FACILITY AUXILIARY BUILDING
UNIVERSITY OF SOUTH CARLINA AIKEN
STATE PROJECT NO.: H29-9552/50003331-2
JCS PROJECT NO: 18103

ADDENDUM #02
June 11, 2019

GENERAL INFORMATION:

1. Q: Is third party testing and material testing to be included in the bid?
   A: No, third party testing and material testing will be provided under a separate contract by the owner
2. Q: Are the temporary driveways to be paved?
   A: No, not required
3. Q: Is fenced tree protection a requirement of this project?
   A: No, it is not required
4. Q: Is lump sum subcontract for unit masonry a requirement for this project?
   A: No, not required
5. Q: Are the insulated translucent wall panels, section 08 4500, the responsibility of the pre engineered building manufacturer?
   A: No, this is a performance spec, product provide by GC
6. Q: Are GC's limited to specified manufacturers or approved equals?
   A: Yes
7. Q: Are tap fees to be included in the bid?
   A: No, tap fees will be paid by Owner
8. Q: Provide additional information on gas tank.
   A: Gas tank is provided by the Owner and sits on the concrete slab within the curbed area as shown on drawings
9. Q: Clarify the responsibility of relocating the existing metal framed mezzanine.
   A: The Owner will relocate the existing metal framed mezzanine
10. Q: What equipment in Shop Area 121 is provided by GC?
    A: Eyewash station, wash basin, and work bench countertops as noted on revised Sheet #A301
11. Q: Clarify interior metal wall panels for warehouse and shop.
    A: Metal wall panels shall match the exterior metal wall panels and are to be installed to a height of 16' AFF as indicated on A701.
12. Q: Does roof insulation receive paint in Warehouse area?
    A: No, roof insulation will be pre-finished white
13. Q: Clarify warehouse fencing specifications
    A: Refer to fence spec 32 3113

SPECIFICATIONS:

1. **SE-330 LUMP SUM BID FORM:** REPLACE the SE-330 Lump Sum Bid Form with the SE-330 form included with this Addendum.
2. **SPECIFICATION SECTION 09 6601 Resilient Tile Flooring:** **REPLACE** the section originally issued with the section included in this Addendum.
3. **SPECIFICATION SECTION 09 6610:** **ADD** the entire section include din this addendum.
4. **SPECIFICATION SECTION 10 2113 Toilet Compartments:** **ADD** the entire section included in this addendum.
5. **SPECIFICATION SECTION 10 2801 Toilet Accessories:** **REPLACE** the section originally issued with the section included in this Addendum.

6. **SPECIFICATION SECTION 10 6700 Storage Shelving: ADD** the entire section included in this addendum.
7. **SPECIFICATION SECTION 26 0500 Electrical Basic Materials and Methods: ADD** Note Section 2-16 – WIRING: Provide communications/data conduit with CAT 6 cables as indicated on drawings.
8. **SPECIFICATION SECTION 26 3213 Standby Power System:** Section 1-02; SUPPLIER, change 'Columbia' to 'Aiken.'

DRAWINGS:

1. **SHEET #A101 Site Plan: All fencing noted on this sheet shall be 6' high chain link fence. See specs.**
2. **SHEET #A301 Floor Plan: REPLACE** this sheet in the bid set with REVISED sheet A301 included in this addendum.
3. **SHEET #A302 Covered Storage Plan: All fencing noted on this sheet shall be 6' high chain link fence. See specs.**
4. **SHEET #A401 Exterior Elevations: All fencing noted on this sheet shall be 6' high chain link fence. See specs.**
5. **SHEET #A502 Door Details & Railing Details: REPLACE** this sheet in the bid set with REVISED sheet A502 included in this addendum.
6. **SHEET #A601 Enlarged Toilet Plan: REPLACE** this sheet in the bid set with REVISED sheet A601 included in this addendum.
7. **SHEET #A602 Casework Sections:** Detail 7, work bench countertop, Spaces 121 and 121A shall be 1-1/2: SWC door panel mounted on steel tube frame 36" O.C. Door panel shall be birch veneer sealed with clear polyurethane.
8. **SHEET #A901 Ceiling Plan: REPLACE** this sheet in the bid set with REVISED sheet A901 included in this addendum.
9. **SHEET #S101 Foundation Plan: REPLACE** this sheet in the bid set with REVISED sheet S101 included in this addendum.
10. **SHEET #S104 Covered Storage Foundation Plan: Add** this sheet to the bid set.
11. **SHEET #M201 Details, Notes, Schedules and Legend:** Reference VAV Package Control Diagram. Control Contractor to coordinate actual electrical heater stages with equipment provided.
12. **SHEET #E001 Electrical Symbols and Notes: REPLACE** this sheet in the bid set with REVISED sheet E001 included in this addendum.
13. **SHEET #E002 Electrical Site Plan: REPLACE** this sheet in the bid set with REVISED sheet E002 included in this addendum.
14. **SHEET #E003 Enlarged Gas Pump Plan and Details: REPLACE** this sheet in the bid set with REVISED sheet E003 included in this addendum.
15. **SHEET #E102 Lighting Fixture Schedule: REPLACE** this sheet in the bid set with REVISED sheet E102 included in this addendum.
16. **SHEET #E201 Power Plan: REPLACE** this sheet in the bid set with REVISED sheet E201 included in this addendum.
17. **SHEET #E603 Electrical Details: REPLACE** this sheet in the bid set with REVISED sheet E603 included in this addendum.
18. **SHEET #E604 Electrical Panel Schedules: REPLACE** this sheet in the bid set with REVISED sheet E604 included in this addendum.
19. **SHEET #E605 Electrical Power Schedules: REPLACE** this sheet in the bid set with REVISED sheet E605 included in this addendum.

PRIOR APPROVALS:

Note: Manufacturers listed below "as accepted" shall meet ALL requirements of the written specifications.

Specification Section	Manufacturer	Disposition
Section 07 1300 Sheet Membrane Waterproofing	Henry Blueskin WP 200 Self adhering sheet waterproofing	Approved must meet all Specifications
Section 07 1300 Sheet Membrane Waterproofing	Viper Vaporcheck II 15 mil 'Class A' Vapor Barrier	Approved must meet all Specifications
Section 07 1300 Sheet Membrane Waterproofing	Protecto Wrap Jiffy Seal 140/60 Waterproofing System	Approved must meet all Specifications
Section 08 3313 Rolling Counter	MobilFlex Counter Shutter Doors	Approved must meet all Specifications
Section 12 3000 High Pressure-Melamine Construction Modular Casework	Advanced Cabinet Systems	Approved must meet all Specifications
Section 12 3000 High Pressure-Melamine Construction Modular Casework	Southern Commercial Interiors	Approved must meet all Specifications
Section 12 3000 High Pressure-Melamine Construction Modular Casework	James McGrew Cabinetmakers	Approved must meet all Specifications
Section 13 3419 Metal Building Systems	CanAm Metal Building	Approved must meet all Specifications
Section 13 3419 Metal Building Systems	Vulcan Steel Structures, LLC	Approved must meet all Specifications
Section 23 0010 General Provisions HVAC	Big Ass Fans	Approved must meet all Specifications
Section 23 0010 General Provisions HVAC	Macro Aire	Approved must meet all Specifications
Section 23 0010 General Provisions HVAC	Enviranorth	Approved must meet all Specifications
Section 26 0500 Electrical Basic Materials and Methods	Carolina Architectural Lighting and Design	Approved must meet all Specifications
Section 28 3100 Fire Alarm Systems	Cerebus	Approved must meet all Specifications

END OF ADDENDUM #02

SE-330
LUMP SUM BID FORM

Bidders shall submit bids on only Bid Form SE-330.

BID SUBMITTED BY: _____

(Bidder's Name)

BID SUBMITTED TO: UNIVERSITY OF SOUTH CAROLINA

(Owner's Name)

FOR: PROJECT NAME: FACILITY AND AUXILIARY SERVICES BUILDING - USC AIKEN

PROJECT NUMBER: H29-9552/50003331-2

OFFER

§ 1. In response to the Invitation for Construction Services and in compliance with the Instructions to Bidders for the above-named Project, the undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Contract with the Owner on the terms included in the Bidding Documents, and to perform all Work as specified or indicated in the Bidding Documents, for the prices and within the time frames indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

§ 2. Pursuant to SC Code § 11-35-3030(1), Bidder has submitted Bid Security as follows in the amount and form required by the Bidding Documents:

☐ **Bid Bond with Power of Attorney** ☐ **Electronic Bid Bond** ☐ **Cashier's Check**

(Bidder check one)

§ 3. Bidder acknowledges the receipt of the following Addenda to the Bidding Documents and has incorporated the effects of said Addenda into this Bid:

(Bidder, check all that apply. Note, there may be more boxes than actual addenda. Do not check boxes that do not apply)

ADDENDA: ☐ **#1** ☐ **#2** ☐ **#3** ☐ **#4** ☐ **#5**

§ 4. Bidder accepts all terms and conditions of the Invitation for Bids, including, without limitation, those dealing with the disposition of Bid Security. Bidder agrees that this Bid, including all Bid Alternates, if any, may not be revoked or withdrawn after the opening of bids, and shall remain open for acceptance for a period of **60** Days following the Bid Date, or for such longer period of time that Bidder may agree to in writing upon request of the Owner.

§ 5. Bidder herewith offers to provide all labor, materials, equipment, tools of trades and labor, accessories, appliances, warranties and guarantees, and to pay all royalties, fees, permits, licenses and applicable taxes necessary to complete the following items of construction work:

§ 6.1 BASE BID WORK ***(as indicated in the Bidding Documents and generally described as follows)*****:** The project consists of new 13,000 SF pre-engineered facility and auxiliary services building with 5,000 sf of administrative area and 8,000 SF of warehouse space. New facility includes new mechanical, plumbing, electrical and fire sprinkler protection systems.

$ _____, which sum is hereafter called the Base Bid.

(Bidder to insert Base Bid Amount on line above)

SE-330
LUMP SUM BID FORM

§ 6.2 BID ALTERNATES as indicated in the Bidding Documents and generally described as follows:

ALTERNATE # 1 *(Brief Description)*: _____

☐ **ADD TO** or ☐ **DEDUCT FROM BASE BID: $** _____

(Bidder to mark appropriate box to clearly indicate the price adjustment offered for each Alternate)

ALTERNATE # 2 *(Brief Description)*: _____

☐ **ADD TO** or ☐ **DEDUCT FROM BASE BID: $** _____

(Bidder to mark appropriate box to clearly indicate the price adjustment offered for each Alternate)

ALTERNATE # 3 *(Brief Description)*: _____

☐ **ADD TO** or ☐ **DEDUCT FROM BASE BID: $** _____

(Bidder to mark appropriate box to clearly indicate the price adjustment offered for each Alternate)

§ 6.3 UNIT PRICES:

BIDDER offers for the Agency's consideration and use, the following UNIT PRICES. The UNIT PRICES offered by BIDDER indicate the amount to be added to or deducted from the CONTRACT SUM for each item-unit combination. UNIT PRICES include all costs to the Agency, including those for materials, labor, equipment, tools of trades and labor, fees, taxes, insurance, bonding, overhead, profit, etc. The Agency reserves the right to include or not to include any of the following UNIT PRICES in the Contract and to negotiate the UNIT PRICES with BIDDER.

No.	ITEM	UNIT OF MEASURE	ADD	DEDUCT
1.			$	$
2.			$	$
3.			$	$
4.			$	$
5.			$	$
6.			$	$

SE-330
LUMP SUM BID FORM

§ 7. LISTING OF PROPOSED SUBCONTRACTORS PURSUANT TO SECTION 3020(b)(i), CHAPTER 35, TITLE 11 OF THE SOUTH CAROLINA CODE OF LAWS, AS AMENDED

(See Instructions on the following page BF-2A)

Bidder shall use the below-listed Subcontractors in the performance of the Subcontractor Specialty Classification work listed:

(A) **SUBCONTRACTOR SPECIALTY** *(Completed by Owner)*	**(B)** **CLASSIFICATION or SUBCLASSIFICATION ABBREVIATION** *(Completed by Owner)*	**(C)** **SUBCONTRACTOR'S or PRIME CONTRACTOR'S NAME** *(Required - must be completed by Bidder)*	**(D)** **SUBCONTRACTOR'S or PRIME CONTRACTOR'S SC LICENSE NUMBER** *(Requested, but not Required)*
BASE BID			
ALTERNATE #1			
ALTERNATE #2			
ALTERNATE #3			
			.

If a Bid Alternate is accepted, Subcontractors listed for the Bid Alternate shall be used for the work of both the Alternate and the Base Bid work.

SE-330
LUMP SUM BID FORM

INSTRUCTIONS FOR SUBCONTRACTOR LISTING

1. S

ection 7 of the Bid Form sets forth an Owner-developed list of contractor/subcontractor specialties by contractor license classification or subclassification for which Bidder is required to identify the entity (subcontractor(s) and/or himself) Bidder will use to perform the work of each listed specialty.

a. C

olumns A & B: The Owner fills out these columns to identify the contractor/subcontractor specialty and related license abbreviation for which the Bidder must list either a subcontractor or himself as the entity that will perform this work. In Column A, the subcontractor specialty is identified by name and in Column B, the related contractor license abbreviation (per Title 40 of the SC Code of Laws) is listed. Abbreviations of licenses can be found at: http://www.llr.state.sc.us/POL/Contractors/PDFFiles/CLBClassificationAbbreviations.pdf . If the owner has not identified a specialty, the Bidder does not list a subcontractor.

b. C

olumns C and D: In these columns, the Bidder identifies the subcontractors it will use for the work of each specialty and license listed by the Owner in columns A & B. Bidder must identify only the subcontractor(s) who will perform the work and no others. Bidders should make sure that their identification of each subcontractor is clear and unambiguous. A listing that could be any number of different entities may be cause for rejection of the bid as non-responsive. For example, a listing of M&M without additional information may be problematic if there are multiple different licensed contractors in South Carolina whose names start with M&M.

2. S

ubcontractor Defined: For purposes of subcontractor listing, a subcontractor is an entity who will perform work or render service to the prime contractor to or about the construction site pursuant to a contract with the prime contractor. Bidder should not identify sub-subcontractors in the spaces provided on the bid form but only those entities with which Bidder will contract directly. Likewise, do not identify material suppliers, manufacturers, and fabricators that will not perform physical work at the site of the project but will only supply materials or equipment to the Bidder or proposed subcontractor(s).

3. S

ubcontractor Qualifications: Bidder must only list subcontractors who possess a South Carolina contractor's license that includes the license classification and/or subclassification identified by the Owner in columns A & B. The subcontractor license must also be within the appropriate license group for the work of the specialty. If Bidder lists a subcontractor who is not qualified to perform the work, the Bidder will be rejected as non-responsible.

4. U

se of Own forces: If, under the terms of the Bidding Documents and SC Contractor Licensing laws, Bidder is qualified to perform the work of a listed specialty and Bidder does not intend to subcontract such work but to use Bidder's own employees to perform such work, the Bidder must insert its own name in the space provided for that specialty.

5. U

se of Multiple Subcontractors:

a. I

f Bidder intends to use multiple subcontractors to perform the work of a single specialty listing, Bidder must insert the name of each subcontractor Bidder will use, preferably separating the name of each by the word **"and"**. If Bidder intends to use both his own employees to perform a part of the work of a single specialty listing and to use one or more subcontractors to perform the remaining work for that specialty listing, Bidder must insert his own name and the name of each subcontractor, preferably separating the name of each with the word **"and"**. Bidder must use each entity listed for the work of a single specialty listing in the performance of that work.

b. Optional Listing Prohibited: Bidder may not list multiple subcontractors for a specialty listing, in a form that provides the Bidder the option, after bid opening or award, to choose one or more but not all the listed subcontractors to perform the work for which they are listed. A listing, which on its face requires subsequent explanation to determine whether it is an optional listing, is non-responsive. If Bidder intends to use multiple entities to perform the work for a single specialty listing, Bidder must clearly set forth on the bid form such intent. Bidder may accomplish this by simply inserting the word "**and**" between the names of each entity listed for that specialty. Agency will reject as non-responsive a listing that contains the names of multiple subcontractors separated by a blank space, the word "or", a virgule (that is a /), or any separator that the Agency may reasonably interpret as an optional listing.

SE-330
LUMP SUM BID FORM

6. If Bidder is awarded the contract, Bidder must, except with the approval of the Agency for good cause shown, use the listed entities to perform the work for which they are listed.

7. If Bidder is awarded the contract, Bidder will not be allowed to substitute another entity as subcontractor in place of a subcontractor listed in Section 7 of the Bid except for one or more of the reasons allowed by the SC Code of Laws.

8. Bidder's failure to identify an entity (subcontractor or himself) to perform the work of a subcontractor specialty listed in columns A & B will render the Bid non-responsive.

SE-330
LUMP SUM BID FORM

§ 8. LIST OF MANUFACTURERS, MATERIAL SUPPLIERS, AND SUBCONTRACTORS OTHER THAN SUBCONTRACTORS LISTED IN SECTION 7 ABOVE *(FOR INFORMATION ONLY):*

Pursuant to instructions in the Invitation for Construction Services, if any, Bidder will provide to Owner upon the Owner's request and within 24 hours of such request, a listing of manufacturers, material suppliers, and subcontractors, other than those listed in Section 7 above, that Bidder intends to use on the project. Bidder acknowledges and agrees that this list is provided for purposes of determining responsibility and not pursuant to the subcontractor listing requirements of SC Code § 11-35-3020(b)(i).

§ 9. TIME OF CONTRACT PERFORMANCE AND LIQUIDATED DAMAGES

a) CONTRACT TIME

Bidder agrees that the Date of Commencement of the Work shall be established in a Notice to Proceed to be issued by the Owner. Bidder agrees to substantially complete the Work within **300** Calendar Days from the Date of Commencement, subject to adjustments as provided in the Contract Documents.

b) LIQUIDATED DAMAGES

Bidder further agrees that from the compensation to be paid, the Owner shall retain as Liquidated Damages the amount of $ **200.00** for each Calendar Day the actual construction time required to achieve Substantial Completion exceeds the specified or adjusted time for Substantial Completion as provided in the Contract Documents. This amount is intended by the parties as the predetermined measure of compensation for actual damages, not as a penalty for nonperformance.

§ 10. AGREEMENTS

a) Bidder agrees that this bid is subject to the requirements of the laws of the State of South Carolina.

b) Bidder agrees that at any time prior to the issuance of the Notice to Proceed for this Project, this Project may be canceled for the convenience of, and without cost to, the State.

c) Bidder agrees that neither the State of South Carolina nor any of its agencies, employees or agents shall be responsible for any bid preparation costs, or any costs or charges of any type, should all bids be rejected or the Project canceled for any reason prior to the issuance of the Notice to Proceed.

§ 11. ELECTRONIC BID BOND

By signing below, the Principal is affirming that the identified electronic bid bond has been executed and that the Principal and Surety are firmly bound unto the State of South Carolina under the terms and conditions of the AIA Document A310, Bid Bond, included in the Bidding Documents.

ELECTRONIC BID BOND NUMBER: _____

SIGNATURE AND TITLE: _____

SE-330
LUMP SUM BID FORM

CONTRACTOR'S CLASSIFICATIONS AND SUBCLASSIFICATIONS WITH LIMITATION

SC Contractor's License Number(s): _____

Classification(s) & Limits: _____

Subclassification(s) & Limits: _____

By signing this Bid, the person signing reaffirms all representation and certification made by both the person signing and the Bidder, including without limitation, those appearing in Article 2 of the SCOSE Version of the AIA A701, Instructions to Bidders, is expressly incorporated by reference.

BIDDER'S LEGAL NAME: _____

ADDRESS: _____

_____

TELEPHONE: _____

EMAIL: _____

SIGNATURE: _____ **DATE:** _____

PRINT NAME: _____

TITLE: _____

1.0 GENERAL

1.1 SCOPE: This section covers resilient tile flooring, and ***RUBBER*** base.

A. Section 09 6610 – Rubber Flooring Accessories; Termination edging of adjacent floor finish

1.2 EXAMINATION OF SUBSTRATE: Installer must examine the substrate and the conditions under which the resilient tile work is to be performed and notify the contractor, in writing, of any unsatisfactory conditions. Do not proceed with installation until unsatisfactory conditions have been corrected in a manner acceptable to the Installer. Surface must be smooth, level at the required finish elevation, without more than 1/8" in 10'-0" variation from level or slopes, as shown.

1.3 SUBMITTALS:

A. Manufacturer's Data: For information only, submit two copies of the manufacturer's specifications and installation instructions for each type of resilient tile required.

B. Maintenance Instructions: Resilient Tile Flooring: Submit two copies of the manufacturers' written instructions for recommended practices for each type of tile work.

C. Replacement of Material: Submit to Owner at project site, unless otherwise directed, one box of each type and color of tile for each 75 boxes, or fraction thereof, of each type and color installed.

2.0 PRODUCTS

2.1 RESILIENT FLOORING (HIGH PSI RATING AND VOC FREE):

A. **LVT-1** Luxury Vinyl Tile –"Uninterrupted Collection", Color: Selections T.B.D. by architect, manufactured by Mannington Commercial.

B. The Collection consists of two (2) series:
   1. Uninterrupted – Stone, Sizes 12" x 24" (305 x 610 mm)
   2. Uninterrupted – Wood, Sizes 7.25" x 48" (184 x 1219 mm)

Style	**Uninterrupted - Stone**	**Uninterrupted - Wood**
Construction	Luxury Vinyl Tile	Luxury Vinyl Tile
Classification	ASTM F1700 Class III, Type B	ASTM F1700 Class III, Type B
Total Thickness	0.1575" (4.0 mm)	0.1575" (4.0 mm)
Wear Layer Thickness	20 mil (0.51 mm)	20 mil (0.51 mm)
Wear Layer	Quantum Guard Elite®	Quantum Guard Elite®
Edge Treatment	Micro-bevel	Micro-bevel
Sizes	12" x 24" (305 x 610 mm)	7.25" x 48" (184 x 1219 mm)
Colors	4	8
Packaging	11 pcs, 22 ft^2 (2.044 m^2), 29.04 lbs (13.17 kg) 12 pcs, 29 ft^2 (2.694 m^2), 38.28 lbs (17.36	
Adhesive	Porous & Non-porous Substrates: V-95 Full Spread, 2-part Epoxy V-88 Full Spread, Transitional Pressure Sensitive, High Moisture For LVT & Sheet Vinyl Full Coverage Spray XpressStep Premium for LVT Full Coverage	

High Moisture Spray Porous
Substrates Only: V-82 Full Spread

Note: Must use V-95, XpressStep or XpressStep Premium adhesive under hospital beds and heavy rolling load areas. Use V-95 where higher risk of topical moisture would be a concern.

Installation Method All arrows in the same direction. Planks should have end joints offset by at least 6" and staggered to create a random appearance. Tiles should be installed block or staggered.

Testing

HUD/FHA	Passes
Flexibility (ASTM F137)	Pass
es - 1" Mandrel - No Crack/Break	
Dimensional Stability (ASTM F2199)	Pass
es - Max 0.020 in/lin.ft. Squareness (ASTM F540)	Passes - 0.010" Max
Static Load (ASTM F970 mod.)	Passes - 2,000 PSI;
Residual Indent ≤ 0.005" Residual Indentation (ASTM F1914)	Passes -
< 8% Avg / 10% Single Value Flooring	
Radiant Panel (ASTM E648)	Passes - Class 1; 0.45 watts/cm2
Smoke Density (ASTM E662)	Passes - ≤ 450
Slip Resistance (ASTM C1028)	Passes - ≥ 0.5 Leather; 0.6 Rubber
Resistance to Light (ASTM F1515)	Passes
Chemical Resistance (ASTM F925)	Passes
Resistance to Heat (ASTM F1514)	Passes

Environmental Data

Rapidly Renewable Content	Contains 2% rapidly renewable resource content
Indoor Air Quality	FloorScore Certified; CDPH v1.1-2010
Product Declarations	EPD
LEED Scoreboard	
May contribute to LEED credits:	
LEED 2009: MRc5 Regional Materials;	
MRc6 Rapidly Renewable Materials;	
IEQ4.1 Low Emitting Adhesives;	
IEQ4.3 Low Emitting Materials - Flooring	
LEED v4: Building Product Disclosure & Optimization - EPDs;	
Building Product Disclosure & Optimization - Sourcing Raw Materials;	
IEQc2 - Low Emitting Materials	
mindful MATERIALS	Visit mM Origin website, mindful materials.origin.build, for current transparency information
Manufacturing Registered	Madison, GA (USA) - ISO 14001 EMS & ISO 9001 QMS

Warranty

Limited 15 Year Commercial Warranty
Limited 15 Year Quantum Guard Elite® Wear Warranty

2.2 RUBBER BASE

A. Flooring Accessories: Reference Section 09 6610 - Resilient Flooring Accessories.

2.3 ADHESIVES (Cement): Waterproof, stabilized type as recommended by the tile manufacturer. Asphalt emulsions and other non-waterproof types not acceptable.

2.4 CONCRETE SLAB PRIMER: Non-staining type with a cementicious body as recommended by tile manufacturer.

3.0 EXECUTION:

3.1 SUBFLOORS: Prior to start of laying the tile units, broom clean or vacuum all surfaces to be covered and inspect the subfloor. Start of laying tile will indicate acceptance of subfloor conditions and full responsibility for the completed work.

3.2 CONCRETE SLAB PRIMER: Apply if recommended by tile manufacturer, prior to application of the adhesive. Apply in compliance with manufacturer's directions.

3.4 CONTINUOUSLY HEAT Areas to receive tile to a temperature of 70 degrees F. for at least 48 hours prior to installation when project conditions are such that heating is required to raise the temperature to 70 degrees F., temperature continuously during and after installation as recommended by the tile manufacturer, but for not less than 48 hours.

3.5 INSTALL TILE: Install all materials according to manufacturer’s recommendations. Only after all finishing operations, including painting, have been completed and permanent heating system is operating. Moisture content of concrete slabs, building with air temperature and relative humidity must be within limits recommended by tile manufacturer.

3.6 PLACE TILE UNITS with adhesive cement in strict compliance with the manufacturer's recommendations Butt tile units tightly to vertical surfaces, thresholds, nosing and edgings, Scribe as necessary around obstruction and to produce neat joints, laid tight, even and in straight parallel lines. Extend tile units into toe spaces, door reveals and into closet and similar openings.

3.7 MAINTAIN REFERENCE MARKERS, holes or openings that are in place or plainly marked for future cuttings by repeating on the finish tile as marked in the subfloor. Use chalk or other non-permanent marking devise.

3.8 LAY TILE FROM CENTER MARKS established with principal walls, discounting minor offsets, so that tile at opposite edges of the room are of equal width. Adjust as necessary to avoid use of cut widths less than 6" at room perimeters. Lay tile square to room axis, unless otherwise shown.

3.9 MATCH TILES for color and pattern by using tile from cartons in the same sequence as packaged. Cut tile neatly to and around all fixtures. Broken, cracked, chipped or deformed tile are not acceptable.

3.10 TIGHTLY CEMENT TILE to sub-base, without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks through tile, or other surface imperfections.

3.11 PLACE SCHLUTER METAL TRANSITION EDGE STRIPS tightly butted to tile and secure as recommended by Schluter. Use appropriate profile for conditions required. Provide edging strips at all unprotected edges of tile, unless otherwise shown.

3.12 APPLY RESILIENT wall base to all columns, pilasters, science equipment, and other permanent fixtures in rooms or areas where base is required. Install base in as long lengths as practical with preformed units, or fabricate from base materials with mitered or coped intersections. Tightly bond base to backing throughout the length of each piece, with continuous contact at horizontal and vertical surfaces. ON masonry surfaces, or other similar irregular surfaces, fill voids along top edge of resilient wall base with manufacturer's recommended adhesive filler material.

3.13 APPLY FLOOR ACCESSORIES using methods as recommended by manufacturer.

3.14 CLEANING AND PROTECTION: The General Contractor is responsible for protecting floors until the date of substantial completion.

3.15 FINISHING: After completion of the project and just prior to final inspection of the work, the General Contractor will thoroughly clean tile floors and accessories. Apply wax and buff with type of wax, number of coats up to 4 coats and buffing procedures in compliance with the tile manufacturer's instructions or Owners instructions.

END OF SECTION 09 6600

1.0 GENERAL

1.1 SCOPE: This section covers rubber flooring accessories complete. The extent of work is as shown on drawings and in schedules or if not shown as required at termination of carpet and resilient flooring edges or transitions as required.

1.2 RELATED DOCUMENTS:

A. Drawings and General Provisions of contract, including general and supplementary conditions and Division 1 Specification Sections, apply to work of this section.

B. Resilient Flooring - Section 096600

C. Tile Carpeting - Section 096813

1.3 QUALITY ASSURANCE:

A. Manufacturer: Provide each type of rubber flooring and accessories as produced by a single manufacturer, including recommended primers, adhesives, sealants, and leveling compounds. All products shall be 100% asbestos free.

B. Products as manufactured by one of the following and chosen by the Architect depending on color selections.

1. Roppe Corporation
2. Flexco Corporation
3. Johnsonite / Tarkett

1.4 SUBMITTALS:

A. Product Data: Submit two copies of manufacture's technical data and installation instructions for each type of rubber accessory.

B. Samples: Submit two sets of samples of each type, color and finish of flooring and accessory required. Provide full-size tile units and 6" long sample of accessory. Include full range of flooring color and pattern variation. Sample submittals will be for reviewed for color, texture and pattern only. Compliance with all other requirements is exclusive responsibility of Contractor.

C. Replacement Material: After completion of work, deliver to project site replacement materials from same manufactured lot as materials installed, not less than one box for each 50 boxes or fraction thereof, for each type, size and color installed.

1.5 JOB CONDITIONS:

A. Maintain minimum temperature of 65 degrees F (18 degrees C) in spaces to receive resilient flooring for at least 48 hours prior to installation, during installation, and for not less than 48 hours after installation. Store flooring materials in spaces where they will be installed for at least 48 hours before beginning installation. Subsequently, maintain minimum temperature of 55 degrees F (13 degrees C) in areas where work is completed.

B. Install rubber flooring and accessories after other finishing operations, including painting, have been completed. Do not install resilient flooring over concrete slabs until the latter have been cured and are sufficiently dry to achieve bond with adhesive as determined by manufacturer's recommended bond and moisture test.

2.0 PRODUCTS:

2.1 RUBBER MATERIALS:

A. Base shall be 1/8" thick EXTRUDED RUBBER COVE BASE. It shall be constructed of first-quality materials properly vulcanized and shall be smooth and free from imperfections which distract from its appearance. The base shall conform fully to the requirements of Federal Specifications SS-W-40(d) Type 1 rubber. All Cove Base shall be standard 5/8" with a height of 4" in lengths of 120 ft. rolls and of 1/8" thickness. Wrap corners 6" beyond corners but do not score through rubber base or cut toe of base. Color shall be selected by Architect equally priced to Burgundy by Roppe.

