



**Procurement Office
PO Box 157
109 Benson Street
Walterboro, SC 29488
Phone: (843) 782-0504**

**REQUEST FOR COMPETITIVE SEALED BIDS
FR-18 PIERCE ROAD FIRE/RESCUE SUBSTATION 34**

BIDS DUE: Wednesday, July 16, 2014 at 11:00am

MAIL BID TO:

Colleton County
Procurement Office
Attn: Kaye B Syfrett
PO Box 157
Walterboro, SC 29488

HAND DELIVER BID TO:

Procurement Office
Attn: Kaye B Syfrett
109 Benson Street
Walterboro, SC 29488

BID OPENING LOCATION:

Council Chambers
109 Benson Street, 2nd Floor
Walterboro, SC 29488

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END OF TOC

SECTION 001300 – PROJECT AND CONSTRUCTION SCHEDULE

EXECUTION OF CONTRACT/NTP	NOTICE TO PROCEED SHALL BE UPON CONTRACT EXECUTION BY THE OWNER AND UPON RECEIPT OF INSURANCE CERTIFICATES AND BONDS.
CONTRACT DAYS BEGINNING ON THE	‘CONTRACT DAY’ IS DEFINED AS THE PERIOD OF CALENDER DAYS DAY OF THE EXECTUION OF THE BUILDING PERMIT.
COMMENCEMENT OF WORK	DAY OF EXECUTION OF CONTRACT
SUBSTANTIAL COMPLETION	THE DATE OF SUBSTANTIAL COMPLETION SHALL BE AS FOLLOWS: 120 CALANDER DAYS
FINAL COMPLETION	NO LATER THAN 30 DAYS FROM DATE OF SUBSTANTIAL COMPLETION.

SECTION 00200 - INSTRUCTIONS TO BIDDERS

- A. Project Name and Location: FR-18 Pierce Road Fire/Rescue Substation 34 -Colleton County S.C.
1. This project is a single story, two and one half bay pre-engineered metal building.
 2. The truck bay area shall have a painted plywood wall 8’-0” high. Overhead sectional doors are operated by remotes. All exterior door hardware shall have keypad lockset systems. Site work shall include clearing, grubbing, fill, retention, and potable well. The drive and parking area shall be concrete. Site accessories shall include signage as indicated on the drawings. A potable well with all connections are part of this contract as well as septic tank and drain field. All DOT, OCRM, SCDHEC permits have been granted. The contractor is to supply the construction documents for the Pre-engineered building based on his selected manufacture. The contractor shall provide from the building manufacture and engineered sealed from the State of South Carolina a set of documents that shall meet all required codes and regulations as called for in the plans. Building colors shall be selected from standard color list, but the roof shall be galvalume. **There shall be no penetrations in the roof, including vent piping.**
 3. **The Contractor shall pay for all Building Permit Fees.**
All mobilization mileage shall be calculated from 113 Mabel T. Willis Blvd. to project site, regardless of location of contractor’s office. Mileage is 25 miles.

THE BIDDER SHALL ACCOMPANY EACH BID WITH BID SECURITY IN THE FORM OF A 5% BID BOND OR A CERTIFIED CHECK.

THE BIDDER REPRESENTS THAT HE WILL ENTER INTO A CONTRACT WITH THE OWNER FOR THE DOLLAR AMOUNT OF THE BASE BID AND ALTERNATES, IF ANY, AND THE UNIT PRICES, IF ANY, STATED IN HIS BID AND THE WRITTEN REQUIREMENTS CONTAINED IN THE PROJECT MANUAL.

SHOULD THE BIDDER REFUSE TO ENTER INTO SUCH CONTRACT AND OR FAIL TO FURNISH SUCH BONDS, IF REQUIRED, THE AMOUNT OF THE BID SECURITY SHALL BE FORFEITED TO THE OWNER

AS LIQUIDATED DAMAGES, NOT AS A PENALTY.

FOR THE PURPOSE OF EXECUTING THE BID SURETY FORMS OR CERTIFIED CHECK, THE OWNER IS COLLETON COUNTY, WALTERBORO, SOUTH CAROLINA.

- A. To be eligible to write the bid surety bond, the surety company must be licensed to do business in the State of South Carolina and shall also be acceptable to the owner.
- B. Bidding Documents: This document contains instructions to bidders for the project named above. This bidding document is not part of the Contract Documents, unless specifically referenced in the Owner/Contractor Agreement.
- C. Bid Documents: To obtain bidding documents contact:
 - 1. Colleton County
 - 2. Kaye Syfrett
 - 3. PO Box 157
 - 4. Walterboro, S.C. 29488
 - 5. 843-782-0504
 - 6. ksyfrett@colletoncounty.org
- D. Documents: Drawings can be downloaded from: www.colletoncounty.org
- E. Submission of Bids: Submit Bid Form before the time and date below. Late submissions will not be considered. Submit bids in sealed and labeled envelopes with the project name and bidder's name on the outside of the envelope. Mark the envelope: "Bid Enclosed - Do Not Open."

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Walterboro, SC 29488

BID OPENING LOCATION:

Council Chambers
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Walterboro, SC 29488

Bids due: Wednesday, July 16, 2014 at 11:00am

Bids will be opened in public. Bidders may be present. Bids may not be withdrawn for 30 calendar days after receipt of bids. Announcements of bid results will be made at bid opening and verified within 10 days.

- F. Bonds: A Performance and Payment Bond is required. Each bidder shall submit evidence of bondability for the entire value of the work. Bonds must be executed by a surety company licensed to do business at the location of the project. Bond form shall be AIA Document A312.
- G. Modifications: Oral, fax or email modifications to bids will not be considered.
- H. Acceptance of Bids: The Owner reserves the right to reject or accept any or all bids or to enter into negotiations with any bidder. The Owner reserves the right to waive any alleged breach of technicality.
- I. Modifications: The Owner reserves the right to modify the Contract Documents and rebid the project, if necessary, to meet Owner's budgetary requirements.
- J. **Questions**: During the bidding period, submit questions to the person named below. Questions will be answered in the form of an addendum and posted on the County website.
 - 1. Bill Chambers
 - 2. R. W. Chambers, Architect
 - 3. P O Box 1181
 - 4. Beaufort, SC 29901
 - 5. 843-379-1000
 - 6. Email: rwchambers@hargray.com
- K. Site Visit: A site visit is not required but encouraged. Contact Bill Chambers to arrange a visit.

SECTION 00230 – LIQUIDATED DAMAGES

- A. Liquated damages is the agreed by the Contractor and Owner to Reimburse the Owner for damages due to failure of the Contractor to complete the work in accord with the project requirements and Construction Schedule.
 - 1. Should the Contractor neglect or refuse to achieve substantial completion on or before the day as Agreed in the Construction schedule they, shall pay the owner liquated damages in the amount of: **\$300.00 per day for each and every calendar day that the work is not finally complete.**

The Contract Agreed upon time shall be **120 days** for final completion.

END OF DOCUMENT

SECTION 00410 - BID FORMS

- A. Submission of Bids: Submit bids in compliance with Document 00 21 00 - Instructions to Bidders. Fill in blanks. The Owner reserves the right to reject incomplete bid forms. **Complete the Attached Bid Form Schedule of Value Sheet, attached in addition to this form. Failure to complete both forms can result in the rejection of the bid.**

- B. Bidding Documents: This Bidding document is not part of the Contract Documents, unless specifically referenced in the Owner/Contractor Agreement.

- C. Project Name: FR-18 PIERCE ROAD FIRE/RESCUE SUBSTATION 34

- D. Project Owner: _____

- E. Name of Bidder: _____

- F. Base Bid: The Bidder proposes to perform all of the Work required by the Contract Documents for the amount of: (Fill in amount in words and numbers.)
 - 1. \$ _____

- G. Bonds: If the Bidder is required to furnish a Performance Bond and Payment Bond (AIA A312) for the entire value of the Work, add the following amount to the base bid amount:
 - 1. \$ _____

- H. Alternates: None

- I. Time: The Bidder proposes the following dates:
 - 1. Proposed Starting Date: _____
 - 2. Proposed Date of Substantial Completion: _____

- J. Submission of Bid Form: By submitting this Bid Form, the Bidder certifies that Bidder has visited the project site, is aware of existing conditions which affect the work, and has reviewed the Contract Documents, including the following Addenda:
 - 1. _____
 - 2. _____
 - 3. _____
 - 4. _____
 - 5. _____

K. Signature: Signed and sealed (Enter date, Bidder's signature, title, name of firm, legal business address, phone and fax numbers, and email address):

1. Business name: _____

2. Name and Title(print): _____

3. Signature: _____

4. Address: _____

5. City _____ State _____ Zip _____

6. Telephone: _____

7. Fax: _____

8. Email(print): _____

L. Project Manager: Bidder's Project Manager to Be Assigned to the Project and years of experience:

1. _____ Years of experience _____

M. Subcontractors: Bidder's List of Proposed Major Subcontractors (list):

1. _____

2. _____

3. _____

4. _____

N. Complete the Bid Form Schedule of Value Sheet that is Attachment 1

SECTION 00520 - AGREEMENT FORMS

- A. Owner-Contractor Agreement Form: AIA A105, Owner-Contractor Agreement Form - Small Projects and A205 General Conditions for Small Project.
- B. Agreement Forms: Agreement forms are available from the American Institute of Architects, Washington, D.C., 202-626-7300. Agreement Forms will be prepared and approved for use on the project by the Owner in consultation with an attorney.

SECTION 00610 - BOND FORMS

- A. Bid Bond: AIA A310, Bid Bond.
- B. Performance Bond and Payment Bond: AIA A312, Performance Bond and Payment Bond.
- C. Bond Forms: Bond forms are available from the American Institute of Architects, Washington, D.C., 202-626-7300. Bond Forms will be prepared and approved for use on the project by the Owner in consultation with an attorney.

DOCUMENT 00651 - INDEMNITY PROVISION

- A. Contractor (or lessee or vendor) assumes entire responsibility and liability for losses, expenses, demands and claims in connection with or arising out of any injury, or alleged injury (including death) to any person, or alleged damage, to property of County or others sustained or alleged to have been sustained in connection with or to have arisen out of or resulting from the performance of the work/service by the contractor, his sub-contractors, agents, and employees, including losses, expenses or damages sustained by the County, and agrees to indemnify and hold harmless the County, its officials, employees or volunteers from any and all such losses, expenses against them, or any of them, based on any such alleged injury or damage, and to pay all damages, cost and expenses in connections therewith or resulting therefrom. As an integral part of this agreement, contractor agrees to purchase and maintain during the life of this contract, contractual liability insurance in the amount required in the general liability insurance requirements and to furnish proper evidence thereof.

DOCUMENT 00700 - GENERAL CONDITIONS

- A. General Conditions: AIA 205 General Conditions for Small Projects.
- B. General Conditions Forms: General Conditions are available from the American Institute of Architects, Washington, D.C., 202-626-7300. General Conditions will be prepared and approved for use on the project by the Owner in consultation with an attorney.

SECTION 010000 – SPECIAL PROVISIONS

PART 1 GENERAL REQUIREMENTS OF THIS SECTION

THE FOLLOWING PROVISIONS SHALL GOVERN THE WORK UNDER THIS SECTION THE SAME AS IF INCORPORATED HEREIN:

- THE INSTRUCTIONS TO BIDDERS
- THE GENERAL CONDITIONS
- THE SUPPLEMENTAL GENERAL CONDITIONS

1.1 CONSTRUCTION PHASING

NONE REQUIRED

1.2 CONTRACTOR'S USE OF PREMISES

CONTRACTOR SHALL CONFINE HIS ACTIVITIES TO THE AREA CONTAINED WITHIN THE PROJECT LIMITS SHOWN ON SITE PLAN.

1.3 TEMPORARY FACILITIES AND PROVISIONS

A. BARRICADES AND FENCING

PROVIDE AND MAINTAIN SAFETY BARRICADES, FENCES, TEMPORARY WALKS, BRACING AND SHORING AND SIGNALS IN COMPLIANCE WITH LOCAL REQUIREMENTS, LAW ENFORCEMENT REGULATIONS AND AS NECESSARY TO SEPARATE NON-PROJECT PERSONS FROM HAZARDOUS CONSTRUCTION AREAS.

B. UTILITIES

INSTALL UTILITIES TO TEMPORARY OFFICE, STORAGE SHEDS, ETC. CONTRACTOR'S USE OF UTILITIES SHALL BE PAID FOR BY THE CONTRACTOR.

PROVIDE TEMPORARY LIGHTING WITHIN THE BUILDING AS THE WORK PROGRESSES.

C. SANITARY FACILITIES

PROVIDE AND MAINTAIN, IN SANITARY CONDITION, ENCLOSED WEATHERTIGHT CHEMICAL TOILETS FOR USE BY PERSONNEL OF THE CONTRACTOR. INSTALLATION SHALL BE IN ACCORDANCE WITH APPLICABLE CODES AND OF AUTHORITIES HAVING JURISDICTION. UPON COMPLETION OF THE WORK, TOILETS AND APPURTENANCE SHALL BE REMOVED, LEAVING PREMISES IN SANITARY, CLEAN CONDITION.

D. TEMPORARY TELEPHONE

PROVIDE AND PAY FOR A TELEPHONE OR CELL PHONE ON THE CONSTRUCTION SITE.

E. CONSTRUCTION TRAILERS, CONTRACTORS

CONSTRUCTION OFFICE AND STORAGE FACILITIES MAY BE TRAILERS CONSTRUCTED ESPECIALLY FOR SUCH USE. SHEDS OR SHANTIES PROVIDED FOR CONTRACTOR'S CONVENIENCE SHALL BE LOCATED AND CONSTRUCTED SO AS NOT TO INTERFERE WITH THE PERFORMANCE OF ANY WORK AND SHALL BE MAINTAINED IN GOOD CONDITION. UPON COMPLETION OF THE WORK, TEMPORARY BUILDINGS SHALL BE DISMANTLED OR REMOVED FROM THE PREMISES.

F. TEMPORARY SECURITY

AS WORK PROGRESSES AND UPON COMPLETION OF EXTERIOR WALLS, PROVIDE TEMPORARY PLYWOOD DOORS WITH HINGES AND HASPS AT DOORS AND FIXED PLYWOOD

COVERS AT WINDOWS WIDER THAN 6". LOCK BUILDING DURING NON-CONSTRUCTION PERIODS. PROVIDE SECURITY OF ON-SITE CONSTRUCTION MATERIALS BY STORING IN LOCKABLE AREAS.

1.4

QUALITY ASSURANCE

A. INTENT OF DOCUMENTS

THE DOCUMENTS DO NOT SHOW ALL DETAILS OF BOLTS, NUTS, CONNECTIONS, WELDS, FABRICATIONS OR THE LIKE REQUIRED FOR A COMPLETE SYSTEM AND DO NOT INDICATE EXACT LOCATIONS OF FIXTURES, EQUIPMENT, CONDUIT, PIPING OR OTHER COMPONENTS. CHANGES NECESSARY TO ACCORD WITH STRUCTURAL, ARCHITECTURAL, OR FABRICATION CONDITIONS SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER. ALL COMPONENTS NECESSARY FOR PROPER OPERATION OF ANY SYSTEM SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

B. PROTECTION OF OWNER'S PROPERTY

PROTECT FROM DAMAGE DUE TO HIS WORK, METHODS, PROCEDURES AND WORKMEN THE OWNER'S PROPERTY INCLUDING BUILDING SURFACES, FINISHES, SYSTEMS, EQUIPMENT, FURNITURE, SUPPLIES, AND SITE IMPROVEMENTS INCLUDING GRASS AND THE WORK OF OTHER SUBCONTRACTORS ASSOCIATED WITH THIS PROJECT. REPAIR OR CAUSE TO BE REPAIRED DAMAGE TO OWNER'S PROPERTY AT NO COST TO THE OWNER.

C. PRODUCTS AND MATERIALS

PROVIDE MATERIALS AND PRODUCTS IN THE WORK WHICH ARE NEW AND OF TOP QUALITY. MANUFACTURED MATERIALS SHALL BE DELIVERED AND STORED IN THEIR ORIGINAL CONTAINERS. EQUIPMENT SHALL BE CLEARLY MARKED WITH THE MANUFACTURER'S NAME AND RATING. ASSUME FULL RESPONSIBILITY FOR PROTECTION, STORAGE, SAFETY AND DAMAGE TO STORED AND INSTALLED MATERIALS UNTIL SUBSTANTIAL COMPLETION.

D. QUALIFICATION OF WORKPERSONS

PROVIDE SKILLED WORKPERSONS THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND TRADES.

E. WORKMANSHIP

MATERIALS ENTERING INTO FABRICATION OF THE WORK SHALL BE SECURELY ANCHORED AND/OR SECURED TOGETHER IN ACCORDANCE WITH THE BEST QUALITY FOR INTENDED PURPOSE. ENSURE THAT EVERY PIECE OF MATERIAL SHALL BE BONDED, ANCHORED, TIED, OR OTHERWISE SECURED IN PLACE IN A PERMANENT MANNER.

INSTALL ALL ITEMS IN A WORKMAN-LIKE MANNER IN ACCORDANCE WITH BEST RECOGNIZED PRACTICE. ALL WORKING PARTS SHALL BE PROPERLY ADJUSTED AFTER INSTALLATION AND BE LEFT IN PERFECT WORKING ORDER. ALL ITEMS IN WALL, FLOORS, OR ROOFS SHALL BE INSTALLED IN SUCH A MANNER AS TO INSURE A PERMANENT WATERTIGHT AND WEATHERTIGHT INSTALLATION. UNLESS OTHERWISE INDICATED, ITEMS EXPOSED TO WEATHER OR SUBJECT TO FLOODING OR WETTING SHALL BE INSTALLED SO AS TO SHED AND NOT HOLD WATER. ITEMS IN ALL CASES SHALL BE INSTALLED PLUMB AND TRUE AND OR IN PROPER RELATIONSHIP TO ADJOINING MATERIALS.

COMPLY WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS FOR INSTALLATION, INCLUDING PREPARATION OF SUBSTRATE AND APPLICATION. THE MANUFACTURER'S RECOMMENDED METHOD OF INSTALLATION SHALL BE THE BASIS FOR INSPECTING THE ACTUAL INSTALLATION OF THE WORK.

CONCEALED OR INSULATED WORK SHALL REMAIN UNCOVERED UNTIL REQUIRED TESTS HAVE BEEN COMPLETED.

NOTIFY THE COUNTY IN ADVANCE OF ALL TESTS. ACCEPTANCE TESTS FOR OPERATION AND PERFORMANCE AS SPECIFIED AND/OR REQUIRED FOR ALL EQUIPMENT AND SYSTEMS SHALL BE IN THE PRESENCE OF THE ARCHITECT/ENGINEER, AS WELL AS REPRESENTATIVES OF AGENCIES, IF ANY, HAVING JURISDICTION, UPON COMPLETION OF THE WORK.

DURING VARIOUS PORTIONS OF THE WORK, THE ARCHITECT / ENGINEER SHALL CAUSE TO BE MADE TESTS WHICH HE MAY CONSIDER NECESSARY. TESTED WORK THAT IS NOT IN ACCORD WITH REQUIREMENTS SHALL BE SO CORRECTED. THE EXPENSE FOR ADDITIONAL TESTS OF PRIOR NONCONFORMING WORK SHALL BE BORNE BY THE CONTRACTOR.

F. COORDINATION OF THE WORK

COORDINATE THE WORK OF ALL TRADES TO AVOID INTERFERENCES, ESTABLISH NECESSARY SPACE REQUIREMENTS, AND SCHEDULE THE TIMING SO AS NOT TO CAUSE DELAYS TO ANY PHASE OF THE CONSTRUCTION.

COORDINATE DELIVERY OF THE UNITS, SUBUNITS AND/OR ASSEMBLIES TO ALLOW PROMPT, COMPLETE FINAL ERECTION OF THE WORK.

PRIOR TO STARTING INSTALLATION, SUBCONTRACTORS SHALL FURNISH TO THE GENERAL CONTRACTOR AND OTHER SUBCONTRACTORS CONCERNED, COPIES OF APPROVED SHOP DRAWINGS SHOWING LOCATION OF EQUIPMENT, PIPING, ETC.

SCHEDULE PERIODIC MEETINGS WITH OTHER TRADES BEFORE AND DURING INSTALLATION TO AVOID CONFLICTS AND ASSURE THAT PIPES AND EQUIPMENT ARE INSTALLED IN THE BEST MANNER, TAKING INTO CONSIDERATION HEAD-ROOM, MAINTENANCE, APPEARANCE, AND REPLACEMENT.

PIPING, FIXTURES, EQUIPMENT, ETC. SHALL BE LOCATED TO AVOID INTERFERENCE WITH STRUCTURAL AND ARCHITECTURAL CONDITIONS, OR WITH THE WORK OF DIFFERENT TRADES. PROVIDE OFF-SETS WHERE NECESSARY TO AVOID FOOTINGS, PIERS, COLUMNS, BEAMS, WINDOWS, OTHER PIPING, ELECTRICAL FIXTURES, AND OTHER SYSTEMS, ETC. SUBCONTRACTORS SHALL SPECIFICALLY INFORM THE GENERAL CONTRACTOR AS TO THE CORRECT SIZE AND LOCATION OF ALL CHASES, OPENINGS, SUPPORTS, SLEEVES, ETC., REQUIRED FOR THE SYSTEM. FURNISH AND INSTALL SLEEVES, INSERTS, BOLTS, ETC., AND ARRANGE FOR THE CUTTING OF WALLS, FLOORS, ROOFS, ETC., AND THE PROPER CLOSING OF ALL OPENINGS. CUTTING OF CONSTRUCTION, WHERE UNAVOIDABLE, MUST BE DONE BY THE GENERAL CONTRACTOR. NO PART OF THE BUILDING MAY BE BROKEN OUT, CUT, BURNED, OR PERMANENTLY REMOVED WITHOUT THE APPROVAL OF THE ARCHITECT/ENGINEER.

G. MINOR CHANGES IN THE WORK

WHERE DEPARTURES FROM INDICATED ARRANGEMENTS ARE REQUIRED, WRITTEN APPROVAL FOR SUCH CHANGES SHALL BE OBTAINED FROM COLLETON COUNTY.

H. CORRECTIONS IN THE WORK

IN THE EVENT OF WORKED JUDGED TO BE "NON-CONFORMING" TO THE INTENT OF THE CONTRACT DOCUMENTS BY THE ARCHITECT/ENGINEER OF RECORD, COLLOTON COUNTY ANDTHE A/E MAY REJECT SUCH MATERIALS, EQUIPMENT, AND OR WORKMANSHIP. SUCH WRITTEN REJECTION SHALL BE CONSTRUED AS GIVING FIRST NOTICE TO A BREACH OF CONTRACT. THE CONTRACTOR SHALL REPLACE WORK WITH CONFORMING WORK WITHIN TEN (10) DAYS FROM WRITTEN NOTICE OF REJECTION AT NO COST TO THE OWNER.

1.5

CLEANING

IT IS THE INTENT OF THE FOLLOWING TO PROVIDE ON GOING DAILY CLEANING OF THE WORK IN PROGRESS AND WITHIN THE LIMITS OF CONSTRUCTION SO THAT DEBRIS OF CONSTRUCTION IS PLACED WITHIN WASTE RECEPTACLES, DUST AND RESIDUE FROM CONSTRUCTION PROCESSES DO NOT ACCUMULATE AND MATERIALS TO BE INCORPORATED INTO THE WORK ARE STORED IN ACCORD WITH ADDITIONAL REQUIREMENTS OF THESE CONDITIONS.

PROVIDE WASTE RECEPTACLES AT CONSTRUCTION SITE THROUGHOUT THE DURATION OF THE WORK. COLLECT AND DISPOSE OF ORGANIC WASTE ON A DAILY BASIS.

BURNING OF CONSTRUCTION MATERIALS IS NOT ALLOWED. BURNING OF ORGANIC DEBRIS FROM SITE PREPARATION IS SUBJECT TO LOCAL JURISDICTIONAL APPROVAL.

PROVIDE FOR THE GOOD, CLEAN CONDITION OF ALL MATERIALS, EQUIPMENT, AND FABRICATIONS, INCLUDING PROTECTION OF INTERNAL MECHANICAL COMPONENTS UNTIL SUBSTANTIAL COMPLETION.

CLEAN INTERIOR SPACES PRIOR TO THE START OF FINISH PAINTING AND CONTINUE CLEANING ON AN AS-NEEDED BASIS UNTIL PAINTING IS COMPLETE. SCHEDULE OPERATIONS SO THAT DUST OR OTHER CONTAMINATES RESULTING FROM CLEANING OR OTHER PROCESS WILL NOT FALL IN WET OR NEWLY COATED SURFACES.

PRIOR TO NOTICE OF SUBSTANTIAL COMPLETION REMOVE GREASE, MASTIC, ADHESIVES, DUST DIRT, STAINS, FINGERPRINTS, LABELS AND OTHER FOREIGN MATERIALS FROM SIGHT - EXPOSED INTERIOR AND EXTERIOR SURFACES.

REMOVE DUST, MISCELLANEOUS DEBRIS AND MATERIALS FROM THE INSIDE OF CASEWORK AND OTHER EQUIPMENT.

CLEAN THE SITE OF SCRAP MATERIALS RESULTING FROM THE WORK, MISCELLANEOUS LUNCH DEBRIS (CHICKEN BONES, ETC.) AND GENERAL LITTER ON A DAILY BASIS.

USE OF OWNER GARBAGE CONTAINERS IS NOT ALLOWED.

CLEAN DIRT AND MUD FROM PUBLIC RIGHT OF WAYS ON A PER OCCURRENCE BASIS.

DISPOSE OF ALL DEBRIS FROM SITE IN A LEGAL AND APPROVED MANNER.

1.6

SAFETY

WORK PERFORMED IN SUCH A MANNER AS TO COMPLY WITH REGULATIONS SET FORTH TO IMPLEMENT OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AND AS MAY BE AMENDED.

OWNER'S SAFETY AND TRAFFIC REGULATIONS

CONTRACTOR SHALL OBSERVE OWNER'S SAFETY AND TRAFFIC REGULATIONS AND SHALL NOT PLACE, STORE, NOR PARK ANY VEHICLES OR MATERIALS IN ANY LOCATIONS NOT DESIGNATED OR ASSIGNED BY THE OWNER THAT MAY INTERFERE WITH OPERATIONS SIMULTANEOUSLY IN PROGRESS.

PROTECTION OF LIFE AND PROPERTY/ FIRST AID

THE CONTRACTOR SHALL AGREE THAT WORK WILL BE COMPLETED WITH THE GREATEST DEGREE OF SAFETY AND TO CONFORM TO THE PROVISIONS OF THE MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION PUBLISHED BY THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA, LATEST EDITION. ARTICLES NECESSARY FOR GIVING "FIRST AID" SHALL BE MAINTAINED IN THE CONTRACTOR'S FIELD OFFICE AT THE SITE. THERE SHALL BE STANDING ARRANGEMENTS FOR IMMEDIATE REMOVAL AND HOSPITAL TREATMENT OF ANY EMPLOYEE INJURED OR WHO MAY BECOME ILL AND REQUIRE SUCH TREATMENT.

