ADDENDUM 3

ADDENDUM DATE: June 14, 2019

PROJECT: Trinity Middle School
Surrett Dr.
Trinity, NC 27370

OWNER: Randolph County School System
2222-c South Fayetteville St.
Asheboro, NC 27205

ARCHITECT: Smith Sinnett Architecture, P.A.
4600 Lake Boone Trail, Suite 205
Raleigh, North Carolina 27607

BIDS DUE: **Thursday, June 20th, 2019 at 2:00 p.m.**
Randolph County School System's Boardroom
2222-C S. Fayetteville St. Asheboro, NC 27205

Please note, Project Addendums and Bidders List are available at www.smithsinnett.com under the 'Documents' icon on the navigation bar.

This Addendum shall be included in the contract for the above referenced project. All General, Supplementary and Special Conditions, etc., as originally specified or as modified below shall apply to these items.

General

1. Refer to list of attachments on page 5.
2. Due to project schedule, the bid period will not be extended.
3. A Digital Data Release Form has been made available in the project documents tab on the website. Complete and return the form to obtain the site autocad file.
4. **Reminder: The period for questions and requests for substitutions has ended.**

Specifications

1. **General:** New Section added 32 32 23 Geogrid Interlocking Concrete Retaining Wall. See attachments. Refer also to note 5 in in the Drawing clarifications on page 3.
2. **Revision:** Section 00 01 10 Index – Add Section 32 32 23 Geogrid Interlocking Concrete Retaining Wall
3. **Revision**: Section 00 42 00 Proposal Forms – List of Alternates has been updated to include new alternate item L. See below.

4. **Revision**: Section 01 23 00 Alternates – Item B(Alternate 2) has been revised to specify Alerton as the only preferred HVAC Controls Manufacturer. Item L (Alternate 12; Owner Preferred Manufacturer(s) – Plumbing) has been added.

5. **Clarification:** Section 01 21 00 Allowances – Allowance A-16 Scoreboards – All electrical work associated with athletic scoreboards is to be included in the base contract.

6. **Clarification:** Section 01 21 00 Allowances – Allowance UP/A-6 has been increased to 4,000cy.

7. **Revision:** Section 09 68 31 Tile Carpeting - 2.1,D - Interface: Cubic "4287 – Shape" is to be the basis of design for CPT-1 and Interface:Cubic "4292 – Area" is to be the basis of design for CPT-2.

8. **Revision:** Section 04 20 00 Unit Masonry – Article 1.9 has been revised from the changes published in Addendum 2.

9. **Clarification:** Section 01 21 00 Allowances – Allowance A-17 – Dimensional lettering can be found on sheets A4-22 and 5-03.

10. **Clarification:** Section 12 35 53 Laboratory Casework – 2.2 E 2 – Square edge construction preferred.

11. **Clarification:** Section 12 35 53 Laboratory Casework – 2.2 E 11 b – Dovetail construction is acceptable.

12. **Clarification:** Section 12 35 53 Laboratory Casework – 2.2 E 11 e – Polycarbonate twin-pin shelf clips are acceptable.

13. **Clarification:** Section 09 30 00 Tiling - Refer to 2.4 for information regarding typical window sills.

Requests for Substitutions

1. 10 51 13 – Metal Lockers – Lockers Manufacturing is to be added to the list of equal manufacturers.

2. 09 65 66 - Resilient Athletic Flooring - Gerflor is to be added to the list of equal manufacturers.

3. 03 30 00 – Cast-in-Place Concrete - 2.7 - Textrude is to be added to the list of equal manufacturers.

4. 11 66 23 – Gymnasium Equipment – 2.2C- Progressive Sports Construction is to be added to the list of equal manufacturers.

5. 11 66 23 – Gymnasium Equipment – 2.3C- Progressive Sports Construction is to be added to the list of equal manufacturers.

6. 11 66 23 – Gymnasium Equipment – 2.4A- Progressive Sports Construction is to be added to the list of equal manufacturers.

7. 11 66 23 – Gymnasium Equipment – 2.4A- Sportsfield Specialties is to be added to the list of equal manufacturers.

8. 07 19 00 – Water Repellents – W.R. Meadows is to be added to the list of equal manufacturers.

9. 09 65 66 - Resilient Athletic Flooring – DynaCourt is to be added to the list of equal manufacturers.

Drawings

1. **New Sheet A7-03:** Includes details related to kitchen area and can wash.

2. **Revision:** Add A7-03 to sheet index.

3. **General Clarification:** All showers are to be tile floor and not pre-molded units. Please refer to new detail on revised sheet A4-02.

4. **General Clarification:** All coiling doors (counter and otherwise) which occur in rated walls shall be tied to the fire alarm.

5. **General Clarification:** All retaining walls except for the wall north of the baseball field(segmental) are to be cast-in-place.

6. **General Clarification:** Where drawings make reference to ground face concrete masonry(GFCMU), polished face is intended. Refer to specification.

7. **Revision:** Sheet G0-03 –UL Detail U467 has been deleted. Shaft liner is not required on this project. U906 has been deleted – refer to U905.

8. **Revision:** Sheets A1-01 – A1-02 – new wall types I and O have been added to the schedule on A1-02 for smoke partitions at classrooms. Partition tags updated on plans.

9. **Revision:** Sheets A1-03 – A1-09
   - Science room walls are now shown to indicate smoke partitions. Refer to revised door schedule.
   - Furring has been added to 2hr fire walls in the locations shown.

134 south wall	216 west wall
133 south and east walls	213 east wall
135 east wall	616 west wall
310 east wall	621 west and north
312 west wall	512 west wall
309 east wall	510 east wall
311 west wall	511 east wall
414 west wall	413 east wall

10. **Revision:** Sheet A7-07 – Floor finish in rooms 621 and 622 should be PC-1. To clarify, restrooms 608 and 609 are to receive tile/pattern MT-A although hatch is not showing.

11. **Revision:** Sheet A6-01 – The Hardware Sets column of the door schedule have been revised. Remarks have been updated. Various updates made to door panel and frame type references.

12. **Clarification:** General – Note that Item 18 of the General Equipment Schedule, wood shelving, is to be owner furnished.

13. **Revision:** Sheet 4-01 – Detail 3, note that a shower seat has been added in restroom 210. Accessory legend has been updated with shower seat information.

14. **Revision:** Sheet 4-02 – Detail 1, note that a shower seat has been added in toilet room 637 and that the shower wall has been modified to achieve a 3'x3' accessible shower. Accessory legend has been updated with shower seat information. New detail 11 has been added for typical shower threshold.

15. **Revision:** Sheet A9-01 – Information added to details 1 and 2. Refer to A4-01 for restroom accessory schedule.

16. **Revision:** Sheet A9-02 – Door schedule has been updated. A note has been added to Detail 13 regarding sectional door installation.

17. **Clarification:** Sheet A1-08 – Casework in room 518 Exploratory is to be solid wood.

18. **Revision:** Sheet A3-13 – Monumental sign detail has been modified with further notation. The monumental sign is included in the Base Bid.

19. **Revision/Clarification:** Sheet A6-02 – Door legend revised. Regarding note Glazing Note 8 – Blinds and shades requirements are listed at the bottom of the frame elevation, next to the title mark.

20. **General Clarification:** Sheet S3-24 – Detail 1 - Disregard level marker for Field House. This detail applies to the canopies at the school's main entrances.

21. **Revision:** Sheet A1-23 - Revision made to ceiling in clouded area.

End of Addendum 3

Attached:

Specifications:
00 42 00
01 21 00
01 23 00
04 20 00
09 68 31
32 32 23

Architectural:
A1-01
A1-02
A1-03
A1-04
A1-05
A1-06
A1-07
A1-08
A1-09
A1-23
A3-13
A4-01
A4-02
A6-01
A6-02
A7-07
A7-30
A9-01
A9-02

Civil: 2 pages, 6 sheets

Offsite Civil: 2 pages, 11 sheets

Structural: 1 page, 2 sheets

Plumbing: 2 pages, 7 sheets

Mechanical: 41 pages, 2 sheets

Electrical: 11 pages, 15 sheets

Food Service: 7 sheets

SECTION 00 42 00 - PROPOSAL FORM

PROJECT: Trinity Middle School
New Construction
PIN# 7708118367, Surrett Drive
Trinity, North Carolina 27370

OWNER: Randolph County School Board
2222-C S. Fayetteville Street
Asheboro, North Carolina 27205

ARCHITECT: Smith Sinnett Architecture
4600 Lake Boone Trail, Suite 205
Raleigh, North Carolina 27607

The undersigned, as bidder, hereby declares that the only person or persons interested in this proposal as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this proposal or in the contract to be entered into; that this proposal is made without connection with any other person, company or parties making a bid or proposal; and that it is in all respects fair and in good faith without collusion or fraud. The bidder further declares that he has examined the site of the work and the contract documents relative thereto, and has read all special provisions furnished prior to the opening of bids; that he has satisfied himself relative to the work to be performed.

The Bidder proposes and agrees if this proposal is accepted to contract with *Randolph County Board of Education* in the form of contract specified below, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation and labor necessary to complete the construction of

Trinity Middle School – New Construction

in full in complete accordance with the plans, specifications and contract documents, to the full and entire satisfaction of the Randolph County Board of Education, and Smith Sinnett Architecture with a definite understanding that no money will be allowed for extra work except as set forth in the General Conditions and the contract documents.

The low Bidder will be determined by the total cost of the Contract with the lump sum prices of the alternates accepted being added to or deducted from the Base Bid to give the total cost of the Contract. Bidders are required to give a price for Base Bid, all Alternates, and all Unit Prices as applicable to their Contract. All Bidders are required to be licensed and in good standing with their respective North Carolina Licensing Board.

SINGLE PRIME CONTRACT:

BASE BID:

Amount: _____ Dollars ($_____)

ALTERNATE 1: Owner Preferred Manufacturer(s) – Door Hardware

Amount: _____ Dollars ($_____)

ALTERNATE 2: Owner Preferred Manufacturer(s) – HVAC

Amount: _____ Dollars ($_____)

ALTERNATE 3: Owner Preferred Manufacturer(s) – Electrical

Amount: _____ Dollars ($_____)

ALTERNATE 4: Terrazzo Flooring

Amount: _____ Dollars ($_____)

ALTERNATE 5: Spray-Applied Cavity Wall Insulation

Amount: _____ Dollars ($_____)

ALTERNATE 6: Concession Upfit

Amount: _____ Dollars ($_____)

ALTERNATE 7: Single Ply Roofing

Amount: _____ Dollars ($_____)

ALTERNATE 8: Additional Gymnasium Bleachers

Amount: _____ Dollars ($_____)

ALTERNATE 9: Maintenance Building

Amount: _____ Dollars ($_____)

ALTERNATE 10: Offsite Work

Amount: _____ Dollars ($_____)

ALTERNATE 11: Owner Preferred Manufacturer(s) – Kitchen Equipment

Amount: _____ Dollars ($_____)

ALTERNATE 12: Owner Preferred Manufacturer(s) – Plumbing

Amount: _____ Dollars ($_____)

MAJOR SUBCONTRACTORS if any (Name, City & State)

General Subcontractor: _____Lic_____

Plumbing Subcontractor: _____Lic_____

Mechanical Subcontractor: _____Lic_____

Electrical Subcontractor: _____Lic_____

GS143-128(d) requires all single prime bidders to identify their subcontractors for the above subdivisions of work. A contractor whose bid is accepted shall not substitute any person as subcontractor in the place of the subcontractor listed in the original bid, except (i) if the listed subcontractor's bid is later determined by the contractor to be non-responsible or non-responsive or the listed subcontractor refuses to enter into a contract for the complete performance of the bid work, or (ii) with the approval of the awarding authority for good cause shown by the contractor.

ALLOWANCES - (Refer to Division 01 Section 01 21 00 – Allowances for amounts to be included in bid shall be based on the Unit Prices provided as part of Section 01 22 00) Acknowledge Allowances have been included with in the Base Bid.

UP/A-1 _____ UP/A-2 _____ UP/A-3 _____ UP/A-4 _____ UP/A-5 _____

UP/A-6 _____ UP/A-7 _____ UP/A-8 _____ UP/A-9 _____ UP/A-10 _____

UP/A-11 _____ UP/A-12 _____ UP/A-13 _____ UP/A-14 _____ UP/A-15 _____

A-16 _____ A-17 _____ A-18 _____ A-19 _____ A-20 _____

UNIT PRICES - (Refer to Division 01 Section 01 22 00 - Unit Prices for Quantities)
Unit prices quoted and accepted shall apply throughout the life of the contract, except as otherwise specifically noted. Unit prices shall be applied, as appropriate, to compute the total value of changes in the base bid quantity of the work and in the given Allowances all in accordance with the contract documents.

Unit Price UP/A-1;	Mass Rock removal and disposal off-site: per cy.	Unit Price ($)_____
Unit Price UP/A-2;	Mass Rock removal and disposal on-site: per cy.	Unit Price ($)_____
Unit Price UP/A-3;	Trench Rock removal and disposal off-site: per cy.	Unit Price ($)_____
Unit Price UP/A-4;	Trench Rock removal and disposal on-site: per cy.	Unit Price ($)_____
Unit Price UP/A-5;	Mass Rock Removal, Processed and placed on site: per cy.	Unit Price ($)_____
Unit Price UP/A-6;	Unsuitable Soils Removal and Disposal off-site: per cy.	Unit Price ($)_____
Unit Price UP/A-7;	Unsuitable Soils Removal and Disposal on-site: per cy.	Unit Price ($)_____
Unit Price UP/A-8;	Replacement of Unsuitable Soils/Rock with on-site suitable soils: per cy.	Unit Price ($)_____
Unit Price UP/A-9;	Replacement of Unsuitable Soils/Rock with off-site imported fills: per cy.	Unit Price ($)_____
Unit Price UP/A-10;	Replacement of Authorized Excavation of Unsuitable Soils/Rock with (ABC) Stone Material: per cy.	Unit Price ($)_____
Unit Price UP/A-11;	Replacement of Excavation of Unsuitable Soils/Rock with #57 Washed Stone Material: per cy.	Unit Price ($)_____
Unit Price UP/A-12;	Geo-Grid in Place: per square yard.	Unit Price ($)_____
Unit Price UP/A-13;	Woven Geotextile Fabric: per square yard.	Unit Price ($)_____
Unit Price UP/A-14;	Replacement of Unsuitable Soils/Rock with lean concrete fill in place: per cy.	Unit Price ($)_____
Unit Price UP/A-15;	High Capacity French Drain: per linear foot.	Unit Price ($)_____

The bidder further proposes and agrees hereby to commence work under this contract on a date to be specified in a written order of the designer and shall fully complete all work thereunder within the time specified in the Supplementary General Conditions Article 9. Applicable liquidated damages amount is also stated in the Supplementary General Conditions Article 9.

ADDENDUM
(Addendum received and used in computing bid)

Addendum No. 1 _____ Addendum No. 3 _____ Addendum No. 5_____

Addendum No. 2 _____ Addendum No. 4 _____ Addendum No. 6 _____

Proposal Signature Page

The undersigned further agrees that in the case of failure on his part to execute the said contract and the bonds within ten (10) consecutive calendar days after being given written notice of the award of contract, the certified check, cash or bid bond accompanying this bid shall be paid into the funds of the owner's account set aside for the project, as liquidated damages for such failure; otherwise the certified check, cash or bid bond accompanying this proposal shall be returned to the undersigned. No proposal may be withdrawn after the scheduled closing time for the receipt of Bids for a period of ninety (**90**) days.

Respectfully submitted this day of _____

_____
(Name of firm or corporation making bid)

WITNESS:

By: _____
Signature

_____
(Proprietorship or Partnership)

Name: _____
Print or type

Title: _____
(Owner/Partner/Pres./V.Pres)

Address: _____

ATTEST:

_____

By: _____

License No. _____

Title: _____
(Corp. Sec. or Asst. Sec. only)

Federal I.D. No. _____

(CORPORATE SEAL)

MINORITY BUSINESS PARTICIPATION REQUIREMENTS

Provide with the bid - Under GS 143-128.2(c) the undersigned bidder shall identify **on its bid** (Identification of Minority Business Participation Form) the minority businesses that it will use on the project with the total dollar value of the bids that will be performed by the minority businesses. **Also** list the good faith efforts (Affidavit **A**) made to solicit minority participation in the bid effort.

NOTE: A contractor that performs all of the work with its own workforce may submit an Affidavit **(B)** to that effect in lieu of Affidavit **(A)** required above. The MB Participation Form must still be submitted even if there is zero participation.

After the bid opening - The Owner will consider all bids and alternates and determine the lowest responsible, responsive bidder. Upon notification of being the apparent low bidder, the bidder shall then file within 72 hours of the notification of being the apparent lowest bidder, the following:

An Affidavit (**C**) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the 10% goal established. This affidavit shall give rise to the presumption that the bidder has made the required good faith effort and Affidavit **D** is not necessary;

*** OR ***

If less than the 10% goal, Affidavit (**D**) of its good faith effort to meet the goal shall be provided. The document must include evidence of all good faith efforts that were implemented, including any advertisements, solicitations and other specific actions demonstrating recruitment and selection of minority businesses for participation in the contract.

Note: Bidders must always submit **with their bid** the Identification of Minority Business Participation Form listing all MB contractors, vendors and suppliers that will be used. If there is no MB participation, then enter none or zero on the form. Affidavit A **or** Affidavit B, as applicable, also must be submitted with the bid. Failure to file a required affidavit or documentation with the bid or after being notified apparent low bidder is grounds for rejection of the bid.

END OF SECTION 00 42 00

SECTION 01 21 00 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements governing allowances.
   1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
   2. The Contractor shall include in the Contract Sum all allowances states in the Contract Documents. The Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for the original allowance shall be included in the Contract Sum and not in the allowance, unless indicated otherwise herein. Coordinate allowance work with related work to ensure that each selection in completely integrated and interfaced with related work. Include all allowance amounts as a separate line item amount on each application for payment.

B. Types of allowances include the following:
   1. Unit-cost allowances.
   2. Quantity allowances.
   3. Contingency Allowances.

C. Related Sections include the following:
   1. Division 01 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders for allowances.
   2. Division 01 Section "Unit Prices" for procedures for using unit prices as bases to establish allowance value.
   3. Divisions 02 through 49 Sections for items of Work covered by allowances.
   4. Division 31 Section 'Earth Moving for Sites" and 'Earth Moving for Building" for procedures for measurements and payment for Unsuitable Soil Replacement.

1.3 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise the Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work. **Provide a minimum of three (3) proposals for each allowance** for use in making final selections, unless instructed otherwise by the Architect. Furnish proposals in time so as not to delay the project. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Architect from the designated supplier.

1.4 SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.6 ALLOWANCES

A. Refer to Schedule of Allowances for Amounts and Quantities

B. Quantity & Lump Sum Allowances
   1. Allowance shall include cost to Contractor of specific products and materials ordered by Owner under allowance and shall include taxes, freight, and delivery to Project site.
   2. Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner under allowance shall be included as part of the Contract Sum and not part of the allowance.

C. Unit-Cost Allowances
   1. Each change order amount for unit-cost type allowances shall be based solely on the difference between the actual unit purchase amount and the unit allowance, multiplied by the final measure or count of work-in-place, with reasonable allowances, where applicable, for cutting losses, tolerances, mixing wastes, normal product imperfections and similar margins.
   2. Include installation costs in the purchase amount only where indicated as a part of the allowance. When requested, prepare explanations and documentation to substantiate the margins as claimed. Prepare and submit substantiation of a change in the scope of work (if any) claimed in the change orders related to unit-cost type allowances. The Owner reserves the right to establish the actual quantity of work- in-place by an independent quantity survey, measure or count.
   3. Unit-Cost Allowances shall be based on the Unit Price value established.

D. Contingency Allowances
   1. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.
   2. Contractor's related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.
   3. Allowances for overhead and profit shall be provided within the contract price and not included as part of any change order till the allowance amount has been spent.

1.7 CHANGE ORDER MARK-UP

A. Except as otherwise indicated, comply with provisions of General Conditions and other requirements stated in this section. For each allowance, Contractor's claims for increased costs (for either purchase order amount or Contractor's handling, labor, installation, overhead, and profit), because of a change in scope or nature of the allowance work as described in contract documents, must be submitted within 60 days of initial change order authorizing work to proceed on that allowance; otherwise, such claims will be rejected.

B. As a procedural restriction no mark-up (increase or decrease) shall be included in the change order amount for Contractor's increase or decrease in handling, labor, installation, overhead or profit unless purchase order amount varies by more than 15% from allowance amount.

C. Change orders prepared to return unused allowance amounts to the Owner shall be subject to the same requirements for the return of appropriate profit and overhead as other change orders in accordance with the Conditions of the Contract. Where the Contractor has been directed not to include his related costs (profit and overhead) in the Contract Sum for contingency allowances, the return of profit and overhead shall not be excepted.

1.8 UNUSED MATERIALS

A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
   1. If requested by Architect, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Architect, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. **Allowance UP/A-1**: Mass Rock removal and disposal off-site.
1. Purpose: To adjust the contract sum in case a quantity different from that indicated in the allowance is required.
2. Unit of measurement: cubic yard measured before removal.
3. Include the following in the unit price:
   a. Excavation, loading, transport, and legal disposal of all materials.
   b. All disposal fees.
   c. Overhead and profit.
4. Include all other related costs in the contract sum.
5. Method of measurement: Quantities will be verified by a soils and materials engineer employed by the Owner.
6. Quantity Allowance: Coordinate unit price with allowance adjustment requirements of Division 01 Section "Allowances."
7. Allowance: 5,000-CY.

B. **Allowance UP/A-2**: Mass Rock removal and disposal on-site.
1. Purpose: To adjust the contract sum in case a quantity different from that indicated in the allowance is required.
2. Unit of measurement: cubic yard measured before removal.
3. Include the following in the unit price:
   a. Excavation, loading and transport of all materials.
   b. Placement and compaction of materials in on-site disposal or fill area.
   c. Overhead and profit.
4. Include all other related costs in the contract sum.
5. Method of measurement: Quantities will be verified by a soils and materials engineer employed by the Owner.
6. Quantity Allowance: Coordinate unit price with allowance adjustment requirements of Division 01 Section "Allowances."
7. Allowance: 5,000-CY.

C. **Allowance UP/A-3**: Trench Rock removal and disposal off-site.
1. Purpose: To adjust the contract sum in case a quantity different from that indicated in the allowance is required.
2. Unit of measurement: cubic yard measured before removal.
3. Include the following in the unit price:
   a. Excavation, loading, transport, and legal disposal of all materials.
   b. All disposal fees.
   c. Overhead and profit.
4. Include all other related costs in the contract sum.
5. Method of measurement: Quantities will be verified by a soils and materials engineer employed by the Owner.
6. Quantity Allowance: Coordinate unit price with allowance adjustment requirements of Division 01 Section "Allowances."
7. Allowance: 1000-CY.

D. **Allowance UP/A-4**: Trench Rock removal and disposal on-site.
1. Purpose: To adjust the contract sum in case a quantity different from that indicated in the allowance is required.
2. Unit of measurement: cubic yard measured before removal.
3. Include the following in the unit price:
   a. Excavation, loading and transport of all materials.
   b. Placement and compaction of materials in on-site disposal or fill area.
   c. Overhead and profit.
4. Include all other related costs in the contract sum.
5. Method of measurement: Quantities will be verified by a soils and materials engineer employed by the Owner.
6. Quantity Allowance: Coordinate unit price with allowance adjustment requirements of Division 01 Section "Allowances."
7. Allowance: 1000-CY.

E. **Allowance UP/A-5**: Mass Rock Removal, processing to specified particle size and placement in on-site fill areas.
1. Purpose: To adjust the contract sum in case a quantity different from that indicated in the allowance is required.
2. Unit of measurement: cubic yard measured before removal.
3. Include the following in the unit price:
   a. Excavation, loading and transport of all materials.
   b. Processing of all rock material down to a particle size of no greater than 3-inches.
   c. Placement and compaction of materials in on-site fill area.
   d. Overhead and profit.
4. Include all other related costs in the contract sum.
5. Method of measurement: Quantities will be verified by a soils and materials engineer employed by the Owner.
6. Quantity Allowance: Coordinate unit price with allowance adjustment requirements of Division 01 Section "Allowances."
7. Allowance: 5,000-CY.

F. **Allowance UP/A-6**: Unsuitable soils removal and disposal off-site.
1. Purpose: To adjust the contract sum in case a quantity different from that indicated in the allowance is required.
2. Unit of measurement: cubic yard in place prior to excavation.
3. Include the following in the unit price:
   a. Excavation, loading, transport and disposal of all materials.
   b. Overhead and profit.
   c. Allowance shall be based on the unit price quoted in the Proposal.
4. Include all other related costs in the contract sum.
5. Method of measurement: Quantities will be verified by a soils and materials engineer employed by the Owner.
6. Allowance Quantity: 4,000-CY.

G. **Allowance UP/A-7:** Unsuitable soils removal and disposal on-site.
1. Purpose: To adjust the contract sum in case a quantity different from that indicated in the allowance is required.
2. Unit of measurement: cubic yard in place prior to excavation.
3. Include the following in the unit price:
   a. Excavation, loading, transport, placement and compaction of all materials to a location to be determined on the school tract.
   b. Overhead and profit.
   c. Allowance shall be based on the unit price quoted in the Proposal.

4. Include all other related costs in the contract sum.
5. Method of measurement: Quantities will be verified by a soils and materials engineer employed by the Owner.
6. Allowance Quantity: 2,000-CY.

H. **Allowance UP/A-8:** Replacement of authorized excavation of unsuitable soils or rock with on-site suitable soils.
1. Purpose: To adjust the contract sum in case a quantity different from that indicated in the allowance is required.
2. Unit of measurement: cubic yard, compacted in place.
3. Include the following in the unit price:
   a. Suitable soil materials from a location to be determined on the project site.
   b. Excavation, loading, on-site transport, placement, moisture control and compaction of suitable soil materials.
   c. Overhead and profit.
   d. Allowance shall be based on the unit price quoted in the Proposal.
4. Include all other related costs in the contract sum. Unit price shall not include the excavation of unsuitable soil or rock.
5. Method of measurement: Quantities will be verified by a soils and materials engineer employed by the Owner.
6. Allowance Quantity: 8,000-CY.

I. **Allowance UP/A-9:** Replacement of authorized excavation of unsuitable soils or rock with off-site imported fill material.
1. Purpose: To adjust the contract sum in case a quantity different from that indicated in the allowance is required.
2. Unit of measurement: cubic yard, compacted in place.
3. Include the following in the unit price:
   a. Suitable soil materials from Contractor's off-site source.
   b. Excavation, loading, transport, placement, moisture control and compaction of suitable soil materials.
   c. Overhead and profit.
   d. Allowance shall be based on the unit price quoted in the Proposal.
4. Include all other related costs in the contract sum. Unit price shall not include the excavation of unsuitable soil or rock.
5. Method of measurement: Quantities will be verified by a soils and materials engineer employed by the Owner.
6. Allowance Quantity: 8,000-CY.

J. **Allowance UP/A-10:** Replacement of authorized excavation of unsuitable soils or rock with Aggregate Base Course (ABC) stone material.
1. Purpose: To adjust the contract sum in case a quantity different from that indicated in the allowance is required.
2. Unit of measurement: cubic yard, compacted in place.
3. Include the following in the unit price:
   a. ABC materials from Contractor's off-site source.
   b. Excavation, loading, transport, placement, moisture control and compaction of materials.
   c. Overhead and profit.
   d. Allowance shall be based on the unit price quoted in the Proposal.
4. Include all other related costs in the contract sum. Unit price shall not include the excavation of unsuitable soil or rock.

5. Method of measurement: Quantities will be verified by a soils and materials engineer employed by the Owner.
6. Allowance Quantity: 1,000-CY.

K. **Allowance UP/A-11:** Replacement of authorized excavation of unsuitable soils or rock with #57 Washed Stone material.
1. Purpose: To adjust the contract sum in case a quantity different from that indicated in the allowance is required.
2. Unit of measurement: cubic yard, compacted in place.
3. Include the following in the unit price:
   a. #57 Washed Stone materials from Contractor's off-site source.
   b. Excavation, loading, transport, placement, moisture control and compaction of materials.
   c. Overhead and profit.
   d. Allowance shall be based on the unit price quoted in the Proposal.
4. Include all other related costs in the contract sum. Unit price shall not include the excavation of unsuitable soil or rock.
5. Method of measurement: Quantities will be verified by a soils and materials engineer employed by the Owner.
6. Allowance Quantity: 500-CY.

L. **Allowance UP/A-12:** Geo-Grid in place.
1. Purpose: To adjust the contract sum in case a quantity different from that indicated in the allowance is required.
2. Unit of measurement: square yard of ground surface covered. Overlap, waste or excess shall not be included in payment measurements.
3. Include the following in the unit price:
   a. Materials and transport to site.
   b. Unloading, handling, and placement.
   c. Overhead and profit.
   d. Allowance shall be based on the unit price quoted in the Proposal.
4. Include all other related costs in the contract sum.
5. Method of measurement: Quantities will be verified by a soils and materials engineer employed by the Owner.
6. Allowance Quantity: 2,000-SY.

M. **Allowance UP/A-13:** Woven Geotextile Separation & Stabilization Fabric in-place.
1. Purpose: To adjust the contract sum in case a quantity different from that indicated in the allowance is required.
2. Unit of measurement: square yard of ground surface covered. Overlap, waste or excess shall not be included in payment measurements.
3. Include the following in the unit price:
   a. Materials and transport to site.
   b. Unloading, handling, and placement.
   c. Overhead and profit.
   d. Allowance shall be based on the unit price quoted in the Proposal.
4. Include all other related costs in the contract sum.
5. Method of measurement: Quantities will be verified by a soils and materials engineer employed by the Owner.
6. Allowance Quantity: 2,000-SY.

N. **Allowance UP/A-14**: Replacement of removed rock or unsuitable soils with Lean Concrete Fill in-place.
1. Purpose: To adjust the contract sum in case a quantity different from that indicated in the allowance is required.
2. Unit of measurement: cubic yard of void to be filled.
3. Include the following in the unit price:
   a. Lean Concrete materials from contractor's off-site source.
   b. Excavation, loading, transport, placement of Lean Concrete Fill into void remaining from removed rock or unsuitable soil.
   c. Overhead and profit.
4. Include all other related costs in the contract sum.
5. Include costs related to removal of rock or unsuitable soil in other Unit Prices.
6. Method of measurement: Quantities will be verified by a soils and materials engineer employed by the Owner based on volume of void to be filled.
7. Quantity Allowance: Coordinate unit price with allowance adjustment requirements of Division 01 Section "Allowances."
8. Allowance: 500-CY.

O. **Allowance UP/A-15**: High Capacity French Drain.
1. Purpose: To adjust the contract sum in case a quantity different from that indicated in the allowance is required. French drains shown on the plan are to be included in this allowance.
2. Unit of measurement: linear foot.
3. Include the following in the unit price:
   a. Materials (incl. pipe, stone, fabric) and transport to site.
   b. Unloading, handling.
   c. Excavation.
   d. Installation per Division 33 Section "Storm Drainage Utilities."
   e. Overhead and profit.
4. Include all other related costs in the contract sum.
5. Refer to Drawings for general locations of drains.
6. Method of measurement: Quantities will be verified by a soils and materials engineer employed by the Owner.
7. Quantity Allowance: Coordinate unit price with allowance adjustment requirements of Division 01 Section "Allowances."
8. Allowance: 700-LF.

P. **Allowance A-16**: Athletic Scoreboards
1. Allow a lump sum to furnish and install athletic scoreboards in locations shown in the construction documents.
2. **Lump Sum: $25,000.00.**

Q. **Allowance A-17:** Signage & Mural Graphics
1. Allow a lump sum for purchase and/or construction of interior panel signage, fire extinguisher signage, and dimensional lettering, as defined by and specified in "Signage" section of Division 10. Signage material and applicable sales taxes will be paid for as part of this allowance. Note, Labor for Sign Installation shall be included in the Base Bid.
2. **Lump Sum: $35,000.00.**

R. **Allowance A-18:** Access Control System
1. Allow a lump sum for purchase and installation of a complete Access Control System, as defined by and specified in contract documents. Provide all components necessary for a fully operational system.
2. **Lump Sum: $70,000.00**

S. **Allowance A-19:** Bi-Directional Amplification System
1. Allow a lump sum for purchase and installation of a complete Bi-Directional Amplification system. This is inclusive of the complete system, both the backbone and horizontal cabling, as well as all required devices for a complete system.
2. **Lump Sum: $70,000.00**

T. **Allowance A-20:** Contingency
1. Contingency allowance shall be provided as follows and the price shall be adjusted based on the actual cost of subcontracts, materials, and labor, excluding overhead and profit. Allowances for overhead and profit shall be provided within the contract price. If there is unused allowance at the conclusion of the project, the allowance plus 15% will be deducted from the contract.
2. **Contingency: $375,000.00**

END OF SECTION 01 21 00

SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
   1. The cost or credit for each alternate is the net addition to the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
B. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
C. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
D. Execute accepted alternates under the same conditions as other work of the Contract.
E. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. **Alternate No. 1; Owner Preferred Manufacturer(s) – Door Hardware:** State the amount to be added to the Base Bid for providing all labor and materials indicated and required to accomplish Work involved in providing the Owner Preferred Manufacturers Listed Below:
1. Exit Devices: Manufacturer – Von Duprin 99 as stated in the Drawings and Specifications.
2. Door Closers: Manufacturer – LCN as stated in the Drawings and Specifications.
3. Locksets: Manufacturer – Schlage locksets with "E" Keyway with Interchangeable Core as stated in the Drawings and Specifications.
4. Note that equal products are allowed ONLY in the Base Bid.

B. **Alternate No. 2; Owner Preferred Manufacturer(s) - HVAC:** State the amount to be added to the Base Bid for providing all labor and materials indicated and required to accomplish Work involved in providing the Owner Preferred Manufacturers Listed Below:
1. HVAC Equipment for Chillers and Air Handlers: Manufacturer – Trane as stated in the Drawings and Specifications.
2. HVAC Controls: Manufacturer – Alerton (Hoffman Building Technologies) as stated in the Drawings and Specifications.
3. Note that equal products are allowed ONLY in the Base Bid.

C. **Alternate No. 3; Owner Preferred Manufacturer(s) - Electrical:** State the amount to be added to the Base Bid for providing all labor and materials indicated and required to accomplish Work involved in providing the Owner Preferred Manufacturers Listed Below:
1. Fire Alarm System: Manufacturer – Fire Lite Fire Alarm by Honeywell as stated in the Drawings and Specifications.
2. Electrical Equipment: Manufacturer – Square D as stated in the Drawings and Specifications.
3. Intercom Equipment: Manufacturer – Ai-phone Video-Intercom System as stated in the Drawings and Specifications.
4. Note that equal products are allowed ONLY in the Base Bid.

D. **Alternate No. 4; Terrazzo Flooring:** State the amount to be added to the Base Bid for providing all labor and materials to install terrazzo flooring in lieu polished concrete flooring in areas shown and noted in the Contract Drawings per the plans and specifications.

E. **Alternate No. 5; Spray-Applied Cavity Wall Insulation:** State the amount to be added to the Base Bid for providing all labor and materials to install spray-applied cavity wall insulation in lieu of rigid insulation and fluid applied air and vapor barrier above finish floor as shown and noted in the Contract Drawings per the plans and specifications.

F. **Alternate No. 6; Concession Upfit:** State the amount to be added to the Base Bid for providing all labor and materials to install concession layout as shown and noted in the Contract Drawings per the plans and specifications.

G. **Alternate No. 7; Single Ply Roofing:** State the amount to be added to the Base Bid for providing all labor and materials to install TPO membrane roofing in lieu of metal roofing as shown and noted in the Contract Drawings per the plans and specifications.

H. **Alternate No. 8; Additional Gymnasium Bleachers:** State the amount to be added to the Base Bid for providing all labor and materials to install additional Gymnasium Bleachers as shown and noted in the Contract Drawings per the plans and specifications.

I. **Alternate No. 9; Maintenance Building:** State the amount to be added to the Base Bid for providing all labor and materials to provide a Maintenance Building and noted in the Contract Drawings per the plans and specifications.

J. **Alternate No. 10; Offsite Work:** State the amount to be added to the Base Bid for providing all labor and materials to provide all offsite development as defined in the Contract Drawings.

K. **Alternate No. 11; Owner Preferred Manufacturer(s) - Kitchen Equipment:** State the amount to be added to the Base Bid for providing all labor and materials to provide owner preferred equipment as defined in the Contract Documents. Refer to specifications.

L. **Alternate No. 12; Owner Preferred Manufacturer(s) - Plumbing:** State the amount to be added to the Base Bid for providing all labor and materials indicated and required to accomplish Work involved in providing the Owner Preferred Manufacturers Listed Below:

1. Boilers:
    a. Boiler Manufacturer – Weil-McLain
    b. Burner Manufacturer - Webster

END OF SECTION 01 23 00

SECTION 04 20 00 - UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes unit masonry assemblies consisting of the following:
   1. Concrete masonry units (CMUs).
   2. Concrete brick.
   3. Face brick.
   4. Mortar and grout.
   5. Reinforcing steel.
   6. Masonry joint reinforcement.
   7. Ties and anchors.
   8. Embedded flashing.
   9. Miscellaneous masonry accessories.

B. Related Sections include the following:
   1. Division 07 Section "Dampproofing" for dampproofing applied to cavity face of backup wythes of cavity walls.
   2. Division 07 Section "Water Repellents" for water repellents applied to unit masonry assemblies.
   3. Division 07 Section "Thermal Insulation" for cavity wall insulation type, thickness, and r value.
   4. Division 07 Section “Thermal Insulation” for Alternate cavity wall insulation.
   5. Division 07 Section "Sheet Metal Flashing and Trim" for **exposed** sheet metal flashing.
   6. Division 07 Section "Joint Sealants" for sealing control and expansion joints in unit masonry.

C. Products furnished, but not installed, under this Section include the following:
   1. Anchor sections of adjustable masonry anchors for connecting to structural frame, installed under Division 05 Section "Structural Steel Framing."

D. Products installed, but not furnished, under this Section include the following:
   1. Steel **lintels and shelf angles** for unit masonry, furnished under Division 05 Section "Metal Fabrications."

1.3 DEFINITIONS

A. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 PERFORMANCE REQUIREMENTS

A. Provide structural unit masonry that develops indicated net-area compressive strengths (f'_m) at 28 days.
   1. Determine net-area compressive strength of masonry from average net-area compressive strengths of masonry units and mortar types (unit-strength method) according to TMS 602/ACI 530.1/ASCE 6.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated.
B. Certification:
   1. The producer shall furnish a letter of certification stating the following;
      a. All aggregate used in the manufacture of the units was produced by the rotary kiln process conforming to ASTM C 331 and ASTM C 330.
      b. Product has been tested and certificated by ASTM C 90.
C. Shop drawings:
   1. For reinforcing steel detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement."
   2. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.
D. Samples for Verification: For each type and color of the following:
   1. Face brick, in the form of straps of five or more bricks.
   2. Decorative concrete masonry units, in the form of small-scale units.
   3. Colored mortar samples showing the full range of colors available.
   4. Weep holes/vents.
   5. Accessories embedded in masonry.
E. List of Materials Used in Constructing Mockups: List generic product names together with manufacturers, manufacturers' product names, model numbers, lot numbers, batch numbers, source of supply, and other information as required to identify materials used. Include mix proportions for mortar and grout and source of aggregates.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1093 for testing indicated, as documented according to ASTM E 548.
B. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.
   1. Manufacturer shall not have less than 10 years of experience for each type of unit.
C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from a single manufacturer for each cementitious component and from one source or producer for each aggregate.
D. Source Limitations for Concrete Masonry Units: Obtain CMU units from a manufacturer with a demonstrated history for providing first quality CMU units suitable for use in exposed work of the type and scope of this project, with units showing dense uniform face texture, square sides, corners, edges and faces, and free of chipped edges and broken corners when delivered to the site. Manufacturers with outdated equipment and worn molds incapable of providing consistently high quality materials will not be considered.
E. Fire-Resistance Ratings: Where indicated, provide materials and construction identical to those of assemblies with fire-resistance ratings determined per ASTM E 119 by a testing and inspecting agency, by equivalent concrete masonry thickness, or by other means, as acceptable to authorities having jurisdiction.
F. Sample Panels: Build sample panels to verify selections made under sample submittals and to demonstrate aesthetic effects. Comply with requirements in Division 01 Section "Quality Requirements" for mockups.
   1. Build sample panels for typical exterior wall in sizes approximately **48 inches** long by **48 inches** high by full thickness.
   2. Where masonry is to match existing, erect panels adjacent and parallel to existing surface.
   3. Clean exposed faces of panels with masonry cleaner indicated.
   4. Protect approved sample panels from the elements with weather-resistant membrane.
   5. Approval of sample panels is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; aesthetic qualities of

workmanship; and other material and construction qualities specifically approved by Architect in writing.

a. Approval of sample panels does not constitute approval of deviations from the Contract Documents contained in sample panels unless such deviations are specifically approved by Architect in writing.

G. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.7 DELIVERY, STORAGE, AND HANDLING

A. Ordering: Comply with manufacture's ordering instructions and lead time requirements to avoid construction delays.

B. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry. Do not double stack pallets of masonry units.

C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

D. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

E. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.

F. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.8 PROJECT CONDITIONS

A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.

B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls or columns.

C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in **ACI 530.1/ASCE 6/TMS 602**.

1. Cold-Weather Construction: When the ambient temperature is within the limits indicated, use the following procedures:
   a. 40 to 32 deg F: Heat mixing water or sand to produce mortar temperatures between 40 and 120 deg F .
   b. 32 to 25 deg F: Heat mixing water and sand to produce mortar temperatures between 40 and 120 deg F. Heat grout materials to produce grout temperatures between 40 and 120 deg F. Maintain mortar and grout above freezing until used in masonry.
   c. 25 to 20 deg F: Heat mixing water and sand to produce mortar temperatures between 40 and 120 deg F . Heat grout materials to produce grout temperatures between 40 and 120

deg F. Maintain mortar and grout above freezing until used in masonry. Heat masonry units to 40 deg F if grouting. Use heat on both sides of walls under construction.

d. 20 deg F and Below: Heat mixing water and sand to produce mortar temperatures between 40 and 120 deg F. Heat grout materials to produce grout temperatures between 40 and 120 deg F. Maintain mortar and grout above freezing until used in masonry. Heat masonry units to 40 deg F. Provide enclosures and use heat on both sides of walls under construction to maintain temperatures above 32 deg F within the enclosures.

2. Cold-Weather Protection: When the mean daily temperature is within the limits indicated, provide the following protection:
   a. 40 to 25 deg F : Cover masonry with a weather-resistant membrane for 48 hours after construction.
   b. 25 to 20 deg F: Cover masonry with insulating blankets or provide enclosure and heat for 48 hours after construction to prevent freezing. Install wind breaks when wind velocity exceeds 15 mi./h .
   c. 20 deg F and Below: Provide enclosure and heat to maintain temperatures above 32 deg F within the enclosure for 48 hours after construction.
3. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.

E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
1. Protect unit masonry work when temperature and humidity conditions produce excessive evaporation of water from mortar and grout. Provide artificial shade and wind breaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 100 deg F and above.

1.9 SPECIAL REQUIREMENTS

A. The masonry subcontractor shall at all times when work is in progress, provide an individual from its own staff, acting as superintendent, designated by the North Carolina Masonry Contractors Association Masonry Contractor Certification Program as a “CMP-Certified Masonry Professional” or “CME-Certified Masonry Executive” (as described in the most current version of the NCMCA’s “Guide to Masonry Contractor Certification”) on-site to supervise work in progress.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

2.2 MASONRY UNITS, GENERAL

A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to exceed tolerances and to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not uses units where such defects, including dimensions that vary from specified dimensions by more than stated tolerances, will be exposed in the completed Work or will impair the quality of completed masonry.

2.3 CONCRETE MASONRY UNITS (CMUs)

A. Shapes: Provide shapes indicated and as follows:
1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
2. Provide **square-edged** units for outside corners, unless otherwise indicated.

B. Concrete Masonry Units: **ASTM C 90 (latest edition)**.
1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2000 psi net average of three units.
2. Weight Classification: Units shall be lightweight blended with aggregates that comply with ASTM C331 and ASTM C33 with a total mix weight not more than 105 lbs./cuft. and not less than 90lbs/cuft.
3. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.
4. Exposed Faces: Provide color and texture matching the range represented by Architect's sample.
5. Aggregates: Do not use aggregates made from pumice, scoria, or tuff. All units will be free of organic impurities that will cause rusting, staining, or popouts and will not contain combustible material. All lightweight material to be manufactured by rotary kiln process. The use of coal cinders, coal ash, bottom ash or other similar waste products are not permitted and shall not be allowed.
6. CMU used in fire rated walls shall meet UL Design Assembly criteria.
7. Basis for Design: Adams an Oldcastle Company - Redline
8. Approved Manufacturers:
   a. Adams an Oldcastle Company
   b. Johnson Concrete
   c. York Building Products
   d. Martinsville Concrete Products
9. Products offered for substitution shall be pre-approved prior to bidding in accordance with the conditions of the contract documents and shall be so indicated in an addendum prior to bid only. Any other approval shall not be valid.

C. Concrete Building Brick: **ASTM C 55**.
1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of **3500 psi**.
2. Weight Classification: Normal Weight
3. Size (Actual Dimensions): 3-5/8 inches wide by **2-1/4 inches** high by 7-5/8 inches long.

2.4 DECORATIVE CONCRETE MASONRY UNITS

A. Decorative Concrete Masonry Units: **ASTM C 90 (latest edition)**.
1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of High Strength Unit. Average of three units 3000PSI, individual unit 2700 PSI. Exceeds ASTM C 90 standard average of three units 2000 PSI, individual unit 1800 PSI.
2. Weight Classification: Normal weight. High Density Unit. not less than 125 lbs/CF.
3. Size (Width): Manufactured to dimensions specified in "Concrete Masonry Units" Paragraph above and as listed below.
   a. Size: Nominal 4”x8”x16” running bond. All exposed faces to be finished.
4. Pattern and Texture:
   a. Polished Face Texture in areas as indicated on the drawings
5. Special Spaces:
   a. Provide all special shapes as required. This includes but not limited to clipped sills.
6. Colors: As selected from manufacturer’s full range.
   b. Units shall require the use of white cement in its manufacture. If a lesser priced unit is selected, the contract price will be modified by change order.
7. Manufacture of Decorative Concrete Masonry Units: Provide decorative units as manufactured by Adams an Oldcastle Company or approved equal.
   c. Approved Manufacturers:

1) Adams an Oldcastle Company
2) York Building Products
3) Martinsville Concrete Products
4) Johnson Concrete Company

d. Products offered for substitution shall be pre-approved prior to bidding in accordance with the conditions of the contract documents and shall be so indicated in an addendum prior to bid only. Any other approval shall not be valid.

e. Products offered for substitution shall be judged on the variety of colors offered, brightness of colors offered, consistency of color, quality of splitting (four blade splitter required), weight, ability of manufacturer to offer and/or control color matching of mortars, method for blending water repellent admix into mixing process, and past performance.

8. Maximum Absorption: Low Absorption unit. The unit shall contain specific amounts of the integral water repellent compound so the absorption is less than (7.5%) and/or 10 lbs/CF.

9. Integral Water Repellent: Provide units produced with liquid polymeric, integral water-repellent admixture that does not reduce flexural bond strength. Units made with integral water repellent, when tested as a wall assembly made with mortar containing integral water-repellent manufacturer's mortar additive according to ASTM E 514, with test period extended to 24 hours, show no visible water or leaks on the back of the test specimen. Product: Subject to compliance with requirements, provide units made with Rainbloc by ACM Chemistries, Dry-Block by W.R. Grace & Co, or equal.

10. Aggregates: Do not use aggregates made from pumice, scoria, or tuff. All units will be free of organic impurities that will cause rusting, staining, or popouts and will not contain combustible material. All lightweight material to be manufactured by rotary kiln process. Coal Cinders are not permitted.

2.5 BRICK

A. General: Provide shapes indicated and as follows:
1. For ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs and with exposed surfaces finished.

B. Face Brick: **ASTM C 216**, Grade **SW** Type **FBS**.
1. Size (Actual Dimensions): **3-5/8 inches** wide by **3-5/8 inches** high by **11-5/8 inches** long.
2. Bond Pattern: Unless otherwise indicated, lay exposed masonry in **one-third running bond**
3. Provide for one of the following:
a. Palmetto Brick
1) Dark Red Wirecut
b. Meridian
1) 424 New Ashbury Wirecut
c. General Shale
1) Winestone Velour

2.6 MASONRY LINTELS

A. General: Provide masonry lintels complying with requirements below.

B. Masonry Lintels: Prefabricated or built-in-place masonry lintels made from bond beam concrete masonry units with reinforcing bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.

2.7 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

B. Hydrated Lime: **ASTM C 207**, Type S.
C. Portland Cement-Lime Mix: Packaged blend of portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C 207, Type S.
D. Masonry Cement: **ASTM C 91**.
   1. Available Products:
      a. Flamingo Color Masonry Cement. Brixment;
      b. Holcim (US) Inc.;
      c. Argos Cement Company
      d. National Cement Company
      e. Lehigh Cement Company
E. Colored Cement Product: Packaged blend made from **masonry cement** and mortar pigments, all complying with specified requirements, and containing no other ingredients.
   1. Formulate blend as required to produce color indicated or, if not indicated, as selected from manufacturer's standard colors.
   2. Pigments shall not exceed 10 percent of portland cement by weight.
   3. Available Products:
      a. Flamingo Color Masonry Cement. Brixment;
      b. Holcim (US) Inc.;
      c. Argos Cement Company
      d. National Cement Company
      e. Lehigh Cement Company
F. Aggregate for Mortar: ASTM C 144.
   1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
G. Aggregate for Grout: ASTM C 404.
   1. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.
   2. Available Products:
      a. Addiment Incorporated; Mortar Kick.
      b. Euclid Chemical Company (The); Accelguard 80.
      c. Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; Morset.
      d. Sonneborn, Div. of ChemRex; Trimix-NCA.
H. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with concrete masonry units, containing integral water repellent by same manufacturer.
   1. Available Products:
      a. Rainbloc by ACM Chemistries
      b. Addiment Incorporated; Mortar Tite.
      c. Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; Dry-Block Mortar Admixture.
      d. Master Builders, Inc.
I. Water: Potable.

2.8 REINFORCEMENT

A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M, Grade 60.
B. Masonry Joint Reinforcement, General: **ASTM A 951**.
   1. Interior Walls: galvanized, carbon steel.
   2. Exterior Walls: Hot-dip galvanized, carbon steel.
   3. Wire Size for Side Rods Interior: **0.148-inch** diameter.
   4. Wire Size for Side Rods Exterior: **0.188-inch** diameter.
   5. Wire Size for Cross Rods: **W1.7 or 0.148-inch** diameter.
   6. Wire Size for Veneer Ties: **0.188-inch** diameter.
   7. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches o.c.
   8. Provide in lengths of not less than 10 feet**, with prefabricated corner and tee units**.

C. Masonry Joint Reinforcement for Single-Wythe Masonry: Truss type with single pair of side rods.
D. Masonry Joint Reinforcement for Multiwythe Masonry:
1. Adjustable (two-piece) type, truss design, with one side rod at each face shell of backing wythe and with separate ties that extend into facing wythe. Ties have two hooks that engage eyes or slots in reinforcement and resist movement perpendicular to wall. Ties extend at least halfway through facing wythe but with at least 5/8-inch cover on outside face. **Ties have hooks or clips to engage a continuous horizontal wire in the facing wythe.**
E. Masonry Joint Reinforcement for Veneers Anchored with Seismic Masonry-Veneer Anchors: Single 0.188-inch- diameter, **hot-dip galvanized, carbon**-steel continuous wire.

2.9 TIES AND ANCHORS

A. Materials: Provide ties and anchors specified in subsequent paragraphs that are made from materials that comply with eight subparagraphs below, unless otherwise indicated.
1. Mill-Galvanized, Carbon-Steel Wire: ASTM A 82; with ASTM A 641/A 641M, Class 1 coating.
2. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82; with ASTM A 153/A 153M, Class B-2 coating.
B. Adjustable Anchors for Connecting to Structure: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.
1. Anchor Section for Welding to Steel Frame: Crimped 1/4-inch- diameter, hot-dip galvanized steel wire. Mill-galvanized wire may be used at interior walls, unless otherwise indicated.
2. Tie Section for Steel Frame: Triangular-shaped wire tie, sized to extend within 1 inch of masonry face, made from **0.188-inch-** diameter, hot-dip galvanized steel wire. Mill-galvanized wire may be used at interior walls, unless otherwise indicated.
C. Rigid Anchors: Fabricate from steel bars **1-1/2 inches** wide by **1/4 inch** thick by **24 inches** long, with ends turned up **2 inches** or with cross pins, unless otherwise indicated.
1. Corrosion Protection: Hot-dip galvanized to comply with ASTM A 153/A 153M.
D. Stone Anchors: Fabricate dowels, cramps, and other stone anchors from stainless steel.
E. Adjustable Masonry-Veneer Anchors
1. General: Provide anchors that allow vertical adjustment but resist tension and compression forces perpendicular to plane of wall, for attachment over sheathing to wood or metal studs, and as follows:
a. Structural Performance Characteristics: Capable of withstanding a 100-lbf load in both tension and compression without deforming or developing play in excess of 0.05 inch.
2. Contractor's Option: Unless otherwise indicated, provide any of the following types of anchors:
3. Screw-Attached, Masonry-Veneer Anchors: Units consisting of a wire tie and a metal anchor section.
a. Anchor Section: Rib-stiffened, sheet metal plate with screw holes top and bottom, 2-3/4 inches wide by 3 inches high; with projecting tabs having slotted holes for inserting vertical legs of wire tie specially formed to fit anchor section.
b. Anchor Section: Sheet metal plate, 1-1/4 inches wide by **6 inches** long, with screw holes top and bottom and with raised rib-stiffened strap, 5/8 inch wide by **3-5/8 inches** long, stamped into center to provide a slot between strap and plate for inserting wire tie.
c. Anchor Section: Gasketed sheet metal plate, 1-1/4 inches wide by 6 inches long, with screw holes top and bottom; top and bottom ends bent to form pronged legs of length to match thickness of insulation or sheathing; and raised rib-stiffened strap, 5/8 inch wide by 6 inches long, stamped into center to provide a slot between strap and plate for inserting wire tie. Provide anchor manufacturer's standard, self-adhering, modified bituminous gaskets manufactured to fit behind anchor plate and extend beyond pronged legs.
d. Anchor Section: Zinc-alloy barrel section with flanged head with eye and corrosion-resistant, self-drilling screw. Eye designed to receive wire tie and to serve as head for drilling fastener into framing. Barrel length to suit sheathing thickness, allowing screw to seat directly against framing with flanged head covering hole in sheathing.
e. Fabricate sheet metal anchor sections and other sheet metal parts from **0.067-inch-** thick, steel sheet, galvanized after fabrication **0.078-inch-** thick,.

f. Wire Ties: Triangular-, rectangular-, or T-shaped wire ties fabricated from **0.25-inch-** diameter, **hot-dip galvanized steel** wire.

4. Available Products:
   a. Dayton Superior Corporation, Dur-O-Wal Division; **D/A 213 or D/A 210 with D/A 700-708**.
   b. Heckmann Building Products Inc.; **315-D with 316 or Pos-I-Tie**.
   c. Hohmann & Barnard, Inc.; **DW-10 DW-10HS or DW-10-X**.
   d. Wire-Bond; 1004, Type III or RJ-711.

2.10 EMBEDDED FLASHING MATERIALS

A. Metal Flashing: Provide metal flashing where flashing is exposed or partly exposed and where indicated, complying with Division 07 Section "Sheet Metal Flashing and Trim".

B. Cavity Wall Flashing
   1. Metal Sub Flashing with integral Drip Edge: Provide continuous under Flexible Flashing. Fabricate from stainless steel. Extend at least 3 inches into wall inner wythe CMU backup and 1/2 inch out from wall, with outer edge bent down 30 degrees and hemmed.
      a. Stainless Steel: ASTM A 240/A 240M, Type 304, 0.016 inch thick.
      b. Metal Flashing Terminations: Fabricate from stainless steel. Extend at least 3 inches into wall and out to exterior face of wall. At exterior face of wall, bend metal back on itself for 3/4 inch and down into joint 3/8 inch to form a stop for retaining sealant backer rod.
   2. Flexible Flashing: For flashing not exposed to the exterior, use **one of** the following, unless otherwise indicated:
      a. Rubberized-Asphalt Flashing: Composite flashing product consisting of a pliable, adhesive rubberized-asphalt compound, bonded to a high-density, cross-laminated polyethylene film to produce an overall thickness of not less than **0.040 inch**.
         1) Available Products:
            a) Advanced Building Products Inc.; Peel-N-Seal.
            b) Carlisle Coatings & Waterproofing; CCW-705-TWF Thru-Wall Flashing.
            c) Dayton Superior Corporation, Dur-O-Wal Division; Dur-O-Barrier-44.
            d) Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; Perm-A-Barrier Wall Flashing.
            e) Heckmann Building Products Inc.; No. 82 Rubberized-Asphalt Thru-Wall Flashing.
            f) Henry Company: Blueskin TWF
            g) Hohmann & Barnard, Inc.; Textroflash.
            h) Polyguard Products, Inc.; Polyguard 300.
            i) Polytite Manufacturing Corp.; Poly-Barrier Self-Adhering Wall Flashing.
            j) Williams Products, Inc.; Everlastic MF-40.
      b. Provide mechanically fastened stainless steel termination bar with continuous sealant at top.

2.11 MISCELLANEOUS MASONRY ACCESSORIES

A. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 or PVC, complying with ASTM D 2287, Type PVC-65406 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

B. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

C. Weep/Vent Products: Use the following, unless otherwise indicated:
   1. Mesh Weep/Vent: Free-draining mesh; made from polyethylene strands, full height and width of head joint and depth 1/8 inch less than depth of outer wythe; in color selected from manufacturer's standard.

a. Provide at 32” o.c. unless otherwise noted.

D. Cavity Drainage Material: Free-draining mesh, made from polymer strands that will not degrade within the wall cavity.
1. Provide one of the following configurations:
a. Strips, full-depth of cavity and 10 inches wide, with dovetail shaped notches 7 inches deep that prevent mesh from being clogged with mortar droppings.
2. Available Products:
a. Advanced Building Products Inc.; **Mortar Break II**.
b. Archovations, Inc.; CavClear Masonry Mat.
c. Dayton Superior Corporation, Dur-O-Wal Division; Polytite MortarStop.
d. Mortar Net USA, Ltd.; Mortar Net.
e. Hohmann & Barnard, Inc.

2.12 MASONRY CLEANERS

A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.
1. **Available** Manufacturers:
a. Diedrich Technologies, Inc.
b. EaCo Chem, Inc.
c. ProSoCo, Inc.

2.13 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.
1. Do not use calcium chloride in mortar or grout.
2. Limit cementitious materials in mortar to portland cement, **mortar cement,** and lime.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

C. Mortar for Unit Masonry: Comply with **ASTM C 270 BIA Technical Notes 8A**, Property Specification, Type S.

D. Pigmented Mortar: Use colored cement product. **Do not add pigments to colored cement products**.
1. Pigments shall not exceed 5 percent of **masonry cement or mortar cement** by weight.
2. Mix to match Architect's sample.

E. Colored-Aggregate Mortar: Produce required mortar color by using colored aggregates and natural color or white cement as necessary to produce required mortar color.

F. Grout for Unit Masonry: Comply with **ASTM C 476**, Proportions Specifications. Provide grout with a slump of 8 to 11 inches when placed in the masonry

2.14 SOURCE QUALITY CONTROL

A. Owner may engage a qualified independent testing agency to perform source quality-control testing indicated below:
1. Payment for these services will be made **by Owner**.
2. Retesting of materials failing to comply with specified requirements shall be done at Contractor's expense.

B. Clay Masonry Unit Test: For each type of unit furnished, per ASTM C 67.

C. Concrete Masonry Unit Test: For each type of unit furnished, per ASTM C 140.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.
C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.
B. Build chases and recesses to accommodate items specified in this and other Sections.
C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.
D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.
    1. Mix units from several pallets or cubes as they are placed.
F. Matching Existing Masonry: Match coursing, bonding, color, and texture of existing masonry.
G. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested per ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.
H. Comply with construction tolerances in ACI 530.1/ASCE 6/TMS 602 and with the following:
    1. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
    2. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2 inch maximum.
    3. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
    4. For exposed bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch , with a maximum thickness limited to 1/2 inch. Do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
    5. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.
    6. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to warpage of masonry units within tolerances specified for warpage of units.
    7. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than 1/16 inch from one masonry unit to the next.

3.3 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in **one-third running bond for Brick and running bond for CMU (all types)**; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

C. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
D. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
E. Fill space between steel frames and masonry solidly with mortar, unless otherwise indicated.
F. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.
G. Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.
H. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above, unless otherwise indicated.
    1. Install compressible filler in joint between top of partition and underside of structure above.
    2. Fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around plastic tubes of anchors and push tubes down into grout to provide 1/2-inch clearance between end of anchor rod and end of tube. Space anchors **48 inches** o.c., unless otherwise indicated.
    3. Wedge non-load-bearing partitions against structure above with small pieces of tile, slate, or metal. Fill joint with mortar after dead-load deflection of structure above approaches final position.
    4. At fire-rated partitions, treat joint between top of partition and underside of structure above to comply with Division 07 Section "Fire-Resistive Joint Systems."

3.4 MORTAR BEDDING AND JOINTING

A. Lay hollow **concrete masonry units** as follows:
    1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
    2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
    3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
    4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.
B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
C. Set trim units in full bed of mortar with full vertical joints. Fill dowel, anchor, and similar holes.
    1. Clean soiled surfaces with fiber brush and soap powder and rinse thoroughly with clear water.
    2. Allow cleaned surfaces to dry before setting.
    3. Wet joint surfaces thoroughly before applying mortar.
D. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness, unless otherwise indicated.

3.5 CAVITY WALLS

A. Bond wythes of cavity walls together using one of the following methods:
    1. Individual Metal Ties: Provide ties as shown installed in horizontal joints, but not less than one metal tie for **2.67 sq. ft.** of wall area spaced not to exceed **16 inches** o.c. horizontally and 16 inches o.c. vertically. Stagger ties in alternate courses. Provide additional ties within 12 inches of openings and space not more than 36 inches apart around perimeter of openings. At intersecting and abutting walls, provide ties at no more than 24 inches o.c. vertically.
        a. Where bed joints of wythes do not align, use adjustable (two-piece) type ties.
        b. Where one wythe is of clay masonry and the other of concrete masonry, use adjustable (two-piece) type ties to allow for differential movement regardless of whether bed joints align.
    2. Masonry Joint Reinforcement: Installed in horizontal mortar joints.

a. Where bed joints of both wythes align, use Truss type **reinforcement extending across both wythes**
b. Where bed joints of wythes do not align, use adjustable (two-piece) type reinforcement **with continuous horizontal wire in facing wythe attached to ties**.

B. Keep cavities clean of mortar droppings and other materials during construction. Bevel beds away from cavity, to minimize mortar protrusions into cavity. Do not attempt to trowel or remove mortar fins protruding into cavity.

C. Coat cavity face of backup wythe to comply with Division 07 Section "Bituminous Dampproofing."

3.6 INSTALLATION OF CAVITY WALL INSULATION: RIGID – BASE BID

A. Installing Cavity-Wall Insulation: Place small dabs of adhesive, spaced approximately 12 inches o.c. both ways, on inside face of insulation boards, or attach with plastic fasteners designed for this purpose. Fit courses of insulation between wall ties and other confining obstructions in cavity, with edges butted tightly both ways. Press units firmly against inside wythe of masonry or other construction as shown.
1. Fill cracks and open gaps in insulation with crack sealer compatible with insulation and masonry. Tape joints.

3.7 MASONRY JOINT REINFORCEMENT

A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.
1. Space reinforcement not more than 16 inches o.c.

Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings.

a. Reinforcement above is in addition to continuous reinforcement.

B. Interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

C. Provide continuity at wall intersections by using prefabricated T-shaped units.

D. Provide continuity at corners by using prefabricated L-shaped units.

E. Cut and bend reinforcing units as directed by manufacturer for continuity at **corners,** returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.8 ANCHORING MASONRY TO STRUCTURAL MEMBERS

A. Anchor masonry to structural members where masonry abuts or faces structural members to comply with the following:
1. Provide an open space not less than **1/2 inch** in width between masonry and structural member, unless otherwise indicated. Keep open space free of mortar and other rigid materials.
2. Anchor masonry to structural members with anchors embedded in masonry joints and attached to structure.
3. Space anchors as indicated, but not more than 24 inches o.c. vertically and horizontally.

3.9 ANCHORING MASONRY VENEERS

A. Anchor masonry veneers to **wall framing concrete and masonry backup** with **seismic** masonry-veneer anchors to comply with the following requirements:

3.10 CONTROL AND EXPANSION JOINTS

A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

B. Form control joints in concrete masonry **as follows**:
   1. Fit bond-breaker strips into hollow contour in ends of concrete masonry units on one side of control joint. Fill resultant core with grout and rake out joints in exposed faces for application of sealant.
   2. Install preformed control-joint gaskets designed to fit standard sash block.
   3. Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar or rake out joint for application of sealant.
   4. Install temporary foam-plastic filler in head joints and remove filler when unit masonry is complete for application of sealant.
   5. Where control joints extend from window or door head lintels and shelf angles, install bond breaker of building felt in horizontal joint below lintel and rake horizontal joint at lintel for installation of sealant.

C. Form expansion joints in brick made from clay or shale as follows:
   1. Build flanges of metal expansion strips into masonry. Lap each joint 4 inches (100 mm) in direction of water flow. Seal joints below grade and at junctures with horizontal expansion joints if any.
   2. Build flanges of factory-fabricated, expansion-joint units into masonry.
   3. Build in compressible joint fillers where indicated.
   4. Form open joint full depth of brick wythe and of width indicated, but not less than **3/8 inch** for installation of sealant and backer rod specified in Division 07 Section "Joint Sealants."

3.11 LINTELS

A. Install steel lintels where indicated.

B. Provide **masonry** lintels where shown and where openings of more than 12 inches for brick-size units and 24 inches for block-size units are shown without structural steel or other supporting lintels.

C. Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

3.12 FLASHING, WEEP HOLES, CAVITY DRAINAGE, AND VENTS

A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated. **Install vents at shelf angles, ledges, and other obstructions to upward flow of air in cavities, and where indicated.**

B. Install flashing as follows, unless otherwise indicated:
   1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
   2. At multiwythe masonry walls, including cavity walls, extend flashing through outer wythe, turned up a minimum of **8 inches**, and through inner wythe to within 1/2 inch of the interior face of wall in exposed masonry. Where interior face of wall is to receive furring or framing, carry flashing completely through inner wythe and turn flashing up approximately 2 inches on interior face.
   3. At multiwythe masonry walls, including cavity walls, extend flashing through outer wythe, turned up a minimum of **8 inches**, and 1-1/2 inches into the inner wythe.
   4. At masonry-veneer walls, extend flashing through veneer, across air space behind veneer, and up face of sheathing at least 8 inches; with upper edge tucked under building paper or building wrap, lapping at least 4 inches.

5. At lintels and shelf angles, extend flashing a minimum of 6 inches into masonry at each end. At heads and sills, extend flashing 6 inches at ends and turn up not less than 2 inches to form end dams.
6. Interlock end joints of ribbed sheet metal flashing by overlapping ribs not less than 1-1/2 inches or as recommended by flashing manufacturer, and seal lap with elastomeric sealant complying with requirements in Division 07 Section "Joint Sealants" for application indicated.
7. Install metal **drip edges and sealant stops** with ribbed sheet metal flashing by interlocking hemmed edges to form hooked seam. Seal seam with elastomeric sealant complying with requirements in Division 07 Section "Joint Sealants" for application indicated.
8. Install metal sub flashing and integral drip edges beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch back from outside face of wall and adhere flexible flashing to metal for the entire length.
9. Cut flexible flashing off flush with face of wall after masonry wall construction is completed.
10. Install flexible flashing with continuous stainless steel termination bar with continuous sealant at top.

C. Place cavity drainage material in cavities to comply with configuration requirements for cavity drainage material in Part 2 "Miscellaneous Masonry Accessories" Article.

D. Install vents in head joints in exterior wythes at spacing indicated. Use **specified weep/vent products**.

3.13 REINFORCED UNIT MASONRY INSTALLATION

A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.
1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.

B. Placing Reinforcement: Comply with requirements in **ACI 530.1/ASCE 6/TMS 602**.

C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.
1. Comply with requirements in **ACI 530.1/ASCE 6/TMS 602** for cleanouts and for grout placement, including minimum grout space and maximum pour height.
2. Limit height of vertical grout pours to not more than **60 inches**.

3.14 SPECIAL INSPECTIONS

A. Special Inspections and tests shall be performed by the Special Inspector or Special Inspection Agency.

B. Preconstruction Testing: Perform preconstruction testing as follows:
1. Concrete Masonry Unit Test: For each type of unit required, according to ASTM C 140 for compressive strength.
2. Mortar Test (Property Specification): For each mix required, according to ASTM C 780 for compressive strength.
3. Grout Test (Compressive Strength): For each mix required, according to ASTM C 1019.

C. Construction Testing: Perform construction testing as follows:
1. Testing Frequency: One set of tests for each 5000 sq. ft. of wall area or portion thereof.
2. Concrete Masonry Unit Test: For each type of unit provided, according to ASTM C 140 for compressive strength.
3. Mortar Test (Property Specification): For each mix provided, according to ASTM C 780. Test mortar for compressive strength.
4. Grout Test (Compressive Strength): For each mix provided, according to ASTM C 1019.

D. Verification and inspection of masonry construction shall be Level 1 in accordance with Table 1704.5.1 of North Carolina State Building Code 2012 and as follows:

1. Perform periodic inspections of the installed masonry construction to verify compliance with the details shown on the construction documents such as use of proper mortar and grout, construction of mortar joints, size, location, spacing and lapping of reinforcing steel, installation of anchors into masonry construction.
2. Perform continuous inspections during grout placement to verify use of proper grout mix, locations of grout, cleanliness of grout spaces, cleanouts as required and proper consolidation of grout.
    a. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.
    b. Place grout only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.
    c. Place grout only after inspectors have verified proportions of site-prepared grout.

E. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

F. Additional testing performed to determine compliance of corrected work with specified requirements shall be at Contractor’s expense.

3.15 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
5. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
6. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.
7. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.
8. Clean stone trim to comply with stone supplier's written instructions.
9. Clean limestone units to comply with recommendations in ILI's "Indiana Limestone Handbook."

3.16 MASONRY WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

B. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.
1. Crush masonry waste to less than 4 inches in each dimension.
2. Mix masonry waste with at least two parts of specified fill material for each part of masonry waste. Fill material is specified in Division 31 Section "Earth Moving."

3. Do not dispose of masonry waste as fill within 18 inches of finished grade.

C. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 04 20 00

SECTION 09 68 13 - TILE CARPETING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes modular, fusion-bonded, tufted carpet tile.
B. Related Sections include the following:
   1. Division 09 Section "Resilient Base and Accessories" for resilient wall base and accessories installed with carpet tile.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include manufacturer's written data on physical characteristics, durability, and fade resistance. Include installation recommendations for each type of substrate.
B. Shop Drawings: Show the following:
   1. Columns, doorways, enclosing walls, or partitions, built-in cabinets, and locations where cutouts are required in carpet tiles.
   2. Existing flooring materials to be removed.
   3. Existing flooring materials to remain.
   4. Carpet tile type, color, and dye lot.
   5. Type of subfloor.
   6. Type of installation.
   7. Pattern of installation.
   8. Pattern type, location, and direction.
   9. Pile direction.
   10. Type, color, and location of insets and borders.
   11. Type, color, and location of edge, transition, and other accessory strips.
   12. Transition details to other flooring materials.
C. Samples: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.
   1. Carpet Tile: Full-size Sample.
   2. Exposed Edge, Transition, and other Accessory Stripping: 12-inch- long Samples.
D. Product Schedule: For carpet tile. Use same designations indicated on Drawings.
E. Qualification Data: For Installer.
F. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency.
G. Maintenance Data: For carpet tiles to include in maintenance manuals. Include the following:
   1. Methods for maintaining carpet tile, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule.
   2. Precautions for cleaning materials and methods that could be detrimental to carpet tile.
H. Warranty: Special warranty specified in this Section.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who is certified by the Floor Covering Installation Board or who can demonstrate compliance with its certification program requirements.
B. Fire-Test-Response Characteristics: Provide products with the critical radiant flux classification indicated in Part 2, as determined by testing identical products per ASTM E 648 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
C. Mockups: Before installing carpet tile, build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
   1. Approved mockups may become part of the completed Work if undamaged at time of Substantial Completion.
D. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to carpet tile installation including, but not limited to, the following:
   1. Review delivery, storage, and handling procedures.
   2. Review ambient conditions and ventilation procedures.
E. Carpet submittals, actual products, and installation shall be tested by a 3rd parting testing agency hired by the Owner. All documentation and materials shall be provided suitable for 3rd party testing. Carpet shall be tested for compliance with the standards and requirements of Term Contract No. 360A of the State of North Carolina Department of Administration Division and Purchase and Contract.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Comply with CRI 104, Section 5, "Storage and Handling."

1.6 PROJECT CONDITIONS

A. Comply with CRI 104, Section 7.2, "Site Conditions; Temperature and Humidity" and Section 7.12, "Ventilation."
B. Environmental Limitations: Do not install carpet tiles until wet work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
C. Do not install carpet tiles over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive and concrete slabs have pH range recommended by carpet tile manufacturer.
D. Where demountable partitions or other items are indicated for installation on top of carpet tiles, install carpet tiles before installing these items.

1.7 WARRANTY

A. Special Warranty for Carpet Tiles: Manufacturer's standard form in which manufacturer agrees to repair or replace components of carpet tile installation that fail in materials or workmanship within specified warranty period.
   1. Warranty does not include deterioration or failure of carpet tile due to, vandalism, or abuse.
   2. Failures include, but are not limited to, more than 10 percent loss of face fiber, edge raveling, snags, runs, loss of tuft bind strength, dimensional stability, excess static discharge, and delamination.
   3. Warranty Period: Lifetime.

1.8 EXTRA MATERIALS

A. Furnish extra materials described below, before installation begins, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Carpet Tile: Full-size units equal to 5 percent of amount installed for each type indicated, but not less than 10 sq. yd..

PART 2 - PRODUCTS

2.1 CARPET TILE

A. Carpet Tile shall be listed and comply with the specified requirements of Term Contract 360A of the State of North Carolina Department of Administration Division of Purchase and Contract.
B. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include the following:
   1. Patcraft
   2. Interface
   3. Shaw Contract Group
   4. Cambridge
   5. Bolyu
   6. Mannington
   7. The Mohawk Company (including LEES, and Bigelow Brands)
   8. Milliken
C. Carpet Type CPT-1:
   1. Basis of design: Manufacturer: Interface
      a. Collection Cubic“4287 - Shape”, Style/Pattern “1380102500”
   2. Pile Construction/Surface: Multi-level pattern loop
   3. Pile Fiber and Type: eco solution q nylon or equal.
   4. Dye Method: 100% Solution Dyed
   5. Density: min 5,600
   6. Gage: 1/12”
   7. Stitches per Inch: min. 8
   8. Face Weight: min. 14 oz/yd^2
   9. Protective Treatment: Manufacturer’s recommended standard for product
   10. Size: 24” x 24” Tiles
   11. Warranty: Wearability - Lifetime
   12. ADA Compliance: Yes
   13. Installation Method: Non Directional
D. Carpet Type CPT-2:
   1. Basis of design: Manufacturer: Interface
      a. Collection Cubic “4292 - Area”, Style/Pattern “1380102500”
   2. Pile Construction/Surface: Tufted, Texture Loop
   3. Pile Fiber and Type: Aquafil econyl nylon type 6 or equal
   4. Dye Method: 100% Solution Dyed
   5. Density: min 7,400
   6. Gage: 1/12”
   7. Stitches per Inch: min. 8
   8. Face Weight: min. 16 oz/yd^2
   9. Protective Treatment: Manufacturer’s recommended standard for product
   10. Size: min. 19.7” x 19.7” Tiles, 24” x 24” tiles acceptable
   11. Warranty: Wearability - Lifetime
   12. ADA Compliance: Yes
   13. Installation Method: Non Directional

E. Carpet Type CPT-3: Not Used

2.2 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided or recommended by carpet tile manufacturer.
B. Adhesives: Water-resistant, mildew-resistant, nonstaining, pressure-sensitive type to suit products and subfloor conditions indicated, that complies with flammability requirements for installed carpet tile and is recommended by carpet tile manufacturer for releasable installation.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet tile performance. Examine carpet tile for type, color, pattern, and potential defects.
B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:
   1. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by carpet tile manufacturer.
   2. Subfloor finishes comply with requirements specified in Division 03 Section "Cast-in-Place Concrete" for slabs receiving carpet tile.
   3. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.
C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General: Comply with CRI 104, Section 6.2, "Site Conditions; Floor Preparation," and with carpet tile manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile installation.
B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch wide or wider and protrusions more than 1/32 inch, unless more stringent requirements are required by manufacturer's written instructions.
C. Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by carpet tile manufacturer.
D. Clean metal substrates of grease, oil, soil and rust, and prime if directed by adhesive manufacturer. Rough sand painted metal surfaces and remove loose paint. Sand aluminum surfaces, to remove metal oxides, immediately before applying adhesive.
E. Broom and vacuum clean substrates to be covered immediately before installing carpet tile.

3.3 INSTALLATION

A. General: Comply with CRI 104, Section 14, "Carpet Modules," and with carpet tile manufacturer's written installation instructions.
B. Installation Method: As recommended in writing by carpet tile manufacturer Glue down; install every tile with full-spread, releasable, pressure-sensitive adhesive.
C. Maintain dye lot integrity. Do not mix dye lots in same area.

D. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet tile manufacturer.
E. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use nonpermanent, nonstaining marking device.
G. Install pattern parallel to walls and borders.
H. Stagger joints of carpet tiles so carpet tile grid is offset from access flooring panel grid. Do not fill seams of access flooring panels with carpet adhesive; keep seams free of adhesive.

3.4 INSTALLATION METHOD

A. Confirm with Architect prior to installation whether tile is to be installed monolithic or quarter turn.

3.5 CLEANING AND PROTECTION

A. Perform the following operations immediately after installing carpet tile:
   1. Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet tile manufacturer.
   2. Remove yarns that protrude from carpet tile surface.
   3. Vacuum carpet tile using commercial machine with face-beater element.
B. Protect installed carpet tile to comply with CRI 104, Section 16, "Protection of Indoor Installations."
C. Protect carpet tile against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer.

END OF SECTION 09 68 13

SECTION 32 32 23 - GEOGRID INTERLOCKING CONCRETE RETAINING WALL

PART 1- GENERAL

1.1 SUMMARY

A. Work shall consist of designing, furnishing and construction of a retaining wall as indicated on the drawings, equal to the basis of design: KEYSTONE Standard II Unit Retaining Wall System, in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans.

B. Work includes preparing foundation soil, furnishing and installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the construction drawings.

C. Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the construction drawings.

1.2 RELATED SECTIONS

A. Section 31 00 00 – Earthwork

B. Section 01 41 00- Special Inspection Services

1.3 REFERENCE DOCUMENTS

A. American Society for Testing and Materials (ASTM)

1.	ASTM C140	Sampling and Testing Concrete Masonry Units
2.	ASTM C1372	Specification for Dry-Cast Segmental Retaining Wall Units
3.	ASTM D422	Particle-Size Analysis of Soils
4.	ASTM D698	Laboratory Compaction Characteristics of Soil -Standard Effort
5.	ASTM D1557	Laboratory Compaction Characteristics of Soil -Modified Effort
6.	ASTM D3034	Polyvinyl Chloride Pipe (PVC)
7.	ASTM D4318	Liquid Limit, Plastic Limit and Plasticity Index of Soils
8.	ASTM D4475	Horizontal Shear Strength of Pultruded Reinforced Plastic Rods
9.	ASTM D4476	Flexural Properties of Fiber Reinforced Pultruded Plastic Rods
10.	ASTM D4595	Tensile Properties of Geotextiles - Wide Width Strip
11.	ASTM D5262	Unconfined Tension Creep Behavior of Geosynthetics
12.	ASTM D5818	Evaluate Installation Damage of Geosynthetics
13.	ASTM D6637	Tensile Properties of Geogrids – Single or Multi-Rib
14.	ASTM D6638	Connection Strength - Reinforcement/Segmental Units
15.	ASTM D6706	Geosynthetic Pullout Resistance in Soil
16.	ASTM D6916	Shear Strength Between Segmental Concrete Units

B. American Association of State Highway and Transportation Officials (AASHTO)

1. AASHTO M 252 Corrugated Polyethylene Drainage Pipe
2. AASHTO M 288 Geotextile Specification for Highway Applications

C. National Concrete Masonry Association (NCMA)

1. NCMA SRWU-1 Test Method for Determining Connection Strength of SRW

2. NCMA SRWU-2 Test Method for Determining Shear Strength of SRW

1.4 SUBMITTALS/CERTIFICATION

A. Contractor shall submit a Manufacturer's certification, prior to start of work, that the retaining wall system components meet the requirements of this specification and the structure design.

B. Contractor shall submit construction drawings and design calculations for the retaining wall system prepared and stamped by a Professional Engineer registered in North Carolina. The engineering designs, techniques, and material evaluations shall be in accordance with the System Manufacturer's Design Manual.

1.5 QUALITY ASSURANCE

A. Contractor shall submit a list of five (5) previously constructed projects of similar size and magnitude by the wall installer where the Standard or Compac retaining wall system has been constructed successfully. Contact names and telephone numbers shall be listed for each project.

B. Contractor shall provide evidence that the design engineer has a minimum of five years of documental experience in the design for reinforced soil structures. The design engineer shall provide proof of current professional liability insurance with an aggregate coverage limit of not less than $2,000,000.

C. Owner shall/may provide soil testing and quality assurance inspection during earthwork and wall construction operations. Contractor shall provide any quality control testing or inspection not provided by the Owner. Owner's quality assurance program does not relieve the contractor of responsibility for quality control and wall performance.

1.6 DELIVERY, STORAGE AND HANDLING

A. Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification have been received.

B. Contractor shall protect all materials from damage due to jobsite conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following:
1. Keystone Retaining Wall Systems. Basis of Design.
2. Anchor Wall Systems.
3. Allan Block.
4. VERSA-LOK

2.2 DEFINITIONS

A. Standard Unit - a concrete retaining wall element machine made from Portland cement, water, and aggregates.

B. Structural Geogrid - a structural element formed by a regular network of integrally connected tensile elements with apertures of sufficient size to allow interlocking with surrounding soil, rock, or earth and function primarily as reinforcement.

C. Unit Drainage Fill - drainage aggregate that is placed within and immediately behind the Geogrid interlocking concrete units.

D. Reinforced Backfill - compacted soil that is placed within the reinforced soil volume as outlined on the plans.

2.3 GEOGRID INTERLOCKING CONCRETE RETAINING WALL UNITS

A. Geogrid interlocking concrete units shall conform to the following architectural requirements:

1. Face color - concrete gray, unless otherwise specified. The Owner may specify standard manufacturers' color.
2. Face finish – hard split in angular tri-plane or straight face configuration. Other face finishes will not be allowed without written approval of Owner.
3. Bond configuration - running with bonds nominally located at midpoint vertically adjacent units, in both straight and curved alignments.
4. Exposed surfaces of units shall be free of chips, cracks or other imperfections when viewed from a distance of 10 feet under diffused lighting.

B. Geogrid interlocking concrete materials shall conform to the requirements of ASTM C1372 - Standard Specifications for Segmental Retaining Wall Units.

C. Geogrid interlocking concrete units shall conform to the following structural and geometric requirements measured in accordance with ASTM C140 Sampling and Testing Concrete Masonry Units:

1. Compressive strength: ≥ 3000 psi (21 MPa);
2. Absorption: ≤ 8 % for standard weight aggregates;
3. Dimensional tolerances: ± 1/8" (3 mm) from nominal unit dimensions not including rough split face;
4. Unit size: 8" (203 mm) (H) x 18" (457 mm)(W) x 18" (457 mm)(D) minimum;
5. Unit weight: 90-lbs/unit (41 kg/unit) minimum for standard weight aggregates.

D. Geogrid interlocking concrete units shall conform to the following performance testing:

1. Inter-unit shear strength in accordance with ASTM D6916 (NCMA SRWU-2): 1500-plf (21 kN/m) minimum at 2-psi (13 kPa) normal pressure;
2. Geogrid/unit peak connection strength in accordance with ASTM D6638 (NCMA SRWU-1): 900-plf (13 kN/m) minimum at 2-psi (13 kPa) normal force.

E. Geogrid interlocking concrete units shall conform to the following constructability requirements:

1. Vertical setback: 1/8" (3 mm) ± per course (near vertical) or 1" (25 mm) + per course per the design;
2. Alignment and grid positioning mechanism: fiberglass pins, two per unit;
3. Horizontal gap between erected units shall be ≤ 1/2 inch (13 mm).

2.4 SHEAR AND REINFORCEMENT PIN CONNECTORS

A. Shear and reinforcement pin connectors shall be 1/2-inch (12 mm) diameter thermoset isopthalic polyester resin-pultruded fiberglass reinforcement rods to provide connection between vertically and horizontally adjacent units and the geosynthetic reinforcement, with the following requirements:

1. Flexural Strength in accordance with ASTM D4476: 128,000 psi (882 MPa) minimum;
2. Short Beam Shear in accordance with ASTM D4475: 6,400 psi (44 MPa) minimum.

B. Shear and reinforcement pin connectors shall be capable of holding the geogrid in the proper design position during grid pre-tensioning and backfilling.

2.5 BASE LEVELING PAD MATERIAL

A. Material shall consist of a compacted crushed stone base or non-reinforced concrete as shown on the construction drawings.

2.6 UNIT DRAINAGE FILL

A. Unit drainage fill shall consist of clean 1" (25 mm) minus crushed stone or crushed gravel meeting the following gradation tested in accordance with ASTM D-422:

Sieve Size	Percent Passing
1 inch (25 mm)	100
3/4-inch (19 mm)	75-100
No. 4 (4.75 mm)	0 - 10
No. 50 (300um)	0 - 5

B. Drainage fill shall be placed within the cores of, between, and behind the units as indicated on the design drawings. Not less than 1.2 cubic foot (0.033 m^3), of drainage fill shall be used for each square foot (0.093 m^2) of wall face unless otherwise specified.

2.7 REINFORCED BACKFILL

A. Reinforced backfill shall be free of debris and meet the following gradation tested in accordance with ASTM D-422:

Sieve Size	Percent Passing
2 inch (50 mm)	100
3/4-inch (19 mm)	100-75
No. 40 (425 um)	0-60
No. 200 (75 um)	0-35

Plasticity Index (PI) <15 and Liquid Limit <40 per ASTM D-4318.

B. The maximum aggregate size shall be limited to 3/4 inch (19 mm) unless installation damage tests have been performed to evaluate potential strength reductions to the geogrid design due to damage during construction.

C. Material can be site-excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the backfill or in the reinforced soil mass.

D. Contractor shall submit reinforced fill sample and laboratory test results to the Architect/Engineer for approval prior to the use of any proposed reinforced fill material.

2.8 GEOGRID SOIL REINFORCEMENT

A. Geosynthetic reinforcement shall consist of geogrids manufactured specifically for soil reinforcement applications and shall be manufactured from high tenacity polyester yarn or high density polyethylene. Polyester geogrid shall be knitted from high tenacity polyester filament yarn with a molecular weight exceeding 25,000 g/m and a carboxyl end group values less than 30. Polyester geogrid shall be coated with an impregnated PVC coating that resists peeling, cracking, and stripping.

B. Ta, Long Term Allowable Tensile Design Load, of the geogrid material shall be determined as follows:

Ta = Tult / (RFcr*RFd*RFid*FS)
Ta shall be evaluated based on a 75-year design life.

1. Tult, Short Term Ultimate Tensile Strength shall be determined in accordance with ASTM D4595 or ASTM D6637.
   Tult is based on the minimum average roll values (MARV).

2. RFcr, Reduction Factor for Long Term Tension Creep
   RFcr shall be determined from 10,000-hour creep testing performed in accordance with ASTM D5262. Reduction value = 1.45 minimum.

3. RFd, Reduction Factor for Durability
   RFd shall be determined from polymer specific durability testing covering the range of expected soil environments. RFd = 1.10 minimum.

4. RFid, Reduction Factor for Installation Damage
   RFid shall be determined from product specific construction damage testing performed in accordance with ASTM D5818. Test results shall be provided for each product to be used with project specific or more severe soil type. RFid = 1.05 minimum.

5. FS, Overall Design Factor of Safety
   FS shall be 1.5 unless otherwise noted for the maximum allowable working stress calculation.

C. The maximum design tensile load of the geogrid shall not exceed the laboratory tested ultimate strength of the geogrid/facing unit connection divided by a factor of safety of 1.5. The connection strength testing and computation procedures shall be in accordance with ASTM D6638 Connection Strength between Geosynthetic Reinforcement and Segmental Concrete Units (NCMA SRWU-1).

D. Soil Interaction Coefficient, Ci
Ci values shall be determined per ASTM D6706 at a maximum 0.75-inch (19 mm) displacement.

E. Manufacturing Quality Control
The geogrid manufacturer shall have a manufacturing quality control program that includes QC testing by an independent laboratory.
The QC testing shall include:
Tensile Strength Testing
Melt Flow Index (HDPE)
Molecular Weight (Polyester)

2.9 DRAINAGE PIPE

A. If required, the drainage pipe shall be perforated or slotted PVC pipe manufactured in accordance with ASTM D-3034 or corrugated HDPE pipe manufactured in accordance with AASHTO M252.

2.10 GEOTEXTILE FILTER FABRIC

A. When required, geotextile filter fabric shall be a needle punched, nonwoven fabric that meets the requirements of AASHTO M288.

PART 3 - EXECUTION

3.1 EXCAVATION

A. Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall inspect the excavation and approve prior to placement of leveling material or fill soils. Proof roll foundation area as directed to determine if remedial work is required.

B. Over-excavation and replacement of unsuitable foundation soils and replacement with approved compacted fill will be compensated as agreed upon with the Owner.

3.2 BASE LEVELING PAD

A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches (150 mm) and extend laterally a minimum of 6" (150 mm) in front and behind the Geogrid interlocking wall unit.

B. Soil leveling pad materials shall be compacted to a minimum of 95 % Standard Proctor density per ASTM D-698 or 92% Modified Proctor Density per ASTM D1557.

C. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.

3.3 GEOGRID INTERLOCKING UNIT INSTALLATION

A. First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.

B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.

C. Install shear/connecting devices per manufacturer's recommendations.

D. Place and compact drainage fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.

E. Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed two courses.

3.4 STRUCTURAL GEOGRID INSTALLATION

A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.

B. Geogrid reinforcement shall be placed at the strengths, lengths, and elevations shown on the construction design drawings or as directed by the Engineer.

C. The geogrid shall be laid horizontally on compacted backfill and attached to the Geogrid interlocking wall pins and within 1 inch of the face of the units. Place the next course of Geogrid interlocking concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.

D. Geogrid reinforcements shall be continuous throughout their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps greater than 2 inches between adjacent pieces of geogrid are not permitted.

3.5 REINFORCED BACKFILL PLACEMENT

A. Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid and installation damage.

B. Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches (150 mm) where hand compaction is used, or 8 - 10 inches (200 to 250 mm) where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.

C. Reinforced backfill shall be compacted to a minimum of 95 % Standard Proctor density per ASTM D-698 or 92% Modified Proctor Density per ASTM D1557. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be dry of optimum, + 0%, - 3%.

D. Only lightweight hand-operated equipment shall be allowed within 3 feet (1 m) from the tail of the Geogrid interlocking concrete unit.

E. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches (150 mm) is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.

F. Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH (15 KPH). Sudden braking and sharp turning shall be avoided.

G. At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

3.6 CAP INSTALLATION

A. Cap units shall be glued to underlying units with an all-weather concrete construction adhesive.

3.7 AS-BUILT CONSTRUCTION TOLERANCES

A. Vertical alignment: ± 1.5" (40 mm) over any 10' (3 m) distance.

B. Wall Batter: within 2 degrees of design batter.

C. Horizontal alignment: ± 1.5" (40 mm) over any 10' (3 m) distance.
Corners, bends & curves: ± 1 foot (300 mm) to theoretical location.

D. Maximum horizontal gap between erected units shall be 1/2 inch (13 mm).

3.8 FIELD QUALITY CONTROL

A. Quality Assurance - The Owner shall/may engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction. This does not relieve the Contractor from securing the necessary construction quality control testing.

B. Quality Assurance should include foundation soil inspection. Verification of geotechnical design parameters, and verification that the contractor's quality control testing is adequate as a minimum. Quality assurance shall also include observation of construction for general compliance with design drawings and project specifications. *(Quality Assurance is usually best performed by the site geotechnical engineer.)*

C. Quality Control – The Contractor shall engage inspection and testing services to perform the minimum quality control testing described in the retaining wall design plans and specifications. Only qualified and experienced technicians and engineers shall perform testing and inspection services.

D. Quality Control testing shall include soil and backfill testing to verify soil types and compaction and verification that the retaining wall is being constructed in accordance with the design plans and project specifications.

3.9 WASTE DISPOSAL

B. Salvageable Materials: Unless otherwise indicated, excess materials are Contractor's property. At completion of retaining wall work, remove from Project site.

C. Waste Disposal as Fill Material: Dispose of clean masonry unit waste, including excess or soil-contaminated sand, and broken masonry units, by crushing and mixing with fill material as fill is placed and as permitted by retaining wall system engineer's instruction.
1. Crush masonry waste to less than 4 inches in each dimension.
2. Mix masonry waste with at least two parts of specified fill material for each part of masonry waste.
3. Do not dispose of masonry waste as fill within 18 inches of finished grade.

D. Excess Masonry Waste: Remove all other waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 32 32 23

ROOM LEGEND - 100 WING

Number	Name	Area
100	COMMONS	7148 SF
101	VESTIBULE	308 SF
102	RECEPTION	819 SF
103	SRO OFFICER	155 SF
104	NURSE	313 SF
105	MEN	50 SF
106	SEC/ TREASURER	156 SF
107	NCSIS	147 SF
108	STORAGE	187 SF
109	OPEN WORKROOM	469 SF
110	CORRIDOR	764 SF
111	TOILET	75 SF
112	WOMEN	51 SF
113	STORAGE	44 SF
114	TOILET	75 SF
115	AP	162 SF
116	STUDENT SERVICES	270 SF
117	OFFICE/ TESTING	147 SF
118	OFFICE/ TESTING	147 SF
119	OFFICE/ TESTING	147 SF
120	OPEN	150 SF
121	CONFERENCE	290 SF
122	GUIDANCE	321 SF
123	RECORDS	150 SF
124	SEC/ TREASURER	157 SF
125	PRINCIPAL	244 SF
126	IDF	75 SF
127	ELEC	126 SF
130	CORRIDOR	2502 SF
131	CAFETERIA	4710 SF
132	MULTIPURPOSE ROOM	4052 SF
133	SERVING LINE	369 SF
134	DISH LINE	369 SF
135	KITCHEN	830 SF
136	FREEZER	239 SF
137	DRY STORAGE	367 SF
138	COOLER	148 SF
139	OFFICE	93 SF
140	CORRIDOR	289 SF

ROOM LEGEND - 100 WING

Number	Name	Area
141	TOILET	61 SF
142	JANITOR	108 SF
143	LOCKERS	28 SF
144	CAN WASH	18 SF
145	ELECTRICAL	512 SF
146	MECHANICAL	641 SF
147	SPRINKLER	121 SF
148	Room	Not Placed
149	Room	Not Placed
150	VESTIBULE	319 SF
151	ELEV	74 SF
152	RESOURCE	405 SF
153	STORAGE	73 SF
154	STORAGE	107 SF
155	RESOURCE	330 SF
156	RESOURCE	439 SF
158	EMER. ELEC.	97 SF
159	RECEIVING	201 SF

ROOM LEGEND - 200 WING

Number	Name	Area
200A	CORRIDOR	998 SF
200B	CORRIDOR	2239 SF
201	VESTIBULE	312 SF
202	MEN	173 SF
203	WOMEN	172 SF
204	JAN	50 SF
205	IT STORAGE	300 SF
206	EC/SC KITCHEN	471 SF
207	EC/SC	1086 SF
208	EC/SC RESOURCE	430 SF
209	ELEC	75 SF
210	TOILET	117 SF
211	TOILET	99 SF
212	HEALTH	837 SF
213	EC/SC	845 SF
214	STORAGE	347 SF
215	STO/ OPEN	402 SF
216	BUSINESS LAB	1630 SF

ROOM LEGEND - 200 WING

Number	Name	Area
217	KEYBOARDING	1159 SF
218	7th LA/SS/MA	847 SF
219	IDF	55 SF
220	STORAGE	178 SF
221	8th SCIENCE PREP	164 SF
222	7th LA/SS/MA	838 SF
223	7th SCIENCE	1256 SF
224	RESOURCE	473 SF
225	7th LA/SS/MA	848 SF
227	MEN	171 SF
228	WOMEN	170 SF
229	TEACHER WORKROOM	380 SF
230	TOILET	50 SF
231	TOILET	50 SF

ROOM LEGEND - 300 WING

Number	Name	Area
300A	CORRIDOR	642 SF
300B	CORRIDOR	1432 SF
301	OPEN	2257 SF
302	VESTIBULE	311 SF
303	WOMEN	229 SF
304	MEN	231 SF
305	JANITOR	54 SF
306	MEDIA STORAGE	433 SF
307	ELEC	60 SF
308	6th LA/SS/MA	843 SF
309	LA/SS/MA	832 SF
309A	MDF	177 SF
310	6th LA/SS/MA	837 SF
311	6th LA/SS/MA	834 SF
312	6th SCIENCE	1160 SF
313	6TH LA/SS/MA	770 SF
314	6th SCIENCE PREP	299 SF
315	WOMEN	48 SF
316	MEN	48 SF
318	6th SCIENCE	1168 SF
319	6th LA/SS/MA	824 SF

ROOM LEGEND - 600 WING

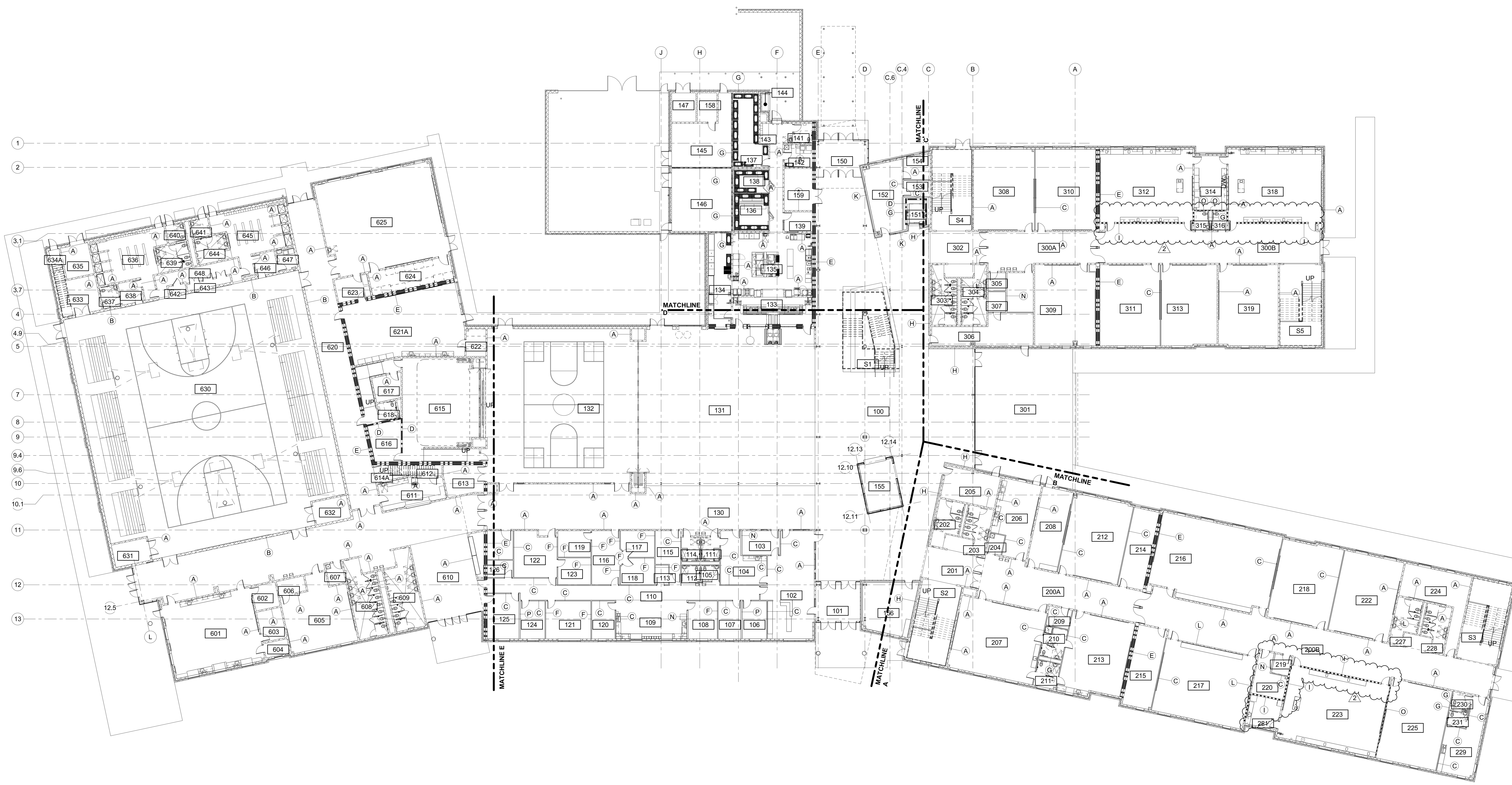
Number	Name	Area
600	CORRIDOR	2576 SF
601	ART	1145 SF
602	OFFICE	101 SF
603	STORAGE	128 SF
604	KILN	60 SF
605	HEALTH/ P.E.	728 SF
606	STORAGE	69 SF
607	JAN	59 SF
608	WOMEN	370 SF
609	MEN	370 SF
610	LOBBY	809 SF
611	CONCESSION	293 SF
612	STORAGE	59 SF
613	STORAGE	196 SF
614A	MECH	80 SF
614B	MECHANICAL PLATFORM	1158 SF
615	CHORUS	1315 SF
616	STORAGE	200 SF
617	OFFICE	117 SF
618	TOILET	57 SF
620	CORRIDOR	1575 SF
621A	AGRICULTURE EDUCATION	1274 SF

ROOM LEGEND - 600 WING

Number	Name	Area
621B	STORAGE	Not Placed
622	STORAGE	91 SF
623	OFFICE	132 SF
624	STORAGE	331 SF
625	BAND	1893 SF
626	STORAGE	Not Placed
630	GYM	10106 SF
631	STORAGE	138 SF
632	STORAGE	135 SF
633	STORAGE	242 SF
634A	MECH	56 SF
634B	MECHANICAL PLATFORM	2815 SF
635	STORAGE	150 SF
636	LOCKER RM.	547 SF
637	TOILET	66 SF
638	OFFICE	82 SF
639	WOMEN'S TOILET	143 SF
640	TOILET	54 SF
641	TOILET	54 SF
642	JANITOR	24 SF
643	STORAGE	50 SF
644	MEN'S TOILET	143 SF
645	LOCKER RM.	544 SF
646	OFFICE	82 SF
647	MECH	66 SF
648	CORRIDOR	223 SF

GENERAL PLAN NOTES

1. SEE WALL TYPES LEGEND ON SHEET A1.02 FOR TYPES INDICATED BY SYMBOL
2. ALL DOOR FRAMES SHALL BE 4" FROM THE FACE OF PERPENDICULAR WALLS UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS TAKEN FROM THE FINISHED FACE OF THE WALL (E.G. SURFACE OF CMU OR GYPSUM FOR STUD WALLS) AND THE CENTERLINE OF COLUMNS.
4. ALL RATED WALL CONSTRUCTION TO COMPLY WITH U.L REQUIREMENTS.
5. REFER TO EXTERIOR ELEVATIONS FOR EXTERIOR MASONRY CONTROL FOR INTERIOR CONTROL JOINTS.
6. ALL EXTERIOR WINDOWS TO RECEIVE BLINDS AS SPECIFIED. INTERIOR WINDOWS MARKED "BL" TO RECEIVE BLINDS.
7. FURNISHINGS SHOWN WITH DASHED LINES NOT IN CONTRACT UNLESS OTHERWISE NOTED.
8. PROVIDE 1" RADIUS BULLNOSE UP TO A HEIGHT OF 8' AT ALL OUTSIDE CMU CORNERS FOR INTERIOR WALLS.
9. FIELD VERIFY AND COORDINATE FIELD CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION, INSTALLATION AND CONSTRUCTION OF BUILDING COMPONENTS. THE GC IS TO INFORM THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
10. FIRE RATED WALLS SHALL HAVE RATINGS STENCILED ABOVE THE CEILING FOR IDENTIFICATION. STENCILED LETTERS SHALL BE RED, 2" HIGH AT 10'-0" OC MAX ALONG WALL, I.E. "4 HR. RATED WALL"
11. REFER TO G0-01 FOR STANDARD ABBREVIATIONS AND NOTATIONS.
12. GENERAL CONTRACTOR SHALL PROVIDE LINTELS FOR MASONRY OPENINGS AND WALL PENETRATIONS AS SHOWN ON ALL DRAWINGS.
13. DIMENSIONS FOR MASONRY OPENINGS ON PLANS ARE GIVEN AS "ROUGH" OPENINGS. GC AND ALL SUBCONTRACTORS RESPONSIBLE FOR FABRICATION OF BUILDING COMPONENTS TO ALLOW FOR SHIM AND INSULATION SPACE.
14. NOTE SLAB DEPRESSIONS FOR TILE AND ATHLETIC FLOORS AS INDICATED BY PLAN KEYNOTES AND INDICATED ON STRUCTURAL DRAWINGS.
15. ALL BLOCKING AND PLYWOOD UTILIZED SHALL BE FIRE RETARDANT TREATED WOOD.
16. ALL RATED CMU WALLS TO BE D-2 CLASSIFIED CMU.
17. ALL EXTERIOR CONCRETE WALKS TO BE BEDDED ON 4" OF #57 STONE ON COMPACTED SUBGRADE WITHIN 6'-0" OF THE BUILDING. ADJOINING WALKS ON COMPACTED SUBGRADE, SEE CIVIL DRAWINGS.
18. GC SHALL PROVIDE FIRE RETARDANT 3/4" PLYWOOD TO MOUNT PANELS AND EQUIPMENT.
19. ALL EXTERIOR STEEL COMPONENTS TO BE HOT-DIPPED GALVANIZED, INCLUDING BUT NOT LIMITED TO ALL EXTERIOR STAIR AND HANDRAIL/ GUARDRAIL COMPONENTS AND STEEL LINTELS.



1 / A1-01 **OVERALL FIRST FLOOR**
1" = 20'-0"

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smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

SMITH SINNETT ARCHITECTURE, PA · CORPORATION · CERT. NO. 50172 · RALEIGH, NORTH CAROLINA · REGISTERED ARCHITECTURAL

DREW WILGUS · REGISTERED ARCHITECT · 12017 · 6.14.19 · RALEIGH, NC · NORTH CAROLINA

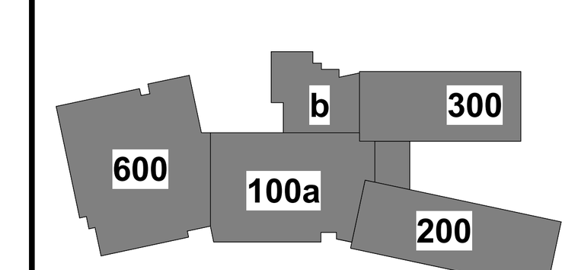
CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME I

TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370



KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3

DRAWN BY: LP, JS, DW
CHECKED BY: DW

OVERALL FLOOR PLANS

2017032 20 MAY 2019

A1-01

WALL TYPE LEGEND

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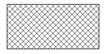
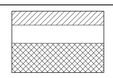
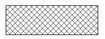
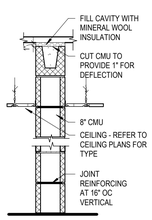
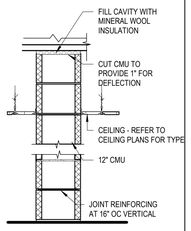
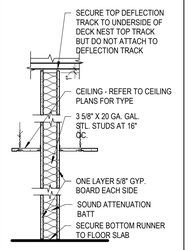
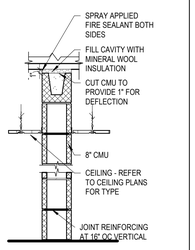
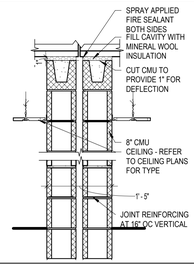
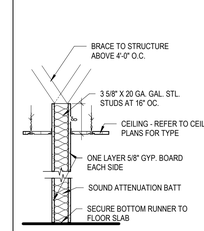
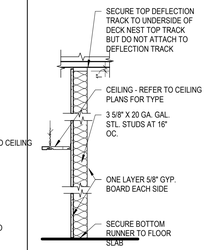
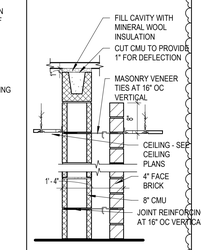
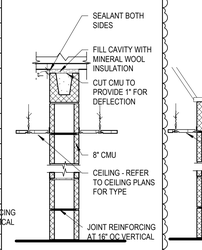
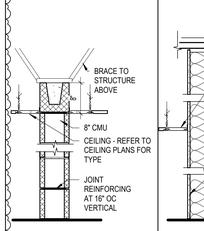
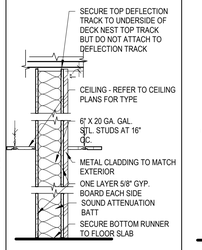
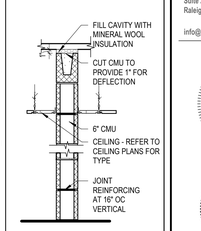
PLAN SYMBOL												
SECTION												
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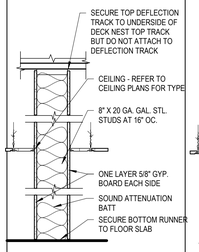
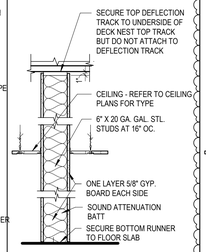
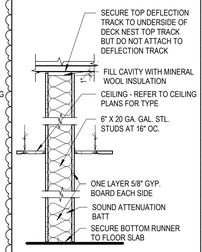
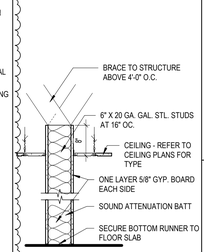
MARKER	M	N	O	P
PLAN SYMBOL				
SECTION				
DESCRIPTION	8" METAL STUD WITH ONE LAYER 5/8" GYP BOARD EACH SIDE NON-RATED	6" METAL STUD WITH ONE LAYER 5/8" GYP BOARD EACH SIDE NON-RATED	6" METAL STUD WITH ONE LAYER 5/8" GYP BOARD EACH SIDE SMOKE PARTITION	6" METAL STUD WITH ONE LAYER OF 5/8" GYP BOARD EACH SIDE UP TO 8" ABOVE CEILING NON-RATED

NOTES:

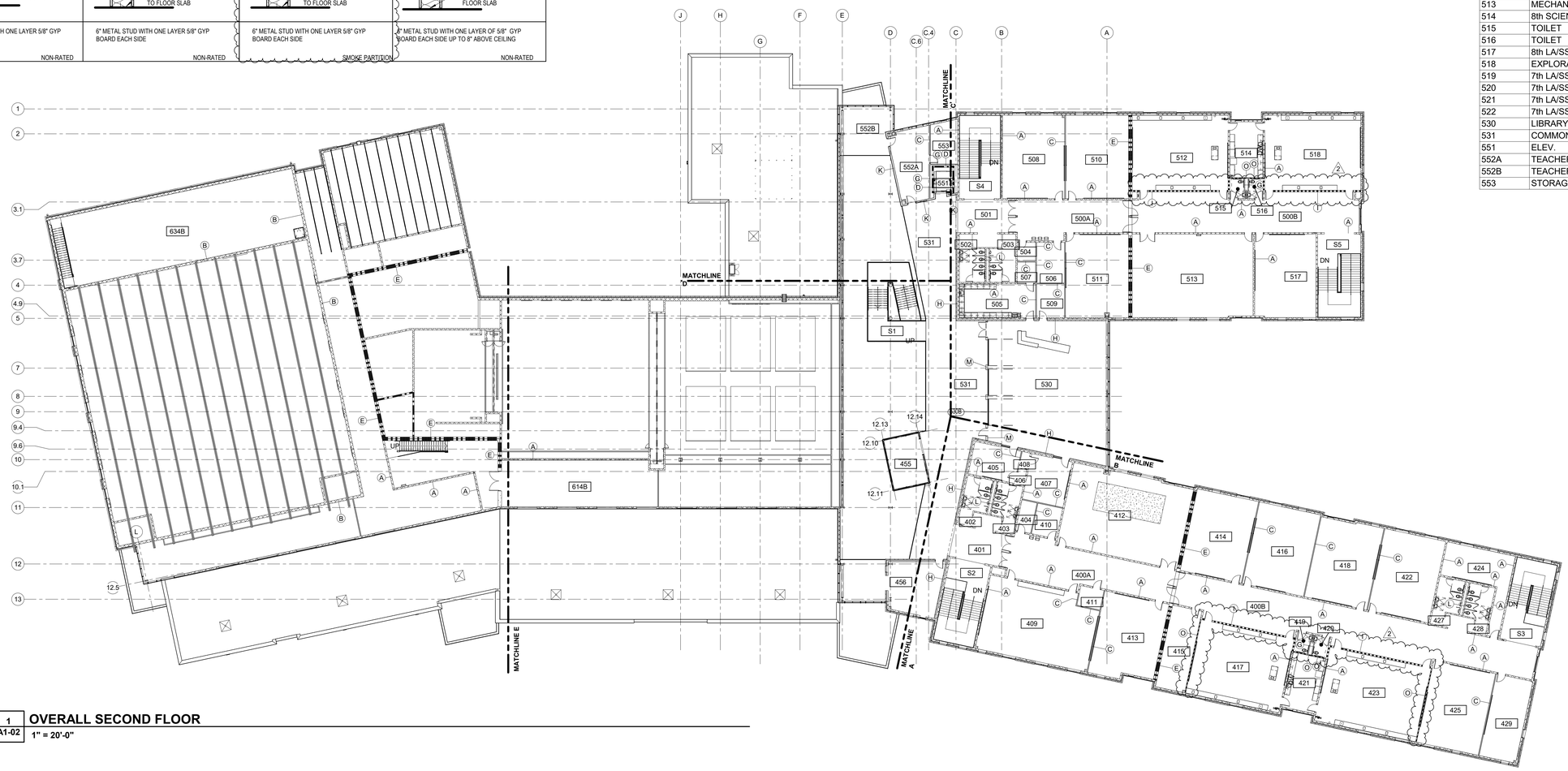
1. ALL CMU WALLS GOING UP TO BOTTOM OF DECK ARE TO PROVIDE A 1" GAP FOR DEFLECTION.
2. FILL 1" GAP WITH MINERAL WOOL INSULATION ALONG THE ENTIRE LENGTH OF WALL.
3. ON RATED WALLS SEAL ENDS WITH SPRAY APPLIED FIRE SEALANT BOTH SIDES ALONG THE ENTIRE LENGTH OF WALL.
4. AT ALL METAL STUD WALLS TERMINATING AT BOTTOM OF DECK PROVIDE A DEFLECTION TRACK SECURED TO THE UNDERSIDE OF THE DECKING, NEST TOP TRACK BUT DO NOT ATTACH TO DEFLECTION TRACK.
5. SEE FINISH SCHEDULE FOR WALL, FLOOR BASE AND CEILING TYPES AND FINISHES
6. REFER TO STRUCTURAL DRAWINGS FOR LOCATION OF REINFORCING, BOND BEAMS, BRACING, ETC.

ROOM LEGEND - 400 WING		
Number	Name	Area
400A	CORRIDOR	998 SF
400B	CORRIDOR	2253 SF
401	VESTIBULE	381 SF
402	MEN	173 SF
403	WOMEN	172 SF
404	JAN	77 SF
405	READING	251 SF
406	CLOSET	21 SF
407	READING	311 SF
408	CLOSET	21 SF
409	EXPLORATORY	1332 SF
410	MDF	127 SF
411	STORAGE	76 SF
412	MECHANICAL	1637 SF
413	8th LA/SS/MA	849 SF

ROOM LEGEND - 400 WING		
Number	Name	Area
414	8th LA/SS/MA	843 SF
415	STORAGE	402 SF
416	8th LA/SS/MA	843 SF
417	8th SCIENCE	1154 SF
418	7th LA/SS/MA	848 SF
419	TOILET	48 SF
420	TOILET	48 SF
421	7th SCIENCE PREP	299 SF
422	7th LA/SS/MA	838 SF
423	7th SCIENCE	1255 SF
424	RESOURCE	473 SF
425	7th LA/SS/MA	849 SF
427	MEN	171 SF
428	WOMEN	170 SF
429	RESOURCE	501 SF

ROOM LEGEND - 400 WING		
Number	Name	Area
455	READING	308 SF
456	READING	770 SF

ROOM LEGEND - 500 WING		
Number	Name	Area
500A	CORRIDOR	643 SF
500B	CORRIDOR	2016 SF
501	VESTIBULE	377 SF
502	WOMEN	170 SF
503	MEN	172 SF
504	JANITOR	55 SF
505	MEDIA WORKROOM	414 SF
506	STORAGE	182 SF
507	IDF	61 SF
508	COMPUTER	838 SF
509	OFFICE	151 SF
510	8th LA/SS/MA	848 SF
511	8th LA/SS/MA	847 SF
512	8th SCIENCE	1165 SF
513	MECHANICAL	1623 SF
514	8th SCIENCE PREP	299 SF
515	TOILET	49 SF
516	TOILET	49 SF
517	8th LA/SS/MA	824 SF
518	EXPLORATORY	1168 SF
519	7th LA/SS/MA	Not Placed
520	7th LA/SS/MA	Not Placed
521	7th LA/SS/MA	Not Placed
522	7th LA/SS/MA	Not Placed
530	LIBRARY	2606 SF
531	COMMONS	2762 SF
551	ELEV.	75 SF
552A	TEACHER RESOURCE	404 SF
552B	TEACHER RESOURCE	414 SF
553	STORAGE	186 SF



1 **OVERALL SECOND FLOOR**
A1-02 1" = 20'-0"

smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

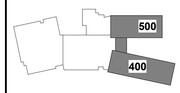
VOLUME I

Smith Sinnett Architecture, P.A. 2018

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 30" X 42" SHEET

TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370



KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3

DRAWN BY: LP, JS, DW
CHECKED BY: DW

OVERALL FLOOR PLANS & WALL TYPE LEGEND

2017032 20 MAY 2019

A1-02

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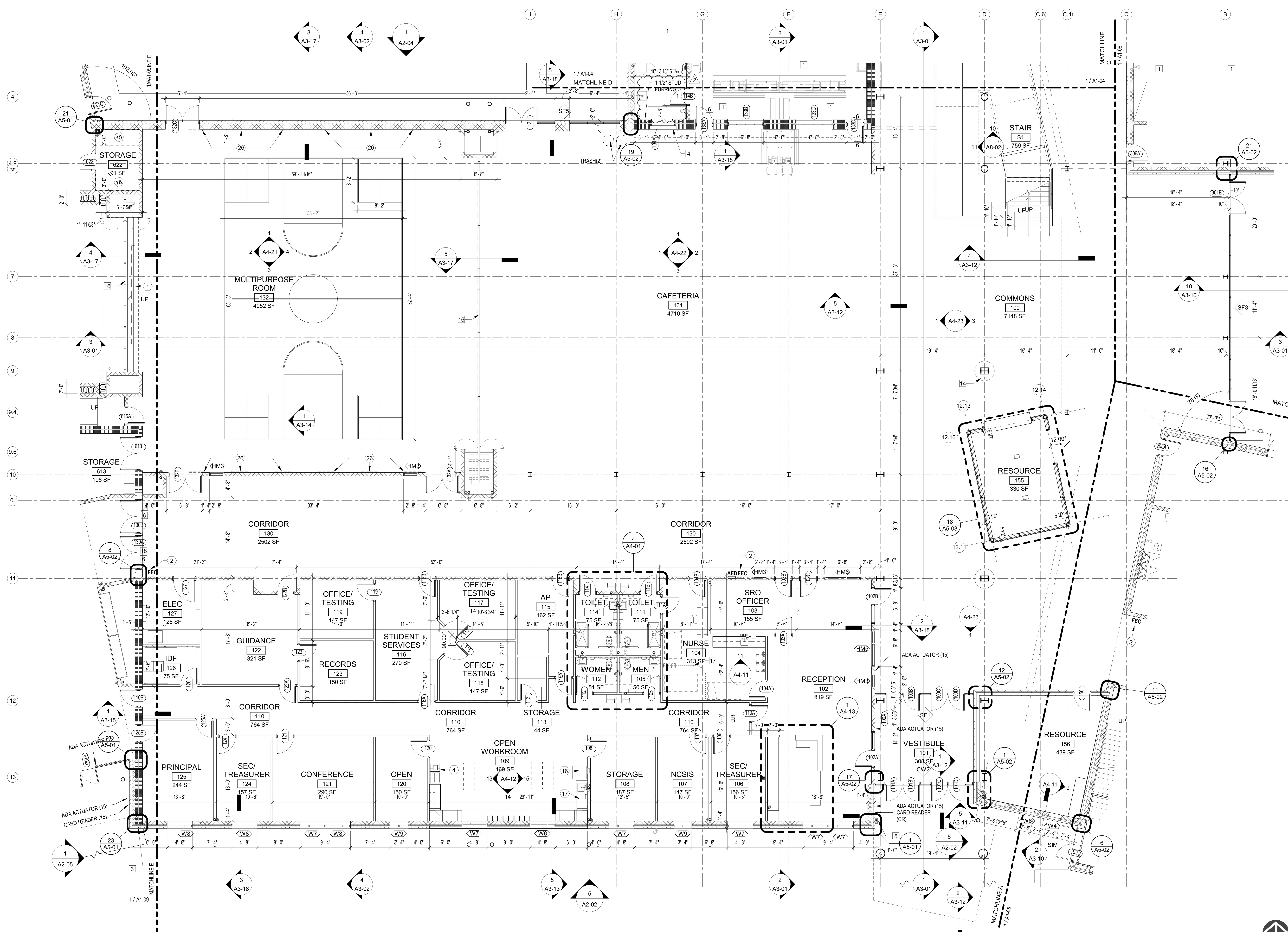


1 A1-03 **100A WING - FIRST FLOOR PLAN**
1/8" = 1'-0"

GENERAL PLAN NOTES

1. SEE WALL TYPES LEGEND ON SHEET A1.02 FOR TYPES INDICATED BY SYMBOL
2. ALL DOOR FRAMES SHALL BE 4" FROM THE FACE OF PERPENDICULAR WALLS UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS TAKEN FROM THE FINISHED FACE OF THE WALL (E.G. SURFACE OF CMU OR GYPSUM FOR STUD WALLS) AND THE CENTERLINE OF COLUMNS.
4. ALL RATED WALL CONSTRUCTION TO COMPLY WITH U.L REQUIREMENTS.
5. REFER TO EXTERIOR ELEVATIONS FOR EXTERIOR MASONRY CONTROL FOR INTERIOR CONTROL JOINTS.
6. ALL EXTERIOR WINDOWS TO RECEIVE BLINDS AS SPECIFIED. INTERIOR WINDOWS MARKED "BL" TO RECEIVE BLINDS.
7. FURNISHINGS SHOWN WITH DASHED LINES NOT IN CONTRACT UNLESS OTHERWISE NOTED.
8. PROVIDE 1" RADIUS BULLNOSE UP TO A HEIGHT OF 8' AT ALL OUTSIDE CMU CORNERS FOR INTERIOR WALLS.
9. FIELD VERIFY AND COORDINATE FIELD CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION, INSTALLATION AND CONSTRUCTION OF BUILDING COMPONENTS. THE GC IS TO INFORM THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
10. FIRE RATED WALLS SHALL HAVE RATINGS STENCILED ABOVE THE CEILING FOR IDENTIFICATION. STENCILED LETTERS SHALL BE RED, 2" HIGH AT 10'-0" OC MAX ALONG WALL, I.E. "4 HR. RATED WALL"
11. REFER TO G0-01 FOR STANDARD ABBREVIATIONS AND NOTATIONS.
12. GENERAL CONTRACTOR SHALL PROVIDE LINTELS FOR MASONRY OPENINGS AND WALL PENETRATIONS AS SHOWN ON ALL DRAWINGS.
13. DIMENSIONS FOR MASONRY OPENINGS ON PLANS ARE GIVEN AS "ROUGH" OPENINGS. GC AND ALL SUBCONTRACTORS RESPONSIBLE FOR FABRICATION OF BUILDING COMPONENTS TO ALLOW FOR SHIM AND INSULATION SPACE.
14. NOTE SLAB DEPRESSIONS FOR TILE AND ATHLETIC FLOORS AS INDICATED BY PLAN KEYNOTES AND INDICATED ON STRUCTURAL DRAWINGS.
15. ALL BLOCKING AND PLYWOOD UTILIZED SHALL BE FIRE RETARDANT TREATED WOOD.
16. ALL RATED CMU WALLS TO BE D-2 CLASSIFIED CMU.
17. ALL EXTERIOR CONCRETE WALKS TO BE BEDDED ON 4" OF #57 STONE ON COMPACTED SUBGRADE WITHIN 6'-0" OF THE BUILDING. ADJOINING WALKS ON COMPACTED SUBGRADE, SEE CIVIL DRAWINGS.
18. GC SHALL PROVIDE FIRE RETARDANT 3/4" PLYWOOD TO MOUNT PANELS AND EQUIPMENT.
19. ALL EXTERIOR STEEL COMPONENTS TO BE HOT-DIPPED GALVANIZED, INCLUDING BUT NOT LIMITED TO ALL EXTERIOR STAIR AND HANDRAIL/ GUARDRAIL COMPONENTS AND STEEL LINTELS.

PLAN KEYNOTES -

1 SLAB RECESSED IN THIS ROOM TO ACCOMODATE SPECIALTY FLOORING - REFER TO FINISH PLAN. GC TO CONFIRM DEPTH OF RECESS WITH FLOORING MANUFACTURER PRIOR TO POURING THE SLAB.
2 MECHANICAL LOUVER, REFER TO MECHANICAL DRAWINGS. GC TO COORDINATE OPENING SIZE AND PROVIDE LINTEL AND FLASHING
3 BUILDING EXPANSION JOINT. PROVIDE BLOCKOUTS IN SLAB FOR FLOOR TO FLOOR JOINTS. - FLOOR TO FLOOR JOINTS: 2 HR. RATED 1" JOINT C/S GROUP MULTIFLEX MFX-1F OR EQUAL. - - WALL TO WALL JOINTS: 2 HR. RATED 1" JOINT, C/S GROUP MULTIFLEX MFX-1FW OR EQUAL- -WALL JO
4 ROLLING COUNTER DOOR. SEE SPECIFICATIONS.
5 ADA ACTUATOR, ELECTRICAL CONTRACTOR PROVIDE BACKER BOXES AND CONDUIT. COORDINATE W/ GC & HARDWARE SUPPLIER.
6 PROVIDE MAGNETIC DOOR HOLD OPENS FOR THIS DOOR ASSEMBLY. REFER TO ELECTRICAL DRAWINGS AND DOOR SCHEDULE FOR SPECIFICATIONS.
7 GC TO PROVIDE BONDBEAM LINTEL OVER THIS OPENING.
8 PROVIDE MECHANICAL DOOR HOLD OPENS FOR THIS DOOR ASSEMBLY
9 RECESS FLOOR 4 1/4" - COORDINATE WITH COOLER/FREEZER UNIT MANUFACTURER PRIOR TO POURING SLABS AND NOTIFY ARCHITECT OF DISCREPENCIES.
10 LADDER - MEANS OF ESCAPE FROM MECHANICAL PLATFORM ABOVE.
11 ROOF ACCESS LADDER - REFER TO ROOF PLAN A1-40
12 4'0" WIDE SELF-CLOSING SAFETY GATE PER OSHA REQUIREMENTS
13 SLOPE SLAB TO DRAIN. SEE STRUCTURAL DRAWINGS FOR MINIMUM CONCRETE COVERAGE AT DRAIN LOCATION(S).
14 COLUMN FEATURE: COUNTER AND WRAP- REFER TO DETAIL 15/A5-01
15 PIPE BOLLARD - SEE CIVIL DRAWINGS
16 OPERABLE PARTITION
17 NURSE EXAM CURTAIN
18 PROVIDE ELECTRONIC LOCKSET FOR SECURITY INTEGRATION THIS DOOR ASSEMBLY

GENERAL EQUIPMENT SCHEDULE

-- Mark	Description and/or Detail Reference	Furnished By/ Installed By	Remarks
1	MOTORIZED RECESSED PROJECTION SCREEN.	CFCI	
2	FIRE EXTINGUISHER AND SEMI-RECESSED FIRE EXT. CABINET. REFER TO TYPICAL DETAIL 6/A5-01.	CFCI	
3	FIRE EXTINGUISHER AND FIRE EXT. BRACKET. REFER TO TYPICAL DETAILS 6/A5-01.	CFCI	
4	COPY MACHINE	OFOI	
5	METAL LOCKER SYSTEM. REFER TO DETAIL 11/A4-02. COLOR AS SELECTED BY ARCHITECT.	CFCI	
6	12'-0" TACK STRIP, REFER TO SPECIFICATIONS.	CFCI	
7	WALL MOUNTED ROOF ACCESS LADDER AND ROOF ACCESS HATCH. REFER TO DETAIL 6/A5-40.	CFCI	
8	12'-0" MARKER BOARD, 6'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
9	6'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
10	8'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
11	12'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
12	16'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
13	3'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
14	4'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
15	8'-0" SMART BOARD.	OFOI	
16	FULL SIZED REFRIGERATOR. 21.7 CUBIC FT. COORDINATE WITH PLUMBING AND ELECTRICAL.	OFOI	
17	MICROWAVE. COORDINATE W/ ELECTRICAL.	OFOI	
18	PREMANUFACTURED OPEN WOOD SHELVING UNITS, REFER TO TYPICAL DETAIL 4/A4-01.	OFOI	
19	LAPTOP STORAGE CART	OFOI	
20	TALL TEACHER WARDROBE. SIZE - 24D X 84H X 36W	CFCI	
21	MOBILE SHEET LIBRARY AND SORTING RACK CABINET - 24D X 36H X 48W	OFOI	
22	30"x60" INSTRUCTOR'S DESK W/ SINK	CFCI	
23	ELECTRIC KILN, 6.4 CUBIC FOOT FIRING CHAMBER, WITH DOWN DRAFT VENTILATION SYSTEM AND KILN SHELVES. SKUTT OR EQUAL. 6.4 CF FIRING CHAMBER.	CFCI	
24	ATHLETIC WASHER AND DRYER ASSEMBLY BY OWNER.	OFOI	
25	UTILITY SINK BASIN WITH SUPPORT LEGS. REFER TO PLUMBING DRAWINGS.	CFCI	3
26	FABRIC COVERED ACOUSTICAL WALL PANELS. CONSULT W/ ARCHITECT FOR FINAL LAYOUT. SEE SPECIFICATIONS.	CFCI	2
27	WASHER AND DRYER ASSEMBLY BY OWNER	OFOI	2

SCHEDULE ABBREVIATIONS
CFCI- CONTRACTOR FURNISHED CONTRACTOR INSTALLED
OFCI- OWNER FURNISHED CONTRACTOR INSTALLED
OFOI- OWNER FURNISHED OWNER INSTALLED

NOTES
1. G.C. TO PROVIDE 3/4" FIRE RETARDANT PLYWOOD PANEL TO MOUNT EQUIPMENT.
2. G.C. TO PROVIDE NECESSARY BLOCKING & REINFORCING PLATES IN GWB WALLS & REINFORCING IN CMU WALLS.
3. PROVIDE CLAY SINK TRAP THIS LOCATION. SEE PLUMBING DRAWINGS.

smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

CONSTRUCTION DOCUMENT

SMITH SINNETT ARCHITECTURE, PA — ARCHITECTURAL CORPORATION — CERT. NO. 50172 — NORTH CAROLINA — REGISTERED — RALEIGH

DREW WILGUS — REGISTERED ARCHITECT — 12017 — 6.14.19 — NORTH CAROLINA — RALEIGH, NC

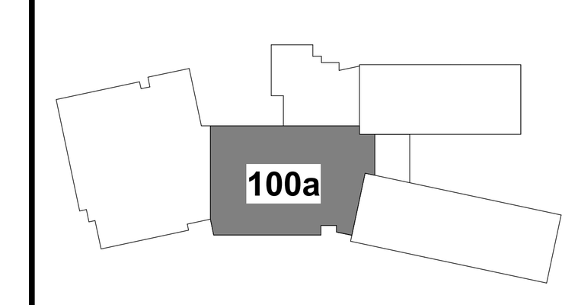
ENERGY STAR PARTNER

VOLUME I

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 30" X 42" SHEET

TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370



KEY PLAN
NO SCALE

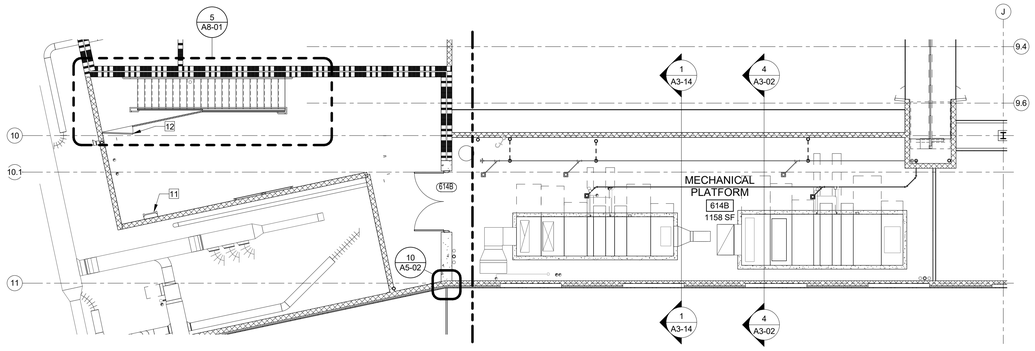
ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3

DRAWN BY: LP, JS, DW
CHECKED BY: DW

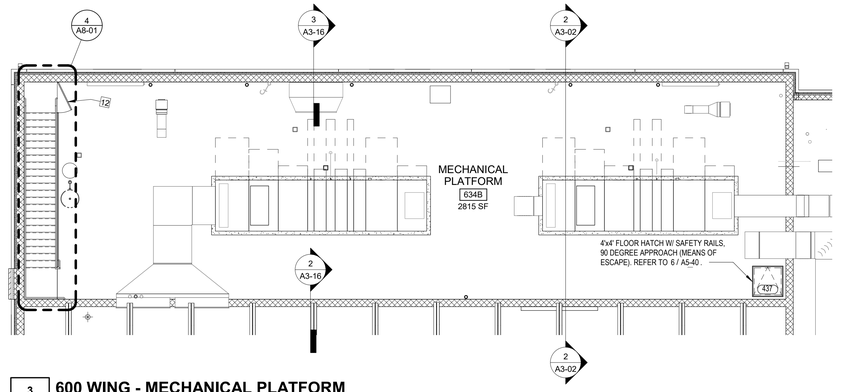
FLOOR PLAN

2017032 20 MAY 2019

A1-03



4 / A1-04 — 100A WING - MECHANICAL PLATFORM
1/8" = 1'-0"



3 / A1-04 — 600 WING - MECHANICAL PLATFORM
1/8" = 1'-0"

GENERAL EQUIPMENT SCHEDULE

Mark	Description and/or Detail Reference	Furnished By/ Installed By	Remarks
1	MOTORIZED RECESSED PROJECTION SCREEN.	CFCI	
2	FIRE EXTINGUISHER AND SEMI-RECESSED FIRE EXT. CABINET. REFER TO TYPICAL DETAIL 6/A5-01.	CFCI	
3	FIRE EXTINGUISHER AND FIRE EXT. BRACKET. REFER TO TYPICAL DETAILS 6/A5-01.	CFCI	
4	COPY MACHINE	OFOI	
5	METAL LOCKER SYSTEM. REFER TO DETAIL 11/A4-02. COLOR AS SELECTED BY ARCHITECT.	CFCI	
6	12'-0" TACK STRIP. REFER TO SPECIFICATIONS.	CFCI	
7	WALL MOUNTED ROOF ACCESS LADDER AND ROOF ACCESS HATCH. REFER TO DETAIL 6/A5-40.	CFCI	
8	12'-0" MARKER BOARD, 6'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
9	6'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
10	8'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
11	12'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
12	16'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
13	3'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
14	4'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
15	8'-0" SMART BOARD.	OFOI	
16	FULL SIZED REFRIGERATOR, 21.7 CUBIC FT. COORDINATE WITH PLUMBING AND ELECTRICAL.	OFOI	
17	MICROWAVE. COORDINATE W/ ELECTRICAL.	OFOI	
18	PREMANUFACTURED OPEN WOOD SHELVING UNITS, REFER TO TYPICAL DETAIL 4/A4-01.	OFOI	
19	LAPTOP STORAGE CART	OFOI	
20	TALL TEACHER WARDROBE. SIZE - 24D X 84H X 36W	CFCI	
21	MOBILE SHEET LIBRARY AND SORTING RACK CABINET - 24D X 36H X 48W	OFOI	
22	30"x60" INSTRUCTOR'S DESK W/ SINK	CFCI	
23	ELECTRIC KILN, 6.4 CUBIC FOOT FIRING CHAMBER, WITH DOWN DRAFT VENTILATION SYSTEM AND KILN SHELVES. SKUTT OR EQUAL. 6.4 CF FIRING CHAMBER.	CFCI	
24	ATHLETIC WASHER AND DRYER ASSEMBLY BY OWNER.	OFOI	
25	UTILITY SINK BASIN WITH SUPPORT LEGS. REFER TO PLUMBING DRAWINGS.	CFCI	3
26	FABRIC COVERED ACOUSTICAL WALL PANELS. CONSULT W/ ARCHITECT FOR FINAL LAYOUT. SEE SPECIFICATIONS.	CFCI	2
27	WASHER AND DRYER ASSEMBLY BY OWNER	OFOI	2

SCHEDULE ABBREVIATIONS
CFCI- CONTRACTOR FURNISHED CONTRACTOR INSTALLED
OFCI- OWNER FURNISHED CONTRACTOR INSTALLED
OFOI- OWNER FURNISHED OWNER INSTALLED

NOTES
1. G.C. TO PROVIDE 3/4" FIRE RETARDANT PLYWOOD PANEL TO MOUNT EQUIPMENT.
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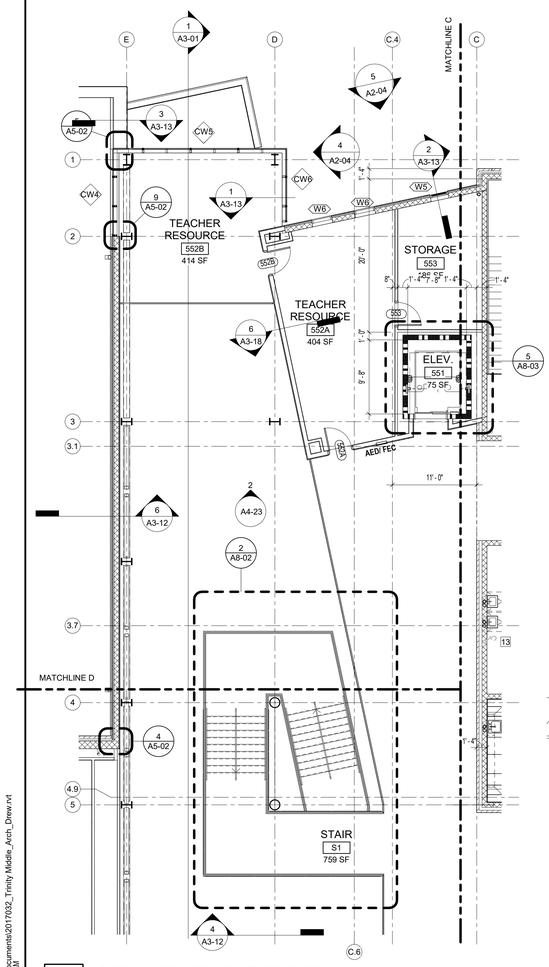
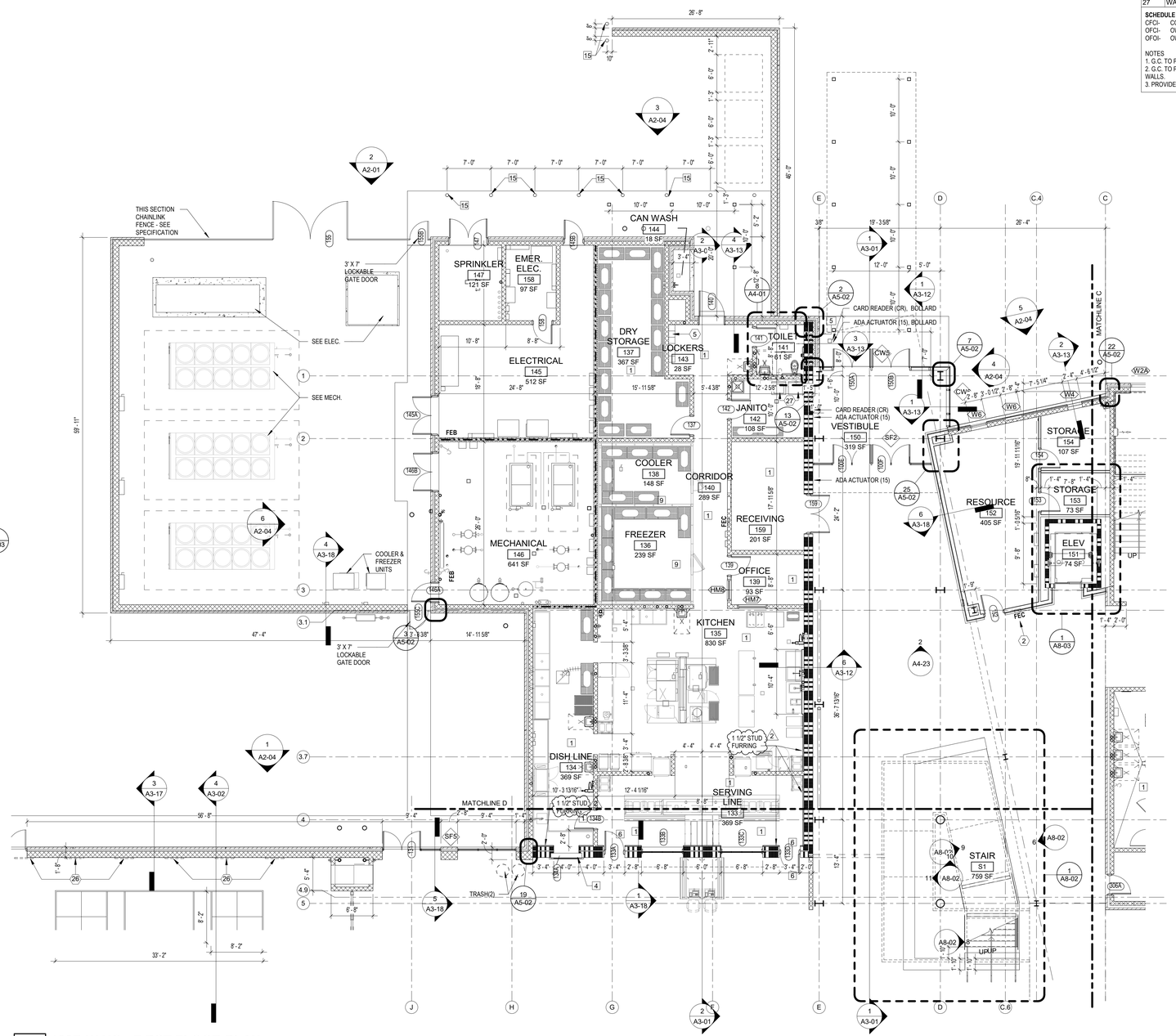
3. PROVIDE CLAY SINK TRAP THIS LOCATION. SEE PLUMBING DRAWINGS.



