CRA ARCHITECTS

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PROJECT MANUAL

WAKULLA COUNTY

WAKULLA COUNTY BOARD OF COUNTY COMMISSIONERS

NEW PUBLIC LIBRARY

318 SHADEVILLE ROAD
CRAWFORDVILLE, FL. 32327

CRA PROJECT NUMBER : 24071

JULY 21, 2025
(100% CONSTRUCTION DOCUMENTS)

VOLUME I

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VOLUME I

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SECTION 011000 - SUMMARY OF WORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS: Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.02 PROJECT DESCRIPTION

A. The Project shall consist of construction as indicated on drawings for Wakulla County Fire and EMS Facility.
   1. Project Location: 318 Shadeville Road, Crawfordville, FL. 32327
   2. Owner: Wakulla County.

B. Contract Documents, dated July 21, 2025 (Construction Documents) were prepared for the Project by Clemons Rutherford and Associates, 2027 Thomasville Road, Tallahassee, Florida.

C. The work consists of:
   1. New Public Library Facility
   2. New metal roof.
   3. New mechanical, electrical and plumbing systems.
   4. New interior partitions, millwork, and finishes.
   5. New doors and hardware.
   6. Coordination of Owner furnished equipment.

D. Work Sequence: The work will be conducted in such a sequence to minimize interference to Owner's normal activities on site and adjacent sites.

E. Applicable Codes: All work shall be completed in accordance with the following codes where applicable:

Florida Building Code, Building (FBC,B)	2023 Edition.
Florida Building Code, Mechanical (FBC,M)	2023 Edition.
Florida Building Code, Fuel Gas (FBC,FG)	2023 Edition.
Florida Building Code, Plumbing (FBC.P)	2023 Edition.
Florida Fire Prevention Code, (FFPC)	2023 Edition.
ASCE 7	2022 Edition
NFPA 101, Life safety code	2024 Edition
NFPA 70, National Electric Code (NEC)	2023 Edition.

F. Product Approval: Contractor shall be responsible for providing Florida Product Approval Numbers OR certify that products installed conform to the Florida Building Code 2014 Edition, for each product installed in the building envelope.

G. General Contractor: A General Contractor has been engaged for this project to serve as Contractor who in turn Subcontracts all or portions of the work. In Divisions 1 through 16, the terms “General Contractor” and “Contractor” are synonymous.

1.03 CONTRACTOR USE OF PREMISES

A. General: During the construction period, the contractor shall have limited use of the premises for construction activities in areas indicated or agreed upon by the Owner. Surrounding existing buildings shall remain operational, accessible, and be occupied throughout the duration of construction.

   1. Confine operations to areas within Contract limits indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
   2. Keep surrounding driveways, sidewalks, and entrances serving the premises clear and

available to the Owner and Visitors at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

3. Designated wetland areas/easements shall remain undisturbed.
4. Do not access adjacent jail site without prior approval.

B. Construction Safeguards: The contractor shall construct safeguards to protect personnel and visitors from the construction areas and areas where materials are stored. Limits of the construction safeguards shall be determined by the Owner.

Note: Construction area, including building and buildings being renovated, shall remain accessible to handicap during entire construction process. Contractor is responsible for providing temporary access to building where needed. This includes temporary ramps, walkways, handrails and all other necessary items required. Contractor shall be responsible for inspecting construction site to determine the extent of temporary access needed. (These items are not necessarily shown on drawings). Contractor shall comply with all ADA requirements.

1.04 DRESS CODE AND CONDUCT: All workmen on the construction site shall wear a shirt at all times. No workmen shall engage in any verbal expressions or physical gestures directed towards all visitors, employees of Owner, or any other person at this construction site which may be considered sexual harassment. Any person found engaging in any offensive conduct will be banned from this construction site.

PART 2 - PRODUCTS (Not applicable).

PART 3 - EXECUTION

3.01 LAYOUT OF THE WORK: **Dimensions and elevations indicated on the drawings shall be verified by the Contractor prior to commencement of work. Discrepancies between drawings, specifications, and existing conditions shall be referred to the Architect for adjustment before affected work is performed. Failure to make such notification shall place responsibility upon the Contractor to carry out the work in a satisfactory and workmanlike manner at no additional cost to the Owner.**

3.02 RESTORATION

A. Remove, cut, alter, replace, patch and repair existing work as necessary to install new work.

B. Existing work (site utilities, electrical work, lawns, paving, roads, walks, etc.) disturbed or removed as a result of performing required new work, shall be patched, repaired, reinstalled, or replaced with new work, and refinished and left in as good condition as existed before commencing work. Existing work to be altered or extended and that is found to be defective in any way, shall be reported to Architect before it is disturbed. Materials and workmanship used in restoring work, shall conform in type and quality to that of original existing construction, except as otherwise shown or specified.

C. Upon completion of contract, deliver work complete and undamaged. Damage that may be caused by Contractor or his workmen to existing structures, grounds, and utilities or work done by others shall be repaired by him at no additional cost to the Owner and left in as good condition as existed prior to damaging.

D. At his own expense, Contractor shall immediately restore to service and repair any damage he may cause to existing piping and conduits, wires, cables, etc., of utility services or of fire protection systems and communications systems which are not scheduled for discontinuance or abandonment. Contractor shall employ appropriate parties for repair work.

3.03 CLEANING UP

A. At completion of the work, the Contractor shall remove from the building and site all tools,

appliances, surplus materials, debris, temporary structures and facilities, scaffolding, and equipment; sweep clean the building thoroughly and remove all marks, stains, fingerprints, dust, dirt, paint drippings, and the like from all surfaces; clean tile work, windows, plumbing, and other fixtures and surfaces.

B. All hardware and other unpainted metals shall be cleaned and polished, and all equipment and paint or decorated work shall be cleaned and touched up, if necessary. Surfaces that are waxed shall be polished. Remove all temporary labels, tags, and paper covering throughout the building.

C. The exterior of the buildings, the grounds, approaches, equipment, pavement, sidewalks, etc., shall be cleaned similar to interior of buildings and left in good order at the time of final acceptance, with paint surfaces clean and unbroken, hardware clean and polished, all repair work accomplished and dirt areas scraped and cleared of weed growth.

D. Cleaning, polishing, sealing, waxing, and all other finish operations indicated on the drawings, or required in the specifications, shall mean that this is the required condition at the time of acceptance of all work under the contract.

END OF SECTION 011000

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.01 SUBSTITUTIONS: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for "substitutions." The following **are not** considered substitutions:

A. Substitutions requested during the bidding period, and accepted prior to award of Contract.

B. Revisions to Contract Documents requested by the Owner or Architect.

C. Specified options of products and construction methods included in Contract Documents.

D. Compliance with governing regulations and orders issued by governing authorities.

1.02 SUBMITTAL: Requests for substitution will be considered if received within 30 days after commencement of the Work. Requests received may be considered or rejected at the discretion of the Architect after review. See mechanical and electrical "General Provisions" section for special substitution requirements.

A. Submit 3 copies of each request for substitution in the form and in accordance with procedures for Change Order proposals.

B. Identify the product, or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Document compliance with requirements for substitutions, and the following information, as appropriate:

1. Product Data, including Drawings and descriptions of products, fabrication and installation procedures.

2. Samples, where applicable or requested.

3. A comparison of significant qualities of the proposed substitution with those specified.

4. A list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors: that will be necessary to accommodate the proposed substitution.

5. A statement indicating the substitution's effect on the Construction Schedule compared to the Schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.

6. Cost information, including a proposal of the net change, if any in the Contract Sum.

7. Certification that the substitution is equal-to or better in every respect to that required by Contract Documents, and that it will perform adequately in application indicated. Include Contractor's waiver of rights to additional payment or time, that may be necessary because of the substitution's failure to perform adequately.

C. Architect's Action: Within one week of receipt of the request for substitution, the Architect will request additional information necessary for evaluation. Within 2 weeks of receipt of the request, or one week of receipt of additional information, whichever is later, the Architect will notify the Contractor of acceptance or rejection. If a decision on use of a substitute cannot be made within the time allocated, use the product specified. Acceptance will be in the form of a Change Order.

1.03 SUBSTITUTIONS: The Contractor's substitution request will be received and considered by the Architect when one or more of the following conditions are satisfied, as determined by the Architect; otherwise requests will be returned without action except to record noncompliance with these requirements.

A. The request is directly related to an "or approved equal" clause or similar language in the Contract Documents.

B. The specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.

C. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.

D. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or separate contractors, and similar considerations.

E. The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.

F. The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.

G. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provide the required warranty.

1.04 The Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

END OF SECTION 012500

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.01 SCHEDULE OF VALUES: Coordinate preparation of the Schedule of Values with the Contractor's Construction Schedule. Correlate line items in the Schedule of Values for each phase with other schedules and forms, including:

Contractor's Construction Schedule.
Application for Payment form.
List of subcontractors.
List of products.
Schedule of submittals.

Submit the Schedule of Values to the Architect at the earliest date, but no later than 7 days before the date scheduled for submittal of the initial Application for Payment.

Format and Content: Use the Project Manual Table of Contents as a guide to establish the format.

Identification: Include the following identification:

Project name and location.
Name of the Architect.
Project number.
Contractor's name and address.
Date of submittal.

Format: Use AIA Document G703 Continuation Sheet.

Break down each Division that is listed in enough detail to facilitate evaluation of Application for Payments. Round amounts off to the nearest dollar; the total shall equal the Contract Sum.

Each item in the Applications for Payment and Continuation Sheet shall be complete including total cost and share of overhead and profit. Temporary facilities and items that are not direct cost of Work-in-place may be shown as separate line items or distributed as general overhead expense.

Update and resubmit the schedule when Change Orders change the Contract Sum.

1.02 APPLICATIONS FOR PAYMENT: Applications for Payment shall be submitted by the 25th of the month and will be paid by the 10th of the following month. Applications for Payment not received by the 25th of the month will be paid not later than 15 days after the date received. The period covered by each Application for Payment is one month. A retainage of 5% of the amount earned and stored will be withheld from each payment.

A. Payment Application Times: Payment dates are indicated in the Agreement. The period covered by each application is the period indicated.

B. Payment Application Forms: Use AIA Document G 702 and Continuation Sheets G 703, 1992 edition, as the form for the application.

C. Application Preparation: Complete every entry, including notarization and execution by person authorized to sign on behalf of the Contractor. Incomplete applications will be returned without action. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions have been made. Include amounts of Change Orders issued prior to the last day of the period covered by the application.

D. Transmittal: Submit application to the Architect within 24 hours; copies shall be complete, including waivers of lien where required and similar attachments. Transmit each copy with a transmittal listing attachments, and recording information related to the application.

E. Waivers of Lien: With final application, submit waivers of lien from every entity who has performed work, provided labor or supplied materials, constituting 2% or more of the overall contract amount. Waivers of Lien are to be provided by, but not limited to the following material suppliers and subcontractors. This list is for illustration only, not necessarily complete.

Concrete	Masonry	Paving
Steel	Site Work	Landscaping
Finish Carpentry	Roofing	Doors
Windows	Finish Hardware	Gypsum Wallboard
Flooring	Painting	Ceilings
Signage	Toilet & Bath Accessories	Elevators
Mechanical	Plumbing	Electrical

F. Waiver Forms: Submit waivers of lien on AIA Document G706A, "Contractor's Affidavit Of Release Of Liens".

1.03 INITIAL APPLICATION FOR PAYMENT: Administrative actions and submittals that must precede or coincide with submittal of the first Application for Payment include:

Fully executed Contract.
List of subcontractors.
List of suppliers and fabricators.
Schedule of Values.
Contractor's Construction Schedule (preliminary if not final).
Submittal Schedule (preliminary if not final).
List of Contractor's staff assignments.
Copies of building permits (if required).
Copies of licenses from governing authorities.
Certificates of insurance and insurance policies.
Performance and payment bonds.

1.04 PARTIAL RETAINAGE RELEASE FORMS: Use AIA Document G707A, "Consent Of Surety To Reduction in Or Partial Release Of Retainage".

1.05 APPLICATION FOR PAYMENT AT SUBSTANTIAL COMPLETION: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment; reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions. Administrative actions and submittals that precede or coincide with this application include:

Occupancy permits.
Test/adjust/balance records (preliminary).
Operation and Maintenance instructions.
Meter readings.
Change-over information related to Owner's occupancy.

1.06 FINAL PAYMENT APPLICATION: Administrative actions and submittals which must precede or coincide with submittal of the final payment application include:

Completion of Project closeout requirements. Refer to Section 01700 - Project Closeout.
Warranties and maintenance agreements.
Completion of all items specified for completion after Substantial Completion.
Transmittal of required Project construction records to Architect.
Final cleaning.
AIA Document G706, "Contractor's Affidavit Of Payment Of Debts and Claims".
Change of door locks to Owner's access.
AIA Document G707, " Consent Of Surety To Final Payment".

END OF SECTION 012900

SECTION 013100 - PROJECT COORDINATION

PART 1 - GENERAL

1.01 THIS SECTION specifies requirements for project coordination including:

Coordination with other Contractors.
Administrative and supervisory personnel.
General installation provisions.
Cleaning and protection.

1.02 COORDINATION: Coordinate activities included in various Sections to assure efficient and orderly installation of each component. Coordinate operations included under different Sections that are dependent on each other for proper installation and operation.

Where installation of one component depends on installation of other components before or after its own installation, schedule activities in the sequence required to obtain the best results.

Where space is limited, coordinate installation of different components to assure maximum accessibility for maintenance, service and repair.

Make provisions to accommodate items scheduled for later installation.

Prepare memoranda for distribution to each party involved outlining required coordination procedures. Include required notices, reports, and attendance at meetings.

Prepare similar memoranda for the Owner and separate Contractors where coordination of their Work is required.

1.03 ADMINISTRATIVE PROCEDURES: Coordinate scheduling and timing of administrative procedures with other activities to avoid conflicts and ensure orderly progress. Such activities include:

Preparation of schedules.
Power and utility shutdowns.
Installation and removal of temporary facilities.
Delivery and processing of submittals.
Progress meetings.
Project closeout activities.

1.04 COORDINATION DRAWINGS: Prepare Coordination Drawings where close coordination is required for installation of products and materials fabricated off-site by separate entities, and where limited space necessitates maximum utilization of space for efficient installation of different components.

Show relationship of components shown on separate Shop Drawings.
Indicate required installation sequences.

1.05 STAFF NAMES: Within 15 days of Notice to Proceed, submit a list of Contractor's staff assignments, including Superintendent and personnel at the site; identify individuals, their duties and responsibilities, addresses and telephone numbers.

Post copies in the Project meeting room, the field office, and at each temporary telephone.

1.06 INSPECTION OF CONDITIONS: The Installer of each component shall inspect the substrate and all other conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected.

1.07 MANUFACTURER'S INSTRUCTIONS: Comply with manufacturer's installation instructions and recommendations, to the extent that they are more stringent than requirements in Contract Documents.

1.08 INSPECT material immediately upon delivery and again prior to installation. Reject damaged and defective items.

1.09 PROVIDE ATTACHMENT and connection devices and methods necessary for securing each construction element. Secure each construction element true to line and level. Allow for expansion and building movement.

1.10 VISUAL EFFECTS: Provide uniform joint widths in exposed Work. Arrange joints to obtain the best effect. Refer questionable choices to the Architect for decision.

1.11 RECHECK MEASUREMENTS and dimensions, including elevations, before starting installation.

1.12 INSTALL EACH COMPONENT during weather conditions and project status that will ensure the best results. Isolate each part from incompatible material as necessary to prevent deterioration.

1.13 COORDINATE TEMPORARY ENCLOSURES with inspections and tests, to minimize uncovering completed construction for that purpose.

1.14 MOUNTING HEIGHTS: Where mounting heights are not indicated, install components at standard heights for the application indicated or refer to the Architect.

1.15 CLEANING AND PROTECTION: During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

Clean and maintain completed construction as often as necessary through the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

Limiting Exposures: Supervise operations to ensure that no part of construction, completed or in progress, is subject to harmful or deleterious exposure. Such exposures include, but are not limited to the following:

Excessive static or dynamic loading.
Excessive internal or external pressures.
Excessive weathering.
Excessively high or low temperatures or humidity.
Air contamination or pollution.
Water or ice.
Chemicals or solvents.
Heavy traffic, soiling, staining and corrosion.
Rodent and insect infestation.
Unusual wear or other misuse.
Contact between incompatible materials.
Theft or vandalism.

END OF SECTION 013100

SECTION 013150 - CUTTING AND PATCHING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS: Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.02 SUMMARY: This Section specifies administrative and procedural requirements for cutting and patching.

Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the work.

Refer to Division-15 and Division-16 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

1.03 SUBMITTALS

A. Cutting and Patching Proposal: Where approval of procedures for cutting and patching is required before proceeding, submit a proposal describing procedures well in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information, as applicable, in the proposal:

Describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.

Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.

List products to be used and firms or entities that will perform Work.

Indicate dates when cutting and patching is to be performed.

List utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.

1.04 QUALITY ASSURANCE

A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would reduce their load-carrying capacity or load-deflection ratio.

B. Operational and Safety Limitations: Do not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.

1.05 VISUAL REQUIREMENTS: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.01 MATERIALS: Use materials that are identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3 - EXECUTION

3.01 INSPECTION: Before cutting existing surfaces, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.

3.02 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.

Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas. Take all precautions necessary to avoid cutting existing pipe, conduit or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

3.03 PERFORMANCE

A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures with the original installer; comply with the original installer's recommendations.

In general, where cutting is required, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces. Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill.

Comply with requirements of applicable Sections of Division-2 where cutting and patching requires excavating and backfilling. By-pass utility services such as pipe or conduit, before cutting, where services are shown or required to be removed, relocated or abandoned. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.

3.04 PATCHING: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

Where feasible, inspect and test patched areas to demonstrate integrity of the installation.

Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken area containing the patch, after the patched area has received primer and second coat.

3.05 CLEANING: Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely from non-intended locations any paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION 013150

SECTION 013200 - PROJECT MEETINGS

PART 1 - GENERAL

1.01 SUMMARY: This Section specifies requirements for Project meetings including:

Pre-Construction Conference.
Progress Meetings.

1.02 PRE-CONSTRUCTION CONFERENCE: Architect shall conduct a pre-construction conference after execution of the Agreement and prior to commencement of construction activities. Review responsibilities and personnel assignments.

Attendees: The Owner, Architect and their consultants, the Contractor and its superintendent, subcontractors, suppliers, manufacturers, and other concerned parties shall be represented by persons authorized to conclude matters relating to the Work.

Agenda: Discuss significant items that could affect progress, including the tentative construction schedule, critical sequencing, use of the premises, procedures for processing Change Orders and equipment deliveries.

Review progress of other activities and preparations for the activity under consideration at each conference, including time schedules, manufacturer's recommendations, weather limitations, substrate acceptability, compatibility problems and inspection and testing requirements.

Record significant discussions, agreements and disagreements of each conference, along with the approved schedule. Distribute the meeting record to everyone concerned, promptly, including the Owner and Architect.

Do not proceed if the conference cannot be successfully concluded. Initiate necessary actions to resolve impediments and reconvene the conference at the earliest feasible date.

1.03 PROGRESS MEETINGS: Conduct progress meetings at regular monthly intervals. Notify the Owner and Architect of scheduled dates. Coordinate meeting dates with preparation of the payment request.

Attendees: The Owner and Architect, each subcontractor, supplier or other entity concerned with progress or involved in planning, coordination or performance of future activities shall be represented by persons familiar with the Project and authorized to conclude matters relating to progress.

Agenda: Review minutes of the previous progress meeting. Review significant items that could affect progress. Include topics appropriate to the current status of the Project including:

RFIs	Change Orders
Scheduling	Submittals

Reporting: Distribute copies of the minutes of the meeting to each party present and to parties who should have been present.

1.04 CONTRACTOR'S CONSTRUCTION SCHEDULE: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

Review the present and future needs of each entity present, including such items as:

Time.
Sequences.

Deliveries.
Off-site fabrication problems.
Site utilization.
Temporary facilities and services.
Hazards and risks.
Quality and Work standards.
Change Orders.
Documentation of information for payment requests.

END OF SECTION 013200

SECTION 013300 - SUBMITTALS

PART 1 - GENERAL

1.01 GENERAL PROCEDURES

A. Coordinate submittal preparation with performance of construction activities, and with purchasing or fabrication, delivery, other submittals and related activities. Transmit in advance of performance of related activities to avoid delay.

B. Coordinate transmittal of different submittals for related elements so processing will not be delayed by the need to review concurrently for coordination. The Architect reserves the right to withhold action on a submittal requiring coordination until related submittals are received.

1.02 PROCESSING: Allow two weeks for initial review. Allow more time if processing must be delayed for coordination with other submittals. The Architect will notify the Contractor when a submittal must be delayed for coordination. Allow two weeks for reprocessing each submittal.

No extension of time will be authorized because of failure to transmit submittals sufficiently in advance of the Work to permit processing.

1.03 SUBMITTAL PREPARATION: Place a label or title block on each submittal for identification. Provide two 4" x 5" spaces on the label or beside the title block on Shop Drawings to record Contractor's review and approval markings and action taken. Include the following information on the label for processing and recording action taken. Submittals received without a signed Contractor's Approval Stamp will be returned for resubmittal with no action taken.

Project name.
Date.
Name and address of Contractor.
Name and address of supplier.
Name of manufacturer.
Number and title of appropriate Specification Section.
Drawing sheet number and detail references, as required.

1.04 SUBMITTAL TRANSMITTAL: Package submittals appropriately for transmittal and handling. Transmit with a transmittal form. Submittals received from other than the Contractor will be returned without action.

Transmittal Form: Use AIA Document G 810 or other form acceptable to Architect. On the form record requests for data, and deviations from Contract Documents. Include Contractor's certification that information complies with Contract Documents.

1.05 CONTRACTOR'S CONSTRUCTION SCHEDULE: Submit a fully developed, CPM type construction schedule, within 30 days after the date of the Owner's issuance of a Notice to Proceed. Use the categories of work in the schedule to establish the categories in the "Schedule of Values".

As work progresses, mark the schedule to indicate Actual Completion.

Provide notations on the Schedule depicting the consequences on the Work from construction phasing.

Prepare the schedule on sheets of sufficient width to show data for the entire construction period.

Secure commitments for performing critical construction operations from parties involved. Coordinate each activity with other activities and show in proper sequence; include minor elements involved in the construction sequence. Indicate sequences necessary for completion of related portions.

Coordinate the Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests and other schedules.
Schedule completion in advance of the date established for Substantial Completion. Schedule Substantial Completion to allow time for the Architect's procedures necessary for certification of Substantial Completion.

Print and distribute schedule following initial approval to the Architect, Owner, subcontractors and other parties required to comply with scheduled dates. Redistribute after any approved revisions. Post copies in the temporary field office. Submit update schedule with each Pay Application.

1.06 DAILY CONSTRUCTION REPORTS: Prepare a daily construction report, recording information concerning events at the site. Submit duplicate copies to the Architect at weekly intervals. Include the following information:

List of subcontractors at the site.
Work Activities.
High and low temperatures, general weather conditions.
Accidents, stoppages, delays, shortages, losses.
Emergency procedures.
Change Orders received, implemented.
Partial Completions, occupancies.
Substantial Completions authorized.
Other relevant dates.

1.07 SUBMITTALS: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit 4 sets plus the number of sets required by the Contractor; maximum eight (8) sets. The Architect will retain four sets and return the others marked with the action taken. **(Note: Architect will mark only one (1) set for return to the Contractor with action taken and/or modifications required.)** Maintain Sample sets at the Project site, for quality comparisons throughout construction phase.

Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

1.08 ARCHITECT'S ACTION: Except for submittals for record, information or similar purposes, where action and return is required, the Architect will review each submittal, mark to indicate action taken, and return. Compliance with specified characteristics is the Contractor's responsibility.

Action Stamp: The Architect will stamp each submittal with a self-explanatory action stamp. The stamp will be appropriately marked to indicate action taken.

1.09 DISTRIBUTION: Furnish copies of final submittal to installers, and others required for performance of construction activities. Show distribution on transmittal forms. Do not proceed with installation until an applicable copy of Product Data is in the installer's possession. Do not permit use of unmarked copies of Product Data in connection with construction.

1.10 SHOP DRAWINGS: Submit information, drawn to accurate scale. Submittals shall **indicate deviations from Contract Documents**. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Include the following information:

Project Name.
Location.
Suppliers Name.
Date.
Drawing No.
Specification Section Reference.
Dimensions.
Identification of products and materials included.
Compliance with specific standards.
Notation of coordination requirements.
Notation of dimensions established by field measurement.

Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2" x 11" but no larger than 24" x 36".

Initial Submittal: Submit one correctable translucent print and two blue-line print for review; the reproducible print will be returned.

Final Submittal: Submit four (4) blue or black line prints of the original submittal for use by the Architect/Engineer, Owner and Contractor.

Do not use Shop Drawings without a Architects stamp indicating action taken in connection with construction.

The Contractor shall schedule all shop drawing submittals to allow sufficient time for one initial review and two resubmittal reviews.

1.11 COORDINATION DRAWINGS are a special type of shop drawing depicting relationship and integration of different construction elements requiring coordination during fabrication or installation to fit and function as intended.

Preparation of coordination drawings is described in these Specifications under "Project Coordination" and may include components previously shown on shop drawings or product data.

Submit for integration of different construction elements. Show sequences and relationships of separate components to avoid conflicts in use of space.

1.12 PRODUCT DATA: Collect Product Data into a single submittal for each element or system. Mark each copy to show applicable choices and options. Where Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:

Manufacturer's printed recommendations.
Compliance with recognized trade association standards.
Compliance with recognized testing agency standards.
Application of testing agency labels and seals.
Notation of dimensions verified by field measurement.
Notation of coordination requirements.

A. Submittals: Submit 3 copies. The Architect will retain two and will return the others. **Note:** The Architect will mark only one set for return to the Contractor with action taken and/or modifications required. The Contractor will be responsible to see that any notes made by the Architect are made on all copies.

Unless noncompliance with Contract Documents, the submittal may serve as the final submittal.

B. Distribution: Furnish copies of final submittal to installers and others required for performance of construction activities. Show distribution on transmittal forms. Do not proceed with installation until an applicable copy of Product Data is in the installers possession.

1.13 SAMPLES: Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics, and a comparison of these characteristics between the final submittal and the component as delivered and installed. Where variations are inherent in the product, submit multiple units that show limits of the variations.

Refer to other Sections for Samples that illustrate details of assembly, fabrication techniques, workmanship, connections, operation and similar characteristics.

Refer to other Sections for Samples to be returned for incorporation in the Work. Such Samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.

Sample sets may be used to obtain final acceptance of the construction associated with each set.

Preliminary submittals: Where Samples are for selection of characteristics from a range of choices, submit a full set of choices for the product. Preliminary submittals will be reviewed and returned indicating selection and other action.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION (Not Applicable).

PART 4 - SCHEDULES

4.01 The following Submittal Schedule is for ***REFERENCE ONLY***. Items listed may or may not be required for this project.

SUBMITTAL SCHEDULE

SECTION	TYPE OF SUBMITTAL	DESCRIPTION
00610 - Performance Bond and Labor and Material Bond	Bonds	Performance Bond, Labor and Material Bond
00840 - List of Subcontractors	List	Subcontractors, Suppliers, Principal Manufactures
01027 - Application for Payment	Schedule of Values Application for Payment	Initial and Subsequent Initial and Subsequent
01040 - Project Coordination	List	Staff Names
01300 - Submittals	Construction Schedule Submittal Schedule Daily Construction Reports	
02070 - Selective Demolition	Schedule	Demolition Schedule
02280 - Termite Control	Warranty	Soil Treatment Solution
02510 - Concrete Paving	Shop Drawings	Walkways/Curb Layout
031119 - Concrete	Shop Drawings	Formwork Reinforce Placement/Schedule
042000 - Unit Masonry	Product Data Field Mock-Up	Grout/Mortar, Joint Reinforcement Masonry Wall
051200 – Structural Steel	Product Data Shop Drawings Certification	Assembly and Installation Instructions Metal Fabrication Metal and Steel Test Results
055000 - Metal Fabrication	Product Data Shop Drawings Certification	Assembly and Installation Instructions Metal Fabrication Metal and Steel Test Results
06192 - Prefabricated Wood Trusses	Shop Drawings	Sizes, Design Information
061000 - Rough Carpentry	Product Data Samples	
064023 - Interior Architectural Woodwork	Shop Drawings Samples	Casework Plastic Laminate, Hardware
071326 - Sheet Membrane Waterproofing	Product Data	Technical Data and Recommendations
072116 - Building Insulation	Product Data	Each Type of Insulation Required
076200 - Flashing and Sheet Metal	Product Data Guarantee	Roofing and Flashing Materials Maintenance Guarantee
074113 – Preformed Walls and Roof	Product Data	

SUBMITTAL SCHEDULE

SECTION	TYPE OF SUBMITTAL	DESCRIPTION
Panels	Samples	Manufacturer=s Information
079200 - Joint Sealers	Product Data Samples Certification	Each Type Sealants Product Test Reports
081113 - Steel Door and Frames	Shop Drawings Schedules	Frames
081416 - Flush Wood Doors	Product Data Shop Drawings Schedule	Wood Doors
083323 – Overhead Doors	Product Data	Doors
087100 - Finish Hardware	Schedule Product Hardware	Hardware
088000 - Glass and Glazing	Product Data Samples	Glass/Glazing Materials Glass
088000 - Glass and Glazing	Product Data Samples	Glass/Glazing Materials Glass
093000 - Tile	Product Data Samples	Tile and Grout Tile
095100 - Acoustical Ceilings	Product Data Samples	Panel/Suspension System
095100 - Acoustical Ceilings	Product Data Samples	Panel/Suspension System
096513 - Resilient Flooring	Product Data Sample Maintenance Instructions Replacement Material	Tile and Base
096816 - Carpeting	Product Data Samples Seaming Plan	Each Carpet Type Each Carpet Type All Carpet Spaces
099100 - Painting	Product Data Samples Mock-Up	Paint Paint Field Application
099100 - Painting	Product Data Samples Mock-Up	Paint Paint Field Application
101000 - Markerboards, Chalkboards, Tackboards	Product Data Samples	Each Type of Visual Board Tackboard Fabric
102800 - Toilet Partitions	Product Data Shop Drawings Samples	Toilet Partitions Fabrication of Partitions Color and Solid Plastic Selection
102800 - Toilet Partitions	Product Data Shop Drawings Samples	Toilet Partitions Fabrication of Partitions Color and Solid Plastic Selection
101440 - Signage	Product Data Schedule Shop Drawings	Signage Sign Layout
105050 - Metal Lockers	Product Data Shop Drawings	Lockers Layout and Details

SUBMITTAL SCHEDULE		
SECTION	**TYPE OF SUBMITTAL**	**DESCRIPTION**
	Samples	Color and Finish Selection
102800 - Toilet and Bath Accessories	Product Data	Accessories
109900 - Miscellaneous Specialties	Product Data Shop Drawings	Each Item Installation Instructions Fabrication Details (where required)
111320 - Project Screens and T.V. Mounting Brackets	Product Data Shop Drawings	Screens and Monitor Mounts Installation Details
111320 - Project Screens and T.V. Mounting Brackets	Product Data Shop Drawings	Screens and Monitor Mounts Installation Details
15010 - Mechanical General Provisions		
15400 - Plumbing		
16010 - Electrical General Provisions		

NOTE: Additional Submittals may be requested by the Architect/Engineer.

END OF SECTION 013300

SECTION 014000 - QUALITY CONTROL SERVICES

PART 1 - GENERAL

1.01 GENERAL: This Section specifies requirements for quality control services. Quality control services include inspections and tests performed by independent agencies, governing authorities, as well as the Contractor.

1.02 CONTRACTOR RESPONSIBILITIES: Provide inspections and tests specified or required by governing authorities, except where they are the Owner's responsibility, or are provided by another entity; services include those specified to be performed by an independent agency not by the Contractor. Costs are included in the Contract.

The Contractor shall engage and pay for services of an independent agency, acceptable to the Architect/Engineer to perform inspections and tests specified as Quality Control services.

Retesting: The Contractor is responsible for retesting where results prove unsatisfactory and do not indicate compliance with Contract Documents, regardless of whether the original test was the Contractor's responsibility.

Cost of retesting construction revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original construction.

Associated Services: The Contractor shall cooperate with agencies performing inspections or tests and provide auxiliary services as requested. Notify the agency in advance of operations to permit assignment of personnel. Auxiliary services include but are not limited to:

Provide access to the Work and furnish incidental labor and facilities necessary to facilitate inspections and tests.

Take representative samples of materials that require testing or assist the agency in taking samples.

Provide facilities for storage and curing of samples, and deliver samples to testing laboratories. Provide a preliminary design mix proposed for use for material mixes that require control by the testing agency.

Provide security and protection of samples and test equipment at the Project site.

1.03 DUTIES OF THE TESTING AGENCY: The agency engaged to perform inspections and testing of materials and construction shall cooperate with the Architect and Contractor in performance of its duties, and provide qualified personnel to perform inspections and tests.

The agency shall notify the Architect and Contractor promptly of deficiencies observed during performance of its services.

The agency is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents, or approve or accept any portion of the Work.

1.04 COORDINATION: The Contractor and each agency engaged to perform inspections and tests shall coordinate the sequence of activities to accommodate services with a minimum of delay. The Contractor and each agency shall coordinate activities to avoid removing and replacing construction to accommodate inspections and tests.

The Contractor is responsible for scheduling inspections, tests, taking samples and similar activities.

1.05 SUBMITTALS: The testing agency shall submit a certified written report of each inspection and test to the Architect, in duplicate, unless the Contractor is responsible for the service. If the Contractor is responsible, submit a certified written report of each inspection and test through the Contractor, in triplicate, who shall send two (2) copies to the Architect.

Submit additional copies of each report to the governing authority, when the authority so directs.

Report Data: Written reports of each inspection or test shall include, but not be limited to:

Date of issue.
Project title and number.
Name, address and telephone number of testing agency.
Testing agency qualifications.
Dates and locations of samples and tests or inspections.
Names of individuals making the inspection or test.
Designation of the Work and test method including applicable industry standards and/or codes.
Identification of product and Specification Section.
Complete inspection or test data.
Test results and an interpretations of test results.
Ambient conditions at the time of sample-taking and testing.
Comments or professional opinion as to whether inspected or tested Work complies with Contract Document requirements.
Name and signature of laboratory inspector or person reviewing results.
Recommendations on retesting.

1.06 QUALIFICATION FOR SERVICE AGENCIES: Engage inspection and testing agencies which are prequalified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and specialize in the types of inspections and tests to be performed.

Each inspection and testing agency engaged shall be authorized to operate in the State in which the Project is located.

1.07 REPAIR AND PROTECTION: Upon completion of inspection and testing repair damaged construction and restore substrates and finishes to eliminate deficiencies. Comply with requirements for "Cutting and Patching."

Protect construction exposed by or for quality control service activities, and protect repaired construction.

The Contractor is responsible for repair and protection regardless of the assignment of responsibility for inspection and testing.

END OF SECTION 014000

SECTION 014200 - DEFINITIONS AND STANDARDS

PART 1 - GENERAL

1.01 DEFINITIONS: Basic Contract definitions are included in the General Conditions.

A. Indicated refers to graphic representations, notes or schedules on Drawings, or Paragraphs or Schedules in Specifications, and similar requirements in Contract Documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used, it is to help locate the reference.

B. Directed: Terms such as "directed", "requested", "authorized", "selected", "approved", "required", and "permitted" mean "directed by the Architect", "requested by the Architect", and similar phrases. No implied meaning shall be interpreted to extend the Architect's responsibility into the Contractor's supervision of construction.

C. Approve, used in conjunction with action on submittals, applications, and requests, is limited to the Architect's duties and responsibilities stated in General and Supplementary Conditions. Approval shall not release the Contractor from responsibility to fulfill Contract requirements.

D. Regulation includes laws, ordinances, statutes and lawful orders issued by authorities having jurisdiction, and rules, conventions and agreements within the construction industry that control performance of the Work, whether lawfully imposed by authorities having jurisdiction or not.

E. Furnish means "supply and deliver, ready for unloading, unpacking, assembly, installation, and similar operations."

F. Install describes operations at the site including "unloading, unpacking, assembly, erection, anchoring, applying, working to dimension, protecting, cleaning and similar operations."

G. Provide means "furnish and install, complete and ready for use."

H. Installer: "Installer" is the Contractor or an entity engaged by the Contractor, as an employee, subcontractor or sub- subcontractor for performance of a particular construction activity, including installation, erection, application and similar operations. Installers are required to be experienced in the operations they are engaged to perform. The term "experienced," when used with "Installer" means having a minimum of 5 previous Projects similar in size to this Project, and familiar with the precautions required, and with requirements of the authority having jurisdiction.

I. Project Site is the space available for construction activities, either exclusively or with others performing other construction on the Project. The extent of the Project Site is shown on the Drawings, and may or may not be identical with the description of the land upon which the Project is to be built.

J. Testing Laboratories: A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, at the Project Site or elsewhere, and to report on, and, if required, to interpret, results of those inspections or tests.

1.02 SPECIFICATION FORMAT: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's 16-Division format and MASTERFORMAT numbering system. Language used in the Specifications is the abbreviated type. Implied words and meanings will be appropriately interpreted. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and where the context so indicates.

Imperative language is used generally. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the text subjective language is used to describe responsibilities which must be fulfilled indirectly by the Contractor, or by others when so noted. The words "shall be" shall be included by inference wherever a colon (:) is used within a sentence or phrase.

1.03 ASSIGNMENT OF SPECIALISTS: Certain construction activities shall be performed by specialists,

recognized experts in the operations to be performed. Specialists must be engaged for those activities, and assignments are requirements over which the Contractor has no option. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.

1.04 DRAWING SYMBOLS: Where not otherwise noted, symbols are defined by "Architectural Graphic Standards", published by John Wiley & Sons, Inc., eighth edition.

1.05 MECHANICAL/ELECTRICAL DRAWINGS: Graphic symbols for mechanical and electrical Drawings are defined in a graphic symbol legend on the Construction Documents and are aligned with symbols recommended by ASHRAE. Where appropriate, they are supplemented by symbols recommended by technical associations. Refer instances of uncertainty to the Architect for clarification before proceeding.

1.06 APPLICABILITY OF STANDARDS: Except where the Contract Documents include more stringent requirements, applicable industry standards have the same force and effect as if bound or copied into Contract Documents. Such standards are part of the Contract Documents by reference. Individual Sections indicate standards the Contractor must keep available at the Project Site.

1.07 PUBLICATION DATES: Where the date of issue of a referenced standard is not specified, comply with the standard in effect as of date of Contract Documents.

Updated Standards: Submit a Change Order proposal where an applicable standard has been revised and reissued after the date of the Contract Documents and before performance of Work. The Architect will decide whether to issue a Change Order to proceed with the updated standard.

1.08 CONFLICTING REQUIREMENTS: Where compliance with two or more standards that establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced. Refer uncertainties as to which quality level is more stringent to the Architect for a decision before proceeding.

Minimum Quantities or Quality Levels: The quantity or quality shown or specified is the minimum to be provided or performed. Indicated values are minimum or maximum values, as appropriate for the requirements. Refer instances of uncertainty to the Architect for decision before proceeding.

1.09 COPIES OF STANDARDS: Each entity engaged on the Project shall be familiar with standards applicable to that activity. Copies of applicable standards are not bound with the Contract Documents.

Where copies of standards are needed for performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.

Although copies of standards needed for enforcement of requirements may be part of submittals, the Architect reserves the right to require submittal of additional copies for enforcement of requirements.

1.10 ABBREVIATIONS AND NAMES: Where acronyms or abbreviations are used in the Specifications or other Contract Documents they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction or other entity applicable. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.

1.11 PERMITS, LICENSES, AND CERTIFICATES: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

END OF SECTION 014200

SECTION 015000 - TEMPORARY FACILITIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS: Drawings and General Provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this section.

1.02 SUMMARY: This Section specifies temporary services and facilities, including utilities, construction and support facilities, security and protection. Provide facilities ready for use. Maintain, expand and modify as needed. Remove when no longer needed, or replaced by permanent facilities.

Temporary facilities required include but are not limited to water service and distribution, temporary electric power and light, storage sheds, sanitary facilities and temporary enclosures, barricades, warning signs, lights and environmental protection.

1.03 USE CHARGES: Cost or use charges for temporary facilities are not chargeable to the Owner or Architect, and will not be accepted as a basis of claims for a Change Order.

1.04 REGULATIONS: Comply with all applicable local, state, and federal laws and regulations.

1.05 STANDARDS: Comply with NFPA Code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and NECA Electrical Design Library "Temporary Electrical Facilities@ and OSHA.

A. Refer to "Guidelines for Bid Conditions for Temporary Job Utilities and Services", prepared by AGC and ASC.

B. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).

1.06 INSPECTIONS: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.07 CONDITIONS OF USE: Keep facilities clean and neat. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload, or permit facilities to interfere with progress. Do not allow hazardous, dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.

1.08 MATERIALS AND EQUIPMENT: Provide new materials and equipment; if acceptable to the Architect, undamaged previously used materials and equipment in serviceable condition may be used. Provide materials and equipment suitable for the use intended.

A. Tarpaulins: Waterproof, fire-resistant, UL labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures provide translucent nylon reinforced laminated polyethylene or polyvinyl chloride fire retardant tarpaulins.

B. Temporary / Construction Fencing: 11-gage, galvanized 2-inch, chain link fabric fencing 6-feet high with galvanized steel pipe posts, 1-1/2" I.D. for line posts and 2-1/2" I.D. for corner posts.

1.09 TEMPORARY UTILITY INSTALLATION: Engage the local utility company to install temporary service or connect to existing service. Arrange for a time when service can be interrupted to make connections. Provide adequate capacity at each stage of construction. Combined use of temporary and existing power and water is anticipated for this project.

A. Water Service: Install water service and distribution piping of sizes and pressures adequate for construction. Sterilize water piping prior to use.

B. Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics. Include meters, transformers,

overload protected disconnects, automatic ground-fault interrupters and main distribution switch gear. Install service underground, if possible.

1. Power Distribution System: Install wiring overhead, and rise vertically where least exposed to damage.

2. Electrical Outlets: Provide properly configured NEMA polarized outlets. Provide outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.

3. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to traffic.

C. Lighting: Provide temporary lighting with local switching to fulfill security requirements and provide illumination for construction operations and traffic conditions.

1. Lamps and Light Fixtures: Provide general service incandescent lamps. Provide guard cages or tempered glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.

D. Telephones: Provide temporary telephone service for personnel engaged in construction. Post a list of important telephone numbers.

E. Sewers and Drainage: If sewers are available, provide temporary connections to remove effluent. If sewers are not available or cannot be used, provide drainage ditches, or similar facilities.

Filter out construction debris and other contaminants that might clog sewers or pollute waterways before discharge. Provide earthen embankments and similar barriers in and around excavations and subgrade construction to prevent flooding by runoff of storm water from heavy rains. **Comply with all City and County requirements for storm water runoff.**

1.10 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION: Locate for easy access. Maintain facilities until Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, if acceptable to the Owner.

A. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads where they do not interfere with construction activities.
Dust Control: If, in the opinion of the Owner or Architect it is necessary to control dust during construction period, the Contractor shall furnish and spread water or calcium chloride at points where dust is a nuisance or as directed by the Architect, at no additional cost to the Owner.

B. Field Offices: Provide field offices of size required to accommodate personnel, including telephone and fax line. In addition provide a 3' x 5' desk, table and stool for use by the Architect. Field office is to be provided with air conditioning. Keep clean and orderly for use for small progress meetings.

C. Storage and Fabrication Sheds: Install sheds, equipped to accommodate materials and/or existing equipment involved. Sheds may be open shelters.

D. Sanitary facilities include temporary toilets and drinking water fixtures. Comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures. Install where facilities will best serve the Project. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.

E. Toilets: Install self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material. Use of pit-type privies will not be permitted. Under no circumstances will construction personnel use existing toilet facilities.

F. Drinking Water Facilities: Provide containerized tap-dispenser type drinking water units.

G. Dewatering Facilities and Drains: For temporary drainage and dewatering operations not associated with construction, comply with requirements of applicable Division-2 Sections. Where feasible, utilize the same facilities. Maintain excavations and construction free of water.

H. Temporary Enclosures: Provide temporary enclosure for protection of construction from exposure, foul weather, other construction operations and similar activities. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions.

Install tarpaulins securely, with incombustible framing. Close openings through floor or roof decks and horizontal surfaces with load-bearing construction.

I. Collection and Disposal of Waste: Collect waste daily. Comply with NFPA 241 for removal of combustible waste. Enforce requirements strictly. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose in a lawful manner.

J. Project Identification and Temporary Signs: Prepare project identification signs on grade B-B High Density Overlay Plywood; install where indicated by Architect. Support on framing of preservative treated wood or steel. Engage an experienced sign painter to apply graphics. Refer to project identification sign drawing at end of this section (Attachment 01500-1).

1.11 SECURITY AND PROTECTION FACILITIES INSTALLATION: Except for use of permanent fire protection as soon as available, do not change from use of temporary security and protection facilities to permanent facilities until Substantial Completion.

A. Fire Protection: Until fire protection is supplied by permanent facilities, install and maintain temporary fire protection of types needed to protect against predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers," and NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations." Consideration should be given to existing fire hydrant locations.

B. Fire Extinguishers: Provide hand-carried, portable UL-rated, class "A" fire extinguishers for temporary offices and similar spaces. In other locations provide hand-carried, portable, UL-rated, class "ABC" dry chemical extinguishers. Locate fire extinguishers where effective for the intended purpose.

Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.

Store combustible materials in containers in fire-safe locations.

Provide supervision of welding operations, combustion type temporary heating units, and sources of fire ignition.

C. Barricades, Warning Signs and Lights: Comply with standards and code requirements for erection of barricades. Paint appropriate warning signs to inform personnel and the public of the hazard being protected against. Where needed provide lighting, including flashing lights. Temporary, portable or metal barricades and structures shall be constructed over all open trench areas intersecting student walkways. Walkway structures over trenches shall be of sturdy construction with handrails and be handicap accessible.

D. Security Enclosure and Lockup: Install temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism and theft. Where materials and equipment must be stored, provide a secure lockup.

E. Enclosure Fence: When excavation begins, install an enclosure fence with lockable entrance gates where indicated, or if not indicated, enclose the entire site or the portion sufficient to accommodate operations. Provide open-mesh, chain-link fencing with posts set in a compacted mixture of gravel and earth.

F. Environmental Protection: Operate temporary facilities and conduct construction by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated or polluted. Restrict use of noise making tools and equipment to hours that will minimize complaints.

1.12 OPERATION: Enforce strict discipline in use of temporary facilities. Limit availability to intended use to minimize abuse. Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and the elements.

Maintain operation of enclosures, heating, cooling, humidity control, ventilation and similar facilities on a 24-hour day basis to achieve indicated results and to avoid damage.

Prevent piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

1.13 TERMINATION AND REMOVAL: Remove each facility when the need has ended, or replaced by a permanent facility, or no later than Substantial Completion. Complete or restore construction delayed because of interference with the facility. Repair damaged Work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.