OSHA STANDARDS: CONTRACTOR'S ATTENTION IS DIRECTED TO SAFETY, HEALTH, FIRST AID AND MEDICAL PROVISIONS OF THE OCCUPATIONAL SAFETY AND HEALTH STANDARDS,

SECTION 01100 - SUMMARY

PART 1 GENERAL

1.1 SUMMARY

- A. Project Identification: FR-18 PIERCE ROAD FIRE/RESCUE SUBSTATION 34
- B. Project Summary: New 2 ½ Bay Pre-engineered Fire/Rescue Substation
- C. Particular Project Requirements:
 - 1. Contractor shall provide the design of the Pre-engineered building by a registered SC engineer, the documents are a basis of design.
 - 2. Contractor shall supply the County and Architect with the Loads required to verify the foundation design.
 - 3. Contractor shall employ at his own expense a Registered Structural Engineer to modify the designed foundation to meet the requirements of his metal building design.
 - 4. Contractor to purchase two pieces of equipment for Colleton County to install. Storage of items shall be within the Station constructed.
 - a. Ice Maker- see attached cut sheet
 - b. Compressor – see attached cut sheet.
- D. Permits and Fees: Apply for, obtain, and pay for permits, fees, and utility company backcharges required to perform the work. Submit copies to Colleton County. Currently, DOT, DHEC, OCRM have been obtained.
- E. Codes: Comply with applicable codes and regulations of authorities having jurisdiction. Submit copies of inspection reports, notices and similar communications to Architect.
- F. Dimensions: Verify dimensions indicated on drawings with field dimensions before fabrication or ordering of materials. Do not scale drawings.
- G. Existing Conditions: Notify Architect of existing conditions differing from those indicated on the drawings. Do not remove or alter structural components without prior written approval.
- H. Coordination:
 - 1. Coordinate the work of all trades.
 - 2. Prepare coordination drawings for areas above ceilings where close tolerances are required between building elements and mechanical and electrical work.
 - 3. Verify location of utilities and existing conditions.

- I. Installation Requirements, General:
 - 1. Take field measurements prior to fabrication where practical. Forms to required shapes and sizes with true edges, lines and angles. Provide inserts and templates as needed for work of other trades.
 - 2. Install materials in exact accordance with manufacturer's instructions and approved submittals.
 - 3. Install materials in proper relation with adjacent construction and with proper appearance.
 - 4. Restore units damaged during installation. Replace units which cannot be restored at no additional expense to the Owner.
 - 5. Refer to additional installation requirements and tolerances specified under individual specification sections.
- J. Limit of Use: No Restrictions.
- K. Existing Construction: Provide proper silt protection from DOT R.O.W and Wetlands:
- L. Intent: Drawings and specifications are intended to provide the basis for proper completion of the work suitable for the intended use of the Owner. Anything not expressly set forth but which is reasonable implied or necessary for proper performance of the project shall be included.
- M. Writing Style: Specifications are written in the imperative mode. Except where specifically intended otherwise, the subject of all imperative statements is the Contractor. For example, 'Provide tile' means 'Contractor shall provide tile.'

SECTION 01300 - ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Administration of Contract: Provide administrative requirements for the proper coordination and completion of work including the following:
 - 1. Supervisory personnel.
 - 2. Preconstruction conference.
 - 3. Project meetings, minimum of one per month; prepare and distribute minutes.
- B. Reports: Submit weekly and special reports.
- C. Work Schedule: Submit progress schedule, updated monthly.
- D. Submittal Schedule: Prepare submittal schedule; coordinate with progress schedule.
- E. Schedule of Values: Submit schedule of values, the bid form is the schedule of value.
- F. Schedule of Tests: Submit schedule of required tests including payment and responsibility.

- G. Perform Surveys: Lay out the work and verifying locations during construction. Perform final site survey.
- H. Emergency Contacts: Submit and post a list of emergency telephone numbers and address for individuals to be contacted in case of emergency.
- I. Record Documents: Submit record drawings and specifications; to be maintained and annotated by Contractor as work progresses.

1.2 SUBMITTALS

- A. Types of Submittals: Provide types of submittals listed in individual sections and number of copies required below.
 - 1. Shop drawings, reviewed and annotated by the Contractor - 4 copies.
 - 2. Product data - 2 copies.
 - 3. Samples - 2, plus extra samples as required to indicate range of color, finish, and texture to be expected.
 - 4. Inspection and test reports - 2 copies.
 - 5. Warranties - 2 copies.
 - 6. Survey data - 2 copies.
 - 7. Closeout submittals - 2 copies.
- B. Submittal Procedures: Comply with project format for submittals. Comply with submittal procedures established by Architect including Architect's submittal and shop drawing stamp. Provide required resubmittals if original submittals are not approved. Provide distribution of approved copies including modifications after submittals have been approved.
- C. Samples and Shop Drawings: Samples and shop drawings shall be prepared specifically for this project. Shop drawings shall include dimensions and details, including adjacent construction and related work. Note special coordination required. Note any deviations from requirements of the Contract Documents.
- D. Warranties: Provide warranties as specified; warranties shall not limit length of time for remedy of damages Owner may have by legal statute. Contractor, supplier or installer responsible for performance of warranty shall sign warranties.

SECTION 01400 - QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Quality Monitoring: Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality. Perform quality control

procedures and inspections during installation.

- B. Standards: Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- C. Tolerances: Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate. Comply with manufacturers' tolerances.
- D. Reference Standards: For products or workmanship specified by association, trades, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- E. Manufacturer's Field Services: When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to perform the following as applicable, and to initiate instructions when necessary.
 - 1. Observe site conditions.
 - 2. Conditions of surfaces and installation.
 - 3. Quality of workmanship.
 - 4. Start-up of equipment.
 - 5. Test, adjust and balance of equipment.

SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SUMMARY

- A. Temporary Services: Provide temporary services and utilities, including payment of utility costs including the following.
 - 1. Water (potable and non-potable).
 - 2. Lighting and power.
 - 3. Metering.
 - 4. Telephone.
 - 5. Toilet facilities.
 - 6. Materials storage.
- B. Construction Facilities: Provide construction facilities, including payment of utility costs needed to complete the project.
- C. Security and Protection: Provide security and protection requirements including the following.
 - 1. Fire extinguishers.

2. Site enclosure fence, barricades, warning signs, and lights.
 3. Building enclosure and lock-up.
 4. Environmental protection.
 5. Pest control during and at the end of construction.
- D. Personnel Support: Provide personnel support facilities including the following.
1. Contractor's field office or area.
 2. Sanitary facilities.
 3. Drinking water.
 4. Project identification sign.
 5. Cleaning.

SECTION 01600 - PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Manufacturers: Provide products from one manufacturer for each type or kind as applicable. Provide secondary materials as acceptable to manufacturers of primary materials.
- B. Product Selection: Provide products selected or equal approved by Colleton County. Products submitted for substitution shall be submitted with complete documentation, and include construction costs of substitution including related work.
- C. Substitutions: Request for substitution must be in writing and approved by Colleton County. Conditions for substitution include:
1. An "or equal" phrase in the specifications.
 2. Specified material cannot be coordinated with other work.
 3. Specified material is not acceptable to authorities having jurisdiction.
 4. Substantial advantage is offered to the Owner in terms of cost, time, or other valuable consideration.
- D. Substitution Requests: Substitutions shall be submitted prior to award of contract, unless otherwise acceptable. Substitutions not approved by Colleton County are the responsibility of the Contractor and the Contractor shall install the specified project at no additional cost to Colleton County. Approval of shop drawings, product data, or samples containing substitutions is not an approval of a substitution unless an item is clearly presented as a substitution at the time of submittal.

SECTION 01700 - EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Substantial Completion: The following are prerequisites to substantial completion. Provide the following:
1. Punch list prepared by Contractor and subcontractors as applicable.
 2. Supporting documentation.
 3. Warranties.
 4. Certifications.
 5. Occupancy permit.
 6. Start-up and testing of building systems.
 7. Change over of locks.
 8. Meter readings.
- B. Final Acceptance: Provide the following prerequisites to final acceptance:
1. Final payment request with supporting affidavits.
 2. Completed punch list.
- C. As-Built Drawings: Provide a marked-up set of drawings including changes, which occurred during construction.
- D. Project Closeout: Provide the following during project closeout:
1. Submission of record documents.
 2. Submission of maintenance manuals.
 3. Training and turnover to Owner's personnel.
 4. Final cleaning and touch-up. Project shall be ready for Occupancy.
 5. Removal of temporary facilities.

PART 3 - EXECUTION

3.1 CUTTING AND PATCHING

- A. Cutting and Patching: Provide cutting and patching work to properly complete the work of the project, complying with project requirements for:
1. Structural work.
 2. Mechanical/electrical systems.
 3. Visual requirements, including detailing and tolerances.
 4. Operational and safety limitations.
 5. Fire resistance ratings.
 6. Inspection, preparation, and performance.
 7. Cleaning.
- B. Means and Methods: Do not cut and patch in a manner that would result in a failure of the work to perform as intended, decrease energy performance, increase maintenance, decrease operational life, or decrease safety performance.

- C. Inspection: Inspect conditions prior to work to identify scope and type of work required. Protect adjacent work. Notify Owner of work requiring interruption to building services or Owner's operations.
- D. Performance of Operations: Perform work with workmen skilled in the trades involved. Prepare sample area of each type of work for approval.
- E. Cutting: Use cutting tools, not chopping tools. Make neat holes. Minimize damage to adjacent work. Inspect for concealed utilities and structure before cutting.
- F. Patching: Make patches, seams, and joints durable and inconspicuous. Comply with tolerances for new work.
- G. Cleaning: Clean work area and areas affected by cutting and patching operations.

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Concrete mix designs and submittals required by ACI 301.
- B. Ready-Mixed Concrete Producer Qualifications: ASTM C 94/C 94M.
- C. Comply with ACI 301, "Specification for Structural Concrete"; ACI 117, "Specifications for Tolerances for Concrete Construction and Materials"; and CRSI's "Manual of Standard Practice."

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Plain Steel Wire: ASTM A 82, as drawn.
- C. Portland cement: ASTM C 150, Type I.
- D. Aggregates: ASTM C 33 uniformly graded.
- E. Air-Entraining Admixture: ASTM C 260.
- F. Chemical Admixtures: ASTM C 494, water reducing and retarding. Do not use calcium chloride or admixtures containing calcium chloride.

- G. Vapor Retarder: Clear 6-mil- thick polyethylene sheet.
- H. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.
- I. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

2.2 MIXES

- A. Comply with ACI 301 requirements for concrete mixtures.
- B. Normal-Weight Concrete: Prepare design mixes, proportioned according to ACI 301, as follows:
 - 1. Minimum Compressive Strength: **3000 psi** at 28 days.
 - 2. Maximum Water-Cementitious Materials Ratio: **0.45**.
 - 3. Slump Limit: **4 inches**, plus or minus 1 inch.
 - 4. Air Content: Maintain within range permitted by ACI 301. Do not allow air content of floor slabs to receive troweled finishes to exceed 3 percent.
- C. Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M.
 - 1. When air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 CONCRETING

- A. Construct formwork according to ACI 301 and maintain tolerances and surface irregularities within ACI 347R limits of Class A, 1/8 inch for concrete exposed to view and Class C, 1/2 inch for other concrete surfaces.
- B. Place vapor retarder on prepared sub grade, with joints lapped 6 inches and sealed.
- C. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- D. Install construction, isolation, and contraction joints where indicated. Install full-depth joint-filler strips at isolation joints.
- E. Place concrete in a continuous operation and consolidate using mechanical vibrating equipment.
- F. Protect concrete from physical damage, premature drying, and reduced strength due to hot or cold weather during mixing, placing, and curing.
- G. Formed Surface Finish: Smooth-formed finish for concrete exposed to view, coated, or covered by waterproofing or other direct-applied material; rough-formed finish elsewhere.
- H. Slab Finishes: Comply with ACI 302.1R for screeding, re-straightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces. Provide the following finishes:

1. Troweled finish for floor surfaces and floors to receive floor coverings, paint or other thin film-finish coatings.
 2. Nonslip-broom finishes to exterior concrete platforms, steps, and ramps.
- I. Cure formed surfaces by moist curing for at least seven days.
 - J. Begin curing concrete slabs after finishing. Keep concrete continuously moist for at least three days.
 - K. Owner will engage a testing agency to perform field tests and to submit test reports.
 - L. Protect concrete from damage. Repair surface defects in formed concrete and slabs.
 - M. Finish edges of walks and exterior slabs with the radius edging tool.

SECTION 062000 - FINISH CARPENTRY

PART 1 – GENERAL

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Lumber: DOC PS 20 and grading rules of inspection agencies certified by American Lumber Standards Committee Board of Review.
- B. Softwood Plywood: DOC PS 1.

2.2 INTERIOR STANDING AND RUNNING TRIM

- A. Interior Softwood Lumber Trim: #1 Southern yellow pine.
 - 1) Maximum Moisture Content: 19 percent.

2.3 PANELING

- A. Board Paneling: 3/4" thick X 8'-0", APA BC. 8'-0"

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Conditions finish carpentry in installation areas for 24 hours before installing.

- B. Install finish carpentry level, plumb, true, and aligned with adjacent materials. Scribe and cut to fit adjoining work. Refinish and seal cuts.
- C. Install standing and running trim with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Stagger joints in adjacent and related trim. Cope at returns and miter at corners.
- D. Install paneling with uniform tight joints. Install miscellaneous 2"x4" wood blocking at the vertical joint of the plywood.

SECTION 072100 - THERMAL INSULATION

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data.
- B. Surface-Burning Characteristics: ASTM E 84, and as follows:
 - 1) Flame-Spread Index: 25 or less where exposed; otherwise, as indicated in Part 2 "Insulation Products" Article.
 - 2) Smoked-Developed Index: 450 or less.
- C. Related Sections:
 - 1) Section 133419 – Metal Building Systems: Roof Insulation

PART 2 - PRODUCTS

2.1 INSULATION PRODUCTS

- A. Mineral-Fiber-Blanket Insulation: ASTM C 665, Type I, unfaced with fibers manufactured from glass, slag wood or rock wool, with flame-spread index of 25 or less.
 - 1. Walls to be R-19(min)

2.2 ACCESSORIES

- A. Vapor Retarder: Polyethylene, 10 mils thick.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install insulation in areas and in thicknesses indicated or required to produce R-values indicated. Cut and fit tightly around obstructions and fill voids with insulation.
- B. Except for loose-fill insulation and insulation that is friction fitted in stud cavities, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.
- C. Extend vapor retarder to extremities of areas to be protected from vapor transmission. Secure in place with adhesives or other anchorage. Locate seams at framing members, overlap, and seal with tape.

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data and color Samples.
- B. Environmental Limitations: Do not proceed with installation of joint sealants when ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40 deg F (4.4 deg C).

PART 2 - PRODUCTS

2.1 JOINT SEALANTS

- A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under service and application conditions.
- B. Sealant for Use in Building Expansion Joints:
 - 1) Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; Uses T, M, and O, with the additional capability to withstand **50 percent movement in both extension and compression for a total of 100 percent movement** .
- C. Sealant for General Exterior Use Where Another Type Is Not Specified, **One of the Following:**
 - 1) Single-component, nonsag polysulfide sealant, ASTM C 920, Type S; Grade NS; Class 12-1/2; Uses NT, M, G, A, and O.

- 2) Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; Uses T, NT, M, G, A, and O.
 - 3) Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; and Uses NT, M, A, and O.
- D. Sealant for Exterior Traffic-Bearing Joints, Where Slope Allows Use of Pourable Sealant:
- 1) Single-component, pourable urethane sealant, ASTM C 920, Type S; Grade P; Class 25; Uses T, M, G, A, and O.
- E. Sealant for Use in Interior Joints in Ceramic Tile and Other Hard Surfaces in Kitchens and Toilet Rooms and Around Plumbing Fixtures:
- 1) Single-component, mildew-resistant silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; Uses NT, G, A, and O; formulated with fungicide.
- F. Sealant for Interior Use at Perimeters of Door and Window Frames:
- 1) Latex sealant, single-component, nonsag, mildew-resistant, paintable, acrylic-emulsion sealant complying with ASTM C 834.

2.2 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are non-staining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer.
- B. Cylindrical Sealant Backings: ASTM C 1330, of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with ASTM C 1193.
- B. Comply with ASTM C 919 for use of joint sealants in acoustical applications.

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 – GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data and Shop Drawings.
- B. Comply with ANSI/SDI A250.8.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cold-Rolled Steel Sheets: ASTM A 1008/A 1008M, suitable for exposed applications.
- B. Hot-Rolled Steel Sheets: ASTM A 1011/A 1011M, free of scale, pitting, or surface defects.
- C. Frame Anchors: ASTM A 591/A 591M, 40Z (12G) coating designation; mill phosphatized.
 - 1. For anchors built into exterior walls, sheet steel complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

2.2 HOLLOW METAL DOORS AND FRAMES

- A. Doors: Complying with ANSI 250.8 for level and model and ANSI A250.4 for physical-endurance level indicated, 1-3/4 inches (44 mm) thick unless otherwise indicated.
 - 1. 16-Gauge, Flush, Seamless with continuously welded edge joints.
 - Thermal-Rated (Insulated) Doors: Where indicated, provide doors with thermal-resistance value (R-value) of not less than 4.0 deg F x h x sq. ft/Btu (0.704 K x sq. m/W) when tested according to ASTM C 1363.
 - 2. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as door face sheets.
- B. Frames: ANSI A250.8; conceal fastenings unless otherwise indicated.
 - 1. Fabricate frames with mitered or coped **and continuously welded corners**, 14-Gauge Steel.
 - 2. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.
 - 3. Frame Anchors: Not less than 0.042 inch (1.0 mm) thick.

- C. Door Silencers: Three on strike jambs of single-door frames and two on heads of double-door frames.
- D. Grout Guards: Provide where mortar might obstruct hardware operation.
- E. Prepare doors and frames to receive mortised and concealed hardware according to ANSI A250.6 and ANSI A115 Series standards.
- F. Reinforce doors and frames to receive surface-applied hardware.
- G. Prime Finish: Manufacturer's standard, factory-applied coat of lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install hollow metal frames to comply with ANSI/SDI A250.11.
- B. Install doors to provide clearances between doors and frames as indicated in ANSI/SDI A250.11.
- C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying rust-inhibitive primer.

SECTION 083323 - OVERHEAD SECTIONAL DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Structural Performance: Design and reinforce overhead sectional doors to withstand wind-loading pressure, as indicated on drawings.
- B. Submittals: Product Data and Shop Drawings.

PART 2- PRODUCTS

2.1 OVERHEAD SECTIONAL DOORS

- A. Products:
 - 1) AMARR Garage Doors, Model 3 1000 Heavy-Duty 2" Insulated Steel Door

- B. Door Curtain Slats: Galvanized steel, flat-profile, insulated slats.
- C. Operation: Electrical Motorized Operation, remote and switched opening, with manual override. Remote operation shall not be affected by other station or truck frequencies. Radio transmitters must open bay doors from within truck cab at 100 yards minimum distance. Antenna to be mounted on the exterior above the overhead door.
- D. Tracks, Supports, and Hardware: Manufacturer's standard, mount inside of jambs. Each door track to have spring type stop at the back of open position.
- E. Weather seals: Provide replaceable weather stripping at bottom and at top of exterior doors.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install door, track and operating equipment complete with necessary hardware, jamb and head mold strips, anchors, inserts, hangers, and equipment supports.
- B. Test and adjust controls and safeties.

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Hardware schedule
- B. Deliver keys to Owner.

PART 2 - PRODUCTS

2.1 HARDWARE

- A. Hinges:
 - 1) FBB1199 HT, High Frequency, Non-Rising Pins, Full Mortise, 1 ½ pair per Door, manufactured by HAGER.
- B. Locksets and Latch sets:
 - 1) Exterior Doors: KABA Lock, Mechanical push-button combination lock, Model #LL-1011-26D-41.
 - 2) Interior Doors: Lever, US26D Grade 2 Cylindrical lock-storeroom lock-lever.

- C. Closers:
 - 1) LCN Model #4210 or Norton #PR7570.
 - 2) Mount closers on interior side (room side) of door opening. Provide regular-arm, parallel-arm, or top-jamb mount closers as necessary.
- D. Provide wall stops for doors as indicated.
 - 1) Model #401, Manufactured by IVES
- E. Door Silencers
 - 1) Furnish three for each single door installed in metal door frames.
- F. Threshold
 - 1) Extruded Aluminum #171A, manufactured by PEMKO:
- G. Weather-stripping
 - 1) Rigid Jamb Weather-stripping, #303AV, Manufactured by PEMKO
 - 2) Door Sweep #315DN, Manufactured by PEMKO

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Mount hardware in locations recommended by the Door and Hardware Institute unless otherwise indicated.

3.2 HARDWARE SCHEDULE

- A. SEE DRAWINGS FOR SCHEDULE

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

PART 1 - PRODUCTS

1.1 MANUFACTURERS

- A. USG
- B. Clark Dietrich Industries
- C. Approved Equal

1.2 METAL FRAMING AND SUPPORTS

- A. Steel Framing Members, General: ASTM C 754.
 - 1) Steel Sheet Components: ASTM C 645. Thickness specified is minimum uncoated base-metal thickness.
 - 2) Protective Coating: **manufacturer's standard corrosion-resistant** zinc coating.
- B. Partition and Soffit Framing:
 - 1) Studs and Runners: In depth indicated, 18 gauge, unless otherwise indicated.
 - 2) Rigid Hat-Shaped Furring Channels: In depth indicated, 20 gauge.

1.3 ACCESSORIES

- A. General: Comply with referenced installation standards.
 - 1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power and other properties required to fasten steel members to substrates.

PART 2 - EXECUTION

2.1 INSTALLATION

- A. Install steel framing to comply with ASTM C 754 and with ASTM C 840 requirements that apply to framing installation.
- B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- C. Isolate steel framing from building structure, except at floor, to prevent transfer of loading imposed by structural movement.
 - 1. Where studs are installed directly against exterior walls, install **asphalt-felt or foam-gasket** isolation strip between studs and wall.

SECTION 099100 - PAINTING

PART 1- GENERAL

1.1 SECTION REQUIREMENTS

- A. Summary: Paint exposed surfaces unless otherwise indicated.
 - 1. Paint the back side of plywood interior with primer on panels.
 - 2. Do not paint prefinished items, items with an integral finish, operating parts, and labels unless otherwise indicated.
- B. Submittals:
 - 1. Product Data
 - 2. Samples.
- C. Extra Materials: Deliver to Owner 1 gal. (3.8 L) of each color and type of finish coat paint used on Project, in containers, properly labeled and sealed.

PART 2 - PRODUCTS

2.1 PAINT

- A. Material Compatibility: Provide materials that are compatible with one another and with substrates.
 - 1. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- B. Colors: As **selected** from standard colors.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Remove hardware, lighting fixtures, and similar items that are not to be painted. Mask items that cannot be removed. Reinstall items in each area after painting is complete.
- B. Clean and prepare surfaces in an area before beginning painting in that area. Schedule painting so cleaning operations will not damage newly painted surfaces.

3.2 APPLICATION

- A. Apply paints according to manufacturer's written instructions.
 - 1. Use brushes only for exterior painting and where the use of other applicators is not practical.
 - 2. Use rollers for finish coat on interior walls and ceilings.

- B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness or other surface imperfections. Cut in sharp lines and color breaks.
 - 1. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

3.3 INTERIOR PAINT APPLICATION SCHEDULE

Semi-gloss Latex: Two coats over Latex Primer

- A. Hollow Metal Doors and Frames:
 - 1. Ultra-hide Semi-Gloss, 5086 Series: Two coats over factory applied primer.

Paint schedule for fire stations. (Global) From the Sherwin Williams Paint chips

Bay walls: Sheet rock -----SW 6100 Practical Beige
Plywood-----SW 6109 Hop Sack
All interior walls -----SW 6002 Essential Gray
All metal including frames: SW 6002

SECTION 101400 - SIGNAGE

PART 1 - GENERAL (TOILET ROOM SIGNAGE IS REQUIRED)

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Interior Panel Signs: Engraved plastic laminate with beveled edges and rounded corners.
 - 1. Finishes and Colors: As selected from manufacturer's full range
 - 2. Tactile Characters: Characters and Grade 2 Braille rose 1/32 inch (0.8 mm) above surface with contrasting colors.
 - 3. Provide signs for restrooms mounted on the wall beside the room door: Text and Symbol to be Unisex ADA Restroom

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Locate signs where indicated or directed by Architect. Install signs level, plumb, and at heights

indicated, with sign surfaces free from distortion and other defects in appearance.

B. Wall-Mounted Signs:

1. Two-Face Tape: Mount signs to smooth, nonporous surfaces, other than vinyl.

SECTION 102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data. - PRODUCTS

2.1 TOILET AND BATH ACCESSORIES

A. Paper Towel Dispenser :

1. Surface Mounted, Model #B3949, Manufactured by Bobrick.

B. Toilet Tissue Dispenser:

1. Surface Mounted, Model #B273 (Heavy-Duty), Manufactured by Bobrick.

C. Grab Bar:

1. Pened Non-Slip Gripping Surface, Vertical 1¼-inch diameter, Model #B-5837.99 and Model #B-5806.99x24, Manufactured by Bobrick or equal.

D. Mirror:

1. ¼- inch Number 1 Quality, Electro Copper, Backed, Plate Glass, 20 gauge Stainless Steel Frame, Model #B165, Manufactured by Bobrick Based.

E. Under lavatory Guard:

1. Description: Insulating pipe coverings for supply and drain piping assemblies, which prevent direct contact with and burns from piping, and allow service access without removing coverings.
2. Material and Finish: Antimicrobial, molded plastic, white.

SECTION 133419 - METAL BUILDING SYSTEMS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Metal Building System Description: Rigid clear span, solid- member with expandable end wall and nonexpandable end wall, primary frame and end wall columns. CABLE CROSS BRACING WILL NOT BE ALLOWED.
1. Eave Height: Manufacturer's standard height, as indicated by nominal height on Drawings
 2. Dimensions and Bay Spacing's: As indicated on Drawings
 3. Roof Slope: 2 inches per 12 inches
 4. Cable bracing shall not be allowed.
 5. Color of frames/girts: Standard Grey.
- B. Structural Performance: Provide metal building systems capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
1. Engineer metal building systems according to procedures in MBMA's "Metal Building Systems Manual."
 2. Design Loads: As indicated or as required by MBMA's "Metal Building Systems Manual."
- C. Wind-Uplift Resistance: V Ultimate 120 mph. Provide metal roof panel assemblies that comply with UL 580 for Class 60. Risk Category III.
- D. Submittals: Product Data, Shop Drawings, structural analysis data signed and sealed by a qualified professional engineer registered in the state of South Carolina.
1. Submit letter of design certification, signed and sealed by a qualified professional engineer. Indicate name and location of Project, name of manufacturer, order number, name of contractor, governing building code and standards including year of edition, design loads and load combinations, building use category, and load importance factors.
 2. Contractor to provide foundation Design by SC registered Engineer. The bid documents are for Basis of Design.
- E. Comply with AISC's "Specification for Structural Steel Buildings - Allowable Stress Design, Plastic Design," or AISC's "Load and Resistance Factor Design Specification for Structural Steel Buildings"; and AISI's "Specification for the Design of Cold-Formed Steel Structural Members," or AISI's "Load and Resistance Factor Design Specification for Steel Structural Members."

