

October 15, 2015

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**RENOVATION & ADAPTIVE REUSE: ADULT PRIMARY CARE CLINIC**

**CRAVEN COUNTY HEALTH DEPARTMENT**

Bid Date: November 10, 2015 at 3 o'clock

General contractors interested in bidding the project must record their intent to bid with the Architect in order to receive **Bid Forms** and **Notification of Addenda**. Please send an email to the Architect at the following address:

crfrancis1@embarqmail.com



Located at  
329 middle street

C . R . F R A N C I S / A R C H I T E C T U R E

329 middle street new bern, nc 28563 phone: 252.637.1112 fax: 252.637.7698

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RENOVATION & ADAPTIVE REUSE: ADULT PRIMARY  
CARE CLINIC  
CRAVEN COUNTY HEALTH DEPARTMENT  
2818 NEUSE BOULEVARD  
NEW BERN, NC



Located at  
329 middle  
street



7. Bid Security  
Bid Bonds  
Liquidated Damages: See Supplementary General Conditions.
8. Insurance: See Supplementary General Conditions.  
AIA Form G715 shall be attached to Accord Certificate of Insurance 25-S.
9. Gold Pages: Gold pages (Supplementary General Conditions and Division 1) set forth the conditions and procedures governing the project. All contractors, subcontractors and suppliers are advised to read carefully the aforesaid pages before beginning to prepare any estimate or to make a quantity takeoff.
10. Bid Forms: Bid forms will be provided to all contractors by email who have registered their intention to bid.
11. Rules for Bid Opening: All bids must be presented in person to the Owner or Architect and that person must remain for the bid opening to witness the opening of the bids.  
  
All bids must be on bid form. Bids shall be placed in a sealed envelope with contractor's name, project name, date of bid, and license [if required for the project] on the face of the envelope.  
  
Erasures or changes in bid must be noted or explained over signature of the bidder.
12. Return of Documents Plan deposits will be returned to the holder of documents when contract documents are returned to the Architect's office within 30 days of the bid opening with the documents in good condition [bound in the original binders and **all sheets unmarked**. We have had drawings returned marked to the point of being illegible and sheets of drawings unbound and out of order. This condition will preclude the return of deposit checks.].

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26 00 00 ELECTRICAL

GENERAL CONDITIONS

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AIA

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The General Conditions for this project are the GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, AIA DOCUMENT A201-2007

The aforesaid document will be bound into the successful bidder's official contract document set in the presence of the Contractor upon contract signature. Copies of this document bound into the full set of contract documents are on file for review at the following locations:  
Office of the Architect.



Located at  
329 middle street

# SUPPLEMENTARY GENERAL CONDITIONS

## ARTICLE 1 IDENTIFICATION.

For the purpose of the contract documents, the following identification shall be given to these terms:

Owner:	Craven County 406 Craven Street New Bern, NC 28560
Architect:	C. R. Francis / Architecture, P. A. 329 Middle Street, New Bern, NC 28560
Engineer:	Any one or all of the Consulting Engineers engaged by the Architect for engineering services for definitive portions of the work whose names and seals appear on the drawings.
Drawings:	Any one or all sheets of drawings entitled: RENOVATION & ADAPTIVE REUSE: ADULT PRIMARY CARE CLINIC CRAVEN COUNTY HEALTH DEPARTMENT 2818 NEUSE BOULEVARD NEW BERN, NC
Also:	Any additional sheets similarly identified and consecutively numbered issued from time to time as the work progresses to more clearly illustrate the intent of the above mentioned drawings or to illustrate a contract modification.

## ARTICLE 2 GENERAL CONDITIONS.

The General Conditions of the contract shall be as set out in A.I.A. Document A201, 2007 Edition General Conditions of the Contract for Construction and these Supplementary General Conditions pages 45 through 54. These conditions shall be applicable to and form a part of each set of contract documents and all of the conditions contained herein will be applicable to the contract between the Owner and each Contractor.

Should anything written in the Supplementary General Conditions conflict in the above mentioned General Conditions or require more inclusive items or set out additional conditions, the Supplementary General Conditions shall take precedence.

## ARTICLE 3 AMENDMENTS TO A.I.A. DOCUMENT A201, 2007 edition.

### GENERAL PROVISIONS: ARTICLE 1.

#### Execution, Correlation, Intent and Interpretation.

1.1.3.1 Add the following sentence:

Work which is attributed to any condition of the site which was visible at the time of bidding or could reasonably have been concluded by a familiarization with the site and the attendant local conditions shall be included in the Project Cost and no additional cost shall be charged to the Owner for any labor, materials or service required in its execution.

1.1.5.1 Additional paragraph:

It is the intent that all various items indicated or shown in detail on the plans or mentioned in these specifications shall be completed as one whole unit and any work or thing necessary to connect the various parts of the work to produce that result shall be furnished and done by the Contractor without change in the contract price.

1.1.5.2 Additional paragraph:

Certain drawings are customarily considered diagrammatic in character such as those illustrating electrical, plumbing, heating and air-conditioning, and equipment layouts. These drawings must be followed as closely as possible consistent with the construction and should not be scaled. Dimensions must come from field conditions or architectural drawings. Every fitting, device, bend or connection is not necessarily shown, but must be furnished if required to accomplish the operation set out in the specification.

CONTRACTOR: ARTICLE 3

3.14 Cutting and Patching

3.14.1.4 Add the following paragraph:

In the event that the work consists of the restoration of, the renovation of, or the addition to an existing structure, the contractor shall do all cutting, fitting or patching of the existing structure required to fit or receive the new work.

INSURANCE: ARTICLE 11

11.3.1 & 11.4.2

Property Insurance with extended coverage, Article 11.3.1 and Boiler and Machinery Insurance Article 11.4.2, General Conditions are hereby amended to the extent that the coverage as set forth shall be obtained and paid for by the Contractor as part of Builder's Risk Policy with appropriate riders.

Add the following sentence at the end of each paragraph: "Insurance shall be kept in force for the duration of the contract or until occupancy, whichever occurs first."

11.3.1.2

Delete in its entirety.

Insert the following sentence:

The Contractor shall file a copy of all policies with the Owner at the time contracts are signed. If the Owner is damaged by failure of the Contractor to maintain such insurance or notify the Owner of its termination, the Contractor shall bear the

reasonable costs properly attributed thereto.

11.3.1.3

Omit the last sentence.

Insert the following sentence:

The Contractor shall pay all costs not covered because of deductibles in the property insurance policies.

11.3.4

Delete in its entirety.

Insert the following sentence:

Any special insurance coverage desired by the Contractor shall be provided by the Contractor.

12.2.3

Omit the last portion of the sentence following "...Contract Documents" and set a period following "Documents".

Article 15 Claims and Disputes

Omit the following paragraphs 15.3 Mediation and all subparagraphs.

Omit the following paragraphs 15.4 Arbitration and all subparagraphs.

**ARTICLE 4 BIDS AND BONDS.**

Each contractor submitting a bid on work covered by these contract documents shall:

- [1] Hold a Contractor's license of the proper classification according to and in compliance with the laws of North Carolina applicable to his branch of the work and shall place the number and classification of such licenses on the outside of the envelope containing the Contractor's sealed bid.
- [2] The Act of considering a bid from any bidder shall be construed only as a business courtesy extended to the contractors by the Owner who reserves the right, and each bidder by his act of submitting a bid thereby concurs in the right of the Owner, to reject any or all bids without further obligation to any bidder; nor shall the owner be called upon to make known the reason for doing so.
- [3] The Owner likewise reserves the right to waive any or all formalities consistent with the North Carolina General Statutes 143 Article 8 in receiving, considering, or accepting any bid submitted, which may, in their opinion, expedite the awarding of the contract, or be in the best interest of the project.
- [4] Attach to his bid as bid security a bid bond or certified check in an amount equal to five percent (5%) of the bid; bond or check shall be issued to the Owner, named precisely as in the preceding "Identification" paragraph Article 1, by a surety company authorized to do business in North Carolina.
  - a. Should any bidder to whom the contract has been awarded refuse or fail to sign the contract and file payment and performance bond hereinafter described within five days after being notified in writing by the Architect that the contract has been awarded to him, he shall forfeit the full amount of his bid security as liquidated damages for refusal

or failure on the part of the bidder. All conditions of this paragraph are applicable to all bidders in sequence established by the amount of their bids beginning with the lowest bid.

b. Bid bonds in the form of checks shall be returned promptly to the bidder after the bids have been opened, and the contract awarded to and signed by the successful bidder; in any case, not later than thirty (30) days after the date set for the opening of the bids.

[5] File with the Owner at the time a contract is signed a performance bond in an amount equal to one hundred percent (100%) of the contract price and a payment bond equal to one hundred percent (100) of the contract price, both issued by a surety company authorized to do business in North Carolina. Bond will be on the standard A.I.A. form of Surety Association of America and issued in favor the Owner.

## ARTICLE 5 INSURANCE COVERAGE.

Contractor shall provide insurance as follows in the amounts and coverage listed:

Workmen's Compensation	Minimum legal limit
Contractors' Liability	Contractual Liability \$1,000,000 Combined single limit
	Comprehensive General Liability \$1,000,000 Combined single limit
	Personal Injury with employment exclusion deleted, \$1,000,000 Combined single limit
Auto Insurance (Vehicles on Site)	Comprehensive auto liability \$500,000 Combined single limit
Property Insurance (Builder's Risk)	Full insurable value, including Architectural and Engineering fees.

## Article 6 SALES TAX

The Owner is a subdivision of the State and as such is a tax exempt institution for taxes collected for State sales tax. Therefore, the Contractor shall furnish to the Owner, by attachment to his Estimate and Request for Payment, an affidavit of the amount on North Carolina sales and use taxes paid by the Contractor, his subcontractors and suppliers on materials entering into the work and invoiced during the period included in the Request for Payment. The affidavit shall be in a form acceptable to the North Carolina Department of Revenue for reimbursement to tax exempt institutions. If materials are invoiced to inventory in bulk lots, the Contractor shall have his supplier issue special invoices covering those items and quantities entering into this project and showing the appropriate tax, otherwise, the Contractor is the vendor and he shall pay the sales tax on the material himself and indicate such amounts on the affidavit.

## ARTICLE 7 EQUALS AND SUBSTITUTES.

- [1] Equal products are those products of similar material, quality, use and design to that specified, but produced by a different manufacturer. Their use does not modify or change a requirement of the specification other than the trade name.
- [2] Substitute products are products of similar use to that specified, produced by the same or different manufacturers, which requires a modification or change in the specifications and thereby involves a modification of the contract documents (change order) with the attendant contract price adjustments.
- [3] In the specifications, products and processes will be referred to by trade names, Federal Specifications, ASTM Standards, industry referenced standards and/or generic name; the phrase "or equal" may also occur. In these cases, the following options shall be available to the contractor, depending on the method of specification used.
  - a. If three or more trade names with attendant product identification are listed for a single product, the contractor may furnish any of the products listed but his choice will be limited to those listed.
  - b. If one trade name and attendant product identification is given followed by the expression "or equal products manufactured by" and a list of two or more manufacturers are given, the contractor shall use the product named or he may use a product of, and shall be limited to, one of the other manufacturers listed, provided that the product used is similar in design, quality, and use to the product identified. However, the burden of proof that such is the case is the Contractor's, and he shall submit such evidence to the Architect for approval before incorporating the product into the work or including it in a request for payment.
  - c. If one or more industry, Federal or ASTM reference standards is used without any other proprietary identification, the contractor may furnish any product available to him which meets these requirements; however, the burden of proof that such is the case is the Contractor's, and he shall submit such evidence to the Architect for approval before incorporating the product into the work or including it in a request for payment.
  - d. If a trade name is listed for a product followed by the phrase "or equal", the Contractor shall use the product named, or he may use another product provided he obtains the written approval of the Architect. Naming of a product in this case shall be interpreted as establishing a standard of quality by which any product of similar design, operation and use will be compatible if submitted by the Contractor for approval.
  - e. If one name only appears in the specifications, the specification is considered closed and no other products may be used, nor will any submittals for equals be considered; except that, if the project used public funds, the phrase "or equal" is implied and the procedure shall be the same as if it were so written.
- [4] No approvals of products as "equal" will be made prior to the bidding; however, additional trade names may be added to a specified list by addendum prior to bidding. Furthermore, requests for equal or substitute materials shall be made only through a bidder registered for this project with C. R. Francis / Architecture, p.a.
- [5] Consistent with statutory requirements, the Architect's decision in the matter of an equal or a substitute product shall be final and binding on all interested parties. An adverse decision on any such request made by the Contractor constitutes only the Architect's professional opinion of the products and combination of materials most advantageous for the project, and creates no reflection or discredit on any materials, supplier, or manufacturer.

**ARTICLE 8**    **CHANGE IN THE WORK.**

The establishment of the cost or credit for changes in the work executed under the General Conditions Article 7 shall be the sum of the following listed items.

Evidence of these charges will be delivered to the Architect when submitting costs or credits for change in the work.

- [1] Invoice cost of materials entering permanently into the work.
- [2] Actual time on the site of properly classified labor to perform the work. Time will be verified by the Contractor's time records and must be approved by the Architect.
- [3] Cost of FICA Insurance and Workman's Compensation Insurance based on Cost of Labor.
- [4] Invoice cost to the contractor of consumable supplies used on the site in performance of the work.
- [5] Cost of rental of power tools necessary for use in the work. Only such time as necessary for transportation of tools and time to do the operation will be allowed.
- [6] 15% of the sum of items 1, 2, 3, 4, and 5 above shall cover overhead, bond, other insurance, profit, supervision of foremen and job superintendent, and all other general expenses.

On the work to be executed involving a subcontract, then the 15% fee shall be divided by the General Contractor as follows: 10% to the subcontractor and 5% to the general contractor..

**ARTICLE 9**    **DAMAGED WORK.**

Any damaged work, regardless of whose responsibility or who damaged the work, shall be immediately removed and replaced, or repaired to its original condition by the contractor whose work it is. The action does not waive any of the contractor's rights or claims set forth in the following Articles of the General Conditions: Article 3, Article 9, Article 10, Article 11.

**ARTICLE 10**    **SAFETY OF OPERATIONS.**

Each contractor shall familiarize himself with Rules & Regulations Governing the Construction Industry as promulgated by the N. C. Commissioner of Labor under N. C. General Statutes Section 95-11 and The Williams-Steiger Occupational Safety and Health Act of 1970 (including any subsequent additions and/or modifications) administered by the N. C. Department of Labor and shall be responsible for conducting his operation in accordance thereof.

**ARTICLE 11**    **TIME OF COMPLETION PENALTY.**

The contract price will be reduced in an amount equal to a prorated share of \$250 per day beginning 90 days from the receipt of written notice to proceed and continuing for each calendar day thereafter until substantial completion of the project, with credit allowed for accumulated time extensions

No extension of time will be considered for any cause whatsoever except where the delay is primarily attributable to acts of neglect by the Architect or the Owner, or by modification in the work where a resulting time extension explicitly sets forth as part of the consideration of the modification, or by fire damage to the work on the site or by labor dispute which effectively eliminates all sources of the material involved or prevents the delivery or use thereof.

Where separate contractors are involved, contractors may submit in writing to the Architect, with copies to the offending contractor, a statement attributing delay of the project to another contractor. The Architect will consider such allegations in assessing the distribution of penalty , but will not be bound by them.

The Architect will be the judge as to the assessment of the prorata share of the penalty assessed to each prime contractor on the project.

Causes listed for delay in the time justifying an extension, General conditions paragraph 8.3.1, and not repeated herein, will be considered in computing any penalties assessed under the terms of this article.

**ARTICLE 12 UNCOVERING AND CORRECTION OF WORK.**

**12.2.2 Guarantee Period.**

Guarantee period referred to in Article 13 of the General Conditions shall be a period of one year from substantial completion of the project or from final acceptance of that portion of the work involved, whichever is the later, except that manufacturers' standard warranties and specified special guarantees, warranties shall extend for their full time period if longer.

**ARTICLE 13 OCCUPANCY OR "READY FOR USE".**

For the work to be considered ready to "occupy or utilize the work or designated portion thereof for the use for which it was intended", the following conditions must be met:

- [1] Certificate of occupancy must be issued by the Building Authority.
- [2] Utility connections must be complete.
- [3] Applicable portions inspected by County sanitarians.

Where separate contractors are involved, it may be that such conditions may be dependent upon other contractors over whom the Contractor has no control. In such cases, the Architect may waive one or more of the conditions provided the delay is likely to become unreasonably long and the Contractor's work is otherwise complete.

**ARTICLE 14 REQUEST FOR PAYMENT FORMAT.**

The Contractor will be given C.R. Francis/Architecture's Estimate & Request for Payment and Materials in Store forms for use on the project. Contractors may use a computer generated cost breakdown following the aforesaid format. AIA Forms G702 and G703, if submitted, will be returned to the contractor without submittal to the owner for payment. A reduced copy of these forms are included as an appendix to the Supplementary General Conditions.

**ARTICLE 15 RETAINAGE.**

The Owner will retain five percent (5%) of the progress payments until the project reaches 50% completion, at which point retainage will be reduced to zero percent (0%) [with written consent of surety] unless the Contractor is not performing satisfactorily.

**ARTICLE 16 COMPLETION INSPECTIONS.**

The Contractor shall prepare for several inspections in closing out the project.

[a] Prefinal Inspection

Near completion of the work, the Architect (or Engineer) will inspect the work, making a list of items for completion and correction.

[b] Final Inspection

After all, or most, of the prefinal corrections and completions have been made, the Architect, with the Owner, will inspect the work, defining any work that is unacceptable, incomplete, or

requires further correction.

[c] Building Inspections

City Building Inspectors will be inspecting the work as it progresses. The Contractor should arrange for the building inspectors' final inspection and the issuance of a "Certificate of Occupancy". This inspection is a legal inspection, separate and apart from the aforementioned contractual inspections. If demands of the City Inspector exceed or otherwise require work beyond that indicated, specified, or reasonably implied by the contract documents, or beyond that which an experienced contractor working in the area would normally be aware, appropriate change orders will be issued.

**ARTICLE 17 DEPARTMENT OF LABOR FIRED & UNFIRED PRESSURE VESSELS INSPECTION.**

Mechanical or other contractors installing pressure vessels (boilers, hot water heaters, etc.) shall have such equipment inspected and approved by the North Carolina Department of Labor, Division of Boiler Inspections. Post certificates of inspection issued by Boiler Inspector in suitable glass covered frames adjacent to the equipment.

**ARTICLE 20 MAINTENANCE OF OWNER'S OPERATION**

The Owner's facility will continue to operate during the period of this agreement. The Contractor shall organize the Work to provide the least interference possible with the Owner's operation and shall coordinate the various work items regularly with the Owner's representative.

On-going operations will include regularly scheduled church services.

Suspension of work may be required due to special Owner's requirements [weddings or funerals] for which time of completion shall be modified [1/2-day credit] for each such event. The Owner will endeavor to give the Contractor 48 hours minimum written notice of such events.

**ARTICLE 21 SMOKING POLICY**

Interior spaces of the existing facilities shall be considered a NO SMOKING AREA.

Upon the establishment of a separate atmosphere in the new facility, at the time when the building is dried in and windows and doors are in place and operational, the new facility shall be considered a NO SMOKING AREA. At the time that the new structure is considered a no smoking area, the Contractor will establish, in conjunction with the Owner's representative, an exterior smoking zone complete with disposal devices.

**ARTICLE 22 PARTICIPATION OF MINORITY & FEMALE BUSINESSES.**

a. Statement of Policy.

It is the policy of the Craven County Board of Commissioners to have an appropriate verifiable percentage goal for participation by minority businesses, as the same are defined in G.S. 143-128(c)(2), in the total value of work for each project for which Public Contract or Contracts are awarded pursuant to G.S. 143-128; and to award Public Contracts without regard to race, religion, color, creed, national origin, sex, age or handicapping condition.

b. Statement of Objectives.

1. For purposes of ensuring participation by minority and female businesses in the awarding of public contracts by the Craven County Board of Commissioners, the Board has adopted 10% as an appropriate verifiable percentage goal for participation by minority and female businesses in the total value of work for which a contract or contracts are awarded in either a separate-prime contract system or a single-prime contract system, pursuant to G.S. 143-128.

2. The Contractors shall, through procedures and solicitation, ensure a good faith effort in the recruitment and selection of minority and female businesses for participation in contracts in accordance with requirements of G.S. 143-128.
- c. Procedures.
1. Contractors are required to negotiate in good faith with interested minority and female businesses, rejecting them only for sound reasons after a thorough investigation of their offers and capabilities.
  2. The low bidder for a single prime contract shall be required to provide the following information prior to the award of a contract:
    - [a] The names and addresses of minority and female businesses which will participate in the Contract; and a description of the work which each will perform and the dollar amount of participation by each.
    - [b] The names and addresses of each minority and female business contacted.
    - [c] The name and address of each minority and female business responding to the Prime Contractor or otherwise demonstrating an interest in performance of any part of the work and the reasons each such minority or female business was rejected or otherwise failed to be awarded any work.
    - [d] A copy of all advertisements or correspondence the bidder has used to attract minority and female businesses.
- d. Lowest Responsible Bidder.  
Nothing in this policy shall be construed to require contractors or the Owner to award contracts or subcontracts to or to make purchases of materials or equipment from minority or female business contractors or minority or female business subcontractors who do not submit the lowest responsible bid or bids.

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DIVISION      01      GENERAL REQUIREMENTS

Includes work by the All Prime Contractors covered in the following sections.  
Section designations are neither consecutive nor numerically inclusive.

01 10 00	SUMMARY OF WORK
01 20 00	PRICE AND PAYMENT PROCEDURES
01 30 00	ADMINISTRATIVE REQUIREMENTS
01 40 00	QUALITY REQUIREMENTS
01 50 00	TEMPORARY FACILITIES
01 70 00	EXECUTION AND CLOSEOUT REQUIREMENTS

**01 10 00 SUMMARY OF THE WORK****01 11 00.00 PROJECT SUMMARY.****01 11 13.00 PROJECT.****01 11 13.10 PROJECT DESCRIPTION.**

The renovation of a portion of the existing Craven County Health Department for use as an Adult Primary Care facility with modifications to adjacent laboratory spaces.

**01 11 13.20 PROJECT MANUAL.****a. Documents.**

The project manual includes the following documents pertinent to the bidding and construction of the project:

1. Instructions to Bidders
2. General Conditions
3. Supplementary General Conditions
4. General Requirements
5. Construction Specifications
6. Addenda
7. Change Orders

**b. Format.**

This manual has been developed in accordance with the general format of the CSI MasterFormat 2004 Edition modified by the Architect for this project. Standardized numbers for broad scope and narrow scope sections have been used subject to certain modifications to accommodate the characteristics of the work. Narrow scope sections have been subordinated to general requirements of broad scope sections under which they occur.

**c. Addenda.**

Addenda and change orders, which may from time to time be used, will be keyed to the section or sections in which the work covered is modified. The Contractor will be furnished extra copies of convenient size to attach to the back of the page opposite the modified specification. Each contractor shall keep his job copy and office copy Project Manual up to date in this respect.

**d. Specification Color-Code.**

To facilitate the division of the work into separate contracts, colored paper has been used.

[1]	All Contractors	Gold
[2]	General Construction Contractor	White
[3]	Plumbing Sub-Contractor	Green
[4]	Heating, Ventilating & Air Conditioning Sub-Contractor	Pink
[5]	Electrical Sub-Contractor	Blue

**01 12 00.00 CONTRACT SUMMARY.**

This project will be bid using two separate methodologies listed as follows:

Subsection	01 12 16	Single Prime Contractor
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**01 12 16.00 SINGLE PRIME CONTRACT.**

- [1] General contractors shall submit a bid including General Construction Division 1 through Division 14, Plumbing Division 22, Heating, Ventilating and Air Conditioning Division 23, and Electrical Divisions 26 and 27.

[2] The General Contractor shall list on his bid the names of the subcontractors that will be used for plumbing, heating, ventilating & air conditioning, and electrical subdivisions of the work.

01 13 00.00 PERSONNEL & DOCUMENT INTERFACE.

01 13 13.00 ENGINEERS STATUS.

The Architect's Consulting Engineers for the various parts of the work shall have the same status with the Contractor as the Architect in so far as the work designed by the Engineer is concerned, except that the Architect will retain authority and responsibility for all interpretations and decisions involving the General Conditions and Supplementary General Conditions, although the Engineer's opinion will be included in any documented decision.

01 13 16.00 CONTRACT DRAWINGS.

The complete set of drawings will be made a contract document for each prime contractor. For clarity and convenience the sheets have been titled by major work divisions; however, each contractor shall include all the work covered in the specified scope of his contract, regardless of the designated title of the sheet on which the work appears. Therefore, each prime contractor shall review all sheets of drawings to familiarize himself with the conditions and requirements of his contract.

01 14 00.00 WORK RESTRICTIONS.

01 14 13.00 ACCESS TO THE SITE.

The Contractor shall have access to the site at all times during the process of construction. If the Owner is also occupying or using portions of the site, the Contractor shall follow the procedure listed below for coordination of activities.

01 14 16.00 SITE COORDINATION WITH OWNERS/OCCUPANTS.

On a site with existing occupied structures, the Owner, businesses and employees traffic take precedence. The Contractor shall coordinate his traffic with Ms. Pam Edwards – Project Co-ordinator for the Craven County Health Department.

01 18 00.00 PROJECT UTILITY SERVICES.

The following utilities provide service to the site. In the event that notification or coordination is required, the following contacts are hereby provided:

Electrical:	City of New Bern
Telephone:	CenturyLink
Water/Sewer:	City of New Bern
Gas:	Piedmont Natural Gas

**01 20 00 ADMINISTRATIVE REQUIREMENTS****01 21 00.00 PROJECT MANAGEMENT AND COORDINATION.****01 21 13.00 PROJECT COORDINATION.****01 21 13.10 CONSULTANTS.**

Consultants for this project are as follows: For those portions of the work designed by the indicated Consultant, the Contractor shall direct Submittals, Requests for Interpretation or Clarification, etc. directly to the Consultant with a copy to the Architect.

Mechanical Engineer:	D. Wilson Pou, PE – Engineering Source of NC
Electrical Engineer:	D. Wilson Pou, PE – Engineering Source of NC

**01 21 19.00 PROJECT MEETINGS.****01 21 19.10 PROGRESS CONFERENCES.****a. Preconstruction Conference:**

A preconstruction conference shall be scheduled by the Architect. All prime contractors shall have a responsible company executive, the project manager and the project superintendent present. Principal subcontractors shall have a representative present if notified to do so. The agenda for the meeting in general will be limited to the following:

1. Review of Division 01 requirements
2. Payment Procedures
3. Site Access/Barricades
4. Emergency notification requirements

**b. Monthly Progress Meetings:**

Construction conferences will be held each month with representatives of each prime contractor, each prime contractor's job superintendent, the architect's representative, the various engineers' representatives, and the owner's representative, with additional personnel as the architect or the contractor may request. The agenda for the meeting will be limited to the following:

1. Review and updating the schedule and review of any scheduling problems.
2. Issues concerning the relationship among the various Contractors.
3. Change Order requests

**c. Preinstallation Meetings:**

A conference, including the general contractor's representative, the subcontractors' representatives, the subcontractor's job superintendents, and the architect's representative shall be held prior to the commencing of any portion of the following subcontract work:

**01 22 00.00 CONSTRUCTION PROGRESS DOCUMENTATION.****01 22 19.00 CONSTRUCTION PROGRESS SCHEDULE.**

The General Contractor shall prepare and set up in the field office a work progress schedule chart showing the various trades and times they will be on the job, set in relation to the total anticipated time required for the completion of the project. He will obtain the pertinent information from other contractors prior to the commencement of work in the field and enter this information on the chart. The chart will be notated and brought up to date weekly, and, on the basis of this schedule, the General Contractor will notify the various trades, subcontractors and other contractors when they are needed on

the job.

01 23 00.00 SUBMITTAL PROCEDURES.

01 23 23.00 SAMPLES AND SHOP DRAWINGS.

01 23 23.10 SUBMITTALS.

a. Required Shop Drawings.

Required shop drawings, brochures and product information shall be submitted in quantities to provide sufficient copies for the job office, the Architect's office and the Engineer's office (if applicable) plus those required by the contractor, his subcontractors and suppliers.

b. Required Samples.

Required samples shall be submitted in quantities to provide filing of approved sample at the job office, the Architect's office and the Engineer's office (if applicable). Approved samples, where their nature is such to be incorporated in the work, may be picked up by the Contractor, used in the construction after they have served their purpose of comparison to similar materials delivered to the site. Samples remain the property of the Contractor.

01 23 23.20 SUBMITTALS.

a. Equal and Substitute Submittals.

Submittals for equal or substitute products must be made to the Architect or Engineer 14 days prior to the date of bid or the Architect/Engineer may use this delay as sufficient reason to reject the submittal without further consideration.

01 23 23.30 ENGINEERS APPROVALS.

a. Approvals Required.

Where approvals are required for Engineer designed work, they shall be by the Engineer for technical considerations and the Architect for appearance and compatibility with the Architect designed work.

b. Transmittals.

All submittals, shop drawings, written requests and correspondence originating from the Contractor to the Engineer shall be routed direct to the Engineer with a copy of the transmittal letter simultaneously routed to the Architect.

**01 30 00 QUALITY REQUIREMENTS****01 31 00.00 REGULATORY REQUIREMENTS.****01 31 13.00 CODES.**

Codes referred to in the specifications are applicable to the project and set forth as a minimum standard for any work to which they apply. Interpretation of the codes and regulations shall be by the agency or office responsible for their enforcement.

- [1] North Carolina Building Code. Volumes I, IA, IC, II, III, IV, V, VI
- [2] North Carolina Health Department Sanitary Regulations.
- [3] North Carolina Boiler Inspection Code.
- [4] National Fire Protection Association.
- [5] All local County and City Plumbing, Electrical, Zoning, and Building Regulations.
- [6] North Carolina Department of Labor. OSHA Std s

**01 32 00.00 REFERENCES.****01 32 19.00 REFERENCE STANDARDS.**

Reference to known standard specifications shall mean the current edition of those standards in publication at the date of the bidding. Only those requirements of the standard specifications as are applicable to the specified product in its intended use in this project shall apply, and conformity with a standard specification does not relieve the product of performing properly in the context of other conditions set forth in the contract documents.

**01 33 00.00 QUALITY ASSURANCE.****01 33 16.00 SUPPLIER QUALIFICATIONS.****01 33 16.10 Approved List of Subcontractors & Suppliers**

Lists of subcontractors and suppliers as required by General Conditions Article 5.2.1 shall be submitted no later than 30 days after the date of the contract if the contractor is to be considered as acting "promptly" and "responsibly" in this matter, and no payment for "job set-up" included in the contractor's Estimate & Request for Payment will be approved until a complete list has been submitted.

**01 33 16.20 Rejection of Subcontractors or Suppliers.**

If as allowed under General Conditions paragraph 5.2.3, either the Owner or the Architect object to the use of a supplier or subcontractor for cause, the Contractor shall replace the supplier or subcontractor with an acceptable entity and the contract price, if required, will be adjusted by Change Order.

**01 35 00.00 QUALITY CONTROL.****01 35 29.00 TESTING.**

Tests will be made in accordance with applicable ASTM standards by an independent laboratory acceptable to the Architect.

**01 40 00 TEMPORARY FACILITIES****01 41 00.00 TEMPORARY CONSTRUCTION UTILITIES.****01 41 13.00 CONSTRUCTION UTILITY SERVICE.**

The Contractor shall supply and pay for all electricity, water, fuel, gas, telephone, utility deposits, or other expense for utilities services which are required or used in the construction, completion and testing of the work under his contract.

**01 41 23.00 CONSTRUCTION HEATING AND AIR CONDITIONING.**

The Owner will provide heat and cooling for the building during the course of construction. Any supplemental heating or cooling required for the Work shall be supplied by the General Contractor.

**01 41 26.00 CONSTRUCTION ILLUMINATION.**

[1] The General Contractor shall provide illumination for the building during the course of construction by the use of temporary equipment and/or through arrangement with the Owner for use of existing lighting sources or with the electrical trades contractor for use of the new lighting system following the activation of the renovated portion of the electrical system.

[2] The appropriate electrical trades contractor shall, upon request from the General Contractor and approval from the Architect/Engineer and the local building inspector, set the renovated portion of the building's electrical system into operation for the temporary usage of the building's lighting system and may charge the General Contractor all labor and expendable materials costs, including but not limited to bulbs and ballasts, involved in the system's operation. Upon completion of the temporary usage of the lighting system, the fluorescent and incandescent fixtures shall be re-bulbed with new bulbs as required in Division 26 of these specifications.

**01 41 36.00 CONSTRUCTION WATER SUPPLY.**

The Owner will allow the General Contractor to make temporary connections to his water supply for the use during the Work.

**01 42 00.00 CONSTRUCTION FACILITIES.****01 42 13.00 FIELD OFFICE.**

No Field Office required.

**01 42 16.00 TEMPORARY STORAGE.**

All materials stored on the site shall be stored and handled to prevent deterioration, deformation, or intrusion of foreign matter [water, dirt, sand, microbes, mold, etc.]. Materials stored in shed will be neatly stored on shelves, or in such a way as to enable a complete, thorough and orderly check by the Architect or his representative. No payment for materials stored on the site not meeting the aforementioned requirements will be made.

**01 42 19.00 SANITARY FACILITIES.**

The General Contractor shall provide temporary toilet facilities for all workmen on the project. The facilities shall meet the requirements of the North Carolina Department of Labor and the North Carolina Department of Health, Sanitation Division.

**01 45 00.00 VEHICULAR ACCESS AND PARKING.**

The Contractor shall, in so far as practical, confine his traffic to and from the site to those areas designated as drives and parking. Special care shall be taken to avoid job traffic causing soil erosion or silting of ditches and streams, or otherwise affecting sediment control..

**01 46 00.00 TEMPORARY BARRIERS AND ENCLOSURES.**

a. The General Contractor shall provide temporary barricades around construction activities during the

course of the work. The extent of the area enclosed by such barricades shall be determined by the Contractor and the Building Inspector in agreement of the Owner; but, in any case, shall enclose all construction equipment and material storage. Barricades shall consist of gates, wire fencing or similar materials of sufficient strength and nature to prevent casual encroachment of the construction area by unauthorized persons.

- b. The General Contractor shall provide dust barriers during operations creating dusty conditions. These barriers shall not only preclude the transmission of dust in the general area of the Work, but shall be sufficient to preclude the intrusion of dust into the air conditioning system through either the supply ductwork system or through the return above ceiling plenum system.

01 48 00.00 PROJECT IDENTIFICATION.

01 48 13.00 JOB SIGN.

No job sign shall be placed for the project. The Contractor may set a small sign identifying [with his standard sign] the location of the entry to be used for delivery purposes.

**01 50 00 EXECUTION AND CLOSEOUT REQUIREMENTS****01 51 00.00 EXAMINATION & PREPARATION.****01 51 13.00 MOBILIZATION.**

Prior to bidding the project, the Contractor shall make himself fully aware of the conditions of the site. For this to occur, the Contractor shall make arrangements with the Architect and the Owner to review the site at the convenience of the Owner.

**01 51 15.00 ACCEPTANCE OF CONDITIONS.**

The act of bidding constitutes the acceptance of the site and conditions therein that are visible at the time of the review of the site. This in no way removes the Contractor's rights under the General Conditions of the Contract and the Supplementary General Conditions with respect to hidden conditions and other issues with respect to existing structures.

**01 54 00.00 CLEAN UP OF SITE.****01 54 13.00 PROGRESS CLEANING.**

Trash and debris shall be collected in a convenient location designated by the General Contractor and disposed of regularly in periods not to exceed 30 days. Disposal shall be in accordance with the law and at disposal points designated by the County and/or Municipal authorities. Each contractor shall be responsible for his and his subcontractors' debris, either by handling it himself or sharing the cost of handling with the other contractors.

a. Weekly Clean Up

Each Contractor shall clean the site weekly of construction debris and any and all strapping wires, bands, and other devices used to bundle construction materials provided under their contract..

**01 54 23.00 FINAL CLEANING.**

Upon completion of the project, the General Contractor shall leave the premises raked clean. The interior of the building shall be left clean and free of all construction dirt and smudges. Mechanical room's surfaces shall be vacuumed to remove dust and dirt, which might affect the mechanical system. Floors shall be polished, windows washed, fixtures cleaned and readied for assumption of normal janitorial maintenance by the Owner. All temporary labels and trademarks shall be removed. Each Contractor shall be responsible for cleaning of the work installed under his contract

**01 58 00.00 CLOSEOUT SUBMITTALS.****01 58 13.00 COMPLETION AND CORRECTION LIST.**

See Supplementary General Conditions Article 15 Completion Inspections.

**01 58 23.00 INSTRUCTION & MAINTENANCE MANUAL .**

Each Contractor shall assemble and deliver to the Architect [or Engineer] four- [4] complete sets of parts lists, operating instructions, and manufacturers' data on all items of equipment furnished and installed under his contract. [Requirements for other contractors are reiterated in their respective sections and divisions.] These manuals will be delivered to the Owner two weeks prior to the final inspection. The manuals shall be three-ring "D" type heavy-back notebooks with the name of the project and the words "Operations and Maintenance Manuals" on the cover and Spine. Each page shall be marked as to the Division, Section and Paragraph in which the product it refers to was specified. The manuals shall contain the following items as a minimum:

- a. Index and page numbers

- b. Certificate of Substantial Completion
- c. Warranties, Guarantees, & Bonds.
- d. Release of Liens
- e. List of all Sub-contractors and suppliers with names, addresses and phone numbers.
- f. Hardware Certification.
- g. Complete operation, maintenance and cleaning procedures for each item including for operating equipment, sequence of events, locations of switches, emergency procedures and any other critical items. Include all parts lists provided with equipment.
- h. Lubrication schedules and types of lubricants

These items, in general, shall include descriptive materials for each item furnished and installed and all submittal data.

**01 59 00.00 DEMONSTRATION & TRAINING.**

The Contractor shall schedule with the Owner a meeting to instruct the Owner in the operation of the equipment installed under his respective Contract. Indicate to the Owner the scope of work, location of concealed lines, piping, and motorized equipment and provide directions for the operation and maintenance of the various items installed. This instructional period shall be done at the Owner's convenience and direction at the conclusion of the project. Instructions shall be given, as if the Owner were not remotely familiar with the project and sufficient time shall be spent to acquaint him with the entire scope of work.

## 01 60 00 PRICE AND PAYMENT PROCEDURES

01 61 00.00 ALLOWANCES.01 61 13.00 CASH ALLOWANCES.01 61 13.10 GENERAL.

- a. Prime contractors shall include the following cash allowances in their contract cost for items covered in their respective portions of the work.
- b. Cash allowance shall cover and include net cost of item delivered at the job site or at the point of fabrication if it is to be incorporated into the item especially fabricated for the job.
- c. Charges in excess of cash allowance will be paid by the Owner. Unspent balances will be credited to the Owner.

01 61 13.20 CASH ALLOWANCES.

NONE

01 62 00.00 UNIT PRICES.01 62 13.00 UNIT PRICE BIDS.

Unit prices where required shall be listed on the bid form and will be incorporated in the contract. In the event that work is required on items covered by unit prices, the Contractor shall notify the Architect and Owner that such work is required and he shall submit the requisite quantities so that a change order may be executed.

01 63 00.00 ALTERNATES.01 63 13.00 ALTERNATE BIDS.01 63 13.10 GENERAL.

- a. The following listed alternates for changes from the work as prescribed in these plans and specifications shall be included in the contractor's bid.
- b. All alternates shall be applied individually to the base bid.
- c. If a contractor desires not to bid an item listed as an alternate, he shall enter on his bid form "NO BID" opposite the alternate item in question. Where such a statement is entered on a bid, that bid will not be considered if award is being made on the basis of the alternate not bid.
- d. Should available funds of the Owner require omission of part of the work or permit additions to the work by the adoption of certain alternates, the Owner, in order to proceed with award of contract, reserves the right to reinstate omitted work covered by any alternates adopted at the time the contract is signed at the same price the contractor deducted or added for such alternate to his original base bid provided such reinstatement is made within sixty days after the date of the contract, and no work has been done which is covered by the alternate.

01 63 13.20 ALTERNATES.

No Alternate Bids

**01 65 00.00** SUBSTITUTION PROCEDURES.**01 65 13.00** PRODUCT SUBSTITUTION PROCEDURES.

See Supplementary General Conditions Article 6 Equals and Substitutes

**01 66 00.00** CONTRACT MODIFICATION PROCEDURES.**01 66 13.00** REQUESTS FOR INTERPRETATION OR CLARIFICATION.

During the process of bidding or negotiation of a contract, certain items may require the Contractor to request further information than the Contractor determines from studying the Contract Documents. At such time, the Contractor only may submit formal requests to the Architect for further information with the following stipulations:

- [1] Requests shall be in writing only and directed to the Architect or his consultant for that portion of the work. When a request is submitted during the bidding process, the request must be received by the Architect or his consultant for that portion of the work a minimum of 5 working days prior to receipt of bids.
- [2] Requests from Subcontractors shall be routed through a Contractor registered as bidding on the project.
- [3] Requests not following this procedure will be discarded.
- [4] Following the establishment of a contract, it is assumed that the Contractor and his Subcontractors and Suppliers understand the intent of the contract documents and any further interpretations or clarifications will take place during the submittal review process.

**01 66 39.00** FIELD DIRECTIVE.

During the process of construction, the Architect or his representative may, due to certain conditions observed in the field, require the Contractor to take minor actions consistent with the Contract Documents. Such a requirement or "Field Directive" shall be stated in writing and become a part of the contract documents. Such a directive shall follow the requirements outlined in Article 7 Changes in the Work paragraph 7.4 .

**01 66 43.00** ADDENDA.

Following the receipt of a Request for Interpretation or Clarification, the Architect will issue an Addendum that with issuance becomes a part of these Contract Documents.

**01 66 63.00** CHANGE ORDERS.

See General Conditions Article 7 Changes in the Work and Supplementary General Conditions Article 7 Changes in the Work for required procedures. Architect will receive Contractor' data as required in the aforementioned documents and prepare documents for signature on the Architect's standard form.

**01 69 00.00** PAYMENT PROCEDURES.**01 69 73.00** SCHEDULE OF VALUES.

As required under General Conditions paragraph 9.2.1, the Contractor shall prepare on the Architect's Estimate and Request for Payment form, a schedule of values based upon the project manual's table of contents , listing the items, quantities, and values of each. This schedule shall be submitted, reviewed, and approved prior to submission of the first Estimate and Request for Payment.

**01 69 00.00** PROGRESS PAYMENTS.

The following procedure will be used for payments on this project:

1. Contractor will close his books for the month on or about the 25<sup>th</sup> and fill in the Architect's Estimate

and Request for Payment form. This form will be submitted to the Architect.

2. Upon receipt of the Estimate and Request for Payment form, the Architect will review the form for compliance with the work present in the field at the time of submission and for those items in storage, if any.
3. The Architect will submit the form to the Owner for payment. Payment will be made on or about the 10<sup>th</sup> of the month following submittal.

**01 69 00.00 TESTING PAYMENTS.**

Where engineering or other laboratory tests are required in the specification, they shall be paid by the Owner Contractor unless noted otherwise.

DIVISION      2      SITE WORK

Includes work by the General Contractor covered in the following sections.  
Section designations are neither consecutive nor numerically inclusive.

02 10 00	SITE CLEARING, DEMOLITION, REMEDIATION
02 90 00	EARTHWORK TREATMENT

**02 10 00 SITE CLEARING, DEMOLITION, & REMEDIATION****00 00 00.10 GENERAL.****02 10 00.11 WORK INCLUDED.**

Furnish all labor, material, and equipment required for the site clearing, demolition, and remediation indicated, specified, or both including all incidental items normally required for conditions encountered. Subsections forming this specification include the following:

Subsection	02 12 00	Demolition
Subsection	02 13 00	Remediation

**02 12 00.00 DEMOLITION****02 12 00.10 GENERAL.****02 12 00.11 Types.**

The following Demolition types are required under this specification:

02 12 19	Selective Demolition
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**02 12 19.00 SELECTIVE DEMOLITION****02 12 19.10 GENERAL.****02 12 19.11 Location.**

All work is confined to the project limits . Any action indicated on the plan includes any all work required for that action to take place in it's entirety. The work in general consists of the Work outlined on the architectural demolition plan and the demolition plans on the plumbing, mechanical, and electrical sheets and any and all work required due to the aforementioned actions.

**02 12 19.20 EXECUTION****02 12 19.21 Demolition.**

1. Where required, the Contractor shall fully remove indicated work. All demolished items become the property of the Contractor and shall be removed from the site for proper disposal or storage. Certain items are indicated as being removed and stored for reincorporation with the facility. Those elements shall be stored so as to preclude damage [physical damage from construction operations as well as environmental damage from climatic conditions].
2. The Contractor shall exercise care in the removal of portions of the indicated work so as to not damage adjacent existing items, structures, or building amenities. The Contractor shall take particular care in the removal of structural elements to properly shore and support the existing structure above.
3. The Contractor shall saw cut to indicated lines and carefully remove indicated work so as to not damage the remaining paving.

02 13 00.00 ASBESTOS REMEDIATION

02 13 13.00 ASBESTOS ABATEMENT

02 13 13.10 GENERAL.

The facility has been tested for asbestos and two areas within the project boundary were positive for the mineral. The Contractor will notify the Owner when he is ready for the asbestos to be abated and the Owner will engage a separate Contractor to remove the substance. Upon completion, the abatement Contractor will issue a letter of clearance allowing the project to continue.

02 13 13.14 Appendix.

The asbestos report of

ENVIRO ASSESSMENTS EAST, INC.

is contained as an appendix showing where testing has occurred and the lab results.

**02 90 00 EARTHWORK TREATMENT****02 90 00.10 GENERAL.****02 90 00.11 Work Included.**

Furnish all labor, material, and equipment required for the fabrication and installation of termite treatment indicated, specified, or both including all incidental items normally required for installation and conditions encountered. Subsections forming this specification include the following:

**02 90 00.12 Related Sections.**

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	03 30 00	Concrete
Section	06 10 00	Rough Carpentry

**02 91 00.00 SOIL TREATMENT****02 91 16.00 TERMITE CONTROL****02 91 16.10 GENERAL.****02 91 16.11 Location.**

Termite control chemicals shall be applied in locations indicated, scheduled, or specified.

**02 91 16.12 Submittals.****A. Shop DRAWINGS:**

The Contractor shall furnish manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

**02 91 16.13 Guarantee.**

Application shall be by a licensed agent of a recognized termite control company who shall provide the Owner with a 5 year warranty in the form of a \$5,000 surety bond against damage to the building or contents from subterranean termites. Inspection or service fees included in the 5 year warranty period shall be paid up for 1 year by the Contractor with Owner's option to renew annually.

**02 91 16.14 Applicator.**

Work shall be performed by an applicator of pest control chemicals licensed by the N. C. Department of Agriculture

**02 91 16.20 MATERIALS.**

Materials shall conform to the following:

[1] Fipronil [Termidor]: 0.06 percent in water emulsion.

Other chemicals currently approved by the EPA and N. C. Department of Agriculture may be submitted to the Architect for approval.

**02 91 16.30 APPLICATION.****02 91 16.31 Interior Floor Slab.**

Under interior floor slab cuts [openings for installation of piping and tilework as required under demolition activities], apply overall at manufacturer's recommended level but no less than 1-1/2 gallons per 10 sq. ft.

02 91 16.34 WORKMANSHIP.

Work shall be done with experienced workmen exercising proper safety precautions. Warnings shall be posted and precautions taken to prevent human or animal contact with treated soil. No oil solutions shall be used. Rules, Regulations, and Definitions of the Structural Pest Control Division, N. C. Dept. of Agriculture shall be complied with.

02 91 16.35 CERTIFICATION.

Furnish certification from applicator that conditions of the N. C. Dept. of Agriculture have been complied with and that chemicals used bear a Federal registration number of the U. S. EPA.

DIVISION      03      CONCRETE

Includes work by the General Contractors covered in the following sections.  
Section designations are neither consecutive nor numerically inclusive.

03 30 00      CAST-IN-PLACE CONCRETE

**03 30 00 CONCRETE****03 30 00.10 GENERAL.**03 30 00.11 Work Included.

Furnish all labor, material, and equipment required for the fabrication and installation of cast-in-place concrete indicated, specified, or both including all incidental items normally required for installation and conditions encountered. Subsections forming this specification include the following:

Subsection	03 31 33	Structural Concrete
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03 30 00.12 Related Sections.

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Division	22	Plumbing
Division	23	Heating, Ventilation, and Air Conditioning
Division	26	Electrical

**03 31 00.00 STRUCTURAL CONCRETE****03 31 13.00 CONCRETE****03 31 00.10 GENERAL.**03 31 00.11 Location.

At all areas on the drawings requiring cast in place concrete.

03 31 00.12 Reference Specifications.

Comply with pertinent standards of the:

- a. Concrete work shall conform to all requirements of The American Concrete Institute "Standard Specifications for Structural Concrete for Buildings," ACI 301-96, except as modified by the supplemental requirements contained in these project specifications.
- b. The American Concrete Institute "Guide for Concrete Floor and Slab Construction," ACI 302.1R-89.

03 31 00.13 Submittals.

The Contractor shall furnish manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

03 31 00.14 Product Handling:

All concrete materials shall be mixed and handled in conformance with the requirements of ASTM C 94, "Standard Specification for Ready-Mixed Concrete," unless otherwise modified by these project specifications.

03 31 00.15 Testing.

Routine testing of materials for compliance with the requirements of these specifications shall be performed by a testing agency selected and paid as indicated under paragraph 01 69 00.00. Test reports shall be furnished to the Architect immediately following each day's testing.

03 31 00.16 Subcontractor.

Cast-in-Place Concrete shall be installed under a subcontract to a single subcontractor regularly involved in the installation of concrete of the type indicated.

03 31 00.20 MATERIALS.

Materials shall conform to the following:

[1] Cast-in-Place Concrete:

Concrete Class [Location]	Min 28-Day Compressive Strength[6" x 12" Cylinders]	Maximum Allowable Course Aggregate Size and Type	Slump	**Total Air Content by Volume	Maximum Water / Cement Ratio*
Ground Floor Slabs	3500 psi	¾" Stone	2" to 5"	5%± 1-1/2%	0.45
*Including free surface moisture on aggregates and liquid admixtures. W/C ratio is maximum permissible ratio for concrete when strength data from field experience or trial mixtures are not available. Higher ratios may be acceptable provided documentation is submitted in accordance with ACI Specifications. **Air entrained concrete not required for interior floor slabs.					

- [2] Cement: The cement used in the work shall conform to ASTM C150, Normal - Type 1 Portland and correspond to that on which the selection of concrete proportions was based. Flash shall not exceed 20% by weight of the required cement content. See "Criteria for use of Fly Ash and Other Concrete Additives," for other requirements.
- [3] Fly Ash: Conform to ASTM C618, Class F, loss on ignition less than 4%.
- [4] Fine and course aggregate: ASTM C33.
- [5] Admixtures: Calcium chloride or admixtures containing calcium chloride shall not be used on this project.
- [6] Liquid Chemical Floor Hardener: All interior concrete floor surfaces to be left permanently exposed to view shall receive a two-coat treatment of a colorless, aqueous solution containing a blend of magnesium fluosilicate and zinc fluosilicate combined with a wetting agent, containing not less than 2 pounds of fluosilicate per gallon. Material shall be equivalent to "Hornolith" manufactured by A. C. Horn Co., "Saniseal 50" manufactured by Master Builders Co., or "Lapidolith" manufactured by Sonneborn Building Products, Inc.
- [7] Vapor Barrier See Section 07 30 00

03 31 00.30 EXECUTION03 31 00.32 Embedded Items.

All dowels, anchor bolts, sleeves, inserts, and other embedded items shall be set with the aid of templates and shall be securely positioned in place prior to the placement of concrete. Threaded parts shall be greased or otherwise protected against bonding of concrete.

03 31 00.33 Consolidation.

All concrete shall be consolidated by the use of mechanical vibrators operated by experienced workmen under competent supervision. Vibrating shall be supplemented by spading and rodding. No forking or raking shall be permitted.

