALLATION SHALL BE IN COMPLIANCE WITH THE APPLICABLE LATEST OR ACCEPTED EDITION OF THE INTERNATIONAL BUILDING CODE AS ADOPTED BY THE STATE OF NEW HAMPSHIRE, NFPA, AND OTHER APPLICABLE RULES AND REGULATIONS AS PRESCRIBED BY THE ADMINISTRATIVE AUTHORITY.
- 1.3 THESE DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND EQUIPMENT. BASIC DESIGN CONCEPTS MUST BE FOLLOWED OR BETTERED. DO NOT SCALE DRAWINGS, FIELD VERIFY DIMENSIONS AND FIELD CONDITIONS.
- 1.4 IT IS NOT INTENDED THAT DRAWINGS SHOW EVERY DETAIL. PROVIDE OFFSETS, CHANGES IN ELEVATION AND ITEMS NECESSARY FOR PROPER INSTALLATION AND OPERATION OF SYSTEM SO THAT WORK WILL BE COMPLETE AND READY FOR OPERATION.
- 1.5 COORDINATE WORK WITH OTHER TRADES, VERIFY BUILDING CONDITIONS AND STRUCTURAL CONDITIONS PRIOR TO INSTALLATION.
- 1.6 IN THE EVENT OF A DISCREPANCY, IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE. DO NOT PROCEED WITH INSTALLATION IN AREAS OF DISCREPANCY UNTIL SUCH DISCREPANCIES HAVE BEEN RESOLVED.
- 1.7 PROVIDE IDENTIFICATION TAGS FOR VALVES, PANELS, STARTERS AND HVAC EQUIPMENT WITH CHART AND SCHEDULE OF LOCATION AND FUNCTION.
- 1.8 EXECUTE WORK IN A NEAT AND WORKMANLIKE MANNER IN CONFORMANCE WITH BEST MODERN TRADE PRACTICE, (I.E. ASME, SHACNA, ANSI, ASHRAE, ASPE, ASA, API) BY COMPETENT, EXPERIENCED MECHANICS, PRESENTING A NEAT APPEARANCE WHEN COMPLETED. REPLACE WORK NOT APPROVED BY OWNER'S REPRESENTATIVE WITHOUT ADDITIONAL CHARGE.
- 1.9 SUBMIT COMPLETE ELECTRONIC PDF COPY OF CATALOG INFORMATION FOR MATERIALS AND EQUIPMENT. INFORMATION REQUIRED INCLUDES MANUFACTURER, CAPACITY, TYPE, CURVES, CERTIFICATION, ACCESSORIES, PHYSICAL AND PERFORMANCE DATA, FINISHES, MATERIALS AND LOCATION. CONFIRM DIMENSIONS AT JOB SITE TO INSURE THAT ITEMS TO BE FURNISHED FIT THE SPACE AVAILABLE. SUBMIT SHOP DRAWING PRIOR TO INSTALLATION OR PURCHASE WITH THE DATE, CONTRACTORS STAMP AND SIGNATURE PROVIDED. NO INSTALLATION IS PERMITTED PRIOR TO REVIEW.

- 1.10 EQUIPMENT SHALL MEET UL AND NEC STANDARDS. EQUIPMENT AND MATERIALS FOR WHICH THERE IS A LISTING SERVICE SHALL BEAR A UL LABEL. MATERIALS SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPMENT RATING OF 50 OR LESS. MATERIAL SHALL BE ASBESTOS FREE.
- 1.11 CONCEAL CONTRACT WORK ABOVE CEILINGS AND IN WALL CHASES UNLESS OTHERWISE CALLED FOR.
- 1.12 PROVIDE CUTTING AND PATCHING AS REQUIRED FOR THE INSTALLATION OF CONTRACT WORK. PATCHING MATERIALS AND METHODS SHALL MATCH ADJACENT MATERIALS.
- 1.13 FIRE STOPPING FOR OPENINGS THROUGH FIRE AND SMOKE RATED WALL AND FLOOR ASSEMBLIES. PROVIDE MATERIALS AND PRODUCTS LISTED OR CLASSIFIED BY AN APPROVED INDEPENDENT TESTING LABORATORY FOR "THROUGH-PENETRATION FIRESTOP SYSTEMS". THE SYSTEMS SHALL MEET THE REQUIREMENTS OF "FIRE TESTS OF THROUGH-PENETRATIONS FIRESTOPS" DESIGNATED ASTM E814. PROVIDE FIRESTOP SYSTEM SEALS AT LOCATIONS WHERE PIPING, TUBING, CONDUIT, ELECTRICAL CABLES AND WIRES, DUCTWORK AND SIMILAR UTILITIES PASS THROUGH OR PENETRATE FIRE RATED WALL OR FLOOR ASSEMBLY. THE MINIMUM REQUIRED FIRE RESISTANCE RATINGS OF THE WALL OR FLOOR ASSEMBLY SHALL BE MAINTAINED BY THE FIRESTOP SYSTEM. THE INSTALLATION SHALL PROVIDE AN AIR AND WATER TIGHT SEAL. PENETRATION OPENINGS SHALL BE AS SMALL AS POSSIBLE. MAKE: DOW CORNING FIRESTOP SYSTEM FOAMS AND SEALANTS, NELSON ELECTRIC FIRESTOP SYSTEM PUTTY, OKL AND NRP, 3M BRAND FIRE BARRIER SYSTEM.
- 1.14 ALL OTHER POWER WIRING SHALL BE PROVIDED AS PART OF THE WORK OF E-SERIES DRAWINGS "ELECTRICAL".

2.0 PART 2 - SHEETMETAL AND SHEETMETAL ACCESSORIES

- 2.1 DUCTWORK SHALL BE CONSTRUCTED FOR A MINIMUM PRESSURE CLASS OF 2 IN. HG. HANGERS, SUPPORTS, BRACING, GAUGES (26 GAUGE MINIMUM) AND WEIGHTS SHALL BE PER SHACNA AND NFPA. MATERIALS NEW, MARKED WITH MANUFACTURER'S NAME AND COMPLY WITH APPLICABLE ASTM AND ANSI STANDARDS. TRANSVERSE AND LONGITUDINAL JOINTS SHALL BE SEALED WITH DUCT JOINT SEALANT OR BE OF WELDED CONSTRUCTION.
- 2.2 RECTANGULAR DUCT SHALL HAVE CORNER CLOSURES AS DESCRIBED AND ILLUSTRATED BY SHACNA DUCT CONSTRUCTION STANDARDS. THROAT RADIUS OF ELBOW NOT LESS THAN DIMENSION OF DUCT IN PLANE OF RADIUS; WHERE THIS CANNOT BE MAINTAINED, USE SHORTER RADIUS WITH INTERNAL GUIDE VANES.
- 2.3 ROUND DUCTWORK SHALL BE SPIRAL LOCK SEAM OR CONTINUOUS FUSION-WELDED LONGITUDINAL SEAM. FITTINGS SHALL BE PRESS FORMED CONTINUOUS WELDED SEAMS. ADJUSTABLE ELBOWS MAY BE USED FOR ROUND DUCT UP TO 12 INCHES, SEAL ADJUSTABLE JOINT AFTER INSTALLATION. PIPE TO PIPE JOINTS SHALL BE MADE WITH SLEEVE COUPLINGS, PIPE TO FITTING JOINTS SHALL BE SLIP-FIT.
- 2.4 SEAL DUCT JOINTS WITH SEALANT, WATER BASED MASTIC, FIBER REINFORCED, AIR SEAL 33 OR APPROVED EQUAL.
- 2.5 CONFIGURATION AND SIZES OF DUCTWORK ARE THE BASIS OF DESIGN, RECTANGULAR ASPECT OR ROUND DUCTWORK MAY BE USED THAT MAINTAINS EQUIVALENT HYDRAULIC DIAMETER, STATIC LOSS, AND DUCT VELOCITY. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF SIZES OF DUCTWORK AND LOCATIONS TO MAINTAIN CLEARANCES TO ALLOW PROPER INSTALLATION OF WORK OF OTHER TRADES AND BUILDING SYSTEMS.
- 2.6 PROVIDE SEISMIC RESTRAINT FOR ALL DUCTWORK EXCEPT WHERE HANGERS ARE 12 INCH LONG OR LESS OR HAVE A CROSS-SECTIONAL AREA OF 6 SQ. FT. OR LESS. WHERE SEISMIC RESTRAINTS ARE REQUIRED SPACE AT 40 FT. FOR TRANSVERSE BRACING AND AT 80 FT. FOR LONGTUDUAL BRACING, SUBMIT CERTIFIED ENGINEERED SHOP DRAWINGS PRIOR TO INSTALLATION.
- 2.7 FLEXIBLE DUCTWORK SHALL BE IN COMPLIANCE WITH NFPA BULLETIN 90A, ASTM G1071, AND UL STANDARD 181, CLASS 1 AIR DUCT, CONSIST OF CORROSION RESISTANT SPRING STEEL HELIX, ACOUSTICAL RATED INTERNAL MATERIAL, LAMINATED MULTILAYER REINFORCED ALUMINUM FOIL FABRIC, SUITABLE FOR STATIC PRESSURE IN DUCTWORK, MINIMUM 4 INCH W.G. FACTORY APPLIED R-6 FIBERGLASS EXTERIOR INSULATION, SHEATHED IN SEAMLESS REINFORCED EXTERIOR VAPOR BARRIER JACKET, WITH VAPOR CUFFS BOTH ENDS. 200 DEGREES F TEMPERATURE, UL LISTED. DESIGN EQUIPMENT: THERMAFLEX 6-KM. MAKE: CLEVEXFLEX, FLEXIMASTER, GENFLEX, TECHNAFLEX OR THERMAFLEX.

2.8 SHEETMETAL MATERIALS SCHEDULE:

SERVICE	MATERIAL	REQUIREMENTS
SUPPLY AND RETURN	LOCK FORMING QUALITY, GALVANIZED STEEL ASTM 525	JOINTS AND FEATURES AS CALLED FOR
ACCESSORIES, DAMPERS AND AIR TURNS	SAME OR BETTER AS PARENT DUCT	-----
EXTENSION OF EXISTING DUCTS	MATCH EXISTING	EMPLOY MATERIALS AND METHODS TO MATCH EXISTING SYSTEMS

- 2.9 DUCT INSULATION: MAXIMUM THERMAL CONDUCTIVITY (K) SHALL BE 0.285 BTU/SQ. FT. HR. DEGREE F/IN. EXCLUDING AIR FILM AT 100 DEGREES F MEAN TEMPERATURE. RIGID BOARD TYPE: 3 LB. MINIMUM DENSITY, GLASS FIBERBOARD, 1 IN. MINIMUM THICKNESS. FACTORY APPLIED VAPOR BARRIER FINISH CONSISTING OF ALUMINUM FOIL REINFORCED WITH FIBERGLASS YARN; SEAMS AND JOINTS TAPED. FLEXIBLE BLANKET TYPE: LONG GLASS FIBER BLANKET, FACTORY APPLIED, FIBERGLASS YARN, REINFORCED ALUMINUM FOIL FACED VAPOR SEAL.

SERVICE	MATERIAL	THICKNESS	REMARKS
AIR CONDITIONING SUPPLY	EXPOSED: R16ID FIBERGLASS CONCEALED: FLEXIBLE FIBERGLASS	R=6.0	
AIR CONDITIONING RETURN	EXPOSED: R16ID FIBERGLASS CONCEALED: FLEXIBLE FIBERGLASS	R=6.0	NOTE 1

NOTE 1: RETURN AIR DUCTS EXPOSED WITHIN AIR CONDITIONED SPACES, ABOVE ACCESSIBLE CEILINGS OF AIR CONDITIONED SPACES OR IN RETURN AIR PLENUMS ARE NOT TO BE INSULATED.

- 2.10 TYPE A - (EXHAUST AND RETURN REGISTERS): STEEL CONSTRUCTION WITH HORIZONTAL FRONT BARS SET AT 45 DEGREES AND CURVED HEMMED EDGE BLADES, WHITE FINISH. KEY OPERATED OPPOSED BLADE DAMPER. 1-1/4 IN. WIDE FLANGE WITH SPONGE RUBBER GASKET. FRAME STYLE TO MATCH CEILING TYPE IN EACH LOCATION. TITUS "B50-RL" OR ANEMOSTAT, CARNES, KRUEGER, METALAIRE, PRICE.

- 2.11 TYPE 1 - (REMOVABLE CORE): STEEL CONSTRUCTION WITH REMOVABLE INNER VANE ASSEMBLY WITHOUT USE OF TOOLS. WHITE FINISH. SQUARE OR ROUND NECK AS CALLED FOR. DIRECTIONAL FLOW PATTERN AS INDICATED. WITH VOLUME DAMPER AND EQUALIZING GRID. ADJUSTABLE INNER VANE ASSEMBLY. FRAME STYLE TO MATCH CEILING TYPE IN EACH LOCATION. TITUS "TDC" OR ANEMOSTAT, CARNES, KRUEGER, METALAIRE, PRICE.

3.0 PART 3 - CONTROLS, ADJUSTING AND BALANCING

3.1 ROOFTOP UNITS - EXISTING

EXISTING CONTROLS TO REMAIN.

- 3.2 ADJUSTING AND BALANCING: BALANCING REPORT SHALL BE TYPED AND THREE COPIES SUBMITTED FOR REVIEW, RESULTS SHALL BE GUARANTEED. CONTRACTOR SHALL BE SUBJECT TO RECALL TO SITE TO VERIFY THE REPORT INFORMATION BEFORE ACCEPTANCE OF THE REPORT BY THE OWNER'S REPRESENTATIVE.
- BALANCING CONTRACTOR SHALL FOLLOW THE PROCEDURES OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).

PLACE SYSTEMS IN SATISFACTORY OPERATING CONDITION. ADJUSTING AND BALANCING SHALL BE ACCOMPLISHED AS SOON AS THE SYSTEMS ARE COMPLETE AND BEFORE OWNER TAKES POSSESSION. ADJUSTING AND BALANCING SHALL BE ACCOMPLISHED UNDER APPROPRIATE OUTDOOR TEMPERATURE CONDITIONS. CHANGE PULLEYS AS REQUIRED TO MEET SYSTEM PERFORMANCE REQUIREMENTS. PERFORM NECESSARY MECHANICAL ADJUSTMENTS IN CONJUNCTION WITH BALANCING PROCEDURE. REPLACE BALANCING COCKS AND FLOW BALANCERS IN SYSTEMS THAT CANNOT BE MANIPULATED TO SATISFY BALANCING REQUIREMENTS. REPLACE DAMPERS IN SYSTEMS THAT CANNOT BE MANIPULATED TO SATISFY BALANCING REQUIREMENTS.

AIR SYSTEMS: TEST AND ADJUST FAN RPM TO DESIGN REQUIREMENTS. TEST AND RECORD MOTOR NO LOAD AND FULL LOAD AMPERES, AND DETERMINE OPERATING BRAKE HORSEPOWER. TEST AND RECORD SYSTEM STATIC PRESSURES, SUCTION AND DISCHARGE. TEST AND ADJUST ZONES AND SYSTEM FOR DESIGN SUPPLY, RETURN AND EXHAUST AIR CFM. TEST AND ADJUST SYSTEM FOR DESIGN OUTSIDE AIR CFM.

TEST AND RECORD ENTERING AND LEAVING AIR TEMPERATURE AT COILS.

TEST AND ADJUST ZONES TO PROPER DESIGN SUPPLY, RETURN AND EXHAUST CFM. ADJUST TERMINAL UNITS TO DESIGN CFM. TEST AND ADJUST EACH DIFFUSER, GRILLE AND REGISTER TO WITHIN 10% OF DESIGN REQUIREMENTS.

END OF SECTION 23 50 00

WA

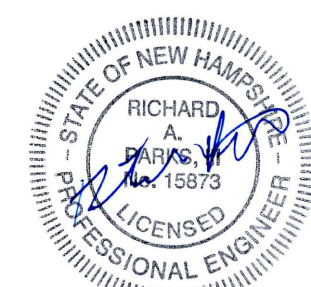
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PLAN KEY:

PROJECT TITLE / ADDRESS:

RVCC LEBABON-LNA/LPN
LAB RENOVATIONS

15 HANOVER COURT
LEBANON, NH 03766

SCALE: AS NOTED DWN BY: RAP
JOB #: 3613 CHK BY: RAP

PRINT DATE: 01/31/2020

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JANUARY 31, 2020
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MECHANICAL SPECIFICATIONS

M-2

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2
one inch = one foot
three quarter inch = one foot
3
one quarter inch = one foot
one eighth inch = one foot
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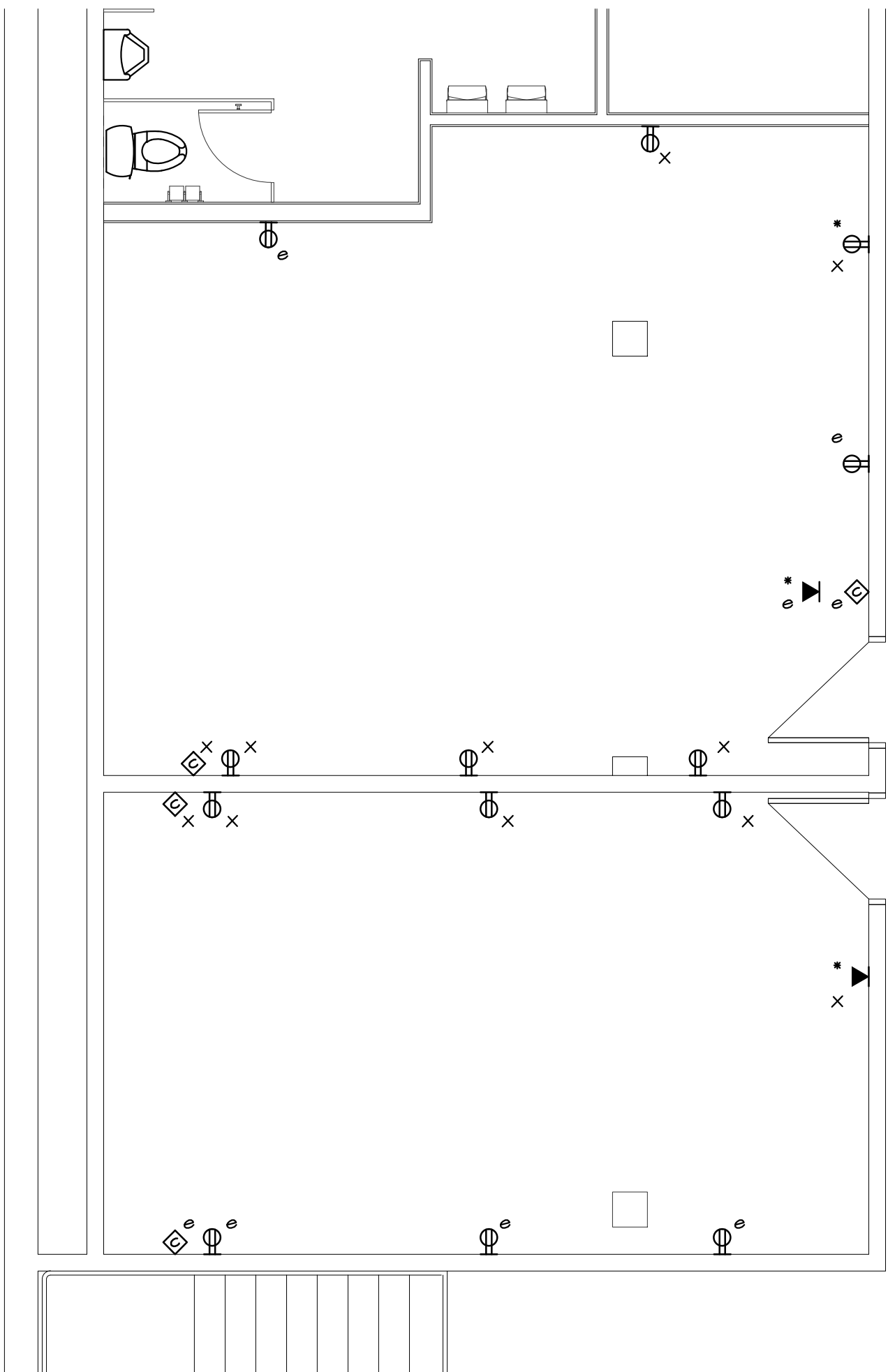
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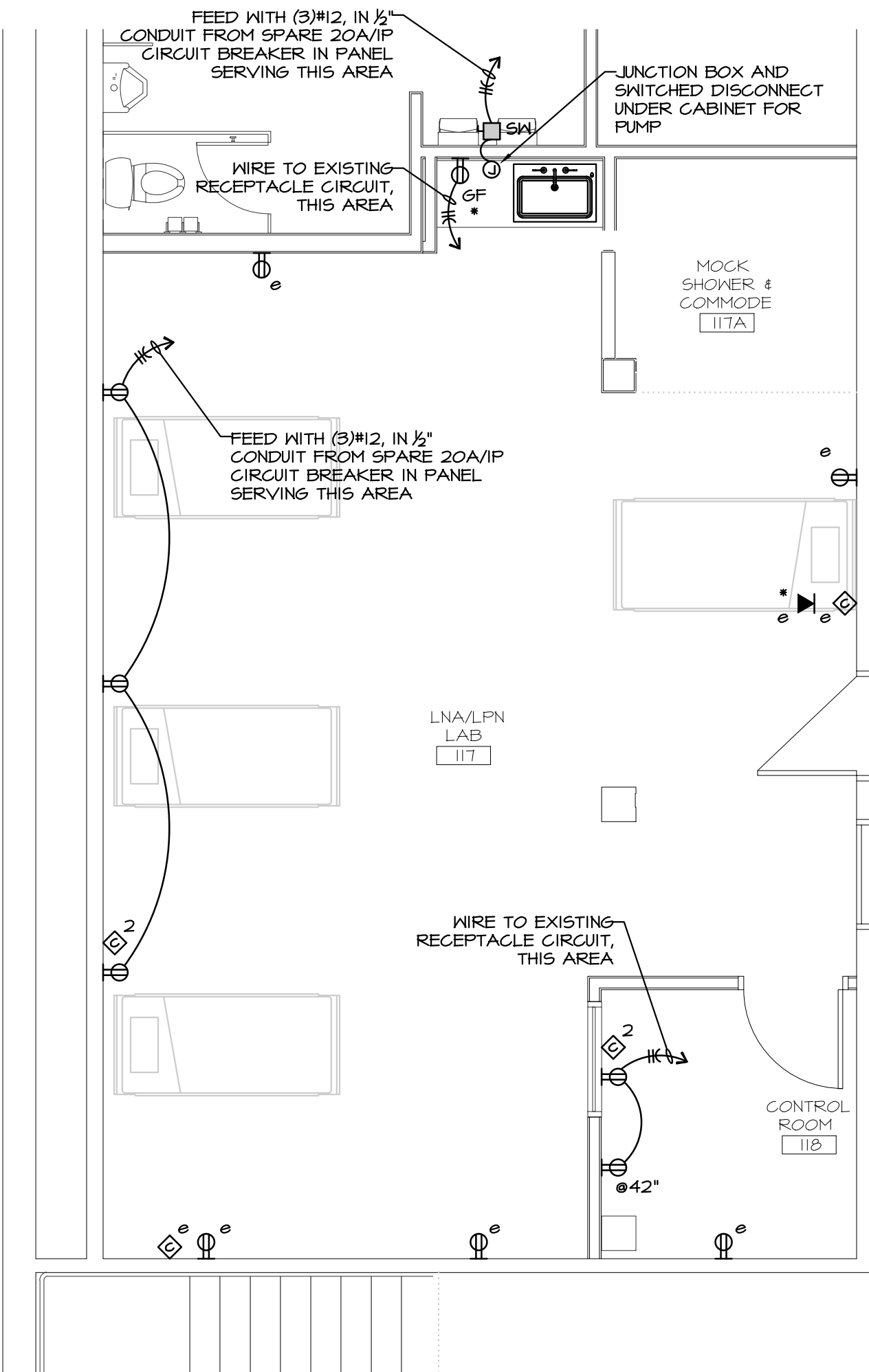
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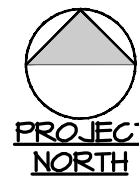
E



EXISTING FIRST FLOOR POWER PLAN
SCALE: 1/4" = 1'-0"



ELECTRICAL FIRST FLOOR POWER PLAN
SCALE: 1/4" = 1'-0"



WA

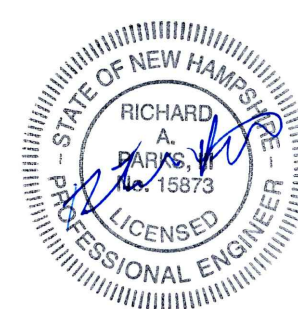
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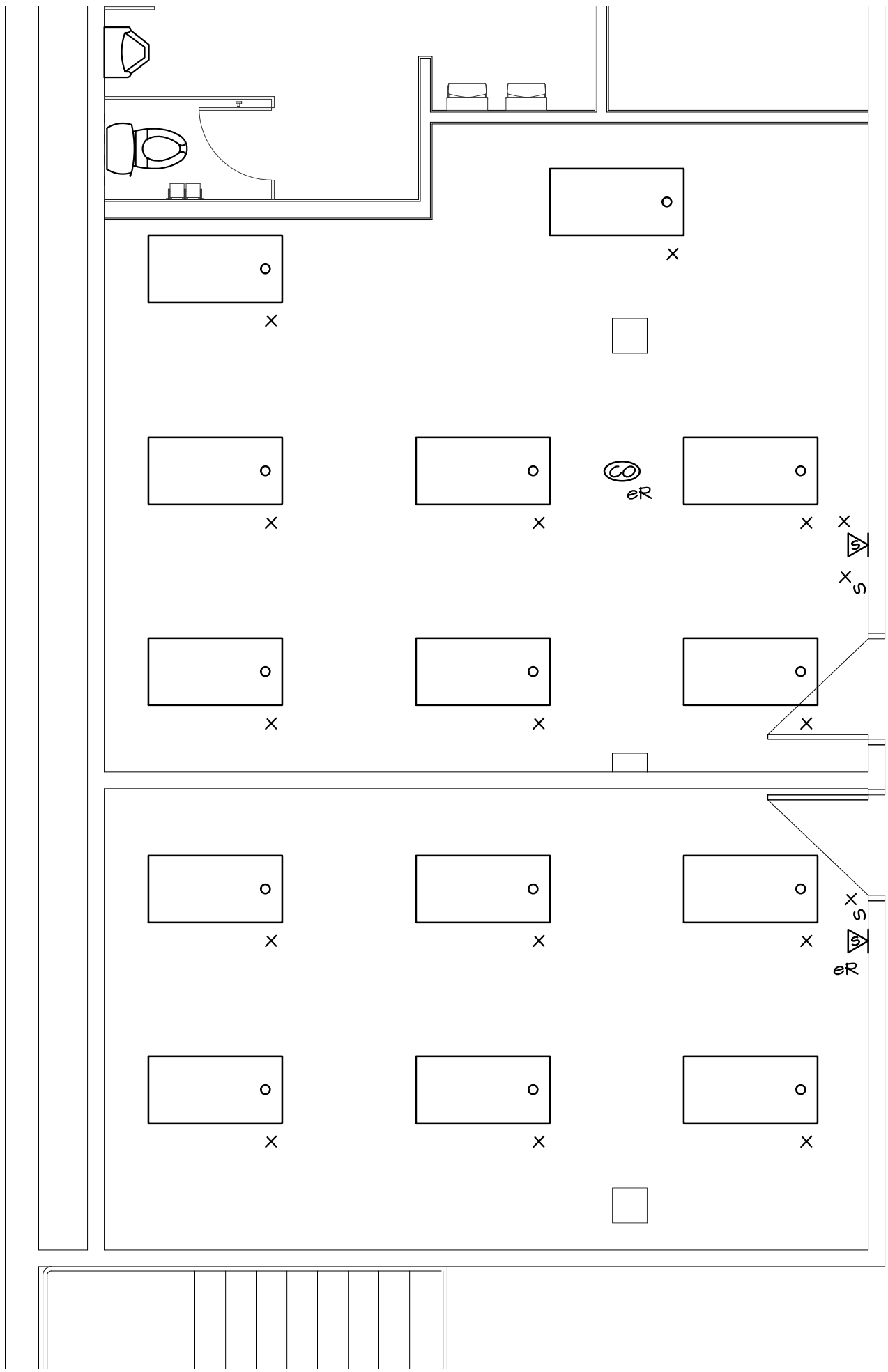
ELECTRICAL FIRST FLOOR
POWER & DATA PLANS