PART 2 - PRODUCTS

2.1 METAL BUILDINGS

- A. Structural-Framing Materials:
1. W-Shapes: ASTM A 992/A 992M; ASTM A 572/A 572M, Grade 50

2. Channels, Angles, M-Shapes, and S-Shapes: ASTM A 36/A 36M; ASTM A 572/A 572M, Grade 50.
3. Plate and Bar: ASTM A 36/A 36M; ASTM A 572/A 572M, Grade 50.
4. Steel Pipe: ASTM A 53/A 53M, Type E or S, Grade B.
5. Cold-Formed Hollow Structural Sections: ASTM A 500, Grade B or C, structural tubing.
6. Structural-Steel Sheet: Hot-rolled, ASTM A 1011/A 1011M, Structural Steel (SS), or High-Strength Low Alloy Steel (HSLAS); or cold-rolled, ASTM A 1008/A 1008M, Structural Steel (SS), or High-Strength Low Alloy Steel (HSLAS).
7. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Structural Steel (SS) or High-Strength Low Alloy Steel (HSLAS); with G60 (Z180) coating designation; mill phosphatized.

B. Roof and Wall Panels:

1. Metal Panels: Steel sheet, zinc coated by the hot-dip process, complying with ASTM A 653/A 653M, G90 (Z275), Structural Steel (SS), and pre-painted by the coil-coating process to comply with ASTM A 755/A 755M.
2. Lap-Seam Roof Panels: Metal panels factory formed to provide 36-inch (914-mm) coverage, with raised trapezoidal major ribs at 12 inches (305 mm) o.c., and intermediate stiffening ribs symmetrically spaced between major ribs. Design panels for mechanical attachment to structure using exposed fasteners, lapping major ribs at panel edges.
 - a) Roof Panel Metal Thickness: 24 Gauge
 - b) Color: Galvalume
3. Lap-Seam Wall Panels: Metal panels factory formed to provide 36-inch (914-mm) coverage, with raised trapezoidal major ribs at 12 inches (305 mm) o.c. and intermediate stiffening ribs symmetrically spaced between major ribs. Design panels for mechanical attachment to structure using exposed fasteners, lapping major ribs at panel edges.
 - a) Wall Panel Metal Thickness: 24 Gauge
 - b) Color: Kynar Finish, as selected by owner from standard finishes.
4. Panel Accessories: Provide clips, flashings, sealants, gaskets, and similar items.

C. Flashing and Trim: Form from 0.0159-inch- (0.40-mm-) thick, zinc-coated (galvanized) steel sheet pre-painted with coil coating. Provide flashing and trim as required to seal against weather and to provide finished appearance. Finish flashing and trim same as adjacent roof or wall panels.

D. Gutters and Downspouts: Form from 0.0159-inch- (0.40-mm-) thick, zinc-coated (galvanized) steel sheet pre-painted with coil coating. Match gutters to profile of gable trim and finish gutters to match roof fascia and rake trim. Finish downspouts to match wall panels.

E. Metal Building Insulation: ASTM C 991, Type I, or NAIMA 202, glass-fiber-blanket insulation; 0.5-lb/cu. ft. (8-kg/cu. m) density; 2 inch-(50 mm) wide, continuous, vapor-tight edge tabs; and with a flame-spread index of 25 or less.

1. Vapor-Retarder Facing: Fiber-reinforced white polypropylene or vinyl film complying with ASTM C 1136.

- F. Accessories:
 - 1. Sectional Overhead Doors: Provide, metal trimmed openings; doors are specified in Division 08 Section "Sectional Doors."

- G. Miscellaneous Materials:
 - 1. Primer: SSPC-Paint 15, Type I, standard grey.
 - 2. Grout: ASTM C 1107, factory-packaged, nonmetallic grout, noncorrosive and non-staining.
 - 3. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing; of manufacturer's standard size.
 - 4. Joint Sealant: ASTM C 920; one-part elastomeric polyurethane, polysulfide, or silicone-rubber sealant; of type, grade, class, and use classifications required to seal joints in metal panels and remain weather tight; and as recommended by metal building system manufacturer.

PART 3 - EXECUTION

3.1 ERECTION

- A. Setting Base and Bearing Plates: Clean concrete and masonry of bond-reducing materials and roughen surfaces before setting plates. Clean bottom surface of plates.
 - 1. Set plates for structural members on wedges, shims, or setting nuts.
 - 2. Tighten anchor rods after supported members have been positioned and plumbed.
 - 3. Pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure.

- B. Erect framing true to line, level, plumb, rigid, and secure. Comply with AISC specifications referenced in this Section.
 - 1. Make field connections for primary framing using high-strength bolts installed according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts," snug tightened or pretension.
 - 2. Fasten secondary framing to primary framing using clips and non-high-strength bolts. Hold rigidly to a straight line by sag rods.
 - 3. Install joists, and accessories plumb, square, and true to line; securely fasten to supporting construction according to SJI's "Standard Specifications, Load Tables, and Weight Tables for Steel Joists and Joist Girders."
 - 4. Bracing: Install bracing in roof and sidewalls where indicated on erection drawings.
 - 5. Framing for Openings: Provide shapes of proper design and size to reinforce openings and to carry loads and vibrations imposed, including equipment furnished under mechanical and electrical work. Securely attach to structural framing.

- C. Roof Panel Installation: Provide roof panels of full length from eave to ridge when possible.
 - 1. Install screws with power tools having controlled torque to compress neoprene washer

- without damage to washer, screw threads, or panels. Install screws in predrilled holes.
 - 2. Use aluminum or stainless-steel fasteners for exterior and galvanized fasteners for interior.
 - 3. Locate panel splices over, but not attached to, structural supports; stagger panel splices.
 - 4. Lap-Seam Roof Panels: Fasten to purlins with exposed fasteners at each lapped joint. Arrange and nest side-lap joints so prevailing winds blow over, not into, lapped joints. Apply a continuous ribbon of sealant tape to weather-side surface of fastenings on lap seams. At splices, lap panels 6 inches (150 mm), seal with butyl sealant and fasten together with interlocking clamping plates.
- D. Wall Panel Installation: Provide panel's full height of building unless otherwise indicated.
- 1. Arrange and nest side-lap joints so prevailing winds blow over, not into, lapped joints.
 - 2. When 2 rows of panels are required, lap panels 4 inches (100 mm) minimum. Locate panel splices over structural supports.
 - 3. Rigidly fasten base end of metal wall panels and allow eave end free movement due to thermal expansion and contraction. Pre-drill panels.
 - 4. Apply elastomeric sealant continuously between metal base channel (sill angle) and concrete, and elsewhere as necessary for waterproofing.
 - 5. Apply a continuous ribbon of sealant tape to weather-side surface of fastenings on lap seams.
 - 6. Install screws with power tools having controlled torque to compress neoprene washer without damage to washer, screw threads, or panels. Install screws in predrilled holes.
 - 7. Use aluminum or stainless-steel fasteners for exterior and galvanized fasteners for interior.
- E. Insulation Installation: Install insulation concurrently with panel installation. Set vapor-retarder-faced units with vapor retarder to warm side of construction. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to surrounding construction to ensure airtight installation.
- 1. Over-Framing Installation: Extend over and perpendicular to top flange of secondary framing members. Hold in place by panels fastened to secondary framing.
- F. Gutters, Downspouts, Flashing, and Trim Installation: Comply with SMACNA's "Architectural Sheet Metal Manual." Provide for thermal expansion; conceal fasteners where possible and set units true to line and level. Install work with laps and seams that will be permanently watertight. Coordinate Downspouts with Civil Drawings.

SECTION 220500 - COMMON WORK RESULTS FOR PLUMBING

PART 1 – GENERAL

1.1 SECTION REQUIREMENTS

- A. Summary: General requirements for motors, hangers and supports, vibration isolation and seismic restraints, and meters and gages.

- B. Submittals: Product Data for materials and equipment specified in this Section.

PART 2 - PRODUCTS

2.1 MOTORS

A. Motor Characteristics:

1. Motors [1/2] [3/4] HP and Larger: Three phase.
2. Motors Smaller Than [1/2] [3/4] HP: Single phase.
3. Frequency Rating: 60 Hz.
4. Voltage Rating: NEMA standard voltage selected to operate on nominal circuit voltage to which motor is connected.
5. Service Factor: 1.15 for open dripproof motors; 1.0 for totally enclosed motors.
6. Duty: Continuous duty at ambient temperature of 105 deg F (40 deg C) and at altitude of 3300 feet (1005 m) above sea level.
7. Capacity and Torque Characteristics: Sufficient to start, accelerate and operate connected loads at designated speeds, at installed altitude and environment, with indicated operating sequence and without exceeding nameplate ratings or considering service factor.
8. Enclosure: Unless otherwise indicated, open dripproof.
9. Motors Used with Variable-Frequency Controllers: Ratings, characteristics and features coordinated with and approved by controller manufacturer.

2.2 HANGERS AND SUPPORTS

- A. Hanger and Pipe Attachments: Factory fabricated with galvanized coatings; nonmetallic coated for hangers in direct contact with copper tubing.
- B. Building Attachments: Powder-actuated-type, drive-pin attachments with pullout and shear capacities appropriate for supported loads and building materials.
- C. Mechanical-Expansion Anchors: Insert wedge-type attachments with pullout and shear capacities appropriate for supported loads and building materials.

2.3 VIBRATION ISOLATION AND SEISMIC CONTROL DEVICES

A. Vibration Supports:

1. Pads: Arranged in single or multiple layers of oil- and water-resistant **neoprene** of sufficient stiffness for uniform loading over pad area, molded with a nonslip pattern and galvanized-steel baseplates, and factory cut to sizes that match requirements of supported equipment.
2. **Restrained** Mounts: Double-deflection type, with molded, oil-resistant fiberglass, rubber or neoprene isolator elements with factory-drilled, encapsulated top plate for bolting to equipment and baseplate for bolting to structure. Provide isolator with

- minimum **0.5-inch (13-mm)** static deflection.
3. Spring Isolators: Freestanding, laterally stable, **restrained** spring isolators. Provide isolator with minimum **1-inch (25-mm)** static deflection.
- B. Vibration Hangers:
1. Elastomeric Hangers: Double-deflection type, with molded, oil-resistant rubber or neoprene isolator elements bonded to steel housings with threaded connections for hanger rods. Provide isolator with minimum [**0.5-inch (13-mm)**] static deflection.
 2. Spring Hangers: Combination coil-spring and elastomeric-insert hanger with spring and insert in compression. Provide isolator with minimum [**1-inch (25-mm)**] < static deflection.
- C. Seismic Restraints:
1. Resilient Isolation Washers and Bushings: One-piece, molded, oil and water-resistant neoprene, with a flat washer face.
 2. Channel Support System: MFMA-3, shop or field-fabricated support assembly made of slotted steel channels with accessories for attachment to braced component at one end and to building structure at the other end and other matching components and with corrosion-resistant coating; and rated in tension, compression, and torsion forces.
 3. Restraining Cables: **Galvanized** -steel cables with end connections made of steel assemblies that swivel to final installation angle and utilize two clamping bolts for cable engagement.
 4. Mechanical Anchor Bolts: Seismic-rated, drill-in, and stud-wedge or female-wedge type. Provide anchor bolts and hardware with zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488.
 5. Adhesive Anchor Bolts: Drilled-in and capsule anchor system containing polyvinyl or urethane methacrylate-based resin and accelerator, or injected polymer or hybrid mortar adhesive. Provide anchor bolts and hardware with zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488.

2.4 PRESSURE GAGES AND TEST PLUGS

- A. Pressure Gages: Direct-mounting, indicating-dial type complying with ASME B40.100. Dry metal case, minimum 2-1/2-inch (63-mm) diameter with red pointer on white face, and plastic window. Minimum accuracy 3 percent of middle half of range. Range two times operating pressure.
- B. Test Plug: Corrosion-resistant brass or stainless-steel body with two self-sealing rubber core inserts and gasket and threaded cap, with extended stem for units to be installed in insulated piping. Minimum pressure and temperature rating 500 psig at 200 deg F (3450 kPa at 93 deg C).

PART 3 - EXECUTION

3.1 MOTOR INSTALLATION

- A. Anchor motor assembly to base, adjustable rails, or other support, arranged and sized according to manufacturer's written instructions.

3.2 GENERAL PIPING INSTALLATIONS

- A. Install piping free of sags and bends.
- B. Install fittings for changes in direction and branch connections.
- C. Install sleeves for pipes passing through metal wall panels, plywood **board partitions**, and concrete floor and roof slabs.
- D. Exterior Wall, Pipe Penetrations: Mechanical sleeve seals installed in steel or cast-iron pipes for wall sleeves.
- E. Comply with requirements in Division 07 Section "Penetration Fire stopping" for sealing pipe penetrations in fire-rated construction.
- F. Install unions at final connection to each piece of equipment.
- G. Install dielectric unions and flanges to connect piping materials of dissimilar metals in gas piping.
- H. Install dielectric coupling and nipple fittings to connect piping materials of dissimilar metals in water piping.

3.3 GENERAL EQUIPMENT INSTALLATIONS

- A. Install equipment to allow maximum possible headroom unless specific mounting heights are not indicated.
- B. Install equipment level and plumb, parallel and perpendicular to other building systems and components, unless otherwise indicated.
- C. Install mechanical equipment to facilitate service, maintenance, and repair or replacement of components. Connect equipment for ease of disconnecting, with minimum interference to other installations. Extend grease fittings to accessible locations.
- D. Install equipment to allow right of way for piping installed at required slope.

3.4 CONCRETE BASES

- A. Anchor equipment to concrete base according to equipment manufacturer's written

instructions and according to seismic codes at Project.

- B. Construct concrete bases of dimensions indicated, but not less than 4 inches (100 mm) larger in both directions than supported unit.
- C. Install dowel rods on 18-inch (450-mm) centers around the full perimeter of the base to connect concrete base to concrete floor.
- D. Install epoxy-coated anchor bolts for supported equipment that extend through concrete base, and anchor into structural concrete floor.
- E. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
- F. Install anchor bolts to elevations required for proper attachment to supported equipment.
- G. Use **3000-psi (20.7-MPa)** 28-day compressive-strength concrete and reinforcement as specified in Division 03 Section "Cast-in-Place Concrete."

3.5 HANGERS AND SUPPORTS

- A. Comply with MSS SP-69 and MSS SP-89. Install building attachments within concrete or to structural steel.
- B. Install hangers and supports to allow controlled thermal and seismic movement of piping systems.
- C. Install powder-actuated drive-pin fasteners in concrete after concrete is cured. Do not use in lightweight concrete or in slabs less than 4 inches (100 mm) thick.
- D. Install mechanical-expansion anchors in concrete after concrete is cured. Do not use in lightweight concrete or in slabs less than 4 inches (100 mm) thick.
- E. See Division 21 Section "Water-Based Fire-Suppression Systems" for support of fire-protection system piping.
- F. Load Distribution: Install hangers and supports so piping live and dead loading and stresses from movement will not be transmitted to connected equipment.
- G. Horizontal-Piping Hangers and Supports: Unless otherwise indicated and except as specified in piping system Specification Sections, install the following types:
 - 1. Adjustable Steel Clevis Hangers (MSS Type 1): For suspension of non-insulated or insulated stationary pipes, NPS 1/2 to NPS 30 (DN 15 to DN 750).
 - 2. Pipe Hangers (MSS Type 5): For suspension of pipes, NPS 1/2 to NPS 4 (DN 15 to DN 100), to allow off-center closure for hanger installation before pipe erection.

3. Adjustable Steel Band Hangers (MSS Type 7): For suspension of non-insulated stationary pipes, NPS 1/2 to NPS 8 (DN 15 to DN 200).
 4. Adjustable Band Hangers (MSS Type 9): For suspension of non-insulated stationary pipes, NPS 1/2 to NPS 8 (DN 15 to DN 200).
 5. Adjustable Swivel-Ring Band Hangers (MSS Type 10): For suspension of non-insulated stationary pipes, NPS 1/2 to NPS 2 (DN 15 to DN 50).
- H. Vertical-Piping Clamps: Unless otherwise indicated and except as specified in piping system Specification Sections, install the following types:
1. Extension Pipe or Riser Clamps (MSS Type 8): For support of pipe risers, NPS 3/4 to NPS 20 (DN 20 to DN 500).
 2. Carbon- or Alloy-Steel Riser Clamps (MSS Type 42): For support of pipe risers, NPS 3/4 to NPS 20 (DN 20 to DN 500), if longer ends are required for riser clamps.

3.6 VIBRATION ISOLATION AND SEISMIC CONTROL DEVICE INSTALLATION

- A. Adjust vibration isolators to allow free movement of equipment limited by restraints.
- B. Install resilient bolt isolation washers and bushings on equipment anchor bolts.
- C. Install cables so they do not bend across sharp edges of adjacent equipment or building structure.

SECTION 221316 - SANITARY WASTE AND VENT PIPING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Minimum Pressure Requirement for Soil, Waste, and Vent: 10-foot head of water.
- B. Comply with NSF 14, "Plastic Piping Components and Related Materials," for plastic piping components.

PART 2 – PRODUCTS

2.1 PIPES AND FITTINGS

- A. Copper Drainage Tube and Fittings: ASTM B 306, Type DWV drawn temper with wrought copper, Type DWV drainage fittings.
- B. Hub-and-Spigot Cast-Iron Soil Pipe and Fittings: ASTM A 74, Service class; ASTM C 564 rubber gaskets.
- C. Hub-less Cast-Iron Soil Pipe and Fittings: ASTM A 888 or CISPI 301, with ASTM C 1277 shielded couplings.
- D. PVC Plastic, DWV Pipe and Fittings: ASTM D 2665, Schedule 40, plain ends with PVC socket-type, DWV pipe fittings.

PART 3 - EXECUTION

3.1 PIPING INSTALLATION

- A. Install cast-iron soil piping according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings."
- B. Install wall penetration system at each pipe penetration through foundation wall. Make installation watertight.
 - 1. Sleeves are not required for cast-iron soil piping passing through concrete slabs-on-grade if slab is without membrane waterproofing.
- C. Make changes in direction for soil and waste drainage and vent piping using appropriate branches, bends, and long-sweep bends. Sanitary tees and short-sweep 1/4 bends may be used on vertical stacks if change in direction of flow is from horizontal to vertical. Use long-turn, double Y-branch and 1/8-bend fittings if 2 fixtures are installed back to back or side by side with common drain pipe. Straight tees, elbows, and crosses may be used on vent lines. Do not change direction of flow more than 90 degrees. Use proper size of standard increasers and reducers if pipes of different sizes are connected. Reducing size of drainage piping in direction of flow is prohibited.
- D. Lay buried building drainage piping beginning at low point of each system. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab in piping and pull past each joint as completed.
- E. Install soil and waste drainage and vent piping at the following minimum slopes, unless otherwise indicated:
 - 1. Building Sanitary Drain: 2 percent downward in direction of flow for piping NPS 3 and smaller; 1 percent downward in direction of flow for piping NPS 4 and larger.
 - 2. Horizontal Sanitary Drainage Piping: 2 percent downward in direction of flow.
 - 3. Vent Piping: 1 percent down toward vertical fixture vent or toward vent stack.

- F. Install PVC soil and waste drainage and vent piping according to ASTM D 2665.
- G. Install underground PVC soil and waste drainage piping according to ASTM D 2321.
- H. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.
- I. Soldered Joints: Use ASTM B 813, water-flushable, lead-free flux; ASTM B 32, lead-free-alloy solder; and ASTM B 828 procedure unless otherwise indicated.

3.2 PIPE SCHEDULE

- A. Above ground Applications: Hubless, cast-iron soil pipe and fittings, PVC plastic, DWV pipe and fittings with solvent-cemented joints or Copper drainage tube and fittings with soldered joints.
- B. Below ground Applications: Hubless, cast-iron soil pipe and fittings, PVC plastic, or DWV pipe and drainage-pattern fittings with cemented joint. PVC not allowed in ceiling plenums where the plenum is used as a return air path.

SECTION 233423 - HVAC POWER VENTILATORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data.
- B. Bear the AMCA seal.
- C. Comply with UL 705.
- D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PART 2 - PRODUCTS

2.1 CENTRIFUGAL VENTILATORS

- A. Basis-of-Design Product: Product indicated on Drawings
- B. Refer to plans Housing: Removable, spun-aluminum, dome top and outlet baffle extruded-aluminum, rectangular top, galvanized-steel, mushroom-domed top; square, one-piece,

aluminum base with venturi inlet cone.

3.

1. Wall-Mounting Units: Aluminum rectangular base with venturi inlet cone, motor mount, and vibration isolators designed for wall mounting.
- C. Fan Wheels: Aluminum hub and wheel with backward-inclined blades.
- D. Belt-Driven Drive Assembly: Resiliently mounted to housing:
1. Fan Shaft: Turned, ground, and polished steel; keyed to wheel hub.
 2. Shaft Bearings: Permanently lubricated, permanently sealed and self-aligning ball bearings.
 3. Pulleys: Cast-iron, adjustable-pitch motor pulley.
 4. Fan and motor isolated from exhaust airstream.
- E. Accessories:
1. Disconnect Switch: Non-fusible type, with thermal-overload protection mounted inside or outside fan housing, factory wired through an internal aluminum conduit.
 2. Bird Screens: Removable, 1/2-inch mesh, aluminum or brass wire.
 3. Dampers: Counterbalanced, parallel-blade, backdraft dampers mounted in curb base; factory set to close when fan stops.
 4. Motorized Dampers: Parallel-blade dampers mounted in curb base with electric actuator; wired to close when fan stops.
- F. Capacities and Characteristics:
1. Airflow: Refer to plans
 2. Static Pressure: Refer to plans
 3. Motor Horsepower: Refer to plans
 4. Fan RPM: Refer to plans
 5. Volts: Refer to plans Phase: Refer to plans
 6. Hertz: 60.

2.2 CEILING-MOUNTING OR IN-LINE CENTRIFUGAL VENTILATORS

- A. Basis-of-Design Product: Refer to plans or comparable product by one of the following:
1. Refer to plans
- B. Housing: Steel, lined with acoustical insulation.
- C. Fan Wheel: Centrifugal wheels directly mounted on motor shaft. Fan shrouds, motor, and fan wheel shall be removable for service.
- D. Grille: Aluminum, Stainless steel, louvered or egg-crate grille with flange on intake and thumbscrew attachment to fan housing.

- E. Electrical Requirements: Junction box for electrical connection on housing and receptacle for motor plug-in.
- F. Accessories:
 - 1. Variable-Speed Controller: Solid-state control to reduce speed from 100 to less than 50 percent.
 - 2. Manual Starter Switch: Single-pole rocker switch assembly with cover and pilot light.
 - 3. Motion Sensor: Motion detector with adjustable shutoff timer.
 - 4. Ceiling Radiation Damper: Fire-rated assembly with ceramic blanket, stainless-steel springs, and fusible link.
 - 5. Filter: Washable aluminum to fit between fan and grille.
 - 6. Isolation: Rubber-in-shear vibration isolators
- G. Capacities and Characteristics:
 - 1. Airflow: Refer to plans
 - 2. Static Pressure: Refer to plans
 - 3. Motor Horsepower: Refer to plans
 - 4. Fan RPM: Refer to plans
 - 5. Volts: Refer to plans
 - 6. Hertz: 60.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. In-Line Centrifugal Fans: Suspend units from structural-steel support frame using threaded steel rods and vibration isolation springs.
- B. Ceiling-Mounted Units: Suspend units from structure using steel wire or metal straps.
- C. Ground power ventilators.

SECTION 311000 - EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Provide protection of the environment during the construction of this project to reduce soil erosion and siltation to the lowest reasonably achievable level.

1.2 GENERAL

- A. Exercise every reasonable precaution, throughout the life of the project, to prevent the eroding of soil and the silting of rivers, streams, lakes, reservoirs, other water impoundments, ground or roadway surfaces, drainage structures ditches or other property. Erosion control practices to be used for this project are shown on the drawings and are to conform to South Carolina Department of Health and Environmental Control regulations and permit and SCDOT permit conditions.

PART 2 - PRODUCTS

2.1 CRUSHED STONE

- A. Provide #57 crushed stone for project entrance and exit.

2.2 GRASSING

- A. Comply with Section 329200: Grassing.

2.3 SILT FENCE

- A. Posts:

1. Steel posts shall be self-fastener angle steel type, 5' in length.
2. Wood posts shall be 3" diameter or 3" square, 6' in length.

- B. **Provide** not less than No. 9 wire staples, 1 .5" long for fastening wire mesh.

- C. Woven wire shall conform to the requirements of ASTM A116, Class I zinc coating for wire. Each woven square shall measure 5.33" X 12". The top and bottom wires shall be 10 gauge. All other wires shall be 12 gauge.

- D. Wire mesh is not required with synthetic, extra strength filter fabric providing puncture strength of 50 psi in accordance with ASTM D751.

- E. Filter fabric shall be burlap or synthetic.

1. If silt fencing is used more than 5 days, synthetic type shall be used.

- F. Burlap shall be 7.5 ounces weight and a minimum 32" wide.

- G. Filter fabric shall be Mirafi 700X as manufactured by Celanese Fibers Co., Bidim C34 as manufactured by DuPont, Trevira or approved equal.

2.4 EROSION CONTROL BLANKET

- A. Use erosion control blanket S150, from North American Green or approved equal.

PART 3 - EXECUTION

3.1 GENERAL

- A. Construct and maintain all erosion control measures until the substantial completion of the project.

3.2 CONSTRUCTION ENTRANCE

- A. Construct a gravel area or pad at points where vehicles enter and leave a construction site.
- B. Clear the entrance and exit area of all vegetation, roots, and other objectionable material and properly grade and place gravel to the grade and dimensions shown on the plans.
- C. Construct drainage channels to carry water to a sediment trap or other suitable outlet.
- D. Use geotextile fabrics to improve stability of the foundation in locations subject to seepage or high water table.
- E. Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site by periodic top dressing with two inches of stone.
- F. After each rainfall, inspect any structure used to trap sediment and clean it out as necessary.
- G. Immediately remove objectionable materials spilled, washed, or tracked onto public roadways.

3.3 TEMPORARY GRASSING

- A. Provide a temporary cover for erosion control on disturbed areas that will remain unstabilized for a period of more than 30 days in accordance with Section 329200 - GRASSING.
- B. This practice applies to cleared areas, diversions, dams, temporary sediment basins, temporary road banks, and topsoil stockpiles where vegetation is needed for less than 1 year.
- C. Provide grassing on slope 5% or greater within 14 days of disturbance.
 - 1. Comply with Section 329200 - GRASSING.

3.4 SILT FENCE

- A. Provide silt fence barrier where shown on the plans and on utility construction parallel to the disturbed trench where perpendicular sheet flow runoff occurs on disturbed areas with slopes greater than 4%.

