July 29, 2020

ADDENDUM #7

RFP 20-78-1620

For: Providing all labor, equipment and materials for the construction of a new Juvenile Justice Center at 875 Lanier 400 Parkway, Cumming, GA 30040. Project includes a multi-phased site development, demolition of existing motel structures and construction of new 62,000 square foot Juvenile Court building.

This addendum supersedes and supplements all portions of the bidding documents and becomes part of the contract documents for the above-referenced project.

Where any item called for in the specifications or indicated on the drawings is supplemented hereby, the original requirements shall remain in effect.

Where any original item is amended, voided or superseded hereby, the provision of such item not so specifically amended, voided or superseded shall remain in effect.

PART 1 - Prebid Questions Received (response in ***bold italics***)

1. Request approval of Dunham-Bush as a manufacturer for this project
    a. **RESPONSE: *Rejected.***
2. Is seismic going to be required?
    a. **RESPONSE: *Seismic Design Category B is correct.***
3. FP drawing FP-0.01, FP Notes, Legends, and Details, provides a “Sprinkler System Criteria” legend. In which, the Vehicular Sally Port is denoted to be covered by dry hsw off the wet system for level 1. The distance from interior wall to exterior wall of the Vehicular Sally Port is 36’-8½”. No manufacturer makes a dry hsw that will cover this distance. How should the design criteria change?
    a. **RESPONSE: *After further review, provide a wet-type system in the sally port.***
    b. Wet system with standard heads and allow the hanging IR-hearts to maintain minimum 40 degrees F.
        i. **RESPONSE: *Wet-type system is acceptable.***
    c. Dry System
        i. **RESPONSE: *Provide Wet-Type system.***
4. The total allowable settlement is shown as ½” on the structural notes (Aggregate piers, note 2, sheet S-0.01) and in the specifications (1.4, C, #2). However, typical total settlement criteria shown in the Geotech report (section 5.4.3) for aggregate pier supported foundations is 1”. ½” of total settlement is very tight criteria may not be achievable with an aggregate pier system given how soft the soils are below the

basement FFE at borings B9 & B10.
Most structures of this type can tolerate 1" total settlement (1/2" differential) and 1" is a typical cap on total settlement for new construction in the Atlanta area. Please confirm what is the cap for total settlement for the aggregate pier system for this project. Please confirm what is the cap for total settlement for the aggregate pier system for this project.

RESPONSE: ***1" total settlement is structurally acceptable. Please reference revised Aggregate Pier Specification and Sheet S-0.01, Addendum #7.***

5. Looking at our settlement analysis again, fully loaded interior columns bearing on PWR may have total settlements on the order of ¼ to ½ inch. This would be elastic settlement that would occur immediately as the loads are applied. Exterior columns bearing on PWR could have settlements up to ¼ inch. These are estimated elastic settlements based on foundations bearing in PWR. If we have foundations bearing on competent rock rather than PWR, then the total settlements would be much less, but those should not occur in the transition zone between aggregate piers and foundations on PWR. I would recommend having the structural confirm 1 in total and ½ in differential is acceptable for his design and stipulate that the aggregate pier contractor verify that differential settlement between adjacent foundations bearing on PWR do not exceed the allowable specified by the EOR.

   RESPONSE: ***1" total settlement is structurally acceptable. Please reference revised Aggregate Pier Specification and Sheet S-0.01, Addendum #7.***

6. Request for Convergint to be an acceptable security integrator.

   RESPONSE: ***Rejected***

PART 2 – Changes to Drawings

2-1 Sheet LS-1.01 LEVEL 100 – LIFE SAFETY PLAN:

1. Add exit light at screening area.
2. Reference sheet LS-1.01 LEVEL 100 – LIFE SAFETY PLAN revised under addendum #07 dated 07/29/2020.

2-2 Sheet C120 UTILITY PLAN – PHASE 01:

1. Updated note legend as clouded (Revised notes 1A through 1D and added note 8I).
2. Reference sheet C120 UTILITY PLAN – PHASE 01 revised under addendum #07 dated 07/29/2020.

2-3 Sheet C121 UTILITY PLAN – PHASE 02:

1. Updated note legend as clouded (Revised notes 1A through 1D and added note 8I)
2. Added conduit for service line to freeze proof enclosure and added note "8I"

3. Changed domestic water tap location and notes revised to indicate the change in the type of tap as well as adjusted the shape of domestic backflow device on the drawing.
4. Reference sheet C121 UTILITY PLAN – PHASE 02 revised under addendum #07 dated 07/29/2020.

2-4 Sheet C121A DETAILED UTILITY PLAN – PHASE 02:

1. Updated note legend as clouded (Revised notes 1A through 1D and added note 8I)
2. Added conduit for service line to freeze proof enclosure and added note "8I"
3. Changed domestic water tap location and notes revised to indicate the change in the type of tap as well as adjusted the shape of domestic backflow device on the drawing.
4. Reference sheet C121A DETAILED UTILITY PLAN – PHASE 02 revised under addendum #07 dated 07/29/2020.

2-5 Sheet C122 UTILITY PLAN PHASE 03:

1. Updated note legend as clouded (Revised notes 1A through 1D and added note 8I)
2. Updated phase 2 line work for the water line and conduit noted in C121 and C121A
3. Reference sheet C122 UTILITY PLAN PHASE 03 revised under addendum #07 dated 07/29/2020.

2-6 Sheet C-532 CITY OF CUMMING DETAILS:

1. Deleted the 2 inch meter detail. Note, there is no detail for a 4 inch meter, only the meter box detail 07-C532.
2. Deleted the backflow enclosure dimension chart and replaced it with a note as clouded.
3. Reference sheet C532 CITY OF CUMMING DETAILS revised under addendum #07 dated 07/29/2020.

2-7 Sheet S-0.01 GENERAL NOTES:

1. Revised Aggregate Piers note #3.
2. Reference sheet S-0.01 GENERAL NOTES revised under addendum #07 dated 07/29/2020.

2-8 Sheet SE-1.0-2 LEVEL 100 FLOOR PLAN – SECURITY:

1. The clouded notation regarding the function of the "Entry Disable Switch" has been modified to include the disabling of the ADA door operators.
2. Reference sheet SE-1.0-2 LEVEL 100 FLOOR PLAN – SECURITY revised under addendum #07 dated 07/29/2020.

2-9 Sheet E-0.02 ELECTRICAL SITE PLAN – PHASE ONE:

1. Added not clarifying that temporary generators for the existing buildings are NOT included as part of this design.
2. Reference sheet E-0.02 ELECTRICAL SITE PLAN – PHASE ONE revised under addendum #07 dated 07/29/2020.

2-10 Sheet E-0.04 ELECTRICAL SITE PLAN – PHASE THREE:

1. Changed sliding gate normal power to emergency power.
2. Added power for heat trace on Backflow Enclosure
3. Reference sheet E-0.04 ELECTRICAL SITE PLAN – PHASE THREE revised under addendum #07 dated 07/29/2020.

2-11 Sheet E-1.01 LEVEL 100 FLOOR PLAN – LIGHTING:

1. Added exit sign in Screening Area 101.
2. Reference sheet E-1.01 LEVEL 100 FLOOR PLAN – LIGHTING revised under addendum #07 dated 07/29/2020.

2-12 Sheet E-6.01 ELECTRICAL PANEL SCHEDULES:

1. Updated panel R1L.
2. Reference sheet E-6.01 ELECTRICAL PANEL SCHEDULES revised under addendum #07 dated 07/29/2020.

2-13 Sheet E-6.04 FIXTURE SCHEDULES:

1. Modified Fixture Type F and FE lumen package.
2. Reference E-6.04 FIXTURE SCHEDULES revised under addendum #07 dated 07/29/2020.

PART 3 – Changes to Specifications

3-1 Specification Section 08 7100 BUILDERS HARDWARE:

1. Added automatic door operators.

2. Reference Specification Section 08 7100 BUILDERS HARDWARE revised under addendum #07 dated 07/29/2020.

3-2 Specification Section 09 5450 SPECIAL CEILING SURFACES:

1. Added Suspended flat wood panel system to specification section.
2. Reference Specification Section 09 5450 SPECIAL CEILING SURFACES revised under addendum #07 dated 07/29/2020.

3-3 Specification Section 28 4619 SECURITY MONITORING AND CONTROL SYSTEM:

1. 284619 1.4.L.1. Delete this sub-paragraph in its entirety. Insert in its place the following text:
    a. In the absence of operating power, all of the equipment specified in Division 28, excluding detention lock power, shall be maintained operational for a period of 15 minutes by the UPS systems. The UPS system will be rack mounted or floor mount. All Div 28 equipment will be sourced from the system UPS equipment. Detention Locks are not required to be sourced from UPS equipment, but they are required to be sourced from emergency power circuits. The UPS will be fed from generator backed up source.
2. 284619 2.5.A. Delete the last sentence of this paragraph in its entirety. Insert in its place the following text:
    a. Provide a minimum of 15 minutes UPS power for the equipment served.
3. References noted above to Specification Section 28 4619 SECURITY MONITORING AND CONTROL SYSTEM revised under addendum #07 dated 07/29/2020.

3-4 Specification Section 31 6613 AGGREGATE PIERS:

1. Revised sentence 31 6613.1.3.c.2.
2. Reference Specification Section 31 6613 AGGREGATE PIERS revised under addendum #07 dated 07/29/2020.

END OF ADDENDUM NO 7

No further questions will be accepted.

SECTION 087100
BUILDERS HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes furnishing items known commercially as finish or door hardware that are required for swing, sliding, and folding doors, except special types of unique hardware specified in the same sections as the doors and door frames on which they are installed.
   1. Automatic door operators for swinging doors.

B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 11 Section SECURITY HARDWARE for all hardware associated with detention openings, and for key cabinets that also accommodate BUILDERS HARDWARE keys.
   2. Division 28 sections for locking control, fire alarm and communication systems providing line power or low voltage power from centrally located transformers for connection to electrically operate, control, or monitor electric strikes, locks, magnets, exit devices, position switches, monitor strikes, call buttons, etc. specified in this section.

1.3 SUBMITTALS

A. Product Data, Schedules and Shop Drawings: Submit complete hardware schedule, catalog cut sheets, templates, proof of UL listing (for cylinders, locks, exit hardware, closers or other items as required), wiring diagrams, system descriptions and specifications for all hardware set items.
   1. Final Hardware Schedule Content: Based on hardware indicated, organize schedule into vertical format "hardware sets" indicating complete designations of every item required for each door or opening.
      a. Use specification heading numbers with any variations suffixed a, b, etc.
      b. Include the following information:
         1) Type, style, function, size, and finish of each hardware item.
         2) Name and manufacturer of each item.
         3) Fastenings and other pertinent information.
         4) Location of each hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.
         5) Explanation of all abbreviations, symbols, and codes contained in schedule.
         6) Mounting locations for hardware.
         7) Door and frame sizes and materials.
         8) Keying information.
         9) Cross-reference numbers used within schedule deviating from those

specified.
a) Column 1: State specified item and manufacturer.
b) Column 2: State prior approved substituted item and its manufacturer.

2. Yellow highlight items in question for Architect's review and response.
   a. Include list of Dual Approach Openings for determination of key cylinder side.
3. Use door references same as indicated on Contract Documents.
   a. Sample Warranties: For manufacturer's special warranties.
4. ***Automatic Door Operators:***
   a. Product Certificates: For each type of automatic door operator. For each operator for fire-rated door assemblies, certify that operator is listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for use on types and sizes of labeled fire doors required.
   b. Sample Warranties: For manufacturer's special warranties.

B. Production and Delivery Schedule: Submit a production and delivery schedule as well as all templates to be forwarded to other trades involved in hardware preparation work.

C. Notification of Division 28 Submission: After hardware shop drawing submittals have been reviewed and accepted by the Architect for contract compliance, Supplier shall furnish wiring diagrams and one of each type electric item to the Division 28 Contractor. Verification of this shall be documented and submitted to the Architect.

D. Templates: Submit templates for doors, frames, and other work specified to be factory prepared for the installation of door hardware. Check shop drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

E. Operations and Maintenance Data: The manufacturer shall furnish specifications as well as instructions on the operation, repair and maintenance of all hardware. Information shall be bound in loose-leaf binders. Each binder shall bear the name, address and telephone number of the manufacturer's representative in the area of the project.

F. Keying Schedule: The supplier shall submit a keying schedule after meeting with Owner and Architect as specified.

1.4 QUALITY ASSURANCE

A. Supplier Qualifications: A recognized architectural door hardware supplier, with warehousing facilities in the Project's vicinity, that has a record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that employs an experienced architectural hardware consultant (AHC) who is available to Owner, Architect, and Contractor, at reasonable times during the course of the Work, for consultation.
   1. Require supplier to meet with Owner to finalize keying requirements and to obtain final instructions in writing.
   2. Require supplier to meet with installer prior to beginning of installation of

door hardware.

B. Regulatory Requirements:
1. Comply with requirements of NFPA 80 and NFPA 101 in providing hardware for fire rated openings.

2. Comply with U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities" and ICC/ANSI A117.1 for accessible door hardware requirements.

C. Single Source Requirements: Hardware items of the same type shall be products of a single manufacturer.

D. Product Standards:
1. Electric Locking Mechanisms and Related Devices: Complying with requirements of UL 1034 for quality, construction, performance and operation.
2. Key Cylinders: Complying with requirements of UL 437 for quality, construction and performance; tested for endurance and attack resistance.
3. Hinges, Mortise Locks and Latches, Closers, Thresholds, Trim, Finishes and other miscellaneous hardware: Complying with requirements of ANSI A156 standards for quality, construction, performance and operation applicable for specified hardware.

E. Pre-Installation Conference: Make representatives of major lock, exit device, and closer manufacturer available for Pre-Installation Conference.

F. Keying Meeting: The Contractor shall be responsible for scheduling, coordinating and documenting a Keying Meeting with owner, Architect and suppliers to establish requirements for the project. Notify participants of time and place of meeting at least seven days in advance. As starting points for discussion, preliminary draft keying proposals may be prepared and distributed prior to the meeting.
1. Builder’s hardware for the Project shall be included with the security hardware keying requirements. Incorporate and coordinate all hardware in the Project to provide for a complete unified system of keying.
2. Reconfirm determinations of key cylinder sides from shop drawing list of Dual Approach Openings.
3. Individual keying of all cylinders shall be only as directed by the Architect and Owner.
4. A complete keying schedule shall be submitted to the Architect and Owner for review after meeting.
5. Key Cabinets for all keys including Builder’s Hardware keys are provided under Division 11 Section SECURITY HARDWARE.

1.5 DELIVERY AND STORAGE

A. Tag each item or package separately with identification related to final hardware schedule, and include basic installation instructions with each item or package.

B. Packaging of door hardware is responsibility of supplier. As material is

received by hardware supplier from various manufacturers, sort and repackage in containers clearly marked with appropriate hardware set number to match set numbers of approved hardware schedule. Two or more identical sets may be packed in same container.

C. Inventory door hardware jointly with representatives of hardware supplier and hardware installer until each is satisfied that count is correct.

D. Deliver individually packaged door hardware items promptly to place of installation (shop or Project site).

E. Provide secure lock-up for door hardware delivered to the Project, but not yet installed. Control handling and installation of hardware items that are not immediately replaceable so that completion of the Work will not be delayed by hardware losses both before and after installation.

1.6 WARRANTY

A. Furnish manufacturers' limited warranty covering defects in materials and workmanship for periods indicated as follows:
1. Door Closers: Minimum Ten (10) years.
2. Exit Devices: Minimum Three (3) years.
3. All other hardware: Minimum One (1) year.
4. Automatic Door Operators: Minimum Two (2) years.

1.7 MAINTENANCE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

B. Parts Kits: Furnish manufacturers' standard parts kits for locksets, exit devices, and door closers.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers are referred to in this section hereinafter by their first or common trade names as follows:

Common Name	Manufacturer
Adams Rite	Adams Rite Manufacturing Company / ASSA ABLOY
Group ASSA	Assa, Inc. / ASSA ABLOY Group
Best	Best Access System / Div. Stanley Security Solutions, Inc.
Bommer	Bommer Industries, Inc.
Corbin Russwin	Corbin Russwin, Inc. / ASSA ABLOY
Group Gallery	Gallery Specialty Hardware Ltd.
Glynn-Johnson	Glynn-Johnson / Ingersoll-Rand
Company Hager	Hager Companies
Ives	Ives / Ingersoll Rand Company
HES	HES, Inc. / ASSA ABLOY Group

LCN	LCN Closers / Ingersoll-Rand Company
Markar	Markar Architectural Products, Inc.
McKinney	McKinney Products Company / ASSA ABLOY
Group Medeco	Medeco Security Locks, Inc. / ASSA ABLOY
Group Midwest	Midwest Detention Systems, Inc.
National Guard	National Guard Products, Inc.
Northwest	Northwest Specialty Hardware,
Inc.	
Norton	Norton Door Controls / Yale Security, Inc. (ASSA ABLOY
Group) Pemko	Pemko Manufacturing, Co., Inc. / ASSA ABLOY Group
Precision	Precision Hardware / Div. Stanley Security Solutions,
Inc. Reese	Reese Enterprises, Inc.
Rixson	Rixson / Yale Security Inc. (ASSA ABLOY Group)
Rockwood	Rockwood Manufacturing Company
RCI	Rutherford Controls International Corporation
Sargent	Sargent Manufacturing Company / ASSA ABLOY
Group Schlage	Schlage / Ingersoll-Rand Company
Securitron	Securitron Magnalock Corporation / ASSA ABLOY
Group Sentrol	Sentrol, Inc.
SDC	Security Door Controls
Southern Folger	Southern Folger Detention Equipment
Company Stanley	Stanley Security Solutions, Inc.
Trimco	Triangle Brass Manufacturing Co., Inc.
Yale	Yale Security Inc. / ASSA ABLOY Group
Zero	Zero International

2.2 HINGES

A. Mortise Butt Hinges:

1. Acceptable products; subject to compliance with specified requirements:

Manufacturer	Std. Wt. - Steel	Hvy. Wt. - Steel	Hvy. Wt. - Stainless Steel
Bommer	BB5000	BB5004	BB5006
Hager	BB1279	BB1168	BB1199
McKinney	TA2714	T4A3786	T4A3386
Stanley	FBB179	FBB168	FBB199

2. Characteristics: Full mortise, five knuckle ball bearing hinge complying with ANSI A156.1; Grade 1 for heavy weight and Grade 2 for standard weight.
   a. Material and Weight: Provide pin material matching hinge material and as follows.
      1) Exterior Doors: Heavy Weight- Stainless Steel.
      2) Interior Doors with Closers: Heavy Weight- Steel.
      3) Interior Doors without Closers: Standard Weight- Steel.
      4) Interior Doors at Wet Locations or areas not climate controlled (as indicated in hardware sets scheduled at the end of this specification section): Heavy Weight- Stainless Steel.
   b. Hinge Pins: Except as otherwise indicated, provide hinge pin types for

applications as follows:

1) Out-Swing Exterior Doors: Non-removable pins.
2) Out-Swing Corridor Doors with locks: Non-removable pins.
3) Interior Doors: Non-rising pins.
4) Interior Doors at detainee exposure locations: Non-removable pins.

c. Hinge Tips: Provide hinge tips of flat button and matching plug type, except where specifically indicated otherwise in hardware sets scheduled at the end of this specification section, and except as follows:
   1) Interior Doors at detainee exposure locations: Hospital Tips (HT).

d. Template: Provide only template-produced units complying with ANSI A156.7; non-handed with symmetrical hole patterns.
e. Size: Size hinges in accordance with specified manufacturer's published recommendations or NFPA 80 for fire labeled doors.
f. Fasteners:
1) Types: Provide Phillips flat-head screws of types specified for applications indicated, except where security screws are required.
a) Machine screws: Provide for installation to drilled and tapped holes prepped in metal doors and frames.
b) Wood screws: Provide steel threaded to the head type for installation to wood doors.
c) Security screws: Furnish flathead tamper-resistance (Torx Plus®) security screws with each hinge scheduled for detainee exposure locations. Provide types as specified for substrates to which screws are anchored.
2) Finish: Screw heads matching surface finish of hinges.

3. Quantity: Furnish one pair of hinges for all doors up to 5'-0" (1524 mm) high. Furnish one hinge for each additional 2-1/2 feet (760 mm) height or fraction thereof, unless otherwise specified. Provide an additional hinge for any door more than 3'-0" wide
4. At Interior Doors at detainee exposure locations, provide only heavy-weight steel hinges with Hospital Tips (HT).

B. Electric Mortise Hinges:

1. Acceptable products; subject to compliance with specified requirements:

Manufacturer	Std. Wt. - Steel	Hvy. Wt. - Steel	Hvy. Wt. - Stainless Steel
Bommer	BB5060	BB5064	BB5066
Hager	BB1279 × ETW	BB1268 × ETW	BB1279 × ETW
McKinney	TA2714-CC	T4A3786-CC	T4A3386-CC
Stanley	CEFBB179-54	CEFBB168-54	CE FBB199-54

2. Characteristics: Same as specified for mortise butt hinge, except equipped with four concealed tamperproof 28 gauge wires, minimum, contained within hinge; UL Listed.

2.3 CONTINUOUS HINGES

A. Continuous Hinges:

1. Acceptable products; subject to compliance with specified requirements:

Manufacturer	Full Mortise
Gallery	951-HT
Hager	HT790-900
Markar	FM-300-HT
McKinney	MCK-FM300-HT
Stanley	HT651

2. Characteristics: Pin and barrel type continuous hinge meeting ANSI A156.26, Grade 1. Hinge shall be capable of operating to full 180-degree swing.

a. Material: Type 304 stainless steel; 14 gauge (0.078-inch) (2.0 mm) minimum thickness.
b. Hinge pins: 0.25-inch (6 mm) minimum diameter stainless steel pin with nylon self-lubricating bearings. Hinge pin shall be staked or fixed of non-removable design.
c. Hinge tips: Hospital type sloped barrel ends.
d. Template: Provide only template-produced units; non-handed with symmetrical hole patterns.
e. Fire label: Hinges for installation to fire-rated door openings shall be listed and labeled in conformance with requirements of NFPA 80 for indicated time protection ratings. Provide labeled hinges for installation with scheduled fire-rated doors and frames.
f. Size: Continuous length full height of door in accordance with hinge manufacturer's published recommendations.
g. Fasteners:
    1) Types: Provide Phillips flat-head screws of types specified for applications indicated, except where security screws are required.
        a) Machine screws: Provide for installation to drilled and tapped holes prepped in metal doors and frames.
        b) Wood screws: Provide steel threaded to the head type for installation to wood doors.
        c) Security screws: Furnish flathead tamper-resistant (Torx Plus®) security screws with each hinge where scheduled for detainee exposure locations. Provide types as specified for substrates to which screws are anchored.
    2) Material and Finish: Stainless steel with screw heads matching surface finish of hinges.

B. Electric Continuous Hinges:

1. Acceptable products; subject to compliance with specified requirements:

Manufacturer	Full Mortise
Gallery	951-HT- Electric
Hager	HT790-900 × ETW
Markar	FM-300-HT × CE-4D
McKinney	MCK-FM300-HT × CC-4
Stanley	HTCE651

2. Characteristics: Same as specified for continuous hinges, except equipped with four concealed tamperproof 28 gauge wires, minimum, contained within hinge; UL Listed. Include fire labeled hinges at scheduled fire-rated door openings.

2.4 KEY CYLINDERS AND KEYING

A. Application Requirements: Locate key cylinder on secure side of opening; the face of the opening closest to the approach from the building entrance, unless noted otherwise.
1. Dual Approach Openings: Include in the Shop Drawing submittal a separate listing of openings where approaches are possible from either side. Itemize list for written direction from Architect and Owner regarding each such opening as to

which side should have the key cylinder. Reconfirm decisions from this list as project openings are reviewed at the Keying Meeting.

B. Builders Hardware Cylinders:
1. Acceptable product; subject to compliance with specified requirements:

Manufacturer	Product
DormaKaba Stanley Best	Best Peaks Preferred Series

No Substitution shall be permitted. The only authorized source for permanent cores is A & S Lock and Safe, 433 Canton Rd., Suite 102, Cumming, GA 30040. Phone 770-888-7399.
2. Match Owner's existing keying system. Provide all permanent keys and cores direct to Owner from keyway manufacturer.
3. Characteristics:
   a. Type: High security, seven-pin tumbler mortise cylinder with SFIC small format interchangeable core; meeting ANSI A156.5, Grade 1 Security.
   b. Materials:
      1) Body: Brass alloy.
      2) Tumbler and sidebar assemblies: Stainless steel, hardened stainless steel or nickel silver alloy.
   c. Cylinder size: Manufacturer's standard as required to accommodate specified hardware.
   d. Accessories: Provide cylinder rings and extensions as required to accommodate installation.
   e. Keys: Hardware manufacturer's standard, designed to fit cylinder cores. Furnish quantities as specified with restricted keying.

C. Construction Keying: Provide construction keying for temporary operation of locksets during construction. Maintain system until Date of Substantial Completion, at which time void construction key system assisted by Owner.
1. Construction Cores: Provide construction cores that are replaceable by permanent cores.
2. Construction Master Keys: Ten (10).

D. Keying:
1. Key Systems: Establish a separate key system for the project. System shall be keyed in sets as directed by Owner.
2. Key Quantities: Provide number of keys indicated. Quantities indicated shall be used as the basis for adjustments, if required, after keying is established with Owner. Coordinate number of keys furnished with key cabinets. Lock openings shall include door openings, pass openings and other similar openings scheduled with locks.
   a. Change Keys Per Lock Opening: Three (3).
   b. Master Keys Per Key Group: Six (6).
3. Key Control: Hardware manufacturer shall be responsible for providing and establishing key control system. The sale of cut keys and blanks shall be factory regulated to control usage and reproduction.
   a. Provide keyway that can only be duplicated by hardware manufacturer.
   b. Maintain manufacturer procedures requiring identity verification of a single

Owner official designated for authorization of key duplication and key blank distribution.

c. All keys shall be accounted for at all times and delivered to the designated personnel as directed by Owner. Index, tag and deliver keys in sealed containers; shipped direct to Owner by prepaid registered mail or other secure method acceptable to Owner.

d. Owner will issue keys required to Contractor for use during construction. All keys assigned to Contractor shall be surrendered to Owner upon completion of the project. The Owner will provide a receipt for all keys received.

e. If at any time a key cannot be accounted for, the lock cylinder shall be re-keyed, or the entire lock replaced if re-keying is not possible, at no additional cost to the Owner.

4. Key Identification: Each key shall be stamped or engraved with permanent identification markings as directed by the Owner. Owner's identification markings shall be in addition to the manufacturer's standard markings.

2.5 MORTISE LOCKSETS AND LATCHSETS

A. Acceptable Mortise Lock Series and Trim Design; subject to compliance with specified requirements:

Manufacturer	Mortise Lock Series	Lever and Rose Design	Thumbturn Design
Best	47H	3H	IS5
Corbin Russwin	ML2000	LSF	519F Series
Sargent	8200	OJ	LB
Schlage	L9000	03B	L583-363

B. Equip all latchsets and locksets with specified lever and rose trim; and where thumbturn function is required, with specified thumbturn trim.

C. The following mortise latchset and lockset manufacturer's model numbers are specified under Function Headings. For the most part, Function Headings use ANSI/BHMA A156.13 function code numbers. Hardware sets at the end of this specification section specify mortise latchsets and locksets using these Function Headings.

D. Mortise Latchsets:

Manufacturer	F01 Passage	F04 Office	F05 Classroom	F07 Storeroom
Best	47H-N	47H-AT	47H-R	47H-D
Corbin Russwin	ML2010	ML2051	ML2055	ML2057
Sargent	8215	8255	8237	8204
Schlage	L9010	L9050	L9070	L9080

(Latchsets continued)

Manufacturer	F22 Privacy
Best	47H-LT
Corbin	
Russwin	ML2060
Sargent	8265
Schlage	L9040

E. Mortise Locksets:

Manufacturer	F15 Hotel w/Indicator	F16 Deadlock-K2S
Best	47H-HJ	47H-WD
Corbin		
Russwin	ML2029 × CMK	ML2012
Sargent	50-8250	8222
Schlage	L9486	L9462

F. Characteristics: Heavy duty mortise locks and latches complying with ANSI/BHMA A156.13 Operational Grade 1 and Security Grade 1.
   1. Lock case: Heavy gauge cold-rolled steel construction.
   2. Handing design: Reversible handing capability without having to disassemble lock case.
   3. Armored front and faceplate:
      a. Case front: Minimum 0.094-inch (2.4 mm) thickness steel attached to lock case; adjustable from flat to 1/8-inch in 2-inch (1:16) bevel.
      b. Faceplate: Minimum 0.0625-inch (16 gauge) 91.6 mm) brass, bronze or stainless steel material attached to case front with machine screws.
   4. Latchbolt: Solid stainless steel anti-friction design; 3/4-inch (19 mm) minimum throw.
   5. Auxiliary Deadlatch: Non-handed, solid stainless steel actuator designed to prevent latchbolt from retracting when engaged.
   6. Deadbolt: Solid hardened stainless steel; 1-inch (25 mm) minimum throw.
   7. Fire Label: Listed and labeled by Underwriters Laboratories, Inc. (UL) in conformance with requirements of NFPA 80 for up to three hours fire rating. Provide labeled hardware for installation with scheduled fire-rated doors and frames.
   8. Trim Components: Cast, wrought or forged stainless steel, brass or bronze fabrications as per manufacturer's design and complying with specified ANSI/BHMA finish and material designation;
      a. Lever Handle: Solid cast or forged material, through-bolted accessible design with independent breakaway spindles.
      b. Rose: Heavy wrought or cast material; 2.5625-inch to 2.75-inch (65 to 70 mm) diameter cylindrical escutcheon design.
      c. Thumbturns: Manufacturer's ADA compliant accessible design not requiring grasping, pinching or twisting motion of wrist to operate.
   9. Strikes: Curved lip mortise type; equipped with strike box. Strike shall be of design to accommodate both latchbolt and deadbolt, or either latchbolt or deadbolt only, as required by lock function.

a. Faceplate: Fabricated from 0.093-inch (2.4 mm) minimum thickness

stainless steel, brass or bronze in material and finish matching lock trim. Provide with curved lip projection of 1-1/4 inch (32mm) nominal dimension measured from centerline of bolt hole.

b. Strike box: Manufacturer's wrought steel dust box; 1-inch (25 mm) minimum depth.

10. Key cylinders: Provide key cylinder as specified and required by lock function.
11. Fasteners: Provide manufacturer's Phillips flat-head screws of types specified below for applications indicated, except where security screws are required. Screw shall be in material and finish matching locks and strikes.
    a. Machine screws: Provide for installation to drilled and tapped holes prepped in metal doors and frames.
    b. Wood screws: Provide steel threaded to the head type for installation to wood doors or frames.
    c. Security screws: Furnish flathead tamper-resistant (Torx Plus®) security screws where scheduled for detainee exposure locations; sized to match hardware manufacturer's standard. Provide types as specified for substrates to which screws are anchored.

2.6 ELECTRIC MORTISE LATCHSETS

A. Acceptable products; subject to compliance with specified requirements:

Manufacturer	FX1 Electric Entrance-K1S	FX2 Electric Holding-K2S
Best	47HW-DEU × LS	47HW-WEU × LS
Corbin Russwin	ML20905 × M91 × M105	ML20904 x K2S × M91 × M92
Sargent	8271-LX	8273-LX
Schlage	L9080EU-RX	L9082EU-RX

B. Characteristics: Heavy duty electromechanical mortise latchsets complying with ANSI/BHMA A156.13 Operational Grade 1; UL listed. Latchsets shall be equipped with internal monitoring switches as specified.
    1. Materials and Construction: Same as specified for mortise locksets and latchsets.
    2. Lever and Trim Design: Same as specified for mortise locksets and latchsets.
    3. Electrical Components:
        a. Solenoid: Manufacturer's continuous duty rated type.
        b. Voltage: 24 volts DC.
        c. Internal Switches: Single pole, double throw type; equipped for monitoring position of latchbolt. Connect to this switch for at least two purposes:
            1) Opening Secure Status Monitoring: Connect this switch in parallel with Door Position Switch (DPS) to provide the Access Control system assurance that the door is both closed and locked.
            2) Request-to-Exit (REX): Connect to this switch to disable nuisance alarms, allowing occupants exiting the space using the inside lever handle, to be recognized by the Access Control system as authorized passage through the opening.
        d. Wiring: Equip with manufacturer's color-coded lead wires.

2.7 SMALL MORTISE DEADLOCK

A. Acceptable products; subject to compliance with specified requirements:

Manufacturer	Classroom K1S - Thumbturn ANSI E06091
Best	48H-R
Corbin Russwin	DL4017
Sargent	4877
Schlage	L463

B. Characteristics: Heavy duty mortise deadlock complying with ANSI/BHMA A156.5, Grade 1.
   1. Lock case: Heavy gauge cold-rolled steel construction.
   2. Armored front and faceplate:
      a. Case front: Minimum 0.094-inch (2.4 mm) thickness steel attached to lock case; adjustable from flat to 1/8-inch in 2-inch (1:16) bevel.
      b. Faceplate: Minimum 0.0625-inch (16 gauge) 91.6 mm) brass or bronze material attached to case front with machine screws.
   3. Backset: 2-3/4 inches (70 mm).
   4. Deadbolt: Solid stainless steel or cold-drawn steel with hardened steel insert pins; minimum 1-inch (25 mm) throw.
   5. Classroom Thumbturn: Provide so it can only retract the deadbolt, but cannot project it.
   6. Key Cylinders: Provide as specified.
   7. Strike: Manufacturer's standard mortise type strike plate; equipped with dust box.
   8. Fasteners: Provide manufacturer's Phillips flat-head screws of types specified below for applications indicated, except where security screws are required. Screw shall be in material and finish matching locks and strikes.
      a. Machine screws: Provide for installation to drilled and tapped holes prepped in metal doors and frames.
      b. Wood screws: Provide steel threaded to the head type for installation to wood doors or frames.
      c. Security screws: Furnish flathead tamper-resistance (Torx Plus®) security screws for small mortise deadlocks scheduled for detainee exposure locations; sized to match hardware manufacturer's standard. Provide types as specified for substrates to which screws are anchored.

2.8 EXIT DEVICES

A. Acceptable Exit Device Series; subject to compliance with specified requirements:

Manufacturer	Wide Stile
Corbin Russwin	ED5000 Series Apex 2100, 2200, 2300, 2700, & 2800
Precision	Series
Sargent	86, 87, 88, & 89 Series
Von Duprin	98/99 Series

B. Equip exit devices with trim specified with lock function model numbers.

C. The following exit device manufacturer's model numbers are specified under Function Headings. For the most part, Function Headings use ANSI/BHMA A156.3 function code numbers. Hardware sets at the end of this specification section specify exit devices using these Function Headings.

D. The following exit device manufacturer's model numbers are further specified under Fire Labeled and Not Fire Labeled sub-headings. At any opening, scheduled or otherwise indicated in Construction Documents to require a fire rating, provide Fire Labeled product. Provide Not Fire Labeled product only where no fire rating is indicated.

E. Rim Exit Devices:

1. Wide Stile (ANSI/BHMA A156.3 Type 1):

a. Function 03 Night Latch- Less Dogging

Manufacturer	Not Fire Labeled- LD	Fire Labeled
Corbin Russwin	ED5200 × L957 × M51	ED5200A × L957
Precision	2103LD × 4903C	FL2103 × 4903C
Sargent	LD-8804 × ETJ	12-8804 × ETJ
Von Duprin	LD98L-NL-03	98L-NL-03-F

b. Function 08 Lever

Manufacturer	Not Fire Labeled	Fire Labeled
Corbin Russwin	ED5200 × L955	ED5200A × L955
Precision	2108 × V4908C	FL2108 × V4908C
Sargent	8813 × ETJ	12-8813 × ETJ
Von Duprin	98L-03	98L-03-F

c. Function 14 Passage

Manufacturer	Not Fire Labeled	Fire Labeled
Corbin Russwin	ED5200 × L910	ED5200A × L910
Precision	2114 × 4914C	FL2114 × 4914C
Sargent	8815 × ETJ	12-8815 × ETJ
Von Duprin	98L-BE-03	98L-BE-03-F

F. Concealed Vertical Rod Exit Devices:

1. Wide Stile (ANSI/BHMA A156.3 Type 8):

a. Function 08 Lever-Less Bottom Rod

Manufacturer	Not Fire Labeled- LBR	Fire Labeled- LBR
Corbin Russwin	ED5800 × L955 × M55	ED5800A × L955 × M55
Precision	2808LBR × V4908C	FL2808LBR × V4908C
Sargent	NB-MD8643 ×ETJ	12-NB-MD8643 ×ETJ
Von Duprin	9847L-03 × LBR	9847L-03-F × LBR

G. Characteristics: Heavy duty rim and vertical rod exit devices complying with ANSI/BHMA A156.3,
Grade 1.
1. Codes and Standards: Provide exit devices complying with UL listing for life safety and provide UL labels for “Fire Exit Hardware”, unless noted otherwise.
   a. Key Cylinder Dogging: At any non-rated applications indicated, provide key cylinder control of latch dogging.
2. Single Manufacturer: Provide all exit devices from a single manufacturer.
3. Non-Handed: Provide only non-handed exit devices.
4. Materials and Finishes: Stainless steel, brass or bronze fabrications per manufacturer's design and complying with specified ANSI/BHMA finish and material designation.
5. Latchbolts: Provide only deadlocking type latchbolts. Provide latchbolts with a self-lubricating coating to reduce wear. Plated or plastic coated latchbolts are not acceptable.
6. Touchpads: Plastic touchpads are not acceptable. Extend touchpads a minimum of 1/2 of the door width and extend to the height of the cross rail housing for “no pinch” operation.
   a. Touchpad Operation: Provide a fluid damper to decelerate touchpad return strokes and reduce exit device operation noise. Plastic linkage and “dogging” components are not acceptable.
7. Lever Trim: Provide solid case material lever trim with a break-away feature to limit damage to the unit from vandalism.
8. Thru-Bolt Trim: Thru-bolt all trim to the lock stile case.
9. Shims: Shim exit devices as needed, including glass bead conversion kits for doors with raised glass beads.
10. Wood Doors: Mount exit devices on labeled wood doors in compliance with requirements of wood door manufacturer.
11. Key Cylinders: Provide key cylinders as specified and as required by lock function.
12. Less Bottom Rod (LBR): At fire door applications indicated LBR, provide UL labeled vertical rod devices without bottom rod assemblies (wood doors at 20 minutes, metal doors at 90 minutes for same direction swing, and 180 minutes for double egress). Provide Fusible Alignment Pins as required by manufacturer’s UL certification testing for LBR locations. At fire door applications not indicated LBR, provide full bottom rod assemblies for security, with device manufacturer’s UL labeled rod and latch guards.

H. Electrified Exit Devices: In addition to meeting requirements specified above, provide exit device additional features as follows:
1. Power Supply: Div. 28 specifications require that the Systems Integrator provide non-proprietary low voltage power to each type of electrically operated hardware, transformed as needed to match that device manufacturer’s requirements. If nevertheless, an exit device manufacturer’s UL listing or warranty requires exclusive use of that manufacturer’s proprietary power supply, then furnish the quantity needed of that power supply to the Systems Integrator for installation with Div. 28 work.
2. Monitoring and Control: Coordinate with Div. 28 Systems Integrator for connection to fire alarm system and to remote monitoring and control systems as applicable. Also coordinate with Div. 28 Systems Integrator and ‘X’ drawings for provision of

door related local devices such as intercoms, keypads, card readers, pushbuttons, cameras, etc.

3. Bolt Position Switch (BPS): Provide internal SPDT switch for remote latch bolt status monitoring. Connect this switch in series with Door Position Switch (DPS) to provide the Access Control system assurance that the door is both closed and locked.
   a. Bolt Position Switch (BPS)

Manufacturer	At exit device hardware sets indicated × BPS provide:
Corbin Russwin	× M91 (suffix)
Precision	LS × (prefix)
Sargent	53- (prefix)
Von Duprin	LX (prefix)

4. Request-to-Exit (REX): Provide internal SPDT switch for remote push bar monitoring. Connect this switch to disable nuisance alarms, allowing occupants using the exit device inside push pad, to be recognized by the Access Control system as authorized passage through the opening.
   a. Request to Exit (REX)

Manufacturer	At exit device hardware sets indicated × REX provide:
Corbin Russwin	× M92 (suffix)
Precision	TS × (prefix)
Sargent	55- (prefix)
Von Duprin	RX (prefix)

5. Electric Latch Retraction (ELR):
   a. Electric Latch Retraction (ELR)

Manufacturer	At exit device hardware sets indicated × ELR provide: Motor
Precision	MLR × (prefix)
Sargent	56- (prefix)
Von Duprin	QEL (prefix)

   b. Characteristics:
      1) At locations indicated ELR provide:
         a) 24 VDC continuous duty motor assembly for momentary or continuous remote or local electric retraction of latch bolt and push bar.
      2) Provide with Power Supply, and Monitoring and Control as specified above.
      3) At each location indicated ELR, also provide BPS and REX as specified above.

2.9 ELECTRIC POWER TRANSFER

A. Acceptable products; subject to compliance with specified requirements:

Manufacturer	Model
Securitron	CEPT-10
Von Duprin	EPT-10

B. Characteristics:
1. Provide an electric power transfer with not less than ten wires at 24 gauge for each electric exit device that requires more than the four conductors available from an electric hinge.
2. Provide tamper resistant articulating metal shrouds concealing wires, with entire device inaccessible when door is closed.

2.10 DOOR CLOSERS

A. Application Requirements:
1. Concealed Closers: Provide at any location having one of the following:
a. Detainee-Exposure.
b. Door Position Switch.
c. Hardware sets specifically listing concealed closer.
d. Contractor's Option: for any other door requiring a closer.
2. Surface Closers: Use permitted at any location not requiring a concealed closer.
a. Door Face: Mount surface closers at face of door farthest from approach. Mount at interior face of exterior doors and, specifically for corridor doors; at non-corridor face, inside rooms.
b. Door Swing Shown on Plans: Accommodate swing direction shown, providing push or pull type as required to accommodate door face requirement above. Also provide closers accommodating full degree of swing (90°, 180°, etc.) indicated on drawings or required by code to allow unobstructed exit access.
c. Auxiliary Door Stops: Provide separate auxiliary stops as specified. Provide Push Side w/Stop Arm closers only where specifically listed in hardware sets.

B. Acceptable products; subject to compliance with specified requirements:
1. Surface Door Closers:

Manufacturer	Push Side	Push Side w/Stop Arm	Push Side w/Stop Arm-Delay	Push Side w/Stop Arm-Hold Open
LCN Closers	4211	4211 × CUSH	4211DA × CUSH	4211 × H-CUSH
Norton	PR7570	CLP7570	CLP7570DA	CLP7570T
Sargent	281 × SSP	281 × SSP × PS	281 DA × SSP × CPS	281 × SSP × PSH

(Surface Door Closers continued):

Manufacturer	Pull Side	Pull Side w/Hold Open	Push Side w/Hold Open
LCN Closers	4511	4011-H × MC	4111-H-EDA × MC
Norton	R7570	R7500H	PR7500H
Sargent	281 × SSO	281 × H10 × MC	281 × SSP × PSH

2. Concealed Door Closers:

Manufacturer	Interior Doors up to 3'-2" (965 mm) width	Interior Doors over 3'-2" to 4'-0" (965 to 1220 mm) width and Exterior Doors up to 3'-0" (915 mm) width	Exterior Doors over 3'-0" (915 mm) to 3'-6" (1065 mm) width

LCN Closers	2213	2214	2215

Norton	7970	7970	7970
Sargent	268 × CSP	268 × CSP	268 × CSP

3. Concealed Door Closer with Door Position Switch:

Manufacturer	Interior Doors up to 3'-2" (965 mm) width	Interior Doors over 3'-2" to 4'-0" (965 to 1220 mm) width and Exterior Doors up to 3'-0" (915 mm) width	Exterior Doors over 3'-0" (915 mm) to 3'-6" (1065 mm) width
LCN Closers	2213DPS	2214DPS	2215DPS
Norton	7970DPS	7970DPS	7970DPS
Sargent	268 × CSPS	268 × CSPS	268 × CSPS

C. Characteristics: Full hydraulic, rack and pinion action with a high strength cast iron cylinder; meeting ANSI/BHMA 156.4, Grade 1.
   1. General:
      a. Codes and Standards: Provide closers complying with UL and UL10C positive pressure requirements for fire rated door openings and complying with ADA requirements for door opening force.
      b. Single Manufacturer: Provide all overhead closers; both surface and concealed, from a single manufacturer.
      c. Warranty: Provide manufacturer's ten year warranty.
      d. Closer Adjustment: Provide continuously adjustable power over full range of closer sizes, allowing reduced opening force for the physically handicapped. Provide hydraulic regulation by tamper-proof, non-critical valves. Provide separate adjustments for latch speed, general speed and back check.
      e. Hydraulic Fluid: Provide a stable fluid UL tested for fire rated openings and all-weather rated for temperature ranges from 120 degrees F. (49° C.) to -30 degrees F. (-35° C.) without seasonal adjustments.
      f. Closer Arms: Provide solid forged steel main arms, and forearms for parallel arm closers.
   2. Concealed Closers: Provide overhead concealed closers with fully mortised door tracks and spring power adjustable for 50% increase in closing power.
   3. Surface Closers: Provide overhead surface closers with:
      a. Full Load Cycles: Cycles tested to exceed ten million (10,000,000) and certified by a recognized independent national testing laboratory.
      b. Metal Covers: One-piece drawn metal, with four point mounting and screw fastened on top. Plastic covers are not acceptable.
      c. Arms: Provide special joints to prevent disassembly.
         1) Stop Arm: Provide cast-in solid stop on the closer shoe where specified.
   4. Door Position Switch: Single pole, double throw type concealed in closer assembly; rated at maximum 10.1 amps at 125/250 VAC. Provide with concealed closer where specified.
      a. Equip with three wire connector harness with 12-inch (305 mm) length, 18 AWG leads for field connection and interface with security and monitoring system.
      b. Indication switch shall be factory set to trip when leading edge of door moves

maximum 1/2-inch (13 mm) away from the door stop.