2 / A1-04 — 100B WING - SECOND FLOOR
1/8" = 1'-0"



1 / A1-04 — 100B WING - FIRST FLOOR PLAN
1/8" = 1'-0"

GENERAL PLAN NOTES

1. SEE WALL TYPES LEGEND ON SHEET A1.02 FOR TYPES INDICATED BY SYMBOL
2. ALL DOOR FRAMES SHALL BE 4" FROM THE FACE OF PERPENDICULAR WALLS UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS TAKEN FROM THE FINISHED FACE OF THE WALL (E.G. SURFACE OF CMU OR GYPSUM FOR STUD WALLS) AND THE CENTERLINE OF COLUMNS.
4. ALL RATED WALL CONSTRUCTION TO COMPLY WITH U.L REQUIREMENTS.
5. REFER TO EXTERIOR ELEVATIONS FOR EXTERIOR MASONRY CONTROL FOR INTERIOR CONTROL JOINTS.
6. ALL EXTERIOR WINDOWS TO RECEIVE BLINDS AS SPECIFIED. INTERIOR WINDOWS MARKED "BL" TO RECEIVE BLINDS.
7. FURNISHINGS SHOWN WITH DASHED LINES NOT IN CONTRACT UNLESS OTHERWISE NOTED.
8. PROVIDE 1" RADIUS BULLNOSE UP TO A HEIGHT OF 8' AT ALL OUTSIDE CMU CORNERS FOR INTERIOR WALLS.
9. FIELD VERIFY AND COORDINATE FIELD CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION, INSTALLATION AND CONSTRUCTION OF BUILDING COMPONENTS. THE GC IS TO INFORM THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
10. FIRE RATED WALLS SHALL HAVE RATINGS STENCILED ABOVE THE CEILING FOR IDENTIFICATION. STENCILED LETTERS SHALL BE RED, 2" HIGH AT 10'-0" OC MAX ALONG WALL. I.E. "4 HR. RATED WALL"
11. REFER TO GO-01 FOR STANDARD ABBREVIATIONS AND NOTATIONS.
12. GENERAL CONTRACTOR SHALL PROVIDE LINTELS FOR MASONRY OPENINGS AND WALL PENETRATIONS AS SHOWN ON ALL DRAWINGS.
13. DIMENSIONS FOR MASONRY OPENINGS ON PLANS ARE GIVEN AS "ROUGH" OPENINGS. GC AND ALL SUBCONTRACTORS RESPONSIBLE FOR FABRICATION OF BUILDING COMPONENTS TO ALLOW FOR SHIM AND INSULATION SPACE.
14. NOTE SLAB DEPRESSIONS FOR TILE AND ATHLETIC FLOORS AS INDICATED BY PLAN KEYNOTES AND INDICATED ON STRUCTURAL DRAWINGS.
15. ALL BLOCKING AND PLYWOOD UTILIZED SHALL BE FIRE RETARDANT TREATED WOOD.
16. ALL RATED CMU WALLS TO BE D-2 CLASSIFIED CMU.
17. ALL EXTERIOR CONCRETE WALKS TO BE BEDDED ON 4" OF #57 STONE ON COMPACTED SUBGRADE WITHIN 6'-0" OF THE BUILDING. ADJOINING WALKS ON COMPACTED SUBGRADE, SEE CIVIL DRAWINGS.
18. GC SHALL PROVIDE FIRE RETARDANT 3/4" PLYWOOD TO MOUNT PANELS AND EQUIPMENT.
19. ALL EXTERIOR STEEL COMPONENTS TO BE HOT-DIPPED GALVANIZED, INCLUDING BUT NOT LIMITED TO ALL EXTERIOR STAIR AND HANDRAIL/ GUARDRAIL COMPONENTS AND STEEL LINTELS.

PLAN KEYNOTES

1. SLAB RECESSED IN THIS ROOM TO ACCOMODATE SPECIALTY FLOORING - REFER TO FINISH PLAN. GC TO CONFIRM DEPTH OF RECESS WITH FLOORING MANUFACTURER PRIOR TO POURING THE SLAB.
2. MECHANICAL LOUVER, REFER TO MECHANICAL DRAWINGS. GC TO COORDINATE OPENING SIZE AND PROVIDE LINTEL AND FLASHING
3. BUILDING EXPANSION JOINT. PROVIDE BLOCKOUTS IN SLAB FOR FLOOR TO FLOOR JOINTS. - FLOOR TO FLOOR JOINTS: 2 HR. RATED 1" JOINT C/S GROUP MULTIFLEX MFX-1F OR EQUAL. - - WALL TO WALL JOINTS: 2 HR. RATED 1" JOINT, C/S GROUP MULTIFLEX MFX-1FW OR EQUAL- -WALL JO
4. ROLLING COUNTER DOOR. SEE SPECIFICATIONS.
5. ADA ACTUATOR, ELECTRICAL CONTRACTOR PROVIDE BACKER BOXES AND CONDUIT. COORDINATE W/ GC & HARDWARE SUPPLIER.
6. PROVIDE MAGNETIC DOOR HOLD OPENS FOR THIS DOOR ASSEMBLY. REFER TO ELECTRICAL DRAWINGS AND DOOR SCHEDULE FOR SPECIFICATIONS.
7. GC TO PROVIDE BONDBEAM LINTEL OVER THIS OPENING.
8. PROVIDE MECHANICAL DOOR HOLD OPENS FOR THIS DOOR ASSEMBLY
9. RECESS FLOOR 4 1/4" - COORDINATE WITH COOLER/FREEZER UNIT MANUFACTURER PRIOR TO POURING SLABS AND NOTIFY ARCHITECT OF DISCREPENCIES.
10. LADDER - MEANS OF ESCAPE FROM MECHANICAL PLATFORM ABOVE.
11. ROOF ACCESS LADDER - REFER TO ROOF PLAN A1-40
12. 4'0" WIDE SELF-CLOSING SAFETY GATE PER OSHA REQUIREMENTS
13. SLOPE SLAB TO DRAIN. SEE STRUCTURAL DRAWINGS FOR MINIMUM CONCRETE COVERAGE AT DRAIN LOCATION(S).
14. COLUMN FEATURE: COUNTER AND WRAP- REFER TO DETAIL 15/A5-01
15. PIPE BOLLARD - SEE CIVIL DRAWINGS
16. OPERABLE PARTITION
17. NURSE EXAM CURTAIN
18. PROVIDE ELECTRONIC LOCKSET FOR SECURITY INTEGRATION THIS DOOR ASSEMBLY

smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

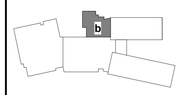
VOLUME I

Smith Sinnett Architecture, P.A. 2018

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 30"X 42" SHEET

TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370



KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3

DRAWN BY: LP, JS, DW
CHECKED BY: DW

FLOOR PLAN

2017032 20 MAY 2019

A1-04

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GENERAL EQUIPMENT SCHEDULE

Mark	Description and/or Detail Reference	Furnished By/ Installed By	Remarks
1	MOTORIZED RECESSED PROJECTION SCREEN.	CFCI	
2	FIRE EXTINGUISHER AND SEMI-RECESSED FIRE EXT. CABINET. REFER TO TYPICAL DETAIL 6/A5-01.	CFCI	
3	FIRE EXTINGUISHER AND FIRE EXT. BRACKET. REFER TO TYPICAL DETAILS 6/A5-01.	CFCI	
4	COPY MACHINE	OFOI	
5	METAL LOCKER SYSTEM. REFER TO DETAIL 11/A4-02. COLOR AS SELECTED BY ARCHITECT.	CFCI	
6	12'-0" TACK STRIP, REFER TO SPECIFICATIONS.	CFCI	
7	WALL MOUNTED ROOF ACCESS LADDER AND ROOF ACCESS HATCH. REFER TO DETAIL 6/A5-40.	CFCI	
8	12'-0" MARKER BOARD, 6'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
9	6'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
10	8'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
11	12'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
12	16'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
13	3'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
14	4'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
15	8'-0" SMART BOARD.	OFOI	
16	FULL SIZED REFRIGERATOR. 21.7 CUBIC FT. COORDINATE WITH PLUMBING AND ELECTRICAL.	OFOI	
17	MICROWAVE. COORDINATE W/ ELECTRICAL.	OFOI	
18	PREMANUFACTURED OPEN WOOD SHELVING UNITS, REFER TO TYPICAL DETAIL 4/A4-01.	OFOI	
19	LAPTOP STORAGE CART	OFOI	
20	TALL TEACHER WARDROBE. SIZE - 24D X 84H X 36W	CFCI	
21	MOBILE SHEET LIBRARY AND SORTING RACK CABINET - 24D X 36H X 48W	OFOI	
22	30"x60" INSTRUCTOR'S DESK W/ SINK	CFCI	
23	ELECTRIC KILN, 6.4 CUBIC FOOT FIRING CHAMBER, WITH DOWN DRAFT VENTILATION SYSTEM AND KILN SHELVES. SKUTT OR EQUAL. 6.4 CF FIRING CHAMBER.	CFCI	
24	ATHLETIC WASHER AND DRYER ASSEMBLY BY OWNER.	OFOI	
25	UTILITY SINK BASIN WITH SUPPORT LEGS. REFER TO PLUMBING DRAWINGS.	CFCI	3
26	FABRIC COVERED ACOUSTICAL WALL PANELS. CONSULT W/ ARCHITECT FOR FINAL LAYOUT. SEE SPECIFICATIONS.	CFCI	2
27	WASHER AND DRYER ASSEMBLY BY OWNER	OFOI	2

SCHEDULE ABBREVIATIONS
CFCI- CONTRACTOR FURNISHED CONTRACTOR INSTALLED
OFCI- OWNER FURNISHED CONTRACTOR INSTALLED
OFOI- OWNER FURNISHED OWNER INSTALLED

NOTES
1. G.C. TO PROVIDE 3/4" FIRE RETARDANT PLYWOOD PANEL TO MOUNT EQUIPMENT.
2. G.C. TO PROVIDE NECESSARY BLOCKING & REINFORCING PLATES IN GWB WALLS & REINFORCING IN CMU WALLS.
3. PROVIDE CLAY SINK TRAP THIS LOCATION. SEE PLUMBING DRAWINGS.

GENERAL PLAN NOTES

1. SEE WALL TYPES LEGEND ON SHEET A1.02 FOR TYPES INDICATED BY SYMBOL
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4. ALL RATED WALL CONSTRUCTION TO COMPLY WITH U.L REQUIREMENTS.
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8. PROVIDE 1" RADIUS BULLNOSE UP TO A HEIGHT OF 8' AT ALL OUTSIDE CMU CORNERS FOR INTERIOR WALLS.
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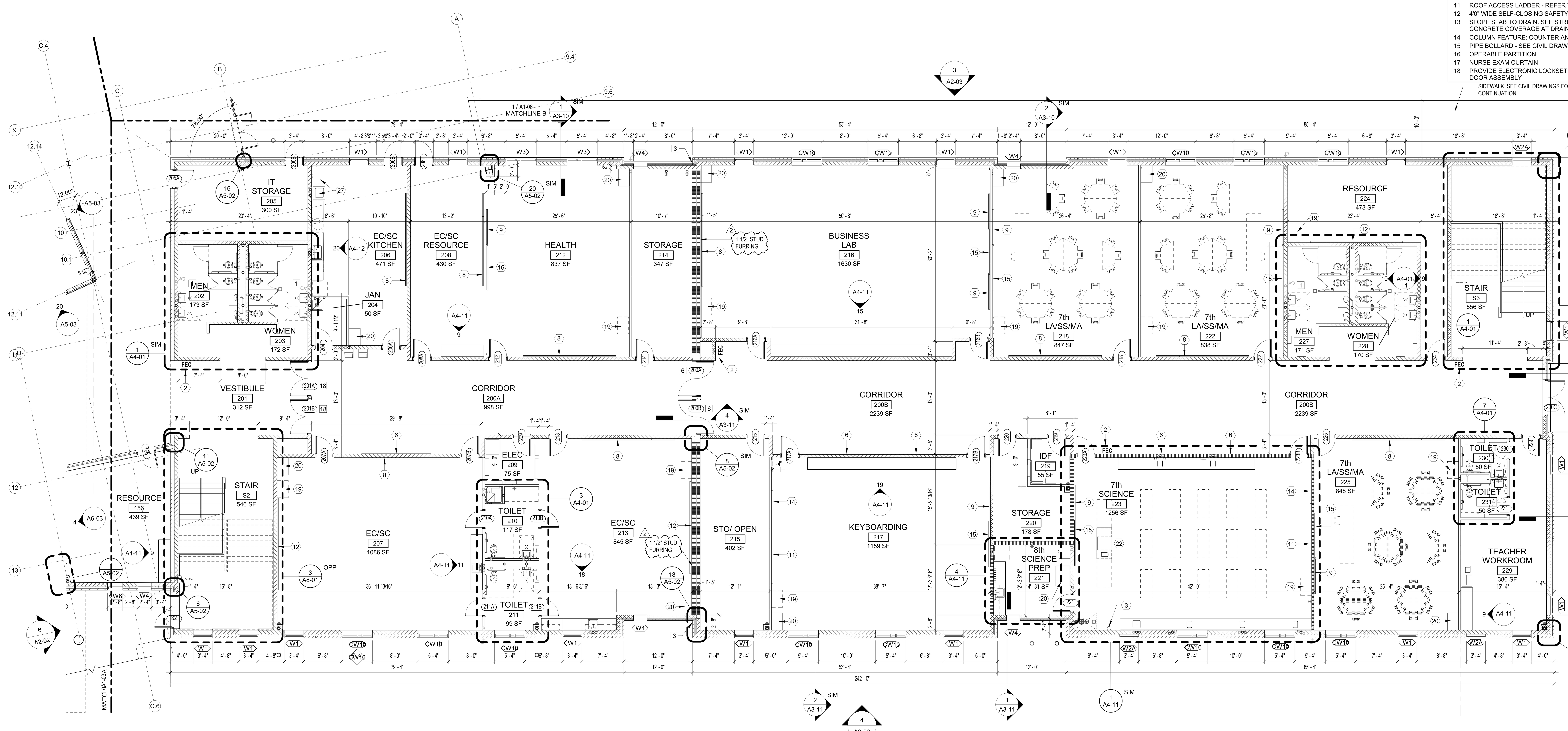
10. FIRE RATED WALLS SHALL HAVE RATINGS STENCILED ABOVE THE CEILING FOR IDENTIFICATION. STENCILED LETTERS SHALL BE RED, 2" HIGH AT 10'-0" OC MAX ALONG WALL, I.E. "4 HR. RATED WALL"
11. REFER TO G0-01 FOR STANDARD ABBREVIATIONS AND NOTATIONS.
12. GENERAL CONTRACTOR SHALL PROVIDE LINTELS FOR MASONRY OPENINGS AND WALL PENETRATIONS AS SHOWN ON ALL DRAWINGS.
13. DIMENSIONS FOR MASONRY OPENINGS ON PLANS ARE GIVEN AS "ROUGH" OPENINGS. GC AND ALL SUBCONTRACTORS RESPONSIBLE FOR FABRICATION OF BUILDING COMPONENTS TO ALLOW FOR SHIM AND INSULATION SPACE.
14. NOTE SLAB DEPRESSIONS FOR TILE AND ATHLETIC FLOORS AS INDICATED BY PLAN KEYNOTES AND INDICATED ON STRUCTURAL DRAWINGS.
15. ALL BLOCKING AND PLYWOOD UTILIZED SHALL BE FIRE RETARDANT TREATED WOOD.
16. ALL RATED CMU WALLS TO BE D-2 CLASSIFIED CMU.
17. ALL EXTERIOR CONCRETE WALKS TO BE BEDDED ON 4" OF #57 STONE ON COMPACTED SUBGRADE WITHIN 6'-0" OF THE BUILDING. ADJOINING WALKS ON COMPACTED SUBGRADE, SEE CIVIL DRAWINGS.
18. GC SHALL PROVIDE FIRE RETARDANT 3/4" PLYWOOD TO MOUNT PANELS AND EQUIPMENT.
19. ALL EXTERIOR STEEL COMPONENTS TO BE HOT-DIPPED GALVANIZED, INCLUDING BUT NOT LIMITED TO ALL EXTERIOR STAIR AND HANDRAIL/ GUARDRAIL COMPONENTS AND STEEL LINTELS.

PLAN KEYNOTES

1 SLAB RECESSED IN THIS ROOM TO ACCOMODATE SPECIALTY FLOORING - REFER TO FINISH PLAN. GC TO CONFIRM DEPTH OF RECESS WITH FLOORING MANUFACTURER PRIOR TO POURING THE SLAB.
2 MECHANICAL LOUVER, REFER TO MECHANICAL DRAWINGS. GC TO COORDINATE OPENING SIZE AND PROVIDE LINTEL AND FLASHING
3 BUILDING EXPANSION JOINT. PROVIDE BLOCKOUTS IN SLAB FOR FLOOR TO FLOOR JOINTS. - FLOOR TO FLOOR JOINTS: 2 HR. RATED 1" JOINT C/S GROUP MULTIFLEX MFX-1F OR EQUAL. - - WALL TO WALL JOINTS: 2 HR. RATED 1" JOINT, C/S GROUP MULTIFLEX MFX-1FW OR EQUAL- -WALL JO
4 ROLLING COUNTER DOOR. SEE SPECIFICATIONS.
5 ADA ACTUATOR, ELECTRICAL CONTRACTOR PROVIDE BACKER BOXES AND CONDUIT. COORDINATE W/ GC & HARDWARE SUPPLIER.
6 PROVIDE MAGNETIC DOOR HOLD OPENS FOR THIS DOOR ASSEMBLY. REFER TO ELECTRICAL DRAWINGS AND DOOR SCHEDULE FOR SPECIFICATIONS.
7 GC TO PROVIDE BONDBEAM LINTEL OVER THIS OPENING.
8 PROVIDE MECHANICAL DOOR HOLD OPENS FOR THIS DOOR ASSEMBLY
9 RECESS FLOOR 4 1/4" - COORDINATE WITH COOLER/FREEZER UNIT MANUFACTURER PRIOR TO POURING SLABS AND NOTIFY ARCHITECT OF DISCREPENCIES.
10 LADDER - MEANS OF ESCAPE FROM MECHANICAL PLATFORM ABOVE.
11 ROOF ACCESS LADDER - REFER TO ROOF PLAN A1-40
12 4'0" WIDE SELF-CLOSING SAFETY GATE PER OSHA REQUIREMENTS
13 SLOPE SLAB TO DRAIN. SEE STRUCTURAL DRAWINGS FOR MINIMUM CONCRETE COVERAGE AT DRAIN LOCATION(S).
14 COLUMN FEATURE: COUNTER AND WRAP- REFER TO DETAIL 15/A5-01
15 PIPE BOLLARD - SEE CIVIL DRAWINGS
16 OPERABLE PARTITION
17 NURSE EXAM CURTAIN
18 PROVIDE ELECTRONIC LOCKSET FOR SECURITY INTEGRATION THIS DOOR ASSEMBLY



1 / A1-05 **200 WING - FIRST FLOOR PLAN**
1/8" = 1'-0"

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smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

SMITH SINNETT ARCHITECTURE, PA — REGISTERED ARCHITECTURAL CORPORATION — CERT. NO. 50172 — NORTH CAROLINA — RALEIGH

DREW WILGUS — REGISTERED ARCHITECT — 12017 — 6.14.19 — NORTH CAROLINA — RALEIGH, NC

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME I

TRINITY MIDDLE SCHOOL
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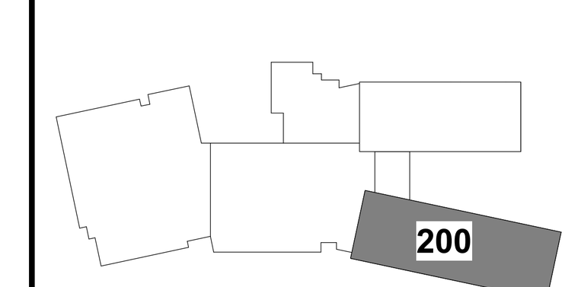


KEY PLAN
NO SCALE

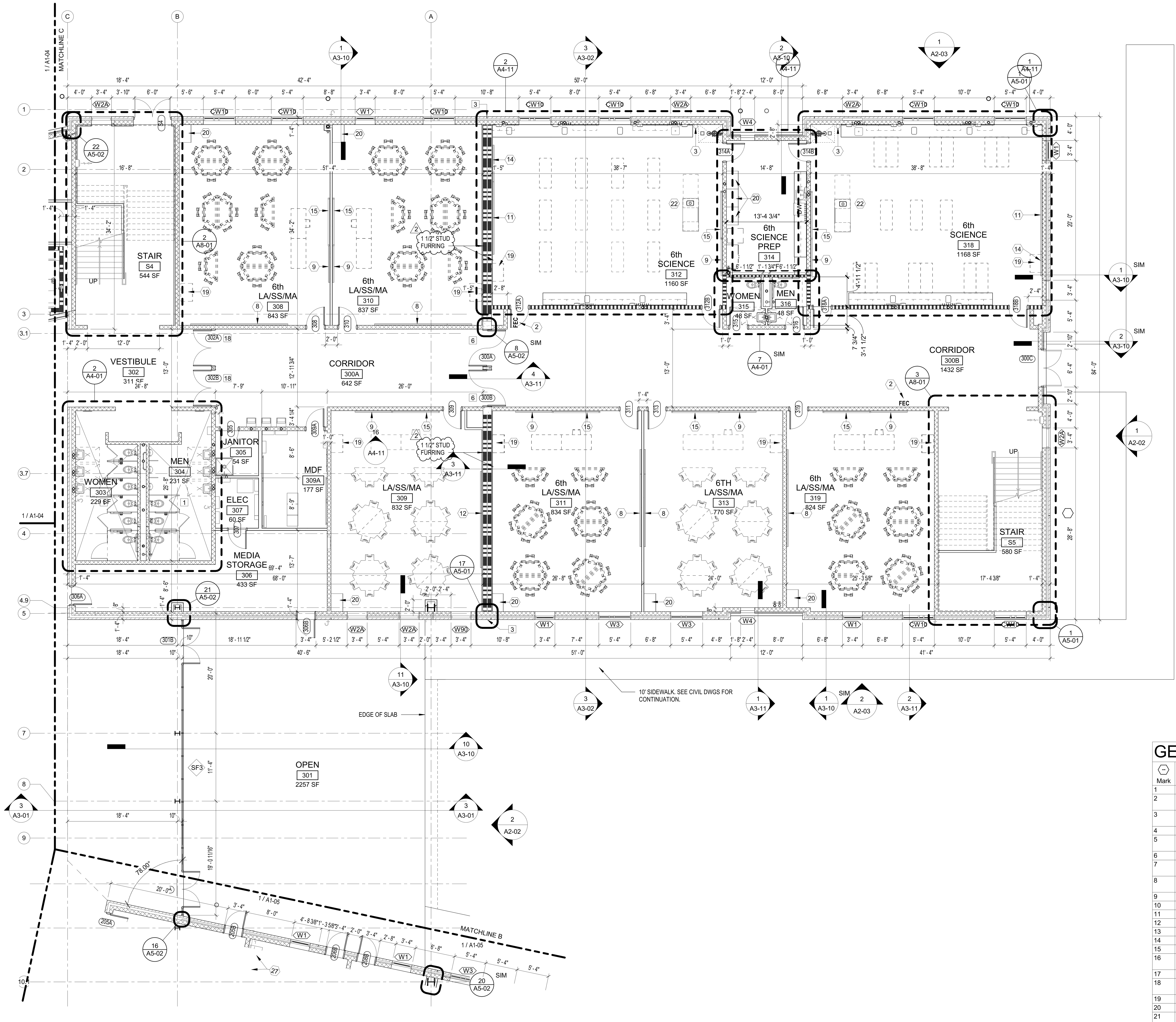
ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3

DRAWN BY: LP, JS, DW
CHECKED BY: DW

FLOOR PLAN

2017032 20 MAY 2019

A1-05



1	300 WING - FIRST FLOOR PLAN
A1-06	1/8" = 1'-0"

GENERAL EQUIPMENT SCHEDULE

Mark	Description and/or Detail Reference	Furnished By/ Installed By	Remarks
1	MOTORIZED RECESSED PROJECTION SCREEN.	CFCI	
2	FIRE EXTINGUISHER AND SEMI-RECESSED FIRE EXT. CABINET. REFER TO TYPICAL DETAIL 6/A5-01.	CFCI	
3	FIRE EXTINGUISHER AND FIRE EXT. BRACKET. REFER TO TYPICAL DETAILS 6/A5-01.	CFCI	
4	COPY MACHINE	OFOI	
5	METAL LOCKER SYSTEM. REFER TO DETAIL 11/A4-02. COLOR AS SELECTED BY ARCHITECT.	CFCI	
6	12'-0" TACK STRIP, REFER TO SPECIFICATIONS.	CFCI	
7	WALL MOUNTED ROOF ACCESS LADDER AND ROOF ACCESS HATCH. REFER TO DETAIL 6/A5-40.	CFCI	
8	12'-0" MARKER BOARD, 6'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
9	6'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
10	8'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
11	12'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
12	16'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
13	3'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
14	4'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
15	8'-0" SMART BOARD.	OFOI	
16	FULL SIZED REFRIGERATOR. 21.7 CUBIC FT. COORDINATE WITH PLUMBING AND ELECTRICAL.	OFOI	
17	MICROWAVE. COORDINATE W/ ELECTRICAL.	OFOI	
18	PREMANUFACTURED OPEN WOOD SHELVING UNITS, REFER TO TYPICAL DETAIL 4/A4-01.	OFOI	
19	LAPTOP STORAGE CART	OFOI	
20	TALL TEACHER WARDROBE. SIZE - 24D X 84H X 36W	CFCI	
21	MOBILE SHEET LIBRARY AND SORTING RACK CABINET - 24D X 36H X 48W	OFOI	
22	30"x60" INSTRUCTOR'S DESK W/ SINK	CFCI	
23	ELECTRIC KILN, 6.4 CUBIC FOOT FIRING CHAMBER, WITH DOWN DRAFT VENTILATION SYSTEM AND KILN SHELVES. SKUTT OR EQUAL. 6.4 CF FIRING CHAMBER.	CFCI	
24	ATHLETIC WASHER AND DRYER ASSEMBLY BY OWNER.	OFOI	
25	UTILITY SINK BASIN WITH SUPPORT LEGS. REFER TO PLUMBING DRAWINGS.	CFCI	3
26	FABRIC COVERED ACOUSTICAL WALL PANELS. CONSULT W/ ARCHITECT FOR FINAL LAYOUT. SEE SPECIFICATIONS.	CFCI	2
27	WASHER AND DRYER ASSEMBLY BY OWNER	OFOI	2

SCHEDULE ABBREVIATIONS
CFCI- CONTRACTOR FURNISHED CONTRACTOR INSTALLED
OFCI- OWNER FURNISHED CONTRACTOR INSTALLED
OFOI- OWNER FURNISHED OWNER INSTALLED

NOTES
1. G.C. TO PROVIDE 3/4" FIRE RETARDANT PLYWOOD PANEL TO MOUNT EQUIPMENT.
2. G.C. TO PROVIDE NECESSARY BLOCKING & REINFORCING PLATES IN GWB WALLS & REINFORCING IN CMU WALLS.
3. PROVIDE CLAY SINK TRAP THIS LOCATION. SEE PLUMBING DRAWINGS.

GENERAL PLAN NOTES

1. SEE WALL TYPES LEGEND ON SHEET A1.02 FOR TYPES INDICATED BY SYMBOL
2. ALL DOOR FRAMES SHALL BE 4" FROM THE FACE OF PERPENDICULAR WALLS UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS TAKEN FROM THE FINISHED FACE OF THE WALL (E.G. SURFACE OF CMU OR GYPSUM FOR STUD WALLS) AND THE CENTERLINE OF COLUMNS.
4. ALL RATED WALL CONSTRUCTION TO COMPLY WITH U.L REQUIREMENTS.
5. REFER TO EXTERIOR ELEVATIONS FOR EXTERIOR MASONRY CONTROL FOR INTERIOR CONTROL JOINTS.
6. ALL EXTERIOR WINDOWS TO RECEIVE BLINDS AS SPECIFIED. INTERIOR WINDOWS MARKED "BL" TO RECEIVE BLINDS.
7. FURNISHINGS SHOWN WITH DASHED LINES NOT IN CONTRACT UNLESS OTHERWISE NOTED.
8. PROVIDE 1" RADIUS BULLNOSE UP TO A HEIGHT OF 8' AT ALL OUTSIDE CMU CORNERS FOR INTERIOR WALLS.
9. FIELD VERIFY AND COORDINATE FIELD CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION, INSTALLATION AND CONSTRUCTION OF BUILDING COMPONENTS. THE GC IS TO INFORM THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
10. FIRE RATED WALLS SHALL HAVE RATINGS STENCILED ABOVE THE CEILING FOR IDENTIFICATION. STENCILED LETTERS SHALL BE RED, 2" HIGH AT 10'-0" OC MAX ALONG WALL, I.E. "4 HR. RATED WALL"
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12. GENERAL CONTRACTOR SHALL PROVIDE LINTELS FOR MASONRY OPENINGS AND WALL PENETRATIONS AS SHOWN ON ALL DRAWINGS.
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14. NOTE SLAB DEPRESSIONS FOR TILE AND ATHLETIC FLOORS AS INDICATED BY PLAN KEYNOTES AND INDICATED ON STRUCTURAL DRAWINGS.
15. ALL BLOCKING AND PLYWOOD UTILIZED SHALL BE FIRE RETARDANT TREATED WOOD.
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PLAN KEYNOTES -

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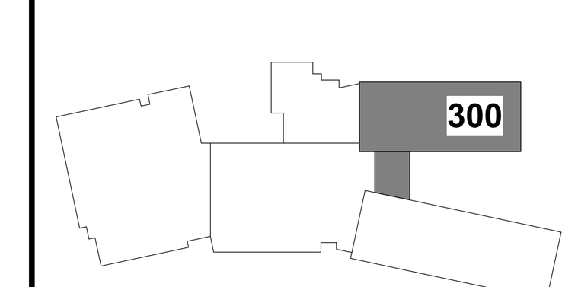

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3

DRAWN BY: LP, JS, DW
CHECKED BY: DW

FLOOR PLAN

2017032 20 MAY 2019

A1-06

GENERAL EQUIPMENT SCHEDULE

Mark	Description and/or Detail Reference	Furnished By/ Installed By	Remarks
1	MOTORIZED RECESSED PROJECTION SCREEN.	CFCI	
2	FIRE EXTINGUISHER AND SEMI-RECESSED FIRE EXT. CABINET. REFER TO TYPICAL DETAIL 6/A5-01.	CFCI	
3	FIRE EXTINGUISHER AND FIRE EXT. BRACKET. REFER TO TYPICAL DETAILS 6/A5-01.	CFCI	
4	COPY MACHINE	OFOI	
5	METAL LOCKER SYSTEM. REFER TO DETAIL 11/A4-02. COLOR AS SELECTED BY ARCHITECT.	CFCI	
6	12'-0" TACK STRIP. REFER TO SPECIFICATIONS.	CFCI	
7	WALL MOUNTED ROOF ACCESS LADDER AND ROOF ACCESS HATCH. REFER TO DETAIL 6/A5-40.	CFCI	
8	12'-0" MARKER BOARD, 6'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
9	6'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
10	8'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
11	12'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
12	16'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
13	3'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
14	4'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
15	8'-0" SMART BOARD.	OFOI	
16	FULL SIZED REFRIGERATOR. 21.7 CUBIC FT. COORDINATE WITH PLUMBING AND ELECTRICAL.	OFOI	
17	MICROWAVE. COORDINATE W/ ELECTRICAL.	OFOI	
18	PREMANUFACTURED OPEN WOOD SHELVING UNITS, REFER TO TYPICAL DETAIL 4/A4-01.	OFOI	
19	LAPTOP STORAGE CART	OFOI	
20	TALL TEACHER WARDROBE. SIZE - 24D X 84H X 36W	CFCI	
21	MOBILE SHEET LIBRARY AND SORTING RACK CABINET - 24D X 36H X 48W	OFOI	
22	30"x60" INSTRUCTOR'S DESK W/ SINK	CFCI	
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26	FABRIC COVERED ACOUSTICAL WALL PANELS. CONSULT W/ ARCHITECT FOR FINAL LAYOUT. SEE SPECIFICATIONS.	CFCI	2
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7 GC TO PROVIDE BONDBEAM LINTEL OVER THIS OPENING.
8 PROVIDE MECHANICAL DOOR HOLD OPENS FOR THIS DOOR ASSEMBLY
9 RECESS FLOOR 4 1/4" - COORDINATE WITH COOLER/FREEZER UNIT MANUFACTURER PRIOR TO POURING SLABS AND NOTIFY ARCHITECT OF DISCREPENCIES.
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11 ROOF ACCESS LADDER - REFER TO ROOF PLAN A1-40
12 40" WIDE SELF-CLOSING SAFETY GATE PER OSHA REQUIREMENTS
13 SLOPE SLAB TO DRAIN. SEE STRUCTURAL DRAWINGS FOR MINIMUM CONCRETE COVERAGE AT DRAIN LOCATION(S).
14 COLUMN FEATURE: COUNTER AND WRAP- REFER TO DETAIL 15/A5-01
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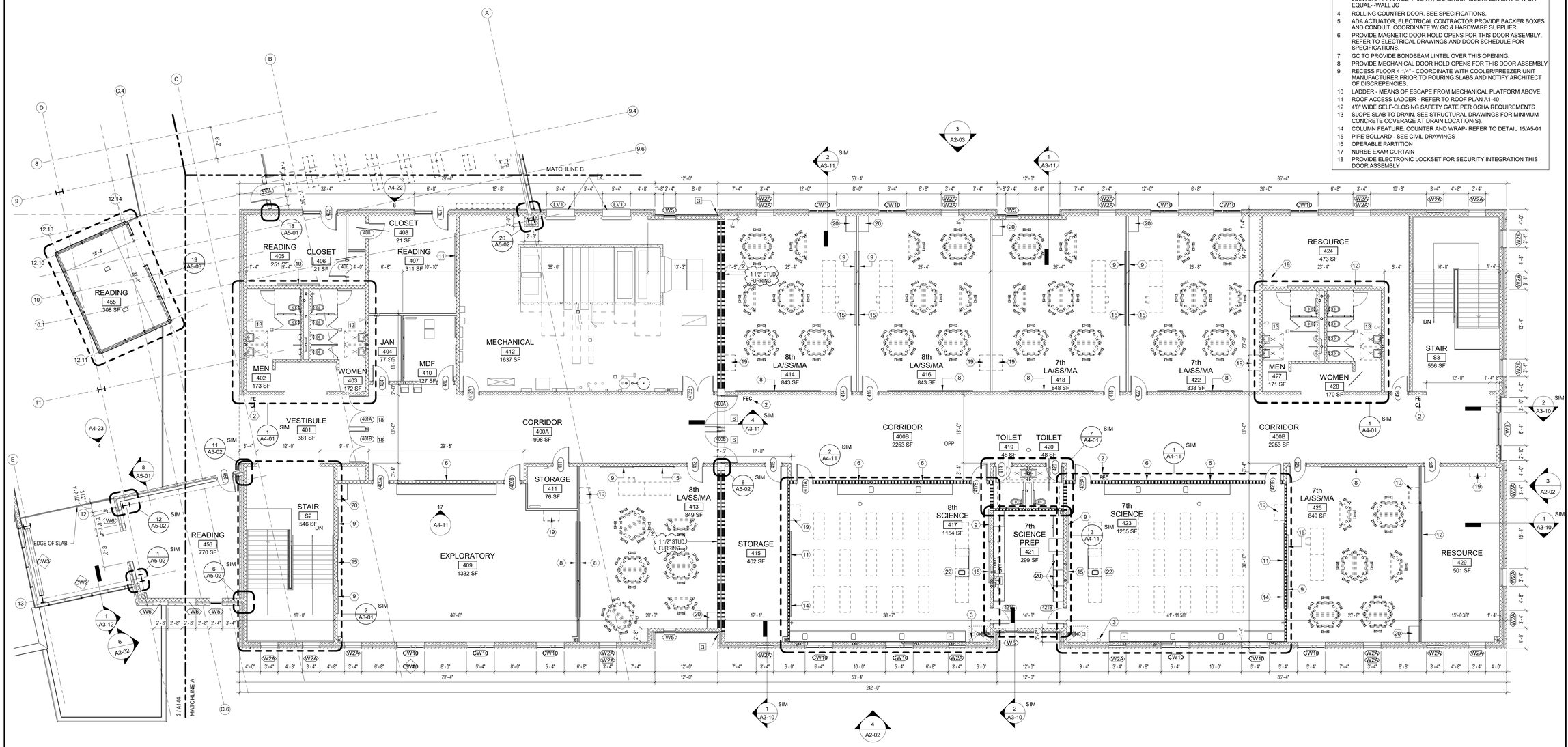

1 A1-07 400 WING - SECOND FLOOR
1/8" = 1'-0"

smith sinnett ARCHITECTURE
T 919 781 8582
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CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME I

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RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370

Smith Sinnett Architecture, P.A. 2018

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 30" X 42" SHEET

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3

DRAWN BY: LP, JS, DW
CHECKED BY: DW

FLOOR PLAN

2017032 20 MAY 2019

A1-07

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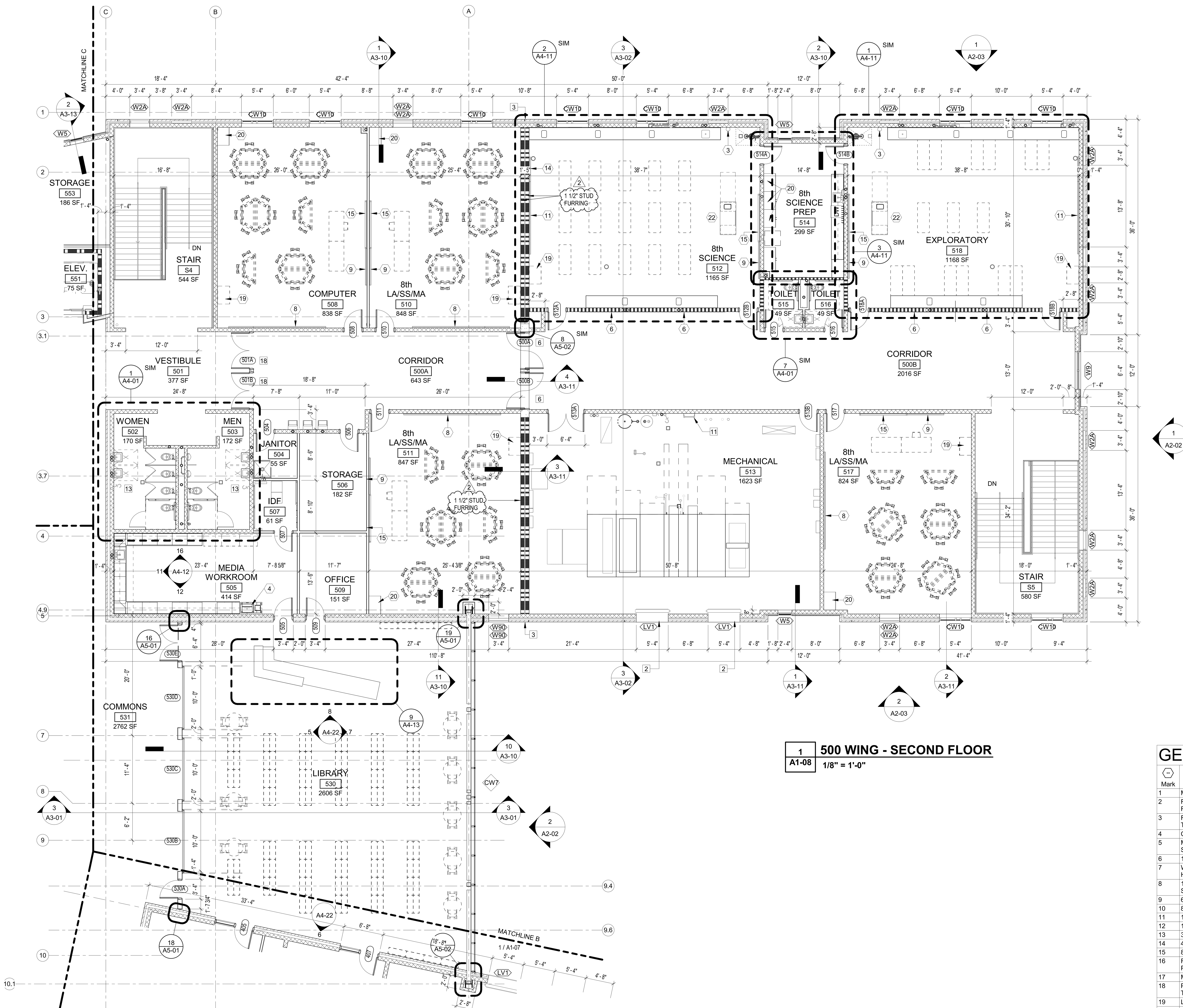

1 A1-08 **500 WING - SECOND FLOOR**
1/8" = 1'-0"

GENERAL EQUIPMENT SCHEDULE

Mark	Description and/or Detail Reference	Furnished By/ Installed By	Remarks
1	MOTORIZED RECESSED PROJECTION SCREEN.	CFCI	
2	FIRE EXTINGUISHER AND SEMI-RECESSED FIRE EXT. CABINET. REFER TO TYPICAL DETAIL 6/A5-01.	CFCI	
3	FIRE EXTINGUISHER AND FIRE EXT. BRACKET. REFER TO TYPICAL DETAILS 6/A5-01.	CFCI	
4	COPY MACHINE	OFOI	
5	METAL LOCKER SYSTEM. REFER TO DETAIL 11/A4-02. COLOR AS SELECTED BY ARCHITECT.	CFCI	
6	12'-0" TACK STRIP, REFER TO SPECIFICATIONS.	CFCI	
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9	6'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
10	8'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
11	12'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
12	16'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
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15	8'-0" SMART BOARD.	OFOI	
16	FULL SIZED REFRIGERATOR. 21.7 CUBIC FT. COORDINATE WITH PLUMBING AND ELECTRICAL.	OFOI	
17	MICROWAVE. COORDINATE W/ ELECTRICAL.	OFOI	
18	PREMANUFACTURED OPEN WOOD SHELVING UNITS, REFER TO TYPICAL DETAIL 4/A4-01.	OFOI	
19	LAPTOP STORAGE CART	OFOI	
20	TALL TEACHER WARDROBE. SIZE - 24D X 84H X 36W	CFCI	
21	MOBILE SHEET LIBRARY AND SORTING RACK CABINET - 24D X 36H X 48W	OFOI	
22	30"x60" INSTRUCTOR'S DESK W/ SINK	CFCI	
23	ELECTRIC KILN, 6.4 CUBIC FOOT FIRING CHAMBER, WITH DOWN DRAFT VENTILATION SYSTEM AND KILN SHELVES. SKUTT OR EQUAL. 6.4 CF FIRING CHAMBER.	CFCI	
24	ATHLETIC WASHER AND DRYER ASSEMBLY BY OWNER.	OFOI	
25	UTILITY SINK BASIN WITH SUPPORT LEGS. REFER TO PLUMBING DRAWINGS.	CFCI	3
26	FABRIC COVERED ACOUSTICAL WALL PANELS. CONSULT W/ ARCHITECT FOR FINAL LAYOUT. SEE SPECIFICATIONS.	CFCI	2
27	WASHER AND DRYER ASSEMBLY BY OWNER	OFOI	2

SCHEDULE ABBREVIATIONS
CFCI- CONTRACTOR FURNISHED CONTRACTOR INSTALLED
OFCI- OWNER FURNISHED CONTRACTOR INSTALLED
OFOI- OWNER FURNISHED OWNER INSTALLED

NOTES
1. G.C. TO PROVIDE 3/4" FIRE RETARDANT PLYWOOD PANEL TO MOUNT EQUIPMENT.
2. G.C. TO PROVIDE NECESSARY BLOCKING & REINFORCING PLATES IN GWB WALLS & REINFORCING IN CMU WALLS.
3. PROVIDE CLAY SINK TRAP THIS LOCATION. SEE PLUMBING DRAWINGS.

GENERAL PLAN NOTES

1. SEE WALL TYPES LEGEND ON SHEET A1.02 FOR TYPES INDICATED BY SYMBOL
2. ALL DOOR FRAMES SHALL BE 4" FROM THE FACE OF PERPENDICULAR WALLS UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS TAKEN FROM THE FINISHED FACE OF THE WALL (E.G. SURFACE OF CMU OR GYPSUM FOR STUD WALLS) AND THE CENTERLINE OF COLUMNS.
4. ALL RATED WALL CONSTRUCTION TO COMPLY WITH U.L REQUIREMENTS.
5. REFER TO EXTERIOR ELEVATIONS FOR EXTERIOR MASONRY CONTROL FOR INTERIOR CONTROL JOINTS.
6. ALL EXTERIOR WINDOWS TO RECEIVE BLINDS AS SPECIFIED. INTERIOR WINDOWS MARKED "BL" TO RECEIVE BLINDS.
7. FURNISHINGS SHOWN WITH DASHED LINES NOT IN CONTRACT UNLESS OTHERWISE NOTED.
8. PROVIDE 1" RADIUS BULLNOSE UP TO A HEIGHT OF 8' AT ALL OUTSIDE CMU CORNERS FOR INTERIOR WALLS.
9. FIELD VERIFY AND COORDINATE FIELD CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION, INSTALLATION AND CONSTRUCTION OF BUILDING COMPONENTS. THE GC IS TO INFORM THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
10. FIRE RATED WALLS SHALL HAVE RATINGS STENCILED ABOVE THE CEILING FOR IDENTIFICATION. STENCILED LETTERS SHALL BE RED, 2" HIGH AT 10'-0" OC MAX ALONG WALL, I.E. "4 HR. RATED WALL"
11. REFER TO G0-01 FOR STANDARD ABBREVIATIONS AND NOTATIONS.
12. GENERAL CONTRACTOR SHALL PROVIDE LINTELS FOR MASONRY OPENINGS AND WALL PENETRATIONS AS SHOWN ON ALL DRAWINGS.
13. DIMENSIONS FOR MASONRY OPENINGS ON PLANS ARE GIVEN AS "ROUGH" OPENINGS. GC AND ALL SUBCONTRACTORS RESPONSIBLE FOR FABRICATION OF BUILDING COMPONENTS TO ALLOW FOR SHIM AND INSULATION SPACE.
14. NOTE SLAB DEPRESSIONS FOR TILE AND ATHLETIC FLOORS AS INDICATED BY PLAN KEYNOTES AND INDICATED ON STRUCTURAL DRAWINGS.
15. ALL BLOCKING AND PLYWOOD UTILIZED SHALL BE FIRE RETARDANT TREATED WOOD.
16. ALL RATED CMU WALLS TO BE D-2 CLASSIFIED CMU.
17. ALL EXTERIOR CONCRETE WALKS TO BE BEDDED ON 4" OF #57 STONE ON COMPACTED SUBGRADE WITHIN 6'-0" OF THE BUILDING. ADJOINING WALKS ON COMPACTED SUBGRADE, SEE CIVIL DRAWINGS.
18. GC SHALL PROVIDE FIRE RETARDANT 3/4" PLYWOOD TO MOUNT PANELS AND EQUIPMENT.
19. ALL EXTERIOR STEEL COMPONENTS TO BE HOT-DIPPED GALVANIZED, INCLUDING BUT NOT LIMITED TO ALL EXTERIOR STAIR AND HANDRAIL/ GUARDRAIL COMPONENTS AND STEEL LINTELS.

PLAN KEYNOTES

1 SLAB RECESSED IN THIS ROOM TO ACCOMODATE SPECIALTY FLOORING - REFER TO FINISH PLAN. GC TO CONFIRM DEPTH OF RECESS WITH FLOORING MANUFACTURER PRIOR TO POURING THE SLAB.
2 MECHANICAL LOUVER, REFER TO MECHANICAL DRAWINGS. GC TO COORDINATE OPENING SIZE AND PROVIDE LINTEL AND FLASHING
3 BUILDING EXPANSION JOINT. PROVIDE BLOCKOUTS IN SLAB FOR FLOOR TO FLOOR JOINTS. - FLOOR TO FLOOR JOINTS: 2 HR. RATED 1" JOINT C/S GROUP MULTIFLEX MFX-1F OR EQUAL. - - WALL TO WALL JOINTS: 2 HR. RATED 1" JOINT, C/S GROUP MULTIFLEX MFX-1FW OR EQUAL- -WALL JO
4 ROLLING COUNTER DOOR. SEE SPECIFICATIONS.
5 ADA ACTUATOR, ELECTRICAL CONTRACTOR PROVIDE BACKER BOXES AND CONDUIT. COORDINATE W/ GC & HARDWARE SUPPLIER.
6 PROVIDE MAGNETIC DOOR HOLD OPENS FOR THIS DOOR ASSEMBLY. REFER TO ELECTRICAL DRAWINGS AND DOOR SCHEDULE FOR SPECIFICATIONS.
7 GC TO PROVIDE BONDBEAM LINTEL OVER THIS OPENING.
8 PROVIDE MECHANICAL DOOR HOLD OPENS FOR THIS DOOR ASSEMBLY
9 RECESS FLOOR 4 1/4" - COORDINATE WITH COOLER/FREEZER UNIT MANUFACTURER PRIOR TO POURING SLABS AND NOTIFY ARCHITECT OF DISCREPENCIES.
10 LADDER - MEANS OF ESCAPE FROM MECHANICAL PLATFORM ABOVE.
11 ROOF ACCESS LADDER - REFER TO ROOF PLAN A1-40
12 4'0" WIDE SELF-CLOSING SAFETY GATE PER OSHA REQUIREMENTS
13 SLOPE SLAB TO DRAIN. SEE STRUCTURAL DRAWINGS FOR MINIMUM CONCRETE COVERAGE AT DRAIN LOCATION(S).
14 COLUMN FEATURE: COUNTER AND WRAP- REFER TO DETAIL 15/A5-01
15 PIPE BOLLARD - SEE CIVIL DRAWINGS
16 OPERABLE PARTITION
17 NURSE EXAM CURTAIN
18 PROVIDE ELECTRONIC LOCKSET FOR SECURITY INTEGRATION THIS DOOR ASSEMBLY

smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

SMITH SINNETT ARCHITECTURE, PA — REGISTERED ARCHITECTURAL CORPORATION — CERT. NO. 50172 — NORTH CAROLINA — RALEIGH
DREW WILGUS — REGISTERED ARCHITECT — 12017 — 6.14.19 — NORTH CAROLINA — RALEIGH, NC

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME I

TRINITY MIDDLE SCHOOL
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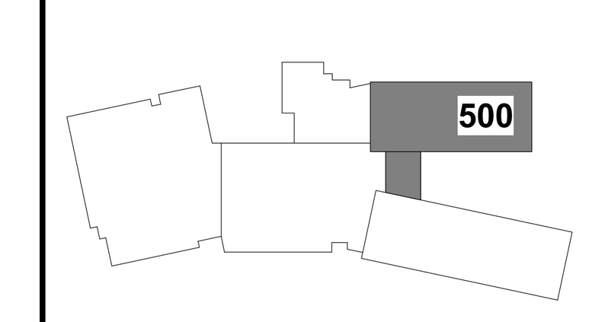

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3

DRAWN BY: LP, JS, DW
CHECKED BY: DW

FLOOR PLAN

2017032 20 MAY 2019

A1-08

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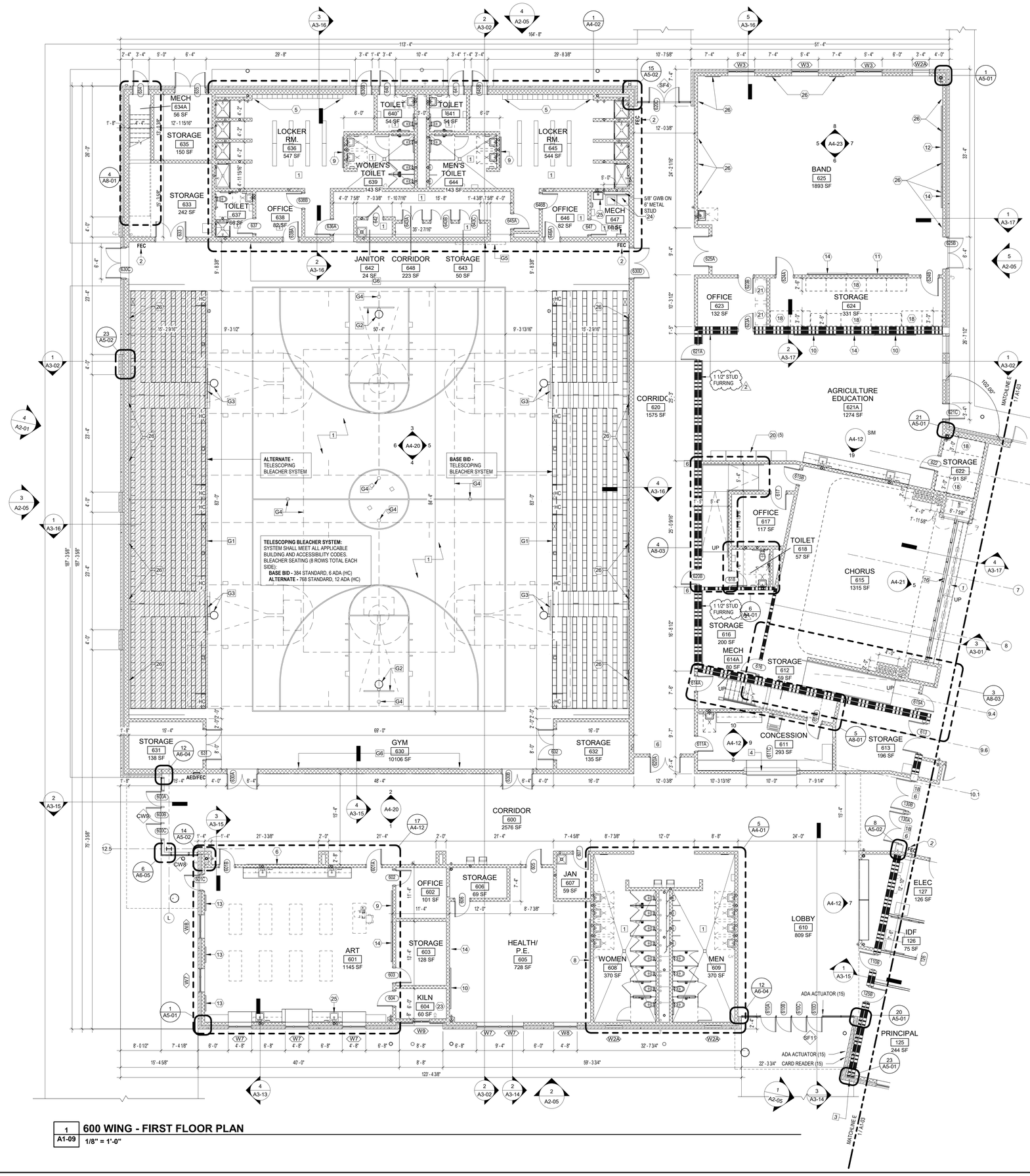

1 A1-09 **600 WING - FIRST FLOOR PLAN**

1/8" = 1'-0"

GENERAL PLAN NOTES

1. SEE WALL TYPES LEGEND ON SHEET A1.02 FOR TYPES INDICATED BY SYMBOL
2. ALL DOOR FRAMES SHALL BE 4" FROM THE FACE OF PERPENDICULAR WALLS UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS TAKEN FROM THE FINISHED FACE OF THE WALL (E.G. SURFACE OF CMU OR GYPSUM FOR STUD WALLS) AND THE CENTERLINE OF COLUMNS.
4. ALL RATED WALL CONSTRUCTION TO COMPLY WITH U.L REQUIREMENTS.
5. REFER TO EXTERIOR ELEVATIONS FOR EXTERIOR MASONRY CONTROL FOR INTERIOR CONTROL JOINTS.
6. ALL EXTERIOR WINDOWS TO RECEIVE BLINDS AS SPECIFIED. INTERIOR WINDOWS MARKED "BL" TO RECEIVE BLINDS.
7. FURNISHINGS SHOWN WITH DASHED LINES NOT IN CONTRACT UNLESS OTHERWISE NOTED.
8. PROVIDE 1" RADIUS BULLNOSE UP TO A HEIGHT OF 8' AT ALL OUTSIDE CMU CORNERS FOR INTERIOR WALLS.
9. FIELD VERIFY AND COORDINATE FIELD CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION, INSTALLATION AND CONSTRUCTION OF BUILDING COMPONENTS. THE GC IS TO INFORM THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
10. FIRE RATED WALLS SHALL HAVE RATINGS STENCILED ABOVE THE CEILING FOR IDENTIFICATION. STENCILED LETTERS SHALL BE RED, 2" HIGH AT 10'-0" OC MAX ALONG WALL, I.E. "4 HR. RATED WALL"
11. REFER TO G0-01 FOR STANDARD ABBREVIATIONS AND NOTATIONS.
12. GENERAL CONTRACTOR SHALL PROVIDE LINTELS FOR MASONRY OPENINGS AND WALL PENETRATIONS AS SHOWN ON ALL DRAWINGS.
13. DIMENSIONS FOR MASONRY OPENINGS ON PLANS ARE GIVEN AS "ROUGH" OPENINGS. GC AND ALL SUBCONTRACTORS RESPONSIBLE FOR FABRICATION OF BUILDING COMPONENTS TO ALLOW FOR SHIM AND INSULATION SPACE.
14. NOTE SLAB DEPRESSIONS FOR TILE AND ATHLETIC FLOORS AS INDICATED BY PLAN KEYNOTES AND INDICATED ON STRUCTURAL DRAWINGS.
15. ALL BLOCKING AND PLYWOOD UTILIZED SHALL BE FIRE RETARDANT TREATED WOOD.
16. ALL RATED CMU WALLS TO BE D-2 CLASSIFIED CMU.
17. ALL EXTERIOR CONCRETE WALKS TO BE BEDDED ON 4" OF #57 STONE ON COMPACTED SUBGRADE WITHIN 6'-0" OF THE BUILDING. ADJOINING WALKS ON COMPACTED SUBGRADE, SEE CIVIL DRAWINGS.
18. GC SHALL PROVIDE FIRE RETARDANT 3/4" PLYWOOD TO MOUNT PANELS AND EQUIPMENT.
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PLAN KEYNOTES

1 SLAB RECESSED IN THIS ROOM TO ACCOMODATE SPECIALTY FLOORING - REFER TO FINISH PLAN. GC TO CONFIRM DEPTH OF RECESS WITH FLOORING MANUFACTURER PRIOR TO POURING THE SLAB.
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4 ROLLING COUNTER DOOR. SEE SPECIFICATIONS.
5 ADA ACTUATOR, ELECTRICAL CONTRACTOR PROVIDE BACKER BOXES AND CONDUIT. COORDINATE W/ GC & HARDWARE SUPPLIER.
6 PROVIDE MAGNETIC DOOR HOLD OPENS FOR THIS DOOR ASSEMBLY. REFER TO ELECTRICAL DRAWINGS AND DOOR SCHEDULE FOR SPECIFICATNS.
7 GC TO PROVIDE BONDBEAM LINTEL OVER THIS OPENING.
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10 LADDER - MEANS OF ESCAPE FROM MECHANICAL PLATFORM ABOVE.
11 ROOF ACCESS LADDER - REFER TO ROOF PLAN A1-40
12 410" WIDE SELF-CLOSING SAFETY GATE PER OSHA REQUIREMENTS
13 SLOPE SLAB TO DRAIN. SEE STRUCTURAL DRAWINGS FOR MINIMUM CONCRETE COVERAGE AT DRAIN LOCATION(S).
14 COLUMN FEATURE: COUNTER AND WRAP- REFER TO DETAIL 15/A5-01
15 PIPE BOLLARD - SEE CIVIL DRAWINGS
16 OPERABLE PARTITION
17 NURSE EXAM CURTAIN
18 PROVIDE ELECTRONIC LOCKSET FOR SECURITY INTEGRATION THIS DOOR ASSEMBLY

EQUIPMENT SCHEDULE - ATHLETIC EQUIP.

G1	MANUAL TELESCOPING COMPOSITE BLEACHER SYSTEM, CFCI
G2	MAIN COURT, MOTORIZED FOLDING BACKSTOP SYSTEM W/ GLASS BACKBOARD, EDGE PADDING, RIM, HEIGHT ADJUSTMENT WINCH, FOLD UP WINCH AND SAFETY STRAPS, CFCI
G3	CROSS COURT, MOTORIZED FOLDING BACKSTOP SYSTEM W/ GLASS BACKBOARD, EDGE PADDING, RIM, HEIGHT ADJUSTMENT WINCH, FOLD UP WINCH AND SAFETY STRAPS, CFCI
G4	ALUMINUM VOLLEYBALL/ TENNIS STANDARDS, NETS, AND FLOOR INSERTS, SEE DETAIL 11/ A1-20, CFCI
G5	2'-4" X 6'-0", L.E.D. SCORE BOARD W/ REMOTE CONTROL CONSOLE, REFER TO ALLOWANCES
G6	2' x 6' SAFETY WALL PANELS. COLOR AS SELECTED BY ARCHITECT. (35 TOTAL), CFCI

SCHEDULE ABBREVIATIONS
CFCI- CONTRACTOR FURNISHED CONTRACTOR INSTALLED
OFCI- OWNER FURNISHED CONTRACTOR INSTALLED
OFOI- OWNER FURNISHED OWNER INSTALLED

NOTES
1. G.C. IS RESPONSIBLE FOR COORDINATING TELESCOPING BLEACHER SUPERSTRUCTURE AND LOCATIONS OF UNDER BLEACHER CHASE DOORS AND ELECTRICAL OUTLETS.

2. PROVIDE THREE (3) PAIRS OF VOLLEYBALL FLOOR INSERTS AND TWO (2) SETS OF STANDARDS AND NETS.

3. MAIN COURT STRIPING SHALL COMPLY WITH THE NORTH CAROLINA DEPARTMENT OF PUBLIC INSTRUCTION MIDDLEUR. HIGH ATHLETICS MANUAL AND THE NORTH CAROLINA HIGH SCHOOL ATHLETICS ASSOCIATION STANDARDS WHEN NOT OTHERWISE INDICATED.

GENERAL EQUIPMENT SCHEDULE

Mark	Description and/or Detail Reference	Furnished By/ Installed By	Remarks
1	MOTORIZED RECESSED PROJECTION SCREEN.	CFCI	
2	FIRE EXTINGUISHER AND SEMI-RECESSED FIRE EXT. CABINET. REFER TO TYPICAL DETAIL 6/A5-01.	CFCI	
3	FIRE EXTINGUISHER AND FIRE EXT. BRACKET. REFER TO TYPICAL DETAILS 6/A5-01.	CFCI	
4	COPY MACHINE	OFOI	
5	METAL LOCKER SYSTEM. REFER TO DETAIL 11/A4-02. COLOR AS SELECTED BY ARCHITECT.	CFCI	
6	12'-0" TACK STRIP, REFER TO SPECIFICATIONS.	CFCI	
7	WALL MOUNTED ROOF ACCESS LADDER AND ROOF ACCESS HATCH. REFER TO DETAIL 6/A5-40.	CFCI	
8	12'-0" MARKER BOARD, 6'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
9	6'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
10	8'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
11	12'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
12	16'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
13	3'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
14	4'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
15	8'-0" SMART BOARD.	OFOI	
16	FULL SIZED REFRIGERATOR. 21.7 CUBIC FT. COORDINATE WITH PLUMBING AND ELECTRICAL.	OFOI	
17	MICROWAVE. COORDINATE W/ ELECTRICAL.	OFOI	
18	PREMANUFACTURED OPEN WOOD SHELVING UNITS, REFER TO TYPICAL DETAIL 4/A4-01.	OFOI	
19	LAPTOP STORAGE CART	OFOI	
20	TALL TEACHER WARDROBE. SIZE - 24D X 84H X 36W	CFCI	
21	MOBILE SHEET LIBRARY AND SORTING RACK CABINET - 24D X 36H X 48W	OFOI	
22	30"x60" INSTRUCTOR'S DESK W/ SINK	CFCI	
23	ELECTRIC KILN, 6.4 CUBIC FOOT FIRING CHAMBER, WITH DOWN DRAFT VENTILATION SYSTEM AND KILN SHELVES. SKUTT OR EQUAL. 6.4 CF FIRING CHAMBER.	CFCI	
24	ATHLETIC WASHER AND DRYER ASSEMBLY BY OWNER.	OFOI	
25	UTILITY SINK BASIN WITH SUPPORT LEGS. REFER TO PLUMBING DRAWINGS.	CFCI	3
26	FABRIC COVERED ACOUSTICAL WALL PANELS. CONSULT W/ ARCHITECT FOR FINAL LAYOUT. SEE SPECIFICATIONS.	CFCI	2
27	WASHER AND DRYER ASSEMBLY BY OWNER	OFOI	2

SCHEDULE ABBREVIATIONS
CFCI- CONTRACTOR FURNISHED CONTRACTOR INSTALLED
OFCI- OWNER FURNISHED CONTRACTOR INSTALLED
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NOTES
1. G.C. TO PROVIDE 3/4" FIRE RETARDANT PLYWOOD PANEL TO MOUNT EQUIPMENT.
2. G.C. TO PROVIDE NECESSARY BLOCKING & REINFORCING PLATES IN GWB WALLS & REINFORCING IN CMU WALLS.
3. PROVIDE CLAY SINK TRAP THIS LOCATION. SEE PLUMBING DRAWINGS.

smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME I

Smith Sinnett Architecture, P.A. 2018
THIS DRAWING IS FORMATTED TO BE PRINTED ON A 30"X 42" SHEET

TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3

DRAWN BY: LP, JS, DW
CHECKED BY: DW

FLOOR PLAN

2017032 20 MAY 2019

A1-09

1 / A1-23 — 300 WING - FIRST FLOOR CEILING PLAN

1/8" = 1'-0"

REFLECTED CEILING PLAN NOTES

1. CURTAIN TRACK.
2. NO CEILING REQ'D OVER FREEZER / COOLER AREA.
3. KITCHEN HOOD. REFER TO MECHANICAL PLANS.
4. SMOKE VENTS ABOVE - COORDINATE LOCATION OF RELEASE CABLE AND CRANK W/ CURTAIN TRACK AND STRUCTURE.
5. ATHLETIC EQUIPMENT
6. DUCTWORK, SEE MECHANICAL.
7. MANUAL OPERABLE PARTITION.
8. S.S. CLOSURE PANEL FROM TOP OF FREEZER / COOLER TO CEILING AS SCHEDULED BY FOOD SERVICE EQUIP. PROVIDER.
9. PRE-MANUFACTURED POST SUPPORTED CANOPY.
10. CEILING CLOUD. 6" VERTICAL PERIMETER TRIM, TYP.
11. RECESSED PROJECTION SCREEN.
12. RECESS IN GYPSUM BULKHEAD AT STEEL COLUMN, SEE DETAIL 10/A1-21
13. CEILING ACCESS PANEL, 2'x2'
14. 1HR. RATED GYPSUM FURRING AT UNDERSIDE OF STAIRS

REFLECTED CEILING LEGEND AND NOTES

CEILING TYPE — A | 10'-0" — CEILING HEIGHT

SYMBOL	TYPE	DESCRIPTION
	A	ACT-1, 2x2 CEILING TILE, WHITE FINISH
	B	ACT-2, 2x2 VINYL COVERED TILE AND GRID, WHITE FINISH, HOLD DOWN CLIPS
	C	MOISTURE RESISTANT GYP WALLBOARD
	D	ONE (1) HOUR RATED GYP WALLBOARD CEILING SYSTEM - REFER TO NER-258
	E	METAL SOFFIT PANEL - PERFORATED
	--	
	F	EXPOSED - STRUCTURE, PLUMBING, DUCTWORK AND METAL DECKING PAINTED WHITE
	G	EXPOSED - STRUCTURE, PLUMBING, DUCTWORK AND METAL DECKING PAINTED BLACK
	H	EXPOSED - NO FINISH

SYMBOL	DESCRIPTION
	1 X 4 LIGHT FIXTURE
	2 X 4 LIGHT FIXTURE
	RETURN AIR GRILLE
	SUPPLY AIR DIFFUSER
	EXHAUST DIFFUSER
⌀	CAN STYLE FIXTURE
	CEILING ACOUSTICAL DIFFUSER PANEL
	PENDANT LIGHT
	DIRECT/INDIRECT LINEAR PENDANT
	HANGING LIGHT FIXTURE
	WALL MOUNTED UPLIGHT

1. REFER TO PLUMBING, MECHANICAL, AND ELECTRICAL DRAWINGS FOR COMPLETE SCOPE OF CEILING PENETRATIONS AND FIXUTRES.
2. REFER TO PROJECT SPECIFICATIONS FOR COMPLETE DESCRIPTION OF CEILING MATERIAL

smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

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VOLUME I

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KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
2	5/14/19	ADDENDUM 3

DRAWN BY: LP, JS, DW
CHECKED BY: DW

REFLECTED CEILING PLAN

2017032 20 MAY 2019

A1-23

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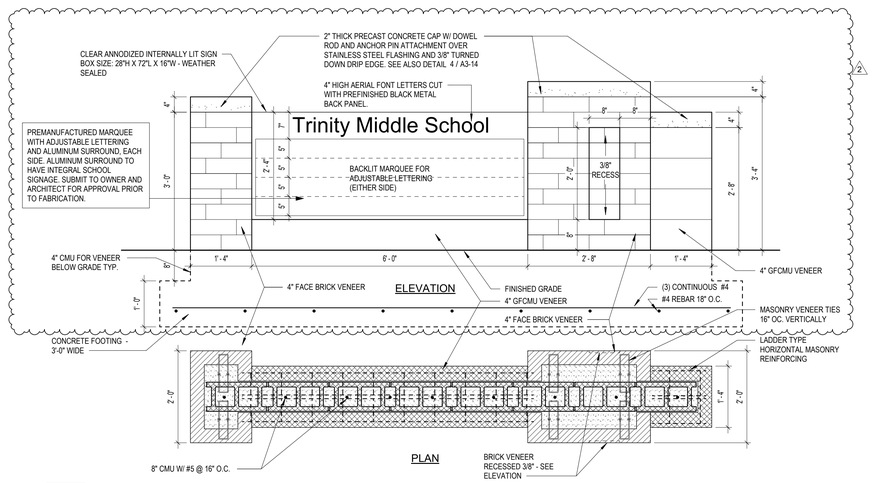
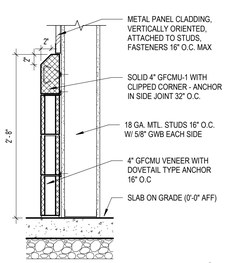
GENERAL WALL SECTION NOTES

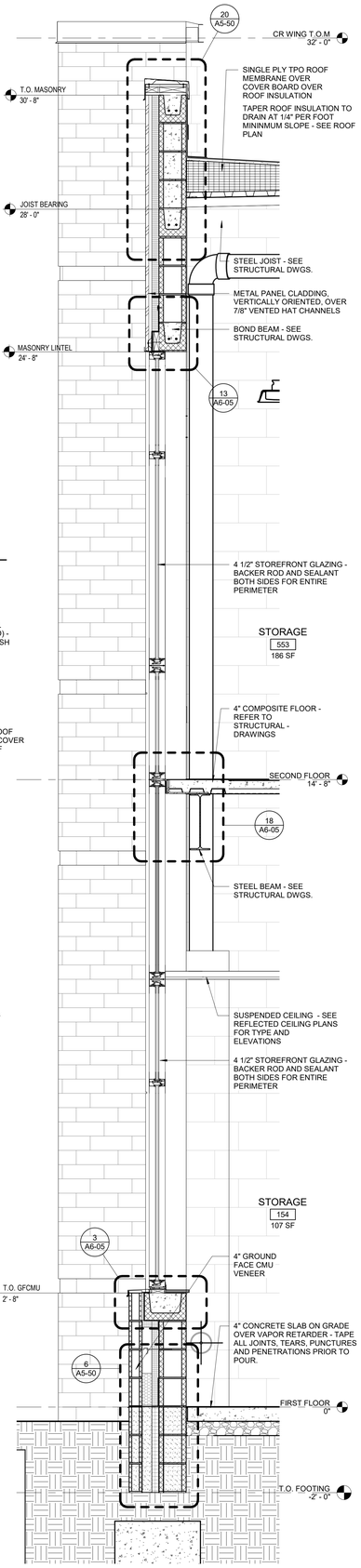
1. COORDINATE ALL LINTEL AND BOND BEAM REQUIREMENTS WITH STRUCTURAL DRAWINGS AND SPECIFICATIONS
2. SEE STRUCTURAL DRAWINGS FOR FOUNDATION AND FOOTING REQUIREMENTS
3. PROVIDE HORIZONTAL JOINT REINFORCEMENT, TIES AND OTHER ACHORAGE AND REINFORCING PER SPECIFICATIONS

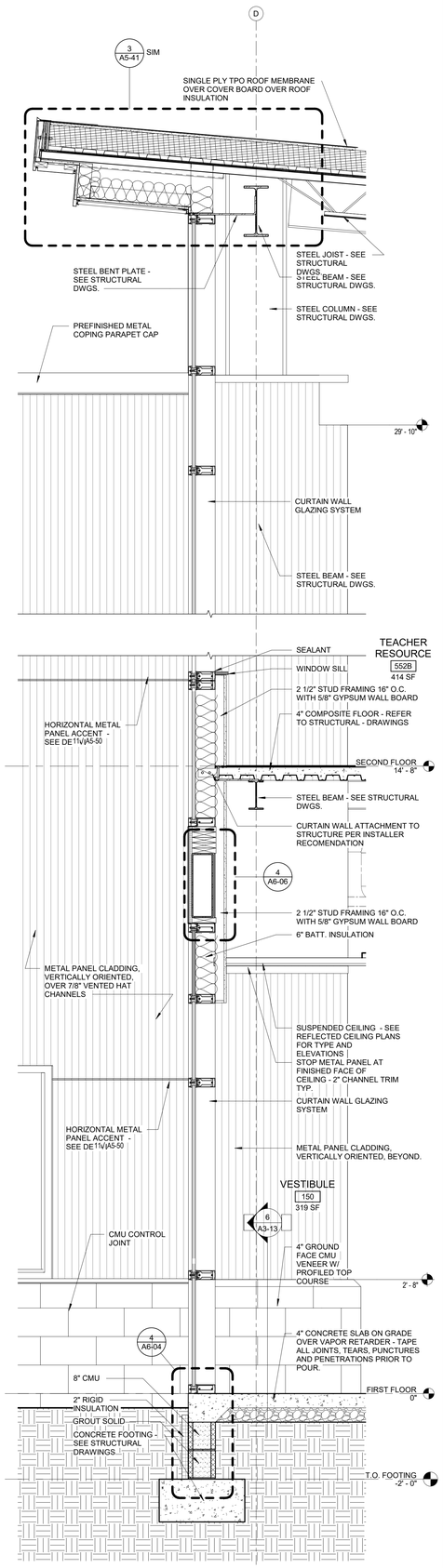


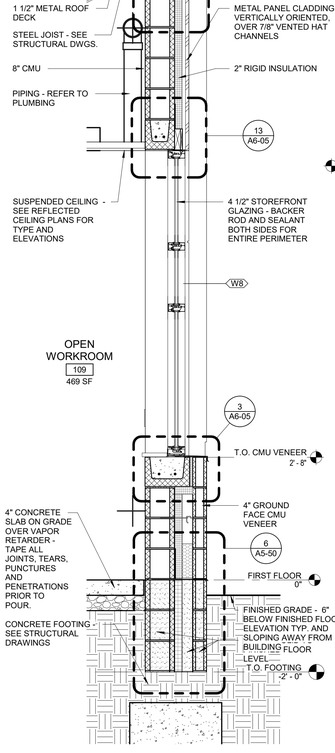
7 / A3-13 MONUMENTAL SIGN
3/4" = 1'-0"



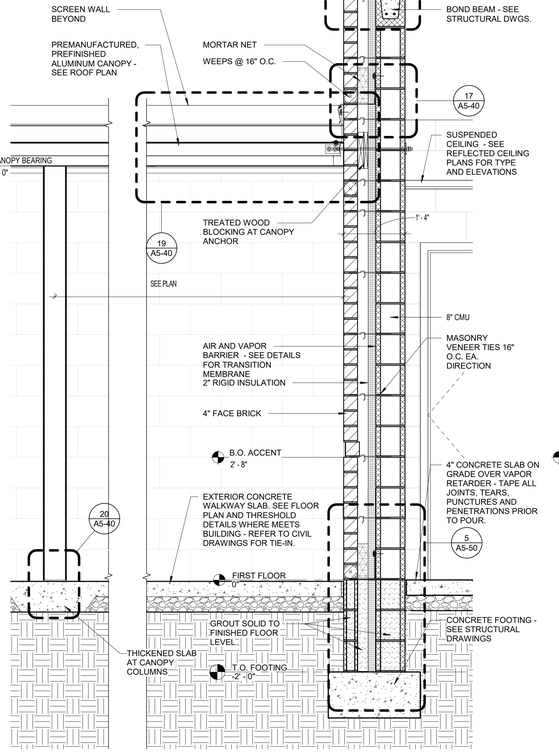
6 / A3-13 INTERIOR MASONRY BASE
1" = 1'-0"







5 / A3-13 WALL SECTION
3/4" = 1'-0"



4 / A3-13 WALL SECTION
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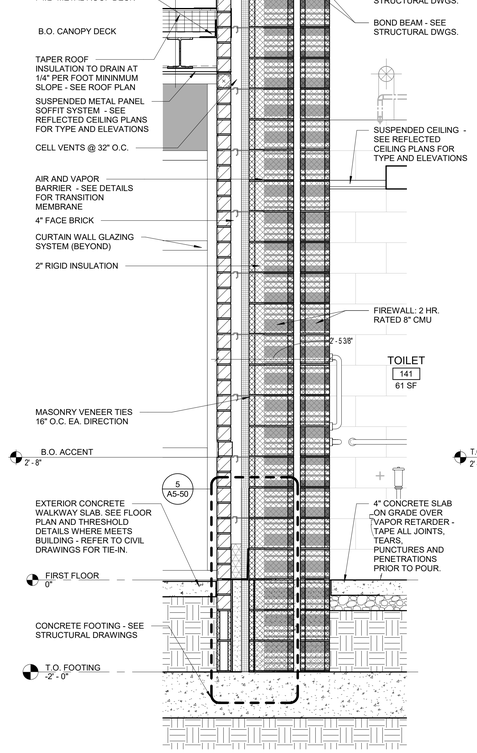

3 / A3-13 WALL SECTION
3/4" = 1'-0"

2 / A3-13 WALL SECTION 313-2
3/4" = 1'-0"

1 / A3-13 WALL SECTION
3/4" = 1'-0"

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Raleigh, NC 27607
info@smithsinnett.com

LICENSED ARCHITECTURE, P.A. CERT. NO. S0172 RALEIGH, NORTH CAROLINA

ANDREW WILLIAM PITTMAN SEAL 12017 REGISTERED ARCHITECT RALEIGH, NORTH CAROLINA

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME I

Smith Sinnett Architecture, P.A. 2018

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 30" X 42" SHEET

TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3

DRAWN BY: LP, JS, DW
CHECKED BY: DW

WALL SECTIONS

2017032 20 MAY 2019

A3-13

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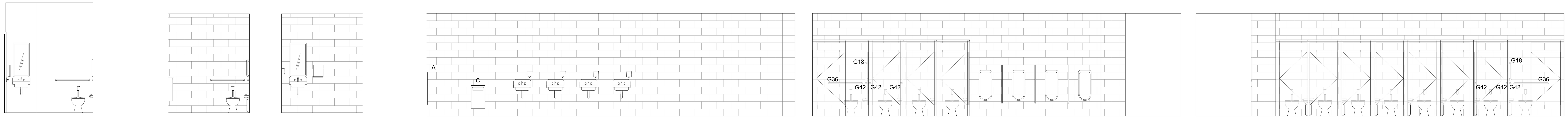
6/14/2019 11:53:14 PM



23 A4-01 **RR_Teacher - a** 1/4" = 1'-0"

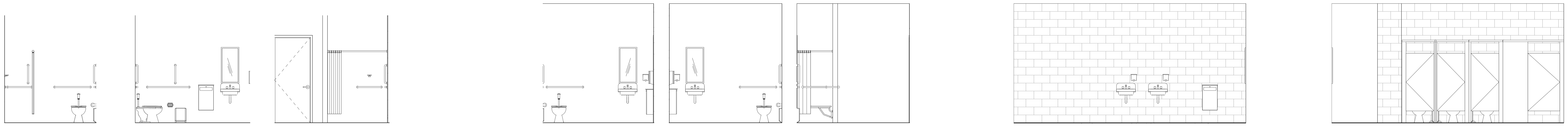
22 A4-01 **RR_Arts - a** 1/4" = 1'-0"

21 A4-01 **RR_Arts - c** 1/4" = 1'-0"

20 A4-01 **TOILET ELEVATION** 1/4" = 1'-0"

19 A4-01 **TOILET ELEVATION** 1/4" = 1'-0"

18 A4-01 **TOILET ELEVATION** 1/4" = 1'-0"



17 A4-01 **RR_Admin - a** 1/4" = 1'-0"

16 A4-01 **RR_Admin - b** 1/4" = 1'-0"

15 A4-01 **RR_Admin - d** 1/4" = 1'-0"

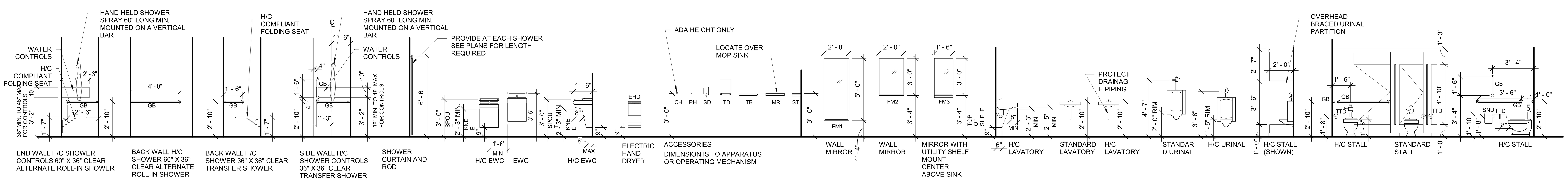
14 A4-01 **RR_EC/SC - a** 1/4" = 1'-0"

13 A4-01 **RR_EC/SC - b** 1/4" = 1'-0"

12 A4-01 **RR_EC/SC - c** 1/4" = 1'-0"

9 A4-01 **TYP. CLASSROOM WING RR- SINK WALL** 1/4" = 1'-0"

10 A4-01 **TYP. CLASSROOM WING RR- TOILET WALL** 1/4" = 1'-0"

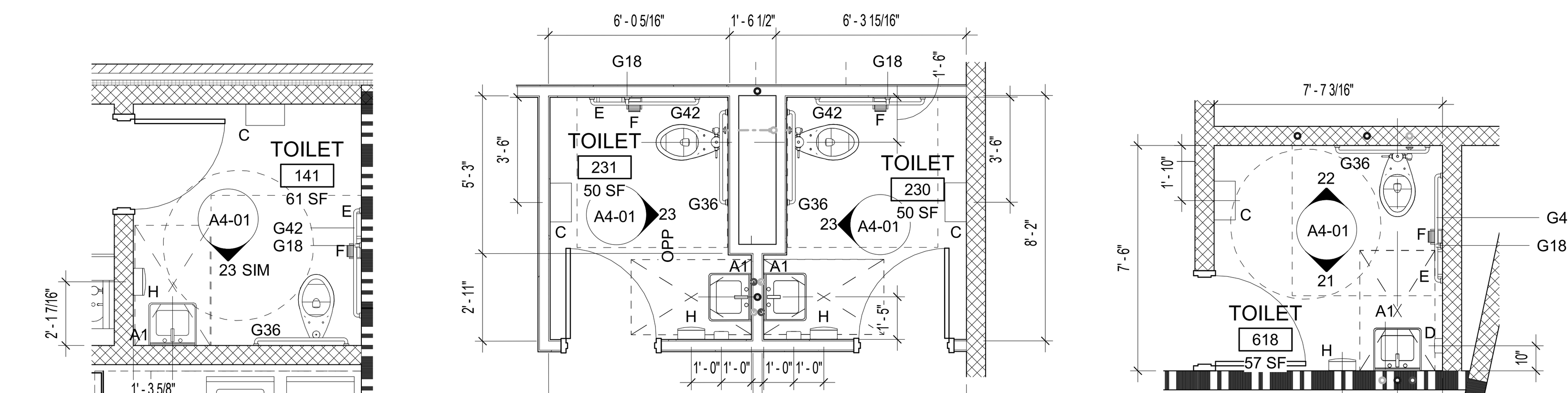


MOUNTING HEIGHTS
1/4" = 1'-0"

ACCESSORY SCHEDULE

MARK	DESCRIPTION	FURNISHED BY/INSTALLED BY	MOUNTING HEIGHT	REMARKS
A	24" x 60" MIRROR, 1/2" CHANNEL FRAME, 1/4" LAMINATED SAFETY GLASS, THEFT RESISTANT MOUNT.	CFCI	18" A.F.F. TO BOTTOM OF UNIT	
A1	24" x 36" MIRROR, 1/2" CHANNEL FRAME, 1/4" LAMINATED SAFETY GLASS, THEFT RESISTANT MOUNT.	CFCI	40" A.F.F. TO BOTTOM OF UNIT	
C	S.S. SURFACE MOUNTED WASTE RECEPTACLE	OFOI	16" A.F.F. TO BOTTOM MIN.	
D				
D, OFOI	DRYER BY OWNER	OFOI	---	
E	S.S. SURFACE MOUNTED SANITARY NAPKIN RECEPTACLE	OFOI	32" A.F.F. TO TOP OF UNIT	
F	SINGLE ROLL TISSUE DISPENSER	OFOI	32" A.F.F. TO TOP OF UNIT	
G18	1 1/2" DIA. X 18" S.S. VERTICAL GRAB BAR - PEENED	CFCI	40" A.F.F. TO BOTTOM OF BAR	
G24	1 1/2" DIA. X 24" S.S. GRAB BAR - PEENED	CFCI	36" A.F.F. TO TOP OF BAR	
G36	1 1/2" DIA. X 36" S.S. GRAB BAR - PEENED	CFCI	36" A.F.F. TO TOP OF BAR	
G42	1 1/2" DIA. X 42" S.S. GRAB BAR - PEENED	CFCI	36" A.F.F. TO TOP OF BAR	
H	PAPER TOWEL DISPENSER	OFOI	40" A.F.F. TO POINT OF DISPENSION	
J	S.S. SOAP DISH	OFOI	48" A.F.F. TO TOP	
K1	60"-72" HEAVY DUTY S.S. SHOWER CURTAIN ROD, VINYL CURTAIN, AND S.S. HOOKS	CFCI	74 1/2" A.F.F. TO C.L.	
K2	42" HEAVY DUTY S.S. SHOWER CURTAIN ROD, VINYL CURTAIN, AND S.S. HOOKS	CFCI	74 1/2" A.F.F. TO C.L.	
REF	REFRIGERATOR BY OWNER	OFOI	---	
SS	REVERSIBLE FOLDING SHOWER SEAT	CFCI	17"-19" A.F.F. TO TOP OF SEAT	
W, OFOI	WASHER BY OWNER	OFOI	---	

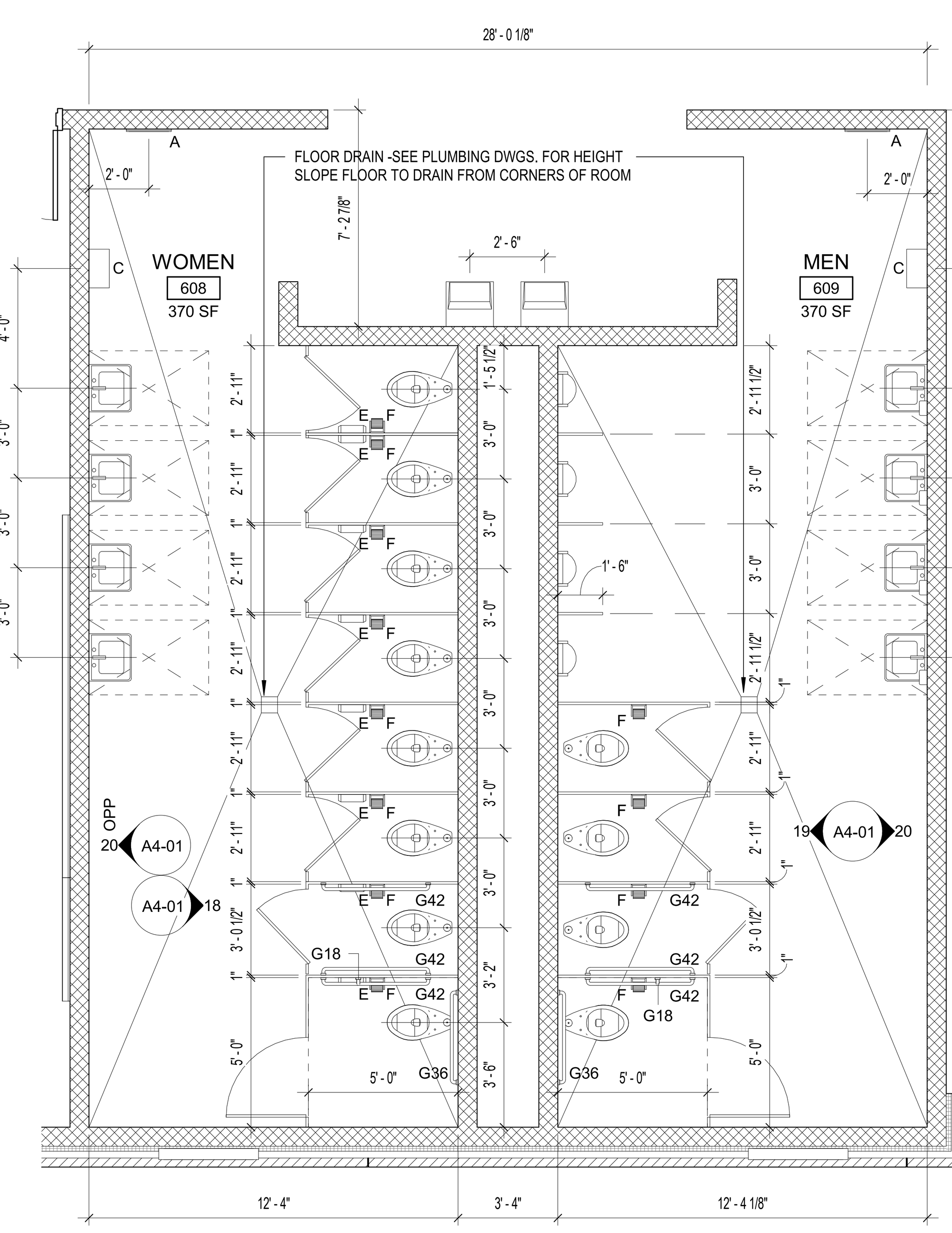
2



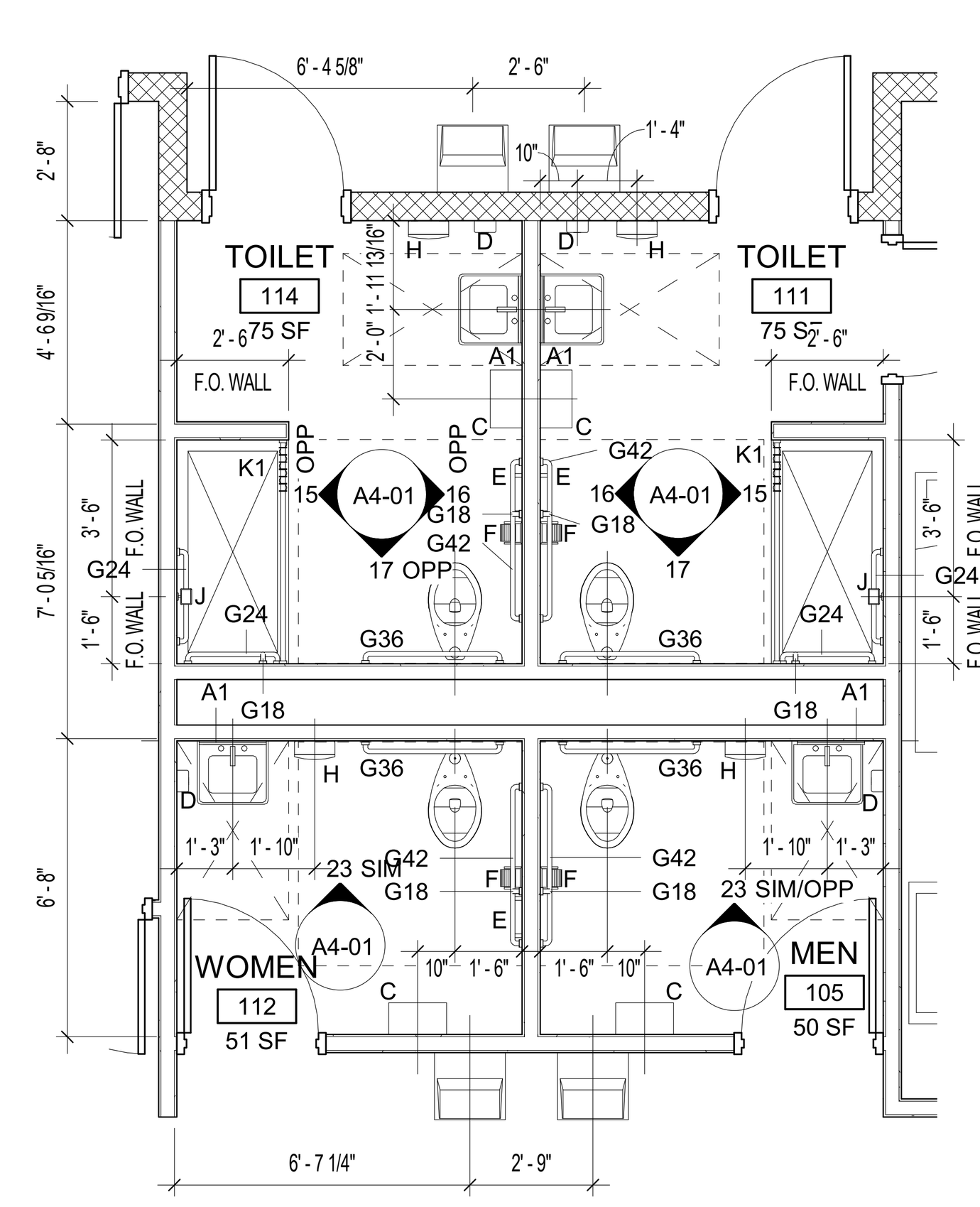
8 A4-01 **ENLG. TOILET PLAN** 1/4" = 1'-0"

7 A4-01 **ENLG. TOILET PLAN** 1/4" = 1'-0"

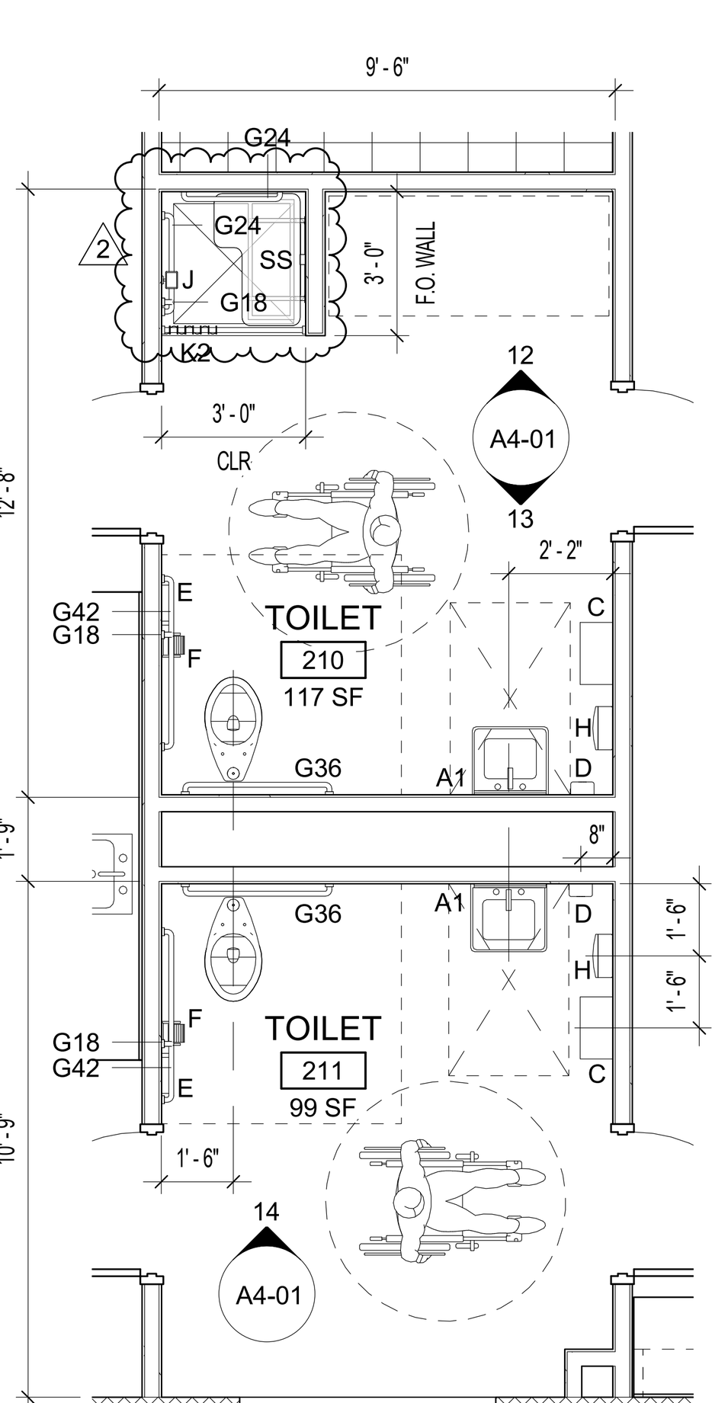
6 A4-01 **ENLG. TOILET PLAN** 1/4" = 1'-0"



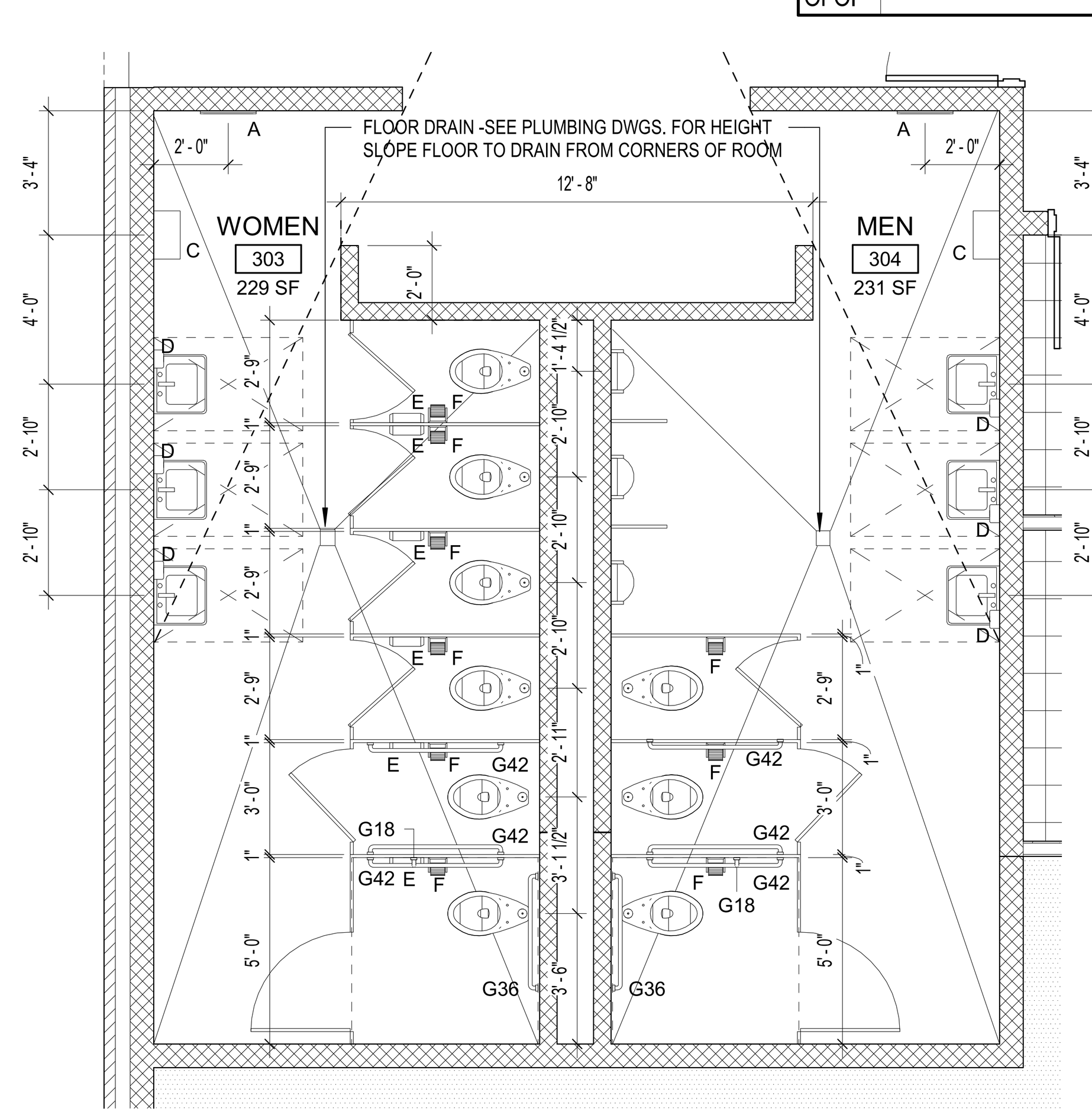
5 A4-01 **ENLARGED TOILET PLAN** 1/4" = 1'-0"



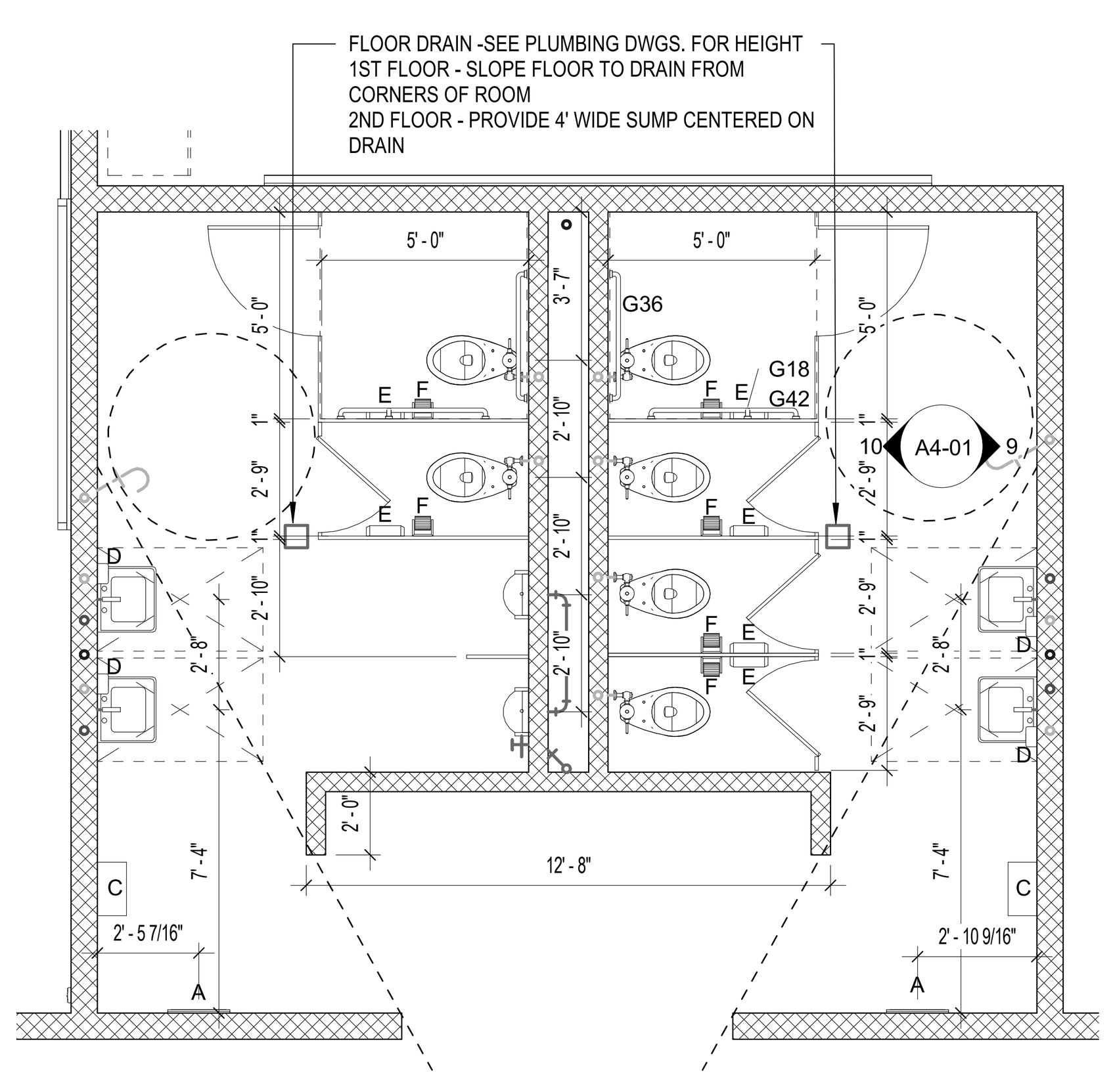
4 A4-01 **ENLARGED TOILET PLAN** 1/4" = 1'-0"



3 A4-01 **ENLG. TOILET PLAN** 1/4" = 1'-0"



2 A4-01 **ENLARGED TOILET PLAN** 1/4" = 1'-0"



1 A4-01 **ENLARGED TOILET PLAN** 1/4" = 1'-0"

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smith sinnett ARCHITECTURE

T 919 781 8582
4600 Lake Boone Trail
Suite 205
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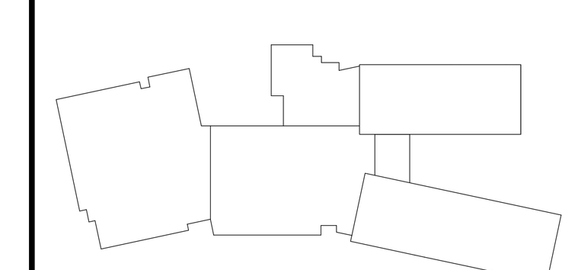
VOLUME I

TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370

KEY PLAN
NO SCALE



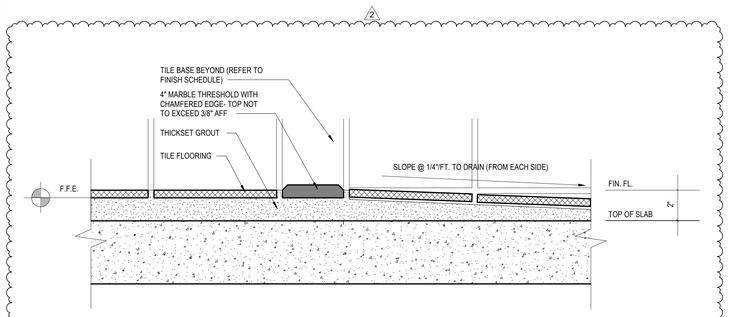
ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3

DRAWN BY: LP, JS, DW
CHECKED BY: DW

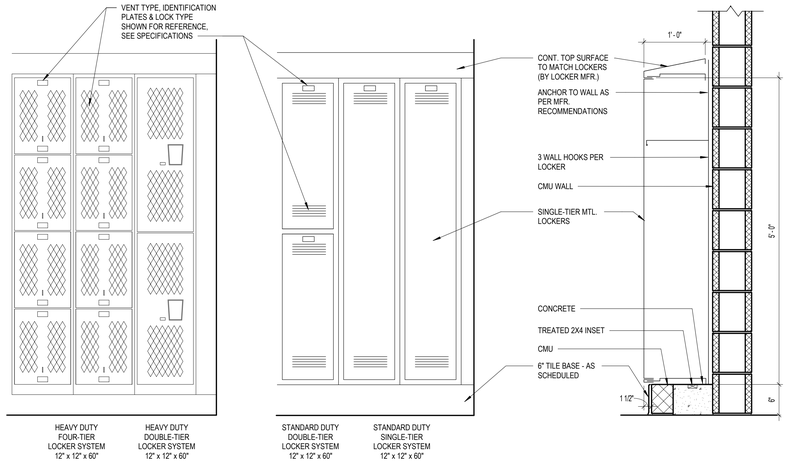
ENLARGED TOILET PLANS

2017032 20 MAY 2019

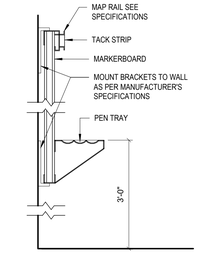
A4-01



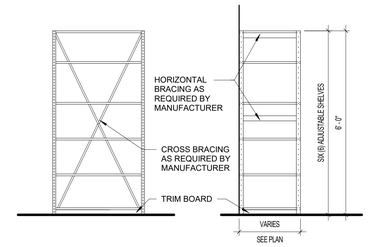
11 / A4-02 SHOWER FLOOR DETAIL
3" = 1'-0"



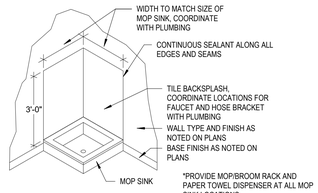
10 / A4-02 LOCKER DETAIL
1" = 1'-0"



9 / A4-02 MARKERBOARD DETAIL
3" = 1'-0"



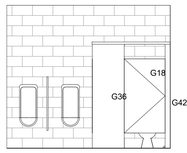
8 / A4-02 TYP WOOD SHELVING
1/2" = 1'-0"



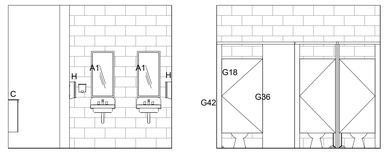
7 / A4-02 MOP SINK DETAIL
3/8" = 1'-0"

ACCESSORY SCHEDULE

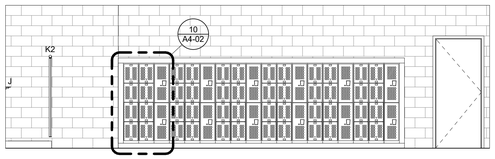
MARK	DESCRIPTION	FURNISHED BY/INSTALLED BY	MOUNTING HEIGHT	REMARKS
A	24" x 60" MIRROR, 1/2" CHANNEL FRAME, 1/4" LAMINATED SAFETY GLASS, THEFT RESISTANT MOUNT.	CFCI	18" A.F.F. TO BOTTOM OF UNIT	
A1	24" x 36" MIRROR, 1/2" CHANNEL FRAME, 1/4" LAMINATED SAFETY GLASS, THEFT RESISTANT MOUNT.	CFCI	40" A.F.F. TO BOTTOM OF UNIT	
C	S.S. SURFACE MOUNTED WASTE RECEPTACLE	OFOI	16" A.F.F. TO BOTTOM MIN.	
D				
D, OFOI	DRYER BY OWNER	OFOI	---	
E	S.S. SURFACE MOUNTED SANITARY NAPKIN RECEPTACLE	OFOI	32" A.F.F. TO TOP OF UNIT	
F	SINGLE ROLL TISSUE DISPENSER	OFOI	32" A.F.F. TO TOP OF UNIT	
G18	1 1/2" DIA. X 18" S.S. VERTICAL GRAB BAR - PEENED	CFCI	40" A.F.F. TO BOTTOM OF BAR	
G24	1 1/2" DIA. X 24" S.S. GRAB BAR - PEENED	CFCI	36" A.F.F. TO TOP OF BAR	
G36	1 1/2" DIA. X 36" S.S. GRAB BAR - PEENED	CFCI	36" A.F.F. TO TOP OF BAR	
G42	1 1/2" DIA. X 42" S.S. GRAB BAR - PEENED	CFCI	36" A.F.F. TO TOP OF BAR	
H	PAPER TOWEL DISPENSER	OFOI	40" A.F.F. TO POINT OF DISPENSION	
J	S.S. SOAP DISH	OFOI	48" A.F.F. TO TOP	
K1	60"-72" HEAVY DUTY S.S. SHOWER CURTAIN ROD, VINYL CURTAIN, AND S.S. HOOKS	CFCI	74 1/2" A.F.F. TO C.L.	
K2	42" HEAVY DUTY S.S. SHOWER CURTAIN ROD, VINYL CURTAIN, AND S.S. HOOKS	CFCI	74 1/2" A.F.F. TO C.L.	
REF	REFRIGERATOR BY OWNER	OFOI	---	
SS	REVERSIBLE FOLDING SHOWER SEAT	CFCI	17"-19" A.F.F. TO TOP OF SEAT	
W, OFOI	WASHER BY OWNER	OFOI	---	



6 / A4-02 LOCKER RM. ELEV.
1/4" = 1'-0"



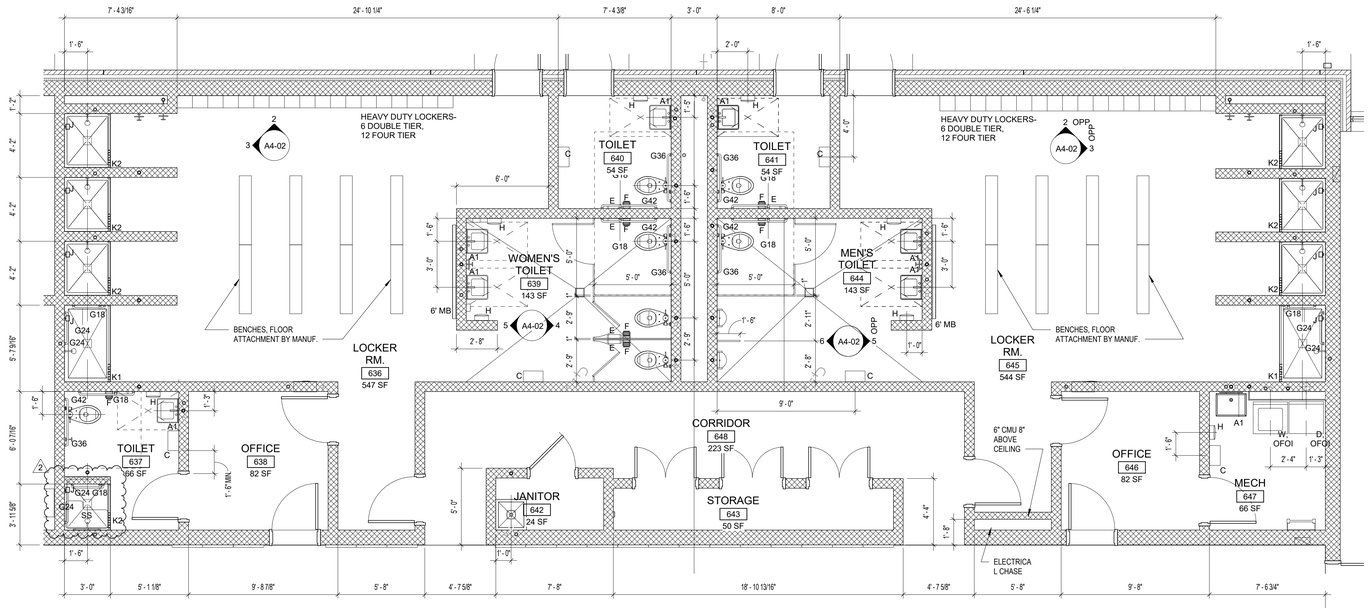
3 / A4-02 LOCKER ROOM ELEV.
1/4" = 1'-0"



2 / A4-02 LOCKER ROOM ELEV.
1/4" = 1'-0"

5 / A4-02 LOCKER RM. ELEV.
1/4" = 1'-0"

4 / A4-02 LOCKER RM. ELEV.
1/4" = 1'-0"



1 / A4-02 ENLARGED LOCKER ROOM PLAN
1/4" = 1'-0"

smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
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CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME I

Smith Sinnett Architecture, P.A. 2018

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TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3

DRAWN BY: LP, JS, DW
CHECKED BY: DW

ENLARGED TOILET PLANS & EQUIPMENT DETAILS

2017032 20 MAY 2019

A4-02

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DOOR SCHEDULE

DOOR	DOOR SIZE						FRAME		DETAILS					
MARK	WIDTH	HEIGHT	THK	MAT	TYPE	LVS	MAT	TYPE	HEAD	JAMB	THRESH	HARDWARE SET	FIRE RATING	REMARKS
100A	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	SF1	18/A6-04		--	03	--	2,7
100B	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	SF1	18/A6-04		--	04	--	
100C	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	SF1	18/A6-04		--	04	--	
100D	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	SF1	18/A6-04		--	04	--	
100E	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	SF2	18/A6-04		--	07	--	2,7
100EE	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	SF2	18/A6-04				--	
100F	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	SF2	18/A6-04		--	08	--	
100FF	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	SF2	18/A6-04				--	
101A	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	CW2	12/A6-04	11/A6-04	2/A6-04	01	--	2,3,7
101B	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	CW2	12/A6-04	11/A6-04	2/A6-04	02	--	3
101C	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	CW2	12/A6-04	11/A6-04	2/A6-04	02	--	3
101D	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	CW2	12/A6-04	11/A6-04	2/A6-04	02	--	3
102A	3' - 0"	7' - 2"	1 3/4"	SCWD	FG1	1	HM	HM3	32/A6-04	8/A6-04	--	18	--	
102B	3' - 0"	7' - 2"	1 3/4"	SCWD	FG1	1	HM	HM3	32/A6-04	8/A6-04	T4	76	--	
102C	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	T4	75	--	
103A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	30/A6-04	23/A6-04	--	52	--	
103B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	T4	52	--	
104A	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T4	56	--	
104B	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T6	56	--	
105	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T2	49	--	4
106	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	30/A6-04	23/A6-04	--	52	--	
107	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	30/A6-04	23/A6-04	--	52	--	
108	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	30/A6-04	23/A6-04	--	62	--	
110A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	30/A6-04	23/A6-04	--	54	--	
110B	3' - 0"	7' - 2"	1 3/4"	SCWD	NFR	1	HM	HM1	5/A6-04	6/A6-04	T4	61	90 MIN	
111A	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T1	48	--	4
111B	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T1	47	--	4
112	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T2	49	--	4
113	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T4	62	--	
114	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T1	47	--	4
115A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	30/A6-04	23/A6-04	--	55	--	
115B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	T4	56	--	
116A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	30/A6-04	23/A6-04	--	56	--	
116B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	T4	56	--	
117	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	30/A6-04	23/A6-04	--	52	--	
118	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	30/A6-04	23/A6-04	--	52	--	
119	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	30/A6-04	23/A6-04	--	52	--	
120	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	30/A6-04	23/A6-04	--	52	--	
121	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	30/A6-04	23/A6-04	--	62	--	
122A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	30/A6-04	23/A6-04	--	55	--	
122B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	T4	55	--	
123	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	30/A6-04	23/A6-04	T4	77	--	
124	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	30/A6-04	23/A6-04	--	52	--	
125A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	30/A6-04	23/A6-04	--	52	--	
125B	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	5/A6-04	6/A6-04	T4	60	90 MIN	
126	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T4	78	--	
127	4' - 0"	7' - 2"	1 3/4"	SCWD	F		HM	HM1	32/A6-04	25/A6-04	T6	79	--	
130A	6' - 0"	7' - 2"	1 3/4"	SCWD	NFR	2	HM	HM2	7/A6-04	8/A5-02	--	43	90 MIN	5
130B	6' - 0"	7' - 2"	1 3/4"	SCWD	NFR	2	HM	HM2	7/A6-04	8/A5-02	--	44	90 MIN	5
131	6' - 0"	7' - 2"	1 3/4"	ALUM	FG1	2	ALUM	SF5	27/A6-04	20/A6-04	1/A6-04	19	--	3
132A	6' - 0"	7' - 2"	1 3/4"	SCWD	N	2	HM	HM1	32/A6-04	25/A6-04	T5	24	--	
132B	6' - 0"	7' - 2"	1 3/4"	SCWD	N	2	HM	HM1	32/A6-04	25/A6-04	T5	24	--	
132C	6' - 0"	7' - 2"	1 3/4"	ALUM	FG1	2	ALUM	AL1	27/A6-04	20/A6-04	1/A6-04	19	--	3
133A	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	5/A6-04	6/A6-04	T3	65	90 MIN	
133B	6' - 8"	8' - 0"	1/2"	STL	OHCD1	1	STL	HM1				88	90 MIN	
133C	6' - 8"	8' - 0"	1/2"	STL	OHCD1	1	STL	HM1				88	90 MIN	
133D	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	5/A6-04	6/A6-04	T3	64	90 MIN	
134A	4' - 0"	4' - 6"	1/2"	STL	FG5								90 MIN	
134B	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM					68	--	
137	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM					62	--	
139	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	52	--	
140	4' - 0"	7' - 2"	1 3/4"	HM	N	1	HM	HM1	28/A6-04	21/A6-04	3/A6-04	17	--	3,7
141	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	46	--	4
142	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	83	--	
145A	6' - 0"	7' - 2"	1 3/4"	HM	L	2	HM	HM1	28/A6-04	21/A6-04	1/A6-04	13		3
145B	3' - 0"	7' - 2"	1 3/4"	HM	F	1	HM					14	--	
146A	3' - 0"	7' - 2"	1 3/4"	HM	F	1	HM	HM1	28/A6-04	21/A6-04	1/A6-04	32	--	3
146B	6' - 0"	7' - 2"	1 3/4"	HM	F	2	HM	HM1	28/A6-04	21/A6-04	1/A6-04	29	--	3
147	6' - 0"	7' - 2"	1 3/4"	HM	L	2	HM					29		
150A	6' - 0"	7' - 2"	1 3/4"	ALUM	FG1	2	ALUM	CW5	12/A6-04	11/A6-04	2/A6-04	05	--	2,3,7
150B	6' - 0"	7' - 2"	1 3/4"	ALUM	FG1	2	ALUM	CW5	12/A6-04	11/A6-04	2/A6-04	06	--	3
152	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T4	70	--	
153	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T4	63	45 MIN	
154	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T4	62	--	
155	12' - 0"	10' - 0"		GATE	GATE							90	--	SEE 5/A6-02
155B	3' - 0"	7' - 0"		GATE	GATE								--	
155C	3' - 0"	7' - 0"		GATE	GATE								--	
156	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	29/A6-04	22/A6-04	T4	70	--	
158	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM					36	90 MIN	
159	6' - 0"	7' - 2"	1 3/4"	SCWD	F	2	HM					85	90 MIN	
200A	6' - 0"	7' - 2"	1 3/4"	SCWD	NFR	2	HM	HM2	7/A6-04	8/A5-02	11/A5-01	25	90 MIN	1
200B	6' - 0"	7' - 2"	1 3/4"	SCWD	NFR	2	HM	HM1	7/A6-04	8/A5-02	11/A5-01	25	90 MIN	1
200C	6' - 0"	7' - 2"	1 3/4"	ALUM	FG1	2	ALUM	AL1	27/A6-04	20/A6-04	1/A6-04	10	--	3,7
201A	6' - 0"	7' - 2"	1 3/4"	SCWD	N	2	HM	HM1	32/A6-04	25/A6-04	--	38	--	5
201B	6' - 0"	7' - 2"	1 3/4"	SCWD	N	2	HM	HM1	32/A6-04	25/A6-04	--	37	--	5
204	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	82	--	
205A	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	28/A6-04	21/A6-04	T6	78	--	
205B	3' - 0"	7' - 2"	1 3/4"	HM	F	1	HM	HM1	28/A6-04	21/A6-04	T1	41	--	3
206A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	70	--	
206B	3' - 0"	7' - 2"	1 3/4"	HM	F	1	HM	HM1	28/A6-04	21/A6-04	T1	41	--	3
207A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	
207B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	
208A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
208B	3' - 0"	7' - 2"	1 3/4"	HM	F	1	HM	HM1	28/A6-04	21/A6-04	T1	41	--	3
209	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	79	--	
210A	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T1	51	--	4
210B	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T1	51	--	4
211A	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T1	51	--	4
211B	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T1	51	--	4
212	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
213	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	70	--	
214	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	77	--	
215	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	77	--	
216A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	
216B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	
217A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	
217B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	
218	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
219	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	78	--	
220	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	77	--	
221	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	58	--	6
222	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
223A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	6,8
223B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	6,8
224	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
225	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
229	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
230	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T2	46	--	4
231	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T2	46	--	4
300A	6' - 0"	7' - 2"	1 3/4"	SCWD	NFR	2	HM	HM1	7/A6-04	8/A5-02	11/A5-01	25	90 MIN	1
300B	6' - 0"	7' - 2"	1 3/4"	SCWD	NFR	2	HM	HM1	7/A6-04	8/A5-02	11/A5-01	25	90 MIN	1
300C	6' - 0"	7' - 2"	1 3/4"	ALUM	FG1	2	ALUM	AL1	27/A6-04	20/A6-04	1/A6-04	10	--	3,7
301A	6' - 0"	7' - 2"	1 3/4"	ALUM	FG1	2	ALUM	SF3	27/A6-04	20/A6-04	1/A6-04	12	--	3
301B	6' - 0"	7' - 2"	1 3/4"	ALUM	FG1	2	ALUM	SF3	27/A6-04	20/A6-04	1/A6-04	09	--	3
302A	6' - 0"	7' - 2"	1 3/4"	SCWD	N	2	HM	HM1	32/A6-04	25/A6-04	--	38	--	5
302B	6' - 0"	7' - 2"	1 3/4"	SCWD	N	2	HM	HM1	32/A6-04	25/A6-04	--	37	--	5
305	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T3	82	--	
306A	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	28/A6-04	21/A6-04	--	78	--	
306B	3' - 0"	7' - 2"	1 3/4"	HM	F	1	HM	HM1	28/A6-04	21/A6-04	T1	40	--	3
307	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T4	81	45 MIN	
308	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
309	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM					71	--	
309A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	84	--	
310	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
311	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
312A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	6,8
312B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	6,8
313	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
314A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	58	--	
314B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	58	--	
315	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T1	50	--	4
316	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T1	50	--	4
318A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	6,8
318B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	6,8
319	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
400A	6' - 0"	7' - 2"	1 3/4"	SCWD	NFR	2	HM	HM1	7/A6-04	8/A5-02	11/A5-01	25	90 MIN	1
400B	6' - 0"	7' - 2"	1 3/4"	SCWD	NFR	2	HM	HM1	7/A6-04	8/A5-02	11/A5-01	25	90 MIN	1
401A	6' - 0"	7' - 2"	1 3/4"	SCWD	N	2	HM	HM1	32/A6-04	25/A6-04	--	38	--	5
401B	6' - 0"	7' - 2"	1 3/4"	SCWD	N	2	HM	HM1	32/A6-04	25/A6-04	--	37	--	5
404	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	82	--	
405	3' - 0"	7' - 2"	1 3/4"	SCWD	FG1	1	HM	HM3	28/A6-04	21/A6-04	--	68	--	
406	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	--	66	--	
407	3' - 0"	7' - 2"	1 3/4"	SCWD	FG1	1	HM	HM3	28/A6-04	21/A6-04	--	68	--	

DOOR SCHEDULE

DOOR	DOOR SIZE						FRAME		DETAILS					
MARK	WIDTH	HEIGHT	THK	MAT	TYPE	LVS	MAT	TYPE	HEAD	JAMB	THRESH	HARDWARE SET	FIRE RATING	REMARKS
408	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	66	--	
409A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	
409B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	
410	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	78	--	
411	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	81	--	
412A	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T6	78	--	
412B	6' - 0"	7' - 2"	1 3/4"	SCWD	N	2	HM	HM1	32/A6-04	25/A6-04	T6	86	--	
413	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	70	--	
414	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
415	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	77	--	
416	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
417A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	6,8
417B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04		22	--	6,8
418	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
419	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T1	50	--	4
420	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T1	50	--	4
421A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04		58	--	
421B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04		58	--	
422	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
423A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	6,8
423B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	6,8
424	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	T4	71	--	
425	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
429	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	T4	71	--	
456	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	29/A6-04	22/A6-04	T4	71	--	
500A	6' - 0"	7' - 2"	1 3/4"	SCWD	NFR	2	HM	HM1	7/A6-04	8/A5-02	11/A5-01	25	90 MIN	1
500B	6' - 0"	7' - 2"	1 3/4"	SCWD	NFR	2	HM	HM1	7/A6-04	8/A5-02	11/A5-01	25	90 MIN	1
501A	6' - 0"	7' - 2"	1 3/4"	SCWD	N	2	HM	HM1	32/A6-04	25/A6-04	--	38	--	5
501B	6' - 0"	7' - 2"	1 3/4"	SCWD	N	2	HM	HM1	32/A6-04	25/A6-04	--	37	--	5
504	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T3	82	--	
505	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	28/A6-04	21/A6-04	--	59	--	
506	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	77	--	
507	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T4	84	--	
508	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
509	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	28/A6-04	21/A6-04	--	53	--	
510	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
511	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
512A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	6,8
512B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	6,8
513A	6' - 0"	7' - 2"	1 3/4"	SCWD	N	2	HM	HM1	32/A6-04	25/A6-04	T6	86	--	
513B	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T6	78	--	
514A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	58	--	
514B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	58	--	
515	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T1	50	--	4
516	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T1	50	--	4
517	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	71	--	
518A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	6,8
518B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	22	--	6,8
530A	3' - 0"	7' - 2"	1 3/4"	SCWD	FG1	1	HM	HM1	30/A6-04	23/A6-04	T4	21	--	
530B	10' - 0"	8' - 0"	2 1/8"	ALUM	G1	1		--	4/A6-02	3/A6-02	--	88		
530C	10' - 0"	8' - 0"	2 1/8"	ALUM	G1	1		--	4/A6-02	3/A6-02	--	88		
530D	10' - 0"	8' - 0"	2 1/8"	ALUM	G1	1		--	4/A6-02	3/A6-02	--	88		
530E	6' - 0"	7' - 2"	1 3/4"	SCWD	FG1	2	HM	HM1	30/A6-04	23/A6-04	T4	42	--	
552A	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T4	70	--	
552B	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T4	71	--	
553	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	30/A6-04	23/A6-04	T4	62	--	
600A	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	CW13	12/A6-04	11/A6-04	2/A6-04	15	--	3,7
600B	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	CW13	12/A6-04	11/A6-04	2/A6-04	16	--	3
600C	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	CW13	12/A6-04	11/A6-04	2/A6-04	16	--	3
601A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	T6	21	--	
601B	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	--	21	--	
601C	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	AL1	27/A6-04	20/A6-04	T1	34	--	3
602	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	52	--	
603	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	62	--	
604	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	67	--	6
605	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	T6	72	--	
606	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	63	--	
607	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	82	--	
610A	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	CW11	27/A6-04	20/A6-04	1/A6-04	16	--	3
610B	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	CW11	27/A6-04	20/A6-04	1/A6-04	16	--	3
610C	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	CW11	27/A6-04	20/A6-04	1/A6-04	16	--	3
610D	3' - 0"	7' - 2"	1 3/4"	ALUM	FG1	1	ALUM	CW11	27/A6-04	20/A6-04	1/A6-04	11	--	2,3,7
611A	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	59	--	
611B	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	66	--	
611C	10' - 0"	4' - 6"	1/2"	STL	CCD1				3/A4-12	4/A4-12	3/A4-12	88	--	
613	6' - 0"	7' - 2"	1 3/4"	SCWD	F	2	HM	HM1	5/A6-04	6/A6-04	T5	87	90 MIN	
614A	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T6	78	--	
614B	7' - 8"	7' - 10"	1 3/4"	SCWD	F	2	HM	HM1	7/A6-04	8/A5-02	11/A5-01	85	90 MIN	
615A	3' - 0"	7' - 2"	1 3/4"	SCWD	N	1	HM	HM1	32/A6-04	25/A6-04	T5	81	--	
615B	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	21	--	
616	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	69	--	
617	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	53	--	
618	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T3	46	--	4
620A	6' - 0"	7' - 2"	1 3/4"	SCWD	N	2	HM	HM1	32/A6-04	25/A6-04	T6	33	--	
620B	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	5/A6-04	6/A6-04	--	23	90 MIN	
620C	6' - 0"	7' - 2"	1 3/4"	ALUM	FG1	2	ALUM	SF4	27/A6-04	20/A6-04	1/A6-04	10	--	3,7
621A	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	5/A6-04	6/A6-04	T4	23	90 MIN	
621C	3' - 0"	7' - 2"	1 3/4"	HM	F	1	HM	HM1	27/A6-04	20/A6-04	1/A6-04	35	--	3
622	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	66	--	
623A	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	5/A6-04	6/A6-04	--	57	90 MIN	
623B	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T4	53	--	
624A	3' - 6"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T4	66	--	
624B	3' - 6"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	T4	63	--	
625A	6' - 0"	7' - 2"	1 3/4"	SCWD	N	2	HM	HM1	32/A6-04	25/A6-04	T4	31	--	
625B	6' - 0"	7' - 2"	1 3/4"	ALUM	FG1	2	ALUM	AL1	27/A6-04	20/A6-04	1/A6-04	20	--	3
630A	6' - 0"	7' - 2"	1 3/4"	SCWD	NFR		HM	HM1	31/A6-04	24/A6-04	9/A7-20	24	--	
630B	6' - 0"	7' - 2"	1 3/4"	SCWD	NFR		HM	HM1	31/A6-04	24/A6-04	9/A7-20	24	--	
630C	6' - 0"	7' - 2"	1 3/4"	HM	F	2	HM	HM1			10/A7-20, 1/A6-04	19	--	3
630D	6' - 0"	7' - 2"	1 3/4"	SCWD	NFR		HM	HM1	31/A6-04	24/A6-04	9/A7-20	24	--	
631	6' - 0"	7' - 2"	1 3/4"	WD	R		HM	HM1	32/A6-04	25/A6-04	9/A7-20	73		
632	6' - 0"	7' - 2"	1 3/4"	WD	R		HM	HM1	32/A6-04	25/A6-04	9/A7-20	73		
633	6' - 0"	7' - 2"	1 3/4"	WD	L		HM	HM1	31/A6-04	24/A6-04	17/A7-20	74		
634	3' - 0"	7' - 2"	1 3/4"	HM	F	1	HM	HM1	28/A6-04	21/A6-04	1/A6-04	32	--	3
635	6' - 0"	7' - 2"	1 3/4"	HM	F	2	HM	HM1	28/A6-04	21/A6-04	1/A6-04	29	--	3
636A	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	45	--	4
636B	3' - 0"	7' - 2"	1 3/4"	HM	F	1	HM	HM1	28/A6-04	21/A6-04	1/A6-04	28	--	3
637	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	46	--	4
638A	3' - 0"	7' - 2"	1 3/4"	SCWD	F		HM	HM1	31/A6-04	24/A6-04	10/A7-20	52	--	
638B	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	52	--	
640	3' - 0"	7' - 2"	1 3/4"	HM	F	1	HM	HM1	28/A6-04	21/A6-04	1/A6-04	26	--	3
641	3' - 0"	7' - 2"	1 3/4"	HM	F	1	HM	HM1	28/A6-04	21/A6-04	1/A6-04	26	--	3
642	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	81	--	
643A	4' - 0"	7' - 2"	1 3/4"	SCWD	F	2	HM	HM1	32/A6-04	25/A6-04	--	80	--	
643B	4' - 0"	7' - 2"	1 3/4"	SCWD	F	2	HM	HM1	32/A6-04	25/A6-04	--	80	--	
643C	4' - 0"	7' - 2"	1 3/4"	SCWD	F	2	HM	HM1	32/A6-04	25/A6-04	--	80	--	
645A	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	45	--	4
645B	3' - 0"	7' - 2"	1 3/4"	HM	F	1	HM	HM1	28/A6-04	21/A6-04	1/A6-04	28	--	3
646A	3' - 0"	7' - 2"	1 3/4"	SCWD	F		HM	HM1	31/A6-04	24/A6-04	10/A7-20	52	--	
646B	3' - 0"	7' - 2"	1 3/4"	SCWD	F	1	HM	HM1	32/A6-04	25/A6-04	--	52	--	
647	3' - 0"	7' - 2"	1 3/4"	SCWD	L	1	HM	HM1	32/A6-04	25/A6-04	--	77	--	
S2	6' - 0"	7' - 2"	1 3/4"	ALUM	FG1	2	ALUM	AL1	27/A6-04	20/A6-04	1/A6-04	09	--	3
S4	6' - 0"	7' - 2"	1 3/4"	ALUM	FG1	2	ALUM	AL1	27/A6-04	20/A6-04	1/A6-04	10	--	3,7

FOR THRESHOLD DETAILS, SEE SHEET A6-04.

DOOR SCHEDULE REMARKS
1. ELECTRICAL MAGNETIC HOLD OPENER PROVIDED BY ELECTRICIAN AND INSTALLED BY HARDWARE SUBCONTRACTOR
2. HANDICAP ACTUATOR ASSEMBLY
3. PROVIDE HEAD AND SILL DRIP EDGE
4. DOOR(S) REQUIRE 3/4" UNDERCUT. UNDERCUT RATED DOOR(S) 1/2" MAXIMUM.
5. LOCK-DOWN DOOR ASSEMBLY, PROVIDE ELECTRICAL HOLD OPENER TO BE INTEGRATED WITH SECURITY SYSTEM.
6. PROVIDE SMOKE GASKETING W/ KERFED FRAME
7. CARD READER ACCESS
8. PROVIDE CLOSER

smith sinnett ARCHITECTURE

T 919 781 8582

4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607

info@smithsinnett.com

SMITH SINNETT ARCHITECTURE, P.A. REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 50172 NORTH CAROLINA RALEIGH

DREW WILGUS REGISTERED ARCHITECT 12017 6.14.19 NORTH CAROLINA RALEIGH, NC

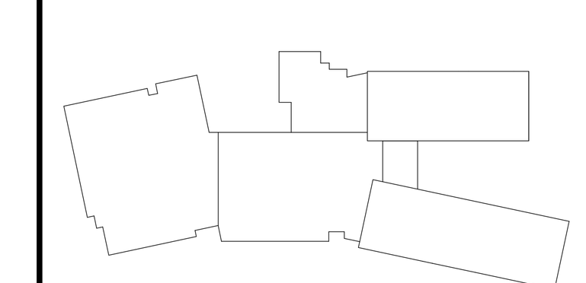
CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME I

TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370



KEY PLAN
NO SCALE

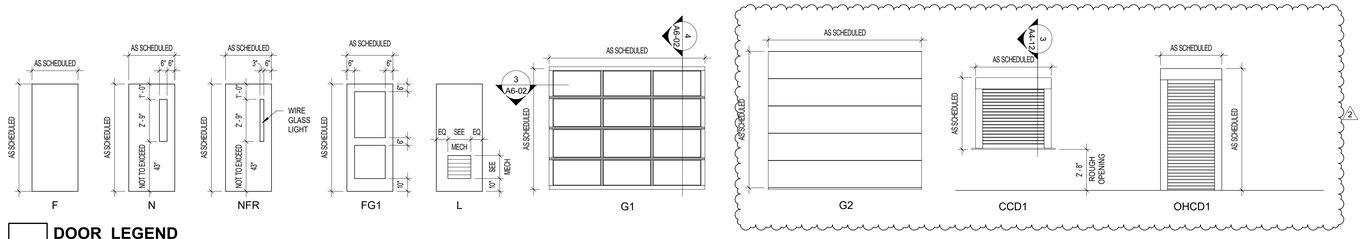
ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3

DRAWN BY: LP, JS, DW
CHECKED BY: DW

DOOR SCHEDULE

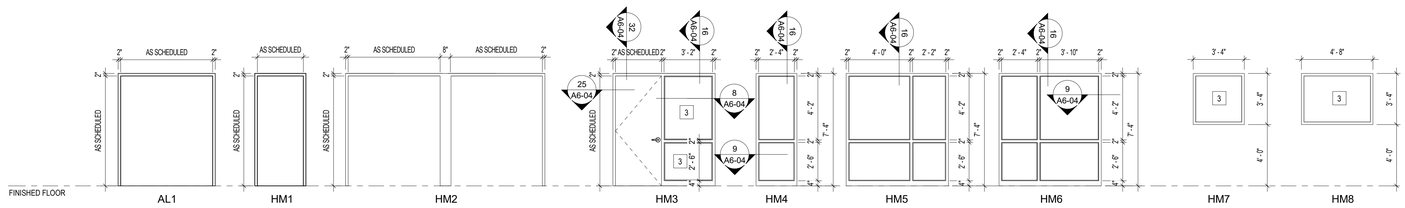
2017032 20 MAY 2019

A6-01



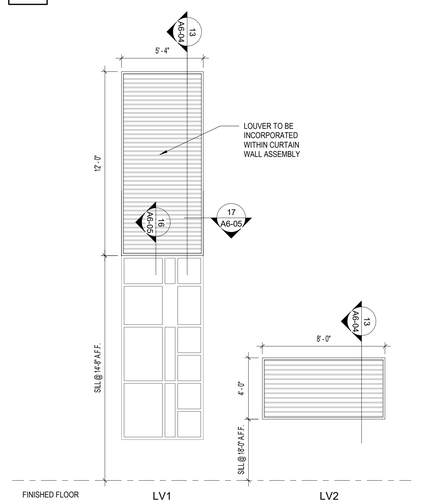
DOOR LEGEND

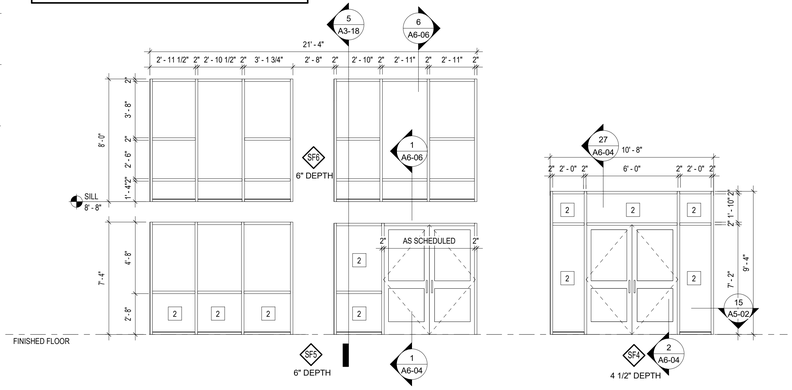
1/4" = 1'-0"

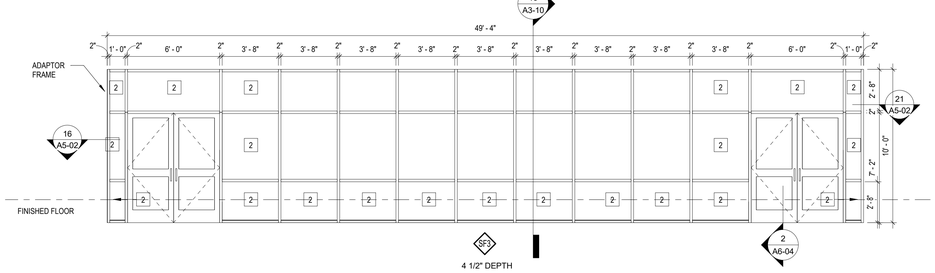


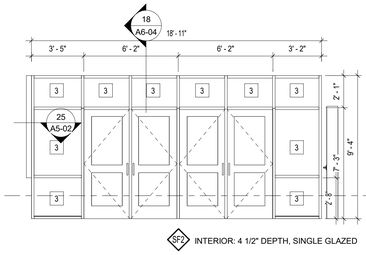
FRAME LEGEND

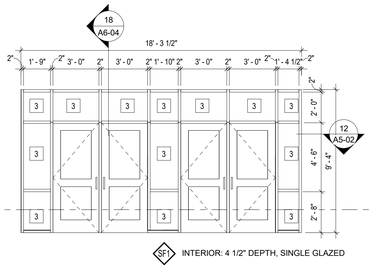
1/4" = 1'-0"



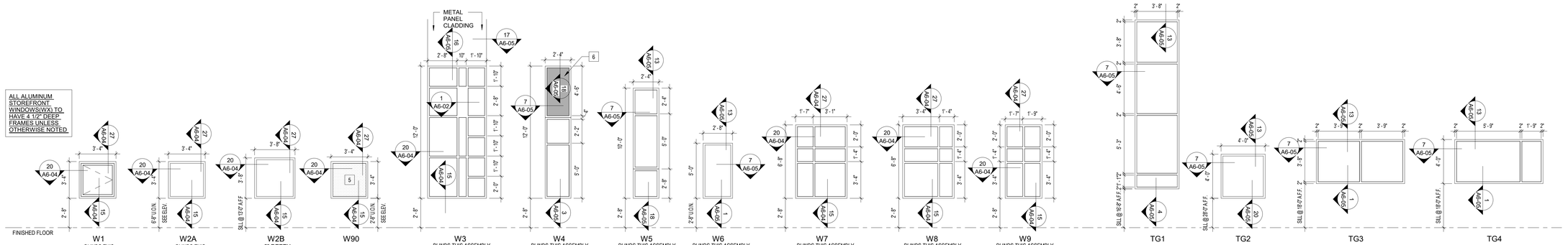








ALL ALUMINUM STOREFRONT WINDOWS(WX) TO HAVE 4 1/2" DEEP FRAMES UNLESS OTHERWISE NOTED.



W1 — *BLINDS THIS ASSEMBLY ALL LOCATIONS, EXCEPT S2, S3, S4, S5*

W2A — *BLINDS THIS ASSEMBLY ALL LOCATIONS, EXCEPT S2, S3, S4, S5 *SPANDREL GLAZING AS INDICATED IN ELEVATIONS*

W2B — 6" DEPTH

W90

W3 — *BLINDS THIS ASSEMBLY*

W4 — *BLINDS THIS ASSEMBLY*

W5 — *BLINDS THIS ASSEMBLY*

W6 — *BLINDS THIS ASSEMBLY*

W7 — *BLINDS THIS ASSEMBLY*

W8 — *BLINDS THIS ASSEMBLY*

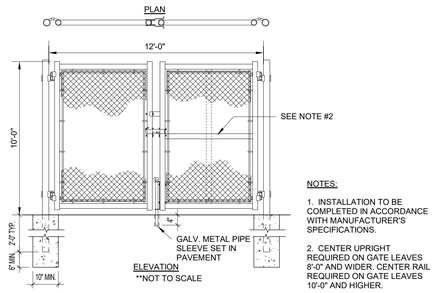
W9 — *BLINDS THIS ASSEMBLY*

TG1

TG2

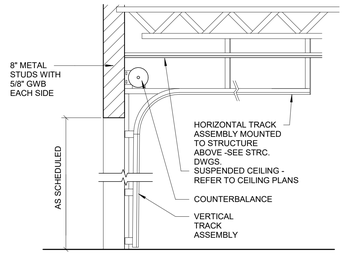
TG3

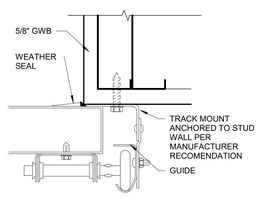
TG4

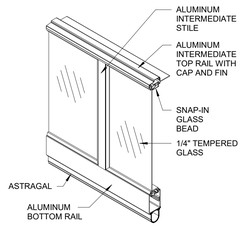


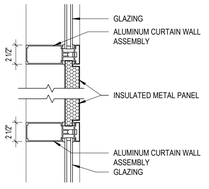
NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. CENTER UPRIGHT REQUIRED ON GATE LEAVES 8'-0" AND WIDER. CENTER RAIL REQUIRED ON GATE LEAVES 10'-0" AND HIGHER.