- B. Place at the extreme limits of the area to be disturbed as shown.
- C. Construct temporary sediment barriers of filter fabric, buried at the bottom, stretched and supported by posts and install below small disturbed areas as indicated on the drawings to retain sediment by reducing the flow velocity to allow sediment deposition.
- D. Provide spacing between posts 5'0" on center, minimum.
- E. Fasten wire mesh to wood posts with wire staples. Wire mesh is not required with synthetic filter fabric.
- F. Remove sediment deposits prior to reaching one-third height of the fence.
- G. Monitor site frequently and place additional silt fencing should evidence indicate that erosion is about to occur at locations other than those shown on plan.

3.5 EROSION CONTROL BLANKET

- A. Provide on areas as shown on the plans or on all embankments with slopes equal to or steeper than 2H: 1V.

3.6 TEMPORARY SEDIMENT TRAPS

- A. Utilize temporary sediment traps at the bottom of all disturbed slopes where runoff is parallel to the utility trench and draining into an existing ditch or stream and where slopes are 5% or greater along the trench.
- B. Provide at intervals of 75'.

3.7 MAINTENANCE

- A. Place all erosion control devices or measures prior to any land disturbing activity within the drainage area they are located.
- B. Periodically check erosion control devices and clean or otherwise remove silt build-up as necessary to maintain them in proper working order.

3.8 REMOVAL

- A. Remove temporary structures after protected areas have been stabilized.

3.9 MEASUREMENT AND PAYMENT

- A. No separate measurement and payment will be made for the work under this Section and all

costs for same shall be included in the price bid for the items to which it pertains.

SECTION 313116 - TERMITE CONTROL

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data and product certificates for each type of product indicated. Include the EPA-Registered Label.
- B. Installer Qualifications: A specialist who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment and products in jurisdiction where Project is located.
- C. Regulatory Requirements: Formulate and apply termiticides according to the EPA-Registered Label.
- D. Continuing Service: Provide **12 months'** continuing service including monitoring, inspection, and re-treatment for occurrences of termite activity.

PART 2 - PRODUCTS

2.1 TERMITE CONTROL PRODUCTS

- A. Soil Treatment Termiticide: Provide an EPA-registered termiticide complying with requirements of authorities having jurisdiction, in an aqueous solution.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's EPA-Registered Label for products.
- B. Soil Treatment Application: Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturer's EPA-Registered Label, to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction.
 - 1. At foundations.
 - 2. Under concrete floor slabs on grade.
- C. Post warning signs in areas of soil treatment application.
- D. Reapply soil termiticide treatment solution to areas disturbed by subsequent excavation or

other construction activities following application.

SECTION 329200 – GRASSING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK:

- A. GENERAL: This item shall include cultivating, fertilizing and planting grass on fill slopes, cut slopes and graded areas, trench excavations, etc., as shown on plans or required by specifications. It is the intent of these specifications to provide for a complete grassing procedure which shall be carefully followed, and on consultation with the Engineer, shall be adjusted to meet unforeseen weather and soil conditions so as to secure a successful planting of the area involved.

PART 2 - PRODUCTS

2.1 MATERIAL: Material for fertilizing and grassing shall be as follows and all shall be approved by the Engineer prior to use:

- A. Lime: Lime shall be ground limestone (dolomite) containing not less than 85 percent of total carbonates, and shall be ground to such a fineness that 40 percent will pass a 100-mesh sieve and 90 percent will pass a 20-mesh sieve.
- B. Fertilizer: Fertilizer shall be uniform in composition and in conformity with State Fertilizer Laws. Fertilizer shall contain the following minimum percentage of plant food by weight:
1. 10% Available Nitrogen (60% slow release)
 2. 10% Available Phosphoric Acid
 3. 10% Available Potash
- C. Asphalt for Mulching: Asphalt shall be emulsified asphalt conforming to ASTM D 977, Grade SS-1, or cutback asphalt conforming to ASTM D 2028, designation RC-70. The asphalt shall contain no petroleum solvents or other diluents which would be toxic to plant growth.
- D. Mulch: Mulch shall be the threshold stalks of oats, wheat, barley, rice, rye, beans or peanuts. It shall not contain more than 15 percent moisture. Mulch material which contains weeds or other plants detrimental to the site shall not be acceptable. Mulch which is excessively brittle, or badly decomposed, shall not be acceptable.
- E. Seed: All seed shall be new crop labeled in accordance with U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act SRA 156. Percentages by weight shall be as follows:

Kind of Seed	Minimum% Pure Live Seed	Minimum% Germination	Maximum% Weed Seed
Bermuda (Hulled)	87	85	1.00
Italian Rye Grass	98	95	0.50
Brown top Millet	90	80	1.00
Centipede	98	95	0.50

1. Seed failing to meet the purity or germination requirements by no more than ten (10%) percent may be used, but the quantity shall be increased to yield the required rate of pure live seed and germination. Seed failing to meet the weed seed requirements shall not be used.

F. Topsoil: Topsoil shall have a "high" rating each of the basic nutrients tested and a pH ranging from 5.5 to 6.0. Necessary additives shall be incorporated in a proper quantity as recommended by a soil analysis to bring the topsoil supplied up to the standards specified. Topsoil shall be from naturally well-drained areas. Topsoil shall be clean and classified as a loam, silt loam, clay loam, or a combination thereof as determined by USDA Triangular Soils Texture Chart. The contractor shall furnish additional topsoil required above the amount obtained from the work are from sources offsite.

G. Embankment Stabilization Fabric: Embankment stabilization fabric shall be SUBAC-6WM (UV) or TREVIRA-1127 or ENKAMAT-7010 as manufacture by Phillips Fiber Corp., American Hoechst Corporation or American ENKA Corporation, respectively, or equal.

H. Hydro-mulch: Wood cellulose fiber containing no germination inhibiting or growth inhibiting agents. Characteristics shall be as follows:

1. Percent moisture content: 9.0% (\pm 3.0%)
2. Percent organic matter: 99.2% (\pm 0.8%).
3. Percent ash content: 0.8% (\pm 0.2%).
4. pH: 4.8 (\pm 0.5).
5. Water holding capacity: 1150 grams water/100 grams fiber, minimum.

PART 3 – EXECUTION

3.1 GENERAL: All areas to be grassed shall be protected from erosion at all times. For protection during the period from September 1 to March 30, grass as specified herein shall be planted as a temporary cover on all areas which are not protected by permanent grass. Planting of the temporary grass cover shall not negate the requirements for a permanent Grass cover.

- A. Grading: Areas to be grassed shall be graded to remove depressions, undulations, and irregularities to the surface before grassing.
- B. Top soiling: Areas to be grassed shall have a minimum of four (4) inches of topsoil placed over them. Topsoil shall not be placed when the sub grade is wet.
- C. Tillage: The areas to be grassed shall be thoroughly tilled to a depth of 3-4 inches using a plow and disc harrow or rotary tilling machinery until a suitable seed bed has been prepared and no clods or clumps remain larger than 1½ inch in diameter.
- D. Applying Lime: The pH of the soil shall be determined by the Contractor. If the pH is below 5.0, sufficient lime shall be added to provide a pH between 5.5 and 6.5. The lime shall be evenly incorporated into the top three to four inches of the soil. Lime and fertilizer may be applied in one operation.
- E. Applying Fertilizer: Fertilizer shall be applied at the rate as specified herein and shall be evenly incorporated into the top three to four inches of soil.
- F. Installation of Embankment Stabilization Fabric: Embankment stabilization fabric shall be installed on all slopes less than 2 horizontal to 1 vertical in accordance with the manufacturer's recommended installation procedures.
- G. Planting Seeds for areas on slopes less than 3 horizontal to 1 vertical. Immediately before seeds are sown after fertilizer is applied, the ground shall be scarified as necessary and shall be raked until the surface is smooth, friable, and of uniformly fine texture. Areas to be grassed shall be seeded evenly with a mechanical spreader. Areas to be grassed shall be seeded evenly with a mechanical spreader, raked lightly, rolled with a 200-pound roller, and watered with a fine spray. On slopes inaccessible to compacting equipment, the seed shall be covered by dragging spiked chains, by light harrowing or by other satisfactory methods.
- H. Seeding Rate for temporary and permanent grass plantings by seasons or soil conditions, required amounts of fertilizer and limestone per 1,000 square feet shall be as follows:

From May 1 - August 31	From Sept. 1 - April 30
1 pound Brown top millet 2 pounds Hulled Bermuda 25 pounds 10-10-10 Fertilizer 75 pounds Limestone	2 pounds Annual Rye Grass ½ pound Hulled Bermuda 1½ pounds Un-hulled Bermuda 25 pounds 10-10-10 Fertilizer 75 pounds Limestone
or	or
1 pound Brown top millet 1 pound Hulled Bermuda 0.6 pound Centipede 25 pounds 10-10-10 Fertilizer 75 pounds Limestone	2 pounds Annual Rye Grass ½ pounds Hulled Bermuda 0.6 pound Centipede 1 pound Un-hulled Bermuda 25 pounds 10-10-10 Fertilizer 75 pounds Limestone
or	or
DEEP SANDY SOILS	DEEP SANDY SOILS
2 pounds Brown top millet 0.9 pounds Centipede 25 pounds 10-10-10 Fertilizer 75 pounds Limestone	1 pound Un-hulled Bermuda 2 pounds Rye Grass or 2 pounds Grain Rye 0.6 pounds Centipede 25 pounds 10-10-10 Fertilizer 75 pounds Limestone

NOTE: All vegetated swales or ditches with side slopes (cut or fill) steeper than 2:1, add 4 to 6 ozs/1,000 square feet or Weeping Love Grass seed to any of the above mixtures. Swale and ditch bottoms should be double-seeded. Do not use Fescue in Sandy Soils.

- I. **Hydro seeding:** Hydro seeding is to be used for all areas with slops equal to or greater than 3 horizontal to 1 vertical.
- J. **Seeding (Wood Cellulose Fiber Mulch):** After the lime has been applied and the ground prepared as specified, a seed/ fertilizer/wood cellulose fiber mulch mixture in water slurry shall be applied. Dispense mixture, using hydraulic mulching equipment, in the following minimum quantities:

1. Fertilizer 650 lbs./acre
2. Bermuda Seed 85 lbs./acre (50% hulled and 50% un-hulled)
3. Italian Rye 130 lbs./acre
4. Hydro mulch 1500 lbs./acre

- K. Clean-Up: All excess soil, excess grass materials, stones and other waste shall be removed from the site daily and not allowed to accumulate.
- L. Maintenance: Maintenance shall begin immediately following the last operation of grassing and continue until final acceptance. Maintenance shall include watering, moving, replanting, and all other work necessary to produce a uniform stand of grass. Grassing will be considered for final acceptance when the permanent grass is healthy and growing on 97% of the area with no bare areas greater than 1 square foot.
- M. Acceptance: Permanently seeded areas will be accepted when the grass attains a height of 2". No acceptance will be made for temporary seeded areas.
- N. Measurement and Payment: No separate measurement and payment will be made for the work under this Section and all costs for same shall be included in the bid for the item to which it pertains.

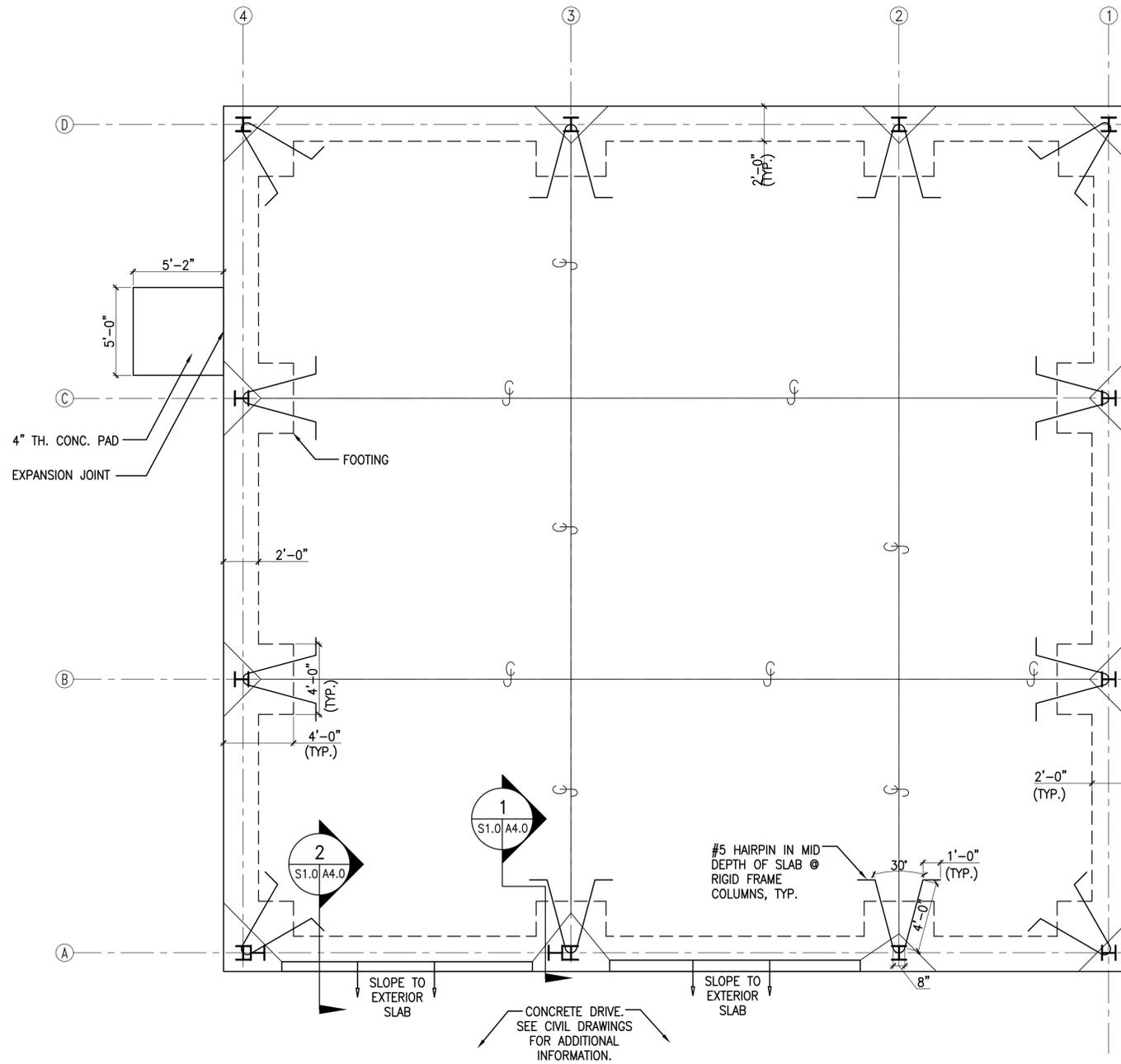
STEEL STUD LINTEL SCHEDULE

WALL SIZE	OPENING WIDTH	LINTEL SIZE
4" STUD WALL	0' TO 3'-0"	(2) 8"x18 GA
	3'-0" TO 6'-0"	(2) 10"x16 GA
6" STUD WALL	0' TO 3'-0"	(3) 8"x18 GA
	3'-0" TO 6'-0"	(3) 10"x16 GA

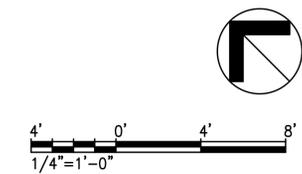
NOTES:

- ALL STUD LINTELS SHALL BE CAPPED TOP & BOTTOM W/ A 14 GA RUNNER TO MATCH WALL STUD THICKNESS
- ALL LINTELS SHALL BEAR OR BE SUPPORTED BY A DOUBLE STUD @ EACH SIDE OF THE OPENING.

"WIND LOADS: BASIC WIND SPEED Vult = 121 MPH"
 "IMPORTANCE FACTOR, Iw = 1.0 WIND EXPOSURE = B"
 "INTERNAL PRESSURE COEFFICIENT, GCPI = +0.18"
 "SEISMIC LOADS: SITE CLASS "" "": D"
 "SEISMIC FORCE RESISTING SYSTEM:" "" ""
 "" = 5.0
 = 4.0"
 "SEISMIC DESIGN CATEGORY" "" "": D"
 RISK CATEGORY IV



1 FOUNDATION PLAN
 S1.0 SCALE: 1/4" = 1'-0"



SUB STATION 34
 PIERCE ROAD
 COLLETON COUNTY
 SOUTH CAROLINA

COLLETON COUNTY

R.W. CHAMBERS, ARCHITECT
 P.O. BOX 1181
 BEAUFORT, S.C. 29901

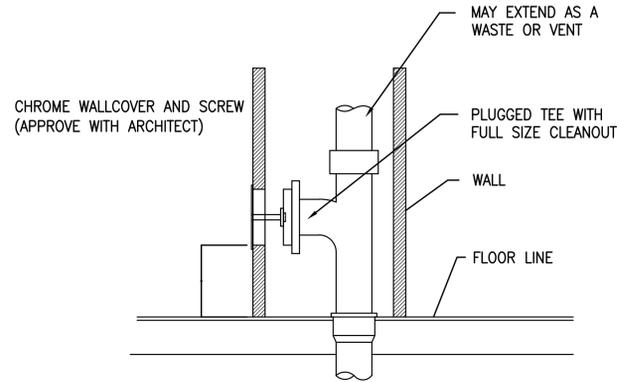


CONSULTANTS

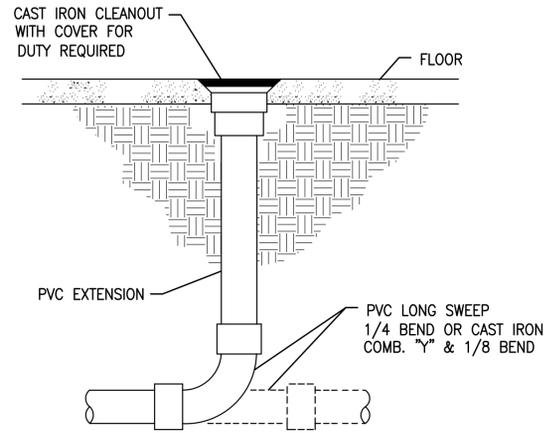
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PROJECT NO: 2012.019.00
 MODEL FILE:
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 CHK'D BY: B.COFFMAN
 DATE: MAY 2014

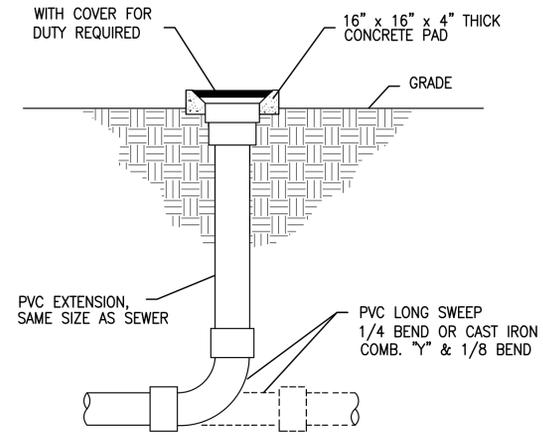
SHEET TITLE
 FOUNDATION PLAN



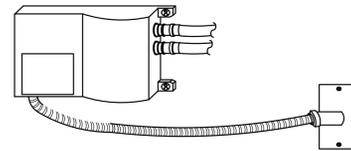
WALL CLEANOUT
SCALE: NTS



FLOOR CLEANOUT
SCALE: NTS



CLEANOUT TO GRADE
SCALE: NTS



INSTANTANEOUS WATER HEATER DETAIL
SCALE: NTS

SUBSTATION 34
PIERCE ROAD
COLLETON COUNTY
SOUTH CAROLINA

COLLETON COUNTY

R.W. CHAMBERS, ARCHITECT
P.O. BOX 1181
BEAUFORT, S.C. 29901



CONSULTANTS

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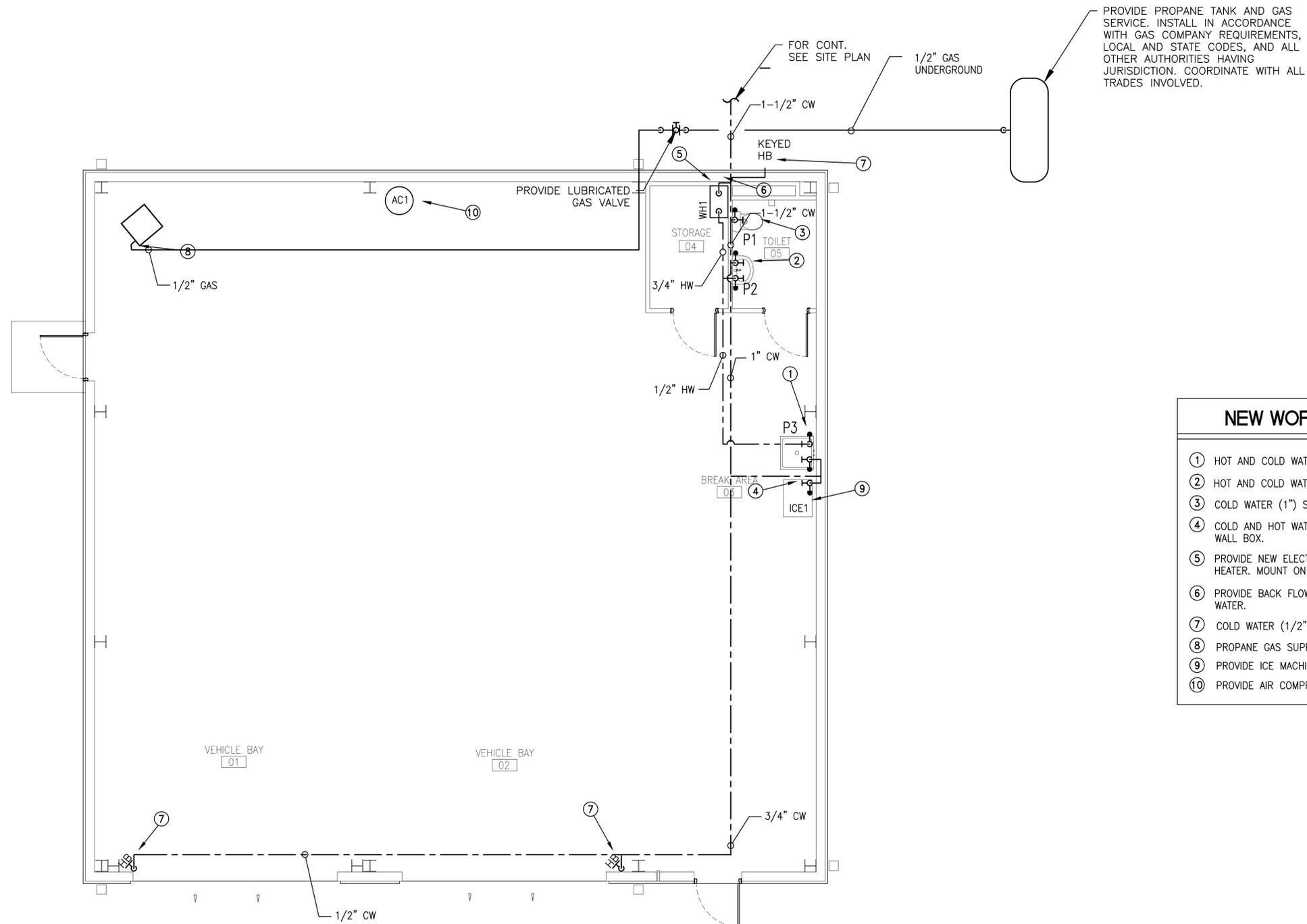
PROJECT NO: 2012.019.00
MODEL FILE:
DRAWN BY: T. FUGARD
CHK'D BY: T. GORMAN
DATE: MAY 2014

SHEET TITLE

**PLUMBING
DETAILS**

P3

SHEET 19 OF 20



PROVIDE PROPANE TANK AND GAS SERVICE. INSTALL IN ACCORDANCE WITH GAS COMPANY REQUIREMENTS, LOCAL AND STATE CODES, AND ALL OTHER AUTHORITIES HAVING JURISDICTION. COORDINATE WITH ALL TRADES INVOLVED.

NEW WORK NOTE SCHEDULE	
①	HOT AND COLD WATER (1/2") SUPPLY TO SINK
②	HOT AND COLD WATER (1/2") SUPPLY TO LAVATORY.
③	COLD WATER (1") SUPPLY TO WATER CLOSET.
④	COLD AND HOT WATER (1/2") SUPPLY TO ICE MACHINE WALL BOX.
⑤	PROVIDE NEW ELECTRIC INSTANTANEOUS HOT WATER HEATER. MOUNT ON WALL.
⑥	PROVIDE BACK FLOW PREVENTOR AT ENTRANCE TO DOMESTIC WATER.
⑦	COLD WATER (1/2") SUPPLY TO HOSE BIB.
⑧	PROPANE GAS SUPPLY (1/2") TO UNIT HEATERS
⑨	PROVIDE ICE MACHINE
⑩	PROVIDE AIR COMPRESSOR

1 WATER AND GAS DISTRIBUTION
 SCALE: 1/4" = 1'-0"



SUBSTATION 34
 PIERCE ROAD
 COLLETON COUNTY
 SOUTH CAROLINA

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 P.O. BOX 1181
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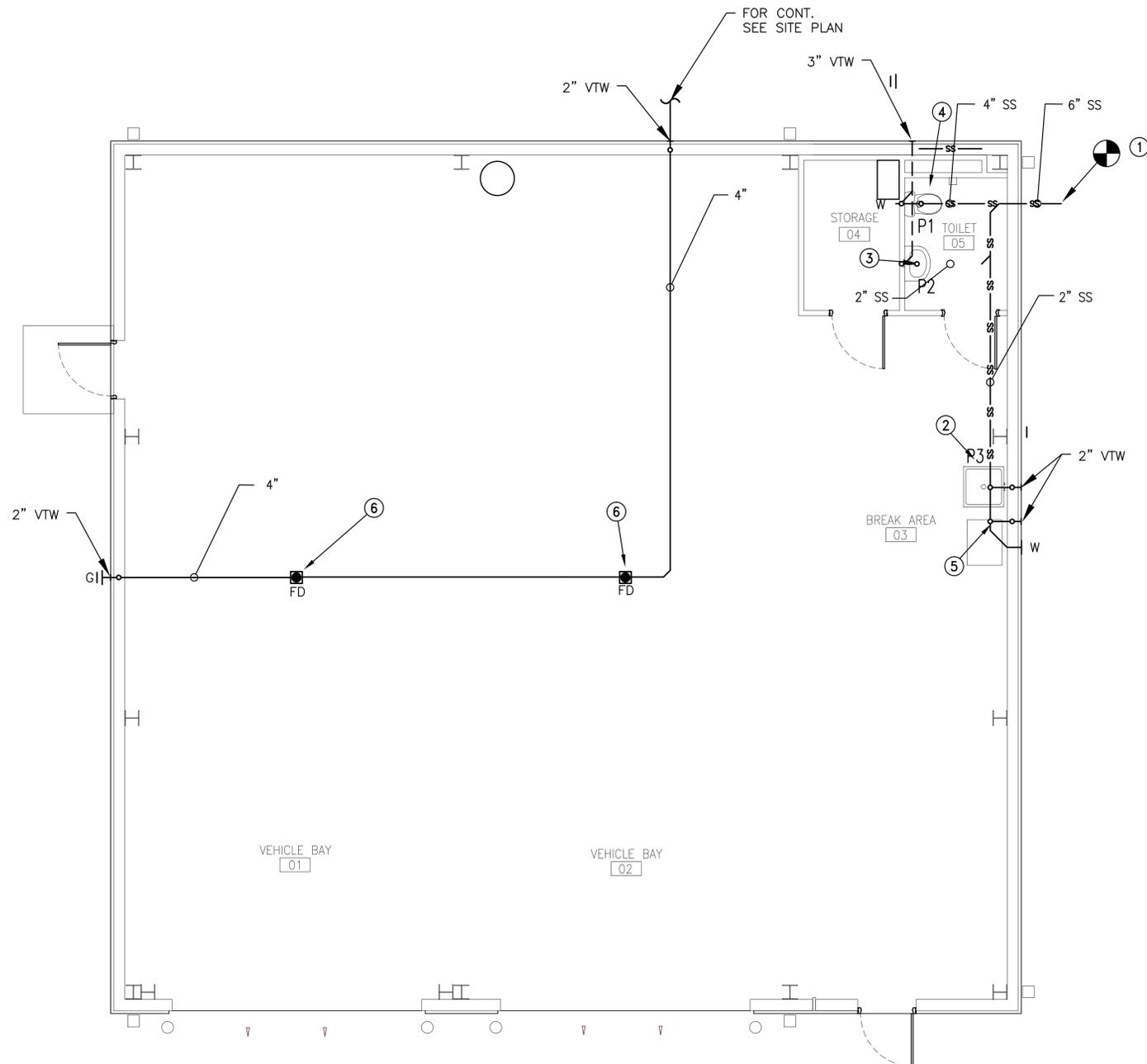


CONSULTANTS

MARK	DATE	DESCRIPTION

PROJECT NO: 2012.019.00
 MODEL FILE:
 DRAWN BY: T. FUGARD
 CHK'D BY: T. GORMAN
 DATE: MAY 2014

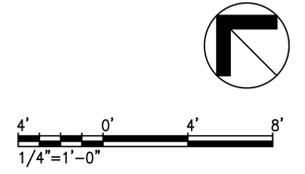
SHEET TITLE
WATER AND GAS DISTRIBUTION



1
P1 **SANITARY SEWER PLAN**
SCALE: 1/4" = 1'-0"

NEW WORK NOTE SCHEDULE	
①	RUN NEW SEWER PIPE TO TANK. REFER TO CIVIL FOR CONTINUATION.
②	SANITARY SEWER (2") FROM SINK.
③	SANITARY SEWER (2") FROM LAVATORY.
④	SANITARY SEWER (3") FROM WATER CLOSET
⑤	SANITARY SEWER (2") FROM ICE MACHINE WASHER WALL BOX.
⑥	RUN 4" DRAIN PIPING FROM FLOOR DRAIN TO FRENCH DRAIN. DRAIN TO ACT AS CLEAN OUT. REFER TO CIVIL FOR CONTINUATION.