5. Finishes: Powder coating finish tested to exceed 100 hours salt spray and certified by a recognized independent national testing laboratory.
   a. Closers for interior doors: Manufacturer's standard powder coated finish.
   b. Closers for exterior doors: Manufacturer's special rust inhibiting process with powder coated finish.

D. Mounting Hardware: Furnish with manufacturer's standard mounting bolts and fasteners except where security fasteners are required as specified. Finish on heads of exposed fasteners shall match closers.
   1. Bolts: Provide sex bolts for mounting surface closers to hollow metal doors and through-bolts for wood doors.
   2. Fasteners: Furnish with manufacturer's standard screws, except where installation is required in detainee exposure areas provide specified tamper-resistant stainless steel (Torx Plus®) security screws.

2.11 DOOR STOPS

A. Application Requirements:
   1. Provide one stop for each location indicating a stop in the hardware sets at the end of this specification section. Unless specifically indicated otherwise, provide according to requirements specified in this Article.
   2. Provide wall stops. Where wall stops cannot be used, provide floor stops. Where wall stops cannot be used, and floor stops would create a trip hazard, provide concealed overhead stops. Where concealed overhead stops would interfere with other specified hardware, provide surface overhead stops.

B. Wall Stops:
   1. Public and Staff Areas:
      a. Acceptable products; subject to compliance with specified requirements:

Manufacturer	Masonry / Concrete Walls	Gypsum Board Walls
Hager	230W	230T
Ives	WS401CVX	WS402CVX
Rockwood	402	400
Trimco	1277/79CX-RP	1277/79CX-MS

      b. Characteristics: Heavy duty wall bumper constructed for concealed mounting; meeting ANSI/BHMA 156.16, Grade 1.
         1) Base: Solid cast brass or aluminum retainer designed to house rubber bumper.
         2) Bumper: Convex rubber, tamper resistant design.
         3) Mounting Hardware: Equip with manufacturer's standard fasteners and mounting devices for anchoring to masonry, concrete and framed gypsum board wall construction indicated.
   2. Detainee Exposure Areas:
      a. Acceptable products; subject to compliance with specified requirements:

Manufacturer	Model No.
Airteq:	Door Stop 651

Hager	269F
Northwest:	NW 606S
Rockwood:	466

b. Characteristics: Heavy duty detention grade wall stop.

1) Design: Molded convex profile black neoprene stop designed with integral anti-rotational post configured to resist removal tampering.

2) Mounting Hardware: Furnish with manufacturer's expansion anchors equipped with specified tamper resistant (Torx Plus®) security screws.

C. Floor Stops:

1. Public and Staff Areas:

a. Acceptable products; subject to compliance with specified requirements:

Manufacturer	Low Dome Stop	High Dome Stop
Hager	259F	259H
Rockwood	481	481H
Trimco	1214	1214H

b. Characteristics: Heavy duty elongated dome type floor stop.

1) Types: Low or high dome stops as specified for door undercut conditions indicated.
   a) Low Dome Stop: Provide for doors having undercuts 3/4-inches (20 mm) and less as measured from finish floor substrate surface.
   b) High Dome Stop: Provide for doors having undercuts greater than 3/4-inches (20 mm) as measured from finish floor substrate surface.

2) Dome Base: Solid cast brass with base flange designed to receive three anchors.

3) Bumper: Replaceable round rubber design.

4) Heights:
   a) Low Dome Stop: 1-3/4 inch (45 mm), nominal.
   b) High Dome Stop: 2-1/4 inch (58 mm), nominal.

5) Mounting Hardware: Furnish with manufacturer's machine screws and expansion anchors for attachment to concrete substrates.

2. Detainee Exposure Areas:

a. Acceptable products; subject to compliance with specified requirements:

Manufacturer	Tall Profile	Low Profile
Midwest	760	–––
Northwest	NW 606	–––
Rockwood	467	–––
Stanley	–––	3001

b. Characteristics: Molded silicone rubber stop formed integral with threaded steel shank for mounting. Provide low or tall profile stops as applicable for

conditions encountered.

1) Size: Minimum 2-inch (50 mm) diameter by 2-1/2 inch (64 mm) or 3-1/2 inch (89 mm) height bumper projection.

2) Mounting Accessories: Provide epoxy adhesive for setting shank of floor stop into hole drilled in concrete substrates.

3. Exterior Areas: Provide tall profile type floor stop same as specified for detainee exposure areas.

D. Overhead Door Stops:

1. Acceptable products; subject to compliance with specified requirements:

Manufacturer	Public and Staff Areas Only Surface, Medium Duty	Detainee Exposure Areas Surface, Heavy Duty	All Areas Concealed, Heavy Duty
Dorma	900S	900S	910S
Glynn Johnson	450S	90S	100S
Hager	7016S	7016S	7016C
Rixson	33-131	9-131	1-131
Sargent	1540S	590S	690S

2. Characteristics: Meeting ANSI/BHMA 156.8, Grade 1.
   a. Material: Stainless steel, except where not available, provide bronze plated to match stainless steel.
   b. Concealed Holders: Mortise “jamb bracket” flush with soffit of door frame head. Mortise channel track into top of door. Install arm.
   c. Surface Holders: Mount “jamb bracket” to door frame head. Mount channel track to face of door. Install arm.
   d. Fasteners: Furnish with manufacturer's standard mounting screws, except where installation is required in detainee exposure areas provide specified tamper-resistant (Torx Plus®) security screws. Fastener heads shall match finish of faceplate.

2.12 DOOR PUSH PLATES AND PULL PLATES

A. Acceptable Products; subject to compliance with specified requirements:

Manufacturer	Push Plate	Pull Plate
Ives	8200 - 4×16	8303EZ-0 - 4×16 × Type F mounting
McKinney	P1253 × Beveled 4Sides	DP703 × Type M mounting
Rockwood	73C	111 × 73C × Type 9 mounting
Trimco	1809-4	1018-3B × Type M mounting

B. Characteristics: Meeting ANSI/BHMA A156.6.
   1. Material: Stainless steel.
   2. Push Plates: Heavy gauge plate with beveled edges four sides and pre-drilled to accept not less than six fasteners.
      a. Plate Size: 4-inch (102 mm) width by 16-inch (406 mm) length.

b. Plate Thickness: 0.125-inch (1/8") (3.1 mm).

3. Pull Plates: Round profile solid rod pulls with metal faceplate pre-drilled to accept not less than six fasteners.
4. Pull Size: 1-inch (25 mm) diameter by 10-inch (254 mm) center to center dimension.
5. Mounting Hardware: Furnish with manufacturer's concealed mounting bolts and screws, except where installation is required in detainee exposure areas provide specified tamper-resistant stainless steel (Torx Plus®) security screws.

2.13 DOOR PROTECTION PLATES

A. Acceptable Products; subject to compliance with specified requirements:

Manufacturer	Kick Plate- * See height specified below.
Hager	194S × *
Ives	8400 S32D-*
McKinney	KP50 × *
Rockwood	K1050 × *
Trimco	K0050 × *

B. Characteristics: Heavy gauge metal door protection plates meeting ANSI/BHMA A156.6.
1. Material and Finish: Stainless steel; satin finish.
2. Plate Thickness: 0.050-inch (1.3 mm) minimum thickness.
3. Plate Sizes:
   a. Width: 2-inch (50 mm) less door width, unless otherwise specified.
   b. Height:
      1) Kick Plate: 10-inches (254 mm), except at aluminum doors provide kickplate height to match provided height of aluminum door bottom rail.
4. Fire Label: Armor plates for installation to fire-rated doors shall be Listed and labeled by Underwriters Laboratories, Inc. (UL) or Intertek Warnock Hersey (WHI) bearing factory applied labels or markings of approval agency in conformance with requirements of NFPA 80. Provide fire labeled plates for installation with scheduled fire-rated openings.
5. Fasteners: Furnish with manufacturer's standard mounting screws, except where installation is required in detainee exposure areas provide specified tamper-resistant (Torx Plus®) security screws. Fastener heads shall match finish of protection plates.

2.14 THRESHOLDS

A. Acceptable products; subject to compliance with specified requirements:
1. Thresholds:

Manufacturer	Standard Saddle	Wide Saddle
Hager	413S-MIL	415S-MIL
National Guard	513	426E
Pemko	271A	172A
Reese	S405A	S426A

B. Characteristics: ADA compliant, aluminum thresholds meeting ANSI/BHMA A156.21.
   1. Types:
      a. Standard Saddle: 5-inch (127 mm) width by 1/4-inch (6.4 mm) height.
      b. Wide Saddle: 6-inch (152 mm) width by 1/2-inch (12.7 mm) height.
   2. Material: Mill finish extruded aluminum alloy; thickness as specified.
      a. Standard Saddle: 0.125-inch (2.8 mm), minimum.
      b. Wide Saddle: 0.109-inch (2.8 mm), minimum.

C. Fasteners: Furnish with stainless steel flathead tamper-resistant (Torx Plus®) security screws.

2.15 DOOR SEALS AND GASKETS

A. Door Seals – Head and Jambs:
   1. Acceptable products; subject to compliance with specified requirements:

	Public and Staff Areas	Detainee Exposure Areas
Manufacturer	Self-Adhering Gasket	Bulb Seal w/Retainer
Hager	726S	891S-S-MIL
National Guard	5050C	162SA
Pemko	S88D	303AS
Reese	F-797B	---

   2. Characteristics: Complying with ANSI/BHMA A156.22.
      a. Types:
         1) Self-adhering Gasket: Pressure sensitive self-adhesive type compression bulb gasketing; dark bronze or black color, ¼" x ½" size, Polyprene® thermoplastic compound rubber or silicone.
         2) Bulb Seal with Retainer: Manufacturer's silicone bulb type seal insert in extruded aluminum retainer housing designed for mounting to door frame stops.
      b. Fire and Smoke Performance:
         1) Fire: Tested in accord with UL Standard 10B and 10C or NFPA 252 at positive pressure; UL Classified as gasketing material for use on fire doors.
         2) Smoke: Test heads, jambs, and astragals to meet requirements of NFPA 105 when tested in accord with UL Standard 1784.
      c. Air Infiltration Performance: Maximum air leakage of 0.5 cfm/lin. ft. (0.77 L/s per m) at 1.56 psf (75 Pa) pressure differential when tested in accord with ASTM E283.
      d. Finish for Aluminum Retainers: Mill finish or clear anodized.
      e. Fasteners: Furnish with stainless steel tamper-resistant (Torx Plus®) security screws for mounting retainer type door seals.

B. Astragal Seals:
1. Surface-Mounted:
a. Acceptable products; subject to compliance with specified requirements:

Manufacturer	Metal Doors-Nylon Brushes
Hager	802S-MIL
National Guard	9605A
Pemko	18041CNB
Reese	F-959C

b. Characteristics: Complying with ANSI/BHMA A156.22.

1) Type: Astragal seal with extruded aluminum retainer housing nylon brush inserts as indicated; designed for surface mounting to face of meeting door stile edges.

2) Fire and Smoke Performance:
a) Fire: Tested in accord with UL Standard 10B or NFPA 252 at positive pressure; UL Classified as gasketing material for use on fire doors.
b) Smoke: Test heads, jambs, and astragals to meet requirements of NFPA 105 when tested in accord with UL Standard 1784 or ASTM E283.
c) Air Infiltration Performance: Maximum air leakage of 0.5 cfm/lin. ft. (0.77 L/s per m) at 1.56 psf (75 Pa) pressure differential when tested in accord with ASTM E283.

3) Finish for Aluminum Retainers:
a) Metal Doors: Mill finish or clear anodized.

4) Fasteners: Furnish with manufacturer's standard stainless steel screws of types specified for applications indicated, except where security screws are required.
a) Sheet metal screws: Provide pan head type for installation to metal doors.
b) Security screws: Furnish pan head tamper-resistant (Torx Plus®) security screws where scheduled for detainee exposure areas. Provide types as specified for substrates to which screws are anchored.

C. Door Bottom Sweeps:
1. Acceptable products; subject to compliance with specified requirements:

Manufacturer	Brush Sweep w/ Drip
Hager	770S-B-MIL
National Guard:	C627A
Pemko:	345ANB

2. Characteristics: Complying with ANSI/BHMA A156.22.
a. Types:

1) Brush Seal w/Drip: Manufacturer's extruded aluminum drip style retainer housing nylon brush gasketing insert having nominal 0.50-inch (1/2") (13 mm) exposure height designed for surface mounting.

b. Fire Performance: Tested in accord with UL Standard 10B and 10C or NFPA 252 at positive pressure; UL Classified as gasketing material foruse on fire doors.

c. Finish for Aluminum Retainers: Mill finish or clear anodized.

d. Fasteners: Furnish with manufacturer's standard stainless steel screws except where installation is required in detainee exposure areasprovide specified tamper-resistant stainless steel (Torx Plus®) security screws.

2.16 ACOUSTIC DOOR SEALS AND GASKETS

A. Adjustable Neoprene Seals with Aluminum Retainers:

1. Acceptable products; subject to compliance with specified requirements:

Manufacturer	Adjustable Door Bottom- Semi-Mortised	Adjustable Door Seals- Surface Heads & Jambs	Adjustable Astragal Seal Set- Surface Both Doors Active
National Guard:	222A	1038A	140SA
Pemko:	4131CRL	322CSN	351CV
Zero:	366AA	770SPAA	55AA/555AA

1. Characteristics: Complying with ANSI/BHMA A156.22.

a. Adjustable Door Bottom: Automatic retractable door bottom seal housed in heavy duty extruded aluminum receptor equipped with neoprene seal as specified.

1) Semi-Mortised Mounted: Enable jamb seals to make continuous unbroken tight seals full height from top to bottom of door opening overlapping the Adjustable Door Bottom. Provide template to door manufacturer requiring a mortise in doors so that the Adjustable Door Bottom outer face is flush with the door face.

b. Adjustable Door Seal: Adjustable door seal housed in heavy duty extruded aluminum receptor equipped with neoprene seal as specified.

1) Surface Mounted at Heads & Jambs: Provide Adjustable Door Seals as a continuous unbroken tight seal full height from top to bottom of a door opening overlapping the Adjustable Door Bottom. Install at heads and jambs.

c. Adjustable Astragal Seal Set: Adjustable door seal set housed in heavy duty extruded aluminum receptors equipped with neoprene seals as specified.

1) Surface Mounted on Both Doors either side of Astragal Gap: Provide Adjustable Astragal Seal Set as continuous unbroken tight seals full height from top to bottom of a door opening overlapping the Adjustable Door Bottom.

d. Fire and Smoke Performance:

1) Fire: Tested in accord with UL Standard 10B and 10C or NFPA 252 at positive pressure; UL Classified as gasketing material for use on fire doors.

2) Smoke: Meeting requirements of NFPA 105 when tested in accord with UL

e. Finish for Aluminum Retainers: Mill finish or clear anodized finish.

f. Fasteners: Furnish with manufacturer's standard stainless steel screws.

2.17 OVERHEAD RAIN DRIPS

A. Acceptable products; subject to compliance with specified requirements:

Manufacturer	Overhead Rain Drips
Hager	810S-B-MIL
National Guard:	16A
Pemko:	346C
Reese:	R201A

B. Characteristics: Complying with ANSI/BHMA A156.22.

1. Overhead Rain Drips: Manufacturer's extruded aluminum drip style having nominal 2.50-inch (2-1/2") (64 mm) horizontal projection by 1.50-inch (1-1/2") (38 mm) height designed for surface mounting to frame immediately above door head.
2. Aluminum Finish: Mill finish or clear anodized.
3. Fasteners: Furnish with manufacturer's standard stainless steel screws except where installation is required in detainee exposure areas provide specified tamper-resistant stainless steel (Torx Plus®) security screws.

2.18 SILENCERS

A. Acceptable products; subject to compliance with specified requirements:

Manufacturer	Metal Frames	Wood Frames
Hager	307D	308D
Ives:	SR64	SR65
Rockwood:	608	609
Trimco:	1229A	1299B

B. Characteristics: Gray rubber or neoprene types of pneumatic design with tamperproof air chambers, for mounting to metal or wood door frames; meeting ANSI A156.16., Grade 1.

C. Quantities: Unless otherwise specified in hardware schedule, provide as follows:

1. Single Door Opening: Provide one silencer aligned opposite each hinge provided, but not less than three silencers.
2. Pair of Doors Opening: Provide one silencer for each leaf, two silencers total. Locate each silencer 6 inches from the center of the frame head.

2.19 SECURITY SCREWS:

A. Acceptable manufacturers; subject to compliance with specified requirements:

1. Holbrook Mfg., Inc.
2. House of Threads, Inc.
3. Sentry Security Fasteners, Inc.

4. Tamperproof Screw Co., Inc.
5. Tamper-Pruf Screws, Inc.

B. Tamper-Resistant Security Screws:
1. Design: Tamper-resistant screw with heads having a deep five lobe recess with a solid post formed in the center based on Camcar/Div. Textron Inc., Torx Plus® Drive System requiring a special mated driver to install or remove screw. Fasteners and tools shall be produced by a Camcar licensed manufacturer.
2. Types:
a. Flathead Torx Plus® machine screws: Provide where countersinking is required. Flathead screws shall be sized to match countersunk holes to provide a proper fitted installation with heads seated flush and aligned with adjacent surfaces.
b. Button-head Torx Plus® machine screws: Provide where no countersinking is required.
c. Flathead Torx Plus® wood or sheet metal screws: Provide for installation in wood substrates where countersinking is required. Flathead screws shall be sized to match countersunk holes to provide a proper fitted installation with heads seated flush and aligned with adjacent surfaces
d. Button-head Torx Plus® wood or sheet metal screws: Provide for installation in wood substrates where no countersinking is required.
3. Materials and Finishes: Base metal for screws shall be of steel or stainless steel as required for hardware finishes specified; except where installed at exterior or wet locations screws shall be stainless steel types.
a. Finishes for screws shall match hardware finish to which it is applied.
b. Where finishes cannot be matched, provide specified screws with satin stainless steel finish (US32D).
4. Drivers: Provide five complete sets of drivers for use with specified screws.
a. Drivers shall be of design to insert substantially into recesses of screwheads to eliminate drive tool slippage.
b. Deliver drivers to Owner with specified spare parts for maintenance use.

C. Security Fastener Requirements: All exposed fasteners on hardware installed in detainee exposure areas shall be equipped with specified tamper-resistant security screws. Should hardware manufacturer or supplier not be capable of furnishing the specified tamper-resistant security screws, Contractor shall be responsible for obtaining and replacing the fasteners furnished by hardware manufacturer with the specified security screws.

2.20 MATERIALS AND FABRICATION

A. Manufacturer's Name Plate: Do not use manufacturers' products that have manufacturer's name or trade name displayed in a visible location (omit removable nameplates) except in conjunction with required fire-rated labels and as otherwise acceptable to Architect.
1. Manufacturer's identification will be permitted on rim of lock cylinders only.

B. Base Metals: Produce hardware units of basic metal and forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness, but in no case of lesser (commercially recognized) quality than specified for applicable hardware units by applicable ANSI/BHMA A156 series standards for each type of

hardware item and with ANSI/BHMA A156.18 for finish designations indicated. Do not furnish "optional" materials or forming methods for those indicated, except as otherwise specified.

C. Fasteners: Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
   1. Do not provide hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.
   2. Furnish screws for installation with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of this other work as closely as possible including "prepared for paint" surfaces to receive painted finish.
   3. Provide concealed fasteners for hardware units that are exposed when door is closed except to the extent no standard units of type specified are available with concealed fasteners.
   4. Do not use thru-bolts or sex bolts for installation where bolt head or nut on opposite face is exposed in other work unless their use is the only means of adequately fastening the hardware, or otherwise found in Headings. Coordinate with wood doors and metal doors and frames where thru-bolts are used as a means of reinforcing the work, provide sleeves for each thru-bolt or use sex screw fasteners.

2.21 HARDWARE FINISHES

A. Match items to the manufacturer’s standard color and texture finish for the latch and lock sets (or push-pull units if no latch of lock sets).

B. Provide finishes that match those established by ANSI or, if none established, match the Architect’s sample.

C. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer’s standards, but in no case less than specified by referenced standards for the applicable units of hardware.

D. Provide protective lacquer coating on all exposed hardware finishes of brass, bronze, and aluminum, except as otherwise indicated. The suffix "-NL" is used with standard finish designations to indicate "no lacquer."

E. The designations used to indicate hardware finishes are those listed in ANSI/BHMA A156.18, "Materials and Finishes," including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.
   1. Hinges (Exterior): 630 (US32D) Satin Stainless Steel
   2. Hinges (Interior wood doors): 652 (US26D) Satin Chrome Plated Steel
   3. Hinges (Interior metal doors): 600 (USP)
   4. Locks: 630 (US32D) Satin Stainless Steel
   5. Exit Devices: 628 (US28) Satin Aluminum, clear anodized chassis, 630 (US32D) Satin Stainless Steel caps and touch pads
   6. Door Closers: 689 (US28) Satin Aluminum Powder Coat
   7. Push Plates: 630 (US32D) Satin Stainless Steel
   8. Pull Plates: 630 (US32D) Satin Stainless Steel

9. Protective Plates: 630 (US32D) Satin Stainless Steel
10. Door Stops: 626 (US26D) Satin Chrome Plated Brass/Bronze
11. Overhead Stops/Holders: 630 (US32D) Satin Stainless Steel
12. Thresholds/Weatherstripping: 627/628 (US27/US28) Satin Aluminum, clear coated/anodized
13. Continuous Hinges: 630 (US32D) Satin Stainless Steel

2.22 AUTOMATIC DOOR OPERATORS

A. Acceptable products; subject to compliance with specified requirements:

1. Low Energy Door Operators- Surface Mounting:

Manufacturer	***Single Swing Door Surface Operator at Pull Side***	***Pair of Swing Doors Simultaneous Operation Surface Operator at Push Side***
Besam	***SW100- Single Operator***	***SW100- Double Operator***
Horton	***EasyAccess Series 7900 Single Unit***	***EasyAccess Series 7900 Pair Unit***
LCN	***9531***	***9550***
Stanley	***Magic-Access***	***Magic-Access x (2)***
Sargent	***MPower 3060***	***MPower 3051 x (2)***

B. Source Limitations: Obtain automatic door operators, including activation and safety devices, from single source and from single manufacturer.

C. General: Provide operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for long-term, maintenance-free operation under normal traffic load for occupancy type indicated; and according to UL 325. Coordinate operator mechanisms with door operation, hinges, and activation and safety devices.

1. Wind Load: Provide door operators on exterior doors that will open and close doors and maintain them in fully closed position when subjected to wind load of 40 pounds per square foot.

2. Electromechanical Operating System: Self-contained unit powered by permanent-magnet dc motor; with closing speed controlled mechanically by gear train and dynamically by braking action of electric motor, connections for power and activation- and safety-device wiring, and manual operation including spring closing when power is off.

3. Brackets and Reinforcements: Fabricated from aluminum with nonstaining, nonferrous shims for aligning system components.

4. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

D. Standard: BHMA A156.19.

E. Performance Requirements:

1. *Opening Force if Power Fails: Not more than 15 lbf (67 N) required to release latch if provided, not more than 30 lbf (133 N) required to manually set door in motion, and not more than 15 lbf (67 N) required to fully open door.*
2. *Entrapment-Prevention Force: Not more than 15 lbf (67 N) required to prevent stopped door from closing or opening.*

F. *Configuration: Operator to control single swinging doors or pair of swinging doors as indicated.*

1. *Traffic Pattern: Two way.*
2. *Mounting: Surface.*

G. *Cover for Surface-Mounted Operators: Fabricated from 0.125-inch- (3.2-mm-) thick, extruded or formed aluminum continuous over full width of operator-controlled door opening; with enclosed end caps, provision for maintenance access, and fasteners concealed when door is in closed position.*

1. *Color Anodic Finish: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.*
   a. *Color: Dark bronze as selected by Architect from full range of industry colors and color densities.*
2. *Materials*
   a. *Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.*
      1) *Extrusions: ASTM B 221 (ASTM B 221M).*
      2) *Sheet: ASTM B 209 (ASTM B 209M).*
   b. *Fasteners and Accessories: Corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.*

H. *Operation: Power opening and spring closing. Provide time delay for door to remain open before initiating closing cycle as required by BHMA A156.19. When not in automatic mode, door operator shall function as manual door closer, with or without electrical power.*

I. *Operating System: Electromechanical.*

J. *Microprocessor Control Unit: Solid-state controller.*

K. *Features:*

1. *Adjustable opening and closing speed.*
2. *Adjustable opening and closing force.*
3. *Adjustable backcheck.*
4. *Adjustable hold-open time from zero to 30 seconds.*
5. *Adjustable time delay.*
6. *Adjustable acceleration.*
7. *Obstruction recycle.*

8. *On-off/hold-open switch to control electric power to operator; key operated.*

L. *External Activation Device: Push-plate switch on each side of door to activate door operator.*

M. *Controls*

1. *General: Provide controls, including activation and safety devices, according to BHMA standards; for condition of exposure; and for long-term, maintenance-free operation under normal traffic load for occupancy type indicated. Coordinate activation and safety devices with door operation and door operator mechanisms.*

2. *Push-Plate Switch: Momentary-contact door control switch with flat push-plate actuator with contrasting-colored, engraved message. Provide square or narrow box and wall, jamb, or post/bollard mounted as indicated.*
   a. *Square Box: Round push plate with 4-by-4-inch (100-by-100-mm) junction box.*
      1) *Wall Mounting: Recess mounted, semiflush in wall.*
   b. *Narrow Box: Rectangular push plate with 2-by-4-inch (50-by-100-mm) junction box.*
      1) *Jamb Mounting: Recess mounted in door jamb.*
      2) *Post/Bollard Mounting: Recess mounted in post/bollard.*
   c. *Push-Plate Material: Stainless steel as selected by Architect from manufacturer's full range.*
   d. *Message: International symbol of accessibility and "Push to Open."*

3. *Bollard for Push-Plate Switch: 6-inch (152-mm) diameter bollard with welded 45° angle top, stainless steel Type 304 satin finish 630 (US32D) per ANSI/BHMA A156.18. Nominal height of angle top; 42-inch (1067-mm) @ bottom, 48-inch (1219-mm) @ top, above finish floor. Prepare angle top to receive recess mounted Narrow Box Push-Plate Switch as specified above. Switch at angle top to have a round Push-Plate, 4-inch (101-mm) diameter, nominal. Provide manufacturer's standard base bracket with screws and floor anchors for mounting bollard to floor surface. Provide hole in base bracket to accommodate conduit for control wiring. At locations where an additional control device, such as a card reader or keypad, is required; provide notched bollard with flat vertical surface for a recessed 2-by-4-inch (50-by-100-mm) junction box at 36-inch (914-mm) centerline, above finish floor.*
   a. *Acceptable products; subject to compliance with specified requirements:*
      1) *Wikk Industries, Inc. BPRSM-AINS with 4R-3 switch at angled top.*

4. *Motor Protection Circuit: When door is inadvertently locked or otherwise prevented from opening, provide control circuit to either prevent activation of operator or shut off power to operator motor.*

N. *Fabrication*

1. *Factory fabricate automatic door operators to comply with indicated standards.*

2. Form aluminum shapes before finishing.

3. Fabricate exterior components to drain condensation and water passing joints within operator enclosure to the exterior.

4. Use concealed fasteners to greatest extent possible. Where exposed fasteners are required, use countersunk Phillips flat-head machine screws, finished to match operator.

O. Accessories

1. Signage: As required by cited BHMA standard for type of door and its operation.

a. Application Process: Decals.

b. Provide sign materials with instructions for field application when operators are installed.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Mount hardware units at heights indicated in following applicable publications, except as specifically indicated or required to comply with governing regulations and except as otherwise directed by Architect.
1. "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute.

B. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in the Division 9 Sections. Do not install surface-mounted items until finishes have been completed on the substrates involved.

C. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

D. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

E. Set thresholds for exterior doors in full bed of butyl-rubber or polyisobutylene mastic sealant complying with requirements specified in Division 7 Section “Joint Sealers”.

F. Weatherstripping and Seals: Comply with manufacturer's instructions and recommendations to the extent installation requirements are not otherwise indicated.

G. Examination for Automatic Door Operators: Verify that full-height finger guards are installed at each door with pivot hinges where door has a clearance at hinge side greater than 1/4 inch (6 mm) and less than 3/4 inch (19 mm) with door in any position.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

H. Automatic Door Operators:

1. General: Install automatic door operators according to manufacturer's written instructions and cited BHMA standard for type of door operation and direction of pedestrian travel, including signage, controls, wiring, remote power units if any, and connection to building's power supply.

a. Do not install damaged components. Fit joints to produce hairline joints free of burrs and distortion.

b. Install operators true in alignment with established lines and door geometry without warp or rack. Anchor securely in place.

2. Controls: Install activation and safety devices according to manufacturer's written instructions and cited BHMA standard for operator type and direction of pedestrian travel. Connect control wiring according to Div. 28 Section "Wire and Cable.

3. Access-Control System: Connect operators to access-control system as specified in Div. 28 Section "Access Control."

4. Signage: Apply on both sides of each door as required by cited BHMA standard for type of door operator and direction of pedestrian travel.

3.2 ADJUSTING, CLEANING, AND DEMONSTRATING

A. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate freely and smoothly or as intended for the application made.

1. Where door hardware is installed more than one month prior to acceptance or occupancy of a space or area, return to the installation during the week prior to acceptance or occupancy and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to function properly with final operation of heating and ventilating equipment.

B. Clean adjacent surfaces soiled by hardware installation.

C. Door Hardware Supplier's Field Service

1. Inspect door hardware items for correct installation and adjustment after complete installation of door hardware.
2. Instruct Owner's personnel in the proper adjustment and maintenance of door hardware and hardware finishes.
3. File written report of this inspection to Architect.

D. Prior to project completion, representatives of the lock, exit device and overhead closer manufacturers shall inspect and adjust all units and certify that all units are installed in accordance with the manufacturer’s instructions, and are regulated properly and functioning correctly. A written report shall be provided to the Architect as to the inspection and shall include appropriate certificates.

E. Automatic Door Operators:

1. Adjust automatic door operators to function smoothly, and lubricate as recommended by manufacturer; comply with requirements of applicable BHMA standards.

a. Adjust operators on exterior doors for weathertight closure.

2. After completing installation of automatic door operators, inspect exposed finishes on doors and operators. Repair damaged finish to match original finish.

3. Readjust automatic door operators and controls after repeated operation of completed installation equivalent to three days' use by normal traffic (100 to 300 cycles).

3.3 HARDWARE SCHEDULE

A. Abbreviations:

BLDRS:	Builders	K1S:	Keyed one side
CD:	Cylinder dogging	K2S:	Keyed two sides
CVR:	Concealed vertical rod	LBR:	Less bottom rod
CYL:	Cylinder	LD:	Less dogging
DPS:	Door position switch	LDW:	Less door width
DR:	Door	MECH:	Mechanical
DU-AX:	Dual-axis builders hardware cylinder	MNTG:	Mounting
FL:	Fire labeled	OPNG:	Opening
HDW:	Hardware		
HM:	Hollow metal		

B. General: Provide hardware for each door to comply with requirements of the hardware set numbers indicated in door schedule, and in the following schedule of hardware sets.

C. Weathersets: Provide where scheduled in hardware sets.

SWG. DR. WEATHERSET
EACH SHALL HAVE:

1	OVERHEAD RAIN DRIP
1 SET	BULB SEAL W/RETAINER (*Provide at Head and Jambs of doors where Detainee Exposure is indicated.*)
1 SET	SELF-ADHERING GASKETS (*Provide only at Head and Jambs of doors where Detainee Exposure is* ***NOT*** *indicated.*)
1 SET	ASTRAGAL SEALS (*Provide at pairs of doors.)*
1	DOOR BOTTOM SWEEP
1	THRESHOLD-STANDARD SADDLE

D. Silencer Set / Fire & Smoke - Sill & Seal Sets: Provide where scheduled in hardware sets.

SWG. DR. SILENCER SET / FIRE & SMOKE - SILL & SEAL SET
EACH SHALL HAVE:

1 SET	SILENCERS (*Provide only at doors that do* ***NOT*** *have* BULB SEAL W/RETAINER *or* SELF-ADHERING GASKETS *below.*)
1 SET	BULB SEAL W/RETAINER (*Provide at Head and Jambs of doors, in smoke barriers or smoke partitions, or that are fire-rated 20 minutes or more* ***AND*** *where Detainee Exposure is indicated.*)
1 SET	SELF-ADHERING GASKETS (*Provide at Head and Jambs of doors, in smoke barriers or smoke partitions, or that are fire-rated 20 minutes or*

*more **AND** where Detainee Exposure is **NOT** indicated.)*

E. Acoustic Seal Sets: Provide where scheduled in hardware sets.

SWG. DR. ACOUSTIC SEAL SET
EACH SHALL HAVE:

1 SET	ADJUSTABLE DOOR SEALS (PROVIDE AT HEADS AND JAMBS, AND FOR DOOR PAIRS, AT FIXED CENTER MULLIONS.)
1	ADJUSTABLE DOOR BOTTOM
1	THRESHOLD-STANDARD SADDLE

F. Hardware Sets:

BH-CYL
EACH SHALL HAVE:

1	KEY CYLINDER X CYLINDER CAM AS NEEDED
■	*Remainder of Hardware by Door Supplier*

DH1-(DETAINEE EXPOSURE)
INTERIOR DOOR (PASSAGE)
EACH SHALL HAVE:

1 SET	HINGES
1	MORTISE LATCHSET – F01 PASSAGE
1	CLOSER
1	KICK PLATE
1	DOOR STOP

BH1A
EXTERIOR DOOR (PASSAGE)
EACH SHALL HAVE:

1 SET	HINGES
1	MORTISE LATCHSET – F01 PASSAGE
1	CLOSER
1	KICK PLATE
1	DOOR STOP
1	SWG. DR. WEATHERSET

BH4B
INTERIOR DOOR (OFFICE, NO CLOSER)
EACH SHALL HAVE:

1 SET	HINGES
1	MORTISE LATCHSET – OFFICE F04
1	DOOR STOP
1 SET	SILENCERS

BH5
DH5-(DETAINEE EXPOSURE)
INTERIOR DOOR (CLASSROOM)
EACH SHALL HAVE:

1 SET	HINGES
1	MORTISE LATCHSET –CLASSROOM F05
1	CLOSER
1	KICKPLATE
1	DOOR STOP
1	SWG. DR. SILENCER SET / FIRE & SMOKE - SILL & SEAL SET

BH5-AL
INTERIOR ALUMINUM DOOR (CLASSROOM)
EACH SHALL HAVE:

1 SET	CONTINUOUS HINGES
1	MORTISE LATCHSET –CLASSROOM F05
1	CLOSER
1	DOOR STOP
1 SET	SILENCERS *(by door manufacturer)*

BH5A
EXTERIOR DOOR (CLASSROOM)
EACH SHALL HAVE:

1 SET	HINGES
1	MORTISE LATCHSET –CLASSROOM F05
1	CLOSER
1	KICKPLATE
1	DOOR STOP
1	SWG. DR. WEATHERSET

BH5B
DH5B-(DETAINEE EXPOSURE)
INTERIOR DOOR (CLASSROOM, NO CLOSER)
EACH SHALL HAVE:

1 SET	HINGES
1	MORTISE LATCHSET – CLASSROOM F05
1	DOOR STOP
1 SET	SILENCERS

BH7
DH7-(DETAINEE EXPOSURE)
INTERIOR DOOR (STOREROOM)
EACH SHALL HAVE:

1 SET	HINGES
1	MORTISE LATCHSET – STOREROOM F07
1	CLOSER
1	KICKPLATE
1	DOOR STOP
1	SWG. DR. SILENCER SET / FIRE & SMOKE - SILL & SEAL SET

BH7A
EXTERIOR DOOR (STOREROOM)
EACH SHALL HAVE:

1 SET	HINGES
1	MORTISE LATCHSET – STOREROOM F07
1	CLOSER
1	KICK PLATE
1	DOOR STOP
1	SWG. DR. WEATHERSET

BH7B
DH7B-(DETAINEE EXPOSURE)
INTERIOR DOOR (STOREROOM)
EACH SHALL HAVE:

1 SET	HINGES
1	MORTISE LATCHSET – STOREROOM F07
1	DOOR STOP
1	SWG. DR. SILENCER SET / FIRE & SMOKE - SILL & SEAL SET

BH7Z
DH7Z-(DETAINEE EXPOSURE)

INTERIOR DOOR (ELEC)
EACH SHALL HAVE:

1 SET	HINGES
1	ELECTRIC HINGE
1	ELECTRIC MORTISE LOCKSET – FX1 ELEC. ENTRANCE- K1S
1	CONCEALED CLOSER WITH DPS
1	KICKPLATE
1	DOOR STOP
1	SWG. DR. SILENCER SET / FIRE & SMOKE - SILL & SEAL SET

BH7AZ

EXTERIOR DOOR (ELEC)
EACH SHALL HAVE:

1 SET HINGES
1 ELECTRIC HINGE
1 ELECTRIC MORTISE LOCKSET – FX1 ELEC. ENTRANCE- K1S
1 CONCEALED CLOSER WITH DPS
1 KICKPLATE
1 DOOR STOP
1 SWG. DR. WEATHERSET

BH7AZ-AL ***(DOOR 100)***

EXTERIOR ALUMINUM DOOR (ELEC)
EACH SHALL HAVE:

1 ELECTRIC CONTINUOUS HINGE
1 ELECTRIC MORTISE LOCKSET – FX2 ELEC. HOLDING- K2S
~~1 CONCEALED CLOSER WITH DPS~~
1 AUTOMATIC DOOR OPERATOR
1 DOOR STOP
1 SWG. DR. WEATHERSET
1 PUSH PLATE SWITCH
1 BOLLARD FOR PUSH PLATE SWITCH (exterior)

BH7Z-AL ***(DOOR 101)***

INTERIOR ALUMINUM DOOR (ELEC)
EACH SHALL HAVE:

1 ELECTRIC CONTINUOUS HINGE
1 ELECTRIC MORTISE LOCKSET – FX2 ELEC. HOLDING- K2S
~~1 CONCEALED CLOSER WITH DPS~~
1 AUTOMATIC DOOR OPERATOR
1 KICKPLATE
1 DOOR STOP
1 SET SILENCERS *(by door manufacturer)*
1 PUSH PLATE SWITCH

BH10

INTERIOR DOOR (PUSH/PULL)
EACH SHALL HAVE:

1 CONTINUOUS HINGE
1 SMALL MORTISE DEADLOCK – CLASSROOM K1S - THUMBTURN
1 PUSH/PULL SET
1 CLOSER
1 KICK PLATE
1 DOOR STOP
1 SET SILENCERS

BH10C

INTERIOR PAIR DOORS (PUSH/PULL)
EACH PAIR SHALL HAVE:

2	CONTINUOUS HINGES
2	PUSH/PULL SETS
2	CLOSERS
2	KICK PLATE
2	DOOR STOP
1 SET	ACOUSTIC ADJUSTABLE ASTRAGAL SEALS
1 SET	ACOUSTIC ADJUSTABLE DOOR SEALS
2	ACOUSTIC ADJUSTABLE DOOR BOTTOMS

DH15-(DETAINEE EXPOSURE)

INTERIOR DOOR
EACH SHALL HAVE:

1 SET	HINGES
1	MORTISE LOCKSET – HOTEL W/INDICATOR F15
1	CLOSER
1	KICKPLATE
1	DOOR STOP
1	SWG. DR. SILENCER SET / FIRE & SMOKE - SILL & SEAL SET

BH15B

INTERIOR DOOR
EACH SHALL HAVE:

1 SET	HINGES
1	MORTISE LOCKSET – HOTEL W/INDICATOR F15
1	DOOR STOP
1	SWG. DR. SILENCER SET / FIRE & SMOKE - SILL & SEAL SET

BH16A
EXTERIOR DOOR (DEADBOLT-K2S)
EACH SHALL HAVE:

1 SET	HINGES
1	K2S - MORTISE DEADLOCK F16
1	CLOSER
1	KICK PLATE
1	DOOR STOP
1	SWG. DR. WEATHERSET

BH22B

INTERIOR DOOR (PRIVACY)
EACH SHALL HAVE:

1 SET	HINGES
1	MORTISE LATCHSET – PRIVACY F22
1	DOOR STOP
1 SET	SILENCERS

BH43

INTERIOR DOOR (RIM EXIT)
EACH SHALL HAVE:

1 SET	HINGES
1	EXIT DEVICE- WIDE STILE RIM, FL- 03 NIGHT LATCH LD
1	CLOSER
1	KICK PLATE
1	DOOR STOP
1	SWG. DR. SILENCER SET / FIRE & SMOKE - SILL & SEAL SET

BH43A

EXTERIOR DOOR (RIM EXIT)
EACH SHALL HAVE:

1 SET	HINGES
1	EXIT DEVICE- WIDE STILE RIM- 03 NIGHT LATCH LD
1	CLOSER
1	KICK PLATE
1	DOOR STOP
1	SWG. DR. WEATHERSET

BH43AZ

EXTERIOR DOOR (RIM EXIT)
EACH SHALL HAVE:

1 SET	HINGES
1	EXIT DEVICE- WIDE STILE RIM- 03 NIGHT LATCH LD- ELR
1	ELECTRIC POWER TRANSFER
1	CONCEALED CLOSER WITH DPS
1	KICK PLATE
1	DOOR STOP
1	SWG. DR. WEATHERSET

BH43Z

EXTERIOR DOOR (RIM EXIT)
EACH SHALL HAVE:

1 SET	HINGES
1	EXIT DEVICE- WIDE STILE RIM- 03 NIGHT LATCH LD- ELR
1	ELECTRIC POWER TRANSFER
1	CONCEALED CLOSER WITH DPS
1	KICK PLATE
1	DOOR STOP
1	SWG. DR. WEATHERSET

BH48

INTERIOR DOOR (RIM EXIT, LEVER)
EACH SHALL HAVE:

1 SET	HINGES
1	EXIT DEVICE- WIDE STILE RIM, FL - 08 LEVER
1	CLOSER
1	KICK PLATE
1	DOOR STOP
1	SWG. DR. SILENCER SET / FIRE & SMOKE - SILL & SEAL SET

BH48A

EXTERIOR DOOR (RIM EXIT, LEVER)
EACH SHALL HAVE:

1 SET	HINGES
1	EXIT DEVICE- WIDE STILE RIM, FL - 08 LEVER
1	CLOSER
1	KICK PLATE
1	DOOR STOP
1	SWG. DR. WEATHERSET

BH48AZ

EXTERIOR DOOR (RIM EXIT, LEVER)
EACH SHALL HAVE:

1 SET	HINGES
1	EXIT DEVICE- WIDE STILE RIM, FL - 08 LEVER- ELR
1	ELECTRIC POWER TRANSFER
1	CONCEALED CLOSER WITH DPS
1	KICK PLATE
1	DOOR STOP
1	SWG. DR. WEATHERSET

BH58C

INTERIOR PAIR DOORS (VERT. ROD EXIT, LEVER)
EACH PAIR SHALL HAVE:

2 SETS	HINGES
2	EXIT DEVICES- WIDE STILE CONCEALED VERT. ROD, FL - 08 LEVER, LBR
2	CLOSERS
2	KICK PLATES
2	DOOR STOPS
1	SWG. DR. SILENCER SET / FIRE & SMOKE - SILL & SEAL SET

BH58C-AL ***(DOOR 103A)***

INTERIOR ALUMINUM PAIR DOORS (VERT. ROD EXIT, LEVER)
EACH PAIR SHALL HAVE:

2 SETS	CONTINUOUS HINGES
2	EXIT DEVICES- WIDE STILE CONCEALED VERT. ROD, FL - 08 LEVER, LBR
~~2~~	~~CLOSERS~~
1	***AUTOMATIC DOOR OPERATOR- PAIR***
2	DOOR STOPS
1 SET	SILENCERS *(by door manufacturer)*
1	***PUSH PLATE SWITCH***

BH58DZ

EXTERIOR PAIR DOORS (VERT. ROD EXIT, LEVER, ELEC)
EACH PAIR SHALL HAVE:

2 SETS	HINGES
2	EXIT DEVICES- WIDE STILE CONCEALED VERT. ROD, FL - 08 LEVER, LBR- ELR
2	ELECTRIC POWER TRANSFERS
2	CONCEALED CLOSER WITH DPS
2	KICK PLATES
2	DOOR STOPS
1	SWG. DR. WEATHERSET

~~BH58D-AL~~ ***BH58A-AL (DOOR 103)***

EXTERIOR ALUMINUM PAIR DOORS (VERT. ROD EXIT, LEVER, ELEC)
EACH PAIR SHALL HAVE:

2 SETS	CONTINUOUS HINGES
2	EXIT DEVICES- WIDE STILE CONCEALED VERT. ROD, FL - 08 LEVER
~~2~~	~~CLOSERS~~
1	***AUTOMATIC DOOR OPERATOR- PAIR***
2	DOOR STOPS
1	SWG. DR. WEATHERSET
1	***PUSH PLATE SWITCH***

END OF SECTION

SECTION 09 5450
SPECIAL CEILING SURFACES

PART 1 GENERAL

1.01 SUMMARY

A. Furnish labor, equipment, materials, and services to provide specialty ceiling systems as specified in this Section in locations shown or scheduled on the Drawings.

B. This Section includes:
   1. ***Suspended flat wood panel system***.
   2. Suspended acoustical flat panel ceiling cloud system.
   3. Suspended translucent vertical linear panel system.
   4. Ceiling suspension system.
   5. All factory applied and/or field installed accessories, wood molding or trim.

C. Related Sections include, but may not be limited to, the following:
   1. Division 09 Section "Painting", for field finishing of non-factory-finished wood products.
   2. Division 09 Section "Acoustical Ceiling", for ceilings consisting of mineral-base and glass-fiber-base acoustical panels and exposed suspension systems.
   3. Division 22, 23, and 26 Sections, for air-distribution components, sprinklers, and light fixtures.

1.02 SUBMITTALS

A. Product Data: For each type of product indicated, describing product features, code compliances, and industry standard compliances.

B. Performance Data: For installed products indicated to comply with design loads and other criteria, include structural analysis and other analytical data signed and sealed by the qualified professional engineer responsible for their preparation.

C. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of 12 inches (300 mm) in length for panels, suspension system members, exposed molding and trim, filler strips **[** and sound absorbers **]**. Provide samples or portions of full size units showing jointing where such exists and methods of internal fastening.