Temporary facilities are property of the Contractor.

At Substantial Completion, renovate permanent facilities used during the construction period, including but not limited to:

Replace air filters and clean inside of ductwork and housings.
Replace worn parts and parts subject to unusual operating conditions.
Replace burned out lamps.

END OF SECTION 015000

SECTION 015500 - MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.01 DEFINITIONS

A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well-recognized meanings in the construction industry.

B. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

C. "Named Products" are items identified by the manufacturer's product name, including make or model number or other designation, shown or listed in the manufacturer's published product literature, that is current as of the date of the Contract Documents.

D. "Materials" are products substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.

E. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.

1.02 QUALITY ASSURANCE

A. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source.

B. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

C. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products that will be exposed to view in occupied spaces or on the exterior.

D. Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous.

E. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:

Name of product and manufacturer.

Model and serial number.

Capacity.

Speed.

Ratings.

1.03 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.

B. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses; and to prevent overcrowding of construction spaces.

C. Deliver products to the site in undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

D. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

E. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.

F. All new installed materials shall be sealed from moisture penetration at the end of each day.

PART 2 - PRODUCTS

2.01 PRODUCT SELECTION

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, new at the time of installation. Discontinued items will not be accepted.

1. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.

2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

B. Product Selection Procedures: The Contract Documents and governing regulations govern product selection. Procedures governing product selection include the following:

1. Semiproprietary Specification Requirements: Where Specifications name two or more products or manufacturers, provide one of the products indicated.

   Where Specifications specify products or manufacturers by name, accompanied by the term "**or equal**" or "**or approved equal**", comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

2. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.

3. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated.

   Manufacturer's recommendations may be contained in published product literature or by the manufacturer's certification of performance.

4. Compliance with Standards, Codes, and Regulations: Where Specifications only require compliance with an imposed code, standard, or regulation, select a product that complies with the standards, codes, or regulations specified.

5. Visual Matching: Where Specifications require matching an established Sample (match existing), the Architect's decision will be final on whether a proposed product matches satisfactorily.

   Where no product is available within the specified category, matches satisfactorily and complies with other specified requirements; comply with provisions of the Contract Documents concerning "substitutions" (Section 01631 - Product Substitutions) for selection of a matching product in another product category.

6. Visual Selection: Where specified product requirements include the phrase "... as selected from manufacturer's standard colors, patterns, textures ..." or a similar phrase, select a product and manufacturer that complies with specified requirements. The Architect will select the color, pattern, and texture from the product line selected. Any selections within the product line which are unavailable, no longer make or superseded by another should be so marked.

PART 3 - EXECUTION

3.01 INSTALLATION OF PRODUCTS

A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.

B. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 015500

SECTION 017700 - PROJECT CLOSEOUT

PART 1 - GENERAL

1.01 SUBSTANTIAL COMPLETION: (See Section 00700 - General Conditions, Section 9.8).Before requesting inspection for certification of Substantial Completion, complete the following:

A. Change-over permanent locks and transmit keys to the Owner.

B. Complete start-up testing of systems, and instruction of the Owner's personnel. Remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.

C. Complete final clean up. Touch-up and repair and restore marred exposed finishes.

1.02 INSPECTION PROCEDURES: When the Contractor considers the work substantially complete, he shall prepare and submit a comprehensive list of items to be completed and/or corrected to the Architect. The Contractor shall proceed to promptly complete and/or correct all items on the list.

A. Upon receipt of Contractor's list, the Architect will make an inspection or inform the Contractor of work to be completed before an inspection will be conducted.

B. When the work is substantially complete, the Architect will prepare the Certificate of Substantial Completion which shall establish the date of Substantial Completion.

C. Results of the completed inspection will form the basis of requirements for final acceptance, **including any items discovered at a later date considered necessary to be completed for final**.

1.03 FINAL ACCEPTANCE: (See General Conditions Section 9.10). Before requesting inspection for certification of final acceptance and final payment, complete the following:

A. Submit a copy of the final inspection list stating that each item has been completed or otherwise resolved for acceptance.

B. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.

C. Submit record drawings, maintenance manuals, damage or settlement survey, and similar record information.

D. Refer to Section 012900 - Application For Payment - Final Payment Application.

E. Provide the Architect with “Final Statement of Compliance”, for the Owner.

1.04 REINSPECTION PROCEDURE (if required): The Architect will re-inspect the Work upon receipt of notice that the Work has been completed, except items whose completion has been delayed because of circumstances acceptable to the Architect.

A. Upon completion of re-inspection, the Architect will then prepare a certificate of final acceptance, or advise the Contractor of work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance. If necessary, re-inspection will be repeated.

1.05 RECORD DRAWINGS: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark-up these drawings to show the actual installation where installation varies from that shown originally. Mark whichever drawing is most capable of showing conditions accurately. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

A. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover.

B. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and lost. Provide access to Project Record Documents for Architect=s reference during normal working hours.

C. Upon completion of the Work, submit Record Drawings (red-line field as-builts) to the Architect for Owner's records.

1.06 PROJECT RECORD SPECIFICATIONS: Maintain one copy of the Project Manual, including addenda. Mark-up to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot be readily discerned later by direct observation. Note related record drawing information and Product Data.

A. Upon completion of the Work, submit record Drawings and Specifications to the Architect for the Owner's records.

1.07 PROJECT AS-BUILT DRAWINGS: The Contractor shall, at his own expense, hire Architect of Record (CRA) to prepare as-built drawings. The Contractor shall provide to the Architect record drawings and record specifications. The Contractor is solely responsible for the content of the record drawings and the as-built documents. As-built drawings shall comply with the following:

A. Show the actual locations of all components, including depth below grade, along with any changes and/or modifications to the Contract Drawings.

B. All dimensions and elevations, including invert elevations, shall be verified by field measurements.

C. The Contractor is cautioned to make all necessary measurements and elevations during installation to accurately locate all concealed items.

D. As-Built Survey: Contractor shall provide signed and sealed As-Built Survey of existing grades and structures as required by authorities having jurisdictions.

1.08 MAINTENANCE MANUALS: Organize maintenance data into sets of manageable size. Bind in individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark identification on front and spine of each binder. Include the following information:

Emergency instructions.
Copies of warranties.
Recommended "turn around" cycles.
Shop Drawings and Product Data.
Spare parts list.
Wiring diagrams.
Inspection procedures.
Fixture lamping schedule.

1.09 OPERATING AND MAINTENANCE INSTRUCTIONS: Arrange for the installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. Include a detailed review of the following:

Maintenance manuals.
Tools.
Control sequences.
Warranties and bonds.
Spar parts and materials.
Lubricants.
Hazards.
Maintenance agreements and similar continuing commitments.

As part of instruction for operating equipment, demonstrate the following procedures:

Start-up and shutdown.
Noise and vibration adjustments.
Emergency operations.
Safety procedures.

All operation and training sessions shall be video taped and two (2) copies provided to Owner. Verify with Owner the appropriate format of taping that should be used.

1.10 FINAL CLEANING: Employ experienced workers for final cleaning. Clean each surface to the condition expected in a commercial building cleaning and maintenance program. Complete the following, as a minimum before requesting inspection for certification of Substantial Completion:

A. Remove labels that are not permanent labels.

B. Clean transparent materials. Remove glazing compound. Replace chipped or broken glass.

C. Clean exposed hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean.

D. Vacuum carpeted surfaces.

E. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

F. Clean the site of rubbish, litter and other foreign substances. Sweep paved areas; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth even-textured surface.

1.11 REMOVAL OF PROTECTION: Remove temporary protection and facilities.

1.12 COMPLIANCE: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Remove waste materials from the site and dispose of in a lawful manner.

END OF SECTION 017700

SECTION 017800 - WARRANTIES AND BONDS

PART 1 - GENERAL

1.01 STANDARD PRODUCT WARRANTIES are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner. Note: All Standard Product Warranties are to be provided.

1.02 SPECIAL WARRANTIES are written warranties required by or incorporated in Contract Documents, to extend time limits provided by standard warranties or to provide greater rights for the Owner. Refer to the General Conditions for terms of the Contractor's special warranty of workmanship and materials.

A. Requirements for warranties for products and installations that are specified to be warranted, are included in the individual Sections of Divisions-2 through -16.

1.03 DISCLAIMERS AND LIMITATIONS: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and Subcontractors required to countersign special warranties with the Contractor.

1.04 RELATED DAMAGES AND LOSSES: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

1.05 REINSTATEMENT OF WARRANTY: When Work covered by a warranty has failed and been corrected, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

1.06 REPLACEMENT COST: On determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through part of its useful service life.

1.07 OWNER'S RECOURSE: Written warranties made to the Owner are in addition to implied warranties, and shall not limit duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.

A. Rejection of Warranties: The Owner reserves the right to reject warranties and limit selections to products with warranties not in conflict with requirements of the Contract Documents. The Owner reserves the right to refuse to accept Work where a special warranty, or similar commitment is required, until evidence is presented that entities required to countersign commitments are willing to do so.

1.08 SUBMIT WRITTEN WARRANTIES to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion, submit written warranties on the Architect's request.

A. When a designated portion of the Work is completed and occupied or used, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within fifteen days of completion of that designated portion of the Work.

B. When a special warranty is to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner through the Architect for approval prior to final execution.

C. Refer to individual Sections of Divisions-2 through -16 for specific content, and particular requirements for submittal of special warranties.

D. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.

E. Provide heavy paper dividers with celluloid covered tabs for each warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address and telephone number of the installer.

F. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS", the Project title or name, and the name of the Contractor.

G. When operating and maintenance manuals are required for warranted construction, provide additional copies of each warranty, as necessary, for inclusion in each required manual.

END OF SECTION 017800

SECTION 023000 - GEOTECHNICAL DATA

PART 1 - GENERAL

1.01 Subsurface soil explorations were conducted at the site by:

Southern Earth Sciences
2467 Centerville Road
Tallahassee, FL 32308

1.02 INTERPRETATION:

Geotechnical Data is provided for the information and the convenience of the Bidders. The Owner and the Architect/Engineer disclaim any responsibility for the accuracy, true location and extent of the Geotechnical Data that has been prepared by others. They further disclaim responsibility for interpretation of that data by Bidders, as in projecting soil-bearing values, rock profiles, soil stability and the presence, level and extent of underground water.

The FINDINGS AND RECOMMENDATIONS and the STRUCTURAL RECOMMENDATIONS in the report are to be utilized as the basis of design for earthwork under buildings and structures. If any design parameters conflict, between this report and the specifications, the more stringent shall be followed.

END OF SECTION 023000

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Geotechnical | Environmental | Materials Testing

Subsurface Investigation and Geotechnical Evaluation Report

WAKULLA COUNTY PUBLIC LIBRARY

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CLEMONS RUTHERFORD AND ASSOCIATES, INC.

SES Project No: T25-159
June 6, 2025

SOUTHERN EARTH SCIENCES
Geotechnical | Environmental | Materials Testing

TALLAHASSEE OFFICE
1246 Timberlane Road
Tallahassee, FL 32312
Tel: (850) 576-4652
www.soearth.com

Clemons Rutherford & Associates, Inc.
2027 Thomasville Road
Tallahassee, Florida 32303

June 6, 2025
File No.: T25-159

ATTENTION: Mr. Brian Yarbrough

SUBJECT: Subsurface Investigation and Geotechnical Evaluation Report
Wakulla County Public Library
318 Shadeville Road, Crawfordville, Wakulla Co., Florida

Dear Mr. Yarbrough:

As requested, Southern Earth Sciences, Inc. (SES) has completed the geotechnical investigation for the above-mentioned project in general accordance with Prop. No.: XT25-204 dated May 9, 2025, and email correspondence. The signed work authorization sheet was provided on May 12, 2025. This report describes our field-testing techniques, includes data obtained during the investigation, and presents our soil-related design and construction recommendations for site preparation, foundations, pavement, and stormwater ponds.

We appreciate the opportunity to be of service to you on this project. Should additional information be required, please do not hesitate to contact us.

Sincerely,

SOUTHERN EARTH SCIENCES, INC.

Colin Curtis

Colin Curtis, E.I.
Geotechnical Project Manager

Mark E. Wilson, P.E.
Eng. Reg. No.: 47707
State of Florida

This item has been digitally signed and sealed by Mark E. Wilson, P.E. (FL Eng. License No.: 47707) using a Digital Signature. Printed copies of this document are not considered signed and sealed and the authentication code must be verified on any electronic

Table of Contents

Appendices

SITE AND PROJECT INFORMATION

The project site is located southwest of the Wakulla County Community Center at 318 Shadeville Road on Wakulla County parcel ID: 00-00-072-000-10150-000 in Crawfordville, Florida. The **Project Site Location Plan** included in **Appendix A** shows the project site location and approximate property boundaries. At the time of our investigation, the project site was mostly a grassy field with scattered trees. As previously mentioned, the northeast section of the project site includes an active community center and associated parking lot areas and roadways that expand across the north and east boundaries of the project area.

Southern Earth Sciences, Inc. (SES) understands the intent of this project is to construct a new public library building that will be approximately 8,000 sf, with additional site improvements including asphalt parking, roadways, and two new stormwater management facilities (SWMFs).

Grading Information

According to the topographic information gathered from Google Earth, the project site area has a slight decline, generally sloping from west to east with elevations ranging from about +28' to +23'. Proposed grading information was not provided for the site improvements other than the SWMF having a proposed bottom depth of about 1 to 2 feet below existing grades. SES assumes that the building area will require minimal cut/fill (no more than 1 foot).

Structural Loading Information

The proposed library is to be a one-story, wood-framed building with Hardie-board siding. Structural loading information, provided by Mr. Brad Johnson, P.E, is anticipated to consist of maximum column and wall loads of 20 kips and 2.5 klf, respectively.

FIELD INVESTIGATIVE PROCEDURES

The test locations were established using the provided Site Plan and a handheld GPS unit with coordinates obtained from Google Earth. The **Test Location Plans** included in **Appendix A** show the approximate boring locations.

On May 20th, 2025, ten (10) Standard Penetration Test (SPT) borings were performed to depths ranging from 6 to 20 feet below existing grades within the proposed pavement, building, and SWMF areas. SPT boring information is in the form of standard penetration tests (SPTs) and small soil samples from selected depth intervals. SPT values give a general indication of soil strength, and the soil samples are used for classification purposes. The SPT borings were drilled in general accordance with ASTM D 1586 and test results are shown on the attachments included in **Appendix B**. The equipment and procedures used in the SPT borings are described in greater detail in **Appendix E**.

On June 3, 2025, two (2) Double Ring Infiltrometer (DRI) tests were performed in 1.5' deep test pits, one within each of the two proposed SWMF areas. The tests were performed in general accordance with ASTM D 3385. Test results are summarized later in this report and shown on the **Double Ring Infiltrometer Test Reports** in **Appendix D.**

LABORATORY TESTING PROCEDURES

Laboratory work consisted of physical examination of soil samples obtained. Soil samples were visually classified in the laboratory in accordance with the Unified Soil Classification System (USCS) and American Association of State Highway and Transportation Officials (AASHTO) systems. Evaluations of these samples have been used to estimate soil characteristics.

Table 1 below summarizes the laboratory classification testing quantities performed. The test results are shown on the attachments included in **Appendix B** at the depths of the tested samples and on the **Double Ring Infiltrometer Test Report** in **Appendix D**. Abbreviations for the laboratory data are in parentheses.

Table 1: Summary of Soil Classification Laboratory Testing

Laboratory Test	Test Method	Number of Tests
Moisture Content (MC)	ASTM D 2216	16
Percent Passing 200 Mesh Sieve (Fines)	ASTM D 1140	16
Organic Content (OC)	AASHTO T267	1

SUBSURFACE CONDITIONS

Beneath a thin veneer of topsoil, the site soils generally consisted of very loose to medium dense USCS slightly silty and poorly graded clean sands (AASHTO classification A-3) to approximate depths of 4 to 16 feet below existing grades. Below these soils, USCS clayey sands (AASHTO A-2-4 to A-2-6) were encountered in borings B-01, B-03, R-01, P-01, P-03, and P-04 at depths ranging from 7 to 20 feet. Notably, weight of hammer or near weight of hammer material was encountered within the depth range of 2 to 6 feet below existing grades in borings B-02 and B-04, and from 2 to 10 feet below existing grade in boring P-01. Additionally, weathered limestone was encountered at 13.5' below existing grade in boring P-03.

Groundwater was not encountered at the time of drilling. Fluctuations in the water table will occur seasonally; therefore, groundwater levels should be verified prior to construction. The Subsurface Diagram and boring log sheets included in **Appendix B** provide a more detailed description of the site soils.

In a hand auger boring performed adjacent to the DRI test locations within the proposed SWMFs, seasonal high-water table (SHWT) indicators were observed in the soil samples obtained at a depth of about 66 inches below existing grade (3.5 to 4.5 feet below the estimated pond bottom elevation). According to the NRCS's Web Soil Survey (WSS), the project site lies within Otela-Alpin fine sand (0 to 5 percent slopes), which has a reported SHWT depth of 42 to 66 inches below natural grades. A copy of the **Custom Soil Resource Report** is included in **Appendix C**.

SITE PREPARATION RECOMMENDATIONS

The following site preparation procedures are based on the assumed grading and structural information presented above in this report. These procedures are considered general recommendations throughout the site, whereas specific foundation and pavement system recommendations can be found in their respective sections later in this report.

1.) Clear/grub the surface soils within the proposed site improvement areas extending at least 5 feet beyond the proposed improvement perimeters to remove all topsoil, organics, and other deleterious materials. Any existing underground utilities and tree root systems within the proposed building area should be removed and backfilled in accordance with the recommendations below.

2.) If required, perform any cut to achieve proposed final grades.

3.) To densify the very loose and loose sands present within the proposed building area, we recommend compacting the stripped/excavated surface with a heavy vibratory roller making multiple passes in each of two (2) perpendicular directions. The effectiveness of the vibratory compaction operation in the proposed building area should be verified by performing additional SPT borings to a depth of about 10 feet below the compacted surface. If sufficient improvement has not been obtained, over-excavation of the soils beneath footings may be required to control settlement. We recommend that the top 12 inches of existing soils be compacted to a depth of at least 12 inches to 95% of the Modified Proctor (AASHTO T180) maximum dry density.

4.) Any fill required to achieve finished grades should consist of sands containing **no more than about 12%**, by dry weight, finer than the U.S. No. 200 mesh sieve. These materials are less moisture sensitive, and easier to compact, than soils with a higher fines content. Fill soils should be compacted to a density of at least 95% of the Modified Proctor maximum dry density in lifts no more than 12 inches in loose thickness. Additional fill soil recommendations for pavement area fill soils are described in the **Pavement Recommendations** section below.

5.) Laboratory moisture-density relationships (Proctors) and in-place density (compaction) tests should be performed to verify compliance with the aforementioned compaction recommendations.

FOUNDATION RECOMMENDATIONS

Our evaluation of foundation conditions has been based on the structural loading and assumed grading information provided in this report and the subsurface data obtained during our investigation. We have used correlations previously made between standard penetration resistances and foundation stabilities observed in soil conditions similar to those encountered at this site.

It is our opinion that the proposed structure may be supported upon a monolithic or conventionally designed shallow foundation system. After the site soils have been improved by vibratory compaction, or over-excavation if required, the foundation system may be designed using an allowable soil bearing pressure of up to 2,000 psf. A soil subgrade modulus of 100 pci may be used for designing the slab on grade. The above site/soil improvements are intended to reduce the anticipated total and differential settlements to less than 1.0 inch and 0.5 inches, respectively.

All footings should bear a minimum of 18 inches below outside finished grade and we recommend minimum continuous and isolated footing widths of 18 inches and 36 inches, respectively. Anticipated settlements are based on the site improvement procedures outlined above. The bottom of footing excavations should be compacted to a depth of 12 inches until they achieve at least 95% of the Modified Proctor maximum dry density.

ASPHALTIC-CONCRETE PAVEMENT RECOMMENDATIONS

The single most destructive element the pavement will be subjected to in its design lifetime is the presence of excess moisture. Therefore, pavements should be adequately sloped, and sufficient drainage provided such that excess water can run off before it can migrate into the pavement system. Sprinkler systems, if utilized in landscaped areas, should be properly installed and aimed such that they do not continually wet the paved surfaces. In addition, at the base of sloped areas where runoff may accumulate, under-drains may be necessary.

All materials and methods of placement shall be in accordance with applicable sections of the Florida Department of Transportation's "Standard Specifications for Road and Bridge Construction", current edition.

Subgrade Recommendations

The existing site soils near the assumed pavement subgrade elevations consisted of AASHTO A-3 sands, which are considered suitable for use as pavement subgrade material if they achieve an LBR value of 40, or greater. If these soils are unable to achieve the required LBR value, we recommend blending the existing subgrade soils with crushed concrete or crushed limerock base to "stabilize" the subgrade.

Where fill is required, the stripped/excavated surface should be compacted to a depth of 12 inches to at least 95% of the Modified Proctor maximum dry density. Fill should be suitable AASHTO A-3 or A-2-4 soils compacted to at least 95% of the Modified Proctor maximum dry density in lifts not exceeding 12 inches in loose thickness. The top 12 inches of pavement subgrade should achieve an LBR value of 40 and be compacted to 98% of the Modified Proctor in accordance with FDOT requirements.

Base Course Recommendations

Once the subgrade has been prepared as described, we recommend installing a base course of crushed limerock or crushed concrete with a minimum thickness of 6 inches for standard-duty asphalt pavement sections. For heavy-duty pavement areas, we recommend that the base course thickness be increased by 2 inches. The base course should be compacted to at least 98% of the Modified Proctor maximum dry density in accordance with FDOT specifications.

Asphalt Recommendations

We recommend a minimum asphalt thickness of 2.0 inches (Type SP-9.5 and/or SP-12.5) for standard-duty asphalt pavement areas. For heavy-duty pavement areas, we recommend that the asphalt thickness be increased by at least 0.5 inches. It should be noted that in FDOT's Flexible Pavement Design Manual, the minimum asphalt thickness for Types SP-9.5 and SP-12.5 are 1.0 and 1.5 inches, respectively.

We anticipate that the asphalt will be placed in multiple lifts. If construction traffic is allowed on the asphalt after the first lift, we caution that localized areas may fail and require reconstruction prior to placing the final lift of asphalt. Pavement maintenance and rehabilitation, including an overlay, may be required within the life of the pavement.

SWMF CONDITIONS

As stated previously, two (2) Double Ring Infiltrometer (DRI) tests were performed approximately 1.5 feet below existing grades within the two proposed SWMF areas. The **Test Location Plans** included in **Appendix A** show the approximate DRI test locations. The DRI and associated laboratory classification test results are summarized in the table below and included in **Appendix D**.

Table 2: Summary of DRI Testing Information

TEST ID	TEST DEPTH (FEET BELOW EXISTING GRADE)	VERTICAL INFILTRATION RATE (IN/HR)	MOISTURE CONTENT / PERCENT FINES OF SOIL AT TEST ELEVATION
DRI-01	1.5	15.9	4.2 / 6.0
DRI-02	1.5	12.3	3.0 / 7.5

Design Infiltration Rates

DRI-01, performed in slightly silty sands within the western SWMF, provided a minimum vertical saturated soil infiltration rate of 15.9 in/hr. For design purposes, we recommend applying a factor of safety of 2.0 to the tested rate, resulting in a design vertical infiltration rate of about 8.0 in/hr. Typically, a horizontal infiltration rate of 1.5 times the factored vertical infiltration rate is utilized in the design of SWMF's, resulting in a horizontal infiltration rate of about 12.5 in/hr.

DRI-02, performed in slightly silty sands within the eastern SWMF, provided a minimum vertical saturated soil infiltration rate of 12.3 in/hr. For design purposes, we recommend applying a factor of safety of 2.0 to the tested rate, resulting in a design vertical infiltration rate of about 6.1 in/hr. Typically, a horizontal infiltration rate of 1.5 times the factored vertical infiltration rate is utilized in the design of SWMF's, resulting in a horizontal infiltration rate of about 9.1 in/hr.

Note: The above design vertical infiltration rates should NOT be interpreted to be the same as the drawdown rate of the proposed SWMF.

Groundwater Mounding Note

Based on the results of boring P-01, a semi-confining layer was encountered at about 11.5 feet below existing grade. Based on the results of boring P-03, a semi-confining layer was encountered at about 7 feet below existing grade. Groundwater mounding is likely to occur above these semi-confining layers or the SHWT, when present. Therefore, a groundwater mounding analysis will be required to predict the drawdown/recovery rate of the stormwater ponds.

SWMF Construction Considerations

During construction, extreme care should be exercised to avoid compaction of the pond bottom soils. Any increase in density of the existing soils will have a significant adverse impact on the infiltration rate. Construction should be planned such that the tracks / tires of earth-moving equipment do not travel on, thus compacting, the final excavated surfaces.

ADDITIONAL TESTING

The effectiveness of the foundation and pavement systems, as well as the performance of the proposed SWMFs, will depend significantly on the proper preparation of the site soils and construction materials. In particular, as previously recommended, additional SPT borings should be performed within the proposed building area after vibratory compaction has been completed to verify that sufficient soil improvement has been achieved to limit settlement to within tolerable limits. Therefore, we recommend the owner employ Southern Earth Sciences, Inc. (SES) as the testing laboratory to perform construction testing services. If SES is not employed to provide construction testing services, we cannot accept any responsibility for conditions which deviate from those described in this geotechnical report.

GENERAL COMMENTS

This report has been prepared to aid in the evaluation of this property. It is intended for use with regard to the specific project discussed herein, and any substantial changes in the locations, structural loading or proposed grades should be brought to our attention so that we may determine how such changes may affect our conclusions and recommendations.

While the soil borings performed for this project are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local variations of the subsurface material are anticipated and may be encountered. The boring logs and related information are based on the driller's logs and visual examination of selected samples in the laboratory. Delineation between soil types shown on the logs is approximate, and soil descriptions represent our interpretation of subsurface conditions at the designated soil boring locations on the particular date drilled. Please see “Important Information about Your Geotechnical Engineering Report” published by ASFE attached in **Appendix E**.

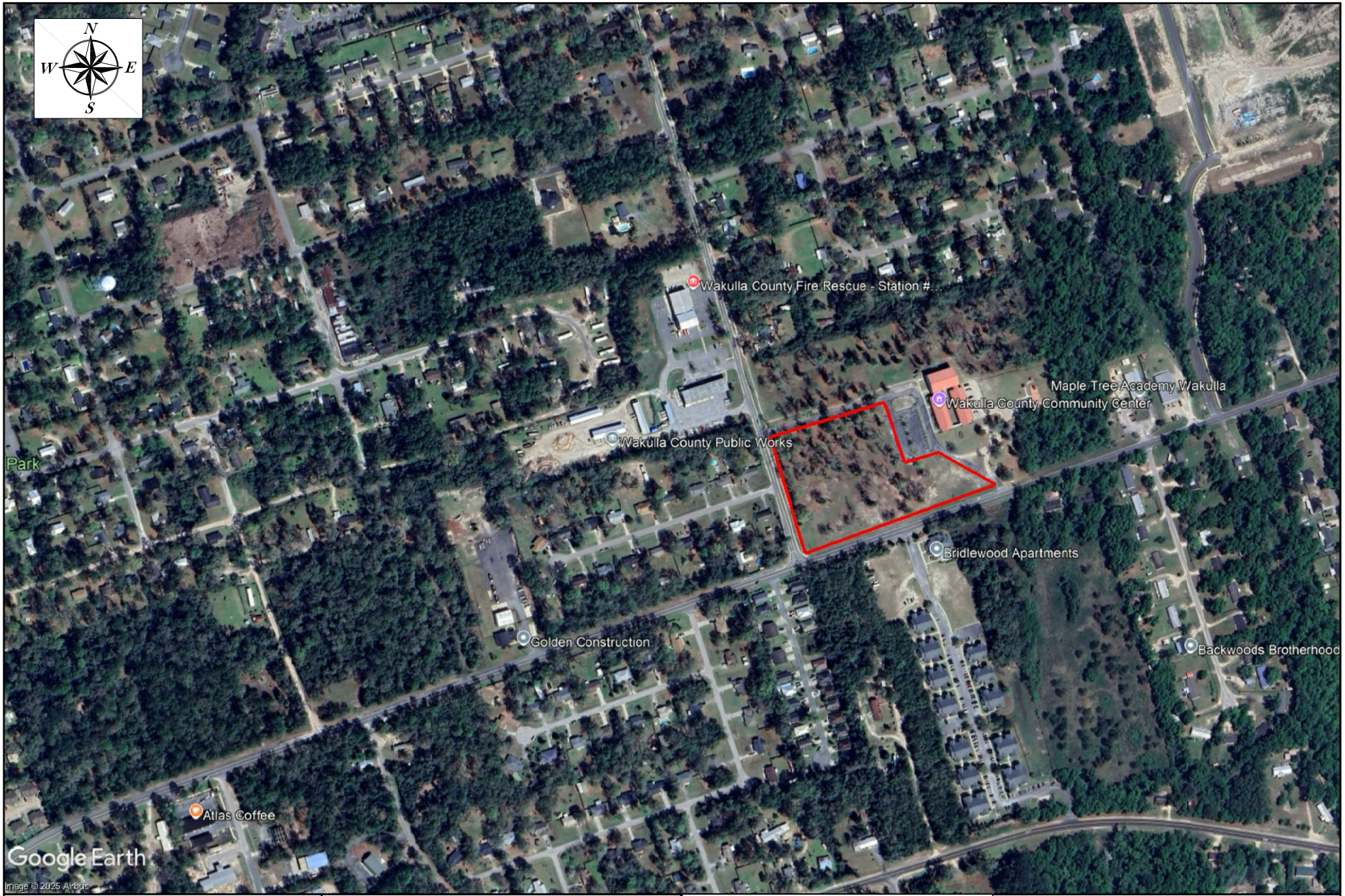
This investigation pertains to near surface soil deposits. It is not intended to include analysis / evaluation of deeper soil or rock strata where cavities and caverns may exist. This report does not address the possibility of sinkhole occurrence at the site.

The information contained in this report is for the use and benefit of the addressee identified on the first page of this report and the owner/design team/lenders associated with the project. It is not for the use or benefit of, nor may it be relied upon, by any other person or entity. The contents of this report may not be quoted in whole or in part or distributed to any person or entity other than the addressee/owner/lenders/design team without, in each case, the advance written consent of the undersigned.

END OF REPORT

APPENDIX A

PLANS



PROJECT SITE BOUNDARIES

CLEMONS RUTHERFORD & ASSOCIATES
2027 THOMASVILLE ROAD
TALLAHASSEE, FLORIDA 32308

SOUTHERN EARTH SCIENCES
Geotechnical | Environmental | Materials Testing

PROJECT SITE LOCATION PLAN
WAKULLA COUNTY PUBLIC LIBRARY
SES JOB #: T25-159

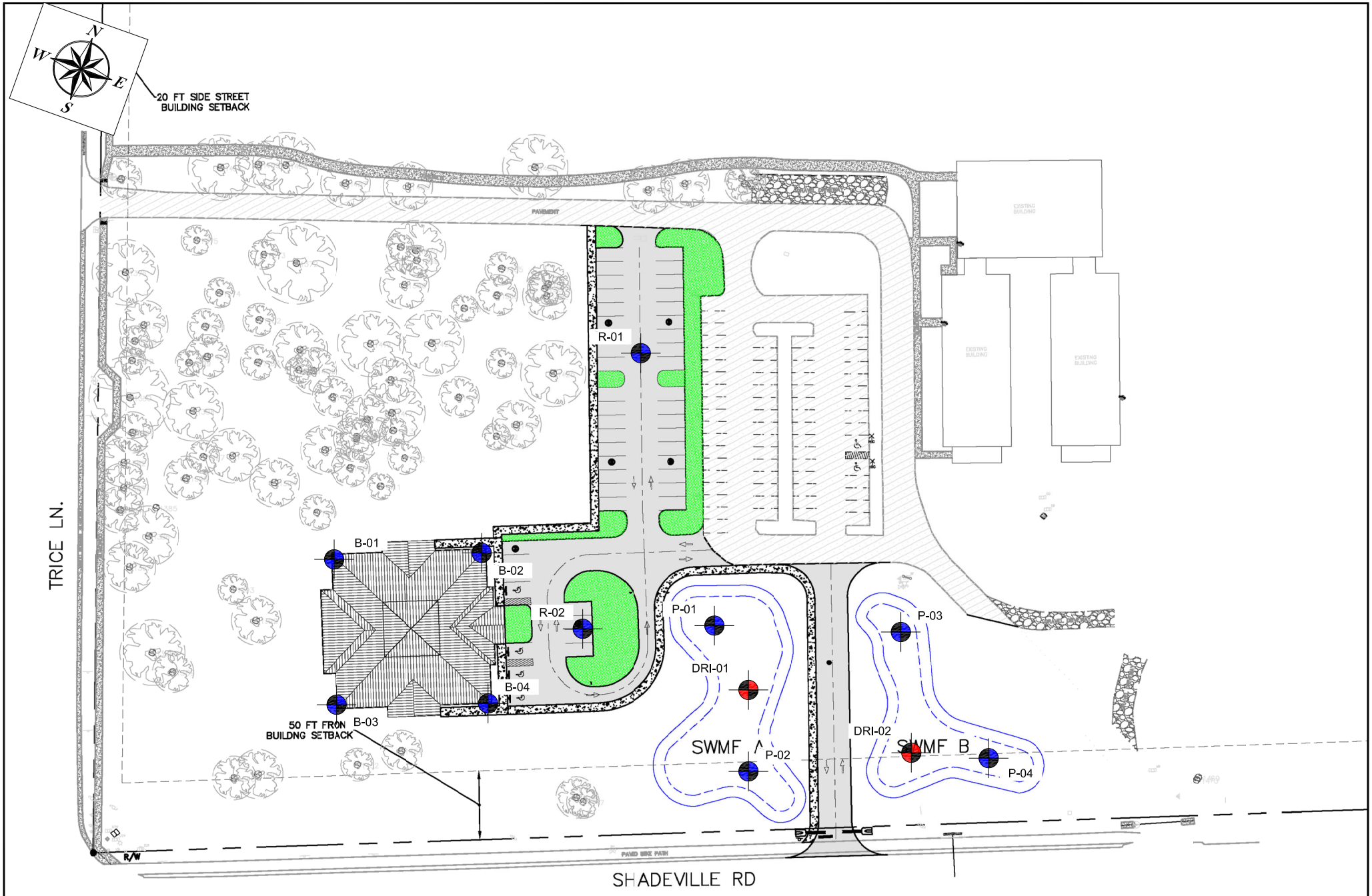
BORING LOCATION

DRI LOCATION

CLEMONS RUTHERFORD & ASSOCIATES
2027 THOMASVILLE ROAD
TALLAHASSEE, FLORIDA 32308

SOUTHERN EARTH SCIENCES
Geotechnical | Environmental | Materials Testing

TEST LOCATION PLAN - EXISTING
WAKULLA COUNTY PUBLIC LIBRARY
SES JOB #: T25--159



BORING LOCATION

DRI LOCATION

CLEMONS RUTHERFORD & ASSOCIATES
2027 THOMASVILLE ROAD
TALLAHASSEE, FLORIDA 32308

SOUTHERN EARTH SCIENCES
Geotechnical | Environmental | Materials Testing

TEST LOCATION PLAN - SITE PLAN
WAKULLA COUNTY PUBLIC LIBRARY
SES JOB #: T25-159

APPENDIX B

SUBSURFACE DIAGRAM & BORING LOG SHEETS

Southern Earth Sciences
1246 Timberlane Road
Tallahassee, Florida 32312
Telephone: (850) 576-4652

SUBSURFACE DIAGRAM
Building and Pavement Borings

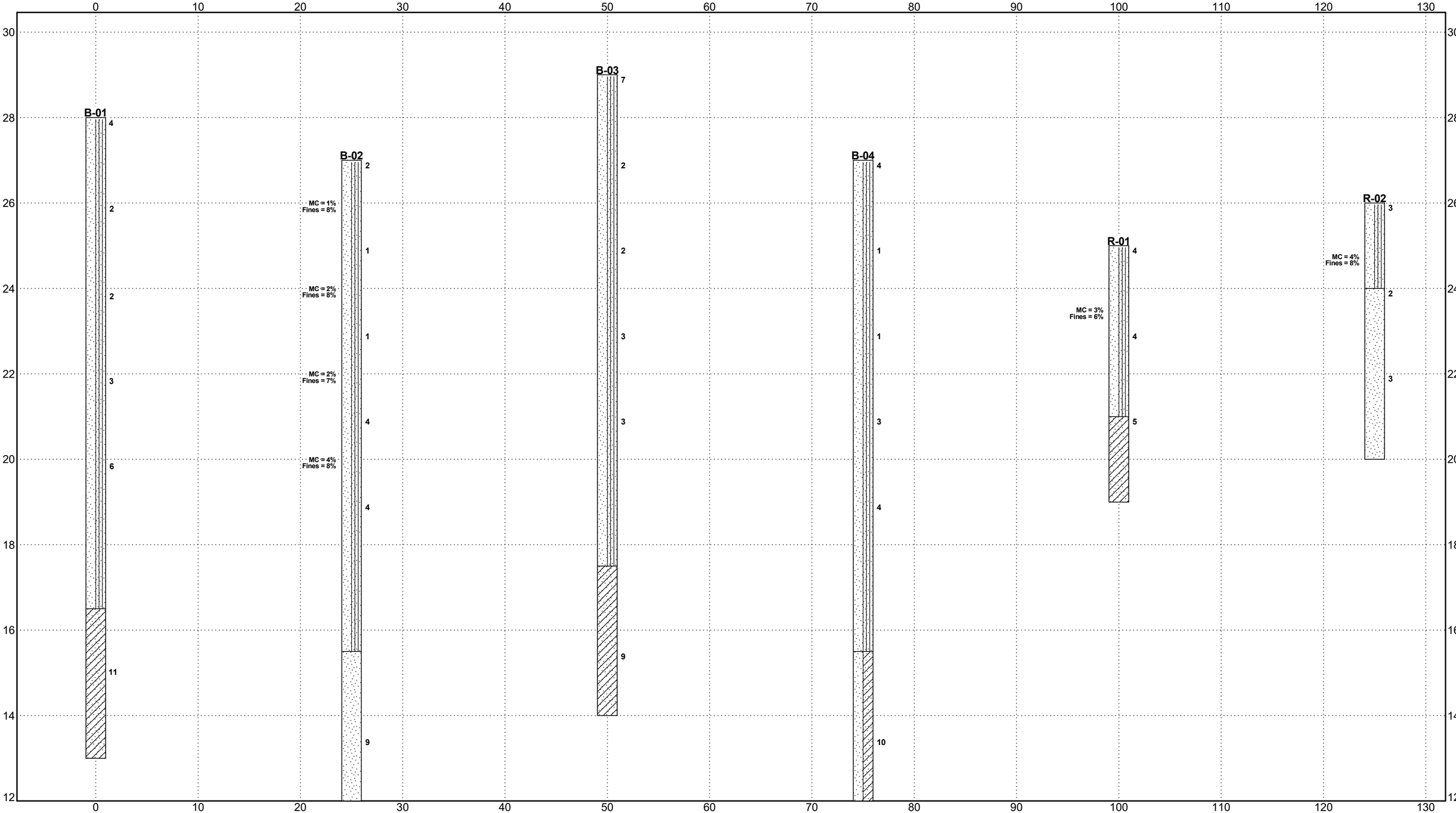
USCS Poorly-graded Sand with Silt
USCS Clayey Sand
USCS Poorly-graded Sand
USCS Poorly-graded Sand with Clay

CLIENT Clemons Rutherford & Associates, Inc.

PROJECT NUMBER T25-159

PROJECT NAME Wakulla County Public Library

PROJECT LOCATION 318 Shadeville Road, Wakulla County, Florida



Southern Earth Sciences
1246 Timberlane Road
Tallahassee, Florida 32312
Telephone: (850) 576-4652

BORING NUMBER B-01

CLIENT Clemons Rutherford & Associates, Inc.
PROJECT NAME Wakulla County Public Library
PROJECT NUMBER T25-159
PROJECT LOCATION 318 Shadeville Road, Wakulla County, Florida
DATE STARTED 5/20/25 **COMPLETED** 5/20/25
GROUND ELEVATION 28 **HOLE SIZE** 2 inches
DRILLING PERSONNEL Down Right Drillin'. LLC
GROUND WATER LEVELS:
DRILLING METHOD Flight Auger
SEASONAL HIGH AFTER DRILLING ---
LOGGED BY C. Curtis **CHECKED BY** M. Wilson
WATER TABLE AFTER DRILLING ---
LATITUDE 30° 11' 0.7"N **LONGITUDE** 84° 21' 47.6"W
24-HR WATER LEVEL AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	ORG. CONTENT. (%)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), light brown, fine grained, very loose	SPT 1	67	1-2-2-2 (4)							
2.5		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), tan to light tan, fine grained, moist, very loose	SPT 2	88	1-1-1-1 (2)							
5.0			SPT 3	75	1-1-1-2 (2)							
7.5			SPT 4	88	1-2-1-2 (3)							
10.0		POORLY GRADED SAND WITH CLAY (USCS SP-SC / AASHTO A-3), light brown and gray, fine to medium grained, moist, loose	SPT 5	83	3-3-3-4 (6)							
12.5		CLAYEY SAND (USCS SC / AASHTO A-2-4), gray, fine to medium grained, moist, medium dense										
15.0			SPT 6	100	4-5-6 (11)							

Bottom of borehole at 15.0 feet.

Southern Earth Sciences
1246 Timberlane Road
Tallahassee, Florida 32312
Telephone: (850) 576-4652

BORING NUMBER B-02

CLIENT Clemons Rutherford & Associates, Inc.
PROJECT NAME Wakulla County Public Library
PROJECT NUMBER T25-159
PROJECT LOCATION 318 Shadeville Road, Wakulla County, Florida
DATE STARTED 5/20/25 **COMPLETED** 5/20/25
GROUND ELEVATION 27 **HOLE SIZE** 2 inches
DRILLING PERSONNEL Down Right Drillin'. LLC
GROUND WATER LEVELS:
DRILLING METHOD Flight Auger
SEASONAL HIGH AFTER DRILLING ---
LOGGED BY C. Curtis **CHECKED BY** M. Wilson
WATER TABLE AFTER DRILLING ---
LATITUDE 30° 11' 1.0"N **LONGITUDE** 84° 21' 46.5"W
24-HR WATER LEVEL AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	ORG. CONTENT. (%)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), tan, fine grained, very loose	SPT 1	79	1-1-1 (2)			1				8
2.5			SPT 2	75	1/24"			2				8
		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), tan to light tan, fine grained, very loose	SPT 3	75	1-1-1/12" (2)			2				7
5.0			SPT 4	83	1-2-2-2 (4)			4				8
7.5		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), light brown, fine grained, very loose	SPT 5	75	2-2-2-2 (4)							
10.0												
12.5		POORLY GRADED SAND (USCS SP / AASHTO A-3), gray, fine grained, moist, loose	SPT 6	89	3-4-5 (9)							
15.0		Bottom of borehole at 15.0 feet.										

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Tallahassee, Florida 32312
Telephone: (850) 576-4652

BORING NUMBER B-03

CLIENT Clemons Rutherford & Associates, Inc.
PROJECT NAME Wakulla County Public Library
PROJECT NUMBER T25-159
PROJECT LOCATION 318 Shadeville Road, Wakulla County, Florida
DATE STARTED 5/20/25 **COMPLETED** 5/20/25
GROUND ELEVATION 29 **HOLE SIZE** 2 inches
DRILLING PERSONNEL Down Right Drillin'. LLC
GROUND WATER LEVELS:
DRILLING METHOD Flight Auger
SEASONAL HIGH AFTER DRILLING ---
LOGGED BY C. Curtis **CHECKED BY** M. Wilson
WATER TABLE AFTER DRILLING ---
LATITUDE 30° 10' 59.7"N **LONGITUDE** 84° 21' 47.2"W
24-HR WATER LEVEL AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	ORG. CONTENT. (%)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), light brown, fine grained, loose	SPT 1	100	3-4-3-3 (7)							
2.5		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), tan to light tan, fine grained, moist, very loose	SPT 2	79	2-1-1-1 (2)							
5.0			SPT 3	83	1-1-1-2 (2)							
7.5			SPT 4	83	2-1-2-2 (3)							
10.0		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), light brown, fine grained, very loose	SPT 5	96	2-1-2-2 (3)							
12.5		CLAYEY SAND (USCS SC / AASHTO A-2-4), gray, fine to medium grained, moist, loose										
15.0			SPT 6	100	3-4-5 (9)							

Bottom of borehole at 15.0 feet.

SOUTHERN EARTH SCIENCES
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1246 Timberlane Road
Tallahassee, Florida 32312
Telephone: (850) 576-4652

BORING NUMBER B-04

CLIENT Clemons Rutherford & Associates, Inc.
PROJECT NAME Wakulla County Public Library
PROJECT NUMBER T25-159
PROJECT LOCATION 318 Shadeville Road, Wakulla County, Florida
DATE STARTED 5/20/25 **COMPLETED** 5/20/25
GROUND ELEVATION 27 **HOLE SIZE** 2 inches
DRILLING PERSONNEL Down Right Drillin'. LLC
GROUND WATER LEVELS:
DRILLING METHOD Flight Auger
SEASONAL HIGH AFTER DRILLING ---
LOGGED BY C. Curtis **CHECKED BY** M. Wilson
WATER TABLE AFTER DRILLING ---
LATITUDE 30° 11' 0.1"N **LONGITUDE** 84° 21' 46.1"W
24-HR WATER LEVEL AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	ORG. CONTENT. (%)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), brown, fine grained, very loose	SPT 1	100	2-2-2-2 (4)							
2.5		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), tan to light tan, fine grained, moist, very loose	SPT 2	92	1-1-1/12" (2)							
5.0			SPT 3	83	1-1-1/12" (2)							
7.5			SPT 4	83	1-1-2-2 (3)							
10.0			SPT 5	96	2-2-2-2 (4)							
12.5		POORLY GRADED SAND WITH CLAY (USCS SP-SC / AASHTO A-3), light brown and gray, fine to medium grained, moist, loose										
15.0			SPT 6	100	4-5-5 (10)							

Bottom of borehole at 15.0 feet.

Southern Earth Sciences
1246 Timberlane Road
Tallahassee, Florida 32312
Telephone: (850) 576-4652

BORING NUMBER R-01

CLIENT Clemons Rutherford & Associates, Inc.
PROJECT NAME Wakulla County Public Library
PROJECT NUMBER T25-159
PROJECT LOCATION 318 Shadeville Road, Wakulla County, Florida
DATE STARTED 5/20/25 **COMPLETED** 5/20/25
GROUND ELEVATION 25 **HOLE SIZE** 2 inches
DRILLING PERSONNEL Down Right Drillin'. LLC
GROUND WATER LEVELS:
DRILLING METHOD Flight Auger
SEASONAL HIGH AFTER DRILLING ---
LOGGED BY C. Curtis **CHECKED BY** M. Wilson
WATER TABLE AFTER DRILLING ---
LATITUDE 30° 11' 2.8"N **LONGITUDE** 84° 21' 45.7"W
24-HR WATER LEVEL AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	ORG. CONTENT. (%)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), gray, fine grained, very loose										
1		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), light brown, fine grained, moist, very loose	SPT 1	83	3-2-2-2 (4)			3				6
2												
3			SPT 2	83	2-2-2-3 (4)							
4												
5		CLAYEY SAND (USCS SC / AASHTO A-2-4), light brown, fine to medium grained, moist, medium dense	SPT 3	96	3-2-3-2 (5)							
6												

Bottom of borehole at 6.0 feet.

