Forsyth County Procurement
Donna H. Kukarola, CPPO, CPPB, Director

July 16, 2020

ADDENDUM #6

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Where any original item is amended, voided or superseded hereby, the provision of such item not so specifically amended, voided or superseded shall remain in effect.

RFP CLOSING DATE HAS BEEN EXTENDED TO:

AUGUST 6, 2020, 2:00 PM (local time), ALL OTHER CLOSING INFORMATION REMAINS THE SAME.

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

1. Elevation ID2.52-6 shows AP-1 and AP-2, but the two wall panel specs don't specify which are which - can I assume AP-1 is the regular acoustical panel, and AP-2 is the impact-resistant panel?
    a. *RESPONSE:* ***AP-1 AND AP-2 Specifications are called out on ID-1.01 FINISH LEGEND.***
2. ID2.51-14 shows DWP-2 panels, I don't see any elevations denoting DWP-1. Where are those located on the project?
    a. **RESPONSE:** ***DWP-1 is located on ID-2.03 in the Kids Area- 302***
3. 098400-4, 3.03 talks about a spray-application acoustical treatment, but there's no actual spec for it and I don't see any in the plans. Was this included unintentionally?
    a. **RESPONSE:** ***Disregard references to spray-on acoustical treatment.***
4. 095450 has three acoustic ceiling products. I can't find the Linear Wood Panel System (LWP in specs, LWD-1 in RCP legend) in the drawings. Where are those located on the project?

   a. **RESPONSE:** ***LWP-1 is to be provided in lieu of the ACT system in the Screening Area- 101.***
5. Please provide the specifications for the standing seam roofing and aluminum soffit panels per Keynote R-16 on A-3.01 and details on A-5.74.
   a. **RESPONSE:** ***Included in Addendum 6***
6. Please confirm the following items are part of the base bid & not part of Add Alternate 2:
   a. Doors 155 and 155A
      i. **RESPONSE:** ***Correct***
   b. Walls between room 155 and rooms 141, 142 154 and 100.C5
      i. **RESPONSE:** ***Correct***
   c. Wall between room160 and 140
      i. **RESPONSE:** ***Correct***
7. Please provide location for the pedestrian control devices per specification 111410
   a. **RESPONSE:** ***Screening Area Room #101***
8. The A/V matrix on T-8.01 shows the large tv monitor to be owner furnished and contractor installed in the courtrooms. However, drawing ID-6.02 shows the 80" tv (equipment Key EQ-7C) to be contractor furnished and installed. Please clarify.
   a. **RESPONSE:** ***Update drawings to address clarifications released under Addendum 6***
9. Please confirm that detail 6/ID-5.02 is located at the front of the judge's bench (elevation 2/ID-2.51). In addition, please confirm that bullet-resistant panel infill is not required at details 2 & 3 on ID-5.02.
   a. **RESPONSE:** ***Yes, detail 6/ID-5.02 is located at the front of the judge's bench (elevation 2/ID-2.51). Bullet-resistant panel infill is not required at details 2 &3 on ID-5.02.***
10. ID-2.03 shows the decorative wall panels (DWP-1) at the location of storefront in Kids 302. Storefront Elevation SF-22 on A-7.13 shows tempered glass in this same storefront. Please confirm if the decorative panels are to be installed over the tempered glass or attached to the aluminum frame.
    a. **RESPONSE:** ***No, the DWP-1 at the Kids 302 is a decorative panel not tempered glass. See specification 097730***
11. How many copies of the bid forms do we need to submit?
    a. **RESPONSE:** ***Per Page 2 of the RFP, 1 un-bound original proposal is to be submitted.***
12. How many hard copies and electronic copies of the book need to be submitted?
    a. **RESPONSE:** ***Per Page 2 of the RFP, 1 un-bound hard copy of the proposal and 7 electronic copies, (flash drive, one copy per media)***
13. Do the bid forms need to go on the flash drive or in the book, or are just hard copies acceptable?
    a. **RESPONSE:** ***This is a Proposal, all required forms, etc. are to be included with all copies***

14. Request for Product Approval - Securock ExoAir 430 Panel - Fluid applied waterproofing
    a. **RESPONSE:** ***Rejected, not in compliance with project specifications***
15. Commissioning is referred to a few times in the construction documents, but there is no commissioning specification sections or written scope of work. Will commissioning be required for this project? If so, can you please provide a scope of work for the commissioning?
    a. **RESPONSE:**
        i. ***230593.1.20.A: Delete reference to Commissioning Agent.***
        ii. ***230923.1.4.D.2: Delete reference to commissioning.***
16. Request for Product Approval - Accurate Controls, Inc.
    a. **RESPONSE:** ***Approved***
17. What category of AESS steel is required?
    a. **RESPONSE:** ***AESS 3: Feature Elements in Close View.***
18. Please note below a compilation of questions from a few elevator subcontractors on this job. For the most part, the various firms intend to submit pricing on a traction elevator, (non-hydro).
    a. If we choose this option for are bid, should we submit as part of the base bid with clarification, or submit as an alternate?
        i. **RESPONSE*****: Provide all gear traction elevators per the elevator schedule in the specifications.***
    b. Car A: Due to the car skipping floors 1 and 2, we essentially have a two stop elevator with a travel of 41'8". This will require the use of the 3300XL, as the product limitation on travel for the 3300 standard model is 24'. The minimum capacity for the XL is 3,500lbs. This changes the hoistway depth from 6'5 3/8" to 6'11 and changes the Overhead to 13". Is this acceptable?
        i. **RESPONSE:** ***This elevator is only skipping floor 1. This elevator requires a stop on floor 2. The elevator model shall be changed from the 3300 model to the 3300XL. Any hoistway modifications shall be included in the base bid price and coordination will occur post bid.***
    c. On page 14 21 23 – 5, Item F sections 1, 2 and 3 several different security features are listed. In the per unit spec sections, only Card readers are referenced. You can only have one, as they are all mutually exclusive. Please confirm that card reader provisions should be provided.
        i. **RESPONSE:** ***Delete sections 2 and 3 Item F on page 14 21 23 – 5.***
        ii. ***All elevators shall have external and internal card readers for security operations. This system shall be coordinated with the security electronics subcontractor*****.**
    d. On page 14 21 23 – 5, 2.06 Car enclosures references Cars A and D with removable panels over baked enamel walls and Car b with stainless steel walls. The specific unit spec sections indicated #4 walls for all. It is an added

cost to have #4 hung panels on the steel frame, but it can be done. I just don't want to add cost unnecessarily. Can you please clarify for all four cars.

i. **RESPONSE:** ***Elevator interior cab elevations are issue with Addendum 6.***

e. Battery Evacuation and Emergency Power Provisions are mutually exclusive. Please let me know which one is required to be included.

i. **RESPONSE:** ***Battery Evacuation***

f. Page 14 21 23 – 7, item I – Fire Command Panel. This is only required with travel over 75'. Do you want a status panel here for security reasons or should this section be eliminated?

i. **RESPONSE:** ***No elevator travel distanced exceed the 75' travel distance. Disregard criteria for Fire Command Panel.***

g. If you want a security panel here please let me know where it will be located.

i. **RESPONSE:** ***Disregard criteria for Fire Command Panel.***

19. The Elevator Sections on Sheet A-6.02 show no doors or stops on Level 200 for all elevators, and no doors or stops on Level 100 for Elevator A. Even though Level 200 is for future buildout, and even though Elev A is the Judge Elevator, please confirm if the true intent is that there not be any doors or stops on those levels as indicated.

a. **RESPONSE:** ***Add doors to all elevators in level 200*****. The Judges Elevator EL-A does not stop on Level 100.**

20. Elevator Spec section 14 2123-5, 2.06 for car Enclosures, calls for removable panels over baked enamel walls for Cars A and D, and stainless steel walls for Car B. The specific unit spec sections starting on 14 2123-7, 2.09 indicated SS#4 for all Cars. Please advise of correct Car Enclosures for all Cars.

a. **RESPONSE: Elevator interior cab elevations are issue with Addendum 6.**

21. Please clarify if the sidewalk detail per 4/L2-00 or 01/C500 should be used for the project. Please clarify the locations of back of curb subdrain per 01/C503

a. **RESPONSE:**

i. ***Use civil detail 01/C500. Disregard detail 4/L2-00.***

ii. ***Disregard back of curb drain detail. It is not specified on the plans.***

22. The proposed Plant List on C138 notes that trees indicated are in addition to the Plant List on L3-01. However, please clarify if there are additional SOD areas shown on C138 not listed on the Plant List on L3-01. Drawing C138 (Final Erosion Control Plan) indicates Ds1 (temporary mulching) at various locations. Please clarify what permanent material shall be used at these temporary mulching (Ds1) locations not shown on L3-00

a. **RESPONSE:**

i. ***Yes, C138 indicates sod areas beyond what is shown on L3-01.***

ii. ***C138 has a text box below the "Ds1" that indicates the type of permanent mulch to be used in areas outside of L3-01.***

23. Request for Product - ARC Limited for CFRC Column Covers

a. **RESPONSE:** ***Approved***

24. Request for Product - Fluid Applied Membrane Air Barriers, Sto Guard Systems, Airseal
    a. **RESPONSE:** ***Approved***
25. If Alternate No 2 is not taken please define what is to be included in the base bid.
    a. **RESPONSE:** ***Structural slab on grade, plumbing stubs in SOG, perimeter partitions and doors surrounding region show on architectural floor plan, minimal temporary lighting to meet code requirements. Reference responses to additional clarifications to RFI's issued under addendum 6.***
26. Please indicate which SOG type is required for the Sally Port: SOG-4, SOG-5 or SOG-8
    a. **RESPONSE:** ***SOG-5***
27. Please verify that the scale on Drawing C-110 should be 1"=40' and not 1"=20' as indicated on the drawing.
    a. **RESPONSE:** ***Scale should be 1"=40' NOT 1"=20' as currently shown.***
28. Please see the clouded note regarding Seismic Bracing on Drawing FP-0.01 and S-0.01. Drawings are calling for seismic bracing and the use of flexible couplings and flex connections on sprinkler heads. Seismic Design Categories A & B do not require seismic bracing. Can you please confirm that seismic bracing and the use of flexible connections/couplings is not required?
    a. **RESPONSE:** ***Per our code research, FP piping bracing was not exempt from Category A or B.***
29. What is the desired construction start date for this project?
    a. **RESPONSE:** ***As this is a Proposal, the Selection Committee will need to review all submittals and there is a possibility to hold interviews it is anticipated that this would be taken to the Board of Commissioners for award September or September 22th. Thus probable start date would be October 15 2020.***
30. <u>CLARIFICATIONS FROM SITE VISIT 7/7/2020</u>
    a. RFP closes July 23rd, 2020 at 2:00 p.m. All proposals must be received by this date/time at the Forsyth County Procurement Department
        i. **RESPONSE:** ***This date/time has been extended. Reference response to item #64 below.***
    b. Remember, this is a Request for Proposal -- the selection criteria is included in our documents.
        i. **RESPONSE:** ***Noted***
    c. Phasing of the project is exceptionally important as Court will continue during the demolition/construction
        i. **RESPONSE:** ***Noted***
    d. Coordination with the County is exceptionally important because of the continued operations
        i. **RESPONSE:** ***Noted***
    e. Power continuity of the existing courthouse is another factor to be considered

   i. RESPONSE: ***Georgia Power to coordinate temporary power routing, phasing and shutdown with Forsyth Co. refer to drawings E-0.02, E-0.03 and E-0.04***

f. Existing secure parking must remain functional until new courthouse and new parking is secured
   i. **RESPONSE: *Noted***

g. Demolition, any/all materials that can be recycled should be
   i. **RESPONSE: *Noted***

31. Civil - Geotech Report - Section 5.4.3 of the Geotechnical Report calls for installation of Rammed Aggregate Piers at the Southern portion of the building. Is there a demarcation plan or scope limits showing where we would need the RAP?
   a. **RESPONSE: *Please see specifications for Aggregate Piers in Addendum #6. All foundations shall be either supported on competent bedrock or aggregate piers bearing on competent bedrock. 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. See geotechnical report for boring information.***
32. Do subcontractors have special requirements to work on project? Do they need to be US Citizen, etc.?
   a. **RESPONSE: *Subconractors and sub-subcontractors must comply with E-Verify.***
33. What is the required minimum concrete strength for the Elevated Concrete Caps?
   a. **RESPONSE: *4000 PSI.***
34. The Architectural Drawings indicate an outlined area to be priced as an alternate for the Male Secure Area, but the structural drawings do not identify this area as an alternate. Please confirm if this requested Alternate shall include the security masonry walls and concrete cap in that area, or shall those items be included in base bid.
   a. **RESPONSE: *Please reference S-1.01 Addendum #6 to include the identification of an alternate in this area.***
35. Battery Evacuation and Emergency Power Provisions are mutually exclusive. Please advise which one is required to be included.
   a. **RESPONSE: *Battery Evacuation***
36. Do Slab on Grade General Notes 4, 5 and 6 on page S-0.01 apply to this job, or are they left over from a previous project?
   a. **RESPONSE: *These notes have been removed under Addendum 6***
37. Building elevations callout "E-11" on certain storefronts, but there is no keynote description provided for E-11 on those sheets. Please advise what E-11 is.
   a. **RESPONSE: *Addressed in previous addendum***
38. The Fire Command Panel is typically only required with travel over 75'. Do you want a status panel here for security reasons or should this be eliminated? If, you do want a security panel, please advise where it will be located.

a. **RESPONSE:** ***Response addressed under previous RFI responses.***

39. Request for Product review - TYPAR
    a. **RESPONSE:** ***Rejected. Fluid applied water barrier will be used for project per specifications.***
40. Is the county receiving federal funds for this project?
    a. **RESPONSE:** ***No***
41. Division 28 Security Electronics - Esitech, cin
    a. **RESPONSE:** ***Approved***
42. Product Submission Request - Canopies, Peachtree Protective Covers, Inc.
    a. **RESPONSE:** ***Approved***
43. Product Substitution Request - Hanwha-Techwin WiseNet Wave as VMS solution
    a. **RESPONSE:** ***Hanwha-Techwin Wisenet Wave is not approved as a substitution for the specified Video Surveillance System Video Management System (VMS). The county wants to keep the same VMS as they currently have so they could seamlessly cross-train staff on jail, state court or juvi court duty***
44. Confirm that the specification of FBX brick is to be maintained.
    a. **RESPONSE:** ***All Brick manufacturers shall comply with specification requirements including FBX criteria***
45. Can you provide specifications and layouts for the SH-1 High Density Shelving for this project in Records Room 119?
    a. **RESPONSE:** ***Owner provided, Owner installed. Reference FURNITURE SCHEDULE***
46. After Review of Add.#5, to confirm response #5e, no finishes will be required. Does this include finished millwork and MEP items (lights, switches, grilles, furniture, etc.?)
    a. **RESPONSE:** ***The exercise is to provide a temporary mockup of space for Judges to view sightlines and layout. Finished millwork and MEP devices are not required to be installed in mockup.***
47. After Review of Add.#5, to confirm response #5f, no mock-up is required for the cells as specified in 11 1900-1.7,C,3,a?
    a. **RESPONSE:** ***No mock-up is required for the cells.***
48. After Review of Add.#5, can more information be provided for response #9? Spec 01 2300 mentions the Alternate #2 with no further details. No further details referencing Alternate #2 can be found elsewhere in the specifications.
    a. **RESPONSE:** ***Response addressed under previous RFI responses. Additionally, Division 28 and SE drawings, if Alternate 2 is rejected, raceway and pull strings will be installed up to the demising wall or at the head/jamb of future controlled openings (where such openings are installed) between the Secure Area and the base bid area. All Division 28 equipment or SE drawing requirements specifically within the Secure Area will NOT be required should the alternate be rejected. This applies specifically to***

Division 28 equipment and SE drawing requirements within the Secure Area (similarly, this applies to Div 27 and "T" drawing requirements). All Division 28 equipment and SE drawing requirements for Control 141 and Head end equipment in Sec Elec 136 ARE REQUIRED regardless of the acceptance or rejection of Alternate 2. Specifically, all equipment outside the confines of the Secure Area are required for the base bid even if they are intended to support the ultimate Alternate 2 buildout. Including, but not limited to, Control room equipment, graphical touchscreen panels, IP-CCTV monitors and related equipment, and head end equipment which will serve to make the Secure Area functional in the future - these are still required to be included in the base bid. See A-1.01D for graphical representation of the Secure Area.

49. At the site visit, it was mentioned that a majority of the furniture would be left in the rooms for demo. For items to be removed, will that be the responsibility of the owner or GC?
    a. **RESPONSE:** ***All items to be removed will be removed by the County prior to demolition.***
50. 285123, 2.4,A. States: Wiring for the Intercom Systems shall be CAT 6 cabling and devices. Drawing SE-7.02 Detail 2: IC and PA One line diagram shows all intercom stations running to the exchange and not switches representing analog stations. Please clarify if intercom stations are to be VoIP utilizing Cat 6 or Analog Stations utilizing shielded twisted pair.
    a. **RESPONSE:** ***Cat 6 cabling is required between the exchanges and equipment to which the IC system interfaced. It is expected that analog staff stations will be used and wired with shielded cabling directly to the exchange.***
51. Are biometrics part of this project
    a. **RESPONSE:** ***In reference to Division 28 and the SE drawings - no - biometrics are not required.***
52. Reference Division 282300
    a. 282300, 2.2,B.1 Ver-L2R4-2 is End of line -Bosch proposed substitute would be Autodome 5000i (NDP-5512-Z30L-see attached data)?
        i. **RESPONSE:** ***The Video Surveillance System specification 282300 is a performance based specification with the limitation that Bosch products are required. Except for the LPR camera, no model numbers were given for cameras. For each application the Bosch model must comply with the minimum performance specification. Bosch products that comply will be accepted. It is the contractor's responsibility to ensure that submitted products comply with performance requirements.***
    b. 282300, 2.2 Interior/Exterior cameras: Please approve the Bosch Flexidome 4000i NDE-4502-A (see attached data)?

i. **RESPONSE:** ***The Video Surveillance System specification 282300 is a performance based specification with the limitation that Bosch products are required. Except for the LPR camera, no model numbers were given for cameras. For each application the Bosch model must comply with the minimum performance specification. Bosch products that comply will be accepted. It is the contractor's responsibility to ensure that submitted products comply with performance requirements.***

c. 282300, There is no specification for the 6MP roof parapet cameras: Please approve Bosch NDE-8502-RT (see attached data this is a 1080P camera with 10-23mm lens)?

i. **RESPONSE:** ***The Video Surveillance System specification 282300 is a performance based specification with the limitation that Bosch products are required. Except for the LPR camera, no model numbers were given for cameras. For each application the Bosch model must comply with the minimum performance specification. Bosch products that comply will be accepted. It is the contractor's responsibility to ensure that submitted products comply with performance requirements.***

d. 282300, 2.3, PTZ camera: Please approve Bosch Autodome 7000i-NDP-7512-Z30 (see attached data)?

i. **RESPONSE:** ***The Video Surveillance System specification 282300 is a performance based specification with the limitation that Bosch products are required. Except for the LPR camera, no model numbers were given for cameras. For each application the Bosch model must comply with the minimum performance specification. Bosch products that comply will be accepted. It is the contractor's responsibility to ensure that submitted products comply with performance requirements.***

e. 282300, 2.4 : Specification is a mixture of single imager panoramic camera and a multi imager camera?

i. **RESPONSE:** ***No single imager panoramics are utilized on this project.***

.1 Please approve Bosch Panoramic cameras -NDS-6004-F180E & NDS-6004-F360E (see attached data)?

i. **RESPONSE:** ***Since no single imagers are used no need to approve now or in submittals the Bosch single imager panoramics.***

.2 If panoramic is unacceptable Bosch does not offer a multi-imager camera please approve Hanwha PNM-9081 VQ multi-sensor camera?

i. **RESPONSE:** ***We are aware that Bosch does not currently produce a multi-imager panoramic and the specs indicate that the submitted multi-***

imager must be compatible with Bosch BVMS and the performance requirements.

f. 282300, 2.2, C.5 Please confirm a 64GB SD card is to be provided in each camera? How is the edge storage to operate in the system?
   i. **RESPONSE:** ***SD cards are required for each camera and will provide ride through recording in the event of short term network/equipment failure***

g. Reference Drawing E-0.04 : Please add key note 7 (120 V/1P connect for exterior CCTV cameras) at the below sketch location for camera C91?
   i. **RESPONSE:** ***Covered by spec 282300 2.1.C, drawing SE-0.02 and E-0.04***

h. Reference Drawing E-2.04: Please add keynote 7 to Northeast and Northwest corners for cameras C81 & C82?
   i. **RESPONSE:** ***Addressed, refence drawings issued under addendum 6***

i. 282300, 2.13, B: Please advise if we need to provide 10 Mobile Video Service (MVS) licenses or just 10 total connections? Each MVS licenses allows for 20 total connections and each workstation and camera is a connection. (IE: 1 workstations with 4 cameras would be 5 connections)
   i. **RESPONSE:** ***A license for each connection is required.***

j. Reference Drawing SE-4.01 Detail 3 Main Control LGE Scale DRWG: Workstations and monitors for State Court and County Admin that are to tie to admin network for viewing the state court and county admin cameras, who will load the software and configure the system for viewing this other system?
   i. **RESPONSE:** ***Workstations and Monitors for County Admin and State Court/Jail will be browser based controlled and this contractor will be responsible to coordinate with county staff to set up.***

k. 282300 1.2, D & 2.11, B. 11 States 60 days storage: Camera Schedule Drawings SE-8.03 & SE8.04 have cameras broken into 30 & 90 days storage. Please confirm the 30 or 90 days required in the schedule are the correct storage requirements?
   i. **RESPONSE:** ***Camera Schedule of SE-8.03 and SE8.04 contain correct storage requirements.***

l. 282300, 2.11, B.14 references separate storage for the Performing Arts Center (PAC). If this applies to this project, we will need to know which cameras are to be recorded separately.
   i. **RESPONSE:** ***Camera Schedule of SE-8.03 and SE8.04 contain correct storage requirements.***

53. What is the desired R-value for the sprayed cellulose insulation called for on the Life Safety Plans?

   a. **RESPONSE:** ***R-30 for joist/framing @ elevated slab – unconditioned basement level parking deck area.***

54. On the Sprinkler System Criteria legend on FP-0.01 it states the evidence areas are covered by a double interlock system, and I cannot find any room tags that are called evidence areas. If you could steer me in the right direction, I would appreciate it.
   a. **RESPONSE:** ***FOLLOW PART NUMBERS ON FIXTURE SCHEDULE FOR EXACT FIXTURE TYPE.***
55. Per the RFP – the Key Personnel is only to include the resumes of the Project Manager and Superintendent. Please confirm that these are the only two resumes that you wish to receive. Do you want a complete project organizational chart?
   a. **RESPONSE: Yes, please provide an organizational chart along with the resumes of the Project Manager and Superintendent**
56. Product substitution request: LS-100 list spry applied cellulose insulation to achieve R-Value. Is Thermacoustic an acceptable alternate?
   a. **RESPONSE:** ***Rejected, no product information for substitution was provided to evaluate the request.***
57. Mechanical specification 23 0923 – 01 DDC Controls states under sub section 1.1B to provide an Alternate system compatible with the existing Trane Tracer System.
   a. **RESPONSE:** ***DELETE PARAGRAPH 1.1.B.1 FROM SECTION 230923 DIRECT DIGITAL CONTROLS FOR HVAC SYSTEMS***
58. Mechanical specification 23 0923 – 01 DDC Controls states under sub section 1.1B to provide an Alternate system compatible with the existing Trane Tracer System. more detail on the existing Trane system is needed to know what exactly would be required. Please provide date installed, version number, etc. to provide Alternate
   a. **RESPONSE:** ***DELETE PARAGRAPH 1.1.B.1 FROM SECTION 230923 DIRECT DIGITAL CONTROLS FOR HVAC SYSTEMS***
59. Not a question - but we need to add the Asbestos Report & that the contractor will be required to complete remediation
   a. **RESPONSE:** ***Report of Pre-Demolition Asbestos Containing Material Survey authored by Nova Engineering dated July 13, 2020 is included in addendum.***
60. PPG Paints is listed as an acceptable manufacturer in Division 9 Sections 099030, 099600, and 099656. However, PPG Paint is not listed in Division 9 Section 096726. This is a request for PPG Paints be added as an acceptable manufacturer as we have a seamless quartz flooring system that will meet or exceed the specification.
   a. **RESPONSE:** ***Approved***
61. Is there a Specification available for 05 5400 – Cold Formed Metal Framing.
   a. **RESPONSE:** ***For Cold Formed Metal Framing located within the Secure Areas, See Spec 11 19 02 SECURITY METAL FABRICATIONS, incl. articles 2.8 & 3.4. For Exterior Cold Formed Metal Framing, no specification section will be provided. Reference Cold-Formed Steel Notes on Sheet S-0.01.***

62. Please confirm there will be no new landscaping and no maintenance required for Phase 1 and Phase 3 areas. Drawings show plantings only in Phase 2.
    a. **RESPONSE:** ***Incorrect. In addition to Phase 2 plantings shown on C137 and the landscape plans, there is new landscaping and maintenance required for phase 1 as shown on Sheet C136 and phase 3 as shown on Sheet C138***
63. Is there irrigation required for landscaped areas? If so, please provide extents.
    a. **RESPONSE:** ***No irrigation is proposed for the landscape areas. Hose bibs are provided along building face to water plants during construction and grow in.***
64. Due to the complexity of this project, the delayed take-off start date and anticipated subcontractor response time, Carmon Construction, Inc. would like to request an additional 10-14 days to prepare this proposal.
    a. **RESPONSE:** ***Extension for proposals has been extended to August 6th, 2020 by 2:00 p.m. (local Time). No proposals will be accepted after this date/time.***
65. Sheet E-6.04: Regarding Light Fixture P, the MR1.5 model number is a circular light fixture with several different sizing options including multiple circles. How many circles need to be provided and what are their required diameters.
    a. **RESPONSE: FOLLOW PART NUMBERS ON FIXTURE SCHEDULE FOR EXACT FIXTURE TYPE.**
66. Sheet A-1.01D – Please confirm if Secure Corridor 100.C5, Control 141, or Sallyport 140 rooms are included in “Secure Area” Alternate #2?
    a. **RESPONSE:** ***No, Secure Corridor 100.C5, Control 141, nor Sallyport 140 are within the Secure Area. These areas are in the base bid.***
67. Sheet A-1.01D – Is Alternate #2 “Secure Area” a shell space in the base bid pricing without interior partitions, ceilings, finishes, plumbing and HVAC?
    a. **RESPONSE:** ***Response addressed under previous RFI responses.***
68. Sheet M-3.01 – RTU 2.1 is shown on the mechanical roof plan however according to the Roof Top Equipment Schedule it is future equipment like RTU-2.2 which is not shown. Please confirm RTU 2.1 is not required at this time.
    a. **RESPONSE:** ***RTU-2.1 AND RTU-2.2 SERVING LEVEL 2 ARE SHOWN FOR COORDINATION ONLY AND NOT INCLUDED AS PART OF THIS CONTRACT.***
69. Please reference Invitation to Bid RFP #20-78-1620 Document, page 10, “Proposal Content”. Item 7 on this page states “Cost – provide detailed costs breakdown that addresses the entire scope of the project”, but no form is provided beyond the Bid Form provided
    a. **RESPONSE:** ***Responded to question in previous addendum.***
70. Please specify the type of through wall flashing material that should be used at the brick masonry. Should copper or PVC material be used?
    a. **RESPONSE:** ***Reference specifications and drawings for flashing components.***

71. Detail 9/A-5.73, window sill note says, “see interiors”. There is no window sill information on interior drawings, please clarify what material window sills are made of.
    a. **RESPONSE:** ***Window sills have been updated to reflect solid surface window sill and trim below - issued under addendum 6. Use Wilsonart Solid Surface (basis of design).***
72. Sheet S-6.14- Please confirm if the concrete tie beans at the elevator shaft walls are to be placed around the entire perimeter of the shafts per S-6.14, or are the tie beams only at the corner of the walls per the structural framing plans (S-1.02 - S-1.04)
    a. **RESPONSE:** ***Elevator tie beams are required around the perimeter of each elevator at each level per Elevator Wall Sections on Sheets S-6.13, S-6.14, and S-6.15. In addition, concrete columns are required at the corners of each elevator as shown in plan and Detail 7/S-6.92.***
73. Pre-Qualification - Div 28, DPS Group LLC
    a. **RESPONSE:** ***Approved***
74. L1-00 says a ADA Sign & Ballard shall be in front of each handicap space and to reference the civil drawings. Details for the ADA Sign shown on 02-C502 and 01-C522 does not show or mention a bollard. Please advise if a bollard is to be used with each sign at the handicap parking spaces?
    a. **RESPONSE:** ***Reference civil plans and details for ADA specs, not landscape plans.***
75. For the sidewalks, detail 01-C500 shows using 4000psi concrete with no wire mesh while detail 4, L2-00 shows to use 3000psi and wire mesh. Please advise which detail is correct.
    a. **RESPONSE:** ***Sidewalk detail on civil plans shall be used for project, Not detail shown on landscape plans.***
76. Product Substitution - Roofing, Metal Roofing Systems, Inc.
    a. **RESPONSE:** ***Approved, must comply with contact documents/specifications.***
77. Can a set of drawings be made available for the Existing Bldg A so the extent of shoring that will be required can be determined.
    a. **RESPONSE:** ***Existing drawings of building are not available.***
78. Specifications 01 3300, 27 0526, 27 0528 , 27 0529, 27 05sssssssssssssssss33, 27 0536, 27 0544, 27 1100, 27 1116, 27 1119, 27 1313, 27 1323, and 27 1513 refer to BIM coordination, BIM delegated design drawings and data files, and BIM shop drawings. Can you please clarify the extent of BIM work required? Is BIM coordination and/or design required for all trades, all MEP trades, or something else?
    a. **RESPONSE:** ***A summary of the BIM requirements in 01-3300 mandates that the contractor (all trades) submit shop drawings and any delegated design in the BIM model and development level of the architectural drawings – which is REVIT 2019, Level of Development (LOD) 300. This 01-3300 requirement is a base bid requirement. However, the references to BIM***

coordination meetings in the Division 27 sections cited are inadvertent and are not required for this project.

79. It is our understanding that fire command panels are only required for travel exceeding 75'-0". Is a status panel an acceptable alternate? Where should the panel be located?
    a. **RESPONSE:** ***Response addressed under previous RFI response.***
80. Please clarify whether elevator auxiliary is to use standby Elevators power or battery power as the two are mutually exclusive.
    a. **RESPONSE:** ***Response addressed under previous RFI responses.***
81. For Elevator A (Judges Car) – an elevator manufacturer has pointed out that the standard 3300 model is limited to 24' travel; due to floors 1 and 2 being skipped, this is essentially 41'-8" of travel requiring the larger 3500XL model; this model would consequently increase the pit depth to 6'-11" and overhead clearance to 13'-0". Is the 3500XL model be acceptable?

    RESPONSE: ***This elevator is only skipping floor 1. This elevator requires a stop on floor 2. The elevator model shall be changed from the 3300 model to the 3300XL. Any hoistway modifications shall be included in the base bid price and coordination will occur post bid.***
82. Will Builder's Risk Insurance be purchased and carried by the Owner?
    a. **RESPONSE:** ***Builder's Risk Insurance to be purchased and carried by the contractor.***
83. There is Resinous Flooring RF-1 on the finish legend, and Seamless Quartz Flooring in the Spec. but we were unable to find it on any of the drawings. We also looked to see if perhaps it was listed in the Alternates, but it wasn't. Can you confirm if Resinous Flooring is needed for this project?
    a. **RESPONSE:** ***RF-1 called out on ID-2.01 Male Juvenile-155 shower. No alternates.***
84. Elevation ID2.52-6 shows AP-1 and AP-2, but the two wall panel specs don't specify which are which - can I assume AP-1 is the regular acoustical panel, and AP-2 is the impact-resistant panel?
    a. **RESPONSE:** ***AP-1 AND AP-2 Specifications are called out on ID-1.01 FINISH LEGEND.***
85. ID2.51-14 shows DWP-2 panels, I don't see any elevations denoting DWP-1. Can you direct me to those?
    a. **RESPONSE:** ***DWP-1 is located on ID-2.03 in the Kids Area- 302***
86. 098400-4, 3.03 talks about a spray-application acoustical treatment, but there's no actual spec for it and I don't see any in the plans - was this included unintentionally?
    a. **RESPONSE:** ***Disregard reference to spray-on acoustical treatment.***
87. 095450 has three acoustic ceiling product, but I can't find the Linear Wood Panel System (LWP in specs, LWD-1 in RCP legend) in the drawings. Can you point those out to me?
    a. **RESPONSE:** ***LWP-1 is to be provided instead of the ACT system in the Screening Area- 101.***

88. A-4.01/2 note E-15 “New Railing System”
    a. What is the material for the post, guardrail, and handrail?
        i. **RESPONSE:** ***Reference drawings for detail.***
    b. How is the system being mounted? Surface, side, core, weld?
        i. **RESPONSE:** ***Core and grouted vertical post***
89. Please confirm that A-6.51/1 Stair 1 is to be a steel pipe post, with stainless steel handrail, or full steel pipe system?
    a. **RESPONSE:** ***Stair 1 and 3 will have stainless steel handrail w/steel post, rails and pickets.***
90. Spec section 057300: Please confirm that there will be Red oak handrail on stair 2 per the spec. Section 2.04 Manufactured Units note 3 is where this is specified.
    a. **RESPONSE:** ***Correct, Red Oak will be used for handrail in stair 2.***
91. Please advise, condensation line- are they to be run out of DWV copper?
    a. **RESPONSE:** ***DWV COPPER SHALL BE USED FOR ALL CONDENSATE ABOVE CEILING, AND ALL CONDENSATE DRAIN PIPING MUST BE INSULATED WITH ½” PRE-FORMED MINERAL FIBER INSULATION.***
92. Per P1.00, what is OL1?
    a. **RESPONSE:** ***JR SMITH 8550 - 50 GPM OIL INTERCEPTOR***
93. Help me understand the River Rock requirement. They are asking for quantity 861. Are they looking for tons or individual pieces?
    a. **RESPONSE:** ***The 861 is the sq. ft. of rock area. See detail 2 on sheet L2-00 for construction of this River Rock.***
94. Where do the roof hydrants drain to?
    a. **RESPONSE:** ***REPLACE ZURN Z-1388 NFRH1 TO WOODFORD MODEL SRH-MS THAT DOES NOT REQUIRE A DRAIN***
95. Where does the yard hydrant go?
    a. **RESPONSE:** ***Sheet C122, note 4E indicates two (2) locations for yard hydrants. One at the dumpster and one in the landscape island near the building entrance***
96. It looks like Phase 1 will generate an excess cut of dirt. Will this material be able to be stockpiled onsite if needed for Phase 2?
    a. **RESPONSE:** ***Due to the phasing and limited space on the site, the plans do not indicate a stockpile location***
97. Is a CAD file available for the grading?
    a. **RESPONSE:** ***A CAD File is available upon request.***
98. Will Davis Bacon wages apply?
    a. **RESPONSE:** ***No***
99. Please refer to ID.2.03 in between Family Waiting 303 and Kids Area 302. Plans refer to aluminum window frame to have DWP-1 installed but window specs show tempered glass.

   a. **RESPONSE:** ***No, the DWP-1 at the Kids 302 is a decorative panel not tempered glass. See specification 097730***

100. Please refer to level one Stair 2//Elevation 18 on ID 2.54 shows WD-1 but plans show PL-3.
   a. **RESPONSE:** ***Stair 2/Elevation 18 is correct. Disregard PL-3 Finish Plan note located at Stair 2***
101. For Proposals that involve price and bids from subcontractors, the bid price is normally given on the hard copies but not electronic copies in order to allow the best price for the county. Is that also the case here?
   a. **RESPONSE:** ***All items are required in all submittals, hard copy and electronic. Please see Page 11 of the RFP for the Selection Process and selection criteria.***
102. Should the fire protection pricing show an allowance for a fire pump? If so, what size?
   a. **RESPONSE:** ***NOT REQUIRED AT PRESENT TIME.***
103. What are the specifications for the two (2) oil interceptors (OI1)?
   a. **RESPONSE:** ***JR SMITH 8550 - 50 GPM***
104. Should the plumbing pricing show an allowance for a domestic water booster pump? If so, what size?
   a. **RESPONSE:** ***NOT REQUIRED AT PRESENT TIME.***
105. Detail A4/P-5.01 does not appear to match the routing for the elevator sump pump discharge (all). Please clarify.
   a. **RESPONSE:** ***THE ELEVATOR DISCHARGE PIPING SHALL BE AS INDICATED ON P-1.01.***
106. The discharge from the elevator sump pumps do not appear to discharge into the plumbing system with an indirect connection per ASME 17.1. Please clarify.
   a. **RESPONSE:** ***THE ELEVATOR IS AN OIL MINDER SYSTEM WHICH ALLOWS THE DISCHARGE TO BE DIRECTLY CONNECTED TO THE SANITARY SYSTEM.***
107. Does the OutSide wiring for the Security and Telecom require Coordination with GA Power?
   a. **RESPONSE:** ***Coordination of paths is required, however the low voltage and telecom electrical is not supplied directly by Georgia Power - they are powered from building panels.***
108. Will The DAS system require coordination with the communication systems?
   a. **RESPONSE:** ***The DAS system is a partial raceway system only - after walls are completed, the owner will field survey RF strength and secure the services of a specialty consultant to install wiring, antennas, BDA and accessories.***
109. Are all the devices for the security and access control systems Owner furnished and contractor install?

   a. **RESPONSE:** ***No, except where specifically noted, security and access control are Contractor furnished and Contractor installed in their entirety.***

110. Is there an Elevation/Details Drawing for the Sliding Gate?
   a. **RESPONSE:** ***No elevation or details. See spec and notes at AJ-101 Level 100 - Security Plan.***
111. Fence height is indicated to be 72". Should there be included a 45 degree angled, 3-strand barbed wire topper, bringing the overall height to 84"? For all Fences & Gates? Or only certain sections? Primary focus of question is Sliding Gate and adjacent Fence.
   a. **RESPONSE:** ***No, fence heights to remain 72" without any toppers.***
112. Required Gate Speed is indicated to be 1 ft. per second. An add/alternate Operator with a speed of 1.7 ft. per second. Is there any interest at this time in a model with that increased performance?
   a. **RESPONSE:** ***No, this location is accessible to the public (UL 325 Class II), therefore this location is limited to 1 foot per second operator speed.***
113. ITEM D-4 states - Guide posts for Class 1 Horizontal Slide Gates: 4x4 inches. We would recommend using 6x6 inch posts, given the weight of this type of fence in 6ga mesh; would that be an acceptable substitution?
   a. **RESPONSE:** ***6x6 inch posts are acceptable.***
114. Request for Approval: Is Cherokee Brick MS Velour Burgundy acceptable as an equal to the Brick specified in 04 2113, Part 2.01(E)? Please see attached Substitution Request.
   a. **RESPONSE:** ***Rejected, samples have yet to be reviewed for design direction by Architect.***
115. In the Gypsum Wallboard Systems specifications, under 1.01 Description, there is a reference to Division 5 "Light Steel Framing", however there is no such section provided. Could you please provide this referenced section?
   a. **RESPONSE:** ***No specification for Cold Formed Metal Framing. Please reference Cold-Formed Steel Notes on Sheet S-0.01. Disregard reference to "Light Steel Framing" in Gypsum Wallboard Systems specification section under 1.01.***
116. Reference 17/S-6.80 & 2/S-6.01: Do all CMU require a bond beam at the upper most course below finish floor as shown on 17/S-6.80, or is this bond beam only required at areas directly tagged with detail 17/S-6.80?
   a. **RESPONSE:** ***Bond beam is required at finish floor elevation at all locations for seismic detailing requirements. See also Detail 1/S-6.95 Typical Masonry Wall Elevation for continuous bond beam at floor line.***
117. The drawings indicate specific columns and beams that are to receive intumescent paint. However, there is only Spec Section 07 8116 which lists intumescent coatings for ALL interior steel that is to be fireproofed. Please clarify if all fireproofed steel outside of the specific columns and beams mentioned in the drawings shall receive intumescent paint or a cementitious spray-fireproofing material. Is there a 07 8100 spec for

Cementitious Fireproofing that would apply to unexposed steel that is required to be fireproofed?

- **a.** ***RESPONSE: Revised specification to address cementitious spray-on fireproofing.***
  - ***i. Exposed structural steel in stairs, lobby and exposed steel columns in basement level to receive intumescent coating.***
  - ***ii. Structures other then what's identified in "i" above receive cementitious spray-on fireproofing material.***
  - ***iii. Reference ratings and UL numbers on life safety plan for ratings and locations for fireproofing applications.***

118. Demolition Note 5E on C031 calls for a temporary 2-story block wall at the portion of the existing building that remains during Phase 2. The note references the architectural and structural drawings for details. As we have not located any details on the drawings, please provide clarification on the following:
    - **a.** Does the existing 2-story, brick (and partial 1st floor siding) clad separation wall remain until the existing courthouse is demolished in Phase 3 (we have not located a note that calls for it to be demolished)? If demolished prior to Phase 3, what is the construction of the existing wall? (see photograph below)
      - **i. RESPONSE:** ***Please reference S-0.01, Contractor's Notes, Note 8: "General contractor to hire shoring engineer to sequence demolition. Reference Contract Documents and Specifications."***
    - **b.** Please confirm that the temporary 2-story block wall is to be erected against the outside face of the existing 2-story, brick (and partial 1st floor siding) clad wall (if it is to remain) – not within the existing courthouse.
      - **i. RESPONSE:** ***Please reference S-0.01, Contractor's Notes, Note 8: "General contractor to hire shoring engineer to sequence demolition. Reference Contract Documents and Specifications."***
    - **c.** Is any shoring required on the inside of the existing courthouse? If so, please advise on bearing points and loads to assume.
      - **i. RESPONSE:** ***Please reference S-0.01, Contractor's Notes, Note 8: "General contractor to hire shoring engineer to sequence demolition. Reference Contract Documents and Specifications."***
    - **d.** Please provide details for the foundation required for the temporary 2-story block wall?
      - **i. RESPONSE:** ***Please reference S-0.01, Contractor's Notes, Note 8: "General contractor to hire shoring engineer to sequence demolition. Reference Contract Documents and Specifications."***
119. The control room on I.D. 2.54 detail 6 shows wall tile, but does not specify which tile type. Please advise
    - **a. RESPONSE:** ***No tile on walls. Control room walls to be Security CMU per AJ-1.01 Security Plan***

120. Detail 8 on sheet AS 1.02 calls for bitumastic paint; however, bitumastic paint is not mentioned in the specs. Please specify.
    a. **RESPONSE:** ***Provide a corrosion resistant coating on bollards prior to pour-back. Kop-Coat Bitumastic No. 50 (basis of design) or equivalent.***
121. Sheet A-2.01, Public Lobby 102 shows curvy lines on ceiling. Please clarify what this is.
    a. **RESPONSE:** ***Light Fixture. See Electrical Drawings.***
122. Please confirm if AESS requirement is mandatory for all exposed steel at entrance canopy.
    a. **RESPONSE: Yes, all exposed steel at the entrance canopy is to be AESS. Please also reference floor framing plan notes Sheet S-1.02.**
123. Please confirm AISC Certified plant requirement for steel erection. Is this requirement mandatory or can a non-AISC certified plant be accepted?
    a. **RESPONSE:** ***AISC certification is required.***
124. Please provide location of the door glass shutter detailed on A 7.02 detail 33.
    a. **RESPONSE:** ***Refer to AJ-1.03 Level 300 Security Plan Interview Room-352. Security glass shutter SV5.***
125. Drawing SE-4.01 Detail/2 IT room 328 large scale drawing: Detail 2 has locking control cabinet shown depicting PLC in room IT 328. Specification Section 281300, 2.11 & 2.12 State they are to be Owner furnished and Contractor installed. Please verify the Package scanners and metal detectors are to be Furnished and installed by Owner?
    a. **RESPONSE:** ***Note 1 at the one-line diagram indicates that the diagram is "only representative of system configuration" - it is not intended to capture every component. It also refers the contractor to the plans and specification for device quantities, location and types.***
126. Drawing ID-6.01 EQ-10 (package Scanner) & EQ-11 (Metal Detector) are designated in Specialty equipment schedule to be Owner Furnished and Owner Installed. Specification Section 281300, 2.11 & 2.12 State they are to be Owner furnished and Contractor installed. Please verify the Package scanners and metal detectors are to be Furnished and installed by Owner?
    a. **RESPONSE:** ***See clarification in the Addendum***
127. During the site visit it was noted that the existing courtroom would stay operational during phase 1 and 2 of construction. Is any work required of the Telecom Contractor in the existing building? If any work is required can the scope be updated to include the existing building?
    a. **RESPONSE:** ***No work is required by the telecom contractor in the existing building. See SE0.02 Security Site Plan for telecom cut over requirements from existing to new.***
128. Is the 24-strand OS2 Fiber Cable noted on Drawing T-7.01 Detail #2 to be installed by the Telecom Contractor or will it be provided by the Service Contractor? If it is to be installed by the Telecom Contractor how will this be left in the handhole, terminated or coiled for terminations by others?

   a. **RESPONSE:** ***It will be provided and installed by the contractor - see SE0.02 Security Site Plan for intended method of termination.***

129. Is the Cable Tray noted on Drawings T-1.04 – T-1.06 to provided and installed by the Telecom Contractor or Electrical Contractor?
   a. **RESPONSE:** ***Cable tray is to be furnished and installed by the Telecom Contractor.***
130. Is the 2" Conduit and Boxes for the Future DAS System noted on Drawings T-1.07 – T-1.10 to provided and installed by the Telecom Contractor or Electrical Contractor?
   a. **RESPONSE:** ***The conduit system for future DAS is scope that may be installed by either the Telecom Contractor or the Electrical contractor at the discretion of the general contractor.***
131. Request for approval from Hill Company on HVAC Equipment.
   a. **RESPONSE:** ***MINI-SPLITS BY PANASONIC ARE ACCEPTABLE. DUNHAM BUSH ROOFTOP UNITS: CROFT IS NOT FAMILIAR AT ALL WITH THIS MANUFACTURER; THEREFORE, CROFT CANNOT RECOMMEND IT AS AN APPROVED MANUFACTURER. WE ASK THE OWNER TO DUNHAM BUSH CAN BE INCLUDED AS AN APPROVED MANUFACTURER.***
132. The bid documents do not reference how many annunciation (s) from the Fire Alarm System should we plan for on the Security Control System Touch Screen?
   a. **RESPONSE:** ***Every Device in the secure area shall be indicated. Devices outside the secure areas can be indicated by zone.***
133. Will the Fire Alarm System indications be transmitted by zone or device location?
   a. **RESPONSE:** ***By Device.***
134. What method of communication or type of interface are we to plan for regarding the HVAC activation of unit exhaust fans from a Touchscreen Control Station?
   a. **RESPONSE:** ***We expect an icon on the locking control panel to signal and operate the exhaust fans. Interface shall be determined by the systems integrator.***
135. The symbol list on drawing SE-0.01 includes a ceiling mounted REX device. The device description further states that the locking hardware contractor may or may not be providing REX enabled hardware. At those locations that are not equipped with REX enabled hardware, we're to furnish the ceiling mounted motion detector for REX purposes. Spec section 281300.2.5.B indicates that there may be some REX's in the door locks. Please clarify/provide some direction as to how we can identify specific openings that will need the ceiling mounted REX devices.
   a. **RESPONSE:** ***Per spec 08 7100 DOOR HARDWARE, both Electric Mortise Locksets and Electrified Exit Devices include hardware integrated Request-to-Exit (REX) capabilities. Therefore, nearly every access controlled swing***

door indicated will already have REX integral in the door hardware. Coordinate with Spec Section 08 7100.

136. Spec section 284619.1.4.P.1 calls for a 25" Touchscreen Monitor but 284619.2.1.A.9 calls for a 32" Widescreen Monitor. Which size unit should be provided?
    a. **RESPONS*E: Provide 32" Units.***
137. What are the EV Stations shown on site print SE-0.02? Are they to be interfaced with the Security System in any way?
    a. **RESP*ONSE: No Interface with the security system is required.***
138. Drawing SE-1.02 contains symbols for two (2) x-rays and two (2) metal detectors in the screening area. Spec section 281300, 2.11 & 2.12 state that the Owner shall furnish and contractor to install. There are no references to these devices being interfaced with the Security System. Please confirm that these devices are owner furnished and define any interface to the Security System if required.
    a. **RES*PONSE: No Interface with the security system is required.***
139. Roof Plan drawing SE-1.05 shows a Card Reader symbol located near camera #'s C83 & C84. Is this correct?
    a. ***RESPONSE: No Card Reader is required at this location.***
140. Spec section 281300, 2.5B and 2.10A refer to compatibility of devices with an existing Genetec Synergist Access Control System. The specs do not state that Genetec is to be the sole source for the Access Control Solution. Will the Owner consider other Access Control Solutions as long as the credentials from the existing Genetec System may be used on another Access Control Solution?
    a. ***RESPONSE: Forsyth County preference is to use the Genetec System.***

PART 2 – Changes to Drawings

2-1 Sheet C030 SITE DEMOLITION PLAN PHASE 1:

1. Revised SITE CLEARING & SITE DEMOLITION NOTE LEGEND.
2. Reference sheet C030 SITE DEMOLITION PLAN PHASE 1 revised under addendum #06 dated 07/16/2020.