D. Coordination Drawings: Reflected ceiling plans, drawn to minimum 1/8 inch = 1 foot (1:96) scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
   1. Linear or rectangular pattern.
   2. Joint pattern.
   3. Ceiling suspension members.
   4. Ceiling-mounted items including light fixtures, diffusers, grilles, speakers, sprinklers, and access panels.
   5. Ceiling perimeter and penetrations through ceiling; trim and moldings.

E. Maintenance Data: For finishes to include in maintenance manuals.

1.03 QUALITY ASSURANCE

A. Source Limitations: Obtain each set of systems from one source with resources to provide products of consistent quality in appearance, physical properties, and performance.

B. Surface-Burning Characteristics: Complying with ASTM E1264 as determined by testing identical products according to ASTM E84 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.

C. Seismic Performance: Provide installation and anchorages capable of withstanding the effects of earthquake motions determined according to the International Building Code 2012, Tables 1613.5.6(1) and 1613.5.6(2) Design Category C, unless a site-specific survey has determined a lesser category. Provide, also, installation in accordance with CISCA 3 – 4.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver ceiling panels, suspension system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.
B. Handle ceiling panels, suspension system components, and accessories carefully to avoid damaging units and finishes in any way.

1.05 PROJECT CONDITIONS

A. Environmental Limitations: Do not install ceiling components until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use, but in no case with humidity greater than 55%.

1.06 EXTRA MATERIALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Linear Wood Panel Ceiling Components: Quantity of each panel, carrier, accessory, and exposed molding and trim equal to 2 percent of quantity installed.

PART 2 PRODUCTS

2.01 SUSPENDED FLAT WOOD PANEL SYSTEM (WD-1)

A. Acceptable Manufacturers: Subject to compliance with requirements of these Specifications, provide products from one of the following:
   1. Rulon Company (St. Augustine, FL) (www.rulonco.com); Flat Panel System.
   2. Armstrong World Industries (Lancaster, PA) (www.armstrong.com); ***Flat Panel System***.
   3. Architectural Surfaces, Inc. (Chaska, MN) (www.architecturalsurfaces.net)
B. ***Basis of Design: Armstrong World Industries; WOODWORKS Torsion Spring Flat Panel System with integral upturn, unperforated, panel options up to 16 s.f***.
C. Components
   1. Ceiling Panels: Provide natural, solid wood. Provide in closed style joints. Wood ***species to be Constants Cherry*** with smooth surface.
   2. Suspension System: Provide manufacturer's ***torsion spring suspension*** rail system with adjustable hangers and provisions for clips to allow fastening the ceiling panels to the rail so they are removable.
   3. ***Provide with manufacturer's universal wall anchors, 1-1/4" structural wall angles, spring mounting saddles, and spring mounting brackets***.
   4. Access Panels: Manufacturer's standard removable panel designed for installation flush with adjacent strips.
D. Surface-Burning Characteristics: Class A.
E. Finishes
   1. Wood Panels: Stained and sealed to match Architect's sample.

2.02 ACOUSTICAL FLAT PANEL CEILING CLOUD SYSTEM (ACC-1)

A. Basis of Design Manufacturer and Product: Subject to compliance with requirements of these Specifications, provide products from the following:
   1. Armstrong World Industries (Lancaster, PA) (www.armstrong.com); Soundscapes Shapes.
B. Rectangle 4 x 6 feet.
C. Surface-Burning Characteristics: Class A.

2.03 LINEAR TRANSLUCENT VERTICAL LINEAR PANEL SYSTEM (TVP-1)

A. Basis of Design: Armstrong Infusions Blades – Concepts
B. Size: 6" x 9'-6"
C. Color: To be selected from full range of colors & patterns.

PART 3 EXECUTION

3.01 EXAMINATION AND PREPARATION

A. ***Panels must be climatized prior to installation. Relative humidity between 25% and 55% and temperatures between 50 deg. F and 86 deg. F must be maintained***.

B. Examine substrates, areas, and conditions, including structural framing and substrates to which ceiling systems attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of the ceiling systems.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

D. Measure each ceiling area and establish layout of panels to balance border widths at opposite edges of each ceiling. Comply with layout shown on reflected ceiling plans and Coordination Drawings.

3.02 INSTALLATION OF PANEL SYSTEMS

A. Comply with ASTM C636 and seismic requirement indicated, per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook".

B. Suspend ceiling hangers from building's structural members and as follows:
   1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
   2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
   3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
   4. Secure wire hangers to ceiling suspension members and to supports above with a minimum of four tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate to which hangers are attached and for type of hanger involved.
   5. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
   6. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
   7. Do not attach hangers to steel deck tabs.
   8. Do not attach hangers to steel roof deck. Attach hangers to structural members.
   9. Space hangers not more than 48 inches (1200 mm) o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches (200 mm) from ends of each member.
   10. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.

C. Install edge moldings and trim of type indicated at perimeter of specified ceiling system area and where necessary to conceal edges and ends of ceiling panels.
   1. Screw attach moldings to substrate at intervals not more than 16 inches (400 mm) o.c. and not more than 3 inches (75 mm) from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet (3.2 mm in 3.6 m). Miter corners accurately and connect securely.
   2. Do not use exposed fasteners, including pop rivets, on moldings and trim.

D. Cut for accurate fit at borders and at interruptions and penetrations by other work through ceilings. Avoid using less-than-half-width or –length panels at borders.

E. Provide access panels where indicated on Drawings and under suspended mechanical units.
   1. For access panels under mechanical units, provide size that will permit removal of mechanical unit straight down.

3.03 FIELD QUALITY CONTROL

A. Panel System

1. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections in accordance with Division 01 Section "Code-Required Special inspections and Procedures":
   a) Suspended ceiling system.
   b) Hangers, anchors, and fasteners.
2. Test and Inspections: Testing and inspecting of completed installations of acoustical panel ceiling hangers and anchors and fasteners shall take place in successive stages, in areas of extent and using methods as follows. Do not proceed with installations of acoustical panel ceiling hangers for the next area until test results for previously completed installations of acoustical panel ceiling hangers show compliance with requirements.
3. Extent of Each Test Area: When installation of ceiling suspension systems on each floor has reached 20 percent completion but no panels have been installed.
4. Within each test area, testing agency will select 1 of every 10 power-actuated fasteners and postinstalled anchors used to attach hangers to concrete and will test them for 100 lbf (445 N) of tension; it will also select one of every 2 postinstalled anchors used to attach bracing wires to concrete and will test them for 220 lbf (979 N) of tension.
5. When testing discovers fasteners and anchors that do not comply with requirements, testing agency will test those anchors not previously tested until 20 pass consecutively and then will resume initial testing frequency.
6. Ceiling hangers and anchors and fasteners will be considered defective if they do not pass tests and inspections.
7. Prepare test and inspection reports.

B. Clean exposed surfaces of ceiling systems, including trim and edge moldings after removing strippable, temporary protective covering if any. Comply with manufacturer's written instructions for stripping of temporary protective covering, cleaning, and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage, including dented and bent units.

END OF SECTION

Section 31 66 13 – Aggregate Piers

Part 1 General

1.1 Related Documents

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

1.2 Summary

A. Section Includes:

1. Aggregate Piers.

B. Related Sections:

1. Section 31 10 00 - Site Clearing for preparation of subgrade for Aggregate Pier operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface.

2. Section 31 20 00 - Earthwork for preparing and grading subgrades and placement of structural fill.

1.3 Reference Documents and Standards

A. Design

1. The project design drawings.

2. The project geotechnical report including boring logs.

B. Modulus Testing

1. ASTM D 1143 - Pile Load Test Procedures

2. ASTM D 1194 - Spread Footing Load Test

C. Materials and Inspection

1. ASTM D 1241 - Aggregate Quality

2. ASTM D 422 - Gradation of Soils

1.4 Performance Requirements

A. Provide all equipment, material, labor and supervision to design and install Aggregate Piers.

B. The design of the Aggregate Pier system shall be based on the service load bearing pressure and the allowable total and differential settlement criteria. The Aggregate Pier system shall be designed in accordance with generally accepted engineering practice and the methods described in these Specifications. It shall be the Aggregate Pier contractor's responsibility to determine and implement the systems and criteria to ensure that the specified performance is achieved.

C. The design shall meet or exceed the following criteria.

1. Allowable Bearing Pressure for isolated spread footings, wall footings, and elevator pits supported by Aggregate Pier Reinforced Soils: 5000 psf

2. Total Settlement based on allowable bearing pressure: ≤ ***1 inch***

3. Differential Settlement based on allowable bearing pressure: ≤ 1/2 inch

D. The pier spacing shall be field coordinated based on existing and new piping. Piers shall be a minimum of 5-feet clear of any adjacent piping. Piers shall not bear within 5-feet of the top of any piping.

E. The Aggregate Pier elements shall be designed using an Aggregate Pier stiffness modulus to be verified by the results of the modulus test.

F. All foundations shall be either supported on competent bedrock or Aggregate Piers bearing on competent bedrock.

G. In conditions where the bottom of foundation is within 4' or less of bedrock elevation the Contractor shall undercut the foundation to bedrock and backfill with flowable fill or compacted 57 stone (in lifts of 8 to 12 inches or as otherwise directed by the geotechnical engineer) .

1.5 Submittals

A. Product Data: For each type of product including gradations for the Aggregate Pier material.

B. Aggregate Pier Layout Drawings, include location of new and existing piping and identify any potential conflicts.

C. Detailed design calculations.

D. Drawings and Calculations shall be signed and sealed by the qualified professional engineer, registered in the State of the project, who was responsible for their preparation.

E. Quality control test program for Aggregate Pier system.

F. Modulus Test Reports – A modulus test shall be performed by the Aggregate Pier

Designer to verify the design assumptions. The Installer shall furnish a description of the installation equipment, installation records, complete test data, analysis of the test data and verification of the design parameter values based on the modulus test results. The report shall be prepared under direction of a Registered Professional Engineer.

G. Daily Aggregate Pier Progress Reports – Furnish a complete and accurate record of Aggregate Pier installation.

1. Pier location, length, and diameter.

2. Final elevations of the pier top and bottom.

3. Documentation of any unusual subsurface conditions encountered.

4. Soil and groundwater observations.

5. The results of any field Quality Control testing or deflection monitoring done.

1.6 Quality Assurance

A. The installer of the Aggregate Pier system shall provide evidence of satisfactory experience with the design and installation of Aggregate Pier Soil Reinforcement systems, including examples of at least 5 previous projects for which the installer has supported comparable structural loads and controlled settlement to the project tolerances. The design and installation shall be conducted and overseen by a registered professional engineer employed by the installer.

B. The Aggregate Pier installer shall provide a certified quality control representative to observe the drilling and construction of all engineered Aggregate Piers. Quality Control observations shall include confirmation that all aggregate lifts have been constructed to the design criteria, as established by the Aggregate Pier design engineer.

C. The installer of the engineered Aggregate Pier system shall maintain Quality Control records during pier installation. This work shall be conducted under the supervision of a registered professional engineer employed by the installer.

D. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated.

E. Installer’s Design Engineer and Quality Control representative shall each have a minimum of 5 years of documented experience with design and construction of Aggregate Pier systems.

F. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM E 329 to provide special inspections and testing indicated.

1.7 Project Conditions

A. Existing Utilities: Locate existing underground utilities before excavating for piers. If utilities are to remain in place, provide protection from damage during operations.

1. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, adapt drilling procedure if necessary, to prevent damage to utilities. Cooperate with Owner and utility companies in keeping services and facilities in operation without interruption. Repair damaged utilities to satisfaction of utility owner.

B. Interruption of Existing Utilities: Do not interrupt any utility to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility according to requirements indicated:

1. Do not proceed with interruption of utility without Owner's written permission.

2. Notify Owner no fewer than two days in advance of interruption of utility.

C. Project-Site Information: A geotechnical report has been prepared for this Project and is available for information only. The opinions expressed in this report are those of the geotechnical engineer and represent interpretations of subsoil conditions, tests, and results of analyses conducted by the geotechnical engineer. Owner will not be responsible for interpretations or conclusions drawn from this data.

1. The geotechnical report can be obtained from the geotechnical engineer.

a. The boring log and accompanying report are believed to be accurate; however, neither the owner nor the engineer guarantees the information contained therein, nor do they guarantee the conditions indicated to exist at the locations of the test holes will prevail at other locations on the site.

b. Groundwater control will be the responsibility of the contractor. Groundwater levels vary with changes in season and rainfall, construction activity, surface water runoff, and other site-specific factors.

c. The information presented in these plans and in the geotechnical report is not intended as a substitute for personal investigation, independent interpretations, or judgements by others.

D. Survey Work: Engage a qualified surveyor to perform surveys, layouts, and measurements for Aggregate Piers. Before excavating, lay out each Aggregate Pier to lines and levels required. Record actual measurements of each pier's location, shaft diameter, bottom and top elevations, deviations from specified tolerances, and other specified data.

1. Record and maintain information pertinent to each Aggregate Pier and cooperate

with Owner's testing and inspecting agency to provide data for required reports.

E. Prior to the installation of Aggregate Piers, the General Contractor will coordinate a meeting with its subcontractors and Aggregate Pier contractor, to identify any locations where excavations and/or utilities are planned within close proximity to Aggregate Piers (as defined by the Aggregate Pier engineer), to discuss procedures and requirements for excavations made near Aggregate Piers. The General Contractor will notify the Aggregate Pier engineer of any excavations and/or utilities locations that are planned to be made prior to and/or after the Aggregate Pier installations. The Contractor shall immediately notify the Aggregate Pier engineer of any changes in excavation plans. All excavations made in close proximity to Aggregate Piers shall be repaired to the satisfaction of the Aggregate Pier engineer, at no cost to the owner. Where excavations are planned within a specified proximity to Aggregate Piers, the Aggregate Pier engineer may specify controlled low strength concrete material (or similar) to ensure that Aggregate Piers are not damaged or improved soils adjacent to Aggregate Piers do not loose compaction energy, from any excavation work.

Part 2 Products

2.1 Equipment

A. Down-Hole Vibrator

1. Should the Aggregate Pier contractor use a down-hole vibrator, the vibrator shall be capable of providing at least 80 HP of rated energy and a centrifugal force of 15 tons. An appropriate metering device should be provided at such a location that inspection of amperage increase may be verified during the operation of the equipment. The metering device may be an ammeter directly indicating the performance of the vibrator tip. Complete equipment specifications should be submitted to the Engineer prior to commencement of the fieldwork.

2.2 Aggregate

A. Down-Hole Vibrator Method:

1. The backfill aggregate should consist of hard, angular to sub-angular durable rock fragments, with the majority of particles in the range of 1/8th inch to 1-1/2 inches such as ASTM C33 size No. 57, or shall be other graded aggregate selected by the installer and successfully used in the modulus test.

Part 3 Execution

3.1 Examination

A. Examine areas and conditions under which Aggregate Piers are to be installed.

1. The work shall not begin until all process piping has been installed, abandoned, or removed as indicated on the drawings.

2. Contractor shall field locate and mark the locations for all new, existing, and abandoned piping to identify any conflicts with the Aggregate Pier layout.

3. Proceed with installation only after unsatisfactory conditions have been corrected.

4. Contractor shall take care not to disturb or dislodge any piping during the installation of the Aggregate Piers.

3.2 Preparation

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, vibration, and other hazards created by pier operations.

1. If an adjacent building is within 15-feet of the Aggregate Pier work area, a relevant building examination shall be performed prior to initiating work to document preexisting cracks/damage. The building must also be monitored for movement during any work within 15-feet of the structure. The work shall be stopped, and the engineer notified if any building settlement is observed.

B. Site subgrade established shall be within 6 inches of finish subgrade, or as approved by installer of the Aggregate Pier system.

3.3 Installation

A. The locations, size, and spacing of Aggregate Pier elements shall be described on the appropriate drawings or details. Any modifications in size and spacing of the Aggregate Pier element layout shall be approved by the Aggregate Pier system engineer and structural engineer of record.

B. Aggregate Pier system shall be pre-drilled using mechanical auger drilling equipment.

C. If cave-ins exceeding 10% of the lift volume occur during excavation such that the sidewalls of the hole are deemed to be unstable, steel casing shall be used to stabilize the cavity or a bottom fed Aggregate Pier system may be used.

D. Aggregate shall be placed in the augured cavity in lift thicknesses as determined by the Aggregate Pier Designer.

E. Should any obstruction, including but not limited to cobbles, boulders, timber, concrete, asphalt, large roots etc., be encountered which prevents placing the elements to the required depth, or causes the Aggregate Pier to drift from the required location, the obstruction shall be removed.

F. The soil at the bottom of the pier excavation shall be compacted prior to the placement of aggregate. If wet, soft or sensitive soils are present, open graded aggregate shall be placed and compacted applying a downward force on the vibrator to stabilize the pier

bottom and may serve as the initial pier lift.

G. The center of each constructed Aggregate Pier element shall be within 6 inches of the design location. Aggregate piers installed outside of the above tolerance and deemed not to be acceptable shall be either rebuilt or other remedial measures taken as approved by the Aggregate Pier system designer.

H. Acceptable constructed lift thickness shall be established by the Aggregate Pier designer and confirmed by the Aggregate Pier installer for each lift installed.

I. Aggregate Piers installed beyond the maximum allowable tolerances shall be abandoned and replaced with new piers, unless the Engineer approves the condition or provides other remedial measures. All material and labor required to replace rejected piers shall be provided at no additional cost to the Owner.

3.4 Aggregate Pier Element Modulus Testing

A. Modulus test data may be used by the Aggregate Pier system designer to confirm Aggregate Pier element design parameters for the project.

B. Aggregate pier elements used for modulus testing which are located within tolerance and provide the structural foundation design bearing capacity and settlement control, upon approval of the Aggregate Pier system engineer, be used in the finished work.

C. Compressive load test procedures shall be conducted in general accordance with ASTM D1143 and D1194, as appropriate. A test pier shall be loaded to 150 percent of the estimated element design pressure..

D. The modulus test shall be conducted as follows:

1. ASTM D1143 test procedures shall be used as a guide to establishing load increments, load increment duration, load decrements, and total applied load.

2. In order to evaluate bulging of the Aggregate Pier element itself under loading, the test pier shall be constructed in such a manner that deflections at both the bottom and top of the pier can be measured at each increment of loading.

3. With the exception of the load increment representing approximately 112% of the design maximum Aggregate Pier element stress, all load increments shall be held for a minimum of 15 minutes, a maximum of 1 hour, and until the rate of deflection reduces to 0.01 inch per hour, or less.

4. The load increment which represents approximately 112% of the design maximum Aggregate Pier element stress shall be held for a minimum of 15 minutes, a maximum of 4 hours, and until the rate of deflection reduces to 0.01 inch per hour, or less.

5. A seating load equal to 5 percent of the total load shall be applied to the loaded steel plate prior to application of load increments and prior to measurement of

deflections to compensate for surficial disturbance.

6. The test data shall be presented as a graph showing deflection of the pier top and bottom under each load increment.

7. At the design load, deflection measured at the top of the pier shall not exceed the design settlement for the Aggregate Pier-reinforced soil zone, and the ratio of bottom plate deflection to top plate deflection shall not exceed 0.20 unless specifically approved by the Aggregate Pier designer.

E. If an Aggregate Pier is installed in an incorrect location or exceeds the specified tolerances, the Aggregate Pier contractor shall replace the pier. Pier replacement may be avoided if alternate remedial procedures are approved by the Designer. Unless the rejection is caused by obstruction, refusal in rock or dense soil or errors in the project drawings, the cost of all labor and material required for the replacement shall not be the responsibility of the Owner.

3.5 Footing Subgrade Preparation

A. Excavation and surface compaction of all foundations shall be the responsibility of the Contractor making the footing excavation.

B. Foundation excavations to expose the tops of Aggregate Pier elements shall be made in a workmanlike manner, and shall be protected until concrete placement, with procedures and equipment best suited to:

1. Prevent softening of the matrix soil between and around the Aggregate Pier elements before pouring structural concrete

2. Achieving direct and firm contact between the dense, undisturbed Aggregate Pier elements and the concrete footing.

C. Foundation excavations shall be constructed as follows:

1. Use a smooth blade excavator bucket and over excavate, as required, if tops of Aggregate Piers are disturbed.

2. Compaction of surface soil and top of Aggregate Pier elements shall be prepared using a motorized impact compactor (“Wacker Packer,” “Jumping Jack,” or similar). Sled-type tamping devices shall not be used. Compaction shall be performed over the entire footing bottom to compact any loose surface soil and loose surface pier aggregate.

3. Place footing concrete immediately after footing excavation is made and approved, preferably the same day as the excavation. Footing concrete must be placed on the same day if the footing is bearing on expansive or sensitive soils.

4. If same day placement of footing concrete is not possible, place a minimum 3-inch thick lean concrete seal (‘mud mat”) immediately after the footing is

excavated and approved.

5. Confirm that immediately before footing construction or placement of an alternate subgrade protection layer, the tops of all the Aggregate Pier elements exposed in each footing excavation have been inspected and recompacted as necessary with mechanical compaction equipment, and that the tops of any Aggregate Pier elements which may have been disturbed by footing excavation and related activity have been recompacted to a dry density equivalent to at least 95% of the maximum dry density obtainable by the modified Proctor method (ASTM D-1557).

D. No excavations or drilled shafts shall be made after installation of Aggregate Pier elements within a horizontal distance of 10’ from the edge of any pier, without the written approval of the Aggregate Pier installer.

3.6 Field Quality Control

A. The Aggregate Pier installer shall have a full-time, on-site Quality Control representative to verify and report all installation procedures. The Installer shall immediately report any unusual conditions encountered during installation to the Aggregate Pier Designer, the General Contractor, and to the Project Engineer.

B. Aggregate Pier Inspections: The special inspector shall log the following during installation for comparison with anticipated conditions and design parameters (from the designer/contractor).

1. Pier Identification
2. Plan Top Elevation
3. Date of Excavation
4. Actual Ground Elevation
5. Designed Pier Length
6. Designed Pier Diameter
7. As-Installed Depth of Pier Excavation
8. As-installed Pier Bottom Elevation
9. As-installed Total Pier Length
10. Soil Type(s) Encountered by Pier Excavation
11. Soil Type at Pier Excavation Bottom
12. Date of Aggregate Placement

13. Type/Description of Aggregate

14. Number of Aggregate Lifts Placed

15. Average Aggregate Lift Thickness

16. Length of Casing Installed (if any)

C. Footings bearing on Aggregate Piers: The special inspector shall confirm:

1. That water (which may soften the unconfined matrix soil between and around the Aggregate Pier elements, and may have detrimental effects on the supporting capability of the Aggregate Pier reinforced subgrade) is not ponding in the footing and there is no evidence of previous water ponding.

2. That all Aggregate Pier elements designed for each footing have been exposed in the footing excavation.

3. That immediately before footing construction, the tops of Aggregate Pier elements exposed in each footing excavation have been inspected and recompacted with a mechanical compactor under observation of the project geotechnical inspector and compact any disturbed soils around Aggregate Piers in accordance with the soil compaction recommendations of the project geotechnical engineer; and that the tops of any pier elements which may have been disturbed by footing excavation.

4. No fill soil or deleterious material be placed between the tops of Aggregate Pier elements and the bottoms of foundations.

5. That no excavations or drilled shafts have been observed within a horizontal distance of 10’ from the edge of any pier.

3.7 Disposal of Surplus and Waste Materials

A. Disposal: Remove all soil and waste material, trash, and debris, and legally dispose of it off Owner's property.

3.8 Net New Fill

A. Net new fill materials placed greater than 2 feet of thickness shall be monitored for settlement due to the new fill load on the residual soil, by or at the direction of the project geotechnical engineer. The project geotechnical engineer will hold a settlement monitoring coordination meeting with the owner, project structural engineer, general contractor, grading subcontractor, foundation subcontractor, Aggregate Pier contractor to coordinate the required settlement monitoring program, sequencing, and frequency of monitoring. Monitoring shall consist of vertical control measured to (+/-) 0.00005 inches.

B. The settlement monitoring system will be protected-in-place by the general contractor.

C. Settlement monitoring data will be provided to the project Architect, Geotechnical engineer, Structural engineer, Aggregate Pier subcontractor and the Owner on a weekly basis until deemed substantially complete by the project Geotechnical engineer.

D. The project geotechnical engineer shall provide a letter with their seal to confirm that the settlement generated by net new fill load has substantially completed, prior to construction of foundations.

END OF SECTION

BUILDING DATA

GENERAL BUILDING DATA:
NEW CONSTRUCTION
FULLY SPRINKLERED BUILDING

OCCUPANCY CLASSIFICATION (LSC / IBC):
MIXED USE OCCUPANCY: NON-SEPARATED
SUBORDINATE OCCUPANCIES:
ASSEMBLY GROUP A-3
BUSINESS GROUP B
INSTITUTIONAL GROUP I-3 / (DETENTION) CONDITION IV AND V
STORAGE GROUP S-1

TYPE OF CONSTRUCTION (IBC):
TYPE IIA
COMPLETE AUTOMATIC BUILDING SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13
PRIMARY OCCUPANCY: BUSINESS

HEIGHT AND AREA LIMITS (IBC):
ALLOWABLE HEIGHT, PER TABLE 504.3
-FOR OCCUPANCY TYPES 'A-3', 'B', 'I-3' AND 'S-1' : 85 FT

ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE, PER TABLE 504.4
-FOR OCCUPANCY TYPES 'A-3' : 4 STORIES
-FOR OCCUPANCY TYPES 'B' : 6 STORIES
-FOR OCCUPANCY TYPES 'S-1' : 5 STORIES
-FOR OCCUPANCY TYPES 'I-3' : 3 STORIES

ALLOWABLE FLOOR AREA, PER TABLE 506.2
-FOR OCCUPANCY TYPES 'A-3' : 46,500 SF
-FOR OCCUPANCY TYPES 'B' : 112,500 SF
-FOR OCCUPANCY 'I-3' : 45,000 SF
-FOR OCCUPANCY TYPES 'S-1' : 78,000 SF

BUILDING AREAS (IBC):		BUILDING OCCUPANCY (NFPA):	
BASEMENT =	5,565 GSF	BASEMENT =	3 PERSONS
LEVEL 100 =	21,744 GSF	LEVEL 100 =	304 PERSONS
LEVEL 200 =	20,615 GSF	LEVEL 200 =	419 PERSONS*
LEVEL 300 =	19,230 GSF	LEVEL 300 =	404 PERSONS
TOTAL =	**66,025 GSF**	**TOTAL =**	**711 PERSONS***

* LEVEL 200 IS UNOCCUPIED - MAXIMUM FUTURE OCCUPANT LOAD IS 1,130 PERSONS

FIRE RATING CRITERIA (IBC)	RATING	U.L. NUMBER
PRIMARY STRUCTURAL FRAME:	1 HOUR	X771, X772
BEARING WALLS:		
EXTERIOR (NONE PROVIDED)	1 HOUR	N/A
INTERIOR (NONE PROVIDED)	1 HOUR	N/A
NONBEARING WALLS & PARTITIONS:		
EXTERIOR	0 HOUR	N/A
INTERIOR	0 HOUR	N/A
FLOOR CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS:	1 HOUR	D916
ROOF CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS:	1 HOUR	P701, P711
EXIT SEPARATIONS:	0 HOUR	N/A
VERTICAL SHAFT ENCLOSURES:		
FOUR OR MORE STORIES	2 HOUR	U419, U905
LESS THAN FOUR STORIES	1 HOUR	U419, U905

INTERIOR WALL AND CEILING FINISH REQUIREMENTS (IBC TABLE 803.13):

GROUP	INTERIOR EXIT STAIRWAYS AND RAMPS AND EXIT PASSAGEWAYS	CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS AND RAMPS	ROOMS AND ENCLOSED SPACES
A-3	B	B	C
B	B	C	C
I-3	A	A *	C
S-1	C	C	C

* CLASS B MATERIALS SHALL BE PERMITTED AS WAINSCOTTING EXTENDING NOT MORE THAN 48" ABOVE THE FINISHED FLOOR IN CORRIDORS AND EXIT ACCESS STAIRWAYS AND RAMPS

APPLICABLE CODES

2018 INTERNATIONAL BUILDING CODE WITH GEORGIA AMENDMENTS (2020)
2018 INTERNATIONAL FIRE CODE (NO GEORGIA AMENDMENTS
2018 INTERNATIONAL PLUMBING CODE WITH GEORGIA AMENDMENTS (2020)
2018 INTERNATIONAL MECHANICAL CODE WITH GEORGIA AMENDMENTS (2020)
2018 INTERNATIONAL FUEL GAS CODE WITH GEORGIA AMENDMENTS (2020)
2017 NFPA 70 - NATIONAL ELECTRICAL CODE (NO GEORGIA AMENDMENTS)
2015 INTERNATIONAL ENERGY CONSERVATION CODE WITH GEORGIA AMENDMENTS (2020)
2018 NFPA 101, LIFE SAFETY CODE WITH GEORGIA AMENDMENTS (2020)

RULES AND REGULATIONS OF SAFETY FIRE COMMISSIONER FOR STATE MINIMUM FIRE SAFETY STANDARDS, CHAPTER 120-3-3 JANUARY 1, 2020 (GEORGIA SAFETY FIRE LAW)

GEORGIA STATE HANDICAPPED ACCESSIBILITY LAW 120-3-20A / 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

LIFE SAFETY PLAN LEGEND

SEPARATION PER IBC CHAPTER 5
2-HOUR RATED PARTITION
1-HOUR RATED PARTITION
SMOKE PARTITION
NON-RATED PARTITION

EXTINGUISHER LOCATION PER NFPA 10
FEC — FIRE EXTINGUISHER IN RECESSED CABINET
FE — BRACKET MOUNTED FIRE EXTINGUISHER

CAPACITY PER LSC 7.3.3.1
STAIRS = 0.3"/PERSON
DOORS = 0.2"/PERSON
32"W DOOR = 30" CLR. = 150 CAPACITY
36"W DOOR = 34" CLR. = 170 CAPACITY
42"W DOOR = 40" CLR. = 200 CAPACITY
48"W DOOR = 46" CLR. = 230 CAPACITY
68"W DOOR = 64" CLR. = 320 CAPACITY
72"W DOOR = 68" CLR. = 340 CAPACITY
96"W DOOR = 92" CLR. = 460 CAPACITY

DOORS PER IBC TABLE 716.1(2)

EXIT SIGNS PER IBC 1013
EXIT SIGNAGE (SHADING INDICATES FACE OF SIGN; ARROW SHOWN INDICATES DIRECTION)

NUMBER OF EXITS PER IBC 1006 & LSC 7.4.1.2
(00) ACTUAL EGRESS COUNT
<00> EGRESS CAPACITY OF EXIT
[00] EGRESS CAPACITY OF STAIR

ALLOWABLE TRAVEL DISTANCE PER LSC

TRAVEL DISTANCE LIMIT:
GROUP A-3: 250 FT. (SPRINKLERED)
GROUP B: 300 FT. (SPRINKLERED)
GROUP I-3: 200 FT.

DEAD END LIMIT:
GROUP A-3: 20 FT. (SPRINKLERED)
GROUP B: 50 FT. (SPRINKLERED)

COMMON PATH LIMIT:
GROUP A-3
(ANY OCCUPANT LOAD): 20 FT. (SPRINKLERED)
(<50 PERSONS) 75 FT. (SPRINKLERED)
GROUP B: 100 FT. (SPRINKLERED)
GROUP I-3: 100 FT. (SPRINKLERED)

PATH OF EGRESS WITHIN BUILDING

TRAVEL DISTANCE & COMMON PATH (SEE NOTES ON PLANS)

MIN. CORRIDOR WIDTH: 44" MIN.
MIN. STAIR WIDTH: 44" MIN.
MIN. CLEAR OPENING OF EXIT DOORS: 32" MIN.

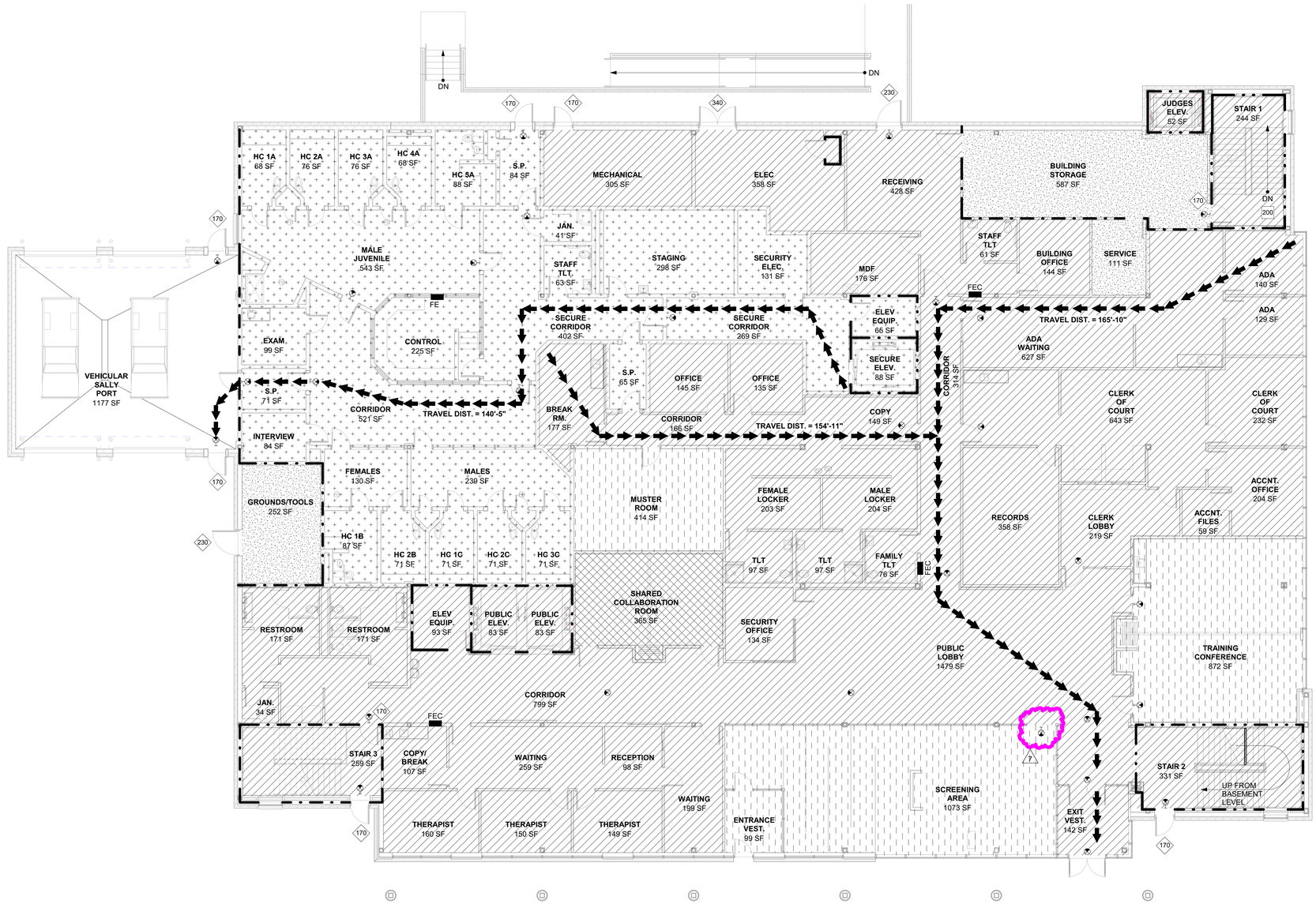
OCCUPANCY TYPE LEGEND
ASSEMBLY (A-3)
BUSINESS (B) COLLABORATION ROOMS
BUSINESS (B)
DETENTION (I-3)
STORAGE (S-1)

PLUMBING FIXTURE REQUIREMENTS (IBC TABLE 2902.1 AND IPC TABLE 403.1)

OCCUPANCY	WATER CLOSETS	LAVATORIES	BATHTUBS/ SHOWERS	DRINKING FOUNTAINS	SERVICE SINK
ASSEMBLY (A-3)	1 PER 125 (MALE) 1 PER 65 (FEMALE)	1 PER 200	---	1 PER 500	1
BUSINESS (B)	1 PER 25 FOR THE FIRST 50 AND 1 PER 50 FOR THE REMAINDER EXCEEDING 50	1 PER 40 FOR THE FIRST 80 AND 1 PER 80 FOR THE REMAINDER EXCEEDING 80	---	1 PER 100	1
DETENTION (I-3)	1 PER 15	1 PER 15	1 PER 15	1 PER 100	1
DETENTION (I-3) (EMPLOYEES)	1 PER 25	1 PER 35	---	1 PER 100	---

PLUMBING FIXTURE COUNT: (TOTAL OCCUPANCY 710)

OCCUPANCY	WATER CLOSETS				LAVATORIES				BATHTUBS/ SHOWERS	DRINKING FOUNTAINS		SERVICE SINK	
ASSEMBLY (A-3) 404 PERSONS	REQUIRED				REQUIRED					REQUIRED		REQUIRED	
	M	F			M	F				1		1	
	2	4			2	2							
BUSINESS (B) 251 PERSONS	REQUIRED				REQUIRED					REQUIRED		REQUIRED	
	M	F			M	F				3		1	
	4	4			3	3							
DETENTION (I-3) 50 PERSONS	REQUIRED				REQUIRED				REQUIRED	REQUIRED		REQUIRED	
	M	F			M	F			1	1		1	
	3	3			3	3							
TOTAL	REQUIRED		PROVIDED		REQUIRED		PROVIDED		PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED
	M	F	M	F	M	F	M	F					
	9	11	23	14	8	8	21	12	3	5	17	3	3



1 **LEVEL 100 - LIFE SAFETY PLAN**
SCALE: 1/8" = 1'-0"

PROJECT NORTH TRUE NORTH

BUILDING AREA AND OCCUPANCY AREA PER FLOOR

OCCUPANCY PER LSC TABLE 7.3.1.2
(REFER TO PLANS FOR INDIVIDUAL ROOM SQUARE FOOTAGES)

OCCUPANCY TYPE (PER FLOOR)	SQUARE FOOTAGE	OCCUPANT LOAD FACTOR	TOTAL OCCUPANCY (PER FLOOR)
BASEMENT LEVEL/PARKING			
STORAGE (S-1)	1,190 SF	500 SF/ OCC.	3 OCCUPANTS
TOTAL			3 OCCUPANTS
LEVEL 100			
ASSEMBLY (A-3)	2,515 SF	15 SF (NET)/ OCC.	168 OCCUPANTS
BUSINESS (B)	365 SF	30 SF/ OCC.	13 OCCUPANTS
BUSINESS (B)	11,806 SF	150 SF/ OCC.	79 OCCUPANTS
DETENTION (I-3)	4,877 SF	120 SF/ OCC.	41 OCCUPANTS
STORAGE (S-1)	1,001 SF	500 SF/ OCC.	3 OCCUPANTS
TOTAL			304 OCCUPANTS
LEVEL 200 (UNOCCUPIED SPACE - FUTURE OCCUPANT LOAD CALCULATIONS)			
ASSEMBLY (A-3)	3,528 SF	15 SF (NET)/ OCC.	236 OCCUPANTS
BUSINESS (B)	2,655 SF	30 SF/ OCC.	89 OCCUPANTS
BUSINESS (B)	12,713 SF	150 SF/ OCC.	85 OCCUPANTS
DETENTION (I-3)	961 SF	120 SF/ OCC.	9 OCCUPANTS
TOTAL			419 OCCUPANTS
LEVEL 300			
ASSEMBLY (A-3)	3,528 SF	15 SF (NET)/ OCC.	236 OCCUPANTS
BUSINESS (B)	2,239 SF	30 SF/ OCC.	75 OCCUPANTS
BUSINESS (B)	12,560 SF	150 SF/ OCC.	84 OCCUPANTS
DETENTION (I-3)	961 SF	120 SF/ OCC.	9 OCCUPANTS
TOTAL			404 OCCUPANTS

JERICHO design group
102 Mary Alice Park Road, Suite 103
Cumming, GA 30040

STATE OF GEORGIA
DOUGLAS E SHAW
03/16/2020
CERTIFICATE NO. RA021845
REGISTERED ARCHITECT

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FORSYTH COUNTY JUVENILE COURT BUILDING
FORSYTH COUNTY BOARD OF COMMISSIONERS
875 LANIER 400 PARKWAY
CUMMING, GA 30040

PRINT RECORD

No.	DATE	DESCRIPTION
	03/16/2020	Release for Bid and Permit
3	04/17/2020	FM RESPONSE 01
	05/08/2020	Release for Bid
7	07/29/2020	Addendum 7

Drawn By: DF
Checked By: DS
Date: 03/16/2020
Job No.: 19059

Sheet Title
LEVEL 100 - LIFE SAFETY PLAN

Sheet No.
LS-1.01

RELEASED FOR CONSTRUCTION

UTILITY PLAN NOTE LEGEND

ITEM	DESCRIPTION
1A	8" VALVE TO BE PROVIDED BY CITY WATER MAIN INSTALLATION PROJECT. CONTRACTOR TO CONNECT TO CITY WATER SYSTEM AT THIS VALVE.
1B	NEW 8"x4" TEE AND 4" GATE VALVE WITH TRAFFIC RATED ROADWAY BOX.
1C	(2) NEW 8" DOUBLE DETECTOR CHECKVALVE ASSEMBLY WITH 3/4 INCH BYPASS METER AND CHECKVALVE ASSEMBLY IN VAULT TO BE PURCHASED AND INSTALLED BY CONTRACTOR PER CITY OF CUMMING DETAIL W-33 (05-C532).
1D	NEW 4" WATER METER IN WATER SERVICE METER BOX PER CITY DETAIL W-37 (06-C532) AND A 4" RPZ BACKFLOW PREVENTER WITH FREEZE PROOF ENCLOSURE TO BE PURCHASED AND INSTALLED BY CONTRACTOR PER CITY OF CUMMING DETAILS 06-C532 & 08-C532. SUBMIT TO ARCHITECT FOR REVIEW OF ENCLOSURE COLOR PRIOR TO ORDERING. CONTRACTOR TO PAY CITY OF CUMMING FOR 4 INCH METER FEE AND PURCHASE & INSTALL A 4 INCH METER.
1E	REMOVE EX. WATER METER AND BACKFLOW PREVENTER AFTER NEW WATER SERVICE IS INSTALLED AND THE OWNER HAS MOVED OUT OF THE EXISTING JUVENILE JUSTICE BUILDING.
2A	NEW 8" D.I.P. FIRE PROTECTION WATERLINE. ALL FIRE LINES SHALL BE DUCTILE IRON CONFORMING TO ANSI A21.51 OR AWWA C151
2B	NEW 6" D.I.P. FIRE PROTECTION WATERLINE. ALL FIRE LINES SHALL BE DUCTILE IRON CONFORMING TO ANSI A21.51 OR AWWA C151
2C	NEW 4" D.I.P. FIRE PROTECTION WATERLINE ALL FIRE LINES SHALL BE DUCTILE IRON CONFORMING TO ANSI A21.51 OR AWWA C151
2D	NEW 4" D.I.P. DOMESTIC WATER LINE. CONFORMING TO ANSI A21.51 OR AWWA C151
2E	NEW 1" TYPE K COPPER WATER LINE FOR YARD HYDRANT AT DUMPSTER
3A	NEW FIRE HYDRANT, GATE VALVE & 8"X6" TEE FIRE HYDRANTS ARE TO BE 3-WAY 5-1/4" TYPE, AVK, SERIES 27, AND WITHIN 3 FEET FROM THE CURB WITH THE STREAMER FACING THE DRIVE AISLE
3B	NEW POST INDICATOR VALVE PER NFPA. TOP OF THE POST MUST BE 36" ABOVE FINISHED GRADE (NFPA 24-6.2). PROPOSED LOCATION IS A MINIMUM OF 40 FT AWAY FROM BUILDING.
3C	NEW EXTERNAL FIRE DEPARTMENT CONNECTION. DISTANCE FROM FIRE HYDRANT AND DETAILS TO MEET NFPA AND CITY OF CUMMING FIRE MARSHAL STANDARDS. SUBMIT FIRE DEPARTMENT CONNECTION DETAILS TO PLUMBING FOR REVIEW.
4A	NEW GATE VALVE WITH TRAFFIC RATED ROADWAY BOX. MATCH LINE SIZE
4B	NEW TEE, SEE PLAN FOR SIZE (TYP.)
4C	NEW REDUCER, SEE PLAN FOR SIZE (TYP.)
4D	NEW GATE VALVE WITH TRAFFIC RATED VALVE BOX. MATCH LINE SIZE AND INSTALL TEMPORARY PLUG FOR EXPANSION IN PHASE 3.
4E	NEW NON-FREEZE YARD HYDRANT. SEE PLUMBING SHEET P6.01 FOR SPECS.
5A	NEW FIRE PROTECTION WATER SERVICE. SEE PLUMBING DRAWINGS FP-1.00 FOR CONTINUATION
5B	NEW DOMESTIC WATER SERVICE. SEE PLUMBING DRAWINGS P-2.00/P-2.01 FOR CONTINUATION
5C	NEW DOMESTIC WATER SERVICE CONNECTION FOR YARD HYDRANT LINE SEE PLUMBING DRAWINGS P-2.00/P-2.01 FOR CONTINUATION
6A	NEW SAN. SEWER SERVICE, INV. = 1304.00. SEE PLUMBING DRAWINGS P-1.00 FOR CONTINUATION
6B	NEW SANITARY SEWER CLEANOUT (TYP.)
6C	NEW DUMPSTER DRAIN PER CITY OF CUMMING DETAILS 04/05 -C530
6D	NEW 6" PVC SANITARY SEWER @ MIN. 1%
7A	NEW (2) - 6" PVC UTILITY SLEEVES (TYP.). DETAIL 03-C501
8A	APPROXIMATE LOCATION OF NEW TRANSFORMER PAD. SEE LOCATION SPECIFICATIONS NOTE.
8B	APPROXIMATE LOCATION OF NEW GENERATOR. SEE ELECTRICAL FOR DETAILS
8C	APPROXIMATE LOCATION OF NEW SECONDARY SERVICE LINE
8D	APPROXIMATE LOCATION OF NEW PRIMARY SERVICE LINE CONTRACTOR SHALL COORDINATE WITH POWER COMPANY.
8E	4" PVC CONDUIT FOR TAMPER SWITCH TO POST INDICATOR VALVE. SEE ELECTRICAL FOR CONDUIT AND LINE SPECIFICATIONS AND DETAILS OF TAMPERPROOF SWITCH AT POST INDICATOR VALVE
8F	GEORGIA POWER TO PROVIDE DESIGN AND INSTALLATION OF NEW LIGHT POLES. POLES SHOWN ARE APPROXIMATE AND FOR INFORMATION PURPOSES ONLY.
8G	NEW CONDUIT FOR ELECTRICAL SERVICE FROM GENERATOR. SEE E0.01
8H	SEE ELECTRICAL PLANS FOR ELECTRICAL SERVICE TO MONUMENT SIGN. SEE E4.01
8I	NEW 4" PVC CONDUIT FOR ELECTRICAL SERVICE TO BACKFLOW ENCLOSURE
9A	NEW GAS SERVICE LINE. & METER BY GAS COMPANY. CONTRACTOR SHALL COORDINATE WITH GAS COMPANY DURING CONSTRUCTION.
9B	NEW GAS LINE FROM BUILDING TO GENERATOR BY CONTRACTOR. SEE PLUMBING SHEET P2.00/P2.01 FOR LINE SIZE AND PIPE SPECIFICATIONS
9C	10 LF SEGMENT OF THE SERVICE LINE TO BE A MINIMUM OF 4 IN. DIA, AS MEASURED FROM THE CONNECTION AT THE GENERATOR PER P2.00/P2.01
10A	(3) 4 IN. CONDUITS FOR NEW TELECOM, FIBER AND CABLE TV LINES. SEE COMMUNICATION "T" SERIES DRAWINGS.
10B	NEW COMMUNICATION PEDESTAL WITH BOLLARDS. SEE SE-0.02, SE-0.03 & SE-1.01 FOR DETAILS.
10C	NEW LICENSE PLATE RECOGNITION CAMERA ON POST. SEE SE-0.02 FOR DETAILS
10D	NEW CONDUIT FOR E.V. STATIONS. SEE SE-0.01 FOR SPECIFICATIONS
10E	NEW DETECTOR LOOP, SEE SE-0.01
11A	NEW DRY WELL. SEE P1.00 FOR DETAILS AND SPECIFICATIONS.