5 A6-02 SERVICE YARD GATE

1/2" = 1'-0"

4 A6-02 SECTIONAL DOOR TRACK

3/4" = 1'-0"

3 A6-02 SECTIONAL DOOR JAMB

1" = 1'-0"

2 A6-02 SECTIONAL DOOR PANEL ISO

1" = 1'-0"

1 A6-02 INSULATED METAL PANEL DETAIL

1 1/2" = 1'-0"

LEGEND

W_ -	FRAME DESIGNATION
SF_ -	ALUMINUM STOREFRONT
CW_-	ALUMINUM CURTAIN WALL
HM_ -	HOLLOW METAL
TG_-	TRANSLUCENT GLAZING

GLAZING AND FRAME NOTES

1. ALL GLAZING TO BE 1" LOW E, INSULATED, UNLESS OTHERWISE NOTED
2. 1" INSULATED, LOW E, TEMPERED GLAZING
3. 1/4" TEMPERED GLAZING
4. ALL FRAMES SHALL BE THERMALLY BROKEN
5. 90 MIN RATED WINDOW ASSEMBLY/FIRE GLASS
6. SPANDREL GLAZING SYSTEM
7. STRUCTURAL SILICON GLAZED (SSG) FRAME
8. BLINDS OR ROLLER SHADES WHERE INDICATED
9. REFER TO BUILDING ELEVATIONS FOR ATYPICAL SPANDREL LOCATIONS

smith sinnett ARCHITECTURE

T 919 781 8582

4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607

info@smithsinnett.com

SMITH SINNETT ARCHITECTURE, P.A. — CERT. NO. 9172 — RALEIGH, NORTH CAROLINA

DREW WITCHER — LICENSED ARCHITECT — 12017 — NORTH CAROLINA — RALEIGH

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME I

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 30" X 42" SHEET

TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370

KEY PLAN

NO SCALE

ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3

DRAWN BY: LP, JS, DW

CHECKED BY: DW

DOOR SCHEDULE, WINDOW AND FRAME ELEVATIONS

2017032 — 20 MAY 2019

A6-02

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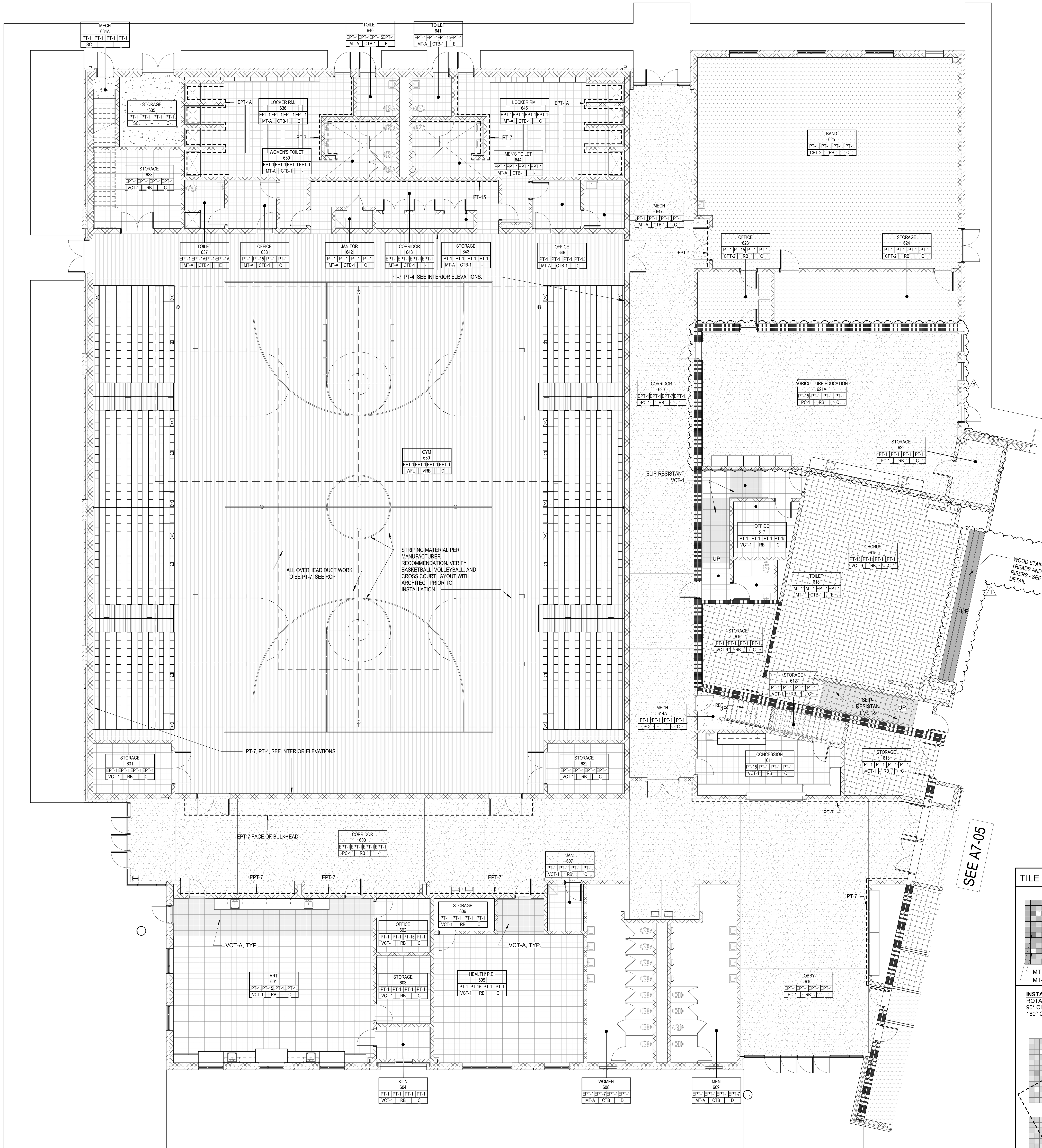
6/14/2019 11:54:59 PM



1
A7-07
600 WING - FIRST FLOOR (FINISH)
1/8" = 1'-0"

FINISH LEGEND

WALL FINISHES BASED ON PLAN LOCATION → ROOM NAME / ROOM NUMBER

NORTH	EAST	SOUTH	WEST
FLOOR	BASE	SIGNAGE	

INDICATES ACCENT PAINT OR WALL TILE: - - - - - - -

PAINT

PT-1/EPT-1	INTERIOR FIELD PAINT/EPOXY PAINT
EPT-1A	INTERIOR FIELD PAINT/EPOXY SHOWER PAINT
PT-2/EPT-2	INTERIOR ACCENT PAINT/EPOXY PAINT
PT-3/EPT-3	INTERIOR ACCENT PAINT/EPOXY PAINT
PT-4/EPT-4	INTERIOR ACCENT PAINT/EPOXY PAINT
PT-5/EPT-5	INTERIOR ACCENT PAINT/EPOXY PAINT
PT-6/EPT-6	INTERIOR ACCENT PAINT/EPOXY PAINT
PT-7/EPT-7	INTERIOR ACCENT PAINT/EPOXY PAINT
PT-8/EPT-8	INTERIOR ACCENT PAINT/EPOXY PAINT
PT-9	INTERIOR CEILING PAINT - 1
PT-10	INTERIOR CEILING PAINT- 2
PT-11	EXTERIOR FIELD PAINT
PT-12	INTERIOR ACCENT PAINT
PT-13	INTERIOR ACCENT PAINT
PT-14	INTERIOR ACCENT PAINT
PT-15	INTERIOR ACCENT PAINT
PT-16	INTERIOR ACCENT PAINT

FLOOR FINISH

SC	SEALED CONCRETE
PC-1	POLISHED CONCRETE - FIELD
PC-2	POLISHED CONCRETE - ACCENT
VCT-A	VCT PATTERN - A (SEE DIAGRAM)
VCT-B	VCT PATTERN - B (SEE DIAGRAM)
VCT-1	VINYL COMPOSITE TILE - FIELD 1/ACCENT
VCT-2	VINYL COMPOSITE TILE - FIELD 2
VCT-3	VINYL COMPOSITE TILE - ACCENT
VCT-4	VINYL COMPOSITE TILE - ACCENT
VCT-5	VINYL COMPOSITE TILE - ACCENT
VCT-6	VINYL COMPOSITE TILE - ACCENT
VCT-7	VINYL COMPOSITE TILE - ACCENT
VCT-8	VINYL COMPOSITE TILE - ACCENT
VCT-9	VINYL COMPOSITE TILE - FIELD 3
MT-A	CERAMIC TILE PATTERN - A
MT-1	CERAMIC TILE - 1
MT-2	CERAMIC TILE - 2
MT-3	CERAMIC TILE - 3
MT-4	CERAMIC TILE - 4
MT-5	CERAMIC TILE - 5
MT-6	CERAMIC TILE - 6
QT	QUARRY TILE
CPT-1	CARPET TILE - 1
CPT-2	CARPET TILE - 2
AFL-1	ATHLETIC FLOORING
AFL-2	ATHLETIC FLOORING - ACCENT
AFL-3	ATLETIC FLOORING - ACCENT
WFL	WOOD FLOOR
WD	WOOD STAIR TREAD
TRZ-1	TERRAZZO - FIELD (ALTERNATE)
TRZ-2	TERRAZZO - ACCENT 1 (ALTERNATE)
TRZ-3	TERRAZZO - ACCENT 2 (ALTERNATE)

1

WALL BASE

RB	RUBBER BASE
RBT	RUBBER TREAD
VRB	VENTED RUBBER BASE
CTB-1	CERAMIC TILE BASE - FIELD COLOR
CTB-2	CERAMIC TILE COVE BASE - ACCENT
QTB	COLOR
	QUARRY TILE BASE

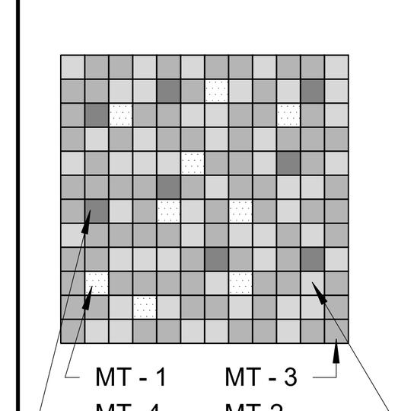
SURFACE FINISH

PLM-1	PLASTIC LAMINATE - BASE (MAPLE)
PLM-2	PLASTIC LAMINATE - COUNTER
PLM-3	PLASTIC LAMINATE - UPPER
PLM-4	PLASTIC LAMINATE - ACCENT
PLM-5	PLASTIC LAMINATE - ACCENT
PLM-6	PLASTIC LAMINATE - ACCENT
SS-1	SOLID SURFACE - COUNTER

GENERAL FINISH NOTES

1. ALL GWB CEILINGS AND BULKHEADS BE PT-1 U.O.N.
2. ALL CEILINGS WITH EXPOSED TO STRUCTURE TO BE PT-9 OR PT-10 AS INDICATED.
3. ARCHITECT SHALL HAVE THE OPTION OF SELECTING FROM A MINIMUM OF THREE APPROVED PLASTIC LAMINATE MANUFACTURE'S PRODUCTS. THE ARCHITECT SHALL BE ABLE TO COMBINE LAMINATES FROM DIFFERENT MANUFACTURES AS DESIRED DURING SHOP DRAWING PHASE.
4. FINISH MATERIALS SUBMITTED AS EQUALS TO THE LISTED MANUFACTURERS WILL BE APPROVED OR REJECTED BASED ON COLOR INTEGRITY AND TACTILE CHARACTERISTICS IN ADDITION TO TECHNICAL SPECIFICATIONS.
5. ROOMS WILL HAVE MILLWORK DESIGNS WITH MORE THAN THREE LAMINATE COLORS. EXACT LOCATION OF EACH TYPE TO BE DETERMINED DURING SHOP DRAWING PHASE.
6. FINISHES ARE CONTINGENT ON FINAL OWNER AND ARCHITECT APPROVAL.

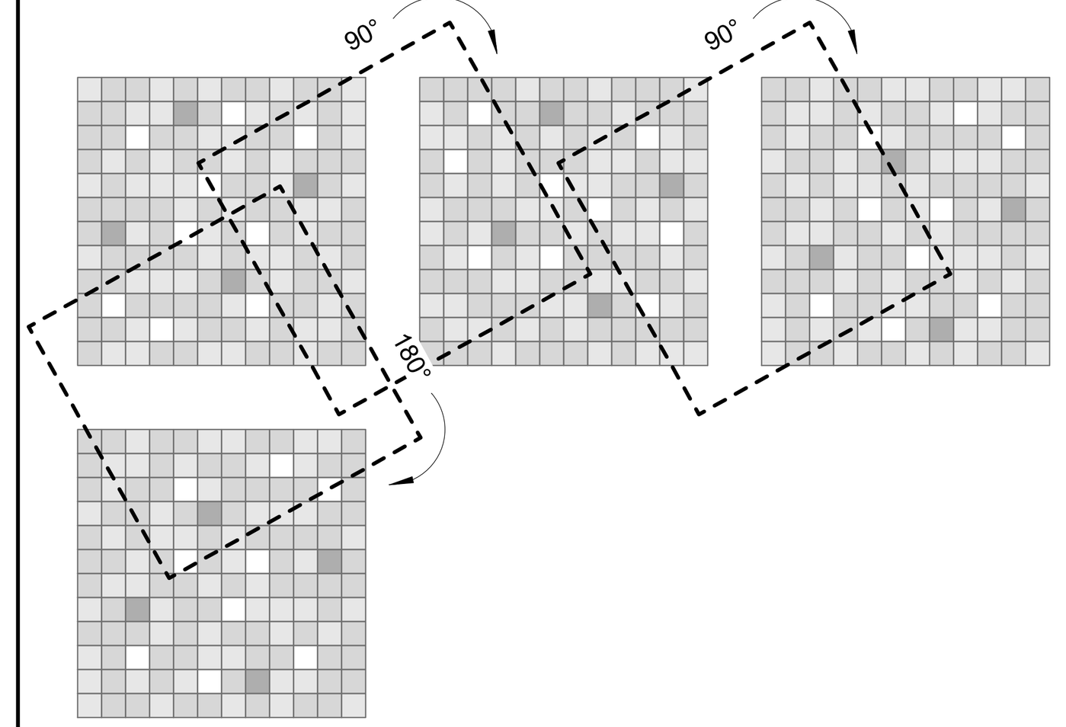
TILE PATTERN MT-A



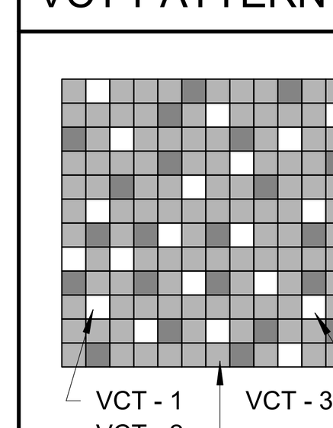
MT-1 - 5%
MT-2 - 35%
MT-3 - 55%
MT-4 - 5%

NOTE:
EXAMPLE SWATCH SHOWS 1" x 1" TILES

INSTALL METHOD:
ROTATE PATTERN WITH THE COMPLETION OF EACH 12X12 TILE SWATCH.
90° CLOCKWISE IN EAST-WEST DIRECTION.
180° CLOCKWISE IN NORTH-SOUTH DIRECTION.



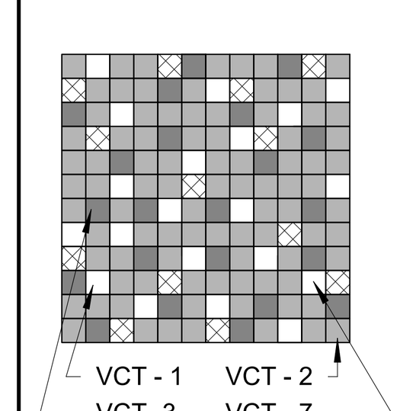
VCT PATTERN - A



VCT-1 ACCENT - 15%
VCT-2 FIELD - 70%
VCT-3 CHARCOAL - 15%
VCT-4 ACCENT
VCT-5 ACCENT
VCT-6 ACCENT
VCT-7 ACCENT
VCT-8 ACCENT
VCT-9 FIELD

NOTE:
EXAMPLE PATTERN SHOWS 1'-0" x 1'-0" TILES

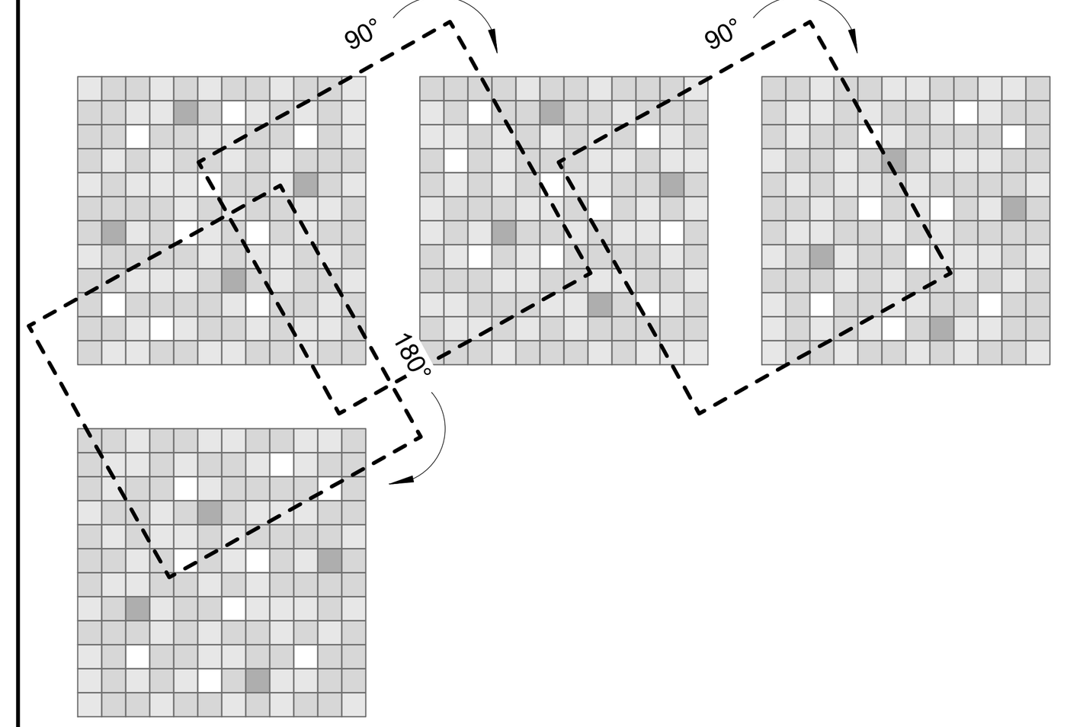
VCT PATTERN - B



VCT-1 ACCENT - 15%
VCT-2 FIELD - 60%
VCT-3 ACCENT - 15%
VCT-4 ACCENT
VCT-5 ACCENT
VCT-6 ACCENT
VCT-7 ACCENT - 10%
VCT-8 ACCENT
VCT-9 FIELD

NOTE:
EXAMPLE PATTERN SHOWS 1'-0" x 1'-0" TILES

INSTALL METHOD:
ROTATE PATTERN WITH THE COMPLETION OF EACH 12X12 TILE SWATCH.
90° CLOCKWISE IN EAST-WEST DIRECTION.
180° CLOCKWISE IN NORTH-SOUTH DIRECTION.



smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

SMITH SINNETT ARCHITECTURE, PA · ARCHITECTURAL CORPORATION · CERT. NO. 50172 · REGISTERED · NORTH CAROLINA · RALEIGH

DREW WILGUS · REGISTERED ARCHITECT · 12017 · 6.7.19 · NORTH CAROLINA · RALEIGH, NC

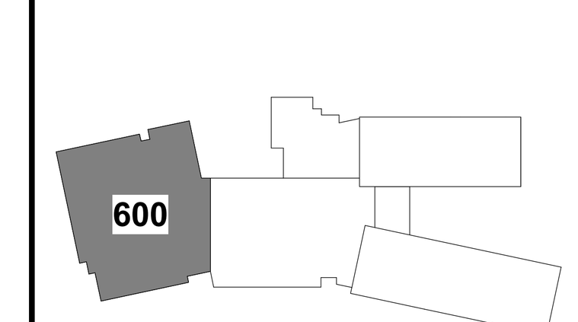
CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME I

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 30" X 42" SHEET

TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM
Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370



KEY PLAN
NO SCALE

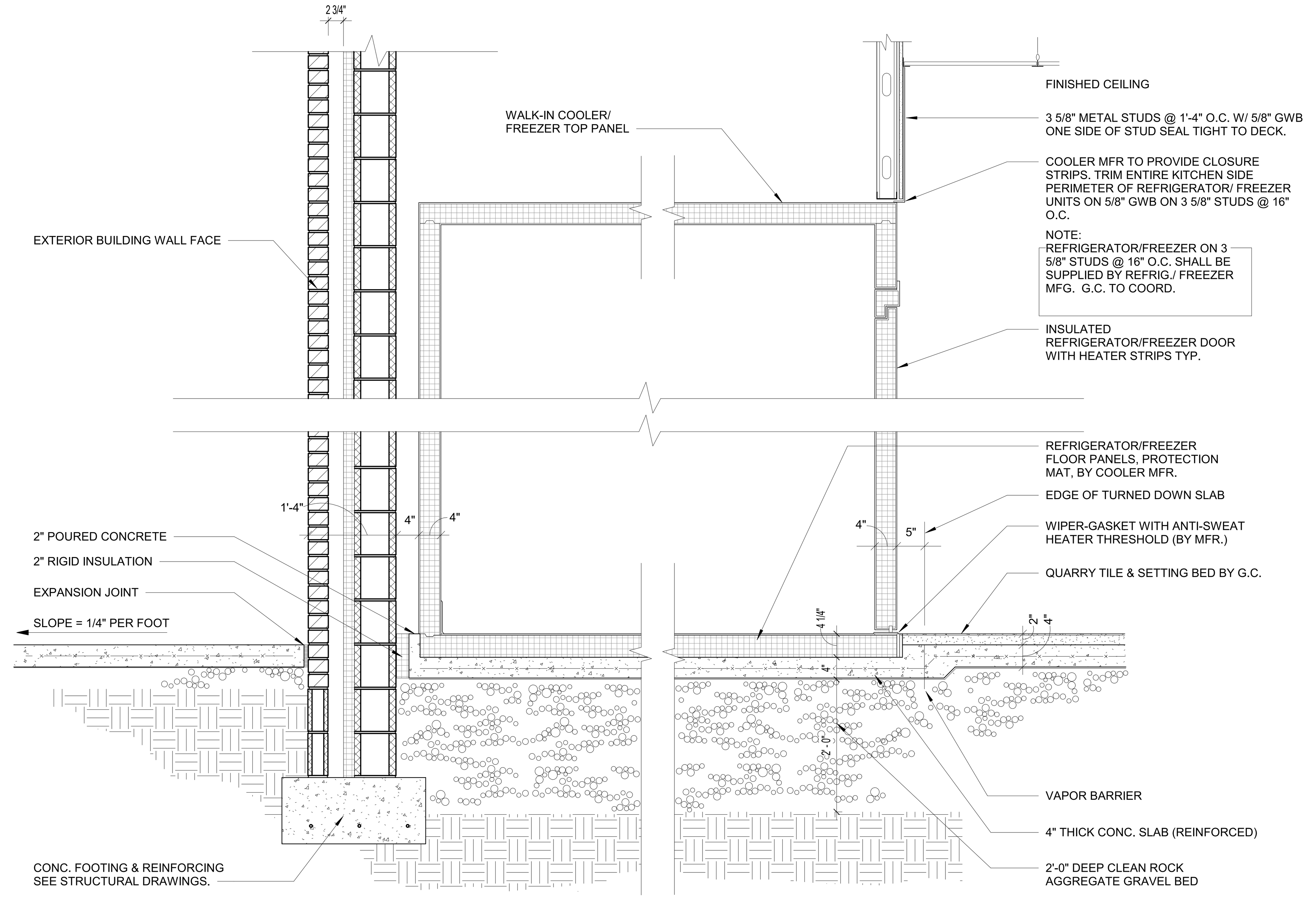
ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3
1	6/7/19	ADDENDUM 2

DRAWN BY: LP, JS, DW
CHECKED BY: DW

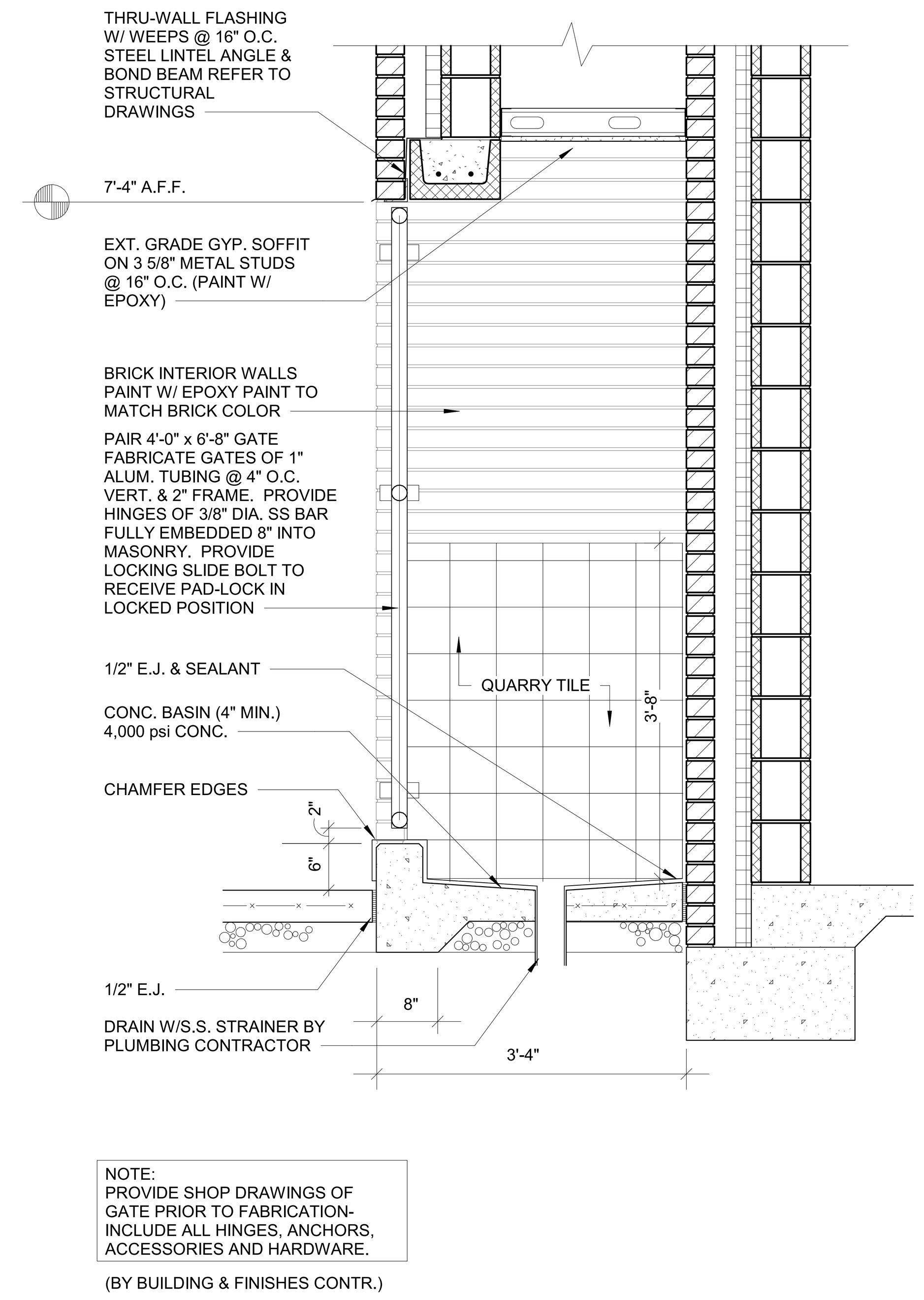
FINISH FLOOR PLAN

2017032 20 MAY 2019

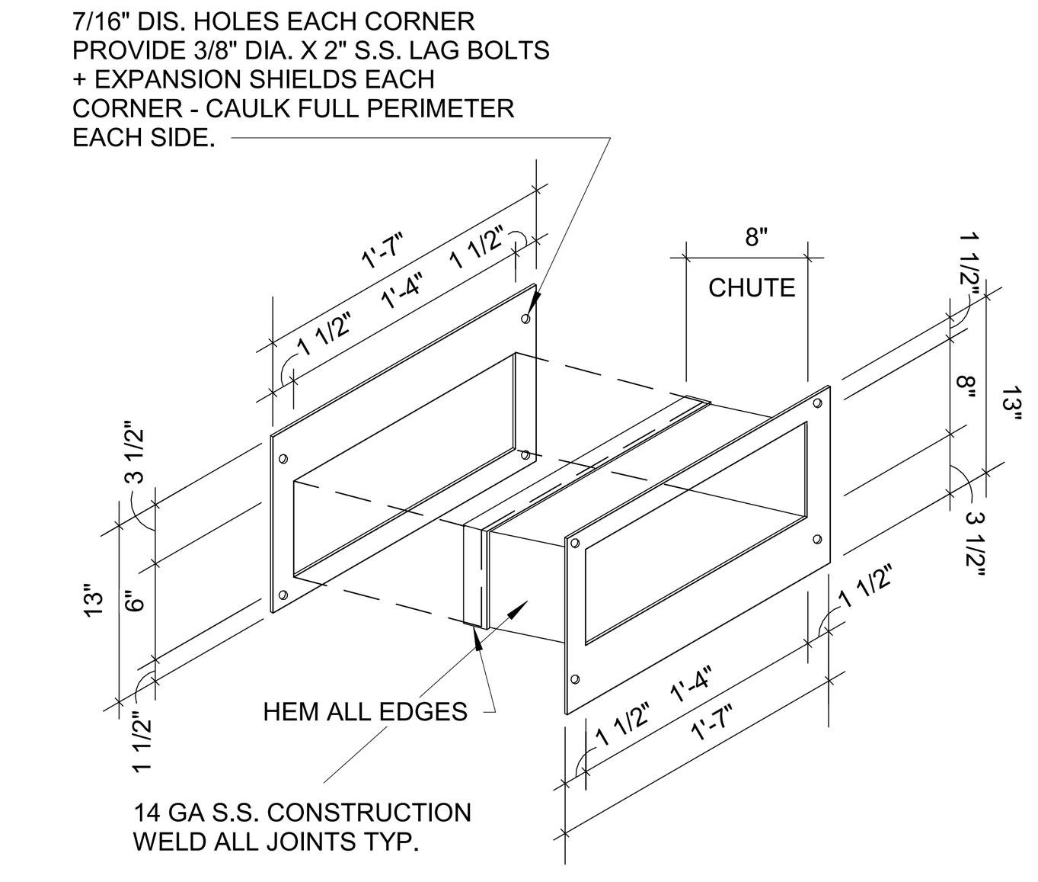
A7-07



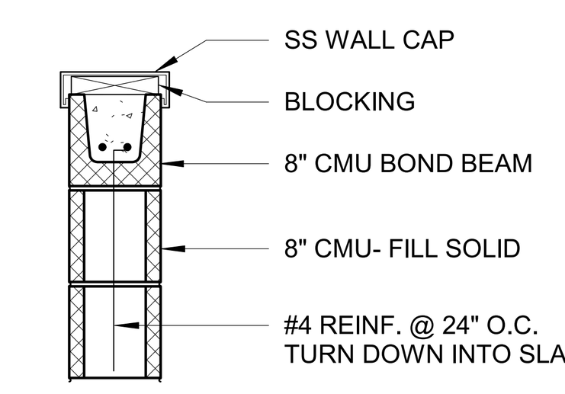
13 A7-30 **SECTION AT WALK-IN FREEZER/COOLER**
3/4" = 1'-0"



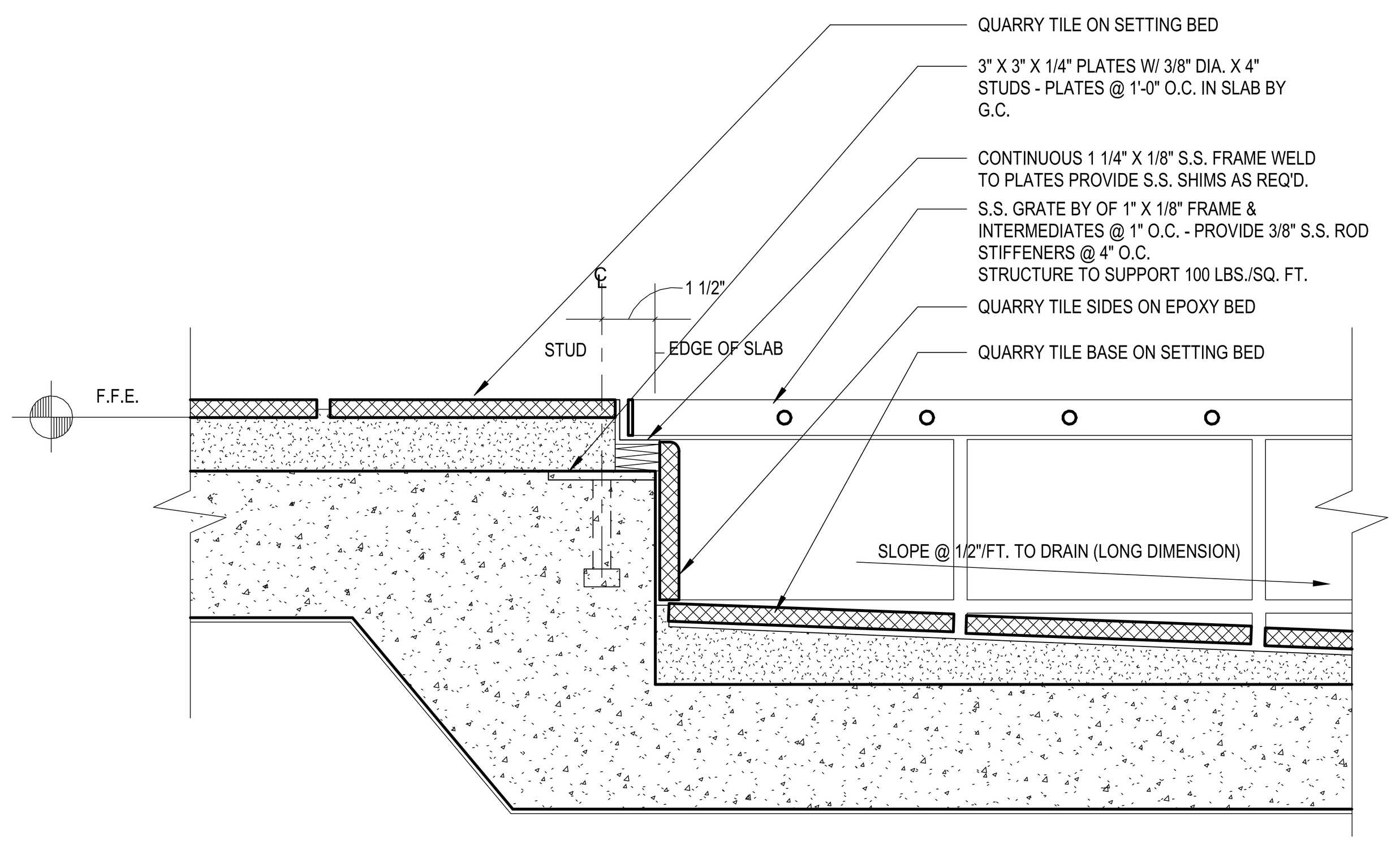
12 A7-30 **SECTION @ CAN WASH**
3/4" = 1'-0"



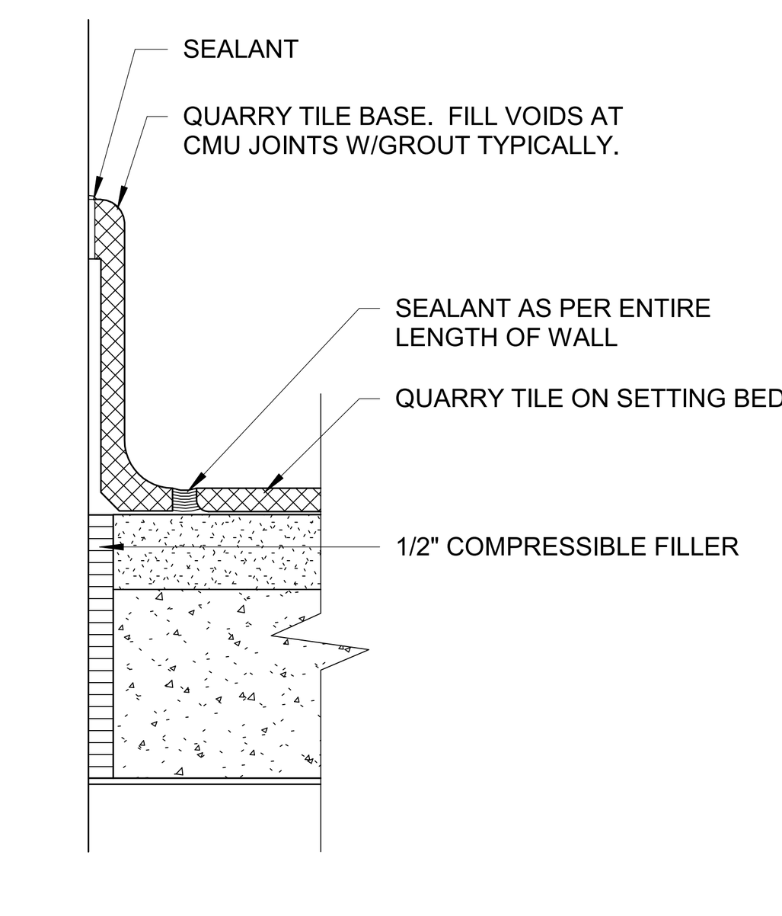
11 A7-30 **SILVERWARE DEPOSIT CHUTE**
1" = 1'-0"



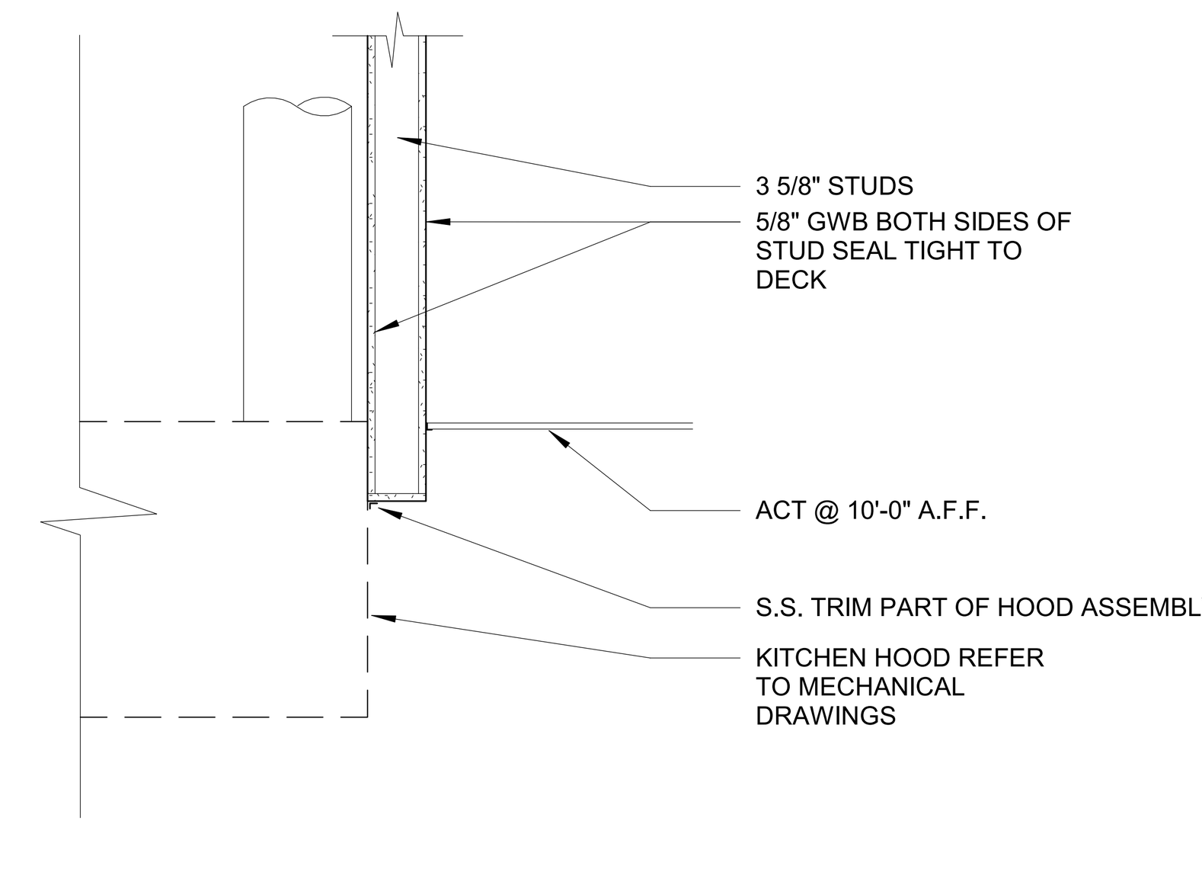
10 A7-30 **SS WALL CAP**
3/4" = 1'-0"



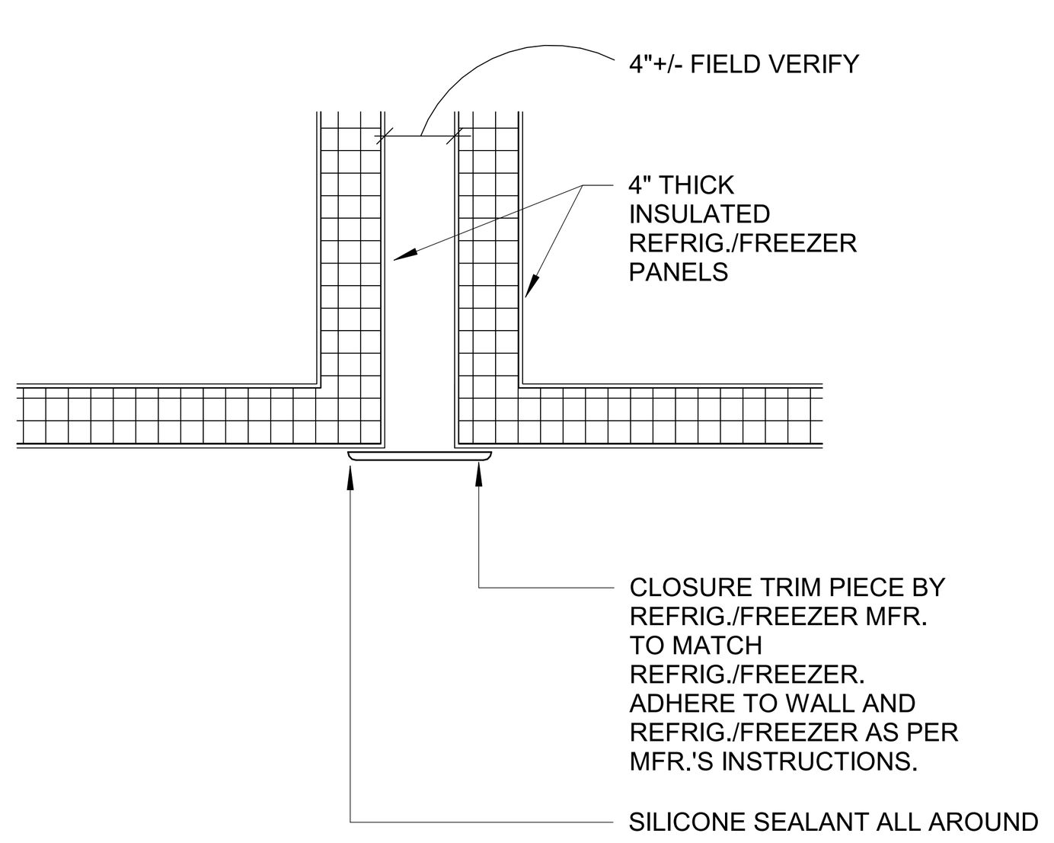
8 A7-30 **K-106 DETAIL AT TRENCH DRAIN**
3" = 1'-0"



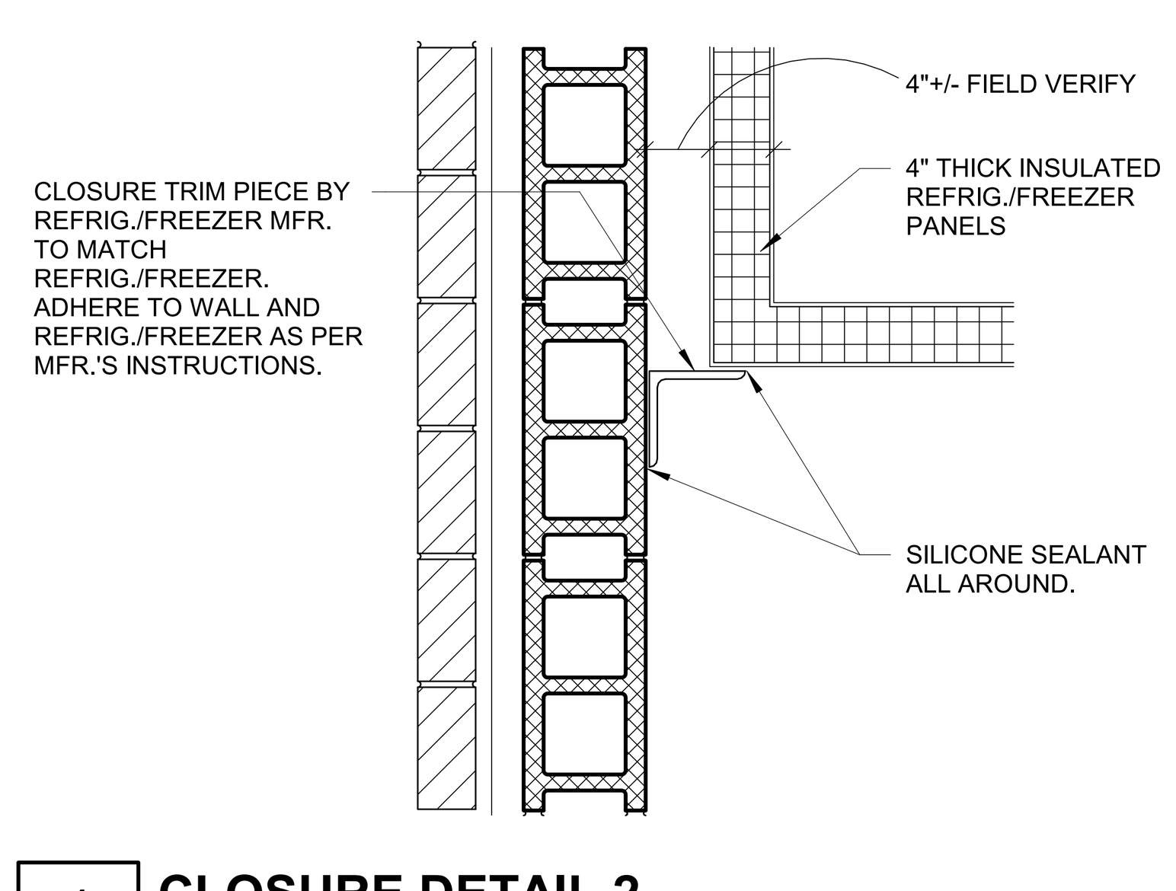
7 A7-30 **Q.T. BASE DETAIL**
3" = 1'-0"



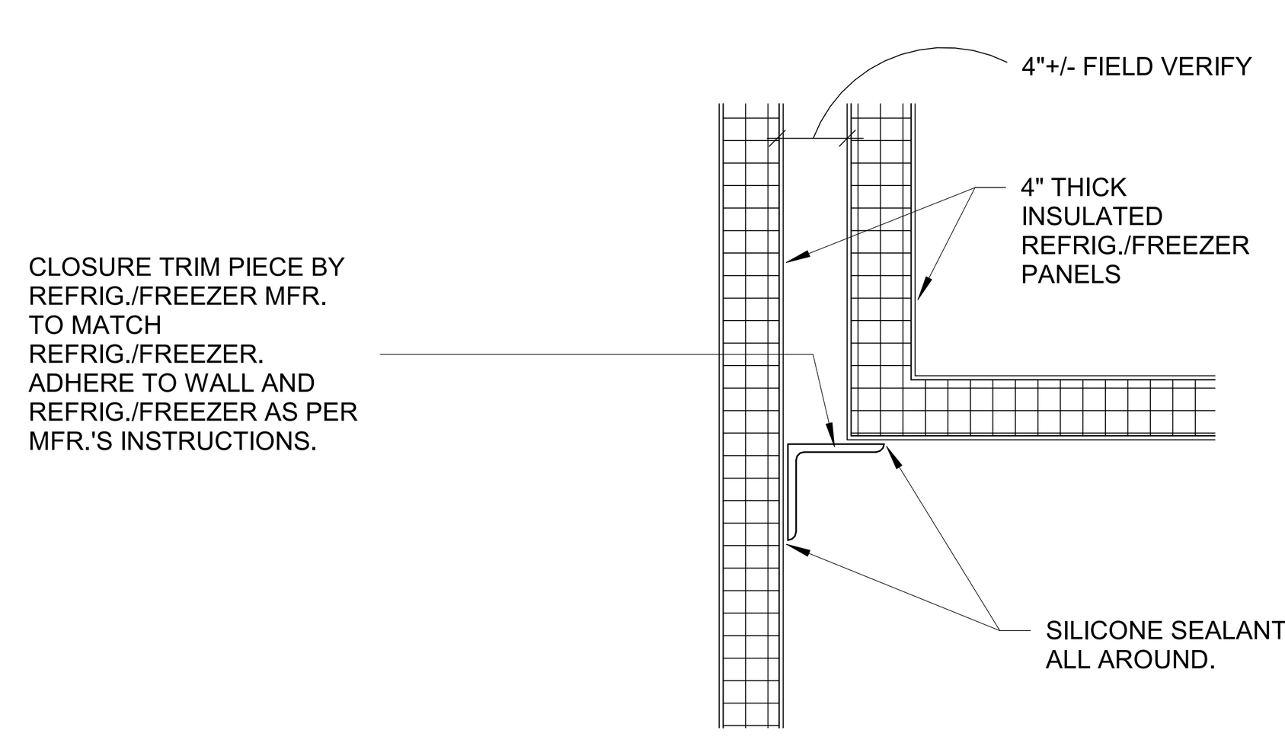
6 A7-30 **SECTION @ HOOD - ITEM #34**
3/4" = 1'-0"



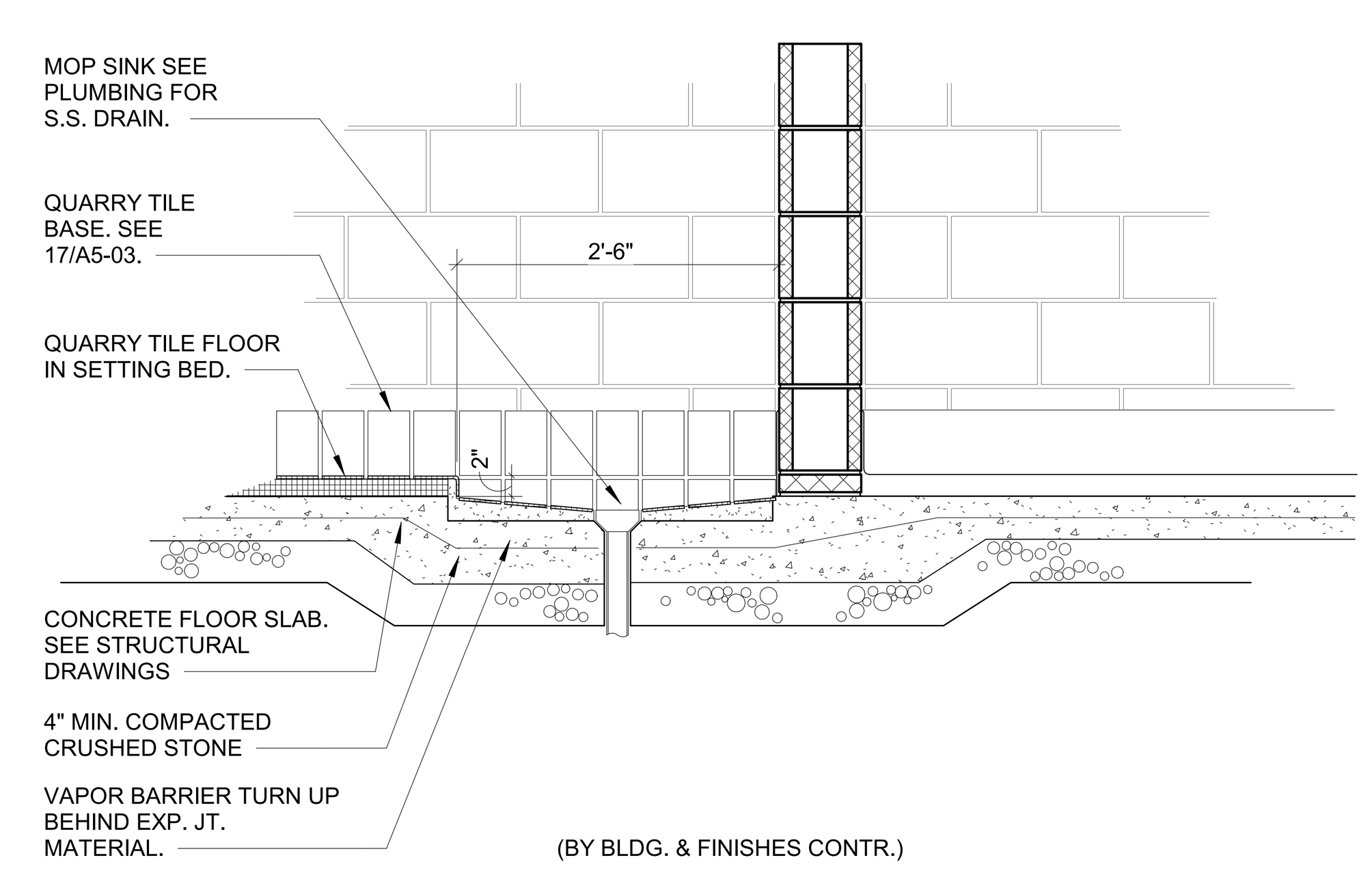
5 A7-30 **CLOSURE DETAIL**
1" = 1'-0"



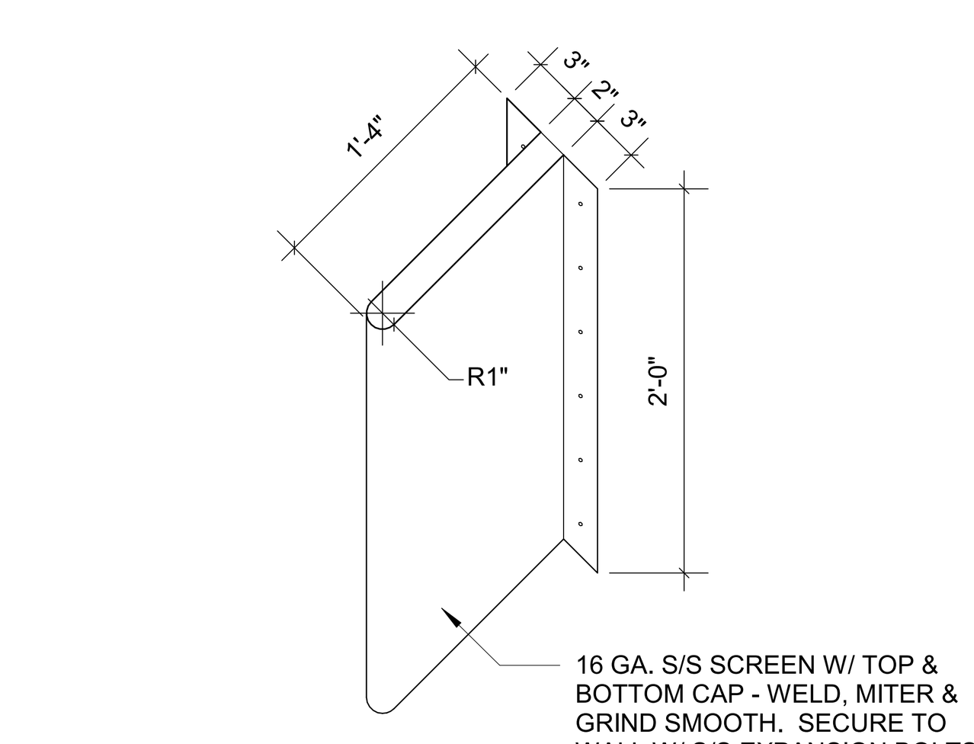
4 A7-30 **CLOSURE DETAIL 2**
1" = 1'-0"



3 A7-30 **CLOSURE DETAIL 3**
1" = 1'-0"



2 A7-30 **MOP SINK DETAIL 2**
3/4" = 1'-0"



1 A7-30 **SPLASH GUARD**
1" = 1'-0"

C:\Users\Drew\Documents\2017032_Trinity Middle_Arch_Drew.rvt
6/14/2019 11:55:26 PM

smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail Suite 205 Raleigh, NC 27607
info@smithsinnett.com

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME I

TRINITY MIDDLE SCHOOL
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Parcel PIN 7708118367
Surrett Drive
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KEY PLAN
NO SCALE

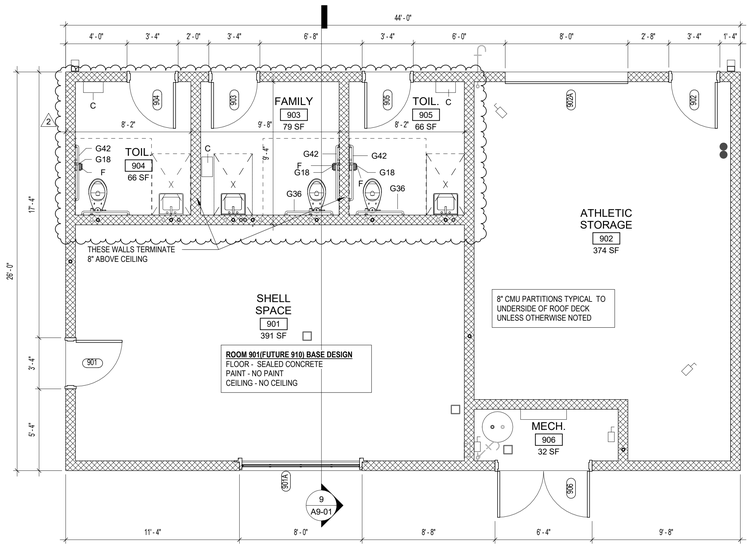
ID	DATE	DESCRIPTION

DRAWN BY: LP, JS, DW
CHECKED BY: DW

KITCHEN DETAILS

2017032 20 MAY 2019

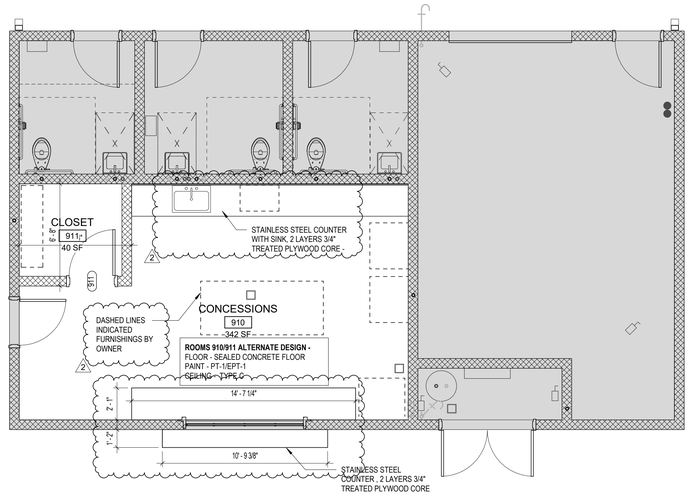
A7-30



1 A9-01 FIELD HOUSE FLOOR PLAN - BASE DESIGN

1/4" = 1'-0"

2 "REFER TO RESTROOM ACCESSORY SCHEDULE ON A4-02



2 A9-01 FIELD HOUSE - CONCESSIONS FITUP- ALTERNATE 6

1/4" = 1'-0"

GENERAL EQUIPMENT SCHEDULE

Mark	Description and/or Detail Reference	Furnished By/ Installed By	Remarks
1	MOTORIZED RECESSED PROJECTION SCREEN.	CFCI	
2	FIRE EXTINGUISHER AND SEMI-RECESSED FIRE EXT. CABINET. REFER TO TYPICAL DETAIL 6/A5-01.	CFCI	
3	FIRE EXTINGUISHER AND FIRE EXT. BRACKET. REFER TO TYPICAL DETAILS 6/A5-01.	CFCI	
4	COPY MACHINE	OFOI	
5	METAL LOCKER SYSTEM. REFER TO DETAIL 11/A4-02. COLOR AS SELECTED BY ARCHITECT.	CFCI	
6	12'-0" TACK STRIP, REFER TO SPECIFICATIONS.	CFCI	
7	WALL MOUNTED ROOF ACCESS LADDER AND ROOF ACCESS HATCH. REFER TO DETAIL 6/A5-40.	CFCI	
8	12'-0" MARKER BOARD, 6'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
9	6'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
10	8'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
11	12'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
12	16'-0" MARKER BOARD. REFER TO SPECIFICATIONS.	CFCI	
13	3'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
14	4'-0" TACKBOARD. REFER TO SPECIFICATIONS.	CFCI	
15	8'-0" SMART BOARD.	OFOI	
16	FULL SIZED REFRIGERATOR. 21.7 CUBIC FT. COORDINATE WITH PLUMBING AND ELECTRICAL.	OFOI	
17	MICROWAVE. COORDINATE W/ ELECTRICAL.	OFOI	
18	PREMANUFACTURED OPEN WOOD SHELVING UNITS, REFER TO TYPICAL DETAIL 4/A4-01.	OFOI	
19	LAPTOP STORAGE CART	OFOI	
20	TALL TEACHER WARDROBE. SIZE - 24D X 84H X 36W	CFCI	
21	MOBILE SHEET LIBRARY AND SORTING RACK CABINET - 24D X 36H X 48W	OFOI	
22	30"x60" INSTRUCTOR'S DESK W/ SINK	CFCI	
23	ELECTRIC KILN, 6.4 CUBIC FOOT FIRING CHAMBER, WITH DOWN DRAFT VENTILATION SYSTEM AND KILN SHELVES. SKUTT OR EQUAL. 6.4 CF FIRING CHAMBER.	CFCI	
24	ATHLETIC WASHER AND DRYER ASSEMBLY BY OWNER.	OFOI	
25	UTILITY SINK BASIN WITH SUPPORT LEGS. REFER TO PLUMBING DRAWINGS.	CFCI	3
26	FABRIC COVERED ACOUSTICAL WALL PANELS. CONSULT W/ ARCHITECT FOR FINAL LAYOUT. SEE SPECIFICATIONS.	CFCI	2
27	WASHER AND DRYER ASSEMBLY BY OWNER	OFOI	2

SCHEDULE ABBREVIATIONS

CFCI- CONTRACTOR FURNISHED CONTRACTOR INSTALLED
OFCI- OWNER FURNISHED CONTRACTOR INSTALLED
OFOI- OWNER FURNISHED OWNER INSTALLED

NOTES
1. G.C. TO PROVIDE 3/4" FIRE RETARDANT PLYWOOD PANEL TO MOUNT EQUIPMENT.
2. G.C. TO PROVIDE NECESSARY BLOCKING & REINFORCING PLATES IN GWB WALLS & REINFORCING IN CMU WALLS.
3. PROVIDE CLAY SINK TRAP THIS LOCATION. SEE PLUMBING DRAWINGS.

PLAN KEYNOTES

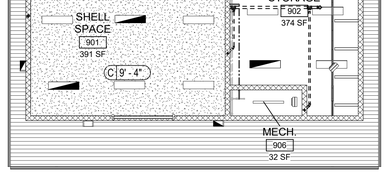
1 SLAB RECESSED IN THIS ROOM TO ACCOMODATE SPECIALTY FLOORING - REFER TO FINISH PLAN. GC TO CONFIRM DEPTH OF RECESS WITH FLOORING MANUFACTURER PRIOR TO POURING THE SLAB.
2 MECHANICAL LOUVER, REFER TO MECHANICAL DRAWINGS. GC TO COORDINATE OPENING SIZE AND PROVIDE LINTEL AND FLASHING
3 BUILDING EXPANSION JOINT. PROVIDE BLOCKOUTS IN SLAB FOR FLOOR TO FLOOR JOINTS. - FLOOR TO FLOOR JOINTS: 2 HR. RATED 1" JOINT C/S GROUP MULTIFLEX MFX-1F OR EQUAL. - - WALL TO WALL JOINTS: 2 HR. RATED 1" JOINT, C/S GROUP MULTIFLEX MFX-1FW OR EQUAL - WALL JO
4 ROLLING COUNTER DOOR. SEE SPECIFICATIONS.
5 ADA ACTUATOR, ELECTRICAL CONTRACTOR PROVIDE BACKER BOXES AND CONDUIT. COORDINATE W/ GC & HARDWARE SUPPLIER.
6 PROVIDE MAGNETIC DOOR HOLD OPENS FOR THIS DOOR ASSEMBLY. REFER TO ELECTRICAL DRAWINGS AND DOOR SCHEDULE FOR SPECIFICATIONS.
7 GC TO PROVIDE BONDBEAM LINTEL OVER THIS OPENING.
8 PROVIDE MECHANICAL DOOR HOLD OPENS FOR THIS DOOR ASSEMBLY
9 RECESS FLOOR 4 1/4" - COORDINATE WITH COOLER/FREEZER UNIT MANUFACTURER PRIOR TO POURING SLABS AND NOTIFY ARCHITECT OF DISCREPENCIES.
10 LADDER - MEANS OF ESCAPE FROM MECHANICAL PLATFORM ABOVE.
11 ROOF ACCESS LADDER - REFER TO ROOF PLAN A1-40
12 4'0" WIDE SELF-CLOSING SAFETY GATE PER OSHA REQUIREMENTS
13 SLOPE SLAB TO DRAIN. SEE STRUCTURAL DRAWINGS FOR MINIMUM CONCRETE COVERAGE AT DRAIN LOCATION(S).
14 COLUMN FEATURE: COUNTER AND WRAP- REFER TO DETAIL 15/A5-01
15 PIPE BOLLARD - SEE CIVIL DRAWINGS
16 OPERABLE PARTITION
17 NURSE EXAM CURTAIN
18 PROVIDE ELECTRONIC LOCKSET FOR SECURITY INTEGRATION THIS DOOR ASSEMBLY

GENERAL PLAN NOTES

1. SEE WALL TYPES LEGEND ON SHEET A1.02 FOR TYPES INDICATED BY SYMBOL
2. ALL DOOR FRAMES SHALL BE 4" FROM THE FACE OF PERPENDICULAR WALLS UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS TAKEN FROM THE FINISHED FACE OF THE WALL (E.G. SURFACE OF CMU OR GYPSUM FOR STUD WALLS) AND THE CENTERLINE OF COLUMNS.
4. ALL RATED WALL CONSTRUCTION TO COMPLY WITH U.L REQUIREMENTS.
5. REFER TO EXTERIOR ELEVATIONS FOR EXTERIOR MASONRY CONTROL FOR INTERIOR CONTROL JOINTS.
6. ALL EXTERIOR WINDOWS TO RECEIVE BLINDS AS SPECIFIED. INTERIOR WINDOWS MARKED "BL" TO RECEIVE BLINDS.
7. FURNISHINGS SHOWN WITH DASHED LINES NOT IN CONTRACT UNLESS OTHERWISE NOTED.
8. PROVIDE 1" RADIUS BULLNOSE UP TO A HEIGHT OF 8' AT ALL OUTSIDE CMU CORNERS FOR INTERIOR WALLS.
9. FIELD VERIFY AND COORDINATE FIELD CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION, INSTALLATION AND CONSTRUCTION OF BUILDING COMPONENTS. THE GC IS TO INFORM THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
10. FIRE RATED WALLS SHALL HAVE RATINGS STENCILED ABOVE THE CEILING FOR IDENTIFICATION. STENCILED LETTERS SHALL BE RED, 2" HIGH AT 10'-0" OC MAX ALONG WALL, I.E. "4 HR. RATED WALL"
11. REFER TO G0-01 FOR STANDARD ABBREVIATIONS AND NOTATIONS.
12. GENERAL CONTRACTOR SHALL PROVIDE LINTELS FOR MASONRY OPENINGS AND WALL PENETRATIONS AS SHOWN ON ALL DRAWINGS.
13. DIMENSIONS FOR MASONRY OPENINGS ON PLANS ARE GIVEN AS "ROUGH" OPENINGS. GC AND ALL SUBCONTRACTORS RESPONSIBLE FOR FABRICATION OF BUILDING COMPONENTS TO ALLOW FOR SHIM AND INSULATION SPACE.
14. NOTE SLAB DEPRESSIONS FOR TILE AND ATHLETIC FLOORS AS INDICATED BY PLAN KEYNOTES AND INDICATED ON STRUCTURAL DRAWINGS.
15. ALL BLOCKING AND PLYWOOD UTILIZED SHALL BE FIRE RETARDANT TREATED WOOD.
16. ALL RATED CMU WALLS TO BE D-2 CLASSIFIED CMU.
17. ALL EXTERIOR CONCRETE WALKS TO BE BEDDED ON 4" OF #57 STONE ON COMPACTED SUBGRADE WITHIN 6'-0" OF THE BUILDING. ADJOINING WALKS ON COMPACTED SUBGRADE, SEE CIVIL DRAWINGS.
18. GC SHALL PROVIDE FIRE RETARDANT 3/4" PLYWOOD TO MOUNT PANELS AND EQUIPMENT.
19. ALL EXTERIOR STEEL COMPONENTS TO BE HOT-DIPPED GALVANIZED, INCLUDING BUT NOT LIMITED TO ALL EXTERIOR STAIR AND HANDRAIL/ GUARDRAIL COMPONENTS AND STEEL LINTELS.

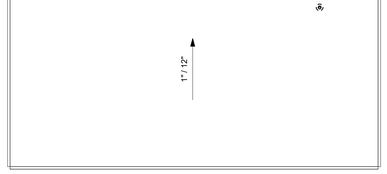
ELEVATION KEYNOTES

1 BRICK VENEER, RUNNING BOND
2 BRICK VENEER BAND, RECESSED 3/8"
3 ALUMINUM COPING
4 METAL PANEL CLADDING
5 CMU VENEER, RUNNING BOND
6 ALUMINUM CURTAIN WALL & GLAZING SYSTEM
7 ALUMINUM STOREFRONT & GLAZING SYSTEM
8 ALUMINUM FASCIA
9 MECHANICAL LOUVER
10 METAL ROOF
11 ALUMINUM DOWNSPOUT
12 ALUMINUM GUTTER
13 SHADED AREA INDICATES BRICK PANEL RECESSED 3/8"
14 SILL FLASHING
15 MASONRY VENEER EXPANSION JOINT
16 MECHANICAL EQUIPMENT - REFER TO MECH. DWGS.
17 BUILDING EXPANSION JOINT
18 CANOPY COLUMN
19 SECONDARY ROOF OVERFLOW SCUPPER; OPENING 4"X16" UNLESS OTHER NOTED – REFER TO ROOF PLANS AND DETAILS
20 EDGE OF BUILDING (CUT IN SECTION)
21 8"x8" PRIMARY DRAIN THRU-WALL SCUPPER WITH ALUMINUM CONDUCTOR HEAD AND 4"X6" DOWNSPOUT. REFER TO ROOF PLAN. SEE DETAILS ON SHEET A5-40 FOR BOOT AND SPLASH BLOCK.
22 PRE-MANUFACTURED, PREFINISHED ALUMINUM CANOPY AND SUPPORT STRUCTURE
23 FULL CONTROL JOINT WHERE SCREEN WALL MEETS BUILDING
24 ATYPICAL SPANDREL GLASS - SEE ELEVATIONS ON A6 SHEETS FOR TYPICAL SPANDREL LOCATIONS
25 METAL PANEL ACCENT - HORIZONTAL JOINT - SEE DETAIL 11/A5-50
RL BRICK VENEER, RUNNING BOND



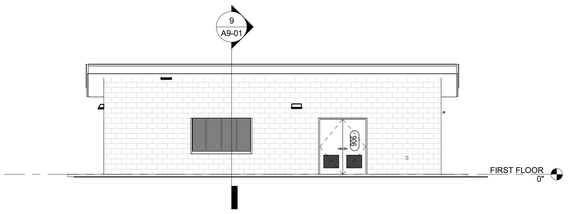
3 A9-01 FIELD HOUSE - REFLECTED CEILING PLAN

1/8" = 1'-0"



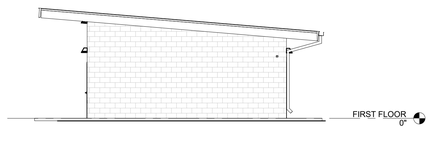
8 A9-01 ROOF PLAN -FIELD HOUSE

1/8" = 1'-0"



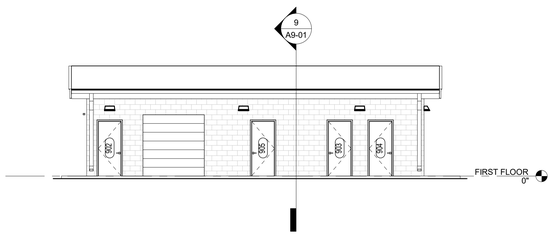
6 A9-01 FIELD HOUSE - SOUTH ELEVATION

1/8" = 1'-0"



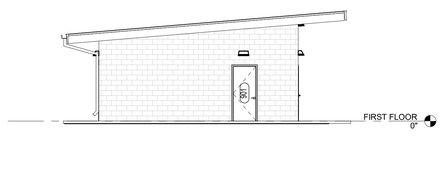
4 A9-01 FIELD HOUSE - EAST

1/8" = 1'-0"



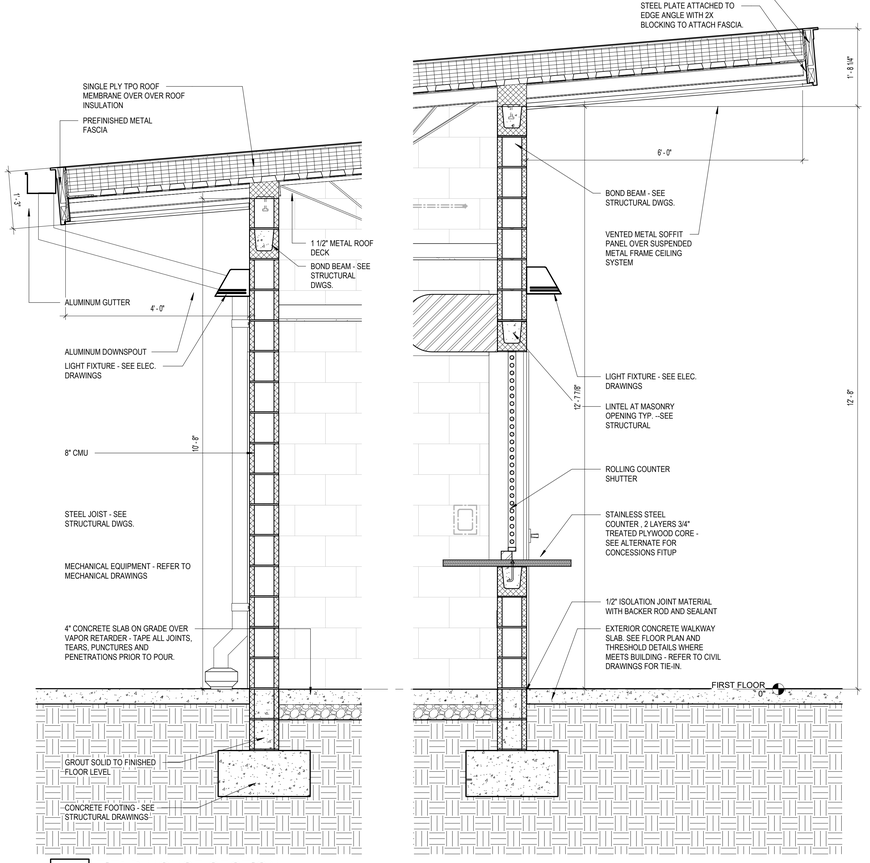
5 A9-01 FIELD HOUSE - NORTH

1/8" = 1'-0"



7 A9-01 FIELD HOUSE - WEST

1/8" = 1'-0"



9 A9-01 FIELD HOUSE SECTION

3/4" = 1'-0"

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smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME I

Smith Sinnett Architecture, P.A. 2018

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 30"x 42" SHEET

TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3

DRAWN BY: DW,LP,JS
CHECKED BY: DW

FIELDHOUSE

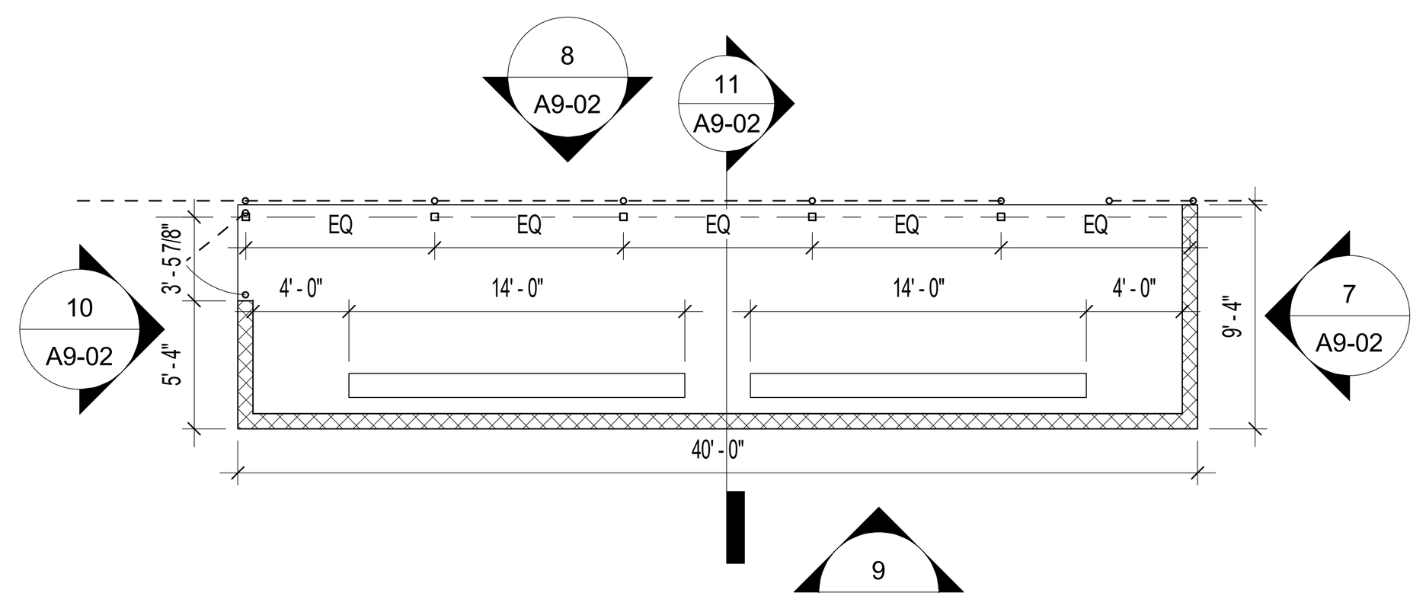
2017032 20 MAY 2019

A9-01

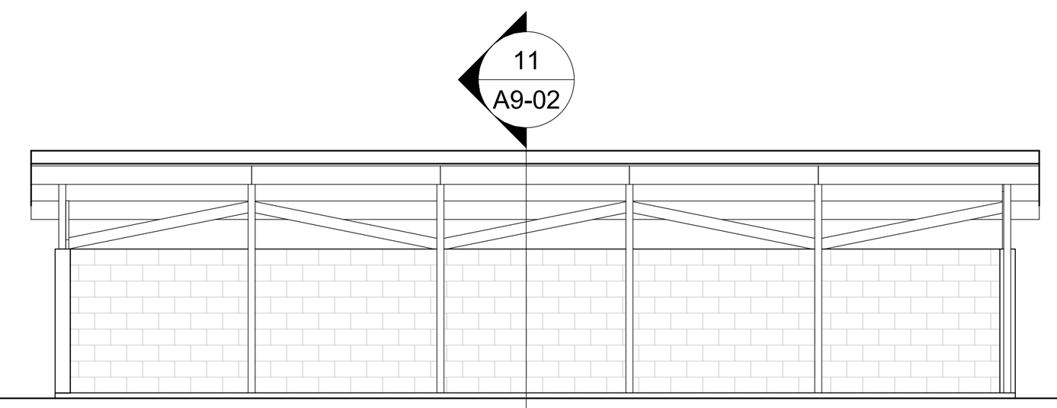
DOOR SCHEDULE ALTERNATES

DOOR							FRAME							
	DOOR SIZE								DETAILS					
MARK	WIDTH	HEIGHT	THK	MAT	TYPE	LVS	MAT	TYPE	HEAD	JAMB	THRESH	HARDWARE SET	FIRE RATING	REMARKS
901	3' - 0"	7' - 2"	1 3/4"	STL	F	1	HM	HM1	32/A6-04	25/A6-04	2/A6-04	39	--	
901A	8' - 0"	4' - 8"			CCD1	1	STL					88		
902	3' - 0"	7' - 2"	1 3/4"	STL	F	1	HM	HM1	32/A6-04	25/A6-04	2/A6-04	39	--	
902A	8' - 0"	8' - 0"	1 1/2"		G2		STL					88		
903	3' - 0"	7' - 2"	1 3/4"	STL	F	1	HM	HM1	32/A6-04	25/A6-04	2/A6-04	27	--	
904	3' - 0"	7' - 2"	1 3/4"	STL	F	1	HM	HM1	32/A6-04	25/A6-04	2/A6-04	27	--	
905	3' - 0"	7' - 2"	1 3/4"	STL	F	1	HM	HM1	32/A6-04	25/A6-04	2/A6-04	27	--	
906	6' - 0"	7' - 2"	1 3/4"	STL	L		HM	HM1	32/A6-04	25/A6-04	2/A6-04	30		
920	3' - 0"	7' - 2"	1 3/4"	STL	F	1	HM	HM1	32/A6-04	25/A6-04	2/A6-04	39	--	ALTERNATE
920A	8' - 0"	8' - 0"	1 1/2"		G2		STL					88		ALTERNATE

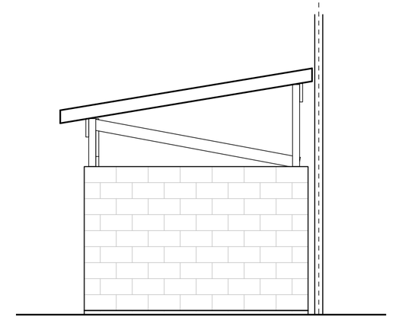
2



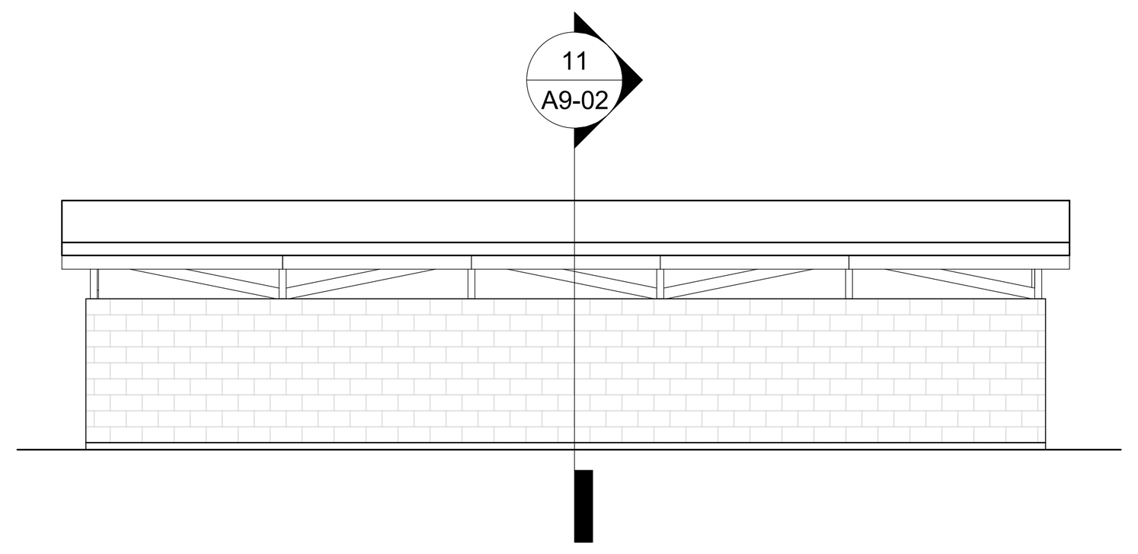
6 A9-02 **DUGOUT**
1/8" = 1'-0"
**TWO (2) DUGOUTS REQUIRED, MIRRORED. SEE CIVIL DRAWINGS FOR LOCATION



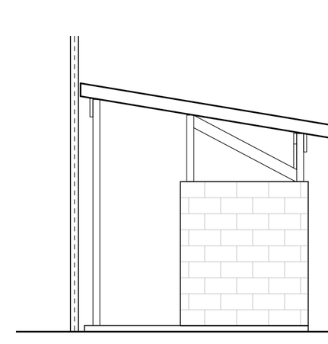
8 A9-02 **DUGOUT NORTH**
1/8" = 1'-0"



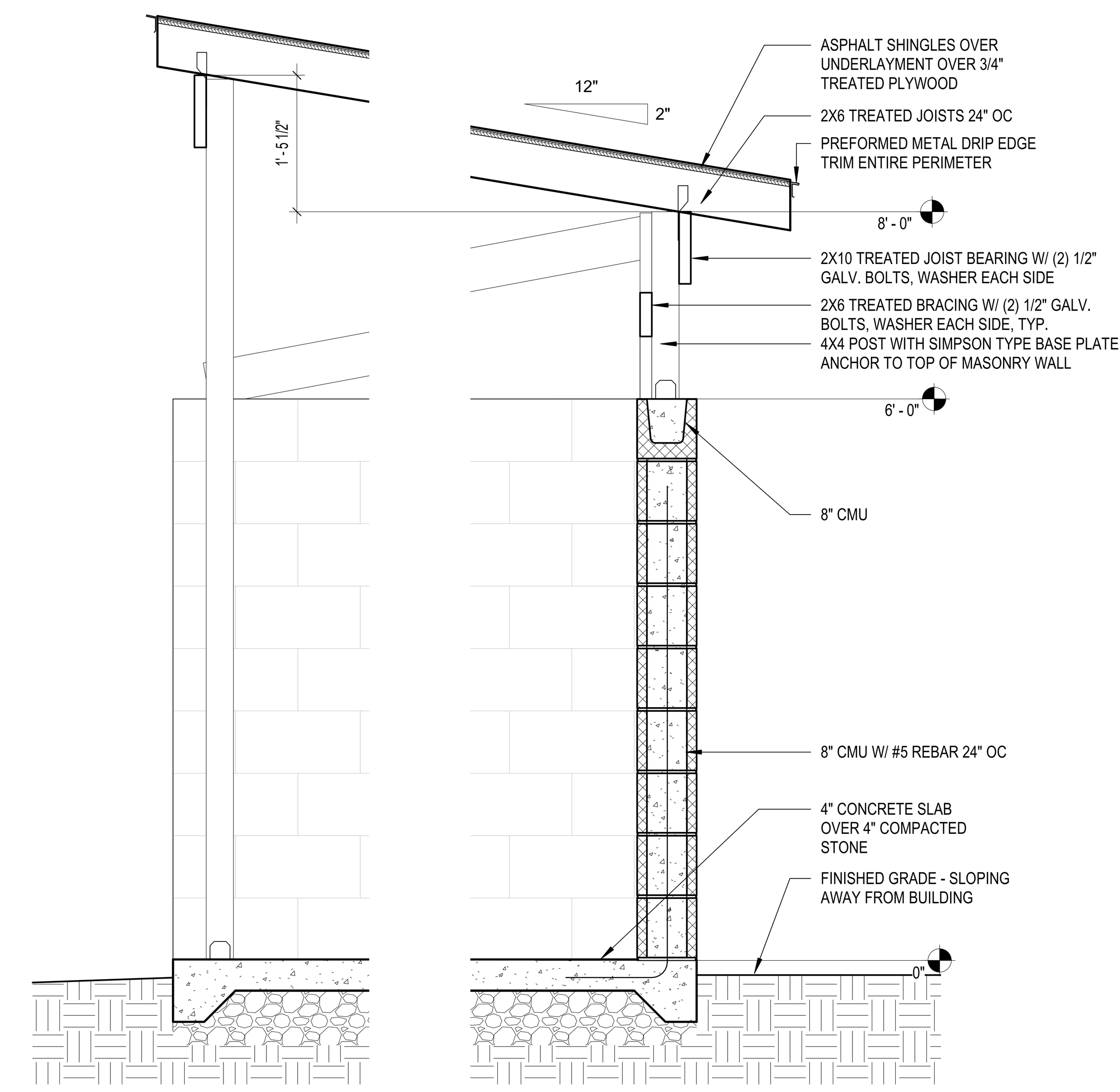
7 A9-02 **DUGOUT EAST**
1/8" = 1'-0"



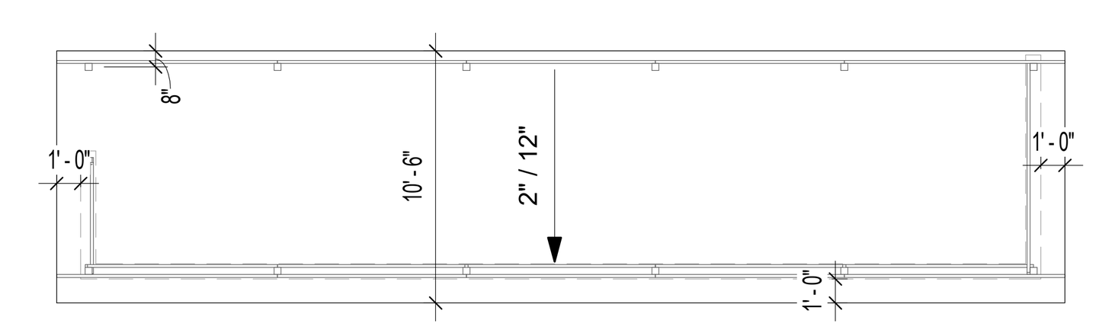
9 A9-02 **DUGOUT SOUTH**
1/8" = 1'-0"



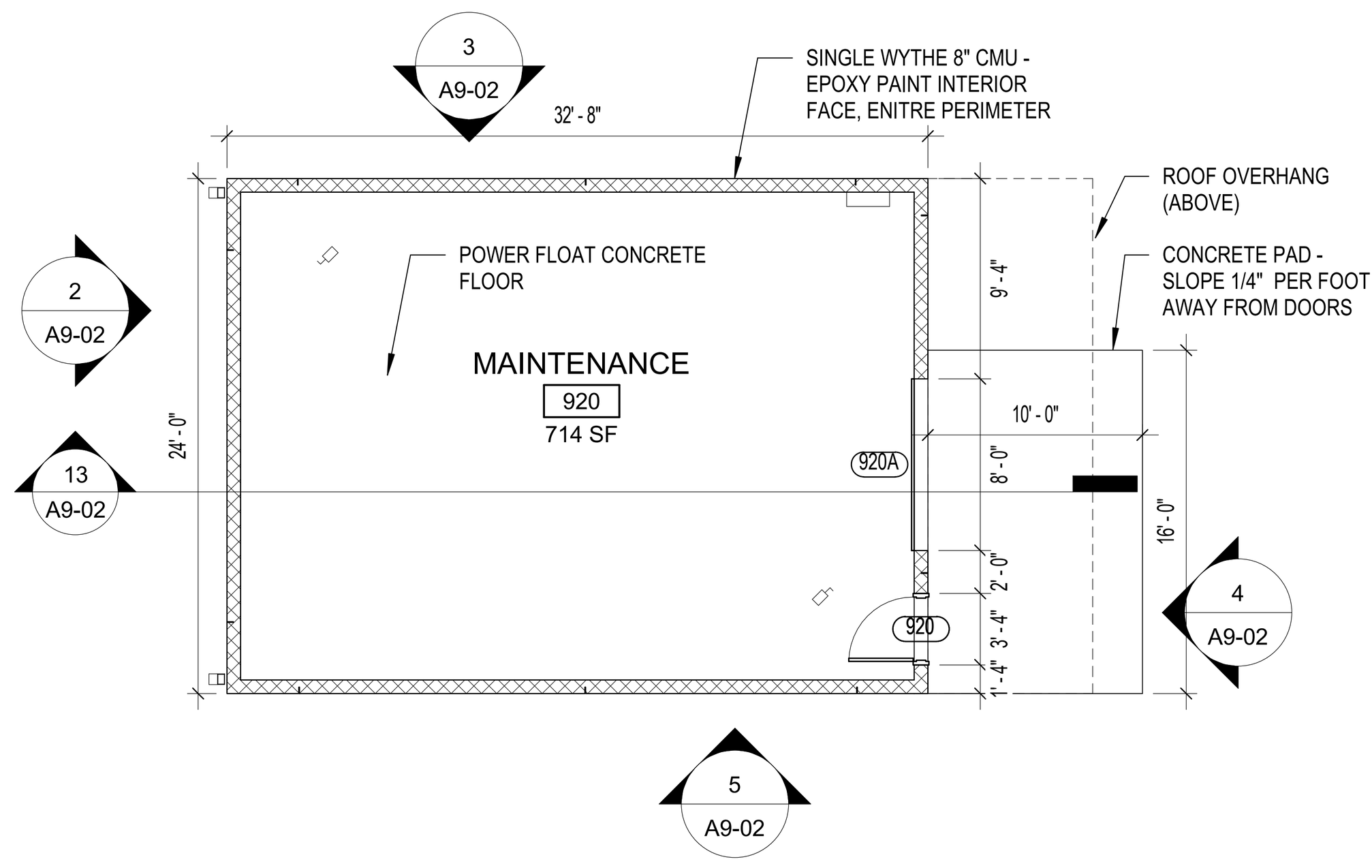
10 A9-02 **DUGOUT WEST**
1/8" = 1'-0"



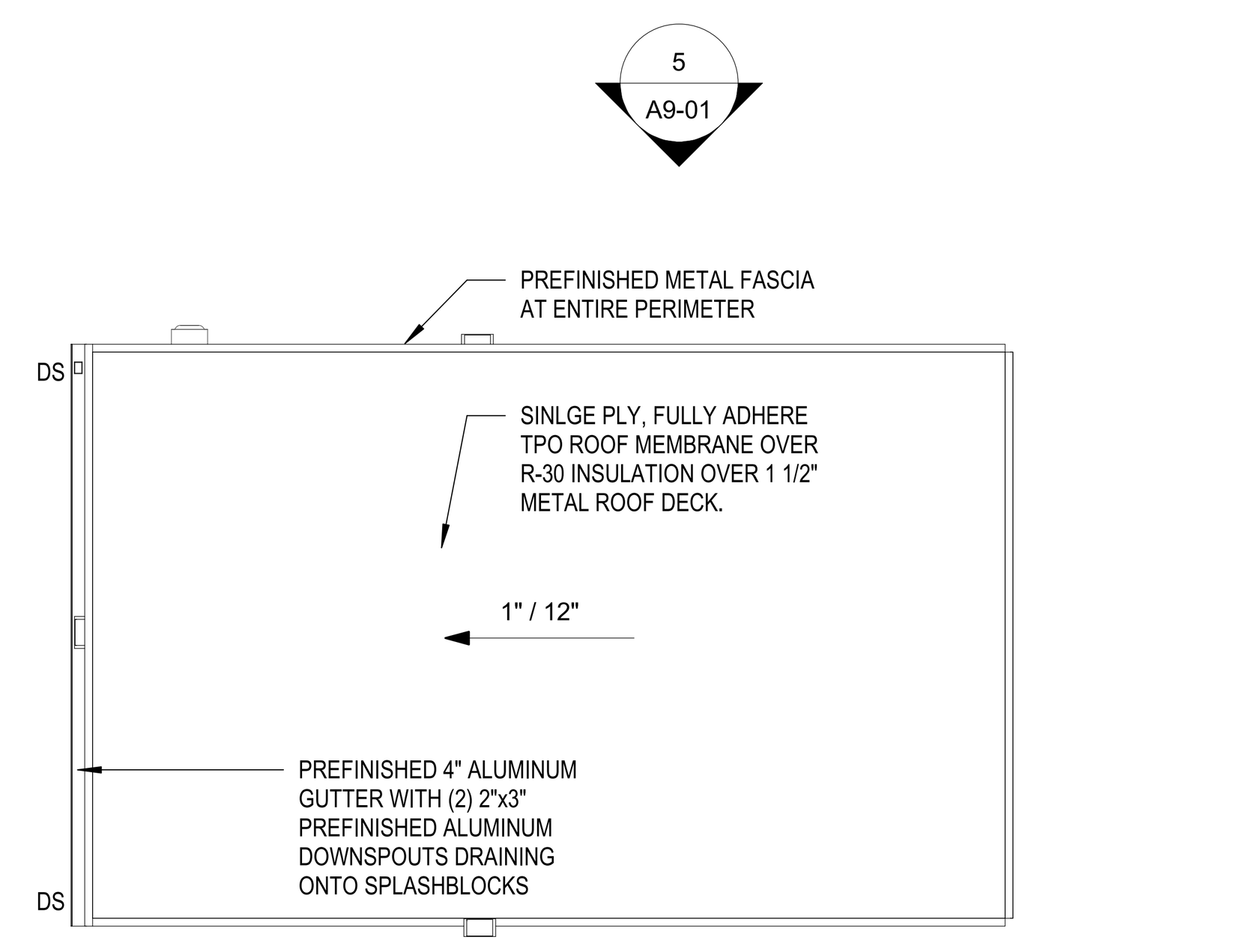
11 A9-02 **DUGOUT SECTION**
3/4" = 1'-0"



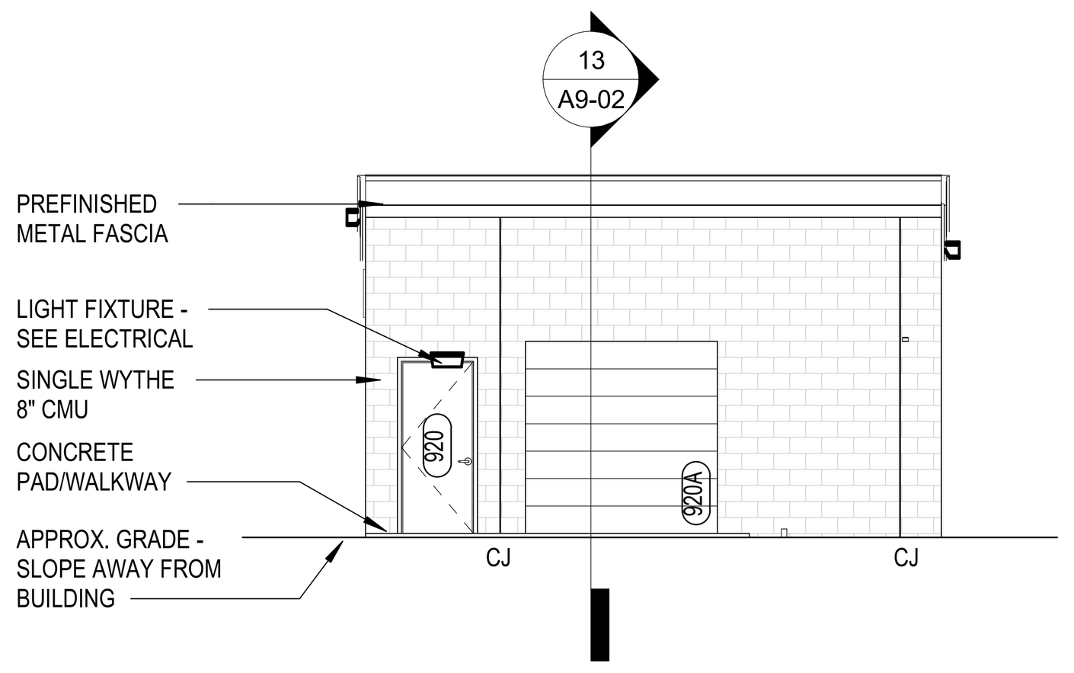
12 A9-02 **ROOF PLAN - TYPICAL DUGOUT**
1/8" = 1'-0"



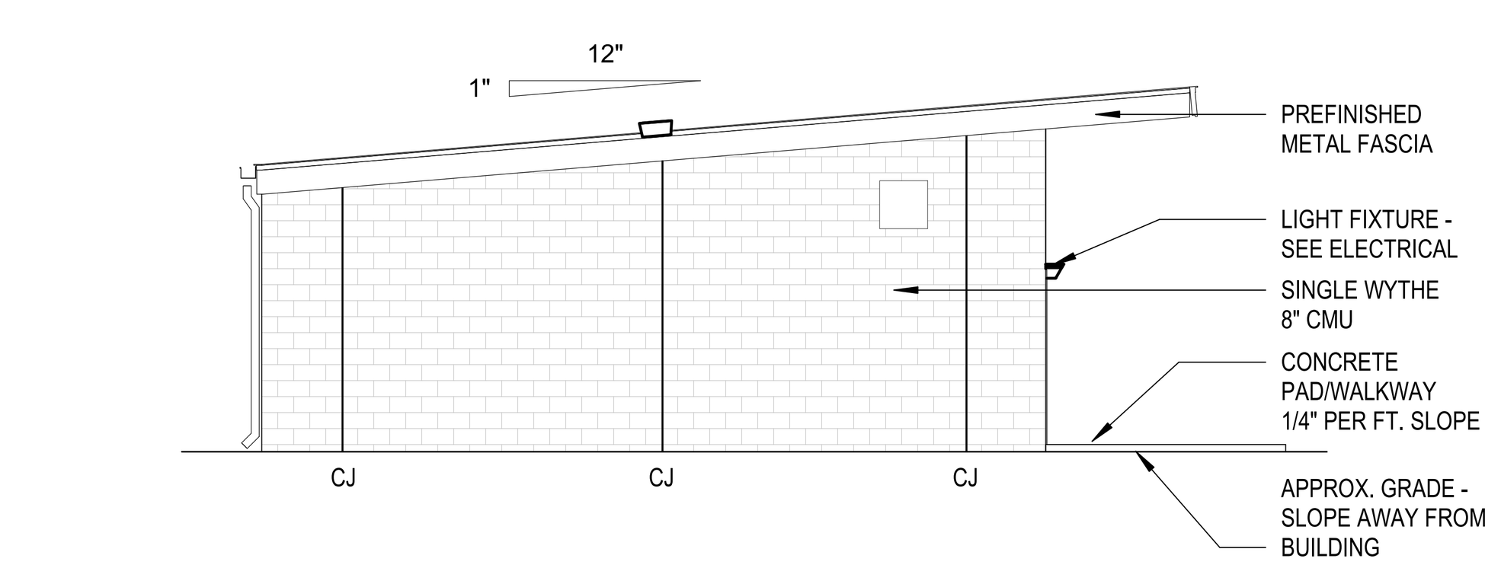
1 A9-02 **MAINTENANCE SHED - ALTERNATE 9**
1/8" = 1'-0"



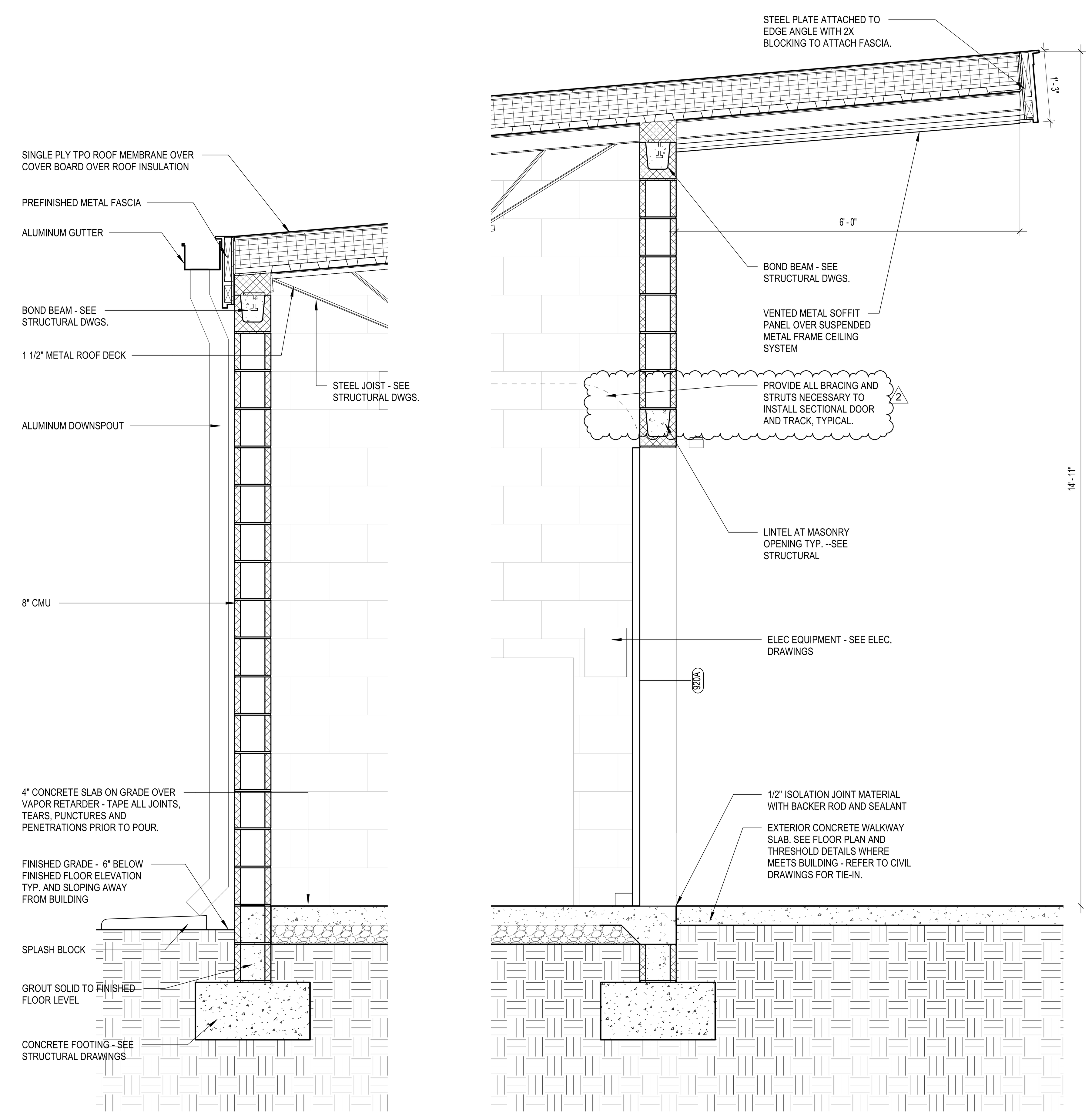
14 A9-02 **ROOF PLAN - MAINTENANCE SHED - ALTERNATE 9**
1/8" = 1'-0"



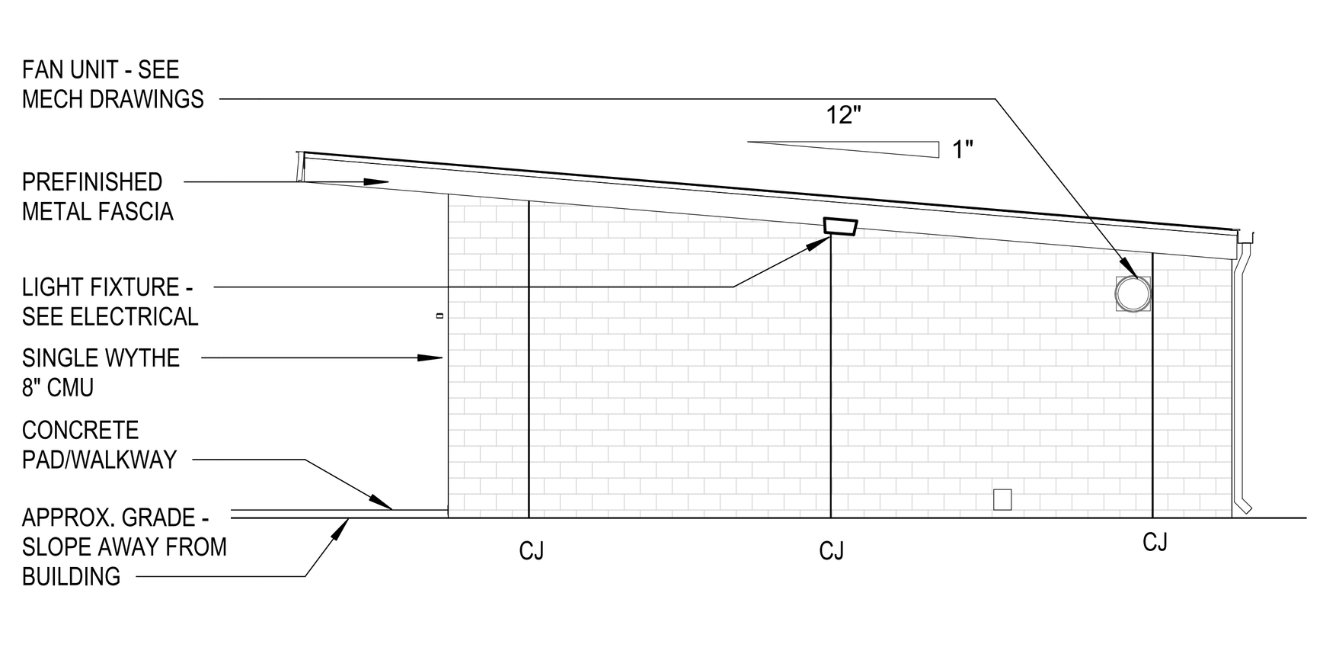
4 A9-02 **MAINTENANCE SHED - EAST**
1/8" = 1'-0"



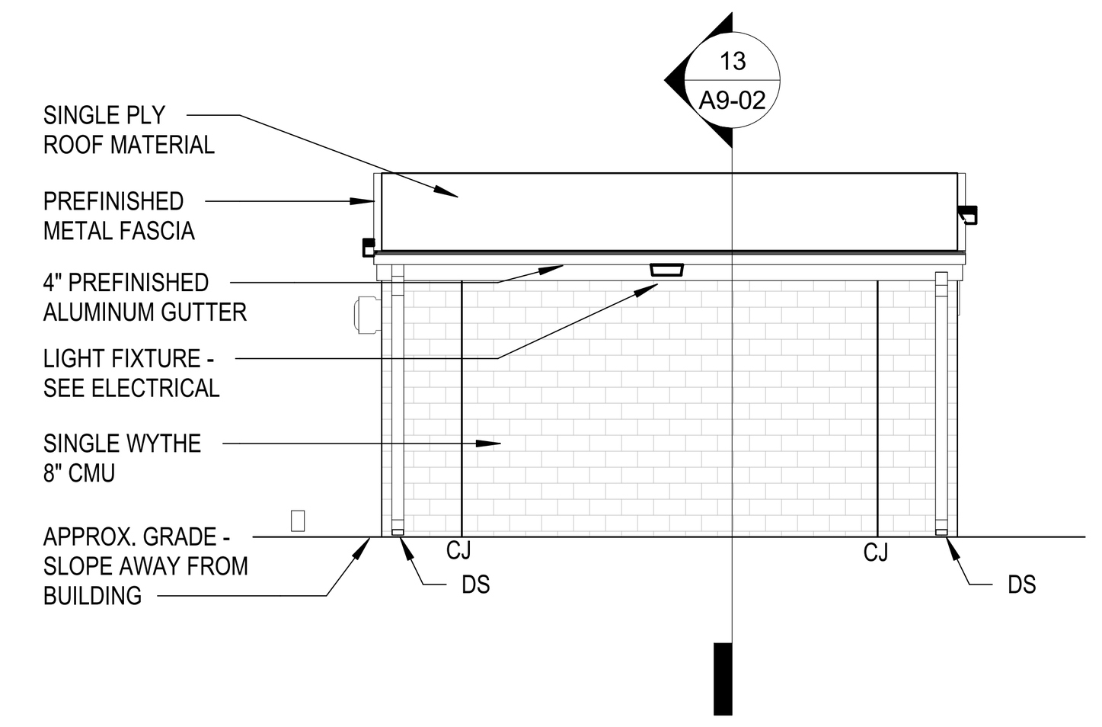
5 A9-02 **MAINTENANCE SHED - SOUTH**
1/8" = 1'-0"



13 A9-02 **MAINTENANCE SECTION**
3/4" = 1'-0"



3 A9-02 **MAINTENANCE SHED - NORTH**
1/8" = 1'-0"



2 A9-02 **MAINTENANCE SHED - WEST**
1/8" = 1'-0"

ROOF GENERAL NOTES

1 ALL ROOF SADDLES TO SLOPE 1/2" PER FOOT. CRICKETS TO SLOPE 1/4" PER FOOT. DRAWINGS ARE INTENDED TO SHOW DESIGN INTENT. CONTRACTOR SHALL PROVIDE SUBMITTAL DRAWINGS OF TAPERED INSULATION PRIOR TO INSTALL TO ENSURE POSITIVE SLOPE TO DRAINS
2 REFER TO PLUMBING DRAWINGS FOR ROOF LEADER TIE-INS AND CIVIL DRAWINGS FOR DRAINAGE AWAY FROM BUILDING.
3 PROVIDE CRICKET AT ALL ROOF CURBS. SLOPE 1/2" PER FOOT TYP.

ROOF PLAN KEYNOTES

1	ROOF ACCESS LADDER - REFER TO DETAIL 2/A5-40
2	WALKWAY MAT
3	ROOF HATCH - REFER TO DETAIL 6/A5-40
4	HOOD - SEE MECH. DWGS. AND ROOF CURB DETAIL 1/A5-40
5	PRE-MANUFACTURED, PREFINISHED ALUMINUM CANOPY AND SUPPORT STRUCTURE
6	ALUMINUM GUTTER -REFER TO DETAIL 18/A5-40
7	PREFINISHED METAL COPING WALL CAP
8	THRU-WALL SCUPPER WITH CONDUCTOR BOX AND DOWNSPOUT DRAINING TO ROOF BELOW - PROVIDE SPLASH BLOCK
9	NOT USED
10	DASHED LINE INDICATES EDGE OF WALL BELOW ROOF OVERHANG
11	SMOKE RELIEF VENTS - REFER TO CURB DETAIL 1/A5-40
12	SCUPPER AT CANOPY GRAVEL STOP - SEE DETAIL 14/A5-41
13	CANOPY TO DRAIN ONLY TO COLUMNS AT DASHED LINE INDICATED - REFER TO PLAN AND DETAILS
14	MECH EQUIPMENT - SEE MECH. DWGS. AND ROOF CURB DETAIL 1/A5-40

REFLECTED CEILING LEGEND AND NOTES

A 10'-0" — CEILING TYPE / CEILING HEIGHT

SYMBOL	TYPE	DESCRIPTION
	A	ACT-1, 2x2 CEILING TILE, WHITE FINISH
	B	ACT-2, 2x2 VINYL COVERED TILE AND GRID, WHITE FINISH, HOLD DOWN CLIPS
	C	MOISTURE RESISTANT GYP WALLBOARD
	D	ONE (1) HOUR RATED GYP WALLBOARD CEILING SYSTEM - REFER TO NER-258
	E	METAL SOFFIT PANEL - PERFORATED
	--	
	F	EXPOSED - STRUCTURE, PLUMBING, DUCTWORK AND METAL DECKING PAINTED WHITE
	G	EXPOSED - STRUCTURE, PLUMBING, DUCTWORK AND METAL DECKING PAINTED BLACK
	H	EXPOSED - NO FINISH

SYMBOL	DESCRIPTION
	1 X 4 LIGHT FIXTURE
	2 X 4 LIGHT FIXTURE
	RETURN AIR GRILLE
	SUPPLY AIR DIFFUSER
	EXHAUST DIFFUSER
	CAN STYLE FIXTURE
	CEILING ACOUSTICAL DIFFUSER PANEL
	PENDANT LIGHT
	DIRECT/INDIRECT LINEAR PENDANT
	HANGING LIGHT FIXTURE
	WALL MOUNTED UPLIGHT

1. REFER TO PLUMBING, MECHANICAL, AND ELECTRICAL DRAWINGS FOR COMPLETE SCOPE OF CEILING PENETRATIONS AND FIXTURES.
2. REFER TO PROJECT SPECIFICATIONS FOR COMPLETE DESCRIPTION OF CEILING MATERIAL

GENERAL PLAN NOTES

1. SEE WALL TYPES LEGEND ON SHEET A1.02 FOR TYPES INDICATED BY SYMBOL
2. ALL DOOR FRAMES SHALL BE 4" FROM THE FACE OF PERPENDICULAR WALLS UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS TAKEN FROM THE FINISHED FACE OF THE WALL (E.G. SURFACE OF CMU OR GYPSUM FOR STUD WALLS) AND THE CENTERLINE OF COLUMNS.
4. ALL RATED WALL CONSTRUCTION TO COMPLY WITH U.L REQUIREMENTS.
5. REFER TO EXTERIOR ELEVATIONS FOR EXTERIOR MASONRY CONTROL FOR INTERIOR CONTROL JOINTS.
6. ALL EXTERIOR WINDOWS TO RECEIVE BLINDS AS SPECIFIED. INTERIOR WINDOWS MARKED "BL" TO RECEIVE BLINDS.
7. FURNISHINGS SHOWN WITH DASHED LINES NOT IN CONTRACT UNLESS OTHERWISE NOTED.
8. PROVIDE 1" RADIUS BULLNOSE UP TO A HEIGHT OF 8' AT ALL OUTSIDE CMU CORNERS FOR INTERIOR WALLS.
9. FIELD VERIFY AND COORDINATE FIELD CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION, INSTALLATION AND CONSTRUCTION OF BUILDING COMPONENTS. THE GC IS TO INFORM THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
10. FIRE RATED WALLS SHALL HAVE RATINGS STENCILED ABOVE THE CEILING FOR IDENTIFICATION. STENCILED LETTERS SHALL BE RED, 2" HIGH AT 10'-0" OC MAX ALONG WALL, I.E. "4 HR. RATED WALL"
11. REFER TO G0-01 FOR STANDARD ABBREVIATIONS AND NOTATIONS.
12. GENERAL CONTRACTOR SHALL PROVIDE LINTELS FOR MASONRY OPENINGS AND WALL PENETRATIONS AS SHOWN ON ALL DRAWINGS.
13. DIMENSIONS FOR MASONRY OPENINGS ON PLANS ARE GIVEN AS "ROUGH" OPENINGS. GC AND ALL SUBCONTRACTORS RESPONSIBLE FOR FABRICATION OF BUILDING COMPONENTS TO ALLOW FOR SHIM AND INSULATION SPACE.
14. NOTE SLAB DEPRESSIONS FOR TILE AND ATHLETIC FLOORS AS INDICATED BY PLAN KEYNOTES AND INDICATED ON STRUCTURAL DRAWINGS.
15. ALL BLOCKING AND PLYWOOD UTILIZED SHALL BE FIRE RETARDANT TREATED WOOD.
16. ALL RATED CMU WALLS TO BE D-2 CLASSIFIED CMU.
17. ALL EXTERIOR CONCRETE WALKS TO BE BEDDED ON 4" OF #57 STONE ON COMPACTED SUBGRADE WITHIN 6'-0" OF THE BUILDING. ADJOINING WALKS ON COMPACTED SUBGRADE, SEE CIVIL DRAWINGS.
18. GC SHALL PROVIDE FIRE RETARDANT 3/4" PLYWOOD TO MOUNT PANELS AND EQUIPMENT.
19. ALL EXTERIOR STEEL COMPONENTS TO BE HOT-DIPPED GALVANIZED, INCLUDING BUT NOT LIMITED TO ALL EXTERIOR STAIR AND HANDRAIL/ GUARDRAIL COMPONENTS AND STEEL LINTELS.

PLAN KEYNOTES -

1 SLAB RECESSED IN THIS ROOM TO ACCOMODATE SPECIALTY FLOORING - REFER TO FINISH PLAN. GC TO CONFIRM DEPTH OF RECESS WITH FLOORING MANUFACTURER PRIOR TO POURING THE SLAB.
2 MECHANICAL LOUVER, REFER TO MECHANICAL DRAWINGS. GC TO COORDINATE OPENING SIZE AND PROVIDE LINTEL AND FLASHING
3 BUILDING EXPANSION JOINT. PROVIDE BLOCKOUTS IN SLAB FOR FLOOR TO FLOOR JOINTS. - FLOOR TO FLOOR JOINTS: 2 HR. RATED 1" JOINT C/S GROUP MULTIFLEX MFX-1F OR EQUAL. - - WALL TO WALL JOINTS: 2 HR. RATED 1" JOINT, C/S GROUP MULTIFLEX MFX-1FW OR EQUAL- -WALL JO
4 ROLLING COUNTER DOOR. SEE SPECIFICATIONS.
5 ADA ACTUATOR, ELECTRICAL CONTRACTOR PROVIDE BACKER BOXES AND CONDUIT. COORDINATE W/ GC & HARDWARE SUPPLIER.
6 PROVIDE MAGNETIC DOOR HOLD OPENS FOR THIS DOOR ASSEMBLY. REFER TO ELECTRICAL DRAWINGS AND DOOR SCHEDULE FOR SPECIFICATIONS.
7 GC TO PROVIDE BONDBEAM LINTEL OVER THIS OPENING.
8 PROVIDE MECHANICAL DOOR HOLD OPENS FOR THIS DOOR ASSEMBLY
9 RECESS FLOOR 4 1/4" - COORDINATE WITH COOLER/FREEZER UNIT MANUFACTURER PRIOR TO POURING SLABS AND NOTIFY ARCHITECT OF DISCREPENCIES.
10 LADDER - MEANS OF ESCAPE FROM MECHANICAL PLATFORM ABOVE.
11 ROOF ACCESS LADDER - REFER TO ROOF PLAN A1-40
12 4'0" WIDE SELF-CLOSING SAFETY GATE PER OSHA REQUIREMENTS
13 SLOPE SLAB TO DRAIN. SEE STRUCTURAL DRAWINGS FOR MINIMUM CONCRETE COVERAGE AT DRAIN LOCATION(S).
14 COLUMN FEATURE: COUNTER AND WRAP- REFER TO DETAIL 15/A5-01
15 PIPE BOLLARD - SEE CIVIL DRAWINGS
16 OPERABLE PARTITION
17 NURSE EXAM CURTAIN
18 PROVIDE ELECTRONIC LOCKSET FOR SECURITY INTEGRATION THIS DOOR ASSEMBLY

smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

SMITH SINNETT ARCHITECTURE, PA — ARCHITECTURAL CORPORATION — CERT. NO. 50172 — REGISTERED — NORTH CAROLINA — RALEIGH
DREW WILGUS — REGISTERED ARCHITECT — 12017 — 6.14.19 — NORTH CAROLINA — RALEIGH, NC

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME I

TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM
Parcel PIN 7708118367
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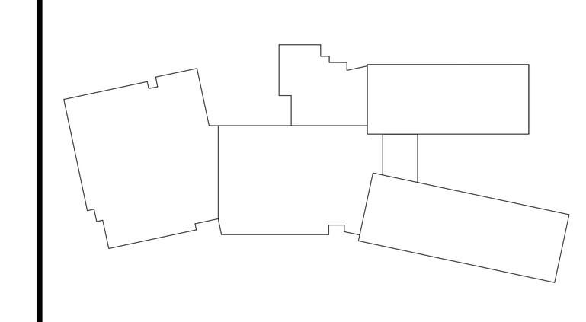


KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
2	6/14/19	ADDENDUM 3

DRAWN BY: LP, JS, DW
CHECKED BY: DW

MAINTENANCE SHED

2017032 20 MAY 2019

A9-02

Trinity Middle School

CLH Project No: 18-107

Raleigh, North Carolina

CLH design, p.a.
400 Regency Forest Drive, Suite 120
Cary, NC 27518

Addendum #2 2019-06-14

Where any article, division or subparagraph of the original contract documents or other addenda is supplemented herein, the provisions of the original documents shall remain in effect. All the supplemental provisions shall be considered as added thereto. Where any such article, division or subparagraphs are amended, voided or superseded thereby, the provisions of such article, division or subparagraph not so specifically amended, voided or superseded shall remain in effect.

The attention of the Contractor is called to the following clarifications, additions to and changes in the plans and specifications dated **May 20, 2019** on the above job. It will be the responsibility of each Contractor to call such clarifications, additions to and changes in the plans and specifications to the attention of subcontractors concerned. The Engineer in no way assumes any responsibility for notifying any subcontractor, material dealers or others not having received the original contract documents.

ITEM 1. GENERAL CONTRACT

Refer to Plan Sheet C05.03: Site Utility Plan – Area 3

REPLACE sheet C05.03 in its entirety with revised drawing C05.03 Addendum No. 3 dated June 14, 2019, attached hereto.

Revisions:

1. Note has been revised for off-site waterline.

ITEM 2. GENERAL CONTRACT

Refer to Plan Sheet C05.01: Site Utility Plan – Area 1

REPLACE sheets C05.01 in its entirety with revised drawings C05.01 Addendum No. 3 dated June 14, 2019, attached hereto.

Revisions:

1. Increase the length of the bore and jack from 230-lf to 250-lf.

ITEM 3. GENERAL CONTRACT

Refer to Plan Sheet C05.05: Sanitary Sewer Plan and Profile

REPLACE sheets C05.05 in its entirety with revised drawings C05.05 Addendum No. 3 dated June 14, 2019, attached hereto.

Revisions:

1. Increase the length of the bore and jack from 230-lf to 250-lf.

ITEM 4. GENERAL CONTRACT

Refer to Plan Sheet C02.01: Existing Conditions and Demolition Plan – Area 1

REPLACE sheets C02.01 in its entirety with revised drawings C02.01 Addendum No. 3 dated June 14, 2019, attached hereto.

Revisions:

1. Construction limits and tree protection fencing revised at bore and jack location.

ITEM 5. GENERAL CONTRACT

Refer to Plan Sheet C03.01: Site Grading Plan – Area 1

REPLACE sheets C03.01 in its entirety with revised drawings C03.01 Addendum No. 3 dated June 14, 2019, attached hereto.

Revisions:

1. Construction limits and tree protection fencing revised at bore and jack location.

ITEM 6. GENERAL CONTRACT

Refer to Plan Sheet C04.05: Site Erosion Control Plan - Area 1- Late Phase

REPLACE sheets C04.05 in its entirety with revised drawings C04.05 Addendum No. 3 dated June 14, 2019, attached hereto.

Revisions:

2. Construction limits, tree protection fencing and silt fencing revised at bore and jack location.

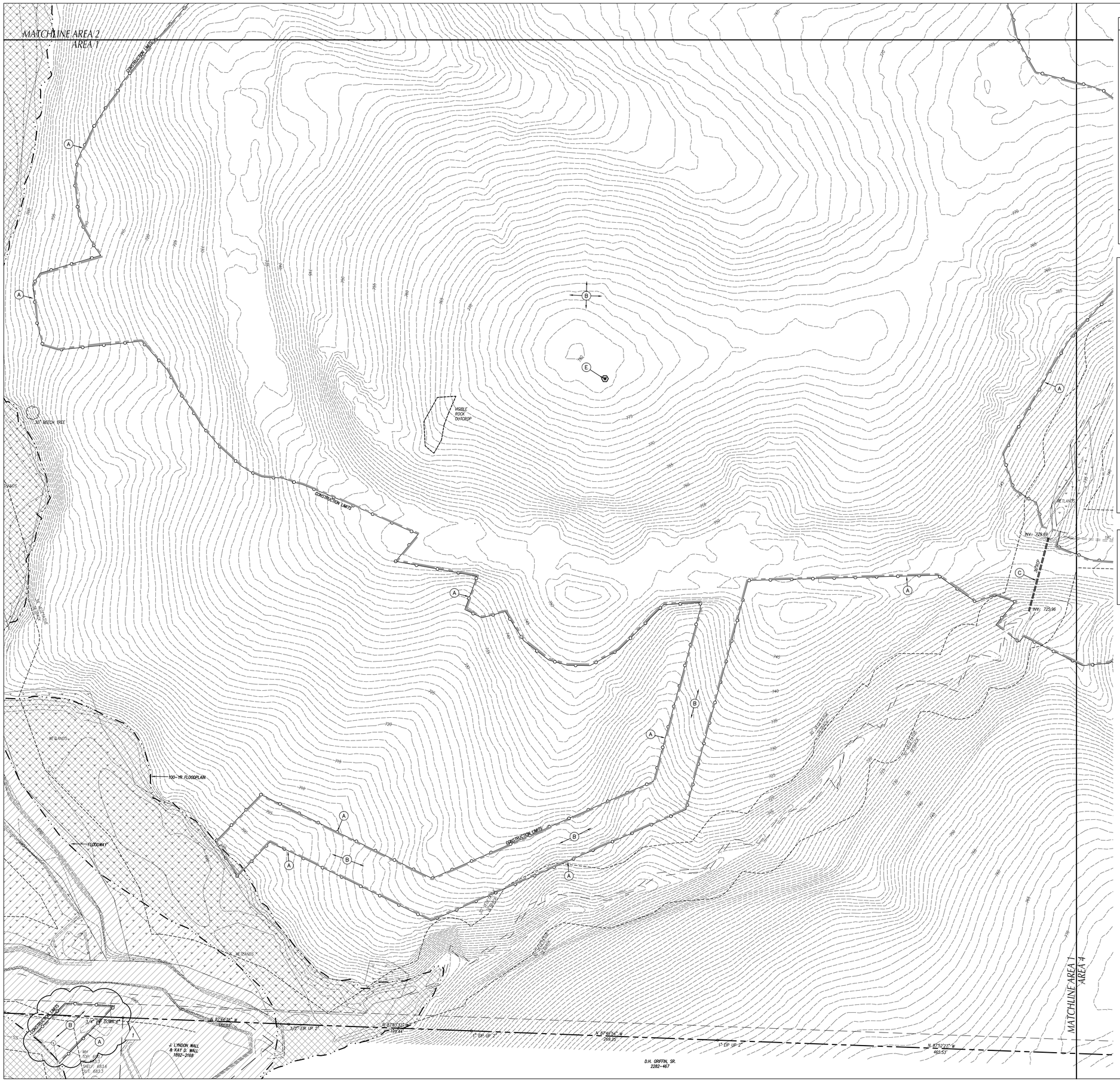
ITEM 7. GENERAL CONTRACT

Refer to Specification Section 32 50 01- Exterior General Athletic Equipment.

REVISE section 2.5 Portable Player Benches to read as follow:

A. Portable Player Benches: 2-in x 10-in heavy duty, anodized, extruded aluminum seat and back planks mounted on 2-3/8" O.D. galv. steel frame, PW Athletic Equipment model #1102 (800-687-5768) or approved equal. Unless noted otherwise, provide a total of four (4) 15-ft long benches at football/soccer field.

END OF SITE/CIVIL ITEMS FOR THIS ADDENDUM



LEGEND

STRUCTURES/UTILITIES TO BE REMOVED		STRUCTURES/UTILITIES TO REMAIN	
OVERHEAD ELECTRICAL	------ E ------	OVERHEAD ELECTRICAL	------ E ------
UNDERGROUND ELECTRICAL	------ UE ------	UNDERGROUND ELECTRICAL	------ UE ------
FIRE PROTECTION	------ FP ------	FIRE PROTECTION	------ FP ------
GAS	------ G ------	GAS	------ G ------
SANITARY SEWER	------ SS ------	SANITARY SEWER	------ SS ------
TELEPHONE	------ T ------	TELEPHONE	------ T ------
UNDERGROUND TELEPHONE	------ UT ------	UNDERGROUND TELEPHONE	------ UT ------
FIBER OPTIC	------ FO ------	FIBER OPTIC	------ FO ------
WATER	------ W ------	WATER	------ W ------
FORCE MAIN	------ FM ------	FORCE MAIN	------ FM ------
STORM DRAIN	═══════	STORM DRAIN	═══════
INDIVIDUAL TREE TO BE REMOVED.		INDIVIDUAL TREE TO REMAIN.	
LIGHT POLE	LP	LIGHT POLE	LP
UTILITY POLE	PP	UTILITY POLE	PP
MANHOLE	MH	MANHOLE	MH
CLEAN OUT	CO	CLEAN OUT	CO
DROP INLET,CATCH BASIN	DI, CB	DROP INLET,CATCH BASIN	DI, CB
FIRE HYDRANT	FH	FIRE HYDRANT	FH
WATER VALVE	WV	WATER VALVE	WV
CONSTR./CLEARING LIMITS		PAVEMENT, S/W, C&G TO BE REMOVED.	
TREE PROTECTION FENCE		BUILDING/STRUCTURE TO BE REMOVED. SEE ARCHITECTURAL PLANS.	

GENERAL NOTES

1. ALL EXISTING STRUCTURES AND UTILITIES SHALL BE REMOVED AS NEEDED TO ALLOW NEW CONSTRUCTION. IN GENERAL, FEATURES INDICATED IN BOLD ON THIS PLAN SHALL BE REMOVED.
2. ALL PAVEMENT OR CONCRETE TO BE REMOVED SHALL BE SAW CUT TO PROVIDE A STRAIGHT AND UNIFORM JOINT FOR NEW PAVEMENT, SIDEWALK, OR CURB AND GUTTER, ETC. ANY EXISTING PAVEMENT, SIDEWALK, CURB AND GUTTER, ETC. THAT MUST BE REMOVED TO ALLOW NEW CONSTRUCTION SHALL BE REMOVED AND REPAIRED PER THE SPECIFICATIONS AND DETAILS OR TO MATCH PRE-CONSTRUCTION CONDITIONS (WHETHER OR NOT SHOWN ON THE DRAWINGS TO BE REMOVED).
3. ALL UTILITIES OR STRUCTURES NOT INDICATED FOR REMOVAL OR MODIFICATION ARE TO REMAIN AND BE PROTECTED FROM DAMAGE.
4. ALL WASTE MATERIAL GENERATED FROM DEMOLITION ACTIVITIES SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL APPLICABLE RULES AND REGULATIONS.
5. EXISTING SITE BOUNDARY AND TOPOGRAPHIC SURVEY INFORMATION WAS TAKEN FROM SURVEY BY SURVEY CAROLINA, PLLC, PERFORMED 02/22/2018. THESE PLANS DO NOT ASSUME ANY LIABILITY FOR ANY EXISTING INFORMATION BOTH SHOWN AND NOT SHOWN ON THE SURVEY AND ANY CHANGES TO THE EXISTING CONDITIONS THAT MAY HAVE OCCURRED AFTER THE SURVEY WAS ISSUED. CONTRACTOR SHALL VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION.
6. INSTALL TREE PROTECTION FENCING PRIOR TO BEGINNING CLEARING OPERATIONS. CLEAR AND GRUB ALL AREAS AS SHOWN AND REQUIRED TO PERMIT INSTALLATION OF NEW CONSTRUCTION PER SPECIFICATIONS AND DRAWINGS. EXISTING TREES, SHRUBS OR OTHER LANDSCAPE MATERIAL WHICH WILL CONFLICT WITH NEW CONSTRUCTION SHALL BE REMOVED (WHETHER OR NOT SHOWN ON THE DRAWINGS). ALL CONTRACTORS SHALL VISIT THE SITE AND OBSERVE EXISTING CONDITIONS PRIOR TO BIDDING.
7. TO MINIMIZE DAMAGE TO EXISTING TREES NEAR THE INTERIOR EDGE OF CLEARING LIMITS, THE CONTRACTOR SHALL CUT 2-FT DEEP TRENCHES ALONG THE LIMITS OF DISTURBANCE, SO AS TO CUT, RATHER THAN TEAR ROOTS.
8. PRIOR TO DEMOLISHING EXISTING STRUCTURES, MAKE AN INSPECTION FOR ANY HAZARDOUS MATERIALS. CONTACT ARCHITECT IMMEDIATELY IF ANY HAZARDOUS MATERIALS ARE DISCOVERED. CAP AND REMOVE UTILITY SERVICES, FUEL TANKS AND SEPTIC SYSTEMS. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
9. VERIFY ALL ILLUSTRATED UNDERGROUND ELEMENTS/UTILITIES. EXERCISE REASONABLE EFFORTS TO PROTECT ANY UNKNOWN UNDERGROUND ELEMENTS/UTILITIES. NOTIFY THE ARCHITECT IMMEDIATELY IF UNKNOWN ELEMENTS/UTILITIES ARE DISCOVERED THAT WOULD NECESSITATE MODIFICATION TO THE PROPOSED DESIGN.
10. CONTACT UTILITY LOCATING SERVICE AT LEAST 48-HRS PRIOR TO EXCAVATION.
11. PROTECT ALL ADJACENT PROPERTIES, THE GENERAL PUBLIC AND ALL OF THE OWNER'S FACILITIES. SHOULD DAMAGES OCCUR, REPAIR IMMEDIATELY AS DIRECTED BY THE ARCHITECT.
12. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL CITY OF TRINITY AND/OR NCDOT STANDARDS AND SPECIFICATIONS.
13. ALL EXISTING VAULTS, MANHOLES, STORM DRAIN STRUCTURES, CLEANOUTS, ETC. SHALL BE ADJUSTED AS NEEDED TO MATCH FINISH GRADE.
14. DEMOLITION AND PATCHING OF PAVEMENT, SIDEWALK, CURB AND GUTTER AND OTHER EXISTING PAVED SURFACES IN ADDITION TO THAT INDICATED ON THIS PLAN SHALL BE PERFORMED AS REQUIRED TO CONSTRUCT AND INSTALL NEW UTILITIES. ALL SUCH DEMOLITION AND PATCHING SHALL BE INCLUDED IN THE BASE BID SCOPE OF WORK. SEE SHEET C07.03 FOR PAVEMENT REPAIR DETAILS.
15. THIS SITE IS/IS NOT LOCATED WITHIN SPECIAL FLOOD HAZARD AREAS AS DETERMINED BY FEMA AND DEPICTED ON F.I.R.M. MAP 3710770800J, DATED 01/02/2008 AS BEING WITHIN ZONE "X-OTHER AREA".
16. NO WORK SHALL BE PERFORMED ON RIGHT-OF-WAYS OR ADJACENT PROPERTIES UNTIL THE OWNER NOTIFIES CONTRACTOR IN WRITING OF PROCUREMENT OF APPROPRIATE PERMITS, EASEMENTS, AGREEMENTS, OR RIGHTS-OF-WAY.

KEY NOTES

(A) TEMPORARY TREE PROTECTION FENCE, SEE DETAIL SHEET C07.01.

(B) CLEAR AND GRUB, STRIP TOPSOIL WITHIN CONSTRUCTION LIMITS.

(C) REMOVE STRUCTURE/UTILITY.

(D) EXISTING UTILITY LINE/STRUCTURE TO BE REMOVED/RELOCATED BY LOCAL UTILITY COMPANY. LOCAL UTILITY COMPANY SHALL DETERMINE THE LIMITS AND EXTENT OF REMOVAL/RELOCATION OF UTILITIES REQUIRED FOR NEW CONSTRUCTION. CONTRACTOR TO COORDINATE SCHEDULE AND WORK WITH LOCAL UTILITY COMPANY AND ARCHITECT/OWNER.

(E) CAP AND ABANDON UTILITY IN ACCORDANCE WITH SPECIFICATIONS.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

smith sinnett ARCHITECTURE

T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1566 JESSE C. PFEIFFER 5-22-19

BID DOCUMENTS

VOLUME I

CLH DESIGN, P.A.
400 Regency Forest Drive
Suite 120
Cary, North Carolina 27518
Phone: (919) 319-0718
Fax: (919) 319-7016
PA: C-1595
PE: C-1595

TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN: 7708118367
Surrett Drive
Trinity, NC 27370

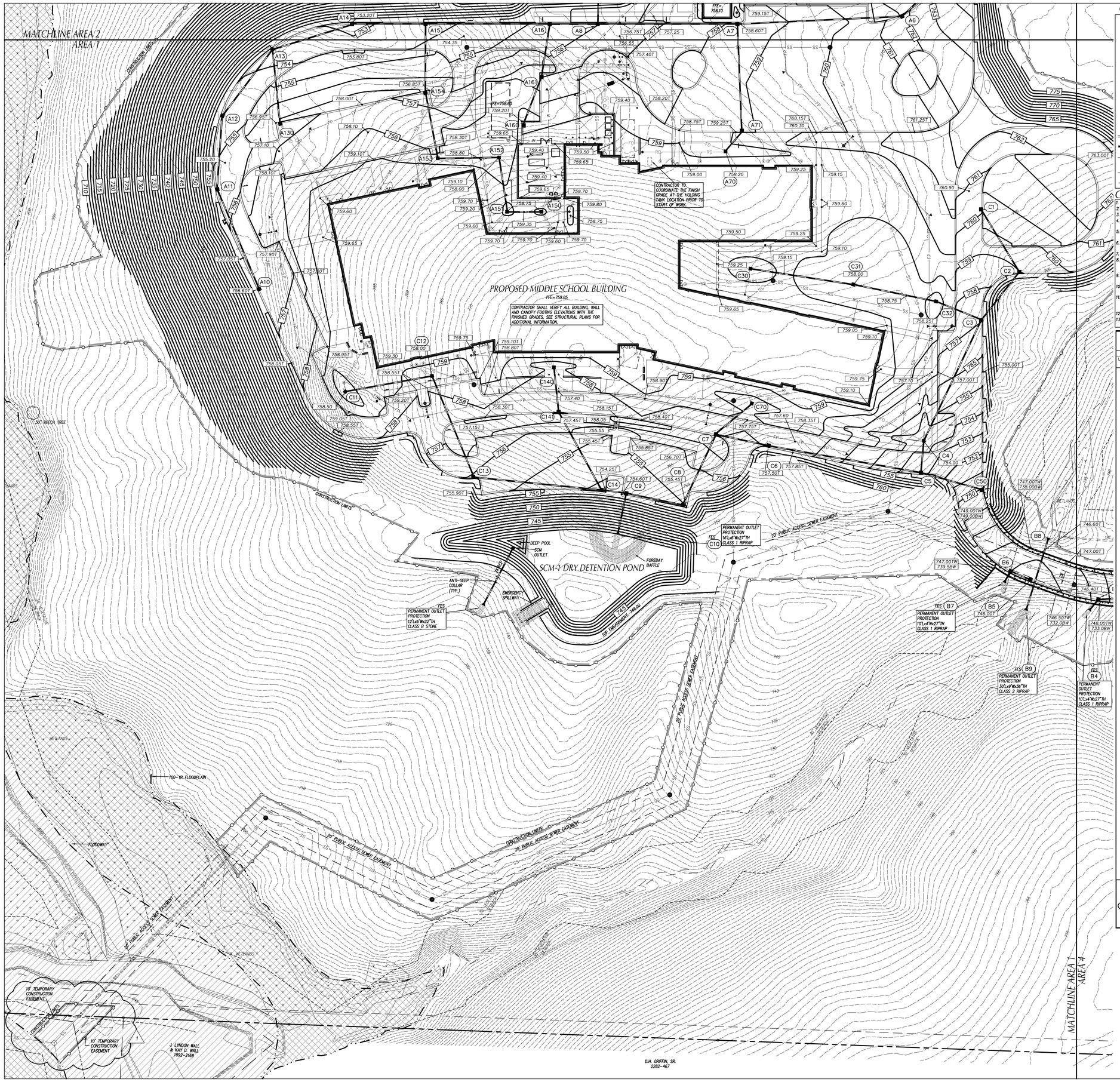
ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM #3 REVISIONS

DRAWN BY: KL, HB
CHECKED BY: RP

SITE EXISTING CONDITIONS & DEMOLITION PLAN - AREA 1

2017032 20 MAY 2019

C02.01



GRADING LEGEND

- EXISTING CONTOURS
- FINAL CONTOURS
- 270.4' + 270.50' — EXISTING SURVEY SPOT ELEVATION
- 270.50' — PROPOSED TOP OF CURB SPOT ELEVATION
- 270.50TW — PROPOSED TOP OF WALL ELEVATION
- 270.50BW — PROPOSED BOTTOM OF WALL ELEVATION
- 270.50 — PROPOSED GROUND/PAVEMENT ELEVATION
- (29) — STORM STRUCTURE NUMBER
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- FD — PROPOSED FOUNDATION DRAIN DISCHARGE LINE. SEE ARCH. PLANS FOR DRAIN PIPE LOCATIONS ALONG BUILDING WALLS.
- RD — PROPOSED ROOF DRAIN
- TREE PROTECTION FENCE

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL CITY OF TRINITY AND NCDOT STANDARDS AND SPECIFICATIONS.
2. ALL SPOT ELEVATIONS INDICATED AT CURB AND GUTTER AND ARE DENOTED TO TOP OF CURB, UNLESS OTHERWISE SHOWN.
3. TOTAL DENUDED AREA = 29 AC
4. CONTRACTOR SHALL ADJUST ALL EXISTING VAULTS, MANHOLES, STORM DRAIN STRUCTURES, CLEANOUTS, ETC. AS NEEDED TO MATCH FINISH GRADE.
5. ALL BACKFILL, COMPACTION, SOILS TESTING, ETC. SHALL BE PERFORMED BY THE OWNERS INDEPENDENT TESTING LABORATORY. (SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION)
6. ALL STORM DRAIN PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER STOPPAGE OF WORK EACH DAY. SEE DETAIL ON SHEET C07.01.
7. EXISTING VEGETATION WITHIN TREE PROTECTION AREAS SHALL REMAIN UNDISTURBED, UNLESS NOTED OTHERWISE.
8. ANY AND ALL LANDSCAPING AND EXISTING TREES & SHRUBS TO REMAIN WHICH ARE DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR UTILIZING A LICENSED LANDSCAPE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
9. THE GRADING CONTRACTOR SHALL COMPLY WITH ALL STATE CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF-SITE.
10. THE GRADING CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY STATE AUTHORITIES OR THE ARCHITECT.
11. THE GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL CLEARING AND GRADING WASTE MATERIALS GENERATED DURING CONSTRUCTION AND FOR OBTAINING ALL APPLICABLE PERMITS FOR OFF-SITE STOCKPILES AND/OR WASTE AREAS.
12. THE CROSS-SLOPE ON ALL SIDEWALKS SHALL BE A MAXIMUM OF 2.0%
13. CONTRACTOR SHALL VERIFY ALL EXISTING ELEVATIONS WHERE NEW CONSTRUCTION JOIN OR CONNECT TO EXISTING PAVEMENT, CURBS AND OTHER RIGID STRUCTURES. NOTIFY ARCHITECT IF DISCREPANCIES OCCUR.