2-2 Sheet C031 SITE DEMOLITION PLAN PHASE 2:

1. Revised SITE CLEARING & SITE DEMOLITION NOTE LEGEND.
2. Reference sheet C031 SITE DEMOLITION PLAN PHASE 2 revised under addendum #06 dated 07/16/2020.

2-3 Sheet C032 SITE DEMOLITION PLAN PHASE 3:

1. Revised SITE CLEARING & SITE DEMOLITION NOTE LEGEND.

2. Reference sheet C032 SITE DEMOLITION PLAN PHASE 3 revised under addendum #06 dated 07/16/2020.

2-4 Sheet C110 OVERALL GRADING AND DRAWING PLAN:

1. Corrected scale reference.
2. Reference sheet C110 OVERALL GRADING AND DRAWING PLAN revised under addendum #06 dated 07/16/2020.

2-5 Sheet S-0.01 GENERAL NOTES:

1. Sheet modifications.
2. Reference sheet S-0.01 GENERAL NOTES revised under addendum #06 dated 07/16/2020.

2-6 Sheet S-1.01 LEVEL 100 FRAMING PLAN:

1. Note for Sally-port slab on grade.
2. Added notation regarding alternate 02.
3. Reference sheet S-1.01 LEVEL 100 FRAMING PLAN revised under addendum #06 dated 07/16/2020.

2-7 Sheet A-1.01R LEVEL 100 – REFERENCE FLOOR PLAN:

1. Added reference to detail 12/A-6.52
2. Reference sheet A-1.01R LEVEL 100 – REFERENCE FLOOR PLAN revised under addendum #06 dated 07/16/2020.

2-8 Sheet A-5.73 SECTION DETAILS:

1. Removed references to “SEE INTERIORS” on window sill details.
2. Reference sheet A-5.73 SECTION DETAILS revised under addendum #06 dated 07/16/2020.

2-9 Sheet A-6.52 STAIR SECTIONS AND DETAILS:

1. Added detail 12/A-6.52
2. Reference sheet A-6.52 STAIR SECTIONS AND DETAILS revised under addendum #06 dated 07/16/2020.

2-10 Sheet A-7.61 WINDOW DETAILS:

1. Revised sill details to show trim.

2. Reference sheet A-7.61 WINDOW DETAILS revised under addendum #06 dated 07/16/2020.

2-11 Sheet A-7.62 WINDOW DETAILS:

1. Revised sill details to show trim.
2. Reference sheet A-7.62 WINDOW DETAILS revised under addendum #06 dated 07/16/2020.

2-12 Sheet ID-2.51 ENLARGED FINISH PLANS & ELEVATIONS:

1. Section cut added to the Judge's Bench.
2. Reference sheet ID-2.51 ENLARGED FINISH PLANS & ELEVATIONS released under addendum #06 dated 07/16/2020.

2-13 Sheet ID-4.02 ELEVATORS – INTERIOR ELEVATIONS:

3. Interior elevators and finishes added.
4. Reference sheet ID-4.02 ELEVATORS – INTERIOR ELEVATIONS released under addendum #06 dated 07/16/2020.

2-14 Sheet P-1.01 LEVEL 100 FLOOR PLAN – SANITARY & VENT:

1. Clarified scope for Add Alternate #2, to include capping vent piping and no vent pipes above ceiling within the area.
2. Reference sheet P-1.01 LEVEL 100 FLOOR PLAN – SANITARY & VENT revised under addendum #06 dated 07/16/2020.

2-15 Sheet P-2.01 LEVEL 100 FLOR PLAN – DOMESTIC WATER:

1. Clarified scope for Add Alternate #2, to include capping domestic cold water, domestic hot water & domestic hot water return lines above ceiling within the area.
2. Reference sheet P-2.01 LEVEL 100 FLOR PLAN – DOMESTIC WATER revised under addendum #06 dated 07/16/2020.

2-16 Sheet P-6.01 PLUMBING SCHEDULES:

1. Added Oil Interceptor (OI1) to schedule.
2. Revised Non-freeze roof hydrant specification from Zurn to Woodford.
3. Reference sheet P-6.01 PLUMBING SCHEDULES revised under addendum #06 dated 07/16/2020.

2-17 Sheet M-0.01 MECHANICAL NOTES, SCHEDULES, & LEGEND:

1. Added MERV 13 filters and UV lights to the RTU Schedule.
2. Reference sheet M-0.01 MECHANICAL NOTES, SCHEDULES, & LEGEND revised under addendum #06 dated 07/16/2020.

2-18 Sheet E-0.02 ELECTRICAL SITE PLAN – PHASE ONE:

1. Added Sequence of Operation for Georgia Power Shutdown and Switchover.
2. Reference sheet E-0.02 ELECTRICAL SITE PLAN – PHASE ONE revised under addendum #06 dated 07/16/2020.

2-19 Sheet E-2.04 ROOF LEVEL FLOOR PLAN - POWER:

1. Added power for rooftop cameras C81 and C82.
2. Reference sheet E-2.04 ROOF LEVEL FLOOR PLAN - POWER revised under addendum #06 dated 07/16/2020.

2-20 Sheet E-6.00 ELECTRICAL PANEL SCHEDULES:

1. Modified load on RTU-1.1.
2. Reference sheet E-6.00 ELECTRICAL PANEL SCHEDULES revised under addendum #06 dated 07/16/2020.

2-21 Sheet E-6.04 FIXTURE SCHEDULES:

1. Added Alternate #05 Lighting Fixture Schedule
2. Reference sheet E-6.04 FIXTURE SCHEDULES revised under addendum #06 dated 07/16/2020.

2-22 Sheet T-8.02 MONITOR SCHEDULE:

1. Adjusted ‘DISPLAY – MONITOR – TV SCHEDULE”.
2. Reference sheet T-8.02 MONITOR SCHEDULE revised under addendum #06 dated 07/16/2020.

PART 3 – Changes to Specifications

3-1 Specification Section 07 2119 FOAMED IN-PLACE INSULATION:

1. Added specification section 07 2119 FOAMED IN-PLACE INSULATION.
2. Application to be underside of elevated unconditioned floor above Basement Level parking area.

3. Reference Specification Section 07 2119 FOAMED IN-PLACE INSULATION released under addendum #06 dated 07/16/2020.

3-2 Specification Section 07 4100 MANUFACTURED ROOF AND WALL PANELS:

1. Added specification section 07 4100 MANUFACTURED ROOF AND WALL PANES.
2. Reference Specification Section 07 4100 MANUFACTURED ROOF AND WALL PANELS released under addendum #06 dated 07/16/2020.

3-3 Specification Section 07 8116 SPRAYED FIRE-RESISTIVE MATERIALS:

1. Added Specification Section 07 8116 SPRAYED FIRE-RESISTIVE MATERIALS cementitious spray-on fireproofing.
2. Reference Specification Section 07 8116 SPRAYED FIRE-RESISTIVE MATERIALS revised under addendum #06 dated 07/16/2020.

3-4 Specification Section 28 1300 ACCESS CONTROL SYSTEMS:

1, Delete existing paragraphs 281300 1.1 and 281300 1.2 and substitute in its place the following:

1.1 METAL DETECTION SYSTEM (OFOI)

A. The owner shall furnish Rapiscan Systems Metor 6M magnetometer(s) at locations indicated on the drawings.

B. The contractor will provide power for the Metal Detection System and the owner will install the system.

1.2 PACKAGE SCREENING SYSTEM (OFOI)

A. The owner shall furnish Rapiscan 622XR package X-Ray screener(s) at locations indicated on the drawings.

B. The contractor will provide power for the Package Screening System and owner will install the system.

3-5 Specification Section 31 6613 AGGREGATE PIERS:

1. Added specification section 31 6613 AGGREGATE PIERS.
2. Reference Specification Section 31 6613 AGGREGATE PIERS released under addendum #06 dated 07/16/2020.

PART 4 – General

4-1 Revised Bid Tab as follows:

1 Added Alternates 04 and 05 to Bid form.
2 Added line item for Allowance of $20,000.
   a. The contractor's electrician will exit the existing electrical room in Building A and come out with a weatherhead, attachment point, and install a meter base on the outside of the building. There is a brick parapet on the rear SW corner of the building that is the proposed connection point for Ga Power. Once the attachment point is installed, the Ga Power crew will schedule a time to hang up the temporary service transformer and run the service wire. Once the weatherhead and attachment point (brick parapet), the Ga Power meterman will have to come out to tap and install the CT's and meter. Additionally, the existing service for Building A ((2) 600 Amp Panels) are fed underground from Buildings B & C. The contractor's electrician is responsible to modify/adjust the service entrance into the existing panels to allow the new vertical pathway to the weather head and temporary aerial feed described above. There are also adjacent subpanels that must remain energized as part of this temporary service. An allowance to cover Ga Power's cost of this work is included on the bid form.
   b. Reference Exhibit "A" released under addendum 6 dated 7/16/2020.

END OF ADDENDUM NO 6

Forsyth County Juvenile Justice Center

Cost Form, Alternates and Unit Prices

Addendum 6
RFP 20-78-1620

The term "bidder" refers to "proposer" on this project

1 Bid Offer

Print Company Name

(herein the "Bidder") offers to the Owner to furnish all necessary tools, services, materials and labor to execute and complete in a careful and workmanlike manner the Work described in the Contract Documents, Plans and Specifications for the lump sum price tendered by the Bidder in this Bid Form. The bidder hereby acknowledges receipt of the following Addenda (list addenda here)_____ inclusive , and hereby agrees they form part of this bid tender.

The Bidder agrees:

.a To substantially perform the Work within _____ calendar days from the date of notification of acceptance of the Bid, or as identified by the Owner.

.b That he/she has carefully examined the Work descripted herein" has become familiar with local conditions and the character and extent of the work; has carefully examined every part of the proposed contract and thoroughly understands its terms and conditions; has determined the sources of supply of the materials required; has investigated labor conditions and has arranged for the continuous performance of the Work described in the Contract Documents, Plans and Specifications.

.c That the bid documents shall be and is the complete Bid and this offer is made subject to all provisions contained therein.

.d That this Tender supersedes and cancels all communications, negotiations, and agreements relating to the Work other than contained in the completed Bid.

Contract Price

Lump Sum

The Bidder agrees that the following is the lump sum referred to in Clause 2.0 of this Tender Form and that this is the Bidder's total Tender price

DOLLARS ($_____)

2 Allowance

ITEM	DESCRIPTION	UNITS	TOTAL
Allow-01	***Provide a temporary transformer to be set on a pole to provide temporary service for building A.***	***LS***	***$20,000***

3 Alternates

ITEM NUMBER	DESCRIPTION	UNITS	TOTAL
ALT - 01	Sunshades - Provide an Alternate Price to add sunshades on the north and west elevations.	LS	

ALT - 02	Work in Secure Area - Provide an Alternate Price to add work associated with Secure Area.	LS	
ALT - 03	Train Tracer Controls - Provide an Alternate Price to add train tracer controls.	LS	
ALT - 04	***Provide UV lights downstream of the cooling coil for RTU-1.1, 1.2, 3.1 and 3.2. UV lights shall be encapsulated, factory installed in the unit with access door interlock to shut down UV lights when door is open. Provide the number of lamps and lamp size adequate to cover the entire cooling coil area.***	***LS***	
ALT - 05	***Alternate Lighting Package***	***LS***	

4 Unit Prices

ITEM NUMBER	DESCRIPTION	NOTE	UNITS	QUANTITY	UNIT COST	TOTAL
Civil - 01	Mass Rock Rippable Excavation, rock hauled off-site	1,2	CY	1,750		
Civil - 02	Mass Rock Blast Excavation, rock hauled off-site	1,2	CY	500		
Civil - 03	Trench Rock rippable excavation, rock hauled off-site	1,2	CY	1,250		
Civil - 04	Trench Rock blast excavation, rock hauled off-site	1,2	CY	1,000		
Civil - 05	Unsuitable Soil excavation, soil hauled off-site	1,2	CY	4,000		
Civil - 06	Haul in suitable soil and compact in-place	1,2	CY	4,000		
Civil - 07	Haul in Graded Aggregate Base, distribute and compact	1,2	CY	500		
Civil - 08	Sediment Control Fence - Type "C"	1,2	LF	250		
Civil - 09	Haul in and compact #3 or #34 stone	1,2	Ton	10		
Civil - 10	Haul in and compact #57 stone	1,2	Ton	10		
Civil - 11	Elevator shaft drilling through rock. Subsurface soil conditions that refuse conventional auger excavation of the elevator jack hole (where applicable) in accordance with Division 14 Section "hydraulic Elevators."	1,2	LF	10		

NOTES

1 Unit cost shall include all equipment, overhand and profit

2 Quantities are established for Unit Pricing in the event of unforeseen conditions require remediation.

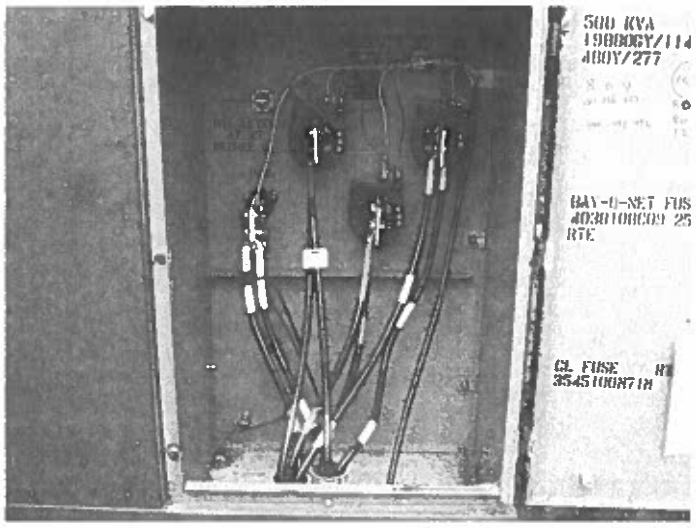
Authorized Signature Date

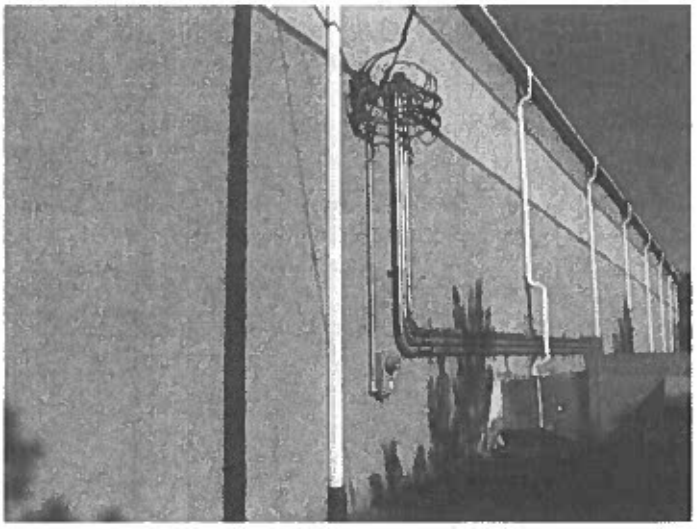
Print Name and Title Company Name

14.0 4-Wire, 3-Phase CT Installation, OH/UD Service (Above 600A)

A. General Notes:

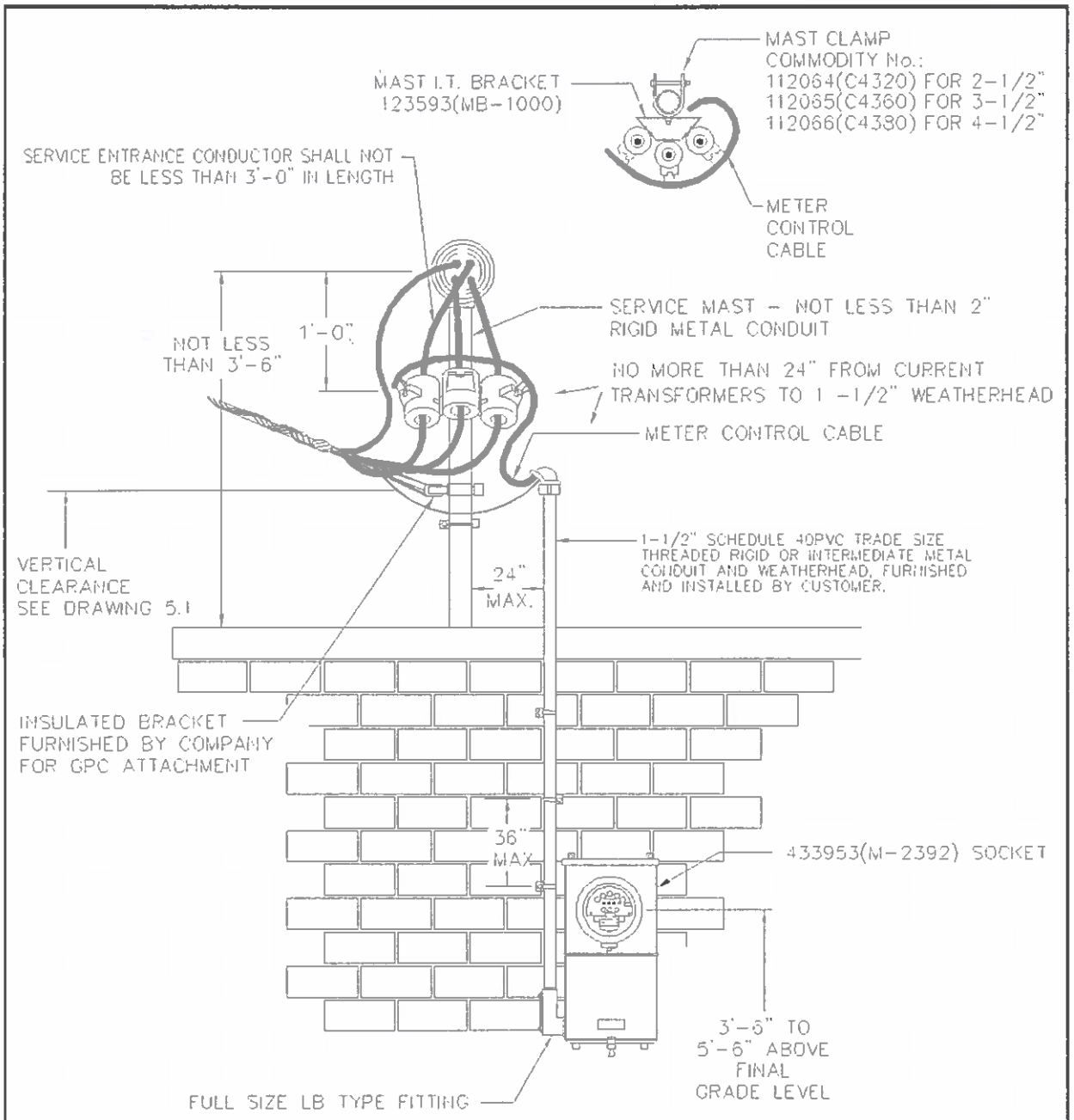
1. Service drop and meter furnished by **Company**.
2. Current Transformers provided by company and may be issued to **Customer** for installation or installed by company employee.
3. Meter control cable furnished and installed by **Company**.
4. Meter socket furnished by company and installed by **Customer.**
5. 1½ inch schedule 40 PVC trade size threaded rigid or intermediate conduit furnished and installed by customer.
6. Transocket shall be mounted to pole with equipment furnished by **Company** and installed by **Customer**.
7. Meter socket and conduit strap shall be surface mounted.
8. **Customer** shall wire brush all conductors, apply a non-grit type inhibitor and terminate them by manufacturer's specification.
9. **Customer** is responsible for line and load connections in Transocket as to manufacturer specification listed inside.
10. **Company** will check torque on all connectors prior to setting meters.
11. Meter socket(s) shall be marked with an address number in permanent letters and/or numbers at least 1 inch high height using a contrasting color with enamel paint inside and outside of the socket. Permanent plastic or metal labels are acceptable, at least 1 inch in height. **Permanent Ink Markers, such as Sharpies, are not acceptable**.





Pad Mount CT Installation and Wall Mount CT Installation

14.1 4-Wire, 3-Phase, OH Service Mast Mounted CT's (Above 600A)



WHERE ATTACHMENT HEIGHT EXCEEDS 36" ABOVE ROOF CUSTOMER SHALL FURNISH AND INSTALL MIN. 1/4" GALVANIZED STEEL GUY WIRE OR EQUIVALENT FOR SUPPORTING SERVICE DROP.

4-WIRE, 3-PHASE, OH SERVICE, MAST MOUNTED CT'S, (ABOVE 600A)

DRAWN BY A.A.W.B. DATE 4/1/88 TRACED BY D.G. BAILEY SCALE NONE APPROVED	REVISIONS 8/20/99,11/10/99 2/17/02,12/01/03,5/17/04 2/15/07, 1/13/12	GEORGIA POWER COMPANY

REPORT OF PRE-DEMOLITION ASBESTOS CONTAINING MATERIAL SURVEY

Forsyth County Juvenile Court Site

Cumming, Forsyth County, Georgia

PREPARED FOR:

Forsyth County Procurement
514 W. Maple Street
Suite 104
Cumming, Georgia 30040

NOVA Project Number: 3020075

July 13, 2020

NOVA

PROFESSIONAL | PRACTICAL | PROVEN

July 13, 2020

FORSYTH COUNTY PROCUREMENT
514 W. Maple Street, Suite 104
Cumming, Georgia 30040

Attention: Mr. Greg Bridges
Procurement Agent III

Subject: Report of Pre-Demolition
Asbestos Containing Material Survey
Forsyth County Juvenile Court Site
Cumming, Forsyth County, Georgia
NOVA Project Number 3020075

Dear Mr. Bridges.:

NOVA Engineering and Environmental, LLC (NOVA) has completed the Pre-Demolition Asbestos Containing Material (ACM) Survey for the Forsyth County Juvenile Court site located in Cumming, Forsyth County, Georgia. We appreciate your selection of NOVA and for the opportunity to be of service on this project. Please feel free to contact us if you have any questions or if we may be of further assistance.

Sincerely,
NOVA Engineering and Environmental, LLC

Curtis Moses
Staff Professional
Environmental Services
AHERA No. 17943

Nickolaus DaSantos
Business Unit Manager
Environmental Services

TABLE OF CONTENTS

LIST OF APPENDICES

1.0 SUMMARY

NOVA Engineering and Environmental, LLC (NOVA) has completed the requested Pre-Demolition Asbestos Containing Material (ACM) Survey for the Forsyth County Juvenile Court site located in Cumming, Forsyth County, Georgia (Subject Property). The Asbestos Containing Material (ACM) inspection of the Subject Property was performed on June 23, 2020.

A brief summary of our findings is presented below. This summary is provided for convenience and should not be substituted for review of the full report, including all attachments as provided herein.

1.1 ASBESTOS

During this study, one hundred sixty-six (166) samples (containing 233 total layers) of joint compound, wallboard, ceiling tile, glue material, floor tile, cove base, caulking material, grout, mortar, cement material, stucco, ceiling texture, Thermal System Insulation (TSI), leveler, roof field layers, shingles, felt, parapet flashing, roof cement, ceramic, fiber panel, mastic, wallpaper, floor sheeting, and cement panels were analyzed by NOVA using Polarized Light Microscopy (PLM) with six (6) of the analyzed samples indicating Asbestos Containing Material (ACM). A sample location plan is included in Appendix A of this Report.

Below is a summary of ACM identified at the Subject Property:

Cement Panels

- A total of four (4) samples of the cement panels located at the Subject Property associated with the doors and windows indicated >1% asbestos (25% Chrysotile Asbestos). Consequently, we believe all of the cement panels located at the Subject Property should be considered Asbestos Containing Material (ACM).

Roofing Cement

- A total of two (2) samples of the roofing cement located at the Subject Property associated with buildings C and B indicated >1% asbestos (8% Chrysotile Asbestos). Consequently, we believe all of the roofing cement located at buildings C and B should be considered Asbestos Containing Material (ACM).

A complete list of suspected ACM samples obtained is shown in the laboratory report (included in Appendix B).

.

2.0 INTRODUCTION

2.1 DESCRIPTION OF SUBJECT PROPERTY

NOVA has completed the Pre-Demolition Asbestos Containing Material (ACM) Survey for the Forsyth County Juvenile Court Site located at 875 Lanier 400 Parkway in Cumming, Forsyth County, Georgia (Subject Property). Specifically, the Subject Property consists of three (3) Buildings (Buildings A, B, and C) that encompass the approximately 37,000 square foot Forsyth County Juvenile Court facility and office space.

According to the Forsyth County Geographic Information System (GIS) database, the Subject Property is located on approximately 7.24-acres of land identified by Tax Parcel Number C35 002.

As requested by Forsyth County Procurement (CLIENT), the Pre-Demolition Asbestos Containing Material Survey was performed in an effort to identify Asbestos-Containing Material (ACM) at the Subject Property. This work has been performed in general accordance with applicable state and federal regulations, and routine industry practice and NOVA proposal number 002-30206585 dated June 15, 2020.

ACM sampling was performed in general accordance with the Asbestos Hazard Emergency Response Act (AHERA) guidelines and ASTM E2356-10,"*Standard Practice for Comprehensive Building Asbestos Survey*" as a Baseline Survey. Deviations from the Baseline Survey protocols include:

- Determination of ACM quantities was excluded from the scope of work.

2.2 LIMITATIONS

NOVA has performed the Pre-Demolition Asbestos Containing Material Survey, which is a limited inquiry into a property's environmental status and is not sufficient to discover every potential source of ACM of the property to be evaluated. No survey can wholly eliminate uncertainty regarding the potential ACM in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for ACM in connection with a property.

The level of inquiry is variable. Not every property will warrant the same level of assessment for ACM. Consistent with good commercial or customary practices, the appropriate level of assessment will be guided by the type of property subject to assessment, the intended use of the property, the expertise and risk tolerance of the CLIENT, and the information developed in the course of the assessment.

NOVA's findings, opinions, conclusions and recommendations are based on information obtained through visual assessment of surficial conditions in readily accessible areas. It is possible that additional ACM exist or may subsequently become known that may impact or change the assessment after NOVA's services are complete.

NOVA's assessment represents our professional opinion, only. Therefore, NOVA cannot, under any circumstances, make a statement of warranty or guarantee, expressed or implied, that ACM are limited to those that are discovered while we are performing the Survey.

2.3 USER RELIANCE

NOVA's Pre-Demolition Asbestos Containing Material Survey, along with the findings and conclusions contained in the report, either in completed form, summary form, or by extraction, is prepared, and intended, for the sole use of Forsyth County Procurement (CLIENT) and therefore may not contain sufficient information for other purposes or parties. The CLIENT is the only intended beneficiary of this report. The contents of NOVA's report will continue to be the property of NOVA. NOVA's report may not be disclosed to, used by, or relied upon by, any person or entity other than the CLIENT without the express written consent of NOVA.

Authorization for disclosure to a third party or authorization for third-party reliance on a final report of any report will be considered by NOVA upon the written request of the CLIENT. NOVA reserves the right to deny authorization to allow disclosure or reliance of NOVA's report to third parties.

3.0 ASBESTOS CONTAINING MATERIAL

3.1 FIELD AND LABORATORY SERVICES

Curtis Moses, a NOVA professional, and federal and state certified asbestos inspector, performed the field work for the Pre-Demolition Asbestos Containing Material Survey for the Subject Property on June 23, 2020.

3.1.1 ASBESTOS CONTAINING MATERIAL SAMPLING

The building area was visually assessed by NOVA to identify suspect ACM, which were then grouped into three categories according to their intended use:

- **Surfacing Material** such as sprayed-on or troweled fireproofing, acoustical and decorative insulation, textured "popcorn" finishes, paint, stucco, etc.

- **Thermal System Insulation** (TSI), such as pipe, boiler and storage tank insulation, and insulation on ducts, pumps, heat exchangers, and other equipment.

- **Miscellaneous Material**, such as floor and ceiling tiles, wallboard, asbestos-cement board, siding and other building material that did not fall into one of the previously mentioned categories.

Where applicable, material with similar texture, color and general appearance were considered homogeneous for sampling purposes, including visually similar material on different floors. NOVA's assessment also included touching representative samples to determine friability, a mechanical classification defined as whether a material can be crumbled, pulverized, or reduced to powder by hand pressure.

Bulk samples were subsequently obtained in general accordance with the AHERA (40 CFR 763.86, Sampling) and ASTM E2356-10 procedures. The samples were placed in appropriate containers, and the containers sealed and labeled with a unique identification number. The samples were subsequently transported (following routine industry practices and chain-of-custody procedures) to EMSL Analytical, LLC (EMSL) for analysis.

The ACM samples were analyzed for asbestos using Polarized Light Microscopy (PLM) methods in accordance with EPA Method 600/R-93/116. Copies of the complete asbestos laboratory report and chain-of custody are included in Appendix B of this report.

Using the results of the laboratory analysis and NOVA's visual assessment, the asbestos containing building material can be further categorized into three groups:

- **Friable ACM** - Material means any material containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR part 763 Section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

- **Category I Nonfriable ACM** - Asbestos-containing packing, gaskets, resilient floor covering, and asphalt roofing products containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR part 763, Section 1, Polarized Light Microscopy.

- **Category II Nonfriable ACM** - Any material, excluding Category I Nonfriable ACM, containing more than one percent (1%) asbestos as determined using the methods specified in Appendix A, Subpart F, 40 CFR part 763, Section 1, Polarized Light Microscopy that, when dry, *cannot* be crumbled, pulverized, or reduced to powder by hand pressure.

During this study, one hundred sixty-six (166) samples (containing 233 total layers) of joint compound, wallboard, ceiling tile, glue material, floor tile, cove base, caulking material, grout, mortar, cement material, stucco, ceiling texture, Thermal System Insulation (TSI), leveler, roof field layers, shingles, felt, parapet flashing, roof cement, ceramic, fiber panel, mastic, wallpaper, floor sheeting, and cement panels were analyzed by NOVA using Polarized Light Microscopy (PLM) with six (6) of the analyzed samples indicating Asbestos Containing Material (ACM). A sample location plan is included in Appendix A of this Report.

Below is a summary of ACM identified at the Subject Property:

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- A total of four (4) samples of the cement panels located at the Subject Property associated with the doors and windows indicated >1% asbestos (25% Chrysotile Asbestos). Consequently, we believe all of the cement panels located at the Subject Property should be considered Asbestos Containing Material (ACM).

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A complete list of suspected ACM samples obtained is shown in the laboratory report (included in Appendix B).

Determination of the actual quantities of ACM should be made by the abatement contractor during a site inspection prior to beginning abatement.

3.2 ASBESTOS ABATEMENT

Any component, which is similar in appearance to, and is in the general vicinity or similar application of samples identified as containing asbestos, as well as any other material not shown by proper sampling and analysis to be non-asbestos containing, should be handled as asbestos-containing material (ACM). As previously noted, determination of the actual quantities of ACM at all locations should be made by the contractor during a site inspection prior to beginning abatement.

ACM should be abated (removed) prior to disturbance by maintenance, renovation and/or demolition by a licensed asbestos abatement contractor and disposed at an approved solid waste disposal facility.

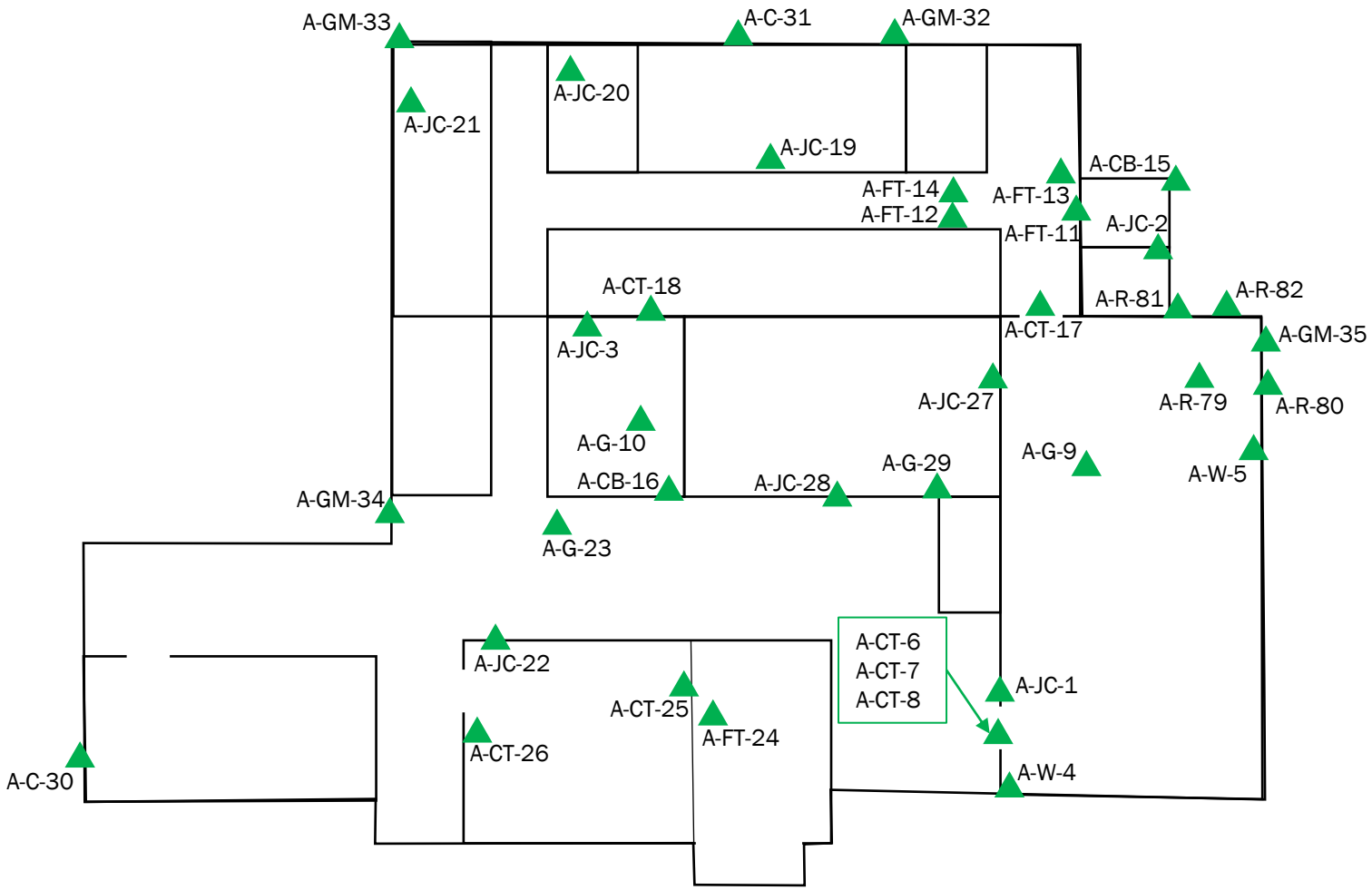
Abatement is highly regulated and consists of several parts. In addition to the demolition/renovation permit, a ten (10) day advance notification to the Georgia Environmental Protection Division (GA-EPD) is required.

During abatement, third party monitoring is recommended to review if the asbestos is adequately managed and contained during the abatement process and to document clearance and re-occupancy criteria established for the project.

Most Clients also request an abatement management report. This report compiles pertinent data regarding the personnel, abatement, and asbestos disposal for liability management after the fact should there be concerns later from workers or others. The ten (10) day notice, abatement, third party oversight, and management report are not included with the authorized scope of work for this project, but we can provide these supplemental services, if desired. Please note that the means and methods necessary for ACM abatement, as well as worker protection and monitoring, are the sole responsibility of the abatement contractor.

APPENDIX A

SAMPLE LOCATION PLANS



Asbestos Containing Material

Non-Asbestos Containing Material

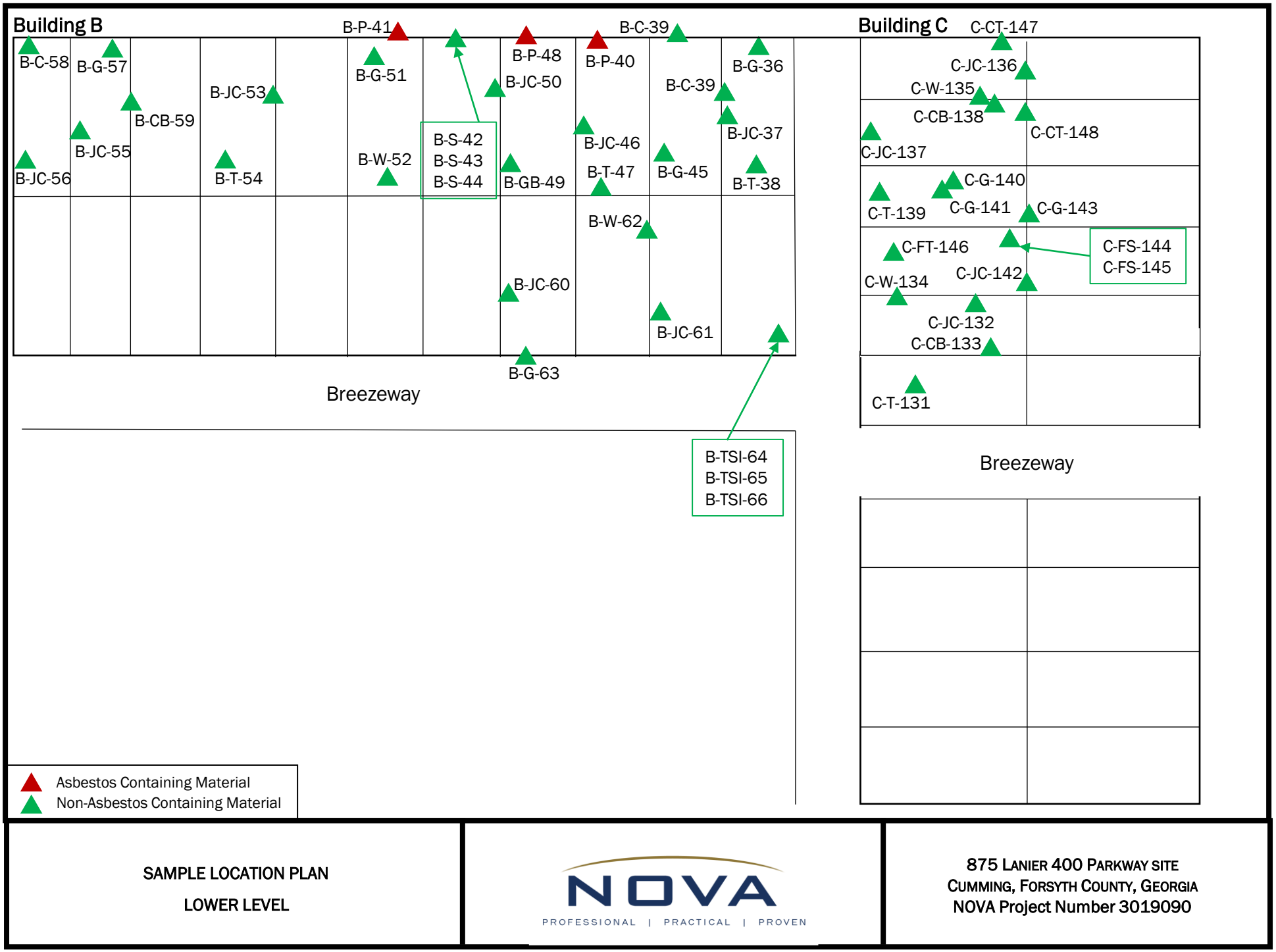
SAMPLE LOCATION PLAN

Building A

NOVA

PROFESSIONAL | PRACTICAL | PROVEN

875 LANIER 400 PARKWAY SITE
CUMMING, FORSYTH COUNTY, GEORGIA
NOVA Project Number 3019090



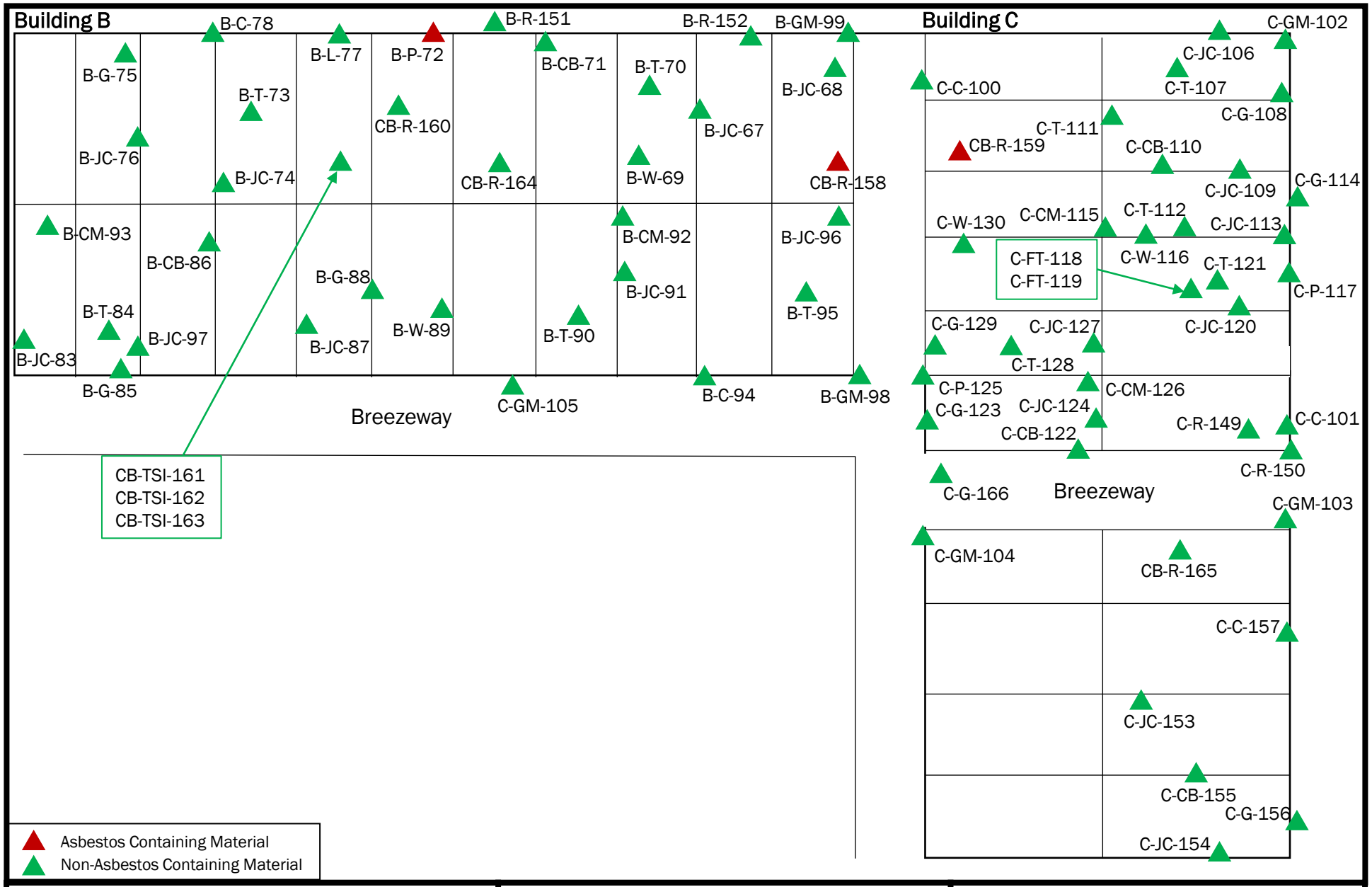
SAMPLE LOCATION PLAN

LOWER LEVEL

NOVA

PROFESSIONAL | PRACTICAL | PROVEN

875 LANIER 400 PARKWAY SITE
CUMMING, FORSYTH COUNTY, GEORGIA
NOVA Project Number 3019090



SAMPLE LOCATION PLAN

UPPER LEVEL

NOVA

PROFESSIONAL | PRACTICAL | PROVEN

875 LANIER 400 PARKWAY SITE
CUMMING, FORSYTH COUNTY, GEORGIA
NOVA Project Number 3019090

APPENDIX B

LABORATORY ANALYTICAL DATA

EMSL Analytical, Inc.

2205 Corporate Plaza Parkway SE, Suite 200 Smyrna, GA 30080

Tel/Fax: (770) 956-9150 / (770) 956-9181

http://www.EMSL.com / atlantalab@emsl.com

EMSL Order:	072004284
Customer ID:	NOVA30
Customer PO:	3020075
Project ID:	

Attention:	Curtis Moses	**Phone:**	(678) 982-5576
	Nova Engineering & Environmental, Inc.	**Fax:**	(770) 425-1113
	3900 Kennesaw 75 Parkway	**Received Date:**	06/23/2020 12:30 PM
	Suite 100	**Analysis Date:**	06/25/2020 - 06/29/2020
	Kennesaw, GA 30144	**Collected Date:**	
Project:	3020075		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
A-JC-1-Joint Compound *072004284-0001*	Joint Compound- Courtroom B	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-JC-1-Drywall *072004284-0001A*	Joint Compound- Courtroom B	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-JC-2-Joint Compound *072004284-0002*	Joint Compound- Lock Up	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-JC-2-Drywall *072004284-0002A*	Joint Compound- Lock Up	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-JC-3-Joint Compound *072004284-0003*	Joint Compound- Conference	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-JC-3-Drywall *072004284-0003A*	Joint Compound- Conference	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-W-4 *072004284-0004*	Wallboard- Courtroom B	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-W-5 *072004284-0005*	Wallboard- Courtroom B	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-CT-6 *072004284-0006*	Ceiling Texture- Above Grid- Court	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-CT-7 *072004284-0007*	Ceiling Texture- Above Grid- Court	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-CT-8 *072004284-0008*	Ceiling Texture- Above Grid- Court	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-G-9-White layer *072004284-0009*	Carpet Glue- Courtroom B	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-G-9-Yellow layer *072004284-0009A*	Carpet Glue- Courtroom B	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-G-10 *072004284-0010*	Carpet Glue- Conference	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-FT-11-Floor Tile *072004284-0011*	Dark 12x12 w/ Glue- Lock Up Halls	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-FT-11-Glue *072004284-0011A*	Dark 12x12 w/ Glue- Lock Up Halls	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 06/29/2020 14:56:42

EMSL Analytical, Inc.