WATER LINE NOTES

1. ALL VALVES SHOWN SHALL BE GATE VALVES TO MATCH THE SIZE OF THE WATERLINE THEY SERVE UNLESS OTHERWISE NOTED.
2. ALL VALVES SHALL BE PROVIDED WITH VALVE BOX & CONCRETE COLLAR.
3. PROVIDE BENDS, TEES AND REDUCERS AS NECESSARY TO INSTALL WATER SYSTEM.
4. FIT ALL HORIZONTAL AND VERTICAL BENDS, TEES AND REDUCERS WITH CONCRETE THRUST BLOCKS AND RESTRAINTS PER DETAIL OF LOCAL JURISDICTION HAVING AUTHORITY.
5. ALL NEW WATERLINES SHALL HAVE A MINIMUM OF 4 FT. OF COVER AT ALL TIMES.
6. ADJUST THE TOPS OF ALL EXISTING WATER AND SEWER STRUCTURES TO FINAL GRADE.

FIRE HYDRANT LOCATION

FIRE HYDRANT LOCATION BASED ON PROVIDING A MAXIMUM OF 300 L.F. OF HOSE LAY COVERAGE AROUND BUILDINGS IN ACCORDANCE WITH CITY OF CUMMING STANDARDS. THE PROPOSED AND/OR EXISTING FIRE HYDRANTS SHOWN APPEAR TO SATISFY THIS REQUIREMENT.

BUILDING FIRE PROTECTION STATEMENT:
1. EXISTING BUILDINGS DO NOT HAVE FIRE PROTECTION SYSTEMS
2. NEW BUILDINGS DO HAVE A PROPOSED FIRE PROTECTION SPRINKLER SYSTEM

NOTE: WATER SERVICE TO EXISTING BUILDINGS SHALL BE MAINTAINED AT ALL TIMES. IF IT IS NECESSARY TO TEMPORARILY TURN OFF WATER DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND WATER MAY ONLY BE TURNED OFF BASED ON A SCHEDULE PROVIDED BY OWNER.

THE SITE CONTRACTOR SHALL COORDINATE SERVICE ROUTING OF ALL GAS, TELEPHONE, AND ELECTRICAL LINES WITH THE APPROPRIATE UTILITY COMPANY. ALL CONSTRUCTION MUST COMPLY WITH EACH UTILITY'S STANDARDS AND SPECIFICATIONS AND NOT INTERFERE WITH TREE PLANTING SITES OR EXISTING TREES TO BE PRESERVED.

PROJECT DATA

OWNER/DEVELOPER & PRIMARY PERMITTEE:	FORSYTH COUNTY BOARD OF COMMISSIONERS 110 EAST MAIN STREET SUITE 220 CUMMING, GA 30040 PHONE: 404-276-3622 EMAIL: JMWELDON@FORSYTHCO.COM
ARCHITECT:	JERICHO ARCHITECTURE DESIGN GROUP 102 MARY ALICE PARK RD SUITE 103 CUMMING, GA 30040
CIVIL SITE ENGINEER:	CORNERSTONE SITE CONSULTANTS, LLC 2985 GORDY PKWY, SUITE 119 MARIETTA, GA 30066 ANDREW M. HALLORAN, P.E. PH: 770-490-9182
SITE ADDRESS:	875 LANIER 400 PARKWAY CUMMING, GA 30040
SITE AREA:	5.14 ACRES
DISTURBED SITE AREA:	5.2 ACRES (TOTAL) 1.5 AC PHASE 1 1.9 AC PHASE 2 1.8 AC PHASE 3
EXISTING SITE USE:	JUVENILE JUSTICE CENTER
PROPOSED PROJECT:	JUVENILE JUSTICE CENTER
SITE ZONING:	HB (CITY OF CUMMING)

SEE DETAIL SHEETS FOR ALL CONSTRUCTION DETAILS

EXISTING INFORMATION DISCLAIMER

EXISTING INFORMATION MAY NOT BE SHOWN ON ALL DRAWINGS IN ORDER TO BETTER ILLUSTRATE THE PROPOSED CONSTRUCTION INFORMATION. PLEASE REFER TO THE EXISTING CONDITIONS PLANS AS NECESSARY WHEN REVIEWING THE DRAWINGS.

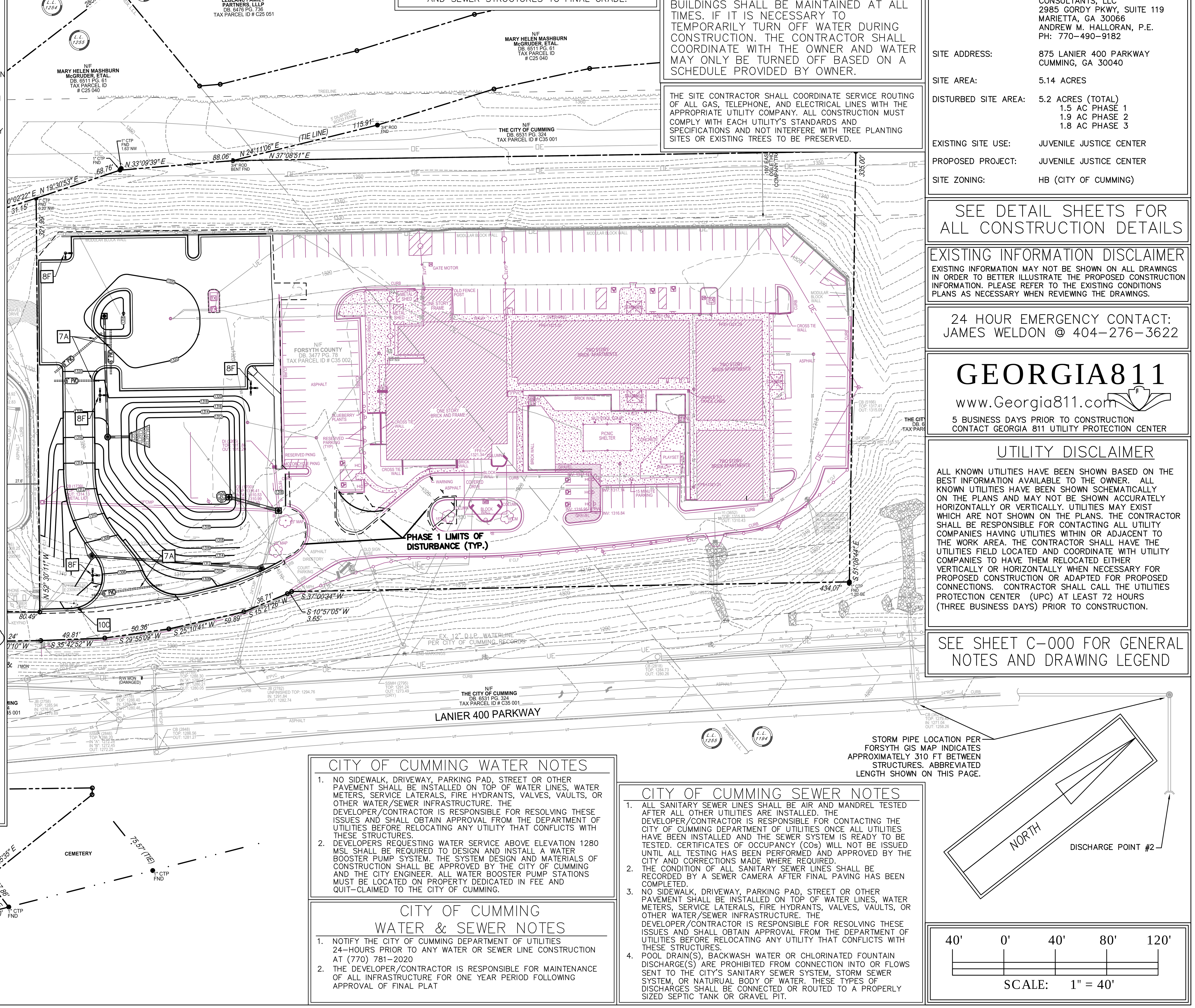
24 HOUR EMERGENCY CONTACT: JAMES WELDON @ 404-276-3622

GEORGIA811
www.Georgia811.com
5 BUSINESS DAYS PRIOR TO CONSTRUCTION
CONTACT GEORGIA 811 UTILITY PROTECTION CENTER

UTILITY DISCLAIMER

ALL KNOWN UTILITIES HAVE BEEN SHOWN BASED ON THE BEST INFORMATION AVAILABLE TO THE OWNER. ALL KNOWN UTILITIES HAVE BEEN SHOWN SCHEMATICALLY ON THE PLANS AND MAY NOT BE SHOWN ACCURATELY HORIZONTALLY OR VERTICALLY. UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL HAVE THE UTILITIES FIELD LOCATED AND COORDINATE WITH UTILITY COMPANIES TO HAVE THEM RELOCATED EITHER VERTICALLY OR HORIZONTALLY WHEN NECESSARY FOR PROPOSED CONSTRUCTION OR ADAPTED FOR PROPOSED CONNECTIONS. CONTRACTOR SHALL CALL THE UTILITIES PROTECTION CENTER (UPC) AT LEAST 72 HOURS (THREE BUSINESS DAYS) PRIOR TO CONSTRUCTION.

SEE SHEET C-000 FOR GENERAL NOTES AND DRAWING LEGEND



CITY OF CUMMING WATER NOTES

1. NO SIDEWALK, DRIVEWAY, PARKING PAD, STREET OR OTHER PAVEMENT SHALL BE INSTALLED ON TOP OF WATER LINES, WATER METERS, SERVICE LATERALS, FIRE HYDRANTS, VALVES, VAULTS, OR OTHER WATER/SEWER INFRASTRUCTURE. THE DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR RESOLVING THESE ISSUES AND SHALL OBTAIN APPROVAL FROM THE DEPARTMENT OF UTILITIES BEFORE RELOCATING ANY UTILITY THAT CONFLICTS WITH THESE STRUCTURES.
2. DEVELOPERS REQUESTING WATER SERVICE ABOVE ELEVATION 1280 MSL SHALL BE REQUIRED TO DESIGN AND INSTALL A WATER BOOSTER PUMP SYSTEM. THE SYSTEM DESIGN AND MATERIALS OF CONSTRUCTION SHALL BE APPROVED BY THE CITY OF CUMMING AND THE CITY ENGINEER. ALL WATER BOOSTER PUMP STATIONS MUST BE LOCATED ON PROPERTY DEDICATED IN FEE AND QUIT-CLAIMED TO THE CITY OF CUMMING.

CITY OF CUMMING WATER & SEWER NOTES

1. NOTIFY THE CITY OF CUMMING DEPARTMENT OF UTILITIES 24-HOURS PRIOR TO ANY WATER OR SEWER LINE CONSTRUCTION AT (770) 781-2020
2. THE DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL INFRASTRUCTURE FOR ONE YEAR PERIOD FOLLOWING APPROVAL OF FINAL PLAT

CITY OF CUMMING SEWER NOTES

1. ALL SANITARY SEWER LINES SHALL BE AIR AND MANDREL TESTED AFTER ALL OTHER UTILITIES ARE INSTALLED. THE DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE CITY OF CUMMING DEPARTMENT OF UTILITIES ONCE ALL UTILITIES HAVE BEEN INSTALLED AND THE SEWER SYSTEM IS READY TO BE TESTED. CERTIFICATES OF OCCUPANCY (COs) WILL NOT BE ISSUED UNTIL ALL TESTING HAS BEEN PERFORMED AND APPROVED BY THE CITY AND CORRECTIONS MADE WHERE REQUIRED.
2. THE CONDITION OF ALL SANITARY SEWER LINES SHALL BE RECORDED BY A SEWER CAMERA AFTER FINAL PAVING HAS BEEN COMPLETED.
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40' 0' 40' 80' 120'
SCALE: 1" = 40'

JERICHO
architectural design group
102 MARY ALICE PARK RD, SUITE 103
CUMMING, GA 30040

GEORGIA REGISTERED 01-21-20 No. 25813 PROFESSIONAL ENGINEER ANDREW M. HALLORAN

FOR THE FIRM CORNERSTONE SITE CONSULTANTS, LLC
GA SWCC LEVEL II NO. 7207
EXPIRES: 03-17-2021

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FORSYTH COUNTY JUVENILE COURT BUILDING

FORSYTH COUNTY BOARD OF COMMISSIONERS

875 LANIER 400 PARKWAY
CUMMING, GA 30040

PRINT RECORD

No.	DATE	DESCRIPTION
	03/16/2020	Release for Bid and Permit
	05/08/2020	Release for Bid
7	07/29/2020	Addendum 7

Drawn By	Checked By
CHC	AMH
Date	**Job No.**
03/16/2020	19059 DG

Sheet Title
UTILITY PLAN
PHASE 01

Sheet No.
C 120

RELEASED FOR CONSTRUCTION

UTILITY PLAN NOTE LEGEND

ITEM	DESCRIPTION
1A	8" VALVE TO BE PROVIDED BY CITY WATER MAIN INSTALLATION PROJECT. CONTRACTOR TO CONNECT TO CITY WATER SYSTEM AT THIS VALVE. (Addendum 7)
1B	NEW 8"x4" TEE AND 4" GATE VALVE WITH TRAFFIC RATED ROADWAY BOX.
1C	(2) NEW 8" DOUBLE DETECTOR CHECKVALVE ASSEMBLY WITH $\frac{3}{4}$ INCH BYPASS METER AND CHECKVALVE ASSEMBLY IN VAULT TO BE PURCHASED AND INSTALLED BY CONTRACTOR PER CITY OF CUMMING DETAIL W-33 (05-C532).
1D	NEW 4" WATER METER IN WATER SERVICE METER BOX PER CITY DETAIL W-37 (06-C532) AND A 4" RPZ BACKFLOW PREVENTER WITH FREEZE PROOF ENCLOSURE TO BE PURCHASED AND INSTALLED BY CONTRACTOR PER CITY OF CUMMING DETAILS 06-C532 & 08-C532. SUBMIT TO ARCHITECT FOR REVIEW OF ENCLOSURE COLOR PRIOR TO ORDERING. CONTRACTOR TO PAY CITY OF CUMMING FOR 4 INCH METER FEE AND PURCHASE & INSTALL A 4 INCH METER.
1E	REMOVE EX. WATER METER AND BACKFLOW PREVENTER AFTER NEW WATER SERVICE IS INSTALLED AND THE OWNER HAS MOVED OUT OF THE EXISTING JUVENILE JUSTICE BUILDING.
2A	NEW 8" D.I.P. FIRE PROTECTION WATERLINE. ALL FIRE LINES SHALL BE DUCTILE IRON CONFORMING TO ANSI A21.51 OR AWWA C151
2B	NEW 6" D.I.P. FIRE PROTECTION WATERLINE ALL FIRE LINES SHALL BE DUCTILE IRON CONFORMING TO ANSI A21.51 OR AWWA C151
2C	NEW 4" D.I.P. FIRE PROTECTION WATERLINE ALL FIRE LINES SHALL BE DUCTILE IRON CONFORMING TO ANSI A21.51 OR AWWA C151
2D	NEW 4" D.I.P. DOMESTIC WATER LINE. CONFORMING TO ANSI A21.51 OR AWWA C151
2E	NEW 1" TYPE K COPPER WATER LINE FOR YARD HYDRANT AT DUMPSTER
3A	NEW FIRE HYDRANT, GATE VALVE & 8"X6" TEE FIRE HYDRANTS ARE TO BE 3-WAY 5-1/4" TYPE, AVK, SERIES 27, AND WITHIN 3 FEET FROM THE CURB WITH THE STREAMER FACING THE DRIVE AISLE
3B	NEW POST INDICATOR VALVE PER NFPA. TOP OF THE POST MUST BE 36" ABOVE FINISHED GRADE (NFPA 24-6.2). PROPOSED LOCATION IS A MINIMUM OF 40 FT AWAY FROM BUILDING.
3C	NEW EXTERNAL FIRE DEPARTMENT CONNECTION. DISTANCE FROM FIRE HYDRANT AND DETAILS TO MEET NFPA AND CITY OF CUMMING FIRE MARSHAL STANDARDS. SUBMIT FIRE DEPARTMENT CONNECTION DETAILS TO PLUMBING FOR REVIEW.
4A	NEW GATE VALVE WITH TRAFFIC RATED ROADWAY BOX. MATCH LINE SIZE
4B	NEW TEE, SEE PLAN FOR SIZE (TYP.)
4C	NEW REDUCER, SEE PLAN FOR SIZE (TYP.)
4D	NEW GATE VALVE WITH TRAFFIC RATED VALVE BOX. MATCH LINE SIZE AND INSTALL TEMPORARY PLUG FOR EXPANSION IN PHASE 3.
4E	NEW NON-FREEZE YARD HYDRANT. SEE PLUMBING SHEET P6.01 FOR SPECS.
5A	NEW FIRE PROTECTION WATER SERVICE. SEE PLUMBING DRAWINGS FP-1.00 FOR CONTINUATION
5B	NEW DOMESTIC WATER SERVICE. SEE PLUMBING DRAWINGS P-2.00/P-2.01 FOR CONTINUATION
5C	NEW DOMESTIC WATER SERVICE CONNECTION POINT FOR YARD HYDRANT LINE SEE PLUMBING DRAWINGS P-2.00/P-2.01 FOR CONTINUATION
6A	NEW SAN. SEWER SERVICE, INV. = 1304.00. SEE PLUMBING DRAWINGS P-1.00 FOR CONTINUATION
6B	NEW SANITARY SEWER CLEANOUT (TYP.)
6C	NEW DUMPSTER DRAIN PER CITY OF CUMMING DETAILS 04/05 -C530
6D	NEW 6" PVC SANITARY SEWER @ MIN. 1%
7A	NEW (2) - 6" PVC UTILITY SLEEVES (TYP.). DETAIL 03-C501
8A	APPROXIMATE LOCATION OF NEW TRANSFORMER PAD. SEE LOCATION SPECIFICATIONS NOTE.
8B	APPROXIMATE LOCATION OF NEW GENERATOR. SEE ELECTRICAL FOR DETAILS
8C	APPROXIMATE LOCATION OF NEW SECONDARY SERVICE LINE
8D	APPROXIMATE LOCATION OF NEW PRIMARY SERVICE LINE CONTRACTOR SHALL COORDINATE WITH POWER COMPANY.
8E	4" PVC CONDUIT FOR TAMPER SWITCH TO POST INDICATOR VALVE. SEE ELECTRICAL FOR CONDUIT AND LINE SPECIFICATIONS AND DETAILS OF TAMPERPROOF SWITCH AT POST INDICATOR VALVE
8F	GEORGIA POWER TO PROVIDE DESIGN AND INSTALLATION OF NEW LIGHT POLES. POLES SHOWN ARE APPROXIMATE AND FOR INFORMATION PURPOSES ONLY.
8G	NEW CONDUIT FOR ELECTRICAL SERVICE FROM GENERATOR. SEE E0.01
8H	SEE ELECTRICAL PLANS FOR ELECTRICAL SERVICE TO MONUMENT SIGN. SEE E4.01
8I	NEW 4" PVC CONDUIT FOR ELECTRICAL SERVICE TO BACKFLOW ENCLOSURE (Addendum 7)
9A	NEW GAS SERVICE LINE. & METER BY GAS COMPANY. CONTRACTOR SHALL COORDINATE WITH GAS COMPANY DURING CONSTRUCTION.
9B	NEW GAS LINE FROM BUILDING TO GENERATOR BY CONTRACTOR. SEE PLUMBING SHEET P2.00/P2.01 FOR LINE SIZE AND PIPE SPECIFICATIONS
9C	10 LF SEGMENT OF THE SERVICE LINE TO BE A MINIMUM OF 4 IN. DIA, AS MEASURED FROM THE CONNECTION AT THE GENERATOR PER P2.00/P2.01
10A	(3) 4 IN. CONDUITS FOR NEW TELECOM, FIBER AND CABLE TV LINES. SEE COMMUNICATION "T" SERIES DRAWINGS.
10B	NEW COMMUNICATION PEDESTAL WITH BOLLARDS. SEE SE-0.02, SE-0.03 & SE-1.01 FOR DETAILS.
10C	NEW LICENSE PLATE RECOGNITION CAMERA ON POST. SEE SE-0.02 FOR DETAILS
10D	NEW CONDUIT FOR E.V. STATIONS. SEE SE-0.01 FOR SPECIFICATIONS
10E	NEW DETECTOR LOOP, SEE SE-01
11A	NEW DRY WELL. SEE P1.00 FOR DETAILS AND SPECIFICATIONS.

TRANSFORMER LOCATION REQUIREMENTS

A. CONTRACTOR SHALL COORDINATE LOCATION WITH ELECTRICAL PLANS & POWER COMPANY PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT IF THERE IS DISCREPANCY IN THE TRANSFORMER LOCATION SHOWN ON ANY CONTRACT DOCUMENTS.
B. CONTRACTOR SHALL OBTAIN FIRE MARSHALL'S FIELD APPROVAL OF TRANSFORMER LOCATION PRIOR TO INSTALLATION.
C. TRANSFORMER LOCATION SHALL COMPLY WITH FOLLOWING CODE SECTION OF NFPA 101 WITH GEORGIA CODE AMENDMENTS:
D. IF THE ACTUAL LOCATION OF THE TRANSFORMER MUST CHANGE FROM THAT SHOWN ON THIS PLAN. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT, ELECTRICAL AND CIVIL ENGINEER PRIOR TO ORDERING AND INSTALLATION.

SECTIONS 1.8-3
SPACE SEPARATION FOR TRANSFORMERS SHALL BE AS FOLLOWS:
1. TRANSFORMER PAD LOCATIONS SHALL BE A MINIMUM OF 10'-0" FROM ANY BUILDING, BUILDING OVERHANGS, CANOPIES, EXTERIOR WALLS, BALCONY, EXTERIOR STAIRS AND/OR WALKWAYS CONNECTED TO THE BUILDING WALL.
2. TRANSFORMER PAD EDGE SHALL BE NO LESS THAN 14'-0" FROM ANY DOORWAY
3. TRANSFORMER PAD EDGE SHALL BE NO LESS THAN 10'-0" FROM ANY WINDOWS OR OTHER OPENINGS.
4. IF THE BUILDING HAS AN OVERHANG, THE 10'-0" CLEARANCE SHALL BE MEASURED FROM A POINT BELOW THE EDGE OF THE OVERHANG ONLY IF THE BUILDING IS 3 STORIES OR LESS. IF THE BUILDING IS 4 STORIES OR MORE, 10'-0" SHALL BE MEASURED FROM THE OUTSIDE BUILDING.
5. FIRE ESCAPES, OUTSIDE STAIRS, AND COVERED WALKWAYS ATTACHED TO OR BETWEEN THE BUILDINGS SHALL BE CONSIDERED AS PART OF THE BUILDING.

EXCEPTION NO. 1 TO 1-5:
TRANSFORMER PADS MAY BE LOCATED CLOSER THAN THE ABOVE REQUIRED MINIMUM CLEARANCES UPON WRITTEN APPROVAL OF THE AUTHORITY HAVING JURISDICTION. IN NO CASE SHALL THE TRANSFORMER LOCATION BE LESS THAN 3'-0" FROM THE BUILDING.

EXCEPTION NO. 2:
TRANSFORMER PADS EXISTING PRIOR TO DECEMBER 31, 1994 ARE EXEMPTED FROM THIS REQUIREMENT. WHEN BUILDINGS ARE MODIFIED, REDUCTIONS IN SPACE SEPARATIONS MAY BE LESS THAN THE ABOVE REQUIRED MINIMUM CLEARANCES UPON WRITTEN APPROVAL OF THE AUTHORITY HAVING JURISDICTION.

WATER LINE NOTES

1. ALL VALVES SHOWN SHALL BE GATE VALVES TO MATCH THE SIZE OF THE WATERLINE THEY SERVE UNLESS OTHERWISE NOTED.
2. ALL VALVES SHALL BE PROVIDED WITH VALVE BOX & CONCRETE COLLAR.
3. PROVIDE BENDS, TEES AND REDUCERS AS NECESSARY TO INSTALL WATER SYSTEM.
4. FIT ALL HORIZONTAL AND VERTICAL BENDS, TEES AND REDUCERS WITH CONCRETE THRUST BLOCKS AND RESTRAINTS PER DETAIL OF LOCAL JURISDICTION HAVING AUTHORITY.
5. ALL NEW WATERLINES SHALL HAVE A MINIMUM OF 4 FT. OF COVER AT ALL TIMES.
6. ADJUST THE TOPS OF ALL EXISTING WATER AND SEWER STRUCTURES TO FINAL GRADE.

FIRE HYDRANT LOCATION

FIRE HYDRANT LOCATION BASED ON PROVIDING A MAXIMUM OF 300 L.F. OF HOSE LAY COVERAGE AROUND BUILDINGS IN ACCORDANCE WITH CITY OF CUMMING STANDARDS. THE PROPOSED AND/OR EXISTING FIRE HYDRANTS SHOWN APPEAR TO SATISFY THIS REQUIREMENT.

BUILDING FIRE PROTECTION STATEMENT:
1. EXISTING BUILDINGS DO NOT HAVE FIRE PROTECTION SYSTEMS
2. NEW BUILDINGS DO HAVE A PROPOSED FIRE PROTECTION SPRINKLER SYSTEM

NOTE: WATER SERVICE TO EXISTING BUILDINGS SHALL BE MAINTAINED AT ALL TIMES. IF IT IS NECESSARY TO TEMPORARILY TURN OFF WATER DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND WATER MAY ONLY BE TURNED OFF BASED ON A SCHEDULE PROVIDED BY OWNER.

THE SITE CONTRACTOR SHALL COORDINATE SERVICE ROUTING OF ALL GAS, TELEPHONE, AND ELECTRICAL LINES WITH THE APPROPRIATE UTILITY COMPANY. ALL CONSTRUCTION MUST COMPLY WITH EACH UTILITY'S STANDARDS AND SPECIFICATIONS AND NOT INTERFERE WITH TREE PLANTING SITES OR EXISTING TREES TO BE PRESERVED.

PROJECT DATA

OWNER/DEVELOPER & PRIMARY PERMITTEE:	FORSYTH COUNTY BOARD OF COMMISSIONERS 110 EAST MAIN STREET SUITE 220 CUMMING, GA 30040 PHONE: 404-276-3622 EMAIL: JMWELDON@FORSYTHCO.COM
ARCHITECT:	JERICHO ARCHITECTURE DESIGN GROUP 102 MARY ALICE PARK RD SUITE 103 CUMMING, GA 30040
CIVIL SITE ENGINEER:	CORNERSTONE SITE CONSULTANTS, LLC 2985 GORDY PKWY, SUITE 119 MARIETTA, GA 30066 ANDREW M. HALLORAN, P.E. PH: 770-490-9182
SITE ADDRESS:	875 LANIER 400 PARKWAY CUMMING, GA 30040
SITE AREA:	5.14 ACRES
DISTURBED SITE AREA:	5.2 ACRES (TOTAL) 1.5 AC PHASE 1 1.9 AC PHASE 2 1.8 AC PHASE 3
EXISTING SITE USE:	JUVENILE JUSTICE CENTER
PROPOSED PROJECT:	JUVENILE JUSTICE CENTER
SITE ZONING:	HB (CITY OF CUMMING)

SEE DETAIL SHEETS FOR ALL CONSTRUCTION DETAILS

EXISTING INFORMATION DISCLAIMER

EXISTING INFORMATION MAY NOT BE SHOWN ON ALL DRAWINGS IN ORDER TO BETTER ILLUSTRATE THE PROPOSED CONSTRUCTION INFORMATION. PLEASE REFER TO THE EXISTING CONDITIONS PLANS AS NECESSARY WHEN REVIEWING THE DRAWINGS.

24 HOUR EMERGENCY CONTACT: JAMES WELDON @ 404-276-3622

GEORGIA811
www.Georgia811.com
5 BUSINESS DAYS PRIOR TO CONSTRUCTION
CONTACT GEORGIA 811 UTILITY PROTECTION CENTER

UTILITY DISCLAIMER

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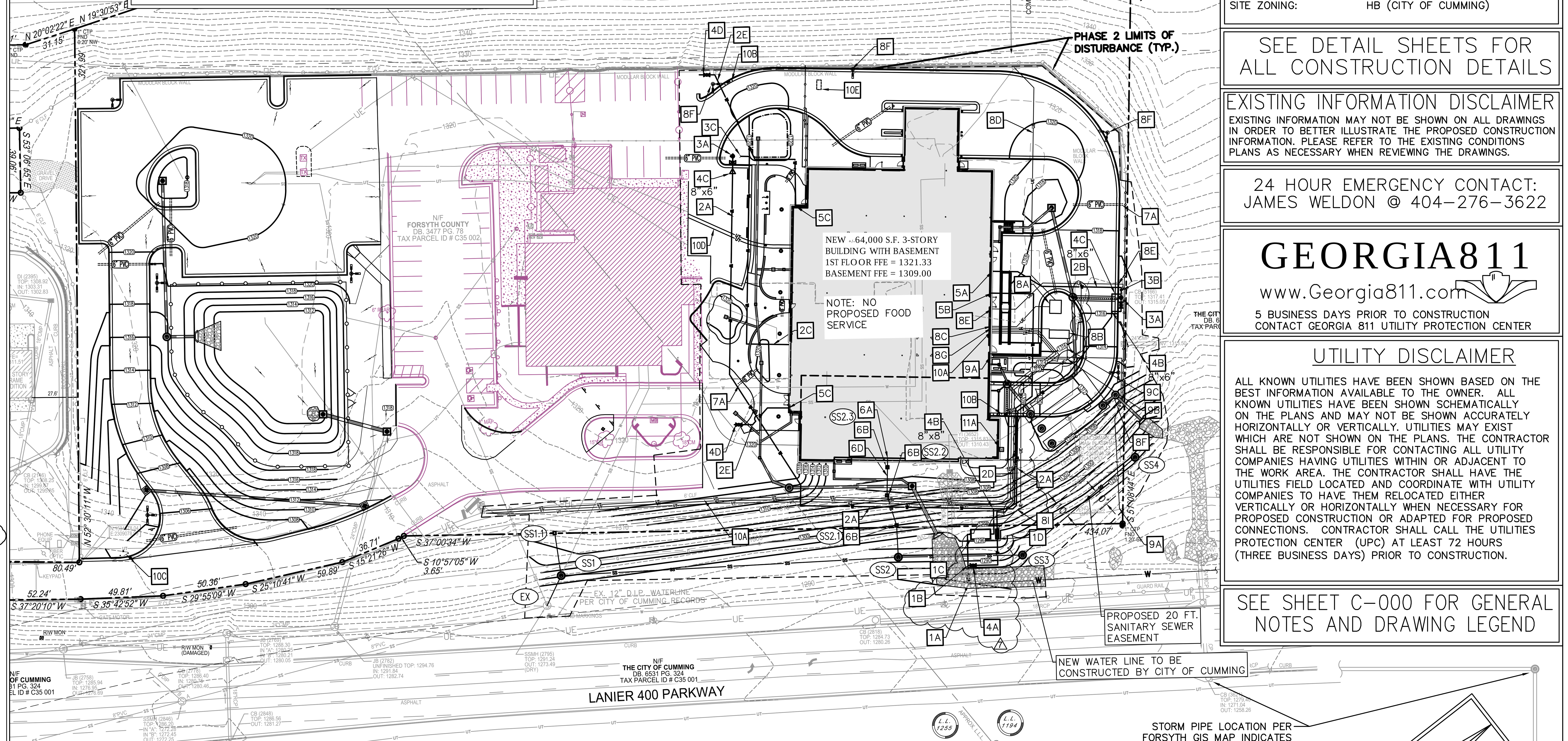

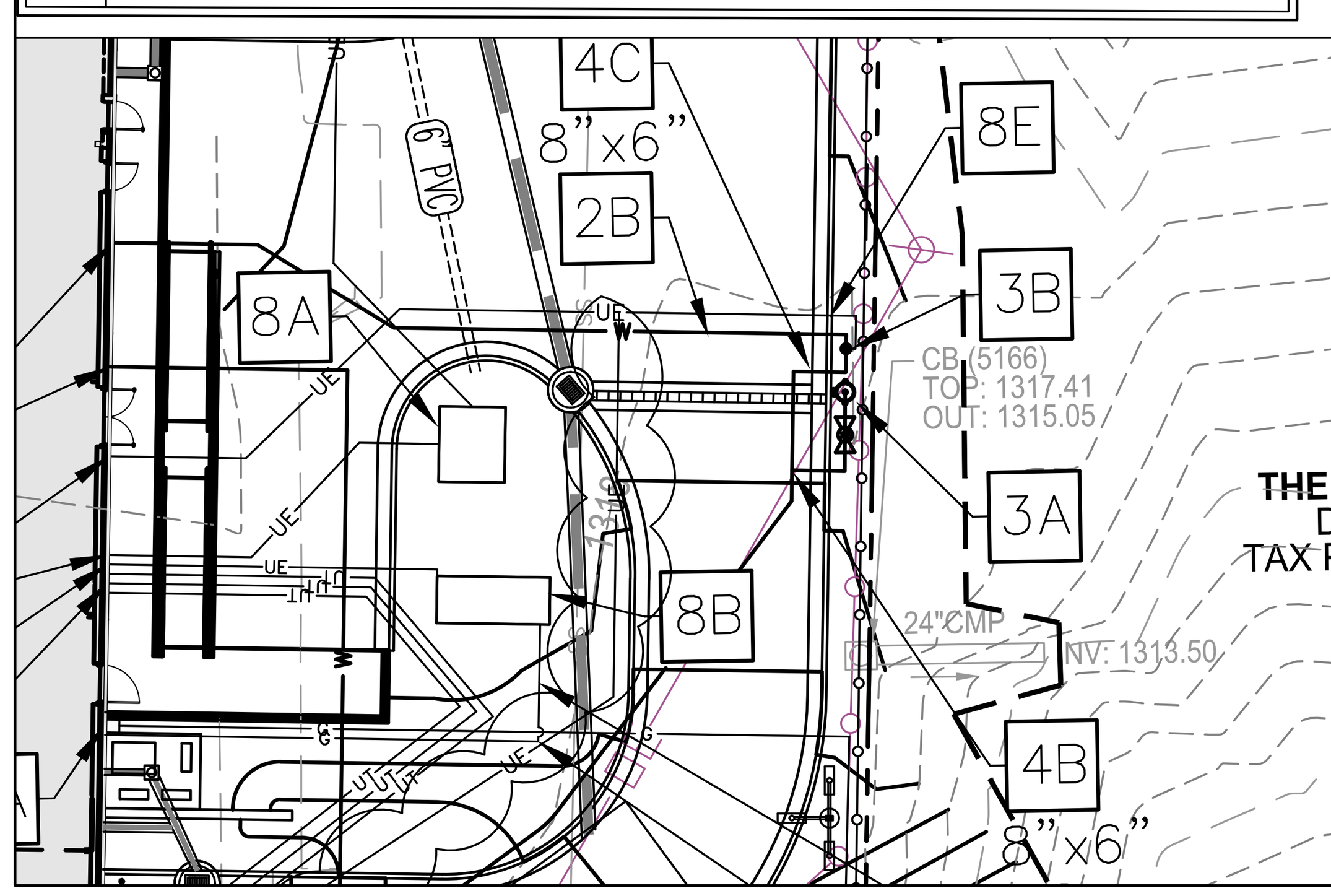

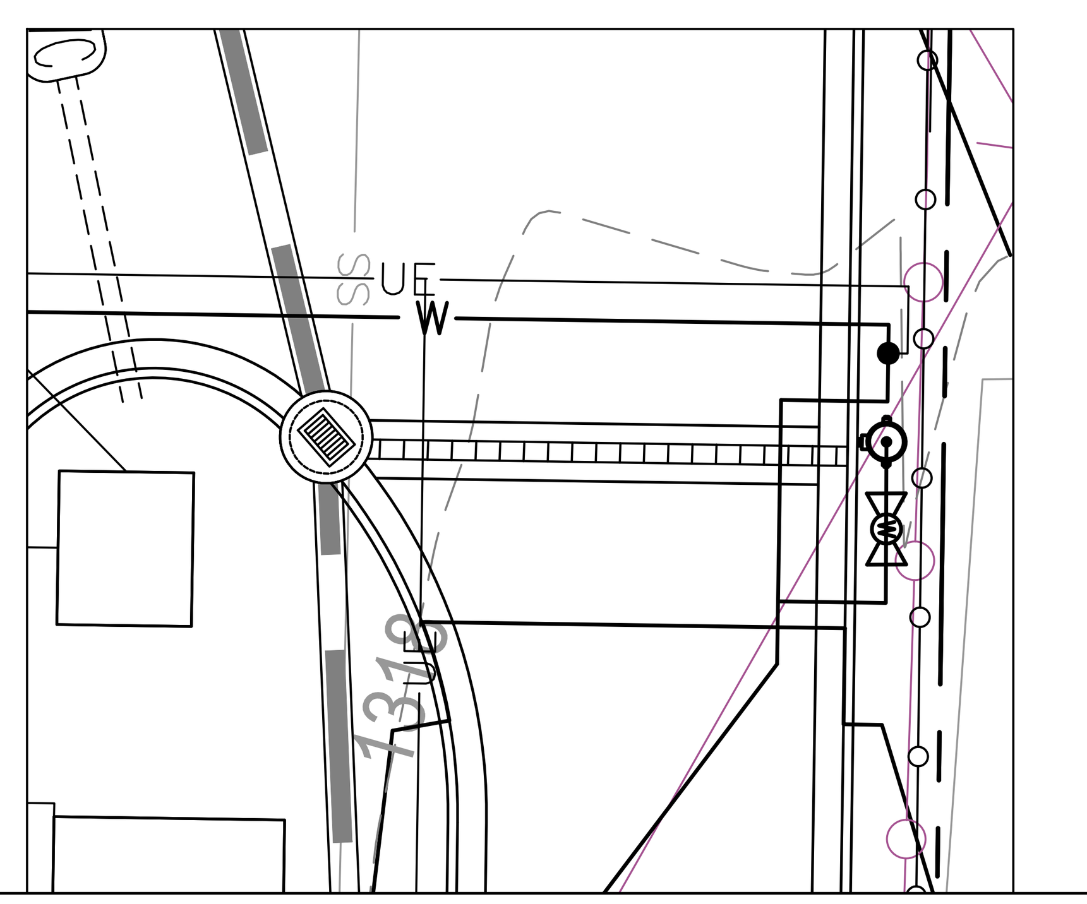

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GEORGIA REGISTERED No. 25813 PROFESSIONAL ENGINEER ANDREW M. HALLORAN 01-21-20

FOR THE FIRM CORNERSTONE SITE CONSULTANTS, LLC
GA SWCC LEVEL II NO. 7207
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Drawn By	Checked By
CHC	AMH
Date	**Job No.**
03/16/2020	19059 DG

Sheet Title
UTILITY PLAN PHASE 02

Sheet No.
C 121

RELEASED FOR CONSTRUCTION

UTILITY PLAN NOTE LEGEND

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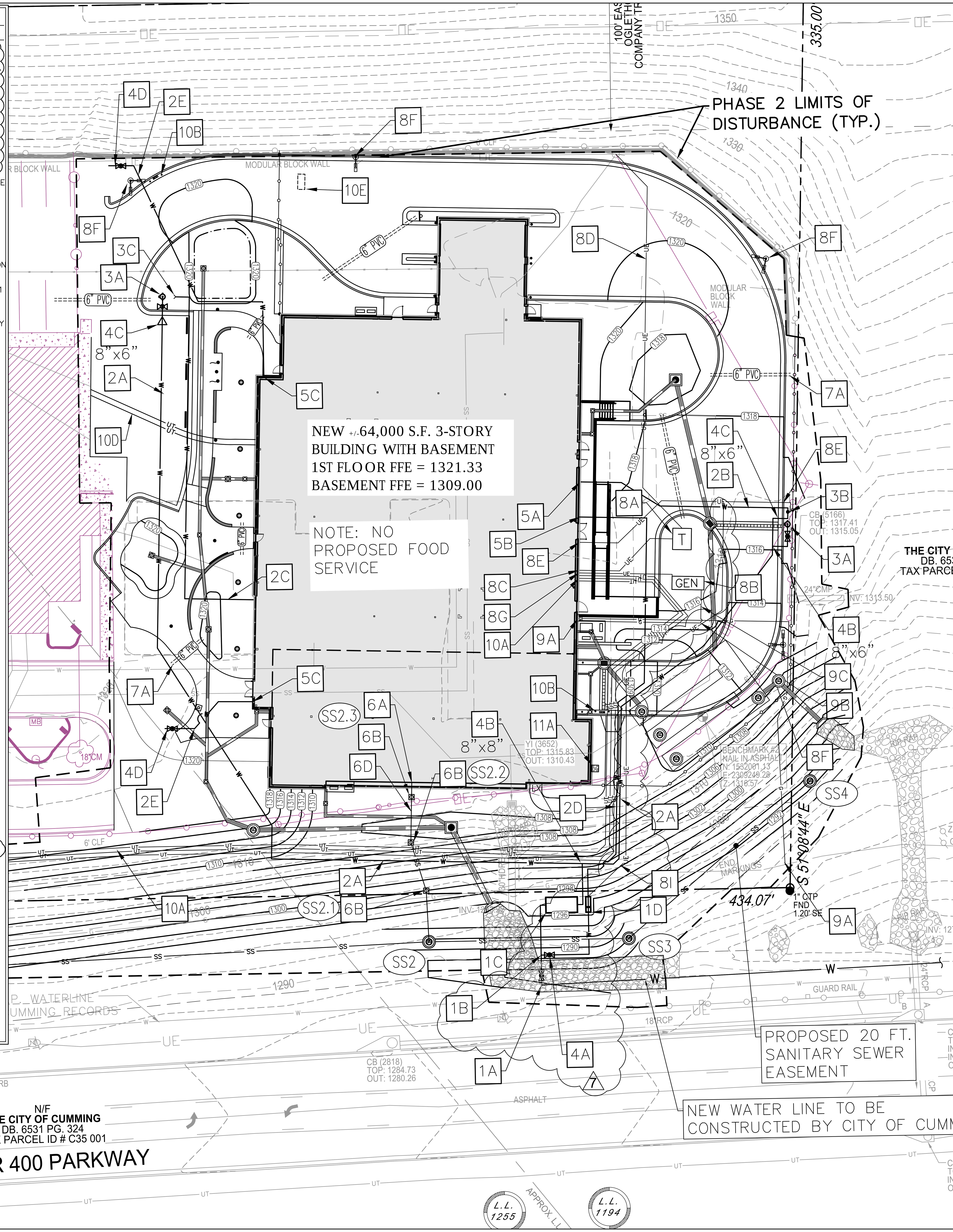
8B	APPROXIMATE LOCATION OF NEW GENERATOR. SEE ELECTRICAL FOR DETAILS
8C	APPROXIMATE LOCATION OF NEW SECONDARY SERVICE LINE
8D	APPROXIMATE LOCATION OF NEW PRIMARY SERVICE LINE CONTRACTOR SHALL COORDINATE WITH POWER COMPANY.
8E	4" PVC CONDUIT FOR TAMPER SWITCH TO POST INDICATOR VALVE. SEE ELECTRICAL FOR CONDUIT AND LINE SPECIFICATIONS AND DETAILS OF TAMPERPROOF SWITCH AT POST INDICATOR VALVE
8F	GEORGIA POWER TO PROVIDE DESIGN AND INSTALLATION OF NEW LIGHT POLES. POLES SHOWN ARE APPROXIMATE AND FOR INFORMATION PURPOSES ONLY.
8G	NEW CONDUIT FOR ELECTRICAL SERVICE FROM GENERATOR. SEE E0.01
8H	SEE ELECTRICAL PLANS FOR ELECTRICAL SERVICE TO MONUMENT SIGN. SEE E4.01
8I	NEW 4" PVC CONDUIT FOR ELECTRICAL SERVICE TO BACKFLOW ENCLOSURE
9A	NEW GAS SERVICE LINE. & METER BY GAS COMPANY. CONTRACTOR SHALL COORDINATE WITH GAS COMPANY DURING CONSTRUCTION.
9B	NEW GAS LINE FROM BUILDING TO GENERATOR BY CONTRACTOR. SEE PLUMBING SHEET P2.00/P2.01 FOR LINE SIZE AND PIPE SPECIFICATIONS
9C	10 LF SEGMENT OF THE SERVICE LINE TO BE A MINIMUM OF 4 IN. DIA, AS MEASURED FROM THE CONNECTION AT THE GENERATOR PER P2.00/P2.01
10A	(3) 4 IN. CONDUITS FOR NEW TELECOM, FIBER AND CABLE TV LINES. SEE COMMUNICATION "T" SERIES DRAWINGS.
10B	NEW COMMUNICATION PEDESTAL WITH BOLLARDS. SEE SE-0.02, SE-0.03 & SE-1.01 FOR DETAILS.
10C	NEW LICENSE PLATE RECOGNITION CAMERA ON POST. SEE SE-0.02 FOR DETAILS
10D	NEW CONDUIT FOR E.V. STATIONS. SEE SE-0.01 FOR SPECIFICATIONS
10E	NEW DETECTOR LOOP, SEE SE-0.01
11A	NEW DRY WELL. SEE P1.00 FOR DETAILS AND SPECIFICATIONS.