B. All stair treads and edge nosing indicated in the finish schedule or otherwise listed in this specification shall be:

1. #93 Textured Design Rubber Treads with tapered nose with relief out by Roppe. The treads shall be homogeneously constructed of first-quality resilient rubber compound. All treads shall be free from objectionable odors, blisters, cracks and other imperfections which will detract from the serviceability and appearance of the treads. Stair treads shall conform to Federal Specification RR-T-650C, Composition A, Type 1, 2 and 4 dated March 16, 1984 or later. Length shall be as required to have a seamless installation. The color shall be selected by the Architect. Equally priced to Burgundy by Roppe.

C. Stair landings shall be standard profile #93 Textured Design Rubber Tile by Roppe. The tile shall be homogeneously constructed of first resilient rubber compound and molded with a design profile of 26 mm raised level design. The design shall be raised 1 mm and the tile shall conform to the Federal Specification SS-T-312 B, TypeII, dated October 10, 1974 or later. The tile shall be 4.5 mm gauge and 50 cm x 50 cm size and in the color selected by the Architect equally priced Burgundy by Roppe.

D. Rubber accessories shall be constructed of first quality materials properly vulcanized and shall be smooth and free from imperfections which distract from its appearance. These accessories hall conform full to the requirements of federal specifications SS-W-40A Type 1 rubber. Accessories shall include: Reducer strips, glue down carpet edges, carpet edge guards, custom carpet edging, reducer strips, tile/carpet jointers, and other shapes as required. Sizes shall be as required. Colors shall be selected by the Architect equally priced to Burgundy by Roppe.

E. Adhesives (Cements): Waterproof, stabilized type as recommended by flooring manufacturer to suit material and substrate conditions.

F. Concrete Slab Primer: Non-staining type as recommended by flooring manufacture.

G. Leveling Compound: Type as recommended by manufacturer.

3.0 EXECUTION:

3.1 PREPARATION:

A. Concrete Subfloors: Remove any existing resilient tile flooring and condition subfloors to provide smooth, clean, continuous surface. Use inderlayment where required to provide level surfaces read to receive tile. Fill holes and cracks in the concrete subfloors with crack filler. Remove grease, dirt, loose particles, and other foreign matter that would prevent adhesion. Then rinse subfloors and allow to dry thoroughly before applying adhesive.

B. Moisture Test: After concrete floor surfaces have been cleaned, small patches of adhesive to be used shall be spread in several locations in each room and allowed to dry overnight. If the adhesive can be peeled easily fro the floor surface, the floor is not sufficiently dry. The test shall be repeated until the adhesive adheres properly. When the adhesive adheres tightly to the floor surface, the resilient flooring shall be applied.

C. Apply concrete slab primer, if recommended by flooring manufacturer, prior to application of adhesive. Apply in compliance with manufacturer's directions.

1. Rubber Base: Remove any surface film on back of base due to mold release agents as recommended by base manufacturer, before applying base adhesive. Provide performed molded internal and external corners and end stops. Wherever rubber base is used in conjunction with vinyl wall covering, spread adhesive to within 1/4" below top of base. Immediately remove spots or smears of adhesive from exposed surface.

2. Stair treads and landings shall be installed in accordance with manufacturer's recommendations. Apply in one-piece, trim to fit.

3. Rubber Accessories: Shall be installed in accordance with manufacturer's recommendation. Immediately remove spots or smears adhesive as installation proceeds.

END OF SECTION 096610

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Solid-phenolic toilet compartments configured as toilet enclosures, entrance screens and urinal screens.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's detailed technical data for materials, fabrication, and installation, including catalog cuts of anchors, hardware, fastenings and accessories for each type of product indicated.

B. LEED Submittals:

1. Product Data for Credit MR 4.1 and Credit MR 4.2: For products having recycled content, documentation indicating percentages by weight of post-consumer and pre-consumer recycled content. Include statement indicating costs for each product having recycled content.
2. Product Data for Credit EQ 4.4: For particleboard, documentation indicating that product contains no urea formaldehyde.

C. Shop Drawings: For toilet compartments. Include plans, elevations, sections, details, and attachments to other work.

D. Samples: Submit full range of color samples for each exposed product and for each color and texture specified.

E. Samples: If requested by the architect, submit 6" square samples of each color and finish on same substrate to be used in the work, for color verification after selections have been made. Remaining paragraphs are defined in Division 01 Section "Submittal Procedures" as "Informational Submittals."

F. Product certificates.

G. Maintenance data.

1.3 QUALITY ASSURANCE

A. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84, or another standard acceptable to authorities having jurisdiction, by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: 25 or less.
2. Smoke-Developed Index: 450 or less.

B. Regulatory Requirements: Comply with applicable provisions in ICC/ANSI A117.1 for toilet compartments designated as accessible.

C. Installation: Shall be by Manufacturer or manufacturer authorized Distributor.

D. Coordination: Furnish inserts and anchorages which must be built into other work for installation of toilet partitions and related work; coordinate delivery to avoid delay.

E. Warranty: Provide warranty signed by the Manufacturer agreeing to replace components which break, corrode, or delaminate within 15 years from date of Substantial Completion.

1. The manufacturer's Warranty shall exclude labor necessary to install new components due to breakage or vandalism.

F. Scratch Protection: Plastic components shall be shipped to the job site and stored individually covered with protective film.

PART 2 - PRODUCTS

2.1 TYPE COMPARTMENTS: Toilet compartments shall be Columbia Super H-D-12 Phenolic Compartments of the floor-mounted type, overhead braced, with doors as indicated. Urinal screens shall be the bracket supported post type as indicated on drawings.

2.2 MATERIALS AND COMPONENTS: All materials shall be water and moisture resistant. Materials shall be graffiti and scratch resistant.

A. General: Provide material which has been selected for surface flatness and smoothness. Exposed surfaces which exhibit pitting, seam marks, roller marks, stains, discolorations, telegraphing of core material, or other imperfections on finished units are not acceptable. Solid Phenolic shall meet or exceed all requirements for Class "A" Flame Spread Rating calculated according to ASTM E-84-91A, and shall carry a UL Class "A" Fire Rating Certification.

B. Material shall be Solid Phenolic with a High-Pressure Melamine matte finish surface made as an integral part of the core material. Laminated surfaces are not acceptable. All material shall be water and moisture resistant. Material shall be graffiti and scratch resistance.

1. Doors – Minimum .75" (19 mm) Finished Thickness
2. Divider Panels – Minimum .50" (13 mm) Finished Thickness
3. Pilasters – Minimum .75" (19 mm) Finished Thickness

C. Colors: Plastic laminate colors (and patterns) shall be selected by the Architect from Formica, Wilsonart or Nevamour as indicated in color schedule.

D. Pilaster Shoes: ASTM A 167, Type 302/304 Stainless Steel, minimum 4" high, 18 gauge, finished with #3 Directional Polish, attached with Stainless Steel Through Bolts.

E. Continuous Brackets: Full High (57.5") Extruded 6063-T5 Aluminum with a Satin Anodized finish. The minimum weight shall be 1.685 pounds per lineal foot. Inside of opening of Bracket shall be .50" for panels, .75" for pilasters. All holes for mounting to wall and panel/pilaster shall be pre-drilled. Holes are to be spaced at 9" O.C. along the full length of the Bracket for a total of fourteen (14) holes for mounting to the wall and seven (7) holes for mounting to the panel/pilaster. Each Bracket is to have minimum wall thickness of .125". Each Bracket is to be packaged in a separate poly tube, and is to be labeled by stock number and manufacturer.

F. Continuous Hinge: Continuous Extruded 6063-T5 Aluminum Hinge (57.5") with Cover Plate. Hinge shall have a Satin Anodized finish. Hinge shall be 3" wide and shall have five (5) Stainless Steel wire springs for self-closing action. Pivot pin shall be .250" in diameter, and shall be made of Type 302/304 Stainless Steel. Hinges shall provide emergency access by lifting the door. Hinges shall be pre-drilled for mounting to door and pilaster. Mounting holes shall be at 9" O.C. for Through-Bolting with Chrome Plated Brass fasteners. Each Hinge is to be packaged in a separate poly tube, and is to be labeled by stock number, manufacturer, and left or right hand.

G. Strike and Keeper: Heavy Duty Cast Stainless Steel with a Satin finish. The Strike and Keeper shall be 2.50" high, with the mounting holes at 1.50" O.C., and the wall thickness shall be a minimum of .125". The Strike and Keeper shall have an integral rubber bumper door stop. The stock number shall be molded into the back of the Strike and Keeper for ease in identification. Each Strike and Keeper shall be packaged in a separate poly bag, and is to be labeled by stock number and manufacturer. Furnish one per door.

H. Slide Latch: Heavy Duty Cast Stainless Steel with a Satin finish. The Slide Latch shall be surface mounted. The slide bar shall be .150" thick, 1.020" wide and 3.720" long. Latch shall have an internal Stainless-Steel buffering spring to prevent damage when door is inadvertently slammed against the Latch. Mounting holes are to be spaced at 3.50" O.C. Latch knob is to be riveted to the slide bar and then welded to ensure that the knob will not come off. The stock number is to molded into the back of the Slide Latch for ease in identification. Each Slide Latch shall be packaged in a separate poly bag, and is to be labeled by stock number and manufacturer. Furnish one per door.

I. Coat Hook: Heavy Duty Cast Stainless Steel with a Satin finish. Coat Hook and Bumper shall be 2.340" high, 1.230" wide and shall protrude out from the door 3.05". The hook portion shall have a finished diameter of .250". The stock number shall be molded into the back of the Coat Hook and Bumper for ease in identification. Each Coat Hook and Bumper shall be packaged in a separate poly bag, and is to be labeled by stock number and manufacturer. Furnish one per door.

J. Door Stop: Heavy Duty Cast Stainless Steel with a Satin finish. Plated Zamac Door Stops are unacceptable. Door Stop shall have a 2.125" base diameter and shall protrude 1.80" from the wall. The bumper at the end of the Door Stop shall be .250" thick. The diameter of the shaft shall be .6875". The stock number shall be molded into the back of the Door Stop for ease in identification. Each Door Stop shall be packaged in a separate poly bag, and is to be labeled by stock number and manufacturer. Furnish one for each Disabled Accessible door.

K. Pull Handle: Heavy Duty Cast Stainless Steel with a Satin finish. Plated Zamac Door Pulls are unacceptable. Pull Handle shall protrude from the face of the door .940" and shall be 4.735" long. The Pull Handle shall have mounting holes drilled and tapped for 10/24 threads at 3.50" O.C. The Pull Handle shall be .655" wide and shall be mounted back to back with the Slide Latch. The stock number shall be molded into the back of the Pull Handle for ease in identification. Each Pull Handle shall be packaged in a separate poly bag, and is to be labeled by stock number and manufacturer. Furnish one for each Disabled Accessible door.

L. Overhead Bracing (Headrail): Continuous Heavy Duty Extruded 6063-T5 Aluminum Headrail with Anti-Grip profile. Headrail shall have integral reinforcing channel and curtain track. Headrail shall have a Satin Anodized finish. Provide Headrail Corner Brackets, Wall Brackets, and Headrail End Caps as required. The Headrail and Headrail Brackets shall have a minimum wall height of 2". The minimum wall thickness of the Headrail and Headrail Brackets shall be .125". Each Headrail Bracket is to be packaged in a separate poly bag, and is to be labeled by stock number and manufacturer.

M. Anchorages and Fasteners: All Fasteners shall be Chrome Plated Brass with theft proof heads, Through-Bolted unless noted otherwise. No chrome plated steel will be acceptable.

2.3 FABRICATION

A. General: Furnish standard doors and pilasters fabricated for partition system, unless otherwise indicated. Furnish cutouts and drilled holes to receive partition-mounted hardware, accessories and grab bars. Coordinate installation of owner furnished accessories prior to drilling related holes for installation.

B. Overhead-Braced Units: Provide manufacturer's standard corrosion-resistant galvanized steel supports and leveling mechanism, and anchors at pilasters, as recommended by manufacturer to suit floor conditions. Make provisions for setting and securing continuous extruded aluminum anti-grip overhead bracing at top of each pilaster. Provide shoes at pilasters to conceal supports and leveling mechanism.

C. Door Size and Swings: Unless otherwise indicated, provide 24-inch- (610-mm-) wide, in-swinging doors for standard toilet compartments and 36-inch- (914-mm-) wide, out-swinging doors with a minimum 32-inch- (813-mm-) wide, clear opening for compartments designated as accessible.

D. Doors: Doors shall be 55” high. Doors shall be mounted 14” above finished floor.

E. Pilasters: Pilasters shall be 82” high and shall be fastened to pilaster shoes using theft-proof stainless-steel sex bolts.

F. Hardware: Hardware stall be fabricated of stainless steel or heavy duty bright-dip anodized aluminum.

PART 3-EXECUTION

3.1 INSTALLATION

A. General: Comply with manufacturer's written installation instructions. Install unit’s rigid, straight, level, and plumb. Secure pilasters to masonry walls with continuous brackets attached 8” on-center minimum along the panel. Remove protective plastic film from areas of plastic components to receive mounting and operation hardware before hardware installation.

B. Clearances: Maximum 1/2 inch (13 mm) between pilasters and panels; 1 inch (25 mm) between panels and walls.

C. Retain paragraph below for stirrup brackets. For solid-polymer units, three brackets are recommended for panel-to-wall and panel-to-pilaster connections to prevent sagging of panel.

D. Overhead-Braced Doors: Secure pilasters to floor, and level, plumb and tighten installation with devices furnished Secure overhead-brace to each pilaster with no fewer than two brackets attached near top and bottom of panel. Locate wall brackets so holes for wall anchors occur in masonry or tile joints. Align brackets at pilasters with brackets

at walls. Hang doors and adjust so that tops of doors are parallel with overhead-brace when doors are in closed position.

E. Hinges, Door Pulls, Latch and Keeper Sets, and Coat Hooks: Shall be installed using theft-proof through bolts equipped with cap nuts matching bolts fabricated to conceal the end of the bolt. All fasteners shall be installed with the cap nut on the inside of the toilet cubical.

3.2 ADJUSTING

A. Revise hinge adjustment requirements in this article to suit Project. Verify accessibility requirements of authorities having jurisdiction.

B. Hardware Adjustment: Adjust and lubricate hardware according to hardware manufacturer's written instructions for proper operation. Set hinges on in-swinging doors to hold doors open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors (and doors in entrance screens) to return doors to fully closed position.

C. Cleaning: Clean exposed surfaces using materials and methods recommended by manufacturer, and provide protection as necessary to prevent damage during remainder of construction period.

D. Remove all protective films: Protective films should be removed immediately prior to final inspection

END OF SECTION 10 21 13

PART 1 GENERAL

1.01 SECTION INCLUDES:

A. Accessories for toilet rooms, utility rooms and non-module showers.

B. Module shower units inclusive of all accessories are shown on the plumbing drawings.

C. Grab bars.

1.02 RELATED REQUIREMENTS:

A. Section 09 2116 - Gypsum Board Assemblies: Concealed supports for accessories, including in wall framing and plates and above ceiling framing.

B. Section 04 2000 Unit Masonry: Placement of concealed anchor devices.

C. Section 09 3000 - Tiling:

D. Section 10 2113.17 - Solid Phenolic Toilet Compartments.

E. Division 22 - Plumbing: Module Shower Units and accessories associated with Group Showers.

1.03 REFERENCE STANDARDS:

A. ADAAG - Americans with Disabilities Act Accessibility Guidelines

B. ANSI A117.1 - Standard on Accessible and Usable Buildings and Facilities, 2003.

C. ASTM A 123/A 123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2009.

D. ASTM A 269 - Standard Specification for Seamless and Welded Austenitic Stainless-Steel Tubing for General Service; 2008.

E. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2009a.

F. ASTM B 456 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium; 2003 (Reapproved 2009).

G. ASTM C 1036 - Standard Specification for Flat Glass; 2006.

H. GSA CID A-A-3002 - Mirrors, Glass; U.S. General Services Administration; 1996.

1.04 ADMINISTRATIVE REQUIREMENTS:

A. Coordinate the work with the placement of internal wall reinforcement to receive anchor attachments.

1.05 QUALITY ASSURANCE:

A. Provide products of the same manufacturer for each type of accessory unit and for units exposed in the same areas, wherever possible.

B. Stamped names or labels on exposed faces of units will not be permitted, except where otherwise specified.

1.06 DELIVERY, STORAGE AND HANDLING:

A. Ship all materials to the job in protective cartons, store in a safe place protected against damage.

1.07 SUBMITTALS:

A. See Section 01 3300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide data on accessories describing size, finish, details of function, attachment methods.

C. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

D. Product Schedule: Indicating types, quantities, sizes, and installations by room of each Accessory required.
1. Identify locations using room designations indicated on Drawings.
2. Identify products using designations indicated on Drawings.

1.08 WARRANTY:

A. See Section 01 7839 - Project Record Documents for additional warranty requirements.

B. Mirrors: Furnish manufacturer's 15-year limited warranty against silver spoilage for first quality glass mirrors which are triple-silvered and electro-copper plated with baked enamel backing.

PART 2 PRODUCTS

2.01 MANUFACTURERS:

A. Products scheduled on drawings are manufactured by Bradley Washroom Accessories, unless otherwise noted.

B. Other Acceptable Manufacturers:
1. American Specialties, Inc: www.americanspecialties.com.
2. Bobrick Washroom Accessories: www.bobrick.com.

C. Substitutions: Section 01 6000 - Product Requirements.

D. All items of each type to be made by the same manufacturer.

2.02 MATERIALS:

A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
1. Grind welded joints smooth.
2. Fabricate units made of metal sheet of seamless sheets, with flat surfaces.

B. Keys: Provide two keys for each accessory to Owner; master key all lockable accessories.

C. Stainless Steel: ASTM A167 Type 304 (18-8); satin finish exposed surfaces unless otherwise specified.

D. Stainless Steel Tubing: ASTM A 269, Type 304 or 316.

E. Galvanized Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A 653/A 653M, with G90/Z275 coating.

F. Chromium Plating: Nickel and chromium electro-deposited on metal, complying with ASTM B456, Type SC 2.

G. Mirror Glass: Float glass, ASTM C 1036 Type I, Class 1, Quality Q2, with silvering, copper coating, and suitable protective organic coating to copper backing in accordance with GSA CID A-A-3002.

H. Adhesive: Two component epoxy type, waterproof.

I. Fasteners, Screws, and Bolts: Hot dip galvanized, tamper-proof, security type. Use concealed fasteners wherever possible. Provide anchors, bolts and other necessary fasteners and attach accessories securely to walls and partitions in locations as shown or directed.

J. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.03 FINISHES:

A. Stainless Steel: No. 4 satin brushed finish, unless otherwise noted.

B. Chrome/Nickel Plating: ASTM B 456, SC 2, satin finish, unless otherwise noted.

C. Baked Enamel: Pretreat to clean condition, apply one coat primer and minimum two coats epoxy baked enamel.

D. Galvanizing for Items Other than Sheet: Comply with ASTM A 123/A 123M; galvanize ferrous metal and fastening devices.

E. Back paint components where contact is made with building finishes to prevent electrolysis.

2.04 TOILET ROOM ACCESSORIES:

A. Catalog numbers indicated on the drawings are taken from the Bradley Catalog and are used to establish quality, sizes, metals and metal gauges and are not intended to limit competition.

B. Paper Towel Dispenser PTD: *Furnished by Owner/Installed by Contractor.*

D. Sanitary Napkin Disposal Unit SNDU: Model 4722-15.

F. Soap Dispenser SD: *Furnished by Owner/Installed by Contractor.*

G. Toilet Tissue Dispenser TTD: *Furnished by Owner/Installed by Contractor.*

H. Grab Bar GB: 812 Series, heavy duty, concealed mounting, safety-grip finish. See plans for dimensions and configurations.

I. Mirror MIR: Model 780-1830 stainless steel frame mirror, 18" x 30".

J. Robe Hook: Model 912 (double hook).

K. Shower Rod: Model 9539.

L. Shower Curtain and hooks: Model 9536 (curtain hooks), 9537 (curtain).

M. Shower Bench: Model 9562 and 9569, white. (locations of each shown on plans)

N. Under Lavatory Guards: Refer to Plumbing specifications.

2.05 UTILITY ROOM ACCESSORIES:

A. Mop and Broom Holder: Refer to Plumbing specifications. (Provide one per mop sink)

2.06 FABRICATION:

A. Units shall be neatly and rigidly assembled, uniformly finished, and free from burrs and rough edges.

PART 3 EXECUTION

3.01 EXAMINATION:

A. Verify existing conditions before starting work.

B. Verify exact location of accessories for installation.

C. Verify that field measurements are as indicated on drawings.

D. See Section 09 2116 - Gypsum Board Assemblies for installation of blocking, reinforcing plates, and concealed anchors in walls.

E. Do not begin installation of toilet and bath accessories until surfaces are acceptable to the Installer. Installing accessories shall constitute acceptance of substrates.

3.02 PREPARATION:

A. Deliver inserts and rough-in frames to site for timely installation.

B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION:

A. Install accessories in accordance with manufacturers' instructions.

B. Install plumb and level, securely and rigidly anchored to substrate.

C. Use concealed fastenings wherever possible. Provide anchors, bolts and other necessary fasteners and attach accessories securely to walls and partitions in locations as shown or directed.

D. Mounting Heights and Locations: As required by accessibility regulations, as indicated on drawings, and where not shown on drawings, locate as directed by Architect.
   1. Accessories in Toilets accessible to handicapped shall be located in compliance with ANSI A117.1 - "Providing Accessibility and Usability for Physically Handicapped People" and ADA Accessibility Guidelines. Refer any conflicts between these two documents or questions concerning compliance to the Architect before installation is commenced.

3.04 CLEANING:

A. Clean each accessory completely, taking care to avoid damage to adjacent materials.

B. Replace any units that are damaged beyond a state where they may be acceptably repaired in place.

C. Remove all rubbish, cartons, and like debris resultant from work of this section. Leave accessories ready for use.

END OF SECTION

1.0 GENERAL

1.1 DESCRIPTION

A. Work Included: Install pre-manufactured wood storage shelving and other items not specifically described as being installed under other Sections of these Specifications. Noted on plans as 12, 18, and 24" shelves.

B. Shelving is noted on plans as 12" or 18" or 24" shelving.

1.2 SUBMITTALS

A. Shop Drawings:
1. Submit shop drawings for storage units, identified with location, materials and finishes.

2. Indicate materials, methods of assembly and jointing, thickness of parts, location and type of hardware.

3. Take measurements at the site for space where each item is to be placed.

B. Product Data: Submit manufacturer's detailed product description. Indicate unit construction including finishes.

1.3 DELIVERY, STORAGE AND HANDLING

A. Deliver storage units only after building is enclosed and wet operations in building are completed.

B. Protect finished surfaces from soiling and damage during handling and installation.

2.0 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Excalibur Shelving Systems, Standard pine or equal products by Lundia.

2.2 MATERIALS AND COMPONENTS

A. Uprights: Hemlock or Douglas Fir (1-5/16" x 1-5/8")

1. 3/8" x 5/8" deep plow entire length of stiles to receive shelf end channels with 3/16" drilled holes on 2" centers. Uprights to be sufficient height for shelving to be 7"-0" high.
2. Stiles are to be locked together with three (3) or more cross members mortised glued and pinned in to the stiles.
3. All components are to be machined smooth with all outside corners eased.

B. Shelves: 3/4" pine shelf materials are to be machined to accept roll formed steel end channels shaped to fit over each end of the shelf and to rest on the shelf support pins. Finger joints are not acceptable. Provide top and bottom shelves in Addition to intermediate shelves at 16" on center.

C. Shelf Support Pins: Non rusting alloy, 3/16" diameter x 1-14" long, 5/16 diameter head.

D. "X" Braces: Two (2) 16 gauge galvanized 5/8" steel straps with holes punched at each end. Rivet straps at centers. One (1) "X" brace required every three (3) sections.

E. Back Panels: All back-to-back units for book storage to have 1/8" Abitibi S2S tempered hardboard pack panels.

F. Kickboard: Proved a 4" pine kickboard for each unit.

G. Finish: Factory seal and lacquer (site finish is not acceptable).

2.3 FABRICATION

A. Manufacture shelving in sizes as necessary to fit wall-to-wall as indicated on the drawings. Gaps in excess of 2" are not acceptable.

Where dead corners are indicated on drawings, solid end panels will be required.

Shelves shall not exceed 42" in length in general storage areas and 36" in book storage rooms. Shelves less than 3/4" thick must be pre-approved (sample required) and may not exceed 30" in length.

3.0 EXECUTION

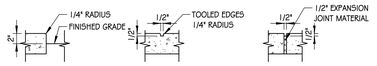
A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Install in strict accordance with manufacturer's current instructions and approved shop drawings.

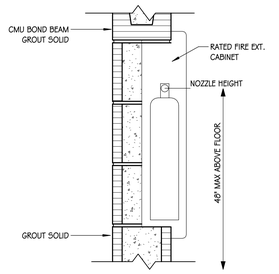
B. Anchor all wall units.

END OF SECTION 10 6700

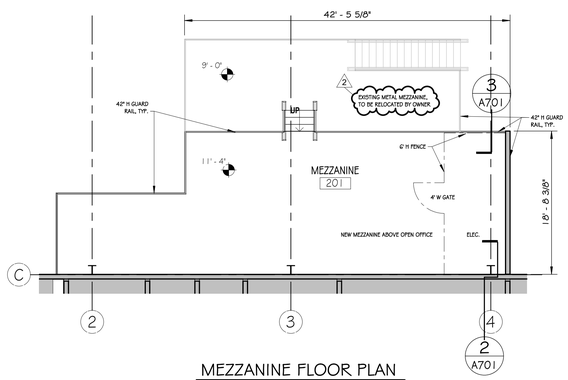


NOTE: ALL EXTERIOR SIDEWALKS AND DRIVES SHALL HAVE FIBER REINFORCING

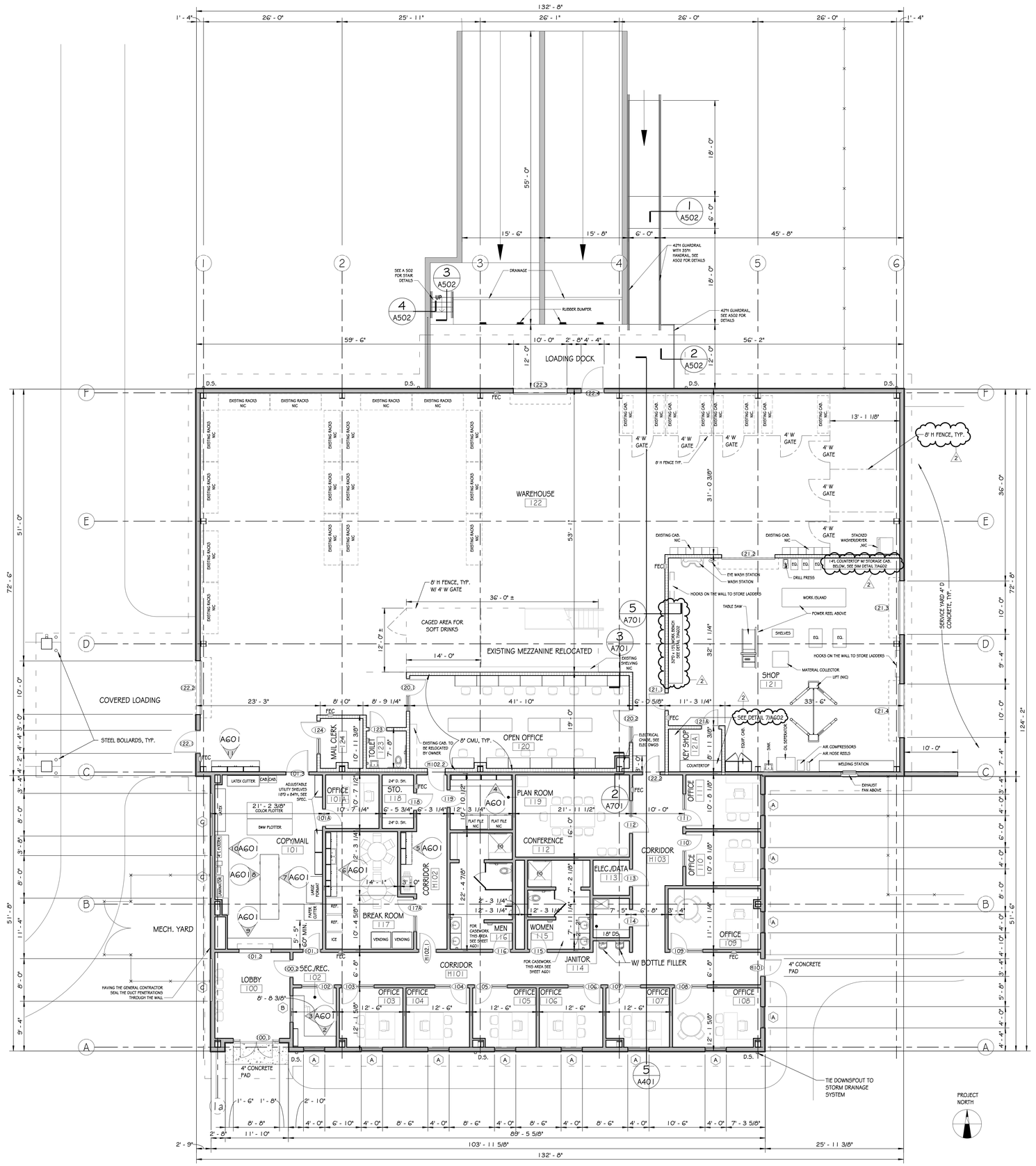
1 A301 SIDEWALK DETAILS
1" = 1'-0"



2 A301 TYP. FIRE EXT. CABINET DETAIL
1 1/2" = 1'-0"



MEZZANINE FLOOR PLAN
1/8" = 1'-0"



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

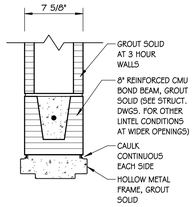
Jumper
Carter
Sease
ARCHITECTS
412 Meeting Street
West Columbia
South Carolina

FACILITY AND AUXILIARY SERVICES BUILDING
UNIVERSITY OF SOUTH CAROLINA AIKEN
AIKEN, SOUTH CAROLINA

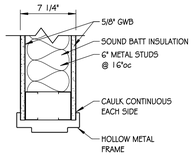
H29-9552/50003331-2

No	Description	Date
2	Addendum #2	06/11/19

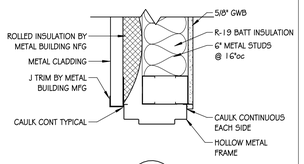
DRAWN BY: JH
CHECKED BY:
COMM NO: 18103
DATE: APRIL 12, 2019
SHEET TITLE: FLOOR PLAN
SHEET NO: A301