E-2

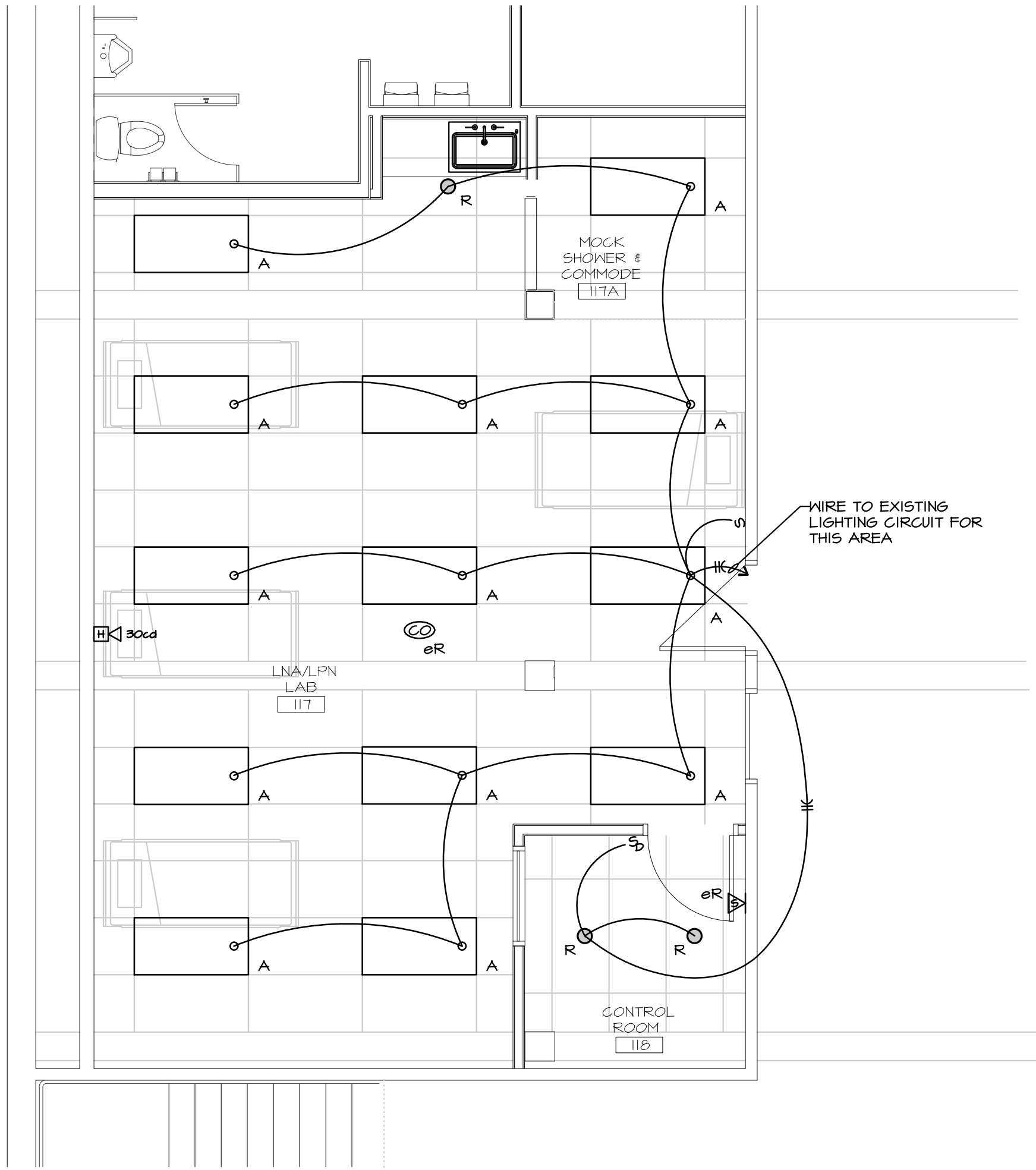
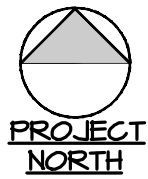
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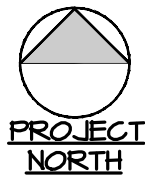
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EXISTING FIRST FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"



ELECTRICAL FIRST FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"



LIGHTING FIXTURE SCHEDULE		
A.	DESCRIPTION:	2x4 LED RECESSED TROFFER, COLD-ROLLED STEEL HOUSING, #12 ACRYLIC DIFFUSER, INTEGRAL 0-10V DIMMING DRIVER, 4300 LUMENS, DAMP LOCATION RATED.
	MANUFACTURER:	COLUMBIA
	SERIES:	LJT24
	VOLTAGE:	120V
	LAMPS:	34W LED (4000K)
	MOUNTING:	RECESSED, CEILING
	SUBSTITUTIONS:	SUBMIT TO ENGINEER FOR APPROVAL PRIOR TO BID.
R.	DESCRIPTION:	6" DIAMETER RECESSED DOWNLIGHT, STEEL HOUSING, SEMI-DIFFUSE REFLECTOR, INTEGRAL 0-10V DIMMING DRIVER, 1100 LUMENS, SUITABLE FOR MET LOCATIONS.
	MANUFACTURER:	LITEFRAME
	SERIES:	LF65L
	VOLTAGE:	120V
	LAMPS:	12.6W LED (4000K)
	MOUNTING:	RECESSED, CEILING
	SUBSTITUTIONS:	SUBMIT TO ENGINEER FOR APPROVAL PRIOR TO BID.

WA

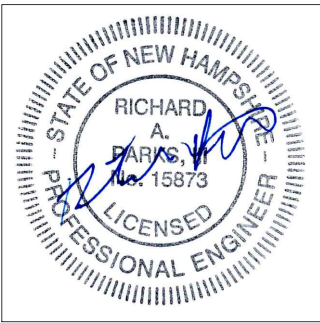
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ELECTRICAL FIRST FLOOR
LIGHTING & FIRE ALARM PLANS

E-3

SHEET NUMBER: - OF ? MECHANICAL

THE DRAWING AND ITS CONTENT IS THE INTELLECTUAL PROPERTY OF WARRENSTREET ARCHITECTS INC. WITH THE SOLE INTENT TO BUILD THE PROJECT TITLED ABOVE AT ONE LOCATION NOTED HEREIN. THE USE OF THE CONTENT FOR ANY OTHER PURPOSE IS PROHIBITED AND PROTECTED UNDER COPYRIGHT LAW.

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three inches = one foot

one and one half inches = one foot

one inch = one foot

three quarter inch = one foot

one quarter inch = one foot

one eighth inch = one foot

4

SECTION 26 50 00 - ELECTRICAL SPECIFICATION

1.0 PART 1 - GENERAL

- 1.1 THE SCOPE OF WORK IS TO PROVIDE LABOR, MATERIALS, SERVICES, SUPPLIES, EQUIPMENT, AND FACILITIES FOR THE COMPLETE AND OPERABLE SYSTEMS AS CALLED FOR.
- 1.2 THE COMPLETE INSTALLATION SHALL BE IN COMPLIANCE WITH THE APPLICABLE LATEST OR ACCEPTED EDITION OF THE INTERNATIONAL BUILDING CODE AS ADOPTED BY THE STATE OF NEW HAMPSHIRE, NFPA, AND OTHER APPLICABLE RULES AND REGULATIONS AS PRESCRIBED BY THE ADMINISTRATIVE AUTHORITY.
- 1.3 THESE DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND EQUIPMENT. BASIC DESIGN CONCEPTS MUST BE FOLLOWED OR BETTERED. DO NOT SCALE DRAWINGS, FIELD VERIFY DIMENSIONS AND FIELD CONDITIONS.
- 1.4 IT IS NOT INTENDED THAT DRAWINGS SHOW EVERY DETAIL. PROVIDE OFFSETS, CHANGES IN ELEVATION AND ITEMS NECESSARY FOR PROPER INSTALLATION AND OPERATION OF SYSTEM SO THAT WORK WILL BE COMPLETE AND READY FOR OPERATION.
- 1.5 NOTES OR INSTRUCTIONS INCLUDED IN THE SPECIFICATIONS AND/OR SHOWN ON ANY ONE DRAWING, APPLY WHERE APPLICABLE, TO ALL OTHER DRAWINGS.
- 1.6 COORDINATE WORK WITH OTHER TRADES, BUILDING CONDITIONS AND STRUCTURAL CONDITIONS PRIOR TO INSTALLATION.
- 1.7 COORDINATE UTILITY SERVICE WORK WITH LOCAL UTILITY COMPANIES. GENERAL CONTRACTOR, BUILDING CONDITIONS AND SITE CONDITIONS PRIOR TO INSTALLATION. PROVIDE ADVANCE COORDINATION AS REQUIRED FOR TIMELY CONNECTIONS OF TEMPORARY AND PERMANENT SERVICES. CONTACT UTILITY COMPANIES PRIOR TO SUBMISSION OF BID. INCLUDE ALL UTILITY FEES AND COSTS RELATED TO THIS PROJECT IN BID.
- 1.8 IN THE EVENT OF A DISCREPANCY, IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE. DO NOT PROCEED WITH INSTALLATION IN AREAS OF DISCREPANCY UNTIL SUCH DISCREPANCIES HAVE BEEN RESOLVED.
- 1.9 EXECUTE WORK IN A NEAT AND WORKMANLIKE MANNER IN CONFORMANCE WITH BEST MODERN TRADE PRACTICE, (I.E. IEEE, NEC, ANSI, NFPA, NEMA,) BY COMPETENT, EXPERIENCED, LICENSED ELECTRICIANS, PRESENTING A NEAT APPEARANCE WHEN COMPLETED. REPLACE WORK NOT APPROVED BY OWNER'S REPRESENTATIVE WITHOUT ADDITIONAL CHARGE.
- 1.10 EQUIPMENT SHALL BE UL, CSA, OR ETL LISTED AND LABELED.
- 1.11 SUBMITTALS PACKAGED BY VENDOR, SUBCONTRACTOR GROUPING OR OTHER RANDOM ASSEMBLY ARE NOT ACCEPTABLE (I.E. IF A VENDOR IS SUPPLYING CONDUIT, LIGHTING, PANELS AND TRANSFORMERS, SUBMITTALS SHALL BE GROUPED BY APPROPRIATE FUNCTION (I.E., POWER, LIGHTING, FIRE ALARM, ETC.).
- 1.12 SUBMIT COMPLETE PDF ELECTRONIC COPY OF CATALOG INFORMATION FOR MATERIALS AND EQUIPMENT. INFORMATION REQUIRED INCLUDES MANUFACTURER, CAPACITY, TYPE, CERTIFICATION, ACCESSORIES, PHYSICAL AND PERFORMANCE DATA, FINISHES, MATERIALS AND LOCATION. CONFIRM DIMENSIONS AT JOB SITE TO INSURE THAT ITEMS TO BE FURNISHED FIT THE SPACE AVAILABLE. SUBMIT SHOP DRAWING PRIOR TO INSTALLATION OR PURCHASE WITH THE DATE, CONTRACTOR'S STAMP AND SIGNATURE PROVIDED. NO INSTALLATION IS PERMITTED PRIOR TO REVIEW.
- 1.13 MAINTAIN AT THE SITE ONE RECORD SET OF DRAWINGS, SPECIFICATIONS, APPENDIX, CHANGE ORDERS, ACCEPTED SHOP DRAWINGS AND ACCEPTED SUBMITTALS TO REMAIN AS RECORD DRAWINGS OF THE WORK AS INSTALLED. TRANSFER DATA TO BUILDING CAD FILES. PROVIDE ONE FULL SIZE SET OF THE CORRECTED RECORD DRAWINGS AND A CD WITH ELECTRONIC COPY OF THE CAD DRAWING FILES AND PDF PLOT FILES TO THE OWNER.
- 1.14 OPERATING AND MAINTENANCE MANUALS: BEFORE FINAL ACCEPTANCE OF PROJECT, SUBMIT THREE (3) COPIES OF COMPLETE OPERATING INSTRUCTIONS AND SERVICE MANUALS NEATLY BOUND AND CONSISTING OF A NEATLY TYPED INDEX, INSTRUCTIONS ON EQUIPMENT OPERATION, PARTS REPLACEMENT INFORMATION, GUARANTEES AND WARRANTIES, TESTING REPORTS, SERVICE MANUALS, CONTROL DRAWINGS AND DIAGRAMMATIC CHARTS.
- 1.15 PROVIDE A COMPLETE CD COPY OF ALL INSTALLED SOFTWARE FOR ALL EQUIPMENT AND SYSTEMS. PROVIDE ADMINISTRATIVE USER NAME, PASSWORD AND ALL OTHER SOFTWARE KEYS REQUIRED TO ACCESS, MODIFY AND SET PARAMETERS.
- 1.16 CONCEAL CONDUCT WORK ABOVE CEILING AND IN WALL CHASES UNLESS OTHERWISE CALLED FOR.
- 1.17 PROVIDE CUTTING AND PATCHING AS REQUIRED FOR THE INSTALLATION OF CONTRACT WORK. PATCHING MATERIALS AND METHODS SHALL MATCH ADJACENT MATERIALS.
- 1.18 ALL WORK REMOVED, RELOCATED AND/OR REINSTALLED SHALL BE SO INSTALLED IN COMPLIANCE WITH NEC AND OTHER APPLICABLE CODES AND STANDARDS. SUCH REINSTALLED WORK SHALL ALSO BE DONE IN COMPLIANCE WITH THESE SPECIFICATIONS. IF THIS REINSTALLATION WORK WERE NEW WORK, EQUIPMENT, DEVICES, CONDUIT, RACEWAY AND WIRING SHALL COMPLY WITH THESE SPECIFICATIONS. WORK SHALL BE FULLY TESTED AND OPERATIONAL AFTER INSTALLATION. CONFIRM SUCH TESTING AND SUCCESSFUL OPERATION, IN WRITING, WITH OWNER REPRESENTATIVE.
- 1.19 FIRE STOPPING FOR OPENINGS THROUGH FIRE AND SMOKE RATED WALL AND FLOOR ASSEMBLIES: PROVIDE MATERIALS AND PRODUCTS LISTED OR CLASSIFIED FOR "THROUGH-PENETRATION FIRESTOP SYSTEMS". PROVIDE FIRESTOP SYSTEM SEALS AT LOCATIONS WHERE CONDUITS PASS THROUGH OR PENETRATE FIRE RATED WALL OR FLOOR ASSEMBLY. THE MINIMUM REQUIRED FIRE RESISTANCE RATINGS OF THE WALL OR FLOOR ASSEMBLY SHALL BE MAINTAINED BY THE FIRESTOP SYSTEM. PROVIDE AS NELSON ELECTRIC FIRESTOP SYSTEM PUTTY OR 3M BRAND FIRE BARRIER SYSTEM.
- 1.20 PROVIDE REVISED TYPED CIRCUIT DISTRIBUTION CHART, PERMANENTLY MOUNTED INSIDE EACH PANELBOARD UNDER TRANSPARENT SHIELD WHERE CIRCUIT CHANGES OCCUR AS PART OF THIS PROJECT. PROVIDE HAND-WRITTEN SCHEDULE DURING CONSTRUCTION. COORDINATE FINAL SCHEDULE ROOM IDENTIFICATION WITH OWNER SUCH THAT ROOM LABELING IS USEFUL TO OWNER. COPIES OF EACH CIRCUIT DISTRIBUTION CHART IDENTIFIED BY THE PANELBOARD SHALL BE INCLUDED IN THE MAINTENANCE MANUAL.
- 1.21 INSTALL WORK ONLY AFTER COORDINATION WITH EXISTING CONDITIONS AND OTHER TRADES. IN GENERAL, EACH TRADE SHALL COORDINATE AND ROUTE ITS WORK AS CLOSE TO CEILING DECK AS POSSIBLE TO PERMIT. CEILING HEIGHTS AS CALLED FOR. LOCATION OF EXPOSED OR FINISH ELEMENTS AS SHOWN ON ARCHITECTURAL REFLECTED CEILING PLANS. ACCESS TO TESTING AND INSPECTION SERVICE POINTS. CROSSING OF PIPING, DUCTWORK AND CONDUITS. CONVENIENT REMOVAL OF AT LEAST ONE 2'X4' CEILING TILE WITHIN EACH SPACE OR EVERY 200 SQUARE FEET OF AREA FOR ACCESS TO ABOVE CEILING COMPONENTS.
- 1.22 COORDINATION AND WORK REQUIRED TO ACCOMPLISH THE ABOVE SHALL BE PROVIDED AS PART OF THE CONTRACT WORK WITH NO ADDITIONAL COST TO THE OWNER. WORK TO INCLUDE: OFFSET OF PIPING, DUCTWORK AND CONDUITS AS REQUIRED (BETWEEN ROOMS). ROUTING CHANGES WITHIN ROOMS OR SPACES TO AVOID CONFLICTS.

1.10 EQUIPMENT SHALL BE UL, CSA, OR ETL LISTED AND LABELED.

- 1.11 SUBMITTALS PACKAGED BY VENDOR, SUBCONTRACTOR GROUPING OR OTHER RANDOM ASSEMBLY ARE NOT ACCEPTABLE (I.E. IF A VENDOR IS SUPPLYING CONDUIT, LIGHTING, PANELS AND TRANSFORMERS, SUBMITTALS SHALL BE GROUPED BY APPROPRIATE FUNCTION (I.E., POWER, LIGHTING, FIRE ALARM, ETC.).
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- 1.15 PROVIDE A COMPLETE CD COPY OF ALL INSTALLED SOFTWARE FOR ALL EQUIPMENT AND SYSTEMS. PROVIDE ADMINISTRATIVE USER NAME, PASSWORD AND ALL OTHER SOFTWARE KEYS REQUIRED TO ACCESS, MODIFY AND SET PARAMETERS.

- 1.16 CONCEAL CONDUCT WORK ABOVE CEILING AND IN WALL CHASES UNLESS OTHERWISE CALLED FOR.

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- 1.19 FIRE STOPPING FOR OPENINGS THROUGH FIRE AND SMOKE RATED WALL AND FLOOR ASSEMBLIES: PROVIDE MATERIALS AND PRODUCTS LISTED OR CLASSIFIED FOR "THROUGH-PENETRATION FIRESTOP SYSTEMS". PROVIDE FIRESTOP SYSTEM SEALS AT LOCATIONS WHERE CONDUITS PASS THROUGH OR PENETRATE FIRE RATED WALL OR FLOOR ASSEMBLY. THE MINIMUM REQUIRED FIRE RESISTANCE RATINGS OF THE WALL OR FLOOR ASSEMBLY SHALL BE MAINTAINED BY THE FIRESTOP SYSTEM. PROVIDE AS NELSON ELECTRIC FIRESTOP SYSTEM PUTTY OR 3M BRAND FIRE BARRIER SYSTEM.

- 1.20 PROVIDE REVISED TYPED CIRCUIT DISTRIBUTION CHART, PERMANENTLY MOUNTED INSIDE EACH PANELBOARD UNDER TRANSPARENT SHIELD WHERE CIRCUIT CHANGES OCCUR AS PART OF THIS PROJECT. PROVIDE HAND-WRITTEN SCHEDULE DURING CONSTRUCTION. COORDINATE FINAL SCHEDULE ROOM IDENTIFICATION WITH OWNER SUCH THAT ROOM LABELING IS USEFUL TO OWNER. COPIES OF EACH CIRCUIT DISTRIBUTION CHART IDENTIFIED BY THE PANELBOARD SHALL BE INCLUDED IN THE MAINTENANCE MANUAL.

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- 1.22 COORDINATION AND WORK REQUIRED TO ACCOMPLISH THE ABOVE SHALL BE PROVIDED AS PART OF THE CONTRACT WORK WITH NO ADDITIONAL COST TO THE OWNER. WORK TO INCLUDE: OFFSET OF PIPING, DUCTWORK AND CONDUITS AS REQUIRED (BETWEEN ROOMS). ROUTING CHANGES WITHIN ROOMS OR SPACES TO AVOID CONFLICTS.

2.0 PART 2 - PRODUCTS

- 2.1 CONDUITS SHALL BE EMT, RMC OR IMC METAL CONDUIT, PVC CONDUIT FOR SERVICE ENTRANCES AND SITE LIGHTING UNDERGROUND. WIRING INSTALLED IN CONDUITS SHALL BE COPPER, THIN/THIN FOR UP TO #4 AWG, THIN OR XHH FOR #3 AWG AND LARGER. ALUMINUM CONDUCTORS PERMITTED FOR SERVICE ENTRANCE AS CALLED FOR. MINIMUM WIRE SIZE SHALL BE #12 AWG. CONDUIT MANUFACTURERS REPUBLIC, GENERAL ELECTRIC, TRIANGLE, CARLIN, NISE MANUFACTURERS AMERICAN, GENERAL CABLE, CAPITOL, ALCOA. PROVIDE APPROVED STEEL SET SCREW FITTINGS. PROVIDE STEEL COMPRESSOR FITTINGS IN DAMP OR WET LOCATIONS.

- 2.2 PROVIDE APPROVED STEEL, CLAMPS, STRAPS AND CONDUIT HANGERS AS REQUIRED.
- 2.3 SURFACE METAL RACEWAY, WHERE SPECIFICALLY PERMITTED, TO BE WIREMOLD 500 OR 700 SERIES, WITH SURFACE BOXES OR CABINET CONNECTORS AS REQUIRED. PROVIDE CONCEALED SUPPORT CLIPS FASTENED TO EXISTING WALLS, 18 INCHES ON CENTER. BEIGE COLOR. PAINTED BY GENERAL CONTRACTOR.
- 2.4 WIRING CONCEALED IN DRY WALL CONSTRUCTION AND ABOVE FINISHED CEILING MAY BE TYPE AC CABLE, #12 MINIMUM, COPPER CONDUCTORS, WITH FULL SIZE INSULATED GROUND CONDUCTOR AND APPROVED CONNECTORS. FIRE ALARM WIRING SHALL BE #18 AWG MINIMUM AC CABLE WITH RED PAINTED METAL SHEATH. PROVIDE METAL NAIL PLATES WHERE CABLES ARE WITHIN 1-1/4 INCH OF FACE OF FRAMING MEMBERS. AFC TYPE "HCF40", EQUIVALENT BY ALFLEX OR CAPITOL.
- 2.5 DIMMERS TO BE DECORA PLATE, 1000 WATT, SLIDE TYPE WITH OFF SWITCH, SINGLE OR 3 WAY TYPE AS CALLED FOR, PROVIDE AS SOLID STATE TYPE WITH RADIO INTERFERENCE FILTER, NON-ILLUMINATED TYPE, COLOR TO MATCH DEVICES. GANG WITH DEVICES WHERE SHOWN. LEVITON, GENERAL ELECTRIC, PASS 4 SEYMOUR, HUBBELL OR SKYLARK CONTROLS.
- 2.6 METAL CLAD CABLE, TYPE MC, BRANCH CIRCUITS. PROVIDE METAL CLAD CABLE AS FOLLOWS: #12 OR #10 AWG AS REQUIRED. THREE CONDUCTOR ONLY (ONE CONDUCTOR GROUNDING GREEN INSULATION) 600 VOLT RATED INSULATION ON CONDUCTOR. MAKE: AFC "MC" OR GENERAL CABLE, ALFLEX.
- 2.7 DEVICES SHALL BE AS CALLED FOR ON SYMBOL LIST. INSTALL IN METAL BOX, SIZED FOR QUANTITY OF DEVICES AND WIRES INSTALLED. PROVIDE MATCHING SMOOTH, STAINLESS STEEL PLATES. DEVICES AS LEVITON 1221 SERIES SWITCHES, COLOR AS SELECTED BY ARCHITECT, LEVITON 5800 SERIES RECEPTACLES, COLOR AS SELECTED BY ARCHITECT. HUBBELL, PASS AND SEYMOUR OR LEVITON. PASS 4 SEYMOUR LINED PLATES NOT ACCEPTABLE.
- 2.8 NON-METALLIC DEVICE BOXES, NOT PERMITTED.
- 2.9 LIGHTING FIXTURES SHALL BE AS SCHEDULED ON PLANS. PROVIDE ALL REQUIRED MOUNTING, CONNECTION, AND ALIGNMENT ACCESSORIES REQUIRED FOR COMPLETE INSTALLATION. PROVIDE WITH "DAMP", "WET" INSULATED CEILING OR OTHER RATINGS TO MEET CONDITIONS. ALL ELECTRONIC BALLAST TO HAVE RATING OF LESS THAN 10% TOTAL HARMONIC DISTORTION.
- 2.10 EXIT AND EMERGENCY LIGHTING EQUIPMENT SHALL BE AS SCHEDULED.