03 31 00.35 Slabs-on-grade.

- a. Prior to placing reinforcement the Contractor shall prepare the grade, compact the fill, place vapor barrier, set keyways, joint material, and other embedded items as required by the Drawings and other Sections of the Specifications.
- b. One layer of vapor barrier shall be installed over the base material with all edges lapped a minimum

of 4 inches and sealed continuously with waterproof tape or other approved material. Openings around piping, conduit, and other openings through the vapor barrier shall be sealed, and the edges of the vapor barrier shall be turned up a minimum of 2 inches at walls and other vertical surfaces.

03 31 00.38 Finishes.

- a. Finishes: Unless otherwise noted, the tolerances, repairing, patching and finishing of concrete work shall be a "Troweled Finish."
- b. Liquid Chemical Floor Hardener: All new concrete floor surfaces to receive liquid chemical floor hardener shall receive a final cleaning to remove all foreign materials, including mortar, paint, plaster, and similar materials, to prevent any foreign materials from showing through the finished surface.

03 31 00.39 Field Quality Control.

Prior to notification of the Architect for a field review preceding concrete placement, the Contractor shall carefully inspect all formwork, reinforcing steel placement, embedded items, and shall coordinate the installation of embedded items by other Contractors.

03 31 00.41 Field Review By The Architect.

The Contractor shall give at least a 24-hour notice to the Architect prior to placing concrete to permit field review of the general construction work as well as mechanical, electrical and other work to be incorporated into the concrete.

- a. The Contractor shall afford the Architect whatever casual labor, platforms, ladders or other access as may be required for proper field review of the concrete work.
- b. Field review of the work by the Architect shall in no way relieve the Contractor of his responsibility to furnish materials and workmanship in full compliance with the Drawings, Specifications and requirements of the work.

DIVISION      04      MASONRY

Includes work by the General Contractors covered in the following sections.  
Section designations are neither consecutive nor numerically inclusive.

NOT USED

DIVISION      05      METALS

Includes work by the General Contractors covered in the following sections.  
Section designations are neither consecutive nor numerically inclusive.

NOT USED

DIVISION      06      CARPENTRY

Includes work by the General Contractors covered in the following sections.  
Section designations are neither consecutive nor numerically inclusive.

06 10 00	ROUGH CARPENTRY
06 40 00	ARCHITECTURAL WOODWORK

**06 10 00 ROUGH CARPENTRY****06 10 00.10 GENERAL.****06 10 00.11 Work Included.**

Furnish all labor, material, and equipment required for the fabrication and installation of structural and non structural wood blocking, forming and any and all other rough carpentry indicated, specified, or both including all incidental items normally required for construction, support, or attachment of other materials and conditions encountered. Subsections forming this specification include the following:

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Subsection	06 11 00	Wood Framing
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**06 10 00.12 Related Sections.**

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	06 40 00	Architectural Woodwork
Section	10 28 00	Toilet, Bath, and Laundry Accessories

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**06 11 00.00 WOOD FRAMING****06 11 00.10 GENERAL.****06 11 00.11 Types.**

The following wood framing types are required under this specification:

06 11 13	Common Framing
----------	----------------

**06 11 00.12 Reference Specifications.**

Structural framing and rough carpentry shall conform to standard practices as set forth by FHA minimum standards for single dwelling units and to Chapter 23 "Wood" and Chapter 16 "Structural Loads" with special attention to Section 1606 "Wind Loads" North Carolina Building Code, latest edition.

**06 11 00.13 Submittals.**

The Contractor shall furnish supplier's certification of grade of products listed herein.

**06 11 00.14 Design Conditions.**

Rough framing shall comply with Chapter 16 of the North Carolina Building Code.

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**06 11 13.00 COMMON FRAMING****06 11 13.10 GENERAL.****06 11 13.11 Location.**

Common wood blocking shall be installed where indicated, for the support of cabinetwork and or attachment of other substrates or structural elements.

**06 11 13.20 MATERIALS.****06 11 13.21 Framing Materials.**

Materials shall conform to the following:

[1] Dimension lumber:	All lumber to be grade marked S4S; max. moisture content 15%. SPIB#2, KD, shortleaf dimension Southern Pine or WWPA construction MC15, C4S, Douglas Fir.
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06 11 13.22 Rough Hardware.

Include all anchors, bolts, washers, spikes, screws, nails, wire rods, weights, hooks, hangers, etc., indicated or required to assemble various materials according to details or required by code. Certify that fasteners selected are compatible for use with fire retardant treated lumber.

06 11 13.23 Framing Accessories.

Hot Dipped Galvanized Sheet Steel [ASTM A653 / A653M high strength low-alloy steel Type A or B w/ G60 coating] fabrications equal to Simpson Strong Tie framing anchors, hangers, or tie downs as indicated, specified, or required by conditions encountered.

06 11 13.24 Pressure Treatments.

All lumber in shall be fire retardant treated for use in this structure.

**06 11 13.30 EXECUTION**06 11 13.31 Standards.

- a. Structural framing and rough carpentry shall conform to standard practices of the trade and shall be sufficient to support the loads involved.
- b. Work shall be done by experienced carpenters; cutting shall be neat and accurate; fitting shall be plumb and square. Framing shall be closely fitted, well nailed and rigidly secured.
- c. Discard units of material with defects that might impair quality of the work, and units that are too small to use in fabricating work with minimum joints or optimum joint arrangement.
- d. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by code.
- e. Anchor and nail as shown, complying with the fastening schedules of the North Carolina Building Code, Tables 2306.1. and 2308.1D
- f. Provide wood grounds, nailers, blocking and sleepers where shown or required for screening or attachment of other work. Form to shapes and cut as required for true line and level of work to be attached. Coordinate location with other work involved. Attach to substrates as required to support applied loading.

06 11 13.32 Wood Framing.

- a. Provide blocking between steel studwork to receive anchors for toilet accessories, cabinetwork, and other items indicated or specified to be attached to wall.
- b. Install wood furring plumb and level .

**06 40 00 ARCHITECTURAL WOODWORK****06 40 00.10 GENERAL.**06 40 00.11 Work Included.

Furnish all labor, material, and equipment required for the fabrication and installation of interior finished carpentry and architectural woodwork indicated, specified, or both including all incidental items normally required for installation and conditions encountered. Subsections forming this specification include the following:

Subsection	06 41 00	Architectural Wood Cabinetwork
Subsection	06 42 00	Architectural Millwork

06 40 00.12 WORK NOT INCLUDED

Section	10 56 16	Storage Shelving
Section	12 30 00	Casework

06 40 00.13 RELATED SECTIONS

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	06 10 00	Rough Carpentry
Section	07 90 00	Joint Protection
Section	08 14 00	Wood Doors
Section	08 70 00	Finish Hardware
Section	09 90 00	Painting
Division	10	Specialties

**06 41 00.00 ARCHITECTURAL WOOD CABINETWORK****06 41 00.10 GENERAL.**06 41 00.11 TYPES.

The following cabinetwork types are required under this specification:

06 41 16	Plastic-Laminate-Clad Cabinets
----------	--------------------------------

06 41 00.12 REFERENCE SPECIFICATIONS.

Comply with pertinent standards of the:

AWI Quality Standard: Comply with applicable requirements of "Architectural Woodwork Quality Standards" published by the Architectural Woodwork Institute (AWI), except as otherwise indicated.

06 41 00.13 SUBMITTALS.

## a. Shop Drawings:

The Contractor shall furnish supplier's detailed shop drawings and manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

## b. Samples:

Submit manufacturer's samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job.

## 06 41 16.00 PLASTIC-LAMINATE-CLAD CABINETWORK

06 41 16.10 GENERAL.06 41 16.11 Location.

Plastic Laminate Clad Cabinetwork shall be provided for spaces indicated, scheduled, or specified

06 41 16.12 Basis of Design – Manufacturer.

Architectural woodwork, interior finish carpentry, and interior millwork items shall be supplied by a recognized millwork company participating in the Architectural Woodwork Institute (AWI).

06 41 16.20 MATERIALS.06 41 13.21 Finish Lumber.

[1] Exposed trim indicated or specified as hardwood: S4S, KD, clear Red Oak AWI Custom Grade.

[2] Concealed lumber or trim not otherwise specified, and concealed members: Douglas Fir or White Pine B & Btr., VG, KD, WWP.

06 41 16.22 Plywood.

a. Exposed interior plywood shall be melamine clad. Color shall be gray.

b. Concealed interior plywood or interior plywood not otherwise specified shall be INT, DFPA, conforming to specification CS 45-55.

06 41 16.23 Plastic Laminate.

a. Where plastic tops and sides are shown on cabinets, counters, etc., finish will be plastic laminate NEMA LD-3. Items less than 4' x 12' will have plastic in a continuous member over exposed surface. Outside edge of top shall be fused with beveled edges, routed and filed.

b. Hardwood edging shall be mitered around all edges and outside corners unless details indicate continuous plastic; in which case, fused and beveled joints shall be made.

c. Mill veneer to plywood as shown, using glue of manufacturer of the plastic sheet; apply to inside and out side of doors.

d. Thickness shall be .050" for horizontal surfaces, counter tops, edges, backslash; .030" for counter faces, end panels, doors and other vertical surfaces.

06 41 16.24 Cabinet Hardware.

Furnish following items for conditions encountered:

[1] Door & drawer pull: Liberty Hardware P84612-SN-C, satin nickel

[2] Hinges: Hafele Duo-Matic hinges with Duo-Matic mounting plates with internal spring closure open to 110 or 165 degrees as conditions allow

[3] Shelf standard & bracket: 3mm. Nickel-platted pin with clear plastic surround, 4 required at each shelf, equal to Hafele 281.40.703.

[4] Drawer slides: Metal channel type 50 lbs./pr. capacity, 1/2" width nylon rollers; 2 required for each drawer.

[5] Shelf slides: Metal channel type with full extension lock, 45 lbs./pr, 1/2"± width; 2 required for each drawer.

06 41 16.25 Miscellaneous Materials.

Materials shall conform to the following:

- |            |   |
|------------|---|
| [1] Nails  | DOC FF-N-101 standard steel wire nails, zinc coated.        |
| [2] Screws | DOC FF-S-111 stainless steel Phillips head in exposed trim. |

**06 41 16.30 FABRICATION**06 41 16.31 Standards.

Cabinetwork and counter top fabrication shall conform to the following: AWI Section 400

06 41 16.32 Design and Construction Features.

Comply with details shown for profile and construction of architectural woodwork; and, where not otherwise shown, comply with applicable Quality Standards, with alternate details at Fabricator's option.

06 41 16.33 Measurements.

Before proceeding with fabrication of woodwork required to be fitted to other construction, obtain measurements and verify dimensions and shop drawing details as required for accurate fit.

- a. Where sequence of measuring substrate before fabrication would delay the project, proceed with fabrication (without field measurements) and provide ample borders and edges to allow for subsequent scribing and trimming of woodwork for accurate fit.

06 41 16.32 Fabricated Items.

All wood cabinetwork shall be accurately fabricated in accordance with the details shown on drawings. Where an item is not completely described, it will be detailed similar to other related items and furnished same as other related items. Cabinetwork shall be mill assembled as far as practical.

- a. Cabinets and similar items indicated or detailed, but not scheduled or noted as casework, shall be considered cabinetwork under this specification.
- b. Cabinetwork shall conform to AWI standard Custom Grade.

06 41 16.33 Tolerances.

No plywood edge shall be left exposed. Corners will be mitered or edged with clear hardwood or taped with hardwood veneer according to details.

06 41 16.34 Product Delivery, Storage, and Handling.

- a. Protect woodwork during transit, delivery, storage and handling to prevent damage, soiling, and deterioration.
- b. Do not deliver woodwork until wet work, grinding and similar operations which could damage, soil or deteriorate woodwork have been completed in installation areas.
- c. Maintain temperature and humidity in installation areas as required to maintain moisture content of installed woodwork with a 1.0- percent tolerance of optimum moisture content, from date of installation through remainder of construction period.

**06 41 16.40 EXECUTION**06 41 16.41 Standards.

Cabinetwork and counter tops installation shall conform to the following: AWI Section 400

06 41 16.42 Installation.

- a. All wood cabinetwork shall be accurately installed in accordance with the details shown on drawings.
- b. Cabinetwork shall be installed without distortion so that doors and drawers will fit openings properly and be accurately aligned. Adjust hardware to center doors and drawers in openings to provide unencumbered operation. Complete the installation of hardware and accessory items as indicated.

- c. Anchor cabinetwork to anchors or blocking built in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation. Set nailing at slight angles so as to lock in trim members. Except where prefinished matching fastener heads are required, use fine finishing nails for exposed nailing, countersunk and filled flush with woodwork, and matching final finish where transparent finish is indicated.
- d. Any wood in contact with concrete floor slab or masonry shall be brush treated with 5% solution of pentachlorophenol.
- e. Scribe and cutwork to fit adjoining work, and refinish cut surfaces, or repair damaged finish at cuts.
- f. Repair damaged and adjudged defective woodwork wherever possible to eliminate defects functionally and visually. Where not possible to repair properly, replace woodwork. Adjust joinery for uniform appearance.
- g. Protect architectural woodwork during remainder of construction period to insure that work will be without damage or deterioration at time of acceptance.

06 41 16.43 Tolerances.

Install the work plumb, level, true and straight with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/8" in 8'0" for plumb and level (including counter tops); with 1/16" maximum offset in revealed adjoining surfaces. Counter tops shall be flush across surface

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06 42 00.00 ARCHITECTURAL MILLWORK

06 42 00.10 GENERAL.

06 42 00.11 Types.

The following millwork types are required under this specification:

06 42 23 Wood Trim

06 42 00.12 Reference Specifications.

Comply with pertinent standards of the:

"Architectural Woodwork Quality Standards" published by the Architectural Woodwork Institute (AWI), except as otherwise indicated..

06 42 00.13 Submittals.

a. Shop DRAWINGS:

The Contractor shall furnish supplier's detailed shop drawings and manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

b. Samples:

Submit manufacturer's samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job.

06 42 00.14 Subcontractor.

Architectural millwork shall be engineered, manufactured, fabricated and supplied under a subcontract to a single millwork company fabricating and producing work according to the requirements of the Architectural Woodwork Institute (AWI).

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## 06 42 23.00 WOOD TRIM

06 42 23.10 GENERAL.06 42 23.11 Location.

Interior Wood trim shall be provided for spaces indicated, scheduled or specified. The following types are required under this specification:

Wood Standing and Running Trim

06 42 23.20 MATERIALS.06 42 23.21 Finish Lumber.

- |  |  |
|--|--|
| [1] Exposed lumber or trim indicated or specified as hardwood stained: | S4S, KD, clear <b>birch</b> AWI Custom Grade. Mill to indicated shapes.  |
| [2] Exposed lumber or trim indicated or specified as hardwood painted: | <b>S4S, KD, clear poplar</b> AWI Custom Grade. Mill to indicated shapes. |
| [3] Concealed lumber or trim not otherwise specified:                  | <b>Douglas Fir or White Pine B &amp; Btr.,</b> VG, KD, WWP.              |

06 42 23.22 Miscellaneous Materials.

- |           |  |
|-----------|--|
| [1] Nails | DOC FF-N-101 standard steel wire nails, zinc coated. Stainless steel required for exterior conditions. |
| [2] Glue  | As required under AWI 100-G-12 Adhesive Summary Table.   |

06 42 23.30 FABRICATION06 42 23.31 Standards.

Wood Trim fabrication shall conform to the following: AWI Section 300: Custom Grade.

06 42 23.32 Fabricated Items.

- a. Before proceeding with fabrication of woodwork required to be fitted to other construction, obtain measurements and verify dimensions and shop drawing details as required for accurate fit.
- b. Wood trim shall be accurately fabricated in accordance with the details shown on the drawings. Where custom mouldings are required, new knives shall be cut to indicated profiles. Where an item is not completely described, it will be detailed similar to other related items and furnished same as other related items. Paneling shall conform to AWI standard 300: Custom Grade.
- c. Glued up components shall remain clamped until fully dry and cured meeting their full specified strength as indicated by glue manufacturer's specification. Laminated components shall be formed with laminations as indicated.
- d. Provide kiln dried (KD) lumber with an average moisture content range of 6% to 11%. Maintain temperature and relative humidity during fabrication, storage and finishing operations so that moisture content values for woodwork at time of installation do not exceed 8% to 13%.

06 42 23.33 Product Delivery, Storage and Handling.

- a. Protect woodwork during transit, delivery, storage and handling to prevent damage, soiling, and deterioration.
- b. Do not deliver interior woodwork until wet work, grinding and similar operations which could damage, soil or deteriorate woodwork have been completed in installation areas.

- c. Maintain temperature and humidity in installation areas as required to maintain moisture content of installed woodwork with a 1.0- percent tolerance of optimum moisture content, from date of installation through remainder of construction period.

06 42 23.34 Tolerances.

Wood trim fabrication shall meet the applicable requirements of AWI paragraphs 300-T-1 through 300-T-2 for smoothness of materials, tightness and accuracy of assembly and fabrication.

**06 42 23.40** EXECUTION

06 42 23.41 Standards.

Wood Trim assembly and installation shall conform to the following: AWI Section 300: Custom Grade.

06 42 23.42 Installation.

- c. Wood trim components shall be accurately installed in accordance with the details shown on drawings. Install the work plumb, level, true and straight with no distortions as required by the indicated AWI Grade. Shim as required using concealed shims.
- d. Scribe and cut work to fit adjoining work, and refinish cut surfaces, or repair damaged finish at cuts.
- e. Wood trim shall be installed with minimum number of joints possible, using full-length or laminated pieces (from maximum length of lumber available) to the greatest extent possible. Stagger joints in adjacent and related members. Cope at returns, miter at corners, and comply with indicated quality standards.
- f. All finish wood millwork shall be assembled and installed *without* contact with concrete or masonry materials; provide separator sheets where direct adjacency is indicated or otherwise required. Secure to anchors and other structural components with concealed fasteners and blind nailing as required for a complete installation. Set nailing at slight angles so as to lock in trim members. Use fine finishing nails for exposed nailing, countersunk and filled flush with woodwork, and matching final finish where transparent finish is indicated.
- g. Repair damaged and adjudged defective woodwork wherever possible to eliminate defects functionally and visually. Where not possible to repair properly, replace woodwork. Adjust joinery for uniform appearance.
- h. Protect architectural woodwork during remainder of construction period to insure that work will be without damage or deterioration at time of acceptance.

06 42 23.43 Tolerances / Testing.

Wood trim assembly shall meet the applicable requirements of AWI paragraphs 700-T-1 through 700-T-2 for smoothness of materials, tightness and accuracy of assembly and fabrication.

DIVISION      07      MOISTURE PROTECTION

Includes work by the General Contractors covered in the following sections.  
Section designations are neither consecutive nor numerically inclusive.

07 20 00	THERMAL PROTECTION
07 30 00	WEATHER BARRIERS
07 90 00	JOINT PROTECTION

**07 20 00 THERMAL PROTECTION****07 20 00.10 GENERAL.**07 20 00.11 Work Included.

Furnish all labor, material, and equipment required for the fabrication and installation of thermal protective materials, devices, and systems indicated, specified, or both including all incidental items normally required for installation and conditions encountered. Subsections forming this specification include the following:

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Subsection	07 21 00	Thermal Insulation
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07 20 00.12 Related Sections.

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	09 20 00	Wall Board Systems
Section	09 50 00	Ceilings

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**07 21 00.00 THERMAL INSULATION****07 21 00.10 GENERAL.**07 21 00.11 Types.

The following insulation types are required under this specification:

07 21 16	Batt and Blanket Insulation
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07 21 00.13 Submittals.

## A. Shop Drawings:

The Contractor shall furnish manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

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**07 21 16.00 BATT AND BLANKET INSULATION****07 21 16.10 GENERAL.**07 21 16.11 Location.

Batt Insulation shall be provided in spaces indicated, scheduled, or specified.

- a. Insulate the ceiling area (interior) at locations specified.
- b. Insulate between studs at locations specified.

07 21 16.12 Basis of Design – Manufacturer.

1. The following product was used in the development of this project.

Owens Corning

2. Products of the following manufacturers *meeting these specifications* may be installed:

Owens Corning

Johns Manville

Certain Teed Corporation

07 21 16.20 MATERIALS.

Materials shall conform to the following:

- |                        |  |
|------------------------|--|
| [1] Sound attenuation: | 4" mineral wool or semi-rigid fiberglasses ASTM C 665 Type I, noncombustible, in accordance with ASTM E-136, equal to Manville Pyro-Fiber Sound Control Batts. |
|------------------------|--|

07 21 16.30 EXECUTION07 21 16.31 Standards.

Comply with approved submittals and manufacturer's written instructions.

07 21 16.32 Installation.

- a. Insulation shall be undamaged, dry, and unsoiled. Insulation shall be immediately placed upon removal from packaging.
- b. Place batt or blanket insulation types in locations as follows:

Sound attenuation insulation:	Ceiling	4"
	Interior Walls [where indicated]	4" [extend to 4" above finished ceilings]
- c. Place batt and/or blanket thermal insulation in close and continuous contact, fit snugly around all obstructions.
- d. Place sound attenuation insulation in close and continuous contact, fit snugly around all obstructions, lap flanges and caulk edges at floor and ceiling. Cover back of electric boxes.
- e. Maintain 3" minimum clearance around recessed lighting fixtures.

**07 30 00 WEATHER BARRIERS****07 30 00.10 GENERAL.****07 30 00.11 Work Included.**

Furnish all labor, material, and equipment required for the fabrication and installation of weather barriers [vapor retarders] indicated, specified, or both including all incidental items normally required for installation and conditions encountered. Subsections forming this specification include the following:

Section	07 31 00	Vapor Retarders
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**07 30 00.12 Related Sections.**

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Division	03	Concrete
Division	22	Plumbing
Division	23	Heating, Ventilation, and Air Conditioning
Division	26	Electrical

**07 31 00.00 VAPOR RETARDERS****07 31 16.00 BELOW-GRADE VAPOR RETARDERS****07 31 16.10 GENERAL.****07 31 16.11 Location.**

Locate under all new concrete slabs forming interior floors set on grade

**07 31 16.13 Reference Specifications.**

Comply with pertinent standards of the:

ASTM E1745 [performance]

ASTM E1643 [installation].

**07 31 16.20 MATERIALS.**

Materials shall conform to the following:

- |                                |  |
|--------------------------------|--|
| [1] Vapor Retarder:            | Single layer of 0.006" polyethylene clear film.                                    |
| [2] Sealing Tape and Sealants: | Proprietary products of the manufacturer used to seal seams, punctures, and tears. |

**07 31 16.30 EXECUTION****07 31 16.31 Installation.**

- a. Following installation of compacted subsurface, unroll the vapor retarder running the longest dimension parallel with the direction of the pour and pull open all folds to full width.
- b. Seal around sewer pipes, support columns or any other penetration with manufacturer's recommended sealant to create a monolithic membrane between the surface of the slab and moisture sources below and at the slab perimeter. Pipe boots may be fabricated from the vapor retarder membrane and fastened with double sided tape and/or single sided tape for more demanding applications.
- c. Overlap joints [new to existing and new to new] a minimum of 4 inches and seal overlap together with manufacturer's seaming tape. Holes or openings through the vapor retarder should be

effectively sealed with an seaming tape or an elastomeric sealant to maintain the integrity of the vapor retarder.

07 31 16.33 Protection.

- a. When installing reinforcing steel and utilities in addition to the placement of concrete, take precaution to protect the vapor retarder. Carelessness during installation can damage the most puncture-resistant retarder. Provide for additional protection in high traffic areas.
- b. See Division 03 for specified reinforcing supports. Carefully install supports to protect the vapor retarder from puncture.
- c. Avoid driving stakes through the vapor retarder. If this cannot be avoided, each individual hole must be repaired.

**07 90 00 JOINT PROTECTION****07 90 00.10 GENERAL.****07 90 00.11 Work Included.**

- a. Furnish all labor, material, and equipment required for the fabrication and installation of joint protection materials, devices, and systems indicated, specified, or both including all incidental items normally required for installation and conditions encountered. Where existing structures are being renovated, remove all caulking compounds and sealants from the exterior surfaces of the structures. Clean joints of all residues.
- b. Subsections forming this specification include the following:

Subsection	07 92 00	Joint Sealants
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**07 92 00.00 JOINT SEALANTS****07 92 13.00 ELASTOMERIC JOINT SEALANTS****07 92 13.10 GENERAL.****07 92 13.11 Location.**

Elastomeric joint sealants shall be provided in spaces indicated, scheduled, or specified. Applications occur at the juncture of the following materials:

Interior material junctures as specified

**07 92 13.12 Types.**

The following condition types are required under this specification:

Interior

**07 92 13.14 Submittals.****A. Shop DRAWINGS:**

The Contractor shall furnish manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

**07 92 13.18 Basis of Design – Manufacturer.**

1. The following product was used in the development of this project.

Dow Corning

2. Products of the following manufacturers *meeting these specifications* may be installed:

Dow Corning  
GE Silicones  
NUCO  
Tremco

**07 92 13.20 MATERIALS.****07 92 13.21 Sealants and Related Materials.**

Materials shall conform to the following:

- |                        |  |
|------------------------|--|
| [1] Interior caulking: | Non-sag, paintable, nonstaining latex sealant ASTM C 834, Type P, Grade NF |
|------------------------|--|

**07 92 13.40** EXECUTION07 92 13.41 Standards.

- a. Comply with sealant manufacturer's written instructions for installation of indicated products.
- b. Comply with recommendations of ASTM C-1193 for use of sealants with respect to adjoining materials.

07 92 13.42 Installation.07 92 13.31 General.

Install sealants only when surfaces and substrates are dry.

07 92 13.33 Sealant Installation.

- a. Install sealants complying with following:
  1. Place sealants so they contact and fully wet joint substrates.
  2. Completely fill recesses provide for each joint configuration.
  3. Produce uniform, cross-section and depth relative to width that allows for optimum sealant movement.
  4. Excess materials and smears shall be avoided, but if they occur, they shall be carefully removed without damage to other materials, using solvents available from the products used.
- b. Following sealant application and before skinning or curing begins, tool sealants according to the following requirements:
  1. Remove excess sealants from adjacent surfaces.
  2. Apply tooling agent.
  3. Tool joints to indicated configurations in indicated locations, matching profiles for concave, flush, and recessed joints as indicated in ASTM C-1193.
- c. Protect sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion.
- d. Any rough, uneven, or damaged seams shall be removed, cleaned, primed, and recaulked to a state indistinguishable from the original work.

DIVISION        08        DOORS, WINDOWS, AND GLASS

Includes work by the General Contractors covered in the following sections.  
Section designations are neither consecutive nor numerically inclusive.

08 10 00	DOORS AND FRAMES
08 40 00	ENTRANCES, STOREFRONTS AND CURTAIN WALLS
08 70 00	HARDWARE
08 80 00	GLAZING

**08 10 00 DOORS AND FRAMES****08 10 00.10 GENERAL.**08 10 00.11 Work Included.

Furnish all labor, material, and equipment required to provide doors and frames indicated, specified, or both including all incidental items, and accessories normally required for installation and conditions encountered. Subsections forming this specification include the following:

Subsection	08 11 00	Metal Doors and Frames
Subsection	08 14 00	Wood Doors

08 10 00.12 Related Sections.

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	09 20 00	Wall Board Systems
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**08 11 00.00 METAL DOORS AND FRAMES****08 11 13.00 HOLLOW METAL DOORS AND FRAMES****08 11 13.10 GENERAL.**08 11 13.11 Location.

Hollow metal doors and frames shall be provided in spaces indicated, scheduled, or specified.

08 11 13.12 Types.

The following hollow metal door and frame types are required under this specification:

Gypsumboard Walls:	Fully welded steel doors and frames
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08 11 13.13 Reference Specifications.

Comply with pertinent standards of the:

Steel Door Institute  
"Standard Specification for Hollow-Metal Doors & Frames"  
SDI-100.

Underwriters Laboratories  
"Fire Test of Door Assemblies"

National Fire Protection Association [NFPA]  
Fire Rated Assemblies: NFPA 80  
Smoke Control Assemblies: NFPA 105

08 11 13.14 Submittals.

## a. Shop DRAWINGS:

The Contractor shall furnish supplier's detailed shop drawings and manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

08 11 13.15 Warranty.

Furnish the written warranty of the hollow metal door and frame manufacturer covering repair and replacement in whole or in part of any portion that exhibits defects of design, workmanship, or materials within one [1] year[s] of the date of substantial completion

08 11 13.16 Design Conditions.

Hollow metal doors and frames shall comply with the loading requirements of Chapter 16 of the North Carolina Building Code.

08 11 13.17 Subcontractor.

Hollow metal doors and frames shall be engineered, manufactured, and fabricated under a subcontract to a single manufacturer regularly involved in the development, fabrication and installation of hollow metal work of the type indicated.

08 11 13.18 Hardware.

Doors and frames shall be prepared at the factory to receive hardware as specified in Section 08 70 00. Templates provided by hardware supplier. Comply with applicable requirements of the ANSI A 115 series specifications for door and frame preparation for hardware

08 11 13.19 Basis of Design – Manufacturer.

1. The following product was used in the development of this project.  
Ceco Door Products
2. Products of the following manufacturers *meeting these specifications* may be installed:  
Ceco Door Products  
Republic Builders Products  
Curries Company  
Steelcraft

08 11 13.20 MATERIALS.

Door and frames shall conform to HMMA guide specification 861 for commercial doors and frames as modified in the following table:

[1] Sheet Steel:	ASTM A366	Doors:	18 ga.
		Frames:	16 ga.
[2] Reinforcing:	ASTM A366 & A36	Frames:	10 ga.
		Doors:	14 ga.
		Hardware:	3/16" plate
[3] Anchorage:	ASTM A366	Jamb:	14 ga.
		Floor:	12 ga.
[4] Glazing Stops:	ASTM A366		18 ga.

08 11 13.30 FABRICATION08 11 13.31 Standards.

- a. Hollow-metal work shall be fabricated by a single firm specializing in this type work in accordance with the standards of the Steel Door Institute. Frames for doors designated as "UL Labeled" constructed to conform the Underwriters Laboratory specifications and so labeled to meet or exceed the hour rating scheduled.
- b. Doors and frames shall be factory fabricated plumb, square, and true to detail with all faces, coplanar. Following fabrication, frames will be disassembled into components for ease of transport.

08 11 13.32 Fabricated Items.

- a. Frames.
  1. Frames, stops, mouldings, and other miscellaneous frame items shall be constructed of tabular indicated gauge cold-rolled sheet steel by width, depth and section indicated. Units shall be factory engineered with integral transoms and sidelights as indicated. Frames shall be straight, plumb, true, square, and coplanar, accurately formed to indicated profiles and shapes with minimum radius for the thickness of metal specified.

2. Miter, reinforce and internally weld corners. Reinforcing plates shall be not less than tabular indicated steel gauge for frame assembly reinforcement and not less than tabular indicated steel plate for hinges and closers. Where frames are fabricated in sections due to shipping or handling requirements, provide alignment plates or angles at each joint, fabricated of the same thickness metal as the frames.
  3. Welding – Welds shall be ground smooth, filled, dressed and made smooth, flush, and invisible.
  4. Anchorage - Provide not less than three adjustable anchor devices on each jamb. Anchor frames to rough floor construction by clip angle on back of frame bolted or welded to floor construction. Use galvanized anchors on exterior frames.
  5. Silencers - Punch frames and equip with three rubber silencers on jamb strikes.
  6. Glazing Stops - Provide cold rolled channel-type 18-ga. steel glazing stops held in place with oval-head Phillips screws. Stops shall be provided for all openings where fixed panels, display panels or glazing is indicated. Stops shall be straight, plumb, true, square, and coplanar.
- b. Hollow Metal Doors.
1. Flush Seamless Type – Doors shall be flush seamless construction 1-3/4" thick with solid insulation fill. Face sheets shall be #18 ga. steel faces lock and hinge. Edges shall have a smooth, unbroken surface with top and bottom edges closed flush. Integral construction shall be not less than 18 ga. with 3/16" plate reinforcement for closers and 14-ga. reinforcement for other hardware. All construction shall be welded. Provide factory fabricated openings as indicated and specified. Provide weeps for exterior doors.
  2. Insulation - Sound deadening shall be rock wool, insulite or other noncombustible standard product of the manufacturer whose door is used.
- c. Hardware.
- Each door assembly shall be furnished and reinforced to receive hardware listed for the respective opening in Section 870.
- d. Finish.
1. Interior - Factory finish with rust inhibiting, bonderized primer, oven dried after fabrication.
  2. Exterior - Factory finish with baked-enamel primer over galvanized 1.25, G-60 class coating ASTM A 525.

08 11 13.33 Tolerances.

Comply with SDI 117, "Manufacturing Tolerances for Standard Steel Doors and Frames

**08 11 13.40** EXECUTION

08 11 13.41 Standards.

Comply with approved shop drawings and the provisions of SDI-105 "Recommended Erection Instructions for Steel Frames," unless otherwise indicated.

08 11 13.42 Installation.

a. Frames.

1. Place frames prior to construction of enclosing walls and ceilings. Set frames accurately in position, plumb, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.
2. Check plumb, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
3. Anchorage:
  - i. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor

and secure with post installed expansion anchors.

- ii. Metal-Stud Partitions: Coordinate installation of frames and anchors to allow solidly packed mineral-fiber insulation behind frames.
  - iii. Ceiling Struts: Extend struts vertically from top of frame at each jamb to supporting construction above, unless frame is anchored to masonry or to other structural support at each jamb. Bend top of struts to provide flush contact for securing to supporting construction above. Provide adjustable wedged or bolted anchorage to frame jamb members.
- b. Doors.
- 1. Fit hollow-metal doors accurately in frames, within clearances specified in SDI-100.
- c. Adjusting and Cleaning.
- 1. Final Adjustments: Check and adjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including standard steel doors or frames that are warped, bowed, dented, or otherwise unacceptable.
  - 2. Clean grout and other bonding material off standard steel doors and frames immediately after installation.
  - 3. Finish Touch-up: Clean abraded areas and repair with primer or galvanizing touch-up paint according to manufacturer's written instructions.

08 11 13.43 Tolerances / Testing.

Adjust standard steel door frames for squareness, alignment, twist, and plumb to the following tolerances:

- a. Squareness: Plus or minus 1/16 inch measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
- b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
- c. Twist: Plus or minus 1/16 inch measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
- d. Plumbness: Plus or minus 1/16 inch measured at jambs at floor.
- e. Non-Fire-Rated Standard Steel Doors
  - a. Jambs and Head: 1/8 inch plus or minus 1/16 inch.
  - b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
  - c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
  - d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.
- f. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c., and not more than 2 inches o.c. from each corner. Stops deformed as a result of overtightening of screws shall be replaced.

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08 14 00.00 **WOOD DOORS**

08 14 00.10 GENERAL.

08 14 00.11 Types.

The following wood door types are required under this specification:

08 14 16 Flush Panel Wood Doors

08 14 00.12 Reference Specifications.

Comply with pertinent standards of the:

Architectural Woodwork Institute

"Architectural Woodwork Quality Standards" latest edition.

Section 1300

NWWDA "Industry Standard for Wood Flush Door"

Underwriters Laboratories

"Fire Test of Door Assemblies"

National Fire Protection Association [NFPA]

Fire Rated Assemblies: NFPA 80

Smoke Control Assemblies: NFPA 105

08 14 00.13 Submittals.

## a. Shop DRAWINGS:

The Contractor shall furnish supplier's detailed shop drawings and manufacturer's literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

## b. Samples:

Submit manufacturer's samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job.

08 14 00.14 Warranty.

Furnish the written warranty of the door manufacturer covering repair and replacement in whole or in part of any portion of any wood door that exhibits defects of design, workmanship, or materials as follows:

## a. Interior Doors : Life of installation.

08 14 00.15 Design Conditions.

Wood doors shall comply with the structural requirements of Chapter 16 of the North Carolina Building Code.

008 14 0.16 Subcontractor.

Wood doors shall be engineered, manufactured, and fabricated under a subcontract to a manufacturer regularly involved in the development and fabrication of wood doors of the type indicated.

08 14 00.17 Environmental Conditions.

Prior to the delivery and installation of wood doors, the following conditions shall apply:

1. The structure shall be enclosed with wet work complete and the HVAC system operating and maintaining temperature and relative humidity levels.
2. Temperature range: 60°F to 90°F.
3. Relative humidity range: 50% to 65%.

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**08 14 16.00 FLUSH PANEL WOOD DOORS****08 14 16.10 GENERAL.**08 14 16.11 Location.

Flush panel wood doors of the following types shall be provided in spaces indicated, scheduled, or

specified.

- a. Solid Core

08 14 16.12 Basis of Design – Manufacturer.

1. The following product was used in the development of this project.  
Eggers Industries
2. Products of the following manufacturers *meeting these specifications* may be installed:  
Ampco Products, Inc.  
Alcoma Hardwoods, Inc.  
Eggers Industries  
Mohawk Flush Doors, Inc.  
Weyerhaeuser Company

08 14 16.20 MATERIALS.

Flush doors shall conform to the following tabular values:

		Solid Core
1.	AWI Specification:	SLC-5ME
2.	AWI Grade:	Premium
3.	Door Thickness:	1-3/4" unless noted scheduled otherwise
4.	Core:	Particlecore
5.	Finish	Stained Transparent
6.	Veneer Face:	Grade A or Better Birch
7.	Veneer Cut:	Plain Sliced
8.	Veneer Match:	Book Match
9.	Assembly Match:	Center
10.	Vertical Edges:	Match Face Veneer
11.	Transom Bottom Edge:	Full Width Matching Rail with Edge Rabbeted Joint between Door and Transom Panel
12.	Machining:	Field Machined except where required by UL for labeling requirements
13.	Finishing:	Field Finished See Section 990
14.	Warp:	Maximum allowable = 1/8"
15.	Label	None Required

08 14 16.30 FABRICATION

08 14 16.31 Standards.

- a. Flush panel wood doors shall be fabricated by a single firm specializing in this type work in accordance with the standards of the Architectural Woodwork Institute.
- b. Doors shall be factory fabricated plumb, square, and true to detail with all faces, coplanar.

08 14 16.32 Fabricated Items.

- a. Fabricate doors in sizes indicated on schedule. Include scheduled, indicated, and specified transoms, trim, and fittings. Doors shall be fully coplanar, without warpage or show-through of core or bands. Apply any detailed trim.
- b. Where trim is indicated as continuing from door to transom, maximum allowable offset is 1/32".
- c. Factory fit doors to clearance requirements for indicated AWI Specification.
- d. Factory machine doors where UL requirements mandate.

- e. Where transom and side panels are required, fabricate same as door. Provide clip angle support concealed from face of door on bottom of transom or side panel and attach edges with concealed transom plugs or blind face nailing.
- f. Cut and trim openings [glazed view panels and / or louvers] through doors as indicated. Where door is labeled, comply with rating requirements.

**08 14 16.40** INSTALLATION.

08 14 16.41 Standards.

Doors shall be installed in accordance with approved shop drawings and the manufacturer's written installation directives. Where fire rated doors are installed, comply with the requirements of NFPA 80.

08 14 16.42 Protection

Store doors flat with free air movement in dry areas. Doors shall be wrapped or otherwise protected from dirt and handprints after hanging and before finishing.

08 14 16.43 Hanging.

- a. Doors shall be hung plumb and neatly fitted in frames according to AWI standards. Transom panels shall be held in place by concealed anchors. Joint in panels above double doors will be splined. Bevel edges 1/8" in 2" clearances; heads and jambs 1/8"; meeting stiles 1/16", 1/8" over flush floor, 1/4" over thresholds. Bevels and clearances shall be uniform throughout the project.
- b. Provide the following clearances:
  - 1/8" at heads, jambs, and between pairs of doors.
  - 1/8" from finished floor to bottom of door.
  - 1/4" from top of threshold to bottom of door.

08 14 16.44 Hardware.

Install hardware scheduled in Section 08 70 00 according to manufacturer's directions.

08 14 16.43 Tolerances / Testing.

Fully align doors with frames with margins indicated in 08 14 16.43. Doors and frames shall be coplanar, square, and without warpage or scratches and shall swing and operate freely.

**08 40 00 ENTRANCES, STOREFRONTS, AND CURTAIN WALLS****00 00 00.10 GENERAL.****00 00 00.11 Work Included.**

Furnish all labor, material, and equipment required for the fabrication and installation of framed glazed assemblies indicated, specified, or both including all incidental items normally required for installation and conditions encountered. Subsections forming this specification include the following:

Section	08 41 00	Storefronts
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**00 00 00.12 Work Not Included.**

Glazing of items specified in Section 08 80 00.

**00 00 00.13 Related Sections.**

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	08 70 00	Finish Hardware
Section	08 80 00	Glazing

**08 41 00.00 STOREFRONTS****08 41 00.10 GENERAL.****08 41 00.11 Types.**

The following storefront types are required under this specification:

Section	08 41 13	Aluminum Framed Storefronts
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**08 41 00.12 Reference Specifications.**

Comply with pertinent standards of the:

Architectural Aluminum Manufacturers Association

"Metal Curtain Wall, Window, Store Front & Entrance Specification Manual"

**08 41 00.13 Submittals.****A. Shop DRAWINGS:**

The Contractor shall furnish supplier's detailed shop drawings and manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

**B. Samples:**

Submit manufacturer's samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job.

**08 41 00.14 Warranty.**

Furnish the written warranty of the manufacturer covering repair and replacement in whole or in part of any portion of the storefront[s] that exhibits defects of design, workmanship, or materials within ten [10] years of the date of substantial completion. Such defects include, but are not limited to, the following:

Structural failures including, but not limited to, excessive deflection.

Noise or vibration caused by thermal movements.

Deterioration of metals, finishes, and or other materials beyond normal weathering.

Adhesive or cohesive sealant failures.

Failure of operating components to function properly.

08 41 00.16 Hardware.  
Doors and frames shall be prepared at the factory to receive hardware as specified in Section 870. Templates provided by hardware supplier. Comply with applicable requirements of the ANSI A 115 series specifications for door and frame preparation for hardware.

08 41 00.17 Subcontractor.  
Storefronts shall be engineered, manufactured, fabricated and installed under a subcontract to a single installer/manufacturer regularly involved in the development, fabrication and installation of storefronts of the type indicated.

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08 41 13.00 **ALUMINUM FRAMED STOREFRONTS**

08 41 13.10 **GENERAL.**

08 41 13.11 Location.  
Aluminum framed storefronts shall be provided for spaces indicated, scheduled, or specified in the following types:

Glazed Doors

08 41 13.12 Basis of Design – Manufacturer.

1. The following product was used in the development of this project.

Manufacturers	Frames	Doors
YKK AP America Inc.	YES 45FS [1-3/4" x 4-1/2"]	35D

2. Products of other manufacturers *meeting these specifications* may be installed.

08 41 13.20 **MATERIALS.**

Materials shall conform to the following:

[1]	Aluminum Extrusions:	ASTM B211, 6063 – T5.
[2]	Sheet Aluminum:	[anodized frames] ASTM B209, 5005 – H14 .050".  [painted frames] ASTM B209, 3003 – H14 .080".
[3]	Fasteners: concealed: exposed:	Stainless steel Hardened aluminum alloys or AISI 300 series stainless steel.
[4]	Glass:	See Sect. 880
[5]	Glazing Accessories:	Setting blocks, edge blocks, and spacers meeting ASTM C 864.
[6]	Wire cloth:	18x14-mesh .012 aluminum insect screen held in place with mfg.'s standard vinyl retention stops

08 41 13.21 Doors & Frames.

Sections shall be 6063-T5 aluminum alloy extrusions minimum thickness ~1/8" thick with bolted and

welded joints. All connections shall be concealed. Comply with ASTM B 221 for extrusions and ASTM B 209 for sheet or plate.

08 41 13.22 Hardware.

a. Each door assembly shall be furnished and reinforced to receive hardware listed for the respective opening in Section 870. In addition, the following manufacturer's standard items shall be furnished.

1-1/2 pr. nylon bearing butts.

Mfg.'s. standard push and pull

Mfg's. standard closer

b. Pushes, pulls, closer arms and panic devices shall be attached with hex nuts and washers.

08 41 13.23 Finish.

All aluminum surfaces of doors, frames and hardware shall be anodized clear.

**08 41 13.30 FABRICATION**

08 41 13.31 Standards.

a. Entrance work shall be fabricated by a single firm specializing in this type work in accordance with the standards of the AAMA Specifications for Aluminum Structures.

b. Entrance work shall be factory fabricated plumb, square, and true to detail with all faces, coplanar.

08 41 13.32 Fabricated Items.

Doors and frames shall be factory fabricated plumb, square, and true to detail with all faces coplanar. Following fabrication, frames will be disassembled into components for ease of transport.

08 41 13.33 Glazed Doors & Frames.

a. Doors shall be 1-3/4" depth by **medium width stile nominal 3-1/2"** with fiber stile weatherstripping. Reinforced with concealed tie rods. Bottom rail shall be 7-1/2" minimum meeting the requirements of the NC Accessibility Code and the ADA.

b. Frames shall be 4-1/2" deep tubular sections thermally broken by width indicated. Sections shall be full size unless otherwise indicated. Combinations of narrower tubular sections to achieve indicated widths will not be accepted.

c. Glazing stops shall be extruded into the door or frame with neoprene insert for puttyless glazing.

d. Doorstop shall be extruded aluminum with a continuous vinyl insert for weatherproofing and sound deadening.

e. Fastening screws shall be stainless steel.

08 41 13.34 Tolerances.

Manufacturing tolerances shall comply with the following:

Material Cuts :	Square to 1/32" over largest dimension; proportionate amount of 1/32" on the two dimensions.
Maximum Offset:	1/64" in alignment between adjacent members
Maximum Offset:	1/64" between framing members at glazing pocket corners.
Joints:	Hairline and square to adjacent member.
Variation:	1/16" in squareness of doors and frame assemblies
Flatness:	± 1/16" off neutral plane.

**08 41 13.40** EXECUTION08 41 13.41 Standards.

Comply with approved shop drawings and manufacturer's written installation instructions.

08 41 13.42 Installation.

- a. All entrance work shall be installed by skilled mechanics to best trade standards. Miters shall be accurate and true. Joints shall be neat and close fitting. All work shall be plumb and square.
- b. Paint all surfaces of dissimilar metals in contact with each other or aluminum in contact with masonry one coat of bituminous-base aluminum paint.
- c. Install hardware specified for opening in this section and Section 08 70 00.
- d. See other sections of the specifications for glazing methods and materials.
- e. Exterior caulking shall be done in such a manner to make a neat, watertight connection to other work. Concealed caulking shall be applied to field joints and framework. See Section 07 90 00 Caulking & Sealants.

08 41 13.43 Cleaning.

Clean complete system inside and outside. Remove excess sealants, glazing compounds, dirt or other substances.

08 41 13.44 Tolerances / Testing.

- a. Installation shall comply with the tolerances indicated in 08 41 13.35.

**08 70 00 HARDWARE****08 70 00.10 GENERAL.****08 70 00.11 Work Included.**

Furnish all labor, material and equipment required for the installation of all finish hardware indicated, specified, and required by the actual conditions encountered in the building in accordance with the specified requirements indicated herein. Include all screws, expansion bolts, attachment devices, and incidental items normally required for installation and conditions encountered and required to derive full benefit and use of items furnished. Subsections forming this specification include the following:

Subsection	08 71 00	Door Hardware
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**08 70 00.12 Work Not Included.**

Sash hardware, toilet partition hardware, gate hardware, locker hardware, miscellaneous cabinet and rough hardware specified in other sections.

**08 70 00.13 Related Sections.**

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	08 10 00	Doors and Frames
Section	08 40 00	Entrances, Storefronts, and Curtain Walls
Section	09 60 00	Flooring

**08 71 00.00 DOOR HARDWARE****08 71 11.00 FINISH DOOR HARDWARE****08 71 11.10 GENERAL.****08 71 11.11 Location.**

Finish door hardware of the types indicated herein shall be provided in spaces indicated, scheduled, or specified.

**08 71 11.12 Coordination.**

The Contractor shall be responsible for full coordination of hardware herein with any special fabrication required for doors and frames specified in Division 8. Furnish templates as required.

**08 71 11.13 Hardware Consultant.**

Hardware installation shall be inspected by certified "American Hardware Consultant" with a letter furnished from such consultant to the Architect prior to certification for final payment, that the hardware installed is as herein specified and is in proper working order.

**08 71 11.14 Submittals.**

- a. The Contractor shall furnish manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.
- b. The Contractor shall submit a complete and itemized hardware schedule for Architect's approval before delivering any hardware to site. The schedule shall generally follow Architect's schedule of items indicated in succeeding subsections.
- c. Submit manufacturer's color and finish samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job.

08 71 11.18 Basis of Design – Manufacturer.

1. Products of the following manufacturers *meeting these specifications* may be installed:

[1]	Lock sets and latch sets	Corbin/Ruswin Yale Schlage
[2]	Hinges	Hager Stanley McKinny
[3]	Closers	Dorma Corbin/Ruswin LCN
[4]	Exit devices	Von Duprin, Dorma, Corbin Ruswin
[5]	Miscellaneous specialties: Bolts and Stops Thresholds and Weather-stripping	H. B. Ives, Rockwood, Hagar Hagar, Pemko, Reese

2. In so far as practical, products of one type or group shall be by a single manufacturer.

08 71 11.20 MATERIALS.

08 71 11.21 Lock Sets and Latch Sets.

Lock sets and latch sets shall be extra heavy-duty cylindrical lever fabrication. Deadlocks shall be cylindrical fabrications. Cylinders shall be recore keyway compatible with any existing master keying system. Lock and latch sets and deadlocks shall be selected from one of the following manufacturer's series. One manufacturer shall be selected for all lock sets, latch sets, and deadlocks for the work.

	Corbin/Ruswin	Yale	Schlage
Locksets/Latchsets	CL3300 Series	5400 LN Series	ND-Series
Deadlocks	DL3000 Series	D100 Series	B-600 Series
Design	Armstrong AZD	Monroe MO	Jupiter
ANSI Grade	A156.2 Series 4000 Grade 1		

Finish US32D [BHMA 630] Satin Finish Stainless Steel

Keying

- (a) Locks and cylinders shall be delivered without keyway core except those required by the contractor to maintain security with construction keys.
- (b) Keying schedule will be furnished to the contractor by the Architect.
- (c) Furnish and install factory combined keyway cores by manufacturer of Owner's present recore system for all keyed locks and cylinders. At substantial completion, set the keying system in place under grandmaster in the presence of and in cooperation with, the Owner's locksmith.
- (d) Arrange factory shipment of keyway cores to the Owner. The Owner will deliver the key cores and keys to the Contractor for installation by the contractor when the project or a portion thereof, is ready for the owner to assume responsibility for access.
- (e) Construction keys and cores are and shall remain property of the Contractor.

08 71 11.22 Hinges.

Shall be selected from a single manufacturer listed on the following table. Finish US32D unless scheduled otherwise.

	Hagar	Stanley	McKinney
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Ball Bearing Hinges	BB1191	BB179	TA2314
Mortice Hinges	1191	179	T2314

08 71 11.23 Closers.

Shall be selected from a single manufacturer listed on the following table in fully adjustable sizes. Provide aluminum cover. Provide hold-open arms and parallel arms as scheduled. Finish US 26D unless scheduled otherwise.

	LCN	Dorma	Corbin Russwin
Series	4041	8901	DC2200

ANSI Grade A156.4 Grade 1

- Surface closers shall be mounted to door with arm to frame. Use through-bolts with grommets.
- Furnish brackets as required to properly position closers. Flush transom brackets required at all doors with transoms.

08 71 11.24 Push Plates, Kick Plates & Pulls.

Shall be selected from a single manufacturer listed in the following table. Finish US 32D unless scheduled otherwise.

	Ives	Rockwood	Hagar
Pulls	8102-8	107	3G
Push plates	8200 Series	70 Series	30S Series
Kick plates	8400 Series	70 Series	190S

08 71 11.25 Exit Bolts.

Shall be selected from a single manufacturer listed in the following table. Furnish with aluminum housing and stainless steel touch bars with cylinder-keyed dogging device on exterior entrance doors and standard dogging device on all others, unless designated (f) Fire doors, to hold latches in retracted position.