NOTE:
NO VENTS ARE TO BE PLACED THRU ROOF.



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SOUTH CAROLINA

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R.W. CHAMBERS, ARCHITECT
P.O. BOX 1181
BEAUFORT, S.C. 29901



CONSULTANTS

MARK	DATE	DESCRIPTION

PROJECT NO: 2012.019.00
MODEL FILE:
DRAWN BY: T. FUGARD
CHK'D BY: T. GORMAN
DATE: April 2013

SHEET TITLE
SANITARY SEWER PLAN

P1
SHEET 17 OF 20

ELECTRICAL NOTES:

1. WORK SHALL CONFORM TO THE LATEST EDITION OF ANSI/NFPA 70 (NATIONAL ELECTRICAL CODE), ANSI C2 NATIONAL ELECTRICAL SAFETY CODE, NECA STANDARD OF INSTALLATION, INTERNATIONAL BUILDING CODE, NFPA 101 (LIFE SAFETY CODE), AND ALL FEDERAL, STATE, AND LOCAL REGULATIONS. CONTRACTOR SHALL PROVIDE SEISMIC SUPPORT FOR ALL ELECTRICAL EQUIPMENT AS REQUIRED BY THE IBC CODE.
2. CONTRACTOR SHALL GUARANTEE WORK INSTALLED UNDER THIS CONTRACT TO BE FREE FROM ANY DEFECTIVE WORKMANSHIP AND MATERIALS, AND SHOULD ANY SUCH DEFECTS DEVELOP WITHIN A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF THE BUILDING BY THE OWNER, CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY DEFECTIVE ITEMS AND DAMAGE RESULTING FROM FAILURE OF THESE ITEMS, AT NO EXPENSE WHATSOEVER TO THE OWNER.
3. PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE ELECTRICAL WORK INDICATED HEREON AND AS REQUIRED BY THE LOCAL AND STATE CODES AND ORDINANCES.
4. AS A MINIMUM, ALL MATERIALS, EQUIPMENT AND DEVICES SHALL MEET THE REQUIREMENTS OF U.L. AND NFPA 70 WHERE SUCH STANDARDS ARE ESTABLISHED FOR THOSE ITEMS. ALL ITEMS SHALL BE CLASSIFIED BY U.L. AS SUITABLE FOR THE PURPOSES USE.
5. PERFORM ALL WORK IN A WORKMANLIKE MANNER AND NONE OF THE SAME SHALL DAMAGE OR WEAKEN THE STRUCTURAL INTEGRITY OF THE BUILDING.
6. COORDINATE ELECTRIC SERVICE WITH LOCAL UTILITY COMPANY, INTERRUPTING CAPACITY AND SHORT CIRCUIT BRACING OF EQUIPMENT SHALL BE COORDINATED WITH AND EXCEED VALUES GIVEN BY THE UTILITY COMPANY.
7. PROVIDE AMPLE CONDUITS FOR VOICE AND DATA SERVICES. STUB OUT CONDUITS 5' FROM BUILDING. COORDINATE WITH VOICE AND DATA SERVICE PROVIDERS.
8. PROVIDE NEW ELECTRICAL MATERIALS AND EQUIPMENT WITH THE MANUFACTURER'S NAME PRINTED THEREON AND UNDERWRITERS LISTED.
9. PROVIDE A NAMEPLATE (LAMINATED PLASTIC) FOR ALL MAJOR ITEMS OF ELECTRICAL EQUIPMENT (E.G. PANELBOARDS, DISCONNECT SWITCHES, TRANSFORMERS, ETC.). NAMEPLATE SHALL BE ATACHED WITH SCREWS, BOLTS, OR RIVETS.
10. PROVIDE TYPED DIRECTORIES FOR ALL PANELS LABELING ALL CIRCUITS SHOWING AS-BUILT CONDITIONS.
11. THE NEUTRAL AND GROUND BUS SHALL BE BONDED TOGETHER AT THE SERVICE EQUIPMENT ONLY. THE GROUNDING CONDUCTOR SHALL BE BONDED TO THE GROUNDING ELECTRODE SYSTEM, COMPRISED OF A 3/4" x 10' DRIVEN GROUND ROD. METALLIC PIPING, BUILDING STEEL, ETC. ALL SUBPANELS SHALL HAVE INSULATED NEUTRALS PER N.E.C. ARTICLE 250.

12. ALL WIRING SHALL BE COPPER, 600 VOLT, WITH THHN/THWN INSULATION UNLESS NOTED OTHERWISE. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG FOR POWER AND LIGHTING CIRCUITS AND #16 AWG FOR CONTROL CIRCUITS UNLESS NOTED OTHERWISE. ALL WIRING SHALL BE INSTALLED IN CONDUIT UNLESS NOTED OTHERWISE.
13. CONDUITS SHALL BE ELECTRICAL METALLIC TUBING (EMT) FOR INTERIOR LOCATIONS, SCHEDULE 40 PLASTIC CONDUIT (PVC) FOR EXTERIOR LOCATIONS, OR RIGID GALVANIZED STEEL (RGS) CONDUIT WHERE EXPOSED TO PHYSICAL DAMAGE UNLESS NOTED OTHERWISE.
14. ALL CONDUIT LOCATED ABOVE CEILING SHALL BE SUPPORTED FROM BUILDING STRUCTURAL MEMBERS OR CONCRETE DECKING. CONDUIT CANNOT BE SUPPORTED FROM CEILING GRID OR GRID HANGER WIRES. ROUTE CONDUIT WITHIN WALLS WHERE PRACTICAL.
15. PROVIDE MOUNTING BRACKETS, HANGERS, CLIPS, ETC. RECOMMENDED BY THE MANUFACTURER AS NECESSARY TO MOUNT AND SECURE LIGHT FIXTURES IN LOCATIONS SHOWN.
16. TO MAINTAIN THE FIRE RATING OF THE BARRIER, THE OPENING AROUND CONDUIT THAT PENETRATES FIRE RATED BARRIERS (WALL, FLOORS, AND CEILINGS, SHALL BE SEALED WITH U.L. LISTED FIRE STOPPING MATERIAL.
17. PROVIDE POWER WIRING AND HOOK-UP FOR ALL MECHANICAL EQUIPMENT.
18. WHERE ROOF PENETRATIONS ARE NECESSARY, ROUTE CONDUIT THROUGH ROOF OPENINGS FOR PIPING AND DUCTWORK. WHERE SUCH ROUTING IS NOT FEASIBLE, PROVIDE ROOF JACK WITH PITCH POCKET.
19. PROVIDE REQUIRED SERVICE AND EQUIPMENT GROUNDING SYSTEMS IN ACCORDANCE WITH NFPA 70. THE CONDUIT SYSTEM SHALL FORM A CONTINUOUS PATH FOR GROUND. GROUND EXPOSED, NON-CURRENT-CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, METALLIC RACEWAY SYSTEMS, GROUNDING CONDUCTOR IN METALLIC AND NONMETALLIC RACEWAYS, AND NEUTRAL CONDUCTOR OF WIRING SYSTEMS.
20. ALL REST ROOM RECEPTACLES LOCATED WITHIN 6' OF WATER OUTLETS SHALL BE GROUND FAULT INTERRUPT TYPE, ABOVE COUNTER.
21. VERIFY WITH OWNER ALL PHONE, CABLE, COMPUTER LINES AND OTHER SPECIAL ELECTRICAL LINES BEFORE INSTALLATION.
22. CONTRACTOR SHALL VERIFY ALL EQUIPMENT LOADS PROVIDED DO NOT EXCEED LOADS IDENTIFIED. IF LOADS VARY, THE ENGINEER SHALL BE NOTIFIED FOR CHANGES.
23. PROVIDE SMOKE DETECTORS AS REQUIRED BY THE LATEST EDITION OF IBC CODE, CONFER WITH THE LOCAL FIRE MARSHALL FOR QUANTITY AND PLACEMENT.
24. THE BRANCH CIRCUIT FEEDING THE EXIT AND EMERGENCY LIGHTING FIXTURES SHALL BE THE SAME BRANCH CIRCUIT AS THAT SERVING THE NORMAL LIGHTING IN THE AREA AND SHALL BE CONNECTED AHEAD OF ANY LOCAL SWITCHES AS REQUIRED BY NEC, SECTION 170.12 F.

SUBMITTALS:

S1. SUBMIT PRODUCT DATA FOR THE PANELBOARD, CIRCUIT BREAKERS, WIRE, CONDUIT, AND SWITCHES TO THE OWNER FOR APPROVAL.

QUALITY ASSURANCE:

- QA1. SUBMIT TEST REPORTS FOR MANUAL OPERATION, AND 600-VOLT WIRING TO THE OWNER FOR APPROVAL.
- QA2. FURNISH TEST EQUIPMENT AND PERSONNEL AND SUBMIT WRITTEN COPIES OF TEST RESULTS. GIVE OWNER 5 WORKING DAYS NOTICE PRIOR TO EACH TEST.
- QA3. EACH DEVICE SUBJECT TO MANUAL OPERATION SHALL BE OPERATED AT LEAST FIVE TIMES, DEMONSTRATING SATISFACTORY OPERATION EACH TIME. TEST WIRING RATED 600 VOLT AND LESS TO VERIFY THAT NO SHORT CIRCUITS OR ACCIDENTAL GROUNDS EXIST. PERFORM INSULATION RESISTANCE TESTS ON WIRING NO. 6 AWG AND LARGER DIAMETER USING INSTRUMENT WHICH APPLIES VOLTAGE OF APPROXIMATELY 500 VOLTS TO PROVIDE DIRECT READING OF RESISTANCE. MINIMUM RESISTANCE SHALL BE 250,000 OHMS.
- QA4. TEST GROUNDING SYSTEM TO ENSURE CONTINUITY, AND THE RESISTANCE TO GROUND IS NOT EXCESSIVE. TEST EACH NEWLY INSTALLED GROUND ROD FOR RESISTANCE TO GROUND BEFORE MAKING CONNECTIONS TO ROD; TIE GROUNDING SYSTEM TOGETHER AND TEST FOR RESISTANCE TO GROUND. MAKE RESISTANCE MEASUREMENTS IN DRY WEATHER, NOT EARLIER THAN 48 HOURS AFTER RAINFALL. SUBMIT WRITTEN RESULTS OF EACH TEST TO ARCHITECT, AND INDICATE LOCATION OF RODS AS WELL AS RESISTANCE AND SOIL CONDITIONS AT TIME MEASUREMENTS WERE MADE.

MATERIALS:

- M1. MATERIALS, EQUIPMENT, AND DEVICES SHALL, AS A MINIMUM, MEET REQUIREMENTS OF UL, WHERE UL STANDARDS ARE ESTABLISHED FOR THOSE ITEMS, AND REQUIREMENTS OF NFPA 70. SELECT DURABLE COMPONENTS FOR A QUALITY, LOW-MAINTENANCE INSTALLATION.
- M2. CIRCUIT BREAKERS SHALL BE UL 489 AND HAVE A MINIMUM SHORT-CIRCUIT CURRENT RATING EQUAL TO THE SHORT-CIRCUIT CURRENT RATING OF THE PANELBOARD IN WHICH THE CIRCUIT BREAKER SHALL BE MOUNTED. SERIES RATED CIRCUIT BREAKERS ARE UNACCEPTABLE. MULTIPOLE BREAKERS SHALL BE COMMON TRIP-TYPE WITH SINGLE OPERATING HANDLE. BREAKER DESIGN SHALL BE SUCH THAT OVERLOAD IN ONE POLE AUTOMATICALLY CAUSES ALL POLES TO OPEN. ALL BREAKERS SHALL BE BOLT ON TYPE. ALL BREAKERS AND DISCONNECTS SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS.
- M3. ALL CONDUCTORS SHALL BE COPPER. WIRES AND CABLES MANUFACTURED MORE THAN 12 MONTHS PRIOR TO DATE OF DELIVERY TO SITE SHALL NOT BE USED. CONDUCTORS NO. 8 AWG AND LARGER DIAMETER SHALL BE STRANDED. CONDUCTORS NO. 10 AWG AND SMALLER DIAMETER SHALL BE SOLID. CONDUCTOR SIZES AND AMPACITIES SHOWN ARE BASED ON COPPER. ALL CONDUCTORS SHALL BE COLOR CODED. WIRES SHALL BE 600-VOLT, TYPE THWN/THHN UNLESS NOTED OTHERWISE.

M4. ALL CIRCUITS SHALL BE RUN CONCEALED (WHERE FEASIBLE). CIRCUITS SHALL BE RUN IN METALLIC RACEWAYS UNLESS NOTED OTHERWISE. METALLIC CABLE ASSEMBLIES, TYPE MI, AC, AND MC CABLE WILL NOT BE ACCEPTABLE. NO PLASTIC RACEWAYS SHALL BE USED ON ANY INTERIOR SYSTEM EXCEPT FOR CIRCUITS RUN IN CONCRETE. PLASTIC RACEWAYS SHALL BE SCHEDULE 40 PVC (NEMA TC-2, EPC-40-PVC). PROVIDE FIRE STOPPING AROUND ELECTRICAL PENETRATIONS AND SEAL ALL EXTERIOR WALL PENETRATIONS. DO NOT USE GUTTERS. ALL TURNUPS SHALL BE RIGID METAL CONDUIT (RMC, NEMA C80.1, UL6)) OR INTERMEDIATE METAL CONDUIT (IMC, UL1242).

M5. COPPER GROUND BUS. PROVIDE CORROSION-RESISTANT 0.25 IN THICK GROUNDING BUSBAR SUITABLE FOR INDOOR INSTALLATION. BUSBARS SHALL BE ELECTROPLATED FOR REDUCED CONTACT RESISTANCE. PREDRILL COPPER BUS BAR FOR USE WITH STANDARD SIZED LUGS. GROUND BUS SHALL BE BY A NATIONALLY RECOGNIZED TESTING LABORATORY.

ELECTRICAL LEGEND

- CIRCUIT HOME RUN: ALL RUNS TO CONTAIN ONE NO. 12 INSULATED GREEN EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO CIRCUIT CONDUCTORS.
- NEW PANEL WITH NEW BREAKERS AS INDICATED
- A 4' SURFACE MOUNTED FLUORESCENT FIXTURE, WITH THIN WHITE BAFFLE, FOUR 54 WATT (T-5) LINEAR FLUORESCENT LAMPS WITH ELECTRONIC BALLAST
- B 4' SURFACE MOUNTED FLUORESCENT FIXTURE, WITH THIN WHITE BAFFLE, TWO 28 WATT (T-5) LINEAR FLUORESCENT LAMPS WITH ELECTRONIC BALLAST
- C 4' SURFACE MOUNTED FLUORESCENT FIXTURE, WITH THIN WHITE BAFFLE, TWO 54 WATT (T-5) LINEAR FLUORESCENT LAMPS WITH ELECTRONIC BALLAST
- D EXTERIOR WALL PACKS, 150 WATT W/AUTOMATIC PHOTO CELL
- E EMERGENCY LIGHTING, TYPICAL
- F EXTERIOR WALL PACKS, 42 WATT W/AUTOMATIC PHOTO CELL
- X EMERGENCY EXIT LIGHT, TYPICAL
- S SINGLE POLE SWITCH, 20 AMP, 120/277 VOLT, AC (48" A.F.F. UNLESS NOTED OTHERWISE)
- S₃ THREE WAY SWITCH, 20 AMP, 120/277 VOLT, AC (48" A.F.F. UNLESS NOTED OTHERWISE)
- S_F SINGLE POLE SWITCH, 20 AMP, 120/277 VOLT, AC (48" A.F.F. UNLESS NOTED OTHERWISE) ENSURE SWITCH IS MATCHED TO FAN MODEL FURNISHED.
- DISCONNECT SWITCH, NON-FUSED
- DISCONNECT SAFETY SWITCH, 240V, 2-POLE, NEMA 3R WHERE INDICATED. NUMBER INDICATES AMPERE RATING.
- DUPLEX RECEPTACLE; 20 AMP, 125 VOLT, 3-WIRE GROUNDING, NEMA 5-20R IVORY, WITH IVORY PLATE; 18" MOUNTING HEIGHT, U.N.O.
- WP/GFI WEATHER PROOF, GROUND FAULT INTERRUPTER RATED RECEPTACLE
- ELECTRIC MOTOR
- COMMUNICATION OUTLET WITH FLUSH MOUNTED 4" SQUARE SINGLE GANG JUNCTION BOX. PROVIDE STAINLESS STEEL COVER PLATE WITH (2) RJ45 EIGHT PIN JACKS.
- 200 AMP WATT HOUR METER AND CAN (FURNISHED BY UTILITY COMPANY)
- SMOKE DETECTORS (BATTER POWERED) TYP AS PER FIRE MARSHALLS INSPECTION
- SURGE ARRESTER. PROVIDE SIEMENS CATALOG NO. TPSCA00C050, 120/240 VOLT, 25KA IMPULSE RATED, SINGLE-PHASE, 500V INITIAL CLAMPING LEVEL ARRESTER, OR APPROVED EQUAL.
- FLEXIBLE SEAL TIGHT METAL CONDUIT - 6 FT. MAXIMUM LENGTH
- CEILING FAN W/ BLADES FOR 72" DIAMETER. CEILING FAN TO BE SELECTED BY OWNER.

LIGHTING FIXTURE SCHEDULE							
TYPE	MFG	PART NUMBER	VOLTS	LAMP	COMMENTS	DESCRIPTION	FIXTURE MOUNTING HEIGHT
A		15-4500-ETB-UPL	120V	54W T5 HO/830K	4400 LUMENS	1'x4' SUSPENDED FIXTURE	14' A.F.F.
B		15-2800-ETB-UPL	120V	28W T5 STD/830K	4400 LUMENS	1'x4' SURFACE MOUNTED FIXTURE	8' A.F.F.
C		15-2500-ETB-UPL	120V	54W T5 HO/830K	4400 LUMENS	1'x4' SUSPENDED FIXTURE	9' A.F.F.
D	H.E.WILLIAMS	WP7Z-PSMH-150-MED	120V	150W METAL HALIDE	PHOTO CELL CONTROL	EXTERIOR WALL MOUNTED FIXTURE	10' A.F.F.
E			120V		EMERGENCY LIGHT	WITH INTEGRAL BATTERY AND 2 LAMPS	9' A.F.F.
F		703941-EB1	120V	1-42W TRIPLE, CFL	ELECTRONIC BALLAST, HPF WITH EMERGENCY BATTERY	EXTERIOR WALL MOUNTED FIXTURE	8' A.F.F.
	H.E.WILLIAMS	EXIT-R-EM-WHT	120V	LED		EXIT FIXTURE	8' A.F.F.

NOTES:

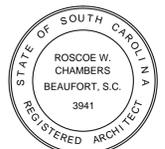
1. MANUFACTURER AND MODEL NUMBERS ARE PROVIDED AS BASIS OF DESIGN ONLY AND ARE NOT TO LIMIT SELECTION. CONTRACTOR SHALL PROVIDE SCHEDULED EQUIPMENT OR EQUIPMENT OF EQUAL QUALITY.
2. LAMP COLOR FOR ALL FLUORESCENT FIXTURES SHALL BE 4100 KELVIN AND SHALL BE FROM THE SAME MANUFACTURER.

NOTES, SCHEDULE AND LEGEND:

SUBSTATION 34
 PIERCE ROAD
 COLLETON COUNTY
 SOUTH CAROLINA

COLLETON COUNTY

R.W. CHAMBERS, ARCHITECT
 P.O. BOX 1181
 BEAUFORT, S.C. 29901



CONSULTANTS

MARK	DATE	DESCRIPTION

PROJECT NO: 2012.019.00
 MODEL FILE:
 DRAWN BY: SP
 CHK'D BY: B. COFFMAN
 DATE: MAY 2014

SHEET TITLE

NOTES, SCHEDULE
 AND LEGEND

E1.0

COLLETON COUNTY

R.W. CHAMBERS, ARCHITECT
P.O. BOX 1181
BEAUFORT, S.C. 29901



CONSULTANTS

MARK	DATE	DESCRIPTION

PROJECT NO: 2012.019.00
MODEL FILE:
DRAWN BY: RWC
CHK'D BY: B. COFFMAN
DATE: MAY 2014

SHEET TITLE

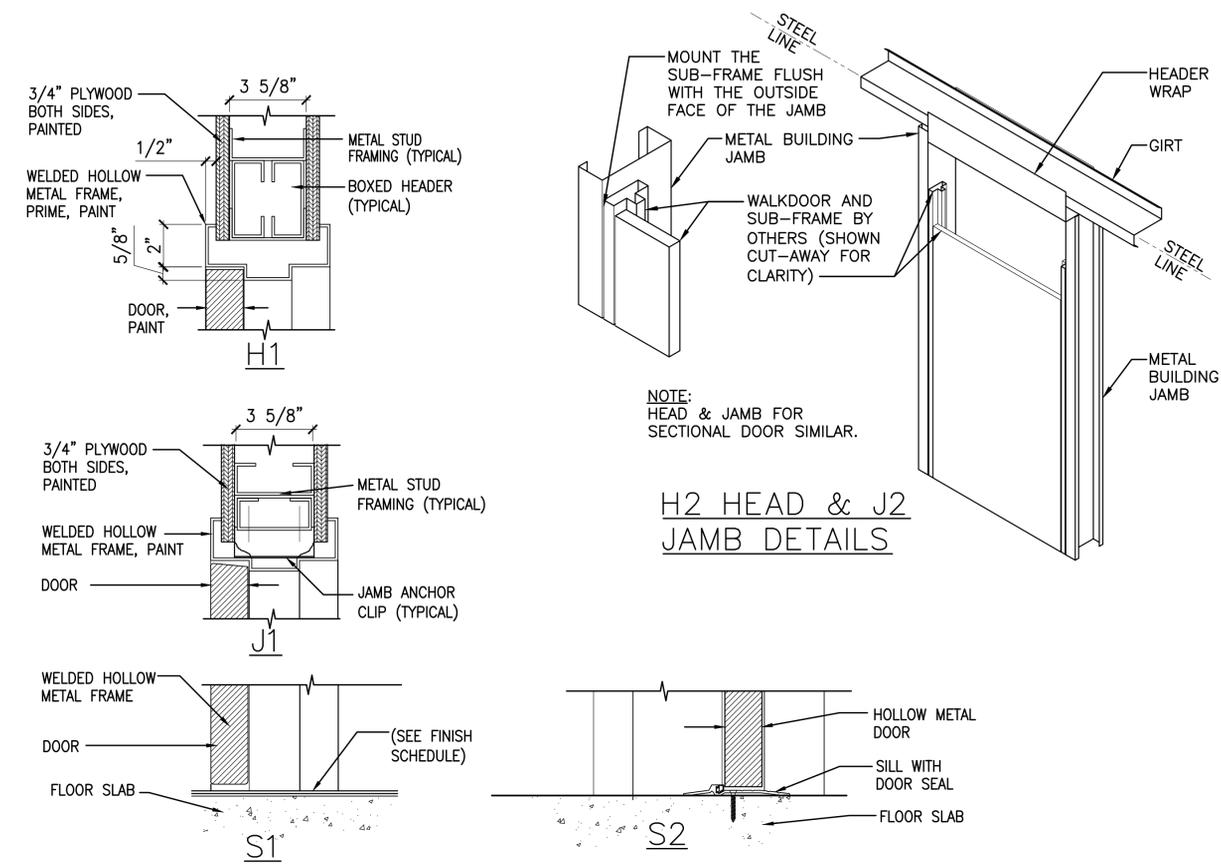
SCHEDULES
& LEGENDS

A6.0

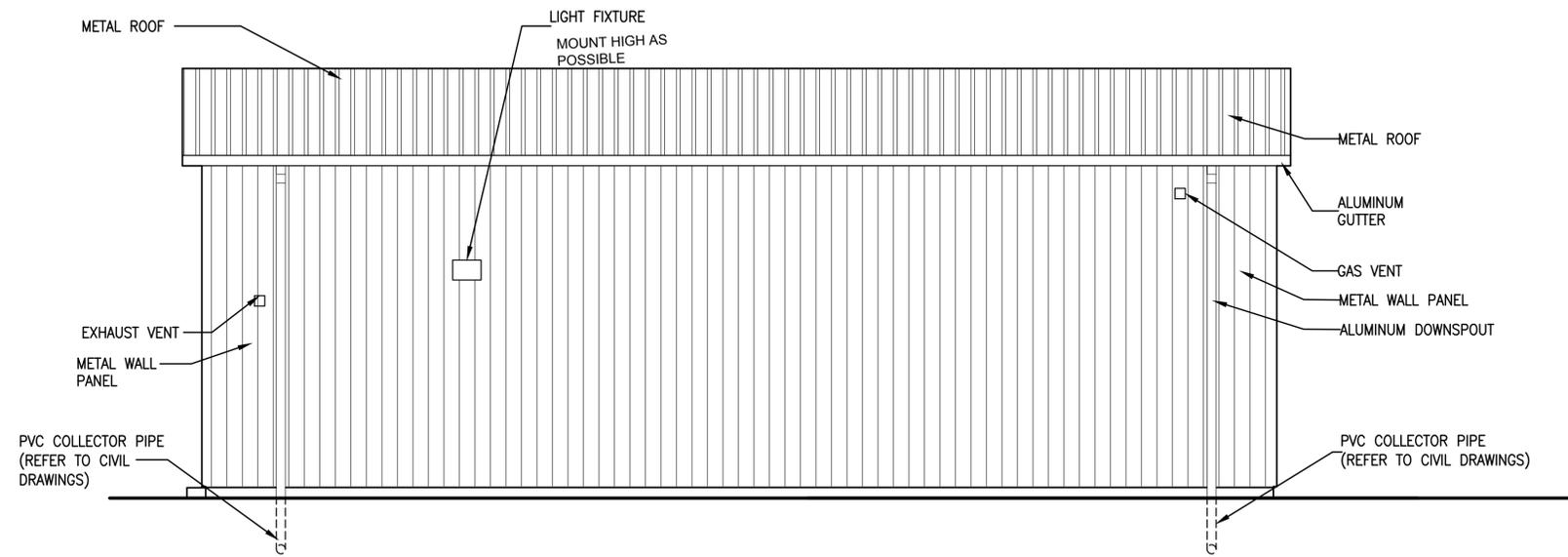
DOOR No.	WIDTH	HEIGHT	THICKNESS	MATERIAL	FINISH	FINISH	HEAD	JAMB	SILL	HARDWARE	NOTES
D1	3/0	6/8	1 3/4	HM/INSUL			H2	J2	S2	HW1	
D2	3/0	6/8	1 3/4	HM/INSUL			H2	J2	S2	HW1	
D3	3/0	6/8	1 3/4	HM/INSUL			H1	J1	S1	HW2	
D4	3/0	6/8	1 3/4	HM/INSUL			H1	J1	S1	HW3	
D5	14/0	14/0	2	STEEL/INSUL							SECTIONAL, MOTOR OPERATED
D6	14/0	14/0	2	STEEL/INSUL							SECTIONAL, MOTOR OPERATED