- X. DESCRIPTION: UNIVERSAL MOUNTED EXIT SIGN, BRUSHED ALUMINUM STENCIL FACE, MATTE BLACK METAL HOUSING, RED PANEL, SINGLE OR DOUBLE FACE AS SPECIFIED. PROVIDE MOUNTING. BATTERY POWER SUPPLY. LITHONIA SERIES: SIGNATURE LED SERIES MOUNTING: SURFACE, CEILING, PENDANT OR WALL MOUNTED WHERE NOTED OR REQUIRED. NOTES: HIGH POWER FACTOR, DUAL-LITE, LIGHTALARMS, PRESCOLITE SUBSTITUTES:
- BU. DESCRIPTION: SURFACE WALL MOUNTED BATTERY UNIT WITH HIGH-IMPACT POLYCARBONATE HOUSING, WHITE, DUAL INTEGRAL HEADS AND/OR REMOTE HEADS AS CALLED FOR, SMOOTH CORNERED ARCHITECTURAL DESIGN, 6 VOLT OUTPUT. LITHONIA SERIES: GELUM 2 (2) 8 WATT HALOGEN WHERE CALLED FOR MOUNTING: SURFACE, WALL PROVIDE BLOCKING. NOTES: DUAL-LITE, HALORIDE SUBSTITUTES:

- BU-O. SAME AS TYPE "BU", EXCEPT WITHOUT HEADS.
- EL. DESCRIPTION: REMOTE FLOOD HEADS, THERMOPLASTIC, DUAL HEADS WITH COMMON BACK PLATE. WHITE ON WHITE OR LIGHT SURFACES, BLACK ON DARK OR BRICK SURFACES. LITHONIA SERIES: PAR 36 SERIES LAMPS: (1) OR (2) 8W 6 VOLT HALOGEN MOUNTING: SURFACE, WALL SUBSTITUTES: EMERGENCY POWER FROM BATTERY UNIT EQUIPMENT.

- 2.11 WHERE PANELBOARDS ARE EXISTING, PROVIDE NEW BREAKERS AS CALLED FOR. BREAKERS TO BE AVAILABLE FOR INSTALLATION IN EXISTING PANELS. MAINTAIN PANEL FAULT CURRENT RATING. VERIFY PANEL TYPE, CAPACITY, MOUNTING DETAILS ON SITE. PROVIDE ALL REQUIRED HARDWARE FOR COMPLETE INSTALLATION. PROVIDE NEW, TYPED PANEL SCHEDULE LISTING ALL LOADS.
- 2.12 DISCONNECTS TO BE NEMA 1 OR 3R AS CALLED FOR, HEAVY DUTY, 250 VOLT, FUSED, WITH NEUTRAL AND GROUND KITS. PROVIDE SIZE AS REQUIRED FOR EQUIPMENT BEING SERVED. CONFIRM WITH APPROVED EQUIPMENT SHOP DRAWINGS. PROVIDE FUSES AS REQUIRED. MATCH EQUIPMENT NAME PLATES. ITE, SQUARE D, GENERAL ELECTRIC.
- 2.13 FIRE ALARM SYSTEM SHALL BE EXISTING TO BE MODIFIED AS SHOWN. FIRELOGIC ADDRESSABLE, NON-CODED AUTOMATIC AND MANUAL SYSTEM. THE COMPLETE SYSTEM SHALL BE UL LISTED AS INDIVIDUAL COMPONENTS AND AS A COMPLETE SYSTEM. STROBE CIRCUITS SHALL BE FULLY SYNCHRONIZED. SYSTEM SHALL MEET WITH APPROVAL OF NEW HAMPSHIRE FIRE MARSHALL'S OFFICE, DEPARTMENT OF LABOR AND INDUSTRY AND LEBANON FIRE DEPARTMENT.

- SUBMIT PLANS TO FIRE DEPARTMENT PRIOR TO ROUGH-IN FOR REVIEW.

- 2.14 INITIATION AND NOTIFICATION DEVICES: MANUAL PULL STATIONS, HEAT AND SMOKE DETECTORS, MONITOR AND CONTROL MODULES, AND HORN, STROBE, SPEAKER AND COMBINATION NOTIFICATION DEVICES SHALL BE MANUFACTURERS STANDARD PRODUCTS TO MATCH PANEL.
- MANUAL PULL STATION - EXTRUDED ALUMINUM CONSTRUCTION (PLASTIC HOUSING NOT ACCEPTABLE), RED ENAMEL FINISH, RAISED LETTER LABEL, SINGLE OR DOUBLE ACTION PER FIRE DEPARTMENT REQUIREMENTS, RESETTABLE WITH KEY SWITCH OR SCREEN DRIVER PER FIRE DEPARTMENT REQUIREMENTS. OPERATION: PULLING STATION'S HANDLE WILL RELEASE THE INTERNAL SWITCH TO TRIGGER THE ALARM DETECTION CIRCUIT.
- AUTOMATIC THERMAL DETECTOR: ADDRESSABLE, PLUG IN SENSOR, FIXED OR RATE-OF-RISE AS INDICATED ON DRAWINGS WITH TEMPERATURE RATINGS AS INDICATED ON DRAWINGS, LOW PROFILE HOUSING, BUILT-IN TEST SWITCH.
- PHOTO ELECTRIC SMOKE DETECTOR - ADDRESSABLE, PLUG-IN OPTICAL SENSOR, PROGRAMMABLE SENSITIVITY WITH CONTINUAL MONITORING, LOW PROFILE HOUSING.
- DUCT SMOKE DETECTOR - IONIZATION HEAD WITH AIR TIGHT CHAMBER, SAMPLE TUBE, INTEGRAL MOUNTING BASE, SAMPLE TUBE WITH FIELD TRIM ASLE 48 INCHES LONG, CAPABLE OF HANDLING 500 TO 4,000 FPM, AUXILIARY CONTACTS FOR FAN SHUT-DOWN WIRING. LEATHERPROOF RATED WHERE SHOWN ON DRAWINGS AT BUILDING EXTERIOR.

- HORN, STROBE, SPEAKER, AND COMBINATION NOTIFICATION DEVICES - FIELD SELECTABLE CANDELA RATINGS, XENON FLASH TUBE, CLASS 'A' AND CLASS 'B' COMPATIBLE, SYNCHRONIZATION MODULE, SPEAKER FREQUENCY FROM 400 TO 4,000 HZ, MULTIPLE SPEAKER POWER TAPS, ADA COMPATIBLE, HORN UNITS SHALL HAVE FREQUENCY AND SOUND LEVELS PER NFPA 72.

- 2.15 CATV SYSTEM WIRING TO BE 75 OHM, COAX CABLE, BRAIDED COPPER CONCENTRIC GROUND, RG-6, GENERAL CABLE, BELDEN, WEST PENN OR CAROL.
- 2.16 CATV SYSTEM OUTLETS TO BE INSTALLED IN FLUSH DEVICE BOX. PLATES TO BE COLOR AS SELECTED BY ARCHITECT SMOOTH WITH COAX THREADED FITTING.

- 2.17 WIRING SHALL BE TESTED TO DEMONSTRATE COMPLIANCE WITH BICSI STANDARDS ELECTRONIC AND PAPER COPY OF THE TEST REPORT FOR EACH RUN WITHIN EACH BUILDING PROVIDED TO THE OWNER FOR REVIEW AND RECORD.

- 2.18 VOICE AND DATA CABLING SYSTEMS: PROVIDE LABOR, MATERIALS, EQUIPMENT AND SERVICES TO PREPARE AND OPERATIONS REQUIRED FOR THE COMPLETE INSTALLATION AND RELATED WORK AS REQUIRED IN CONTRACT DOCUMENT.

- ORGANIZE SUBMITTALS IN BOUND BROCHURES CONTAINING DESCRIPTIVE INFORMATION FOR EACH OF THE SUBMITTALS. PROVIDE THE SCOPE OF THIS WORK: WORK AREA OUTLETS, WALL PLATES AND JACKS/CONNECTORS, WALL BOXES, SURFACE HOUSINGS, CONDUIT, BUSHINGS, SLEEVES, RACEWAY, AND ACCESSORIES. HORIZONTAL CABLES. CROSS CONNECT BLOCKS. CABLE MANAGEMENT ACCESSORIES.

- WORK AREA (STATION) OUTLETS: FACEPLATE WITH LABEL STRIPS AND CLEAR LABEL STRIP PLASTIC COVERS TOP AND BOTTOM, NUMBER OF PORTS PER FACEPLATE AS SHOWN ON DRAWINGS. MAKE: HUBBELL 11P SERIES OR SIEMENS, PANDUIT, ORTRONICS.

- SINGLE PORT NYLON FACEPLATE TO PROVIDE WALL PHONE COMPATIBILITY. MAKE: HUBBELL BR630 SERIES OR SIEMENS, PANDUIT, ORTRONICS.

- CATEGORY 6, 110 STYLE MODULAR JACK, T568B WIRING, WITH PROVISION FOR STRAIN RELIEF AFTER TERMINATION. RED COLOR FOR DATA, GREY COLOR FOR VOICE. MAKE: HUBBELL HX16 SERIES OR SIEMENS, PANDUIT, ORTRONICS.

- HORIZONTAL CABLING: NON-PLENUM RATED CATEGORY 6 CABLING SHALL BE FOUR-PAIR 100-OHM UNSHIELDED TWISTED-PAIR (UTP) 24 AWG, WITH SOLID COPPER CONDUCTORS. ALL INSULATION SHALL BE THE SAME MATERIAL. PLENUM RATED CATEGORY 6 CABLING SHALL MEET REQUIREMENTS OF ANSI/TIA/EIA-568-B AND BE UL LISTED FOR THAT PURPOSE. MAKE: SUPERIOR ESSEX OR MOHAWK, GENERAL CABLE, COMMScope, HITACHI, BERK-TEK.

- CROSS CONNECT BLOCKS: CATEGORY 6 MODULAR 110 CROSS CONNECT BLOCK WITH LESS, LABELS, AND HOLDERS, 50 PAIR. MAKE: HUBBELL CAT 6 110 SERIES OR SIEMENS, PANDUIT, ORTRONICS.

- CABLE MANAGEMENT ACCESSORIES: NON-METALLIC SPLIT RINGS FOR WIRE PATH MANAGEMENT, WITH SCREEN HOLES FOR SURFACE MOUNTING TO WALLS, CEILING, AND BACKBOARDS. MAKE: HUBBELL MCCPSR SERIES OR SIEMENS, PANDUIT, ORTRONICS.

- VERIFY LOCATION OF ALL WALL OUTLETS WITH OWNER'S REPRESENTATIVE BEFORE REINSTALLING. THIS SPECIFICATION IS BASED ON EIA/TIA 568A WIRING TERMINATIONS. THIS CONTRACTOR SHALL VERIFY WITH OWNER, IN WRITING, IF 568A OR 568B WIRING IS EXISTING. THIS CONTRACTOR SHALL THEN MATCH THAT WIRING.

- WORK AREA OUTLETS SHALL CONSIST OF THE FOLLOWING: ONE SINGLE GANG FACEPLATE, NUMBER OF PORTS AS SHOWN ON DRAWINGS, COLOR TO MATCH OTHER FACE PLATES IN ROOM. ONE CATEGORY 6, 110 STYLE MODULAR JACK, T568B WIRING BY LABEL COLOR, 100% QUANTITY AS SHOWN ON DRAWINGS. ONE OUTLET BOX INSTALLED IN THE WALL, MINIMUM 4 IN. BY 4 IN. BY 2-1/8 IN. DEEP, WITH SINGLE GANG EXTENDER RING TO ACCOMMODATE THE THICKNESS OF THE FINISH WALL AND PROVIDE A TOTAL BOX DEPTH OF AT LEAST 2-1/2" TO PROVIDE ROOM FOR PROPER CABLE BEND RADIUS.

- WALL TELEPHONE OUTLETS SHALL CONSIST OF THE FOLLOWING: ONE SINGLE PORT STAINLESS STEEL FACEPLATE TO PROVIDE WALL PHONE COMPATIBILITY. ONE CATEGORY 6, 110 STYLE MODULAR JACK, T568B WIRING, DESIGNATED BY LABEL, COLOR, 4 ICON. ONE OUTLET BOX INSTALLED IN THE WALL, MINIMUM 4 IN. BY 4 IN. BY 2-1/8 IN. DEEP, WITH SINGLE GANG EXTENDER RING TO ACCOMMODATE THE THICKNESS OF THE FINISH WALL AND PROVIDE A TOTAL BOX DEPTH OF AT LEAST 2-1/2" TO PROVIDE ROOM FOR PROPER CABLE BEND RADIUS.

- CAT6 PHONE AND DATA TELECOMMUNICATIONS OUTLETS SHALL CONSIST OF THE FOLLOWING: ONE SINGLE GANG FACEPLATE, NUMBER OF PORTS AS SHOWN ON DRAWINGS, COLOR TO MATCH OTHER FACE PLATES IN ROOM. CATEGORY 6, 110 STYLE MODULAR JACK, T568B WIRING, DESIGNATED BY LABEL, COLOR, 4 ICON, QUANTITY PER OUTLET AS SHOWN ON DRAWINGS. ONE OUTLET BOX INSTALLED IN THE WALL, MINIMUM 4 IN. BY 4 IN. BY 2-1/8 IN. DEEP, WITH SINGLE GANG EXTENDER RING TO ACCOMMODATE THE THICKNESS OF THE FINISH WALL AND PROVIDE A TOTAL OF DEPTH OF AT LEAST 2-1/2" TO PROVIDE ROOM FOR PROPER CABLE BEND RADIUS.

- THE LENGTH OF EACH HORIZONTAL CABLE RUN SHALL NOT EXCEED 245 FEET. HORIZONTAL CABLE IS DEFINED AS THAT LENGTH OF CABLE FROM THE BACK OF THE WORKSTATION OUTLET TO THE BACK OF THE PATCH PANEL OR CONNECTING BLOCK IN THE TELECOMMUNICATIONS CLOSET. HORIZONTAL CABLE SHALL BE A CONTINUOUS RUN OF CABLE WITH NO SPLICES, BRIDGES, OR OTHER DISCONTINUITIES.

- EACH WORK AREA JACK FOR COMPUTER CONNECTION SHALL BE SUPPORTED BY (1) CATEGORY 6 CABLES WITH ORANGE SHEATH (OR MARKED WITH ORANGE TAPE). CABLE ENDS AND ASSOCIATED CONNECTORS SHALL BE GIVEN A PERMANENT, UNIQUE LABEL AT BOTH WORK AREA AND CROSS CONNECT ENDS TO CLEARLY IDENTIFY HORIZONTAL WIRING CONNECTION AND FUNCTION (DATA).

- EACH WORK AREA OUTLET FOR TELEPHONE CONNECTION SHALL BE SUPPORTED BY (1) CATEGORY 6 CABLE WITH BLUE SHEATH (OR MARKED WITH BLUE TAPE). CABLE ENDS AND ASSOCIATED CONNECTORS SHALL BE GIVEN A PERMANENT, UNIQUE LABEL AT BOTH WORK AREA AND CROSS CONNECT ENDS TO CLEARLY IDENTIFY HORIZONTAL WIRING CONNECTION AND FUNCTION (VOICE).

- TESTING: CONTRACTOR SHALL PROVIDE ALL NECESSARY TESTING EQUIPMENT TO TEST ALL CABLES. THE PERMANENT LINK TEST CONFIGURATION DEFINED IN TIA/EIA 568B SHALL BE USED TO VERIFY THE PERFORMANCE OF PERMANENTLY INSTALLED CABLING. USING CATEGORY 6 CABLE, ALL HORIZONTAL CABLING SHALL BE TESTED AND CERTIFIED FOR WIRE MAP, LENGTH, ATTENUATION, AND NEAR-END CROSSTALK (NEXT) LOSS AND MEET THE REQUIREMENTS OF TIA/EIA 568B PERMANENT LINK SPECIFICATION.

- CONDUIT: MINIMUM 1" CONDUIT SHALL BE INSTALLED IN ALL NEW WALLS AND SHALL BE RUN TO ABOVE ACCESSIBLE CEILING (SEE DRAWINGS FOR CONDUIT SIZE). TERMINATE ALL CONDUITS WITH BUSHINGS. CONDUIT BENDS MUST HAVE A RADIUS OF NOT LESS THAN 6 TIMES THE INTERNAL DIAMETER OF CONDUITS 2 INCHES OR SMALLER AND 10 TIMES THE INTERNAL DIAMETER OF CONDUITS LARGER THAN 2 INCHES. CONDUITS FOR PULLING UP CABLE RUNS SHALL CONTAIN NOT MORE THAN (2) 90 DEGREE CHANGES OF DIRECTION OR A TOTAL OF 180 DEGREES.

3.0 PART 3 - EXECUTION

- 3.1 WORK SHALL BE COMPLETED BY NEW HAMPSHIRE LICENSED ELECTRICIANS IN A WORKMANLIKE MANNER, CONSISTENT WITH STANDARD PRACTICE, AND PRESENT A NEAT AND FINISHED APPEARANCE PRIOR TO FINAL ACCEPTANCE BY OWNERS REPRESENTATIVE.

- 3.2 VERIFY STRUCTURAL, ARCHITECTURAL, AND MECHANICAL CONDITIONS (BEAM CLEARANCES, DOOR SWINGS, COUNTER HEIGHTS, AND DUCT CLEARANCES) PRIOR TO ROUGH IN.

- 3.3 ELECTRICAL WORK SHALL BE CAREFULLY LAID OUT AND COORDINATED WITH OTHER TRADES, UTILITIES, AND SITE CONDITIONS. CUTTING, DRILLING, AND ALTERATIONS TO OTHER WORK SHALL BE PLANNED IN ADVANCE WITH THE GENERAL CONTRACTOR AND BE CAREFULLY DONE. DAMAGE SHALL BE REPAIRED BY SKILLED MECHANICS, TO THE SATISFACTION OF THE OWNERS REPRESENTATIVE.

- 3.4 THE CONTRACTOR SHALL PROTECT AND KEEP CLEAN ELECTRICAL EQUIPMENT, PANELS, FIXTURES, AND DEVICES.

- 3.5 THE CONTRACTOR SHALL PROVIDE INFORMATION ABOUT HIS EQUIPMENT TO THE GENERAL CONTRACTOR FOR COORDINATION.

- 3.6 THE CONTRACTOR SHALL VERIFY FINAL LOCATIONS AND CAPACITIES OF MECHANICAL, HVAC, AND OWNERS EQUIPMENT ON SITE PRIOR TO ROUGH IN.

- 3.7 METAL RACEWAY SYSTEMS, AND ELECTRICAL EQUIPMENT SHALL BE BONDED AND GROUNDING AS CALLED FOR AND PER NEC 250. CONDUIT, CABLE AND RACEWAY FITTINGS, LUGS, BOLTS, AND CONNECTIONS SHALL BE DESIGNED FOR THE PURPOSE AND CONDITIONS UNDER WHICH THEY ARE INSTALLED. EQUIPMENT SHALL BE PROPERLY INSTALLED AND TIGHTENED TO ASSURE MECHANICAL AND ELECTRICAL CONTINUITY. NO CONDUIT SHALL BE INSTALLED ABOVE TOP CHORD OF BAR JOISTS OR STEEL BEAMS.

- 3.8 SURFACE METAL RACEWAY TO BE INSTALLED WITH MANUFACTURER'S STANDARD FITTINGS WHERE POSSIBLE. FIELD BENDS AND OFFSETS WHERE REQUIRED, SHALL BE MADE WITH MANUFACTURER'S STANDARD BENDING TOOL. INSTALL RACEWAY PARALLEL TO BUILDING STRUCTURE. MINIMIZE EXPOSED LENGTHS. FIELD VERIFY ACCEPTABLE LOCATIONS WITH OWNER'S REPRESENTATIVE ON SITE.

- 3.9 WIRING SHALL BE CONCEALED IN WALLS AND ABOVE CEILING IN FINISHED AREAS AND WHEREVER POSSIBLE. WIRING IN UTILITY MAY BE EXPOSED. EXPOSED WIRING SHALL BE IN CONDUIT, BE NEAT AND PARALLEL TO STRUCTURE. NO WIRING SHALL BE INSTALLED ABOVE TOP CHORD OF JOISTS.

- 3.10 WIRING SHALL BE SEPARATED AND MARKED TO INDICATE PHASE AND FUNCTION. WIRING SIZE # 10 AND SMALLER SHALL BE SOLID COLOR INSULATION. WIRING #6 AND LARGER MAY BE BLACK INSULATION WITH PHASE TAPE APPLIED TO EACH END AND AT JUNCTION BOXES. LABEL ALL PANELS WITH WIRING COLOR SCHEME, PER NEC. BUILDING WIRING SHALL BE COLOR CODED AS FOLLOWS:

- PHASE A BLACK
PHASE B RED
PHASE C BLUE
NEUTRAL WHITE
GROUND GREEN

- 3.11 CONDUITS, RACEWAYS, AND CABLES SHALL BE PROPERLY AND SECURELY ATTACHED TO BUILDING STRUCTURAL COMPONENTS AS CALLED FOR AND PER NEC. FASTENERS AND HARDWARE SHALL BE APPROVED FOR THE INSTALLATION AND CONDITIONS ENCOUNTERED.

- 3.12 EACH OUTLET OR JUNCTION IN ANY WIRING SYSTEM SHALL BE MADE IN AN APPROVED, METALLIC JUNCTION BOX. BOX SHALL BE SUITABLE FOR THE SIZE AND NUMBER OF CONDUCTORS AND DEVICES INSTALLED, AND CONDITIONS ENCOUNTERED. SPLICES SHALL BE MADE WITH APPROVED MECHANICAL CONNECTORS.

- 3.13 CIRCUITS NOT OTHERWISE CALLED FOR SHALL BE 20 AMP, 120 VOLT, SINGLE PHASE, 2 WIRE WITH GROUND. CONDUIT HOME RUNS MAY BE COMBINED PROPERLY PHASED AND BALANCED, AT THE DISCRETION OF THE ELECTRICAL CONTRACTOR. CONFIRM PHASE ROTATION OF ALL EQUIPMENT. CORRECT WIRING AS REQUIRED FOR PROPER OPERATION.

- 3.14 INTENT OF CONTRACT DOCUMENTS IS TO MEET CITY OF LEBANON FIRE DEPARTMENT REQUIREMENTS FOR THE LIMITED RENOVATIONS CALLED FOR. CONTACT FIRE DEPARTMENT PRIOR TO BIDDING. OBTAIN COPY OF LATEST CITY OF LEBANON "FIRE ALARM RULES AND REGULATIONS". NOTIFY ENGINEER OF ANY REQUIRED ALTERNATIONS OR ADDITIONS TO SYSTEMS. NO ALLOWANCE FOR ADDITIONAL COMPENSATION WILL BE PERMITTED FOR FAILURE TO DETERMINE FIRE DEPARTMENT REQUIREMENTS PRIOR TO BIDDING.

- 3.15 FIRE ALARM VENDORS/MANUFACTURERS SHALL PREPARE MATERIALS IN COORDINATION WITH DIVISION 26 CONTRACTOR. DIVISION 26 CONTRACTOR SHALL PREPARE MATERIALS IN COORDINATION WITH DIVISION 26 CONTRACTOR AND INCLUDE MATERIALS FROM VARIETY OF VENDORS AND SUPPLIERS AS MAY BE NEEDED.

- 3.16 PROVIDE SUBMITTALS FOR THE ENTIRE SYSTEM INCLUDING: COMPLETE EQUIPMENT LIST INCLUDING QUANTITIES, CATALOG DESCRIPTIVE LITERATURE FOR ALL EQUIPMENT, RISER WIRING DIAGRAM, ALL DEVICES, WIRE QUANTITY AND ZONE ZONE, TYPICAL TERMINAL WIRING DIAGRAM FOR EACH TYPE OF DEVICE. TERMINAL WIRING DIAGRAM FOR THE FIRE ALARM CONTROL PANEL. CALCULATIONS, INCLUDING ACTUAL EQUIPMENT LOADS AND QUANTITIES USED TO DERIVE BATTERY BACKUP AMPERE-HOUR RATING.

- 3.17 SUBMITTAL OF FIRE ALARM SHOP DRAWINGS SHALL CONTAIN AT LEAST ONE (1) BOOKLET OF ORIGINAL MANUFACTURER SPECIFICATION AND INSTALLATION INSTRUCTION SHEETS. SUBSEQUENT BOOKLETS MAY BE COPIES. CONFIRMATION OF SUBMITTAL OF COPY OF FINAL PLANS, SPECIFICATIONS AND SHOP DRAWINGS TO LOCAL AND STATE FIRE DEPARTMENT FOR APPROVAL.

- 3.18 DIVISION 26 CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF THE FIRE ALARM SYSTEM SUBMITTAL. SUCH COORDINATION SHALL INCLUDE WORKING WITH SELECTED FIRE ALARM SYSTEM VENDOR, THE PROJECT GENERAL CONTRACTOR, THE PROJECT FIRE PROTECTION/SPRINKLER SYSTEM SUB-CONTRACTOR, AND THE OWNER'S REPRESENTATIVE TO SECURE WRITTEN APPROVALS OF THE FIRE ALARM SYSTEM PRIOR TO CONSTRUCTION. COPIES OF WRITTEN CORRESPONDENCE RECEIVED FROM THE FIRE DEPARTMENT OR THE STATE FIRE MARSHAL SHALL BE COPIED TO THE OWNER'S REPRESENTATIVE AND THE ARCHITECT FOR REVIEW AND COMMENT PRIOR TO IMPLEMENTING ANY REQUESTED CHANGES BY EITHER OF THESE DEPARTMENTS.

- 3.19 VENDOR LAYOUT: THE INTENT OF THE CONTRACT DOCUMENTS IS TO PROVIDE A FIRE ALARM SYSTEM WITH HORNS, STROBES, AND/OR COMBINATION UNITS COMPLYING WITH CODES AND STANDARDS NOTED. SYSTEM VENDORS AND/OR MANUFACTURER'S REPRESENTATIVE SHALL FAMILIARIZE HIMSELF WITH THE CONTRACT DOCUMENTS, INCLUDING PLANS, DETAILS, ARCHITECTURAL ELEVATIONS AND BUILDING SECTIONS AND THE LOCATION OF ALARM INDICATING APPLIANCES. VENDOR SHALL CONFIRM THAT THE STYLE, CAPACITY, NEMA RATING, AND OPERATIONAL CHARACTERISTICS OF THIS EQUIPMENT ARE SUITABLE FOR THE USE AND LOCATION SHOWN. SPECIFIC ATTENTION IS CALLED TO ADA GUIDELINES AND NFPA 72, REPAIRING STROBE EQUIPMENT LAYOUT, PLACEMENT AND CANDELLA RATING. VENDOR SHALL INCLUDE WRITTEN CONFIRMATION AS PART OF SUBMITTAL THAT EQUIPMENT AS SUBMITTED COMPLIES WITH STANDARDS AND INTENDED USE, SPACING AND LOCATION OR PROVIDE WRITTEN SUMMARY OF ANY EXCEPTIONS TO SUCH COMPLIANCE ON A CASE BY CASE BASIS.

- 3.20 FIRE ALARM SYSTEM SHOP DRAWINGS - INCLUDING BATTERY CALCULATIONS AND EQUIPMENT CUT SHEETS, ALONG WITH CONTRACT DRAWINGS, SHALL BE SUBMITTED BY DIVISION 26 TO BOTH THE LEBANON FIRE DEPARTMENT AND THE STATE OF NEW HAMPSHIRE FIRE MARSHALL'S OFFICE FOR REVIEW AND APPROVAL. SUBMIT IN AMPLE TIME TO ALLOW FOR REVIEW AND APPROVAL TIME PRIOR TO INSTALLATION.