2205 Corporate Plaza Parkway SE, Suite 200 Smyrna, GA 30080

Tel/Fax: (770) 956-9150 / (770) 956-9181

http://www.EMSL.com / atlantalab@emsl.com

EMSL Order:	072004284
Customer ID:	NOVA30
Customer PO:	3020075
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
A-FT-12-Floor Tile *072004284-0012*	Dark 12x12 w/ Glue-Lock Up Halls	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-FT-12-Glue *072004284-0012A*	Dark 12x12 w/ Glue-Lock Up Halls	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-FT-13-Floor Tile *072004284-0013*	Tan 12x12 w/ Glue-Lock Up Halls	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-FT-13-Glue *072004284-0013A*	Tan 12x12 w/ Glue-Lock Up Halls	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-FT-14-Floor Tile *072004284-0014*	Tan 12x12 w/ Glue-Lock Up Halls	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-FT-14-Glue *072004284-0014A*	Tan 12x12 w/ Glue-Lock Up Halls	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-CB-15-Cove Base *072004284-0015*	Covebase Glue- Lock Up	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-CB-15-Glue *072004284-0015A*	Covebase Glue- Lock Up	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-CB-16-Cove Base *072004284-0016*	Covebase Glue-Conference	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-CB-16-Glue *072004284-0016A*	Covebase Glue-Conference	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-CT-17 *072004284-0017*	Ceiling Tile 2x2- Lock Up	Gray Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
A-CT-18 *072004284-0018*	Ceiling Tile 2x2-Conference	Gray Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
A-JC-19-Joint Compound *072004284-0019*	Joint Compound-Kitchen	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-JC-19-Drywall *072004284-0019A*	Joint Compound-Kitchen	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-JC-19-Tape *072004284-0019B*	Joint Compound-Kitchen	White Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
A-JC-20-Joint Compound *072004284-0020*	Joint Compound-Front Office Hall	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-JC-20-Drywall *072004284-0020A*	Joint Compound-Front Office Hall	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-JC-21-Joint Compound *072004284-0021*	Joint Compound-Corner Office	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
A-JC-21-Tape *072004284-0021A*	Joint Compound-Corner Office	White Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
A-JC-22-Joint Compound *072004284-0022*	Joint Compound-Accounting	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-JC-22-Drywall *072004284-0022A*	Joint Compound-Accounting	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-G-23-Pad *072004284-0023*	Carpet Glue- Front Office Hall	Gray Fibrous Homogeneous	80% Synthetic	20% Non-fibrous (Other)	None Detected
A-G-23-Glue *072004284-0023A*	Carpet Glue- Front Office Hall	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-FT-24-Floor Tile *072004284-0024*	Tan 12x12-Accounting	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-FT-24-Mastic *072004284-0024A*	Tan 12x12-Accounting	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-CT-25 *072004284-0025*	2x2 Ceiling Tile-Accounting- Textured	Gray Fibrous Homogeneous	30% Min. Wool	70% Non-fibrous (Other)	None Detected
A-CT-26 *072004284-0026*	2x2 Ceiling Tile-Accounting- Textured	Gray Fibrous Homogeneous	30% Min. Wool	70% Non-fibrous (Other)	None Detected
A-JC-27 *072004284-0027*	Joint Compound-Courtroom A- Side	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-JC-28 *072004284-0028*	Joint Compound-Courtroom A- End	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-G-29 *072004284-0029*	Carpet Glue-Courtroom A	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-C-30 *072004284-0030*	Caulking- Front At Door	Brown Non-Fibrous Homogeneous	<1% Cellulose <1% Synthetic	100% Non-fibrous (Other)	None Detected
A-C-31 *072004284-0031*	Caulking- Side Frame	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-GM-32 *072004284-0032*	Grout/ Mortar- At HVAC System	Pink Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-GM-33 *072004284-0033*	Grout/ Mortar- At HVAC System	Pink Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-GM-34 *072004284-0034*	Exterior- Face	Pink Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-GM-35 *072004284-0035*	Exterior- Face	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
B-G-36 *072004284-0036*	Glue On Slab-122	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-JC-37 *072004284-0037*	Joint Compound-122	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-T-38 *072004284-0038*	Ceiling Texture- 122	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-C-39 *072004284-0039*	Frame Caulking At 122	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-P-40 *072004284-0040*	Cement Panel- Above Door	Gray Fibrous Homogeneous		75% Non-fibrous (Other)	25% Chrysotile
B-P-41 *072004284-0041*	Cement Panel- At HVAC	Gray Fibrous Homogeneous		75% Non-fibrous (Other)	25% Chrysotile
B-S-42 *072004284-0042*	Exterior Stucco/ Cement- Rear	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-S-43 *072004284-0043*	Exterior Stucco/ Cement- Walk	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-S-44 *072004284-0044*	Exterior Stucco/ Cement- Rear	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-G-45 *072004284-0045*	Carpet Glue On Slab-120	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-JC-46 *072004284-0046*	Joint Compound-118	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-T-47 *072004284-0047*	Ceiling Texture- 118	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-P-48 *072004284-0048*	Cement Panel At Door- 116	Gray Fibrous Homogeneous		75% Non-fibrous (Other)	25% Chrysotile
B-GB-49-Cove Base *072004284-0049*	Covebase Glue- 116	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-GB-49-Glue *072004284-0049A*	Covebase Glue- 116	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-JC-50 *072004284-0050*	Joint Compound- 114	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-G-51 *072004284-0051*	Glue On Slab- 112	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-W-52 *072004284-0052*	Wallboard- 112	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-JC-53 *072004284-0053*	Joint Compound- 108	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
B-T-54 *072004284-0054*	Ceiling Texture- 108	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-JC-55 *072004284-0055*	Joint Compound- 104	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-JC-56 *072004284-0056*	Joint Compound- 102	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-G-57 *072004284-0057*	Carpet Glue- 104	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-C-58 *072004284-0058*	Exterior Frame Caulking At 102	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-CB-59-Cove Base *072004284-0059*	Covebase Glue- 104	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-CB-59-Mastic *072004284-0059A*	Covebase Glue- 104	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-JC-60 *072004284-0060*	Joint Compound- 115	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-JC-61 *072004284-0061*	Joint Compound- 119	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-W-62-Joint Compound *072004284-0062*	Wallboard- 117	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-W-62-Drywall *072004284-0062A*	Wallboard- 117	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-G-63 *072004284-0063*	Carpet Glue On Slab- 115	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-TSI-64 *072004284-0064*	TSI Wrap- Mech	Various Fibrous Homogeneous	60% Cellulose 20% Glass	20% Non-fibrous (Other)	None Detected
B-TSI-65 *072004284-0065*	TSI Wrap- Mech	Various Fibrous Homogeneous	60% Cellulose 20% Glass	20% Non-fibrous (Other)	None Detected
B-TSI-66 *072004284-0066*	TSI Wrap- Mech	Various Fibrous Homogeneous	60% Cellulose 20% Glass	20% Non-fibrous (Other)	None Detected
B-JC-67 *072004284-0067*	Joint Compound- 220	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-JC-68 *072004284-0068*	Glue On Slab- 222	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-W-69 *072004284-0069*	Wallbaord- 218	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
B-T-70 *072004284-0070*	Ceiling Texture- 218	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-CB-71-Cove Base *072004284-0071*	Covebase Glue- 216	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-CB-71-Mastic *072004284-0071A*	Covebase Glue- 216	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-P-72 *072004284-0072*	Cement Panel- 212	Gray Fibrous Homogeneous		75% Non-fibrous (Other)	25% Chrysotile
B-T-73 *072004284-0073*	Ceiling Texture- 208	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-JC-74 *072004284-0074*	Joint Compound- 208	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-G-75-Glue *072004284-0075*	Carpet Glue- 204 w/ Leveler	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-G-75-Leveler *072004284-0075A*	Carpet Glue- 204 w/ Leveler	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-JC-76 *072004284-0076*	Joint Compound- 204	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-L-77 *072004284-0077*	Exterior Wall Leveler-Rear	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-C-78 *072004284-0078*	Frame Caulking- Rear	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-R-79-Shingle *072004284-0079*	Roof Core- All Layers	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
A-R-79-Felt *072004284-0079A*	Roof Core- All Layers	Black Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
A-R-80-Shingle 1 *072004284-0080*	Roof Core- All Layers	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
A-R-80-Shingle 2 *072004284-0080A*	Roof Core- All Layers	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
A-R-80-Felt *072004284-0080B*	Roof Core- All Layers	Black Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
A-R-81 *072004284-0081*	Roofing Cement- Side	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A-R-82 *072004284-0082*	Roofing Cement-Parapet (Wall)	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-JC-83 *072004284-0083*	Joint Compound- 201	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
B-T-84-Texture *072004284-0084*	Ceiling Texture- 203	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-T-84-Tape *072004284-0084A*	Ceiling Texture- 203	White Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
B-T-84-Joint Compound *072004284-0084B*	Ceiling Texture- 203	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-G-85-Glue *072004284-0085*	Glue On Slab- 203	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-G-85-Slab *072004284-0085A*	Glue On Slab- 203	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-CB-86-Cove Base *072004284-0086*	Covebase Glue- 205	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-CB-86-Mastic *072004284-0086A*	Covebase Glue- 205	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-JC-87 *072004284-0087*	Joint Compound- 209	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-G-88 *072004284-0088*	Glue On Slab- 209	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-W-89-Joint Compound *072004284-0089*	Wallboard- 211	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-W-89-Drywall *072004284-0089A*	Wallboard- 211	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-T-90 *072004284-0090*	Ceiling Texture- 215				Not Submitted
B-JC-91 *072004284-0091*	Joint Compound- 217	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-CM-92-Ceramic Tile *072004284-0092*	Ceramic/ w/ Grout/ Mortar- Restroom-217	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-CM-92-Mortar *072004284-0092A*	Ceramic/ w/ Grout/ Mortar- Restroom-217	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-CM-93-Ceramic Tile *072004284-0093*	Ceramic/ w/ Grout/ Mortar- Restroom-201	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-CM-93-Mortar *072004284-0093A*	Ceramic/ w/ Grout/ Mortar- Restroom-201	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-C-94 *072004284-0094*	Exterior Frame Caulking- 219	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-T-95 *072004284-0095*	Ceiling Texture- 221	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
B-JC-96 *072004284-0096*	Joint Compound- 221	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-JC-97 *072004284-0097*	Joint Compound- 203	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-GM-98 *072004284-0098*	Brick- Grout Mortar- Front	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
B-GM-99 *072004284-0099*	Brick- Grout Mortar- Rear	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-C-100 *072004284-0100*	Frame Caulking At Breezeway At 225	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-C-101 *072004284-0101*	Caulking At 236	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-GM-102 *072004284-0102*	Grout Mortar On Brick- Edge	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-GM-103 *072004284-0103*	Center Lot Stairwell	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-GM-104 *072004284-0104*	Walkway/ Grout/ Mortar/ Leveler	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-GM-105 *072004284-0105*	Walkway/ Grout/ Mortar/ Leveler	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-JC-106-Joint Compound *072004284-0106*	Joint Compound- 226 w/ Wallpaper	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-JC-106-Tape *072004284-0106A*	Joint Compound- 226 w/ Wallpaper	White Fibrous Homogeneous	20% Synthetic	80% Non-fibrous (Other)	None Detected
C-T-107 *072004284-0107*	Ceiling Texture- 226	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-G-108-Glue *072004284-0108*	Glue On Slab- 226	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-G-108-Slab *072004284-0108A*	Glue On Slab- 226	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-JC-109-Joint Compound *072004284-0109*	Joint Compound- 228 w/ Wallpaper	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-JC-109-Wallpaper *072004284-0109A*	Joint Compound- 228 w/ Wallpaper	White Fibrous Homogeneous	70% Synthetic	30% Non-fibrous (Other)	None Detected
C-CB-110-Cove Base *072004284-0110*	Covebase Glue- 228	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
C-CB-110-Glue *072004284-0110A*	Covebase Glue- 228	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-T-111 *072004284-0111*	Ceiling Texture- 228	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-T-112 *072004284-0112*	Ceiling Texture- 230	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
JC-113-Joint Compound *072004284-0113*	Joint Compound- 230	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
JC-113-Drywall *072004284-0113A*	Joint Compound- 230	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
JC-113-Tape *072004284-0113B*	Joint Compound- 230	White Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
C-G-114 *072004284-0114*	Glue On Slab- 230	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-CM-115-Ceramic Tile *072004284-0115*	Ceramic GM- RR.	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-CM-115-Grout *072004284-0115A*	Ceramic GM- RR.	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-W-116 *072004284-0116*	Wallbaord- 230	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-P-117 *072004284-0117*	Fiber Panel- 232	Gray Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
C-FT-118-Floor Tile *072004284-0118*	FT 12x12 w/ Glue-232	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-FT-118-Mastic *072004284-0118A*	FT 12x12 w/ Glue-232	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-FT-119-Floor Tile *072004284-0119*	FT 12x12 w/ Glue-232	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-FT-119-Mastic *072004284-0119A*	FT 12x12 w/ Glue-232	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-JC-120 *072004284-0120*	Joint Compound- 232	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-T-121 *072004284-0121*	Ceiling Texture- 232	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-CB-122-Cove Base *072004284-0122*	Covebase Glue- 235	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-CB-122-Glue *072004284-0122A*	Covebase Glue- 235	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 06/29/2020 14:56:42

EMSL Analytical, Inc.

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http://www.EMSL.com / atlantalab@emsl.com

EMSL Order:	072004284
Customer ID:	NOVA30
Customer PO:	3020075
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
C-G-123 *072004284-0123*	Glue On Slab- 235	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-JC-124-Joint Compound *072004284-0124*	Joint Compound w/ Wallpaper- 235	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-JC-124-Wallpaper *072004284-0124A*	Joint Compound w/ Wallpaper- 235	White Fibrous Homogeneous	60% Synthetic	40% Non-fibrous (Other)	None Detected
C-P-125 *072004284-0125*	Fiberboard- 235	Gray Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
C-CM-126-Ceramic Tile *072004284-0126*	Ceramic w/ Grout/ Mortar- 235	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-CM-126-Mastic *072004284-0126A*	Ceramic w/ Grout/ Mortar- 235	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-JC-127-Joint Compound *072004284-0127*	Joint Compound- 233	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-JC-127-Wallpaper *072004284-0127A*	Joint Compound- 233	Gray Fibrous Homogeneous	60% Synthetic	40% Non-fibrous (Other)	None Detected
C-T-128 *072004284-0128*	Ceiling Texture- 233	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-G-129-Glue *072004284-0129*	Glue On Slab w/ Leveler- 233	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-G-129-Leveler *072004284-0129A*	Glue On Slab w/ Leveler- 233	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-W-130 *072004284-0130*	Wallboard- 233	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-T-131 *072004284-0131*	Ceiling Texture- 135	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-JC-132-Cove Base *072004284-0132*	Joint Compound- 133	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-JC-132-Glue *072004284-0132A*	Joint Compound- 133	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-CB-133-Cove Base *072004284-0133*	Covebase Glue- 133	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-CB-133-Glue *072004284-0133A*	Covebase Glue- 133	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-CB-133-Joint Compound *072004284-0133B*	Covebase Glue- 133	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
C-W-134 *072004284-0134*	Wallboard- 133	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-W-135 *072004284-0135*	Wallboard- 125	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-JC-136 *072004284-0136*	Joint Compound- 125	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-JC-137 *072004284-0137*	Joint Compound- 127	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-CB-138-Cove Base *072004284-0138*	Covebase Glue- 127	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-CB-138-Glue *072004284-0138A*	Covebase Glue- 127	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-T-139 *072004284-0139*	Ceiling Texture- 129	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-G-140-Vinyl Floor Tile *072004284-0140*	Glue On Slab w/ 12x12 Self Stick- 129	Various Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-G-140-Mastic *072004284-0140A*	Glue On Slab w/ 12x12 Self Stick- 129	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-G-141 *072004284-0141* *Result includes a small amount of inseparable attached material*	Glue On Slab w/ 12x12 Self Stick- 127	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-JC-142-Joint Compound *072004284-0142*	Joint Compound- 131	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-JC-142-Wallpaper *072004284-0142A*	Joint Compound- 131	White Fibrous Homogeneous	70% Synthetic	30% Non-fibrous (Other)	None Detected
C-G-143-Vinyl Floor Tile *072004284-0143*	12x12 Self Stick- 129	Various Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-G-143-Adhesive *072004284-0143A*	12x12 Self Stick- 129	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-FS-144-Floor Tile *072004284-0144*	Pink Floor Sheeting Over Glue/ Tile Grout- 131	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-FS-144-Mastic *072004284-0144A*	Pink Floor Sheeting Over Glue/ Tile Grout- 131	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-FS-144-Vinyl Sheet Flooring *072004284-0144B*	Pink Floor Sheeting Over Glue/ Tile Grout- 131	Various Fibrous Homogeneous	25% Cellulose	75% Non-fibrous (Other)	None Detected
C-FS-144-Mastic *072004284-0144C*	Pink Floor Sheeting Over Glue/ Tile Grout- 131	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
C-FS-145-Sheet Flooring *072004284-0145*	Pink Floor Sheeting Over Glue- End- 131	Various Fibrous Homogeneous	25% Cellulose	75% Non-fibrous (Other)	None Detected
C-FS-145-Mastic *072004284-0145A*	Pink Floor Sheeting Over Glue- End- 131	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-FT-146-Floor Tile *072004284-0146*	12x12 Gray w/ Glue (Same As Tile Above)- 131	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-FT-146-Mastic *072004284-0146A*	12x12 Gray w/ Glue (Same As Tile Above)- 131	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-CT-147 *072004284-0147*	Ceiling Tile- 125 Restroom	Various Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
C-CT-148 *072004284-0148*	Ceiling Tile- 127 Restroom	Various Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
C-R-149-Shingle *072004284-0149*	Roof Core- Rear	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
C-R-149-Felt *072004284-0149A*	Roof Core- Rear	Black Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
C-R-150-Shingle *072004284-0150*	Roof Core- Side/ Rear	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
C-R-150-Felt *072004284-0150A*	Roof Core- Side/ Rear	Black Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
B-R-151-Shingle *072004284-0151*	Roof Core- Rear	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
B-R-151-Felt *072004284-0151A*	Roof Core- Rear	Black Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
B-R-152-Shingle *072004284-0152*	Roof Core- Rear	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
B-R-152-Felt *072004284-0152A*	Roof Core- Rear	Black Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
C-JC-153 *072004284-0153*	Joint Compound- 242	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-JC-154 *072004284-0154*	Joint Compound- 244	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-CB-155 *072004284-0155*	Covebase Glue- 244	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-G-156-Cove Base *072004284-0156*	Glue On Slab- 244	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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Customer ID:	NOVA30
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Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
C-G-156-Glue *072004284-0156A*	Glue On Slab- 244	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
C-C-157 *072004284-0157*	Caulking- Exterior Frame At 240	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
CB-R-158 *072004284-0158*	Cement At Roof Vent-Center	Black Non-Fibrous Homogeneous		92% Non-fibrous (Other)	8% Chrysotile
CB-R-159 *072004284-0159*	Cement At Roof Vent-Center	Black Non-Fibrous Homogeneous		92% Non-fibrous (Other)	8% Chrysotile
CB-R-160-Shingle *072004284-0160*	Cement At Roof Vent-Additional- Rear	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
CB-R-160-Mastic *072004284-0160A*	Cement At Roof Vent-Additional- Rear	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
CB-TSI-161 *072004284-0161*	TSI Tape On Duct Joints CB Buildings Attic	Various Fibrous Homogeneous	60% Synthetic	40% Non-fibrous (Other)	None Detected
CB-TSI-162 *072004284-0162*	TSI Tape On Duct Joints CB Buildings Attic	Various Fibrous Homogeneous	60% Synthetic	40% Non-fibrous (Other)	None Detected
CB-TSI-163 *072004284-0163*	TSI Tape On Duct Joints CB Buildings Attic	Various Fibrous Homogeneous	60% Synthetic	40% Non-fibrous (Other)	None Detected
CB-R-164-Shingle 1 *072004284-0164*	Shingles w/ Felt-Center Roof In Attic Debris	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
CB-R-164-Shingle 2 *072004284-0164A*	Shingles w/ Felt-Center Roof In Attic Debris	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
CB-R-164-Felt *072004284-0164B*	Shingles w/ Felt-Center Roof In Attic Debris	Black Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
CB-R-165-Shingle 1 *072004284-0165*	Shingles w/ Felt-Front Roof In Attic Debris	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
CB-R-165-Shingle 2 *072004284-0165A*	Shingles w/ Felt-Front Roof In Attic Debris	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
CB-R-165-Felt *072004284-0165B*	Shingles w/ Felt-Front Roof In Attic Debris	Black Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
C-G-166 *072004284-0166*	Glue On Slab Breezeway	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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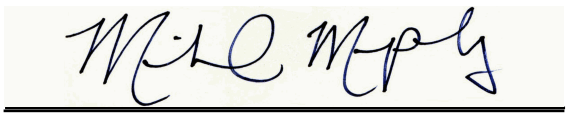
EMSL Order:	072004284
Customer ID:	NOVA30
Customer PO:	3020075
Project ID:	

Analyst(s)

Anthony Sanaie (165)

Kyle Rich (54)

Violedah Richardson (14)



Michael Murphy
or Other Approved Signatory

Initial report from: 06/29/2020 14:56:42

OrderID: 072004284

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(lab use only)*: 072004284

PHONE:
FAX:

Company Name : NOVA		**EMSL Customer ID:** NOVA30	
Street: 3900 Kennesaw 75 Pkwy	**City:** Kennesaw	**State or Province:** GA	
Zip/Postal Code: 30144	**Country:**	**Telephone #:** —	**Fax #:** —
Report To (Name): CM - ND		**Please Provide Results via:** ☐ Fax (X) Email	
email Address: CM - ND		**Purchase Order Number:**	
Client Project ID: 3020075		**EMSL Project ID** *(internal use only)*:	
State or Province Collected: GA		**CT only** ☐ **Commercial/Taxable** ☐ **Residential/Tax Exempt**	

EMSL-Bill to: ☐ Same ☐ Different - *If bill to is different note instructions in comment. Third party billing requires written authorization from third party*

Turnaround Time (TAT) Options Please Check

☐ 3 Hr[1]	☐ 4-4.5Hr[1] AHERA Only	☐ 6 Hr[1]	☐ 24 Hr	☐ 32 Hr[2]	☐ 48 Hr	☐ 72 Hr	☐ 96 Hr	(X) 1 Week	☐ 2 Week

[1]*Premium Service Charge applies for 3 Hour TEM AHERA or EPA Level II TAT – you will be asked to sign an authonzation form. TEM Air 3-6 Hour, please call ahead to schedule*
[2] *32 Hour TAT available for select tests only, samples must be submitted by 11:30 am.*

PCM - Air
- ☐ NIOSH 7400
- ☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
- (X) PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)

Point Count
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

Point Count w/Gravimetric
- ☐ 400 (<0 25%) ☐ 1000 (<0 1%)
- ☐ NYS 198.1 (friable - NY)
- ☐ NYS 198 6 NOB (non-friable-NY)
- ☐ NYS 198.8 SOF-V
- ☐ NIOSH 9002 (<1%)

TEM – Air[1]
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (non-friable-NY)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)*

TEM – Water: EPA 100 2
- Fibers >10µm ☐ Waste ☐ Drinking
- All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Settled Dust
- ☐ Microvac - ASTM D 5755
- ☐ Wipe - ASTM D6480
- ☐ Carpet Sonication (EPA 600/J-93/167)

Soil – Rock – Vermiculite (reporting limit)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0 1%)*
- ☐ TEM Qualitative via Filtration Prep
- ☐ TEM Qualitative via Drop Mount Prep
- ☐ Cincinnati Method EPA 600/R-04/004 – PLM/TEM

**Lower reporting limits avaialble on request*

Other test (please specify):

☐ **Stop At First Positive** *(clearly identify homogenous areas below)*

Filter Pore Size (Air Samples): ☐ 0.8µm ☐ 0.45µm

Sampler's Name: C.M. **Sampler's Signature:**

Sample #	Sample Description/Location	Volume, Area or Homogenous Area	Date/Time Sampled
	See Attached		

Client Sample # (s): 1 - 166 **Total # of Samples:** 166

Relinquished by (Client): **Date:** 6-23-2020 **Time:** 1230

Received by (Lab): SP **Date:** 6/23/2020 **Time:** 12:30

Comments/Special Instructions:

1 of 9

OrderID: 072004284

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*:

PHONE:
FAX:

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
A-JC-1	Joint Compound - Courtroom B		
A-JC-2	↓ - Lock up		
A-JC-3	↓ - Conference		
A-W-4	Wallboard - Courtroom B		
A-W-5	↓		
A-CT-6	Ceiling Tile - above Grid - Court		
A-CT-7	Texture ↓		
A-CT-8	↓		
A-G-9	Carpet Glue - Courtroom B		
A-G-10	↓ - Conference		
A-FT-11	Rock 12x12 w/Glue - Lock up Halls		
A-FT-12	↓	↓	
A-FT-13	Tan ↓	↓	
A-FT-14	↓	↓	
A-CB-15	Coveb ase Glue - Lock up		
A-CB-16	↓ - Conference		
A-CT-17	Ceiling Tile 2x2 - Lock up		
A-CT-18	↓ ↓ Conference		
A-JC-19	Joint Compound - Kitchen		
A-JC-20	- Front office Hall		
A-JC-21	- Corner office		
A-JC-22	↓ - Accounting		
A-G-23	Carpet Glue - Front office Hall		

*Comments/Special Instructions:

Sample Instructions

OrderID: 072004284

EMSL ANALYTICAL, INC.
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Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only).*

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Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
A-FT-24	Tan 12x12 - Accounting		
A-CT-25	12x2 Ceiling Tile - Accounting - Textured		
A-CT-26	↓ ↓	↓	
A-JC-27	Joint Compound - Courtroom A-Side		
A-JC-28	↓ - ↓ A-End		
A-G-29	Carpet Glue - Courtroom A		
A-C-30	Caulking - Front at door		
A-C-31	↓ - Side Frame		
A-GM-32	Grout/mortar - at HVAC System		
A-GM-33	↓ - ↓		
A-GM-34	Exterior - Face		
A-GM-35	↓ ↓		
B-G-36	Glue on Slab - 122		
B-JC-37	Joint Compound - 122		
B-T-38	Ceiling Texture - 122		
B-C-39	Frame Caulking at 122		
B-P-40	Cement panel - above door		
B-P-41	↓ at HVAC		
B-S-42	Exterior Stucco/Cement - Rear		
B-S-43	↓ - Walk		
B-S-44	↓ - Rear		
B-G-45	Carpet Glue on Slab - 120		
B-JC-46	Joint Compound - 118		

*Comments/Special Instructions:

Sample Instructions

EMSL ANALYTICAL, INC.
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ACM
~~LEAD (Pb)~~ CHAIN OF CUSTODY
EMSL ORDER ID *(Lab Use Only)*:

PHONE: ( )
FAX. ( )

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Location	Volume/Area	Date/Time Sampled
B-T-47	Ceiling Texture-118		
B-P-48	Cement panel at door - 116		
B-CB-49	Cove base Glue -116		
B-JC-50	Joint Compound - 114		
B-G-51	Glue on Slab - -112		
B-W-52	Wallboard -112		
B-JC-53	Joint Compound -108		
B-T-54	Ceiling Texture -108		
B-JC-55	Joint Compound - 104		
B-JC-56	↓ -102		
B-G-57	Carpet Glue - 104		
B-C-58	Exterior Frame Caulking at	102	
B-CB-59	Cove base Glue -104		
B-JC-60	Joint Compound -	115	
B-JC-61	↓ -	119	
B-W-62	Wallboard	117	
B-G-63	Carpet Glue on slab	115	
B-TSI-64	TSI Wrap - mech		

Comments/Special Instructions

Page 4 of 9 pages

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ACM
~~LEAD (Pb)~~ **CHAIN OF CUSTODY**
EMSL ORDER ID *(Lab Use Only):*

PHONE: ( )
FAX ( )

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Location	Volume/Area	Date/Time Sampled
B-TSJ-65	TSJ wrap - mech.		
B-TSJ-66	↓ ↓		
B-JC-67	Joint Compound 220		
B-JC-68	Glue on slab -222		
B-WB-69	wall board -218		
B-T-70	Ceiling Text. -218		
B-CB-71	Corebase Glue -216		
B-P-72	Cement panel -212		
B-T-73	Ceiling Texture -208		
B-JC-74	Joint Compound -208		
B-G-75	Carpet Glue -204	W/leveler	
B-JC-76	Joint Compound -204		
B-L-77	Exterior walk leveler	-Rear	
B-C-78	Frame Caulking	-Rear	
A-R-79	Roof Core - all layers		
A-R-80	↓		
A-R-81	Roofing Cement - Side		
A-R-82	↓ parapet	(wall)	

Comments/Special Instructions:

Page 5 of 9 pages

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LABORATORY•PRODUCTS•TRAINING

~~LEAD (Pb)~~ ACM CHAIN OF CUSTODY

EMSL ORDER ID *(Lab Use Only)*:

PHONE: ( )
FAX: ( )

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Location	Volume/Area	Date/Time Sampled
B-JC-83	Joint Compound - 201		
B-T-84	Ceiling Texture - 203		
B-G-85	Glue on Slab - ~~205~~ 203		
B-CB-86	Covebase Glue - 205		
B-JC-87	Joint Compound - 209		
B-G-88	Glue on slab - 209		
B-W-89	Wallboard - 211		
B-T-90	Ceiling Texture - 215		
B-JC-91	Joint Compound - 217		
B-CM-92	↑ ↑ ↑	↑ - 217	
B-CM-93	Ceramic/w/Grout/Mortar - Restroom - 201		
B-C-94	Exterior Frame Caulking - 219		
B-T-95	Ceiling Texture - 221		
B-JC-96	Joint Compound - 221		
B-JC-97	↓ 223		
B-GM-98	Brick - Grout Mortar - Front		
B-GM-99	↓ - Rear		
B-C-100	Frame Caulking at Breezeway at 225		

Comments/Special Instructions:

Page 6 of 9 pages

ACM

Mold Chain of Custody

EMSL Order Number (*Lab Use Only*):

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX:(856) 786-0262

Additional pages of the chain of custody are only necessary if needed for additional sample information.

Sample #	Sample Location/Description	Sample Type	Potable/ NonPotable (Only for Waters)	Test Code	Volume/ Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
C-C-101	Cavity Wall 236		☐P ☐NP				
C-GM-102	Gray Mortar on brick Edge		☐P ☐NP				
C-GM-103	Center Lot Stairwell		☐P ☐NP				
C-GM-104	Walkway Grout/mortar	Leveler	☐P ☐NP	Stairs			
C-GM-105	↓ ↓	↓	☐P ☐NP	mic			
C-JC-106	Joint Comp-226	w/wallpaper	☐P ☐NP				
C-T-107	Ceiling Texture-226		☐P ☐NP				
C-G-108	Glue on Slab-226		☐P ☐NP				
C-JC-109	Joint Compound-228	w/ wallpaper	☐P ☐NP				
C-CB-110	Covebase Glue-228		☐P ☐NP				
C-T-111	Ceiling Text. 228		☐P ☐NP				
C-T-112	& -230		☐P ☐NP				
C-JC-113	Joint Compound-230		☐P ☐NP				
C-G-114	Glue on Slab-230		☐P ☐NP				
C-CM-115	Ceramic GM-RR	230	☐P ☐NP				
C-W-116	Wallboard-230		☐P ☐NP				
C-P-117	Fiber Cement Panel -	232	☐P ☐NP				
C-FT-118	FT 12x12 w/Glue -	232	☐P ☐NP				
C-FT-119	↓	232	☐P ☐NP				
C-JC-120	Joint Compound-232		☐P ☐NP				
C-T-121	Ceiling Texture-232		☐P ☐NP				
C-CB-122	Covebase Glue-235		☐P ☐NP				
C-G-123	Glue on Slab-235		☐P ☐NP				

Comments/Special Instructions:

OrderID: 072004284

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

ACM
~~Radon Testing~~ **Chain of Custody**

EMSL Order Number (*Lab Use Only*):

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 858-1580

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Box Number	Device Number	Location	Exposure Period Beginning Date and Time	Exposure Period Ending Date and Time	Temperature	Humidity %
C-JC-124		235	Joint Compound	w/wallpaper		
C-P-125		235	Fiberboard			
C-CM-126		235	Ceramic w/Grout/Mortar			
C-JC-127		233	Joint Compound			
C-T-128		233	Ceiling Texture			
C-G-129		233	Glue on slab	w/Leveler		
C-W-130		233	Wallboard			
C-T-131		135	Ceiling Texture			
C-JC-132		133	Joint Compound			
C-CB-133		133	Covebase Glue			
C-W-134		133	Wallboard			
C-W-135		125	↓			
C-JC-136		125	Joint Compound			
C-JC-137		127	↓			
C-CB-138		127	Covebase Glue			
C-T-139		129	Ceiling Texture			
C-G-140		129	Glue on slab	w/12x12 self stick		
C-G-141		127	↓	~~w/12x12 self stick~~		
C-JC-142		131	Joint Compound			
C-G-143		129	12x12 self stick			
C-FS-144		131	Pink Floorsheeting	over Glue/Tile	Grey	
C-FS-145		131	↓	over Glue - End		
C-FT-146		131	12x12 Grey w/Glue	Same as Tileboard		

***Comments/Special Instructions:**

OrderID: 072004284

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*:

EMSL ANALYTICAL, INC
2205 CORPORATE PLAZA PKWY
SMYRNA, GA 30080
PHONE: 770-956-9150
FAX.

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
C-CT-147	Ceiling Tile - 125 Restroom	2x2	
C-CT-148	↓ - 127 Restroom	↓	
C-R-149	Roof Core - Rear		
C-R-150	↓ - Side/Rear		
CB-R-151	↓ - Rear		
CB-R-152	↓ - Rear		
C-JC-153	Joint Compound - 242		
C-JC-154	↓ 244		
C-CB-155	Coveb base Glue - 244		
C-G-156	Glue on Slab - 244		
C-C-157	Ceiling - Exterior Frame	at 240	
CB-R-158	Cement at roof vent - Center		
CB-R-159	↓ - ↓		
CB-R-160	Cement at roof vent - additional - Rear		
CB-TSI-161	TSI Tape on duct Joints CB	Buildings	Attic
CB-TSI-162	↓ ↓	↓	↓
CB-TSI-163	↓ ↓	↓	↓
CB-R-164	Shingles w/Felt - Center roof	in Attic	debris
CB-R-165	↓ Front ↓	↓	
C-G-166	Glue on Slab Breezeway		

***Comments/Special Instructions:**

APPENDIX C

PERSONNEL QUALIFICATIONS

NICKOLAUS DASANTOS
Environmental Business Unit Manager

PROFESSIONAL EXPERIENCE

Mr. DaSantos is a Manager with NOVA's Environmental Group in Kennesaw, Georgia. Mr. DaSantos has experience as an environmental consultant performing all aspects of Phase I and Phase II Environmental Site Assessments (ESAs), Risk Hazard Assessments (RHAs), National Environmental Policy Act (NEPA) Assessments, Georgia Environmental Policy Act (GEPA) Assessments, Prospective Purchaser Corrective Action Plans (PPCAPs), Hazardous Site Response Act (HSRA) Notifications, Brownfield Applications, Compliance Status Reports (CSRs), Oversight for the assessment, excavation, removal and remediation of Underground Storage Tanks (USTs), and the installation of soil borings/groundwater monitoring wells, surface and groundwater sampling, soil sampling, multi-incremental soil sampling, stockpile soil sampling, Toxicity Characteristic Leaching Procedure (TCLP) sampling, Mold Assessments, Radon Assessments, Radon Mitigation Design, Radon Mitigation Installation Oversight, biocell construction/remediation, and Vapor Intrusion Assessments, Vapor Intrusion Mitigation (VIMS) Design, Vapor Intrusion Mitigation System Installation Oversight.

Mr. DaSantos is experienced in performing pre-renovation/pre-demolition asbestos inspections, lead based paint inspections, mold inspections, as well as large asbestos, lead based paint, and hazardous materials abatement oversight projects.

Mr. DaSantos is also experienced in assessment and remediation of hazardous waste sites impacted by chlorinated solvents, petroleum hydrocarbons, and other chemical substances released into the environment. Mr. DaSantos has knowledge of state and federal environmental programs and government regulations, including RCRA, HSRA, CERCLA, UST/LUST, AHERA, ASHARA, and OSHA.

Education:

BS, Natural Science, with emphasis in Geology, University of Alaska at Anchorage 2011
BA, Philosophy, University of Georgia 2000
Certificate of Environmental Ethics, University of Georgia, 2000

REPRESENTATIVE PROJECT EXPERIENCE

Municipal/Government

Asbestos Inspection, Alaska Department of Natural Resources, Healy, AK

Asbestos Inspection, Federal Courthouse Building, Rome, GA

Phase I ESA, GEPA Assessment, Cherokee County Sheriff's Facility, Canton, GA

Lead Inspection, Canton, GA

Quarterly Groundwater Monitoring, Well Closure, Municipal Fueling Facility, Canton, GA

Monitoring Well Closure, Canton, GA

Mold Inspections and Mold Air Sampling, Multiple Fire Stations and Police Stations, Cherokee County, GA

Asbestos Inspection, Lead Based Paint Inspection, Asbestos Abatement Oversight, Lead Based Paint Abatement Oversight, UST Closure, City of Newnan, GA

Phase I ESA, Phase II ESA, multiple Fire and Police Department facilities, Clayton County, GA

GEPA and Phase I ESA, Police Department Training Facility, Canton, GA

Asbestos Inspection, Asbestos Abatement Oversight, Hazardous Building Material Inventory, Centers for Disease Control (CDC), Atlanta, GA

Phase I ESA, Former Public Library, Homer, AK

Certifications / Registrations:

U.S. EPA Lead Inspector
Certification No. 1892
Certified Niton XRF Operator
AHERA (Asbestos) Building Inspector/Asbestos in Buildings: Management Plan (Management Planner)
Certificate No. 17447
Asbestos Abatement Designer
Certificate No. 4396
Control of Respirable Crystalline Silica Dust
40 hour HAZWOPER Training

REPRESENTATIVE PROJECT EXPERIENCE

Education

Asbestos Inspection, Lead Based Paint Inspection, Hazardous Materials Survey, Phase I ESA, Agnes Scott College, Atlanta, GA

Asbestos Inspections, Asbestos Management Planning, Lead Inspections, RHAs, Mold Inspections, City Schools of Decatur, Decatur, GA

Asbestos Inspection, Asbestos Abatement Design Specifications, Asbestos Abatement Oversight, Lead Based Paint Inspection, Polychlorinated Biphenyl Inspection, Hazardous Materials Remediation Oversight, Kennesaw State University, Kennesaw, GA

Asbestos Inspection, Asbestos Abatement Design Specifications, Lead Based Paint Inspection, Hazardous Materials Survey, Phase I ESA, Spelman College, Atlanta, GA

Asbestos and Lead Based Paint Inspection, Fairmount Elementary School, Fairmount, GA

Lead Inspection, North Springs High School, Sandy Springs, GA

Georgia Environmental Policy Act (GEPA) Assessment and Phase I ESA, Technical College System of Georgia, Edison, GA

Risk Hazard Assessment, Kipp Strive Academy, Atlanta, GA

UST Remediation Specifications, Georgia State University, Atlanta, GA

Asbestos Inspection, Lead Based Paint Inspection, West Georgia College, Carrollton, GA

AHERA 3-Year Re-Inspection, St. Mary's Catholic School, Rome, GA

Phase I and II ESA, Soil Sampling, UST Removal, Georgia Environmental Policy Act Assessment, Chattahoochee Technical College, Woodstock, GA

Asbestos and Radon Survey, Abatement Specifications, Lovett School, Atlanta, GA

Electromagnetic Frequency (EMF) Study and High Voltage Electric Transmission Line Risk Assessment Study, DeKalb County Schools, DeKalb, GA

Phase I ESA and RHA, Atlanta Public Schools, Atlanta, GA

Phase I ESAs, RHAs, DeKalb County Schools System, DeKalb County, GA

Soil Sampling, Georgia Gwinnett College, Lawrenceville, GA

Soil Sampling, Kipp Ways Academy, Atlanta, GA

AHERA 3-Year Re-Inspection, St. Catherine of Sienna Catholic School, Kennesaw, GA

AHERA 3-Year Re-Inspection, St. Joseph Catholic School, Marietta, GA

AHERA 3-Year Re-Inspection, Our Lady of Mercy Catholic High School, Fayetteville, GA

Asbestos Abatement Oversight, St. Pius X Catholic High School, Atlanta, GA

AHERA 3-Year Re-Inspection, St. Peter Claver Catholic School, Decatur, GA

GEPA and Phase I ESA, Gordon County Career Academy, Calhoun, GA

REPRESENTATIVE PROJECT EXPERIENCE

Residential

Prospective Purchaser Corrective Action Plans, Brownfield Applications, Compliance Status Reports, HSRA Notifications, Water Usage Surveys, Multiple Sites, Atlanta, GA

Radon Mitigation Design
Multiple Locations,
Atlanta, GA

Radon Mitigation Design
33 Level Residential Tower,
Atlanta, GA

Vapor Intrusion Surveys (Pre- and Post-Construction), Multiple Sites, Atlanta, GA

Radon Assessment
Apartment Complex
Hampton, GA

Radon Surveys, Multiple Locations, AK, GA, NC and SC

Oversight for the assessment, excavation, removal and remediation of Underground Storage Tanks (USTs) multiple sites throughout GA, NC, and AK

Decommissioning of Heating Oil USTs, Anchorage, AK

Phase I ESA, Hazardous Building Material Inventory, TCLP Sampling, Anchorage, AK

UST Contaminated Soil Excavation, Talkeetna, AK

Asbestos and Lead Based Paint Inspection, Phase I ESA, Farm, Trapper Creek, AK

Groundwater Monitoring, Trapper Creek, AK

Asbestos Inspection, Slocomb, AL

Multiple Phase I ESAs, Greenspace, Athens, GA

Asbestos Inspection, Lead Based Paint Inspection, Phase I ESA, Multiple Sites, AL, AK, GA, NC, SC, FL, TN

Retail

Phase I ESA, Strip Mall, Eagle River, AK

Decommissioning of USTs & Lead Soil Screening, Service Station, Anchorage, AK

Ponce City Market
Radon Assessment,
Atlanta, GA

Radon Mitigation Design
23 Level Tower, Mixed-Use/Retail,
Atlanta, GA

Office

Asbestos and Lead Based Paint Inspection, Big Brothers and Big Sisters Atlanta Office Building, Atlanta, GA

Asbestos and Lead Based Paint Inspection, Hazardous Building Materials Inventory, 22-Level High Rise Office Building, Peachtree Road, Atlanta, GA

Lead Based Paint Inspection, 52-Level High Rise Office Building, Atlanta, GA

Radon Mitigation Design
Multiple Locations,
Atlanta, GA

REPRESENTATIVE PROJECT EXPERIENCE

Recreational

Asbestos Operations and Maintenance Plan, City Hall East/Ponce City Market, Atlanta, GA

Soils Assessment, National College Football Hall of Fame, Atlanta, GA

Lead Based Paint Sampling, Delta Heritage Museum, Atlanta, GA

Aviation

Groundwater Monitoring, Airstrip, Nikiski, AK

Manufacturing/Industrial

Asbestos and Polychlorinated Biphenyl (PCB) Inspection, GE Manufacturing Facility, Murfreesboro, TN

Asbestos, Lead Based Paint, Hazardous Materials Survey, Siemens Facility, Atlanta, GA

Asbestos Inspection, Beverage Can Manufacturing Facility, Forest Park, GA

Asbestos Dust Wipe Sampling, Brake Manufacturing Facility, Cartersville, GA

Asbestos and Lead Based Paint Inspection, Train Depot, Blue Ridge, GA

Asbestos and Lead Based Paint Inspection, Phase I ESA, Phase II ESA, Groundwater and Soil Sampling, Former Cotton Mill, Jackson, GA

Multi-Family/Mixed Use

Asbestos and Lead Based Paint Inspections, Phase I ESAs, Multiple Office/Retail Facilities, Anchorage, AK

Radon Assessment Multiple Office/Retail Facilities, Atlanta, GA

CURTIS MOSES
Staff Professional

PROFESSIONAL EXPERIENCE

Mr. Moses is a Staff Professional with NOVA's Environmental Group. Mr. Moses has experience as an environmental professional providing various aspects of environmental consultation. His experience includes performing pre-renovation/pre-demolition asbestos inspections, lead based paint inspections, lead risk assessments, indoor air quality studies, microbial assessments, Phase I Site Assessments as well as large-scale asbestos and lead abatement oversight. He has worked in this industry since 2006.

Certifications / Registrations:

NIOSH 582, Certificate No. 2260
AHERA (Asbestos) Building Inspector, Certificate No.17943
South Carolina (Asbestos) No. BI-00805
North Carolina (Asbestos) No. 12831
Alabama (Asbestos) No. AIN0516610139
West Virginia (Asbestos) No. AI008032
U.S. EPA Lead Risk Assessor Certificate No. 1914
GA EPD Lead Risk Assessor Certificate No. 70RA00715
U.S. EPA Lead Inspector, Certificate No. 1876
GA EPD Lead Inspector, Certificate No. 60INS00215
Control of Respirable Crystalline Silica Dust Training
40 Hr. HAZWOPER, Certificate No. 2749407
8 Hr. HAZWOPER Certificate No. 1608045175860
Radiation Safety and Operation, Certificate No. RS0038000001TmpqA
Geo-Seal Certified Inspector 472018

REPRESENTATIVE PROJECT EXPERIENCE

Education

Asbestos Inspection, Agnes Scott College Dormitory, Atlanta, GA

AHERA 3-Year Re-Inspection, Asbestos Inspection, Abatement Oversight, Pace Academy, Atlanta, GA

AHERA 3-Year Re-Inspection, City of Atlanta Schools

AHERA 3-Year Re-Inspection, Abatement Oversight, Clearance Monitoring, Darlington School, Rome, GA

TEM Clearance Testing, Abatement Oversight, Marist School, Atlanta, GA

Asbestos Inspection, Gwinnett County Schools, Norcross, GA

Asbestos Inspection and Clearance Monitoring, University of Georgia, Athens, GA

Asbestos Inspection, Abatement Oversight, Newnan Hospital Redevelopment, Newnan, GA

AHERA 3-Year Re-Inspection Christ the King Catholic School, Atlanta, GA

AHERA 3-Year Re-Inspection Immaculate Heart of Mary Catholic School, Atlanta, GA

AHERA 3-Year Re-Inspection St. Jude the Apostle Catholic School, Atlanta, GA

AHERA 3-Year Re-Inspection St. John the Evangelist Catholic School, Hapeville, GA

AHERA 3-Year Re-Inspection, Operations and Maintenance Assessment, and Hazardous Building Materials Survey, Marist School, Atlanta, GA

TEM Clearance Testing, Asbestos Sampling, University of North Carolina at Charlotte

Asbestos Inspection International Community School

Asbestos Inspection, Whitfield County Schools, Dalton, GA

Asbestos Abatement Oversight and Clearance Sampling, Whitfield County Schools, Dalton, GA

Lead Inspection, Agnes Scott College – Rebekah Hall, Atlanta, GA

Asbestos Inspection, Lead Inspection, CY Grant Gymnasium, North Georgia Technical College, Clarksville, GA

Microbial Assessment, Maxwell Road, Alpharetta, GA

Asbestos Inspection, Our Lady of the Assumption Catholic School, Atlanta, GA

Asbestos Inspection, Jordan Hall, Decatur, GA

REPRESENTATIVE PROJECT EXPERIENCE

Education con't

AHERA 3-Year Re-Inspection Clairemont Elementary School, Decatur, GA

AHERA 3-Year Re-Inspection College Heights Elementary School, Decatur, GA

AHERA 3-Year Re-Inspection Decatur High School, Decatur, GA

AHERA 3-Year Re-Inspection Glenwood Elementary School, Decatur, GA

AHERA 3-Year Re-Inspection Oakhurst Elementary School, Decatur, GA

AHERA 3-Year Re-Inspection Renfroe Middle School, Decatur, GA

AHERA 3-Year Re-Inspection Winnona Park Elementary School, Decatur, GA

Abatement Oversight, Kennesaw State University, Library Renovations. Kennesaw, GA

Lead Based Paint, Asbestos Inspection, and Hazardous Building Materials Inventory, 222 Piedmont, Atlanta, GA

Abatement Oversight, Renfroe Middle School Renovations, Decatur, GA

Residential

Lead Inspection, Asbestos Abatement Oversight, Clearance Monitoring, Briarcliff Summit, Atlanta, GA

Multiple Unit Asbestos Inspection, Renovations, Fort Gordon, GA

Multiple Unit Asbestos Inspection, Renovations, Fort Stewart, GA

Asbestos Abatement Oversight, On Site Fiber Counting, Shaw Air Force Base, Shaw, SC

3455 Old Alabama Road, John's Creek, GA

Lead Inspection, Dormitory, Georgia Institute of Technology, Atlanta, GA

Microbial Assessment, Abatement Oversight, Golden Living Center, Dunwoody, GA

Microbial Assessment, Marietta, GA

Asbestos Abatement Oversight, Golden Living Center, Rome, GA

Asbestos Abatement Oversight, Golden Living Center, Decatur, GA

Asbestos Inspection, Old Alabama Road, Johns Creek, GA

Radon Testing, Hampton Court Apartments, Hampton, GA

Microbial Assessment, Avery Road Apartments, Covington, GA

Remediation Oversight, Atlanta, GA

Lead Based Paint and Asbestos Inspection, 312 South Candler Street, Atlanta, GA

Abatement Monitoring and Oversight, City Hall East, Atlanta, GA

REPRESENTATIVE PROJECT EXPERIENCE

Office/Industrial/Commercial

Asbestos Inspection, Asbestos and Lead Abatement Oversight, Clearance Monitoring, City Hall East/Ponce City Market, Atlanta, GA

Asbestos Inspection, General Motors Plant, Doraville, GA

Asbestos Inspection, Asbestos Abatement Oversight, Clearance Monitoring, Town of Trion Hospital, Trion, GA

Asbestos Abatement Oversight, Belmont Hills, Marietta, GA

Asbestos Inspection, Abatement Oversight and On Site Fiber Counting, Lockheed Martin, Marietta, GA

Asbestos Abatement Oversight, Clearance Monitoring, World of Coke Offices, Atlanta, GA

Asbestos Inspection, Former Georgia Department of Transportation, Atlanta, GA

Microbial Assessment, Clearance Testing, Retail Facilities, Roswell, GA

Lead Inspection, Asbestos Inspection, Abatement Oversight Barracks, Fort Benning, GA

Lead Inspection, Asbestos Inspection, 2 Capitol Square, Atlanta, GA

Asbestos inspection, Newnan Hospital, Newnan, GA

Asbestos Inspection, Lead Inspection, Noel Place Office Tower, Nashville, TN

Asbestos Abetment Oversight, Clearance Monitoring, Circle 75 Office Park Renovations, Atlanta, GA

Asbestos Inspection, Weems Road Warehouse Redevelopment, GA

Lead Inspection, Asbestos inspection, Former Days Inn, Northside Drive, Atlanta, GA

Asbestos Inspection, 60 11th Street, Atlanta, GA

Microbial Assessment, Flat Shoals Road, Union City, GA

Asbestos Inspection, Lead based Paint Inspection, and Abatement Oversight, Newnan Hospital Redevelopment, Newnan, GA

Phase I ESA, 87 Jackson Street, Newnan, GA

Soil sampling and remediation oversight, Goodwill Development, Decatur, GA

Lead Inspection, Asbestos Inspection, Forsyth County Courthouse Renovations

Lead Inspection, Georgia Pacific Center Mechanical Rooms & Stairwells, Atlanta, GA

Microbial Assessment, Ashville, Buncombe, NC

Asbestos Inspections, 11575 Maxwell Road, Roswell, GA

Asbestos Inspection, Floor and Décor, Buford, GA

Phase I ESA, 246 North Arcadia, Decatur, GA

Phase I ESA, 4900 Ivey Road, Acworth, GA

Asbestos Inspection, Dialysis Center, Savannah, GA

Asbestos Inspection, Dialysis Center, Brunswick, GA

Asbestos Inspection, The Candler Building, Atlanta, GA

Lead Based Paint and Asbestos Inspection, The Variety Playhouse, Atlanta, GA

Asbestos Suite Inspections, Stonecrest Mall, Lithonia, GA

Asbestos Inspection, Lead Based Paint Inspection, Hazardous Building Materials Inventory, and Abatement Specifications, Metro State Prison Facility, Atlanta, GA

Asbestos Inspection, Bells Ferry Station #1, Acworth, GA

Abatement Oversight and Clearance Air Sampling Savannah Street Boys and Girls Club Renovation and Demolition, Newnan, GA

Abatement Oversight and Clearance Air Sampling Savannah Street Boys and Girls Club Renovation and Demolition, Newnan, GA

Phase II Site Assessment

Huff Road Tract

Atlanta, GA

Phase II Site Assessment

20 Linden

Atlanta, GA

The Environmental Institute

Curtis Moses

Social Security Number - XXX-XX-9977

Nova Engineering & Environmental - 3900 Kennesaw 75 Parkway - Kennesaw, Georgia 30144

Has completed 4 hours of coursework and satisfactorily passed an examination that meets all criteria required for EPA/AHERA/ASHARA (TSCA Title II) Approved Reaccreditation

Asbestos in Buildings: Inspector Refresher

June 4, 2020
Course Date

June 4, 2020
Examination Date

June 3, 2021
Expiration Date

17943
Certificate Number

Thomas G. Laubenthal - Principal Instructor

Rachel G. McCain - Exam Administrator

David W. Hogue - Training Manager

(Approved by the ABIH Certification Maintenance Committee for 1/2 CM point - Approval #11-577)

(Florida Provider Registration Number FL49-0001342 - Course #FL49-0002805)

TEI - 1395 S. Marietta Parkway SE - Building 100, Suite 124 - Marietta, GA 30067

Phone: 770-427-3600 - Website: www.tei-atl.com

APPENDIX D

QUALIFICATIONS OF CONCLUSIONS

QUALIFICATIONS OF CONCLUSIONS

The findings and opinions presented are relative to the dates of our site work and should not be relied on to represent conditions at substantially later dates or locations not investigated.