	Von Duprin	Dorma	Corbin Russwin
Series	99	9000	ED9000

ANSI Grade Grade 1

08 71 11.26 Cabinet Hardware.

Hardware for casework and cabinetwork not included.

08 71 11.27 Miscellaneous Specialties.

Furnish following items at locations specified as follows.

*Bolts and Stops*

	Ives	Rockwood	Hagar	Finish
Surface bolts*	453	580	275D	US 32D
Foot bolts*	453	580	275D	US 32D
Door Stops				
Interior wall stops:	401 and 402 for conditions encountered	400 through 405 for conditions encountered	230W and 231W for conditions encountered	US 32D
Interior floor stops	436	440/441	241F	US 32D
Exterior stops	446	472/473	268F/268S	US 32D

\*All inactive leaves unless other bolts scheduled.

*Coordinators*

	Ives	DCI	Hagar	Finish
Coordinators*	COR series	600 series	297D	US 32D

All coordinators shall be UL labeled and rated and sized as required for the related doors. Furnish complete with all carrying bars, mounting brackets, or fillers required for proper operation. Upon complete installation, coordinator [with fillers] shall fully fill the width of the opening.

*Hold-opens*

	Glynn-Johnson	Dorma	Mfg. optional	Finish
Holdopens*	450 series F	#700	--	US 32D

*Magnetic Holdopens*

	Dorma	Sentronic	Siemens	Finish
Magnetic Holdopens*	EM-R24120	DH Series	Series SDH-2	US 32D

All magnetic hold-opens shall be recessed mounted into the gypsum covered masonry walls

*Thresholds and Weather-stripping*

<i>Thresholds</i>	Hagar	Pekoe	Reese	Finish	Inserts
At entrances with carpet	431S	229	F-S245A	Mill fin. aluminum	
At interior doors where carpet terminates	505S	236	F-S565A	Mill fin. aluminum	
At entrances (no carpet),	412S	171	F-S205A	Mill fin. aluminum	
<i>Weather-stripping</i>					
Jamb weather-stripping	862S	319	403	Mill fin. aluminum	Neoprene
Bottom sweeps at out swinging exterior doors	750S	315	323	Mill fin. aluminum	Neoprene
Bottom sweeps at in-swinging exterior doors	774S	209	DB591	Mill fin. aluminum	Vinyl

08 71 11.28 Cylinders.

Cylinders shall be recore type 6-pin compatible with Owner's existing master keying system. Finish US 32D unless scheduled otherwise. Unless otherwise indicated, each opening shall receive a recore cylinder keyed into the master system.

08 71 11.40 EXECUTION08 71 11.41 Installation.

- Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Install surface-mounted items following completion of finish work.
- Accurately set hardware in position, plumb, aligned, and true. Adjust and reinforce attachment

substrates as necessary for proper installation and operation.

- c. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards. Hinges and other morticed work shall be flush with adjacent surfaces.
- d. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with accessibility requirements.
  - 1.Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 30 degrees.
  - 2.Door Closers: Adjust sweep period so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches from the latch, measured to the leading edge of the door.
- e. Six-Month Adjustment: Approximately six months after date of Substantial Completion, Installer shall perform the following:
  - 1. Examine and readjust each item of door hardware as necessary to ensure function of doors, door hardware, and any electrified door hardware items.
  - 2. Consult with and instruct Owner's personnel on recommended maintenance procedures.
  - 3. Replace door hardware items that have deteriorated or failed due to faulty design, materials, or installation of door hardware units.

08 71 11.42 CLEANING AND PROTECTION.

- a. Clean hardware and adjacent surfaces soiled by door hardware installation.
- b. Clean operating items as necessary to restore finish and proper function.
- c. Provide protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

08 71 12.00 **FINISH HARDWARE SCHEDULE**

- a. The following schedule lists types and quantities of various items at each opening, but does not necessarily cover every item required as heretofore specified in general terms. Any opening not scheduled shall be furnished with hardware items same as similar opening and in accordance with general materials requirements of this specification.
- b. Include all items for each condition heretofore specified.

MH            mortise hinge  
 MBBH        mortise ball bearing hinge  
 PA            parallel arm closer  
 [ANSI #]     indicates function of specified device in schedule

DOOR SCHEDULE

GROUP 1

DOOR	1A	EXISTING CORRIDOR	TO	1	WAITING
DOOR	11A	EXISTING CORRIDOR	TO	11	PASSAGE/NURSE

Hardware by aluminum frame manufacturer

## Group 2

Door	2a		11 Passage/Nurse	to	2 Exam
Door	3a		11 Passage/Nurse	to	3 Exam
Door	4a		11 Passage/Nurse	to	4 Exam
Door	7a		11 Passage/Nurse	to	7 Exam
Door	8a		11 Passage/Nurse	to	8 Exam
Door	9a		11 Passage/Nurse	to	9 Exam
Door	10a		11 Passage/Nurse	to	10 Storage/Mech

3	hinges	MH			
1	Passage Latchset	CL3310 [F75]	Corbin Russwin		
		8" x full door			
1	kick plate	width			
1	acoustic seal	29313CTF	Pemko		Surface apply on all stops
1	bottom seal	4301CPKL	Pemko		Semi-morticed installation

## Group 3

Door	14a		11 Passage/Nurse	to	14 Consultation
Door	15a		11 Passage/Nurse	to	15 Nurses
Door	20a		Existing Lab	to	20 Serology / Soils

3	hinges	MH			
1	Office Lockset	CL3361 [F82A]	Corbin Russwin		

## Group 4

Door	19a		11 Passage/Nurse	to	19 Storage
------	-----	--	------------------	----	------------

3	hinges	MH			
1	Storage Lockset	CL3357 [F86]	Corbin Russwin		

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**08 80 00 GLAZING****08 80 00.10 GENERAL.**08 80 00.11 Work Included.

Furnish all labor, material, and equipment required for the fabrication and installation of of all glass and glazing work on windows, doors, partition lights, cabinets, etc., throughout the interior of the building within the project limits as indicated, scheduled, or specified, including all incidental items normally required for installation and conditions encountered.. Subsections forming this specification include the following:

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Subsection	08 81 00	Glass
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08 80 00.12 Work Not Included.

Mirrors specified in Section 10 20 00 Interior Specialties.

08 80 00.13 Related Sections.

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	08 10 00	Doors and Frames
Section	08 400 00	Entrances, Storefronts, and Curtain Walls

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**08 81 00.00 GLASS GLAZING****08 81 11.00 GLASS****08 81 11.10 GENERAL.**08 81 11.11 Location.

Glass shall be provided in spaces, frames, sash, doors, and other devices indicated, scheduled, or specified.

08 81 11.12 Types.

The following glass types are required under this specification:

- Float Glass
- Tempered Float Glass

08 81 11.13 Submittals.

## a. Samples:

Submit manufacturer's samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job.

08 81 11.14 Warranty.

Furnish the written warranty of the glass manufacturer covering repair and replacement in whole or in part of any portion of glazing that exhibits defects of design, workmanship, or materials within ten [10] years of the date of substantial completion

08 81 11.15 Subcontractor.

Unless other indicated, glass shall be engineered, manufactured, and fabricated under a subcontract to a single manufacturer regularly involved in the development, fabrication and installation of glazing of the type indicated.

**08 81 11.20 MATERIALS.**

Materials shall conform to the following:

08 81 11.21 Glass.

Glass shall conform to ASTM C 1036, ASTM C 1048, and to the following:

- [1] Float glass: ASTM C 1036 Type I 3/16" clear & 1/4" clear, Type 1 Class I Quality Q3.
- [2] Tempered float glass: ASTM C 1048 Type I Quality Q3 Class I 1/4" tempered safety glass, clear. ANSI Z 97.1, SG, CC, marked "High Temper."

08 81 11.23 Glazing Compound.

DAP Flexiglaze #1231. Pecora M-251 or PRC-300.

08 81 11.24 Glazing Tape.

Rectangular gray 1/8" thick and 1/2" extruded polybutyl, Pecora-Extru-seal B-44.

08 81 11.25 Setting Blocks, Spacers, Edge Blocks.

Elastomeric material with a Shore A durometer hardness required by glass manufacturer to maintain glass lites in required locations and to limit movement within the frame.

08 81 11.30 GLASS TYPE LOCATION.

Glaze the following with 1/4" float glass:

- [1] Openings in hollow metal interior frames forming view panels not meeting the requirements of NCBC paragraph 2406.4 and not requiring fire glass

Glaze the following with tempered 1/4" float glass:

- [1] Openings in hollow metal interior frames forming sidelights and transom lights located within the requirements of NCBC paragraph 2406.4

08 81 11.40 EXECUTION08 81 11.41 Installation.

- a. All glazing shall be done by men experienced in the trade. Glass shall be set to allow freedom of movement in watertight seal.
- b. Clean surfaces to receive glass immediately before glazing commences. Remove any coatings, which may preclude continuous adhesion of glazing setting materials.
- c. Protect glass edges from damage during handling and installation. Remove damaged glass from site and dispose of as required in the Supplementary General Conditions and Division 1.
- d. Apply primers as required by the glass and / or sealant manufacturer.
- e. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
- f. Maintain edge pressures within published tolerances.
- g. Provide spacers for glass lites where the length plus the width is larger than 50 inches. Locate spaces as follows:
  - 1. Located spacers directly opposite each other on both inside and outside faces of glass. Install requisite size and spacing to preserve mandated face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
  - 2. Provide 1/8" minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

- h. Provide edge blocking where required to prevent glass from moving sideways in frame or sash.
- i. Where glass is installed using neoprene gasket systems, set with adequate anchorage so as to prevent gasket walkout or corner pullout. Set with sealant where recommended by manufacturer.

08 81 11.43 Interior Glazing – Wood or Metal Frames or Doors – Tape Glazed.

Where frames are indicated with a stop on each side of the glazing unit, the frame shall be tape glazed using the following method:

- a. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sight-line of stops.
- b. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
- c. Cover vertical framing joints by applying tapes to heads and sills first and then to jambs. Cover horizontal framing joints by applying tapes to jambs and then to heads and sills.
- d. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
- e. Do not remove release paper from tape until just before each glazing unit is installed.

08 81 11.45 Factory Furnished Inserts – Aluminum Frames.

In glazed openings furnished with vinyl or neoprene glazing inserts, glass shall be cut to allow freedom of movement yet give the inset full contract. Place setting blocks if required to hold glass in position and pull up stops to exert uniform pressure and watertight seal.

08 81 11.46 Cleaning and Protection.

- a. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Remove non permanent labels, and clean surfaces. Marking on glass surfaces to indicate the presence of glass is hereby prohibited.
- b. Protect glass from contact with contaminating substances resulting from construction operations, including but not limited to mortar, weld splatter, and concrete residue. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended by glass manufacturer.
- c. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains; remove as recommended in writing by glass manufacturer.
- d. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.

DIVISION      09      FINISHES

Includes work by the General Contractors covered in the following sections.  
Section designations are neither consecutive nor numerically inclusive.

09 20 00	WALL BOARD SYSTEMS
09 30 00	TILE
09 50 00	CEILINGS
09 60 00	FLOORING
09 90 00	PAINTING & COATING

**09 20 00 WALL BOARD SYSTEMS****09 20 00.10 GENERAL.**09 20 00.11 Work Included.

Furnish all labor, material, and equipment required to provide wallboard finishes, and their related supporting systems indicated, specified, or both including all incidental items, accessories, and trim normally required for installation and conditions encountered. Subsections forming this specification include the following:

Subsection	09 22 00	Support Systems
Subsection	09 28 00	Backer Boards and Underlayments
Subsection	09 29 00	Gypsum Wall Board

09 20 00.13 Related Sections.

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	06 10 00	Rough Carpentry
Division	23	Mechanical Systems
Division	26	Electrical

**09 22 00.00 SUPPORT SYSTEMS****09 22 00.10 GENERAL.**09 22 00.11 Types.

The following support system types are required under this specification:

09 22 13	Metal Furring
09 22 16	Non-Structural Metal Framing
09 22 26	Suspension Systems

09 22 00.12 Reference Specifications.

Comply with pertinent standards of the:

American Institute of Steel Construction.  
"Light Gauge Cold Formed Steel Design Manual"

U. S. Gypsum.  
"Gypsum Construction Handbook"

Metal lath Manufacturer's Association as follows:

Lath furred on steel framing	G.S. #5-#5A
Lath suspended from steel framing	G.S. #6-#6A
Lath framing	G.S. #7
and to ANSI A 42.3	

09 22 00.13 Submittals.

## a. Shop DRAWINGS:

The Contractor shall furnish supplier's detailed shop drawings and manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

## b. Samples:

Submit manufacturer's samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job – Lath only.

09 22 00.14 Design Conditions.

Framing shall comply with Chapter 16 of the North Carolina Building Code. Horizontal loading shall be a minimum of 5 lbs. per sq. ft. live load. *Deflection shall be limited to 1/360 for plaster surfaces and 1/240 wall board surfaces of any span at full pressure acting normal to the surface plus product dead load.*

09 22 00.16 Subcontractor.

Support systems shall be installed under a subcontract to an installer regularly involved in the development, fabrication and installation of support systems of the type indicated.

**09 22 13.00 METAL FURRING****09 22 13.10 GENERAL.**09 22 13.11 Location.

Metal furring shall be provided in spaces indicated, scheduled, or specified

09 22 13.12 Basis of Design – Manufacturer.

1. The following product was used in the development of this project.

U S Gypsum Company

2. Products of the following manufacturers *meeting these specifications* may be installed:

National Gypsum Company [Gold Bond]

Marino / Ware

**09 22 13.20 MATERIALS.**

Materials shall conform to the following:

- |                           |  |
|---------------------------|--|
| [1] Hat Channels:         | 7/8" x 2-1/2" galvanized, cold rolled furring channels 26 ga.    |
| [2] Cold Rolled Channels: | 1-1/2" & 3/4" galvanized, cold rolled furring channels, 26 ga.   |
| [3] Resilient Channels:   | 1/2" x 2-5/8" galvanized, cold rolled resilient channels, 26 ga. |

**09 22 13.30 EXECUTION.**09 22 13.31 Standards.

Furring shall be installed according to manufacturer's directions and conforming to recommended AISC procedures. Tack weld where indicated on drawings and at other locations where rigidity requires; otherwise, snaps, bolts or metal screws may be used. Tie wires are not permitted. Assembly shall be firm and rigid before application of gypsum board or metal lath.

09 22 13.32 Installation.

Position furring on existing walls at indicated spacing. Shim where required to make wall true and vertical.

09 22 13.33 Tolerances.

Maximum variations:

- |                  |   |
|------------------|---|
| Plumb and level: | 1/8" in 8'-0"   |
| Plane to plane:  | 1/16" at any one location along a joint, seam, or edge. |

## 09 22 16.00 NON STRUCTURAL METAL FRAMING

09 22 16.10 GENERAL.09 22 16.11 Location.

Non structural metal framing shall be provided in spaces indicated, scheduled, or specified.

09 22 16.12 Basis of Design – Manufacturer.

1. The following product was used in the development of this project.  
Marino/Ware
2. Products of the following manufacturers *meeting these specifications* may be installed:  
U S Gypsum Company  
Dietrich Metal Framing  
Marino/Ware

09 22 16.20 MATERIALS.

Materials shall conform to the following:

- |                         |   |
|-------------------------|---|
| [1] Channels "C" studs: | 1-1/4" x 2-1/2" & 1-1/4" x 3-5/8", 22 ga. steel channels factory primed, equal to USG Type ST with 22 ga. channel runners.                      |
| [2] Track & Bridging:   | 18-ga. steel, galvanized, designed for top, bottom, and intermediate support of channel.  |
| [3] Accessories:        | Welding washers, channel aligners, slips, angles, shoes, etc., shall be furnished as required for the installation. Similar gauge to stud work. |

09 22 16.30 EXECUTION.09 22 16.31 Standards.

Support system shall be installed according to manufacturer's directions and conforming to recommended AISC procedures. Tack weld where indicated on drawings and at other locations where rigidity requires; otherwise, snaps, bolts or metal screws may be used. Tie wires are not permitted. Assembly shall be firm and rigid before application of gypsum board or metal lath.

09 22 16.32 Installation.

- a. Position stud between floor runner and top runner at indicated spacing [no greater than 24" oc]. Attach bottom runner to concrete floor with power driven pins not less than 24" o.c. Set double channel runner studs 6" above finish ceiling. Diagonally brace stud walls to structure at 6'-0" o.c. Provide horizontal stiffener at each edge joint of gypsum board or metal lath.
- b. Provide double stud at each doorjamb and extend one stud [regardless of top runner location] to structure and diagonally brace door head with two additional studs forming angle braces at frame ends. Where frames exceed 4'-0" in width, place additional angled bracing at 4'-0" oc maximum.
- c. Where chases occur, space stud opposite each other with flanges pointed in same direction. Cross brace across chase between studs at quarter points.
- d. Where gypsum board occurs on only one side of stud, apply cross bracing between or behind studs to hold back flange rigid.
- e. Where sloped surfaces occur, provide special bracing according to detail or as required to maintain required shapes. In addition to screw or tab attachments, tack weld assembly at critical points for rigidity.

- f. Provide blocking and bracing between stud joist or furring to receive anchors for toilet accessories, chalkboard and other items indicated or specified to be wall mounted.

09 22 16.33 Tolerances.

- a. Erection Tolerances: Install cold-formed metal framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
- b. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

09 22 26.00 **SUSPENSION SYSTEMS**

09 22 26.10 **GENERAL.**

09 22 26.11 Location.

Suspension systems shall be provided in spaces indicated, scheduled, or specified

09 22 26.20 **MATERIALS.**

09 22 26.21 Wall Board Suspension Systems.

Materials shall conform to the following:

- |                      |   |
|----------------------|---|
| [1] Main Tees:       | Heavy duty "T" profile 1-1/2" high x 1-1/2" wide cold rolled hot dipped galvanized steel with knurled face for UL fire rated systems. USG DGLW-26 or equal.                         |
| [2] Cross Tees:      | Heavy duty "T" profile 1-1/2" high x 1-1/2" wide cold rolled hot dipped galvanized steel with knurled face and with quick release for UL fire rated systems. USG DGLW-424 or equal. |
| [3] Perimeter Edge:  | Heavy duty "C" profile 1-9/16" x 1" x 1" cold rolled hot dipped galvanized steel with knurled face for UL fire rated systems.   |
| [4] Suspension Wire: | Manufacturer's standard 12 ga. Suspension wire  |
| [5] Accessories:     | Manufacturer's standard clip, shims, joints, etc. designed for the conditions encountered..   |

09 22 26.40 **EXECUTION – WALL BOARD**

09 22 26.41 Standards.

Apply suspension system and related work in accordance with ASTM C636, and manufacturers printed recommendations, latest edition..

09 22 26.42 Installation.

- a. Grid shall be laid straight, level, and true. Where angled planes are indicated, planes shall be true to angle of incline across the full surface.
- b. Where ceiling is suspended away from contact with the structure or where anchorage to structure exceeds 4'-0" o.c. place supplementary 1-1/2" channels 4'-0" o.c. perpendicular to section or anchor bar to receive ceiling system. Provide secondary support between beams and joists where required to avoid mechanical equipment and other obstructions.
- c. Hang system from structural system above [beams, trusses, bar joists, joists, etc.]. *Do not hang ceiling system from metal deck ribs.* Avoid splay hangers. If splay hangers are necessary, limit angle to 15 deg. from vertical.

- d. Provide metal channel edging at all edges where ceiling adjoins wall openings or other materials. Edge of grid system shall be supported from structure. Edge channels shall be mechanically attached to walls or partitions.
- e. Frame opening for light fixtures, air conditioning outlets, ventilators, etc. Reinforce ceiling system shall be d with necessary channels and supports; however, weight or load of any such items in openings shall not be supported by the ceiling system.

09 22 26.43 Tolerances/ Testing.

Maximum variations:

Plumb and level:	1/8" in 8'-0"
Plane to plane:	1/16" at any one location along a joint, seam, or edge.

09 28 00.00 **BACKER BOARDS**09 28 11.00 **CEMENTITIOUS BACKER BOARD**09 28 11.10 GENERAL.09 28 11.11 Location.

All interior surfaces where cement board is indicated or scheduled shall board of the type indicated indicated, specified, or otherwise required.

09 28 11.12 Submittals.

Shop DRAWINGS:

The Contractor shall furnish supplier's detailed shop drawings and manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

Samples:

Submit manufacturer's samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job.

## 09 28 11.13 Subcontractor

Gypsumboard shall be installed under a subcontract to a single installer regularly involved in installation of gypsumboard surfaces of the type indicated.

09 28 11.20 MATERIALS.

- a. Cement Board: ANSI A118.9, Aggregated Portland cement board with woven glass fiber mesh facing, 4' x 8', 4' x 10', 4' x 12' sheets, 1/2" or 5/8. USG "Durock", or equal.
- b. Fiberglass tape: As recommended by the board manufacturer
- c. Fasteners: Corrosion resistant 1" Type S bugle head metal self-tapping type or equal as recommended by the board manufacturer.

09 28 11.30 EXECUTION09 28 11.31 Standards.

Apply cement backer boards and related work in accordance with ANSI A108.11 and manufacturer's printed instructions.

09 28 11.32 Installation.

- a. Complete plumbing rough-in prior to installation of boards.
- b. Separate board from rough-in and fixtures and fill space as recommended by manufacturer.

- c. Securely fasten boards to substrate.
- d. Embed fiberglass tape in skim coat of mortar at joints and corners making a smooth transition across joint or corner.
- e. Shim as required to meet the required installation tolerances.

09 28 11.33 Tolerances / Testing.  
Maximum variations:

Plumb and level:	1/8" in 8'-0"
Plane to plane:	1/16" at any one location along a joint, seam, or edge.

09 29 00.00 GYPSUM WALL BOARD

09 29 11.00 GYPSUMBOARD

09 29 11.10 GENERAL.

09 29 11.11 Location.

All interior surfaces where gypsum wall board [GWB] is indicated or scheduled shall board of the type indicated indicated, specified, or otherwise required.

09 29 11.12 Reference Specifications.

Comply with pertinent standards of the:

Work shall be performed in accordance with ASTM C-754, ASTM Gypsum Association GA-216, and as set forth in Gypsum Construction Handbook, U.S. Gypsum Co., latest edition.

09 29 11.13 Submittals.

[1] Shop DRAWINGS:

The Contractor shall furnish supplier's detailed shop drawings and manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

09 29 11.14 Subcontractor.

Gypsumboard shall be installed under a subcontract to a single installer regularly involved in installation of gypsumboard surfaces of the type indicated.

09 29 11.20 MATERIALS.

Materials shall conform to the following:

- |                                   |   |
|-----------------------------------|---|
| [1] Gypsum Wall Board:            | "Sheetrock", ASTM C 36, Type X, UL listed. 4' x 8', 4' x 10', 4' x 12' sheets, 5/8" thick tapered edges.              |
| [2] Water resistant gypsum board: | ASTM C-630, Type X, 5/8" thick, 4' x 8' tapered edges "Green Board".  |
| [3] Screws:                       | 1" Type S bugle head metal self-tapping type ASTM C-646.  |
| [4] Metal accessories:            | 1-1/4" x 1-1/4" galvanized corner beads, galvanized casing and trim beads with taping wings. USG #103 and Series 200. |
| [5] Suspension system:            | See 09 22 26.   |
| [6] Joint compound:               | Ready mixed vinyl based ASTM C-475 water-resistant type with water-resistant gypsum board..                           |

**09 29 11.30** EXECUTION09 29 11.31 Standards.

Apply gypsum wall board and related work in accordance manufacturer's printed instructions and as indicated in the USG Handbook, latest edition. Use largest practical sheets to minimize butt joints. Install with face side out. Position boards so like edges abut. Work shall be performed in a ventilated area where temperature must be maintained at 56°. F or above. Provide openings for light fixtures and mechanical work in rated surfaces to comply with UL requirements to maintain fire rated resistance.

09 29 11.32 Installation.09 29 11.33 Gypsum Board on Stud Framing [metal or wood].

Place gypsum board sheets horizontally, breaking joints between opposite sides of partition. On ceiling, place boards perpendicular to joists on furring strips. Shim as required to provide plumb and level surfaces. Supports shall be 24" 16" oc and at all edges. Attach with nails 8" oc around perimeter and 12" oc at intermediate supports.

09 29 11.34 Gypsum Board on Light Weight Metal Framing

- a. When all stud, furring channels and "Z" channels are in place, they will form the shape of the space, with attachments for gypsum board 24" oc. at walls and 16' oc. at ceilings; with attachments at inside corners and at edges where directions change. Apply single layer face out with long dimension vertical and all abutting edges and joints occurring over stud flange or furring strip. Stagger joints on opposite sides of partition. Cut boards to fit work of others
- b. Attach boards with electric screw gun. Space screws 3/8" from edge 8" oc. around perimeter and 12" oc. at intermediate supports. Stagger screws along abutting edges.

09 29 11.35 Gypsum Board on Suspended Ceilings

Place 1-1/2" channels perpendicular to joist suspended to required level on hanger wires at each point of support. Attach hangers to channels maximum 4'-0" oc.; hanger angle maximum 15 deg. from vertical. Attach metal furring channels perpendicular to suspended channels with metal clips at each support. Attach gypsum board in same manner as on attached to joist ceilings.

09 29 11.36 Gypsum Board on Metal Furred Surfaces

Place support and furring channels as indicated. Tack weld all vertical members supporting a load. Spacing of primary support shall not exceed 4'-0" oc. and secondary or furring channels shall not exceed 24" oc. All edges of gypsum board shall be attached to metal furring channels. Floating blocking may be used. Place gypsum board with minimum joints in same manner as on ceilings.

09 29 11.37 Finishes

- c. Gypsum wall board surfaces shall be finished according to the following requirements

	Surface	Finish
1.	Ceilings	Knock Down
2.	Walls	Level 4
3.	Concealed Barriers	Fire Level 3 modified

- b. Finish level applications.

1. Pre-fill. Mix compound and fill all joints between boards to top of eased or beveled edge. Wipe off excess compound and allow to harden.
2. Level 1 – Taping. Butter taping compound into inside corner and joints. Place tape over joints and press into fresh compound. Remove excess compound

3. Level 2 – First Coat. Following bedding of tape, apply skim coat of joint compound over center of tape and allow to dry completely in accordance with manufacturer’s instruction. Trowel width minimum: 6” Spot fastener heads and fill corner and edge beads.
4. Level 3 – Second Coat. After all first coat compounds have dried, apply second joint compound coat over taped seams, fastener head, and beads. Joint compound shall extend beyond first coat by a minimum of 2” each side. Trowel width minimum: 10” Allow to dry. Lightly sand.
5. Level 4 – Third coat application. Following completion and drying of second coat, apply a thin finishing coat to joints, fastening heads, and beads. Feather edges of third coat 2” beyond second coat. Minimum trowel width: 14”. Lightly sand when dry.
6. Level 5 – Following completion of third coat application, fully cover gypsumboard surfaces with joint compound in accordance with the manufacturer’s requirements for fully smooth and unblemished finish. Lightly sand following drying.
7. Knock Down Finish -- Finish shall be formed by the application of standard perforated tape over joints set in accordance with manufacturer’s recommendations through level 4 indicated above, followed by a gun application of joint compound. “Knock Down” finish with long trowel. Finish shall simulate “Birch Tree Bark”.

09 29 11.40 Tolerances / Testing

Maximum variations in board installation:

Plumb and level:	1/8” in 8’-0”
Plane to plane:	1/16” at any one location along a joint, seam, or edge.

Maximum variations following installation to Level 4 finish:

Surface evenness:	No shadowing or shading with light set at 30-degree angle to plane of surface.
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Maximum variations following installation to Level 5 finish:

Surface evenness:	No shadowing or shading with light set at 10-degree angle to plane of surface.
-------------------	--

**09 30 00 TILE****09 30 00.10 GENERAL.**09 30 00.11 Work Included.

Furnish all labor, material, and equipment required for the fabrication and installation of ceramic tile indicated, specified, or both including all incidental items normally required for installation and conditions encountered.

- a. Set all toilet accessories, which are attached or connected to work in this division and specified in Division 10 or delivered, to the job site by the Owner.
- b. Coordinate work with plumbing and electrical trades. Properly fit tile work around work of others.
- c. Examine surfaces to receive tile work and conditions under which tile will be installed. Do not proceed with tile work until surfaces and conditions comply with requirements indicated in referenced tile installation standard.

Subsections forming this specification include the following:

Subsection	09 31 00	Thin-Set Tilework
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09 30 00.12 Related Sections.

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	09 20 00	Wall Board Systems
Division	22	Plumbing

**09 31 00.00 THIN SET TILE****09 31 00.10 GENERAL.**09 31 00.11 Types.

The following tile types are required under this specification:

09 30 13	Thin Set Ceramic Tile
----------	-----------------------

09 31 00.12 Reference Specifications.

Comply with pertinent standards of the:

Tile Council of America, Handbook for Ceramic Tile Installation, Latest edition.

09 31 00.13 Submittals.

## A. Shop Drawings:

The Contractor shall furnish supplier's detailed shop drawings of any specialized patterns or designs and manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

## B. Samples:

Submit manufacturer's samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job.

09 31 00.16 Subcontractor.

Tile work shall be performed by a tile subcontractor with skilled craftsmen regularly employed in the

trade.

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09 31 13.00 **THIN SET CERAMIC TILE**

09 31 13.10 **GENERAL.**

09 31 13.11 Location.

Thin set ceramic wall tile shall be provided for spaces indicated, scheduled, or specified.

09 31 13.12 Basis of Design – Manufacturer.

1. The following product was used in the development of this project.  
Dal-tile
2. Products of the following manufacturers *meeting these specifications* may be installed:  
American Olean  
Dal-tile  
Florida Tile

09 31 13.20 **MATERIALS.**

09 31 13.21 Tile.

Materials shall conform to the following:

- |                                |   |
|--------------------------------|---|
| [1] Wall Tile:                 | Standard grade glazed wall tile, 4-1/4" x 4-1/4", matte finish meeting the requirements of ANSI A137. Furnish all trim shapes indicated or required for conditions encountered.   |
| [2] Ceramic Mosaic Floor Tile: | Tile shall be machine made, dust pressed, vitreous bodied, unglazed thru the body color, standard size pieces 2" x 2", paper mounted in a rectangular grid pattern. Furnish trim shapes to trim cove base, inside and outside corners, and terminate edges. Interior corners shall be coved; exterior corners, bull nose. Tile shall be manufactured in accordance with ANSI A137.1 standards for the types and grades indicated. |

09 31 13.22 Setting Materials.

Setting materials shall conform to the following specification standards. Where applicable products shall be manufactured by a licensee of the Tile Council of America and bear the TCA hallmark.

- |                |  |
|----------------|--|
| [1] Grout:     | White Portland Cement neat ASTM C-150 type I |
| [2] Bond Coat: | Latex Portland Cement ANSI A118.4            |

09 31 13.23 Waterproofing Materials.

Waterproofing materials shall be a self curing thin [0.02"] rubber polymer with a reinforcing fabric set to form a fully waterproofed wall and floor prior to the installation of thin set tile over a cementitious backerboard and a concrete subfloor. Products equal to Laticrete 9235 Waterproofing Membrane with manufacturer's approved reinforcing fabric.

09 31 13.30 **EXECUTION**

09 31 13.31 Standards.

Standard practices of the industry as set forth by the Tile Council of America shall be followed explicitly. Installation shall comply with ANSI 108.

- |    |            |  |
|----|------------|--|
| 1. | Wall tile  | TCA Spec. W-244 & W-211<br>Cement mortar bonded as required for the wall conditions encountered. |
| 2. | Floor tile | TCA Spec. F-122 Cement mortar bonded [thin- set].  |
| 3. | Threshold  | TCA spec. TR-611   |

09 31 13.32 Installation.09 31 13.33 Wall Tile.

- a. Following the installation of the cement backerboards and the concrete subfloor, place reinforced waterproofing membrane following manufacturer's instructions. Allow to fully cure prior to installation of tile work.
- b. Wall tile finished surfaces shall have coved base, outside corners and edges, and square inside corners. Tile work shall show straight, uniform joint lines in both directions. Surfaces shall be plumb. Grout all joints.
- c. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish or built-up items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures and other penetrations so that plates, collars, or covers overlap tile.
- d. Jointing Pattern: Unless otherwise shown, lay tile in grid pattern. Align joints when adjoining tiles on floor, base, walls, and trim are same size. Lay out tile work on floor, base, and walls in both directions in each space or on each wall area. Set pattern to avoid less than one-half size tiles. Adjust to minimize tile cutting. Provide uniform joint widths, unless otherwise shown.
- e. Fully Seal Coat ceramic walls behind urinals and water closets.
- f. Clean all surfaces and protect finish work of other trades from damage from tile operations. Protect finish tile work from damage by other trades.

09 31 13.34 Floor Tile.

- a. Floor tile finished surfaces shall have return members for inside and outside openings and return end tiles at doors and other openings. Tile work shall show straight, uniform joint lines in both directions. Surfaces shall be plumb and co-planar.
- b. Thresholds shall be installed where tile adjoins adjacent floors at door openings. Set threshold so flat surface is under bottom of door. Configuration shall meet handicap code requirements of not more than 1/2" rise between surfaces.
- c. Extend tile work into recesses and under or behind wall equipment and fixtures to form a complete covering without interruptions except as otherwise shown. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- d. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish or built-up items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures and other penetrations so that plates, collars, or covers overlap tile.
- e. Jointing Pattern: Unless otherwise shown, lay tile in grid pattern. Align joints when adjoining tiles on floor, base, walls, and trim are same size. Lay out tile work on floor, base, and walls in both directions in each space or on each wall area. Set pattern to avoid less than one-half size tiles. Adjust to minimize tile cutting. Provide uniform joint widths, unless otherwise shown.

- f. Clean all surfaces and protect finish work of other trades from damage from tile operations. Following cleaning, fully seal coat ceramic floors. Protect finish tile work from damage by other trades.

**09 50 00 CEILINGS****09 50 00.10 GENERAL.**09 50 00.11 Work Included.

Furnish all labor, material, and equipment required for the fabrication and installation of ceilings indicated, specified, or both including all incidental items normally required for installation and conditions encountered. The system specifically required for this project is . Subsections forming this specification include the following:e the following:

Subsection	09 51 00	Acoustical Ceilings
Subsection	09 53 00	Acoustical Ceiling Suspension Systems

09 50 00.12 Work Not Included.

The following work is not covered in this portion of the specification:

Suspended Gypsum Ceilings included in:                      Section    09 20 00    Wall Board Systems

09 50 00.13 Related Sections.

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	07 20 00	Thermal Protection
Division	23	Mechanical
Division	26	Electrical

09 50 00.14 Fire Rating.

The materials furnished, when properly assembled, shall, in combination with the building structure indicated, provide an UL-rated fire resistance as follows:

None Required

09 50 00.15 Project Conditions – Environmental Requirements.

Building shall be fully enclosed with the mechanical systems and controls fully operational and with the roof fully watertight prior to installation of ceiling systems. The following climatic conditions shall be established and maintained prior to acoustic tile installation and during the remainder of construction:

Temperature: range 60 -85° F  
Humidity: 75% RH maximum.

09 50 00.16 Additional Materials.

Supply the owner with two full unbroken cartons of matching acoustic tile of each type installed in the project, in care of the facility maintenance staff at completion of the project.

**09 51 00.00 ACOUSTICAL CEILINGS****09 51 23.00 ACOUSTICAL TILE CEILINGS**09 51 23.10 General.09 51 23.11 Location.

All surfaces where suspended acoustic tile is indicated [SACT].

09 51 23.12 Types.

The following acoustic tile types are required under this specification:

09 51 23.13 Reference Specifications.

Comply with pertinent standards of the:

American Society for Testing and Materials [ASTM].

Applicable standards for fire testing, surface burning, and sound absorption, "

Underwriters Laboratories, Inc

"Fire Resistance Directory"

CISCA

"Ceiling Systems Installation Handbook"

09 51 23.14 Submittals.

## a. Shop DRAWINGS:

The Contractor shall furnish supplier's detailed shop drawings and manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

## b. Samples:

Submit manufacturer's samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job.

09 51 23.15 Subcontractor.

Acoustic tile shall be installed under a subcontract to a single installer regularly involved in installation of acoustic tile of the type indicated.

09 51 23.16 Basis of Design – Manufacturer.

## 1. The following product was used in the development of this project.

Armstrong World Industries, Inc.

2. Products of the following manufacturers *meeting these specifications* may be installed:

Armstrong World Industries, Inc.

USG

09 51 23.20 MATERIALS.

Materials shall conform to the following:

## [1] Acoustic Tile #1:

Acoustic tile shall conform to the following:

1. Surface Texture: Fine
2. Composition: Mineral Fiber
3. Color: White
4. Size: 24" x 24" x 3/4"
5. Edge Profile: Square Edge for interface with compatible grid.
6. Noise Reduction Coefficient (NRC): ASTM C 423; 0.70.
7. Ceiling Attenuation Class (CAC): ASTM C 1414; 35

8. Flame Spread: ASTM E 1264; Class A (UL)
9. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.86.
10. Dimensional Stability: HumiGuard Plus - temperatures up to 120 degrees F and high humidity excluding only exterior use, use over standing water, and direct contact with moisture .
11. Mold/Mildew Inhibitor: The front and back of the product have been treated with BioBlock, a paint that contains a special biocide that inhibits or retards the growth of mold or mildew, ASTM D 3273.
12. Acoustic tile shall be equal to Armstrong Cirrus Square 574

[2] Acoustic Tile #2:

Acoustic tile shall conform to the following:

1. Surface Texture: Fine
2. Composition: Mineral Fiber
3. Color: White
4. Size: 24" x 24" x 3/4"
5. Edge Profile: Beveled Tegular for interface with compatible grid.
6. Noise Reduction Coefficient (NRC): ASTM C 423; 0.70.
7. Ceiling Attenuation Class (CAC): ASTM C 1414; 35
8. Flame Spread: ASTM E 1264; Class A (UL)
9. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.86.
10. Dimensional Stability: HumiGuard Plus - temperatures up to 120 degrees F and high humidity excluding only exterior use, use over standing water, and direct contact with moisture .
11. Mold/Mildew Inhibitor: The front and back of the product have been treated with BioBlock, a paint that contains a special biocide that inhibits or retards the growth of mold or mildew, ASTM D 3273.
12. Acoustic tile shall be equal to Armstrong Cirrus Tegular 584

## 9 51 23.30 EXECUTION

### 09 51 23.31 Standards.

Install suspension system and related work in accordance with ASTM C636, CISCA Installation Standards, and with the manufacturer's printed instructions, latest edition.

### 09 51 23.32 Installation.

- a. Tile shall be laid in grid system and held in place by spring clips or other devices. Tiles shall be fitted neatly and be fully supported on all four edges.
- b. Where tile is cut, cuts shall be accurate and tight to adjacent work [grid, surfaces, fixtures, etc.] Cuts shall be clean and crisp without ragged edges and chips matching the profile of the remainder of the

tile on edges, or the profile of the adjacent surface when made to allow installation of fixtures or equipment.

- c. Each tile shall be placed so that the texture direction is at right angles to that of tiles immediately adjacent.
- d. Cover recessed light fixtures and other devices in ceiling in a manner to protect the fire rated integrity of the ceiling system and in accordance with the approved UL methods for rating specified.

09 51 23.33 Tolerances.

Plumb and level:	1/8" in 8'-0" at any one location with a maximum variation of 1/8" across ceiling plane.
Tile to Tile:	1/16" at any one location along a joint, seam, or edge.

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09 53 00.00 **ACOUSTICAL CEILING SUSPENSION SYSTEMS**

09 53 23.00 **METAL SUSPENSION SYSTEMS**

09 53 23.10 General.

09 53 23.11 Location.

All surfaces where suspended acoustic tile is indicated [SACT].

09 53 23.12 Reference Specifications.

Comply with pertinent standards of the:

American Society for Testing and Materials [ASTM].

- a. Applicable standards for manufacturing of metal suspension systems and installation of suspended ceilings.
- b. Applicable standards for fire testing, surface burning, and sound absorption"

Underwriters Laboratories, Inc

"Fire Resistance Directory"

CISCA

"Ceiling Systems Installation Handbook"

09 53 23.13 Submittals.

a. Shop Drawings:

The Contractor shall furnish supplier's detailed shop drawings and manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

b. Samples:

Submit manufacturer's samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job.

09 53 23.17 Subcontractor.

Acoustic tile suspension system shall be installed under a subcontract to a single installer regularly involved in installation of systems of the type indicated.

09 53 23.18 Basis of Design – Manufacturer.

1. The following product was used in the development of this project.  
Armstrong World Industries, Inc.
2. Products of the following manufacturers *meeting these specifications* may be installed:

Armstrong World Industries, Inc.  
USG  
Chicago Metallic

09 53 23.20 MATERIALS.

Materials shall conform to the following:

- [1] Suspension System:
  - [1] Components: All main beams and cross tees shall be ASTM C 635 Intermediate Duty, hot-dipped galvanized steel, ASTM A 653. Main beams and cross tees are double-web steel construction with exposed flange design. Edge angles and mouldings match main runner exposed profile. Finish: baked polyester paint.
  - [2] Color: White.
  - [3] Product equal to: Armstrong PRELUDE XL 15/16" EXPOSED TEE.
  - [4] Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

09 53 23.30 EXECUTION

09 53 23.31 Standards.

Install suspension system and related work in accordance with ASTM C636, CISCA Installation Standards, and with the manufacturer's printed instructions, latest edition.

09 53 23.32 Installation.

- a. Install suspension system in the pattern indicated on the reflected ceiling plan unless otherwise indicated or specified.
- b. Grid shall be laid straight, level, true and coplanar. Unless otherwise indicated on reflected ceiling plans, work shall be started at the center of each room or panel with either support or a full tile centered. However, in ceiling areas separated only by glass or transparent surfaces or folding partitions all tile lines shall be continuous from room to room.
- c. Where ceiling is suspended away from contact with the structure or where anchorage to structure exceeds 4'-0" o.c. place 1-1/2" channels 4'-0" o.c. perpendicular to section or anchor bar to receive ceiling system. Provide secondary support between beams and joists where required to avoid mechanical equipment and other obstructions.
- d. Do not hang ceiling system from metal deck ribs. Avoid splay hangers. If splay hangers are necessary, limit angle to 15 deg. from vertical.
- e. Grid pattern, unless otherwise indicated, shall be so arranged to avoid less than 1/2 tiles occurring at edges.
- f. Provide metal channel edging strip at all edges where acoustical tile adjoins wall openings or other materials. Turn outside corners of edging with finish corner clips. Edge of grid system shall be supported from structure. Edge channel shall not be required to support more than the parallel edge of the adjacent tile. Edge channels shall be mechanically attached to walls or partitions.
- g. Provide openings for light fixtures, air conditioning outlets, ventilators, etc. Reinforce ceiling system with channels and supports as required to fully support ceiling panels; however, weight or load of any such items in openings shall not be supported by the ceiling system.

09 53 23.33 Tolerances / Testing.

Plumb and level:	1/8" in 8'-0" at any one location with a maximum variation of 1/8" across ceiling plane.
Grid element to Grid element:	1/16" at any one location along a joint, seam, or edge.

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**09 60 00 FLOORING****09 60 00.10 GENERAL.**09 60 00.11 Work Included.

Furnish all labor, material, and equipment required for the fabrication and installation of flooring products indicated, specified, or both including all incidental items normally required for installation and conditions encountered. Subsections forming this specification include the following:

Subsection	09 65 00	Resilient Flooring
Subsection	09 68 00	Carpet [Carpet Tile]

09 60 00.13 Related Sections.

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	02 10 00	Demolition
Division	03	Concrete

**09 65 00.00 RESILIENT FLOORING****09 65 00.10 GENERAL.**09 65 00.11 Types.

The following flooring types are required under this specification:

09 65 13	Resilient Base
09 65 16	Resilient Sheet Flooring

09 65 00.12 Submittals.

## a. Shop DRAWINGS:

The Contractor shall furnish supplier's detailed shop drawings and manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

## b. Samples:

Submit manufacturer's samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job.

09 65 00.13 Subcontractor.

Resilient flooring shall be installed under a subcontract to a single supplier/installer regularly involved in the procurement and installation of flooring of the type indicated.

**09 65 13.00 RESILIENT BASE****09 65 13.10 GENERAL.**09 65 13.11 Location.

Resilient base shall be provided for spaces indicated, scheduled, or specified. Base shall fully cover juncture of wall with floor unless otherwise noted or scheduled.

09 65 13.12 Basis of Design – Manufacturer.

1. The following product was used in the development of this project.  
Johnsonite

2. Products of the following manufacturers *meeting these specifications* may be installed:

Flexco  
Johnsonite  
Roppe

09 65 13.20 MATERIALS.

Materials shall conform to the following:

- [1] Resilient Base: 1/8" standard 4" high rubber or vinyl with preformed inside and outside corners, complying with the following:  
Rubber FS SS-W-40 Type I  
Vinyl FS SS-W-40 Type II  
color as indicated on the Interior Finish Schedule  
Cove toe against resilient floor field.  
Straight toe against carpet.
- [2] Base Adhesive: Proprietary, resin based, high strength base adhesive recommended by manufacturer for products and substrate encountered.

09 65 13.30 EXECUTION

09 65 13.31 Standards.

Set base in strict accordance with standard specification of the manufacturer.

09 65 13.32 Installation.

Set base over CMU, wall-coverings, and other wall finishes and after carpet is installed where these conditions occur. Extend base across the toe space of fixed cabinets. Place preformed corners on inside and outside corners

09 65 13.33 Tolerances / Testing.

Fully align base members across material junctures.

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09 65 16.00 RESILIENT SHEET FLOORING

09 65 16.10 GENERAL.

09 65 16.11 Location.

Resilient sheet flooring shall be provided for spaces indicated, scheduled, or specified.

09 65 16.12 Basis of Design – Manufacturer.

1. The following product was used in the development of this project.  
Mannington Assurance II
2. Products of the following manufacturers *meeting these specifications* may be installed:  
Mannington  
Armstrong  
Congoleum

09 65 16.20 MATERIALS.

09 65 16.21 Tiles.

Materials shall conform to the following:

- [1] Sheet Vinyl: .080 ga. filled vinyl sheet with backing, slip resistant, 6' wide, ASTM F-1913. [Products equivalent to Mannington Commercial's "Mannington Assurance II" series are considered to meet this specification] Colors shall be similar to those indicated on the Finish Schedule selected from the manufacturer's full color palette for the product

09 65 16.22 Installation Accessories.

Materials shall conform to the following:

- [1] Sheet Flooring Adhesive: Proprietary water-resistant adhesive recommended by manufacturer for products and substrate encountered.
- [2] Underlayment: Latex emulsion and Portland cement.

09 65 16.30 EXECUTION

09 65 16.31 Standards.

Set flooring in strict accordance with standard specification of the manufacturer unless otherwise directed in these specifications.

09 65 16.32 Installation.

09 65 16.33 Moisture Test.

Submit results of tests for moisture and certification that such results are within the manufacturer's allowable tolerance for the mastic used before laying any tile. A test shall be made in each room or area in which tile is to be laid.

09 65 16.34 Preparation.

- [3] Contractor shall schedule tile installation work separate from any other work within the same space.
- [4] No flooring work will be started until the surface to be covered has been inspected by the Architect. Such inspection, however, shall not relieve the contractor of his responsibility for the entire area to be in proper condition to receive the finished flooring.
- [5] All cracks, construction joints, and the like, shall be properly filled with mastic and the floor leveled to a smooth surface with latex emulsion underlayment. Rough spots or high points shall be ground with carborundum.
- [6] No flooring shall be placed over surface rough enough to show through the tile at a later date. Likewise, no underlying debris shall be evident visually or tactually. The surface shall be level with no evident rolling, shadowing, or dimpling.
- [7] Remove coatings, including curing compounds, and other substances that are incompatible with flooring adhesives and that contain soap, wax, oil, silicone, using mechanical methods recommended by the manufacturer. Solvents are prohibited.
- [8] Broom and vacuum clean substrates to be covered immediately before product installation. After cleaning, examine substrates for salts, carboantion, or dust. Correct unsatisfactory conditions involving the aforementioned substances.

09 65 16.35 Sheet Flooring Setting.

- a. Sheet flooring shall be set in a workmanlike manner starting at the intersection of the centerlines of the area. No cracked sheet flooring will be accepted.
- b. Where resilient floors join floors of other finishes at doors, the division line between the materials

shall be under the door when the door is closed. Provide vinyl nosing at sheet vinyl edges. Where carpet adjoins resilient flooring, aluminum threshold strip specified in Division 08 shall provide edging.

- c. Regardless of manufacturer's allowance, applying of adhesive and setting of flooring shall be completed on the same working day.

09 65 16.36 Finishing.

- a. At the completion of all other work, clean sheet vinyl floor and base as recommended by the manufacturer. Thoroughly remove cement, dirt or other foreign substances and surface blemishes.
  - b. Vacuum floor thoroughly to remove loose particulate matter. Wash floor following manufacturer's recommendations for time and procedures.
  - c. Apply protective floor polish to surfaces that have been thoroughly cleaned where required by the manufacturer.
  - d. Cover and protect floor until preparation time for inspection for substantial completion. At that time remove protective cover. Reclean and/or strip floor of protective wax and prepare for final waxing and finishing.
  - e. Apply two coats of manufacturer's recommended wax, each of which will be machine polished to produce a uniform finish. Floor must be in this condition at final inspection.
- 

09 68 00.00 CARPET

09 68 16.00 SHEET CARPET

09 68 16.10 GENERAL.

09 68 16.11 Location.

Carpet tile shall be provided for spaces indicated, scheduled, or specified.

09 68 16.13 Reference Specifications.

Comply with pertinent standards of the:

Standard for Installation of Commercial Carpet: Comply with applicable requirements "Standard for Installation of Commercial Carpet" published by the Carpet and Rug Institute (CRI), except as otherwise indicated.

09 68 16.14 Submittals.

- a. Shop Drawings:

The Contractor shall furnish to the Architect for approval supplier's detailed layout drawings and manufacturers' literature for each item specified. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

- b. Samples:

Submit manufacturer's samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job.

09 68 16.15 Certification.

The Contractor shall furnish the following certification prior to installation of carpeting materials on the site.

The products submitted are certified to meet or exceed all of the characteristics listed for the carpet[s] specified in Section 09 68 00.20, paragraphs .21, .22 and that if at any time, regardless of the state of installation, upon subsequent examination and test the carpet furnished is found not to meet or exceed the aforementioned characteristics, it is expressly agreed that the carpet will be replaced with a

complying product, approved by the Architect, at no cost to the Owner, prior approval or acceptance notwithstanding.

[Carpet Manufacturer]
[Carpet Subcontractor]
[Contractor]
[Notary]

09 68 16.16 Warranty.  
 Furnish the written warranty of the carpet manufacturer covering repair and replacement, in whole or in part, of any portion of carpet that exhibits edge ravel, delamination and defects of design, workmanship, or materials within 10 years of the date of substantial completion.

09 68 16.17 Acceptance of Job Conditions.  
 Floor construction and surfaces to receive carpeting shall be inspected by the subcontractor. The General Contractor shall be promptly notified of any and all defects in the floor which affect this work so they may be corrected before start of this work. The subcontractor of the pertinent floor areas shall deem proceeding with this work as acceptance and he shall be held responsible thereafter for installation of this work.

09 68 16.18 Subcontractor.  
 Carpeting shall be installed under a subcontract to a single installer regularly involved in installation of carpeting of the type indicated.

09 68 16.19 Basis of Design – Manufacturer.

1. The following product was used in the development of this project.  
 Shaw collection: virtual spaces pattern: hype tile
2. Products of the following manufacturers *meeting these specifications* may be installed:  
 Mannington Commercial  
 Shaw  
 Lees

**09 68 16.20 MATERIALS.**

09 68 16.21 Carpet Tile.  
 Materials shall conform to the following:

[1] Weave	Multi-Level Pattern Loop
[2] Yarn-type	Solution q extreme nylon
[3] Pile-height	.099"
a. face weight	20 oz./sq. yd.
[4] Stitches/inch	10
[5] Gauge	1/12

## [6] Backing

- |                               |  |
|-------------------------------|--|
| a. primary                    | Synthetic  |
| b. secondary                  | ecoworx® tile  |
| c. Tuft pull resistance       | Equal to Lees Unibond System   |
| d. Static electricity control | Guarantee not more than 3.5kv at 20% relative humidity at 70° F.                                     |
| e. Radiant panel:             | Class I  |
| f. Smoke Development          | Carpet shall develop less than 450 Flaming Mode when tested according to NBS Smoke Chamber NFPA-258. |

09 68 16.22 Accessories.