- 3.21 FIRE ALARM SYSTEM ADDITIONS AND RENOVATIONS SHALL BE 100% TESTED IN ACCORDANCE WITH NFPA 72. PROVIDE WRITTEN AND SIGNED REPORT INDICATING SCOPE OF TEST, DATE OF TEST, PERSON PERFORMING TEST, DEVICES TESTED AND ANY ABNORMALITIES. USE AND COMPLETE FORM IN NFPA 72. SUBMIT COMPLETED FORM FOR REVIEW PRIOR TO FINAL ACCEPTANCE. CORRECT ALL ABNORMALITIES AND RETEST. PROVIDE 100 PER CENT TESTING, COORDINATE WITH OWNER AND LEBANON FIRE DEPARTMENT.

- 3.22 COORDINATE EXISTING ELECTRICAL SYSTEMS SERVING OWNER OCCUPIED SPACES AND MAINTAIN SERVICE FOR OWNERS USE. SCHEDULE ALL REQUIRED SYSTEM DOWN TIMES AND OUTAGES WITH OWNER'S REPRESENTATIVE IN WRITING, MINIMUM OF 48 HOURS IN ADVANCE OF WORK.

- 3.23 PROVIDE PHASE/SEQUENCE TESTING PRIOR TO DISCONNECTING ANY EQUIPMENT OR CIRCUITS. TAG WIRING, RETEST AND CONFIRM ROTATION PRIOR TO RECONNECTING EXISTING EQUIPMENT OR START UP OF PROPOSED EQUIPMENT.

- 3.24 DEMOLISH AND REMOVE ALL EXISTING SYSTEM DEVICES, EQUIPMENT AND WIRING AFTER REPLACEMENT SYSTEMS ARE FULLY FUNCTIONAL. SYSTEMS INCLUDE EXISTING LIGHTING, POWER, FIRE ALARM, AND COMMUNICATIONS SYSTEMS.

END OF SECTION 26 50 00

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PROJECT TITLE / ADDRESS: RVCC LEBABON-LNA/LPN LAB RENOVATIONS

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SCALE: AS NOTED DWN BY: SMT
JOB #: 3613 CHKD BY: CFH

PRINT DATE: 01/31/2020

ISSUE DATE: JANUARY 31, 2020
FOR CONSTRUCTION

REVISION: DATE: COMMENTS:

ELECTRICAL SPECIFICATIONS

SHEET NUMBER: OF ? MECHANICAL

THE DRAWING AND ITS CONTENT IS THE INTELLECTUAL

three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarter inch = one foot
one quarter inch = one foot
one eighth inch = one foot
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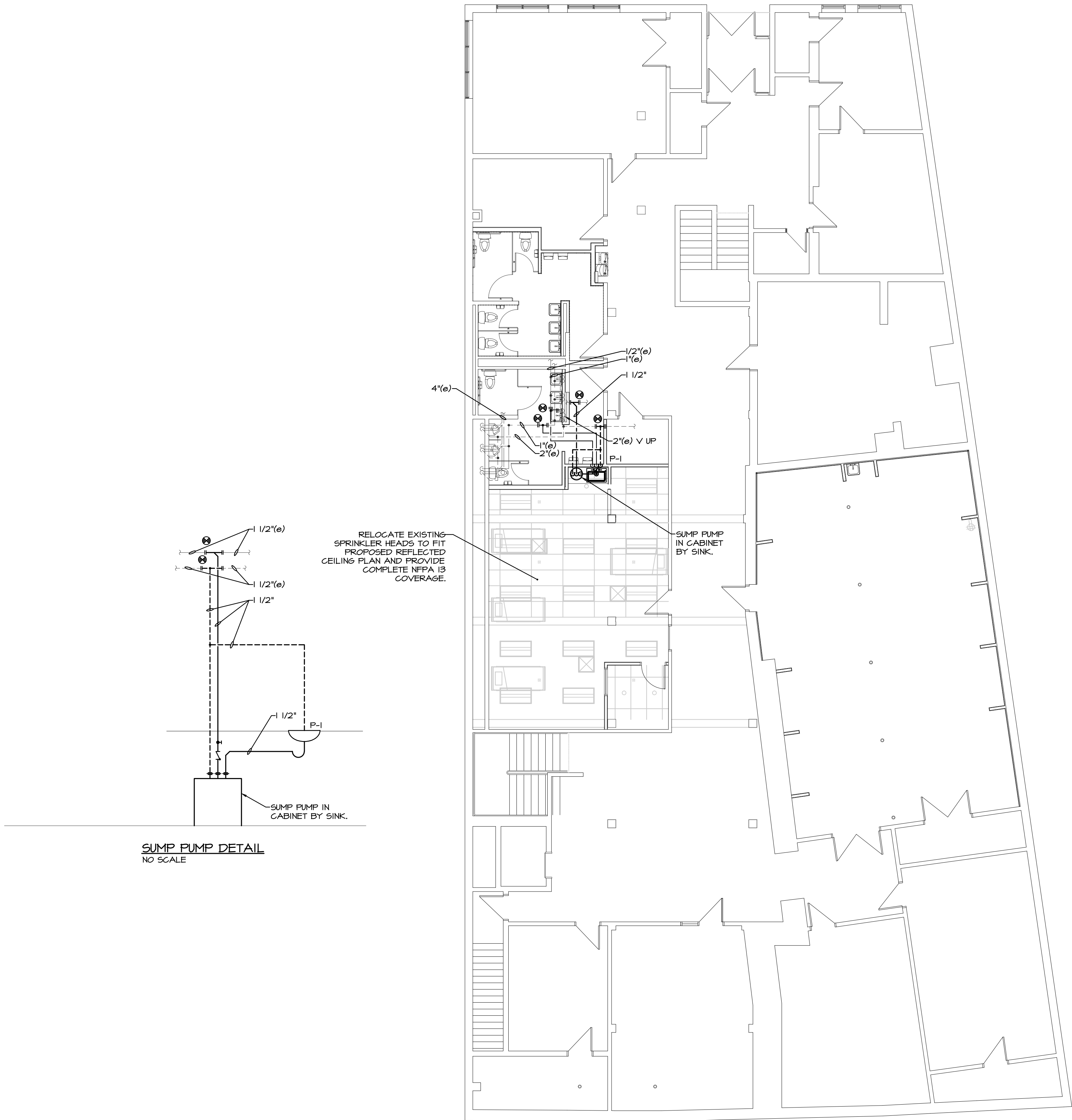
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PLUMBING FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"



PLUMBING SYMBOL LIST			
ALL SYMBOLS ARE NOT NECESSARILY USED			
SYMBOLS	DESCRIPTION	ABBREVIATION	
	SANITARY SOIL AND WASTE ABOVE GROUND	SW	
	SANITARY SOIL AND WASTE BELOW GROUND/SLAB	SW	
	SANITARY VENT	V	
	VENT BELOW GROUND/SLAB	V	
	COLD WATER	CW	
	HOT WATER	HW	
	HOT WATER RECIRC	HWRC	
	SHUTOFF VALVE		
	SHUTOFF VALVE		
	CHECK VALVE	CV	
	GLOBE VALVE	GLV	
	FLOW (BALANCING VALVE)	FBV	
	CONTROL VALVE	CLV	
	PRESSURE REDUCING VALVE	PRV	
	WATER METER	WM	
	PIPING DROP OR DOWN THROUGH FLOOR	DROP, DN	
	PIPING RISE OR UP THROUGH CEILING	RISE, UP	
	CLEANOUT	CO	
	WALL CLEANOUT	WCO	
	DECK PLATE CLEANOUT	DPCO	
	FLOOR OR ROOF DRAIN	FD, RD	
	WATER HAMMER ARRESTER	WHA	
	FUEL GAS	G	
	LIQUID PETROLEUM GAS	LPG	
	PRESSURE & TEMPERATURE RELIEF VALVE	PTV	
	PRESSURE RELIEF VALVE	RV	
	STRAINER		
	UNION		
	PRESSURE GAUGE		
	THERMOMETER		
	WATER HYDRANT	WH	
	HOSE BIBB	HB	
	NEW TO EXISTING CONNECTION		
	NEW TO FUTURE CONNECTION		
PG	PUMPED CONDENSATE	AR	ARGON
PD	PUMPED DISCHARGE	O2	OXYGEN
COND	COIL CONDENSATE	VAC	VACUUM
CA	COMPRESSED AIR	N2	NITROGEN
DI	DEIONIZED WATER		

FIXTURE CONNECTION SCHEDULE								
SYM	FIXTURE	SUP	TRP	MINIMUM BRANCH SIZE				REMARKS
				WASTE	VENT	COLD	HOT	
P-1	SINK	3/8	1-1/4	1-1/2	1-1/2	1/2	1/2	DROP IN, ADA COMPLIANT

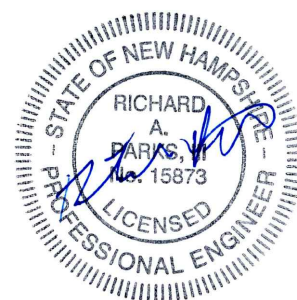
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FOR CONSTRUCTION

REVISION	DATE	COMMENTS

PLUMBING FIRST
FLOOR PLAN

P-1

SHEET NUMBER: - OF ? PLUMBING

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SECTION 22 40 00 - PLUMBING SPECIFICATION

1.0 PART 1 - GENERAL

- 1.1 THE SCOPE OF WORK IS TO PROVIDE LABOR, MATERIALS, SERVICES, SUPPLIES, TOOLS, EQUIPMENT, PERMITS, TRANSPORTATION AND FACILITIES NECESSARY TO FURNISH AND MODIFY EXISTING AND INSTALL THE COMPLETE AND OPERABLE SYSTEMS AS CALLED FOR.
- 1.2 THE COMPLETE INSTALLATION SHALL BE IN COMPLIANCE WITH THE APPLICABLE LATEST OR ACCEPTED EDITION OF THE INTERNATIONAL BUILDING CODE AS ADOPTED BY THE STATE OF NEW HAMPSHIRE, NFPA, AND OTHER APPLICABLE RULES AND REGULATIONS AS PRESCRIBED BY THE ADMINISTRATIVE AUTHORITY.
- 1.3 THESE DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND EQUIPMENT. BASIC DESIGN CONCEPTS MUST BE FOLLOWED OR BETTERED. DO NOT SCALE DRAWINGS. FIELD VERIFY DIMENSIONS AND FIELD CONDITIONS.
- 1.4 IT IS NOT INTENDED THAT DRAWINGS SHOW EVERY DETAIL. PROVIDE OFFSETS, CHANGES IN ELEVATION AND ITEMS NECESSARY FOR PROPER INSTALLATION AND OPERATION OF SYSTEM SO THAT WORK WILL BE COMPLETE AND READY FOR OPERATION.
- 1.5 COORDINATE WORK WITH OTHER TRADES, BUILDING CONDITIONS AND STRUCTURAL CONDITIONS PRIOR TO INSTALLATION.
- 1.6 COORDINATE UTILITY SERVICE WORK WITH LOCAL SERVICE PROVIDERS AND THE OWNER'S GAS SERVICE PROVIDER. CONTACT UTILITY COMPANY PRIOR TO SUBMISSION OF BID. INCLUDE ALL UTILITY FEES AND COSTS TO THIS PROJECT BID.
- 1.7 IN THE EVENT OF A DISCREPANCY, IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE. DO NOT PROCEED WITH INSTALLATION IN AREAS OF DISCREPANCY UNTIL SUCH DISCREPANCIES HAVE BEEN RESOLVED.
- 1.8 PROVIDE IDENTIFICATION TAGS FOR VALVES, PANELS, STARTERS, AND EQUIPMENT WITH A CHART AND SCHEDULE OF LOCATION AND FUNCTION.
- 1.9 EXECUTE WORK IN A NEAT AND WORKMANLIKE MANNER IN CONFORMANCE WITH BEST MODERN TRADE PRACTICE, (I.E. ASME, ANSI, ASPE, AGA, API) BY COMPETENT, EXPERIENCED MECHANICS, PRESENTING A NEAT APPEARANCE WHEN COMPLETED. REPLACE WORK NOT APPROVED BY OWNER'S REPRESENTATIVE WITHOUT ADDITIONAL CHARGE.
- 1.10 SUBMIT ELECTRONIC PDF COPY OF COMPLETE CATALOG INFORMATION FOR MATERIALS AND EQUIPMENT. INFORMATION REQUIRED INCLUDES MANUFACTURER, CAPACITY, TYPE, CURVES, CERTIFICATION, ACCESSORIES, PHYSICAL AND PERFORMANCE DATA, FINISHES, MATERIALS AND LOCATION. CONFIRM DIMENSIONS AT JOB SITE TO INSURE THAT ITEMS TO BE FURNISHED FIT THE SPACE AVAILABLE. SUBMIT SHOP DRAWING PRIOR TO INSTALLATION OR PURCHASE WITH THE DATE, CONTRACTORS STAMP AND SIGNATURE PROVIDED. NO INSTALLATION IS PERMITTED PRIOR TO REVIEW.
- 1.11 MAINTAIN AT THE SITE ONE RECORD SET OF DRAWINGS, SPECIFICATIONS, APPENDS, CHANGE ORDERS, ACCEPTED SHOP DRAWINGS AND ACCEPTED SUBMITTALS TO REMAIN AS RECORD DRAWINGS OF THE WORK AS INSTALLED. PROVIDE ONE FULL SIZE SET OF THE CORRECTED RECORD DRAWINGS.
- 1.12 OPERATING AND MAINTENANCE MANUALS: BEFORE FINAL ACCEPTANCE OF PROJECT SUBMIT THREE (3) COPIES OF COMPLETE OPERATING INSTRUCTIONS AND SERVICE MANUALS NEATLY BOUND AND CONSISTING OF THE FOLLOWING: NEATLY TYPEWRITTEN INDEX, INSTRUCTIONS ON EQUIPMENT OPERATION, PARTS REPLACEMENT INFORMATION, GUARANTEES AND WARRANTIES, TESTING AND BALANCING REPORTS, SERVICE MANUALS, AUTOMATIC TEMPERATURE CONTROL DRAWINGS AND DIAGRAMMATIC CHARTS.
- 1.13 EQUIPMENT SHALL MEET UL AND NEC STANDARDS. EQUIPMENT AND MATERIALS FOR WHICH THERE IS A LISTING SERVICE SHALL BEAR A UL LABEL. MATERIALS SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPMENT RATING OF 50 OR LESS. MATERIAL SHALL BE ASBESTOS FREE.
- 1.14 CONCEAL CONTRACT WORK ABOVE CEILINGS AND IN WALL CHASES UNLESS OTHERWISE CALLED FOR.
- 1.15 PROVIDE CUTTING AND PATCHING AS REQUIRED FOR THE INSTALLATION OF CONTRACT WORK. PATCHING MATERIALS AND METHODS SHALL MATCH ADJACENT MATERIALS.
- 1.16 FIRE STOPPING FOR OPENINGS THROUGH FIRE AND SMOKE RATED WALL AND FLOOR ASSEMBLIES. PROVIDE MATERIALS AND PRODUCTS LISTED OR CLASSIFIED BY AN APPROVED INDEPENDENT TESTING LABORATORY FOR "THROUGH-PENETRATION FIRESTOP SYSTEMS". THE SYSTEMS SHALL MEET THE REQUIREMENTS OF "FIRE TESTS OF THROUGH-PENETRATIONS FIRESTOPS" DESIGNATED ASTM E814. PROVIDE FIRESTOP SYSTEM SEALS AT LOCATIONS WHERE PIPING, TUBING, CONDUIT, ELECTRICAL CABLES AND WIRES, DUCTWORK AND SIMILAR UTILITIES PASS THROUGH OR PENETRATE FIRE RATED WALL OR FLOOR ASSEMBLY. THE MINIMUM REQUIRED FIRE RESISTANCE RATINGS OF THE WALL OR FLOOR ASSEMBLY SHALL BE MAINTAINED BY THE FIRESTOP SYSTEM. THE INSTALLATION SHALL PROVIDE AN AIR AND WATER TIGHT SEA. PENETRATION OPENINGS SHALL BE AS SMALL AS POSSIBLE. MAKE: DON CORNING FIRESTOP SYSTEM FOAMS AND SEALANTS, NELSON ELECTRIC FIRESTOP SYSTEM PUTTY, CKL AND WRP, 3M BRAND FIRE BARRIER SYSTEM.
- 1.17 MOTORS SHALL BE SINGLE PHASE, 60 HZ, IN COMPLIANCE WITH NEMA, CLASS B TEMPERATURE RISE, 1.15 MINIMUM SERVICE FACTOR, 20,000 HR. BEARINGS. PREMIUM EFFICIENCY TYPE, IEEE STANDARD 112 METHOD B. MOTORS FOR GENERAL PURPOSES SHALL BE OPEN-DRIP-PROOF, DUSTY OR OPEN TO WEATHER SHALL BE TEFC, BELOW GRADE, DAMP OR HIGH HUMIDITY SHALL BE TEFC OR ENCAPSULATED. GENERAL ELECTRIC, GOULD, LINCOLN, RELIANCE OR WESTINGHOUSE.
- 1.18 STARTERS, CONTACTORS AND CONTROLLERS SHALL COMPLY WITH NEMA STANDARDS. SHORT CIRCUIT PROTECTION SHALL BE TIME DELAY MANUAL RESET TYPE. THERMAL OVERLOADS SHALL BE MANUAL RESET TYPE. PILOT LIGHTS SHALL BE SIX VOLT EXTENDED LIFE. EACH STARTER SUBJECT TO ELECTRICAL INTERLOCK OR AUTOMATIC CONTROL SHALL HAVE THE NECESSARY AUXILIARY CONTACTS, EQUIP WITH SELF-CONTAINED FUSED AND GROUNDED 120 VOLT CONTROL TRANSFORMERS.
- 1.19 MANUAL STARTERS SHALL BE TOGGLE OPERATED, SINGLE POLE LINE TO NEUTRAL, TWO POLE LINE TO LINE, FLUSH MOUNTED UNLESS OTHERWISE CALLED FOR.
- 1.20 DISCONNECTS SHALL BE HEAVY DUTY 250 VOLT. GENERAL PURPOSE ENCLOSURES SHALL BE NEMA 1. ALLEN-BRADLEY, CUTLER-HAMMER, GENERAL ELECTRIC, ITE, SQUARE D, WESTINGHOUSE.
- 1.21 PROVIDE WIRING CIRCUITS UP TO AND INCLUDING 120 VOLTS FOR EQUIPMENT IN DIVISION 22 "PLUMBING", INCLUDING POWER, CONTROL AND COMMUNICATION WIRING TO AND BETWEEN PANELS AND DEVICES. REFER TO E-SERIES DRAWINGS "ELECTRICAL" AND NEC FOR REQUIREMENTS FOR CONDUCTORS, RACEWAY AND WIRING DEVICES.
- 1.22 ALL OTHER POWER WIRING SHALL BE PROVIDED AS PART OF THE WORK OF E-SERIES DRAWINGS "ELECTRICAL".
- 1.23 PROVIDE COMPLETE WIRING DIAGRAMS FOR EQUIPMENT AND SYSTEMS. DELIVER WIRING DIAGRAMS TO PROPER PARTIES IN TIME FOR ROUGHING OF CONDUIT AND EQUIPMENT CONNECTIONS TO AVOID DELAY IN CONSTRUCTION SCHEDULE. WIRING DIAGRAMS AND ROUGHING INFORMATION TO CLEARLY INDICATE ITEMS TO BE MOUNTED AND/OR WIRED AS PART OF THE WORK OF E-SERIES DRAWINGS, "ELECTRICAL".

2.0 PART 2 - PIPING AND PIPING ACCESSORIES

- 2.1 COPPER PIPE AND SOLDER FITTINGS: HARD TEMPER, ASTM B88, TYPE K, L, M, OR DRY, AS CALLED FOR. COPPER IS NOT ALLOWED FOR URINAL WASTE. WROUGHT COPPER OR CAST BRONZE; SOLDER END CONNECTIONS; ASTM B62, ANSI B16.22, UNIONS FOR 2 INCH AND SMALLER, SOLDER TYPE, CAST BRONZE; GROUND JOINT, 150 LB. SWP, FLANGES FOR 2-1/2 INCH AND LARGER, CAST BRONZE, COMPANION TYPE, ASME DRILLED, SOLDER CONNECTION, 150 LB. SWP. SOLDER MATERIALS, NO-LEAD SOLDER, USING ALLOYS MADE FROM TIN, COPPER, SILVER AND NICKEL. HARRIS "STAT-SAFE 50" AND "BRIGHT" ENGLEHART "SILVERBRIGHT 100". WILLARD INDUSTRIES "SILVER SAFE" (SILVER BEARING), GANFIELD "WATERSAFE". COPPER OR COPPER ALLOY MECHANICAL COUPLINGS ASME B16.18 OR ASME B16.22, EPDM SEALING ELEMENT, INSTALLED WITH MANUFACTURERS APPROVED CLAMPING TOOL.
- 2.2 MECHANICAL PRESS FITTINGS COPPER ALLOY, ASME B16.22, PRESS FIT HNER SEALING ELEMENT, APPLIED AND INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURER. VIEGA "PRO PRESS" OR APPROVED EQUAL.

- 2.3 THERMOPLASTIC (PVC) PIPE AND FITTINGS: ASTM D1784 MATERIAL MANUFACTURED TO ASTM D1785 STANDARDS. SEAMLESS SCHEDULE 40 POLYVINYL CHLORIDE (PVC) TYPE 1, GRADE 1. SOCKET TYPE WELD COUPLINGS ASTM D2466, DR WITH INTEGRAL BELL END FOR SOLVENT CEMENTING ASTM D2672. SOLVENT CEMENT - ASTM D2564.
- 2.4 DIELECTRIC PIPE FITTINGS ASTM B16.8, UNION 250 PSI, FLANGED 175 PSI, EPC OR CAPITOL MANUFACTURING. PROVIDE AT ALL DISSIMILAR PIPING CONNECTIONS.
- 2.5 HANGERS SHALL BE ADJUSTABLE, WROUGHT MALLEABLE IRON OR STEEL. COPPER PLATED OR PVC COATED WHERE IN CONTACT WITH COPPER PIPING. CHROMIUM PLATED OR GALVANIZED FOR EXTERIOR. ADJUSTABLE RING TYPE WHERE PIPING IS INSTALLED DIRECTLY ON HANGER FOR PIPING 3-1/2 INCH AND SMALLER. ADJUSTABLE STEEL CLEVIS TYPE FOR PIPING 4 INCH AND LARGER.

PIPE SIZE	COPPER	PLASTIC	ROD SIZE
3/4" TO 1"	6'	3'	3/8"
1-1/4" TO 2"	8'	3'	3/8"

2.6 PROVIDE SEISMIC RESTRAINT FOR ALL PIPING EXCEPT WHERE HANGERS ARE 12 INCH LONG OR LESS, 1 INCH OR LESS IN BOILER AND MECHANICAL ROOMS OR 2 INCH OR LESS IN ALL OTHER AREAS. WHERE SEISMIC RESTRAINTS ARE REQUIRED SPACE AT 40 FT. FOR TRANSVERSE BRACING AND AT 80 FT. FOR LONGITUDUAL BRACING, SUBMIT CERTIFIED ENGINEER SHOP DRAWINGS PRIOR TO INSTALLATION.

2.7 SUPPORTS SPACED FOR A MAXIMUM OF 1000 LBS.: "DRILL-IN" INSERTS EQUAL TO PHILLIPS "RED HEAD" 1/2" CHANNEL, BEAM CLAMPS OR OTHER STRUCTURALLY REVIEWED SUPPORT. THE FACTOR OF SAFETY SHALL BE AT LEAST FOUR.

2.8 ESCUTCHEON PLATES: STEEL OR CAST IRON POLISHED CHROME, SPLIT HINGE TYPE WITH SETSCREW. HIGH PLATES WHERE REQUIRED FOR EXTENDED SLEEVES. CHROME PLATED IN VICINITY OF ALL FIXTURES.

2.9 PIPING MATERIALS SCHEDULE:

SERVICE	PIPE MATERIALS	FITTINGS	CONNECTIONS
DOMESTIC WATER INTERIOR HOT, COLD AND CIRCULATING	TYPE L COPPER	WROUGHT COPPER OR CAST BRONZE	NO-LEAD SOLDER
DOMESTIC WATER INTERIOR HOT, COLD AND CIRCULATING (OPTIONAL)	TYPE L COPPER	MECHANICAL FITTINGS	PRESS FITTINGS INSTALLED IN COMPLIANCE WITH MANUFACTURER
SANITARY, VENT AND STORM (ABOVE GRADE)	SCHEDULE 40 PVC	SOCKET TYPE	SOLVENT WELDED NOTE 1
EXTENSION OF EXISTING PIPING	MATCH EXISTING	MATCH EXISTING	EMPLOY MATERIALS AND METHODS TO MATCH EXISTING SYSTEMS

- NOTE 1: PROVIDE "THROUGH PENETRATION" PROTECTION AT FIRE RATED ASSEMBLIES, WRAP WITH INSULATION OR PROVIDE CAST IRON PIPE WHERE LOCATED IN RETURN AIR PLENUMS.
- 2.10 CHECK VALVES: 2 INCH AND SMALLER: BRONZE, SWING CHECK, 125 SWP. SCREENED ENDS, POWELL #57B, SOLDER ENDS, POWELL #1825 OR KENNEDY, NIBCO.
- 2.11 BALL VALVES: 2 INCH AND UNDER, LEAD FREE CAST BODY WITH TYPE 316 STAINLESS STEEL STEM AND BALL. PTFE SEATS. END ENTRANCE, 225 PSI WP, W.O.G. SCREENED ENDS, MATTS LFB 6000, SOLDER ENDS, MATTS OR JAMESBURY, NIBCO, POWELL.
- 2.12 PIPE INSULATION (GLASS FIBER): FOUR POUND NOMINAL DENSITY FIBERGLASS. WHITE KRAFT OUTER JACKET BONDED TO ALUMINUM FOIL WITH FIBERGLASS YARN REINFORCEMENT. MAXIMUM THERMAL CONDUCTIVITY (K) SHALL BE 0.25 BTU/SQ. FT. HR. DEGREE F/INCH AT 75 DEGREE F MEAN TEMPERATURE. PREMOULDED "ZESTON" FITTING COVERS. CERTAINTED, KNUAF, MANVILLE, OMENS-CORNING.
- 2.13 PIPE INSULATION (FLEXIBLE ABOVE GRADE): FLEXIBLE UNICELLULAR ELASTOMERIC FOAM TYPE, FIRE RETARDANT INSULATION, 1/2 INCH THICKNESS. MAXIMUM THERMAL CONDUCTIVITY (K) ON A FLAT SURFACE SHALL BE 0.25 BTU/SQ. FT. HR. OF INCH AT 75 DEGREES F MEAN TEMPERATURE. ARMSTRONG, MANVILLE, RUBATEX.
- 2.14 PIPE INSULATION MATERIALS SCHEDULE:
- | SERVICE | MATERIAL | THICKNESS | REMARKS |
|--------------------------|-------------|---------------------------------|---------------|
| DOMESTIC COLD WATER | GLASS FIBER | 2 IN AND SMALLER.....1/2 IN | NOTES 1 AND 2 |
| DOMESTIC HOT WATER | GLASS FIBER | MAINS - 1 IN. BRANCHES - 1/2 IN | NOTE 1 |
| SANITARY AND WASTE LINES | GLASS FIBER | ALL SIZES - 1 INCH | NOTE 3 |
- NOTE 1: FLEXIBLE PIPE INSULATION OF SAME THICKNESS CALLED FOR MAY BE USED ON PIPING 2" AND SMALLER WHERE CONCEALED.
- NOTE 2: CONTINUOUS UNBROKEN VAPOR BARRIER.
- NOTE 3: INSULATE HORIZONTAL RUNS LOCATED ABOVE FINISHED CEILINGS AND 12 INCHES OVER VERTICAL RISER, INSULATE HUBS.
- 2.15 STERILIZATION: IN ACCORDANCE WITH ANWA C652 AND REQUIREMENTS OF STATE OF NEW HAMPSHIRE, PUBLIC WATER SUPPLY GUIDES, DIVISION OF SANITARY ENGINEERING, BUREAU OF PUBLIC WATER SUPPLY.
- 2.16 DOMESTIC WATER PIPING TESTS: PROVIDE ALL NECESSARY ITEMS TO COMPLETE PROPER TESTING OF ALL WATER PIPING. ISOLATE EXISTING SYSTEMS. TEST DOMESTIC WATER PIPING AT 125 PSI HYDROSTATIC FOR TWO HOURS. FLUSH PIPING TO REMOVE DEBRIS, SEDIMENT, ETC.
- 2.17 SANITARY DRAIN PIPING TEST: PROVIDE NECESSARY ITEMS TO COMPLETE PROPER TESTING OF SANITARY AND ROOF DRAIN PIPING. ISOLATE EXISTING SYSTEMS. MAINTAIN 5 PSI. SHOULD ANY LEAKS, DEFECTIVE JOINTS OR DEFECTIVE CONSTRUCTION BE FOUND THEY SHALL BE PROMPTLY MADE GOOD. SHOULD ANY DEFECTIVE PIPES OR SPECIALS BE DISCOVERED THEY SHALL BE REMOVED AND REPLACED WITH SOUND PIPES OR SPECIALS IN A SATISFACTORY MANNER AT THE CONTRACTOR'S EXPENSE.
- 2.18 PROVIDE WRITTEN CERTIFICATION THAT TESTS HAVE BEEN CONDUCTED AND SUCCESSFULLY COMPLETED. SUBMIT TO OWNER'S REPRESENTATIVE. PAY ALL COSTS OF TEST.