The opinions included herein are based on information obtained during the study and our experience. If additional information becomes available which might impact our environmental conclusions, we request the opportunity to review the information, reassess the potential concerns and modify our opinions, if necessary.

Assessments may include interviews, a review of documents prepared by others or other secondary information sources. NOVA has not verified the provided information and has no responsibility for the accuracy or completeness of the information.

Although this assessment has attempted to identify the potential for environmental impacts to the subject property, potential sources of contamination may have escaped detection due to: (1) the limited scope of this assessment, (2) the inaccuracy of public records, (3) the presence of undetected or unreported environmental incidents, (4) inaccessible areas and/or (5) deliberate concealment of detrimental information. It was not the purpose of this study to determine the actual presence, degree or extent of contamination at the site, except as specifically described in the previous sections of this report. This would require additional exploratory work, including supplemental sampling and laboratory analysis.

This report is intended for the sole use of ***Forsyth County Procurement.*** The scope of work performed during this study was developed for purposes specifically intended by ***Forsyth County Procurement*** and may not satisfy other user requirements. Use of this report or the findings and conclusions by others will be at the sole risk of the user.

Our professional services have been performed, our findings obtained, our conclusions derived and our recommendations prepared in accordance with generally accepted engineering practices and principles. This statement is in lieu of all other statements or warranties, either expressed or implied.

SECTION 07 2119
FOAMED-IN-PLACE INSULATION

PART 1 GENERAL

1.01 SUMMARY

A. Furnish labor, materials, equipment, and services to provide foamed-in-place building insulation in locations shown or scheduled on the Drawings.

B. Section Includes:
   1. Closed-cell spray polyurethane foam.

C. Related Sections include, but may not be limited to, the following:
   1. Division 07 Section "Building Insulation" for incidental foamed-in-place insulation to fill gaps and foam-plastic board insulation, and batt insulation.
   2. Various Division 07 roofing Sections for insulation under various roofing membranes.

1.02 SUBMITTALS

A. Product Data: For each type of product.

B. Qualification Data: For Installer.

C. Product Test Reports: For each product, for tests performed by a qualified testing agency.

1.03 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

PART 2 PRODUCTS

2.01 CLOSED-CELL SPRAY POLYURETHANE FOAM

A. Acceptable Manufacturers: Subject to compliance with the requirements of these Specifications, provide products from one of the following:
   1. Icynene (Mississauga, ON, CAN) (www.icynene.com); Pro Seal (MD-C-200V3).
   2. Gaco Western (Seattle, WA) (www.gaco.com) ; Gacowallfoam 183M.
   3. Premium Spray Products (Marietta, GA) (www.premiumspray.com); Foamsulate 220.

B. Closed-Cell Spray Polyurethane Foam: ASTM C1029, Type II, minimum density of 2.0 lb/cu. ft. (32 kg/cu. m) and minimum aged R-value at 1 inch (25.4 mm) thickness of 6.2 (deg. F x h x sq. ft./Btu at 75 deg. F) (43 K x sq. m/W at 24 deg. C).

C. Performance Characteristics:
   1. Water Vapor Permeance: Less than 1 perm at 1.5 inches, per ASTM E96.
   2. Air Permeance: Less than 0.002 L/s/sq. m at 1.5 inches, per ASTM E2178.
   3. Compressive Strength: Minimum 30 lb/sq. inch, per ASTM D1621.
   4. Dimensional Stability: Maximum 8.9% by volume at 70 deg. C and 97% RH, per ASTM D2126.
   5. Surface-Burning Characteristics: Comply with ASTM E84, Class A; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
      a) Flame-Spread Index: 25 or less.
      b) Smoke-Developed Index: 450 or less.
   6. Fire Propagation Characteristics:
      a) Passes NFPA 285 testing as part of an approved assembly.
      b) Passes NFPA 286 for attic and crawl space, with no coating required.

2.02 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by insulation manufacturer where required for adhesion of insulation to substrates.

PART 3 EXECUTION

3.01 PREPARATION

A. Verify that substrates are clean, dry, and free of substances that are harmful to insulation.

B. Priming: Prime substrates where recommended by insulation manufacturer. Apply primer to comply with insulation manufacturer's written instructions. Confine primers to areas to be insulated; do not allow spillage or migration onto adjoining surfaces.

3.02 INSTALLATION

A. Comply with insulation manufacturer's written instructions applicable to products and applications.
B. Spray insulation to envelop entire area to be insulated and fill voids.
C. Apply in multiple passes to not exceed maximum thicknesses recommended by manufacturer. Do not spray into rising foam.
D. Framed Construction: Install into cavities formed by framing members to achieve thickness indicated on Drawings.
E. Cavity Walls: Install into cavities to thickness indicated on Drawings.
F. Miscellaneous Voids: Apply according to manufacturer's written instructions.

3.03 PROTECTION

A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes.

END OF SECTION

SECTION 07 4100
MANUFACTURED ROOF AND WALL PANELS

PART 1 GENERAL

1.01 SUMMARY

A. Furnish labor, material, equipment and services to provide a complete, weathertight panel system including preformed sheet metal panels, related accessories, valleys, hips, ridges, eaves, corners, rakes, drip flashing, miscellaneous flashing, attaching devices, trim and closures.

1.02 REFERENCES

A. American Society for Testing and Materials
   1. ASTM A653/653M-13 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
   2. ASTM A792-10 – Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process
   3. ASTM B209-10 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
   4. ASTM D226-09 – Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
   5. ASTM D4214-07 Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films.
   6. ASTM D714-02(2009) – Standard Test Method for Evaluating Degree of Blistering of Paints
   7. ASTM D1970-14 – Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
   8. ASTM E331-00(2009) – Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors.
   9. ASTM E1592-05(2012) – Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference
   10. ASTM E1646-95(2011) – Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference.
   11. ASTM E1680-11 – Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems.
B. Aluminum Association
   1. Specifications for Aluminum Sheet Metal Work in Building Construction
C. SMACNA - Architectural Sheet Metal Manual.
D. National Roofing Contractors Association
   1. The NRCA Construction Details
E. Metal Construction Association
   1. Preformed Metal Wall Guidelines
F. Underwriters Laboratories, Inc.
   1. UL 90 (UL 580) – Standard for Tests for Uplift Resistance of Roof Assemblies.
   2. UL 1897 – Standard for Uplift Tests for Roof Covering Systems.

1.03 PERFORMANCE REQUIREMENTS

A. General Performance: Provide sheet metal roofing, fascia and wall panels which have been manufactured, fabricated and installed to withstand structural and thermal movement, wind loading and weather exposure to maintain performance criteria without defects, damage, failure or infiltration of water.
   1. See "Additional Product Performance" for "Metal Wall Systems" in Part 2 below.
B. Wind Uplift: Provide systems that pass the testing required for UL 1A-90 rated assemblies.
C. Water Penetration: No water penetration when tested according to ASTM E1646 at the following test-pressure difference:
   1. Test-Pressure Difference (roof slopes 30 degrees or less): 2.86 lbf/sq. ft. (137 Pa).

2. Test-Pressure Difference (roof slopes greater than 30 degrees): 20 percent of positive design wind pressure, but not less than 6.24 lbf/sq. ft. (300 Pa) and not more than 12.0 lbf/sq. ft. (575 Pa).
3. Positive Preload Test-Pressure Difference: Greater than or equal to 15.0 lbf/sq. ft. (720 Pa) and the greater of 75 percent of building live load or 50 percent of building design positive wind-pressure difference.
4. Negative Preload Test-Pressure Difference: 50 percent of design wind-uplift-pressure difference.

D. Air Infiltration: Air leakage through assembly of not more than 0.06 cfm/sq. ft. (0.3 L/s per sq. m) of roof area when tested according to ASTM E1680 at the following test-pressure difference:
1. Test-Pressure Difference (roof slopes 30 degrees or less): Negative 1.57 lbf/sq. ft. (75 Pa).
2. Test-Pressure Difference (roof slopes greater than 30 degrees): Positive and negative 1.57 lbf/sq. ft. (75 Pa).
3. Positive Preload Test-Pressure Difference: Greater than or equal to 15.0 lbf/sq. ft. (720 Pa) and the greater of 75 percent of building live load or 50 percent of building design positive wind-pressure difference.
4. Negative Preload Test-Pressure Difference: 50 percent of design wind-uplift-pressure difference.

E. Structural Performance: Provide metal roof panel assemblies capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated, based on testing according to ASTM E1592:
1. Wind Loads: Determine loads based on the following minimum design wind pressures:
   a) Uniform pressure of 30 lbf/sq. ft. (1436 Pa), acting inward or outward, unless indicated otherwise on the Drawings.
2. Deflection Limits: Metal roof panel assemblies shall withstand wind and snow loads with vertical deflections no greater than 1/240 of the span.

F. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

1.04 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of roof panel and accessory.

B. Shop Drawings: Show fabrication and installation layouts of metal roof panels; details of edge conditions, side-seam and endlap joints, panel profiles, corners, anchorages, trim, flashings, closures, and accessories; and special details. Distinguish between factory- and field-assembled work.

C. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
1. Metal Roof, Wall and Soffit Panels: 12 inches (300 mm) long by actual panel width. Include fasteners, clips, battens, closures, and other metal roof panel accessories.

D. Submit copies of independent laboratory tests, mill certifications, and calculations by a professional engineer registered in the State where Project is built, certifying structural performance data on the panels, anchor clips, and fasteners to meet the structural testing and performance and materials requirements of this specification and applicable building codes.

E. Field Quality Control Reports: As interim and final inspections are completed. Prior to Substantial Completion, submit quality control data certifying that materials furnished for the project are the same make and manufacture as those tested.

1.05 QUALITY ASSURANCE

A. Manufacturer: Company specializing in Architectural Sheet Metal Products with ten (10) years minimum experience.

B. Applicator: Installer trained and approved to install manufacturer's material, and having successfully installed a minimum of five projects of similar size with similar material.
   1. Provide one million dollar general liability coverage.
   2. There shall exist no present viable claims for defective workmanship.
C. No product substitutions shall be permitted without meeting specifications.
D. Substitutions shall be submitted at least 10 days prior to Bid Date and acceptance put forth as an addendum in accordance with Section 01 6201 or 01 6202 "Substitutions and Product Options".
E. Prior to fabrication of panels, take field measurements of structure or substrates to receive panel system. Allow for trimming panel units where dimensions cannot be established.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact. Identify fabricated components with UL 90 label where appropriate.
B. Upon receipt of panels and other materials, installer shall examine the shipment for damage and completeness.
C. Panels should be stored in a clean, dry place. Stack prefinished material to prevent twisting, bending, abrasion, scratching and denting. One end should be elevated to allow moisture to run off.
D. Panels with strippable film must not be stored in the open exposed to the sun.

1.07 PROJECT CONDITIONS

A. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.
B. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit metal roof panel work to be performed according to manufacturer's written instructions and warranty requirements.

1.08 WARRANTIES

A. Panel Warranty: Panel manufacturer's 20-year, non-prorated, non-depreciating, warranty against perforation or corrosion.
B. Finish Warranty: Paint finish shall have a 20-year guarantee against cracking, peeling and fading (not to exceed 5 N.B.S. units).
C. Applicator shall furnish guarantee covering watertightness of the roofing system and associated flashing details for the period of two (2) years from the date of Substantial Completion.

PART 2 PRODUCTS

2.01 METAL ROOFING SYSTEM

A. Acceptable Manufacturers - Subject to the requirements of these Specifications provide manufacturers and systems from one of the following:
   1. Petersen Aluminum Corp (Acworth, GA) (www.pac-clad.com); Tite-Loc Plus
   2. McElroy Metal Inc. (Bossier City, LA) (www.mcelroymetal.com)
   3. MBCI (Houston, TX) (www.mbci.com)
B. Design Basis Manufacturer and System (See Division 01 Section "Substitutions and Product Options"): Petersen Aluminum Corp.; Tite-Loc Plus.
   1. Panel Width: 12" smooth panel (standard).
   2. Seam Height: 2"
C. Sheet Material
   1. Prefinished aluminum shall be ASTM B209, 3105-H14 or 3003-H14 Aluminum alloy.
D. Sheet Thickness
   1. Aluminum: .040"
E. Sheet Texture
   1. Smooth.

F. Finish
1. Two-Coat Fluoropolymer: AAMA 621. 70% Kynar 500 fluorocarbon coating, applied by the manufacturer on a continuous coil coating line, with a top side dry film thickness of 0.70 to 0.90 mil over 0.25 to 0.35 mil prime coat, to provide a total dry film thickness of 0.95 to 1.25 mil. Bottom side shall be coated with baked-on epoxy primer with a dry film thickness of 0.25 mil. Finish shall conform to all tests for adhesion, flexibility, and longevity as specified by the Kynar 500 finish and polyester finish supplier.
2. Strippable film shall be liquid applied to the top side of the painted coil to protect the finish during fabrication, shipping and field handling. This strippable film shall be removed before installation.

G. Accessory Materials
1. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.
   a) Closures: Provide closures at eaves and ridges, fabricated of same metal as metal panels.
   b) Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
   c) Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1 inch (25 mm) thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction. Metal profile closures, of the same material and color as the roof panel, shall be placed in front of all rubber closures to protect them from UV exposure.
2. Fasteners: Cadmium plated stainless steel, with cadmium plated stainless steel washers where required.
3. Anchor Clips: Non-magnetic, type 304 stainless steel. Provide for thermal movement to accommodate the expected panel expansion and contraction, but in no case less than plus or minus 0.25 inch (6.35 mm), in each direction along the longitudinal dimension. Provide minimum 22 ga. galvanealed or galvalume bearing plates where installation is over rigid insulation.
4. Elastomeric closures shall be furnished where required.
5. Integral panel framing shall be manufacturer's standard.
6. Bituminous Coating: Cold-applied asphalt mastic, SSPC paint 12, compounded for 15 mil dry film thickness per coat.
7. Gutters: Gutter and downspout material shall be provided by metal roofing manufacturer and as specified in Section 07 6310, “Gutters and Downspouts”.
8. Sealant: Provide manufacturer's standard.
9. Adhered Underlayment: Self-adhering waterproofing membrane meeting ASTM D1970, composed of reinforcement that is impregnated and coated with SBS rubberized asphalt, designed to withstand temperatures up to 250 deg. F. Minimum 60 mil. thickness. Suitable for UL Class A applications, approved by Miami-Dade.
   a) Acceptable Manufacturers/Products
      1) CertainTeed Corporation (Valley Forge, PA) (www.certainteed.com); Metalayment.
      2) Atlas Roofing Corporation (Atlanta, GA) (www.atlasroofing.com); Weathermaster TU Ultra SE.
      3) Owens Corning Roofing and Asphalt, LLC (Toledo, OH) (www.roofing.owenscorning.com); WeatherLock Speciality Tile & Metal.
10. Soffit Panels: Specified manufacturer's accessory soffit panels roll-formed from 0.032 gauge matching material, 12 inches wide with a 'vee' groove every 6 inches. Provide solid panels secured with manufacturer's matching 'J' channels.

H. Fabrication
1. All exposed adjacent flashing and other trim shall be of same material and finish as the roof panels.

2. Fabricate all panels from the same coating batch formulation and observe direction sensitivity for premium or specialty products.
3. All exposed edges shall be concealed within the panel interlock or panel seam.
4. All flashings, hem exposed edges of underside to 1/2 inch.
5. Fabricated panels shall not have horizontal joints but shall be full length of roof, unless indicated otherwise.
6. Panels shall be factory tension-leveled and factory formed, not field formed. The only exception is that if panels are field formed, they shall be formed from material supplied by one of the specified manufacturers and to the exact profiles of that manufacturer's specified system, and using the manufacturer's own rolling equipment. When using field forming equipment, provide evidence of U.L. certification dated within one year of the date of the construction contract.
7. Apply bituminous coating or other permanent separation materials on concealed panel surfaces where panels would otherwise be in direct contact with substrate materials which are non-compatible or could result in corrosion or deterioration of either material or finishes.
8. Fabricate panels for control of condensation, including vapor inclusion of seals and provisions for breathing, venting, weeping and draining.

PART 3 EXECUTION

3.01 METAL ROOFING SYSTEM INSTALLATION

A. Inspection
   1. Substrate:
      a) Examine plywood or metal deck to ensure proper attachment to framing.
      b) Inspect roof deck to verify deck is clean and smooth, free of depressions, waves or projections, properly sloped to valleys or eaves.
      c) Verify roof openings, curbs, pipes, sleeves, ducts or vents through roof are solidly set, cant strips and reglets in place, and nailing strips located.
      d) Verify deck is dry and free of snow or ice. Flutes in steel deck to be clean and dry. Joints in wood deck to be solidly supported and nailed.
   2. Felting:
      a) Provide and install an approved adhered underlayment in single layer, weather lapped head 6", ends 18" or in 2 layers as dictated by roof slopes. Install over solid sheathing and nail in place. Install felts immediately after respective sheathing installations.
      b) Ensure underlayment is installed horizontally, starting at eave to ridge with a 6" minimum overlap.
      c) Ensure underlayment is fully adhered. The use of staples to secure underlayments is not acceptable.

B. Installation
   1. Comply with manufacturer's standard instructions and conform to standards set forth in the Architectural Sheet Metal Manual published by SMACNA, in order to achieve a watertight installation.
   2. Install panels in such a manner that horizontal lines are true and level and vertical lines are plumb.
   3. Install starter and edge trim before installing roof panels.
   4. Remove protective strippable film prior to installation of roof panels.
   5. Attach panels using manufacturer's clips and fasteners as required for wind and loading specified, spaced in accordance with approved shop drawings. Use concealed fasteners to greatest extent possible.
   6. Provide for temperature expansion/contraction movement of panels at roof penetrations and roof mounted equipment in accordance with system manufacturer's product data and design calculations.
   7. Install sealants for preformed roofing panels as approved on shop drawings.
   8. Do not allow panels or trim to come into contact with dissimilar materials.
   9. Do not allow traffic on completed roof. If required, provide cushioned walk boards.

10. Protect installed roof panels and trim from damage caused by adjacent construction until completion of installation.
11. Remove and replace any panels or components which are damaged beyond successful repair.
12. No "band-aids" will be allowed on seam bends.
13. Make suitable provisions to allow for free expansion and contraction of all work without causing audible pops or scrapes and without leaks or rupture.

C. Cleaning
1. Clean any grease, finger marks or stains from the panels per manufacturer's recommendations.
2. Remove all scrap and construction debris from the site.
3. Provide Owner with one jar of matching touch-up paint for future use.

3.02 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to provide interim and final inspection of metal roof panel installation, including accessories. Report results in writing.
B. Remove and replace applications of metal roof panels where inspections indicate that they do not comply with specified requirements.
C. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.03 CLEANING

A. Remove temporary protective coverings and strippable films, if any, as metal roof panels are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of metal roof panel installation, clean finished surfaces as recommended by metal roof panel manufacturer. Maintain in a clean condition during construction.
B. Replace metal roof panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 07 8116
SPRAYED FIRE-RESISTIVE MATERIALS

PART 1 GENERAL

1.01 SUMMARY

A. Furnish labor, material, equipment and services to provide sprayed fire-resistive materials on structural steel or interior combustibles as specified in this Section in locations shown or scheduled on the Drawings.
B. This Section Includes:
   1. Interior Concealed Sprayed Fire-resistive Materials: Applications where sprayed fire-resistive materials are applied to surfaces that are concealed from view behind other construction when the Work is completed.
   2. Interior Exposed Sprayed Fire-resistive Materials: Applications where sprayed fire-resistive materials are applied to surfaces that are exposed to view when the Work is completed.
   3. Exterior Exposed Sprayed Fire-resistive Materials: Applications exposed to weather where sprayed fire-resistive materials are applied to surfaces that are exposed to view when the Work is completed.
   4. Thin-Film Intumescent Coatings
   5. Topcoat
   6. Sealer

1.02 REFERENCES

A. ASTM International:
   1. ASTM D695-10 – Standard Test Method for Compressive Properties of Rigid Plastics.
   2. ASTM D952-10 – Standard Test Method for Bond or Cohesive Strength of Sheet Plastics and Electrical Insulating Materials.
   3. ASTM D1044-13 – Standard Test Method for Resistance of Transparent Plastics to Surface Abrasion.
   4. ASTM D2240-05(2010) – Standard Test Method for Rubber Property – Durometer Hardness.
   5. ASTM D2794-93(2010) – Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
   6. ASTM D4060-10 – Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
   7. ASTM D4541-09e1 – Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.
   8. ASTM E119-12a – Standard Test Methods for Fire Tests of Building Construction and Materials.
   9. ASTM E605-93(2011) – Standard Test Methods for Thickness and Density of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members.
   10. ASTM E736-00(2011) – Standard Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members.
   11. ASTM E759-92(2011) – Standard Test Method for Effect of Deflection on Sprayed Fire-Resistive Material Applied to Structural Members.
   12. ASTM E760-92(2011) – Standard Test Method for Effect of Impact on Bonding of Sprayed Fire-Resistive Material Applied to Structural Members.
   13. ASTM E761-92(2011) – Standard Test Method for Compressive Strength of Sprayed Fire-Resistive Material Applied to Structural Members.
   14. ASTM E859-93(2011) – Standard Test Method for Air Erosion of Sprayed Fire-Resistive Materials (SFRMs) Applied to Structural Members.
   15. ASTM E937-93(2011) – Standard Test Method for Corrosion of Steel by Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members.
   16. ASTM G21-13 – Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
B. Association of the Wall and Ceiling Industries International:

1. AWCI Technical Manual 12-A, 3rd Edition – Standard Practice for the Testing and Inspection of Field Applied Sprayed Fire-Resistive Materials; an Annotated Guide.

C. Steel Structures Painting Council
   1. SSPC SP 6 – Commercial Blast Cleaning.
   2. SSPC PA 2 – Measurement of Dry Paint Thickness with Magnetic Gages.

1.03 SUBMITTALS

A. Product Data: For each sprayed fire-resistive material product indicated.
B. Submit test report from an independent testing laboratory indicating compliance of products with specified performance requirements including asbestos content and content of volatile organic compounds (VOCs).
C. Submit certificates from sprayed fire-resistive material manufacturer indicating:
   1. Each sprayed fire-resistive product complies with specified product requirements and is suitable for the use indicated.
   2. Steel substrates should be un-primed. If primers are used, submit that primers applied to steel in shop or field are compatible with sprayed-on fire-resistive material and will not impair its performance under fire exposure as proven by ASTM E119 test. Include test data as evidence.
   3. Calculations demonstrating the thickness adjustments made for beams smaller than those indicated by specified UL test.
D. Shop drawings in form of structural framing plans indicating the following:
   1. Where and what kinds of surface preparations are required before applying sprayed fire-resistive material.
   2. Extent of sprayed fire-resistive material for each different construction and fire-resistance rating including the following:
      a) Applicable fire-resistive design designations of inspecting and testing agency acceptable to authorities having jurisdiction.
      b) Minimum thicknesses needed to achieve required fire-resistance ratings of structural components and assemblies.
   3. Treatment of sprayed fire-resistive material after application.
E. Samples for Verification: Of each type of exposed finish required, of each color, gloss, texture and material to be applied.
F. Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.
G. Field Quality Control Testing Results: Submit written report from the engaged testing laboratory within fifteen (15) days after each test session.
H. Field quality-control reports.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer certified, licensed, or otherwise qualified by the sprayed fire-resistive material manufacturer as having the necessary experience, staff, and training to install manufacturer's products per specified requirements. A manufacturer's willingness to sell its sprayed-on fireproofing products to the Contractor or to an Installer engaged by the Contractor does not in itself confer qualification on the buyer.
B. Provide materials and construction which are identical to those tested for the fire performance characteristics by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction as indicated by reference to design designation in UL "Fire Resistance Directory" for fire-resistance-rated assemblies.
   1. All sprayed fire-resistive materials shall be adjusted for all beams smaller than those outlined in specified UL test, based on unrestrained beam thickness for hourly rating required.
   2. Where available for each construction condition, UL design listings must state that the loading was determined by Allowable Stress Design Method or Load and Resistance Factor Design Method and shall not require a load restriction factor.

C. Provide products containing no asbestos or mineral fiber as determined according to the method specified in 40 CFR, Part 763, Subpart E, Appendix E, Section 1, "Polarized Light Microscopy."
D. Owner Quality Control Testing: Owner will employ and pay a qualified independent testing agency to perform field quality-control testing services specified in Part 3 of this Section. The Contractor shall schedule such testing so that all tests for each floor can be made during one job visit by the testing agency. The Contractor shall notify Architect no later than 10 days prior to the Contractor's need for testing.

1.05 JOB CONDITIONS

A. Deliver products to job site in original unopened containers with manufacturer's labels identifying products. Labels shall indicate date of manufacture and shelf life, where applicable. Containers shall also bear UL labels for fire-resistance ratings applicable to product.
B. Do not use any materials for which shelf life has expired.
C. Store materials inside, under cover and protected.
D. Do not install products when ambient or substrate temperatures are expected to fall below 40 degrees F. during and for 24 hours after installation.
E. Ventilate by natural or mechanical means area of product installation during and following application until product is thoroughly dry.
F. Sequence and coordinate application of fireproofing products with other related work to comply with the following:
   1. Provide temporary enclosures if necessary to prevent deterioration of applied products due to environmental conditions or abrasion resulting from subsequent construction operations.
   2. Do not apply fireproofing to substrates associated with the roof construction until roofing operation is complete and roof traffic minimized.
   3. Do not conceal fireproofing products until inspection, testing and any corrective work is completed.

1.06 WARRANTY

A. The special warranty specified in this Article shall not deprive Owner of the rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
B. Special Warranty: Submit a written warranty, executed by Contractor and co-signed by Installer, agreeing to repair or replace sprayed fire-resistive materials that fail within the specified warranty period. Failures include, but are not limited to, cracking, flaking, eroding in excess of specified requirements; peeling; and delaminating of sprayed fire-resistive materials from substrates due to defective materials and workmanship within the specified warranty period. Not covered under the warranty are failures due to damage by occupants and Owner's maintenance personnel, exposure to environmental conditions other than those investigated and approved during fire-response testing, and other causes not reasonably foreseeable under conditions of normal use.
   1. Warranty Period: Two (2) years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 MATERIALS, GENERAL

A. Assemblies: Provide fireproofing, including auxiliary materials, according to requirements of each fire-resistance design and manufacturer's written instructions.
B. Source Limitations: Obtain spray fire-resistive materials from single source.
C. Asbestos: Provide products containing no detectable asbestos.

2.02 INTERIOR CONCEALED SPRAYED FIRE-RESISTIVE MATERIALS

A. General: Provide manufacturer's standard products complying with requirements indicated for material composition and physical properties representative of installed products.

B. Material Composition: Cementitious sprayed fire-resistive material consisting of factory-mixed, dry formulation of gypsum and/or portland cement binders and lightweight mineral or synthetic aggregates mixed with water at Project site to form a slurry or mortar for conveyance and application.

C. Physical Properties: Minimum values, unless otherwise indicated, or higher values required to attain designated fire-resistance ratings, measured per standard test methods referenced with each property listed as follows:
   1. Dry Density: 15 lb./cu. ft. (240 kg/cu. m) per ASTM E605 or AWCI Tech. Man. 12-A, Appen. A.
   2. Thickness: Provide minimum average thickness required for fire-resistive design indicated according to the following criteria, but not less than 0.375 inch (9 mm), per ASTM E605.
      a) Where referenced design lists 1 inch (25 mm) or greater, min. allowable individual thickness of material is design thickness minus 0.25 inch (6 mm).
      b) Where referenced design lists less than 1 inch (0.25 mm) but more than 0.375 inch (9mm), min. allowable is 75% of design thickness.
   3. Bond strength: 200 lb./sq. ft. (9.6 kPa) per ASTM E736
   4. Compressive strength: 1440 lb./sq. ft. (68.9 kPa) per ASTM E761
   5. Corrosion Resistance: No evidence of corrosion per ASTM E937
   6. Deflection: No cracking, spalling, delamination per ASTM E759.
   7. Effect of impact on bonding: No cracking, spalling or delamination per ASTM E760.
   8. Air Erosion: Maximum weight loss of 0.005 g/sq. ft. (0.27 g/sq. m) per ASTM E859.
   9. Surface burning characteristics:
      a) Flame spread: 10
      b) Smoke developed: 0
   10. Fungal Resistance: No observed growth on specimens per ASTM G21. Submit manufacturer's certificate.

D. Acceptable Manufacturers/Products
   1. Subject to compliance with requirements of these Specifications, provide products from one of the following:
      a) Carboline (St. Louis, MO) (www.carboline.com); Pyrolite 15
      b) Grace Construction Products (Columbia, MD) (www.graceconstruction.com); Monokote MK-6/MK-6HY
      c) Isolatek International (Stanhope, NJ) (www.isolatek.com); Cafco 300
      d) Southwest Fireproofing Products Co. (Albuquerque, NM) (www.southwestfireproofing.com) ; 5GP.

2.03 INTERIOR EXPOSED SPRAYED FIRE-RESISTIVE MATERIALS

A. General: Provide manufacturer's standard products complying with requirements indicated for material composition and physical properties representative of installed products.

B. Material Composition: Cementitious sprayed fire-resistive material consisting of factory-mixed, dry formulation of gypsum or portland cement binders and lightweight mineral or synthetic aggregates mixed with water at Project site to form a slurry or mortar for conveyance and application.

C. Physical Properties: Minimum values, unless otherwise indicated, or higher values required to attain designated fire-resistance ratings, measured per standard test methods referenced with each property listed as follows:
   1. Dry Density: 22 lb./cu. ft. (352 kg/cu. m) per ASTM E605 or AWCI Tech. Man. 12-A, Appen. A.
   2. Thickness: Provide minimum average thickness required for fire-resistive design indicated according to the following criteria, but not less than 0.375 inch (9 mm), per ASTM E605.
      a) Where referenced design lists 1 inch (25 mm) or greater, min. allowable individual thickness of material is design thickness minus 0.25 inch (6 mm).
      b) Where referenced design lists less than 1 inch (0.25 mm) but more than 0.375 inch (9mm), min. allowable is 75% of design thickness.

3. Bond strength: 561 lb./sq. ft. (26.9 kPa) per ASTM E736
4. Compressive strength: 6000 lb./sq. ft. (287.3 kPa) per ASTM E761
5. Corrosion Resistance: No evidence of corrosion per ASTM E937
6. Deflection: No cracking, spalling, delamination per ASTM E759.
7. Effect of impact on bonding: No cracking, spalling or delamination per ASTM E760.
8. Air Erosion: Maximum weight loss of 0.025 g/sq. ft. (1.0 l./sq. m) per ASTM E859.
9. Surface burning characteristics:
   a) Flame spread: 10 or less
   b) Smoke developed: 0
10. Fungal Resistance: No observed growth on specimens per ASTM G21.

D. Acceptable Manufacturers/Products
1. Subject to compliance with requirements of these Specifications, provide products from one of the following:
   a) Carboline (St. Louis, MO) (www.carboline.com); Pyrolite 22
   b) Grace Construction Products (Columbia, MD) (www.graceconstruction.com); Monokote Z106/G, Z106/HY
   c) Isolatek International (Stanhope, NJ) (www.isolatek.com); Cafco 400.
   d) Southwest Fireproofing Products Co. (Albuquerque, NM) (www.southwestfireproofing.com) ; 7GP.

2.04 EXTERIOR EXPOSED SPRAYED FIRE-RESISTIVE MATERIALS

A. General: Provide manufacturer's standard products complying with requirements indicated for material composition and physical properties measured by standard test methods referenced with each property.

B. Material Composition: Factory-mixed, dry, cement aggregate formulation, chloride-free formulation of gypsum or portland cement binders, additives, and inorganic aggregates, mixed with water at Project site to form a slurry or mortar for conveyance and application.

C. Physical Properties: Minimum values, unless otherwise indicated, or higher values required to attain designated fire-resistance ratings, measured per standard test methods referenced with each property listed as follows:
1. Dry Density: Values for average and individual densities as required for fire-resistance ratings indicated, per ASTM E605 or AWCI Technical Manual 12-A, Appendix A, "Alternate Method for Density Determination," but with an average density of not less than 40 lb./cu. ft. (640 kg/cu. m).
2. Bond Strength: 6535 lb./sq. ft. (313 kPa) per ASTM E736.
3. Compressive Strength: 550 lb./sq. ft. (26.3 kPa) per ASTM E761.
4. Hardness (Shore D): 40
5. Corrosion Resistance: No evidence of corrosion per ASTM E937.
6. Deflection: No cracking, spalling, delamination, or the like per ASTM E759.
7. Effect of Impact on Bonding: No cracking, spalling, delamination, or the like per ASTM E760.
8. Air Erosion: Maximum weight loss of 0.025 g/sq. ft. (1.0 l./sq. m) per ASTM E859.
9. Surface Burning Characteristics:
   a) Flame Spread: 10
   b) Smoke Developed: 0
10. Fungal Resistance: No observed growth on specimens per ASTM G21.

D. Acceptable Manufacturers/Products
1. Subject to compliance with requirements of these Specifications, provide products from one of the following:
   a) Carboline (St. Louis, MO) (www.carboline.com); Pyrocrete 240
   b) Grace Construction Products (Columbia, MD) (www.graceconstruction.com); Monokote Z146
   c) Isolatek International (Stanhope, NJ) (www.isolatek.com); Cafco Fendolite M-II
   d) Pyrok, Inc. (Mamaroneck, NY) (www.pyrokinc.com); Pyrok-HD.
   e) Southwest Fireproofing Products Co. (Albuquerque, NM) (www.southwestfireproofing.com) ; 1XR.

2.05 THIN-FILM INTUMESCENT COATINGS

A. Interior Coatings For Steel
   1. General: Provide manufacturer's standard products complying with UL-Interior General Purpose requirements indicated for material composition and physical properties measured by standard test methods referenced with each property. Products shall bear the UL Classification Mark.
   2. Acceptable Manufacturers: Subject to compliance with requirements of these Specifications, provide products from one of the following:
      a) Albi Manufacturing (East Berlin, CT) (www.albi.com) ; Albi Clad TF.
      b) Isolatek International (Stanhope, NJ) (www.isolatek.com) ; Cafco Sprayfilm-WB3 or WB5 as required.
      c) Carboline (St. Louis, MO) (www.carboline.com) ; A/D Firefilm III.
   3. Material Composition: Two-step, water-base, thin-film intumescent coating system formulated for interior exposed applications comprised of a base coat which intumesces to provide the required protection, and a manufacturer-recommended decorative, resilient, protective top coating, meeting the requirements of the applicable UL design, available in at least 100 colors providing a smooth architectural finish.
   4. Physical Properties: Minimum values, unless otherwise indicated, or higher values required to attain designated fire-resistance ratings, measured per standard test methods referenced with each property listed as follows:
      a) Bond Strength: 225 psi (1551 kPa), per ASTM D4541; or 40 psi (276 kPa), per ASTM D952; or 10,800 lbf / sq. ft. (520 kPa) for 120 mils, per ASTM E736.
      b) Compressive Strength: 250 psi (1724 kPa), per ASTM D695; or 157,680 lbf / sq.ft. (7.55 Mpa) at 10% deformation per ASTM E761.
      c) Hardness (Shore D): 45 – 50, per ASTM D2240.
      d) Impact Resistance: 56 in/lbs. (0.65 kg/m), per ASTM D2794; or 0.77 ft. lbs./inch of notch, per ASTM D256.
      e) Abrasion Resistance: maximum 0.2g lost after 1000 cycles, per ASTM D4060; or 0.0g lost, per ASTM D1044.
      f) Surface Burning Characteristics, maximum: Conforming to Class A..
      g) Flame Spread: 20.
      h) Smoke Developed: 55.
   5. Finish Texture: Commercial.

B. Interior Coatings For Combustibles
   1. Acceptable Manufacturers: Subject to compliance with requirements of these Specifications, provide products from one of the following:
      a) Albi Manufacturing (East Berlin, CT) (www.albi.com) ; Albi Clad FP.
      b) FlameOff Coatings, Inc. (Raleigh, NC) (www.flameoffcoatings.com)
   2. Material Composition: Water-based, odor-free, thin-film, co-polymer intumescent coating designed to provide U.L. classified and tested Class A protection of wood, wallboard, plaster and other non-ferrous substrates. Provide in dry film thickness to meet required assembly hourly fire rating, up to 2 hours.
   3. Physical Properties:
      a) Hardness: Minimum 45.
      b) Cohesive/Adhesion Strength: 190 psi (cohesive failure).
      c) Abrasion Resistance: 0.0g lost, per ASTM D1044.
      d) Impact Resistance: 0.77 ft. lbs./inch of notch, per ASTM D256.
      e) Flame Spread (at 225 sq. ft./gal): Maximum 5, per ASTM E84.
      f) Smoke Developed (at 225 sq. ft./gal): Maximum 40, per ASTM E84.
      g) Flash Point: Over 200 deg. F.; Closed Cup – No flash.
      h) Solids, by volume: Minimum 48% +/-5%.
   4. Finish Texture: Commercial.

C. Exterior Coatings For Steel
   1. General: Provide manufacturer's standard products complying with UL-Exterior Use requirements indicated for material composition and physical properties measured by

standard test methods referenced with each property. Products shall bear the UL Classification Mark for exterior use.

2. Acceptable Manufacturers: Subject to compliance with requirements of these Specifications, provide products from one of the following:
   a) Carboline (St. Louis, MO) (www.carboline.com) ; Thermo-Lag 3000-A / SA.
   b) Albi Manufacturing (East Berlin, CT) (www.albi.com) ; Albi Clad 800.
   c) International (Strongsville, OH) (www.international-pc.com) ; Interchar 212.
   d) Isolatek International (Stanhope, NJ) (www.isolatek.com) ; Cafco Sprayfilm-WB4.
3. Material Composition: Two-part epoxy-base, or solvent-based, thin film intumescent coating system formulated for exterior exposed applications comprised of a base coat which intumesces to provide the required protection, and a manufacturer-recommended decorative top coating, meeting the requirements of the applicable UL design, which provides a tough, resilient, protective coating available in at least 100 colors providing a smooth architectural finish.
4. Physical Properties: Minimum values, unless otherwise indicated, or higher values required to attain designated fire-resistance ratings, measured per standard test methods referenced with each property listed as follows:
   a) Bond Strength: 6535 lb./sq. ft. (313 kPa), per ASTM E736; or 250 psi (2586 kPa), per ASTM D4541.
   b) Compressive Strength: 124,895 lb./sq. ft. (5.98 MPa) per ASTM E761, or 2,100 psi (14.48 MPa) per ASTM D695.
   c) Hardness (Shore D): 50, 40 for topcoating.
   d) Corrosion Resistance: No evidence of corrosion per ASTM E937.
   e) Deflection: No cracking, spalling, delamination, or the like per ASTM E759.
   f) Impact Resistance: 50 in-lb. direct (ASTM D2794); or Pass, per ASTM E760; or 0.54 ft. lbs/in. of notch, per ASTM D256.
   g) Abrasion Resistance: maximum 0.3g lost after 2000 cycles per ASTM D4060, or 0.40g after 1000 cycles per ASTM D1044.
   h) Surface Burning Characteristics, maximum: Conforming to Class A.
   i) Flame Spread: 15
   j) Smoke Developed: 50
5. Finish Texture: Commercial.

2.06 AUXILIARY FIREPROOFING MATERIALS

A. General: Provide auxiliary fire-resistive materials that are compatible with sprayed fire-resistive products and substrates and are approved by UL or other testing and inspecting agency acceptable to authorities having jurisdiction for use in fire-resistive designs indicated.

B. Substrate Primers: Type approved by manufacturer of sprayed-on fire-resistive material and thin film intumescent material for substrate and for conditions of exposure indicated, and complying with one or both of the following requirements:
   1. Primer and substrate are identical to those tested in required fire-resistance design by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
   2. Primer's bond strength in required fire-resistance design complies with specified bond strength for fireproofing and with requirements in UL's "Fire Resistance Directory" or in the listings of another qualified testing agency acceptable to authorities having jurisdiction, based on a series of bond tests according to ASTM E736.

C. Bonding Agent: Product approved by fireproofing manufacturer and complying with requirements in UL's "Fire Resistance Directory" or in the listings of another qualified testing agency acceptable to authorities having jurisdiction.

D. Metal Lath: Expanded metal lath fabricated from material of weight, configuration, and finish required to comply with fire-resistive designs indicated and fire-resistive product manufacturer's written recommendations. Include clips, lathing accessories, corner beads, and other anchorage devices required to attach lath to substrates and to receive sprayed fire-resistive material.

E. Reinforcing Fabric: Glass-fiber fabric of type, weight, and form required to comply with fire-resistive designs indicated, approved by manufacturer of intumescent mastic fire-resistive material.
F. Topcoats: Type approved by manufacturer of each sprayed fire-resistive material for applications indicated.
   1. Pedestrian Areas: cement/sand finish or sand/gypsum finish of 3/16 inch (4.76mm) thickness, smooth troweled and using generic plastering details for joints, cornerbeads, etc.
   2. Intumescents require a polyurethane or industrial enamel topcoat.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates, with installer and manufacturer present, to determine if they are in satisfactory condition to receive sprayed fire-resistive material. Substrate shall comply with requirements of the section in which the substrate and related work is specified and is free of oil, grease, rolling compounds, incompatible primers, loose mill scale, dirt or other foreign substances capable of impairing bond of fireproofing with substrate under conditions of normal use or fire exposure.
   1. Thin-Film Intumescent Coatings: Verify steel substrates have been abrasive cleaned to minimum SSPC SP-6 with 2-3 mil anchor profile.
B. Verify that concrete work on steel deck has been completed before beginning fireproofing work.
C. Verify that roof construction, installation of roof-top HVAC equipment, and other related work is complete before beginning fireproofing work.
D. Make certain that objects which will penetrate fire-resistive material, included clips, hangers, support sleeves and similar items have been securely attached to substrates prior to application.
E. Make certain that substrates are not obstructed by construction that could interfere with application of fire-resistive material.
F. Verify that painted metal decks to receive fire-resistive materials are UL Classified.
G. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

3.02 PREPARATION

A. Clean substrates of substances which could impair bonding, including oil, grease rolling compounds, incompatible primers, and loose mill scale.
B. Prime substrates where recommended by fire-resistive material manufacturer, except where compatible shop primer has been applied and is in satisfactory condition to receive fireproofing in accordance with the current UL Directory, Fire Resistance Ratings – ANSI/UL 263 (BXUV), Part II, Section 8 Coating Materials.
C. Cover other work which might be damaged by fall-out or overspray of fire-resistive materials during application. Provide temporary enclosure as required to confine spraying operations, protect the environment, and to ensure adequate ambient conditions for temperature and ventilation.

3.03 INSTALLATION, GENERAL

A. Comply with fire-resistive material manufacturer's written instructions for mixing materials, for application procedures and for types of equipment used to convey and spray-on fireproofing materials as applicable to the particular conditions of installation and as required to achieve fire-resistance ratings indicated.
B. Coat substrates with adhesive prior to application of fire-resistive material where required to achieve fire-resistance rating or recommended by fireproofing manufacturer for material and application indicated.
C. Extend fire-resistive material full thickness over entire area of each substrate to be protected.
D. Apply fire-resistive material in thicknesses and densities not less than that required to achieve fire resistance ratings designated for each condition, and in no case less than

required by the IBC 2018, Chapter 7. Provide fire-resistive material such that a structural member's rating is at least equal to the rating of the assembly it supports.

E. Apply fire-resistive materials by sprayed-on method to maximum extent possible. Following spraying operation in each area, complete the coverage by trowel application or other placement method acceptable to manufacturer.
F. Install metal lath, as required, to comply with fire-resistance ratings and fire-resistive material manufacturer's written recommendations for conditions of exposure and intended use. Securely attach lath to substrate in position required for support and reinforcement of fire-resistive material. Use anchorage devices of type recommended in writing by fire-resistive material manufacturer. Attach lathing accessories where indicated or required for secure attachment to substrate.
G. Install all fire-resistive materials before any mechanical pipe and ducts and electrical items are installed.
H. All drywall track in areas to receive fire-resistive materials shall be installed prior to application of fire-resistive materials.
I. Apply discontinuous textured spatter-coat spray per manufacturer's instructions to all cellular steel floor units with flat plate on the bottom and to roof deck assemblies as required to meet the fire resistance ratings, before application of the fire-resistive materials.
J. For applications over encapsulant materials, including lockdown(post-removal) encapsulants, apply sprayed fire-resistive material that differs in color from that of the encapsulant over which it is applied.

3.04 INSTALLING INTERIOR CONCEALED SPRAYED FIRE-RESISTIVE MATERIALS

A. Apply in thicknesses and densities indicated, but not less than those required to achieve fire-resistance ratings designated for each condition.
B. Apply topcoat to concealed sprayed fire-resistive material where indicated by manufacturer.

3.05 INSTALLING INTERIOR EXPOSED SPRAYED FIRE-RESISTIVE MATERIALS

A. Apply exposed sprayed fire-resistive material in thicknesses and densities indicated, but not less than that required to achieve fire-resistance ratings designated for each condition.
B. Provide a uniform finish complying with description indicated for each type of material and matching Architect's sample or, if none, finish approved for field-erected mockup.
   1. Provide an even, spray-textured finish, produced by rolling flat surfaces of fire-protected members with a damp paint roller to remove drippings and excessive roughness.
C. Apply sealer coat to all exposed sprayed fire-resistive materials.

3.06 INSTALLING EXTERIOR EXPOSED SPRAYED FIRE-RESISTIVE MATERIALS

A. Apply exposed sprayed fire-resistive material in thicknesses and densities indicated, but not less than that required to achieve fire-resistance ratings designated for each condition.
B. Provide a uniform finish complying with description indicated for each type of material and matching Architect's sample or, if none, finish approved for field-erected mockup.
   1. Provide an even, spray-textured finish, produced by rolling flat surfaces of fire-protected members with a damp paint roller to remove drippings and excessive roughness.
C. Apply sealer coat to all exposed sprayed fire-resistive materials.

3.07 INSTALLING THIN FILM INTUMESCENT FIRE-RESISTIVE MATERIALS

A. Apply in dry-film thicknesses indicated, but not less than those required to achieve fire-resistance ratings designated for each condition.
B. Provide a uniform finish complying with description indicated for each type of material and matching Architect's sample or, if none, finish approved for field-erected mockup.

C. Provide manufacturer's basecoat and/or glasscloth reinforcement if required for UL Design compliance.
D. Spray apply successive coat(s) and finish topcoat. Allow to dry and cure between coats. Back-roll final coat to provide a smooth appearance before applying color topcoat. Determine presence of required dry film thickness before applying color topcoat.
E. Provide a finish topcoat color approved by Architect.