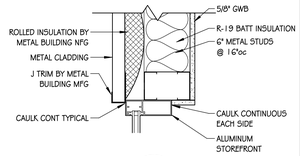
H-1



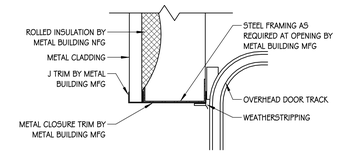
H-2



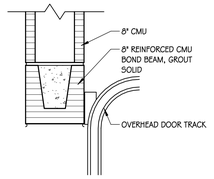
H-3



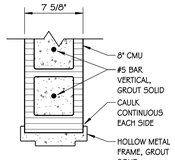
H-4



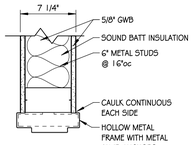
H-5



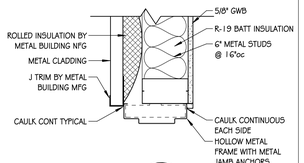
H-6



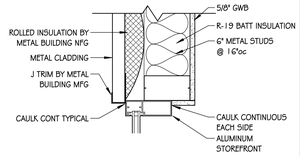
J-1



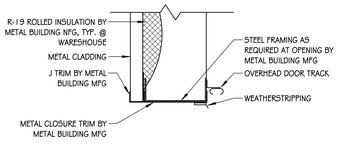
J-2



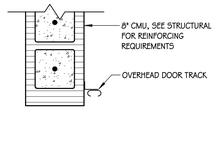
J-3



J-4



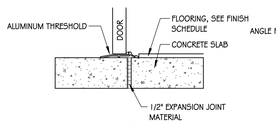
J-5



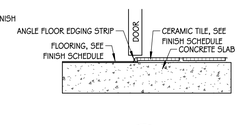
J-6

HEAD & JAMB DETAILS

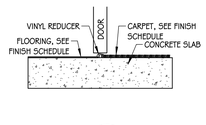
1 1/2" = 1'-0"



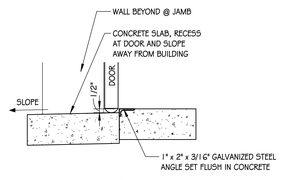
S-1



S-2



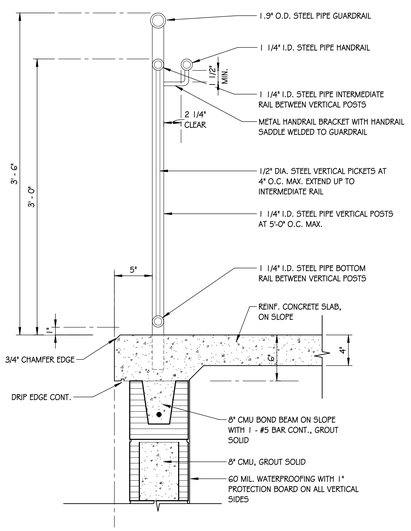
S-3



S-4

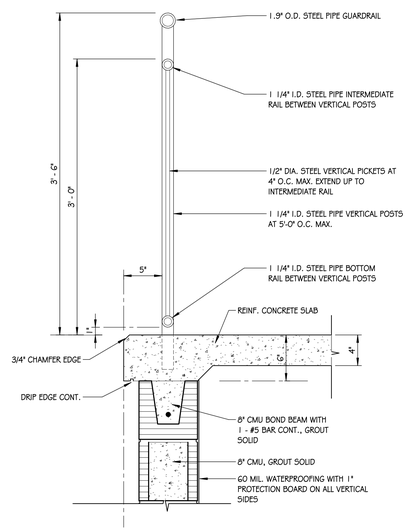
SILL DETAILS

1 1/2" = 1'-0"



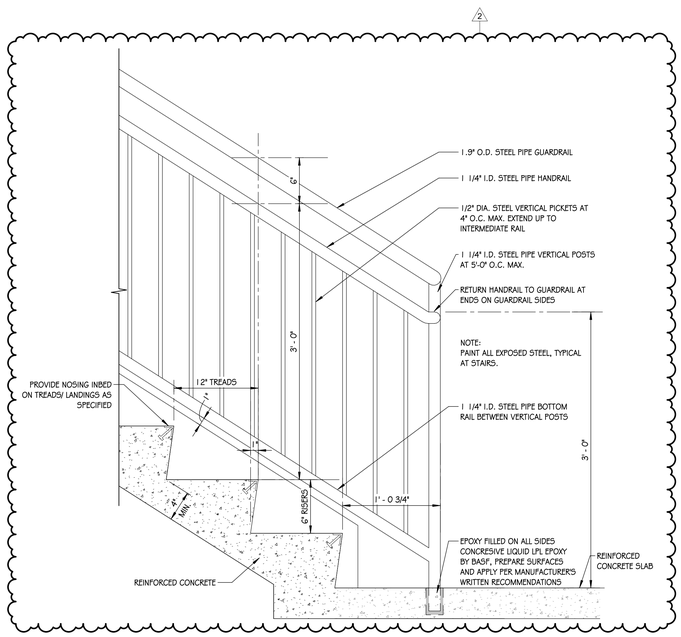
1 GUARDRAIL AT EXTERIOR RAMP

A301 | A502 1 1/2" = 1'-0"



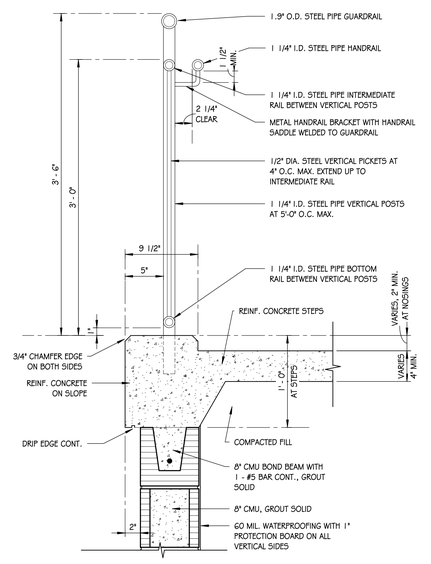
2 GUARDRAIL AT LOADING DOCK

A101 | A502 1 1/2" = 1'-0"



3 TYPICAL STAIR DETAIL - CONCRETE STEP

A301 | A502 1 1/2" = 1'-0"



4 GUARDRAIL AT EXTERIOR CONCRETE STEPS

A301 | A502 1 1/2" = 1'-0"

Jumper
Carter
Sease
ARCHITECTS
412 Meeting Street
West Columbia
South Carolina

FACILITY AND AUXILIARY SERVICES BUILDING
UNIVERSITY OF SOUTH CAROLINA AIKEN
AIKEN, SOUTH CAROLINA

H29-9552/50003331-2

No	Description	Date
2	Addendum #2	06/11/19

DRAWN BY: BK&JH

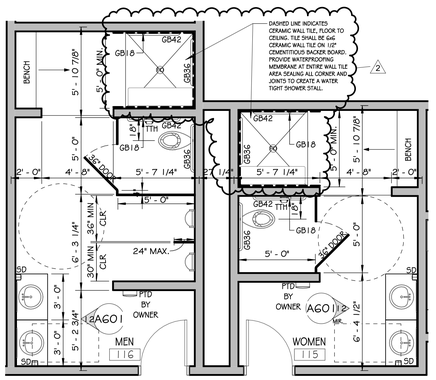
CHECKED BY:

COMM NO: 18103

DATE: APRIL 12, 2019

SHEET TITLE: DOOR DETAILS & ENLARGED RAILING DETAILS

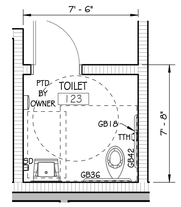
SHEET NO: A502



ENLARGED TOILETS

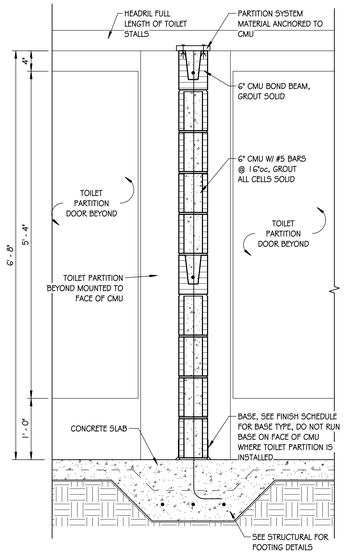
1/4" = 1'-0"

TOILET ACCESSORIES	
HD	HAND DRYER
PTD	PAPER TOWEL DISPENSER
TTH	TOILET TISSUE HOLDER
SD	SOAP DISPENSER
GB	GRAB BAR
MIRR	24"X36" ALUMINUM FRAMED MIRROR



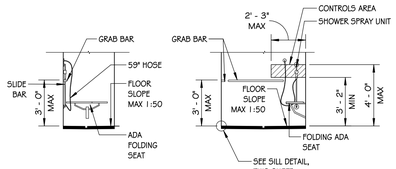
ENLARGED UNISEX TOILET

1/4" = 1'-0"

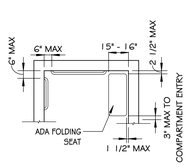


1 A601 TYPICAL WALL SECTION @ TOILET COMPARTMENTS

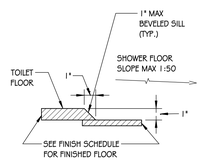
1" = 1'-0"



ELEVATION



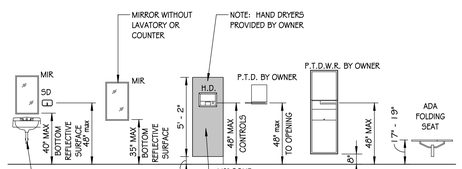
PLAN



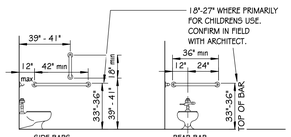
SILL (NOT TO SCALE)

TYP. ACCESSIBLE ROLL-IN-TYPE SHOWER

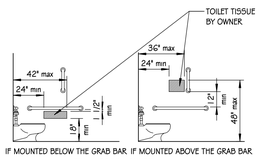
1/4" = 1'-0"



TYPICAL ACCESSIBLE ACCESSORY HEIGHTS (MEETS ACCESSIBLE & NON-ACCESSIBLE)



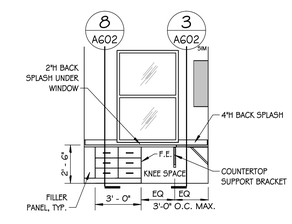
TYPICAL ACCESSIBLE WATER CLOSET GRAB BAR MOUNTING



TYPICAL TOILET TISSUE HOLDER MOUNTING PARAMETERS (ADULTS)

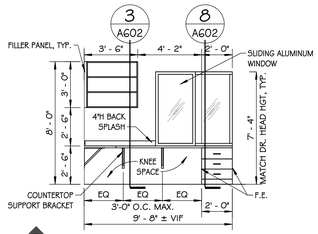
TOILET ACCESSORY MOUNTING PARAMETERS

1/4" = 1'-0"



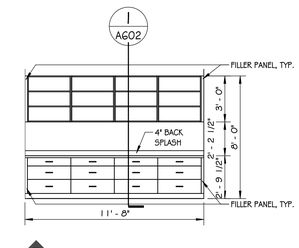
2 A301 | A601 102.1 - CASEWORK ELEV

1/4" = 1'-0"



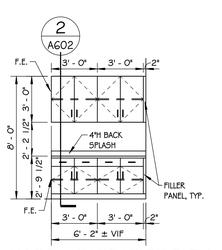
3 A301 | A601 102.2 - CASEWORK ELEV

1/4" = 1'-0"



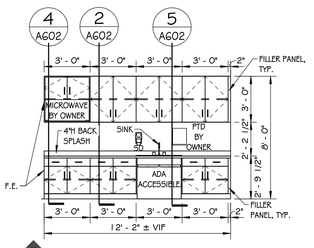
4 A301 | A601 119 - CASEWORK ELEV

1/4" = 1'-0"



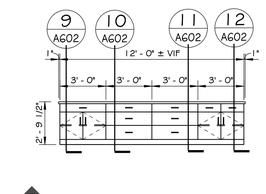
5 A301 | A601 H102 - CASEWORK ELEV

1/4" = 1'-0"



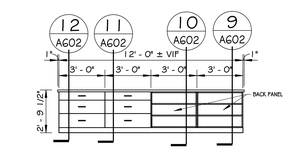
6 A301 | A601 117 - CASEWORK ELEV

1/4" = 1'-0"



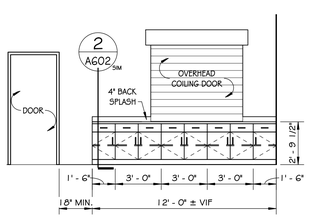
7 A301 | A601 101 - CASEWORK ELEV - 1

1/4" = 1'-0"



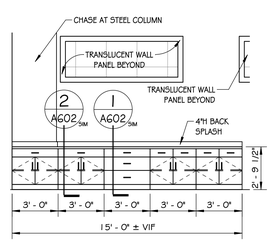
8 A301 | A601 101 - CASEWORK ELEV - 2

1/4" = 1'-0"



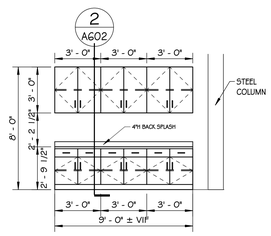
9 A301 | A601 101 - CASEWORK ELEV - 3

1/4" = 1'-0"



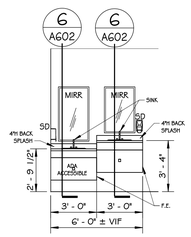
10 A301 | A601 101 - CASEWORK ELEV - 4

1/4" = 1'-0"



11 A301 | A601 122 - CASEWORK ELEV

1/4" = 1'-0"



12 A301 | A601 116 - CASEWORK ELEV

1/4" = 1'-0"

Jumper
Carter
Sease
ARCHITECTS
412 Meeting Street
West Columbia
South Carolina

FACILITY AND AUXILIARY SERVICES BUILDING
UNIVERSITY OF SOUTH CAROLINA AIKEN
AIKEN, SOUTH CAROLINA

H29-9552/50003331-2

No	Description	Date
2	Addendum #2	06/11/19

DRAWN BY: BK

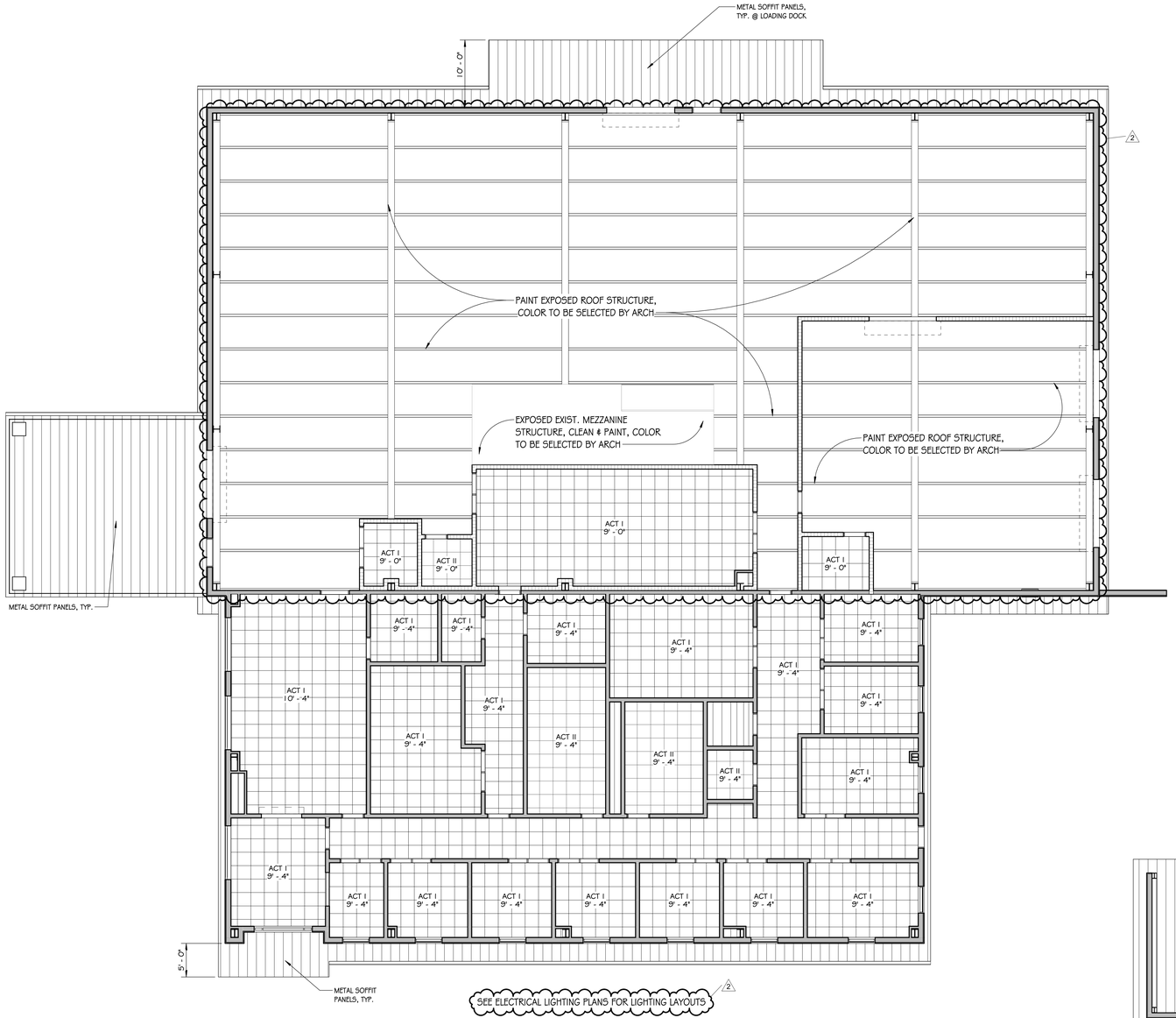
CHECKED BY:

COMM NO: 18103

DATE: APRIL 12, 2019

SHEET TITLE: ENLARGED TOILET PLANS & CASEWORK ELEVATIONS

SHEET NO: A601



CEILING PLAN

1/8" = 1'-0"

2

CEILING PLAN LEGEND

ACT X X'-X"	INDICATES CEILING TYPE & CEILING HEIGHT ABOVE FINISHED FLOOR
	PREFINISHED METAL SOFFIT PANELS
	ACOUSTICAL CEILING TILE 1, 2 or 3
	G.W.B. CEILING

GENERAL NOTES

1. SEE ELECTRICAL PLANS FOR LIGHTING FIXTURES.
2. SEE MECHANICAL PLANS FOR HVAC GRILLE REQUIREMENTS.
3. ALL EXPOSED LINTELS, DECKS & STEEL STRUCTURE SHALL BE PAINTED ALONG WITH ADJACENT CONDUITS & ROUGH-IN BOXES. DONT PAINT ANY DEVICES OR PRE-FINISHED ITEMS. COLOR TO BE SELECTED BY ARCHITECT.
4. PAINT EXPOSED CEILING STRUCTURE. COLOR TO BE DETERMINED BY ARCHITECT.
5. CONTRACTOR IS TO INSTALL ALL CEILING SYSTEMS & COMPONENTS IN FULL COMPLIANCE WITH IBC 2012 REQUIREMENTS IN ADDITION TO ALL ASTM E580 & CEILING SYSTEM MANUFACTURERS IBC TESTED & APPROVED ASSEMBLIES PER MANUFACTURERS ES REPORTS. ESR DATA IS TO BE PROVIDED WITH SUBMITTAL DOCUMENTATION.

Jumper
Carter
Sease
ARCHITECTS
412 Meeting Street
West Columbia
South Carolina

FACILITY AND AUXILIARY SERVICES BUILDING
UNIVERSITY OF SOUTH CAROLINA AIKEN
AIKEN, SOUTH CAROLINA

H29-9552/50003331-2

No	Description	Date
2	Addendum #2	06/11/19

DRAWN BY:

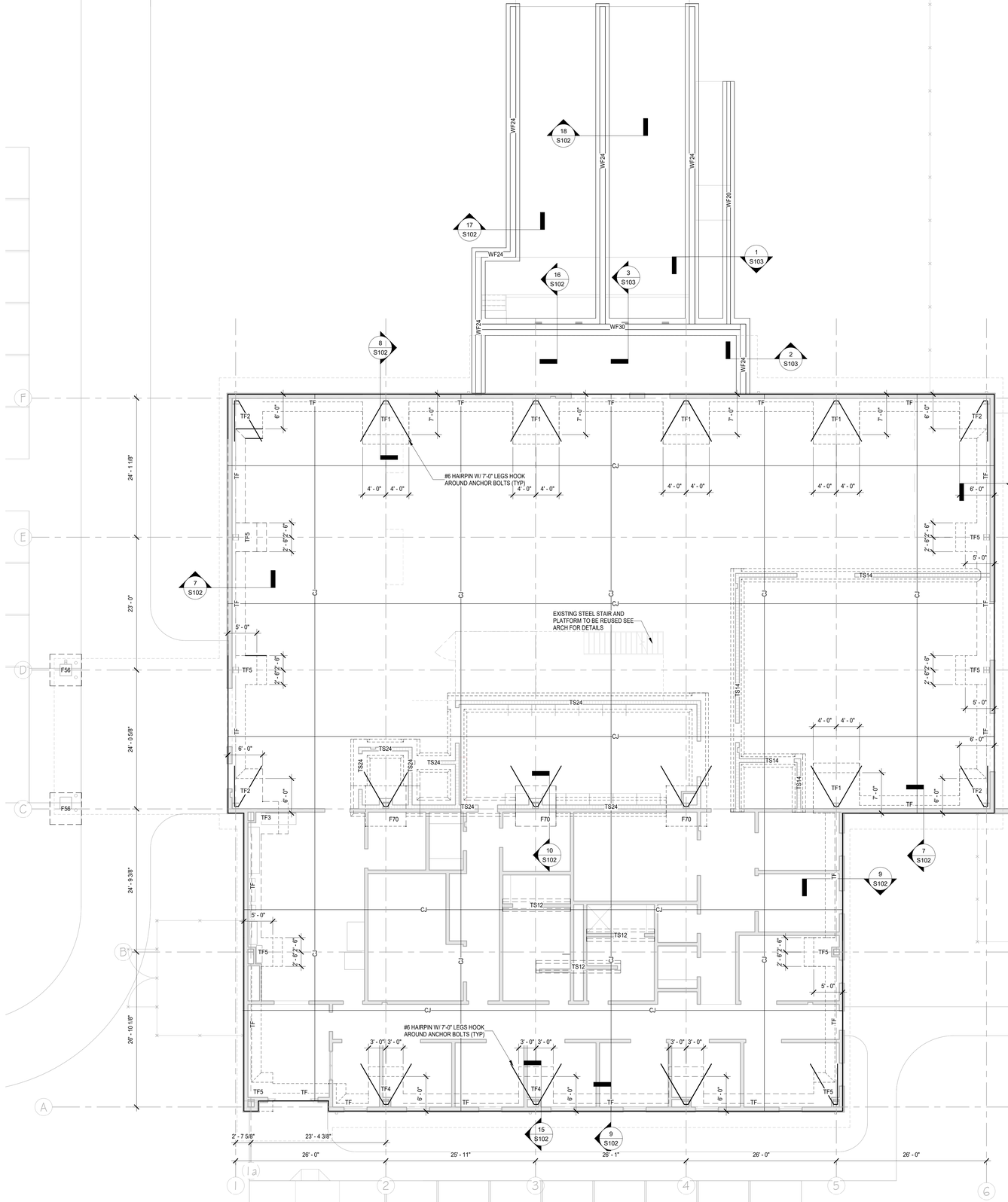
CHECKED BY:

COMM NO: 18103

DATE: APRIL 12, 2019

SHEET TITLE: CEILING PLAN

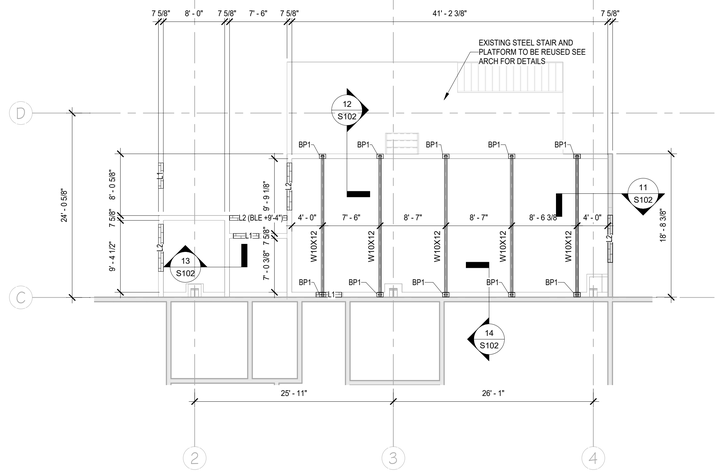
SHEET NO: A901



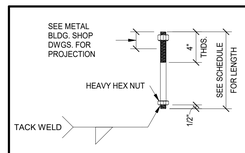
1 FOUNDATION PLAN
S101 — 1/8" = 1'-0"

PLAN NOTES:
1. MAIN FINISH FLOOR IS DATUM (0.00) FOOTING ELEVATION SHOWN ARE BELOW THIS LEVEL. WHERE NOT SHOWN OR NOTED, STEP FOOTING TO MAINTAIN 8" BELOW FINISH GRADE. INTERIOR FOOTINS ELEVATION ARE SHOWN BELOW MAIN FINISH FLOOR ELEVATION (0.00').
2. TYPICAL FLOOR ON GRADE CONSTRUCTION = 4" CONCRETE SLAB REINFORCED WITH WWF 6X6 - W1.4 X W1.4 WIRE MESH UNLESS NOTED OTHERWISE.
3. "CJ" DENOTES SLAB CONTROL JOINT. SEE DETAIL 1/S401.
4. SEE DRAWING S103 FOR MASONRY WALL REINFORCING DETAILS.
5. SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN OR NOTED.
6. SEE DRAWING S103 FOR ALL APPROVED ANCHORS FOR POST INSTALLED ANCHORS IN CONCRETE AND MASONRY.

NOTE:
DO NOT POUR ANY FOOTINGS UNTIL METAL BUILDING COLUMN REACTIONS HAVE BEEN CHECKED AGAINST FOOTING SIZES



2 MEZZANINE FRAMING PLAN
S101 — 1/8" = 1'-0"



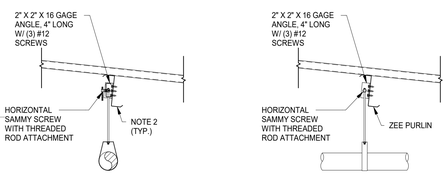
ANCHOR ROD SCHEDULE	
DIAMETER	LENGTH
1/2" DIA.	15"
5/8" DIA.	15"
3/4" DIA.	24"
1" DIA.	24"
1 1/4" DIA.	24"

3 ANCHOR RODS DETAILS
S101 — 1 1/2" = 1'-0"

NOTES:
1. SEE THE APPROVED METAL BUILDING SYSTEM DRAWINGS FOR THE QUANTITY, DIAMETER AND PROJECTION OF ANCHOR RODS. GENERAL CONTRACTOR SHALL PROVIDE ANCHOR RODS. SOME OF THE DIAMETERS SHOWN IN THE SCHEDULE MAY NOT BE REQUIRED FOR THIS BUILDING.
2. ANCHOR ROD MATERIAL SHALL BE ASTM F1554. GRADE 36.
3. IF DIAMETERS OTHER THAN THOSE SHOWN IN THE SCHEDULE ARE REQUIRED, CONSULT WITH THE ARCHITECT FOR THE REQUIRED ANCHOR ROD LENGTHS.

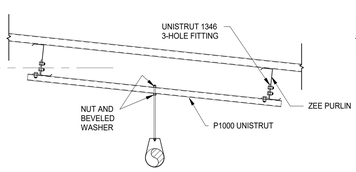
FOUNDATION SCHEDULE

MARK	SIZE	THICKNESS	REINFORCING EACH WAY
F56	5'-6" X 5'-6"	24"	6 #5
F70	7'-0" X 7'-0"	24"	6 #6
TF1	7'-0X8'-0"	24"	7 #5 CONT, #4 @ 12" OC HOOK BARS
TF2	7'-0" X 7'-0"	24"	7 #5 CONT, #4 @ 12" OC HOOK BARS
TF3	6'-0" X 5'-6"	24"	6 #5 CONT, #4 @ 12" OC HOOK BARS
TF4	4'-0" X 5'-0"	24"	4 #5 CONT, #4 @ 12" OC HOOK BARS
TF5	6'-0" X 6'-0"	24"	5 #5 CONT, #4 @ 12" OC HOOK BARS
TF6	4'-0" X 4'-0"	24"	4 #5 CONT, #4 @ 12" OC HOOK BARS
TS12	1 '-0" CONT	12"	2 # 4 CONT
TS14	1 '-4" CONT	12"	2 # 4 CONT
TS24	3 '-4" CONT	12"	3 #5 CONT, #4 @ 32" OC TRANSVERSE
WF20	2'-0" CONT.	12"	3 #5 CONT, #4 @ 32" OC TRANSVERSE
WF24	2'-4" CONT.	12"	3 #5 CONT, #4 @ 32" OC TRANSVERSE
WF30	3'-0" CONT.	12"	3 #5 CONT, #4 @ 32" OC TRANSVERSE

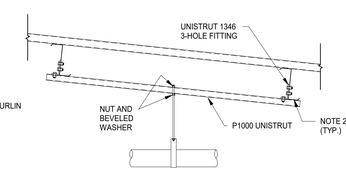


PIPING OR DUCT PARALLEL TO PURLINS MAX. LOAD 100 LBS.

PIPING OR DUCT PERPENDICULAR TO PURLINS MAX. LOAD 100 LBS.



PIPING OR DUCT PARALLEL TO PURLINS LOAD 101 TO 250 LBS.



PIPING OR DUCT PERPENDICULAR TO PURLINS LOAD 101 TO 250 LBS.

4 PURLIN HANGER ROD DETAILS
S101 — 3/4" = 1'-0"

NOTES:
1. REFER TO THE MECHANICAL AND PLUMBING DRAWINGS FOR SIZE AND LOCATIONS OF PIPES, DUCTS AND FOR HANGER DETAILS.
2. DO NOT DRILL OR CLAMP THE BOTTOM FLANGE OF ANY PURLIN.
3. MULTIPLE LOADS USING THE DETAILS SHOWN ABOVE SHALL NOT BE LOCATED CLOSER TOGETHER THAN 8' APART ALONG THE LENGTH OF THE PURLIN.
4. INDIVIDUAL LOADS ON ZEE PURLINS SHALL NOT EXCEED 250 POUNDS.