3.0 PART 3 - EQUIPMENT

- 3.1 DRAIN PUMP
- FACTORY ASSEMBLED, FULLY AUTOMATIC OPERATION. OIL FILED HERMETICALLY SEALED MOTOR WITH THERMAL OVERLOAD PROTECTION, POWER CORD PLUG-IN. CORROSION RESISTANT POLYOLEFIN RECEIVER. CAPACITY 10 GPM @ 15 FT. OF HEAD, 1/3 HP, 120 VOLT. LIBERTY MODEL 404 OR APPROVED EQUAL.
- 3.2 TYPE P-1 SINK: ELKAY LR4D 2521-65, 6-1/2 INCH DEEP, HANDICAPPED ACCESSIBLE, NICKEL TYPE 304 STAINLESS STEEL SINGLE BOWL SINK. 3 FAUCET HOLE, 18 GAUGE FOR COUNTER TOP INSTALLATION, SYMONS SK-6600 SERIES, EXTRACTABLE SPRAYER CERTIFIED LEAD FREE FAUCET, SWING SPOUT, 0.5 GPM VANDAL RESISTANT AERATOR. MCGUIRE 4320.024 STRAINER WITH REMOVABLE CUP, 1-1/2 IN. TAILPIECE, MCGUIRE 8412 SEMI-CAST BRASS ADJUSTABLE 1" TRAP, 1-1/2 IN. X 1-1/2 IN. WITH CLEANOUT PLUG, MCGUIRE BV2165 1/2 IN. SUPPLIES WITH 3/8 IN. FLEXIBLE RISERS, LOOSE KEY STOPS AND ESCUTCHEONS. TRAP AND SUPPLY HANDICAPPED INSULATION KIT, TRUBRO LAV-GUARD. ELKAT, JUST.

END OF SECTION 22 40 00

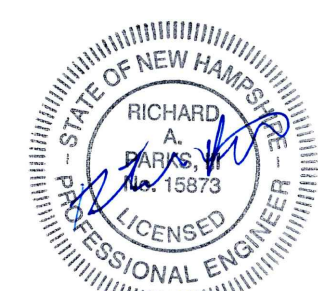


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PLAN KEY:

PROJECT TITLE / ADDRESS:

RVCC LEBABON-LNA/LPN
LAB RENOVATIONS

15 HANOVER COURT
LEBANON, NH 03766

SCALE: AS NOTED DWN BY: RAP
JOB #: 3613 CHK BY: RAP

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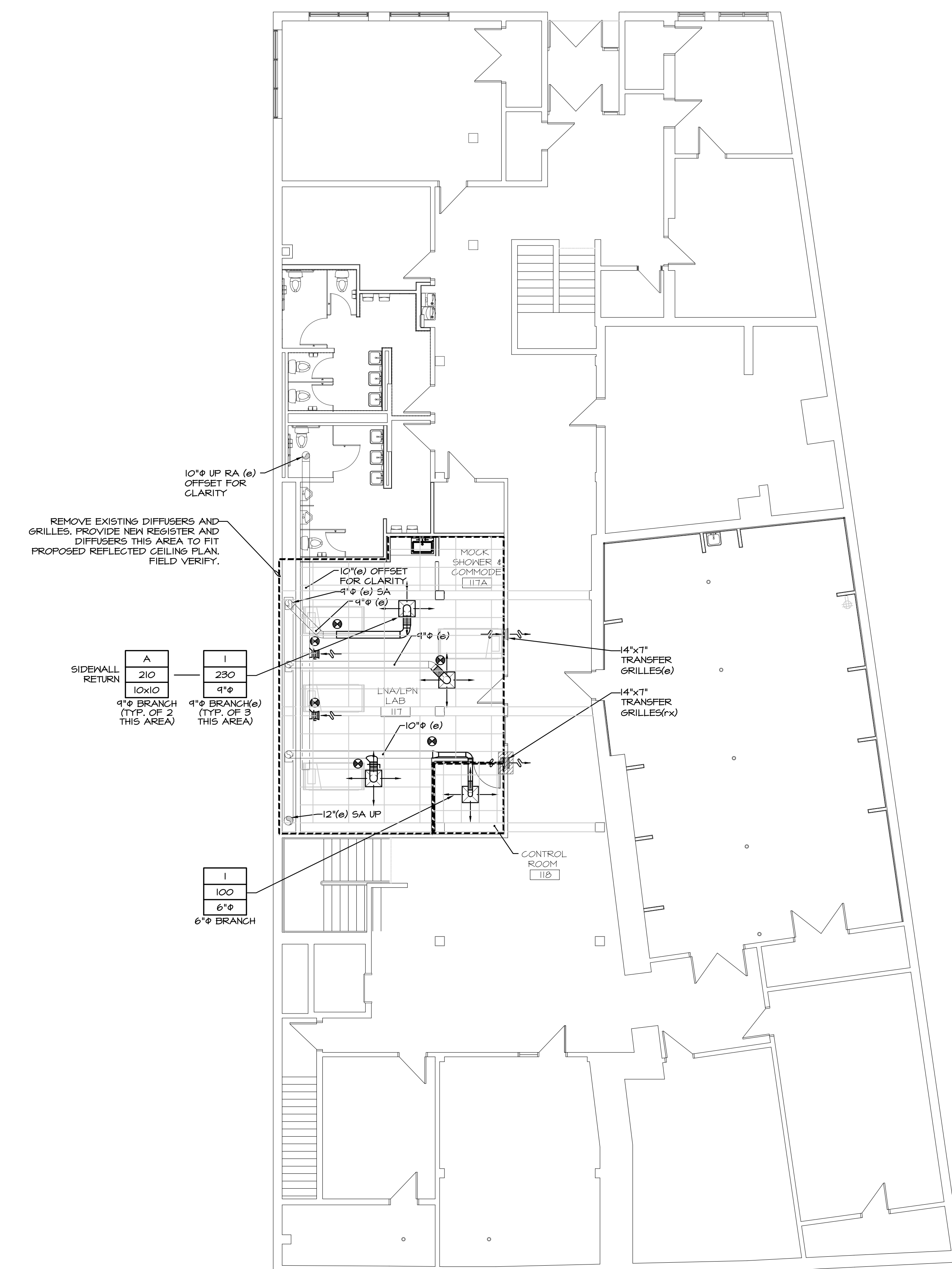
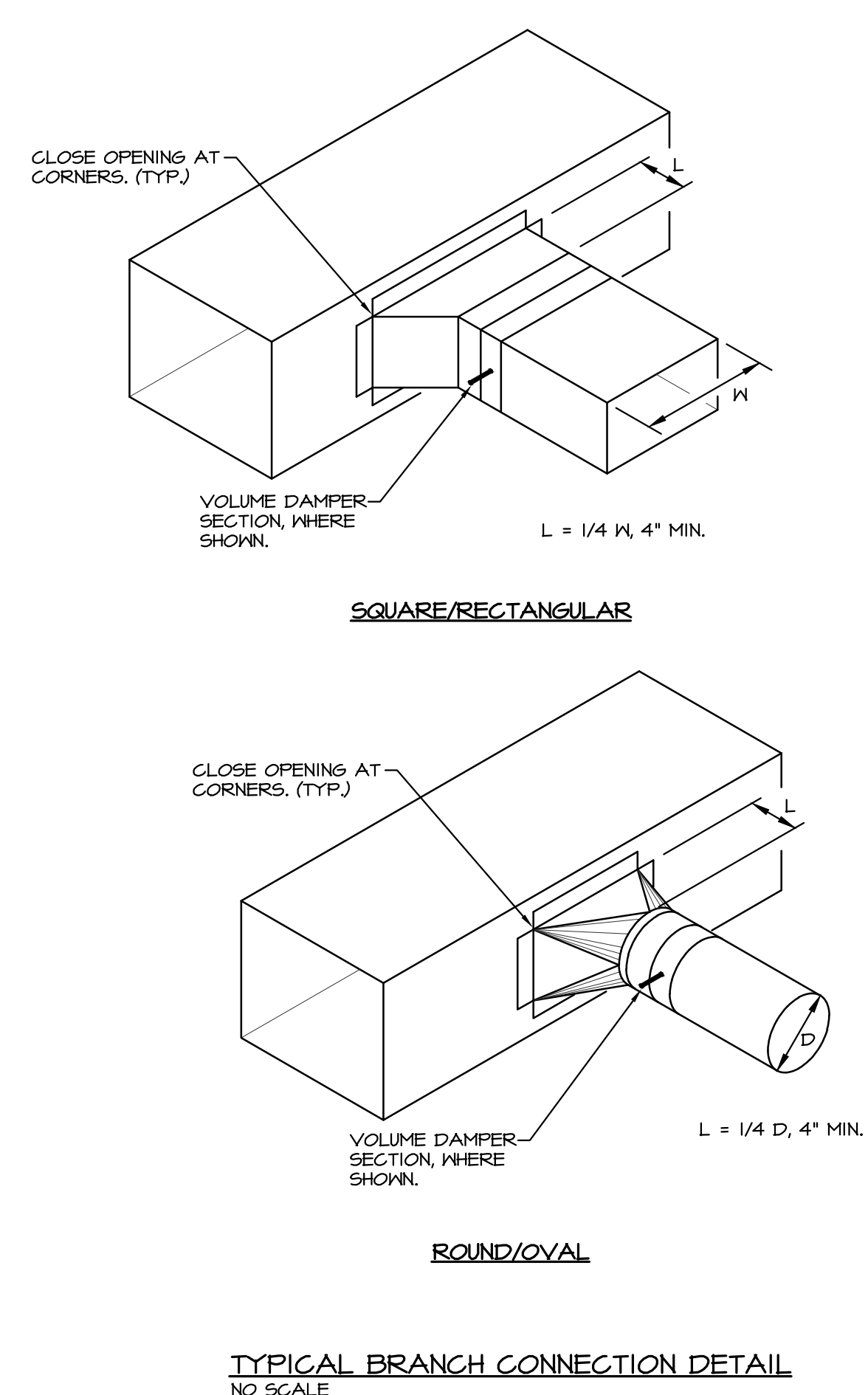
PLUMBING
SPECIFICATIONS

P-2

SHEET NUMBER: - OF ? MECHANICAL

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one eighth inch = one foot
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FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

DRAWING NOTES:
1) IT APPEARS THAT THE EXISTING MECHANICAL SYSTEMS UTILIZES THE CORRIDOR AS A RETURN AIR PLENUM. THESE SYSTEMS ARE NOT BEING MODIFIED AS PART OF THIS PROJECT.

HVAC SYMBOL LIST	
ALL SYMBOLS ARE NOT NECESSARILY USED	
LPS	LOW PRESSURE STEAM
LPC	LOW PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
MPC	MEDIUM PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
HPC	HIGH PRESSURE CONDENSATE
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
HPWS	HEAT PUMP WATER SUPPLY
HPWR	HEAT PUMP WATER RETURN
CWS	CHILLED WATER SUPPLY
CWR	CHILLED WATER RETURN
GS	GLYCOL SUPPLY
GR	GLYCOL RETURN
CS	CONDENSER WATER SUPPLY
CR	CONDENSER WATER RETURN
PC	PUMPED CONDENSATE
BF	BOILER FEED
BBD	BOILER BLOW DOWN
D	DRAIN
ATV	ATMOSPHERIC VENT
VAC	VACUUM
RD	REFRIGERANT DISCHARGE
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
RHG	REFRIGERANT HOT GAS
A	COMPRESSED AIR
G	GAS
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOV	FUEL OIL VENT
FOF	FUEL OIL FILL
FOG	FUEL OIL GAUGE
-	DOMESTIC COLD WATER (CW)
-	DIRECTION OF FLOW
-	REDUCER
-	CAP OR FLUG
-	BOTTOM CONNECTION/TURN AWAY
-	TOP CONNECTION/TURN TOWARDS
-	UNION (OR FLANGE)
-	VALVE (SHUT OFF)
-	GLOBE VALVE
-	CHECK VALVE
-	CONTROL VALVE (2-WAY)
-	PRESSURE RELIEF VALVE
-	CONTROL VALVE (3-WAY)
-	TRIPLE DUTY VALVE
-	PRESSURE REDUCING VALVE
-	BALANCING COCK
-	FLOW BALANCER
-	STRAINER
-	THERMOSTATIC TRAP ASSEMBLY
-	FLOAT & THERMOSTIC TRAP ASSEMBLY
-	BUCKET TRAP ASSEMBLY
-	THERMODYNAMIC TRAP
-	THERMOMETER
-	PRESSURE GAUGE
-	AIR VENT
-	TEMPERATURE SENSOR WELL
-	BUTTERFLY VALVE
-	PIPE PITCH UP/INCLINE RISE
-	PIPE PITCH DOWN/INCLINE DROP
-	FINNED TUBE RADIATION ELEMENT
-	WALL ENCL.
-	TRANSITION-SQUARE TO ROUND
-	SUPPLY DUCT SECTION
-	RETURN OR EXHAUST DUCT SECTION
-	ROUND DUCT SECTION
-	FIRE DAMPER
-	SMOKE DAMPER
-	COMBINATION FIRE AND SMOKE DAMPER
-	BACKDRAFT DAMPER
-	VOLUME DAMPER
-	MANUAL DAMPER
-	MOTOR OPERATED DAMPER
CFM	CUBIC FEET/MINUTE
FFM	FEET/MINUTE
NTS	NOT TO SCALE
DSD	DUCT SMOKE DETECTOR
MBH	THOUSAND BTU/HOUR
(e)	EXISTING
SA	SUPPLY AIR
RA	RETURN AIR
EA	EXHAUST AIR
OA	OUTSIDE AIR
OED	OPEN ENDED DUCT
AFF	ABOVE FINISH FLOOR
BFC	BELOW FINISH CEILING
1	THERMOSTAT
2	ELECTRIC THERMOSTAT WITH MULTIPLE SET POINTS
3	TEMPERATURE SENSOR WITH A GUARD
4	SLAB SENSOR
5	STATIC PRESSURE SENSOR
6	HUMIDISTAT
7	UNDERCUT DOOR (1" BY THE G.C.)
8	LOUVERED DOOR, INDICATES SQ. FT. FREE AREA
9	AIR FLOW
10	SHEET METAL CAP ON EXISTING DUCT
11	ACCESS DOOR, MIN 1.0 SQ.FT.
12	ACOUSTIC THERMAL LINING
13	SOUND ATTENUATOR
14	WORK TO BE REMOVED
15	NEW TO EXISTING CONNECTION
16	NEW TO FUTURE CONNECTION
17	DIFFUSER W/ FLEX. DUCT CONNECTION (REG. SIMILAR)
18	DIFFUSER W/ RIGID DUCT CONNECTION (REG. SIMILAR)
19	REGISTER, DIFFUSER, OR GRILLE DESIGNATION
20	DUCT SIZE SERVING REGISTER, DIFFUSER, OR GRILLE

WA

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STATE OF NEW HAMPSHIRE

RICHARD A. WARR

1983

PROFESSIONAL ENGINEER

PROJECT TITLE / ADDRESS:

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MECHANICAL LEGEND AND BASEMENT PLAN

M-1

SHEET NUMBER: - OF ? MECHANICAL

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SECTION 23 50 00 - MECHANICAL SPECIFICATION

1.0 PART 1 - GENERAL

1.1 THE SCOPE OF WORK IS TO PROVIDE LABOR, MATERIALS, SERVICES, SUPPLIES, TOOLS, EQUIPMENT, PERMITS, TRANSPORTATION AND FACILITIES NECESSARY TO FURNISH AND MODIFY EXISTING AND INSTALL THE COMPLETE AND OPERABLE SYSTEMS AS CALLED FOR.

1.2 THE COMPLETE INSTALLATION SHALL BE IN COMPLIANCE WITH THE APPLICABLE LATEST OR ACCEPTED EDITION OF THE INTERNATIONAL BUILDING CODE AS ADOPTED BY THE STATE OF NEW HAMPSHIRE, NFPA, AND OTHER APPLICABLE RULES AND REGULATIONS AS PRESCRIBED BY THE ADMINISTRATIVE AUTHORITY.

1.3 THESE DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND EQUIPMENT. BASIC DESIGN CONCEPTS MUST BE FOLLOWED OR BETTERED. DO NOT SCALE DRAWINGS, FIELD VERIFY DIMENSIONS AND FIELD CONDITIONS.

1.4 IT IS NOT INTENDED THAT DRAWINGS SHOW EVERY DETAIL. PROVIDE OFFSETS, CHANGES IN ELEVATION AND ITEMS NECESSARY FOR PROPER INSTALLATION AND OPERATION OF SYSTEM SO THAT WORK WILL BE COMPLETE AND READY FOR OPERATION.

1.5 COORDINATE WORK WITH OTHER TRADES, VERIFY BUILDING CONDITIONS AND STRUCTURAL CONDITIONS PRIOR TO INSTALLATION.

1.6 IN THE EVENT OF A DISCREPANCY, IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE. DO NOT PROCEED WITH INSTALLATION IN AREAS OF DISCREPANCY UNTIL SUCH DISCREPANCIES HAVE BEEN RESOLVED.

1.7 PROVIDE IDENTIFICATION TAGS FOR VALVES, PANELS, STARTERS AND HVAC EQUIPMENT WITH CHART AND SCHEDULE OF LOCATION AND FUNCTION.

1.8 EXECUTE WORK IN A NEAT AND WORKMANLIKE MANNER IN CONFORMANCE WITH BEST MODERN TRADE PRACTICE, (I.E. ASME, SHACNA, ANSI, ASHRAE, ASPE, ASH, API) BY COMPETENT, EXPERIENCED MECHANICS, PRESENTING A NEAT APPEARANCE WHEN COMPLETED. REPLACE WORK NOT APPROVED BY OWNER'S REPRESENTATIVE WITHOUT ADDITIONAL CHARGE.

1.9 SUBMIT COMPLETE ELECTRONIC PDF COPY OF CATALOG INFORMATION FOR MATERIALS AND EQUIPMENT. INFORMATION REQUIRED INCLUDES MANUFACTURER, CAPACITY, TYPE, CURVES, CERTIFICATION, ACCESSORIES, PHYSICAL AND PERFORMANCE DATA, FINISHES, MATERIALS AND LOCATION. CONFIRM DIMENSIONS AT JOB SITE TO INSURE THAT ITEMS TO BE FURNISHED FIT THE SPACE AVAILABLE. SUBMIT SHOP DRAWING PRIOR TO INSTALLATION OR PURCHASE WITH THE DATE, CONTRACTORS STAMP AND SIGNATURE PROVIDED. NO INSTALLATION IS PERMITTED PRIOR TO REVIEW.

1.10 EQUIPMENT SHALL MEET UL AND NEC STANDARDS. EQUIPMENT AND MATERIALS FOR WHICH THERE IS A LISTING SERVICE SHALL BEAR A UL LABEL. MATERIALS SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPMENT RATING OF 50 OR LESS. MATERIAL SHALL BE ASBESTOS FREE.

1.11 CONCEAL CONTRACT WORK ABOVE CEILINGS AND IN WALL CHASES UNLESS OTHERWISE CALLED FOR.

1.12 PROVIDE CUTTING AND PATCHING AS REQUIRED FOR THE INSTALLATION OF CONTRACT WORK. PATCHING MATERIALS AND METHODS SHALL MATCH ADJACENT MATERIALS.

1.13 FIRE STOPPING FOR OPENINGS THROUGH FIRE AND SMOKE RATED WALL AND FLOOR ASSEMBLIES. PROVIDE MATERIALS AND PRODUCTS LISTED OR CLASSIFIED BY AN APPROVED INDEPENDENT TESTING LABORATORY FOR "THROUGH-PENETRATION FIRESTOP SYSTEMS". THE SYSTEMS SHALL MEET THE REQUIREMENTS OF "FIRE TESTS OF THROUGH-PENETRATIONS FIRESTOPS" DESIGNATED ASTM E814. PROVIDE FIRESTOP SYSTEM SEALS AT LOCATIONS WHERE PIPING, TUBING, CONDUIT, ELECTRICAL CABLES AND WIRES, DUCTWORK AND SIMILAR UTILITIES PASS THROUGH OR PENETRATE FIRE RATED WALL OR FLOOR ASSEMBLY. THE MINIMUM REQUIRED FIRE RESISTANCE RATINGS OF THE WALL OR FLOOR ASSEMBLY SHALL BE MAINTAINED BY THE FIRESTOP SYSTEM. THE INSTALLATION SHALL PROVIDE AN AIR AND WATER TIGHT SEAL. PENETRATION OPENINGS SHALL BE AS SMALL AS POSSIBLE. MAKE: DOW CORNING FIRESTOP SYSTEM FOAMS AND SEALANTS, NELSON ELECTRIC FIRESTOP SYSTEM PUTTY, OKL AND NRP, 3M BRAND FIRE BARRIER SYSTEM.

1.14 ALL OTHER POWER WIRING SHALL BE PROVIDED AS PART OF THE WORK OF E-SERIES DRAWINGS "ELECTRICAL".

2.0 PART 2 - SHEETMETAL AND SHEETMETAL ACCESSORIES

2.1 DUCTWORK SHALL BE CONSTRUCTED FOR A MINIMUM PRESSURE CLASS OF 2 IN. HG. HANGERS, SUPPORTS, BRACING, GAUGES (26 GAUGE MINIMUM) AND WEIGHTS SHALL BE PER SHACNA AND NFPA. MATERIALS NEW, MARKED WITH MANUFACTURER'S NAME AND COMPLY WITH APPLICABLE ASTM AND ANSI STANDARDS. TRANSVERSE AND LONGITUDINAL JOINTS SHALL BE SEALED WITH DUCT JOINT SEALANT OR BE OF WELDED CONSTRUCTION.

2.2 RECTANGULAR DUCT SHALL HAVE CORNER CLOSURES AS DESCRIBED AND ILLUSTRATED BY SHACNA DUCT CONSTRUCTION STANDARDS. THROAT RADIUS OF ELBOW NOT LESS THAN DIMENSION OF DUCT IN PLANE OF RADIUS; WHERE THIS CANNOT BE MAINTAINED, USE SHORTER RADIUS WITH INTERNAL GUIDE VANES.

2.3 ROUND DUCTWORK SHALL BE SPIRAL LOCK SEAM OR CONTINUOUS FUSION-WELDED LONGITUDINAL SEAM. FITTINGS SHALL BE PRESS FORMED CONTINUOUS WELDED SEAMS. ADJUSTABLE ELBOWS MAY BE USED FOR ROUND DUCT UP TO 12 INCHES, SEAL ADJUSTABLE JOINT AFTER INSTALLATION. PIPE TO PIPE JOINTS SHALL BE MADE WITH SLEEVE COUPLINGS, PIPE TO FITTING JOINTS SHALL BE SLIP-FIT.

2.4 SEAL DUCT JOINTS WITH SEALANT, WATER BASED MASTIC, FIBER REINFORCED, AIR SEAL 33 OR APPROVED EQUAL.

2.5 CONFIGURATION AND SIZES OF DUCTWORK ARE THE BASIS OF DESIGN, RECTANGULAR ASPECT OR ROUND DUCTWORK MAY BE USED THAT MAINTAINS EQUIVALENT HYDRAULIC DIAMETER, STATIC LOSS, AND DUCT VELOCITY. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF SIZES OF DUCTWORK AND LOCATIONS TO MAINTAIN CLEARANCES TO ALLOW PROPER INSTALLATION OF WORK OF OTHER TRADES AND BUILDING SYSTEMS.

2.6 PROVIDE SEISMIC RESTRAINT FOR ALL DUCTWORK EXCEPT WHERE HANGERS ARE 12 INCH LONG OR LESS OR HAVE A CROSS-SECTIONAL AREA OF 6 SQ. FT. OR LESS. WHERE SEISMIC RESTRAINTS ARE REQUIRED SPACE AT 40 FT. FOR TRANSVERSE BRACING AND AT 80 FT. FOR LONGITUDUAL BRACING, SUBMIT CERTIFIED ENGINEERED SHOP DRAWINGS PRIOR TO INSTALLATION.