3.08 FIELD QUALITY CONTROL

A. Special Inspections: Owner will employ and pay a qualified independent testing laboratory to perform field quality control testing.
B. Test and inspect in accordance with Chapter 17 of the applicable building code and at least the following:
   1. Thickness: For structural frame members, provide testing of 25% of members of each floor. For each floor assembly and each roof assembly, provide four tests per 2,500 s.f. of area. Thickness shall be determined in accordance with ASTM E605.
   2. Density: For each floor, and not less than within each 2,500 sq. ft., testing laboratory shall randomly select a typical bay, and test one of each fireproofed structural element type within it for density in accordance with ASTM E605.
   3. Cohesion/Adhesion: For each floor, and not less than within each 2,500 sq. ft., testing laboratory shall randomly select a typical bay, and test one of each fireproofed structural element type within it for density in accordance with ASTM E736.
C. Testing Laboratory shall report test results promptly and in writing to Contractor and Architect.
D. Test intumescent fireproofing for dry film thickness per SSPC PA2. Reading to be taken on 25% of the treated steel area. No DFT (Dry Film Thickness) reading shall be less than that required per approved submittals. Do not apply topcoat until intumescent fireproofing is tested and approved.
E. Fireproofing will be considered defective if it does not pass tests and inspections.
   1. Remove and replace fireproofing that does not pass tests and inspections, and retest.
   2. Apply additional fireproofing, per manufacturer's written instructions, where test results indicate insufficient thickness, and retest.
F. Prepare test and inspection reports.

3.09 CLEANING, REPAIR, AND PROTECTION

A. Cleaning: Immediately upon completion of spraying operations in each confinable area of project, remove over-spray and fall-out of materials from surfaces of other work and clean exposed surfaces to remove evidence of soiling. Sweep all effected floors broom clean.
B. Cure exposed cementitious fireproofing materials in compliance with fireproofing manufacturer's recommendations to prevent premature drying.
C. Protect fireproofing according to advice of fireproofing manufacturer and installer from damage resulting from construction operations or other causes so that fireproofing will be without damage or deterioration at time of Substantial Completion.
D. Coordinate with other work in order to minimize the need for other trades to cut or remove fireproofing. As other trades successively complete installation of their work, maintain protection of structure afforded by fireproofing by patching any areas which have been removed or damaged prior to concealment of fireproofing.
E. Repair or replace work which has not been successfully protected.

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: ≤ 1/2 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.

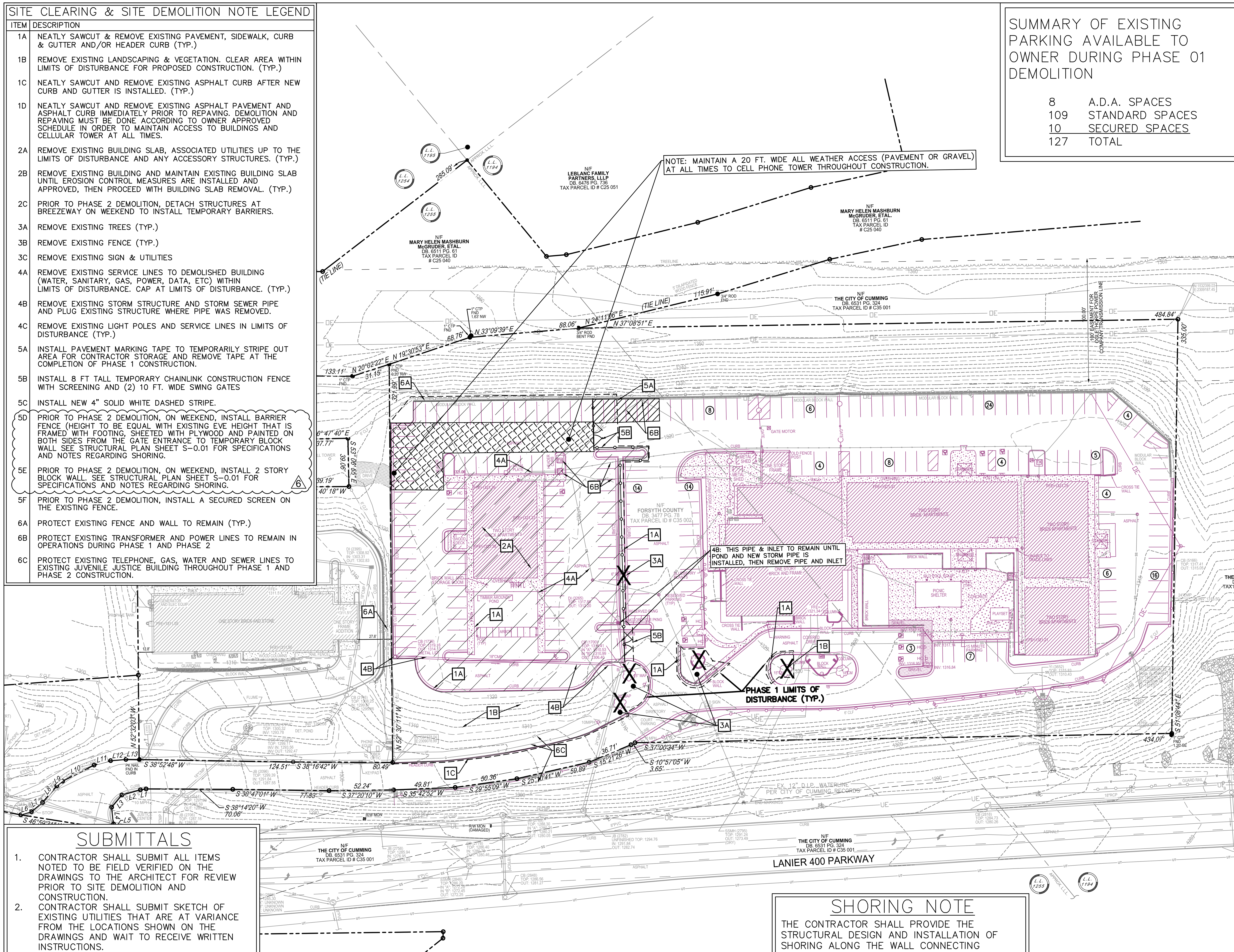
C. Settlement monitoring data will be provided to the project Architect, Geotechnical engineer, Structural engineer, Aggregate Pier subcontractor and the Owner on a weekly basis until deemed substantially complete by the project Geotechnical engineer.

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

SITE CLEARING & SITE DEMOLITION NOTE LEGEND

ITEM	DESCRIPTION
1A	NEATLY SAWCUT & REMOVE EXISTING PAVEMENT, SIDEWALK, CURB & GUTTER AND/OR HEADER CURB (TYP.)
1B	REMOVE EXISTING LANDSCAPING & VEGETATION. CLEAR AREA WITHIN LIMITS OF DISTURBANCE FOR PROPOSED CONSTRUCTION. (TYP.)
1C	NEATLY SAWCUT AND REMOVE EXISTING ASPHALT CURB AFTER NEW CURB AND GUTTER IS INSTALLED. (TYP.)
1D	NEATLY SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT AND ASPHALT CURB IMMEDIATELY PRIOR TO REPAVING. DEMOLITION AND REPAVING MUST BE DONE ACCORDING TO OWNER APPROVED SCHEDULE IN ORDER TO MAINTAIN ACCESS TO BUILDINGS AND CELLULAR TOWER AT ALL TIMES.
2A	REMOVE EXISTING BUILDING SLAB, ASSOCIATED UTILITIES UP TO THE LIMITS OF DISTURBANCE AND ANY ACCESSORY STRUCTURES. (TYP.)
2B	REMOVE EXISTING BUILDING AND MAINTAIN EXISTING BUILDING SLAB UNTIL EROSION CONTROL MEASURES ARE INSTALLED AND APPROVED, THEN PROCEED WITH BUILDING SLAB REMOVAL. (TYP.)
2C	PRIOR TO PHASE 2 DEMOLITION, DETACH STRUCTURES AT BREEZEWAY ON WEEKEND TO INSTALL TEMPORARY BARRIERS.
3A	REMOVE EXISTING TREES (TYP.)
3B	REMOVE EXISTING FENCE (TYP.)
3C	REMOVE EXISTING SIGN & UTILITIES
4A	REMOVE EXISTING SERVICE LINES TO DEMOLISHED BUILDING (WATER, SANITARY, GAS, POWER, DATA, ETC) WITHIN LIMITS OF DISTURBANCE. CAP AT LIMITS OF DISTURBANCE. (TYP.)
4B	REMOVE EXISTING STORM STRUCTURE AND STORM SEWER PIPE AND PLUG EXISTING STRUCTURE WHERE PIPE WAS REMOVED.
4C	REMOVE EXISTING LIGHT POLES AND SERVICE LINES IN LIMITS OF DISTURBANCE (TYP.)
5A	INSTALL PAVEMENT MARKING TAPE TO TEMPORARILY STRIPE OUT AREA FOR CONTRACTOR STORAGE AND REMOVE TAPE AT THE COMPLETION OF PHASE 1 CONSTRUCTION.
5B	INSTALL 8 FT TALL TEMPORARY CHAINLINK CONSTRUCTION FENCE WITH SCREENING AND (2) 10 FT. WIDE SWING GATES
5C	INSTALL NEW 4" SOLID WHITE DASHED STRIPE.
5D	PRIOR TO PHASE 2 DEMOLITION, ON WEEKEND, INSTALL BARRIER FENCE (HEIGHT TO BE EQUAL WITH EXISTING EVE HEIGHT THAT IS FRAMED WITH FOOTING, SHEETED WITH PLYWOOD AND PAINTED ON BOTH SIDES FROM THE GATE ENTRANCE TO TEMPORARY BLOCK WALL SEE STRUCTURAL PLAN SHEET S-0.01 FOR SPECIFICATIONS AND NOTES REGARDING SHORING.
5E	PRIOR TO PHASE 2 DEMOLITION, ON WEEKEND, INSTALL 2 STORY BLOCK WALL. SEE STRUCTURAL PLAN SHEET S-0.01 FOR SPECIFICATIONS AND NOTES REGARDING SHORING. 6
5F	PRIOR TO PHASE 2 DEMOLITION, INSTALL A SECURED SCREEN ON THE EXISTING FENCE.
6A	PROTECT EXISTING FENCE AND WALL TO REMAIN (TYP.)
6B	PROTECT EXISTING TRANSFORMER AND POWER LINES TO REMAIN IN OPERATIONS DURING PHASE 1 AND PHASE 2
6C	PROTECT EXISTING TELEPHONE, GAS, WATER AND SEWER LINES TO EXISTING JUVENILE JUSTICE BUILDING THROUGHOUT PHASE 1 AND PHASE 2 CONSTRUCTION.



SUMMARY OF EXISTING PARKING AVAILABLE TO OWNER DURING PHASE 01 DEMOLITION

8	A.D.A. SPACES
109	STANDARD SPACES
10	SECURED SPACES
127	TOTAL

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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SEE SHEET C-000 FOR GENERAL NOTES AND DRAWING LEGEND

SUBMITTALS

1. CONTRACTOR SHALL SUBMIT ALL ITEMS NOTED TO BE FIELD VERIFIED ON THE DRAWINGS TO THE ARCHITECT FOR REVIEW PRIOR TO SITE DEMOLITION AND CONSTRUCTION.
2. CONTRACTOR SHALL SUBMIT SKETCH OF EXISTING UTILITIES THAT ARE AT VARIANCE FROM THE LOCATIONS SHOWN ON THE DRAWINGS AND WAIT TO RECEIVE WRITTEN INSTRUCTIONS.

NOTE: SEE ELECTRICAL PLANS FOR NOTES AND SPECIFICATIONS REGARDING THE REMOVAL OF ANY SITE ELECTRICAL LINES, POLES, BOXES, ETC.

IN GENERAL, ALL EXISTING TREES INDICATED FOR REMOVAL SHALL BE MARKED BY THE CONTRACTOR. BEFORE PROCEEDING WITH ACTUAL CLEARING OPERATIONS, ALL TREES SPECIFICALLY INTENDED TO BE REMOVED SHALL BE IDENTIFIED BY AN APPROPRIATE AND CLEARLY RECOGNIZABLE MARKER. CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING WHEN ALL TREES WITHIN THE CLEARING LIMITS HAVE BEEN MARKED; REMOVAL SHALL NOT COMMENCE UNTIL THE ARCHITECT HAS APPROVED ALL PROPOSED TREE REMOVAL.

POTHOLE NOTE:

1. AFTER UTILITIES ARE LOCATED ON THE SITE BY THE CONTRACTOR AND PRIOR TO SITE CONSTRUCTION, THE CONTRACTOR SHALL POTHOLE THE DEPTH OF THE EXISTING UTILITY LINES TO REMAIN WITHIN DISTURBED AREA MAIN TO DETERMINE THE DEPTHS OF THE LINE AND COMPARE WITH THE EXCAVATION REQUIREMENTS. SUBMIT RESULTS TO THE ARCHITECT TO VERIFY IF THERE IS ANY CONFLICT WITH EXISTING UTILITY.

ESPC NOTE

CONTRACTOR SHALL INSTALL ALL APPLICABLE EROSION, SEDIMENT, & POLLUTION CONTROL MEASURES AS SHOWN ON THE INITIAL ESPC PLAN PRIOR TO SITE CLEARING AND DEMOLITION OPERATIONS.

NOTE: CONTRACTOR SHALL PROTECT EXISTING BUILDINGS ON SITE DURING CONSTRUCTION. CONTRACTOR SHALL MAINTAIN ACCESS THROUGH PARKING LOT AND AT ENTRANCES AND MAINTAIN ACCESS TO EXISTING BUILDINGS. CONTRACTOR SHALL COORDINATE WITH OWNER AND OBTAIN OWNER APPROVED SCHEDULE IF ACCESS POINTS NEED TO BE TEMPORARILY DISRUPTED DURING CONSTRUCTION.

SHORING NOTE

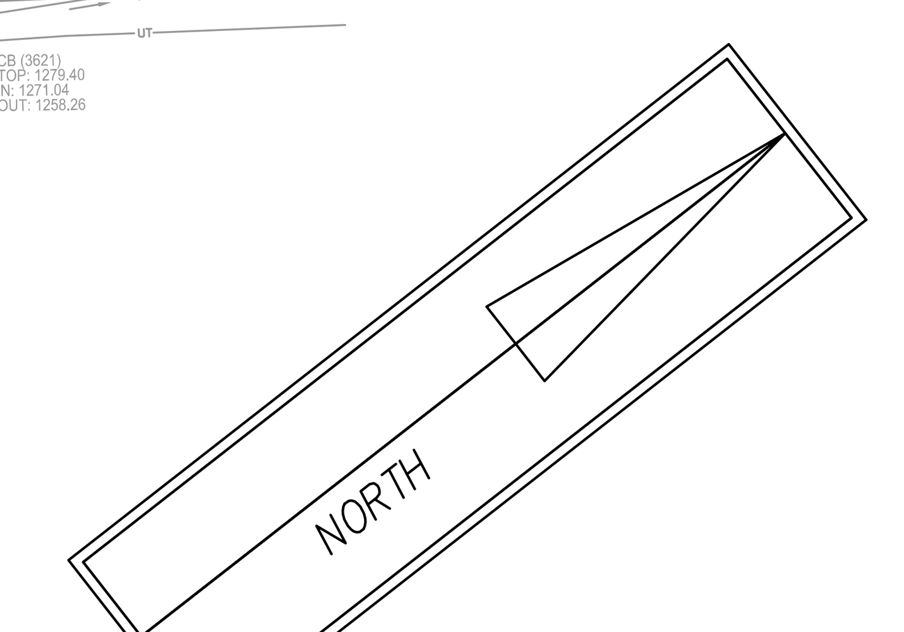
THE CONTRACTOR SHALL PROVIDE THE STRUCTURAL DESIGN AND INSTALLATION OF SHORING ALONG THE WALL CONNECTING BUILDING A AND B PRIOR TO DEMOLITION AND THROUGHOUT CONSTRUCTION.

DEMOLITION LEGEND

ITEM TO BE REMOVED............ X

PAVEMENT, SIDEWALK OR CURB & GUTTER TO BE REMOVED............

NOTE:
THERE MAY BE ADDITIONAL TREES NOT SHOWN ON THIS SURVEY WITHIN THE LIMITS OF DISTURBANCE THAT NEED TO BE REMOVED. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO DETERMINE THE SCOPE OF TREE REMOVAL.



40' 0' 40' 80' 120'

SCALE: 1" = 40'

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

GEORGIA REGISTERED 07-16-20 No. 25813 PROFESSIONAL ENGINEER ANDREW M. HALLORAN

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

CORNERSTONE SITE CONSULTANTS

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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
6	07/16/2020	Addendum 6

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

Sheet Title

SITE DEMOLITION PLAN PHASE 1

Sheet No.

C 030

RELEASED FOR CONSTRUCTION

SITE CLEARING & SITE DEMOLITION NOTE LEGEND

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1C	NEATLY SAWCUT AND REMOVE EXISTING ASPHALT CURB AFTER NEW CURB AND GUTTER IS INSTALLED. (TYP.)
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3C	REMOVE EXISTING SIGN & UTILITIES
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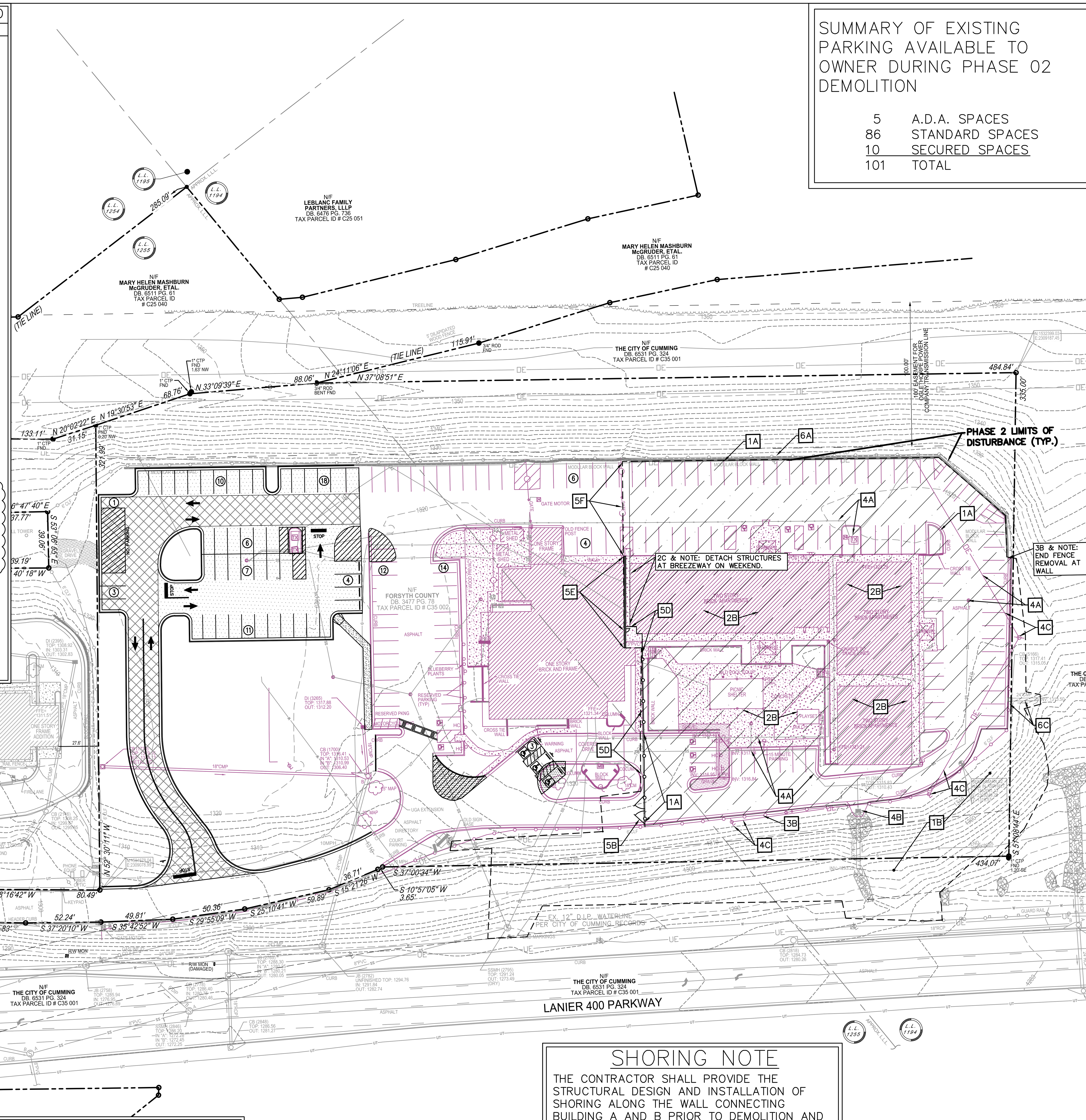
SUMMARY OF EXISTING PARKING AVAILABLE TO OWNER DURING PHASE 02 DEMOLITION

5	A.D.A. SPACES
86	STANDARD SPACES
10	SECURED SPACES
101	TOTAL



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)

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POTHOLE NOTE:

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NOTE: CONTRACTOR SHALL PROTECT EXISTING BUILDINGS ON SITE DURING CONSTRUCTION. CONTRACTOR SHALL MAINTAIN ACCESS THROUGH PARKING LOT AND AT ENTRANCES AND MAINTAIN ACCESS TO EXISTING BUILDINGS. CONTRACTOR SHALL COORDINATE WITH OWNER AND OBTAIN OWNER APPROVED SCHEDULE IF ACCESS POINTS NEED TO BE TEMPORARILY DISRUPTED DURING CONSTRUCTION.

SHORING NOTE

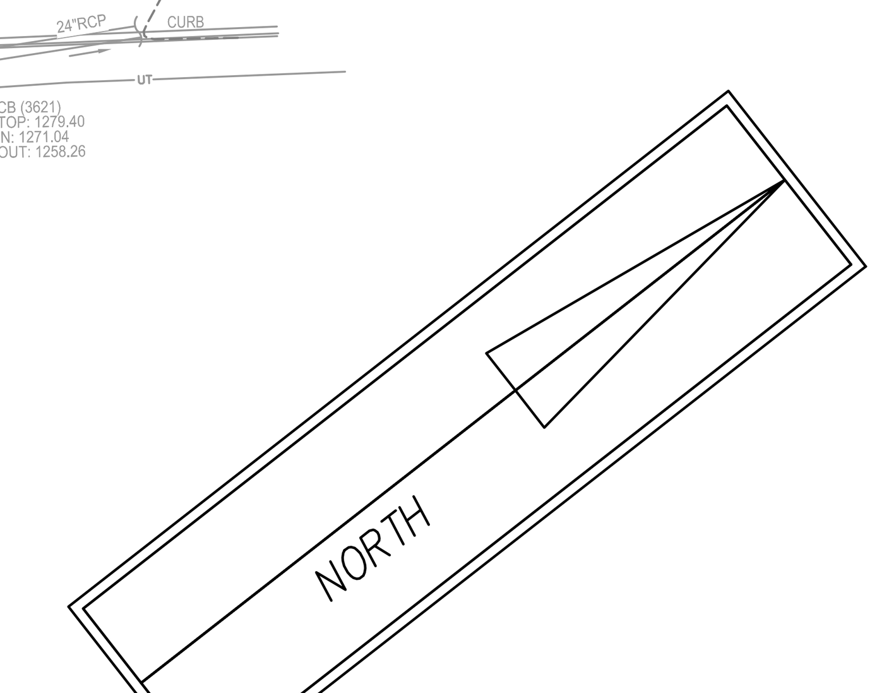
THE CONTRACTOR SHALL PROVIDE THE STRUCTURAL DESIGN AND INSTALLATION OF SHORING ALONG THE WALL CONNECTING BUILDING A AND B PRIOR TO DEMOLITION AND THROUGHOUT CONSTRUCTION.

DEMOLITION LEGEND

ITEM TO BE REMOVED............ X

PAVEMENT, SIDEWALK OR CURB & GUTTER TO BE REMOVED............

NOTE:
THERE MAY BE ADDITIONAL TREES NOT SHOWN ON THIS SURVEY WITHIN THE LIMITS OF DISTURBANCE THAT NEED TO BE REMOVED. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO DETERMINE THE SCOPE OF TREE REMOVAL.



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

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

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 25813 ANDREW M. HALLORAN
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 JUVENILE COURT BUILDING

FORSYTH COUNTY BOARD OF COMMISSIONERS

875 LANIER 400 PARKWAY
CUMMING, GA 30040

PRINT RECORD

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6	07/16/2020	Addendum 6

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

Sheet Title

SITE DEMOLITION PLAN PHASE 2

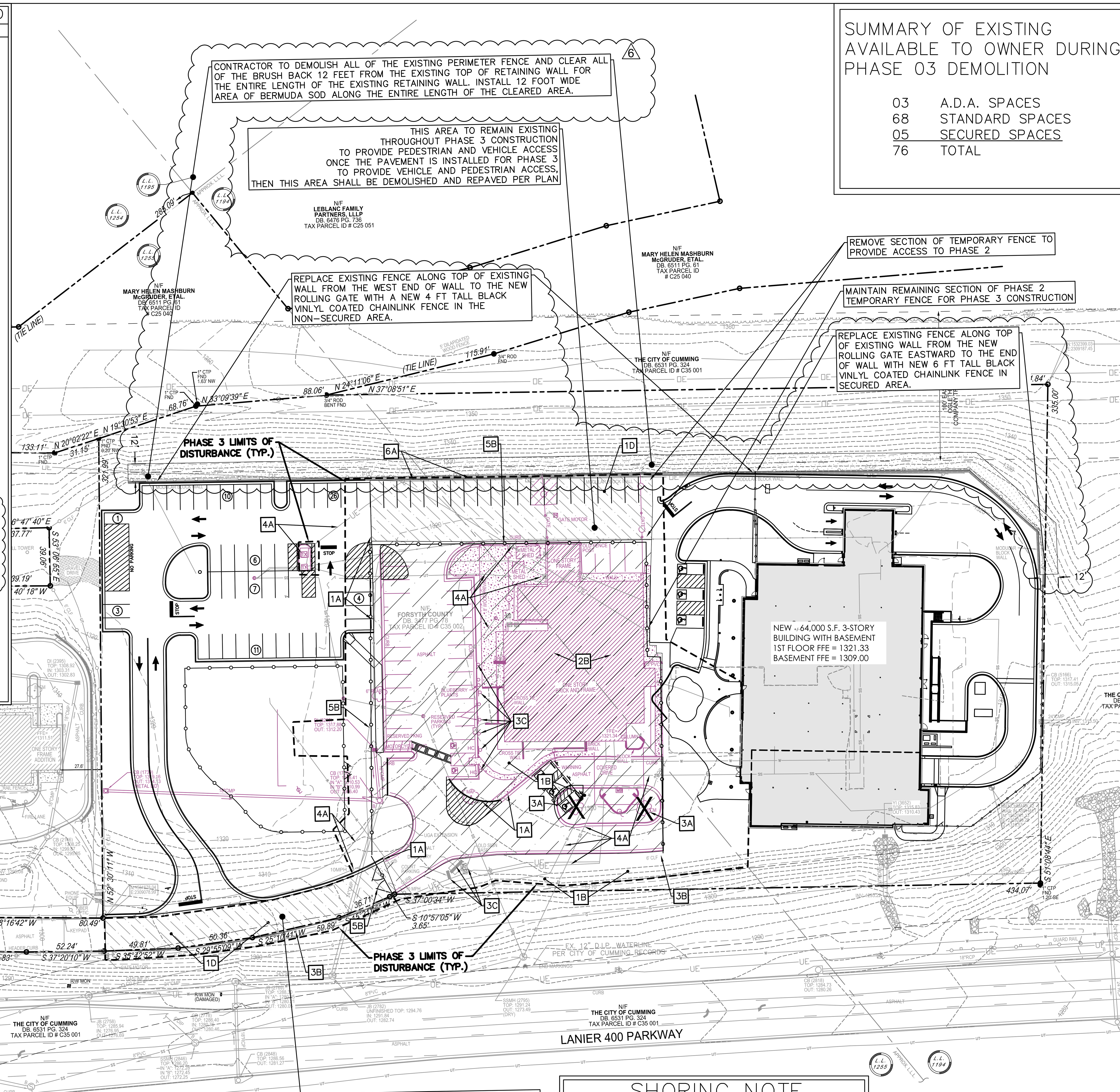
Sheet No.

C 031

RELEASED FOR CONSTRUCTION

SITE CLEARING & SITE DEMOLITION NOTE LEGEND

ITEM	DESCRIPTION
1A	NEATLY SAWCUT & REMOVE EXISTING PAVEMENT, SIDEWALK, CURB & GUTTER AND/OR HEADER CURB (TYP.)
1B	REMOVE EXISTING LANDSCAPING & VEGETATION. CLEAR AREA WITHIN LIMITS OF DISTURBANCE FOR PROPOSED CONSTRUCTION. (TYP.)
1C	NEATLY SAWCUT AND REMOVE EXISTING ASPHALT CURB AFTER NEW CURB AND GUTTER IS INSTALLED. (TYP.)
1D	NEATLY SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT AND ASPHALT CURB IMMEDIATELY PRIOR TO REPAVING. DEMOLITION AND REPAVING MUST BE DONE ACCORDING TO OWNER APPROVED SCHEDULE IN ORDER TO MAINTAIN ACCESS TO BUILDINGS AND CELLULAR TOWER AT ALL TIMES.
2A	REMOVE EXISTING BUILDING SLAB, ASSOCIATED UTILITIES UP TO THE LIMITS OF DISTURBANCE AND ANY ACCESSORY STRUCTURES. (TYP.)
2B	REMOVE EXISTING BUILDING AND MAINTAIN EXISTING BUILDING SLAB UNTIL EROSION CONTROL MEASURES ARE INSTALLED AND APPROVED, THEN PROCEED WITH BUILDING SLAB REMOVAL. (TYP.)
2C	PRIOR TO PHASE 2 DEMOLITION, DETACH STRUCTURES AT BREEZEWAY ON WEEKEND TO INSTALL TEMPORARY BARRIERS.
3A	REMOVE EXISTING TREES (TYP.)
3B	REMOVE EXISTING FENCE (TYP.)
3C	REMOVE EXISTING SIGN & UTILITIES
4A	REMOVE EXISTING SERVICE LINES TO DEMOLISHED BUILDING (WATER, SANITARY, GAS, POWER, DATA, ETC) WITHIN LIMITS OF DISTURBANCE. CAP AT LIMITS OF DISTURBANCE. (TYP.)
4B	REMOVE EXISTING STORM STRUCTURE AND STORM SEWER PIPE AND PLUG EXISTING STRUCTURE WHERE PIPE WAS REMOVED.
4C	REMOVE EXISTING LIGHT POLES AND SERVICE LINES IN LIMITS OF DISTURBANCE (TYP.)
5A	INSTALL PAVEMENT MARKING TAPE TO TEMPORARILY STRIPE OUT AREA FOR CONTRACTOR STORAGE AND REMOVE TAPE AT THE COMPLETION OF PHASE 1 CONSTRUCTION.
5B	INSTALL 8 FT TALL TEMPORARY CHAINLINK CONSTRUCTION FENCE WITH SCREENING AND (2) 10 FT. WIDE SWING GATES
5C	INSTALL NEW 4" SOLID WHITE DASHED STRIPE.
5D	PRIOR TO PHASE 2 DEMOLITION, ON WEEKEND, INSTALL BARRIER FENCE (HEIGHT TO BE EQUAL WITH EXISTING EVE HEIGHT THAT IS FRAMED WITH FOOTING, SHEETED WITH PLYWOOD AND PAINTED ON BOTH SIDES FROM THE GATE ENTRANCE TO TEMPORARY BLOCK WALL SEE STRUCTURAL PLAN SHEET S-0.01 FOR SPECIFICATIONS AND NOTES REGARDING SHORING.
5E	PRIOR TO PHASE 2 DEMOLITION, ON WEEKEND, INSTALL 2 STORY BLOCK WALL. SEE STRUCTURAL PLAN SHEET S-0.01 FOR SPECIFICATIONS AND NOTES REGARDING SHORING.
5F	PRIOR TO PHASE 2 DEMOLITION, INSTALL A SECURED SCREEN ON THE EXISTING FENCE.
6A	PROTECT EXISTING FENCE AND WALL TO REMAIN (TYP.)
6B	PROTECT EXISTING TRANSFORMER AND POWER LINES TO REMAIN IN OPERATIONS DURING PHASE 1 AND PHASE 2
6C	PROTECT EXISTING TELEPHONE, GAS, WATER AND SEWER LINES TO EXISTING JUVENILE JUSTICE BUILDING THROUGHOUT PHASE 1 AND PHASE 2 CONSTRUCTION.



SUMMARY OF EXISTING AVAILABLE TO OWNER DURING PHASE 03 DEMOLITION

03	A.D.A. SPACES
68	STANDARD SPACES
05	SECURED SPACES
76	TOTAL

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 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

SUBMITTALS

1. CONTRACTOR SHALL SUBMIT ALL ITEMS NOTED TO BE FIELD VERIFIED ON THE DRAWINGS TO THE ARCHITECT FOR REVIEW PRIOR TO SITE DEMOLITION AND CONSTRUCTION.
2. CONTRACTOR SHALL SUBMIT SKETCH OF EXISTING UTILITIES THAT ARE AT VARIANCE FROM THE LOCATIONS SHOWN ON THE DRAWINGS AND WAIT TO RECEIVE WRITTEN INSTRUCTIONS.

NOTE: SEE ELECTRICAL PLANS FOR NOTES AND SPECIFICATIONS REGARDING THE REMOVAL OF ANY SITE ELECTRICAL LINES, POLES, BOXES, ETC.

IN GENERAL, ALL EXISTING TREES INDICATED FOR REMOVAL SHALL BE MARKED BY THE CONTRACTOR. BEFORE PROCEEDING WITH ACTUAL CLEARING OPERATIONS, ALL TREES SPECIFICALLY INTENDED TO BE REMOVED SHALL BE IDENTIFIED BY AN APPROPRIATE AND CLEARLY RECOGNIZABLE MARKER. CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING WHEN ALL TREES WITHIN THE CLEARING LIMITS HAVE BEEN MARKED; REMOVAL SHALL NOT COMMENCE UNTIL THE ARCHITECT HAS APPROVED ALL PROPOSED TREE REMOVAL.

POTHOLE NOTE:

1. AFTER UTILITIES ARE LOCATED ON THE SITE BY THE CONTRACTOR AND PRIOR TO SITE CONSTRUCTION, THE CONTRACTOR SHALL POTHOLE THE DEPTH OF THE EXISTING UTILITY LINES TO REMAIN WITHIN DISTURBED AREA MAIN TO DETERMINE THE DEPTHS OF THE LINE AND COMPARE WITH THE EXCAVATION REQUIREMENTS. SUBMIT RESULTS TO THE ARCHITECT TO VERIFY IF THERE IS ANY CONFLICT WITH EXISTING UTILITY.

ESPC NOTE

CONTRACTOR SHALL INSTALL ALL APPLICABLE EROSION, SEDIMENT, & POLLUTION CONTROL MEASURES AS SHOWN ON THE INITIAL ESPC PLAN PRIOR TO SITE CLEARING AND DEMOLITION OPERATIONS.

NOTE: CONTRACTOR SHALL PROTECT EXISTING BUILDINGS ON SITE DURING CONSTRUCTION. CONTRACTOR SHALL MAINTAIN ACCESS THROUGH PARKING LOT AND AT ENTRANCES AND MAINTAIN ACCESS TO EXISTING BUILDINGS. CONTRACTOR SHALL COORDINATE WITH OWNER AND OBTAIN OWNER APPROVED SCHEDULE IF ACCESS POINTS NEED TO BE TEMPORARILY DISRUPTED DURING CONSTRUCTION.

SHORING NOTE

THE CONTRACTOR SHALL PROVIDE THE STRUCTURAL DESIGN AND INSTALLATION OF SHORING ALONG THE WALL CONNECTING BUILDING A AND B PRIOR TO DEMOLITION AND THROUGHOUT CONSTRUCTION.

DEMOLITION LEGEND

ITEM TO BE REMOVED............ X

PAVEMENT, SIDEWALK OR CURB & GUTTER TO BE REMOVED............

NOTE:
THERE MAY BE ADDITIONAL TREES NOT SHOWN ON THIS SURVEY WITHIN THE LIMITS OF DISTURBANCE THAT NEED TO BE REMOVED. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO DETERMINE THE SCOPE OF TREE REMOVAL.

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

JERICHO architectural design group
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Drawn By CHC	Checked By AMH
Date 03/16/2020	Job No. 19059 DG

Sheet Title
SITE DEMOLITION PLAN PHASE 3

Sheet No.
C 032

RELEASED FOR CONSTRUCTION

STORM SEWER AS-BUILTS

1. UPON COMPLETION OF THE STORM SEWER SYSTEM, THE CONTRACTOR SHALL SUBMIT TO THE CIVIL ENGINEER AN AS-BUILT SURVEY OF THE STORM SEWER SYSTEM SIGNED AND SEALED BY A REGISTERED LAND SURVEYOR. THE SURVEY SHOULD BE PREPARED BY THE SURVEYOR OF RECORD UNLESS OTHERWISE APPROVED BY THE CIVIL ENGINEER.
2. THE AS-BUILT SURVEY SHALL INCLUDE THE HORIZONTAL LAYOUT AND AS-BUILT ELEVATIONS OF THE STORM SEWER SYSTEM AS SHOWN ON THE DESIGN PLANS. THE SURVEY SHOULD INCLUDE ALL PIPE SIZES, MATERIAL AND INVERTS. ALL STORM SEWER STRUCTURES WITH ELEVATION DATA OF ANY TOPS, GRATES, WEIRS AND INVERTS. ALL ELEVATIONS SHALL CORRESPOND TO THE PROJECT BENCHMARK.
3. IF, UPON REVIEW THE AS-BUILT STORM SEWER SYSTEM, IS NOT IN COMPLIANCE WITH THE DESIGN DRAWINGS, THE CONTRACTOR SHALL MODIFY THE STORM SEWER SYSTEM WHERE NECESSARY TO BRING IT INTO COMPLIANCE WITH THE DESIGN DRAWINGS AT NO ADDITIONAL COST TO THE OWNER. THEN HAVE THE REVISED AREAS RE-SURVEYED AS STATED ABOVE. THIS PROCESS SHALL CONTINUE UNTIL THE STORM SEWER SYSTEM IS IN ACCORDANCE WITH THE DESIGN DRAWINGS AT NO ADDITIONAL COST TO THE OWNER.
4. CONTRACTOR SHALL PROVIDE ADEQUATE TIME (MIN. 10 WEEKS REQUIRED) TO SCHEDULE SURVEY AND ENGINEER REVIEW PRIOR TO REQUIRED OR TARGETED DATE TO OBTAIN THE CERTIFICATE OF OCCUPANCY. IT IS SUGGESTED THAT THE SURVEY BE PROVIDED IMMEDIATELY UPON COMPLETION OF THE STORM SEWER SYSTEM WHILE THE SITE CONTRACTOR'S EQUIPMENT IS STILL ON SITE AND AVAILABLE FOR ANY NECESSARY MODIFICATIONS.

DETENTION POND AS-BUILTS

1. UPON COMPLETION OF THE DETENTION POND CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A TOPOGRAPHIC AS-BUILT SURVEY OF THE POND SIGNED AND SEALED BY A REGISTERED LAND SURVEYOR AS PREPARED BY THE SURVEYOR OF RECORD UNLESS OTHERWISE APPROVED BY THE CIVIL ENGINEER.
2. THE AS-BUILT SURVEY SHALL INCLUDE THE HORIZONTAL LAYOUT AND AS-BUILT ELEVATIONS OF THE DETENTION POND AREA AS SHOWN ON THE DESIGN PLANS, BOTH INNER & OUTER FACE OF DAM, OUTLET CONTROL STRUCTURE DETAILED & INVERTS, SIZE AND MATERIAL OF THE OUTLET PIPE. PROVIDE 1 FT. CONTOURS AND INTERIOR SPOT ELEVATIONS AT THE BOTTOM OF POND. ALL ELEVATIONS SHALL CORRESPOND TO THE PROJECT BENCHMARK.
3. IF, UPON REVIEW THE AS-BUILT DETENTION POND IS NOT IN COMPLIANCE WITH THE DESIGN DRAWINGS, THE CONTRACTOR SHALL MODIFY THE DETENTION POND WHERE NECESSARY TO BRING IT INTO COMPLIANCE WITH THE DESIGN DRAWINGS AT NO ADDITIONAL COST TO THE OWNER. THEN HAVE THE REVISED POND RE-SURVEYED AS STATED ABOVE. THIS PROCESS SHALL CONTINUE UNTIL THE DETENTION POND IS IN ACCORDANCE WITH THE DESIGN DRAWINGS AT NO ADDITIONAL COST TO THE OWNER.
4. CONTRACTOR SHALL PROVIDE ADEQUATE TIME (MIN. 10 WEEKS REQUIRED) TO SCHEDULE SURVEY AND ENGINEER REVIEW PRIOR TO REQUIRED OR TARGETED DATE TO OBTAIN THE CERTIFICATE OF OCCUPANCY.

STORMWATER DETENTION PIPE NOTES

1. DETENTION PIPE SYSTEM TO BE DESIGNED FOR H20 LOADING BASED ON COVER PROVIDED ON THE GRADING PLAN. PIPE MATERIAL AS ALUMINIZED STEEL TYPE 2 PIPE WITH WATER TIGHT HUGGER BANDS AND O-RING GASKETS.
2. COMPLY WITH MANUFACTURER'S SPECIFICATIONS FOR BACKFILL
3. PROVIDE STONE BACKFILL TO A MINIMUM OF SPRINGLINE OF THE PIPE
4. PROVIDE 6 OZ. NON-WOVEN GEOTEXTILE FABRIC BETWEEN STONE BACKFILL AND SOIL (WRAP ON ALL TOP, BOTTOM AND SIDES)
5. PROVIDE ACCESS RISER LIDS AS SHOWN ON RISER TO INCLUDE LADDER AND TOP OF RISER TO HAVE An 8" THICK BY 60" DIAMETER CONCRETE COLLAR.
6. CONTRACTOR SHALL PROVIDE AND SUBMIT DESIGN DRAWINGS OF THE STORM DETENTION PIPE SYSTEM TO CIVIL ENGINEER PRIOR TO ORDERING OR FABRICATION. SUBMITTED DRAWINGS SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF GEORGIA.

ROOF & LANDSCAPE DRAIN STORM PIPE NOTES

1. SITE CONTRACTOR SHALL PROVIDE ROOF DRAIN LEADER PIPE AND DOWNSPOUT ADAPTER TO CONNECT WITH DOWNSPOUTS.
2. DOWNSPOUT ADAPTER SHALL MATCH COLOR OF DOWNSPOUTS WHERE ABOVE GRADE.
3. ROOF DRAIN LINE SHALL BE EITHER D.I.P. CLASS 51, SDR 35 PVC, OR HDPE ADS N-12 (OR APPROVED EQUAL) SMOOTH INTERIOR WATERTIGHT JOINTS STORM PIPE LINE WHERE SHOWN ON THE DRAWINGS
4. CLEANOUTS IN PAVED AREAS MUST HAVE TRAFFIC RESISTANT TOPS.
5. ALL CLEANOUTS SHALL BE FLUSH WITH FINISHED GRADE. SEE DETAIL ON CONSTRUCTION DETAILS
6. PROVIDE STORM SEWER CLEANOUTS LOCATIONS SHOWN.
7. PROVIDE WYE CONNECTIONS INSTEAD OF TEES ALONG ALL ROOF DRAIN OR LANDSCAPE DRAIN STORM PIPING
8. WHERE SHOWN ON THE DRAWINGS, CONNECT ROOF DRAINS AND LANDSCAPE DRAIN STORM PIPING TO STORM STRUCTURE AT INVERT SPECIFIED ON THIS SHEET OR PROFILE SHEET.
9. PROVIDE A MINIMUM OF 2 FEET OF COVER OVER ROOF DRAIN STORM PIPE.
10. LANDSCAPE INLETS SHOWN SHALL HAVE A STANDARD GRATE WITH CONCRETE COLLAR PER DETAILS 06-C504
11. SEE HDPE BEDDING DETAIL ON C504.

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
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PROPOSED PROJECT:	JUVENILE JUSTICE CENTER
SITE ZONING:	HB (CITY OF CUMMING)

JERICHO architectural design group
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GEORGIA REGISTERED No. 25813 PROFESSIONAL ENGINEER ANDREW M. HALLORAN 03-16-20

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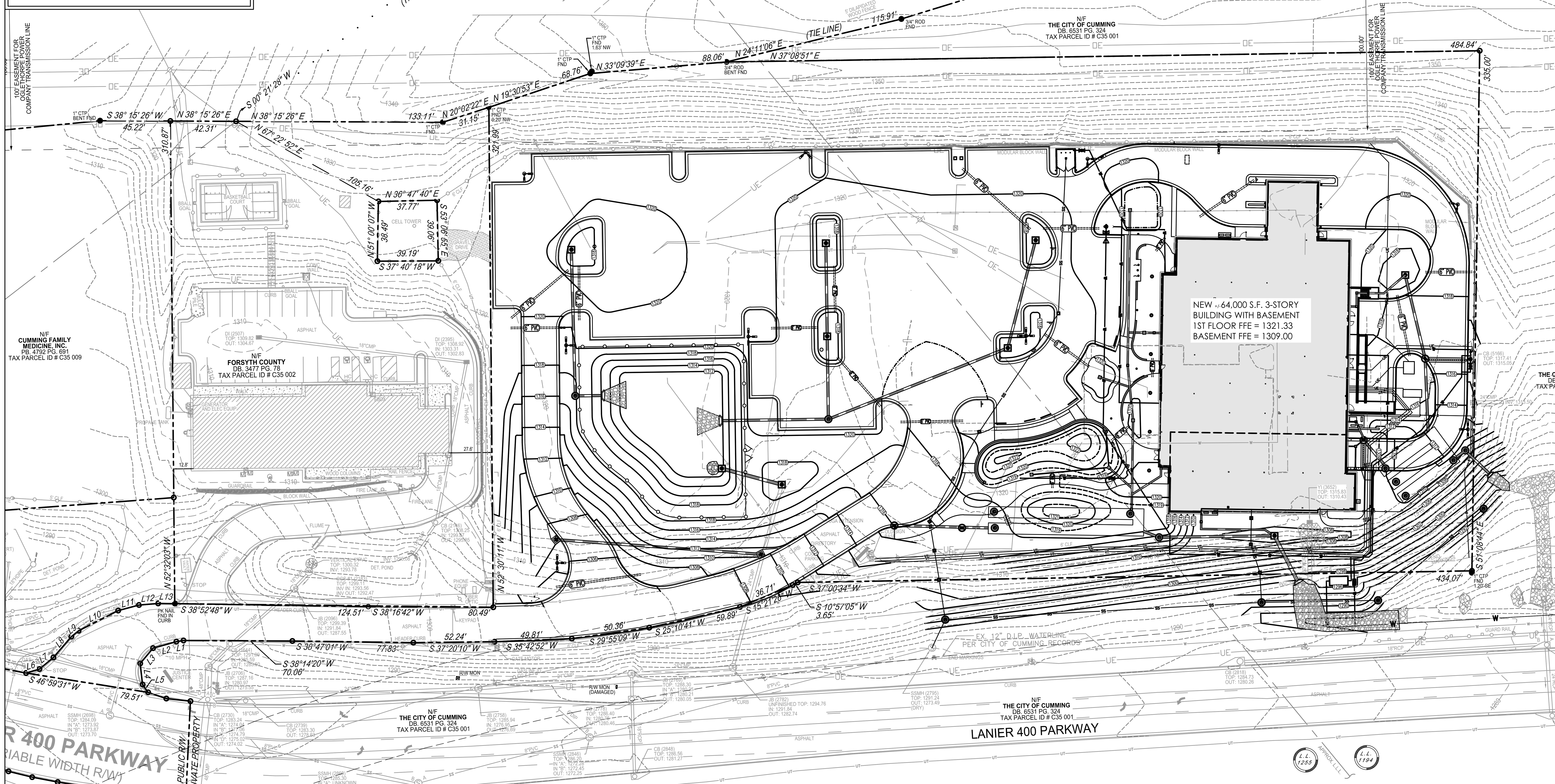
FORSYTH COUNTY NOTE

1. HDPE SHALL BE INSTALLED PER GDOT SPECIAL PROVISION, SECTION 550.



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SEE SHEET C-000 FOR GENERAL NOTES AND DRAWING LEGEND

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

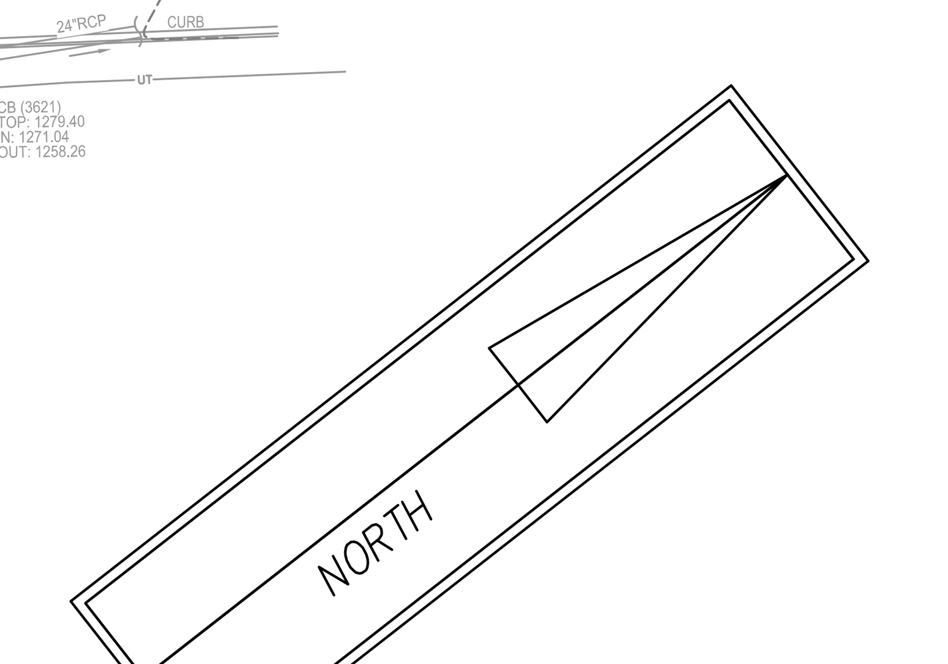
Sheet Title

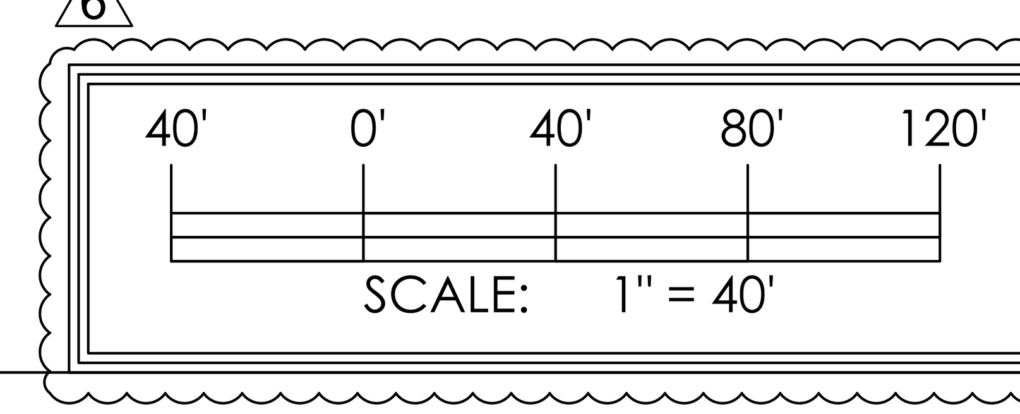
OVERALL GRADING & DRAINAGE PLAN

Sheet No.