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1246 Timberlane Road
Tallahassee, Florida 32312
Telephone: (850) 576-4652

BORING NUMBER R-02

CLIENT Clemons Rutherford & Associates, Inc.
PROJECT NAME Wakulla County Public Library
PROJECT NUMBER T25-159
PROJECT LOCATION 318 Shadeville Road, Wakulla County, Florida
DATE STARTED 5/20/25 **COMPLETED** 5/20/25
GROUND ELEVATION 26 **HOLE SIZE** 2 inches
DRILLING PERSONNEL Down Right Drillin'. LLC
GROUND WATER LEVELS:
DRILLING METHOD Flight Auger
SEASONAL HIGH AFTER DRILLING ---
LOGGED BY C. Curtis **CHECKED BY** M. Wilson
WATER TABLE AFTER DRILLING ---
LATITUDE 30° 11' 0.7"N **LONGITUDE** 84° 21' 45.5"W
24-HR WATER LEVEL AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	ORG. CONTENT. (%)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), brown, fine grained, very loose	SPT 1	83	2-2-1-2 (3)			4				8
1												
2		POORLY GRADED SAND (USCS SP / AASHTO A-3), tan, fine grained, moist, very loose	SPT 2	83	1-1-1-1 (2)							
3												
4			SPT 3	96	2-1-2-1 (3)							
5												
6		Bottom of borehole at 6.0 feet.										

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SUBSURFACE DIAGRAM
Pond 1 and 2 Borings

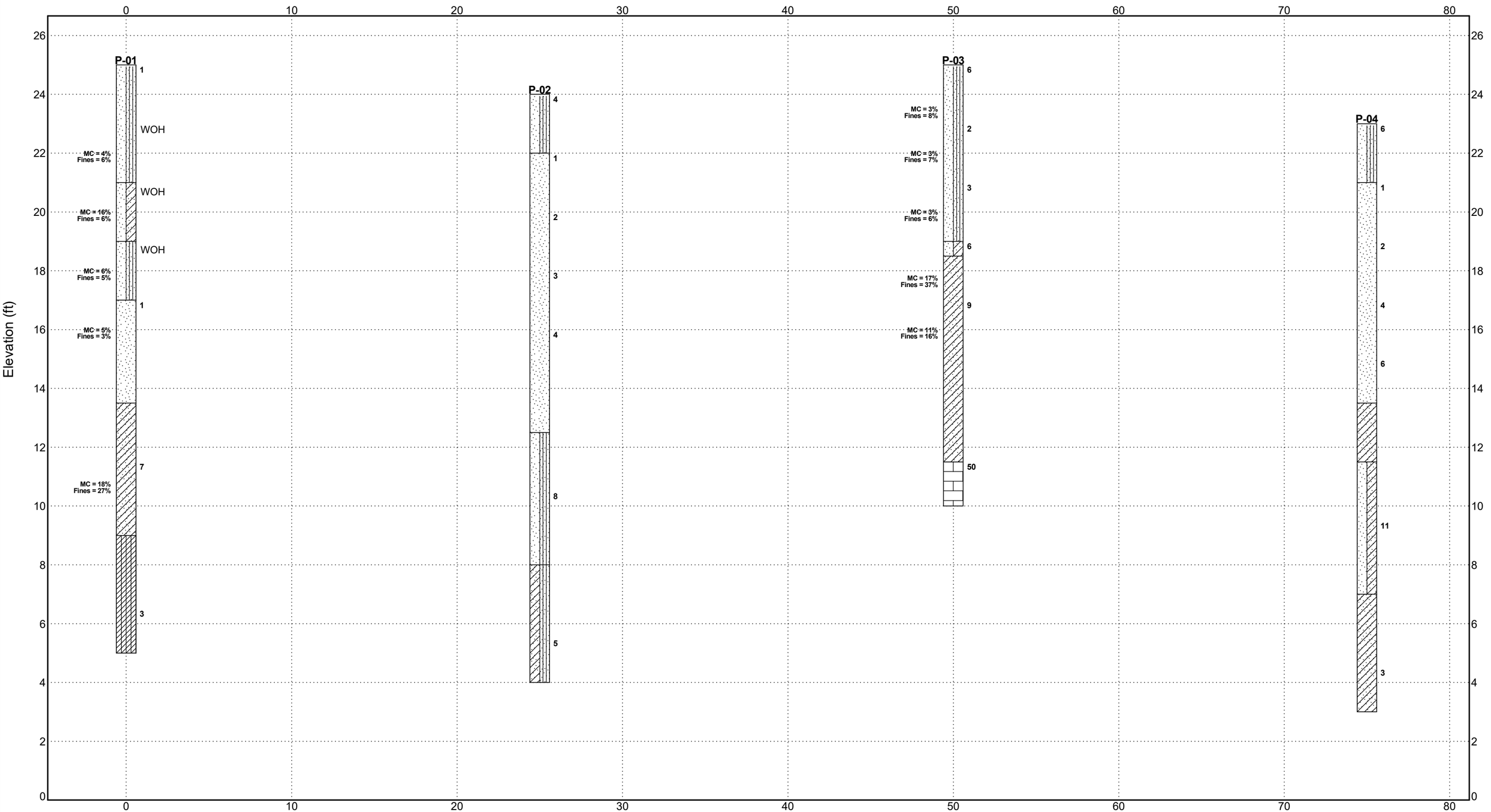
CLIENT Clemons Rutherford & Associates, Inc.

PROJECT NUMBER T25-159

PROJECT NAME Wakulla County Public Library

PROJECT LOCATION 318 Shadeville Road, Wakulla County, Florida

- USCS Poorly-graded Sand with Silt
- USCS Poorly-graded Sand with Clay
- USCS Poorly-graded Sand
- USCS Clayey Sand
- USCS Low Plasticity Silty Clay
- USCS Clayey Sand
- Limestone



Southern Earth Sciences
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Tallahassee, Florida 32312
Telephone: (850) 576-4652

BORING NUMBER P-01

CLIENT Clemons Rutherford & Associates, Inc.
PROJECT NAME Wakulla County Public Library
PROJECT NUMBER T25-159
PROJECT LOCATION 318 Shadeville Road, Wakulla County, Florida
DATE STARTED 5/20/25 **COMPLETED** 5/20/25
GROUND ELEVATION 25 **HOLE SIZE** 2 inches
DRILLING PERSONNEL Down Right Drillin'. LLC
GROUND WATER LEVELS:
DRILLING METHOD Flight Auger
SEASONAL HIGH AFTER DRILLING ---
LOGGED BY C. Curtis **CHECKED BY** M. Wilson
WATER TABLE AFTER DRILLING ---
LATITUDE 30° 11' 1.0"N **LONGITUDE** 84° 21' 44.4"W
24-HR WATER LEVEL AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	ORG. CONTENT. (%)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), brown, fine grained, very loose	SPT 1		2-1/18" (1)							
			SPT 2		WOH			4				6
5		POORLY GRADED SAND WITH CLAY (USCS SP-SC / AASHTO A-3) with organics, brown, fine grained, wet, weight of hammer	SPT 3		WOH		3.1	16				6
		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), brown, fine to medium grained, moist, weight of hammer	SPT 4		WOH			6				5
10		POORLY GRADED SAND (USCS SP / AASHTO A-3), light gray, fine to medium grained, moist, very loose	SPT 5		1/24"			5				3
		CLAYEY SAND (USCS SC / AASHTO A-2-4), gray, fine to medium grained, moist, loose	SPT 6		2-3-4 (7)			18				27
15												
		HIGH PLASTISTICTY SILTY CLAY (CH-ML / AASHTO A-7), with trace limestone, tan and light gray, moist to wet, soft	SPT 7		1-1-2 (3)							
20												

Bottom of borehole at 20.0 feet.

SOUTHERN EARTH SCIENCES
Southern Earth Sciences
1246 Timberlane Road
Tallahassee, Florida 32312
Telephone: (850) 576-4652

BORING NUMBER P-02

CLIENT Clemons Rutherford & Associates, Inc.
PROJECT NAME Wakulla County Public Library
PROJECT NUMBER T25-159
PROJECT LOCATION 318 Shadeville Road, Wakulla County, Florida
DATE STARTED 5/20/25 **COMPLETED** 5/20/25
GROUND ELEVATION 24 **HOLE SIZE** 2 inches
DRILLING PERSONNEL Down Right Drillin'. LLC
GROUND WATER LEVELS:
DRILLING METHOD Flight Auger
SEASONAL HIGH AFTER DRILLING ---
LOGGED BY C. Curtis **CHECKED BY** M. Wilson
WATER TABLE AFTER DRILLING ---
LATITUDE 30° 11' 0.2"N **LONGITUDE** 84° 21' 43.8"W
24-HR WATER LEVEL AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	ORG. CONTENT. (%)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), light brown, fine grained, very loose	SPT 1	100	2-2-2-2 (4)							
		POORLY GRADED SAND (USCS SP / AASHTO A-3), tan to light gray, fine grained, moist, very loose	SPT 2	79	1-1-1/12" (2)							
5			SPT 3	92	1-1-1-1 (2)							
			SPT 4	83	1-1-2-2 (3)							
10			SPT 5	92	2-2-2-2 (4)							
		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), dark brown, fine tro medium grained, loose	SPT 6	94	2-3-5 (8)							
15												
		CLAYEY SILTY SAND (USCS SC-SM / AASHTO A-2-4), light gray, fine grained, moist, loose	SPT 7	100	2-2-3 (5)							
20												

Bottom of borehole at 20.0 feet.

SOUTHERN EARTH SCIENCES
Southern Earth Sciences
1246 Timberlane Road
Tallahassee, Florida 32312
Telephone: (850) 576-4652

BORING NUMBER P-03

CLIENT Clemons Rutherford & Associates, Inc.
PROJECT NAME Wakulla County Public Library
PROJECT NUMBER T25-159
PROJECT LOCATION 318 Shadeville Road, Wakulla County, Florida
DATE STARTED 5/20/25 **COMPLETED** 5/20/25
GROUND ELEVATION 25 **HOLE SIZE** 2 inches
DRILLING PERSONNEL Down Right Drillin'. LLC
GROUND WATER LEVELS:
DRILLING METHOD Flight Auger
SEASONAL HIGH AFTER DRILLING ---
LOGGED BY C. Curtis **CHECKED BY** M. Wilson
WATER TABLE AFTER DRILLING ---
LATITUDE 30° 11' 1.3"N **LONGITUDE** 84° 21' 42.9"W
24-HR WATER LEVEL AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	ORG. CONTENT. (%)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), dark gray to brown, fine grained, loose	SPT 1	100	3-3-3-2 (6)			3				8
2.5		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), tan, fine grained, moist, very loose	SPT 2	96	2-1-1-2 (2)			3				7
5.0			SPT 3	100	2-1-2-2 (3)			3				6
		POORLY GRADED SAND WITH CLAY (USCS SP-SC / AASHTO A-3), tan, fine to medium grained, moist, loose										
7.5		CLAYEY SAND (USCS SC / AASHTO A-2-4), light brown to gray with orange, fine to medium grained, moist, loose	SPT 4	92	2-3-3-3 (6)			17				37
			SPT 5	100	4-4-5-5 (9)			11				16
10.0												
12.5												
		LIMEROCK, tan and light gray	SPT 6	33	50/3"							
15.0												

Bottom of borehole at 15.0 feet.

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BORING NUMBER P-04

CLIENT Clemons Rutherford & Associates, Inc.
PROJECT NAME Wakulla County Public Library
PROJECT NUMBER T25-159
PROJECT LOCATION 318 Shadeville Road, Wakulla County, Florida
DATE STARTED 5/20/25 **COMPLETED** 5/20/25
GROUND ELEVATION 23 **HOLE SIZE** 2 inches
DRILLING PERSONNEL Down Right Drillin'. LLC
GROUND WATER LEVELS:
DRILLING METHOD Flight Auger
SEASONAL HIGH AFTER DRILLING ---
LOGGED BY C. Curtis **CHECKED BY** M. Wilson
WATER TABLE AFTER DRILLING ---
LATITUDE 30° 11' 0.8"N **LONGITUDE** 84° 21' 42.0"W
24-HR WATER LEVEL AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	ORG. CONTENT. (%)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		POORLY GRADED SAND WITH SILT (USCS SP-SM / AASHTO A-3), light brown, fine to medium grained, loose	SPT 1	100	2-3-3-2 (6)							
		POORLY GRADED SAND (USCS SP / AASHTO A-3), brown to light gray, fine to meidum grained, very loose to loose	SPT 2	92	1-1-1/12" (2)							
5			SPT 3	92	1-1-1-1 (2)							
			SPT 4	83	2-2-2-3 (4)							
			SPT 5	96	3-3-3-2 (6)							
10		CLAYEY SAND (USCS SC / AASHTO A-2-4), light gray, fine to medium grained, moist, loose										
		POORLY GRADED SAND WITH CLAY (USCS SP-SC / AASHTO A-3), light gray, fine to medium grained, moist, medium dense	SPT 6	100	4-5-6 (11)							
15												
		CLAYEY SAND (SC to CL / AASHTO A-6), light gray, fine grained, moist, very loose										
			SPT 7	89	2-1-2 (3)							
20												

Bottom of borehole at 20.0 feet.

APPENDIX C

NRCS CUSTOM SOIL RESOURCE REPORT

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Wakulla County, Florida

May 30, 2025

Contents

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:1,490 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Wakulla County, Florida
Survey Area Data: Version 20, Aug 26, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 13, 2022—Mar 22, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
47	Otela-Alpin fine sands, 0 to 5 percent slopes	6.0	100.0%
Totals for Area of Interest		**6.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Wakulla County, Florida

47—Otela-Alpin fine sands, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1hyvd
Elevation: 20 to 300 feet
Mean annual precipitation: 59 to 67 inches
Mean annual air temperature: 64 to 72 degrees F
Frost-free period: 223 to 253 days
Farmland classification: Not prime farmland

Map Unit Composition

Otela and similar soils: 63 percent
Alpin and similar soils: 36 percent
Minor components: 1 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Otela

Setting

Landform: Rises on marine terraces, knolls on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

Ap - 0 to 6 inches: fine sand
E - 6 to 67 inches: fine sand
Btg - 67 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 42 to 66 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F152AY525FL - Eastern Karst Ridges, Rises, and Knolls
Forage suitability group: Sandy soils on rises, knolls, and ridges of mesic uplands (G152AA121FL)
Other vegetative classification: Sandy soils on rises, knolls, and ridges of mesic uplands (G152AA121FL)

Hydric soil rating: No

Description of Alpin

Setting

Landform: Flats on marine terraces, knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Eolian deposits or sandy marine deposits

Typical profile

A - 0 to 7 inches: fine sand
E - 7 to 52 inches: fine sand
E and Bt - 52 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F152AY515FL - Eastern Karst Hill
Forage suitability group: Sandy soils on ridges and dunes of xeric uplands (G152AA111FL)
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G152AA111FL)
Hydric soil rating: No

Minor Components

Lutterloh

Percent of map unit: 1 percent
Landform: Knolls on marine terraces, rises on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F152AY500FL - Eastern Karst Flat
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G152AA131FL)
Hydric soil rating: No

APPENDIX D

DOUBLE RING INFILTROMETER TEST REPORT

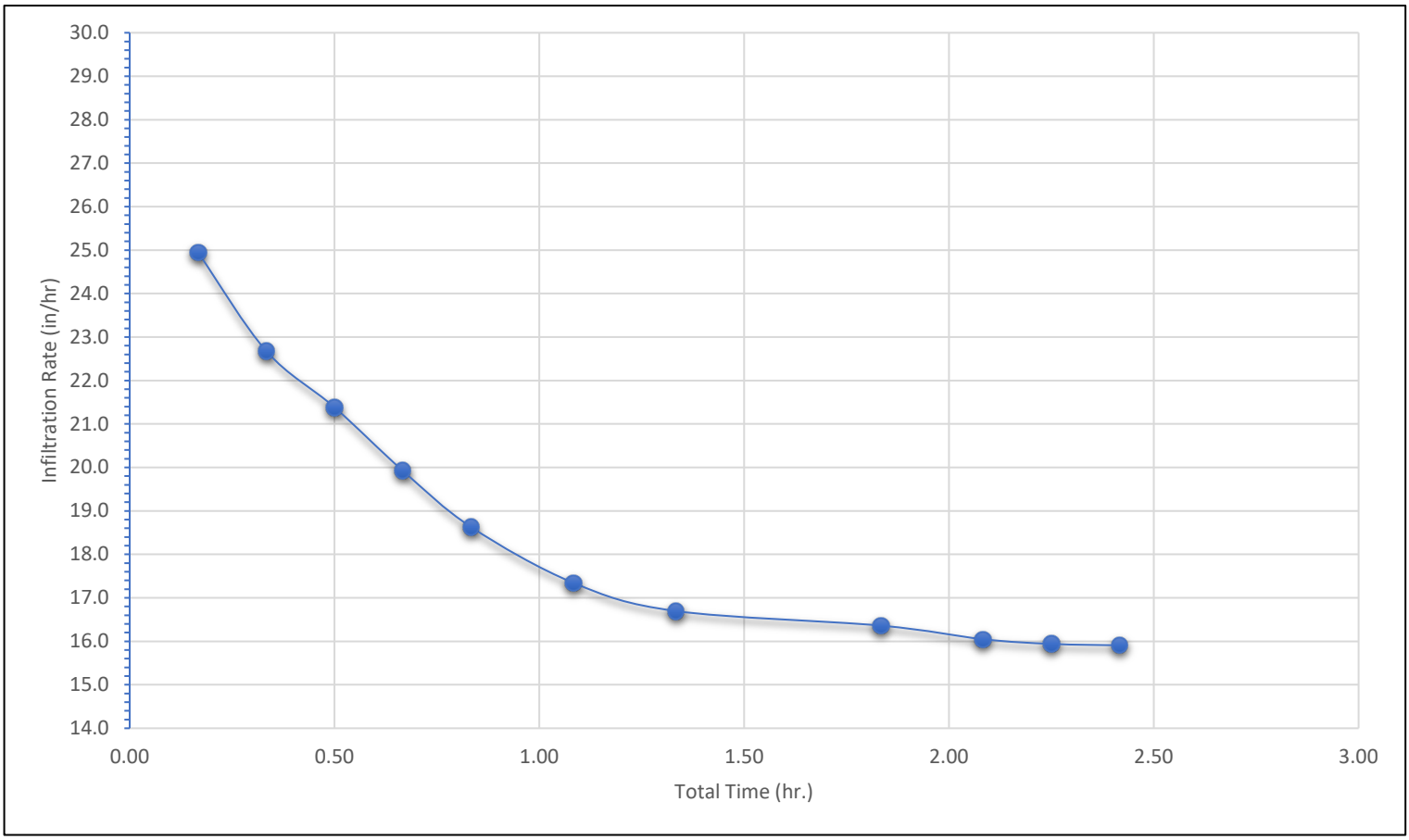
Double Ring Infiltrometer Test Report

Constant Head Method

ASTM D3385-18

Project (SES File No.)	Wakulla County Public Library (T25-159)
Date(s) of Testing	June 3, 2025
Tested By	Colin Curtis
Material Tested (USCS / AASHTO)	SP-SM (A-3)
Test Depth (Approx. Elevation)	18 inches below existing grade (+23.5)

DRI-01



Notes:

- Subsurface conditions near the DRI Location are shown on boring log sheet P-01.

DRI Test Result	
15.9	in/hr
31.8	ft/day

SOUTHERN EARTH SCIENCES
Geotechnical | Environmental | Materials Testing

Double Ring Infiltrometer Test Data

DRI-01

Rate Data

mL Added	Time (min)	Infiltration Rate (in/hr)	Total Time (hr)
7700	10	24.9	0.17
7000	10	22.7	0.33
6600	10	21.4	0.50
6150	10	19.9	0.67
5750	10	18.6	0.83
8030	15	17.3	1.08
7730	15	16.7	1.33
15150	30	16.4	1.83
7430	15	16.0	2.08
4920	10	15.9	2.25
4910	10	15.9	2.42

Water Conditions		
pH		6.9
Temperature (°F)	Before	71
	After	80
Depth (in)	Inner Ring	5
	Outer Ring	5
Soil Conditions		
Temperature (°F)	Before	70
	After	78
Moisture Content (%)		4.2
Fines Content (%)		6
Ambient Conditions		
Temperature (°F)	Before	76
	After	87
Weather		Overcast

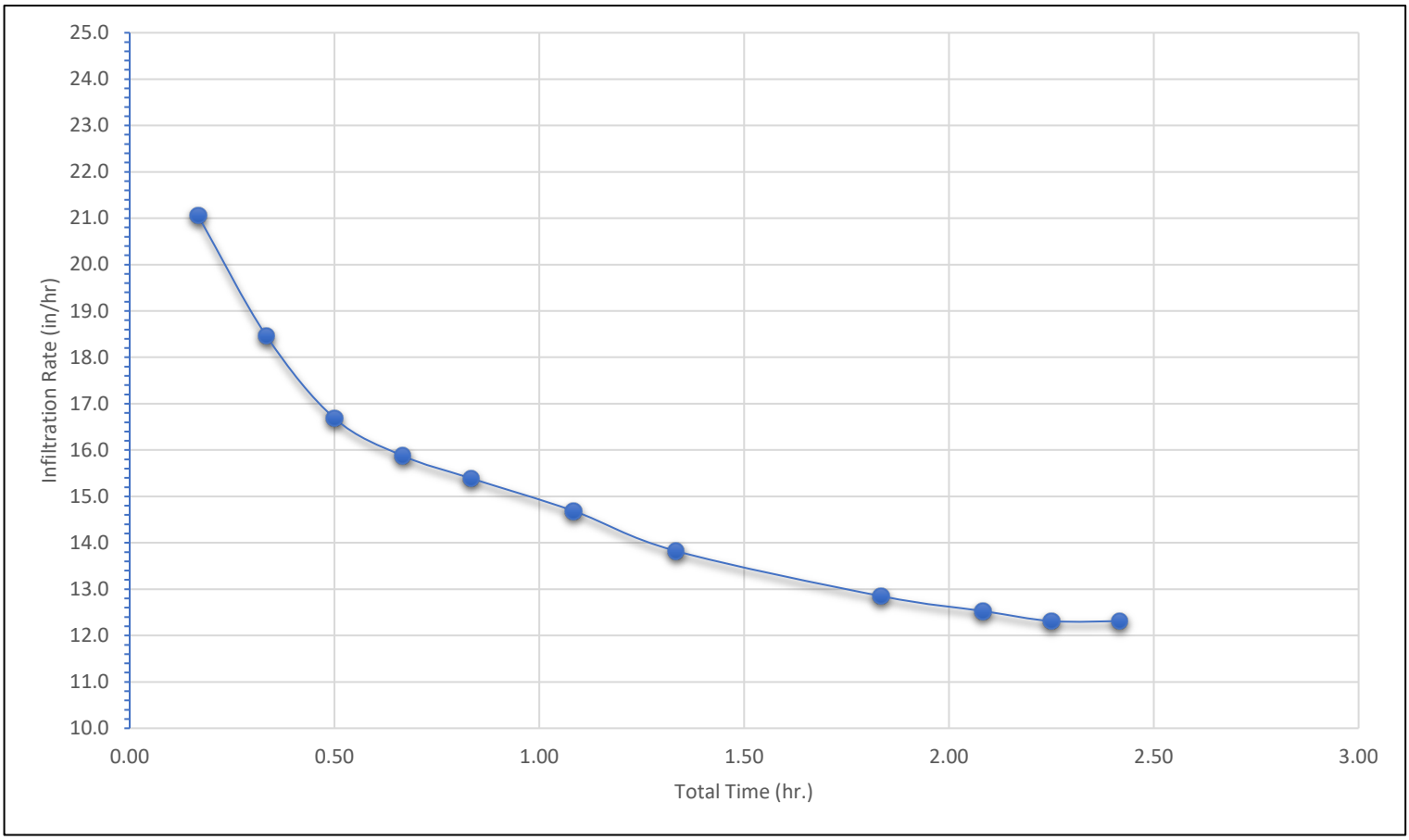
Double Ring Infiltrometer Test Report

Constant Head Method

ASTM D3385-18

Project (SES File No.)	Wakulla County Public Library (T25-159)
Date(s) of Testing	June 3, 2025
Tested By	Colin Curtis
Material Tested (USCS / AASHTO)	SP-SM (A-3)
Test Depth (Approx. Elevation)	18 inches below existing grade (+21.5)

DRI-02



Notes:

- Subsurface conditions near the DRI Location are shown on boring log sheet P-04.

DRI Test Result	
12.3	in/hr
24.6	ft/day

SOUTHERN EARTH SCIENCES
Geotechnical | Environmental | Materials Testing

Double Ring Infiltrometer Test Data

DRI-02

Rate Data

mL Added	Time (min)	Infiltration Rate (in/hr)	Total Time (hr)
6500	10	21.1	0.17
5700	10	18.5	0.33
5150	10	16.7	0.50
4900	10	15.9	0.67
4750	10	15.4	0.83
6800	15	14.7	1.08
6400	15	13.8	1.33
11900	30	12.9	1.83
5800	15	12.5	2.08
3800	10	12.3	2.25
3800	10	12.3	2.42

Water Conditions		
pH		6.9
Temperature (°F)	Before	80
	After	85
Depth (in)	Inner Ring	5
	Outer Ring	5
Soil Conditions		
Temperature (°F)	Before	80
	After	84
Moisture Content (%)		3
Fines Content (%)		7.5
Ambient Conditions		
Temperature (°F)	Before	87
	After	95
Weather		Sunny

APPENDIX E

IMPORTANT INFORMATION ABOUT THE GEOTECHNICAL REPORT

DRILLING AND PENETRATION TESTING PROCEDURES

The borings were advanced with a 4-inch continuous flight auger, hollow stem auger or by a mud rotary drilling process. At regular intervals, the drilling tools were withdrawn and soil samples obtained with a standard 1.4-inch I.D., 2.0-inch O.D., split-tube sampler.

The sampler was initially seated six inches to penetrate loose cuttings, then driven an additional foot with blows of a 140 pound hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot was recorded and is designated the "penetration resistance". Penetration resistance is an index to the soil strength and density which may be evaluated in engineering design.

The samples were visually classified in the field by the driller as they were obtained. Representative portions of each soil sample were then sealed in plastic bags and transported to our laboratory where they were examined by an Engineer or Geologist to verify the field classifications.

ENGINEERING CLASSIFICATION

COHESIONLESS SOILS (SANDS)

DESCRIPTION	BLOW COUNT "N"
VERY LOOSE	0 TO 4
LOOSE	4 TO 10
MEDIUM DENSE	10 TO 30
DENSE	30 TO 50
VERY DENSE	50 TO 100

COHESIVE SOILS (CLAYS)

DESCRIPTION	UNCONFINED COMPRESSIVE STRENGTH, qu, tsf	BLOW COUNT "N"
VERY SOFT	<1/4	0 TO 2
SOFT	¼ TO ½	2 TO 4
MEDIUM STIFF	½ TO 1	4 TO 8
STIFF	1 TO 2	8 TO 15
VERY STIFF	2 TO 4	15 TO 30
HARD	>4	>30

N = Number of blows for each foot of penetration into soil; 2" O.D. split spoon sampler driven by 140 pound hammer dropping 30 inches.

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

SECTION 042000 - UNIT MASONRY

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

A. Single Source Responsibility for Masonry Units: Obtain exposed masonry units of uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from one manufacturer for each different product required for each continuous surface or visually related surfaces.

B. Single Source Responsibility for Mortar Materials: Obtain mortar ingredients of uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source and producer for each aggregate.

C. Preconstruction Tests by Unit Test Methods: Test the following materials by methods indicated:
   1. Concrete Masonry Units: Test each type, class and grade of concrete masonry unit per ASTM C 140.
   2. Mortar Tests: Test each mortar type per ASTM C780.

D. Preconstruction Tests by Prism Methods: For each type of wall construction indicated for testing, test masonry prisms per ASTM E 447, Method B and as follows:
   1. Prepare one set of prisms for testing at 7 days and one set for testing at 28 days.
   2. Fabricate concrete masonry prisms with height-to-thickness ratio of not less than 1.33 nor more than 3.0.
   3. Flexural Bond Strength Tests: Where indicated, also test prisms per ASTM C 518; place prisms with tooled joints facing downward.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data for each type of masonry unit, accessory, and other manufactured products, including certifications that each type complies with specified requirements.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Deliver masonry materials to project in undamaged condition.

B. Store and handle masonry units to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion or other causes.
   1. Limit moisture absorption of concrete masonry units during delivery and until time of installation to the maximum percentage specified for Type I units for the average annual relative humidity as reported by the U.S. Weather Bureau Station nearest project site.
   2. Store cementitious materials off the ground, under cover and in dry location.
   3. Store aggregates where grading and other required characteristics can be maintained.
   4. Store masonry accessories including metal items to prevent deterioration by corrosion and accumulation of dirt.

1.04 PROJECT CONDITIONS

A. Protection of Work: During erection, cover top of walls with waterproof sheeting at end of each day's work. Cover partially completed structures when work is not in progress.

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

C. Do not apply uniform floor or roof loading for at least 12 hours after building masonry walls or columns.

D. Do not apply concentrated loads for at least 3 days after building masonry walls or columns.

E. Staining: Prevent grout or mortar or soil from staining the face of masonry to be left exposed or painted. Remove immediately grout or mortar in contact with such masonry.

F. Protect base of walls from rain-splashed mud and mortar splatter by means of covering spread on ground and over wall surface.

G. Protect sills, ledges and projections from droppings of mortar.

H. Cold Weather Protection:
1. Do not lay masonry units which are wet or frozen.
2. Remove any ice or snow formed on masonry bed by carefully applying heat until top surface is dry to the touch.
3. Remove masonry damaged by freezing conditions.

PART 2 - PRODUCTS

2.01 CONCRETE MASONRY UNITS: Comply with referenced standards and other requirements indicated below applicable to each form of concrete masonry unit required.

A. Provide special shapes where required for lintels, corners, jambs, sash, control joints, headers, bonding and other special conditions. Use 45E block at all locations where walls intersect at a 45E angle.

B. Provide square-edged units for outside corners, except where indicated as bullnose.

C. Grade N except Grade S may be used above grade in exterior walls with weather protective coatings and in walls not exposed to weather.

D. Typical Size: Manufacturer's standard units with nominal face dimensions of 16" long x 8" high (15-5/8" x 7-5/8" actual) x thicknesses indicated.

E. Block Shapes:
1. Split Face Block: 8" x 4" x 16" standard gray.
2. Pre-Cast Water Table: 4" x 8" x 16". With outside corner and top horizontal edge chamfered.

F. Type II, non-moisture controlled units.

G. Exposed Faces: Manufacturer's standard color and texture, unless otherwise indicated.

Note: All CMU, visible to view and not designated to receive a finish on Finish Schedule or elsewhere in the documents, shall receive block filler and paint as specified in Section 09900, except mechanical chases. Mechanical chases are not to be painted.

H. Hollow Loadbearing Block: Requirements for block when delivered to job site. ASTM C 90 and as follows:
1. Weight Classification: Light weight.
2. Minimum Compressive Strength: 1900 psi (average of 3 units).
3. Maximum Percent with Slight Cracks and Chips: 5%.

2.02 MORTAR AND GROUT MATERIALS

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

B. Water: Clean and potable.

2.03 JOINT REINFORCEMENT, TIES, AND ANCHORING DEVICES:

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

Dur-O-Wall, Inc.
Masonry Reinforcing Corp. of America
National Wire Products Corp.

B. Materials: Comply with requirements indicated below for basic materials and with requirements indicated under each form of joint reinforcement, tie and anchor for size and other characteristics:
1. Hot-Dip Galvanized Steel Wire: ASTM A 82 for uncoated wire and ASTM A 153 for zinc coated wire.
2. Application: Use for masonry exposed to exterior and in contact with earth.

C. Joint Reinforcement: Provide welded-wire units prefabricated with deformed continuous side rods and plain cross rods into straight lengths of not less than 10', with prefabricated corner and tee units, and complying with requirements indicated below:
1. Width: Fabricate joint reinforcements in units with widths of approximately 2" less than nominal width of walls and partitions as required to provide mortar coverage of not less than 5/8" on joint faces exposed to exterior and 1/2" elsewhere.
2. Wire Size for Side Rods: 9 gauge.
3. Wire Size for Cross rods: 9 gauge.
4. For single-wythe masonry provide type as follows with single pair of side rods: Ladder design spaced not more than 16" o.c.

D. Anchor Bolts: Provide steel bolts with hex nuts and flat washers complying with ASTM A 307, Grade A, hot-dip galvanized to comply with ASTM C 153, Class C, in sizes and configuration indicated.

2.04 MASONRY CLEANERS

A. Job-Mixed Detergent Solution: Solution of trisodium phosphate (1/2 cup dry measure) and laundry detergent (1/2 cup dry measure) dissolved in one gallon of water. **Verify with block manufacturer.**

2.05 MORTAR AND GROUT MIXES: Do not add admixtures including coloring pigments, air-entraining agents, accelerators, retarders, water repellent agents, anti-freeze compounds or other admixtures, unless otherwise indicated.

Do not use calcium chloride in mortar or grout.

A. Mixing: Combine and thoroughly mix cementitious, water and aggregates in a mechanical batch mixer; comply with referenced ASTM standards for mixing time and water content.

B. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification, for types of mortar required, unless otherwise indicated.
1. Use Type S mortar for reinforced masonry and where indicated.
2. Use Type N mortar for exterior, above-grade non-loadbearing walls; for interior non-loadbearing walls; and for other non-loadbearing applications where another type is not indicated.

C. Grout (Pea Gravel Conc.) for Unit Masonry: Comply with ASTM C 476 for grout for use in construction of reinforced and nonreinforced unit masonry. Use grout of consistency indicated or if not otherwise indicated, of consistency (fine or coarse) at time of placement which will completely fill all spaces intended to receive grout. Concrete used as block fill for reinforced masonry cells shall have a minimum 28 day compressive strength of 3000 psi.
1. Use coarse grout in grout spaces 4" or more in least horizontal dimension, unless otherwise indicated.

2.06 VERTICAL EXPANSION JOINTS: Provide ASlot Seal Wide Flange 2016-3" expansion joints by Williams Products, Inc. OR approved equal, unless detailed on drawings otherwise.

PART 3 - EXECUTION

3.01 INSTALLATION, GENERAL

A. Do not wet concrete masonry units.

B. Cleaning Reinforcing: Before placing, remove loose rust, ice and other coatings from reinforcing.

C. Thickness: Build cavity and composite walls, floors and other masonry construction to the full thickness shown. Build single-wythe walls (if any) to the actual thickness of the masonry units, using units of nominal thickness indicated.

D. Leave openings for equipment to be installed before completion of masonry work. After installation of equipment, complete masonry work to match work immediately adjacent to the opening.

E. Cut masonry units using motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide continuous pattern and to fit adjoining work. Use full-size units without cutting where possible.

Use dry cutting saws to cut concrete masonry units.

F. Minimum length of masonry lintels is 16” longer than the required opening (8” minimum bearing each end).

3.02 CONSTRUCTION TOLERANCES

A. Variation from Plumb: For vertical lines and surfaces of columns, and walls, do not exceed 1/4" in 10', or 3/8" in a story height not to exceed 20', nor 1/2" in 40' or more. For external corners, expansion joints, control joints and other conspicuous lines, do not exceed 1/4" in any story or 20' maximum, nor 1/2" in 40' or more. For vertical alignment of head joints do not exceed plus or minus 1/4" in 10', 1/2" maximum.

B. Variation from Level: For bed joints and lines of exposed lintels, sills, parapets, horizontal grooves and other conspicuous lines, do not exceed 1/4" in any bay or 20' maximum, nor 1/2" in 40' or more. For top surface of bearing walls do not exceed 1/8" between adjacent floor elements in 10' or 1/16" within width of a single unit.

C. Variation of Linear Building Line: For position shown in plan and related portion of columns, walls and partitions, do not exceed 1/2" in any bay or 20' maximum, nor 3/4" in 40' or more.

D. Variation in Cross-Sectional Dimensions: For columns and thickness of walls, from dimensions shown, do not exceed minus 1/4" nor plus 1/2".

E. Variation in Mortar Joint Thickness: Do not exceed bed joint thickness indicated by more than plus or minus 1/8", with a maximum thickness limited to 1/2". Do not exceed head joint thickness indicated by more than plus or minus 1/8".

3.03 LAYING MASONRY WALLS

A. Layout walls in advance for accurate spacing of surface bond patterns with uniform joint widths and to accurately locate openings, movement-type joints, returns and offsets. Avoid the use of less-than-half-size units at corners, jambs and wherever possible at other locations.

B. Lay-up walls to comply with specified construction tolerances, with courses accurately spaced and

coordinated with other work.

C. Pattern Bond: Lay exposed masonry in running bond with vertical joint in each course centered on units in courses above and below. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2". Bond and interlock each course of each wythe at corners. do not use units with less than nominal 4" horizontal face dimensions at corners or jambs.

D. Stopping and Resuming Work: Rack back 1/2-unit length in each course; do not tooth. Clean exposed surfaces of set masonry, wet units lightly (if required) and remove loose masonry units and mortar prior to laying fresh masonry.

E. Built-in Work: As the work progresses, build-in items specified under this and other sections of these specifications. Fill in solidly with masonry around built-in items.
1. Fill space between hollow metal frames and masonry solidly with mortar, unless otherwise indicated.
2. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath in the joint below and rod mortar or grout into core.
3. Fill cores in hollow concrete masonry units with grout under bearing plates, beams, lintels, posts and similar items, unless otherwise indicated.

F. Inspection and clean out holes shall be utilized when grouting height exceeds five (5) feet. Clean out holes shall be the width of the masonry cell and a minimum of 3” high. Grout space requirements for various pour heights shall conform to Table 1.15.1, ACI 530-02.

3.04 MORTAR BEDDING AND JOINTING

A. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells. Bed webs in mortar in starting course on footings and in all courses of piers, columns and pilasters, and where adjacent to cells or cavities to be reinforced or filled with concrete or grout. For starting course on footings where cells are not grouted, spread out full mortar bed including areas under cells.

B. Maintain joint widths shown, except for minor variations required to maintain bond alignment. If not shown, lay walls with 3/8" joints.

C. Cut joints flush for masonry walls which are to be concealed or to be covered by other materials, unless otherwise indicated.

D. Tool exposed joints slightly concave using a jointer larger than joint thickness, unless otherwise indicated.

E. Remove masonry units disturbed after laying; clean and reset in fresh mortar. Do not pound corners or jambs to shift adjacent stretcher units which have been set in position. If adjustments are required, remove units, clean off mortar and reset in fresh mortar.

3.05 HORIZONTAL JOINT REINFORCEMENT: Provide continuous horizontal joint reinforcement at 16" C-C. Install longitudinal side rods in mortar for their entire length with a minimum cover of 5/8" on exterior side of walls 1/2" elsewhere. Lap reinforcing a minimum of 6".

A. Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

B. Provide continuity at corners and wall intersections by use of prefabricated "L" and "T" sections. Cut and bed reinforcement units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures and other special conditions.

Space continuous horizontal reinforcement as follows:

For single-wythe walls, space reinforcement at 16" o.c. vertically, unless otherwise indicated.

C. Reinforce masonry openings greater than 1'-0" wide, with horizontal joint reinforcement placed in 2 horizontal joints approximately 8" apart, immediately above the lintel and immediately below the sill. Extend reinforcement a minimum of 2'-0" behind jambs of the opening except at control joints.

3.06 CONTROL AND EXPANSION JOINTS

A. Vertical Control Joints: Provide control joints in CMU walls to allow for movement resulting from shrinkage and creep. Provide control joints as detailed and at locations shown on drawings, or if not shown, as indicated below. Provide control joints in both exterior and interior walls, and in both loadbearing and non-loadbearing conditions.

1. At maximum spacing of 50 feet on center.
2. At all abrupt changes in wall height.
3. At all changes in wall thickness, such as those at pipe or duct chases and those adjacent to columns or pilasters.
4. Above joints in foundations and floors.
5. Below joints in roofs and floors that bear on the wall.
6. At a distance of not over one-half the allowable joint spacing from bonded intersections or corners.
7. At one or both sides of all door and window openings unless other crack control measures are used such as joint reinforcement or bond beams.

B. Vertical Expansion Joints: Provide sheer lugs at expansion joints in exterior masonry veneer to allow for movement resulting from changes in temperature, moisture expansion, etc. Provide expansion joints as detailed and at locations shown on drawings, or as indicated below.

Wall/building expansion joints shall be aligned thru entire wall construction.

Control joints in veneer masonry need no be aligned with back-up masonry in cavity wall construction.

CONTROL JOINT SPACING FOR MOISTURE CONTROLLED
TYPE I
CONCRETE MASONRY UNITS

Recommended Spacing of Control Joints	Vertical Spacing of Joint Reinforcement			
	None	24"	16"	8"
Expressed as ratio of Panel length to height L/H	2	2-1/2	3	4
With Panel Length (l) Not to Exceed:	40'	45'	50'	60'

3.07 FIELD QUALITY CONTROL

A. Contractor shall employ, at his own expense, a testing laboratory experienced in performing types of masonry field quality control tests for masonry indicated. Comply with requirements for qualification and acceptance of testing laboratory specified in Part 1 for preconstruction testing service.

B. Remove and replace masonry units which have cracked do to shrinkage or settlement problems. Provide new units to match adjoining units and install in fresh mortar, pointed to eliminate evidence of replacement.

C. Unit Test Method:
   1. Concrete Masonry Unit Tests: For each type, class and grade of concrete masonry unit indicated, test units by method of sampling and testing of ASTM C 140.
   2. Mortar Tests: For each type indicated, test mortar by methods of sampling and testing of ASTM C 780. Conduct tests no less frequently than that required to evaluate mortar used to install each increment of masonry units indicated above from which samples are taken for testing.

D. Prism Test Method:
   1. Compression Test: For each type of wall construction indicated for testing, test masonry prisms by methods of sampling and testing of ASTM E 447, Method B, and as follows:

      Prepare one set of prisms for testing at 7 days and one set for testing at 28 days.

E. Report test results in writing and in form specified under each test method, to Architect and Contractor, on same day tests are made.

F. Evaluation of Quality Control Tests: Masonry work, in absence of other indications of noncompliance with requirements, will be considered satisfactory if results from construction quality control tests comply with minimum requirements indicated.

3.08 REPAIR, POINTING AND CLEANING

A. Remove and replace masonry units which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar or grout, pointed to eliminate evidence of replacement.

B. Remove and replace masonry units which have cracked do to shrinkage or settlement problems. Provide new units to match adjoining units and install in fresh mortar, pointed to eliminate evidence of replacement.

C. Pointing: During the tooling of joints, enlarge any voids or holes, except weep holes, and completely fill with mortar. Point-up all joints, including corners, openings, and adjacent work, to provide a neat, uniform appearance, prepared for application of sealants.

D. Final Cleaning: After mortar is thoroughly set and cured, clean masonry as follows:
   1. Remove large mortar particles by hand with wooden paddles and non-metallic scrape hoes or chisels.
   2. Test cleaning methods on sample wall panel; leave 1/2 panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
   3. Clean concrete unit masonry to comply with masonry manufacturer's directions and applicable NCMA "Tek" bulletins.
   4. Do not use acid or abrasives on finish surfaces of ground faced accent block.

E. Protection: Provide final protection and maintain conditions in a manner acceptable to Installer, which ensures unit masonry work being without damage and deterioration at time of substantial completion.

END OF SECTION 042000

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.01 STRUCTURAL PERFORMANCE: Provide the following assemblies capable of withstanding loadings indicated:

A. Handrails and Toprails: Concentrated load of 200 lbf applied at any point in any direction and a uniform load of 50 lbf per lin. ft. applied simultaneously in both vertical and horizontal directions.
1. All railings fabricated and installed shall comply with ADA requirements.

B. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.02 SUBMITTALS: In addition to product data, submit shop drawings showing details of fabrication, assembly and installation including templates for anchor bolt placement.

A. Samples of materials and finished products as may be requested by Architect.

PART 2 - PRODUCTS

2.01 MATERIALS/FABRICATION: For work exposed to view use materials selected for their smoothness and freedom from surface blemishes.

A. Steel Plates, Shapes, and Bars: ASTM A 36.

B. Structural Steel Sheet: ASTM A 570 or ASTM A 611, Class 1; of grade required for design loading.

C. Galvanized Structural Sheet: ASTM A 446, of grade required for design loading; coating designation G90 or as indicated.

D. Steel Pipe: ASTM A 53, type and grade as required for design loading (if applicable), black finish unless galvanizing indicated; standard weight (Schedule 40) unless otherwise indicated. All handrails shall be 1½@ o.d.

E. Aluminum Pipe: Provide alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than the strength and durability properties of alloy and temper designated below for each aluminum form required.
1. Extruded Tubing: ASTM B221, Alloy 6063-T5/T52.
2. Extruded Structural Pipe and Round Tubing: ASTM B 429, Alloy 6063-T6. Provide standard Weight (Schedule 40) pipe, unless otherwise noted.

H. Exterior Railings: Fabricate using Schedule 80 aluminum.

6. Stair Nosings: Provide stair nosings Type 3711 as manufactured by American Safety Tread Co., Helena, AL OR approved equal. The base shall consist of heat treated extruded aluminum alloy 6063-T6 with a abrasive filler. The abrasive ribs shall project a minimum of 1/16" above the extruded channels. Nosings shall be full length of steps less 1/8" clearance. Abrasive filler color shall be selected by Architect.

7. Stair Nosings: Roll-formed stainless steel to ASTM A167, Type 304 (V2A), heavy-traffic use, slip-resistant stair tread with integral perforated anchoring leg for setting the assembly into setting bed. Provide ATREP-E Stair Nosings@ by Schluter Systems OR approved equal. Height of nosing shall be 10 mm or as required to suit application. Install as recommended by manufacturer. See cut sheet at end of this section for profile of nosing.

G. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either galvanized ferrous castings, malleable iron, cast steel; with steel bolts, washers and shims; hot-dip galvanized.

H. Non-Shrink Non-Metallic Grout: CE CRD-C621, non-staining, non-corrosive, non-gaseous; recommended by mfr. for types of applications indicated.

I. Fasteners: Provide bolts, nuts, lag bolts, machine screws, wood screws, toggle bolts, masonry anchorage devices, lock washers as required for application indicated and complying with applicable Federal standards. Hot-dip galvanize fasteners for exterior applications to comply with ASTM A 153.