Furnish as required for conditions encountered in installation.

- a. Adhesive: Waterproof type for use on concrete as recommended by the carpet manufacturer.

09 68 16.23 Colors & Patterns.

- a. In any single space, any color, pattern, or type shall come from a single dye lot for that item.

**09 68 16.30** EXECUTION09 68 16.31 Standards.

Carpet installation shall comply with the CRI recommendations for indicated installation type and with the specific requirements listed below:

Direct Glue-Down Installation CRI Section 8

09 68 16.32 Installation.09 68 16.33 Preparation.

- [1] Remove coatings, including curing compounds and other substances that are incompatible with adhesives including but not limited to soap, wax, oil, or silicone, without using solvents.
- [2] Correct sub-floor deficiencies as indicated in paragraph 16.17.
- [3] Vacuum clean substrates to be covered immediately before installing carpet. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Correct unsatisfactory conditions involving the aforementioned substances.

09 68 16.34 Time of Installation.

The Contractor shall schedule the carpet installation following completion of "wet work" [painting, tile setting, etc.] Cooperate with the other trades and cover the carpet with paper runners or other acceptable means to protect the carpet during the final finishing up of all trades.

09 68 16.35 Installation Procedures.

- a. Carpet tile shall be installed by experienced mechanics working under close supervision for an established carpet subcontractor familiar with the work involved.
- b. Carpet tile will be laid in place with adhesive. Seams shall be neat and tight.
- c. Carpet tile shall be set in a quarter turn pattern across the area.
- d. Cut and fit carpet tile neatly around obstructions. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture. Bind or seal cut edges as recommended by manufacturer.
- e. Extend carpet tile into toe spaces, door reveals, closets, open-bottom obstructions, removable

flanges, alcoves, and similar openings.

09 68 16.36 Finishing.

- a. Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet manufacturer.
- b. Remove yarns that protrude from carpet surface.
- c. Vacuum carpet using commercial machine with face-beater equipment.
- d. After installation, until final acceptance, provide plastic or Kraft paper runners or other adequate protection while finishing trades or other contractors are working.

09 68 16.37 Remnants.

For replacement and repairs, furnish the Owner with minimum 5 sq. yds. of each type and color of carpet tile installed, from the same dye lot as the installed carpet. Replacement carpet, remnants and usable scrap and overage in carpeting shall be packaged in appropriate wrapping, labeled and delivered to the Owner at the job site.

09 68 16.38 Tolerances / Testing.

Adhesion: Carpet shall be fully adhered without bubbles or lapses.

**09 90 00 PAINTING & COATINGS****09 90 00.10 GENERAL.****09 90 00.11 Work Included.**

- a. Furnish all labor, material, and equipment required to provide finishes of paint or paint related materials indicated, specified, or both including all incidental items normally required for conditions encountered to exterior and interior exposed surfaces throughout the project, except where specifically excluded.
- b. Furnish all labor, material, and equipment required to provide surface preparation and priming specified are in addition to shop priming and surface treatment specified under other sections of work.

Subsections forming this specification include the following:

Subsection	09 91 00	Painting
Subsection	09 93 00	Staining & Transparent Finishing

**09 90 00.12 General Requirements.**

- a. The finishing subcontractor(s) shall furnish all materials, equipment, drop cloths, etc., necessary during the prosecution of his work. Protect all other trades work at all times and be responsible for damage resulting from painting operations.
- b. Materials shall be stored in shed provided by the Contractor and not in the building. Rags, etc., shall be removed from the building nightly, including clothing.
- c. Materials shall be delivered to the site in new and unopened containers, No materials shall be reduced or changed in any way except as specified, and all products shall be applied in accordance with instructions on the package.
- d. If woodwork, metal, or any other surface to be finished cannot be put in proper condition for finishing by customary cleaning, sanding, or puttying operations, the finishing subcontractor shall notify the Contractor and Architect in writing or assume responsibility for and rectify any resulting unsatisfactory finish.

**09 90 00.13 Design Conditions.**

- a. Apply water base products only when temperature of surfaces to be painted and surrounding air temperatures are between 50 degrees F and 95 degrees F unless otherwise required by the manufacturer.
- b. Apply solvent thinned products only when temperature of surfaces to be painted and surrounding air temperatures are between 55 degrees F and 95 degrees F unless otherwise required by the manufacturer..
- c. Do not apply finishing products in snow, rain, fog, or mist; or when relative humidity exceeds 85%; or to damp or wet surfaces.
- d. Painting and staining may be continued during inclement weather if areas and surfaces to be finished are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

**09 90 00.14 Subcontractor.**

Paint and related products shall be applied under a subcontract to a single subcontractor regularly involved in the application of finishes of the type indicated..

## 09 91 00.00 PAINTING

09 91 00.10 GENERAL.09 91 00.11 Requirements.

- a. It is the intent that all exposed surfaces, inside and outside the building not finished with stain, wall covering or other special finishes will be painted with the exception of the following items when not specifically referred to in application; brick, stone, stucco, masonry coatings, concrete, copper, glass, glazed tile, acoustical tile, factory finished bright metals, or factory finished products.
- b. Any area giving appearance of insufficient coverage after specified applications shall receive additional application until the proper results are obtained.
- c. Paint exposed surfaces whether or not colors are designated in "schedule", except where natural finish of material is specifically noted as a surface not to be painted. Where items or surfaces are not specifically mentioned, paint same as adjacent similar materials or areas. If color or finish is not specified, Architect will select color from standard colors scheduled for materials specified.
- d. Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas, foundation spaces, furred areas, utility tunnels pipe spaces, duct shafts, and attics. Walls behind tack boards, chalkboards, and cabinetwork may be left unpainted.
- e. Painting for electrical work is limited to panel faces, junction boxes, conduits and gutters in habitable spaces other than mechanical rooms, closets, etc. Other painting specified in Division 26.
- f. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, nonspecular black paint.
- g. Paint backsides of access panels, and removable or hinged covers to match exposed surfaces.
- h. Shop priming specified for various materials in other sections.
- i. Omit first coat (primer) on metal surfaces, which have been shop primed and touch-up painted, unless otherwise specified.
- j. Paint exposed roofing aluminum sheet metal surfaces, including eave strips. Downspout leaders, gutter faces and expansion joint caps. No paint required on flashing and valleys.
- k. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces.

09 91 00.12 Submittals.

- a. Technical Literature:  
The Contractor shall furnish to the Architect for approval manufacturers' technical literature including paint label analysis and application instructions for each material specified.
- b. Samples:  
Submit samples for Architect's review of color and texture only. Provide a listing of material and application for each coat of each finish sample.  

[1] On a 12" x 12" hardboard, provide two samples of each color and material, with texture to simulate actual conditions. Resubmit samples as requested by Architect until acceptable sheen, color, and texture is achieved. If colors are those listed in color schedule, color chips may be substituted for this requirement.

09 91 00.13 Basis of Design – Manufacturer.

1. The following product was used in the development of this project.  
ICI-Glidden Co

2. Products of the following manufacturers *meeting these specifications* may be installed:

Pratt & Lambert  
Devoe-Raynolds Company  
Benjamin Moore

09 91 00.20 MATERIALS.

See 09 91 13 Exterior Applications and 09 91 23 Interior Applications for product requirements:

09 91 00.21 COLORS & FINISHES.

09 91 00.22 Colors.

Colors shall be those shown on the color schedule. If products of manufacturer other than those listed in the color schedule are to be used, the contractor will submit to the Architect a complete color schedule for approval, with color chips, and locations clearly indicated. If accurate or acceptable color match cannot be made with manufacturer's standard colors, special colors will be prepared. Colors of one manufacturer will be used throughout.

09 91 00.23 Finishes.

In general, all finishes listed below shall apply throughout the building. Finishes shall be subject to minor variations on color schedule at the Architect's discretion.

Interior surfaces:	Eggshell finish
Interior metal work not otherwise specified:	Low luster semigloss finish
Wood trim:	Low luster semigloss finish
Hardwood Doors:	Stained finish – see Subsection 09 93 00
All surfaces subject to dampness or moisture:	Enamel finish

09 91 00.30 EXECUTION

09 91 00.31 Surface Preparation.

a. General.

- [1] Determine alkalinity and moisture content of surfaces. If surfaces are found to be sufficiently alkaline to cause blistering and burning of finish paint, correct the condition before application of paint. Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.
- [2] Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.
- [3] Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish painted, or provide surface applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.
- [4] Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Schedule cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly painted surfaces.

b. Cementitious Materials.

Prepare cementitious surfaces including concrete, concrete block, cement plaster and cement composition board to painted by removing efflorescence, chalk, dust, dirt, grease, oils, and by roughening as required to remove glaze.

c. Wood.

[1] Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer, before application of priming coat. After priming, fill holes, cracks, joints and imperfections in finish surfaces with putty or plastic wood filler. Sandpaper smooth when dry.

[2] Prime, stain, or seal wood required to be job painted immediately upon delivery to job. Prime edges, ends, faces, undersides and backsides.

[3] Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or equivalent sealer immediately upon delivery to job.

d. Ferrous Metals.

Clean ferrous surfaces, which are not galvanized or shop coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.

e. Galvanized Surfaces.

Clean free of oil and surface contaminants with non-petroleum based solvent.

f. Plaster & Drywall.

Clean surfaces; repair gouged irregular or damaged surfaces with putty or spackle and sand smooth. Test plaster surfaces with moisture meter. Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

09 91 00.32 Materials Preparation.

- a. Mix and prepare painting materials in accordance with manufacturer's directions.
- b. Store materials not in actual use in tightly covered containers. Maintain containers used for storage, mixing, and application of paint in a clean condition, free of foreign materials and residue.
- c. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

09 91 00.33 Painting Procedures.

- a. All painting will be done by experienced workmen and only first class work will be permitted or accepted.
- b. Apply paint in accordance with manufacturer's printed instructions. Use applicators and techniques as listed in application specification or, if not listed, as best suited for substrate and type of material being applied.
- c. Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance.
- d. Give special attention to insure that all surfaces, including edges, corners, crevices, recesses, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
- e. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise

detrimental to formation of a durable paint film.

- f. Apply first coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practical after preparation and before subsequent surface deterioration.
- g. Allow sufficient time between successive coatings to permit proper drying; but in no case less time than indicated in the manufacturer's instructions. Do not re-coat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat

09 91 00.34 Minimum Coating Thickness.

Apply materials at not less than manufacturer's recommended spreading rate to establish recommended total dry film thickness.

09 91 00.35 Prime Coats.

- a. Apply prime coat fully over materials, which are required to be painted or finished, and which has not been prime coated by others.
- b. Re-coat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn through or other defects due to insufficient sealing.

09 91 00.36 Pigmented (Opaque) Finishes.

Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will be corrected and refinished.

09 91 00.37 Transparent (Clear) Finishes.

Use multiple coats to produce glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, or other surface imperfections.

- a. Provide satin finish for final coats, unless otherwise indicated.

09 91 00.38 Clean Up and Protection.

a. Clean Up.

- [1] During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each workday.
- [2] Upon completion of painting work, clean window glass and other paint spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

b. Protection.

- [1] Protect work of other trades, whether to be painted or not, against damage by painting and finishing operations. Correct any damage by repainting, cleaning, repairing or replacing, as acceptable to Architect.
- [2] Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.
- [3] At the completion of work of other trades, touch up and restore all damaged or defaced painted surfaces.

09 91 00.39 Completed Work.

Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

**09 91 23.00 INTERIOR PAINT APPLICATIONS****09 91 23.11 Metal Work.**

All exposed metal work not otherwise specified, including structural steel, hollow metal work, railings, unexcluded sheet metal work, shall receive 2 coats of medium oil alkyd paint semigloss over either shop or field primer. Metal deck ceilings shall receive 2 coats medium oil alkyd paint flat over field primer. See 09 91 23.13 for priming requirements.

**09 91 23.12 Woodwork.**

- a. Interior softwood trim, cabinets, paneling, etc. shall be given two coats of medium oil, alkyd paint over priming coat, including interiors of cabinets.
- b. Shelving shall receive 1 coat of sanding sealer followed by light sanding and 1 coat of white shellac (not required if prefabricated shelves are finished with equivalent factory finish).

**09 91 23.13 Drywall Surfaces & Vinyl Wall Covering Surfaces Scheduled as Painted.**

- a. Drywall surfaces scheduled "GWB Painted" and other drywall surfaces not otherwise scheduled and not otherwise excluded shall receive primer followed by two coats acrylic latex eggshell finish paint.

**09 91 23.14 Field Priming.**

After structural steel is in place and all connections and welds completed and prepared, apply spot priming field coat of primer of same type as shop primer over any bare or unpainted structural steel surface including field welds.

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**09 93 00.00 STAINING & TRANSPARENT FINISHING****09 93 00.10 GENERAL.****09 93 00.11 Requirements.**

- a. It is the intent that certain exposed surfaces, inside and outside the building not finished with paint, wall covering or other special or natural finishes will be stained.
- b. Any area giving appearance of insufficient coverage after required applications shall receive additional applications until the proper results are obtained.
- c. Stain exposed surfaces whether or not colors are designated in "schedule." If color or finish is not specified, Architect will select color from manufacturer's full range of stain colors for materials specified.

**09 93 00.12 Submittals.**

- a. Technical Literature:  
The Contractor shall furnish manufacturers' technical literature including stain label analysis and application instructions for each material specified to the Architect for approval.
- b. Samples:
  - [1] Submit samples for Architect's review of color and texture only. Provide a listing of material and application method for each coat of each finish sample
  - [2] On actual wood surfaces, provide two 4" x 8" samples of natural and stained wood finish. Label and identify each as to location and application.

**09 93 00.17 Basis of Design – Manufacturer.**

- [1] The following product was used in the development of this project.

Glidden – a PPG Company

- [2] Products of the following manufacturers *meeting these specifications* may also be installed:

Pratt & Lambert  
 Devoe-Raynolds Company  
 Benjamin Moore

09 93 00.20 MATERIALS.

See 09 91 13 Exterior Applications and 09 91 23 Interior Applications:

09 93 00.21 COLORS & FINISHES.

09 93 00.22 Colors.

Colors shall be those shown on the color schedule. If products of manufacturer other than those listed in the color schedule are to be used, the contractor will submit to the Architect a complete color schedule for approval, with color chips, wall covering swatches and locations clearly indicated. If accurate or acceptable color match cannot be made with manufacturer's standard colors, special colors will be prepared. Colors of one manufacturer will be used throughout unless otherwise indicated.

09 93 00.23 Finishes.

In general, all finishes listed below shall apply throughout the building. Finishes shall be subject to minor variations on color schedule at the Architect's discretion.

Hardwood Finished Doors

Satin finished clear coat

09 93 00.30 EXECUTION

09 93 00.31 Surface Preparation.

a. General.

- [1] Perform preparation and cleaning procedures in accordance with stain manufacturer's instructions and as herein specified, for each particular substrate condition.
- [2] Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish stained, or provide surface applied protection prior to surface preparation and finishing operations. Remove, if necessary, for complete staining of items and adjacent surfaces. Following completion of each space or area, reinstall removed items.
- [3] Clean surfaces to be stained before application. Remove oil and grease prior to mechanical cleaning. Schedule cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly stained surfaces.

b. Wood.

- [1] Clean wood surfaces to be stained of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off. Fill holes, cracks, joints and imperfections in finish surfaces with putty or plastic wood filler. Sandpaper smooth when dry.
- [2] Stain wood required to be job stained immediately upon delivery to job.
- [3] Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or equivalent sealer immediately upon delivery to job.

09 93 00.32 Materials Preparation.

- a. Mix and prepare materials in accordance with manufacturer's directions.
- b. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing and application of stain in a clean condition, free of foreign materials and residue.
- c. Stir materials before application to produce a mixture of uniform density, and stir as required during

application.

09 93 00.33 Staining Procedures.

- a. All staining will be done by experienced workmen and only first class work will be permitted or accepted.
- b. Apply stain in accordance with manufacturer's directions. Use applicators and techniques as listed in application specification or, if not listed, as best suited for substrate and type of material being applied.
- c. Apply first coat material to surfaces that have been cleaned, pretreated or otherwise prepared for staining as soon as practical after preparation and before subsequent surface deterioration.
- d. Apply additional coats when opaque stains show undercoats, stains or other conditions show through final coat of paint, until stain is of uniform finish, color and appearance.
- e. Give special attention to insure that all surfaces, including edges, corners, crevices, and recesses receive uniform finish, color and appearance.
- f. Do not stain over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a uniform stain finish.

09 93 00.34 Minimum Coating.

Apply materials at not less than manufacturer's recommended spreading rate to establish recommended finish.

09 93 00.35 Transparent (Clear) Finishes.

Use multiple clear coats of polyurethane to produce glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, or other surface imperfections.

- a. Provide satin finish for final coats, unless otherwise indicated.

09 93 00.36 Clean Up and Protection.

c. Clean Up.

- [1] During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each workday.
- [2] Upon completion of painting work, clean window glass and other paint spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

d. Protection.

- [1] Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting as acceptable to Architect.
- [2] Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.
- [3] At the completion of work of other trades, touch up and restore all damaged or defaced painted surfaces.

09 93 00.39 Completed Work.

Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

**09 93 23.00 INTERIOR STAIN APPLICATIONS**

09 93 23.12 Woodwork.

- a. Hardwood trim, and hardwood veneers shall be filled, or sealed, stained, and finished with three coats of water based polyurethane. The third coat shall be a satin finish.

DIVISION 10 SPECIALTIES

Includes work by the General Contractor covered in the following sections.  
Section designations are neither consecutive nor numerically inclusive.

SECTION 10 10 00	INFORMATION SPECIALTIES
SECTION 10 20 00	INTERIOR SPECIALTIES
SECTION 10 50 00	SHELVING

**10 10 00 INFORMATION SPECIALTIES****10 10 00.10 GENERAL.**10 10 00.11 Work Included.

Furnish all labor, material, and equipment required for the fabrication and installation of information specialties indicated, specified, or both including all incidental items normally required for installation and conditions encountered. Subsections forming this specification include the following:

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Subsection	10 14 00	Signage
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10 10 00.12 Related Sections.

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

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Section	09 20 00	Wall Board Systems
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**10 14 00.10 GENERAL.**10 14 00.11 Types.

The following signage types are required under this specification:

10 14 16	Plaques
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10 14 00.12 Submittals.

## A. Shop DRAWINGS:

The Contractor shall furnish supplier's detailed shop drawings and manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

## B. Samples:

Submit manufacturer's samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job.

10 14 00.13 Design Conditions.

a. Signage shall comply with Chapter 16 of the North Carolina Building Code. Loading shall be as required for the following wind velocity: *120 m.p.h. wind velocity as determined under Section 1606 and ASCE 7-93.*

b. Signage shall comply with the latest edition of the North Carolina Building Code, Chapter 11 Accessibility [for scoping requirements] and ICI/ANSI A117.1-2003 [for technical requirements] and with the "Americans with Disabilities Act" Public Law 101-336 [ADA]

10 14 00.14 Subcontractor.

Signage shall be engineered, manufactured, fabricated and installed under a subcontract to a single manufacturer regularly involved in the development, fabrication and installation of signs of the type indicated.

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**10 14 16.00 PLAQUES****10 14 16.10 GENERAL.**10 14 16.11 Location.

Room and Accessible Route Identification signage plaques shall be provided for spaces indicated, scheduled, or specified and as required under the scoping requirements of NCBC Chapter 11 and under

the requirements of the ADA PL 101-336 as indicated in paragraph 10 14 00.13b above. Signage shall apply only to the new construction. Specific locations are identified as follows:

- a. Each door into each space identified on the Interior Finish Schedule
- b. Each exit identified as an exit by a lighted exit sign on the electrical lighting plans
- c. Each fire extinguisher cabinet as located on the floor plans
- d. Each fire alarm pull station as shown on the Fire alarm riser diagram and as indicated on the electrical plans
- e. Each accessible entrance.
- f. Each inaccessible entrance shall have a sign directing a handicapped person to the nearest accessible entrance.
- g. 2 signs shall identify and shall be located as directed in the field indicating availability of Assistive Listening Devices.
- h. Signage identifying mechanical rooms and electrical rooms shall have wording stating No Storage.
- i. Signage required at the elevator directing building users to use the stairs in the event of fire.

#### 10 14 16.20 MATERIALS.

Materials shall conform to the following:

- |   |  |
|---|--|
| [1] Acrylic Sheet:                            | Cast-Acrylic Sheet, clear matte finish, in indicated or specified thicknesses.       |
| [2] Acrylic Letters, Numbers, & Braille Tags: | Acrylic copy colored, chemically compatible with acrylic sheet and welding chemical. |
| [3] Silkscreen Paint:                         | Manufacturer's standard silk-screening enamel.                                       |

#### 10 14 16.30 FABRICATION

##### 10 14 16.31 Fabricated Items.

##### 10 14 16.32 Room Identification Signs [door signs]

- a. Quantity.  
Provide identifying nameplates for all interior doors in building and for code mandated signs as defined in NCBC Chapter 11 and under the requirements of the ADA PL 101-336. Doors shall have number of area into which they open – numbers will be furnished under separate cover to following the present numbering system. Two or more doors opening into same areas shall have the same number.
- b. Type.
  1. Nameplates shall be matte finish acrylic with reverse side screen printed for color application, 3/16" thick min., minimum size 7-5/8" x 7-5/8" in configurations as indicated in ANSI A117.1-2003, with round corners.
  2. Nameplates with male or female icons shall be matte finish acrylic with reverse side screen printed for color application 3/16" thick min., minimum size 7-5/8" x 7-5/8" in configurations as indicated in ANSI A117.1-2003, with round corners.
  3. Copy shall be raised 1/32" minimum above the surface of the sign and fully chemically welded to the acrylic sheet.
  4. Colors:
 

Copy:	Dark color selected from manufacturer's full color palette
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Background: Light color selected from manufacturer's full color palette

5. Font: Helvetica upper case with Grade 2 Braille tags.

6. Font Sizes:

	Numerals	Letters
Nameplates:	$\frac{3}{4}$ "	$\frac{7}{8}$ "
Nameplates with Male/Female Icons	$\frac{5}{8}$ "	$\frac{3}{4}$ "

#### 10 14 16.40 EXECUTION

##### 10 14 16.42 Installation.

- A. Signage shall be set plumb, level, square, and coplanar to surfaces on which they are to be affixed.
- B. Door signs shall be mechanically attached to the subsurface materials using countersunk flat head Phillips head stainless steel screws set at the center [radius point] of the rounded corners.
- C. The horizontal centerline of the room identification signs shall be set at 60" above the finished floor. The vertical centerline of the sign shall comply with paragraph 703.3.11 of ICI/ANSI A117.1 reprinted below.

703.3.11Location. Where a tactile sign is provided at a door, the sign shall be alongside the door at the latch side. Where a tactile sign is provided at double doors with one active leaf, the sign shall be located on the inactive leaf. Where a tactile sign is provided at double doors with two active leaves, the sign shall be to the right of the right-hand door. Where there is no wall space on the latch side of a single door, or to the right side of double doors, signs shall be on the nearest adjacent wall. Signs containing tactile characters shall be located so that a clear floor area 18 inches [455 mm] minimum by 18 inches [455 mm] minimum, centered on the tactile characters, is provided beyond the arc of any door swing between the closed position and 45 degree open position.

Exception: signs with tactile characters shall be permitted on the push side of doors with closers and without hold-open devices.

**10 20 00 INTERIOR SPECIALTIES****10 20 00.10 GENERAL.**10 20 00.11 Work Included.

Furnish all labor, material, and equipment required for the fabrication and installation of miscellaneous interior products indicated, specified, or both including all incidental items normally required for installation and conditions encountered. Subsections forming this specification include the following:

Subsection	10 28 00	Toilet, Bath, and Laundry Accessories
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10 20 00.13 Related Sections.

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	09 20 00	Wall Board Systems
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**10 28 00.00 TOILET, BATH, AND LAUNDRY ACCESSORIES****10 28 13.00 TOILET ACCESSORIES****10 28 13.10 GENERAL.**10 28 13.11 Location.

Toilet accessories shall be provided for spaces indicated, scheduled, or specified.

10 28 13.12 Types.

Factory fabricated stainless steel accessories developed for use in commercial establishments.

10 28 13.14 Submittals.

## A. Shop DRAWINGS:

The Contractor shall furnish supplier's detailed shop drawings and manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

## B. Samples:

Submit manufacturer's samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job.

## 10 28 13.17 Subcontractor

Toilet accessories shall be engineered, manufactured, and fabricated under a subcontract to a single manufacturer regularly involved in the development, fabrication and installation of products of the type indicated.

10 28 13.18 Basis of Design – Manufacturer.

1. The following product was used in the development of this project.

Bobrick Washroom Equipment

2. Products of the following manufacturers *meeting these specifications* may be installed:

Bobrick Washroom Equipment

ASI

Bradley Corp

**10 28 13.20 MATERIALS.**

All accessories shall be satin finish stainless steel.

10 28 13.21 Products.

Products and materials shall conform to the following:

At Each Lavatory or Sink

- |  |              |                   |             |                   |
|--|--------------|-------------------|-------------|-------------------|
|  | Towel holder | Bobrick<br>B-4262 | ASI<br>0210 | Bradley<br>250-15 |
|--|--------------|-------------------|-------------|-------------------|
- 10 28 13.22 Keying.  
Provide universal keys [4] for internal access to accessories for servicing and resupplying.
- 10 28 13.23 Handicapped protective devices.  
Furnish and install the following protective devices at lavatories with unshielded piping.
- [1] Pipe protection: 1/8" vinyl pipe and valve enclosure. Smooth high gloss finish. Antimicrobial, paintable, snap clip fasteners. The following fittings are required:
- Valve cover.
  - Supply cover
  - P-trap cover
  - Waste cover
- Elbows, "T" s and other miscellaneous fittings required to completely cover the exposed piping.
- 10 28 13.30 FABRICATION.
- 10 28 13.31 Fabricated Items.  
Units will be fabricated with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.
- 10 28 13.40 EXECUTION
- 10 28 13.41 Standards.  
Install accessories according to the approved shop drawings and any manufacturers' written instructions.
- 10 28 13.42 Installation.
- a. All devices shall be installed plumb, level, square, and firmly anchored. Exposed screws shall be drawn up tight without deforming assembly.
  - b. Use fasteners appropriate to substrate indicated and recommended by unit manufacturer. Devices attached to toilet partitions shall be furnished with stainless steel through bolts with sex nuts. Devices set in framed partitions shall be attached with manufacturer's standard fastener system.
  - c. Units exhibiting sharp or rough edges or corners will be considered defective, shall be removed from the Work, and the unit shall be replaced.
  - d. Set devices at location and height indicated.
  - e. Install grab bars to withstand the code mandated downward load when tested according to method in ASTM F 446
  - f. Fully cover any and all exposed piping with protective devices following manufacturer instructions. Set devices with snap on clips out of view on the back or bottom side of piping.
  - g. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.
  - h. Remove temporary labels and protective coatings.
  - i. Clean and polish exposed surfaces according to manufacturer's written recommendations.

10 28 13.43 Tolerances / Testing.

Test all units for attachment to substrates. Units shall maintain their position without movement.

**10 50 00 STORAGE SPECIALTIES****10 50 00.10 GENERAL.**10 50 00.11 Work Included.

Furnish all labor, material, and equipment required for the fabrication and installation of various storage specialties indicated, specified, or both including all incidental items normally required for installation and conditions encountered. Subsections forming this specification include the following:

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Subsection	10 56 00	Storage Assemblies
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10 50 00.12 Work Not Included.

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Casework Shelving	Section	12 30 00
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10 50 00.13 Related Sections.

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	09 20 00	Wall Board Systems
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**10 56 00.00 STORAGE ASSEMBLIES****10 56 00.10 GENERAL.**10 56 00.11 Types.

The following storage shelving and rack types are required under this specification:

10 56 16	Wood Storage Shelving
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10 56 00.12 Submittals.

## A. Shop DRAWINGS:

The Contractor shall furnish supplier's detailed shop drawings and manufacturers' literature for each item specified to the Architect for approval. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

## B. Samples:

Submit manufacturer's samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job.

10 56 00.13 Subcontractor.

Storage shelving shall be engineered, manufactured, fabricated and installed under a subcontract to a single manufacturer regularly involved in the development, fabrication and installation of shelving of the type indicated.

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**10 56 16.00 WOOD SHELVING****10 56 16.10 GENERAL.**10 56 16.11 LOCATION.

Wood shelving shall be furnished and installed where indicated, scheduled, or specified.

10 56 16.12 Type

Shelving indicated by note or line in storage and equipment spaces. In absence of other details or

specification, each shelf unit indicated shall be 7 shelves high, not less than 12" deep, assembled of standard lengths according to space available.

10 56 16.13 BASIS OF DESIGN – MANUFACTURER.

1. The following product was used in the development of this project.  
Lundia Shelving & Storage Systems
2. Products of other manufacturers *meeting these specifications* may be installed:

10 56 16.20 MATERIALS.

10 56 16.21 Shelving.

Wood shelving shall be constructed of standard grade prefabricated components.

- a. Stiles: Stiles shall be 1-1/4" x 1-3/4" clear fir or equal with one 1/4" x 1/2" plow entire height of each stile. Holes 1/4" dia. and 2" o.c. shall be drilled perpendicular to plow and across grain of stile entire height of each stile. Plowed in stiles shall accept steel angles at ends of shelves. Holes in stiles shall accommodate 3/16" steel shelf-support pins.
- b. Cross Rails: Cross rails shall be 1/4" x 1-3/4" clear fir or equal with rectangular tenons at each end. Cross rails shall be glued and secured in mortised plows of two stiles with at least three recessed pins at each tenon. Three cross rails at top, bottom and center of a pair of stiles shall be minimum to form finished upright.
- c. Shelves: Shelves shall be edge-glued stock 3/4" in thickness and in the width and depths indicated. Each shelf corner shall have a 1/2" x 1-3/4" notch to accommodate stiles of uprights. Each shelf end shall be dadoed to accept hot rolled-steel angles that shall be secured at each shelf with at least three recessed pins.
- d. Bracing: Bracing shall be 1/8" x 3/4" flat cold-rolled steel riveted at the intermediate bisecting point to form an "x", fasten to back of upright stiles.

10 56 16.22 Finish.

Shelving shall be natural, sanded, dust sealed.

10 56 16.30 FABRICATION.

10 56 16.31 STANDARDS.

Standard practices of the industry as set forth by AWA shall be followed explicitly. Installation shall comply with ANSI 108.

10 56 16.40 EXECUTION

10 56 16.41 STANDARDS.

Comply with approved shop drawings and manufacturer's written installation instructions.

10 56 16.42 Installation.

Adjustment shall be made without tools. Steel angles in shelves rest on steel pins inserted in holes in stiles. Shelves may be moved up or down or slanted at 2" intervals. With exception of top and bottom shelves, all shelves may be removed without disturbing the stability of units.

10 56 16.43 TOLERANCES / TESTING.

Plumb and level :	1/4" in 10'-0"
Offset maximum:	1/32"

DIVISION      11      EQUIPMENT

Includes work by the General Contractor covered in the following sections. Section designations are neither consecutive nor numerically inclusive.

NOT USED

DIVISION      12      FURNISHINGS

Includes work by the General Contractor covered in the following sections. Section designations are neither consecutive nor numerically inclusive.

12 30 00      Casework

**12 30 00 CASEWORK****12 30 00.10 GENERAL.****12 30 00.11 Work Included.**

Furnish all labor, material, and equipment required for the re installation of existing casework indicated, specified, or both including all incidental items normally required for installation and conditions encountered. Where required, fabricate matching finished ends, and finished panels to complete the indicated layout. Subsections forming this specification include the following:

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Section	12 32 00	Manufactured Wood Casework
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- a. Include items listed in Cabinet Schedule and/or indicated with designated symbol on layouts or plans and interior elevations. Existing casework is differentiated from new millwork cabinets by the use of an "E" in the type designation.
- b. Include all accessories, hardware, connectors and miscellaneous items required to derive the full benefit and use of the item specified.

**12 30 00.12 Work Not Included.**

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	06 40 00	Architectural Woodwork
Section	10 50	Storage Specialties

**12 30 00.13 Related Sections.**

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	07 90 00	Joint Protection
Division	15	Plumbing
Division	17	Electrical

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**12 32 00.00 MANUFACTURED WOOD CASEWORK****12 32 16.00 PLASTIC LAMINATE CLAD CASEWORK****12 32 16.10 GENERAL.****12 32 16.11 Location.**

Existing Plastic Laminate Clad Casework shall be reinstalled in spaces indicated, scheduled, or specified

**12 32 16.12 Submittals.****A. Shop DRAWINGS:**

The Contractor shall furnish supplier's detailed installation drawings to the Architect for approval. Where new matching materials, finished ends, and panels are required, each new element shall be detailed and shall indicate materials, finishes and methods of attachment. Such approval will be as to design, quality, connections and size. The Contractor shall be responsible for dimensions and quantities.

**B. Samples:**

Submit samples [smallest practical quantities] of new work to the Architect for approval before placing on the job.

12 32 16.13 Subcontractor

Casework shall be installed under a subcontract to a single installer regularly involved in the installation of casework of the type indicated.

12 32 16.40 Installation.

Install the work plumb, level, true and straight with no distortions. Shim as required, using concealed shims. Install to a tolerance of 1/16" in 10' for plumb and level (including tops), with a maximum of 1/16" offset in flush adjoining vertical surfaces, and with a maximum of 1/8" offsets in revealed adjoining vertical surfaces. Tops shall be flush across seams.

- a. The work shall be installed without distortion so that doors and drawers fit openings properly and are accurately aligned. Adjust hardware to provide unencumbered operation. Complete the installation of hardware and accessory items as indicated. Existing units may require minor modifications to bring to like new condition.
- b. Replace chipped, cracked, or scratched plastic laminate and melamine surfaces on new work. Document any existing defect in existing cabinetwork prior to re-installation.
- c. Fully caulk and seal splash and tops to adjacent surfaces at casework items containing sinks.
- d. Protect casework during remainder of construction period to ensure that work will be without damage.
- e. Where casework abuts other finished work, scribe and cut for accurate fit. Provide filler strips or scribe strips, matching doors and drawers.
- f. Fasten casework units to adjacent units and/or sub-bases with countersunk flat black, flat Phillips-head wood screws. Screws shall be concealed from view located inside of door or drawer units. Set screws in pattern paced 2" each way from horizontal and vertical members in open shelf units or set units with fully concealed fasteners.

DIVISION      13      SPECIAL CONSTRUCTION

Includes work by the General Contractor covered in the following sections. Section designations are neither consecutive nor numerically inclusive.

Not Used

DIVISION      14      CONVEYING SYSTEMS

Includes work by the General Contractor covered in the following sections. Section designations are neither consecutive nor numerically inclusive.

Not Used

DIVISION        21        Fire Suppression

Includes work by the Electrical [Sub] Contractor covered in the following sections. Section designations are neither consecutive nor numerically inclusive.

21 00 00        FIRE SUPPRESSION

**21 00 00 FIRE SUPPRESSION****00 00 00.10 GENERAL.**00 00 00.11 Work Included.

Furnish all labor, material, and equipment required for the design of the renovation and the fabrication, modification, and installation of fire suppression systems as required for the indicated project including all incidental items normally required for installation and conditions encountered. The work generally consists of the following:

1. Review the existing system in place.
2. Revising the layout of the existing sprinkler system to accommodate the revised plan of Level 1. In this area, sprinkler heads shall be semi-recessed.
3. Sprinkler drawings shall be designed and sealed by a professional engineer registered in North Carolina certified for fire suppression work.

DIVISION      22      Plumbing

Includes work by the Plumbing [Sub] Contractor covered in the following sections. Section designations are neither consecutive nor numerically inclusive.

22 00 00      PLUMBING SYSTEM

**22 00 00 PLUMBING****22 00 00.10 GENERAL.****22 00 00.11 Work Included.**

Furnish all labor, material, and equipment required for the fabrication and installation [including any required earthwork] of complete plumbing system indicated, specified, or both including all incidental items normally required for installation and conditions encountered.

**22 00 00.12 Subcontractor.**

Work shall be included in the General Contract and performed by a properly licensed subcontractor who regularly installs commercial plumbing.

**22 00 00.13 Related Sections.**

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Division	23	Mechanical
Division	26	Electrical

**22 00 00.14 Reference Specifications.**

The following codes, standards, and specifications shall form a part of these specifications:

North Carolina State Building Code: Plumbing latest edition

Regulations of the North Carolina Department of Health.

All fabricated assemblies of electrically operated equipment, furnished under this contract, shall have Underwriters' Laboratory approval or UL re-examination listing in every case where such approval has been established for the particular type of materials or devices in question.

National Electrical Code, latest edition.

**22 00 00.15 Drawings.**

The plumbing plans are diagrammatic only and are not intended to show all fittings and details of the work. The location of piping is approximate and the plumbing subcontractor shall make any necessary changes in the location to avoid structural and mechanical components, after submitting any such changes to the Architect and securing approval.

**22 00 00.16 Shop Drawings.**

The Contractor shall furnish supplier's detailed shop drawings and manufacturers' literature as required under the General Conditions of the Contract, and as required in Division 01.

**22 00 00.17 Coordination.**

The Contractor shall review the complete set contract documents to establish the points of connection of work specified in this division with other equipment and indicated or specified.

**1. Chases, Cutting, and Patching:**

- a. The Plumbing Subcontractor in concert with the Contractor shall layout the location of chases, holes or openings for forces of the Contractor to fabricate, cut or install.
- b. The cutting of chases, openings, or holes, in floors and ceilings, shall be done in a manner as not to endanger the stability of the structure or any part thereof. The contractor shall not, in any case, cut or alter the work of any other contractor without the approval of and under the direction of the Architect or Engineer. All repairs, resulting from cutting, shall be done under the

supervision of the Project Superintendent.

2. Excavation and Backfilling:

- a. Excavate for all work required in connection with the work specified in this Division 22. All such excavating shall be done in a manner as not to endanger the stability of the structure or any part thereof, or any work in place by other contractors. All backfilling shall be thoroughly tamped as required in Section 02 20 00. Where excavations are made through existing lawns, sidewalks, and other finish materials, the Contractor shall restore the finish to its original condition.
- b. Excess earth shall be disposed of as required under Section 02 20 00.

22 00 00.20 MATERIALS.

Materials shall conform to the following:

- a. All material and equipment shall be new, free from defects or other imperfections.
- b. The Contractor shall provide identifying nameplates for all equipment, switches, panels, etc. The nameplates shall be laminated phenolic plastic, black front and back with white core, allowing engraved letters etched into the core. Nameplates shall be fastened with pan head tapping screws.

22 00 00.30 EXECUTION.

22 00 00.31 Installation.

- a. All work shall be executed in a workmanlike manner by skilled mechanics and shall present a neat appearance when completed. Support and attach piping and equipment as hereinafter specified and required.
- a. Plumbing plans are diagrammatic and shall not be scaled. Secure dimensions from the architectural drawings or field measurement.
- b. Piping shall be installed as indicated with piping runs plumb, level [where required], square, and to indicated slopes. Where necessary, piping will be equipped with offsets to avoid structure.
- c. The Plumbing Sub-contractor shall lay out and install the Work in advance of pouring concrete floors and walls. He shall furnish all sleeves to the Contractor for openings through poured floors or walls, above grade, required for passage of all piping. Where indicated on the drawings, the Sub-contractor shall install fire caulking to meet the mandates of the indicated UL penetration requirements
- d. All fixtures shall be accurately roughed in according to the manufacturer's instructions so that no offset adapters, flexible connections, or other improvisations are required. All work indicating such condition shall be torn out and corrected.
- e. All fixtures, floor drains, flush valves and traps shall be set plumb and level.
- f. Connections shall be made at locations indicated. Check-valves, and other apparatus, which require adjustment, shall be installed at sufficient distance from the structure to allow for service as required.

22 00 00.31 Testing.

- a. All piping and equipment installed under this Contract shall be tested in the presence of the Engineer or his authorized representative, and proved tight for the periods stated above, or longer if required by the Inspector.
- b. All water piping shall be made tight under hydrostatic test of 125 psi for one hour. Any and all leaks shall be corrected immediately. Where joints in copper or PVC lines leak, the joint shall be resoldered [copper] or refabricated [PVC]. Where copper is the specified material, both pipe and fittings shall be thoroughly cleaned to the original condition.
- c. All sanitary drainage and vent piping shall be tested before fixtures are installed and before

connection is made to the sewer by capping or plugging the opening and filling the entire system with water and allowing it to stand thus filled for three hours. A minimum of 10 feet of water head shall be placed upon the system or portion thereof being tested.

- d. Hot water piping shall be tested at normal operating temperatures, as well as when containing cold water.
- e. All tests shall be strictly made in accordance with the methods as outlined in the North Carolina Building Code Volume II.
- f. Any defect, in any materials or equipment, which may become evident while under test, shall be immediately made good by the Contractor without cost to the Owner.
- g. Where necessary, the Work may be tested in sections. When additional installations are made to work, which has already been tested, the previously tested lines shall be placed under the same test as the newly added lines.
- h. No plumbing system or part thereof shall be covered or concealed until after it has been tested and approved. If such work has been covered or concealed before testing, it shall be exposed for testing.
- i. Testing shall be repeated the number of times required to prove the complete absence of leaks under all operating conditions anticipated by the Owner.
- j. Prior to any section of the Work being tested, the Contractor shall notify the Engineer at least forty-eight hours before the test is ready in order that the Engineer may be present when the test is made.

22 00 00.32 Connection to Equipment by Others.

The electrical subcontractor will provide a disconnect means, either in the form of a breaker in a panel, or as a disconnect switch as shown on the drawings located adjacent the water heater. The plumbing subcontractor shall connect to the load side lugs of the disconnect means and wire the water heater completely.

22 00 00.33 Fire Stopping.

All penetrations through floors and rated walls shall be fire stopped with a UL approved material specifically intended for that purpose, applied in accordance with the manufacturer's instructions.

22 00 00.40 PROJECT CLOSEOUT.

22 00 00.41 Sterilizing and Flushing.

- a. All water piping shall be sterilized with chlorine, 50 milligrams per liter, and held for a 24-hour period, after which the system shall be flushed prior to being put into service.
- b. During the flushing of the system, all flush valves shall be thoroughly flushed out to insure the removal of sediment, pipe dope, etc., from waterlines and flush valves, removing such working parts of the flush valves as may be deemed necessary. The system shall be drained and flushed sufficiently to provide chlorine residue of 0.2 PPM or less.

22 00 00.42 Placing in Service.

- a. Upon completion and sterilization of the entire installation, the complete system shall be tested by actual operation of each item in the system to prove that it will function as intended.
- b. Flush all water and waste piping, etc., to insure that no foreign materials are in the lines, and that a continuous flow of water and waste can be effected.
- c. Place the entire system in a satisfactory operating condition and furnish all assistance and instruction required by the Owner's representative during the initial operating period.

22 00 00.43 Instruction.

The Contractor shall schedule with the Owner a meeting to instruct the Owner in the operation of the plumbing systems. Indicate to the Owner the scope of work, location of buried lines, and provide directions for operating and maintaining various items of plumbing equipment. This instructional period shall be done at the Owner's convenience and direction at the conclusion of the project. Instructions shall be given as if the Owner were not remotely familiar with the project and sufficient time shall be spent to acquaint him with the entire scope of work.

22 00 00.44 Operating and Maintenance Manuals.

Assemble and deliver to the Contractor two [2] complete sets of parts lists, operating instructions, and manufacturers' data including warranty information on all items of equipment furnished and installed under this contract. This data shall be included in the Contractor's maintenance manual delivered to the Owner two weeks prior to the final inspection:

- a. Index and page numbers
- b. Parts List and Technical Data
- c. Operating Instructions
- d. Warranties
- e. List of all Sub-contractors and suppliers with names, addresses and phone numbers.
- f. Complete start-up operation and shutdown procedures for each system including sequence of events, locations of switches, emergency procedures and any other critical items.
- g. Lubrication schedules and types of lubricants

In general, include descriptive materials for plumbing fixtures, cleanouts, water coolers, and any other items furnished and installed and all submittal data.

DIVISION        23        Heating, Ventilating, & Air Conditioning

Includes work by the Mechanical [Sub] Contractor covered in the following sections. Section designations are neither consecutive nor numerically inclusive.

23 00 00    INTERIOR CLIMATE CONDITIONING [HVAC]

**23 00 00 INTERIOR CLIMATE CONDITIONING****23 00 00.10 GENERAL.**23 00 00.11 Work Included.

Furnish all labor, material, and equipment required for the fabrication and installation of heating, ventilation, and air conditioning systems indicated, specified, or both including all incidental items normally required for installation and conditions encountered.

23 00 00.12 Subcontractor.

Work shall be included in the General Contract and performed by a properly licensed subcontractor who regularly installs commercial heating, ventilating, and air conditioning systems factory trained for the installation of the specified equipment.

23 00 00.13 Related Sections.

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Division	22	Plumbing
Division	26	Electrical

23 00 00.14 Reference Specifications.

The following specifications and standards shall form a part of these specifications:

North Carolina State Building Code Volume III latest edition.

North Carolina State Building Code Volume IV latest edition, which includes the National Electric Code together with any subsequent supplements.

Underwriters' Laboratory, Inc., Standards for Cabinets and Boxes, Rubber Wires and Cables, and Thermoplastic Insulated Wires and Cables

- a. All fabricated assemblies of electrically operated equipment shall have UL approval or UL re-examination listing in every case where such approval has been established for the particular type of material or device in question.

23 00 00.15 Drawings.

- a. The mechanical plans are diagrammatic and are not intended to show every fitting and all details of the work. The location of ductwork, piping, and devices is approximate and the mechanical subcontractor shall make any requisite changes in the location to avoid structural, plumbing, and / or electrical components; and to allow for proper maintenance after submitting any such changes to the Architect or his Consulting Engineer and securing approval.
- b. Where an existing system is in place, and elements of the existing equipment are required to be reused and incorporated in the new systems, the drawings indicate and differentiate graphically the existing components to be reused and or reinstalled. Where items of equipment are not indicated as existing, they shall be considered new.
- c. Certain diagrams are general in nature, developed to show certain related components *in their completed and operational state*, and do not differentiate between new and existing components. Where this occurs, the contractor shall refer to the plans and riser diagrams where the new and existing components are differentiated.

23 00 00.16 Shop Drawings.

The Contractor shall furnish supplier's detailed shop drawings and manufacturers' literature as required under the General Conditions of the Contract, and as required in Division 01.

23 00 00.17 Coordination.

The Contractor shall review the complete set of contract documents to establish the points of connection of the work specified in this division with other equipment indicated or specified.

## 1. Chases, Cutting, and Patching:

- a. The Mechanical Subcontractor in concert with the Contractor shall layout the location of chases, holes or openings for forces of the Contractor to fabricate cut or install.
- b. The cutting of chases, openings, or holes, in floors and ceilings, shall be done in a manner as not to endanger the stability of the structure or any part thereof. The Contractor shall not, in any case, cut or alter the work of any other contractor without the approval of and under the direction of the Architect or Structural Engineer. All repairs, resulting from cutting, shall be done under the supervision of the Project Superintendent.

## 2. Excavation and Backfilling:

- a. Excavate for all work required in connection with the work specified in this Division 23. All such excavating shall be done in a manner as not to endanger the stability of the structure or any part thereof, or any work in place by other contractors. All backfilling shall be thoroughly tamped as required in Section 02 20 00. Where excavations are made through existing lawns, sidewalks [cuts shall be made on the nearest joint lines allowing matching of concrete patterning], roads, parking lots and access drives, and other finish materials, the Contractor shall restore the aforementioned items to their original condition. In the event that the item is some form of loose unit masonry, the item shall be removed, stored and reinstalled.
- b. Excess earth shall be disposed of as required under Section 02 20 00.

23 00 00.20 MATERIALS.

Materials shall conform to the following:

- a. All material and equipment shall be new, free from defects or other imperfections unless otherwise indicated or specified.
- b. The Contractor shall provide identifying nameplates for all [new and existing] equipment, switches, panels, etc. The nameplates shall be laminated phenolic plastic, black front and back with white core, allowing engraved letters etched into the core. Nameplates shall be fastened with stainless steel pop rivets or stainless steel pan head self-tapping screws.

23 00 00.30 INSTALLATION.23 00 00.31 General.

- a. All work shall be executed in a workmanlike manner by skilled mechanics and shall present a neat appearance when completed. All ductwork shall be sealed and shall be insulated unless otherwise directed. Support and attach ductwork, conduit, and equipment as hereinafter specified and required.
- b. Mechanical plans are diagrammatic and shall not be scaled. Secure dimensions from the architectural drawings or field measurement.
- c. Ductwork shall be installed as indicated with runs plumb, level [where required], square and to indicated slopes held in place with hangers, supports, and/or anchoring devices as indicated or specified. Where necessary, ductwork will be equipped with offsets to avoid structure and plumbing waste lines.
- d. The Mechanical Sub-contractor shall lay out and install the Work in advance of work by the concrete and masonry trades. He shall furnish all sleeves to the Contractor for openings through poured floors

or walls above grade, required for the passage of all ductwork and piping. Where ductwork and or piping is indicated on the drawings as penetrating fire rated walls and partitions, the Sub-contractor shall install fire dampers [ductwork] and or fire caulking [ductwork sleeves or collars and piping] to meet code and UL mandates.

- e. All registers, grills, diffusers, and devices shall be set plumb and level and parallel and square to adjacent surfaces.
- f. Connections shall be made at locations indicated. Heating and air conditioning units and other apparatus, which require adjustment, shall be installed to allow for proper service access.

23 00 00.32 Testing.

- a. Air Flow:  
Following complete installation of system, airflow readings shall be taken at each supply and return grill. Readings shall be within 5% of those indicated on the contract documents. Readings in deficit or in excess shall require to Contractor to fine tune dampers and other controls in order to bring the system into compliance.
- b. Electrical work:  
Connections, control wiring and other electrical work shall be tested according to standards established in Division 26 for the various wiring types encountered.
- c. Gas piping:
  - 1. Gas piping systems shall be tested in strict accordance with the National Fire Protection Association's National Fuel Gas Code 54 and the NCBC.
  - 2. The gas piping system shall be air tested at 50 psi for a period of not less than one [1] hour without loss of pressure. Any leaks that occur shall be checked for leaks with a water-soap solution. Where leaks are found, the joint shall be remade.

23 00 00.33 Connection to Equipment by Others.

- a. The electrical subcontractor will provide a power source located adjacent the following items of equipment:
  - Ductless Mini-Split UnitThe mechanical subcontractor shall connect to the load side lugs of the disconnect means and complete all wiring to the aforementioned items of equipment.
- b. The electrical subcontractor will provide a junction box, leaving 12" of spare conductors, located adjacent the exhaust fans. The mechanical subcontractor shall connect to the conductors within the junction box and wire the exhaust fans completely. The mechanical subcontractor shall provide the necessary switchleg, including all conduit, conductors, outlet boxes, and motor overload protection.
- c. Miscellaneous:
  - 1. All individual motor starters for mechanical equipment (fans, pumps, etc.) shall be furnished and installed under Division 23 unless indicated as part of a motor control center. Motor starters for mechanical equipment provided in motor control centers will be furnished under Division 26.
  - 2. Power wiring will be provided up to a termination point consisting of a junction box, trough, starter or disconnect switch. Under Division 26 line side terminations will be provided. Wiring from the termination point to the mechanical equipment, including final connections shall be provided under Division 23.
  - 3. Duct smoke detectors will be provided and wired by Division 26, and shall be installed by the mechanical subcontractor. Fire alarm AHU shut down circuits will be wired from the fire alarm

control panel to a termination point, adjacent to the fire alarm control panel, under Division 26. AHU control wiring from the termination point to the equipment shall be under Division 23.