C 110

RELEASED FOR CONSTRUCTION





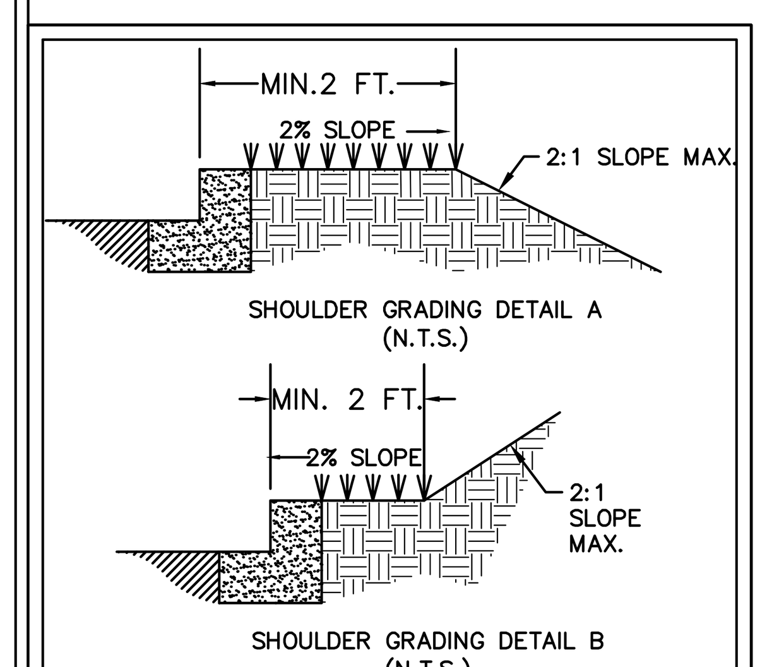
CITY OF CUMMING STORMWATER POND NOTES

1. STORMWATER MANAGEMENT FACILITY FENCING. FENCES AND WARNING SIGNS WILL BE REQUIRED ON ALL DETENTION PONDS, CONSTRUCTED WETLANDS, RETENTION PONDS OR SIMILAR DEVICES WHERE THE SIDES OF THE DEVICE ADJACENT TO THE WATER ARE STEEPER THAN 3:1 AND THE DEPTH OF THE WATER IN THE POND IS GREATER THAN THREE FEET. FENCES SHALL BE FIVE-FOOT-HIGH CHAIN LINK OR OTHER APPROVED MATERIAL WITH A 12-FOOT-WIDE GATE. THE GATE SHALL BE LOCKED WITH A MASTER NUMBER ONE LOCK THAT IS KEYED AS PER THE CITY, AND TWO KEYS WILL BE PROVIDED TO THE CITY. FENCES SHALL BE LOCATED ON THE OUTSIDE EDGE OF THE 20-FOOT PERIMETER EASEMENT WHEN POSSIBLE.

2. A SILT GAUGE WILL BE INSTALLED ON ALL DETENTION PONDS CONSISTING OF A DURABLE, WEATHER-RESISTANT POST. THE POST WILL BE EMBEDDED A MINIMUM OF TWO FEET AND EXTEND A MINIMUM OF FIVE FEET ABOVE THE GROUND. NUMBERS AND ADJACENT TICK MARKS MUST BE ON THE POST BEGINNING WITH THE NUMBER "1" AT ONE FOOT ABOVE THE GROUND ELEVATION AND THEREAFTER A NUMBER AND TICK MARK FOR EACH CORRESPONDING FOOT. NUMBERS AND TICK MARKS MUST BE CLEAR, READABLE, WEATHER-RESISTANT, AND DURABLE.

3. A CONCRETE SURVEY MARKER SHALL BE PLACED IN THE NEAR VICINITY OF THE STORMWATER MANAGEMENT FACILITY. THE MARKER SHALL BE A MINIMUM OF FIVE INCHES BY FIVE INCHES IN WIDTH AND BE EMBEDDED ONE FOOT INTO THE GROUND. THE MARKER SHALL HAVE A "PK" NAIL EMBEDDED IN THE TOP. THE MARKER MUST BE PLACED ABOVE THE HIGH WATER ELEVATION OF THE FACILITY AND WITHIN THE DRAINAGE EASEMENT AREA. ALTERNATE SURVEY MARKERS ARE ALLOWED WITH PRIOR APPROVAL FROM THE CITY.

4. ALL STORMWATER INLETS INSTALLED BY THE DEVELOPER SHALL HAVE A STORM SEWER STENCIL OR INSIGNIA APPROVED BY THE PLANNING AND ZONING DIRECTOR.



FINE GRADE SITE AND PROVIDE BACKFILL AGAINST CURBS PER DETAIL A OR B DEPENDING UPON THE GRADING CONDITION AGAINST THE CURB.

GRADING & DRAINAGE NOTES

1. PROVIDE POSITIVE DRAINAGE AT ALL TIMES.
2. SEE PROFILE SHEET FOR STORM SEWER PROFILES OF ALL LABELED STORM LINES
3. MATCH EXISTING GRADE AT THE INTERFACE BETWEEN NEW AND EXISTING SURFACES. NOTIFY ENGINEER IMMEDIATELY IF DESIGN GRADES DO NOT MATCH EXISTING GRADES AS SHOWN ON THE PLANS.
4. MAXIMUM NEW CUT/FILL SLOPE IS 2H:1V.
5. BACKFILL CURB LINES PER DETAIL ON C110.
6. CLEAN AND FLUSH EXISTING STORM SEWER STRUCTURE AND/OR LINE. CONTRACTOR SHALL REMOVE ALL DEBRIS & SEDIMENT WITH VACUUM TRUCK & REMOVE FROM SITE. DO NOT FLUSH DEBRIS OR SEDIMENT DOWNSTREAM.
7. ADJUST THE TOPS OF ALL EXISTING STORM STRUCTURES TO FINAL GRADE.
8. PLACEMENT OF FILL OVER SLOPES 4H:1V OR STEEPER SHALL BE BENCHED PER GA DOT DETAIL.
9. PROVIDE A MINIMUM OF A 5 FT. SHOULDER AROUND THE BUILDING SLOPING AWAY AT 2% SLOPE. (TYP.)

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.

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.

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.

FACE OF FRAMING MEMBER

e = ECCENTRICITY (SEE 7-30 - 7-53, AISC FOURTEENTH EDITION)

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

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: </= 1/2 INCH
3. DIFFERENTIAL SETTLEMENT BASED ON ALLOWABLE BEARING PRESSURE: </= 1/2 INCH
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	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
RISK CATEGORY : 3
WIND EXPOSURE (X-X) : C
WIND EXPOSURE (Y-Y) : C
INTERNAL PRESSURE COEFFICIENT ±0.18
COMPONENTS AND CLADDING WIND PRESSURES: SEE TABLES, THIS SHEET

SEISMIC DESIGN CRITERIA

RISK CATEGORY : 3
SEISMIC IMPORTANCE FACTOR (I_s) : I_s = 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"

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03/16/20

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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

Drawn By
N&A

Checked By
MWN

Date
03/16/2020

Job No.
20.002

Sheet Title
GENERAL NOTES

Sheet No.
S-0.01

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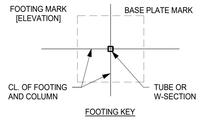
FOUNDATION PLAN NOTES



FOOTING KEY

: INDICATES TO SLOPE SLAB. SEE ARCHITECTURAL FOR AMOUNT OF SLOPE AND EXACT LOCATION.

[0'-0"] INDICATES ELEVATION OF FINISH FLOOR SLAB. SEE CIVIL DRAWINGS FOR DATUM.

[ ] : NUMBER INSIDE OF BRACKETS INDICATES TOP OF FOOTING ELEVATION

-ø- INDICATES A STEP IN FOOTING. SEE GENERAL NOTES FOR CRITERIA.

D.J. : INDICATES A DUMMY JOINT IN THE SLAB ON GRADE. SEE TYPICAL DUMMY JOINT DETAIL.

F.J. : INDICATES A FLOOR JOINT. USE 24 GAUGE KEYED TYPE. DISCONTINUE MESH AT JOINT. SEE TYPICAL CONTROL JOINT DETAIL AND SPECIFICATIONS.

M.C.J. : INDICATES A MASONRY CONTROL JOINT. COORDINATE EXACT LOCATION WITH ARCHITECT. JOINT SHALL EXTEND TO TOP OF PARAPET AND SHALL NOT BE LOCATED WITHIN 1'-0" OF A JOIST BEARING SEAT ABOVE, 2'-0" OF A BEAM BEARING, OR WITHIN 2'-0" OF JAMB OF ANY OPENING.

C.J. : INDICATES A CONTROL JOINT IN THE CONCRETE WALL. SEE 8 / S-6.92

NOTE: CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF ALL FLOOR JOINTS AND DUMMY JOINTS WITH THE ARCHITECTURAL JOINTS IN FINISHES. ALL FLOOR JOINTS SHOULD COINCIDE DIRECTLY UNDER A JOINT IN THE ARCHITECTURAL FINISH ABOVE. SEE ARCHITECTURAL DRAWINGS.

NOTE: WHERE ROOF DRAIN PIPES ARE LOCATED OVER A COLUMN OR A WALL FOOTING, DROP TOP OF FOOTING TO [-2'-0"] BELOW FINISH FLOOR SLAB ELEVATION [0'-0"] AND PROVIDE A CONCRETE PIER AT COLUMN.

NOTE: AT THE BASE OF ALL STAIRS, PROVIDE A THICKENED SLAB 10" THICK & 20" WIDE REINF. WITH 2 #5 CONT.

NOTE: FOOTINGS HAVE NOT BEEN DROPPED FOR CIVIL PLUMBING, OR ELECTRICAL LINES. SEE GENERAL NOTES FOR CRITERIA.

NOTE: SEE TYPICAL DETAIL AT BASE OF STEEL COLUMNS. WHERE CONCRETE PIERS ARE NOT SPECIFICALLY DETAILED, PROVIDE A PIER AS NOTED ON DETAIL.

NOTE: WHERE REACTION ARE NOT SHOWN ON COMPOSITE BEAM, DESIGN FOR MIN OF 6K.

NOTE: UNLESS NOTED OTHERWISE ON PLANS, TOP OF FOOTINGS AT ALL EXTERIOR FOOTINGS SHALL BE [-2'-0"] BELOW FINISH FLOOR SLAB.

NOTE: UNLESS NOTED OTHERWISE ON PLANS, TOP OF FOOTINGS AT ALL INTERIOR FOOTINGS SHALL BE [-2'-0"] BELOW FINISH FLOOR SLAB.

NOTE: MAXIMUM SPACING OF VERTICAL CONTROL JOINTS IN EXTERIOR MASONRY VENEER IS 16'-0" FROM CORNERS AND 32'-0" FOR INTERMEDIATE VERTICAL JOINTS. SEE ARCHITECT FOR EXACT LOCATIONS.

NOTE: FOR ISOLATION JOINT AT COLUMN BASES, SEE TYPICAL DETAIL.

NOTE: MAXIMUM EARTH DIFFERENTIAL WHEN BACKFILLING SHOULD NOT EXCEED 2'-0"

NOTE: ALL ELEVATIONS SHOWN ARE TOP OF FOOTING ELEVATION.

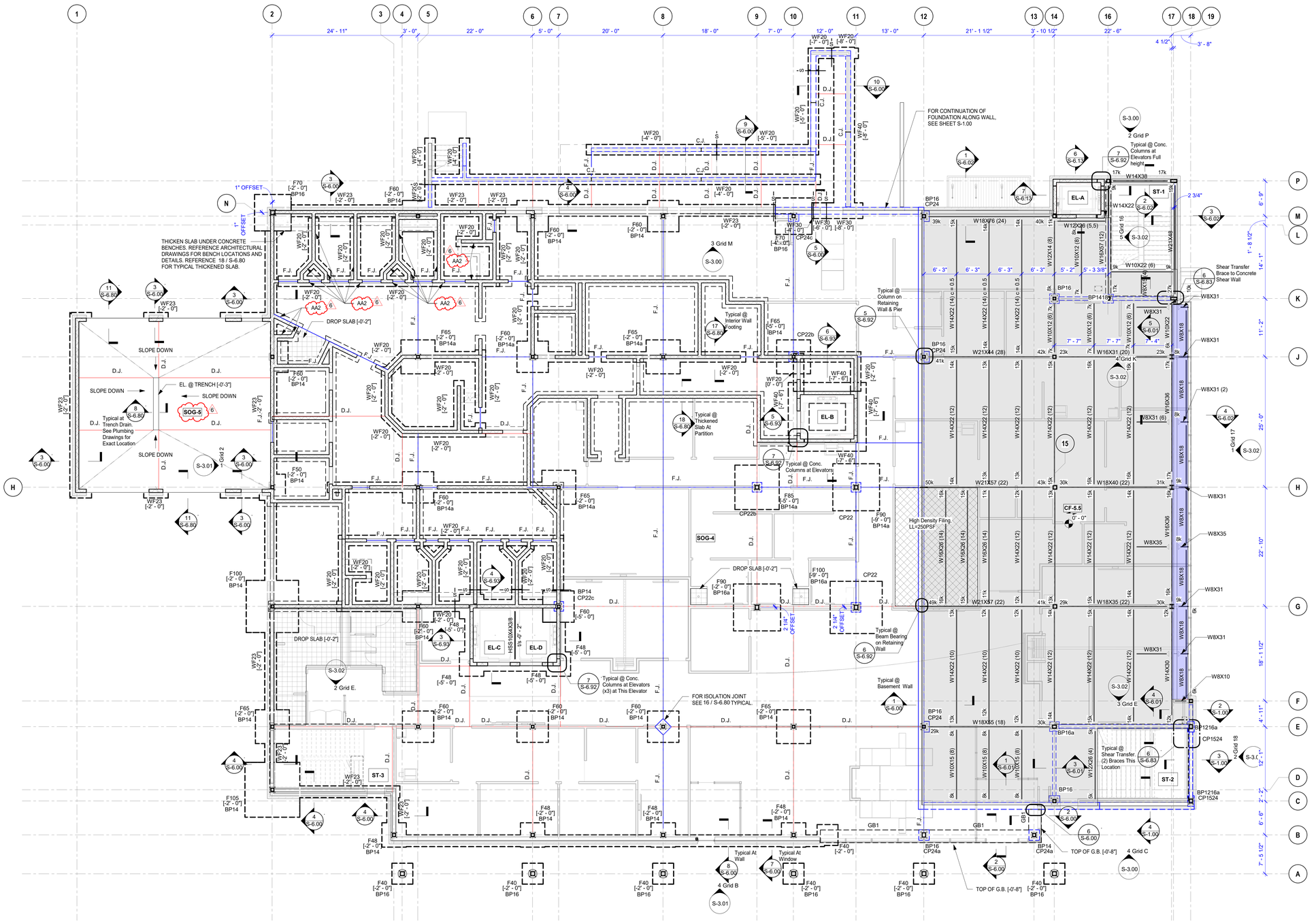
NOTE: FOOTINGS UNDER DIAGONAL BRACES SHALL BE THE SCHEDULED THICKNESS, BUT NOT LESS THAN 24" THICK. PROVIDE SCHEDULED BOTTOM STEEL REINFORCEMENT IN EACH DIRECTION 3" CLEAR, IN ADDITION PROVIDE #4@16" o.c. EACH WAY TOP 2" CLEAR.

AA2: ADD ALTERNATE 02. CMU PARTITIONS FROM SLAB ON GRADE TO CAP SLAB AND CAP SLAB ARE INCLUDED IN ADD ALTERNATE 02. INSTALL FOOTINGS, CMU, AND REINFORCING UP TO SOG ELEVATION WHERE REQUIRED IN PREPARATION FOR FUTURE INSTALLATION OF CMU AND CAP SLAB. PROVIDE DOWELS IN EXTERIOR CMU WALLS WHERE REQUIRED IN PREPARATION OF CAP SLAB AND PERPENDICULAR CMU WALLS. SEE ALSO SHEET S-2.00 FOR CAP SLAB DETAILS AND CMU SECURITY WALLS, SHEET S-6.95 FOR TYPICAL CMU DETAILS, AND DETAIL 17 / S-6.80 FOR FOUNDATION DETAIL AT CMU WALL.

Gridline Type Legend

NEW GRIDLINE

F.O. MASONRY GRIDLINE



1 S-1.01 Foundation Plan

1/8" = 1'-0"

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	03.16.2020	Release for Bid and Permit
	05.08.2020	Release for Bid
6	07/16/2020	Addendum #6

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

Sheet Title
LEVEL 100 FRAMING PLAN

Sheet No.
S-1.01

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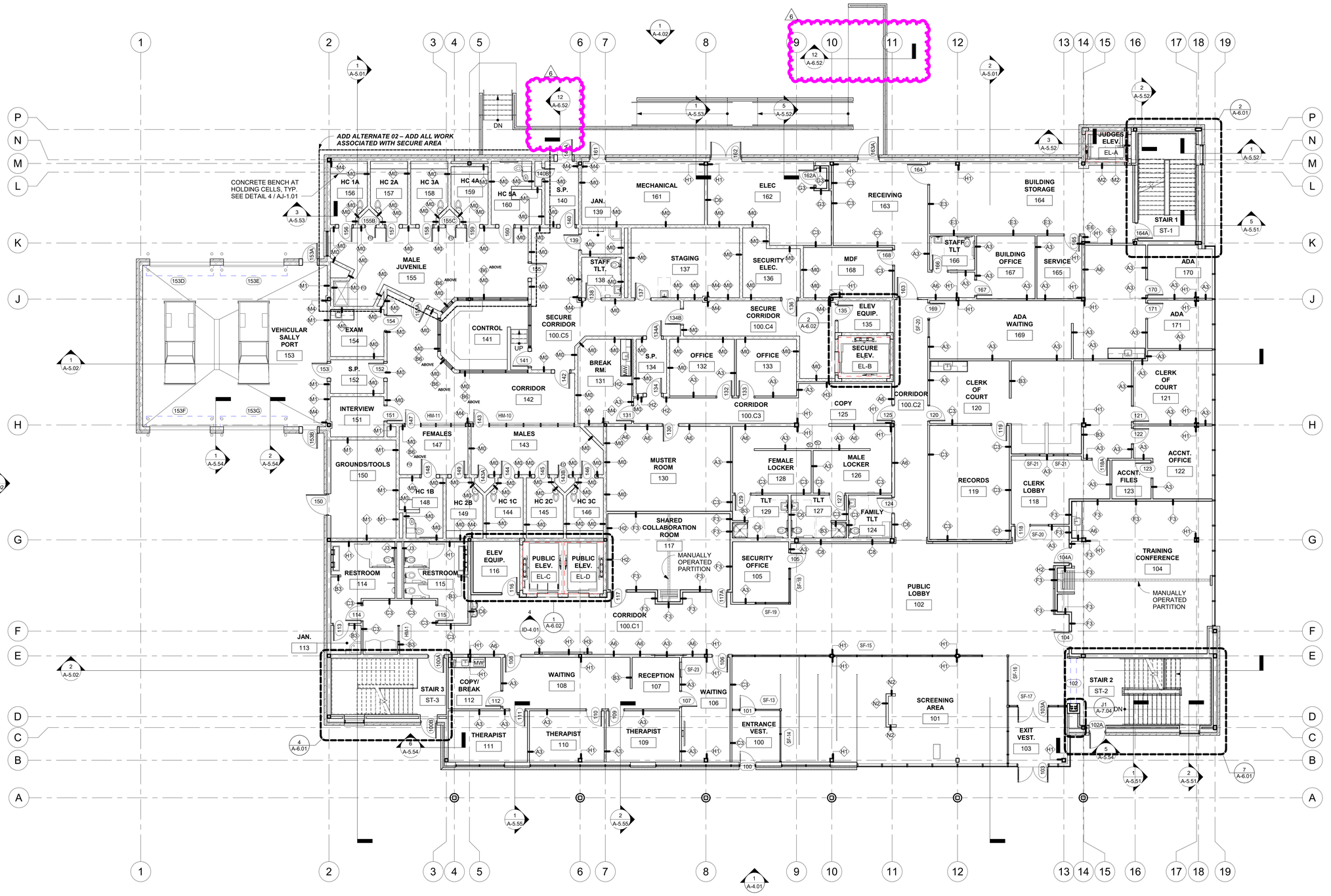

1 LEVEL 100 - REFERENCE FLOOR PLAN

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

PROJECT NORTH / TRUE NORTH

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102 Mary Alice Park Road, Suite 103
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STATE OF GEORGIA
DOUGLAS E SHAW
03/16/2020
CERTIFICATE NO. RA025435
REGISTERED ARCHITECT

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	03/16/2020	Release for Bid and Permit
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6	07/16/2020	Addendum 6

Drawn By	Checked By
MG	DS
Date	**Job No.**
03/16/2020	19059

Sheet Title

LEVEL 100 - REFERENCE FLOOR PLAN

Sheet No.

A-1.01R

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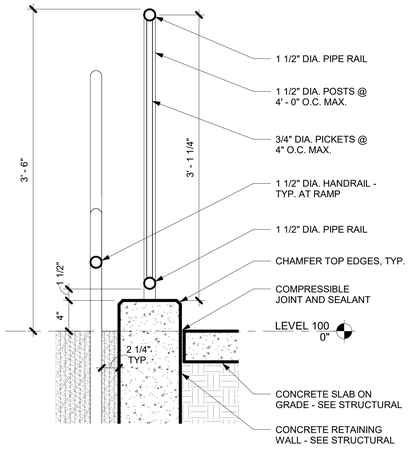
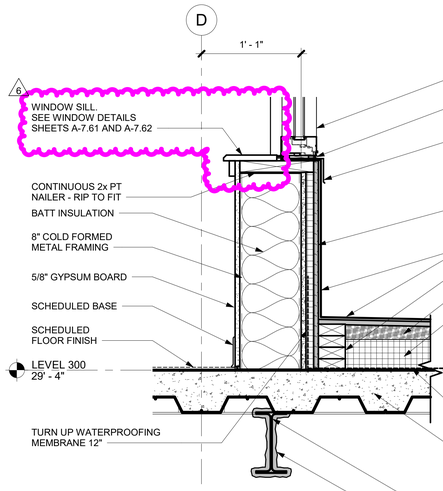
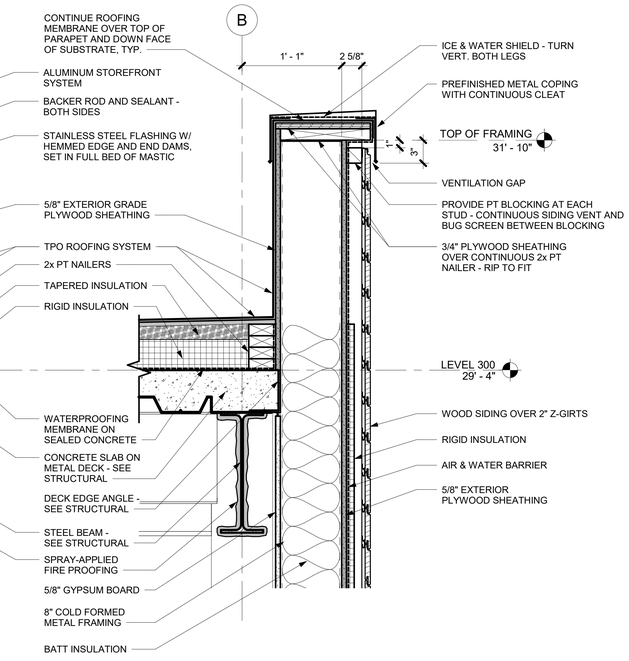


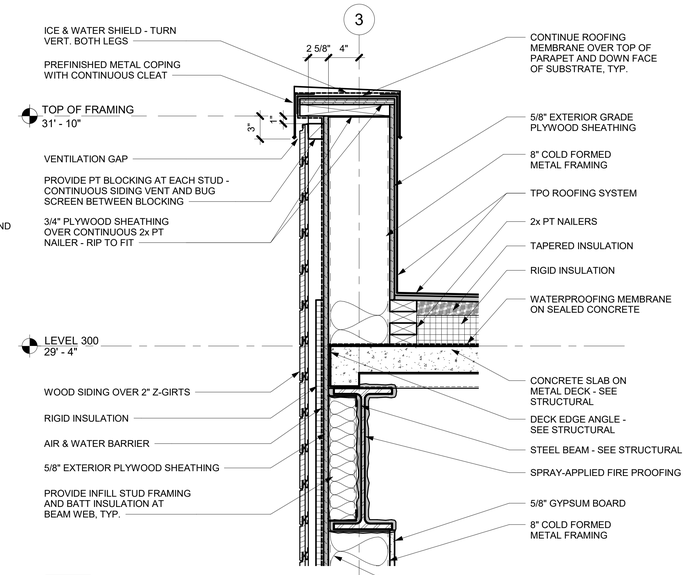
10 **SECTION DETAIL**
SCALE: 1 1/2" = 1'-0"



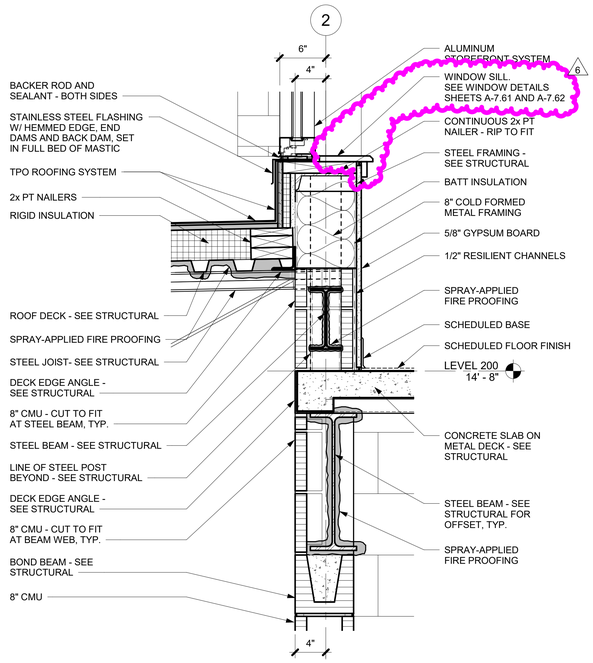
9 **SECTION DETAIL**
SCALE: 1 1/2" = 1'-0"



6 **SECTION DETAIL**
SCALE: 1 1/2" = 1'-0"



3 **SECTION DETAIL**
SCALE: 1 1/2" = 1'-0"



8 **SECTION DETAIL**
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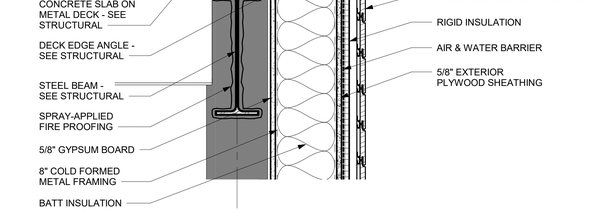
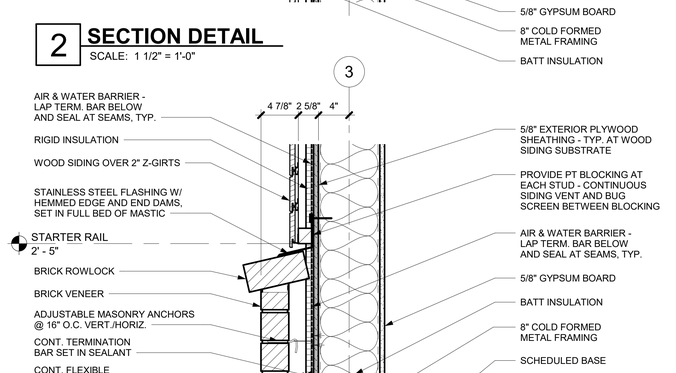
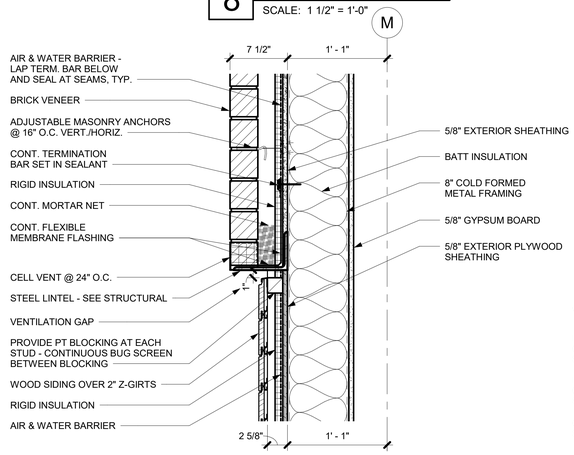


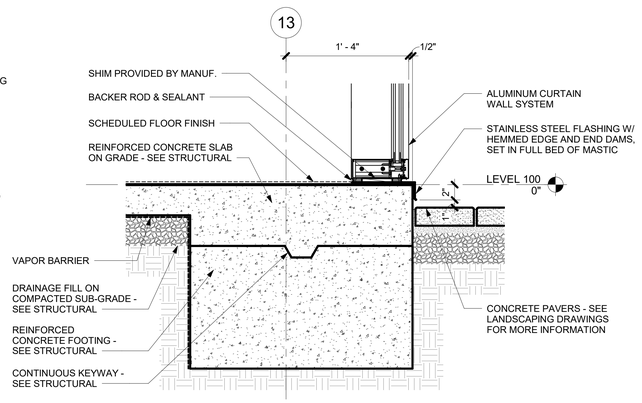
5 **SECTION DETAIL**
SCALE: 1 1/2" = 1'-0"



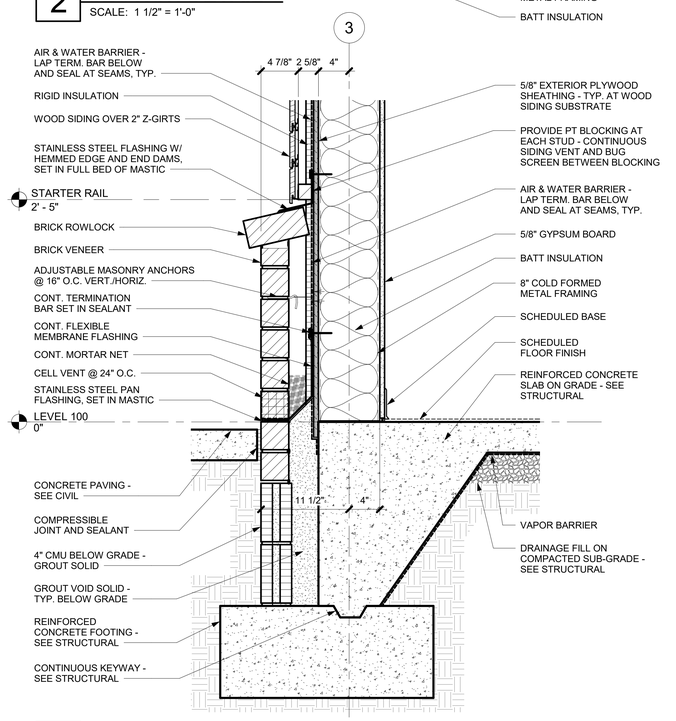
2 **SECTION DETAIL**
SCALE: 1 1/2" = 1'-0"



7 **SECTION DETAIL**
SCALE: 1 1/2" = 1'-0"



4 **SECTION DETAIL**
SCALE: 1 1/2" = 1'-0"



1 **SECTION DETAIL**
SCALE: 1 1/2" = 1'-0"

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6	07/16/2020	Addendum 6

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

Sheet Title
SECTION DETAILS

Sheet No.
A-5.73

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7/16/2020 4:02:06 PM
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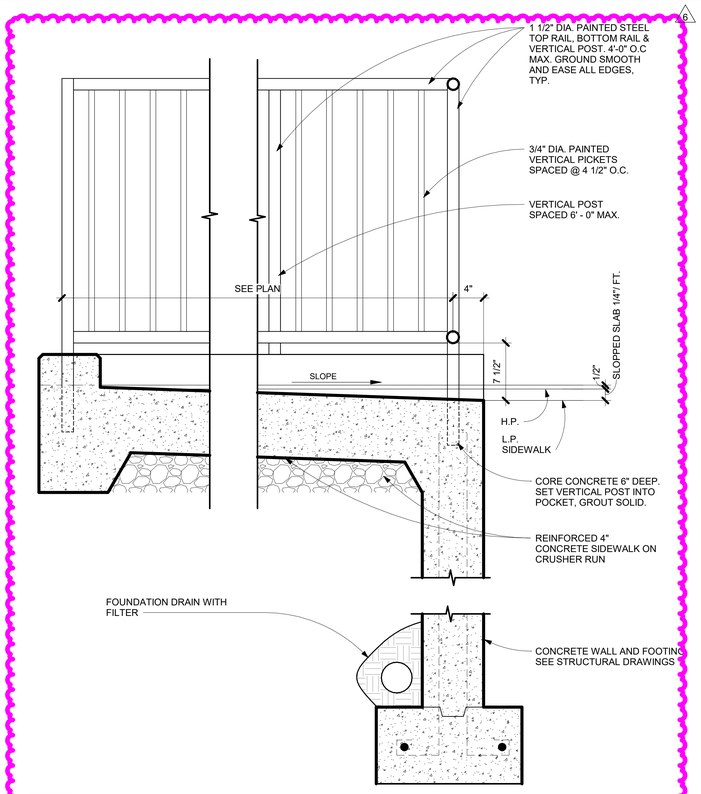

12 SECTION @ RAILING
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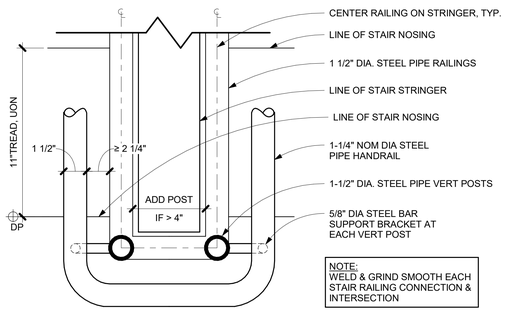
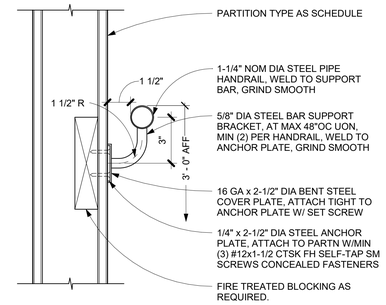
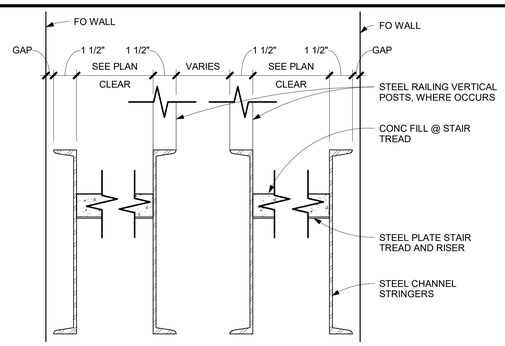


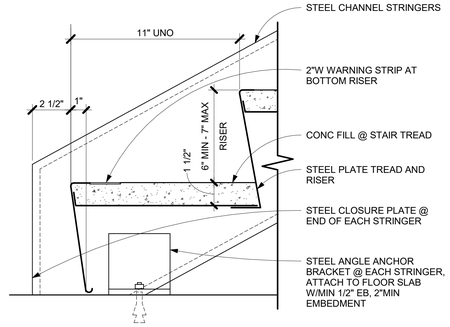
11 STAIR RAILING TRANSITION @ LANDINGS
SCALE: 3" = 1'-0"



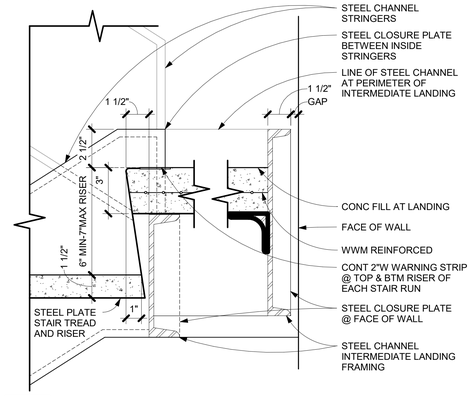
6 HANDRAIL DETAIL
SCALE: 3" = 1'-0"



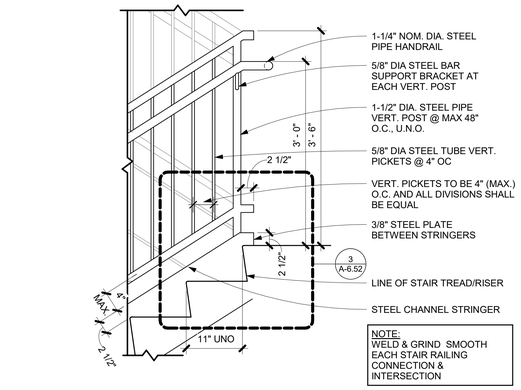
5 STAIR CROSS SECTION
SCALE: 3" = 1'-0"



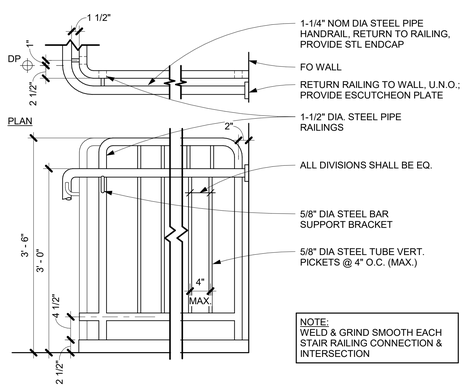
4 STAIR @ FLOOR SLAB
SCALE: 3" = 1'-0"



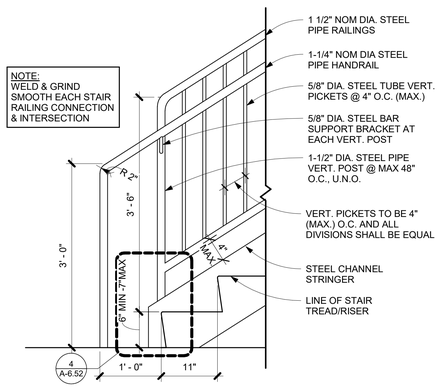
3 STAIR @ INTERMEDIATE LANDING
SCALE: 3" = 1'-0"



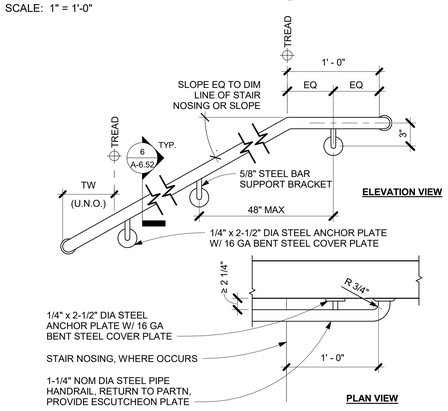
10 STAIR GUARDRAIL TRANSITION @ LANDING
SCALE: 1" = 1'-0"



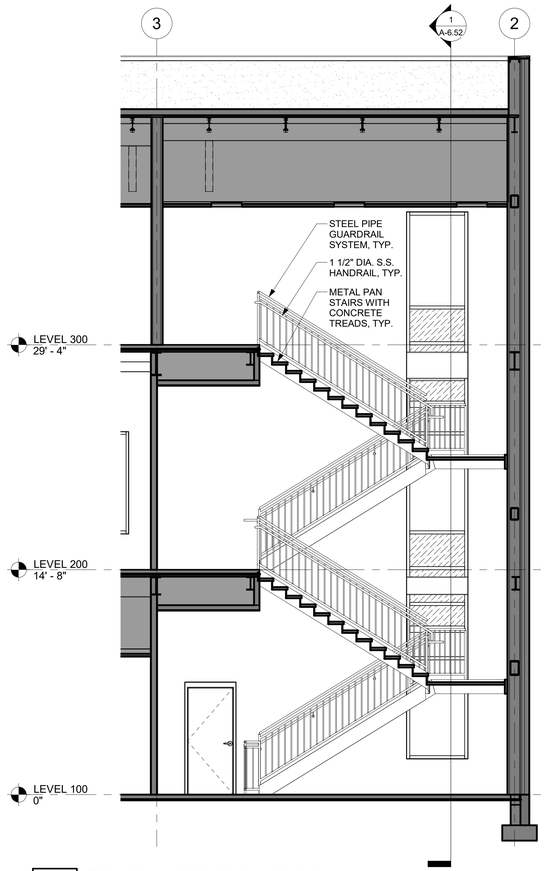
9 STAIR RAIL TERMINATION @ TOP LANDING
SCALE: 1" = 1'-0"



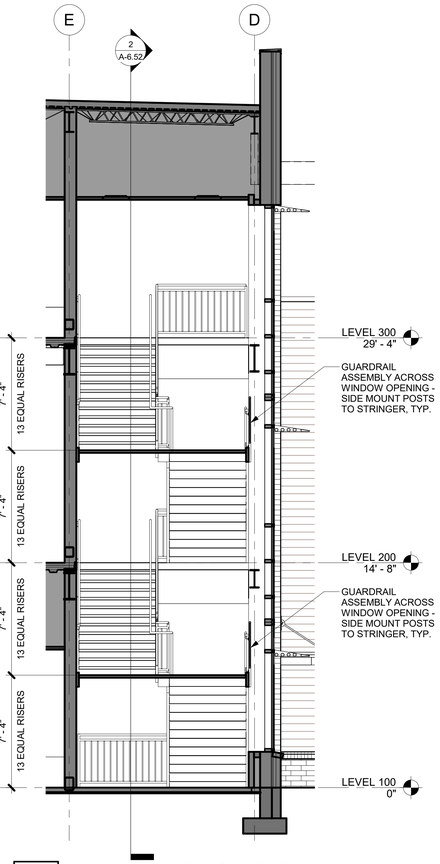
8 STAIR RAIL TRANSITION @ BOTTOM LANDING
SCALE: 1" = 1'-0"



7 HANDRAIL @ STAIR
SCALE: 1 1/2" = 1'-0"



2 STAIR 3 SECTION (E/W)
SCALE: 1/4" = 1'-0"



1 STAIR 3 SECTION (N/S)
SCALE: 1/4" = 1'-0"

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DF	DS
Date	**Job No.**
03/16/2020	19059

Sheet Title
STAIR SECTIONS AND DETAILS

Sheet No.
A-6.52

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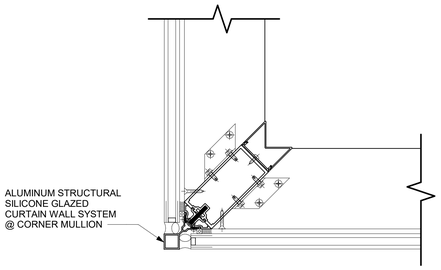
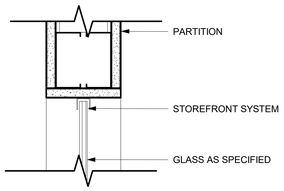
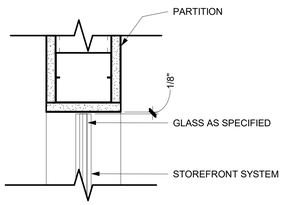


12 CURTAINWALL CORNER DETAIL
SCALE: 3" = 1'-0"



11 GLASS FRAME DETAIL
SCALE: 3" = 1'-0"



10 GLASS JAMB DETAIL
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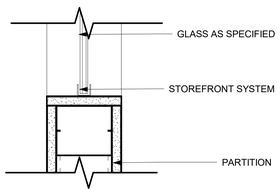

9 GLASS SILL DETAIL
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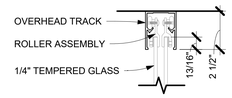
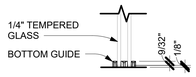


8 WINDOW HEAD DETAIL
SCALE: 3" = 1'-0"



7 WINDOW SILL DETAIL
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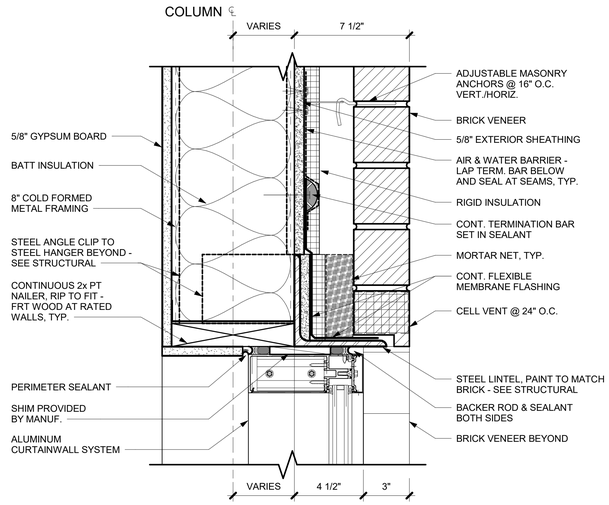
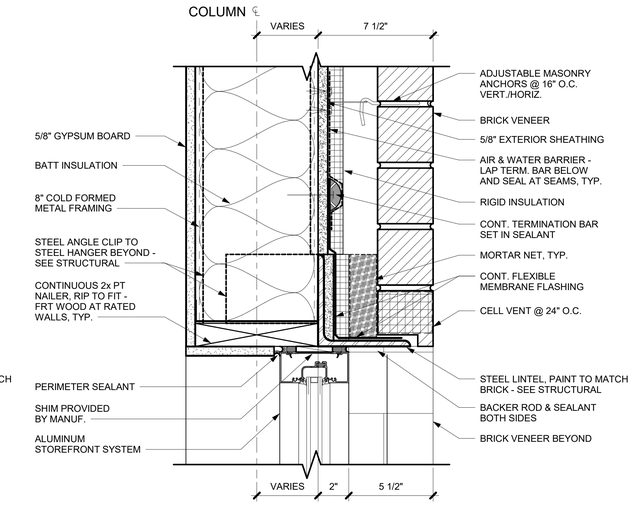
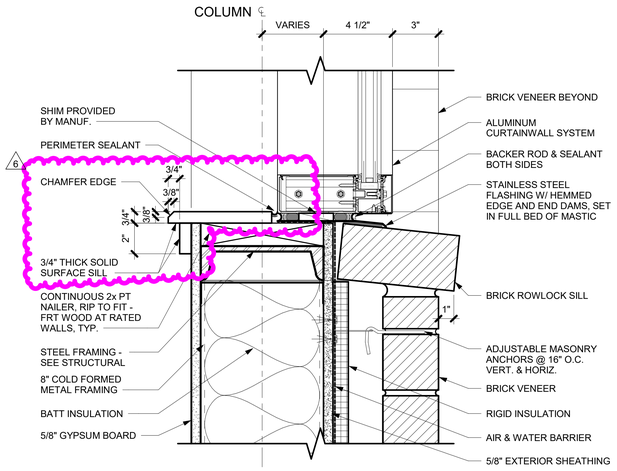