2.02 SHOP PAINTING: Apply shop primer to surface of metal fabrications except those embedded in concrete or galvanized; comply with SSPC-PA1 and requirements indicated below:

A. Surface Preparation: Comply with SSPC-SP6 "Commercial Blast Cleaning" for exterior work, and with SSPC-SP3 "Power Tool Cleaning" for interior work.

B. Shop Primer: Fabricator's standard, fast-curing, lead-free, "universal" primer complying with performance requirements of FS TT-P-645.

C. Stripe paint edges, corners, crevices, bolts, welds and sharp edges.

2.03 GALVANIZING: ASTM A 386 for assembled products; ASTM A 123 for rolled, pressed and forged steel shapes, plates, bars and strip 1/8" and thicker; galvanizing repair paint: MIL-P-21035 or SSPC-Paint-20.

2.04 FABRICATION, GENERAL: Use materials of size and thickness shown, or, if not shown, of required size, grade and thickness to produce strength and durability in finished product. Shop-paint all items not specified to be galvanized after fabrication.

A. Weld corners and seams continuously; grind exposed welds smooth and flush.

B. Form exposed connections with hairline, flush joints; use concealed fasteners where possible.

2.05 ROUGH HARDWARE: Furnish custom-fabricated bolts, plates, anchors, hangers, dowels, and other miscellaneous steel and iron shapes for framing and supporting and anchoring woodwork. Galvanize, unless otherwise indicated.

2.06 MISCELLANEOUS FRAMING AND SUPPORTS: Provide as required to complete work. Fabricate of welded construction in as large units as possible; drill and tap as required to receive hardware and similar items. Include required anchors for building into other work; spaced not more than 24" o.c.

PART 3 - EXECUTION

3.01 INSTALLATION: Perform cutting, drilling and fitting required for installation; set work accurately in location, alignment and elevation, measured from established lines and levels. Provide anchorage devices and fasteners where necessary for installation to other work.

3.03 ALL RAILINGS shall be set in non-shrink, non-pourable grout. Grout shall be placed in a dome shape, higher than the surrounding grade.

3.02 TOUCH-UP SHOP PAINT after installation. Clean field welds, bolted connections and abraded areas, and apply same type paint as used in shop. Use galvanizing repair paint on damaged galvanized surfaces.

END OF SECTION 055000

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.01 Lumber, General: Manufacture lumber, S4S and grade stamped, to comply with PS 20 and applicable grading rules of inspection agencies certified by ALSC's Board of Review. Provide seasoned lumber with 19 percent moisture content at time of dressing and shipment, for sizes 2" or less in thickness. **All lumber shall be fire-retardant treated.**

1.02 Blocking: All wood blocking shall be a minimum 3/4" plywood. This applies to backing supporting for millwork, headwalls, oak crash rails, toilet accessories, metal lockers, t.v. brackets, etc. or unless otherwise indicated in drawings or by manufacturer of the product being hung.

A. Wood blocking methods shall be approved by manufacturers of all wall supported systems.

1.03 Related Sections:

A. Section 10800 - Toilet and Bath Accessories for blocking requirements.

B. Section 11132 - Projection Screens.

C. Section 10500 - Metal Lockers.

PART 2 - PRODUCTS

2.01 Dimension Lumber:

A. Construction grade light-framing lumber (2"-4" thick, 2"-4" wide): Any species graded under WWPA or WCLIB rules or Southern Pine graded under SPIB rules or Western Spruce-Pine-Fir graded under NLGA rules.

B. Studs (2"-4" thick, 2"-6" wide, 10' and shorter): "Stud" or No. 3 Structural Light Framing grade, any species graded under WWPA, WCLIB, SPIB OR NLGA rules.

2.02 Lumber for Miscellaneous Uses: Unless otherwise indicated, provide Standard grade lumber for support of other work, including bucks, nailers, blocking, furring, grounds, stripping and similar members.

2.03 Fasteners and Anchorages: Of size, type, material and finish suited to application shown and of quality equal to products by Simpson Strong Tie Co., Inc. Provide metal hangers and framing anchors of size and type recommended for intended use by manufacturer. Hot-dip galvanize fasteners and anchorages for work exposed to weather, in ground contact and high relative humidity to comply with ASTM A 153.

2.04 Preservative pressure treat lumber with water-borne preservatives to comply with AWPA C2 and C9, respectively, and with AWPB LP-22 (Wood for Ground Contact Use) and AWPB LP-2 (Wood for Above-Ground Use).

A. Treat nailers, blocking, and similar items in conjunction with flashing and treat sills, blocking, furring, and similar items in direct contact with masonry or concrete.

2.05 WALL SUPPORT SYSTEM AND ROUGH-IN REQUIREMENTS: Provide blocking as recommended by the manufacturer for all wall hung items.

PART 3 - EXECUTION

3.01 Install rough carpentry work to comply with "Manual of House Framing" by National Forest Products Assoc. (N.F.P.A.) and with recommendations of American Plywood Association (APA), unless otherwise indicated. For sheathing and other products not covered in above standards, comply with recommendations of manufacturer of product involved for use intended. Set carpentry work to required levels and lines, with members plumb and true and cut to fit.

3.02 Securely attach carpentry work to substrates and supporting members using fasteners of size that will not penetrate members where opposite side will be exposed to view or receive finish materials. Install fasteners without splitting wood; fasten panel products to allow for expansion at joints unless otherwise indicated.

3.03 Provide wood framing members of size and spacing indicated; do not splice structural members between supports.

END OF SECTION 061000

SECTION 064000 - PLASTIC LAMINATE CLAD FIXED CABINETS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and Division 1, apply to work of this section.

1.02 DESCRIPTION OF WORK: Extent of each type of architectural millwork is indicated on drawings. Types of architectural millwork include laminate clad cabinets including tops and opaque shelving.

1.02 QUALITY ASSURANCE

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

B. Installer Qualifications: Arrange for installation of architectural millwork items by same firm which fabricated them.

1.03 SUBMITTALS

A. Shop Drawings: Submit shop drawings showing location of each item, dimensioned plans and elevations, large scale details, joinery, attachment devices and other components. All shop drawings shall indicate use of particle board with minimum density of 45# throughout panels and plywood.

B. Samples: Submit samples of plastic laminate and all cabinet hardware, one unit of each type and finish.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Protect millwork during transit, delivery, storage and handling to prevent damage, soiling and deterioration.

B. Do not deliver millwork, until painting, wet work, grinding and similar operations which could damage, soil or deteriorate millwork have been completed in installation areas. If, due to unforeseen circumstances, millwork must be stored in other than installation areas, store only in areas meeting requirements specified for installation areas.

1.05 PROJECT CONDITIONS

A. Conditioning: Millwork Manufacturer and Installer shall advise Contractor of temperature and humidity requirements for millwork installation and storage areas. Do not install millwork until required temperature and relative humidity have been stabilized and will be maintained in installation areas.

B. Maintain temperature and humidity in installation area as required to maintain moisture content of installed millwork within a 1.0 percent tolerance of optimum moisture content, from date of installation through remainder of construction period. Require Millwork Manufacturer to establish optimum moisture content and required temperature and humidity conditions.

PART 2 - PRODUCTS

2.01 ACCEPTABLE LAMINATE MANUFACTURER

A. Manufacturer: Wilsonart, Formica, Pionite, Nevamar or approval equal.

2.02 MATERIALS

A. ARCHITECTURAL CABINETS AND SHELVING UNITS, LAMINATE CLAD: Comply with the following requirements:
Grade: Custom.
Construction: Semi-Reveal Overlay. Panel Type Construction.
Note:
1. **All construction shall be 3/4", 45# density particleboard throughout panel.**
2. **All cabinets over 36" wide to have 3/4" continuous top.**
3. **Shelving units over 33" wide shall have vertical divider support or reinforced.**
4. **Drawer bottoms over 24" wide shall be reinforced.**
5. **Cabinets shall have a separate and continuous pressure treated sub-base. Cabinet sides to floor will not be acceptable.**
6. **Use largest sheets of laminate available to avoid butt seams. Butt seams will only be accepted when larger sheet size is unavailable.**

Plastic Laminate for Exposed and Semi-exposed Surfaces: Vertical grade (VGP – 0.028") for vertical surfaces.
Edge Treatment: Doors and drawers shall receive 3mm PVC banding, machine applied with waterproof hot melt adhesive with external edges and outside corners machine profiled to 1/8" radius for safety; Cabinet bodies and shelving shall receive 1mm PVC banding, machine applied with waterproof hot melt adhesive. Shelves shall have 1mm PVC banding on front and back edge.
Concealed Surfaces: 120 gram minimum Thermofused Melamine finish. Color to be selected by Architect.
Colors: See Color Legend in the Finish Plans. PVC color selections shall include wood grains and patterns, and **not** be limited to stock colors.
Comply with AWI Section 400 and its Division 400B.

B. ARCHITECTURAL CABINET TOPS: Solid surfacing – see spec section in division 6.
Grade: Custom.
Comply with AWI Section 400 and its Division 400C.
Grommets: Provide one (1) 2½" grommet by Doug Mockett & Co. Inc. (800-523-1269) for each 36" length of workstation countertop or as shown on drawings. Locations to be determined in the field by Owner.
Note:
1. **Counter tops to be 3/4" – 45# density particleboard with 1-1/4" built-up front edge. Counter tops with sinks shall be 3/4" plywood.**
2. **All counter tops to receive backer sheet. Countertops with no base shall have a solid underside with backer sheet. No bare substrate in any location is acceptable.**
3. **Exposed corners shall have 1-1/2" radius.**
4. **Counter tops longer than 36" shall have intermediate supports at 36" o.c.**

C. CABINET HARDWARE AND ACCESSORY MATERIALS
Concealed Hinges: Grass 3000 Series, self closing, 110E swing, 2 per door and 4 per door on units over 60" high.
Metal Drawer Slides: BHMA A156.9, Zargen Drawer Slide System.
Box Drawer Slides (Grade 1HD-100): For drawers not more than 6 inches high and 24 inches wide.
Metal Drawer Sides: Height shall be within 1" of depth of face of drawer.
Pulls: Hafele, Model 155.00.492, 155mm wide x 30mm deep; zinc alloy, stainless steel colored. One per door or drawer.
Shelf Pins 5mm pin holes with dual pin, anti tip shelf supports suitable for 3/4" or 1" shelving. 32mm line bore holes with double pin reinforced supports tested for over 250 lbs. with anti-lift supports to provide a non-tip feature suitable for 3/4" or 1" thick shelving.
Standard bracket: Standard Steel bracket, 21" x 21", by A & M Hardware, Inc.

D. FASTENERS AND ANCHORS:
   1. Screws: Select material, type, size and finish required for each use. Comply with FS FF-S-111 for applicable requirements.
   2. Nails: Select material, type, size and finish required for each use. Comply with FS FF-N-105 for applicable requirements.
   3. Anchors: Select material, type, size and finish required by each substrate for secure anchorage. Provide non-ferrous metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion-resistance. Provide toothed steel or lead expansion bolt devices for drilled-in-place anchors. Furnish inserts and anchors, as required, to be set into concrete or masonry work for subsequent millwork anchorage.

2.03 FABRICATION, GENERAL

A. Wood Moisture Content: Comply with requirements of referenced quality standard for moisture content of lumber at time of fabrication and for relative humidity conditions in the installation areas.

B. Fabricate millwork to dimensions, profiles, and details indicated with openings and mortises precut, where possible, to receive hardware and other items and work.

C. Complete fabrication, assembly, finishing, hardware application, and other work before shipment to project site to maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

D. Pre-Cut Openings: Fabricate architectural millwork with pre-cut openings, where possible, to receive hardware, appliances, plumbing fixtures, electrical work and similar items. Locate openings accurately and use templates or roughing-in diagrams for proper size and shape. Smooth edges of cutoffs and, where located in countertops and similar exposures seal edges of cutouts with a water-resistant coating. Exposed openings to receive plastic grommets.

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

PART 3 - EXECUTION

3.01 PREPARATION

A. Condition millwork to average prevailing humidity conditions in installation areas prior to installing.

B. Prior to installation of architectural millwork, examine shop fabricated work for completion, and complete work as required, including back priming and removal of packing.

3.02 INSTALLATION

A. Install millwork plumb, level, true and straight with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/8" in 8'-0" for plumb and level (including tops); and with no variations in flushness of adjoining surfaces.

B. Scribe and cut millwork to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.

C. Anchor millwork to anchors or blocking built-in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation. Except where prefinished matching fasteners heads are

required, use fine finishing nails for exposed nailing, countersunk and filled flush with millwork, and matching final finish where transparent finish is indicated.

D. Cabinets: Install without distortion so that doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete the installation of hardware and accessory items as indicated.

E. Tops: Anchor securely to base units and other support systems as indicated.

3.03 ADJUSTMENT, CLEANING, FINISHING, AND PROTECTION

A. Repair damaged and defective millwork where possible to eliminate defects functionally and visually; where not possible to repair replace millwork. Adjust joinery for uniform appearance.

B. Clean, lubricate and adjust hardware.

C. Clean millwork on exposed and semi-exposed surfaces. Touch-up shop-applied finishes to restore damaged or soiled areas.

D. Complete the finishing work specified as work of this section, to whatever extent not completed at shop or prior to installation of millwork.

E. Provide final protection and maintain conditions, in a manner acceptable to Fabricator and Installer, which ensures architectural millwork being without damage or deterioration at time of substantial completion.

END OF SECTION 064000

SECTION 064123 - INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS: Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1, apply to work of this section.

1.02 DESCRIPTION OF WORK: Extent of each type of architectural millwork is indicated on drawings. Types of architectural millwork include laminate clad cabinets including tops and opaque shelving.

1.03 QUALITY ASSURANCE

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

B. Installer Qualifications: Arrange for installation of architectural millwork items by same firm which fabricated them.

1.04 SUBMITTALS

A. Shop Drawings: Submit shop drawings showing location of each item, dimensioned plans and elevations, large scale details, joinery, attachment devices and other components. All shop drawings shall indicate use of marine grade plywood.

B. Samples: Submit samples of plastic laminate and all cabinet hardware, one unit of each type and finish.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Protect millwork during transit, delivery, storage and handling to prevent damage, soiling and deterioration.

B. Do not deliver millwork, until painting, wet work, grinding and similar operations which could damage, soil or deteriorate millwork have been completed in installation areas. If, due to unforeseen circumstances, millwork must be stored in other than installation areas, store only in areas meeting requirements specified for installation areas.

1.06 PROJECT CONDITIONS

A. Conditioning: Millwork Manufacturer and Installer shall advise Contractor of temperature and humidity requirements for millwork installation and storage areas. Do not install millwork until required temperature and relative humidity have been stabilized and will be maintained in installation areas.

B. Maintain temperature and humidity in installation area as required to maintain moisture content of installed millwork within a 1.0 percent tolerance of optimum moisture content, from date of installation through remainder of construction period. Require Millwork Manufacturer to establish optimum moisture content and required temperature and humidity conditions.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide high pressure decorative laminates by Formica, Nevamar, Pionite, Wilsonart, OR approved equal.

B. Refer to Section 066550, Solid Surfacing, for all countertops with integral backsplash.

2.02 MATERIALS

A. ARCHITECTURAL CABINETS AND SHELVING UNITS, LAMINATE CLAD: Comply with the following requirements:

Grade: Custom.

Construction: Semi-Reveal Overlay. Panel Type Construction.

Note:
1. **All construction shall be marine grade plywood.**
2. **All cabinets over 36" wide to have 3/4" continuous top.**
4. **Shelving units over 33" wide shall have vertical divider support or reinforced.**
5. **Drawer bottoms over 24" wide shall be reinforced.**
6. **Cabinets shall have a separate and continuous pressure treated sub-base. Cabinet sides to floor will not be acceptable.**

Plastic Laminate for Exposed and Semi-Exposed Surfaces: VGS-28 for horizontal surfaces and vertical surfaces.

Edge Treatment: Doors, drawers, and open shelving faces shall receive 3mm PVC banding, machine applied with waterproof hot melt adhesive with external edges and outside corners machine profiled to 1/8" radius for safety; Cabinet bodies and shelving shall receive 1mm PVC banding, machine applied with waterproof hot melt adhesive. Shelves in closed cabinets shall have 1mm PVC banding on all four sides. Shelving in open cabinets shall have 3mm PVC edge banding on front and back edges. Sides shall be 1mm PVC edge banding. Cabinet bodies in open cabinets shall have 3mm PVC edge banding.

Concealed Surfaces: 120 gram minimum Thermofused Melamine finish. Color to be selected by Architect.

Colors: To be selected by Architect. PVC color selections shall include wood grains and patterns, and ***not*** be limited to stock colors. See Finish Plans for Color Legend.

Comply with AWI Section 400 and its Division 400B.

B. ARCHITECTURAL CABINET TOPS: Solid surfacing:

Grade: Custom.

Comply with AWI Section 400 and its Division 400C.

Grommets: Provide one (1) 2½" grommet by Doug Mockett & Co. Inc. (800-523-1269) for each 48" length of workstation countertop or as shown on drawings. Locations to be determined in the field by Owner.

Note:
1. **Counter tops to be 1/2" solid surfacing over 3/4" marine grade plywood with 1 1/4" built-up front edge up to 36" wide.**
2. **All counter tops to receive a backer sheet.**
3. **Exposed corners shall have 1½" radius.**
4. **Tops over 36" wide to receive 3/4" continuous top with backer sheet.**

C. WOOD FRAMES FOR MIRRORS: Provide stain grade maple hardwood for mirror frames in restrooms. See drawings for locations.

D. CABINET HARDWARE AND ACCESSORY MATERIALS

Concealed Hinges: Grass 3000 Series, self closing, 110E swing, 2 per door and 4 per door on units over 60" high.

Metal Drawer Slides: BHMA A156.9, Zargen Drawer Slide System.

Box Drawer Slides (Grade 1HD-100): For drawers not more than 6 inches high and 24 inches wide.

Metal Drawer Sides: Height shall be within 1" of depth of face of drawer.

Pulls: Hafele, Item #117.31.436 (153mm x 30mm x 128mm); matte chrome. One per door or drawer.

Shelf Pins: 5mm pin holes with dual pin, anti tip shelf supports suitable for 3/4" or 1" shelving. 32mm line bore holes with double pin reinforced supports tested for over 250 lbs. with anti-lift supports to provide a non-tip feature suitable for 3/4" or 1" thick shelving.

Locks: All top drawers shall receive 5-disc tumbler, cam type with bright nickel finish. Provide additional locks where noted on drawings.

E. FASTENERS AND ANCHORS:
1. Screws: Select material, type, size and finish required for each use. Comply with FS FF-S-111 for applicable requirements.
2. Nails: Select material, type, size and finish required for each use. Comply with FS FF-N-105 for applicable requirements.
3. Anchors: Select material, type, size and finish required by each substrate for secure anchorage. Provide non-ferrous metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion-resistance. Provide toothed steel or lead expansion bolt devices for drilled-in-place anchors. Furnish inserts and anchors, as required, to be set into concrete or masonry work for subsequent millwork anchorage.

2.03 FABRICATION, GENERAL

A. Wood Moisture Content: Comply with requirements of referenced quality standard for moisture content of lumber at time of fabrication and for relative humidity conditions in the installation areas.

B. Fabricate millwork to dimensions, profiles, and details indicated with openings and mortises precut, where possible, to receive hardware and other items and work.

C. Complete fabrication, assembly, finishing, hardware application, and other work before shipment to project site to maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

D. Pre-Cut Openings: Fabricate architectural millwork with pre-cut openings, where possible, to receive hardware, appliances, plumbing fixtures, electrical work and similar items. Locate openings accurately and use templates or roughing-in diagrams for proper size and shape. Smooth edges of cutoffs and, where located in countertops and similar exposures seal edges of cutouts with a water-resistant coating. Exposed openings to receive plastic grommets.

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

PART 3 - EXECUTION

3.01 PREPARATION

A. Condition millwork to average prevailing humidity conditions in installation areas prior to installing.

B. Prior to installation of architectural millwork, examine shop fabricated work for completion, and complete work as required, including back priming and removal of packing.

3.02 INSTALLATION

A. Install millwork plumb, level, true and straight with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/8" in 8'-0" for plumb and level (including tops); and with no variations in flushness of adjoining surfaces.

B. Scribe and cut millwork to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.

C. Anchor millwork to anchors or blocking built-in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation. Except where prefinished matching fasteners heads are required, use fine finishing nails for exposed nailing, countersunk and filled flush with millwork, and matching final finish where transparent finish is indicated.

D. Cabinets: Install without distortion so that doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete the installation of hardware and accessory items as indicated.

E. Tops: Anchor securely to base units and other support systems as indicated.

3.03 ADJUSTMENT, CLEANING, FINISHING, AND PROTECTION

A. Repair damaged and defective millwork where possible to eliminate defects functionally and visually; where not possible to repair replace millwork. Adjust joinery for uniform appearance.

B. Clean, lubricate and adjust hardware.

C. Clean millwork on exposed and semi-exposed surfaces. Touch-up shop-applied finishes to restore damaged or soiled areas.

D. Complete the finishing work specified as work of this section, to whatever extent not completed at shop or prior to installation of millwork.

E. Provide final protection and maintain conditions, in a manner acceptable to Fabricator and Installer, which ensures architectural millwork being without damage or deterioration at time of substantial completion.

END OF SECTION 064123

SECTION 066510 - SOLID SURFACE FABRICATIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including general and supplementary conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes the following horizontal and trim solid surface product types:
   1. Window sills
   2. Countertops
   3. Vanity tops

B. Related Sections include the following:
   1. Division 6 Section “Rough Carpentry” for Blocking.
   2. Division 22 - Plumbing

1.03 DEFINITION

A. Solid surface is defined as nonporous, homogeneous material maintaining the same composition throughout the part with a composition of acrylic polymer, aluminum trihydrate filler and pigment.

1.04 SUBMITTALS

A. Shop drawings:
   1. Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices and other components.
      a. Show full-size details, edge details, thermoforming requirements, attachments, etc.
      b. Show locations and sizes of furring, blocking, including concealed blocking and reinforcement specified in other Sections.
      c. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers, waste receptacle and other items installed in solid surface.

B. Fabricator/installer qualifications:
   1. Provide copy of certification number.

C. Maintenance data:
   1. Submit manufacturer’s care and maintenance data, including repair and cleaning instructions.
      a. Maintenance kit for finishes shall be submitted.
   2. Include in project closeout documents.

1.05 QUALITY ASSURANCE

A. Qualifications:
   1. Shop that employs skilled workers who custom fabricate products similar to those required for this project and whose products have a record of successful in-service performance.

B. Fabricator/installer qualifications:
   1. Work of this section shall be by a certified fabricator/installer, certified in writing by the manufacturer.

C. Applicable standards:
   1. Standards of the following, as referenced herein:
      a. American National Standards Institute (ANSI)

b. American Society for Testing and Materials (ASTM)
c. National Electrical Manufacturers Association (NEMA)
d. NSF International

2. Fire test response characteristics:
   a. Provide with the following Class A (Class I) surface burning characteristics as determined by testing identical products per UL 723 (ASTM E84) or another testing and inspecting agency acceptable to authorities having jurisdiction:
      1) Flame Spread Index: 25 or less.
      2) Smoke Developed Index: 450 or less.

D. Coordination drawings:
1. Shall be prepared indicating:
   a. Plumbing work.
   b. Electrical work.
   c. Miscellaneous steel for the general work.
   d. Indicate location of all walls (rated and non-rated), blocking locations and recessed wall items, etc.
2. Content:
   a. Project-specific information, drawn accurately to scale.
   b. Do not base coordination drawings on reproductions of the contract documents or standard printed data.
   c. Indicate dimensions shown on the contract drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements.
   d. Provide alternate sketches to designer for resolution of such conflicts.
      1) Minor dimension changes and difficult installations will not be considered changes to the contract.

E. Drawings shall:
1. Be produced in 1/2-inch scale for all fabricated items.

F. Pre-installation conference:
1. Conduct conference at project site to comply with requirements in Division 1.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver no components to project site until areas are ready for installation.

B. Store components indoors prior to installation.

C. Handle materials to prevent damage to finished surfaces.
1. Provide protective coverings to prevent physical damage or staining following installation for duration of project.

1.07 WARRANTY

A. Provide manufacturer's warranty against defects in materials.
1. Warranty shall provide material and labor to repair or replace defective materials.
2. Damage caused by physical or chemical abuse or damage from excessive heat will not be warranted.

B. Optional Installed Warranty:
1. To qualify for the optional Installed Warranty, fabrication and installation must be performed by a DuPont Certified Fabrication/Installation source who will provide a brand plate for the application.
2. This warranty covers all fabrication and installation performed by the certified/approved source subject to the specific wording contained in the Installed Warranty Card.

C. Manufacturer's warranty period:
1. Ten years from date of substantial completion.

1.08 MAINTENANCE

A. Provide maintenance requirements as specified by the manufacturer.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers:
1. Subject to compliance with requirements, provide products by one of the following:
a. Corian® surfaces from the DuPont company, LG Himacs, Wilsonart or approval equal.

2.02 MATERIALS

A. Solid polymer components:
1. Cast, nonporous, filled polymer, not coated, laminated or of composite construction with through body colors meeting ANSI Z124.3 or ANSI Z124.6, having minimum physical and performance properties specified.
2. Superficial damage to a depth of 0.010 inch (.25 mm) shall be repairable by sanding and/or polishing.

B. Thickness:
1. 1/2 inch with 1 1/4" built-up front edge

C. Edge treatment:
1. 1/8" eased edges

D. Integral Sink:
1. 816P (mid size oval)

E. Performance characteristics:

Property	Typical Result	Test
Tensile Strength	6,000 psi	ASTM D 638
Tensile Modulus	1.5 x 10^6 psi	ASTM D 638
Tensile Elongation	0.4% min.	ASTM D 638
Flexural Strength	10,000 psi	ASTM D 790
Flexural Modulus	1.2 x 10^6 psi	ASTM D 790
Hardness	>85 Rockwell "M" Scale	ASTM D 785
Thermal Expansion	2.2 x 10^{-5} in./in./°F	ASTM D 696
Fungus and Bacteria Resistance	Does not support microbial growth	ASTM G21&G22
Microbial Resistance	Highly resistant to mold growth	UL 2824
Ball Impact Resistance: Sheets	No fracture—1⁄2 lb. ball: 1⁄4" slab—36" drop 1⁄2" slab—144" drop	NEMA LD 3-2000 Method 3.8
Weatherability	ΔE^*_{94}<5 in 1,000 hrs.	ASTM G 155
Flammability		ASTM E 84, NFPA 255 & UL 723
Class	A	NFPA 101, Life Safety Code
Flame Spread	<25	NFPA 255 & UL 723
Smoke Developed	<25	

2.03 ACCESSORIES

A. Joint adhesive:
1. Manufacturer's standard one- or two-part adhesive kit to create inconspicuous, nonporous joints.

B. Sealant:
1. Manufacturer's standard mildew-resistant, FDA-compliant, NSF 51-compliant (food zone — any type), UL-listed silicone sealant in colors matching components.

2.04 FACTORY FABRICATION

A. Shop assembly:
1. Fabricate components to greatest extent practical to sizes and shapes indicated, in accordance with approved shop drawings and manufacturer's printed instructions and technical bulletins.
2. Form joints between components using manufacturer's standard joint adhesive without conspicuous joints.
   a. Reinforce with strip of solid polymer material, 2" wide.
3. Provide factory cutouts for plumbing fittings and bath accessories as indicated on the drawings.
4. Rout and finish component edges with clean, sharp returns.
   a. Rout cutouts, radii and contours to template.
   b. Smooth edges.
   c. Repair or reject defective and inaccurate work.

B. Thermoforming:
1. Comply with manufacturer's data.
2. Heat entire component.
   a. Material shall be uniform, between 275 and 325 degrees Fahrenheit during forming.
3. Form pieces to shape prior to seaming and joining.
4. Cut pieces to finished dimensions.
5. Sand edges and remove nicks and scratches.

2.05 FINISHES

A. Select from the manufacturer's standard color chart.
1. Color: To be selected from price group "C or 3".

B. Finish:
1. Provide surfaces with a uniform finish.
   a. Matte; gloss range of 5–20.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates and conditions, with fabricator present for compliance with requirements for installation tolerances and other conditions affecting performance of work.
B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Install components plumb, level and rigid, scribed to adjacent finishes, in accordance with approved shop drawings and product data.
1. Provide product in the largest pieces available.

2. Form field joints using manufacturer's recommended adhesive, with joints inconspicuous in finished work.
   a. Exposed joints/seams shall not be allowed.
3. Reinforce field joints with solid surface strips extending a minimum of 1 inch on either side of the seam with the strip being the same thickness as the top.
4. Cut and finish component edges with clean, sharp returns.
5. Rout radii and contours to template.
6. Anchor securely to base cabinets or other supports.
7. Align adjacent countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop.
8. Carefully dress joints smooth, remove surface scratches and clean entire surface.
9. Install countertops with no more than 1/8-inch (3 mm) sag, bow or other variation from a straight line.

3.03 REPAIR

A. Repair or replace damaged work which cannot be repaired to architect's satisfaction.

3.04 CLEANING AND PROTECTION

A. Keep components clean during installation.

B. Remove adhesives, sealants, and other stains.

END OF SECTION 066510

SECTION 071326 - SHEET MEMBRANE WATERPROOFING

PART 1 - GENERAL

1.01 Product Data: Submit product data and general recommendations from waterproofing materials manufacturer, including data substantiating that materials comply with requirements.

1.02 Manufacturer: Obtain primary waterproofing materials of each type required from a single manufacturer, to greatest extent possible. Provide secondary materials only as recommended by manufacturer of primary materials.

1.03 Project Conditions: Proceed with work after substrate construction, openings, and penetrating work have been completed. Start waterproofing and associated work only when existing and forecasted weather conditions will permit work to be performed in accordance with manufacturers' recommendations and warranty requirements.

PART 2 - PRODUCTS

2.01 Rubberized Asphalt Sheet Waterproofing: Self-adhering membrane of rubberized asphalt integrally bonded to polyethylene sheeting, formed into uniform flexible sheets of thickness shown, or not less than 56 mils if no thickness is shown, complying with the following:

A. Tensile Strength: 250 psi min; ASTM D 412.

B. Ultimate Elongation: 300 percent min; ASTM D 412.

C. Brittleness Temperature: minus 25 deg F (minus 32 deg C); ASTM D 746.

D. Hydrostatic Head Resistance: 150 feet min.

E. Water Absorption: Not more than 0.5 percent weight gain after 48 hours of immersion at 70 deg F (21 deg C); ASTM D 570.

F. Products: Subject to compliance with requirements, provide one of the following:

Bituthene; W. R. Grace & Co.
Mel-rol; W.R. Meadows, Inc.
Polyguard 650; Polyguard Products, Inc.
Miradri; Mirafi, Inc.

2.02 Roof Underlayment: 40 mil thick, self-adhering membrane polymer modified bituminous sheet material equal to “Ice and Water Shield” by W. R. Grace.

A. Tensile Strength: 250 psi; ASTM D 412.

B. Ultimate Elongation: 250 percent min; ASTM D 412.

C. Adhesion: 3.0; ASTM D 903.

D. Permeance: 0.05; ASTM E 96.

2.03 Auxiliary Materials: Provide the following materials:

A. Adhesives: Provide types of adhesive compound and tapes recommended by waterproofing sheet manufacturer, for bonding to substrate (if required), for waterproof sealing of seams in membrane, and for waterproof sealing of joints between membrane and flashings, adjoining surfaces and projections through membrane.

B. Primers: Provide type of concrete primer recommended by manufacturer of sheet waterproofing material for applications required.

C. Flashing Materials: Except as otherwise indicated, provide types of flexible sheet material for flashing as recommended by waterproofing sheet manufacturer.

PART 3 - EXECUTION

3.01 Preparation: Comply with manufacturer's instruction for surface preparation. Apply primer to concrete and masonry surfaces at rate recommended by manufacturer of primary waterproofing materials. Prime only area that will be covered by WP membrane in same working day; reprime areas not covered by WP membrane within 24 hours.

3.02 Installation: Comply with manufacturer's instructions for handling and installation of sheet waterproofing materials.

A. Coordinate installation of waterproofing materials and associated work to provide complete system complying with combined recommendations of manufacturers and installers involved in work. Schedule installation to minimize period of exposure of sheet waterproofing materials.

B. Extend waterproofing sheet and flashings as shown to provide complete membrane over area indicated to be waterproofed. Seal to projections through membrane and seal seams. Bond to vertical surfaces and also, where shown or recommended by manufacturer, bond to horizontal surfaces.

C. Install protection board over completed membrane, complying with manufacturer's recommendations for both waterproofing sheet and protection course materials.

3.03 Cleaning: After completion, remove any masking materials and stains from exposed surfaces caused by waterproofing installation. Provide protection of completed membrane during installation of work over membrane and throughout remainder of construction period.

END OF SECTION 071326

SECTION 071900 - WATER REPELLENTS

PART 1 - GENERAL

1.01 Extent of surfaces to receive water repellent include all architectural precast, brick veneer, existing brick and concrete surfaces.

1.02 Product Data: Submit manufacturer's specifications, installation instructions, general recommendations for water repellents, and test results of repellent penetrations on brick from site.

1.03 Weather and Substrate Conditions: Proceed with application of water repellent when weather conditions and substrate conditions are in accordance with manufacturer's printed instructions.

PART 2 - PRODUCTS

2.01 Isobutyltrialkoxy Silane: Provide “Chemtrete BSM-40" by Degussa Corp. OR by one of the following approved equals.

Pecora International Corp.
W.R. Meadows.

Note: If product other than basis for design is submitted, submit test data and comparison between basis for design and submitted product demonstrating the submitted product is equal or better.

2.03 Warranty: Provide ten (10) year warranty against water infiltration due to repellant failure.

PART 3 - EXECUTION

3.01 Test Application: Prior to performance of water repellent work, including bulk purchase/delivery of products, prepare a small application in an unobtrusive location and in a manner acceptable to Architect, for purpose of demonstrating final effect (visual and physical/chemical) of planned installation. Proceed with work only after Architect's acceptance of test application, or as otherwise directed. Provide fugitive dye.

3.02 Clean substrate of substances which might interfere with penetration/adhesion of water repellents. Test for moisture content, in accordance with repellent manufacturer's instructions, to ensure that surface is sufficiently dry.

3.03 Coordination with Sealants: Where feasible, delay application of water repellents until installation of sealants has been completed in joints adjoining surfaces to be coated with repellent.

3.04 Protect adjoining work, including sealant bond surfaces, from spillage or blow-over of water repellent. Comply with manufacturer's recommendations.

3.05 Installation: Apply a heavy saturation spray coating of water repellent on surfaces indicated for treatment using low pressure spray equipment. Comply with manufacturer's instructions.

3.06 Apply a second saturation spray coating, repeating first application. Comply with manufacturer's instructions for limitations on drying time between coats.

END OF SECTION 071900

SECTION 072100 - BUILDING INSULATION

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes thermal insulation, acoustical insulation, and exterior wall insulation as indicated and/or specified complete.

B. Related Sections:

1- Division 01 – General Requirements

2- Division 07 – 072119 Foam In Place Insulation

3- Divisions 21 through 23

1.02 Fire Performance Characteristics: Provide insulation materials identical to those whose indicated fire performance characteristics have been determined per ASTM E 119, ASTM E 84, and ASTM E 136, as applicable, by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing and inspecting organization.

1.03 SUBMITTALS:

A. Submit product data for each form and type of insulation indicated.

PART 2 - PRODUCTS

2.01 Roof Insulation (R-Value = R-30 Min):

Polyurethane Spray Foam Insulation: Icynene ProSeal (MD-C-200v3) OR Approved Equal Spray Foam Insulation: Medium-density, HFC 365/227 blown, conforming to the following:

A. Thermal Resistance (for 1 inch of material) (R-Value/inch @75 deg F): ASTM C 518; 7.1 hr.sq ft.degree F/BTU

B. Air Permeance (for 1 inch of material): ASTM E 2178: less than 0.02 L/s.m^2 @75 Pa
C. Water Vapor Transmission (for 1.5 inches of material): ASTM E 96; 0.97 perm
D. Resistance to Fungal Growth: ASTM C 1338: no growth
E. Product Emissions: Collaborative for High Performance Schools (CHPS) “Low-emitting” material per CA Section 01350 criteria.
F. Flame Spread and Smoke Developed Rating: ASTM E 84

1	Flame Spread:	25
2	Smoke Development:	300

2.02 Spray Foam Insulation (R-Value = R-18 Min):

Polyurethane Spray Foam Insulation: Icynene ProSeal (MD-C-200v3) OR Approved Equal Spray Foam Insulation: Medium-density, HFC 365/227 blown, conforming to the following:

A. Thermal Resistance (for 1 inch of material) (R-Value/inch @75 deg F): ASTM C 518; 7.1 hr.sq ft.degree F/BTU

B. Air Permeance (for 1 inch of material): ASTM E 2178: less than 0.02 L/s.m^2 @75 Pa
C. Water Vapor Transmission (for 1.5 inches of material): ASTM E 96; 0.97 perm
D. Resistance to Fungal Growth: ASTM C 1338: no growth
E. Product Emissions: Collaborative for High Performance Schools (CHPS) “Low-emitting” material per CA Section 01350 criteria.
F. Flame Spread and Smoke Developed Rating: ASTM E 84

1	Flame Spread:	25
2	Smoke Development:	300

2.03 Thermal Barrier for Polyurethane Spray Insulation: JM Spider Insulation manufactured by Johns Manville OR approved equal. Spray foam insulation to be sprayed ***over*** spray poly foam (SPF) insulation providing a thermal barrier and shall conform with the following:

A. Complying with ASTM E-84 and ASTM E-136.

B. At 1.8 pcf density and ≥ 2" thickness meets International Building Code and ICC ES criteria for use as an ignition barrier over foamed plastic.

2.04 Acoustical Insulation:

A. Mineral fiber sound batts, R-11, unfaced (non-combustible). Flame spread - 25 maximum as tested by ASTM # 84-75.

B. Acoustical insulation is required above ceilings at toilets, unless "full height" sound insulated walls are specified. Vinyl backed insulation shall be used in open air plenum spaces. STC rating shall be 45 to 51 in walls and ceilings.

2.05 Perimeter Fire-Containment Systems (Fire Safing): Where indicated for gaps between the perimeter edge of fire-resistance-rated floor assemblies and non-fire-resistance-rated exterior curtains walls, provide a perimeter fire-containment system with the fire-test-response characteristics indicated, as determined by testing identical systems per UL 2079 by UL and inspecting agency acceptable to authorities having jurisdiction. Materials shall be identified with appropriate makings of applicable testing and inspecting agency.

PART 3 - EXECUTION

3.01 GENERAL: Comply with insulation manufacturer's instructions for installation of insulation.

A. Support insulation units by adhesive or mechanical anchorage or both as applicable to location and conditions indicated.

3.02 INSTALLATION

A. Batt Insulation: Provide Batt insulation as indicated. Install insulation with edges butted snugly, leaving no open areas. Support securely with staples, clips, tape or fasteners, as required. Install in accordance with the manufacturer's directions and recommendations.
   1. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage, to provide permanent placement and support of units.
   2. Set vapor barrier faced units with vapor barrier to outside of construction, except as otherwise shown.
   3. At interior ceilings, where indicated, install on top of drywall or acoustical tile, as shown, fastening securely. Do not install insulation over light fixtures. Maintain 3" clearance from all light fixtures.
   4. At exterior soffits and ceilings, install on cross runners. Wire tie and fasten to prevent sag.

B. Wall Insulation:
   1. Install as per manufacturer's specifications, using licensed and approved installers.

END OF SECTION 072100

SECTION 074113 - PREFORMED WALL AND ROOF PANELS

PART 1 - GENERAL

1.01 WORK INCLUDED:

A. Standing seam metal roof/siding panels for the exterior walls/roofs as shown on the Drawings.

B. All metal trim, accessories, fasteners, sealants, anchor bolts, and all miscellaneous building components or accessories indicated on the Drawings or needed for a complete and weathertight roof installation.

1.02 SUBMITTALS:

A. Shop Drawings: Furnish detailed drawings showing profile and gauge of interior and exterior sheets, location and type of fasteners, location, gauges, shape and method of attachment of all trim, location and type of sealants, and any other details as may be required for a weathertight installation.

B. Samples: Provide two (2) full width by one (1) foot long samples of roof panels in finish specified.

1.03 DEFINITIONS:

A. Manufacturer: Terms such as manufacturer, panel manufacturer and roofing manufacturer are defined as the material supplier.

B. Roofing Contractor: Terms such as roofing contractor are defined as the installer.

C. Roofing Team: Terms such as roofing team are defined as the material supplier and the installer.

1.03 WARRANTY:

Notice of Intent to Issue Roof Warranty: **Manufacturer must complete form and provide to General Contractor for inclusion in Bid Package**. Form is included in section.

Metal Roofing Guarantee: Complete form at the end of this section.

Warranties: Provide 20-year leak free written warranty jointly issued by Panel Manufacturer and Roofing Contractor with full material and labor plus General Contractor's overhead and profit. Provide Panel Manufacturer's 20-year written finish warranty.

This joint warranty, comprised of the Materials Supplier and the Installer, shall commence upon final acceptance of the roof system by the Owner. There shall be no time within the twenty (20) year warranty period that either party is exempt from full responsibility of the specified conditions of the warranty.

Should either party (Materials Supplier or Installer) for any reason fail to, or become incapable of honoring the specified warranty, the other party shall become wholly and solely responsible for honoring the full extent of the specified warranty for the balance of the twenty (20) year period.

1.04 PERFORMANCE TESTING REQUIREMENTS:

A. Structural Tests: Structural designs shall have been derived from witnessed tests per ASTM E-72 "Chamber Method" using a 30 psf windload. A deflection limit of L/180 shall apply to positive load only.

B. Submit shop drawings and calculations on structural design, preformed metal roof deck and fasteners that are signed, sealed and dated by a Professional Engineer registered in the State of Florida, verifying that the structural framing and covering panel connections meet loading requirements and codes and that they are in compliance with requirements to resist wind uplift for

129 mph wind speed, in accordance with ASCE 7-10.

C. Air Infiltration: When tested per ASTM E-283-73 at a static pressure of 30 psf there shall not exceed .083 cfm per square foot of wall area.

D. Water Penetration: When tested per ASTM E-331-70 at a static pressure of 30 psf there shall be no uncontrolled water penetration through the panel joints.

E. Fire Tests: Panels shall be qualified by full scale fire tests for acceptance by building code and insurance authorities for use when non-load bearing non-combustible wall construction is permitted, based on fire performance. Evidence of the fire performance shall be submitted and include the following:

1. UL1 classification for "Surface Burning Characteristics" per UL1 Standard 723 (ASTM E-84). Assembled Panel Units: Flame Spread less than 25. Smoke Developed less than 450.
2. UL1 classification for "Enclosed Room Corner Test" (8' x 12' x 8'), per UL1 subject 1715.
3. FM approved per FM Standards (4880), Full Scale Corner Test."

F. All roofing materials shall be labeled Class A per ASTME 108 and shall be certified by a nationally recognized, independent testing laboratory. All roofing systems shall be installed within the limitations of the test procedure for surfacing, deck cross slope and combustibility.

PART 2 - PRODUCTS

2.01 ACCEPTABLE ROOFING TEAMS:

A. Provide Preformed Wall and Roof Panels meeting these specifications as manufactured and constructed by one of the following construction teams:

Acme Roofing w/ Superior Metal Systems
Gulf Coast Metal Systems, Inc. w/ Architectural Integrated Metals. (AIM)
Kent Construction w/ Englert.
K.C. Construction w/ Architectural Integrated Metals. (AIM)
K.C. Construction w/ Architectural Metal Systems
Specialty Contractors w/ Architectural Metal Systems
Sperry & Associates, Inc. w/ Architectural Metal Systems
Sperry & Associates w/ Merchant & Evans
Streamline Roofing w/ Drexel Metals Corporation

2.02 PANEL DESIGN:

A. No panel shall exceed 18" width.

B. Exposed fasteners are to be kept to a minimum.

C. Integral batten profile shall be used for roofing and siding.

D. Match profile of Architectural Metal Systems - "Loc Seam 16" for roof panel and “Architectural II” for wall panel.

E. **Panels are to be continuous with no laps.**

2.03 MATERIALS:

A. Face sheet shall be 24 gage, AZ55 acrylic coated, hot dipped (galvalume) aluminum-zinc alloy coated steel conforming to ASTM A792 Grade 40, commercial quality.

B. All components used shall be approved by the manufacturer.

C. Flexible Closure Strips: Closed-cell, expanded cellular rubber, self-extinguishing, cut or premolded to match corrugation of roofing sheets. All neoprene closures shall be covered with metal profile closure to match color of roofing.

D. Trim shall be formed sheet metal finished to match panels. Provide manufacturer's standard extruded aluminum trim painted to match panels if so detailed on Drawings.

E. All exposed fasteners shall be made of stainless steel, cast aluminum-zinc alloy or capped head used with neoprene coated aluminum. Finish shall match color of roof panel.

F. Sealants shall be:
1. Preformed tape sealant shall be polymeric, butyl based material that is non-skinning, non-drying, non-toxic and shall have a service temperature range of -60°F to 212°F.
2. Field applied vapor sealant in the panel joints shall be butyl based material that is non-skinning, non-drying, re-sealable and shall have a service temperature range of -60°F to 212°F.
3. Field applied weather sealant shall be a silicone based material with excellent adhesion and cohesion properties and shall have a service temperature range of -80°F to 300°F.

G. Roof panel clips shall be heavy gauge galvalume steel and concealed in the panel joint. The clips shall be installed from the topside of the roof.

H. Sheet Metal Accessories:
1. Gutters: Continuous roll formed, seamless gutters with end pieces, outlet tubes, and other special pieces. Size in accordance with SMACNA. Join sections with riveted and soldered or sealed joints. Provide expansion-type slip joint at center of runs. Furnish gutter supports 36 inches on center, constructed of same metal as gutters. Provide aluminum wire ball strainers at outlets. Gutters shall be 24 gage (galvalume coated) steel with an acrylic coating to match roof fascia and rake. Contractor to provide typical ADS downspout adapters and ADS piping as requited to connect with existing system.
2. Downspouts: Form in 10-foot sections with elbows and offsets. Join sections with 1-1/2-inch telescoping joints. Provide fasteners designed to hold downspouts 1 inch away from walls; locate fasteners at top and bottom and approximately 5 feet on center in between. Downspouts shall be 24 gage (galvalume coated) steel with an acrylic coating to match wall panels.
3. Soffits: 24 gage, (galvalume coated) steel soffits with an acrylic coating. Provide 8 1/2" wide panels. Perforated panels are required as shown on drawings. All fasteners shall be concealed. Profile to match Flexloc by MBCI.

PART 3 - EXECUTION

3.01 Inspection:

A. Examine alignment of structural steel and/or panel support system prior to installation and do not proceed until any defects are corrected by the responsible contractor.

B. Building tolerances shall not exceed maximums as defined by AISC or ACI specifications.

C. The roof membrane shall be inspected by the manufacturer’s representative within one (1) year of acceptance by the Owner.