DRAINAGE STRUCTURE SCHEDULE

STRUCTURE NO. UP STRM	STRUCTURE NO. DN STRM	PIPE SLOPE	PIPE DIA. (IN)	PIPE LENGTH (LF)	PIPE MATRL	UPSTREAM STRUCTURE DATA: UPPER INV. (FT)	UPSTREAM STRUCTURE DATA: LOWER INV. (FT) (1)	UPSTREAM STRUCTURE DATA: TOP ELEV	UPSTREAM STRUCTURE DATA: DEPTH (FT)	UPSTREAM STRUCTURE DATA: TYPE	NOTES
A1	A2	1.02%	15	200	RCP	781.60	779.75	786.25	4.45	CB	
A2	A3	0.98%	15	300	RCP	779.65	776.70	784.70	5.05	CB	
A3	A4	3.90%	15	100	RCP	776.60	772.70	781.30	4.70	CB	
A4	A5	4.70%	15	100	RCP	772.60	767.90	777.05	4.45	CB	
A5	A6	5.00%	15	200	RCP	767.80	757.80	772.15	4.35	CB	
A6	A7	3.00%	15	180	RCP	757.70	752.30	762.10	4.40	CB	
A7	A8	4.31%	18	153	RCP	752.20	745.60	758.60	6.40	CB	
A8	A9	1.00%	30	50	RCP	745.50	745.00	756.50	11.00	CB	
A70	A71	1.07%	15	28	RCP	753.80	753.50	758.20	4.40	DI	
A71	A7	1.03%	18	116	RCP	753.40	752.20	759.20	5.80	CB	
A10	A11	0.93%	15	118	RCP	752.20	751.10	756.60	4.40	CB	
A11	A12	0.93%	15	81	RCP	751.00	750.25	755.85	4.85	CB	
A12	A13	0.92%	15	92	RCP	750.15	749.30	754.95	4.80	CB	
A13	A14	0.93%	15	91	RCP	749.20	748.35	754.05	4.85	CB	
A14	A15	0.93%	18	81	RCP	748.25	747.50	753.20	4.95	CB	
A15	A16	0.92%	24	138	RCP	747.40	746.15	754.05	6.65	CB	
A16	A8	0.86%	24	52.2	RCP	746.05	745.60	755.70	9.65	CB	
A160	A161	3.16%	15	57	RCP	754.80	753.00	759.20	4.40	CB	
A161	A16	1.02%	15	59	RCP	752.90	752.30	757.50	4.60	CB	
A150	A151	1.08%	15	37	RCP	754.30	753.90	758.75	4.45	DI	
A151	A152	1.02%	15	59	RCP	753.80	753.20	758.75	4.95	DI	
A152	A153	1.06%	15	66	RCP	753.10	752.40	758.00	4.90	DI	
A153	A154	1.13%	15	71	RCP	752.30	751.50	758.50	6.20	DI	
A154	A15	1.07%	15	75	RCP	751.40	750.60	756.85	5.45	CB	
A130	A13	1.11%	15	81	RCP	752.50	751.60	756.95	4.45	CB	
B1	B2	7.49%	15	319	RCP	768.10	744.20	772.50	4.40	CB	
B2	B3	7.63%	15	135	RCP	744.10	733.80	756.50	12.40	CB	
B3	B4	7.50%	15	16	RCP	733.70	732.50	747.90	14.20	CB	
B5	B6	1.30%	15	23	RCP	741.60	741.30	746.00	4.40	CB	
B6	B7	1.07%	15	14	RCP	736.15	736.00	746.50	10.35	CB	
B8	B9	4.87%	30	80	RCP	728.90	725.00	746.00	17.10	FES	Class IV
C1	C2	2.00%	15	80	RCP	756.30	754.70	760.65	4.35	CB	
C2	C3	2.01%	15	67	RCP	754.60	753.25	759.50	4.90	CB	
C3	C4	1.03%	18	146	RCP	751.25	749.75	757.50	6.25	CB	
C4	C5	1.00%	18	35	RCP	749.65	749.30	754.00	4.35	DI	
C5	C6	0.91%	24	170	RCP	745.30	743.75	753.90	8.60	CB	
C6	C7	0.93%	24	59	RCP	743.65	743.10	757.50	13.85	CB	
C7	C8	0.93%	24	86	RCP	743.00	742.20	757.50	14.50	CB	
C8	C9	0.94%	24	64	RCP	742.10	741.50	755.45	13.35	CB	
C9	C10	0.87%	30	46	RCP	741.40	741.00	754.60	13.20	CB	
C11	C12	3.18%	15	96	RCP	754.10	751.05	758.50	4.40	DI	
C12	C13	3.09%	15	118	RCP	750.95	747.30	758.00	7.05	DI	
C13	C14	3.09%	15	141	RCP	747.20	742.85	756.35	9.15	CB	
C14	C9	4.11%	15	28	RCP	742.75	741.60	754.25	11.50	CB	
C30	C31	1.01%	15	114	RCP	754.10	752.95	758.50	4.40	DI	
C31	C32	1.02%	15	93	RCP	752.85	751.90	758.00	5.15	DI	
C32	C3	1.02%	15	54	RCP	751.80	751.25	757.50	5.70	DI	
C70	C7	9.51%	15	51	RCP	753.10	748.25	757.50	4.40	DI	
C140	C141	1.02%	15	49	RCP	753.10	752.60	757.50	4.40	DI	
C141	C14	1.02%	15	98	RCP	752.50	751.50	757.50	5.00	CB	
C50	CO	1.01%	15	69	RCP	746.10	745.40	750.50	4.40	CB	
D1	D2	10.20%	15	98	RCP	748.00	738.00	754.00	6.00	FES	
E1	E2	1.08%	15	93	RCP	748.10	747.10	752.50	4.40	DI	
E2	E3	1.06%	15	94	RCP	747.00	746.00	752.50	5.50	DI	
E3	E4	1.05%	15	95	RCP	745.90	744.90	752.50	6.60	DI	
E4	E5	1.04%	15	96	RCP	744.80	743.80	752.50	7.70	DI	
E5	E6	1.02%	15	216	RCP	743.70	741.50	752.50	8.80	DI	
E6	E7	1.04%	15	115	RCP	741.40	740.20	753.70	12.30	DI	
E7	E8	3.05%	18	95	RCP	739.90	737.00	752.80	12.90	DI	
E8	E9	2.00%	18	265	RCP	736.90	731.60	752.40	15.50	DI	
E9	E10	9.85%	18	132	RCP	731.50	718.50	750.10	18.60	DI	
E11	E12	1.28%	15	86	RCP	745.60	744.50	750.00	4.40	DI	
E12	E9	1.10%	15	100	RCP	744.40	743.30	750.00	5.60	DI	
E70	E71	1.02%	15	284	RCP	745.00	742.10	749.00	4.00	DI	
E71	E7	1.82%	15	110	RCP	742.00	740.00	752.00	10.00	DI	
F1	F2	0.30%	18	118	RCP	784.00	783.65	787.00	3.00	FES	
G1	G2	3.26%	15	86	RCP	772.00	769.20	774.65	2.65	FES	
G2	G3	1.78%	18	58	EX RCP	769.20	768.17	772.90	3.70	DI	

LEGEND

- CB — CATCH BASIN, SEE DETAIL SHEET C07.04
- DI — DROP INLET, SEE DETAIL SHEET C07.04
- (A2) — STRUCTURE I.D. NUMBER

NOTES

TOP ELEVATION IS TOP OF RIM FOR MANHOLES, TOP OF GRATE FOR YARD INLETS, AND FINISH GRADE FOR CLEANOUTS.

ALL FES INLETS & OUTLETS SHALL BE RCP.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

smith sinnett ARCHITECTURE

T 919 781 6582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23953 KENNETH A. LORING 5-20-19

BID DOCUMENTS

VOLUME I

CLH DESIGN, P.A.
400 Regency Forest Drive
Suite 120
Cary, North Carolina 27518
Phone: (919) 319-0716
Fax: (919) 319-7016
NC: C-1595
PE: C-1595

TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN: 7708118367
Surrett Drive
Trinity, NC 27370

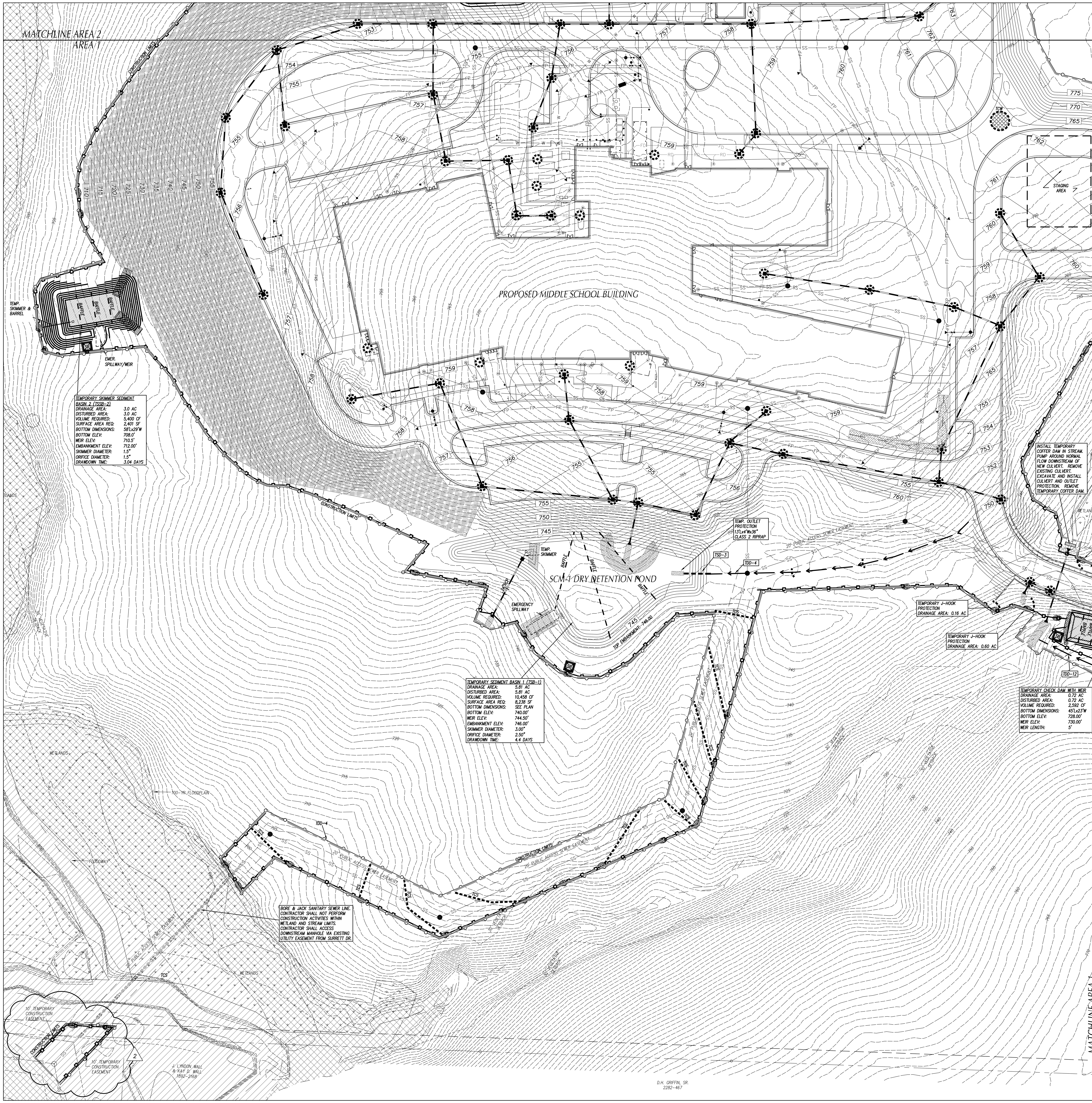
ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM #3 REVISIONS

DRAWN BY: KL, HB
CHECKED BY: RP

SITE GRADING PLAN - AREA 1

2017032 20 MAY 2019

C03.01



LEGEND

- TEMP. GRAVEL CONSTR. ENTRANCE SEE DETAIL SHEET C07.01.
- TEMP. INLET PROTECTION DEVICE SEE DETAIL SHEET C07.01.
- TEMP. DIVERSION DITCH / BERM SEE DETAIL SHEET C07.02.
- TEMP. SILT FENCE SEE DETAIL SHEET C07.01.
- TEMP. REINFORCED SILT FENCE OUTLET SEE DETAIL SHEET C07.01.
- PERMANENT OUTLET PROTECTION SEE DETAIL SHEET C7.02.
- TCW TEMP. CONCRETE WASHOUT AREA SEE DETAIL SHEET C07.01.
- TEMP. PLASTIC LINING, SEE TEMP. BASIN BAFFLES ON DETAIL SHEET C07.02.
- CD TEMP. CHECK DAM SEE DETAIL SHEET C07.01.
- TEMP. COFFER DAM SEE STREAM CROSSING/CULVERT INSTALLATION DETAIL SHEET C07.02.
- TEMP. J-HOOK PROTECTION SEE DETAIL SHEET C07.01.
- COCONUT MAT SLOPE PROTECTION SEE DETAIL SHEET C07.01.
- TSSB TEMP. SKIMMER SEDIMENT BASIN SEE DETAIL SHEET C07.02.
- EXISTING CONTOUR
- FINISHED CONTOUR
- TEMP. CONTOUR (TEMP. GRADES DURING CONSTR.)
- TEMP. ROCK PIPE INLET PROTECTION SEE DETAIL SHEET C07.01.
- CHANNEL LINING SEE DETAIL SHEET C07.02.
- SB TEMP. DEWATERING SILT BAG SEE DETAIL SHEET C07.01.
- TEMP. CHECK DAM WITH WEIR SEE DETAIL SHEET C07.02.
- TREE PROTECTION FENCE SEE DETAIL SHEET C07.01.
- TCS TEMP. COMPOST SOCK SEE DETAIL SHEET C07.01.
- TSD TEMP. SLOPE DRAIN SEE DETAIL SHEET C07.02.
- PROPOSED STORM SEWER PIPES
- EXISTING STORM SEWER PIPES
- CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED.

SELF-INSPECTION RULES

1. SELF-INSPECTION SHALL BE CONDUCTED AFTER EACH PHASE OF THE PROJECT, AND CONTINUED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
2. THE FINANCIALLY RESPONSIBLE PERSON AND/OR HIS AGENT WILL BE PERFORM SELF INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES USING NCDEQ'S SELF INSPECTION REPORT (WORKSHEET) AND THIS WILL BE KEPT ONSITE.
3. NOTIFICATION OF LAND RESOURCES SEDIMENT AND EROSION CONTROL SELF-INSPECTION PROGRAM: THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2006 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED. RULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TOOK EFFECT OCTOBER 1, 2010. THE SELF-INSPECTION PROGRAM IS SEPARATE FROM THE WEEKLY SELF-MONITORING PROGRAM OF THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES. THE FOCUS OF THE SELF-INSPECTION REPORT IS THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES ACCORDING TO THE APPROVED PLAN. THE INSPECTIONS MUST BE CONDUCTED AFTER EACH PHASE OF THE PROJECT, AND CONTINUED UNTIL PERMANENT GROUND COVER IS ESTABLISHED IN ACCORDANCE WITH NCGS 113A-54.1 AND 15A NCAC 4B.0131. THE SELF-INSPECTION REPORT FORM IS AVAILABLE AS AN EXCEL SPREADSHEET FROM http://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms. IF YOU HAVE QUESTIONS OR CANNOT ACCESS THE FORM, PLEASE CONTACT NCDEQ OFFICE AT 919-791-4200.
4. CONTRACTOR SHALL INSTALL AND MAINTAIN RAIN GAUGE ON SITE.
5. CONTRACTOR SHALL KEEP A COPY OF APPROVED EROSION & SEDIMENT CONTROL PLANS, APPROVAL LETTER, 401/404 DOCUMENTS FROM DWR/USACOE, NPDES PERMIT WITH A MINIMUM OF MOST RECENT 30 DAYS ON SITE UNTIL THE PROJECT IS CLOSED BY NCDEQ OFFICE. CONTRACTOR SHALL SUPPLY A TEMPORARY WASH STATION IF AREAS ALONG PUBLIC STREETS ARE NOT KEPT CLEAN. CONTRACTOR MUST KEEP AREAS IN PUBLIC USE CLEAN OF SEDIMENT.

SLOPE & SURFACE STABILIZATION

GROUND STABILIZATION SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO FOLLOWING SCHEDULE:

SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
PERIMITER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7-DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND HQW ZONES).

EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE (SECTION II.B(2) (b))

THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.

INSTALL TEMPORARY EXCELSIOR MATTING FOR STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER) AND AREAS OF CONCENTRATED FLOW (CHANNELS, DITCHES, SWALES, ETC.). UTILIZE TEMPORARY COCONUT MAT IN AREAS IDENTIFIED ON PLAN. REFER TO SPECIFICATION SECTION 312500 FOR MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.

MAT SLOPES IN SUMMER AND WINTER – GRADED SLOPES AND FILLS SHALL BE PROTECTED WITH A ROLLED EROSION CONTROL PRODUCT IF COMPLETED OUTSIDE OPTIMUM GERMINATION SEASONS, WHEN UNFAVORABLE WEATHER CONDITIONS PREVENT ESTABLISHMENT OF VEGETATIVE GROUND COVER.

MAINTENANCE PLAN

1. DURING ALL PHASES OF CONSTRUCTION, GROUNDCOVER ON EXPOSED SLOPES SHALL BE PROVIDED ACCORDING TO GROUND STABILIZATION TABLE (ABOVE) FOLLOWING COMPLETION OF ANY PHASE OF GRADING.
2. FINAL PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED ON ALL DISTURBED AREAS ACCORDING TO GROUND STABILIZATION TABLE (ABOVE) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
3. THE ABOVE REQUIREMENTS ARE THE MINIMUM NECESSARY TO MEET EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONTRACT DOCUMENTS INCLUDE ADDITIONAL SEEDING AND STABILIZATION REQUIREMENTS AND SCHEDULES WHICH MAY EXCEED THOSE ABOVE.
4. SLOPE EROSION CONTROL MATTING SHALL BE INSTALLED FOR TEMPORARY STABILIZATION DURING THE ESTABLISHMENT OF VEGETATIVE COVER ON ALL STEEP SLOPES (6:1 OR STEEPER). REFER TO MATERIAL SPECIFICATIONS. INSTALL MATTING PER MANUFACTURER'S INSTRUCTIONS.
5. ALL OTHER SEEDED AREAS SHALL BE MULCHED WITH STRAW AND TACKED WITH ASPHALT.

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL CITY OF TRINITY NCDOT AND NCDEQ STANDARDS, SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE. ALL OFF-SITE SOIL BORROW AND WASTE SITES SHALL BE PROPERLY PERMITTED FOR SUCH ACTIVITIES. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION OF SEDIMENT & EROSION CONTROL PERMIT FOR ANY OFF-SITE SITES TO OWNER PRIOR TO RELOCATING ANY STOCKPILE MATERIALS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR ARCHITECT.
4. TOTAL DISTURBED AREA: 29 AC.
5. ALL OPEN STORM PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER WORK STOPPAGE EACH DAY. SEE DETAIL SHEET C07.01.
6. ALL STORM DRAINAGE PIPES SHALL BE THOROUGHLY FLUSHED OF ALL SEDIMENT FOLLOWING SITE STABILIZATION. INTERIOR FLUSHING OF SYSTEM SHALL BE PERFORMED AS NEEDED TO MAINTAIN PROPER FUNCTIONING OF THE DRAINAGE SYSTEM.
7. THE INDICATED STAGING AREA IS INTENDED FOR VEHICLES AND NON-ERODIBLE MATERIALS ONLY. NO SOIL, SAND OR OTHER ERODIBLE, FINE GRAINED MATERIAL SHALL BE STORED OUTSIDE OF THE LIMITS OF THE SITE PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES.
8. SOIL AND OTHER MATERIALS SHALL ONLY BE TEMPORARILY STOCKPILED WITHIN THE CONSTRUCTION LIMITS PROTECTED BY SEDIMENT AND EROSION CONTROL DEVICES AND MEASURES. STOCKPILES SHALL BE STABILIZED AS REQUIRED AS INDICATED IN THE SLOPE & SURFACE STABILIZATION NOTES ON THIS PLAN.
9. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
10. TREE PROTECTION FENCING SHALL NOT BE MOVED AND THERE SHALL BE NO ENCROACHMENT INTO SUCH PROTECTED AREA(S) WITHOUT WRITTEN AUTHORIZATION OF THE COUNTY ZONING COMPLIANCE STAFF. ANY ACTIVITY (LANDSCAPING, FENCING, OR UTILITY INSTALLATION) SHOWN ON THE APPROVED PLANS IN A TREE PROTECTION AREA, SHALL ALSO NOT OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY ZONING COMPLIANCE STAFF. ANY UNAUTHORIZED ENCROACHMENT OR DISTURBANCE WITHIN THE BOUNDARIES OF A TREE PROTECTION AREA SHALL AUTOMATICALLY RESULT IN FINES AND THE REPLACEMENT OF ANY DAMAGED VEGETATION IN ACCORDANCE WITH THE LAND DEVELOPMENT ORDINANCE.
11. ROADSIDE DITCHES AND CHANNELS SHALL BE STABILIZED DAILY UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
12. INSTALL TEMPORARY MATTING TO TOP OF ALL SIDE SLOPES ON CHANNELS, DIVERSION DITCHES AND TEMPORARY SEDIMENT BASINS.

SEE SHEET C04.04 FOR CONSTRUCTION SEQUENCE.

smith sinnett ARCHITECTURE

T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

NORTH CAROLINA PROFESSIONAL SEAL 23953 ENGINEER KENNETH A. LORING 5-20-19

BID DOCUMENTS

VOLUME I

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 30" X 42" SHEET

CLH DESIGN, P.A.
400 Regency Forest Drive
Suite 120
Cary, North Carolina 27518
Phone: (919) 319-6716
Fax: (919) 319-7516
LA: C-106
PE: C-1595

TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN: 7708118367
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ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM #3 REVISIONS

DRAWN BY: KL, HB
CHECKED BY: RP

SITE EROSION CONTROL PLAN - AREA 1 LATE PHASE

2017032 20 MAY 2019

C04.05

MATCHLINE AREA 2
AREA 1

PROPOSED MIDDLE SCHOOL BUILDING

SCM-1 DRY DETENTION POND

COORDINATE UTILITY ROUTING WITH OTHER UTILITIES/TRADES.

CONNECT TO BUILDING FOUNDATION DRAIN, SEE ARCHITECTURAL PLANS.

GREASE TRAP BY P.C.

1" K-SOFT COPPER (DOMESTIC)

4" DIP (PRIVATE)

8" DIP (FIRE)

8" PVC (PRIVATE)

20' PUBLIC ACCESS SEWER EASEMENT

8" PVC (PUBLIC)

8" DIP (PUBLIC)

30' VEGETATIVE SETBACK

100-YR FLOODPLAIN

FLOODWAY

WETLANDS

10' TEMPORARY CONSTRUCTION EASEMENT

CONNECT TO EXISTING MANHOLE A1

10' TEMPORARY CONSTRUCTION UM EASEMENT
TOP: 690.7
IN: 683.3
SHELF: 683.6
OUT: 683.3

4' LYNDON WALL
B-KAY III WALL
1892-2168

D.H. GRIFFIN, SR.
2282-467

MATCHLINE AREA 1
AREA 4

UTILITY LEGEND

	EXISTING	PROPOSED
CHILLED WATER	------CW------	CW
ELECTRICAL (OVERHEAD)	------E------	E
ELECTRICAL (UNDERGROUND)	------UE------	UE
FOUNDATION DRAIN	------FD------	FD
GAS	------G------	G
SANITARY SEWER	------SS------	SS
TELEPHONE (OVERHEAD)	------T------	T
TELEPHONE (UNDERGROUND)	------UT------	UT
WATER	------W------	W
ROOF DRAIN	------RD------	RD
FIRE PROTECTION	------FP------	FP
STORM DRAIN	==========	
TREE PROTECTION FENCING, SEE EROSION CONTROL PLANS		
LIGHT POLE	LP	
UTILITY POLE	PP	
MANHOLE	MH	
CLEAN OUT	CO	
DROP INLET/CATCH BASIN	DI, CB	
FIRE HYDRANT	FH	
WATER VALVE	WV	
POST INDICATOR VALVE (PIV)		
FIRE DEPARTMENT CONNECTION (FDC)		
THRUST BLOCKING		
SANITARY SEWER STRUCTURE IDENTIFICATION		1

GENERAL NOTES-UTILITY

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL CITY OF TRINNITY AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. INSTALL WATERMAINS WITH A COVER OF NO LESS THAN 3-FT.
3. INSTALL SEWER MAINS WITH A COVER OF NO LESS THAN 3-FT TO FINISH GRADE IN NON-TRAFFIC AREAS, 4-FT TO FINISH GRADE IN TRAFFIC AREAS..
4. INSTALL ALL UTILITIES TO PROVIDE REQUIRED CLEARANCES AS INDICATED IN THE SPECIFICATIONS.
5. WATERLINES AND SEWER MAINS SHALL BE INSTALLED WITH A MINIMUM HORIZONTAL CLEARANCE OF 10-FT.
6. SEWER MAINS SHALL BE INSTALLED WITH A MINIMUM VERTICAL CLEARANCE OF 24-IN TO STORM DRAINAGE PIPES.
7. COORDINATE AND SCHEDULE INSTALLATION OF ALL UTILITIES WITH OTHER PRIME CONTRACTORS, UTILITY COMPANIES AND OTHER TRADES INCLUDING BUT NOT LIMITED TO: NATURAL GAS, ELECTRICITY, TELEPHONE AND CATV.
8. VERIFY EXISTING CONDITIONS AND CONNECTIONS TO EXISTING UTILITIES PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT IF ANY DISCREPANCIES ARE DISCOVERED.
9. CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGES DURING CONSTRUCTION AND SHALL MAKE REPAIRS AT NO EXPENSE TO THE OWNER.
10. ALL CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE NCSBC AND OSHA REQUIREMENTS.
11. THE CONTRACTOR SHALL PROVIDE AN AS-BUILT SURVEY OF ALL UTILITY AND STORM DRAINAGE IMPROVEMENTS FOLLOWING CONSTRUCTION.
12. CONTRACTOR SHALL PHASE DEMOLITION AND NEW CONSTRUCTION TO ENSURE UNINTERRUPTED ACCESS AND UTILITY SERVICE TO ADJACENT FACILITIES. COORDINATE SHORT-TERM, OFF-HOUR, TEMPORARY SHUT- DOWNS WITH THE OWNER.
13. SEE GENERAL NOTES ON EXISTING CONDITIONS AND DEMOLITION PLAN FOR REQUIREMENTS FOR REMOVAL AND PATCHING OF PAVEMENT FOR UTILITY INSTALLATION.
14. ALL ROOF DRAINS SHALL BE 6" PVC (SCH 40) @ 1.04% MIN. SLOPE UNLESS INDICATED OTHERWISE. USE DUCTILE IRON WHEN COVER IS LESS THAN 24-IN.
15. ALL SANITARY SEWER SERVICES SHALL BE 4" PVC (SCH 40) @1.04% MIN. SLOPE UNLESS INDICATED OTHERWISE. USE DUCTILE IRON WHEN COVER IS LESS THAN 24-IN.
16. ALL CONDENSATE LINES SHALL BE CONNECTED TO STORM DRAINAGE SYSTEM.
17. NO WORK SHALL BE PERFORMED ON RIGHT-OF-WAYS OR ADJACENT PROPERTIES UNTIL THE OWNER NOTIFIES CONTRACTOR IN WRITING OF PROCUREMENT OF APPROPRIATE PERMITS, EASEMENTS, AGREEMENTS, OR RIGHTS-OF-WAY.
18. RESTRAINED JOINT PIPING SHALL BE USED FOR THE LENGTH OF WATERLINE FROM MAIN TAP TO BACKFLOW PREVENTER.

KEY NOTES

(A) FIRE HYDRANT ASSEMBLY, SEE DETAIL SHEET C07.06.
(B) THRUST BLOCKING, TYP, SEE DETAIL SHEET C07.07.
(C) SANITARY SEWER MANHOLE, SEE DETAIL SHEET C07.08. SEE SANITARY SEWER PLAN AND PROFILES.
(D) EXTEND UTILITY TO WITHIN 5'-0" OF BUILDING WALL OR AS INDICATED ON PLUMBING PLANS. REFER TO PLUMBING PLANS FOR LOCATION AND INVERTS.
(E) EXTEND WATER MAIN TO 12-IN ABOVE FINISH FLOOR FOR FIRE PROTECTION/PLUMBING CONNECTION, SEE DETAIL SHEET C07.07. REFER TO TO FIRE PROTECTION/PLUMBING PLANS FOR EXACT LOCATION.
(F) CLEANOUT, SEE DETAIL SHEET C07.07.
(G) 10-IN AMES MODEL 3000SS DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C07.06. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.
(H) TWO 2" DOMESTIC WATER METERS SET IN MANIFOLD. METERS SET BY DAVIDSON WATER INC. SEE DETAIL SHEET C07.07.
(I) DOWNSPOUT CONNECTION, SEE DETAIL SHEET C07.04.
(J) GATE VALVE AND VALVE BOX, SEE DETAIL SHEET C07.06.
(K) CONDENSATE RELIEF BASIN, SEE DETAIL SHEET C07.05.
(L) POST INDICATOR VALVE W/ TAMPER SWITCH, SEE SPECS.
(M) 1" NON-FREEZE YARD HYDRANT, SEE DETAIL SHEET C07.06.
(O) FIRE DEPARTMENT CONNECTION, SEE DETAIL SHEET C07.07.
(P) 3-IN ZURN-WILKINS MODEL 375 REDUCED PRESSURE BACKFLOW ASSEMBLY (RPA) WITHIN HEATED ENCLOSURE, SEE DETAIL SHEET C07.07. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.
(Q) INCREASER/REDUCER FITTING.
(R) WYE FITTING. SEE SPECS.
(S) DOME GRATE AND IN-LINE DRAIN, SEE DETAIL SHEET C07.04.
(T) ELEVATOR PUMP HOLDING TANK BY P.C. SEE PLUMBING PLANS FOR ADDITIONAL INFORMATION.
(U) BORE & JACK 250-LF 16" STEEL ENCASEMENT PIPE. INSTALL 8" DIP SANITARY SEWER MAIN WITH RESTRAINED JOINTS. SEE SANITARY SEWER PLAN AND PROFILE SHEETS.
(V) ~~DOWNSPOUT TO SPLASH ON GRADE. SEE ARCHITECTURAL PLANS FOR SPLASH BLOCK DETAIL.~~
(W) APPROXIMATE LOCATION GAS METER. SEE MECHANICAL PLANS FOR ADDITIONAL INFORMATION.
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(Y) ~~AIR RELEASE VALVE, SEE DETAIL SHEET C07.06.~~
(Z) GAS SERVICE LINE BY PSNC, COORDINATE EXACT LOCATION WITH LOCAL UTILITY COMPANY.
(AA) FLAT GRATE AREA DRAIN, SEE DETAIL SHEET C07.04.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

MAGNETIC

smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23953 KEITH A. CRAWFORD 12-20-19

BID DOCUMENTS

VOLUME I

CLH DESIGN, P.A.
400 Regency Forest Drive
Suite 120
Cary, North Carolina 27518
Phone: (919) 319-6716
Fax: (919) 319-7916
PA: C-1166
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DRAWN BY: KL, HB
CHECKED BY: RP

SITE UTILITY PLAN - AREA 1

2017032 20 MAY 2019

C05.01

UTILITY LEGEND

	EXISTING	PROPOSED
CHILLED WATER	------CW------	——CW——
ELECTRICAL (OVERHEAD)	------ E ------	—— E ——
ELECTRICAL (UNDERGROUND)	------UE------	——UE——
FOUNDATION DRAIN	------FD------	——FD——
GAS	------ G ------	—— G ——
SANITARY SEWER	------SS------	——SS——
TELEPHONE (OVERHEAD)	------ T ------	—— T ——
TELEPHONE (UNDERGROUND)	------UT------	——UT——
WATER	------ W ------	—— W ——
ROOF DRAIN	------RD------	——RD——
FIRE PROTECTION	------FP------	——FP——
STORM DRAIN	══════	▬▬▬▬
TREE PROTECTION FENCING, SEE EROSION CONTROL PLANS		—o——o—
LIGHT POLE	LP	
UTILITY POLE	PP	
MANHOLE	MH	
CLEAN OUT	CO	
DROP INLET,CATCH BASIN	DI, CB	
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KEY NOTES

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- (AA) FLAT GRATE AREA DRAIN, SEE DETAIL SHEET C07.04.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MAGNETIC

smith sinnett ARCHITECTURE

T 919 781 8582

4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607

info@smithsinnett.com

NORTH CAROLINA PROFESSIONAL SEAL 23953 ENGINEER KENNETH A. LORING 5-20-19

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VOLUME I

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CLH DESIGN, P.A.
400 Regency Forest Drive
Suite 120
Cary, North Carolina 27518
Phone: (919) 319-6716
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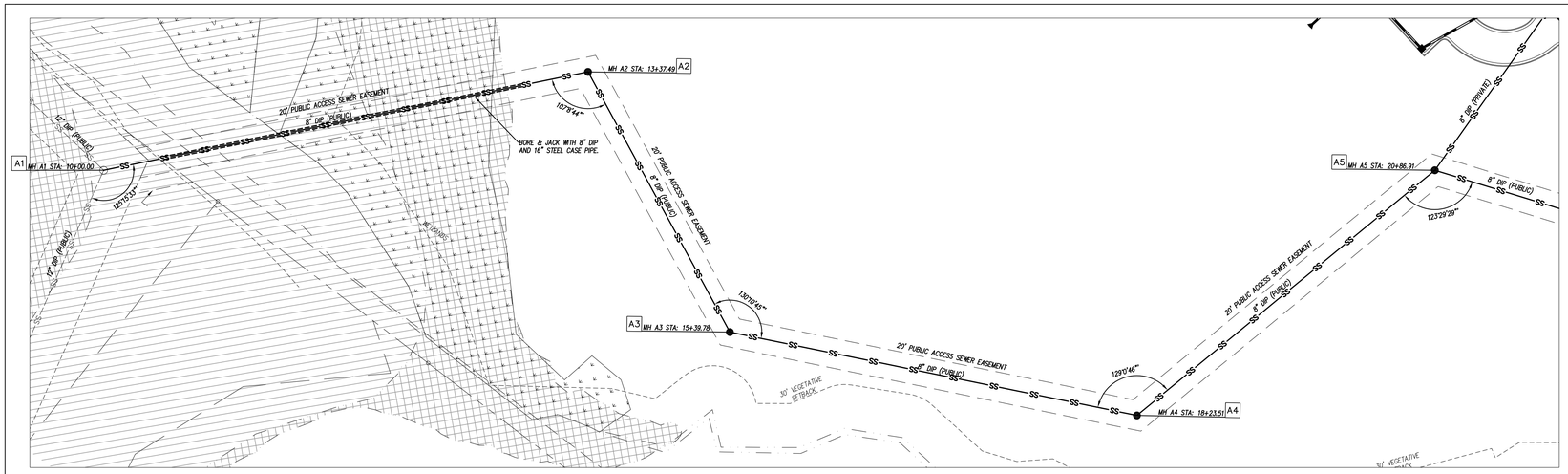
ID	DATE	DESCRIPTION
1	06/06/19	DAVIDSON WATER REVISIONS
2	06/14/19	ADDENDUM #3 REVISIONS

DRAWN BY: KL, HB
CHECKED BY: RP

SITE UTILITY PLAN - AREA 3

2017032 20 MAY 2019

C05.03

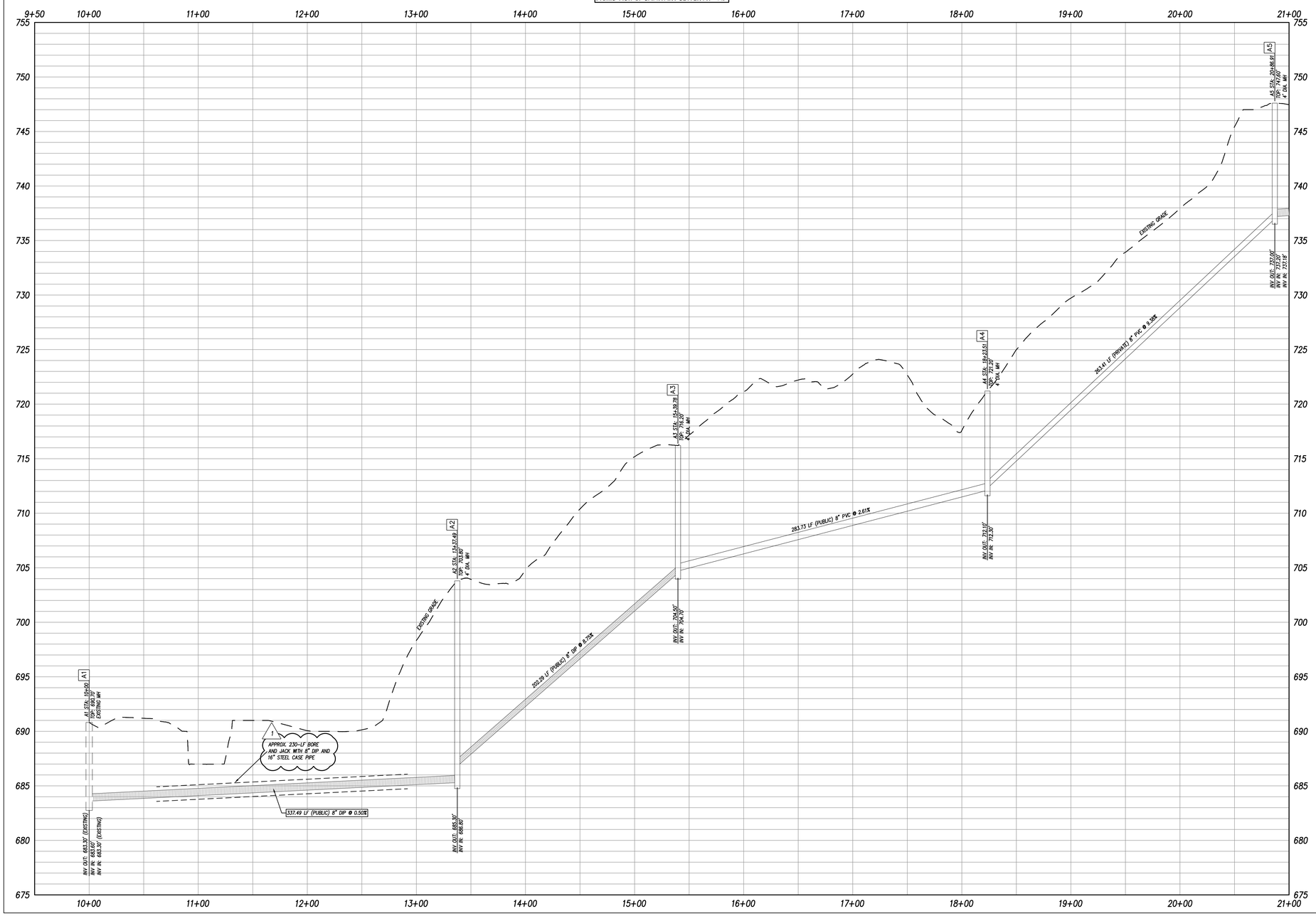


GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Profile View of SANITARY SEWER A1 - A5



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
H: 1 inch = 40 ft.
V: 1 inch = 4 ft.

smith sinnett ARCHITECTURE
T 919 781 6582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

NORTH CAROLINA PROFESSIONAL SEAL 23953 ENGINEER KENNETH A. LOVING
5-20-19

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VOLUME I

CLH DESIGN, P.A.
400 Regency Forest Drive
Suite 120
Cary, North Carolina 27518
Phone: (919) 319-6716
Fax: (919) 319-7016
NC: C-1165
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DRAWN BY: KL, HB
CHECKED BY: RP

SANITARY SEWER PLAN AND PROFILE

2017032 20 MAY 2019

C05.05

Addendum #1

Project: Trinity Middle School
Smith Sinnett Architects Project #: 2017027
Issue Date: May 14, 2019
Issued By: Sean A. Dolle, Grounded Engineering

The following is a list of changes that have been made to the plans since the issuance of bid documents. These changes are as a result of Town review comments.

Changes to Plans:

1. The NPDES notes have been removed from sheet C0-01. New NPDES notes have been provided on new sheets C4-10 and C4-11.
2. General Note #15 on sheet C0-01 has been added.
3. Site Demolition Plan Note #5 has been revised on sheet C0-01.
4. A general note has been added at the beginning of the Construction Sequence on sheet C0-01.
5. The proposed Disturbed Area has been revised on sheet C0-01.
6. The limits of disturbance have been adjusted on sheet C4-00.
7. Some temporary silt fence has been added to sheet C4-00.
8. Sheets C4-10 and C4-11 have been added to the set.
9. The proposed waterline location has been shifted the west. The waterline connection to existing waterline has been revised. The blow off design at the end of the proposed waterline has been revised. (sheets C8-00 and C8-01)
10. The water meter reconnections and new meters have been adjusted on sheets C8-00 and C8-01.
11. Clarification notes have been added for the existing utility poles along the proposed waterline routes on sheets C8-00 and C8-01.
12. The waterline profile has been adjusted on sheets C8-00 and C8-01. An approximate elevation of the existing edge of pavement has also been shown on these sheets in the profile.
13. A new fire hydrant has been added near STA 108+80.
14. The fire hydrant previously shown at the driveway entrance to the school (approx. STA 114+75) has been relocated to be off of the fire line running into the project site. Refer to plans by CLH Design for more information.
15. Sheet C9-11 has been added to the set to provide a temporary silt fence detail and erosion control maintenance requirements.

P.O. Box 37132
Raleigh, NC 27627
www.grounded-engineering.com
919.438.3694
grounded ENGINEERING

Attachments:

- C0-01 (dated 06.14.2019)
- C0-02 (dated 06.14.2019)
- C1-00 (dated 06.14.2019)
- C4-00 (dated 06.14.2019)
- C4-10 (dated 06.14.2019)
- C4-11 (dated 06.14.2019)
- C8-00 (dated 06.14.2019)
- C8-01 (dated 06.14.2019)
- C9-10 (dated 06.14.2019)
- C9-11 (dated 06.14.2019)
- C9-30 (dated 06.14.2019)

End of Document

CONSTRUCTION SEQUENCE

THE CONTRACTOR SHALL NOT BEGIN ANY CONSTRUCTION WORK ASSOCIATED WITH THE OFF-SITE WATERLINE EXTENSION UNTIL ALL REQUIRED PERMITS ARE IN HAND AND ALL REQUIRED EASEMENTS HAVE BEEN SECURED.

1. OBTAIN A SEDIMENTATION & EROSION CONTROL PERMIT FROM NCDEQ.
2. PRIOR TO BEGINNING CONSTRUCTION (INCLUDING DEMOLITION), THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING ON-SITE WITH NCDEQ INSPECTOR AND OWNER'S REPRESENTATIVES. THE CONTRACTOR SHALL PROVIDE EVERYONE WITH A MINIMUM OF 72 HOURS NOTICE FOR ALL ON-SITE MEETINGS.
3. FOLLOWING THE MEETING, IF APPROVED BY NCDEQ, THE CONTRACTOR SHALL PROCEED WITH INSTALLATION OF EROSION CONTROL MEASURES. CONTRACTOR SHALL ONLY DEMOLISH SITE IMPROVEMENTS AS NECESSARY TO INSTALL PROPOSED EROSION CONTROL MEASURES.
4. THE CONTRACTOR SHALL SCHEDULE AN EROSION CONTROL MEASURE INSPECTION WITH NCDEQ INSPECTOR.
5. UPON APPROVAL OF EROSION CONTROL MEASURES, THE CONTRACTOR SHALL BEGIN WITH THE INSTALLATION OF THE PROPOSED OFF-SITE WATERLINE. THE CONTRACTOR SHALL INSTALL CHECK DAMS WITHIN ALL AREAS OF DISTURBANCE AS THE AREAS ARE DISTURBED.
6. ONCE GRADING IS COMPLETE, ALL IMPROVEMENTS HAVE BEEN INSTALLED AND THE SITE IS STABILIZED, THE CONTRACTOR SHALL CALL THE NCDEQ INSPECTOR TO REQUEST AN INSPECTION AND OBTAIN APPROVAL TO REMOVE TEMPORARY MEASURES. DO NOT REMOVE ANY TEMPORARY MEASURES WITHOUT PRIOR NCDEQ INSPECTOR APPROVAL.
2. ONCE ALL WATERLINE CONSTRUCTION IS COMPLETED, THE CONTRACTOR SHALL PROVIDE PERMANENT SEEDING WHERE TEMPORARY MEASURES HAVE BEEN REMOVED AND GROUND COVER IS NOT ADEQUATE.
3. ONCE THE WATERLINE CONSTRUCTION IS COMPLETE, TEMPORARY MEASURES ARE REMOVED, THE SITE IS STABILIZED, THE CONTRACTOR SHALL CALL NCDEQ INSPECTOR TO SCHEDULE A FINAL INSPECTION. FULL STABILIZATION ON THE ENTIRE SITE IS REQUIRED IN ORDER TO OBTAIN A CERTIFICATE OF OCCUPANCY.
4. ONCE THE FINAL INSPECTION IS APPROVED, CLOSE THE SEDIMENTATION & EROSION CONTROL PERMIT AND OBTAIN A CERTIFICATE OF COMPLETION FROM NCDEQ.

THE NCDEQ INSPECTOR ASSIGNED TO THIS PROJECT IS:
NAME: TBD
EMAIL ADDRESS: TBD
PHONE #: 919.791.4200

EROSION CONTROL NOTES

1. REFER TO GENERAL NOTES.
2. THE CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE APPROVED CONSTRUCTION DOCUMENTS, BUT MAY ADJUST AS NECESSARY BASED ON FIELD CONDITIONS. HOWEVER, ANY DEVIATIONS FROM THE APPROVED EROSION CONTROL PLAN SHALL BE APPROVED BY NCDEQ.
3. THE CONTRACTOR SHALL MAINTAIN EROSION CONTROL MEASURES FOR THE LIFE OF THE PROJECT AND SHALL ENSURE THEY ARE CONTINUALLY IN GOOD WORKING CONDITION.
4. THE CONTRACTOR SHALL ENSURE GRADING OPERATIONS ARE PERFORMED IN A MANNER THAT DO NOT ALLOW ANY SEDIMENT OUTSIDE OF THE PROJECT LIMITS OR OFF-SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROMPT REMOVAL OF ANY MUD, SOILS AND CONSTRUCTION RELATED MATERIALS DEPOSITED UPON THE SURFACES OF THE PUBLIC RIGHT-OF-WAY.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL SELF-INSPECTIONS AND SELF-MONITORING IN ACCORDANCE WITH CONDITIONS OF NPDES PERMIT NO. NCG010000 AND NORTH CAROLINA GENERAL STATUE 113A-54.1(e) AND 15A NCAC 04B .0131 AND SHALL COMPLETE THE REQUIRED SELF-INSPECTION FORM FORM FOUND ON THE DEMLR WEBSITE (http://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms)
6. SELF-INSPECTIONS FOR EROSION AND SEDIMENTATION CONTROL MEASURES ARE TO BE PERFORMED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OR EVERY RAIN EVENT GREATER THAN 0.5 INCH. ANY NECESSARY REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN MEASURES AS DESIGNED. ALL ESC MEASURES SHALL BE MAINTAINED AS SPECIFIED IN THE CONSTRUCTION DETAILS ON THIS PLAN. A RAIN GUAGE SHALL BE INSTALLED AT THE PROJECT SITE FOR MONITORING.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL NECESSARY PERMITS ASSOCIATED WITH OFF-SITE BORROW SOURCES, IF NEEDED.
8. THE FOLLOWING MUST BE KEPT ON SITE UNTIL THE E&SC PLAN HAS BEEN CLOSED OUT BY LAND QUALITY: PREVIOUS 30 DAYS OF SELF INSPECTION REPORTS, RAIN GUAGE, APPROVAL CERTIFICATE/LETTER, APPROVED PLAN, AND NPDES PERMIT. THESE ITEMS SHOULD BE LOCATED IN AN ACCESSIBLE PERMIT BOX NEAR THE MAIN CONSTRUCTION ENTRANCE. FAILURE TO MAINTAIN THESE ON SITE VIOLATES THE NPDES PERMIT.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING DUST POLUTION FROM LEAVING THE PROJECT LIMITS.
10. CONCRETE DUST/WASTE/WASTEWATER MUST BE CLEANED OFF THE ROADWAY BY DRY SWEEPING METHODS ONLY. WATER MUST NOT BE USED TO WASH SEDIMENT OFF OF ROADS, DRIVEWAYS, OR PARKING LOTS.
11. THE CONTRACTOR SHALL NOT REMOVE ANY EROSION CONTROL MEASURES IN ANY PHASE OF CONSTRUCTION PRIOR TO APPROVAL BY THE NCDEQ INSPECTOR.
12. NO ON-SITE FUEL STORAGE SHALL BE LOCATED WITHIN 50' OF ANY EXISTING OR PROPOSED STORM DRAINAGE INLET. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITTING, SAFETY MEASURES AND APPROVALS NEEDED FOR ON-SITE FUEL STORAGE.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR APPLYING ALL GROUND COVER PER CONDITIONS OF THE NPDES PERMIT OR IN CRITICAL AREAS, AT THE END OF THE DAY.

PROPOSED DISTURBED AREA = 1.2 AC

EROSION CONTROL MAINTENANCE CONTACT INFORMATION

RANDOLPH COUNTY SCHOOL SYSTEM
2222-C SOUTH FAYETTEVILLE STREET
ASHEBORO, NC 27205
ATTN: MARTY TROTTER, ASSISTANCE SUPERINTENDENT
OPERATIONS DIVISION
EMAIL: MTROTTER@RANDOLPH.K12.NC.US
PHONE: 336.633.5183
FAX: 336.663.5155

NARRATIVE

THIS PROPOSED PROJECT IS THE CONSTRUCTION OF A PUBLIC WATERLINE ALONG SURRETT DRIVE TO SERVE THE PROPOSED TRINITY MIDDLE SCHOOL PROJECT.

EROSION CONTROL MEASURES INCLUDE GRAVEL CHECK DAMS AND WATTLE CHECK DAMS.

THE CONTRACTOR SHALL FAITHFULLY MAINTAIN ALL SEDIMENTATION AND EROSION CONTROL MEASURES THROUGHOUT THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED BY NCDEQ LAND QUALITY SECTION, IF WARRANTED.

GRADING & DRAINAGE NOTES

1. REFER TO GENERAL NOTES.
2. COMPACTION OF SOILS SHALL BE PERFORMED IN ACCORDANCE WITH NCDOT STANDARDS AND SPECIFICATIONS AND/OR RECOMMENDATIONS OF A LICENSED GEOTECHNICAL ENGINEER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTING AND GRADING ALL PROPOSED IMPROVEMENTS IN A MANNER THAT ALLOWS FOR POSITIVE DRAINAGE AWAY FROM THE BUILDING. PONDING WATER ANYWHERE ON SITE IS PROHIBITED.
4. ALL NEW GRADING SHALL MEET EXISTING GRADES WITH SMOOTH TRANSITIONS.
5. EXISTING STORM DRAINAGE AND EXISTING UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES AND STORM DRAINAGE PRIOR TO MOBILIZATION AND REPORT THE RESULTS TO THE OWNER'S REPRESENTATIVE.
6. NO STATEMENT IS MADE OR IMPLIED THAT THE ON-SITE GRADING AND EARTHWORK INDICATED ON THESE DRAWINGS IS BALANCED.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING ALL EXISTING STRUCTURES WITHIN THE PROJECT LIMITS TO MATCH THE ADJACENT GRADE.

GENERAL NOTES

1. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM WITH DAVIDON WATER, INC AND NCDOT STANDARDS AND SPECIFICATIONS.
2. EXISTING BOUNDARY, TOPOGRAPHY, AND EXISTING CONDITIONS TAKEN FROM SURVEY PROVIDED BY NCDOT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING, COORDINATING, AND PAYMENT FOR ALL NECESSARY LOCATING SERVICES INCLUDING INDEPENDENT LOCATING SERVICES. THE CONTRACTOR SHALL HAVE ALL EXISTING UTILITIES LOCATED AT LEAST 48 HOURS PRIOR TO BEGINNING DEMOLITION, EXCAVATION, OR ANY OTHER FORM OF CONSTRUCTION. THE CONTRACTOR SHALL IMMIEDIATELY NOTIFY THE OWNERS REPRESENTATIVES OF ANY DISCREPANCIES OR CONFLICTS.
4. ALL SUB-SURFACE UTILITIES IDENTIFIED ON THESE CONSTRUCTION DOCUMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION BASED ON SURVEY INFORMATION, FIELD OBSERVATIONS, AND OTHER RECORD DRAWINGS WHICH MAY BE AVAILABLE. THESE DRAWINGS DO NOT NECESSARILY SHOW ALL EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL UTILITIES.
5. EXISTING IMPROVEMENTS DAMAGED OR DESTROYED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED OR REPLACED TO ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND COORDINATING INSPECTIONS, CERTIFICATIONS, AND OTHER REQUIREMENTS WHICH MUST BE MET UNDER THIS CONTRACT.
7. THE CONTRACTOR SHALL MAINTAIN AS-BUILT DRAWINGS TO RECORD THE ACTUAL LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS WILL BE PROVIDED TO THE OWNER'S REPRESENTATIVE AT REGULAR INTERVALS THROUGHOUT THE PROJECT FOR RECORD KEEPING AND AT THE CONCLUSION OF CONSTRUCTION.
8. IF DEPARTURES FROM THE PROJECT DRAWINGS OR SPECIFICATIONS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THERE FOR SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR REVIEW. NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE OWNER'S REPRESENTATIVE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RELOCATION OF ANY EXISTING UTILITY INFRASTRUCTURE REQUIRED TO COMPLETE ANY PORTION OF CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE COORDINATION AND COSTS OF ASSOCIATED WORK.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS AND RUBBISH CAUSED BY THE CONTRACTOR. ALL DEBRIS SHALL BE REMOVED FROM THE PROJECT SITE ON A DAILY BASIS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL REQUIRED TRAFFIC CONTROL MEASURES IN COMPLIANCE WTIH MUTCD AND NCDOT STANDARDS AND SPECIFICATIONS.
12. THE CONTRACTOR SHALL NOT INTERRUPT UTILITY SERVICES TO ANY OF THE ADJACENT PROPERTIES WITHOUT PRIOR NOTICE, COORDINATION, AND APPROVAL BY THE APPROPRIATE AUTHORITY HAVING JURISDICTION.
13. THE CONTRACTOR SHALL NOT INTERRUPT ACCESS TO PROPERTIES WITHOUT PRIOR NOTICE AND COORDINATION.
14. THE CONTRACTOR SHALL NOT STORE VEHICLES, EQUIPMENT, AND/OR CONSTRUCTION RELATED MATERIALS WITHIN THE PUBLIC RIGHTS-OF-WAY.
15. THE CONTRACTOR SHALL NOT BEGIN ANY CONSTRUCTION WORK ASSOCIATED WITH THE OFF-SITE WATERLINE EXTENSION UNTIL ALL REQUIRED PERMITS ARE IN HAND AND ALL REQUIRED EASEMENTS HAVE BEEN SECURED.
16. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND/OR METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.

SITE DEMOLITION PLAN NOTES

1. REFER TO GENERAL NOTES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING APPROPRIATE SIGNAGE AND MEASURES TO SECURE THE CONSTRUCTION SITE AND MAINTAIN SAFETY FOR ALL PARTIES.
3. THE CONTRACTOR SHALL REMOVE CONCRETE (WHERE REQUIRED) TO THE FIRST COLD JOINT OR SAW CUT TO OBTAIN A CLEAN EDGE.
4. THE CONTRACTOR SHALL SAW CUT ASPHALT (WHERE REQUIRED) TO OBTAIN A CLEAN EDGE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING EVERYTHING WITHIN THE CLEARING LIMITS INCLUDING TREES, STUMPS, TRASH, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF ALL PERMANENT FEATURES IN CONFLICT WITH THE PROPOSED IMPROVEMENTS INCLUDING BUT NOT LIMITED TO SIGNS, FENCES, AND MAILBOXES.
6. CLEANOUTS AND WATER VALVES LOCATED IN AREAS OF DEMOLITION OR SUBSEQUENT CONSTRUCTION SHALL BE PROTECTED FROM DAMAGE AND ADJUSTED TO BE FLUSH WITH NEW GRADE.
7. CLEAN SOILS SHALL BE UTILIZED FOR BACKFILL. COMPACTION OF THESE SOILS SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A GEOTECHNICAL ENGINEER.
8. ALL ITEMS DESIGNATED TO BE REMOVED SHALL BE REMOVED COMPLETELY, INCLUDING ALL SUBGRADE MATERIALS DIRECTLY ASSOCIATED WITH ITEMS TO BE REMOVED.
9. ANY MATERIALS REMOVED AS PART OF DEMOLITION FOR THIS PROJECT SHALL BE PROPRELY DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL LAWS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY TEMPORARY SHORING AND STRUCTURAL STABILIZATION. THESE PLANS DO NOT PROVIDE ANY STRUCTURAL ENGINEERING RECOMMENDATIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING APPROPRIATE TRAFFIC CONTROL MEASURES TO CONTROL CONSTRUCTION TRAFFIC IN AND OUT OF THE PROJECT SITE INCLUDING FLAGGERS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISCONNECTION AND REMOVAL OF ALL INACTIVE INFRASTRUCURE WITHIN THE AREA OF DEMOLITION.
13. IF CONSTRUCTION MEANS AND METHODS REQUIRE ANY TEMPORARY PUBLIC LANE OR SIDEWALK CLOSURES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM NCDOT.

UTILITY NOTES

1. REFER TO GENERAL NOTES.
2. EXISTING UTILITIES IN CONFLICT WITH PROPOSED IMPROVEMENTS SHALL BE REMOVED OR RELOCATED.
3. THIS PLAN IS DIAGRAMMATIC AND REPRESENTS THE APPROXIMATE LOCATION OF UTILITIES UNLESS SPECIFICALLY DIMENSIONED. THE CONTRACTOR SHALL COORDINATE THE ACTUAL AND PROPOSED LOCATION OF UTILITIES TO AVOID CONFLICTS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING ALL EXISTING UTILITY STRUCTURES (MANHOLES, VALVES, METER BOXES, ETC.) WITHIN THE PROJECT LIMITS TO MATCH THE ADJACENT GRADE.
5. ALL UTILITY RELOCATIONS SHOWN ARE SCHEMATICALLY DRAWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION AND RELOCATION OF THE LINES IN A MANNER THAT CONFORMS WITH ALL APPLICABLE LOCATION, SEPARATION AND DEPTH REQUIREMENTS.

ALL WATERLINE CONSTRUCTION SHALL CONFORM WITH DAVIDSON WATER, INC. STANDARDS AND SPECIFICATIONS. ALL CONSTRUCTION INSIDE OF THE PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH NCDOT STANDARDS AND SPECIFICATIONS.

REFER TO SHEET C-001 FOR PROJECT AND SHEET RELATED NOTES. REFER TO SHEET C-002 FOR DAVIDSON WATER NOTES.

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smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

grounded ENGINEERING
4909 Liles Road
Raleigh, NC 27606
919.438.3694 (o)
Firm License C-3898

NORTH CAROLINA PROFESSIONAL SEAL 026363 ENGINEER SEAN A. DOLLE
14 JUNE 2019

BID SET

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 24" X 36" SHEET

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

PARCEL PIN 7708118367
SURRETT DRIVE
TRINITY, NC 27370

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06.14.19	REV. PER REVIEW

DRAWN BY: SAD
CHECKED BY: SAD

SITE NOTES

2017027 20 MAY 2019

C0-01

03/7/16

GENERAL MATERIAL SPECIFICATIONS

ALL MATERIALS MUST MEET OR EXCEED AWWA STANDARDS

All the parts/components that come in contact with water must meet NSF 61/NSF 372 (new lead free requirements).

1. Pipe; SDR 17 Lengths 20' Max. 2", 3". Pipe must have NSF/PW seal stamped on it.
2. Pipe; SDR 21 Lengths 20' Max. 2", 3", 4". Pipe must have NSF/PW seal stamped on it.
3. Pipe; Ductile Iron P.C. 350 6", 8", 10", 12", 16".
4. Valves; AWWA Standard specifications. Valves shall open left, non-rising stem. 200 PSI working pressure iron body,resilient seat gate valve 2", 3", 4", 6", 8", Mueller, M & H, American Darling, Kennedy.
5. Fire Hydrants; AWWA Type Dry Top National Standard, Traffic type. 4 1/2" valve opening, 1 1/2" pent., two 2 1/2" openings, one 4 1/2" opening, bronze to bronze seat, yellow barrel, red bonnet caps, not less than 3' 6" bury, open left. Mueller, Super Centurion 200, M & H #129, American Darling, MARK 73-1, Kennedy, K81A. AWWA C502
6. Fittings; Ductile Iron
   Push on, M.J.
   All fire hydrants shall branch off with hydrant tee and and most stub outs.
7. All MIPX Bell Adapters 2" and 3" shall be Harco.
8. All threaded pipe (nipples etc.) shall be brass 2" and 3".
9. Valve boxes 5 1/4" cast iron with WATER written on the lid, screw type.
10. Meter box plastic 12" deep Brooks #1419-12, Jones, Meter box lid, solid cast iron 15 lb. min.
11. Linesetter; Ford LSVBHH41-233W, Mueller B-2418F-2A with H-14222 and H-14227 end pieces.
12. Tubing; Type K Copper ASTM B-88.
13. Corporation stops; Ford F-1000, Mueller H-15008.
14. Service saddles; Muller H-134, Ford S70, CC Threads.
15. Tapping sleeves Stainless Steel, full rubber back, JCM, Romac-SST, Ford, Smith-Blair.

03/07/16

ENGINEER'S NOTES

1. Minimum 3 feet cover on water lines, a maximum of 4 feet. (SEE TRENCH SECTION AND LINESETTER INSTALLATION TYPICAL)
2. Water line shall be placed at least 3 feet from edge of pavement but no greater than 5 feet from edge of pavement. (SEE TRENCH SECTION AND LINESETTER INSTALLATION TYPICAL)
3. Special care should be take at cul-de-sacs to keep the water line the proper distance from the pavement. (SEE CUL-DE-SAC TYPICAL)
4. Water lines 6" and over shall be Ductile Iron.
5. The developer is responsible for the installation of taps or encasements on the long side when the subsurface of the roadway cannot be bored. (SEE SERVICE ENCASEMENT TYPICALS)
6. The maximum distance for a 2" line is 500'. The maximum number of taps on a 2" line is 6. (SEE CUL-DE-SAC TYPICAL)
7. Minimum fire flow shall be 500 gallons per minute at 30 P.S.I.
8. Water mains running under the pavement are to be Ductile Iron.
9. Fire Hydrants shall be spaced no more than 900 feet apart (SOME TYPES OF DEVELOPMENTS MAY REQUIRE CLOSER SPACING).
10. At all creek crossings where the water line is run through or under the creek, there shall be 5 foot cover and steel encasement pipe, D.I. used as a carrier.
11. All lines, smaller than 6", with a pressure of 100 psi (static or dynamic) or greater, shall be constructed of ducile iron. (TYPE OF MATERIAL SHALL BE DETERMINED BY DAVIDSON WATER, INC.)
12. Provide Davidson Water, Inc. with a digital copy of the street/water line layout.
13. Before Engineer writes letter for verification of construction, Davidson Water, Inc. Waterline Represenative, Engineer or agent and contractor, shall perform a final inspection.

03/7/16

INSTALLATION SPECIFICATIONS

1. Work to be performed shall consist of furnishing and installing complete and ready for service all water main and appurtenances in accordance with the contract plans and specifications. Prior to commencing work, the Contractor will provide 2 working days notice to Davidson Water Inc., NCDOT, and all other appropriate utility companies.
2. Trench excavation in rock shall be a minimum of 2 feet wider than the nominal pipe diameter. Excavation shall be 6" below the proposed invert of the PVC pipe and backfilled(cushioned) with clean soil or sand.
3. Backfill along sides and immediately over pipe by hand. Backfill material around pipe shall be free of rocks and other debris. Trench backfill under existing or proposed paving and road shoulders shall be compacted to a density of 95 percent of maximum dry density.
4. Encasement pipe shall be installed by dry boring and jacking. Casing diameter, length, and wall thickness shall be as shown on plans. Materials and workmanship in the existing or proposed NCDOT right of way shall conform to NCDOT standards and specifications. The contractor making the bored crossing shall notify NCDOT prior to the start of work with enough notice for NCDOT to provide inspectors.
5. Water mains shall be laid at least 10 feet laterally from existing or proposed sanitary sewers. Water mains shall have a minimum of 18" vertical separation over sewer mains. Where this separation is not possible or the water main is laid under the sewer main, both the water and sewer pipe shall be ductile iron pipe. Center pipe spans at point of intersection in order to have 10 feet from water line joint to point of intersection.
6. Minimum cover for water mains shall be 36 inches. Maximum cover shall be 48 inches. Minimum trench width shall be pipe diameter plus 18 inches. (SEE TRENCH SECTION AND LINESETTER TYPICAL)
7. All pipe shall be thoroughly cleaned of all earth material and rubbish before being placed in the trench. Bell holes will be dug at each joint. Pipe shall be placed on firm, smooth foundation to prevent subsequent settlement.
8. Concrete thrust blocking shall be constructed at all bends, tees, reducers, and dead ends and where conditions warrant. All fittings and accessories to be wrapped with polyethylene film prior to placing blocking. (SEE BLOCKING TYPICALS)
9. Hydrants shall be set plumb as indicated on the drawings with the pumper connection 18 inches above grade. The back of the hydrant, opposite the pipe connection, shall be firmly blocked against the vertical face of the trench with poured-in-place concrete to prevent the hydrant from blowing off the line. In fill areas or soils that are not solid hydrants shall be rodded or restrained by mega-lug using Ductile Iron pipe not PVC. Clean crushed stone or gravel shall be placed around the base of each hydrant above the supporting foundation and to within 12 inches of the ground line. Stone or gravel shall extend at least 10 inches away from the hydrant barrel in all directions. Hydrants shall be opened and flushed prior to pressure testing of the lines. SEE HYDRANT INSTALLATION TYPICAL)

10. Valve box assembly shall be set plumb, true and to grade. (SEE VALVE INSTALLATION TYPICAL)
11. All water mains shall be pressure tested with a test pressure at the high point of the main twice the working pressure or 200 PSI, whichever is greater. Test pressure shall be maintained for a minimum of 3 hours. Make up water shall not exceed the following amounts in gallons per 1000 feet of main: 2" line - .50, 3" line – 0.74, 4" line - 1.11, 6" line - 1.65, 8" line 2.22, 12" line-3.3, 16" line – 3.96 and 24" line – 5.97.
12. All water mains shall be flushed and disinfected prior to being put in service. Flushing shall be accomplished with sufficient water velocity (Minimum of 2.5 fps) to thoroughly clean the main. The mains shall be disinfected using a chlorine equal to or greater than 50 milligrams per liter (50 ppm). The chlorine solution shall remain in the mains for a minimum of 24 hours. Bacteriological test samples shall be taken by Davidson Water Inc. for evaluation and line disinfectant approval. After disinfection is complete, the new lines shall be flushed sufficiently so that the chlorine concentration level in the new lines do not exceed existing line concentration.
13. Water lines shall be placed at least 3 feet minimum from the edge of the pavement but no greater than 5 feet from the edge of the pavement. (SEE TRENCH SECTION AND LINESETTER INSTALLATION TYPICAL)
14. Special care should be taken at cul-de-sacs to ensure water line is kept proper distance from the edge of the pavement. (SEE CUL-DE-SAC TYPICAL)
15. All tapping sleeves and valves shall be air tested at 150 P.S.I. for a minimum of 15 minutes. Testing is to take place before taps are made.

ALL WATERLINE CONSTRUCTION SHALL CONFORM WITH DAVIDSON WATER, INC. STANDARDS AND SPECIFICATIONS. ALL CONSTRUCTION INSIDE OF THE PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH NCDOT STANDARDS AND SPECIFICATIONS.

REFER TO SHEET C-001 FOR PROJECT AND SHEET RELATED NOTES. REFER TO SHEET C-002 FOR DAVIDSON WATER NOTES.

smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

grounded ENGINEERING
4909 Liles Road
Raleigh, NC 27606
919.438.3694 (o)
Firm License C-3898

NORTH CAROLINA PROFESSIONAL SEAL 042763 ENGINEER SEAN A. DOLLE
14 JUNE 2019

BID SET

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 24" X 36" SHEET

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

PARCEL PIN 7708118367
SURRETT DRIVE
TRINITY, NC 27370

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06.14.19	REV. PER REVIEW

DRAWN BY: SAD
CHECKED BY: SAD

SITE NOTES

2017027 20 MAY 2019

C0-02

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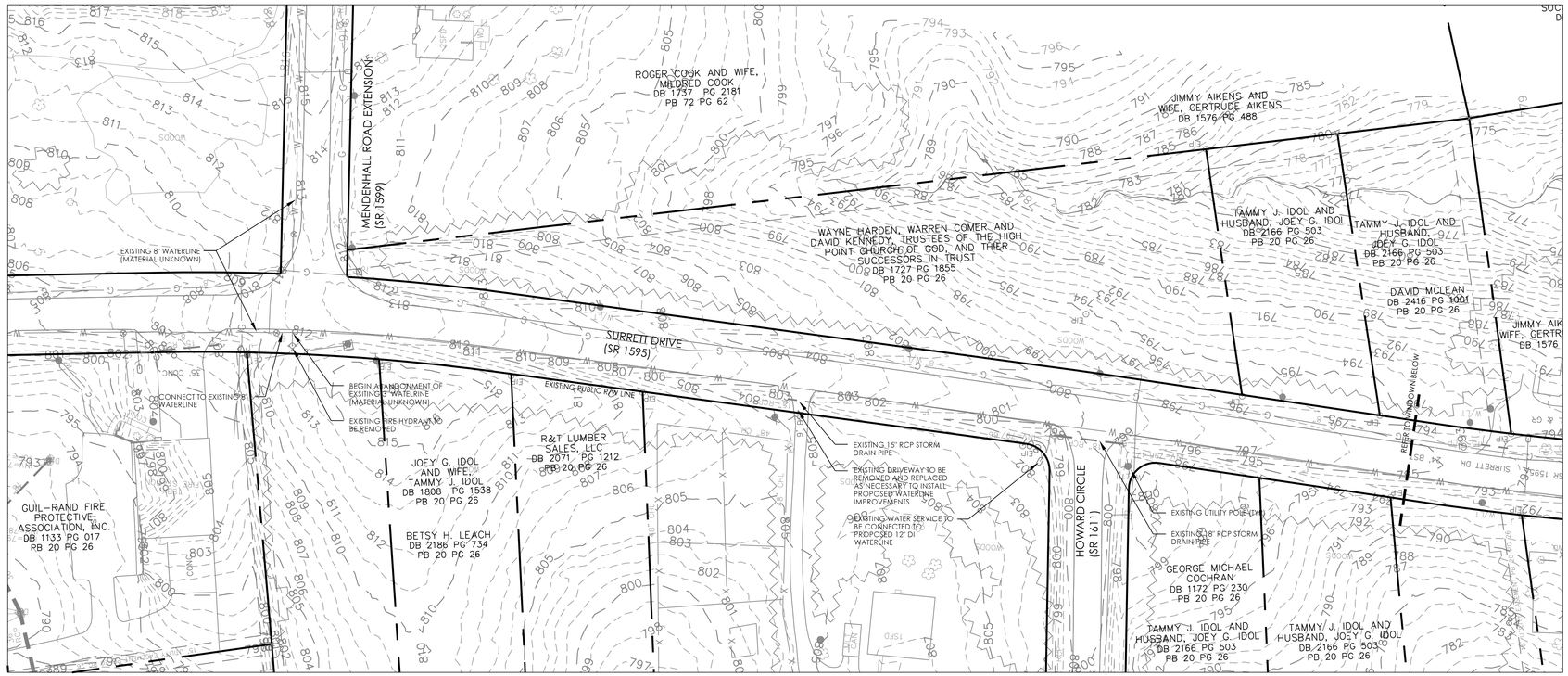

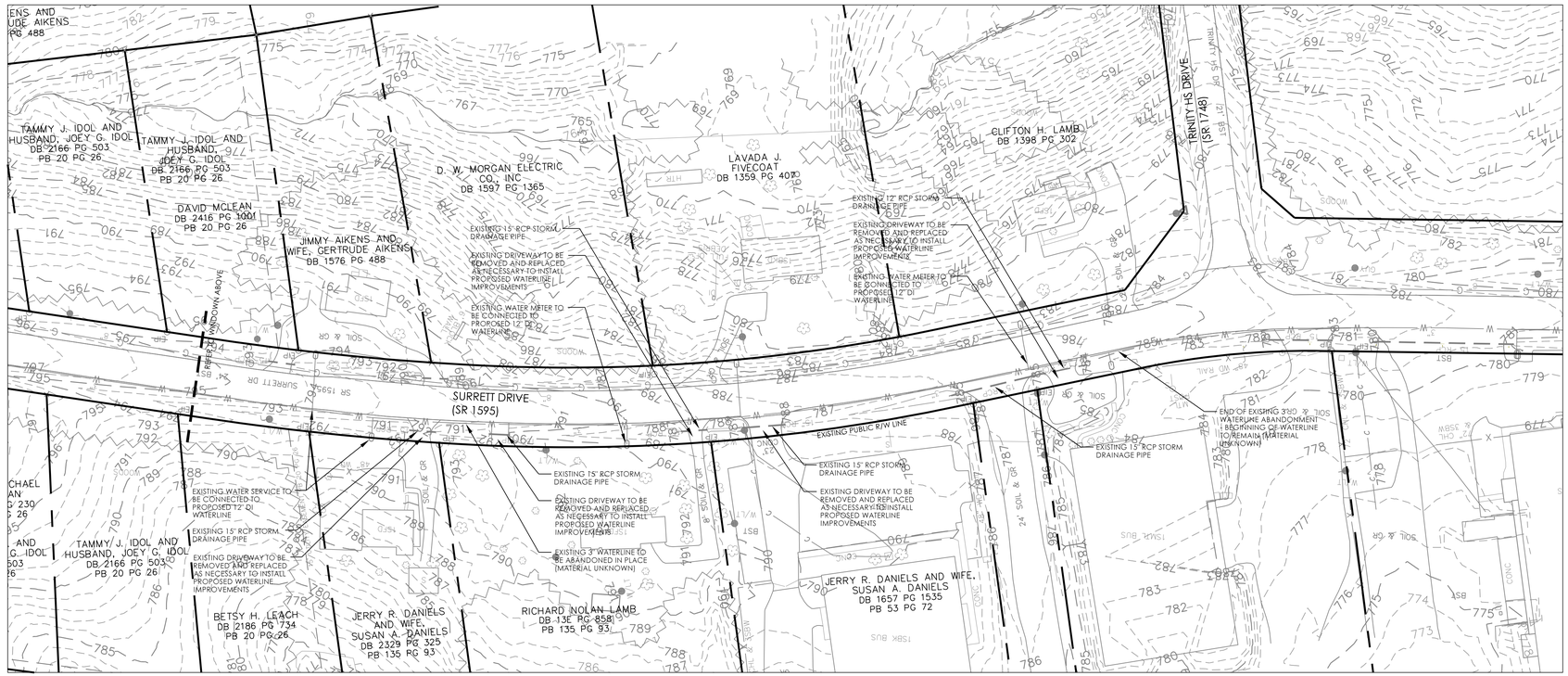

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smith sinnett ARCHITECTURE

T 919 781 8582

4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607

info@smithsinnett.com

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OFFSITE WATERLINE EX. COND. & DEMO PLAN

2017027 20 MAY 2019

C1-00

ALL WATERLINE CONSTRUCTION SHALL CONFORM WITH DAVIDSON WATER, INC. STANDARDS AND SPECIFICATIONS. ALL CONSTRUCTION INSIDE OF THE PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH NCDOT STANDARDS AND SPECIFICATIONS.

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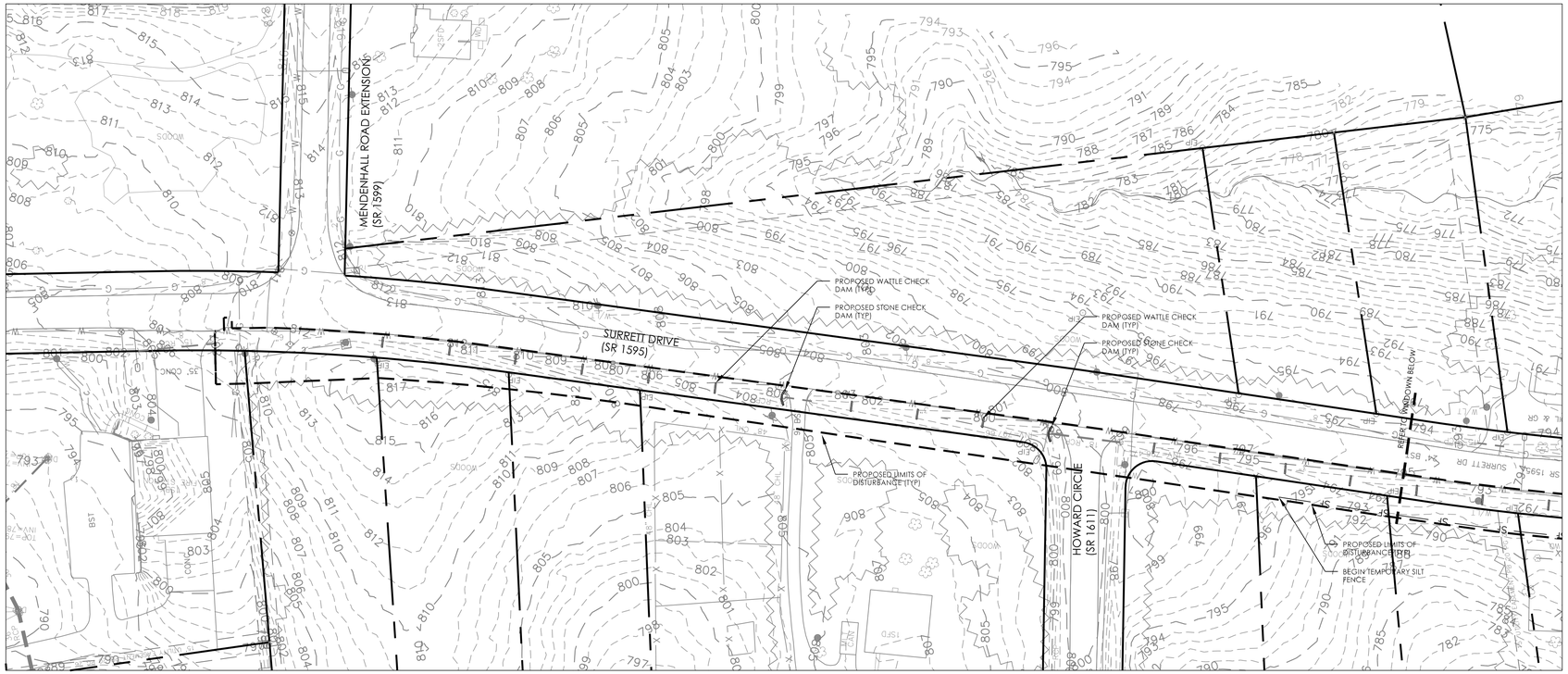

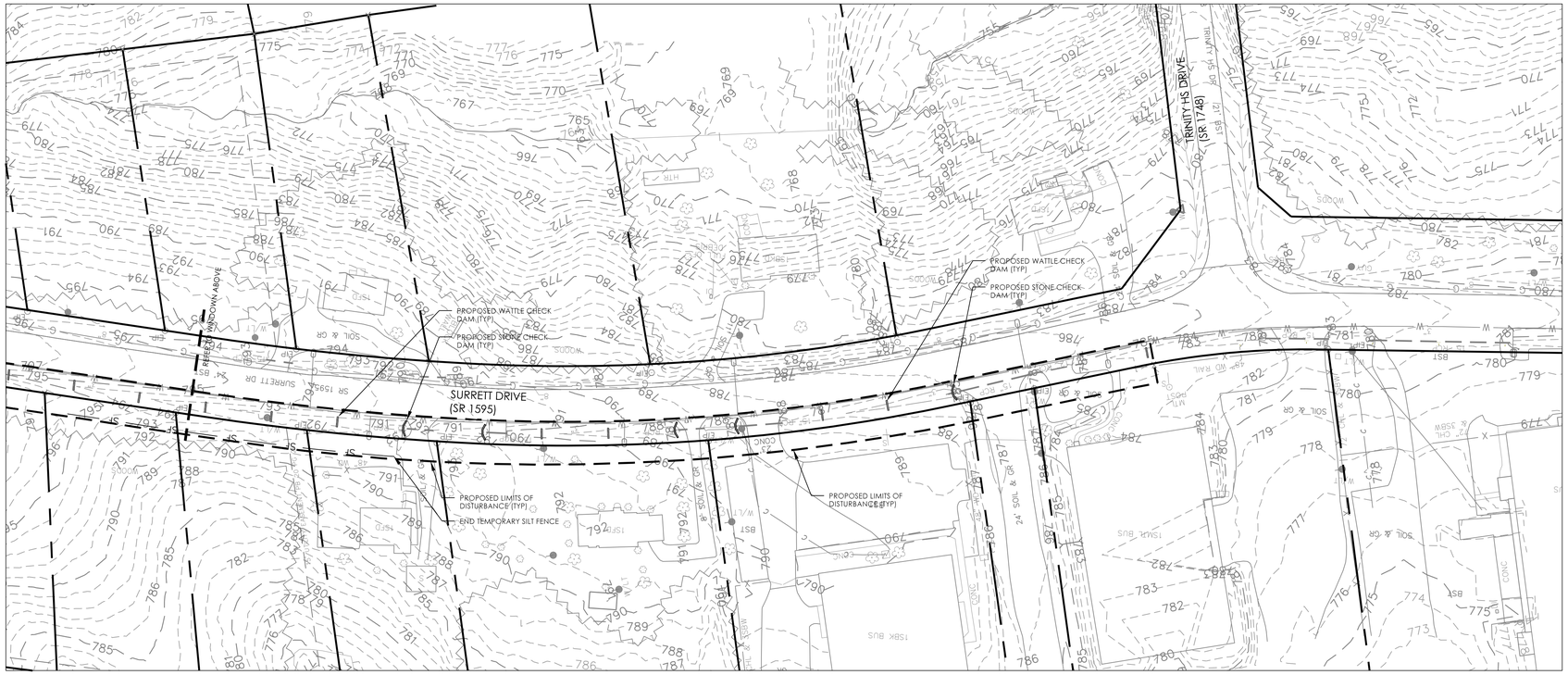

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GRAPHIC SCALE

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T 919 781 8582

4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607

info@smithsinnett.com

grounded ENGINEERING
4909 Liles Road
Raleigh, NC 27606
919.438.3694 (o)
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NORTH CAROLINA PROFESSIONAL SEAL 036763 ENGINEER SEAN A. DOYLE
14 JUNE 2019

BID SET

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NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

PARCEL PIN 7708118367
SURRETT DRIVE
TRINITY, NC 27370

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06.14.19	REV. PER REVIEW

DRAWN BY: SAD
CHECKED BY: SAD

OFFSITE WATERLINE EROSION CONTROL PLAN

2017027 20 MAY 2019

C4-00

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GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

Temporary and Permanent Groundcover*

STABILIZATION TIMEFRAMES
(Effective Aug. 3, 2011)

Site Area Description	Stabilization	Timeframe Exceptions
Perimeter dikes, swales, ditches, slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length.
All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

*-For Falls Lake watershed, in disturbed areas where grading activities are incomplete, provide temporary groundcover no later than seven (7) days for slopes steeper than 3:1; ten (10) days for slopes equal to or flatter than 3:1; fourteen (14) days for areas with no slope.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

NORTH CAROLINA *Environmental Quality*

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number of waste containers on site to manage the quantity of waste produced.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow.
8. Dispose waste off-site at an approved disposal facility.

PAINT AND OTHER LIQUID WASTE

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

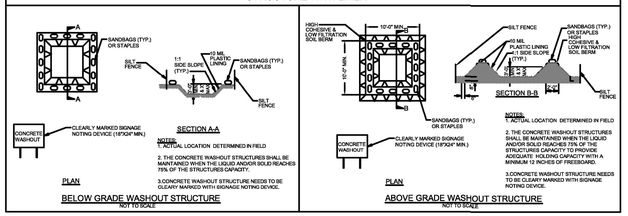
PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

ONSITE CONCRETE WASHOUT
STRUCTURE WITH LINER



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

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NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 03/01/19

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NPDES NOTES

2017027 20 MAY 2019

C4-10

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PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include [40 CFR 122.41]:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the persen performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Corrective actions taken, and 7. Date of actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the persen performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Actions taken to correct/prevent sedimentation, and 7. Date of actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Date of actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Evidence and actions taken to reduce sediment contributions, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit of this permit.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be documented in the manner described:

Item to Document	Documentation Requirements
(a) Each E&SC Measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC Plan.	Initial and date each E&SC Measure on a copy of the approved E&SC Plan or complete, date and sign an inspection report that lists each E&SC Measure shown on the approved E&SC Plan. This documentation is required upon the initial installation of the E&SC Measures or if the E&SC Measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC Plan.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC Measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC Measures.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation

In addition to the E&SC Plan documents above, the following items shall be kept on the site and available for agency inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This general permit as well as the certificate of coverage, after it is received.

(b) Records of inspections made during the previous 30 days. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

(c) All data used to complete the Notice of Intent and older inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that must be reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(a) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(b) Anticipated bypasses and unanticipated bypasses.

(c) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible***. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

NORTH CAROLINA *Environmental Quality*

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

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NPDES NOTES

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C4-11

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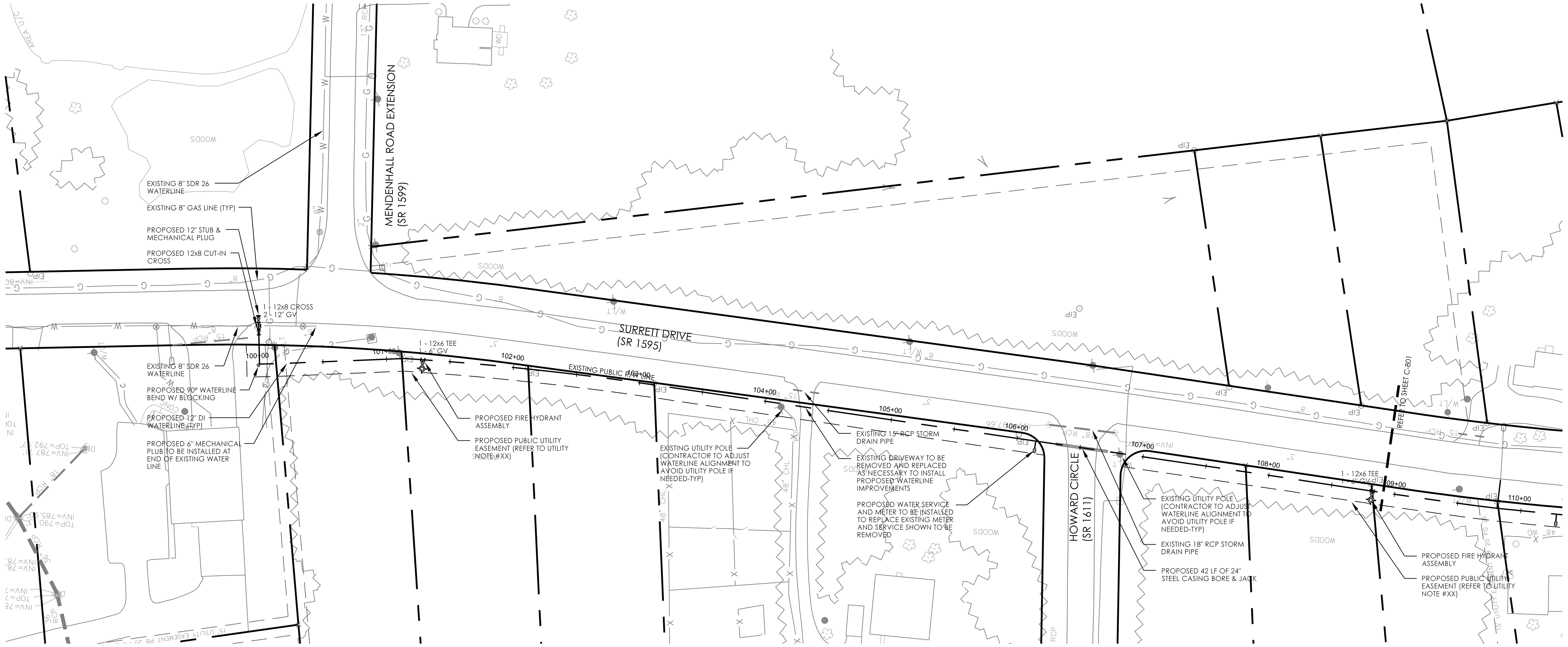

811
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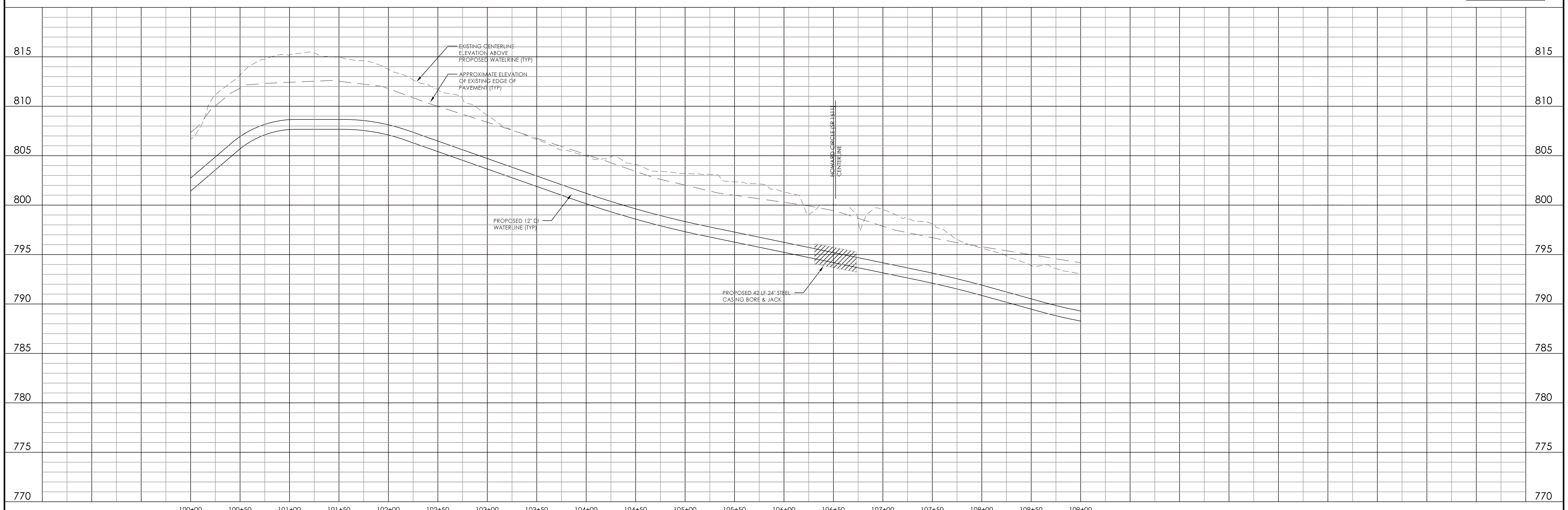
PUBLIC WATERLINE EXTENSION

1" = 50' (HORIZONTAL)
1" = 5' (VERTICAL)



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OFFSITE WATERLINE PLAN & PROFILE

2017027 20 MAY 2019

C8-00

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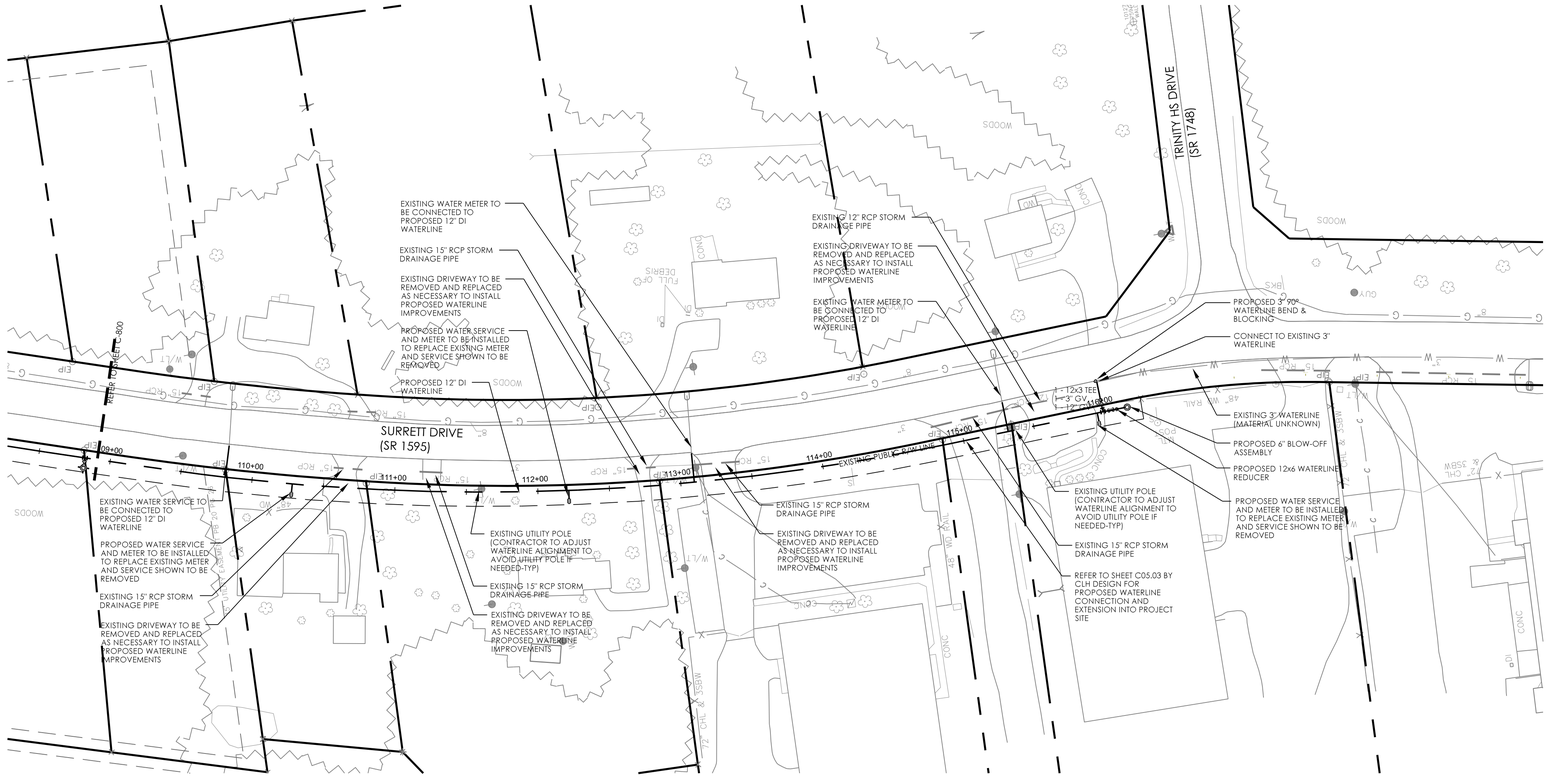

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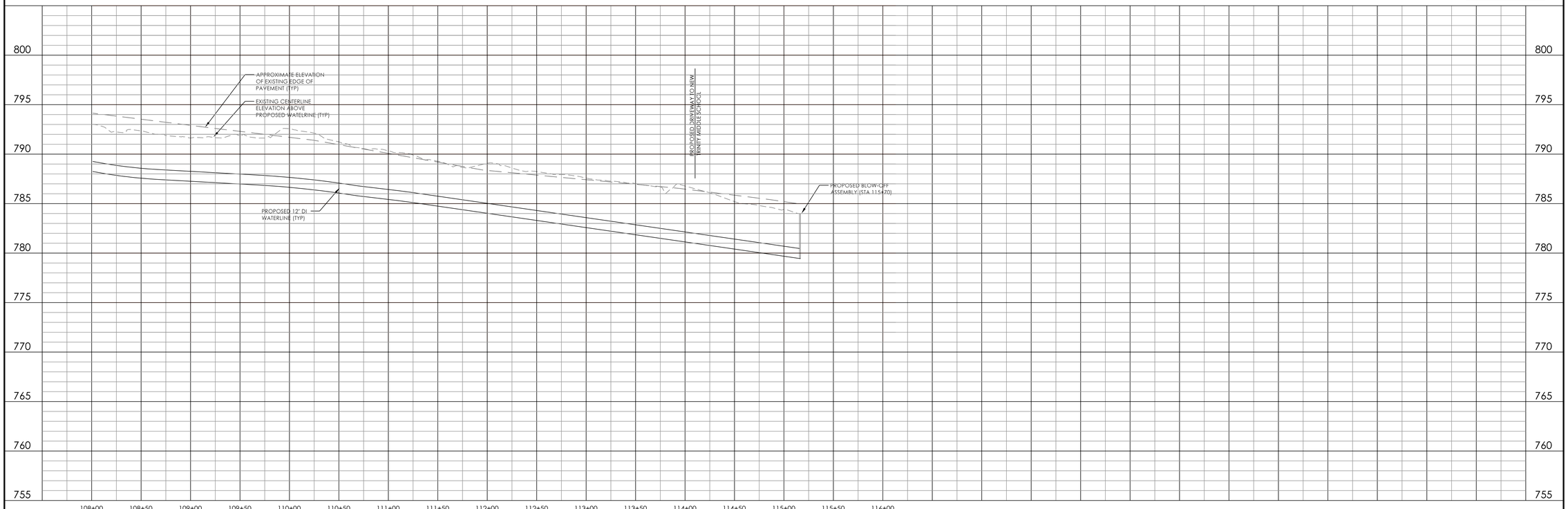
PUBLIC WATERLINE EXTENSION



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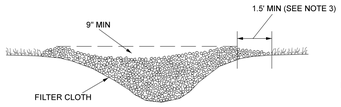
OFFSITE WATERLINE PLAN & PROFILE

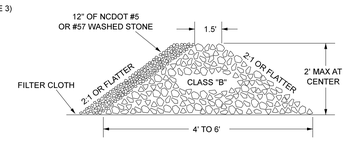
2017027 20 MAY 2019

C8-01

NOTES:
1. ENSURE THAT CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.
2. THE DRAINAGE AREA IS LIMITED TO ONE HALF ACRE.
3. KEY THE STONE INTO THE DITCH BANKS AND EXTEND IT BEYOND THE ABUTMENTS A MINIMUM OF 1.5 FEET TO AVOID WASHOUT FROM OVERFLOW AROUND THE DAM.

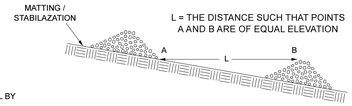


PLAN VIEW



CROSS-SECTION VIEW

MAINTENANCE:
CLEAN OUT SEDIMENT AND DEBRIS AND REPAIR WASH OUTS.



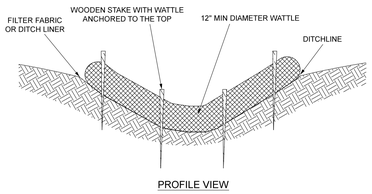
PROFILE VIEW

PURPOSE: TO REDUCE EROSION IN A CHANNEL BY REDUCING THE VELOCITY OF FLOW.

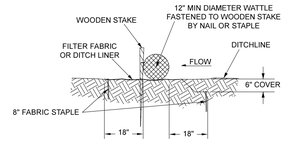
DO NOT USE CHECK DAM IN INTERMITTENT OR PERENNIAL STREAMS.

SEE N.C. DEQ EROSION and SEDIMENT CONTROL PLANNING and DESIGN MANUAL FOR CONDITIONS WHERE PRACTICE APPLIES; PLANNING CONSIDERATION & DESIGN CRITERIA.

STONE CHECK DAM

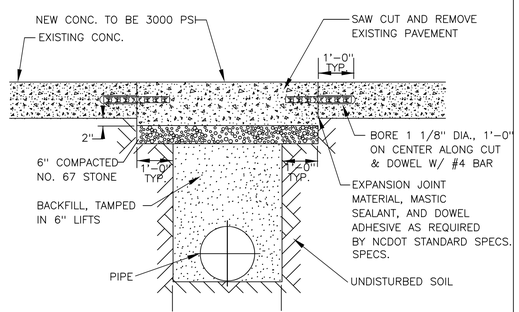


PROFILE VIEW



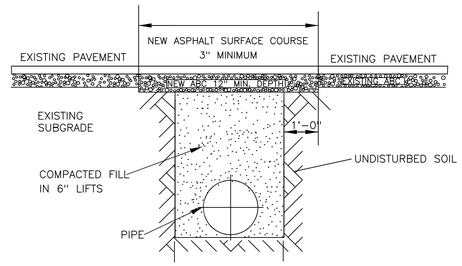
NOTES:
1. WATTLES SHALL BE FILLED WITH STRAW OR OTHER APPROVED MATERIAL.
2. SPACING FOR WATTLES SHALL BE DETERMINED BY THE SITE ENGINEER.
3. WATTLES MAY BE USED FOR PROTECTION OF CATCH BASINS AND DROP INLETS WITH APPROVAL BY THE STORMWATER PROGRAM MANAGER OR DESIGNEE.
4. FOR USE OF WATTLE IN A DITCH, GRADE OF DITCH MUST BE <2.5%.

WATTLE CHECK DAM DETAIL



NOTES:
1. Pavement cuts over 5'-0" in width shall be reinforced to N.C.D.O.T. standards.
2. Pavement cuts shall be made with an appropriate saw cut machine.
3. Pavement cuts within NCDOT ROW shall conform to the approved on site encroachment permit.

STANDARD CONCRETE PAVEMENT PATCH DETAIL



NOTES:
1. IN NCDOT MAINTAINED ROADWAYS ENCROACHMENT PAVEMENT PATCH REQUIREMENTS SHALL TAKE PRECEDENCE.
2. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE AND CUT WITH AN APPROPRIATE SAWCUT MACHINE.
3. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT.
4. THE FINAL 1' OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-80 AS MODIFIED BY NCDOT.
5. THE ENTIRE THICKNESS AND VERTICAL EDGE OF CUT SHALL BE TACKED.
6. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 3" THICK.
7. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY WITH A SMOOTH DRUM ROLLER TO ACHIEVE A SMOOTH LEVEL PATCH.
8. NO HAND PATCHING ALLOWED.
9. PAVEMENT CUTS WITHIN NCDOT ROW SHALL CONFORM TO THE APPROVED ON SITE ENCROACHMENT PERMIT.

STANDARD ASPHALT PAVEMENT PATCH DETAIL

TEMPORARY SEEDING SPECIFICATIONS

Complete grading before preparing seedbeds, and install all necessary erosion control practices such as, dikes, waterways, and basins. Minimize steep slopes because they make seedbed preparation difficult and increase the erosion hazard. If soils become compacted during grading, loosen them to a depth of 6-8 inches using a ripper, harrow, or chisel plow.

SEEDBED PREPARATION
Good seedbed preparation is essential to successful plant establishment. A good seedbed is well-pulverized, loose, and uniform. Where hydroseeding methods are used, the surface may be left with a more irregular surface of large clods and stones.

Liming—Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1 to 1 1/2 tons/acre on coarse-textured soils and 2-3 tons/acre on finetextured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

Fertilizer—Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700-1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

Surface roughening—If recent tillage operations have resulted in a loose surface, additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by disking, raking, harrowing, or other suitable methods. Groove or furrow slopes steeper than 3:1 on the contour before seeding (Refer to the NCDEQ Erosion and Sediment Control Planning and Design Manual, Practice 6.03, Surface Roughening).

PLANT SELECTION
Select an appropriate species or species mixture from Table 6.10a for seeding in late winter and early spring, Table 6.10b for summer, and Table 6.10c for fall.

In the Mountains, December and January seedings have poor chances of success. When it is necessary to plant at these times, use recommendations for fall and a securely tacked mulch.

SEEDING
Evenly apply seed using a cyclone seeder (broadcast), drill, cultipacker seeder, or hydroseeder. Use seeding rates given in Tables 6.10a-6.10c. Broadcast seeding and hydroseeding are appropriate for steep slopes where equipment cannot be driven. Hand broadcasting is not recommended because of the difficulty in achieving a uniform distribution.

Small grains should be planted no more than 1 inch deep, and grasses and legumes no more than 1/2 inch. Broadcast seed must be covered by raking or chain dragging, and then lightly firmed with a roller or cultipacker. Hydroseeded mixtures should include a wood fiber (cellulose) mulch.

MULCHING
The use of an appropriate mulch will help ensure establishment under normal conditions, and is essential to seeding success under harsh site conditions (Refer to the NCDEQ Erosion and Sediment Control Planning and Design Manual, Practice 6.14, Mulching). Harsh site conditions include: • seeding in fall for winter cover (wood fiber mulches are not considered adequate for this use),

- slopes steeper than 3:1,
- excessively hot or dry weather,
- adverse soils (shallow, rocky, or high in clay or sand), and
- areas receiving concentrated flow.

If the area to be mulched is subject to concentrated waterflow, as in channels, anchor mulch with netting (Refer to the NCDEQ Erosion and Sediment Control Planning and Design Manual, Practice 6.14, Mulching).

TEMPORARY SEEDING MAINTENANCE

Reseed and mulch areas where seedling emergence is poor, or where erosion occurs, as soon as possible. Do not mow. Protect from traffic as much as possible.

ALL WATERLINE CONSTRUCTION SHALL CONFORM WITH DAVIDSON WATER, INC. STANDARDS AND SPECIFICATIONS. ALL CONSTRUCTION INSIDE OF THE PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH NCDOT STANDARDS AND SPECIFICATIONS.

REFER TO SHEET C-001 FOR PROJECT AND SHEET RELATED NOTES. REFER TO SHEET C-002 FOR DAVIDSON WATER NOTES.

TABLE 6.10a - TEMPORARY SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

SEEDING MIXTURE

SPECIES	RATE (LBS/ACRE)
RYE (GRAIN)	120
ANNUAL LESPEDEZA (KOBE IN PIEDMONT AND COASTAL PLAIN, KOREAN IN MOUNTAINS)	50

OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE.

SEEDING DATES:

MOUNTAINS -	ABOVE 2500 FEET: FEB. 15 - MAY 15 BELOW 2500 FEET: FEB. 1 - MAY 1
PIEDMONT -	JAN. 1 - MAY 1
COASTAL PLAIN -	DEC. 1 - APR. 15

SOIL AMENDMENTS:
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

MULCH:
APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE:
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

TABLE 6.10b - TEMPORARY SEEDING RECOMMENDATIONS FOR SUMMER

SEEDING MIXTURE

SPECIES	RATE (LBS/ACRE)
GERMAN MILLET	40

IN THE PIEDMONT AND MOUNTAINS, A SMALL-STEMMED SUDANGRASS MAY BE SUBSTITUTED AT A RATE OF 50 LB/ACRE.

SEEDING DATES:

MOUNTAINS -	MAY 15 - AUG. 15
PIEDMONT -	MAY 1 - AUG. 15
COASTAL PLAIN -	APR. 15 - AUG. 15

SOIL AMENDMENTS:
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

MULCH:
APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE:
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

TABLE 6.10c - TEMPORARY SEEDING RECOMMENDATIONS FOR FALL

SEEDING MIXTURE

SPECIES	RATE (LBS/ACRE)
RYE (GRAIN)	120

SEEDING DATES:

MOUNTAINS -	AUG. 15 - DEC. 15
PIEDMONT -	AUG. 15 - DEC. 30
COASTAL PLAIN -	AUG. 15 - DEC. 30

SOIL AMENDMENTS:
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER.

MULCH:
APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE:
REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 LB/ACRE OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LB/ACRE KOBE (PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

Know what's **below.**
Call before you dig.

smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

grounded ENGINEERING
4909 Liles Road
Raleigh, NC 27606
919.438.3694 (o)
Firm License C-3898

NORTH CAROLINA PROFESSIONAL SEAL 036763 ENGINEER SAM A. DOLLE
14 June 2019

BID SET

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 24" X 36" SHEET

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

PARCEL PIN 7708118367
SURRETT DRIVE
TRINITY, NC 27370

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06.14.19	REV. PER REVIEW
DRAWN BY:		SAD
CHECKED BY:		SAD

OFFSITE WATERLINE EROSION CONTROL DETAILS

2017027 20 MAY 2019

C9-10

ALL WATERLINE CONSTRUCTION SHALL CONFORM WITH DAVIDSON WATER, INC. STANDARDS AND SPECIFICATIONS. ALL CONSTRUCTION INSIDE OF THE PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH NCDOT STANDARDS AND SPECIFICATIONS.

REFER TO SHEET C-001 FOR PROJECT AND SHEET RELATED NOTES. REFER TO SHEET C-002 FOR DAVIDSON WATER NOTES.

CHECK DAM MAINTENANCE

INSPECT CHECK DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL WHEN NEEDED.

ANTICIPATE SUBMERGENCE AND DEPOSITION ABOVE THE CHECK DAM AND EROSION FROM HIGH FLOWS AROUND THE EDGES OF THE DAM. CORRECT ALL DAMAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, ADDITIONAL MEASURE CAN BE TAKEN SUCH AS INSTALLING A PROTECTIVE RIPRAP LINER IN THAT PORTION OF THE CHANNEL.

REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION, ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

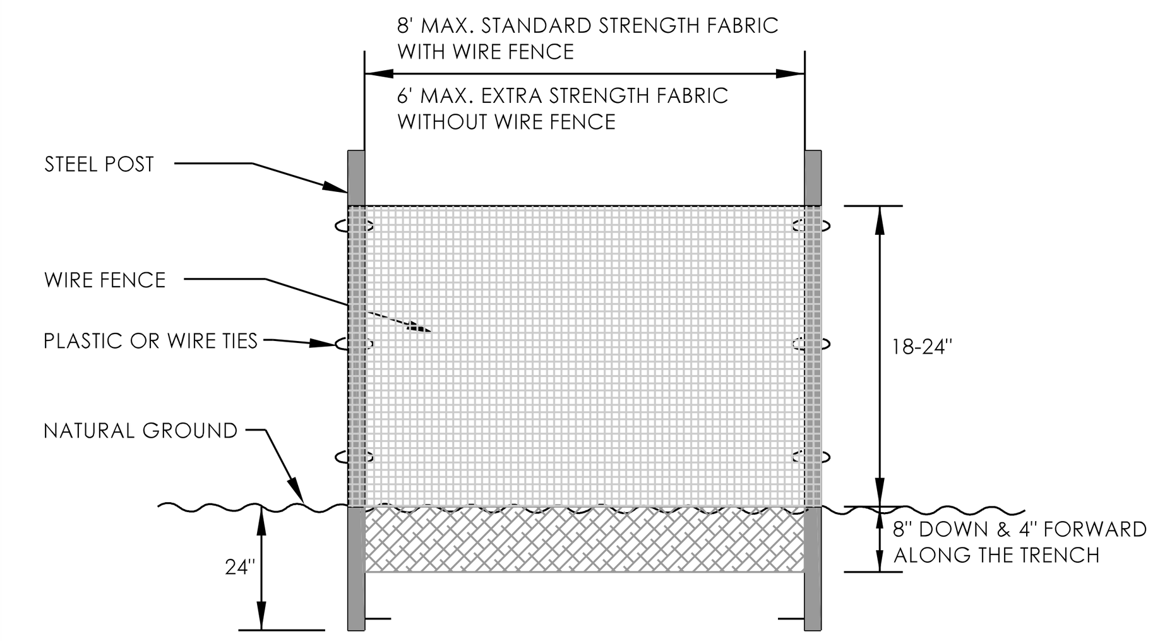
SILT FENCE MAINTENANCE

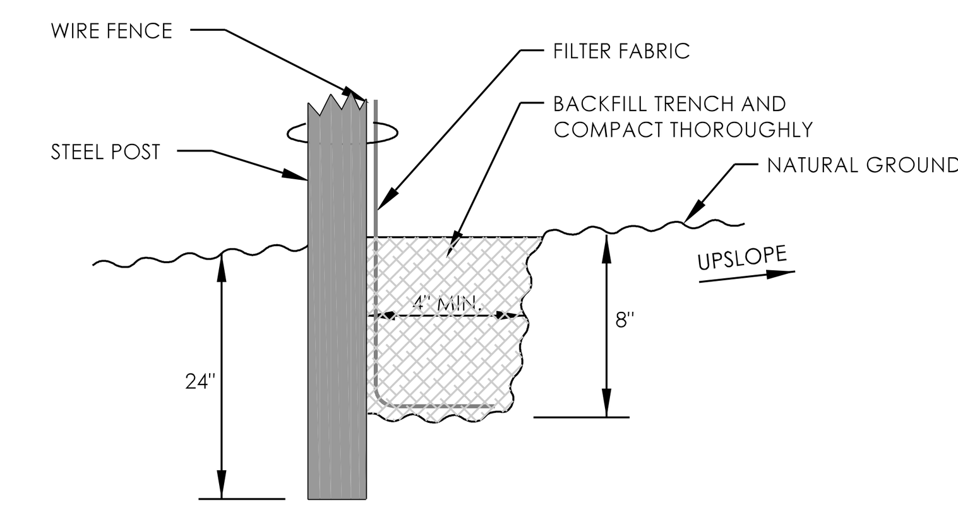
INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.

SHOULD THE FABRIC FOR A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.

REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.





CROSS-SECTION VIEW

MATERIAL SPECIFICATIONS

1. USE A SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS OF ASTM D 6461, WHICH IS SHOWN IN PART IN TABLE 6.62b IN THE NCDEQ EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL. SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0-DEGREES TO 120-DEGREES FARENHEIT.
2. ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.25 LB/LINEAR FOOT MINIMUM STEEL WITH A MINIMUM LENGTH OF 5 FEET. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.
3. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH A MINIMUM 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS.
2. ENSURE THAT TEH HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.)
3. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS FOLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO THE NEXT POST.
4. SUPPORT STANDARD LENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT TO TEH BOTTOM OF THE TRENCH. FASTEN THE WIRE REINFOREMENT, THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.
5. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
6. EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.
7. EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
8. PLACE 12 INCHES OF THE FABRIC ALONG THE BOTTOM AND SIDE OF THE TRENCH.
9. BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT. THOROUGH COMPACTION OF THE BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.
10. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.

INSTALLATION SPECIFICATIONS

1. THE BASE OF BOTH END POSTS SHOULD BE AT LEAST ONE FOOT HIGHER THAN THE MIDDLE OF THE FENCE. CHECK WITH LEVEL IF NECESSARY.
2. INSTALL POSTS 4 FEET APART IN CRITICAL AREAS AND 6 FEET APART ON STANDARD APPLICATIONS.
3. INSTALL POSTS 2 FEET DEEP ON DOWNSTREAM SIDE OF THE SILT FENCE, AND AS CLOSE AS POSSIBLE TO THE FABRIC, ENABLING POSTS TO SUPPORT THE FABRIC FROM UPSTREAM WATER PRESSURE.
4. INSTALL POSTS WITH TEH NIPPLES FACING AWAY FROM THE FILT FABRIC.
5. ATTACH THE FABRIC TO EACH POST WITH THREE TIES, ALL SPACED WITH THE TOP 8 INCHES OF THE FABRIC. ATTACH EACH TIE DIAGONALLY 45-DEGREES THROUGH THE FABRIC, WITH EACH PUNCTURE AT LEAST 1 INCH VERTICALLY APART. ALSO, EACH TIE SHOULD BE POSITIONED TO HANG ON A POST NIPPLE WHEN TIGHTENING TO PREVENT SAGGING.
6. WRAP APPROXIMATELY 6 INCHES OF FABRIC AROUND THE END POSTS AND SECURE WITH 3 TIES.
7. NO MORE THAN 24 INCHES OF A 36 INCH FABRIC IS ALLOWED ABOVE GROUND LEVEL.
8. THE INSTALLATION SHOULD BE CHECKED AND CORRECTED FOR ANY DEVIATIONS BEFORE COMPACTION.
9. COMPACTION IS VITALLY IMPORTANT FOR EFFECTIVE RESULTS. COMPACT THE SOIL IMMEDIATELY NEXT TO THE SILT FENCE FABRIC WITH THE FRONT WHEEL OF THE TRACTOR, SKID STEER, OR ROLLER EXERTING AT LEAST 60 POUNDS PER SQUARE INCH. COMPACT THE UPSTREAM SIDE FIRST, AND THEN EACH SIDE TWICE FOR A TOTAL OF 4 TRIPS.

MAINTENANCE REQUIREMENTS

INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.

SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.

REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

TEMPORARY SILT FENCE (SEDIMENT FENCE)

NOT TO SCALE

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T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

grounded ENGINEERING
Raleigh, NC 27606
919.438.3694 (o)
Firm License C-3898

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 026963 SEAN A. DOLLE
14 JUNE 2019

BID SET

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NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

PARCEL PIN 7708118367
SURRETT DRIVE
TRINITY, NC 27370

KEY PLAN
NO SCALE

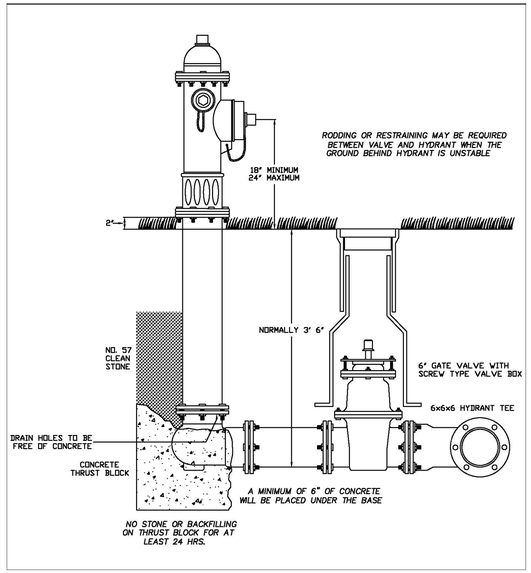
ID	DATE	DESCRIPTION
1	06.14.19	REV. PER REVIEW

DRAWN BY: SAD
CHECKED BY: SAD

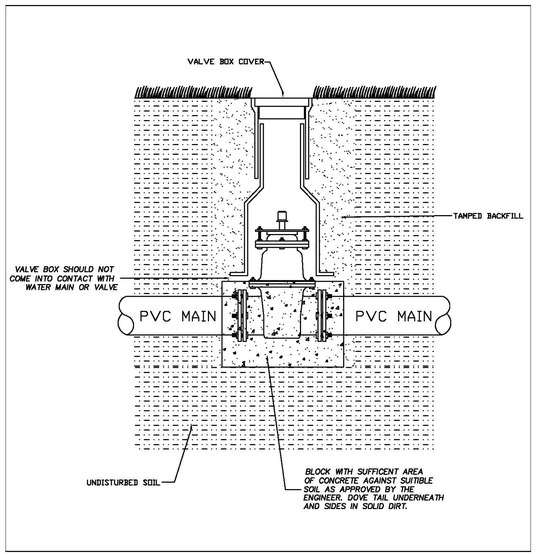
OFFSITE WATERLINE EROSION CONTROL DETAILS

2017027 | 20 MAY 2019

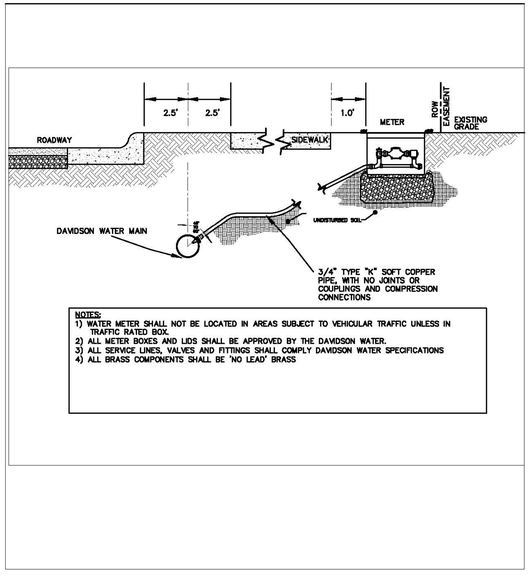
C9-11



TYPICAL FIRE HYDRANT INSTALLATION



TYPICAL IN LINE WATER VALVE INSTALLATION



STANDARD WATER MAIN, SERVICE & METER BOX INSTALLATION WITH SIDEWALK

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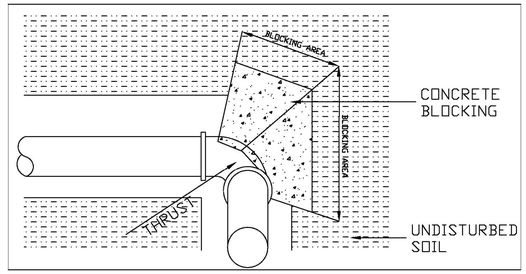
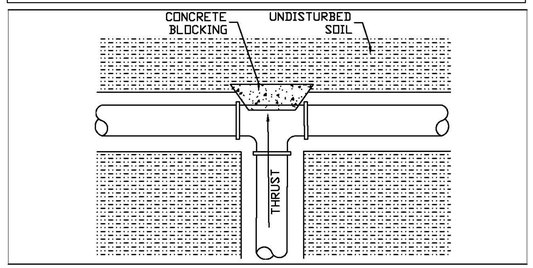
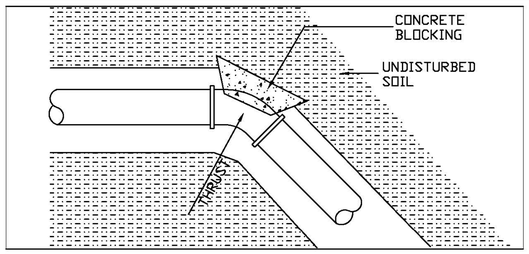


BLOCKING AREA

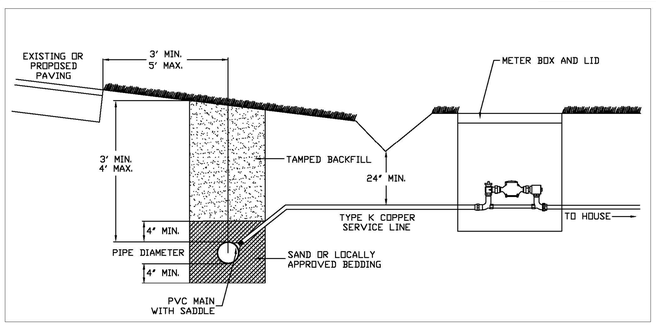
Keep concrete away from joints. Place concrete fairly dry and form if required for maximum area against undisturbed soil. All fittings to be wrapped with 10 mil. polyethlene prior to pouring blocking. Use 3000 PSI concrete.



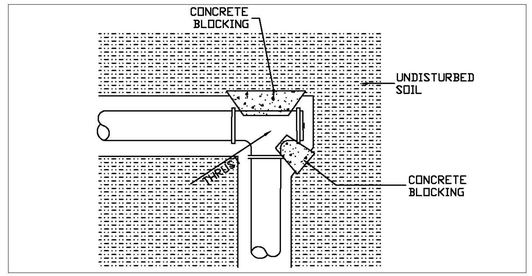
TYPICAL TEE BLOCKING



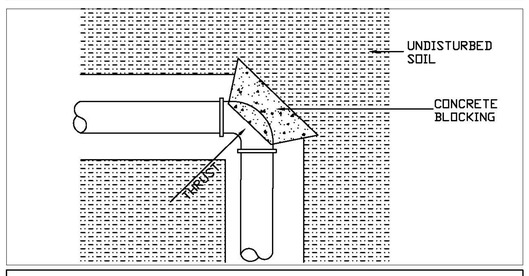
TYPICAL 45° BEND BLOCKING



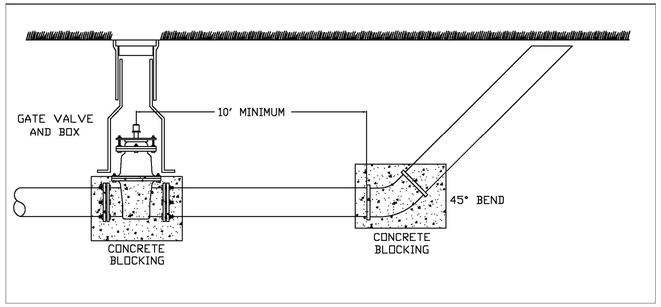
TYPICAL TRENCH SECTION AND LINESETTER INSTALLATION



TYPICAL TEE WITH PLUG BLOCKING



TYPICAL 90° BEND BLOCKING



TYPICAL 2,3,4,6, AND 8 in. BLOW OFF INSTALLATION

Know what's below. Call before you dig.

smith sinnett ARCHITECTURE

T 919 781 8582

4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607

info@smithsinnett.com

grounded ENGINEERING
4909 Liles Road
Raleigh, NC 27606
919.438.3694 (o)
Firm License C-3898

NORTH CAROLINA PROFESSIONAL SEAL 029763 ENGINEER SEAN A. DOYLE
14 JUNE 2019

BID SET

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 24" X 36" SHEET

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

PARCEL PIN 7708118367
SURRETT DRIVE
TRINITY, NC 27370

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06.14.19	REV. PER REVIEW

DRAWN BY: SAD
CHECKED BY: SAD

OFFSITE WATERLINE UTILITY DETAILS

2017027 20 MAY 2019

C9-30

lynchmykins

June 14, 2019

Drew Wilgus, AIA, LEED AP
Smith Sinnett Architecture
4600 Lake Boone Trail
Raleigh, NC 27607

Re: Trinity Middle School
LM Project No: R18.165

Dear Drew:

Please refer to summary below of structural drawing revisions issued in Addendum #3 dated June 14, 2019.

Drawing S1-01
Revised section cut 5/S3-01 to section cut 5A/S3-01 to properly denote 16" CMU at this location.

Drawing S3-01
Revised section 5/S3-01 to Section 5 & 5A/S3-01 to denote both 12" CMU and 16" CMU.

Clarifications

- Note that Slab Type S7 as denoted on S0-02 is NOT USED.
- "BOD - Field House" reference elevation in Section 1/S3-24 is not applicable and is an extraneous reference.
- Section 1/S3-24 applies at the 1/S4-13 (2 frame locations), 2/S4-13 (1 frame location), 4/S4-13 (1 frame location).