GENERAL NOTES

1. IN CASE OF DISCREPANCY BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS, CONSULT WITH THE ARCHITECT. FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE THE ARCHITECTURAL DRAWINGS. VERIFY ALL MECHANICAL OPENINGS AND SUPPORTS WITH THE MECHANICAL EQUIPMENT. FIELD VERIFY ALL DIMENSIONS AND CONDITIONS RELATED TO EXISTING CONSTRUCTION.
2. DESIGN CRITERIA
   - A. BUILDING CODE: 2015 INTERNATIONAL BUILDING CODE
   - B. OCCUPANCY CATEGORY: II
   - C. SEISMIC DESIGN DATA:
     - a. IMPORTANCE FACTOR: 1.0
     - b. S_S = 0.334 S_1 = 0.122
     - c. SD_S = 0.341 SD_1 = 0.188
     - d. SITE CLASS D ASSUMED, SEISMIC DESIGN CATEGORY C
     - e. DESIGN BASE SHEAR: BY METAL BUILDING SUPPLIER
     - f. SEISMIC RESPONSE COEFFICIENT: C_S = BY METAL BUILDING SUPPLIER
     - g. BASIC SEISMIC FORCE RESISTING SYSTEM: BY METAL BUILDING SUPPLIER
     - h. ANALYSIS PROCEDURE: BY METAL BUILDING SUPPLIER
   - D. WIND VELOCITY 115 MPH, EXPOSURE C, INTERNAL PRESSURE COEFFICIENT +/- 0.18.
   - E. ROOF LIVE LOAD: 20 PSF
   - F. GROUND SNOW LOAD: 10 PSF
   - G. FLOOR LIVE LOADS:
     - a. LOBBIES: 100 PSF
     - b. CORRIDORS: 80 PSF
     - c. OFFICES: 50 PSF
     - d. CLASSROOMS: 40 PSF
     - e. MEZZANINE 150 PSF
     - f. FLOORS (EXCEPT AREAS WHERE LIVE LOADS EXCEED 80 PSF) ARE DESIGNED FOR A LIVE LOAD PARTITION ALLOWANCE OF 15 PSF.
3. FOUNDATION DESIGN BASED ON AN ASSUMED SOIL BEARING PRESSURE OF 2500 PSF
   - A. FOOTING TO BE VERIFIED FOR BEARING PRESSURE = 2500 PSF BEFORE POURING FOOTINGS
   - B. STEP FOOTINGS AS REQUIRED TO LET UTILITIES PASS OVER FOOTINGS.
4. CONCRETE: 28-DAY COMPRESSIVE STRENGTHS SHALL BE AS FOLLOWS:
   - A. ALL CONCRETE: 3000 PSI, NORMAL WEIGHT
5. CONCRETE REINFORCING STEEL
   - A. ASTM A615, GRADE 60, EXCEPT WHERE REINFORCING IS SHOWN TO BE WELDED, USE ASTM A706 WELDABLE REINFORCING. DO NOT WELD OR TACK WELD ANY REINFORCING NOT SHOWN ON THE DRAWINGS TO BE WELDED.
   - B. DETAIL IN ACCORDANCE WITH ACI DETAILING MANUAL, LATEST EDITION.
   - C. LAP ALL BARS WITH CLASS B SPLICES UNLESS NOTED OTHERWISE.
   - D. PROVIDE CORNER BARS OF SAME SIZE AND SPACING AS HORIZONTAL REINFORCING AT ALL WALLS AND FOOTING INTERSECTIONS. LAP WITH CLASS B SPLICES.
6. STRUCTURAL STEEL
   - A. MATERIALS:
     - a. PIPE: ASTM A53, GRADE B
     - b. TUBE: ASTM A500, GRADE C
     - c. WIDE FLANGES AND TEES: ASTM A992, GRADE 50
     - d. OTHER: ASTM A36
   - B. FABRICATION SHALL BE IN ACCORDANCE WITH AISC SPECIFICATIONS.
   - C. BOLTED CONNECTIONS: ASTM A325. 3/4" DIAMETER, SNUG-TIGHTENED, BEARING TYPE CONNECTIONS WITH THREADS IN THE SHEAR PLANE UNLESS NOTED OTHERWISE.
   - D. WELDED CONNECTIONS: E70XX ELECTRODES. ELECTRODES USED FOR WELDING A992 STEEL SHALL BE LOW HYDROGEN ELECTRODES.
7. COMPOSITE STEEL BEAMS
   1. ALL BEAMS SUPPORTING SLABS ON METAL DECK ARE COMPOSITE BEAMS AND RECEIVE STUDS @ 12" OC THROUGHOUT THE BEAM LENGTH UNLESS NOTED OTHERWISE.
   2. STUDS: 3/4" DIAMETER X 4 1/2" LONG HEADED STUDS FIELD WELDED THROUGH DECK.
   3. EXCEPT WHERE NOTED OTHERWISE, BEAMS ARE DESIGNED TO BE UNSHORED WHEN CONCRETE IS PLACED. SOME DEFLECTIONS WILL OCCUR AND MUST BE COMPENSATED FOR DURING SCREEDING. TOP SURFACE OF SLAB SHALL BE FLAT AND LEVEL. SLAB WILL NOT NECESSARILY BE UNIFORM THICKNESS.
8. STEEL DECK
   - A. FLOOR DECK SHALL BE 3" 20 GAGE GALVANIZED COMPOSITE STEEL DECK. MINIMUM SECTION MODULUS = 0.574 INCHES^3, MINIMUM MOMENT OF INERTIA = 0.964 INCHES^4.
9. METAL BUILDING SYSTEM, GIRTS, AND PURLINS:
   - A. THE METAL BUILDING SYSTEM SHALL BE DESIGNED BY AN ENGINEER REGISTERED IN SOUTH CAROLINA FOR THE FOLLOWING LOADS AND FOR THE MECHANICAL LOADS AND OTHER LOADS SHOWN ON THE DRAWINGS:
     - ROOF LIVE LOAD - 20 PSF (REDUCIBLE FOR FRAMES)
     - COLLATERAL LOAD - 3 PSF + SPRINKLER LOAD
     - WIND AND SEISMIC LOADS - PER DESIGN CRITERIA IN GENERAL NOTE 2

     METAL BUILDING SYSTEM MANUFACTURER SHALL SUBMIT COMPLETE SHOP DRAWINGS AND STRUCTURAL CALCULATIONS SEALED BY THE DESIGN ENGINEER.
   - B. THE METAL BUILDING SHALL BE DESIGNED FOR A LATERAL WIND DEFLECTION OF H/60 (H = EAVE HEIGHT). RIGID FRAMES SHALL BE DESIGNED WITH PINNED COLUMN BASES. DRIFT SHALL BE BASED ON 10 YEAR WIND LOAD.
   - C. PURLINS SHALL BE DESIGNED FOR A DEFLECTION OF L/240 UNDER COMBINED DEAD AND LIVE LOAD.

Jumper
Carter
Sease
Architects PA
412 Meeting Street
West Columbia
South Carolina

SOUTH CAROLINA LABOR, LICENSING AND REGULATION — PROFESSIONAL ENGINEER — No. 23150 — JOSEPH LEE MARTIN

SOUTH CAROLINA — CERTIFICATE OF AUTHORIZATION — Johnson & King Engineers No. 0165

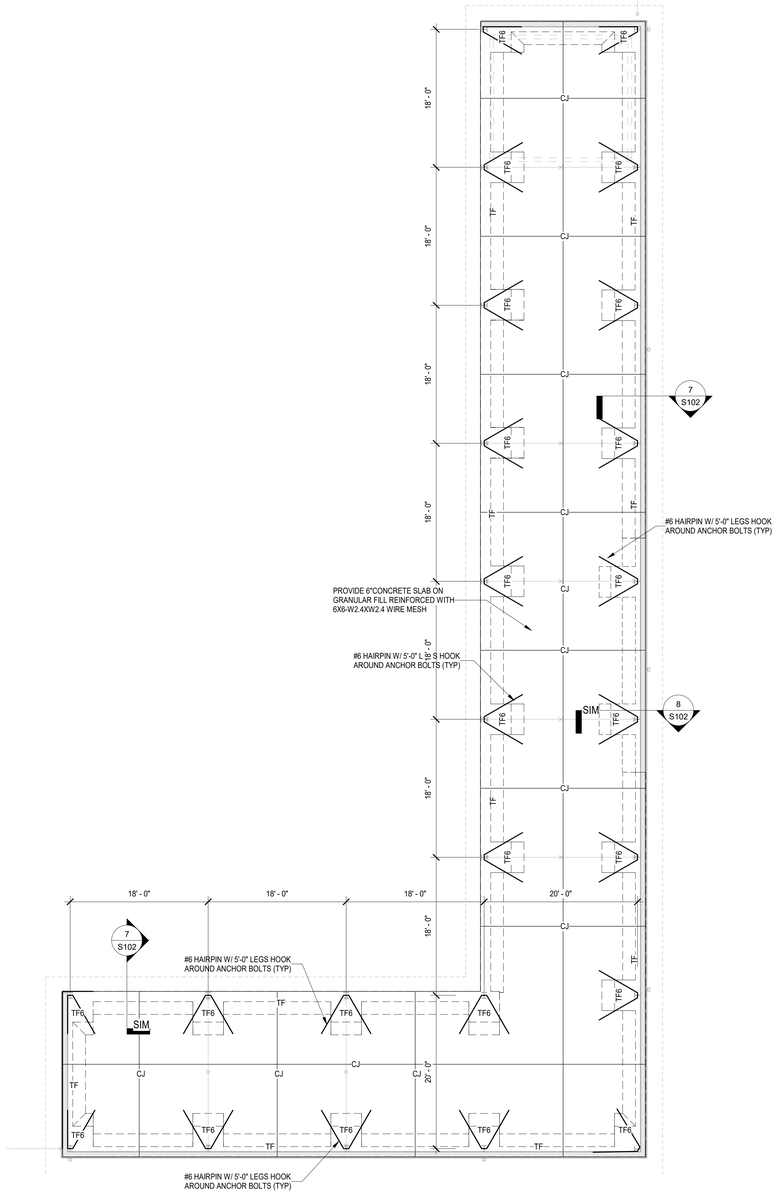
USC AIKEN MAINTENANCE FACILITY
UNIVERSITY OF SOUTH CAROLINA
AIKEN, SOUTH CAROLINA

H29-9552/50003331-2

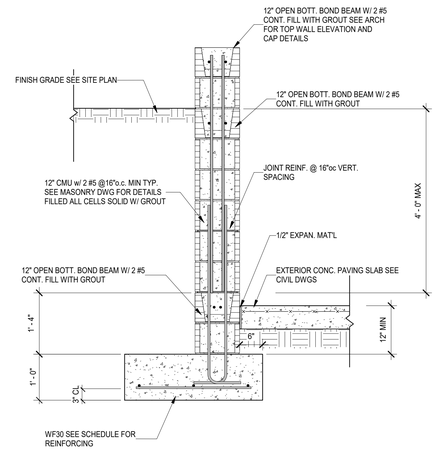
No	Description	Date
1	Addendum #2	6/11/19

DRAWN BY: LWK
CHECKED BY: LWK/JLM
COMM NO: 18103
DATE: FEB 2019
SHEET TITLE: FOUNDATION PLAN
SHEET NO: S101

JOHNSON&KING ENGINEERS
structural consultants
1223 Elmwood Avenue, Columbia, SC 29201 | 803.779.8830 T | 803.779.8831 F



1 S104 FOUNDATION PLAN
1/8" = 1'-0"



2 S104 SECTION AT DUMPSTER PAD
3/4" = 1'-0"

Jumper
Carter
Sease
Architects PA
412 Meeting Street
West Columbia
South Carolina

SOUTH CAROLINA LLEWELLYN PROFESSIONAL ENGINEER No. 23150 JOSEPH LEE MARTIN

SOUTH CAROLINA Johnson & King Engineers No. 0165 CERTIFICATE OF AUTHORIZATION

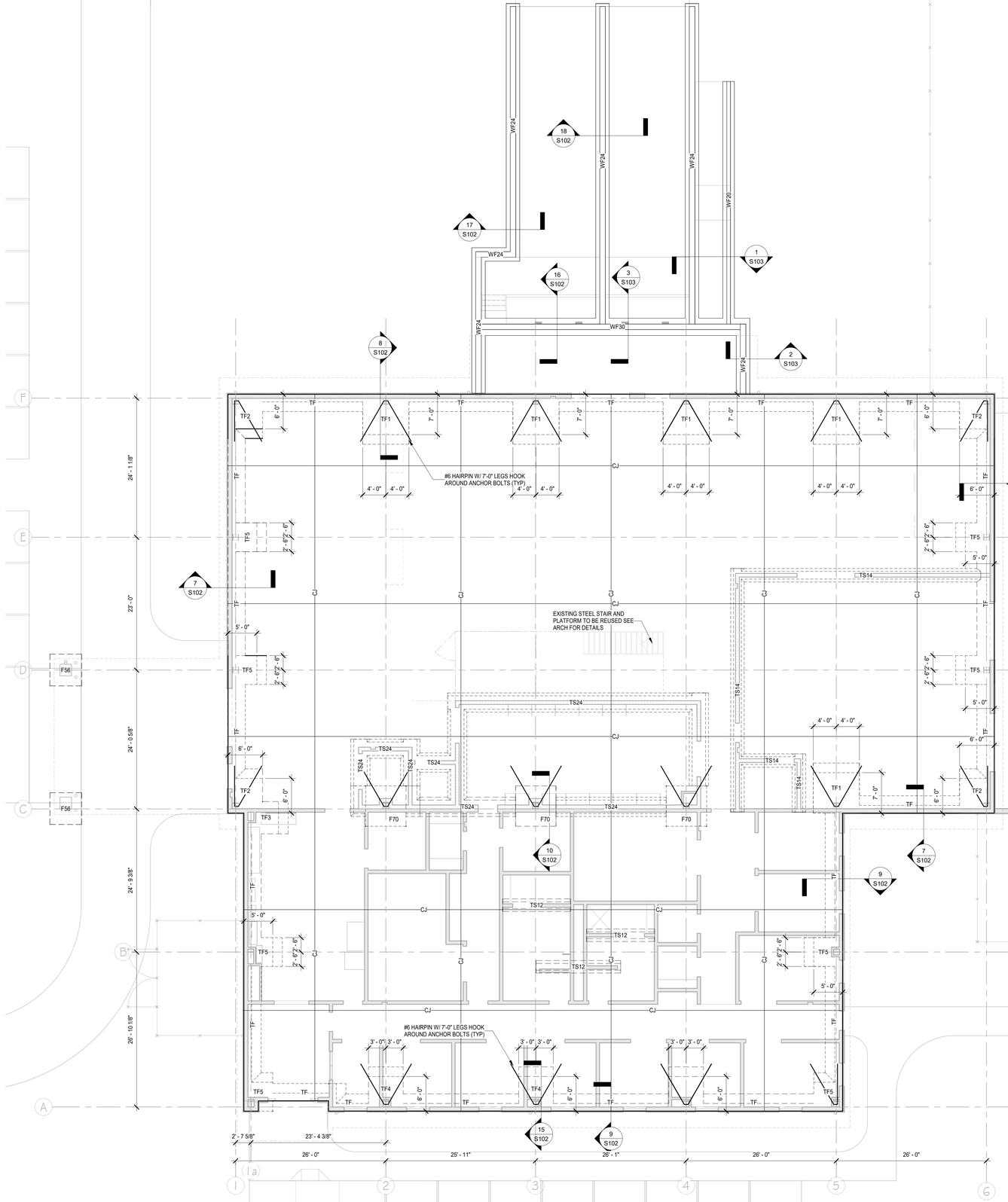
USC AIKEN MAINTENANCE FACILITY
UNIVERSITY OF SOUTH CAROLINA
AIKEN, SOUTH CAROLINA

H29-9552/50003331-2

No	Description	Date
1	Addendum #2	6/11/19

DRAWN BY: Author
CHECKED BY: Checker
COMM NO: 18103
DATE: FEB 2019
SHEET TITLE: FOUNDATION COVERED STORAGE BUILDING
SHEET NO: S104

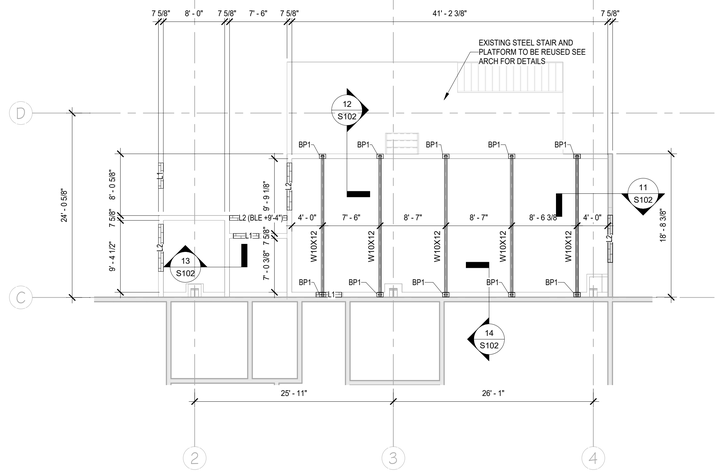
JOHNSON&KING ENGINEERS Structural Consultants
1223 Elmwood Avenue, Columbia, SC 29201 | 803.779.8830 T 803.779.8831 F



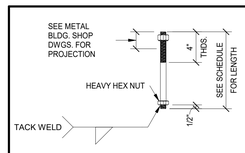
1 FOUNDATION PLAN
S101 — 1/8" = 1'-0"

PLAN NOTES:
1. MAIN FINISH FLOOR IS DATUM (0.00) FOOTING ELEVATION SHOWN ARE BELOW THIS LEVEL. WHERE NOT SHOWN OR NOTED, STEP FOOTING TO MAINTAIN 8" BELOW FINISH GRADE. INTERIOR FOOTINS ELEVATION ARE SHOWN BELOW MAIN FINISH FLOOR ELEVATION (0.00').
2. TYPICAL FLOOR ON GRADE CONSTRUCTION = 4" CONCRETE SLAB REINFORCED WITH WWF 6X6 - W1.4 X W1.4 WIRE MESH UNLESS NOTED OTHERWISE.
3. "CJ" DENOTES SLAB CONTROL JOINT. SEE DETAIL 1/S401.
4. SEE DRAWING S103 FOR MASONRY WALL REINFORCING DETAILS.
5. SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN OR NOTED.
6. SEE DRAWING S103 FOR ALL APPROVED ANCHORS FOR POST INSTALLED ANCHORS IN CONCRETE AND MASONRY.

NOTE:
DO NOT POUR ANY FOOTINGS UNTIL METAL BUILDING COLUMN REACTIONS HAVE BEEN CHECKED AGAINST FOOTING SIZES



2 MEZZANINE FRAMING PLAN
S101 — 1/8" = 1'-0"



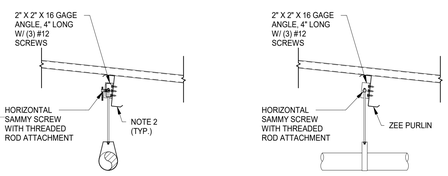
ANCHOR ROD SCHEDULE	
DIAMETER	LENGTH
1/2" DIA.	15"
5/8" DIA.	15"
3/4" DIA.	24"
1" DIA.	24"
1 1/4" DIA.	24"

3 ANCHOR RODS DETAILS
S101 — 1 1/2" = 1'-0"

NOTES:
1. SEE THE APPROVED METAL BUILDING SYSTEM DRAWINGS FOR THE QUANTITY, DIAMETER AND PROJECTION OF ANCHOR RODS. GENERAL CONTRACTOR SHALL PROVIDE ANCHOR RODS. SOME OF THE DIAMETERS SHOWN IN THE SCHEDULE MAY NOT BE REQUIRED FOR THIS BUILDING.
2. ANCHOR ROD MATERIAL SHALL BE ASTM F1554. GRADE 36.
3. IF DIAMETERS OTHER THAN THOSE SHOWN IN THE SCHEDULE ARE REQUIRED, CONSULT WITH THE ARCHITECT FOR THE REQUIRED ANCHOR ROD LENGTHS.

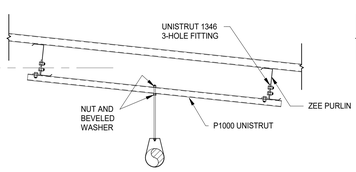
FOUNDATION SCHEDULE

MARK	SIZE	THICKNESS	REINFORCING EACH WAY
F56	5'-6" X 5'-6"	24"	6 #5
F70	7'-0" X 7'-0"	24"	6 #6
TF1	7'-0X8'-0"	24"	7 #5 CONT, #4 @ 12" OC HOOK BARS
TF2	7'-0" X 7'-0"	24"	7 #5 CONT, #4 @ 12" OC HOOK BARS
TF3	6'-0" X 5'-6"	24"	6 #5 CONT, #4 @ 12" OC HOOK BARS
TF4	4'-0" X 5'-0"	24"	4 #5 CONT, #4 @ 12" OC HOOK BARS
TF5	6'-0" X 6'-0"	24"	5 #5 CONT, #4 @ 12" OC HOOK BARS
TF6	4'-0" X 4'-0"	24"	4 #5 CONT, #4 @ 12" OC HOOK BARS
TS12	1 '-0" CONT	12"	2 # 4 CONT
TS14	1 '-4" CONT	12"	2 # 4 CONT
TS24	3 '-4" CONT	12"	3 #5 CONT, #4 @ 32" OC TRANSVERSE
WF20	2'-0" CONT.	12"	3 #5 CONT, #4 @ 32" OC TRANSVERSE
WF24	2'-4" CONT.	12"	3 #5 CONT, #4 @ 32" OC TRANSVERSE
WF30	3'-0" CONT.	12"	3 #5 CONT, #4 @ 32" OC TRANSVERSE

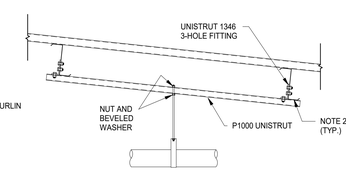


PIPING OR DUCT PARALLEL TO PURLINS MAX. LOAD 100 LBS.

PIPING OR DUCT PERPENDICULAR TO PURLINS MAX. LOAD 100 LBS.



PIPING OR DUCT PARALLEL TO PURLINS LOAD 101 TO 250 LBS.



PIPING OR DUCT PERPENDICULAR TO PURLINS LOAD 101 TO 250 LBS.

4 PURLIN HANGER ROD DETAILS
S101 — 3/4" = 1'-0"

NOTES:
1. REFER TO THE MECHANICAL AND PLUMBING DRAWINGS FOR SIZE AND LOCATIONS OF PIPES, DUCTS AND FOR HANGER DETAILS.
2. DO NOT DRILL OR CLAMP THE BOTTOM FLANGE OF ANY PURLIN.
3. MULTIPLE LOADS USING THE DETAILS SHOWN ABOVE SHALL NOT BE LOCATED CLOSER TOGETHER THAN 8' APART ALONG THE LENGTH OF THE PURLIN.
4. INDIVIDUAL LOADS ON ZEE PURLINS SHALL NOT EXCEED 250 POUNDS.

GENERAL NOTES

1. IN CASE OF DISCREPANCY BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS, CONSULT WITH THE ARCHITECT. FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE THE ARCHITECTURAL DRAWINGS. VERIFY ALL MECHANICAL OPENINGS AND SUPPORTS WITH THE MECHANICAL EQUIPMENT. FIELD VERIFY ALL DIMENSIONS AND CONDITIONS RELATED TO EXISTING CONSTRUCTION.
2. DESIGN CRITERIA
   - A. BUILDING CODE: 2015 INTERNATIONAL BUILDING CODE
   - B. OCCUPANCY CATEGORY: II
   - C. SEISMIC DESIGN DATA:
     - a. IMPORTANCE FACTOR: 1.0
     - b. S_S = 0.334 S_1 = 0.122
     - c. SD_S = 0.341 SD_1 = 0.188
     - d. SITE CLASS D ASSUMED, SEISMIC DESIGN CATEGORY C
     - e. DESIGN BASE SHEAR: BY METAL BUILDING SUPPLIER
     - f. SEISMIC RESPONSE COEFFICIENT: C_S = BY METAL BUILDING SUPPLIER
     - g. BASIC SEISMIC FORCE RESISTING SYSTEM: BY METAL BUILDING SUPPLIER
     - h. ANALYSIS PROCEDURE: BY METAL BUILDING SUPPLIER
   - D. WIND VELOCITY 115 MPH, EXPOSURE C, INTERNAL PRESSURE COEFFICIENT +/- 0.18.
   - E. ROOF LIVE LOAD: 20 PSF
   - F. GROUND SNOW LOAD: 10 PSF
   - G. FLOOR LIVE LOADS:
     - a. LOBBIES: 100 PSF
     - b. CORRIDORS: 80 PSF
     - c. OFFICES: 50 PSF
     - d. CLASSROOMS: 40 PSF
     - e. MEZZANINE 150 PSF
     - f. FLOORS (EXCEPT AREAS WHERE LIVE LOADS EXCEED 80 PSF) ARE DESIGNED FOR A LIVE LOAD PARTITION ALLOWANCE OF 15 PSF.
3. FOUNDATION DESIGN BASED ON AN ASSUMED SOIL BEARING PRESSURE OF 2500 PSF
   - A. FOOTING TO BE VERIFIED FOR BEARING PRESSURE = 2500 PSF BEFORE POURING FOOTINGS
   - B. STEP FOOTINGS AS REQUIRED TO LET UTILITIES PASS OVER FOOTINGS.
4. CONCRETE: 28-DAY COMPRESSIVE STRENGTHS SHALL BE AS FOLLOWS:
   - A. ALL CONCRETE: 3000 PSI, NORMAL WEIGHT
5. CONCRETE REINFORCING STEEL
   - A. ASTM A615, GRADE 60, EXCEPT WHERE REINFORCING IS SHOWN TO BE WELDED, USE ASTM A706 WELDABLE REINFORCING. DO NOT WELD OR TACK WELD ANY REINFORCING NOT SHOWN ON THE DRAWINGS TO BE WELDED.
   - B. DETAIL IN ACCORDANCE WITH ACI DETAILING MANUAL, LATEST EDITION.
   - C. LAP ALL BARS WITH CLASS B SPLICES UNLESS NOTED OTHERWISE.
   - D. PROVIDE CORNER BARS OF SAME SIZE AND SPACING AS HORIZONTAL REINFORCING AT ALL WALLS AND FOOTING INTERSECTIONS. LAP WITH CLASS B SPLICES.
6. STRUCTURAL STEEL
   - A. MATERIALS:
     - a. PIPE: ASTM A53, GRADE B
     - b. TUBE: ASTM A500, GRADE C
     - c. WIDE FLANGES AND TEES: ASTM A992, GRADE 50
     - d. OTHER: ASTM A36
   - B. FABRICATION SHALL BE IN ACCORDANCE WITH AISC SPECIFICATIONS.
   - C. BOLTED CONNECTIONS: ASTM A325. 3/4" DIAMETER, SNUG-TIGHTENED, BEARING TYPE CONNECTIONS WITH THREADS IN THE SHEAR PLANE UNLESS NOTED OTHERWISE.
   - D. WELDED CONNECTIONS: E70XX ELECTRODES. ELECTRODES USED FOR WELDING A992 STEEL SHALL BE LOW HYDROGEN ELECTRODES.
7. COMPOSITE STEEL BEAMS
   1. ALL BEAMS SUPPORTING SLABS ON METAL DECK ARE COMPOSITE BEAMS AND RECEIVE STUDS @ 12" OC THROUGHOUT THE BEAM LENGTH UNLESS NOTED OTHERWISE.
   2. STUDS: 3/4" DIAMETER X 4 1/2" LONG HEADED STUDS FIELD WELDED THROUGH DECK.
   3. EXCEPT WHERE NOTED OTHERWISE, BEAMS ARE DESIGNED TO BE UNSHORED WHEN CONCRETE IS PLACED. SOME DEFLECTIONS WILL OCCUR AND MUST BE COMPENSATED FOR DURING SCREEDING. TOP SURFACE OF SLAB SHALL BE FLAT AND LEVEL. SLAB WILL NOT NECESSARILY BE UNIFORM THICKNESS.
8. STEEL DECK
   - A. FLOOR DECK SHALL BE 3" 20 GAGE GALVANIZED COMPOSITE STEEL DECK. MINIMUM SECTION MODULUS = 0.574 INCHES^3, MINIMUM MOMENT OF INERTIA = 0.964 INCHES^4.
9. METAL BUILDING SYSTEM, GIRTS, AND PURLINS:
   - A. THE METAL BUILDING SYSTEM SHALL BE DESIGNED BY AN ENGINEER REGISTERED IN SOUTH CAROLINA FOR THE FOLLOWING LOADS AND FOR THE MECHANICAL LOADS AND OTHER LOADS SHOWN ON THE DRAWINGS:
     - ROOF LIVE LOAD - 20 PSF (REDUCIBLE FOR FRAMES)
     - COLLATERAL LOAD - 3 PSF + SPRINKLER LOAD
     - WIND AND SEISMIC LOADS - PER DESIGN CRITERIA IN GENERAL NOTE 2

     METAL BUILDING SYSTEM MANUFACTURER SHALL SUBMIT COMPLETE SHOP DRAWINGS AND STRUCTURAL CALCULATIONS SEALED BY THE DESIGN ENGINEER.
   - B. THE METAL BUILDING SHALL BE DESIGNED FOR A LATERAL WIND DEFLECTION OF H/60 (H = EAVE HEIGHT). RIGID FRAMES SHALL BE DESIGNED WITH PINNED COLUMN BASES. DRIFT SHALL BE BASED ON 10 YEAR WIND LOAD.
   - C. PURLINS SHALL BE DESIGNED FOR A DEFLECTION OF L/240 UNDER COMBINED DEAD AND LIVE LOAD.