6 CURTAINWALL HEAD DETAIL
SCALE: 3" = 1'-0"



3 STOREFRONT HEAD DETAIL
SCALE: 3" = 1'-0"



5 CURTAINWALL SILL DETAIL
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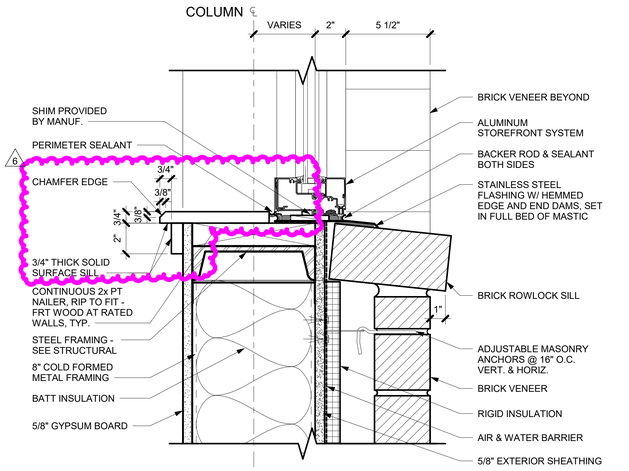

2 STOREFRONT SILL DETAIL
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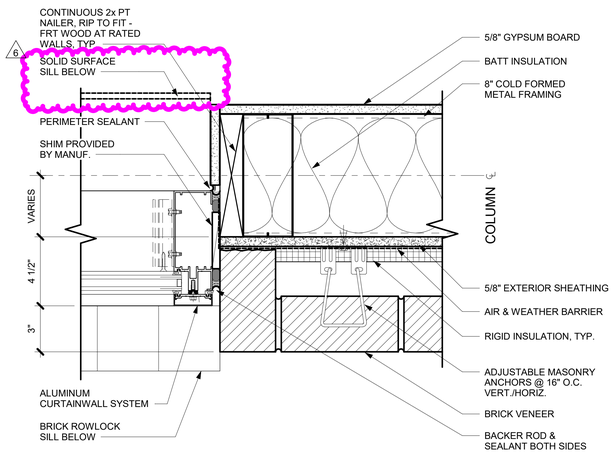
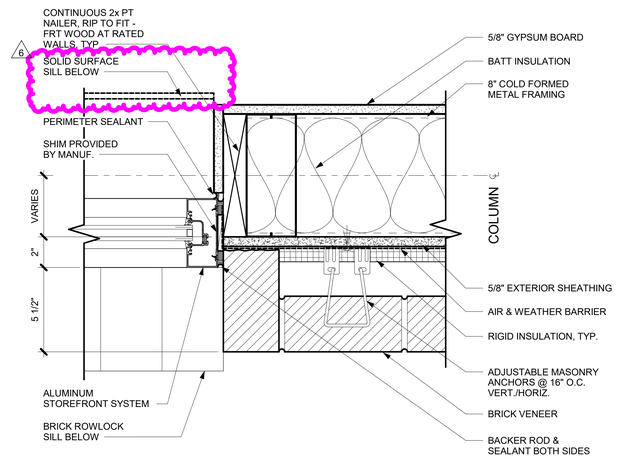


4 CURTAINWALL JAMB DETAIL
SCALE: 3" = 1'-0"



1 STOREFRONT JAMB DETAIL
SCALE: 3" = 1'-0"

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03/16/2020
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Date 03/16/2020
Job No. 19059

Sheet Title
WINDOW DETAILS

Sheet No.
A-7.61

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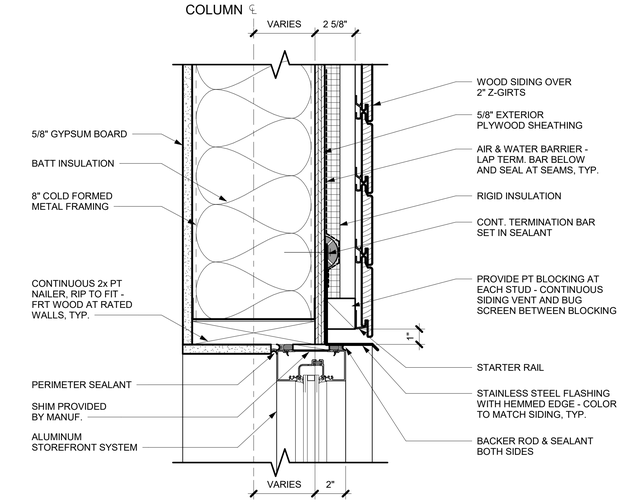
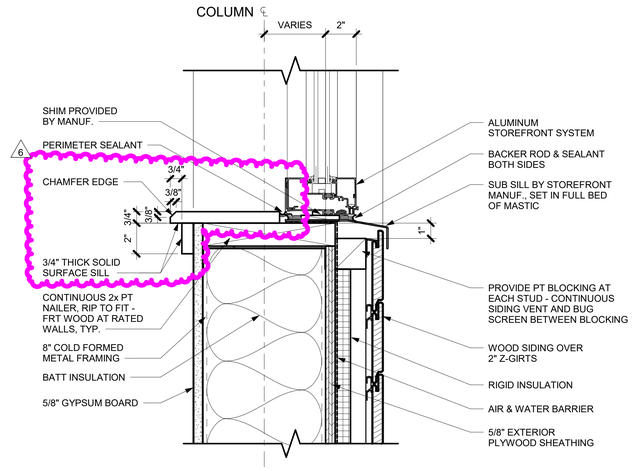
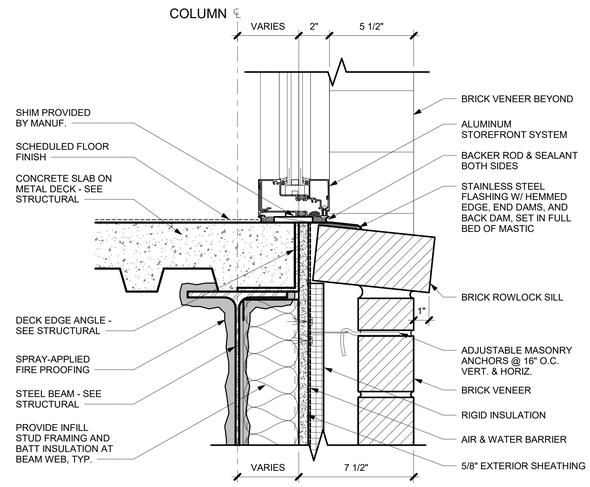


3 STOREFRONT HEAD DETAIL
SCALE: 3" = 1'-0"



2 STOREFRONT SILL DETAIL
SCALE: 3" = 1'-0"



4 STOREFRONT SILL DETAIL
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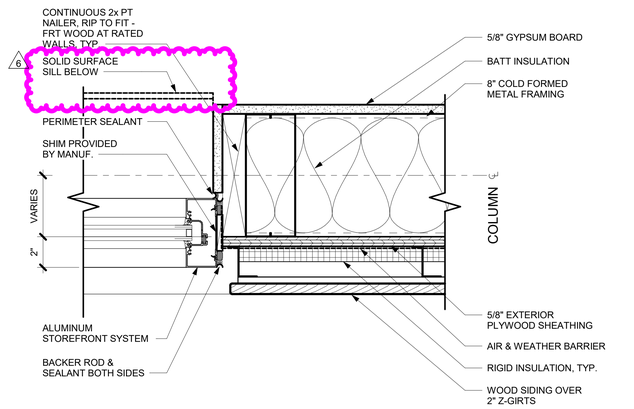

1 STOREFRONT JAMB DETAIL
SCALE: 3" = 1'-0"

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Job No. 19059

Sheet Title
WINDOW DETAILS

Sheet No.
A-7.62

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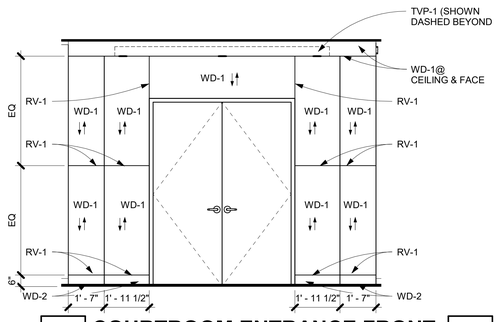
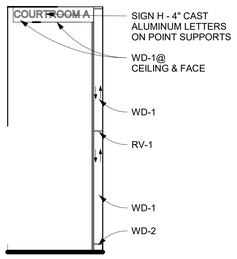
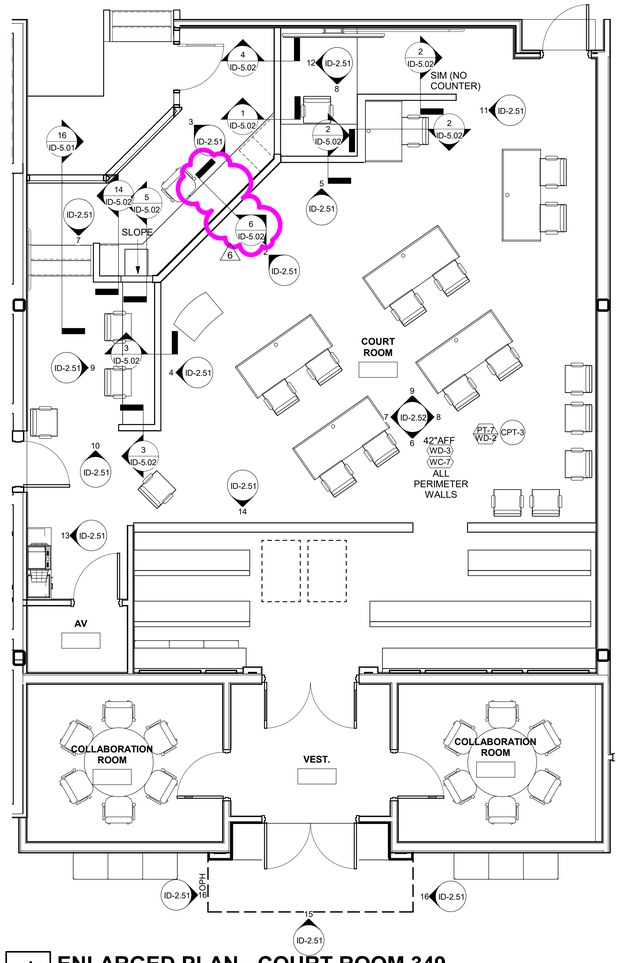


15 COURTROOM ENTRANCE FRONT
SCALE: 3/8" = 1'-0"



16 COURTROOM ENTRANCE SIDE
SCALE: 3/8" = 1'-0"



1 ENLARGED PLAN - COURT ROOM 349
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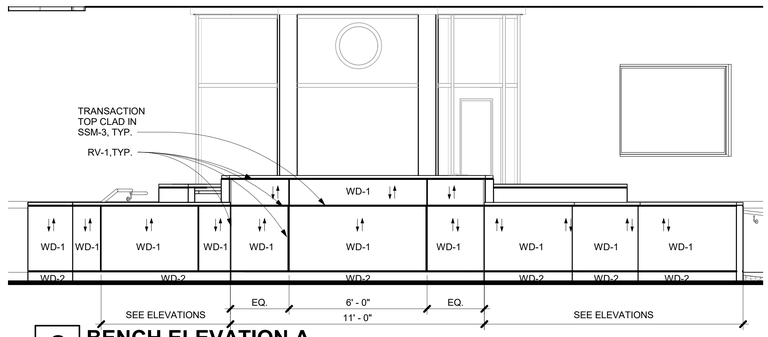
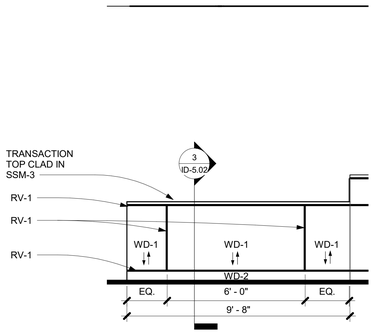
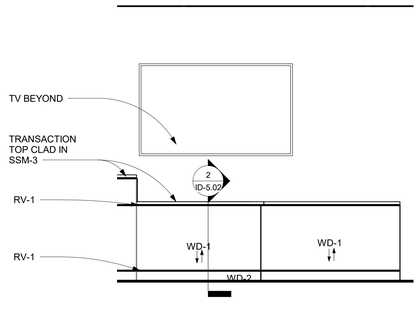


2 BENCH ELEVATION A
SCALE: 3/8" = 1'-0"

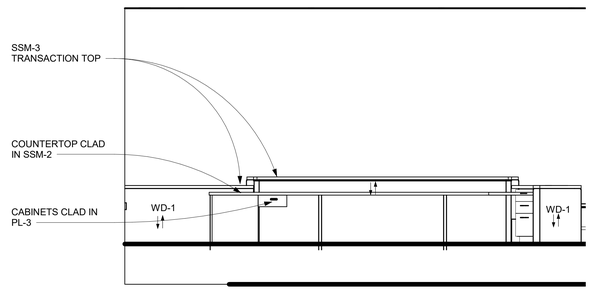
3 BENCH BACK WALL
SCALE: 3/8" = 1'-0"



4 BENCH ELEVATION B
SCALE: 3/8" = 1'-0"



5 BENCH ELEVATION C
SCALE: 3/8" = 1'-0"



6 BENCH ELEVATION D
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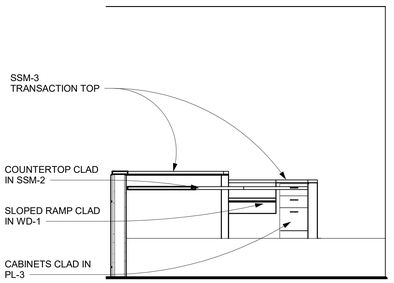
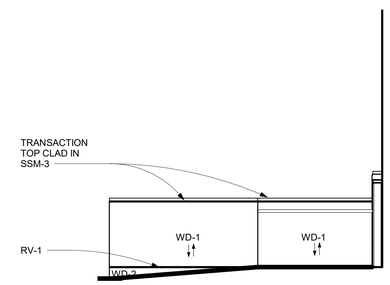
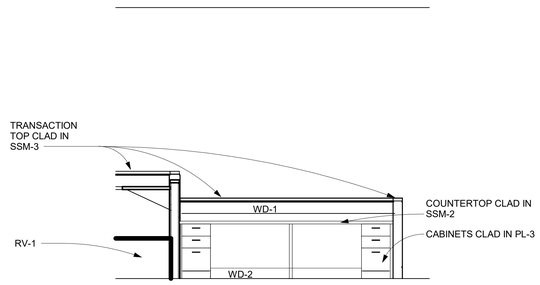


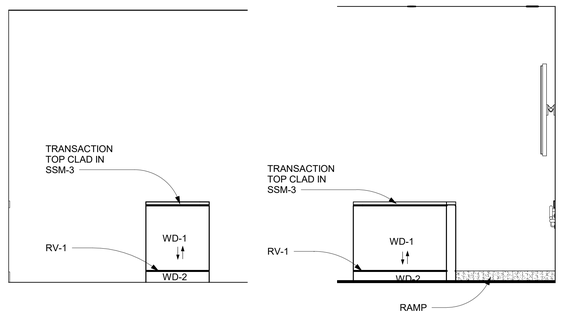
7 BENCH ELEVATION E
SCALE: 3/8" = 1'-0"



8 BENCH ELEVATION F
SCALE: 3/8" = 1'-0"

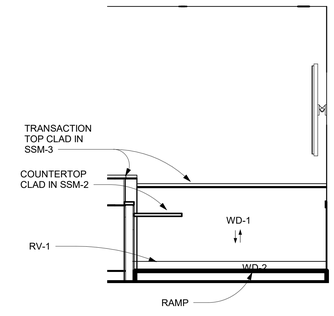


9 BENCH ELEVATION G
SCALE: 3/8" = 1'-0"

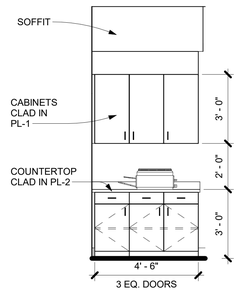


10 BENCH ELEVATION H
SCALE: 3/8" = 1'-0"

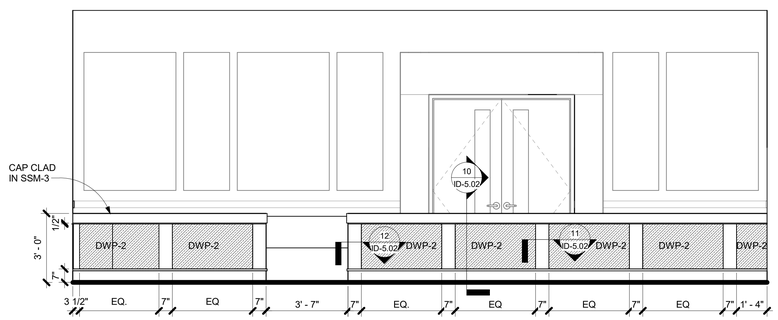
11 BENCH ELEVATION J
SCALE: 3/8" = 1'-0"



12 BENCH ELEVATION K
SCALE: 3/8" = 1'-0"



13 COURT COPY AREA
SCALE: 3/8" = 1'-0"



14 COURT GALLERY ELEVATION
SCALE: 3/8" = 1'-0"

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	05/08/2020	Release for Bid
6	07/16/2020	Addendum 6

Drawn By	Checked By
WR/EJ	WR
Date	**Job No.**
03/16/2020	19059

Sheet Title
ENLARGED FINISH PLANS & ELEVATIONS

Sheet No.
ID-2.51

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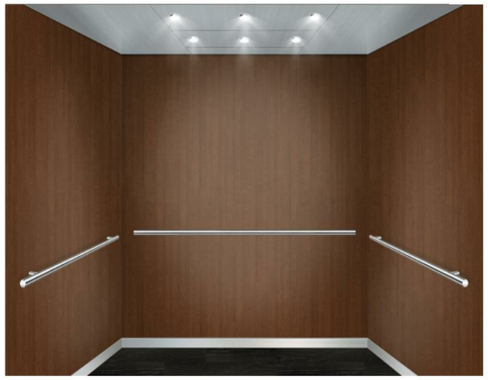
Your Schindler 3300XL MRL Elevator Cab Design.

To turn your design into a reality, visit www.us.schindler.com to find your local Schindler office.

Cab Design Preview



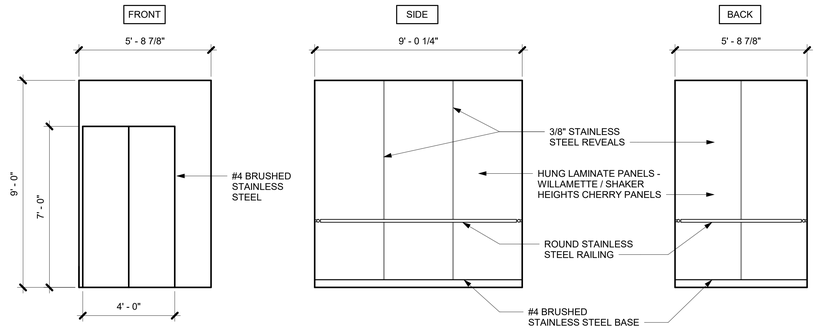
Rear View

Front View

Entrance View

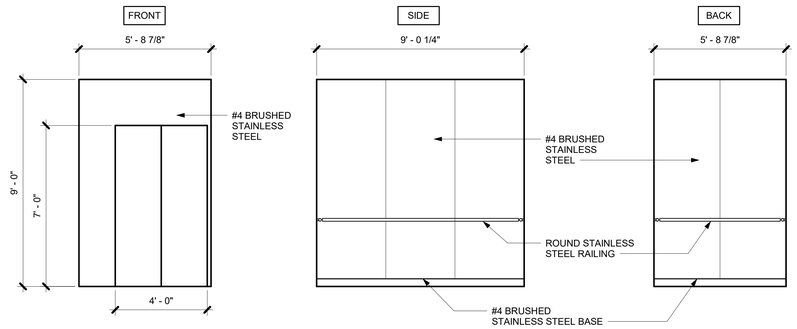
GENERAL NOTES:

- ELEVATORS INTERIOR ELEVATIONS SUPERSEDE SPECIFICATIONS.
- PROVIDE VANDAL RESISTANT HALL FIXTURES TO ALL ELEVATORS.



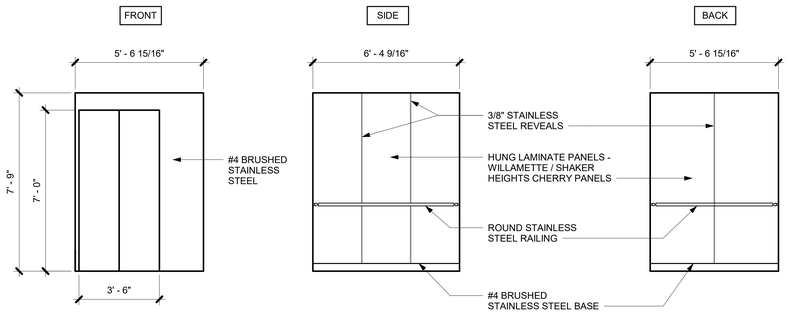
3 PUBLIC ELEVATORS EL- C&D - INTERIOR ELEVATIONS

SCALE: 3/8" = 1'-0"



2 SECURE ELEVATOR EL- B - INTERIOR ELEVATIONS

SCALE: 3/8" = 1'-0"



1 JUDGES ELEVATOR EL-A - INTERIOR ELEVATIONS

SCALE: 3/8" = 1'-0"

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Sheet Title
ELEVATORS INTERIOR ELEVATIONS

△6

Sheet No.
ID-4.02

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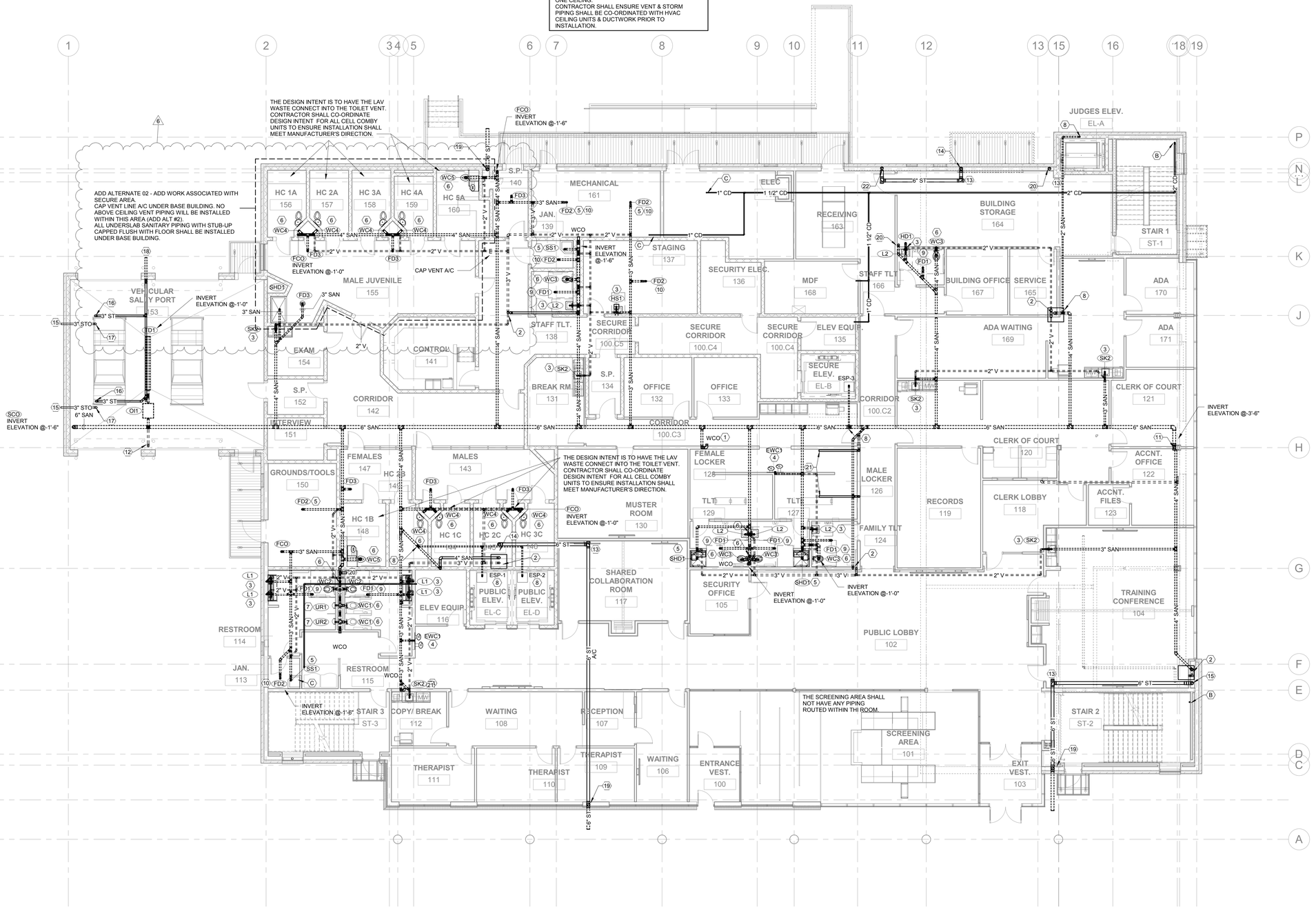
CONTRACTOR SHALL INSTALL ALL SANITARY & VENT PIPING THAT IS ROUTED IN ROOMS WITHOUT A CEILING IN SUCH A MANNER AS TO ALLOW THE PIPING TO BE INSTALLED IN A NEAT & WORKMAN-LIKE MANNER. SHOULD THE ROOM HAVE A CLOUD CEILING CONTRACTOR SHALL KEEP THE PIPING OVER THE CLOUDS AND SPACED EVENLY. ALL PIPING SHALL BE ROUTED AS HIGH TO UNDERSIDE OF STRUCTURE AS POSSIBLE.

***TERMINAL UNITS LOCATED ABOVE CEILING (REFER TO MECHANICAL PLANS FOR EXACT LOCATION)* – CONTRACTOR SHALL NOT INSTALL SANITARY & VENT PIPING NEXT TO SERVICE SIDE OF THE UNIT. CONTRACTOR SHALL CO-ORDINATE THE LOCATION OF THE SERVICE SIDE OF THE UNIT PER MANUFACTURER PRIOR TO INSTALLATION OF PIPING. CONTRACTOR SHALL NOT INSTALL PIPING BELOW THE UNIT.**

SANITARY/VENT/STORM PIPING NOTE:
SANITARY PIPING IS LOCATED AT BASEMENT LEVEL CEILING FROM COL. 12-18.
VENT & STORM PIPING IS LOCATED ABOVE LEVEL ONE CEILING.
CONTRACTOR SHALL ENSURE VENT & STORM PIPING SHALL BE CO-ORDINATED WITH HVAC CEILING UNITS & DUCTWORK PRIOR TO INSTALLATION.



A1 / P-1.01 LEVEL 100 FLOOR PLAN - SANITARY, VENT & STORMWATER
1/8" = 1'-0"
0 5 10 25 FT

PLUMBING - GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE. DO NOT SCALE LOCATIONS OF UNITS, LINES, ETC. COORDINATE ALL DOCUMENTS TO DETERMINE PROPER LOCATIONS OF ALL EQUIPMENT AND MATERIALS.

PLUMBING - SANITARY & VENT NOTES:

1. SEE SHEET P-001 PLUMBING GENERAL NOTES FOR SANITARY, VENT, AND WASTEWATER INSTALLATION SPECIFICATIONS.
2. ALL SANITARY LINES ROUTE TO SIDE OF BUILDING AS SHOWN TO CONNECT TO EXTERIOR MANHOLE. SEE CIVIL DRAWINGS FOR DETAILS. CONTRACTOR SHALL COORDINATE WITH CIVIL CONTRACTOR PRIOR TO START OF NEW WORK.

PLUMBING - STORMWATER NOTES:

1. PROVIDE A CLEANOUT IN THE WALL AT THE BASE OF ALL PRIMARY DRAIN STACKS ON THE LAST FLOOR LEVEL. COORDINATE FINAL FINISHED APPEARANCE OF CLEANOUT WITH ARCHITECT.
2. ALL EXPOSED STORMWATER PIPING AND ALL STORMWATER VERTICAL DRAIN STACKS MUST BE COVERED WITH INSULATION, MINIMUM 2 INCHES THICK, FOR SOUND ATTENUATION PURPOSES.

KEY NOTES: SANITARY & VENT

1. 2-WAY INTERIOR WALL CLEANOUT @ APPROX. -2'-6" BELOW SLAB.
2. WET COLUMN CONTAINING 4" SANITARY RISER W/STUB @ 13'-6" AFF & 3" VENT RISER W/STUB @ 14'-0" AFF.
3. 2" SAN. DN., 1-1/2" V UP.
4. 2" SAN DN., 2" V UP.
5. 3" SAN DN., 2" V UP.
6. 4" SAN DN., 2" V UP.
7. 2" SAN FROM URINAL TO ROUTE TO 2" VENT FROM WATER CLOSET.
8. 2" PUMPED DISCHARGE FROM ELEVATOR SUMP PUMP (ESP1) ROUTED JUST BELOW LEVEL ONE SLAB OVER TO SANITARY MAIN. CONTRACTOR SHALL CONNECT TO MAIN W/ UPRIGHT WYE FITTING.
9. 3" FLOOR DRAIN (FD1) W/ TRAP PRIMER.
10. 3" FLOOR DRAIN (FD2) W/ TRAP GUARD.
11. 6" SAN W/ CLEANOUT @ BASE OF THE RISER DN. TO -2'-0" BELOW BASEMENT SLAB. FOR CONTINUATION REFER TO CIVIL.
12. 3" VENT BELOW SLAB TO ROLL UP @ 45 DEGREES TO TURN UP ALONG FACE OF WALL THEN CONTINUE TO 3" VTR.
13. END OF LINE CLEANOUT.
14. 6" PRIMARY STORM DN. FROM ABOVE.
15. 3" OVERFLOW STORM DRAIN TO SPILL HIGH THRU LAMBS TONGUE.
16. 3" PRIMARY STORM DN. FROM ABOVE.
17. 3" OVERFLOW STORM DN. FROM ABOVE.
18. 3" PRIMARY STORM DN. TO -1'-6" BELOW GRADE. PIPE SHALL ROUTE ON TOP OF FOOTING.
19. 6" PRIMARY STORM W/ CLEANOUT @ BASE OF THE RISER DN. TO -1'-6" BELOW GRADE. PIPE SHALL ROUTE ON TOP OF FOOTING.
20. 6" PRIMARY STORM DN. TO BASEMENT.
21. 4" CAPPED SANITARY CONNECTION @ -1'-6" BELOW LEVEL TWO SLAB.
22. 8" PRIMARY STORM DN. TO BASEMENT.

KEY NOTES: CONDENSATE

A. ROUTE 2" COMMON CONDENSATE DRAIN LINE DN. IN EXTERNAL WALL TO PENETRATE WALL AT 1'-0" ABOVE GRADE TO SPILL TO CONDENSATE DRYWELL. COORDINATE RISER LOCATION W/ FIRE PROTECTION STANDPIPE. REFER TO B3/P-501.
B. 2" CONDENSATE RISER. COORDINATE W/ FIRE PROTECTION STANDPIPE. REFER TO B3/P-501.
C. 3/4" CONDENSATE LINE FROM HVAC UNIT. ROUTE AS HIGH AS POSSIBLE.

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Job No. 2019-226

Sheet Title
LEVEL100 FLOOR PLAN - SANITARY & VENT

Sheet No.
P-1.01

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CONTRACTOR SHALL INSTALL ALL WATER PIPING THAT IS ROUTED IN ROOMS WITHOUT A CEILING IN SUCH A MANNER AS TO ALLOW THE PIPING TO BE INSTALLED IN A NEAT & WORKMAN-LIKE MANNER. SHOULD THE ROOM HAVE A CLOUD CEILING CONTRACTOR SHALL KEEP THE PIPING OVER THE CLOUDS AND SPACED EVENLY. ALL PIPING SHALL BE ROUTED AS HIGH TO UNDERSIDE OF STRUCTURE AS POSSIBLE.

TERMINAL UNITS LOCATED ABOVE CEILING (REFER TO MECHANICAL PLANS FOR EXACT LOCATION) – CONTRACTOR SHALL NOT INSTALL WATER PIPING NEXT TO SERVICE SIDE OF THE UNIT. CONTRACTOR SHALL CO-ORDINATE THE LOCATION OF THE SERVICE SIDE OF THE UNIT PERMANUFACTURER PRIOR TO INSTALLATION OF PIPING. CONTRACTOR SHALL NOT INSTALL WATER PIPING BELOW THE UNIT THE UNIT.

PLUMBING - GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE. DO NOT SCALE LOCATIONS OF UNITS, LINES, ETC. COORDINATE ALL DOCUMENTS TO DETERMINE PROPER LOCATIONS OF ALL EQUIPMENT AND MATERIALS.

PLUMBING - DOMESTIC WATER NOTES:

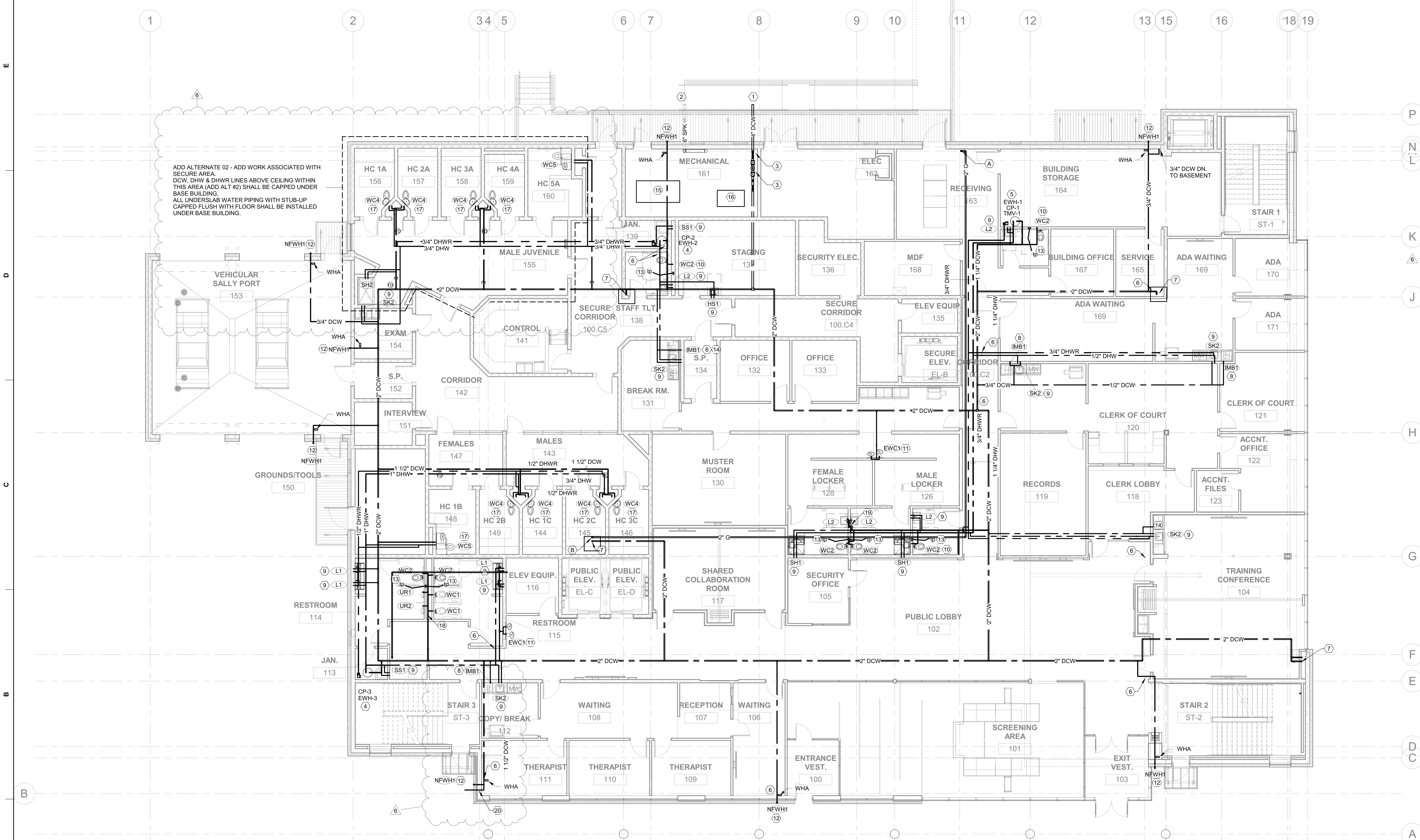
1. SEE SHEET P-001 PLUMBING GENERAL NOTES FOR DOMESTIC WATER PIPING INSTALLATION SPECIFICATIONS.
2. SEE PLUMBING FIXTURE UNIT CALCULATION SCHEDULE FOR DOMESTIC WATER PRESSURE DETAILS.
3. CONTRACTOR SHALL PROVIDE AND INSTALL WATER HAMMER ARRESTORS IN THE PIPING SYSTEM AS REQUIRED BY THE SIZE OF THE FIXTURE LOAD (SEE PLUMBING SCHEDULE FOR SIZING DETAILS).

KEY NOTES: DOMESTIC WATER

1. NEW INCOMING 4"Ø DOMESTIC COLD WATER FROM MAIN. SEE CIVIL FOR CONTINUATION.
2. NEW INCOMING 6"Ø FIRE WATER FROM MAIN. SEE CIVIL FOR CONTINUATION.
3. DOMESTIC WATER RISER UP TO APPROX. 4'-0". CONTRACTOR SHALL ROUTE THRU WATTS LF909 RPZ BACKFLOW PREVENTOR. PROVIDE PRESSURE REGULATING ASSEMBLY SET FOR 65 PSI MIN. & 75 PSI MAXIMUM AND FULL PORT SHUT-OFF VALVE.
4. ELECTRIC WATER HEATER MOUNTED ABOVE CEILING ALONG WALL BY MOP SINK. ROUTE 1-1/4" 140 DEGREE DHW & DCW TO/FROM WATER HEATER. 3/4" DHWR DN. TO CIRCULATING PUMP.
5. ELECTRIC WATER HEATER MOUNTED ABOVE CEILING ALONG WALL. ROUTE 1-1/4" 140 DEGREE DHW & 1-1/4" DCW OVER TO LEONARD 270LF MIXING VALVE. FROM THE TMV ROUTE 120 DEGREE DHW TO PLUMBING FIXTURES AS INDICATED ON PLAN. 3/4" DHWR DN. TO CIRCULATING PUMP.
6. SHUT-OFF VALVE ABOVE CEILING. CONTRACTOR SHALL ENSURE TO LOCATE ABOVE ACCESSIBLE CEILING, TYPICAL.
7. WET COLUMN CONTAINING 2" DOMESTIC COLD WATER RISER W/1-1/2" DCW VALVED & CAPPED STUB @ 13'-6" AFF.
8. 1/2" DCW DN. TO ICEMAKER BOX. CONTRACTOR SHALL INSTALL WATTS LF7 BFP AND AN INLINE WATER FILTER.
9. 1/2" DHW/DCW DN.
10. 1" DCW DN.
11. 1/2" DCW DN. ROUTE 1/2" TO EACH WATER COOLER.
12. 3/4" DCW DN. IN EXTERIOR WALL FOR NON-FREEZE WALL HYDRANT (NFWH). CONTRACTOR SHALL INSULATE PIPE TO HELP PREVENT FREEZING.
13. DCW LINE TO FLOOR DRAIN TRAP PRIMER. PIPING BELOW SLAB SHALL BE TYPE K SOFT COPPER WITH NO JOINTS.
14. 3/4" DCW DN. CONTRACTOR SHALL TAP OFF AT APPROX. 30" AFF AND ROUTE 3/4" HEADER WITH 1/2" VALVED TAPS TO SUPPLY FUTURE WATER BOX FOR ICE MACHINE, 1/2" FOR COFFEE MAKER/WATER DISPENSER OR OTHER OWNER FURNISHED EQUIPMENT. CONTRACTOR SHALL INSTALL WATTS LF7C BFP ON ALL WATER SUPPLIED EQUIPMENT.
15. APPROXIMATE LOCATION FOR FIRE PUMP, IF REQUIRED.
16. APPROXIMATE LOCATION FOR DOMESTIC WATER BOOSTER PUMP, IF REQUIRED.
17. SECURE COMBO FIXTURE W/ 1" DCW TO FV & 1/2" DHW&DCW TO LAVATORY.
18. 2" DCW DN. CONTRACTOR SHALL ROUTE 1" DCW TO EACH WC, 3/4" DCW TO EACH URINAL.
19. 1-1/2" DCW DN.,3/4" DHW DN. CONTRACTOR SHALL ROUTE 1" DCW TO EACH WC & 1/2" TO EACH LAVTORY.
20. 1-1/4" DCW THRU EXTERIOR WALL AT APPROX. 8'-0" AFF. CONTRACTOR SHALL CO-ORDINATE W/ LANDSCAPE ARCH FOR EXACT ROUTING TO PROVIDE YARD HYDRANT (NFYH1) FOR LARGE ISLAND WATERING. CONTRACTOR SHALL MAINTAIN AT MIN. 2'-6" OF COVER FOR BURIED DCW PIPE.

KEY NOTES: NATURAL GAS

A. NEW 2" GAS LINE UP FROM BASEMENT TO ABOVE LEVEL ONE CEILING.
B. 2" (2) PSI GAS TO BE ROUTED UP THRU CHASE TO ROOF.



A1 P-2.01 LEVEL 100 FLOOR PLAN - DOMESTIC WATER

1/8" = 1'-0"

0 5 10 25 FT

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Date 03/16/20

Job No. 2019-226

Sheet Title

LEVEL 100 FLOOR PLAN - DOMESTIC WATER

Sheet No.

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PLUMBING FIXTURE SCHEDULE

Mark	Fixture Description	Flow	Mfgr	Model	Trim	Cold	Hot	Waste	Vent	Notes
2WECO	2-WAY EXTERIOR CLEANOUT	-	ZURN	CO2430	INCLUDE TWO WAY CLEANOUT FITTING	N/A	N/A	MATCH PIPE SIZE	N/A	N/A
EWC1	BI-LEVEL ADA WATER COOLER, STAINLESS STEEL, BARRIER-FREE ACCESS, REFRIGERATED, FILTERED, W/ BOTTLE FILLER	8 GPF	ELKAY	EZSTL8WSVRSK	115V / 60 HZ	1/2"	N/A	1-1/2"	1-1/2"	6
FCO	FLOOR CLEANOUT	-	MIFAB	C1220-1-6	LACQUERED CAST IRON BODY WITH NICKEL BRONZE TOP AND SECURITY SCREWS	N/A	N/A	MATCH PIPE SIZE	N/A	N/A
FD1	FLOOR DRAIN	-	MIFAB	F1000-C-S-7	5x5" SQUARE	1/2"	N/A	3"	2"	4
FD2	FLOOR DRAIN	-	MIFAB	F1100-C-4-S-11	8" DIAMETER	-	N/A	3"	2"	1
FD3	FLOOR DRAIN	-	MIFAB	F1160-1-7-C-HP	4" DIAMETER	-	N/A	3"	2"	1
HB1	HOSE BIBB	-	ZURN	Z-1341-PC-LK	NON-REMOVABLE VACCUM BREAKER. LOOSE KEY CONNECTION.	3/4"	N/A	N/A	N/A	6
TD1	TRENCH DRAIN		MIFAB	T1500-PG-ADA	6" WIDE, DUCTILE IRON,ADA COMPLIANT, CLASS C GRATE ONLY - TRENCH SHALL BE PER STRUCTURAL W/ FLOOR DRAIN (FD2) INSTALLED AT THE OUTLET.	N/A	N/A	4	N/A	
HD	FLOOR HUB DRAIN - NICKEL BRONZE	-	ZURN	ZN211-S-P-*NH	DURA-COAT® CAST IRON BODY; BOTTOM OUTLET; SEDIMENT BUCKET	N/A	N/A	MATCH PIPE SIZE	N/A	N/A
L1	UNDERMOUNT LAVATORY; CAST IRON, OVAL BASIN, BUILT-IN OVERFLOW, ADA	0.5 GPM	SLOAN	SS-3001-STG	SLOAN SF-2200-4-PLG-TEE-CP-0.5GPM-MLM-IR FAUCET, GRID DRAIN, P-TRAP, 19"x16", 0.5 GPM AERATOR	1/2"	1/2"	2"	1-1/2"	2,6
L2	WALL-MOUNT LAVATORY; VITREOUS CHINA, CONCEALED ARM CARRIER, BUILT-IN OVERFLOW, SINGLE-HOLE, AUTOMATIC, ADA	0.5 GPM	SLOAN	SS-3006-STG	SLOAN SF-2200-4-PLG-TEE-CP-0.5GPM-MLM-IR FAUCET, GRID DRAIN, P-TRAP, 22"x18", 0.5 GPM AERATOR	1/2"	1/2"	2"	1-1/2"	2,6
L3	WALL-MOUNT LAVATORY; VITREOUS CHINA, CONCEALED ARM CARRIER, BUILT-IN OVERFLOW, SINGLE-HOLE, AUTOMATIC, ADA	0.5 GPM	SLOAN	SS-3006-STG	CHICAGO 895-317 FAUCET, 4" WRIST BALDE HANDLES, 4" ON CENTER, GRID DRAIN, P-TRAP, 22"x18", 0.5 GPM AERATOR	1/2"	1/2"	2"	1-1/2"	2,6
HS1	WALL-MOUNT HAND SINK; STAINLESS STEEL, CONCEALED ARM CARRIER, SINGLE-HOLE, ADA	0.5	ADVANCE TABCO	600HS17KO	COMPLETE W/ KNEE OPERATED CONTROLS, BASKET STRAINER, GOOSENECK FAUCET. LEONARD LF270 MIXING VALVE TO SET TEMPERATURE TO 110 DEGREES.	1/2"	1/2"	2"	1/1/2002	2,6
SCO	SURFACE CLEANOUT	-	MIFAB	C1300-MF-4-6	CAST IRON BODY AND DUCTILE IRON COVER/PLG	N/A	N/A	MATCH PIPE SIZE	N/A	N/A
SD1	COMBINED ROOF DRAIN AND SECONDARY OVERFLOW SYSTEM	-	ZURN	Z165	GALVANIZED BODIES, MEMBRANE CLAMPS, AND DOME STRAINERS; MEMBRANE CLAMP AND GRAVEL STOP, COORDINATE INSTALLATION WITH ROOFING CONTRACTOR	N/A	N/A	SEE PLANS	N/A	N/A
SD2	CORNICE ROOF DRAIN SYSTEM	-	ZURN	Z181	DUCO-COATED CAST IRON, MEMBRANE CLAMPS, AND DOME STRAINERS; FLASHING CLAMP,CORNICE FLASHING MEMBRANE AND GRAVEL STOP, COORDINATE INSTALLATION WITH ROOFING CONTRACTOR	N/A	N/A	SEE PLANS	N/A	N/A
SD3	SCUPPER ROOF DRAIN SYSTEM	-	ZURN	Z189	DUCO-COATED CAST IRON, MEMBRANE CLAMPS, AND DOME STRAINERS; FLASHING CLAMP,CORNICE FLASHING MEMBRANE AND GRAVEL STOP, COORDINATE INSTALLATION WITH ROOFING CONTRACTOR	N/A	N/A	SEE PLANS	N/A	N/A
DSN1	6-INCH STORMWATER DOWNSPOUT NOZZLE	-	ZURN	Z199	ALL POLISHED BRONZE BODY, PVC CONNECTION	N/A	N/A	6"	N/A	N/A
SH1	SHOWER - PREFAB, ADA	2 GPM	FREEDOM	FREEDOM: APF3838BF4P.5 TRANSFER SHOWER. KOHLER SHOWER ASSY:CORALIS K-15701-KS/K-T15121-4CP/K-9500-CP	KOHLER RITE TEMP PRESSURE BALANCING VALVE, TRIM W/ LEVER HANDLE METAL HANDHELD SHOWER HOSE. OATEY SHOWER DRAIN, WITH TILEABLE DRAIN GRATE, COMMERCIAL-GRADE	1/2"	1/2"	3"	2"	6,7
SH2	SHOWER SET FOR TILE-IN SHOWER, ADA	2 GPM	ACORN	MLR1748-ES03-3	AIR CONTROL TEMP PRESSURE BALANCING VALVE, TRIM W/TWO (2) CONICAL SHOWER HEADS, PUSH BUTTON CONTROLS. OATEY SHOWER DRAIN, WITH TILEABLE DRAIN GRATE W/ SECURITY SCREWS, COMMERCIAL-GRADE	1/2"	1/2"	3"	2"	6
SK1	31"x16"x5-1/2"D DOUBLE-BOWL UNDERMOUNT SINK, ADA	1.5 GPM	ELKAY	ELUHAD321655	LK-35 BASKET STRAINER, KOHLER K-7506 PULL-OUT KITCHEN SINK FAUCET (7" SPOUT REACH) WITH LOW-FLOW KIT, IN-SINK-ERATOR CNTR333 3/4 HP DISPOSAL, 1.5 GPM AERATOR	1/2"	1/2"	2"	1-1/2"	2,6
SK2	16.5"x16.5"x5.5"D SINGLE-BOWL UNDERMOUNT SINK, ADA	1.5 GPM	ELKAY	ELUHAD141455	LK-35 BASKET STRAINER, KOHLER K-7506 PULL-OUT KITCHEN SINK FAUCET (7" SPOUT REACH) WITH LOW-FLOW KIT, IN-SINK-ERATOR CNTR333 3/4 HP DISPOSAL, 1.5 GPM AERATOR	1/2"	1/2"	2"	1-1/2"	2,6
SS1	SQUARE, MOLDED STONE, FLOOR MOUNTED MOP SINK	-	FIAT PRODUCTS	MSB-2424	CHICAGO FAUCETS MODEL#897 CHROME, 3/4" HOSE THREAD SPOUT AND WALL BRACE MTD @ 24" A.F.F., FIAT 832-AA 30" HVY DUTY FLEXIBLE 3/4" RUBBER HOSE & WALL BRACKET, FIAT 833-AA SILICONE SEALANT, FIAT 889-CC 18-GAUGE TYPE-302 SS MOP HANGAR, INTEGRAL STAINLESS STEEL STRAINER EXTENSION	3/4"	N/A	1-1/2"	2"	6

PUMP SCHEDULE

GENERAL				BASIS OF DESIGN		DESIGN PARAMETERS							ELECTRICAL		
MARK	DESCRIPTION	TYPE	SERVICE	MFGR	MODEL	DRIVE	RATED SPEED (RPM)	DUTY POINT EFF. (%)	FLUID TEMP (°F)	FLOW (GPM)	TOTAL HEAD (FT.)	NPSH (FT.)	MOTOR (HP)	VOLTS	PH	NOTES
CP-1	CENTRIFUGAL PUMP LEVEL ONE - EWH-1	INLINE	DOMESTIC HOT WATER CIRCULATION (WH-1)	B&G	ECOCIRC 19-16	ECM	4600	70	140	5	10	3	0.50	115	1	1
CP-2	CENTRIFUGAL PUMP LEVEL ONE - EWH-2	INLINE	DOMESTIC HOT WATER CIRCULATION (WH-1)	B&G	ECOCIRC 19-16	ECM	4600	70	140	5	10	3	0.50	115	1	1
CP-3	CENTRIFUGAL PUMP LEVEL ONE - EWH-3	INLINE	DOMESTIC HOT WATER CIRCULATION (WH-1)	B&G	ECOCIRC 19-16	ECM	4600	70	140	5	10	3	0.50	115	1	1
CP-4	CENTRIFUGAL PUMP LEVEL THREE - EWH-4	INLINE	DOMESTIC HOT WATER CIRCULATION (WH-1)	B&G	ECOCIRC 19-16	ECM	4600	70	140	5	10	3	0.50	115	1	1
CP-5	CENTRIFUGAL PUMP LEVEL THREE - EWH-5	INLINE	DOMESTIC HOT WATER CIRCULATION (WH-1)	B&G	ECOCIRC 19-16	ECM	4600	70	140	5	10	3	0.50	115	1	1
ESP-1	SUBMERSIBLE PUMP LEVEL ONE	DIAPHRAGM	ELEVATOR SUMP PUMP (CONNECT TO OIL SEPERATOR SYSTEM)	STANCOR	SE-50	DIRECT	-	-	70	50	25	-	1.00	115	1	2
ESP-2	SUBMERSIBLE PUMP LEVEL ONE	DIAPHRAGM	ELEVATOR SUMP PUMP (CONNECT TO OIL SEPERATOR SYSTEM)	STANCOR	SE-50	DIRECT	-	-	70	50	25	-	1.00	115	1	2
ESP-3	SUBMERSIBLE PUMP LEVEL ONE	DIAPHRAGM	ELEVATOR SUMP PUMP (CONNECT TO OIL SEPERATOR SYSTEM)	STANCOR	SE-50	DIRECT	-	-	70	50	25	-	1.00	115	1	2
ESP-4	SUBMERSIBLE PUMP LEVEL ONE	DIAPHRAGM	ELEVATOR SUMP PUMP (CONNECT TO OIL SEPERATOR SYSTEM)	STANCOR	SE-50	DIRECT	-	-	70	50	25	-	1.00	115	1	2

GENERAL NOTES:

A) ALL PUMPS HANDLING POTABLE WATER MUST BE OF LEAD-FREE BRONZE CONSTRUCTION WITH STAINLESS STEEL IMPELLERS AND SHAFTS. ALL WETTED PARTS MUST BE OF MIN. AISI 304 STAINLESS STEEL CONSTRUCTION

NOTES:

1) PUMP SHALL BE CONTROLLED WITH AN END-OF-LINE THERMOSTAT. SEE MECHANICAL DETAILS AND DRAWINGS FOR THERMOSTAT LOCATION. PUMP SHALL ACTIVATE TO CIRCULATE WHEN MEASURED TEMPERATURE DROPS TO 10°F BELOW INDICATED DESIGN SETPOINT.