Sincerely,
LYNCH MYKINS STRUCTURAL ENGINEERS, PC

Jeffrey R. Morrison, PE
Sr. Project Engineer

Raleigh HQ
415 Hillsborough Street
Suite 101
Raleigh, NC
27603

P: 919.782.1833

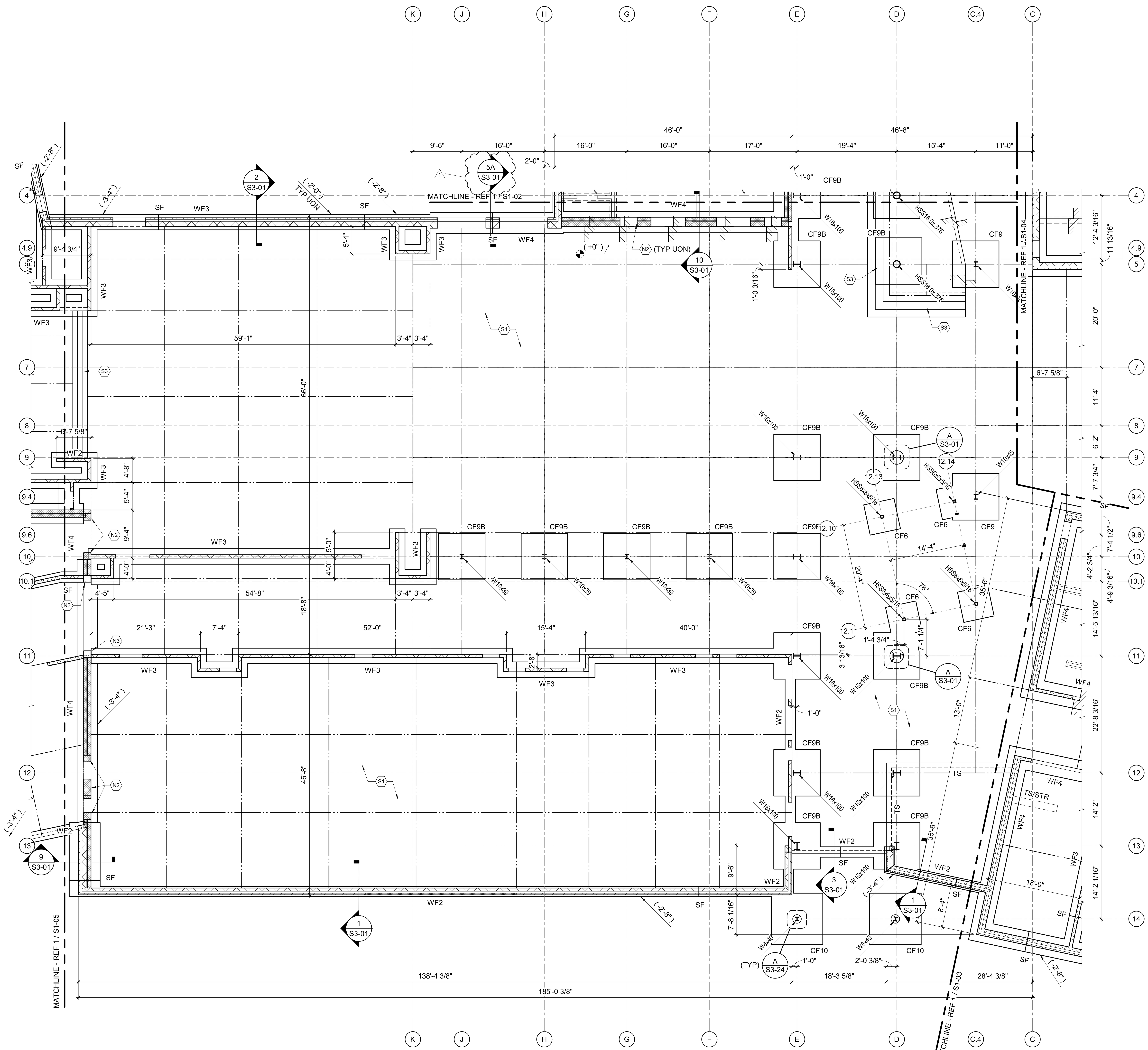
Virginia Beach
5032 Rouse Drive
Suite 200
Virginia Beach, VA
23462

P: 757.671.8626

Richmond
1503 Santa Rosa Road
Suite 210
Richmond, VA
23229

P: 804.346.3935

www.lynchmykins.com



1 FOUNDATION PLAN - 100A WING
S1-01
1/8" = 1'-0"

smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

CONSTRUCTION DOCUMENT

lynchmykins
Structural Engineers
415 Hillsborough St., Ste 101
Raleigh, NC 27603
919.782.1833 - lynchmykins.com

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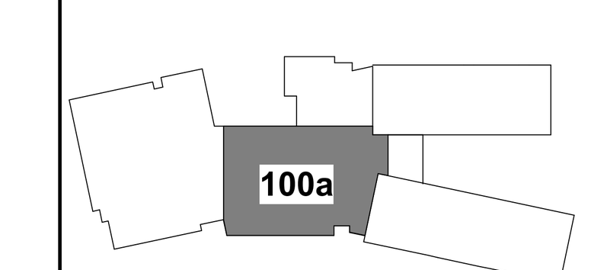


KEY PLAN
NO SCALE

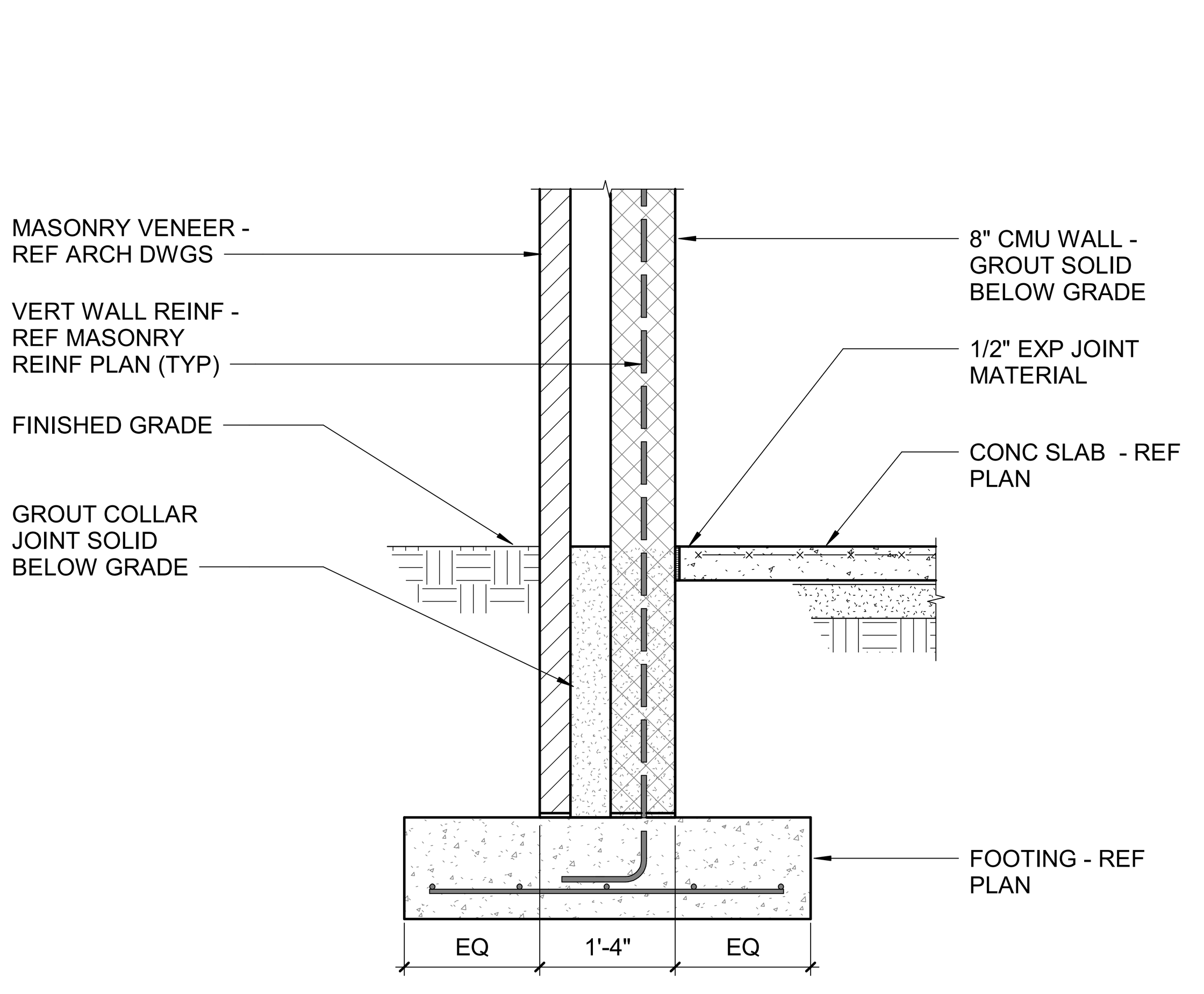
ID	DATE	DESCRIPTION
3	06/14/19	ADDENDUM 3

DRAWN BY: MBG
CHECKED BY: JRM

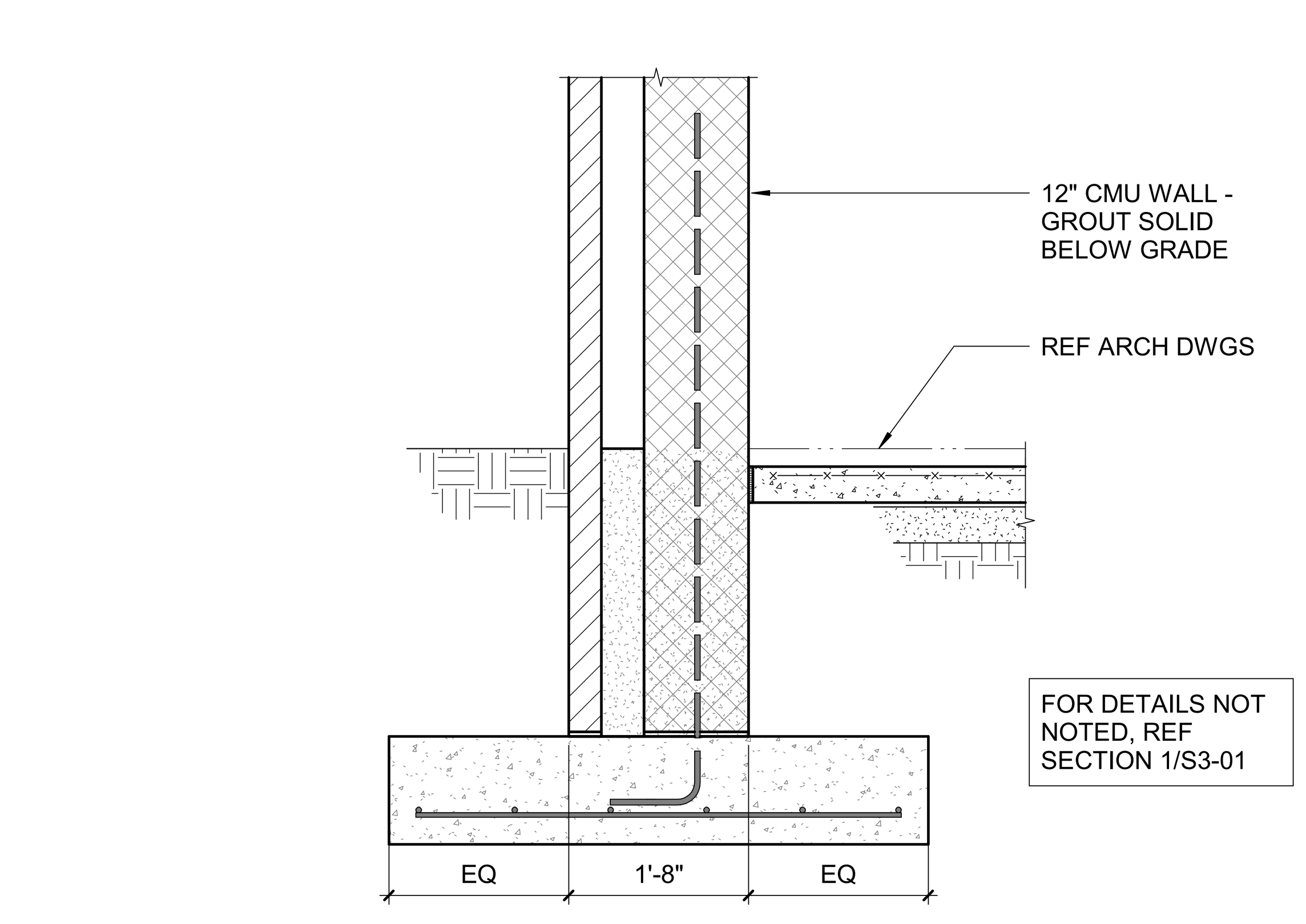
FOUNDATION PLAN
100A WING

2017032 20 MAY 2019

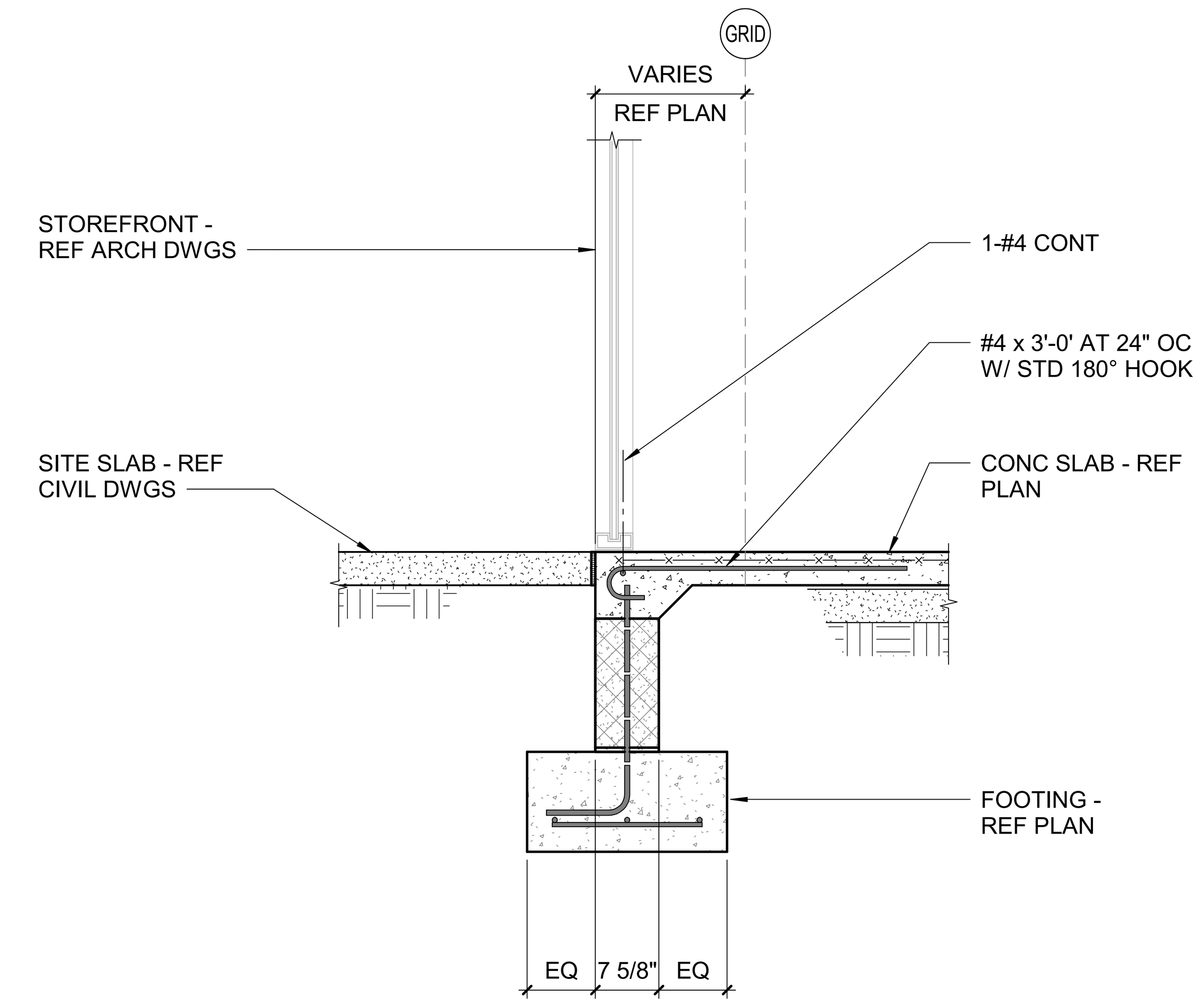
S1-01



1 | S3-01 SECTION
3/4" = 1'-0"



2 | S3-01 SECTION
3/4" = 1'-0"



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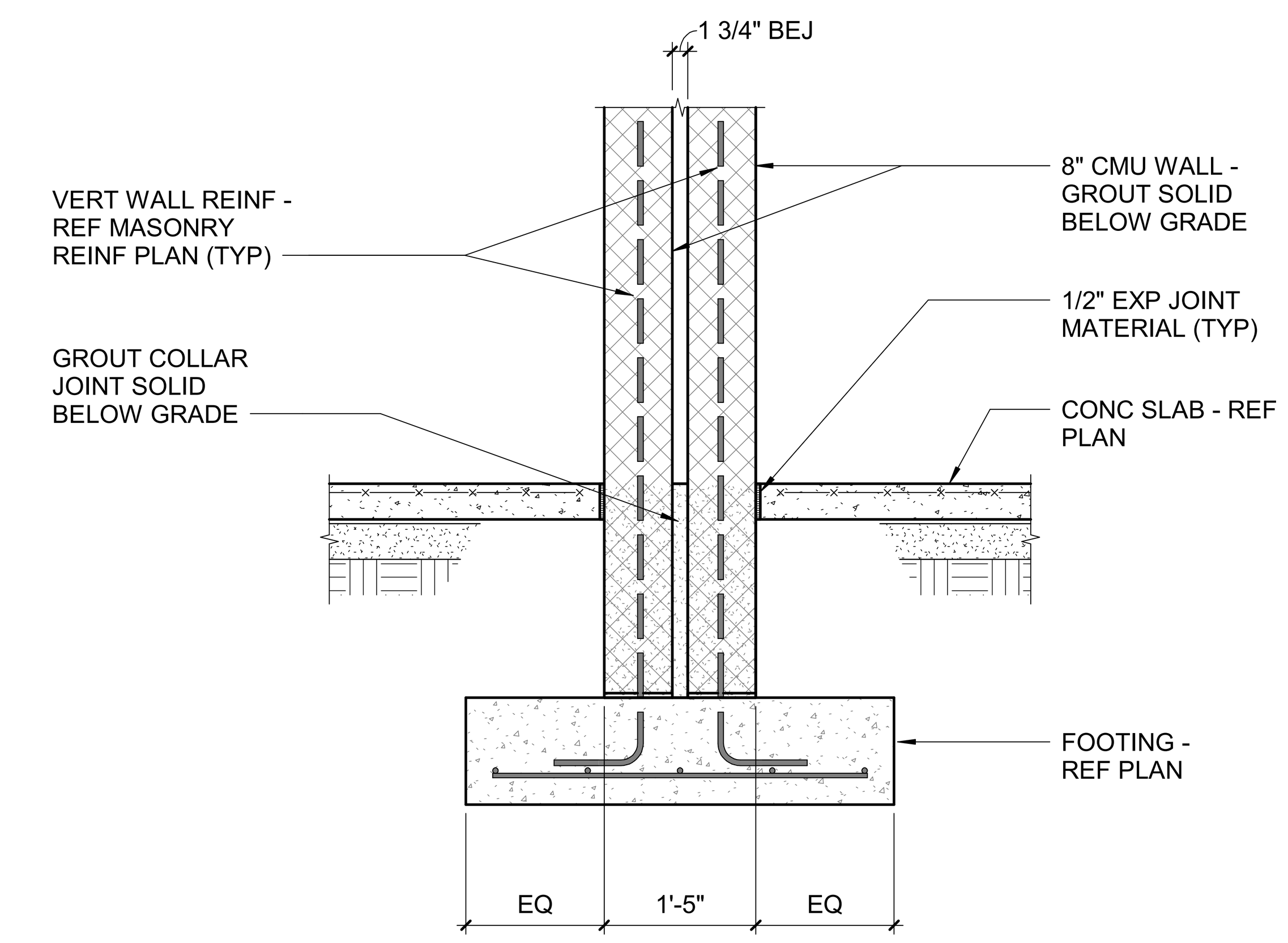
3/4" = 1'-0"



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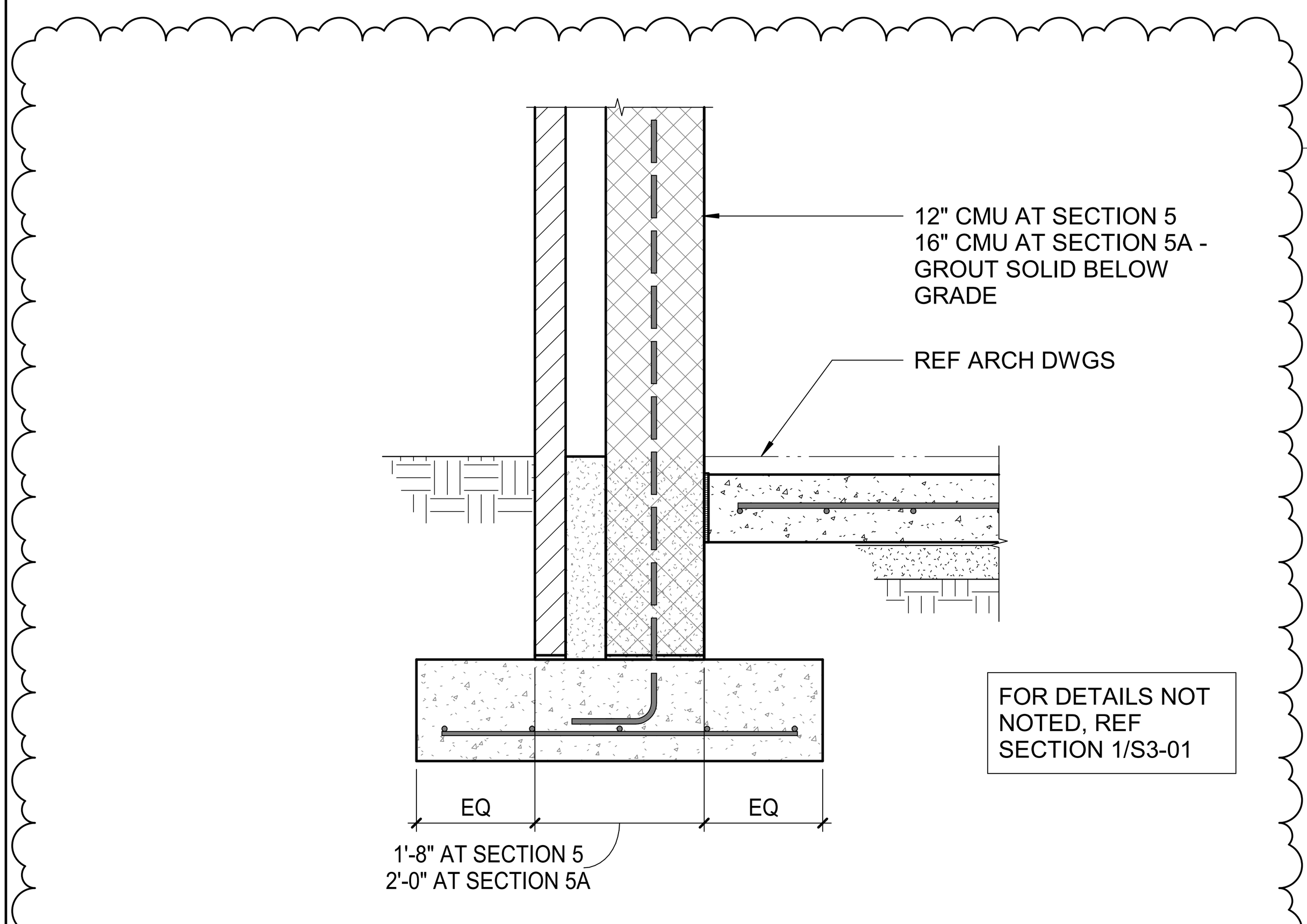
3/4" = 1'-0"



5/5A | S3-01 SECTION
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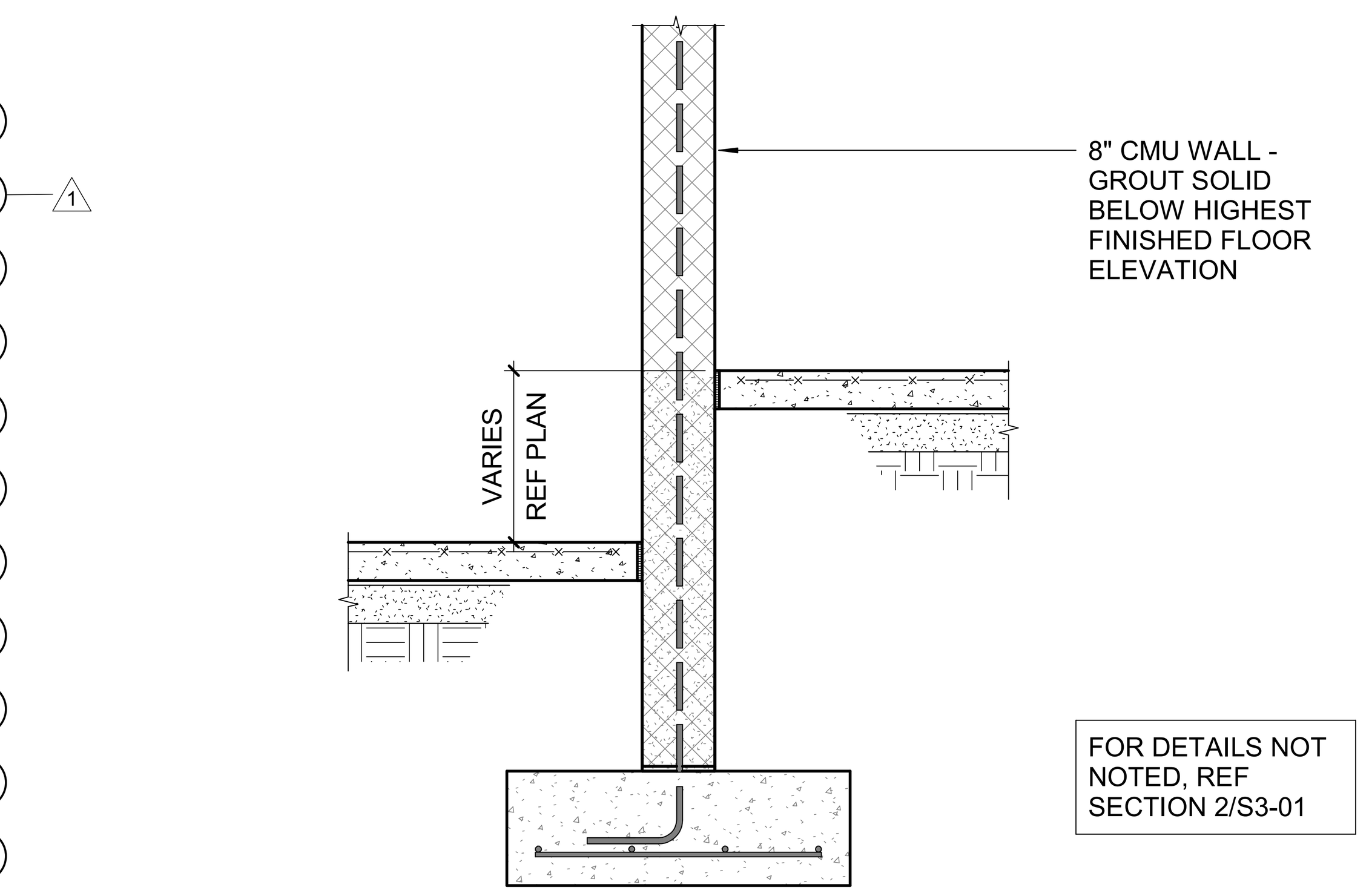
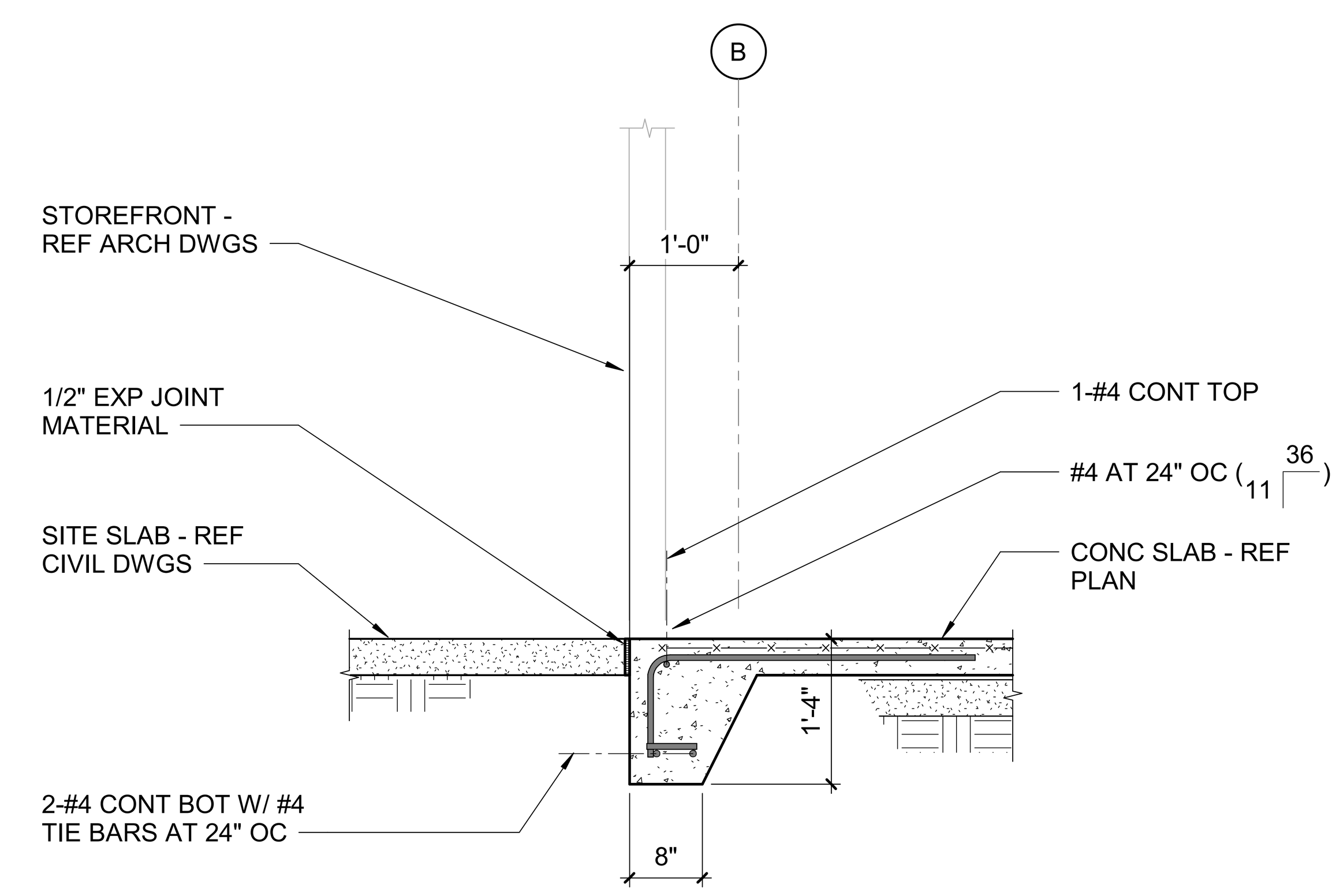
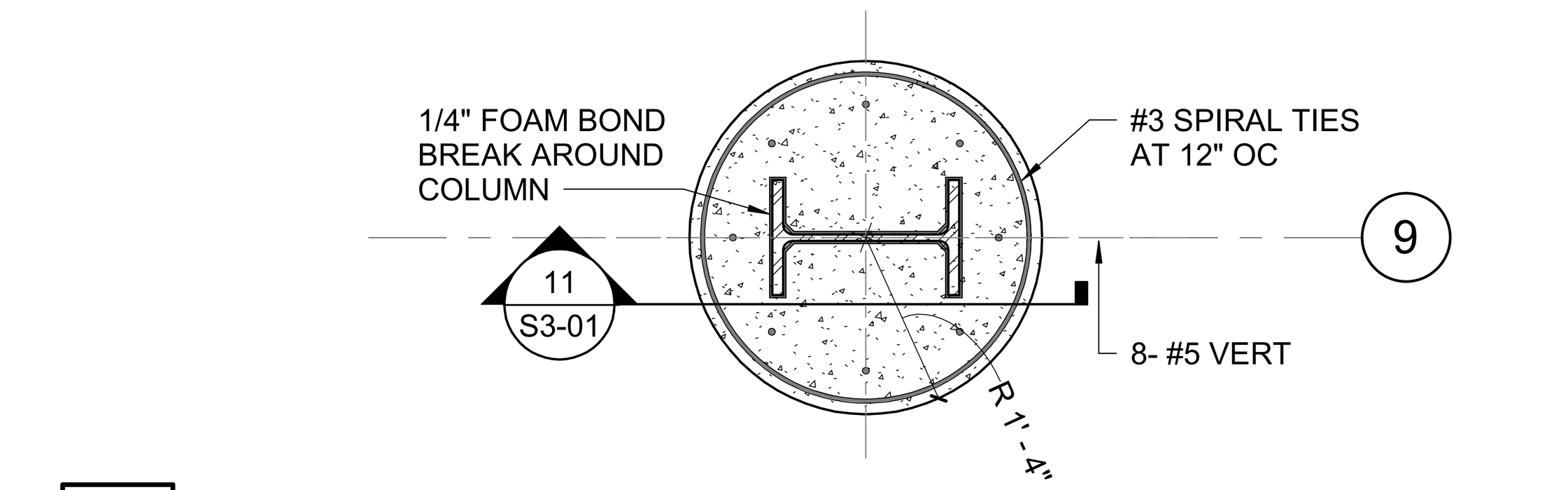


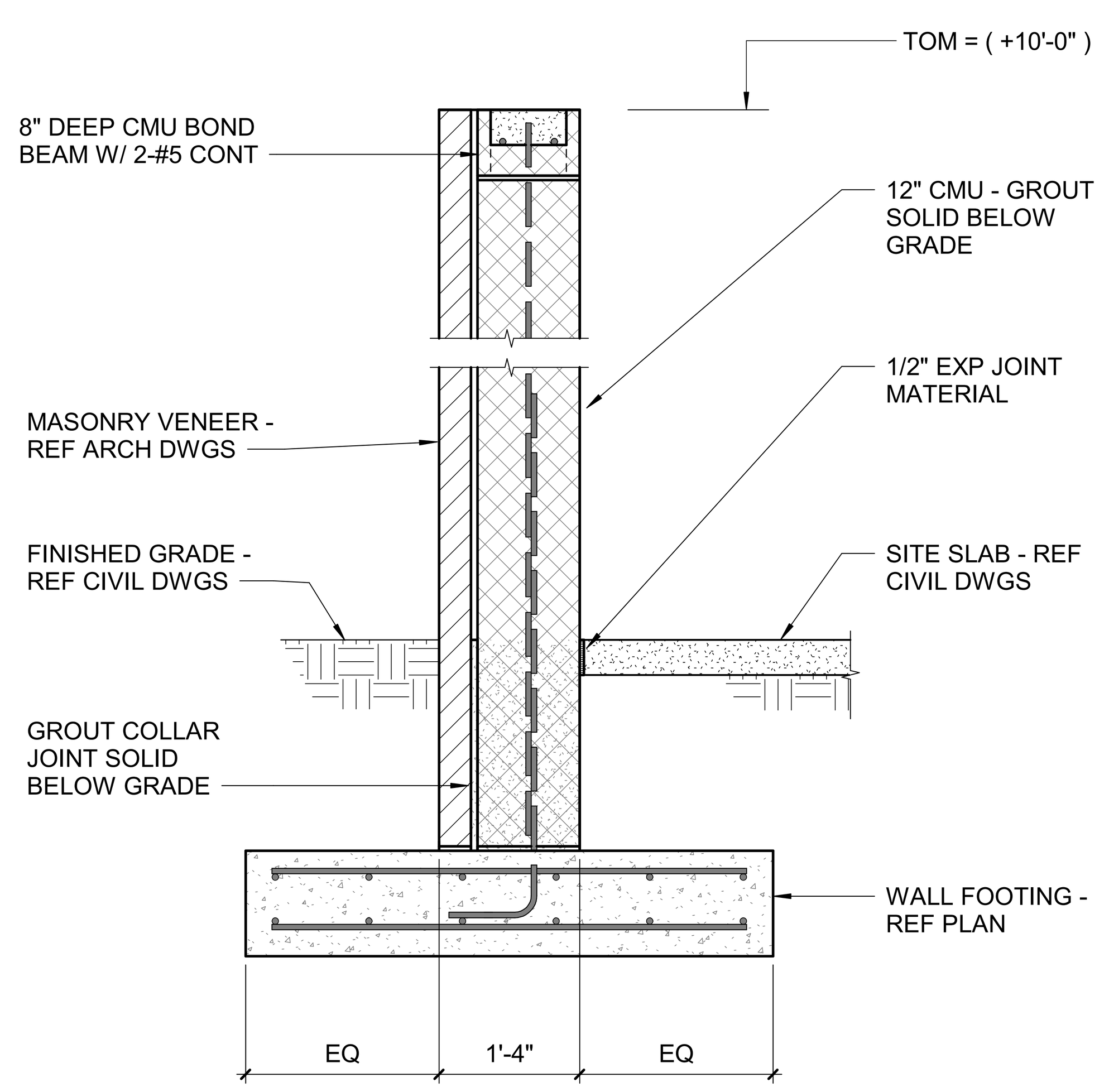
6 | S3-01 SECTION
3/4" = 1'-0"



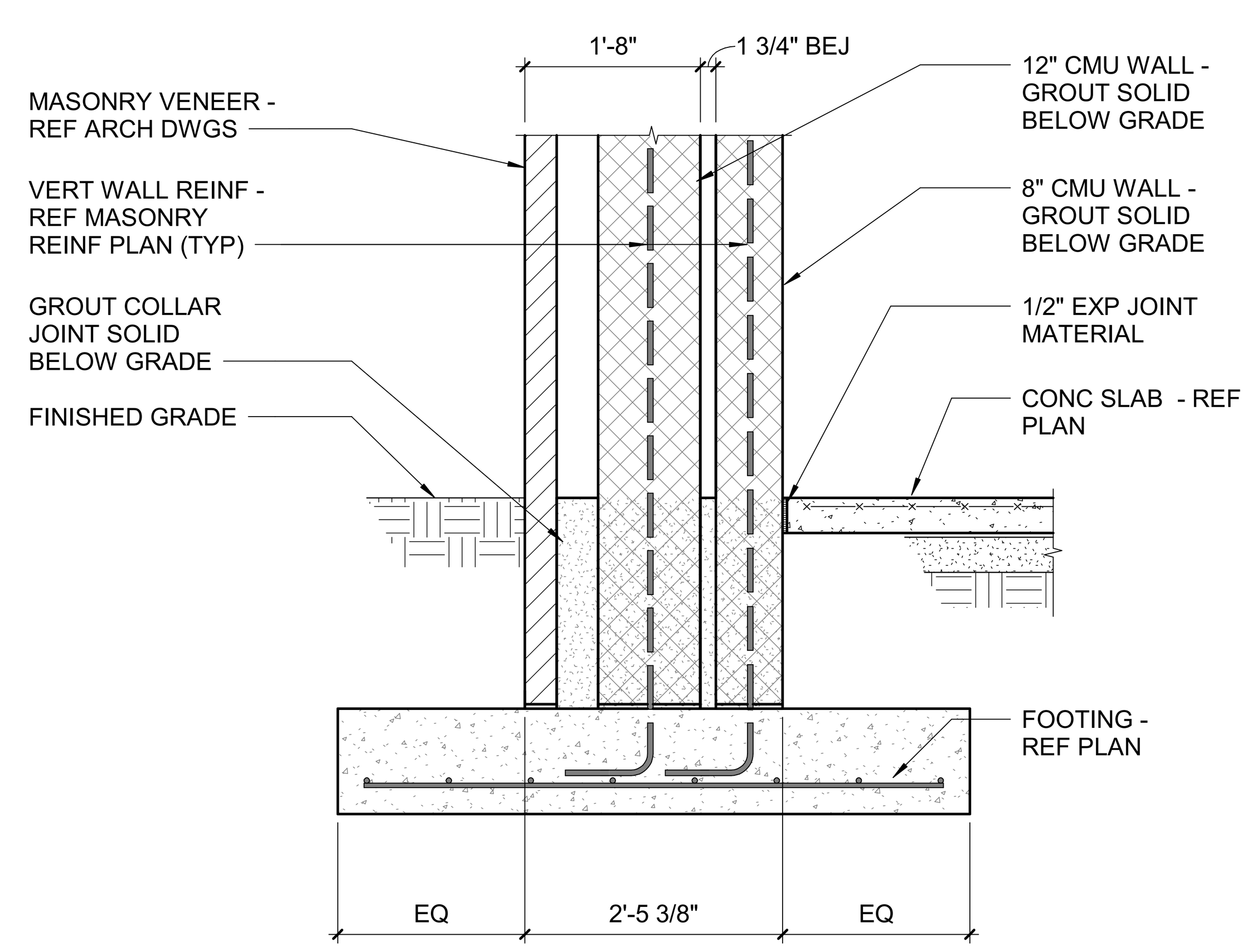
7 | S3-01 SECTION
3/4" = 1'-0"



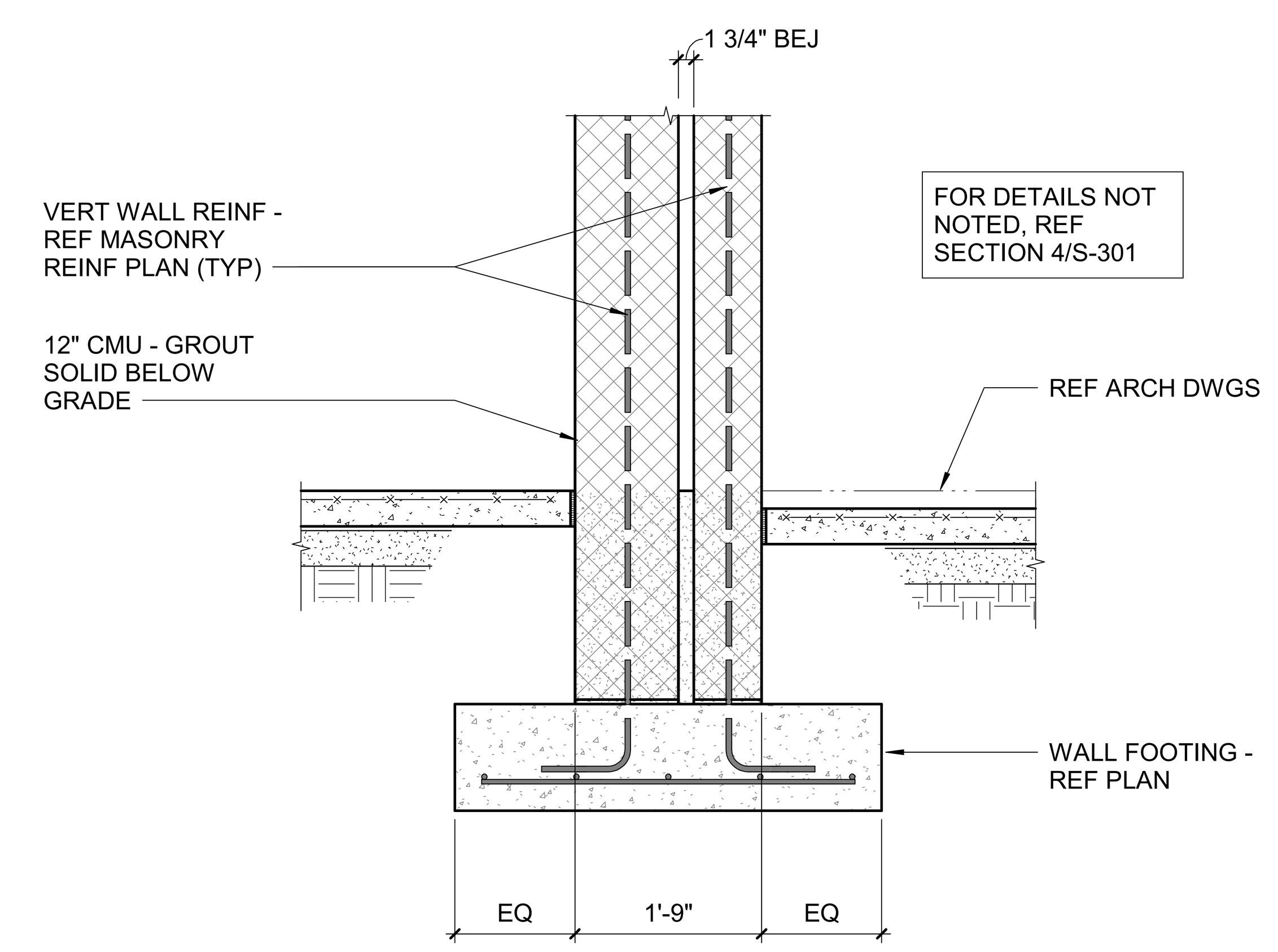
A | S3-01 PLAN DETAIL
3/4" = 1'-0"



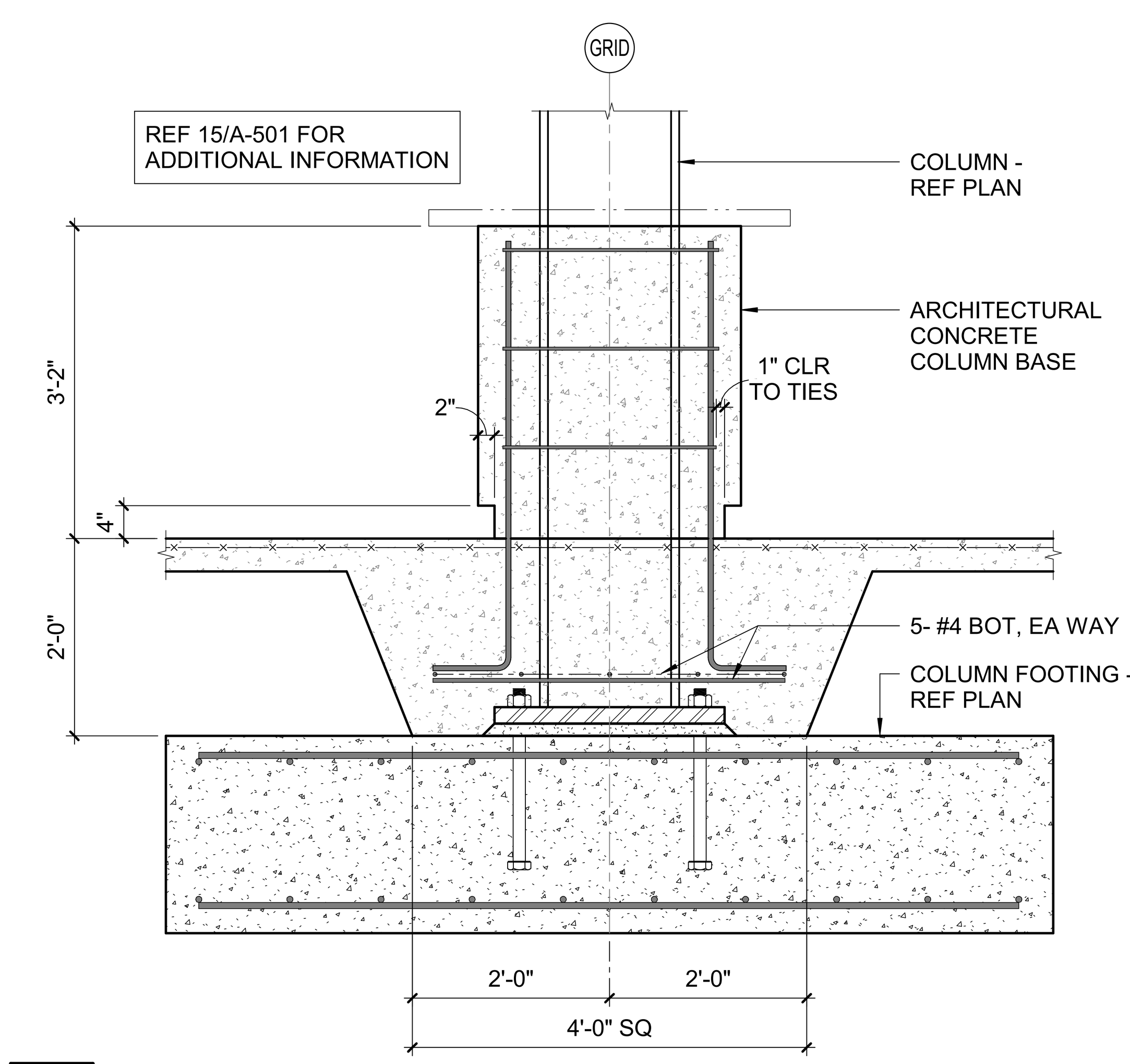
8 | S3-01 SECTION
3/4" = 1'-0"



9 | S3-01 SECTION
3/4" = 1'-0"



10 | S3-01 SECTION
3/4" = 1'-0"



11 | S3-01 SECTION
3/4" = 1'-0"

smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

NORTH CAROLINA PROFESSIONAL ENGINEERING CORPORATION C-4360 LYNCHMYKINS STRUCTURAL ENGINEERS, PC
NORTH CAROLINA PROFESSIONAL SEAL 27813 ENGINEER JEFFREY R. MORRISON 6/14/19

CONSTRUCTION DOCUMENT

lynchmykins
CALCULATE. COLLABORATE. CREATE.
Structural Engineers
415 Hillsborough St., Ste 101
Raleigh, NC 27603
919.782.1833 - lynchmykins.com

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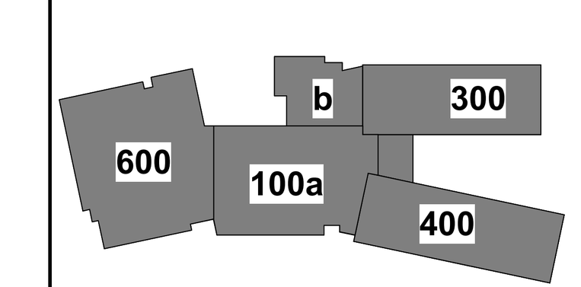


KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 3

DRAWN BY: MBG
CHECKED BY: JRM

SECTIONS - FOUNDATION

2017032 20 MAY 2019

S3-01

Progressive Design Collaborative, Ltd
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989

NORTH CAROLINA PROFESSIONAL SEAL 025020 ENGINEER STEVE W. CAMPBELL
6/14/19

ADDENDUM 03 – PLUMBING

DATE: June 14, 2019

PROJECT: Trinity Middle School
PDC Project # 17104

This Addendum, applicable to the work designed below, shall be understood to be and is a change to the bid documents and shall be part of and included in the contract for the above referenced project. All General, Supplementary and Special Conditions, etc., as originally specified or as modified below shall apply to these items.

Changes to Plumbing Drawings:

1. Drawing P0-01
   a. Changed Urinal Model Number - Note that U-1 / U-2 Urinals are to be Model No. 6590.001 by American Standard, or approved equal from listed equals in specifications
   b. Removed Fixture L-4 Kitchen Hand-Wash Lavatory - Plumbing contractor still required to provide final connections to Kitchen Area Hand-Wash Lavatories provided as part of Kitchen Equipment / Food Service Contract
   c. Revised Shower Fixtures SH-1, SH-2 Model Numbers to be Hydapipe Metered type with exterior mounted Stainless Steel Shroud, and Added Shower SH-4 Fixture for Coaches Office Hydapipe Non-Metered Type with exterior mounted Stainless Steel Shroud

2. Drawing P1-02
   a. Revised location of Shower Controls at Roll-In/Transfer Showers SH-3 in Rooms Toilet 114 and Toilet 111

3. Drawing P1-07
   a. Revised location of Shower Controls at Roll-In/Transfer Showers SH-1 in Rooms Locker 636 and Locker 645
   b. Revised Fixture Callout to new Shower SH-4 Fixture and moved controls at Room Toilet 637

4. Drawing P2-01

   a. Revised Keynote 2 to include verbiage regarding Valved Piping Bypass added for possible future Pressure Reducing Station

   b. Revised Keynote 4

   c. Revised Piping configuration at Domestic Water Riser to include regarding Valved Piping Bypass added for possible future Pressure Reducing Station

   d. Added Detail for Valved Piping Bypass added for possible future Pressure Reducing Station

   e. Removed Fixture Tags (L-4) from Kitchen Hand-Wash Lavatories (Lavatories provided under Food Service Contract) and added Kitchen Equipment Symbol corresponding to Kitchen Equipment Schedule for reference.

   f. Revised portions of the Domestic Water Service Piping sizes.

5. Drawing P3-02

   a. Riser Diagram updated to match changes to Shower Control Locations at Rooms Toilet 114 and Toilet 111

6. Drawing P3-03

   a. Riser Diagrams updated to match changes to Kitchen / Boiler Rooms including removal of Kitchen Lavatory callouts, some Domestic Water Piping Sizes, and addition of Valved Piping Bypass at Domestic Water Riser

7. Drawing P3-13

   a. Riser Diagram updated to match changes to Shower Control Locations at Locker Rooms

END OF ADDENDUM 03 – PLUMBING

Attachments: Drawing Sheets (4)

FIXTURE SCHEDULE

REFER TO SPECIFICATION SECTION 22 42 00 FOR A LIST OF APPROVED EQUALS

MARK	DESCRIPTION	REMARKS
CW-1	CAN WASH ZURN Z1325-VB VARI-TEMP COMBINATION HOT AND COLD WATER NON-FREEZE ENCASED WALL HYDRANT FOR FLUSH INSTALLATION WITH VACUUM BREAKER, BRONZE CASTING, ALL BRONZE INTERIOR PARTS, NON-TURNING OPERATING RODS WITH FREE-FLOATING COMPRESSION CLOSURE VALVES, REPLACEABLE BRONZE SEAT AND SEAT WASHER, AND COMBINATION 3/4" FEMALE OR 1" MALE STRAIGHT IP INLET, NICKEL BRONZE BOX AND HINGED COVER WITH OPERATING KEY LOCK AND "WATER" CAST ONTO COVER, PROVIDE WITH FLOOR SINK (FS-2) PROVIDE MIN. 12' HEAVY DUTY RUBBER HOSE, FITTINGS, AND HOSE WALL BRACKET MOUNTED ADJACENT TO HYDRANT	MOUNT HYDRANT +/- 42" AFF
BV-1	BACKWATER VALVE ZURN MODEL Z-1095-FC BACKWATER VALVE WITH ADJUSTABLE CLEANOUT, FERRULE EXTENSION, DURA-COATED CAST IRON BODY, HUB INLET AND OFFSET SPIGOT OUTLET, BRONZE THREADED COVER, AUTOMATIC TYPE VALVE SEAT AND FLAPPER WHICH HANGS CLOSED WHEN NOT OPERATING	
HT-1	HOLDING TANK IN-GROUND CAST CONCRETE VAULT WITH GALVANIZED STEEL ACCESS LID AND INTERNAL TANK, HIGH WATER ALARMS CONNECTED TO BAS, REFER TO DETAIL P0-02/08 FOR BASIS OF DESIGN MANUFACTURER AND INSTALLATION REQUIREMENTS, PROVIDE AS LISTED OR APPROVED EQUAL	REFER TO DETAIL P0-02/08
WB-1	WASHING MACHINE CONNECTION WASHER BOX OATEY MODEL NO. 38995, 20 GAUGE GALV. STEEL BOX AND FACEPLATE WITH 2" DRAIN PIPE AND (2) 3/4" QUARTER-TURN BRASS HAMMER BALL VALVES WITH 3/4" HOSE THREAD CONNECTIONS AND 2" RUBBER TAILPIECE - PROVIDE OATEY MODEL NO. 38987 PVC TAILPIECE WHERE APPLICABLE, COORDINATE MOUNTING HEIGHT WITH WASHING MACHINE PROVIDED IN GENERAL CONTRACT, MAKE FINAL CONNECTIONS	
IM-1	REFRIGERATOR ICE MAKER CONNECTION ICE MAKER BOX OATEY MODEL NO. 39152, WITH QUARTER-TURN BALL VALVE AND WATER HAMMER, PROVIDE WATTS 9BD DUAL-CHECK VACUUM BREAKER, COORDINATE MOUNTING HEIGHT WITH REFRIGERATOR OR OTHER EQUIPMENT SUPPLIED IN GENERAL CONTRACT, MAKE FINAL CONNECTIONS	MOUNT 48" AFF AT COUNTERTOP EQUIPMENT UNO
IM-2	ICE MACHINE CONNECTION ICE MACHINE AND WATER FILTERS SUPPLIED IN GENERAL CONTRACT, PROVIDE 1/2" CW WITH QUARTER-TURN BALL VALVE AND WATTS 9BD DUAL-CHECK VACUUM BREAKER, PIPE ALL WASTES TO FLOOR DRAIN/FLOOR SINK, MAKE ALL FINAL CONNECTIONS INCLUDING WATER FILTERS	
DW-1	DISHWASHER CONNECTION DISHWASHER SUPPLIED IN GENERAL CONTRACT. PROVIDE 1/2" HW WITH QUARTER-TURN BALL VALVE UNDER SINK, PROVIDE CHROME PLATED BRASS DISHWASHER TAILPIECE AT ADJACENT SINK, MAKE ALL FINAL CONNECTIONS	
SP-1	ELEVATOR PIT SUMP PUMP LIBERTY PUMPS ELEVATOR SUMP PUMP MODEL ELV-280 SUBMERSIBLE 1/2HP CAST IRON EFFLUENT PUMP CAPABLE OF 50 GPM AT 15 FEET OF HEAD, 115/1/60, UL APPROVED, PROVIDE WITH LIBERTY PUMPS ELEVATOR SUMP PUMP CONTROL PANEL WITH SEPARATE PUMP AND CONTROL PANEL CIRCUITS AND REMOTE ALARM WITH AUXILIARY CONTACTS FOR CONNECTION TO BUILDING AUTOMATION SYSTEM. PROVIDE FLOATS AND SWITCHES AS REQUIRED FOR PUMP ON, PUMP OFF, AND HIGH WATER ALARMS/ACTIVIATION AS NEEDED. PROVIDE ADEQUATE CHORD, CONNECTOR LENGTHS AS NEEDED TO PROVIDE FULLY FUNCTIONING SYSTEM AS ILLUSTRATED IN PLUMBING PLANS AND DETAILS - COORDINATE ALL CONDUIT ROUTING AND REQUIREMENTS AND CONNECTIONS WITH ELECTRICAL CONTRACTOR AND MECHANICAL CONTRACTOR RESPONSIBLE FOR BAS/BMS. INSTALLATION SHALL COMPLY WITH ASME A17.1	REFER TO DETAIL P0-02/09
H-1	WALL HYDRANT - EXTERIOR/ENCASED/FREEZE-PROOF ZURN Z1300 ENCASED ECOLOTROL ANTI-SIPHON AUTOMATIC DRAINING WALL HYDRANT FOR FLUSH INSTALLATION, NON-FREEZE INTEGRAL BACKFLOW PREVENTER, BRONZE CASING, ALL BRONZE INTERNAL PARTS, NON-TURNING OPERATING RODS WITH FREE-FLOATING COMPRESSION CLOSURE VALVES, REPLACEABLE BRONZE SEAT AND SEAT WASHER, AND COMBINATION 3/4" FEMALE OR 1" MALE STRAIGHT IP INLET, NICKEL BRONZE BOX AND HINGED COVER WITH OPERATING KEY LOCK AND "WATER" CAST ONTO COVER	MOUNT 24" AFG
H-2	WALL HYDRANT - INTERIOR/ENCASED ZURN Z1350 ENCASED MODERATE CLIMATE WALL HYDRANT FOR FLUSH INSTALLATION IN NARROW WALL, BRONZE BODY, ALL BRONZE INTERNAL PARTS, REPLACEABLE SEAT WASHER, SCREWDRIVER OPERATED STOP VALVE IN SUPPLY KEY OPERATED CONTROL VALVE, 3/4" IP FEMALE INLET, 3/4" MALE HOSE CONNECTION, ADJUSTABLE ST STL BOX AND HINGED COVER WITH CYLINDER LOCK AND "WATER" STAMPED ONTO COVER	MOUNT 12" AFF
H-3	HOSE BIBB - INTERIOR/FACILTIES WOODFORD MODEL NO. 24 HYDRANT/HOSE BIBB, CHROME PATED BRASS, VACUUM BREAKER, 3/4" HOSE THREAD OUTLET, WALL FLANGE, AND OPTIONAL METAL WHEEL HANDLE - MOUNT BALL VALVE SHUTOFF FOR HYDRANTS (H-3) ON EXPOSED PIPING AT 6' AFF IN MECHANICAL/FACILITIES SPACES	MOUNT 12" AFF
FS-1	FLOOR SINK ZURN MODEL NO. Z1752-KC-Y-2 12"X12"X10" DEEP 16 GAUGE, ALL TYPE 304 ST STL LIGHT-DUTY SANI-FLOR RECEPTOR WITH NON-TILT, LOOSE SET 1/2 GRATE WITH 1/2" SQUARE OPENINGS, ANTI-SPLASH ST STL INTERIOR DOME STRAINER, ANCHOR-FLANGE WITH SEEPAGE HOLES AND CLAMP COLLAR, AND SEDIMENT BUCKET	SEE FOODSERVICE DRAWINGS FOR DIMENSIONS AND/OR COORD. LOCATION WITH KITCHEN EQUIPMENT CONTRACTOR
FS-2	FLOOR SINK ZURN MODEL NO. Z1749-KC-19 12"X12"X4" DEEP 16 GAUGE, ALL TYPE 304 ST STL LIGHT-DUTY SANI-FLOR RECEPTOR WITH NON-TILT, FULL-HINGED FULL GRATE WITH 1/2" SQUARE OPENINGS, ANTI-SPLASH ST STL INTERIOR DOME STRAINER, AND ANCHOR FLANGE W/ SEEPAGE HOLES AND CLAMP COLLAR	
FD-1	FLOOR DRAIN ZURN MODEL NO. ZN415B DURA-COATED CAST IRON DRAIN WITH BOTTOM OUTLET, COMBINATION INVERTABLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH SEEPAGE SLOTS, "TYPE B" POLISHED NICKEL BRONZE LIGHT-DUTY STRAINER.	
FD-2	FLOOR DRAIN WITH RAISED FLANGE STRAINER - RECESSED ZURN MODEL NO. ZN415I DURA-COATED CAST IRON DRAIN WITH BOTTOM OUTLET, COMBINATION INVERTABLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH SEEPAGE SLOTS, "TYPE I" POLISHED NICKEL BRONZE STRAINER WITH RAISED FLANGE - SET FOR USE AS RECESSED DRAIN WITH TOP OF FLANGE SET FLUSH WITH FINISH FLOOR	
FD-3	FLOOR DRAIN WITH RAISED FLANGE STRAINER - COLLARED ZURN MODEL NO. ZN415I DURA-COATED CAST IRON DRAIN WITH BOTTOM OUTLET, COMBINATION INVERTABLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH SEEPAGE SLOTS, "TYPE I" POLISHED NICKEL BRONZE STRAINER WITH RAISED FLANGE - SET FOR USE AS RAISED COLLAR DRAIN WITH TOP OF FLANGE SET ABOVE FINISH FLOOR	
FD-4	PVC HUB DRAIN FOR AHU CONDENSATE 4 X 2, 4 X 3, OR 6 X 4 SCHED. 40 SOLID WALL PVC REDUCING COUPLING SET AS HUB DRAIN ABOVE FINISH FLOOR - COORDINATE HEIGHT WITH AHU CONDENSATE PIPING IN FIELD - CONFIRM CONDENSATE DRAIN PIPE SIZES AT PLAN TO DETERMINE COUPLING SIZES NEEDED	
TD-1	TRENCH DRAIN - KITCHEN TRENCH BY GC PER DETAILING BY ARCHITECT - SEE ARCHITECTURE DRAWINGS (K) FOR DETAILS AND COORDINATE INSTALLATION OF 4" DRAIN (FD-1) AT BOTTOM OF TRENCH/SUMP AS NEEDED	
CO-1	CLEANOUT - FLOOR ZURN MODEL NO. ZN1400-BP WITH NICKEL BRONZE TOP AND BRONZE PLUG, PROVIDE -CM CARPET CLEANOUT MARKER WHERE IN CARPET	
CO-2	CLEANOUT - WALL ZURN MODEL NO. Z1441-BP-VP WALL CLEANOUT OR Z1446-BP-VP WALL CLEANOUT TEE TO SUIT APPLICATION, VANDAL PROOF SECURED TOP, SMOOTH ST STL ROUND ACCESS COVER	
CO-3	CLEANOUT - EXTERIOR GRADE/PAVING ZURN MODEL NO. Z1449-BP CLEANOUT FERRULE WITH BRONZE PLUG AT GRADE, WHERE IN PAVING PROVIDE WITH ZURN MODEL NO. ZN1474-G-VP HEAVY DUTY CLEANOUT HOUSING WITH INTEGRAL ANCHOR FLANGE, SECURED SCORIATED NICKEL BRONZE COVER WITH LIFTING DEVICE AND VANDAL-PROOF SCREW	
CO-4	CLEANOUT - CEILING/CRAWLSPACE ZURN MODEL NO. Z1440-BP CLEANOUT FERRULE WITH BRONZE PLUG	
RD	ROOF DRAIN JAY R. SMITH MODEL NO. 1310-CID-C-R, DUCO CAST IRON BODY WITH CAST IRON DOME, UNDER-DECK CLAMP, ROOF SUMP RECEIVER, AND COMBINATION MEMBRANE FLASHING CLAMP/GRAVEL GUARD	SIZE(S) PER PLAN

FIXTURE SCHEDULE

REFER TO SPECIFICATION SECTION 22 42 00 FOR A LIST OF APPROVED EQUALS

MARK	DESCRIPTION	REMARKS
S-1	SINGLE SINK (ACCESSIBLE) - MEDIA JUST, SINGLE BOWL, MODEL NO. SL-ADA-1921-A-GR, 18 GAUGE, TYPE 304 STAINLESS STEEL SELF-RIMMING, SATIN FINISH, FULLY COATED UNDERSIDE SOUND DEADENED, 19" x 21" x 4 1/2" WITH 14" x 18" BOWL, 3-HOLE PUNCHED, 4" CENTERS, CENTER BACK OUTLET, CHICAGO FAUCETS MODEL NO. 1100-GN8AE35-317AB CAST BRASS FAUCET, 8" RIGID/SWING GOOSENECK SPOUT, 4" WRIST BLADE HANDLES, QUATURN COMPRESSION CARTRIDGES, 1.5 GPM AERATOR, PROVIDE McGUIRE NO. LF170 SUPPLIES WITH ESCUTCHEONS, McGUIRE NO. 151 CRUMB CUP STRAINER, McGUIRE 8912C P-TRAP, SUPPLIES SHALL BE COMPATIBLE WITH TAILPIECE ON FAUCET, PROVIDE McGUIRE PLUMBEREX HANDY-SHILED COVERS ON TRAP AND SUPPLIES	SEE ARCHITECTURE DRAWINGS FOR COUNTER HEIGHT
S-2	DOUBLE SINK (ACCESSIBLE) - KITCHENETTE JUST, DOUBLE BOWL, MODEL NO. DLN-ADA-1829-A-GR, 18 GAUGE, TYPE 304 STAINLESS STEEL SELF-RIMMING, SATIN FINISH, FULLY COATED UNDERSIDE SOUND DEADENED, 18" x 29" x 4 1/2" WITH 12" x 12" BOWLS, 3-HOLE PUNCHED, 4" CENTERS, CENTER BACK OUTLET, PROVIDED WITH INTEGRAL DRAINS/CUP STRAINERS AND TAILPIECE, PROVIDE CHICAGO FAUCETS MODEL NO. 1100-GN8AE35-317AB CAST BRASS FAUCET, 8" RIGID/SWING GOOSENECK SPOUT, 4" WRIST BLADE HANDLES, QUATURN COMPRESSION CARTRIDGES, 1.5 GPM AERATOR, PROVIDE McGUIRE NO. LF170 SUPPLIES WITH ESCUTCHEONS, McGUIRE NO. 151 CRUMB CUP STRAINERS, McGUIRE 8912C P-TRAP, AND McGUIRE 111C16G17 CONTINUOUS WASTE. SUPPLIES SHALL BE COMPATIBLE WITH TAILPIECE ON FAUCET, PROVIDE McGUIRE PLUMBEREX HANDY-SHILED COVERS ON TRAP AND SUPPLIES	SEE ARCHITECTURE DRAWINGS FOR COUNTER HEIGHT
S-3	SINGLE SINK (ACCESSIBLE) - HEALTH / EC-SC JUST, SINGLE BOWL, MODEL NO. SL-ADA-1815-A-GR, 18 GAUGE, TYPE 304 STAINLESS STEEL SELF-RIMMING, SATIN FINISH, FULLY COATED UNDERSIDE SOUND DEADENED, 18" x 15" x 4 1/2" WITH 12" x 12" BOWL, 2-HOLE PUNCHED, 4" CENTERS, CENTER BACK OUTLET, CHICAGO FAUCETS MODEL NO. 895-317FCABCP CAST BRASS FAUCET, 3-1/2" FLOW CONTROL RIGID/SWING GOOSENECK SPOUT, 4" WRIST BLADE HANDLES, QUATURN COMPRESSION CARTRIDGES, 1.5 GPM LAMINAR FLOW CONTROL INSERT IN SPOUT, PROVIDE McGUIRE NO. LF170 SUPPLIES WITH ESCUTCHEONS, McGUIRE NO. 151 CRUMB CUP STRAINER, McGUIRE 8912C P-TRAP, SUPPLIES SHALL BE COMPATIBLE WITH TAILPIECE ON FAUCET, PROVIDE McGUIRE PLUMBEREX HANDY-SHILED COVERS ON TRAP AND SUPPLIES PROVIDE BRADLEY MODEL MODEL NO. S19-200B FAUCET MOUNTED EYEWASH	SEE ARCHITECTURE DRAWINGS FOR COUNTER HEIGHT
S-4	UTILITY SINK - LAUNDRY TRAY JUST, MODEL NO. SB-124, 14 GAUGE, TYPE 304 STAINLESS STEEL UTILITY SINK, 27" x 27" WITH ONE 24" x 24" x 12" DEEP BOWL, 12" BACKSPLASH WITH 2-HOLE PUNCH ON 8" CENTERS, AND 1 5/8" O.D. TUBULAR LEGS WITH GUSSETS AND ADJUSTABLE BULLET FEET, SEAMLESS WELDED CONSTRUCTION THROUGHOUT, 1 1/2" ROLL RIM ON THREE SIDES, POLISHED FINISH AT INTERIOR, BRUSH FINISH ON EXTERIOR EXPOSED SURFACES, CHICAGO FAUCETS MODEL NO. 540-LDABCP, WALL/BACKSPLASH MOUNTED, POLISHED CHROME PLATED BRASS FAUCET, ADJUSTABLE 8" CENTER (7-1/4" - 8-3/4"), 2-3/8" LEVER HANDLES, 6" S-TYPE SWING SPOUT, 2.2 GPM AERATOR, QUATURN COMPRESSION CARTRIDGES, 2-5/16" DIAM. SLIP FLANGES, PROVIDE McGUIRE NO. LF170 SUPPLIES WITH ESCUTCHEONS, McGUIRE NO. 151 CRUMB CUP STRAINER, McGUIRE 8912C P-TRAP, AND ALL TAILPIECES, INLET CONNECTIONS, PLATES, NUTS, NIPPLES, WASHERS, ETC. FROM THE MANUFACTURER NEEDED FOR A COMPLETE INSTALLATION	
S-5	UTILITY SINK - BAND JUST, MODEL NO. SB-130, 14 GAUGE, TYPE 304 STAINLESS STEEL UTILITY SINK, 33" x 27" WITH ONE 30" x 24" x 12" DEEP BOWL, 12" BACKSPLASH WITH 2-HOLE PUNCH ON 8" CENTERS, AND 1-5/8" O.D. TUBULAR LEGS WITH GUSSETS AND ADJUSTABLE BULLET FEET, SEAMLESS WELDED CONSTRUCTION THROUGHOUT, 1-1/2" ROLL RIM ON THREE SIDES, POLISHED FINISH AT INTERIOR, BRUSH FINISH ON EXTERIOR EXPOSED SURFACES, CHICAGO FAUCETS MODEL NO. 540-LDABCP, WALL/BACKSPLASH MOUNTED, POLISHED CHROME PLATED BRASS FAUCET, ADJUSTABLE 8" CENTER (7-1/4" - 8-3/4"), 2-3/8" LEVER HANDLES, 6" S-TYPE SWING SPOUT, 2.2 GPM AERATOR, QUATURN COMPRESSION CARTRIDGES, 2-5/16" DIAM. SLIP FLANGES, PROVIDE McGUIRE NO. LF170LKC SUPPLIES WITH ESCUTCHEONS, McGUIRE NO. 151 CRUMB CUP STRAINER, McGUIRE 8912C P-TRAP, AND ALL TAILPIECES, INLET CONNECTIONS, PLATES, NUTS, NIPPLES, WASHERS, ETC. FROM THE MANUFACTURER NEEDED FOR A COMPLETE INSTALLATION	
S-6A	ART SINK (STANDARD) JUST, SINGLE BOWL, MODEL NO. SLX-1921-A-GR, 18 GAUGE, TYPE 304 STAINLESS STEEL SELF-RIMMING, SATIN FINISH, FULLY COATED UNDERSIDE SOUND DEADENED, 19" x 21" x 10-1/2" WITH 14" x 18" BOWL, 3-HOLE PUNCHED, 4" CENTERS, CENTER BACK OUTLET, CHICAGO FAUCETS MODEL NO. 786-GR8AE35V317AB CAST BRASS FAUCET, 8" RESTRICTED SWING GOOSENECK SPOUT, 4" VANDAL PROOF WRIST BLADE HANDLES, QUATURN COMPRESSION CARTRIDGES, 1.5 GPM VANDAL PROOF AERATOR, PROVIDE McGUIRE NO. LF170LK SUPPLIES WITH ESCUTCHEONS, McGUIRE NO. 151 CRUMB CUP STRAINER, SUPPLIES SHALL BE COMPATIBLE WITH TAILPIECE ON FAUCET, PROVIDE WITH ZURN MODEL NO. Z1180 ACID-RESISTANT COMPOSITE SOLIDS INTERCEPTOR WITH REMOVABLE PVC SEDIMENT BUCKET AND REMOVABLE PERFORATED FLOW DEFUSING/INTERCEPTING PVC SCREEN, TOP ACCESS GASKETED SECURED COVER, ST STL DRAW LATCHES AND HARDWARE, ABS HANDLE FOR REMOVAL OF SEDIMENT BUCKET AND SCREEN, 1-1/2" THREADED LOW INLET AND HIGH OUTLET, INSTALL SOLIDS INTERCEPTOR IN BASE CABINET BELOW SINK, PROVIDE WASTE PIPING TO AND FROM SOLIDS INTERCEPTOR AS NEEDED	SEE ARCHITECTURE DRAWINGS FOR COUNTER HEIGHT
S-6B	ART SINK (ACCESSIBLE) SAME AS S-6A EXCEPT PROVIDE WITH JUST, SINGLE BOWL, MODEL NO. SL-ADA-1921-A-GR (19" x 21" x 4 1/2" DEEP), AND INSTALL SOLIDS INTERCEPTOR IN BASE CABINET NEXT TO SINK, McGUIRE PLUMBEREX HANDY-SHILED COVERS ON SUPPLIES	
S-7	SCIENCE CLASSROOM SINK (STANDARD) - TEACHER ISLAND COUNTER RESIN SINK AND TRIM PROVIDED IN GENERAL CONTRACT - COORDINATE CONNECTIONS WITH FAUCET(S) AND STRAINER(S) PROVIDED IN GENERAL CONTRACT. PROVIDE ACID RESISTANT POLYPROPYLENE SINK OUTLET TAILPIECE, ZURN MODEL NO. Z9A-DT-112 1.5 GAL. DILUTION TANK IN BASE CABINET UNDER SINK, SEAMLESS CONSTRUCTION OF HIGH-DENSITY POLYETHYLENE, REMOVABLE BOLTED POLYPROPYLENE COVER WITH NEOPRENE RUBBER GASKET AND ST STL HARDWARE, 1-1/2" TOP INLET AND SIDE OUTLET, INCLUDING ACID NEUTRALIZATION MEDIUM, AND POLYPROPYLENE OUTLET PIECE FROM TANK TO DRAIN PIPING AS NEEDED FOR COMPLETE INSTALLATION, PROVIDE MCGUIRE NO. LF170 SUPPLIES WITH TAILPIECES COMPATIBLE WITH TAILPIECES AT FAUCET(S)	SEE ARCHITECTURE DRAWINGS FOR COUNTER HEIGHT
S-8A	SCIENCE CLASSROOM SINK (STANDARD) - STUDENT COUNTER RESIN SINK AND TRIM PROVIDED IN GENERAL CONTRACT - COORDINATE CONNECTIONS WITH FAUCET(S) AND STRAINER(S) PROVIDED IN GENERAL CONTRACT. PROVIDE ACID RESISTANT POLYPROPYLENE SINK OUTLET TAILPIECE, ZURN MODEL NO. Z9A-DT-112 1.5 GAL. DILUTION TANK IN BASE CABINET UNDER SINK, SEAMLESS CONSTRUCTION OF HIGH-DENSITY POLYETHYLENE, REMOVABLE BOLTED POLYPROPYLENE COVER WITH NEOPRENE RUBBER GASKET AND ST STL HARDWARE, 1-1/2" TOP INLET AND SIDE OUTLET, INCLUDING ACID NEUTRALIZATION MEDIUM, AND POLYPROPYLENE OUTLET PIECE FROM TANK TO DRAIN PIPING AS NEEDED FOR COMPLETE INSTALLATION, PROVIDE MCGUIRE NO. LF170LK SUPPLIES WITH TAILPIECES COMPATIBLE WITH TAILPIECES AT FAUCET(S)	SEE ARCHITECTURE DRAWINGS FOR COUNTER HEIGHT AND PLUMBING
S-8B	SCIENCE CLASSROOM SINK (ACCESSIBLE) - STUDENT COUNTER SAME AS S-8A EXCEPT DILUTION TANK TO BE INSTALLED IN BASE CABINET NEXT TO SINK, McGUIRE PLUMBEREX HANDY-SHILED COVERS ON SUPPLIES	
S-9	SINGLE SINK (ACCESSIBLE) - SCIENCE PREP ROOM SAME AS S-8A EXCEPT DILUTION TANK TO BE INSTALLED IN BASE CABINET NEXT TO SINK, PROVIDE COUNTER MOUNTED EYEWASH (EM-2) AND MIXING VALVE (MV-3), McGUIRE PLUMBEREX HANDY-SHILED COVERS ON SUPPLIES	
MV-1	MIXING VALVE - KITCHEN SYMMONS MODEL NO. 7-1000A TEMPCONTROL THERMOSTATIC CONTROLLER WITH INTEGRAL SERVICE STOPS, REMOVABLE CARTRIDGE WITH STRAINER, STAINLESS STEEL PISTON, AND LIQUID FILL THERMAL MOTOR WITH BELLOWS MOUNTED OUT OF WATER. ROUGH CHROME FINISH WITH 1-1/2" INLETS AND 2" OUTLET. PROVIDE QUARTER-TURN BALL VALVES AND CHECK VALVES ON INLETS AND OUTLET WITH TEMPERATURE GAUGES	MOUNT ADJ. TO WH-1 AT +/- 60" AFF COORDINATE WITH OTHER TRADES REFER TO DETAIL P0-02/06
MV-2	MIXING VALVE - ATHLETICS SHOWERS SYMMONS MODEL NO. 7-230B-CK-M-B MAXLINE 7 SERIES WATER TERMPERATURE LIMITING VALVE WITH INTEGRAL CHECKS WITH WHITE ENAMEL WALL CABINET AND 3/4" MALE NPT CONNECTIONS. PROVIDE QUARTER-TURN BALL VALVES AND CHECK VALVES ON INLETS AND OUTLET WITH TEMPERATURE GAUGES ABOVE CEILING	MOUNT IN GYM OFFICE +/- 60" AFF COORDINATE WITH SHELVING OR OTHER EQUIP. REFER TO DETAIL P0-02/05
MV-3	MIXING VALVE - EMERGENCY EYEWASH BRADLEY MODEL S19-2000EFX8 THERMOSTATIC MIXING VALVE WITH ROUGH BRONZE FINISH, INTEGRAL STRAINER CHECKSTOPS, LIQUID-FILLED THERMOSTAT, INTEGRAL DIAL THERMOMETER, POSITIVE SHUT-OFF OF HOT SUPPLY WHEN COLD SUPPLY IS LOST, COLD WATER BYPASS IN CASE OF HOT WATER FAILURE OR LOSS OF THERMOSTAT CHARGE, AND SET POINT ADJUSTMENT FROM 65°F TO 95°F, FACTORY SET AT 85°F, 1/2" INLETS, 1/2" OUTLET, TEMPERATURE CONTROL SHALL BE ACCURATE TO WITHIN ±3°F, PROVIDE QUARTER-TURN BALL VALVES AND CHECK VALVES ON INLETS AND OUTLET WITH TEMPERATURE GAUGES.	MOUNT IN CEILING ADJ. TO EM-1 COORDINATE WITH OTHER TRADES REFER TO DETAIL P0-02/05
MV-4	MIXING VALVE - EMERGENCY SHOWER BRADLEY MODEL S19-2200 THERMOSTATIC MIXING VALVE WITH ROUGH BRONZE FINISH, INTEGRAL STRAINER CHECKSTOPS, LIQUID-FILLED THERMOSTAT, INTEGRAL DIAL THERMOMETER, POSITIVE SHUT-OFF OF HOT SUPPLY WHEN COLD SUPPLY IS LOST, COLD WATER BYPASS IN CASE OF HOT WATER FAILURE OR LOSS OF THERMOSTAT CHARGE, AND SET POINT ADJUSTMENT FROM 65°F TO 95°F - FACTORY SET AT 85°F, 1" INLETS, 1-1/4" OUTLET, TEMPERATURE CONTROL SHALL BE ACCURATE TO WITHIN ±3°F, PROVIDE QUARTER-TURN BALL VALVES AND CHECK VALVES ON INLETS AND OUTLET WITH TEMPERATURE GAUGES.	MOUNT IN CEILING ADJ. TO EM-1 COORDINATE WITH OTHER TRADES REFER TO DETAIL P0-02/04
EM-1	EMERGENCY SHOWER/EYEWASH/FACEWASH (ACCESSIBLE) STINGRAY SYSTEMS MODEL S5200-NF-EP-ABS FLOOR MOUNTED COMBINATION EMERGENCY FIXTURE WITH DUAL AERATED SPRAY HEADS OF POLYPROPYLENE WITH FLIP-TOP DUST CAPS, THAT REMAIN OPEN UNTIL MANUALLY CLOSED, INCLUDES 15-3/4" DIAM. BOWL, FILTER AND EASY-USE ACTIVATOR WITH UNIVERSAL ANSI COMPLIANT SIGN. UNIT CAPABLE OF 20GPM AT 30 PSI. PULL DOWN SHOWER ACTIVATOR SHALL BE RIGID PULL ROD WITH TRIANGULAR HANDLE LOCATED ABOVE FLOOR, PROVIDE A WALL BRACE MOUNTED AS CLOSE TO SHOWER HEAD AS POSSIBLE FOR RIGIDITY, INCLUDES MANUFACTURER'S STANDARD SAFETY SIGN. COMPLIES WITH ANSI STANDARD Z358.1-2009, PROVIDE (2) SETS TESTING EQUIPMENT	36" AFF TO EYEWASH SPRAYHEADS MAINTAIN 27" CLEAR KNEE SPACE NOT PIPED TO WASTE - POINT DRAIN OUTLET AT FLOOR DRAIN (FD-1) PROVIDED ADJACENT TO SHOWER
EM-2	EMERGENCY EYEWASH - SWING ACTIVATED BRADLEY MODEL S19-270E POLISHED, CHROME-PLATED BRASS EYEWASH, UNIVERSAL RIGHT OR LEFT HAND MOUNTING W/ LOCKING MECHANISM, WITH TWIN PERFORATED ANTIMICROBIAL STEADY FLOWING DISC EYE/FACE WASH HEADS WITH DUST COVERS THAT AUTOMATICALLY RELEASE WITH WATER PRESSURE, VANDAL RESISTANT CERAMIC VALVE, 1/2" STAY-OPEN BALL VALVE IS ACTIVATED BY PULLING SWING ARM 90° OUT OVER SINK, WATER FLOW IS STOPPED BY RETURNING ARM TO ORIGINAL POSITION, PROVIDE MANUFACTURER'S STANDARD SAFETY SIGN	MOUNT EYEWASH ON COUNTER, RIGHT SIDE OF SINK, REFER TO ARCHITECTURE DRAWINGS FOR COUNTER HEIGHT

FIXTURE SCHEDULE

REFER TO SPECIFICATION SECTION 22 42 00 FOR A LIST OF APPROVED EQUALS

MARK	DESCRIPTION	REMARKS
WC-1	WATER CLOSET (STANDARD) AMERICAN STANDARD MADERA MODEL NO. 2234.001 FLOOR MOUNTED, BOTTOM OUTLET, 1-1/2" TOP SPUD, VITREOUS CHINA, HIGH EFFICIENCY TOILET WITH ELONGATED BOWL, 1.28 GAL/FLUSH SIPHON JET OPERATION, AND BOLTS AND CAPS, WITH SLOAN ROYAL MODEL NO. 111-1.28 FLUSH VALVE, PROVIDE WITH CHURCH PRODUCTS NO. 9500SSCT, EXTRA HEAVY DUTY SOLID PLASTIC, OPEN FRONT, ELONGATED SEAT WITH STAINLESS STEEL POSTS, STAINLESS STEEL SELF-SUSTAINING CHECK HINGES, AND STA-TITE FASTENING NUTS	15" AFF TO RIM
WC-2	WATER CLOSET (ACCESSIBLE) AMERICAN STANDARD MADERA MODEL NO. 3043.001 FLOOR MOUNTED, BOTTOM OUTLET, 1-1/2" TOP SPUD, VITREOUS CHINA, HIGH EFFICIENCY TOILET WITH ELONGATED BOWL, 1.28 GAL/FLUSH SIPHON JET OPERATION, AND BOLTS AND CAPS, WITH SLOAN ROYAL MODEL NO. 111-1.28 FLUSH VALVE, PROVIDE WITH CHURCH PRODUCTS NO. 9500SSCT, EXTRA HEAVY DUTY SOLID PLASTIC, OPEN FRONT, ELONGATED SEAT WITH STAINLESS STEEL POSTS, STAINLESS STEEL SELF-SUSTAINING CHECK HINGES, AND STA-TITE FASTENING NUTS	16 1/2" AFF TO RIM COORD. VALVE HANDLE HEIGHT WITH GRAB BARS
WC-3	WATER CLOSET (ACCESSIBLE) - FACULTY/STAFF AMERICAN STANDARD MADERA MODEL NO. 3043.001 FLOOR MOUNTED, BOTTOM OUTLET, 1-1/2" TOP SPUD, VITREOUS CHINA, HIGH EFFICIENCY TOILET WITH ELONGATED BOWL, 1.28 GAL/FLUSH SIPHON JET OPERATION, AND BOLTS AND CAPS, WITH SLOAN ROYAL MODEL NO. 111-1.28 FLUSH VALVE, PROVIDE WITH CHURCH PRODUCTS NO. 9500SSCT, EXTRA HEAVY DUTY SOLID PLASTIC, OPEN FRONT, ELONGATED SEAT WITH STAINLESS STEEL POSTS, STAINLESS STEEL SELF-SUSTAINING CHECK HINGES, AND STA-TITE FASTENING NUTS	16 1/2" AFF TO RIM COORD. VALVE HANDLE HEIGHT WITH GRAB BARS
WC-4	WATER CLOSET (ACCESSIBLE) - ADAPTIVE CURRICULUM AMERICAN STANDARD MADERA MODEL NO. 3043.001 FLOOR MOUNTED, BOTTOM OUTLET, 1-1/2" TOP SPUD, VITREOUS CHINA, HIGH EFFICIENCY TOILET WITH ELONGATED BOWL, 1.1 - 1.6 GAL/FLUSH SIPHON JET OPERATION, AND BOLTS AND CAPS PROVIDE WITH SLOAN REGAL MODEL NO. BPW-1150-1.6XL BEDPAN WASHER FLUSH VALVE WITH OFFSET FLUSH CONNECTION FOR CLEARANCE AROUND GRAB BAR PROVIDE WITH CHURCH PRODUCTS NO. 760T, HEAVY DUTY SOLID PLASTIC, CLOSED FRONT, ROUND SEAT WITH COVER, STAINLESS STEEL POSTS, STAINLESS STEEL SELF-SUSTAINING CHECK HINGES, AND STA-TITE FASTENING NUTS	16-1/2" AFF TO RIM COORD. VALVE HANDLE HEIGHT WITH GRAB BARS WHERE APPLIES
U-1	URINAL (STANDARD) AMERICAN STANDARD MODEL NO. 6590.001 WASHBROOK VITREOUS CHINA WASHOUT TOP SPUD URINAL, 0.5 GPF, 3/4" TOP SPUD, FLUSHING ELONGATED RIM, WITH SLOAN ROYAL MODEL N0. 186-0.5 MANUAL FLUSH VALVE, PROVIDE ZURN CARRIER MODEL 1221 OR 1222 TO FIT INSTALLATION REQUIREMENTS 1	22" AFF TO RIM
U-2	URINAL (ACCESSIBLE) SAME AS U-1 EXCEPT MOUNTING HEIGHT	17" AFF TO RIM
L-1	LAVATORY (STANDARD) - STUDENT AMERICAN STANDARD REGALYN MODEL NO. 4867.004 ENAMELED CAST IRON, WALL HUNG, 4" CENTERS, 19" x 17" LAVATORY WITH CHICAGO FAUCETS MODEL NO. 3300-ABCP HOT AND COLD WATER METERING MIXING FAUCET, 4" CENTERS, 0.5 GPM VANDAL PROOF NON-AERATING SPRAY, ADJUSTABLE AUTO-TIMED METERING CARTRIDGE, CHROME PLATED SOLID CAST BRASS FAUCET MEETING LOW-LEAD REQUIREMENTS PROVIDE McGUIRE NO. LF170LKC LOOSE-KEY SUPPLIES WITH ESCUTCHEONS, McGUIRE NO. 155A DRAIN AND TAILPIECE WITH PERFORATED STRAINER, AND McGUIRE NO. 8912C P-TRAP. PROVIDE ZURN CARRIER MODEL NO. Z1224 TO FIT INSTALLATION REQUIREMENTS. TAILPIECE ON SUPPLIES SHALL BE COMPATIBLE WITH TAILPIECE ON FAUCET.	31" AFF TO RIM
L-2	LAVATORY (ACCESSIBLE) - STUDENT SAME AS L-1 EXCEPT FOR MOUNTING HEIGHT	34" AFF TO RIM
L-3	LAVATORY (ACCESSIBLE) - FACULTY AMERICAN STANDARD REGALYN MODEL NO. 4867.001 ENAMELED CAST IRON, WALL HUNG, SINGLE HOLE, 19" x 17" LAVATORY WITH CHICAGO FAUCETS MODEL 2200-E2805ABCP CHROME PLATED CAST BRASS SINGLE LEVER, SINGLE HOLE MOUNTED FAUCET WITH CERAMIC CARTRIDGE, TEMPERATURE LIMIT STOP, AND VANDAL RESISTANT .5 GPM AERATOR. PROVIDE McGUIRE NO. LF170LKC LOOSE-KEY SUPPLIES WITH ESCUTCHEONS, McGUIRE NO. 155A DRAIN AND TAILPIECE WITH PERFORATED STRAINER, AND McGUIRE NO. 8902C P-TRAP. PROVIDE ZURN CARRIER MODEL NO. Z1224 TO FIT INSTALLATION REQUIREMENTS. PROVIDE McGUIRE PROWRAP ON SUPPLIES AND TRAP. TAILPIECE ON SUPPLIES SHALL BE COMPATIBLE WITH TAILPIECE ON FAUCET. 1	34" AFF TO RIM
EWC-1	ELECTRIC WATER COOLER (BI-LEVEL ACCESSIBLE) ELKAY MODEL NO. LZSTL8WSLK BARRIER-FREE BI-LEVEL WATER COOLER SELF-CLOSING EASY-TOUCH CONTROLS ON FRONT AND BOTH SIDES, FLEXIBLE GUARD BUBBLERS, STAINLESS STEEL ANTI-SPLASH TOP DESIGN, WITH OPTIONAL FULL STAINLESS STEEL FINISH CABINET PROVIDE ELKAY CARRIER MODEL NO. MLP200 FOR FIXTURE SUPPORT PROVIDE MCGUIRE NO. 8912C P-TRAP AND QUARTER-TURN FULL-PORT BALL VALVE ON COLD WATER LINE WITHIN CABINET, PROVIDE CANE DETECTION APRON AT UPPER UNIT WHEN COOLER NOT LOCATED WITHIN ACCESSIBLE ALCOVE	36" AFF TO UPPER SPOUT 30" AFF TO LOWER SPOUT
EWC-2	ELECTRIC WATER COOLER (SINGLE ACCESSIBLE) ELKAY MODEL NO. EZS4 BARRIER-FREE WATER COOLER SELF-CLOSING EASY-TOUCH CONTROLS ON FRONT AND BOTH SIDES, FLEXIBLE GUARD BUBBLER, STAINLESS STEEL ANTI-SPLASH TOP DESIGN, WITH OPTIONAL FULL STAINLESS STEEL FINISH CABINET PROVIDE ELKAY CARRIER MODEL NO. MLP100 FOR FIXTURE SUPPORT PROVIDE MCGUIRE NO. 8912C P-TRAP AND QUARTER-TURN FULL-PORT BALL VALVE ON COLD WATER LINE WITHIN CABINET, PROVIDE CANE DETECTION APRON WHEN COOLER NOT LOCATED WITHIN ACCESSIBLE ALCOVE	42" AFF TO SPOUT
MR-1	MOP RECEPTOR FLORESTONE MODEL 82 36" x 36" x 12" ONE-PIECE PRECAST TERRAZZO MOP RECEPTOR WITH ST STL INTEGRAL CAST PROTECTIVE CAP ON ALL SIDES AND TWO ST STL INTEGRAL CAST TILING FLANGES. DRAIN BODY SHALL BE BRASS, CAST INTEGRAL WITH A NON-CAULKED CONNECTION NOT LESS THAN 1" DEEP TO A 3" PIPE AND 18 GAUGE ST STL STRAINER, FLORESTONE NO. MR-371 SERVICE SINK FAUCET WITH INTEGRAL STOPS, VACUUM BREAKER, SPOUT, AND PAIL HOOK WALL BRACE, AND FLORESTONE NO. MR-370 5'-LONG HOSE AND HOSE BRACKET. PROVIDE FLOOR DRAIN (FD-1) WITH 3" DRAIN BODY AND ASSOC. PIPING	36" AFF TO FAUCET CONTROLS, 18" AFF TO HOSE BRACKET PROVIDE TILING FLANGE ORIENTATION TO MATCH PLAN
MR-2	MOP RECEPTOR RECEPTOR BASIN BY GC AS DETAILED IN ARCHITECTURE (K) DRAWINGS. DRAIN BODY SHALL BE BRASS, CAST INTEGRAL WITH A NON-CAULKED CONNECTION NOT LESS THAN 1" DEEP TO A 3" PIPE AND 18 GAUGE ST STL STRAINER, FLORESTONE NO. MR-371 SERVICE SINK FAUCET WITH INTEGRAL STOPS, VACUUM BREAKER, SPOUT, AND PAIL HOOK WALL BRACE, AND FLORESTONE NO. MR-370 5'-LONG HOSE AND HOSE BRACKET. PROVIDE FLOOR DRAIN (FD-1) WITH 3" DRAIN BODY AND ASSOC. PIPING	36" AFF TO FAUCET CONTROLS, 18" AFF TO HOSE BRACKET REFER TO ARCHITECTURE (K) DRAWINGS FOR RECEPTOR DETAILS
SH-1	SHOWER - STUDENT (ACCESSIBLE ROLL-IN/TRANSFER) SYMMONS HYDAPIPE SYSTEM MODEL NO. 1-801-458-FSB-60-285, HYDAPIPE EXPOSED METERING SHOWER VALVE WITH INTEGRAL STOP AND 1/2" SWEAT CONNECTIONS (NO. 4-420) AND FIXED SPRAY FRE-FLO INSTITUTIONAL SHOWERHEAD (2 GPM) WITH VANDAL RESISTANT MOUNTING HARDWARE, LEVER DIVERTER VALVE, AND WALL/HAND SHOWER MODEL NO. FSB (2.5 GPM) WITH 5' FLEXIBLE METAL HOSE, IN-LINE VACUUM BREAKER, AND 30" VERTICAL SLIDE BAR. PROVIDE FLOOR DRAIN (FD-1) WITH 3" DRAIN BODY AND ASSOC. PIPING 1	43" AFF TO SHOWER VALVE AND DIVERTER VALVE 72" AFF TO BOTTOM OF FIXED SHOWER HEAD BOTTOM OF SLIDE BAR 1-1/2" ABOVE HORIZONTAL GRAB BAR 48" AFF TO OUTLET OF HAND SHOWER
SH-2	SHOWER - STUDENT (STANDARD) SYMMONS HYDAPIPE SYSTEM MODEL NO. 1-901-60, HYDAPIPE EXPOSED METERING SHOWER VALVE WITH INTEGRAL STOP AND 1/2" SWEAT CONNECTIONS (NO. 4-420) AND FRE-FLO INSTITUTIONAL SHOWERHEAD WITH ADJUSTABLE SPRAY (NO. 4-295-2.0) (2 GPM) WITH VANDAL RESISTANT MOUNTING HARDWARE. PROVIDE FLOOR DRAIN (FD-1) WITH 3" DRAIN BODY AND ASSOC. PIPING	48" AFF TO SHOWER VALVE BOTTOM OF SHOWER HEAD AT 72" AFF (BOYS) 66" AFF (GIRLS)
SH-3	SHOWER - FACULTY (ACCESSIBLE) ROLL-IN/TRANSFER SYMMONS MODEL NO. C-96-500-B30-V-X-1.5 WITH PRESSURE BALANCING ANTI-SCALD VALVE WITH INTEGRAL SERVICE STOPS, LEVERTROL LEVER DIVERTER VALVE, 1.5 GPM SOLID BRASS ADJUSTABLE SHOWER HEAD WITH ARM AND FLANGE, AND AND WALL/HAND SHOWER WITH 5' FLEXIBLE METAL HOSE, IN-LINE VACUUM BREAKER, AND 30" VERTICAL SLIDE BAR. SHOWER VALVE SHALL BE OF ALL BRONZE AND STAINLESS STEEL WITH ONLY ONE MOVING PART, PROVIDE FLOOR DRAIN (FD-1) WITH 3" DRAIN BODY AND ASSOC. PIPING 1	43" AFF TO SHOWER VALVE AND DIVERTER VALVE 72" AFF TO BOTTOM OF FIXED SHOWER HEAD BOTTOM OF SLIDE BAR 1-1/2" ABOVE HORIZONTAL GRAB BAR 48" AFF TO OUTLET OF HAND SHOWER
SH-4	SHOWER - FACULTY (ACCESSIBLE TRANSFER) SYMMONS HYDAPIPE SYSTEM MODEL NO. 1-801S-458-FSB-56, HYDAPIPE EXPOSED PRESSURE BALANCING SHOWER VALVE WITH INTEGRAL STOP AND 1/2" SWEAT CONNECTIONS (NO. 4-420) AND SUPER SHOWERHEAD (2 GPM) WITH VANDAL RESISTANT MOUNTING HARDWARE, VOLUME CONTROL LEVER DIVERTER VALVE, AND WALL/HAND SHOWER MODEL NO. FSB (2.5 GPM) WITH 5' FLEXIBLE METAL HOSE, IN-LINE VACUUM BREAKER, AND 30" VERTICAL SLIDE BAR. PROVIDE FLOOR DRAIN (FD-1) WITH 3" DRAIN BODY AND ASSOC. PIPING	
WH-1 ST-1	WATER HEATER - (2) NAT. GAS FIRED 100 GAL. HEATERS WITH (1) 200 GAL. STORAGE TANK BRADFORD WHITE MODEL NO. EF-100T-199E-3N(A) 98.5% THERMAL EFFICIENCY DIRECT-VENT, 100 GALLON STORAGE CAPACITY NATURAL GAS WATER HEATER. HEATER SHALL BE RATED AT 199,000 BTU NATURAL GAS WITH A RECOVERY RATE OF 239 GALLONS PER HOUR AT 100°F RISE HEATER SHALL BE PROVIDED WITH A NILES MODEL NO. JS-32-200 200 GAL. ASME STORAGE TANK, FACTORY JACKETED, INSULATED, AND GLASS LINED WITH 200 GALLON MIN. STORAGE CAPACITY FOR VERTICAL MOUNTING SYSTEM SHALL INCLUDE HANDHOLES, PROPERLY SIZED CIRCULATOR BY SAME MANUFACTURER, INLET & OUTLET THERMOMETERS, RELIEF VALVE, TANK TEMPERATURE CONTROL AND BE ASME RATED WITH REQUIRED STAMP. PROVIDE CONDENSATE DRAIN AND CONDENSATE NEUTRALIZATION KIT. PROVIDE MODEL NO. AST-20 EXPANSION TANK BY AMTROL. ELECTRICAL REQUIREMENT - 115/1/60, 1/3 HP. PROVIDE BUILDING RECIRCULATING PUMPS. PROVIDE HOUSEKEEPING PAD 4" THICK AND 6" WIDER THAN WATER HEATER PACKAGE ON EACH SIDE.	REFER TO DETAIL P0-02/03
WH-2 ST-2	WATER HEATER - ELECTRIC 120 GAL. WITH (1) 120 GAL. STORAGE TANK BRADFORD WHITE ELECTRIFLEX LD SERIES MODEL NO. LE2120T3-3 30kW, 480V, 3-PHASE, HEATER SHALL BE SET AT 110°F WATER TEMPERATURE, ASME TANK SHALL BE GLASS LINED, RATED FOR 150 PSI WORKING PRESSURE, AND SHALL HAVE A THREE-YEAR WARRANTY. CAPABLE OF 123 GAL/h RECOVERY AT 100° RISE. ASME STORAGE TANK (ST-2) FACTORY JACKETED, INSULATED, GLASS LINED WITH 120 GALLON STORAGE CAPACITY FOR VERTICAL MOUNT, PROVIDE MODEL NO. AST-20 EXPANSION TANK BY AMTROL WITH 150 PSI MAXIMUM WORKING PRESSURE AND FACTORY PRE-CHARGED TO 40 PSIG.	REFER TO DETAIL P0-02/07

GENERAL NOTES

1. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS AND FEES.
2. THE PLUMBING CONTRACTOR SHALL MAKE A COMPLETE REVIEW OF THE PLUMBING PLANS, SCHEDULES, AND DETAILS PRIOR TO INSTALLATION OF THE PLUMBING SYSTEM, AND REVIEW ANY CONFLICTS THAT ARE NOTED WITH THE ENGINEER.
3. THE PLUMBING CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO BIDDING AND FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS.
4. REFER TO THE ARCHITECTURAL PLANS FOR ALL FLOOR PLAN DIMENSIONS. DO NOT SCALE THESE PLANS.
5. IT WILL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO INSURE THAT ITEMS TO BE FURNISHED UNDER HIS CONTRACT WILL FIT THE SPACE AVAILABLE. HE SHALL MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS AND SERVICE REQUIREMENTS, AND SHALL FURNISH AND INSTALL SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE INTENT AND MEANING OF THE DRAWINGS AND SPECIFICATIONS.
6. EACH CONTRACTOR SHALL PROVIDE AND INSTALL HIS OWN SUPPORT DEVICES. ALL LOCATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND OTHER PRIME CONTRACTORS PRIOR TO INSTALLATION.
7. THE PLUMBING CONTRACTOR SHALL PROVIDE ALL OPENINGS IN WALLS AND FLOORS UNLESS NOTED OTHERWISE. HE SHALL VERIFY LOCATION AND SIZE OF ALL OPENINGS REQUIRED UNDER THIS CONTRACT WITH THE GENERAL CONTRACTOR.
8. THE PLUMBING CONTRACTOR SHALL SEAL ALL PENETRATIONS OF FIRE RATED WALLS USING U.L. METHODS AS SHOWN ON THESE PLANS.
9. INSTALL INSULATED WATER PIPING IN EXTERIOR WALLS ON THE INTERIOR SIDE OF THE WALL INSULATION. SEE SPECIFICATIONS FOR SIZE AND TYPE INSULATION TO BE USED.
10. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING FLOOR DRAIN STRAINERS AND CLEANOUT TOPS FLUSH WITH THE FINISHED FLOOR ELEVATION. A RAISED OR LOWERED STRAINER OR CLEANOUT TOP WILL NOT BE ACCEPTABLE.
11. INSTALL ALL THREADED CLEANOUT PLUGS WITH PIPE DOPE TO ALLOW FOR EASY REMOVAL IN THE FUTURE.
12. ALL PLUMBING FIXTURES SHALL BE NEATLY CAULKED WITH SILICONE CAULKING COMPOUND WHERE THE FIXTURE MEETS THE WALL, COUNTERTOP, OR FLOOR UNLESS OTHERWISE NOTED. NOTE: DO NOT CAULK AT WATER COOLERS LOCATED ON GYPSUM BOARD WALLS.
13. WHERE VALVES ON WATER LINES ARE LOCATED ABOVE CEILING, LOCATE THEM 8" ABOVE CEILING.
14. THE PLUMBING CONTRACTOR SHALL COORDINATE EXACT FLOOR DRAIN LOCATIONS IN THE MECHANICAL ROOMS WITH THE MECHANICAL CONTRACTOR FOR THE TYPE OF MECHANICAL EQUIPMENT TO BE INSTALLED.
15. THE PLUMBING CONTRACTOR SHALL COORDINATE WITH ALL PRIME CONTRACTORS, THE INSTALLATION OF EQUIPMENT UNDER THIS CONTRACT, PRIOR TO THE INSTALLATION, IN ORDER TO AVOID CONFLICT WITH OTHERS. IF AN ALTERNATE METHOD OF INSTALLATION IS REQUIRED, IT SHALL BE COORDINATED WITH THE ENGINEER OR ARCHITECT PRIOR TO START OF THE NEW WORK.
16. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL AND CONTROL CONNECTIONS TO THE EQUIPMENT PROVIDED UNDER THIS CONTRACT. REFER TO THE ELECTRICAL PLANS FOR LOCATIONS OF JUNCTION BOXES, DISCONNECTS, AND CIRCUIT BREAKERS (PANELBOARDS). TYPE, SIZE, AND NUMBER OF CONDUCTORS AND CONDUITS TO EQUIPMENT SHALL BE EQUAL TO THE CONDUCTORS AND CONDUITS PROVIDED BY THE ELECTRICAL CONTRACTOR TO THE JUNCTION BOXES AND DISCONNECT SWITCHES. IN CASE OF PLUMBING EQUIPMENT CONNECTION TO A CIRCUIT BREAKER, THE NUMBER AND SIZE OF THE CONDUCTORS AND CONDUITS SHALL CONFORM TO THE LATEST NATIONAL ELECTRICAL CODE REGULATIONS. ALL MOTOR STARTERS, SWITCHES, CONTROL DEVICES, ETC. PROVIDED BY THIS CONTRACTOR SHALL BE RECESSED IN THE WALLS, EXCEPT WHERE THESE ITEMS ARE LOCATED IN THE MECHANICAL ROOMS. PROVIDE A NAMEPLATE FOR ALL EQUIPMENT, SWITCHES, CONTROL DEVICES, ETC. THE WATER HEATER SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE.
17.. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL CONNECTIONS TO ALL KITCHEN EQUIPMENT THAT REQUIRE WASTE AND WATER, ALONG WITH NECESSARY PIPE AND FITTINGS.
18. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL CONNECTIONS TO ALL GAS FIRED EQUIPMENT, ALONG WITH ALL NECESSARY EQUIPMENT AND PIPING FOR A COMPLETE AND OPERATIONAL SYSTEM UNLESS OTHERWISE NOTED.
19. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND UTILITIES, STORM DRAINS, ETC., WHICH MAY OR MAY NOT BE SHOWN ON THESE PLANS, AND TO AVOID CONFLICT OF HIS INSTALLATION WITH SAME. REPAIR OF DAMAGE TO THESE UTILITIES, STORM DRAINS, ETC. SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
20. ALL NEW UNDERGROUND WATER PIPING SHALL BE INSTALLED A MINIMUM OF 30" BELOW FINISHED GRADE TO PIPE CROWN.
21. ALL UNDERGROUND PIPING ON THE EXTERIOR OF THE BUILDING SHALL BE IDENTIFIED BY UNDERGROUND LINE MARKING TAPE LOCATED DIRECTLY ABOVE THE PIPING AT 6 TO 8 INCHES BELOW FINISHED GRADE. TAPE SHALL CONFORM TO ANSI/ASTM 13.1 AND SHALL BE 6" WIDE, 7.0 MILS MINIMUM THICKNESS, NON-DISTORTING, COLORFAST, ULTRAVIOLET LIGHT FAST, NO-STRETCH, 600 POUND TENSILE STRENGTH PER 6" WIDTH. MESSAGE MUST REPEAT WITHIN A MAXIMUM OF 40 INCHES. PRINTED LEGEND SHALL BE INDICATIVE OF TYPE OF UNDERGROUND LINE. UNDERGROUND GAS LINE SHALL HAVE INSULATED COPPER TRACER WIRE, MINIMUM 18 AWG WITH INSULATION SUITABLE FOR DIRECT BURIAL AND ENDS SHALL TERMINATE ABOVE GRADE. PAINT AND COLOR CODE ALL EXPOSED PIPING IN MECHANICAL ROOMS. ABOVE CEILING PIPING SHALL HAVE FLOW ARROWS AND LABELS LOCATED AT 10 FOOT INTERVALS, AT ALL TURNS, AND AT EACH FLOOR OR WALL PENETRATION, AND SHALL BE COLOR CODED AS FOLLOWS:
    - COLD WATER - DARK BLUE
    - HOT WATER - DARK RED
    - GAS - YELLOW

    PROVIDE A PHENOLIC SIGN AT ALL NON-POTABLE WATER OUTLETS STATING "NONPOTABLE - NOT SAFE FOR DRINKING" IN LETTERS 1/2" HIGH.
22. THE FLASHING AND COUNTERFLASHING FOR ALL VENTS THROUGH THE ROOF SHALL BE PROVIDED AND INSTALLED BY THE GENERAL CONTRACTOR. THE PLUMBING CONTRACTOR SHALL COORDINATE ALL LOCATIONS OF THE VENTS THROUGH THE ROOF WITH THE ROOFING SUBCONTRACTOR AND THE MECHANICAL SUBCONTRACTOR.
23. ALL VENTS THROUGH THE ROOF SHALL BE A MINIMUM OF 40' FROM ANY MECHANICAL FRESH AIR INTAKE GRILL OR DUCT OPENING. REVIEW DRAWINGS THOROUGHLY AND COORDINATE WITH MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR. ANY VENTS THROUGH THE ROOF SHOWN ON PLANS WITHIN 40' OF ANY FRESH AIR INTAKE SHALL BE REPORTED TO THE PLUMBING ENGINEER PRIOR TO START OF WORK AND ALTERNATE ROUTING PROPOSED AND AGREED UPON PRIOR TO INSTALLATION.
24. ALL ROOF DRAINS WILL BE FURNISHED BY THE PLUMBING CONTRACTOR AND INSTALLED BY THE GENERAL CONTRACTOR. THE PLUMBING CONTRACTOR WILL BE RESPONSIBLE FOR THE CONNECTION TO ROOF DRAINS AND PIPING TO 5'-0" OUTSIDE THE BUILDING. HE SHALL PROVIDE AND INSTALL PROPER ADAPTERS AS NECESSARY FOR INSTALLATION. PLUMBING CONTRACTOR SHALL INSULATE ROOF DRAIN BODY AND HORIZONTAL RUNS IN PIPING INCLUDING ELBOW TO VERTICAL.
25. ALL GUTTERS AND DOWNSPOUTS AND ASSOCIATED PIPING SHALL BE PROVIDED AND INSTALLED BY THE GENERAL CONTRACTOR.
26. AT MECHANICAL ROOMS WITH GYPSUM BOARD CEILINGS, PLUMBING CONTRACTOR SHALL INSTALL HANGER RODS BEFORE CEILING IS INSTALLED, AND SHALL COMPLETE PIPING INSTALLATION AFTER THE CEILING HAS BEEN INSTALLED.
27. PLUMBING CONTRACTOR SHALL PROVIDE ALL ACCESS DOORS AS REQUIRED FOR CODE COMPLIANCE AND TO ACCESS ANY INSTALLATION THAT WILL REQUIRE FUTURE MAINTENANCE. THESE DOORS SHALL BE 20"x20". EACH ROOM WITH A DRYWALL CEILING SHALL HAVE A MINIMUM OF ONE ACCESS DOOR PROVIDED BY THE PLUMBING CONTRACTOR. THE DRYWALL SUBCONTRACTOR WILL PROVIDE THE REQUIRED FRAMED OPENING AND INSTALL THE ACCESS DOORS.
28. PROVIDE QUARTER -TURN FULL-PORT TWO-PIECE LEAD-FREE BALL VALVE IN BRANCH PIPING TO ALL EXTERIOR HOSE BIBBS.
29. USE OF RUBBER SLEEVE COUPLINGS (I.E. FERNCO) IS PROHIBITED. HEAVY-DUTY TYPE 304 STAINLESS STEEL JACKETED RUBBER CLAMPS AS SPECIFIED SHALL BE USED.
30. PLUMBING CONTRACTOR TO REVIEW THOROUGHLY ARCHITECTURE AND STRUCTURE DRAWINGS AND TO NOTE LOCATIONS AND DEPTHS OF ALL DEPRESSED SLABS AND PREPARE WASTE PIPING, FLOOR DRAINS, OR ANY OTHER PLUMBING FIXTURES OR FITTINGS ACCORDINGLY IN THOSE AREAS. PLUMBING CONTRACTOR TO COORDINATE WITH CONCRETE SUBCONTRACTOR PRIOR TO ANY PLACEMENT OF CONCRETE IN ANY AREA WHERE FLOOR DRAINS, ROOF DRAINS, PIPE SLEEVES, OR ANY OTHER AFFECTED ITEM WITHIN THE PLUMBING CONTRACTOR'S SCOPE IS REQUIRED.
31. EACH ABOVE GROUND SECTION OF GAS PIPING SHALL BE ELECTRICALLY BONDED PER NC FUEL GAS CODE SECTION 310
32. IN ADDITION TO THE LOCATIONS REQUIRED AS SHOWN IN THESE DRAWINGS, LEAD-FREE, TWO-PIECE, FULL-PORT BRONZE BALL VALVES/SHUTOFFS SHALL BE PROVIDED AS REQUIRED BY NC PLUMBING CODE SECTION 606
33. WATER HEATERS ARE NOT CONNECTED TO THE BAS - RECIRCULATION PUMPS ARE CONNECTED TO THE BAS - COORDINATE WITH MECHANICAL AND CONTROLS CONTRACTORS FOR DEVICES TO BE CONNECTED TO THE BAS
34. ALL WATER PIPING SHALL BE LOCATED A MINIMUM OF 10 FEET FROM ELECTRICAL SWITCHBOARDS AND/OR ELECTRICAL PANEL BOARDS
35. PLUMBING CONTRACTOR SHALL COMPLETELY ROD AND FLUSH ALL SANITARY WASTE LINES AFTER BUILDING IS COMPLETED AND BEFORE OWNER TAKES OCCUPANCY
36. PROVIDE CHROME ESCUTCHEON RINGS AT ALL EXPOSED PIPING CEILING AND WALL PIPE PENETRATIONS

NOTE: COORDINATE ALL STEPPED FOOTING LOCATIONS AND PIPE INVERTS WITH SITE UTILITY CONTRACTOR PRIOR TO STARTING WORK - REFER TO STRUCTURAL AND CIVIL DRAWINGS FOR COORDINATION.

FIXTURE SCHEDULE

REFER TO SPECIFICATION SECTION 22 42 00 FOR A LIST OF APPROVED EQUALS

MARK	DESCRIPTION	REMARKS
WH-3	WATER HEATER - ELECTRIC/TALL 40 GAL. BRADFORD WHITE ELECTRIFLEX LD LOWBOY MODEL NO. LE140L3-3 (2) ELEMENTS SHALL BE RATED AT 3000 WATTS EACH, 208/1/60, WITH NON-SIMULTANEOUS OPERATION CAPABLE OF 12 GAL/h AT 100° RISE. ELEMENTS SHALL BE CONTROLLED BY A MOUNTED THERMOSTAT AND HIGH TEMPERATURE CUTOFF SWITCH. HEATER SHALL BE SET AT 110°F WATER TEMPERATURE. TANK SHALL BE GLASS LINED, RATED FOR 150 PSI WORKING PRESSURE, AND SHALL HAVE A THREE-YEAR WARRANTY. PROVIDE AMTROL MODEL NO. THERM-X-TROL ST-5 EXPANSION TANK WITH 150 PSI MAXIMUM WORKING PRESSURE AND FACTORY PRE-CHARGED TO 40 PSIG.	REFER TO DETAIL P0-02/01
WH-4 ST-4 WH-5 ST-5	WATER HEATER - ELECTRIC 120 GAL. WITH (1) 200 GAL. STORAGE TANK BRADFORD WHITE ELECTRIFLEX LD SERIES MODEL NO. LE2120T3-3 30kW, 480V, 3-PHASE, HEATER SHALL BE SET AT 110°F WATER TEMPERATURE, ASME TANK SHALL BE GLASS LINED, RATED FOR 150 PSI WORKING PRESSURE, AND SHALL HAVE A THREE-YEAR WARRANTY. CAPABLE OF 123 GAL/h RECOVERY AT 100° RISE. ASME STORAGE TANK (ST-4,5) FACTORY JACKETED, INSULATED, GLASS LINED WITH 200 GALLON STORAGE CAPACITY FOR VERTICAL MOUNT, PROVIDE MODEL NO. AST-20 EXPANSION TANK BY AMTROL WITH 150 PSI MAXIMUM WORKING PRESSURE AND FACTORY PRE-CHARGED TO 40 PSIG.	REFER TO DETAIL P0-02/07
RP-1	RECIRCULATING PUMP (RP-1) - SEE DETAILS/PLANS FOR QUANTITY B&G SERIES 100, 5 GPM, 7 FEET HEAD, 120/1/60, 1/12 HP, ALL BRONZE CONSTRUCTION AND FLANGE CONNECTION. MAKE CONNECTION TO BUILDING AUTOMATION SYSTEM CONNECTION POINT PROVIDED BY MECHANICAL CONTRACTOR.	

SYMBOL LEGEND

SYMBOL	DESCRIPTION
———	WASTE PIPING
—AW—	ACID WASTE PIPING
—FM—	FORCE MAIN PIPING
—C—	CONDENSATE DRAIN PIPING
- - - -	VENT PIPING
- -AV- -	ACID VENT PIPING
— · —	COLD WATER PIPING
—110—	110°F HOT WATER PIPING
—140—	140°F HOT WATER PIPING
—110R— / —HWR—	110°F HOT WATER RETURN PIPING
—140R—	140°F HOT WATER RETURN PIPING
—G—	NATURAL GAS PIPING AT 7" WATER COLUMN PRESSURE
—HPG—	NATURAL GAS PIPING AT 2 OR 5 PSI PRESSURE
—A—	"QUICK-CONNECT" COMPRESSED AIR OUTLETS
—A—	COMPRESSED AIR PIPING
	BALL VALVE
	BALL VALVE
	CHECK VALVE
	GAS COCK
	ELECTRIC SOLENOID VALVE
	UNION
	BUTTERFLY VALVE
	CIRCUIT SETTER/BALANCING VALVE
	HYDRANT
	PIPE TURNS UP
	PIPE TURNS DOWN
	CLEANOUT AT WALL OR IN CEILING
	CLEANOUT AT FINISHED FLOOR/FINISHED GRADE
A	WATER HAMMER ARRESTOR WITH PDI SIZE (REFER TO SCHEDULE BELOW)
	HOT WATER RECIRCULATION PUMP
VTR	VENT THROUGH ROOF
FFE	FINISH FLOOR ELEVATION
BFF	BELOW FINISH FLOOR
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
INV	INVERT OF PIPING
VIF	VERIFY IN FIELD
℄	CENTERLINE
ROW	RIGHT OF WAY
(E)	EXISTING
(N)	NEW
ST STL	STAINLESS STEEL
UON / UNO	UNLESS OTHERWISE NOTED / UNLESS NOTED OTHERWISE

CONNECTION SCHEDULE

	WASTE	COLD WATER	HOT WATER
WATER CLOSET (FLUSH VALVE)	4"	1"	-
URINAL (FLUSH VALVE)	2"	3/4"	-
LAVATORY	2"	1/2"	1/2"
SINK	2"	1/2"	1/2"
ELECTRIC WATER COOLER	2"	1/2"	-
HYDRANT	-	3/4"	-
MOP RECEPTOR	3"	3/4"	3/4"
EMERGENCY SHOWER/EYEWASH UNIT	-	1 1/4"	1 1/4"
ICE MACHINE/MAKER BOX	-	1/2"	-
WASHING MACHINE/WASHER BOX	2"	3/4"	3/4"

LOAD SUMMARY

WASTE DEMAND IN FIXTURE UNITS	WATER DEMAND IN FIXTURE UNITS	PEAK WATER DEMAND IN GPM	NATURAL GAS DEMAND IN BTUH
710	1235.3	120	7,000,000

WATER HAMMER ARRESTORS

PDI DESIGNATION	JAY R. SMITH 5000 SERIES HYDROTROL	ZURN Z-1700 SERIES SHOKTROL	WADE SHOKSTOPS	MAX FU
A	#5005	#100	#W-5	11
B	#5010	#200	#W-10	32
C	#5020	#300	#W-20	60
D	#5030	#400	#W-50	113
E	#5040	#500	#W-75	154
F	#5050	#600	#W-100	330

SHEET INDEX - PLUMBING

smith sinnett ARCHITECTURE

T 919 781 8582
F 919 781 3979
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

pdc
Progressive Design Collaborative, ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989
PROJECT #17104
License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL SEAL 025020 ENGINEER STEVE W. CAMPBELL 6/14/19

CONSTRUCTION DOCUMENT

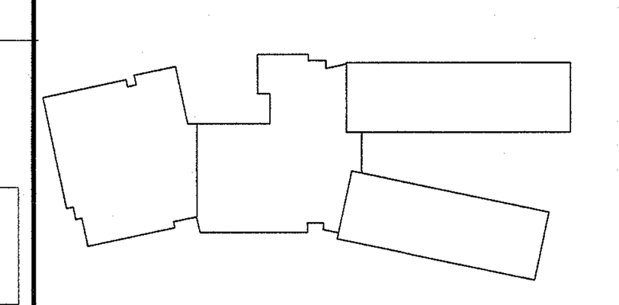
ENERGY STAR PARTNER

VOLUME II

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 30" X 42" SHEET

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370



KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03

DRAWN BY: Author
CHECKED BY: RA

SYMBOL LEGEND, FIXTURE SCHEDULE, GENERAL NOTES

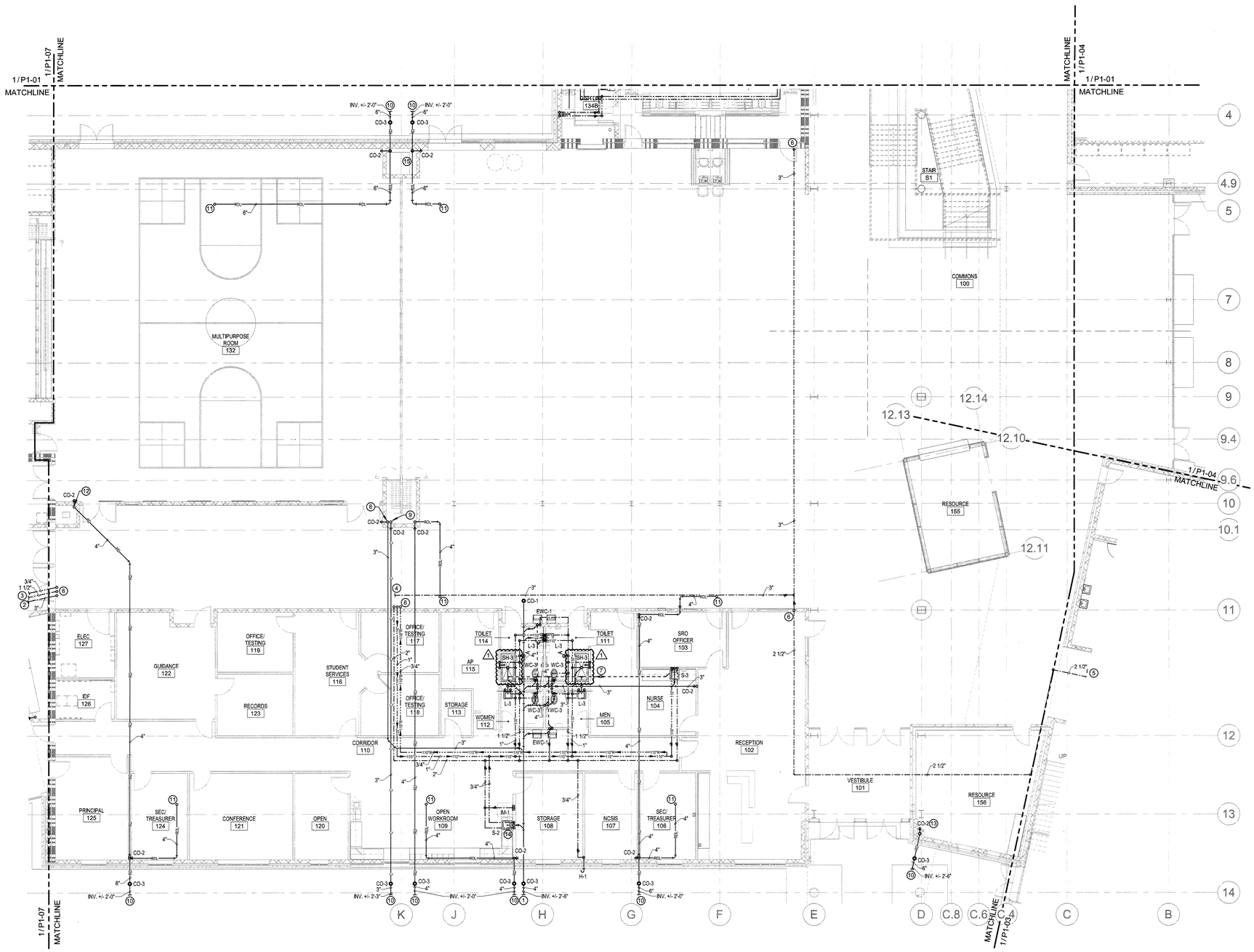
2017032 20 MAY 2019

P0-01

WALL RATINGS LEGEND

1 HR RATED WALL

2 HR RATED WALL



1 100A WING - FIRST FLOOR PLUMBING PLAN

1/8" = 1'-0"

GENERAL NOTES:

1. ALL VENT PIPING SHALL BE 2" UNLESS OTHERWISE NOTED.

NOTES:(AS INDICATED ON THIS PLAN BY A NUMBER IN A ◯)

1. PROVIDE MATERIALS AND MAKE CONNECTION TO SANITARY SEWER PIPING PROVIDED BY SITE UTILITIES CONTRACTOR.
2. DOMESTIC COLD WATER PIPING. REFER TO SHEET P1-07 FOR CONTINUATION.
3. DOMESTIC HOT WATER PIPING. REFER TO SHEET P1-07 FOR CONTINUATION.
4. DOMESTIC COLD WATER PIPING. REFER TO SHEET P1-01/3 FOR CONTINUATION.
5. DOMESTIC COLD WATER PIPING. REFER TO SHEET P1-03 FOR CONTINUATION.
6. PLUMBING CONTRACTOR TO COORDINATE PIPING RISE AND DROP AS NEEDED TO STAY ABOVE CEILINGS OR AT UNDERSIDE OF ROOF DECKING IN AREAS WITH NO CEILING. REFER TO SHEET P1-01 & P2-01 FOR CONTINUATION.
7. 3" VTR.
8. 2" SANITARY WASTE PIPING DOWN FROM ABOVE. REFER TO SHEET P1-01/3 FOR CONTINUATION. TRANSITION TO 3" PIPING BELOW SLAB.
9. 2" CONDENSATE PIPING DOWN FROM ABOVE. REFER TO SHEET P1-01/3 FOR CONTINUATION. TRANSITION TO 3" PIPING BELOW SLAB.
10. PROVIDE MATERIALS AND MAKE CONNECTION TO STORM SEWER PIPING PROVIDED BY SITE UTILITIES CONTRACTOR.
11. ROOF DRAIN LEADER. REFER TO SHEET P1-08 FOR CONTINUATION.
12. ROOF DRAIN LEADER. REFER TO SHEET P1-01/3 FOR CONTINUATION.
13. ROOF DRAIN LEADER. REFER TO SHEET P1-05 FOR CONTINUATION.
14. 2" VENT UP TO 2" VTR. REFER TO SHEET P1-08 FOR CONTINUATION.
15. COORDINATE CLOSELY ROOF DRAIN LEADERS THIS AREA WITH MECHANICAL PIPING AND DUCTING ALSO IN THIS AREA. ROOF DRAIN LEADERS MAY BE REQUIRED TO BE INSTALLED ABOVE MECHANICAL DUCTING/PIPING FOR SYSTEMS TO DROP AS NEEDED.

smith sinnett ARCHITECTURE

T 919 781 8582
F 919 781 3970
4600 Lake Boone Trail
Suite 200
Raleigh, NC 27607
info@smithsinnett.com

pdc

Progressive Design Collaborative, ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919.790.0990
PROJECT #17104
License# C-0165
pdcengineers.com

NORTH CAROLINA SEAL 023020 ENGINEER STEVE W. CAMPBELL
6/14/19

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME II

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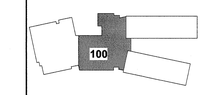


KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03

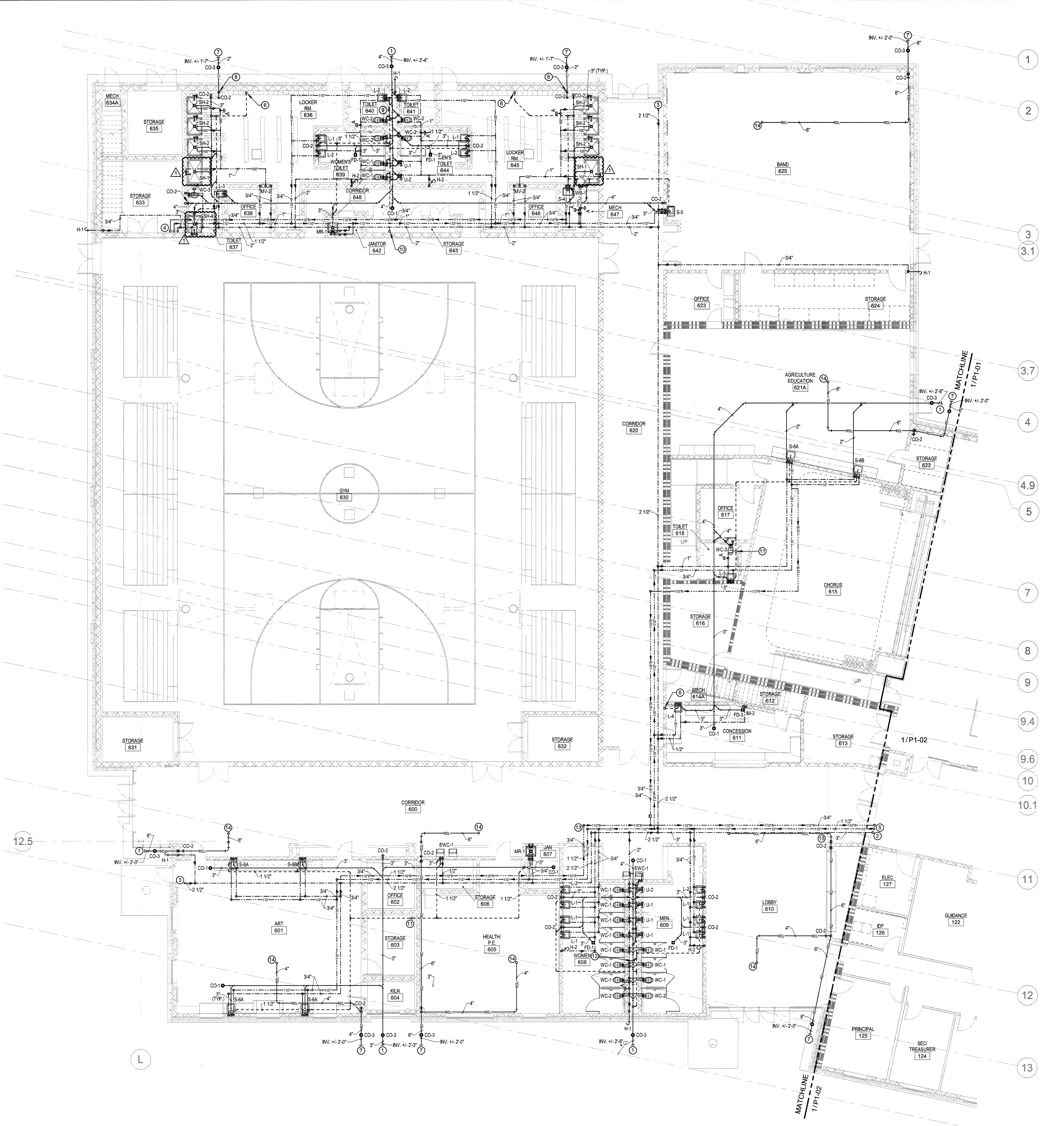
DRAWN BY: Author
CHECKED BY: RA

100A WING - FIRST FLOOR PLUMBING PLAN

2017032 20 MAY 2019

P1-02

0' 2' 4' 8' 16'



1 600 WING - FIRST FLOOR PLUMBING PLAN
1/8" = 1'-0"

WALL RATINGS LEGEND

- 1 HR RATED WALL
- 2 HR RATED WALL

GENERAL NOTES:

1. ALL VENT PIPING SHALL BE 2" UNLESS OTHERWISE NOTED.

NOTES (AS INDICATED ON THIS PLAN BY A NUMBER IN A ◯)

1. PROVIDE MATERIALS AND MAKE CONNECTION TO SANITARY SEWER PIPING PROVIDED BY SITE UTILITIES CONTRACTOR.
2. DOMESTIC COLD WATER PIPING. REFER TO SHEET P1-01/1 FOR CONTINUATION.
3. CAPPED FOR POSSIBLE FUTURE EXPANSION. PLACE ADJACENT VALVE IN THE CLOSED POSITION.
4. 1 1/2" COLD WATER, 1 1/2" HOT WATER, 3/4" HOT WATER RETURN FROM MECHANICAL PLATFORM ABOVE. REFER TO SHEET P1-01/4 FOR CONTINUATION.
5. DOMESTIC HOT WATER PIPING. REFER TO SHEET P1-01/1 FOR CONTINUATION.
6. 2" VENT PIPING UP. REFER TO P1-01/3 & P1-01/4 FOR CONTINUATION.
7. PROVIDE MATERIALS AND MAKE CONNECTION TO STORM SEWER PIPING PROVIDED BY SITE UTILITIES CONTRACTOR.
8. 2" CONDENSATE PIPING DOWN FROM ABOVE. REFER TO P1-01/4 FOR CONTINUATION.
9. 2" SANITARY WASTE PIPING DOW FROM ABOVE. REFER TO P1-01/4 FOR CONTINUATION.
10. 3" VENT PIPING UP. REFER TO P1-01/4 FOR CONTINUATION.
11. 2" VENT PIPING UP TO 2" VTR.
12. 3" VENT PIPING UP TO 3" VTR.
13. PLUMBING CONTRACTOR TO COORDINATE PIPE DROPS AND ENTRANCE INTO SOFFIT AND/OR CEILING AT THIS LOCATION SO THAT PIPING IS NOT EXPOSED. REFER TO ARCHITECTURE DRAWINGS AND COORDINATE WITH GENERAL CONTRACTOR.
14. ROOF DRAIN PIPING FROM ROOF DRAIN ABOVE. REFER TO P1-08 FOR CONTINUATION.
15. ROOF DRAIN PIPING FROM ROOF DRAIN ABOVE. REFER TO P1-01/3 FOR CONTINUATION.

smith sinnett ARCHITECTURE

T 919 781 8582
F 919 781 3979
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

pdc
Progressive Design Collaborative, ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989
PROJECT #17104
License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL SEAL 025020 ENGINEER STEVE W. CAMPBELL 6/14/19

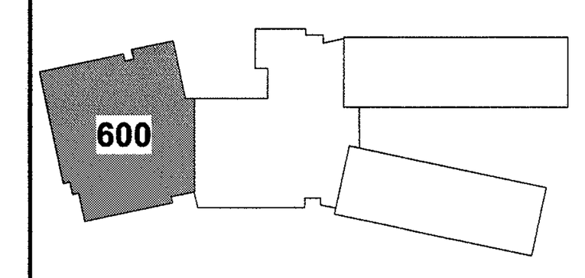
CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME II

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370



KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03

DRAWN BY: Author
CHECKED BY: RA

600 WING - FIRST FLOOR PLUMBING PLAN

2017032 20 MAY 2019

P1-07

GENERAL NOTES:

1. ALL VENT PIPING SHALL BE 2" UNLESS OTHERWISE NOTED.
2. ALL GREASE WASTE PIPING (GI) AND WASTE PIPING SERVING MECHANICAL 146 SHALL BE RUN @ 1/4" PER FOOT SLOPE.
3. FOOD SERVICE EQUIPMENT CONTRACTOR SHALL RUN COOLER/FREEZER CONDENSATE PIPING FROM EQUIPMENT TO INDIRECT CONNECTION AT EXTENDED RIM FLOOR DRAIN (FD-3) PROVIDED BY PLUMBING CONTRACTOR.
4. COORDINATE PIPE DEPTHS/INVERTS AS NEEDED WITH FINISH GRADE ELEVATIONS AND GREASE INTERCEPTOR REQUIREMENTS. COORDINATE WITH SITE UTILITY CONTRACTOR AND STRUCTURAL DRAWINGS.
5. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL CONNECTIONS TO KITCHEN EQUIPMENT. COORDINATE WITH FOOD SERVICE EQUIPMENT CONTRACTOR.
6. KITCHEN EQUIPMENT IS DESIGNATED BY A NUMBER IN A ⬡ AND IS PROVIDED BY THE GENERAL CONTRACTOR OR FOOD SERVICE EQUIPMENT CONTRACTOR. REFER TO FOOD SERVICE PLANS FOR EQUIPMENT SCHEDULE.
7. FOR ALL FOOD SERVICE EQUIPMENT SINKS, THE PLUMBING CONTRACTOR SHALL INSTALL FAUCETS AND SHALL PROVIDE CONTINUOUS WASTE AND INDIRECT WASTE TO FLOOR SINK OF 17 GAUGE CAST BRASS, CHROME PLATED, OR SHALL FABRICATE FROM TYPE "L" COPPER DWV TUBING WITH SOLDER JOINT FITTINGS SPRAYED SILVER. FAUCET(S) AND LEVER OPERATED WASTES ARE SUPPLIED BY THE FOOD SERVICE EQUIPMENT SUPPLIER UNLESS OTHERWISE NOTED. FLOOR SINK LOCATIONS ARE TO BE COORDINATED WITH KITCHEN EQUIPMENT/FOOD SERVICE CONTRACTOR PRIOR TO ROUGH-IN.
8. PROVIDE VACUUM BREAKER WATTS 9D-M2 OR M3 ON WATER CONNECTION TO KITCHEN EQUIPMENT WHERE REQUIRED OR WHERE KITCHEN EQUIPMENT DOES NOT HAVE INTEGRAL AIR GAP IN WATER SUPPLY OF FILLING MECHANISM.
9. CONNECTIONS TO COFFEE MACHINES OR BEVERAGE DISPENSERS TO BE PROTECTED FROM BACKFLOW BY A BACKFLOW PREVENTER CONFORMING TO ASSE 1022 OR BY AN AIR GAP. PLUMBING CONTRACTOR TO CONFIRM EQUIPMENT HAS INTEGRAL AIR GAP AT WATER SUPPLY MECHANISM OR PROVIDE WATTS SD-3 BACKFLOW PREVENTER OR EQUAL.
10. PLUMBING CONTRACTOR TO CONFIRM ALL KITCHEN EQUIPMENT PROVIDED WITH FILTERS IN GENERAL CONTRACT AND COORDINATE INSTALLATION WITH FOOD SERVICE EQUIPMENT CONTRACTOR.
11. PLUMBING CONTRACTOR TO INSTALL IN WATER PIPING SYSTEMS ALL DEVICES PROVIDED AS PART OF GENERAL CONTRACT WHICH ARE NOT INSTALLED BY KITCHEN EQUIPMENT SUPPLIER OR SUBCONTRACTOR SUCH AS SOLENOID VALVES, THERMOMETERS, ETC. REVIEW FOOD SERVICE DRAWINGS AND ALL SPECIFICATIONS CAREFULLY AND COORDINATE WITH ALL TRADES.
12. PLUMBING CONTRACTOR TO REVIEW THOROUGHLY THE FOOD SERVICE DRAWINGS PRIOR TO START OF WORK.

NOTES: (AS INDICATED ON THIS PLAN BY A NUMBER IN A ◯)

(1) PROVIDE MATERIALS AND MAKE CONNECTION TO DOMESTIC COLD WATER SERVICE PROVIDED BY SITE UTILITIES CONTRACTOR.

△1 (2) DOMESTIC COLD WATER SERVICE RISER WITH BALL VALVE SHUT-OFF AND HOSE BIBB DRAIN IN VERTICAL. PROVIDE PIPED, VALVED, BYPASS SETUP FOR POSSIBLE FUTURE PRESSURE REDUCING VALVE STATION. REFER TO DETAIL ON THIS SHEET.

(3) MAKE-UP WATER FOR BOILERS. COORDINATE AND MAKE CONNECTION TO RPZ TYPE BACKFLOW PREVENTER PROVIDED/INSTALLED BY MECHANICAL CONTRACTOR.

△1 (4) MAKE ALL NECESSARY NATURAL GAS CONNECTIONS FOR WATER HEATER PER MANUFACTURER. PROVIDE GAS PRESSURE REGULATOR WITH EQUIPMENT.

(5) ROOF DRAIN LEADER DOWN FROM ABOVE. REFER TO SHEET P1-08 FOR CONTINUATION.

(6) RUN VENT BELOW SLAB. RISE UP AT WALL AS SHOWN.

(7) 3" VTR.

(8) PROVIDE MATERIALS AND MAKE CONNECTION TO STORM WATER PIPING PROVIDED BY SITE UTILITIES CONTRACTOR.

(9) CONCENTRIC VENT THROUGH ROOF FOR WATER HEATER FLUE AND VENT. REFER TO MANUFACTURER'S REQUIREMENTS. PROVIDE ALL NECESSARY MATERIALS.

(10) PROVIDE HEAT TRACE AT BRANCH WASTE PIPING AT CAN WASH. 5WLF. COORDINATE WITH ELECTRICAL CONTRACTOR.

(11) COORDINATE HOT WATER PIPING AND CONNECTIONS TO 3-COMPARTMENT SINK (ITEM 32) TO THE BOOSTER HEATER (ITEM 33) PROVIDED AS PART OF THE KITCHEN EQUIPMENT CONTRACT. CONFIGURE PER MANUFACTURER'S REQUIREMENTS AS NEEDED.

(12) WATER TO UDS. COORDINATE WITH FOOD SERVICE EQUIPMENT CONTRACTOR.

(13) CONDENSATE PIPING OUTLET. PROVIDE BACKWATER VALVE (BV-1) PRIOR TO CONNECTION TO STORM SEWER PIPING IN GENERAL CONTRACT. COORDINATE WITH SITE UTILITY CONTRACTOR. REFER TO P1-01 FOR CONTINUATION.

(14) SANITARY WASTE PIPING OUTLET. REFER TO P1-01 FOR CONTINUATION.

(15) GREASE INTERCEPTOR PIPING OUTLET. REFER TO P1-01 FOR CONTINUATION.

(16) PROVIDE GAS CONNECTION TO BOILERS. COORDINATE LOCATION WITH MECHANICAL CONTRACTOR. GAS PRESSURE REGULATOR SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR.

(17) ELEVATOR SUMP PUMP HOLDING TANK ALARM PANEL. REFER TO DETAIL P0-02/08. COORDINATE CONDUIT ROUTING AND CONNECTIONS TO HOLDING TANK WITH ELECTRICAL CONTRACTOR AND SITE UTILITIES CONTRACTOR.

(18) ELEVATOR SUMP PUMP CONTROL/ALARM PANEL. REFER TO DETAIL P0-02/09. COORDINATE CONDUIT ROUTING AND CONNECTIONS TO ELEVATOR SUMP PUMP WITH ELECTRICAL CONTRACTOR AND SITE UTILITIES CONTRACTOR.

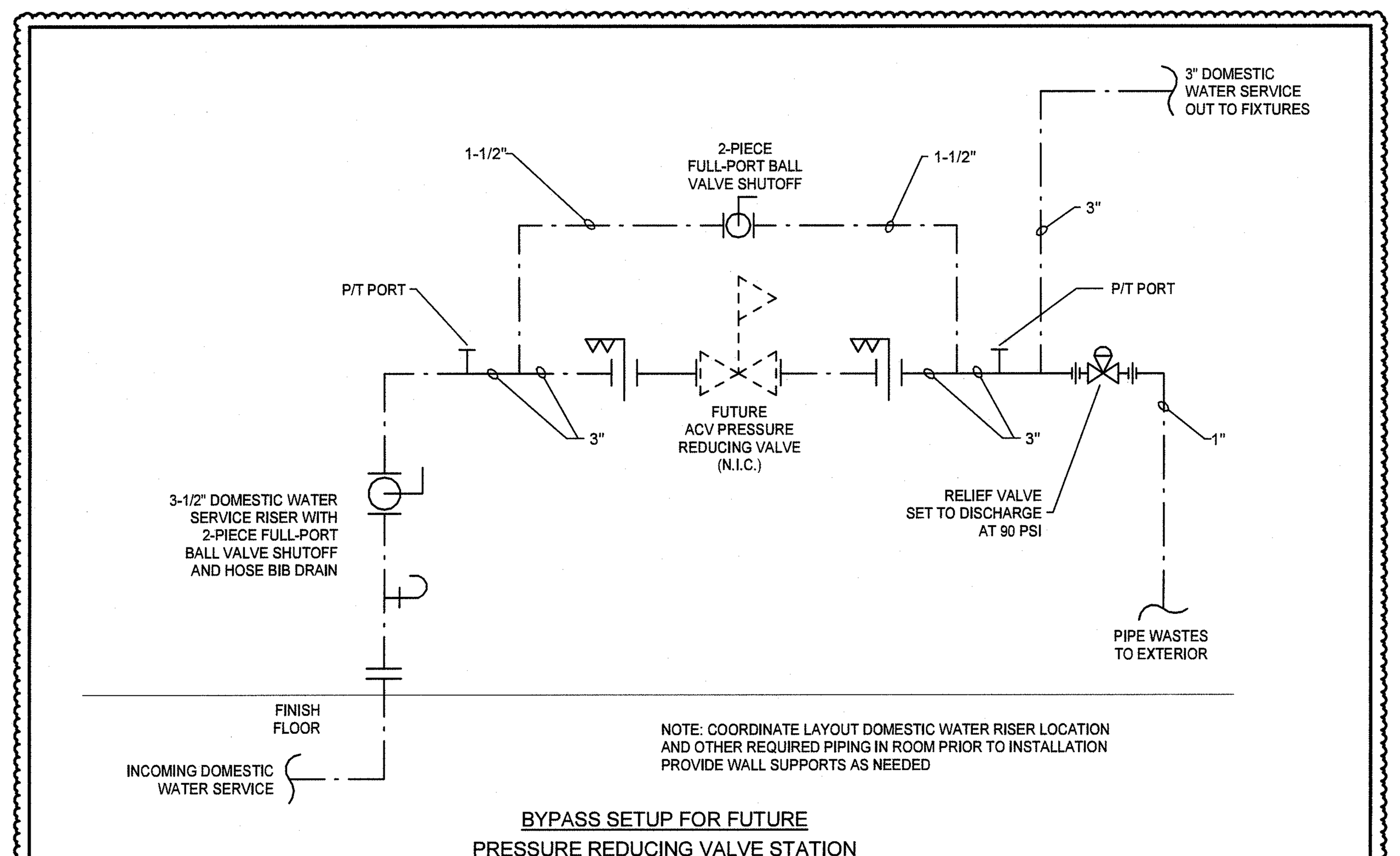
(19) DOMESTIC COLD WATER SERVICE UP AND OVER TO 100A WING. REFER TO P1-02 FOR CONTINUATION.

(20) COORDINATE LOCATION OF FLOOR SINKS AT SERVING LINE WITH DRAIN LOCATION OF HOT/COLD SERVING EQUIPMENT.

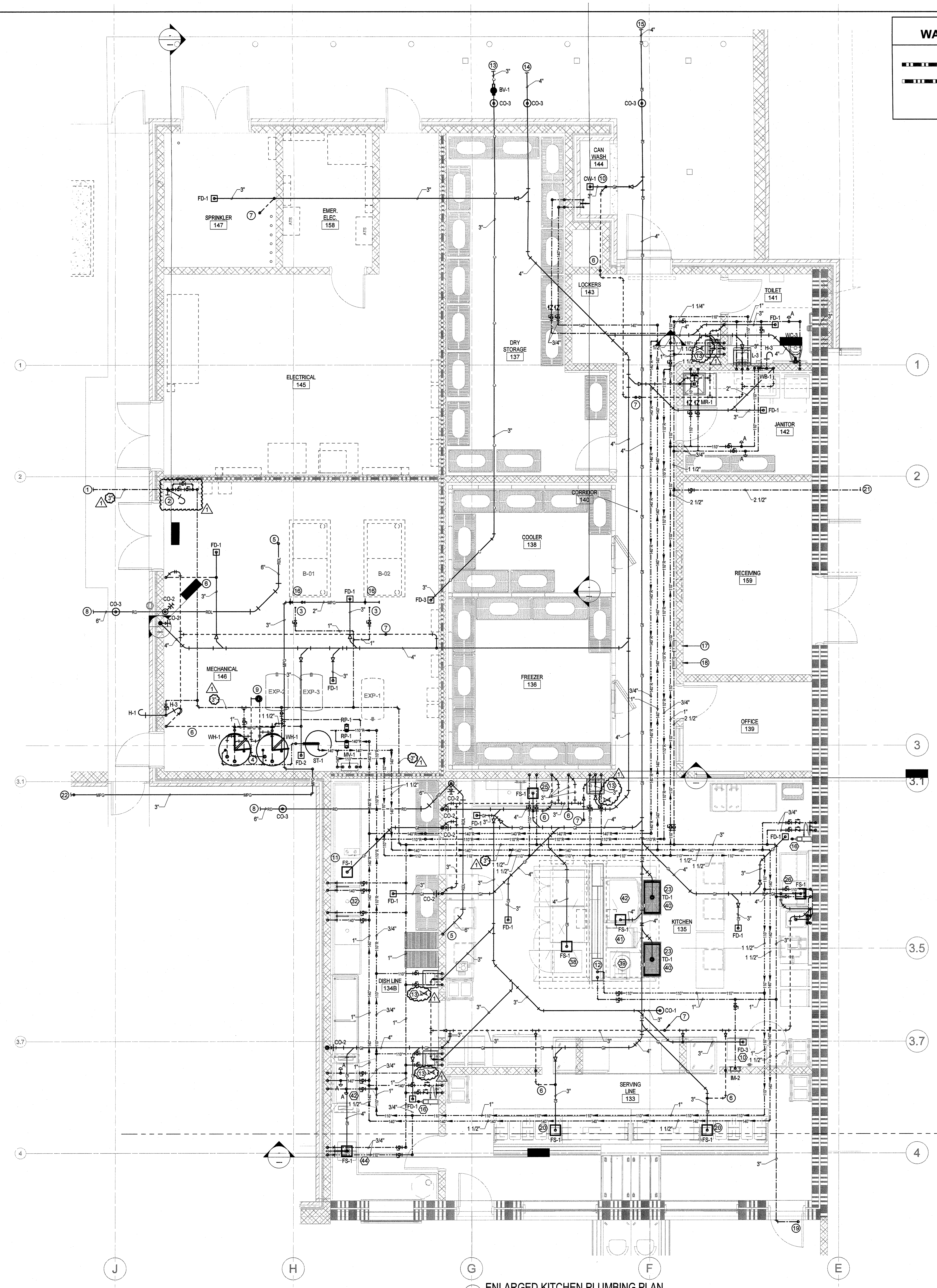
(21) DOMESTIC WATER SERVICE. REFER TO P1-01 FOR CONTINUATION.

(22) NATURAL GAS PIPING. REFER TO P1-01 AND GAS RISER ON P3-14 FOR CONTINUATION.

(23) TRENCH DRAIN TO BE COORDINATED WITH FINAL LOCATION OF EQUIPMENT PIROR TO THE START OF CONSTRCUTION. REFER TO KITCHEN EQUIPMENT CUT SHEETS. COORDINATE WITH KITCHEN EQUIPMENT VENDOR.



2 BYPASS PIPING SETUP FOR FUTURE P.R.V.
NOT TO SCALE



1 ENLARGED KITCHEN PLUMBING PLAN
1/4" = 1'-0"

WALL RATINGS LEGEND

▬ ▬ ▬	1 HR RATED WALL
▬▬ ▬▬ ▬▬	2 HR RATED WALL

smith sinnett ARCHITECTURE
T 919 781 8582
F 919 781 3979
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Suite 205
Raleigh, NC 27607
info@smithsinnett.com

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Progressive Design Collaborative, Ltd.
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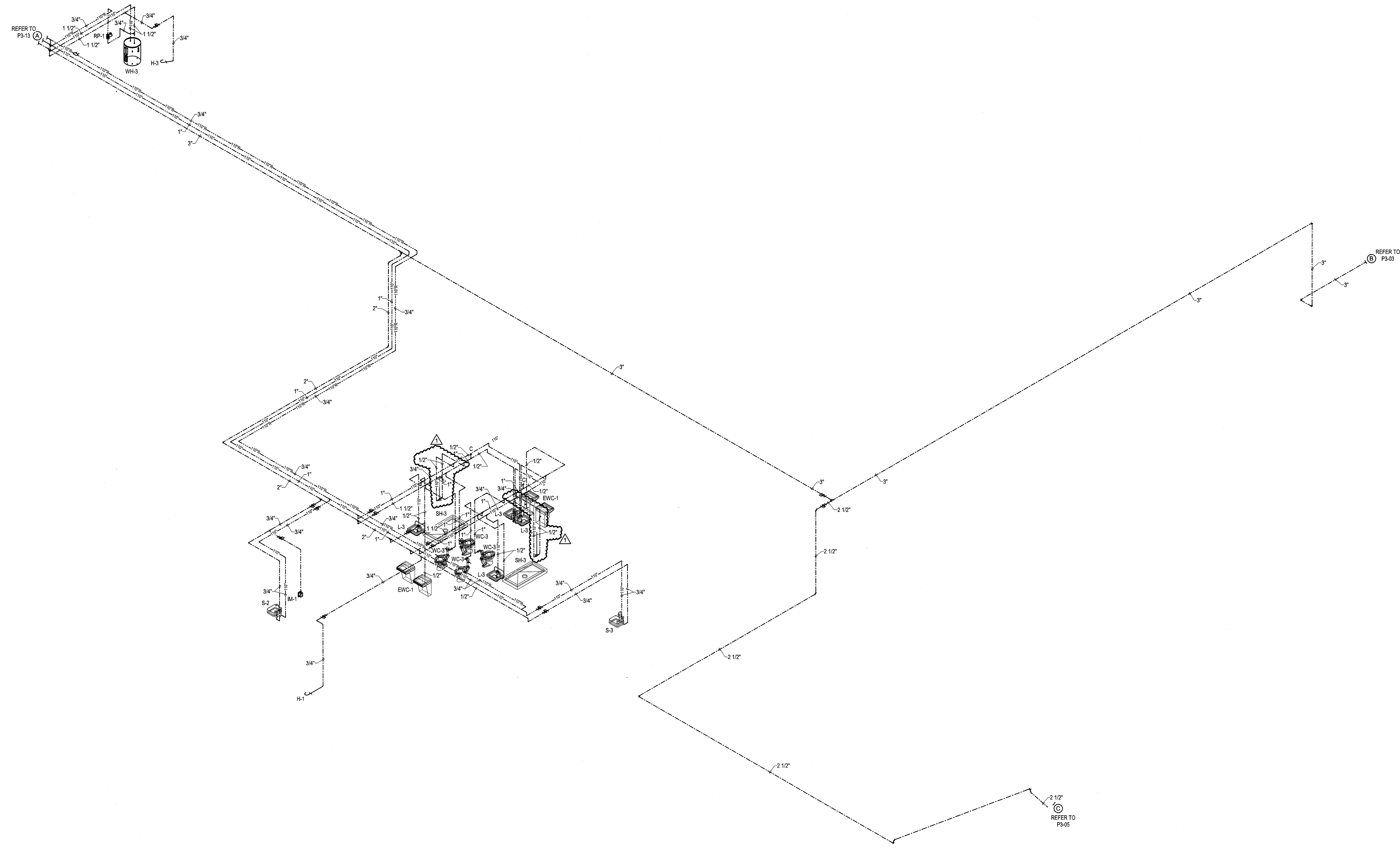
ENLARGED KITCHEN PLUMBING PLAN

2017032 20 MAY 2019

P2-01



1 100A WING - HOT & COLD WATER RISER
NOT TO SCALE

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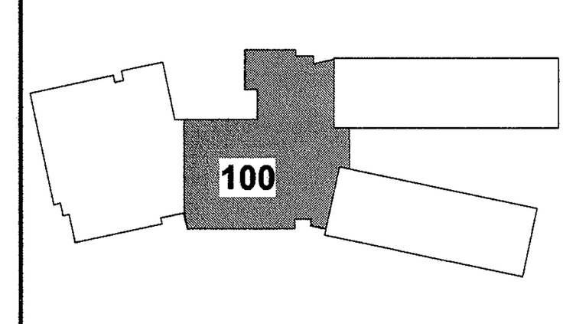

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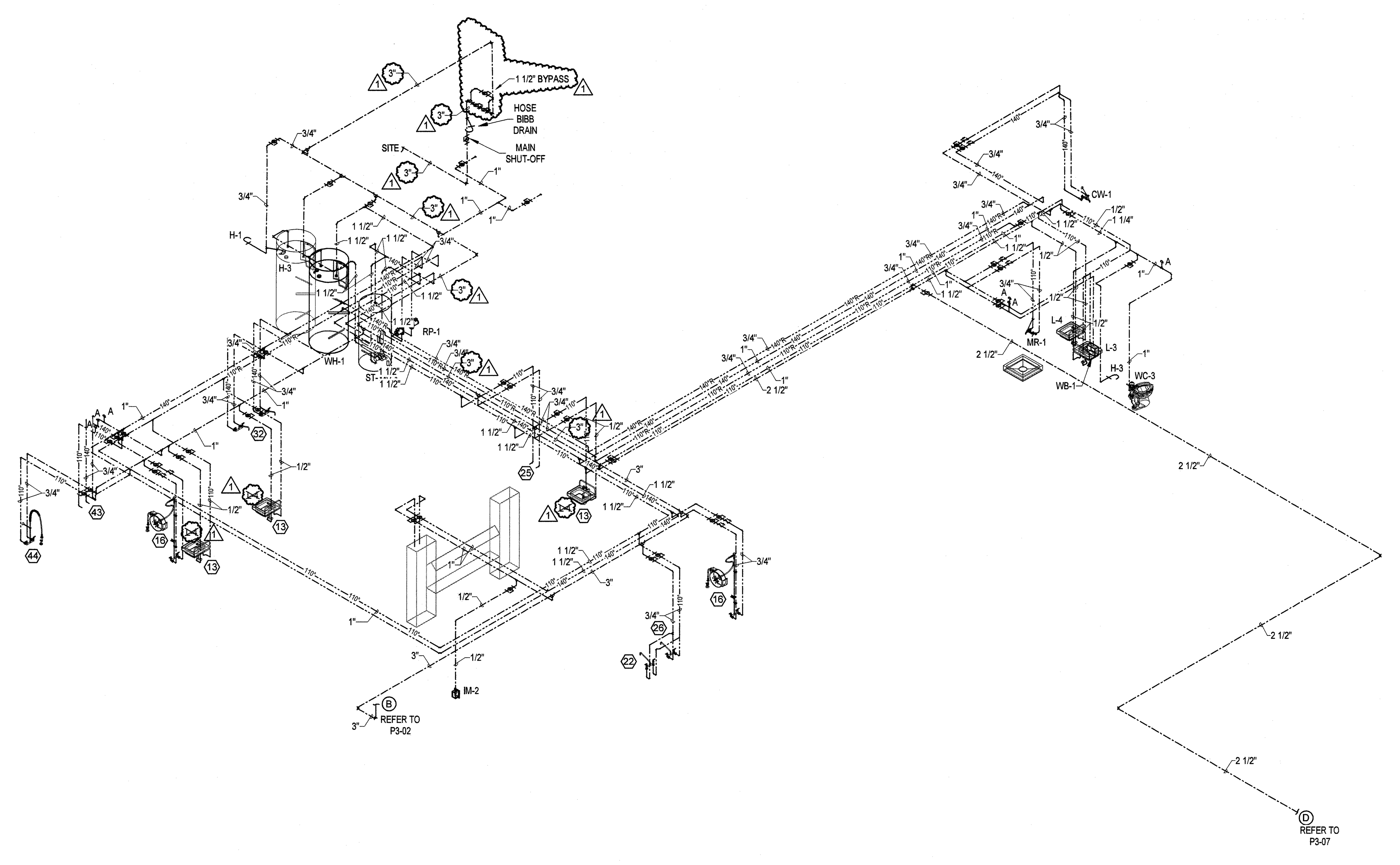
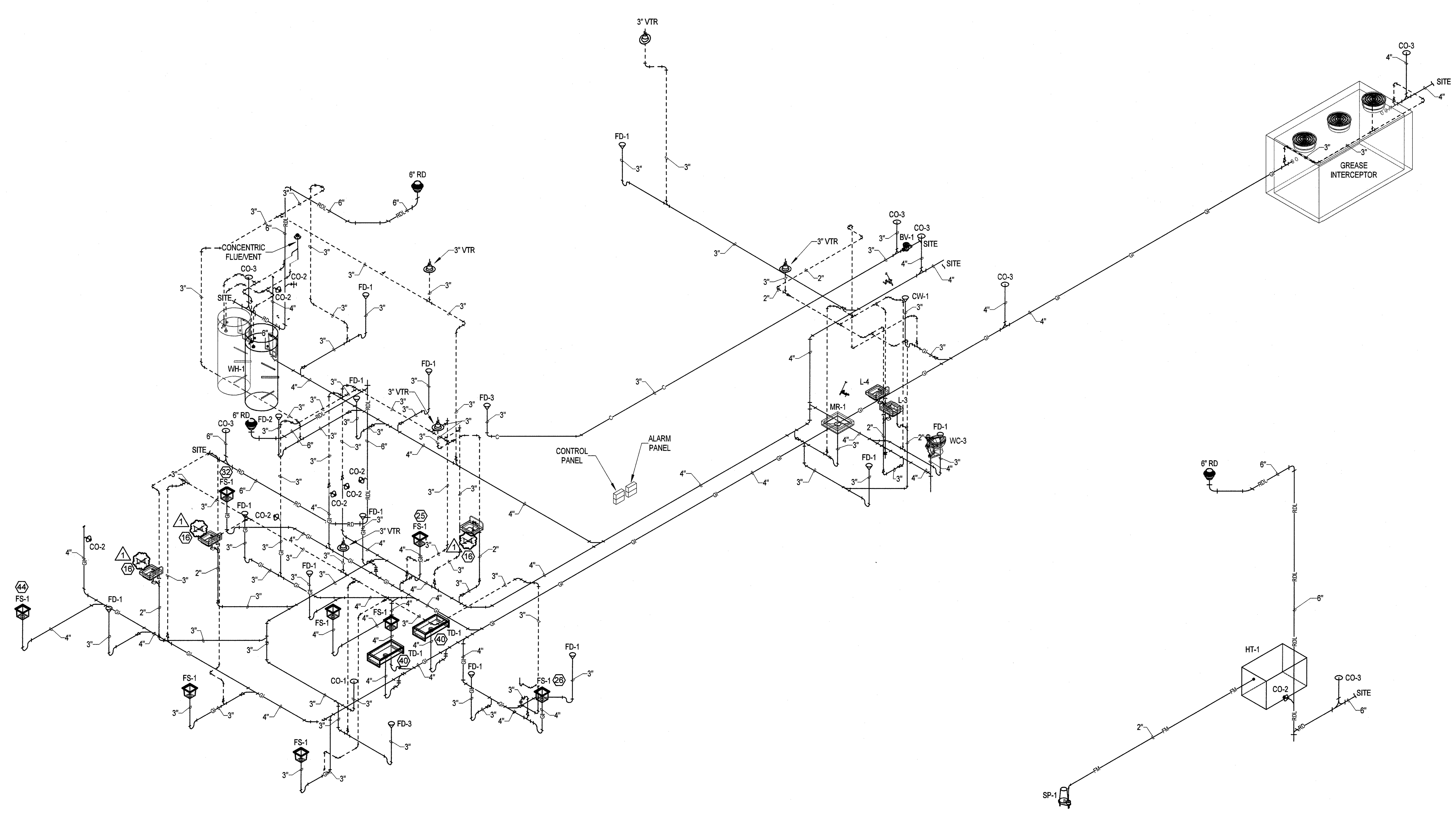
100A WING - HOT & COLD WATER RISER

2017032 20 MAY 2019

P3-02



2 100B WING - HOT & COLD WATER RISER
NOT TO SCALE



1 100B WING - WASTE & VENT, & ROOF DRAIN RISER
NOT TO SCALE

smith sinnett ARCHITECTURE

T 919 781 8582
F 919 781 3979
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

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Progressive Design Collaborative, ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
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VOLUME II

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KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03

DRAWN BY: Author
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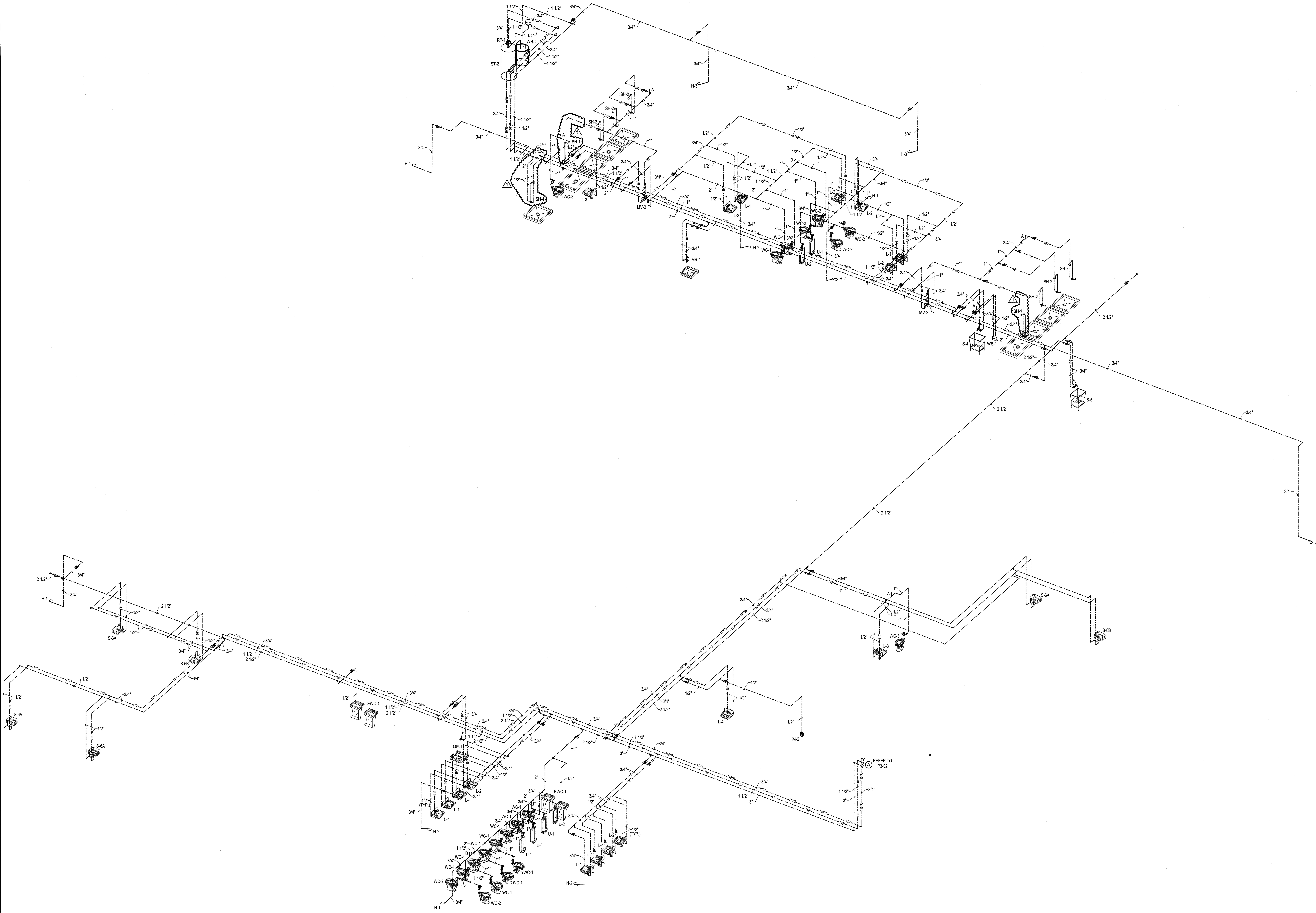
100B WING - WASTE, VENT, ROOF DRAIN, HOT & COLD WTR. RISERS

20 MAY 2019

P3-03



1 600 WING - HOT & COLD WATER RISER
NOT TO SCALE

smith sinnett ARCHITECTURE

T 919 781 8582
F 919 781 3979
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

pdc
Progressive Design Collaborative, ltd.