Jumper
Carter
Sease
Architects PA
412 Meeting Street
West Columbia
South Carolina

SOUTH CAROLINA LABOR, LICENSING AND REGULATION — PROFESSIONAL ENGINEER — No. 23150 — JOSEPH LEE MARTIN

SOUTH CAROLINA — CERTIFICATE OF AUTHORIZATION — Johnson & King Engineers No. 0165

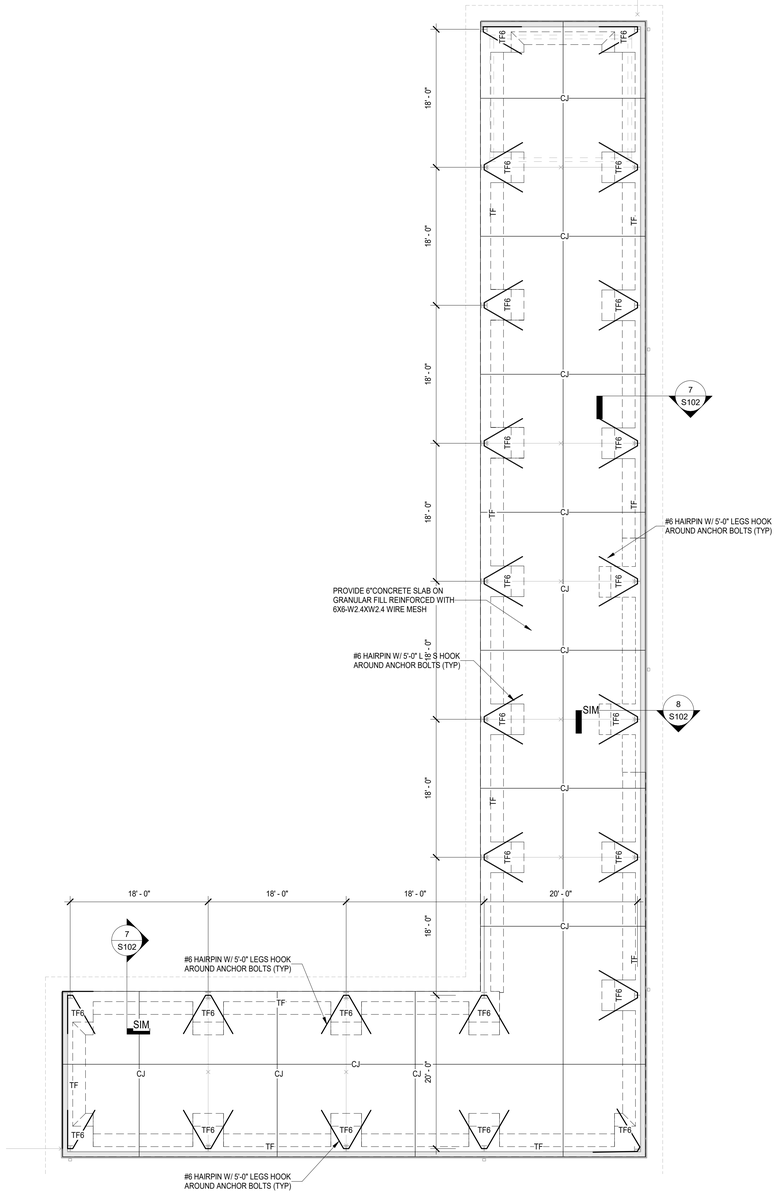
USC AIKEN MAINTENANCE FACILITY
UNIVERSITY OF SOUTH CAROLINA
AIKEN, SOUTH CAROLINA

H29-9552/50003331-2

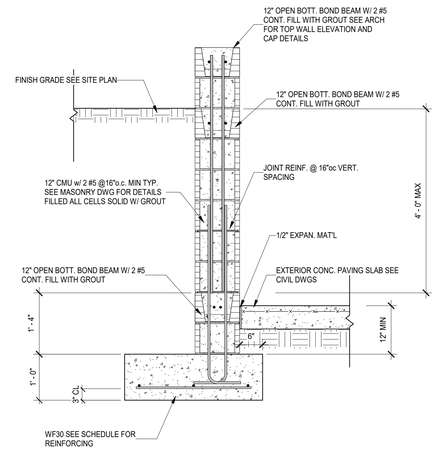
No	Description	Date
1	Addendum #2	6/11/19

DRAWN BY: LWK
CHECKED BY: LWK/JLM
COMM NO: 18103
DATE: FEB 2019
SHEET TITLE: FOUNDATION PLAN
SHEET NO: S101

JOHNSON&KING ENGINEERS
structural consultants
1223 Elmwood Avenue, Columbia, SC 29201 | 803.779.8830 T | 803.779.8831 F



1 S104 FOUNDATION PLAN
1/8" = 1'-0"



2 S104 SECTION AT DUMPSTER PAD
3/4" = 1'-0"

Jumper
Carter
Sease
Architects PA
412 Meeting Street
West Columbia
South Carolina

SOUTH CAROLINA LLEWELLYN PROFESSIONAL ENGINEER No. 23150 JOSEPH LEE MARTIN

SOUTH CAROLINA Johnson & King Engineers No. 0165 CERTIFICATE OF AUTHORIZATION

USC AIKEN MAINTENANCE FACILITY
UNIVERSITY OF SOUTH CAROLINA
AIKEN, SOUTH CAROLINA

H29-9552/50003331-2

No	Description	Date
1	Addendum #2	6/11/19

DRAWN BY: Author
CHECKED BY: Checker
COMM NO: 18103
DATE: FEB 2019
SHEET TITLE: FOUNDATION COVERED STORAGE BUILDING
SHEET NO: S104

JOHNSON&KING ENGINEERS Structural Consultants
1223 Elmwood Avenue, Columbia, SC 29201 | 803.779.8830 T 803.779.8831 F

ELECTRICAL SYMBOLS

	DUPLEX RECEPTACLE, 20A, 120V, NEMA 5/20R, 16" AFF TO BOTTOM OF OUTLET BOX. – "TR" DENOTES TAMPER-RESISTANT RECEPTACLE, SEE 260500. – "CR" DENOTES CORROSION-RESISTANT RECEPTACLE, SEE 260500. – "WP" DENOTES WEATHER-RESISTANT RECEPTACLE [2014 NEC, SECTION 406.9(A)] WITH EXTRA-DUTY RATED "IN-USE" WEATHERPROOF COVER PLATE, SEE 260500.
	SAME, EXCEPT MOUNTED 3" TO BOTTOM OF OUTLET FROM COUNTER BACKSPLASH, OR 48" AFF TO TOP OF OUTLET, OR AS DETAILED ON DRAWINGS. SEE ELEVATION THIS SHEET.
	SAME, EXCEPT CEILING MOUNTED RECEPTACLE.
	SAME, EXCEPT SINGLE RECEPTACLE, MOUNT BEHIND EQUIPMENT AS DIRECTED ON JOB.
AC	QUADRAPLEX RECEPTACLE, (2) HUBBELL 5362 RECEPTACLES WITH 2-GANG COVERPLATE, 16" AFF. FOR STANDARD, 3" TO BOTTOM OF OUTLET FROM COUNTER BACKSPLASH FOR "AC".
	GFCI RECEPTACLE, MOUNTING HEIGHTS AS ABOVE, "WP" DENOTES WEATHER-RESISTANT RECEPTACLE [2014 NEC, SECTION 406.9(A)] WITH WEATHERPROOF COVER PLATE, SEE SPECIFICATIONS.
Ⓖ	REMOTE FACELESS GFCI TEST SWITCH, 48" AFF TO TOP OF BOX OR 3" TO BOTTOM OF BOX FROM COUNTER BACKSPLASH. GROUP TEST SWITCH WITH GFCI RECEPTACLE WIRED TO A SEPARATE CIRCUIT. HUBBELL GFBF20-X-L OR EQUIVALENT, SEE DETAIL FOR MOUNTING AND CIRCUITING.
	DEDICATED ISOLATED GROUND DUPLEX OR QUADRAPLEX RECEPTACLE FOR COMPUTERS. 20A, 120V, NEMA 5/20R WITH FACTORY ENGRAVED STAINLESS STEEL COVERPLATE LABELED "COMPUTER", MOUNTING HEIGHTS AND CONFIGURATIONS AS ABOVE.
	WALL OR FLOOR MOUNTED SPECIAL POWER OUTLET, SEE PLANS FOR DESCRIPTION.
Ⓙ Ⓙ	WALL OR CEILING MOUNTED JUNCTION BOX.
Ⓗ	HANDS-FREE HIGH VELOCITY ADA COMPLIANT HAND DRYER, SEE SPECIFICATIONS. SECURELY MOUNT TO WALL PER MANUFACTURER'S INSTRUCTIONS 44" AFF TO BOTTON OF HAND DRYER (VERIFY MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN).
	PUSHBUTTON STATION, SEE PLANS FOR DESCRIPTION.
PP	WIREMOLD DIVIDED POWER POLE, NP800 SERIES WITH CONNECTORS, FLEXIBLE CONDUIT, ADAPTER PLATES, ETC. AS REQUIRED TO CONNECT TO PREWIRED DESKS.
	30" OUTDOOR POWER PEDESTAL WITH ALUMINUM OR STAINLESS STEEL CONSTRUCTION (SILVER) AND (2) 20A WR GFCI RECEPTACLES MOUNTED BEHIND WP COVER. WIREMOLD XCSPP2GRR-SV OR EQUIVALENT OF ACE MANUFACTURING APR MARINE SERIES, IPLC IP3 SERIES, PEDOC POWER SOLUTIONS PEDESTAL, OR OTHER ACCEPTABLE EQUIVALENT PEDESTAL. SEE DETAIL ON E005.
	NON-FUSED SAFETY SWITCH, 3 POLE. SEE EQUIPMENT POWER NOTES ON DRAWINGS.
	SAME, EXCEPT FUSED SAFETY SWITCH.
	EQUIPMENT ELECTRICAL CONNECTION. SEE EQUIPMENT POWER NOTES ON DRAWINGS.
⊠	MOTOR CONTROLLER, STARTER, OR VFD FURNISHED WITH EQUIPMENT, INSTALLED AND POWER WIRED BY ELECTRICAL CONTRACTOR.
Ⓕ ⑤	MOTOR, NUMERAL DENOTES HORSEPOWER. "F" FOR FRACTIONAL HORSEPOWER.
Ⓜ	MOTORIZED ZONE DAMPER FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR, POWER WIRED BY ELECTRICAL CONTRACTOR. PROVIDE 120V CIRCUIT AS NOTED ON THE DRAWINGS.
Ⓟ	CONDENSATE PUMP TIED TO AHD UNITS, PROVIDE 120V CIRCUIT AND DISCONNECT AS NOTED ON THE DRAWINGS.
Ⓣ	WALL MOUNTED THERMOSTAT, 48" AFF. FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED AND POWER WIRED BY ELECTRICAL CONTRACTOR.
S_F	FAN SWITCH, FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED AND POWER WIRED BY ELECTRICAL CONTRACTOR.
	TWO-PIECE DIVIDED SURFACE METAL RACEWAY SYSTEM, SEE SPECIFICATIONS AND DETAILS ON DRAWINGS. VERIFY MOUNTING HEIGHT WITH ARCHITECT ON JOB PRIOR TO ROUGH-IN.
	TELEPHONE BOARD.
	PANELBOARD.
A–1,3	BRANCH CIRCUIT WIRING RUN CONCEALED IN WALLS OR CEILING, 1#12G, 2#12 UNLESS NOTED OTHERWISE. ARROW DENOTES HOME RUN AND NUMERAL DENOTES CIRCUIT NUMBER. WHERE MORE THAN TWO CONDUCTORS ARE REQUIRED, SLASH MARKS INDICATE NUMBER OF #12 CONDUCTORS: SHORT SLASH DENOTES HOT OR SWITCH LEG, LONG SLASH DENOTES NEUTRAL, "L" DENOTES GROUNDING WIRE
	MULTIWIRE BRANCH CIRCUITS USING A SHARED OR COMMON NEUTRAL ARE NOT PERMITTED ON THIS PROJECT. THE CONTRACTOR SHALL PULL A SEPARATE NEUTRAL FOR ALL 120V AND 277V CIRCUITS. CONDUIT HOMERUNS TO PANELBOARDS SHALL BE 3/4" MINIMUM, OTHERWISE RACEWAYS SHALL BE 1/2" MINIMUM, EXCEPT THAT FLEXIBLE CONDUIT SHALL BE 3/8" MINIMUM.
– – – –	SAME, EXCEPT RUN UNDERGROUND OR UNDERFLOOR.
– · – · –	SAME, EXCEPT RUN EXPOSED.
	COMMUNICATIONS CONDUIT (OR CONDUIT & WIRING WHERE SPECIFIED), SIZE AS NOTED. CONDUIT TO BE EMT RUN OVERHEAD CONCEALED IN WALLS OR CEILING UNLESS NOTED OTHERWISE.
P,C WOOD	FLOOR OUTLET, SEE PLANS AND SPECIFICATIONS FOR DESCRIPTION. "P" DENOTES POWER, "C" DENOTES COMMUNICATIONS, "P,C" DENOTES 2-GANG BOX, "P,C,C" DENOTES 3-GANG BOX, "P,P,C DENOTES 3-GANG BOX, "P,P,C,C DENOTES 4-GANG BOX, ETC. EACH COMMUNICATIONS GANG MUST BE CAPABLE OF ACCEPTING A MINIMUM OF (4) CATEGORY 6 JACKS. PROVIDE BOX WITH CONDUIT TAPPING TO MATCH CONDUIT FEEDING BOX, SEE SPECIFICATIONS. "WOOD" DENOTES FLOOR OUTLET FOR INSTALLATION IN WOOD FLOOR, SEE PLANS & SPECIFICATIONS FOR DESCRIPTION.
▭	CABLE TRAY RUN ABOVE ACCESSIBLE LAY-IN CEILINGS, SEE SPECIFICATIONS AND DETAILS ON DWGS.
	RATED TRIPLE CABLE PATHWAY SYSTEM, SEE DETAIL ON DRAWINGS. STI EZ-PATH TRIPLE PATHWAY SYSTEM, OR EQUIVALENT. "NR" DENOTES A NON-RATED SLEEVE ASSEMBLY FOR NON-RATED WALLS.
TV	TV OUTLET. 2 GANG BOX, 4 11/16" SQUARE, 2 1/8" DEEP, WITH 1 GANG PLASTER RING, 84" AFF TO BOTTOM OF OUTLET BOX UNLESS NOTED. PROVIDE DUPLEX RECEPTACLE 84" AFF WITHIN 8" OF TV OUTLET. HOMERUN 3/4" EMPTY CONDUIT WITH PULL WIRE TO CABLE TRAY OR MDF/IDF ROOM.
◁	COMMUNICATIONS OUTLET, 2 GANG BOX, 4 11/16" SQUARE, 2 1/8" DEEP, WITH 1 GANG PLASTER RING, 16" AFF TO BOTTOM OF OUTLET BOX UNLESS NOTED. HOMERUN 1" EMPTY CONDUIT TO CABLE TRAY OR MDF/IDF ROOM (NUMBER INDICATED QUANTITY CAT 6 JACKS/CABLES).
	SAME, EXCEPT MOUNTED 4" ABOVE COUNTER BACKSPLASH OR AS INDICATED ON THE DRAWINGS.
	CEILING MOUNTED WIRELESS ACCESS POINT, 2 GANG BOX, 4" SQUARE, 2 1/8" DEEP, WITH BLANK COVER, LOCATED ABOVE LAY-IN CEILING IN ACCESSIBLE LOCATION. HOMERUN 3/4" CONDUIT TO CABLE TRAY OR MDF/IDF ROOM (CAT 6 CABLE, SEE DETAIL ON E603).
C	SECURITY CAMERA BACK BOX, SEE E401 AND DETAILS ON E603. COORDINATE LOCATION AND ELEVATION WITH OWNER'S SECURITY CONSULTANT PRIOR TO ROUGH-IN. HOMERUN 3/4" EMPTY CONDUIT WITH PULL WIRE TO CABLE TRAY OR MDF/IDF ROOM.
CR	CARD READER, SEE E401.
	SEE E401 FOR ADDITIONAL COMMUNICATIONS SYMBOLS.

1

LIGHTING SYMBOLS

	WALL OR CEILING MOUNTED FIXTURE, PROVIDE AS SCHEDULED.
	RECESSED FIXTURE, WIRE THRU GREENFIELD FROM OUTLET BOX ABOVE CEILING, PROVIDE AS SCHEDULED. "NL" DENOTES FIXTURE WIRED TO A SEPARATE 24/7 NIGHT LIGHT CIRCUIT.
	SUSPENDED DIRECT/INDIRECT FIXTURE, PROVIDE AS SCHEDULED.
● ■	RECESSED FIXTURE, PROVIDE AS SCHEDULED.
○ □	SURFACE MOUNTED FIXTURE, PROVIDE AS SCHEDULED.
	WALL MOUNTED FIXTURE, PROVIDE AS SCHEDULED.
	HALF-SHADED FIXTURE DENOTES EMERGENCY LIGHTING FIXTURE. PROVIDE EMERGENCY BALLASTS OR GENERATOR TRANSFER DEVICES WHERE SCHEDULED.
⊗ ⊗	WALL OR CEILING MOUNTED LED EXIT LIGHT, SHADED AREA DENOTES FACE.
	WALL OR CEILING MOUNTED LED EXIT LIGHT, SHADED AREA DENOTES FACE.
□–□	POLE MOUNTED FIXTURE.
S S_{WP}	SINGLE POLE SWITCH, 20A, 120/277V, 48" AFF TO TOP OF OUTLET BOX. SUBSCRIPT DENOTES OUTLETS CONTROLLED. WP DENOTES SWITCH WITH LOCKABLE SHALLOW IN-USE STYLE WEATHERPROOF COVER PLATE, SEE 260500.
S_3	SAME, EXCEPT THREE WAY.
S_4	SAME, EXCEPT FOUR WAY.
S_K	SAME, EXCEPT SINGLE POLE KEYED SWITCH, 20A, 120/277V, 48" AFF.
S_D	120/277V, 0–10V LED WALL BOX DIMMER WITH INTEGRAL ON/OFF BUTTON, 48" AFF TO TOP OF OUTLET BOX. RATING=1200W (120V) & 1660W (277V). ON/OFF TO BE ACCOMPLISHED WITHOUT THE USE OF SEPARATE POWER PACKS, UNLESS NOTED OTHERWISE. GREENGATE WBSD-010SLD OR EQUIVALENT OF WATTSTOPPER, ACUITY, CRESTRON, LEVITON, OR LUTRON. SEE DETAIL ON E605.
S_{D3}	SAME, EXCEPT WIRED PER THE MANUFACTURER'S INSTRUCTIONS FOR FOR THREE WAY SWITCHING.
S_{DE} S_{DM} S_{1500} S_{600}	SLIDE-TO-OFF WALL BOX DIMMER, 48" AFF TO TOP OF OUTLET BOX. "DE" DENOTES ELECTRONIC LOW VOLTAGE DIMMER, "DM" DENOTES MAGNETIC VOLTAGE DIMMER, "600", "1000", "1500", OR "2000" DENOTES 600W, 1000W, 1500W, OR 2000W INCANDESCENT DIMMER. LUTRON NOVA T SERIES, OR EQUIVALENT. ALL DIMMERS TO BE SLIDE-TO-OFF UNLESS NOTED OTHERWISE.
S_{WA}	WALL MOUNTED IR SENSOR WITH BUILT-IN SWITCH, 48" AFF. SEE OCCUPANCY SENSOR DETAILS. WATTSTOPPER PW-100 (A) OR PW-200 (AB), OR EQUIVALENT OF ACUITY, EATON, CRESTRON, OR LUTRON.
S_{TS}	WALL MOUNTED PRESET COUNTDOWN TIME SWITCH, 48" AFF. SEE OCCUPANCY SENSOR DETAILS. WATTSTOPPER RT-50 OR EQUIVALENT OF ACUITY, EATON, CRESTRON, OR LUTRON.
WG WP	WALL OR CEILING MOUNTED DUAL TECHNOLOGY SENSOR WITH INTEGRAL PHOTOSENSOR. FURNISH, INSTALL, AND WIRE POWER PACK(S) PER THE MANUFACTURER'S INSTRUCTIONS. POWER PACKS NOT SHOWN ON DRAWINGS, BUT ARE REQUIRED, SEE OCCUPANCY SENSOR DETAILS AND NOTES FOR ADDITIONAL INFORMATION. WATTSTOPPER DT-200 (2000SF) WITH BZ-150 POWER PACK(S); "WG" DENOTES WIRE GUARD; "WP" DENOTES WATTSTOPPER CB-100 (2000SF) WATER-TIGHT INFRARED SENSOR; OR EQUIVALENT OF ACUITY, EATON, CRESTRON, OR LUTRON.
DT DT WG	CEILING MOUNTED 360° DUAL TECHNOLOGY OCCUPANCY SENSOR. FURNISH, INSTALL, AND WIRE POWER PACK(S) PER THE MANUFACTURER'S INSTRUCTIONS. POWER PACKS NOT SHOWN ON DRAWINGS, BUT ARE REQUIRED, SEE OCCUPANCY SENSOR DETAILS AND NOTES FOR ADDITIONAL INFORMATION. WATTSTOPPER DT-300 (1000SF) WITH BZ-150 POWER PACK(S), OR EQUIVALENT OF ACUITY, EATON, CRESTRON, OR LUTRON. "WG" DENOTES WIRE GUARD.
IR IR2	CEILING MOUNTED 360° INFRARED TECHNOLOGY OCCUPANCY SENSOR. FURNISH, INSTALL, AND WIRE POWER PACK(S) PER THE MANUFACTURER'S INSTRUCTIONS. POWER PACKS NOT SHOWN ON DRAWINGS, BUT ARE REQUIRED, SEE OCCUPANCY SENSOR DETAILS AND NOTES FOR ADDITIONAL INFORMATION. WATTSTOPPER CI-300-1 (IR, 500SF) AND CI-300 (IR2, 1200SF) WITH BZ-150 POWER PACK(S), OR EQUIVALENT OF ACUITY, EATON, CRESTRON, OR LUTRON.
UT UT	CEILING MOUNTED 360° ULTRASONIC SENSOR, FURNISH, INSTALL, AND WIRE POWER PACK(S) PER THE MANUFACTURER'S INSTRUCTIONS. POWER PACKS NOT SHOWN ON DRAWINGS, BUT ARE REQUIRED, SEE OCCUPANCY SENSOR DETAILS AND NOTES FOR ADDITIONAL INFORMATION. ARROWS DENOTE SENSOR FOR CORRIDORS WITH 90° LINEAR COVERAGE PATTERN. WATTSTOPPER UT-300-3 (2000SF OR 90LF) WITH BZ-150 POWER PACK(S), OR EQUIVALENT OF ACUITY, EATON, CRESTRON, OR LUTRON.
Ⓡ DT Ⓡ UT Ⓡ	SAME AS ABOVE, EXCEPT DENOTES SENSOR TO BE PROVIDED WITH AUXILIARY RELAY FOR CONTROL OF SEPARATE LOAD SUCH AS A TOILET EXHAUST FAN, SEE OCCUPANCY SENSOR DETAILS AND NOTES FOR ADDITIONAL INFORMATION. WATTSTOPPER S120/277/347E-P RELAY, OR EQUIVALENT. OF ACUITY, EATON, CRESTRON, OR LUTRON.
PE	ADJUSTABLE SLIDE LIGHTING PHOTOSENSOR AS MANUFACTURED BY TORK OR INTERMATIC.
TC	TIME CLOCK: 7-DAY, 2-CHANNEL, 120V ELECTRONIC PROGRAMMABLE TIME CONTROL WITH TWO SPDT CONTACTS, NEMA 3R CASE, 24-HOUR CLOCK FORMAT, LEAP YEAR CORRECTION, AND DAYLIGHT SAVINGS TIME ADJUSTMENT. INTERMATIC ET1725CR OR EQUIVALENT OF TORK.

SCOPE OF WORK

THE WORK OF THIS SECTION SHALL PROVIDE COMPLETE ELECTRICAL SYSTEMS WHICH SHALL INCLUDE THE PROVIDING OF ALL CONDUCTORS, RACEWAYS, FITTINGS, CIRCUIT PROTECTIVE DEVICES, LIGHT FIXTURES, BOXES, SUPPORTS, AND ALL ASSOCIATED APPURTENANCES AND MISCELLANEOUS EQUIPMENT NECESSARY, ALL OF WHICH SHALL BE COMPLETELY CONNECTED, TESTED, ADJUSTED AND LEFT IN PROPER OPERATING CONDITION. THE ELECTRICAL SYSTEM TO BE PROVIDED SHALL INCLUDE SERVICE AND DISTRIBUTION FACILITIES POWER FOR MOTOR OPERATED EQUIPMENT, LIGHTING SYSTEMS, AND ALL OUTLETS AS COVERED HEREINAFTER.

GENERAL NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE 2014 NATIONAL ELECTRICAL CODE (NEC), THE 2015 INTERNATIONAL BUILDING CODE (IBC), AND ANY LOCAL CODES, LAWS AND ORDINANCES WHICH MAY APPLY. WHERE DIFFERENCES EXIST BETWEEN THE CODES, THE STRICTER CODE SHALL APPLY.
2. ALL CONDUITS SHALL CONTAIN A GROUNDING CONDUCTOR REGARDLESS OF USE.
3. THE CONTRACTOR FOR THE WORK UNDER THIS SECTION SHALL PROCURE AND PAY FOR ALL PERMITS, FEES, AND LICENSES REQUIRED FOR THE EXECUTION OF THIS WORK. SATISFACTORY EVIDENCE OF COMPLIANCE WITH THE REQUIREMENT AND ALL CERTIFICATES OF INSPECTION SHALL BE DELIVERED TO THE OWNER PROMPTLY UPON REQUEST.
4. TYPE MC CABLE MAY NOT BE USED ON THIS PROJECT, EXCEPT AS NOTED BELOW:

   OFFICE / ADMINISTRATION AREA:

   - MANUFACTURER SUPPLIED METAL CLAD CABLE (TYPE MC OR TYPE MC-PCS) SHALL BE PERMITTED FOR LIGHT FIXTURE WHIPS (#18 AWG MINIMUM) PROVIDED THEY INCLUDE A GROUND WIRE AND DO NOT EXCEED 6' IN LENGTH.
   - TYPE TYPE MC-PCS CABLE MAY BE USED FOR INTERIOR, CONCEALED 0–10V LIGHTING BRANCH CIRCUITS LOCATED ABOVE ACCESSIBLE LAY-IN CEILINGS, EXCEPT THAT CIRCUITING BETWEEN SPACES AND HOMERUNS TO PANELBOARDS SHALL BE IN EMT, CIRCUITING FOR LIGHTS IN CORRIDORS SHALL BE IN EMT, AND TYPE MC-PCS CABLE MAY NOT PENETRATE RATED WALLS OR FLOORS. REFER TO SPECIFICATIONS AND TO LIGHTING PLANS FOR ADDITIONAL INFORMATION.

   WAREHOUSE AREA:

   - MC CABLING MAY NOT BE USED. PROVIDE SYSTEM CABLING AND WIRING IN METALLIC CONDUITS AS SPECIFIED.
5. ALL LOW VOLTAGE WIRING FOR OCCUPANCY SENSOR APPLICATIONS SHALL BE RUN IN METALLIC CONDUIT.
6. UNLESS OTHERWISE NOTED FOR 120-VOLT, 20-AMP CKTS:
   #10 AWG SHALL BE USED FOR HOMERUNS LONGER THAN 75 FEET
   #12 AWG SHALL BE USED FOR HOMERUNS 75 FEET OR SHORTER
7. MULTIWIRE BRANCH CIRCUITS USING A SHARED OR COMMON NEUTRAL ARE NOT PERMITTED ON THIS PROJECT. THE CONTRACTOR SHALL PULL A SEPARATE NEUTRAL FOR ALL 120V AND 277V CIRCUITS.
8. MOUNT RECEPTACLES 16" AFF UNLESS OTHERWISE NOTED.
9. ALL LIGHT SWITCHES AND RECEPTACLES SHALL BE BY THE SAME MANUFACTURER. COVER PLATES SHALL BE JUMBO STAINLESS STEEL. DEVICE COLOR TO BE SELECTED BY THE ARCHITECT UNLESS STATED WITH THE DEVICE SYMBOL.
10. ELECTRICAL METALLIC TUBING AND RIGID GALVANIZED STEEL CONDUIT SHALL BE THE ONLY TYPES OF CONDUIT INSTALLED WITHIN THE BUILDING. PVC IS PERMITTED UNDERGROUND.
11. BRANCH CIRCUITS SHALL BE RUN CONCEALED WHERE PRACTICAL. BRANCH CIRCUITS RUN EXPOSED TO WEATHER ON EXTERIOR WALLS OR ON ROOFS SHALL BE RUN IN GRC OR IMC WITH SCREWED FITTINGS. BRANCH CIRCUITS RUN CONCEALED IN WALLS OR CEILINGS SHALL BE RUN IN EMT, GRC, OR IMC. BRANCH CIRCUITS RUN EXPOSED IN DRY, FINISHED SPACES SHALL BE RUN IN WIREMOLD SURFACE METAL RACEWAY. BRANCH CIRCUITS RUN EXPOSED IN DAMP LOCATIONS, UNFINISHED SPACES (ATTICS), AND UNOCCUPIED SPACES (STORAGE ROOM, EQUIPMENT ROOMS, JANITOR'S CLOSET, ETC.) MAY BE RUN IN EMT IN LIEU OF WIREMOLD.
12. CONDUIT HOMERUNS TO PANELBOARDS AND CONDUITS SHOWN WITH MULTIPLE CIRCUITS SHALL BE 3/4" MINIMUM, OTHERWISE RACEWAYS SHALL BE 1/2" MINIMUM, EXCEPT THAT FLEXIBLE CONDUIT SHALL BE 3/8" MINIMUM.
13. INTERIOR CONDUIT HOMERUNS TO PANELBOARDS SHALL BE RUN OVERHEAD IN EMT, GRC, OR IMC UNLESS NOTED OTHERWISE ON THE DRAWINGS.
14. FIRE ALARM SYSTEM CONDUITS AND COMMUNICATIONS SYSTEM CONDUITS TO BE EMT RUN OVERHEAD CONCEALED IN WALLS OR CEILING UNLESS NOTED OTHERWISE.
15. ALL FIRE RATED WALLS, FLOORS, ETC WHICH HAVE A CONDUIT OR OTHER ELECTRICAL PENETRATION SHALL BE SEALED TO EQUAL THE RATING OF THE WALL, FLOOR, ETC. THAT IS PENETRATED. CONTRACTOR SHALL USE A U.L. RATED AND LISTED ASSEMBLY FOR THE SEALING MATERIAL AND METHOD. COORDINATE MANUFACTURER WITH THE GENERAL CONTRACTOR SO THAT ALL TRADES ON THE PROJECT USE THE SAME MANUFACTURER. THROUGH PENETRATIONS OF CONDUITS AND CABLES OF FIRE RESISTANCE RATED WALLS MUST COMPLY WITH SECTION 714.3.1 OF THE IBC. THROUGH PENETRATIONS OF FIRE RESISTANCE CEILING ASSEMBLIES MUST COMPLY WITH SECTION 714.4.1.1 OF THE IBC.
16. ALL OUTLET BOXES 4"x4" OR SMALLER LOCATED ON OPPOSITE SIDES OF A RATED WALL SHALL HAVE A MINIMUM OF 24" HORIZONTAL SPACING OR SHALL BE PROTECTED WITH LISTED PUTTY PADS. ALL OUTLET BOXES LARGER THAN 4"x4" (COMMUNICATIONS OUTLETS, ETC.) LOCATED IN RATED WALLS SHALL BE PROTECTED WITH LISTED PUTTY PADS.
17. METALLIC WATER PIPING SHALL BE BONDED TO THE GROUNDING ELECTRODE SYSTEM (SEE NEC 250–104).
18. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS, LOCATIONS, CABINETS, ETC.
19. CONCEAL ALL CONDUIT AND FITTINGS EXCEPT WHERE THE ARCHITECT GRANTS SPECIFIC PERMISSION.
20. ALL WORK AND MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF ACCEPTANCE.
21. PROVIDE ONE COMPLETE SET OF ELECTRICAL DRAWINGS MARKED UP FOR RECORD DRAWINGS. SHOW ALL LOCATIONS OF EQUIPMENT AND MATERIALS.
22. INSTALL ALL MATERIALS PER MANUFACTURER'S INSTRUCTIONS.
23. IDENTIFY MAJOR EQUIPMENT INSTALLED WITH LAMICOR LABELS (SEE SPECS). PROVIDE FLASH HAZARD SIGN AT ALL ELECTRICAL PANELS. PROVIDE A TYPED DIRECTORY IN ALL PANEL BOARDS CLEARLY DESCRIBING THE LOCATION OF AND TYPE OF LOAD BEING SERVED FOR ALL CIRCUITS.
24. VISIT SITE TO DETERMINE EXISTING CONDITIONS PRIOR TO SUBMITTING BID.
25. ALL RACEWAYS, FIXTURES, WIRING, DEVICES, AND EQUIPMENT RENDERED USELESS BY THIS WORK SHALL BE REMOVED AND DELIVERED TO THE OWNER'S STORAGE FACILITY AS DIRECTED. ANY MATERIAL NOT WANTED BY THE OWNER SHALL BE DISPOSED OF BY THE CONTRACTOR.
26. ELECTRICAL CONTRACTOR SHALL DO ALL CUTTING AND PATCHING AS REQUIRED TO INSTALL HIS WORK. FINISH PATCHING AND PAINTING WILL BE DONE BY THE GENERAL CONTRACTOR.
27. PRIOR TO DIGGING ANY TRENCHES, NOTIFY ALL UTILITIES AND OBTAIN LOCATIONS OF UNDERGROUND UTILITIES. ANY DAMAGES DONE TO UNDERGROUND UTILITIES OR PIPING BY THIS CONTRACTOR WILL BE REPAIRED BY THE OWNER OF THE LINE IN A SATISFACTORY MANNER. THIS CONTRACTOR WILL BEAR ALL COSTS FOR REPAIRS. THE MAIN ELECTRICAL FEEDER AND THE SERVICE ENTRANCE COMMUNICATIONS CONDUITS SHALL BE BE ENCASED IN MINIMUM 2" CONCRETE ON ALL SIDES WHERE RUN UNDERGROUND, EXCEPT WHERE RUN UNDER THE CONCRETE FLOOR SLAB.
28. CONDUITS TO BE RUN UNDER WALKWAYS AND PAVINGS SHALL BE INSTALLED BY JACKING OR BORING, UNLESS NOTED. DO NOT CUT WALKWAYS OR PAVEMENTS, UNLESS ACCEPTABLE TO THE ENGINEER. ALLOWED CUTS IN PAVEMENT OR CONCRETE SHALL BE MADE USING A PAVEMENT SAW, AND SHALL BE PATCHED TO MATCH THE EXISTING SURFACE.
29. WHERE DISAGREEMENTS EXISTS ON THE DESIGN DOCUMENTS, THE ITEM OR ARRANGEMENTS OF BETTER QUALITY, GREATER QUANTITY, OR HIGHER COST SHALL BE INCLUDED IN THE BASE BID. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS, AND FIELD CONDITIONS SHALL BE RESOLVED WITH THE ENGINEER PRIOR TO COMMENCING WORK. ALL AGREEMENTS SHALL BE VERIFIED IN WRITING.
30. ALL WORK UNDER THIS SECTION SHALL BE COORDINATED WITH OTHER TRADES TO INSURE PROPER LOCATION OF OUTLETS AND EQUIPMENT CONNECTIONS, AND TO MINIMIZE CONFLICTS WITH STRUCTURAL MEMBERS, DUCT WORK, PIPING, ETC. CONFLICTS BETWEEN EQUIPMENT AND/OR MATERIAL LOCATIONS SHALL BE CORRECTED AS DIRECTED BY THE ARCHITECT-ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

ELECTRICAL SUBMITTALS

ELECTRICAL SHOP DRAWINGS SHALL BE SUBMITTED IN ONE COMPLETE PACKAGE CONTAINING ALL ITEMS REQUIRED BY THE ELECTRICAL DRAWINGS AND THE DIVISION 26–28 SPECIFICATIONS. PARTIAL SHOP DRAWING SUBMITTALS MAY BE REJECTED BY THE ARCHITECT-ENGINEER. REFER TO SECTION 260510 OF THE ELECTRICAL SPECIFICATIONS FOR REQUIRED SUBMITTAL FORMAT AND FOR ADDITIONAL REQUIREMENTS.