DOOR/FRAME SCHEDULE NOTES:

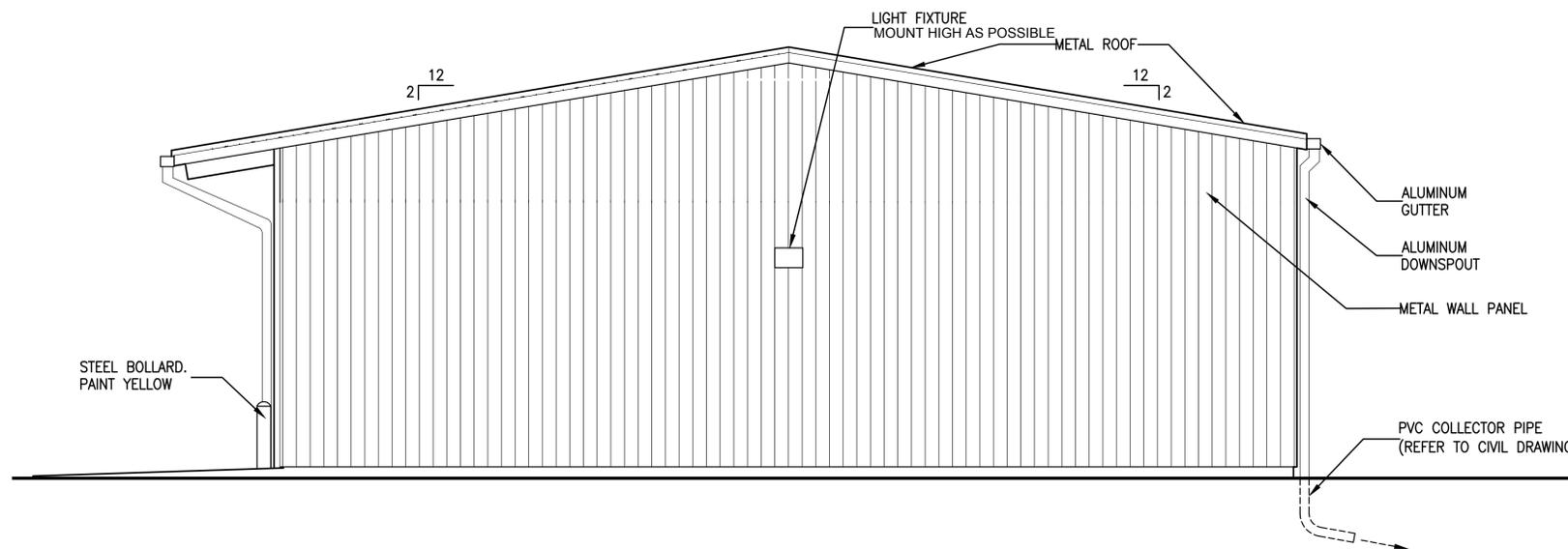
HW1 - EXTERIOR SINGLE DOOR. (1-1/2) PAIR HINGES (1) DOOR CLOSER (1) PUSH BUTTON COMBINATION LOCKSET (1) WEATHERSTRIPPING	HW3 - TOILET SINGLE DOOR W/PRIVACY LOCKSET. (1-1/2) PAIR HINGES (2) DOOR CLOSER (1) PRIVACY LOCKSET (3) SILENCERS (1) WALL DOOR STOP
HW2 - INTERIOR SINGLE DOOR. (1-1/2) PAIR HINGES (1) DOOR CLOSER (3) SILENCERS (1) PASSAGE LOCKSET	
NOTE: 1. PROVIDE WEATHER SEAL ON ALL EXTERIOR DOORS. 2. PROVIDE BLOCKING AT ALL STUD WALL DOOR STOP LOCATIONS.	



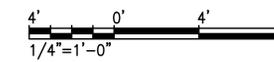
DOOR, JAMB & SILL DETAILS
SCALE: NTS



3 REAR VIEW
A2.1 SCALE: 1/4" = 1'-0"



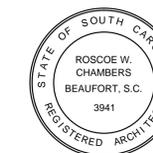
4 SIDE VIEW
A2.1 SCALE: 1/4" = 1'-0"



SUBSTATION 34
PIERCE ROAD
COLLETON COUNTY
SOUTH CAROLINA

COLLETON COUNTY

R.W. CHAMBERS, ARCHITECT
P.O. BOX 1181
BEAUFORT, S.C. 29901



CONSULTANTS

MARK	DATE	DESCRIPTION

MARK DATE DESCRIPTION

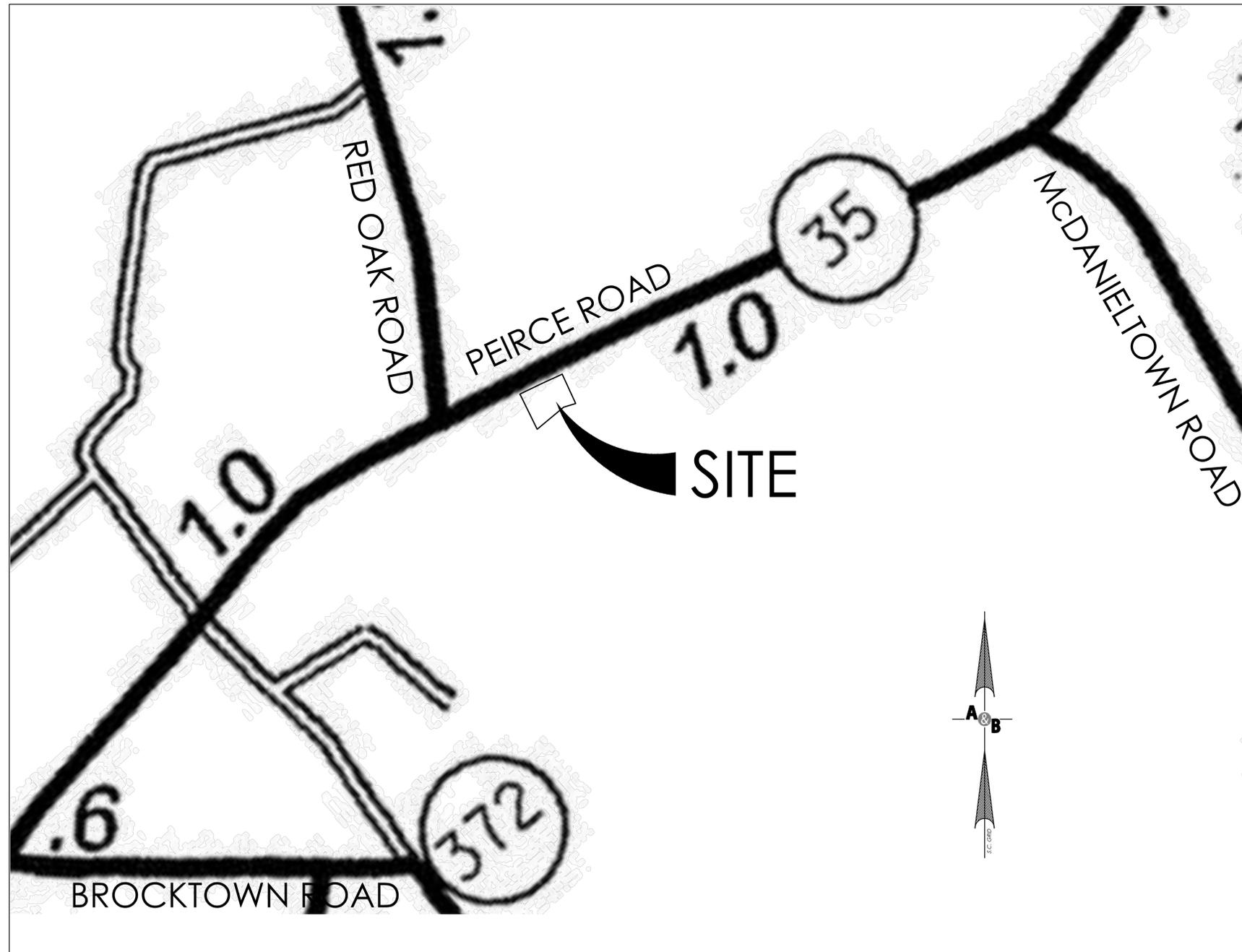
PROJECT NO: 2012.019.00
MODEL FILE:
DRAWN BY: RWC
CHK'D BY: B. COFFMAN
DATE: MAY 2014

SHEET TITLE

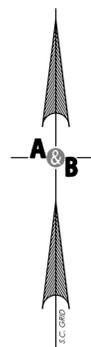
EXTERIOR
ELEVATIONS

A2.1
SHEET OF 20

SITE DEVELOPMENT PLAN
FOR
COLLETON COUNTY FIRE STATION #34
PEIRCE ROAD
TOWN OF COTTAGEVILLE
COLLETON COUNTY, SOUTH CAROLINA



VICINITY MAP
SCALE: 1"=500'



N.P.D.E.S. DISTURBED AREA = 0.90 Acres

3 DAYS BEFORE DIGGING IN SOUTH CAROLINA
CALL 1-888-721-7877
PALMETTO UTILITY PROTECTION SERVICE

APPROXIMATE LOCATION OF SITE:
LONGITUDE: 80°-26'-36"
LATITUDE: 32°-57'-53"

DEVELOPER NAME:
COLLETON COUNTY
31 KLEIN ST.
P.O. BOX 157
WALTERBORO, S.C. 29488
PHONE: 843-549-5221

PROJECT DATA INFORMATION:
COLLETON COUNTY FIRE STATION #34
DISTRICT #: 120
PARCEL #: 008
PROJECT ZONING: RURAL
FEMA FLOOD ZONE: A, X

PHONE #:	PERMIT#:
COLLETON COUNTY 843.549.2545	-----
D.H.E.C. 843.522.3345	-----
O.C.R.M. 843.744.5898	-----
S.C.D.O.T. 843.524.7255	-----
S.C.E.&G. 843.549.8600	-----
COASTAL ELECTRIC 843.538.5700	-----

APPROVED FOR CONSTRUCTION

BY: _____ / / _____
DATE

2712 Bull Street Suite A
Beaufort, SC 29902
843.379.2222
Fax 843.379.2223

Andrews & Burgess Inc.
Engineering & Surveying

ANDREWS & BURGESS INC.
No. C00008

WAIDE ANDERSON
No. 12860

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INDEX OF DRAWINGS	
SHEET #	DESCRIPTION
Note	TITLE
C1	LEGEND & NOTES
C2	TREE AND SEDIMENT & EROSION CONTROL PLAN
C3	PAVING AND GRADING PLAN
C4	SITE DETAILS
C5	SEDIMENT & EROSION CONTROL DETAILS SHEET 1
C5	SEDIMENT & EROSION CONTROL DETAILS SHEET 2
1 OF 1	SCDOT SIGHT DISTANCE PLAN

DRAWING RELEASED FOR:

<input type="checkbox"/> PLAN REVIEW	___/___/___
<input type="checkbox"/> PERMIT DRAWINGS	___/___/___
<input type="checkbox"/> CONSTRUCTION DRAWINGS	___/___/___
<input checked="" type="checkbox"/> BID SET	05 / 22 / 14
<input type="checkbox"/> RECORD DRAWINGS	___/___/___
<input type="checkbox"/> OTHER: _____	___/___/___

PLAN REVISIONS			
NO.	DESCRIPTION:	DATE:	BY:
1	-	-	-
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-

TYPICAL LINE TYPES

	CONSTRUCTED SWALE
	ROAD CENTERLINE(PROP & EXIST)
	CABLE TV LINE
	FIBER OPTICS
	CONDUIT LINE
	CHAIN LINK FENCE
	SQUARE WOODEN FENCE
	SILT FENCE
	TREE PROTECTION FENCE
	EXISTING PVC FORCEMAIN
	PROPOSED 1" PVC (C900-DR25) FORCEMAIN
	PROPOSED 2" PVC (C900-DR25) FORCEMAIN
	PROPOSED 4" PVC (C900-DR25) FORCEMAIN
	PROPOSED 6" PVC (C900-DR25) FORCEMAIN
	PROPOSED 8" PVC (C900-DR25) FORCEMAIN
	OVERHEAD POWERLINE
	EXISTING SANITARY SEWER LINE
	PROPOSED 10" SANITARY SEWER LINE
	PROPOSED 12" SANITARY SEWER LINE
	PROPOSED 6" SANITARY SEWER LINE
	PROPOSED 8" SANITARY SEWER LINE
	FUTURE SANITARY SEWER LINE
	EXISTING GAS LINE
	4" DIP (DUCTILE IRON PIPE)
	6" DIP
	8" DIP
	10" DIP
	EXISTING PROPERTY LINE
	FUTURE PROPERTY LINE
	PROPOSED PROPERTY LINE
	EXISTING RIGHT OF WAY
	FUTURE RIGHT OF WAY
	PROPOSED RIGHT OF WAY
	EXISTING SETBACK
	FUTURE SETBACK
	TELEPHONE LINE
	UNDERGROUND POWER LINE
	3 UNDERGROUND TELEPHONE LINE
	UNDERGROUND TELEPHONE LINE
	PROPOSED 1" PE (SDR17) WATERLINE
	PROPOSED 10" PVC (C900-DR25-CL100) WATERLINE
	PROPOSED 12" PVC (C900-DR25-CL100) WATERLINE
	PROPOSED 2" PVC (SDR21-CL200) WATERLINE
	PROPOSED 30" PVC (C900-DR25-CL100) WATERLINE
	PROPOSED 4" PVC (C900-DR25-CL100) WATERLINE
	PROPOSED 6" PVC (C900-DR25-CL100) WATERLINE
	PROPOSED 8" PVC (C900-DR25-CL100) WATERLINE
	EXISTING WATERLINE
	EXISTING 10" PVC WATERLINE
	EXISTING 12" PVC WATERLINE
	EXISTING 2" PVC WATERLINE
	EXISTING 4" PVC WATERLINE
	EXISTING 20" PVC WATERLINE
	EXISTING 6" PVC WATERLINE
	EXISTING 8" PVC WATERLINE
	FUTURE PVC WATERLINE
	STRIPING LANE LINES
	STRIPING FOR TURN LANES
	STRIPED LANE MARKERS

TYPICAL ABBREVIATIONS

AC	AIR CONDITIONER
BB	BOTTOM OF BANK
BC	BUILDING CORNER
BD	BOTTOM OF DITCH
BENCH	TEMP. BENCHMARK
BFC	BOTTOM FACE OF CURB
BOC	BACK OF CURB
BS#	BACKSIGHT (POINT#)
BSW	BACK OF SIDEWALK
BW	BOTTOM OF WALL
CA	CORNER OF ASPHALT
CB	CATCH BASIN
CC	CORNER OF CONCRETE
CDK	CORNER OF DECK
CG	CORNER OF GRAVEL
CI	CURB INLET
CLBP	CENTERLINE OF BIKE PATH
CLCP	CENTERLINE CART PATH
CLCR	CENTERLINE OF CREEK
CLD	CENTERLINE OF DITCH
CLINT	CENTERLINE OF INTERSECTION
CLP	CENTERLINE OF PAVEMENT
CLR	CENTERLINE OF ROAD
CLS#	CENTERLINE OF SIDEWALK
CMF	CONCRETE MONUMENT FOUND
CMP	CORRUGATED METAL PIPE
CMS	CONCRETE MONUMENT SET
CO	CLEAN OUT
COGO	CALCULATED POINT
COL	COLUMN
CP	CONTROL PANEL
CPL	CORNER OF POOL
CPP	CORRUGATED PLASTIC PIPE
CRIT	S.C. COASTAL CRITICAL LINE
CSW	CORNER OF SIDEWALK
CTV	CABLE TELEVISION BOX
DK	DECK
EA	EDGE OF ASPHALT
EB	ELECTRIC BOX
EBP	EDGE OF BIKE PATH
EC	EDGE OF CONCRETE
ECON	ELECTRIC CONDUIT
EDK	EDGE OF DECK
EDR	EDGE OF DIRT ROAD
EDW	EDGE OF DRIVEWAY(DIRT/GRASS)
EG	EDGE OF GRAVEL
EM	EDGE OF MARSH
EMET	ELECTRIC METER
EOP	EDGE OF CART PATH
ESTUB	ELECTRIC STUB-OUT
ESW	EDGE OF SIDEWALK
EW	EDGE OF WATER
F	FENCE
FC	FENCE CORNER
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FL	FENCE LINE
FOM	FIBER OPTIC MARKER
FP	FLAG POLE
FS	FORESIGHT
GI	GRATE INLET
GL	GROUND LIGHT
GPS#	GPS CONTROL (POINT#)
GRV	GRAVE
GT	GAS TANK
GUT	GUTTER LINE
GV	GAS VALVE
GW	GUY WIRE
HPS	HANDICAP PARKING STRIPE
HSB	HOSE BIB
HT#	HUB & TACK (POINT#)
IM	IRRIGATION METER
INV	INVERT ELEVATION
IPC	IRON PIN CALCULATED(CORNER)
IPF	IRON PIN FOUND
IPS	IRON PIN SET
IV	IRRIGATION VALVE
LI	LANDSCAPE ISLAND
LP	LIGHT POLE/LAMP POST
MB	MAIL BOX
NW	MONITOR WELL
NWL	NORMAL WATER LEVEL

TYPICAL ABBREVIATIONS

OHP	OVER HEAD WIRE
PC	PORCH CORNER
PI	POINT OF INTERSECTION
PK#	P/K NAIL (AS SETUPS)
PP	POWER POLE
PS	PARKING STRIPE
PVC	POLYVINYL CHLORIDE PIPE
PKS	PK NAIL SET
RCP	REINFORCED CONCRETE PIPE
RIM	MANHOLE RIM
RIP	EDGE OF RIP-RAP
RP	RADIUS POINT
SB	SETBACK
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SGN*DESC*	SIGN (THEN A DESC.)
SH	SPRINKLER HEAD
SLAT	SEWER LATERAL
SLM	SEWER LINE MARKER
SMH	SANITARY SEWER MANHOLE
STOP	STOP BAR
STP	STEP
SUN#	SETUP NAIL#
SV	SEWER VALVE
SVM	SEWER VALVE MARKER
SWB	BACK OF SIDEWALK
T	TOPO SHOT (ELEVATION)
TB	TOP OF BANK
TBC	TOP BACK OF CURB
TBM	TEMPORARY BENCHMARK
TEL	TELEPHONE PEDESTAL
TIE#	TIE TO SETUP NAIL
TL	TREE LINE
TMH	TELEPHONE MANHOLE
TOP	TOP OF PIPE
TP	TRAVERSE POINT
TRNF	TRANSFORMER
TSB	TRAFFIC STOP BAR
TW	TOP OF WALL
UC	UNDERGROUND CABLE TV
UE	UNDERGROUND ELECTRIC
UFO	UNDERGROUND FIBER OPTIC
UGG	UNDERGROUND GAS LINE
UGM	UNDERGROUND GAS MARKER
USS	UNDERGROUND SANITARY SEWER
UT	UNDERGROUND TELEPHONE
UW	UNDERGROUND WATER
VCP	VERIFIED CLAY PIPE
WELL	WATER WELL
WF	WATER FOUNTAIN
WL	WHITE LINE
WLAT	WATER LATERAL
WLM	WHITE LINE MARKER
WM	WATER METER
WP	WATER PIPE
WT	WATER TANK
WV	WATER VALVE
WWM	WATER VALVE MARKER
YL	YELLOW LINE
SUFFIXES	
END	END (EX. BFC_END)
OL	ON LINE (EX. BFC_OL)

UTILITY MARKINGS:

RED - ELECTRIC
 GREEN - SEWER
 BLUE - WATER
 YELLOW - GAS
 ORANGE - CABLE
 ORANGE "T" - TELEPHONE

TYPICAL LEGEND UNLESS OTHERWISE NOTED

WETLANDS	
DEMOLITION	
LAGOON/POND	
EXISTING ASPHALT PAVEMENT	
CONCRETE PAVEMENT	
STONE RIP RAP ON ENGR FABRIC	
BRICK PAVEMENT	
TYP. ASPHALT PAVEMENT	
PERVIOUS PAVEMENT	
EDGE OF PAVEMENT	EP
TOP OF BANK	TB
EXISTING SPOT ELEVATION	GS
LANDSCAPE AREA	
CONCRETE MARKER	
TEMPORARY BENCHMARK	
CURB INLET	
DRAINAGE MANHOLE	
PROP FIRE HYDRANT	
WATER VALVE	
WATER VALVE MARKER	
POST INDICATOR VALVE	
MONITORING WELL	
SPRINKLER HEAD	
SANITARY SEWER MANHOLE	
SANITARY SEWER CLEAN OUT	
TRANSFORMER	
EXISTING POWER POLE	
GUY WIRE	
LIGHT POLE	
AIR CONDITIONER	
FIBER OPTIC MANHOLE	
UNDERGROUND GAS MARKER	
MAILBOX	
DIP CROSSING	
PROP STORM DRAIN	
EXISTING STORM DRAIN	
TOP OF PAVEMENT	TP15.50
TOP OF CURB	TC16.00
TOP OF SIDEWALK	TS15.25
FINISHED GRADE	FG13.50
EXISTING CONTOUR	18.00
PROPOSED CONTOUR	19

UTILITY NOTES:

- SHOWN ON PLAN ARE KNOWN UNDERGROUND UTILITY LOCATIONS, HOWEVER, NOT SHOWN BUT POSSIBLY ENCOUNTERED IN THE AREA OF THE SITE ARE OTHER BURIED UTILITIES INCLUDING, BUT NOT NECESSARILY LIMITED TO:
 - TELEPHONE
 - FIBER OPTICS
 - CABLE TELEVISION
 - POTABLE WATER
 - SANITARY SEWER
 - GAS PIPELINE / TRANSMISSION LINE
 - STORM SEWER
- WHEN ENCOUNTERED, THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH WRITTEN GRAPHICAL INFORMATION PERTAINING TO THE VERTICAL & HORIZONTAL ALIGNMENT OF UTILITY LOCATIONS.
- ADDITIONAL COST ASSOCIATED WITH THE LOCATING, RELOCATING (DUE TO CONFLICTS), OR DELAYS AS A RESULT OF OTHER UNDERGROUND UTILITIES ENCOUNTERED WILL BE THE RESPONSIBILITY OF THE OWNER.
- THOSE COSTS BEING ADDITIONAL PIPING, BORES, ASPHALT CUT & PATCH, CLEARING & GRUBBING, STABILIZATION & GRASSING, OR OTHER SPECIAL CONSTRUCTION TECHNIQUES TO BE CHARGED AT THE UNIT BID PRICE OR A NEGOTIATED FEE.

GENERAL NOTES:

- NO SITE WORK SHALL BEGIN ON A REGULATED SITE UNTIL THE OCRM LAND DISTURBANCE PLACARD IS POSTED ON SITE, ALL TREE PROTECTION IS IN PLACE AND ALL REQUIRED SILT FENCE HAS BEEN INSTALLED.
- A HORIZONTAL & VERTICAL CONTROL MONUMENT HAS BEEN DESIGNATED BY THE ENGINEER. THE VERTICAL DATUM IS NGVD-29, AND THE HORIZONTAL DATUM IS NAD 83.
- ALL PAVEMENT DIMENSIONS (i.e.: ROAD WIDTHS, PARKING LOTS, LANDSCAPE ISLANDS, etc.) ARE GIVEN TO THE EDGE OF PAVEMENT OR BACK OF CURB, AS SITE DICTATES.
- ALL BUILDING TIES ARE PERPENDICULAR TO THE PROPERTY LINES.
- CONTRACTOR TO IDENTIFY AND LOCATE ALL UNDERGROUND UTILITIES PRIOR TO STARTING CONSTRUCTION.
- CONTRACTOR RESPONSIBLE FOR TRAFFIC CONTROL AND SAFETY DURING CONSTRUCTION.
- CONTRACTOR RESPONSIBLE FOR SECURING SITE DURING NON-WORKING HOURS TO ENSURE TRAFFIC AND PEDESTRIAN SAFETY.
- THE GENERAL CONTRACTOR AND SUB-CONTRACTORS SHALL BE AWARE THAT SOME PART OR ALL OF THE CONSTRUCTION OF THIS SITE MAY FALL UNDER THE JURISDICTION OF SPECIFIC CONDITIONS RELEVANT TO A SCDOT OR BEAUFORT COUNTY ENCROACHMENT PERMIT, UNITED STATES ARMY CORPS PERMIT, SETBACKS/BUFFERS PERTINENT TO THE ESTABLISHED ZONING ORDINANCES, SC-DHEC PERMITS, DHEC-OCRM PERMITS OR THE WATER AND SEWER AUTHORITY OF JURISDICTION. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO CONFIRM THE EXISTENCE AND CONDITIONS OF ALL PERMITS RELEVANT TO THIS PROJECT PRIOR TO THE COMMENCEMENT OF THE IMPACTED PHASE(S) OF CONSTRUCTION.
- THE WATER AND SEWER CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE INSTALLATION OF WATER AND SEWER SERVICES IN ACCORDANCE WITH THE SPECIFICATIONS AND RELEVANT DETAILS OF THE WATER AND SEWER AUTHORITY OF JURISDICTION. THE LOCATION OF WATER AND/OR SEWER SERVICES SHOWN ON THESE PLANS IS TO BE CONSIDERED TO BE SCHEMATIC AND HAS BEEN SHOWN ON THESE DRAWINGS FOR REFERENCE PURPOSES ONLY. SEE DETAILS OR ARCHITECTURAL DRAWINGS FOR EXACT LOCATION.
- ALL DEDICATED FIRE LINES FROM PIV TO BUILDING AND FDC'S TO BE DESIGNED & INSTALLED BY FIRE SPRINKLER DESIGNER/FIRE SPRINKLER CONTRACTOR.
- CONTRACTOR IS MADE AWARE THAT OSHA REQUIRES A PROTECTIVE SYSTEM DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER FOR EXCAVATIONS DEEPER THAN 20 FT.
- CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO EXISTING ROADWAYS FROM CONSTRUCTION AREAS.