3.02 INSTALLATION:

A. Install metal panels, clips, fasteners, trim and related sealants in accordance with approved shop drawings and as may be required for a weathertight installation. Panels shall be cut in the field for bevels and openings. Flashing and trim shall be installed true and in proper alignment for best appearance. Sealants shall be installed without skips or voids to insure weathertightness and

integrity of the vapor barrier system.

B. All new installed material shall be sealed from moisture penetration at the end of each day. The contractor shall provide the architect with a 'final statement of compliance' for the owner's record.

C. Remove all strippable coating if utilized, and provide a dry wipe-down cleaning of the panels as they are erected.

3.03 DAMAGED MATERIAL:

Upon determination of responsibility, repair or replace damaged metal panels and trim to the satisfaction of the Architect and/or the Owner.

MANUFACTURER'S NOTICE OF INTENT TO ISSUE ROOF WARRANTY

Whereas _____ herein called "Roofing Manufacturer" hereby gives to:

Owner: _____

Address: _____

of its Notice of Intent to Issue the Roof Warranty, as specified in the Contract Documents issued by Clemons Rutherford & Associates.

Project: _____

Address: _____

When installed in accordance with manufacturer=s instructions and the Contract Documents by a manufacturer approved installer, certified to install the manufacturer's roofing system, identified as:

As the Authorized Representative of said Manufacturer, with the authority to make the above representations to the Owner, I hereby certify the above statements to the Owner.

Manufacturer: _____

Address: _____

Authorized Representative: _____

Signed: _____

Date: _____

By submitting this bid I hereby certify to Owner that a manufacturer approved roofer will be installing the roofing system.

Signed: _____

Date: _____

METAL ROOFING GUARANTEE

WHEREAS, of
(Roofing Contractor)

(Address)

AND WHEREAS of
(Roofing Manufacturer)

(Address)

herein called "The Roofing Team" hereby gives notice to:

OWNER:

ADDRESS:

having performed the metal roofing and related work on the project. More specifically:

PROJECT:

ADDRESS:

Date of Guarantee Acceptance:

Designated Guarantee Period: **Twenty Year Period**

Date of Guarantee Expiration:

AND WHEREAS, the Roofing Team have contracted, either directly with the Owner, or indirectly with each other for the benefit of the Owner to guarantee said work as follows for the designated guarantee period.

A. The finish coating will not crack or check, peel, blister, flake, chip, or otherwise lose adhesion, and will not chalk in excess of eight (8), or fade in excess of five (5) ENBS units. Color change determination shall be make in accordance with ASTM D-2244, paragraph 4.3.2.4, by comparing exposed panels and unexposed panels from a given batch.

B. Metal substrate shall not corrode or structurally fail within design loading conditions.

C. Leak-Free.

NOW THEREFORE, Roofing Team, defined as the material supplier and the installer, hereby guarantees, subject only to the terms, conditions and limitations herein set forth, that during guarantee period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of such work or materials as are necessary to correct defective workmanship or defective materials, and as are necessary to maintain said work during the

guarantee period.

This guarantee is made subject to the following terms and conditions:

1. Specifically excluded from this guarantee are damages to the work caused by:

    a. Penetrations of the roof associated with vents, equipment or other causes if performed without prior approval from the Roofing Team. Such approval will not be unreasonably withheld.

    b. Failure of the building framing/structure in excess of design criteria.

    c. Winds in excess of 129 mph.

    d. Lightning

    e. Fires

    f. Vandalism

    g. Corrosive, aggressive atmosphere such as chemical fumes, direct salt spray (defined as being within 1500 feet of saltwater), or rain water and condensation which contains alkaline, acid, chlorides, or sulfates that is significantly above or below what is considered to be normal. By accepting the contract for installation of the roof, the panel manufacturer and installer declare that the atmospheric conditions, at the time of their bid, are within normal limits.

    h. Hail

    i. Other Acts of Gods.

2. When such work has been damaged by any of the foregoing causes, the guarantee shall be null and void until such damage has been repaired by the Roofing Team and until cost expense thereof has been paid by the Owner or by another responsible party so designated by the Owner.

3. The Roofing Team is responsible for any and all damage, deterioration, or failure for any reason of the work covered by this guarantee, except for those items specifically excluded above.

4. After reasonable investigation by the Owner, the Owner shall promptly notify Roofing Team of observed, known or suspected leaks, defects, or deterioration. The Roofing Team shall respond to all notifications within forty-eight (48) hours and to make all repairs as deemed reasonably necessary to correct said leaks or defects. Approval of such corrective work shall not be unreasonably withheld by the Owner.

5. In relation to the Weathertightness Warranty, the following shall apply. This guarantee shall not supersede any warranties or guarantee as a part of any construction or purchase contract between the Roofing Team and Owner, or any combination thereof, but shall operate in addition to all contractual guarantees and warranties available from the Roofing Team. This agreement shall not operate to restrict or cut off the Owner from any and all remedies and recourses lawfully available to him in cases of roofing failures. Specifically, this guarantee shall not operate to relieve Roofing Team of responsibility for performance of the original work in accordance with the requirements of contract directly with the Owner or a subcontract with the Owner's General Contractor. If any warranties or guaranties conflict, the most stringent in favor of the Owner shall take precedence. This warranty or guarantee does not cover any claims or actions for consequential, special, or incidental damages, or punitive damages, or other loss or expense, whether such claims may arise

or be based upon tort (including negligence), strict liability contract or warranty, or any other cause of action, to the building, other property, contents or materials within the building project. Owner's exclusive remedy pursuant to this guarantee or warranty shall be the repair or replacement of the roof system materials as provided herein.

This joint warranty, comprised of the Materials Supplier and the Installer, shall commence upon final acceptance of the roof system by the Owner. There shall be no time within the twenty (20) year warranty period that either party is exempt from full responsibility of the specified conditions of the warranty.

Should either party (Materials Supplier or Installer) for any reason fail to, or become incapable of honoring the specified warranty, the other party shall become wholly and solely responsible for honoring the full extent of the specified warranty for the balance of the twenty (20) year period.

By signing the above, the Authorized Representative of said entities certifies and represents that he is an officer of the entity with the authority to contract and make the above representations to the Owner.

IN WITNESS HEREOF, this instrument has been duly executed on this

day of , 20 .

(SEAL) ROOFING CONTRACTOR

(Authorized Representative)

Sworn to and subscribed before me

this day of , 20 .

Notary Public

My commission expires:

(SEAL) ROOFING MANUFACTURER

(Authorized Representative)

Sworn to and subscribed before me

this day of , 20 .

Notary Public

My commission expires:

SECTION 074600 - MINERAL FIBER CEMENT SIDING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 6 Section "Rough Carpentry" for underlayment and wood framing.

2. Division 7 Section "Flashing and Sheet Metal" for flashing, gutters, and other sheet metal work.

3. Division 7 Section "Joint Sealers" for field-applied sealants.

1.02 SUBMITTALS: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

A. Product data for each type of product specified, including details of construction relative to materials, dimensions of individual components, profiles, textures, and colors.

B. Samples: Submit three 6" x 6" pieces of siding in style and texture specified.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in manufacturer's unopened bundles or containers with labels intact.

B. Handle and store materials at Project site to prevent water damage, staining, or other physical damage. Comply with manufacturer's recommendations for job site storage, handling and protection.

1.04 PROJECT CONDITIONS

Weather Conditions: Proceed with siding installation only when existing and forecasted weather conditions will permit siding to be installed in compliance with manufacturer's recommendations and when substrate is completely dry.

1.05 WARRANTY

A. Provide manufacturer=s standard product warranty against manufacturing defects in siding for fifty (50) years.

PART 2 - PRODUCTS

2.01 MANUFACTURER: Provide hardiplank siding by James Hardie Building Products OR approved equal.

2.02 HARDIPLANK

A. Non-asbestos fiber-cement siding to comply with ASTM C1186, Grade II, Type A.

B. Style, Size: Hardie Plank, Select Cedarmill, 73@ (6" exposure) with APrimePlus@ sealing and priming system.

2.03 ACCESSORIES

A. Siding Accessories: Solid vinyl soffit panels, ventilating vinyl soffit panels, corner posts, door casings, window casings, starter strips, trim, and other items as recommended by manufacturer for building configuration, matching type of siding selected.

B. Fasteners: Non-corrosive aluminum siding nails, in sufficient length to penetrate minimum of 1 inch into substrate. Provide pre-finished fasteners in color to match siding where face nailing is unavoidable.

PART 3 - EXECUTION

3.01 EXAMINATION: Examine substrates for compliance with requirements for substrates, installation tolerances, and other conditions affecting performance of siding. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION:

A. Clean substrates of projections and substances detrimental to application.

B. Coordinate installation with flashings and other adjoining construction to ensure proper sequencing.

3.03 INSTALLATION: Comply with siding manufacturer's installation instructions and recommendations. Center nails in elongated nailing slots without binding siding to allow for thermal movement. Install trim and accessories in accordance with manufacturer's recommendations. Overlap butt joints to shed water away from direction of prevailing wind. Isolate dissimilar metals.

3.04 ADJUSTING: Replace damaged siding materials with new materials complying specified requirements.

3.05 CLEANING: Clean finished surfaces as recommended by siding manufacturer, and maintain in a clean condition during construction.

END OF SECTION 074600

SECTION 076200 - FLASHING AND SHEET METAL

PART 1 - GENERAL:

Conform to profiles and sizes shown on drawings, and comply with "Architectural Sheet Metal Manual" by SMACNA, for each general category of work required.

Metal flashing and counter flashing.
Conductor Head and Downspouts.

Guarantee: Five-year maintenance guarantee stating that all work in this section not guaranteed under the roof warranty, will remain watertight for a period of 5-years from the date of project acceptance, co-signed by the General Contractor.

PART 2 - PRODUCTS:

Conductor Head and Downspouts: Provide 0.040 continuous pre-finished aluminum gutters and downspouts with baked enamel finish. Color shall be selected by Architect.

Solder: For use with steel or copper, provide 50-50 tin/lead solder (ASTM B 32), with rosin flux.

Fasteners: Same metal as flashing/sheet metal or other non-corrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened.

Bituminous Coating: SSPC-Paint 12, solvent-type bituminous mastic, nominally free of sulfur, compounded for 15-mil dry film thickness per coat.

Elastomeric Sealant: Generic type recommended by manufacturer of metal and fabricator of components being sealed and complying with requirements for joint sealants as specified in Section 07900 - Joint Sealers.

Epoxy Seam Sealer: 2-part noncorrosive metal seam cementing compound, recommended by metal manufacturer for exterior/interior nonmoving joints including riveted joints.

Reglets: Metal or plastic units of type and profile indicated, compatible with flashing indicated, noncorrosive.

Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gage required for performance.

Mill Finish Aluminum: ASTM B 209, 3003-H14, with a minimum thickness of 0.040 inch, unless otherwise indicated.

Fabricated Units

Fabricate sheet metal with flat-lock seams; solder with type solder and flux recommended by manufacturer, except seal aluminum seams with epoxy metal seam cement and, where required for strength, rivet seams and joints.

Provide for thermal expansion of running sheet metal work by overlaps of expansion joints in fabricated work. Where required for water-tight construction, provide hooked flanges filled with polyisobutylene mastic for 1-inch embedment of flanges. Space joints at intervals of not more than 50 feet for steel, 24 feet for copper or stainless steel, or 30 feet for zinc alloy or aluminum. Conceal expansion provisions where possible.

PART 3 - EXECUTION:

Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.

A. Coat side of uncoated aluminum and stainless-steel sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.

B. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene underlayment.

C. Bed flanges in thick coat of asphalt roofing cement where required for waterproof performance.

Anchor work in place with noncorrosive fasteners, adhesives, setting compounds, tapes and other materials and devices as recommended by manufacturer of each material or system. Provide for thermal expansion and building movements. Comply with recommendations of "Architectural Sheet Metal Manual" by SMACNA.

Seal moving joints in metal work with elastomeric joint sealants, complying with requirements specified in Division 7 Section "Joint Sealants."

Clean metal surfaces of soldering flux and other substances which could cause corrosion.

Nail flanges of expansion joint units to substrates at spacing of 6 inches o.c.

Composition Stripping: Cover flanges (edges) of work set on bituminous substrate with 2 courses of glass fiber fabric (ASTM D-1668) set in and covered with asphaltic roofing cement.

Performance: Water-tight and weatherproof performance of flashing and sheet metal work is required.

END OF SECTION 076200

SECTION 076310 - GUTTERS AND DOWNSPOUTS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope:

1. Includes but not limited to:

a. Gutters and downspouts along main entry open canopy area (front and back).

PART 2 - PRODUCTS

2.01 DOWNSPOUTS

A. As shown on drawings, and if not shown on drawings, a minimum of 6" square and smooth finish 0.040 inch thick baked-on enamel aluminum including necessary elbows to match existing.

2.02 GUTTERS

A. 0.051 inch thick baked-on enamel aluminum, color to match metal roofing.

B. Hanger system shall be as detailed in Figure A, Page 41 of SMACNA Manual, 3rd Edition.

C. Cross-sectional configuration of gutter shall be Style G, Page 9 of SMACNA Manual, 3rd Edition, and match existing.

2.03 Downspouts, gutters, hangers, fasteners, and accessories shall be compatible material. Color to match metal roofing.

PART 3 - EXECUTION

3.01 Before starting work, verify governing dimensions at building. Inspect for conditions which would prevent installation of first class system. Do not install over improper conditions.

3.02 Furnish and install outlet tubes and gutter ends where required. Furnish and install expansion joints in runs exceeding 50'-0" and in runs which are restrained at both ends.

3.03 Join gutter sections according to Manufacturer's recommendations.

3.04 Lap joints in downSpouts at least 1-1/2 inches in direction of water flow.

3.05 Fabricate and install in accordance with SMACNA Manual, 3rd Edition.

3.06 Properly secure gutters and downspouts to withstand wind load of 130 mph.

3.07 At completion of this work, block downspouts and flood gutters in presence of Architect. Repair leaks and adjust gradients for proper drainage.

3.08 Coordinate installation requirements with Section 07600 - Flashing and Sheet Metal and Section 076100 - Metal Seam Roofing.

END OF SECTION 076310

SECTION 078400 - FIRESTOPPING

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Firestopping of Through Penetrations in Rated Assemblies.

B. Fire Resistive Joint Systems.

C. Perimeter Fire Containment Systems.

D. Smoke Seals.

E. Construction enclosing compartmentalized areas.

1.02 RELATED SECTIONS

A. Section 01 25 13 – Product Substitution Procedures.
B. Section 01 33 00 – Submittal Procedures.
C. Section 01 42 00 – References.
D. Section 01 45 00 – Quality Control.
E. Section 01 66 00 – Project Storage and Handling Requirements.
F. Section 01 78 00 – Closeout SubmittalsSection 10 42 00 – References.
G. Section 03 30 00 - Cast-In-Place Concrete: Sleeves and blockouts in concrete assemblies.
H. Section 04 80 00 - Masonry Assemblies: Sleeves and blockouts in masonry assemblies.
C. Section 05 50 00 - Metal Decking.
D. Section 05 81 10 - Architectural Joint Systems.
E. Section 07 21 00 - Building Insulation.
F. Section 07 71 60 - Roof Expansion Assemblies.
G. Section 07 81 00 - Applied Fireproofing.
H. Section 07 84 10 - Duct Firestopping: Fire resistive duct enclosures.
I. Section 07 90 00 - Joint Sealers.
J. Section 09 25 00 - Gypsum Board.
K. Division 23 – Heating, Ventilating and Air Conditioning (HVAC): Work requiring firestopping.
L. Division 26 - Electrical: Electrical work requiring firestopping.

1.03 REFERENCES

A. See Section 01 42 00 – References for standards, rules, regulations and statutes applicable to this section.

1.04 PERFORMANCE REQUIREMENTS

A. Provide products that upon curing, do not re-emulsify, dissolve, leach, breakdown or otherwise deteriorate over time from exposure to atmospheric moisture, sweating pipes, ponding water or other forms of moisture characteristic during and after construction.

B. Provide firestop sealants sufficiently flexible to accommodate motion such as pipe vibration, water hammer, thermal expansion and other normal building movement without damage to seal.

C. Pipe insulation shall not be removed, cut away or otherwise interrupted through wall or floor openings. Provide products appropriately tested for thickness and type of insulation utilized.

D. Openings within walls and floors designed to accommodate voice, data and video cabling shall be provided with re-enterable products specifically designed for retrofit.

E. Penetrants passing through fire-resistance rated floor-ceiling assemblies contained within chase wall assemblies shall be protected with products tested by being fully exposed to fire outside of chase wall. Systems within UL Fire Resistance Directory that meet criterion are identified with words "Chase Wall Optional".

F. Provide fire-resistive joint sealants sufficiently flexible to accommodate movement such as thermal expansion and other normal building movement without damage to seal.

G. Provide fire-resistive joint sealants designed to accommodate specific range of movement and tested for purpose in accord with cyclic movement test criteria as outlined in Standards, ASTM E-1399, ASTM E-1966 or ANSI/ UL 2079.

H. Provide through penetration firestop systems and fire-resistive joint systems and conduct air leakage test in accord with Standards, ANSI/UL1479 andANSI/ UL2079, respectively, with published L-Ratings for ambient and elevated temperatures as evidence of ability of through penetration firestop system or fire-resistive joint system to restrict movement of smoke.

1.05 SUBMITTALS

A Submit in accord with Section 01 33 00 – Submittal Procedures.

B. Product Data: Provide manufacturer's standard catalog data for specified products demonstrating compliance with referenced standards and listing numbers of systems in which each product is to be used.

C. Shop Drawings: Submit schedule of opening locations and sizes, penetrating items, and required listed design numbers to seal openings to maintain fire resistance rating of adjacent assembly.

D. Certificates:
1. Product certificates signed by the firestop system manufacturer certifying material compliance with applicable code and specified performance characteristics.
2. Certification of Installer's Qualifications.

E. Installation Instructions: Submit manufacturer's printed installation instructions.

1.06 QUALITY ASSURANCE

A. Products/Systems: Provide firestopping systems that comply with following requirements and as specified in Paragraph 1.04 - Performance Criteria.
1. Firestopping tests shall be performed by qualified, testing and inspection agency, UL approved, or another agency performing testing and follow-up inspection services for firestop systems acceptable to authorities having jurisdiction.
2. Firestopping products bear classification marking of qualified testing and inspection agency.

B. Installer Qualifications: Experienced in performing work, certified, licensed or otherwise qualified by firestopping manufacturer as having required training to install firestop products in accord with specified requirements.

C. Mock-Up: Install mock-up using acceptable products and manufacturer approved installation methods.
1. Apply one of each unit type of firestopping material, such as penetrations through fire rated partition, to representative application.
2. Locate where directed.
3. Maintenance: Maintain mock-up during construction for workmanship comparison.
4. Remove and legally dispose of mock-up when no longer required.

D Preinstallation Meetings: Conduct meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, and warranty requirements. Comply with Division 1 requirements.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Delivery in manufacturer's original, unopened, undamaged containers, identification labels intact identifying product and manufacturer, date of manufacture; lot number; shelf life, if applicable; qualified testing and inspection agency's classification marking; and mixing instructions for

multicomponent materials.

B. Handle and store products in accord with manufacturer's written recommendations published in technical materials. Leave products wrapped or otherwise protected and under clean and dry storage conditions until required for installation.

C. Store materials protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer.

1.08 PROJECT CONDITIONS

A. Do not install firestopping products when ambient or substrate temperatures are outside limitations recommended by manufacturer.

B. Do not install firestopping products when substrates are wet due to rain, frost, condensation, or other causes.

C. Maintain minimum temperature before, during, and for minimum 3 days after installation of materials

D. Do not use materials that contain flammable solvents.

E. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements.

F. Coordinate sizing of sleeves, openings, core-drilled holes or cut openings to accommodate through-penetration firestop systems.

G. Schedule installation of firestopping after completion of penetrating item installation but prior to covering or concealing of openings.

H. Schedule installation of safing materials in linear opening at curtain wall prior to construction that limits access to safing slot.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturer: Specified Technologies Inc., 200 Evans Way; Somerville, NJ 08876; Tel: 800-992-1180; Tel: 908-526-8000; Website: www.stifirestop.com.

B. Requests for substitutions will be considered in accord Section 01 25 13 – Product Substitution Procedures.

C. Single Source: Obtain firestop systems for each type of penetration or joint opening and construction condition indicated only from single manufacturer.

2.02 MATERIALS

A. Use only firestopping products that have been tested for specific fire-resistance-rated construction conditions conforming to construction assembly type, penetrating item type or joint opening width and movement capabilities, annular space requirements, and fire-rating involved for each separate instance.

B. Latex Sealants: STI SpecSeal Series single component latex formulations that upon cure do not re-emulsify during exposure to moisture, the following products are acceptable:
   1. Specified Technologies, Inc. (STI) SpecSeal Series SSS Intumescent Sealant.
   2. Specified Technologies, Inc. (STI) SpecSeal Series LCI Intumescent Sealant.
   3. Specified Technologies, Inc. (STI) SpecSeal Series LC Endothermic Sealant.
   4. Specified Technologies, Inc. (STI) SpecSeal Series AS Elastomeric Spray.
   5. Specified Technologies, Inc. (STI) SpecSeal Series ES Elastomeric Sealant.

C. Firestop Devices: STI SpecSeal Series factory-assembled steel collars lined with intumescent material sized to fit specific outside diameter of penetrating item, the following products are acceptable:
   1. Specified Technologies, Inc. (STI) SpecSeal Series SSC Firestop Collars.
   2. Specified Technologies, Inc. (STI) SpecSeal Series LCC Firestop Collars.

D. Wall Opening Protective Materials: STI SpecSeal Series intumescent, non-curing pads or inserts for protection of electrical switch and receptacle boxes to reduce horizontal separation to less than 24 inches (610mm), the following products are acceptable:
   1. Specified Technologies, Inc. (STI) SpecSeal Series SSP Firestop Putty Pads.
   2. Specified Technologies, Inc. (STI) SpecSeal Series EP PowerShield Insert Pads.

E. Firestop Putty: STI SpecSeal Series intumescent, non-hardening, water resistant putties containing no solvents, inorganic fibers or silicone compounds, the following products are acceptable:
   1. Specified Technologies, Inc. (STI) SpecSeal Series SSP Firestop Putty.

F. Fire Rated Cable Pathways: STI EZ-PATH device modules comprised of steel raceway with intumescent foam pads allowing 0 to 100 percent cable fill, the following products are acceptable:
   1. Specified Technologies Inc. (STI) EZ-PATH Fire Rated Pathway.

G. Wrap Strips: STI SpecSeal Series single component intumescent elastomeric strips faced on both sides with a plastic film, the following products are acceptable:
   1. Specified Technologies, Inc. (STI) SpecSeal Series RED Wrap Strip.
   2. Specified Technologies, Inc. (STI) SpecSeal Series BLU Wrap Strip.
   3. Specified Technologies, Inc. (STI) SpecSeal Series BLU2 Wrap Strip.

H. Firestop Pillows: STI SpecSeal Series re-enterable, non-curing, mineral fiber core encapsulated with an intumescent coating contained in a flame retardant poly bag, the following products are acceptable:
   1. Specified Technologies, Inc. (STI) SpecSeal Series SSB Firestop Pillows.

I. Mortar: STI SpecSeal Series Portland cement based dry-mix product formulated for mixing with water at Project site to form a non-shrinking, water-resistant, homogenous mortar, the following products are acceptable:
   1. Specified Technologies, Inc. (STI) SpecSeal Series SSM Firestop Mortar.

J. Silicone Sealants: STI SpecSeal Series moisture curing, single component, silicone elastomeric sealant for horizontal surfaces (pourable or nonsag) or vertical surface (nonsag), the following products are acceptable:
   1. Specified Technologies, Inc. (STI) Pensil 300 Silicone Sealant.
   2. Specified Technologies, Inc. (STI) Pensil 300 SL Self-Leveling Silicone Sealant.

K. Silicone Foam: STI SpecSeal Series multicomponent, silicone-based liquid elastomers, that when mixed, expand and cure in place to produce a flexible, non-shrinking foam, the following products are acceptable:
   1. Specified Technologies, Inc. (STI) Pensil 200 Silicone Foam.

L. Silicone/Urethane Sealants: STI SpecSeal Series moisture curing, single component, silicone/urethane hybrid elastomericsealant for horizontal surfaces, the following products are acceptable:
   1. Specified Technologies, Inc. (STI) SpecSeal Fast Tack Firestop Spray.

M. Installation Accessories: Provide clips,collars, fasteners, temporary stops or dams, and other devices required to position and retain materials in place.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Before beginning installation, verify that substrate conditions previously installed under other sections are acceptable for installation of firestopping in accord with manufacturer's installation instructions and technical bulletins.

B. Surfaces shall be free of dirt, grease, oil, scale, laitance, rust, release agents, water repellents, and any other substances that may inhibit optimum adhesion.

C. Provide masking and temporary covering to protect adjacent surfaces.

D. Do not proceed until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. General: Install through-penetration firestop systems and fire-resistive joint systems in accordance with the Performance Criteria and in accord with conditions of testing and classification as specified in published design.

B. Manufacturer's Instructions: Comply with manufacturer's written instructions for installation of firestopping products and the following.
   1. Seal openings or voids made by penetrations to ensure air and water resistant seal.
   2. Consult with mechanical engineer, project manager, and damper manufacturer prior to installation of through-penetration firestop systems that might hamper the performance of fire dampers as it pertains to duct work.
   3. Protect materials from damage on surfaces subjected to traffic.
   4. Apply suitable bond-breaker to prevent three-sided adhesion in applications where conditions might occur such as intersection of gypsum wallboard/steel stud wall to floor or roof assembly where joint is backed by steel ceiling runner or track.
   5. Where joint application is exposed to elements, fire-resistive joint sealant must be approved by manufacturer for use in exterior applications and shall comply with ASTM C-920, "Specification for Elastomeric Joint Sealants".

3.03 FIELD QUALITY CONTROL

A. Keep areas of work accessible until inspection by authorities having jurisdiction.

B. Where deficiencies are found,, repair or replace firestopping products to comply with requirements.

3.04 ADJUSTING AND CLEANING

A. Remove equipment, materials and debris, leaving area in undamaged, clean condition.

B. Clean all surfaces adjacent to sealed openings to be free of excess firestopping materials and soiling as work progresses.

END OF SECTION 078400

SECTION 079200 - JOINT SEALERS

PART 1 - GENERAL

1.01 PRECONSTRUCTION FIELD TESTS: Prior to installation of joint sealers, field-test their adhesion to joint substrates per field adhesion test in AAMA Aluminum Curtain Wall Series No. 13.

1.02 SUBMITTALS: Submit product data, samples of each type and color of joint sealer required and certified test reports for joint sealers evidencing compliance with requirements.

1.03 COMPATIBILITY: Provide joint sealers, joint fillers and other related materials that are compatible with one another and with joint substrates under service and application conditions, as demonstrated by testing and field experience.

1.04 COLORS: Provide color of exposed joint sealers to match color of adjacent surface.

PART 2 - PRODUCTS

2.01 ELASTOMERIC SEALANT STANDARD: Provide manufacturer's standard chemically curing, elastomeric sealant of base polymer indicated, complying with ASTM C 920 requirements.

A. One-Part Nonacid-Curing Silicone Sealant: Type S, Grade NS, Class 25, Uses NT, M, G, A, and O. Additional capability, when tested per ASTM C 719, to withstand 35 percent movement in both extension and compression for a total of 70 percent movement as measured at time of application and still comply with other requirements of ASTM C 920.

B. One-Part Nonsag Urethane Sealant for Use NT: Type S; Grade NS; Class 25; and Uses NT, M, A, and O.

2.02 ACRYLIC SEALANT: Manufacturer's standard one-part nonsag, solvent-release-curing, acrylic terpolymer sealant complying with ASTM C 920 for Type S; Grade NS; Uses NT, M, G, A and O; except for selected test properties which are revised as follows:

Heat-aged hardness: 40-50
Weight loss: 15 percent
Max. cyclic movement capability: plus or minus 7.5 percent

2.03 SILICONE-EMULSION SEALANT: Manufacturer's standard one part, nonsag, mildew-resistant, paintable, silicone-emulsion sealant complying with ASTM C 834.

2.04 ACOUSTICAL SEALANT FOR CONCEALED JOINTS: Manufacturer's standard, nondrying, nonhardening, nonskinning, nonstaining, gunnable, synthetic rubber sealant recommended for sealing interior concealed joints to reduce transmission of airborne sound.

2.05 FIRESTOP CAULKING AND PUTTY: Provide Firestop Putty or Adhesive Firestop Caulking/Sealant for fire sealing rated partitions at penetrations, junctions with roofing panels, and intersections at dissimilar materials. Firestop putty shall be Nelson FSP Firestop Putty as manufactured by Hevi-Duty/Nelson, OR Approved Equal. Adhesive Firestop caulking/sealant shall be Nelson CLK Adhesive Firestop Sealant as manufactured by Hevi-Duty/Nelson, OR Approved Equal. Materials furnished for firestopping shall comply with ASTM E-84 and ASTM E-814. Comply with manufacturer's instructions for installation and suitability for application.

2.06 FOAMED-IN-PLACE FIRE-STOPPING SEALANT: Two-part, foamed-in-place, silicone sealant for use as part of a through-penetration fire-stop system for filling openings around cables, conduit, pipes and similar penetrations through walls and floors, with fire-resistance rating indicated, per ASTM E 814; listed by UL or other testing and inspecting agency acceptable to authorities having jurisdiction.

2.07 ONE-PART FIRE-STOPPING SEALANT: One part elastomeric sealant formulated for use as part of a through-penetration fire-stop system for sealing openings around cables, conduit, pipes and similar penetrations through walls and floors, listed by UL or other testing and inspecting agency acceptable to

authorities having jurisdiction.

2.08 SECURITY SEALANT:

A. Type 1 – Polyurethane Sealant (Pick Resistance): Comply with the following:
1. Vulkem 116 by Tremco OR approved. One-part, moisture curing, gun grade polyurethane sealant.
2. Sonolastic Ultra by Sonneborn OR approved equal. One-part, moisture-curing, aliphatic, nonsag, polyurethane sealant.

B. Type 2 – Epoxy Sealant (Pick Proof): Provide the following in all inmate areas. Comply with the following:
1. Dynapoxy EP-1100 by Pecora Corporation OR approved equal. Two-part, non-sag chemically curing epoxy adhesive/sealant.
2. Sikadur 31, Hi-Mod Gel by Sika Corporation OR approved equal. Two-part, 100% solids, solvent-free, moisture-tolerant, high-modulas, high strength, structural epoxy paste adhesive.

2.09 SEALANT BACKINGS, GENERAL: Nonstaining; compatible with joint substrates, sealants, primers and other joint fillers; approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

A. Elastomeric Tubing Joint-Fillers: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, capable of remaining resilient at temperatures down to -26 deg F (-15 deg C). Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth and otherwise contribute to optimum sealant performance.

B. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing bond between sealant and joint filler or other materials at back of joint.

2.10 PRIMER: As recommended by joint sealer manufacturer where required for adhesion of sealant to joint substrates indicated.

2.11 ACCESSORY MATERIALS FOR FIRE-STOPPING SEALANTS: Forming, joint-fillers, packing and other accessory materials as required for installation of fire-stopping sealants.

PART 3 - EXECUTION

3.01 GENERAL: Comply with joint sealer manufacturers' instructions applicable to products and applications indicated.

3.02 INSTALLATION:

A. Elastomeric Sealant Installation Std: Comply with ASTM C 962.

B. Latex Sealant Installation Standard: Comply with ASTM C 790.

C. Acoustical Sealant Application Standard: Comply with ASTM C 919 for use of joint sealants in acoustical applications.

D. Installation of Fire-Stopping Sealant: Install sealant, including forming, packing and other accessory materials to fill openings around mechanical and electrical services penetrating floors and walls to provide fire-stops with fire resistance ratings indicated.

END OF SECTION 079200

SECTION 079500 - EXPANSION CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Interior expansion control systems.
   2. Exterior wall expansion control systems.

B. Related Requirements:
   1. Section 079200 "Joint Sealants" for liquid-applied joint sealants and for elastomeric sealants without metal frames.

1.3 SUBMITTALS

A. Shop Drawings: For each expansion control system specified. Include plans, elevations, sections, details, splices, blockout requirement, attachments to other work, and line diagrams showing entire route of each expansion control system. Where expansion control systems change planes, provide isometric or clearly detailed drawing depicting how components interconnect. Furnish a total of six (6) sets, five (5) hard copies and one (1) electronic copy.

B. Samples: For each exposed expansion control system and for each color and texture specified, full width by 6 inches (150 mm) long in size.
   1. Include manufacturer's color charts showing the full range of colors and finishes available for each exposed metal and elastomeric seal material.
   2. Fire-resistance ratings.

C. Product Test Reports: For each fire barrier provided as part of an expansion control system, for tests performed by a qualified testing agency.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

A. General: Provide expansion control systems of design, basic profile, materials, and operation indicated. Provide units with capability to accommodate variations in adjacent surfaces.
   1. Furnish units in longest practicable lengths to minimize field splicing. Install with hairline mitered corners where expansion control systems change direction or abut other materials.
   2. Include factory-fabricated closure materials and transition pieces, T-joints, corners, curbs, cross-connections, and other accessories as required to provide continuous expansion control systems.

B. Coordination: Coordinate installation of exterior wall expansion control systems with roof expansion control systems to ensure that wall transitions are watertight. Roof expansion joint assemblies are specified elsewhere.

2.2 PERFORMANCE REQUIREMENTS

A. Fire-Resistance Ratings: Where indicated, provide expansion control systems with fire barriers identical to those of systems tested for fire resistance per UL 2079 or ASTM E 1966 by a testing and inspecting agency acceptable to authorities having jurisdiction.
   1. Hose Stream Test: Wall-to-wall and wall-to-ceiling systems shall be subjected to hose stream testing.

B. Seismic Performance: Expansion control systems shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
   1. The term "withstand" means "the system will remain in place without separation of any parts when subjected to the seismic forces specified and the system will be fully operational after the seismic event."
   2. Component Importance Factor is 1.5.

2.3 INTERIOR EXPANSION CONTROL SYSTEMS

A. Manufacturers: Subject to compliance with requirements. Provide products by Construction Specialties, Inc. OR approved equal. (Basis of Design: Construction Specialties.)

B. Floor-to-Floor: Model SGP.

C. Floor-to-Wall: Model SGPW.

D. Wall-to-Wall: Model FWFC and FWFC-M.

E. Wall-to-Ceiling: Model FWFC and SCC.

2.4 EXTERIOR WALL EXPANSION CONTROL SYSTEMS

A. Manufacturers: Subject to compliance with requirements. Provide products by Construction Specialties, Inc. OR approved equal. (Basis of Design: Construction Specialties.)

B. Wall-to-Wall: Model SC.

C. Roof-to-Wall: Model SRJW.

2.5 MATERIALS

A. Aluminum: ASTM B 221 (ASTM B 221M), Alloy 6063-T5 for extrusions; ASTM B 209 (ASTM B 209M), Alloy 6061-T6 for sheet and plate.
   1. Apply manufacturer's standard protective coating on aluminum surfaces to be placed in contact with cementitious materials.

B. Compression Seals: ASTM E 1612; preformed elastomeric extrusions having an internal baffle system and designed to function under compression.

C. Cellular Foam Seals: Extruded, compressible foam designed to function under compression.

D. Fire Barriers: Any material or material combination, when fire tested after cycling, designated to resist the passage of flame and hot gases through a movement joint and to meet performance criteria for required fire-resistance rating.

E. Moisture Barrier: Flexible elastomeric material.

F. Accessories: Manufacturer's standard anchors, clips, fasteners, set screws, spacers, and other accessories compatible with material in contact, as indicated or required for complete installations.

2.6 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.7 ALUMINUM FINISHES

A. Mill finish.

B. Clear Anodic Finish: AAMA 611, [AA-M12C22A41, Class I, 0.018 mm] [AA-M12C22A31, Class II, 0.010 mm] or thicker.

C. Color Anodic Finish: AAMA 611, [AA-M12C22A42/A44, Class I, 0.018 mm] [AA-M12C22A32/A34, Class II, 0.010 mm] or thicker.
1. Color: To be selected by Architect.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces where expansion control systems will be installed for installation tolerances and other conditions affecting performance of work.
1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates according to expansion control system manufacturer's written instructions.

B. Coordinate and furnish anchorages, setting drawings, and instructions for installing expansion control systems. Provide fasteners of metal, type, and size to suit type of construction indicated and to provide for secure attachment of expansion control systems.

3.3 INSTALLATION

A. Comply with manufacturer's written instructions for storing, handling, and installing expansion control systems and materials unless more stringent requirements are indicated.

B. Metal Frames: Perform cutting, drilling, and fitting required to install expansion control systems.
1. Install in true alignment and proper relationship to joints and adjoining finished surfaces measured from established lines and levels.
2. Adjust for differences between actual structural gap and nominal design gap due to ambient temperature at time of installation. Notify Architect where discrepancies occur that will affect proper expansion control system installation and performance.
3. Cut and fit ends to accommodate thermal expansion and contraction of metal without buckling of frames.
4. Repair or grout blockout as required for continuous frame support using nonmetallic, shrinkage-resistant grout.
5. Install frames in continuous contact with adjacent surfaces.
a. Shimming is not permitted.
6. Locate anchors at interval recommended by manufacturer, but not less than 3 inches (75 mm) from each end and not more than 24 inches (600 mm) o.c.

C. Compression Seals: Apply adhesive or lubricant adhesive as recommended by manufacturer to both [frame interfaces] [sides of slabs] before installing compression seals.

D. Foam Seals: Install with adhesive recommended by manufacturer.

E. Terminate exposed ends of expansion control systems with field- or factory-fabricated termination devices.

F. Fire-Resistance-Rated Assemblies: Coordinate installation of expansion control system materials and associated work so complete assemblies comply with assembly performance requirements.
   1. Fire Barriers: Install fire barriers to provide continuous, uninterrupted fire resistance throughout length of joint, including transitions and field splices.

G. Moisture Barrier: Provide [at all exterior joints and]where indicated on Drawings. Provide drainage fittings at a maximum of 50 feet (15.2 m) or] where indicated on Drawings.

3.4 PROTECTION

A. Do not remove protective covering until finish work in adjacent areas is complete. When protective covering is removed, clean exposed metal surfaces to comply with manufacturer's written instructions.

B. Protect the installation from damage by work of other Sections. Where necessary due to heavy construction traffic, remove and properly store cover plates or seals and install temporary protection over expansion control systems. Reinstall cover plates or seals prior to Substantial Completion of the Work.

END OF SECTION 079500

SECTION 081113 - STEEL DOORS AND FRAMES

PART 1 - GENERAL

1.01 STANDARDS: In addition to other specified requirements, comply with Steel Door Institute "Recommended Specifications for Standard Steel Doors and Frames" (SDI-100), for the following classifications:

A. Interior Doors: SDI-100, Grade II, heavy-duty, Model 1, minimum 18-gage faces.

B. Exterior Doors: SDI-100, Grade III, extra heavy-duty, Model 2, minimum 16-gage faces.

C. All external envelope enclosure products and assemblies shall meet the large missile impact criteria.

1.02 SUBMITTALS: With manufacturer's standard details and specifications for steel doors and frames, submit shop drawings showing application to project, as required.

1.03 FIRE-RATED ASSEMBLIES: Provide units that display appropriate UL or FM labels for fire-rating indicated.

1.04 THERMAL INSULATED ASSEMBLIES: Provide thermal insulating door and frame assemblies tested in accordance with ASTM C 236, with U factor of 0.24 Btu/(hr x sq ft x deg. F) or better at all exterior locations.

PART 2 - PRODUCTS

2.01 MANUFACTURER: One of the following OR Approved Equal:

Amweld Building Products, Inc.
Ceco Door Products.
Curries Co. / an Assa Abloy Company
Mesker Door, Inc.
Pioneer Industries, Inc.
Steelcraft / Division of Ingersoll Rand.
Republic Builders Products.
SW Fleming / an Assa Abloy Company

2.02 MATERIALS: Steel doors and frames; hot-rolled, pickled and oiled per ASTM A 569 and A 568; cold-rolled per ASTM A 366 and A 568.

A. Galvanized sheets: ASTM A 526 with ASTM A 525, A 60 zinc coating, mill phosphatized. (At exterior doors and frames).

B. Anchors and Accessories: Manufacturer's standard units. Use galvanized items for units built into exterior walls, complying with ASTM A 153.

C. Doors: Comply with SDI-100, of the types and styles indicated, for materials quality, metal gages, and construction details.
1 Provide top cap at all exterior doors.

D. Door Frames: All frames shall be 16 gage and comply with SDI-100, of the types and styles indicated, for materials quality, metal gages, and construction details.
1. Provide standard hollow metal frames for doors, transoms, sidelights, borrowed lights, and other openings as indicated.
2. Prepare frames to receive 3 silencers on strike jambs of single-swing frames and 2 silencers on heads of double-swing frames.

3. Provide 26-gage steel plaster guards or mortar boxes, welded to frame, at back of hardware cutouts where installed in concrete, masonry or plaster openings.
4. All fire rated frames shall be labeled with a permanently affixed raised metal tag located on the hinge side of frame. Stenciled or paper labels shall not be used.

2.03 FABRICATION: Fabricate units to be rigid, neat in appearance, and free from defects, warp or buckle. Weld exposed joints continuously, grind, dress, and make smooth, flush and invisible.

A. Prepare steel doors and frames to receive mortised and concealed finish hardware, including cutouts, reinforcing, drilling and tapping, complying with ANSI A 115 "Specifications for Door and Frame Preparation for Hardware".

B. Reinforce units to receive surface-applied finish hardware to be field applied.

C. Locate finish hardware as indicated or, if not indicated, per DHI "Recommended Locations for Builder's Hardware".

2.04 Shop paint exposed surfaces of doors and frame units, including galvanized surfaces, using manufacturer's standard baked-on rust inhibitive primer.

PART 3 - EXECUTION

3.01 INSTALLATION: Install hollow-metal units in accordance with manufacturer's instructions and final shop drawings (if any). Fit doors to frames and floors with clearances specified in SDI-100.

A. Install fire-rated units in accordance with NFPA Std. No. 80.

B. Finish hardware is specified in another Division-8 section.

END OF SECTION 081113

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.01 QUALITY STANDARDS: Comply with NWWDA I.S.1 and AWI "Architectural Woodwork Quality Standards".

1.02 SUBMITTALS: In addition to product data, submit Samples 1'-0" square, of each type of core construction, face material and finish required.

1.03 WARRANTY: Provide manufacturer's lifetime of installation warranty for interior wood doors.

PART 2 - PRODUCTS

2.01 MANUFACTURER: Masonite Algoma-Marshfield: Aspiro Series OR Approved Equal.

2.02 GENERAL WOOD DOOR PRODUCT REQUIREMENTS: Provide doors with the same exposed surface material on both faces of each door, unless otherwise indicated.

A. Louvers: Manufacturer's standard louvers of type, materials and size indicated:
1. Material: Color anodized aluminum. Color to be selected by Architect.

2.03 INTERIOR SOLID CORE DOORS FOR TRANSPARENT FINISH: As follows:

A. Faces: Natural Birch, rotary sliced.

B. Grade: AA

C. Veneer Leaf Match: Slip match

D. Veneer Face Match/Assembly: Running

E. Construction: PC-5 (Particleboard core, 5-ply).

F. Finish: To be selected from manufacturer's select stain options.

G. Metal Frames for Light Openings: Manufacturer's standard 18-gage cold-rolled steel frame, **factory-primed, to be painted in field. Color to be selected by Architect**.

2.04 INTERIOR FIRE-RATED SOLID CORE DOORS: Labeled and listed for rating indicated, by testing and inspection agency acceptable to authorities having jurisdiction, complying with the following requirements:

A. Faces and AWI Grade: Match faces of non-rated doors in same area of building, unless otherwise indicated.

B. Edge Construction: Manufacturer's standard laminated edge construction for improved screw-holding capability and split resistance.

C. Pairs: Furnished formed steel edges and astragals for pairs of fire-rated doors, unless otherwise indicated.

D. Metal Frames for Light Openings in Fire Doors: Manufacturer's standard 18-gage cold-rolled steel frame, factory-primed, approved for use in door of fire-rating indicated.

E. All doors in stairwells shall be temperature rise doors.

F. Fire rated doors shall be labeled with a permanently affixed raised metal tag located on the hinge side of the door. Stenciled or paper labels shall not be used.

2.05 FABRICATION: Fabricate flush wood doors to produce doors complying with following requirements:

A. In sizes indicated for job-site fitting.

B. Metal Astragals: Pre-machine astragals and formed steel edges for hardware where required for pairs of fire-rated doors.

C. Openings: Cut and trim openings through doors to comply with applicable requirements of referenced standards for kind(s) of doors required.
   1. Light Openings: Trim openings with moldings of material and profile indicated.

D. Louvers: Factory install louvers in prepared openings.

2.06 SHOP SEAL faces and edges of doors for field-applied transparent finish with stain (if required) and other required pre-treatments and first coat of finish as specified in Division-9 section "Painting".

PART 3 - EXECUTION

3.01 INSTALLATION:

A. Install wood doors to comply with manufacturer's instructions and of referenced AWI standard and as indicated.

B. Install fire-rated doors in corresponding fire-rated frames in accordance with requirements of NFPA No. 80.

3.02 ALIGN AND FIT doors in frames with uniform clearances and bevels. Machine doors for hardware. Seal cut surfaces after fitting and machining.

3.03 PRE-FIT DOORS: Fit to frames for uniform clearance at each edge.

END OF SECTION 081416

SECTION 084113 - ALUMINUM STOREFRONTS

PART 1 - GENERAL

1.01 SYSTEM PERFORMANCE REQUIREMENTS: Comply with structural performance, air infiltration, and water penetration requirements indicated, as demonstrated by testing stock assemblies according to test methods indicated.

A. Thermal Movement: Provide for expansion and contraction of the component materials. The system shall be capable of withstanding a metal surface temperature range of 180 deg F (100 deg C) without buckling, joint seal failure, undue stress on structural elements, damaging loads on fasteners, reduction of performance, or stress on glass. Doors shall function normally over specified range.

1. Wind Loads: Provide assemblies capable of withstanding inward and outward pressures, acting normal to plane of the wall, as indicated on the drawings.

B. Structural Performance: Test in accordance with ASTM E 330. There shall be no glass breakage or permanent damage to fasteners, anchors, hardware or actuating mechanism or permanent deformation of framing members in excess of 0.2 percent of their clear span.

1. Deflection Normal to the Plane of the Wall: Test pressure shall be wind load specified. Deflection shall not exceed 1/175 of clear span, when subjected to uniform load deflection test.

2. Deflection Parallel to the Plane of the Wall: Test pressure shall be 1.5 times wind pressure. Deflection of members carrying full dead load shall not exceed amount that will reduce glass bite below 75 percent of design dimension or edge clearance between member and fixed glass or other fixed member above to less than 1/8 inch. Clearance between the member and operable door or window shall be at least 1/16 inch.