PROJECT DATA

OWNER/DEVELOPER & PRIMARY PERMITTEE:	FORSYTH COUNTY BOARD OF COMMISSIONERS 110 EAST MAIN STREET SUITE 220 CUMMING, GA 30040 PHONE: 404-276-3622 EMAIL: JMWELDON@FORSYTHCO.COM
ARCHITECT:	JERICHO ARCHITECTURE DESIGN GROUP 102 MARY ALICE PARK RD SUITE 103 CUMMING, GA 30040
CIVIL SITE ENGINEER:	CORNERSTONE SITE CONSULTANTS, LLC 2985 GORDY PKWY, SUITE 119 MARIETTA, GA 30066 ANDREW M. HALLORAN, P.E. PH: 770-490-9182
SITE ADDRESS:	875 LANIER 400 PARKWAY CUMMING, GA 30040
SITE AREA:	5.14 ACRES
DISTURBED SITE AREA:	5.2 ACRES (TOTAL) 1.5 AC PHASE 1 1.9 AC PHASE 2 1.8 AC PHASE 3
EXISTING SITE USE:	JUVENILE JUSTICE CENTER
PROPOSED PROJECT:	JUVENILE JUSTICE CENTER
SITE ZONING:	HB (CITY OF CUMMING)

SEE DETAIL SHEETS FOR ALL CONSTRUCTION DETAILS

EXISTING INFORMATION DISCLAIMER

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24 HOUR EMERGENCY CONTACT:
JAMES WELDON @ 404-276-3622

GEORGIA811
www.Georgia811.com
5 BUSINESS DAYS PRIOR TO CONSTRUCTION
CONTACT GEORGIA 811 UTILITY PROTECTION CENTER

UTILITY DISCLAIMER

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SEE SHEET C-000 FOR GENERAL NOTES AND DRAWING LEGEND

SCALE: 1" = 20'

JERICHO
architectural design group
102 MARY ALICE PARK RD, SUITE 103
CUMMING, GA 30040

FOR THE FIRM CORNERSTONE SITE CONSULTANTS, LLC
GA SWCC LEVEL II NO. 7207
EXPIRES: 03-17-2021

CORNERSTONE SITE CONSULTANTS

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ARCHITECTS • ENGINEERS

FORSYTH COUNTY JUVENILE COURT BUILDING

FORSYTH COUNTY BOARD OF COMMISSIONERS

875 LANIER 400 PARKWAY
CUMMING, GA 30040

PRINT RECORD

No.	DATE	DESCRIPTION
	03/16/2020	Release for Bid and Permit
	05/08/2020	Release for Bid
7	07/29/2020	Addendum 7

Drawn By	Checked By
CHC	AMH
Date	**Job No.**
03/16/2020	19059 DG

Sheet Title
DETAILED UTILITY PLAN PHASE 02

Sheet No.
C 121A

RELEASED FOR CONSTRUCTION

UTILITY PLAN NOTE LEGEND

ITEM	DESCRIPTION
1A	8" VALVE TO BE PROVIDED BY CITY WATER MAIN INSTALLATION PROJECT. CONTRACTOR TO CONNECT TO CITY WATER SYSTEM AT THIS VALVE. ⚠7
1B	NEW 8"x4" TEE AND 4" GATE VALVE WITH TRAFFIC RATED ROADWAY BOX.
1C	(2) NEW 8" DOUBLE DETECTOR CHECKVALVE ASSEMBLY WITH ¾ INCH BYPASS METER AND CHECKVALVE ASSEMBLY IN VAULT TO BE PURCHASED AND INSTALLED BY CONTRACTOR PER CITY OF CUMMING DETAIL W-33 (05-C532).
1D	NEW 4" WATER METER IN WATER SERVICE METER BOX PER CITY DETAIL W-37 (06-C532) AND A 4" RPZ BACKFLOW PREVENTER WITH FREEZE PROOF ENCLOSURE TO BE PURCHASED AND INSTALLED BY CONTRACTOR PER CITY OF CUMMING DETAILS 06-C532 & 08-C532. SUBMIT TO ARCHITECT FOR REVIEW OF ENCLOSURE COLOR PRIOR TO ORDERING. CONTRACTOR TO PAY CITY OF CUMMING FOR 4 INCH METER FEE AND PURCHASE & INSTALL A 4 INCH METER.
1E	REMOVE EX. WATER METER AND BACKFLOW PREVENTER AFTER NEW WATER SERVICE IS INSTALLED AND THE OWNER HAS MOVED OUT OF THE EXISTING JUVENILE JUSTICE BUILDING.
2A	NEW 8" D.I.P. FIRE PROTECTION WATERLINE. ALL FIRE LINES SHALL BE DUCTILE IRON CONFORMING TO ANSI A21.51 OR AWWA C151
2B	NEW 6" D.I.P. FIRE PROTECTION WATERLINE ALL FIRE LINES SHALL BE DUCTILE IRON CONFORMING TO ANSI A21.51 OR AWWA C151
2C	NEW 4" D.I.P. FIRE PROTECTION WATERLINE ALL FIRE LINES SHALL BE DUCTILE IRON CONFORMING TO ANSI A21.51 OR AWWA C151
2D	NEW 4" D.I.P. DOMESTIC WATER LINE. CONFORMING TO ANSI A21.51 OR AWWA C151
2E	NEW 1" TYPE K COPPER WATER LINE FOR YARD HYDRANT AT DUMPSTER
3A	NEW FIRE HYDRANT, GATE VALVE & 8"X6" TEE FIRE HYDRANTS ARE TO BE 3-WAY 5-1/4" TYPE, AVK, SERIES 27, AND WITHIN 3 FEET FROM THE CURB WITH THE STREAMER FACING THE DRIVE AISLE
3B	NEW POST INDICATOR VALVE PER NFPA. TOP OF THE POST MUST BE 36" ABOVE FINISHED GRADE (NFPA 24-6.2). PROPOSED LOCATION IS A MINIMUM OF 40 FT AWAY FROM BUILDING.
3C	NEW EXTERNAL FIRE DEPARTMENT CONNECTION. DISTANCE FROM FIRE HYDRANT AND DETAILS TO MEET NFPA AND CITY OF CUMMING FIRE MARSHAL STANDARDS. SUBMIT FIRE DEPARTMENT CONNECTION DETAILS TO PLUMBING FOR REVIEW.
4A	NEW GATE VALVE WITH TRAFFIC RATED ROADWAY BOX. MATCH LINE SIZE
4B	NEW TEE, SEE PLAN FOR SIZE (TYP.)
4C	NEW REDUCER, SEE PLAN FOR SIZE (TYP.)
4D	NEW GATE VALVE WITH TRAFFIC RATED VALVE BOX. MATCH LINE SIZE AND INSTALL TEMPORARY PLUG FOR EXPANSION IN PHASE 3.
4E	NEW NON-FREEZE YARD HYDRANT. SEE PLUMBING SHEET P6.01 FOR SPECS.
5A	NEW FIRE PROTECTION WATER SERVICE. SEE PLUMBING DRAWINGS FP-1.00 FOR CONTINUATION
5B	NEW DOMESTIC WATER SERVICE. SEE PLUMBING DRAWINGS P-2.00/P-2.01 FOR CONTINUATION
5C	NEW DOMESTIC WATER SERVICE CONNECTION POINT FOR YARD HYDRANT LINE SEE PLUMBING DRAWINGS P-2.00/P-2.01 FOR CONTINUATION
6A	NEW SAN. SEWER SERVICE, INV. = 1304.00. SEE PLUMBING DRAWINGS P-1.00 FOR CONTINUATION
6B	NEW SANITARY SEWER CLEANOUT (TYP.)
6C	NEW DUMPSTER DRAIN PER CITY OF CUMMING DETAILS 04/05 -C530
6D	NEW 6" PVC SANITARY SEWER @ MIN. 1%
7A	NEW (2) - 6" PVC UTILITY SLEEVES (TYP.). DETAIL 03-C501
8A	APPROXIMATE LOCATION OF NEW TRANSFORMER PAD. SEE LOCATION SPECIFICATIONS NOTE.
8B	APPROXIMATE LOCATION OF NEW GENERATOR. SEE ELECTRICAL FOR DETAILS
8C	APPROXIMATE LOCATION OF NEW SECONDARY SERVICE LINE
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10E	NEW DETECTOR LOOP, SEE SE-0.01
11A	NEW DRY WELL. SEE P1.00 FOR DETAILS AND SPECIFICATIONS.

WATER LINE NOTES

1. ALL VALVES SHOWN SHALL BE GATE VALVES TO MATCH THE SIZE OF THE WATERLINE THEY SERVE UNLESS OTHERWISE NOTED.
2. ALL VALVES SHALL BE PROVIDED WITH VALVE BOX & CONCRETE COLLAR.
3. PROVIDE BENDS, TEES AND REDUCERS AS NECESSARY TO INSTALL WATER SYSTEM.
4. FIT ALL HORIZONTAL AND VERTICAL BENDS, TEES AND REDUCERS WITH CONCRETE THRUST BLOCKS AND RESTRAINTS PER DETAIL OF LOCAL JURISDICTION HAVING AUTHORITY.
5. ALL NEW WATERLINES SHALL HAVE A MINIMUM OF 4 FT. OF COVER AT ALL TIMES.
6. ADJUST THE TOPS OF ALL EXISTING WATER AND SEWER STRUCTURES TO FINAL GRADE.

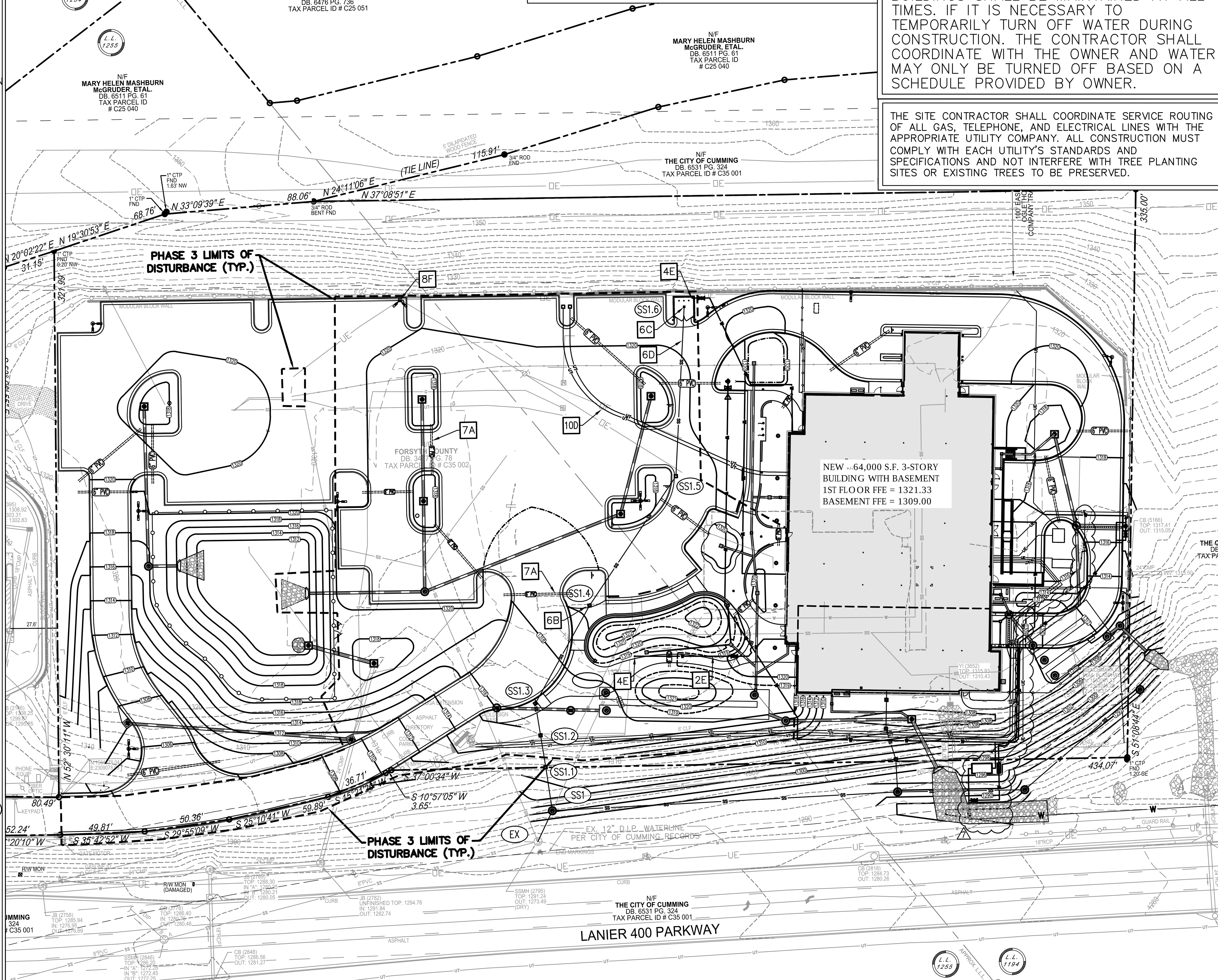
FIRE HYDRANT LOCATION

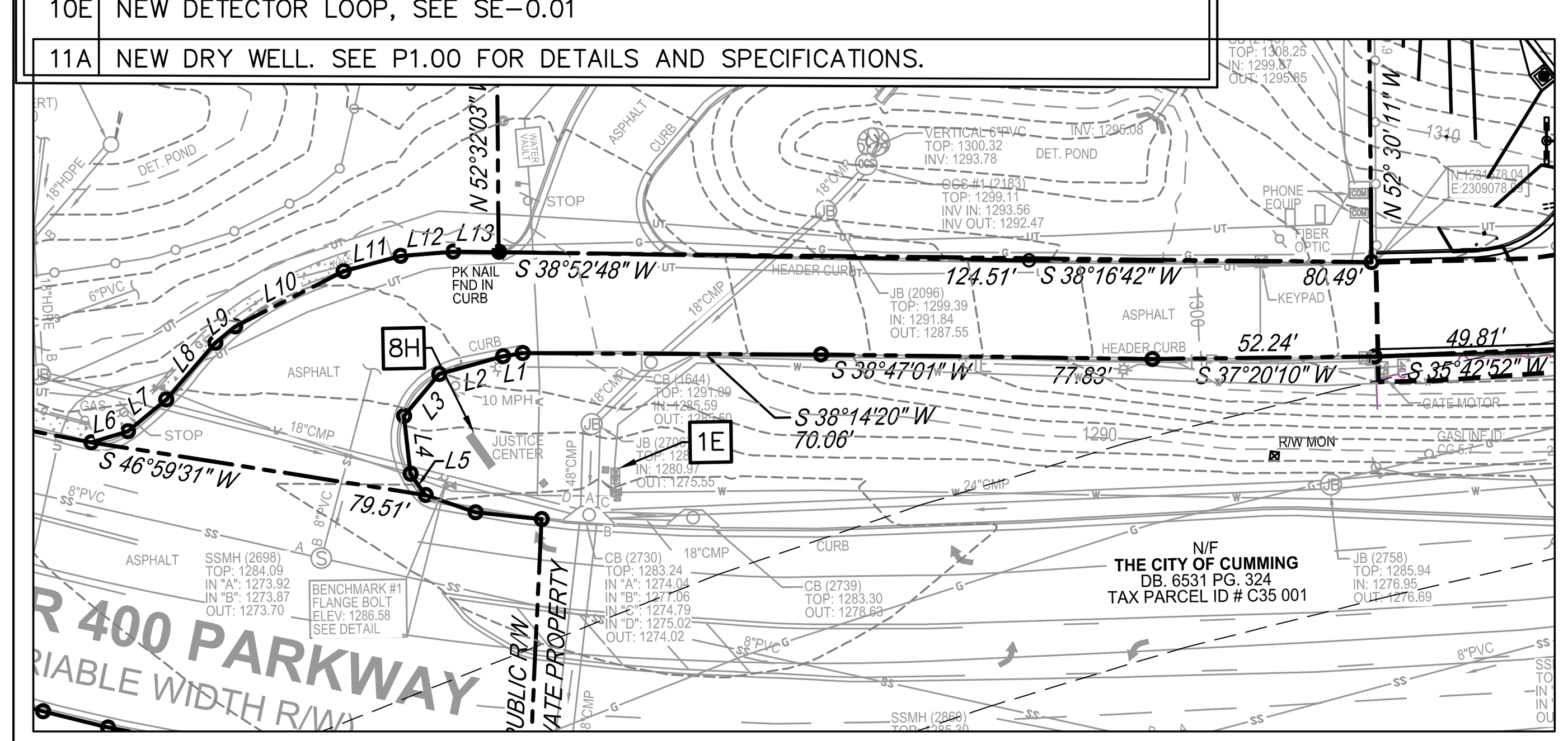
FIRE HYDRANT LOCATION BASED ON PROVIDING A MAXIMUM OF 300 L.F. OF HOSE LAY COVERAGE AROUND BUILDINGS IN ACCORDANCE WITH CITY OF CUMMING STANDARDS. THE PROPOSED AND/OR EXISTING FIRE HYDRANTS SHOWN APPEAR TO SATISFY THIS REQUIREMENT.

BUILDING FIRE PROTECTION STATEMENT:
1. EXISTING BUILDINGS DO NOT HAVE FIRE PROTECTION SYSTEMS
2. NEW BUILDINGS DO HAVE A PROPOSED FIRE PROTECTION SPRINKLER SYSTEM

NOTE: WATER SERVICE TO EXISTING BUILDINGS SHALL BE MAINTAINED AT ALL TIMES. IF IT IS NECESSARY TO TEMPORARILY TURN OFF WATER DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND WATER MAY ONLY BE TURNED OFF BASED ON A SCHEDULE PROVIDED BY OWNER.

THE SITE CONTRACTOR SHALL COORDINATE SERVICE ROUTING OF ALL GAS, TELEPHONE, AND ELECTRICAL LINES WITH THE APPROPRIATE UTILITY COMPANY. ALL CONSTRUCTION MUST COMPLY WITH EACH UTILITY'S STANDARDS AND SPECIFICATIONS AND NOT INTERFERE WITH TREE PLANTING SITES OR EXISTING TREES TO BE PRESERVED.





CITY OF CUMMING WATER NOTES

1. NO SIDEWALK, DRIVEWAY, PARKING PAD, STREET OR OTHER PAVEMENT SHALL BE INSTALLED ON TOP OF WATER LINES, WATER METERS, SERVICE LATERALS, FIRE HYDRANTS, VALVES, VAULTS, OR OTHER WATER/SEWER INFRASTRUCTURE. THE DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR RESOLVING THESE ISSUES AND SHALL OBTAIN APPROVAL FROM THE DEPARTMENT OF UTILITIES BEFORE RELOCATING ANY UTILITY THAT CONFLICTS WITH THESE STRUCTURES.
2. DEVELOPERS REQUESTING WATER SERVICE ABOVE ELEVATION 1280 MSL SHALL BE REQUIRED TO DESIGN AND INSTALL A WATER BOOSTER PUMP SYSTEM. THE SYSTEM DESIGN AND MATERIALS OF CONSTRUCTION SHALL BE APPROVED BY THE CITY OF CUMMING AND THE CITY ENGINEER. ALL WATER BOOSTER PUMP STATIONS MUST BE LOCATED ON PROPERTY DEDICATED IN FEE AND QUIT-CLAIMED TO THE CITY OF CUMMING.

CITY OF CUMMING WATER & SEWER NOTES

1. NOTIFY THE CITY OF CUMMING DEPARTMENT OF UTILITIES 24-HOURS PRIOR TO ANY WATER OR SEWER LINE CONSTRUCTION AT (770) 781-2020
2. THE DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL INFRASTRUCTURE FOR ONE YEAR PERIOD FOLLOWING APPROVAL OF FINAL PLAT

CITY OF CUMMING SEWER NOTES

1. ALL SANITARY SEWER LINES SHALL BE AIR AND MANDREL TESTED AFTER ALL OTHER UTILITIES ARE INSTALLED. THE DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE CITY OF CUMMING DEPARTMENT OF UTILITIES ONCE ALL UTILITIES HAVE BEEN INSTALLED AND THE SEWER SYSTEM IS READY TO BE TESTED. CERTIFICATES OF OCCUPANCY (COs) WILL NOT BE ISSUED UNTIL ALL TESTING HAS BEEN PERFORMED AND APPROVED BY THE CITY AND CORRECTIONS MADE WHERE REQUIRED.
2. THE CONDITION OF ALL SANITARY SEWER LINES SHALL BE RECORDED BY A SEWER CAMERA AFTER FINAL PAVING HAS BEEN COMPLETED.
3. NO SIDEWALK, DRIVEWAY, PARKING PAD, STREET OR OTHER PAVEMENT SHALL BE INSTALLED ON TOP OF WATER LINES, WATER METERS, SERVICE LATERALS, FIRE HYDRANTS, VALVES, VAULTS, OR OTHER WATER/SEWER INFRASTRUCTURE. THE DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR RESOLVING THESE ISSUES AND SHALL OBTAIN APPROVAL FROM THE DEPARTMENT OF UTILITIES BEFORE RELOCATING ANY UTILITY THAT CONFLICTS WITH THESE STRUCTURES.
4. POOL DRAIN(S), BACKWASH WATER OR CHLORINATED FOUNTAIN DISCHARGE(S) ARE PROHIBITED FROM CONNECTION INTO OR FLOWS SENT TO THE CITY'S SANITARY SEWER SYSTEM, STORM SEWER SYSTEM, OR NATURUAL BODY OF WATER. THESE TYPES OF DISCHARGES SHALL BE CONNECTED OR ROUTED TO A PROPERLY SIZED SEPTIC TANK OR GRAVEL PIT.

PROJECT DATA

OWNER/DEVELOPER & PRIMARY PERMITTEE:	FORSYTH COUNTY BOARD OF COMMISSIONERS 110 EAST MAIN STREET SUITE 220 CUMMING, GA 30040 PHONE: 404-276-3622 EMAIL: JMWELDON@FORSYTHCO.COM
ARCHITECT:	JERICHO ARCHITECTURE DESIGN GROUP 102 MARY ALICE PARK RD SUITE 103 CUMMING, GA 30040
CIVIL SITE ENGINEER:	CORNERSTONE SITE CONSULTANTS, LLC 2985 GORDY PKWY, SUITE 119 MARIETTA, GA 30066 ANDREW M. HALLORAN, P.E. PH: 770-490-9182
SITE ADDRESS:	875 LANIER 400 PARKWAY CUMMING, GA 30040
SITE AREA:	5.14 ACRES
DISTURBED SITE AREA:	5.2 ACRES (TOTAL) 1.5 AC PHASE 1 1.9 AC PHASE 2 1.8 AC PHASE 3
EXISTING SITE USE:	JUVENILE JUSTICE CENTER
PROPOSED PROJECT:	JUVENILE JUSTICE CENTER
SITE ZONING:	HB (CITY OF CUMMING)

SEE DETAIL SHEETS FOR ALL CONSTRUCTION DETAILS

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SEE SHEET C-000 FOR GENERAL NOTES AND DRAWING LEGEND

40' 0' 40' 80' 120'
SCALE: 1" = 40'

JERICHO
architectural design group
102 MARY ALICE PARK RD, SUITE 103
CUMMING, GA 30040

GEORGIA REGISTERED 07-29-20 No. 25813 PROFESSIONAL ENGINEER ANDREW M. HALLORAN

FOR THE FIRM CORNERSTONE SITE CONSULTANTS, LLC
GA SWCC LEVEL II NO. 7207
EXPIRES: 03-17-2021

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FORSYTH COUNTY JUVENILE COURT BUILDING

FORSYTH COUNTY BOARD OF COMMISSIONERS

875 LANIER 400 PARKWAY
CUMMING, GA 30040

PRINT RECORD

No.	DATE	DESCRIPTION
	03/16/2020	Release for Bid and Permit
	05/08/2020	Release for Bid
⚠7	07/29/2020	Addendum 7

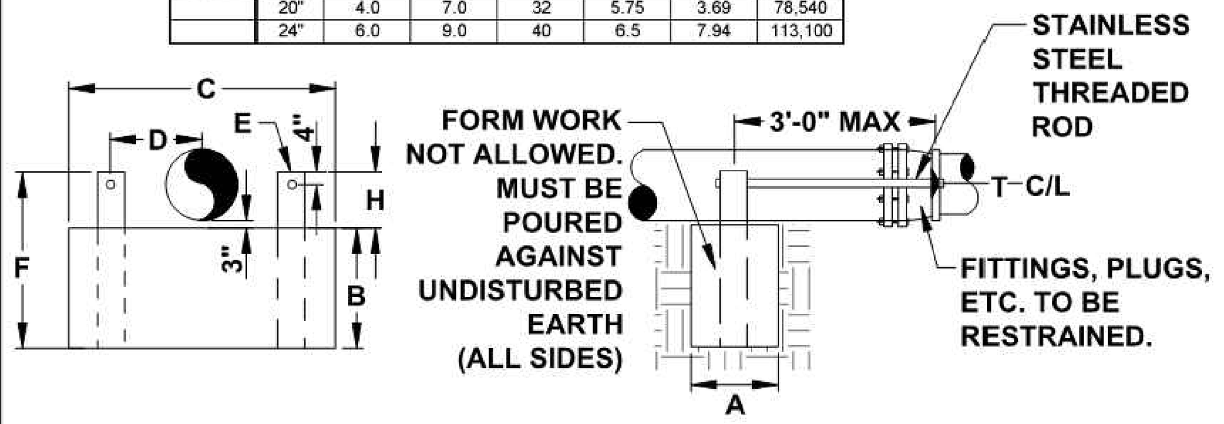
Drawn By	Checked By
CHC	AMH
Date	**Job No.**
03/16/2020	19059 DG

Sheet Title
UTILITY PLAN
PHASE 03

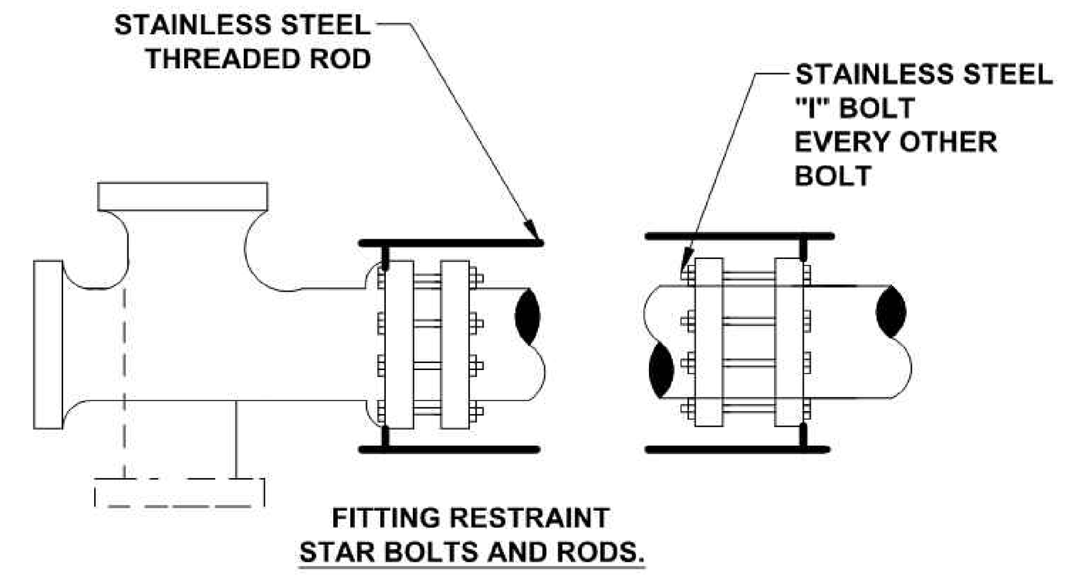
Sheet No.
C 122

RELEASED FOR CONSTRUCTION

NOTES:
1. BASED ON ROD AND NUT HAVING YIELD STRENGTH OF 96,000 PSI.
2. SOIL BEARING CAPACITY OF 2000 PSI.
3. RODS TO HAVE 6" OF THREADS ON ENDS.
4. ALL METAL TO BE CLEANED AND COATED WITH APPROVED PROTECTIVE COATING FOLLOWING INSTALLATION AND PRIOR TO BACKFILLING. SEE NOTE 2 ON DETAIL 18

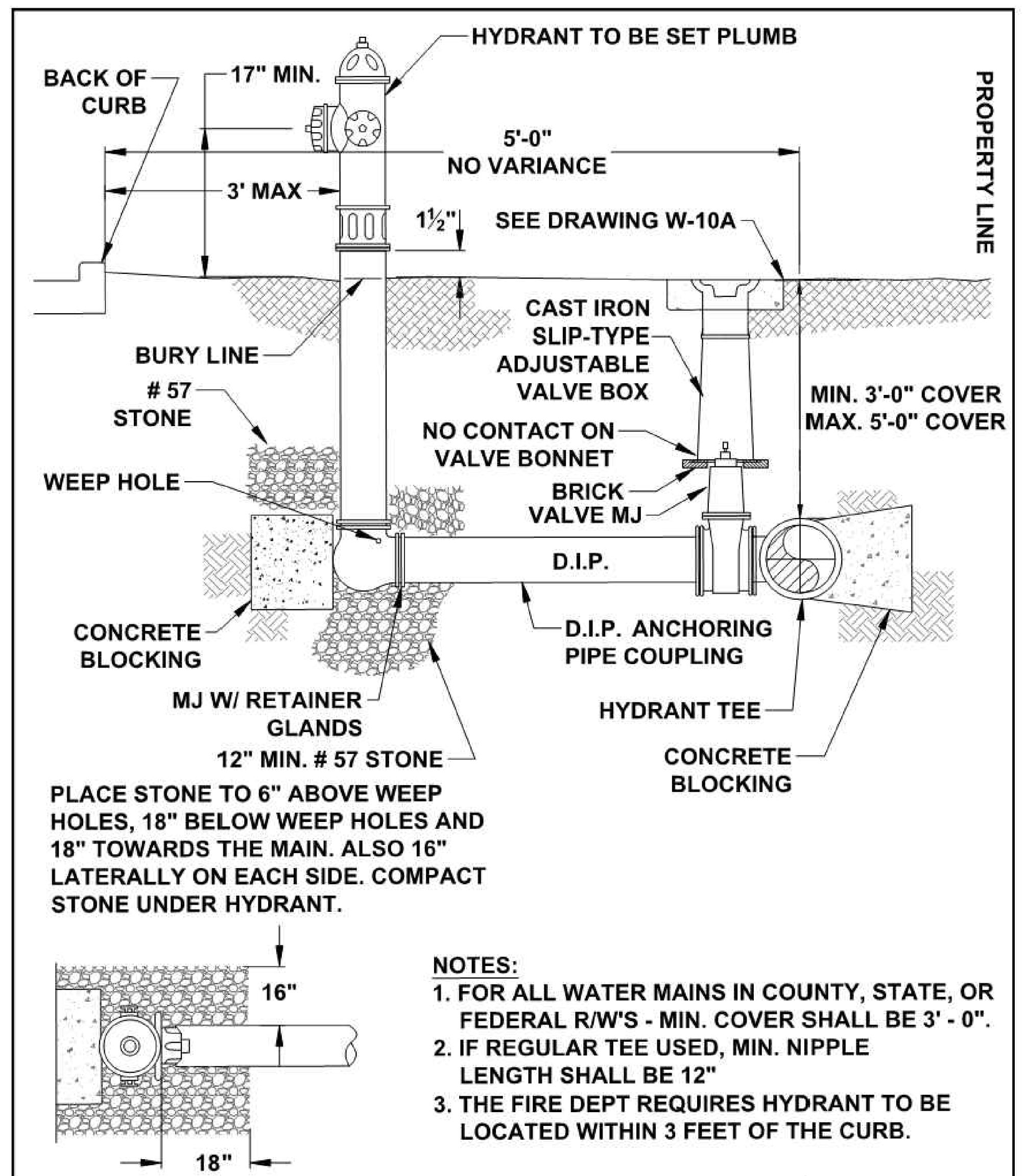


CITY OF CUMMING
DEPARTMENT OF UTILITIES
THRUST RESTRAINT "DEAD MAN" CONCRETE TYPE
DETAIL NUMBER: W-17
LATEST REVISION 07/14/2017
SCALE: NOT TO SCALE
01 C 532



NOTES:
1. NO FLANGED JOINTS ARE TO BE BURIED.
2. AFTER INSTALLATION, TIE-RODS AND CLAMP ASSEMBLIES SHALL BE CLEANED AND THOROUGHLY COATED WITH BITUMASTIC OR APPROVED EQUIVALENT.

CITY OF CUMMING
DEPARTMENT OF UTILITIES
THRUST RESTRAINT: TIE ROD INSTALLATION
DETAIL NUMBER: W-18
LATEST REVISION 07/14/2017
SCALE: NOT TO SCALE
02 C 532

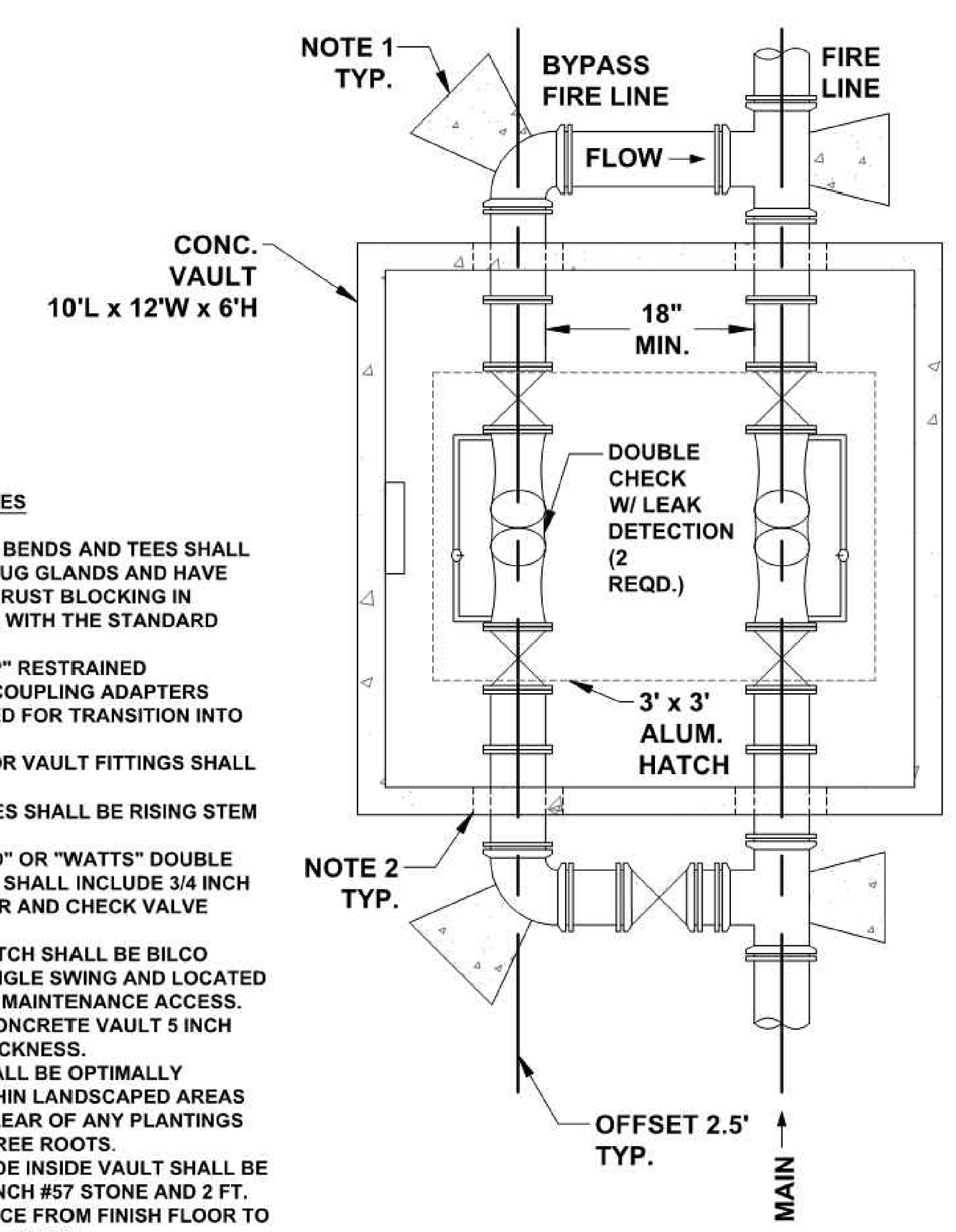


NOTES:
1. FOR ALL WATER MAINS IN COUNTY, STATE, OR FEDERAL R/W'S - MIN. COVER SHALL BE 3' - 0".
2. IF REGULAR TEE USED, MIN. NIPPLE LENGTH SHALL BE 12"
3. THE FIRE DEPT REQUIRES HYDRANT TO BE LOCATED WITHIN 3 FEET OF THE CURB.

CITY OF CUMMING
DEPARTMENT OF UTILITIES
FIRE HYDRANT INSTALLATION SUBDIVISIONS
DETAIL NUMBER: W-20
LATEST REVISION 07/14/2017
SCALE: NOT TO SCALE
03 C 532

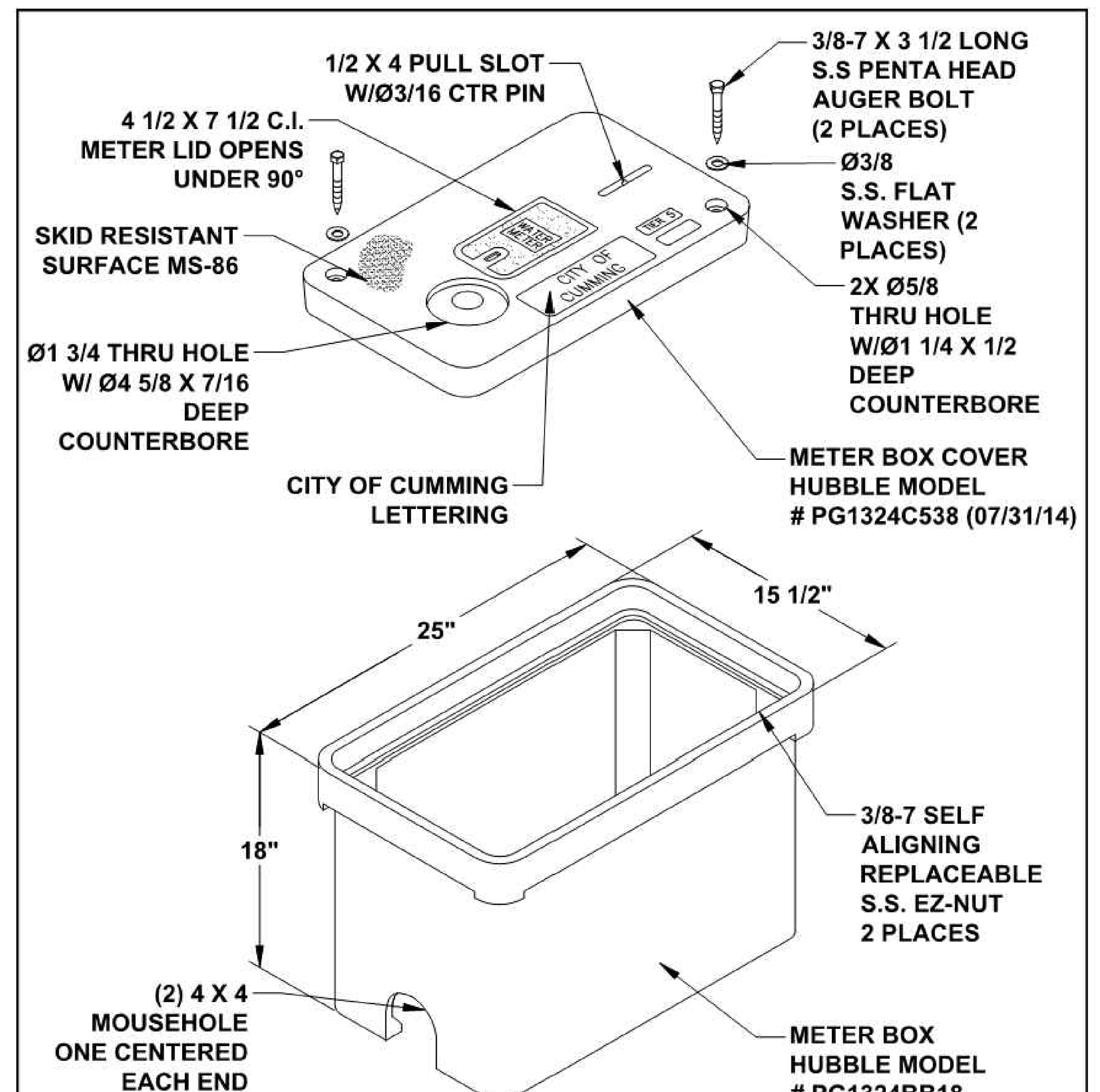
<DETAIL DELETED>

7
04 C 532



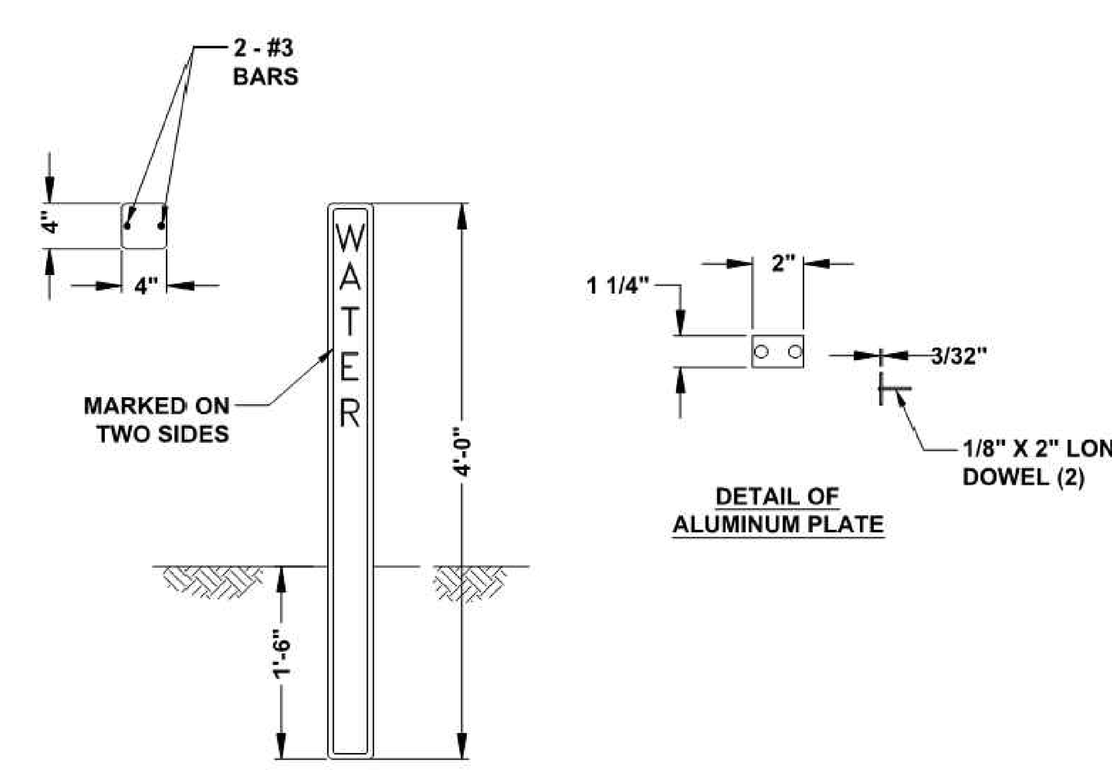
GENERAL NOTES
1. ALL BURIED BENDS AND TEES SHALL BE MJ MEGA-LUG GLANDS AND HAVE RESTRAINT THRUST BLOCKING IN ACCORDANCE WITH THE STANDARD DETAILS.
2. "ROMA GRIP" RESTRAINED MJ/FLANGED COUPLING ADAPTERS SHALL BE USED FOR TRANSITION INTO THE VAULT.
3. ALL INTERIOR VAULT FITTINGS SHALL BE FLANGED.
4. GATE VALVES SHALL BE RISING STEM OS & Y TYPE
5. "CONBRACO" OR "WATTS" DOUBLE CHECK VALVE SHALL INCLUDE 3/4 INCH BYPASS METER AND CHECK VALVE ASSEMBLY.
6. ACCESS HATCH SHALL BE BILCO ALUMINUM SINGLE SWING AND LOCATED FOR OPTIMUM MAINTENANCE ACCESS.
7. PRECAST CONCRETE VAULT 5 INCH MIN. WALL THICKNESS.
8. VAULTS SHALL BE OPTIMALLY LOCATED WITHIN LANDSCAPED AREAS AND 3-5 FT. CLEAR OF ANY PLANTINGS OR MATURE TREE ROOTS.
9. FINISH GRADE INSIDE VAULT SHALL BE OPEN. MIN. 6 INCH #57 STONE AND 2 FT. MIN. CLEARANCE FROM FINISH FLOOR TO BOTTOM OF FLANGES.
10. FINAL APPROVAL SHALL BE BY FORSYTH COUNTY FIRE DEPARTMENT.