4. Relays, actuators, timers, seven-day clocks, alternators, pressure, vacuum, float, flow, pneumatic-electric, and electric-pneumatic switches, aquastats, freezestats, line and low voltage thermostats, thermals, remote selector switches, remote pushbutton stations, emergency break-glass stations, interlocking, disconnect switches beyond termination point, and other appurtenances associated with equipment under Division 23 shall be furnished, installed and wired under Division 23.
5. Wiring required for controls and instrumentation unless otherwise indicated shall be furnished and installed under Division 23.
6. Roof exhaust fans with built-in disconnects provided under Division 23 will be wired under Division 26 to the line side of the disconnect switch. A disconnect switch will be provided under Division 26 if the fan is not provided with a built-in disconnect switch. In this case wiring from the switch to the fan shall be under Division 23.

23 00 00.34 Fire Stopping.

All penetrations through floors and rated walls shall be fire stopped with a UL approved material specifically intended for that purpose, applied in accordance with the manufacturer's instructions.

23 00 00.40 PROJECT CLOSEOUT.

23 00 00.41 Cleaning and Start-up.

- a. Units, ductwork, and other equipment installed under this contract shall be left in a like new condition. Clean equipment, pipe work, ductwork, etc. Touch up scarred surfaces on factory finished products with materials supplied by the manufacturer.
- b. Equipment startup shall be by the Mechanical Subcontractor under the supervision of the equipment manufacturer's representative.
- c. Place all equipment in satisfactory operation, observing equipment alignments and settings. Align pulleys, sheaves, and other similar equipment if excessive vibration is observed. Run all equipment through complete operating cycles for both heating and cooling.

23 00 00.42 Placing in Service.

- a. Upon completion of the electrical installation, the complete mechanical system shall be tested by actual operation of each item in the system to prove that it will function as intended. Should proper conditions not be available to adequately insure the correct operation of either the heating equipment or the cooling equipment, then the contractor shall return at such time as conditions may allow proper testing.
- b. Place the entire system in a satisfactory operating condition and furnish all assistance and instruction required by the Owner's representative during the initial operating period.

23 00 00.43 Instruction.

The Contractor shall schedule with the Owner a meeting to instruct the Owner in the operation of the electrical systems. Indicate to the Owner the scope of work, location of buried lines, and provide directions for operating and maintaining various items of electrical equipment. This instructional period shall be done at the Owner's convenience and direction at the conclusion of the project. Instructions shall be given as if the Owner were not familiar with the project and products installed, and sufficient time shall be spent to acquaint him with the entire scope of work.

23 00 00.44 Operating and Maintenance Manuals.

Assemble and deliver to the Contractor two [2] complete sets of parts lists, operating instructions, and

manufacturers' data including warranty information on all items of equipment furnished and installed under this contract. This data shall be included in the Contractor's maintenance manual delivered to the Owner two weeks prior to the final inspection:

- a. Index and page numbers
- b. Parts List and Technical Data
- c. Operating Instructions
- d. Warranties
- e. List of all Sub-contractors and suppliers with names, addresses and phone numbers.
- f. Complete start-up operation and shutdown procedures for each system including sequence of events, locations of switches, emergency procedures and any other critical items.
- g. Lubrication schedules and types of lubricants

In general, include descriptive materials for any and all mechanical equipment and controls furnished under this contract, and all submittal data.

DIVISION      26      Electrical

Includes work by the Electrical [Sub] Contractor covered in the following sections. Section designations are neither consecutive nor numerically inclusive.

26 00 00      ELECTRICAL

## 26 00 00 ELECTRICAL

26 00 00.10 GENERAL.

Furnish all labor, material, and equipment required for the fabrication and installation of the complete electrical system indicated, specified, or both including all incidental items normally required for the installation and conditions encountered.

- a. Electrical power including service entrance and all secondary distribution
- b. Lighting fixtures, lamps, and requisite hangers and supports
- c. Voice and data communications system raceway
- d. Fire alarm system

26 00 00.12 Subcontractor

Work shall be included in the General Contract and performed by a properly licensed subcontractor who regularly installs commercial electrical systems.

26 00 00.13 Related Sections

Special attention is directed to work in the following sections and or divisions affecting the work specified in this section.

Section	02 20 00	Earthwork
Division	22	Plumbing
Division	23	Mechanical

26 00 00.14 Reference Specifications

The following codes, standards and specifications shall form a part of these specifications:

North Carolina State Building Code: Electrical latest edition, which includes the National Electric Code together with any subsequent supplements.

Underwriters' Laboratory, Inc., Standards for Cabinets and Boxes, Rubber Wires and Cables, and Thermoplastic Insulated Wires and Cables

- a. All fabricated assemblies of electrically operated equipment shall have UL approval or UL re-examination listing in every case where such approval has been established for the particular type of material or device in question.

26 00 00.15 Drawings.

The electrical plans are diagrammatic only and are not intended to show all fittings and details of the work. The location of conduit and devices is approximate and the electrical subcontractor shall make any necessary changes in the location to avoid footings, beams, ductwork, etc., after submitting any such changes to the Architect and securing approval.

26 00 00.16 Shop Drawings

Submit manufacturer's samples [smallest practical quantities] to the Architect for approval of each material listed below before placing on the job.

26 00 00.17 Coordination

The Contractor shall review the complete set of contract documents to establish the points of connection of work specified in this division with other equipment indicated or specified.

## 1.Chases, Cutting, and Patching

- a. The Electrical Subcontractor in concert with the Contractor shall layout the location of chases, holes or openings for forces of the Contractor to fabricate cut or install.

- b. The cutting of chases, openings, or holes, in floors and ceilings, shall be done in a manner as not to endanger the stability of the structure or any part thereof. The contractor shall not, in any case, cut or alter the work of any other contractor without the approval of and under the direction of the Architect or Engineer. All repairs, resulting from cutting, shall be done under the supervision of the Project Superintendent.

#### 2. Excavation and Backfilling

- a. Excavate for all work required in connection with the work specified in this Division 26. All such excavating shall be done in a manner as not to endanger the stability of the structure or any part thereof, or any work in place by other contractors. All backfilling shall be thoroughly tamped as required in Section 02 20 00. Where excavations are made through existing lawns, sidewalks, and other finish materials, the Contractor shall restore the finish to its original condition.
- b. Excess earth shall be disposed of as required under Section 02 20 00.

#### 26 00 00.20 MATERIALS.

Materials shall conform to the following:

- a. All material and equipment shall be new, free from defects or other imperfections.
- b. The Contractor shall provide identifying nameplates for all equipment, switches, panels, etc. The nameplates shall be laminated phenolic plastic, black front and back with white core, allowing engraved letters etched into the core. Nameplates shall be fastened with pan head tapping screws.

#### 26 00 00.30 INSTALLATION.

##### 26 00 00.31 General.

- a. All work shall be executed in a workmanlike manner by skilled mechanics and shall present a neat appearance when completed. Support and attach conduit and equipment as hereinafter specified and required.
- b. Electrical plans are diagrammatic and shall not be scaled. Secure dimensions from the architectural drawings or field measurement.
- c. Conduit shall be installed as indicated with runs plumb, level [where required], square and to indicated slopes held in place with hangers, supports, and/or anchoring devices as indicated or specified. Where necessary, conduits will be equipped with offsets to avoid structure.
- d. The Electrical Sub-contractor shall lay out and install the Work in advance of pouring concrete floors and walls. He shall furnish all sleeves to the Contractor for openings through poured floors or walls, above grade, required for passage of all piping.
- e. All fixtures shall be accurately roughed in according to the manufacturer's instructions so that no offset field fabricated adapters, flexible connections, or other improvisations are required. All work indicating such condition shall be torn out and corrected.
- f. All fixtures and devices shall be set plumb and level.
- g. Connections shall be made at locations indicated. Disconnects, and other apparatus, which require adjustment, shall be installed to allow for service as required.

##### 26 00 00.32 Testing.

- a. **Feeder Insulation Resistance Testing**  
All current carrying phase conductors and neutrals shall be tested as installed, and before connections are made, for insulation resistance and accidental grounds. This shall be done with a 500-volt megger. The procedures listed below shall be followed:

1. Minimum readings shall be one million (1,000,000) or more ohms for #6 AWG wire and smaller, 250,000 ohms or more for #4 AWG wire or larger, between conductors and between conductor and the grounding conductor.
  2. After all fixtures, devices and equipment are installed and all connections completed to each panel, the contractor shall disconnect the neutral feeder conductor from the neutral bar and take a megger reading between the neutral bar and the grounded enclosure. If this reading is less than 250,000 ohms, the contractor shall disconnect the branch circuit neutral wires from this neutral bar. He shall then test each one separately to the panel and until the low readings is found. The contractor shall correct troubles, reconnect and retest until at least 250,000 ohms from the neutral bar to the grounded panel can be achieved with only the neutral feeder disconnected.
  3. The contractor shall send a letter to the engineer and the State Construction Office certifying that the above has been done and tabulating the megger readings for each panel. This shall be done at least four (4) days prior to final inspection.
  4. At final inspection, the contractor shall furnish a megger and show the engineers and State Construction Office representatives that the panels comply with the above requirements. He shall also furnish a hook-on type ammeter and voltmeter to take current and voltage readings as directed by the representatives.
- b. Ground System Testing
- Upon completion of installation of the electrical grounding and bonding systems, the ground resistance shall be tested with a ground resistance tester. Where tests show resistance-to-ground is over 25 ohms, appropriate action should be taken to reduce the resistance to 25 ohms, or less. (The compliance should be demonstrated by retesting.) See section 26 05 19.32c for work required when excessive resistance is encountered.
- c. Circuit Breaker Testing
- For services 1000 amperes and larger, the following tests should be performed on the service circuit breakers and the distribution circuit breakers. Testing shall be performed by a qualified factory technician at the job site. All readings shall be tabulated:
1. Phase tripping tolerance (within 20% of U/L requirements).
  2. Trip time (per phase) in seconds.
  3. Instantaneous trip (amps) per phase.
  4. Insulation resistance (in mega-ohms) at 100 volts (phase to phase, and line to load).
- d. Ground Fault Protection System
- The ground fault protection on the new circuit breakers (if provided) shall be performance tested in the field and properly calibrated and set in accordance with the coordination study.
- e. Documentation
1. All tests specified shall be completely documented indicating time of day, date, temperature and all pertinent test information.
  2. All required documentation of readings indicated above shall be submitted to the engineer prior to, and as one of the prerequisites for, final acceptance of the project.

26 00 00.33 Connection to Equipment by Others.

- a. The electrical subcontractor will provide a disconnect means, either in the form of a breaker in a panel, or as a disconnect switch as shown on the drawings located adjacent the water heater. The plumbing subcontractor shall connect to the load side lugs of the disconnect means and wire the water heater completely.

- b. The electrical subcontractor shall provide power as required by the manufacturer located adjacent the following items of equipment:
- Ductless Mini-Split
- c. The electrical subcontractor shall provide an outlet, leaving 12" of spare conductors, located adjacent the exhaust fans. The mechanical subcontractor will connect to the conductors within the outlet and wire the exhaust fans completely. The mechanical subcontractor will provide the necessary switchleg, including all conduit, conductors, outlet boxes, and motor overload protection.
- d. Miscellaneous:
1. All individual motor starters for mechanical equipment (fans, pumps, etc.) will be furnished and installed under Division 23 unless indicated as part of a motor control center. Motor starters for mechanical equipment provided in motor control centers shall be furnished under Division 26.
  2. Power wiring shall be provided up to a termination point consisting of a junction box, trough, and starter or disconnect switch. Under Division 26 line side terminations shall be provided. Wiring from the termination point to the mechanical equipment, including final connections will be provided under Division 23.
  3. Duct smoke detectors shall be provided and wired by Division 26, installed by Division 23. Fire alarm AHU shut down circuits shall be wired from the fire alarm control panel to a termination point, adjacent to the fire alarm control panel, under Division 26. AHU control wiring from the termination point to the equipment will be under Division 23.
  4. Relays, actuators, timers, seven-day clocks, alternators, pressure, vacuum, float, flow, pneumatic-electric, and electric-pneumatic switches, aquastats, freezestats, line and low voltage thermostats, thermals, remote selector switches, remote pushbutton stations, emergency break-glass stations, interlocking, disconnect switches beyond termination point, and other appurtenances associated with equipment under Division 23 will be furnished, installed and wired under Division 23.
  5. Wiring required for controls and instrumentation unless otherwise indicated will be furnished and installed under Division 23.
  6. Roof exhaust fans with built-in disconnects provided under Division 23 shall be wired under Division 26 to the line side of the disconnect switch. A disconnect switch shall be provided under Division 26 if the fan is not provided with a built-in disconnect switch. In this case wiring from the switch to the fan will be under Division 23.

26 00 00.34 Fire Stopping.

All penetrations through floors and rated walls shall be fire stopped with a UL approved material specifically intended for that purpose, applied in accordance with the manufacturer's instructions.

26 00 00.40 PROJECT CLOSEOUT.

26 00 00.41 Placing in Service.

- a. Upon completion of the entire electrical installation, the complete system shall be tested by actual operation of each item in the system to prove that it will function as intended.
- b. Place the entire system in a satisfactory operating condition and furnish all assistance and instruction required by the Owner's representative during the initial operating period. Where emergency generators and other special motorized equipment is installed, factory startup is required.

26 00 00.42 Instruction.

The Contractor shall schedule with the Owner a meeting to instruct the Owner in the operation of the

electrical systems. Indicate to the Owner the scope of work, location of buried lines, and provide directions for operating and maintaining various items of electrical equipment. This instructional period shall be done at the Owner's convenience and direction at the conclusion of the project. Instructions shall be given as if the Owner were not remotely familiar with the project and sufficient time shall be spent to acquaint him with the entire scope of work.

26 00 00.43 Operating and Maintenance Manuals

Assemble and deliver to the Engineer two [2] complete sets of parts lists, operating instructions, and manufacturers' data on all items of equipment furnished and installed under this contract. These manuals shall be delivered to the Owner two weeks prior to the final inspection. The manuals shall be three-ring heavy-back notebooks with the name of the project and the words "Operations and Maintenance Manuals" on the cover and Spine. The manuals shall contain the following items as a minimum:

- a. Index and page numbers
- b. Certificate of Substantial Completion
- c. Warranties
- d. List of all Sub-contractors and suppliers with names, addresses and phone numbers.
- e. Complete start-up operation and shutdown procedures for each system including sequence of events, locations of switches, emergency procedures and any other critical items.
- f. Lubrication schedules and types of lubricants

These items, in general, shall include descriptive materials switchboards, panel boards, bus ducts, lighting fixtures, devices, etc., and any other items furnished and installed and all submittal data.

## Appendix

Asbestos Report

Estimate and Request for Payment – Application Form

Estimate and Request for Payment – Continuation Sheet

Estimate and Request for Payment – Materials in Store Sheet

# *Enviro Assessments East, Inc.*

*Asbestos-Lead-Mold Inspections & Abatement*

10705 Hwy 55 West  
Dover, NC 28526  
Phone (252) 527-3052  
FAX (252) 527-3055  
Email Josh@eae-inc.com  
www.eae-inc.com

## **Inspection # - ASB15-0930-02**

Wednesday, September 30, 2015

Craven County  
Mr. Steve Creel – Maintenance Director  
308 New Street  
New Bern, NC 28560

Reference: Limited Asbestos Inspection Report  
2818 Neuse Boulevard – Lab Areas & Associated Offices  
New Bern, NC 28562

Dear Mr. Creel,

Enviro Assessments East, Inc. (EAE, Inc.) has completed the Limited Asbestos Survey of the Property located at 2818 Neuse Boulevard in New Bern, NC. We are pleased to provide you with this report, and if there are any questions please let us know.

### **Description of Services**

An Asbestos Survey was performed on September 25<sup>th</sup>, 2015 by NC Licensed inspector Jason T. Simpson (NC Inspector # 12882). The inspection was conducted in general accordance with the U.S. Environmental Protection Agency requirements and in General accordance with the North Carolina Health Hazards Control Unit. This inspection was performed in preparation for the renovation of the lab areas and associated offices located within the Health Department Building on site.

### **Inspection Process**

EAE, Inc. began the survey by observing the areas for renovation as shown by the representative of the health department. These areas included the clinical lab, environmental lab, and associated rooms located in the right side of the health department building on site. The materials sampled were ceiling tiles, sheetrock and associated joint compound, flooring materials to include floor tiles, mastics, as well as carpet glues, cove base mastics, wall coverings, door caulking, as well as laboratory counter tops.

As required a minimum of 2 samples were taken of each material. These account for a total of 22 Bulk samples taken for analysis and 4 additional layers separated by the lab for a total of 26 Samples. All samples were double bagged and sent along with a chain of Custody (Attached) to Schneider Labs located in Richmond, VA. The samples were analyzed using Polarized Light Microscopy (PLM).

**Results and Recommendations**

Of the 26 total samples analyzed, 2 were found to contain asbestos. It is required that these materials be properly abated prior to disturbance by renovation activities or demolition. Please see the table below for a description of materials found to contain asbestos.

Sample #	Material Type	Location	% Asbestos
19,20	Residual Floor Tile Mastic	Throughout Carpeted areas and any other areas where found.	4-6% Chrysotile

- All square footages are approximated and should be verified by the contractor prior to bidding.

**Limitations**

As mentioned before, this report is only a limited survey of the areas in which EAE, Inc. was directed to sample. This report in no way represents materials not included on the lab analysis report. If there are any questions on which materials were sampled, please contact EAE, Inc.

To the best of my knowledge, no other asbestos containing materials were found that were sampled in this survey. Before a building is to be renovated or demolished, all asbestos material that will be disturbed should be removed by a North Carolina State Licensed Asbestos Contractor using only licensed workers and supervisors.

If during demolition or remodeling any other suspect asbestos material is discovered, stop work immediately and test those materials for asbestos.

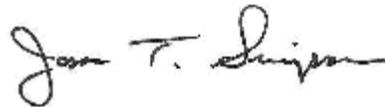
Sincerely,



William S. Lane Jr., President  
Enviro Assessments East, Inc.

NC Asbestos Inspection # 12021  
NC Asbestos Supervisor # 33514  
NC General Contracting # 60742  
NC Lead Firm # FPB-0292  
NC RRP # RRP-0943  
NC Lead Supervisor # 130279  
VA & SC License upon Request

Sincerely,



Jason T. Simpson, Estimator/PM  
Enviro Assessments East, Inc.

NC Asbestos Inspector # 12882  
NC Asbestos Supervisor # 34329

# Attachment I



**Customer:** Enviro Assessments East Inc. (1833)  
**Address:** 10705 Highway 55 West  
Dover, NC 28526

<b>Order #:</b>	144688
-----------------	--------

**Received** 09/28/15  
**Analyzed** 09/28/15  
**Reported** 09/28/15

**Attn:**  
**Project:** 2818 Neuse Blvd  
**Location:** New Bern, NC  
**Number:**

**PO Number:**

**Method:** EPA 600/R-93/116 & 600/M4-82-020

### PLM Analysis

Sample ID	Collected	Cust. ID	Location	Asbestos Fibers	Other Materials
<b>144688-001</b>	09/25/15	1	Rm 133, 134, & Clinic Lab		
Layer 1:	Floor Tile			None Detected	100% NON FIBROUS MATERIAL
	White/Gray, Organically Bound				
Layer 2:	Mastic			None Detected	100% NON FIBROUS MATERIAL
	Yellow, Soft				
<b>144688-002</b>	09/25/15	2	Rm 133, 134, & Clinic Lab		
Layer 1:	Floor Tile			None Detected	100% NON FIBROUS MATERIAL
	White/Gray, Organically Bound				
Layer 2:	Mastic			None Detected	100% NON FIBROUS MATERIAL
	Yellow, Soft				
<b>144688-003</b>	09/25/15	3	Rm 133, 134, & Clinic Lab		
Layer 1:	Cove Base Mastic			None Detected	100% NON FIBROUS MATERIAL
	Yellow, Soft				
<b>144688-004</b>	09/25/15	4	Rm 133, 134, & Clinic Lab		
Layer 1:	Cove Base Mastic			None Detected	100% NON FIBROUS MATERIAL
	Yellow, Soft				
<b>144688-005</b>	09/25/15	5	Original T. Out Env Lab		
Layer 1:	Ceiling Tile			None Detected	45% CELLULOSE FIBER
	Gray, Fibrous				15% FOAMED GLASS
					35% MINERAL/GLASS WOOL
					5% NON FIBROUS MATERIAL
<b>144688-006</b>	09/25/15	6	Original T. Out Env Lab		
Layer 1:	Ceiling Tile			None Detected	40% CELLULOSE FIBER
	Gray, Fibrous				5% FOAMED GLASS
					45% MINERAL/GLASS WOOL
					10% NON FIBROUS MATERIAL

Method reporting limit is 1%. PLM analysis is based on Visual Estimation and NESHAP recommends that any asbestos content less than 10 percent be verified by PLM Point Count or TEM Analysis. This report must not be reproduced except in full with the approval of the laboratory. The test results reported relate only to the samples submitted.

Sample ID	Collected	Cust. ID	Location	Asbestos Fibers	Other Materials
<b>144688-007</b>	09/25/15	7	Replacement T. Out		
Layer 1:	Ceiling Tile			None Detected	45% CELLULOSE FIBER
	Gray, Fibrous				5% FOAMED GLASS
					45% MINERAL/GLASS WOOL
					5% NON FIBROUS MATERIAL
<b>144688-008</b>	09/25/15	8	Replacement T. Out		
Layer 1:	Ceiling Tile			None Detected	45% CELLULOSE FIBER
	Gray, Fibrous				10% FOAMED GLASS
					35% MINERAL/GLASS WOOL
					10% NON FIBROUS MATERIAL
<b>144688-009</b>	09/25/15	9	Int Doors T. Out		
Layer 1:	Caulk			None Detected	100% NON FIBROUS MATERIAL
	White, Soft				
<b>144688-010</b>	09/25/15	10	Int Doors T. Out		
Layer 1:	Caulk			None Detected	100% NON FIBROUS MATERIAL
	White, Soft				
<b>144688-011</b>	09/25/15	11	T. Out		
Layer 1:	Sheetrock			None Detected	2% CELLULOSE FIBER
	Off White, Powdery				98% NON FIBROUS MATERIAL
<b>144688-012</b>	09/25/15	12	T. Out		
Layer 1:	Sheetrock			None Detected	4% CELLULOSE FIBER
	Off White, Powdery				96% NON FIBROUS MATERIAL
<b>144688-013</b>	09/25/15	13	T. Out		
Layer 1:	Joint Compound			None Detected	100% NON FIBROUS MATERIAL
	White, Granular				
<b>144688-014</b>	09/25/15	14	T. Out		
Layer 1:	Joint Compound			None Detected	100% NON FIBROUS MATERIAL
	White, Granular				
<b>144688-015</b>	09/25/15	15	T. Out		
Layer 1:	Counter Top			None Detected	100% NON FIBROUS MATERIAL
	Black, Hard				
<b>144688-016</b>	09/25/15	16	T. Out		
Layer 1:	Counter Top			None Detected	100% NON FIBROUS MATERIAL
	Black, Hard				

Method reporting limit is 1%. PLM analysis is based on Visual Estimation and NESHAP recommends that any asbestos content less than 10 percent be verified by PLM Point Count or TEM Analysis. This report must not be reproduced except in full with the approval of the laboratory. The test results reported relate only to the samples submitted.

Method: EPA 600/R-93/116 & 600/M4-82-020

PLM Analysis

Sample ID	Collected	Cust. ID	Location	Asbestos Fibers	Other Materials
144688-017	09/25/15	17	T. Out		
Layer 1:	Wall Covering			None Detected	90% CELLULOSE FIBER
	Beige/Gray, Fibrous				10% NON FIBROUS MATERIAL
144688-018	09/25/15	18	T. Out		
Layer 1:	Wall Covering			None Detected	95% CELLULOSE FIBER
	Beige/Gray, Fibrous				5% NON FIBROUS MATERIAL
144688-019	09/25/15	19	T. Out Carpeted Area		
Layer 1:	Glue			None Detected	100% NON FIBROUS MATERIAL
	Yellow, Soft				
Layer 2:	Mastic			4% CHRYSOTILE	2% CELLULOSE FIBER
	Black, Bituminous				94% NON FIBROUS MATERIAL
144688-020	09/25/15	20	T. Out Carpeted Area		
Layer 1:	Glue			None Detected	100% NON FIBROUS MATERIAL
	Yellow, Soft				
Layer 2:	Mastic			6% CHRYSOTILE	4% CELLULOSE FIBER
	Black, Bituminous				90% NON FIBROUS MATERIAL
144688-021	09/25/15	21	On Lab Cabinets		
Layer 1:	Cove Base Mastic			None Detected	100% NON FIBROUS MATERIAL
	Beige, Soft				
144688-022	09/25/15	22	On Lab Cabinets		
Layer 1:	Cove Base Mastic			None Detected	100% NON FIBROUS MATERIAL
	Beige, Soft				

Analyst: Hashim, Reel  
144688-09/28/15 03:56 PM



Reviewed By: Hind Eldanaf  
Microscopy Supervisor

Method reporting limit is 1%. PLM analysis is based on Visual Estimation and NESHAP recommends that any asbestos content less than 10 percent be verified by PLM Point Count or TEM Analysis. This report must not be reproduced except in full with the approval of the laboratory. The test results reported relate only to the samples submitted.

Enviro Assessments East, Inc. <b>ACCOUNT # 1833</b> 10705 Hwy 55 West Dover, NC 28526 Contact: Sammy Lane PH# 252-560-3363 Fax#252-527-3055 Email To: eae200@embarqmail.com Labresults@eae-inc.com	<b>LABORATORY TEST REQUEST</b> Laboratory Name: Schneider Labs Account Name: <u>Crawley County</u> Survey Site: <u>Lab Access - Health Dept.</u> Address: <u>2818 Neuse Blvd.</u> <u>New Bern, NC</u>
--	--

Sample Type: <b>Asbestos Bulk</b>	Analysis Type: <b>PLM</b>	Date Shipped: <u>9/25/15</u>
Turn Around Time: <b>24 HR</b>	# of Samples: <u>22</u>	Date Collected: <u>9/25/15</u>
<b>Special Instructions/Notes</b>		

Sample #	Sample type	Location	P/S
1	FT Mastic	Rm 133, 134, + Clinical Lab	
2	" "	" " " " "	
3	Cove Base Mastic	" " " " "	
4	" " "	" " " " "	
5	Ceiling Tile (2x2)	Original Throughout Env. Lab, Clinical	
6	" " "	Lab, and Associated Rooms	
7	" " "	Replacement " " " "	
8	" " "	" " " " "	
9	Door Caulk	Interior doors throughout	
10	" "	" " " "	
11	SR	Throughout	
12	"	"	
13	SC	"	
14	"	"	
15	Lab Counter Top	"	
16	" " "	"	
17	Wall Covering	"	
18	" "	"	
19	Carpet Glue + Residual Mastic	Throughout Carpeted Areas	
20	" " " "	" " "	
21	Cove Base mastic	On Lab Cabinets	
22	" " "	" " "	
23			
24			
25			
26			

144688



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**CHAIN OF CUSTODY RECORD**

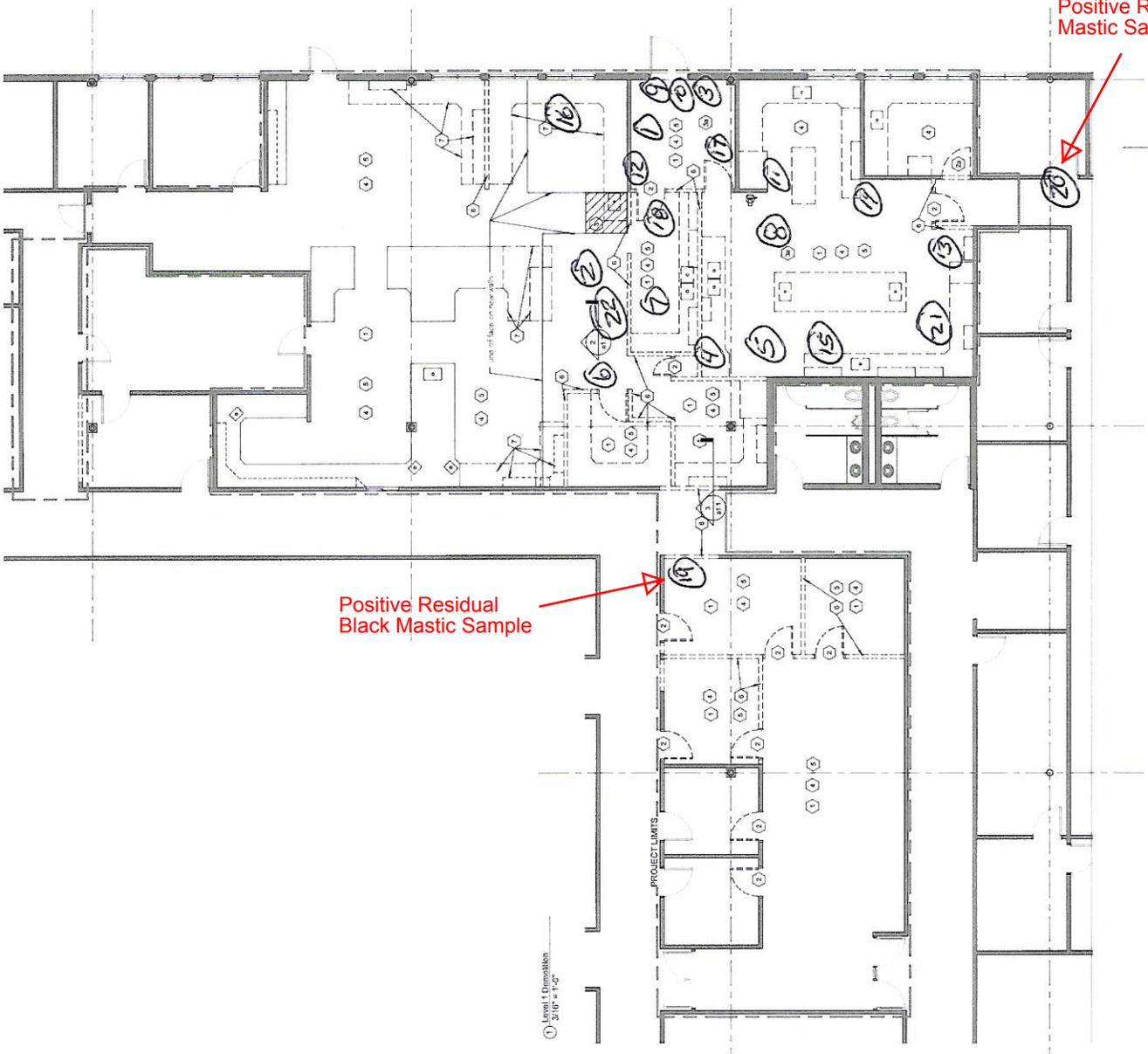
9/28/15 UPS 2210

DATE/TIME	CONDITION OF SAMPLE	SAMPLES RECEIVED BY:	SAMPLES RELEASED BY:
<u>9/25/15</u>	<b>Double Bagged</b>	<u>[Signature]</u>	<u>[Signature]</u>

## Attachment II

**Demolition Notes**

1. Remove ceiling
2. Remove doors and frame
3. Remove floor frame remains in place
4. Remove exterior framing for addition of new block
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100. Remove exterior framing for addition of new block



Positive Residual Black Mastic Sample

Positive Residual Black Mastic Sample

Level 1 Demolition  
3/16" = 1'-0"

**Renovation & Adaptive Reuse: Adult Primary Care Clinic**

Craven County Health Department      2818 Neuse Boulevard, New Bern, NC

**C. R. FRANCIS ARCHITECTURE**  
ARCHITECTS  
2818 NEUSE BOULEVARD, NEW BERN, NC 28510  
TEL: 252.639.1111 FAX: 252.639.1112  
WWW.CRFARCHITECTURE.COM

Not for construction



# ESTIMATE AND REQUEST FOR PAYMENT

C. R. FRANCIS / ARCHITECTURE, P.A.  
329 MIDDLE STREET, NEW BERN, NC 28560



PROJECT: \_\_\_\_\_ OWNER: \_\_\_\_\_ APPLICATION No.: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_ DISCIPLINE: \_\_\_\_\_ DATE: \_\_\_\_\_

THE ABOVE NAMED CONTRACTOR REQUESTS FROM THE OWNER PARTIAL PAYMENT AS HEREIN INDICATED FOR THE PERIOD FROM \_\_\_\_\_ TO \_\_\_\_\_

THIS STATEMENT IS FOR ESTIMATING PURPOSES AND PAYMENT DOES NOT CONSTITUTE ACCEPTANCE OF WORK SHOWN REGARDLESS OF % OF COMPLETION INDICATED IN THE ATTACHED CONTINUATION SHEET

ORIGINAL CONTRACT AMOUNT:	_____	\$0.00
NET CHANGE TO DATE BY CHANGE ORDERS:	_____	\$0.00
CONTRACT SUM TO DATE:	_____	\$0.00
TOTAL THIS ESTIMATE:	_____	\$0.00
TOTAL OF VALUES INDICATED IN COLUMN 8 ON CONTINUATION SHEETS		
LESS <u>0</u> % RETAINED:	_____	0
VALUE OF THIS ESTIMATE:	_____	\$0.00
LESS PREVIOUS AMOUNT AUTHORIZED:	_____	\$0.00
REQUESTED THIS ESTIMATE:	_____	\$0.00

## CERTIFICATION

I, \_\_\_\_\_  
[NAME]  
\_\_\_\_\_  
TITLE [OWNER, PARTNER, ETC.]  
OF \_\_\_\_\_  
FIRM NAME

CONTRACTOR FOR THE PURPOSE OF SECURING THE PAYMENT REQUESTED  
CERTIFY:

1. THAT ALL WORK LISTED ABOVE HAS BEEN COMPLETED IN ACCORDANCE WITH THE CONGRTRACT DOCUMENTS.
2. THAT ALL LAWFUL CHARGES FOR LABOR, SERVICES, AND MATERIAL, COVERED BY PREVIOUS APLICATIONS HAVE BEEN PAID IN FULL.
3. THAT MONIES DUE TO DATE AND INCLUDED IN THIS ESTIMATE ARE RECEIVED IN TRUST FOR PROMPT PAYMENT TO RESPECTIVE CREDITORS.

SIGNED: \_\_\_\_\_

## NOTARY

SUBSCRIBED AND SWORN TO BEFORE ME

THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ 2015

\_\_\_\_\_  
NOTARY PUBLIC

MY COMMISSION EXPIRES \_\_\_\_\_

**ESTIMATE and REQUEST for PAYMENT**  
**CONTINUATION SHEET**

C. R. FRANCIS / ARCHITECTURE

p.o. box 1387    new bern, n c 28563    phone: 252.637.1112    fax: 252.637.7698



1	2	3	4		5		6	7	8
ITEM NO.	ITEM	QUANTITY BREAKDOWN	4A COST BREAKDOWN 4B		5A VALUE OF WORK COMPLETE 5B		% COMPLETE 5A + 5B / 4A + 4B	VALUE OF MATERIAL IN STORE	TOTAL THIS ESTIMATE 5A + 5B + 7
			MATERIALS	LABOR	PREVIOUS APPLICATION	THIS APPLICATION			

INDICATE TOTALS ON LAST SHEET ONLY

THIS STATEMENT IS FOR ESTIMATING PURPOSES AND PAYMENT DOES NOT CONSTITUTE ACCEPTANCE OF WORK SHOWN REGARDLESS OF % OF COMPLETION INDICATED IN COLUMN NO. 6.



# RENOVATION & ADAPTIVE REUSE: ADULT PRIMARY CARE CLINIC

Craven County Health Department

2818 Neuse Boulevard, New Bern, NC



## CRAVEN COUNTY BOARD OF COMMISSIONERS

Scott Tyson - Chairman  
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JIMMIE B. HICKS, JR. - COUNTY ATTORNEY

Scott Harrelson - Director: Craven County Health Department



View toward examining room cabinet installation

Sheet List		
Sequential Sheet Number	Sheet Number	Sheet Name
1	1	title sheet
2	ad1.0	demolition
3	a1.1	first floor
4	a1.2	reflected ceilings / furnishings
5	a6.0	schedules
6	a7.0	cabinet/millwork
7	a7.1	cabinet/millwork
8	f1.1	fire alarm
9	f2.1	fire alarm
10	p1.1	plumbing
11	p1.2	plumbing
12	p2.1	plumbing
13	m0.1	HVAC
14	m1.1	HVAC
15	m2.1	HVAC
16	e0.1	electrical
17	e1.1	electrical
18	e1.2	electrical
19	e1.3	electrical
20	e1.4	electrical
21	e2.1	electrical

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Renovation & Adaptive Reuse: Adult Primary Care Clinic

Craven County Health Department

2818 Neuse Boulevard, New Bern, NC

Symbols & Abbreviations		Door		Window		Building Section		Callout - plan or sect.		AF-1		Aluminum Frame mark		Dimension Lumber		RC		Reinforced Concrete	
Door	101	Window	11	Building Section	1	Callout - plan or sect.	1	AF-1	Aluminum Frame mark	Dimension Lumber	RC	Reinforced Concrete							
Elev.	2015	Horizontal Level		Building Section	1	Callout - plan or sect.	1	Rigid Insulation		Wood Trim	VR	Vapor Retarder							
Frame		Room name	101	Building Section	1	GWB [gypsumboard]	1	LVL [laminated veneer lumber]		Wd. /Hwd.	Wood /Hardwood								
		Room Tag	150 SF	Wall Section	1	Plywood	1	Fiberglass Batt Insulation		Mil.	Metal								



C. R. FRANCIS / ARCHITECTURE  
 located at 329 middle street new bern, north carolina 28563 tel. (252) 637-1112 fax (252) 637-7698 p.a.  
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 Date: September 2015 Drawn by: crf Sequential No. 01

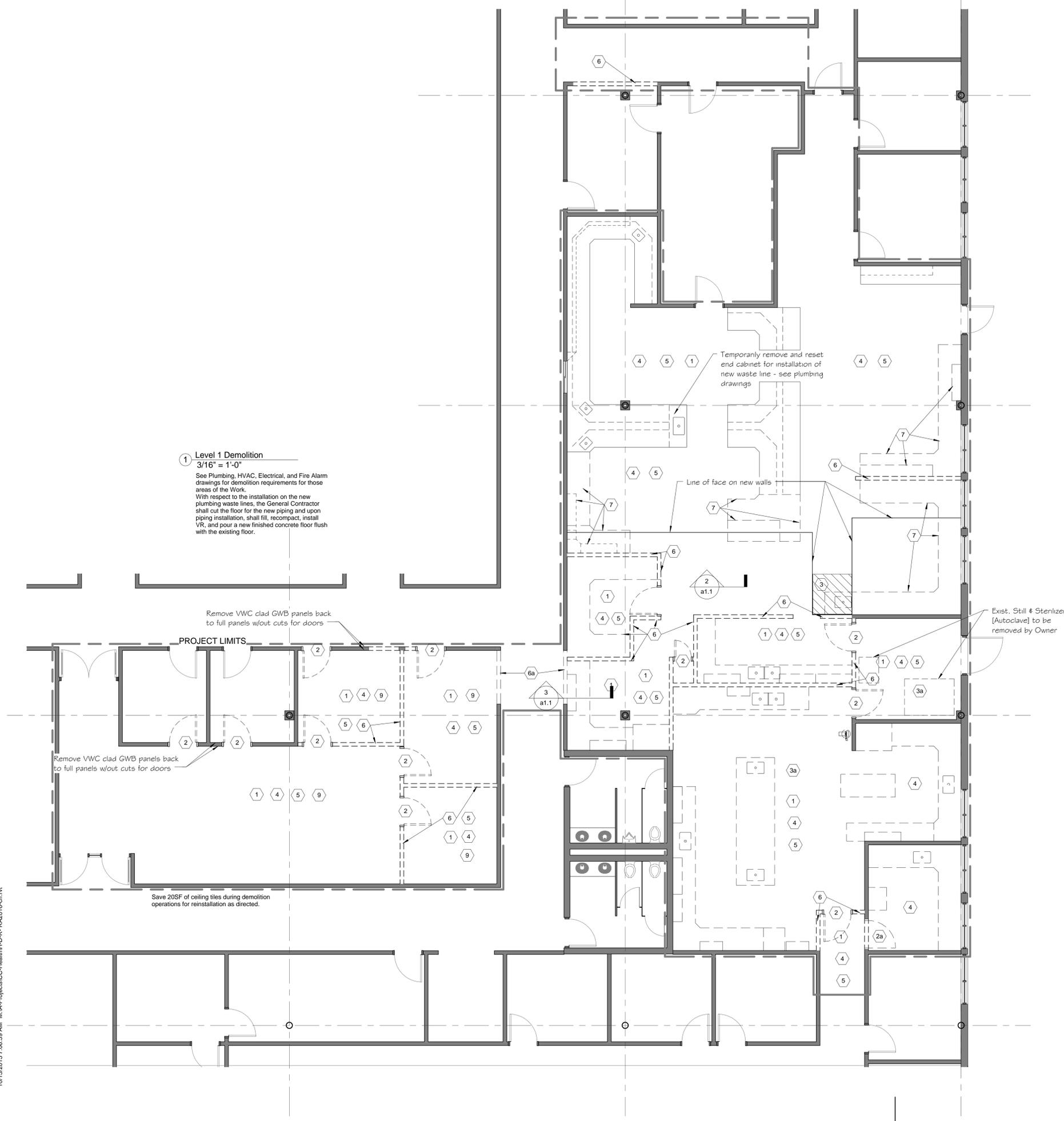


**Demolition Notes**

- 1 Remove ceiling
- 2 Remove door and frame save 1 frame for reinstallation @ Nurses
- 2a Remove door - frame remains in place
- 3 Remove portion of existing concrete floor for installation of new tilework
- 3a Remove portions of existing concrete floor for installation of new plumbing piping and fixtures - see plumbing drawings - applicable to all spaces within project limits
- 4 Remove floor finish (carpet, tile, etc)
- 5 Remove ceiling grid & tile
- 6 Remove walls - includes all misc. trim and bases - where electrical components are located within wall, see elect. demo plans.
- 6a Remove portion of wall [see elevation AF I on sheet a6.0] - includes all misc. trim and bases - where electrical components are located within wall, see elect. demo plans.
- 7 Remove cabinets (casework), tops, & fillers & save for partial reinstallation
- 9 Remove base - entire space - save portion of base for re-installation as directed

**1 Level 1 Demolition**  
3/16" = 1'-0"

See Plumbing, HVAC, Electrical, and Fire Alarm drawings for demolition requirements for those areas of the Work.  
With respect to the installation on the new plumbing waste lines, the General Contractor shall cut the floor for the new piping and upon piping installation, shall fill, recompact, install VR, and pour a new finished concrete floor flush with the existing floor.



**Renovation & Adaptive Reuse: Adult Primary Care Clinic**

Craven County Health Department

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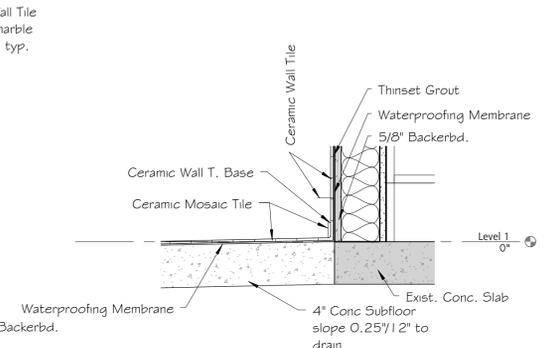
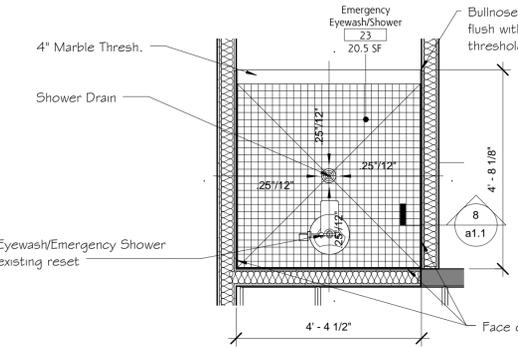
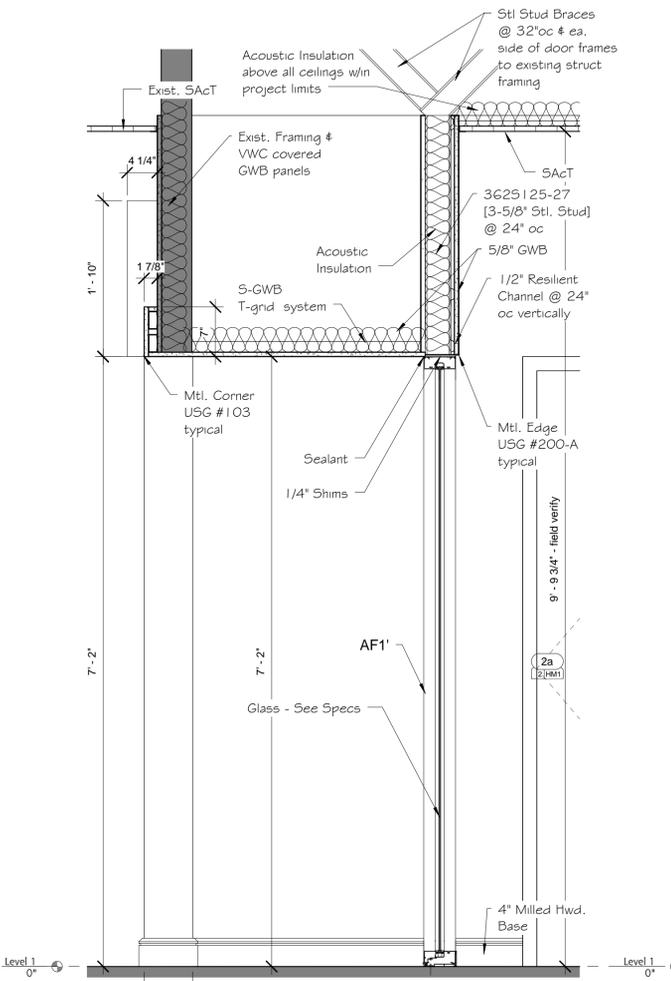
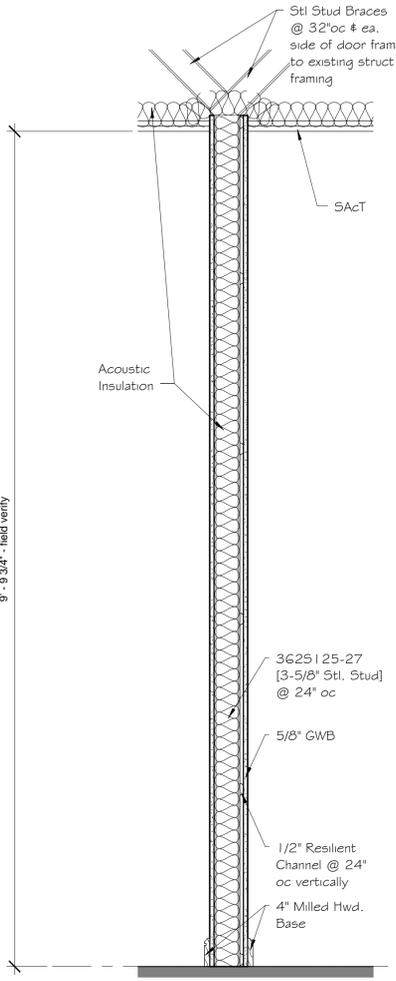
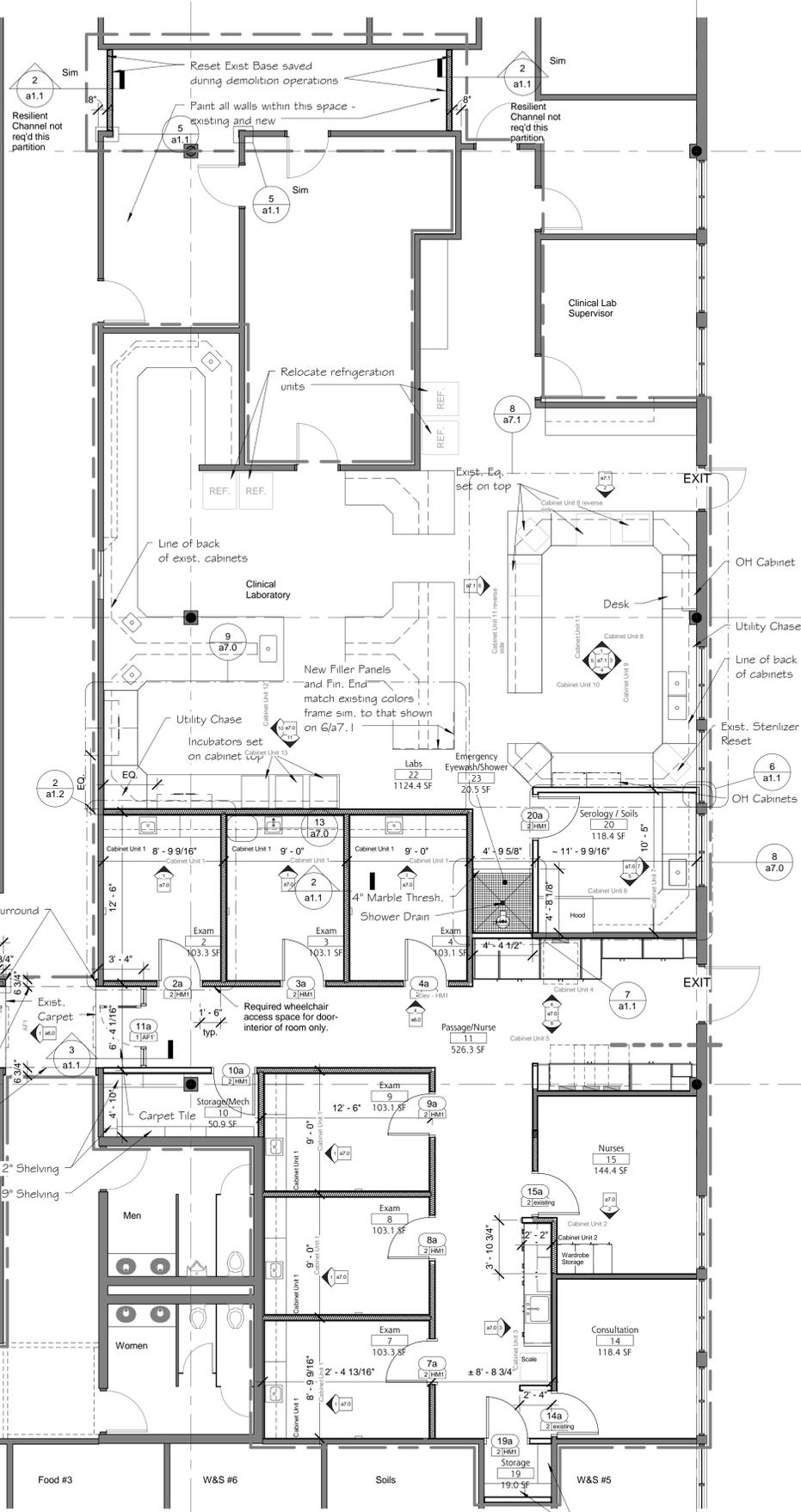
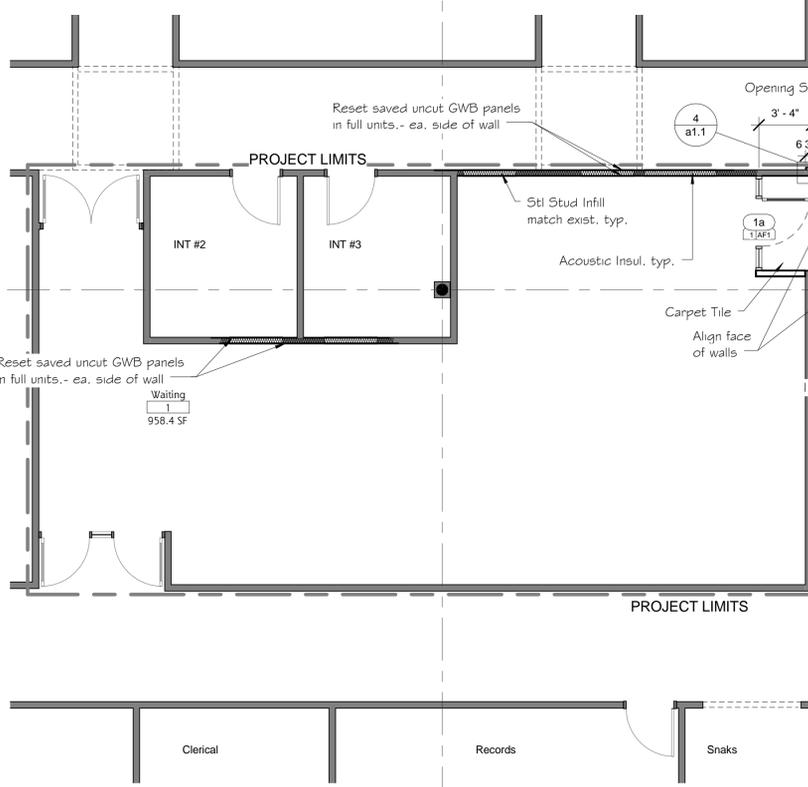
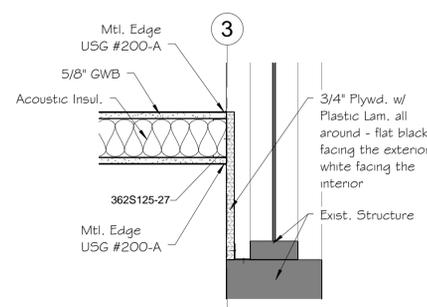
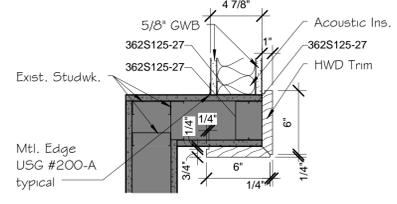
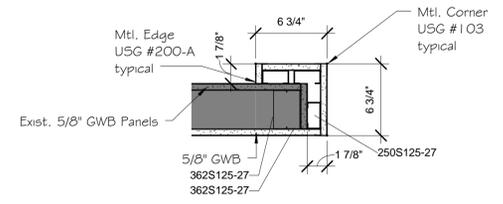
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sheet ad1.0