ABBREVIATIONS

A	AMPERES	LTG	LIGHTING
AFF	ABOVE FINISHED FLOOR	MFR	MANUFACTURER
AFG	ABOVE FINISHED GRADE	MLO	MAIN LUGS ONLY
AWG	AMERICAN WIRE GAUGE	NEC	NATIONAL ELECTRICAL CODE
AHJ	AUTHORITY HAVING JURISDICTION	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
CKT	CIRCUIT	NIC	NOT IN CONTRACT
CU	COPPER	PH,ø	PHASE
EC	EMPTY CONDUIT	RCPT	RECEPTACLE
EQPT	EQUIPMENT	RE:	REFER TO
EXST	EXISTING	TYP	TYPICAL
FWE	FURNISHED WITH EQUIPMENT	UNO	UNLESS NOTED OTHERWISE
GFI	GROUND FAULT INTERRUPTER	V	VOLTS
IAW	IN ACCORDANCE WITH	W	WIRE OR WATTS
KVA	KILOVOLTAMPERES	WP	WEATHERPROOF
KW	KILOWATTS		

SPARE PARTS:

A. <u>ADDITIONAL FIRE ALARM DEVICES:</u> THE ELECTRICAL CONTRACTOR AND FIRE ALARM SYSTEM INSTALLER SHALL FURNISH AND INSTALL ADDITIONAL FIRE ALARM DEVICES AT THE DISCRETION OF THE ARCHITECT/ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION IN THE FOLLOWING QUANTITIES:

- (4) HORN/STROBE LIGHTS
- (4) STROBE LIGHTS
- (4) MANUAL PULL STATIONS, MONITORING MODULES, OR CONTROL MODULES
- (2) CEILING MOUNTED SMOKE OR HEAT DETECTORS

INCLUDE COMPLETE COSTS TO FURNISH AND INSTALL THE ABOVE ADDITIONAL DEVICES IN BASE BID, INCLUDING ALL CONDUIT, OUTLET BOXES, 120V POWER, WIRING, AND SYSTEM PROGRAMMING. ANY DEVICES NOT USED SHALL BE TURNED OVER TO THE OWNER AS SPARE DEVICES AT THE END OF THE PROJECT.

B. <u>ADDITIONAL LIGHTING CONTROL ROOM OCCUPANCY SENSORS:</u> THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ADDITIONAL ROOM OCCUPANCY SENSORS AT THE DISCRETION OF THE ARCHITECT/ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION IN THE FOLLOWING QUANTITIES:

- (4) WALL OR CEILING MOUNTED DUAL TECHNOLOGY, ULTRASONIC, OR INFRARED OCCUPANCY SENSORS WITH POWER SUPPLIES

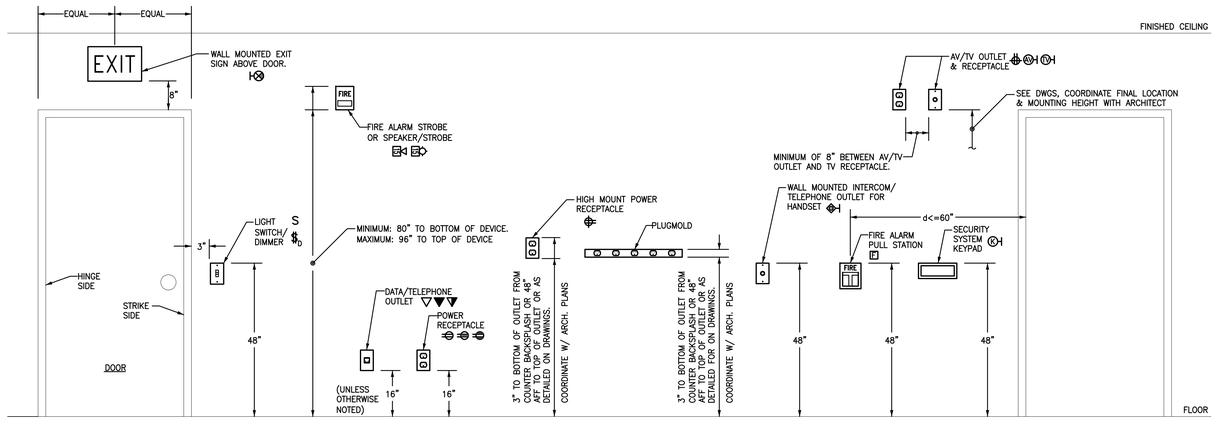
INCLUDE COMPLETE COSTS TO FURNISH AND INSTALL THE ABOVE ADDITIONAL DEVICES IN BASE BID, INCLUDING ALL CONDUIT, OUTLET BOXES, WIRING, AND SYSTEM PROGRAMMING. ANY DEVICES NOT USED SHALL BE TURNED OVER TO THE OWNER AS SPARE DEVICES AT THE END OF THE PROJECT.

C. <u>ADDITIONAL EXIT LIGHTS:</u> THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ADDITIONAL EXIT LIGHTS AT THE DISCRETION OF THE ARCHITECT/ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION IN THE FOLLOWING QUANTITIES:

- (4) WALL OR CEILING MOUNTED TYPE EXIT LIGHTS AS SPECIFIED. SEE LIGHTING FIXTURE SCHEDULE.

INCLUDE COMPLETE COSTS TO FURNISH AND INSTALL THE ABOVE ADDITIONAL EXIT LIGHTS IN BASE BID, INCLUDING ALL CONDUIT, OUTLET BOXES, 120V POWER, AND WIRING. ANY DEVICES NOT USED SHALL BE TURNED OVER TO THE OWNER AS SPARE DEVICES AT THE END OF THE PROJECT.

ELECTRICAL SHEET LIST



8 TYPICAL MOUNTING HEIGHTS FOR WALL MOUNTED DEVICES

NOT TO SCALE

Jumper
Carter
Sease
ARCHITECTS

412 Meeting Street
West Columbia
South Carolina

No. C03104

No. 21972
6/11/19
BENNY L. McDANIEL, JR.

USC AIKEN MAINTENANCE FACILITY
UNIVERSITY OF SOUTH CAROLINA
AIKEN, SC

H29-9552/50003331-2

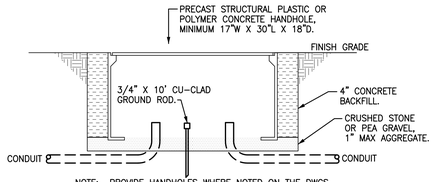
No	Description	Date
2	ADDENDUM 2	06/11/2019

DRAWN BY:
CHECKED BY:
COMM NO: 18103
DATE: 04/30/2019
SHEET TITLE: ELECTRICAL SYMBOLS AND NOTES

ADDENDUM 2 C19009

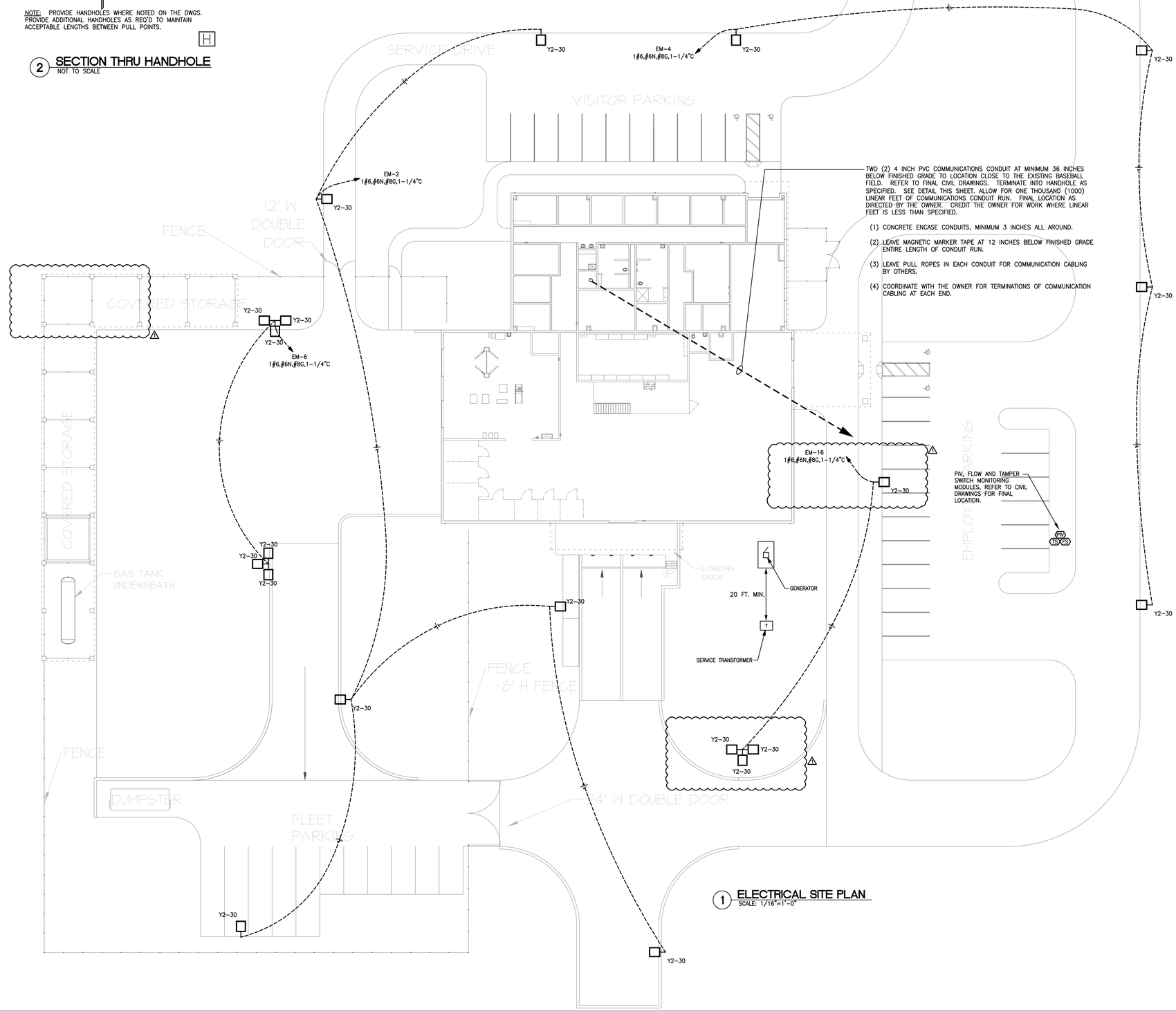
SIMS GROUP ENGINEERS, INC.
800 Columbiana Drive, Suite 208
Irmo, South Carolina 29063
Phone: (803) 765-1007 Fax: (803) 765-1030
www.simsgroupusa.com

SHEET NO: E001



2 **SECTION THRU HANDHOLE**
NOT TO SCALE

NOTE: PROVIDE #1/0AWG – 1"C. AND BOND ALL FENCING ON SITE; INCLUDING ALL SWING GATES. REFER TO FINAL CIVIL AND ARCHITECTURAL SITE PLANS FOR FINAL LAYOUT AND LOCATION OF FENCING ON SITE. BOND TO MAIN BUILDING SERVICE GROUND. DO NOT CREATE GROUND LOOPS WITH OTHER CIRCUITS ON SITE.



1 **ELECTRICAL SITE PLAN**
SCALE: 1/16"=1'-0"

Jumper Carter Sease
ARCHITECTS

412 Meeting Street
West Columbia
South Carolina

SOUTH CAROLINA SIMS GROUP ENGINEERS, INC. No. C03104 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 21972 6/11/19 BENNY L. McDANIEL, JR.

USC AIKEN MAINTENANCE FACILITY
UNIVERSITY OF SOUTH CAROLINA AIKEN, SC

H29-9552/50003331-2

No	Description	Date
2	ADDENDUM 2	06/11/2019

DRAWN BY:

CHECKED BY:

COMM NO: 18103

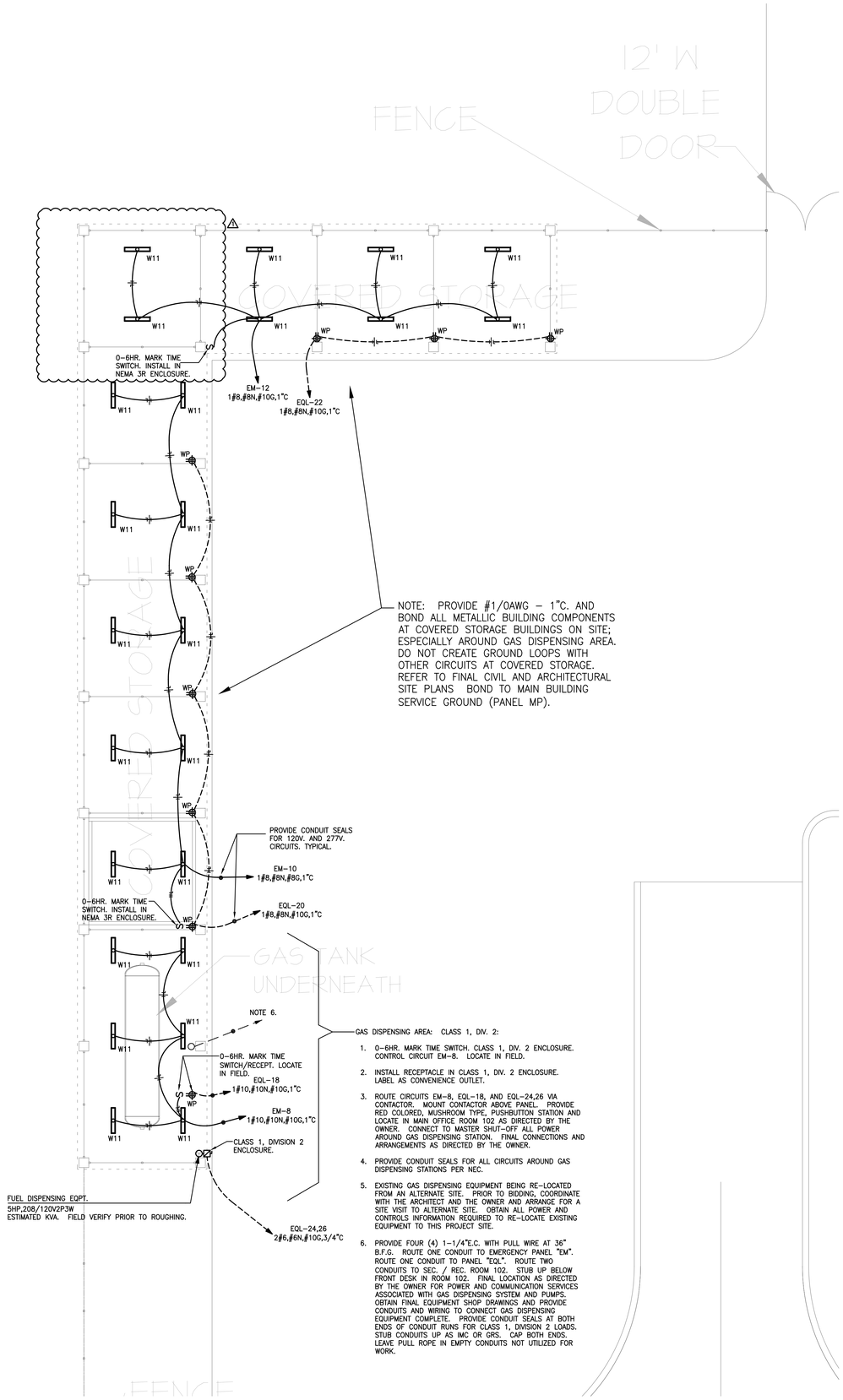
DATE: 04/30/2019

SHEET TITLE: ELECTRICAL SITE PLAN

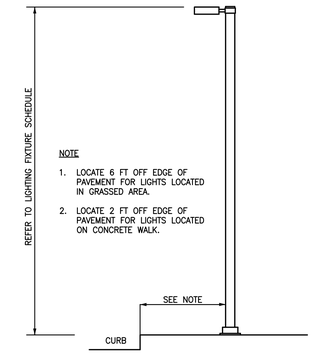
ADDENDUM 2 C19009

sims group
SIMS GROUP ENGINEERS, INC.
800 Columbiana Drive, Suite 208
Irmo, South Carolina 29063
Phone: (803) 765-1007 Fax: (803) 765-1030
www.simsgroupusa.com

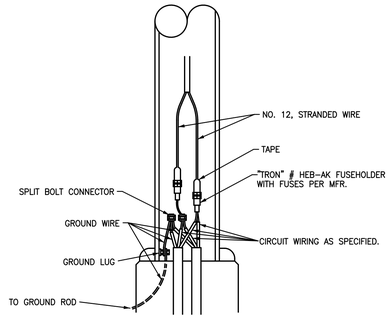
SHEET NO: E002



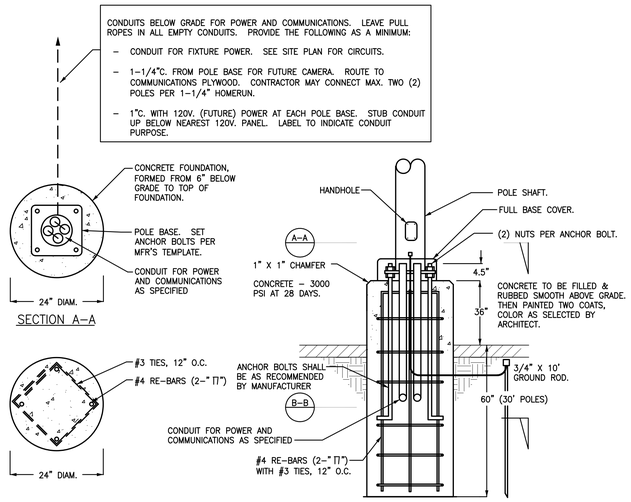
1 ENLARGED GAS PUMP PLAN
SCALE: 1/8"=1'-0"



4 30' LIGHT STANDARD ELEVATIONS
NOT TO SCALE



3 TYPICAL DETAIL OF CONDUCTOR CONNECTIONS
NOT TO SCALE



2 LIGHT POLE FOUNDATION DETAIL
NOT TO SCALE

Jumper
Carter
Sease
ARCHITECTS

412 Meeting Street
West Columbia
South Carolina

SOUTH CAROLINA
SIMS GROUP ENGINEERS, INC.
No. C03104
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
No. 21972
6/11/19
BENNY L. McDANIEL, SR.

USC AIKEN MAINTENANCE FACILITY
UNIVERSITY OF SOUTH CAROLINA
AIKEN, SC

H29-9552/50003331-2

No	Description	Date
2	ADDENDUM 2	06/11/2019

DRAWN BY:

CHECKED BY:

COMM NO: 18103

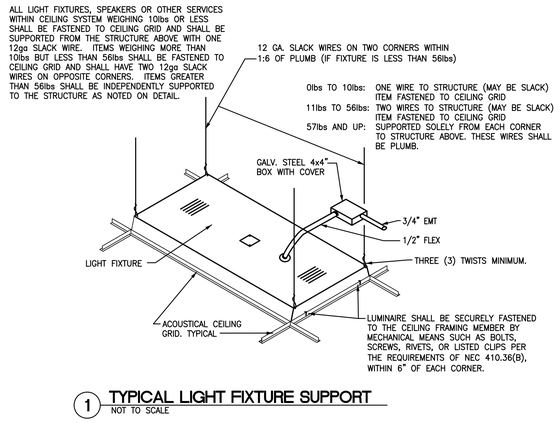
DATE: 04/30/2019

SHEET TITLE: ENLARGED GAS PUMP PLAN AND DETAILS

ADDENDUM 2 C19009

sims group
SIMS GROUP ENGINEERS, INC.
800 Columbiana Drive, Suite 208
Irmo, South Carolina 29063
Phone: (803) 765-1007 Fax: (803) 765-1030
www.simsgroupusa.com

SHEET NO: E003



1 **TYPICAL LIGHT FIXTURE SUPPORT**
NOT TO SCALE

LIGHTING FIXTURE SCHEDULE

TYPE	SYMBOL	LAMP	DESCRIPTION	MODEL	WATTS	VOLTS	NOTE 1
A40		(1) LED	2x4 SPEC GRADE RECESSED LED FIXTURE WITH 0-10V DIMMING CAPABILITY AND THE FOLLOWING MINIMUM CRITERIA: 4000 LUMEN OUTPUT, 125LPW, 80CRI, 4000K.	WILLIAMS LT-24-L40/840-AF-EQCLIPS-DIM-UNV OR EQUIVALENT OF LITHONIA 2BLT4 SERIES OR METALUX CRUZE SERIES	32	277V 1P 2W	
A47		(1) LED	2x4 SPEC GRADE RECESSED LED FIXTURE WITH 0-10V DIMMING CAPABILITY AND THE FOLLOWING MINIMUM CRITERIA: 4700 LUMEN OUTPUT, 115LPW, 80CRI, 4000K.	FIDELUX FFP24-38W-40-UNV-D OR EQUIVALENT OF LITHONIA EPANL SERIES, METALUX 24FP SERIES, OR COLUMBIA CFP SERIES	38	277V 1P 2W	WIRE FOR 0-10V DIMMING WHERE NOTED.
A50		(1) LED	2x4 SPEC GRADE RECESSED LED FIXTURE WITH 0-10V DIMMING CAPABILITY AND THE FOLLOWING MINIMUM CRITERIA: 5000 LUMEN OUTPUT, 125LPW, 80CRI, 4000K.	WILLIAMS LT-24-L52/840-AF-EQCLIPS-DIM-UNV OR EQUIVALENT OF LITHONIA 2BLT4 SERIES OR METALUX CRUZE SERIES	38	277V 1P 2W	
B27		(1) LED	2x2 SPEC GRADE RECESSED LED FIXTURE WITH 0-10V DIMMING CAPABILITY AND THE FOLLOWING MINIMUM CRITERIA: 2700 LUMEN OUTPUT, 125LPW, 80CRI, 4000K.	WILLIAMS LT-22-L27/840-AF-EQCLIPS-DIM-UNV OR EQUIVALENT OF LITHONIA 2BLT2 SERIES OR METALUX CRUZE SERIES	21	277V 1P 2W	
C		(1)	HI-BAY LED WAREHOUSE LIGHTING	CREE HXB-B-UV-35L-M-40K-8-UL-SV OR EQUAL.	276	277V 1P 2W	
DWET		(1) LED	VANDAL RESISTANT LENSED DOWNLIGHT WET LOCATION LISTED FOR COVERED CEILINGS.	KENALL HRDL6L-19L-40K8-DV-DCC-CC(SILVER)-CSS-TTG, OR EQUIVALENT OF GOTHAM EVO-VR SERIES OR FAILSAFE FFLD6A SERIES.	19	277V 1P 2W	SILVER OR ALUMINUM TRIM FINISH.
EM1		(2) LED	WALL MOUNTED EMERGENCY BATTERY LIGHT WITH WITH WHITE THERMOPLASTIC HOUSING, NICAD BATTERY BACKUP, 1W LED HEADS, SELF DIAGNOSTICS.	EMERGILITE EL-2LED, LITHONIA ELM2-LED-SD, SURELITES APEL, OR ACCEPTABLE EQUIVALENT OF CHLORIDE, LIGHTALARMS, OR DUALLITE	2	MULTIPLE	PROVIDE WITH SELF-TESTING DIAGNOSTICS.
F55		(1) LED	4-FOOT SPEC GRADE SURFACE LED FIXTURE WITH THE FOLLOWING MINIMUM CRITERIA: 5500 LUMEN OUTPUT, 125LPW, 80CRI, 4000K.	WILLIAMS 75R-4-L50/840-DRV-UNV OR EQUIVALENT OF LITHONIA ZL1D SERIES OR METALUX SNLED SERIES	44	277V 1P 2W	
W10		(1) LED	FULL CUTOFF WALL MOUNTED LED FIXTURE WITH ALUMINUM HOUSING, INTEGRAL SURGE PROTECTION, IP65 RATING, AND THE FOLLOWING MINIMUM CRITERIA: 1700 LUMEN OUTPUT, 90LPW, 80CRI, 4000K.	WILLIAMS VWMH-L17/840-XX-XYZ-SDGL-SP10-DIM-UNV OR EQUIVALENT OF LITHONIA WST-LED, EATON, OR HUBBELL. PROVIDE HOUSING TO MATCH FIXTURE W10E. FORWARD THROW LIGHTING DISTRIBUTION.	16	277V 1P 2W	XYZ=STANDARD COLOR AS SELECTED BY ARCHITECT (BLACK, BRONZE, GRAY, SILVER, WHITE). REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING, FIELD VERIFY WITH ARCHITECT PRIOR TO ROUGH-IN.
W10E		(1) LED	FULL CUTOFF WALL MOUNTED LED FIXTURE WITH ALUMINUM HOUSING, INTEGRAL SURGE PROTECTION, IP65 RATING, AND THE FOLLOWING MINIMUM CRITERIA: 1000 LUMEN OUTPUT, 100LPW, 80CRI, 4000K. PROVIDE FIXTURE WITH EMERGENCY BATTERY BACKUP. COLD WEATHER RATED. 90 MIN. RATING. CONTRACTOR MAY PROVIDE REMOTE BATTERY BACKUP AT HIS OPTION. LOCATE ABOVE LAY-IN TILE CEILINGS. DESIGN INTENT IS FOR THE HOUSING OF FIXTURES W10 AND W10E TO MATCH.	WILLIAMS VWMH-L10/840-XX-XYZ-SDGL-SP10-DIM-UNV OR EQUIVALENT OF LITHONIA WST-LED, EATON, OR HUBBELL FORWARD THROW LIGHTING DISTRIBUTION.	13	277V 1P 2W	XYZ=STANDARD COLOR AS SELECTED BY ARCHITECT (BLACK, BRONZE, GRAY, SILVER, WHITE). REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING, FIELD VERIFY WITH ARCHITECT PRIOR TO ROUGH-IN.
W11		(1) LED	4-FOOT OUTDOOR, CLASS 1, DIVISION 2 RATED, SURFACE LED FIXTURE. COLD WEATHER RATED LED DRIVER.	HUBBELL HEM-40-HL-RFP-E-SSL-277V. OR APPROVED EQUAL.	52	277V 1P 2W	SURFACE-CEILING
X1C		(1) LED	CEILING MOUNT SINGLE FACE LED EXIT SIGN WITH EVEN ILLUMINATION RED DIFFUSER, WHITE THERMOPLASTIC HOUSING. PROVIDE BATTERY BACKUP.	EMERGILITE ELXN400-RN SERIES LITHONIA LHQM-S-W-3-R-120/277 SERIES SURELITES LPXC SERIES	2	MULTIPLE	SURFACE-CEILING. PROVIDE WITH SELF-TESTING DIAGNOSTICS.
X1W		(1) LED	FLAT WALL MOUNTED SINGLE FACE LED EXIT SIGN WITH EVEN ILLUMINATION RED DIFFUSER, WHITE THERMOPLASTIC HOUSING. PROVIDE BATTERY BACKUP.	MATCH X1C. ADJUST CATALOG NUMBERS FOR FLAT WALL MOUNTED EXIT	2	MULTIPLE	PROVIDE WITH SELF-TESTING DIAGNOSTICS.
Y2-30		(1) LED	30' ROUND TAPERED ALUMINUM POLE WITH (1) SPEC GRADE LED LUMINAIRE WITH DIE-CAST ALUMINUM HOUSING, UNIFORM TYPE II DISTRIBUTION, CLASS 1 DRIVER WITH 10KV SURGE PROTECTION, AND THE FOLLOWING MINIMUM CRITERIA: 21,000 LUMEN OUTPUT, 120PW, 70CRI, 4000K, 95% LUMEN MAINTENANCE AT 50,000 HOURS (25° C), 5 YEAR WARRANTY, IP65 RATING.	US ARCHITECTURAL RAZAR RZR-PLED-II-80LED-700mA-NW-277-XX-MS-F211 ON 30-FOOT RTA POLE WITH 4-BOLT BASE OR EQUIVALENT OF LITHONIA D-SERIES, CREE OSQ SERIES, MCGRAW-EDISON GLEON SERIES, OR KIM ALTITUDE SERIES	174	277V 1P 2W	MOUNT ON ROUND CONCRETE BASE, SEE DETAIL ON DRAWINGS. FIXTURE TO INCLUDE ARM, HUB, AND ALL OTHER NECESSARY MOUNTING HARDWARE.