2.7 FLEXIBLE DUCTWORK SHALL BE IN COMPLIANCE WITH NFPA BULLETIN 90A, ASTM G1071, AND UL STANDARD 181, CLASS 1 AIR DUCT, CONSIST OF CORROSION RESISTANT SPRING STEEL HELIX, ACOUSTICAL RATED INTERNAL MATERIAL, LAMINATED MULTILAYER REINFORCED ALUMINUM FOIL FABRIC, SUITABLE FOR STATIC PRESSURE IN DUCTWORK, MINIMUM 4 INCH W.G. FACTORY APPLIED R-6 FIBERGLASS EXTERIOR INSULATION, SHEATHED IN SEAMLESS REINFORCED EXTERIOR VAPOR BARRIER JACKET, WITH VAPOR CUFFS BOTH ENDS. 200 DEGREES F TEMPERATURE, UL LISTED. DESIGN EQUIPMENT: THERMAFLEX 6-KM. MAKE: CLEVEXFLEX, FLEXIMASTER, GENFLEX, TECHNAFLEX OR THERMAFLEX.

2.8 SHEETMETAL MATERIALS SCHEDULE:

SERVICE	MATERIAL	REQUIREMENTS
SUPPLY AND RETURN	LOCK FORMING QUALITY, GALVANIZED STEEL ASTM 525	JOINTS AND FEATURES AS CALLED FOR
ACCESSORIES, DAMPERS AND AIR TURNS	SAME OR BETTER AS PARENT DUCT	-----
EXTENSION OF EXISTING DUCTS	MATCH EXISTING	EMPLOY MATERIALS AND METHODS TO MATCH EXISTING SYSTEMS

2.9 DUCT INSULATION: MAXIMUM THERMAL CONDUCTIVITY (K) SHALL BE 0.285 BTU/50. FT. HR. DEGREE F/IN. EXCLUDING AIR FILM AT 100 DEGREES F MEAN TEMPERATURE. RIGID BOARD TYPE: 3 LB. MINIMUM DENSITY, GLASS FIBERBOARD, 1 IN. MINIMUM THICKNESS. FACTORY APPLIED VAPOR BARRIER FINISH CONSISTING OF ALUMINUM FOIL REINFORCED WITH FIBERGLASS YARN; SEAMS AND JOINTS TAPED. FLEXIBLE BLANKET TYPE: LONG GLASS FIBER BLANKET, FACTORY APPLIED, FIBERGLASS YARN, REINFORCED ALUMINUM FOIL FACED VAPOR SEAL.

SERVICE	MATERIAL	THICKNESS	REMARKS
AIR CONDITIONING SUPPLY	EXPOSED: RIGID FIBERGLASS CONCEALED: FLEXIBLE FIBERGLASS	R=6.0	
AIR CONDITIONING RETURN	EXPOSED: RIGID FIBERGLASS CONCEALED: FLEXIBLE FIBERGLASS	R=6.0	NOTE 1

NOTE 1: RETURN AIR DUCTS EXPOSED WITHIN AIR CONDITIONED SPACES, ABOVE ACCESSIBLE CEILINGS OF AIR CONDITIONED SPACES OR IN RETURN AIR PLENUMS ARE NOT TO BE INSULATED.

2.10 TYPE A - (EXHAUST AND RETURN REGISTERS): STEEL CONSTRUCTION WITH HORIZONTAL FRONT BARS SET AT 45 DEGREES AND CURVED HEMMED EDGE BLADES, WHITE FINISH. KEY OPERATED OPPOSED BLADE DAMPER. 1-1/4 IN. WIDE FLANGE WITH SPONGE RUBBER GASKET. FRAME STYLE TO MATCH CEILING TYPE IN EACH LOCATION. TITUS "350-RL" OR ANEMOSTAT, CARNES, KRUEGER, METALAIRE, PRICE.

2.11 TYPE 1 - (REMOVABLE CORE): STEEL CONSTRUCTION WITH REMOVABLE INNER VANE ASSEMBLY WITHOUT USE OF TOOLS. WHITE FINISH. SQUARE OR ROUND NECK AS CALLED FOR. DIRECTIONAL FLOW PATTERN AS INDICATED. WITH VOLUME DAMPER AND EQUALIZING GRID. ADJUSTABLE INNER VANE ASSEMBLY. FRAME STYLE TO MATCH CEILING TYPE IN EACH LOCATION. TITUS "TDC" OR ANEMOSTAT, CARNES, KRUEGER, METALAIRE, PRICE.

3.0 PART 3 - CONTROLS, ADJUSTING AND BALANCING

3.1 ROOFTOP UNITS - EXISTING

EXISTING CONTROLS TO REMAIN.

3.2 ADJUSTING AND BALANCING: BALANCING REPORT SHALL BE TYPED AND THREE COPIES SUBMITTED FOR REVIEW, RESULTS SHALL BE GUARANTEED. CONTRACTOR SHALL BE SUBJECT TO RECALL TO SITE TO VERIFY THE REPORT INFORMATION BEFORE ACCEPTANCE OF THE REPORT BY THE OWNER'S REPRESENTATIVE.

BALANCING CONTRACTOR SHALL FOLLOW THE PROCEDURES OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).

PLACE SYSTEMS IN SATISFACTORY OPERATING CONDITION. ADJUSTING AND BALANCING SHALL BE ACCOMPLISHED AS SOON AS THE SYSTEMS ARE COMPLETE AND BEFORE OWNER TAKES POSSESSION. ADJUSTING AND BALANCING SHALL BE ACCOMPLISHED UNDER APPROPRIATE OUTDOOR TEMPERATURE CONDITIONS. CHANGE PULLEYS AS REQUIRED TO MEET SYSTEM PERFORMANCE REQUIREMENTS. PERFORM NECESSARY MECHANICAL ADJUSTMENTS IN CONJUNCTION WITH BALANCING PROCEDURE. REPLACE BALANCING COCKS AND FLOW BALANCERS IN SYSTEMS THAT CANNOT BE MANIPULATED TO SATISFY BALANCING REQUIREMENTS. REPLACE DAMPERS IN SYSTEMS THAT CANNOT BE MANIPULATED TO SATISFY BALANCING REQUIREMENTS.

AIR SYSTEMS: TEST AND ADJUST FAN RPM TO DESIGN REQUIREMENTS. TEST AND RECORD MOTOR NO LOAD AND FULL LOAD AMPERES, AND DETERMINE OPERATING BRAKE HORSEPOWER. TEST AND RECORD SYSTEM STATIC PRESSURES, SUCTION AND DISCHARGE. TEST AND ADJUST ZONES AND SYSTEM FOR DESIGN SUPPLY, RETURN AND EXHAUST AIR CFM. TEST AND ADJUST SYSTEM FOR DESIGN OUTSIDE AIR CFM.

TEST AND RECORD ENTERING AND LEAVING AIR TEMPERATURE AT COILS.

TEST AND ADJUST ZONES TO PROPER DESIGN SUPPLY, RETURN AND EXHAUST CFM. ADJUST TERMINAL UNITS TO DESIGN CFM. TEST AND ADJUST EACH DIFFUSER, GRILLE AND REGISTER TO WITHIN 10% OF DESIGN REQUIREMENTS.

END OF SECTION 23 50 00

WA

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PROFESSIONAL ENGINEER

PLAN KEY:

PROJECT TITLE / ADDRESS:

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LAB RENOVATIONS

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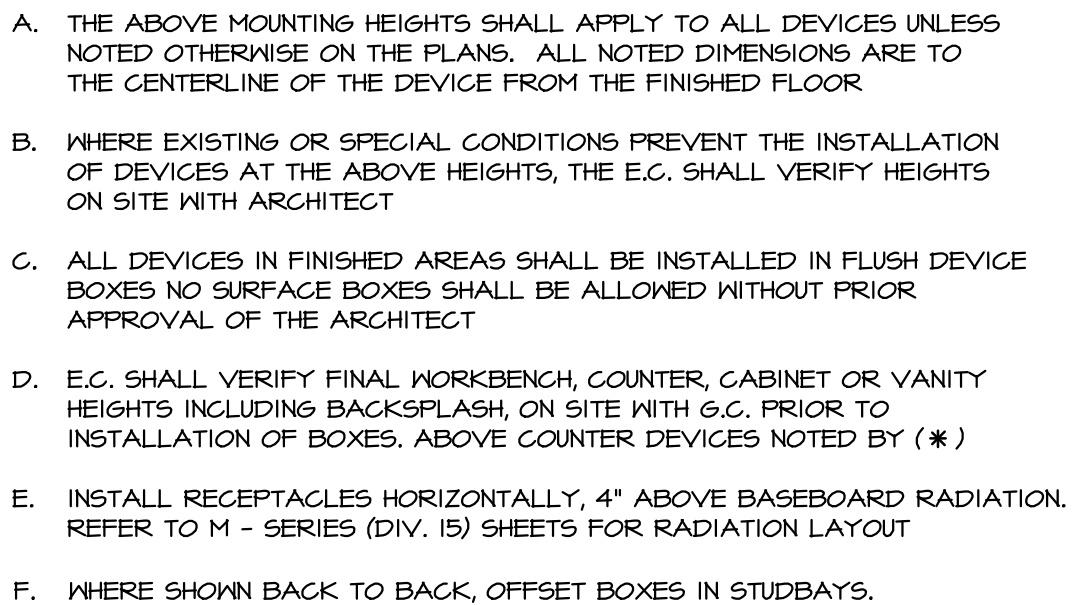
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MECHANICAL SPECIFICATIONS






































M-2

SHEET NUMBER: - OF ? MECHANICAL

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SYMBOL	DESCRIPTION	MOUNTING
	FIRE ALARM CONTROL PANEL	FLUSH, 5' TO TOP
	FIRE ALARM REMOTE ANNUNCIATOR	FLUSH, 5' TO TOP
	SYSTEM SMOKE DETECTOR	CEILING
	DUCT SMOKE REMOTE TEST	WALL, 42" AFF
	DUCT SMOKE DETECTOR	IN DUCT
	RATE OF RISE HEAT DETECTOR	CEILING
	FIXED HEAT DETECTOR	CEILING
	FIXED HEAT DETECTOR	CEILING
	RATE OF RISE HEAT DETECTOR	CEILING
	MANUAL PULL STATION	WALL, 42" AFF, SEMI FLUSH
	HORN STROBE DEVICE CANDELLA RATING AS SHOWN	WALL, 80" AFF, SEMI FLUSH
	STROBE ONLY DEVICE CANDELLA RATING AS SHOWN	WALL, FLUSH, 80" AFF
	MINI HORN STROBE DEVICE CANDELLA RATING AS SHOWN	WALL, FLUSH, 80" AFF
	SPRINKLER FLOW SWITCH	BY SPRINKLER CONTRACTOR
	SPRINKLER TAMPER SWITCH	BY SPRINKLER CONTRACTOR
	SPRINKLER PRESSURE SWITCH	BY SPRINKLER CONTRACTOR
	120 VOLT, SELF-CONTAINED SMOKE DETECTOR	CEILING
	MASTER BOX	WALL MTD.
	SPEAKER STROBE DEVICE CANDELLA RATING AS SHOWN	WALL, 80" AFF, SEMI FLUSH
	MAGNETIC DOOR HOLD DEVICE	WALL MTD.
	GO DETECTOR; SYSTEM TYPE COMPATIBLE WITH FACP	WALL MTD.

	STRIP, WRAP, OR LINEAR FIXTURE
	RECESSED, TROFFER FIXTURE
	WALL BRACKET OR WALL SCONCE
	CEILING FIXTURE: SURFACE OR RECESS MOUNTING, REFER TO SPECIFICATIONS. RECESS: PROVIDE DIRECT CONTACT, WITH INSULATION WHERE AFFLICABLE COORDINATE WITH ARCH. PLANS/ELEVATIONS
	EMERGENCY BATTERY UNIT, NO ATTACHED HEADS
	EMERGENCY BATTERY UNIT, ATTACHED HEADS
	REMOTE EMERGENCY LIGHTING FIXTURE, DOUBLE HEAD, POWERED FROM REMOTE BATTERY UNIT
	EXIT SIGN, SELF POWERED
	SINGLE POLE SWITCH 20 AMP 125/277 VOLT TOGGLE
	3-WAY SWITCH 20 AMP 125/277 VOLT TOGGLE
	4-WAY SWITCH 20 AMP 125/277 VOLT TOGGLE
	DUAL SWITCHES FOR SEPARATE CONTROL OF BALLASTS IN DUAL-BALLASTED FIXTURES
	DUAL SWITCHES FOR CONTROL OF STEPPED DIMMING BALLAST (OFF, 50%, 100%), OR FOR SEPARATE CONTROL OF BALLASTS IN DUAL-BALLASTED FIXTURES
	PILOT LIGHT SWITCH 20 AMP 125 VOLT TOGGLE, FLUSH MOUNT SEE NOTES AT DEVICE FOR SPECIFIC MOUNTING INSTRUCTIONS
	DIMMER SWITCH, 120 VOLT, SLIDE TYPE, 1000 WATT MIN
	WALL BOX TIMER SWITCH
	DUPLEX RECEPTACLE 20 AMP 125 VOLT
	CEILING MOUNTED RECEPTACLE, WHITE COLOR, FOR "SHOW WINDOW" USE, 120 VOLT, 20 AMP, WHITE PLATE
	DUPLEX RECEPTACLE ABOVE COUNTER AND BACKSPASH, VERIFY FINAL MOUNTING HEIGHT ON SITE PRIOR TO ROUGH IN
	DOUBLE DUPLEX RECEPTACLE, INSTALL IN 2-GANG BOX UNDER ONE 2-GANG PLATE, WIRE TO COMMON CIRCUIT AS SHOWN
	DUPLEX RECEPTACLE WITH METAL WEATHERPROOF IN-USE, GASKETED COVER
	GROUND FAULT TYPE DUPLEX RECEPTACLE, 20 AMP 125 VOLT CLASS A WITH 20 AMP FEED THROUGH RATINGS, PLATE TO MATCH OTHER DEVICES INSTALL IN SEPARATE SINGLE GANG BOX WHERE SHOWN ON PLANS (MIN. 3-1/2" WALL BOX)
	GROUND FAULT TYPE DUPLEX RECEPTACLE, WITH WEATHERPROOF COVER INSTALL IN SEPARATE SINGLE GANG BOX WHERE SHOWN ON PLANS (MIN. 3-1/2" WALL BOX)
	FLOOR MOUNTED RECEPTACLE
	SPECIAL 10 OR 30 OUTLET, 208 VOLT, CONFIRM AMPERAGE AND N.E.M.A. CONFIGURATION TO SUITE EQUIPMENT BEING SERVED
	TELEPHONE OUTLET, BOX AND DROP SEE DROP DETAIL AND PHONE RISER
	TELEPHONE OUTLET, WALL TYPE
	CATV OUTLET BOX AND DROP, SEE DETAILS AND CATV RISER DIAGRAM
	COMPUTER OUTLET BOX AND DROP, SEE DETAILS
	WIRING HOME RUN TO PANEL AS NOTED, (2) #12, (1) #12 GND MIN, BACK TO 20 AMP, SINGLE POLE BREAKER UNLESS NOTED OTHERWISE
	INDICATES (2) POWER CONDUCTORS WITH FULL SIZE GROUND
	INDICATES (3) POWER CONDUCTORS WITH FULL SIZE GROUND
	INDICATES (4) POWER CONDUCTORS WITH FULL SIZE GROUND
	CABLE OR RACEWAY RUN CONCEALED IN WALLS OR CEILINGS SURFACE MOUNTED WHERE NOTED OR ALLOWED IN UTILITY OR UNFINISHED AREAS
	UNDERSLAB RACEWAY AS NOTED
	EMERGENCY LIGHTING LOW VOLTAGE (12 VDC) WIRING, RUN CONCEALED IN WALLS OR ABOVE CEILINGS. SURFACE MOUNTED ONLY IN UTILITY AREAS OR WHERE SPECIFICALLY ALLOWED
	ELECTRICAL PANELBOARD, VOLTAGE AND PHASE AS NOTED REFER TO POWER RISER DIAGRAM AND PANEL SCHEDULES FOR DETAILS

ALL EQUIPMENT NEEDING ELECTRICAL POWER IS INTENDED AND SPECIFIED TO BE "UL" OR "CSA" LISTED AND LABELED. ELECTRICAL CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER AND ENGINEER OF ANY EQUIPMENT NOT SO LISTED AND LABELED AND SHALL NOT PROCEED WITH ANY WIRING OF SUCH EQUIPMENT UNTIL REPLACEMENT OF EQUIPMENT OR DIRECTED IN WRITING BY ENGINEER. TYPICAL OF ALL DEVICES AND EQUIPMENT ON THIS PROJECT

AFB	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AL	ALUMINUM
BG	BARE COPPER
BKBD	BACKBOARD
BLDG	BUILDING
C	CONDUIT
CATV	CABLE TELEVISION
CSA	CANADIAN STANDARDS
CU	COPPER
CVPS	CENTRAL VERMONT PUBLIC SERVICE
DET	DETAIL
DWG	DRAINING
EC	ELECTRICAL CONTRACTOR
EHT	ELECTRICAL METALLIC TUBING
EXIST	EXISTING
FU	FUSIBLE
GC	GENERAL CONTRACTOR
GF	GROUND FAULT (PROTECTED) = GFCI
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HVAC	HEATINGS VENTILATION AND AIR CONDITIONING
M	MECHANICAL CONTRACTOR
MCB	MAIN CIRCUIT BREAKER
MM	MAGNETIC HOLDERS
MIN	MINIMUM
MO	MO
MIC	MOUNTED
NOT	NOT IN CONTRACT
NF	NON FUSED
PSNH	PUBLIC SERVICE OF NH.
PVC	RIGID NON-METALLIC CONDUIT (POLY(VINYL CHLORIDE))
RMG	RIGID GALVANIZED METAL CONDUIT
SHT	SHEET
TELE	TELEPHONE
TV	TELEVISION
TY	TYPICAL
UL	UNDERWRITERS LABORATORY
UN	UNLESS OTHERWISE NOTED
W/G	WITH GROUND CONDUCTOR
WP	WEATHERPROOF

e	EXISTING EQUIPMENT TO REMAIN
eR	EXISTING EQUIPMENT TO BE RELOCATED AS SHOWN
eL	NEW EQUIPMENT AT EXISTING LOCATION
X	EXISTING EQUIPMENT TO BE REMOVED AND DISPOSED OF

CONSTRUCTION MANAGER
T.B.D

RVCC LEBABON-LNA/LPN
LAB RENOVATIONS

15 HANOVER COURT
LEBANON, NH 03766

SCALE: AS NOTED DWN BY: SMT
JOB #: 3613 CHK BY: CFH

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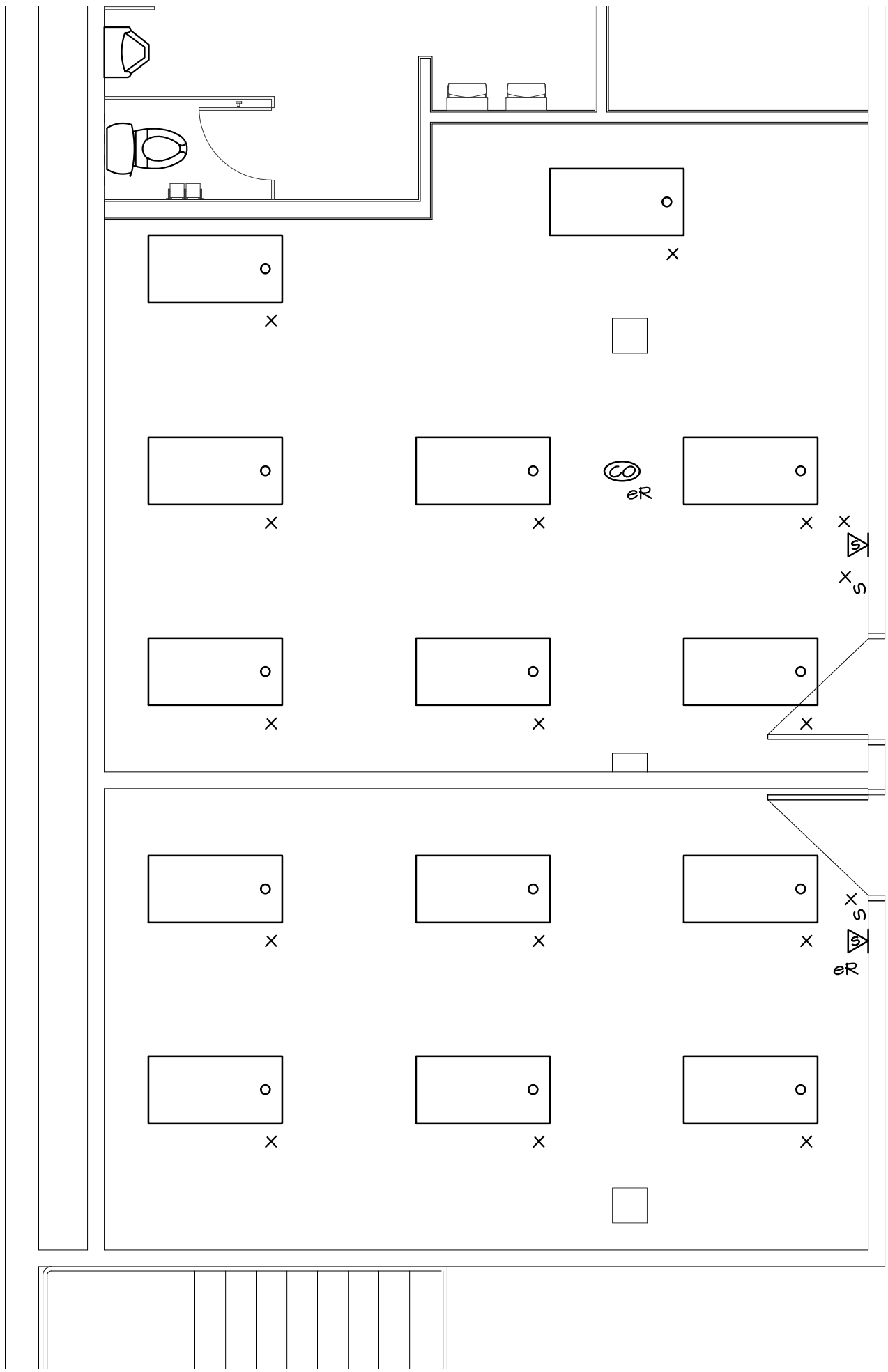
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ELECTRICAL FIRST FLOOR POWER & DATA PLANS

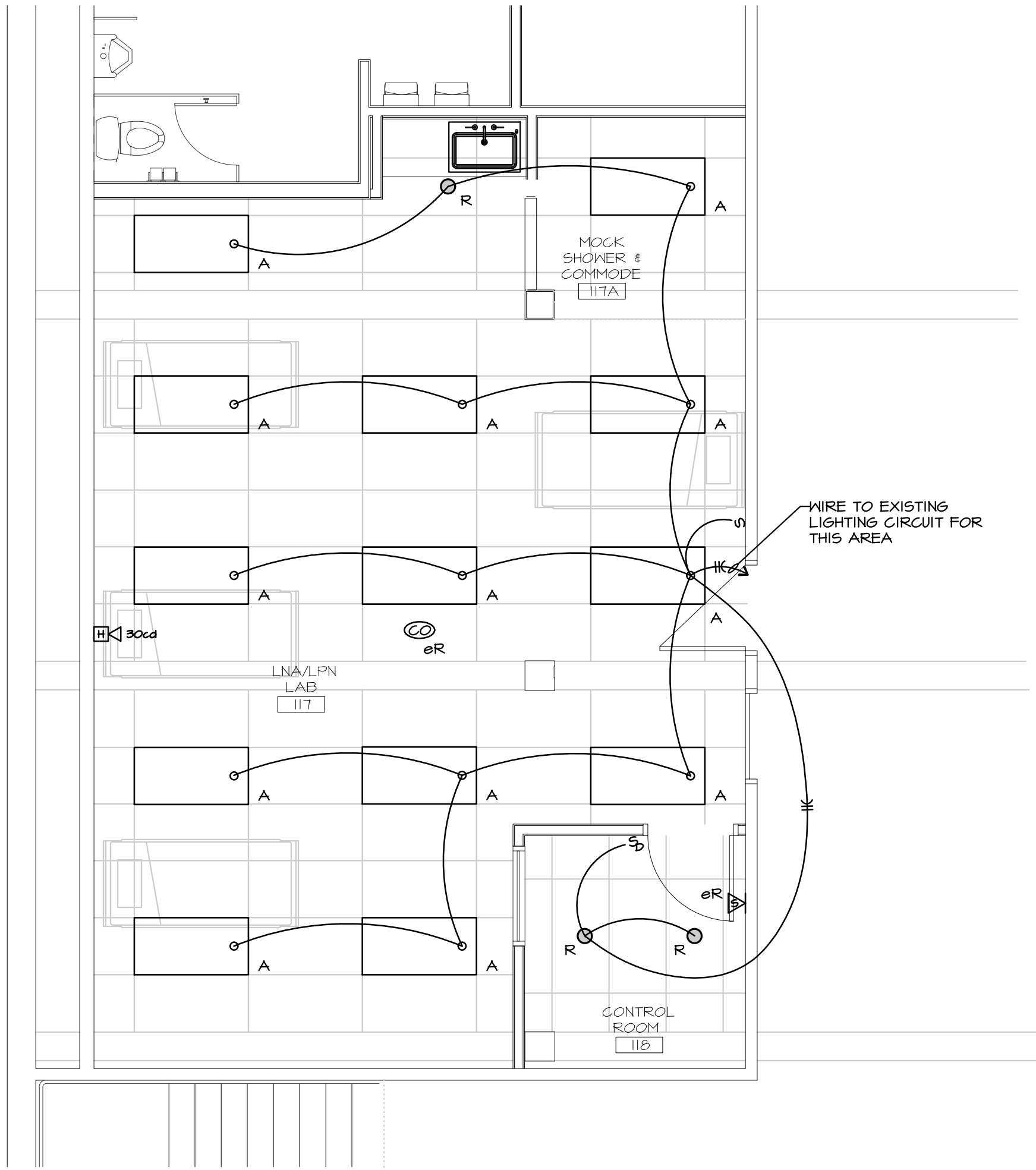
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EXISTING FIRST FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"



ELECTRICAL FIRST FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"



LIGHTING FIXTURE SCHEDULE		
A.	DESCRIPTION:	2x4 LED RECESSED TROFFER, COLD-ROLLED STEEL HOUSING, #12 ACRYLIC DIFFUSER, INTEGRAL 0-10V DIMMING DRIVER, 4300 LUMENS, DAMP LOCATION RATED.
	MANUFACTURER:	COLUMBIA
	SERIES:	LJT24
	VOLTAGE:	120V
	LAMPS:	34W LED (4000K)
	MOUNTING:	RECESSED, CEILING
	SUBSTITUTIONS:	SUBMIT TO ENGINEER FOR APPROVAL PRIOR TO BID.
R.	DESCRIPTION:	6" DIAMETER RECESSED DOWNLIGHT, STEEL HOUSING, SEMI-DIFFUSE REFLECTOR, INTEGRAL 0-10V DIMMING DRIVER, 1100 LUMENS, SUITABLE FOR MET LOCATIONS.
	MANUFACTURER:	LITEFRAME
	SERIES:	LF65L
	VOLTAGE:	120V
	LAMPS:	12.6W LED (4000K)
	MOUNTING:	RECESSED, CEILING
	SUBSTITUTIONS:	SUBMIT TO ENGINEER FOR APPROVAL PRIOR TO BID.