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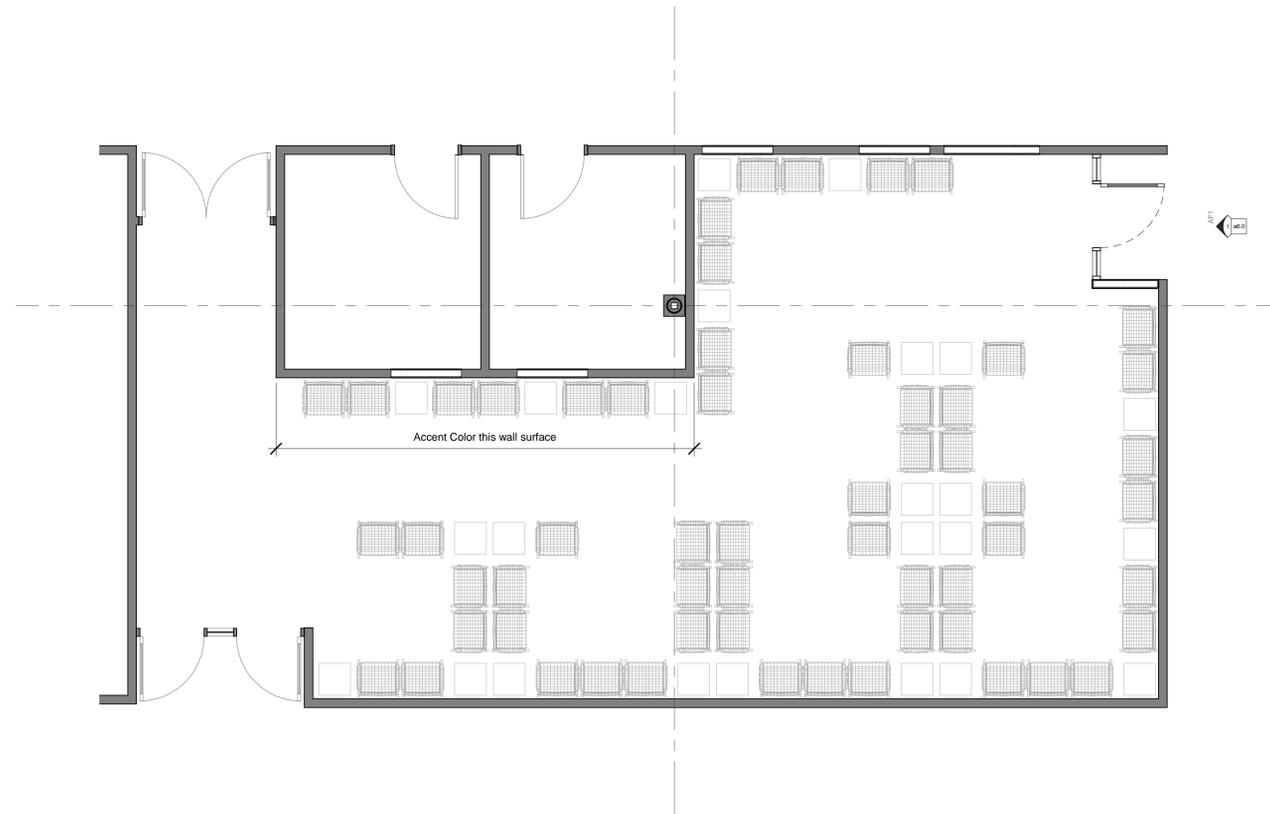
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# Renovation & Adaptive Reuse: Adult Primary Care Clinic

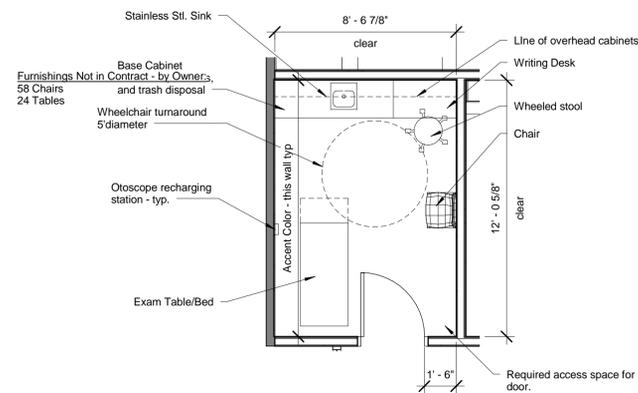
Craven County Health Department 2818 Neuse Boulevard, New Bern, NC



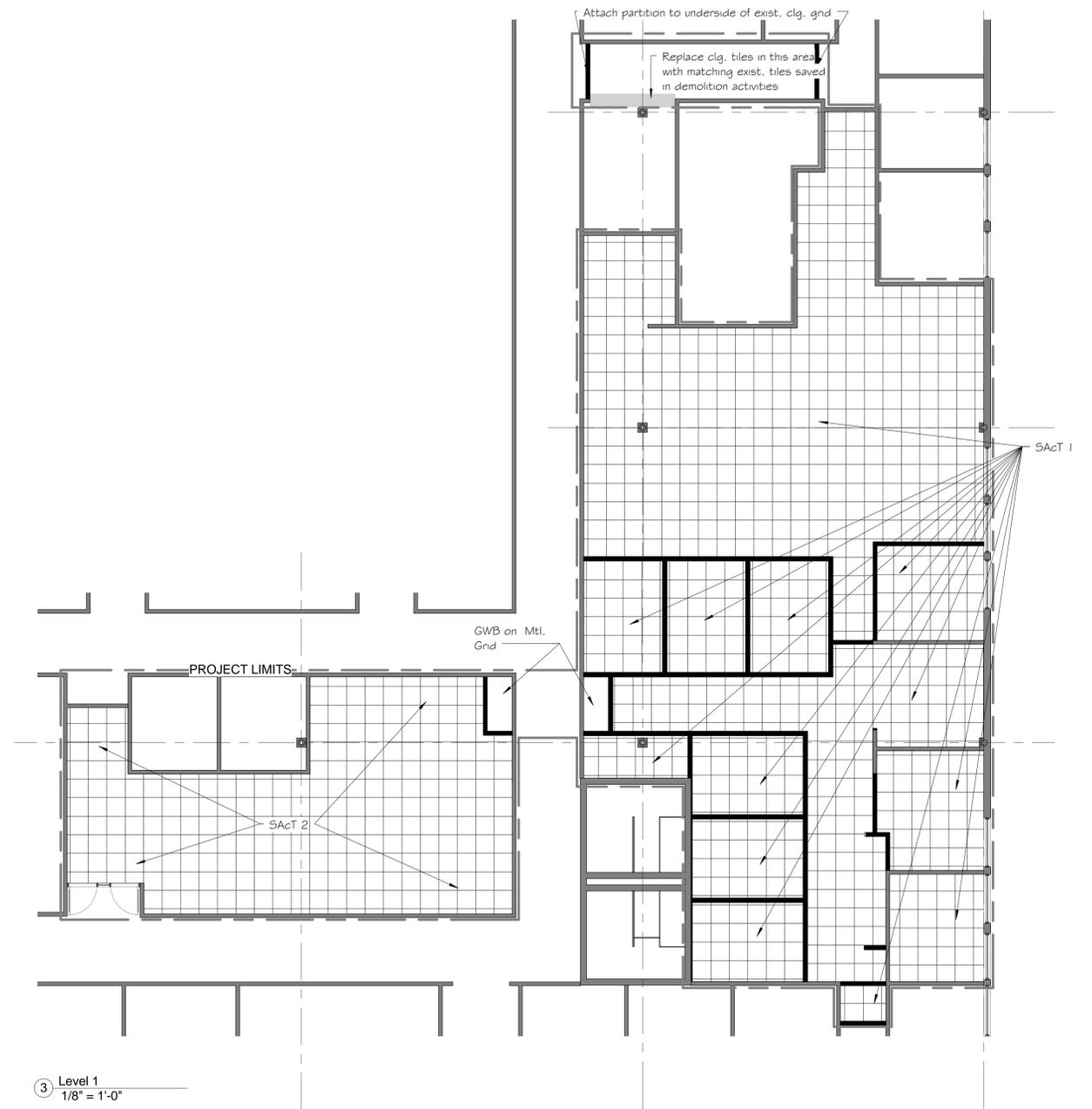
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 sheet a1.1  
 Date: September 2015 Drawn by: crf, dhf Sequential No. 01



1 Level 1 - Furnishings Layout  
1/4" = 1'-0"



2 Level 1 - Exam Layout  
1/4" = 1'-0"



3 Level 1  
1/8" = 1'-0"

See Sprinkler, Plumbing, Mechanical, and Electrical drawings for light fixtures, diffusers, and sprinkler head locations.

# Renovation & Adaptive Reuse: Adult Primary Care Clinic

Craven County Health Department

2818 Neuse Boulevard, New Bern, NC



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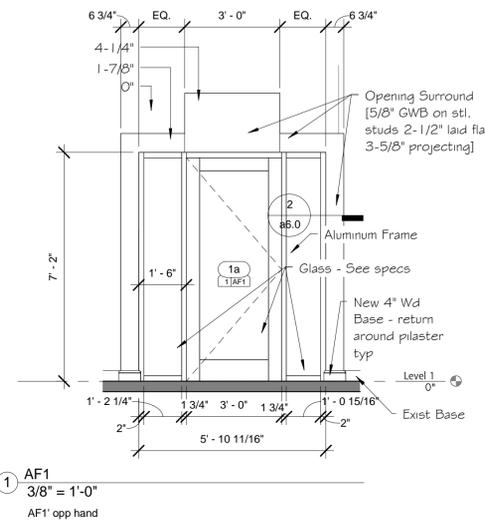
sheet a1.2  
Date: September 2015 Drawn by: crf Sequential No. 01

Interior Finish Schedule												
Room Number	Room Name	Area	Floor Finish	Floor Color	Base Finish	Base Color	Wall Finish	Wall Color	Accent Color	Ceiling Finish	Ceiling Color	Remarks
1	Waiting	958.4 SF	Carpet Tile	Energize 64585	Wood - Painted	AC-42	Existing VVC painted	AC-42	2123-40	5AcT	White	
2	Exam	103.3 SF	Sheet Vinyl	Sandnft 16304	Wood - Painted	AC-42	GWB Painted	AC-42	2123-40	5AcT	White	
3	Exam	103.1 SF	Sheet Vinyl	Sandnft 16304	Wood - Painted	AC-42	GWB Painted	AC-42	2123-40	5AcT	White	
4	Exam	103.1 SF	Sheet Vinyl	Sandnft 16304	Wood - Painted	AC-42	GWB Painted	AC-42	2123-40	5AcT	White	
6	Closet	106.4 SF	Sheet Vinyl	Sandnft 16304	Wood - Painted	AC-42	GWB Painted	AC-42	2123-40	5AcT	White	
7	Exam	103.3 SF	Sheet Vinyl	Sandnft 16304	Wood - Painted	AC-42	GWB Painted	AC-42	2123-40	5AcT	White	
8	Exam	103.1 SF	Sheet Vinyl	Sandnft 16304	Wood - Painted	AC-42	GWB Painted	AC-42	2123-40	5AcT	White	
9	Exam	103.1 SF	Sheet Vinyl	Sandnft 16304	Wood - Painted	AC-42	GWB Painted	AC-42	2123-40	5AcT	White	
10	Storage/Mech	50.9 SF	Sheet Vinyl	Sandnft 16304	Wood - Painted	AC-42	GWB Painted	AC-42		5AcT	White	
11	Passage/Nurse	526.3 SF	Sheet Vinyl	Sandnft 16304	Wood - Painted	AC-42	GWB Painted	AC-42		5AcT	White	
14	Consultation	118.4 SF	Carpet Tile	Energize 64585	Wood - Painted	AC-42	Existing VVC painted	AC-42		5AcT	White	
15	Nurses	144.4 SF	Carpet Tile	Energize 64585	Wood - Painted	AC-42	GWB Painted	AC-42		5AcT	White	
19	Storage	19.0 SF	Sheet Vinyl	Sandnft 16304	Wood - Painted	AC-42	GWB Painted	AC-42		5AcT	White	
20	Serology / Soils	118.4 SF	Sheet Vinyl	Stone Gray 16302	Wood - Painted	Match Wall Color	Existing VVC painted / GWB Painted	Match Existing painted walls		5AcT	White	
21	E.H. Lab - Water	273.9 SF	Sheet Vinyl	Stone Gray 16302	Wood - Painted	Match Wall Color	GWB Painted	Match Existing painted walls		5AcT	White	
22	Labs	1124.4 SF	Sheet Vinyl	Stone Gray 16302	Wood - Painted	Match Existing Base Color	Existing VVC painted / GWB Painted	Match Existing painted walls		5AcT	White	
23	Emergency Eyewash/Shower	20.5 SF	Ceramic Mosaic Tile	D201 Urban Putty Speckle	Ceramic Tile	07G1 Matte Urban Putty	Ceramic Tile	07G1 Matte Urban Putty		5AcT	White	

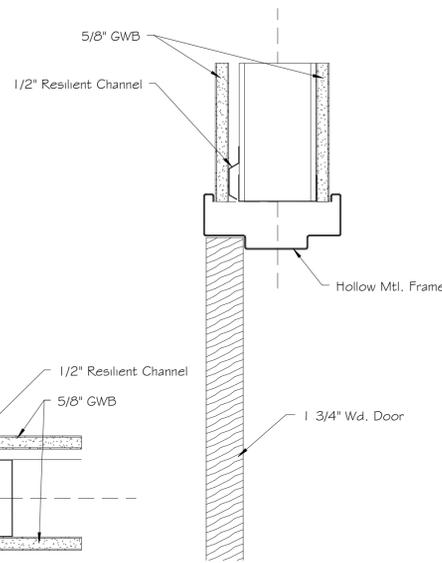
Paint colors indicated are products of Benjamin Moore & Co.  
Base colors indicated are products of Johnsonite  
Carpet colors indicated are products of Shaw Commercial  
Sheet Vinyl colors indicated are products of Mannington.

Paint Metal Door Frames AC-2 berkshire beige  
Base Color AC-42 above is called grand teton white  
Accent Color 2123-40 above is called gossimer blue

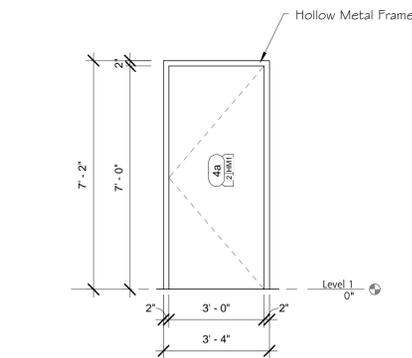
Door Schedule												
Door Number	Elev.	Door					Fire Rating	Frame			Remarks	
		Width	Height	Thickness	Material	Type		Type	Jamb	Head		
1a	1	3' - 0"	7' - 0"	1 3/4"	Glazed Aluminum	Wide Stile	0	AF1				
2a	2	3' - 0"	7' - 0"	1 3/4"	Wood	Flush Panel	0	HM1				
3a	2	3' - 0"	7' - 0"	1 3/4"	Wood	Flush Panel	0	HM1				
4a	2	3' - 0"	7' - 0"	1 3/4"	Wood	Flush Panel	0	HM1				
7a	2	3' - 0"	7' - 0"	1 3/4"	Wood	Flush Panel	0	HM1				
8a	2	3' - 0"	7' - 0"	1 3/4"	Wood	Flush Panel	0	HM1				
9a	2	3' - 0"	7' - 0"	1 3/4"	Wood	Flush Panel	0	HM1				
10a	2	3' - 0"	7' - 0"	1 3/4"	Wood	Flush Panel	0	HM1				
11a	1	3' - 0"	7' - 0"	1 3/4"	Glazed Aluminum	Wide Stile	0	AF1'				
14a	2	3' - 0"	7' - 0"	1 3/4"	Wood	Flush Panel	0	existing				New Door in existing frame
15a	2	3' - 0"	7' - 0"	1 3/4"	Wood	Flush Panel	0	existing				Reset saved existing frame
19a	2	3' - 0"	7' - 0"	1 3/4"	Wood	Flush Panel	0	HM1				
20a	2	3' - 0"	7' - 0"	1 3/4"	Wood	Flush Panel	0	HM1				



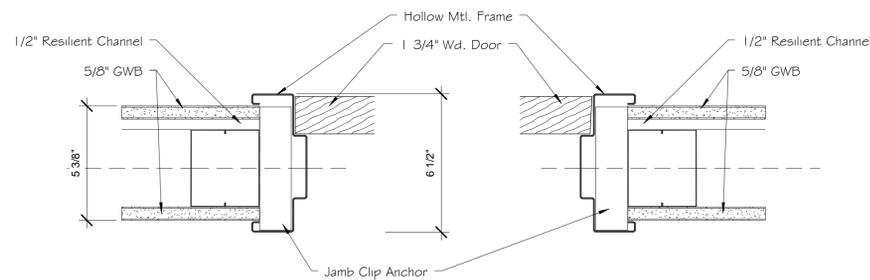
1 AF1  
3/8" = 1'-0"  
AF1' opp hand



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



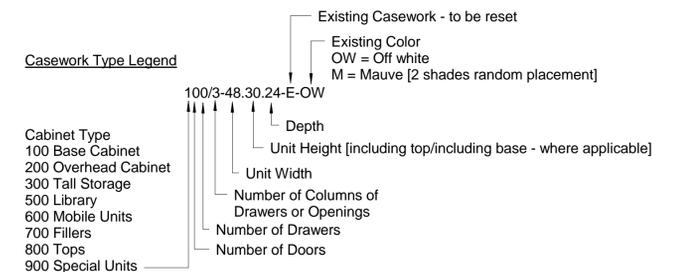
4 Elev - HM1  
3/8" = 1'-0"



3 Door Frame Details  
3" = 1'-0"

Casework Schedule						
Type Mark	Type	Discription	Width	Height	Depth	Comments
	801E					
a	605-24.32.17	Mobile Unit	2' - 0"	2' - 8"	1' - 5"	Special Fabrication see details
b	100ADA-30.34.18	ADA Medical Lavatory Unit	2' - 6"	2' - 10"	1' - 6"	
c	105-15.34.18	Base Cabinet: 5 Drawer	1' - 3"	2' - 9"	1' - 6"	
d	220-34.30.12	Overhead Cabinet: 2 Doors	2' - 10"	2' - 6"	1' - 0 1/2"	
e1	801-SS	Top				Solid Surface
f	804	Splash		3' - 0"		Solid Surface - see elevations for splash height
g	310w 16.84.26	Tall Storage: Wardrobe/1Door	1' - 4"	7' - 0"	2' - 2"	Include metal hanger rod and shelf above
h	222-30.36.24	Base Cabinet: Door & Drawer	2' - 6"	2' - 11"	2' - 0"	
j	120sa-30.36.24	Base Cabinet: 2 Door Sink Base	2' - 6"	2' - 11"	2' - 0"	
k	104c-15.36.24	Base Cabinet: 4 Drawer	1' - 3"	2' - 11"	2' - 0"	
l	220a-30.30.12	Overhead Cabinet: 2 Doors	2' - 6"	2' - 6"	1' - 0 1/2"	
m	703	Full Ht. Filler		7' - 0"		
n	310 22.84.36	Tall Storage: 1 Door	1' - 10"	7' - 0"	3' - 0"	
o	320 36.84.36	Tall Storage: 2 Doors	3' - 0"	7' - 0"	3' - 0"	At Panels, fabricate so as to look like 4 equal full length doors with a false joint in ea. leaf. Omit shelving
p	310 18.84.36	Tall Storage: 1 Door	1' - 6"	7' - 0"	3' - 0"	
q	310 18.84.12	Tall Storage: 1 Door	1' - 6"	7' - 0"	1' - 0"	
r	320-36.84.24	Tall Storage: 2 Doors	3' - 0"	7' - 0"	2' - 0"	
s	320-72.84.24	Tall Storage: 2 Doors	6' - 0"	7' - 0"	2' - 0"	At Panels, fabricate so as to look like 4 equal full length doors with a false joint in ea. leaf. Omit shelving
t	110dia-14.38.22-E-OW	Diagonal Corner Base Cabinet	1' - 1 3/4"	3' - 1"	1' - 10"	
v	104-24.38.22-E-OW	Base Cabinet: 4 Drawer	2' - 0"	3' - 1"	1' - 10"	
x	111-18.32.22-E-M	Base Cabinet: 1 Door & 1 Drawer	1' - 6"	2' - 7"	1' - 10"	
y	001-30.32.22-E-OW	Knee Space Drawer	2' - 6"	4"	1' - 10"	
z	120sb-30.38.22-E-OW	Base Cabinet: Sink Base 2 Doors	2' - 6"	3' - 1"	1' - 10"	
za	111-15.38.22-E-OW	Base Cabinet: 1 Door & 1 Drawer	1' - 3"	3' - 1"	1' - 10"	
zb	120-30.38.22-E-OW	Base Cabinet: 2 Door	2' - 6"	3' - 1"	1' - 10"	
zc	200-48.32.12-E-OW	Overhead Cabinet: Shelving	4' - 0"	2' - 8"	1' - 0 1/2"	
zd	122-36.38.22-E-OW	Base Cabinet: Door & Drawer	3' - 0"	3' - 1"	1' - 10"	
ze	120sb-48.38.22-E-OW	Base Cabinet: Sink Base/2 Doors	4' - 0"	3' - 1"	1' - 10"	
zf	111-18.38.22-E-OW	Base Cabinet: 1 Door & 1 Drawer	1' - 6"	3' - 1"	1' - 10"	
zg	112wt-15.38.22-E-OW	Base Cabinet: 1 Door/2 Drawers/Pull out tablet	1' - 3"	3' - 1"	1' - 10"	
zh	121-30.38.22-E-OW	Base Cabinet: 2 Doors/1 Drawer	2' - 6"	3' - 1"	1' - 10"	
zi	220/s-30.32.12-E-OW	Overhead Cabinet: 2 Sliding Glazed Doors	2' - 6"	2' - 8"	1' - 0 1/2"	
zj	122-30.38.22-E-OW	Base Cabinet: Door & Drawer	2' - 6"	3' - 1"	1' - 10"	
zk	701	Base Filler		3' - 1"	2' - 0"	
zl	702	Overhead Filler	5/16"	2' - 6"	1' - 0"	
zm	320-36.84.18		3' - 0"	7' - 0"	1' - 6"	
zn	103-15.32.22-E-M		1' - 3"	2' - 7"	1' - 10"	
zo	001-30.32.22-E-M		2' - 6"	4"	1' - 10"	
zp	220-48.32.12-E-M		4' - 0"	2' - 6"	1' - 0 1/2"	
zq	122-30.38.22-E-M	Base Cabinet: Door & Drawer	2' - 6"	3' - 1"	1' - 10"	
zr	111-24.38.22-E-M	Base Cabinet: 1 Door & 1 Drawer	2' - 0"	3' - 1"	1' - 10"	
zs	104-24.38.22-E-M	Base Cabinet: 4 Drawer	2' - 0"	3' - 1"	1' - 10"	
zt	110dia-14.38.22-E-M		1' - 1 3/4"	3' - 1"	1' - 10"	

Note: Heights of base cabinets indicated in the height column above do not include the top. See elevation for overall height of base cabinets including tops. Also, the overall height is indicated in the type as keyed below.

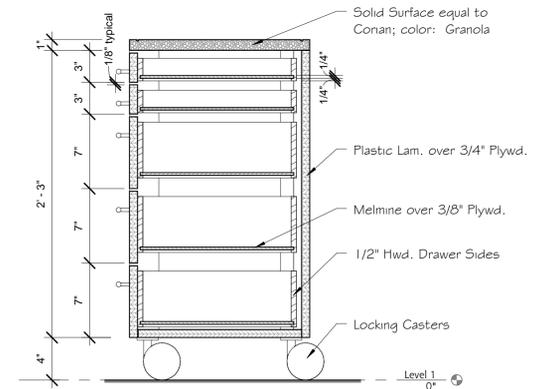
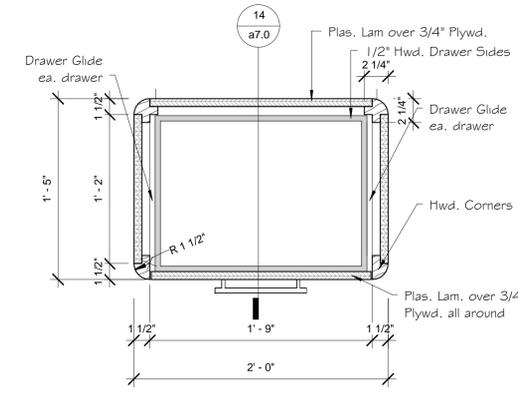
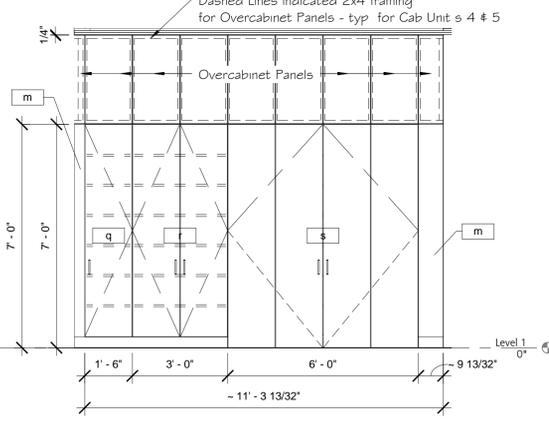
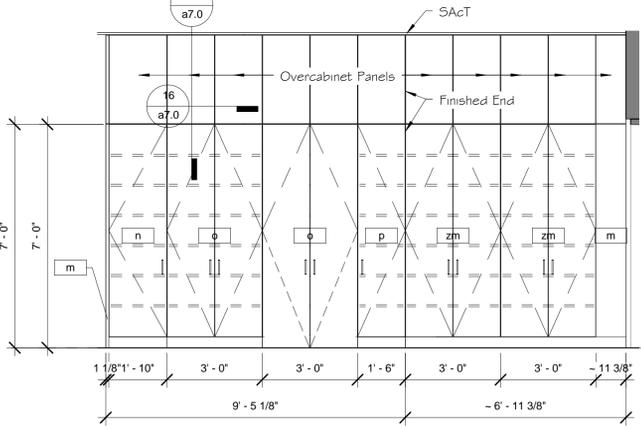
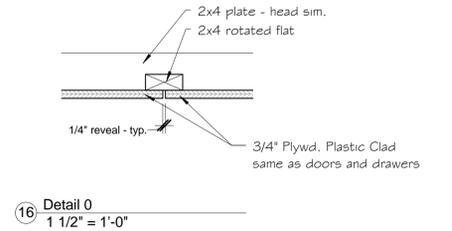
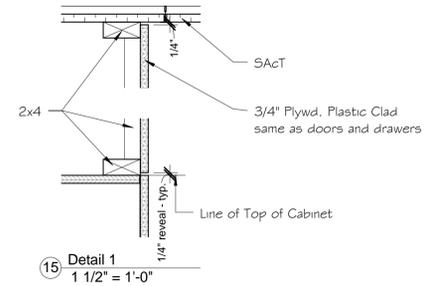
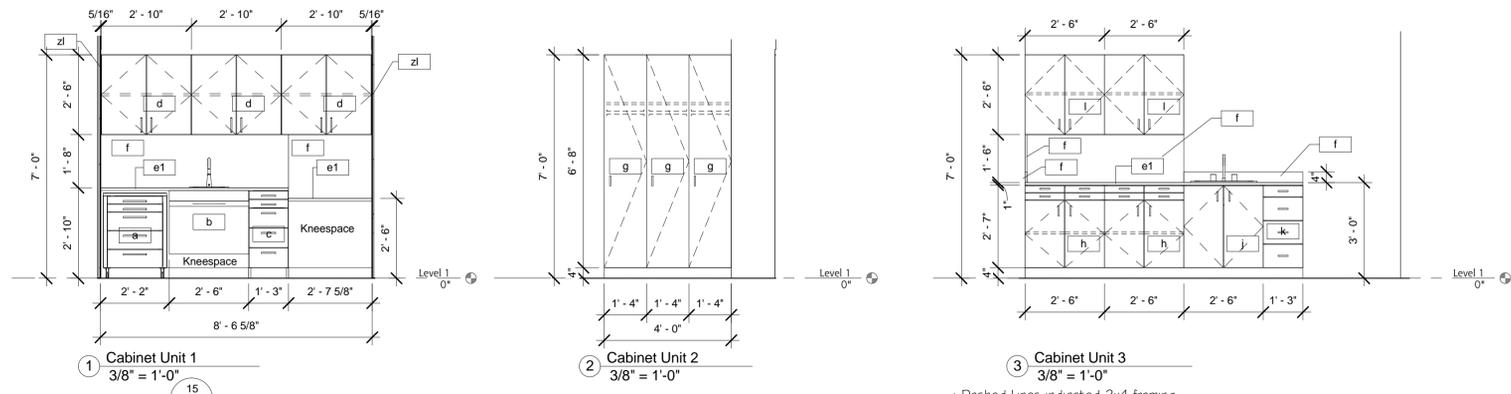


# Renovation & Adaptive Reuse: Adult Primary Care Clinic

Craven County Health Department

2818 Neuse Boulevard, New Bern, NC



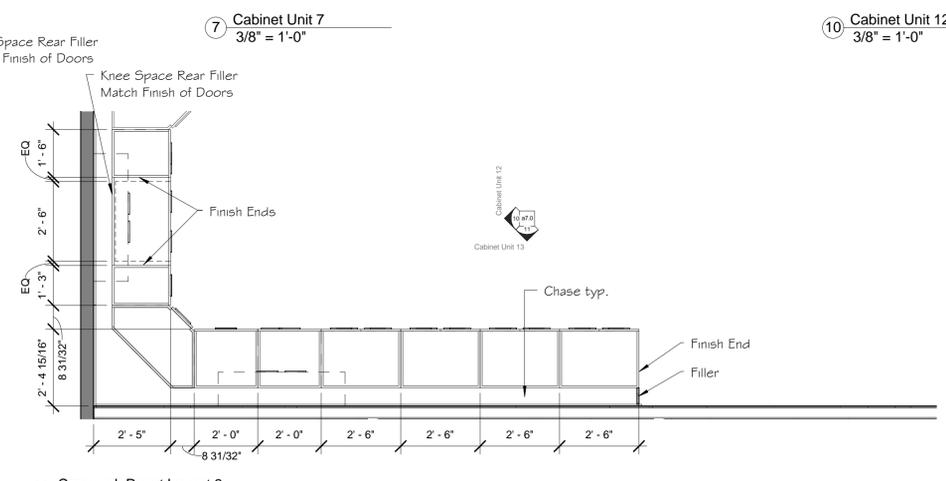
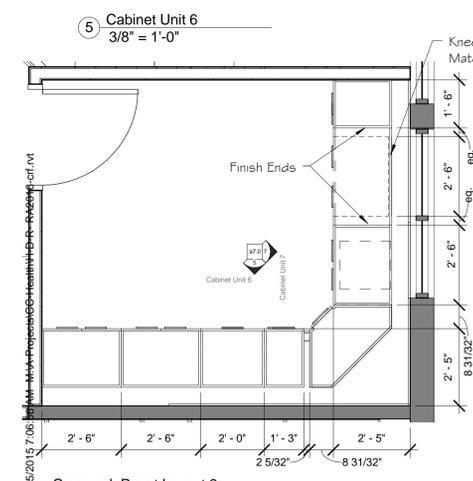
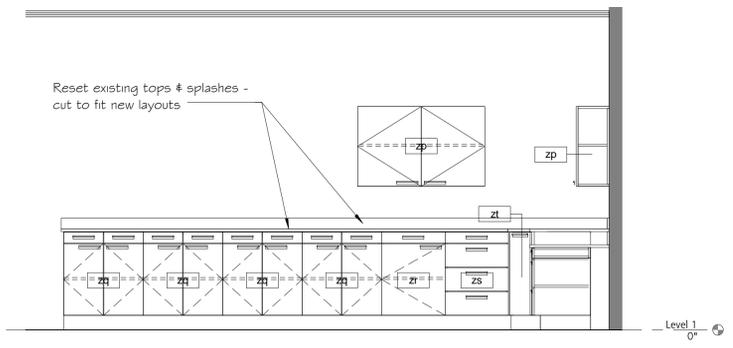
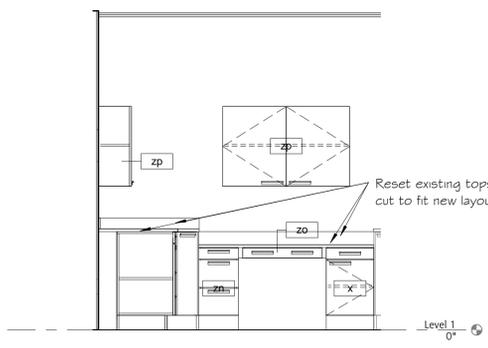
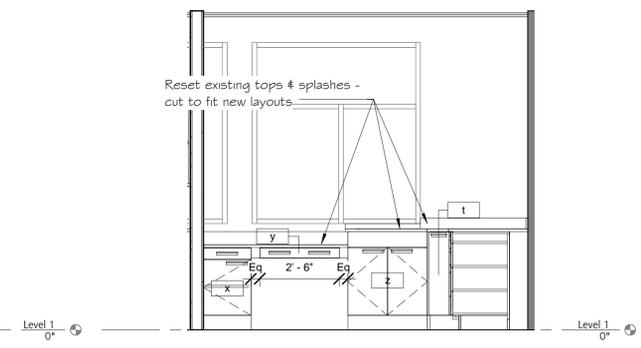
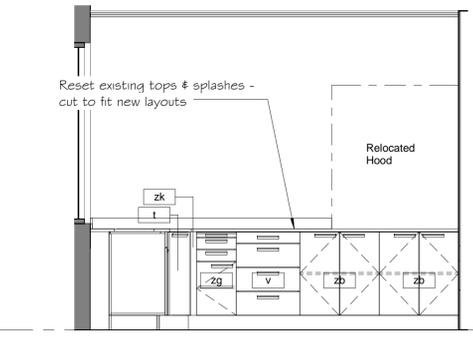


4 Cabinet Unit 4  
3/8" = 1'-0"

6 Cabinet Unit 5  
3/8" = 1'-0"

13 Detail - Plan - Mobile Cabinet  
1 1/2" = 1'-0"

14 Detail - Section - Mobile Cabinet  
1 1/2" = 1'-0"



10 Cabinet Unit 12  
3/8" = 1'-0"

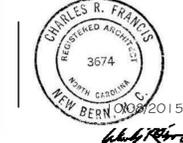
11 Cabinet Unit 13  
3/8" = 1'-0"

8 Casework Reset Layout 2  
3/8" = 1'-0"

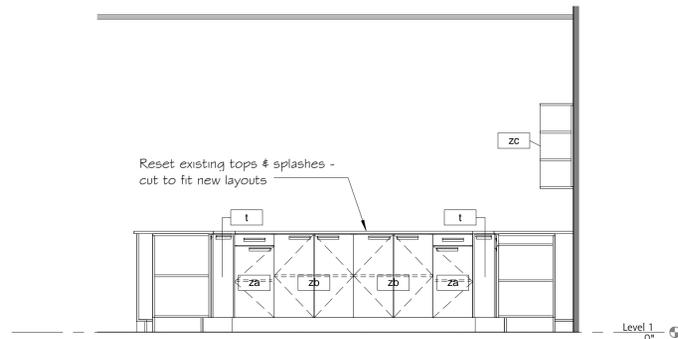
9 Casework Reset Layout 3  
3/8" = 1'-0"

# Renovation & Adaptive Reuse: Adult Primary Care Clinic

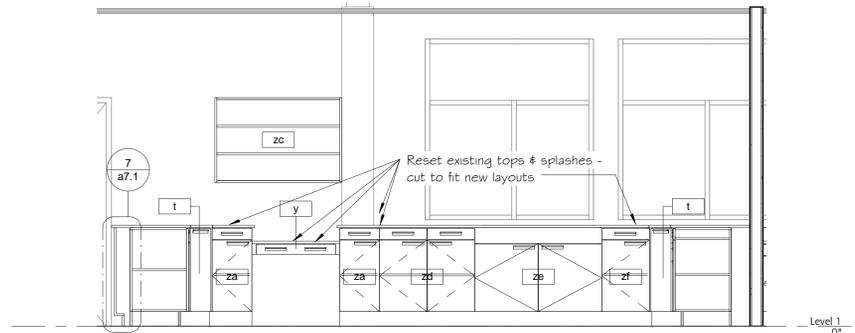
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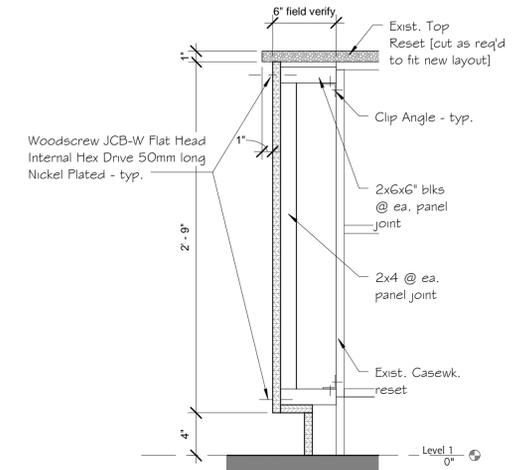
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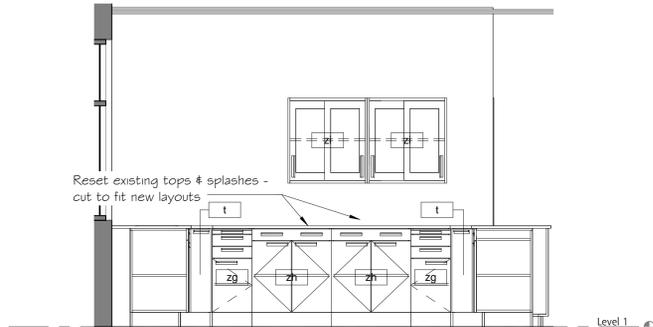
1 Cabinet Unit 8  
3/8" = 1'-0"



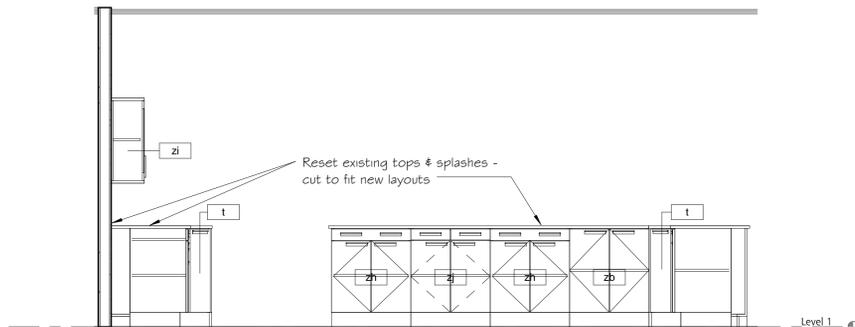
3 Cabinet Unit 9  
3/8" = 1'-0"



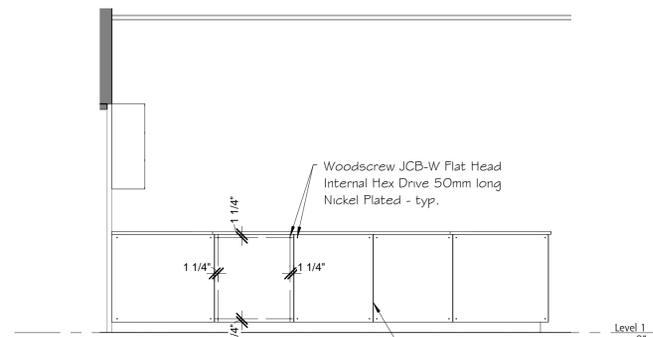
7 Detail - Finish Back/Cabinet Chase  
1 1/2" = 1'-0"



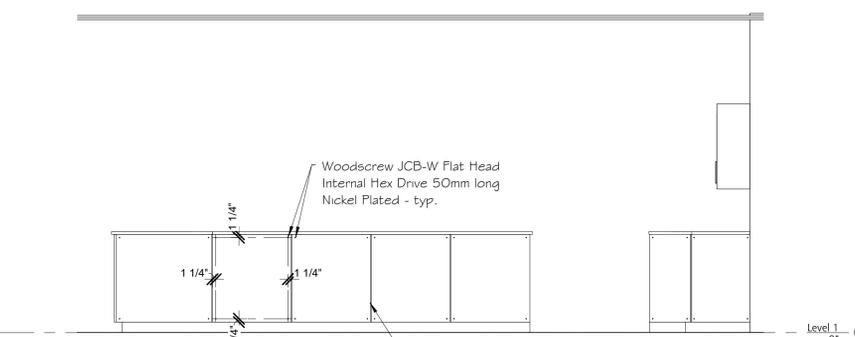
4 Cabinet Unit 10  
3/8" = 1'-0"



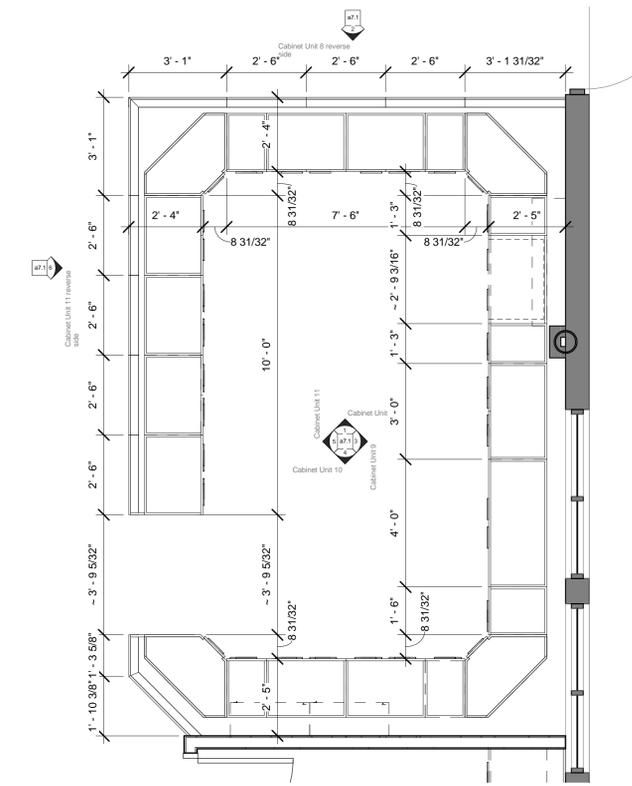
5 Cabinet Unit 11  
3/8" = 1'-0"



2 Cabinet Unit 8 reverse side  
3/8" = 1'-0"



6 Cabinet Unit 11 reverse side  
3/8" = 1'-0"



8 Casework Reset Layout 1  
3/8" = 1'-0"

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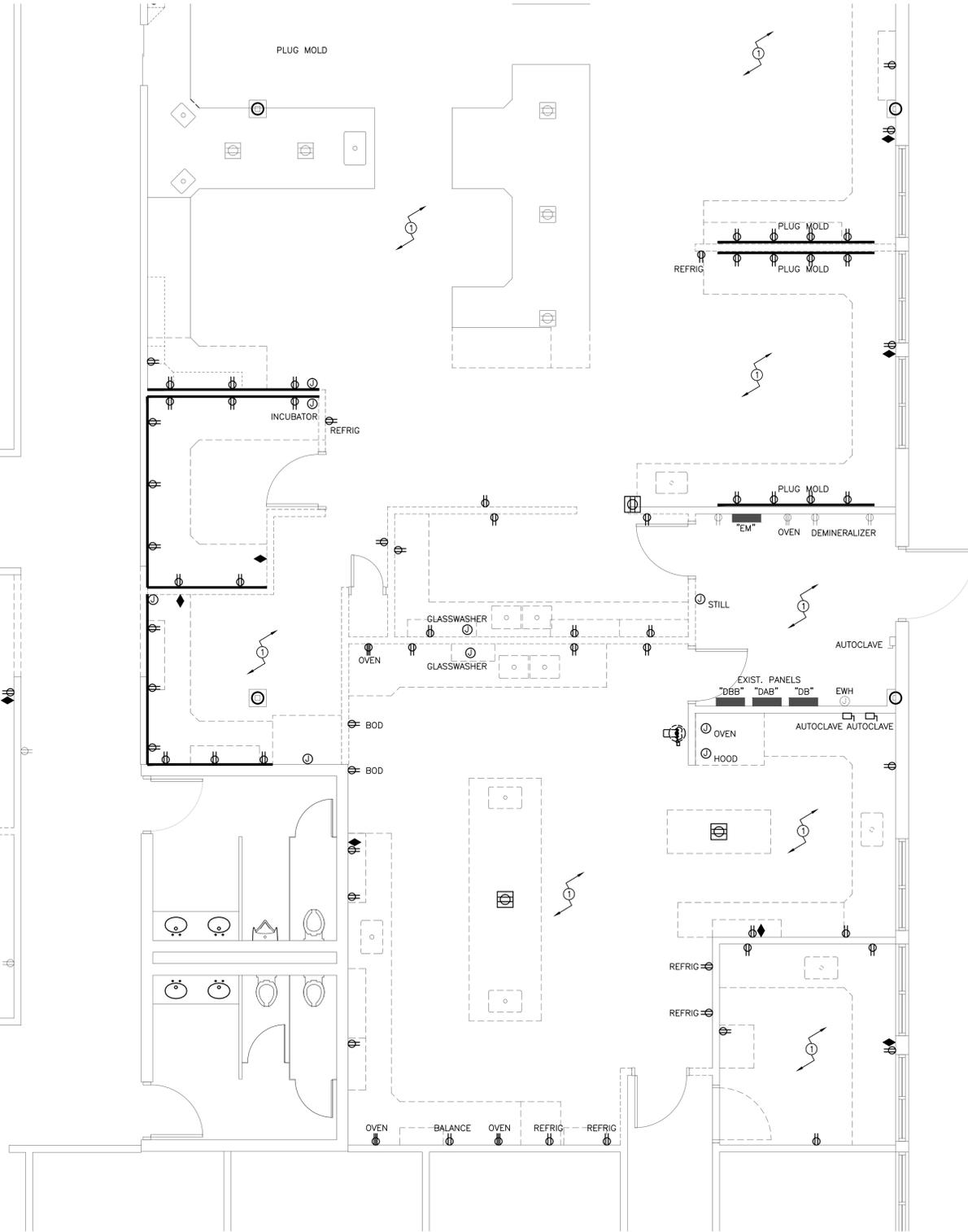
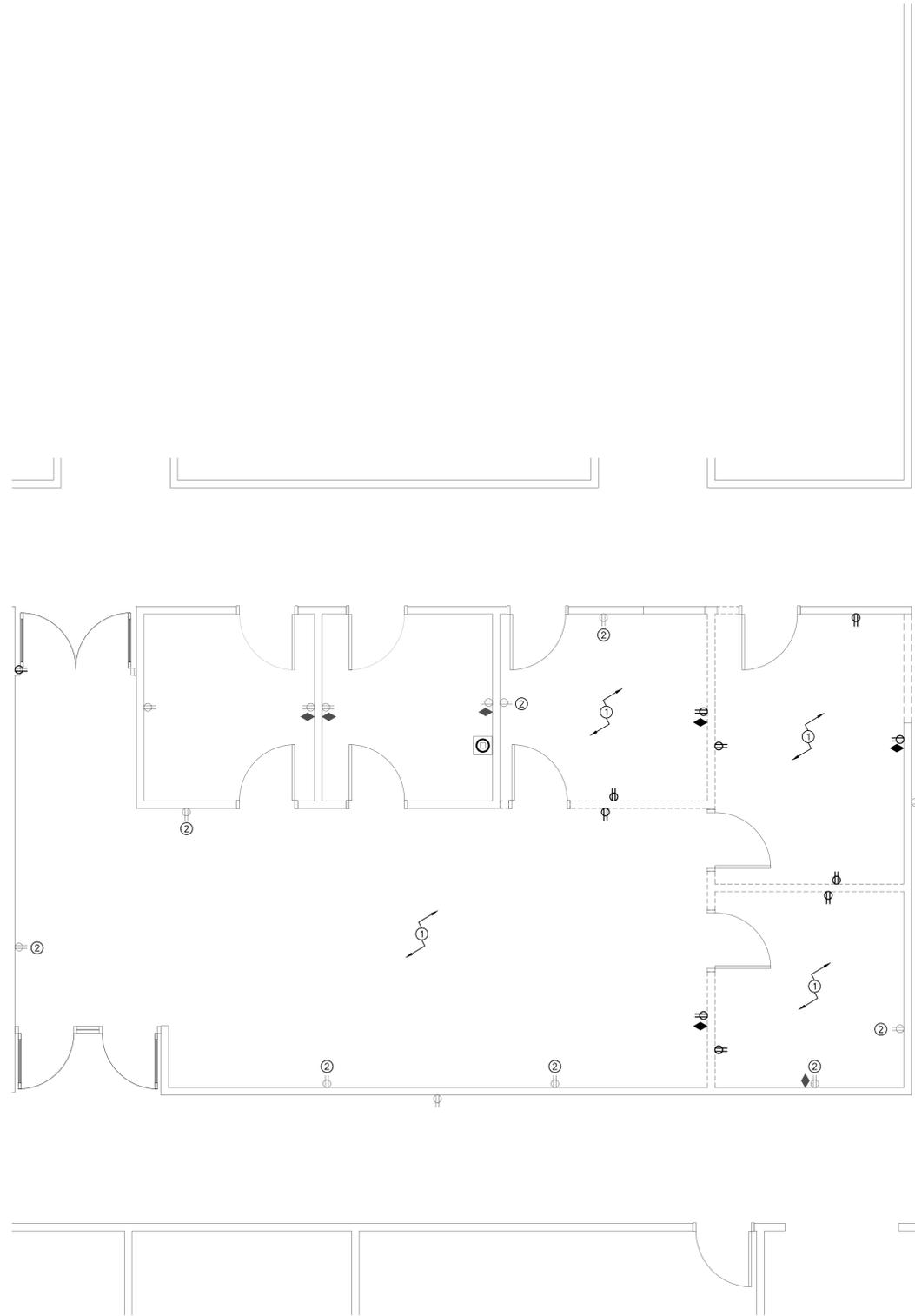
# Renovation & Adaptive Reuse: Adult Primary Care Clinic

Craven County Health Department 2818 Neuse Boulevard, New Bern, NC



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**DEMO PLAN KEY NOTES:**  
 EC SHALL REMOVE ALL EXISTING LIGHTING IN THIS AREA. MAINTAIN UNSWITCHED LEG OF CIRCUIT FOR REUSE WITH NEW LIGHTS (SEE ARCH DEMO PLAN)  
 REMOVE EXISTING DEVICE MAINTAIN WALL BOX & CIRCUIT FOR RECONNECTION TO NEW DEVICE

**GENERAL DEMO PLAN NOTES:**  
 1. EC IS RESPONSIBLE FOR DE-ENERGIZING ALL LTG, RECPT, SWITCH & GEAR ON WALLS OR EQUIPMENT TO BE REMOVED.  
 2. MAINTAIN ALL CIRCUITS FOR REUSE LABEL PULL BOXES & J-BOXES WITH CIRCUITS CONTAINED IN THEM.  
 3. KEEP ALL SWITCH, GEAR, STARTERS, CONTROLLERS, ECT. ON EQUIPMENT TO BE RELOCATED FOR REUSE IN NEW LOCATION.