OCCUPANCY SENSOR NOTES:

MANUFACTURER: PRODUCTS SUPPLIED SHALL BE FROM A SINGLE MANUFACTURING THAT HAS BEEN CONTINUOUSLY INVOLVED IN THE MANUFACTURING OF OCCUPANCY SENSORS FOR A MINIMUM OF FIVE (5) YEARS. MIXING OF MANUFACTURERS SHALL NOT BE ALLOWED. FURNISH AND INSTALL SENSORS AS MANUFACTURED BY WATTSTOPPER, OR SENSOR SWITCH (ACUITY).

WARRANTY: ALL COMPONENTS SHALL BE U.L. LISTED, OFFER A MINIMUM 5-YEAR WARRANTY AND MEET ALL STATE AND LOCAL APPLICABLE CODE REQUIREMENTS. CONTRACTOR SHALL WARRANT ALL EQUIPMENT FURNISHED IN ACCORDANCE TO THIS SPECIFICATION TO BE UNDAMAGED, FREE OF DEFECTS IN MATERIALS AND WORKMANSHIP, AND IN CONFORMANCE WITH THE SPECIFICATIONS. THE SUPPLIER'S OBLIGATION SHALL INCLUDE REPAIR OR REPLACEMENT, AND TESTING WITHOUT CHARGE TO THE OWNER, ALL OR ANY PARTS OF EQUIPMENT WHICH ARE FOUND TO BE DAMAGED, DEFECTIVE OR NON-CONFORMING AND RETURNED TO THE SUPPLIER. THE WARRANTY SHALL COMMENCE UPON THE OWNER'S ACCEPTANCE OF THE PROJECT. WARRANTY ON LABOR SHALL BE FOR A MINIMUM PERIOD OF 1-YEAR.

SUBMITTALS AND DOCUMENTATION: MANUFACTURER SHALL SUBSTANTIATE CONFORMANCE TO THIS SPECIFICATION BY SUPPLYING THE NECESSARY DOCUMENTS, PERFORMANCE DATA AND WIRING DIAGRAMS. SUBMIT A LIGHTING PLAN CLEARLY MARKED BY MANUFACTURER SHOWING PROPER PRODUCT, LOCATION, WIRING, AND ORIENTATION OF EACH SENSOR. SUBMIT STANDARD CATALOG LITERATURE WHICH INCLUDES PERFORMANCE SPECIFICATIONS INDICATING COMPLIANCE TO THE SPECIFICATION.

THE CONTRACT DOCUMENTS ARE DIAGRAMMATIC AND ONLY ESTABLISH THE MINIMUM NUMBER AND TYPE OF SENSOR REQUIRED IN EACH SPACE. THE CONTRACTOR SHALL FURNISH ADDITIONAL SENSORS AS NECESSARY TO PROVIDE THE REQUIRED COVERAGE. THE CONTRACTOR MAY NOT REDUCE THE NUMBER OF SENSORS IN A SPACE OR CHANGE THE SENSOR TYPE IN A SPACE WITHOUT WRITTEN PERMISSION FROM THE ENGINEER AND THE OWNER. IN ORDER TO PROVIDE COVERAGE FOR THE CONTROLLED AREA AND ACCOMMODATE ALL OWNER OCCUPANCY REQUIREMENTS, ALL ROOMS/SPACES SHALL HAVE BETWEEN NINETY (90) AND ONE HUNDRED (100) PERCENT COVERAGE.

LAYOUT OF OCCUPANCY SENSORS ON THE CONTRACT DOCUMENTS REPRESENTS THE BASIS OF DESIGN. THE OCCUPANCY SENSOR SUPPLIER SHALL FURNISH SHOP DRAWINGS AND PRINTED MATERIAL INDICATING LAYOUT OF SENSORS, RACEWAY, AND WIRING REQUIRED TO CONTROL THE LIGHTING INDICATED. NO CHANGE ORDER WILL BE ALLOWED FOR ADDITIONAL SENSORS, RACEWAY, WIRING, POWER SUPPLIES, SATELLITE RELAYS, ETC., REQUIRED ON SHOP DRAWINGS BY THE OCCUPANCY SENSOR SUPPLIER. WHERE POWER SUPPLIES ARE REQUIRED FOR OPERATION OF THE OCCUPANCY SENSORS, BUT ARE NOT SHOWN ON THE LIGHTING PLANS, THE POWER SUPPLIES MUST BE INCLUDED AS PART OF THE BASE BID FOR THIS PROJECT. SEE OCCUPANCY SENSOR DETAILS THIS SHEET.

INSTALLATION: IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND AIM SENSORS IN THE CORRECT LOCATION REQUIRED FOR COMPLETE AND PROPER VOLUMETRIC COVERAGE WITHIN THE RANGE OF COVERAGE(S) OF CONTROLLED AREAS PER THE MANUFACTURER'S RECOMMENDATIONS. PROPER JUDGMENT MUST BE EXERCISED IN EXECUTING THE INSTALLATION SO AS TO ENSURE THE BEST POSSIBLE INSTALLATION IN THE AVAILABLE SPACE AND TO OVERCOME LOCAL DIFFICULTIES DUE TO SPACE LIMITATIONS OR INTERFERENCE OF STRUCTURAL COMPONENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ALL PROPER ADJUSTMENTS TO ASSURE OWNER'S SATISFACTION WITH THE OCCUPANCY SYSTEM. PROVIDE ALL POWER PACKS AND MOUNTING HARDWARE NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.

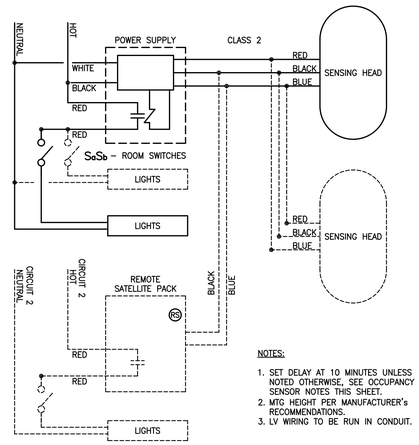
RACEWAYS: ALL LOW VOLTAGE WIRING FOR OCCUPANCY SENSORS SHALL BE RUN IN METAL CONDUIT. SEE DETAIL FOR MOUNTING OF OCCUPANCY SENSOR POWER SUPPLIES

OCCUPANCY SENSOR TIME DELAY SETTINGS: RECOMMENDED DELAY FOR OCCUPANCY SENSORS IS 20 MINUTES. FIELD VERIFY DELAY SETTINGS FOR OCCUPANCY SENSORS WITH THE OWNER PRIOR TO FINAL SETUP (BETWEEN 30 SECONDS AND 30 MINUTES).

DUAL TECHNOLOGY SENSORS: SET TRIGGER FOR DUAL TECHNOLOGY SENSORS SO BOTH TECHNOLOGIES ARE REQUIRED TO TRIGGER ON, EITHER TECHNOLOGY IS REQUIRED TO HOLD ON, AND EITHER TECHNOLOGY IS REQUIRED TO RETRIGGER ON (5 SECOND DURATION).

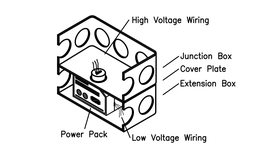
VERIFICATION AND TRAINING: IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL PROPER ADJUSTMENTS AND TRAIN OWNER'S PERSONNEL TO ENSURE OWNERS SATISFACTION WITH THE OCCUPANCY SYSTEM. THIS SERVICE SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER OR THE ARCHITECT/ENGINEER. SEE SPECIFICATIONS THIS SHEET FOR ADDITIONAL INFORMATION.

FINAL REVIEW: A FINAL REVIEW OF THE ELECTRICAL INSTALLATION BY THE ENGINEER CANNOT BE PROVIDED UNTIL THE OCCUPANCY SENSOR INSTALLATION AND THE SENSOR SETTINGS HAVE BEEN PROPERLY VERIFIED BY THE CONTRACTOR.

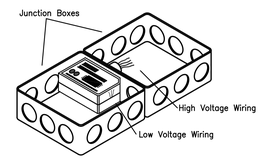


NOTES:
1. SET DELAY AT 10 MINUTES UNLESS NOTED OTHERWISE, SEE OCCUPANCY SENSOR NOTES THIS SHEET.
2. MTG HEIGHT PER MANUFACTURER'S RECOMMENDATIONS.
3. LV WIRING TO BE RUN IN CONDUIT.

2 **LOW VOLTAGE CEILING AND WALL MOUNTED OCCUPANCY SENSOR DETAIL**
NOT TO SCALE



STACKED JUNCTION BOXES



SIDE BY SIDE JUNCTION BOXES

NOTE: DO NOT MOUNT POWER PACKS CLOSER THAN 6-12 INCHES FROM SENSOR.

3 **OCCUPANCY SENSOR POWER PACK INSTALLATION DETAIL**
NOT TO SCALE

Jumper
Carter
Sease

ARCHITECTS

412 Meeting Street
West Columbia
South Carolina

SOUTH CAROLINA SIMS GROUP ENGINEERS, INC. No. C03104 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 21972 4/30/19 BENNY McDANIEL, JR.

USC AIKEN MAINTENANCE FACILITY
UNIVERSITY OF SOUTH CAROLINA
AIKEN, SC

H29-9552/50003331-2

No	Description	Date
1	ADDENDUM NO.2	6/11/19

DRAWN BY:

CHECKED BY:

COMM NO: 18103

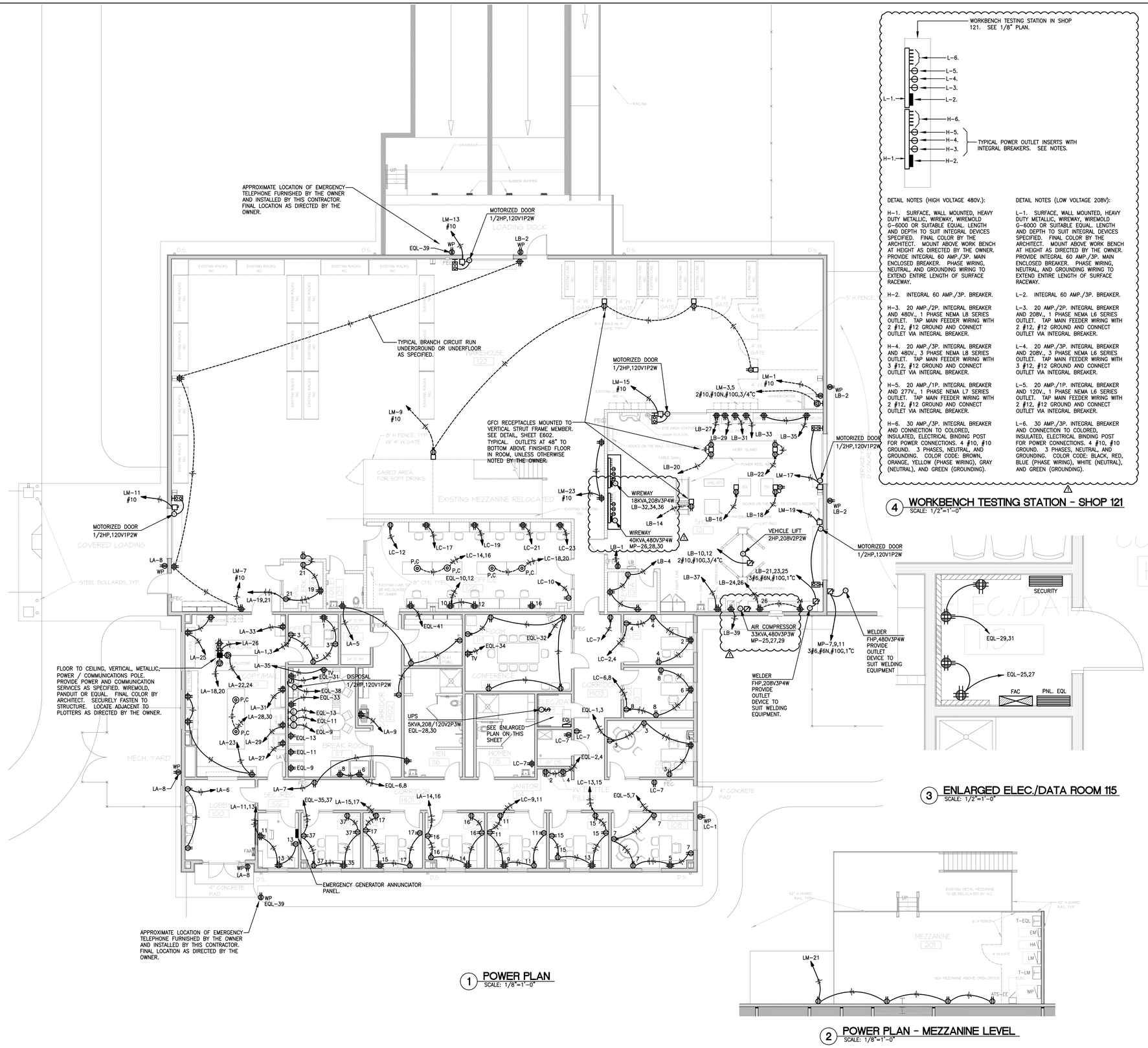
DATE: 04/30/2019

SHEET TITLE: LIGHTING FIXTURE SCHEDULE AND DETAILS

BID SET C19009

sims group
SIMS GROUP ENGINEERS, INC.
800 Columbiana Drive, Suite 208
Irmo, South Carolina 29063
Phone: (803) 765-1007 Fax: (803) 765-1030
www.simsgroupusa.com

SHEET NO: E102



1 POWER PLAN
SCALE: 1/8"=1'-0"

2 POWER PLAN - MEZZANINE LEVEL
SCALE: 1/8"=1'-0"

3 ENLARGED ELEC./DATA ROOM 115
SCALE: 1/2"=1'-0"

4 WORKBENCH TESTING STATION - SHOP 121
SCALE: 1/2"=1'-0"

DETAIL NOTES (HIGH VOLTAGE 480V.):

H-1. SURFACE, WALL MOUNTED, HEAVY DUTY METALLIC, WIREWAY, WIREMOLD G-6000 OR SUITABLE EQUAL. LENGTH AND DEPTH TO SUIT INTEGRAL DEVICES SPECIFIED. FINAL COLOR BY THE ARCHITECT. MOUNT ABOVE WORK BENCH AT HEIGHT AS DIRECTED BY THE OWNER. PROVIDE INTEGRAL 60 AMP./3P. MAIN ENCLOSED BREAKER. PHASE WIRING, NEUTRAL, AND GROUNDING WIRING TO EXTEND ENTIRE LENGTH OF SURFACE RACEWAY.

H-2. INTEGRAL 60 AMP./3P. BREAKER.

H-3. 20 AMP./2P. INTEGRAL BREAKER AND 480V., 1 PHASE NEMA L8 SERIES OUTLET. TAP MAIN FEEDER WIRING WITH 2 #12, #12 GROUND AND CONNECT OUTLET VIA INTEGRAL BREAKER.

H-4. 20 AMP./3P. INTEGRAL BREAKER AND 480V., 3 PHASE NEMA L8 SERIES OUTLET. TAP MAIN FEEDER WIRING WITH 3 #12, #12 GROUND AND CONNECT OUTLET VIA INTEGRAL BREAKER.

H-5. 20 AMP./1P. INTEGRAL BREAKER AND 277V., 1 PHASE NEMA L7 SERIES OUTLET. TAP MAIN FEEDER WIRING WITH 2 #12, #12 GROUND AND CONNECT OUTLET VIA INTEGRAL BREAKER.

H-6. 30 AMP./3P. INTEGRAL BREAKER AND CONNECTION TO COLORED, INSULATED, ELECTRICAL BINDING POST FOR POWER CONNECTIONS. 4 #10, #10 GROUND. 3 PHASES, NEUTRAL, AND GROUNDING. COLOR CODE: BROWN, ORANGE, YELLOW (PHASE WIRING), GRAY (NEUTRAL), AND GREEN (GROUNDING).

DETAIL NOTES (LOW VOLTAGE 208V):

L-1. SURFACE, WALL MOUNTED, HEAVY DUTY METALLIC, WIREWAY, WIREMOLD G-6000 OR SUITABLE EQUAL. LENGTH AND DEPTH TO SUIT INTEGRAL DEVICES SPECIFIED. FINAL COLOR BY THE ARCHITECT. MOUNT ABOVE WORK BENCH AT HEIGHT AS DIRECTED BY THE OWNER. PROVIDE INTEGRAL 60 AMP./3P. MAIN ENCLOSED BREAKER. PHASE WIRING, NEUTRAL, AND GROUNDING WIRING TO EXTEND ENTIRE LENGTH OF SURFACE RACEWAY.

L-2. INTEGRAL 60 AMP./3P. BREAKER.

L-3. 20 AMP./2P. INTEGRAL BREAKER AND 208V., 1 PHASE NEMA L6 SERIES OUTLET. TAP MAIN FEEDER WIRING WITH 2 #12, #12 GROUND AND CONNECT OUTLET VIA INTEGRAL BREAKER.

L-4. 20 AMP./3P. INTEGRAL BREAKER AND 208V., 3 PHASE NEMA L6 SERIES OUTLET. TAP MAIN FEEDER WIRING WITH 3 #12, #12 GROUND AND CONNECT OUTLET VIA INTEGRAL BREAKER.

L-5. 20 AMP./1P. INTEGRAL BREAKER AND 120V., 1 PHASE NEMA L6 SERIES OUTLET. TAP MAIN FEEDER WIRING WITH 2 #12, #12 GROUND AND CONNECT OUTLET VIA INTEGRAL BREAKER.

L-6. 30 AMP./3P. INTEGRAL BREAKER AND CONNECTION TO COLORED, INSULATED, ELECTRICAL BINDING POST FOR POWER CONNECTIONS. 4 #10, #10 GROUND. 3 PHASES, NEUTRAL, AND GROUNDING. COLOR CODE: BLACK, RED, BLUE (PHASE WIRING), WHITE (NEUTRAL), AND GREEN (GROUNDING).

Jumper

Carter

Sease

ARCHITECTS

412 Meeting Street
West Columbia
South Carolina

SOUTH CAROLINA
SIMS GROUP ENGINEERS, INC.
No. C03104
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
No. 21972
6/11/19
BENNY L. MCDANIEL, JR.

USC AIKEN MAINTENANCE FACILITY
UNIVERSITY OF SOUTH CAROLINA
AIKEN, SC

H29-9552/50003331-2

No	Description	Date
2	ADDENDUM 2	06/11/2019

DRAWN BY:

CHECKED BY:

COMM NO: 18103

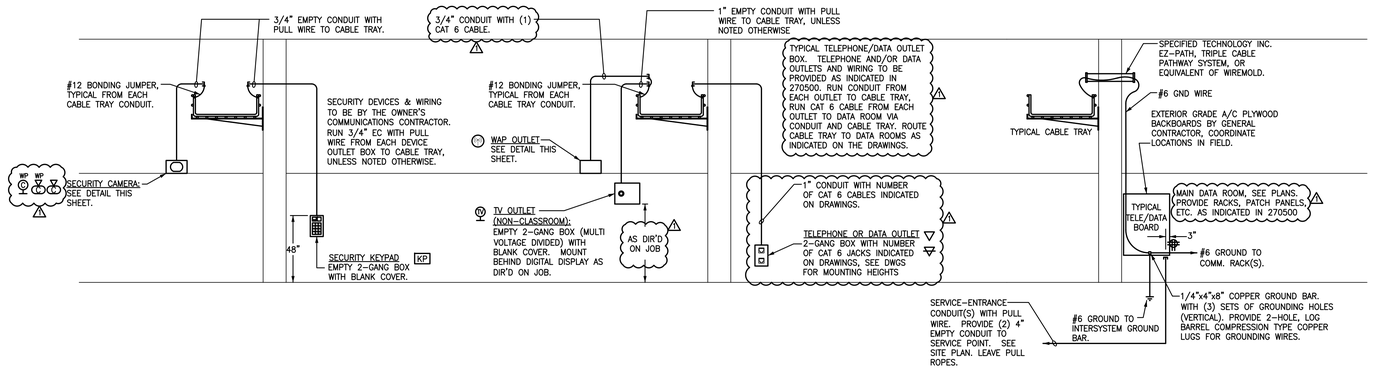
DATE: 04/30/2019

SHEET TITLE: POWER PLAN

ADDENDUM 2 C19009

sims group
SIMS GROUP ENGINEERS, INC.
800 Columbiana Drive, Suite 208
Irmo, South Carolina 29063
Phone: (803) 765-1007 Fax: (803) 765-1030
www.simsgroupusa.com

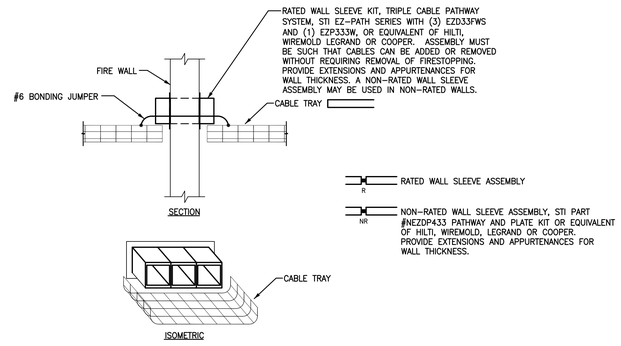
SHEET NO: E201



6 TYPICAL SECURITY DEVICE DETAIL
NOT TO SCALE

7 TYPICAL COMMUNICATIONS OUTLET DETAIL
NOT TO SCALE

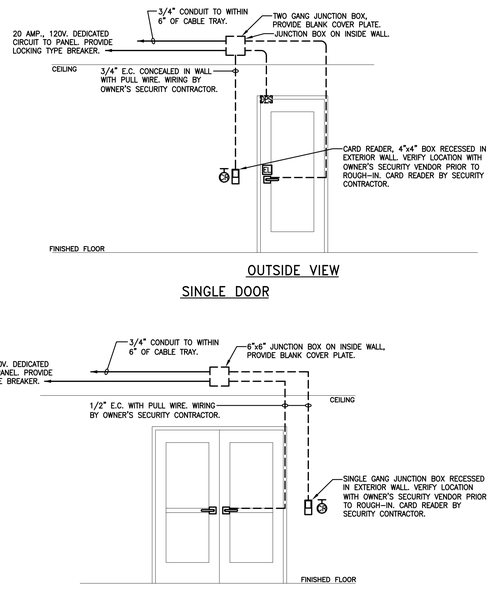
8 TYPICAL CABLE TRAY RISER DIAGRAM FOR IDF, MDF, AND OTHER TELE/DATA ROOMS
NOT TO SCALE



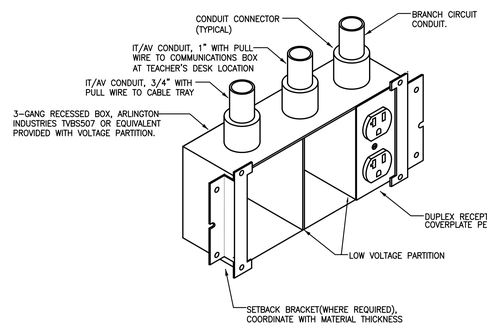
9 CABLE TRAY FIRE STOPPING DETAIL
NOT TO SCALE

NOTES:

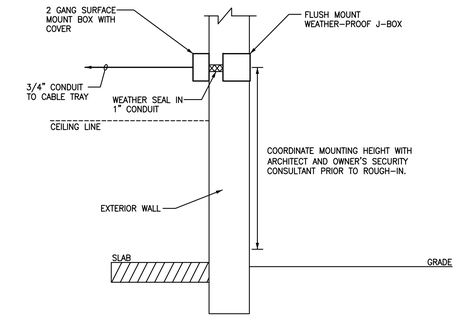
1. COORDINATE ALL REQUIREMENTS WITH SECURITY CONTRACTOR AND DOOR HARDWARE PROVIDER PRIOR TO ROUGH-IN.
2. LOCATE THE DOOR JUNCTION BOX IN AN ACCESSIBLE LOCATION. WHERE THE CEILING ADJACENT TO THE DOOR IS IN-ACCESSIBLE, LOCATE THE BOX ABOVE THE CEILING IN THE NEAREST ADJACENT SPACE WITH ACCESSIBILITY.
3. 4x4x2-1/4" SINGLE-GANG ELECTRICAL BOXES FITTED WITH 2x4 PLASTER RINGS WILL BE PROVIDED FOR ALL CARD READER LOCATIONS. MOUNTING HEIGHT SHALL BE CENTERED ON THE DOOR LEVER SET. 3/4" CONDUIT SHALL TERMINATE ABOVE THE CEILING AT AN ACCESSIBLE LOCATION. EXTERIOR MOUNTED CARD READERS SHALL BE MOUNTED FLUSH WITH THE BUILDING EXTERIOR SURFACE.
4. ACCESS CONTROLLED DOORS SHALL HAVE THEIR DOORFRAMES FITTED WITH 1/2" CONDUIT FOR THE ELECTRIC STRIKE WIRING AFTER THE FRAME IS SET, PRIOR TO FINISHING THE ADJOINING WALL. THE CONDUIT SHALL BE CONCEALED WITHIN THE DOORFRAME TO PROVIDE A WIREWAY FROM THE STRIKE CUT OUT TO AN ACCESSIBLE LOCATION ABOVE THE CEILING.
5. EMERGENCY EGRESS DOORS SHALL FAIL SAFE IN THE OPEN POSITION UPON ALARM OR POWER FAILURE.
6. ALL CONDUITS TO HAVE PULL WIRE.



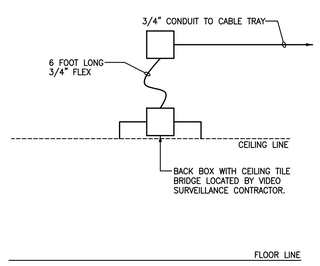
2 ACCESS CONTROL SYSTEM DOOR DETAIL
NOT TO SCALE



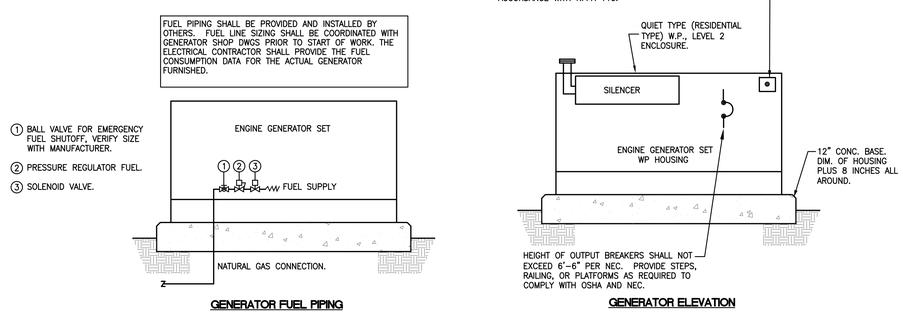
3 INTERACTIVE TELEVISION LOCATION IT/POWER BACKBOX
NOT TO SCALE



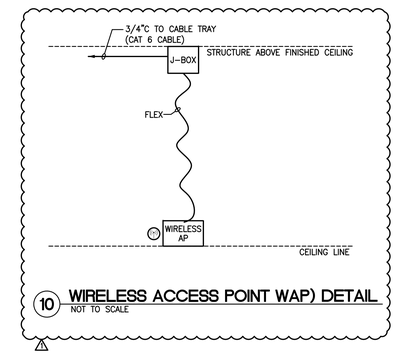
4 EXTERIOR WALL MOUNTED SECURITY CAMERA
NOT TO SCALE



5 TYPICAL SECURITY CAMERA LOCATION (LAY-IN CEILING)
NOT TO SCALE



1 GENERATOR DETAILS - NATURAL GAS
NOT TO SCALE



10 WIRELESS ACCESS POINT WAP) DETAIL
NOT TO SCALE

Jumper Carter Sease
ARCHITECTS
412 Meeting Street
West Columbia
South Carolina

SOUTH CAROLINA SIMS GROUP ENGINEERS, INC. No. C03104 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 21972 6/11/19 BENNY MCDANIEL JR.

USC AIKEN MAINTENANCE FACILITY
UNIVERSITY OF SOUTH CAROLINA
AIKEN, SC

H29-9552/50003331-2

No	Description	Date
2	ADDENDUM 2	06/11/2019

DRAWN BY:

CHECKED BY:

COMM NO: 18103

DATE: 04/30/2019

SHEET TITLE: ELECTRICAL DETAILS

ADDENDUM 2 C19009

sims group
SIMS GROUP ENGINEERS, INC.
800 Columbiana Drive, Suite 208
Irmo, South Carolina 29063
Phone: (803) 765-1007 Fax: (803) 765-1030
www.simsgroupusa.com

SHEET NO: E603

MP

ROOM
MOUNTING SURFACE
FED FROM SERVICE TRANSFORMER
NOTE
VOLTS 480Y/277V 3P 4W
BUS AMPS 600
NEUTRAL 100%
AIC 42,000
MAIN BKR 600
LUGS STANDARD

CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	200/3	77.50	PANEL HA	a	2	30/3	0.00	SPD DEVICE
3	|			b	4	|		
5	|			c	6	|		
7	50/3	14.10	WELDER	a	8	225/3	137.08	XFMR T-LM
9	|			b	10	|		
11	|			c	12	|		
13	125/3	57.87	TRANSFER SWITCH ATS-EE	a	14	150/3	0.00	SPARE
15	|			b	16	|		
17	|			c	18	|		
19	200/3	0.00	SPARE	a	20	200/3	0.00	SPARE
21	|			b	22	|		
23	|			c	24	|		
25	50/3	33.00	AIR COMPRESSOR	a	26	60/3	40.00	WIREWAY
27	|			b	28	|		
29	|			c	30	|		
31	20/1	0.00	SPARE	a	32	20/1	0.00	SPARE
33	20/1	0.00	SPARE	b	34	20/1	0.00	SPARE
35	20/1	0.00	SPARE	c	36	20/1	0.00	SPARE
37	20/1	0.00	SPARE	a	38	20/1	0.00	SPARE
39	20/1	0.00	SPARE	b	40	20/1	0.00	SPARE
41	20/1	0.00	SPARE	c	42	20/1	0.00	SPARE

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	15.85	19.81	(125%)	RECEPTACLES	135.44	72.72	(50%>10)
LARGEST MOTOR	46.00	11.50	(25%)	NONCONTINUOUS	33.00	33.00	(100%)
MOTORS	97.76	97.76	(100%)	HEATING	77.50	77.50	(100%)
				COOLING	46.00	0.00	(0%)
				TOTAL LOAD		312.29	
				BALANCED 3-PHASE AMPS		375.62	
				PHASE A		98.1%	
				PHASE B		105%	
				PHASE C		96.8%	

NOTE: PROVIDE ELECTRONIC, ADJUSTABLE, TRIP BREAKERS FOR CIRCUITS MP-8,10,12, MP-13,15,17, MP-19,21,23, AND MP-20,22,24. BREAKER SETTINGS SHALL BE COORDINATED WITH PROTECTIVE DEVICE COORDINATION STUDY SPECIFIED ON POWER RISER DIAGRAM. SET BREAKERS FOR OPTIMUM SELECTIVITY. SET BREAKER MP-8,10,12 TO ALLOW FOR TRANSFORMER INRUSH CURRENTS.