CITY OF CUMMING
DEPARTMENT OF UTILITIES
FIRE LINE VALVE VAULT
DETAIL NUMBER: W-33
LATEST REVISION 07/14/2017
SCALE: NOT TO SCALE
05 C 532



NOTES:
1. THIS ASSEMBLY IS RATED FOR A STATIC DESIGN LOAD OF 5,000 LBS. OVER A 10 X 10 AREA AND MUST PASS A MIN. STATIC TEST LOAD OF 7,500 LBS.
2. METER BOX SHALL BE BY HUBBELL, OLDCASTLE OR APPROVED EQUIVALENT. SHOP DRAWING AND SPECIFICATION SUBMITTAL IS REQUIRED FOR EQUIVALENT.

CITY OF CUMMING
DEPARTMENT OF UTILITIES
WATER SERVICE METER BOX
DETAIL NUMBER: W-37
LATEST REVISION 07/14/2017
SCALE: NOT TO SCALE
06 C 532

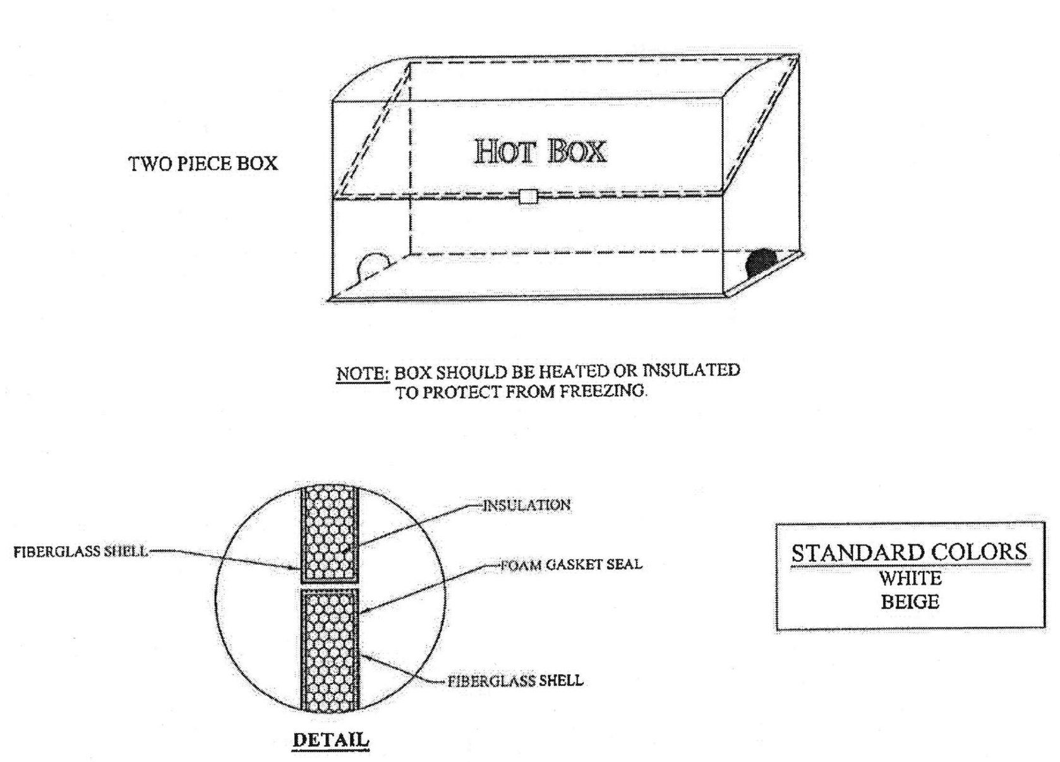


NOTES:
1. ALUMINUM PLATE CAST IN SIDE OF MARKER POST.
2. DISTANCE (NEAREST FOOT) FROM CENTER LINE OF POST TO CENTER LINE OF VALVE BOX AND DIRECTION ARROW TO BE STAMPED INTO PLATE WITH STEEL DIE AFTER MARKER IS SET.

CITY OF CUMMING
DEPARTMENT OF UTILITIES
VALVE MARKER DETAIL
DETAIL NUMBER: W-38
LATEST REVISION 07/14/2017
SCALE: NOT TO SCALE
07 C 532

REDUCED PRESSURE ZONE ASSEMBLY INSTALLATION

ENCLOSURE: HOT BOX® OR EQUIVALENT BOX, SIZED TO ASSEMBLY SIZE ¾" TO 2".



CONTRACTOR SHALL COORDINATE REQUIRED SIZE OF PRODUCT WITH THE BACKFLOW PREVENTER MODEL. 7

Fiberglass construction, drainage capacity (RPZ devices), engineered heater sizing (protection for -30°F), testing / maintenance, ground anchor capabilities and lockable lid.

12

08 C 532

JERICHO architectural design group
102 MARY ALICE PARK RD, SUITE 103
CUMMING, GA 30040

FOR THE FIRM CORNERSTONE SITE CONSULTANTS, LLC
GA SWCC LEVEL II NO. 7207
EXPIRES: 03-17-2021

CORNERSTONE SITE CONSULTANTS

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FORSYTH COUNTY BOARD OF COMMISSIONERS

875 LANIER 400 PARKWAY
CUMMING, GA 30040

PRINT RECORD

No.	DATE	DESCRIPTION
	03/16/2020	Release for Bid and Permit
	05/08/2020	Release for Bid
7	07/29/2020	Addendum 7

Drawn By	Checked By
CHC	AMH

Date	Job No.
03/16/2020	19059 DG

Sheet Title
CITY OF CUMMING DETAILS

Sheet No.
C 532

RELEASED FOR CONSTRUCTION

GENERAL NOTES

CONCRETE NOTES

1. REINFORCING STEEL FOR ALL MEMBERS SHALL HAVE A YIELD STRENGTH OF 60,000 PSI MINIMUM, EXCEPT FOR STIRRUPS, TIES AND HOOPS, WHICH SHALL HAVE A YIELD. STRENGTH OF 40,000 PSI MINIMUM.
2. UNLESS SHOWN OTHERWISE, FRAMED CONCRETE SLABS SHALL BE 4" THICK REINFORCED WITH #4 @ 8" o.c. EACH WAY.
3. WHERE MAIN REINFORCING IN A SOLID SLAB IS ONE DIRECTION, PROVIDE #3 BARS AT 12" o.c. IN THE OTHER DIRECTION, UNLESS SHOWN OTHERWISE.
4. BACKFILL SHALL NOT BE PLACED AGAINST BASEMENT WALLS UNTIL THE BASEMENT FLOOR SLAB AND THAT PORTION OF THE FIRST SLAB OVER THE BASEMENT ARE IN PLACE.
5. UNLESS SHOWN OTHERWISE, CONCRETE WALLS 8" THICK OR LESS SHALL BE REINFORCED WITH #4 @ 8" o.c. EACH WAY. WALLS OVER 8" THICK SHALL BE REINFORCED WITH #4 @ 12" o.c. EACH WAY, EACH FACE.
6. WHERE THE LENGTH OF A BAR IS GIVEN, AND IT IS TO BE HOOKED, THE HOOK SHALL BE IN ADDITION TO THE LENGTH GIVEN.
7. WHERE OPENINGS OCCUR IN SLABS, PLACE THE REINFORCING THAT WOULD OCCUR IN LINE WITH THE OPENING EQUALLY TO EITHER SIDE OF THE OPENING. CUT NO STEEL IN THE FIELD.
8. REINFORCING BARS THAT ARE TO BE WELDED SHALL BE OF A WELDABLE GRADE AND WELDED IN ACCORDANCE WITH A.W.S. RECOMMENDATIONS.
9. PROTECTIVE COVERING OF REINFORCEMENT (SEE DETAILS) SHALL BE AS FOLLOWS : FOOTINGS AND GRADE BEAMS 3" CLEAR BOTTOM AND SIDES, 1 1/2" CLEAR SIDES. BEAMS 1 1/2" CLEAR TO STIRRUPS. CONCRETE COLUMNS AND PIERS 1 1/2" CLEAR TO TIES. 3/4" CLEAR FOR CONCRETE JOIST TOP BARS
10. ALL CONCRETE FOR TOPPING SLAB SHALL BE REGULAR WEIGHT CONCRETE.

CONTRACTOR'S NOTES

1. SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWING. AND SPECIFICATIONS FOR SIZE AND LOCATION OF DRIPS, CHAMFERS, SLEEVES, ANCHORS, INSERTS AND OPENINGS REQUIRED. THE LOCATION AND SIZE OF SLEEVES OR OPENINGS NOT SHOWN ON THE DRAWINGS IN STRUCTURAL MEMBERS SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT. ANY CONFLICT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING WITH THE WORK AFFECTED. PRINCIPAL OPENINGS IN THE STRUCTURE ARE INDICATED ON THE CONTRACT DRAWINGS. ANY SUBSTITUTIONS RESULTING IN REVISIONS TO THE STRUCTURE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE ARCHITECT.
2. THE CONTRACTOR SHALL NOT SCALE THE CONTRACT DRAWINGS FOR THE PURPOSE OF ESTABLISHING CORRECT DIMENSIONS.
3. U.N.O. DENOTES: "UNLESS NOTED OTHERWISE".
4. GENERAL CONTRACTOR SHALL FIELD VERIFY EXISTING SIZES, DIMENSIONS, NOTES OR CONDITIONS PRIOR TO ANY DETAILING, OR FABRICATION OF MATERIALS.
5. WHERE THE CONTRACTOR ELECTS TO POUR THE SLAB ON GRADE PRIOR TO ERECTING THE SUPERSTRUCTURE, THE CONTRACTOR SHALL TAKE INTO CONSIDERATION THAT THE SLAB ON GRADE IS NOT DESIGNED FOR SUPPORT OF ANY CRANES OR SIMILAR DEVICES USED TO ERECT THE STRUCTURAL FRAME. DO NOT PLACE THIS EQUIPMENT ON THE SLAB.
6. WHERE OVERHEAD LIFTS OCCUR ON THE PROJECT, NO KEYED OR SAW CUT JOINT SHALL BE PLACED WITHIN 6" OF THE LIFT SUPPORT ANCHORAGE AS PER THE LIFT MANUFACTURER RECOMMENDATIONS. GENERAL CONTRACTOR COORDINATE WITH FINAL LIFT PLACEMENT PLAN PRIOR TO POURING THE SLAB.
7. GENERAL CONTRACTOR SHALL ENGAGE A SURVEYOR TO PROVIDE LOCATIONS OF ALL EXISTING UTILITES, TRENCHES, ETC. TO ENSURE THAT NEW FOUNDATIONS WILL NOT INTERFERE, UNDERMINE, OR BEAR ON EXISTING UTILITIES.
8. GENERAL CONTRACTOR TO HIRE SHORING ENGINEER TO SEQUENCE DEMOLITION. REFERENCE CONTRACT DOCUMENTS AND SPECIFICATIONS. 5

DECKING NOTES

1. NO PIPING, DUCTWORK, OR CONDUIT LARGER THAN 3/4" DIAMETER OR STUD WALLS SHALL BE SUPPORTED DIRECTLY FROM METAL DECK OR PERMANENT METAL FORM.
2. ALL METAL ROOF DECKS SHALL BE WIDE RIB AND GALVANIZED TYPE "B" DECKS UNLESS NOTED OTHERWISE.

FOUNDATION NOTES

1. BUILDING FOOTINGS ARE DESIGNED TO BEAR ON ORIGINAL EARTH OR LABORATORY CONTROLLED COMPACTED FILL WITH AN ALLOWABLE BEARING CAPACITY OF 5000 PSF. ALLOWABLE BEARING CAPACITY AT CONTINUOUS WALL FOOTINGS SHALL BE 5000 PSF. SOIL BEARING CAPACITY SHALL BE VERIFIED BY A REGISTERED GEOTECHNICAL ENGINEER AT THE TIME OF EXCAVATION. ELEVATIONS GIVEN ARE FOR PURPOSES OF CONTRACT AND SHALL BE ADJUSTED AT THE TIME OF EXCAVATION TO MEET SOILS CONDITIONS. SITE SHALL BE PREPARED IN ACCORDANCE TO THE GEOTECHNICAL REPORT PREPARED BY "NOVA" DATED JULY 31,2019. PROJECT NO . 2019017. PROVIDE AGGREGATE STONE PIERS AS RECOMMENDED BY THE GEOTECHNICAL REPORT. SEE REPORT AND CONSULT GEOTECH FOR EXTENT.
2. WALL FOOTINGS, UNLESS SHOWN OTHERWISE, SHALL BE 12" THICK WITH A 6" SPREAD EACH SIDE OF MASONRY WALL, REINFORCED WITH 2 #6 CONTINUOUS. (UNLESS NOTED OTHERWISE)
3. THE MAXIMUM WALL FOOTING STEP-OFF SHALL BE 2'-0" VERTICAL SPACED NOT LESS THAN: 4'-0"o.c. FOOTING STEP-OFFS ARE INDICATED BY THE SYMBOL:
4. WHERE PIPES OR CONDUITS RUN PERPENDICULAR TO A FOOTING, STEP TOP OF FOOTING DOWN TO ALLOW PIPES OR CONDUIT TO RUN OVER TOP OF FOOTINGS.
5. WHERE PIPES OR CONDUIT RUN PARALLEL TO A FOOTING, STEP DOWN BOTTOM OF FOOTING SO THAT A LINE DRAWN BETWEEN INVERT OF PIPE AND BOTTOM OF FOOTING SHALL NOT EXCEED 30 DEGREES, SEE "TRENCHES NEAR FOOTINGS" DETAIL.
6. NO PIPES OR CONDUIT SHALL BE PLACED IN THE FOOTINGS, OR SLAB ON GRADE.

SLAB-ON-GRADE NOTES

1. WHERE SLABS REST ON FILL, FILL SHALL BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS.
2. SLABS ON GROUND MAY BE PLACED IN LANE FASHION USING GALVANIZED STEEL, PREFORMED KEYED FORMS AT FLOOR JOINT LOCATION INDICATED. REINFORCING SHALL NOT CROSS CONSTRUCTION OR KEYED JOINTS.
3. SEE CIVIL AND ARCH. DRAWINGS AND SPECIFICATIONS FOR EXTERIOR SLAB WORK AND JOINTING. HORIZONTAL RUNS OF CONDUIT AND PIPE SHALL NOT BE PLACED IN SLABS ON GROUND, PLACE IN SUB-GRADE.

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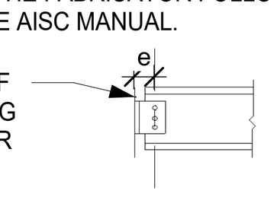
STRUCTURAL STEEL NOTES

1. FABRICATION AND ERECTION OF ALL STEEL SHALL BE IN ACCORDANCE WITH THE AISC SPECIFICATIONS.
2. ALL BOLTS SHALL BE ASTM A-325 HIGH STRENGTH BOLTS U.N.O. (T.C. BOLTS)
3. WHERE BEAMS REST ON MASONRY OR CONCRETE WALLS THEY SHALL BEAR A MINIMUM OF 8" AND SHALL HAVE BEARING PLATES AND ANCHORS.
4. WHERE NOT SHOWN OTHERWISE, ALL COLUMNS SHALL HAVE BASE PLATES AND (4) 3/4" DIAMETER x 1'-2" LONG+HOOK ANCHOR BOLTS.
5. UNLESS SHOWN OTHERWISE, PROVIDE 5/8"x12"x7-1/2" BEARING PLATES ON 1" GROUT WITH (2) 3/4" DIAMETER ANCHOR BOLTS UNDER ALL STEEL BEAMS THAT BEAR ON MASONRY WALLS.
6. COLUMN BASES ARE DESIGNED AS UNRESTRAINED, THEREFORE COLUMNS MUST BE BRACED DURING ERECTION.
7. AS ERECTION PROGRESSES, FRAMING SHALL BE ADEQUATELY GUYED AND BRACED AND CONNECTIONS SHALL BE SECURELY BOLTED OR WELDED.
8. NO SHOP SPLICE OR OTHER CONNECTION WILL BE PERMITTED UNLESS THIS SPLICE OR DETAIL IS SHOWN ON SHOP DRAWINGS AND REVIEWED BY THE ENGINEERS.
9. ALL STEEL SHALL CONFORM TO ASTM A992, 50 KSI STEEL UNLESS SHOWN OTHERWISE. TUBE STEEL SHALL CONFORM TO ASTM A-500, GRADE B (Fy = 46 KSI MINIMUM) ALL MISC. PLATES, CONNECTION PLATES AND ANGLES SHALL BE 36 KSI STEEL.
10. ALL FASTENERS SHALL CONSIST OF ONE NUT, ONE BOLT, AND ONE WASHER.
11. ALL WELDING SHALL CONFORM TO THE "STRUCTURAL WELDING CODE - AMERICAN WELDING SOCIETY." FOR WELD TESTING REQUIREMENTS, SEE SPECIFICATIONS.
12. ALL ANCHOR BOLTS SHALL BE ASTM F-1554.
13. NO SLOTTED HOLES ARE PERMITTED UNLESS SPECIFICALLY DETAILED BY THE ENGINEER OF RECORD.
14. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SECURE STEEL AGAINST DISPLACEMENT DURING ERECTION AND TO MAINTAIN IT AGAINST DISPLACEMENT UNTIL THE ERECTION OF ALL STEEL IS COMPLETED, ALL FLOOR AND ROOF DECKS ARE IN PLACE, AND ALL EXTERIOR MASONRY IS COMPLETED. ALL STRUCTURAL METAL WORK SHALL HAVE TEMPORARY GUYS, BRACES AND STAYS TO HOLD IT IN POSITION UNTIL IT IS PERMANENTLY SECURE.
15. ALL GROUT UNDER BASE PLATES AND BEAM BEARING PLATES SHALL BE NON SHRINK GROUT. (5,000 PSI)
16. WHERE ROOF DECKS FRAME ONTO A ROOF MEMBER, AND DECK IS IN A DIFFERENT PLANE THAN THE ROOF MEMBER, PROVIDE A 3/16" CONTINUOUS BENT PLATE WELDED ACROSS THE TOP OF THE ROOF MEMBER SLOPED TO MATCH PLANE OF ROOF DECK.
17. FILL ALL CMU CELLS WITH GROUT WHERE REINFORCING AND/OR ANCHORS OCCUR.
18. HEADED CONCRETE ANCHORS SHALL BE NELSON OR K.S.M. HEADED CONCRETE ANCHORS (OR APPROVED EQUAL), AND SHALL CONFORM TO ASTM A-108.
19. ANCHORS SHALL BE AUTOMATICALLY END WELDED WITH SUITABLE STUD WELDING EQUIPMENT IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.
20. WHERE A ROOF FRAMING MEMBER DOES NOT FRAME OVER A COLUMN, PROVIDE A 1/2" THICK CAP PLATE (i.e. TUBES AND PIPES)
21. FABRICATOR SHALL SUBMIT COMPLETE CALCULATIONS OF ALL CONNECTIONS, STRUCTURAL STEEL, AND JOIST SEALED BY THE REGISTERED DESIGN ENGINEER
22. WHERE HSS OUTLOOKERS OCCUR PROVIDE 1/4" CAP PLATE AT END.
23. AT CAR WASH STRUCTURE, ALL STRUCTURAL STEEL, MISC. STEEL, EMBED PLATES AND ROOF DECK SHALL BE GALVANIZED G90.
24. ALL EXTERIOR EXPOSED STEEL SHALL BE GALVANIZED G90 UNLESS NOTED OTHERWISE BY THE ARCHITECT.
25. ALL BEAM SHOP CONNECTIONS SHALL BE WELDED. BEAM SHOP CONNECTIONS MAY BE BOLTED IN LIEU OF WELDING PROVIDED THAT THE CONTRACTOR ASKS AND RECEIVES AN AFFIRMATIVE ANSWER BY THE ENGINEER OF RECORD IN WRITING. FURTHERMORE, ACCEPTANCE OF A BOLTED CONNECTION WILL ONLY OCCUR IF THE FABRICATOR FOLLOWS THE ECCENTRIC LOAD TABLES PROVIDED ON PAGES 7-30 THROUGH 7-53 OF THE AISC MANUAL.



COLD-FORMED STEEL NOTES

1. ALL EXTERIOR METAL STUDS ARE TO BE C.S.J. (U.N.O.)
2. ALL EXTERIOR METAL STUDS SHALL BE DESIGNED FOR LATERAL WIND PRESSURE BASED UPON ULTIMATE DESIGN WIND SPEED AS SHOWN ON DESIGN NOTES AND SHOULD BE LIMITED TO LATERAL DEFLECTION OF L/600 WHEN BACKING MASONRY, AND L/360 WHEN BACKING E.I.F.S., AND METAL PANELS
3. ALL EXTERIOR FLANGES OF STUD WALLS SHALL BE BRACED BY SHEATHING PROPERLY ATTACHED TO THEM.
4. CONTRACTOR SHALL FURNISH DETAILED DESIGN CALCULATIONS INCLUDING CONNECTION AND GAUGE OF ALL EXTERIOR METAL STUDS, METAL STUD TRUSSES AND METAL STUD TRUSS GIRDERS SEALED BY A REGISTERED ENGINEER IN THE STATE IN WHICH THE PROJECT IS BUILT.
5. THE TOP COMPRESSION FLANGES OF JOISTS & TRUSSES ARE TO BE LATERALLY BRACED BY PROPER ATTACHMENT OF THE DECKING.
6. THE TOP FLANGES OF BOTTOM CHORDS OF TRUSSES, SHALL BE BRACED LATERALLY AT INTERVALS NOT EXCEEDING 3'-0" o.c. BY CONTINUOUS C STUDS WELDED TO TOP FLANGES OR BY SHEATHING ATTACHED DIRECTLY TO BOTTOM FLANGE.
7. TOP FLANGE OF CEILING STUD SHALL BE BRACED LATERALLY BY CONTINUOUS C STUDS WELDED TO EACH JOIST. EACH BRACE SHALL BE CAPABLE OF TRANSMITTING A MINIMUM OF 200 POUNDS IN TENSION OR COMPRESSION. BOTTOM FLANGE OF CEILING SHALL BE BRACED BY SHEATHING PROPERLY ATTACHED TO BOTTOM FLANGE.
8. ALL INTERIOR FLANGES OF STUD WALLS SHALL BE BRACED EITHER BY SHEATHING OR BY CONTINUOUS CHANNELS WELDED TO FLANGE AT INTERVALS NOT EXCEEDING 2'-0" o.c. OR AS DETERMINED BY DETAIL DESIGN DOCUMENTS FURNISHED BY A REGISTERED ENGINEER IN THE STATE IN WHICH THE PROJECT IS BUILT.
9. ALL NON-LOAD-BEARING METAL STUD WALLS (INTERIOR AND EXTERIOR) SHALL BE CONNECTED TO ALLOW FOR 3/4" VERTICAL MOVEMENT BETWEEN STUD WALL AND STRUCTURE.
10. ALL OTHER INTERIOR METAL STUD PARTITIONS, BULKHEADS, CEILING STUDS AND ECT. SHALL BE FURNISHED UNDER THE DIRECTION OF THE ARCHITECTURAL DOCUMENTS . ANY ADDITIONAL STUD DESIGN REQUIREMENTS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR'S METAL STUD DESIGN ENGINEER.
11. METAL STUD WALLS SHALL NOT BE ERECTED UNTIL AFTER DEAD LOADS AND ALL CONCRETE FLOORS ON FRAMING ABOVE ABOVE ARE IN PLACE.
12. INCORPORATE CANOPY REACTIONS IN DESIGN OF METAL STUDS WHERE APPLICABLE.

COMPOSITE FLOOR NOTES

1. ALL SHEAR STUDS SHALL BE 3/4" DIAMETER x 3-1/2" LONG. SHEAR STUDS SHALL BE FIELD WELDED TO TOP FLANGE OF BEAMS AND TESTED IN ACCORDANCE TO THE PROJECT SPECIFICATIONS.
2. NO CONDUIT SHALL BE PLACED OR RUN IN THE CONCRETE SLAB. ALL CONDUIT SHALL BE SUPPORTED FROM BELOW THE SLAB.
3. ALL DECK SIDE LAPS SHALL BE EITHER WELDED OR FASTENED WITH A SELF TAPPING FASTENER. BUTTON PUNCHING, OR CRIMPING IS NOT PERMITTED. SEE SPECIFICATIONS FOR SPACING.
4. METAL STUD WALLS SHALL NOT BE ERECTED UNTIL AFTER DEAD LOADS AND ALL CONCRETE FLOORS ON FRAMING ABOVE ABOVE ARE IN PLACE.

CONCRETE MASONRY NOTES

1. MORTAR SHALL COMPLY WITH ASTM C 270, TYPE S, UNLESS GREATER STRENGTH IS SPECIFIED ELSEWHERE.
2. MASONRY GROUT SHALL BE COMPLYING WITH ASTM C 476, MINIMUM REQUIRED GROUT COMPRESSIVE STRENGTH f'g = 2250 PSI, U.N.O.
3. REQUIRED MASONRY NET AREA COMPRESSIVE STRENGTH f'm=2250 PSI, U.N.O.
4. CONCRETE GROUT, CONFORMING TO ASTM C476, NOT MORTAR, SHALL BE USED AT CELLS AND BOND BEAMS CONTAINING REINFORCING BARS. DO NOT FILL CELLS NOT CONTAINING REINFORCING BARS, EXCEPT BELOW GRADE, UNLESS SO INDICATED.
5. UNLESS NOTED OTHERWISE, MAXIMUM CONTROL JOINT SPACING SHALL BE 32'-0", 16'-0" FROM CORNERS, COORDINATE WITH ARCHITECTURAL. ALL HORIZONTAL REINFORCING SHALL BE DISCONTINUED AT WALL CONTROL JOINTS.
6. LOAD BEARING MASONRY WALLS SHALL BE LATERALLY BRACED UNTIL ALL FLOOR / ROOF DIAPHRAGM IS IN PLACE.
7. AT ALL NON-LOAD BEARING MASONRY WALLS (INTERIOR AND EXTERIOR), PROVIDE A 3/4" CAULKED JOINT BETWEEN UNDERSIDE OF BEAM, JOIST, DECK, OR STRUCTURE AND TOP OF MASONRY WALL.
8. PROVIDE MASONRY HORIZONTAL JOINT REINFORCEMENT 16" o.c. VERTICAL IN ALL CONCRETE BLOCK WALLS. REINFORCEMENT SHALL BE FOR TOTAL WIDTH OF CAVITY WALLS.
9. PROVIDE A 2 SQUARE INCH INSPECTION HOLE AT THE BOTTOM CELL FOR EACH LIFT TO ALLOW VISUAL INSPECTION AND TO REMOVE MORTAR DROPPING PRIOR TO GROUTING.
10. ALL MASONRY SHALL BE RUNNING BOND UNLESS NOTED OTHERWISE.
11. SLEEVE ALL PLUMBING OR FIRE PROTECTION PIPING THROUGH CMU WALL.
12. SEE ARCHITECT DRAWINGS AND SPECIFICATIONS FOR MASONRY FINISHES.
13. AT LOAD-BEARING MASONRY WHERE JOISTS OR BEAMS BEAR ON MASONRY WALLS, GROUT POCKET SOLID WITH GROUT TO THE SAME FINISH FACE AS MASONRY ABOVE AND BELOW. DO THIS ONLY AFTER JOIST SEAT CONNECTION HAS BEEN INSPECTED.

POST-INSTALLED ANCHOR NOTES

THE BELOW PRODUCTS ARE THE DESIGN BASIS FOR THIS PROJECT. PRODUCT DIAMETER AND EMBEDMENT SHALL BE AS SHOWN IN THE DETAILS. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII). SUBSTITUTION REQUESTS FOR PRODUCTS OTHER THAN THOSE LISTED BELOW MAY BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER-OF-RECORD (EOR) FOR REVIEW. SUBSTITUTIONS WILL ONLY BE CONSIDERED FOR PRODUCTS HAVING A CODE REPORT RECOGNIZING THE PRODUCT FOR THE APPROPRIATE APPLICATION. SUBSTITUTION REQUESTS SHALL INCLUDE CALCULATIONS THAT DEMONSTRATE THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE EQUIVALENT PERFORMANCE VALUES OF THE DESIGN BASIS PRODUCT. CONTRACTOR SHALL CONTACT MANUFACTURER'S REPRESENTATIVE (800-999-5099) FOR PRODUCT INSTALLATION TRAINING AND A LETTER SHALL BE SUBMITTED TO THE EOR INDICATING TRAINING HAS TAKEN PLACE. SPECIAL INSPECTIONS ARE REQUIRED PER THE IBC AND ICC-ES REPORTS.

A. FOR ANCHORING INTO CONCRETE

I. MECHANICAL ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC-ES AC193 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. PRE-APPROVED ANCHORS INCLUDE:
 (1) SIMPSON STRONG TIE "STRONG-BOLT 2" (IAPMO-UES ESR ER-240)

II. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. ADHESIVE ANCHORS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2 WHERE INDICATED ON THE CONTRACT DOCUMENTS. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.9.2.4. PRE-APPROVED ANCHORS INCLUDE:
 (1) SIMPSON STRONG TIE "SET-XP" (ICC-ES ESR-2508)
 (2) SIMPSON STRONG TIE "AT-XP" (IAPMO-UES ESR-263)

III. POWDER-ACTUATED FASTENERS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ICC-ES AC70. PRE-APPROVED ANCHORS INCLUDE:
 (1) SIMPSON STRONG TIE "GAS ACTUATED PINS" (ICC-ES ESR-2811)
 (2) SIMPSON STRONG TIE "POWDER ACTUATED PINS" (ICC-ES ESR-2138)

B. FOR ANCHORING INTO MASONRY

I. ANCHORAGE TO SOLID-GROUTED CONCRETE MASONRY
 (1) MECHANICAL ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC ES AC01 OR ICC-ES AC106 PRE-APPROVED ANCHORS INCLUDE:
  (A) SIMPSON STRONG TIE "TITEN-HD" (ICC-ES ESR-1056)
  (B) SIMPSON STRONG TIE "STRONG-BOLT 2" (IAPMO-ES ER-240)
 (2) ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC58. PRE-APPROVED ANCHORS INCLUDE:
  (A) SIMPSON STRONG TIE "AT-XP" (IAPMO-UES ER-281)
  (B) SIMPSON STRONG TIE "SET-XP" (IAPMO-UES ER-265)
 (3) POWDER-ACTUATED FASTENERS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ICC-ES AC70. PRE-APPROVED ANCHORS INCLUDE:
  (A) SIMPSON STRONG TIE "GAS ACTUATED PINS" (ICC-ES ESR-2811)
  (B) SIMPSON STRONG TIE "POWDER ACTUATED PINS" (ICC-ES ESR-2138)

II. ANCHORAGE TO HOLLOW CONCRETE MASONRY
 (1) MECHANICAL ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC106 PRE-APPROVED ANCHORS INCLUDE:
  (A) SIMPSON STRONG TIE "TITEN-HD"
 (2) ADHESIVE FOR REBAR AND ANCHORS WITH SCREEN TUBES SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC58. THE APPROPRIATE SCREEN TUBE SHALL BE USED AS RECOMMENDED BY THE ADHESIVE MANUFACTURER. PRE-APPROVED ANCHORS WITH SCREEN TUBES INCLUDE:
  (A) SIMPSON STRONG TIE "SET" (ICC-ES ESR-1772)
 (3) POWDER-ACTUATED FASTENERS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ICC-ES AC70. PRE-APPROVED ANCHORS INCLUDE:
  (A) SIMPSON STRONG TIE "GAS ACTUATED PINS" (ICC-ES ESR-2811)
  (B) SIMPSON STRONG TIE "POWDER ACTUATED PINS" (ICC-ES ESR-2138)

C. FOR ANCHORING INTO STEEL POWDER-ACTUATED FASTENERS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ICC-ES AC70. PRE-APPROVED ANCHORS INCLUDE:
 I. SIMPSON STRONG TIE "GAS ACTUATED PINS" (ICC-ES ESR-2811)
 II. SIMPSON STRONG TIE "POWDER-ACTUATED PINS" (ICC-ES ESR-2138)

STEEL BAR JOIST NOTES

1. JOIST BRIDGING SHALL NOT BE USED TO SUPPORT CONDUIT, PIPING, DUCTWORK, ETC.
2. JOISTS SHALL NOT BE FIELD MODIFIED EXCEPT AS SHOWN.
3. WHERE JOISTS CANNOT ACHIEVE THE REQUIRED BEARING ON STEEL BEAMS, STAGGER JOISTS TO PROVIDE ADEQUATE BEARING.
4. STEEL JOISTS SHALL BE OPEN WEB STEEL JOISTS OF THE SIZES AND SERIES SHOWN ON THE DRAWINGS. JOISTS, BRIDGING AND SPACING OF BRIDGING SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS" OF THE STEEL JOIST INSTITUTE, EXCEPT WHERE OTHERWISE INDICATED BY THE DRAWINGS OR SPECIFICATIONS.
5. WHERE ANGLE BRACES ARE SHOWN ON STRUCTURAL SECTIONS, JOIST MANUFACTURER SHALL RESOLVE AN AXIAL LOAD OF 2000 POUNDS FROM THE BRACE INTO THE JOIST - TYPICAL UNLESS NOTED OTHERWISE.
6. IN ADDITION TO WHAT IS CALLED FOR ON PLAN, BAR JOISTS SHALL BE DESIGNED TO SUPPORT AN ADDITIONAL CONCENTRATED LOAD OF 300 POUNDS AT TOP OR BOTTOM CHORD AT ANY ONE LOCATION ALONG THE SPAN.
7. AT THE END OF EACH ROOF JOIST, PROVIDE A CONTINUOUS ROW OF BRIDGING AT THE LAST BOTTOM CHORD PANEL POINT FOR UPLIFT. TYPICAL AT EACH END OF JOIST.
8. NET WIND UPLIFT SHALL BE CONSIDERED USING THE ASD COMPONENTS AND CLADDING PRESSURES (THIS SHEET) AND A DEAD LOAD OF 8 P.S.F. USE LOAD COMBINATION 16-15 IBC

REPAIR, PROTECT, AND STRENGTHENING NOTES

THE BELOW PRODUCTS ARE THE DESIGN BASIS FOR THIS PROJECT. CONTRACTOR SHALL FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS AND CONTACT MANUFACTURER'S REPRESENTATIVE (800-999-5099) WITH PRODUCT RELATED QUESTIONS. SUBSTITUTION REQUESTS FOR PRODUCTS OTHER THAN THOSE LISTED BELOW MAY BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER-OF-RECORD (EOR) FOR REVIEW AND APPROVAL. SUBSTITUTIONS WILL ONLY BE CONSIDERED FOR PRODUCTS HAVING INDEPENDENT TEST RESULTS OR OTHER DOCUMENTATION INDICATING THE PRODUCT IS APPROPRIATE FOR THE INTENDED APPLICATION.

A. REBAR PRIMER: REBAR PRIMER SHALL BE USED TO PROTECT EXISTING STEEL REINFORCING AND ENCOURAGE POSITIVE BOND FROM EXISTING STEEL REINFORCING TO NEW REPAIR MATERIAL. PRE-APPROVED PRODUCTS INCLUDE:
 I. SIMPSON STRONG TIE "FX-406"

B. BONDING AGENTS: BONDING AGENTS SHALL BE USED TO ENCOURAGE POSITIVE BOND OF NEW REPAIR MATERIAL TO EXISTING CONCRETE. PRE-APPROVED PRODUCTS INCLUDE:
 I. SIMPSON STRONG TIE "FX-762"

C. REPAIR MORTARS: REPAIR MATERIAL SHALL BE USED TO REPAIR AREAS OF DAMAGED CONCRETE. PRE-APPROVED PRODUCTS INCLUDE:
 I. SIMPSON STRONG TIE "FX-263" (FOR USE IN OVERHEAD AND VERTICAL APPLICATIONS)
 II. SIMPSON STRONG TIE "FX-261" (FOR USE IN HORIZONTAL AND FORM & POUR APPLICATIONS)

D. CRACK REPAIR SYSTEM: CRACK REPAIR SYSTEM SHALL CONSIST OF CRACK INJECTION MATERIAL AND PASTE OVER ADHESIVE AND SHALL BE USED TO PRESSURE INJECT CRACKS. PRE-APPROVED SYSTEMS INCLUDE:
 I. SIMPSON STRONG TIE "FX-751 LV" INJECTION MATERIAL WITH "FX-763" PASTE OVER ADHESIVE

E. NON-SHRINK GROUT MATERIAL: NON-SHRINK GROUT MATERIAL SHALL BE USED TO GROUT BENEATH BASEPLATES, BEARING PLATES AND EQUIPMENT BASES. PRE-APPROVED PRODUCTS INCLUDE:
 I. SIMPSON STRONG TIE "FX-228"

STEEL STAIR AND ALL RAILING NOTES

1. SUBMIT COMPLETE ERECTION, FABRICATION DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THIS PROJECT IS BUILT WHICH ADDRESSES THE DESIGN FOR ALL STEEL STAIRS, GUARD RAILS AND HANDRAILS. DETAILS SHALL BE FURNISHED OF ALL STEEL STAIRS. STAIRS SHALL MEET THE SPECIFICATIONS FOR ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS) OF THE AISC CODE OF STANDARD PRACTICE. ALLOW TEN (10) BUSINESS DAYS FOR REVIEW OF SUBMITTED STRUCTURAL DRAWINGS.
2. TREADS AND RISERS SHALL BE PREFORMED OF 14 GAUGE METAL. LANDING PAN SHALL BE 12 GAUGE MINIMUM.
3. STRINGERS, LANDING BEAMS, CLOSURE PLATES, STIFFENERS AND CONNECTION ANGLES SHALL BE OF SIZES DESIGNED BY THE STAIR PROVIDER AND SHALL RESIST A MINIMUM OF SELF WEIGHT OF STEEL, CONCRETE, ARCHITECTURAL FINISHES AND 100 PSF LIVE LOAD.
4. AT LOWEST LEVEL, STAIRS MAY BE SUPPORTED FROM POST BEARING ON A FOOTING, THICKENED SLAB, OR CONCRETE WALL PROVIDED SUPPORT BASE PLATE CAN REMAIN CONCEALED WITHIN ARCHITECTURAL ELEMENTS WITHOUT BEING EXPOSED.
5. WHERE STAIR LANDINGS ARE SUSPENDED FROM FLOORS ABOVE, USE A MINIMUM OF DOUBLE ANGLE 3x3x1/4" HANGERS. HANG CONCENTRICALLY FROM FLOOR BEAM. CONTRACTOR SHALL COORDINATE WITH THE ARCHITECTURAL PARTITION SCHEDULE TO ENSURE HANGERS ARE CONCEALED WITHIN PARTITIONS. DO NOT USE ROD HANGERS.
6. INTERMEDIATE LANDINGS SHALL BE COMPRISED OF CHANNELS SPANNING BETWEEN SUPPORT STRINGERS SPACED AT A MAXIMUM OF 2'-0" o.c. MAX.
7. AT ORNAMENTAL STAIRS, STRINGERS SHALL BE COMPRISED OF TUBE STEEL OR CHANNELS WITH CONTINUOUS COVER PLATES TO FORM A TUBE. IN THIS CASE WELDS SHALL BE CONTINUOUS AND GROUND SMOOTH.
8. SEE ARCHITECTURAL DRAWINGS FOR ALL STAIR LAYOUTS, DIMENSIONS AND SECTIONS.
9. DELEGATED DESIGN AT THE MONUMENTAL STAIR TO ADDRESS HIGHER GRADE ARCHITECTURAL FINISH FOR STEEL. SEE ARCHITECTURAL DRAWINGS.

SUBMITTAL NOTES

1. THE GENERAL CONTRACTOR SHALL SUBMIT A SCHEDULE OF SUBMITTALS PRIOR TO CONSTRUCTION BEGINNING ON THE PROJECT. THE SCHEDULE SHOULD DESCRIBE WHAT EACH SUBMITTAL IS, WHETHER IT IS THE ENTIRE PACKAGE, OR BROKEN INTO PHASES FOR REVIEW.
2. THE GENERAL CONTRACTOR SHALL ALLOW FOR 10 BUSINESS DAYS OF ALL STRUCTURAL SUBMITTALS. IF THE CONTRACTOR WISHES TO EXPEDITE OR REDUCE THE REVIEW TIME, IT SHALL BE DONE FOR AN ADDITIONAL CHARGE AND MUST BE NEGOTIATED WITH THE ARCHITECT AND ENGINEER PRIOR TO THE SUBMISSION OF THE PACKAGE.
3. IN THE EVENT THE CONTRACTOR ATTEMPTS TO SUBMIT THE ENTIRE PROJECT AT THE SAME TIME FOR SUBMISSION, ADDITIONAL TIME WILL BE REQUIRED BEYOND THE STANDARD 10 DAY REVIEW TIME.
4. WHERE GLASS REQUIRES ADDITIONAL DESIGN OF MISCELLANEOUS STEEL AND MULLIONS, CONTRACTOR SHALL FURNISH DETAILED DESIGN CALCULATIONS SEALED BY A REGISTERED ENGINEER IN THE STATE IN WHICH THE PROJECT IS BUILT.
5. STRUCTURAL STEEL SUPPLIER SHALL PROVIDE COMPLETE SHOP DRAWINGS INCLUDING AN ANCHOR SETTING PLAN, ERECTION DRAWINGS WITH ALL PIECE MARKS, AND ASSOCIATED FABRICATION DRAWINGS SHOWING ALL MATERIAL AND CONNECTIONS. CONNECTIONS SHALL BE DESIGNED BASED UPON THE END SHEAR TABLES PROVIDED IN THE AISC UNLESS NOTED OTHERWISE.
6. REBAR SUPPLIER SHALL PROVIDE COMPLETE SHOP DRAWINGS INCLUDING PLAN VIEWS WITH MARKS ILLUSTRATING BAR SIZES AND BAR BENDING DETAILS. INCLUDE ALL LOCATION OF STEPS NOTED IN THE GENERAL NOTES FOR PLUMBING AND CIVIL LINES WHERE APPLICABLE. WHERE CONCRETE PIER AND STEM WALLS OCCUR PROVIDE SECTION CUTS, AND ELEVATIONS ILLUSTRATING THE MATERIAL SPECIFIED
7. REBAR SUPPLIER SHALL PROVIDE COMPLETE SHOP DRAWINGS FOR LOAD BEARING MASONRY. PROVIDE ALL WALLS INCLUDING NON LOAD BEARING PARTITIONS IN ELEVATIONS DEPICTING THE VERTICAL WALL REINFORCEMENT/ LAPS, ALL LINTELS AT OPENINGS , REINFORCING AND BOND BEAMS AS DESCRIBED IN TYPICAL DETAILS AND WALL SECTIONS INCLUDING MASONRY CONTROL JOINT LOCATIONS.
8. JOIST AND DECK SUPPLIER SHALL PROVIDE COMPLETE SHOP DRAWINGS INCLUDING ERECTION DRAWINGS, SECTIONS INCLUDING MATERIALS PROVIDED, ALL ASSOCIATED CONNECTIONS AS OUTLINED IN THE CONTRACT DOCUMENTS AND SPECIFICATIONS. SHOP DRAWINGS SHALL INCLUDE ALL EDGE OF DECK DIMENSIONS, EDGE OF JOIST DIMENSIONS .
9. SEE DISCIPLINE SPECIFIC NOTES AND SPECIFICATIONS FOR ALL ADDITIONAL SUBMITTAL REQUIREMENTS.
10. FOR THIRD-PARTY DESIGN SUBMITTALS INCLUDING, BUT NOT LIMITED TO, PRECAST, HOLLOW CORE SLABS, METAL STUDS, STAIRS & HANDRAILS, GLASS DESIGN, AND WOOD TRUSSES, PLEASE SUBMIT MANUFACTURER'S DRAWINGS WITH ACCOMPANYING CALCULATIONS SEALED BY A REGISTERED ENGINEER IN THE STATE IN WHICH THE PROJECT IS BUILT.

AGGREGATE PIERS 6

1. ALLOWABLE BEARING PRESSURE FOR ISOLATED SPREAD FOOTINGS, WALL FOOTINGS, AND ELEVATOR PITS SUPPORTED BY AGGREGATE PIER REINFORCED SOILS: 5000 PSF
2. TOTAL SETTLEMENT BASED ON ALLOWABLE BEARING PRESSURE: </= 1 INCH 7
3. DIFFERENTIAL SETTLEMENT BASED ON ALLOWABLE BEARING PRESSURE, INCLUDING DIFFERENTIAL SETTLEMENT BETWEEN AGGREGATE PIERS AND ADJACENT FOUNDATIONS BEARING ON PWR: </= 1/2 INCH 7
4. ~~ALL FOUNDATIONS SHALL BE EITHER SUPPORTED ON COMPETENT BEDROCK OR AGGREGATE PIERS~~ BEARING ON COMPETENT BEDROCK.
5. IN CONDITIONS WHERE THE BOTTOM OF FOUNDATION IS WITHIN 4' OR LESS OF BEDROCK ELEVATION, THE CONTRACTOR SHALL UNDERCUT THE FOUNDATION TO BEDROCK AND BACKFILL WITH FLOWABLE FILL OR 57 STONE.
6. CONTRACTOR SHALL SUBMIT FOR APPROVAL AGGREGATE PIER LAYOUT DRAWINGS, INCLUDING LOCATION OF NEW AND EXISTING PIPING AND IDENTIFY ANY POTENTIAL CONFLICTS, AND DETAILED DESIGN CALCULATIONS.
7. ALL DRAWINGS AND CALCULATIONS SUBMITTED FOR APPROVAL SHALL BE SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF THE PROJECT, WHO WAS RESPONSIBLE FOR THEIR PREPARATION.
8. THE INSTALLER OF THE AGGREGATE PIER SYSTEM SHALL PROVIDE EVIDENCE OF SATISFACTORY EXPERIENCE WITH THE DESIGN AND INSTALLATION OF AGGREGATE PIER SOIL REINFORCEMENT SYSTEMS, INCLUDING EXAMPLES OF AT LEAST 5 PREVIOUS PROJECTS FOR WHICH TEH INSTALLER HAS SUPPORTED COMPARABLE STRUCTURAL LOADS AND CONTROLLED SETTLEMENT TO THE PROJECT TOLERANCES. THE DESIGN AND INSTALLATION SHALL BE CONDUCTED AND OVERSEEN BY A REGISTERED PROFESSIONAL ENGINEER EMPLOYED BY THE INSTALLER.
9. INSTALLER'S DESIGN ENGINEER AND QUALITY CONTROL REPRESENTATIVE SHALL EACH HAVE A MINIMUM OF 5 YEARS OF DOCUMENTED EXPERIENCE WITH DESIGN AND CONSTRUCTION OF AGGREGATE PIER SYSTEMS.