C. Air Infiltration: The test specimen shall be tested in accordance with ASTM E 283 or AAMA/NWWDA 101/l.s.2-97. Air infiltration rate shall not exceed 0.06 cfm/ft^2 at static air pressure differential of 6.24 P.S.F.

D. Water Penetration: The test specimen shall be tested in accordance with ASTM E 331. There shall be no leakage at a minimum static air pressure differential of 10 P.S.F. as defined in AAMA 501.

E. Condensation Resistance: Where framing systems are "thermal-break" construction, provide units tested for thermal performance in accordance with AAMA 1503 showing condensation resistance factor (CRF) of not less than 68.

F. Thermal Transmittance: Provide framing systems that have an overall U-value of not more than 0.58 BTU/(hr. x sq. ft. x deg. F) at 15 mph exterior wind velocity when tested in accordance with AAMA 1503 /15003.1.

1.03 SUBMITTALS

A. Product Data: Include fabrication methods, data on finishing, hardware and accessories and surface maintenance recommendations.

B. Shop Drawings: Include layout, installation details, 1/4-inch scale elevations, detail sections of composite members, anchors and reinforcement, hardware mounting heights and glazing details.

C. Samples: Pairs of samples of each finish on 12-inch-long sections. Where normal color variations are anticipated, include sets indicating full range of color variations.

D. Certified test reports from an AAMA accredited laboratory, showing that the systems have been tested and comply with the specified requirements.

SECTION 084113 - ALUMINUM STOREFRONTS

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Installer who has completed installations similar to those required and whose work has resulted in a record of successful in-service performance.

B. Manufacturer's Qualifications: A firm experienced in manufacturing systems similar to those indicated and has a record of successful in-service performance.

C. Design Criteria: Drawings indicate size, profile, and dimensional requirements and are based on specific types and models indicated. Aluminum entrance and storefront by other manufacturers may be considered provided deviations do not change the design concept.

1.05 WARRANTY: Submit a written warranty, executed by the manufacturer, agreeing to repair or replace units that fail in materials or workmanship within the specified warranty period. Failures include, but are not necessarily limited to:

Structural failures including excessive deflection, excessive leakage or air infiltration.

Faulty operation.

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

Warranty Period: 3 years after the date of Substantial Completion.

The warranty shall not deprive the Owner of other rights or remedies the Owner may have under other provisions of the Contract Documents, and is in addition to and runs concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

PART 2 - PRODUCTS

2.01 MANUFACTURERS: Subject to compliance with requirements, provide products by one of the following OR approved equal:

a. YKK AP (YES 40 FS Commercial Storefront System– basis of design for exterior storefront systems & exterior outswing storefront doors)
b. Kawneer

c. EFCO

2.02 MATERIALS

A. Aluminum Members: Shall be 6063-T6 alloy and temper; comply with ASTM B 221 for extrusions, ASTM B 209 for sheet or plate, and ASTM B 211 for bars, rods, and wire.

B. Glazing Materials: Comply with "Glass and Glazing" section.

C. Fasteners: Aluminum, nonmagnetic stainless steel, zinc plated steel, or material warranted to be noncorrosive and compatible with aluminum components, hardware, anchors, and other components.

Do not use exposed fasteners except for application of hardware. For hardware, use Phillips flat-head machine screws that match finish of member or hardware being fastened.

D. Thermal Barrier: The thermal barrier shall be poured in place two part polyurethane. A non-structural thermal barrier is unacceptable.

E. Perimeter Anchors: Aluminum or steel, providing the steel is properly isolated from the aluminum.

F. Concealed Flashing: 0.0179-inch (26 gage) minimum dead-soft stainless steel, or 0.026-inch-thick minimum extruded aluminum of alloy and type selected for compatibility with other components.

G. Brackets and Reinforcements: High-strength aluminum; where use of aluminum is not feasible provide nonmagnetic stainless steel or hot-dip galvanized steel complying with ASTM A 123.

H. Concrete/Masonry Inserts: Cast iron, malleable iron, or hot-dip galvanized steel complying with ASTM A 123.

I. Compression Weatherstripping: Replaceable molded neoprene gaskets complying with ASTM D 2000 on storefronts.

J. Sliding Weatherstripping: Replaceable wool, polypropylene, or nylon woven pile weatherstripping, with nylon fabric or aluminum strip backing, complying with AAMA 701.2.

2.03 FABRICATION

A. Storefront Framing System: Provide storefront and entrance framing systems fabricated from extruded aluminum members of size and profile indicated. Include subframes and other reinforcing members of the type indicated. Shop-fabricate and preassemble frame components where possible. Door glazing stops shall be snap-in type with elastomeric gaskets. Door stiles and rails shall have hairline joints at corners. Heavy concealed reinforcement brackets shall be secured with screws and shall be deep penetration and fillet welded. All doors shall have an adjusting mechanism in the top rail to provide for minor clearance adjustments. Weatherstripping shall be installed in one stile of pairs of doors and in jamb stiles of center pivoted doors. Door stops shall include wool pile weatherstripping.

B. Mullion Configurations: Provide pockets at the inside glazing face to receive resilient elastomeric glazing. Mullions and horizontals shall be one piece. Make provisions to drain moisture accumulation to the exterior.

2.04 FINISHES: Comply with NAAMM "Metal Finishes Manual" for recommendations relative to application and designations of finishes. Finish designations prefixed by "AA" conform to the system established by the Aluminum Association for designating aluminum finishes.

A. Color/Finish: AA-M12-C41-R1X, film thicker than 0.7 mil siliconized polyester baked enamel or Kynar 500 finish complying with AAMA 603.8 or AAMA 605.2. Color to be selected by Architect.

PART 3 - EXECUTION

3.01 Examine substrates for compliance with requirements, installation tolerances, and conditions that affect installation. Correct unsatisfactory conditions before proceeding.

3.02 Installation: Comply with manufacturer's instructions. Set units plumb, level, and true to line, without warp or rack of framing members, doors, or panels. Install in proper alignment and relation to established lines and grades. Provide support and anchor securely in place.

3.03 Drill and tap frames and doors and apply surface-mounted hardware.

3.04 Set sill members in bed of sealant, or with joint fillers or gaskets.

3.05 Refer to "Glass and Glazing" Section for installation of glass and other panels glazed into doors and framing.

3.06 Adjust hardware to function properly.

3.07 Clean completed system after installation. Avoid damage to coatings.

3.08 Clean glass after installation. Comply with "Glass and Glazing" Section for cleaning and maintenance.

END OF SECTION 084113

Door Schedule																
ROOM NAME	ROOM NUMBER	DOOR NUMBER	DOOR SIZE			DOOR			FRAME			LABEL	HDWR	DETAIL	NOTES/REMARKS	
			WIDTH	HEIGHT	THICKNESS	TYPE	MATL	FINISH	TYPE	MATL	FINISH					
LOBBY	001	001	(PR)3' - 0"	7' - 0"	1 3/4"	D2	ALUM	ANOD	SF1	ALUM	ANOD		5			
LOBBY	001	001A	(PR)3' - 0"	7' - 0"	1 3/4"	D2	WD	ST	F2	HM	PT		6			
WOMEN'S RESTROOM	002	002	3' - 0"	7' - 0"	1 3/4"	D1	WD	ST	F1	HM	PT		10			
MEN'S RESTROOM	003	003	3' - 0"	7' - 0"	1 3/4"	D1	WD	ST	F1	HM	PT		10			
MEETING ROOM	004	004	3' - 0"	7' - 0"	1 3/4"	D3	WD	ST	F1	PT	HM		6			
STORAGE	004A	004A	3' - 0"	7' - 0"	1 3/4"	D1	WD	ST	F1	HM	PT		9			
MEETING ROOM	004	004B	3' - 0"	7' - 0"	1 3/4"	D1	WD	ST	F1	HM	PT		6			
OFFICE	005	005	3' - 0"	7' - 0"	1 3/4"	D3	WD	ST	F1	PT	HM		1			
TEEN AREA	006	006	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT		6			
TEEN AREA	006	006A	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT		1			
CHILDRENS ROOM	007	007	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT		6			
CHILDRENS ROOM	007	007A	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT		1			
STUDY	008	008	3' - 0"	7' - 0"	1 3/4"	D3	WD	ST	F1	PT	HM		1			
CIRCULATION	009A	009	3' - 0"	7' - 0"	1 3/4"	D1	WD	PT	F1	HM	PT	2HR	4			
YOUNG ADULT	010	010	(PR)3' - 0"	7' - 0"	1 3/4"	D2	ALUM	ANOD	SF1	ALUM	ANOD		5			
COMPUTER LAB/CONF. RM	012	012	3' - 0"	7' - 0"	1 3/4"	D3	WD	ST	F1	PT	HM		6			
OFFICE (LINDA)	013	013	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT		1			
OFFICE	014	014	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT		1			
OFFICE (REX)	015	015	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT		1			
OFFICE (BECCA)	016	016	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT		1			
CHILDRENS AREA	017	017	(PR)3' - 0"	7' - 0"	1 3/4"	D2	ALUM	ANOD	SF1	ALUM	ANOD		5			
F.O.L	019	019	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT		1			
WORK AREA	020	020	3' - 0"	7' - 0"	1 3/4"	D1	HM	PT	F1	HM	PT		5			
BREAK ROOM	021	021	3' - 0"	7' - 0"	1 3/4"	D1	WD	PT	F1	HM	PT	2HR	4			
STORAGE	022	022	3' - 0"	7' - 0"	1 3/4"	D1	HM	PT	F1	HM	PT		9			
J/C	023	023	3' - 0"	7' - 0"	1 3/4"	D1	HM	PT	F1	HM	PT		7			
TOILET	024	024	3' - 0"	7' - 0"	1 3/4"	D1	WD	ST	F1	HM	PT		2			
TOILET	025	025	3' - 0"	7' - 0"	1 3/4"	D1	WD	ST	F1	HM	PT		2			
ELEC/COMM.	026	026	3' - 0"	7' - 0"	1 3/4"	D1	HM	PT	F1	HM	PT		3			
MECH.	027	027	(PR)3' - 0"	7'-0"	1 3/4"	D1	HM	PT	F2	HM	PT		8			

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SECTION 087100 - FINISH HARDWARE

PART 1 - GENERAL

1.1 SUMMARY:

A. Section Includes: Finish Hardware for door openings, except as otherwise specified herein.

1. Door hardware for steel (hollow metal) doors.
2. Door hardware for aluminum doors.
3. Door hardware for wood doors.
4. Door hardware for other doors indicated.
5. Keyed cylinders as indicated.

B. Related Sections:
1. Division 6: Rough Carpentry.
2. Division 8: Aluminum Doors and Frames
3. Division 8: Hollow Metal Doors and Frames.
4. Division 8: Wood Doors.
5. Division 26 Electrical
6. Division 28: Electronic Security

C. References: Comply with applicable requirements of the following standards. Where these standards conflict with other specific requirements, the most restrictive shall govern.

1. Builders Hardware Manufacturing Association (BHMA)
2. NFPA 101 Life Safety Code
3. NFPA 80 - Standard for Fire Doors and Other Opening Protectives
4. ANSI-A156.xx- Various Performance Standards for Finish Hardware
5. UL10C – Positive Pressure Fire Test of Door Assemblies
6. ANSI-A117.1 – Accessible and Usable Buildings and Facilities 2009
7. DHI /ANSI A115.IG – Installation Guide for Doors and Hardware
8. Florida Building Code, 2014, 5th Edition
9. Miami-Dade requirements for Hurricane (NOA) for exterior openings.

D. Intent of Hardware Groups

1. Should items of hardware not definitely specified be required for completion of the Work, furnish such items of type and quality comparable to adjacent hardware and appropriate for service required.
2. Where items of hardware aren't definitely or correctly specified, are required for completion of the Work, a written statement of such omission, error, or other discrepancy to be submitted to Architect, prior to date specified for receipt of bids for clarification by addendum; or, furnish such items in the type and quality established by this specification, and appropriate to the service intended.

E. Allowances

1. Refer to Division 1 for allowance amount and procedures.

F. Alternates

1. Refer to Division 1 for Alternates and procedures.

1.2 SUBSTITUTIONS:

A. Comply with Division 1.

1.3 SUBMITTALS:

A. Comply with Division 1.

B. Special Submittal Requirements: Combine submittals of this Section with Sections listed below to ensure the "design intent" of the system/assembly is understood and can be reviewed together.

C. Product Data: Manufacturer's specifications and technical data including the following:

1. Detailed specification of construction and fabrication.
2. Manufacturer's installation instructions.
3. Wiring diagrams for each electric product specified. Coordinate voltage with electrical before submitting.
4. Submit 6 copies of catalog cuts with hardware schedule.
5. Provide 9001-Quality Management and 14001-Environmental Management for products listed in Materials Section 2.2

D. Shop Drawings - Hardware Schedule: Submit 6 complete reproducible copy of detailed hardware schedule in a vertical format.

1. List groups and suffixes in proper sequence.
2. Completely describe door and list architectural door number.
3. Manufacturer, product name, and catalog number.
4. Function, type, and style.
5. Size and finish of each item.
6. Mounting heights.
7. Explanation of abbreviations and symbols used within schedule.
8. Detailed wiring diagrams, specially developed for each opening, indicating all electric hardware, security equipment and access control equipment, and door and frame rough-ins required for specific opening.

E. Templates: Submit templates and "reviewed Hardware Schedule" to door and frame supplier and others as applicable to enable proper and accurate sizing and locations of cutouts and reinforcing.

1. Templates, wiring diagrams and "reviewed Hardware Schedule" of electrical terms to electrical for coordination and verification of voltages and locations.

F. Samples: (If requested by the Architect)

1. 1 sample of Lever and Rose/Escutcheon design, (pair).
2. 3 samples of metal finishes

G. Contract Closeout Submittals: Comply with Division 1 including specific requirements indicated.

1. Operating and maintenance manuals: Submit 3 sets containing the following.

a. Complete information in care, maintenance, and adjustment, and data on repair and replacement parts, and information on preservation of finishes.
b. Catalog pages for each product.
c. Name, address, and phone number of local representative for each manufacturer.
d. Parts list for each product.

2. Copy of final hardware schedule, edited to reflect, "As installed".
3. Copy of final keying schedule
4. As installed “Wiring Diagrams” for each piece of hardware connected to power, both low voltage and 110 volts.
5. One set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

1.4 QUALITY ASSURANCE

A. Comply with Division 1.

1. Exterior Openings Severe Windstorm Components testing: Listed and labeled by a testing and inspecting agency acceptable to authority having jurisdiction, based on testing according to ANSI A250.13. Further compliance with Florida Building Codes for Hurricane (NOA) for Exterior Openings.
2. Statement of qualification for distributor and installers.
3. Statement of compliance with regulatory requirements and single source responsibility.
4. Distributor's Qualifications: Firm with 3 years experience in the distribution of commercial hardware.

    a. Distributor to employ full time Architectural Hardware Consultants (AHC) for the purpose of scheduling and coordinating hardware and establishing keying schedule.
    b. Hardware Schedule shall be prepared and signed by an AHC.

5. Installer's Qualifications: Firm with 3 years experienced in installation of similar hardware to that required for this Project, including specific requirements indicated.
6. Regulatory Label Requirements: Provide testing agency label or stamp on hardware for labeled openings.

    a. Provide UL listed hardware for labeled and 20 minute openings in conformance with requirements for class of opening scheduled.
    b. Underwriters Laboratories requirements have precedence over this specification where conflict exists.

7. Single Source Responsibility: Except where specified in hardware schedule, furnish products of only one manufacturer for each type of hardware.

B. Review Project for extent of finish hardware required to complete the Work. Where there is a conflict between these Specifications and the existing hardware, notify the Architect in writing and furnish hardware in compliance with the Specification unless otherwise directed in writing by the Architect.

1.5 DELIVERY, STORAGE, AND HANDLING:

A. Packing and Shipping: Comply with Division 1.

1. Deliver products in original unopened packaging with legible manufacturer's identification.
2. Package hardware to prevent damage during transit and storage.
3. Mark hardware to correspond with "reviewed hardware schedule".
4. Deliver hardware to door and frame manufacturer upon request.

B. Storage and Protection: Comply with manufacturer's recommendations.

1.6 PROJECT CONDITIONS:

A. Coordinate hardware with other work. Furnish hardware items of proper design for use on doors and frames of the thickness, profile, swing, security and similar requirements indicated, as necessary for the proper installation and function, regardless of omissions or conflicts in the information on the Contract Documents.

B. Review Shop Drawings for doors and entrances to confirm that adequate provisions will be made for the proper installation of hardware.

1.7 WARRANTY:

A. Refer to Conditions of the Contract

B. Manufacturer's Warranty:

1. Closers: Ten years
2. Exit Devices: Three Years
3. Locksets & Cylinders: Three years
4. All other Hardware: Two years.

1.8 OWNER'S INSTRUCTION:

A. Instruct Owner's personnel in operation and maintenance of hardware units.

1.9 MAINTENANCE:

A. Extra Service Materials: Deliver to Owner extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Division 1 Closeout Submittals Section.

1. Special Tools: Provide special wrenches and tools applicable to each different or special hardware component.
2. Maintenance Tools: Provide maintenance tools and accessories supplied by hardware component manufacturer.
3. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage and protection of extra service materials.

B. Maintenance Service: Submit for Owner's consideration maintenance service agreement for electronic products installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

A. The following manufacturers are approved subject to compliance with requirements of the Contract Documents. Approval of manufacturers other than those listed shall be in accordance with Division 1.

Item:	Manufacturer:	Approved:
Hinges	Stanley	Bommer, McKinney
Locksets	Best	Schlage, Sargent
Cylinders	Best Cormax™	
Exit Devices	Precision	
Closers	Stanley D-4550	Dorma 8900, Norton 7500
Access Control System	By Security provider	
Power Supply	Best	Altronix
Protection Plates	Trimco	Burns, Rockwood
Overhead Stops	ABH	Rixson, Glynn Johnson
Door Stops	Trimco	Burns, Rockwood
Flush Bolts	Trimco	ABH, Burns
Coordinator & Brackets	Trimco	ABH, Burns
Threshold & Gasketing	National Guard	Reese, K.N. Crowder

2.2 MATERIALS:

A. Hinges:

1. Template screw hole locations
2. Minimum of 2 permanently lubricated non-detachable bearings
3. Equip with easily seated, non-rising pins
4. Sufficient size to allow 180-degree swing of door
5. Furnish hinges with five knuckles concealed bearings

6. Provide hinge type as listed in schedule.
7. Furnish 3 hinges per leaf to 7 foot 6 inch height. Add one for each additional 30 inches in height or fraction thereof.
8. Tested and approved by BHMA for all applicable ANSI Standards for type, size, function and finish
9. UL10C listed for Fire rated doors.

B. Electrified Functions for Hinges: Comply with the following:
1. Power Transfer: Concealed PTFE-jacketed wires, secured at each leaf and continuous through hinge knuckle. Provide wire quantity and sizes required for electric hardware be served.

C. Cylindrical Type Locks and Latchsets:

1. Tested and approved by BHMA for ANSI A156.2, Series 4000, Operational Grade 1, Extra-Heavy Duty, and be UL10C listed.
2. Provide 9001-Quality Management and 14001-Environmental Management.
3. Fit modified ANSI A115.2 door preparation.
4. Locksets and cores to be of the same manufacturer to maintain complete lockset warranty
5. Locksets to have anti-rotational studs that are thru-bolted
6. Keyed lever shall not have exposed “keeper” hole
7. Each lever to have independent spring mechanism controlling it
8. 2-3/4 inch (70 mm) backset
9. 9/16 inch (14 mm) throw latchbolt
10. Provide sufficient curved strike lip to protect door trim
11. Outside lever sleeve to be seamless, of one-piece construction made of a hardened steel alloy
12. Keyed lever to be removable only after core is removed, by authorized control key
13. Provide locksets with 7-pin removable and interchangeable core cylinders
14. Hub, side plate, shrouded rose, locking pin to be a one-piece casting with a shrouded locking lug.
15. Locksets outside locked lever must withstand minimum 1400 inch pounds of torque. In excess of that, a replaceable part will shear. Key from outside and inside lever will still operate lockset.
16. Core face must be the same finish as the lockset.
17. Functions and design as indicated in the hardware groups.

D. Exit Devices:

1. Exit devices to meet or exceed BHMA for ANSI 156.3, Grade 1.
2. Exit devices to be tested and certified by UL or by a recognized independent laboratory for mechanical operational testing to 10 million cycles minimum with inspection confirming Grade 1 Loaded Forces have been maintained.
3. Exit devices chassis to be investment cast steel, zinc dichromate.
4. Exit devices to have stainless steel deadlocking ¾” through latch bolt.
5. Exit devices to be equipped with sound dampening on touchbar.
6. Non-fire rated exit devices to have ¼” minimum turn hex key dogging.
7. Touchpad to be “T” style constructed of architectural metal with matching metal end caps.
8. Touchbar assembly on wide style exit devices to have a ¼” clearance to allow for vision frames.
9. All exposed exit device components to be of architectural metals and “true” architectural finishes.
10. Provide strikes as required by application.
11. Fire exit hardware to conform to UL10C and UBC 7-2. UL tested for Accident Hazard.
12. The strike is to be black powder coated finish.
13. Exit devices to have field reversible handing.
14. Provide heavy duty vandal resistant lever trim with heavy duty investment cast stainless steel components and extra strength shock absorbing overload springs. Lever shall not require resetting. Lever design to match locksets and latchsets.
15. Provide 9001-Quality Management and 14001-Environmental Management.
16. Vertical Latch Assemblies to have gravity operation, no springs.

E. Cylinders:

1. Provide the necessary cylinder housings, collars, rings & springs as recommended by the manufacturer for proper installation.
2. Provide the proper cylinder cams or tail piece as required to operate all locksets and other keyed hardware items listed in the hardware sets.
3. Coordinate and provide as required for related sections.

F. Door Closers shall:

1. Tested and approved by BHMA for ANSI 156.4, Grade 1
2. UL10C certified
3. Provide 9001-Quality Management and 14001-Environmental Management.
4. Closer shall have extra-duty arms and knuckles
5. Conform to ANSI 117.1
6. Maximum 2 7/16 inch case projection with non-ferrous cover
7. Separate adjusting valves for closing and latching speed, and backcheck
8. Provide adapter plates, shim spacers and blade stop spacers as required by frame and door conditions
9. Full rack and pinion type closer with 1½“ minimum bore
10. Mount closers on non-public side of door, unless otherwise noted in specification
11. Closers shall be non-handed, non-sized and multi-sized.

G. Door Stops: Provide a dome floor or wall stop for every opening as listed in the hardware sets.

1. Wall stop and floor stop shall be wrought bronze, brass or stainless steel.
2. Provide fastener suitable for wall construction.
3. Coordinate reinforcement of walls where wall stop is specified.
4. Provide dome stops where wall stops are not practical. Provide spacers or carpet riser for floor conditions encountered

H. Over Head Stops: Provide a Surface mounted or concealed overhead when a floor or wall stop cannot be used or when listed in the hardware set.

1. Concealed overhead stops shall be heavy duty bronze or stainless steel.
2. Surface overhead stops shall be heavy duty bronze or stainless steel.

I. Kickplates: Provide with four beveled edges ANSI J102, 10 inches high by width less 2 inches on single doors and 1 inch on pairs of doors. Furnish oval-head countersunk screws to match finish.

J. Mop plates: Provide with four beveled edges ANSI J103, 4 inches high by width less 1 inch on single doors and 1 inch on pairs of doors. Furnish oval-head countersunk screws to match finish.

K. Door Bolts: Flush bolts for wood or metal doors.

1. Provide a set of Automatic bolts, Certified ANSI/BHMA 156.3 Type 25 for hollow metal label doors.
2. Provide a set of Automatic bolts, Certified ANSI/BHMA 156.3 Type 27 at wood label doors.
3. Manual flush bolts, Certified ANSI/BHMA 156.16 at openings where allowed local authority.
4. Provide Dust Proof Strike, Certified ANSI/BHMA 156.16 at doors with flush bolts without thresholds.

L. Coordinator and Brackets: Provide a surface mounted coordinator when automatic bolts are used in the hardware set.

1. Coordinator, Certified ANSI/BHMA A1156.3 Type 21A for full width of the opening.
2. Provide mounting brackets for soffit applied hardware.
3. Provide hardware preparation (cutouts) for latches as necessary.

M. Power Supply: UL Listed, Field Selectable 12VDC or 24VDC output. The power supply will specifically designed to support electric locks and access controls. The power supply uses 115 VAC at 800mA input. The power shall be able to be expanded to four station controls. The filtered and regulated output power is field selectable for 12 or 24 VDC.

1. Fire Alarm/Life Safety emergency release included in power supply.
2. Available options for multiple door options four or more control stations, Adjustable Time delay relay, Battery charging, Battery Back up.

N. Electric Door Strike: Certified by ANSI/BHMA 156.31, Grade 1 and listed for Burglary Protection ANSI/ UL1034 Grade 1.

1. For General use provide fail-secure electric strike and with fire-rated device.
2. Listed UL10C for Fire Door assemblies
3. Latchbolt monitor switch option when specified in hardware sets.
4. Provide the electric strike in the appropriate model that will accept a 5/8” or 3/4" latchbolt.

O. Door Position Switch: Provide door position switch for door status monitoring as indicated in hardware sets.

1. At all fired rated doors the door and frames, position switch preparation will be provided by the door and frame manufacturer or by an authorized label service agent.

P. Seals: All seals shall be finished to match adjacent frame color. Seals shall be furnished as listed in schedule. Material shall be UL listed for labeled openings.

Q. Weatherstripping: Provide at head and jambs only those units where resilient or flexible seal strip is easily replaceable. Where bar-type weatherstrip is used with parallel arm mounted closers install weatherstrip first.

1. Weatherstrip shall be resilient seal of (Neoprene, Polyurethane, Vinyl, Pile, Nylon Brush, Silicone)
2. UL10C Positive Pressure rated seal set when required.

R. Door Bottoms/Sweeps: Surface mounted or concealed door bottom where listed in the hardware sets.

1. Door seal shall be resilient seal of (Neoprene, Polyurethane, Nylon Brush, Silicone)
2. UL10C Positive Pressure rated seal set when required.

S. Thresholds: Thresholds shall be aluminum beveled type with maximum height of ½” for conformance with ADA requirements. Furnish as specified and per details. Provide fasteners and screws suitable for floor conditions.

T. Provide one wall mounted Telkee, Lund or MMF series key cabinet complete with hooks, index and tags to accommodate 50% expansion. Coordinate mounting location with architect.

U. Silencers: Furnish silencers on all interior frames; 3 for single doors, 2 for pairs. Omit where any type of seals occur.

2.3 FINISH:

A. Designations used in Schedule of Finish Hardware - 3.05, and elsewhere to indicate hardware finishes are those listed in ANSI/BHMA A156.18 including coordination with traditional U.S. finishes shown by certain manufacturers for their products

B. Powder coat door closers to match other hardware, unless otherwise noted.

C. Aluminum items shall be finished to match predominant adjacent material. Seals to coordinate with frame color.

2.4 KEYS AND KEYING:

A. Provide keyed brass construction cores and keys during the construction period. Construction control and operating keys and core shall not be part of the Owner's permanent keying system or furnished in the same keyway (or key section) as the Owner's permanent keying system. Permanent cores and keys (prepared according to the accepted keying schedule) will be furnished to the Owner.

B. Cylinders, removable and interchangeable core system: Best CORMAX™ Patented 7-pin.

C. Permanent keys and cores: Stamped with the applicable key mark for identification. These visual key control marks or codes will not include the actual key cuts. Permanent keys will also be stamped: "Do Not Duplicate"

D. Transmit Grand Masterkeys, Masterkeys and other Security keys to Owner by Registered Mail, return receipt requested.

E. Furnish keys in the following quantities:

1. 1 each Grand Masterkeys
2. 4 each Masterkeys
3. 2 each Change keys each keyed core
4. 15 each Construction masterkeys
5. 1 each Control keys

F. The Owner, or the Owner's agent, will install permanent cores and return the construction cores to the Hardware Supplier. Construction cores and keys remain the property of the Hardware Supplier.

G. Keying Schedule: Arrange for a keying meeting, and programming meeting with Architect Owner and hardware supplier, and other involved parties to ensure locksets and locking hardware, are functionally correct and keying and programming complies with project requirements. Furnish 3 typed copies of keying and programming schedule to Architect.

PART 3 - EXECUTION

3.1 EXAMINATION:

A. Verification of conditions: Examine doors, frames, related items and conditions under which Work is to be performed and identify conditions detrimental to proper and or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.2 HARDWARE LOCATIONS:

A. Mount hardware units at heights indicated in the following publications except as specifically indicated or required to comply with the governing regulations.

1. Recommended Locations for Builder’s Hardware for Standard Steel Doors and Frames, by the Door and Hardware Institute (DHI).

2. Recommended locations for Architectural Hardware for flush wood doors (DHI).

3. WDMA Industry Standard I.S.-1A-04, Industry Standard for Architectural wood flush doors.

3.3 INSTALLATION:

A. Install each hardware item per manufacturer's instructions and recommendations. Do not install surface mounted items until finishes have been completed on the substrate. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

B. Conform to local governing agency security ordinance.

C. Install Conforming to ICC/ANSI A117.1 Accessible and Usable Building and Facilities.

1. Adjust door closer sweep periods so that from the open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches from the latch, measured to the landing side of the door.

D. Installed hardware using the manufacturers fasteners provided. Drill and tap all screw holes located in metallic materials. Do not use “Riv-Nuts” or similar products.

3.4 FIELD QUALITY CONTROL AND FINAL ADJUSTMENT:

A. Contractor/Installers, Field Services: After installation is complete, contractor shall inspect the completed door openings on site to verify installation of hardware is complete and properly adjusted, in accordance with both the Contract Documents and final shop drawings.

1. Check and adjust closers to ensure proper operation.

2. Check latchset, lockset, and exit devices are properly installed and adjusted to ensure proper operation.

a. Verify levers are free from binding.
b. Ensure latchbolts and dead bolts are engaged into strike and hardware is functioning.

3. Report findings, in writing, to architect indicating that all hardware is installed and functioning properly. Include recommendations outlining corrective actions for improperly functioning hardware if required.

3.5 SCHEDULE OF FINISH HARDWARE:

Manufacturer List

Code	Name
AB	ABH Manufacturing Inc.
BE	Best Access Systems
BY	By Others
DM	Dorma Door Controls
HS	HES
NA	National Guard
PR	Precision
RC	RCI
SD	Stanley Door Closers
ST	Stanley
TR	Trimco
RO	Rockwood

Finish List

Code	Description
AL	Aluminum
626	Satin Chromium Plated
630	Satin Stainless Steel
689	Aluminum Painted
GRAY	Gray
GREY	Grey
BLACK	Black
US26D	Chromium Plated, Dull
US32D	Stainless Steel, Dull

Option List

Code	Description
FL	Fire Exit Hardware
HC	Hurricane Code Device
S3	ANSI Strike Package
B4E	BEVELED 4 EDGES - KICK PLATES
CSK	COUNTER SINKING OF KICK / MOP PLATES
NRP	NON REMOVEABLE PIN STD/HVY HINGE
RQE	REQUEST TO EXIT

Hardware Sets

SET #1

3	Hinges	CB179 4 1/2 X 4 1/2	US26D	ST
1	Lockset	9K3-7AB15D PATD S3	626	BE
1	Stop	1270WV or 1211 as Req.	626	TR

SET #2

3	Hinges	CB179 4 1/2 X 4 1/2	US26D	ST
1	Privacy Set	9K3-0L15D S3	626	BE
1	Door Closer	CLD-4551 STD W/PA BRKT	689	SD
1	Kick Plate	KO050 10" x 2" LDW B4E CSK	630	TR
1	Mop Plate	KM050 4" x 1" LDW B4E CSK	630	TR
1	Wall Bumper	1270WV	630	TR
1	Gasketing	5050 B @ Head and Jambs		NA
1	Threshold	AS DETAILED		BY

SET #3

3	Hinges	CB179 4 1/2 X 4 1/2	US26D	ST
1	Lockset	9K3-7D15D PATD S3	626	BE
1	Door Closer	CLD-4551 STD W/PA BRKT	689	SD
1	Wall Bumper	1270WV	630	TR

SET #4

3	Hinges	CB179 4 1/2 X 4 1/2	US26D	ST
1	Passage Set	9K3-0N15D S3	626	BE
1	Door Closer	CLD-4551 STD W/PA BRKT	689	SD
1	Wall Bumper	1270WV	630	TR
1	Gasketing	5050 B @ Head and Jambs		NA

SET #5 - CR

3	Hinges	CB191 4 1/2 X 4 1/2 NRP	US32D	ST
1	Exit Device	HC 2103 X 4903A	630	PR
1	Rim Cylinder	12E-72 PATD	626	BE
1	Electric Strike Body	9600	630	HS
1	Door Closer	CLD-4550 CS	689	SD
1	Kick Plate	KO050 10" x 2" LDW B4E CSK	630	TR
1	Card Reader	By Access Control Supplier		BY
1	Power Supply	AL300ULX		BE
1	Door Position Switch	MC4		DM
1	Infrared Egress Switch	915-G	GRAY	RC
1	Gasketing	127 NA @ Head and Jambs		NA
1	Door Sweep	200 NA		NA
1	Saddle Threshold	425	AL	NA

NOTE: Prox Card Reader signals release of the electric strike allowing entry. Passive infrared sensor is used for request to exit. Door position switch monitors door status. Coordinate electrical requirements with the related trades and sections.

SET #6

3	Hinges	CB179 4 1/2 X 4 1/2	US26D	ST
1	Passage Set	9K3-0N15D S3	626	BE
1	Door Closer	CLD-4550 CS	689	SD
3	Door Silencers	1229A	GREY	TR

SET #7

3	Hinges	CB179 4 1/2 X 4 1/2	US26D	ST
1	Passage Set	9K3-0N15D S3	626	BE
1	Door Closer	CLD-4551 STD W/PA BRKT	689	SD
1	Wall Bumper	1270WV	630	TR
3	Door Silencers	1229A	GREY	TR

SET #8

3	Hinges	CB179 4 1/2 X 4 1/2 NRP	US26D	ST
1	Storeroom Lockset	9K3-7D15D PATD S3	626	BE
1	Door Closer	CLD-4551 STD W/PA BRKT	689	SD
1	Wall Bumper	1270WV	630	TR
1	Gasketing	5050 B @ Head and Jambs		NA

SET #9

3	Hinges	CB179 4 1/2 X 4 1/2	US26D	ST
1	Passage Set	9K3-0N15D S3	626	BE
1	Wall Bumper	1270WV	630	TR
3	Door Silencers	1229A	GREY	TR

SET #10

3	Hinges	CB179 4 1/2 X 4 1/2	US26D	ST
1	Pull Plate	111x70C	US32D	RO
1	Push Plate	70C-RKW	US32D	RO
1	Kick Plate	KO050 10" x 2" LDW B4E CSK	630	TR
1	Mop Plate	KM050 4" x 1" LDW B4E CSK	630	TR
1	Stop	1270WV or 1211 as Req.	626	TR
3	Door Silencers	1229A	GREY	TR
1	Door Closer	CLD-4551 STD W/PA BRKT	689	SD

OPENING LIST TO FOLLOW:

Opening List

Opening	Hdw Set
005	#1
006A	#1
007A	#1
008	#1
013	#1
014	#1
015	#1
016	#1
019	#1
024	#2
025	#2
026	#3
009	#4
021	#4
001	#5
010	#5
017	#5
020	#5
001A	#6
004	#6
004B	#6
006	#6
007	#6
012	#6
023	#7
027	#8
004A	#9
022	#9
002	#10
003	#10

END OF SECTION 087100

SECTION 088000 - GLASS AND GLAZING

PART 1 - GENERAL

1.01 RELATED SECTIONS

A. Section 084113 – Aluminum Entrances and Storefronts

1.02 GLAZING STANDARD: Comply with FGMA "Glazing Manual" and "Sealant Manual".

1.03 SAFETY GLAZING STANDARD: Comply with ANSI Z97.1 and testing requirements of 16 CFR Part 1201 for category II materials.

1.05 PERFORMANCE REQUIREMENTS

A. General: Installed glazing systems shall withstand normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.
   1. Design Wind Pressures: Determine design wind pressures applicable to Project according to ASCE/SEI 7, based on heights above grade indicated on Drawings.
   2. Basic Wind Speed: 130 mph **(**3 second gust)
   3. Importance Factor: 1.00
   4. Exposure Category: C.

B. Comply with National Storm Shelter Association's Standard for the Design and Construction of Storm Shelters, ICC 500-2008

C. Comply with Chapter 16 of Florida Building Code Wind Borne Debris Region.

1.06 SUBMITTALS

A. Product Data: For each glass product and glazing material indicated

PART 2 - PRODUCTS

2.01 GLASS MANUFACTURERS: Subject to compliance with requirements, provide products by one of the following:

Falconer Glass Industries.	Pilkington Sales
Ford Glass Div.	PPG Industries Inc.
Guardian Industries Corp.	Saint Gobain/Euroglass.
Hordis Brothers, Inc.	Spectrum Glass Prod.
LOF Glass, Inc.	Viracon, Inc.

2.03 SIZES: Fabricate glass of thicknesses indicated and to sizes required for glazing openings indicated, with edge clearances and tolerances complying with recommendations of glass manufacturer.

2.04 PRIMARY GLASS PRODUCTS: Comply with ASTM C 1036 for the following:

A. Clear Float Glass: Type I, Class 1, Quality q3.

B. Tinted Float Glass: Type I, Class 2, Quality q3.

2.05 FIRE-RATED GLAZING:

A. Provide fire rated glazing composed of multiple sheets of glass laminated with an intumescent interlayer. Provide Pyrobel as manufactured by AGC Flat Glass Europe and distributed by InterEdge Technologies LLC, Sausalito, CA (877) 376-3343 OR approved equal.

B. Properties:
   1. Thickness: For Interior Use: 1", #60-25 V-60.
   2. Weight: Interior glazing varies with thickness (approximate range 12 lbs/sq.ft.).
   3. Approximate Visible Transmission: 81%.
   4. Fire-rating at opening locations on drawings, when tested in accordance with ASTM E 119 and UL 263.

C. Glazing Compound (for fire rated glazing material):
   1. Glazing Tape: Closed cell foam, coiled on release paper over adhesive on one side, maximum water absorption by bolume of 1 percent, designed for compression of 30 percent to effect an air and vapor seal. At header apply additional layer of Pemko 3000S45 intumescent glazing tape.
   2. Silicone Sealant at Butt Joints: Neutral Cure Silicone as specified by manufacturer:.
   3. Perimeter Silicone Sealant: One-part neutral curing silicone, medium modulus sealant, Type S; Grade NS; Class 25 with additional movement capability of 50 percent in both extension and compression (total 100 percent); Use (Exposure) NT; uses (Substrates) G, A, and O as applicable. Available products:
      a. Dow Corning 795 – Dow Corning Corp.
      b. Silglaze-II 2800 – general Electric Co.
      c. Spectrem 2 – Tremco, Inc.
   4. Setting Blocks: Calcium silicate; glass width by 3" x ¼" thick.
   5. Cleaners, Primers, and Sealers: Type recommended by manufacturer of glass and gaskets.

2.05 UNCOATED HEAT-TREATED GLASS PRODUCTS: Comply with ASTM C 1048 and with manufacturing process indicated for the following:

A. Clear Tempered Float Glass: Kind FT, Condition A, Type I, Class 1, Quality q3.

B. Tinted Tempered Float Glass: Kind FT, Condition A, type I, Class 1, Quality q3.

2.06 LAMINATED GLASS, GENERAL:

A. Description: Two plies of float glass laminated with polyvinyl butyral (PVB) plastic interlayer, clear.

B. Compliance:
   1. ASTM C 1172
   2. Testing requirements in CPSC 16 CFR 1201 for Category II materials.
   3. Windborne-Debris-Impact Resistance: ASTM E 1886 and ASTM E 1996.
      a. Test specimens shall be no smaller in width and length than glazing indicated for use on the project and shall be installed in same manner as glazing indicated for use on the project.
      b. Testing Level: Basic
      c. Wind Zone: As scheduled and indicated on drawings.
      d. Missile Testing: Large-Missile Test; for glazing located within 30 feet of grade.

2.07 SEALED INSULATING GLASS UNITS:

A. Comply with requirements of ASTM E 774 for Class A units and the following:

B. Performance characteristics indicated are those of units and are based on manufacturer's published test data for units with 1/4" thick panes and 1/2" thick air space. U-values are indicated in Btu per hr. per sq. ft. per deg. F difference.

C. For properties of individual glass panes making up units refer to product requirements specified elsewhere in this section applicable to types, classes, kinds and conditions of glass products indicated

D. Provide heat-treated panes of kind indicated and as recommended by the manufacturer for application indicated.
   1. Thickness of Each Pane: ¼".
   2. Air Space Thickness: ½".
   3. Sealing System: Manufacturer's standard.
   4. Spacer Material: Manufacturer's standard metal.

E. Low-E Coating: (Interior Lite) 19/32" Laminate – ¼" PPG Solarban 60, with "OPTIGRAY 23" with the following performances characteristics OR approved equal:
   1. Shading Coefficient: 0.21
   2. Solar Heat Gain Coefficient: 0.18
   3. Light to Solar Gain (LSG): 1.02

2.07 GLAZING SEALANT: Comply with sealant and glass manufacturers for selection of glass sealants which suit project application and installation conditions and which are compatible with surfaces contacted. Provide color of exposed sealants indicated or as selected by Architect.

2.08 DENSE ELASTOMERIC COMPRESSION SEAL GASKETS: ASTM C 864, extruded or molded neoprene, EPDM, or thermoplastic polyolefin rubber.

2.09 CELLULAR ELASTOMERIC PREFORMED GASKETS: ASTM C 509, Type II, black; extruded or molded neoprene.

2.10 CLEANERS, PRIMERS AND SEALERS: Type recommended by manufacturer of sealants/gaskets.

2.11 BLOCKS AND SPACERS: Neoprene, EPDM or silicone as required for compatibility with glazing sealants; of 80 to 90 Shore A hardness for setting blocks and, for spacers and edge blocks, of hardness recommended by glass and sealant manufacturer for application indicated.

2.12 COMPRESSIBLE FILLER RODS: Closed-cell or waterproof-jacketed rod stock of synthetic rubber or plastic foam, 5-10 psi compression strength for 25 percent compression.

PART 3 - EXECUTION

3.01 GLASS INSTALLATION (GLAZING): Comply with referenced FGMA standards and instructions of manufacturers of glass, glazing sealants, and gaskets, to achieve airtight and watertight performance, and to minimize breakage.

3.02 PROTECT GLASS FROM EDGE DAMAGE during handling and installation. Inspect glass during installation and discard pieces with edge damage that could affect glass performance.

3.03 SET UNITS OF GLASS IN EACH SERIES with uniformity of pattern, draw, bow and similar characteristics.

3.04 PROTECT GLASS from contact with contaminating substances resulting from construction operations; remove any such substances by method approved by glass manufacturer.

3.05 WASH GLASS ON BOTH FACES not more than 4 days prior to date scheduled for inspections intended to establish date of substantial completion. Wash glass by method recommended by glass manufacturer.

END OF SECTION 088000

SECTION 092900 - GYPSUM DRYWALL

PART 1 - GENERAL

1.01 Fire-Resistance Ratings: Provide gypsum drywall construction fire-resistance ratings indicated, conforming to assemblies tested per ASTM E 119 by inspecting and testing organization acceptable to authorities having jurisdiction.

A. **All fire and/or smoke barriers or walls shall be effectively and permanently identified with stenciling above any decorative ceiling and/or in concealed space with letters a minimum of two (2) inches high on a contrasting background spaced a maximum of twelve (12) feet on center with a minimum of one per wall or barrier. The hourly fire rating shall be included on all rated barriers or walls. Wording shall be as follows: "(__) Hour Fire and Smoke Barrier-Protect All Openings."**

B. **Storage rooms which are sprinklered shall have permanently stenciled, eighteen (18) inches below sprinkler heads, a designation line (red) with the following wording: "NO STORAGE ABOVE LINE." Requirements for stenciling shall be as noted above.**

1.02 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Provide light gauge framing shop drawings stamped by a Florida registered engineer.

PART 2 - PRODUCTS

2.01 Manufacturers: Subject to compliance with requirements, provide gypsum board and related products by one of the following:

Georgia-Pacific Corp.
Gold Bond Building Products Div.
National Gypsum Co.
United States Gypsum Co.

2.02 Steel Framing Components for Suspended Ceilings: As follows, sized per ASTM C 754, unless otherwise indicated:

A. Wire for Hangers and Ties: ASTM A 641, soft, Class 1 zinc coating.

B. Grid Suspension System: ASTM C 645, manufacturer's standard grid suspension system composed of main beams and cross furring members which interlock to form a modular supporting network.

2.03 Steel Framing for Walls and Partitions: Comply with ASTM C 754 and the following:

A. Steel Studs and Runners: ASTM C 645, 0.0179 inch (25 gauge) base metal thickness unless otherwise indicated.

1. Height for which 0.0179 inch (25 gauge) is insufficient per manufacturer's "Limiting Height Tables", shall be accomplished in the gauge of material required by these tables. **If 3-5/8" metal studs shown on the floor plans will not meet the "Length Heights Table", brace each metal stud or use 6" metal stud instead.** Such materials to be provided at no additional cost to the Owner.
2. All door frame openings shall be reinforced with two (2) 0.0312 inch (20 gauge) studs on each side for a total of four (4) studs.

B. Base Track: ASTM C 645, 0.0312 inch (20 gauge) for interior; 0.0538 inch (16 gauge) for exterior.

C. Top Track: Slip Track, 0.0312 inch (20 gauge) for interior; 0.0538 inch (16 gauge) for exterior.

D. Steel Rigid Furring Channels: ASTM C 645, 0.0179 inch (25 gauge) base metal thickness, hat-shaped.

2.04 Gypsum Board: Provide gypsum board of types indicated in maximum lengths available to minimize end joints:

A. Exposed Gypsum Board: ASTM C 36, 5/8" thickness, Type 'X'. For fire-rated-assemblies refer to Drawings for UL Design Numbers.

B. Moisture & Mold Resistant Gypsum Board: ASTM C 1396, 5/8" thickness, regular type except where Type X Fire-resistant type is indicated or required to meet UL assembly types. Edges shall be tapered. Provide Sheetrock brand Mold Tough Firecode Gypsum Panels by USG OR approved equal. **Note: All wet areas to receive Moisture & Mold Resistant Gypsum Board. Wet areas include walls and ceilings where gypsum board is specified. Areas include, but are not necessarily limited to, bathrooms, gang toilets, showers, janitor closets, kitchens and laundry areas.**

C. Mineral Board: Provide 1/2" gypsum sheathing board core in accordance with ASTM C 1177 with glass mats both sides and long edges. Provide Dens-Glass Gold by Georgia-Pacific Corp. OR approved equal.

2.05 Trim Accessories: ASTM C 840; manufacturer's standard trim accessories, including cornerbead and edge trim of beaded type with face flanges for concealment in joint compound.