**DEMO PLAN**  
 SCALE: 1/4"=1'-0"

**Renovation & Adaptive Reuse: Adult Primary Care Clinic**

Craven County Health Department 2818 Neuse Boulevard, New Bern, NC

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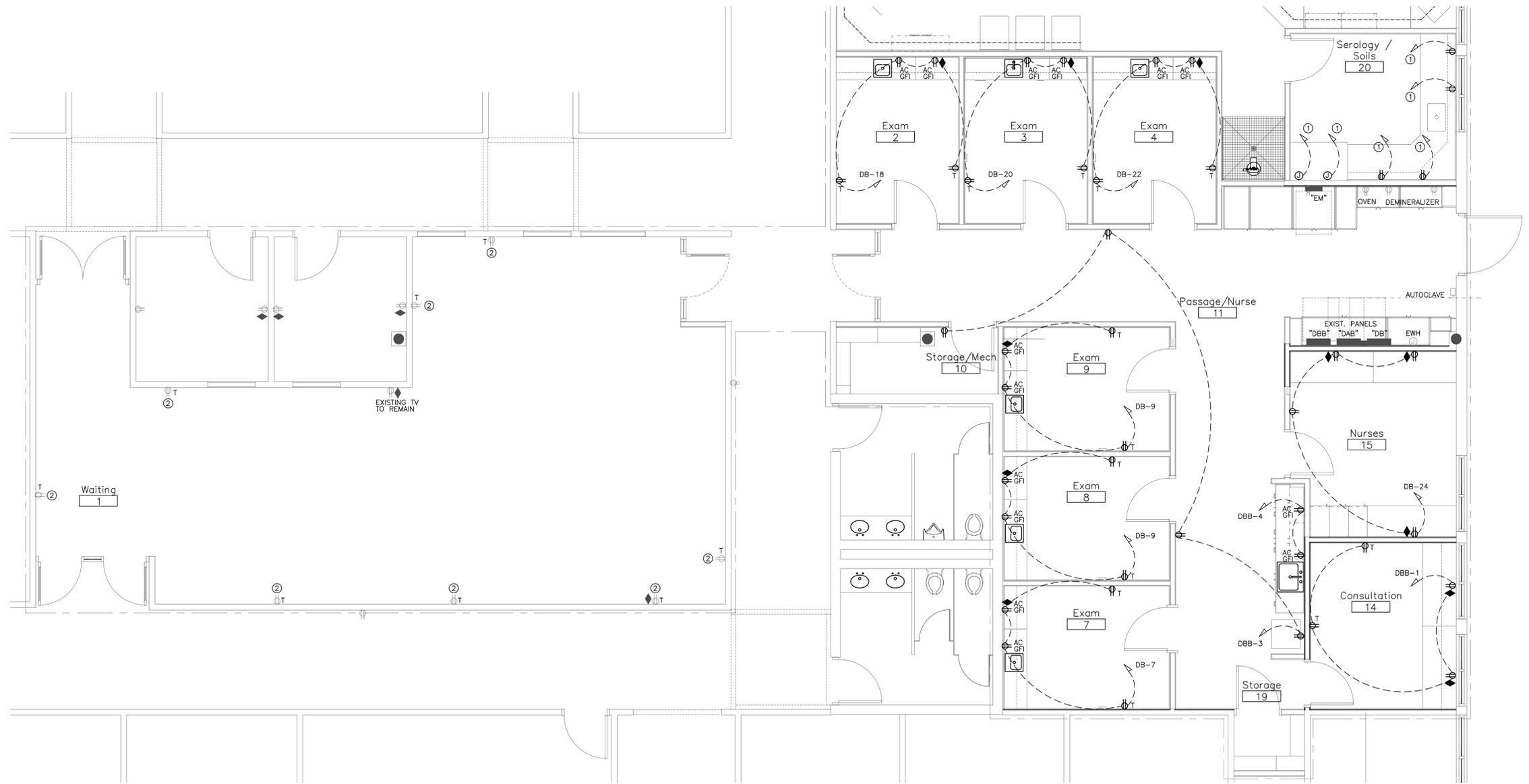
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**WAITING & EXAM ROOM POWER PLAN**  
SCALE: 1/4"=1'-0"

- POWER PLAN NOTES:**
- ① NEW LOCATION OF EXISTING EQUIPMENT. MAINTAIN EXISTING CIRCUIT AND PROVIDE NECESSARY FEEDERS FROM NEW LOCATION BACK TO CIRCUITS, CONDUITS AND CONNECTIONS.
  - ② PROVIDE & INSTALL NEW DEVICE IN EXISTING BOX TIE TO CIRCUIT MAINTAINED FOR REUSE IN BOX.

**Renovation & Adaptive Reuse: Adult Primary Care Clinic**

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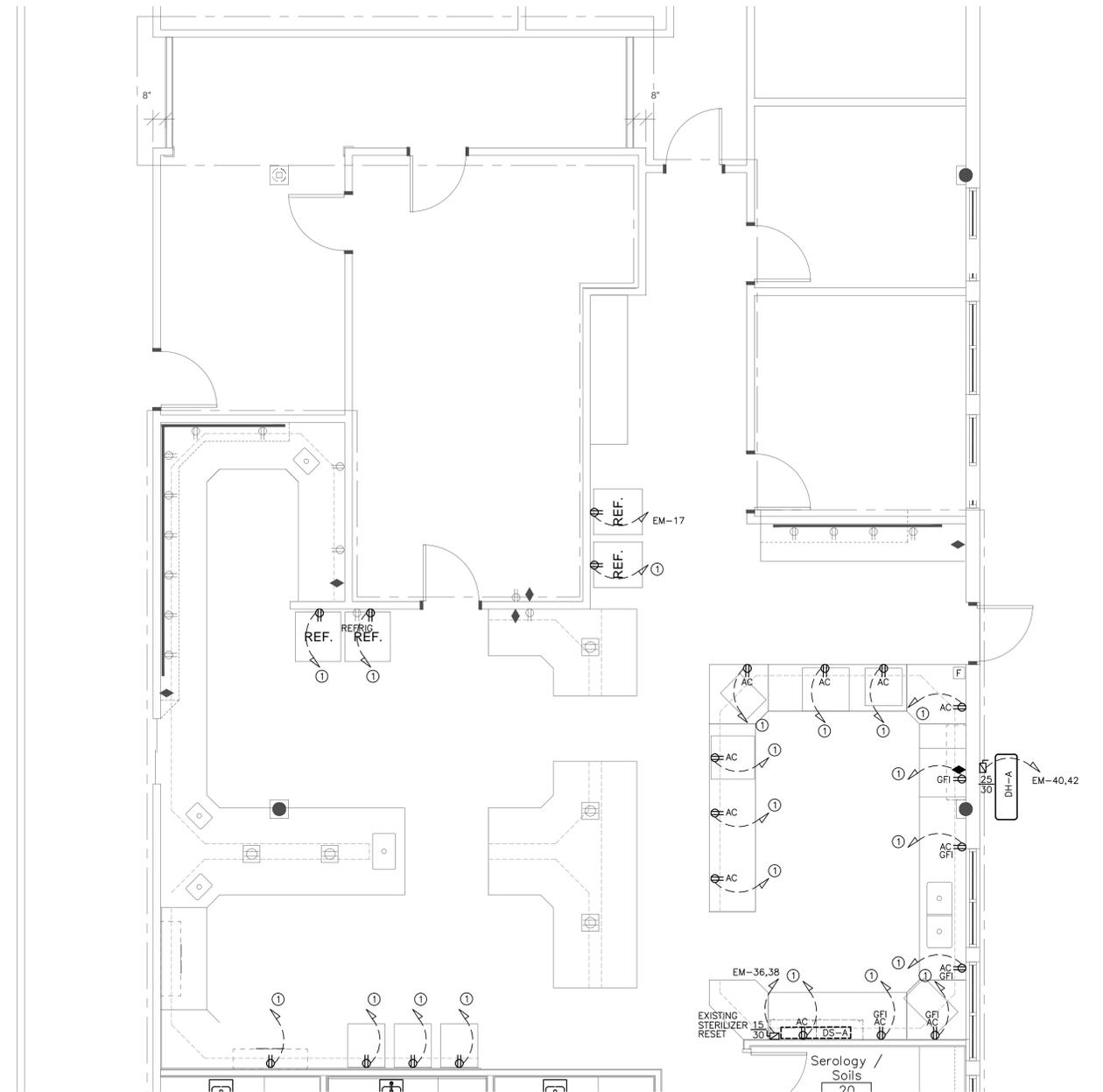
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ELECTRICAL LEGEND (REFER TO MOUNTING HEIGHT SCHEDULE FOR MOUNTING HEIGHT INFORMATION)	
	FLUORESCENT LIGHT FIXTURE, 2x4 FT.
	FLUORESCENT LIGHT FIXTURE NIGHT LIGHT
	FLUORESCENT STRIP LIGHT, 8 FT.
	FLUORESCENT STRIP LIGHT, 4 FT.
	FLUORESCENT LIGHT FIXTURE, 1x4 FT.
	FLUORESCENT LIGHT FIXTURE, 2'x2'
	POLE MOUNTED LIGHT FIXTURE, AS SPECIFIED
	FLUORESCENT LIGHT FIXTURE WALL SCONCE
	OWNER SELECTED PENDANT MOUNTED
	EXTERIOR TWO-HEAD LIGHT
	EXTERIOR DOOR LIGHT
	LIGHT AND EXHAUST FAN COMBINATION
	EXHAUST FAN
	H.I.D. LIGHT FIXTURE, AS SPECIFIED.
	RECESSED OR SURFACE MOUNTED ROUND FIXTURE
	RECESSED NIGHT LIGHT
	WALL PACK
	BOLLARD EXTERIOR LIGHT
	EXTERIOR GROUND MOUNTED FLOOD LIGHT
	JUNCTION BOX
	TELEPHONE OUTLET WITH COVER SEE DETAIL FOR INSTALLATION INSTRUCTIONS.
	DATA/LAN OUTLET WITH COVER. SEE DETAIL FOR INSTALLATION INSTRUCTIONS.
	EXIT LIGHT
	EMERGENCY EXIT LIGHT
	EMERGENCY LIGHT WALL MOUNTED UNLESS NOTED OTHERWISE.
	DUPLEX RECEPTACLE, 20 AMP, 120 V., "SPEC. GRADE"
	220 V. RECEPTACLE, MATCH APPLIANCE PLUG
	FLUSH MOUNTED FLOOR DUPLEX RECEPTACLE
	FLUSH MOUNTED FLOOR DATA/LAN OUTLET
	QUAD RECEPTACLE, 20 AMP, 120 V., "SPEC. GRADE"
	WALL SWITCH, SINGLE POLE, 20 AMP, 120 V., "SPEC. GRADE"
	WALL SWITCH, DIMMER, 20 AMP, 120 V., "SPEC. GRADE"
	WALL SWITCH, 3-WAY, 20 AMP, 120 V., "SPEC. GRADE"
	MANUAL MOTOR STARTER, 20A, 120V
	DOUBLE GANG WALL SWITCH, 20 AMP, 120V., "SPEC. GRADE"
	NON-FUSED DISCONNECT SWITCH, 240V, 30A, U.N.O.
	FUSED DISCONNECT SWITCH DISCONNECT FUSE SIZE DISCONNECT FRAME SIZE
	FIRE ALARM MANUAL PULL STATION
	FIRE ALARM HORN/STROBE
	FIRE ALARM STROBE
	SMOKE DETECTOR
	HEAT DETECTOR, CEILING MOUNTED
	DUCT SMOKE DETECTOR
	FIRE ALARM CONTROL PANEL, FLUSH MOUNTED.
	GROUND - EXTEND AND CONNECT TO APPROVED GROUND
	ELECTRICAL PANEL - SURFACE MOUNTED.
	ELECTRICAL PANEL - FLUSH MOUNTED.
	UNSWITCHED CIRCUIT, 2#12 & 1 #12 G. IN 3/4" C., U.N.O.
	SWITCHED CIRCUIT
	?-# PANEL NAME-CIRCUIT #
	WP WEATHER PROOF
	GFI GROUND FAULT INTERRUPTER
	T TAMPER PROOF
	A.F.F. ABOVE FINISHED FLOOR
	NL NIGHT LIGHT
	U.N.O. UNLESS NOTED OTHERWISE
	IG ISOLATED GROUND
	LC LIGHTING CONTACTOR
	EWC ELECTRIC WATER COOLER
	AC ABOVE COUNTER
	BC BELOW COUNTER
	EX EXISTING
	ETR EXISTING TO REMAIN
	ER EXISTING TO BE RELOCATED



**LAB POWER PLAN**  
SCALE: 1/4"=1'-0"

COORDINATE ALL RELOCATED EQUIPMENT LOCATION WITH OWNER. SEE NAME PLATE ELECTRICAL DATA FOR POWER REQUIREMENTS. MAINTAIN EXISTING CIRCUITS FOR REUSE. ALL EQUIPMENT REQUIRING EMERGENCY BACK UP GENERATOR POWER SHALL BE FED FROM PANEL "EM" AND SHALL BE RED DEVICES WITH RED COVER PLATES.

**POWER PLAN NOTES:**  
① NEW LOCATION OF EXISTING EQUIPMENT. MAINTAIN EXISTING CIRCUIT AND PROVIDE NECESSARY FEEDERS FROM NEW LOCATION BACK TO CIRCUITS, CONDUITS AND CONNECTIONS.

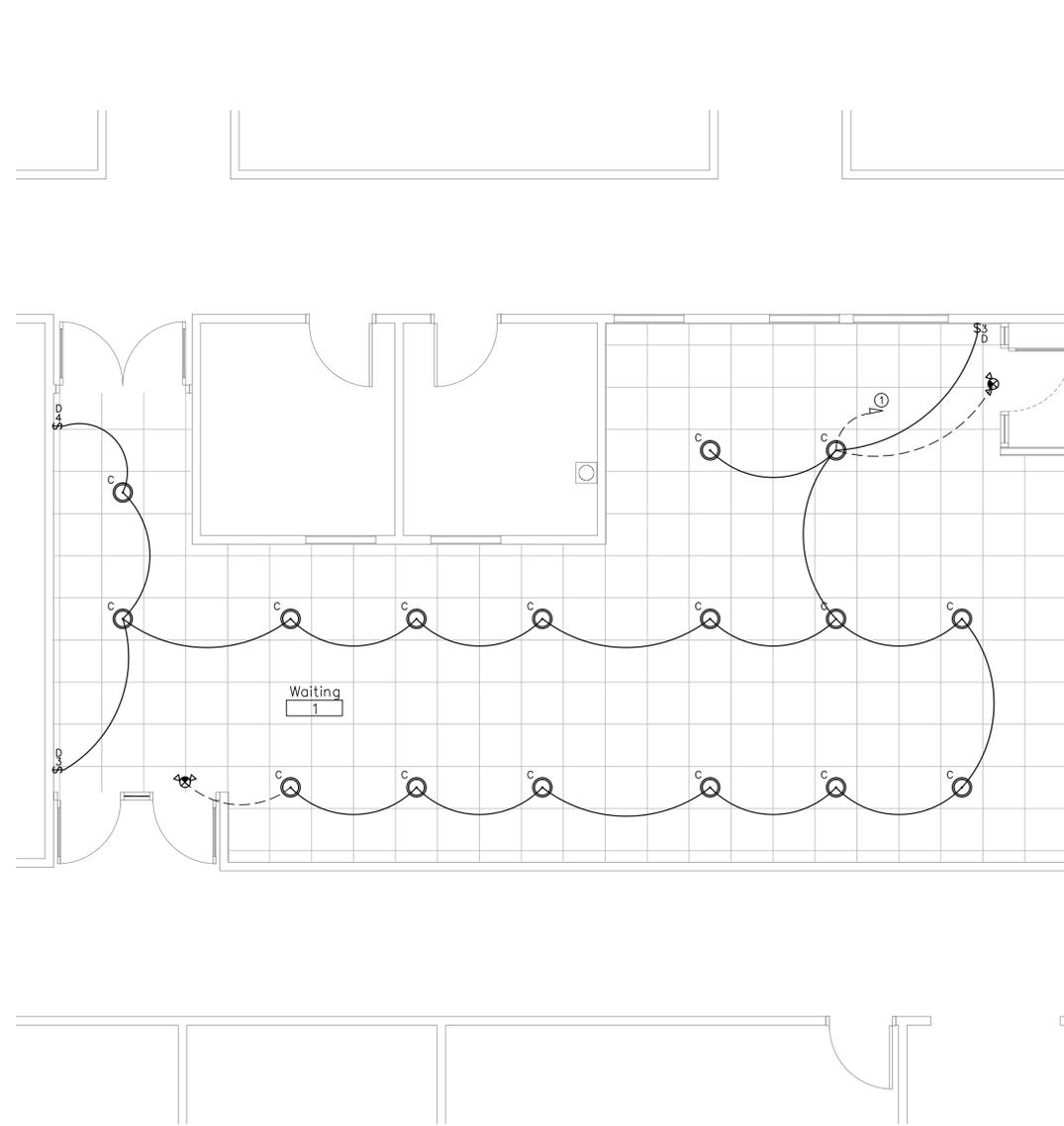
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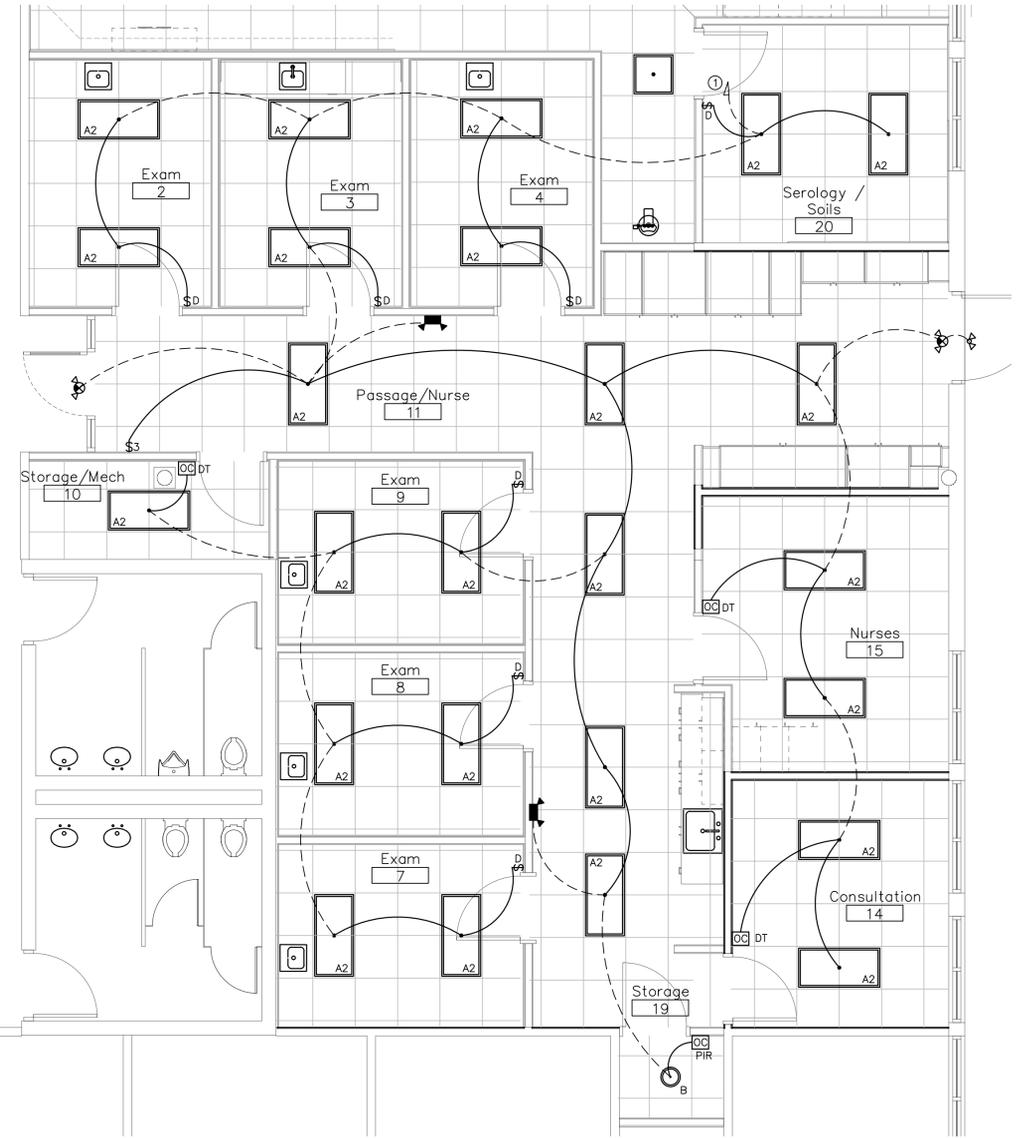
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**LIGHTING PLAN**  
SCALE: 1/4"=1'-0"



**LIGHTING PLAN NOTES:**  
① TIE NEW LIGHT FIXTURES TO EXISTING LOCAL LIGHTING CIRCUIT. 1900 WATTS MAXIMUM PER CIRCUIT.

**Renovation & Adaptive Reuse: Adult Primary Care Clinic**

Craven County Health Department 2818 Neuse Boulevard, New Bern, NC

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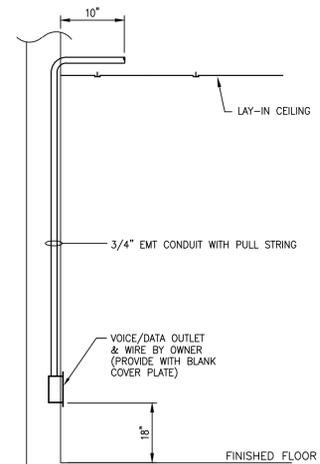
## LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	LAMPS	VOLTS	WATTS	B.F.
A2	2'x4' LED LIGHT FIXTURE WITH FROSTED PRISMATIC LENS AND ROLLED-EDGE STEEL CHANNEL AND DEEP REINFORCEMENT RIBS. DRIVER FOR 0-10 DIMMING. PROVIDE WILLIAMS: 50-G-S-2-4-LEDPH*35/830-A12125-MVOLT OR EQUAL.	LED	MVOLT	34	-
B	6" ROUND RECESSED MOUNTED LED LIGHT FIXTURE. 0-10 DIMMING DRIVER. PROVIDE WILLIAMS #: LED60-OS15/840-CS-EDD*OS-120 OR EQUAL BY LITHONIA, DAYBRITE, HUBBLE OR COLUMBIA	LED	MVOLT	25	-
C	6" ROUND RECESSED MOUNTED LED LIGHT FIXTURE WITH LUMINOUS DISC. 0-10 DIMMING DRIVER. PROVIDE WILLIAMS #: LED60-OS20/840-CS-LAD-EDD*OS-UNV OR EQUAL BY LITHONIA, DAYBRITE, HUBBLE OR COLUMBIA	LED	MVOLT	28	-
D	2'x2' LED LIGHT RECESSED FIXTURE. DRIVER FOR 0-10 DIMMING. PROVIDE WILLIAMS: HETG-S22-LEDPH38-A-EDPH-UNV OR EQUAL.	LED	MVOLT	45	-
	CEILING OR WALL MOUNTED LED EXIT & 2-HEAD EMERGENCY LIGHT CONFORMING TO NFPA 101 STANDARDS. w/ BATTERY & SOLID STATE CHARGER, SELF DIAGNOSTICS w/ A TEST CYCLE EVERY 30 DAYS MINIMUM, SELF-CONTAINED, DOUBLE OR SINGLE WHITE FACE/BODY, ABS THERMOPLASTIC HOUSING, PILOT & STATUS INDICATING LIGHTS, TEST SWITCH, & 120 MIN. EMERGENCY RUN TIME. EXIT LIGHT SHALL CONTINUE TO OPERATE FOR 24 HOURS FOLLOWING POWER OUTAGE; EXIT SIGN SHALL HAVE 5 YEAR WARRANTY. PROVIDE MCPHILBEN #: CCTXL-R-3-R-W OR EQUAL BY EMERGLITE OR LITHONIA	RED LED 2-5.4W TUNGSTEN	120/ 6V	10.8	N/A
 OR 	CEILING OR WALL MOUNTED LED EXIT LIGHT CONFORMING TO NFPA 101 STANDARDS. w/ BATTERY & SOLID STATE CHARGER, SELF DIAGNOSTICS w/ A TEST CYCLE EVERY 30 DAYS MINIMUM, SELF-CONTAINED, DOUBLE OR SINGLE WHITE FACE/BODY, ABS THERMOPLASTIC HOUSING, PILOT & STATUS INDICATING LIGHTS, TEST SWITCH, & 120 MIN. EMERGENCY RUN TIME; EXIT SIGN SHALL HAVE 5 YEAR WARRANTY. PROVIDE MCPHILBEN #: CXXL-3-R-W OR EQUAL BY EMERGLITE OR LITHONIA	RED LED	120/ 6V	2	N/A
	AUTOMATIC, SELF-CONTAINED, SELF DIAGNOSTIC, MAINTENANCE FREE, 2-HEAD EMERGENCY LIGHT. UL 924 LISTED AND NFPA 101 COMPLIANT, ABS THERMOPLASTIC HOUSING, PILOT & STATUS INDICATING LIGHTS, SELF DIAGNOSTICS SHALL INCLUDE CONTINUOUS SELF CHECKS AND 30 MINUTE FULL LOAD TEST WITH CHARGER OFF EVERY 30 DAYS. PROVIDE MCPHILBEN #: CAXGH OR EQUAL BY EMERGLITE OR LITHONIA	2-9W MR16	120/ 6V	18	N/A
	WALL MOUNTED DOOR LIGHT WITH DIE-CAST ALUMINUM HOUSING. PROVIDE WITH UL LISTED, 90 MINUTE, EMERGENCY BACK-UP BATTERY SYSTEM. PROVIDE WITH UL LISTING FOR WET LOCATION MOUNTING. 2 LAMPS MEETING NFPA 101. PROVIDE MCPHILBEN#: PDN-BZ OR EQUAL BY LITHONIA OR COLUMBIA.	2-6W XENON WEDGE-BASED	120/ 6V	12	N/A

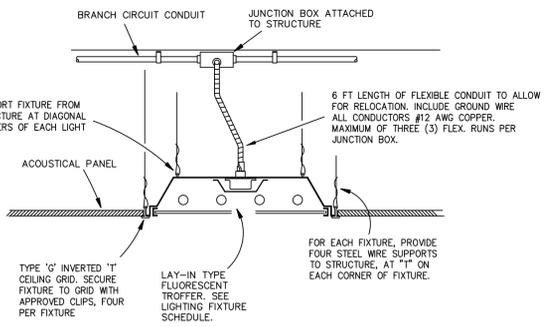
## OC. SENSOR SCHEDULE

TYPE	DESCRIPTION
PIR	<u>PASSIVE INFRARED</u> -WALL MOUNT - WATT STOPPER #PW-100 -CEILING MOUNT - WATT STOPPER #CI-305 W/BZ-150 PWR PACK
US	<u>ULTRASONIC</u> -WALL MOUNT - WATT STOPPER #UW-100 -CEILING MOUNT - WATT STOPPER #UT-305 W/BZ-150 PWR PACK
DT DT-DR	<u>DUAL TECHNOLOGY</u> -WALL MOUNT - WATT STOPPER #DW-100 -WALL MOUNT DUAL RELAY - WATT STOPPER #DW-200 -CEILING MOUNT - WATT STOPPER #DT-305 W/BZ-150 PWR PACK
TIME	<u>PUSH BUTTON TIMER</u> -WALL MOUNT - WATT STOPPER #TS-400

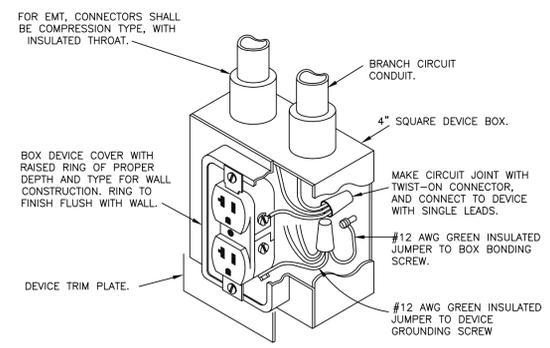
\* ALL OCCUPANCY SENSORS SPECIFIED USE 120/277V AC POWER. EQUALS ACCEPTED, MAKE AND MODEL USED TO SET STANDARD OF PERFORMANCE & QUALITY.  
\* ALL OCCUPANCY SENSORS INSTALLED ARE 20A RATED, CIRCUITED PER PLANS.



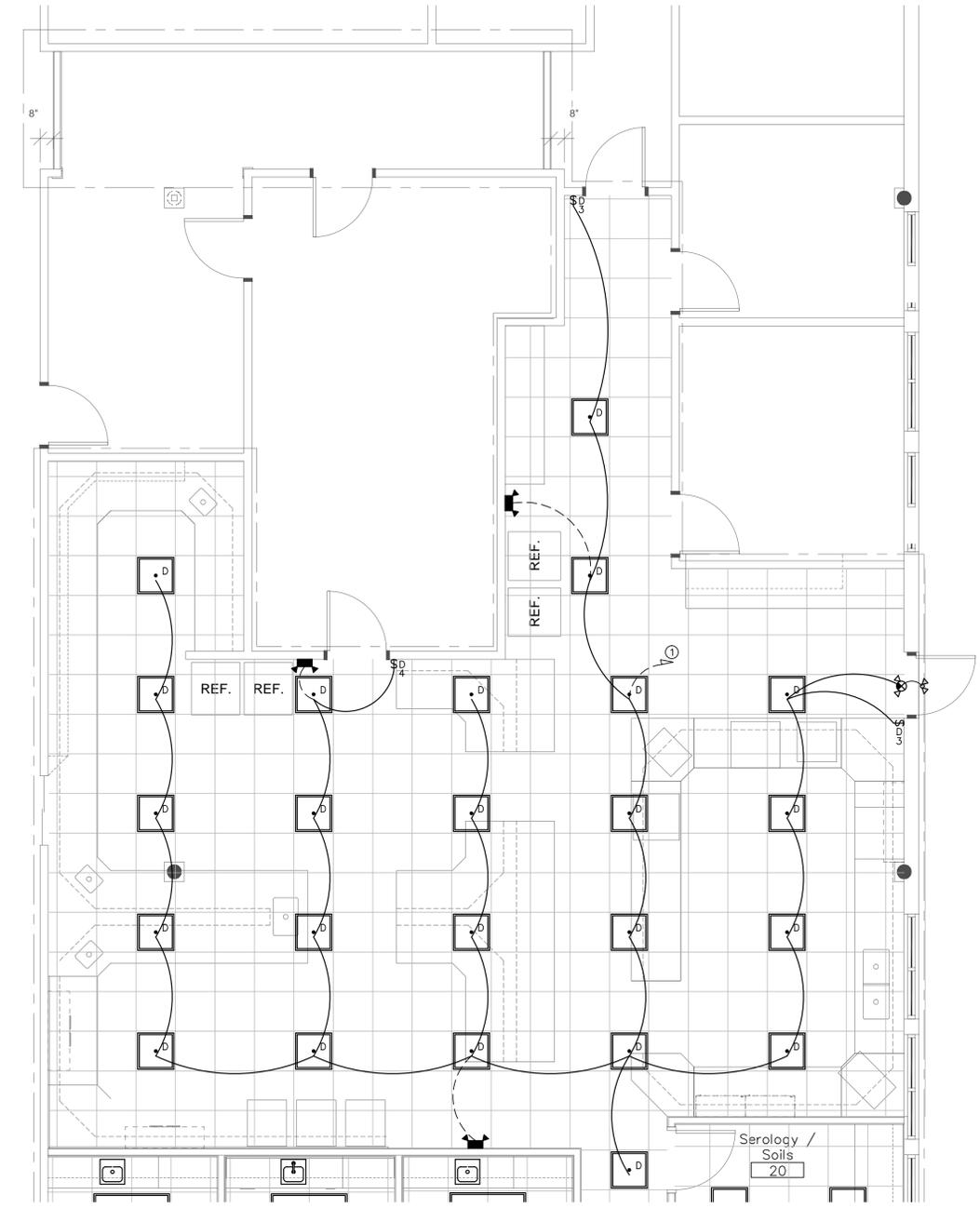
**VOICE/DATA DETAIL**  
SCALE: NTS



**FLUORESCENT TROFFER INSTALLATION**  
SCALE: NONE



**TYPICAL DUPLEX RECEPTACLE INSTALLATION**  
SCALE: NONE



**LAB LIGHTING PLAN**  
SCALE: 1/4"=1'-0"

**LIGHTING PLAN NOTES:**  
① THE NEW LIGHT FIXTURES TO EXISTING LOCAL LIGHTING CIRCUIT. 1900 WATTS MAXIMUM PER CIRCUIT.

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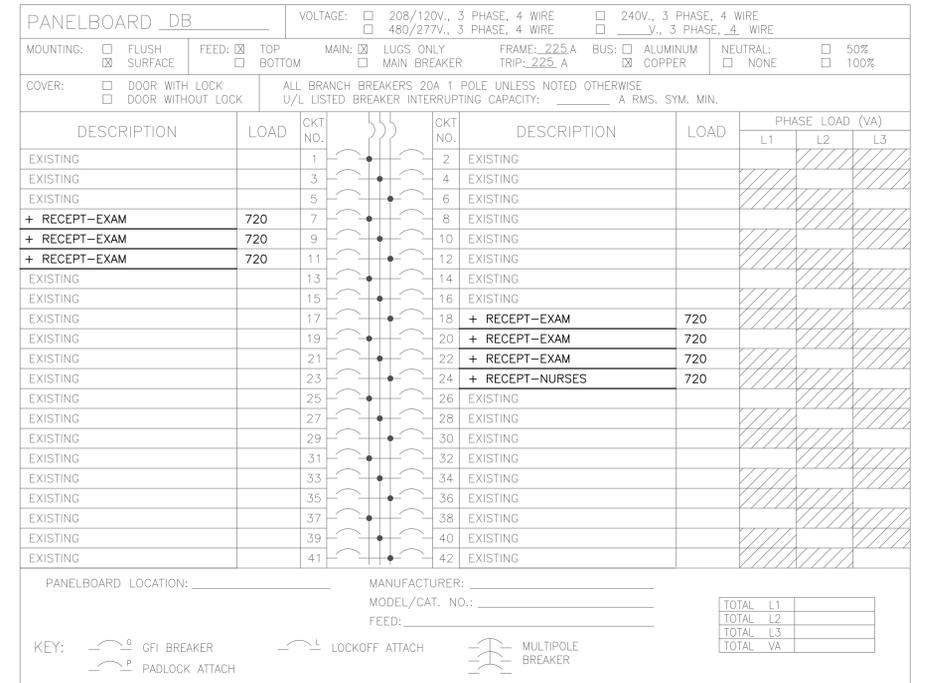
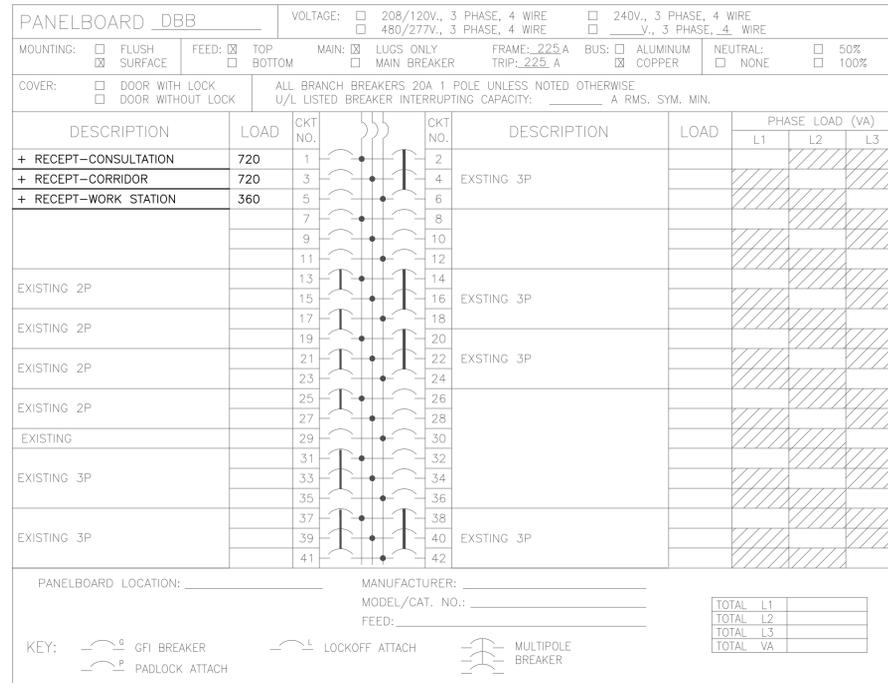
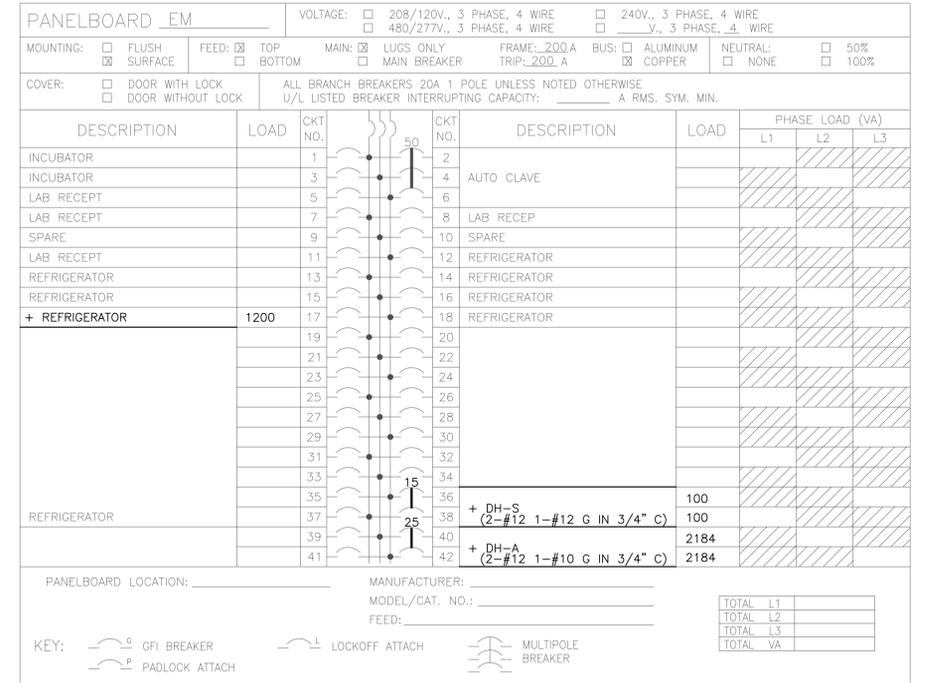
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- THESE DRAWINGS ARE DIAGRAMMATIC ONLY AND ARE NOT INTENDED TO SHOW MINOR DETAILS AND EXACT LOCATIONS. DESIGN ADJUSTMENTS SHALL BE ANTICIPATED BY THE CONTRACTOR TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
- ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH CURRENT NEC/NFPA 70. CONTRACTOR SHALL NOTIFY ENGINEER REGARDING ANY CODE DISCREPANCIES SHOWN ON PLAN. ANY PERMIT OR INSPECTION FEES ARE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- CONTRACTOR SHALL INSTALL, GROUND AND BOND SYSTEM PER THE CURRENT NEC.
- CONTRACTOR SHALL NOT PUT MORE THAN SIX (6) DUPLEX RECEPTACLES ON ANY GIVEN 1P-20A CIRCUIT UNLESS SHOWN OTHERWISE.
- MINIMUM WIRE SIZE SHALL BE #12 AWG., MINIMUM CONDUIT SIZE SHALL BE 3/4".
- CONTRACTOR SHALL COORDINATE TELEPHONE AND DATA OUTLETS REQUIRED WITH OWNER PRIOR TO GYP. BOARD BEING INSTALLED.
- HALLWAY AND MAINTENANCE RECEPTACLES SHALL NOT BE CIRCUITED WITH OFFICE OR OTHER GENERAL PURPOSE RECEPTACLES.
- ELECTRICAL CONTRACTOR SHALL PROVIDE HACR RATED CIRCUIT BREAKERS ON ALL HVAC EQUIPMENT.
- CONDUCTORS SHALL BE TYPE THHN, THWN, OR THW. BRANCH CIRCUIT CONDUCTOR SHALL NOT BE SMALLER THAN No. 12 AWG., EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE. HOME RUNS ORIGINATING MORE THAN 80' AT 120V FROM PANEL LOCATION SHALL BE No. 10 AWG MINIMUM SIZE. WIRES No. 10 AWG AND SMALLER SHALL BE SOLID; WIRES No. 8 AWG AND LARGER SHALL BE STRANDED. PROVISIONS OF SECTION 210-5 COLOR CODE, NEC, SHALL BE STRICTLY COMPLIED WITH AND BE CONSISTENT THROUGHOUT ENTIRE SYSTEM.
- ALL CIRCUITS SHALL BE PROVIDED WITH AN INSULATED EQUIPMENT GROUND CONDUCTOR SIZED IN ACCORDANCE WITH CURRENT NEC TABLE 250-122. HASHMARK FOR GROUNDING CONDUCTOR IS NOT INDICATED ON THESE DRAWINGS. RACEWAY SHALL NOT BE USED AS EQUIPMENT GROUND.
- IN ADDITION TO MECHANICAL FASTENING TO CEILING TRACK, SUPPORT LIGHT FIXTURES AT EACH CORNER INDEPENDENTLY OF SUSPENDED CEILING WITH 12 GAUGE WIRE. CONNECT TO STRUCTURAL SYSTEM OF BUILDING.
- ALL CONDUIT SHALL BE CONCEALED UNLESS OTHERWISE NOTED. ALL EMPTY CONDUIT SHALL HAVE A PULL WIRE.
- SERVICE ENTRANCE CONDUCTORS SHALL BE IN CONDUIT (RIGID OR PVC). EXTERIOR CONDUIT EXPOSED ABOVE SLAB SHALL BE RIGID. INTERIOR CONDUIT EXPOSED SHALL BE ELECTRICAL METALLIC TUBING (EMT). EMT SHALL BE COLD-ROLLED STEEL TUBING w/A COATING ON THE OUTSIDE AND PROTECTED ON THE INSIDE BY A ZINC, ENAMEL, OR EQUIVALENT CORROSION RESISTANT COATING AND CONFORMING TO THE REQUIREMENTS OF ANSI C 80.3-1996 OR LATER EDITION. ALL UNDERGROUND CONDUIT SHALL BE UL LISTED SCHD 40 PVC CONFORMING TO ARTICLES 352 & 300 OF THE NEC. WHERE SCHD 40 PVC IS INSTALLED BELOW GRADE OR UNDER FLOOR SLABS, THE ELBOWS REQUIRED TO TURN THE RACEWAY UP INTO CABINETS, EQUIPMENT, ETC., SHALL BE OF RIGID STEEL AND SHALL CONTINUE AS RIGID STEEL TO THE CABINET, EQUIPMENT, ETC. FEEDER CIRCUITS SHALL BE IN CONDUIT. E.C. MAY USE M.C. CABLE FOR CONCEALED BRANCH CIRCUITS AND LIQUID TIGHT FOR CONNECTIONS FOR EXTERIOR EQUIPMENT CONNECTIONS TO SAFETY SWITCHES.
- ALL JUNCTION OR DEVICE BOXES SHALL HAVE A COVER.
- ALL 1P-20A CIRCUITS SHALL BE 2-#12 & 1-#12G IN 3/4" U.N.O.
- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH ALL VOLUMES OF THE NCSBC, INSPECTORS HAVING JURISDICTION, AND ALL OTHER APPLICABLE CODES AND ORDINANCES.
- EACH PIECE OF ELECTRICAL GEAR, EQUIPMENT, ETC., SHALL BEAR A THIRD PARTY TESTING LABEL APPROVED BY CITY OF RALEIGH. ("UL" OR OTHER)
- METAL ROOF DECKING SHALL NOT BE PENETRATED TO SUPPORT ELECTRICAL ITEMS.
- ALL EMERGENCY AND EXIT LIGHTS SHALL BE CONNECTED TO THE UNINTERRUPTED SIDE OF THE LOCAL LIGHTING CIRCUIT.
- INSTALL ENGRAVED PHENOLIC LABELS ON ALL ELECTRICAL GEAR, DISCONNECTS, ETC. FASTEN WITH SCREW FASTENERS.
- E.C. SHALL INSTALL HEAVY DUTY NEMA-1 DISCONNECTS AT ALL INTERIOR LOCATIONS INDICATED AND HEAVY DUTY NEMA-3R DISCONNECTS AT ALL EXTERIOR LOCATIONS INDICATED ON THESE DRAWINGS.
- VERIFY WITH OWNER LOCATION/TYPE OF ALL FIXTURES, PANEL BOXES, OUTLET PLACEMENT, ETC. BY HOLDING AN ELECTRICAL WALKTHROUGH ON THE BUILDING SITE ONCE FRAMING IS COMPLETED.
- ELECTRICAL BOXES INSTALLED IN U.L. RATED WALLS SHALL BE LOCATED A MINIMUM OF 2'-0" FROM ANY OTHER ELECTRICAL BOX IN THAT WALL.
- LIGHTING SWITCHES, RECEPTACLES AND/OR DATA OUTLETS SHALL NOT BE MOUNTED BACK TO BACK IN ANY WALL.
- CABLE LOCATED IN PLENUMS SHALL BE PLENUM-RATED.
- E.C. SHALL INSTALL COMPLY WITH ANSI A117.1 FOR OUTLET AND CONTROL SWITCH MOUNTING HEIGHTS FOR ADA ACCESSIBILITY.
- ALL PATIENT CARE AREAS SHALL MEET THE REQUIREMENTS OF NEC517 FOR NON CRITICAL CARE.
- EC SHALL PROVIDE TAMPER PROOF OUTLETS WHERE INDICATED ON PLANS AND WHERE REQUIRED BY NEC 406.14 FOR AREAS WHERE CHILDREN ARE LIKELY TO BE PRESENT FOR PERIODS OF TIME.
- DEVICE COLOR SELECTED BY ARCHITECT OR SHALL MATCH EXISTING EXCEPT CIRCUITS FED FROM EMERGENCY PANEL "EM" ALL EMERGENCY OUTLETS SHALL BE RED WITH RED COVER PLATES.