STRUCTURAL STEEL STRENGTHS

STEEL SHAPE	ASTM	Fy (ksi)	Fu (ksi)
ANGLES,PLATES, S SHAPE, AND MISC. CHANNELS MC15 AND SMALLER, AND CHANNELS C8 AND SMALLER	A36	36	58
W SHAPES, MISC CHANNELS MC18 AND LARGER, CHANNELS C10 AND LARGER	A992	50	65
HSS RECTANGULAR AND SQUARE	A500 GRADE C	50	62
HSS ROUND	A500 GRADE C	46	62
SHEAR STUDS	A108	——	65
ANCHOR RODS (A.BOLTS)	F1554	36	58
HIGH STRENGTH BOLTS 3/4" TO 1" DIAM. INCLUSIVE 1-1/8" TO 1-1/2" DIAM. INCL. 1-1/8" TO 1-1/2" DIAM. INCL.	 A325 A325 A490	 —— —— ——	 120 105 150
WELDED WIRE FABRIC 6x6-W.9xW2.9	A185		
REINFORCING STEEL	A615	60	——

MINIMUM REINFORCED CONCRETE STRENGTHS
f 'c AT 28 DAYS (U.N.O. ON SCHEDULES)
(TYPE 1 CEMENT ONLY. DO NOT SUBSTITUTE FLYASH OR SLAG FOR CEMENT)

LOCATION	DENSITY	STRENGTH
SLAB SUPPORTED ON GRADE	145 P.C.F.	3000 PSI
FOOTINGS SUPPORTING WOOD, MASONRY, AND STEEL STRUCTURES	145 P.C.F.	3000 PSI
CONCRETE PIERS SUPPORTING STEEL OR MASONRY COLUMNS	145 P.C.F.	3000 PSI
FRAMED SLABS IN COMPOSITE STEEL CONSTRUCTION, ELEVATED CONCRETE CAP SLABS (6)	115 P.C.F.	4000 PSI
BASEMENT, TIEBACK, AND RETAINING WALLS	145 P.C.F.	3000 PSI
NON-SHRINK GROUT AT STEEL COLUMN BASEPLATES	145 P.C.F.	5000 PSI
STAIR TREADS AND LANDINGS	145 P.C.F.	3000 PSI
GRADE BEAMS OR TIE STRAPS	145 P.C.F.	4000 PSI

MINIMUM LAP SPLICE LENGTH SCHEDULE

BAR TYPE	3000 PSI CONC.								
	#3	#4	#5	#6	#7	#8	#9	#10	#11
TOP BARS	29"	38"	47"	56"	82"	94"	105"	118"	131"
OTHER BARS	22"	29"	36"	43"	62"	72"	81"	91"	101"
BAR TYPE	4000 PSI CONC.								
	#3	#4	#5	#6	#7	#8	#9	#10	#11
TOP BARS	25"	33"	40"	48"	70"	81"	91"	103"	113"
OTHER BARS	20"	25"	31"	38"	55"	62"	70"	79"	87"

MINIMUM PRETENSION OF BOLTS (KIPS)

BOLT DIAMETER	A325 BOLTS	A490 BOLTS
3/4" DIAMETER	28	35
7/8" DIAMETER	39	49
1" DIAMETER	51	64

NON-LOAD-BEARING BRICK LINTEL SCHEDULE

SPAN	LINTEL SIZE
≤ 2'-0"	1 FLAT PLATE - 3-1/2" x 3/8"
2'-0" TO 5'-0"	1 ANGLE - 3-1/2" x 3-1/2" x 5/16"
5'-0" TO 6'-0"	1 ANGLE - 5" x 3-1/2" x 5/16" S.L.O.
6'-0" TO 7'-0"	1 ANGLE - 5" x 3-1/2" x 5/16" S.L.O.
7'-0" TO 8'-0"	1 ANGLE - 6" x 4" x 3/8" S.L.O.
8'-0" TO 9'-0"	1 ANGLE - 6" x 4" x 3/8" S.L.O.
9'-0" TO 10'-0"	1 ANGLE - 8" x 4" x 7/16" S.L.O.

NOTES:
1. SEE SCHEDULE FOR STEEL GRADE AND STRENGTH
2. ANGLES ARE FOR 4" BRICKWORK
3. BEAR ALL LINTELS A MINIMUM OF 8" AT EACH END
4. ANGLES SHALL BE PLACED SHORT LEG OUT (S.L.O.)
5. FOR PAINTING OR GALVANIZING OF ANGLES, SEE ARCHITECT

DESIGN NOTES

REFERENCE CODES

INTERNATIONAL BUILDING CODE	IBC 2018
MINIMUM DESIGN LOADS	ASCE 7-10
MASONRY STRUCTURES	ACI 530-13
STRUCTURAL CONCRETE	ACI 318-14
STRUCTURAL STEEL	AISC 360-10

LIVE LOADS

OCCUPANCY OR USE	UNIFORM (PSF)	CONC. (LBS)	OCCUPANCY OR USE	UNIFORM (PSF)	CONC. (LBS)
ROOF	20	300	OFFICES & CORRIDORS	80	2,000
LIGHT STORAGE	125		HANDRAILS AND GUARDS		200
STAIRS AND EXIT WAYS	100	300	GRAB BARS		250

ROOF SNOW LOAD

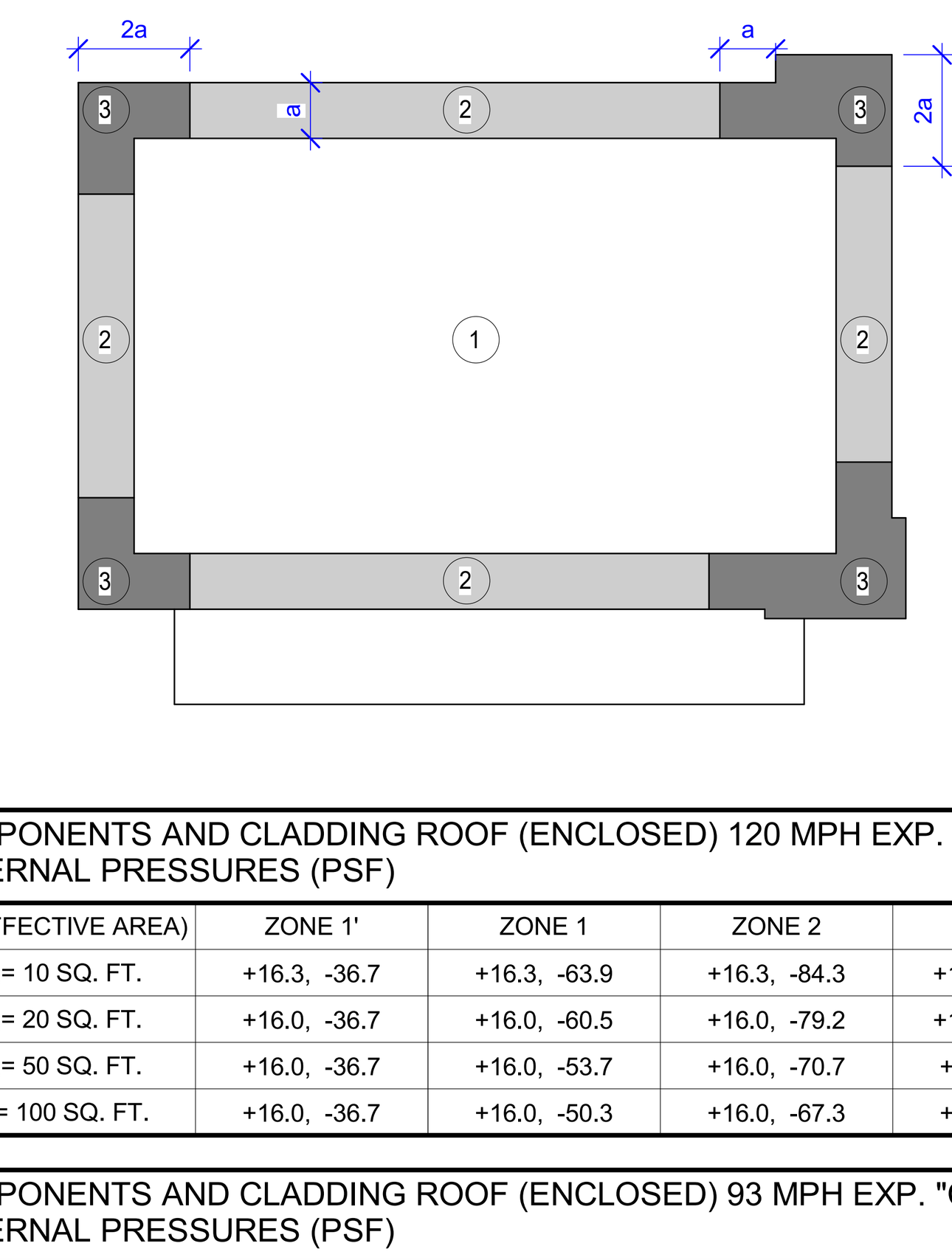
FLAT-ROOF SNOW LOAD (P_f) : 5 PSF
SNOW EXPOSURE FACTOR (C_e) : 0.9
SNOW IMPORTANCE FACTOR (I_s) : 1.0
THERMAL FACTOR (C_t) : 1.0
DESIGN FROST DEPTH 12"

WIND DESIGN CRITERIA

DESIGN WIND SPEED
ULTIMATE (V_{ult}) : 120 MPH
NOMINAL (V_{asd}) : 93 MPH
INTERNAL PRESSURE COEFFICIENT ±0.18
RISK CATEGORY : 3
WIND EXPOSURE (X-X) : C
WIND EXPOSURE (Y-Y) : C
COMPONENTS AND CLADDING WIND PRESSURES: SEE TABLES, THIS SHEET

SEISMIC DESIGN CRITERIA

RISK CATEGORY : 3
SEISMIC IMPORTANCE FACTOR (I_e) : I_e = 1.25
MAPPED SPECTRAL RESPONSE ACCELERATIONS : S_s = 0.219 g, S_1 = 0.097 g
SITE CLASS: C
MAPPED SPECTRAL RESPONSE ACCELERATIONS : S_{ds} = 0.234 g, S_{d1} = 0.155 g
SEISMIC DESIGN CATEGORY : B
BASIC SEISMIC-FORCE-RESISTING SYSTEM(S) : STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
DESIGN BASE SHEAR : F_x=F_y= 284 k
RESPONSE MODIFICATION FACTOR(S) : R = 3
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE



COMPONENTS AND CLADDING ROOF (ENCLOSED) 120 MPH EXP. "C" 'ULT' EXTERNAL PRESSURES (PSF)

A_e (EFFECTIVE AREA)	ZONE 1'	ZONE 1	ZONE 2	ZONE 3
A_e= 10 SQ. FT.	+16.3, -36.7	+16.3, -63.9	+16.3, -84.3	+16.3, -114.9
A_e= 20 SQ. FT.	+16.0, -36.7	+16.0, -60.5	+16.0, -79.2	+16.0, -104.7
A_e= 50 SQ. FT.	+16.0, -36.7	+16.0, -53.7	+16.0, -70.7	+16.0, -90.4
A_e= 100 SQ. FT.	+16.0, -36.7	+16.0, -50.3	+16.0, -67.3	+16.0, -79.9

COMPONENTS AND CLADDING ROOF (ENCLOSED) 93 MPH EXP. "C" 'ASD' EXTERNAL PRESSURES (PSF)

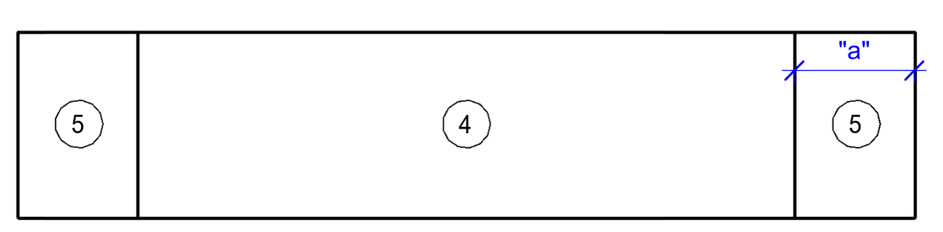
A_e (EFFECTIVE AREA)	ZONE 1'	ZONE 1	ZONE 2	ZONE 3
A_e= 10 SQ. FT.	+10.0, -22.0	+10.0, -38.4	+10.0, -50.6	+10.0, -69.0
A_e= 20 SQ. FT.	+10.0, -22.0	+10.0, -36.3	+10.0, -47.6	+10.0, -62.9
A_e= 50 SQ. FT.	+10.0, -22.0	+10.0, -32.2	+10.0, -42.5	+10.0, -54.3
A_e= 100 SQ. FT.	+10.0, -22.0	+10.0, -30.2	+10.0, -40.4	+10.0, -48.0

COMPONENTS AND CLADDING ROOF (ENCLOSED) 120 MPH EXP. "C" 'ULT' EXTERNAL PRESSURES (PSF)

A_e (EFFECTIVE AREA)	ZONE 1	ZONE 2	ZONE 3
A_e= 10 SQ. FT.	+16.3, -40.1	+16.3, -67.3	+16.3, -101.3
A_e= 20 SQ. FT.	+16.0, -39.1	+16.0, -60.1	+16.0, -83.9
A_e= 50 SQ. FT.	+16.0, -37.7	+16.0, -50.7	+16.0, -60.9
A_e= 100 SQ. FT.	+16.0, -36.7	+16.0, -43.5	+16.0, -43.5

COMPONENTS AND CLADDING ROOF (ENCLOSED) 93 MPH EXP. "C" 'ASD' EXTERNAL PRESSURES (PSF)

A_e (EFFECTIVE AREA)	ZONE 1	ZONE 2	ZONE 3
A_e= 10 SQ. FT.	+10.0, -24.1	+10.0, -40.4	+10.0, -60.8
A_e= 20 SQ. FT.	+10.0, -23.5	+10.0, -36.1	+10.0, -50.4
A_e= 50 SQ. FT.	+10.0, -22.7	+10.0, -30.4	+10.0, -36.6
A_e= 100 SQ. FT.	+10.0, -22.0	+10.0, -26.1	+10.0, -26.1



WALL ELEVATION

COMPONENTS AND CLADDING WALL (ENCLOSED) 120 MPH EXP. "C" 'ULT' EXTERNAL PRESSURES (PSF)

A_e (EFFECTIVE AREA)	ZONE 4	ZONE 5
A_e= 10 SQ. FT.	+36.7, -39.8	+36.7, -48.9
A_e= 20 SQ. FT.	+35.1, -38.1	+35.1, -45.7
A_e= 50 SQ. FT.	+32.9, -36.0	+32.9, -41.4
A_e= 100 SQ. FT.	+31.3, -34.4	+31.3, -38.1

COMPONENTS AND CLADDING WALL (ENCLOSED) 93 MPH EXP. "C" 'ASD' EXTERNAL PRESSURES (PSF)

A_e (EFFECTIVE AREA)	ZONE 4	ZONE 5
A_e= 10 SQ. FT.	+22.0, -23.9	+22.0, -29.4
A_e= 20 SQ. FT.	+21.1, -22.9	+21.1, -27.4
A_e= 50 SQ. FT.	+19.8, -21.6	+19.8, -24.9
A_e= 100 SQ. FT.	+18.8, -20.6	+18.8, -22.9

NOTES:
1. *INTERPOLATION MAY BE UTILIZED FOR EFFECTIVE AREAS THAT OCCUR BETWEEN VALUES SHOWN ON THE TABLE.*
2. *PLUS AND MINUS SIGN INDICATES THE PRESSURE ACTING TOWARD AND AWAY FROM THE SURFACES, RESPECTIVELY.*
3. *FORCES AND DIAGRAMS ARE BASED ON IBC / ASCE 7.*

End zone width, a = 12' - 1"

JERICHO design group
102 Mary Alice Park Road, Suite 103
Cumming, GA 30040

GEORGIA REGISTERED No. 34748 PROFESSIONAL ENGINEER MARK WALID NANNIS
03/16/20

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FORSYTH COUNTY JUVENILE COURT BUILDING

FORSYTH COUNTY BOARD OF COMMISSIONERS

LANIER PARKWAY
CUMMING, GA 30040

PRINT RECORD

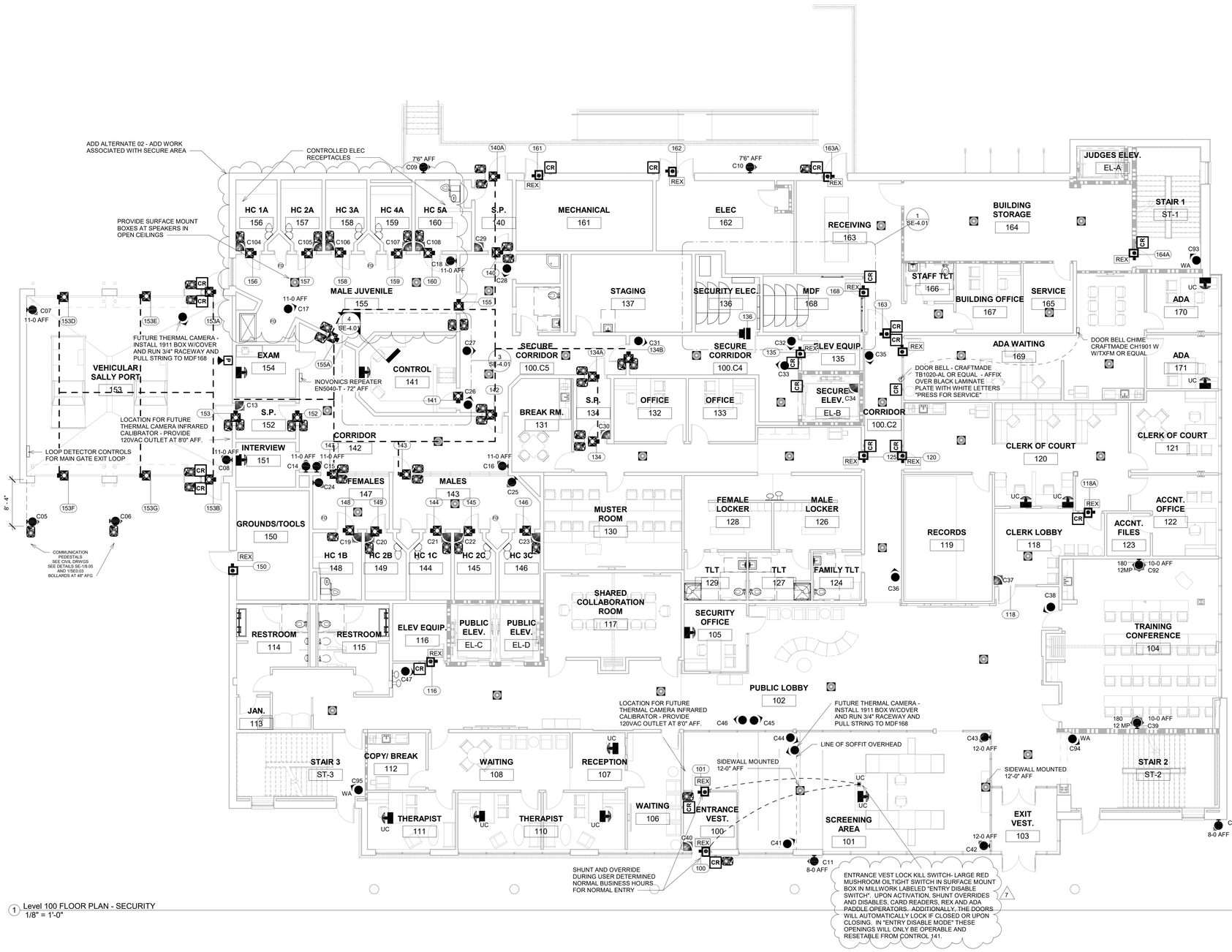
No.	DATE	DESCRIPTION
	03.16.2020	Release for Bid and Permit
	05.08.2020	Release for Bid
5	07/10/2020	Addendum #5
6	07/16/2020	Addendum #6
7	07/29/2020	Addendum #7

Drawn By: N&A
Checked By: MWN
Date: 03/16/2020
Job No.: 20.002

Sheet Title
GENERAL NOTES

Sheet No.
S-0.01

RELEASED FOR CONSTRUCTION



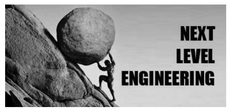
1 Level 100 FLOOR PLAN - SECURITY
1/8" = 1'-0"

SHEET NOTES

1. ALL CARD ACCESS CONTROLLED OPENINGS WILL BE RELEASED AUTOMATICALLY UPON FIRE ALARM SIGNAL.

JERICHO design group
102 Mary Alice Park Road, Suite 103
Cumming, GA 30040

GEORGIA REGISTERED No. 035071 PROFESSIONAL ENGINEER FLOYD A. KEELS
03/16/2020



FORSYTH COUNTY JUVENILE COURT BUILDING

FORSYTH COUNTY BOARD OF COMMISSIONERS

LANIER PARKWAY
CUMMING, GEORGIA 30040

PRINT RECORD

No.	DATE	DESCRIPTION
1	03/16/2020	Released for Bid and Permit
	05/08/2020	Release for Bid
7	07/29/2020	Addendum 7

Drawn By L LATIMER
Checked By F KEELS
Date 03/16/2020
Job No. 19059

Sheet Title
LEVEL 100 FLOOR PLAN - SECURITY

Sheet No.
SE-1.02

RELEASED FOR CONSTRUCTION

7/24/2020 1:33:09 PM
E:\Current L:TL Projects\19059 Forsyth Co Juvenile Courthouse\13 Revit\01-WIP\BIM_Models\Links-RVT\19059 DG FOCO JUV_SEC_RVT19.rvt

2 E-0.02 ELECTRICAL SITE PLAN - PHASE ONE

1" = 30'-0"

PLAN NORTH

0 15 30 60 FT

GENERAL NOTES:

1. REFER TO CIVIL DRAWINGS FOR MORE INFORMATION.
2. COORDINATE POWER AND LIGHTING REQUIREMENTS WITH GEORGIA POWER: BRIAN KENADY (BKKENADY@SOUTHERNCO.COM AND 404-580-0331)

(X) KEY NOTES:

1. CONTRACTOR TO COORDINATE SCHEDULING OF WORK WITH GEORGIA POWER TO PROVIDE DESIGN AND INSTALLATION OF PARKING LOT LIGHTING IN THIS AREA.
2. COORDINATE WITH GEORGIA POWER FOR EXISTING TRANSFORMER AND FEEDER REMOVAL AND RE-ROUTING OF TEMPORARY SERVICES TO EXISTING ONE-STORY BRICK AND FRAME BUILDING AND TWO-STORY BRICK APARTMENTS. ANY NEED FOR SWITCH-OVERS OR OUTAGES OF ANY UTILITY SUPPORTING THE EXISTING BUILDING/S DURING CONSTRUCTION REQUIRE A MINIMUM 72 HOURS, 3 (THREE) BUSINESS DAYS NOTICE IN WRITING PRIOR APPROVAL BY THE OWNER, ARE STRICTLY LIMITED TO AND SUBJECT TO SPECIFIC HOURS LISTED IN WRITTEN OWNER APPROVAL. ACTUAL OUTAGE AND SWITCH-OVERS OF ANY UTILITY SHALL ONLY BE ALLOWABLE AFTER OWNER'S BUSINESS HOURS OR OPERATION. ANY UNPLANNED AND/OR UNAPPROVED POWER OUTAGES TO THE JUVENILE COURT BUILDING DURING DAILY OPERATIONS ARE NOT ALLOWED.

SEQUENCE OF OPERATIONS FOR GEORGIA POWER SHUTDOWN AND SWITCHOVER:

1. CONTACT BRIAN KENEDY WITH GEORGIA POWER (BKKENADY@SOUTHERNCO.COM AND 404-580-0331) FOR AN ON SITE MEETING TO DISCUSS PARKING LOT LIGHTING PHASING, TEMPORARY POWER OPTIONS AND SWITCHOVER SCHEDULES.
2. PHASE ONE:
   THIS PHASE INCLUDES DESIGN AND INSTALLATION OF A NEW PARKING LOT AND ASSOCIATED PARKING LOT LIGHTING (BY GEORGIA POWER) ON THE SOUTH END OF THE SITE. THERE ARE ALSO (2) EXISTING TRANSFORMER LOCATIONS IN A PARKING LOT ISLAND THAT HAVE ALREADY BEEN REMOVED BY GEORGIA POWER.
3. PHASE TWO:
   A. THIS PHASE INCLUDES THE INSTALLATION OF A TEMPORARY SERVICE BY GEORGIA POWER TO SUPPLY POWER TO THE EXISTING DISTRIBUTION BOARD IN THE EXISTING ONE-STORY BRICK BUILDING. CONTRACTOR TO SCHEDULE A SHUTOFF AND SWITCHOVER FROM THE EXISTING SERVICE TO THE TEMPORARY SERVICE WITH GEORGIA POWER AND THE OWNER BEFORE ANY WORK IS TO BEGIN. GEORGIA POWER TO DETERMINE THE BEST ROUTING OF THIS TEMPORARY SERVICE.
   B. WHEN THE TEMPORARY SERVICE HAS BEEN INSTALLED AND THE SWITCHOVER COMPLETED IN THE EXISTING ONE-STORY BRICK BUILDING, THE TWO-STORY BRICK APARTMENTS, ASSOCIATED TRANSFORMER AND SWITCHBOARD SHALL BE DEMOLISHED AND REMOVED.
   C. WHEN THE TWO-STORY BRICK APARTMENTS HAVE BEEN DEMOLISHED, A NEW SERVICE FOR THE NEW COURTHOUSE BUILDING SHALL BE PROVIDED BY GEORGIA POWER. CONTRACTOR TO PROVIDE POWER FROM THE SECONDARY SIDE OF THE NEW PAD MOUNTED TRANSFORMER TO THE NEW COURTHOUSE ELECTRICAL ROOM.
   D. THE DESIGN AND INSTALLATION OF A NEW PARKING LOT AND ASSOCIATED PARKING LOT LIGHTING (BY GEORGIA POWER) ON THE NORTH END OF THE SITE SHALL ALSO BE INCLUDED.
4. PHASE THREE:
   WHEN THE NEW COURTHOUSE BUILDING HAS BEEN GRANTED OCCUPANCY AND MOVE IN IS READY, THE CONTRACTOR SHALL SCHEDULE A SHUTOFF AND REMOVAL OF THE TEMPORARY SERVICE IN THE EXISTING ONE-STORY BRICK BUILDING WITH GEORGIA POWER AND THE OWNER BEFORE ANY WORK IS TO BEGIN. ONCE THIS TEMPORARY SERVICE HAS BEEN REMOVED, THE EXISTING ONE-STORY BRICK BUILDING WILL BE READY TO BE DEMOLISHED. IN ADDTION, THE FINAL CENTRAL PARKING LOT WILL BE ADDED ALONG WITH PARKING LOT LIGHTING (BY GEORGIA POWER).

TEMPORARY GENERATORS FOR EXISTING BUILDINGS:

1. TEMPORARY GENERATORS FOR THE EXISTING BUILDINGS ARE NOT INCLUDED AS PART OF THIS DESIGN. ALL TEMPORARY GENERATORS, AUTOMATIC TRANSFER SWITCHES, CONNECTIONS AND FUEL SHALL BE TREATED AS "MEANS AND METHODS" BY THE GENERAL CONTRACTOR, WHERE REQUIRED. THIS COST SHALL BE INCLUDED AS PART OF THE CONTRACTORS BASE BID.

7

JERICHO design group
102 Mary Alice Park Road, Suite 103
Cumming, GA 30040

GEORGIA REGISTERED No. 34343 PROFESSIONAL ENGINEER ROBBIE E. RAHN

07/24/20

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FORSYTH COUNTY JUVENILE COURT BUILDING

FORSYTH COUNTY BOARD OF COMMISSIONERS

LANIER PARKWAY
CUMMING, GA 30040

PRINT RECORD

No.	DATE	DESCRIPTION
	03/16/2020	Release for Bid and Permit
	05/08/2020	Release for Bid
3	06/29/2020	ADDENDUM #3
6	07/16/2020	ADDENDUM #6
7	07/24/2020	ADDENDUM #7

Drawn By: RER
Checked By: RER
Date: 03/16/2020
Job No.: 2019-226

Sheet Title
ELECTRICAL SITE PLAN - PHASE ONE

Sheet No.
E-0.02

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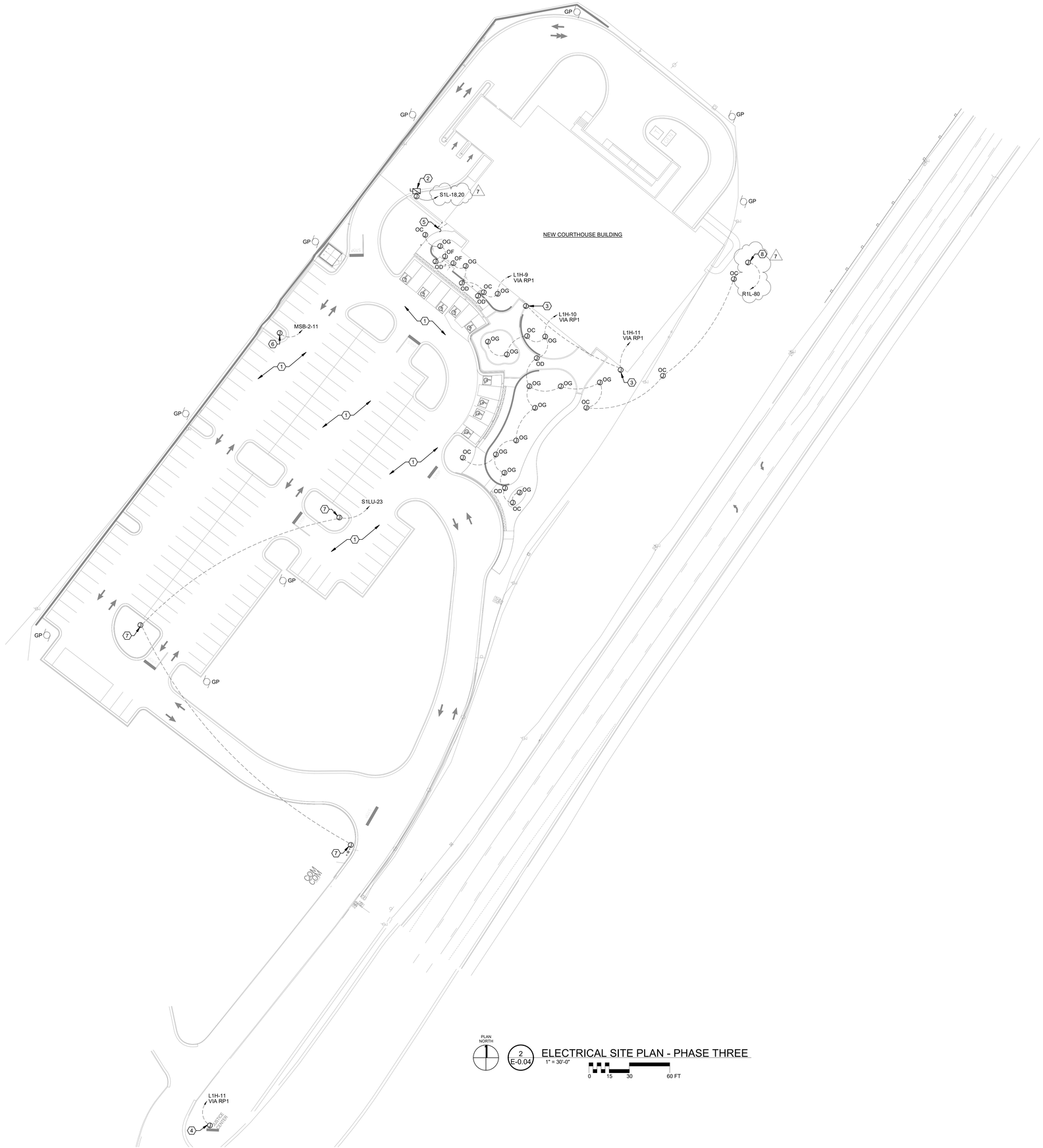

GENERAL NOTES:

1. REFER TO CIVIL DRAWINGS FOR MORE INFORMATION.
2. COORDINATE POWER AND LIGHTING REQUIREMENTS WITH GEORGIA POWER:
   BRIAN KENADY
   (BKKENADY@SOUTHERNCO.COM AND 404-580-0331)
3. REFER TO HARDSCAPE DRAWINGS FOR EXACT EXTERIOR LIGHTING FIXTURE LOCATIONS.

(X) KEY NOTES:

1. CONTRACTOR TO COORDINATE SCHEDULING OF WORK WITH GEORGIA POWER TO PROVIDE DESIGN AND INSTALLATION OF PARKING LOT LIGHTING IN THIS AREA. POLES INDICATED WITH A "GP" INDICATE PROPOSED LOCATIONS OF LIGHTING POLES AND IS FOR INFORMATION PURPOSES ONLY.
2. PROVIDE 208V/1PH CONNECTION AND 30A/2P/NF NEMA 3R DISCONNECT FOR SLIDING GATE. PROVIDE 2#10, 1#10G IN 1" PVC CONDUIT AND (2) ADDITIONAL 1" SPARE CONDUITS FOR CONTROLS. COORDINATE WITH LOW VOLTAGE DRAWINGS FOR EXACT LOCATION AND OTHER CONTROL REQUIREMENTS.
3. PROVIDE 277V/1PH CONNECTION FOR EXTERIOR SIGN. COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS.
4. PROVIDE 277V/1PH CONNECTION FOR EXTERIOR SIGN. PROVIDE 2#6, 1#6G IN 1" PVC CONDUIT. COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS.
5. STUB 1" EMPTY CONDUIT WITH PULLSTRING UNDERGROUND AND STAKE FOR FUTURE IRRIGATION CONTROLLER. STUB UP INTO GROUNDS/TOOLS ROOM 150. COORDINATE EXACT LOCATION IN FIELD.
6. PROVIDE 480V, 1PH, 100A CONNECTION TO EATON MINI-POWER CENTER WITH INTEGRATED 480V-120/240, 25kVA TRANSFORMERFOR EV CHARGERS. COORDINATE EXACT LOCATION AND CONNECTION REQUIREMENTS IN FIELD. PROVIDE 2#1, 1#8 IN 2" PVC CONDUIT. PROVIDE AN ADDITIONAL (2) SPARE CONDUIT WITH PULLSTRING. REFER TO DETAIL 10/E-700 FOR MORE INFORMATION.
7. PROVIDE 120V/1PH CONNECTION FOR EXTERIOR CCTV CAMERAS. PROVIDE 2#6, 1#6G IN 1" PVC CONDUIT. COORDINATE EXACT LOCATION WITH LOW VOLTAGE DRAWINGS.
8. PROVIDE 120V/1PH CONNECTION FOR BACKFLOW ENCLOUSRE HEAT TRACE.

PLAN NORTH

2 / E-0.04 ELECTRICAL SITE PLAN - PHASE THREE
1" = 30'-0"
0 15 30 60 FT

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Drawn By RER
Checked By RER
Date 03/16/2020
Job No. 2019-226

Sheet Title
ELECTRICAL SITE PLAN - PHASE THREE

Sheet No.
E-0.04

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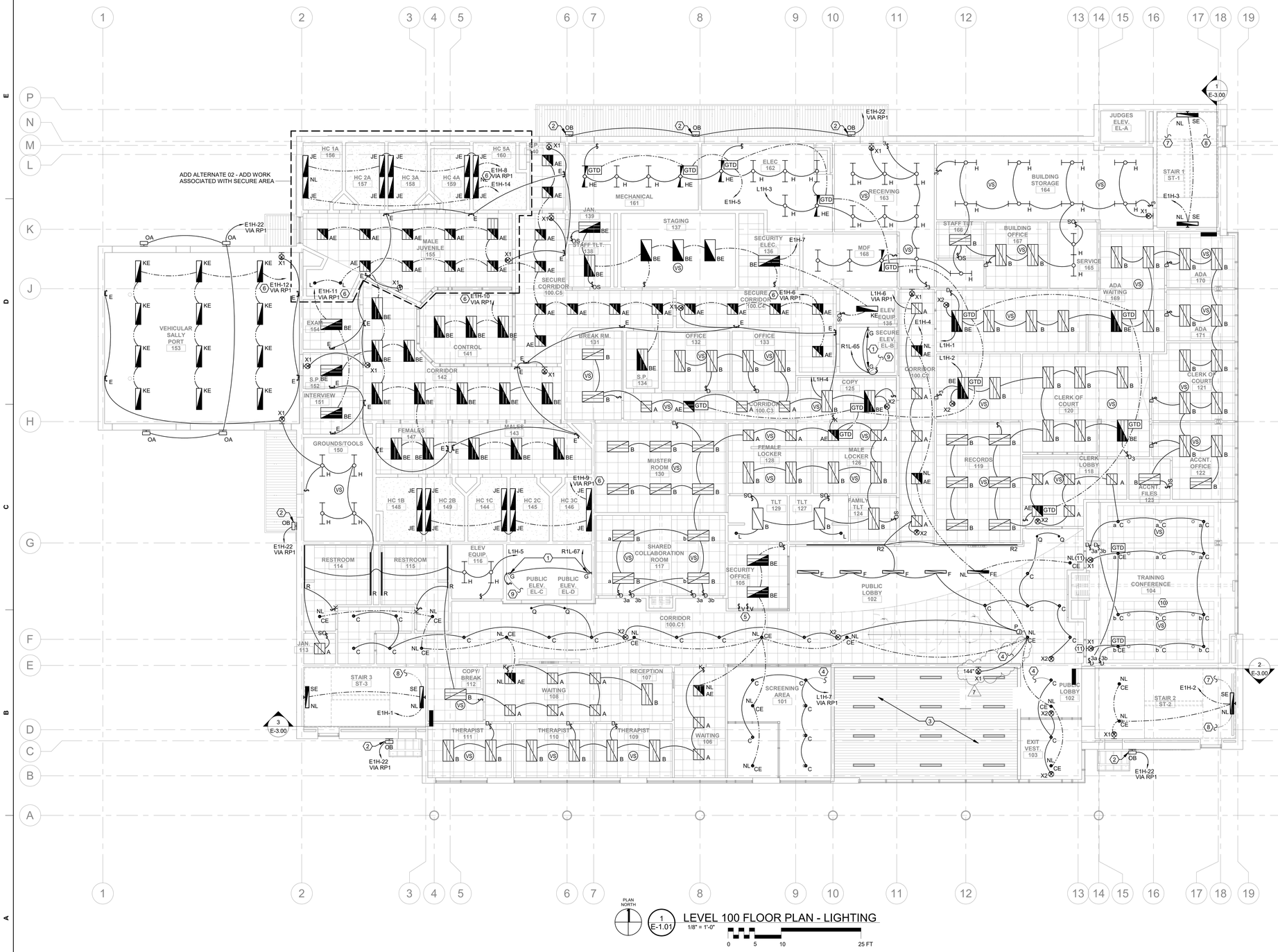

PLAN NORTH

1 E-1.01 LEVEL 100 FLOOR PLAN - LIGHTING

1/8" = 1'-0"

0 5 10 25 FT

GENERAL NOTES:

1. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT FIXTURE PLACEMENT.
2. REFER TO LIGHTING FIXTURE SCHEDULE ON SHEET E-6.04 FOR MORE INFORMATION.
3. PROVIDE ADDITIONAL UNSWITCHED CONDUCTOR FOR EXIT SIGNS AND WALL MOUNTED EMERGENCY FIXTURES.
4. PROVIDE POWER PACKS AS REQUIRED FOR VACANCY SENSORS ON PLANS. PROVIDE POWER PACKS AS REQUIRED FOR VACANCY SENSORS ON PLANS. COORDINATE QUANTITIES AND LOCATIONS OF VACANCY SENSORS WITH MANUFACTURERS REPRESENTATIVE.

(X) KEY NOTES:

1. MOUNT FIXTURE TYPE G 2'-6" AFF TO AVOID ELEVATOR EQUIPMENT.
2. TOP OF EDGE OF FIXTURE TYPE OB TO ALIGN WITH TOP EDGE OF DOOR FRAME.
3. REFER TO SHEET E-1.02 FOR LEVEL 200 LIGHTING IN THIS AREA.
4. TO LIGHTING ON 2ND FLOOR. SEE SHEET E-1.02 FOR CONTINUATION.
5. PROVIDE AND INSTALL LOW VOLTAGE SWITCHES TIED INTO RELAY PANEL RP1 FOR PUBLIC CORRIDOR AND SCREENING AREA LIGHTING BRANCH CIRCUITS L1H-6 AND L1H-7. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT IN FIELD.
6. EMERGENCY LIGHTING BRANCH CIRCUIT ROUTED TO 1ST FLOOR RELAY PANEL. SWITCHING IS CONTROLLED BY CONTROL ROOM INTERFACE LOCATED IN CONTROL ROOM 141 LOCATED ON 1ST FLOOR. A LOW VOLTAGE SIGNAL IS SENT BY INTERFACE TO RELAY PANEL TO ACTIVATE RELAYS. REFER TO LOW VOLTAGE DRAWINGS FOR MORE INFORMATION.
7. REFER TO SHEET E-1.00 FOR CONTINUATION OF LIGHTING BRANCH CIRCUIT.
8. REFER TO SHEET E-1.02 FOR CONTINUATION OF LIGHTING BRANCH CIRCUIT.
9. CONNECT TO ELEVATOR PIT RECEPTACLE. SEE SHEET E-2.01.
10. ALL OVERHEAD CONDUIT IN THIS SPACE SHALL BE GROUPED TOGETHER. ROUTE HIGH AND TIGHT TO STRUCTURE IN A NEAT AND WORKMAN-LIKE MANNER. ALL CEILING AND WALL MOUNTED DEVICES SHALL BE LEVEL, SPACED EVENLY AND CENTERED AS REQUIRED.
11. WALL MOUNT EXIT SIGNS 6" ABOVE WINDOW FRAME TO BOTTOM OF FIXTURE.

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Drawn By	Checked By
RER	RER
Date	**Job No.**
03/16/2020	2019-226

Sheet Title

LEVEL 100 FLOOR PLAN - LIGHTING

Sheet No.