3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9980
PROJECT #17104
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600 WING - HOT & COLD WATER RISER

2017032 20 MAY 2019

P3-13

Progressive Design Collaborative, Ltd
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989

NORTH CAROLINA PROFESSIONAL SEAL 025020 ENGINEER STEVE W. CAMPBELL 6/14/19

ADDENDUM 03 – MECHANICAL

DATE: June 13, 2019

PROJECT: Trinity Middle School
PDC Project # 17104

This Addendum, applicable to the work designed below, shall be understood to be and is a change to the bid documents and shall be part of and included in the contract for the above referenced project. All General, Supplementary and Special Conditions, etc., as originally specified or as modified below shall apply to these items.

Changes to Mechanical Drawings:

Drawing M0-01
- Revised language in chiller schedule regarding sound requirements.

Drawing M6-05
- Added hood integration points list

Changes to Mechanical Specifications:

Section 23 09 23
- 1.01(B)(1) – Revised specification to require any approved bidder who does not have an existing server established with Randolph County to provide a Niagara 4 server as part of the work.
- 1.03(B)(7) – Added Trane as acceptable manufacturer.
- 1.04(A)(6) – Revised language to include office with 125 miles of project site.
- 2.02 – Section added to provide requirements if vendor is providing a new server.
- 2.03 – Section added to provide requirements if vendor is providing a new server.
- 2.04 – Section added to provide requirements if vendor is providing a new server.
- Subsequent Sections have been renumbered accordingly.
- Added Veris as an acceptable humidity sensor manufacturer.

Section 23 52 23
- 2.01(C) – Weil McLain and Webster burners as preferred alternate
- 2.01(D) and (E) – Added Burnham and Peerless as acceptable manufacturers

Section 23 05 70
- 3.01 (F) – Added reference to Fire Protection Contractor

Section 23 09 33
- 2.01(H) – Added SquareD as an acceptable manufacturer
- 2.10(C) – Revised language to allow either fused disconnect or circuit breaker
- 2.07(A)(1) – Added BACnet MS/TP as acceptable protocol

END OF ADDENDUM 03 – MECHANICAL
Attachments: Drawings (M0-01) Specifications (23 05 70, 23 09 23, 23 09 33, 23 52 23)

SECTION 23 05 70

MECHANICAL COORDINATION DRAWINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. The Mechanical Contractor shall be responsible for providing 1/4 scale coordination drawings for the entire project.

B. The drawings shall cover above ceiling space, mechanical rooms, electrical rooms and service yards.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 COORDINATION

A. The Mechanical Contractor shall obtain the architectural, structural, and MEP REVIT models from the Architect. The models will be in REVIT 2018.

B. The Mechanical Contractor shall produce drawings that indicate all piping, equipment and ductwork on 1/4 scale drawings. All items shall be drawn to scale, dimensioned and be easily identified. Actual equipment dimensions from the submittals shall be used. The drawings shall indicate a bottom of duct or bottom of pipe. All manufacturers' recommeded clearances and code required clearances shall be clearly indicated.

C. The Mechanical Contractor shall import a 3D file compatible with Navisworks from the Plumbing Contractor that indicates all piping, fixtures, and plumbing equipment. This includes underground piping. The drawings shall be to scale, dimensioned, and clearly identified. The drawings shall indicate bottom of pipe (or centerline) for all equipment or pipes.

D. The Mechanical Contractor shall import a 3D file compatible with Navisworks from the Fire Protection Contractor that indicates all piping, heads, and equipment. The drawings shall be to scale, dimensioned and clearly identified. The drawings shall indicate bottom of pipe (or centerline) for all equipment or pipes.

E. The Mechanical Contractor shall import a 3D file compatible with Navisworks from the Electrical Contractor that indicate all conduits over 2”, lights, cable tray, underground duct banks and electrical equipment. The drawings shall be to scale, dimensioned and clearly identified. The drawings shall indicate mounting heights of all equipment.

F. The Mechanical Contractor shall incorporate the Plumbing Contractor’s, **Fire Protection Contractor's,** and the Electrical Contractor’s model and drawings with his own model to produce one overall set of coordination drawings for each area. The Mechanical Contractor shall adjust layers, colors, etc., to make the drawing readable. (***Addendum 03)***

G. Navisworks shall be used for clash detection. The Mechanical Contractor shall review the overall coordination model for conflicts. If a conflict is found, the Mechanical Contractor shall coordinate revisions to the model and drawings with each sub contractor. There shall be as many iterations as required to produce a clash-free model

H. If any problems cannot be worked out between the Contractors, the Mechanical Contractor shall contact the Engineer. At that time, a meeting with the Engineer and the Architect will be arranged. The Mechanical Contractor shall make the overall coordination model available for the meeting.

I. Once all conflicts have been resolved, the Mechanical Contractor shall provide the Architect and Engineer with a complete set of Coordination Drawings.

J. In addition, the Mechanical Contractor shall send the completed overall coordination drawings to a printer so that the Plumbing, Fire Protection, and Electrical Contractors can order as many copies as they desire (at their expense). The Mechanical Contractor is responsible for providing the Engineer’s set, the Architect’s set, and the Mechanical Contractor ’s set(s).

K. The Mechanical Contractor and the General Contractor/Construction Manager are responsible for setting the schedule for this process. The Plumbing Contractor, Fire Protection Contractor, Electrical Contractor and the Architect should approve the schedule.

L. The Coordination Drawings shall be used as the basis for the As-built Drawings. These shall be made available to the Design Team for this purpose.

M. The overall coordination drawings shall be completed prior to any plumbing, mechanical and electrical work beginning. Start of work, including underground work, without completed Coordination Drawings is at the Contractor's risk.

END OF SECTION 23 05 70

SECTION 23 09 23

DIRECT DIGITAL CONTROL SYSTEM FOR HVAC

PART 1: GENERAL

1.01 WORK INCLUDED

A. Furnish a totally native BACnet-based system. All building controllers, application controllers, and all input/output devices shall communicate using the protocols and network standards as defined by ANSI/ASHRAE Standard 135-2008, BACnet. In other words, all workstations and controllers, including unitary controllers, shall be native BACnet devices. No gateways shall be used for communication to controllers installed under this section. Gateways may be used for communication to systems installed under other sections.

B. This system shall be directly interfaced with ~~the~~ ***an*** existing Randolph County ~~Alerton~~ BACnet Server and shall be incorporated seamlessly into the existing graphics package and shall match all ***existing*** graphics standards. All building automation functions for the installed system shall be integrated into the existing Server. This includes the ability to view, schedule, trend, and alarm all control points through the existing software.

1. ***If approved bidder does not currently maintain an existing BAS Server for Randolph county, a new Niagara 4 BAS Server with the latest software vesion shall be provided. New BAS Server shall at a minimum be certified as a BACnet Advanced Operator Workstation (B-AWS) per standards of BACnet Testing Laboratories. New controls shall be incorporated seamlessly into the new or existing graphics package and shall match all graphics standards for Randolph County. All building automation functions for the installed system shall be integrated into the new Server. This includes the ability to view, schedule, trend, and alarm all control points through the new or existing software. (Addendum 03)***
2. ***If an existing Randolph County schools server is being connected to by the Controls vendor, all software shall be upgraded to the latest stable version. (Addendum 03)***

C. The Controls Contractor shall include any software, expansion, and licensing upgrades necessary to accommodate the scope of work for this project.

D. Provide all necessary BACnet-compliant hardware and software to meet the system's functional specifications. Provide Protocol Implementation Conformance Statement (PICS) for Windows-based control software and every controller in system, including unitary controllers.

E. Prepare individual hardware layouts, interconnection drawings, and software configuration from project design data.

F. Implement the detailed design for all analog and binary objects, system databases, graphic displays, logs, and management reports based on control descriptions, logic drawings, configuration data, and bid documents.

G. Design, provide, and install all equipment cabinets, panels, data communication network cables needed, and all associated hardware.

H. Provide and install all interconnecting cables between supplied cabinets, application controllers, and input/output devices.

I. Provide and install all interconnecting cables between all operator's terminals and peripheral devices (such as printers, etc.) supplied under this section.

J. Provide complete manufacturer's specifications for all items that are supplied. Include vendor name of every item supplied.

K. Provide supervisory specialists and technicians at the job site to assist in all phases of system installation, startup, and commissioning.

L. Provide a comprehensive operator and technician training program as described herein.

M. Provide as-built documentation, operator's terminal software, diagrams, and all other associated project operational documentation (such as technical manuals) on approved media, the sum total of which accurately represents the final system.

N. Provide new sensors, dampers, valves, and install only new electronic actuators. No existing or previously used components shall be installed as any part or piece of the system.

1.02 SYSTEM DESCRIPTION

A. A distributed logic control system complete with all software and hardware functions shall be provided and installed. System shall be completely based on ANSI/ASHRAE Standard 135-2008. This system is to control all mechanical equipment, including all unitary equipment such as VAV boxes, etc., and all air handlers, boilers, chillers, and any other listed equipment using native BACnet-compliant components. Non-BACnet-compliant or proprietary equipment or systems (including gateways) shall not be acceptable and are specifically prohibited.

B. Operator's workstation software (EXISTING) shall use Windows 10 as the computer operating system. The Energy Management and Control System (EMCS) application program shall be written to communicate specifically utilizing BACnet protocols. Software functions delivered on this project shall include password protection, scheduling (including optimum start), alarming, logging of historical data, full graphics including animation, after-hours billing program, demand limiting, and a full suite of field engineering tools including graphical programming and applications. Systems using operating systems other than that described above are strictly prohibited. All software required to program application specific controllers and all field level devices and controllers will be left with the owner. All software passwords required to program and make future changes to the system will also become the property of the owner. All software required to make any program changes anywhere in the system, along with scheduling and trending applications, will be left with the owner. All software passwords required to program and make future changes to schedules, trends and related program changes will also become the property of the owner. All software required for all field engineering tools including graphical programming and applications will be left with the owner. All software passwords required to program and make future changes to field engineering tools, including graphical programming and applications will be left with the owner.

C. Building controllers shall include complete energy management software, including scheduling building control strategies with optimum start and logging routines. All energy management software and firmware shall be resident in field hardware and shall not be dependent on the operator's terminal. Operator's terminal software is to be used for access to field-based energy management functions only. Provide zone-by-zone direct digital logic control of space temperature, scheduling, runtime accumulation, equipment alarm reporting, and override timers for after-hours usage.

D. Room sensors shall be provided with digital readout that allows the user to view room temperature, view outside air temperature, adjust the room setpoint within preset limits and set desired override time. User shall also be able to start and stop unit from the digital sensor. Include all necessary wiring and firmware such that room sensor includes field service mode. Field service mode shall allow a technician to balance VAV zones and access any parameter in zone controller directly from the room sensor. Field service mode shall have the ability to be locked out.

E. All application controllers for every terminal unit (VAV, HP, UV, etc.) air handler, all central plant equipment, and any other piece of controlled equipment shall be fully programmable. Application controllers shall be mounted next to controlled equipment and communicate with building controller through BACnet LAN.

1.03 APPROVED MANUFACTURERS

A. The basis of design shall be the Compass system from Alerton. The Owner's existing server is an Alerton BACnet Server.

B. Approved Control Manufacturers
   1. Alerton (Preferred Alternate)

2. Johnson
3. Automated Logic
4. Honeywell
5. Schneider
6. Siemens
7. ***Trane (Addendum 03)***

1.04 QUALITY ASSURANCE

A. The Building Automation System (BAS) system shall be designed, installed, commissioned, and serviced by manufacturer authorized and trained personnel. System provider shall have an in-place support facility within 2 hours response time of the site with technical staff, spare parts inventory, and necessary test and diagnostic equipment.
   1. The contractor shall provide full-time, on-site, experienced project manager for this work, responsible for direct supervision of the design, installation, start-up and commissioning of the BAS system.
   2. The Bidder shall be regularly engaged in the design, installation and maintenance of BAS systems and shall have demonstrated technical expertise and experience in the design, installation and maintenance of BAS systems similar in size and complexity to this project.
   3. Materials and equipment shall be manufacturer's latest standard design that complies with the specification requirements.
   4. All BAS peer-to-peer network controllers, central system controllers and local user displays shall be UL Listed under Standard UL 916, category PAZX.
   5. All electronic equipment shall conform to the requirements of FCC Regulation, Part 15, Governing Radio Frequency Electromagnetic Interference and be so labeled.
   6. Control system shall be engineered, programmed and supported completely by representative's local office that must be within ***125*** miles of project site. ***(Addendum 03)***

1.05 REFERENCE STANDARDS

A. The latest edition of the following standards and codes in effect and amended as of supplier's proposal date, and any applicable subsections thereof, shall govern design and selection of equipment and material supplied:
   1. American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE).
   2. ANSI/ASHRAE Standard 135-2008, BACnet.
   3. Uniform Building Code (UBC), including local amendments.
   4. UL 916 Underwriters Laboratories Standard for Energy Management Equipment. Canada and the US.
   5. National Electrical Code (NEC).
   6. FCC Part 15, Subpart J, Class A.
   7. EMC Directive 89/336/EEC (European CE Mark).
   8. UL-864 UUKL listing for Smoke Controls for any equipment used in smoke control sequences.
   9. City, county, state, and federal regulations and codes in effect as of contract date.
   10. Except as otherwise indicated, the system supplier shall secure and pay for all permits, inspections, and certifications required for his work, and arrange for necessary approvals by the governing authorities.

1.06 SUBMITTALS

A. Drawings
   1. The system supplier shall submit engineered drawings, control sequence, and bill of materials for approval.
   2. Drawings shall be submitted in the following standard sizes: 8" x 11 1/2" (ANSI B) or 11" x 17".
   3. Eight complete sets (copies) of submittal drawings shall be provided.
   4. System Documentation
      a. Include the following in submittal package:
      b. System configuration diagrams in simplified block format.

c. All input/output object listings and an alarm point summary listing.
d. Electrical drawings that show all system internal and external connection points, terminal block layouts, and terminal identification.
e. Complete bill of materials, valve schedule and damper schedule.
f. Manufacturer's instructions and drawings for installation, maintenance, and operation of all purchased items.
g. Overall system operation and maintenance instructions-including preventive maintenance and troubleshooting instructions.
h. For all system elements-operator's workstation(s), building controller(s), application controllers, routers, and repeaters-provide BACnet Protocol Implementation Conformance Statements (PICS) as per ANSI/ASHRAE Standard 135-2001.
i. Provide complete description and documentation of any proprietary (non-BACnet) services and/or objects used in the system.
j. A list of all functions available and a sample of function block programming that shall be part of delivered system.

5. Project Management
   a. The vendor shall provide a detailed project design and installation schedule with time markings and details for hardware items and software development phases. Schedule shall show all the target dates for transmission of project information and documents, and shall indicate timing and dates for system installation, debugging, and commissioning.

1.07 WARRANTY

A. Warranty shall cover all costs for parts, labor, associated travel, and expenses for a period of one year from completion of system acceptance.

B. Hardware and software personnel supporting this warranty agreement shall provide on-site or off-site service in a timely manner after failure notification to the vendor. The maximum acceptable response time to provide this service at the site shall be 24 hours, Monday through Friday and 48 hours on Saturday and Sunday.

C. This warranty shall apply equally to both hardware and software.

1.08 RELATED WORK IN OTHER SECTIONS

A. Refer to Division 0 and Division 1 for related contractual requirements.

B. Refer to Section 23 01 00 for General Mechanical Provisions.

PART 2: PRODUCTS

2.01 ADVANCED WORKSTATION (AWS) - EXISTING

A. General structure of workstation interaction shall be a standard client/server relationship with web server embedded in the server for browser only access. Server shall be used to archive data and store system database. The AWS shall support operation in a virtualized server environment. Thick and web clients shall access server for all archived data.
   1. A single server license shall:
      a. Allow a minimum of 50 thick client seats/installations.
      b. Allow a minimum of 200 web client users.
      c. Not restrict system size based on point count (BACnet or Integration).
   2. Data Displays
      a. Data displays shall render all data associated with project as called out on drawings and/or object type list supplied. Graphic files shall be created using digital, full color photographs of system installation, AutoCAD or Visio drawing files of field installation drawings, and wiring diagrams from as-built drawings.
      b. Data displays shall render data using iconic graphic representations of all mechanical equipment. System shall be capable of displaying graphic file, text, trendlog, and dynamic object data together on each display and shall include animation. Information shall be labeled with descriptors and shall be shown with the appropriate engineering

units. All information on any display shall be dynamically updated without any action by the user.

c. Data display frame shall allow user to change all field-resident AWS functions associated with the project, such as setpoints, weekly schedules, exception schedules, etc., from any screen, no matter if that screen shows all text or a complete graphic display. This shall be done without any reference to object addresses or other numeric/mnemonic indications.
d. Analog objects shall be displayed with operator modifiable units. Analog input objects may also be displayed as individual graphic items on the display screen as an overlay to the system graphic.
e. All displays and programming shall be generated and customized by the local use energy management and control system (EMCS) supplier and installer. Systems requiring factory development of graphics or programming of DDC logic are specifically prohibited.
f. AWS shall be supplied with a library of standard graphics, which may be used unaltered or modified by the operator. AWS shall include a library of equipment graphic components to assemble custom graphics. Systems that do not allow customization or creation of new graphic objects by the operator (or with third-party software) shall not be allowed.
g. A navigation tree for building, equipment and system diagnostic centric display organization shall be available from data display view. The tree navigation contents shall be customizable on a per-user and per-group basis.
h. Each display may be protected from viewing unless operator credentials have the appropriate access level. An access level may be assigned to each display and system object. The menu label shall not appear on the graphic if the operator does not have the appropriate security level.
i. Data displays shall have the ability to link to content outside of the EMCS system. Such content shall include, but is not limited to launching external files in their native applications (for example, a Microsoft Word document).
j. A single system software license can support a minimum of 200 user accounts and web access.
k. Data displays shall support:
    1) Graphic items with custom geometry that offer both color gradient shading and variable opacity in scale to system variables, both analog and digital, and color range settings. For example, rooms on a floor plan graphic can be made to indicate the space temperature by varying the color of that room.
    2) Clear and custom geometry navigation buttons to provide intuitive navigation to system display or external URLs.
    3) Graphic files in JPG, PNG, and GIF file types.
    4) Viewing of up to 1,024 system data points (Analog, Binary, and/or Multi-state) in a single screen.
    5) Customizable mouse-over tooltip information of graphic items or data points can be displayed. The tooltips can be turned on and off. The default setting is off.
    6) Right click capability to directly access system functionality, such as Schedule, Trendlogs, and Alarms associated with a display object selected.
    7) Automatic zooming to the screen size detected to maximize the size of the display to match screen display area available. The zoom capability can be enabled or disabled, default is enabled. The background color, if solid, will be used to flood fill the remaining screen background.
    8) Supports user configurable embedded Data Viewer for a persistent trend log data view to accompany system data and graphic information on a single display.

3. Password Protection

a. Provide security system that prevents unauthorized use unless operator is logged on. Access shall be limited to operator's assigned functions when user is logged on. This includes displays as outlined above.
b. AWS shall provide security for a minimum of 200 users. Each user shall have an individual User ID, User Name, and Password. Entries are alphanumeric characters only and are case sensitive (except for User ID). User ID, User Name, and Password shall be shall support a minimum of 40 characters. All user information and passwords shall be stored in an encrypted form.
c. Each user shall be allowed individual assignment of only those control functions, menu items, navigation tree, and user-specific system start display, as well as restricted access to discrete BACnet devices to which that user requires access.
d. All passwords, user names, and access assignments shall be adjustable via Server and Thick client. Password shall be adjustable via the web client.
e. Users shall also have a set access level, which defines access to displays and individual objects the user may control. System shall include 10 separate and distinct access levels for assignment to users.
f. The AWS and Thick Client shall include an Auto Logout feature that shall automatically logout user when there has been no keyboard or mouse activity for a set period of time. Time period shall be adjustable by system administrator. Auto Logout may be enabled and disabled by system administrator. Operator terminal shall display message on screen that user is logged out after Auto Logout occurs.
g. The system shall permit the assignment of an effective date range, as well as an effective time of day, that the User IDs are permitted to authenticate.

4. Operator Activity Log
   a. An Operator Activity Log that tracks all operator changes and activities shall be included with AWS. System shall track what is changed in the system, who performed this change, date and time of system activity, and value of the change before and after operator activity. Operator shall be able to display all activity, sort the changes by user and also by operation. Operator shall be able to print the Operator Activity Log display.
   b. Log shall be gathered and archived to a hard drive on AWS as needed. Operator shall be able to export data for display and sorting in a spreadsheet.
   c. System shall have the option to require user comment recording in the Operator Activity Log upon any system point change.
   d. Operator Activity log shall be accessible via the Web Client for viewing, sorting, filtering, and Printing.
5. Scheduling
   a. AWS, Thick Client and Web Client shall show all information in easy-to-read daily format including calendar of this month and next. All schedules shall show actual ON/OFF times for day based on scheduling priority. Priority for scheduling shall be events, holidays and daily, with events being the highest.
   b. Holiday and special event schedules shall display data in calendar format. Operator shall be able to schedule holidays and special events directly from these calendars.
   c. Operator shall be able to change all information for a given weekly or exception schedule if logged on with the appropriate access privileges.
   d. AWS and Thick Client shall include a Schedule Wizard for set up of schedules. Wizard shall walk user through all steps necessary for schedule generation. Wizard shall have its own pull-down selection for startup or may be started by right-clicking on value displayed on graphic and then selecting Schedule.
   e. Scheduling shall include optimum start based on outside air temperature, current heating/cooling setpoints, indoor temperature and history of previous starts. Each and every individual zone shall have optimum start time independently calculated based on all parameters listed. User shall input schedules to set time that occupied setpoint is to be attained. Optimum start feature shall calculate the startup time needed to

match zone temperature to setpoint. User shall be able to set a limit for the maximum startup time allowed.

f. Schedule list shall show all schedules currently defined. This list shall include all standard, holiday and event schedules. In addition, user shall be able to select a list that shows all scheduled points and zones.
g. Any displayed data that is changeable by the operator may be selected using the right mouse button and the schedule shall then be selectable on the screen. Selection of the schedule using this method shall allow the viewing of the assigned schedule allow the point to be scheduled.
h. Schedule editor shall support drag-n-drop events and holidays onto the schedule calendar.
i. Schedule editor shall support drag-n-drop events default to a two-hour period, which can then be adjusted by the user.
j. Schedule editor shall support drag-n-drop holidays default for OFF all day and can be edited for multiple-day holidays.
k. Schedule editor shall support the view of affected zones when adding or editing timed events of a schedule.
l. The web client shall have the ability to search a list of all scheduled points and zones to access the schedule calendar.
m. Schedule time blocks shall present schedule detail via mouse-over information.

6. Alarm Indication and Handling
   a. AWS shall provide visual, printed, and email means of alarm indication. Printout of alarms shall be sent to the assigned terminal and port. Alarm notification can be filtered based on the User ID's authorization level.
   b. Web client shall display a persistent alarm state for the system regardless of the data view including points in alarm but not acknowledged, and points that have gone into alarm and returned to normal without being acknowledged.
   c. Alarm History shall provide log of alarm messages. Alarm log shall be archived to the hard disk of the AWS. Each entry shall include a description of the event-initiating object generating the alarm. Description shall be an alarm message of at least 256 characters in length. Entry shall include time and date of alarm occurrence, time and date of object state return to normal, time and date of alarm acknowledgment, and identification of operator acknowledging alarm.
   d. Alarm messages shall be in user-definable text (English or other specified language) and shall be delivered either to the operator's terminal, client or through remote communication using email (Authenticated SMTP supported).
   e. AWS, Thick Client, and Web Client shall allow for set up of alarms. UI shall walk user through all steps necessary for alarm generation. Alarm creation may be started by right-clicking on value displayed on graphic and then selecting Alarm setup.
   f. Web client shall support color-coded indication of current alarms as follows:
      1) Red indicator shows number of active alarms that have not been acknowledged.
      2) Yellow indicator shows number of alarms that are still active but have been acknowledged.
      3) Blue indicator shows number of alarms that have returned to normal but have not been acknowledged.
      4) Color-coded indicators, when selected by the user, navigate to a pre-filtered view of alarm history.
      5) Alarm history can be filtered by color-coded indicator states.
      6) Alarm annunciation includes navigation link to a user-selected display or URL.
      7) Any displayed data that is changeable by the operator may be selected using the right mouse button and the alarm shall then be selectable on the screen. Selection of the alarm using this method shall allow the viewing of the alarm history or allow the creation of a new alarm.
7. Trendlog Information

a. AWS shall periodically gather historically recorded data stored in the building controllers and store the information in the system database. Stored records shall be appended with new sample data, allowing records to be accumulated. Systems that write over stored records shall not be allowed unless limited file size is specified. System database shall be capable of storing up to 50 million records before needing to archive data. Samples may be viewed at the web client. All trendlog records shall be displayed in standard engineering units.
b. AWS shall be capable of trending on an interval determined by a polling rate, or change-of-value.
c. AWS, Thick client, or Web Client shall be able to add and edit trendlogs and the setup information. This includes the information to be logged as well as the interval at which it is to be logged. All operations shall be password protected. Viewing may be accessed directly from any and all graphics on which a trended object is displayed.
d. AWS and Thick Client shall include a Trendlog Wizard for setup of multiple trend logs simultaneously. Wizard shall walk user through all necessary steps. Wizard shall have its own pull-down selection for startup, or may be started by right-clicking on value displayed on graphic, and then selecting Trendlogs from the displayed menu.
e. AWS shall be capable of using Microsoft SQL as the system database.
f. Any displayed data that is changeable by the operator may be selected using the right mouse button and the trendlog shall then be selectable from a menu on the screen. Selection of the trendlog using this method shall allow the viewing of the trendlog data in the DataViewer.
g. DataViewer shall provide:
    1) Software that is capable of graphing the trend-logged object data shall be included.
    2) Access and ability to create, edit and view are restricted to users by user account credentials
    3) Specific and repeatable URL defines the trendlog(s) views for browser bookmarking and email compatibility.
    4) Call out of trendlog value at intersection of trend line and mouse-over vertical axis.
    5) Trendlog or Energy log and companion logs can be configured to display on one of two independent vertical scales embedded in the display.
    6) Click zoom for control of data set viewed along either graph axis.
    7) User-specifiable start and end dates as well as a fast scroll features that supports click zoom of macro scale view of the data for quickly finding data set based on visual signature.
    8) User export of the viewed data set to MS Excel.
    9) Web browser-based help.
    10) Optional min/max ranges (Upper Control Limits, Lower Control Limits) for each value.

8. Energy Log Information
    a. AWS shall be capable of periodically gathering energy log data stored in the field equipment and archive the information. Archive files shall be appended with new data, allowing data to be accumulated. Systems that write over archived data shall not be allowed unless limited file size is specified. Display all energy log information in standard engineering units.
    b. All data shall be stored in database file format for direct use by third-party programs. Operation of system shall stay completely online during all graphing operations.
    c. AWS operator shall be able to change the energy log setup information as well. This includes the meters to be logged, meter pulse value, and the type of energy units to be logged. All meters monitored by the system may be logged. System shall support using flow and temperature sensors for BTU monitoring.

d. AWS shall display data in tabular format form for both consumption and peak values. Data shall be shown in hourly, daily, weekly, monthly and yearly formats. In each format, the user shall be able to select a specific period of data to view.
e. Web client shall display data in tabular format and graphical format. Data shall be shown in hourly, daily, weekly, monthly and yearly formats. In each format, the user shall be able to select a specific period of data to view.

9. Demand Limiting
   a. AWS shall include demand limiting program that includes two types of load shedding. One type of load shedding shall shed/restore equipment in binary fashion based on energy usage when compared to shed and restore settings. The other type of shedding shall adjust operator-selected control setpoints in an analog fashion based on energy usage when compared to shed and restore settings. Shedding may be implemented independently on each and every zone or piece of equipment connected to system.
   b. Binary shedding shall include minimum of five (5) priority levels of equipment shedding. All loads in a given priority level shall be shed before any loads in a higher priority level are shed. Load shedding within a given priority level shall include two methods. In one, the loads shall be shed/restored in a “first off-first on” mode, and in the other the loads are just shed/restored in a “first off-last on” (linear) fashion.
   c. Analog shed program shall generate a ramp that is independently used by each individual zone or individual control algorithm to raise the appropriate cooling setting and lower appropriate heating setting to reduce energy usage.
   d. AWS shall be able to display the status of each and every load shed program. Status of each load assigned to an individual shed program shall be displayed along with English description of each load.
10. Reports
   a. AWS shall be capable of periodically producing reports of trendlogs, alarm history, tenant activities, device summary, energy logs, and override points. The frequency, content, and delivery are to be user adjustable.
   b. All reports shall be capable of being delivered in multiple formats including text- and comma-separated value (CSV) files. The files can be printed, emailed, or saved to a folder, either on the server hard drive or on any network drive location.
11. Configuration/Setup
   a. Provide means for operator to display and change system configuration. This shall include, but not be limited to system time, day of the week, date of daylight savings set forward/set back, printer termination, port addresses, modem port and speed, etc. Items shall be modified using understandable terminology with simple mouse/cursor key movements.
   b. The building management system (BMS) shall operate the user interface in any region and support varying languages and locale settings, without the addition of special software. Localization tools shall be commonly available open sourced or purchased products, No BMS manufacturer specific software will be acceptable.
      1) The following localization capabilities shall be supported:
         (a) Locale settings related to date, time and number formats
         (b) Multiple left-to-right languages supported including Cyrillic languages
         (c) On the fly locale change using browser language settings (multiple language and locale setting change)
         (d) Default character encoding shall be UTF-8
         (e) Each localized BMS element can be localized independently and operate autonomously
12. Field Engineering Tools
   a. AWS shall include field engineering tools for programming all controllers supplied. All controllers shall be programmed using graphical tools that allow the user to connect function blocks on screen that provide sequencing of all control logic. Function blocks shall be represented by graphical displays that are easily identified and distinct from

other types of blocks. Graphical programming that uses simple rectangles and squares is not acceptable.

b. User shall be able to select a graphical function block from menu and place on screen. Provide zoom in and zoom out capabilities. Function blocks shall be downloaded to controller without any reentry of data.
c. Programming tools shall include a real-time operation mode. Function blocks shall display real-time data and be animated to show status of data inputs and outputs when in real-time operation. Animation shall show change of status on logic devices and countdown of timer devices in graphical format.
d. Field engineering tools shall also include a database manager of applications that include logic files for controllers and associated graphics. Operator shall be able to select unit type, input/output configuration and other items that define unit to be controlled. Supply minimum of 250 applications as part of workstation software.
e. Field engineering tool shall include Device Manager for detection of devices connected anywhere on the BACnet network by scanning the entire network. This function shall display device instance, network identification, model number, and description of connected devices. It shall record and display software file loaded into each controller. A copy of each file shall be stored on the computer's hard drive. If needed, this file shall be downloaded to the appropriate controller using the mouse.
f. AWS shall automatically notify the user when a device that is not in the database is added to the network.
g. AWS shall include backup/restore function that will back up entire system to selected medium and then restore system from that medium. The system shall be capable of creating a backup for the purpose of instantiating a new client PC.
h. The system shall provide a means to scan, detect, interrogate, and edit third-party BACnet devices and BACnet objects within those devices.

13. Software
    a. At the conclusion of the project, contractor shall leave with owner a electronic copy that includes the complete software operation system and project graphics, setpoints, system parameters, etc. This backup shall allow the owner to completely restore the system in the case of a computer malfunction.
14. Web Client
    a. EMCS supplier shall provide an HTML5-based browser access to the AWS as part of standard installation. User must be able to access all displays of real-time data that are part of the AWS using a standard web browser. Web browser shall tie into the network through owner-supplied Ethernet network connection. The web client shall support a minimum of 200 users with a single license.
    b. Browser shall be standard version of Microsoft Internet Explorer v10.0 or later, Firefox v19.0 or later, Chrome v24.0 or later, and Safari v7.1.1 or later. No special vendor-supplied software shall be needed on computers running browser. Data shall be displayed in real-time and update automatically without user interaction.
    c. Web pages shall be automatically generated using HTML5 from the data display files that reside on the AWS. Any system that requires use of an HTML editor for generation of web pages shall not be considered.
    d. Access through web client or thick client shall utilize the same hierarchical security scheme as the AWS. User shall be asked to log on once the client makes connection to the AWS. Once the user logs on, any and all changes that are made shall be tracked by the AWS. The user shall be able to change only those items he or she has authority to change. A user activity report shall show any and all activity of the users who have logged on to the system, regardless of whether those changes were made using a web client, thick client or through the AWS.
    e. Shall provide User Session Management including the ability to view all connected user sessions to the web client, see how long they have been active/inactive for each unique session, and force log-out for any or all sessions.

f. Shall provide menu-style navigation access to primary features, i.e. alarm history, DataViewer, Search scheduled points and Zones, System Activity, User Session Management, and Top Display
g. Web client shall, at a minimum, support the following tablets:
   1) Android platform:
      (a) Google Nexus
      (b) Samsung Galaxy Note
   2) Apple platform
      (a) Ipad
      (b) Apple Ipad Mini

2.02 ***NIAGARA BASED SERVER (BASE BID)***

A. ***The contractor shall be responsible for the hardware and software for the enterprise framework and system integration required for the complete Building Automation System.***

B. ***Provide a JACE 8000 controller to provide integrated control, supervision, data logging, alarming, scheduling and network management.***

C. ***Provide license for 1000 analytic points for Embedded Controller.***

D. ***The BAS shall be comprised of Network Control Units (NCU) connected to the Building Automation System local area network (BAS LAN).***
   1. ***Access to the BAS, either through a Workstation on the BAS LAN, within the building or through a Wireless Application Protocol device, or remotely through the Internet, shall be accomplished through a standard Web browser.***
   2. ***Each NCU shall communicate to BTL Listed BACnet controllers provided under the Programmable Controllers section.***

E. ***The system includes software and programming of the JACE, NCU(s), Operator Workstation(s) (OWS) software and hardware, development of all graphical screens, setup of schedules, trends, logs and alarms, network management and connection of the NCU(s) to the local area network. (Addendum 03)***

2.03 ***SERVER REQUIREMENTS (BASE BID)***

A. ***The Server shall be a PC with minimum Intel Core i5 Quad core 3.4 GHz processor with 8 GB RAM and a 1TB SATA hard drive with 6 GB/s transfer rate. It shall include a minimum 32X CD-ROM drive and 4-USB ports. A minimum 21", HDMI, DVI-D video interfaces, minimum 1024 x 768 resolution, 4x3 Widescreen, LED color monitor with a minimum 60 Hz refresh rate shall also be included.***

B. ***The server operating system shall be:***
   1. ***Windows 10 64bit***
   2. ***With VM support***
   3. ***With the most recent service packs and system updates.***
   4. ***Selected based on availability and project requirements.***

C. ***Acceptable Manufacturers are:***
   1. ***Dell***
   2. ***Lenovo***
   3. ***HP (Hewlett Packard)***

D. ***Connection to the BAS LAN network shall be via an Ethernet network interface card, 100 Mbps.***

E. ***The server shall support all Network Control Units (NCU), OWSs, and 3rd party mechanical / electrical systems connected to the Facility Management Control / Building Automation System Local Area Network. (Addendum 03)***

2.04 ***NETWORK (BASE BID)***

A. ***The BAS network(s) must be based on Open Systems.***

B. ***Niagara N4 shall be used at the network levels as the manager(s).***

C. ***High-speed data transfer rates for alarm reporting, quick report generation form multiple controllers and upload/download efficiency between network devices.***

D. ***Support of any combination of controllers and operator workstations directly connected to the local area network. A minimum of 50 devices shall be supported on a single local area network.***

E. ***Detection and accommodation of single or multiple failures of workstations, controller panels and the network media. The network shall include provisions for automatically reconfiguring itself to allow all operational equipment to perform their designated functions as effectively as possible in the event of single or multiple failures.***

F. ***Message and alarm buffering to prevent information from being lost.***

G. ***Error detection, correction, and retransmission to guarantee data integrity.***

H. ***Default device definition to prevent loss of alarms or data, and ensure alarms are reported as quickly as possible in the event an operator device does not respond.***

I. ***Commonly available, multiple sourced, networking components shall be used to allow the system to coexist with other networking applications such as office automation. Ethernet to IEEE 802.3 standard is the only acceptable technology.***

J. ***Synchronization of the real-time clocks in all NCU panels shall be provided.***

K. ***The BAS LAN shall be a 100 Megabits/sec Ethernet network supporting BACnet, Java, XML, HTTP, SOAP, OBIX, SNMP and SMTP Protocols for maximum flexibility for integration of building data with enterprise information systems and providing support for multiple Network Control Units (NCUs), user workstations and where specified, a local server. Local area network minimum physical and media access requirements:***
   1. ***Ethernet; IEEE standard 802.3***
   2. ***Cable; 100 Base-T, UTP-8 wire, category 5***
   3. ***Minimum throughput; 100 Mbps***
   4. ***Provide access to the BAS LAN via a Wireless Application Protocol (WAP) device. Through this connection the BAS LAN will provide authorized staff with the ability to monitor and control the BAS from any location within the through a web browser, or web enabled devices.***
   5. ***Provide access to the BAS LAN from a remote location, via the Intranet or Internet. The owner shall provide (in future) a connection to the Internet to enable access via high-speed cable modem, asynchronous digital subscriber line (ADSL) modem, ISDN line, T1 Line or access to an Internet Service Provider (ISP). If required, the owner will provide a switch/firewall between the building LAN and the BAS LAN. Through this connection the BAS LAN will provide authorized staff with the ability to monitor and control the BAS from a remote location through a web browser, or web enabled devices.***

L. ***Controller Local Area Network (BAS sub LAN)***
   1. ***Provide a network of stand-alone, distributed direct digital controllers that operate on the following protocol using the specified physical layers:***
      a. ***The BAS sub LAN shall employ the BACnet protocol for communication between controllers. BACnet protocol implementation shall adhere to the ANSI/ASHRAE Standard 135. Communications between BACnet devices shall be 76.8 kbps over approved twisted shielded pair cabling utilizing Master/Slave Toke Passing BACnet protocol. BACnet defines a comprehensive set of object types and application services for communication requirements among all levels of control in a distributed, hierarchical Building Automation System. BACnet is intended to provide a single, uniform standard for the BAS to provide the required interoperability.***

2. ***Strict adherence to industry standards including ANSI/ASHRAE Standard 135, BACnet, certified by BACnet Testing Laboratory (BTL listed) to assure interoperability between all system components. Controllers that are not BTL listed are unacceptable.***
3. ***Provide BAS Controllers that conform to ANSI/ASHRAE Standard. 135, BACnet***
4. ***The design of the BAS sub LAN shall network Local Control Unit (LCU) and Terminal Control Unit (TCU) to a Network Control Unit (NCU).***
5. ***This level of communication shall support a family of application specific controllers and shall communicate bi-directionally with the network through DDC Controllers for transmission of global data.***
6. ***Terminal Control Unit (TCU) shall be arranged on the BAS sub LAN's in a functional relationship manner with Local Control Unit (LCU). Ensure that a Variable Air Volume (VAV) Terminal Control Unit (TCU) is logically on the same LAN or segment as the Local Control Unit (LCU) that is controlling its corresponding Air Handling Unit (AHU).***

M. ***The system shall consist of a network of Network Control Units (NCUs), interoperable Local Control Units (LCUs) and Terminal Control Units (TCUs) (VAV Box Controllers, Fan Coil Unit Controllers, etc.). All controllers for terminal units, air handling units (AHU) and controllers shall communicate and share data, utilizing BACnet communications protocols only.***

N. ***The intent of this specification is to provide a distributed and networked open Building Automation System, the capability to integrate ANSI/ASHRAE Standard 135, BACnet and ISO/IEC 14908-1: Open Data Communication in Building Automation, Controls and Building Management – Control Network Protocol into a unified system in order to provide flexibility for expansion, maintenance, and service of the system.***

O. ***The proposed system must maintain strict adherence to industry standards including ANSI/ASHRAE Standard 135, Annex L, and Device Profile to assure interoperability between all system components. BACnet system must be tested and listed on BACnet Testing Laboratory (BTL) web site. Systems based on vendor specific proprietary hardware or software will not be considered for this project.***

P. ***Systems utilizing gateways to proprietary communication systems will not be considered for this project. A gateway is considered to be a device or controller where the sole function is mapping of data points from one protocol to another. A gateway device cannot perform higher-level energy management functions such as Outdoor Air Optimization, Electrical Demand Limiting and the like.***

Q. ***The supplied system software shall employ object-oriented technology (OOT) for representation of all data and control devices within the system. In addition, adherence to industry standards including ANSI/ASHRAE™ Standard 135, BACnet to assure interoperability between all system components is required.***

R. ***A hierarchical topology is required to assure reasonable system response times and to manage the flow and sharing of data without unduly burdening the customer's internal Intranet network. Systems employing a flat single tiered architecture shall not be acceptable. Maximum acceptable response time from any alarm occurrence (at the point of origin) to the point of annunciation shall not exceed 10 seconds for network connected user interfaces. Maximum acceptable response time from any alarm occurrence (at the point of origin) to the point of annunciation shall not exceed 60 seconds for remote or dial-up connected user interfaces.***

S. ***User Access***
   1. ***The supplied system must incorporate the ability to access all data using standard Web browsers without requiring proprietary operator interface and configuration programs.***

T. ***An Open Database Connectivity (ODBC) or Structured Query Language (SQL) compliant server database is required for all system databases, all controller program graphics and network databases which shall be provided in a NiagaraN4 Framework format.***
   1. ***This data shall reside on a supplier-installed server for all database access.***
   2. ***Systems requiring proprietary database and user interface programs shall not be acceptable.***

U. ***Software Tools***
   1. ***All software tools needed for full functional use, including programming of controllers, NiagaraN4 Framework network management and expansion, and graphical user interface use and development, of the BAS described within these specifications shall be provided to the owner or his designated agent.***
      a. ***Any licensing required by the manufacturer now and to the completion of the warranty period, including changes to the licensee of the software tools and the addition of hardware corresponding to the licenses, to allow for a complete and operational system for both normal day to day operation and servicing shall be provided.***
      b. ***Any such changes to the designated license holders shall be made by the manufacturer upon written request by the owner or his agent.***
      c. ***Any cost associated with the license changes shall be identified within the BAS submittals.***

V. ***Software License Agreement***
   1. ***The Owner shall sign a copy of the manufacturer's standard software and firmware licensing agreement as a condition of this contract.***
   2. ***Such license shall grant use of all programs and application software to Owner as defined by the manufacturer's license agreement, but shall protect manufacturer's rights to disclosure of trade secrets contained within such software.***
      a. ***The Owner shall be the named license holder of all software associated with any and all incremental work on the project(s).***
      b. ***In addition, the Owner shall receive ownership of all job specific configuration documentation, data files, and application-level software developed for the project.***
      c. ***This shall include all custom, job specific software code, databases and documentation for all configuration and programming that is generated for a given project and/or configured for use with the NCU, Server, OWS and any related LAN/WAN/Intranet and Internet connected routers and devices.***
      d. ***Any and all required User IDs and passwords for access to any component or software program shall be provided to the owner. (Addendum 03)***

2.05 BUILDING CONTROLLER

A. General Requirements
   1. BACnet Conformance
      a. Building Controller shall be approved by the BTL as meeting the BACnet Building Controller requirements.
      b. Please refer to section 22.2, BACnet Functional Groups, in the BACnet standard, for a complete list of the services that must be directly supported to provide each of the functional groups listed above. All proprietary services, if used in the system, shall be thoroughly documented and provided as part of the submittal data. All necessary tools shall be supplied for working with proprietary information.
   2. Building controller shall be of scalable design such that the number of trunks and protocols may be selected to fit the specific requirements of a given project.
   3. The controller shall be capable of panel-mounted on DIN rail and/or mounting screws.
   4. The controller shall be capable of providing global control strategies for the system based on information from any objects in the system, regardless if the object is directly monitored by the building controller module or by another controller.

5. The controller shall be capable of running up to six (6) independent control strategies simultaneously. The modification of one control strategy does not interrupt the function or runtime others.
6. The software program implementing the DDC strategies shall be completely flexible and user-definable. All software tools necessary for programming shall be provided as part of project software. Any systems utilizing factory pre-programmed global strategies that cannot be modified by field personnel on-site, using a wide area network (WAN) or downloaded through remote communications are not acceptable. Changing global strategies using firmware changes is also unacceptable.
7. Programming shall be object-oriented using control function blocks and support DDC functions. All flowcharts shall be generated and automatically downloaded to controller. Programming tool shall be supplied and be resident on workstation. The same tool shall be used for all controllers.
8. The programming tool shall provide means to graphically view inputs and outputs to each program block in real-time as program is executing. This function may be performed using the operator's workstation or field computer.
9. Controller shall have 6,000 Analog Values and 6,000 Binary Values.
10. Controller IP configuration can be done via a direct USB connect with an operator's workstation or field computer.
11. Controller shall have at a minimum a Quad Core 996Ghz processor to ensure fast processing speeds.
12. Global control algorithms and automated control functions shall execute using a 64-bit processor.
13. Controller shall have a minimum of 1 GB of DDR3 SDRAM on a 533Mhz bus to ensure high speed data recording, large data storage capacity and reliability.
14. Controller shall support two (2) on-board EIA-485 ports capable of supporting various EIA-485 protocols including, but not limited to BACnet MS/TP and Modbus.
    a. Ports are capable of supporting various EIA-485 protocols including, but not limited to BACnet MS/TP and Modbus.
15. Controller shall support two (2) ports-each of gigabit speed-Ethernet (10/100/1000) ports.
    a. Ports are capable of supporting various Ethernet protocols including, but not limited to BACnet IP, FOX, and Modbus.
16. All ports shall be capable of having protocol(s) assigned to utilize the port's physical connection.
17. The controller shall have at a minimum four (4) onboard inputs, two (2) universal inputs and two (2) binary inputs.
18. Schedules
    a. Building controller modules shall provide normal seven-day scheduling, holiday scheduling and event scheduling.
    b. Each building controller shall support a minimum of 380 BACnet Schedule Objects and 380 BACnet Calendar Objects.
19. Logging Capabilities
    a. Each building controller shall log as minimum 2,000 objects at 15-minute intervals. Any object in the system (real or calculated) may be logged. Sample time interval shall be adjustable at the operator's workstation.
    b. Logs may be viewed both on-site or off-site using WAN or remote communication.
    c. Building controller shall periodically upload trended data to networked operator's workstation for long-term archiving if desired.
    d. Archived data stored in database format shall be available for use in third-party spreadsheet or database programs.
20. Alarm Generation
    a. Alarms may be generated within the system for any object change of value or state (either real or calculated). This includes things such as analog object value changes, binary object state changes, and various controller communication failures.
    b. Each alarm may be dialed out as noted elsewhere.

c. Alarm log shall be provided for alarm viewing. Log may be viewed on-site at the operator's terminal or off-site using remote communications.
d. Controller must be able to handle up to 2,000 alarm setups stored as BACnet event enrollment objects, with system destination and actions individually configurable.

21. Demand Limiting
    a. Demand limiting of energy shall be a built-in, user-configurable function. Each controller module shall support shedding of up to 1,200 loads using a minimum of two types of shed programs.
    b. Load shedding programs in building controller modules shall operate as defined in section 2.1.J of this specification.

B. BACnet MS/TP
1. BACnet MS/TP LAN must be software-configurable from 9.6 to 115.4Kbps
    a. Each BACnet MS/TP LAN shall support 64 BACnet devices at a minimum.
    b. All proprietary object types, if used in the system, shall be thoroughly documented and provided as part of the submittal data. All necessary tools shall be supplied for working with proprietary information.

C. BACnet IP
1. The building controller shall comply with Annex J of the BACnet specification for IP connections. This device shall use Ethernet to connect to the IP internetwork, while using the same Ethernet LAN for non-IP communications to other BACnet devices on the local area network (LAN).
2. Must support interoperability on WANs and campus area networks (CANs), and function as a BACnet Broadcast Management Device (BBMD).
3. Each controller shall support at a minimum 128 BBMD entries.
4. BBMD management architecture shall support 3,000 subnets at a minimum.
5. Shall support BACnet Network Address Translation.
6. All proprietary object types, if used in the system, shall be thoroughly documented and provided as part of the submittal data. All necessary tools shall be supplied for working with proprietary information.

D. Expansion Ports
1. Controller shall support two (2) expansion ports.
    a. Combining the two on-board EIA-458 ports with fully loaded expansion ports, the controller shall support six (6) EIA-485 trunks simultaneously.
2. Expansion cards that mate to the expansion ports shall include:
    a. Dual port EIA-485 card.
    b. LON network card.

E. Niagara Framework
1. Controller shall utilize the Tridium Niagara Framework.
    a. Niagara Framework shall be version 4.7.
    b. All Niagara licensing shall be stored on a removable MicroSD card for fast in-field replacement of controller.
    c. The Niagara License for the controllers shall be an open license.
        1) The controller shall be programmable via Niagara Workplace programming tool.
        2) The controller shall be programmable via an Niagara embedded Workplace programming tool.

F. Power Supply
1. Input for power shall accept between 17 and 30VAC, 47 and 63Hz.
2. Optional rechargeable battery for shutdown of controller including storage of all data in flash memory.
3. On-board capacitor will ensure continuous operation of real-time clocks for minimum of 14 days.

G. Controller shall be in compliance with the following:
1. UL 916 for open energy management

2. FCC Class B
3. ROHS
4. IEC 60703
5. C-Tick Listed

H. Controller shall operate in the following environmental conditions:
1. -4 to 149 °F (-20 to 65 °C) without optional battery, or 32 to 122 °F (0 to 50 °C) with optional battery.
2. 0 to 95% relative humidity (RH), non-condensing.

2.06 TERMINAL UNIT APPLICATION CONTROLLERS (HEAT PUMPS, AC UNITS, FAN-COILS)

A. Provide one native BACnet application controller for each piece of unitary mechanical equipment that adequately covers all objects listed in object list for unit. All controllers shall interface to building controller through MS/TP LAN using BACnet protocol. No gateways shall be used. Controllers shall include input, output and self-contained logic program as needed for complete control of unit.

B. BACnet Conformance
1. Application controllers shall, as a minimum, support MS/TP BACnet LAN types. They shall communicate directly using this BACnet LAN at 9.6, 19.2, 38.4 and 76.8 Kbps, as a native BACnet device. Application controllers shall be approved by the BTL as meeting the BACnet Application Specific Controller requirements and support all BACnet services necessary to provide the following BACnet functional groups:
a. Files Functional Group
b. Reinitialize Functional Group
c. Device Communications Functional Group
2. Please refer to Section 22.2, BACnet Functional Groups in the BACnet standard, for a complete list of the services that must be directly supported to provide each of the functional groups listed above. All proprietary services, if used in the system, shall be thoroughly documented and provided as part of the submittal data. All necessary tools shall be supplied for working with proprietary information.
3. Standard BACnet object types supported shall include, as a minimum, Analog Input, Analog Output, Analog Value, Binary Input, Binary Output, Binary Value, Device, File, and Program Object Types. All proprietary object types, if used in the system, shall be thoroughly documented and provided as part of the submittal data. All necessary tools shall be supplied for working with proprietary information.

C. Application controllers shall include universal inputs with 10-bit resolution that can accept 3K and 10K thermistors, 0-5VDC, 4-20mA, dry contact signals and a minimum of 3 pulse inputs. Any input on controller may be either analog or digital. Controller shall also include support and modifiable programming for interface to intelligent room sensor. Controller shall include binary outputs on board with analog outputs as needed.

D. All program sequences shall be stored on board controller in EEPROM. No batteries shall be needed to retain logic program. All program sequences shall be executed by controller 10 times per second and shall be capable of multiple PID loops for control of multiple devices. Programming of application controller shall be completely modifiable in the field over installed BACnet LANs or remotely through modem interface. Operator shall program logic sequences by graphically moving function blocks on screen and tying blocks together on screen. Application controller shall be programmed using same programming tools as building controller and as described in operator workstation section. All programming tools shall be provided and installed as part of system.

E. Application controller shall include support for intelligent room sensor (see Section 2.10.B.) Display on room sensor shall be programmable at controller and include an operating mode and a field service mode. All button functions and display data shall be programmable to show specific controller data in each mode based on which button is pressed on the sensor. See sequence of operation for specific display requirements at intelligent room sensor.

2.07 VAV BOX CONTROLLERS-SINGLE DUCT

A. Provide one native BACnet application controller for each VAV box that adequately covers all objects listed in object list for unit. All controllers shall interface to building controller through MS/TP LAN using BACnet protocol. No gateways shall be used. Controllers shall include on board CFM flow sensor, inputs, outputs and programmable, self-contained logic program as needed for control of units.

B. BACnet Conformance
   1. Application controllers shall, at a minimum, support MS/TP BACnet LAN types. They shall communicate directly through this BACnet LAN at 9.6, 19.2, 38.4 and 76.8 Kbps, as a native BACnet device. Application controllers shall be approved by the BTL as meeting the BACnet Application Specific Controller requirements.
   2. Please refer to Section 22.2, BACnet Functional Groups, in the BACnet standard, for a complete list of the services that must be directly supported to provide each of the functional groups listed above. All proprietary services, if used in the system, shall be thoroughly documented and provided as part of the submittal data. All necessary tools shall be supplied for working with proprietary information.
   3. Standard BACnet object types supported shall include, as a minimum, Analog Input, Analog Output, Analog Value, Binary Input, Binary Output, Binary Value, Device, File, and Program Object Types. All proprietary object types, if used in the system, shall be thoroughly documented and provided as part of the submittal data. All necessary tools shall be supplied for working with proprietary information.

C. Application controllers shall include universal inputs with 10-bit resolution that can accept 3K and 10K thermistors, 0-5 VDC, and dry contact signals. Inputs on controller may be either analog or digital. Controller shall also include support and modifiable programming for interface to intelligent room sensor with digital display. Controller shall also include binary outputs on board. For applications using variable speed parallel fans, provide a single analog output selectable for 0-10 V or 0-20 mA control signals. Application controller shall include microprocessor driven flow sensor for use in pressure independent control logic. All boxes shall be controlled using pressure-independent control algorithms and all flow readings shall be in CFM (LPS if metric).

D. All program sequences shall be stored on board application controller in EEPROM. No batteries shall be needed to retain logic program. All program sequences shall be executed by controller 10 times per second and shall be capable of multiple PID loops for control of multiple devices. Programming of application controller shall be completely modifiable in the field over installed BACnet LANs or remotely using modem interface. Operator shall program logic sequences by graphically moving function blocks on screen and tying blocks together on screen. Application controller shall be programmed using the same programming tool as Building Controller and as described in operator's workstation section. All programming tools shall be provided as part of system.

E. Application controller shall include support for intelligent room sensor (see Section 2.10.B.) Display on room sensor shall be programmable at application controller and include an operating mode and a field service mode. All button functions and display data shall be programmable to show specific controller data in each mode based on which button is pressed on the sensor. See sequence of operations for specific display requirements for intelligent room sensor.

F. On board flow sensor shall be microprocessor-driven and pre-calibrated at the factory. Pre-calibration shall be at 16 flow points as a minimum. All factory calibration data shall be stored in non-volatile memory. Calibration data shall be field adjustable to compensate for variations in VAV box type and installation. All calibration parameters shall be adjustable through intelligent room sensor. Operator's workstation, portable computers, and special hand-held field tools shall not be needed for field calibration.

G. Provide duct temperature sensor at discharge of each VAV box that is connected to controller for reporting back to operator's workstation.

2.08 AUXILIARY CONTROL DEVICES

A. Temperature Sensors
1. Provide the following instrumentation as required by the monitoring, control and optimization functions. All temperature sensors shall use Thermistor or platinum RTD elements. All temperature sensors to be solid-state electronic, interchangeable with housing appropriate for application. Wall sensors to be installed as indicated on drawings. Duct sensors to be installed such that the sensing element is in the main air stream. Immersion sensors to be installed in wells provided by control contractor, but installed by mechanical contractor. Immersion wells shall be filled with thermal compound before installation of immersion sensors. Outside air sensors shall be installed away from exhaust or relief vents, not in an outside air intake, and in a location, that is in the shade most of the day. All Temperature Sensors shall be Alerton, ACI or Veris.
   a. Room Temperature:
      1) Sensor Output: 10K @ 77°F
      2) Sensor Accuracy: ±0.36°F from 32 to 158°F
      3) Operating Temperature Range: -40 to 212°F
      4) Operating Humidity Range: 0 to 90% RH non-condensing
   b. Liquid Immersion Temperature:
      1) Sensor Output: 10K @ 77°F
      2) Sensor Accuracy: ±0.36°F from 32 to 158°F
      3) Operating Temperature Range: -40 to 302°F
      4) Operating Humidity Range: 10 to 95% RH non-condensing
   c. Duct (Single Point & Averaging) Temperature
      1) Sensor Output: 10K @ 77°F
      2) Sensor Accuracy: ±0.36°F from 32 to 158°F
      3) Operating Temperature Range: -40 to 302°F
      4) Operating Humidity Range: 10 to 95% RH non-condensing
   d. Outside Air Temperature
      1) Sensor Output: 10K @ 77°F
      2) Sensor Accuracy: ±0.36°F from 32 to 158°F
      3) Operating Temperature Range: -40 to 302°F
      4) Operating Humidity Range: 10 to 95% RH non-condensing

B. Humidity Sensor
1. Provide the following instrumentation as required by the monitoring, control and optimization functions. All humidity sensors shall be transmitters. Sensor output shall be 0-10V or 4-20mA signal. Sensor shall operate from 24 VDC or 24 VAC power source. The sensors shall be wall or duct mounted type as indicated on plans and in the sequence of operation. Wall sensors to be installed as indicated on drawings. Duct sensors to be installed such that the sensing element is in the main air stream. Outside air sensors shall be installed away from exhaust or relief vents, not in an outside air intake, and in a location, that is in the shade most of the day. All humidity sensors shall be Alerton, ACI, ***or Veris***. ***(Addendum 03)***
   a. Outdoor/Duct Humidity Sensor
      1) Sensor Output: 4-20mA or 0-10 VDC
      2) Sensor Accuracy: ±2% from 10 to 95% RH
      3) Operating Temperature Range: -40 to 140°F
      4) Operating Humidity Range: 0 to 100% RH
      5) Long Term Stability: 2% drift/5 years
   b. Room Humidity Sensor
      1) Sensor Output: 4-20mA or 0-10 VDC
      2) Sensor Accuracy: ±2% from 10 to 95% RH
      3) Operating Temperature Range: -40 to 140°F
      4) Operating Humidity Range: 0 to 100% RH

5) Long Term Stability: 2% drift/5 years

C. Indoor Air Quality (CO2) sensor
1. Provide the following instrumentation as required by the monitoring, control and optimization functions. The sensor shall be compliant with ASHRAE 62.1 standard. The sensors shall be a non-dispersive infrared (NDIR) operation. Sensor shall have field selectable outputs of 0-10V or 4-20mA. Sensor shall operate from 24 VDC or 24 VAC power source. The sensors shall be wall or duct mounted type as indicated on plans and in the sequence of operation. Wall sensors to be installed as indicated on drawings. Mount 48 inches above finished floor. Duct sensors to be installed such that the sensing element is in the main air stream. All CO2 sensors shall be Alerton, ACI or Veris.
   a. Wall Mounted
      1) Sensor Range: 0-2000ppm
      2) Sensor Accuracy: ±30ppm ±5% of measured value
      3) Sensor Repeatability: ±20ppm ±1% of measured value
      4) Operating Temperature Range: 32 to 122°F
      5) Operating Humidity Range: 0 to 95% RH
      6) 5-year calibration interval
   b. Duct Mounted
      1) Sensor Range: 0-2000ppm or 0-5000ppm
      2) Sensor Accuracy: ±30ppm ±5% of measured value
      3) Sensor Repeatability: ±20ppm ±1% of measured value
      4) Operating Temperature Range: 32 to 122°F
      5) Operating Humidity Range: 0 to 95% RH
      6) 5-year calibration interval

D. Differential Pressure Transmitters
1. Provide the following instrumentation as required by the monitoring, control and optimization functions. Pressure range to suit application. Sensor shall have provision for zeroing by pushbutton or digital input. Sensor shall have field selectable outputs of 0-5V, 0-10V, and 4-20mA. Sensor shall operate from 24 VDC or 24 VAC power source. Sensor shall be switch or jumper selectable for pressure ranges and for flow direction (uni-directional or bi-directional). All pressure sensors shall be Alerton, ACI or Veris.
   a. Fluid Pressure Transmitter
      1) Sensor Pressure Range: 0-100 PSI, as needed
      2) Sensor Accuracy: ±2.0% FSO (includes linearity, hysteresis and repeatability.)
      3) Operating Temperature Range: -22 to 248°F
      4) Operating Humidity Range: 10 to 90% RH
      5) Enclosure rating: NEMA 4
         (a) Dry Media Pressure Transmitter
         (b) Sensor Pressure Range: -5.0” W.C. to 5.0” W.C., as needed
         (c) Sensor Accuracy: ±2.0% FSO (includes linearity, hysteresis and repeatability.)
         (d) Operating Temperature Range: 32 to 140°F
         (e) Operating Humidity Range: 0 to 95% RH

E. Control Relays
1. Control relays shall be UL listed plug-in type with dust cover and LED “energized” indicator. Contact rating, configuration, and coil voltage shall be suitable for application.
2. Acceptable Manufacturers are IDEC, Functional Devices or Veris.

F. Current Sensors
1. Current sensor shall be self-powered and solid state. The switches shall be selected to match the current of the application and output requirements of the DDC system. The current shall provide visual indication (LED) for output status and sensor. Current sensor shall be Alerton, ACI or Veris.

2.09 ENCLOSURES

A. All controllers, power supplies and relays shall be mounted in enclosures.

B. Enclosures may be NEMA 1 when located in a clean, dry, indoor environment. Indoor enclosures shall be NEMA 12 when installed in other than a clean environment. Outdoor enclosures shall be NEMA 3R.

C. Enclosures shall have hinged, locking doors.

D. Provide laminated plastic nameplates for all enclosures in any mechanical room or electrical room. Include location and unit served on nameplate. Laminated plastic shall be 0.125 inches thick and appropriately sized to make label easy to read.

2.10 AIR FLOW MEASURING STATIONS (THERMAL DISPERSION TYPE)

A. Acceptable Manufacturers
   1. EBTRON, Inc.

B. Types of Mounting Application
   1. Fan-Inlet
   2. Duct Mounted Probe

C. Specifications:
   1. Transmitter Powered by 24VAC or VDC power supply
   2. Airflow Range:
      a. 0 to 10,000 FPM (fan inlet)
      b. 0 to 4,000 FPM (duct mounted)
   3. Transmitter Signal Range: 0-10 VDC or 4-20mA
   4. Airflow Measuring Accuracy: ±3% of measured flow
   5. Temperature Reading Range -20 to 140°F
   6. Temperature Reading Accuracy: ±0.15°F
   7. Operating Temperature Range: -20 to 120°F
   8. Operating Humidity Range: 5-95% R.H., non-condensing

2.11 LIQUID FLOW METERS

A. Insertional Turbine Flow Meters
   1. Approved Manufacturers
      a. ONICON
      b. Provide an ONICON Model F-1210 Dual Turbine Flow Meter complete with all installation hardware necessary to enable insertion and removal of the meter without system shutdown. For bi-directional flow applications, provide ONICON Model FB-1210. The flow meter shall be hand-insertable up to 400 psi. The flow meter shall have two contra-rotating axial turbines, with electronic impedance-based sensing and an averaging circuit to reduce measurement errors due to swirl and flow profile distortion. Wetted metal components shall be nickel-plated brass (unless optional 316L SS is otherwise specified). Optional 316L SS construction is required for HW applications operating over 250 degrees F, and for any application in non-metallic pipe. The maximum operating temperature shall be 280 degrees F, 300 F peak. Each flow meter shall be individually wet-calibrated against a primary volumetric standard that is accurate to within 0.1% and traceable to NIST*. The manufacturer's certificate of calibration shall be provided with each flow meter. Accuracy shall be within ± 0.5% of rate at the calibrated velocity, within ± 1% of rate over a 10:1 turndown (3.0 to 30 ft/s) and within ± 2% of rate over a 50:1 turndown (from 0.4 to 20 ft/s). The flow meter shall include integral analog output(s), 4-20 mA, 0-10V, or 0-5V. Bi-directional meters shall include an isolated contact closure output for direction. The flow meter shall be covered by the manufacturer's two-year warranty.

B. Inline Magnetic Flow Meters
   1. Approved Manufacturers
      a. ONICON

b. Provide an ONICON F-3200 Series Electromagnetic Flow Meter complete with integral or remote electronics module. The electronics module shall include a backlit graphic display and keypad. Connections to the piping shall be ANSI class 150 flanges (ANSI class 300 available where required). The installing contractor is responsible for providing suitable mating flanges. The flow tube shall be epoxy coated steel; the sensing electrodes shall be 316SS; the liner shall be polypropylene or ebonite for low temperature service, PFTE for hot water service. Each flow meter shall be individually wet-calibrated and accurate to within ±0.2% of reading from 1.6 to33 feet per second velocity. A certificate of calibration shall be provided with each flow meter. Output signals shall be 4-20 mA and programmable pulse. The flow meter shall be capable of measuring bi-directional flow. For installations in non-metallic pipe, install grounding rings between flanges. Each flow meter shall be factory programmed for its specific application, and shall be re-programmable using the integral keypad on the converter (no special interface device or computer required). Each flow meter shall be covered by the manufacturer's two-year warranty.

PART 3: EXECUTION

3.01 EXAMINATION

A. Prior to starting work, carefully inspect installed work of other trades and verify that such work is complete to the point where work of this Section may properly commence.

B. Notify the owner's representative in writing of conditions detrimental to the proper and timely completion of the work.

C. Do not begin work until all unsatisfactory conditions are resolved.

3.02 INSTALLATION (GENERAL)

A. Install in accordance with manufacturer's instructions.

B. The Controls Contractor shall provide their own independent ethernet network for startup, functional testing, and Commissioning and shall not rely on the Owner's network for commencement of this work.

C. Provide all miscellaneous devices, hardware, software, interconnections, installation, and programming required to ensure a complete operating system in accordance with the sequences of operation and point schedules.

3.03 LOCATION AND INSTALLATION OF COMPONENTS

A. Locate and install components for easy accessibility; in general, mount 48 inches above floor with minimum 3 feet of clear access space in front of units. Obtain approval on locations from owner's representative prior to installation.

B. All instruments, switches, transmitters, etc., shall be suitably wired and mounted to protect them from vibration, moisture, and high or low temperatures.

C. Identify all equipment and panels. Provide permanently mounted tags for all panels.

D. Provide stainless steel or brass thermowells suitable for respective application and for installation under other sections, and sized to suit pipe diameter without restricting flow.

3.04 INTERLOCKING AND CONTROL WIRING

A. Provide all interlock and control wiring. All wiring shall be installed neatly and professionally, in accordance with Specification Division 26 and all national, state and local electrical codes.

B. Provide wiring as required by functions as specified and as recommended by equipment manufacturers, to serve specified control functions. Provide shielded low capacitance wire for all communications trunks.

C. Control wiring shall not be installed in power circuit raceways. Magnetic starters and disconnect switches shall not be used as junction boxes. Provide auxiliary junction boxes as required. Coordinate location and arrangement of all control equipment with the owner's representative prior to rough-in.

D. Provide auxiliary pilot duty relays on motor starters as required for control function.

E. Provide power for all control components from nearest electrical control panel or as indicated on the electrical drawings; coordinate with electrical contractor.

F. All control wiring in the mechanical, electrical, telephone and boiler rooms to be installed in raceways.

G. Control wiring above accessible ceiling spaces shall be run in raceway. Wiring exposed above the ceiling that terminates at VAV box controllers, etc., shall be listed for plenum use.

3.05 DDC OBJECT TYPE SUMMARY

A. Provide all database generation.

B. Displays
   1. System displays shall show all analog and binary object types within the system. They shall be logically laid out for easy use by the owner. Provide outside air temperature indication on all system displays associated with economizer cycles.

C. Run Time Totalization
   1. At a minimum, run time totalization shall be incorporated for each monitored supply fan, return fan, exhaust fan, hot water and chilled water pumps. Warning limits for each point shall be entered for alarm and or maintenance purposes.

D. Trendlog
   1. All binary and analog object types (including zones) shall have the capability to be automatically trended.

E. Alarm
   1. All analog inputs (High/Low Limits) and selected binary input alarm points shall be prioritized and routed (locally or remotely) with alarm message per owner's requirements.

F. Database Save
   1. Provide backup database for all standalone application controllers on disk.

3.06 FIELD SERVICES

A. Prepare and start logic control system under provisions of this section.

B. Start up and commission systems. Allow sufficient time for startup and commissioning prior to placing control systems in permanent operation.

C. Provide the capability for off-site monitoring at control contractor's local or main office. At a minimum, off-site facility shall be capable of system diagnostics and software download. Owner shall provide phone line for this service for one year or as specified.

D. Provide owner's representative with spare parts list. Identify equipment critical to maintaining the integrity of the operating system.

3.07 TRAINING

A. Provide application engineer to instruct owner in operation of systems and equipment.

B. Provide system operator’s training to include (but not be limited to) such items as the following: modification of data displays, alarm and status descriptors, requesting data, execution of commands and request of logs. Provide this training to a minimum of three persons.

C. Provide on-site training above as required, up to 8 hours as part of this contract.

3.08 DEMONSTRATION

A. Demonstrate complete operating system to owner's representative.

B. Provide certificate stating that control system has been tested and adjusted for proper operation.

END OF SECTION 23 09 23

SECTION 23 09 33

VARIABLE FREQUENCY DRIVE

PART 1 GENERAL

1.01 DESCRIPTION

A. This specification covers variable frequency drives (VFDs) designated on the drawing schedules to be variable speed. All standard and optional features shall be included within the VFD panel.

B. The VFD shall be UL Type 1 or UL Type 12 as required on the schedule.

C. The VFD shall have been evaluated by UL and found acceptable for mounting in a plenum or other air handling compartment.
   1. Manufacturer shall supply a copy of the UL plenum evaluation upon request.

D. The VFD shall be tested to UL 508C.
   1. The appropriate UL label shall be applied.

E. VFD shall be manufactured in ISO 9001, 2000 certified facilities.

F. The VFD shall be CE marked and conform to the European Union ElectroMagnetic Compatibility directive.

G. The VFD shall be UL listed for a short circuit current rating of 65 kAIC and labeled with this rating.

H. To ensure adequate technical and factory support, VFDs manufactured by others and brand labeled shall not be acceptable.

I. The VFD manufacturer shall supply the VFD and all necessary controls as herein specified.

J. The manufacturer shall have been engaged in the production of this type of equipment for a minimum of twenty years.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. ABB

B. Danfoss

C. Eaton

D. Johnson

E. Schneider

F. Siemens

G. Yasakawa

H. ***Square D (Addendum 03)***

2.02 DESCRIPTION

A. The VFD shall convert incoming fixed frequency three-phase AC power into an adjustable frequency and voltage for controlling the speed of three-phase AC motors.

B. The motor current shall closely approximate a sine wave.

C. Motor voltage shall be varied with frequency to maintain desired motor magnetization current suitable for the driven load and to eliminate the need for motor derating.

D. When properly sized, the VFD shall allow the motor to produce full rated power at rated motor voltage, current, and speed without using the motor's service factor.

E. VFDs utilizing sine weighted/coded modulation (with or without 3rd harmonic injection) must provide data verifying that the motors will not draw more than full load current during full load and full speed operation.

F. The VFD shall include an input full-wave bridge rectifier and maintain a fundamental (displacement) power factor near unity regardless of speed or load.

G. The VFD shall have a dual 5% impedance DC link reactor on the positive and negative rails of the DC bus to minimize power line harmonics and protect the VFD from power line transients. The chokes shall be non-saturating.
   1. Swinging chokes that do not provide full harmonic filtering throughout the entire load range are not acceptable.

H. VFDs with saturating (non-linear) DC link reactors shall require an additional 3% AC line reactor to provide acceptable harmonic performance at full load, where harmonic performance is most critical.

I. The VFD's full load output current rating shall meet or exceed NEC Table 430-150.

J. The VFD shall be able to provide full rated output current continuously, 110% of rated current for 60 seconds and 135% of rated torque for up to 0.5 second while starting.

K. The VFD shall provide full motor torque at any selected frequency from 20 Hz to base speed while providing a variable torque V/Hz output at reduced speed.
   1. This is to allow driving direct drive fans without high speed derating or low speed excessive magnetization, as would occur if a constant torque V/Hz curve was used at reduced speeds.

L. A programmable automatic energy optimization selection feature shall be provided standard in the VFD. This feature shall automatically and continuously monitor the motor's speed and load to adjust the applied voltage to maximize energy savings.

M. The VFD must be able to produce full torque at low speed to operate direct drive fans.

N. The VFD must be capable of connection and disconnection to motor while the VFD is under load.
   1. This switching shall be accomplished without interlocks or damage to the VFD.

O. An automatic motor adaptation algorithm shall measure motor stator resistance and reactance to optimize performance and efficiency.
   1. It shall not be necessary to run the motor or de-couple the motor from the load to perform the test.

P. Galvanic isolation shall be provided between the VFD's power circuitry and control circuitry to ensure operator safety and to protect connected electronic control equipment from damage caused by voltage spikes, current surges, and ground loop currents.
   1. VFDs not including either galvanic or optical isolation on both analog I/O and discrete digital I/O shall include additional isolation modules.

Q. VFD shall minimize audible motor noise through the use of an adjustable carrier frequency.
   1. The carrier frequency shall be automatically adjusted to optimize motor and VFD operation while reducing motor noise.
   2. VFDs with fixed carrier frequency are not acceptable.

R. All VFDs shall contain integral EMI filters to attenuate radio frequency interference conducted to the AC power line.

2.03 PROTECTIVE FEATURES

A. A minimum of Class 20 I2t electronic motor overload protection for single motor applications shall be provided.
   1. Overload protection shall automatically compensate for changes in motor speed.

B. Protection against input transients, loss of AC line or load phase, output short circuit, output ground fault, over voltage, under voltage, VFD over temperature and motor over temperature.
   1. The VFD shall display all faults in plain language. Codes are not acceptable.

C. Protect VFD from input phase loss.
   1. The VFD should be able to protect itself from damage and indicate the phase loss condition. During an input phase loss condition,

2. the VFD shall be able to be programmed to either trip off while displaying an alarm, issue a warning while running at reduced output capacity, or issue a warning while running at full commanded speed.
3. This function is independent of which input power phase is lost.

D. Protect from under voltage.
1. The VFD shall provide full rated output with an input voltage as low as 90% of the nominal.
2. The VFD will continue to operate with reduced output, without faulting, with an input voltage as low as 70% of the nominal voltage.

E. Protect from over voltage.
1. The VFD shall continue to operate without faulting with a momentary input voltage as high as 130% of the nominal voltage.

F. The VFD shall incorporate a programmable motor preheat feature to keep the motor warm and prevent condensation build up in the motor when it is stopped in a damp environment by providing the motor stator with a controlled level of current.

G. VFD shall include a “signal loss detection” algorithm with adjustable time delay to sense the loss of an analog input signal.
1. It shall also include a programmable time delay to eliminate nuisance signal loss indications.
2. The functions after detection shall be programmable.

H. VFD shall function normally when the keypad is removed while the VFD is running.
1. No warnings or alarms shall be issued as a result of removing the keypad.

I. VFD shall catch a rotating motor operating forward or reverse up to full speed without VFD fault or component damage.

J. Selectable over-voltage control shall be provided to protect the drive from power regenerated by the motor while maintaining control of the driven load.

K. VFD shall include current sensors on all three output phases to accurately measure motor current, protect the VFD from output short circuits, output ground faults, and act as a motor overload.
1. If an output phase loss is detected, the VFD will trip off and identify which of the output phases is low or lost.

L. If the temperature of the VFD’s heat sink rises to a critical level, the VFD shall automatically reduce its carrier frequency to reduce the heat sink temperature.
1. It shall also be possible to program the VFD so that it reduces its output current limit value if the VFD’s temperature becomes too high.

M. In order to ensure operation during periods of overload, it must be possible to program the VFD to automatically reduce its output current to a programmed value during periods of excessive load. This allows the VFD to continue to run the load without tripping.

N. The VFD shall have temperature controlled cooling fan(s) for quiet operation, minimized losses, and increased fan life.
1. The drive fan speed can be preprogrammed at preset speeds or run in Auto mode.
2. At low loads or low ambient temperatures, the VFD may even turn the fan(s) off even when the VFD is running.

O. The VFD shall store in memory the last 10 alarms.
1. A description of the alarm, and the date and time of the alarm shall be recorded.
2. The VFD shall include graphing capability for the last 2 alarms to provide additional diagnostic analysis.

P. When used with a pumping system, the VFD shall be able to detect no-flow situations, dry pump conditions, and operation off the end of the pump curve.
1. It shall be programmable to take appropriate protective action when one of the above situations is detected.

2.04 INTERFACE FEATURES

A. Hand, Off and Auto keys shall be provided to start and stop the VFD and determine the source of the speed reference.
   1. It shall be possible to either disable these keys or password protect them from undesired operation.

B. There shall be an “Info” key on the keypad.
   1. The Info key shall include “on-line” context sensitive assistance for programming and troubleshooting.

C. The VFD shall be programmable to provide a digital output signal to indicate whether the VFD is in Hand or Auto mode.
   1. This is to alert the Building Automation System whether the VFD is being controlled locally or by the Building Automation System.

D. Password protected keypad with alphanumeric, graphical, backlit display can be remotely mounted.
   1. Two levels of password protection shall be provided to guard against unauthorized parameter changes.

E. All VFDs shall have the same customer interface.
   1. The keypad and display shall be identical and interchangeable for all sizes of VFDs.

F. To set up multiple VFDs, it shall be possible to upload all setup parameters to the VFD’s keypad, place that keypad on all other VFDs in turn and download the setup parameters to each VFD.
   1. To facilitate setting up VFDs of various sizes, it shall be possible to download from the keypad only size independent parameters.
   2. Keypad shall provide visual indication of copy status.

G. A red FAULT light, a yellow WARNING light and a green POWER-ON light shall be provided.
   1. These indications shall be visible both on the keypad and on the VFD when the keypad is removed.

H. A quick setup menu with factory preset typical HVAC parameters shall be provided on the VFD.
   1. The VFD shall also have individual Fan, Pump, and Compressor menus specifically designed to facilitate start-up of these applications.

I. A three-feedback PID controller to control the speed of the VFD shall be standard.

J. This controller shall accept up to three feedback signals.
   1. It shall be programmable to compare the feedback signals to a common setpoint or to individual setpoints and to automatically select either the maximum or the feedback signal as the controlling signal.
   2. It shall also be possible to calculate the controlling feedback signal as the average of all feedback signals or the difference between a pair of feedback signals.

K. The VFD shall be able to apply individual scaling to each feedback signal.

L. For fan flow tracking applications, the VFD shall be able to calculate the square root of any or all individual feedback signals so that a pressure sensor can be used to measure air flow.

M. The VFD’s PID controller shall be able to actively adjust its setpoint based on flow.
   1. This allows the VFD to compensate for a pressure feedback sensor which is located near the output of the pump rather than out in the controlled system.

N. The VFD shall have three additional PID controllers which can be used to control damper and valve positioners in the system and to provide setpoint reset.

O. Floating point control interface shall be provided to increase/decrease speed in response to contact closures.

P. Five simultaneous meter displays shall be available.
   1. They shall include at a minimum, frequency, motor current, motor voltage, VFD output power, VFD output energy, VFD temperature in degrees, among others.

Q. Programmable Sleep Mode shall be able to stop the VFD.
   1. When its output frequency drops below set “sleep” level for a specified time, when an external contact commands that the VFD go into Sleep Mode, or when the VFD detects a no-flow situation, the VFD may be programmed to stop.
   2. When the VFD’s speed is being controlled by its PID controller, it shall be possible to program a “wake-up” feedback value that will cause the VFD to start.
   3. To avoid excessive starting and stopping of the driven equipment, it shall be possible to program a minimum run time before sleep mode can be initiated and a minimum sleep time for the VFD.

R. A run permissive circuit shall be provided to accept a “system ready” signal to ensure that the VFD does not start until dampers or other auxiliary equipment are in the proper state for VFD operation.
   1. The run permissive circuit shall also be capable of initiating an output “run request” signal to indicate to the external equipment that the VFD has received a request to run.

S. VFD shall be programmable to display feedback signals in appropriate units, such as inches of water column (in-wg), pressure per square inch (psi) or temperature (°F).

T. VFD shall be programmable to sense the loss of load.
   1. The VFD shall be programmable to signal this condition via a keypad warning, relay output and/or over the serial communications bus.
   2. To ensure against nuisance indications, this feature must be based on motor torque, not current, and must include a proof timer to keep brief periods of no load from falsely triggering this indication.

2.05 STANDARD CONTROL AND MONITORING INPUTS AND OUTPUTS

A. Four dedicated, programmable digital inputs shall be provided for interfacing with the systems control and safety interlock circuitry.

B. Two terminals shall be programmable to act as either as digital outputs or additional digital inputs.

C. Two programmable relay outputs, Form C 240 V AC, 2 A, shall be provided for remote indication of VFD status.

D. Each relay shall have an adjustable on delay / off delay time.

E. Two programmable analog inputs shall be provided that can be either direct-or-reverse acting.

F. Each shall be independently selectable to be used with either an analog voltage or current signal.

G. The maximum and minimum range of each shall be able to be independently scalable from 0 to 10 V dc and 0 to 20 mA.

H. A programmable low-pass filter for either or both of the analog inputs must be included to compensate for noise.

I. The VFD shall provide front panel meter displays programmable to show the value of each analog input signal for system set-up and troubleshooting,

J. One programmable analog current output (0/4 to 20 mA) shall be provided for indication of VFD status.
   1. This output shall be programmable to show the reference or feedback signal supplied to the VFD and for VFD output frequency, current and power.
   2. It shall be possible to scale the minimum and maximum values of this output.

K. It shall be possible through serial bus communications to read the status of all analog and digital inputs of the VFD.

L. It shall be possible to command all digital and analog output through the serial communication bus.

2.06 OPTIONAL CONTROL AND MONITORING INPUTS AND OUTPUTS

A. It shall be possible to add optional modules to the VFD in the field to expand its analog and digital inputs and outputs.

B. These modules shall use rigid connectors to plug into the VFD's control card.

C. The VFD shall automatically recognize the option module after it is powered up. There shall be no need to manually configure the module.

D. Modules may include such items as:
   1. Additional digital outputs, including relay outputs
   2. Additional digital inputs
   3. Additional analog outputs
   4. Additional analog inputs, including Ni or Pt temperature sensor inputs

E. It shall be possible through serial bus communications to control the status of all analog and digital outputs of the VFD.
   1. Standard programmable firefighter's override mode allows a digital input to control the VFD and override all other local or remote commands.
   2. It shall be possible to program the VFD so that it will ignore most normal VFD safety circuits including motor overload.
   3. The VFD shall display FIREMODE whenever in firefighter's override mode.
   4. Fire-mode shall allow selection of forward or reverse operation and the selection of a speed source or preset speed, as required to accommodate local fire codes, standards and conditions.

F. A real-time clock shall be an integral part of the VFD.
   1. It shall be possible to use this to display the current date and time on the VFD's display.
   2. Ten programmable time periods, with individually selectable ON and OFF functions shall be available.
   3. The clock shall also be programmable to control start/stop functions, constant speeds, PID parameter setpoints and output relays. Is shall be possible to program unique events that occur only during normal work days, others that occur only on non-work days, and others that occur on specific days or dates.
   4. The manufacturer shall provide free PC-based software to set up the calendar for this schedule.

G. All VFD faults shall be time stamped to aid troubleshooting.

H. It shall be possible to program maintenance reminders based on date and time, VFD running hours, or VFD operating hours.

I. The real-time clock shall be able to time and date stamp all faults recorded in the VFD fault log.

J. The VFD shall be able to store load profile data to assist in analyzing the system demand and energy consumption over time.

K. The VFD shall include a sequential logic controller to provide advanced control interface capabilities. This shall include:
   1. Comparators for comparing VFD analog values to programmed trigger values
   2. Logic operators to combine up to three logic expressions using Boolean algebra
   3. Delay timers
   4. A 20-step programmable structure
   5. The VFD shall include a Cascade Controller which allows the VFD to operate in closed loop set point (PID) control mode one motor at a controlled speed and control the operation of additional constant speed motor starters.

2.07 SERIAL COMMUNICATIONS

A. The VFD shall include a standard EIA-485 communications port and capabilities to be connected to the following serial communication protocols at no additional cost and without a need to install any additional hardware or software in the VFD:

1. BACnet IP ***or BACnet MS/TP (Addendum 03)***
2. Option board only

B. Option boards for the following protocols shall be available:
1. BACnet Expanded
2. Ethernet
3. LonWorks Free Topology (FTP) certified to LonMark standard 3.3

C. VFD shall have standard USB port for direct connection of Personal Computer (PC) to the VFD.
1. The manufacturer shall provide no-charge PC software to allow complete setup and access of the VFD and logs of VFD operation through the USB port.
2. It shall be possible to communicate to the VFD through this USB port without interrupting VFD communications to the building management system.

D. The VFD shall have provisions for an optional 24 V DC back-up power interface to power the VFD's control card. This is to allow the VFD to continue to communicate to the building automation system even if power to the VFD is lost.

2.08 ADJUSTMENTS

A. The VFD shall have a manually adjustable carrier frequency to allow the user to select the desired operating characteristics. The VFD shall also be programmable to automatically reduce its carrier frequency to avoid tripping due to thermal loading.

B. Four independent setups shall be provided.

C. Four preset speeds per setup shall be provided for a total of 16.

D. Each setup shall have two programmable ramp up and ramp down times. Acceleration and deceleration ramp times shall be adjustable over the range from 1 to 3,600 seconds.

E. Each setup shall be programmable for a unique current limit value.
1. If the output current from the VFD reaches this value, any further attempt to increase the current produced by the VFD will cause the VFD to reduce its output frequency to reduce the load on the VFD.
2. If desired, it shall be possible to program a timer which will cause the VFD to trip off after a programmed time period.

F. If the VFD trips on one of the following conditions, the VFD shall be programmable for automatic or manual reset: external interlock, under-voltage, over-voltage, current limit, over temperature, and VFD overload.

G. The number of restart attempts shall be selectable from 0 through 20 or infinitely and the time between attempts shall be adjustable from 0 through 600 seconds.

H. An automatic "start delay" may be selected from 0 to 120 seconds. During this delay time, the VFD shall be programmable to either apply no voltage to the motor or apply a DC braking current if desired.

I. Four programmable critical frequency lockout ranges to prevent the VFD from operating the load at a speed that causes vibration in the driven equipment shall be provided. Semi-automatic setting of lockout ranges shall simplify the set-up.

2.09 OPTIONAL FEATURES

A. All optional features shall be built, mounted and tested by the VFD manufacturer.
1. The VFD manufacturer's warranty shall apply to the entire assembly as shipped.
2. Packages built by third parties and do not carry the VFD manufacturer's warranty shall not be allowed.
3. All options shall carry a UL / C-UL Enclosed Industrial Control Panel label.
4. All panels shall be marked for 100,000 amp short circuit current rating.

B. The enclosure rating of the VFD w/ options shall be consistent with the VFD rating of either NEMA/UL type 1 or NEMA/UL type 12, as required for the installation location and/or as called for on the schedule.

1. The package shall include ALL optional devices and shipped as a complete factory tested assembly.

C. Three Contactor bypass shall be provided that allows operation of the motor via line power in the event of a failure of the VFD.
   1. Motor control selection shall be though either a VFD output contactor or a bypass contactor that is electrically interlocked to ensure that both contactors are not energized simultaneously.
   2. A third contactor, the drive input contactor, shall be supplied as standard.
   3. This allows the powering of the VFD with the motor off or operating in bypass mode for testing, programming and troubleshooting purposes.

D. The Three Contactor bypass shall include the following interface and control features:
   1. Mode selection via a four position DRIVE/OFF/BYPASS/TEST switch.
   2. DRIVE Mode: Both the drive input and output contactors are closed and the motor is operated via VFD power
   3. OFF mode: DRIVE input, drive output and bypass contactors are all open.
   4. Bypass mode: Bypass contactor is closed and motor is operating from line power. Both the drive input and drive output contactors are open for servicing of the VFD without power.
   5. Test mode: Bypass contactor is closed and the motor is operated from line power. The drive input contactor is closed but the drive output contactor is open. This allows for the testing and programming of the VFD while the motor is operated via line power.

E. Contactors shall operate from a 24vdc power supply that shall function off of any two legs of the AC line and shall maintain power on the loss of any one of the AC lines.

F. A Bypass pilot light is supplied to indicate that the motor is operating from line power.

G. Common start/stop command when operating in either Bypass or VFD mode.

H. Selectable Run Permissive logic shall operate in either VFD or bypass operation.
   1. When activated, any command to start the motor, in either Hand Bypass, Remote Bypass, Hand VFD or Remote VFD shall not start the motor, but instead close a relay contact that is used to initiate operation of another device, such as an outside air damper.
   2. A contact closure from this device shall confirm that it is appropriately actuated and the motor shall then start.

I. Bypass package shall include an External Safety interlock that will disable motor operation in either bypass or VFD when open.

J. Fire-mode bypass operation shall be standard.
   1. When activated via a contact closure, the motor shall transfer to bypass (line power) regardless of the mode selected.
   2. All calls to stop the motor shall be ignored.
   3. These include the opening of the start command, an external safety trip or the tripping of the motor overload.
   4. Fire-mode operation will take precedence over all other commands.

K. The bypass must include a selectable time delay of 0 to 60 seconds before the initiation of bypass operation.
   1. When transferring from VFD to bypass modes, the time delay starts after the motor has decelerated to zero speed.
   2. This delay allows the BAS to prepare for bypass operation.
   3. Bypass packages that do not include a time delay, or do not include a selectable delay period, will not be acceptable.

L. Automatic bypass shall be selectable.
   1. When active, the motor shall be transferred to line power on a VFD fault condition.
   2. The bypass time delay shall be activate prior to this transfer to line power to allow the VFD time to attempt to recover from the fault condition prior to running in bypass.

2.10 PROTECTIVE FEATURES

A. Main input disconnect shall be provided that removes power from both the bypass and VFD.

B. Main input motor rated fuses that protect the entire package.

C. ~~VFD only fast acting input fuses shall be provided. Packages that include only main input motor rated fusing or circuit breaker are not acceptable.~~ ***Disconnecting means shall be either a fused disconnect and a circuit breaker rated for SCCR listed herein. (Addendum 03)***

D. Overload protection shall be supplied in bypass mode.

E. This overload shall supply minimum class 20 protection as well as wide adjustable current setting for complete motor protection when operating on line power.
   1. Those overloads that are not class 20 or current selectable will not be acceptable.

F. Overload protection shall include phase loss and phase imbalance protection.

G. For 460V/600V units 75 Hp and below and 208V/230V units 40 Hp and below, low voltage contactor operation shall be maintained down to 70% of the unit's nominally rated voltage, to ensure VFD operation.

H. For 460V/600V units 75 Hp and below and 208V/230V units 40 Hp and below, the VFD shall be able to operate the motor at a reduced load with the loss of any one of the three phases of power.
   1. Contactors shall remain closed regardless of which phase is lost to ensure VFD operation.

2.11 LINE/LOAD CONDITIONERS

A. VFDs that do not include 5% DC link impedance shall include 5% AC line reactors in the options enclosure. Lower levels of impedance will not be acceptable.

2.12 SERVICE CONDITIONS

A. Ambient temperature, continuous, full speed, full load operation:
   1. 14 to 113°F on Non-Bypass units
   2. 14 to 104°F on Bypass units
   3. 5 to 95% relative humidity, non-condensing.
   4. Elevation to 3,300 feet without derating.
   5. AC line voltage variation, -10 to +10% of nominal with full output.
   6. All power and control wiring shall be from the bottom.
   7. All VFDs shall be plenum rated.

2.13 QUALITY ASSURANCE

A. To ensure quality, the complete VFD shall be tested by the manufacturer. The VFD shall drive a motor connected to a dynamometer at full load and speed and shall be cycled during the automated test procedure.

B. All optional features shall be functionally tested at the factory for proper operation.

PART 3 EXECUTION

3.01 START-UP SERVICE

A. The manufacturer shall provide start-up commissioning of the VFD and its optional circuits by a factory certified service technician who is experienced in start-up and repair services.

B. Sales personnel and other agents who are not factory certified shall not be acceptable as commissioning agents.

C. Start-up services shall include checking for verification of proper operation and installation for the VFD, its options and its interface wiring to the building automation system.

D. Harmonic filtering.
   1. The VFD supplier shall, with the aid of the buyer's detailed electrical power single line diagram showing all impedances in the power path to the VFDs, perform an analysis to initially demonstrate the supplied equipment will met the IEEE recommendations after installation.

2. If, as a result of the analysis, it is determined that additional filter equipment is required to meet the IEEE recommendations, then the cost of such equipment shall be included in the drive supplier quotation.

3.02 WARRANTY

A. The complete VFD shall be warranted by the manufacturer for a period of 36 months from date of shipment.
   1. The warranty shall include parts, labor, travel costs and living expenses incurred by the manufacturer to provide factory authorized on-site service.
   2. The warranty shall be provided by the VFD manufacturer and not a third party.
   3. A written warranty statement shall be provided with the submittals.

END OF SECTION 23 09 33

SECTION 23 52 23
CAST-IRON BOILERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Boilers.

B. Controls and boiler trim.

C. Hot water connections.

D. Fuel connection.

E. Collector, draft hood, and chimney connection.

1.02 REFERENCE STANDARDS

A. AHRI 1500 - Performance Rating of Commercial Space Heating Boilers; 2015.

B. ASME BPVC-IV - Boiler and Pressure Vessel Code, Section IV - Rules for Construction of Heating Boilers; 2017.

C. ASME BPVC-VIII-1 - Boiler and Pressure Vessel Code, Section VIII, Division 1 - Rules for Construction of Pressure Vessels; 2017.

D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2014.

E. NFPA 54 - National Fuel Gas Code; 2018.

F. UL (DIR) - Online Certifications Directory; Current Edition.

1.03 SUBMITTALS

A. Product Data: Provide data indicating general layout, dimensions, and size and location of water, gas, and vent connections, and electrical characteristics and connection requirements.

B. Manufacturer's Instructions: Submit manufacturer's complete installation instructions.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

1.05 REGULATORY REQUIREMENTS

A. Conform to applicable code code for internal wiring of factory wired equipment.

B. Conform to ASME BPVC-IV and ASME BPVC-VIII-1 for boiler construction.

C. Units: UL (DIR) listed and labeled.

D. Products Requiring Electrical Connection: Listed and classified by UL (DIR) as suitable for the purpose specified and indicated.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect units before, during, and after installation from damage to casing by leaving factory shipping packaging in place until immediately prior to final acceptance.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Smith Cast Iron Boilers/Mestek, Inc: www.smithboiler.com/#sle.

B. Viessmann

C. Weil-McLain/SPX Corporation: www.weil-mclain.com/#sle. ***Preferred Alternate (Addendum 03)***

D. ***Burnham (Addendum 03)***

E. ***Peerless (Addendum 03)***

2.02 PERFORMANCE REQUIREMENTS

A. Performance rating shall be in accordance with AHRI 1500.

B. Rating:
   1. Refer to Schedules on Drawings.

2.03 MANUFACTURED UNITS

A. Hot Water Boilers: Suitable for forced draft with insulated jacket, sectional cast iron heat exchanger, natural gas burning system, refractory, controls, and boiler trim including circulator.

B. Provide water wall design consisting of water backed combustion area with water circulating around firebox. Refractory chamber or separate base not required.

C. Efficiency:
   1. Annual Fuel Utilization Efficiency: 0.80.

2.04 FABRICATION

A. Assembly: Cast iron sections with 80 psig water ASME Boilers and Pressure Vessels Code rating, assembled with push nipples or gaskets and draw rods.

B. Access: To flue passages for cleaning and flame observation ports.

C. Jacket: Glass fiber insulated steel jacket, finished with factory applied baked enamel.

2.05 HOT WATER BOILER TRIM

A. ASME rated pressure relief valve, 80 psig.

B. Combination water pressure and temperature gauge.

C. Low water cut-off to prevent burner operation when boiler water falls below safe level.

D. Operating temperature controller with outdoor reset to maintain boiler water temperature.

E. Electronic operating temperature controller:
   1. NEMA 250 Type 1 enclosure with full cover for wall mounting.
   2. Ambient temperature range -30 to 150 degrees F.
   3. Adjustable reset ratio of outside air temperature change to discharge control point change 1:2 to 100:1.
   4. Integral set point adjustment 80 to 230 degrees F.
   5. Electronic primary and outdoor sensors.

F. High limit temperature controller with manual reset for burner to prevent boiler water temperature from exceeding safe system temperature.

G. Boiler air vent.

2.06 FUEL BURNING SYSTEM

A. Manufacturers:
   1. Webster ***Preferred Alternate (Addendum 03)***
   2. Riello
   3. Weishaupt

B. Burner Operation: Low-High-Low-Off with low fire position for ignition.

C. Gas Burner: Atmospheric type for natural gas adjustable combustion air supply, pressure regulator, gas valves, manual shut-off, intermittent spark or glow coil ignition, flame sensing device, and automatic 100 percent shut-off.

D. Gas Burner Safety Controls: Energize ignition, limit time for establishment of flame, prevent opening of gas valve until pilot flame is proven, stop gas flow on ignition failure, energize blower motor, and after air flow proven and slight delay, allow gas valve to open.

E. Collector and Draft Hood: Stainless steel vent pipe and air intake.

F. Controls: Pre-wired, factory assembled electronic controls in control cabinet with flame scanner or detector, programming control, relays, and switches. Provide pre-purge and post-purge

ignition and shut-down of burner in event of ignition pilot and main flame failure with manual reset.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install boiler on concrete housekeeping base, sized minimum 4 inches larger than boiler base.

C. Provide connection of natural gas service in accordance with requirements of NFPA 54 and applicable codes.

D. Pipe relief valves to nearest floor drain.

3.02 SYSTEM STARTUP

A. Provide the services of manufacturer's field representative for starting and testing unit.

3.03 CLOSEOUT ACTIVITIES

A. Train operating personnel in operation and maintenance of units.

END OF SECTION 23 52 23

FAN SCHEDULE

	MODEL	AIRFLOW (CFM)	ESP	HP	BHP/ WATTS	FAN SPEED	MAX RPM	SONES	VOLT	REMARKS
EF-01	CSP-A710-VG	450	0.60	n/a	236w	1,365	1,400	6.5	115	1,3,4,5
EF-02	G-095-VG	300	0.40	0.17	0.05	1,214	1,300	5.9	115	2,3,4,10,13
EF-03	G-090-VG	300	0.40	0.17	0.05	1,214	1,300	5.9	115	2,3,4,10,13
EF-04	G-095-VG	245	0.50	0.17	0.06	1,328	1,400	7.1	115	1,2,3,4
EF-05	CSP-A290	140	0.50	n/a	50w	913	1,000	3.5	115	1,3,4,5
EF-06	CSP-A700	560	0.50	n/a	198w	942	1,000	0.9	115	1,3,4,5
EF-07	CSP-A1410	1260	0.50	n/a	550w	1,345	1,450	2.5	115	3,4,5,7,13
EF-08	CSP-A290	200	0.50	n/a	75w	987	1,100	2.5	115	3,4,5,9
EF-09	CSP-A290	190	0.50	n/a	70w	964	1,100	3.0	115	1,3,4,5
EF-10	CSP-A700	610	0.50	n/a	237w	990	1,100	1.1	115	1,3,4,5
EF-11	G-099-VG	560	0.50	0.25	0.09	1,221	1,300	7.6	115	1,2,3,4
EF-12	CUE-141-VG	1260	0.50	0.5	0.20	1,020	1,100	8.7	115	2,3,4,7,13
EF-13	G-097-VG	70	0.50	0.25	0.04	1,219	1,300	5.5	115	1,2,3,4
EF-14	CUE-090-VG	300	0.50	0.1	0.06	1,393	1,450	6.5	115	2,3,4,9
EF-15	G-143-VG	1170	0.60	0.5	0.22	1,044	1,150	7.5	115	1,2,3,4
EF-16	G-103-VG	610	0.50	0.25	0.09	1,192	1,300	5.0	115	1,2,3,4
EF-17	CUE-141-VG	1180	0.50	0.25	0.18	996	1,100	8.2	115	2,3,4,7,13
EF-18	G-097-VG	140	0.50	0.25	0.04	1,219	1,300	5.5	115	1,2,3,4
EF-19	CUE-090-VG	300	0.50	0.1	0.06	1,393	1,450	6.5	115	2,3,4,9
EF-20	CSP-A1410	1170	0.50	n/a	457w	1,275	1,350	2.0	115	3,4,5,7,13
EF-21	CSP-A510	300	0.50	n/a	170w	1,059	1,150	3.5	115	3,4,5,9
EF-22	CSP-A290	140	0.50	n/a	50w	913	1,000	3.5	115	1,3,4,5
EF-23	CSP-A1410	1170	0.50	n/a	457w	1,275	1,350	2.0	115	3,4,5,7,13
EF-24	CSP-A1410	890	0.50	n/a	239w	1,068	1,150	1.2	115	1,3,4,5
EF-25	G-099-VG	610	0.50	0.25	0.10	1,260	1,300	7.9	115	1,2,3,4
EF-26	CUE-095-VG	360	0.50	0.17	0.07	1,373	1,450	6.8	115	2,3,4,10
EF-27	CSP-A700	680	0.60	n/a	324w	1,099	1,150	2.0	115	1,3,4,5
EF-28	CSP-A1410	850	0.60	n/a	236w	1,088	1,150	1.5	115	1,3,4,5
EF-29	G-097-VG	70	0.50	0.25	0.04	1,219	1,300	5.5	115	1,2,3,4
EF-30	SP-A250	180	0.50	n/a	50w	900	1,050	3.0	115	3,4,5,10
EF-31	CUE-101HP-VG	600	1.00	0.5	0.25	2,033	2,100	12.1	115	2,3,4,12,13
EF-32	SP-A250	180	0.50	n/a	50w	900	1,050	3.0	115	3,4,5,10
EF-33	SP-A250	180	0.50	n/a	50w	900	1,050	3.0	115	3,4,5,10
EF-34	CUE-141-VG	1180	0.50	0.25	0.18	996	1,100	8.2	115	2,3,4,7,13
EF-35	G-123-VG	810	0.60	0.25	0.13	1,124	1,200	7.7	115	1,2,3,4
EF-36	REFER TO KITCHEN HOOD DRAWINGS								0	6,11,13
EF-37	CUE-141-VG	1260	0.50	0.5	0.20	1,020	1,100	8.7	115	2,3,4,7,13
EF-38	CW-099-VG	750	0.30	0.25	0.1	1,276	1,350	7.3	115	3,4,14
EF-39	CSP-A290	210	0.50	n/a	81w	1,011	1,050	2.5	115	3,4,5
EF-40	G-090-VG	250	0.40	0.17	0.05	1,214	1,300	5.9	115	2,3,4,10,13
EF-41	REFER TO KITCHEN HOOD DRAWINGS								0	6,11,13

GENERAL NOTES:

A. PROVIDE DUCT TRANSITIONS FOR ALL FANS.
B. FOR EXTERIOR FANS, THE UNIT HOUSING SHALL BE CONSTRUCTED OF ALUMINUM.
C. ALL FANS SHALL BE U.L. LISTED AND AMCA CERTIFIED.
D. PROVIDE WITH UNIT MOUNTED DISCONNECT SWITCH OR INTEGRAL PLUG DISCONNECT (FOR IN-LINE FANS).
E. EXTERNALLY OR INTERNALLY MOUNTED DISCONNECT SWITCH FURNISHED BY HVAC CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR.
F. EXTERNALLY MOUNTED STARTER FURNISHED BY CONTROLS CONTRACTOR INSTALLED BY THE ELECTRICAL CONTRACTOR.
G. PROVIDE OVERLOAD PROTECTION FOR ALL FANS, COORDINATE WITH ELECTRICAL CONTRACTOR.
H. PROVIDE SPEED CONTROLLERS FOR ALL DIRECT DRIVE FANS.
I. FOR ALL ROOF MOUNTED FANS, BOTH THE FAN AND CURB SHALL BE RATED FOR THE PROJECT WIND ZONE.
J. BASIS OF DESIGN IS GREENHECK. EQUIVALENTS BY LOREN COOK, PENN, TWIN CITY, OR EQUIVALENT.

REMARKS:

1. CONTROL FAN WITH DDC SYSTEM. CONSULT OWNER FOR SCHEDULING.
2. PROVIDE WITH 14" HIGH PRE-FABRICATED INSULATED ROOF CURB. CURB SHALL BE COMPATIBLE WITH THE ROOFING SYSTEM. ALL ROOF CURBS AND ATTACHMENT METHODS TO FANS SHALL BE RATED FOR THE PROJECT WIND ZONE.
3. FACTORY DISCONNECT SWITCH, NEMA-1, TOGGLE, MOUNTED AND WIRED.
4. PROVIDE GRAVITY OPERATED DAMPER.
5. PROVIDE HANGING VIBRATION ISOLATION KIT.
6. CONTROL FAN WITH KITCHEN HOOD SYSTEM. FAN STATUS SHALL BE MONITORED BY DDC SYSTEM.
7. FAN CONTROLLED BY MANUAL TWIST TIMER.
8. PROVIDE WITH INTEGRAL PRESSURE SENSING SWITCH AND WALL MOUNTED INDICATOR TO START FAN ON INDICATION OF DRYER RUNNING.
9. FAN SHALL BE CONTROLLABLE BY DDC SYSTEM, BUT SHALL BE SCHEDULED TO RUN CONTINUOUSLY
10. FAN CONTROLLED BY LINE VOLTAGE THERMOSTAT
11. REFER TO KITCHEN HOOD DRAWINGS. FAN IS KEF-1.
12. INTERLOCK FAN WITH DISHWASHER OPERATION.
13. MONITOR FAN STATUS WITH DDC SYSTEM.
14. PROVIDE SIDEWALL MOUNTING KIT.

MECHANICAL SUMMARY
MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

CODE
2018 NC ENERGY CODE: PRESCRIPTIVE __X__ PERFORMANCE ______
ASHRAE 90.1-2013: PRESCRIPTIVE ______ PERFORMANCE ______

ADDITIONAL PRESCRIPTIVE COMPLIANCE:

_____ 506.2.1 MORE EFFICIENT MECHANICAL EQUIPMENT
__X__ 506.2.2 REDUCED LIGHTING POWER DENSITY
_____ 506.2.3 ENERGY RECOVERY VENTILATION SYSTEMS
_____ 506.2.4 HIGHER EFFICIENCY SERVICE WATER HEATING
_____ 506.2.5 ON-SITE SUPPLY OF RENEWABLE ENERGY
_____ 506.2.6 AUTOMATIC DAYLIGHTING CONTROLS

THERMAL ZONE: 4A
WINTER DRY BULB: 20.0 DEGREES F
SUMMER DRY BULB: 94.6 DEGREES F
SUMMER WET BULB: 74.3 DEGREES F
SUMMER HR/MCDB 129.5 / 81.2 DEGREES F

INTERIOR DESIGN CONDITIONS
WINTER DRY BULB: 70 DEGREES F
SUMMER DRY BULB: 75 DEGREES F
RELATIVE HUMIDITY: 55 %

BUILDING HEATING LOAD: 3,426 MBH

BUILDING COOLING LOAD: 373 TONS

MECHANICAL SPACING CONDITIONING SYSTEM

UNITARY
DESCRIPTION OF UNIT:
HEATING EFFICIENCY: REFER TO SCHEDULES ON DRAWINGS
COOLING EFFICIENCY:
SIZE CATEGORY OF UNIT:

BOILER: TOTAL BOILER OUTPUT. IF OVERSIZED, STATE REASON. 4,454 MBH
OVERSIZED FOR FUTURE EXPANSION

CHILLER: TOTAL CHILLER CAPACITY. IF OVERSIZED, STATE REASON. 390 TONS
OVERSIZED FOR FUTURE EXPANSION

REFER TO EQUIPMENT SCHEDULES FOR UNIT EFFICIENCIES.

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 NORTH CAROLINA STATE ENERGY CODE.

NORTH CAROLINA PROFESSIONAL SEAL 025020 ENGINEER STEVE W. CAMPBELL 6/14/19

NAME: STEVE W. CAMPBELL, P.E.

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BOILER SCHEDULE

BOILERS B-01 & B-02

WEIL-MCLAIN WATER BOILER, 88 SERIES 1088, 3,082 GAS INPUT, 2,227 MBH WATER OUTPUT. 83.1% THERMAL EFFICIENCY. 148.5 GPM WITH A MAXIMUM 1.0 PSI PRESSURE DROP. BURNERS SHALL HAVE LOW-HIGH-LOW-OFF, PROVEN START, AND ELECTRONIC DIRECT SPARK IGNITION. PROVIDE 50 PSI ASME RELIEF AND LOW WATER CUTOFF. GAS FIRED. BUILT IN AIR ELIMINATOR. WEBSTER 1.5 HP BURNER, 208/3PH . PROVIDE 115V/1 CONTROL CIRCUIT. COORDINATE FINAL SIZE, VOLTAGE, AND PHASE OF THE ELECTRICAL REQUIREMENTS OF THE BOILER WITH THE ELECTRICIAN. 44.25"W X 82.75"D X 65"H, 6130 LBS. SUPPLY WATER TEMPERATURE 170°F, RETURN TEMPERATURE 140°F. PROVIDE FINAL GAS REGULATOR FOR EACH BOILER. COORDINATE FINAL SIZE, VOLTAGE AND PHASE OF THE ELECTRICAL REQUIREMENTS OF THE BOILER WITH DIVISION 26. PROVIDE EACH BOILER WITH A CONTROL PANEL TO INTERFACE THROUGH BACNET OR MODBUS WITH THE DDC SYSTEM. MAXIMUM OF 10 FT PRESSURE DROP. UL 726 LISTED. EQUIVALENTS AS LISTED IN THE SPECIFICATIONS.

BOILER STACKS

14" DIAMETER METALBESTOS INSULATED DOUBLE WALL 304 STAINLESS STEEL METAL STACK SUITABLE FOR FORCED DRAFT BOILER. STACK SHALL INCLUDE ALL DUCTS, ELBOWS, FLANGES, TRIM RINGS FOR CEILING PENETRATION AND A ROOF CAP. COMPLYING WITH UL 103 AND NFPA 211. EQUIVALENTS BY AMPCO OR VAN PACKER.

ROOF VENT SCHEDULE

MARK	MODEL	AIRFLOW (CFM)	ESP	SERVICE	THROAT AREA (SF)	SIZE	THROAT FPM	WEIGHT	REMARKS
RV-A1	FGI	14550	0.12	INTAKE	18.0	48x54	951	280	
RV-A2	FGI	14550	0.12	INTAKE	18.0	48x54	951	280	
RV-B1	FGI	12650	0.09	INTAKE	18.0	48x54	828	280	
RV-B2	FGI	12650	0.09	INTAKE	18.0	48x54	828	280	
RV-C	FGI	4000	0.08	INTAKE	7.5	20x54	793	120	
RV-F	FGI	9500	0.12	INTAKE	19.5	48x48	981	260	

GENERAL NOTES:

A. PROVIDE 18 INCH ROOF CURB
B. PROVIDE ALUMINUM BIRDSCREEN
C. PROVIDE ALL TRANSITIONS FROM ROOF VENT INLET. MOTORIZED ALUMINUM DAMPERS SHALL BE PROVIDED BY THE CONTROLS CONTRACTOR
D. PROVIDE BACKED ENAMEL FINISH. COLOR SHALL BE SELECTED BY ARCHITECT
E. BASIS OF DESIGN IS GREENHECK. EQUIVALENTS BY TWIN CITY, LOREN COOKE, OR EQUIVALENT.

PUMP SCHEDULE

MARK	MFG	SERIES	MODEL	FLOW (GPM)	HEAD (ft)	PUMP EFF.	RPM	BHP	MOTOR HP	VOLTS	PH	REMARKS
P-3	TACO	KS6011	6x6x9.7	760	79	80.0	1760	20.0	25.0	480	3	CHW DIST.
P-4	TACO	KS6011	6x6x9.7	760	79	80.0	1760	20.0	25.0	480	3	CHW DIST.
P-5	TACO	KS3006	3x3x6	295	93	72.0	3500	9.4	10.0	480	3	HW DIST.
P-6	TACO	KS3006	3x3x6	295	93	72.0	3500	9.4	10.0	480	3	HW DIST.
P-7	TACO	KV3007	3x3x6.5	150	15	69.0	1160	0.8	1.0	480	3	B-1
P-8	TACO	KV3007	3x3x6.5	150	15	69.0	1160	0.8	1.0	480	3	B-2

GENERAL NOTES:

A. ALL PUMPS SHALL HAVE NON-OVERLOADING INVERTER DRIVEN DUTY MOTORS WITH AEGIS SHAFT GROUNDING RING
B. PROVIDE PUMPS WITH SUCTION DIFFUSERS AND TRIPLE DUTY VALVE
C. EQUIVALENTS BY B&G OR ARMSTRONG
D. CONTROLS CONTRACTOR SHALL PROVIDE VFDs FOR ALL PUMPS
E. PUMPS SHALL BE VERTICAL IN-LINE. PROVIDE SPLIT COUPLED MODELS FOR MOTORS LARGER THAN 5.0 HP
F. P-3 AND P-4 ARE DESIGNED FOR LEAD/STANDBY OPERATION FOR CHILLED WATER SYSTEM.
G. P-5 AND P-6 ARE DESIGNED FOR LEAD/STANDBY OPERATION FOR HOT WATER SYSTEM.
H. CHILLER PRIMARY PUMPS P-1, P-2, AND P-9 ARE DUPLEX PUMP SETS AND SHALL BE FACTORY FURNISHED AS PART OF THE CHILLER PACKAGE, INTEGRAL TO THE CHILLER WITH FREEZE PROTECTION. PUMPS SHALL BE SIZED FOR 253 GPM AND 42 FT OF HEAD.

ELECTRIC UNIT HEATER SCHEDULE

Mark	MAKE	MODEL	MBH	kW	VOLT/PH	MOUNTING HEIGHT	LOCATION	REMARKS
UH-01	MARKEL	G3425T	17	5.0	277/1	2'	STAIR S3-1	1,2,3
UH-02	MARKEL	G3425T	17	5.0	277/1	2'	STAIR S2-1	1,2,3
UH-03	MARKEL	G3425T	17	5.0	277/1	2'	STAIR S5-1	1,2,3
UH-04	MARKEL	G3425T	17	5.0	277/1	2'	STAIR S4-1	1,2,3
UH-05	MARKEL	G1G5103N	11.2	3.3	277/1	10'	MECH 146	4,5,6,7
UH-06	MARKEL	G1G5103N	11.2	3.3	277/1	9'	STORAGE 635	4,5,6,7
UH-07	MARKEL	G1G5103N	11.2	3.3	277/1	9'	STORAGE 633	4,5,6,7
UH-08	MARKEL	G1G5105N	17.1	5.0	277/1	9'	MECH 634B	4,5,6,7
UH-09	MARKEL	G1G5105N	17.1	5.0	277/1	9'	MECH 634B	4,5,6,7
UH-10	MARKEL	G1G5105N	17.1	5.0	277/1	9'	MECH 614B-2	4,5,6,7
UH-11	MARKEL	G1G5103N	11.2	3.3	277/1	10'	SPRINKLER 147	4,5,6,7
UH-12	MARKEL	HLA 12-208160	10.3	3.0	208/1	9'	MAINTENANCE	8
UH-13	MARKEL	HLA 12-208160	10.3	3.0	208/1	9'	MAINTENANCE	8
UH-14	MARKEL	CV6012X	2.0	0.6	120/1	7'-9"	TOILET	10
UH-15	MARKEL	CV6012X	2.0	0.6	120/1	7'-9"	TOILET	10
UH-16	MARKEL	CV6012X	2.0	0.6	120/1	7'-9"	TOILET	10
UH-17	MARKEL	F1F5103N	11.2	3.3	208/1	9'	CONCESS. MECH	4,5,6,7
UH-18	MARKEL	F1F5103N	11.2	3.3	208/1	9'	ATHL. STORAGE	4,5,6,7
UH-19	MARKEL	F1F5103N	11.2	3.3	208/1	9'	ATHL. STORAGE	4,5,6,7
UH-20	MARKEL	E3383D-RP	5.1	1.5	120/1	CEILING	CONCESSIONS	3,6,11
UH-21	MARKEL	E3383D-RP	5.1	1.5	120/1	CEILING	CONCESSIONS	3,6,11

GENERAL NOTES:

A. UNITS BASED ON MARKEL 5100 AND 3420 SERIES.
B. EQUIVALENTS: REZNOR, BERKO, INDEECO, OR EQUIVALENT.
C. WHERE A REMOTE WALL MOUNTED THERMOSTAT IS INDICATED, PROVIDE 24V THERMOSTAT AND CONTROL TRANSFORMER.

REMARKS:

1. PROVIDE SEMI-RECESSED WALL SLEEVE.
2. PROVIDE FACTORY CIRCUIT BREAKER.
3. PROVIDE BUILT-IN TAMPERPROOF THERMOSTAT.
4. PROVIDE CONTROLS TRANSFORMER AND WALL-MOUNTED 24V THERMOSTAT.
5. PROVIDE HANGING BRACKET.
6. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH.
7. PROVIDE RADIAL DIFFUSER.
8. HAZARDOUS LOCATION UNIT HEATER SUITABLE FOR DIVISION 1, GROUPS C AND D AND DIVISION 2, GROUPS E, F, AND G. PROVIDE FACTORY MOUNTED AND WIRED HAZARDOUS LOCATION DISCONNECT SWITCH AND THERMOSTAT. ALL CONTROLS SHALL BE MOUNTED IN A HAZARDOUS LOCATION ENCLOSURE. CABINET SHALL HAVE EPOXY COATED FINISH
9. PROVIDE HANGING BRACKET. MOUNT 3" BELOW CEILING AND 1" FROM WALL.
10. PROVIDE LINE VOLTAGE THERMOSTAT FOR CONTROL.
11. PROVIDE ADAPTER KIT FOR MOUNTING IN SHEETROCK CEILING.

DUCTLESS SPLIT SYSTEMS

DS-01 THRU DS-06 (WALL MOUNT)

MITSUBISHI MODEL #PKA-A12HA, 12,000 BTUH, 380 CFM (WET HIGH SPEED) 208/1, 15.2 SEER, MCA = 1. (INDOOR UNIT UNDER POWER FROM OUTDOOR UNIT). PROVIDE WITH WIRED REMOTE AND CONDENSATE PUMP. WEIGHT, 30LBS. CONDENSATE PUMP SHALL CONNECT DIRECTLY TO THE TERMINAL STRIP OF THE INDOOR UNIT. EQUIVALENTS BY DAIKIN, SAMSUNG, LG, OR EQUIVALENT.

DSC-01 THRU DSC-06 (OUTSIDE UNIT)

MITSUBISHI MODEL #PUY-A12NHA3, 208/1, MCA = 13 AMPS, MOCP = 15 AMPS. PROVIDE WITH LOW AMBIENT HEAD PRESSURE CONTROL AND WIND BAFFLE. PROVIDE CONCRETE HOUSEKEEPING PAD EXTENDING 8" BEYOND UNIT FOOTPRINT. WEIGHT, 90LBS. EQUIVALENTS BY DAIKIN, SAMSUNG, LG, OR EQUIVALENT.

NOTE: MECHANICAL CONTRACTOR (DIVISION 23) IS RESPONSIBLE FOR PROVIDING CONDUIT, POWER WIRING, AND CONTROL WIRING BETWEEN THE INDOOR AND OUTDOOR UNITS.

CONTROLS CONTRACTOR SHALL PROVIDE A SEPARATE TEMPERATURE SENSOR FOR EACH UNIT MOUNTED IN THE RESPECTIVE ROOM AND MONITOR TEMPERATURE IN THE ROOM. PROVIDE HIGH LIMIT ALARM (ADJ) FOR ROOM TEMPERATURE.

CHILLER SCHEDULE

CHILLERS CH-01 & CH-02 & CH-03

TRANE AIR COOLED SCROLL CHILLER, MODEL #CGAM130, REFRIGERANT R-410A, 126 FULL LOAD TONS, 147 KW, AND EER OF 10.4 AT 95°F AMBIENT PER AHRI 550/590. PROVIDE NEOPRENE VIBRATION ISOLATORS. PROVIDE ENCLOSURE PANELS AROUND COMPLETE UNIT WITH LOW SOUND FANS. THE OVERALL A-WEIGHTED SOUND POWER LEVEL SHALL NOT EXCEED 68 DB AFTER ATTENUATION, AS MEASURED PER ARI STANDARD 370. PROVIDE HIGH AMBIENT OPTION REQUIRED FOR 25 - 125°F OPERATION. PROVIDE SUCTION AND DISCHARGE SERVICE VALVE FOR EACH COMPRESSOR. PROVIDE SINGLE POINT 480 VOLT POWER CONNECTION THAT FEEDS CHILLER AND PRIMARY PUMP AND PROVIDE AN ADDITIONAL 120 VOLT POWER CONNECTION FOR THE EVAPORATOR HEAT TAPE. TEAO CONDENSER FAN MOTORS. PROVIDE FACTORY MOUNTED AND WIRED CONTROL TRANSFORMER. FACTORY MOUNT AND WIRE EVAPORATOR HEATER FOR FREEZE PROTECTION TO -20°F. PROVIDE CONTROL PANEL THAT PROVIDES CHILLED WATER SETPOINT ADJUSTMENT AND DEMAND LIMITING VIA A 4-20MA INPUT. PROVIDE HIGH SHORT CIRCUIT CURRENT RATED CONTROL PANEL. CONTROL PANEL SCCR RATING SHALL BE MINIMUM 65 kA. PROVIDE LONWORKS/BACNET CONTROL INTERFACE. 460/3/60. MCA = 285, MOP = 300, GPM = 253 AT 16 FT PRESSURE DROP AT 45°F EWT AND 57°F LWT, WEIGHT = 7,900 LBS. MINIMUM EVAPORATOR FLOW = 147 GPM. EQUALS BY YORK, CARRIER AND DAIKIN, OR AS LISTED IN SPECIFICATIONS. PROVIDE EPOXY COATING ON ALL COILS FOR SEACOAST CORROSION PROTECTION. CORROSION DURABILITY SHALL BE CONFIRMED THROUGH TESTING TO NO LESS THAN 5,000 HOURS SALT SPRAY PER ASTM B117-90 USING SCRIBED ALUMINUM TEST COUPONS. PROVIDE FACTORY PUMP PACKAGE WITH TWO PUMPS, VFDs, DRAINAGE VALVES, SHUT-OFF VALVES, AND LEAVING CONNECTIONS. PUMP PACKAGE SHALL BE SINGLE POINT POWER INTEGRATED INTO THE CHILLER POWER WITH A SEPARATE FACTORY WIRED CONTROL PANEL. THE CONTROL OF THE PUMPS SHALL BE INTEGRATED INTO THE CHILLER CONTROLLER. FREEZE PROTECTION DOWN TO AN AMBIENT OF -20°F SHALL BE PROVIDED. COLD PARTS OF THE PUMP PACKAGE SHALL BE INSULATED. ONE REDUNDANT PUMP - THE CHILLER CONTROLS BOTH PUMPS THROUGH A LEAD/LAG AND FAILURE/RECOVERY FUNCTIONALITY.

THE CHILLER MANUFACTURER SHALL PROVIDE A NOISE REDUCTION SYSTEM TO LIMIT THE CHILLER NOISE AND MEET OR BE LESS THAN AN NC LEVEL OF 25 WITHIN THE BAND AND ORCHESTRA ROOMS ADJACENT TO THE CHILLER YARD WITH ALL THREE (3) CHILLERS RUNNING SIMULTANEOUSLY. REFER TO ARCHITECT'S DRAWINGS FOR WALL CONSTRUCTION. THE NOISE REDUCTION SYSTEM SHALL BE SPECIFICALLY ENGINEERED AND INCLUDE, BUT NOT LIMITED TO, HUSH COVER™ REMOVABLE INSULATION COVERS FOR THE CHILLER COMPRESSORS, DISCHARGE/SUCTION LINES AND OIL SEPARATORS, OUTDOOR GRADE HUSH QUILT™ ACOUSTICAL INSULATION BLANKETS MANUFACTURED WITH TANERA GORE™ THREAD AND VINYL COATED POLYESTER MATERIALS RATED FOR 20+ YEAR OUTDOOR LIFE WHEN PROPERLY ANCHORED TO A SOLID CMU/CONCRETE ARCHITECTURAL BARRIER WALL (ARCH. BARRIER WALL BY OTHERS), HUSH DUCT™ ACOUSTICAL LOUVERS ATTACHED TO THE COMPESSOR AND/OR CONDENSER SECTION, HUSH GUARD™ ACOUSTICAL METAL PANELS SURROUNDING THE CHILLER CONDENSER FANS AND/OR THE ENTIRE CHILLER. THE NOISE REDUCTION SYSTEM SHALL BE MANUFACTURED BY A COMPANY SPECIALIZING IN THE MANUFACTURE OF ACOUSTICAL SYSTEMS AND RELATED ACCESSORIES WITH NOT LESS THAN 20 YEARS DOCUMENTED SUCCESSFUL EXPERIENCE WITH WORK COMPARABLE TO WORK OF THIS PROJECT. ALL NOISE CONTROL MATERIALS MANUFACTURERS SHALL DELIVER A COMPLETE SUBMITTAL INCLUDING A COPY OF AN ACOUSTICAL REPORT IN COMPLIANCE WITH THE ACOUSTICAL PERFORMANCE AS PER THIS SPECIFICATION AND THE COMPLETED SYSTEM SHALL RESULT IN A CHILLER DEGRADATION OF NO MORE THAN 2.5%. THE COMPLETE NOISE REDUCTION SYSTEM SHALL BE INSTALLED BY THE NOISE MATERIALS MANUFACTURER TO ENSURE GUARANTEED FIT AND MEET THE ACOUSTICAL PEFORMANCE AS PER THIS SPECIFICATION. CHILLER MANUFACTURERS FACTORY ATTENAUTION PACKAGES ARE NOT ACCEPTABLE. CHILLER MANUFACTUERERS LOW NOISE FANS ARE ACCEPTABLE. BRD NOISE AND VIBRATION CONTROL, INC., LOTEC AND KINETICS ARE CONSIDERED AN ACCEPTABLE SUPPLIER OF THESE PRODUCTS AND SERVICES. THE OWNER WILL RETAIN THE SERVICES OF A THIRD PARTY TO PERFORM SOUND MEASUREMENTS ON THE COMPLETE SYSTEM TO VERIFY COMPLIANCE WITH REQUIREMENTS OF THIS SPECIFICATION. IF OVERALL SOUND PRESSURE LEVEL (dBA) TEST RESULTS DO NOT MEET THE REQUIREMENTS OF THIS SPECIFICATION, THEN THE CHILLER MANUFACTURER/VENDOR SHALL SUPPLY ADDITIONAL SOUND ATTENUATION AND/OR FACILITY MODIFICATIONS TO MEET THIS REQUIREMENT AT NO ADDITIONAL COST TO THE OWNER

AIR DISTRIBUTION SCHEDULE

MARK	PURPOSE	MIN FLOW (CFM)	MAX FLOW (CFM)	SIZE	DUCT SIZE	MAKE	MODEL	REMARKS
A	SUPPLY	40	100	24x24	6"	PRICE	ASPD	1,2,3
B	SUPPLY	105	230	24x24	8"	PRICE	ASPD	1,2,3
C	SUPPLY	235	375	24x24	10"	PRICE	ASPD	1,2,3
D	SUPPLY	380	550	24x24	12"	PRICE	ASPD	1,2,3
E	SUPPLY	50	180	8x6	8x6	PRICE	620	1,6
F	SUPPLY	185	250	10x8	10x8	PRICE	620	1,6
G	SUPPLY	300	350	14x8	14x8	PRICE	620	1,6
H	SUPPLY	405	525	16x8	16x8	PRICE	620	6
J	SUPPLY	305	400	4 SLOT	10"	PRICE	SDS 100	1,7
K	SUPPLY	555	700	24x24	14"	PRICE	ASPD	1,2,3
R	RETURN/EXHAUST	40	100	24x24	6"	PRICE	APDDR	1,2,3,4
RR	RETURN/EXHAUST	0	100	12x12	6"	PRICE	APDDR	1,2,3,4
S	RETURN/EXHAUST	0	225	24x24	8"	PRICE	APDDR	1,2,3,4
T	RETURN/EXHAUST	230	375	24x24	10"	PRICE	APDDR	1,2,3,4
U	RETURN/EXHAUST	380	555	24x24	12"	PRICE	APDDR	1,2,3,4
V	RETURN/EXHAUST	560	850	24x24	14"	PRICE	APDDR	1,2,3,4
W	RETURN/EXHAUST	855	1,100	24x24	16"	PRICE	APDDR	1,2,3,4
X	RETURN/EXHAUST	855	1,100	20x16	20x16	PRICE	630	6
XX	EXHAUST		1,250	18x18	18x18	PRICE	710	8
Y	RETURN/EXHAUST	3,000	3,600	48x20	48x20	PRICE	98	6
Z	RETURN/EXHAUST	50	150	8x6	8x6	PRICE	630	6
Z2	RETURN	7,900		84x48	84x48	PRICE	QA845	6
Z3	RETURN	6,200		96x36	96x36	PRICE	QA845	1,5,6
Z4	RETURN	8,400		96x42	96x42	PRICE	QA845	1,5,6

GENERAL NOTES:

A. BASIS OF DESIGN IS PRICE. EQUIVALENTS BY TITUS, KRUEGER, TUTTLE AND BAILEY, NAILOR, OR AS LISTED IN SPECIFICATIONS
B. PROVIDE VOLUME DAMPERS AT TAKE-OFF FOR EACH GRILLE
C. ALL AIR DISTRIBUTION DEVICES SHALL BE ALUMINUM
D. THE PRICE MODELS SCHEDULED HERE ARE BASIS OF DESIGN, INCLUDING GENERATED NOISE. PROPOSED SUBSTITUTIONS WILL BE JUDGED BY THOSE CRITERIA ALSO
E. WHERE LOCATED IN HARD CEILINGS, PROVIDE ALUMINUM MOUNT FRAME/PLASTER FRAME FOR HARD CEILING THAT ALLOWS DIFFUSER/GRILLE WITH FLEX CONNECTION TO BE LIFTED OUT OF FRAME TO ACCESS CEILING SPACE. TYPICAL OF ALL HARD CEILING LOCATIONS. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN
F. FOR SIDE WALL GRILLES, PROVIDE REMOTE CABLE OPERATED, GEAR DRIVEN BALANCING DAMPER OPERABLE FROM FACE OF DIFFUSER

REMARKS:

1. PROVIDE WITH OFF-WHITE ENAMEL FINISH
2. PROVIDE WITH TRIM TO MATCH CEILING TYPE. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR CEILINGS
3. PROVIDE DIFFUSER/GRILLE WITH ROUND NECK OR PROVIDE SQUARE TO ROUND TRANSITION
4. ALL CEILING MOUNTED RETURN GRILLES SHALL BE FULL FACED. NO LAY-IN PANELS ALLOWED
5. ACOUSTIC LOUVER. PROVIDE ALUMINUM 1/2" X 1/2" SCREEN. PROVIDE DURANAR XL COATING. PROVIDE STANDARD AND CUSTOM COLOR CHARTS WITH SUBMITTAL FOR SELECTION BY ARCHITECT
6. PROVIDE OPPOSED BLADE ALUMINUM DAMPER
7. PROVIDE INSULATED SDB LINEAR SLOT PLENUM WITH FLEXIBLE CONNECTION AND FRAME STYLE MATCHING ARCHITECTURAL CEILING. PLENUM SHALL BE FACTORY INSULATED.
8. STAINLESS STEEL GRILLE. PROVIDE 1/2" X 1/2' ALUMINUM SCREEN. PROVIDE FRAME SUITABLE FOR MOUNTING IN CANOPY CEILING. PROVIDE FINISH SUITABLE FOR PAINTING.

FLY FAN

PROVIDE AIR CURTAIN FAN. POWERED AIRE BCT-1-42. 42" NOZZLE WIDTH. 115V/1PH, 3/4 HP MOTOR. 3150 FPM AVERAGE VELOCITY AT NOZZLE. 2,530 CFM AT NOZZLE. 97 LBS. EQUALS BY MARS, TMI OR WELBON. PROVIDE AND WIRE DOOR SWITCH FOR FAN CONTROL.

AIR CONTROLS

CHILLED WATER:
AS-1 - TACO - 4908A-125 AIR SEPARATOR. PROVIDE ALL PIPE TRANSITIONS.

EXP-1 - TACO - CA300-125, 79 GALLON ASME BLADDER EXPANSION TANK WITH FULL ACCEPTANCE VOLUME. PRE-CHARGE TO 22 PSI.

EQUIVALENTS BY B&G OR ARMSTRONG.

HOT WATER:

AS-2 - TACO - 4904A-125 AIR SEPARATOR. PROVIDE ALL PIPE TRANSITIONS.

EXP-2,3 - TACO - CA450-125, 119 GALLON HORIZONTAL ASME BLADDER EXPANSION TANK WITH FULL ACCEPTANCE VOLUME. PRECHARGE TO 22 PSI.

EQUIVALENTS BY B&G OR ARMSTRONG.

HIGH VOLUME LOW SPEED FAN

HVLS-01

MACROAIR AIRVOLUTION-D 370. 6 FT DIAMETER. PROVIDE UNIVERSAL MOUNTING HARDWARE KIT. DROP TUBE LENGTH TO BE MINIMUM ALLOWABLE BY MANUFACTURER. PROVIDE FUSED DISCONNECT SWITCH AND NOISE DAMPENER. 0.25 HP FAN MOTOR. 115V/1PH. PROVIDE POWDER COATED FINISH. COLOR SELECTION BY OWNER. PROVIDE DIGITAL REMOTE CONTROLLER WITH TOUCHPAD AND 200 FT REMOTE CABLE 5E CABLE. COORDINATE WITH DIVISION 26 ON LIGHTING LAYOUT.