WA

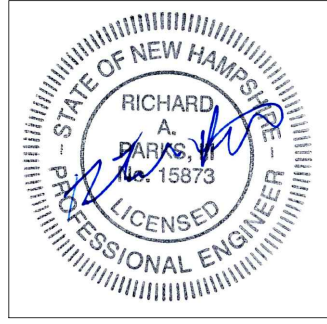
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PLAN KEY:

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LAB RENOVATIONS

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ELECTRICAL FIRST FLOOR
LIGHTING & FIRE ALARM PLANS

E-3

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three inches = one foot

one and one half inches = one foot

one inch = one foot

three quarter inch = one foot

one quarter inch = one foot

one eighth inch = one foot

4

SECTION 26 50 00 - ELECTRICAL SPECIFICATION	
1.0 PART 1 - GENERAL	
1.1	THE SCOPE OF WORK IS TO PROVIDE LABOR, MATERIALS, SERVICES, SUPPLIES, EQUIPMENT, AND TOOLS FOR THE CONSTRUCTION OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITIES AND STRUCTURES.
1.2	THE COMPLETE INSTALLATION SHALL BE IN COMPLIANCE WITH THE APPLICABLE LATEST OR ACCEPTED EDITION OF THE INTERNATIONAL BUILDING CODE AS ADOPTED BY THE STATE OF NEW HAMPSHIRE, NFPA, AND OTHER APPLICABLE RULES AND REGULATIONS AS PRESCRIBED BY THE ADMINISTRATIVE AUTHORITY.
1.3	THESE DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND EQUIPMENT. BASIC DESIGN CONCEPTS MUST BE FOLLOWED OR BETTERED. DO NOT SCALE DRAWINGS, FIELD VERIFY DIMENSIONS AND FIELD CONDITIONS.
1.4	IT IS NOT INTENDED THAT DRAWINGS SHOW EVERY DETAIL. PROVIDE OFFSETS, CHANGES IN ELEVATION AND ITEMS NECESSARY FOR PROPER INSTALLATION AND OPERATION OF SYSTEM SO THAT WORK WILL BE COMPLETE AND READY FOR OPERATION.
1.5	NOTES OR INSTRUCTIONS INCLUDED IN THE SPECIFICATIONS AND/OR SHOWN ON ANY ONE DRAWING, APPLY WHERE APPLICABLE, TO ALL OTHER DRAWINGS.
1.6	COORDINATE WORK WITH OTHER TRADES, BUILDING CONDITIONS AND STRUCTURAL CONDITIONS PRIOR TO INSTALLATION.
1.7	COORDINATE UTILITY SERVICE WORK WITH LOCAL UTILITY COMPANIES. GENERAL CONTRACTOR, BUILDING CONDITIONS AND SITE CONDITIONS PRIOR TO INSTALLATION. PROVIDE ADVANCE COORDINATION AS REQUIRED FOR TIMELY CONNECTIONS OF TEMPORARY AND PERMANENT SERVICES. CONTACT UTILITY COMPANIES PRIOR TO SUBMISSION OF BID. INCLUDE ALL UTILITY FEES AND COSTS RELATED TO THIS PROJECT IN BID.
1.8	IN THE EVENT OF A DISCREPANCY, IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE. DO NOT PROCEED WITH INSTALLATION IN AREAS OF DISCREPANCY UNTIL SUCH DISCREPANCIES HAVE BEEN RESOLVED.
1.9	EXECUTE WORK IN A NEAT AND WORKMANLIKE MANNER IN CONFORMANCE WITH BEST MODERN TRADE PRACTICE, (I.E. IEEE, NEC, ANSI, NFPA, NEMA,) BY COMPETENT, EXPERIENCED, LICENSED ELECTRICIANS, PRESENTING A NEAT APPEARANCE WHEN COMPLETED. REPLACE WORK NOT APPROVED BY OWNER'S REPRESENTATIVE WITHOUT ADDITIONAL CHARGE.
1.10	EQUIPMENT SHALL BE UL, CSA, OR ETL LISTED AND LABELED.
1.11	SUBMITTALS PACKAGED BY VENDOR, SUBCONTRACTOR GROUPING OR OTHER RANDOM ASSEMBLY ARE NOT ACCEPTABLE (I.E. IF A VENDOR IS SUPPLYING CONDUIT, LIGHTING, PANELS AND TRANSFORMERS, SUBMITTALS SHALL BE GROUPED BY APPROPRIATE FUNCTION (I.E., POWER, LIGHTING, FIRE ALARM, ETC.).
1.12	SUBMIT COMPLETE PDF ELECTRONIC COPY OF CATALOG INFORMATION FOR MATERIALS AND EQUIPMENT. INFORMATION REQUIRED INCLUDES MANUFACTURER, CAPACITY, TYPE, CERTIFICATION, ACCESSORIES, PHYSICAL AND PERFORMANCE DATA, FINISHES, MATERIALS AND LOCATION. CONFIRM DIMENSIONS AT JOB SITE TO INSURE THAT ITEMS TO BE FURNISHED FIT THE SPACE AVAILABLE. SUBMIT SHOP DRAWING PRIOR TO INSTALLATION OR PURCHASE WITH THE DATE, CONTRACTOR'S STAMP AND SIGNATURE PROVIDED. NO INSTALLATION IS PERMITTED PRIOR TO REVIEW.
1.13	MAINTAIN AT THE SITE ONE RECORD SET OF DRAWINGS, SPECIFICATIONS, APPENDIX, CHANGE ORDERS, ACCEPTED SHOP DRAWINGS AND ACCEPTED SUBMITTALS TO REMAIN AS RECORD DRAWINGS OF THE WORK AS INSTALLED. TRANSFER DATA TO BUILDING CAD FILES. PROVIDE ONE FULL SIZE SET OF THE CORRECTED RECORD DRAWINGS AND A CD WITH ELECTRONIC COPY OF THE CAD DRAWING FILES AND PDF PLOT FILES TO THE OWNER.
1.14	OPERATING AND MAINTENANCE MANUALS: BEFORE FINAL ACCEPTANCE OF PROJECT, SUBMIT THREE (3) COPIES OF COMPLETE OPERATING INSTRUCTIONS AND SERVICE MANUALS NEATLY BOUND AND CONSISTING OF A NEATLY TYPED INDEX, INSTRUCTIONS ON EQUIPMENT OPERATION, PARTS REPLACEMENT INFORMATION, GUARANTEES AND WARRANTIES, TESTING REPORTS, SERVICE MANUALS, CONTROL DRAWINGS AND DIAGRAMMATIC CHARTS.
1.15	PROVIDE A COMPLETE CD COPY OF ALL INSTALLED SOFTWARE FOR ALL EQUIPMENT AND SYSTEMS. PROVIDE ADMINISTRATIVE USER NAME, PASSWORD AND ALL OTHER SOFTWARE KEYS REQUIRED TO ACCESS, MODIFY AND SET PARAMETERS.
1.16	CONCEAL CONDUCTOR WORK ABOVE CEILING AND IN WALL CHASES UNLESS OTHERWISE CALLED FOR.
1.17	PROVIDE CUTTING AND PATCHING AS REQUIRED FOR THE INSTALLATION OF CONDUCTOR WORK. PATCHING MATERIALS AND METHODS SHALL MATCH ADJACENT MATERIALS.
1.18	ALL WORK REMOVED, RELOCATED AND/OR REINSTALLED SHALL BE SO INSTALLED IN COMPLIANCE WITH NEC AND OTHER APPLICABLE CODES AND STANDARDS. SUCH REINSTALLED WORK SHALL ALSO BE DONE IN COMPLIANCE WITH THESE SPECIFICATIONS. IF THIS REINSTALLATION WORK WERE NEW WORK, EQUIPMENT, DEVICES, CONDUIT, RACEWAY AND WIRING SHALL COMPLY WITH THESE SPECIFICATIONS. WORK SHALL BE FULLY TESTED AND OPERATIONAL AFTER INSTALLATION. CONFIRM SUCH TESTING AND SUCCESSFUL OPERATION, IN WRITING, WITH OWNER REPRESENTATIVE.
1.19	FIRE STOPPING FOR OPENINGS THROUGH FIRE AND SMOKE RATED WALL AND FLOOR ASSEMBLIES: PROVIDE MATERIALS AND PRODUCTS LISTED OR CLASSIFIED FOR "THROUGH-PENETRATION FIRESTOP SYSTEMS". PROVIDE FIRESTOP SYSTEM SEALS AT LOCATIONS WHERE CONDUITS PASS THROUGH OR PENETRATE FIRE RATED WALL OR FLOOR ASSEMBLY. THE MINIMUM REQUIRED FIRE RESISTANCE RATINGS OF THE WALL OR FLOOR ASSEMBLY SHALL BE MAINTAINED BY THE FIRESTOP SYSTEM. PROVIDE AS NELSON ELECTRIC FIRESTOP SYSTEM PUTTY OR 3M BRAND FIRE BARRIER SYSTEM.
1.20	PROVIDE REVISED TYPED CIRCUIT DISTRIBUTION CHART, PERMANENTLY MOUNTED INSIDE EACH PANELBOARD UNDER TRANSPARENT SHIELD WHERE CIRCUIT CHANGES OCCUR AS PART OF THIS PROJECT. PROVIDE HAND-WRITTEN SCHEDULE DURING CONSTRUCTION. COORDINATE FINAL SCHEDULE ROOM IDENTIFICATION WITH OWNER SUCH THAT ROOM LABELING IS USEFUL TO OWNER. COPIES OF EACH CIRCUIT DISTRIBUTION CHART IDENTIFIED BY THE PANELBOARD SHALL BE INCLUDED IN THE MAINTENANCE MANUAL.
1.21	INSTALL WORK ONLY AFTER COORDINATION WITH EXISTING CONDITIONS AND OTHER TRADES. IN GENERAL, EACH TRADE SHALL COORDINATE AND ROUTE ITS WORK AS CLOSE TO CEILING DECK AS POSSIBLE TO PERMIT. CEILING HEIGHTS AS CALLED FOR. LOCATION OF EXPOSED OR FINISH ELEMENTS AS SHOWN ON ARCHITECTURAL REFLECTED CEILING PLANS. ACCESS TO TESTING AND INSPECTION SERVICE POINTS. CROSSING OF PIPING, DUCTWORK AND CONDUITS. CONVENIENT REMOVAL OF AT LEAST ONE 2'X4' CEILING TILE WITHIN EACH SPACE OR EVERY 200 SQUARE FEET OF AREA FOR ACCESS TO ABOVE CEILING COMPONENTS.
1.22	COORDINATION AND WORK REQUIRED TO ACCOMPLISH THE ABOVE SHALL BE PROVIDED AS PART OF THE CONTRACT WORK WITH NO ADDITIONAL COST TO THE OWNER. WORK TO INCLUDE: OFFSET OF PIPING, DUCTWORK AND CONDUITS AS REQUIRED (BETWEEN ROOMS). ROUTING CHANGES WITHIN ROOMS OR SPACES TO AVOID CONFLICTS.
2.0 PART 2 - PRODUCTS	
2.1	CONDUITS SHALL BE EMT, RMC OR IMC METAL CONDUIT, PVC CONDUIT FOR SERVICE ENTRANCES AND SITE LIGHTING UNDERGROUND. WIRING INSTALLED IN CONDUITS SHALL BE COPPER, THIN/THIN FOR UP TO #4 AWG, THIN OR XHH FOR #3 AWG AND LARGER. ALUMINUM CONDUCTORS PERMITTED FOR SERVICE ENTRANCE AS CALLED FOR. MINIMUM WIRE SIZE SHALL BE #12 AWG. CONDUIT MANUFACTURERS REPUBLIC, GENERAL ELECTRIC, TRIANGLE, CARLIN, NISE MANUFACTURERS AMERICAN, GENERAL CABLE, CAPITOL, ALCOA. PROVIDE APPROVED STEEL SET SCREW FITTINGS, PROVIDE STEEL COMPRESSOR FITTINGS IN DAMP OR WET LOCATIONS.
2.2	PROVIDE APPROVED STEEL, CLAMPS, STRAPS AND CONDUIT HANGERS AS REQUIRED.
2.3	SURFACE METAL RACEWAY, WHERE SPECIFICALLY PERMITTED, TO BE WIREMOLD 500 OR 700 SERIES, WITH SURFACE BOXES OR CABINET CONNECTORS AS REQUIRED. PROVIDE CONCEALED SUPPORT CLIPS FASTENED TO EXISTING WALLS, 18 INCHES ON CENTER. BEIGE COLOR. PAINTED BY GENERAL CONTRACTOR.
2.4	WIRING CONCEALED IN DRY WALL CONSTRUCTION AND ABOVE FINISHED CEILING MAY BE TYPE AC CABLE, #12 MINIMUM, COPPER CONDUCTORS, WITH FULL SIZE INSULATED GROUND CONDUCTOR AND APPROVED CONNECTORS. FIRE ALARM WIRING SHALL BE #16 AWG MINIMUM AC CABLE WITH RED PAINTED METAL SHEATH. PROVIDE METAL NAIL PLATES WHERE CABLES ARE WITHIN 1-1/4 INCH OF FACE OF FRAMING MEMBERS. AFC TYPE "HCF40", EQUIVALENT BY ALFLEX OR CAPITOL.
2.5	DIMMERS TO BE DECORA PLATE, 1000 WATT, SLIDE TYPE WITH OFF SWITCH, SINGLE OR 3 WAY TYPE AS CALLED FOR, PROVIDE AS SOLID STATE TYPE WITH RADIO INTERFERENCE FILTER, NON-ILLUMINATED TYPE, COLOR TO MATCH DEVICES, GANG WITH DEVICES WHERE SHOWN. LEVITON, GENERAL ELECTRIC, PASS 4 SEYMOUR, HUBBELL OR SKYLARK CONTROLS.
2.6	METAL CLAD CABLE, TYPE MC, BRANCH CIRCUITS. PROVIDE METAL CLAD CABLE AS FOLLOWS: #12 OR #10 AWG AS REQUIRED. THREE CONDUCTOR ONLY (ONE CONDUCTOR GROUNDING GREEN INSULATION) 600 VOLT RATED INSULATION ON CONDUCTOR. MAKE: AFC "MC" OR GENERAL CABLE, ALFLEX.
2.7	DEVICES SHALL BE AS CALLED FOR ON SYMBOL LIST. INSTALL IN METAL BOX, SIZED FOR QUANTITY OF DEVICES AND WIRES INSTALLED. PROVIDE MATCHING SMOOTH, STAINLESS STEEL PLATES. DEVICES AS LEVITON 1221 SERIES SWITCHES, COLOR AS SELECTED BY ARCHITECT, LEVITON 5800 SERIES RECEPTACLES, COLOR AS SELECTED BY ARCHITECT. HUBBELL, PASS AND SEYMOUR OR LEVITON. PASS 4 SEYMOUR LINED PLATES NOT ACCEPTABLE.
2.8	NON-METALLIC DEVICE BOXES, NOT PERMITTED.
2.9	LIGHTING FIXTURES SHALL BE AS SCHEDULED ON PLANS. PROVIDE ALL REQUIRED MOUNTING, CONNECTION, AND ALIGNMENT ACCESSORIES REQUIRED FOR COMPLETE INSTALLATION. PROVIDE WITH "DAMP", "WET" INSULATED CEILING OR OTHER RATINGS TO MEET CONDITIONS. ALL ELECTRONIC BALLAST TO HAVE RATING OF LESS THAN 10% TOTAL HARMONIC DISTORTION.
2.10	EXIT AND EMERGENCY LIGHTING EQUIPMENT SHALL BE AS SCHEDULED.
X.	DESCRIPTION: UNIVERSAL MOUNTED EXIT SIGN, BRUSHED ALUMINUM STENCIL FACE, MATTE BLACK METAL HOUSING, RED PANEL, SINGLE OR DOUBLE FACE AS SPECIFIED. PROVIDE BATTERY BACKED UP BATTERY POWER SUPPLY. LITHONIA SERIES: SIGNATURE LED SERIES MOUNTING: SURFACE, CEILING, PENDANT OR WALL MOUNTED WHERE NOTED OR REQUIRED. NOTES: HIGH POWER FACTOR, DUAL-LITE, LIGHTALARMS, PRESCOLITE SUBSTITUTES:
BU.	DESCRIPTION: SURFACE WALL MOUNTED BATTERY UNIT WITH HIGH-IMPACT POLYCARBONATE HOUSING, WHITE, DUAL INTEGRAL HEADS AND/OR REMOTE HEADS AS CALLED FOR, SMOOTH CORNERED ARCHITECTURAL DESIGN, 6 VOLT OUTPUT. LITHONIA SERIES: GELUM (2) 8 WATT HALOGEN WHERE CALLED FOR MOUNTING: SURFACE, WALL, PROVIDE BLOCKING. NOTES: DUAL-LITE, HALORIDE SUBSTITUTES:
BU-O.	SAME AS TYPE "BU", EXCEPT WITHOUT HEADS.
EL.	DESCRIPTION: REMOTE FLOOD HEADS, THERMOPLASTIC, DUAL HEADS WITH COMMON BACK PLATE. WHITE ON WHITE OR LIGHT SURFACES, BLACK ON DARK OR BRICK SURFACES. LITHONIA SERIES: PAR 36 SERIES LAMPS: (1) OR (2) 8W 6 VOLT HALOGEN MOUNTING: SURFACE, WALL, EMERGENCY POWER FROM BATTERY UNIT EQUIPMENT. SUBSTITUTES:
2.11	WHERE PANELBOARDS ARE EXISTING, PROVIDE NEW BREAKERS AS CALLED FOR. BREAKERS TO BE AVAILABLE FOR INSTALLATION IN EXISTING PANELS. MAINTAIN PANEL FAULT CURRENT RATING. VERIFY PANEL TYPE, CAPACITY, MOUNTING DETAILS ON SITE. PROVIDE ALL REQUIRED HARDWARE FOR COMPLETE INSTALLATION. PROVIDE NEW, TYPED PANEL SCHEDULE LISTING ALL LOADS.
2.12	DISCONNECTS TO BE NEMA 1 OR 3R AS CALLED FOR, HEAVY DUTY, 250 VOLT, FUSED, WITH NEUTRAL AND GROUND KITS. PROVIDE SIZE AS REQUIRED FOR EQUIPMENT BEING SERVED. CONFIRM WITH APPROVED EQUIPMENT SHOP DRAWINGS. PROVIDE FUSES AS REQUIRED. MATCH EQUIPMENT NAME PLATES. ITE, SQUARE D, GENERAL ELECTRIC.
2.13	FIRE ALARM SYSTEM SHALL BE EXISTING TO BE MODIFIED AS SHOWN. FIRE ALARM ADDRESSABLE, NON-CODED AUTOMATIC AND MANUAL SYSTEM. THE COMPLETE SYSTEM SHALL BE UL LISTED AS INDIVIDUAL COMPONENTS AND AS A COMPLETE SYSTEM. STROBE CIRCUITS SHALL BE FULLY SYNCHRONIZED. SYSTEM SHALL MEET WITH APPROVAL OF NEW HAMPSHIRE FIRE MARSHALL'S OFFICE, DEPARTMENT OF LABOR AND INDUSTRY AND LEBANON FIRE DEPARTMENT.
SUBMIT PLANS TO FIRE DEPARTMENT PRIOR TO ROUGH-IN FOR REVIEW.	
2.14	INITIATION AND NOTIFICATION DEVICES: MANUAL PULL STATIONS, HEAT AND SMOKE DETECTORS, MONITOR AND CONTROL MODULES, AND HORN, STROBE, SPEAKER AND COMBINATION NOTIFICATION DEVICES SHALL BE MANUFACTURERS STANDARD PRODUCTS TO MATCH PANEL.
MANUAL PULL STATION - EXTRUDED ALUMINUM CONSTRUCTION (PLASTIC HOUSING NOT ACCEPTABLE), RED ENAMEL FINISH, RAISED LETTER LABEL, SINGLE OR DOUBLE ACTION PER FIRE DEPARTMENT REQUIREMENTS, RESETTABLE WITH KEY SWITCH OR SCREEN DRIVER PER FIRE DEPARTMENT REQUIREMENTS. OPERATION: PULLING STATION'S HANDLE WILL RELEASE THE INTERNAL SWITCH TO TRIGGER THE ALARM DETECTION CIRCUIT.	
AUTOMATIC THERMAL DETECTOR: ADDRESSABLE, PLUG IN SENSOR, FIXED OR RATE-OF-RISE AS INDICATED ON DRAWINGS WITH TEMPERATURE RATINGS AS INDICATED ON DRAWINGS, LOW PROFILE HOUSING, BUILT-IN TEST SWITCH.	
PHOTO ELECTRIC SMOKE DETECTOR - ADDRESSABLE, PLUG-IN OPTICAL SENSOR, PROGRAMMABLE SENSITIVITY WITH CONTINUAL MONITORING, LOW PROFILE HOUSING.	
DUCT SMOKE DETECTOR - IONIZATION HEAD WITH AIR TIGHT CHAMBER, SAMPLE TUBE, INTEGRAL MOUNTING BASE, SAMPLE TUBE WITH FIELD TRIM ASLE 48 INCHES LONG, CAPABLE OF HANDLING 500 TO 4,000 FPM, AUXILIARY CONTACTS FOR FAN SHUT-DOWN WIRING. LEATHERPROOF RATED WHERE SHOWN ON DRAWINGS AT BUILDING EXTERIOR.	
HORN, STROBE, SPEAKER, AND COMBINATION NOTIFICATION DEVICES - FIELD SELECTABLE CANDELA RATINGS, XENON FLASH TUBE, CLASS 'A' AND CLASS 'B' COMPATIBLE, SYNCHRONIZATION MODULE, SPEAKER FREQUENCY FROM 400 TO 4,000 HZ, MULTIPLE SPEAKER POWER TAPS, ADA COMPATIBLE, HORN UNITS SHALL HAVE FREQUENCY AND SOUND LEVELS PER NFPA 72.	
2.15	CATV SYSTEM WIRING TO BE 75 OHM, COAX CABLE, BRAIDED COPPER CONCENTRIC GROUND, RG-6, GENERAL CABLE, BELDEN, WEST PENN OR CAROL.
2.16	CATV SYSTEM OUTLETS TO BE INSTALLED IN FLUSH DEVICE BOX. PLATES TO BE COLOR AS SELECTED BY ARCHITECT SMOOTH WITH COAX THREADED FITTING.
2.17	WIRING SHALL BE TESTED TO DEMONSTRATE COMPLIANCE WITH BICSI STANDARDS ELECTRONIC AND PAPER COPY OF THE TEST REPORT FOR EACH RUN WITHIN EACH BUILDING PROVIDED TO THE OWNER FOR REVIEW AND RECORD.
2.18	VOICE AND DATA CABLING SYSTEMS: PROVIDE LABOR, MATERIALS, EQUIPMENT AND SERVICES TO PREPARE AND OPERATIONS REQUIRED FOR THE COMPLETE INSTALLATION AND RELATED WORK AS REQUIRED IN CONTRACT DOCUMENT.