E-1.01

RELEASED FOR CONSTRUCTION

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Branch Panel: R1L

Location: ELEC 129
Supply From: TR1
Mounting: Surface
Enclosure: 2-Section Feed-Thru Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 22,000
Mains Type: MCB
Mains Rating: 400 A
MCB Rating: 400 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	MECH/ELEC/RECEIVING ROOMS-RECEPTS	20 A	1	1.62 kVA 1.31 kVA			1	20 A	BUILDING STORAGE 164-RECEPTS	2
3	SERVICE 165/OFFICE 167-RECEPTS	20 A	1		0.90 kVA 1.62 kVA		1	20 A	OFFICES 165,167,169-RECEPTS VIA RP1	4
5	ADA WAITING 169-RECEPTS	20 A	1			0.36 kVA 0.50 kVA	1	20 A	ADA WAITING 169-REFRIG	6
7	ADA WAITING 169-COPIER	20 A	1	1.00 kVA 1.08 kVA			1	20 A	ADA WAITING 169-RECEPTS	8
9	ADA WAITING 169/CLERK 120-RECEPTS VIA RP1	20 A	1		0.90 kVA 1.08 kVA		1	20 A	CLERK OF COURT 120-RECEPTS	10
11	CLERK OF COURT 120-RECEPTS VIA RP1	20 A	1			1.08 kVA 1.44 kVA	1	20 A	OFFICES 121,122,170,171-RECEPTS VIA RP1	12
13	OFFICES 121,170,171-RECEPTS	20 A	1	1.26 kVA 1.44 kVA			1	20 A	OFFICES 118,122,123-RECEPTS	14
15	RECORDS 119-RECEPTS	20 A	1		0.90 kVA 1.26 kVA		1	20 A	TRAINING CONFERENCE 104-RECEPTS VIA RP1	16
17	TRAINING CONFERENCE 104-RECEPTS VIA RP1	20 A	1			1.26 kVA 0.56 kVA	1	20 A	TRAINING CONFERENCE 104-RECEPTS	18
19	TRAINING CONFERENCE 104-RECEPTS	20 A	1	0.54 kVA 0.50 kVA			1	20 A	TRAINING CONFERENCE 104-REFRIG	20
21	PUBLIC LOBBY 102-RECEPTS	20 A	1		0.90 kVA 0.72 kVA		1	20 A	OFFICE 132/133-RECEPTS VIA RP1	22
23	OFFICE 132/133-RECEPTS	20 A	1			1.26 kVA 0.36 kVA	1	20 A	BREAK/COPY 125-RECEPTS	24
25	BREAK/COPY 125-REFRIG	20 A	1	0.50 kVA 1.00 kVA			1	20 A	BREAK/COPY 125-COPIER	26
27	CLERK OF COURT 120-RECEPTS	20 A	1		0.54 kVA 0.50 kVA		1	20 A	CLERK OF COURT 120-REFRIG	28
29	CLERK OF COURT 120-COPIER	20 A	1			1.00 kVA 0.36 kVA	1	20 A	LOCKERS 126/128-WATER FOUNTAINS	30
31	LOCKERS/TOILETS 124,126,127,128,129-RECEPTS	20 A	1	1.26 kVA 0.54 kVA			1	20 A	BREAK ROOM 131-RECEPTS	32
33	BREAK ROOM 131-RECEPTS VIA RP1	20 A	1		0.72 kVA 0.50 kVA		1	20 A	BREAK ROOM 131-REFRIG	34
35	MUSTER ROOM 130-RECEPTS	20 A	1			1.08 kVA 1.44 kVA	1	20 A	MUSTER ROOM 130-RECEPTS VIA RP1	36
37	OFFICES/CONFERENCE 105,117-RECEPTS VIA RP1	20 A	1	1.44 kVA 1.98 kVA			1	20 A	OFFICES/CONFERENCE 105,117-RECEPTS	38
39	RESTROOM 124,127,129-FLUSH/SINK SENSORS	20 A	1		0.69 kVA 1.08 kVA		1	20 A	GROUNDS/TOOLS 150-RECEPTS	40
41	GROUNDS/TOOLS 150-RECEPTS	20 A	1			1.44 kVA 0.33 kVA	1	20 A	RESTROOM 114-FLUSH/SINK SENSORS	42
43	RESTROOM 115-FLUSH/SINK SENSORS	20 A	1	0.15 kVA 0.90 kVA			1	20 A	RESTROOMS RM 114,115-RECEPTS	44
45	PUBLIC LOBBY 102-WATER FOUNTAINS	20 A	1		0.36 kVA 0.50 kVA		1	20 A	PUBLIC LOBBY 102-VENDING	46
47	PUBLIC LOBBY 102-VENDING	20 A	1			0.50 kVA 1.26 kVA	1	20 A	THERAPIST/BREAK 111,112-RECEPTS VIA RP1	48
49	THERAPIST/BREAK 110,111,112-RECEPTS	20 A	1	1.44 kVA 1.26 kVA			1	20 A	PUBLIC LOBBY/WAITING ROOM 102.108-RECEPTS	50
51	RECEPTION/THERAPIST 107,109-RECEPTS	20 A	1		0.90 kVA 0.92 kVA		1	20 A	ENTRY/WAITING ROOM 100,106-RECEPTS	52
53	RECEP./THERAPIST 107,109,110-RECEPTS VIA RP1	20 A	1			1.80 kVA 1.00 kVA	1	20 A	BREAK ROOM 112-COPIER	54
55	RECEIVING 163-XRAY MACHINE	20 A	1	1.00 kVA 1.00 kVA			1	20 A	SCREENING AREA-XRAY MACHINE	56
57	SCREENING AREA-XRAY MACHINE	20 A	1		1.00 kVA 1.00 kVA		1	20 A	SCREENING AREA-XRAY MACHINE	58
59	SCREENING AREA-XRAY MACHINE	20 A	1			1.00 kVA 1.38 kVA	1	20 A	STAIR 2-WON-DOOR	60
61	SHARED COLAB ROOM 117-PARTITION DOOR	20 A	1	1.00 kVA 0.10 kVA			1	20 A	RELAY PANEL RP1	62
63	ELEVATOR EL-A PIT LIGHTING/RECEPT	20 A	1		0.20 kVA 1.80 kVA		1	30 A	ELEVATOR EL-A CAB LIGHTING/ACCESSORIES	64
65	ELEVATOR EL-B PIT LIGHTING/RECEPT	20 A	1			0.20 kVA 1.80 kVA	1	30 A	ELEVATOR EL-B CAB LIGHTING/ACCESSORIES	66
67	ELEVATOR EL-C&D PIT LIGHTING/RECEPT	20 A	1	0.38 kVA 1.80 kVA			1	30 A	ELEVATOR EL-C CAB LIGHTING/ACCESSORIES	68
69	ELEVATOR EL-D CAB LIGHTING/ACCESSORIES	30 A	1		1.80 kVA 1.08 kVA		1	20 A	BASEMENT LEVEL-RECEPTS	70
71	BASEMENT LEVEL-AIR COMPRESSOR	20 A	2			1.14 kVA 0.25 kVA	1	20 A	HOLDING CELL TOILETS-FLUSH SENSORS	72
73				1.14 kVA 0.90 kVA			1	20 A	INTERVIEW 151-RECEPTS	74
75	EXAM 154-RECEPTS	20 A	1		1.44 kVA 0.48 kVA		1	20 A	HOLDING CELL TOILETS-FLUSH SENSORS	76
77	STAGING 137-RECEPTS	20 A	1			1.44 kVA 0.54 kVA	1	20 A	SECURE CORRIDOR 100-RECEPTS	78
79	BASEMENT LEVEL-HEAT TRACE	20 A	1	1.00 kVA 0.50 kVA			1	20 A	HEAT TRACE FOR BACKFLOW ENCLOSURE	80
81	SECURE AREA-RECEPT FOR CPAP MACHINES VIA RP1	20 A	1		0.36 kVA 0.00 kVA		--	--	SPACE	82
83	MECHANICAL ROOM 161-CONTROL PANEL	20 A	1			0.50 kVA 1.20 kVA	1	20 A	RESTROOM 114-WASHBAR	84
85	STAFF TOILET 138-HAND DRYER	20 A	1	1.00 kVA 1.20 kVA			1	20 A	RESTROOM 114-WASHBAR	86
87	TOILET 129-HAND DRYER	20 A	1		1.00 kVA 1.20 kVA		1	20 A	RESTROOM 115-WASHBAR	88
89	TOILET 127-HAND DRYER	20 A	1			1.00 kVA 1.20 kVA	1	20 A	RESTROOM 115-WASHBAR	90
91	FAMILY TOILET 124-HAND DRYER	20 A	1	1.00 kVA 1.00 kVA			1	20 A	STAFF TOILET 166-HAND DRYER	92
93	TRAINING CONFERENCE 104-SOLAR SHADES	20 A	1		0.50 kVA 0.50 kVA		1	20 A	TRAINING CONFERENCE 104-SOLAR SHADES	94
95	GENERATOR BATTERY CHARGER	20 A	1			0.50 kVA 0.50 kVA	1	20 A	GENERATOR BLOCK HEATER	96
97	SPACE	--	--	0.00 kVA 0.00 kVA			--	--	SPACE	98
99	SPACE	--	--		0.00 kVA 0.00 kVA		--	--	SPACE	100
101	SPACE	--	--			0.00 kVA 0.00 kVA	--	--	SPACE	102
103	SPACE	--	--	0.00 kVA 0.00 kVA			--	--	SPACE	104
105	SPACE	--	--		0.00 kVA 0.00 kVA		--	--	SPACE	106
107	SPACE	--	--			0.00 kVA 0.00 kVA	--	--	SPACE	108
		Total Load:		32.24 kVA	27.35 kVA	29.68 kVA				
		Total Amps:		271.65 A	227.92 A	250.32 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Elevator	7.20 kVA	85.00%	6.12 kVA	**Total Conn. Load:**	89.27 kVA
Motor	2.28 kVA	125.00%	2.85 kVA	**Total Est. Demand:**	62.79 kVA
Receptacle	61.98 kVA	58.07%	35.99 kVA	**Total Conn.:**	247.79 A
Power	17.75 kVA	100.00%	17.75 kVA	**Total Est. Demand:**	174.27 A
Lighting	0.06 kVA	125.00%	0.08 kVA		

Notes:

Branch Panel: M1L

Location: ELEC 129
Supply From: TM1
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 22,000
Mains Type: MCB
Mains Rating: 125 A
MCB Rating: 125 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	BUILDING STORAGE 164-CP-1	20 A	1	1.20 kVA 1.20 kVA			1	20 A	JANITOR 139-CP-2	2
3	JANITOR 113-CP-3	20 A	1		1.20 kVA 0.30 kVA		1	20 A	VAV-1.1, VAV-1.2, VAV-1.3	4
5	VAV-1.6, VAV-1.10, VAV-1.12	20 A	1			0.30 kVA 0.30 kVA	1	20 A	VAV-1.4, VAV-1.7, VAV-1.5	6
7	VAV-1.13	20 A	1	0.10 kVA 0.20 kVA			1	20 A	VAV-1.8, VAV-1.9	8
9	EF-1A	20 A	1		0.50 kVA 0.30 kVA		1	20 A	IRH-1	10
11	EF-1C	20 A	1			0.50 kVA 0.94 kVA	1	20 A	EF-1B, EF-1E	12
13	MSHP-1E	25 A	2	1.58 kVA 0.80 kVA			1	20 A	EF-1D	14
15					1.58 kVA 0.20 kVA		1	20 A	EF-1G	16
17	MSHP-A	25 A	2			1.58 kVA 0.92 kVA	2	25 A	MSHP-B	18
19				1.58 kVA 0.92 kVA						20
21	MSHP-1B	30 A	2		2.08 kVA 2.08 kVA		2	30 A	MSHP-1A	22
23						2.08 kVA 2.08 kVA				24
25	MSHP-11A	30 A	2	2.08 kVA 1.00 kVA			1	20 A	ESP-4	26
27					2.08 kVA 0.50 kVA		1	20 A	OSM-4	28
29	ESP-1	20 A	1			1.00 kVA 0.50 kVA	1	20 A	OSM-1	30
31	ESP-2	20 A	1	1.00 kVA 0.50 kVA			1	20 A	OSM-2	32
33	ESP-3	20 A	1		1.00 kVA 0.50 kVA		1	20 A	OSM-3	34
35	FC-1	15 A	2			0.83 kVA 0.00 kVA	1	20 A	SPARE	36
37				0.83 kVA 0.00 kVA			1	20 A	SPARE	38
39	SPARE	20 A	1		0.00 kVA 0.00 kVA		1	20 A	SPARE	40
41	SPARE	20 A	1			0.00 kVA 0.00 kVA	1	20 A	SPARE	42
		Total Load:		12.99 kVA	12.32 kVA	11.03 kVA				
		Total Amps:		109.87 A	104.33 A	91.88 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	30.33 kVA	100.00%	30.33 kVA	**Total Conn. Load:**	36.33 kVA
Motor	4.00 kVA	106.25%	4.25 kVA	**Total Est. Demand:**	36.58 kVA
Power	2.00 kVA	100.00%	2.00 kVA	**Total Conn.:**	100.84 A
				Total Est. Demand:	101.54 A

Notes:

Branch Panel: M1H

Location: ELEC 129
Supply From: MSB-1
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 65,000
Mains Type: MCB
Mains Rating: 250 A
MCB Rating: 250 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	BUILDING STORAGE 164-EWH-1	20 A	1	3.00 kVA 3.00 kVA			1	20 A	JANITOR 139-EWH-2	2
3	JANITOR 113-EWH-3	25 A	1		4.50 kVA 2.00 kVA		1	20 A	STAIR #1-UH-1.1	4
5	STAIR #2-UH-1.2	20 A	1			3.00 kVA 2.00 kVA	1	20 A	STAIR #3-UH-1.3	6
7	SPARE	20 A	1	0.00 kVA 3.00 kVA			1	20 A	GROUNDS/TOOLS 150-UH-1.5	8
9	MECHANICAL 161-UH-1.6	20 A	1		3.00 kVA 3.00 kVA		1	20 A	ELECTRICAL 162-UH-1.7	10
11	PIU-1.4	25 A	1			4.55 kVA 7.44 kVA	1	35 A	PIU-1.1	12
13	PIU-1.6	25 A	1	4.89 kVA 2.19 kVA			1	15 A	PIU-1.2	14
15	PIU-1.8	20 A	1		4.19 kVA 5.19 kVA		1	25 A	PIU-1.3	16
17	PIU-1.10	15 A	1			3.19 kVA 3.78 kVA	1	20 A	PIU-1.5	18
19				12.99... 4.11 kVA			1	20 A	PIU-1.7	20
21	TRANSFORMER TM1	50 A	3		12.32... 4.55 kVA		1	25 A	PIU-1.9	22
23						11.03... 3.02 kVA	1	15 A	PIU-1.11	24
25				0.31 kVA 4.89 kVA			1	25 A	PIU-1.12	26
27	EF-A	20 A	3		0.31 kVA 1.50 kVA		1	20 A	S.P. 140-UH-1.4	28
29						0.31 kVA 1.99 kVA				30
31				1.99 kVA			3	15 A	CU-1	32
33					1.99 kVA					34
35						0.00 kVA	--	--	SPACE	36
37	SPACE	--	--	0.00 kVA 0.00 kVA			--	--	SPACE	38
39	SPACE	--	--		0.00 kVA 0.00 kVA		--	--	SPACE	40
41	SPACE	--	--			0.00 kVA 0.00 kVA	--	--	SPACE	42
		Total Load:		40.37 kVA	42.55 kVA	40.31 kVA				
		Total Amps:		145.76 A	153.64 A	145.51 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	117.22 kVA	100.00%	117.22 kVA	**Total Conn. Load:**	123.22 kVA
Motor	4.00 kVA	106.25%	4.25 kVA	**Total Est. Demand:**	123.47 kVA
Power	2.00 kVA	100.00%	2.00 kVA	**Total Conn.:**	148.21 A
				Total Est. Demand:	148.51 A

Notes:

Branch Panel: L1H

Location: ELEC 129
Supply From: MSB-1
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 65,000
Mains Type: MCB
Mains Rating: 125 A
MCB Rating: 125 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	WAITING AND ADA OFFICES-LIGHTING	20 A	1	0.81 kVA 0.99 kVA			1	20 A	RECORDS AND TRAINING-LIGHTING	2
3	MECHANICAL AND ELECTRICAL ROOMS-LIGHTING	20 A	1		1.05 kVA 1.40 kVA		1	20 A	OFFICES AND LOCKERS-LIGHTING	4
5	OFFICES AND RESTROOMS-LIGHTING	20 A	1			0.97 kVA 1.48 kVA	1	20 A	CORRIDORS-LIGHTING VIA RP1	6
7	SCREENING AREA-LIGHTING VIA RP1	20 A	1	0.64 kVA 0.39 kVA			1	20 A	PARKING GARAGE-LIGHTING	8
9	EXTERIOR HARDSCAPE LIGHTING VIA RP1	20 A	1		1.00 kVA 1.90 kVA		1	20 A	EXTERIOR HARDSCAPE LIGHTING VIA RP1	10
11	EXTERIOR SIGN LIGHTING VIA RP1	20 A	1			1.50 kVA 0.00 kVA	1	20 A	SPARE	12
13	SPARE	20 A	1	0.00 kVA 0.00 kVA			1	20 A	SPARE	14
15	SPARE	20 A	1		0.00 kVA 0.00 kVA		1	20 A	SPARE	16
17	SPARE	20 A	1			0.00 kVA 0.00 kVA	1	20 A	SPARE	18
19	SPACE	--	--	0.00 kVA 0.00 kVA			--	--	SPACE	20
21	SPACE	--	--		0.00 kVA 0.00 kVA		--	--	SPACE	22
23	SPACE	--	--			0.00 kVA 0.00 kVA	--	--	SPACE	24
25	SPACE	--	--	0.00 kVA 0.00 kVA			--	--	SPACE	26
27	SPACE	--	--		0.00 kVA 0.00 kVA		--	--	SPACE	28
29	SPACE	--	--			0.00 kVA 0.00 kVA	--	--	SPACE	30
31	SPACE	--	--	0.00 kVA 0.00 kVA			--	--	SPACE	32
33	SPACE	--	--		0.00 kVA 0.00 kVA		--	--	SPACE	34
35	SPACE	--	--			0.00 kVA 0.00 kVA	--	--	SPACE	36
37	SPACE	--	--	0.00 kVA 0.00 kVA			--	--	SPACE	38
39	SPACE	--	--		0.00 kVA 0.00 kVA		--	--	SPACE	40
41	SPACE	--	--			0.00 kVA 0.00 kVA	--	--	SPACE	42
		Total Load:		2.81 kVA	5.35 kVA	3.93 kVA				
		Total Amps:		10.15 A	19.95 A	14.83 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0.00 kVA	0.00%	0.00 kVA	**Total Conn. Load:**	12.09 kVA
Lighting	12.09 kVA	125.00%	15.11 kVA	**Total Est. Demand:**	15.11 kVA
				Total Conn.:	14.54 A
				Total Est. Demand:	18.18 A

Notes:

JERICHO design group
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Cumming, GA 30040

GEORGIA REGISTERED No 34342 PROFESSIONAL ENGINEER ROBBIE E RAHN
07/24/20

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FORSYTH COUNTY JUVENILE COURT BUILDING

FORSYTH COUNTY BOARD OF COMMISSIONERS

LANIER PARKWAY
CUMMING, GA 30040

PRINT RECORD

No.	DATE	DESCRIPTION
	03/16/2020	Release for Bid and Permit
	05/08/2020	Release for Bid
7	07/24/2020	ADDENDUM #7

Drawn By RER
Checked By RER
Date 03/16/2020
Job No. 2019-226

Sheet Title
ELECTRICAL PANEL SCHEDULES

Sheet No.
E-6.01

RELEASED FOR CONSTRUCTION

LIGHTING FIXTURE SCHEDULE

FIXTURE TAG	DESCRIPTION	MANUFACTURER	MODEL	VOLTAGE	LOAD	COMMENTS
A	2X2 LED RECESSED CONTEMPORARY ARCHITECTURAL TROFFER	COLUMBIA LIGHTING OR EQUIVALENT	#LCAT22-40-LW-G-ED	277V	0.02 kVA	PROVIDE 0-10V DIMMING PROVISIONS
AE	SAME AS TYPE 'A', BUT ON EMERGENCY GENERATOR BACKUP	COLUMBIA LIGHTING OR EQUIVALENT	#LCAT22-40-LW-G-ED	277V	0.02 kVA	PROVIDE 0-10V DIMMING PROVISIONS; PROVIDE BODINE GTD GENERATOR TRANSFER DEVICE
B	2X4 LED RECESSED CONTEMPORARY ARCHITECTURAL TROFFER	COLUMBIA LIGHTING OR EQUIVALENT	#LCAT24-40-LW-G-ED	277V	0.04 kVA	PROVIDE 0-10V DIMMING PROVISIONS
BE	SAME AS TYPE 'B', BUT ON EMERGENCY GENERATOR BACKUP	COLUMBIA LIGHTING OR EQUIVALENT	#LCAT24-40-LW-G-ED	277V	0.04 kVA	PROVIDE 0-10V DIMMING PROVISIONS; PROVIDE BODINE GTD GENERATOR TRANSFER DEVICE
C	6" LED DOWNLIGHT	PRESCOLITE LIGHTING OR EQUIVALENT	#LF6MLDM1277-40K	277V	0.03 kVA	PROVIDE 0-10V DIMMING PROVISIONS
CE	SAME AS TYPE 'C', BUT ON EMERGENCY GENERATOR BACKUP	PRESCOLITE LIGHTING OR EQUIVALENT	#LF6MLDM1277-40K	277V	0.03 kVA	PROVIDE 0-10V DIMMING PROVISIONS.
D	8 FOOT LED DIRECT PENDANT MOUNTED FIXTURE SUSPENDED 18" BELOW CEILING	HUBBELL LIGHTING LITECONTROL OR EQUIVALENT	#4L-P-D-08-SOF-C1-40K-D01	277V	0.06 kVA	PROVIDE 0-10V DIMMING PROVISIONS
DE	SAME AS TYPE 'D', BUT ON EMERGENCY GENERATOR BACKUP	HUBBELL LIGHTING LITECONTROL OR EQUIVALENT	#4L-P-D-08-SOF-C1-40K-D01	277V	0.06 kVA	PROVIDE 0-10V DIMMING PROVISIONS. PROVIDE BODINE GTD GENERATOR TRANSFER DEVICE
E	EMERGENCY WALL MOUNTED LED FIXTURE WITH 90 MINUTE BATTERY BACKUP	HUBBELL LIGHTING COMPASS OR EQUIVALENT	#CU2	277V	0.01 kVA	MOUNT 9'-6" ON CENTER AFF
F	4 FOOT X 4 INCH WIDE LED RECESSED LINEAR SLOT FIXTURE	HUBBELL LIGHTING LITECONTROL OR EQUIVALENT	#4L-DW-D-04-SOF-C1-40K-D125-NDM-UNV	277V	0.04 kVA	1250 LUMENS PER FOOT PACKAGE
FE	SAME AS TYPE 'F', BUT ON EMERGENCY GENERATOR BACKUP	HUBBELL LIGHTING LITECONTROL OR EQUIVALENT	#4L-DW-D-04-SOF-C1-40K--D125-NDM-UNV	277V	0.04 kVA	PROVIDE BODINE GTD GENERATOR TRANSFER DEVICE. 1250 LUMENS PER FOOT PACKAGE
G	WALL MOUNTED ELEVATOR LED PIT FIXTURE	HUBBELL OUTDOOR LIGHTING OR EQUIVALENT	#VWGL-1	277V	0.01 kVA	MOUNT 2'-0" ON CENTER AFF
GTD	BODINE GENERATOR TRANSFER DEVICE	BODINE OR EQUIVALENT	#GTD	-		-
H	4 FOOT LED SURFACE MOUNTED STRIP FIXTURE	COLUMBIA LIGHTING OR EQUIVALENT	#MPS4-40VW-CW-EU	277V	0.03 kVA	-
HE	SAME AS TYPE 'H', BUT ON EMERGENCY GENERATOR BACKUP	COLUMBIA LIGHTING OR EQUIVALENT	#MPS4-40VW-CW-EU	277V	0.03 kVA	PROVIDE BODINE GTD GENERATOR TRANSFER DEVICE
JE	4 FOOT VANDAL AND SUICIDE-PROOF CORNER MOUNTED LED FIXTURE ON GENERATOR BACKUP	NEWSTAR LIGHTING OR EQUIVALENT	#55M2-A-L3-40-1-2/A-UN	277V	0.04 kVA	-
KE	4 FOOT VANDAL-PROOF SURFACE MOUNTED LED FIXTURE ON GENERATOR BACKUP	NEWSTAR LIGHTING OR EQUIVALENT	#33L-N-4-A-L3-40-1-2/A-UN	277V	0.08 kVA	-
L	6" LED SHOWER LIGHT WITH LENS	PRESCOLITE LIGHTING OR EQUIVALENT	#LF6MLDM1277-40K-CL	277V	0.03 kVA	-
ME	ROUND SURFACE MOUNTED LED PARKING GARAGE FIXTURE ON GENERATOR BACKUP	HUBBELL LIGHTING BEACON OR EQUIVALENT	#SRT1-55-4K7-5QW-UNV-DB	277V	0.06 kVA	PROVIDE INTERNAL OCCUPANCY SENSOR ON FIXTURE TO DIM TO 50% WHEN NO MOTION IS DETECTED
N	4 FOOT X 3 INCH WIDE LED RECESSED LINEAR SLOT FIXTURE ON GENERATOR BACKUP	HUBBELL LIGHTING LITECONTROL OR EQUIVALENT	#3L-LG-D-08-SOF-C1-40K-NDM-UNV	277V	0.06 kVA	-
NE	4 FOOT X 3 INCH WIDE LED RECESSED LINEAR SLOT FIXTURE ON GENERATOR BACKUP AND 90-MINUTE EMERGENCY BATTERY BACKUP	HUBBELL LIGHTING LITECONTROL OR EQUIVALENT	#3L-LG-D-08-SOF-C1-40K-NDM-UNV	277V	0.06 kVA	-
OA	EXTERIOR WALL MOUNTED LED WALL PACK OVER SALLYPORT	HUBBELL OUTDOOR LIGHTING OR EQUIVALENT	#SG2-80-4K7-FT-UNV-DB	277V	0.08 kVA	MOUNT 6" ABOVE DOOR FRAME TO BOTTOM OF FIXTURE
OB	EXTERIOR WALL MOUNTED LED WALL PACK ADJACENT TO CANOPIES	HUBBELL OUTDOOR LIGHTING OR EQUIVALENT	#SG1-20-4K7-FT-UNV-DB	277V	0.01 kVA	MOUNT TOP EDGE OF FIXTURE EVEN WITH TOP EDGE OF DOOR FRAME
OC	EXTERIOR HARDSCAPE LED LIGHT POST	SELUX LIGHTING OR EQUIVALENT	#08-R1-5G350-40-BZ-277	277V	0.04 kVA	SPECIFY AN 8'-0" HIGH POLE
OD	EXTERIOR HARDSCAPE UNDER BENCH LED LIGHT STRIP	KELVIX LIGHTING SIGNWAVE 5 OR EQUIVALENT	#SW5-XX-40K-B-XX-IP6R	277V	0.50 kVA	PROVIDE TRANSFORMER AND SPECIFY LENGTH OF LIGHTING STRIP WITH BENCH LENGTH. MOUNTED UNDERNEATH. REFER TO HARDSCAPE PLANS FOR MORE INFORMATION.
OF	EXTERIOR HARDSCAPE GROUND MOUNTED ADJUSTABLE LED FLAG POLE UPLIGHT	BK LIGHTING OR EQUIVALENT	#K2-LED-X51-FL-BZP-12	277V	0.06 kVA	MOUNT ON GRADE. PROVIDE CONCRETE FOOTING AS REQUIRED FOR MOUNTING.
OG	EXTERIOR HARDSCAPE GROUND MOUNTED LED TREE UPLIGHT	BK LIGHTING OR EQUIVALENT	#DS-LED-E66-WFL-A9-BZW-A-360SL	277V	0.30 kVA	PROVIDE WITH TR SERIES TRANSFORMER
OH	EXTERIOR 3RD FLOOR CANOPY LED UPLIGHTING	ELLIPTIPAR LIGHTING	#S175-R08G-H-06-M-00-840-00	277V	0.03 kVA	MOUNT ON CANOPY FLOOR AND AIM UP TOWARD CANOPY
P	CUSTON LED CRESENT MOON RING	ALW LIGHTING	#MR1.5-CQ24/2-CQ30/2-CQ36/6-CQ42/2-CQ48/3-SS-MED/80/4000-0/10V/S-LENS-N-N-N-TBD-UNV	277V	0.50 kVA	COORDINATE WITH INTERIORS FOR EXACT FIXTURE TYPE AND CATALOG NUMBER
Q	4 INCH LED RECESSED DOWNLIGHT	PRESCOLITE LIGHTING OR EQUIVALENT	#LF4MLDM1277-40K	277V	0.03 kVA	-
R	8 FOOT RECESSED LED WALL SLOT	HUBBELL LIGHTING LITECONTROL OR EQUIVALENT	#SAE-202-DW-08-C1-40K-NDM-UNV	277V	0.07 kVA	REFER TO ARCHITECTUAL DRAWINGS FOR EXACT LOCATIONS.
R2	RECESSED LED WALL SLOT	VODE ARCHITECTURAL LIGHTING OR EQUIVALENT	#707-Z1-SL-C-RP-2-0-Z-SO-40	277V	0.10 kVA	VERIFY EXACT SYSTEM LENGTH AND LOCATION WITH ARCHITECTURAL DRAWINGS
SE	4 FOOT WALL MOUNTED STAIRWELL LED FIXTURE ON GENERATOR BACKUP	COLUMBIA LIGHTING OR EQUIVALENT	#ESL4-40-FAW-ED-U-NXOS	277V	0.04 kVA	PROVIDE INTERNAL OCCUPANCY SENSOR ON FIXTURE TO DIM TO 50% WHEN NO MOTION IS DETECTED
X1	SINGLE FACE WALL/CEILING MOUNTED EDGE-LIT LED EXIT SIGN WITH 90-MINUTE EMERGENCY BATTERY BACKUP	DUAL-LITE OR EQUIVALENT	#LE SERIES WITH GREEN LETTERS	277V	0.01 kVA	MOUNT 6" ABOVE DOOR FRAME TO BOTTOM OF FIXTURE
X2	DUAL FACE WALL/CEILING MOUNTED EDGE-LIT LED EXIT SIGN WITH 90-MINUTE EMERGENCY BATTERY BACKUP	DUAL-LITE OR EQUIVALENT	#LE SERIES WITH GREEN LETTERS	277V	0.01 kVA	MOUNT 6" ABOVE DOOR FRAME TO BOTTOM OF FIXTURE

7

FIXTURE TAG	DESCRIPTION	CATALOG NUMBER	EQUIVALENT ETRENZIK PART #
Column1	Column2	Column3	Column4
	General Interior Lighting		
A	Int - A, 2 x 2 LED Recessed Contemporary Arch. Troffer	#LCAT22-40-LW-G-ED	EPBL22-PSCCT
B	Int - B, 2 x 4 LED, Recessed Contemporary Arch. Troffer	#LCAT24-40-LW-G-ED	EPBL24-PSCCT
C	Int - C, 6" LED Downlight	#LF6MLDM1277-40K	ECDL6 / EDLE
D	Int - D, 8' LED Suspended Pendant	#4L-P-D-08-SOF-C1-40K-D01	ECDL8 / EDLE
E	EMERGENCY WALL MOUNTED LED FIXTURE WITH 90 MINUTE BATTERY BACKUP	#CU2	EEMR-BUG
F	Int - F, 4' x 4" LED Recessed Linear Slot Fixture	#4L-DW-D-04-SOF-C1-40K-NDM-UNV	ELLA
G	Int - G, Wall Mtd Elevator LED Pit Fixture	#VWGL-1	EVPTWM-1150
H	Int - H, 4' LED Surface Mtd Strip Fixture	#MPS4-40VW-CW-EU	ESLT / ESLF
J/K	Int - J/K, 4' Vandal & Suicide-Proof LED Fixture	#55M2-A-L3-40-1-2/A-UN	N/A
L	Int - L, 6" LED Shower Light w/ Lens	#LF6MLDM1277-40K-CL	EDL6
ME	Int - ME, LED Surface Mounted Parking Garage Fixture	#SRT1-55-4K7-5QW-UNV-DB	ECL
N	Int - N, 3" x 4' LED Recessed Slot Fixture	#3L-LG-D-08-SOF-C1-40K-NDM-UNV	ELLA
Q	Int - Q, 4" LED Recessed Downlight	#LF4MLDM1277-40K	ECDL4 / EDLE
R	Int - R, 8' LED Recessed Wall Slot	#SAE-202-DW-08-C1-40K-NDM-UNV	ELL4
R2	Int - R2, 15' LED Recessed Wall Slot	#707-Z1-SL-C-RP-2-0-Z-SO-40	ELL4
SE	Int - SE, 4' Wall Mtd. Stairwell LED Fixture @ Elevator	#ESL4-40-FAW-ED-U-NXOS	ELST / ELSF
X1	**Exit Lighting**	#LE SERIES WITH GREEN LETTERS	EEXIT-EDGE
	Emergency Battery Back-up		
	Emergency Light Fixture		
	Architectural Lighting		
	Wall Sconce		
	Decorative Pendant Fixture		
	Track Light Fixtures		
	Lighting Track		
	Decorative Fixture		
	Exterior Lighting		
OA	Ext - OA, Wall Mtd LED Wall Pack over Sallyport	#SG2-80-4K7-FT-UNV-DB	EWPA
OB	Ext - OB, Flood Lights	#SG1-20-4K7-FT-UNV-DB	EWPA
	Building Uplights		
	Canopy/Soffit Light Fixtures		
	Special Lighting		
	Show Case Lighting		
	Stage Lighting		
	Lighting Control Systems		
	Switches		ESWITCH
	Switches w/Dimmers		ESWITCH-OSPIR-0DIM
	Switches w/Occupancy Sensors		ESWITCH-OSPIR
	Occupancy Sensors		EOCC-CM
	Daylighting System (Photocells & Ballasts)		EDAYLIGHT

ALTERNATE #05 LIGHTING FIXTURE SCHEDULE

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

EQUIPMENT TAG	DESCRIPTION	VOLTAGE	PHASE	PANEL	BREAKER SIZE	CONDUCTORS/CONDUIT	DISCONNECT SWITCH	REMARKS
CP-1	CIRCULATING WATER PUMP	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
CP-2	CIRCULATING WATER PUMP	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
CP-3	CIRCULATING WATER PUMP	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
CP-4	CIRCULATING WATER PUMP	120V	1 PHASE/2 WIRE	M3L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
CP-5	CIRCULATING WATER PUMP	120V	1 PHASE/2 WIRE	M3L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
CU-1	CONDENSING UNIT	480V	3 PHASE/3 WIRE	M1H	15A	3#10, 1 #10 GND IN 3/4" EMT C.	30A/3P/NF/NEMA 3R	-
EF-1A	EXHAUST FAN	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
EF-1B	EXHAUST FAN	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
EF-1C	EXHAUST FAN	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
EF-1D	EXHAUST FAN	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
EF-1E	EXHAUST FAN	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
EF-1G	EXHAUST FAN	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
EF-3A	EXHAUST FAN	120V	1 PHASE/2 WIRE	M3L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
EF-3B	EXHAUST FAN	120V	1 PHASE/2 WIRE	M3L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
EF-3C	EXHAUST FAN	120V	1 PHASE/2 WIRE	M3L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
EF-3C	EXHAUST FAN	120V	1 PHASE/2 WIRE	M3L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
EF-3D	EXHAUST FAN	120V	1 PHASE/2 WIRE	M3L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
EF-A	EXHAUST FAN	480V	3 PHASE/3 WIRE	M1H	20A	3#10, 1 #10 GND IN 3/4" EMT C.	30A/3P/NF/NEMA 1	-
ESP-1	ELECTRIC SUMP PUMP	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
ESP-2	ELECTRIC SUMP PUMP	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
ESP-3	ELECTRIC SUMP PUMP	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
ESP-4	ELECTRIC SUMP PUMP	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
EWH-1	ELECTRIC WATER HEATER	277V	1 PHASE/2 WIRE	M1H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
EWH-2	ELECTRIC WATER HEATER	277V	1 PHASE/2 WIRE	M1H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
EWH-3	ELECTRIC WATER HEATER	277V	1 PHASE/2 WIRE	M1H	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	-
EWH-4	ELECTRIC WATER HEATER	277V	1 PHASE/2 WIRE	M3H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
EWH-5	ELECTRIC WATER HEATER	277V	1 PHASE/2 WIRE	M3H	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	-
FC-1	FAN COIL UNIT	208V	1 PHASE/2 WIRE	M1L	15A	2#10, 1 #10 GND IN 3/4" EMT C.	30A/2P/NF/NEMA 1	-
IRH-1	INFRARED HEATER	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
MSCU-1C	MINI-SPLIT CONDENSER UNIT	208V	1 PHASE/2 WIRE	S1L	30A	2#10, 1#10 GND IN 3/4" EMT C.	30A/2P/NF/NEMA 3R	-
MSCU-2B	MINI-SPLIT CONDENSER UNIT	208V	1 PHASE/2 WIRE	S1L	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/2P/NF/NEMA 3R	-
MSCU-3D	MINI-SPLIT CONDENSER UNIT	208V	1 PHASE/2 WIRE	S1L	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/2P/NF/NEMA 3R	-
MSCU-3E	MINI-SPLIT CONDENSER UNIT	208V	1 PHASE/2 WIRE	M3L	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/2P/NF/NEMA 3R	-
MSCU-3F	MINI-SPLIT CONDENSER UNIT	208V	1 PHASE/2 WIRE	M3L	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/2P/NF/NEMA 3R	-
MSCU-3G	MINI-SPLIT CONDENSER UNIT	208V	1 PHASE/2 WIRE	M3L	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/2P/NF/NEMA 3R	-
MSFC-1A	MINI-SPLIT FAN COIL	-	1 PHASE/2 WIRE	-	-	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	FED THROUGH CONDENSING UNIT/HEAT PUMP
MSFC-1B	MINI-SPLIT FAN COIL	-	1 PHASE/2 WIRE	-	-	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	FED THROUGH CONDENSING UNIT/HEAT PUMP
MSFC-1C	MINI-SPLIT FAN COIL	-	1 PHASE/2 WIRE	-	-	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	FED THROUGH CONDENSING UNIT/HEAT PUMP
MSFC-1E	MINI-SPLIT FAN COIL	-	1 PHASE/2 WIRE	-	-	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	FED THROUGH CONDENSING UNIT/HEAT PUMP
MSFC-2A	MINI-SPLIT FAN COIL	-	1 PHASE/2 WIRE	-	-	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	FED THROUGH CONDENSING UNIT/HEAT PUMP
MSFC-3A	MINI-SPLIT FAN COIL	-	1 PHASE/2 WIRE	-	-	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	FED THROUGH CONDENSING UNIT/HEAT PUMP
MSFC-3B	MINI-SPLIT FAN COIL	-	1 PHASE/2 WIRE	-	-	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	FED THROUGH CONDENSING UNIT/HEAT PUMP
MSFC-3C	MINI-SPLIT FAN COIL	-	1 PHASE/2 WIRE	-	-	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	FED THROUGH CONDENSING UNIT/HEAT PUMP
MSFC-3D	MINI-SPLIT FAN COIL	-	1 PHASE/2 WIRE	-	-	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	FED THROUGH CONDENSING UNIT/HEAT PUMP
MSFC-3E	MINI-SPLIT FAN COIL	-	1 PHASE/2 WIRE	-	-	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	FED THROUGH CONDENSING UNIT/HEAT PUMP
MSFC-3F	MINI-SPLIT FAN COIL	-	1 PHASE/2 WIRE	-	-	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	FED THROUGH CONDENSING UNIT/HEAT PUMP
MSFC-3G	MINI-SPLIT FAN COIL	-	1 PHASE/2 WIRE	-	-	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	FED THROUGH CONDENSING UNIT/HEAT PUMP
MSFC-11A	MINI-SPLIT FAN COIL	-	1 PHASE/2 WIRE	-	-	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	FED THROUGH CONDENSING UNIT/HEAT PUMP
MSFC-A	MINI-SPLIT FAN COIL	-	1 PHASE/2 WIRE	-	-	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	FED THROUGH CONDENSING UNIT/HEAT PUMP
MSFC-B	MINI-SPLIT FAN COIL	-	1 PHASE/2 WIRE	-	-	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	FED THROUGH CONDENSING UNIT/HEAT PUMP
MSHP-1A	MINI-SPLIT HEAT PUMP	208V	1 PHASE/2 WIRE	M1L	30A	2#10, 1#10 GND IN 3/4" EMT C.	30A/2P/NF/NEMA 3R	-
MSHP-1B	MINI-SPLIT HEAT PUMP	208V	1 PHASE/2 WIRE	M1L	30A	2#10, 1#10 GND IN 3/4" EMT C.	30A/2P/NF/NEMA 3R	-
MSHP-1E	MINI-SPLIT HEAT PUMP	208V	1 PHASE/2 WIRE	M1L	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/2P/NF/NEMA 3R	-
MSHP-3A	MINI-SPLIT HEAT PUMP	208V	1 PHASE/2 WIRE	M3L	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/2P/NF/NEMA 3R	-
MSHP-3B	MINI-SPLIT HEAT PUMP	208V	1 PHASE/2 WIRE	M3L	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/2P/NF/NEMA 3R	-
MSHP-3C	MINI-SPLIT HEAT PUMP	208V	1 PHASE/2 WIRE	M3L	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/2P/NF/NEMA 3R	-
MSHP-11A	MINI-SPLIT HEAT PUMP	208V	1 PHASE/2 WIRE	M1L	30A	2#10, 1#10 GND IN 3/4" EMT C.	30A/2P/NF/NEMA 3R	-
MSHP-A	MINI-SPLIT HEAT PUMP	208V	1 PHASE/2 WIRE	M1L	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/2P/NF/NEMA 3R	-
MSHP-B	MINI-SPLIT HEAT PUMP	208V	1 PHASE/2 WIRE	M1L	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/2P/NF/NEMA 3R	-
OSM-1	OIL SERVICE MINDER	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
OSM-2	OIL SERVICE MINDER	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
OSM-3	OIL SERVICE MINDER	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
OSM-4	OIL SERVICE MINDER	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-1.1	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M1H	35A	2#8, 1#10 GND IN 3/4" EMT C.	60A/1P/NF/NEMA 1	-
PIU-1.2	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M1H	15A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-1.3	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M1H	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	-
PIU-1.4	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M1H	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	-
PIU-1.5	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M1H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-1.6	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M1H	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	-
PIU-1.7	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M1H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-1.8	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M1H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-1.9	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M1H	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	-
PIU-1.10	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M1H	15A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-1.11	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M1H	15A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-1.12	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M1H	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	-
PIU-3.1	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.2	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.3	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.4	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	15A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.5	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.6	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.7	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	-
PIU-3.9	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.10	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	35A	2#8, 1#10 GND IN 3/4" EMT C.	60A/1P/NF/NEMA 1	-
PIU-3.11	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.12	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	15A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.13	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	15A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.14	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.15	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/1P/NF/NEMA 1	-
PIU-3.16	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.17	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.18	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	15A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.19	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	15A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.20	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	30A	2#10, 1#10 GND IN 3/4" EMT C.	30A/3P/NF/NEMA 1	-
PIU-3.21	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	25A	2#10, 1#10 GND IN 3/4" EMT C.	30A/3P/NF/NEMA 1	-
PIU-3.22	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	30A	2#10, 1#10 GND IN 3/4" EMT C.	30A/3P/NF/NEMA 1	-
PIU-3.23	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	15A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.24	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	15A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
PIU-3.25	POWER INDUCTION UNIT	277V	1 PHASE/2 WIRE	M3H	35A	2#8, 1#10 GND IN 3/4" EMT C.	60A/1P/NF/NEMA 1	-
RTU-1-1	ROOFTOP MOUNTED A/C UNIT	480V	3 PHASE/4 WIRE	MSB-2	90A	4#1, 1#8 GND IN 1-1/2" EMT C.	100A/3P/NF/NEMA 3R	-
RTU-1-2	ROOFTOP MOUNTED A/C UNIT	480V	3 PHASE/4 WIRE	MSB-2	110A	4#1/0, 1 #6 GND IN 2" EMT C.	200A/3P/NF/NEMA 3R	-
RTU-2-1	ROOFTOP MOUNTED A/C UNIT	480V	3 PHASE/4 WIRE	MSB-2	110A	4#1/0, 1 #6 GND IN 2" EMT C.	200A/3P/NF/NEMA 3R	-
RTU-2-2	ROOFTOP MOUNTED A/C UNIT	480V	3 PHASE/4 WIRE	MSB-2	110A	4#1/0, 1 #6 GND IN 2" EMT C.	200A/3P/NF/NEMA 3R	-
RTU-3-1	ROOFTOP MOUNTED A/C UNIT	480V	3 PHASE/4 WIRE	MSB-2	110A	4#1/0, 1 #6 GND IN 2" EMT C.	200A/3P/NF/NEMA 3R	-
RTU-3-2	ROOFTOP MOUNTED A/C UNIT	480V	3 PHASE/4 WIRE	MSB-2	110A	4#1/0, 1 #6 GND IN 2" EMT C.	200A/3P/NF/NEMA 3R	-
UH-1.1	UNIT HEATER	277V	1 PHASE/2 WIRE	M1H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
UH-1.2	UNIT HEATER	277V	1 PHASE/2 WIRE	M1H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
UH-1.3	UNIT HEATER	277V	1 PHASE/2 WIRE	M1H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
UH-1.4	UNIT HEATER	277V	1 PHASE/2 WIRE	M1H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
UH-1.5	UNIT HEATER	277V	1 PHASE/2 WIRE	M1H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
UH-1.6	UNIT HEATER	277V	1 PHASE/2 WIRE	M1H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
UH-1.7	UNIT HEATER	277V	1 PHASE/2 WIRE	M1H	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
UH-2.1	UNIT HEATER	480V	3 PHASE/3 WIRE	M2H	30A	3#10, 1 #10 GND IN 3/4" EMT C.	30A/3P/NF/NEMA 1	-
UH-2.2	UNIT HEATER	480V	3 PHASE/3 WIRE	M2H	30A	3#10, 1 #10 GND IN 3/4" EMT C.	30A/3P/NF/NEMA 1	-
UH-2.3	UNIT HEATER	480V	3 PHASE/3 WIRE	M2H	30A	3#10, 1 #10 GND IN 3/4" EMT C.	30A/3P/NF/NEMA 1	-
UH-2.4	UNIT HEATER	480V	3 PHASE/3 WIRE	M2H	30A	3#10, 1 #10 GND IN 3/4" EMT C.	30A/3P/NF/NEMA 1	-
UH-2.5	UNIT HEATER	480V	3 PHASE/3 WIRE	M2H	30A	3#10, 1 #10 GND IN 3/4" EMT C.	30A/3P/NF/NEMA 1	-
UH-2.6	UNIT HEATER	480V	3 PHASE/3 WIRE	M2H	30A	3#10, 1 #10 GND IN 3/4" EMT C.	30A/3P/NF/NEMA 1	-
UH-2.7	UNIT HEATER	480V	3 PHASE/3 WIRE	M2H	30A	3#10, 1 #10 GND IN 3/4" EMT C.	30A/3P/NF/NEMA 1	-
UH-2.8	UNIT HEATER	480V	3 PHASE/3 WIRE	M2H	30A	3#10, 1 #10 GND IN 3/4" EMT C.	30A/3P/NF/NEMA 1	-
UH-2.9	UNIT HEATER	480V	3 PHASE/3 WIRE	M2H	30A	3#10, 1 #10 GND IN 3/4" EMT C.	30A/3P/NF/NEMA 1	-
UH-2.10	UNIT HEATER	480V	3 PHASE/3 WIRE	M2H	30A	3#10, 1 #10 GND IN 3/4" EMT C.	30A/3P/NF/NEMA 1	-
VAV-1.1	VARIABLE AIR VOLUME UNIT	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
VAV-1.2	VARIABLE AIR VOLUME UNIT	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
VAV-1.3	VARIABLE AIR VOLUME UNIT	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
VAV-1.4	VARIABLE AIR VOLUME UNIT	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
VAV-1.5	VARIABLE AIR VOLUME UNIT	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
VAV-1.6	VARIABLE AIR VOLUME UNIT	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
VAV-1.7	VARIABLE AIR VOLUME UNIT	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
VAV-1.8	VARIABLE AIR VOLUME UNIT	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
VAV-1.9	VARIABLE AIR VOLUME UNIT	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
VAV-1.10	VARIABLE AIR VOLUME UNIT	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
VAV-1.12	VARIABLE AIR VOLUME UNIT	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-
VAV-1.13	VARIABLE AIR VOLUME UNIT	120V	1 PHASE/2 WIRE	M1L	20A	2#10, 1#10 GND IN 3/4" EMT C.	MOTOR-RATED SWITCH	-

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FORSYTH COUNTY BOARD OF COMMISSIONERS

LANIER PARKWAY
CUMMING, GA 30040

PRINT RECORD

No.	DATE	DESCRIPTION
	03/16/2020	Release for Bid and Permit
	05/08/2020	Release for Bid
6	07/16/2020	ADDENDUM #6
7	07/24/2020	ADDENDUM #7

Drawn By RER
Checked By RER
Date 03/16/2020
Job No. 2019-226

Sheet Title
FIXTURE SCHEDULES

Sheet No.
E-6.04

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