HA

ROOM
MOUNTING SURFACE
FED FROM MP
NOTE
VOLTS 480Y/277V 3P 4W
BUS AMPS 200
NEUTRAL 100%
AIC 35,000
MAIN BKR 200
LUGS STANDARD

CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	30/3	14.50	VAV 1-1, VAV 1-2, VAV 1-3	a	2	20/1	0.00	SPARE
3	|			b	4	20/1	0.00	SPARE
5	|			c	6	20/1	0.00	SPARE
7	20/3	12.00	VAV 1-4, VAV 1-5, VAV 1-6	a	8	20/1	0.00	SPARE
9	|			b	10	20/1	0.00	SPARE
11	|			c	12	20/1	0.00	SPARE
13	20/3	5.00	VAV 1-7	a	14	20/1	0.00	SPARE
15	|			b	16	20/1	0.00	SPARE
17	|			c	18	20/1	0.00	SPARE
19	70/3	46.00	PAC-1	a	20	20/1	0.00	SPARE
21	|			b	22	20/1	0.00	SPARE
23	|			c	24	20/1	0.00	SPARE
25	20/1	0.00	SPARE	a	26	20/1	0.00	SPARE
27	20/1	0.00	SPARE	b	28	20/1	0.00	SPARE
29	20/1	0.00	SPARE	c	30	20/1	0.00	SPARE
31	20/1	0.00	SPARE	a	32	20/1	0.00	SPARE
33	20/1	0.00	SPARE	b	34	20/1	0.00	SPARE
35	20/1	0.00	SPARE	c	36	20/1	0.00	SPARE
37	20/1	0.00	SPARE	a	38	30/3	0.00	SPD DEVICE
39	20/1	0.00	SPARE	b	40	|		
41	20/1	0.00	SPARE	c	42	|		

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LARGEST MOTOR	46.00	11.50	(25%)	TOTAL LOAD		89.00	
HEATING	77.50	77.50	(100%)	BALANCED 3-PHASE AMPS		107.05	
COOLING	46.00	0.00	(0%)	PHASE A		100%	
				PHASE B		100%	
				PHASE C		100%	

ATS-EE

ROOM
MOUNTING SURFACE
FED FROM MP
UTILITY
NOTE
VOLTS 480Y/277V 3P 4W
SIZE 125
AIC 35,000

CKT #	BREAKER TRIP/POLES	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	FEEDER RACEWAY AND CONDUCTORS
1	125/3	PANEL EM	19.07	21.75	17.05	3#1/0,#1/0N,#6G,1-1/2"C
		TOTAL CONNECTED KVA BY PHASE	19.07	21.75	17.05	

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	15.85	19.81	(125%)	MOTORS	8.42	8.42	(100%)
LARGEST MOTOR	1.18	0.29	(25%)	RECEPTACLES	28.60	19.30	(50%>10)
				NONCONTINUOUS	5.00	5.00	(100%)
				TOTAL LOAD		52.82	
				BALANCED 3-PHASE AMPS		63.54	

T-EQL

ROOM
FED FROM EM
NOTE
PRIMARY VOLTS 480V 3P 3W
SECONDARY VOLTS 208Y/120V 3P 4W
AIC 10,000
KVA 45

CKT #	BREAKER TRIP/POLES	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	FEEDER RACEWAY AND CONDUCTORS
1	175/3	PANEL EQL	13.72	9.04	13.27	3#2/0,#2/0N,#4G,2"C
		TOTAL CONNECTED KVA BY PHASE	13.72	9.04	13.27	

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LARGEST MOTOR	1.18	0.29	(25%)	RECEPTACLES	22.60	16.30	(50%>10)
MOTORS	8.42	8.42	(100%)	NONCONTINUOUS	5.00	5.00	(100%)
				TOTAL LOAD		30.02	
				BALANCED 3-PHASE AMPS		83.32	

T-LM

ROOM
FED FROM MP
NOTE
PRIMARY VOLTS 480V 3P 3W
SECONDARY VOLTS 208Y/120V 3P 4W
AIC 22,000
KVA 150

CKT #	BREAKER TRIP/POLES	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	FEEDER RACEWAY AND CONDUCTORS
1	600/3	PANEL LM	48.99	49.73	38.35	(2)3#350kcmil,#350kcmil N,#2/0G,3"C
		TOTAL CONNECTED KVA BY PHASE	48.99	49.73	38.35	

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LARGEST MOTOR	36.00	9.00	(25%)	RECEPTACLES	66.84	38.42	(50%>10)
MOTORS	56.24	56.24	(100%)	NONCONTINUOUS	14.00	14.00	(100%)
				TOTAL LOAD		117.66	
				BALANCED 3-PHASE AMPS		326.58	

EM

ROOM
MOUNTING SURFACE
FED FROM ATS-EE
NOTE
VOLTS 480Y/277V 3P 4W
BUS AMPS 125
NEUTRAL 100%
AIC 35,000
MAIN BKR 125
LUGS STANDARD

CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	20/1	1.34	LIGHTING	a	2	20/1	1.04	LIGHTING
3	20/1	1.68	LIGHTING	b	4	20/1	0.70	LIGHTING
5	20/1	0.33	LIGHTING	c	6	20/1	1.04	LIGHTING
7	20/1	0.57	LIGHTING	a	8	20/1	0.31	EXTERIOR LIGHTING
9	30/1	4.78	LIGHTING	b	10	20/1	0.52	EXTERIOR LIGHTING
11	20/1	2.21	LIGHTING	c	12	20/1	0.31	EXTERIOR LIGHTING
13	20/3	6.00	WH-1	a	14	20/1	0.31	LIGHTING
15	|			b	16	20/1	0.70	LIGHTING
17	|			c	18	20/1	0.00	SPARE
19	20/1	0.00	SPARE	a	20	20/1	0.00	SPARE
21	20/1	0.00	SPARE	b	22	20/1	0.00	SPARE
23	20/1	0.00	SPARE	c	24	20/1	0.00	SPARE
25	20/1	0.00	SPARE	a	26	20/1	0.00	SPARE
27	20/1	0.00	SPARE	b	28	20/1	0.00	SPARE
29	20/1	0.00	SPARE	c	30	20/1	0.00	SPARE
31	20/1	0.00	SPARE	a	32	30/3	0.00	SPD DEVICE
33	20/1	0.00	SPARE	b	34	|		
35	20/1	0.00	SPARE	c	36	|		
37	20/1	0.00	SPARE	a	38	70/3	36.02	XFMR T-EQL
39	20/1	0.00	SPARE	b	40	|		
41	20/1	0.00	SPARE	c	42	|		

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	15.85	19.81	(125%)	MOTORS	8.42	8.42	(100%)
LARGEST MOTOR	1.18	0.29	(25%)	RECEPTACLES	28.60	19.30	(50%>10)
				NONCONTINUOUS	5.00	5.00	(100%)
				TOTAL LOAD		52.82	
				BALANCED 3-PHASE AMPS		63.54	
				PHASE A		98.7%	
				PHASE B		112%	
				PHASE C		88.9%	

NOTE TO PANEL "EM":

1. CIRCUIT 13,15 WATER HEATER. ROUTE CIRCUIT VIA OFF-TIME DELAY-ON CONTACTOR WITH ADJUSTABLE RELAY. UPON BUILDING LOSS OF POWER, ADJUST TIMING THAT LOAD WILL BE CONNECTED TO THE GENERATOR.
2. CIRCUITS 8,10,12 EXTERIOR LIGHTING. ROUTE CIRCUIT VIA OFF-TIME DELAY-ON CONTACTOR WITH ADJUSTABLE RELAY. UPON BUILDING LOSS OF POWER, ADJUST TIMING THAT LOAD WILL BE CONNECTED TO THE GENERATOR.

EQL

ROOM
MOUNTING SURFACE
FED FROM T-EQL
NOTE
VOLTS 208Y/120V 3P 4W
BUS AMPS 225
NEUTRAL 100%
AIC 10,000
MAIN BKR 175
LUGS DOUBLE
ISO GND BUS

CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	20/1	0.36	RECEPTACLE	a	2	20/1	0.50	EWC-GFCI
3	20/1	0.54	RECEPTACLE	b	4	20/1	0.50	EWC-GFCI
5	20/1	0.36	RECEPTACLE	c	6	20/1	0.18	RECEPTACLE
7	20/1	0.72	RECEPTACLE	a	8	20/1	0.18	RECEPTACLE
9	20/1	0.36	RECEPTACLE	b	10	20/1	0.36	RECEPTACLE
11	20/1	0.36	RECEPTACLE	c	12	20/1	0.36	RECEPTACLE
13	20/1	0.36	RECEPTACLE	a	14	20/1	0.00	SPARE
15	20/1	0.50	GENERATOR BATTERY CHARGER	b	16	20/1	0.36	RECEPTACLE
17	40/2	6.00	GENERATOR BLOCK HEATER (VERIFY CKT.)	c	18	20/1	1.18	RECEPTACLE
19	|			a	20	20/1	1.90	RECEPTACLE
21	20/1	0.50	GENERATOR RECEPTACLE	b	22	20/1	1.54	RECEPTACLE
23	20/1	0.36	RECEPTACLE	c	24	50/2	6.72	FUEL DISPENSING EQPT.
25	20/1	0.36	RECEPTACLE	a	26	|		
27	20/1	0.36	RECEPTACLE	b	28	30/2	5.00	COMMUNICATIONS RACK UPS
29	20/1	0.36	RECEPTACLE	c	30	|		
31	20/1	0.18	RECEPTACLE	a	32	20/1	0.90	RECEPTACLE
33	20/1	0.18	RECEPTACLE	b	34	20/1	0.18	RECEPTACLE
35	20/1	0.36	RECEPTACLE	c	36	20/1	0.53	RECIRC PUMP
37	20/1	0.72	RECEPTACLE	a	38	20/1	1.18	DISPOSAL
39	20/1	1.16	EMERGENCY TELEPHONE RECEPTACLE	b	40	20/1	0.00	SPARE
41	20/1	0.36	RECEPTACLE	c	42	20/1	0.00	SPARE
43	20/1	0.00	SPARE	a	44	20/1	0.00	SPARE
45	20/1	0.00	SPARE	b	46	100/3	0.00	SPARE
47	20/1	0.00	SPARE	c	48	|		
49	20/1	0.00	SPARE	a	50	|		

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LARGEST MOTOR	1.18	0.29	(25%)	RECEPTACLES	22.60	16.30	(50%>10)
MOTORS	8.42	8.42	(100%)	NONCONTINUOUS	5.00	5.00	(100%)
				TOTAL LOAD		30.02	
				BALANCED 3-PHASE AMPS		83.32	
				PHASE A		118%	
				PHASE B		74.6%	
				PHASE C		110%	

NOTE TO PANEL "EQL":

1. CIRCUIT 24,26 FUEL DISPENSING EQPT. ROUTE CIRCUIT VIA OFF-TIME DELAY-ON CONTACTOR WITH ADJUSTABLE RELAY. UPON BUILDING LOSS OF POWER, ADJUST TIMING THAT LOAD WILL BE CONNECTED TO THE GENERATOR.
2. CIRCUIT 28,30 COMMUNICATIONS RACK UPS. ROUTE CIRCUIT VIA OFF-TIME DELAY-ON CONTACTOR WITH ADJUSTABLE RELAY. UPON BUILDING LOSS OF POWER, ADJUST TIMING THAT LOAD WILL BE CONNECTED TO THE GENERATOR.

LM

ROOM
MOUNTING SURFACE
FED FROM T-LM
NOTE
VOLTS 208Y/120V 3P 4W
BUS AMPS 600
NEUTRAL 100%
AIC 22,000
MAIN BKR 600
LUGS DOUBLE
ISO GND BUS

CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	20/1	1.48	WASHER RECEPTACLE	a	2	25/2	36.00	SHP-1
3	30/2	4.98	DRYER RECEPTACLE	b	4	|		
5	|			c	6	20/1	0.00	SPARE
7	20/1	0.72	RECEPTACLE	a	8	20/1	0.00	SPARE
9	20/1	0.72	REC.-GFCI	b	10	20/1	0.00	SPARE
11	20/1	1.18	MOTORIZED DOOR	c	12	20/1	0.00	SPARE
13	20/1	1.18	MOTORIZED DOOR	a	14	20/1	0.00	SPARE
15	20/1	1.18	MOTORIZED DOOR	b	16	20/1	0.00	SPARE
17	20/1	1.18	MOTORIZED DOOR	c	18	20/1	0.00	SPARE
19	20/1	1.18	MOTORIZED DOOR	a	20	30/3	0.00	SPD DEVICE
21	20/1	0.72	RECEPTACLE	b	22	|		
23	20/1	0.36	RECEPTACLE	c	24	|		
25	20/1	0.00	SPARE	a	26	125/3	23.08	PANEL LA
27	20/1	0.00	SPARE	b	28	|		
29	20/1	0.00	SPARE	c	30	|		
31	20/1	0.00	SPARE	a	32	200/3	55.58	PANEL LB
33	20/1	0.00	SPARE	b	34	|		
35	20/1	0.00	SPARE	c	36	|		
37	125/3	0.00	SPARE	a	38	125/3	7.56	PANEL LC
39	|			b	40	|		
41	|			c	42	|		

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LARGEST MOTOR	36.00	9.00	(25%)	RECEPTACLES	66.84	38.42	(50%>10)
MOTORS	56.24	56.24	(100%)	NONCONTINUOUS	14.00	14.00	(100%)
				TOTAL LOAD		117.66	
				BALANCED 3-PHASE AMPS		326.58	
				PHASE A		108%	
				PHASE B		109%	
				PHASE C		83.2%	

LA

ROOM
MOUNTING FLUSH
FED FROM LM
NOTE
VOLTS 208Y/120V 3P 4W
BUS AMPS 125
NEUTRAL 100%
AIC 14,000
MAIN BKR MLO
LUGS STANDARD
ISO GND BUS

CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	20/1	0.36	RECEPTACLE	a	2	20/1	0.00	SPARE
3	20/1	0.54	RECEPTACLE	b	4	20/1	0.00	SPARE
5	20/1	0.72	RECEPTACLE	c	6	20/1	0.36	RECEPTACLE
7	20/1	0.36	RECEPTACLE	a	8	20/1	0.54	RECEPTACLE
9	20/1	0.36	RECEPTACLE	b	10	20/1	0.00	SPARE
11	20/1	0.36	RECEPTACLE	c	12	20/1	0.00	SPARE
13	20/1	0.54	RECEPTACLE	a	14	20/1	0.36	RECEPTACLE
15	20/1	0.36	RECEPTACLE	b	16	20/1	0.72	RECEPTACLE
17	20/1	0.72	RECEPTACLE	c	18	20/2	3.18	B&W PLOTTER RECEPTACLE
19	20/1	0.36	RECEPTACLE	a	20	|		
21	20/1	0.54	RECEPTACLE	b	22	20/2	3.18	COLOR PLOTTER RECEPTACLE
23	20/1	1.54	RECEPTACLE	c	24	|		
25	20/1	1.36	RECEPTACLE	a	26	20/1	1.36	RECEPTACLE
27	20/1	1.18	RECEPTACLE	b	28	20/1	0.18	RECEPTACLE
29	20/1	1.18	RECEPTACLE	c	30	20/1	0.18	RECEPTACLE
31	20/1	1.18	RECEPTACLE	a	32	20/1	0.00	SPARE
33	20/1	1.18	RECEPTACLE	b	34	20/1	0.00	SPARE
35	20/1	0.18	RECEPTACLE	c	36	20/1	0.00	SPARE
37	20/1	0.00	SPARE	a	38	20/1	0.00	SPARE
39	20/1	0.00	SPARE	b	40	20/1	0.00	SPARE
41	20/1	0.00	SPARE	c	42	20/1	0.00	SPARE

	CONN KVA	CALC KVA			CALC KVA
RECEPTACLES	23.08	16.54	(50%>10)	TOTAL LOAD	16.54
				BALANCED 3-PHASE AMPS	45.91
				PHASE A	104%
				PHASE B	86.8%
				PHASE C	109%

LB

ROOM
MOUNTING SURFACE
FED FROM LM
NOTE NEMA 12 ENCLOSURE.
VOLTS 208Y/120V 3P 4W
BUS AMPS 200
NEUTRAL 100%
AIC 14,000
MAIN BKR 200
LUGS FEEDTHRU
ISO GND BUS

CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	20/1	0.18	RECEPTACLE	a	2	20/1	0.54	RECEPTACLE
3	20/1	0.00	SPARE	b	4	20/1	0.54	RECEPTACLE
5	20/1	0.00	SPARE	c	6	50/1	2.88	EF-5
7	20/1	0.00	SPARE	a	8	20/1	0.00	SPARE
9	20/1	0.00	SPARE	b	10	30/2	2.88	VEHICLE LIFT
11	20/1	0.00	SPARE	c	12	|		
13	20/1	1.18	RH-1	a	14	20/1	0.18	REC.-GFCI
15	20/1	1.18	RH-2	b	16	20/1	0.18	REC.-GFCI
17	20/1	1.18	RH-3	c	18	20/1	0.18	REC.-GFCI
19	20/1	0.70	CF-1	a	20	20/1	0.36	REC.-GFCI
21	50/3	14.10	WELDER	b	22	20/1	0.36	REC.-GFCI
23	|			c	24	20/1	0.18	RECEPTACLE
25	|			a	26	20/1	0.18	RECEPTACLE
27	20/1	1.18	RECEPTACLE	b	28	20/1	0.70	CF-2
29	20/1	1.18	RECEPTACLE	c	30	20/1	0.70	CF-3
31	20/1	1.18	RECEPTACLE	a	32	60/3	18.00	WIREWAY
33	20/1	1.18	RECEPTACLE	b	34	|		
35	20/1	1.26	RECEPTACLE	c	36	|		
37	20/1	0.18	RECEPTACLE	a	38	20/1	0.00	SPARE
39	20/1	0.18	RECEPTACLE	b	40	20/1	0.00	SPARE
41	50/1	2.88	EF-6	c	42	20/1	0.00	SPARE

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LARGEST MOTOR	2.88	0.72	(25%)	RECEPTACLES	27.22	18.61	(50%>10)
MOTORS	14.36	14.36	(100%)	NONCONTINUOUS	14.00	14.00	(100%)
				TOTAL LOAD		47.69	
				BALANCED 3-PHASE AMPS		132.36	
				PHASE A		82.9%	
				PHASE B		95.2%	
				PHASE C		122%	

LC

ROOM
MOUNTING FLUSH
FED FROM LM
NOTE
VOLTS 208Y/120V 3P 4W
BUS AMPS 125
NEUTRAL 100%
AIC 14,000
MAIN BKR MLO
LUGS STANDARD
ISO GND BUS

CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	20/1	0.18	RECEPTACLE	a	2	20/1	0.36	RECEPTACLE
3	20/1	0.00	SPARE	b	4	20/1	0.54	RECEPTACLE
5	20/1	0.00	SPARE	c	6	20/1	0.36	RECEPTACLE
7	20/1	0.90	RECEPTACLE	a	8	20/1	0.54	RECEPTACLE
9	20/1	0.36	RECEPTACLE	b	10	20/1	0.18	RECEPTACLE
11	20/1	0.72	RECEPTACLE	c	12	20/1	0.18	RECEPTACLE
13	20/1	0.36	RECEPTACLE	a	14	20/1	0.18	RECEPTACLE
15	20/1	0.72	RECEPTACLE	b	16	20/1	0.18	RECEPTACLE
17	20/1	0.36	RECEPTACLE	c	18	20/1	0.18	RECEPTACLE
19	20/1	0.36	RECEPTACLE	a	20	20/1	0.18	RECEPTACLE
21	20/1	0.36	RECEPTACLE	b	22	20/1	0.00	SPARE
23	20/1	0.36	RECEPTACLE	c	24	20/1	0.00	SPARE
25	20/1	0.00	SPARE	a	26	20/1	0.00	SPARE
27	20/1	0.00	SPARE	b	28	20/1	0.00	SPARE
29	20/1	0.00	SPARE	c	30	20/1	0.00	SPARE

	CONN KVA	CALC KVA			CALC KVA
RECEPTACLES	7.56	7.56	(50%>10)	TOTAL LOAD	7.56
				BALANCED 3-PHASE AMPS	20.98
				PHASE A	121%
				PHASE B	92.9%
				PHASE C	65.7%

Jumper
Carter
Sease
ARCHITECTS
412 Meeting Street
West Columbia
South Carolina

SOUTH CAROLINA SIMS GROUP ENGINEERS, INC. No. C03104 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 21972 6/11/19 BENNY L. McDANIEL, JR.

USC AIKEN MAINTENANCE FACILITY
UNIVERSITY OF SOUTH CAROLINA
AIKEN, SC

H29-9552/50003331-2

No	Description	Date
2	ADDENDUM 2	06/11/2019

DRAWN BY:

CHECKED BY:

COMM NO: 18103

DATE: 04/30/2019

SHEET TITLE: ELECTRICAL PANEL SCHEDULES

ADDENDUM 2 C19009

sims group
SIMS GROUP ENGINEERS, INC.
800 Columbiana Drive, Suite 208
Irmo, South Carolina 29063
Phone: (803) 765-1007 Fax: (803) 765-1030
www.simsgroupusa.com

SHEET NO: E604

FAULT CURRENT SCHEDULE

DEVICE	FAULT	AIC RATING	L-N VOLTS	UTILITY			FED FROM				FEEDER						TRANSFORMER						TOTAL MOTOR	DIRECTLY CONNECTED MOTOR LOAD			
				FAULT	X	R	DEVICE	FAULT	X	R	SIZE	X / 1000'	R / 1000'	LENGTH	X	R	KVA	Z%	XR RATIO	FAULT AT PRIMARY	X	R	FAULT	KVA	FAULT	X	R
GENERATOR	1,000		277V	1,000	0.2716	0.05432																					
SERVICE TRANSFORMER	45,801	50,000	277V	45,123	0.00602	0.001204											750	2	5	UTILITY	0.006019	0.001204	678				
MP	34,913	42,000	277V	34,232	0.00762	0.002724	SERVICE TRANSFORMER	45,123	0.00602	0.001204	(2)#350kcmil	0.02	0.019	80'	0.0016	0.0015							681	33.1	159	1.687	0.4219
ATS-EE	21,712	35,000	277V	21,672	0.004401	0.012	MP	34,232	0.00762	0.002724	#1/0	0.044	0.12	112'	0.0049	0.0134							40				
EM	18,117	35,000	277V	18,077	0.005275	0.01439	ATS-EE	21,672	0.004401	0.012	#1/0	0.044	0.12	20'	0.0009	0.0024							40				
T-EQL	6,572	10,000	120V	6,479	0.01748	0.006116	EM	18,077	0.005275	0.01439	#4	0.048	0.31	2'-1"	0.0001	0.0006	45	1.75	5	17,348	0.01647	0.003295	93				
EQL	3,894	10,000	120V	3,800	0.02378	0.02077	T-EQL	6,479	0.01748	0.006116	#2/0	0.043	0.1	147'	0.0063	0.0147							94	8.42	94	1.245	0.3112
HA	32,196	35,000	277V	31,584	0.008042	0.003499	MP	34,232	0.00762	0.002724	#3/0	0.042	0.077	10'	0.0004	0.0008							612	46	221	1.214	0.3036
T-LM	17,088	22,000	120V	16,425	0.007109	0.001687	MP	34,232	0.00762	0.002724	#4/0	0.041	0.062	3'-11"	0.0002	0.0002	150	2	5	33,259	0.005648	0.00113	663				
LM	16,925	22,000	120V	16,264	0.007169	0.001744	T-LM	16,425	0.007109	0.001687	(2)#350kcmil	0.02	0.019	3'	0.0001	0.0001							661	41.9	465	0.2504	0.06259
LA	3,945	14,000	120V	3,919	0.01608	0.02606	LM	16,264	0.007169	0.001744	#1/0	0.044	0.12	203'	0.0089	0.0243							26				
LB	5,964	14,000	120V	5,753	0.01443	0.01506	LM	16,264	0.007169	0.001744	#3/0	0.042	0.077	173'	0.0073	0.0133							211	14.4	159	0.7304	0.1826
LC	4,376	14,000	120V	4,343	0.01503	0.02319	LM	16,264	0.007169	0.001744	#1/0	0.044	0.12	179'	0.0079	0.0214							33				

EQUIPMENT POWER SCHEDULE

CALLOUT	SYMBOL	VOLTS	KVA	MCA	MOCP	CIRCUIT	WIRE CALLOUT	DISCONNECT	NEMA	NOTE
AIR COMPRESSOR		480V 3P 3W	33			MP-25,27,29	3#6,#10G,3/4"C	FUSED		
CF-1		120V 1P 2W	0.7			LB-18	1#12,#12N,#12G,3/4"C	HARDWIRED CONNECTION		
CF-2		120V 1P 2W	0.7			LB-28	1#12,#12N,#12G,3/4"C	HARDWIRED CONNECTION		
CF-3		120V 1P 2W	0.7			LB-30	1#12,#12N,#12G,3/4"C	HARDWIRED CONNECTION		
DAHU-1		208V 2P 2W	36					HARDWIRED CONNECTION		
DISPOSAL		120V 1P 2W	1.18			EQL-38	1#12,#12N,#12G,3/4"C	HARDWIRED CONNECTION		
EF-1		120V 1P 2W	0.14					HARDWIRED CONNECTION		
EF-2		120V 1P 2W	0.13					HARDWIRED CONNECTION		
EF-3		120V 1P 2W	0.13					HARDWIRED CONNECTION		
EF-4		120V 1P 2W	0.13					HARDWIRED CONNECTION		
EF-4		120V 1P 2W	0.13					HARDWIRED CONNECTION		
EF-5		120V 1P 2W	2.88			LB-6	1#6,#6N,#10G,3/4"C	FUSED		
EF-6		120V 1P 2W	2.88			LB-41	1#6,#6N,#10G,3/4"C	FUSED		
FUEL DISPENSING EQPT.		208/120V 2P 3W	6.72			EQL-24,26	2#6,#6N,#10G,3/4"C	FUSED		
MOTORIZED DAMPER		120V 1P 2W	0.1					HARDWIRED CONNECTION		
MOTORIZED DOOR		120V 1P 2W	1.18			LM-11	1#10,#10N,#10G,3/4"C	NON-FUSED		
MOTORIZED DOOR		120V 1P 2W	1.18			LM-13	1#10,#10N,#10G,3/4"C	NON-FUSED		
MOTORIZED DOOR		120V 1P 2W	1.18			LM-15	1#10,#10N,#10G,3/4"C	NON-FUSED		
MOTORIZED DOOR		120V 1P 2W	1.18			LM-17	1#12,#12N,#12G,3/4"C	NON-FUSED		
MOTORIZED DOOR		120V 1P 2W	1.18			LM-19	1#12,#12N,#12G,3/4"C	NON-FUSED		
PAC-1		480V 3P 3W	46	69	70	HA-19,21,23	3#4,#8G,1"C	FUSED		
RECIRC PUMP		120V 1P 2W	0.53			EQL-36	1#12,#12N,#12G,3/4"C	HARDWIRED CONNECTION		
RH-1		120V 1P 2W	1.18			LB-13	1#12,#12N,#12G,3/4"C	FUSED		
RH-2		120V 1P 2W	1.18			LB-15	1#12,#12N,#12G,3/4"C	FUSED		
RH-3		120V 1P 2W	1.18			LB-17	1#12,#12N,#12G,3/4"C	FUSED		
SHP-1		208V 2P 2W	36	19	26	LM-2,4	2#10,#10G,3/4"C	FUSED		
UPS		208/120V 2P 3W	5			EQL-28,30	2#8,#8N,#8G,3/4"C	TOGGLE SWITCH		
VAV 1-1		480V 3P 4W	5			HA-1,3,5	3#10,#10N,#10G,3/4"C	HARDWIRED CONNECTION		
VAV 1-2		480V 3P 4W	4			HA-1,3,5	3#10,#10N,#10G,3/4"C	HARDWIRED CONNECTION		
VAV 1-3		480V 3P 4W	5.5			HA-1,3,5	3#10,#10N,#10G,3/4"C	HARDWIRED CONNECTION		
VAV 1-4		480V 3P 3W	4					HARDWIRED CONNECTION		
VAV 1-4		480V 3P 4W	4			HA-7,9,11	3#10,#10N,#10G,3/4"C	HARDWIRED CONNECTION		
VAV 1-5		480V 3P 4W	4			HA-7,9,11	3#10,#10N,#10G,3/4"C	HARDWIRED CONNECTION		
VAV 1-6		480V 3P 3W	4			HA-7,9,11	3#10,#10N,#10G,3/4"C	HARDWIRED CONNECTION		
VAV 1-7		480V 3P 4W	5			HA-13,15,17	3#10,#10N,#10G,3/4"C	HARDWIRED CONNECTION		
VEHICLE LIFT		208V 2P 2W	2.88		30	LB-10,12	2#10,#10G,3/4"C	FUSED		
WELDER		208V 3P 4W	0.1		50	LB-21,23,25	3#6,#6N,#10G,1"C	FUSED		
WELDER		480V 3P 4W	0.1		50	MP-7,9,11	3#6,#6N,#10G,1"C	FUSED		
WH-1		480V 3P 3W	6			EM-13,15,17	3#12,#12G,3/4"C	FUSED		
WIREWAY		480V 3P 4W	40			MP-26,28,30	3#4,#4N,#10G,1-1/4"C	HARDWIRED CONNECTION		
WIREWAY		208V 3P 4W	18			LB-32,34,36	3#4,#4N,#10G,1-1/4"C	HARDWIRED CONNECTION		

Jumper Carter Sease
ARCHITECTS
412 Meeting Street
West Columbia
South Carolina

SOUTH CAROLINA SIMS GROUP ENGINEERS, INC. No. C03104 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 21972 6/11/19 BENNY L. McDANIEL, JR.

USC AIKEN MAINTENANCE FACILITY
UNIVERSITY OF SOUTH CAROLINA
AIKEN, SC

H29-9552/50003331-2

No	Description	Date
1	ADDENDUM 2	06/11/2019

DRAWN BY:

CHECKED BY:

COMM NO: 18103

DATE: 04/30/2019

SHEET TITLE: ELECTRICAL POWER SCHEDULES

SHEET NO: E605

ADDENDUM 2 C19009

sims group
SIMS GROUP ENGINEERS, INC.
800 Columbiana Drive, Suite 208
Irmo, South Carolina 29063
Phone: (803) 765-1007 Fax: (803) 765-1030
www.simsgroupusa.com