2.06 Gypsum Board Joint Treatment Materials: ASTM C 475 and ASTM C 840, and as follows:

A. Joint Tape: Paper reinforcing tape, unless open-weave glass fiber tape is recommended by gypsum board manufacturer.

B. Setting-Type Joint Compound: Factory-prepackaged, job-mixed chemical-hardening powder products formulated for uses indicated.

C. Drying-Type Joint Compounds: Factory-prepackaged -premixed vinyl-based products. Taping compound formulated for embedding tape and first coat over fasteners and flanges of corner beads and edge trim. Topping compound formulated for fill (2nd) and finish (3rd) coats.

2.07 Miscellaneous Materials: As recommended by gypsum board manufacturer:

A. Gypsum Board Screws: ASTM C 1002.

B. Concealed Acoustical Sealant: Comply with requirements specified in Division-7 Section "Joint Sealers."

PART 3 - EXECUTION:

3.01 Install steel framing to comply with ASTM C 754 and ASTM C 840.

A. Do not bridge building expansion joints with support systems, frame both sides of joints with furring and other supports as indicated.

B. Secure hangers to structural support by connecting directly to structure where possible, otherwise connect to inserts, clips other anchorage devices or fasteners as indicated.

C. Install direct-hung grid suspension system, including perimeter wall track or angle, with members spaced and installed to comply with mfr's instructions.

D. Install steel studs with bottom and top runner tracks anchored to substrates. Isolate system from building structure to prevent transfer of loading and deflections into metal support system, both vertically and horizontally.

E. Install supplementary framing, runners, furring, blocking and bracing at openings and terminations in gypsum drywall and where required for support of other work which cannot be adequately supported on gypsum board alone.

3.02 Install and finish gypsum board to comply with ASTM C 840 and as follows:

A. Isolate drywall construction from abutting structural and masonry work; provide edge trim and acoustical sealant as recommended by manufacturer.

B. Screw gypsum board to metal supports.

C. Do not bridge building expansion joints. Leave space of the width indicated between boards, and trim both edges for installation of sealant or gasket.

3.03 Install water-resistant backing board where indicated to receive thin-set tile.

3.04 Drywall Finishing:

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

A. Prefill open joints and damaged surface areas.

B. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C840:

1. Level 4: (For all surfaces unless otherwise noted)

a. All joints and interior angles shall have tape embedded in joint compound and two separate coats of joint compound applied over all flat joints and one separate coat of joint compound applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound. All joint compound shall be smooth and free of tool marks and ridges. Note: It is recommended that the prepared surface be coated with a drywall primer prior to the application of final finishes. (See Section 099000 – Painting.)

3.05 Install compound in 3 coats (plus prefill of cracks where recommended by manufacturer); sand between coats and after last coat.

A. Embedding and First Coat: Ready-mix drying type all-purpose of taping compound.

B. Fill (Second) Coat: Ready-mix drying type all-purpose or topping compound.

C. Finish (Third) Coat: Ready-mix drying-type all-purpose or topping compound.

END OF SECTION 092900

SECTION 093000 - TILE

PART 1 - GENERAL

1.01 SUMMARY

A. Scope of work: Provide tile, tile installation materials and accessories as indicated on drawings, as specified herein, and as needed for complete and proper installation.

1.02 SECTION INCLUDES

A. Tile

B. Installation products: adhesives, mortars, grouts and sealants.

C. Crack isolation membranes.

D. Thresholds, trim and other accessories herein.

1.03 REFERENCE STANDARDS

A. ANSI A108A-A108.13 – American National Standards for Installation of Ceramic Tile.

B. ANSI A137.1 – American National Standard Specifications for Ceramic Tile.

C. ANSI A118.1-A118.12 – American National Standard Specifications for the Installation of Ceramic Tile.

D. ANSI A136.1 – American National Standard Specification for the Installation of Ceramic Tile.

E. ASTM C 33 – Standard Specification for Concrete Aggregate.

F. ASTM C144 – Standard Specification for Aggregate for Masonry Mortar.

G. ASTM C150 – Standard Specification for Portland Cement.

H. ASTM C 36 – Standard Specification for Gypsum Wallboard.

I. TCNA (HB) – Handbook for Ceramic Tile Installation; Tile Council of North America, Inc.

1.04 SUBMITTALS

A. Submit manufacturer's technical information for each product specified.

B. Submit proof of warranty.

1.05 QUALITY ASSURANCE

A. Obtain tile from a single source with resources to provide products of consistent quality in appearance and physical properties.

B. Installer qualifications: company specializing in installation of tile with five years documented experience with installations of similar scope, materials and design.

1.06 DELIVERY, STORAGE AND HANDLING

A. Acceptance at Site: Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use, in accordance with manufacturer's instructions.

B. Store tile and installation system materials in a dry location; handle in a manner to prevent chipping, breakage and contamination.

C. Protect adhesives from freezing or overheating in accordance with manufacturer's instruction; store at room temperature when possible.

D. Store mortars and grouts in a dry location.

1.07 PROJECT CONDITIONS

A. Provide ventilation and protection of environment as recommended by manufacturer.

B. Prevent carbon dioxide damage to tile and installation materials by venting temporary heaters to the exterior.

C. Maintain ambient temperatures at no less than 50 deg F or more than 100 deg F during during installation and for a minimum of 7 days after completion. It is the General Contractor's responsibility to maintain temperature control.

1.08 SEQUENCING AND SCHEDULING

A. Coordinate installation of the tile work with related work.

B. Proceed with tile work only after curbs, vents, drains, piping and other projections through substrate have been installed and when substrate construction and framing of openings have been completed.

1.09 WARRANTY

A. The Contractor warrants the work in this Section to be in accordance with the Contract Documents and free from faults and defects in materials and workmanship for a period of 10 years.

1.10 MAINTENANCE

A. Submit maintenance data including cleaning methods, cleaning solutions recommended, stain removal methods, as well as polishes and waxes recommended.

1.11 EXTRA MATERIALS STOCK

A. Provide additional stock to Owner equaling 2% of each type and color of tile and installation materials installed. Extra stock to be from the same production run or batch as the original tile and installation materials.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acceptable manufacturer for tile:
Trinity Surfaces
James Nichols
904-870-5658
OR Approved Equal.

B. Acceptable Manufacturer for grout, mortar and setting materials:
MAPEI Corp. U. S. A.,
1144 E. Newport Center Rd
Deerfield Beach, FL 33442; Toll Free Tel: 800-42-MAPEI; Tel: (954) 246 – 8888;
Fax: (954) 246 – 8801; Web: www.mapei.com
OR approved equal.

C. Provide tile grout, setting materials, additives, waterproofing and factory-prepared mortars from the same manufacturer.

2.02 MORTAR /MATERIALS

A. Floor and Wall Tile:
1. Thinset Bed Mortar: Premium Grade, Single-component, Ultra high performance, polymer-modified thin set mortar complying with ANSI A118.4, ANSI A118.11 and ANSI A118.15; MAPEI Ultraflex 3.
2. Grout: Solvent-free, 100%-solids epoxy grout. Non-sagging, chemical resistant grout, with high-compressive strength; MAPEI Kerapoxy CG (not 410) meeting or exceeding ANSI A118.3.
3. Sealant: Silicone Joint for heavy traffic and movement joints. MAPEI Mapesil T (Res / Comm 1-6)

2.03 MIXES

A. Proportion and mix materials in accordance with manufacturer's most current written instructions and applicable ANSI standards.

2.04 Porcelain Tile (PT):

Manufacturer: Trinity Surfaces
Style: Drift
Colors: To be selected by Architect.
Size: 12" x 24" x 8mm thick
Type: Porcelain
Finish: matte
Dynamic coefficient of friction: >/= 0.42 - ASTM 137.1.
Metal trim: Schluter or Approved equal.
Transition between PT and LVT or CPT: Schluter-RENO-U in satin anodized aluminum. Note that transition strip should not be installed on top of LVT. LVT should butt into the transition strip.
Cove between wall tile and floor tile: Schluter-DILEX-AHK in satin anodized aluminum.
Top cap and outside corners for wall tile: Schluter-QUADEC in satin anodized aluminum. Include endcap at outside corners.

2.05 Setting Materials: Provide setting materials as follows:

A. Sealer: ASTM E 96 Tile/grout sealer shall be water based, sub-surface, water repellant equal to Silox 110 by Cerama Seal, where applicable.

B. Waterproofing and crack-isolation membrane: Trowel applied, flexible, fiber-mesh-reinforced waterproofing and crack-isolation membrane applied as per ANSI A118.10; Mapei, Mapelastic 315. Install membrane to comply with pertinent codes and manufacturer's directions.
1. Fiberglass Mesh: Use Mapei Fiberglass mesh with Mapelastic 315.

PART 3 - EXECUTION

3.01 EXAMINATION AND SURFACE PREPARATION

A. Before work commences, the tile contractor must examine areas to be covered and report any deficiency or adverse condition in writing to the general contractor and architect.

B. Do not proceed with the work until surfaces and conditions comply with the requirements indicated in the manufacturer's instructions, applicable industry standard, federal, state,

provincial, local regulations and good work practices. By beginning work, the applicator/user acknowledges that the conditions are acceptable for installation.

C. Substrates should be sound, stable and free of all oils, grease, loose debris, paint, drywall debris, curing agents, sealers or any potential bond breaking contaminants must be removed mechanically. Do not use chemicals for surface prep. Consult the manufacture for their specific recommendations.

D. All substrates must be plumb and flat to a tolerance in plane of 1/4" in 10', and no more than 1/16" in 1' variation from substrate high points. Refer to manufactures specifications for their specific product.

E. Dry as per American Society for Testing and Materials (ASTM) D4263 – Standard Test for Determining Moisture in Concrete by the Plastic Sheet Method.

F. Concrete surfaces shall be cured a minimum of 28 days at 70 deg F, including an initial 7 day period of wet curing.

3.02 INSTALLATION

A. Comply with ANSI A108 – Standard for Installation of Ceramic Tile and TCA – Handbook for Ceramic Tile Installation, both to be the most current version.

B. Comply with manufacturer's instructions for application of proprietary materials.

3.03 CLEANING: Clean tile in accordance with applicable ANSI standard for type of tile and method of installation used and manufacturer's instructions.

END OF SECTION 093000

SECTION 095100 - ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.01 Acoustical Panel and Tile Standard: FS SS-S-118.

1.02 Acoustical Suspension System Standards: ASTM C 635 for materials, ASTM C 636 for installation.

1.03 Surface Burning Characteristics: 25 or less for flame spread, 50 or less for smoke developed, per ASTM E 84.

1.04 Submittals: Submit product data for each type of acoustical ceiling tile along with 6" square samples of each type of acoustical tile.

1.05 Coordination: Review Finish Plan on drawings and Mechanical and Electrical Drawings for layout and pattern of acoustical units, location of recessed light fixtures, ceiling diffusers and grilles, details of ceiling penetrations, details of fire rated acoustical treatment, access doors and necessary connections to work of other trades.
Provide coordination drawings for reflected ceiling plans drawn accurately to scale and coordinating penetrations and ceiling-mounted items. Show the following:
1. Ceiling suspension members.
2. Methods of attaching hangers to building structure.
3. Size and location of initial access modules.
4. Ceiling-mounted items including light fixtures; air outlets and inlets; speakers; sprinkler heads; and column penetrations and other junctures with adjoining construction.

1.06 Installer Qualifications: Engage an experienced Installer who has successfully completed acoustical ceilings similar in material, design and extent to that indicated for Project.

1.07 Preinstallation Conference: Conduct a preinstallation conference at the Project site to coordinate work from all trades.

1.08 Delivery, Storage and Handling: Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination and other causes. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.

1.09 Deliver extra materials to Owner. Furnish extra materials of each size and type, matching products installed and equaling 2.0% of acoustical units and exposed suspension members installed. Package materials in protective covering and identify with appropriate labels.

1.10 Warranty: Provide acoustical panels and grid from the same manufacturer with a thirty year warranty from the date of substantial completion.

PART 2 - PRODUCTS:

2.01 **Approved Manufacturers**:
Armstrong Commercial Ceilings
USG Commercial Ceilings

A. **ACT**– Wet formed mineral fiber with factor applied latex paint; Type III; Form 2; Class A and as follows:
Color: White
Light Reflectance: 85%
NRC: 0.70
CAC: 35.
Edge Detail: Square
Size: 24" x 24" x 3/4".
Products: Subject to compliance with requirements, provide "School Zone Fine Fissured with

High Acoustics" #1713, by Armstrong **OR approved equal**.
Sag Resistance: HumiGuard+
Antimicrobial: BioBlock+
Recycled Content: Up to 56%
VOC Emissions: GreenGuard Gold Certified.

2.02 Dimensional Stability: Suspension systems shall meet or exceed the requirements of ASTM C635 for dimensional tolerances, coatings and finishes, and load carrying capabilities.

2.03 Humidity control: Ceilings shall have a 30-year system warranty against system sagging and warping when installed according to manufacturer's recommendations. Ceilings shall have and anti-microbial warranty against fungi, mold, mildew, bacteria, yeast or algae.

2.04 Suspension Systems:

A. Non-Fire-Resistance-Rated Exposed Double Web Steel Direct-Hung Suspension System with 15/16" Wide Exposed Faces: Roll-formed from prefinished cold-rolled steel sheet, with hanger wire, attachment devices and edge moldings and trim; intermediate-duty system structural classification; white painted finish in all locations.
Note: All cold-rolled steel sheets shall be hot dipped galvanized (G-30).
Armstrong – 15/16" Prelude XL.
(Manufacturer's Ceiling Tile shall be installed with Manufacturer's Suspension System in order to keep the 30-year system warranty. No alternate manufacturers warranties will be accepted).

PART 3 - EXECUTION

3.01 Project Conditions: Do not install interior acoustical ceilings until space is enclosed and weatherproof, wet work in space is completed and nominally dry, work above ceilings is complete, and ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

3.02 Layout: Balance ceiling borders on opposite sides, using more-than-half-width acoustical units.

3.03 Tolerance: 1/8" in 12'-0" level tolerance.

3.04 Suspension System: Secure to building structure, with hangers spaced 4'-0" along supported members.

3.05 Edge Moldings: Secure to substrate with screw anchors spaced 16" o.c. Miter corner joints. Cope exposed edges of intersecting exposed suspension members to produce flush intersections.

3.06 Damaged ceiling panels: Prior to Substantial Completion, remove and replace skinned, damaged or dirty ceiling panels with new material.

3.07 Cleaning: Clean exposed surfaces of acoustical ceilings, including trim, edge moldings and suspension members. Comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095100

SECTION 096500 - LUXURY VINYL TILE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY:

A. Section Includes:
1. Luxury vinyl floor tile.

1.03 SUBMITTALS:

A. Product Data: For each type of product indicated.

B. Samples for Verification: Full-size units of each color and pattern of floor tile required.

C. Qualification Data: For qualified Installer.

D. Maintenance Data: For each type of floor tile to include in maintenance manuals.

1.04 QUALITY ASSURANCE

A. Qualifications: A qualified installer who employs workers for this Project who are competent in techniques required by manufacturer for floor tile installation indicated.
1. Engage an installer who employs workers for this Project who are trained for installation techniques required.

B. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C). Store floor tiles on flat surfaces.

1.06 PROJECT CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 68 deg F (20 deg C) or more than 72 deg F (22.2 deg C), in spaces to receive floor tile during the following time periods:
1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

B. Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 60 deg F (15.6 deg C or more than 80 deg F (26.7 deg C).

C. Close spaces to traffic during floor tile installation.

D. Close spaces to traffic for 48 hours after floor tile installation.

E. Install floor tile after other finishing operations, including painting, have been completed.

1.08 EXTRA MATERIALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Floor Tile: Furnish 1 box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

PART 2 - PRODUCTS

2.01 LUXURY VINYL TILE - LVT

A. Mfr: Tarkett OR approved equal
Series: "ID Latitude" – Stone & Wood
Contact: Ed Xanders with Tarkett flooring (904) 535-6791.

B. Tile Standard: ASTM F 1700.
   1. Class: Class III, printed film vinyl tile.
   2. Type: Type B, embossed surface.

C. Nominal Thickness: overall - 0.120 inch (3.0 mm); 20 mil wear layer with TECHTONIC

D. Test Performance:
ASTM E648: Critical Radiant Flux - Class 1, CRF > 0.45
ASTM E662: Smoke Density - > 450, Good
ASTM F925: Chemical Resistance - Excellent
ASTM C1028: Slip resistance - Very good
ASTM D2047: Passes
ADA Compliant: FTC slip resistant classified product

E. Size: To be selected

F. Edges: Square

G. Color: To be selected.

H. Warranty: 20 year Commercial Use

2.03 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, Portland cement based or blended hydraulic-cement-based formulation.

B. Adhesives: As recommended by Tarkett to meet site conditions and concrete moisture testing
   1. Luxury Vinyl Floor Tile
      a. Tarkett 959 HM High Moisture adhesive (up to 99% RH/7-10 ph).

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Prepare substrates according to Tarkett written instructions to ensure proper adhesion of Resilient Flooring.
   1. Prepare concrete substrates in accordance with ASTM F 710.
      a. Concrete floors must be free of dust, solvent, paint, wax, oil, grease, residual adhesive, adhesive removers, film-forming curing compounds, silicate penetrating curing compounds, sealing, hardening or parting compounds, alkaline salts, excessive carbonation, mold, mildew, and other foreign materials that may affect dissipation rate of moisture from the concrete, discoloration or adhesive bonding.
      b. Mechanically remove contamination on the substrate that may cause damage to the resilient flooring material. Permanent and non-permanent markers, pens, crayons, paint, etc., must not be used to write on the back of the flooring material or used to mark the substrate as they could bleed through and stain the flooring material.
      c. Perform moisture testing as recommended by manufacturer. Proceed with installation only after substrates have been tested and meet the minimum requirements from the manufacturer in accordance with ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
      d. A pH test for alkalinity must be conducted on the concrete floor prior to installation with results conforming to manufacturer requirements. If the test results are not within the acceptable range, then installation must not proceed until the problem has been corrected.
      e. All tests must be done. Results shall be documented and retained. A copy shall be submitted to the Architect, Contractor and Flooring Subcontractor within 72 hours.

B. Fill cracks, holes, depressions and irregularities in the substrate with good quality Portland cement based underlayment leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

C. Floor covering shall not be installed over expansion joints.

D. Do not install resilient products until they are same temperature as the space where they are to be installed.
   1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

E. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.
   1. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.
   2. Do not install floor tiles until they are same temperature as space where they are to be installed.
      a. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.
   3. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.03 FLOOR TILE INSTALLATION

A. Comply with manufacturer's written instructions for installing floor tile.

B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.

C. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.
   1. Lay tiles carefully, noting directional arrows on the back of tiles when present.

D. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.

E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.

F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent, nonstaining marking device.

G. Install floor tiles on covers for telephone and electrical ducts, building expansion-joint covers, and similar items in finished floor areas. Maintain overall continuity of color and pattern between pieces of tile installed on covers and adjoining tiles. Tightly adhere tile edges to substrates that abut covers and to cover perimeters.

H. Adhere floor tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

3.04 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protection of floor tile.

B. Perform the following operations immediately after completing floor tile installation:
   1. Remove adhesive and other blemishes from exposed surfaces.
   2. Sweep and vacuum surfaces thoroughly.
   3. Damp-mop surfaces to remove marks and soil.

C. Protect floor tile products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Remove soil, visible adhesive, and surface blemishes from floor tile surfaces.
   1. Not less than 48 hours after installation, clean floor with a neutral liquid cleaner, as recommended by the flooring and cleaner manufacturers.

END OF SECTION 096500

SECTION 096600 - RESILIENT WALL BASE AND STAIR FLOORING

PART 1 - GENERAL

1.01 SUMMARY

Section Includes: RESILIENT WALL BASE

1.02 REFERENCED DOCUMENTS

A. ASTM International
1. E84, Standard Test Method for Surface Burning Characteristics of Building Materials.
2. E648, Standard Test Method for Critical Radiant Flux of Flooring Systems Using a Radiant Energy Source.
3. E662, Test Method for Specific Density of Smoke Generated by Solid Materials.
4. F137, Standard Test Method for Flexibility of Resilient Flooring Materials with Cylindrical Mandrel Apparatus.
5. F925, Standard Test Method for Resistance to Chemicals of Resilient Flooring.
6. F1861, Standard Specification for Resilient Wall Base.

B. Other Referenced Documents
1. National Fire Protection Association (NFPA), NFPA 255; Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Energy Source.
2. National Fire Protection Association (NFPA), NFPA 258; Test Method for Specific Density of Smoke Generated by Solid Materials.
3. The Collaborative for High Performance Schools (CHPS).

1.03 SUBMITTALS

A. Product Data: Submit product data, including manufacturer's specification summary sheet for specified products.

B. Shop Drawings: Submit shop drawings showing layout, finish colors, patterns and textures.

C. Samples: Submit selection and verification samples for finishes, colors, and textures.

D. Quality Assurance Submittals: Submit the following
1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
2. Manufacturer's Instructions: Manufacturer's installation and maintenance instructions.

E. Maintenance Information: Maintenance information for installed products in accordance with Division 1 sections.
1. Methods for maintaining installed products.
2. Precautions against cleaning materials and methods detrimental to finishes and performance.

F. Warranty: Warranty documents specified herein.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installing work similar to that required for this project.

B. Regulatory Requirements
1. Fire Performance characteristics: Provide resilient wall base with the following Fire performance characteristics as determined by testing products in accordance with ASTM method (and NFPA method) indicated below by a certified testing laboratory or another testing and inspecting agency acceptable to authorities having jurisdiction.

a. ASTM E648 (NFPA 253), Critical Radiant Flux of Floor Covering Systems; Class 1, Greater than 0.45 W/cm2.
b. ASTM E662 (NFPA 258), Specific Optical Density of Smoke Generated by Solid Materials; < 450.

C. Single-Source Responsibility: Obtain resilient wall base tile and manufacturer's recommended adhesive from a single supplier.

D. Pre-Installation Meetings: Conduct pre-installation meeting to verify project requirements, Manufacturer's conditions, recommended adhesive depending on product, substrate type and type of installation, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with requirements in Division 1.

1.05 DELIVERY, STORAGE AND HANDLING

A. General: Comply with requirements in Division 1.

B. Ordering: Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with Identification labels intact.

D. Storage and Protection: Store materials protected from exposure to harmful weather conditions and acclimated to site conditions at temperature and humidity conditions recommended by manufacturer.

1.06 PROJECT CONDITIONS

A. Environmental Requirements/Conditions: In accordance with manufacturer's recommendations, areas to receive rubber flooring shall be clean, fully enclosed, weather tight with the permanent HVAC set at a uniform temperature of 65º - 85º F for 48 hours prior to, during and thereafter installation of rubber flooring. Rubber flooring and adhesive shall be conditioned in the same manner. Rubber flooring/tile must be un-boxed at least 48 hours prior to installation in the areas in which it will be installed.

1.07 SEQUENCING AND SCHEDULING

A. Finishing Operations: Install resilient wall base after finishing operations, including floor covering, painting and ceiling operations, have been completed.

1.08 MAINTENANCE

A. Extra Materials: Deliver to Owner extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Division 1, Closeout Submittals Section.

B. Quantity: Furnish quantity of resilient wall base equal to 5% of amount to be installed.

C. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage and protection of extra materials.

D. Maintenance of finished resilient wall base to be conducted per Manufacturer's Maintenance Guide.

1.09 WARRANTY

A. Manufacturer's Materials Warranty: Submit, for Owner's acceptance, manufacturer's standard

warranty document. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

1. Warranty: 1 year limited warranty commencing on Date of Substantial Completion. Notice of any defect must be made in writing to manufacturer within 30 days after buyer learns of the defect.

PART 2 - PRODUCTS

2.01 RESILIENT WALL BASE

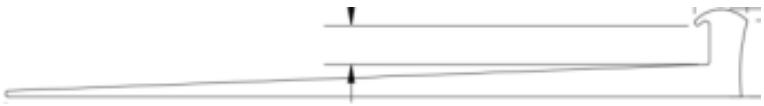
A. Manufacturer: Tarkett OR Approved Equal.

B. Test results
1. ASTM D570, Water Absorption of Plastics; < 0.15%.
2. ASTM E84 (NFPA 255), Surface Building Characteristics of Building Materials; Class C.
3. ASTM E648 (NFPA 253), Critical Radiant Flux; Class 1, > 1.0 W/cm2.
4. ASTM E662 (NFPA 258), Specific Optical Density of Smoke Generated by Solid Materials; Passes.
5. ASTM F925, Resistance to Chemicals; Passes, List Available.
6. ASTM F1515, Light Stability; Excellent.
7. ASTM F1861, Standard Specification for Resilient Wall Base - Types TS, TP & TV, Group 1 & 2, Styles A&B; (Federal Specification SSW40a, Type II, Styles A&B).
8. NFPA 101 Life Safety Code, Wall Base; Interior floor trim material used at the junction of the wall and the floor to provide a functional or decorative border, and not exceeding 6 in. (150 mm) in height shall meet the requirements for the interior wall finish for its location or the requirements for Class II interior floor finish as described (CFR > .22 W/cm2 / < .45 W/cm2) using ASTM E 648. If Class I floor finish is required (CFR > .45 W/cm2), the interior floor trim shall be Class I.

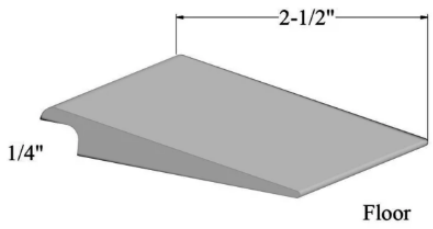
C. Product:
1. Resilient Base – RB: Duracove Thermoplastic Rubber Cove Base. Complies with ASTM F 1861 Type TP (Thermoplastic Rubber), Group 1 (Solid).
   a. Profile: Standard Toe (Cove base)
   b. Height: 4” (101.6 mm)
   c. Length: 120’ (36.57 m) Coils - **48" pieces are not acceptable.**
   d. Thickness: 1/8” (3.175 mm)
   e. Corner Installation: Job Site Formed by Installer.

2.02 ACCESSORIES

A. Resilient transition strips: Between Luxury Vinyl Tile and Carpet.
1. Manufacturer: Tarkett
2. Style: Metal Edge
3. Color: To be selected
4. Size: As recommended by manufacturer for joining flooring materials.



B. Between Carpet and Special Coatings for Concrete.
   1. Manufacturer: Tarkett
   2. Style: CTA-XX-J
   3. Color: To be selected



CTA-XX-J
1/4" material to subfloor

PART 3 - EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer’s requirements as published in Manufacturer installation instructions.

B. Adhesive: As recommended by manufacturer.

C. Caulking: Tarkett’s colored caulking as required.

3.02 EXAMINATION

A. Site Verification of Conditions: Confirm substrate conditions (which have been previously addressed under other sections) are acceptable for product installing in accordance with manufacturer's instructions.

B. Material Inspection: In accordance with manufacturer's installing requirements, visually inspect materials prior to installing. Material with visual defects shall not be installed.

3.03 PREPARATION

A. Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage while installing.

B. Substrate Preparation: Prepare substrate to be smooth, rigid, flat, level, permanently dry, clean and free of foreign materials such as paint, dust, grease, oils, solvent, old adhesive residue, vinyl wall coverings, non-porous surfaces and all other contaminants that may interfere with adhesive bond.

C. Do not install over existing floor covering or over substrates not approved by manufacturer.

3.04 INSTALLING

A. Refer to manufacturer’s installation instructions for specific resilient wall base detailed specifications on installing.
   1. Accessories: Architect shall specify manufacturers’ color coordinated accessories as required, including (but not limited to) resilient transition strips and reducers.

3.05 FIELD QUALITY REQUIREMENTS

A. Manufacturer's Field Services: Upon Owner's request and with minimum 72 hours notice, provide

manufacturer's field service consisting of product use recommendations and periodic site visits to confirm installing of product is in accordance with manufacturer's instructions.

3.06 PROTECTION

A. Protection: Protect installed product and finish surfaces from damage during construction. Remove and legally dispose of protective covering at time of substantial completion.

B. Restrict cleaning for first 72 hours.

3.07 INITIAL MAINTENANCE PROCEDURES

A. General: Include in contract sum cost for initial maintenance procedures and execution by professional maintenance personnel after resilient wall base has been installed for 72 hours as specified in the Manufacturer maintenance instructions.

3.08 CLEANING

A. Cleaning: See manufacturer’s maintenance instructions. Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance. Remove construction debris from project site and legally dispose of.

END OF SECTION 096600

SECTION 096700 - SPECIAL COATING FOR CONCRETE

PART 1 - GENERAL

1.01 SECTION INCLUDES:

A. Fluid-applied flooring for Concrete

1.02 RELATED SECTIONS:

A. Division 3 – Concrete

1.03 REFERENCES:

A. SSPC-SP 1 - Solvent Cleaning

B. SSPC-SP 2 - Hand Tool Cleaning

C. SSPC-SP 3 - Power Tool Cleaning

D. SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete

E. ASTM F1869 - Moisture Test by use of Calcium Chloride

F. ASTM D4258 - Standard Practice for Cleaning Concrete

G. ASTM D4259 - Standard Practice for Abrading Concrete

H. ASTM D4260 - Standard Practice for Etching Concrete

I. ASTM D4263 - Plastic Sheet Method for Checking Moisture in Concrete

J. EPA-Method 24

K. ICRI # 03732

1.04 SUBMITTALS:

A. Submit under provisions of Section 013300, Submittal Procedures.

B. Product Data: Manufacturer's data sheets on each paint and coating product should include:
1 Product characteristics
2 Surface preparation instructions and recommendations
3 Primer requirements and finish specification
4 Storage and handling requirements and recommendations
5 Application methods
6 Cautions

C. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer’s color samples available.

D. Verification Samples: For each finish product specified, submit samples that represent actual product, color, and sheen.

1.05 MOCK-UP: Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of painting on the project.

A. Finish surfaces for verification of products, colors, & sheens.

B. Finish area designated by Architect.

C. Provide samples that designate prime & finish coats.

D. Do not proceed with remaining work until the Architect approves the mock-up samples.

1.06 DELIVERY, STORAGE, AND HANDLING:

A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information:
1. Product name, and type (description)
2. Application & use instructions
3. Surface preparation
4. VOC content
5. Environmental issues
6. Batch date
7. Color number

B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.

C. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.07 PROJECT CONDITIONS:

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not apply coatings under environmental conditions outside manufacturer's absolute limits.

PART 2 - PRODUCTS

2.01 MANUFACTURERS:

A. Acceptable Manufacturer:
The Sherwin-Williams Company OR Approved Equal
101 Prospect Avenue NW
Cleveland, OH 44115
Tel: (800) 321-8194
Fax: (216) 566-1392

B. Substitutions: Requests for substitutions will be considered in accordance with the provisions of Section 16000 Product Requirements. When submitting a request for substitution, provide complete product data specified above under Submittals, for each substitute product.

2.02 APPLICATION/SCOPE:

A. See Finish Plans for locations of Special Coatings.

2.03 SCHEDULE:

A. SPC: Light Industrial Duty: (Is Generally Considered For Industrial Foot Traffic & handcarts)
1st Coat:ArmorSeal® Tread-Plex™, B90 Series
(1.5 - 2.0 mils dry)
2nd Coat: ArmorSeal® Tread-Plex™, B90 Series
(1.5 - 2.0 mils dry per coat)

Additive: SharkGrip for slip resistance
Spread Density Mock-up must be approved by the Architect.
Color: Architect to select color from manufactures standard colors plus 120 tints.

2.04 MATERIALS - GENERAL REQUIREMENTS:

A. Paints and Coatings - General:
1. Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.

B. Primers:
1. Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.

2.05 ACCESSORIES:

A. Coating Application Accessories:
1. Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer’s specifications.

PART 3 EXECUTION

3.01 EXAMINATION:

A. Do not begin application of coatings until substrates have been properly prepared. Notify Architect of unsatisfactory conditions before proceeding.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Proceed with work only after conditions have been corrected, and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.

3.02 SURFACE PREPARATION:

A. Proper product selection, surface preparation, and application affect coating performance. Coating integrity and service life will be reduced because of improperly prepared surfaces. Selection and implementation of proper surface preparation ensures coating adhesion to the substrate and prolongs the service life of the coating system.

B. Selection of the proper method of surface preparation depends on the substrate, the environment, and the expected service life of the coating system. Economics, surface contamination, and the effect on the substrate will also influence the selection of surface preparation methods.

C. Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

D. New Poured Concrete
1. For surface preparation, refer to SSPC-SP13/NACE 6/ICRI # 03732. Surfaces must be clean, dry, sound and offer sufficient profile to achieve adequate adhesion. Minimum substrate cure is 28 days at 75°F. Remove all form release agents, curing compounds, salts, efflorescence, laitance, and other foreign matter by sandblasting, shotblasting,or mechanical scarification. Chemical means is not accepted Refer to ASTM D4260. Rinse thoroughly to achieve a final pH between 8.0 and 10.0. Allow to dry thoroughly prior to coating.

E. Fill all cracks, voids, bug holes and joints with appropriate filler or ArmorSeal Crack Filler, ArmorSeal Joint Sealant, or ArmorSeal Expresspatch.

F. Always follow the ASTM methods listed below:
1. ASTM F1869 Moisture Test by use of Calcium Chloride
2. ASTM F2170 Relative Humidity Moisture Test with in-situ probes.
3. ASTM D4258 Standard Practice for Cleaning Concrete.
4. ASTM D4259 Standard Practice for Abrading Concrete.
5. ASTM D4260 Standard Practice for Etching Concrete.
6. ASTM D4263 Plastic Sheet Method for Checking Moisture in Concrete.
7. SSPC-SP 13/Nace 6 Surface Preparation of Concrete
8. ICRI # 03732 Surface Preparation of Concrete

WARNING! Removal of old paint by sanding, scraping or other means may generate dust or fumes that contains lead. Exposure to lead dust or fumes may cause brain damage or other adverse health
effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead
Information Center at 1-800-424-LEAD (in US) or contact your local health authority.

G. Moisture Testing: Perform tests recommended by manufacturer **and as follows**. Proceed with installation only after substrates pass testing. Testing shall be done by an independent third party.
1. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
2. Perform relative humidity test using in situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum **80%** relative humidity level measurement.
3. Both test shall be done. Results shall be documented and retained. A copy shall be submitted to the Architect, Contractor and Flooring Subcontractor.

3.03 INSTALLATION:

A. Apply all coatings and materials with manufacturer's specifications in mind. Mix and thin coatings according to manufacturer's recommendation.

B. Do not apply it to wet or damp surfaces.
1. Wait at least 28 days before applying to new concrete or masonry. Or follow manufacturer's procedures to apply appropriate coatings prior to 28 days.
2. Test new concrete for moisture content.

C. Apply coatings using methods recommended by manufacturer.

D. Uniformly apply coatings without runs, or sags, without brush marks, and with consistent sheen.

E. Apply coatings at the spreading rate required to achieve the manufacturer's recommended dry film thickness.

F. Inspection: The coated surface must be inspected and approved by the Architect or Engineer just prior to each coat.

3.04 PROTECTION:

A. Protect finished coatings from damage until completion of project.

B. Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

END OF SECTION 096700

SECTION 096800 - CARPET

PART 1 - GENERAL

1.01 SUMMARY

A. Work under this section consists of furnishing all labor, material, tools, equipment, and carpet accessories needed for a complete proper installation of carpet as shown drawings and as specified herein.

1.02 SUBMITTALS

A. Shop Drawings showing columns, doorways, enclosing walls or partitions, built-in cabinets and locations where cutouts are required as well as direction of carpet pile and pattern, location of edge moldings shall be submitted to the architect for approval prior to installation.

B. Floor schedule using same room designations indicated on drawings.

C. Product Data: Provide data on specified products, describing physical and performance characteristics, sizes, patterns, colors available and method for installation.

D. Verification Samples: Submit samples illustrating color and pattern for each carpet material specified.

E. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

F. Maintenance Data: Include maintenance procedures, recommendations for maintenance materials and equipment, and suggested schedule for cleaning.

G. Manufacturer's Product Warranty.

1.03 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Company specializing in manufacturing specified carpet with minimum 2 years documented experience.
2. Upon request, manufacturer to provide representative to assist in project start-up and to inspect installation while in process and upon completion. Representative will notify designated contact if any installation instructions are not followed.
3. Single Source Responsibility: Obtain each type of product from one source and by single manufacturer.
4. Installer Qualifications:
    1. Flooring contractor must be certified by the manufacturer prior to bid.
    2. Flooring contractor to be a specialty contractor normally engaged in this type of work and shall have prior experience in the installation of these types of materials.
    3. Flooring contractor possessing Contract for the product installation shall not sub-contract the labor without written approval of the Project Manager.
    4. Flooring contractor will be responsible for proper product installation, including floor testing and preparation as specified by the manufacturer and JOB CONDITIONS herein.
    5. Flooring contractor to provide Owner a written installation warranty that guarantees the completed installation to be free from defects in materials and workmanship for a period of one year after job completion.

1.04 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to the site in manufacturer's original packaging listing manufacturer's name,

product name, identification number and related information.

B. Please see Flex-Aire Cushion Modular Installation & Floor Preparation Instructions for specific requirements for moisture vapor emission rate ambient conditions and other requirements.

C. All material used in sub-floor preparation and repair shall be recommended by the carpet manufacturer and shall be chemically and physically compatible with the carpet system being bid.

D. Maintain minimum 65 degrees F ambient temperature and 65% Relative Humidity for 72 hours prior to, during, and 48 hours after installation.

E. Do not install carpet until space is enclosed and weatherproof, wet-work in space is completed and nominally dray, work above ceilings is complete, and ambient temperature and humidity conditions are and will be continuously maintained at values near those indicated for final occupancy.

1.05 EXTRA MATERIALS

A. Provide one extra box of carpet tile to owner for future use.

PART 2 - PRODUCTS

2.01 PRODUCT WARRANTY

A. Warranty to be sole source responsibility of the Manufacturer. Second source warranties and warranties that involve parties other than the carpet manufacturer are unacceptable.

B. If the product fails to perform as warranted when properly installed and maintained, the affected area will be repaired or replaced at the discretion of the Manufacturer.

C. Chair pads are not required but are recommended for optimum textural performance. Absent to the user of chair pads, more intensive maintenance will be required for areas in direct contact with chair caster traffic, and some degree of appearance change is to be expected.

D. The non-prorated lifetime limited warranty shall specifically warranty against:
1. Excessive Surface Wear: More than 15% loss of pile fiber weight
2. Excessive Static Electricity: more than 3.0 kilovolts at relative humidity of 20% and a room temperature of 70 degrees F.

2.02 FIBER

A. Nylon Fiber: Bulked Continuous filament (BCF) Nylon in a loop pile construction, Tandus Dynex Nylon.

B. Fiber to contain carbon-core filament for permanent static control. Topical treatments are not allowed.

C. Durable stain inhibitor should be applied to the fiber during product manufacturing to resist fiber staining and soiling.

2.03 BACKING CHARACTERISTICS

A. Primary Backing: Synthetic Non-Woven.

B. Secondary Backing: Flex-Aire Modular Cushion
1. Density (ASTM D-1667): 18.5 lbs/cu ft
2. Recycled Content: 24.6% Recycled Content
3. Fiberglass Reinforced Composite Closed Cell Cushion

4. Delamination: No delamination per ASTM D3936.

2.04 PERFORMANCE CHARACTERISTICS

A. Test reports for the following performance assurance testing to be submitted upon request. Submitted shall represent average results for production goods of the referenced style.

B. Requirements listed below must be met by all products.
1. Flooring Radiant Panel: ASTM E-648 - Class 1 (CRF: 0.45watts/sq cm or greater)
2. Federal Flammability CPSC FF 1-70: Passes (ASTM D-2859)
3. Smoke Density ASTM E-662: Less than 450
4. Electrostatic Propensity AATCC 134: 1.1 kV or less; Permanent Conductive Fiber

2.05 PRODUCT SPECIFICATIONS

A. Manufactured by Tandus
1. Carpet – CPT: Provide "Flame Edit" by Tarkett, OR approved equal
   a. Face Yarn: Dynex SD Nylon
   b. Weave/Surface Texture: Stratatec Patterned Loop
   c. Gauge: 5/64 inch.
   d. Backing Construction: Ethos Modular
   e. Size: 24" x 24" Modular
   f. Color: See Color Legend in the drawings.
   g. Installation Pattern: Vertical Ashlar
   h. Adhesive: C12E (__%RH limit; pH limit)

2. Entry Carpet - ECPT: Provide "Assertive Rib" by Tarkett, OR approved equal
   a. Face Yarn: Dynex TDX Nylon
   b. Weave/Surface Texture: Stratatec Patterned Loop
   c. Gauge: 5/64 inch.
   d. Backing Construction: Flex-Aire Modular Cushion
   e. Size: 24" x 24"
   f. Color: To be selected.
   g. Installation Pattern: Vertical Ashlar
   h. Adhesive: C-EX

2.06 ACCESSORIES

A. Materials recommended by Manufacturer for patching, leveling, priming, etc.

B. Base, Carpet Edge, and Transition Strips: As noted on finish plans.

PART 3 - EXECUTION

3.01 EXAMINATION / PREPARATION

A. Prepared sub-floor to comply with criteria established in Manufacturer's installation instructions. Use only preparation materials that are acceptable to the Manufacturer.
1. Remove all deleterious substances from substrates(s) that would interfere with or be harmful to the installation.
2. Remove sub-floor ridges and bumps. Fill cracks, joints, holes, and other defects.
3. Verify that sub-floor is smooth and flat within specified tolerances and ready to receive carpet.
4. Verify that substrate surface is dust free and free of substances that would impair bonding of product to floor.
5. Verify that concrete surfaces are ready for installation by conducting moisture and pH testing. Results must be within limits recommended by Manufacturer.
6. There will be no exceptions to the provisions stated in the Manufacturer's installation instructions.

3.02 INSTALLATION - GENERAL

A. Install product in accordance with Manufacturer's installation instructions.

B. Product must meet the requirements of CRI's Green Label Plus (GLP9744) program for carpet. Provide documentation.

C. Adhesive must meet the requirements of CRI's Green Label Plus (GLP) program for adhesive. Provide documentation.

D. Product as installed to be securely attached to the floor in compliance with Americans with Disabilities Act (ADA), Section 4.5.3.

E. Where demountable partitions or other items are indicated for installation on top of finished carpet tile floor, install carpet tile before installation of these items.

F. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes outlets, edgings, thresholds, and nosing's.

G. Extend carpet tile into toe spaces, door reveals, closes, open-bottomed obstructions, removable flanges, alcoves, and similar openings.

H. Roll with appropriate roller for complete contact of product with adhesive to sub-floor.

I. Trim carpet neatly at walls and around interruptions.

J. Completed product is to be smooth and free of bubbles, puckers and other defects.

3.03 PROTECTION & CLEANING

A. Remove excess adhesive and/or other from floor and wall surfaces without damage.

B. All rubbish, wrappings, debris, trimmings, etc. to be removed from site and disposed of properly.

C. Clean and vacuum surfaces according to manufacturer's instructions.

D. After each area is installed, protect from soiling and damage by other trades.

END OF SECTION 096800

SECTION 099100 - PAINTING

PART 1 - GENERAL

1.01 NOT USED

1.02 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.

1.03 DESCRIPTION OF WORK

A. Painting and finishing of interior and exterior items and surfaces, unless otherwise indicated.

B. Includes field painting of bare and covered pipes and ducts (including color coding), and hangers, exposed steel and iron work, and primed metal surfaces of equipment installed under mechanical and electrical work.

C. Paint exposed surfaces, except as otherwise indicated, whether or not colors are designated. If not designated, colors will be selected by Architect from designer colors available for the coatings required.

1.04 WORK NOT INCLUDED: Unless otherwise indicated, shop priming of ferrous metal items and fabricated components are included under their respective trades. Pre-finished items are not included.

A. Unless otherwise indicated, painting not required on surfaces of concealed areas except for piping, equipment and other such items within concealed spaces. Finished metals such as anodized aluminum, stainless steel, bronze, and similar metals will not be painted. Do not paint any moving parts of operating units, or over any equipment identification, performance rating, name or nomenclature plates or code-required labels.

1.05 RELATED SECTIONS

A. Section 081113 – Hollow Metal Doors and Frames

B. Section 092900 - Gypsum Drywall

1.06 FLAME SPREAD RATING

A. Class A (0-25) over non-combustible surfaces.

1.07 SUBMITTALS: In addition to manufacturer's data, application instructions, and label analysis for each coating material, submit samples for Architect's review of color and texture only. Resubmit samples if requested until required sheen, color and texture is achieved.

A. On 8" x 8" hardboard, provide samples of each color and material, with texture to simulate finish conditions.

B. On actual wall surfaces and other building components, duplicate painted finishes of acceptable samples, as directed by Architect. Final acceptance of paint color and texture shall be from wall sample.

1.08 PROJECT CONDITIONS

A. Do not apply paint in rain, fog or mist or when relative humidity exceeds 85%. Do not apply paint to damp or wet surfaces or before the building is weathered in.

1.09 EXTRA MATERIALS

A. Furnish extra paint materials from the same production run as the materials applied. Package with

protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner. Furnish Owner with 1 gal. of each material and color applied.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Provide specified paint by Sherwin-Williams Company OR approved equal by one of the following paint manufacturers:
1. PPG Paints.
2. Benjamin Moore.
3. Or equal

2.02 PAINT MATERIALS - GENERAL

A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates recommended by manufacturer.

B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

2.03 PAINT SCHEDULE

A. **Exterior Surfaces:**

EXTERIOR PAINT AND COATING SYSTEMS

1. **Concrete: Cementitious Siding, Flexboard, Transite Board & Hardi Board**
2. **Latex Systems:**
3. **Satin Finish Self Cleaning:**
   1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (5.3-8.0 mils. wet, 2.1-3.2 dry per coat).
   1st Coat: S-W Loxon Self Cleaning Acrylic Coating-Satin, LX14-50 Series.
   2nd Coat: S-W Loxon Self Cleaning Acrylic Coating-Satin, LX14-50 Series (5.0-7.0 mils. wet, 2.0-2.8 dry per coat).