TREE PROTECTION & REMOVAL NOTES:

INSTALL ALL TREE PROTECTION FENCE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

WATER & SANITARY SEWER NOTES:

- THE EXISTING WATERLINE INFORMATION HAS BEEN SUPPLIED BY OTHERS. ITS LOCATION AND SIZE ARE APPROXIMATE. THE CONTRACTOR IS TO FIELD VERIFY THE EXACT SIZE AND LOCATION OF THE EXISTING WATERLINE PRIOR TO THE BEGINNING OF CONSTRUCTION.
- WATERLINES 4" AND ABOVE ARE TO BE C900-DR18-CL150. ALL 2" WATERLINES ARE TO BE HDPE, AND ALL DUCTILE IRON PIPE (DIP) IS TO BE CL150.
- WATER METERS ARE 1" DIA. UNLESS OTHERWISE NOTED.
- ALL SANITARY SEWER PIPE LENGTHS IN PLAN AND PROFILE VIEWS ARE TO THE CENTERLINE OF THE MANHOLES.
- SANITARY SEWER PIPE IS TO BE PVC SDR26.
- EXISTING MANHOLE LOCATION, RIM ELEVATION, AND INVERTS HAVE BEEN SUPPLIED BY THE SURVEYOR. THE PIPE LOCATION IS APPROXIMATE AND IS TO BE FIELD VERIFIED BY THE CONTRACTOR IF APPLICABLE.
- SANITARY SEWER LATERALS ARE TO BE LAID WITH A MINIMUM SLOPE OF 2.00% AS SHOWN ON PLANS.

STORM SEWER NOTES:

- RCP IS TO BE (CUII), UNLESS OTHERWISE NOTED.
- HDPE IS TO BE N-12 UNLESS OTHERWISE NOTED.
- ALL PIPE LENGTHS IN THE PLAN AND PROFILE VIEWS ARE TO THE CENTERLINE OF THE STRUCTURE. (i.e.: CB, JB, OR OUTFALL)
- SUBGRADE DRAIN IS TO BE 4" PERFORATED HDPE WITH GEOTEXTILE SOCK.
- WRAP ALL JOINTS W/GEOTEXTILE FABRIC

PROJECT REQUIREMENTS FOR HARGRAY TELEPHONE & CATV:

- COMMERCIAL BUILDINGS-APARTMENTS-VILLAS TO HAVE A MINIMUM 4" DIAMETER CONDUIT SCH. 40 PVC WITH PULL STRING BURIED AT 24" TO 30" DEPTH, FROM THE EQUIPMENT ROOM OR POWER METER LOCATION TO A POINT DESIGNATED BY HARGRAY AT ROAD RIGHT-OF-WAY OR PROPERTY LINE. CONDUITS ARE REQUIRED FROM EACH BUILDING SITE & MULTIPLE CONDUITS MAY APPLY.
- COMMERCIAL BUILDINGS WITH MULTIPLE "UNITS" MAY REQUIRE CONDUIT(S) MINIMUM 3/4" FROM MAIN EQUIPMENT ENTRY POINT TO TERMINATION POINT INSIDE UNIT. PLENUM TYPE CEILINGS REQUIRE CONDUITS OR FLAME RETARDANT TEFLO WIRING TO COMPLY WITH CODE.
- HOTEL OR LARGE COMMERCIAL PROJECT REQUIREMENTS WOULD BE 2-4" DIAMETER SCH. 40 PVC UNDERGROUND CONDUITS.
- EQUIPMENT ROOMS TO HAVE 3/4" 4'X8" SHEET OF PLYWOOD MOUNTED ON WALL TO RECEIVE TELEPHONE EQUIPMENT.
- A POWER GROUND ACCESSIBLE AT EQUIPMENT ROOM OR AN INSULATED #6 FROM THE SERVICE PANEL OR POWER MGN TO THE BACKBOARD.
- RESIDENTIAL WIRING REQUIRES MINIMUM THREE PAIR TWISTED IN LOOP CONFIGURATION (INDUSTRY STANDARD).
- CATV INSIDE WIRING WILL BE RG6 FOIL WRAPPED 66% BRAID MINIMUM, HOME RUN TO EACH OUTLET.
- ALL INTERIOR WIRING SHOULD BE PULLED TO THE AREA IMMEDIATELY ADJACENT TO THE PLYWOOD BACKBOARD OR POWER METER LOCATION. A MINIMUM OF 5' OF SLACK IS REQUIRED FOR TERMINATIONS.
- EASEMENTS ARE REQUIRED.

CONSTRUCTION SEQUENCE

- RECEIVE NPDES COVERAGE FROM DHEC
- PRE-CONSTRUCTION MEETING (ON-SITE IF MORE THAN 10 DISTURBED AND NON-LINEAR)
- NOTIFY DHEC EOC REGIONAL OFFICE OR OCRM 48 HOURS PRIOR TO BEGINNING LAND-DISTURBING ACTIVITIES
- INSTALLATION OF CONSTRUCTION ENTRANCE(S)
- CLEARING & GRUBBING ONLY AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS
- INSTALLATION OF PERIMETER CONTROLS (E.G., SILT FENCE)
- CLEARING & GRUBBING ONLY IN AREAS OF BASIN/TRAPS/PONDS
- INSTALLATION OF BASINS/TRAPS/PONDS AND INSTALLATION OF DIVERSIONS TO THOSE STRUCTURES (OUTLET STRUCTURES MUST BE COMPLETELY INSTALLED AS SHOWN ON THE DETAILS BEFORE PROCEEDING TO NEXT STEP; AREAS DRAINING TO THESE STRUCTURES CANNOT BE DISTURBED UNTIL THE STRUCTURES AND DIVERSIONS TO THE STRUCTURES ARE COMPLETELY INSTALLED)
- CLEARING & GRUBBING OF SITE OR DEMOLITION (SEDIMENT & EROSION CONTROL MEASURES FOR THESE AREAS MUST ALREADY BE INSTALLED)
- ROUGH GRADING
- INSTALLATION OF STORM DRAIN SYSTEM AND PLACEMENT OF INLET PROTECTION AS EACH INLET IS INSTALLED
- FINE GRADING, PAVING, ETC.
- PERMANENT / FINAL STABILIZATION
- CLEAN-OUT OF DETENTION BASINS THAT WERE USED AS SEDIMENT CONTROL STRUCTURES AND RE-GRADING OF DETENTION POND BOTTOMS; IF NECESSARY, MODIFICATION OF SEDIMENT BASIN RISER TO CONVERT TO DETENTION BASIN OUTLET STRUCTURE
- REMOVAL OF TEMPORARY SEDIMENT & EROSION CONTROL MEASURES AFTER ENTIRE AREA DRAINING TO THE STRUCTURE IS FINALLY STABILIZED (THE DEPARTMENT RECOMMENDS THAT THE PROJECT OWNER/OPERATOR HAVE THE SWPPP PREPARER OR REGISTRATION EQUIVALENT APPROVE THE REMOVAL OF TEMPORARY STRUCTURES)
- PERFORM AS-BUILT SURVEYS OF ALL DETENTION STRUCTURES AND SUBMIT TO DHEC OR MS4 FOR ACCEPTANCE
- SUBMIT NOTICE OF TERMINATION (NOT) TO DHEC AS APPROPRIATE

PRELIMINARY / NOT FOR CONSTRUCTION

PLAN REVISIONS	
NO.	DESCRIPTION
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 Beaufort, SC 29902
 843.379.2222
 Fax 843.379.2223

Andrews & Burgess Inc.
 Engineering & Surveying

Site Development Plan
 For
 Colleton County
 Fire Station #34
 Peirce Road
 Colleton County, SC

Typical Legend
 and Note Sheet

Date Drawn: 12/19/13
 Last Revised: 05/22/14
 Drawn By: R. Crosby
 Engineer: S. Andrews

SHEET #:
Notes

JOB: 130028

SITE AREA TABLE	
BUILDING	2,400 S.F. (2.3%)
CONCRETE PAVING	7,440 S.F. (7.1%)
TOTAL IMPERVIOUS AREA	9,840 S.F. (9.4%)
UPLAND	2.33 Acres (97.4%)
WETLAND	0.06 Acres (2.6%)
TOTAL SITE AREA	2.39 Acres (104,435 S.F.)

PLAN REVISIONS	
NO.	DESCRIPTION
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TMS # 120-00-00-007
N/F KATHA K. NELSON
DEED BOOK 17, PAGE 36

TMS # 120-00-00-029
N/F MW-W-LAND SALES, INC.
DEED BOOK 1815, PAGE 151

Professional Engineer Seal: Andrew S. Burgess, No. 12860, State of South Carolina.

Professional Engineer Seal: Andrew S. Burgess, No. 00008, State of North Carolina.

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Beaufort, SC 29902
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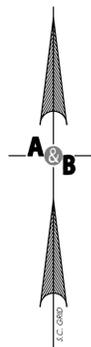
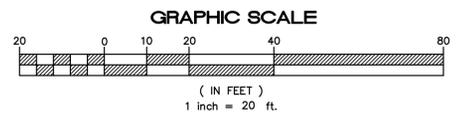
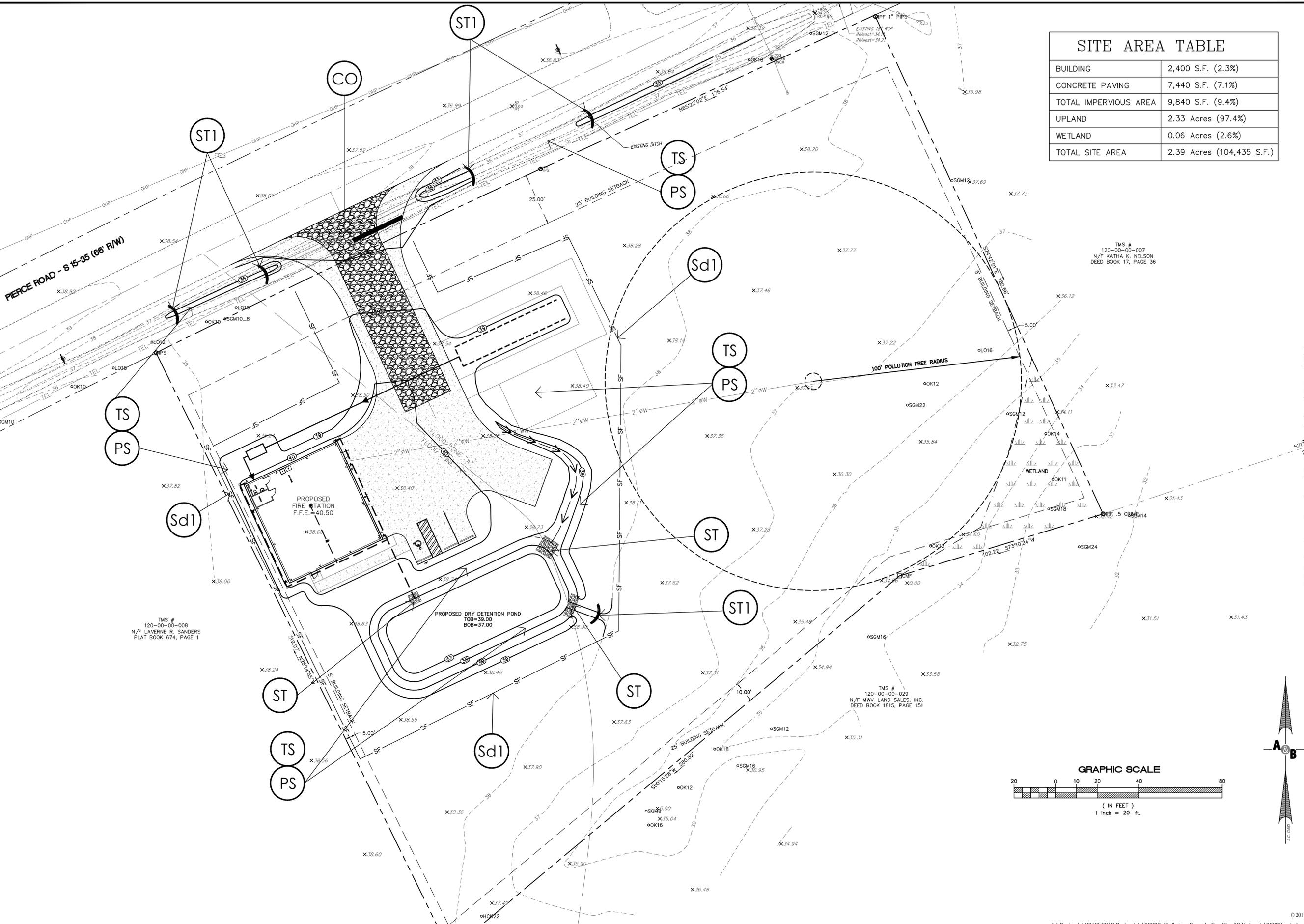
Engineering & Surveying

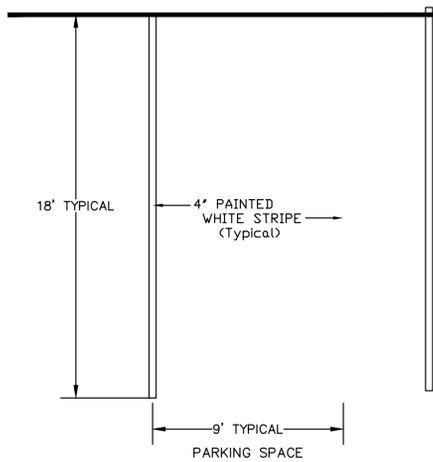
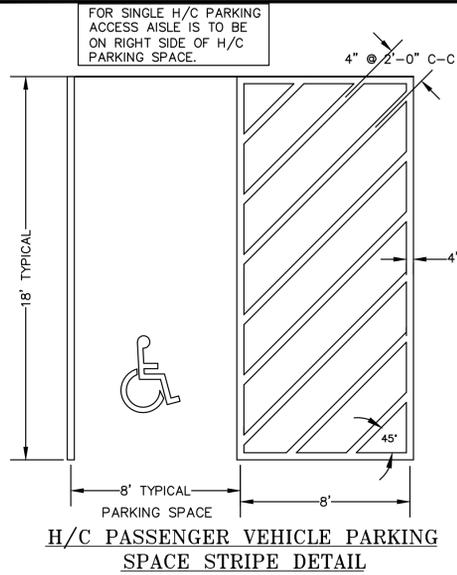
Site Development Plan
For
Colleton County
Fire Station #34
Peirce Road
Colleton County, SC

Tree and Sediment
and Erosion Control
Plan

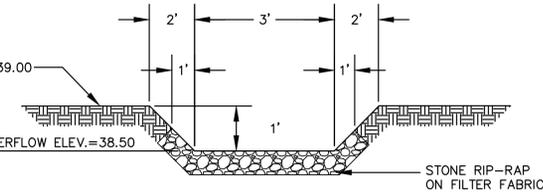
Date Drawn: 12/19/13
Last Revised: 05/22/14
Drawn By: R. Crosby
Engineer: S. Andrews

SHEET #:
C1
JOB: 130028

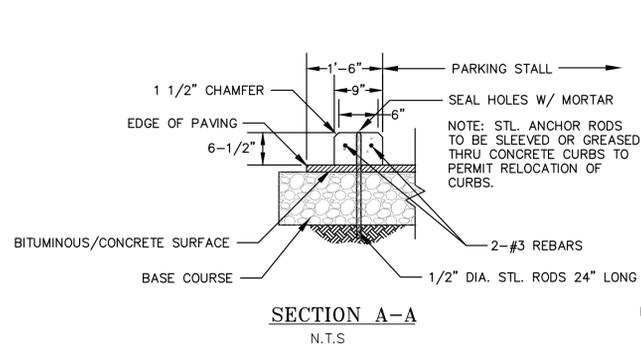




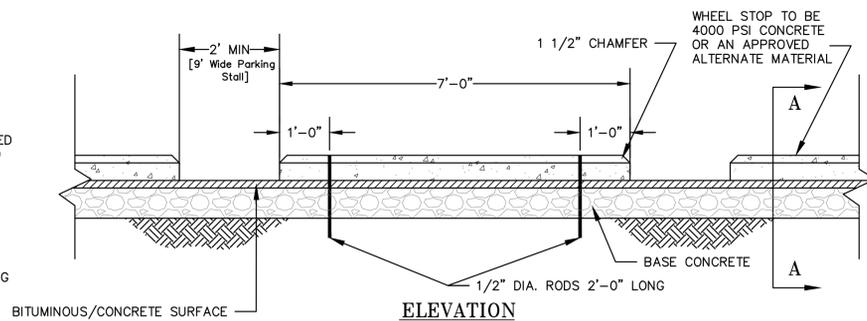
Detail-TYPICAL PARKING SPACE STRIPING
N.T.S.



EMERGENCY OVERFLOW WEIR
N.T.S.

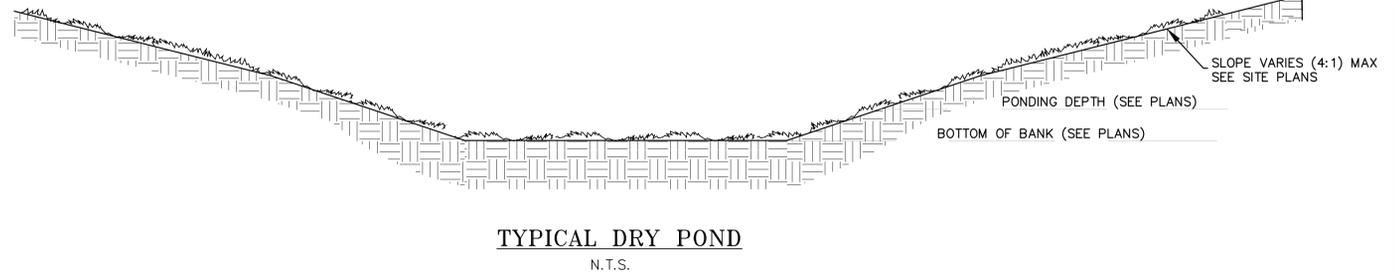


SECTION A-A
N.T.S.

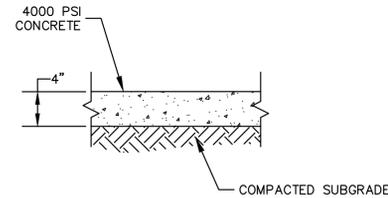


ELEVATION

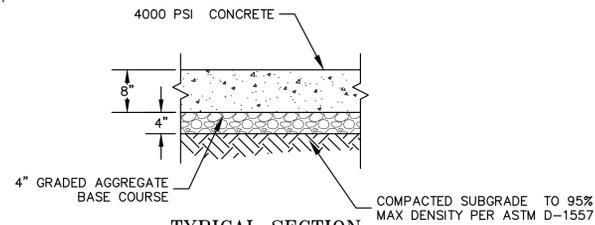
Typical-PCAST CONCRETE WHEEL STOP DETAILS
N.T.S.



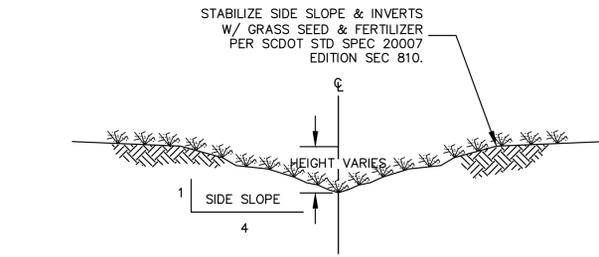
TYPICAL DRY POND
N.T.S.



TYPICAL SECTION
CONCRETE SIDEWALK
N.T.S.



TYPICAL SECTION
CONCRETE PAVEMENT
N.T.S.

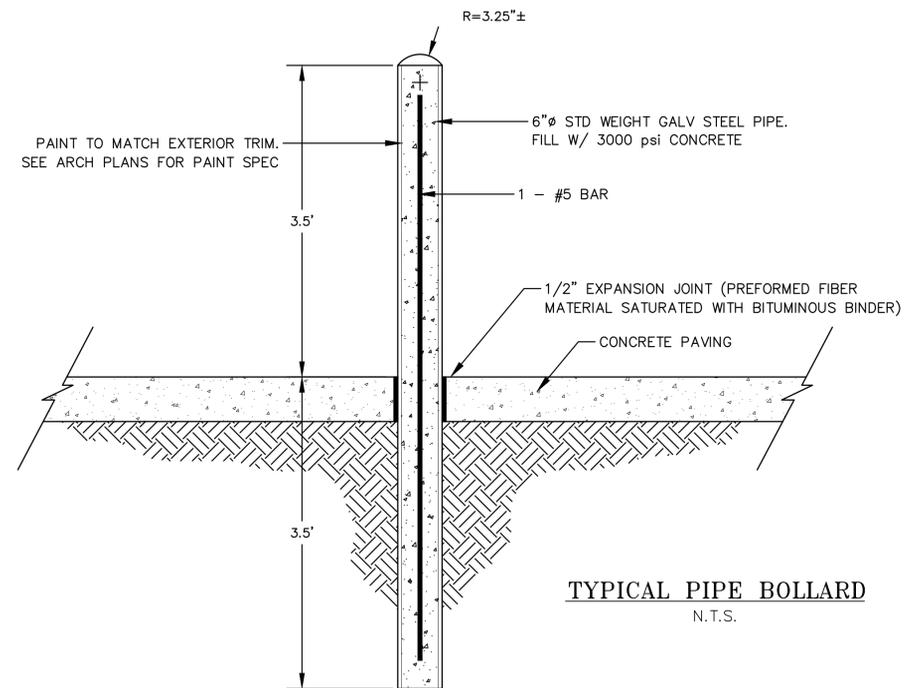


TYPICAL SECTION
GRASS SWALE
N.T.S.



NOTE: ALL STOP BARS ARE TO BE SOLID WHITE LINES EXTENDING ACROSS THE LANE(S) AND INSTALLED IN ACCORDANCE WITH THE 2009 EDITION OF THE MUTCD SECT. 3B.16, PAGE 381.

STOP BAR DETAIL
N.T.S.



TYPICAL PIPE BOLLARD
N.T.S.

PLAN REVISIONS	
NO.	DESCRIPTION
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Professional Engineer Seal: Andrew S. Burgess, No. 00008, State of Alabama.

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2712 Bull Street Suite A
Beaufort, SC 29902
843.379.2222
Fax 843.379.2223

Andrews & Burgess Inc.