GENERAL NOTES

1. THE CONTRACT DOCUMENTS ARE COMPLIMENTARY AND WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IF REQUIRED BY ALL. IN THE CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE BETTER QUALITY. IN THE CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE GREATER QUANTITY OF WORK.
2. COORDINATE ALL WORK WITH THAT OF THE OTHER DISCIPLINES PRIOR TO THE INSTALLATION OF ANY PIPING, DUCTWORK, OR EQUIPMENT.
3. PERFORM A COMPLETE REVIEW OF THE CONTRACT DOCUMENTS PRIOR TO INSTALLATION OF THE MECHANICAL SYSTEMS AND REVIEW ANY CONFLICTS WITH THE ENGINEER.
4. ENSURE THAT ITEMS TO BE FURNISHED OR PROVIDED WILL FIT IN THE SPACE AVAILABLE. MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS, AND PROVIDE SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE INTENT AND MEANING OF THE CONTRACT DOCUMENTS. PROVIDE THE ENGINEER WITH SCALED COORDINATION DRAWINGS OF ALL MECHANICAL SPACES AND ABOVE CEILING INSTALLATIONS.
5. LOCATE ALL EQUIPMENT TO PROVIDE MAXIMUM SPACE FOR MAINTENANCE AND SERVICE.
6. PROVIDE ALL ELECTRICAL AND CONTROL CONNECTIONS TO THE EQUIPMENT PROVIDED. REFER TO THE ELECTRICAL DRAWINGS FOR LOCATIONS OF JUNCTION BOXES, DISCONNECTS, CIRCUIT BREAKERS (PANELBOARDS). TYPE, SIZE, AND NUMBER OF CONDUCTORS AND CONDUITS TO EQUIPMENT SHALL BE EQUIVALENT TO THE CONDUCTORS AND CONDUITS PROVIDED BY DIVISION 26. IN CASE OF MECHANICAL EQUIPMENT CONNECTION TO A CIRCUIT BREAKER, THE NUMBER AND SIZE OF THE CONDUCTORS AND CONDUITS SHALL CONFORM TO THE LATEST NATIONAL ELECTRICAL CODE REGULATIONS. ALL MOTOR STARTERS, SWITCHES, CONTROL DEVICES, ETC., PROVIDED BY DIVISION 23 SHALL BE RECESSED IN THE WALLS, EXCEPT WHEN THESE ITEMS ARE LOCATED IN MECHANICAL SPACES. PROVIDE A NAMEPLATE FOR ALL EQUIPMENT, SWITCHES, CONTROL DEVICES, ETC. REFER TO THE GENERAL PROVISIONS SECTION OF THE DIVISION 23 SPECIFICATIONS.
7. PROVIDE ALL SUPPORT DEVICES NECESSARY FOR THE WORK. COORDINATE ALL LOCATIONS WITH OTHER DISCIPLINES PRIOR TO INSTALLATION.
8. REFER TO THE ARCHITECTURAL DRAWINGS FOR FLOOR PLAN DIMENSIONS AND ELEVATIONS. DO NOT SCALE THESE DRAWINGS.
9. PROVIDE ALL PENETRATIONS PERTAINING TO THE 23 WORK THROUGH THE ROOF, WALLS, AND FLOORS. PROVIDE THE WATERPROOFING AROUND THE OPENINGS.
10. COORDINATE THE SIZE AND LOCATION OF ALL PENETRATIONS THROUGH THE ROOF WITH DIVISION 07 AND OTHER DISCIPLINES.
11. FIRE SEAL ALL FLOOR AND FIRE WALL PIPE AND CONDUIT PENETRATIONS WITH A UL APPROVED METHOD.
12. PROVIDE ALL CUTTING AND PATCHING OF FLOORS AND WALLS FOR THE WORK UNLESS OTHERWISE INDICATED.
13. CONDENSATE DRAINS SHALL BE A MINIMUM OF 1"∅ COPPER, INSULATED WITH A 25/50 RATED CLOSED CELL RUBBER TUBING HAVING A NOMINAL WALL THICKNESS OF 1". PROVIDE A P-TRAP WITH VENT AND CLEANOUT PLUG AT THE UNIT. ALL CONDENSATE LINES SHALL BE ROUTED TO A FLOOR DRAIN OR AS INDICATED ON THE DRAWINGS.
14. DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR UNLESS OTHERWISE INDICATED.
15. EXHAUST DUCTWORK SHALL BE UNINSULATED UNLESS OTHERWISE INDICATED. EXHAUST AND RELIEF DUCTWORK WITHIN 10 FEET OF A WALL OF ROOF OPENING SHALL BE INSULATED.
16. PROVIDE FLEXIBLE DUCT CONNECTORS AT SUPPLY, RETURN, AND EXHAUST DUCTWORK CONNECTIONS TO ALL AIR HANDLING UNITS AND FANS.
17. PROVIDE SHEET METAL COLLAR AT ALL LOCATIONS WHERE DUCTS PENETRATE WALLS. COLLARS SHALL BE OF A GAGE EQUIVALENT TO THE DUCTWORK.
18. PROVIDE FIRE DAMPERS AT DUCT PENETRATIONS THROUGH THE FIRE RATED PARTITIONS, BARRIERS, AND WALLS AS INDICATED ON THE DRAWINGS. INSTALL PER MANUFACTURER'S INSTRUCTIONS. PENETRATIONS THROUGH FIRE RATED WALLS OF 3 HOURS OR MORE SHALL BE PROTECTED BY A LISTED FIRE DOOR, SATISFACTORY FOR CLASS A OPENINGS, ON BOTH SIDES OF THE WALL.
19. ALL ACCESS DOORS IN THE DUCTWORK SHALL BE LOCATED TO EASILY ACCESS FIRE DAMPERS. COORDINATE CEILING ACCESS PANEL LOCATIONS WITH ALL OTHER DISCIPLINES. ALL ACCESS DOORS IN DUCTWORK FOR FIRE DAMPERS, DUCT-MOUNTED COILS, CONTROL DAMPERS, HUMIDIFIERS, DUCT SMOKE DETECTORS, AND OTHER DEVICES SHALL CONFORM TO THE FOLLOWING SCHEDULE:

DUCT WIDTH	ACCESS DOOR SIZE
UP TO 17" WIDE	16"x12" (OR AS LARGE AS POSSIBLE)
18" TO 22"	16"x16"
22" AND LARGER	18"x18"

20. PROVIDE BALANCING DAMPERS IN ALL LOW PRESSURE DUCTS FOR SYSTEM BALANCING.
21. PROVIDE ADJUSTABLE CONTROL DEFLECTION DEVICES AT ALL BRANCH DUCT TAKE-OFFS.
22. ALL ELBOWS IN DUCTWORK SHALL BE 1-1/2W RADIUS ELBOWS, UNLESS INDICATED OTHERWISE. WHERE RECTANGULAR ELBOWS ARE INDICATED, INSTALL DOUBLE WIDTH TURNING VANES.
23. INSTALL SMOKE DETECTORS (FURNISHED AND WIRED BY DIVISION 26) IN THE RETURN AIR DUCT OF EACH AIR HANDLING UNIT.
24. INSTALL THERMOSTATS, SENSORS, AND OTHER CONTROLS 48" ABOVE FINISHED FLOOR OR AS INDICATED ON THE DRAWINGS. COORDINATE WITH OTHER DISCIPLINES TO ALIGN EXACTLY WITH ADJACENT DEVICES SUCH AS LIGHT SWITCHES AND CONTROLS.
25. PROVIDE ALL THERMOSTATS, SENSORS, CONTROLS, WIRING, AND CONDUIT.
26. WHERE DUCTWORK CONNECTS TO EXTERIOR LOUVERS, PRIME AND PAINT DUCTWORK BLACK TO PREVENT DUCTWORK FROM BEING VISIBLE THROUGH THE LOUVER.
27. FRESH AIR INTAKES SHALL BE A MINIMUM OF 10 FEET FROM ALL EXHAUST AIR TERMINATIONS AND PLUMBING VENT THRU ROOF TERMINATIONS.
28. ALL DUCT LAYOUT AND LOCATIONS INDICATED ARE DIAGRAMMATIC. VISIT THE SITE, BECOME FAMILIAR WITH THE EXISTING CONDITIONS, AND COORDINATE THE DUCT LAYOUT WITH ALL DISCIPLINES PRIOR TO INSTALLATION.
29. SUPPORT ALL DUCTWORK, PIPING, EQUIPMENT, AND APPURTENANCES FROM THE BUILDING STRUCTURE AND NOT THE ROOF DECK.
30. INSULATE ALL SUPPLY DIFFUSERS AND DUCTED RETURN DIFFUSERS WITH 2" - 1# R.6 DUCT WRAP. CUT DIFFUSERS SO THERE IS A FOLDED 2" LAP ON ALL FOUR SIDES. TAPE WITH FSK TAPE WHERE INSULATED FLEX MEETS DUCT INSULATION, AND SO THERE ARE NO RAW EDGES OF FIBERGLASS.
31. EQUIPMENT SHALL MEET OR EXCEED ALL REQUIREMENTS IN THE 2013 VERSION OF ASHRAE STANDARD 90.1 AND THE INTERNATIONAL ENERGY CONSERVATION CODE WITH NORTH CAROLINA AMENDMENTS.
32. COORDINATE THE ROUGH-IN OF HYDRONIC PIPING WITH THE GENERAL CONTRACTOR AND OTHER TRADES. ALL UNDERGROUND PIPING SHALL BE COORDINATED WITH STRUCTURAL FOOTINGS PRIOR TO INSTALLATION.
33. ALL HYDRONIC PIPING SHALL BE PERMANENTLY IDENTIFIED BY CONTENT, FUNCTION, AND DIRECTION OF FLOW (I.E., HOT WATER SUPPLY →). ALL IDENTIFICATION MARKERS SHALL BE PERMANENTLY STENCILED ON THE PIPING IN A LEGIBLE MANNER AT NO GREATER DISTANCE THAN 10'-0" ON CENTER. WHERE COLOR CODED PVC INSULATION JACKETING IS NOT SPECIFIED, ALL PIPING IN MECHANICAL ROOMS AND FINISHED AREAS ARE TO BE PAINTED AS FOLLOWS:

CHILLED WATER	BLUE WITH WHITE BACKGROUND AND BLUE LETTERS
HOT WATER	RED WITH WHITE BACKGROUND AND RED LETTERS
DOMESTIC WATER MAKE-UP	GREEN WITH WHITE BACKGROUND AND GREEN LETTERS
REFRIGERANT	GREEN WITH BLACK BACKGROUND AND YELLOW LETTERS

34. PROVIDE FLEXIBLE PIPE CONNECTIONS AT ALL HYDRONIC PIPING CONNECTIONS AT CHILLERS, BASE MOUNTED PUMPS, AIR HANDLING UNITS, FAN BOXES, AND OTHER ROTATING EQUIPMENT.
35. INSTALL A MANUAL AIR VENT AT EVERY HIGH POINT IN THE ENTIRE HYDRONIC PIPING SYSTEM.
36. INSTALL ALL UNDERGROUND WATER PIPING A MINIMUM OF 24" BELOW FINISHED GRADE TO PIPE CROWN. COORDINATE WITH ALL DISCIPLINES PRIOR TO INSTALLING UNDERGROUND PIPING.
37. ALL UNDERGROUND LINES OUTSIDE THE BUILDING FOOTPRINT SHALL HAVE WARNING TAPE INSTALLED IN THE BACKFILL BETWEEN 6" AND 24" BELOW FINISHED GRADE DIRECTLY OVER THE PIPING.
38. METALLIC LINES SHALL BE IDENTIFIED WITH DURABLE PRINTED PLASTIC WARNING TAPE, MINIMUM 3" WIDE, WITH LETTERING TO IDENTIFY BURIED LINE BELOW.
39. NON-METALLIC PIPES, OTHER THAN GAS LINES, SHALL BE IDENTIFIED BY DETECTABLE WARNING TAPE, MINIMUM 2" WIDE, WITH LETTERING TO IDENTIFY BURIED LINE BELOW.
40. FOR GAS PIPING, AN INSULATED COPPER TRACER WIRE OR OTHER APPROVED CONDUCTOR SHALL BE INSTALLED ADJACENT TO UNDERGROUND NON-METALLIC PIPING. ACCESS SHALL BE PROVIDED TO THE TRACER WIRE OR THE TRACER WIRE SHALL TERMINATE ABOVE GROUND AT THE END OF THE NON-METALLIC PIPING. THE TRACER WIRE SHALL NOT BE LESS THAN 18 AWG AND THE INSULATION TYPE SUITABLE FOR DIRECT BURIAL.
41. WRAP ALL EXTERIOR ABOVE GROUND HYDRONIC PIPING WITH ELECTRIC TRACE LINE PRIOR TO INSULATING. WRAP INSULATION WITH ALUMINUM JACKET AND SEAL ALL JOINTS.
42. DO NOT INSTALL PIPING OR DUCTWORK OVER ANY ELECTRICAL PANEL OR SWITCHGEAR.
43. PROVIDE EQUIPMENT SUPPORT PAD FOR ALL BASE MOUNTED EQUIPMENT. PAD SHALL BE 6" HIGH FOR CHILLERS AND BOILERS AND 4" HIGH FOR ALL OTHER MECHANICAL EQUIPMENT, INCLUDING AIR HANDLING UNITS AND PUMPS. PROVIDE 8" MINIMUM FROM EQUIPMENT TO END OF PAD ON ALL SIDES.

SYMBOL LEGEND

SYMBOL	DESCRIPTION
	FLEXIBLE DUCT
_x_	SUPPLY DUCT
_x_	RETURN DUCT
_x_	EXHAUST DUCT
_x_	OUTSIDE AIR INTAKE
	BALANCING DAMPER
	SUPPLY GRILLE
	RETURN GRILLE
	EXHAUST GRILLE
#T	T'STAT - SUBSCRIPT INDICATES TERMINAL/ UNIT NUMBER
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	HOT WATER SUPPLY
	HOT WATER RETURN
REF	REFRIGERANT PIPING
COND	CONDENSATE PIPING
	BALL VALVE (FULL DETAIL / SINGLE LINE)
	CIRCUIT SETTER
	BUTTERFLY VALVE (FULL DETAIL / SINGLE LINE)
	CHECK VALVE
	DIFFERENTIAL PRESSURE GAUGE
SD	SMOKE DUCT DETECTOR
MD	MOTORIZED DAMPER, PARALLEL BLADE FOR SHUT-OFF, OPPOSED BLADE FOR MODULATING, 24V ACTUATOR.
▼	FIRE DAMPER. 1.5 HOUR FOR 1 HR AND 2HR CONSTRUCTION, 3 HOUR FOR 3 HR CONSTRUCTION. TYPE B WITH BLADES OUT OF AIR STREAM. UL 555 LISTED. PROVIDE FACTORY SLEEVE. PROVIDE MULTI-SECTION ASSEMBLY AS REQUIRED FOR DUCT DIMENSIONS. PROVIDE THIN-LINE MODEL OR OUT OF WALL MODEL WHERE APPROPRIATE.
SP	DUCT MOUNTED STATIC PRESSURE SENSOR
SP	SPACE STATIC PRESSURE SENSOR. CEILING MOUNTED UNLESS INDICATED AS WALL MOUNTED BY 'w'.
TT	TWIST TIMER FOR SCIENCE CLASSROOM EXHAUST FAN CONTROL
©	WALL MOUNTED CO2 SENSOR
AFS	AIRFLOW MONITORING STATION. EBTRON GOLD OR EQUIVALENT
VD	MANUAL BALANCING DAMPER, OPPOSED BLADE, DOUBLE FLANGED. PROVIDE FACTORY SLEEVE, AND MANUAL HAND QUADRANT WITH INSULATION EXTENSION. AIR PERFORMANCE TESTED IN ACCORDANCE WITH AMCA. LEAKAGE CLASS 1, 8 CFM/SF AT 4 in w.g.
PB	EMERGENCY OFF PUSH BUTTON FOR BOILERS
DP	DIFFERENTIAL PRESSURE SENSOR

SHEET INDEX - MECHANICAL

Sheet Number	Sheet Name	Current Revision	Current Revision Date
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M0-02	MECHANICAL LEGENDS, SCHEDULES & NOTES		
M1-01	MECHANICAL DUCTWORK PLAN-100 WING		
M1-02	MECHANICAL DUCTWORK PLAN - 200 WING		
M1-03	MECHANICAL DUCTWORK PLAN-300 WING		
M1-04	MECHANICAL DUCTWORK PLAN-400 WING		
M1-05	MECHANICAL DUCTWORK PLAN-500 WING		
M1-06	MECHANICAL DUCTWORK PLAN-600 WING		
M1-07	MECHANICAL DUCTWORK PLAN-100 WING 2ND FLOOR		
M2-01	MECHANICAL PIPING PLAN-100 WING	1	05/30/19
M2-02	MECHANICAL PIPING PLAN-200 WING		
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M3-01	MECHANICAL ENLARGED PLANS		
M3-02	MECHANICAL ENLARGED PLANS		
M3-03	MECHANICAL ENLARGED PLANS		
M3-04	MECHANICAL ENLARGED PLANS		
M4-01	MECHANICAL SECTIONS		
M4-02	MECHANICAL SECTIONS		
M4-03	MECHANICAL SECTIONS		
M5-01	DETAILS		
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M6-05	MISCELLANEOUS SCHEMATICS	2	06/14/19
M9-01	CONCESSIONS AND MAINTENANCE BUILDINGS		

smith sinnett ARCHITECTURE
T 919 781 8582
F 919 781 3979
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

pdc
Progressive Design Collaborative, Ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989
PROJECT #17104
License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL SEAL 025020 ENGINEER STEVE W. CAMPBELL 6/14/19

CONSTRUCTION DOCUMENT

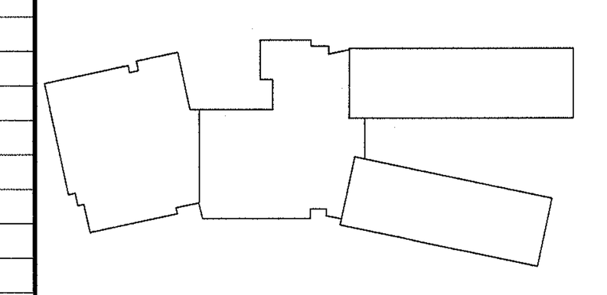
ENERGY STAR PARTNER

VOLUME II

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 30" X 42" SHEET

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370



KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03

DRAWN BY: JAV
CHECKED BY: RA

MECHANICAL LEGENDS, SCHEDULES & NOTES

2017032 20 MAY 2019

M0-01

MISCELLANOUS POINTS AND SEQUENCES

EXHAUST FAN CONTROL

EXHAUST FANS SHALL BE CONTROLLED BY THE BAS, VIA PRE-PROGRAMMED SCHEDUL, EXCEPT WHERE INDICATED ON THE FAN SCHEDULE.

OCCUPIED PERIOD:
FANS SHALL OPERATE VIA METHOD AS LISTED IN THE FAN SCHEDULE (BAS, T-STAT, ETC.) FANS CONTROLLED BY INDIVIDUAL THERMOSTAT DO NOT REQUIRE BAS CONNECTION

UN-OCCUPIED PERIOD:
FANS ARE OFF, EXCEPT WHERE INDICATED ON THE SCHEDULE

PREPARATORY PERIOD:
FANS ARE OFF, EXCEPT WHERE INDICATED ON THE SCHEDULE

EXHAUST FANS SHALL BE INTERLOCKED TO OPERATE WITH THEIR RESPECTIVE AIR HANDLING UNIT. EXHAUST FANS IN MECHANICAL ROOMS SHALL BE CONTROLLED BY LOCAL THERMOSTAT. FANS SHALL TURN ON WHEN TEMPERATURE RISES ABOVE SETPOINT. ON A DROP BELOW SETPOINT, FAN SHALL TURN OFF.

THE BAS SHALL GENERATE AN ALARM WHENEVER THE STATUS OF A FAN DOES NOT MATCH THE COMMAND.

LIGHTING CONTROL

THE BAS CONTRACTOR SHALL PROVIDE WIRING TO LIGHTING CONTACTORS SPECIFIED AND INDICATED ON THE ELECTRICAL DRAWINGS.

THE BAS CONTRACTOR SHALL PROVIDE OUTPUTS TO CONTROL LIGHTING RELAYS AND CONTACTORS. LIGHTING CIRCUITS SHALL BE CONTROLLED VIA USER ADJUSTABLE SCHEDULES WITHIN THE BAS BASED ON TIME OF DAY AND 365-DAY CALENDAR SCHEDULE.

REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR LIGHTING CONTROL REQUIREMENTS.

REFER TO SPECIFICATIONS SECTION 26 09 23 FOR PROGRAMMING REQUIREMENTS.

REFER TO LIGHTING DRAWINGS FOR OVERRIDE SWITCHES. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS. CONTROLS CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OVERRIDE SWITCHES, FACE PLATES, LOW VOLTAGE CABLING, AND PROGRAMMING. FACE PLATES SHALL MATCH DIVISION 26 SPECIFICATIONS, MATERIAL, AND COLOR. RACEWAY AND BOXES ASSOCIATED WITH OVERRIDE SWITCHES BY DIVISION 26.

DUCTLESS SPLIT SYSTEMS

DUCTLESS SPLIT SYSTEMS SHALL HAVE WALL MOUNTED CONTROLS IN THEIR RESPECTIVE ROOMS. UNITS ARE COOLING ONLY AND SHALL OPERATE AS REQUIRED TO KEEP ROOMS AT SETPOINT.

THE BAS CONTRACTOR SHALL PROVIDE A SEPARATE WALL MOUNTED TEMPERATURE SENSOR IN EACH ROOM CONTAINING A DUCTLESS SPLIT SYSTEM TO MONITOR THE TEMPERATURE ONLY. PROVIDE A HIGH LIMIT TEMPERATURE ALARM (85°F, ADJ)

TREND LOGS
PROVIDE TREND LOGS FOR BOILER OPERATION, CHILLER OPERATION, COOLING TOWER OEPRATION, HOT AND CHILLED WATER PUMP OPERATION, AND AIR HANDLING UNIT OPERATION.

PROVIDE TREND LOGS FOR ALL VAV BOX OPERATION.

PROVIDE TREND LOGS FOR ALL RESET REQUESTS.

TREND ALL TEMPERATURE, PRESSURE, AND EQUIPMENT CHANGES OF STATE.

MAINTENANCE MANAGEMENT

THE DDC SYSTEM SHALL MEASURE AND RECORD RUN TIME FOR ALL START/STOP POINTS IN THE SYSTEM. BASED UPON THE ACCUMULATED RUN TIME, PROVIDE MAINTENANCE MESSAGES ON THE INTERVAL RECOMMENDED BY THE EQUIPMENT MANUFACTURERS. ANY DIGITAL INPUT POINT THAT IS USED FOR MAINTENANCE PURPOSES (I.E. DIRTY FILTER) SHALL ALSO GENERATE A MAINTENANCE MESSAGE. ALL MAINTENANCE MESSAGES ARE TO BE SENT VIA EMAIL TO COUNTY'S FACILITY MAINTENANCE DIRECTOR OR SOMEONE ELSE OF HIS CHOOSING.

TROUBLE ALARMS

THE CONTROL SUBCONTRACTOR SHALL ESTABLISH A TROUBLE HIGH AND TROUBLE LOW ALARM LIMIT FOR EACH ANALOG INPUT, EQUIPMENT STATUS AND ANNUNCIATE A CORRESPONDING ALARM MESSAGE AT THE CONTROLS FRONT END.

MODIFICATION

ALL SOFTWARE SETPOINTS, LIMITS, ALARMS, MESSAGES, SCHEDULES, SEQUENCES, ETC., AS SPECIFIED HEREIN ARE TO PROVIDE AN INITIAL SETUP OF THE CONTROLS SYSTEM. THE CONTROLS SUBCONTRACTOR SHALL PROVIDE SOFTWARE CUSTOMIZATIONS REQUIRED TO "TUNE" THE DDC SYSTEM TO ACCURATELY RESPOND TO ACTUAL BUILDING PARAMETERS. FURTHER, THESE SOFTWARE FUNCTIONS SHALL BE READILY MODIFIABLE BY THE OWNER'S PERSONNEL AS CHANGES IN BUILDING OPERATION DICTATE.

UNIT HEATERS

UNIT HEATER: BUILT-IN THERMOSTAT SHALL MAINTAIN ITS SETPOINT OF 55°F (ADJ.) BY STARTING THE UNIT HEATER. ONCE THE UNIT HEATER IS ENERGIZED, IT WILL RUN FOR AT LEAST FIVE (5) MINUTES TO AVOID SHORT CYCLING. NO BAS MONITORING OR CONTROL IS REQUIRED FOR UNIT HEATERS.

MISCELLANEOUS PONTS

BAS SHALL MONITOR ELEVATOR SUMP PUMP OPERATION AND ALARMS.

RELIEF AIR DAMPERS IN MECHANICAL ROOMS SHALL HAVE MULTIPLE DAMPER SECTIONS. EACH SECTION SHALL BE OPENED (STAGED) TO MAINTAIN A SLIGHT POSITIVE PRESSURE IN THE ROOM.

WATER HEATER AND RECIRCULATION PUMP CONTROL

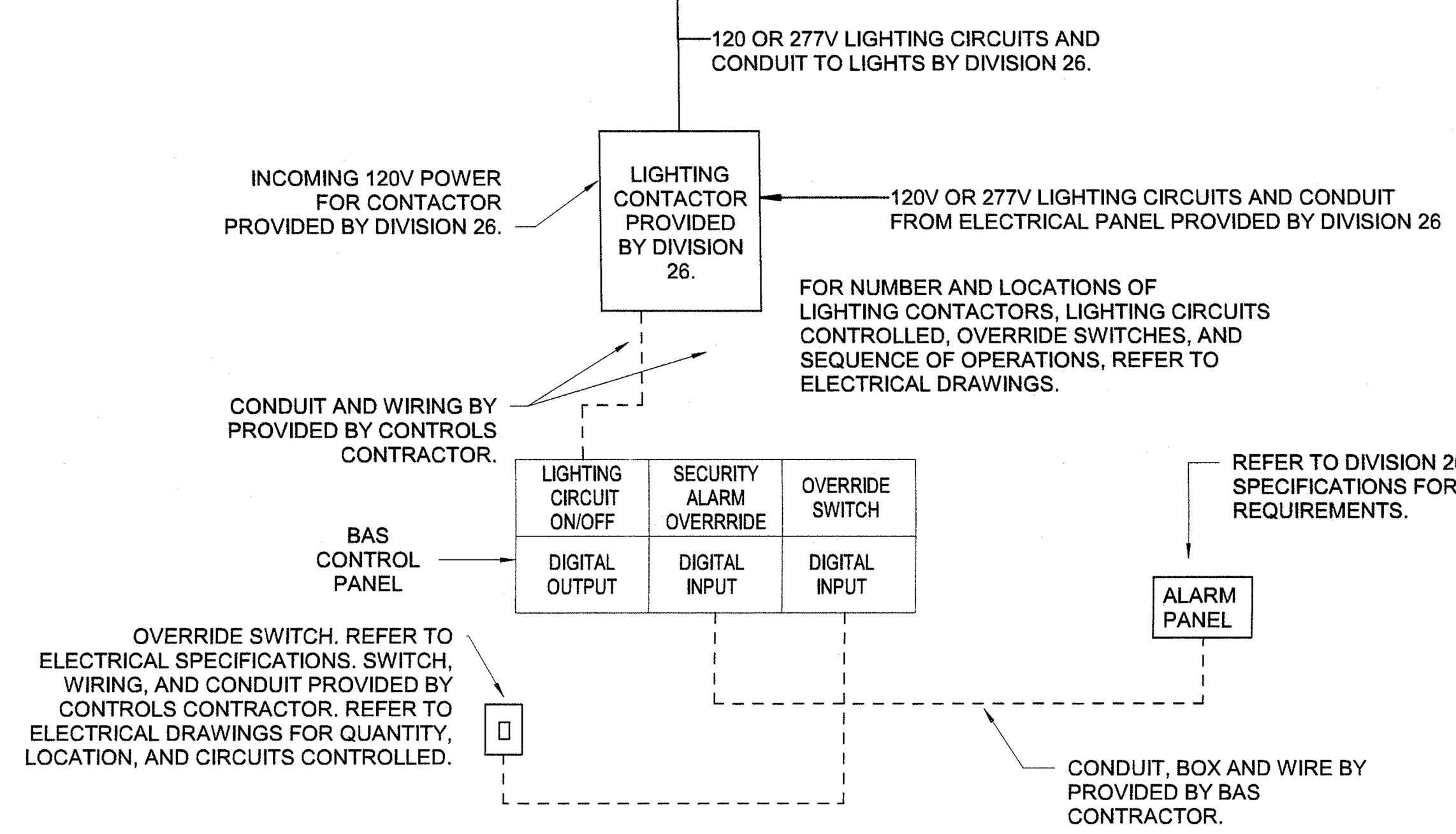
BAS SHALL ENABLE AND DISABLE RECIRCULATION PUMPS FOR OCCUPIED AND UNOCCUPIED TIMES. REFER TO PLUMBING DRAWINGS FOR NUMBER AND LOCATION OF PUMPS.

THE BAS WILL GENERATE AN ALARM IF THE PUMP FAILS TO RUN.

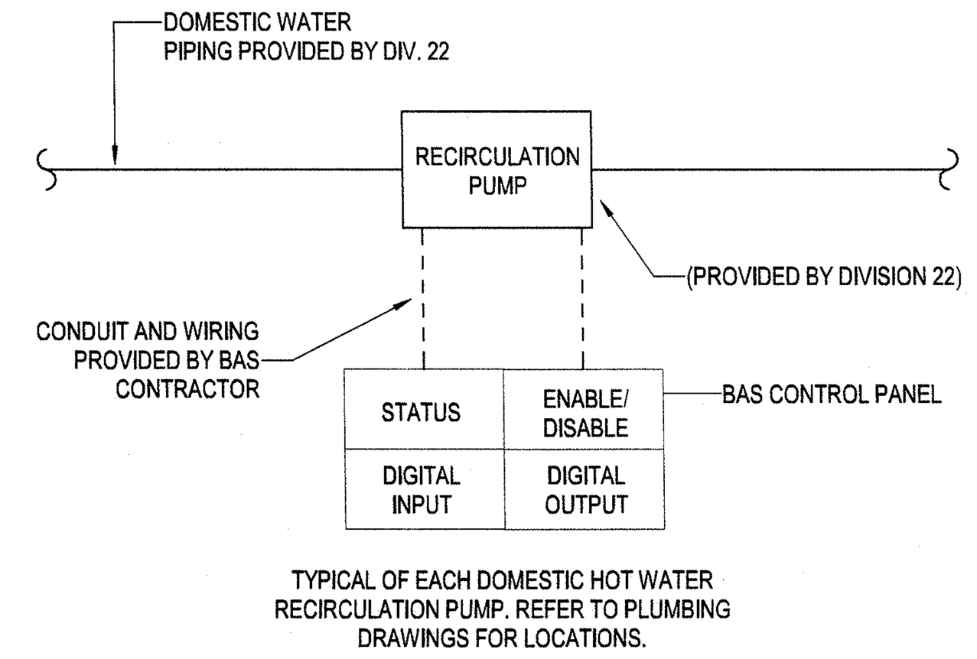
WALK-IN COOLER AND FREEZER

BAS SHALL MONITOR THE TEMPERATURES IN THE KITCHEN WALK-IN COOLER AND FREEZER. A HIGH LIMIT ALARM (ADJ) SHALL BE ESTABLISHED FOR EACH. WHEN THE TEMPERATURE EXCEEDS THE HIGH LIMIT, AN ALARM SHALL BE DISPLAYED AT THE FRONT END GRAPHIC.

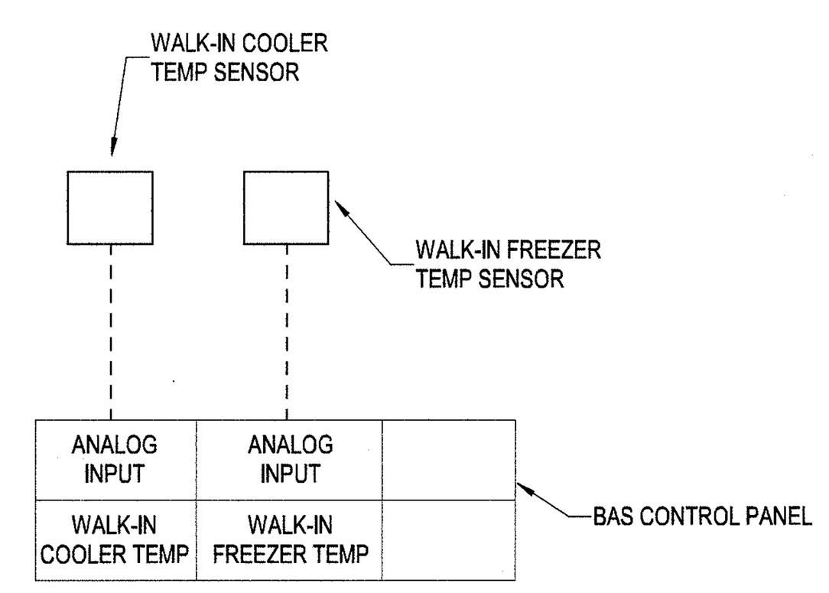
1



LIGHTING CONTROL SCHEMATIC

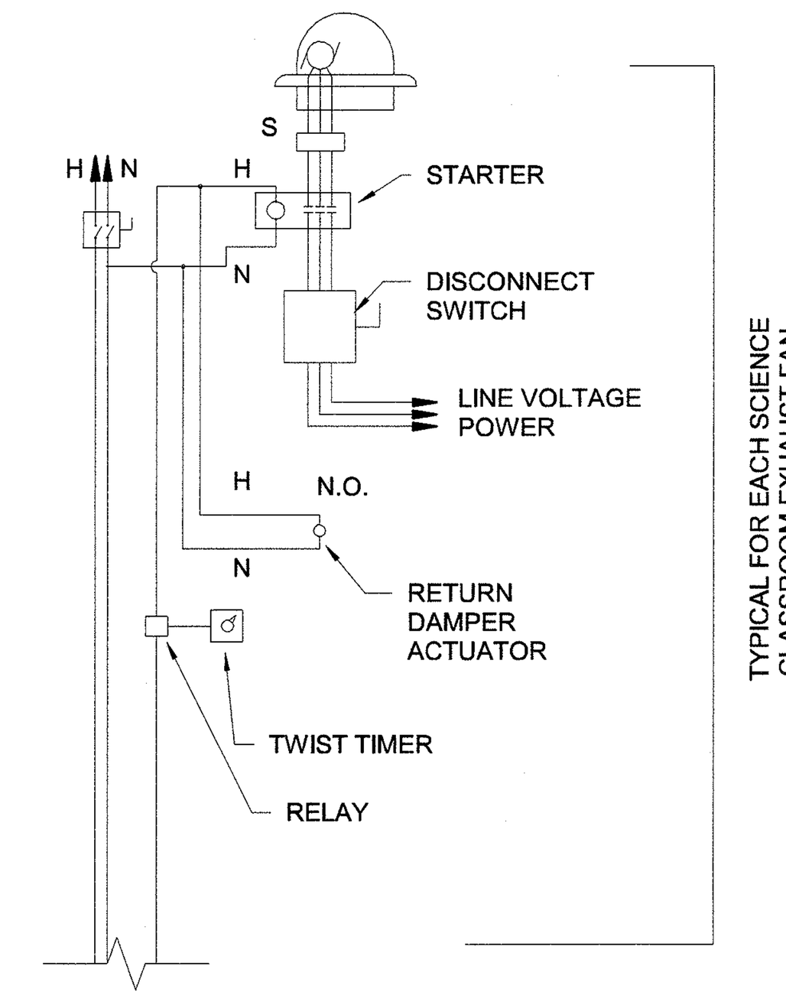


DOMESTIC HW RECIRCULATION PUMP MONITORING-TYPICAL



WALK-IN COOLER & FREEZER MONITORING

1



SCIENCE CLASSROOM FAN CONTROL

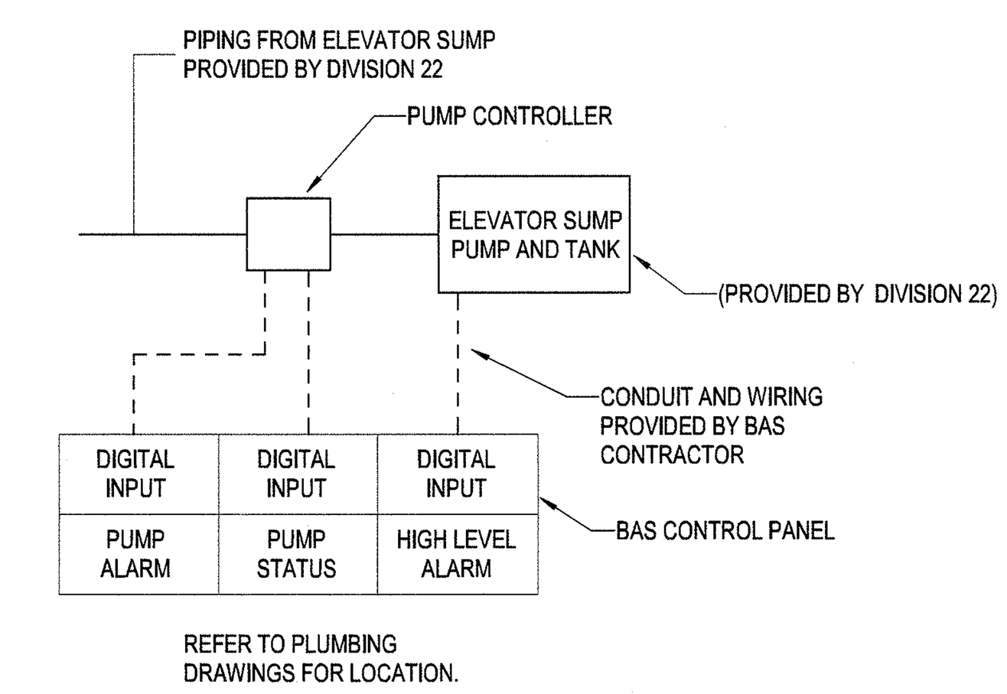
HOOD INTEGRATION POINTS LIST

ROOM TEMPERATURE	MONITOR
DUCT TEMPERATURE	MONITOR
FAN SPEED	MONITOR
FAN AMPERAGE	MONITOR
FAN POWER	MONITOR
VFD FAULTS	MONITOR
CONTROLLER FAULTS	MONITOR
FAN FAULTS	MONITOR
PCU FAULTS	MONITOR
PCU FILTER CLOG PERCENTAGES	MONITOR
FIRE CONDITION	MONITOR
CORE FIRE SYSTEM	MONITOR
BUILDING PRESSURES	MONITOR
PREP TIME BUTTON	MONITOR & CONTROL
FANS BUTTON	MONITOR & CONTROL
LIGHTS BUTTON	MONITOR & CONTROL
WASH BUTTON	MONITOR & CONTROL

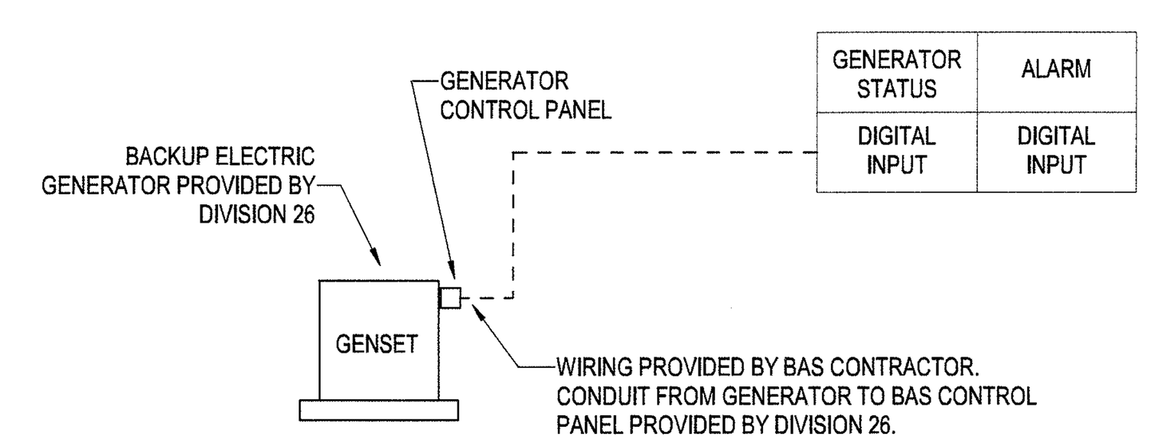
COORDINATE POINTS LIST WITH HOOD SUBMITTAL DURING SHOP DRAWING PHASE.

KITCHEN HOOD

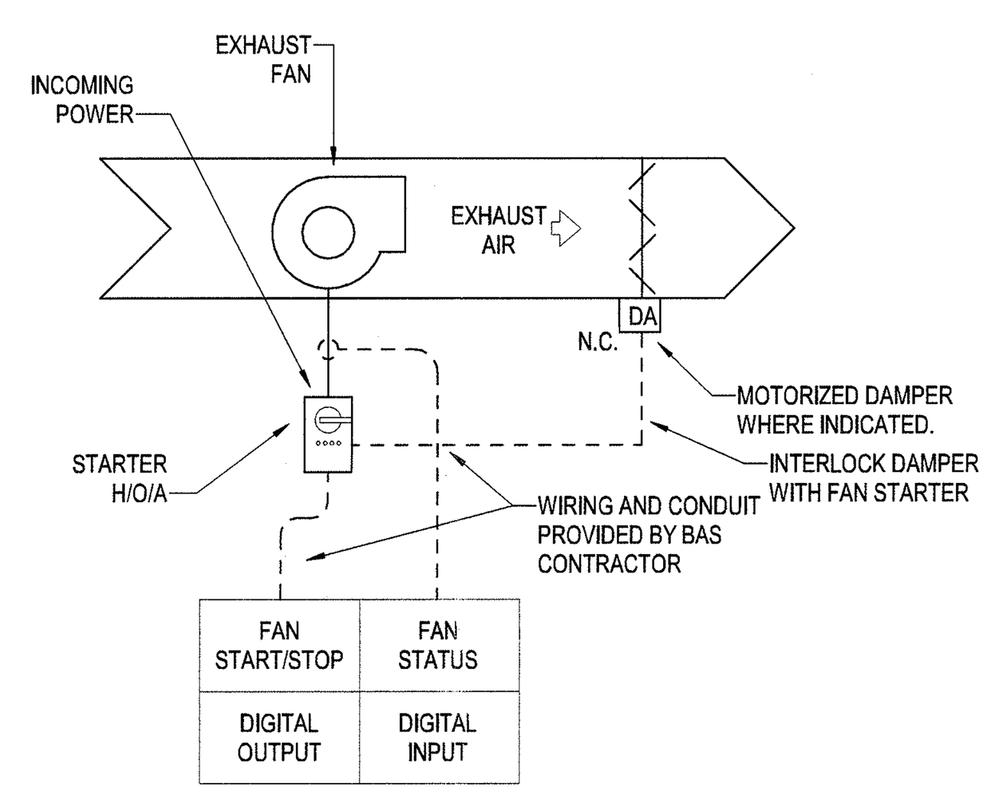
2



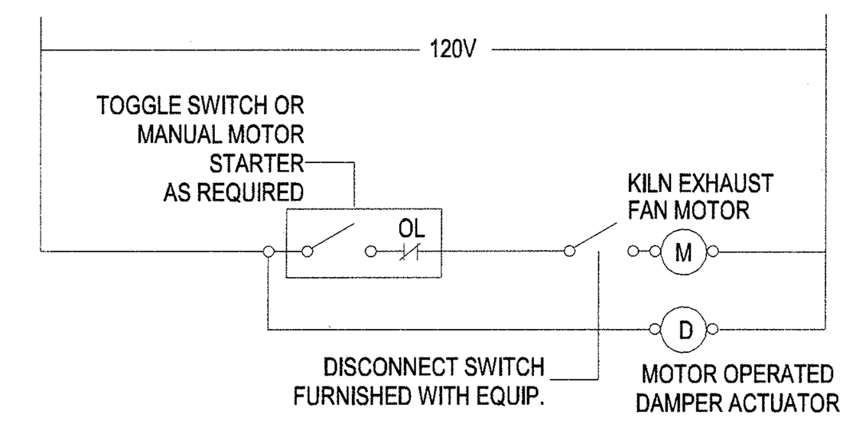
ELEVATOR SUMP PUMP MONITORING-TYPICAL



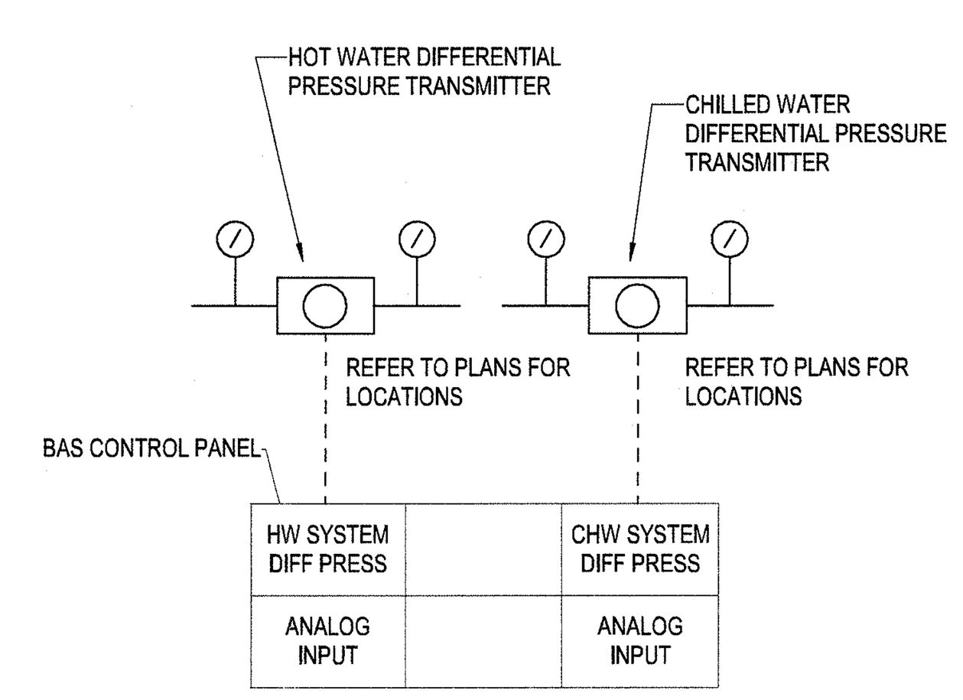
GENERATOR MONITORING



EXHAUST FAN-TYPICAL



KILN EXHAUST FAN



DIFFERENTIAL PRESSURE TRANSMITTERS-TYPICAL

smith sinnett ARCHITECTURE

T 919 781 8582
F 919 781 3979
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

pdc

Progressive Design Collaborative, ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-0080
PROJECT #17104
License# C-0183
pdcengineers.com

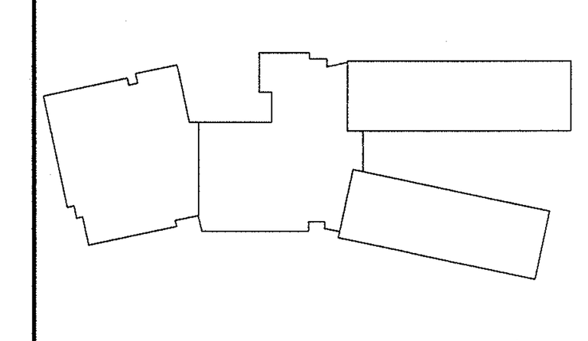
CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME II

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370



KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
2	06/14/19	ADDENDUM 03
1	05/30/19	ADDENDUM 01

DRAWN BY: Author
CHECKED BY: RA

MISCELLANEOUS SCHEMATICS

2017032 20 MAY 2019

M6-05

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6/10/2019 11:58:07 AM

Progressive Design Collaborative, Ltd
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989

NORTH CAROLINA PROFESSIONAL SEAL 045439 ENGINEER ROBERT A. CLARK

6/14/19

ADDENDUM 03 – ELECTRICAL

DATE: June 14, 2019

PROJECT: Trinity Middle School
PDC Project # 17104

This Addendum, applicable to the work designed below, shall be understood to be and is a change to the bid documents and shall be part of and included in the contract for the above referenced project. All General, Supplementary and Special Conditions, etc., as originally specified or as modified below shall apply to these items.

Changes to Electrical Specifications:

Specification 26 43 00, Page 2, Part 2, 2.01
- Added: Manufacturer SSI (An ILSCO Company)

Specification 26 77 62, Page 1
- Clarified Sound System shall be provided under the Base Bid and be 100% complete and operational upon project completion.

Changes to Electrical Drawings:

Drawing E0-07
- Revised: Dimming Riser Detail 06 to clarify 11 fixtures, Room Reference and Control Console model.

Drawing E1-01
- Revised: Switch locations in Vestibule 150 and Commons 100. Clarified Panels in Electrical 127.

Drawing E1-03
- Revised: Light fixtures in Media /Storage 306 to accommodate ceiling change.

Drawing E1-05
- Added: General Note A.

Drawing E1-06
- Revised: Note 11 and Added: Dimming Preset station.

Drawing E2-01
- Clarified Panel BL4 location in Electrical 127.

Drawing E2-10
- Revised: General Note 3 and Deleted: Key Note 29 on plan.

Drawing E3-03
- Revised: Ceiling device in Media/Storage 306 to accommodate ceiling change.

Drawing E4-01
- Added: Panel SBL5 to Power Riser.

END OF ADDENDUM 03 – ELECTRICAL

Attachments: Specification Sections (26 43 00, 26 77 62), Drawings (9)

SECTION 26 43 00
SURGE PROTECTIVE DEVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surge protective devices for service entrance locations.

B. Surge protective devices for distribution locations.

1.02 RELATED REQUIREMENTS

A. Section 26 05 26 - Grounding and Bonding for Electrical Systems.

B. Section 26 24 13 - Switchboards.

C. Section 26 24 16 - Panelboards.

1.03 REFERENCE STANDARDS

A. UL 1283 - Standard for Electromagnetic Interference Filters; Current Edition, Including All Revisions.

B. UL 1449 - Standard for Surge Protective Devices; Current Edition, Including All Revisions.

C. NFPA 70 - National Electrical Code; National Fire Protection Association, Including All Applicable Amendments and Supplements; 2017.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate size and location of overcurrent device compatible with the actual surge protective device and location to be installed. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to ordering equipment.

1.05 SUBMITTALS

A. Product Data: Include detailed component information, voltage, surge current ratings, repetitive surge current capacity, voltage protection rating (VPR) for all protection modes, maximum continuous operating voltage (MCOV), nominal discharge current (I-n), short circuit current rating (SCCR), connection means including any required external overcurrent protection, enclosure ratings, outline and support point dimensions, weight, service condition requirements, and installed features.
   1. SPDs with EMI/RFI filter: Include noise attenuation performance.

B. Shop Drawings: Include wiring diagrams showing all factory and field connections with wire and circuit breaker/fuse sizes.

C. Certificates: Manufacturer's documentation of listing for compliance with the following standards:
   1. UL 1449.
   2. UL 1283 (for Type 2 SPDs).

D. Field Quality Control Test Reports.

E. Manufacturer's Installation Instructions: Include application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

F. Operation and Maintenance Data: Include information on status indicators and recommended maintenance procedures and intervals.

G. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.

H. Project Record Documents: Record actual connections and locations of surge protective devices.

1.06 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

C. Product Listing Organization Qualifications: Third party agencies shall be amongst those accredited by the NCBCC (North Carolina Building Code Council) to label Electrical and Mechanical Equipment.

1.07 DELIVERY, STORAGE, AND PROTECTION

A. Store in a clean, dry space in accordance with manufacturer's written instructions.

1.08 FIELD CONDITIONS

A. Maintain field conditions within manufacturer's required service conditions during and after installation.

1.09 WARRANTY

A. Manufacturer's Warranty: Provide minimum five year warranty covering repair or replacement of surge protective devices showing evidence of failure due to defective materials or workmanship.

B. Exclude surge protective devices from any clause limiting warranty responsibility for acts of nature, including lightning, stated elsewhere.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Field-installed, Externally Mounted Surge Protective Devices:
   1. Current Technology; a brand of Thomas & Betts Power Solutions.
   2. Schneider Electric; Square D Brand Surgelogic Products.
   3. Liebert.
   4. SSI (An ILSCO Company)
   5. Approved equal.

B. Factory-installed, Internally Mounted Surge Protective Devices:
   1. Same as manufacturer of equipment containing surge protective device, to provide a complete listed assembly including SPD.

C. Source Limitations: Furnish surge protective devices produced by a single manufacturer and obtained from a single supplier.

2.02 SURGE PROTECTIVE DEVICES - GENERAL REQUIREMENTS

A. Description: Factory-assembled surge protective devices (SPDs) for 60 Hz service; listed, classified, and labeled as suitable for the purpose intended; system voltage as indicated on the drawings.

B. Protected Modes:
   1. Wye Systems: L-N, L-G, N-G, L-L.

C. UL 1449 Voltage Protection Ratings (VPRs):
   1. 208Y/120V System Voltage: Not more than 700 V for L-N, L-G, and N-G modes and 1,000 V for L-L mode.
   2. 480Y/277V System Voltage: Not more than 1,200 V for L-N, L-G, and N-G modes and 2,000 V for L-L mode.

D. UL 1449 Maximum Continuous Operating Voltage (MCOV): Not less than 115% of nominal system voltage.

E. Enclosure Environment Type per NEMA 250: As indicated on the drawings.

F. Mounting for Field-installed, Externally Mounted SPDs: Unless otherwise indicated, as specified for the following locations:
   1. Provide surface-mounted SPD where mounted in non-public areas or adjacent to surface-mounted equipment.

G. Equipment Containing Factory-installed, Internally Mounted SPDs: Listed and labeled as a complete assembly including SPD.
   1. Switchboards: See Section 26 24 13.
   2. Panelboards: See Section 26 24 16.

2.03 SURGE PROTECTIVE DEVICES FOR SERVICE ENTRANCE LOCATIONS

A. Unless otherwise indicated, provide field-installed, externally mounted or factory-installed, internally mounted SPDs.

B. List and label as complying with UL 1449, Type 1 when connected on line side of service disconnect overcurrent device and Type 1 or 2 when connected on load side of service disconnect overcurrent device.

C. Provide SPDs utilizing field-replaceable modular or non-modular protection circuits.

D. Surge Current Rating: Not less than 120 kA per mode/240 kA per phase.

E. Surge Current Rating:
   1. Ampacity: 2500 - 6000A 300 kA per mode 600 kA per phase.
   2. Ampacity: 1200 - 2000A 250 kA per mode 500 kA per phase.
   3. Ampacity: 600 - 1000A 200 kA per mode 400 kA per phase.
   4. Ampacity: 225 - 400A 150 kA per mode 300 kA per phase.
   5. Ampacity: 125 - 225A 100 kA per mode 200 kA per phase.

F. UL 1449 Nominal Discharge Current (I-n): 20 kA.

G. UL 1449 Short Circuit Current Rating (SCCR): Not less than the available fault current at the installed location as indicated on the drawings.

H. Opening of supplementary protective devices, internal or external, shall not be permissible during UL 1449 3rd Edition Nominal Discharge testing.

I. EMI/RFI Filtering: Provide EMI/RFI filter to attenuate electrical noise; listed as complying with UL 1283 for Type 2 SPDs (UL 1283 listing not available for Type 1 SPDs).
   1. Noise Attenuation: Not less than 40 dB at 100 kHz using MIL-STD-220 insertion loss test method.

J. Diagnostics:
   1. Protection Status Monitoring: Provide indicator lights to report the protection for each phase.
   2. Alarm Notification: Provide indicator light and audible alarm to report alarm condition. Provide button to manually silence audible alarm.
   3. Remote Status Monitoring: Provide Form C dry type contacts (normally open and normally closed) for remote annunciation of status.
   4. Surge Counter: Provide surge event counter with manual reset button, surge count retention upon power loss, and six digit LCD display that indicates quantity of surge events.

2.04 SURGE PROTECTIVE DEVICES FOR DISTRIBUTION LOCATIONS

A. Unless otherwise indicated, provide field-installed, externally mounted SPDs.

B. List and label as complying with UL 1449, Type 1 or Type 2.

C. Provide SPDs utilizing Non-Modular surge protection circuits.

D. Surge Current Rating: Not less than 80 kA per mode/160 kA per phase.

E. Surge Current Rating:
   1. Ampacity: 400 - 800A 150 kA per mode 300 kA per phase.
   2. Ampacity: 125 - 225A 100 kA per mode 200 kA per phase.
   3. Ampacity: 15 - 100A 50 kA per mode 100 kA per phase.

F. UL 1449 Nominal Discharge Current (I-n): 20 kA.

G. UL 1449 Short Circuit Current Rating (SCCR): Not less than the available fault current at the installed location as indicated on the drawings.

H. Diagnostics:
   1. Protection Status Monitoring: Provide indicator lights to report the protection status for each phase.
   2. Alarm Notification: Provide indicator light and audible alarm to report alarm condition. Provide button to manually silence audible alarm.
   3. Remote Status Monitoring: Provide Form C dry type contacts (normally open and normally closed) for remote annunciation of status.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that the service voltage and configuration marked on the SPD are consistent with the service voltage and configuration at the location to be installed.

C. Verify that electrical equipment is ready to accept connection of the SPD and that installed overcurrent device is consistent with requirements of drawings and manufacturer's instructions.

D. Verify system grounding and bonding is in accordance with Section 26 05 26, including bonding of neutral and ground for service entrance and separately derived systems where applicable. Do not energize SPD until deficiencies have been corrected.

E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Perform work in a neat and workmanlike manner.

B. Install products in accordance with manufacturer's instructions.

C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

D. Unless indicated otherwise, connect service entrance surge protective device on load side of service disconnect main overcurrent device.

E. Provide conductors with minimum ampacity not less than manufacturer's recommended minimum conductor size.

F. Install conductors between SPD and equipment terminations as short and straight as possible, not exceeding manufacturer's recommended maximum conductor length. Breaker locations may be reasonably rearranged in order to provide leads as short and straight as possible. Twist conductors together to reduce inductance.

G. Do not energize SPD until bonding of neutral and ground for service entrance and separately derived systems is complete in accordance with Section 26 05 26 where applicable. Replace SPDs damaged by improper or missing neutral-ground bond.

H. Disconnect SPD prior to performing any high potential testing. Replace SPDs damaged by performing high potential testing with SPD connected.

3.03 FIELD QUALITY CONTROL

A. Inspect and test in accordance with NETA ATS, except Section 4.

B. Perform inspections and tests listed in NETA ATS Section 7.19.1.

C. Procure services of a qualified manufacturer's representative to observe installation and assist in inspection, testing, and adjusting. Include manufacturer's reports with field quality control submittals.

3.04 CLEANING

A. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION 26 43 00

SECTION 26 77 62

SOUND SYSTEM

THIS SYSTEM SHALL BE PROVIDED UNDER THE BASE BID AND SHALL BE 100% COMPLETE AND OPERATIONAL UPON PROJECT COMPLETION.

THE SOUND SYSTEM SHALL PROVIDE FOR THE PICK-UP, PROCESSING, AMPLIFICATION AND DISTRIBUTION OF LIVE AND PRERECORDED PROGRAM MATERIAL. SOUND COVERAGE OF THE AUDIENCE AREA SHALL BE BY MAIN SPEAKERS. ONE ON EACH OUTSIDE STAGE PERIMETER AS WELL AS FILL IN SPEAKERS BEYOND WHERE THE CURTAIN CAN BE DRAWN TO SEPARATE THE ROOM.

AN ASSISTED LISTENING SYSTEM SHALL BE PROVIDED TO COMPLY WITH NCBS VOLUME 1C HANDICAP ACCESSIBILITY REQUIREMENTS.

THE SYSTEM SHALL CONSIST OF BOTH WIRELESS AND WIRED MICROPHONES. ALSO, INCLUDED THERE SHALL BE TWO MIXERS, CD/CD WRITER, DIGITAL PROCESSORS, EQUIPMENT STORAGE DRAWER, AMPLIFIERS, SPEAKERS, WALL JACKS, LOCK-ABLE WALL RACK WITH REQUIRED SPACING FOR EQUIPMENT SUPPLIED, POWER CONDITIONER, VENTED BLANKS, MIC CABLES AND ALL OTHER CABLING. ALL MISCELLANEOUS ITEMS SHALL BE INCLUDED FOR A COMPLETE OPERATIONAL SYSTEM. ALL COMPONENTS SHALL BE NEW AND OF THE LATEST DESIGN. ALL ITEMS SHALL BE PROFESSIONAL GRADE. ALL EQUIPMENT TO BE HOUSED IN ONE RACK. EACH PIECE OF RACK MOUNTED EQUIPMENT SHALL BE SEPARATED BY A 1.75" VENTED BLANK.

THE SPECIFICATIONS CALL FOR SPECIFIC PRODUCTS (BASIS OF DESIGN) TO ESTABLISH QUALITY AND PERFORMANCE CRITERIA FOR THIS PROJECT. OTHER EQUIPMENT WILL BE CONSIDERED THAT MEET THE CRITERIA. SUBMIT DETAILED CUT SHEETS 10 DAYS PRIOR TO BID DATE. APPROVAL MUST BE GIVEN BEFORE SUBMISSIONS WILL BE ALLOWED. ALONG WITH OTHER SUBMITTAL REQUIREMENTS THE CONTRACTOR MUST PROVIDE A LIST OF AT LEAST 5 PROJECTS OF SIMILAR DESIGN.

5.01 PRODUCTS

A. Mixer - The basis of design for MIXER is BOGEN VMIX, with 8 module bays capable of accepting advanced plug-in modules, with 2 bays capable of accepting signal-processing plug-in output modules. Each channel shall have its own independent volume control, and LED signal/clip indicator. The mixer shall have a master volume control, bass and treble controls, an 11-segment LED output level switch (-50, -10, and +4dBu), circuit breaker with reset capability, one power indicator, a grounded un-switched AC convenience receptacle with a 500W maximum capacity provided for external equipment. The mixer shall be capable of being bridged and muted. The mixer shall be rack mountable (with RPK87 rack mount kit). The mixer shall come with a 3 year parts warranty, (2RU each). Approved manufacturers: Bogen, Mackle, Allen Heath.
   1. QUANTITY - TWO

B. CD/CD Recorder - The basis of design for CD/CD Writer is Tascam model CDRW750. Approved manufacturers: Denon, TDK, Tascam. Features required are:
   1. Uses professional grade and consumer grade CDs
   2. CD-text reading and writing capability
   3. Unbalanced RCA Analog I/O
   4. SPDIF coax and optical digital I/O
   5. Wireless remote
   6. Repeat play
   7. Digital gain adjustment
   8. Head phone output
   9. QUANTITY - ONE

C. Equalizer - The basis of design for Digital Equalizer is SHURE DFR22. Approved manufacturers: Shure, Peavey, Ashly Protea. The device shall have 2 analog inputs and 2

analog outputs. Phoenix (Euroblock) and XLR connectors shall be available on the back panel for each input and output. The inputs shall accept line level signals up to at least +24dBu. The outputs shall have a clipping level to +24dBu and shall provide analog pads for lowering the output clipping level to +12dBu and 6dBu. The frequency response of the device shall deviate no more than 1 dB from 20 Hz to 20 kHz. Analog to digital conversion and digital to analog conversion shall be performed at a resolution of 24-bit with a 48 kHz sampling rate. The overall dynamic range of the device from input to output shall be >110 dBa from 20Hz to 20Khz. The device shall have an internal auto-switching power supply capable of accepting an operating voltage from 100-240 VAC, 50/60 Hz. The unit shall be programmable. The front panel shall display an LED for each feedback filter. (1RU)

1. QUANTITY - ONE

D. Assistive Listening System - Basis of design for Assistive Listening System is Drake ALT-1000 - Receivers DRAKE MR306. Approved manufacturers: Drake, Williams Sound, Phonic Ear. The transmitter shall operate in the 72-76 MHz Auditory Assistance Band as approved by the FCC. The operating frequency and mode: “Stereo” or “Mono” shall be shown on an LCD display and be programmable by the front panel “up” and “down” buttons. The transmitter shall be FCC approved. The transmitter shall permit fitting of a 7” flexible antenna mounted through the top cover of the rack unit. The transmitter shall have XLR connections for balanced audio inputs and RCA Phono connectors for unbalanced audio inputs. There shall be a front panel control to adjust the audio input level with an LED (OVER) MODULATION indicator. There shall be a ¼” stereo monitor jack with volume control. The transmitter shall be powered by an external AC line to 12 VDC power adapter. The transmitter shall be rack mountable. Provide number of receivers requested. (1RU)

1. Occupancy capacity (951). (1) Transmitter, 35 Receivers (9 shall be hearing aid compatible)

E. Wireless MIC Systems - Basis of Design for WIRELESS SYSTEMS is SHURE SLX 24s with SM-58 handhelds and WL 185 lapels. Approved manufacturers: Shure, Telex, Lectrosonics. The wireless system shall operate in the UHF band between 698 MHz and 865 MHz, with the specific available frequency range being dependent on the user’s location. Effective range of the system shall be 300ft under optimal conditions. Each system shall allow selection of over 960 operating frequencies across 24 MHz of bandwidth in order to avoid RF interface. The process of synchronization shall be simple and instantaneous. Each transmitter shall be powered by two AA batteries. Transmitters shall have a power on-off/mute switch, as well as a timed, backlit LCD showing frequency group and channel, locked/unlocked status, and battery strength. The receiver shall have a multi-function display showing group, channel, frequency, transmitter battery, and locked/unlocked status. The system shall use diversity technology to improve reception, minimize signal dropouts, and achieve the best possible signal-to-noise ratio. The receiver shall include an audio level meter and an infrared port for system synchronization. (1RU)

1. QUANTITY - SLX 24 RECEIVERS - 4 SM-58 TRANSMITTERS - 2
   WL185 LAPELS - 2

F. Antenna Combiner - Basis of Design for ANTENNA COMBINER is SHURE MODEL UA844US. Approved manufacturers: Shure, Telex, Sennheiser. The SHURE MODEL UA844US shall be a wide band four-way active antenna splitter and power distribution system with external power supply. The antenna system shall have the capability to be rack mounted.

1. QUANTITY - ONE

G. BASIS of Design for OVERHEAD CLUSTER SPEAKERS is APOGEE AFI4s. Approved manufacturers: Apogee, Electro-voice, Community. The speakers shall have a 12” permanent magnet cone type driver treated with waterproofing compound that provides resistance to moisture enabling long-term stability of cone resonance and cone mass parameters. Driver also treated with Ferrofluid for greater power handling capability, low distortion, and control of short term impedance rise. Voice coil shall measure 1.75” and also be treated with Ferrofluid. There shall be two handles: one on top and one on the bottom. These handles shall not contain any moving parts. Speaker grills shall be constructed of perforated steel. Plastic or polymer grilles will not be accepted. Cabinet construction shall be made of multi-ply hardwood. Each speaker

shall have a maximum continuous rating of 200 watts at 8 ohms. All necessary mounting hardware to be included. Main speakers to be connected to CH 1 on main amp.
1. QUANTITY - TWO

H. Fill-In Speakers - Basis of Design for FILL-IN SPEAKERS is Bogen OCS1 (recessed) (70 Volt). Approved manufacturers: Bogen, JBL, Electro-Voice. The FILL-IN SPEAKERS shall be of surface design, consisting of a 6.5" low frequency transducer, a coaxsually-mounted ¾" high frequency transducer and frequency dividing network installed in a ported enclosure. The low frequency voice coil shall be 1" in diameter and the coil former shall be of aluminum for maximum heat dissipation. Rated power shall be at least 75 watts continuous pink noise power. The high frequency transducer shall be horn -loaded to more evenly cover a minimum110 degree polar are conical area. The backcan shall be constructed of formed steel and the baffle of UL94V-0 fire rated medium impact polystyrene. An enclosed terminal box shall be included proving strain relief for use with either plenum=rated wire, ½" conduit or flexible conduit up to 7/8" outside diameter. The external wiring shall be accomplished via a removable lockable wiring connector with screw-down terminals to provide both secure wire terminations and prewiring capability before loudspeaker installation. An attachment loop shall be provided on the back panel for cabling to building structure as a secondary point of support. The system shall include a support backing plate to reinforce the ceiling material and tile support rails for use with standard ceiling tiles. The speakers shall have a 70.7 volt transformer with selectable taps
1. QUANTITY - TWELVE

I. Monitor Speaker - Basis of Design for MONITOR SPEAKER is APOGEE AFI - Point 5. Approved manufacturers: Apogee, Electro-Voice, Community. The monitor speaker shall have one low frequency 5.25" permanent magnet cone type driver and one .5" Mylar tweeter. Connectors shall be of the spring type. The grill shall have a highly durable, quality finish on perforated steel. Nominal impedance shall be 8 ohms with maximum power handling of 60W continuous/240W peak. Speaker shall be hung on inside of proscenium wall facing the stage. Speaker shall be connected to CH. 2 of the main amplifier. Music source only for input to this channel.
1. QUANTITY - ONE

J. Main Amplifier - Basis of Design for MAIN AMPLIFIER is APOGEE CA-2000. The MAIN AMPLIFIER shall contain the latest in power MOSFET technology. Approved manufacturers: Apogee, Crest-Audio, Crown. All controls shall be located on the rear of the unit to avoid being tampered with. The air intake and air filter shall be located on the front panel for easy access when cleaning is required. The front end circuitry shall feature an advanced clip eliminator to reduce distortion. Speaker protection shall be provided by means of an ultra-fast crowbar unit. The amplifier shall be equipped with adjustable speed fans for quiet, efficient cooling and feature internally configurable AC mains for 120 VAC or 230 VAC. The MAIN AMPLIFIER shall have a rating of 180 watts at 8 ohms. (2RU)
1. QUANTITY - ONE

K. Fill-In Speaker Amplifier - Basis of Design for FILL-IN AMPLIFIER is BOGEN V-250. Approved manufacturers: Bogen, Crest-Audio, QSC. The FILL-IN speaker amp shall have a power rating of 60 watts. The amplifier shall provide one low-impedance balanced microphone input, one dedicated Hi-Z auxiliary input, and one dedicated telephone line input as well as a fourth input that is switch selectable to be either a microphone or auxiliary input. The microphone inputs shall be equipped with filters to protect against RF interference, independent volume controls for each input as well as TREBLE control. The amplifier shall contain a TEL volume control to adjust the telephone paging level and a VOX volume control to adjust the TEL input signal trigger point for automatic muting of the AUX input. The amplifier shall provide output impedances of 4 - (direct), 8, 16-ohm speaker systems as well as 25V and 70V constant voltage systems. Two high-impedance outputs shall be provided to drive a tape recorder or booster amplifier and, when used with an accessory transformer, to feed a 600-ohm telephone line. The amplifier shall contain a thermostat capable of resetting the power transformer to protect against heat build-up and short-circuited or overloaded connections. Included rack mounts for standard rack mounting. (2 RU)

1. QUANTITY - ONE

L. Wired Microphone - Basis of Design for HANDHELD MICS is Shure SM58s. Approved manufacturers: Shure, Audio-Technology, EV. The HANDHELD MICS shall be unidirectional with a frequency response from 50 to 15,000 HZ. Rated impedance shall be 150 ohms low impedance. The mic connection point shall be by a 3 pin XLR connector. The mic element shall be covered by a steel mesh grill.
   1. QUANTITY - TWO

M. Lockable Drawer - Basis of Design for LOCKABLE DRAWER is LOWELL L18-193L. Approved manufacturers: Lowell, Atlas, Middle Atlantic. The drawer is 19”W for rack mount use. Drawer shall have panel space height of (2RU) and a maximum extension of 15.375” Construction shall be welded 16 gauge USA steel with ball bearing slides and positive stops. Load capacity shall be 50LBS. Finish shall be black powder epoxy.
   1. QUANTITY - ONE

N. Power Conditioner - Basis of Design for POWER CONDITIONER shall be an AVLEX PC-08. Approved manufacturers: Avlex, Furman, Monster. The POWER CONDITIONER shall have eight switched AC outlets. Also, the conditioner shall have two light modules with dimming capability, adjustable swivel and pull out positioning. The eight circuits shall be rated at 15 amps, equivalent to 1800 watts at 120 volts.
   1. QUANTITY - ONE

O. Equipment Rack - Basis of Design for EQUIPMENT RACK is LOWELL L260 SERIES. Approved manufacturers: Lowell, Atlas, Middle Atlantic. The EQUIPMENT RACK shall be fully welded 16 gauge US steel with vented side, a 14 gauge steel bottom and reinforcement at all load bearing junctures. Front and rear mounting rails shall be fixed in place. Top entry and a 6” deep rear conduit plane for knockouts shall be provided. Rack space requirements will be determined by individual contractor.
   1. QUANTITY - ONE

P. Floor Rack Diagram -

Q. FLOOR RACK (Refer to A.3 for Blank Panels)

ASSITIVE LISTENING TRANSMITTER
POWER CONDITIONER
8 CHANNEL POWER VECTOR MIXER
8 CHANNEL POWER VETOR MIXER
CD/CD WRITER
WIRELESS HANDHELD RECEIVERS
WIRELESS HANDHELD RECEIVERS
STORAGE DRAWER W/LOCK
DIGITAL EQUALIZER
ANTENNA COMBINER
AMPLIFIER 1 (MAIN)
AMPLIFIER 2 (FILL-IN SPEAKER)

R. Microphone Stands - Basis of Design for MICROHONE STANDS is BOGEN SF4s. Approved manufacturers: Bogen, Exo, Tascam. The MICROPHONE STANDS shall be full height professional grade with a low profile base black in color. The stands shall be constructed of 5/8” and 7/8” diameter heavy-duty welded cold rolled tubing with 5/8” - 27 male thread termination to accommodate standard microphone holders. Top and bottom lock-nut rings are included for versatile and secure positioning. The one-piece low silhouette cast iron includes anti-tip stabilizers.
   1. QUANTITY - TWO

S. Microphone Plates (Jacks) - Basis of Design for MICROPHONE PLATES is RAPCO SP1-DF. Approved manufacturers: Rapco, Switchcraft, Shure. The MICROPHONE PLATES shall be single gang stainless steel with one female XLR jack mounted on plate. Three on the wall below the front edge of stage evenly spaced across the width of the stage. One on the stage right wall, one on the stage -left wall, and one on the back wall of the stage. Floor pockets or floormounted jacks will NOT be allowed.
   1. QUANTITY - SIX

T. Main Speaker Cable - Basis of Design for MAIN SPEAKER CABLE is BELDON 5000UE. Approved manufacturers: Beldon, Monster, Tappan or equal. The MAIN SPEAKER CABLE shall be 12 AWG copper cable with conductors. The cable must be UL listed and be made in the USA. Cables installed in a plenum environment must be plenum rated, otherwise PVC jacket will be accepted. Each speaker shall have its own individual homerun.

U. Monitor Speaker Cable - Basis of Design for MONITOR SPEAKER CABLE is TAPPAN P40020.1. Approved manufacturers: Beldon, Monster, Tappan or equal. The MONITOR SPEAKER CABLE shall be a 18 AWG 7 - strand copper cable with two copper conductors. The cable must be UL listed and be made in USA. Cables installed in a plenum environment must be plenum rated, otherwise PVC jacket will be accepted.

V. Fill In Speaker Cable - Basis of Design for FILL IN SPEAKER CABLE is TAPPAN P40020.1. Approved manufacturers: Tappan, Beldon, monster or equal. The FILL IN SPEAKER CABLE shall be a 18 AWG 7 - strand copper cable with two copper conductors. The cable must be UL listed and be made in USA. Cables installed in a plenum environment must be plenum rated, otherwise PVC jacket will be accepted. Fill In Speakers may be daisy chained.

W. Microphone Field Cable - Basis of Design for Microphone Cable is TAPPAN R20008.1. Approved manufacturers: Tappan, Beldon, monster or equal. The MICROPHONE CABLE shall be a 22 AWG shielded 7 strand 1 pair copper cable. The cable must be UL listed and made in USA. Cables installed in a plenum environment shall be plenum rated, otherwise PVC will be accepted. All microphone cables to be individually homerun.

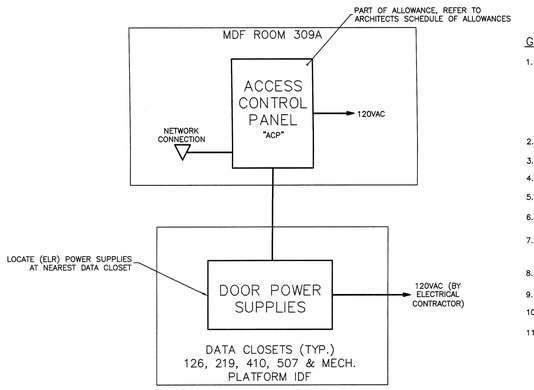
X. Microphone Portable Cable - The MICROPHONE PORTABLE CABLE shall have 22 AWG 7 strand center conductors. The conductors shall have a 95% low loss spiral wound shield with a black ultra-flexible rubber jacket. Cables shall be terminated with a three pin female XLR connector on one end a three pin XLR male connector on the other end. 25” cables shall be included.
   1. QUANTITY - FOUR

5.02 EXECUTION

A. A qualified “System Contractor” shall install the sound system complete except for the conduit/raceway. “System Contractor” shall have 5 years’ experience in the specific field of sound system installations of this kind. “System Contractor” shall submit single line drawings showing equipment locations and interconnections between all equipment supplied.

B. The system shall be installed using the latest technology and with good engineering practices. All cables shall be tested for opens, shorts and grounds prior to the hook-up of any cables to equipment. The system shall be balanced for optimum coverage for the room. Digital EQ shall be set and locked.

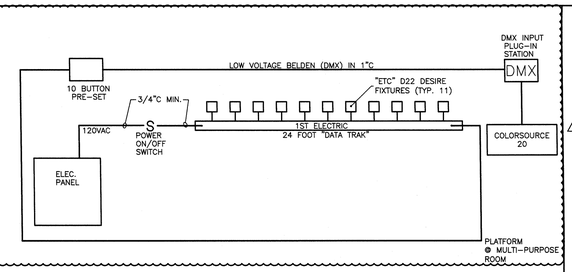
END OF SECTION 26 77 62



GENERAL NOTES:

1. ALL WORK SHALL BE COORDINATED BETWEEN OWNER, ARCHITECT, ELECTRICAL CONTRACTOR, OWNER'S ACCESS CONTROL CONTRACTOR AND DOOR HARDWARE CONTRACTOR PRIOR TO ROUGH-IN. A PRE-INSTALLATION MEETING SHALL OCCUR PRIOR TO INSTALLATION. AN ALLOWANCE AS IDENTIFIED IN THE ARCHITECTS SCHEDULE OF ALLOWANCES IS PROVIDED FOR THE ACCESS CONTROL SYSTEM. ALL ROUGH-INS, CONDUIT OUTLET BOXES, 120VAC SHALL BE PROVIDED AS PART THE CONTRACT AND NOT THE ALLOWANCE. THE ALLOWANCE WILL COVER ALL CARD READERS, HEAD-END EQUIPMENT, LOW VOLTAGE WIRING, AND ANY ACCESSORIES REQUIRED FOR A 100% COMPLETE SYSTEM. REFER TO THE DOOR HARDWARE SPECIFICATION / SCHEDULE. IF THERE ARE ANY COMPONENTS THAT ARE NOT SPECIFIED IN THE DOOR HARDWARE SPECIFICATIONS THEN IT SHALL BE INCLUDED IN THE ALLOWANCE. SEE ARCHITECTS SCHEDULE FOR ALLOWANCES.
2. REFER TO DOOR HARDWARE SPECIFICATION.
3. ALL ROUGH-INS SHALL BE COORDINATED WITH THE OWNER AND ACCESS CONTROL SYSTEM CONTRACTOR HIRED UNDER THE ALLOWANCE.
4. AS-BUILT DRAWINGS SHALL BE SUBMITTED AS PART OF O&M MANUALS.
5. POWER SUPPLIES SHALL BE LOCATED AT IDF/MDF CLOSETS AS REQUIRED FOR EASE OF MAINTENANCE BY RANDOLPH MAINTENANCE.
6. ALL 120VAC POWER THAT IS REQUIRED FOR SYSTEM SHALL BE COORDINATED AND PROVIDED BY THE ELECTRICAL CONTRACTOR.
7. DOOR DETAILS E0-07/05/07 & /09 ARE FOR REFERENCE ONLY. THE INSTALLATION REQUIREMENTS SHALL BE AS PER DOOR HARDWARE REQUIREMENTS. CARD READERS, STRIKES, POWER SUPPLIES, REX MOTIONS AND ASSOCIATED CONDUIT AND WIRING SHALL BE COORDINATED CLOSELY BETWEEN TRADES.
8. CARD READERS MOUNTED IN SINGLE GANG BOX WITH 3/4" CONDUIT TO JUNCTION BOX AND/OR CEILING VOID. COORDINATE CLOSELY.
9. ALL REX LOCATIONS, DOOR POSITION SWITCHES SHALL BE COORDINATED AND ROUGHED-IN BY THE ELECTRICAL CONTRACTOR.
10. REFER TO ARCHITECTURAL DOOR SCHEDULE AND ELECTRICAL PLANS FOR DOOR ACCESS CONTROL LOCATIONS.
11. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OWNER/OTHERS AND PROVIDE 3/4" RACEWAY FROM DOOR FRAMES TO ALLOW FOR THE DOOR CLOSER/HOLDERS TO BE WIRED INTO THE OWNER'S ACCESS CONTROL SYSTEM. APPLICABLE AREAS: (2) DOUBLE DOORS VESTIBULE 201, (2) DOUBLE DOORS VESTIBULE 302, (2) DOUBLE DOORS VESTIBULE 402, (2) DOUBLE DOORS VESTIBULE 501.

DETAIL NOT TO SCALE — DOOR ACCESS CONTROL SYSTEM RISER — **08**



NOTES:

1. THIS PLATFORM LIGHTING SYSTEM DESIGN BASIS IS SYSTEM AS MANUFACTURED BY ELECTRONIC THEATER CONTROLS ("ETC"). OR APPROVED EQUAL. EQUAL MANUFACTURER'S SHALL BE RESPONSIBLE FOR FURNISHING ALL PARTS, PIECES AND COMPONENTS REQUIRED SO THAT THE EQUAL PRODUCT PERFORMS IN AN EQUIVALENT MANNER AS THE SYSTEM SPECIFIED. EQUIVALENT SYSTEMS SHALL BE SUBMITTED 10 DAYS PRIOR TO BID FOR CONSIDERATION AND APPROVAL.
2. THIS SYSTEM SHALL INCLUDE ALL DEVICES, CONSOLE AND EQUIPMENT FOR A 100% COMPLETE AND OPERABLE SYSTEM.
3. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONDUIT, POWER CABLE, LOW VOLTAGE CABLES, SWITCHES AND MOUNT AND INSTALL ALL EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE EQUIPMENT SUPPLIER FOR THIS INSTALLATION SUCH THAT THE SUPPLIER (ETC) IS INVOLVED CLOSELY WITH THE INSTALLATION. THE LIGHTING SYSTEM SHALL BE PURCHASED THRU A SYSTEMS INTEGRATOR (BARBIZON, ATLAS-STAGEWORKS OR BANDIT)
4. THE SYSTEM SHALL BE 100% TESTED AND VERIFIED PRIOR TO OWNER TRAINING.
5. LOCATIONS OF DATA TRAK SHALL BE COORDINATED CLOSELY TO AVOID INTERFERENCES. INTEGRATOR "EQUIPMENT PROVIDER SHALL LOCATE TRAK FOR OPTIMUM PERFORMANCE. TRACKS SHALL BE SUPPORTED SECURELY FROM STRUCTURE.
6. ALL WIRING SHALL BE IN CONDUIT.
7. THE SYSTEM SHALL BE PROVIDED WITH ALL BUTTON STATION, CONTROL CONSOLE, DMX CONNECTION, LOW VOLTAGE WIRING, LINE VOLTAGE WIRING, CONNECTORS, FEEDERS, FIXTURES, TRACKS, SUPPORT ACCESSORIES, ETC FOR A COMPLETE AND OPERATIONAL TRACK LIGHTING SYSTEM.

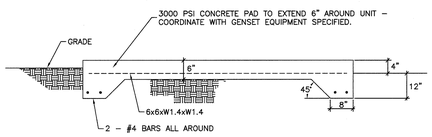
DETAIL NOT TO SCALE — PLATFORM LED DIMMING RISER — **06**

NOT USED

DETAIL NOT TO SCALE — **04**

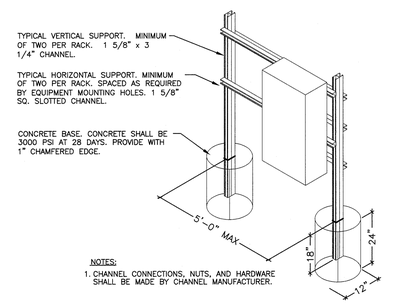
NOT USED

DETAIL NOT TO SCALE — **03**



GENERATOR PAD

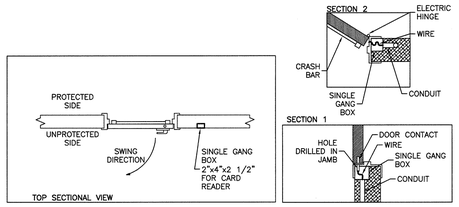
DETAIL NOT TO SCALE — GENERATOR PAD — **02**

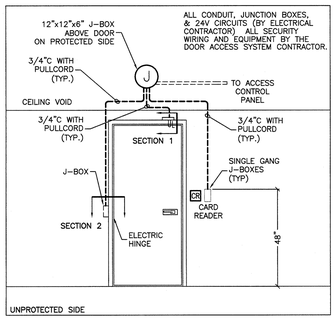


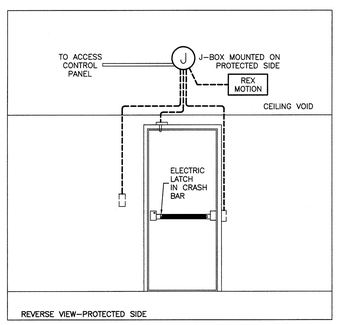
NOTES:
1. CHANNEL CONNECTIONS, NUTS, AND HARDWARE SHALL BE MADE BY CHANNEL MANUFACTURER.

H-FRAME CONSTRUCTION DETAIL
NOT TO SCALE

DETAIL NOT TO SCALE — H-FRAME FOR PANEL MOUNTING — **01**



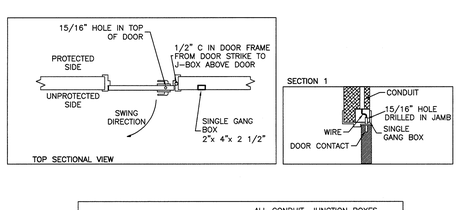


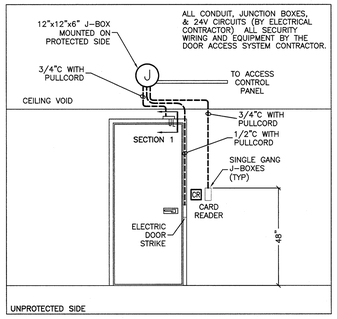


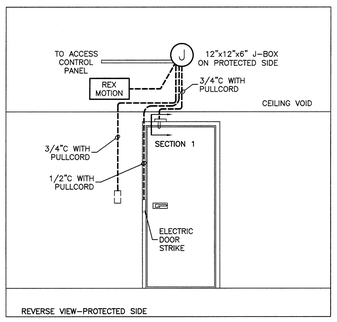
GENERAL NOTES:

1. REFER TO DOOR HARDWARE SPECIFICATION FOR DOOR HARDWARE.
2. THE INSTALLATION OF ALL CONDUIT, WIRING, JUNCTION BOXES, TERMINATIONS, CARD READERS AND IEI EQUIPMENT SHALL BE COORDINATED BETWEEN THE ELECTRICAL, SECURITY AND DOOR HARDWARE CONTRACTORS PRIOR TO INSTALLATION.
3. POWER SUPPLIES SHALL BE LOCATED IN READILY ACCESSIBLE LOCATION AT NEAREST NETWORK CLOSET, NOT ABOVE CEILINGS.
4. COORDINATE CLOSELY, PRIOR TO ROUGH-IN WITH THE SECURITY CONTRACTOR HIRED UNDER THE ALLOWANCE.

DETAIL NOT TO SCALE — EXTERIOR SINGLE DOORS W/CRASH BAR — **09**



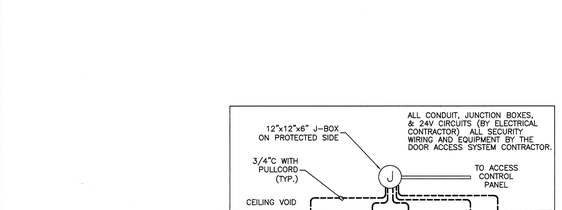


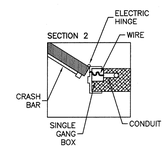


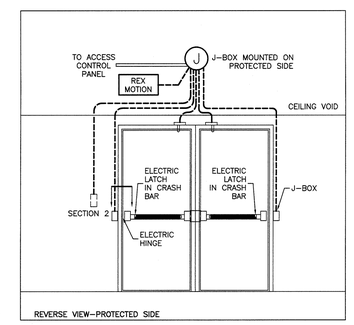
GENERAL NOTES:

1. REFER TO DOOR HARDWARE SPECIFICATION FOR DOOR HARDWARE.
2. THE INSTALLATION OF ALL CONDUIT, WIRING, JUNCTION BOXES, TERMINATIONS, CARD READERS AND ACCESS CONTROL EQUIPMENT SHALL BE COORDINATED BETWEEN THE ELECTRICAL, SECURITY AND DOOR HARDWARE CONTRACTORS PRIOR TO INSTALLATION.
3. POWER SUPPLIES SHALL BE LOCATED IN READILY ACCESSIBLE LOCATION AT NEAREST NETWORK CLOSET, NOT ABOVE CEILINGS.
4. THIS DOOR DETAIL IS A GENERAL DETAIL AND DOES NOT REFLECT THE ACTUAL DOOR PROVIDED. THE CONTRACTORS SHALL COORDINATE WITH ALL APPLICABLE TRADES AND INCORPORATE ALL REQUIRED ACCESS CONTROLS FOR A COMPLETE AND 100% OPERATIONAL DOOR.
5. COORDINATE CLOSELY, PRIOR TO ROUGH-IN WITH THE SECURITY CONTRACTOR HIRED UNDER THE ALLOWANCE.

DETAIL NOT TO SCALE — EXTERIOR SINGLE DOORS W/ELECTRICK STRIKE — **07**







GENERAL NOTES:

1. REFER TO DOOR HARDWARE SPECIFICATION FOR DOOR HARDWARE.
2. THE INSTALLATION OF ALL CONDUIT, WIRING, JUNCTION BOXES, TERMINATIONS, CARD READERS AND ACCESS CONTROL EQUIPMENT SHALL BE COORDINATED BETWEEN THE ELECTRICAL, SECURITY AND DOOR HARDWARE CONTRACTORS PRIOR TO INSTALLATION.
3. POWER SUPPLIES SHALL BE LOCATED IN READILY ACCESSIBLE LOCATION AT NEAREST NETWORK CLOSET, NOT ABOVE CEILINGS.
4. THIS DOOR DETAIL IS A GENERAL DETAIL AND DOES NOT REFLECT THE ACTUAL DOOR PROVIDED. THE CONTRACTORS SHALL COORDINATE WITH ALL APPLICABLE TRADES AND INCORPORATE ALL REQUIRED ACCESS CONTROLS FOR A COMPLETE AND 100% OPERATIONAL DOOR.
5. COORDINATE CLOSELY, PRIOR TO ROUGH-IN WITH THE SECURITY CONTRACTOR HIRED UNDER THE ALLOWANCE.

DETAIL NOT TO SCALE — EXTERIOR DOUBLE DOORS W/CRASH BARS — **05**

smith sinnett ARCHITECTURE
T 919 781 8382
F 919 781 0970
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

pdc
Progressive Design Collaborative, ltd.
3101 Poplarwood Court, Suite 330
Raleigh, North Carolina 27604
919.790.9080

PROJECT #17104
License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL SEAL 045439 ENGINEER ROBERT A. CLARK 6/13/19

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME II

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370

KEY PLAN
NO SCALE

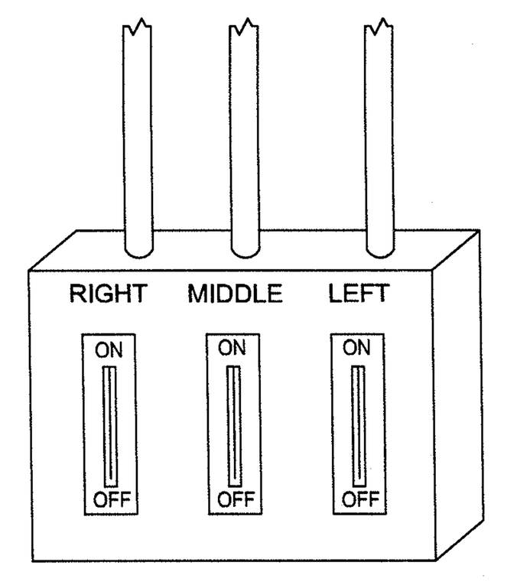
ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03
DRAWN BY:		JPT
CHECKED BY:		RAC

ELECTRICAL DETAILS

2017032 — 20 MAY 2019

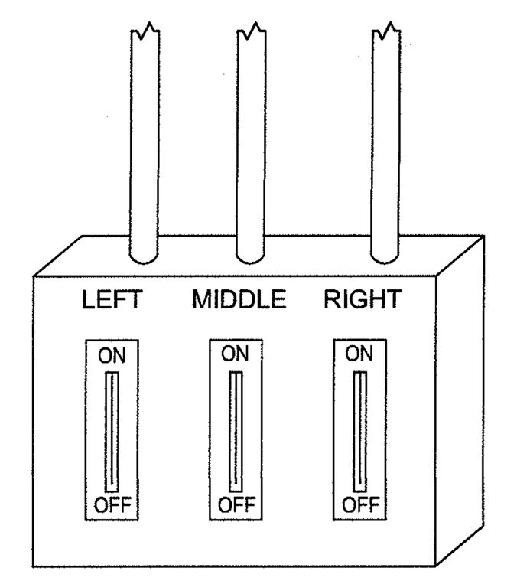
E0-07

Project # 17104
Sheet# E0-07
Plotted By: chris
Plotted: June 13, 2019 @ 11:56 AM



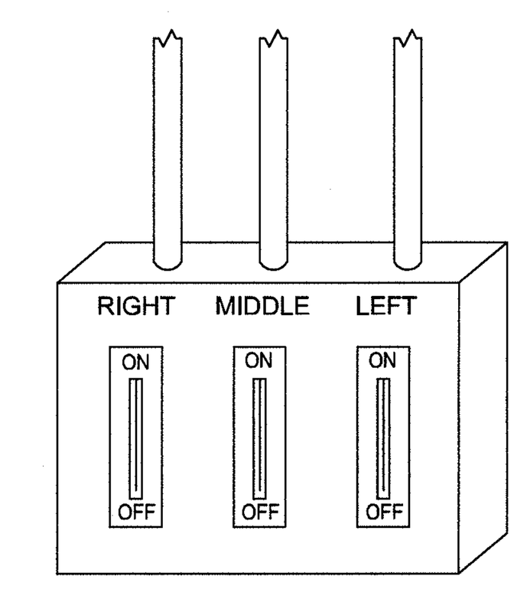
SWITCH BANK 'C'

NOTE: ALL SWITCHES SHALL BE 4-WAY KEYED SWITCHES.



SWITCH BANK 'B'

NOTE: ALL SWITCHES SHALL BE 3-WAY KEYED SWITCHES.

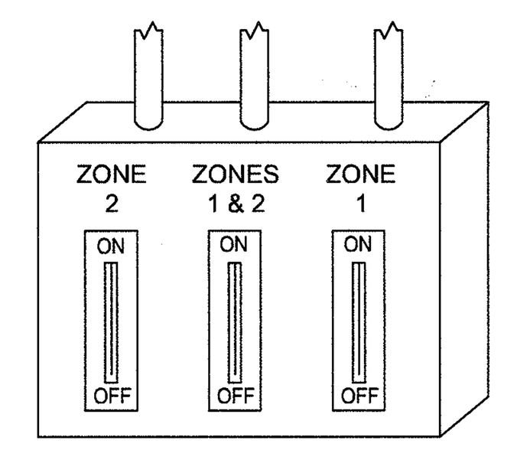


SWITCH BANK 'A'

NOTE: ALL SWITCHES SHALL BE 3-WAY KEYED SWITCHES.

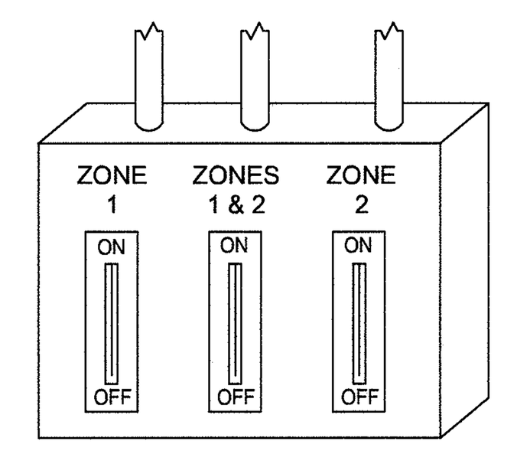
4 MULTIPURPOSE ROOM SWITCH BANKS

NOT TO SCALE



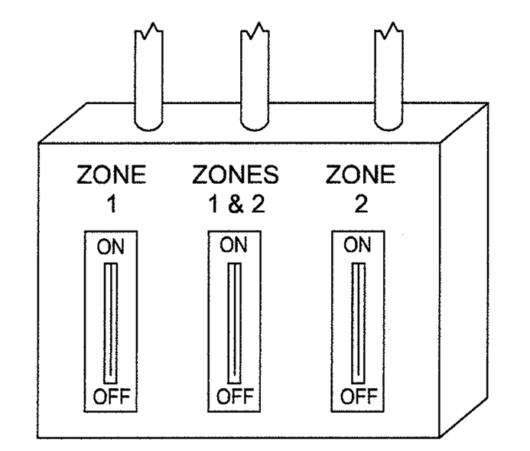
SWITCH BANK '3'

NOTE: ALL SWITCHES SHALL BE 4-WAY KEYED SWITCHES.



SWITCH BANK '2'

NOTE: ALL SWITCHES SHALL BE 3-WAY KEYED SWITCHES.

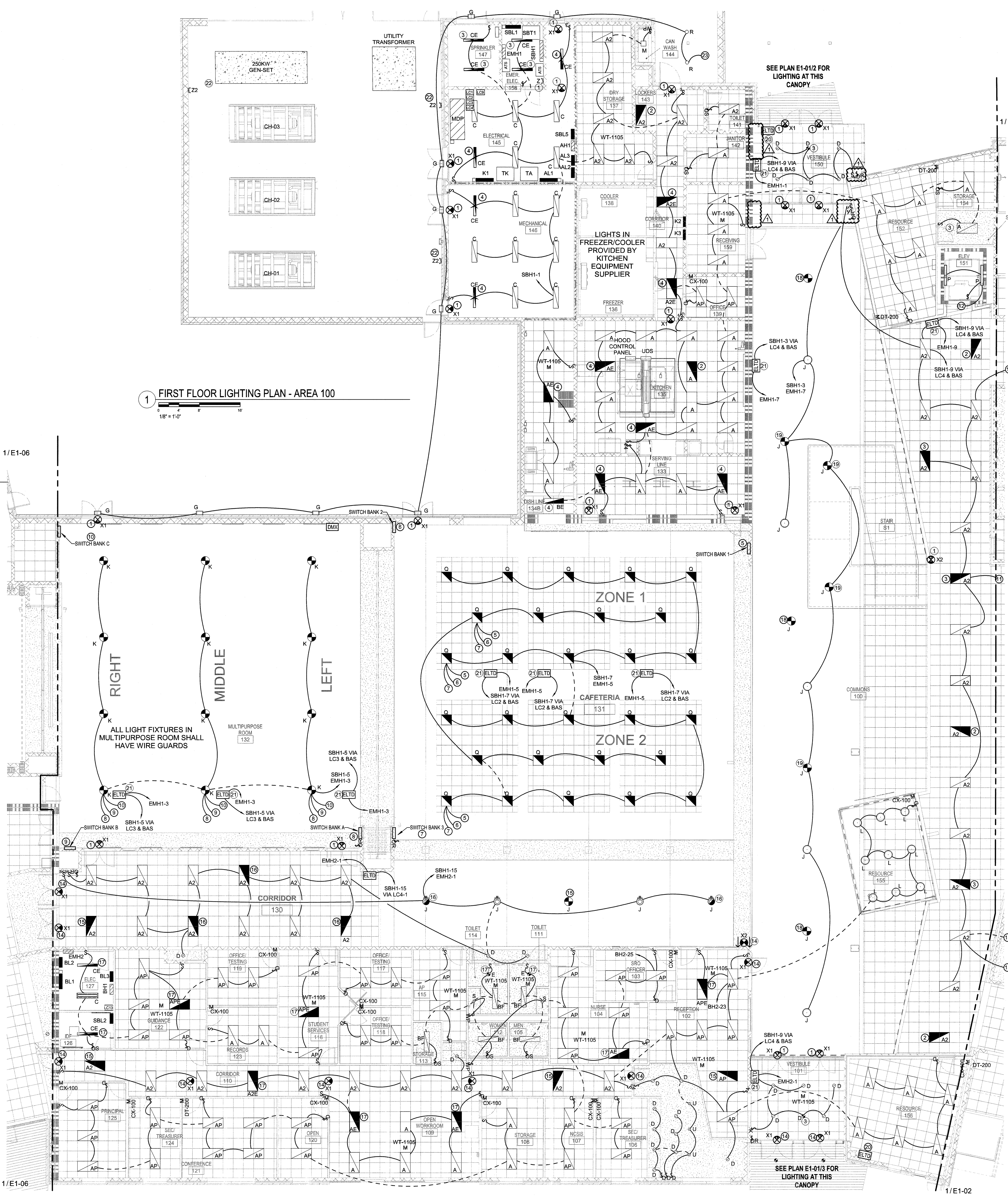


SWITCH BANK '1'

NOTE: ALL SWITCHES SHALL BE 3-WAY KEYED SWITCHES.

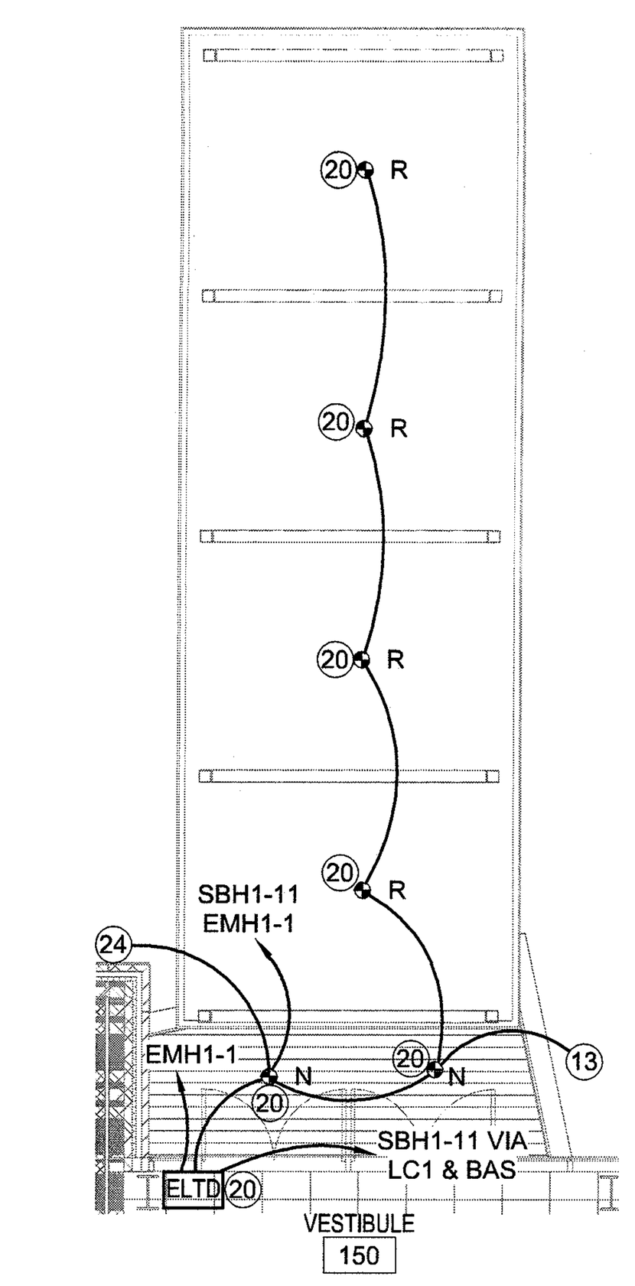
5 CAFETERIA SWITCH BANKS

NOT TO SCALE



1 FIRST FLOOR LIGHTING PLAN - AREA 100

1/8" = 1'-0"

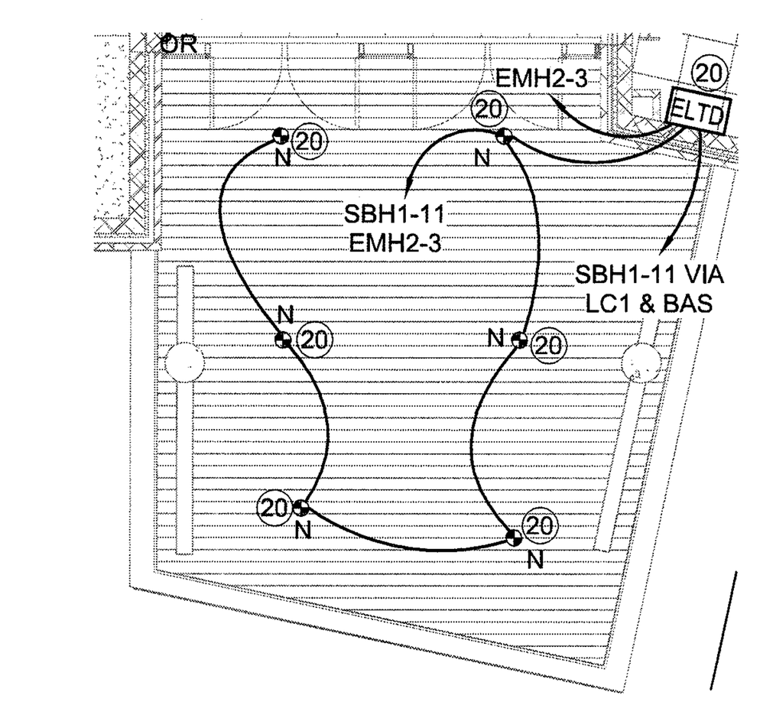


2 AREA 100 - VESTIBULE 150 CANOPY

1/8" = 1'-0"

NOTES: (AS SHOWN ON THIS PLAN WITH A NUMBER IN A ◯)

1. EMERGENCY FIXTURE - WIRE AHEAD OF ALL SWITCHES AND CONNECT TO EMERGENCY CIRCUIT EMH1-1.
2. NIGHT LIGHT/EMERGENCY LIGHT - WIRE TO EMERGENCY CIRCUIT EMH1-1.
3. EMERGENCY FIXTURE IN CORRIDOR - WIRE FIXTURE VIA 20A UL924 ELTD SO THAT FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO EMERGENCY CIRCUIT EMH1-1.
4. EMERGENCY FIXTURE WITH INTERNAL UL924 ELTD - WIRE SO FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT AS SHOWN AND EMERGENCY CIRCUIT EMH1-1.
5. WIRE TO SWITCH BANK 1 - REFER TO DETAIL E1-01/5.
6. WIRE TO SWITCH BANK 2 - REFER TO DETAIL E1-01/5.
7. WIRE TO SWITCH BANK 3 - REFER TO DETAIL E1-01/5.
8. WIRE TO SWITCH BANK A - REFER TO DETAIL E1-01/4.
9. WIRE TO SWITCH BANK B - REFER TO DETAIL E1-01/4.
10. WIRE TO SWITCH BANK C - REFER TO DETAIL E1-01/4.
11. REFER TO DRAWING E1-03 FOR CONTINUATION.
12. CONNECT TO RECEPTACLE CIRCUIT IN ROOM AHEAD OF GFCI.
13. REFER TO DRAWING E1-02 FOR CONTINUATION.
14. EMERGENCY FIXTURE - WIRE AHEAD OF ALL SWITCHES AND CONNECT TO EMERGENCY CIRCUIT EMH2-1.
15. NIGHT LIGHT/EMERGENCY LIGHT - WIRE TO EMERGENCY CIRCUIT EMH2-1.
16. EMERGENCY FIXTURE IN CORRIDOR - WIRE FIXTURE VIA 20A UL924 ELTD SO THAT FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO EMERGENCY CIRCUIT EMH2-1.
17. EMERGENCY FIXTURE WITH INTERNAL UL924 ELTD - WIRE SO FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT AS SHOWN AND EMERGENCY CIRCUIT EMH2-1.
18. NIGHT LIGHT/EMERGENCY LIGHT - WIRE TO EMERGENCY CIRCUIT EMH1-7.
19. EMERGENCY FIXTURE IN CORRIDOR - WIRE FIXTURE VIA 20A UL924 ELTD SO THAT FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO EMERGENCY CIRCUIT EMH1-7.
20. EXTERIOR EMERGENCY CANOPY FIXTURE - WIRE TO NORMAL AND EMERGENCY CIRCUITS VIA EMERGENCY LIGHTING TRANSFER DEVICE AS SHOWN. FIXTURE CONTROLLED ON/OFF THROUGH BAS. UPON LOSS OF NORMAL POWER FIXTURE SHALL ILLUMINATE.
21. EMERGENCY FIXTURE - WIRE TO NORMAL AND EMERGENCY CIRCUITS VIA EMERGENCY LIGHTING TRANSFER DEVICE AS SHOWN. FIXTURE CONTROLLED ON/OFF THROUGH BAS. UPON LOSS OF NORMAL POWER FIXTURE SHALL ILLUMINATE.
22. EMERGENCY FIXTURE WITH BATTERY BACK-UP - WIRE AHEAD OF SWITCHES AND/OR BAS. FIXTURE SHALL OPERATE UPON LOSS OF NORMAL POWER.
23. REFER TO CANOPY LIGHTING PLAN E1-01/2 FOR CONTINUATION.
24. REFER TO AREA 100 LIGHTING PLAN E1-01/1 FOR CONTINUATION.



3 AREA 100 - VESTIBULE 101 CANOPY

1/8" = 1'-0"

WALL RATINGS LEGEND

— — —	1 HR RATED WALL
— — —	2 HR RATED WALL

smith sinnett ARCHITECTURE

T 919 781 8582
F 919 781 3979
4600 Lake Boone Trail Suite 205 Raleigh, NC 27607
info@smithsinnett.com

pdc

Progressive Design Collaborative, Ltd.
5101 Pinehurst Court, Suite 320
Raleigh, North Carolina 27609
919.790-0980
PROJECT #17104
License # C-0185
pdcengineers.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022439 ROBERT A. CLARK

CONSTRUCTION DOCUMENT

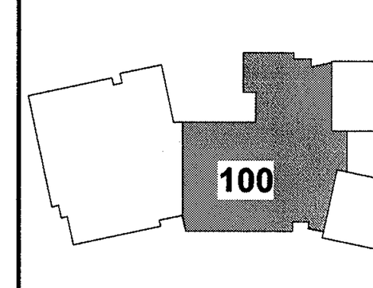
ENERGY STAR PARTNER

VOLUME II

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 30" X 42" SHEET

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370



KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03

DRAWN BY: JPT

CHECKED BY: RA

FIRST FLOOR LIGHTING PLAN - AREA 100

2017032 20 MAY 2019

E1-01

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6/12/2019 11:56:04 AM

1 FIRST FLOOR LIGHTING PLAN - AREA 300

1/8" = 1'-0"

WALL RATINGS LEGEND

1 HR RATED WALL

2 HR RATED WALL

NOTES: (AS SHOWN ON THIS PLAN WITH A NUMBER IN A ◯)

1. EMERGENCY FIXTURE - WIRE AHEAD OF ALL SWITCHES AND CONNECT TO EMERGENCY LIGHTING CIRCUIT EMH1-9.
2. NIGHT LIGHT/EMERGENCY LIGHT - WIRE TO EMERGENCY CIRCUIT EMH1-9.
3. EMERGENCY FIXTURE IN CORRIDOR - WIRE FIXTURE VIA 20A UL 924 ELTD SO THAT FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT INDICATED AND EMERGENCY CIRCUIT EMH1-11.
4. EMERGENCY FIXTURE WITH INTERNAL UL924 ELTD - WIRE SO FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT AS SHOWN AND EMERGENCY CIRCUIT EMH1-9.
5. CONTINUE UP TO LIGHTS IN SECOND FLOOR STAIRWELL.
6. REFER TO DRAWING E1-01 FOR CONTINUATION.
7. EMERGENCY FIXTURE - WIRE AHEAD OF ALL SWITCHES AND CONNECT TO EMERGENCY LIGHTING CIRCUIT EMH1-11.
8. NIGHT LIGHT/EMERGENCY LIGHT - WIRE TO EMERGENCY CIRCUIT EMH1-11.
9. EMERGENCY FIXTURE WITH INTERNAL UL924 ELTD - WIRE SO FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT AS SHOWN AND EMERGENCY CIRCUIT EMH1-11.
10. CONTINUED TO EXTERIOR LIGHTING ON DRAWING E1-02.
11. EMERGENCY FIXTURE IN OPEN AREA - WIRE FIXTURE VIA 20A UL 924 ELTD SO THAT FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT INDICATED AND EMERGENCY CIRCUIT EMH1-11.

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ENERGY STAR PARTNER

VOLUME II

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300

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03

DRAWN BY: JPT

CHECKED BY: RA

FIRST FLOOR LIGHTING PLAN - AREA 300

2017032 — 20 MAY 2019

E1-03

WALL RATINGS LEGEND

1 HR RATED WALL

2 HR RATED WALL

1 SECOND FLOOR LIGHTING PLAN - AREA 500

1/8" = 1'-0"

⚠ GENERAL NOTES

A. OUTLET BOXES AT MECHANICAL OR ELECTRICAL ROOMS ON FIRE RATED WALLS SHALL BE SURFACE MOUNTED.

NOTES: (AS SHOWN ON THIS PLAN WITH A NUMBER IN A ◯)

1. EMERGENCY FIXTURE - WIRE AHEAD OF ALL SWITCHES AND CONNECT TO EMERGENCY CIRCUIT EMH1-13.
2. NIGHT LIGHT - WIRE TO EMERGENCY CIRCUIT EMH1-13.
3. EMERGENCY FIXTURE IN CORRIDOR - WIRE FIXTURE VIA 20A UL 924 ELTD SO THAT FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT AS INDICATED AND EMERGENCY CIRCUIT EMH1-13.
4. EMERGENCY FIXTURE WITH INTERNAL UL924 ELTD - WIRE SO FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT AS SHOWN AND EMERGENCY CIRCUIT EMH1-13.
5. CONTINUED DOWN TO FIRST FLOOR STAIRWELL LIGHTING CIRCUIT.
6. REFER TO DRAWING E1-04/1 FOR CONTINUATION.
7. EMERGENCY FIXTURE WITH INTERNAL UL924 ELTD - WIRE SO FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT SBH1-9 AND EMERGENCY CIRCUIT EMH1-9.
8. EMERGENCY FIXTURE WITH INTERNAL UL924 ELTD - WIRE SO FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT DH1-11 AND EMERGENCY CIRCUIT EMH1-11.
9. CONNECT TO SECOND FLOOR ELEVATOR RECEPTACLE CIRCUIT AHEAD OF GFCI.

smith sinnett ARCHITECTURE

T 919 781 8582
F 919 781 3979

4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607

info@smithsinnett.com

pdc
Progressive Design Collaborative, Ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989
PROJECT #17104
License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 015439 ROBERT A. CLARK 6/13/19

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VOLUME II

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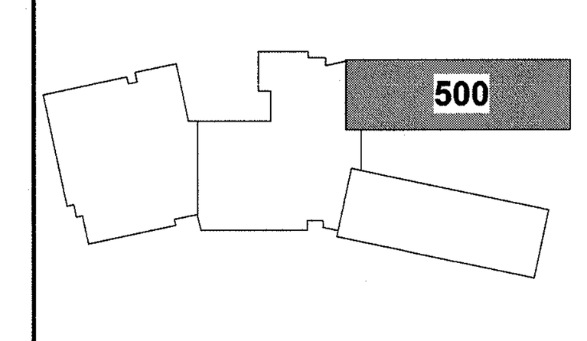


KEY PLAN
NO SCALE

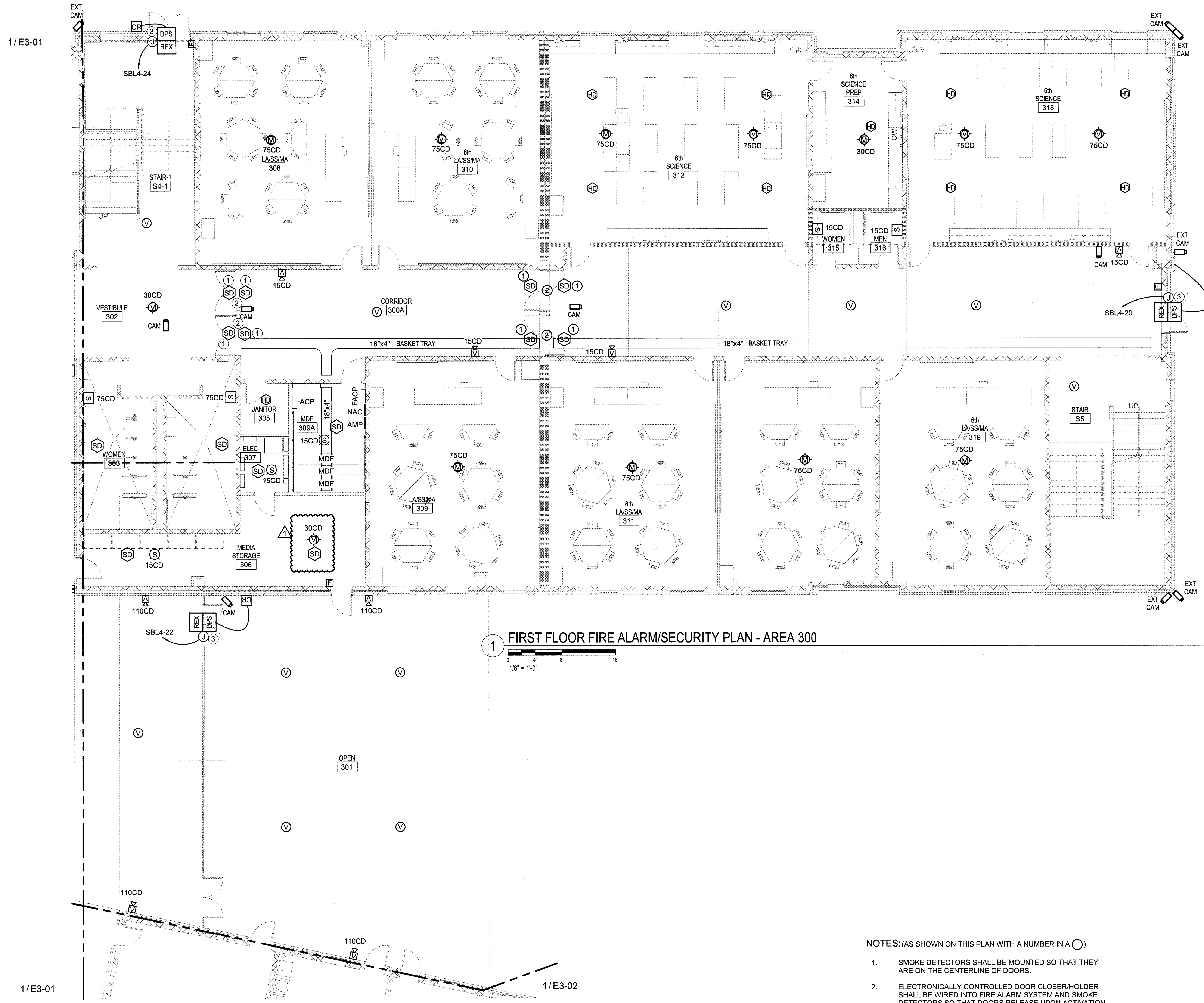
ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03

DRAWN BY: Author
CHECKED BY: RA

SECOND FLOOR LIGHTING PLAN - AREA 500

2017032 20 MAY 2019

E1-05



1 FIRST FLOOR FIRE ALARM/SECURITY PLAN - AREA 300
1/8" = 1'-0"

WALL RATINGS LEGEND

▬ ▬ ▬ ▬	1 HR RATED WALL
▬ ▬ ▬ ▬	2 HR RATED WALL

NOTES: (AS SHOWN ON THIS PLAN WITH A NUMBER IN A ◯)

1. SMOKE DETECTORS SHALL BE MOUNTED SO THAT THEY ARE ON THE CENTERLINE OF DOORS.
2. ELECTRONICALLY CONTROLLED DOOR CLOSER/HOLDER SHALL BE WIRED INTO FIRE ALARM SYSTEM AND SMOKE DETECTORS SO THAT DOORS RELEASE UPON ACTIVATION OF SYSTEM.
3. PROVIDE 120VAC POWER FOR ACCESS CONTROLLED DOOR. COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER/DOOR HARDWARE CONTRACTOR PRIOR TO ROUGH-IN.

GENERAL NOTES:

A. ALL FIRE ALARM WIRING SHALL BE IN CONDUIT. REFER TO SPECIFICATIONS.
B. CABLE TRAY IS FOR NETWORK CABLING.
C. REFER TO E2 SERIES OF DRAWINGS FOR CONDUIT SLEEVES.
D. CARD READERS AND ACCESS CONTROL DEVICES SHALL BE PROVIDED BY OWNER'S SECURITY CONTRACTOR. NOTE: ALL ROUGH-IN SHALL BE BY THE ELECTRICAL CONTRACTOR.
E. ALL CAMERAS AND MOUNTS SHALL BE PROVIDED BY THE OWNER'S SECURITY CONTRACTOR. THE CAT-6 WIRING FOR THE CAMERAS SHALL BE BY THE DIVISION 27 CONTRACTOR. THIS INCLUDES THE SMB CONNECTORS. THE 3FT CAT-6 PATCH CABLES TO THE CAMERAS SHALL BE BY THE DIVISION 27 CONTRACTOR.

smith sinnett ARCHITECTURE
T 919 781 8582
F 919 781 3979
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

pdc
Progressive Design Collaborative, Ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
PROJECT #17104
License# C-0163

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME II

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Parcel PIN 7708118367
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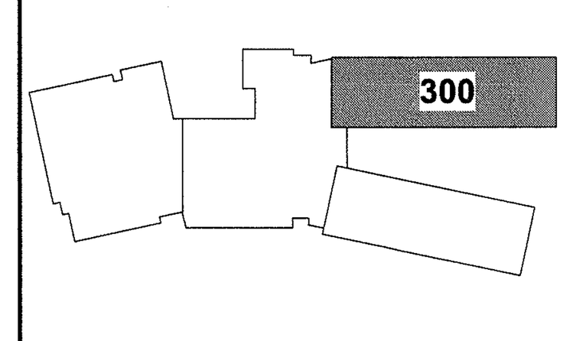


KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03

DRAWN BY: Author
CHECKED BY: RA

FIRST FLOOR FIRE ALARM/SECURITY PLAN - AREA 300

2017032 — 20 MAY 2019

E3-03

	TOTAL KVA	TOTAL DIVERSITY	CONNECTED KVA
INTERIOR LIGHTING	83.328	x1.25	104.16
EXTERIOR LIGHTING	2.250	x1.25	2.82
MOTORS	155.7	x1.0	155.7
HVAC	342.8	x1.0	342.8
GENERAL PURPOSE RECEPTACLES	307.2	{ 10.0 x1.0 } { 297.2 x0.5 }	10.0 148.6
OTHER	322	x1.0	322
KITCHEN EQUIPMENT	105.9	x0.65	68.9
ELEVATOR	54.015	x1.0	54.015
	1373.2		1209

$$I = \frac{(1209)\ (1000)}{480\ x\sqrt{3}} = 1455\ AMPS$$

NEW CHILLERS CH-1, CH-2 & CH-3: 236.8 KVA + 236.8 KVA + 236.8 KVA = 710.5 KVA

LOAD ON NEW UTILITY TRANSFORMER: 1209 KVA + 710.5 KVA = 1920 KVA (2310 AMPS)

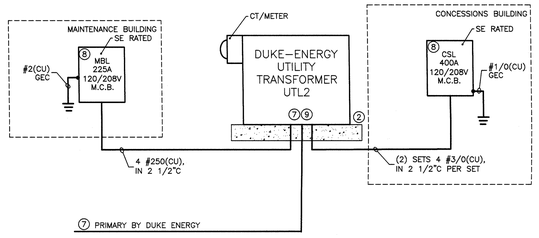
MAIN BUILDING LOAD SUMMARY

	TOTAL KVA	TOTAL DIVERSITY	CONNECTED KVA
INTERIOR LIGHTING	1.269	x1.25	1.586
EXTERIOR LIGHTING	0.564	x1.25	0.705
MOTORS	0	x1.0	0
HVAC	22.2	x1.0	22.2
GENERAL PURPOSE RECEPTACLES	5.9	{ 10.0 x1.0 } { 0 x0.5 }	5.9 0
OTHER	4.8	x1.0	4.8
KITCHEN EQUIPMENT	0	X1.0	0
	34.733		35.191

$$I = \frac{(35.191)\ (1000)}{208\ x\sqrt{3}} = 97.68\ AMPS$$

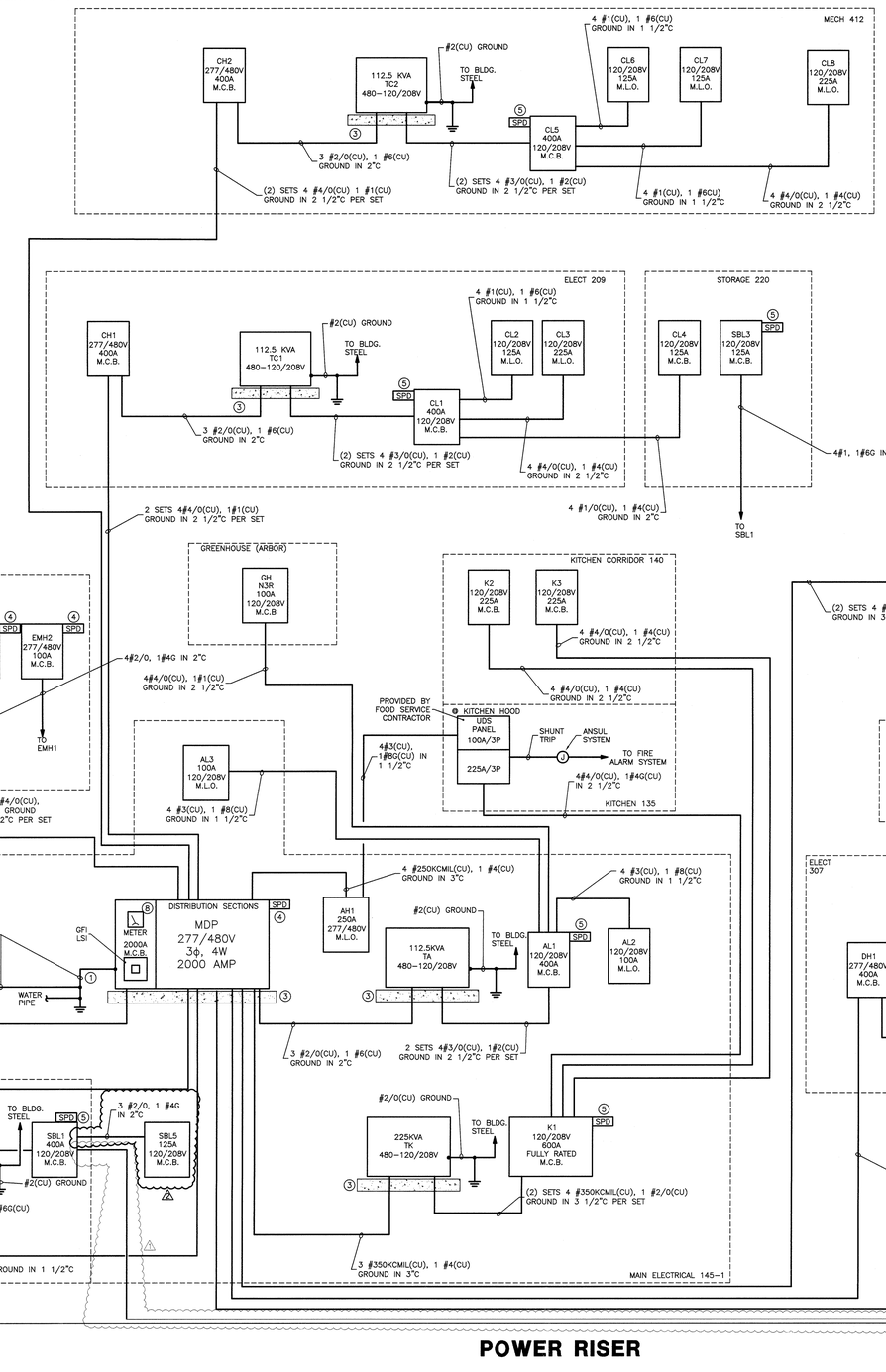
LOAD ON NEW UTILITY TRANSFORMER UTL2: 35.191 KVA (97.68 AMPS)

UTL 2 ESTIMATED LOAD SUMMARY



NOTES: (AS INDICATED ON THIS PLAN BY A NUMBER IN A ◯)

1. SEE SERVICE GROUNDING DETAIL E0-02-08.
2. 6", 3000psi REINFORCED CONCRETE PAD BY ELECTRICAL CONTRACTOR FOR UTILITY COMPANY TRANSFORMER. COORDINATE REQUIREMENTS AND OPENINGS WITH LOCAL UTILITY COMPANY.
3. 4", 3000psi REINFORCED CONCRETE HOUSEKEEPING PAD FOR ELECTRICAL EQUIPMENT.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE A TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS) REFER TO SPECIFICATIONS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. TVSS SHALL BE LOCATED NEXT TO PANEL USING A CHASE NIPPLE FOR WIRING.
5. TRANSIENT VOLTAGE SURGE SUPPRESSOR – REFER TO SPECIFCATIONS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. TVSS SHALL BE LOCATED NEXT TO PANEL USING A CHASE NIPPLE FOR WIRING.
6. 600 VOLT, 400 AMP, 3 POLE, NEMA-3R, FUSIBLE DISCONNECT SWITCH FOR CHILLER. FUSE PER MANUFACTURERS RECOMMENDATIONS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR. MOUNT ON GALVANIZED STEEL ANGLE/UNISTRUT FRAME EMBEDDED IN CONCRETE. DISCONNECT SHALL BE UL LISTED AS SERVICE ENTRANCE EQUIPMENT.
7. BY LOCAL UTILITY COMPANY DUKE-ENERGY.
8. LABEL SERVICES AS PER LATEST NEC ART. 225.37.
9. TO BE LOCATED ON NORTH EAST SIDE OF CONCESSIONS BUILDING, COORDINATE FINAL LOCATION WITH ARCHITECT/UTILITY



POWER RISER

LEGEND:
- M.S.B. – MAIN SHUNT TRIP BREAKER
- M.L.O. – MAIN LUGS ONLY
- M.C.B. – MAIN CIRCUIT BREAKER
- GEC – GROUNDING ELECTRODE CONDUCTOR

smith sinnett ARCHITECTURE
T 919 781 6882
F 919 781 6979
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

pdc
Progressive Design Collaborative, Ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919.790.0980

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pdcengineers.com

NORTH CAROLINA PROFESSIONAL SEAL 036439 ENGINEER ROBERT A. CLARK
01/31/19

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME II

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

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KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
2	06/14/19	ADDENDUM 03
1	05/30/19	ADDENDUM 01

DRAWN BY: JPT
CHECKED BY: RAC

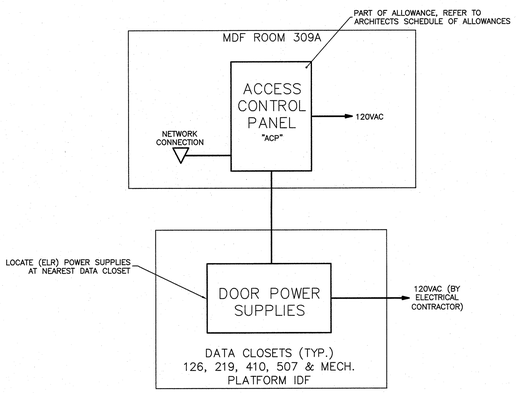
POWER RISER
LOAD SUMMARIES

2017032 20 MAY 2019

E4-01

Project # 170104
Sheet E4-01

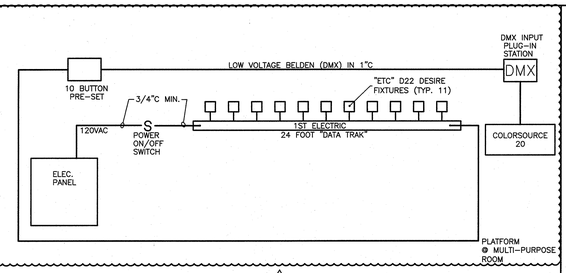
Plotted By: chris
Plotted: June 12, 2019 @ 11:56 AM



GENERAL NOTES:

1. ALL WORK SHALL BE COORDINATED BETWEEN OWNER, ARCHITECT, ELECTRICAL CONTRACTOR, OWNER'S ACCESS CONTROL CONTRACTOR AND DOOR HARDWARE CONTRACTOR PRIOR TO ROUGH-IN. A PRE-INSTALLATION MEETING SHALL OCCUR PRIOR TO INSTALLATION. AN ALLOWANCE AS IDENTIFIED IN THE ARCHITECTS SCHEDULE OF ALLOWANCES IS PROVIDED FOR THE ACCESS CONTROL SYSTEM. ALL ROUGH-INS, CONDUIT OUTLET BOXES, 120VAC SHALL BE PROVIDED AS PART THE CONTRACT AND NOT THE ALLOWANCE. THE ALLOWANCE WILL COVER ALL CARD READERS, HEAD-END EQUIPMENT, LOW VOLTAGE WIRING, AND ANY ACCESSORIES REQUIRED FOR A 100% COMPLETE SYSTEM. REFER TO THE DOOR HARDWARE SPECIFICATION / SCHEDULE. IF THERE ARE ANY COMPONENTS THAT ARE NOT SPECIFIED IN THE DOOR HARDWARE SPECIFICATIONS THEN IT SHALL BE INCLUDED IN THE ALLOWANCE. SEE ARCHITECTS SCHEDULE FOR ALLOWANCES.
2. REFER TO DOOR HARDWARE SPECIFICATION.
3. ALL ROUGH-INS SHALL BE COORDINATED WITH THE OWNER AND ACCESS CONTROL SYSTEM CONTRACTOR HIRED UNDER THE ALLOWANCE.
4. AS-BUILT DRAWINGS SHALL BE SUBMITTED AS PART OF O&M MANUALS.
5. POWER SUPPLIES SHALL BE LOCATED AT IDF/MDF CLOSETS AS REQUIRED FOR EASE OF MAINTENANCE BY RANDOLPH MAINTENANCE.
6. ALL 120VAC POWER THAT IS REQUIRED FOR SYSTEM SHALL BE COORDINATED AND PROVIDED BY THE ELECTRICAL CONTRACTOR.
7. DOOR DETAILS E0-07/05/07 & /09 ARE FOR REFERENCE ONLY. THE INSTALLATION REQUIREMENTS SHALL BE AS PER DOOR HARDWARE REQUIREMENTS, CARD READERS, STRIKES, POWER SUPPLIES, REX MOTIONS AND ASSOCIATED CONDUIT AND WIRING SHALL BE COORDINATED CLOSELY BETWEEN TRADES.
8. CARD READERS MOUNTED IN SINGLE GANG BOX WITH 3/4" CONDUIT TO JUNCTION BOX AND/OR CEILING VOID. COORDINATE CLOSELY.
9. ALL REX LOCATIONS, DOOR POSITION SWITCHES SHALL BE COORDINATED AND ROUGHED-IN BY THE ELECTRICAL CONTRACTOR.
10. REFER TO ARCHITECTURAL DOOR SCHEDULE AND ELECTRICAL PLANS FOR DOOR ACCESS CONTROL LOCATIONS.
11. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OWNER/OTHERS AND PROVIDE 3/4" RACEWAY FROM DOOR FRAMES TO ALLOW FOR THE DOOR CLOSER/HOLDERS TO BE WIRED INTO THE OWNER'S ACCESS CONTROL SYSTEM. APPLICABLE AREAS: (2) DOUBLE DOORS VESTIBULE 201, (2) DOUBLE DOORS VESTIBULE 302, (2) DOUBLE DOORS VESTIBULE 402, (2) DOUBLE DOORS VESTIBULE 501.

DETAIL NOT TO SCALE — DOOR ACCESS CONTROL SYSTEM RISER — **08**



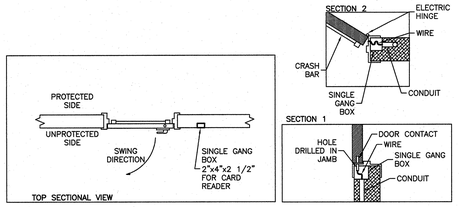
NOTES:

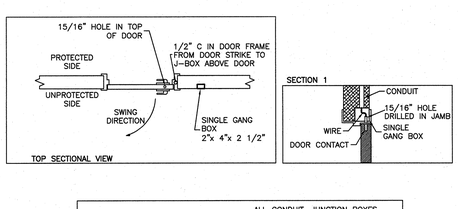
1. THIS PLATFORM LIGHTING SYSTEM DESIGN BASIS IS SYSTEM AS MANUFACTURED BY ELECTRONIC THEATER CONTROLS ("ETC"). OR APPROVED EQUAL. EQUAL MANUFACTURER'S SHALL BE RESPONSIBLE FOR FURNISHING ALL PARTS, PIECES AND COMPONENTS REQUIRED SO THAT THE EQUAL PRODUCT PERFORMS IN AN EQUIVALENT MANNER AS THE SYSTEM SPECIFIED. EQUIVALENT SYSTEMS SHALL BE SUBMITTED 10 DAYS PRIOR TO BID FOR CONSIDERATION AND APPROVAL.
2. THIS SYSTEM SHALL INCLUDE ALL DEVICES, CONSOLE AND EQUIPMENT FOR A 100% COMPLETE AND OPERABLE SYSTEM.
3. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONDUIT, POWER CABLE, LOW VOLTAGE CABLES, SWITCHES AND MOUNT AND INSTALL ALL EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE EQUIPMENT SUPPLIER FOR THIS INSTALLATION SUCH THAT THE SUPPLIER (ETC) IS INVOLVED CLOSELY WITH THE INSTALLATION. THE LIGHTING SYSTEM SHALL BE PURCHASED THRU A SYSTEMS INTEGRATOR (BARBIZON, ATLAS-STAGEWORKS OR BANDIT)
4. THE SYSTEM SHALL BE 100% TESTED AND VERIFIED PRIOR TO OWNER TRAINING.
5. LOCATIONS OF DATA TRAK SHALL BE COORDINATED CLOSELY TO AVOID INTERFERENCES. INTEGRATOR "EQUIPMENT PROVIDER SHALL LOCATE TRAK FOR OPTIMUM PERFORMANCE. TRACKS SHALL BE SUPPORTED SECURELY FROM STRUCTURE.
6. ALL WIRING SHALL BE IN CONDUIT.
7. THE SYSTEM SHALL BE PROVIDED WITH ALL BUTTON STATION, CONTROL CONSOLE, DMX CONNECTION, LOW VOLTAGE WIRING, LINE VOLTAGE WIRING, CONNECTORS, FEEDERS, FIXTURES, TRACKS, SUPPORT ACCESSORIES, ETC FOR A COMPLETE AND OPERATIONAL TRACK LIGHTING SYSTEM.

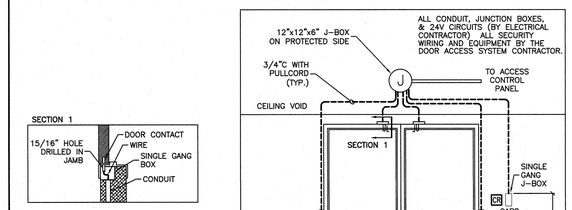
DETAIL NOT TO SCALE — CHORUS 615 LED DIMMING RISER ⚠ — **06**

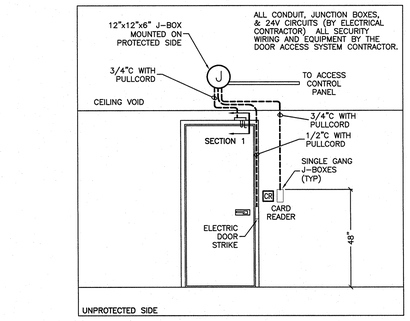
NOT USED

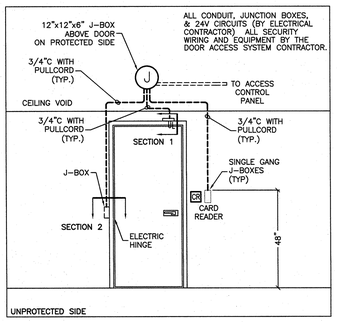
DETAIL NOT TO SCALE — **04**

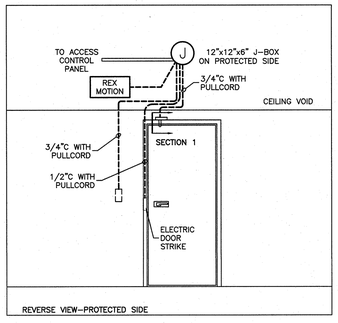


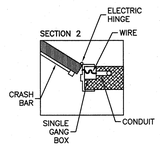


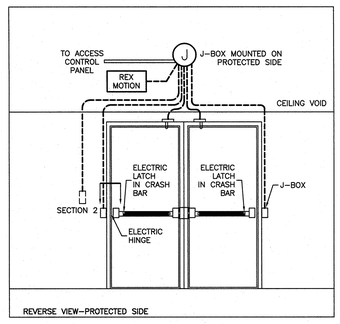






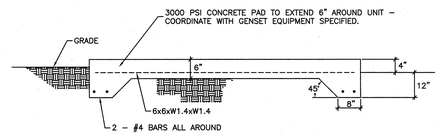






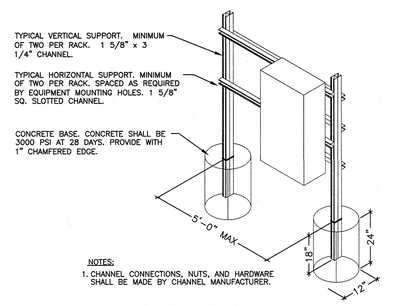
NOT USED

DETAIL NOT TO SCALE — **03**



GENERATOR PAD

DETAIL NOT TO SCALE — GENERATOR PAD — **02**



NOTES:

1. CHANNEL CONNECTIONS, NUTS, AND HARDWARE SHALL BE MADE BY CHANNEL MANUFACTURER.

H-FRAME CONSTRUCTION DETAIL
NOT TO SCALE

GENERAL NOTES:

1. REFER TO DOOR HARDWARE SPECIFICATION FOR DOOR HARDWARE.
2. THE INSTALLATION OF ALL CONDUIT, WIRING, JUNCTION BOXES, TERMINATIONS, CARD READERS AND IEI EQUIPMENT SHALL BE COORDINATED BETWEEN THE ELECTRICAL, SECURITY AND DOOR HARDWARE CONTRACTORS PRIOR TO INSTALLATION.
3. POWER SUPPLIES SHALL BE LOCATED IN READILY ACCESSIBLE LOCATION AT NEAREST NETWORK CLOSET, NOT ABOVE CEILINGS.
4. COORDINATE CLOSELY, PRIOR TO ROUGH-IN WITH THE SECURITY CONTRACTOR HIRED UNDER THE ALLOWANCE.

DETAIL NOT TO SCALE — EXTERIOR SINGLE DOORS W/CRASH BAR — **09**

GENERAL NOTES:

1. REFER TO DOOR HARDWARE SPECIFICATION FOR DOOR HARDWARE.
2. THE INSTALLATION OF ALL CONDUIT, WIRING, JUNCTION BOXES, TERMINATIONS, CARD READERS AND ACCESS CONTROL EQUIPMENT SHALL BE COORDINATED BETWEEN THE ELECTRICAL, SECURITY AND DOOR HARDWARE CONTRACTORS PRIOR TO INSTALLATION.
3. POWER SUPPLIES SHALL BE LOCATED IN READILY ACCESSIBLE LOCATION AT NEAREST NETWORK CLOSET, NOT ABOVE CEILINGS.
4. THIS DOOR DETAIL IS A GENERAL DETAIL AND DOES NOT REFLECT THE ACTUAL DOOR PROVIDED. THE CONTRACTORS SHALL COORDINATE WITH ALL APPLICABLE TRADES AND INCORPORATE ALL REQUIRED ACCESS CONTROLS FOR A COMPLETE AND 100% OPERATIONAL DOOR.
5. COORDINATE CLOSELY, PRIOR TO ROUGH-IN WITH THE SECURITY CONTRACTOR HIRED UNDER THE ALLOWANCE.

DETAIL NOT TO SCALE — EXTERIOR SINGLE DOORS W/ELECTRICK STRIKE — **07**

GENERAL NOTES:

1. REFER TO DOOR HARDWARE SPECIFICATION FOR DOOR HARDWARE.
2. THE INSTALLATION OF ALL CONDUIT, WIRING, JUNCTION BOXES, TERMINATIONS, CARD READERS AND ACCESS CONTROL EQUIPMENT SHALL BE COORDINATED BETWEEN THE ELECTRICAL, SECURITY AND DOOR HARDWARE CONTRACTORS PRIOR TO INSTALLATION.
3. POWER SUPPLIES SHALL BE LOCATED IN READILY ACCESSIBLE LOCATION AT NEAREST NETWORK CLOSET, NOT ABOVE CEILINGS.
4. THIS DOOR DETAIL IS A GENERAL DETAIL AND DOES NOT REFLECT THE ACTUAL DOOR PROVIDED. THE CONTRACTORS SHALL COORDINATE WITH ALL APPLICABLE TRADES AND INCORPORATE ALL REQUIRED ACCESS CONTROLS FOR A COMPLETE AND 100% OPERATIONAL DOOR.
5. COORDINATE CLOSELY, PRIOR TO ROUGH-IN WITH THE SECURITY CONTRACTOR HIRED UNDER THE ALLOWANCE.