ORGANIZE SUBMITTALS IN BOUND BROCHURES CONTAINING DESCRIPTIVE INFORMATION FOR EACH OF THE FOLLOWING: CATEGORY 6, CATEGORY 6E, CATEGORY 6F, CATEGORY 6G, CATEGORY 6H, CATEGORY 6I, CATEGORY 6J, CATEGORY 6K, CATEGORY 6L, CATEGORY 6M, CATEGORY 6N, CATEGORY 6O, CATEGORY 6P, CATEGORY 6Q, CATEGORY 6R, CATEGORY 6S, CATEGORY 6T, CATEGORY 6U, CATEGORY 6V, CATEGORY 6W, CATEGORY 6X, CATEGORY 6Y, CATEGORY 6Z, CATEGORY 6AA, CATEGORY 6AB, CATEGORY 6AC, CATEGORY 6AD, CATEGORY 6AE, CATEGORY 6AF, CATEGORY 6AG, CATEGORY 6AH, CATEGORY 6AI, CATEGORY 6AJ, CATEGORY 6AK, CATEGORY 6AL, CATEGORY 6AM, CATEGORY 6AN, CATEGORY 6AO, CATEGORY 6AP, CATEGORY 6AQ, CATEGORY 6AR, CATEGORY 6AS, CATEGORY 6AT, CATEGORY 6AU, CATEGORY 6AV, CATEGORY 6AW, CATEGORY 6AX, CATEGORY 6AY, CATEGORY 6AZ, CATEGORY 6BA, CATEGORY 6BB, CATEGORY 6BC, CATEGORY 6BD, CATEGORY 6BE, CATEGORY 6BF, CATEGORY 6BG, CATEGORY 6BH, CATEGORY 6BI, CATEGORY 6BJ, CATEGORY 6BK, CATEGORY 6BL, CATEGORY 6BM, CATEGORY 6BN, CATEGORY 6BO, CATEGORY 6BP, CATEGORY 6BQ, CATEGORY 6BR, CATEGORY 6BS, CATEGORY 6BT, CATEGORY 6BU, CATEGORY 6BV, CATEGORY 6BW, CATEGORY 6BX, CATEGORY 6BY, CATEGORY 6BZ, CATEGORY 6CA, CATEGORY 6CB, CATEGORY 6CC, CATEGORY 6CD, CATEGORY 6CE, CATEGORY 6CF, CATEGORY 6CG, CATEGORY 6CH, CATEGORY 6CI, CATEGORY 6CJ, CATEGORY 6CK, CATEGORY 6CL, CATEGORY 6CM, CATEGORY 6CN, CATEGORY 6CO, CATEGORY 6CP, CATEGORY 6CQ, CATEGORY 6CR, CATEGORY 6CS, CATEGORY 6CT, CATEGORY 6CU, CATEGORY 6CV, CATEGORY 6CW, CATEGORY 6CX, CATEGORY 6CY, CATEGORY 6CZ, CATEGORY 6DA, CATEGORY 6DB, CATEGORY 6DC, CATEGORY 6DD, CATEGORY 6DE, CATEGORY 6DF, CATEGORY 6DG, CATEGORY 6DH, CATEGORY 6DI, CATEGORY 6DJ, CATEGORY 6DK, CATEGORY 6DL, CATEGORY 6DM, CATEGORY 6DN, CATEGORY 6DO, CATEGORY 6DP, CATEGORY 6DQ, CATEGORY 6DR, CATEGORY 6DS, CATEGORY 6DT, CATEGORY 6DU, CATEGORY 6DV, CATEGORY 6DW, CATEGORY 6DX, CATEGORY 6DY, CATEGORY 6DZ, CATEGORY 6EA, CATEGORY 6EB, CATEGORY 6EC, CATEGORY 6ED, CATEGORY 6EE, CATEGORY 6EF, CATEGORY 6EG, CATEGORY 6EH, CATEGORY 6EI, CATEGORY 6EJ, CATEGORY 6EK, CATEGORY 6EL, CATEGORY 6EM, CATEGORY 6EN, CATEGORY 6EO, CATEGORY 6EP, CATEGORY 6EQ, CATEGORY 6ER, CATEGORY 6ES, CATEGORY 6ET, CATEGORY 6EU, CATEGORY 6EV, CATEGORY 6EW, CATEGORY 6EX, CATEGORY 6EY, CATEGORY 6EZ, CATEGORY 6FA, CATEGORY 6FB, CATEGORY 6FC, CATEGORY 6FD, CATEGORY 6FE, CATEGORY 6FF, CATEGORY 6FG, CATEGORY 6FH, CATEGORY 6FI, CATEGORY 6FJ, CATEGORY 6FK, CATEGORY 6FL, CATEGORY 6FM, CATEGORY 6FN, CATEGORY 6FO, CATEGORY 6FP, CATEGORY 6FQ, CATEGORY 6FR, CATEGORY 6FS, CATEGORY 6FT, CATEGORY 6FU, CATEGORY 6FV, CATEGORY 6FW, CATEGORY 6FX, CATEGORY 6FY, CATEGORY 6FZ, CATEGORY 6GA, CATEGORY 6GB, CATEGORY 6GC, CATEGORY 6GD, CATEGORY 6GE, CATEGORY 6GF, CATEGORY 6GG, CATEGORY 6GH, CATEGORY 6GI, CATEGORY 6GJ, CATEGORY 6GK, CATEGORY 6GL, CATEGORY 6GM, CATEGORY 6GN, CATEGORY 6GO, CATEGORY 6GP, CATEGORY 6GQ, CATEGORY 6GR, CATEGORY 6GS, CATEGORY 6GT, CATEGORY 6GU, CATEGORY 6GV, CATEGORY 6GW, CATEGORY 6GX, CATEGORY 6GY, CATEGORY 6GZ, CATEGORY 6HA, CATEGORY 6HB, CATEGORY 6HC, CATEGORY 6HD, CATEGORY 6HE, CATEGORY 6HF, CATEGORY 6HG, CATEGORY 6HH, CATEGORY 6HI, CATEGORY 6HJ, CATEGORY 6HK, CATEGORY 6HL, CATEGORY 6HM, CATEGORY 6HN, CATEGORY 6HO, CATEGORY 6HP, CATEGORY 6HQ, CATEGORY 6HR, CATEGORY 6HS, CATEGORY 6HT, CATEGORY 6HU, CATEGORY 6HV, CATEGORY 6HW, CATEGORY 6HX, CATEGORY 6HY, CATEGORY 6HZ, CATEGORY 6IA, CATEGORY 6IB, CATEGORY 6IC, CATEGORY 6ID, CATEGORY 6IE, CATEGORY 6IF, CATEGORY 6IG, CATEGORY 6IH, CATEGORY 6II, CATEGORY 6IJ, CATEGORY 6IK, CATEGORY 6IL, CATEGORY 6IM, CATEGORY 6IN, CATEGORY 6IO, CATEGORY 6IP, CATEGORY 6IQ, CATEGORY 6IR, CATEGORY 6IS, CATEGORY 6IT, CATEGORY 6IU, CATEGORY 6IV, CATEGORY 6IW, CATEGORY 6IX, CATEGORY 6IY, CATEGORY 6IZ, CATEGORY 6JA, CATEGORY 6JB, CATEGORY 6JC, CATEGORY 6JD, CATEGORY 6JE, CATEGORY 6JF, CATEGORY 6JG, CATEGORY 6JH, CATEGORY 6JI, CATEGORY 6JJ, CATEGORY 6JK, CATEGORY 6JL, CATEGORY 6JM, CATEGORY 6JN, CATEGORY 6JO, CATEGORY 6JP, CATEGORY 6JQ, CATEGORY 6JR, CATEGORY 6JS, CATEGORY 6JT, CATEGORY 6JU, CATEGORY 6JV, CATEGORY 6JW, CATEGORY 6JX, CATEGORY 6JY, CATEGORY 6JZ, CATEGORY 6KA, CATEGORY 6KB, CATEGORY 6KC, CATEGORY 6KD, CATEGORY 6KE, CATEGORY 6KF, CATEGORY 6KG, CATEGORY 6KH, CATEGORY 6KI, CATEGORY 6KJ, CATEGORY 6KL, CATEGORY 6KM, CATEGORY 6KN, CATEGORY 6KO, CATEGORY 6KP, CATEGORY 6KQ, CATEGORY 6KR, CATEGORY 6KS, CATEGORY 6KT, CATEGORY 6KU, CATEGORY 6KV, CATEGORY 6KW, CATEGORY 6KX, CATEGORY 6KY, CATEGORY 6KZ, CATEGORY 6LA, CATEGORY 6LB, CATEGORY 6LC, CATEGORY 6LD, CATEGORY 6LE, CATEGORY 6LF, CATEGORY 6LG, CATEGORY 6LH, CATEGORY 6LI, CATEGORY 6LJ, CATEGORY 6LK, CATEGORY 6LL, CATEGORY 6LM, CATEGORY 6LN, CATEGORY 6LO, CATEGORY 6LP, CATEGORY 6LQ, CATEGORY 6LR, CATEGORY 6LS, CATEGORY 6LT, CATEGORY 6LU, CATEGORY 6LV, CATEGORY 6LW, CATEGORY 6LX, CATEGORY 6LY, CATEGORY 6LZ, CATEGORY 6MA, CATEGORY 6MB, CATEGORY 6MC, CATEGORY 6MD, CATEGORY 6ME, CATEGORY 6MF, CATEGORY 6MG, CATEGORY 6MH, CATEGORY 6MI, CATEGORY 6MJ, CATEGORY 6MK, CATEGORY 6ML, CATEGORY 6MN, CATEGORY 6MO, CATEGORY 6MP, CATEGORY 6MQ, CATEGORY 6MR, CATEGORY 6MS, CATEGORY 6MT, CATEGORY 6MU, CATEGORY 6MV, CATEGORY 6MW, CATEGORY 6MX, CATEGORY 6MY, CATEGORY 6MZ, CATEGORY 6NA, CATEGORY 6NB, CATEGORY 6NC, CATEGORY 6ND, CATEGORY 6NE, CATEGORY 6NF, CATEGORY 6NG, CATEGORY 6NH, CATEGORY 6NI, CATEGORY 6NJ, CATEGORY 6NK, CATEGORY 6NL, CATEGORY 6NM, CATEGORY 6NO, CATEGORY 6NP, CATEGORY 6NQ, CATEGORY 6NR, CATEGORY 6NS, CATEGORY 6NT, CATEGORY 6NU, CATEGORY 6NV, CATEGORY 6NW, CATEGORY 6NX, CATEGORY 6NY, CATEGORY 6NZ, CATEGORY 6OA, CATEGORY 6OB, CATEGORY 6OC, CATEGORY 6OD, CATEGORY 6OE, CATEGORY 6OF, CATEGORY 6OG, CATEGORY 6OH, CATEGORY 6OI, CATEGORY 6OJ, CATEGORY 6OK, CATEGORY 6OL, CATEGORY 6OM, CATEGORY 6ON, CATEGORY 6OO, CATEGORY 6OP, CATEGORY 6OQ, CATEGORY 6OR, CATEGORY 6OS, CATEGORY 6OT, CATEGORY 6OU, CATEGORY 6OV, CATEGORY 6OW, CATEGORY 6OX, CATEGORY 6OY, CATEGORY 6OZ, CATEGORY 6PA, CATEGORY 6PB, CATEGORY 6PC, CATEGORY 6PD, CATEGORY 6PE, CATEGORY 6PF, CATEGORY 6PG, CATEGORY 6PH, CATEGORY 6PI, CATEGORY 6PJ, CATEGORY 6PK, CATEGORY 6PL, CATEGORY 6PM, CATEGORY 6PN, CATEGORY 6PO, CATEGORY 6PP, CATEGORY 6PQ, CATEGORY 6PR, CATEGORY 6PS, CATEGORY 6PT, CATEGORY 6PU, CATEGORY 6PV, CATEGORY 6PW, CATEGORY 6PX, CATEGORY 6PY, CATEGORY 6PZ, CATEGORY 6QA, CATEGORY 6QB, CATEGORY 6QC, CATEGORY 6QD, CATEGORY 6QE, CATEGORY 6QF, CATEGORY 6QG, CATEGORY 6QH, CATEGORY 6QI, CATEGORY 6QJ, CATEGORY 6QK, CATEGORY 6QL, CATEGORY 6QM, CATEGORY 6QN, CATEGORY 6QO, CATEGORY 6QP, CATEGORY 6QQ, CATEGORY 6QR, CATEGORY 6QS, CATEGORY 6QT, CATEGORY 6QU, CATEGORY 6QV, CATEGORY 6QW, CATEGORY 6QX, CATEGORY 6QY, CATEGORY 6QZ, CATEGORY 6RA, CATEGORY 6RB, CATEGORY 6RC, CATEGORY 6RD, CATEGORY 6RE, CATEGORY 6RF, CATEGORY 6RG, CATEGORY 6RH, CATEGORY 6RI, CATEGORY 6RJ, CATEGORY 6RK, CATEGORY 6RL, CATEGORY 6RM, CATEGORY 6RN, CATEGORY 6RO, CATEGORY 6RP, CATEGORY 6RQ, CATEGORY 6RR, CATEGORY 6RS, CATEGORY 6RT, CATEGORY 6RU, CATEGORY 6RV, CATEGORY 6RW, CATEGORY 6RX, CATEGORY 6RY, CATEGORY 6RZ, CATEGORY 6SA, CATEGORY 6SB, CATEGORY 6SC, CATEGORY 6SD, CATEGORY 6SE, CATEGORY 6SF, CATEGORY 6SG, CATEGORY 6SH, CATEGORY 6SI, CATEGORY 6SJ, CATEGORY 6SK, CATEGORY 6SL, CATEGORY 6SM, CATEGORY 6SN, CATEGORY 6SO, CATEGORY 6SP, CATEGORY 6SQ, CATEGORY 6SR, CATEGORY 6SS, CATEGORY 6ST, CATEGORY 6SU, CATEGORY 6SV, CATEGORY 6SW, CATEGORY 6SX, CATEGORY 6SY, CATEGORY 6SZ, CATEGORY 6TA, CATEGORY 6TB, CATEGORY 6TC, CATEGORY 6TD, CATEGORY 6TE, CATEGORY 6TF, CATEGORY 6TG, CATEGORY 6TH, CATEGORY 6TI, CATEGORY 6TJ, CATEGORY 6TK, CATEGORY 6TL, CATEGORY 6TM, CATEGORY 6TN, CATEGORY 6TO, CATEGORY 6TP, CATEGORY 6TQ, CATEGORY 6TR, CATEGORY 6TS, CATEGORY 6TT, CATEGORY 6TU, CATEGORY 6TV, CATEGORY 6TW, CATEGORY 6TX, CATEGORY 6TY, CATEGORY 6TZ, CATEGORY 6UA, CATEGORY 6UB, CATEGORY 6UC, CATEGORY 6UD, CATEGORY 6UE, CATEGORY 6UF, CATEGORY 6UG, CATEGORY 6UH, CATEGORY 6UI, CATEGORY 6UJ, CATEGORY 6UK, CATEGORY 6UL, CATEGORY 6UM, CATEGORY 6UN, CATEGORY 6UO, CATEGORY 6UP, CATEGORY 6UQ, CATEGORY 6UR, CATEGORY 6US, CATEGORY 6UT, CATEGORY 6UU, CATEGORY 6UV, CATEGORY 6UW, CATEGORY 6UX, CATEGORY 6UY, CATEGORY 6UZ, CATEGORY 6VA, CATEGORY 6VB, CATEGORY 6VC, CATEGORY 6VD, CATEGORY 6VE, CATEGORY 6VF, CATEGORY 6VG, CATEGORY 6VH, CATEGORY 6VI, CATEGORY 6VJ, CATEGORY 6VK, CATEGORY 6VL, CATEGORY 6VM, CATEGORY 6VN, CATEGORY 6VO, CATEGORY 6VP, CATEGORY 6VQ, CATEGORY 6VR, CATEGORY 6VS, CATEGORY 6VT, CATEGORY 6VU, CATEGORY 6VV, CATEGORY 6VW, CATEGORY 6VX, CATEGORY 6VY, CATEGORY 6VZ, CATEGORY 6WA, CATEGORY 6WB, CATEGORY 6WC, CATEGORY 6WD, CATEGORY 6WE, CATEGORY 6WF, CATEGORY 6WG, CATEGORY 6WH, CATEGORY 6WI, CATEGORY 6WJ, CATEGORY 6WK, CATEGORY 6WL, CATEGORY 6WM, CATEGORY 6WN, CATEGORY 6WO, CATEGORY 6WP, CATEGORY 6WQ, CATEGORY 6WR, CATEGORY 6WS, CATEGORY 6WT, CATEGORY 6WU, CATEGORY 6WV, CATEGORY 6WW, CATEGORY 6WX, CATEGORY 6WY, CATEGORY 6WZ, CATEGORY 6XA, CATEGORY 6XB, CATEGORY 6XC, CATEGORY 6XD, CATEGORY 6XE, CATEGORY 6XF, CATEGORY 6XG, CATEGORY 6XH, CATEGORY 6XI, CATEGORY 6XJ, CATEGORY 6XK, CATEGORY 6XL, CATEGORY 6XM, CATEGORY 6XN, CATEGORY 6XO, CATEGORY 6XP, 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3.0 PART 3 - EXECUTION	
3.1	WORK SHALL BE COMPLETED BY NEW HAMPSHIRE LICENSED ELECTRICIANS IN A WORKMANLIKE MANNER, CONSISTENT WITH STANDARD PRACTICE, AND PRESENT A NEAT AND FINISHED APPEARANCE PRIOR TO FINAL ACCEPTANCE BY OWNERS REPRESENTATIVE.
3.2	VERIFY STRUCTURAL, ARCHITECTURAL, AND MECHANICAL CONDITIONS (BEAM CLEARANCES, DOOR SWINGS, COUNTER HEIGHTS, AND DUCT CLEARANCES) PRIOR TO ROUGH IN.
3.3	ELECTRICAL WORK SHALL BE CAREFULLY LAID OUT AND COORDINATED WITH OTHER TRADES, UTILITIES, AND SITE CONDITIONS. CUTTING, DRILLING, AND ALTERATIONS TO OTHER WORK SHALL BE PLANNED IN ADVANCE WITH THE GENERAL CONTRACTOR AND BE CAREFULLY DONE. DAMAGE SHALL BE REPAIRED BY SKILLED MECHANICS, TO THE SATISFACTION OF THE OWNERS REPRESENTATIVE.
3.4	THE CONTRACTOR SHALL PROTECT AND KEEP CLEAN ELECTRICAL EQUIPMENT, PANELS, FIXTURES, AND DEVICES.
3.5	THE CONTRACTOR SHALL PROVIDE INFORMATION ABOUT HIS EQUIPMENT TO THE GENERAL CONTRACTOR FOR COORDINATION.
3.6	THE CONTRACTOR SHALL VERIFY FINAL LOCATIONS AND CAPACITIES OF MECHANICAL, HVAC, AND OWNERS EQUIPMENT ON SITE PRIOR TO ROUGH IN.
3.7	METAL RACEWAY SYSTEMS, AND ELECTRICAL EQUIPMENT SHALL BE BONDED AND GROUNDED AS CALLED FOR AND PER NEC 250. CONDUIT, CABLE AND RACEWAY FITTINGS, LUGS, BOLTS, AND CONNECTIONS SHALL BE DESIGNED FOR THE PURPOSE AND CONDITIONS UNDER WHICH THEY ARE INSTALLED. EQUIPMENT SHALL BE PROPERLY INSTALLED AND TIGHTENED TO ASSURE MECHANICAL AND ELECTRICAL CONTINUITY. NO CONDUIT SHALL BE INSTALLED ABOVE TOP CHORD OF BAR JOISTS OR STEEL BEAMS.
3.8	SURFACE METAL RACEWAY TO BE INSTALLED WITH MANUFACTURER'S STANDARD FITTINGS WHERE POSSIBLE. FIELD BENDS AND OFFSETS WHERE REQUIRED, SHALL BE MADE WITH MANUFACTURER'S STANDARD BENDING TOOL. INSTALL RACEWAY PARALLEL TO BUILDING STRUCTURE. MINIMIZE EXPOSED LENGTHS. FIELD VERIFY ACCEPTABLE LOCATIONS WITH OWNER'S REPRESENTATIVE ON SITE.
3.9	WIRING SHALL BE CONCEALED IN WALLS AND ABOVE CEILING IN FINISHED AREAS AND WHEREVER POSSIBLE. WIRING IN UTILITY MAY BE EXPOSED. EXPOSED WIRING SHALL BE IN CONDUIT, BE NEAT AND PARALLEL TO STRUCTURE. NO WIRING SHALL BE INSTALLED ABOVE TOP CHORD OF JOISTS.
3.10	WIRING SHALL BE SEPARATED AND MARKED TO INDICATE PHASE AND FUNCTION. WIRING SIZE # 10 AND SMALLER SHALL BE SOLID COLOR INSULATION. WIRING #6 AND LARGER MAY BE BLACK INSULATION WITH PHASE TAPE APPLIED TO EACH END AND AT JUNCTION BOXES. LABEL ALL PANELS WITH WIRING COLOR SCHEME, PER NEC. BUILDING WIRING SHALL BE COLOR CODED AS FOLLOWS: PHASE A BLACK PHASE B RED PHASE C BLUE NEUTRAL WHITE GROUND GREEN
3.11	CONDUITS, RACEWAYS, AND CABLES SHALL BE PROPERLY AND SECURELY ATTACHED TO BUILDING STRUCTURAL COMPONENTS AS CALLED FOR AND PER NEC. FASTENERS AND HARDWARE SHALL BE APPROVED FOR THE INSTALLATION AND CONDITIONS ENCOUNTERED.
3.12	EACH OUTLET OR JUNCTION IN ANY WIRING SYSTEM SHALL BE MADE IN AN APPROVED, METALLIC JUNCTION BOX. BOX SHALL BE SUITABLE FOR THE SIZE AND NUMBER OF CONDUCTORS AND DEVICES INSTALLED, AND CONDITIONS ENCOUNTERED. SPLICES SHALL BE MADE WITH APPROVED MECHANICAL CONNECTORS.
3.13	CIRCUITS NOT OTHERWISE CALLED FOR SHALL BE 20 AMP, 120 VOLT, SINGLE PHASE, 2 WIRE WITH GROUND. CONDUIT HOME RUNS MAY BE COMBINED PROPERLY PHASED AND BALANCED, AT THE DISCRETION OF THE ELECTRICAL CONTRACTOR. CONFIRM PHASE ROTATION OF ALL EQUIPMENT. CORRECT WIRING AS REQUIRED FOR PROPER OPERATION.
3.14	INTENT OF CONTRACT DOCUMENTS IS TO MEET CITY OF LEBANON FIRE DEPARTMENT REQUIREMENTS FOR THE LIMITED RENOVATIONS CALLED FOR. CONTACT FIRE DEPARTMENT PRIOR TO BIDDING. OBTAIN COPY OF LATEST CITY OF LEBANON "FIRE ALARM RULES AND REGULATIONS". NOTIFY ENGINEER OF ANY REQUIRED ALTERNATIONS OR ADDITIONS TO SYSTEMS. NO ALLOWANCE FOR ADDITIONAL COMPENSATION WILL BE PERMITTED FOR FAILURE TO DETERMINE FIRE DEPARTMENT REQUIREMENTS PRIOR TO BIDDING.
3.15	FIRE ALARM VENDORS/MANUFACTURERS SHALL PREPARE MATERIALS IN COORDINATION WITH DIVISION 26 CONTRACTOR. DIVISION 26 CONTRACTOR SHALL PREPARE MATERIALS IN COORDINATION WITH DIVISION 26 CONTRACTOR AND INCLUDE MATERIALS FROM VARIETY OF VENDORS AND SUPPLIERS AS MAY BE NEEDED.
3.16	PROVIDE SUBMITTALS FOR THE ENTIRE SYSTEM INCLUDING: COMPLETE EQUIPMENT LIST INCLUDING QUANTITIES, CATALOG DESCRIPTIVE LITERATURE FOR ALL EQUIPMENT, RISER WIRING DIAGRAM, WIRING ALPHABET, WIRE QUANTITY AND ZONE, TYPICAL TERMINAL WIRING DIAGRAM FOR EACH TYPE OF DEVICE, TERMINAL WIRING DIAGRAM FOR THE FIRE ALARM CONTROL PANEL. CALCULATIONS, INCLUDING ACTUAL EQUIPMENT LOADS AND QUANTITIES USED TO DERIVE BATTERY BACKUP AMPERE-HOUR RATING.
3.17	SUBMITTAL OF FIRE ALARM SHOP DRAWINGS SHALL CONTAIN AT LEAST ONE (1) BOOKLET OF ORIGINAL MANUFACTURER SPECIFICATION AND INSTALLATION INSTRUCTION SHEETS. SUBSEQUENT BOOKLETS MAY BE COPIES. CONFIRMATION OF SUBMITTAL OF COPY OF FINAL PLANS, SPECIFICATIONS AND SHOP DRAWINGS TO LOCAL AND STATE FIRE DEPARTMENT FOR APPROVAL.
3.18	DIVISION 26 CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF THE FIRE ALARM SYSTEM SUBMITTAL. SUCH COORDINATION SHALL INCLUDE WORKING WITH SELECTED FIRE ALARM SYSTEM VENDOR, THE PROJECT GENERAL CONTRACTOR, THE PROJECT FIRE PROTECTION/SPRINKLER SYSTEM SUB-CONTRACTOR, AND THE OWNER'S REPRESENTATIVE TO SECURE WRITTEN APPROVALS OF THE FIRE ALARM SYSTEM PRIOR TO CONSTRUCTION. COPIES OF WRITTEN CORRESPONDENCE RECEIVED FROM THE FIRE DEPARTMENT OR THE STATE FIRE MARSHAL SHALL BE COPIED TO THE OWNER'S REPRESENTATIVE AND THE ARCHITECT FOR REVIEW AND COMMENT PRIOR TO IMPLEMENTING ANY REQUESTED CHANGES BY EITHER OF THESE DEPARTMENTS.
3.19	VENDOR LAYOUT: THE INTENT OF THE CONTRACT DOCUMENTS IS TO PROVIDE A FIRE ALARM SYSTEM WITH HORNS, STROBES, AND/OR COMBINATION UNITS COMPLYING WITH CODES AND STANDARDS NOTED. SYSTEM VENDORS AND/OR MANUFACTURER'S REPRESENTATIVE SHALL FAMILIARIZE HIMSELF WITH THE CONTRACT DOCUMENTS, INCLUDING PLANS, DETAILS, ARCHITECTURAL ELEVATIONS AND BUILDING SECTIONS AND THE LOCATION OF ALARM INDICATING APPLIANCES. VENDOR SHALL CONFIRM THAT THE STYLE, CAPACITY, NEMA RATING, AND OPERATIONAL CHARACTERISTICS OF THIS EQUIPMENT ARE SUITABLE FOR THE USE AND LOCATION SHOWN. SPECIFIC ATTENTION IS CALLED TO ADA GUIDELINES AND NFPA 72, REPAIRING STROBE EQUIPMENT LAYOUT, PLACEMENT AND CANDELLA RATING. VENDOR SHALL INCLUDE WRITTEN CONFIRMATION AS PART OF SUBMITTAL THAT EQUIPMENT AS SUBMITTED COMPLIES WITH STANDARDS AND INTENDED USE, SPACING AND LOCATION OR PROVIDE WRITTEN SUMMARY OF ANY EXCEPTIONS TO SUCH COMPLIANCE ON A CASE BY CASE BASIS.
3.20	FIRE ALARM SYSTEM SHOP DRAWINGS - INCLUDING BATTERY CALCULATIONS AND EQUIPMENT CUT SHEETS, ALONG WITH CONTRACT DRAWINGS, SHALL BE SUBMITTED BY DIVISION 26 TO BOTH THE LEBANON FIRE DEPARTMENT AND THE STATE OF NEW HAMPSHIRE FIRE MARSHALL'S OFFICE FOR REVIEW AND APPROVAL. SUBMIT IN AMPLE TIME TO ALLOW FOR REVIEW AND APPROVAL TIME PRIOR TO INSTALLATION.
3.21	FIRE ALARM SYSTEM ADDITIONS AND RENOVATIONS SHALL BE 100% TESTED IN ACCORDANCE WITH NFPA 72. PROVIDE WRITTEN AND SIGNED REPORT INDICATING SCOPE OF TEST, DATE OF TEST, PERSON PERFORMING TEST, DEVICES TESTED AND ANY ABNORMALITIES. USE AND COMPLETE FORM IN NFPA 72. SUBMIT COMPLETED FORM FOR REVIEW PRIOR TO FINAL ACCEPTANCE. CORRECT ALL ABNORMALITIES AND RETEST. PROVIDE 100 PER CENT TESTING, COORDINATE WITH OWNER AND LEBANON FIRE DEPARTMENT.
3.22	COORDINATE EXISTING ELECTRICAL SYSTEMS SERVING OWNER OCCUPIED SPACES AND MAINTAIN SERVICE FOR OWNERS USE. SCHEDULE ALL REQUIRED SYSTEM DOWN TIMES AND OUTAGES WITH OWNER'S REPRESENTATIVE IN WRITING, MINIMUM OF 48 HOURS IN ADVANCE OF WORK.
3.23	PROVIDE PHASE/SEQUENCE TESTING PRIOR TO DISCONNECTING ANY EQUIPMENT OR CIRCUITS. TAG WIRING, RETEST AND CONFIRM ROTATION PRIOR TO RECONNECTING EXISTING EQUIPMENT OR START UP OF PROPOSED EQUIPMENT.
3.24	DEMOLISH AND REMOVE ALL EXISTING SYSTEM DEVICES, EQUIPMENT AND WIRING AFTER REPLACEMENT SYSTEMS ARE FULLY FUNCTIONAL. SYSTEMS INCLUDE EXISTING LIGHTING, POWER, FIRE ALARM, AND COMMUNICATIONS SYSTEMS.
END OF SECTION 26 50 00	

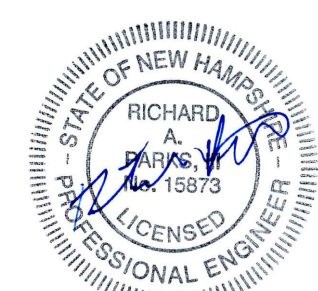
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PLAN KEY:

PROJECT TITLE / ADDRESS:

RVCC LEBABON-LNA/LPN
LAB RENOVATIONS

15 HANOVER COURT
LEBANON, NH 03766

SCALE: AS NOTED DWN BY: SMT
JOB #: 3613 CHKD BY: CFH

PRINT DATE: 01/31/2020

ISSUE DATE:
JANUARY 31, 2020
FOR CONSTRUCTION

REVISION	DATE	COMMENTS

ELECTRICAL SPECIFICATIONS

E-4

SHEET NUMBER: - OF ? MECHANICAL