4. **Galvanized Metal (Exterior): Semi-Gloss Finish**
   1st Coat: S-W PRO Industrial Acrylic Semi-Gloss Coating, B66-650 Series
   2nd Coat: S-W PRO Industrial Acrylic Semi-Gloss Coating, B66-650 Series (2.5-4 mils dry per coat; VOC 0 g/L)

5. **Ferrous Metal (Exterior) (Shop Primed Metal):**
   1st Coat: S-W PRO Industrial Acrylic Semi-Gloss Coating, B66-650 Series
   2nd Coat: S-W PRO Industrial Acrylic Semi-Gloss Coating, B66-650 Series (2.5-4 mils dry per coat; VOC 0 g/L)

C. **Interior Surfaces**:

1. **Gypsum Drywall (Interior):**
   1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry; VOC 0.0 g/L, 0.0 lb/gal)
   2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series
   3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series (4 mils wet, l.6 mils dry per coat; VOC 0.0 g/L, 0.0 lb/gal)

2. **Gypsum Drywall (Wet Areas – where EP is scheduled)**:
   Semi-Gloss Finish
   1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600

(4 mils wet, 1.0 mils dry)
2nd Coat: S-W ProIndustrial Catalyzed Waterbased Epoxy, B73-300
3rd Coat: S-W ProIndustrial Catalyzed Waterbased Epoxy, B73-300
(4.0 mils wet, 1.5 mils dry per coat; VOC 155 g/L, 1.29 lb/gal)

3. **Concrete Masonry Units and Concrete (Interior)**:
Semi-Gloss Finish
1st Coat: S-W Loxon Block Surfacer, A24W200
(50-100 sq ft/gal; VOC <100 g/L)
2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-gloss, B31-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-gloss, B31-2600 Series
(4 mils wet, l.6 mils dry per coat; VOC 0.0 g/L, 0.0 lb/gal)

4. **Concrete Masonry Units and Concrete (where EP is scheduled)**:
1st Coat : S-W Loxon Block Surfacer, A24W200
(50-100 sq ft/gal; VOC 81 g/L, 0.68 lb/gal)
2nd Coat: S-W ProIndustrial Waterbased Catalyzed Epoxy, B73-300
3rd Coat: S-W ProIndustrial Waterbased Catalyzed Epoxy, B73-300
(5.0 mils wet, 2.0 mils dry per coat; VOC <50 g/L, 0.42 lb/gal)

5. **Concrete Floor – where Sealed Concrete is noted**:
1st Coat: S-W ArmorSeal Tread-Plex, B90 Series
2nd Coat: S-W ArmorSeal Tread-Plex, B90 Series
(1.5-2.0 mils dry, per coat; VOC <100 g/L, 0.83 lb/gal)

6. **Metal (Interior – Hollow Metal Doors/Frames, Handrails)**:
Semi-gloss Finish:
1st Coat: S-W PRO Industrial Pro-Cryl Universal Primer, B66 Series
2nd Coat: S-W PRO Industrial Waterbased Alkyd Urethane, B53-1150 Series
3rd Coat: S-W PRO Industrial Waterbased Alkyd Urethane, B53-1150 Series
(1.4-1.7 dry mils per coat)

7. **Ferrous Metal (Interior)**:
Primer: S-W Pro-Cryl Universal Primer, B66-310 Series
(5.0-10.0 mils wet, 2.0-4.0 mils dry; VOC <100 g/L, <0.93 lb/gal)
1st Coat: S-W PRO Industrial Acrylic Semi-Gloss Coating, B66-650 Series
2nd Coat: S-W PRO Industrial Acrylic Semi-Gloss Coating, B66-650 Series
(2.5-4 mils dry per coat; VOC 0 g/L)

PART 3 - EXECUTION

3.01 EXAMINATION:

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application.
1. Proceed with paint application only after unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
2. Start of painting will be construed as Applicator's acceptance of surfaces and conditions within a particular area.
3. Notify Architect about anticipated problems when using the materials specified over substrates primed by others.

3.02 PREPARATION

A. Remove hardware and accessories, machined surfaces, plates, lighting fixtures and similar items in place and not to be finish-painted or provide surface-applied protection. Reinstall removed items and remove protective coverings at completion of work.

B. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer=s written instructions for each particular substrate condition and as specified.

1. Cementitious Surfaces: Prepare concrete, concrete masonry, cement plaster and surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents.

Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation. Determine alkalinity and moisture content of surfaces to be painted. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

2. Wood: Clean surfaces of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth, and dust off.

a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After primer, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand

b. Prime, stain, or seal wood to be painted immediately upon delivery. Prime edges, ends, faces, undersides, and backsides of wood, including cabinets, counters, cases, and paneling.

c. Seal tops, bottoms, and cut-outs of unprimed wood doors with a heavy coat of varnish or sealer immediately upon delivery.

C. Ferrous Metals: Clean non-galvanized ferrous metal surfaces that have not been shop-coated; remove oil, grease, dirt, loose mill scale and other foreign substances. Use solvent or mechanical cleaning methods that comply with recommendations of the Steel Structures Painting Council. Touch-up shop-applied prime coats that have been damaged, and bare areas. Wire-brush, clean with solvents and touch-up with the same primer as the shop coat.

D. Galvanized Surfaces: Clean galvanized surfaces with non-petroleum based solvents so that surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock, by mechanical methods.

E. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.

3.03 APPLICATION:

A. Apply painting and finishing materials in accordance with manufacturer's directions. Use applicators, and techniques best suited for materials and surfaces to which applied.

B. Apply additional coats when undercoats, stains or other conditions show through final paint coat, until paint film is of uniform finish, color and appearance.

C. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only before equipment is installed.

D. Paint interior surfaces of ducts, where visible through registers or grilles, flat, non-specular black.

E. Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.

F. Sand lightly between exceeding enamel or varnish coats.

G. Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise specified.

H. Apply prime coat to material which is required to be painted or finished, and which has not been prime coated by others.

I. Apply each material at not less than manufacturer's recommended spreading rate, to provide a total dry film to thickness of not less than 4.0 mils for entire coating system of prime and finish coats for 3-coat work.

J. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.

3.05 PROTECTION:

A. Protect work of other trades. Correct any painting related damages by cleaning, repairing or replacing, and refinishing, as directed by Architect.

3.06 COORDINATION:

A. Provide finish coats which are compatible with prime paints used. Provide barrier coats over incompatible primers where required. Notify Architect in writing of anticipated problems using specified coatings with substrates primed by others.

3.07 COMPLETED WORK

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

END OF SECTION 099100

SECTION 101440 - SIGNAGE

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Interior signage of the following types:

Lucent, custom construction

1.02 REFERENCES

A. ICC/ANSI A117.1 – Accessible and Useable Buildings and Facilities

B. USATBCB – Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)

1.03 SUBMITTALS

A. Submit under provisions of Section 013300.

B. Product Data: Manufacturer's descriptive literature.

C. Shop Drawings: List sign styles, lettering, locations, and dimensions of each interior sign. Contractor shall submit a sign schedule with doors listed in numerical order for review and approval. Shop drawings shall include a scaled diagram of each type of sign specified.

D. Selection Samples: One complete set of color chips representing manufacturer's full range of available colors.

E. Verification Samples: Two full size samples, representing type, style, and color specified including method of attachment.

1.04 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with requirements of ICC/ANSI A117.1 and ADAAG.

1.05 DELIVERY, STORAGE AND HANDLING

A. Inspect products upon receipt. Store products in manufacturer's packaging until ready for installation.

1.06 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturer: Best Sign Systems, Inc., 1202 N. Park Avenue, Montrose, CO 81401. ASD. TEL: (800) 235-BEST. FAX: (970) 249-0223. Email: sales@bestsigns.com, www.bestsigns.com.

B. Requests for substitutions will be considered in accordance with provisions of Section 012500.

2.02 SIGNS

A. ADA-Compliant Interior Signage, Custom Design

2.03 INTERIOR SIGNAGE

A. Manufacturer's standard monolithic tactile plaque constructed utilizing a thermoforming process, which provides a fully homogeneous plaque sign. The sign body, face, raised text and Braille are compression molded to form a single dimensional component that results in a sign surface that exhibits a toughness that resists scratching, cracking, gouging and graffiti.

1. Style: Custom Lucent Sign by Best Sign Systems, Inc
2. Material: Extruded Clear Acrylic
3. Sign Thickness: 1/4 inch (6mm)
4. Tactile Characters/Symbols: Raised 1/32 inch (1 mm) from sign plate face
5. Construction: One-piece; added on or engraved characters not acceptable
6. Lettering Style: Typeface as selected from the manufacturer's standard sans serf or simple serf typefaces, upper case letters, minimum height 5/8", maximum height 2"
7. Braille: Grade 2 braille, placed directly below last line of letters or numbers
8. Contrast: Letters, numbers and symbols shall contrast with background.
9. Bevel Options: Bullnosed
10. Profiles: Square
11. Color of Background: Colors chosen from 73 Standard Paint colors, subsurface or surface applied
12. Color of Text and Raised Characters: As selected from 73 standard colors
13. Surface Texture: Stipple
14. Signage shall be approved for use at interior doors as well as exterior doors.
15. Install with double sided foam tape

2.04 ROOM SIGNAGE

A. All doors (interior and exterior) shall receive a Type "A" sign, unless another type sign is scheduled.

B. All restrooms shall receive a Type "B" sign. They are to be an ADA compliant regulatory sign with text, braille, and universal symbol.

C. Signs requiring the posting of maximum occupancy shall receive a Type "C" sign.

D. Contractor shall provide signage as described above and as shown in the attached schedule. Provide a schedule with the room number and name as shown on the signage schedule for the architect and owner to review and edit. Text will be reviewed and edited during the submittal phase.

2.05 CAST METAL PLAQUE: Fabricate cast metal plaque to comply with requirements specified for metal, border style, background texture and finish and to comply with requirements shown for thickness, size, shape and copy. Produce castings free from pits, scale, sand holes or other defects. Hand tool and buff borders and raised copy to produce the manufacturer's standard satin polished finish.

A. Metal: Bronze.

B. Border Style: Raised flat band.

C. Background Texture: Manufacturer's standard pebble texture.

D. Background Finish: To be selected by Architect.

E. Bronze Castings: Provide bronze castings, copper alloy UNS C83600, complying with the requirements of ASTM B 584.

F. Fasteners: Unless otherwise indicated, use concealed fasteners fabricated from metals that are non-corrosive to either the sign material or the mounting surface.

G. Anchors and Inserts: Use non-ferrous metal or hot-dipped galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use toothed steel or lead expansion bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.

H. Graphic Style: Owner to provide sign layout for bronze plaque.

I. Size: 18" x 24"

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine installation areas to ensure that conditions are suitable for installation.

B. Examine signage for defects prior to installation. Do not install damaged signage.

3.02 PREPARATION

A. Verify mounting heights and locations for interior signage will comply with referenced standards.

B. Clean mounting locations of dirt, dust, grease or similar conditions that would prevent proper installation.

3.03 INSTALLATION

A. Install signs level, plumb, without distortion, and in proper relationship with adjacent surfaces using manufacturer's recommended standard mounting system.

B. Clean signs after installation as recommended by manufacturer.

C. Replace damaged products before Substantial Completion.

3.04 ADA GUIDELINES FOR SIGNAGE

A. Room Identification Signs: Signs which designate permanent rooms or spaces shall comply with the following guidelines:

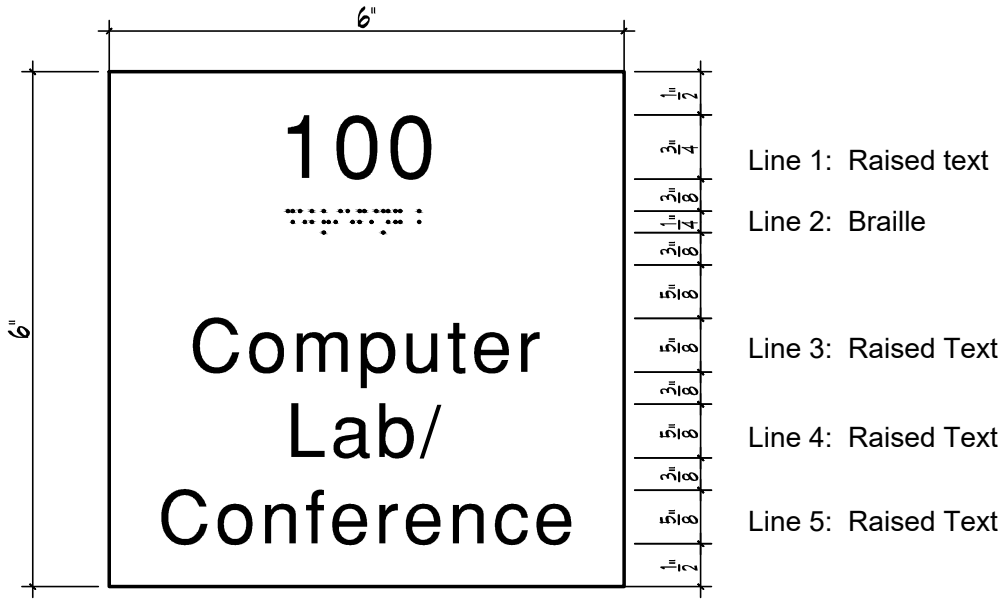
1. Raised Copy – Letters and numerals shall be raised 1/32" upper case, sans serif or simple serif typestyle.
2. Symbols – Symbols shall be accompanied by the equivalent verbal description placed directly below the symbol. The border dimension of the symbol shall be 6" minimum in height.
3. Braille Tags – Grade 2 Braille shall be on all signs, as required.
4. Colors – The characters and backgrounds of all signs shall be of matte or other non-glare finish. Characters and symbols shall contrast with light characters on a dark background or dark characters on a light background. Colors to be selected by the Architect from the manufacturer's standard colors.

B. Directional and Information Signs: Signs which provide direction to, or information about, functional spaces of the building shall comply with the same guidelines as those set for Room Identification Signs with the following additions and exceptions.

1. Character Proportion – Letters and numerals on sign shall have a width to height ratio between 3:5 and 1:1 and a stroke width to height ration between 1:5 and 1:10.
2. Character Height – Characters and numbers on signs shall be sized according to the viewing distance from which they are to be read. The minimum height is measured using an upper case X. Lower case characters are permitted. Any signs that are suspended or projected overhead shall have characters at least three inches high and shall maintain a minimum clearance of 80 inches from finished floor.
3. Raised Copy – Directional and Informational signs are NOT required to use raised copy or braille tags.

C. Signage Mounting Location and Height: Where permanent identification is provided for rooms and spaces, signs shall be installed on the wall adjacent to the latch side of the door. Where there is no wall space to the latch side of the door, including at double leaf doors, signs shall be placed on the nearest adjacent wall. Mounting height shall be 60" (maximum) to the top of the sign. Signs shall be located with a clear floor space of 18" x 18" is provided as shown below.

END OF SECTION 101440



SIGN TYPE 'A'

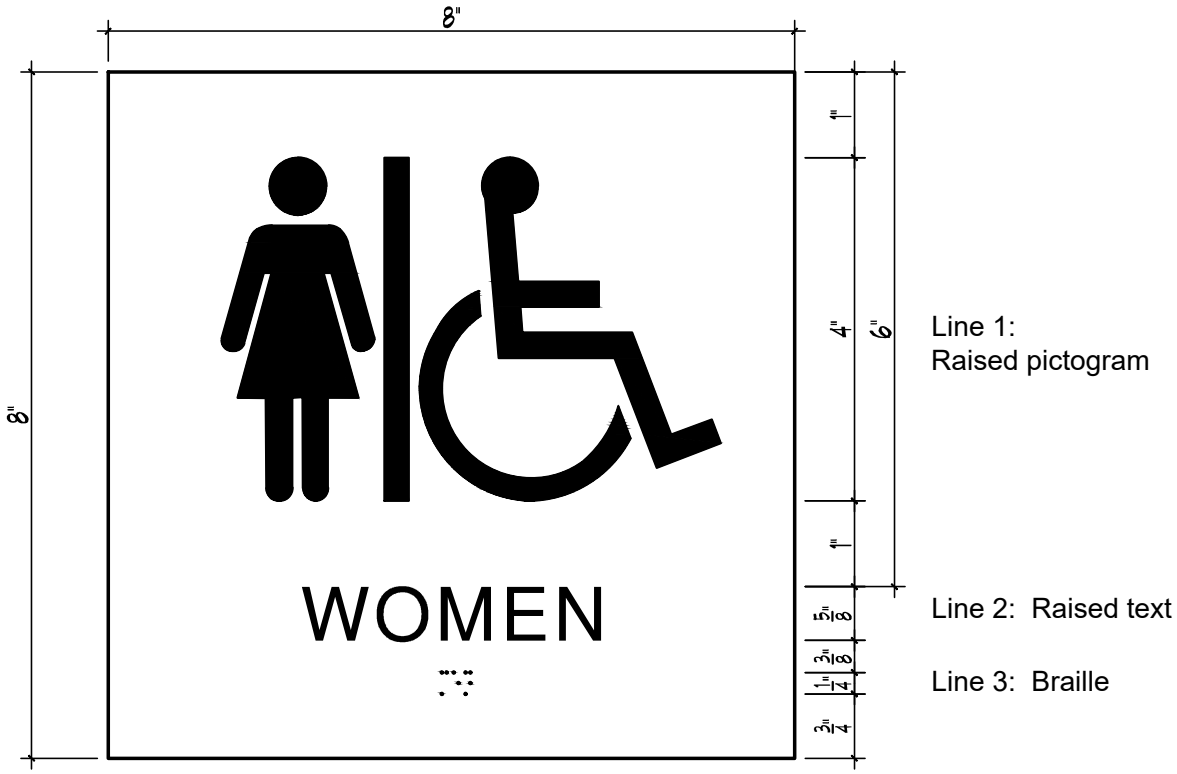
CRA ARCHITECTS

Clemons, Rutherford
& Associates Inc.
2027 Thomasville Road
Tallahassee, Florida 32308
(850) 385-6153
Fax (850) 386-8420

SIGNAGE TYPES

PROJECT: Wakulla County BOCC
Wakulla County Public Library
Crawfordville, FL

CRA PROJECT NO.: 24071



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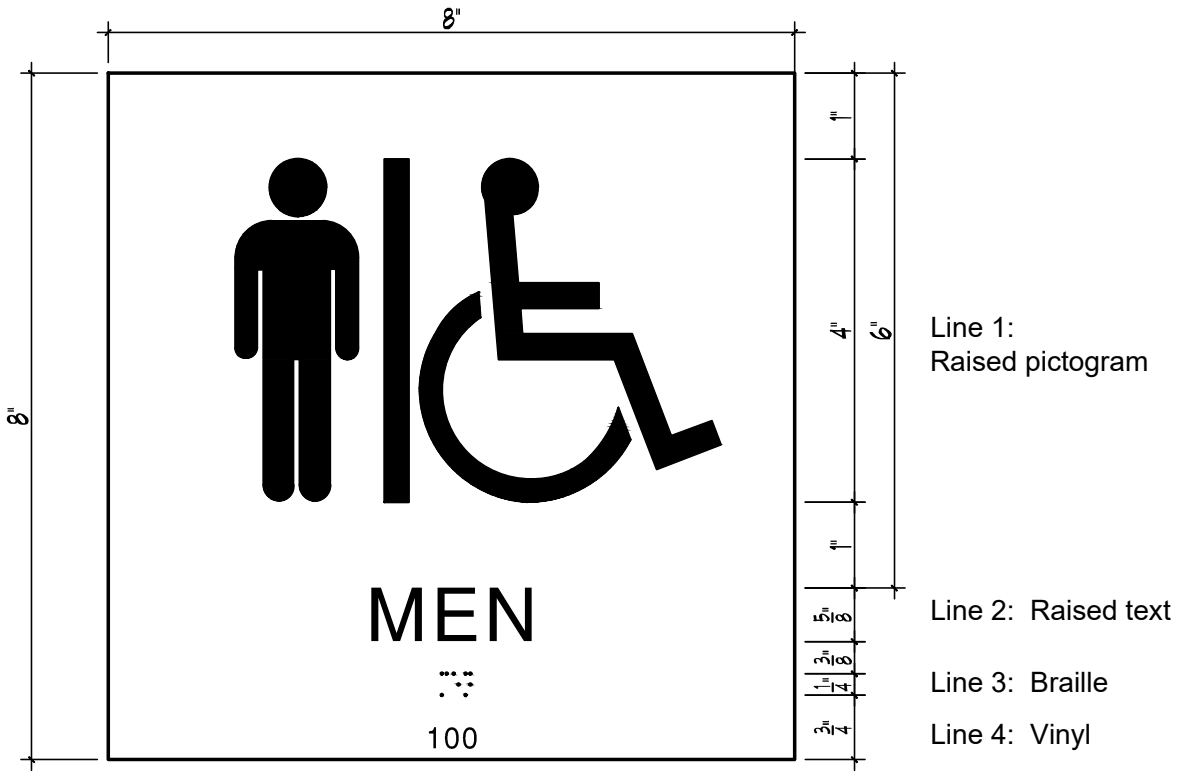


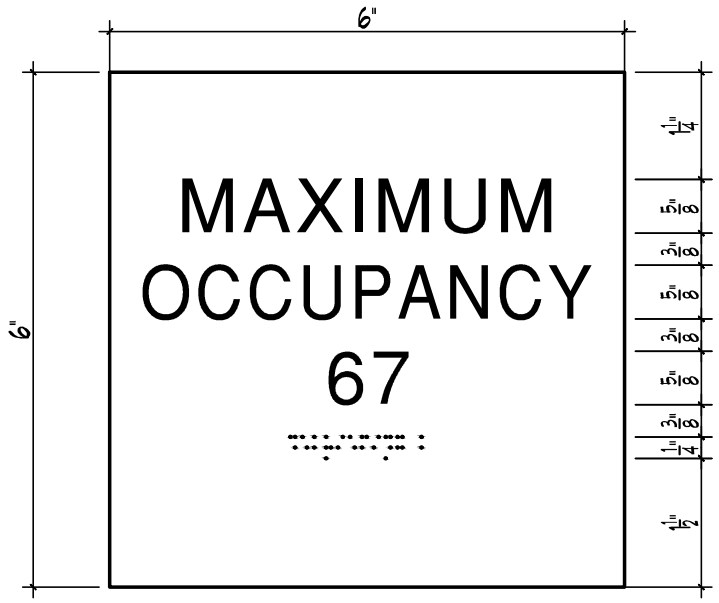
CRA ARCHITECTS

Clemons, Rutherford
& Associates Inc.
2027 Thomasville Road
Tallahassee, Florida 32308
(850) 385-6153
Fax (850) 386-8420

SIGNAGE TYPES

PROJECT: Wakulla County BOCC
Wakulla County Public Library
Crawfordville, FL

CRA PROJECT NO.: 24071



SIGN TYPE 'C'

CRA ARCHITECTS

Clemons, Rutherford
& Associates Inc.
2027 Thomasville Road
Tallahassee, Florida 32308
(850) 385-6153
Fax (850) 386-8420

SIGNAGE TYPES

PROJECT: Wakulla County BOCC
Wakulla County Public Library
Crawfordville, FL

CRA PROJECT NO.: 24071

Signage Schedule					
Door #	**Room Name**	**Room #**	**Sign Type**	**Sign Content**	**Notes**
001	Lobby	001	Vinyl	To be determined	EXTERIOR
001A	Lobby	001	No sign		
002	Womens Restroom	002	B	(HC female pictogram) WOMEN (braille)	
003	Mens Restroom	003	B	(HC male pictogram) MEN (braille)	
004	Meeting Room	004	A	004 (braille) Meeting Room	
004A	Storage	004A	A	004A (braille) Storage	
004B	Meeting Room	004	A	004 (braille) Meeting Room	
005	Office	005	A	005 (braille) Office	
006	Teen Area	006	A	006 (braille) Teen Area	
006A	Office	005	A	005 (braille) Office	
007	Childrens Room	007	A	007 (braille) Childrens Room	
007A	Office	005	A	005 (braille) Office	
008	Study	008	A	008 (braille) Study	

009	Work Area	009	No sign	020 (braille) Work Area	
010	Young Adult	010	Vinyl	To be determined	EXTERIOR
No Door	Adult Area	011	No sign		
012	Computer Lab/ Conf. Room	012	A	012 (braille) Computer Lab/ Conference	
013	Office (Linda)	013	A	013 (braille) Office	
014	Office	014	A	014 (braille) Office	
015	Office (Rex)	015	A	015 (braille) Office	
016	Office (Becca)	016	A	016 (braille) Office	
017	Childrens Area	017	Vinyl	To be determined	EXTERIOR
No Door	Junior Area	018	No sign		
019	F.O.L	019	A	019 (braille) F. O. L.	
020	Work Area	020	A	020 (braille) Work Area	EXTERIOR
021	Break Room	021	A	021 (braille) Break Room	
022	Storage	022	A	022 (braille) Storage	
023	Janitors	023	A	023 (braille) Janitor Closet	

024	Toilet	024	B	(HC unisex pictogram) RESTROOM (braille)	
025	Toilet	025	B	(HC unisex pictogram) RESTROOM (braille)	
026	Elec./Comm.	026	A	026 (braille) Electrical/ Comm Room	
027	Mechanical	027	A	027 (braille) Mechanical	EXTERIOR

SECTION 101600 - TOILET PARTITIONS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Solid plastic toilet compartments including the following: (Hiny Hiders)
   1. Floor mounted overhead-braced toilet compartments.

1.02 RELATED SECTIONS

A. Division 5 – Metal Fabrications

B. Division 6 – Rough Carpentry

1.03 REFERENCES

A. ASTM A 666 – Standard Specification for Stainless Steel and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.

B. ASTM B 221 – Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profile and Tubes.

C. National Fire Protection Association (NFPA) 286 – Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.

D. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials.

E. United States EPA (Environmental Protection Agency) Registration – Bactericidal Surfaces Registered with the U.S. EPA to Legally Make Claims that these Materials Kill Infectious Bacteria.

1.04 SUBMITTALS

A. Submit under provisions of Division 1.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements.
   3. Installation methods.

C. Shop Drawings: Provide layout drawings and installation details with location and type of hardware required.

D. Verification Samples: Fore each finish product specified, two samples representing actual product, color and patterns. IF requested by architect.

1.05 QUALITY ASSURANCE

A. Manufacturer's Qualifications: A company regularly engaged in manufacture of products specified in this section, and whose products have been in satisfactory use under similar service conditions for not less than 5 years.

B. Installer's Qualifications: A Company or Individual, regularly engaged in installation of products specified in this Section, with a minimum of 5 years experience.

C. Materials: Doors, panels and pilasters, construction from high density polyethylene (HDPE) resins. Partitions to be fabricated from polymer resins compounded under high pressure, forming a single component which is waterproof, nonabsorbent and has a self-lubricating surface that

resists marks from pens, pencils, markers and other writing instruments. Cover all plastic components with protective plastic masking.

D. Performance Requirements:
1. Fire Resistance: Partition materials shall comply with the following requirements, when tested in accordance with the ASTM E 84:
a. Class B flame spread/smoke developed rating.
2. Material Fire Ratings:
a. National Fire Protection Association (NFPA) 286: Pass.
b. International Code Council (ICC): Class B.
3. Antimicrobial Touch Surfaces: Hardware touch surfaces shall be manufactured from substrates that are registered with the U.S. EPA to kill specific bacterial tested according to U.S. EPA protocols.

1.06 DELIVERY, STORAGE AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation

1.07 PROJECT CONDITIONS

A. Maintain environments conditions (temperature, humidity and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environments conditions outside manufacturer's absolute limits.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Provide toilet partitions as manufactured by Scranton Products OR Approved equal.
1. Fabricators: Santana, Cometc or Capitol.

2.02 MATERIAL

A. Plastic Panels: High Density Polyethylene (HDPE) suitable for exposed applications, waterproof, nonabsorbent and graffiti-resistant textured surface.

B. Zinc Aluminum Magnesium and Copper Alloy (Zamac): ASTM B 86.

C. Stainless Steel Castings: ASTM A167, Type 304.

D. Aluminium: ASTM 6463-T5 alloy.

2.03 SOLID PLASTIC TOILET COMPARTMENTS

A. Hiny Hiders Toilet Compartments as manufactured by and supplied by Scranton Products.
1. Style: Floor mounted overhead-braced toilet compartments.

B. Doors, Panels and Pilasters: 1 inch thick with all edges rounded to a radius. Mount doors and dividing panels based on height of specified system.
1. Door and Panel Height (toilet compartments): 55 inches.
2. Panel Height (privacy/urinal screen): 42 inches. (24 inches wide)
3. Panel Edge: Standard.
4. Pilasters (toilet compartments): 82 inches high and fastened to the floor.
5. Pilasters (privacy/urinal screen): Height of ceiling.
6. Aluminum heat sinc fastened to the bottom edges of panels.

C. Panel Color: To be selected by architect.

D. Pilaster Shoes: 3 inches high, 20 gauge stainless steel.

E. Headrail: Heavy-duty extruded 6463-T5 alloy aluminum with anti-grip design. Finish to be clear anodized. Fastened to headrail brackets with stainless steel tamper resistant Torx head sex bolt, and fastened at the top of the pilaster with stainless steel tamper resistant Torx head screws.
   1. Headrail Brackets: 20 gauge stainless steel with satin finish. Secured to the wall with stainless steel tamper resistant Torx head screws.

F. Wall Brackets:
   1. Aluminum Brackets: Heavy-duty aluminum 6463-T5 alloy.
   2. Brackets are fastened to pilasters with stainless steel tamper resistant Torx head screws and fastened to the panels with stainless steel tamper resistant Torx head sex bolts.
   3. Bracket Type: Continuous 54 inches aluminum.

G. Door Hardware:
   1. Wrap-Around Hinges: 8 inches and fabricated from heavy-duty extruded aluminum. Hinges are through-bolted to pilasters and doors with stainless steel tamper resistant Torx head sex bolts. Hinges operate with field adjustable nylon cams.
   2. Door Strike/Keeper: Heavy-duty extruded aluminum 6436-T5 alloy with bright dip anodized finish. Secured to pilasters with stainless steel tamper resistant Torx head sex bolts. Bumper shall be made of extruded black vinyl.
   3. Latch Mechanism: Healthy Hardware Slide Bolt, Pulls and Coat Hook: Made from U.S. EPA registered materials by manufacturer currently holding U.S. EPA Company Number, U.S. EPA Establishment Number and California Broker's License. Satin finish.
   4. Doors supplied with one coat hook/bumper and pull made of Healthy Hardware.
   5. Equip outswing handicapped doors with second door pull and door stop. Door pulls shall be ADA compliant.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify the Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Examine areas to receive toilet partitions and screens for correct height and spacing of anchorage/blocking and plumbing fixtures that affect installation of partitions. Report discrepancies to the architect.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install partitions rigid, straight, plumb and level in layout shown on shop drawings.

C. Clearance at vertical edges of doors shall be uniform top and bottom and shall not exceed 3/8 inch.

D. No evidence of cutting, drilling and/or patching shall be visible on the finished work.

E. Finished surfaces shall be cleaned after installation and be left free of imperfections.

3.04 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 101600

SECTION 102800 - TOILET AND BATH ACCESSORIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and Division 1 Specification Sections, apply to this section.

1.02 SUBMITTALS

A. Product Data: For each type of product included. Include the following:
1. Construction details and dimensions.
2. Anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
3. Material and finish descriptions.
4. Manufacturer's warranty.

B. Maintenance Data: For toilet and bath accessories to be included in maintenance manuals.

1.03 STRUCTURAL REQUIREMENTS: All grab bars and their mounting devices shall withstand a downward load of at least 250 lbs. of force when tested according to method in ASTM F 446.

PART 2 - PRODUCTS

2.01 MANUFACTURER: Provide toilet and bath accessories as manufactured by Bobrick OR approved equal.

2.02 GENERAL: Provide toilet and bath accessories as scheduled. Install units at locations and heights as indicated, plumb and level, firmly anchored, in accordance with manufacturer's instructions.

2.03 GENERAL FABRICATION: Stamped names or labels on exposed faces of toilet and bath accessory units are not permitted, however unobtrusive labels indicating manufacturer and model number are required on surface not exposed to view. Wherever locks are required for particular type of accessory, provide same keying throughout project. Furnish two keys for each lock, properly identified.

A. Mirror Fabrication: Fabricate frames for glass mirrors to accommodate wood, felt, plastic, or other glass edge protection material. Provide mirror backing and support system which will permit rigid, tamperproof glass installation and prevent accumulation of moisture.

B. Surface-Mounted Accessories: Fabricate units with tight seams and joints, exposed edges rolled. Hang doors or access panels with continuous piano hinge or minimum of two 1-1/2" pin hinges of same metal as unit cabinet. Provide concealed anchorage wherever possible.

2.05 TOILET ACCESSORY ITEMS: Provide the following toilet accessories by Bobrick Washroom Equipment Inc. OR approved equal, unless otherwise noted.

A. Grab Bars:
1. Grab bar: 18-8 S, type-304, 18-gauge stainless steel tubing with satin finish, slip-resistant surface. 1-1/2" outside diameter. Clearance between the grab bar and wall is 1-1/2". End of grab bar shall pass through concealed mounting flanges and be heliarc welded to form one structural unit.
2. Concealed mounting flanges: 18-8 S, type-304, 11-gauge thick, stainless-steel plate; end flanges 2" x 3-1/8" with holes for attachment to wall. Intermediate flanges 2-5/8" x 3-1/8" wide x 3-1/8" diameter.
3. Snap Flange Covers: 18-8 S, type-304, 22-gauge drawn stainless steel with satin-finish, 3-1/4" diameter x 1/2" deep. Each cover snaps over mounting flange to conceal mounting screws.
4. Strength: Grab bars that provide 1-1/2" clearance from wall can support loads in excess of 900 pounds if properly installed.
a. Grab bars shall comply with accessible design (including ADAAG in the U.S.A.) for structural strength.

5. Models and sizes: ***(B-6806-36; B-6806-42)***

B. Stainless Steel Framed Mirrors:
1. Frame: Type-430 stainless steel, 1/2" x 1/2" x 3/8" channel with 1/4" return at rear for Snap Locking Design; with bright polished finish. One piece frame with with 90◦ mitered corners. Galvanized steel back has integral horizontal hanging brackets near the top for hanging the mirror and near the bottom to prevent the bottom of the mirror from pulling away from the wall. Locking devices secure mirror to concealed wall hanger.
2. Mirror: No. 1 quality, 1/4" select float glass: selected for silvering, electrolytically copper-plated by the galvanic process, and guaranteed for 15 years against silver spoilage. Back is protected by full-size, shock-absorbing, water-resistant, nonabrasive, polyethylene padding.
3. Concealed Wall Hanger: 16 gauge cold rolled steel construction. Incorporates upper and lower support members which engage backplate louvers to keep mirror against wall. Locking devices secure mirror to concealed wall hanger. Mirror shall be removable from the wall.
4. Sizes: 18" wide x 30" high x 3/4" deep
   Models: ***(B-165-1830)***

C. Surface Mounted Multi-Roll Toilet Tissue Dispenser:
1. Cabinet: 18-8, type 304, 22 gauge (0.8mm) stainless steel. All welded construction. Exposed surfaces have satin finish.
2. Door: 18-8, type 304, 22 gauge (0.8mm) stainless steel with 18-gauge (1.2mm) stainless steel door frame. Exposed surfaces have satin finish. Front of door is drawn, one-piece, seamless construction. Secured to cabinet with two rivets. Equipped with a tumbler lock keyed like other Bobrick washroom accessories.
3. Dispensing Mechanism, Inner Housing and Cam: 18-8, type 304, 22 gauge (0.8mm) stainless steel.
4. Spindles (2): Heavy-duty, one-piece, molded Abs, Theft resistant. Retained in dispensing mechanism when door is locked.
5. Operation: Unit holds two standard-core toilet tissue rolls up to 5-1/4" (133mm) diameter (1800 sheets). Tissue rolls are loaded and locked into dispensing mechanism. Extra roll automatically drops in place when bottom roll is depleted. Depleted rolls can only be removed by unlocking door.
5. Size: 6-1/16" wide x 11" high x 5-15/16" deep
6. Model: ***(B-2888)***

D. Surface Mounted Soap Dispenser:
1. Container: - 18-8, type 304, 22 gauge (0.8mm) stainless steel with satin finish. The body is drawn, one-piece, seamless construction. The back plate has mounting bracket attached. Furnish with concealed wall plate. Equipped with clear acrylic refill indicator window and locked, hinged stainless steel lid for top filling. Capacity: 40fl oz (1.2 L).
2. Valve: lack molded plastic, push button and spout. Soap head-holding mushroom valve. Stainless steel spring. U-packing seal and duckbill. Antibacterial soap resistant plastic cylinder.
3. Operation: Corrosion resistant valve dispenses commercially marketed all-purpose hand soaps. To prevent corrosion of the tank, use only chloride free pH-neutral liquid soaps. Valve shall be operable with one hand without tight grasping, pinching, or twisting of the wrist, and with less than 5 pounds of force to (22.2N) to comply with accessible design guidelines (including ADAAG in U.S.A.). Window indicates when refill is required. The locked, hinged lid opens for top filling only with special key provided. Concealed vandal resistant mounting.
4. Size: 4-3⁄4" W, 8-1⁄8" H (120 x 205mm); wall to push-button, 3 1⁄2" (90mm).
5. Model: ***(B-2111)***

E. Surface Mounted Paper Towel Dispenser:
1. Cabinet: 18-8, type-304, 22-gauge stainless steel. All-welded construction. Exposed surfaces have satin finish. Towel tray has hemmed opening to dispense paper towels without tearing.

2. Door: 18-8, type-304, 22-gauge stainless steel with satin finish. Secured to cabinet with a full-length stainless steel piano hinge. Equipped with a tumbler lock keyed like other Bobrick washroom accessories.
3. Accessory: Part No. 262-130 TowelMate. Allows for paper towels to dispense one at a time without bulging, sagging or falling through the towel tray opening.
4. Operation: Unit dispenses 400 C-fold and 525 multifold towels measuring 3-1/8" to 3-13/16" deep.
   Size: 10-13/16" wide x 14-1/16" high x 3-15/16" deep
   Model: ***(B-262-130 – with TowelMate accesory)***

F. Mop and Broom Holder/Utility Shelf:
1. Mounting Base and Shelf: 18-8, Type-304, 18-gauge stainless steel with satin finish. All welded construction. Shelf is 8" deep with 3/4" return edge on all three sides. Front edge is hemmed for safety.
2. Shelf Support Brackets: 18-8, Type-304, 16-gauge stainless steel with satin finish. Welded to mounting base and shelf.
3. Mop/Broom Holders (3): Spring-loaded rubber cams with anti-slip coating. Plated steel retainers. Accommodate handles from 7/8" to 1-1/4" diameter.
4. Hooks (4): 18-8, Type-304, 12-gauge stainless steel with satin finish. Each hook attached to mounting strip with two rivets.
5. Size: 34" long x 8" deep x 13" high
6. Model: ***(B-239 x 34)***

G. Surface Mounted Napkin Disposal:
1. Cabinet: 18-8, Type-304, heavy-gauge stainless steel. All-welded construction. Exposed surfaces shall have satin finish.
2. Door: 18-8, Type-304, 22-gauge stainless steel with satin finish. Secured to cabinet with a full-length stainless steel piano-hinge. Equipped with a tumbler lock keyed like other Bobrick washroom accessories.
3. Disposal Panel: 18-8, Type-304, 22-gauge stainless steel with satin finish. Bottom edges hemmed for safety. Secured to door and permanent panel with spring-loaded, full-length stainless piano-hinge. Equipped with international graphic symbol identifying sanitary napkin disposal.
4. Waste Receptacle: Leak-proof, rigid molded polyethylene. Removable for servicing. Capacity: 1.2 gal.
5. Size: 10-11/16" wide x 4-1/16" deep x 15-1/8" high.
6. Model: ***(B-254)***

H. Diaper Changing Station:
1. Materials: Injection-molded polypropylene with Microban antimicrobial additive embedded into the bed surface. Reinforced steel-on-steel hinge mechanism and metal mounting chassis with mounting hardware included. Labelled usage instructions and safety messages in four languages. Braille label included. Contoured changing surface area is 450 sq. in. and comes complete with nylon safety strap and bag hooks. Dual cabinet liner dispenser holds approximately 50 KB150-99 bed liners.
2. Standards: Unit shall be compliant with the 2010 ADA Standards for Accessible Design and the 2009 ICC A117.1, Accessible and Usable Buildings and Facilities. Unit shall conform to ASTM F 2285-04 Standard Safety Performance Specification for Diaper Changing Tables for Commercial Use, NSI Z535.4. ASTM G22 Antibacterial standards or local code if more stringent.
3. Model: ***(KB-200)*** Color to be selected by Architect.

PART 3 - EXECUTION

3.01 INSTALLATION:

A. Install toilet accessory units in accordance with manufacturer's instructions, using fasteners appropriate to substrate and recommended by manufacturer of unit. Install units plumb and level, firmly anchored in locations indicated and in accordance with the requirements of ADA.

3.02 ADJUSTING AND CLEANING

A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.

B. Remove temporary labels and protection coatings.

C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

END OF SECTION 102800

SECTION 104416 - FIRE EXTINGUISHERS, CABINETS, AND ACCESSORIES

PART 1 - GENERAL

1.01 UL-Listed Products: Provide new UL-listed fire extinguishers bearing UL "Listing Mark" for type, rating, and classification of extinguishers indicated.

1.02 Submittals: Submit product data and finish samples.

PART 2 - PRODUCTS

2.01 Manufacturers: Subject to compliance with requirements, provide products by one of the following:

Allenco
Ansul Fire Protection, Wormald US Inc.
Badger-Powhatan
Bobrick Washroom Equipment, Inc.
J.L. Industries
Larsen's Manufacturing Co.
Modern Metal Products by Muckle
Potter-Roemer, Inc.
Samson Metal Products, Inc.
Walter Kidde, Division of Kidde, Inc.
Watrous Inc.

2.02 Fire Extinguishers: Provide fire extinguishers for each extinguisher cabinet and other locations indicated on Life Safety Plans.

A. Contractor's Option: Contractor has option to provide rated fire extinguisher cabinets in rated walls OR provide 5-sided gypsum board box in rated walls.

2.03 Multipurpose Dry Chemical Type:

A. Typical Areas: UL-rated 3A-20 B: C min., in enameled steel containers.

B. Labs, Shops, Boiler Rooms, Bulk Storage, Electrical and Equipment Rooms: UL-rated 3A-40 B: C min., in enameled steel containers.

C. Bulk Paper Storage: UL-rated 4A-60 B:C, in enameled steel containers.

D. Kitchens: UL-rated 3A-40 B:C min.

2.04 Mounting Brackets: Provide brackets for extinguishers not located in cabinets.

2.05 Fire Extinguisher Cabinets: Provide fire extinguisher cabinets where indicated, of suitable size for housing fire extinguishers of types and capacities indicated.

A. Semi-Recessed: Cabinet box (tub) recessed in walls of sufficient depth to suit style of trim indicated.

1. Exposed Trim: One-piece combination trim and perimeter door frame overlapping surrounding wall surface with exposed trim face and wall return at outer edge (backbend).
   a. Rolled Edge Trim with 2-1/2 inch backbend depth.
   b. Trim Metal: Of same metal and finish as door.

B. Fully-Recessed: Cabinet box recessed in walls of sufficient depth to suit style of trim indicated.

1. Exposed Flat Trim: One-piece combination trim and perimeter door frame overlapping surrounding wall surface with exposed trim face and wall return at outer edge (backbend) of 1/4 to 5/16 inch.

C. Surface Mounted: Cabinet box fully exposed and mounted directly on wall; with no trim.

2.06 Door Material and Construction: Manufacturer's standard door construction, of material indicated, coordinated with cabinet types and trim styles selected.

A. Enameled Steel: Manufacturer's standard finish, hollow steel door construction with tubular stiles and rails.

B. Identify fire extinguisher in cabinet with lettering spelling "FIRE EXTINGUISHER" applied by silkscreen method to door. Provide lettering to comply with requirements indicated for letter style, color, size, spacing, and location or as selected by Architect from manufacturer's standard arrangements. Lettering shall be vertical and red. Cabinet shall be white.

C. Door Style: Manufacturer's standard full flush solid panel of material indicated.

D. Door Hardware: Provide manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated. Provide either lever handle with cam action latch, or door pull, exposed or concealed, and friction latch. Provide concealed or continuous-type hinge permitting door to open 180 deg.

2.07 Factory Finishing of Fire Extinguisher Cabinet: Comply with NAAMM "Metal Finishes Manual" to provide uniformly finished products. Protect mechanical finishes on exposed surfaces from damage by application of strippable, temporary protective covering prior to shipment. Cabinet shall be mounted 48” A.F.F. to center of cabinet handle.

PART 3 - EXECUTION

3.01 Installation:

A. Install items included in this section in locations and at mounting heights indicated, or if not indicated, at heights to comply with applicable regulations of governing authorities.

B. Prepare recesses in walls for fire extinguisher cabinets as required by type and size of cabinet and style of trim and to comply with manufacturer's instructions.

C. Securely fasten mounting brackets and fire extinguisher cabinets to structure, square and plumb, to comply with manufacturer's instructions.

END OF SECTION 104416

SECTION 313116 - TERMITE CONTROL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 QUALITY ASSURANCE

A. Qualifications: Engage a licensed professional pest control operator, for application of soil treatment solution.

B. Regulatory Requirements: Use only termiticides which bear a Federal registration number of the U.S. Environmental Protection Agency.

C. Comply with FBC Section 1816 - Termite Protection.

1.03 JOB CONDITIONS

A. Restrictions: Do not apply soil treatment solution until excavating, filling and grading operations are completed, except as otherwise required in construction operations.

B. To insure penetration, do not apply soil treatment to frozen or excessively wet soils or during inclement weather. Comply with handling and application instructions of soil toxicant manufacturer.

1.04 SUBMITTALS

A. Product Data: Treatments and application instructions, including EPA-Registered Label.

B. Product Certificates: Signed by manufacturers of termite control products certifying that treatments furnished comply with requirements.

1.05 WARRANTY

A. Provide 5 year written warranty from date of treatment, signed by Applicator and Contractor, certifying that applied soil termiticide treatment will prevent infestation of subterranean termites and, that if subterranean termite activity is discovered during warranty period, Contractor will re-treat soil and repair or replace damage caused by termite infestation.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Soil Treatment Solution: Use emulsible concentrate termiticide for dilution with water, specially formulated to prevent termite infestation. Provide a working solution of one of following chemical elements and concentrations.

A. Permethrin ("Dragnet", "Torpedo"); 0.5% in water emulsion.

B. Cypermethrin (APrevail FT@); 0.5% in water emulsion.

C. Imidacloprid ("Premise 75"); 0.1% water emulsion.
D. Fipronil (Termidor 80WG); 0.125% water emulsion.

B. Other solutions may be used as recommended by Applicator if acceptable to local governing authorities and to Architect. Use only soil treatment solutions which are not injurious to planting.

PART 3 - EXECUTION

3.01 APPLICATION

A. Surface Preparation: Remove foreign matter which could decrease effectiveness of treatment on areas to be treated. Loosen, rake, and level soil to be treated, except previously compacted areas under slabs and foundations. Termiticide may be applied before placement of compacted fill under slabs, if recommended by manufacturer.

B. Application Rates: Apply soil treatment solution at rates recommended by soil termiticide manufacturer.

C. Treatment Areas: Treat areas required by applicable codes. In addition treat everything within one foot outside of building perimeter and as follows:
   1. Slabs-On-Grade: Under ground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.
   2. Foundations: Adjacent soil including soil along the entire inside perimeter of foundation walls, around plumbing pipes and electric conduit penetrating the slab, and around interior column footers, and piers; also along the entire outside perimeter, from grade to bottom of footing. Avoid soil washout around footings.

3.02 POST SIGNS in areas of application warning workers that soil termiticide treatment has been applied. Remove signs when areas are covered by other construction.

3.03 REAPPLY SOIL TERMITICIDE TREATMENT solution to areas disturbed by subsequent excavation or other construction activities following application.

END OF SECTION 313116