DETAIL NOT TO SCALE — EXTERIOR DOUBLE DOORS W/CRASH BARS — **05**

DETAIL NOT TO SCALE — H-FRAME FOR PANEL MOUNTING — **01**

smith sinnett ARCHITECTURE
T 919 781 8882
F 919 781 3979
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

pdc
Progressive Design Collaborative, Ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919.790.9099
PROJECT #17104
License# C-0183
pdcengineers.com
NORTH CAROLINA PROFESSIONAL SEAL 24439 ENGINEER HERBERT A. CLARK
6/13/19

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME II

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03

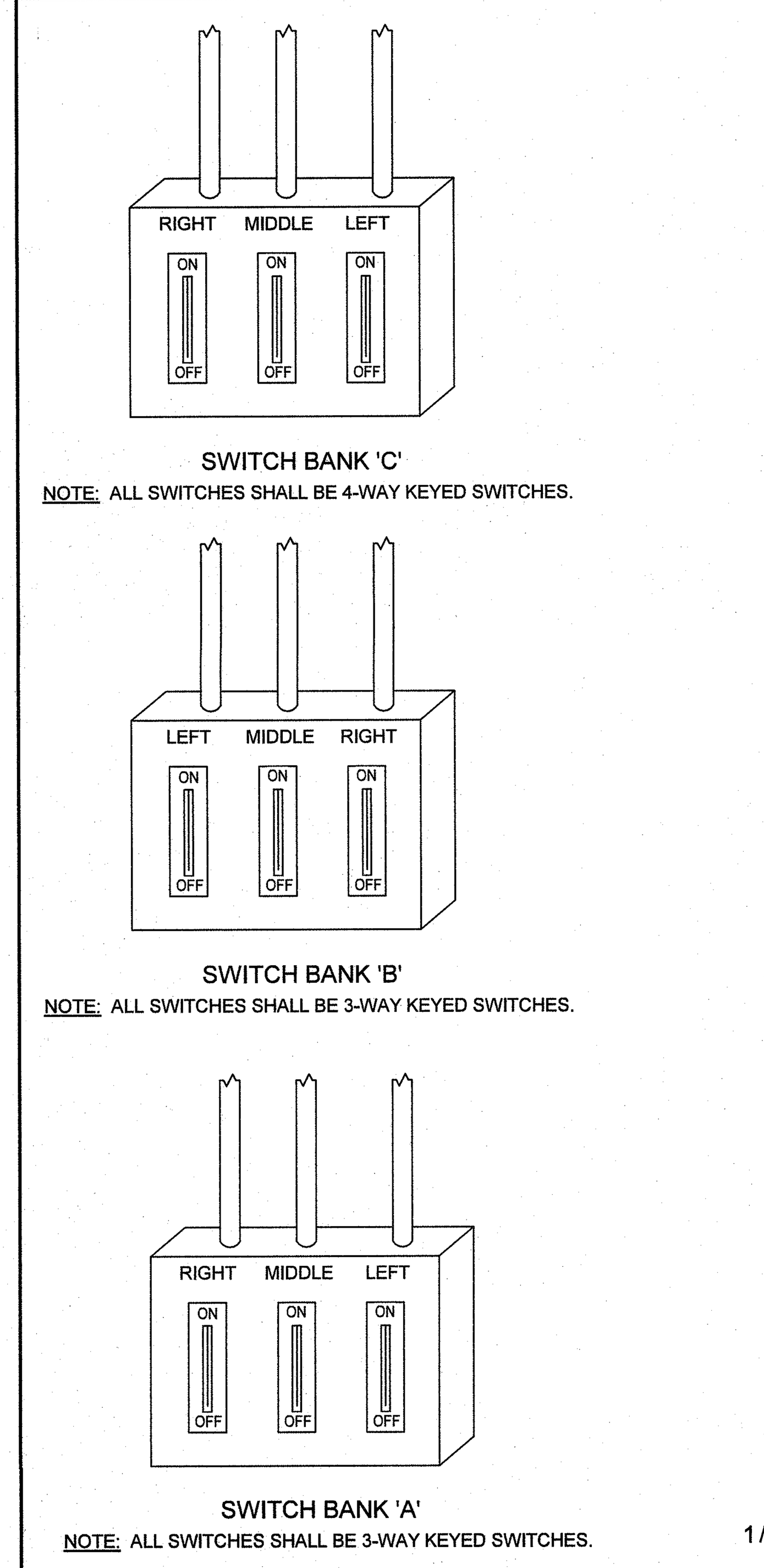
DRAWN BY: JPT
CHECKED BY: RAC

ELECTRICAL DETAILS

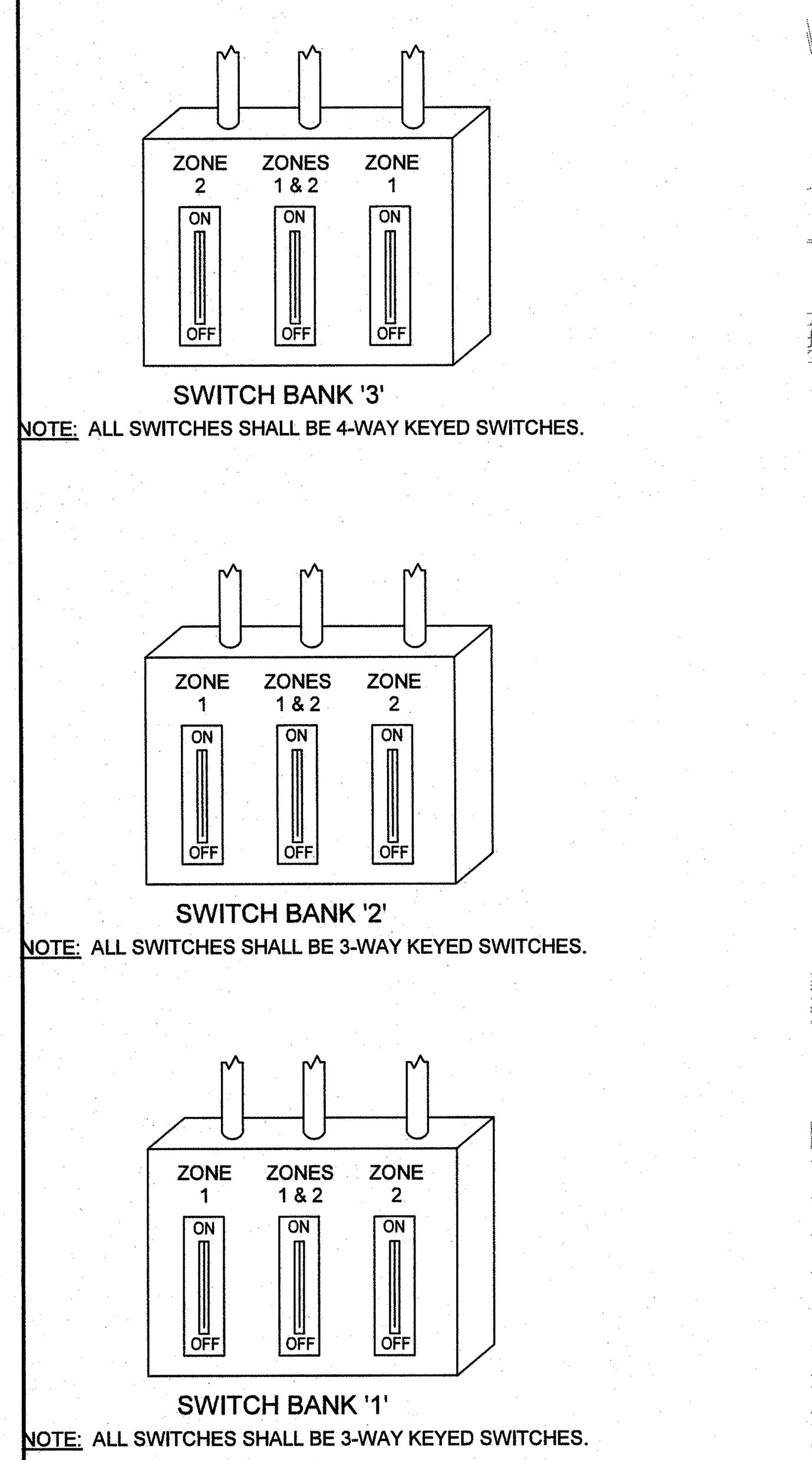
2017032 — 20 MAY 2019

E0-07

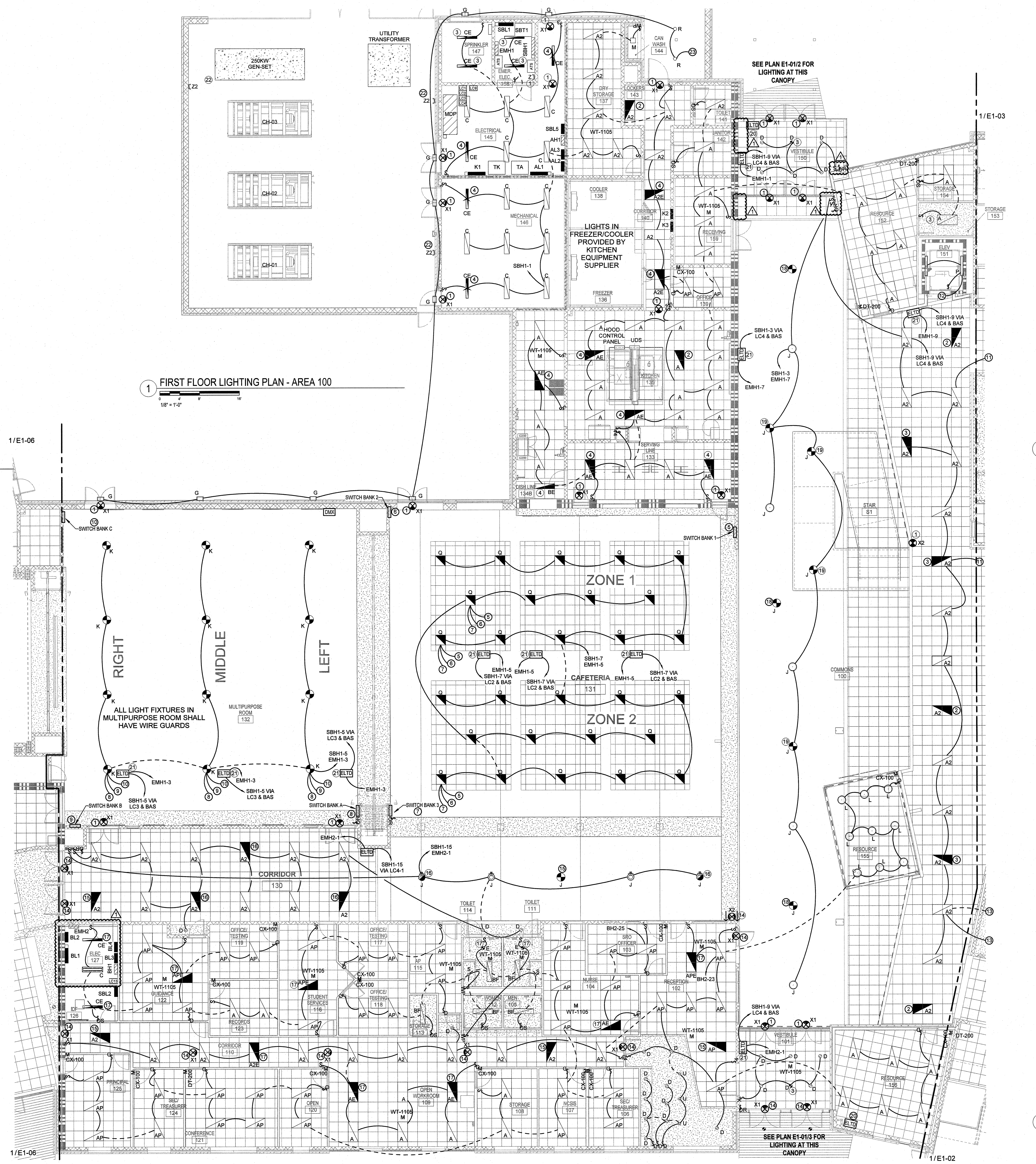
Project # 17104
Sheet: E0-07
Plotted By: Jolly
Plotted: June 13, 2019 @ 5:07 PM



4 MULTIPURPOSE ROOM SWITCH BANKS
NOT TO SCALE



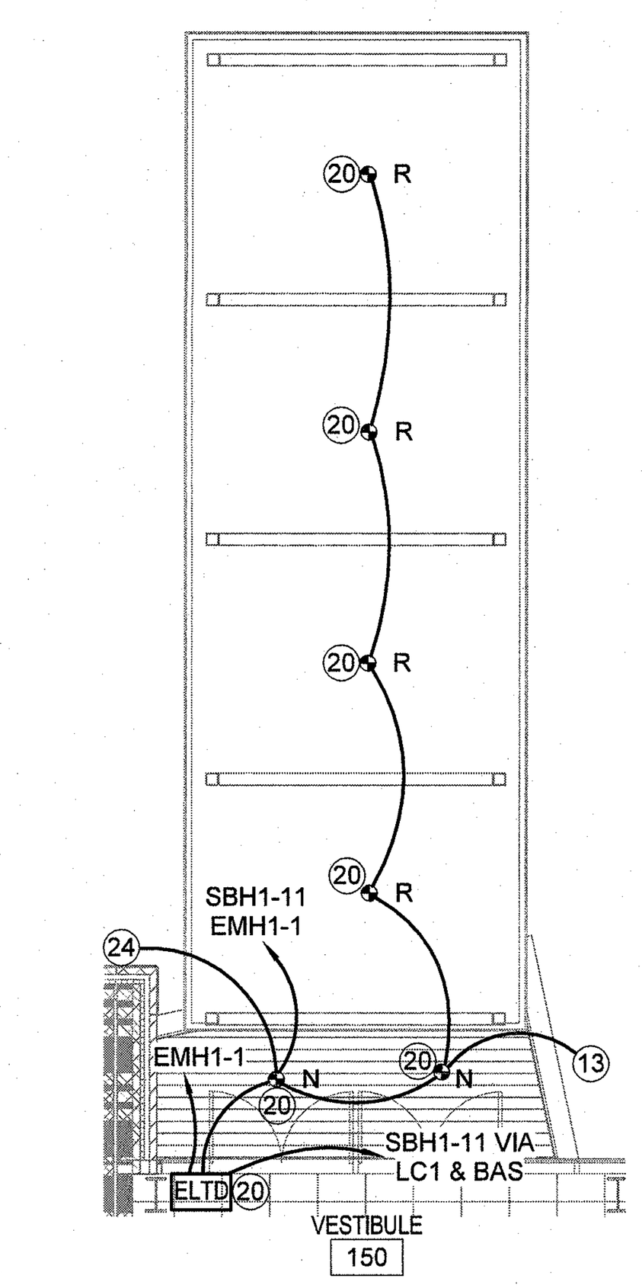
5 CAFETERIA SWITCH BANKS
NOT TO SCALE



1 FIRST FLOOR LIGHTING PLAN - AREA 100
1/8" = 1'-0"

WALL RATINGS LEGEND

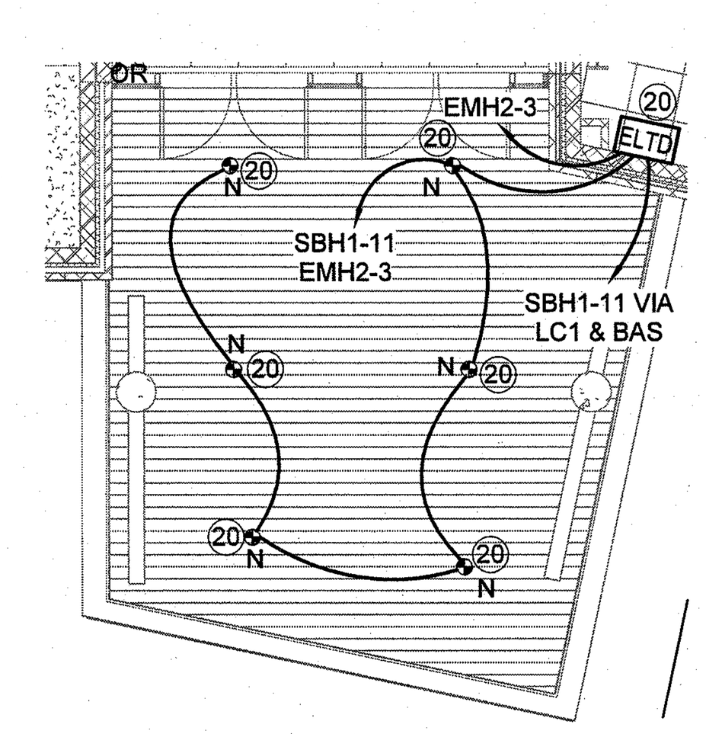
1 HR RATED WALL
2 HR RATED WALL



2 AREA 100 - VESTIBULE 150 CANOPY
1/8" = 1'-0"

NOTES: (AS SHOWN ON THIS PLAN WITH A NUMBER IN A ◯)

1. EMERGENCY FIXTURE - WIRE AHEAD OF ALL SWITCHES AND CONNECT TO EMERGENCY CIRCUIT EMH1-1.
2. NIGHT LIGHT/EMERGENCY LIGHT - WIRE TO EMERGENCY CIRCUIT EMH1-1.
3. EMERGENCY FIXTURE IN CORRIDOR - WIRE FIXTURE VIA 20A UL924 ELTD SO THAT FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO EMERGENCY CIRCUIT EMH1-1.
4. EMERGENCY FIXTURE WITH INTERNAL UL924 ELTD - WIRE SO FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT AS SHOWN AND EMERGENCY CIRCUIT EMH1-1.
5. WIRE TO SWITCH BANK 1 - REFER TO DETAIL E1-01/5.
6. WIRE TO SWITCH BANK 2 - REFER TO DETAIL E1-01/5.
7. WIRE TO SWITCH BANK 3 - REFER TO DETAIL E1-01/5.
8. WIRE TO SWITCH BANK A - REFER TO DETAIL E1-01/4.
9. WIRE TO SWITCH BANK B - REFER TO DETAIL E1-01/4.
10. WIRE TO SWITCH BANK C - REFER TO DETAIL E1-01/4.
11. REFER TO DRAWING E1-03 FOR CONTINUATION.
12. CONNECT TO RECEPTACLE CIRCUIT IN ROOM AHEAD OF GFCI.
13. REFER TO DRAWING E1-02 FOR CONTINUATION.
14. EMERGENCY FIXTURE - WIRE AHEAD OF ALL SWITCHES AND CONNECT TO EMERGENCY CIRCUIT EMH2-1.
15. NIGHT LIGHT/EMERGENCY LIGHT - WIRE TO EMERGENCY CIRCUIT EMH2-1.
16. EMERGENCY FIXTURE IN CORRIDOR - WIRE FIXTURE VIA 20A UL924 ELTD SO THAT FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO EMERGENCY CIRCUIT EMH2-1.
17. EMERGENCY FIXTURE WITH INTERNAL UL924 ELTD - WIRE SO FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT AS SHOWN AND EMERGENCY CIRCUIT EMH2-1.
18. NIGHT LIGHT/EMERGENCY LIGHT - WIRE TO EMERGENCY CIRCUIT EMH1-7.
19. EMERGENCY FIXTURE IN CORRIDOR - WIRE FIXTURE VIA 20A UL924 ELTD SO THAT FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO EMERGENCY CIRCUIT EMH1-7.
20. EXTERIOR EMERGENCY CANOPY FIXTURE - WIRE TO NORMAL AND EMERGENCY CIRCUITS VIA EMERGENCY LIGHTING TRANSFER DEVICE AS SHOWN. FIXTURE CONTROLLED ON/OFF THROUGH BAS. UPON LOSS OF NORMAL POWER FIXTURE SHALL ILLUMINATE.
21. EMERGENCY FIXTURE - WIRE TO NORMAL AND EMERGENCY CIRCUITS VIA EMERGENCY LIGHTING TRANSFER DEVICE AS SHOWN. FIXTURE CONTROLLED ON/OFF THROUGH BAS. UPON LOSS OF NORMAL POWER FIXTURE SHALL ILLUMINATE.
22. EMERGENCY FIXTURE WITH BATTERY BACK-UP - WIRE AHEAD OF SWITCHES AND/OR BAS. FIXTURE SHALL OPERATE UPON LOSS OF NORMAL POWER.
23. REFER TO CANOPY LIGHTING PLAN E1-01/2 FOR CONTINUATION.
24. REFER TO AREA 100 LIGHTING PLAN E1-01/1 FOR CONTINUATION.



3 AREA 100 - VESTIBULE 101 CANOPY
1/8" = 1'-0"

smith sinnett ARCHITECTURE
T 919 781 8582
F 919 781 7079
4000 Lake Boone Trail Suite 205 Raleigh, NC 27607
info@smithsinnett.com

pdc
Progressive Design Collaborative, ltd.
3101 Poplarwood Court, Suite 320 Raleigh, North Carolina 27604
PROJECT #17104
License# C-0185

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME II

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 30" X 42" SHEET

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM
Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03

DRAWN BY: JPT
CHECKED BY: RA

FIRST FLOOR LIGHTING PLAN - AREA 100

2017032 20 MAY 2019

E1-01

1 FIRST FLOOR LIGHTING PLAN - AREA 300

1/8" = 1'-0"

WALL RATINGS LEGEND

1 HR RATED WALL

2 HR RATED WALL

NOTES: (AS SHOWN ON THIS PLAN WITH A NUMBER IN A ◯)

1. EMERGENCY FIXTURE - WIRE AHEAD OF ALL SWITCHES AND CONNECT TO EMERGENCY LIGHTING CIRCUIT EMH1-9.
2. NIGHT LIGHT/EMERGENCY LIGHT - WIRE TO EMERGENCY CIRCUIT EMH1-9.
3. EMERGENCY FIXTURE IN CORRIDOR - WIRE FIXTURE VIA 20A UL 924 ELTD SO THAT FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT INDICATED AND EMERGENCY CIRCUIT EMH1-11.
4. EMERGENCY FIXTURE WITH INTERNAL UL924 ELTD - WIRE SO FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT AS SHOWN AND EMERGENCY CIRCUIT EMH1-9.
5. CONTINUE UP TO LIGHTS IN SECOND FLOOR STAIRWELL.
6. REFER TO DRAWING E1-01 FOR CONTINUATION.
7. EMERGENCY FIXTURE - WIRE AHEAD OF ALL SWITCHES AND CONNECT TO EMERGENCY LIGHTING CIRCUIT EMH1-11.
8. NIGHT LIGHT/EMERGENCY LIGHT - WIRE TO EMERGENCY CIRCUIT EMH1-11.
9. EMERGENCY FIXTURE WITH INTERNAL UL924 ELTD - WIRE SO FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT AS SHOWN AND EMERGENCY CIRCUIT EMH1-11.
10. CONTINUED TO EXTERIOR LIGHTING ON DRAWING E1-02.
11. EMERGENCY FIXTURE IN OPEN AREA - WIRE FIXTURE VIA 20A UL 924 ELTD SO THAT FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT INDICATED AND EMERGENCY CIRCUIT EMH1-11.

0' 2' 4' 8' 16'

smith sinnett ARCHITECTURE

T 919 781 6582
F 919 781 3979
4601 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

pdc
Progressive Design Collaborative, ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-0980
PROJECT #17104
License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL SEAL 025439 ENGINEER ROBERT A. CLARK 11/21/19

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

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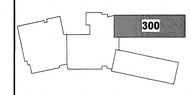

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03

DRAWN BY: JPT
CHECKED BY: RA

FIRST FLOOR LIGHTING PLAN - AREA 300

2017032 20 MAY 2019

E1-03

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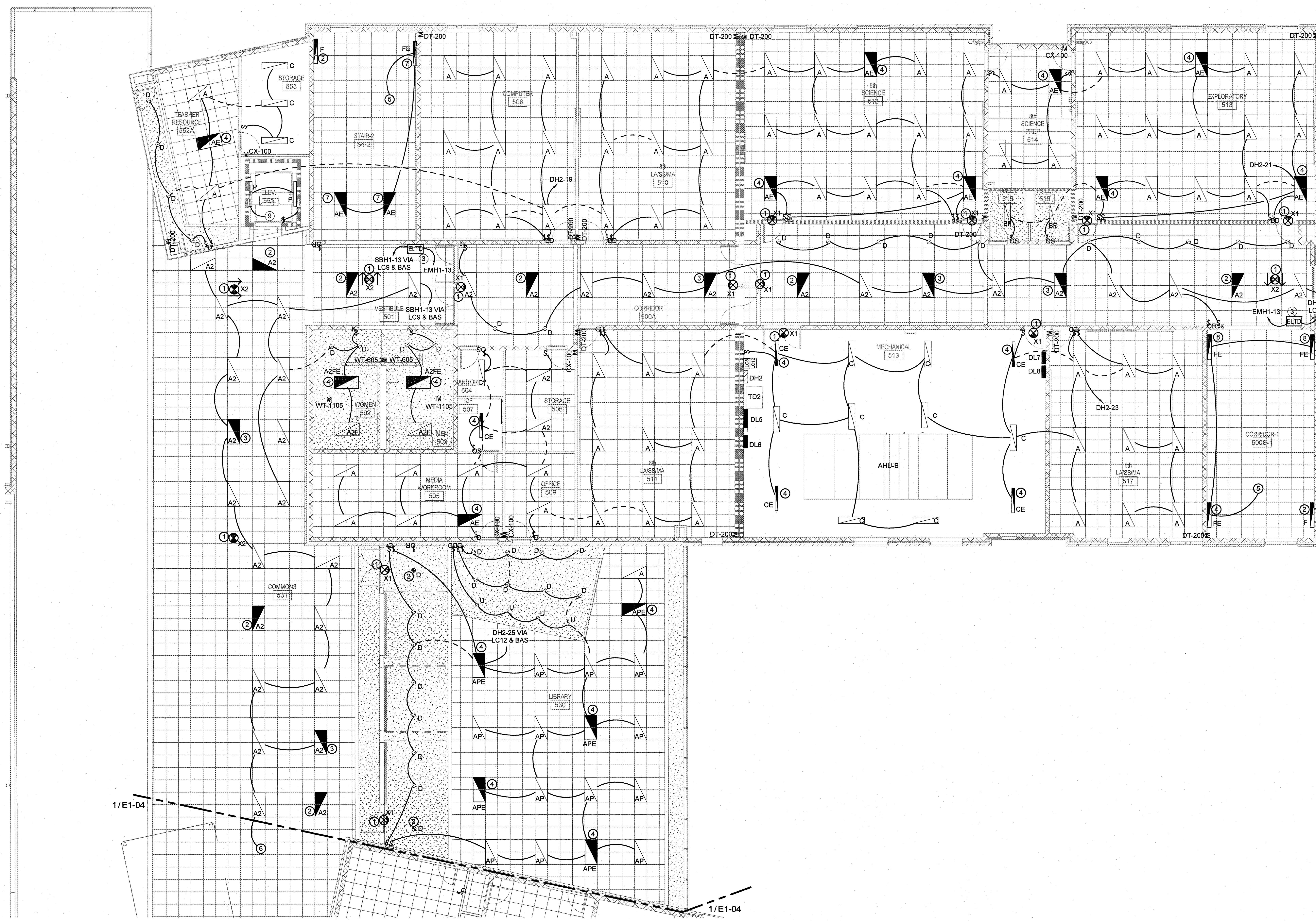
WALL RATINGS LEGEND

1 HR RATED WALL

2 HR RATED WALL



1 SECOND FLOOR LIGHTING PLAN - AREA 500

1/8" = 1'-0"

GENERAL NOTES

A. OUTLET BOXES AT MECHANICAL OR ELECTRICAL ROOMS ON FIRE RATED WALLS SHALL BE SURFACE MOUNTED.

NOTES: (AS SHOWN ON THIS PLAN WITH A NUMBER IN A ◯)

1. EMERGENCY FIXTURE - WIRE AHEAD OF ALL SWITCHES AND CONNECT TO EMERGENCY CIRCUIT EMH1-13.
2. NIGHT LIGHT - WIRE TO EMERGENCY CIRCUIT EMH1-13.
3. EMERGENCY FIXTURE IN CORRIDOR - WIRE FIXTURE VIA 20A UL 924 ELTD SO THAT FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT AS INDICATED AND EMERGENCY CIRCUIT EMH1-13.
4. EMERGENCY FIXTURE WITH INTERNAL UL924 ELTD - WIRE SO FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT AS SHOWN AND EMERGENCY CIRCUIT EMH1-13.
5. CONTINUED DOWN TO FIRST FLOOR STAIRWELL LIGHTING CIRCUIT.
6. REFER TO DRAWING E1-04/1 FOR CONTINUATION.
7. EMERGENCY FIXTURE WITH INTERNAL UL924 ELTD - WIRE SO FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT SBH1-9 AND EMERGENCY CIRCUIT EMH1-9.
8. EMERGENCY FIXTURE WITH INTERNAL UL924 ELTD - WIRE SO FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT DH1-11 AND EMERGENCY CIRCUIT EMH1-11.
9. CONNECT TO SECOND FLOOR ELEVATOR RECEPTACLE CIRCUIT AHEAD OF GFCI.

smith sinnett ARCHITECTURE

T 919 781 8582
F 919 781 3979

4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607

info@smithsinnett.com

pdc
Progressive Design Collaborative, ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989
PROJECT #17104
License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL SEAL 045439 ENGINEER ROBERT A. CLARK 6/13/19

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME II

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NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
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Trinity, NC 27370

500

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03

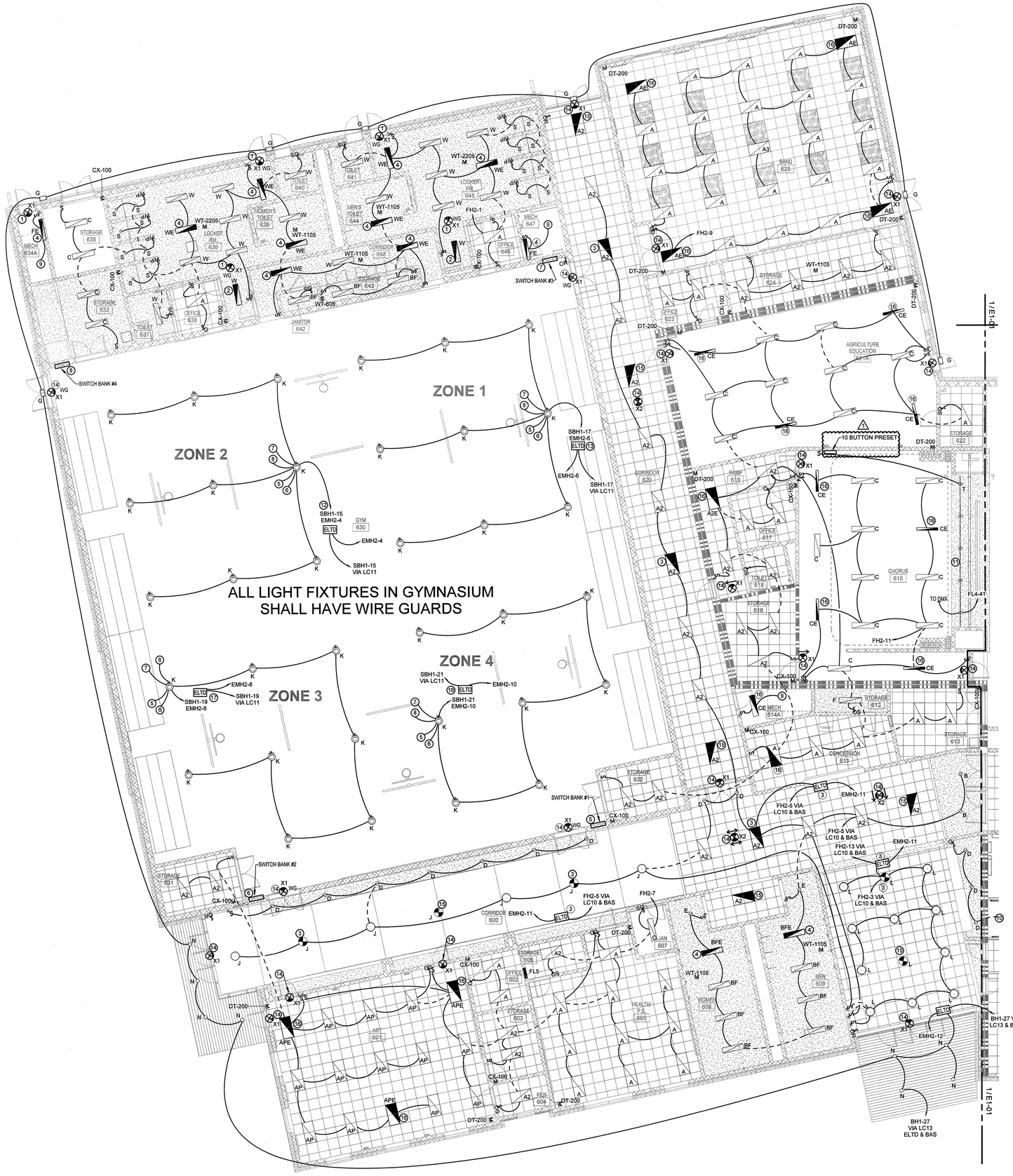
DRAWN BY: Author

CHECKED BY: RA

SECOND FLOOR LIGHTING PLAN - AREA 500

2017032 20 MAY 2019

E1-05



1 FIRST FLOOR LIGHTING PLAN - AREA 600

1/8" = 1'-0"

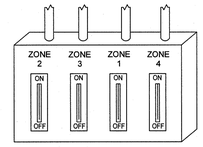
WALL RATINGS LEGEND

1 HR RATED WALL

2 HR RATED WALL

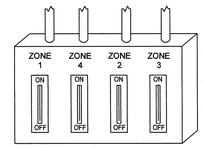
NOTES: (AS SHOWN ON THIS PLAN WITH A NUMBER IN A ◯)

1. EMERGENCY FIXTURE - WIRE AHEAD OF ALL SWITCHES AND CONNECT TO EMERGENCY CIRCUIT EMH2-9.
2. NIGHT LIGHT/EMERGENCY LIGHT - WIRE TO EMERGENCY CIRCUIT EMH2-9.
3. EMERGENCY FIXTURE IN CORRIDOR - WIRE FIXTURE VIA 20A UL924 ELTD SO THAT FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT AS INDICATED AND TO EMERGENCY CIRCUIT EMH2-11.
4. EMERGENCY FIXTURE WITH INTERNAL UL924 ELTD - WIRE SO FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT AS SHOWN AND EMERGENCY CIRCUIT EMH2-9.
5. WIRE TO SWITCH BANK #1 - REFER TO SWITCH BANK DETAILS ON THIS SHEET.
6. WIRE TO SWITCH BANK #2 - REFER TO SWITCH BANK DETAILS ON THIS SHEET.
7. WIRE TO SWITCH BANK #3 - REFER TO SWITCH BANK DETAILS ON THIS SHEET.
8. WIRE TO SWITCH BANK #4 - REFER TO SWITCH BANK DETAILS ON THIS SHEET.
9. UP TO FIXTURES/SWITCH/CIRCUIT ON MECHANICAL PLATFORM.
10. REFER TO DRAWING E1-01 FOR CONTINUATION.
11. REFER TO THE CHORUS PLATFORM LED DIMMING RISER DIAGRAM E0-07/6 ⚠ 01/3/19
12. PROVIDE ELTD. WIRE NORMAL AS SHOWN AND WIRE TO EMERGENCY CIRCUIT EMH2-4. FIXTURE SHALL TURN ON/OFF WITH OTHER FIXTURES, BUT UPON LOSS OF NORMAL POWER, FIXTURE SHALL ILLUMINATE.
13. PROVIDE ELTD. WIRE NORMAL AS SHOWN AND WIRE TO EMERGENCY CIRCUIT EMH2-6. FIXTURE SHALL TURN ON/OFF WITH OTHER FIXTURES, BUT UPON LOSS OF NORMAL POWER, FIXTURE SHALL ILLUMINATE.
14. EMERGENCY FIXTURE - WIRE AHEAD OF ALL SWITCHES AND CONNECT TO EMERGENCY CIRCUIT EMH2-11.
15. NIGHT LIGHT/EMERGENCY LIGHT - WIRE TO EMERGENCY CIRCUIT EMH2-11.
16. EMERGENCY FIXTURE WITH INTERNAL UL924 ELTD - WIRE SO FIXTURE TURNS ON/OFF WITH OTHER FIXTURES BUT FIXTURE ILLUMINATES UPON LOSS OF NORMAL POWER. WIRE TO NORMAL CIRCUIT AS SHOWN AND EMERGENCY CIRCUIT EMH2-11.
17. PROVIDE UL924 ELTD. WIRE NORMAL AS SHOWN AND WIRE TO EMERGENCY CIRCUIT EMH2-8. FIXTURE SHALL TURN ON/OFF WITH OTHER FIXTURES, BUT UPON LOSS OF NORMAL POWER, FIXTURE SHALL ILLUMINATE.
18. PROVIDE UL924 ELTD. WIRE NORMAL AS SHOWN AND WIRE TO EMERGENCY CIRCUIT EMH2-10. FIXTURE SHALL TURN ON/OFF WITH OTHER FIXTURES, BUT UPON LOSS OF NORMAL POWER, FIXTURE SHALL ILLUMINATE.



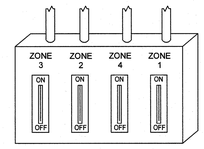
SWITCH BANK #4

NOTE: ALL SWITCHES SHALL BE 4-WAY KEYED SWITCHES.



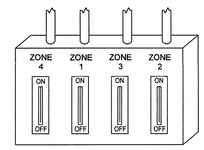
SWITCH BANK #3

NOTE: ALL SWITCHES SHALL BE 4-WAY KEYED SWITCHES.



SWITCH BANK #2

NOTE: ALL SWITCHES SHALL BE 3-WAY KEYED SWITCHES.



SWITCH BANK #1

NOTE: ALL SWITCHES SHALL BE 3-WAY KEYED SWITCHES.

2 GYMNASIUM SWITCH BANKS
1/8" = 1'-0"

smith sinnett ARCHITECTURE

T 919 781 5582
F 919 781 3979
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

pdc
Progressive Design Collaborative, ltd.
5101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-0999
PROJECT #1704
License# C-0185
pdcengineers.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045439 HERBERT A. CLARK

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME II

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
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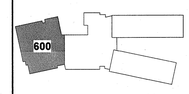

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03

DRAWN BY: Author
CHECKED BY: RA

FIRST FLOOR LIGHTING PLAN - AREA 600

2017032 20 MAY 2019

E1-06

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6/13/2019 4:42:13 PM

WALL RATINGS LEGEND

1 HR RATED WALL

2 HR RATED WALL

GENERAL NOTES

A. ONLY ITEMS THAT PERTAIN TO THE OPERATION OF THE ELEVATOR ARE ALLOWED IN THE ELEVATOR HOISTWAY.

B. WHERE ELEVATORS ARE EQUIPPED WITH "BATTERY LOWERING" THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING A CONTACT IN THE MAIN ELEVATOR POWER DISCONNECT THAT WILL DISABLE THE "BATTERY LOWERING" FEATURE OF THE ELEVATOR WHEN THE MAIN POWER DISCONNECT IS THROWN. THIS DISABLING CONTACT IS INTENDED TO BE USED FOR SERVICING THE ELEVATOR. ("BATTERY LOWERING" IS A FUNCTION OF THE ELEVATOR WHEREBY UPON LOSS OF AC POWER, THE ELEVATOR, OPERATING UNDER BATTERY POWER, RETURNS TO THE LOWEST LANDING AND OPENS DOORS TO LET ANYONE TRAPPED INSIDE SAFE EXIT).

C. IF ELEVATOR ANTI-ENTRAPMENT BATTERY LOWERING DEVICE IS SPECIFIED WITH THE ELEVATOR, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A NORMALLY OPEN AUXILIARY CONTACT PER CAR. IN ADDITION, A DRY CONTACT (NORMALLY CLOSED) WILL ALSO BE REQUIRED. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CONDUIT AND WIRING AS NEEDED, MAKING FINAL CONNECTIONS UNDER THE DIRECTION OF THE ELEVATOR PROVIDER.

D. REFER TO E3-XX SERIES OF DRAWINGS FOR ADDITIONAL CABLE TRAY, FIRE ALARM AND SECURITY DEVICES.

E. PROVIDE CONDUIT BUSHINGS ON BOTH ENDS OF ALL CONDUITS/SLEEVES. WHERE SLEEVES PENETRATE FIRE WALLS, SLEEVES SHALL BE SEALED TO ACHIEVE THE FIRE RESISTANCE RATING OF THE WALL.

NOTES: (AS SHOWN ON THIS PLAN WITH A NUMBER IN A ◯)

1. COORDINATE RECEPTACLE FOR WATER COOLER WITH PLUMBING CONTRACTOR SO CORD DOES NOT SHOW. PROVIDE GFI BREAKER IN PANEL.
2. WEATHERPROOF JUNCTION BOX FOR 120VAC CHILLER HEAT TRACE. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
3. WEATHERPROOF JUNCTION BOX FOR 120VAC CHILLER PIPING HEAT TRACE. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
4. WEATHERPROOF JUNCTION BOX FOR 120VAC CHILLER CONTROLS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
5. 600 VOLT, 400 AMP, 3 POLE, NEMA-3R, SERVICE ENTRANCE RATED FUSIBLE DISCONNECT SWITCH FOR CHILLER. MOUNT ON GALVANIZED STEEL ANGLE/STRUT FRAME EMBEDDED IN CONCRETE.
6. 120VAC MOTOR RATED TOGGLE DISCONNECT SWITCH WITH NEMA-1 JUNCTION BOX FOR VAV BOX. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR. WIRE VAV BOXES INDICATED TO CIRCUIT "BL3-20".
7. 120VAC MOTOR RATED TOGGLE DISCONNECT SWITCH WITH NEMA-1 JUNCTION BOX FOR VAV BOX. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR. WIRE VAV BOXES INDICATED TO CIRCUIT "BL3-22".
8. 120VAC MOTOR RATED TOGGLE DISCONNECT SWITCH WITH NEMA-1 JUNCTION BOX FOR VAV BOX. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR. WIRE VAV BOXES INDICATED TO CIRCUIT "BL3-24".
9. 120VAC MOTOR RATED TOGGLE DISCONNECT SWITCH WITH NEMA-1 JUNCTION BOX FOR VAV BOX. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR. WIRE VAV BOXES INDICATED TO CIRCUIT "AL2-35".
10. COORDINATE EXACT LOCATION OF POWER ACTUATOR AND PUSH PADS FOR HANDICAP DOORS WITH DOOR HARDWARE PROVIDER.
11. CONTINUE TO LIGHT CIRCUIT IN ELEVATOR PIT. WIRE SO THAT LIGHT IS CONNECTED AHEAD OF GFCI RECEPTACLE.
12. 120VAC, 20 AMP, MOTOR RATED TOGGLE DISCONNECT SWITCH WITH NEMA-1 JUNCTION BOX FOR EXHAUST FAN. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
13. (2)-1" COMMUNICATIONS CONDUITS FROM FLOORBOX TO ABOVE FINISHED LAY-IN CEILING AT RECEPTION 102.
14. 240 VOLT, 30 AMP, 2 POLE, NEMA-1, FUSIBLE DISCONNECT SWITCH FOR DS UNIT. FUSE PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR. NOTE: INDOOR DS UNIT IS POWERED BY ASSOCIATED OUTDOOR DSC UNIT. COORDINATE CLOSELY.
15. PROVIDE 1 1/2" CONDUIT FOR SOUND SYSTEM. COORDINATE ROUTING AND LOCATION WITH SOUND SYSTEM CONTRACTOR. REFER TO DETAIL E0-05/08.
16. CAFETERIA SOUND SYSTEM SPEAKERS. REFER TO SOUND SYSTEM RISER E0-05/-8.
17. 277VAC, 20 AMP, MOTOR RATED TOGGLE DISCONNECT SWITCH WITH NEMA-1 JUNCTION BOX FOR UNIT HEATER. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR. DISCONNECT PROVIDED WITH UNIT HEATER.
18. (4)-3" CONDUIT SLEEVES. LOCATE ABOVE ACCESSIBLE LAY-IN CEILING.
19. (2)-3" CONDUIT SLEEVES. LOCATE ABOVE ACCESSIBLE LAY-IN CEILING.
20. (2)-2" CONDUIT SLEEVES. LOCATE ABOVE ACCESSIBLE LAY-IN CEILING.
21. 240 VOLT, 30 AMP, 3 POLE, NEMA-3R, FUSIBLE DISCONNECT SWITCH FOR CONDENSING UNIT FUSE PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE EXACT LOCATION WITH KITCHEN EQUIPMENT PROVIDER.
22. COORDINATE ROUTING OF CONDUIT AND PLACEMENT OF OUTLET AT COUNTER WITH ARCHITECT PRIOR TO ROUGH-IN.
23. ROUTE CONDUIT FROM DEVICE OUTLET LOCATION, CONCEALED, TO IDF ROOM 126.
24. COORDINATE TV LOCATIONS WITH ARCHITECT PRIOR TO ANY ROUGH-IN. ROUTE COMMUNICATION CONDUIT TO NEAREST LAY-IN CEILING LOCATION.
25. 120VAC MOTOR RATED TOGGLE DISCONNECT SWITCH WITH NEMA-1 JUNCTION BOX FOR VAV BOX. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR. WIRE VAV BOXES INDICATED TO CIRCUIT "BL3-34".
26. (2)-3" CONDUITS UNDERGROUND TO MDF ROOM 309A.
27. TELECOMMUNICATIONS GROUND BAR. REFER TO DETAIL E0-02/04.
28. 4'x8'x3/4" FIRE RETARDANT PLYWOOD BACK BOARD.

1 FIRST FLOOR POWER PLAN - AREA 100
1/8" = 1'-0"

2 ENLARGED POWER PLAN - IDF 126
1/4" = 1'-0"

smith sinnett ARCHITECTURE
T 919 781 8862
F 919 781 3979
4600 Lake Boone Trail Suite 205 Raleigh, NC 27607
info@smithsinnett.com

pdc
Progressive Design Collaborative, ltd.
5101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9969
PROJECT #17104
License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045152 ROBERT A. CLARK 6/13/19

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME II

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 30" X 42" SHEET

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370

KEY PLAN
NO SCALE

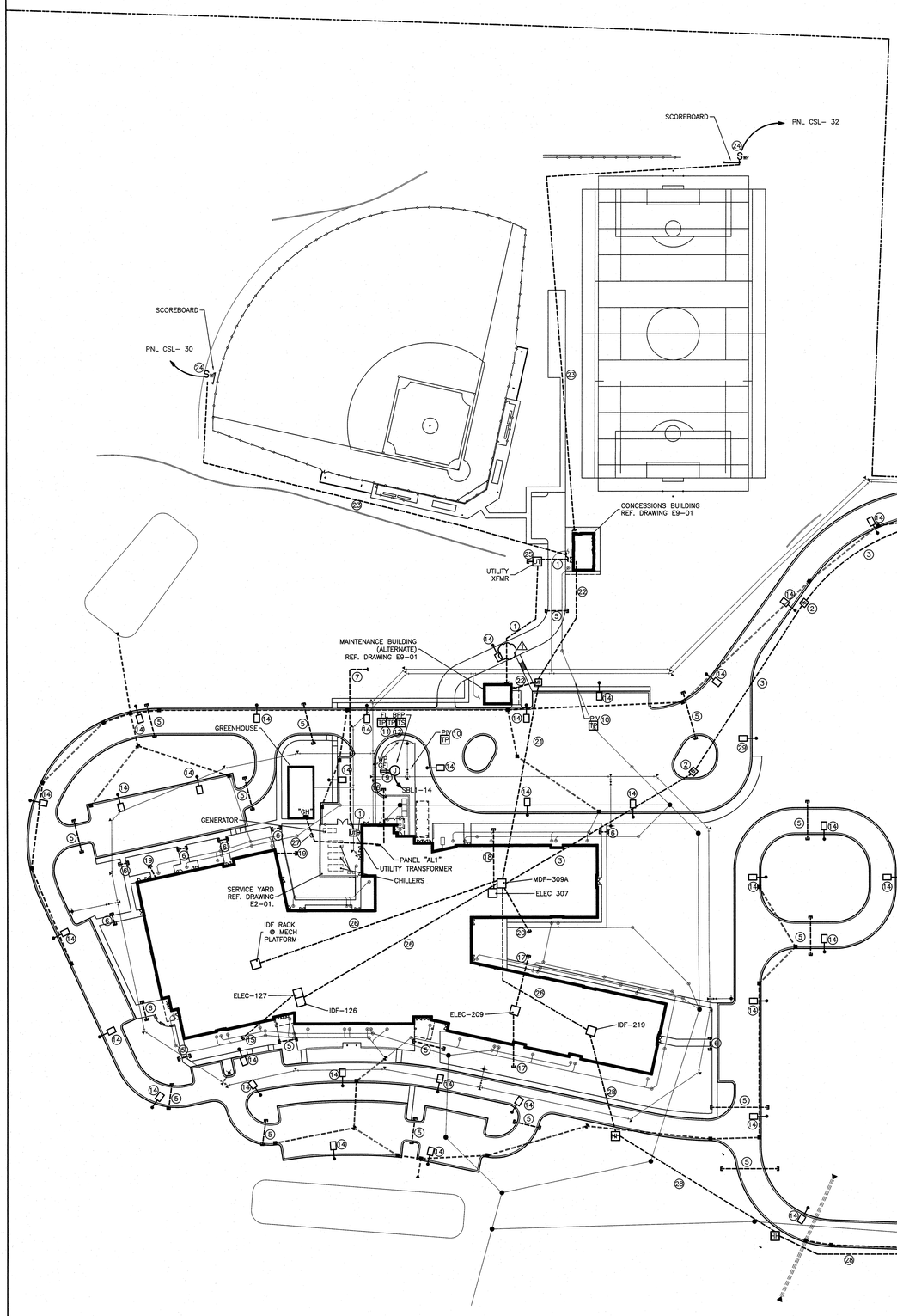
ID	DATE	DESCRIPTION
2	06/14/19	ADDENDUM 03
1	05/30/19	ADDENDUM 01

DRAWN BY: Author
CHECKED BY: RA

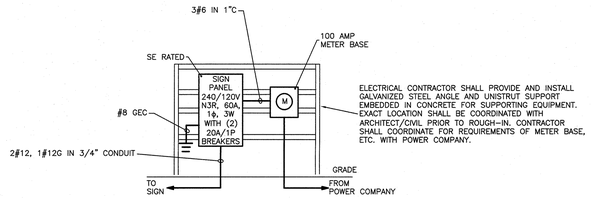
FIRST FLOOR POWER PLAN - AREA 100

2017032 20 MAY 2019

E2-01



01 E2–10 ELECTRICAL SITE PLAN
1" = 60'–0"



02 E2–10 SIGN SERVICE RISER
NTS

NOTES: (AS INDICATED ON THIS PLAN BY A NUMBER IN A ◯)

1. SEE POWER RISER ON SHEET E4–01.
2. SEE MANHOLE DETAIL E0–06/01.
3. (3)–4" COMMUNICATION CONDUITS FROM MDF ROOM 309A TO PROPERTY LINE VIA MANHOLES. BURY CONDUITS A MINIMUM OF 36" BELOW GRADE.
4. (3)–4" COMMUNICATION CONDUITS STUBBED OUT AND CAPPED FROM MANHOLE. MARK LOCATION ON AS–BUILT PLANS.
5. (2)–3" CONDUIT SLEEVES – BURY A MINIMUM OF 36" BELOW GRADE. COORDINATE WITH POWER COMPANY FOR FINAL LOCATIONS.
6. 2" CONDUIT SLEEVE – BURY A MINIMUM OF 24" BELOW GRADE.
7. PROPOSED PRIMARY UNDERGROUND POWER LINE BY DUKE ENERGY. COORDINATE CLOSELY. CONTRACTOR SHALL PROVIDE AND INSTALL (2) 6" CONDUITS FROM TRANSFORMER PAD TO GRASS AREA FOR DUKE ENERGY PRIMARY. COORDINATE EXACT REQUIREMENTS WITH DUKE ENERGY PRIOR TO ANY ROUGH–IN.
8. WEATHERPROOF JUNCTION BOX AND GFCI RECEPTACLE FOR DOMESTIC WATER BFP HEATER. CIRCUIT AS SHOWN.
9. WEATHERPROOF JUNCTION BOX AND GFCI RECEPTACLE FOR FIRELINE BFP HEATER. CIRCUIT AS SHOWN.
10. TAMPER SWITCH FOR POST INDICATOR VALVE (PIV). PROVIDE AND INSTALL 1" CONDUIT AND FIRE ALARM WIRING TO FIRE ALARM SYSTEM TO MONITOR TAMER SWITCH.
11. TAMPER SWITCHES FOR FIRELINE BFP. PROVIDE AND INSTALL 1" CONDUIT AND FIRE ALARM WIRING TO FIRE ALARM SYSTEM FOR MONITORING TAMPER SWITCHES.
12. TEMPERATURE SENSOR (POTTER OR EQUAL) FOR FIRELINE BFP HOT BOX. PROVIDE AND INSTALL 1" CONDUIT AND FIRE ALARM WIRING TO FIRE ALARM SYSTEM FOR MONITORING TEMPERATURE SENSOR. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONDUIT, WIRING, TEMPERATURE SENSOR (POTTER OR EQUAL) FOR A COMPLETE INSTALLATION.
13. ELECTRICAL CONTRACTOR SHALL PROVIDE SEPARATE ELECTRICAL SERVICE FOR SCHOOL SIGN. REFER TO DETAIL 02 ON THIS SHEET.
14. REFERENCE LOCATION FOR DUKE ENERGY SITE LIGHTING. REFER TO CIVIL DRAWINGS.
15. PROVIDE AND INSTALL (2) 2" (SPARE) CONDUITS FROM ELECTRICAL ROOM 127 FOR FUTURE USE. BURY A MINIMUM OF 24" BELOW GRADE, CAP BOTH ENDS AND LOCATE ON AS–BUILT PLANS USING DIMENSIONS.
16. PROVIDE AND INSTALL (2) 2" (SPARE) CONDUITS FROM ELECTRICAL ROOM 145–1 FOR FUTURE USE. BURY A MINIMUM OF 24" BELOW GRADE, CAP BOTH ENDS AND LOCATE ON AS–BUILT PLANS USING DIMENSIONS.
17. PROVIDE AND INSTALL (2) 2" (SPARE) CONDUITS FROM ELECTRICAL ROOM 209 FOR FUTURE USE. BURY A MINIMUM OF 24" BELOW GRADE, CAP BOTH ENDS AND LOCATE ON AS–BUILT PLANS USING DIMENSIONS.
18. PROVIDE AND INSTALL (2) 2" (SPARE) CONDUITS FROM ELECTRICAL ROOM 307 FOR FUTURE USE. BURY A MINIMUM OF 24" BELOW GRADE, CAP BOTH ENDS AND LOCATE ON AS–BUILT PLANS USING DIMENSIONS.
19. PROVIDE AND INSTALL (2) 2" (SPARE) CONDUITS FROM MECHANICAL ROOM 634B FOR FUTURE USE. BURY A MINIMUM OF 24" BELOW GRADE, CAP BOTH ENDS AND LOCATE ON AS–BUILT PLANS USING DIMENSIONS.
20. PROVIDE AND INSTALL (2) 2" (SPARE) CONDUITS FROM MDF ROOM 309A FOR FUTURE USE. BURY A MINIMUM OF 24" BELOW GRADE, CAP BOTH ENDS AND LOCATE ON AS–BUILT PLANS USING DIMENSIONS.
21. PROVIDE AND INSTALL (3) 3" (SPARE) CONDUITS FROM MDF ROOM 309A TO MANHOLE FOR OUTLYING FACILITIES. BURY A MINIMUM OF 24" BELOW GRADE, CAP BOTH ENDS AND LOCATE ON AS–BUILT PLANS USING DIMENSIONS.
22. PROVIDE AND INSTALL (2) 3" (SPARE) CONDUITS FROM MANHOLE TO OUTLYING STRUCTURE, FOR FUTURE COMMUNICATIONS CABLING. LOCATE ON AS–BUILT PLANS.
23. REFER TO PANEL SCHEDULE FOR CONDUIT AND WIRE SIZE.
24. PROVIDE AND INSTALL WEATHERPROOF DISCONNECT SWITCH FOR SCOREBOARD. PROVIDE A EXTRA HEAVY DUTY IN–USE COVER. COORDINATE EXACT LOCATION WITH THE SCOREBOARD PROVIDER.
25. STUB–OUT (2) 3" SPARE CONDUITS FROM THE TRANSFORMER PAD FOR FUTURE SPORTSFIELD LIGHTING. CAP ENDS OF CONDUITS AND LOCATE ON ASBUILT PLANS.
26. PROVIDE AND INSTALL (2) 3" CONDUITS UNDERGROUND BETWEEN MDF–309A AND NETWORK CLOSETS. LOCATE ROUTE ON ASBUILT PLANS.
27. GREENHOUSE PANEL, REFER TO POWER RISER ON E4–01. COORDINATE EACT LOCATION WITH OWNER/ARCHITECT PRIOR TO ROUGH–IN.
28. PROVIDE AND INSTALL (1) 2" CONDUIT UNDERGROUND BETWEEN IDF–219 AND SCHOOL SIGN FOR FUTURE COMMUNICATIONS. ROUTE CONDUIT USING QUAZITE# PC1212HG00, TIER 15, 2–BOLTS, GASKETED HANDHOLES AT LOCATIONS SHOWN.

GENERAL NOTES:

1. ALL COPPER COMMUNICATIONS, FIRE ALARM, ETC. CONDUCTORS EXISTING THE BUILDING ENVELOPE SHALL BE PROVIDED WITH LIGHTNING SURGE SUPPRESSION AS REQUIRED PER NEC ARTICLE 800. REFER TO SPECIFICATIONS.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE PULL CORDS IN ALL EMPTY CONDUITS. PLEASE NOTE, THE PULL CORDS FOR THE COMMUNICATIONS SERVICE ENTRANCE FROM THE PROPERTY LINE WILL BE REQUIRED TO MEET THEIR REQUIREMENTS. PLEASE COORDINATE CLOSELY.
3. ⚠1 THE MAINTENANCE BUILDING SHALL BE AN ALTERNATE IN THE PROJECT. REFER TO ARCHITECT'S ALTERNATE SECTION 012300. THE ELECTRICAL CONTRACTOR SHALL STUB–OUT & CAP (2)–3" COMMUNICATION CONDUITS 5'–0" FROM THE MANHOLE TOWARDS THE MAINTENANCE BUILDING IF THE ALTERNATE IS NOT ACCEPTED. LOCATE ON AS–BUILT PLANS.

smith sinnett ARCHITECTURE
T 919 781 6882
F 919 781 3979
4601 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

pdc
Progressive Design Collaborative, Ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919.790.0999
PROJECT #17104
Licensed C-0185
pdcengineers.com

NORTH CAROLINA PROFESSIONAL 043439 ENGINEER ROBERT A. CLARK
6/13/19

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME II

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
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Trinity, NC 27370

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03

DRAWN BY: JPT
CHECKED BY: RAC

ELECTRICAL SITE PLAN

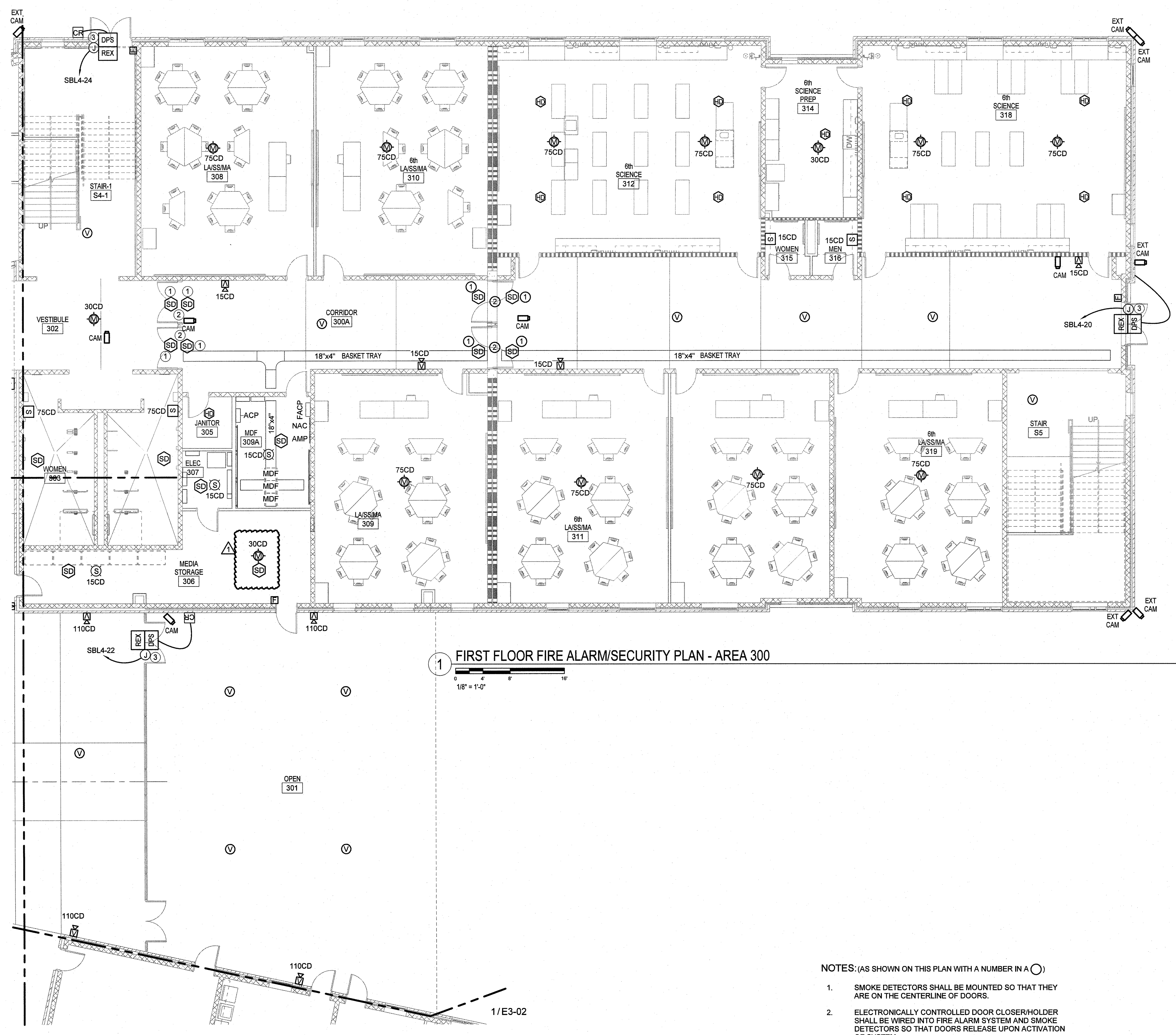
2017032 20 MAY 2019

E2-10

Project #: 17104
Sheet: E2-10
Plotted By: toby
Plotted: June 13, 2019 @ 5:12 PM

WALL RATINGS LEGEND

(line symbol)	1 HR RATED WALL
(line symbol)	2 HR RATED WALL



1 FIRST FLOOR FIRE ALARM/SECURITY PLAN - AREA 300

1/8" = 1'-0"

NOTES: (AS SHOWN ON THIS PLAN WITH A NUMBER IN A ◯)

1. SMOKE DETECTORS SHALL BE MOUNTED SO THAT THEY ARE ON THE CENTERLINE OF DOORS.
2. ELECTRONICALLY CONTROLLED DOOR CLOSER/HOLDER SHALL BE WIRED INTO FIRE ALARM SYSTEM AND SMOKE DETECTORS SO THAT DOORS RELEASE UPON ACTIVATION OF SYSTEM.
3. PROVIDE 120VAC POWER FOR ACCESS CONTROLLED DOOR. COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER/DOOR HARDWARE CONTRACTOR PRIOR TO ROUGH-IN.

GENERAL NOTES:

A. ALL FIRE ALARM WIRING SHALL BE IN CONDUIT. REFER TO SPECIFICATIONS.
B. CABLE TRAY IS FOR NETWORK CABLING.
C. REFER TO E2 SERIES OF DRAWINGS FOR CONDUIT SLEEVES.
D. CARD READERS AND ACCESS CONTROL DEVICES SHALL BE PROVIDED BY OWNER'S SECURITY CONTRACTOR. NOTE: ALL ROUGH-IN SHALL BE BY THE ELECTRICAL CONTRACTOR.
E. ALL CAMERAS AND MOUNTS SHALL BE PROVIDED BY THE OWNER'S SECURITY CONTRACTOR. THE CAT-6 WIRING FOR THE CAMERAS SHALL BE BY THE DIVISION 27 CONTRACTOR. THIS INCLUDES THE SMB CONNECTORS. THE 3FT CAT-6 PATCH CABLES TO THE CAMERAS SHALL BE BY THE DIVISION 27 CONTRACTOR.

smith sinnett ARCHITECTURE

T 919 781 8582
F 919 781 3979

4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607

info@smithsinnett.com

pdc
Progressive Design Collaborative, ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989
PROJECT #17104
License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045439 ROBERT A. CLARK 6/13/19

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

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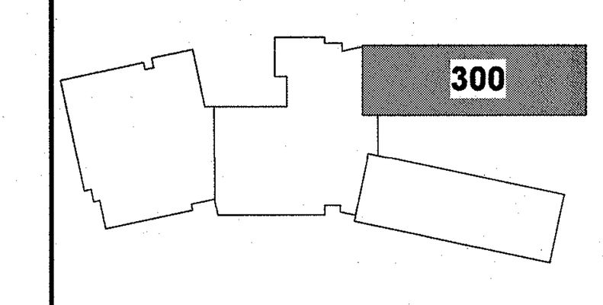


KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
1	06/14/19	ADDENDUM 03

DRAWN BY: Author
CHECKED BY: RA

FIRST FLOOR FIRE ALARM/SECURITY PLAN - AREA 300

2017032 20 MAY 2019

E3-03

MAIN BUILDING LOAD SUMMARY

	TOTAL KVA	TOTAL DIVERSITY	CONNECTED KVA
INTERIOR LIGHTING	83.328	x1.25	104.16
EXTERIOR LIGHTING	2.250	x1.25	2.82
MOTORS	155.7	x1.0	155.7
HVAC	342.8	x1.0	342.8
GENERAL PURPOSE RECEPTACLES	307.2	{ 10.0 x1.0 / 297.2 x0.5 }	10.0 / 148.6
OTHER	322	x1.0	322
KITCHEN EQUIPMENT	105.9	x0.65	68.9
ELEVATOR	54.015	x1.0	54.015
	1373.2		1209

$$I = \frac{(1209)\ (1000)}{480\ x\sqrt{3}} = 1455 \text{ AMPS}$$

NEW CHILLERS CH–1, CH–2 & CH–3: 236.8 KVA + 236.8 KVA + 236.8 KVA = 710.5 KVA

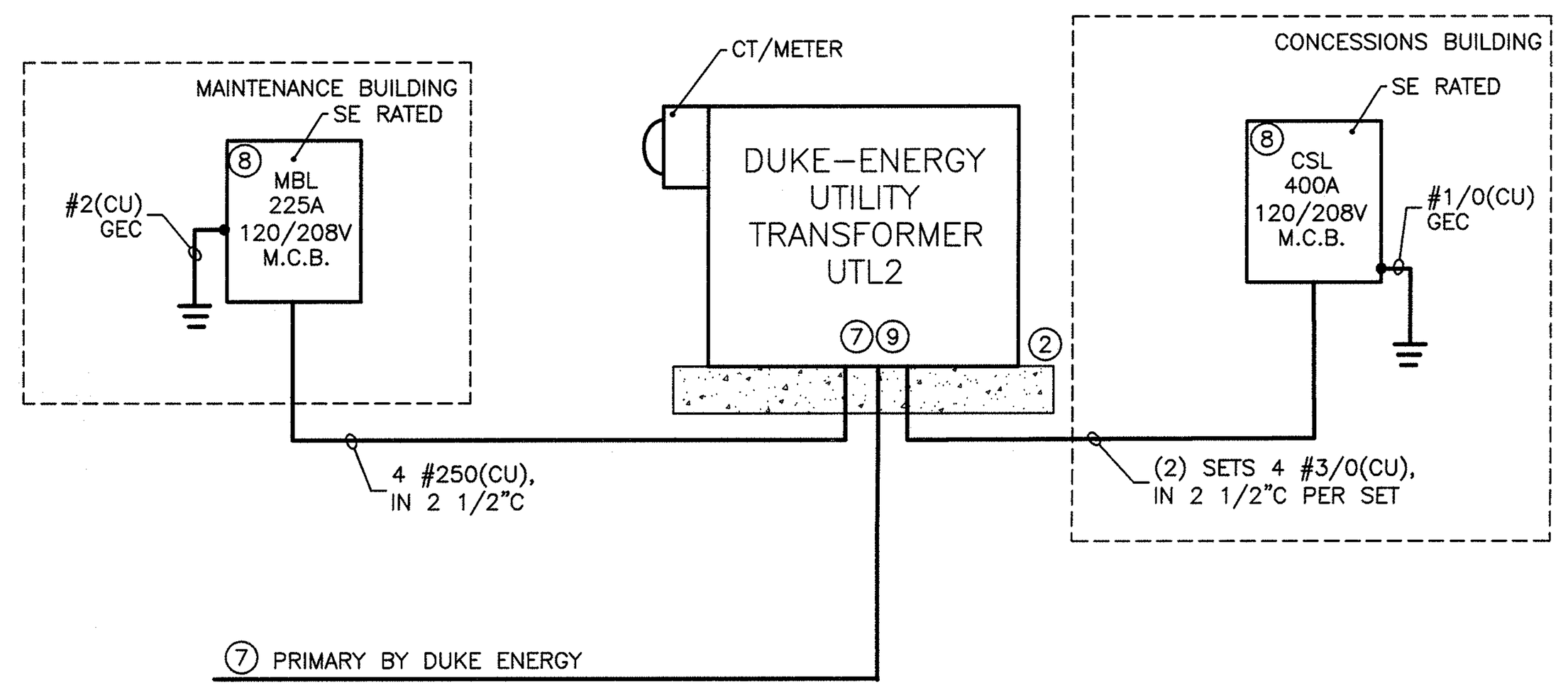
LOAD ON NEW UTILITY TRANSFORMER: 1209 KVA + 710.5 KVA = 1920 KVA (2310 AMPS)

UTL 2 ESTIMATED LOAD SUMMARY

	TOTAL KVA	TOTAL DIVERSITY	CONNECTED KVA
INTERIOR LIGHTING	1.269	x1.25	1.586
EXTERIOR LIGHTING	0.564	x1.25	0.705
MOTORS	0	x1.0	0
HVAC	22.2	x1.0	22.2
GENERAL PURPOSE RECEPTACLES	5.9	{ 10.0 x1.0 / 0 x0.5 }	5.9 / 0
OTHER	4.8	x1.0	4.8
KITCHEN EQUIPMENT	0	X1.0	0
	34.733		35.191

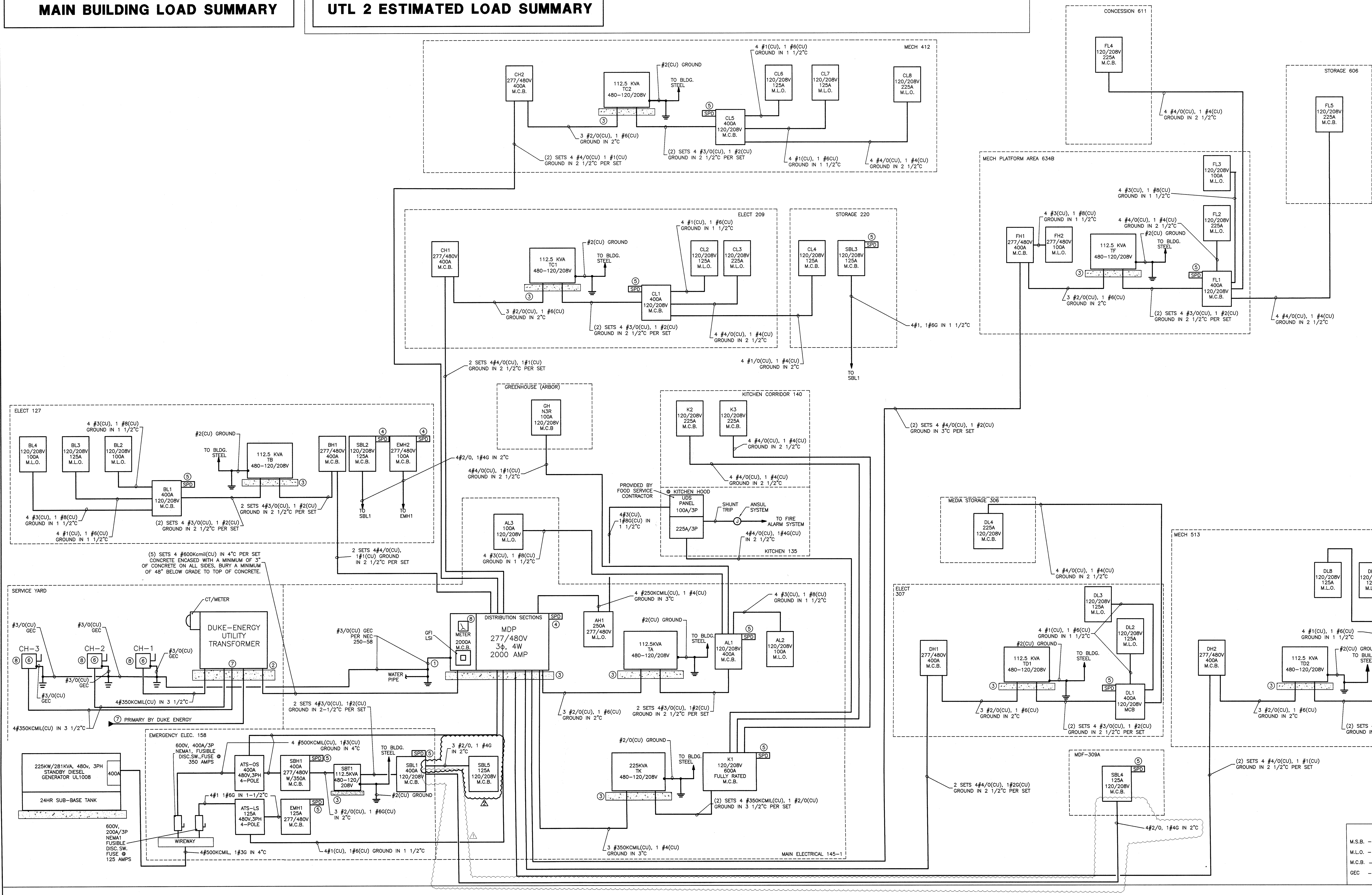
$$I = \frac{(35.191)\ (1000)}{208\ x\sqrt{3}} = 97.68 \text{ AMPS}$$

LOAD ON NEW UTILITY TRANSFORMER UTL2: 35.191 KVA (97.68 AMPS)



NOTES: (AS INDICATED ON THIS PLAN BY A NUMBER IN A ◯)

1. SEE SERVICE GROUNDING DETAIL E0–02–08.
2. 6", 3000psi REINFORCED CONCRETE PAD BY ELECTRICAL CONTRACTOR FOR UTILITY COMPANY TRANSFORMER. COORDINATE REQUIREMENTS AND OPENINGS WITH LOCAL UTILITY COMPANY.
3. 4", 3000psi REINFORCED CONCRETE HOUSKEEPING PAD FOR ELECTRICAL EQUIPMENT.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE A TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS) REFER TO SPECIFICATIONS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. TVSS SHALL BE LOCATED NEXT TO PANEL USING A CHASE NIPPLE FOR WIRING.
5. TRANSIENT VOLTAGE SURGE SUPPRESSOR – REFER TO SPECIFCATIONS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. TVSS SHALL BE LOCATED NEXT TO PANEL USING A A CHASE NIPPLE FOR WIRING.
6. 600 VOLT, 400 AMP, 3 POLE, NEMA–3R, FUSIBLE DISCONNECT SWITCH FOR CHILLER. FUSE PER MANUFACTURERS RECOMMENDATIONS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR. MOUNT ON GALVANIZED STEEL ANGLE/UNISTRUT FRAME EMBEDDED IN CONCRETE. DISCONNECT SHALL BE UL LISTED AS SERVICE ENTRANCE EQUIPMENT.
7. BY LOCAL UTILITY COMPANY DUKE–ENERGY.
8. LABEL SERVICES AS PER LATEST NEC ART. 225.37.
9. TO BE LOCATED ON NORTH EAST SIDE OF CONCESSIONS BUILDING, COORDINATE FINAL LOCATION WITH ARCHITECT/UTILITY



POWER RISER

LEGEND:

- M.S.B. – MAIN SHUNT TRIP BREAKER
- M.L.O. – MAIN LUGS ONLY
- M.C.B. – MAIN CIRCUIT BREAKER
- GEC – GROUNDING ELECTRODE CONDUCTOR

smith sinnett ARCHITECTURE
T 919 781 8582
F 919 781 3979
4600 Lake Boone Trail Suite 205 Raleigh, NC 27607
info@smithsinnett.com

pdc
Progressive Design Collaborative, ltd.
3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989
PROJECT #17104
License# C-0183
pdcengineers.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045459 ROBERT A. CLARK 6/13/19

CONSTRUCTION DOCUMENT

ENERGY STAR PARTNER

VOLUME II

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 30" X 42" SHEET

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370

KEY PLAN
NO SCALE

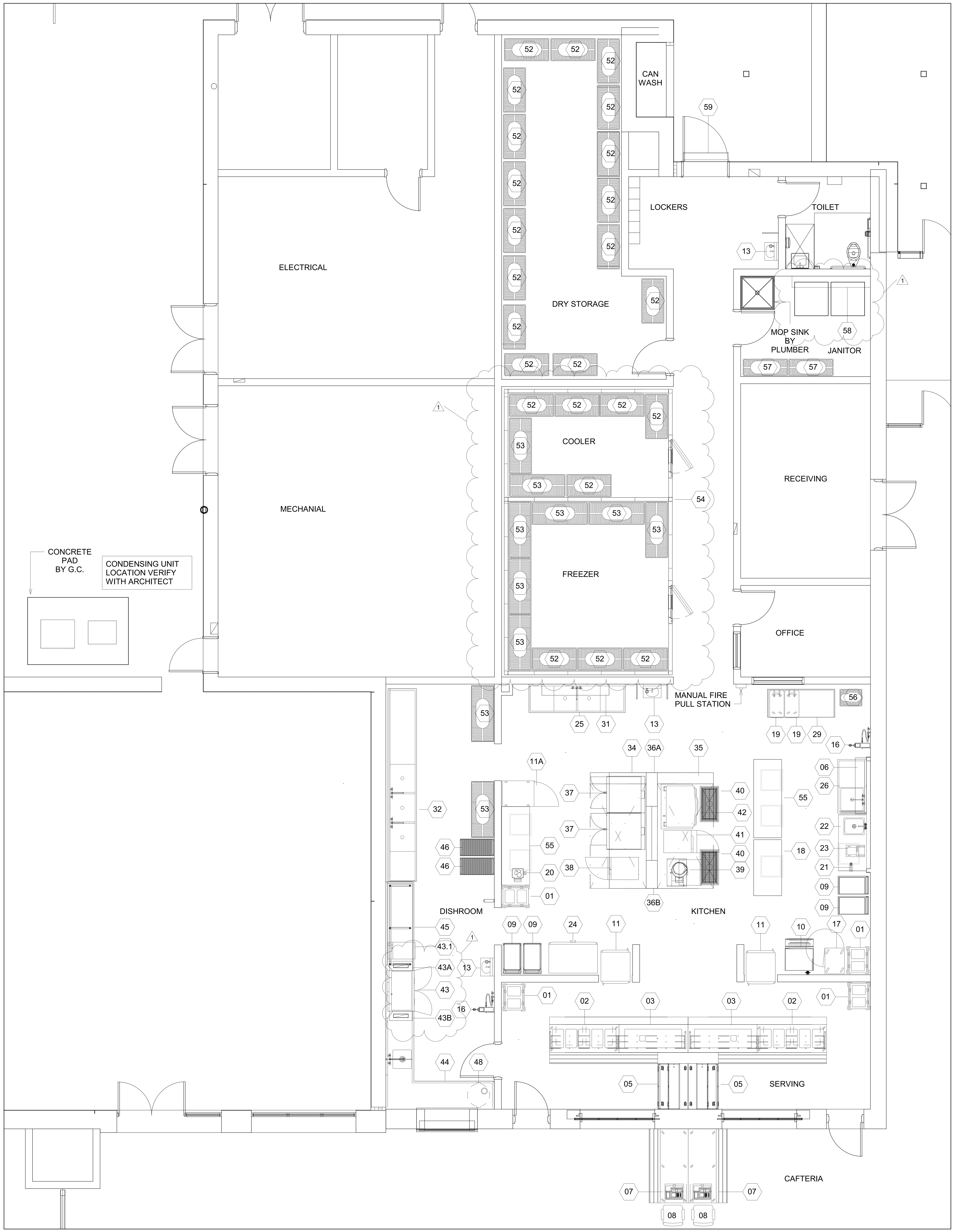
ID	DATE	DESCRIPTION
2	06/14/19	ADDENDUM 03
1	05/30/19	ADDENDUM 01

DRAWN BY: JPT
CHECKED BY: RAC

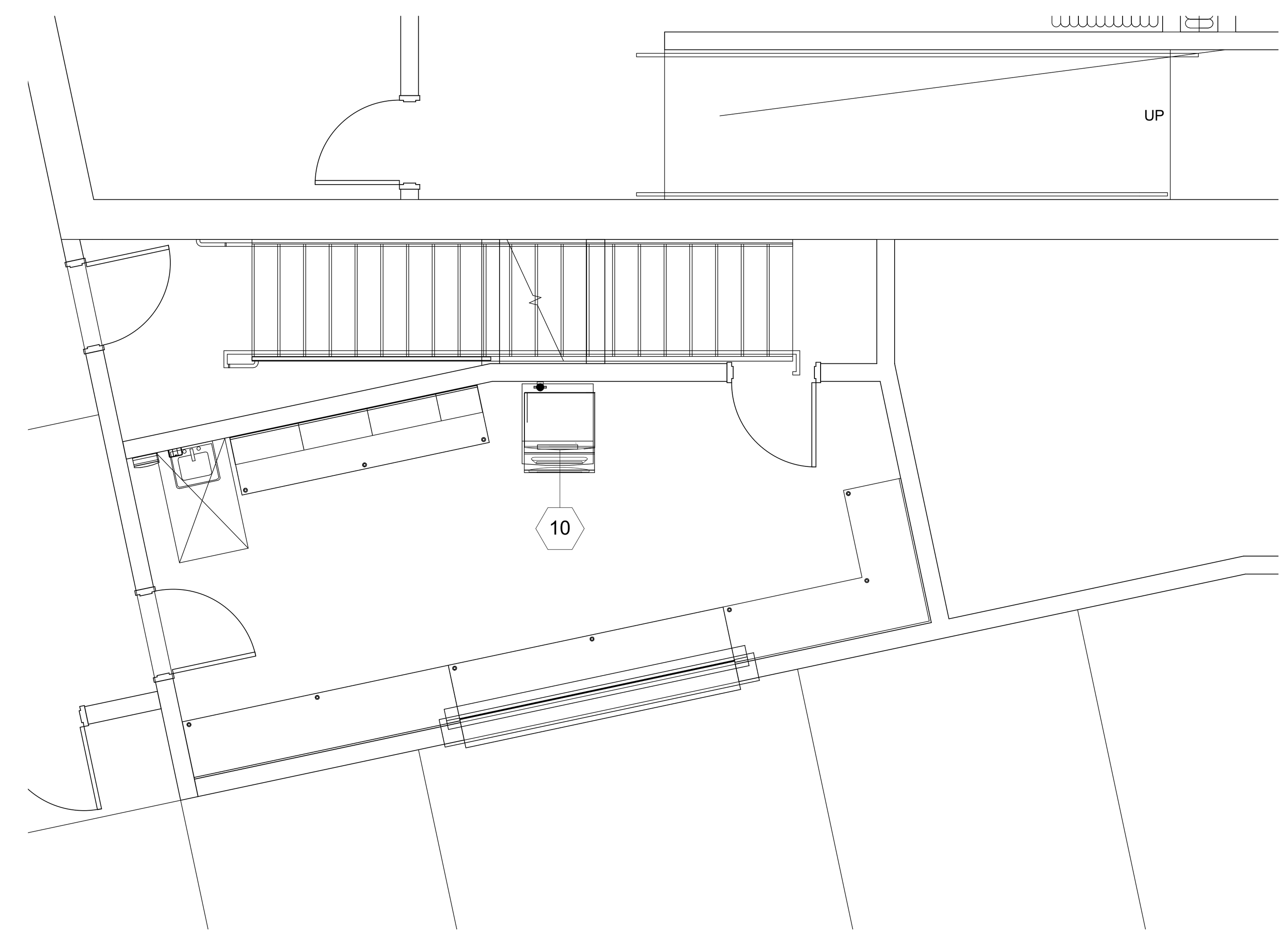
POWER RISER
LOAD SUMMARIES

2017032 20 MAY 2019

E4-01



1 FS.01 FOOD SERVICE EQUIPMENT PLAN
1/4" = 1'-0"



2 FS.01 FOOD SERVICE CONCESSION PLAN
1/4" = 1'-0"

smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com

CONSTRUCTION DOCUMENTS

FOODESIGN The Complete Food Service Experience

VOLUME I

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NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

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Surrett Drive
Trinity, NC 27370

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION

DRAWN BY: JA
CHECKED BY: KM

FOODSERVICE EQUIPMENT PLAN

2017032 21 MAY 2019

FS.01

FOODSERVICE EQUIPMENT SCHEDULE

QTY	ITEM	DESCRIPTION	MANUFACTURER	MODEL	ELECTRICAL							PLUMBING								REMARKS	Item #
					ELECT. A.F.F.	KW	HP	AMPS	VOLTS	PHASE	NEMA	HW SIZE	HW/A.F.F.	CW SIZE	CW/A.F.F.	IW	DRAIN TYPE	DW	DW A.F.F.		
4	01	TUBULAR TRAY DRISPENSER	COLORPOINT	CPM-MTD-2-1014																TRAY SLIDE, CUTTING BOARD, SNNEZE GUARD, CASTERS	01
2	02	HOT FOOD TABLE	COLORPOINT	EF5-CPA-EB	STUB			27.5 A	120	1	5-15P					1"	F.S.			TRAY SLIDE, CUTTING BOARD, SNNEZE GUARD, CASTERS	02
2	03	COLD FOOD TABLE	COLORPOINT	36-CFMA-74	STUB			7.6 A	120	1	5-15P					1"	F.S.			TRAY SLIDE, CUTTING BOARD, SNNEZE GUARD, CASTERS	03
1	04	NOT USED	-	-																	04
2	05	MILK COOLER	TRAULSEN	RMC49S4	24"			7.2 A	120	1	5-15P									CASTERS	05
1	06	WALL MOUNTED SHELF	EAGLE GORUP	SWS1260-16/4																MOUNT AT 4' - 6" A.F.F.	06
2	07	CASHIER STAND	COLORPOINT	36-CSE-MOD	24"															CASTERS	07
2	08	CASHIER CHAIR	KRUEGER	BY OWNER																	08
4	09	UTILITY CART	METRO	MY1627-24BL																	09
2	10	ICE MAKER W/ BIN	MANITOWOC	ID0302A				10.8 A	120	1	DIRECT					1/2"	F.S.				
2	11	PASS-THRU HEATED CABINET	VICTORY	HS-1D-1-EW-PT	90"			6.3 A	208	1	C&P									CASTERS	11
1	11A	HOLDING CABINET	WINSTON	HA4522-HL-3	24"			19.3 A	120	1	5-20P									CASTERS	11A
1	12	NOT USED	-	-																	12
3	13	HAND SINK	EAGLE GROUP	HSA-10-FDP								1/2"	14"	1/2"	14"			1 1/2"		GOOSENECK FAUCET, BASKET LEVER DRAIN, SOAP/PAPER TOWEL DISPENSER	13
2	14-15	NOT USED	-	-																	14-15
2	16	HOSE REEL	T&S BRASS	B-1433								1/2"	42"	1/2"	42"	1 1/2"	F.D.			30' HOSE, WALL MOUNTING FAUCET W/ LEVER HANDLES, HOSE CONNECTOR AND QUICK DISCONNECT, SPRAY VALVE, WALL BRACKET	16
1	17	NON-INSULATE CABINET	CRES COR	100-1841D																CASTERS	17
1	18	WORKTABLE	EAGLE GROUP	T3060SE																20" x 20" x 5" DRAWER, S/S UNDERSHELF, CASTERS	18
2	19	INGREDIENT BINS	CAMBRO	IB36148																CASTERS	19
1	20	FOOD PROCESSOR	ROBOT COUPE	CL50 GOURMET	24"			13.5 A	120	1	C&P										20
1	21	CAN OPENER	EDLUND	S-11																	21
1	22	WORKTABLE W/ SINK	EAGLE GROUP	T3060SE								1/2"	14"	1/2"	14"					20" x 20" x 5" DRAWER, SINK W/ FAUCET MODEL # B-0231, LEVER DRAIN, S/S UNDERSHELF	22
1	23	ELECTRIC CAN OPENER	EDLUND	266	24"			10.0 A	120	1	C&P										23
1	24	REACH-IN REFRIGERATOR	VICTORY	RSA-2D-S1	24"			10.7 A	120	1	C&P										24
1	25	TWO-COMPARTMENT SINK	EAGLE GROUP	FFN2740-2-24-14/3								1/2"	14"	1/2"	14"	1 1/2"	F.S.			T&S BRASS FAUCET MODEL# B-0231, (2) LEVER DRAIN, CASTERS	25
1	26	ONE COMPARTMENT SINK	EAGLE GROUP	FN2424-1-30L-14/3								1/2"	14"	1/2"	14"	1 1/2"	F.S.			T&S BRASS FAUCET MODEL# B-0231, LEVER DRAIN, CASTERS	26
2	27-28	NOT USED	-	-																	27-28
1	29	BAKERS TABLE	ADVANCE TABCO	BST-306R																3-TIER DRAWERS ON RIGHT	29
1	30	NOT USED	-	-																	30
1	31	WALL MOUNTED SHELF RACK	EAGLE GROUP	SWS1272-16/3																MOUNT AT 4' - 6" A.F.F.	31
1	32	THREE (3) COMPARTMENT SINK	EAGLE GROUP	CUSTOM								(2)1/2"	14"	(2)1/2"	14"	1 1/2"	F.S.			(2) T&S BRASS FAUCET MODEL # B-0231, (3) LEVER DRAINS	32
1	33	NOT USED	-	-																	33
1	34	EXHAUST HOOD	CAPTIVE-AIRE	ND-PSP	(2)ABV			20.0 A	120	1	DIRECT									SEE VENTILATION SCHEDULE	34
1	35	FIRE SUPPRESSION SYSTEM	ANSUL	R-102	ABV															WET CHEMICAL	35
1	36A	UTILITY DISTRIBUTION SYSTEM	CAPTIVE-AIRE	UDS	ABV		-	225.0 A	120/208	3	DIRECT	3/4"	ABV.	1"	ABV						36
1	36B	UTILITY DISTRIBUTION SYSTEM	CAPTIVE-AIRE	UDS	ABV		-	100.0 A	480	3	DIRECT	3/4"	ABV	1"	ABV						36B
2	37	CONVECTION OVEN	BLODGETT	MARK V-100 DBL	UDS			51.0 A	480	3	C&P										37
1	38	ELECTRIC STEAMER	VULCAN	C24EA5-PLUS	UDS			72.0 A	208	1	C&P	3/4"	ABV	3/4"	ABV	1 1/2"	F.S.			BACK FLOW PREVENTION, WATER FILTRATION	38
1	39	TILTING KETTLE	SOUTHBEND	KECT-12	UDS			57.6 A	208	1	C&P	3/8"	ABV	3/8"	ABV		F.T.			BACK FLOW PREVENTION, WATER FILTRATION, DOUBLE PANTRY FAUCET	39
2	40	FLOOR TROUGH	EAGLE GROUP	ASFT-1836-SG												4"	F.T.				40
1	41	CONVECTION STEAMER DBL	VULCAN	C24ET10				94.0 A	208	3	DIRECT					1 1/2"	F.T.			DRAIN WATER TEMPERING KIT, BACK FLOW PREVENTION	41
1	42	BRASING PAN	SOUTHBEND	BELTS-40	UDS			72.1 A	208	1	C&P	3/8"	ABV	3/8"	ABV		F.T.			DOUBLE PANTRY FAUCET	42
1	43	DISHWASHER	HOBART	CI44eN-BAS1	64"			55.0 A	208	3	DIRECT	3/4"	64"	3/4"	64"	2"	F.S.			DRAIN WATER TEMPERING KIT	43
1	43.1	BOOSTER SINK HEATER	HATCO	C-36	18"			100.0 A	208	3	DIRECT	3/4"	14"			1/2"					43.1
1	43A	PANT LEG VENT HOOD - UNLOAD	HOBART	CUSTOM								3/4"	14"							SEE VENTILATION SCHEDULE	43A
1	43B	PANT LEG VENT HOOD - LOAD END	HOBART	CUSTOM																SEE VENTILATION SCHEDULE	43B
1	44	SOILED DISHTABLE	ADVANCE TABCO	CUSTOM								1/2"	14"	1/2"	14"		F.S.			PRE-RINSE SINK, PRE-RINSE UNIT, SCRAP BASKET, LEVER DRAIN	44
1	45	CLEAN DISHTABLE	ADVANCE TABCO	CUSTOM																	45
2	46	SHELVING UNIT	NEXEL	C1836RN																4-TIER POST 63"H, CASTERS	46
1	47	NOT USED	-	-																	47
1	48	TRASH CAN	BY OWNER	BY OWNER																	48
2	49-51	NOT USED	-	-																	49-51
24	52	SHELVING UNIT	METRO	MQ2448G																EPOXY COATED, 74"H POST	52
10	53	SHELVING UNIT	METRO	MQ2460G																EPOXY COATED, 74"H POST	53
2	54	COLD STORAGE ASSEMBLY	BALLY	CUSTOM																SEE REFRIGERATION SCHEDULE	54
2	55	WORKTABLE	EAGLE GROUP	T3084SE												1 1/2"	F.S.			(2) DRAWERS 20" x 20" x5", UNDERSHELF, CASTERS	55
1	56	SHELVING UNIT	METRO	MQ1824G																EPOXY COATED, 74"H POST	56
2	57	SHELVING UNIT	METRO	MQ1848G																EPOXY COATED, 74"H POST	57
1	58	WALL MOUNTED SHELF	EAGLE GROUP	WS1284-14/3																MOUNT AT 4' - 6" A.F.F.	
1	59	AIR CURTAIN/FLY FAN	MARS AIR SYSTEMS	LPV248-1UA-OB	ABV.		1/6	2.4 A	120	1	DIRECT									MICROSWITCH AT DOOR	59

REFRIGERATION CONNECTION SCHEDULE

CONN.	EQUIPMENT	LOAD	V/PH	REMARKS
54A	LIGHT, COOLER	300 W	120/1	2 EXTRA LIGHTS
54B	EVAP. COIL, COOLER	2.0 AMPS	120/1	--
54C	COND. UNIT, COOLER	6.6 MCA	208/1	--
54D	LIGHTS, DOOR HEAT	800 W	120/1	4 EXTRA LIGHTS
54E	HEAT TAPE, FREEZER	15 AMPS	120/1	DRAINLINE HEAT TAPE
54F	EVAP. COIL, FREEZER	1.8 AMPS	120/1	FEED DEFROST THRU TIMER @ COND. UNIT
54G	COND. UNIT, FREEZER	19.4 MCA	208/1	

VENTILATION CONNECTION SCHEDULE

ITEM	CONNECTION	SIZE	CFM	S.P.	QTY.	TOTAL
43A	EXHAUST	4" x 16"	200	0.25"	1	200
43B	EXHAUST	4" x 16"	400	0.25"	1	400
34A	EXHAUST	16" DIA.	2200	-0.689"	1	2200
34B	EXHAUST	16" DIA.	2200	-0.689"	1	2200

***GAS NOTE:
KITCHEN EQUIPMENT WILL BE PROVIDED WITH GAS PRESSURE REGULATORS DESIGNED TO OPERATE WITH 14" W.C. INCOMING GAS PRESSURE OR LESS. PLUMBER TO PROVIDE INTERMEDIATE REGULATORS, AS REQUIRED TO REDUCE INCOMING BUILDING PRESSURE TO LEVEL SUITABLE FOR EQUIPMENT.

ELECTRICAL LOADS ARE BASED ON MANUFACTURER'S INFORMATION. MINIMUM CIRCUIT AMPACITY AND OVERCURRENT PROTECTION TO BE DETERMINED BY CODE REQUIREMENTS AND/OR MANUFACTURER'S DIRECTIONS.

110° F. HOT WATER REQUIREMENTS

		GPH
MOP SINK	1 @ 5	5
HAND SINK	2 @ 5	10
	TOTAL	15

140° F. HOT WATER REQUIREMENTS

		GPH
POT SINKS	5 @ 30	150
HOSE STATION	2 @ 45	90
CAN WASH	1 @ 10	10
PREP SINK	2 @20	10
DISHMACHINE	FROM BOOSTER @ 20 PSI	126
PRE-RINSE SINK	1 @ 35	35
	TOTAL	421

ABBREVIATIONS

ABV.	ABOVE
A.F.F.	ABOVE FINISHED FLOOR
CTR.	COUNTER MOUNTED
C.W.	COLD WATER
E.C.	ELECTRICAL CONTRACTOR
F.D.	FLOOR DRAIN
F.S.	FLOOR SINK
F.S.E.C.	FOOD SERVICE EQUIPMENT CONTRACTOR
G.C.	GENERAL CONTRACTOR
H.W.	HOT WATER
I.W.	INDIRECT WASTE
M.C.	MECHANICAL CONTRACTOR
N.I.K.C.	NOT IN KITCHEN CONTRACT
S/S	STAINLESS STEEL
ST.	STUB
U.C.	UTILITY CHASE
W.	WASTE

smith sinnett ARCHITECTURE

T 919 781 8582

4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607

info@smithsinnett.com

CONSTRUCTION DOCUMENTS

FOODESIGN The Complete Food Service Experience

VOLUME I

Smith Sinnett Architecture, P.A. 2018

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NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION

DRAWN BY: JA
CHECKED BY: KM

FOOD SERVICE EQUIPMENT SCHEDULE

2017032 21 MAY 2019

FS.02

MECHANICAL SYMBOLS

Symbol	Description
(half-filled circle)	HOT WATER (HW)
(filled circle)	COLD WATER (CW)
(open circle)	WASTE (W)
FD	FLOOR DRAIN
FS	FLOOR SINK - OPEN
FS	FLOOR SINK W/HALF GRATE

NOTES

PLUMBING ROUGHING IN NOTES

THIS PLAN IS INTENDED TO SHOW UTILITY REQUIREMENTS AND APPROXIMATE ROUGHING-IN LOCATIONS ONLY. DO NOT USE FOR ACTUAL ROUGHING-IN. FOR FINAL ROUGH-IN LOCATIONS SEE DIMENSIONED PLANS PROVIDED BY FOOD SERVICE EQUIPMENT CONTRACTOR.

WHERE EXPOSED PIPES AND CONDUITS ARE NECESSARY, THEY SHOULD BE MOUNTED 1 TO 2 INCHES OFF THE WALL AND 6 INCHES OFF THE FLOOR TO ALLOW FOR CLEANING.

PLUMBING NOTES

PLUMBING TRIM SUCH AS FAUCETS AND SINK WASTES SHALL BE FURNISHED WITH EQUIPMENT BY FOOD SERVICE EQUIPMENT CONTRACTOR. PLUMBER TO PROVIDE SERVICE, STOP VALVES, P-TRAPS, ETC., AND MAKE FINAL CONNECTIONS.

COLD STORAGE ASSEMBLY: EVAP. COIL DRAINLINES SHALL BE PROVIDED AND INSTALLED BY FOOD SERVICE EQUIPMENT CONTRACTOR.

BOOSTER HEATER SHALL BE FURNISHED BY FOOD SERVICE EQUIPMENT CONTRACTOR WITH/PRESS. REDUCING VALVE TEMP/PRESSURE GAUGE AND SHOCK ABSORBER LOOSE FOR FINAL CONNECTION BY PLUMBER.

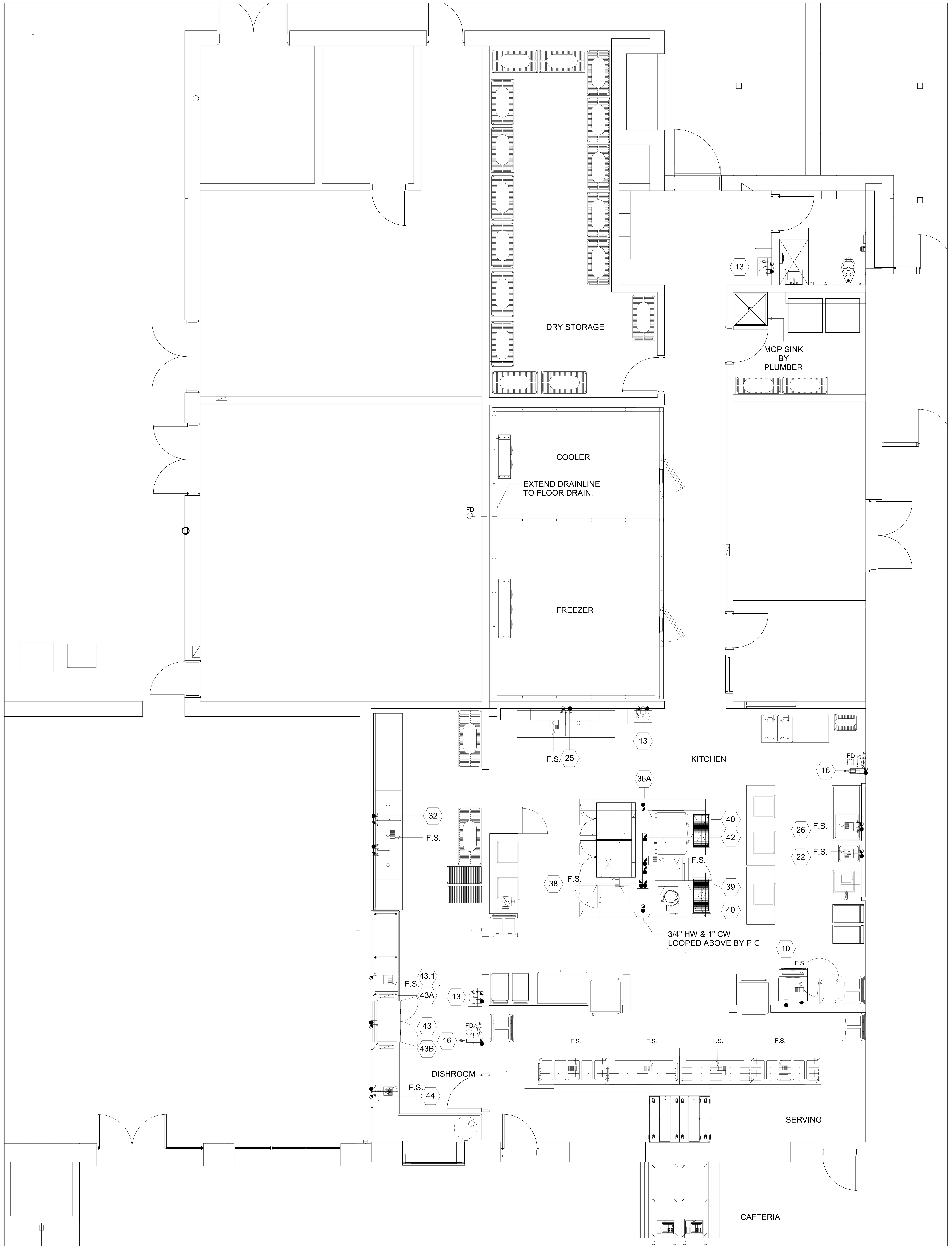
HOSE REELS FURNISHED BY FOOD SERVICE EQUIPMENT CONTRACTOR WITH VACUUM BREAKER, MIXING VALVE, SHUT-OFF VALVE, CHECK VALVES, TEMPERED WATER PIPING AND FLANGES. PLUMBER TO PROVIDE SUPPLY LINES AND MAKE FINAL CONN.S. (SEE HOSE REEL DETAIL)

S/S UTILITY CHASE FURNISHED BY FOOD SERVICE EQUIPMENT CONTRACTOR WITH WATER MANIFOLDS. PLUMBER TO MAKE FINAL CONNECTION TO HOSE.

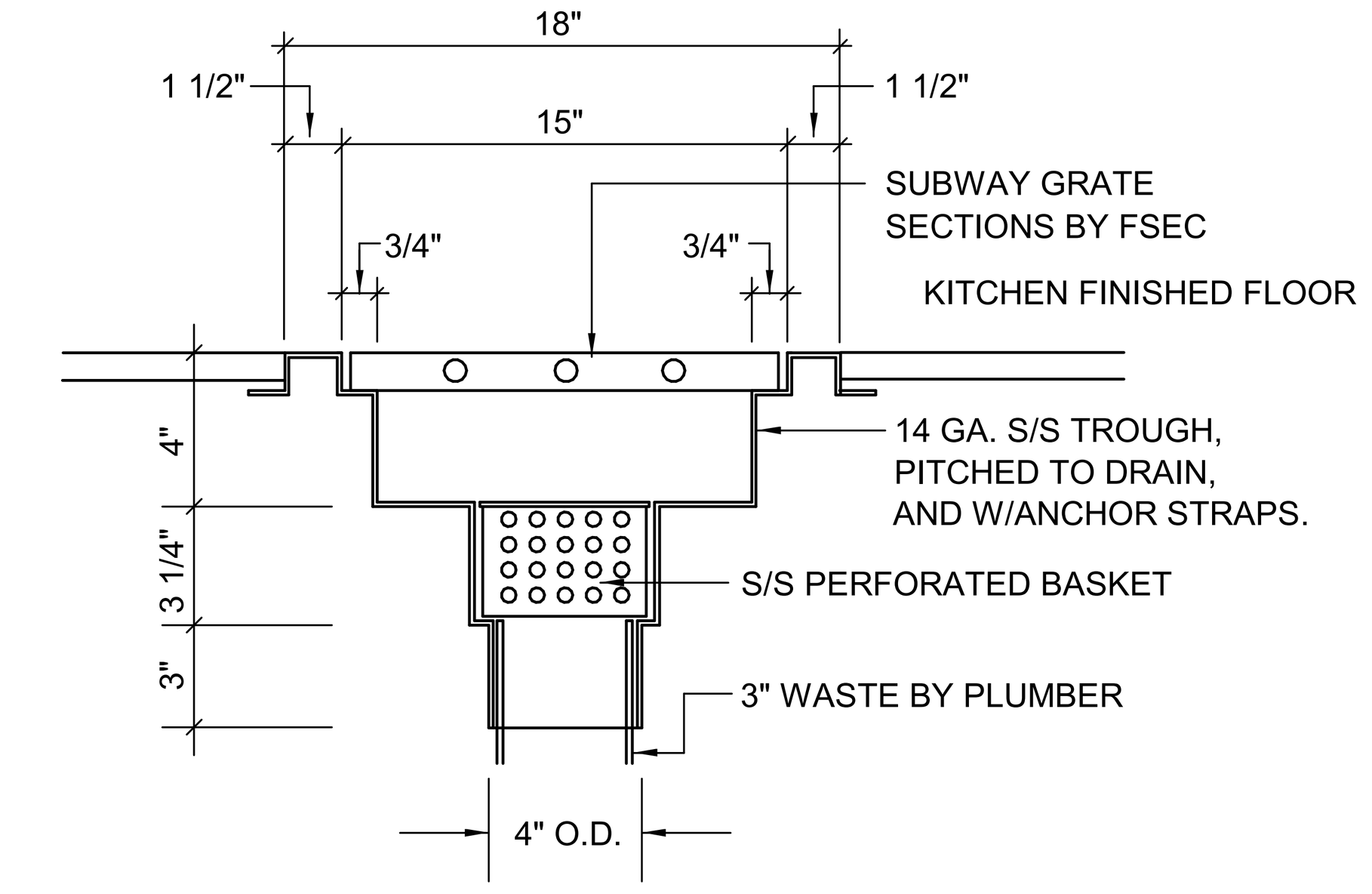
MECHANICAL NOTES

EXHAUST HOOD SHALL BE FURNISHED BY FOOD SERVICE EQUIPMENT CONTRACTOR WITH CONNECTION COLLARS ON TOP. H.V.A.C. CONTRACTOR TO PROVIDE EXHAUST FAN, BUILDING DUCTWORK AND MAKE FINAL CONNECTIONS.

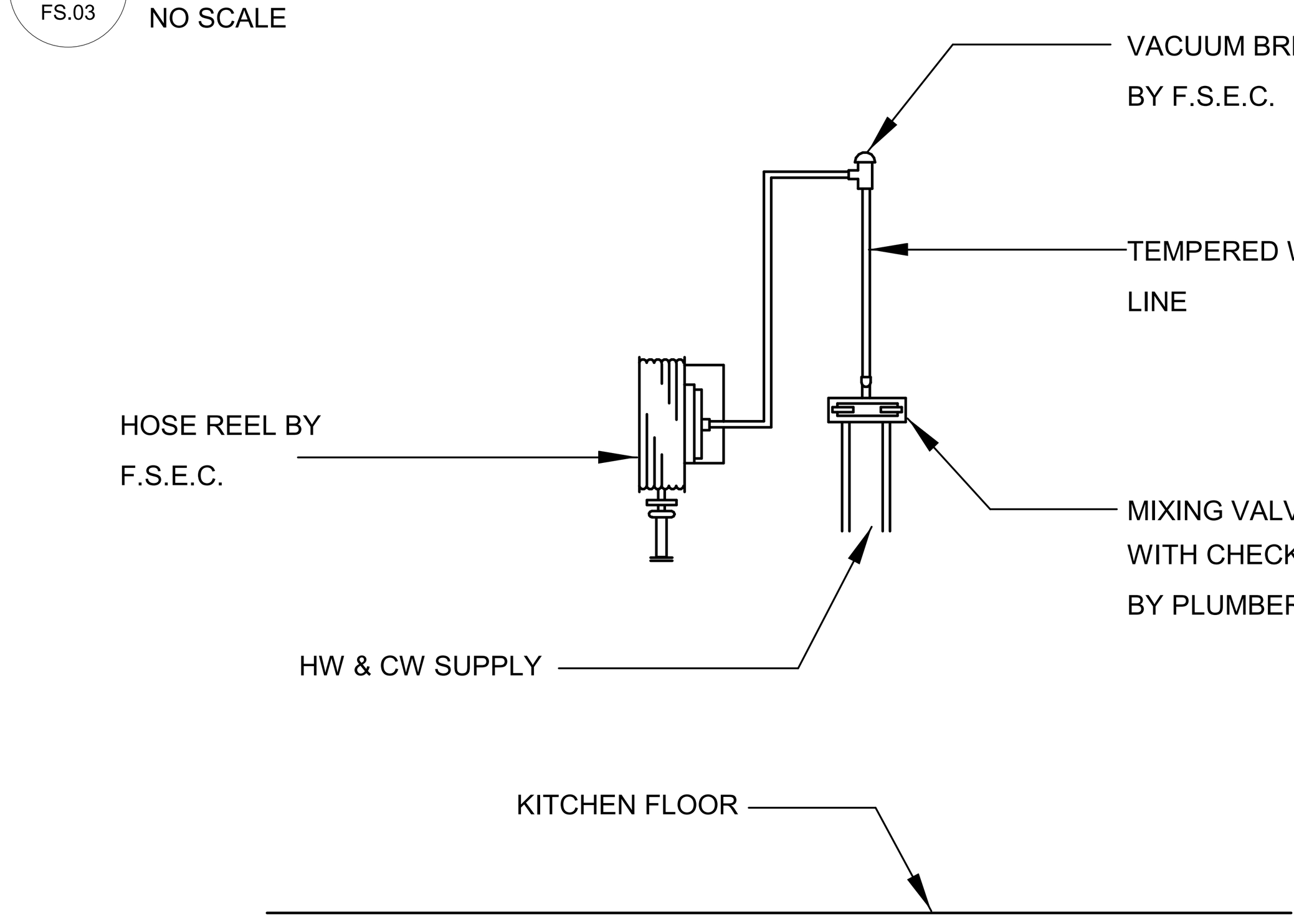
DISHMACHINE SHALL BE FURNISHED BY FOOD SERVICE EQUIPMENT CONTRACTOR WITH VENT COWLS AND STAINLESS STEEL DUCTS TO CEILING, READY FOR FINAL CONNECTIONS BY H.V.A.C. CONTRACTOR.



1 FS.03 FOOD SERVICE PLUMBING PLAN
1/4" = 1'-0"



2 FS.03 FLOOR TROUGH 12" x 18" DETAIL
NO SCALE



3 FS.03 HOSE REEL DETAIL
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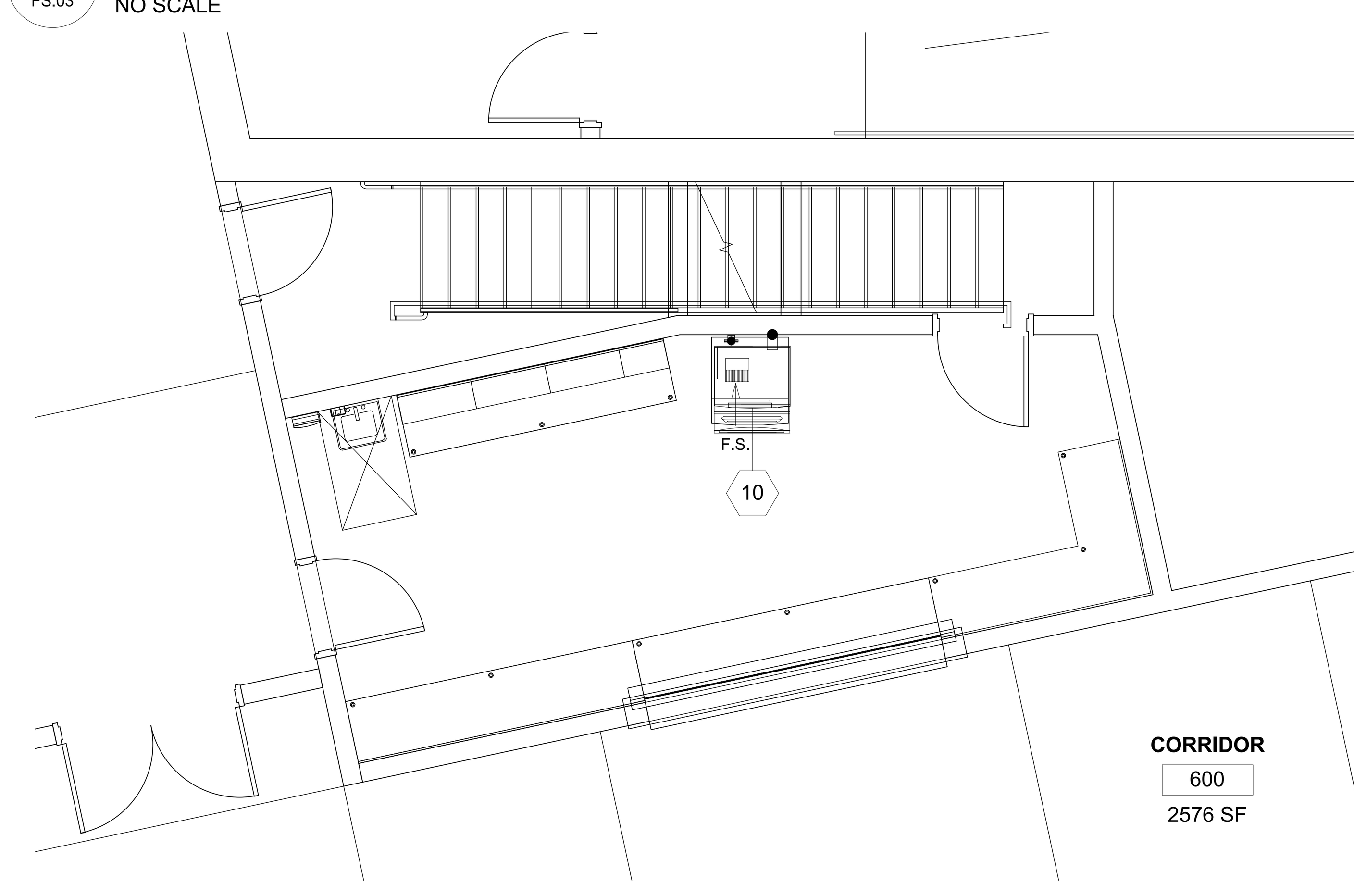

4 FS.03 FOOD SERVICE PLUMBING PLAN - CONCESSION
1/4" = 1'-0"

smith sinnett ARCHITECTURE
T 919 781 8582
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
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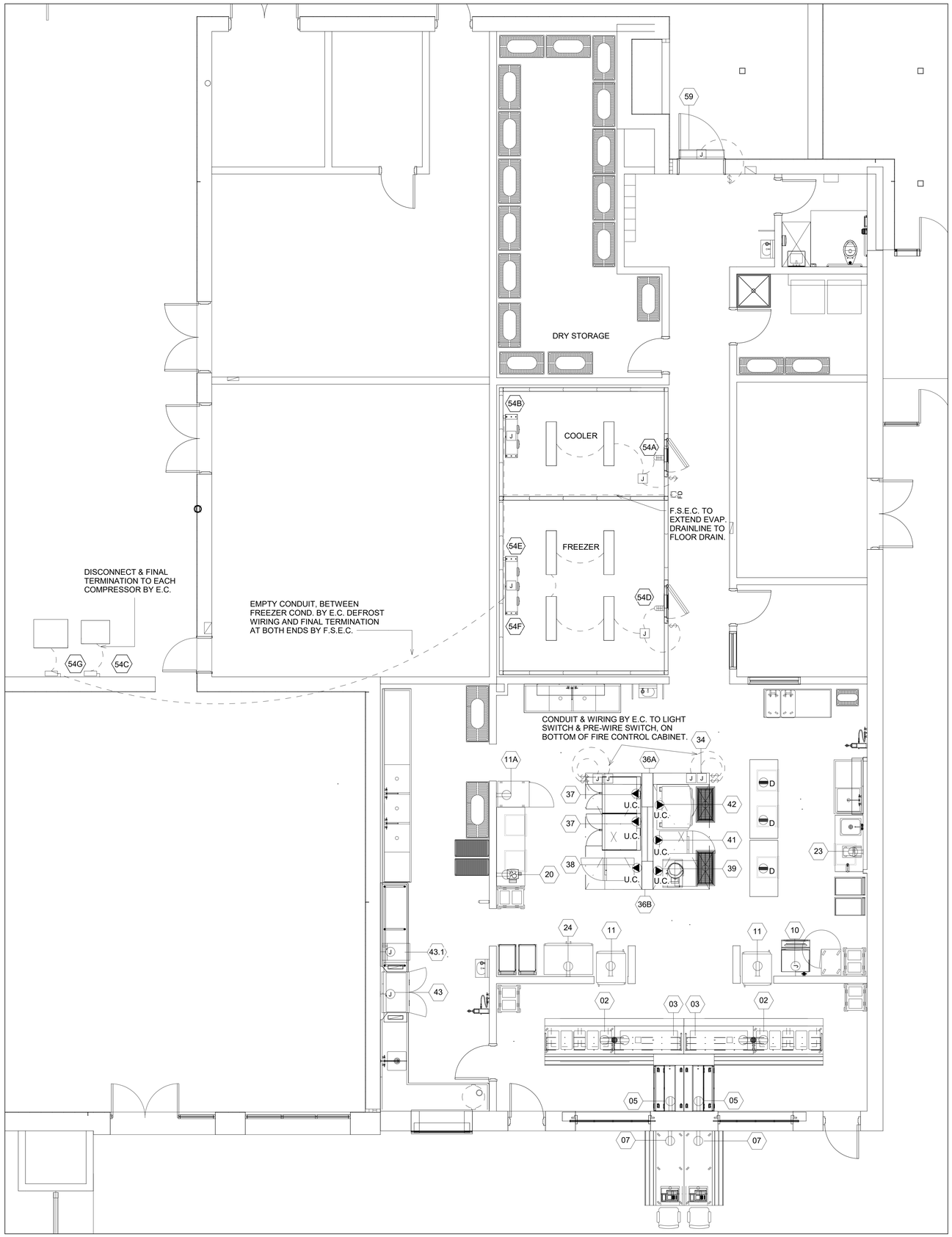
FOOD SERVICE PLUMBING PLAN

2017032 21 MAY 2019

FS.03



1 FS.04 FOOD SERVICE ELECTRICAL PLAN
1/4" = 1'-0"

ELECTRICAL SYMBOLS

J	J-BOX, FLUSH IN WALL
J	J-BOX FROM ABOVE
	WATERPROOF CONDUIT STUB
	DUPLEX OUTLET
U.C.	UTILITY CHASE MOUNTED OUTLET
	CONVENIENCE OUTLET, UNASSIGNED
F	FLOOR MOUNTED OUTLET BY E.C.
	SPECIAL OUTLET TO MATCH EQUIPMENT
D	OUTLET WITH DROP CORD FROM ABOVE

NOTES

ELECTRICAL ROUGHING IN NOTES

THIS PLAN IS INTENDED TO SHOW UTILITY REQUIREMENTS AND APPROXIMATE ROUGHING-IN LOCATIONS ONLY. DO NOT USE FOR ACTUAL ROUGHING IN. FOR FINAL ROUGH-IN LOCATIONS SEE DIMENSIONED PLANS PROVIDED BY FOOD SERVICE EQUIPMENT CONTRACTOR.

WHERE EXPOSED PIPES AND CONDUITS ARE NECESSARY, THEY SHOULD BE MOUNTED 1 TO 2 INCHES OFF THE WALL AND 6 INCHES OFF THE FLOOR TO ALLOW FOR CLEANING.

ELECTRICAL NOTES

DISHMACHINE SHALL BE FURNISHED BY FOOD SERVICE EQUIPMENT CONTRACTOR, PRE-WIRED TO INTEGRAL CONTROL PANEL READY FOR FINAL CONNECTION BY ELECTRICAL CONTRACTOR.

COLD STORAGE ROOMS SHALL BE FURNISHED BY FOOD SERVICE EQUIPMENT CONTRACTOR WITH PRE-WIRED LIGHT AND SWITCH AT DOOR PANEL. ELECTRICAL CONTRACTOR TO PROVIDE INTERCONNECTING WIRING TO EXTRA LIGHT FIXTURES AND MAKE FINAL CONNECTIONS.

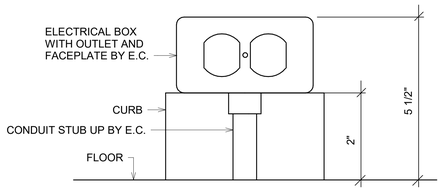
REFRIGERATION SYSTEMS SHALL BE FURNISHED AND INSTALLED BY FOOD SERVICE EQUIPMENT CONTRACTOR, INCLUDING DEFROST WIRING BETWEEN COND. UNIT AND EVAP. COIL. FINAL POWER DROPS AND DISCONNECTS FOR COND. UNITS AND EVAP. COILS SHALL BE BY ELECTRICAL CONTRACTOR.

EXHAUST HOODS FURNISHED BY FOOD SERVICE EQUIPMENT CONTRACTOR WITH LIGHT FIXTURES AND EMPTY CONDUIT TO J-BOX. ELECTRICAL CONTRACTOR TO INTERCONNECT TO LIGHT SWITCH IN FRONT OF HOOD.

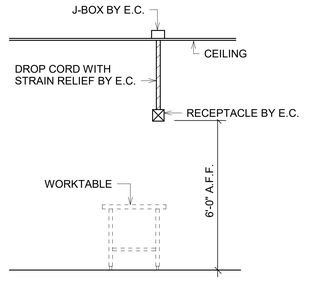
EXHAUST HOOD FURNISHED WITH FAN PREWIRE PACKAGE. ELECTRICAL CONTRACTOR TO INTERCONNECT TO SWITCH IN FRONT OF HOOD.

S/S UTILITY CHASE SHALL BE FURNISHED BY FOOD SERVICE EQUIPMENT CONTRACTOR WITH RECEPTABLES MOUNTED AND CORD & PLUG SET LOOSE. ELECTRICAL CONTRACTOR TO EXTEND WIRING TO EACH RECEPTABLE ON RACEWAY AND CONNECT. ELECTRICAL CONTRACTOR TO CONNECT CORD & PLUG SETS TO EQUIPMENT.

FIRE CONTROL SYSTEM FURNISHED BY FOOD SERVICE EQUIPMENT CONTRACTOR WITH APPLIANCE SHUT-OFF FEATURE. ELECTRICAL CONTRACTOR TO INTERCONNECT TO SHUNT TRIPS PER MANUFACTURERS DIAGRAM, SO AS TO SHUT OFF ALL EQUIPMENT UNDER HOODS WHEN ACTUATED.



2 FS.04 TOMBSTONE RECEPTACLE
NO SCALE



3 FS.04 CEILING-MOUNTED RECEPTACLE
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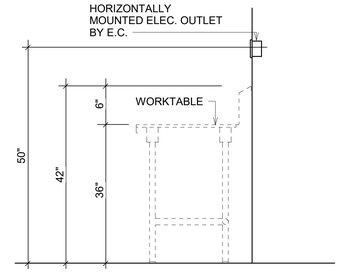
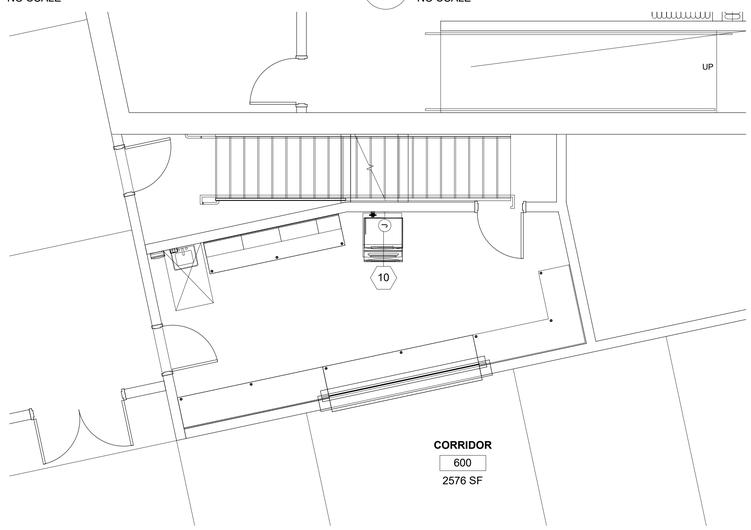


4 FS.04 TYP. UNASSIGNED WALL OUTLET DETAIL
NO SCALE



5 FS.04 FOOD SERVICE ELECTRICAL - CONCESSION
1/4" = 1'-0"

smith sinnett ARCHITECTURE
T 919 781 8582
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FOODESIGN The Complete Food Service Experience

VOLUME I

NEW TRINITY MIDDLE SCHOOL
RANDOLPH COUNTY SCHOOL SYSTEM

Parcel PIN 7708118367
Surrett Drive
Trinity, NC 27370

KEY PLAN
NO SCALE

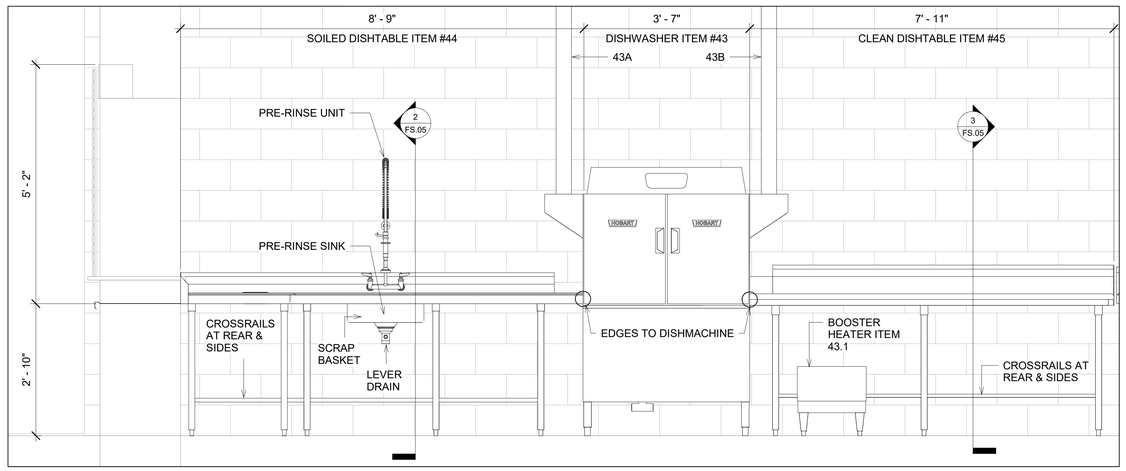
ID	DATE	DESCRIPTION

DRAWN BY: JA
CHECKED BY: KM

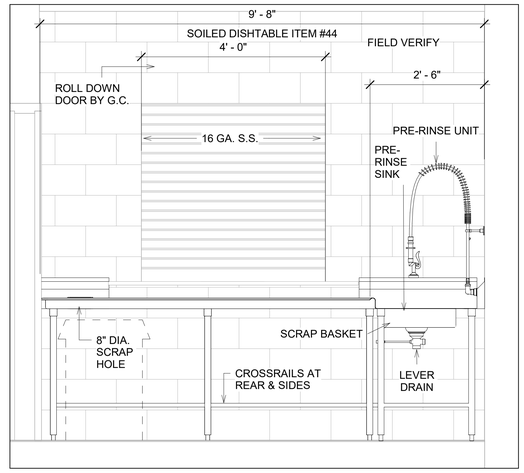
FOOD SERVICE ELECTRICAL PLAN

2017032 21 MAY 2019

FS.04



1 DISHTABLE ASSEMBLY DETAIL
FS.05
3/4" = 1'-0"



2 SOILED DISHTABLE DETAIL
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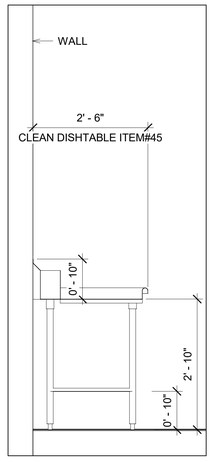
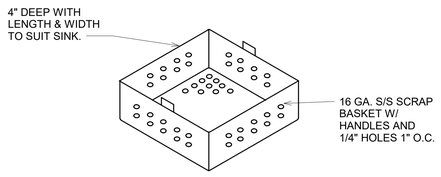
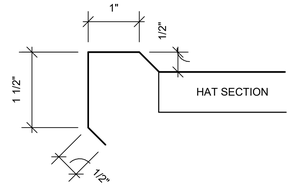
3/4" = 1'-0"



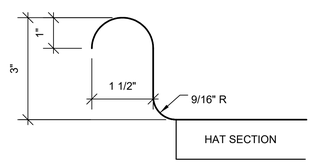
3 CLEAN DISHTABLE DETAIL
FS.05
3/4" = 1'-0"



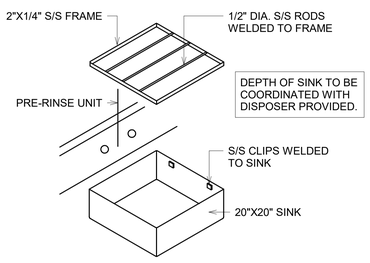
4 SCRAP BASKET DETAIL
FS.05
NO SCALE



5 NON-SPILL
FS.05
NO SCALE



6 ROLLED RIM
FS.05
NO SCALE



7 PRE-RISE SINK DETAIL
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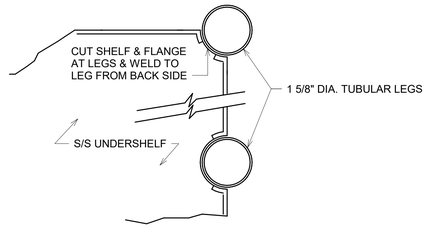
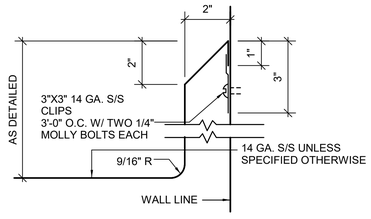
NO SCALE



8 PIPE LEG UNDERSHELF
FS.05
NO SCALE



9 BACKSPLASH DETAIL
FS.05
NO SCALE

smith sinnett ARCHITECTURE
T 919 781 8582
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info@smithsinnett.com

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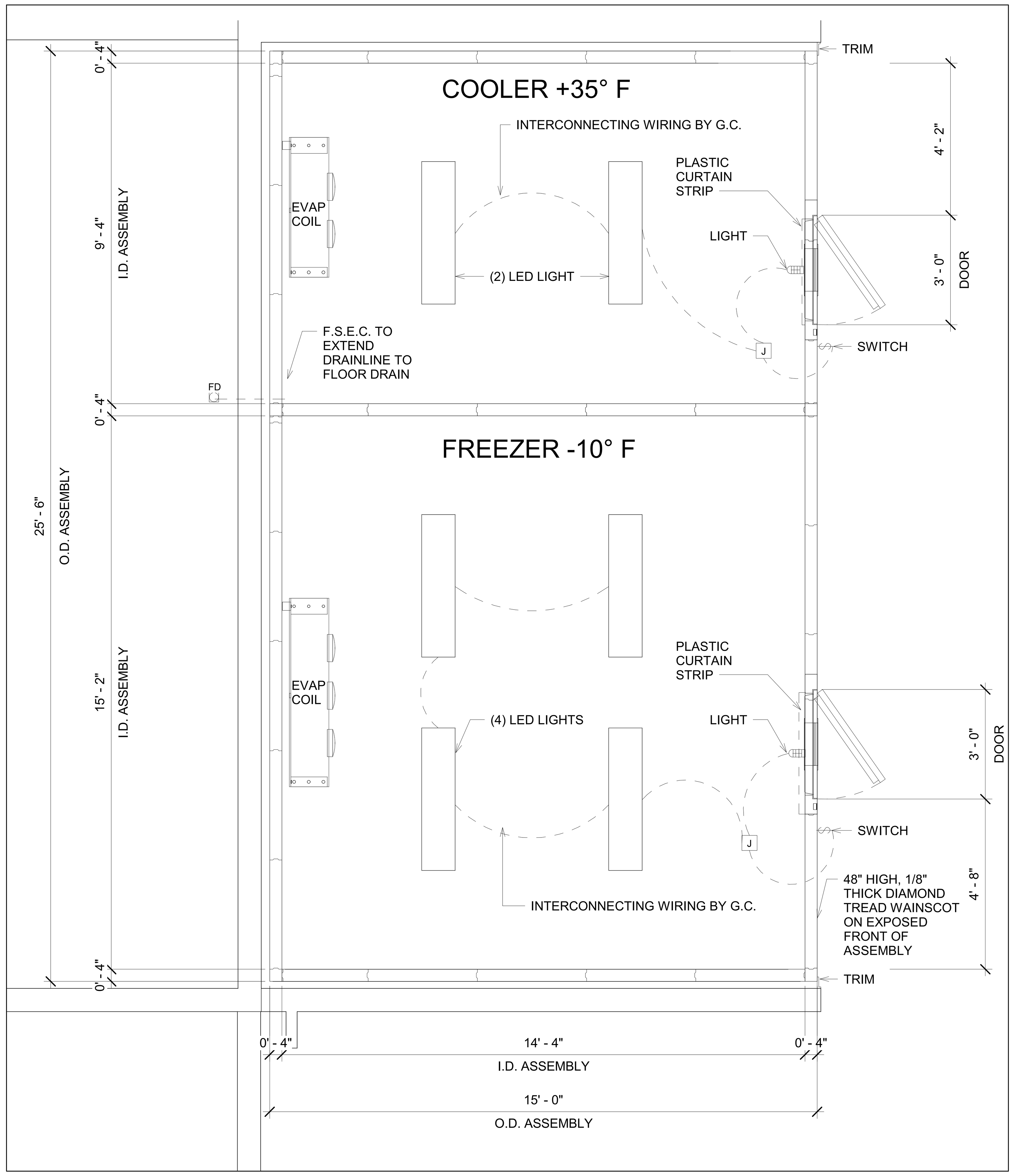
FOOD SERVICE DISHROOM DETAILS

2017032 21 MAY 2019

FS.05



1 FS.06 COLD STORAGE ASSEMBLY PLAN
1/2" = 1'-0"
ITEM # 54

COLD STORAGE ASSEMBLY DATA						
COMPARTMENT	TEMP RANGE	DAILY BTU LOAD	LIGHTS WATTS	DOOR HEAT	VOLT	PHASE
COOLER	+35° F	8,951	0300 W		120	1
FREEZER	-10° F	14,080	500 W	300 W	120	1

REFRIGERATION SYSTEMS										
AMBIENT TEMP.	RUN TIME	COND. UNIT MCA	COND. UNIT VOLT	COND. UNIT PHASE	SUCTION TEMP	EVAP. COIL AMP	EVAP. COIL VOLT	EVAP. COIL PHASE	EVAP. COIL DEFROST	
100° F	16 HOURS	6.6	208	3	25.9° F	2.0	120	1	OFF-CYCLE	
100° F	18 HOURS	15.9	208	3	-19.2° F	1.8	208	1	ELECTRIC	

WALK-IN NOTES

EXTERIOR SURFACES
.040 PATTERNED ALUMINUM WITH 48" HIGH WAINSCOT ON EXPOSED SURFACES.

INTERIOR WALLS
.040 PATTERNED ALUMINUM WITH WHITE FINISH.

INTERIOR CEILING
.040 PATTERNED ALUMINUM WITH WHITE ENAMEL.

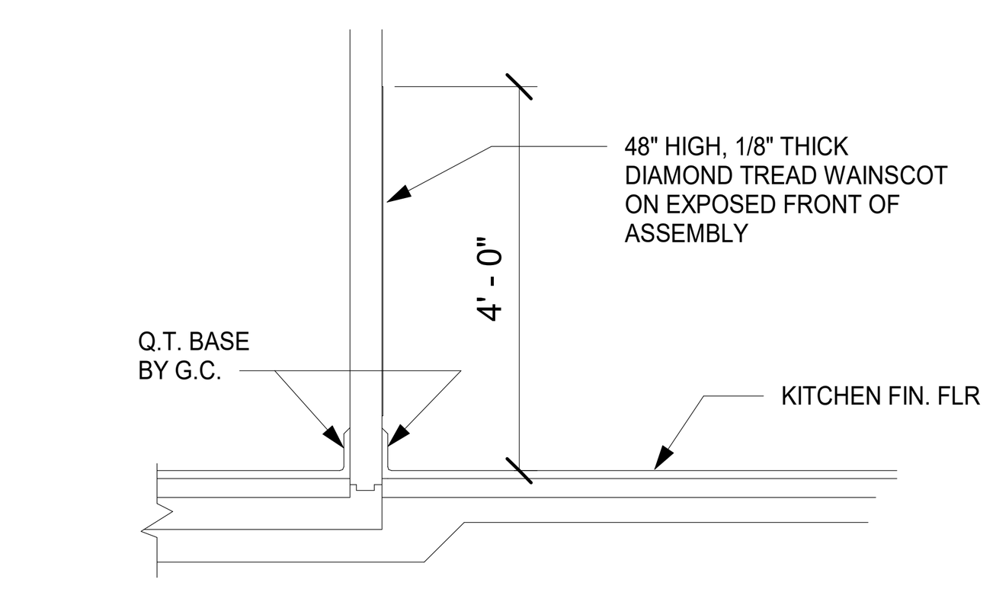
INTERIOR FLOOR
RECESSED INSULATED FLOOR BY F.S.E.C. WITH .100 DIAMOND TREAD ALUMINUM

DOORS
NOMINAL 36"x78" FINISHED TO MATCH EXTERIOR. CHROME PLATED HARDWARE; 1/8" DIAMOND TREAD KICK PLATE, 48" HIGH, BOTH SIDES.

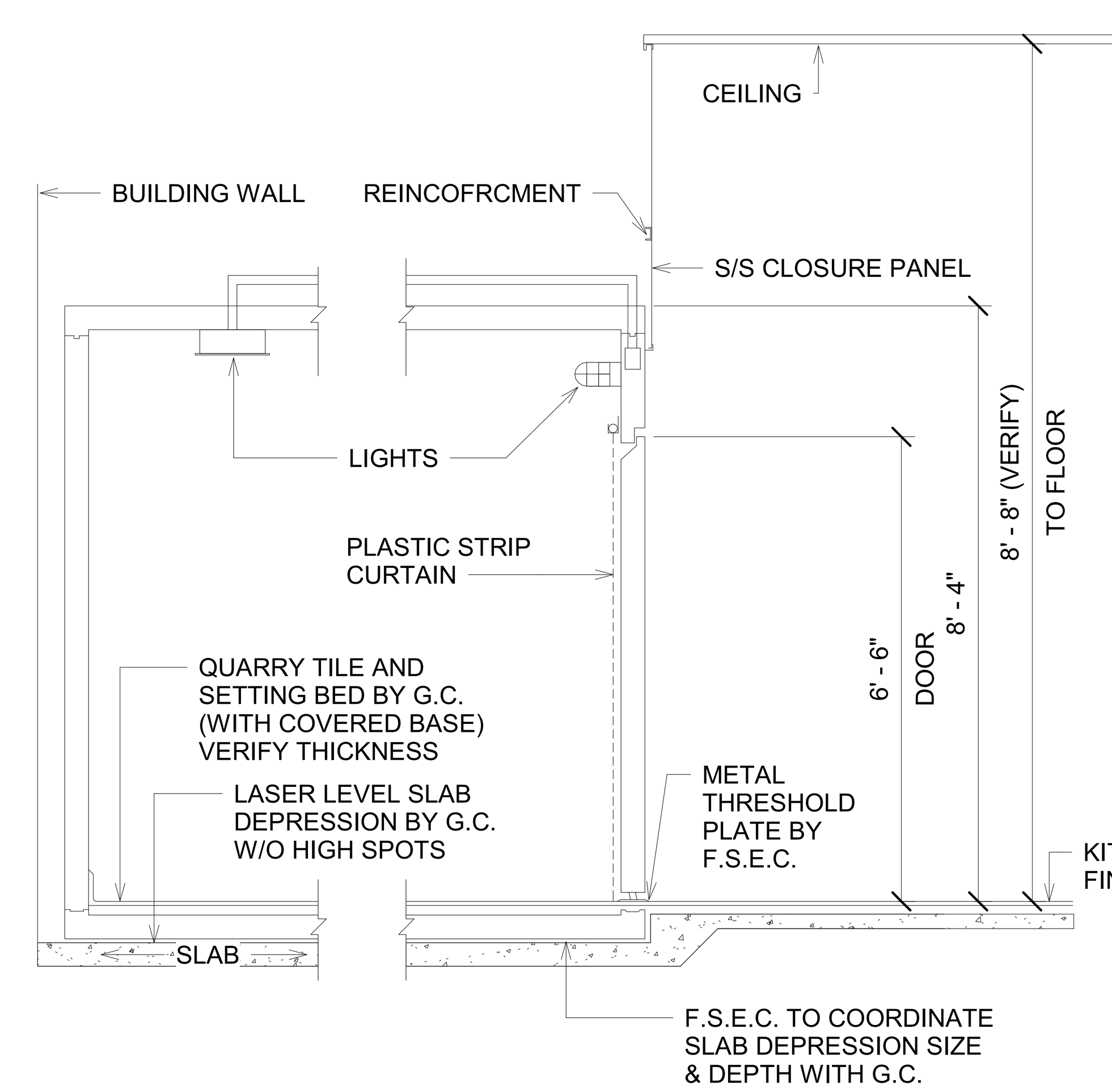
REFRIGERATION
AIR COOLED REMOTE CONDENSING UNITS WITH ALL WEATHER HOUSING, AND CONTROLS FOR OUTDOOR OPERATION.

MISCELLANEOUS
TRIM STRIPS, EVAPORATOR DRAIN LINES, DIAL THERMOMETERS, TOP CLOSURE PANELS, PLASTIC STRIP CURTAINS AND 1/8" DIAMOND TREAD WAINSCOT ACROSS FRONT OF ASSEMBLY.

LIGHTS
MANUFACTURER TO FURNISH EXTRA LIGHT FIXTURES AS REQUIRED TO PROVIDE 50 FT. CANDLES 30" ABOVE FLOOR MINIMUM. F.S.E.C. TO INSTALL AND E.C. TO CONNECT.



2 FS.06 WAINSCOT DETAIL - QUARRY TILE
NO SCALE



3 FS.06 COLD STORAGE ASSEMBLY SECTION - QUARRY TILE
NO SCALE
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FOOD SERVICE COLD STORAGE DETAILS

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FS.06

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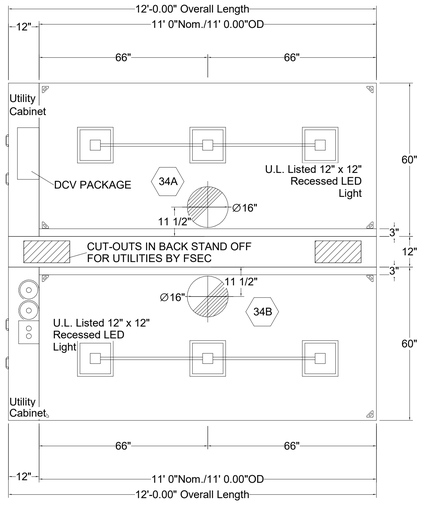
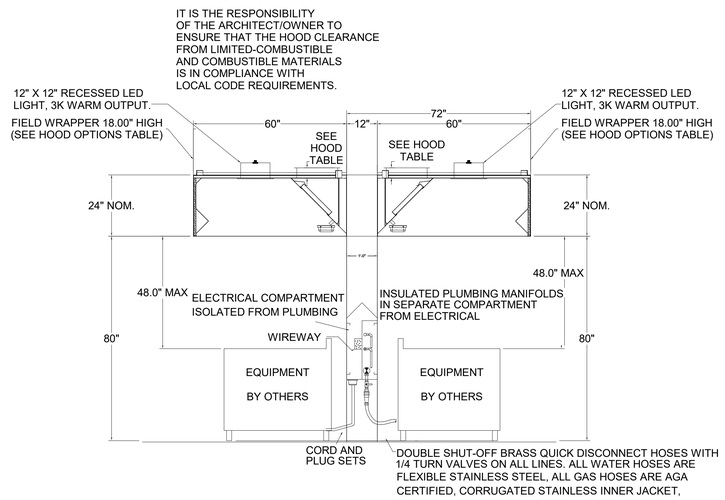
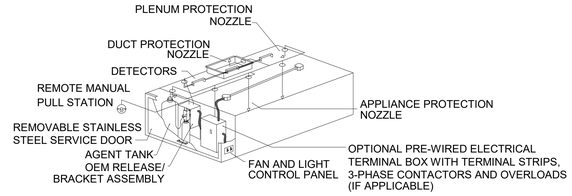


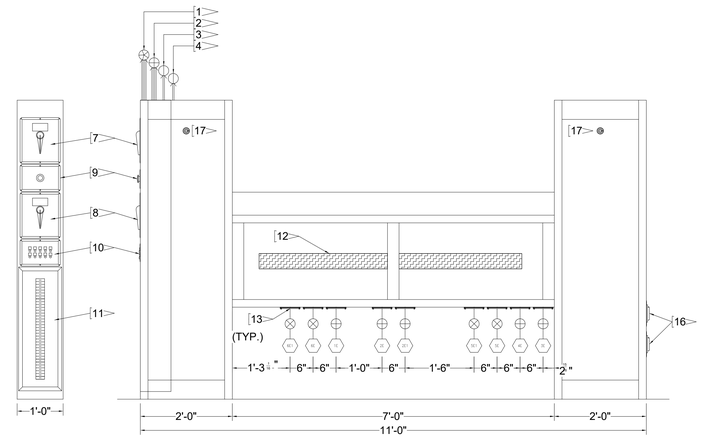
1 FS.08 EXHAUST HOOD PLAN VIEW
1/2" = 1'-0"



2 FS.08 EXHAUST HOOD SECTION VIEW
1/2" = 1'-0"



3 FS.08 FIRE SUPRESSION SYSTEM
1/2" = 1'-0"



FLAG NOTES

1. 480V/3PH/100AMP ELECTRICAL SERVICE FROM ABOVE. PROVIDED BY ELECTICAL CONTRACTOR.
2. 120/208V/3PH/225AMP ELECTRICAL SERVICE FROM ABOVE. PROVIDED BY ELECTICAL CONTRACTOR.
3. 120V/1PH/15A DEDICATED ELECTRICAL CIRCUIT INTO UDS TERMINALS "H1 & N1" FOR FIRE/FUEL SHUT OFF CONTROL. (PROVIDED BY ELECTRICAL CONTRACTOR) SEE MASTER DRAWING FOR WIRING DETAILS.
4. 2-WIRE ELECTRICAL CIRCUIT FROM UDS SYSTEM TERMINALS "KTS & ST" TO LIKE TERMINALS "KTS & ST" LOCATED IN EMS SYSTEM. PROVIDED BY JOBSITE ELECTRICAL CONTRACTOR). SEE MASTER DRAWING FOR WIRING DETAILS.
5. 1" COLD WATER SERVICE FROM ABOVE (PROVIDED BY PLUMBING CONTRACTOR)
6. 3/4" HOT WATER SERVICE FROM ABOVE (PROVIDED BY PLUMBING CONTRACTOR)
7. 480V/3PH/100A MAIN SERVICE BREAKER WITH SHUNT TRIP BUILT IN.
8. 120/208V/3PH/225A MAIN SERVICE BREAKER WITH SHUNT TRIP BUILT IN.
9. EMERGENCY KILL SWITCH.
10. STATUS INDICATOR LIGHTS.
11. ELECTRICAL LOAD CENTER W/ INDIVIDUAL CIRCUIT BREAKERS.
12. ELECTRICAL WIRING INSIDE PROTECTIVE PANDUIT.
13. ELECTRICAL CONNECTION W/WEATHERPROOF COVER AS SPECIFIED ON THE EQUIPMENT SCHEDULE THIS SHEET.
14. MANUAL SHUT OFF VALVE.
15. PLUMBING CONNECTIONS AS SPECIFIED ON THE EQUIPMENT SCHEDULE SCHEDULE THIS SHEET.
16. DUPLEX CONVENIENT OUTLET.
17. REMOVEABLE DOORS.

4 FS.08 UDS SECTION & ELEVATION VIEW
3/4" = 1'-0"

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FOOD SERVICE EXHAUST HOOD DETAILS

2017032 21 MAY 2019

FS.08