Engineering & Surveying

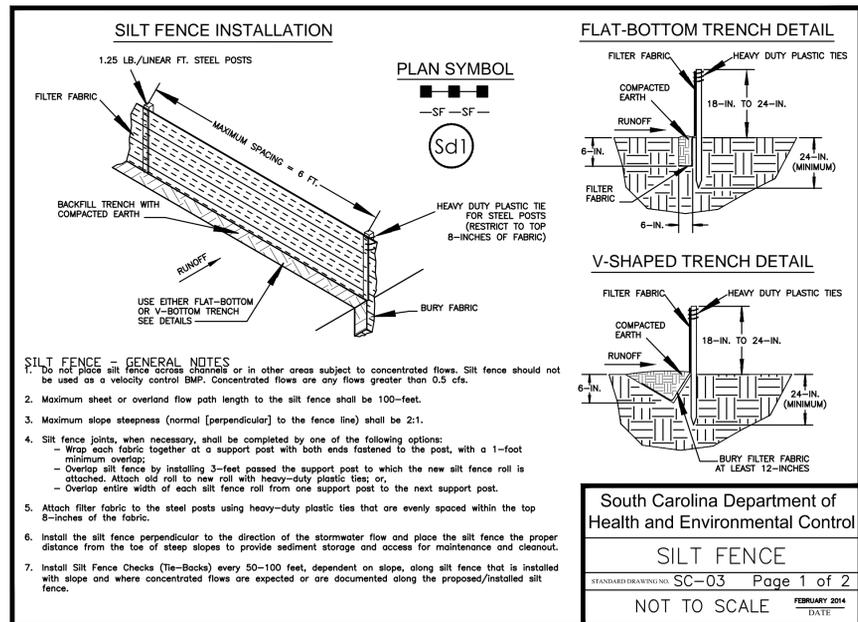
Site Development Plan
For
Colleton County
Fire Station #34
Peirce Road
Colleton County, SC

Site Details

Date Drawn: 12/19/13
Last Revised: 05/22/14
Drawn By: R. Crosby
Engineer: S. Andrews

SHEET #:
C3

JOB: 130028



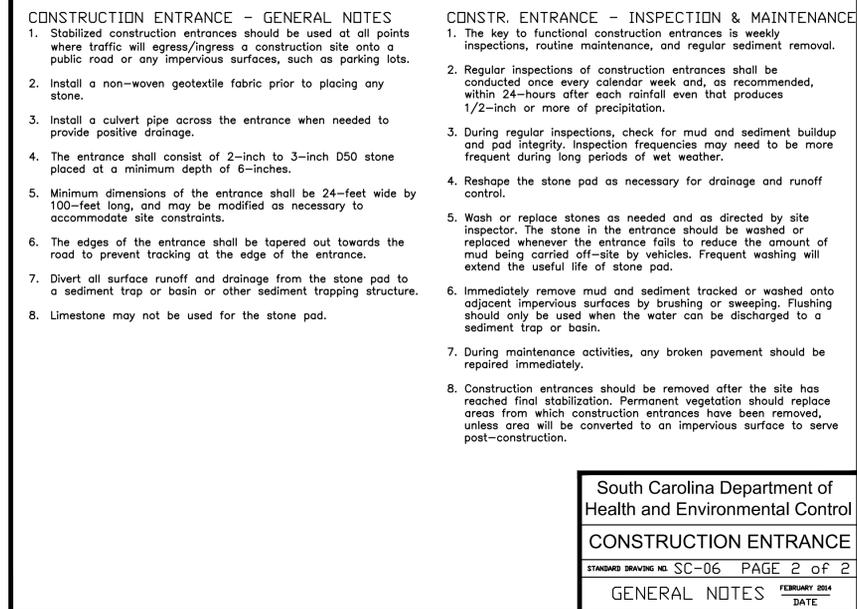
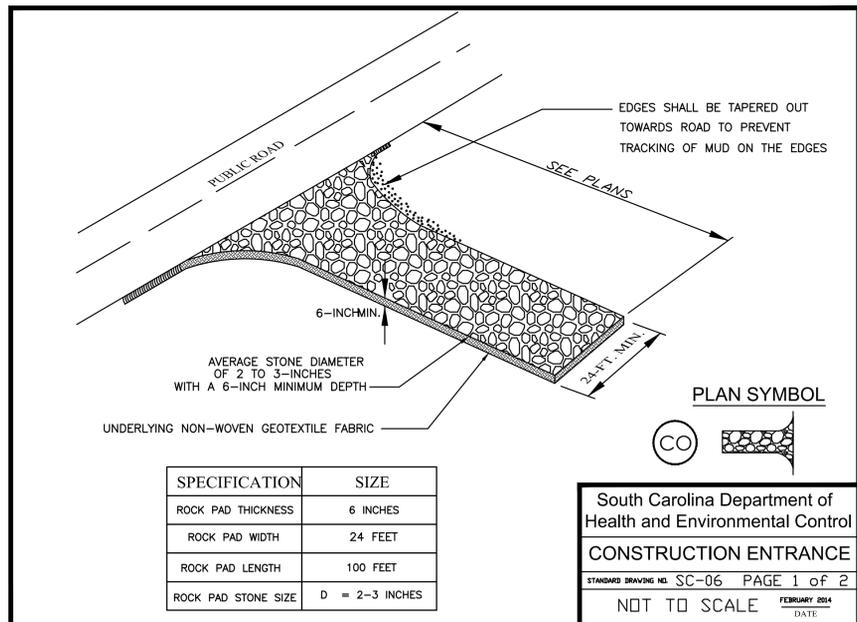
South Carolina Department of Health and Environmental Control

SILT FENCE

STANDARD DRAWING NO. SC-03 PAGE 1 of 2

NOT TO SCALE

FEBRUARY 2014 DATE



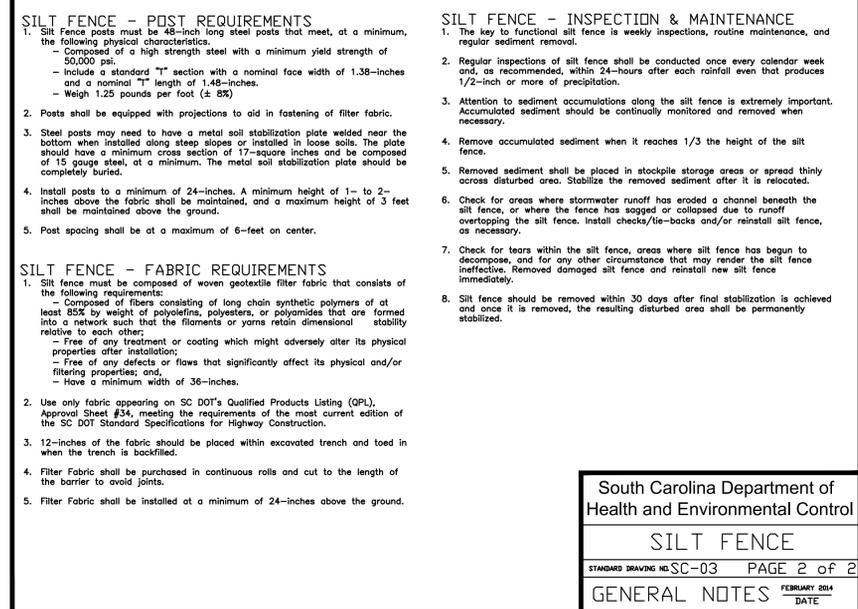
South Carolina Department of Health and Environmental Control

CONSTRUCTION ENTRANCE

STANDARD DRAWING NO. SC-06 PAGE 2 of 2

GENERAL NOTES

FEBRUARY 2014 DATE



South Carolina Department of Health and Environmental Control

SILT FENCE

STANDARD DRAWING NO. SC-03 PAGE 2 of 2

GENERAL NOTES

FEBRUARY 2014 DATE

SEDIMENT AND EROSION CONTROL NOTES

- If necessary, slopes, which exceed eight (8) vertical feet should be stabilized with synthetic or vegetative mats, in addition to hydroseeding. It may be necessary to install temporary slope drains during construction. Temporary berms may be needed until the slope is brought to grade.
- Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than fourteen (14) days after work has ceased, except as stated below.
 - Where stabilization by the 14th day is precluded by snow cover or frozen ground conditions stabilization measures must be initiated as soon as practicable.
 - Where construction activity on a portion of the Site is temporarily ceased, and earth-disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the Site.
- All sediment and erosion control devices shall be inspected once every calendar week. If periodic inspection or other information indicates that a BMP has been inappropriately or incorrectly installed, the Permittee must address the necessary replacement or modification required to correct the BMP within 48 hours of identification.
- Provide silt fence and/or other control devices, as may be required, to control soil erosion during utility construction. All disturbed areas shall be cleaned, graded, and stabilized with grassing immediately after the utility installation. Fill, cover, and temporary seeding at the end of each day are recommended. If water is encountered while trenching, the water should be filtered to remove sediment before being pumped back into any waters of the State.
- All erosion control devices shall be properly maintained during all phases of construction until the completion of all construction activities and all disturbed areas have been stabilized. Additional control devices may be required during construction in order to control erosion and/or offsite sedimentation. All temporary control devices shall be removed once construction is complete and the site is stabilized.
- The contractor must take necessary action to minimize the tracking of mud onto paved roadway(s) from construction areas and the generation of dust. The contractor shall daily remove mud/soil from pavement, as may be required.
- Residential subdivisions require erosion control features for infrastructure as well as for individual lot construction. Individual property owners shall follow these plans during construction or obtain approval of an individual plan in accordance with S.C. Reg. 72-300 et seq. and SCR100000.
- Temporary diversion berms and/or ditches will be provided as needed during construction to protect work areas from upslope runoff and/or to divert sediment-laden water to appropriate traps or stable outlets.
- All waters of the State (WoS), including wetlands, are to be flagged or otherwise clearly marked in the field. A double row of silt fence is to be installed in all areas where a 50-foot buffer can't be maintained between the disturbed area and all WoS. A 10-foot buffer should be maintained between the last row of silt fence and all WoS.
- Litter, construction debris, oils, fuels, and building products with significant potential for impact (such as stockpiles of freshly treated lumber) and construction chemicals that could be exposed to storm water must be prevented from becoming a pollutant source in storm water discharges.
- A copy of the C-SWPPP & OS-SWPPP, inspections records, and rainfall data must be retained at the construction site or a nearby location easily accessible during normal business hours, from the date of commencement of construction activities to the date that final stabilization is reached.
- Initiate stabilization measures on any exposed steep slope (3H:1V or greater) where land-disturbing activities have permanently or temporarily ceased, and will not resume for a period of 7 calendar days.
- Minimize soil compaction and, unless infeasible, preserve topsoil.
- Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
- Minimize the discharge of pollutants from dewatering of trenches and excavated areas. These discharges are to be routed through appropriate BMPs (sediment basin, filter bag, etc.).
- The following discharges from sites are prohibited:
 - Wastewater from washout of concrete, unless managed by an appropriate control;
 - Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
 - Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
 - Soaps or solvents used in vehicle and equipment washing.
- After construction activities begin, inspections must be conducted at a minimum of at least once every calendar week and must be conducted until final stabilization is reached on all areas of the construction site.
- If existing BMPs need to be modified or if additional BMPs are necessary to comply with the requirements of this permit and/or SC's Water Quality Standards, implementation must be completed before the next storm event whenever practicable. If implementation before the next storm event is impracticable, the situation must be documented in the SWPPP and alternative BMPs must be implemented as soon as reasonably possible.
- A Pre-Construction Conference must be held for each construction site with an approved On-Site SWPPP prior to the implementation of construction activities. For non-linear projects that disturb 10 acres or more this conference must be held on-site unless the Department has approved otherwise.

PLAN REVISIONS	
NO.	DESCRIPTION
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Professional Engineer Seal: Andrew Burgess, No. 00008, State of North Carolina.

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2712 Bull Street Suite A
Beaufort, SC 29902
843.379.2222
Fax 843.379.2223

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Engineering & Surveying

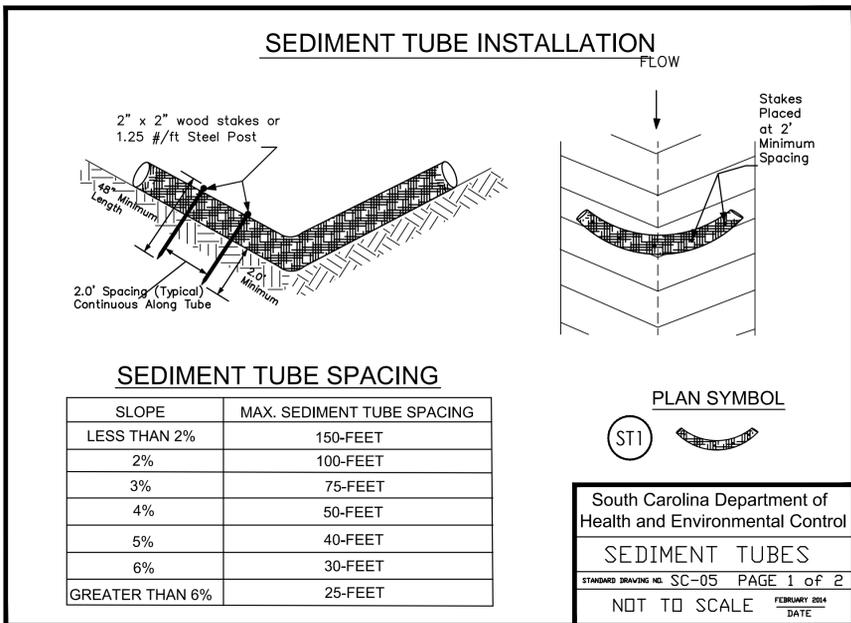
Site Development Plan
For
Colleton County
Fire Station #34
Peirce Road,
Colleton County, SC

Sediment and
Erosion Control
Details
Sheet 1

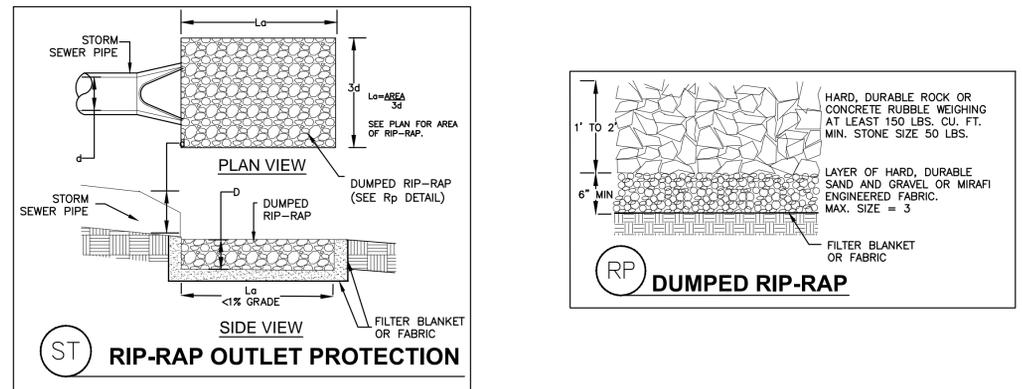
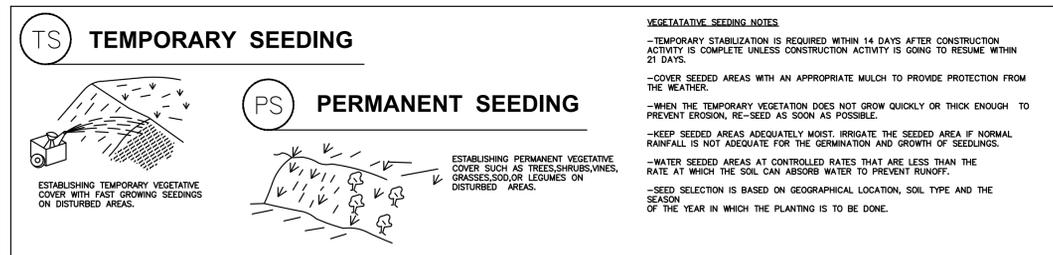
Date Drawn: 12/19/13
Last Revised: 05/22/14
Drawn By: R. Crosby
Engineer: S. Andrews

SHEET #:
C4

JOB: 130028



- #### SEDIMENT TUBES - GENERAL NOTES
- Sediment tubes may be installed along contours, in drainage conveyance channels, and around inlets to help prevent off-site discharge of sediment-laden stormwater runoff.
 - Sediment tubes are elongated tubes of compacted geotextiles, curled excelsior wood, natural coconut fiber, or hardwood mulch. Straw, pine needle, and leaf mulch-filled sediment tubes are not permitted.
 - The outer netting of the sediment tube should consist of seamless, high-density polyethylene photodegradable materials treated with ultraviolet stabilizers or a seamless, high-density polyethylene non-degradable material.
 - Sediment tubes, when used as checks within channels, should range between 18-inches and 24-inches depending on channel dimensions. Diameters outside this range may be allowed where necessary when approved.
 - Curled excelsior wood, or natural coconut products that are rolled up to create a sediment tube are not allowed.
 - Sediment tubes should be staked using wooden stakes (2-inch X 2-inch) or steel posts (standard "U" or "T" sections with a minimum weight of 1.25 pounds per foot) at a minimum of 48-inches in length placed on 2-foot centers.
 - Install all sediment tubes to ensure that no gaps exist between the soil and the bottom of the tube. Manufacturer's recommendations should always be consulted before installation.
 - The ends of adjacent sediment tubes should be overlapped 6-inches to prevent flow and sediment from passing through the field joint.
 - Sediment tubes should not be stacked on top of one another, unless recommended by manufacturer.
 - Each sediment tube should be installed in a trench with a depth equal to 1/5 the diameter of the sediment tube.
 - Sediment tubes should continue up the side slopes a minimum of 1-foot above the design flow depth of the channel.
 - Install stakes at a diagonal facing incoming runoff.
- #### SEDIMENT TUBES - INSPECTION & MAINTENANCE
- The key to functional sediment tubes is weekly inspections, routine maintenance, and regular sediment removal.
 - Regular inspections of sediment tubes shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation.
 - Attention to sediment accumulations in front of the sediment tube is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
 - Remove accumulated sediment when it reaches 1/3 the height of the sediment tube.
 - Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
 - Large debris, trash, and leaves should be removed from in front of tubes when found.
 - If erosion causes the edges to fall to a height equal to or below the height of the sediment tube, repairs should be made immediately to prevent runoff from bypassing tube.
 - Sediment tubes should be removed after the contributing drainage area has been completely stabilized. Permanent vegetation should replace areas from which sediment tubes have been removed.
- South Carolina Department of
Health and Environmental Control
- ### SEDIMENT TUBES
- STANDARD DRAWING NO. SC-05 PAGE 2 of 2
FEBRUARY 2014 DATE
GENERAL NOTES



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PLAN REVISIONS

NO.	DESCRIPTION	DATE	BY
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Professional Engineer
No. 12860
Professional Engineer
No. 00008

ANDREWS & BURGESS, INC.
No. 00008

2712 Bull Street Suite A
Beaufort, SC 29902
843.379.2222
Fax 843.379.2223

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Engineering & Surveying

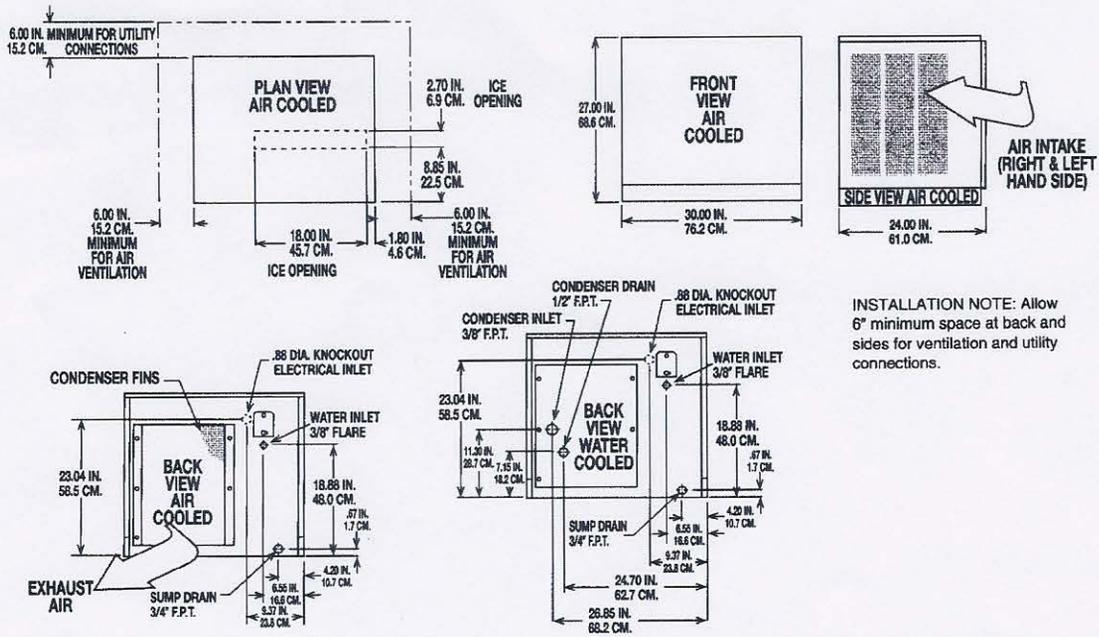
Site Development Plan
For
Colleton County
Fire Station #34
Peirce Road
Colleton County, SC

Sediment and
Erosion Control
Details
Sheet 2

Date Drawn: 12/19/13
Last Revised: 05/22/14
Drawn By: R. Crosby
Engineer: S. Andrews

SHEET #:
C5
JOB: 130028

CM³ Ice Machine Specifications



INSTALLATION NOTE: Allow 6" minimum space at back and sides for ventilation and utility connections.

All models: Dimensions: W x D x H Unit: 30" x 24" x 27" Shipping Carton: 33 1/2" x 28" x 32 1/2"

Model Number	Condenser Unit	Basic Electrical Volts/Hz/Phase	Max. Fuse Size or HACR Circuit Breaker	Comp. HP	Circuit Wires	Min. Circuit Ampacity	BTU's per hour	Shipping Weight lbs./kg.	Power Consumption KWH/100 lbs. 90°/70° F	Water Usage Gallons/100 lbs. Potable 90°/70° F Condenser 90°/70° F	
CME256AS-1F	AIR	115/60/1	20	1/2	2	16	5,500	185/84	9.5	27.0	-
CME256WS-1F	AIR	208-230/60/1	15	1/2	2	7.9	5,500	185/84	9.5	27.0	-
CME256WS-1F	WATER	115/60/1	20	1/2	2	16	5,500	195/88	7.7	25.0	190

All units with Stainless Steel finish.
 Refrigerant: R-404A.

OPTIONS:
 Stacking Kit: Number KSCME6-30 (CME256, CME506, or CME806, CME656 on CME256, CME506, CME656, or CME806).

Scotsman's ice machines are not designed for outdoor installations. Scotsman remote condensers are designed for outdoor installations.

Machine requires voltage indicated on rating name plate. Failures caused by improper voltage are not considered factory defects. Extended periods of operation at temperatures exceeding limitations constitutes misuse under the terms of Scotsman Manufacturer's Limited Warranty, resulting in a loss of warranty coverage. Specifications and design are subject to change without notice.

Consult Your Local SCOTSMAN Representative At:

IMPORTANT OPERATING REQUIREMENTS:

	Minimum	Maximum
Air Temperatures	50°F (10°C)	100°F (37.7°C)
Water Temperatures	40°F (4.4°C)	100°F (37.7°C)
Remote Cond. Temps	-20°F (-28.9°C)	120°F (48.9°C)
Water Pressures	20 PSIG	80 PSIG
Electrical Voltage	-5%	+10%

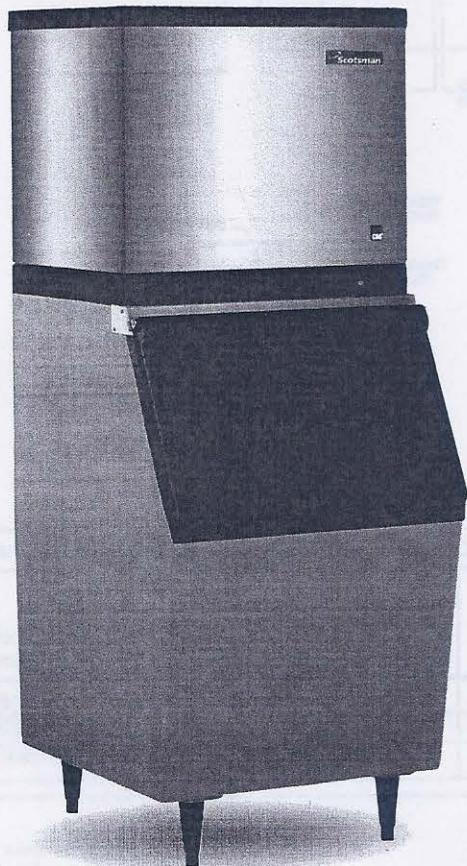
YOU'LL VALUE THE DIFFERENCE.™

775 Corporate Woods Parkway • Vernon Hills, IL 60061 • 1-800-SCOTSMAN • Fax: (847) 913-9844
 Visit our website at: www.scotsman-ice.com • E-mail: customer.service@scotsman-ice.com

Scotsman

SCOTSMAN

AIR & WATER, MODULAR CONTOUR CUBERS



CME256

VOLUME PRODUCTION • 24 HOUR

 Certified & rated in accordance with ARI standard 810-95	Air-Cooled		Water-Cooled	
	70°/50° lbs./kg.	ARI 90°/70° lbs./kg.	70°/50° lbs./kg.	ARI 90°/70° lbs./kg.
CME256-1	307/139	240/109	320/145	250/114
CME256-32	307/139	240/109	—	—

VALUE THE DIFFERENCE OF CM³ ICE MACHINES:

- CM³ series offers the lowest lifetime operating costs based on lower water and electrical usage. Combine that with a competitive purchase price and the best warranty in the industry and you have the lowest lifetime ownership cost. Period.
- AutoIQ™ Control System monitors and controls the ice machines' functions to ensure consistent ice production and reduce operating costs.
- CM³ Evaporator is a hot tin dipped, molecularly bonded plate that has been field tested and proven 99.4% reliable over 5 years.
- Rust-free Polyethylene Base and Food Zone is insulated with 1-1/2" of foam which keeps water and food zone cool to reduce operating costs and is backed by a Lifetime Rust-free Warranty.
- Contemporary styling and stainless steel finish make the CM³ a perfect addition to any operation.
- Now protected with AquaArmor™ utilizing AgION™, a silver-based anti-microbial compound that reduces the growth of bacteria, microorganisms, algae, mold and slime on ice machine surfaces. AgION is a trademark of AgION Technologies and is registered with the EPA.

WARRANTY See your dealer for complete warranty details.

- Limited Lifetime Rust Free Warranty on Food Zone
- 3 years parts and labor on all components.
- 5 years parts and labor on the CME evaporator.
- 5 years parts on the compressor and condensor.

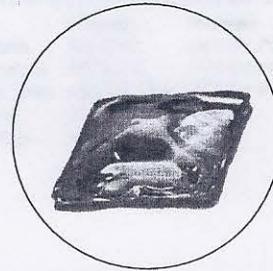
BIN OPTIONS:



BIN: HTB250



BIN: HTB350



APPROX. CUBE SIZE:
1 3/8" X 1 3/8" X 5/8" THICK

SCOTSMAN MODULAR BINS					
Model Number	Dimensions W"xD"xH"	ARI Bin Capacity	Application Capacity	Finish*	Ship Weight lbs./kg.
HTB250	30 x 31.5 x 22.5	190 LBS.	250 LBS.	HTB	80/36
HTB350	30 x 31.5 x 29.5	270 LBS.	350 LBS.	HTB	90/41
HTB555	30 x 34.5 x 44.5	420 LBS.	535 LBS.	HTB	110/50
BH550	30 x 31.5 x 44	410 LBS.	520 LBS.	SS	140/64

* (HTB) Linear Low Density Polyethylene—Grey color.
 (SS) Stainless Steel with Polyethylene liner.

 Certified & rated in accordance with ARI standard 820-95

This product qualifies for the following listings:
  
 Rated in accordance with ARI standard 810-95



CERTIFIED

 9001:2000





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INGERSOLL-RAND Compressor, Air, 5.0 HP

Pneumatics > Air Compressors and Vacuum Pumps > Stationary Electric Air Compressors

Electric Two Stage Air Compressor, Type 30, HP Rating 5.0 HP, Air Delivery 15 CFM, Maximum Pressure 175 PSI, Voltage Rating 230 Single Phase, Current Rating 28 Amps, Tank Capacity 60 Gallons, Rated ASME, Tank Type Vertical, Oil Capacity 32 Ounces, With Manual Drain, Discharge Isolation Valve, Height 69 inches, Length 32 inches, Width 30 inches, Outlet 1/2 Inch FNPT, Start Up Kit Number 4M579

Grainger Item # 4L977
 Your Price (ea.) **\$1,495.00**
 Brand **INGERSOLL-RAND**
 Mfr. Model # 2340L5
 Ship Qty.
 Sell Qty. (Will-Call)
 Ship Weight (lbs.) 425.0
 Usually Ships**
 Catalog Page No. 3667
 Country of Origin USA
 (Country of Origin is subject to change.)



Required Accessories

More Accessories



Pad, Anti Vibration
 Price (ea.) \$34.20
 Brand: MASON
 Qty

Qty.

Add Grainger TripleGuard® repair & replacement coverage for \$199.00 each.

Tech Specs	Additional Information	Compliance & Restrictions	MSDS	Required Accessories	Optional Accessories	Alternate Products	Repair Parts
Item							
Sub-Category		Electric Air Compressor					
Type		Type 30, 2 Stage					
Pump Type		Cast Iron					
HP		5					
Max. Pressure (PSI)		175					
Free Air CFM @ 175 PSI		15.0					
Free Air CFM @ Max. Pressure		14.3					
Voltage		230					
Phase		1					
Amps AC		28.0					
Tank (Gal.)		60					
Tank Type		Vertical					
(FNPT) Outlet (In.)		1/2					
Length (In.)		32					
Width (In.)		30					
Height (In.)		69					
Oil Capacity (Oz.)		32					

Other Popular Terms for this Product

Air Compressors Electric Air Compressors Electric Compressors Stationary Air Compressors Stationary Compressors
 Oil-Lubricated Air Compressors Oil-Lubricated Compressors Two-Stage Air Compressors Two-Stage Compressors

The "Usually Ships" reflects when an item is generally expected to ship from Grainger based on its stocking location. Real-time availability information will be shown during the checkout process and on the e-mail order confirmation (for U.S. and Puerto Rico - US customers only). Please allow additional delivery time for international orders.