**Renovation & Adaptive Reuse: Adult Primary Care Clinic**

Craven County Health Department 2818 Neuse Boulevard, New Bern, NC



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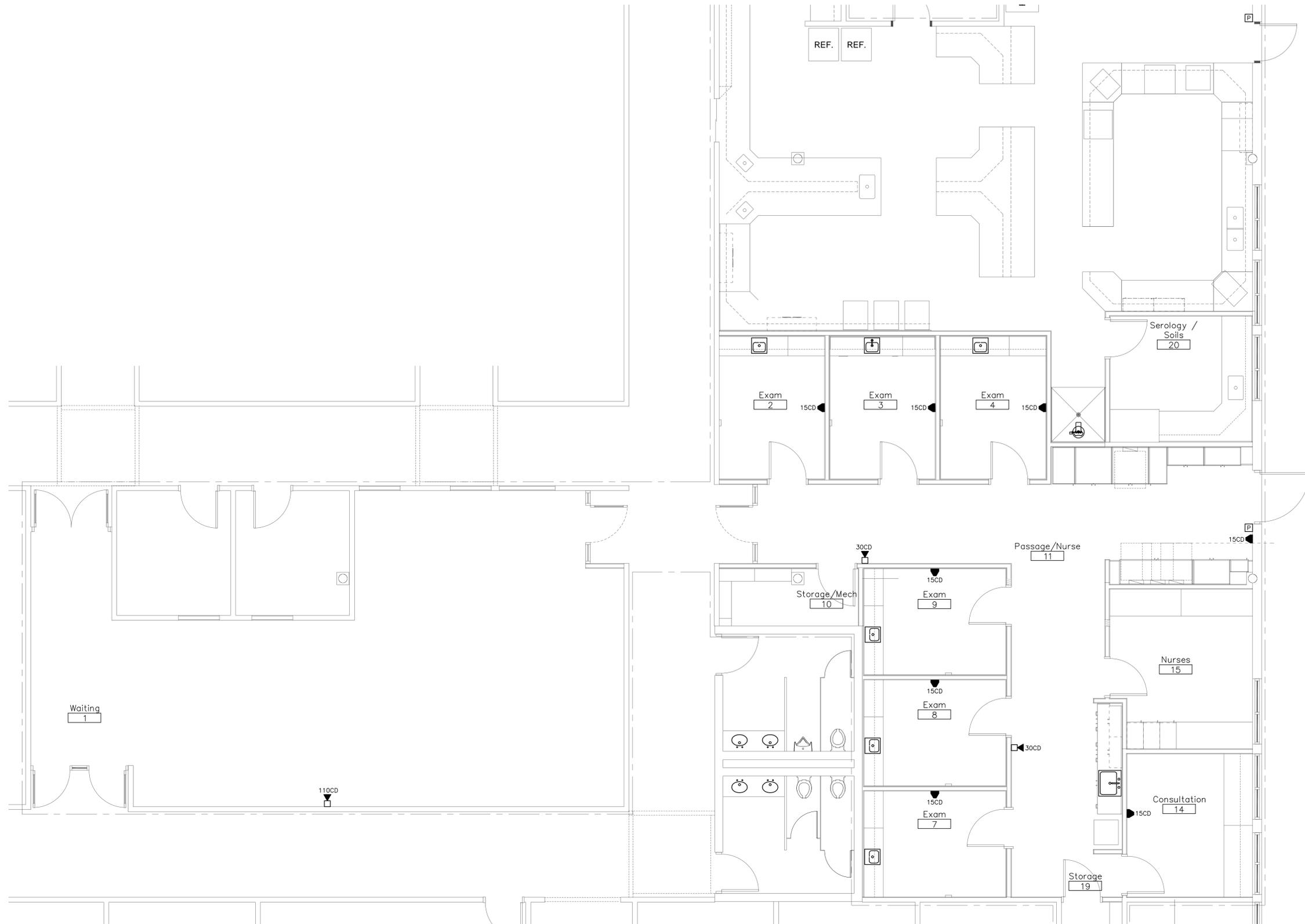
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**FIRE ALARM PLAN**  
SCALE: 1/4"=1'-0"

**Renovation & Adaptive Reuse: Adult Primary Care Clinic**

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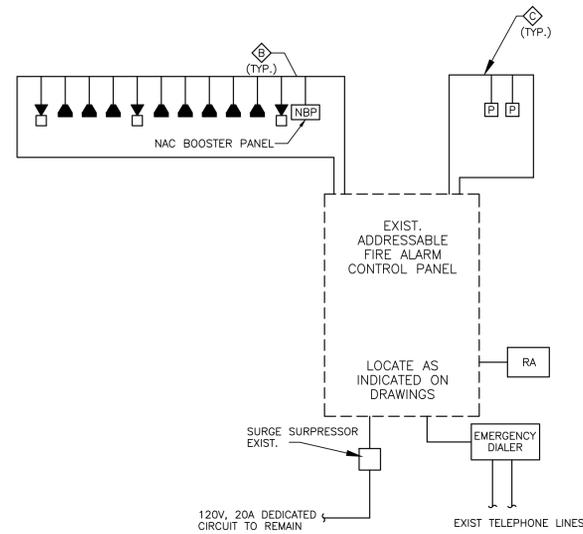
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FIRE ALARM SYSTEM ACTION MATRIX	SYSTEM ACTION																			
	ACTUATE COMMON ALARM SIGNAL INDICATOR	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE TROUBLE SIGNAL	ACTUATE APPROPRIATE LOCATION INDICATOR	ACTUATE ALL AUDIBLE EVACUATION SIGNALS	ACTUATE ALL VISIBLE EVACUATION SIGNALS	DISPLAY / PRINT CHANGE OF STATUS	TRANSMIT ALARM SIGNAL TO SUPERVISING STATION	TRANSMIT SUPERVISORY SIGNAL TO SUPERVISING STATION	TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION	FAN SHUT DOWN (UNIVERSAL)	MUSIC & SPECIALTY LTG SHUT DOWN	DAMPER SHUT DOWN	RECALL ELEVATOR TO GRND FLOOR	SHUNT ALL GAS & POWER UNDER HOOD	COMMENTS/REMARKS	
INITIATING DEVICE OR CONDITION																				
MANUAL ALARM STATION	X	X					X	X	X	X	X			X	X	X				
SMOKE SENSOR / DETECTOR	X	X					X	X	X	X	X			X	X	X				
DUCT SENSOR / DETECTOR			X	X			X	X	X	X	X			X	X	X				
ELEVATOR SMOKE SENSORS (SHAFT & LOBBIES)	X	X					X	X	X	X	X			X	X	X	X			
KITCHEN HOOD SUPPRESSION SYS	X	X					X	X	X	X	X			X	X	X			X	
WATERFLOW SWITCH	X	X					X	X	X	X	X			X	X	X				
TAMPER SWITCH			X	X			X			X										
POST INDICATOR VALVE SWITCH			X	X			X			X				X						
FIRE ALARM AC POWER FAILURE					X	X				X			X							
FIRE ALARM SYSTEM LOW BATTERY					X	X				X			X							
OPEN CIRCUIT					X	X				X			X							
GROUND FAULT					X	X				X			X							
NOTIFICATION APPLIANCE CIRCUIT WIRE-TO-WIRE SHORT					X	X				X										

**WIRE LEGEND**

- ◇ 1 PAIR #16 SHIELDED CABLE
- ◇ 2 COND. #14 THHN
- ◇ 4 COND. #14 THHN
- ◇ 8 COND. #22
- ◇ 2 PAIR #18 SHIELDED + 2 COND. # 14 THHN



**FIRE ALARM SYMBOL LEGEND**  
(SEE MOUNTING HEIGHT SCHEDULE FOR MOUNTING INFORMATION UNLESS NOTED OTHERWISE)

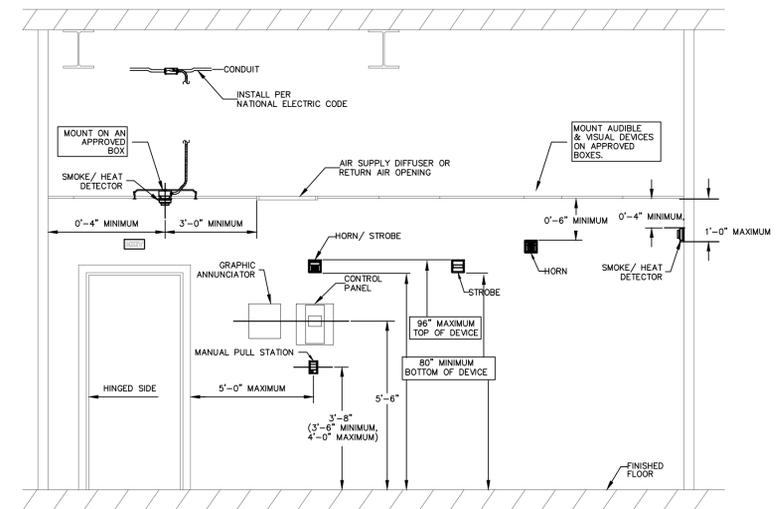
- [P] FIRE ALARM MANUAL PULL STATION
- [H] FIRE ALARM HORN/STROBE
- [S] FIRE ALARM STROBE
- [S] SMOKE DETECTOR
- [SD] DUCT MOUNTED SMOKE DETECTOR, PROVIDED AND WIRED BY E.C., INSTALLED BY M.C.
- [H] HEAT DETECTOR, CEILING MOUNTED
- [FACP] FIRE ALARM CONTROL PANEL, FLUSH MOUNTED
- [RA] REMOTE ANNUNCIATOR PANEL, FLUSH MOUNTED
- [KX] KNOX BOX (COORDINATE WITH LOCAL FIRE MARSHALL)
- [NBP] APPLIANCE BOOSTER POWER SUPPLY
- [W] WATER FLOW SENSOR
- [T] TAMPER SWITCH
- [M] MONITOR MODULE
- [R] RELAY
- [RIL] DUCT MOUNTED SMOKE DETECTOR REMOTE INDICATOR LIGHT MOUNTED IN CEILING PROVIDED AND INSTALLED BY E.C., LABEL ACCORDING TO MECHANICAL UNIT SERVED.

**FIRE ALARM RISER**  
SCALE: NTS

**FIRE ALARM INSTALLATION NOTES:**

- FIRE ALARM SHALL BE INSTALLED BY A MANUFACTURER APPROVED INSTALLATION COMPANY.
- E.C. OR E.C.'S REPRESENTATIVE SHALL PERFORM THOROUGH TRAINING WITH OWNER'S REPRESENTATIVES PRIOR TO OWNER OCCUPANCY OF THE BUILDING.
- FIRE ALARM SYSTEM SHALL BE INSTALLED IN ACCORDANCE TO ALL APPLICABLE STATE AND LOCAL LAWS AND IN ACCORDANCE WITH THE LATEST EDITION OF NFPA 72.
- ALARM SHALL HAVE A SOUND LEVEL MEETING THE dB REQUIREMENTS OF 907.6.2.1.1 OF THE NC FIRE PREVENTION CODE AND NOT LESS THAN 20 dB ABOVE AMBIENT NOISE LEVELS. (TYPICALLY, 55 dB AMBIENT NOISE PER BUSINESS OCCUPANCY. ADJUST FOR NOISY ENVIRONMENTS).
- ANY WIRING INSTALLED IN RETURN AIR PLENUM SHALL BE EITHER PLENUM-RATED CABLE OR IN CONDUIT.
- FIRE ALARM CONTRACTOR SHALL PROVIDE A FULL SET OF SHOP DRAWINGS, INCLUDING BATTERY CALCULATIONS, WIRING DIAGRAMS, AND DEVICE PRODUCT DATA TO THE AHJ FOR REVIEW AND APPROVAL PRIOR TO STARTING ROUGH-INS.
- E.C. SHALL PROVIDE FRAMED BUILDING LAYOUT NEXT TO REMOTE ANNUNCIATOR AT FRONT ENTRANCE. BUILDING LAYOUT SHALL SHOW ALL FIRE ALARM DEVICE LOCATIONS AND THEIR RESPECTIVE ADDRESSES.
- SYNCHRONIZE ALL FLASHING VISUAL APPLIANCES PER NFPA REQUIREMENTS.
- ALL NEW DEVICES AND COMPONENTS MUST BE 100% COMPATIBLE WITH THE EXISTING EDWARDS EST SYSTEM.

**NFPA 72 AND ADA DEVICE INSTALLATION REQUIREMENTS**



**FIRE ALARM DEVICE MOUNTING DETAIL**  
SCALE: N.T.S.

**Renovation & Adaptive Reuse: Adult Primary Care Clinic**

Craven County Health Department 2818 Neuse Boulevard, New Bern, NC

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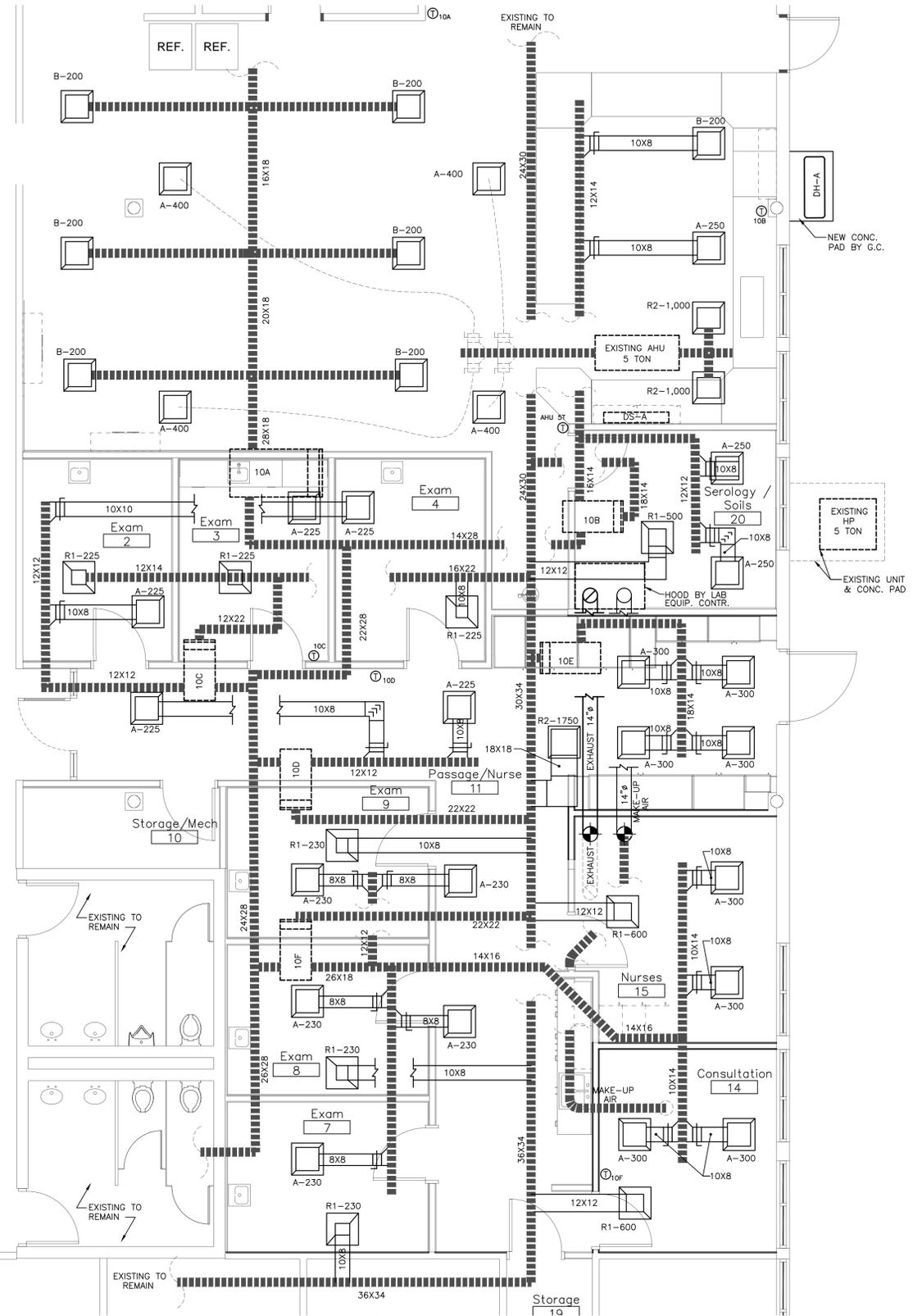
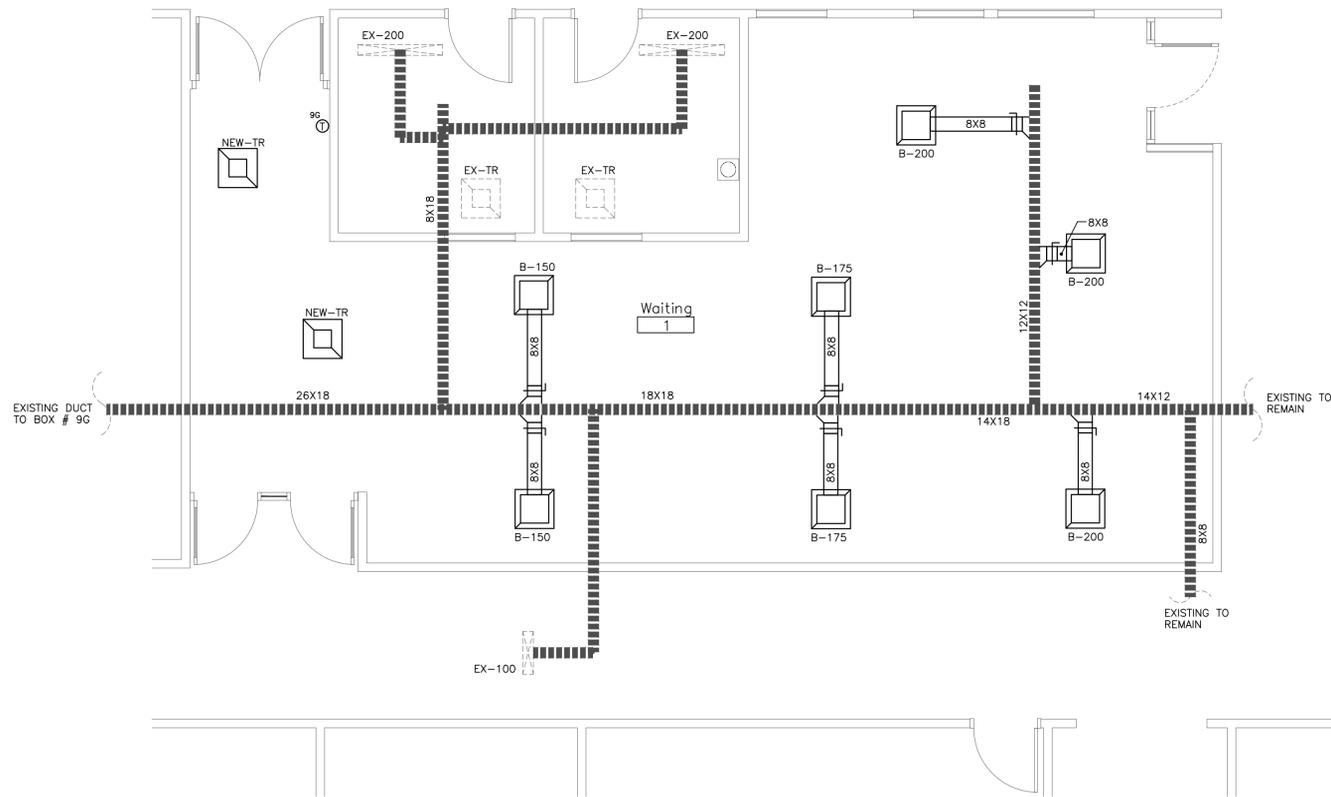


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**MECHANICAL LEGEND**

- G.C. GEN. CONTR.
- E.C. ELEC. CONTR.
- P.C. PLUMB. CONTR.
- AFF ABOVE FINISH FLOOR
- AFG ABOVE FINISH GRADE
- 18x16 WRAPPED RIGID DUCT
- INSULATED FLEXIBLE DUCT
- SUPPLY DIFFUSER
- RETURN AIR GRILLE
- CEILING EXHAUST GRILLE OR FAN
- AHU-1 THERMOSTAT & UNIT SERVED.
- A-400 DIFFUSER TYPE-CFM
- MANUAL DAMPER
- DUCT MOUNTED SMOKE DETECTOR
- FIRE ALARM HORN/STROBE (SEE GENERAL NOTES)
- CONN. TO EXIST.
- GAS PIPING
- SPRING LOADED FIRE DAMPER
- CO2 SENSOR (800 PPM) & UNIT SERVED.
- AHU-1 CO2 SENSOR & UNIT SERVED.
- TWIST TIMER SWITCH
- 120V MOTORIZED DAMPER
- CO & NOx SENSOR & UNIT SERVED. CONSPEC CN50-CO2

NOTE: M.C. IS RESPONSIBLE FOR REBALANCING ALL AIR FLOWS IN VAV BOXES BEING UTILIZED IN THE RENOVATED AREAS. CONTRACTOR MUST RE-CALIBRATE BOX CONTROLLERS AND SENSORS ON UNITS IN THE AFFECTED AREA AS WELL.



**MECHANICAL PLAN**  
SCALE: 1/4"=1'-0"

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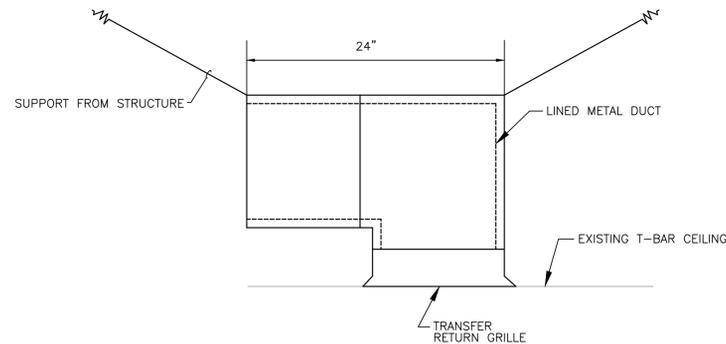
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**MECHANICAL GENERAL NOTES:**

- ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE NC BUILDING CODE & CONTR. SHALL NOTIFY ENGINEER IN WRITING REGARDING ANY CODE DISCREPANCIES FOUND ON PLANS. CONTR. IS RESPONSIBLE FOR PERMITS, INSPECTIONS AND FEES.
- SYSTEMS INDICATED ON PLANS ARE DIAGRAMMATIC IN NATURE. CONTRACTOR SHALL PROVIDE NECESSARY HANGERS, FASTENERS ETC. TO PROVIDE A COMPLETE AND WORKING SYSTEM.
- CONTRACTOR SHALL SEAL ALL DUCTWORK WITH A PAINT ON MASTIC. ALL WALL PENETRATIONS SHALL BE SEALED AIR TIGHT.
- CONTRACTOR SHALL FIELD MEASURE ACTUAL INSTALLED CONDITIONS AND COORDINATE DUCT SIZES PRIOR TO FABRICATION OR INSTALLATION OF EQUIP. & DUCTWORK.
- CONTRACTOR SHALL COORDINATE ALL DUCTWORK, DIFFUSER AND GRILLE LOCATION WITH OTHER CEILING MOUNTED DEVICES SHOWN ON THE ARCHITECTURAL REFLECTED CEILING PLAN.
- CONTRACTOR SHALL INSTALL BALANCING DAMPERS IN EACH BRANCH DUCT TO PROVIDE PROPER AIRFLOW TO EACH ZONE.
- LOCATE THERMOSTATS AND TEMPERATURE SENSORS AT 4'-0" A.F.F. IN LOCATION INDICATED ON PLANS.
- ALL DUCT DIMENSIONS ARE INSIDE CLEAR DIMENSIONS.
- CONTRACTOR SHALL COORDINATE ALL ROOF AND FLOOR PENETRATION LOCATIONS AND SIZES.
- FABRICATE AND INSTALL ALL DUCT WORK PER SMACNA 1.5" W.C. PRESSURE. ALL ELBOWS SHALL HAVE 1.5R CENTERLINE. ALL DUCT UNDER SLAB SHALL BE FIBERGLASS.
- ALL FLEXIBLE ROUND DUCT SHALL BE PRE-INSULATED DOUBLE WALLED WITH SPIRAL METAL RIB, AND SHALL HAVE MIN. RESISTANCE VALUE OF R-6. MAXIMUM LENGTH SHALL BE 14'-0" UNLESS SHOWN SPECIFICALLY OTHERWISE IN PLAN. SECURE ENDS WITH NYLON BANDS AND TAPE.
- ALL SUPPLY AND RETURN DUCT SHALL BE INSULATED WITH 2" 1.0 LB. OR 3" 1/2 LB. DENSITY FIBERGLASS WRAP.
- ALL DUCTWORK AND PIPING SHALL BE CONCEALED ABOVE CEILINGS, TRUSSES AND SOFFITS EXCEPT IN MECHANICAL ROOMS, UTILITY PLATFORMS AND WHERE NOTED OTHERWISE.
- MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL CONTROL WIRING & CONNECTIONS TO HIS EQUIPMENT. COOR'D. FEEDER AND FUSE SIZES FOR SPECIFIC EQUIPMENT PROVIDED WITH ELECTRICIAN. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ANY ADDITIONAL WORK REQUIRED TO PROVIDE FEEDERS FOR EQUIPMENT THAT EXCEEDS THE AMP RATINGS LISTED IN THE SCHEDULE.
- MECHANICAL CONTRACTOR MAY USE ROUND DUCT OF EQUIV. AREA IN LIEU OF RECTANGULAR. COOR'D. ROUND DUCT SIZES W/ ENGR. USE INSULATED DOUBLE WALLED SPIRAL DUCT WITH PAINT GRIP FINISH WHERE DUCT IS TO BE EXPOSED.
- MECHANICAL CONTRACTOR SHALL PROVIDE ENGR. WITH AN AIR BALANCE REPORT INDICATING INITIAL AND FINAL READINGS AT EACH DIFFUSER AND TOTAL CFM PER UNIT, INCLUDE IN DOCUMENTS PROVIDED TO OWNER AT JOB CLOSEOUT.
- UNIT CONTROLLER OR PROGRAMMABLE THERMOSTAT SHALL HAVE 7 DAY PROGRAMING, TIMED OVER-RIDE AND THE ABILITY TO RUN FANS IN OCCUP. MODE & CYCLE FANS IN UN-OCCUP. MODE.
- MECHANICAL CONTRACTOR SHALL NOT ALLOW DUCTWORK TO CONTACT LAY-IN LIGHT FIXTURES. ROUTE ACCORDINGLY.

AIR DISTRIBUTION						
MARK	MAX. CFM	FRAME	NECK SIZE	MODEL	MANUF.	REMARKS
A	400	T-BAR	10"Ø	ASPD	PRICE	1,2,3,5,7
B	200	T-BAR	8"Ø	ASPD	PRICE	1,2,3,5,7
R1	550	T-BAR	12x12	80TB	PRICE	1,2,4,5,6
R2	1400	T-BAR	22x22	80TB	PRICE	1,2,4,5,6
TR	1400	T-BAR	22x22	80TB	PRICE	1,2,4,6,8
EX	EXISTING MECHANICAL GRILLE					

- ALL T-BAR GRILLES SHALL HAVE 24"x24" FACE.
- NC SHALL NOT EXCEED NC 25.
- MAX. SP SUPPLY - 0.10" W.G.
- MAX. SP RETURN - 0.05" W.G.
- ALL RUN-OUTS AND FLEX TO BE EQUAL TO NECK SIZE FOR SUPPLY.
- PAIN INSIDE PAN FLAT BLACK
- CONTRACTOR SHALL INSULATE BACK OF SUPPLY GRILLE PAN.
- M.C SHALL PROVIDE GRILLE WITH SOUND BOOT. (SEE DETAIL)



**(SOUND BOOT)  
PLEUM RETURN DETAIL**

SCALE: NTS

DUCTLESS SPLIT-SYSTEM SCHEDULE														
SUPPLY FAN									HEAT PUMP			COOLING		
MARK	MODEL	CFM	ESP (IN. W.G.)	FAN MOTOR	VOLT/PH	MCA	MOCP	MARK	MODEL	VOLT/PH	MCA	MOCP	TC (BTUH)	SC (BTUH)
DS-A	MITSUBISHI MSZ-D36NA	887	0.0	0.76 FLA	208/1	1.0	15	DH-A	MITSUBISHI MUZ-D36NA-1	208/1	21.0	25	36,000	25,200

- COOLING CAPACITIES ARE MINIMUM ACCEPTABLE VALUES
- PROVIDE WITH FILTERS AND FILTER FRAMES.
- BASIS OF DESIGN HAS POWER DISTRIBUTED FROM THE HEAT PUMP TO THE AIR HANDLERS. COORD REQ'TS WITH E.C.
- MECHANICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH E.C. FUSES REQUIRED FOR EQUIPMENT PURCHASED.
- AMP RATINGS GIVEN ARE MAXIMUM VALUES.
- ESP INCLUDES .35" FOR DIRTY FILTER ALLOWANCE.
- SPECIFICATIONS BASED UPON "MITSUBISHI", EQUALS BY "CARRIER" AND "SANYO" ACCEPTABLE.

**MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT**

METHOD OF COMPLIANCE:

PRESCRIPTIVE  ENERGY COST BUDGET

CLIMATE ZONE: IBC - 3A

THERMAL ZONE

WINTER DRY BULB: 18°F  
SUMMER DRY BULB: 93°F

INTERIOR DESIGN CONDITIONS

WINTER DRY BULB: 70°F  
SUMMER DRY BULB: 75°F  
RELATIVE HUMIDITY: 50%

BUILDING HEATING LOAD: 36.0 MBH

BUILDING COOLING LOAD: 25.2 MBH

MECHANICAL SPACE CONDITIONING SYSTEM

UNITARY  
DESCRIPTION OF UNIT: DUCTLESS SPLIT SYSTEM  
HEATING EFFICIENCY: 3.25 COP  
COOLING EFFICIENCY: 16.0 SEER  
HEAT OUTPUT OF UNIT: SEE SCHEDULE  
COOLING OUTPUT OF UNIT: SEE SCHEDULE

BOILER  
TOTAL BOILER OUTPUT: (if oversized, state reason)

CHILLER  
TOTAL CHILLER OUTPUT: (if oversized, state reason)

LIST EQUIPMENT EFFICIENCIES

EQUIPMENT SCHEDULES WITH MOTORS (Not used for mechanical systems)

MOTOR HORSEPOWER:

NUMBER OF PHASES:

MINIMUM EFFICIENCY:

MOTOR TYPE:

# OF POLES:

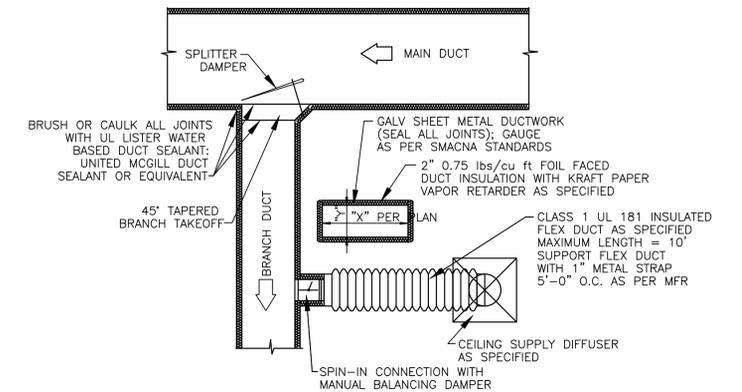
DESIGNER STATEMENT:

To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the 2012 North Carolina energy conservation code.

SIGNED: D. Wilson POU

NAME: D. WILSON POU, P.E.

TITLE: PRESIDENT



**DUCT CONSTRUCTION DETAIL**

SCALE: NTS

**Renovation & Adaptive Reuse: Adult Primary Care Clinic**

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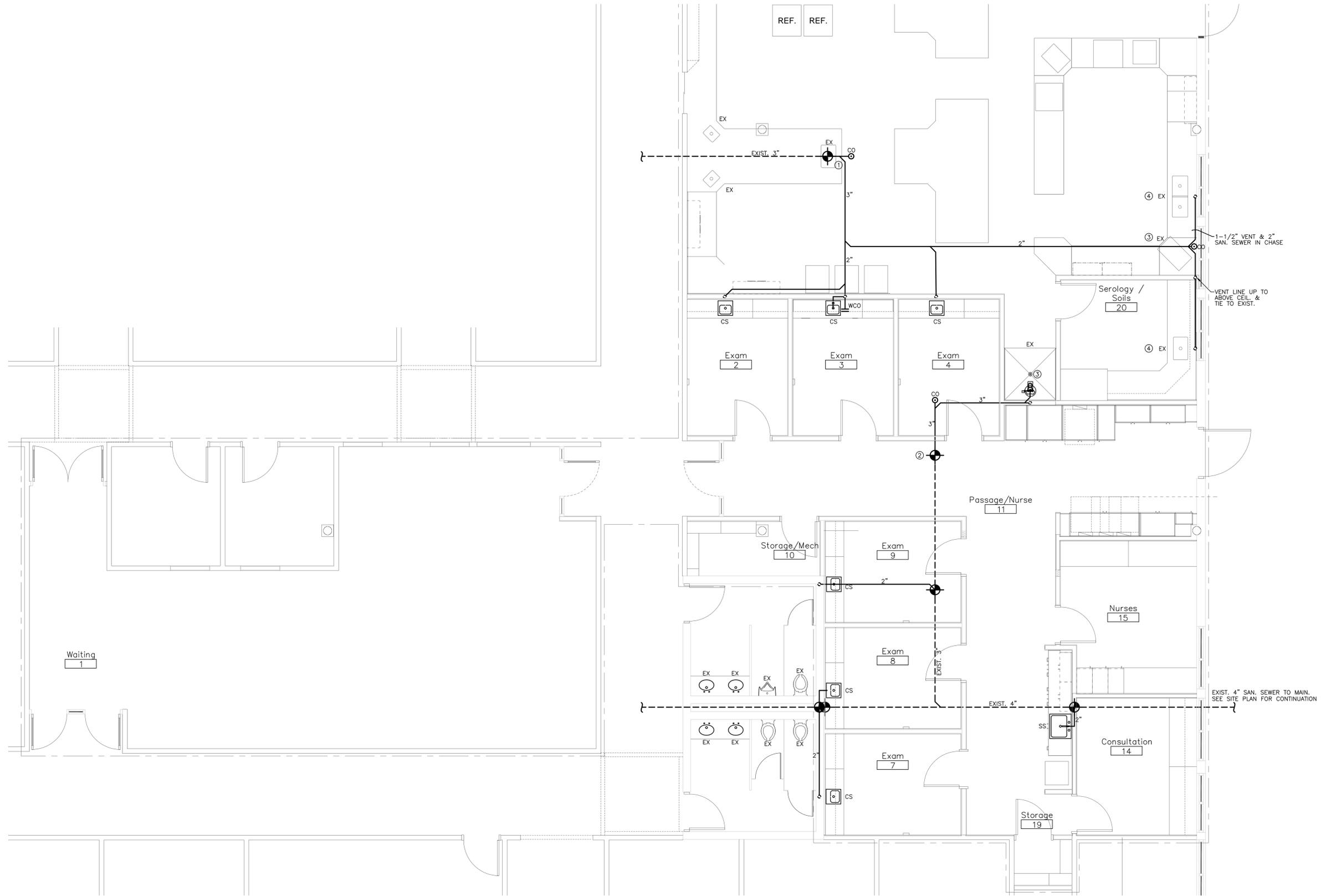
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NOTE: P.C. IS RESPONSIBLE FOR DISCONNECTING ALL WASTE, VENT AND WATER PIPING FROM EXISTING FIXTURES TO BE REMOVED OR RELOCATED. REMOVE PIPING TO CONCEALMENT ABOVE CEILING OR BELOW FLOOR AND CAP. SEE ARCHITECTURAL DEMOLITION PLAN FOR WALLS AND FIXTURES BEING REMOVED.

### SANITARY SEWER PLAN

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

#### SANITARY SEWER PLAN NOTES:

- ① P.C. SHALL TIE NEW 3" SAN. SEWER TO EXIST. & RUN TO NEW FIXTURES AS SHOWN.
- ② TIE NEW 3" SAN. SEWER TO EXIST. AT APPROX. LOC. OF EXIST. FD
- ③ EXIST. FIXTURE TO BE RELOCATED. P.C. SHALL TIE NEW SAN. SEWER TO EXIST. AND REMOVE EXIST. SAN. SEWER LINES FROM CURRENT LOC. G.C. IS RESPONSIBLE FOR PATCH & FINISH OF SLAB.
- ④ EXIST. LAB SINK TO BE REMOVED & MAINTAINED FOR RE-USE. P.C. SHALL PROVIDE & INSTALL NEW ACID-RESISTANT POLYVINYLIDENE FLUORIDE (PVDF) PIPING & PROPER SEALANTS TO MATCH EXIST.

## Renovation & Adaptive Reuse: Adult Primary Care Clinic

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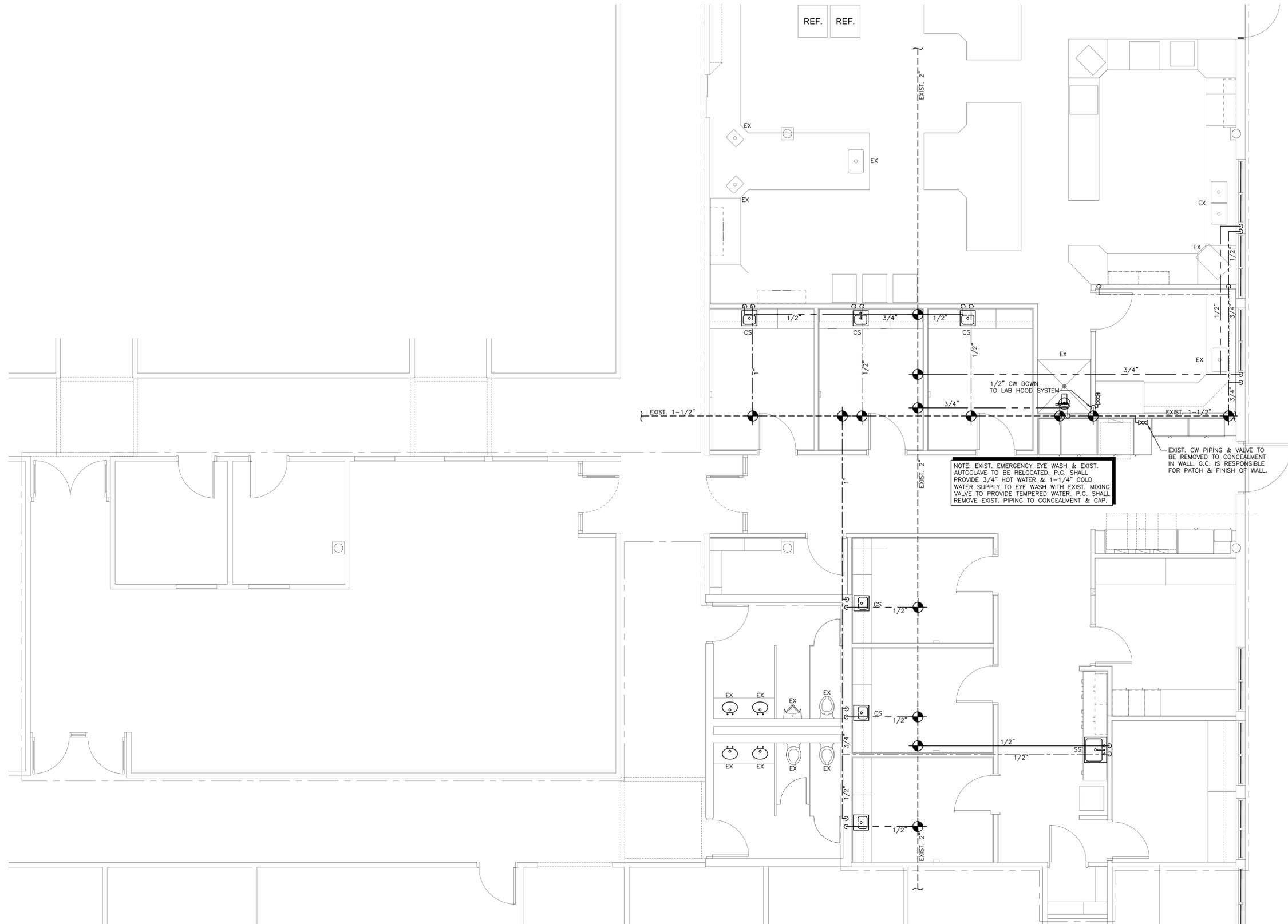
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NOTE: EXIST. EMERGENCY EYE WASH & EXIST. AUTOCLAVE TO BE RELOCATED. P.C. SHALL PROVIDE 3/4" HOT WATER & 1-1/4" COLD WATER SUPPLY TO EYE WASH WITH EXIST. MIXING VALVE TO PROVIDE TEMPERED WATER. P.C. SHALL REMOVE EXIST. PIPING TO CONCEALMENT & CAP.

EXIST. CW PIPING & VALVE TO BE REMOVED TO CONCEALMENT IN WALL. G.C. IS RESPONSIBLE FOR PATCH & FINISH OF WALL.

**POTABLE WATER PLAN**  
SCALE: 1/4"=1'-0"

**Renovation & Adaptive Reuse: Adult Primary Care Clinic**

Craven County Health Department 2818 Neuse Boulevard, New Bern, NC

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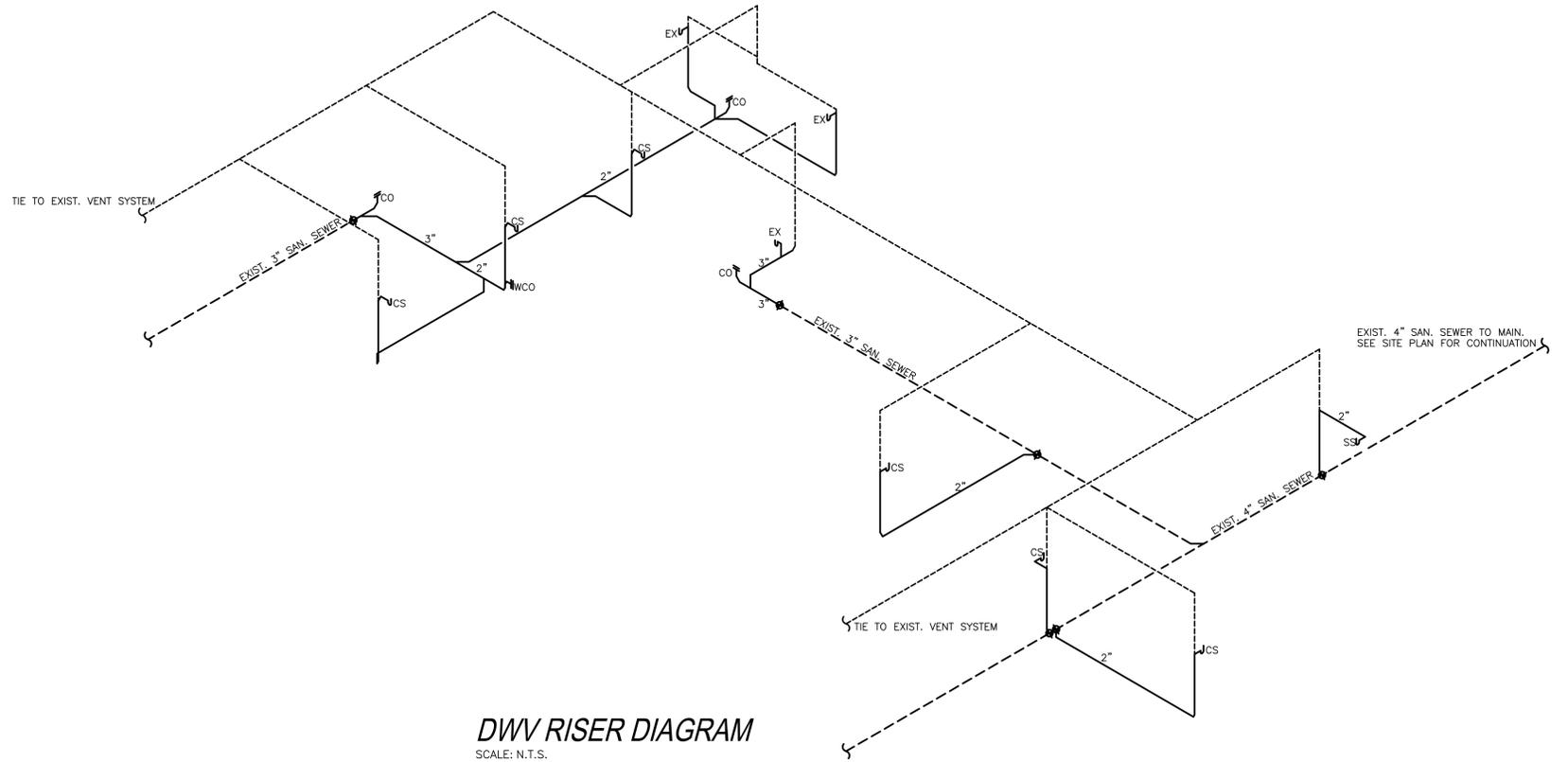
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**PLUMBING GENERAL NOTES:**

1. THE ENTIRE PLUMBING SYSTEM SHALL BE IN ACCORDANCE WITH N.C. PLUMBING CODE AND LOCAL PLUMBING INSPECTOR.
2. ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION. CONTRACTOR SHALL COORDINATE ROUTING OF ALL PIPING WITH EXISTING CONDITIONS AND SHALL PROVIDE ANY NECESSARY OFFSETS, TEES, REROUTING, ETC. REQUIRED FOR A COMPLETE AND COORDINATED INSTALLATION.
3. THESE PLANS ARE DIAGRAMMATIC. CONTRACTOR SHALL PROVIDE ALL NECESSARY OFFSETS, TEES, ELBOWS, ETC. FOR A COMPLETE WORKING PLUMBING SYSTEM.
4. THE CONTRACTOR SHALL OBTAIN AND PAY ALL FEES RELATED TO PERMITTING, INSPECTIONS, TAPS, ETC.
5. CONTRACTOR SHALL COORDINATE ANY PLUMBING SYSTEM REQUIRING SHUTDOWN WITH THE OWNER 48 HOURS IN ADVANCE.
6. ALL DOMESTIC WATER PIPING SHOWN IS ABOVE BETWEEN FLOOR JOIST/WITHIN WALLS, AND IN CRAWL SPACES UNLESS OTHERWISE NOTED.
7. ALL DOMESTIC WATER PIPING (ABOVE SLAB) SHALL BE COPPER TUBING TO MATCH EXISTING PIPING.
8. ALL WATER PIPING SHALL BE INSULATED WITH CLOSED CELL (ARMAFLEX) TYPE INSULATION WITH THE FLAME DENSITY RATING NOT EXCEEDING 25 & THE SMOKE DENSITY RATING NOT EXCEEDING 50. THICKNESS FOR COLD WATER PIPING SHALL BE 1/2" THICK. THICKNESS FOR HOT WATER & RETURN PIPING SHALL BE 1" THICK. INSTALL SADDLES AS REQUIRED IN ALL LOCATIONS TO PREVENT COMPRESSION OF INSULATION.
9. ALL BRANCH LINES SHALL HAVE SHUT-OFF VALVES. ALL DOMESTIC WATER BALL VALVES SHALL BE BRASS BODY, FULL PORT, CHROME PLATED BALL, TEFLON SEATS 150 # WSP, FOR SIZES 1/2" THRU 2". PROVIDE VALVE HANDLE EXTENSIONS AS REQUIRED FOR INSULATION.
10. ALL SANITARY SEWER PIPING SHOWN IS BELOW SLAB/WITHIN WALLS UNLESS NOTED OTHERWISE. ALL SANITARY VENT PIPING SHOWN IS ABOVE CEILING/WITHIN WALLS UNLESS NOTED OTHERWISE.
11. ALL WASTE AND VENT PIPING SHALL BE SCHEDULE 40 PVC-DWV CONFORMING TO ASTM D 2661. ALL JOINTS SHALL BE SOLVENT WELDED TYPE CONFORMING TO ASTM D 2665/2949/3034, ASTM F 891, CSA B182.2, CSA CAN/CSA-B182.4
12. ALL PIPING SYSTEMS SHALL BE SUPPORTED AS REQUIRED BY NC PLUMBING CODE AND MANUFACTURERS RECOMMENDATIONS.
13. ALL PIPING PENETRATIONS THRU NEW AND EXISTING WALLS SHALL BE SEALED TO EQUAL RATING OF THE NEW/EXISTING WALL.
14. ALL PLUMBING SYSTEMS SHALL BE TESTED AS REQUIRED PER N.C. PLUMBING CODE.
15. THE PLUMBING CONTRACTOR SHALL COORDINATE ALL UNDER SLAB PIPING WITH ALL STRUCTURAL FOUNDATIONS, P.C. SHALL COORDINATE ALL UNDER SLAB PLUMBING WITH ELEVATION INVERTS WITH THE SITE UTILITY INVERTS.
16. ALL EXPOSED WATER SUPPLY AND WASTE LINES UNDER OPEN SINKS/LAVATORIES SHALL HAVE PROTECTIVE DEVICES INSTALLED TO MEET LATEST NCSBC AND ADA REQUIREMENTS.
17. THE ENTIRE PLUMBING SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH NC PLUMBING CODE.
18. ROOF DECKING SHALL NOT BE PENETRATED TO SUPPORT WASTE LINES, VENT LINES, AND WATER SUPPLY LINES.
19. WATER HEATERS SHALL COMPLY WITH N.C ENERGY CODE SECTION 504 OF THE NC BUILDING CODE
20. ALL FLOOR DRAINS, HUB DRAINS, AND FLOOR SINKS SHALL HAVE HOSE BIBBS, INSTALLED AS SPECIFIED IN THE N.C. PLUMBING CODE SECTION 412.6.
21. P.C. SHALL VERIFY AND SET THE MAXIMUM OUTLET TEMPERATURES AT ALL NON-COMMERCIAL KITCHEN EQUIPMENT INCLUDING HAND SINKS LOCATED IN THE KITCHEN TO NOT EXCEED 120°F BY INSTALLATION OF POINT OF USE ANTI-SCALD MIXING VALVES IF NECESSARY.
22. ALL ACCESS COVERS INCLUDING BUT NOT LIMITED TO IN-GRADE CLEANOUTS, MANHOLES, AND WATER METER BOXES SHALL BE FLUSH WITH FINISHED GRADE UNLESS OTHERWISE SPECIFIED
23. P.C. SHALL PROTECT ALL PLUMBING PIPE AS IT COMES UP THROUGH CONCRETE PER SECTION 305.1 OF THE N.C. PLUMBING CODE.

**PLUMBING LEGEND**

- EXISTING SANITARY SEWER LINE
- SANITARY SEWER LINE
- GREASE WASTE LINE
- VENT
- COLD WATER
- EXISTING COLD WATER
- HOT WATER
- RECIRCULATING HOT WATER LOOP
- EXISTING HOT WATER
- VTR VENT THROUGH ROOF
- E.C. ELECTRICAL CONTRACTOR
- M.C. MECHANICAL CONTRACTOR
- G.C. GENERAL CONTRACTOR
- CO CLEAN OUT
- WCO WALL CLEAN OUT
- BALL VALVE
- CHECK VALVE
- UNION
- ELBOW UP
- ELBOW DOWN
- POINT OF NEW CONNECTION TO EXISTING
- HWRP HOT WATER RECIRCULATION PUMP
- CS CIRCUIT SETTER
- WHA WATER HAMMER ARRESTOR (WHA)
- AAV AUTOMATIC AIR ADMITTANCE VALVE
- TMV THERMOSTATIC MIXING VALVE



**DWV RISER DIAGRAM**  
SCALE: N.T.S.

FIXTURE CALCULATIONS JUSTIFICATION	
OCCUPANCY = BUSINESS	MINIMUM PLUMBING FIXTURES FROM TABLE 403.1
GROSS AREA FOR OCCUPANT CALC.:	TOTAL REQUIRED   TOTAL PROVIDED
WAITING ROOM = 10 PEOPLE	1 WC   1 WC
EXAM ROOMS = 6 PEOPLE	1 LAVATORY   2 LAVATORY
TOTAL = 16 PEOPLE	
DIVISION OF FACILITIES PER TABLE 403.4:	
MALE: 50%	1 WC   2 WC
FEMALE: 50%	1 LAVATORY   2 LAVATORY
16 x .5 = 8 FEMALE	
16 - 8 = 8 MALE	
	DRINKING FOUNTAINS N/A*   N/A*

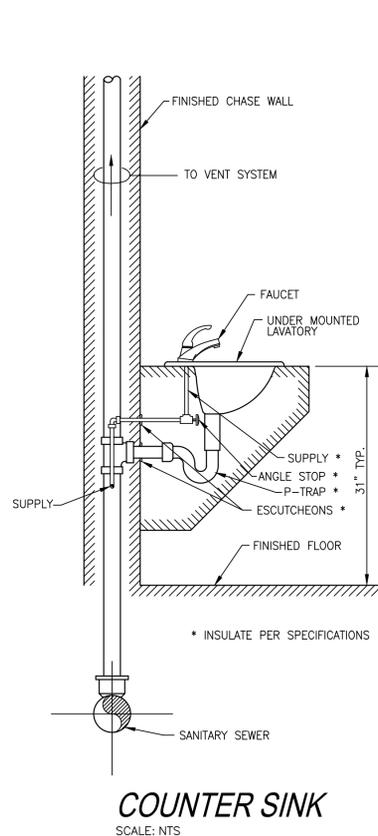
FIXTURE UNIT REQUIREMENTS	
POTABLE WATER SUPPLY	21.5 GPM USE LOCAL 1-1/2" MAIN CW LINE
WASTE	25.0 FU USE LOCAL 4" MAIN DRAIN

\* NEW EWC NOT NECESSARY FOR NEW OCCUPANT LOAD. EXIST. EWC IS SUFFICIENT FOR BUILDING OCCUPANTS

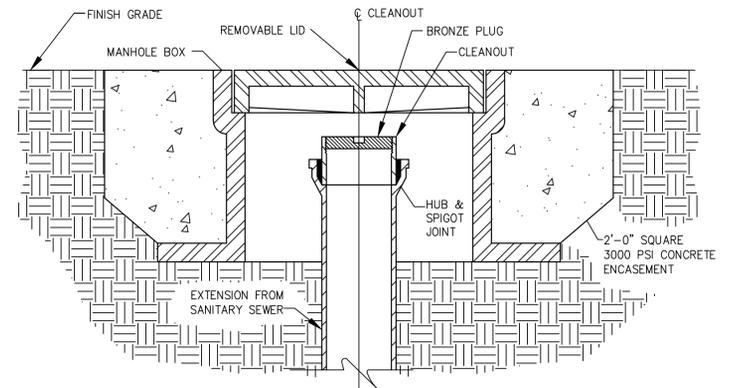
**PLUMBING FIXTURE SCHEDULE**

ITEM	DESCRIPTION	FINISH	COLD	HOT	VENT	WASTE	ADA
CS	COUNTER SINK - AMERICAN STANDARD DROP-IN STAINLESS STEEL SINK. M#: 245B.151511.290	STAINLESS			1-1/2"	2"	
	FAUCET - TOTO BATTERY POWERED SENSOR GOOSENECK FAUCET M#: TEL5DG5-10 (OR EQUAL PRODUCT FROM MANUFACTURERS IN SPECIFICATIONS)	CHROME	1/2"	1/2"			
SS	SERVICE SINK - JUST SINGLE COMPARTMENT SINK M# SLF-2225-A-GR	STAINLESS			1-1/2"	2"	
	FAUCET - ZURN KITCHEN SINK FAUCET M# Z-871C4-PT-3F-WS2 (OR EQUAL PRODUCT FROM MANUFACTURERS IN SPECIFICATIONS)	CHROME	1/2"	1/2"			
CO	CLEAN-OUT IN FLOOR - ZURN MODEL # ZN-1444-BP WITH INSIDE CAULK CONNECTION (OR EQUAL PRODUCT FROM MANUFACTURERS IN SPECIFICATIONS)	BRONZE				3"	
WCO	WALL-CLEAN-OUT - ZURN M# ZN-1441-BP (OR EQUAL PRODUCT FROM MANUFACTURERS IN SPECIFICATION)	BRONZE				2"	

\*MODEL NUMBERS ARE PROVIDED TO ESTABLISH A LEVEL OF QUALITY. EQUAL QUALITY PRODUCTS ARE ACCEPTABLE.



**COUNTER SINK**  
SCALE: N.T.S.



**CLEANOUT**  
SCALE: (IN GRADE)

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