2) PUMP SHALL BE OF CORROSION-RESISTANT CONSTRUCTION, WITH PERMANENTLY-LUBRICATED MOTOR RATED FOR CONTINUOUS OPERATION.

ELECTRIC WATER HEATER SCHEDULE

GENERAL		BASIS OF DESIGN								ELECTRICAL		
MARK	DESCRIPTION	MFGR	MODEL	RECOVERY FLOW RATE...	STORAGE CAPACITY (GAL)	SUPPLY TEMP. (°F)	WEIGHT, DRY (LB)	PRIMARY HEATING ELEMENT TYPE	PRIMARY HEATING ELEMENT INPUT (KW)	PRIMARY HEATING ELEMENT EFF (%)	VOLTS	PH	NOTES
EWH-1	TANK WATER HEATER, ELECTRIC - LEVEL ONE	AO SMITH	DEL-30	24	30	140	100	ELECTRIC	3.0/3.0	95.00%	277	1	1
EWH-2	TANK WATER HEATER, ELECTRIC LEVEL ONE	AO SMITH	DEL-30	24	30	140	100	ELECTRIC	3.0/3.0	95.00%	277	1	1
EWH-3	TANK WATER HEATER, ELECTRIC LEVEL ONE	AO SMITH	DEL-30	36	30	140	100	ELECTRIC	4.5/4.5	95.00%	277	1	1
EWH-4	TANK WATER HEATER, ELECTRIC - LEVEL ONE	AO SMITH	DEL-30	24	30	140	100	ELECTRIC	3.0/3.0	95.00%	277	1	1
EWH-5	TANK WATER HEATER, ELECTRIC LEVEL ONE	AO SMITH	DEL-30	36	30	140	100	ELECTRIC	4.5/4.5	95.00%	277	1	1

NOTES:

1.) DUAL ELEMENT

WIRED SIMULTNEOUS ON SINGLE ELEMENT

EXT1	HOT WATER SYSTEM EXPANSION TANK (8 GAL)	-	AO SMITH	TS-8	-	N/A	3/4"	N/A	N/A	N/A
TP	TRAP PRIMER	-	PRECISION PLUMBING PRODUCTS	PR-500	BRASS BODY, 1/2" INLET, 1/2" OUTLET	1/2"	N/A	N/A	N/A	4
UR1	URINAL; VITREOUS CHINA, WALL-HUNG, ELONGATED,MANUAL FLUSH VALVE, LOW-FLOW, SIPHON JET	0.5 GPF	SLOAN	SU-7009-STG	SLOAN 186-0.5 ESS HARD-WIRED ELECTRONIC FLUSH VALVE, FURNISH AND INSTALL FACTORY PROVIDED WALL CARRIER. FOR NON-ADA INSTALLATION HEIGHT. SEE ARCH RESTROOM DETAILS	3/4"	N/A	2"	1-1/2"	6
UR2	URINAL; VITREOUS CHINA, WALL-HUNG, ELONGATED,MANUAL FLUSH VALVE, LOW-FLOW, SIPHON JET, ADA	0.5 GPF	SLOAN	SU-7009-STG	SLOAN 186-0.5 ESS HARD-WIRED ELECTRONIC FLUSH VALVE, FURNISH AND INSTALL FACTORY PROVIDED WALL CARRIER. FOR NON-ADA INSTALLATION HEIGHT. SEE ARCH RESTROOM DETAILS	3/4"	N/A	2"	1-1/2"	3,6
WC1	WATER CLOSET; VITREOUS CHINA, WALL-MOUNT, AUTOMATIC FLUSH VALVE	1.28 GPF	SLOAN	WETS-2450.1303	SLOAN ROYAL 111-1.28 ESS HARD-WIRED ELECTRONIC FLUSH VALVE, HEAVY-DUTY ELONGATED OPEN FRONT TOILET SEAT FURNISH AND INSTALL ZURN ZN1201-HD WALL CARRIER. FOR NON-ADA INSTALLATION HEIGHT. SEE ARCH RESTROOM DETAILS	1"	N/A	4"	2"	6
WC2	WATER CLOSET; VITREOUS CHINA, WALL-MOUNT, AUTOMATIC FLUSH VALVE	1.28 GPF	SLOAN	WETS-2450.1303	SLOAN ROYAL 111-1.28 ESS HARD-WIRED ELECTRONIC FLUSH VALVE, HEAVY-DUTY ELONGATED OPEN FRONT TOILET SEAT FURNISH AND INSTALL ZURN ZN1201-HD WALL CARRIER. FOR NON-ADA INSTALLATION HEIGHT. SEE ARCH RESTROOM DETAILS	1"	N/A	4"	2"	3,6
WC3	WATER CLOSET; VITREOUS CHINA, FLOOR-MOUNT, AUTOMATIC FLUSH VALVE, ADA	1.28 GPF	SLOAN	ST-2029-STG	SLOAN ROYAL 111-1.28 ESS HARD-WIRED ELECTRONIC FLUSH VALVE, HEAVY-DUTY ELONGATED OPEN FRONT TOILET SEAT FURNISH AND INSTALL FACTORY PROVIDED WALL CARRIER. FOR NON-ADA INSTALLATION HEIGHT. SEE ARCH RESTROOM DETAILS	1"	N/A	4"	2"	3,6
WC4	WATER CLOSET; VITREOUS CHINA, WALL-MOUNT, AUTOMATIC FLUSH VALVE	1.28 GPF	ACORN	LR1418	WALL MOUNT COMPLETE W/ 120 VOLT/24 VOLT TRANSFORMER, MVC2 TIME TROL VALVE W/ ELECTRONIC LAV PIEZO BUTTONS, MVCFV TIME TROL VALVE ELECTRONIC FLUSH VALVE PIEZO BUTTON, DRINKING BUBBLER W/ PUSH BUTTON, TOILET PAPER HOLDER, LW1 THRU WALL LAV EXTENSION. ANGLE LEFT/RIGHT PER PLANS. MODEL ST70-12 THERMOSTATIC MIXING VALVE INCLUDED.	1-1/4"	1/2"	4"	2"	6
WC5	WATER CLOSET; VITREOUS CHINA, FLOOR-MOUNT, AUTOMATIC FLUSH VALVE, ADA	1.28 GPF	ACORN	LR1449	WALL MOUNT COMPLETE W/ 120 VOLT/24 VOLT TRANSFORMER, MVC2 TIME TROL VALVE W/ ELECTRONIC LAV PIEZO BUTTONS, MVCFV TIME TROL VALVE ELECTRONIC FLUSH VALVE PIEZO BUTTON, DRINKING BUBBLERW/ PUSH BUTTON, TOILET PAPER HOLDER, LW1 THRU WALL LAV EXTENSION. ANGLE LEFT/RIGHT PER PLANS. MODEL ST70-12 THERMOSTATIC MIXING VALVE INCLUDED.	1-14"	1/2"	4"	2"	6
WC6	WATER CLOSET; VITREOUS CHINA, FLOOR-MOUNT, AUTOMATIC FLUSH VALVE, ADA	1.28 GPF	SLOAN	ST-2029-STG	SLOAN ROYAL 111-1.28 ESS HARD-WIRED ELECTRONIC FLUSH VALVE, HEAVY-DUTY ELONGATED OPEN FRONT TOILET SEAT FURNISH AND INSTALL FACTORY PROVIDED WALL CARRIER. FOR NON-ADA INSTALLATION HEIGHT.	1"	N/A	4"	2"	3,6
WCO	WALL CLEANOUT	-	ZURN	Z-1440	SIZE TO MATCH RISER	N/A	N/A	MATCH PIPE SIZE	N/A	5
NFWH1	WALL HYDRANT	-	ZURN	Z-1321	ENCASED, SELF DRAINING STAINLESS STEEL BOX WITH LOCKING COVER, INTEGRAL VACCUM BREAKER WITH 3/4" HOSE CONNECTION	3/4"	N/A	N/A	N/A	6
NFYH1	FREEZE-PROOF SELF-DRAINING POST HYDRANT, YARD-MOUNT, CAST IRON HEAD WITH LOCK	-	ZURN	Z-1397	DEPTH OF BURY: 3 FT., BASIS OF DESIGN SPEC ONLY. REFER TO LANDSCAPE/CIVIL PLANS FOR EXACT LOCATION & SPECIFICATION.	1"	N/A	1/8"	N/A	6
NFRH1	FREEZE-PROOF SELF-DRAINING POST HYDRANT, YARD-MOUNT, CAST IRON HEAD WITH LOCK OPTION	-	WOODFORD	SRH-MS	ENCASED, SELF DRAINING, INTEGRAL VACCUM BREAKER WITH 3/4" HOSE CONNECTION, CLAMPING COLLAR. NOTE: NON-FREEZE FEATURE WILL NOT FUNCTION WITH VACUUM BREAKER. THE VACUUM BREAKER MUST BE MANUALLY TRIPPED TO FACILITATE DRAINAGE.	3/4"	N/A	1/8"	N/A	6
WHA	WATER HAMMER ARRESTOR	-	MIFAB	MWH	FIXTURE UNIT RATING 1-11: 1/2" FIXTURE UNIT RATING 12-30: 3/4" FIXTURE UNIT RATING 31-60: 1" FIXTURE UNIT RATING 61-113: 1-1/4" FIXTURE UNIT RATING 114-154: 1-1/2"	REFER TO PDI SPEC	REFER TO PDI SPEC	REFER TO PDI SPEC	REFER TO PDI SPEC	6
ICM1	ICE MAKER WALL-MOUNTED WATER CONNECTION BOX	-	UPONOR	LF5955025	CONTRACTOR SHALL COORDINATE WITH ARCHITECT TO INSTALL WALL OUTLET BOX IN SUCH A MANNER AS TO MINIMIZE VISIBILITY OF THE FINISHED PRODUCT.	1/4"	N/A	N/A	N/A	N/A
TMV1	THERMOSTATIC MIXING VALVE	0.25 GPM - 12.0 GPM	LEONARD	270	CONTRACTOR SHALL COORDINATE WITH LEONARD MANUFACTURING THE PREFERRED INSTALLATION METHOD PRIOR TO PURCHASE AND INSTALLATION.	1"	1"	N/A	N/A	N/A
OI1	OIL-WATER INTERCEPTOR	50.0 GPM	JR SMITH	8550	CONTRACTOR SHALL COORDINATE WITH JR SMITH MANUFACTURING THE PREFERRED INSTALLATION METHOD...	N/A	N/A	4"	3"	N/A

GENERAL NOTES:

A) COORDINATE FINISH OF ALL FIXTURES, CLEANOUT COVERS, ETC. WITH ARCHITECT

B) FIXTURE FLOW RATES SHOWN ARE RATED AT MINIMUM 40 PSI. CONTRACTOR SHALL VERIFY WATER PRESSURE AND MIN. FLOW RATE AFTER INSTALLATION

NOTES:

1) INCLUDE RECTORSEAL SURE SEAL® TRAP SEAL DEVICE OR APPROVED EQUAL
2) INCLUDE LEONARD MODEL 270 FAUCET MIXER VALVE
3) MOUNT WATER CLOSET/URINAL PER ADA REQUIREMENTS. TRIP LEVER SHALL BE ON WIDE SIDE OF THE ROOM
4) SEE PLUMBING GENERAL NOTES ON FLOOR PLANS REGARDING TRAP PRIMERS
5) SIZE WALL CLEANOUT TO MATCH CONNECTED SANITARY PIPE
6) CONTRACTOR SHALL INSTALL WATER HAMMER ARRESTORS AS REQUIRED TO MEET THE FIXTURE LOAD. INSTALL IN ACCESSIBLE LOCATION COMPLETE WITH ACCESS PANEL
7) CONTRACTOR SHALL CO-ORDINATE SEAT TYPE WITH ARCHITECT.

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07 / 15 / 2020

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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
6	07-16-2020	Addendum #6

Drawn By CEH
Checked By VLM
Date 03/16/20
Job No. 2019-226

Sheet Title
PLUMBING SCHEDULES

Sheet No.
P-6.01

RELEASED FOR CONSTRUCTION

ADD ALTERNATES:

- ADD ALTERNATE 03: REFER TO SPECIFICATIONS SECTION 230923 DIRECT DIGITAL CONTROL FOR HVAC SYSTEMS, PART 1.1 FOR DESCRIPTION OF ADD ALTERNATE 03.
- ADD ALTERNATE 04: PROVIDE UV LIGHTS DOWNSTREAM OF COOLING COIL FOR RTU-1.1, 1.2, 3.1, AND 3.2. UV LIGHTS SHALL BE ENCAPSULATED, FACTORY INSTALLED IN THE UNIT WITH ACCESS DOOR INTERLOCK TO SHUT DOWN UV LIGHTS WHEN DOOR IS OPEN. PROVIDE THE NUMBER OF LAMPS AND LAMP SIZE ADEQUATE TO COVER THE ENTIRE COOLING COIL AREA.

GENERAL NOTES:

1. THESE DRAWINGS ARE SCHEMATIC, AND ARE NOT REPRESENTATIVE OF ALL POTENTIAL CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH ALL OTHER DISCIPLINES TO ENSURE PROPER INSTALLATION OF ALL SYSTEMS AND EQUIPMENT.
2. COORDINATE WITH ARCHITECTURAL CEILING PLAN FOR LOCATION OF ALL CEILING-MOUNTED EQUIPMENT AND AIR DISTRIBUTION DEVICES.
3. COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT WITH THE ELECTRICAL CONTRACTOR PRIOR TO PURCHASE.
4. CONTRACTOR SHALL MAINTAIN MINIMUM 10'-10" DISTANCE BETWEEN ALL EXHAUST / VENT OUTLETS AND OUTSIDE AIR INTAKES. COORDINATE WITH PLUMBING AND ROOFING CONTRACTORS PRIOR TO INSTALLATION.
5. REFER TO MANUFACTURER'S INSTALLATION CLEARANCE REQUIREMENTS FOR ALL HVAC EQUIPMENT. CONTRACTOR SHALL COORDINATE REQUIRED CLEARANCES WITH ALL TRADES PRIOR TO BEGINNING WORK.
6. REFER TO SPECIFICATIONS SECTION 233113 METAL DUCTS, PART 1.3.B.3 FOR DUCTWORK SHOP DRAWING REQUIREMENTS.
7. UNLESS OTHERWISE NOTED, INSTALL DUCT LINER 10'-0" MINIMUM DOWSTREAM FROM THE DISCHARGE OF ALL POWERED INDUCTION UNITS (PIU). REFER TO SPECIFICATIONS SECTION 233113 METAL DUCTS, PART 2.6 FOR DUCT LINER REQUIREMENTS.
8. REFER TO DETAIL 1 / M-502 FOR LOCATION OF ALL BALANCING DAMPERS ON LOW PRESSURE DUCTWORK. NO VOLUME DAMPERS ALLOWED IN MEDIUM PRESSURE DUCTWORK.
9. INSTALL DUCTWORK AND REFRIGERANT PIPING IN A NEAT AND WORKMAN-LIKE MANNER IN ROOMS WITH NO CEILING OR CLOUD CEILINGS. PIPING SHALL BE INSTALLED AS HIGH AS POSSIBLE AND DUCTWORK EVENLY SPACED OUT OVER CLOUDS.

HVAC LEGEND-SYMBOL

SYMBOL	ITEM
A.F.F.	ABOVE FINISHED FLOOR
A.M.D.	AUTOMATIC MOTORIZED DAMPER
C.L.	CENTER LINE
F.D.	FIRE DAMPER
N.T.S.	NOT TO SCALE
O.S.A.	OUTSIDE AIR
R.A.	RETURN AIR
V.A.V.	VARIABLE AIR VOLUME
D	DRAIN PIPING
CD	CONDENSATE DRAIN
△FD	FIRE DAMPER
⟨XX⟩⟨###⟩	DEVICE TYPE MARK / AIRFLOW (CFM)
M	MOTORIZED CONTROL DAMPER
24"x18"	24" WIDE x 18" HIGH RECTANGULAR DUCT
24"/18"	24" WIDE / 18" HIGH FLAT OVAL DUCT
(T)	THERMOSTAT
(S)	TEMPERATURE SENSOR
(C)	CARBON DIOXIDE SENSOR
(H)	HUMIDISTAT
⧄	RETURN AIR DIFFUSER
⊠	SUPPLY AIR DIFFUSER
▭ǀǀǀǀǀ	FLEXIBLE DUCTWORK
⟨#⟩	KEYED NOTE TAG
▨	EXPOSED SPIRAL DUCTWORK - DOUBLE WALL

TERMINAL UNIT AND ACCESS REQUIRED

ROOFTOP UNIT SCHEDULE

	UNIT										COOLING						HEATING				
	BASIS OF DESIGN			ELECTRICAL	FILTERS		SUPPLY FAN				EAT		LAT								
MARK	MFGR	MODEL	WEIGHT (LBS)	V/Ø	TYPE	FILTER AREA (SQ. FT.)	AIRFLOW (CFM)	OUTSIDE AIR (CFM)	ESP (inH2O)	MOTOR SIZE (HP)	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	TYPE	LAT (F°)	CAPACITY (MBH)	STAGES	NOTES
RTU-1.1	TRANE	SFHLF25	6,225	460/3	MERV 13	5.5	8,535	1500	2.5	15.0	78	65	52.9	51.9	292.6	219.5	NG	60	500	14:1	1-11,13
RTU-1.2	TRANE	SFHLF30	6,840	460/3	MERV 13	5.5	9,260	2000	2.5	15.0	78	65	53.9	52.9	317.5	238.1	NG	60	500	14:1	1-11,13
RTU-2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
RTU-2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
RTU-3.1	TRANE	SFHLF30	6,840	460/3	MERV 13	5.5	10,020	2000	2.5	15.0	78	65	53.6	52.6	343.5	257.7	NG	60	500	14:1	1-11,13
RTU-3.2	TRANE	SFHLF30	6,840	460/3	MERV 13	5.5	10,110	2000	2.5	15.0	78	65	53.9	52.9	346.6	260.0	NG	60	500	14:1	1-11,13

NOTES:

1) PROVIDE SMOKE DETECTOR IN SUPPLY DUCT.
2) PROVIDE SMOKE DETECTOR IN RETURN DUCT.
3) PROVIDE DISCONNECT SWITCH.
4) UNIT MOUNTED VARIABLE FREQUENCY DRIVE.
5) 2" PLEATED FILTERS.
6) ENTHALPY-TYPE ECONOMIZER AND POWERED EXHAUST.
7) OUTDOOR AIR FLOW MEASURING STATION.
8) DDC CONTROLS.
9) SINGLE POINT POWER CONNECTION.
10) 14" ROOF CURB WITH SPRING ISOLATORS. TO BE INSTALLED ON ROOF CONCRETE PAD.
11) DIRECT DRIVE PLENUM FANS.
12) FUTURE ROOFTOP UNITS TO SERVE THE SECOND FLOOR.
13) PROVIDE FACTORY INSTALLED UV LIGHTS DOWNSTREAM OF EVAPORATOR COIL. SINGLE POINT POWER, CABINET DOOR INTERLOCK, SHIELDING OF PLASTIC COMPONENTS. ADD ALTERNATE 04, SEE FULL DESCRIPTION ON M-0.01.

DIFFUSER AND AIR TERMINAL SCHEDULE

MARK	FACE SIZE (IN.)	NECK SIZE (IN.)	MFGR	MODEL	DESCRIPTION	MAX AIRFLOW (CFM)	N.C. RATING AT MAX FLOW	NOTES
S1	24x24	6	TITUS	TMSA	3-CONE SUPPLY DIFFUSER	196	25	1
S2	24x24	8	TITUS	TMSA	3-CONE SUPPLY DIFFUSER	279	25	1
S3	24x24	10	TITUS	TMSA	3-CONE SUPPLY DIFFUSER	436	24	1
S4	24x24	6	TITUS	OMNI	ARCHITECTURAL, PLAQUE FACE	157	13	1
S5	24x24	8	TITUS	OMNI	ARCHITECTURAL, PLAQUE FACE	279	17	1
S6	24x24	10	TITUS	OMNI	ARCHITECTURAL, PLAQUE FACE	491	24	1
S7	19x7	18x6	TITUS	S300F	SPIRAL DUCT MTD. SUPPLY GRILLE	379	20	-
S8	48	8	TITUS	ML-40	LINEAR SUPPLY GRILLE	256	26	1,4
S9	25x7	24x6	TITUS	CT-581	LINEAR BAR SUPPLY/RETURN GRILLE	169	16	1,4
S10	12x8	10x6	TITUS	301RL	LONG BLADE SUPPLY GRILLE	204	18	-
S11	31x9	30x8	TITUS	300FL	LONG BLADE SUPPLY GRILLE	745	19	-
S12	13x7	12x6	TITUS	301RL	LONG BLADE SUPPLY GRILLE	287	23	-
S13	48x2	8	TITUS	FL-20	LINEAR SLOT	210	20	4
S14	12x12	6	TITUS	TMSA	3-CONE SUPPLY DIFFUSER	137	19	1
S15	24x24	12	TITUS	TDC	3-CONE SUPPLY DIFFUSER	900	27	1
SG	9x9	8x8	TITUS	SG-300RL	MEDIUM SECURITY, FIXED GRILLE	178	22	-
R1	24x24	6	TITUS	PAR	PERFORATED FACE RETURN GRILLE	157	25	-
R2	24x24	8	TITUS	PAR	PERFORATED FACE RETURN GRILLE	244	27	-
R3	24x24	10	TITUS	PAR	PERFORATED FACE RETURN GRILLE	327	27	-
R4	24x24	22x22	TITUS	45F	SIGHT-PROOF EGGCRATE RETURN GRILLE	1176	27	2
R5	24x12	22x10	TITUS	45F	SIGHT-PROOF EGGCRATE RETURN GRILLE	611	26	2
R6	9x9	8x8	TITUS	350RL	LOUVERED RETURN GRILLE	296	28	-
R7	25x7	24x6	TITUS	CT-581	LINEAR BAR RETURN GRILLE	169	16	1,4
R8	37x21	36x20	TITUS	350R	SHORT BLADE RETURN GRILLE	3768	38	-
R9	48x2	8	TITUS	FL-20	LINEAR SLOT	210	20	5
R10	16x16	14x14	TITUS	350RL	LOUVERED RETURN GRILLE	610	18	-
R11	12x12	6	TITUS	PAR	PERFORATED FACE RETURN GRILLE	157	21	-
R12	24x24	22x22	TITUS	50F	EGGCRATE RETURN GRILLE	2200	20	-
R13	20x20	18x18	TITUS	350RL	LOUVERED RETURN GRILLE	1449	28	-

GENERAL NOTES:

A) Diffusers shall have factory finish. Coordinate finish with architect. Coordinate air terminal and diffuser locations with architectural ceiling plans and electrical lighting plan.
B) All diffusers shall include a control damper to balance airflow at each diffuser, regardless of presence on drawings. Unless otherwise indicated, locate balance damper at branch takeoff.

EQUIPMENT NOTES:

1) Include factory-installed molded diffuser-top insulation blanket (minimum R-6 insulation value).
2) Unless noted otherwise, furnish with lined ductboard sound boot stubbed into plenum. See mechanical details.
3) Coordinate mounting bracket type with assembly in which diffuser is to be installed. See Architectural drawings for details. Provide concealed-mount brackets in all hard or continuous assemblies unless otherwise noted.
4) Include min. 18" factory-provided insulated supply plenum with round connection as indicated.
5) include factory-provided light shield.

VAV SCHEDULE (COOLING ONLY)

	BASIS OF DESIGN						
MARK	MFGR	MODEL	SIZE	INLET STATIC (IN.WG.)	MAXIMUM AIRFLOW (CFM)	MINIMUM AIRFLOW (CFM)	NOTES
VAV-1.1	TRANE	VCCF	6	0.5	450	135	1-3
VAV-1.2	TRANE	VCCF	8	0.5	510	153	1-3
VAV-1.3	TRANE	VCCF	8	0.5	825	248	1-3
VAV-1.4	TRANE	VCCF	8	0.5	500	150	1-3
VAV-1.5	TRANE	VCCF	8	0.5	580	174	1-3
VAV-1.6	TRANE	VCCF	8	0.5	700	210	1-3
VAV-1.7	TRANE	VCCF	4	0.5	120	36	1-3
VAV-1.8	TRANE	VCCF	8	0.5	700	210	1-3
VAV-1.9	TRANE	VCCF	8	0.5	740	222	1-3
VAV-1.10	TRANE	VCCF	10	0.5	1090	327	1-3
NOT USED							
VAV-1.12	TRANE	VCCF	6	0.5	400	120	1-3
VAV-1.13	TRANE	VCCF	8	0.5	850	255	1-3
NOT USED							
NOT USED							
NOT USED							

NOTES:

1) PROVIDE FACTORY MOUNTED DDC CONTROLS.
2) COOLING ONLY
3) PROVIDE 24V CONTROL TRANSFORMER.

PIU SCHEDULE

									HEATING					ELECTRICAL		
	BASIS OF DESIGN															
MARK	MFGR	MODEL	SIZE	INLET STATIC (IN.WG.)	COOLING AIRFLOW MAX. (CFM)	COOLING AIRFLOW MIN. (CFM)	FAN AIRFLOW (CFM)	FAN E.S.P.	(KW)	TYPE	STAGES	EAT (°F)	LAT (°F)	MOTOR TYPE	MOTOR HP	NOTES
PIU-1.1	TRANE	VPEF	8	0.5	900	270	360	0.25	7	ELEC	3	60	95	ECM	0.33	1,2,4,5
PIU-1.2	TRANE	VPEF	5	0.5	300	90	120	0.25	2	ELEC	1	60	95	ECM	0.125	1,2,4,5
PIU-1.3	TRANE	VPEF	8	0.5	660	200	260	0.25	5	ELEC	2	60	95	ECM	0.125	1,2,4,5
PIU-1.4	TRANE	VPEF	12	0.5	1500	450	600	0.25	12	ELEC	4	60	95	ECM	0.33	1,2,4,5
PIU-1.5	TRANE	VPEF	10	0.5	1320	400	530	0.25	10	ELEC	3	60	95	ECM	0.33	1,2,4,5
PIU-1.6	TRANE	VPEF	8	0.5	800	240	320	0.25	6	ELEC	2	60	95	ECM	0.33	1,2,4,5
PIU-1.7	TRANE	VPEF	12	0.5	1440	430	580	0.25	11	ELEC	4	60	95	ECM	0.33	1,2,4,5
PIU-1.8	TRANE	VPEF	8	0.5	540	160	220	0.25	4	ELEC	2	60	95	ECM	0.125	1,2,4,5
PIU-1.9	TRANE	VPEF	12	0.5	1520	460	610	0.25	12	ELEC	4	60	95	ECM	0.33	1,2,4,5
PIU-1.10	TRANE	VPEF	5	0.5	350	110	140	0.25	3	ELEC	1	60	95	ECM	0.125	1,2,4,5
PIU-1.11	TRANE	VPEF	10	0.5	1000	300	400	0.25	8	ELEC	3	60	95	ECM	0.33	1,2,4,5
PIU-1.12	TRANE	VPEF	8	0.5	800	240	320	0.25	6	ELEC	2	60	95	ECM	0.33	1,2,4,5
PIU-3.1	TRANE	VPEF	10	0.5	1300	390	520	0.25	10	ELEC	3	60	95	ECM	0.33	1,2,4,5
PIU-3.2	TRANE	VPEF	6	0.5	450	140	180	0.25	4	ELEC	2	60	95	ECM	0.125	1,2,4,5
PIU-3.3	TRANE	VPEF	8	0.5	700	210	280	0.25	5	ELEC	2	60	90	ECM	0.125	1,2,4,5
PIU-3.4	TRANE	VPEF	5	0.5	350	110	140	0.25	3	ELEC	1	60	95	ECM	0.125	1,2,4,5
PIU-3.5	TRANE	VPEF	12	0.5	1500	450	600	0.25	12	ELEC	4	60	95	ECM	0.33	1,2,4,5
PIU-3.6	TRANE	VPEF	10	0.5	1400	420	560	0.25	11	ELEC	4	60	95	ECM	0.33	1,2,4,5
PIU-3.7	TRANE	VPEF	12	0.5	1500	450	600	0.25	12	ELEC	4	60	95	ECM	0.33	1,2,4,5
NOT USED																
PIU-3.9	TRANE	VPEF	12	0.5	1500	450	600	0.25	12	ELEC	4	60	95	ECM	0.33	1,2,4,5
PIU-3.10	TRANE	VPEF	8	0.5	900	270	360	0.25	7	ELEC	3	60	95	ECM	0.33	1,2,4,5
PIU-3.11	TRANE	VPEF	10	0.5	1310	390	520	0.25	9	ELEC	3	60	90	ECM	0.33	1,2,4,5
PIU-3.12	TRANE	VPEF	5	0.5	340	100	140	0.25	3	ELEC	1	60	95	ECM	0.125	1,2,4,5
PIU-3.13	TRANE	VPEF	5	0.5	340	100	140	0.25	3	ELEC	1	60	95	ECM	0.125	1,2,4,5
PIU-3.14	TRANE	VPEF	6	0.5	480	140	190	0.25	4	ELEC	2	60	95	ECM	0.125	1,2,4,5
PIU-3.15	TRANE	VPEF	8	0.5	600	180	240	0.25	5	ELEC	2	60	95	ECM	0.125	1,2,4,5
PIU-3.16	TRANE	VPEF	8	0.5	630	190	250	0.25	4	ELEC	2	60	90	ECM	0.125	1,2,4,5
PIU-3.17	TRANE	VSEF	6	0.5	450	140	180	0.25	4	ELEC	2	60	90	ECM	0.125	1,3,4,5
PIU-3.18	TRANE	VPEF	5	0.5	200	60	80	0.25	1	ELEC	1	60	90	ECM	0.125	1,2,4,5
PIU-3.19	TRANE	VPEF	5	0.5	200	60	80	0.25	1	ELEC	1	60	90	ECM	0.125	1,2,4,5
PIU-3.20	TRANE	VSEF	12	0.5	1800	540	720	0.25	17	ELEC	4	60	90	ECM	0.5	1,3,4,5
PIU-3.21	TRANE	VPEF	8	0.5	760	230	300	0.25	5	ELEC	2	60	90	ECM	0.125	1,2,4,5
PIU-3.22	TRANE	VSEF	12	0.5	1800	540	720	0.25	17	ELEC	4	60	90	ECM	0.5	1,3,4,5
PIU-3.23	TRANE	VPEF	6	0.5	360	110	140	0.25	2	ELEC	1	60	90	ECM	0.125	1,2,4,5
PIU-3.24	TRANE	VPEF	6	0.5	360	110	140	0.25	2	ELEC	1	60	90	ECM	0.125	1,2,4,5
PIU-3.25	TRANE	VPEF	8	0.5	900	270	360	0.25	7	ELEC	3	60	95	ECM	0.33	1,2,4,5
NOT USED																

NOTES:

1) PROVIDE FACTORY MOUNTED DDC CONTROLS.
2) PARALLEL ARRANGEMENT.
3) SERIES ARRANGEMENT.
4) PROVIDE CONTROL TRANSFORMER WITH UNIT.
5) AIRFLOW SWITCH.

EXHAUST FAN SCHEDULE

MARK	BASIS OF DESIGN	MODEL	TYPE	DRIVE	SERVICE	AIRFLOW (CFM)	MIN. E.S.P. (IN.WG.)	MOTOR (HP)	SONES	NOTES
EF-A	GREENHECK	AX-54-160-0424	INLINE	DIRECT	PARKING GARAGE	3500	0.3	1/2	9.5	1,2
EF-1A	GREENHECK	SQ-100-VG	INLINE	DIRECT	GENERAL - RR	600	0.25	1/4	4	1
EF-1B	GREENHECK	SQ-120-VG	INLINE	DIRECT	GENERAL - CELLS	1100	0.5	1/2	8	1
EF-1C	GREENHECK	SQ-100-VG	INLINE	DIRECT	GENERAL - LOCKERS	850	0.5	1/4	4.5	1
EF-1D	GREENHECK	G-143-VG	DOWNBLAST	DIRECT	SALLY PORT	1500	0.25	1/2	8.1	1-3
EF-1E	GREENHECK	SQ-90-VG	INLINE	DIRECT	MECHANICAL	250	0.25	1/10	5	1
EF-1G	GREENHECK	SQ-90-VG	INLINE	DIRECT	GROUNDS / TOOLS	250	0.25	1/10	4	1
EF-3A	GREENHECK	SQ-100-VG	INLINE	DIRECT	GENERAL - RR	475	0.25	1/4	4	1
EF-3B	GREENHECK	SQ-90-VG	INLINE	DIRECT	JUDGE RR	300	0.25	1/15	5	1
EF-3C	GREENHECK	G-090-VG	DOWNBLAST	DIRECT	GENERAL - RR	75	0.25	1/10	4.5	1
EF-3D	GREENHECK	G-090-VG	DOWNBLAST	DIRECT	GENERAL - CELLS	300	0.25	1/10	4.5	1

GENERAL NOTES:

ALL FANS SHALL BE UL-LISTED, AND SOUND LEVELS AND PERFORMANCE RATINGS SHALL BE AMCA-CERTIFIED

INCLUDE BACKDRAFT DAMPER FOR EACH EXHAUST FAN

NOTES:

1) SEE ELECTRICAL DRAWINGS FOR CONTROLS DETAILS.
2) PROVIDE EC MOTOR WITH 2-SPEED CONTROLLER.
3) 14" ROOF CURB.

SPLIT SYSTEM UNIT SCHEDULE

TONS	SEER	MFGR	OUTDOOR UNIT	MARK	UNIT WT. (LBS)	INDOOR UNIT	MARK	UNIT WT. (LBS)	DESCRIPTION	AIRFLOW (CFM)	OUTSIDE AIR (CFM)	COOLING TOTAL BTUH	NOTES
2.00	19.6	MITSUBISHI	PUZ-A24N	MSHP-A	150	PEAD-A24A	MSFC-A	70	DUCTED CONCEALED	740	-	24,000	1-3
1.50	19.9	MITSUBISHI	PUZ-A18N	MSHP-B	100	PEAD-A18A	MSFC-B	65	DUCTED CONCEALED	600	-	18,000	1-3
3.00	18.8	MITSUBISHI	PUZ-A36N	MSHP-1A	245	PKA-A36K	MSFC-1A	50	WALL-MOUNT	920	-	36,000	1-3
3.00	18.8	MITSUBISHI	PUZ-A36N	MSHP-11A	245	PKA-A36K	MSFC-11A	50	WALL-MOUNT	920	-	36,000	1-3
3.00	18.8	MITSUBISHI	PUZ-A36N	MSHP-1B	245	PKA-A36K	MSFC-1B	50	WALL-MOUNT	920	-	36,000	1-3
3.00	18.8	MITSUBISHI	PUZ-A36N	MSCU-1C	245	PKA-A36K	MSFC-1C	50	WALL-MOUNT	920	-	36,000	1-3
2.50	19.8	MITSUBISHI	PUZ-A30N	MSHP-1E	150	PEAD-A30A	MSFC-1E	70	DUCTED CONCEALED	800	-	24,000	1-3
1.50	19.9	MITSUBISHI	PUZ-A18N	MSHP-3A	100	PEAD-A18A	MSFC-3A	65	DUCTED CONCEALED	600	-	18,000	1-3
2.00	19.6	MITSUBISHI	PUZ-A24N	MSHP-3B	150	PEAD-A24A	MSFC-3B	70	DUCTED CONCEALED	740	-	24,000	1-3
1.50	19.9	MITSUBISHI	PUZ-A18N	MSHP-3C	100	PEAD-A18A	MSFC-3C	65	DUCTED CONCEALED	600	-	18,000	1-3
2.50	19.8	MITSUBISHI	PUY-A30N	MSCU-3D	150	PKA-A30K	MSFC-3D	50	WALL-MOUNT	775	-	30,000	1-3
2.50	19.8	MITSUBISHI	PUY-A30N	MSCU-3E	150	PKA-A30K	MSFC-3E	50	WALL-MOUNT	775	-	30,000	1-3
2.50	19.8	MITSUBISHI	PUY-A30N	MSCU-3F	150	PKA-A30K	MSFC-3F	50	WALL-MOUNT	775	-	30,000	1-3
2.50	19.8	MITSUBISHI	PUY-A30N	MSCU-3G	150	PKA-A30K	MSFC-3G	50	WALL-MOUNT	775	-	30,000	1-3

NOTES:

1) PROVIDE WALL MOUNTED THERMOSTAT THERMOSTAT.
2) ROUTE LINESETS THROUGH ROOF WITH ROOF SHACK OR EQUIVALENT. COORDINATE ROOFTOP LINESET PENETRATIONS WITH ROOFING CONTRACTOR. NO PITCH POCKETS OR OTHER VERTICAL PENETRATIONS SHALL BE USED. UNLISTED / UNRATED FIELD FABRICATED ASSEMBLIES ARE DISALLOWED.
3) INCLUDE FACTORY PROVIDED CONDENSATE PUMP.

EXTERIOR AIR LOUVER SCHEDULE

MARK	MFGR	MODEL	LOUVER SIZE (IN.)	BLADE ANGLE	BLADE CENTERS (NOM.)	BIRD SCREEN	FREE AREA (SQ.FT.)	AIRFLOW (CFM)	FACE VELOCITY (FPM)	SERVICE	NOTES	DESCRIPTION
L-1A	RUSKIN	ELF6375DX	32x24	35°	6"	5/8"x0.040" (16x1)	2.5	600	240	EF-1A		EXTRUDED ALUMINUM DRAINABLE STORMPROOF LOUVER
L-1B	RUSKIN	ELF6375DX	32x24	35°	6"	5/8"x0.040" (16x1)	2.5	1100	440	EF-1B		EXTRUDED ALUMINUM DRAINABLE STORMPROOF LOUVER
L-1C	RUSKIN	ELF6375DX	32x24	35°	6"	5/8"x0.040" (16x1)	2.5	850	340	EF-1C	-	EXTRUDED ALUMINUM DRAINABLE STORMPROOF LOUVER
L-1E	RUSKIN	ELF6375DX	32x24	35°	6"	5/8"x0.040" (16x1)	2.5	250	100	EF-1E	-	EXTRUDED ALUMINUM DRAINABLE STORMPROOF LOUVER
L-1D	RUSKIN	ELF6375DX	32x24	35°	6"	5/8"x0.040" (16x1)	2.5	1500	600	EF-1D	-	EXTRUDED ALUMINUM DRAINABLE STORMPROOF LOUVER
L-1G	RUSKIN	ELF6375DX	32x24	35°	6"	5/8"x0.040" (16x1)	2.5	250	100	EF-1G	-	EXTRUDED ALUMINUM DRAINABLE STORMPROOF LOUVER
L-3A	RUSKIN	ELF6375DX	18x18	35°	6"	5/8"x0.040" (16x1)	1	475	475	EF-3A	-	EXTRUDED ALUMINUM DRAINABLE STORMPROOF LOUVER
L-3B	RUSKIN	ELF6375DX	18x18	35°	6"	5/8"x0.040" (16x1)	1	300	300	EF-EB	-	EXTRUDED ALUMINUM DRAINABLE STORMPROOF LOUVER

GENERAL NOTES:

A) FINISH TYPE 2-COAT 70% KYNAR 500 / HYLAR 5000 AAMA 2605. COORDINATE FINISH COLOR WITH ARCHITECT.
B) AMCA WATER PENETRATION CLASS RATING SHALL BE IN ACCORDANCE WITH THE AMCA WATER PENETRATION TEST FOR THE CONDITIONS INDICATED. CONTRACTOR SHALL PROVIDE WATER PENETRATION TEST RATINGS DEMONSTRATING COMPLIANCE WITH ABOVE REQUIREMENTS ALONG WITH SUBMITTALS.

SPLIT SYSTEM UNIT SCHEDULE

TONS	SEER	MFGR	OUTDOOR UNIT	MARK	UNIT WT. (LBS)	INDOOR UNIT (AHU / COIL)	MARK	UNIT WT. (LBS)	DESCRIPTION	AIRFLOW (CFM)	OUTSIDE AIR (CFM)	COOLING TOTAL BTUH	NOTES
5	14	TRANE	4TTA4	CU-1	250	GAM5B / 4PXCDU	FC-1	180	SPLIT SYSTEM, COOLING ONLY	2000	-	58,500	1-4

NOTES:

1) PROVIDE WALL MOUNTED THERMOSTAT.
2) PROVIDE RECTORSEAL OR APPROVED EQUAL LINESET PROTECTORS FOR ALL EXTERIOR REFRIGERANT LINES. COORDINATE FINISH COLOR WITH ARCHITECT
3) INCLUDE FACTORY PROVIDED CONDENSATE PUMP.
4) LOW AMBIENT CONTROL.

UNIT HEATER SCHEDULE

MARK	DESCRIPTION	BASIS OF DESIGN	MODEL	HEAT TYPE	SIZE (KW)	AIRFLOW (CFM)	VOLTS	PH	WEIGHT	NOTES
UH-1.1	CABINET HEATER	REZNOR	EMC	ELEC	2	200	277	1	115	1-3
UH-1.2	CABINET HEATER	REZNOR	EMC	ELEC	3	200	277	1	115	1-3
UH-1.3	CABINET HEATER	REZNOR	EMC	ELEC	2	200	277	1	115	1-3
UH-1.4	ARCHITECTURAL WALL HEATER	REZNOR	EHA	ELEC	1.5	160	277	1	28	1,2
UH-1.5	UNIT HEATER, SUSPENDED	REZNOR	EGEB	ELEC	3	310	277	1	40	2,4
UH-1.6	UNIT HEATER, SUSPENDED	REZNOR	EGEB	ELEC	3	310	277	1	40	2,4
UH-1.7	UNIT HEATER, SUSPENDED	REZNOR	EGEB	ELEC	3	310	277	1	40	2,4
UH-2.1	COMMERCIAL HEATER, SUSPENDED	REZNOR	EGHB	ELEC	15	1,350	480	3	85	2,4
UH-2.2	COMMERCIAL HEATER, SUSPENDED	REZNOR	EGHB	ELEC	15	1,350	480	3	85	2,4
UH-2.3	COMMERCIAL HEATER, SUSPENDED	REZNOR	EGHB	ELEC	15	1,350	480	3	85	2,4
UH-2.4	COMMERCIAL HEATER, SUSPENDED	REZNOR	EGHB	ELEC	15	1,350	480	3	85	2,4
UH-2.5	COMMERCIAL HEATER, SUSPENDED	REZNOR	EGHB	ELEC	15	1,350	480	3	85	2,4
UH-2.6	COMMERCIAL HEATER, SUSPENDED	REZNOR	EGHB	ELEC	15	1,350	480	3	85	2,4
UH-2.7	COMMERCIAL HEATER, SUSPENDED	REZNOR	EGHB	ELEC	15	1,350	480	3	85	2,4
UH-2.8	COMMERCIAL HEATER, SUSPENDED	REZNOR	EGHB	ELEC	15	1,350	480	3	85	2,4
UH-2.9	COMMERCIAL HEATER, SUSPENDED	REZNOR	EGHB	ELEC	15	1,350	480	3	85	2,4
UH-2.10	COMMERCIAL HEATER, SUSPENDED	REZNOR	EGHB	ELEC	15	1,350	480	3	85	2,4

NOTES:

1) SURFACE MOUNT.
2) INCLUDE INTERNAL THERMOSTAT KIT. SET TO 60°F.
3) CONFIGURATION: BOTTOM INTAKE, TOP DISCHARGE.
4) INCLUDE FACTORY PROVIDED SUSPENDED MOUNTING KIT.

INFRARED HEATER SCHEDULE

Mark	Description	Mfgr	Location	Model	Fuel	Gas Pressure (IN.WC.)	Gas Connection (IN)	Heat Input High (MBH)	Heat Input Low (MBH)	Radiant Tube Dia. (IN)	Reflector Type	Notes
IHR-1	LOW-INTENSITY INFRARED HEATING SYSTEM	SPACE-RAY	SALLY PORT	LTU90-30-N5	NG	5-14	0.5	90	57	4	STANDARD	1-4

NOTES:

1) Reflectors shall be mounted for vertical heating.
2) Provide 24 volt wall-mounted thermostat. Mount @ 8'-0" A.F.F. Operate as required to maintain 70°F during occupied hours.
3) Assembled length shall be 17'-6".
4) Install cumbustion ait intake / discharge per manufacturers recommendations.

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

GEORGIA REGISTERED PROFESSIONAL ENGINEER NO. 23002 VINCENT L. MAZZEI
07 / 16 / 2020

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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
4	07/06/2020	Addendum #4
6	07/16/2020	Addendum #6

Drawn By JEB
Checked By VLM
Date 03/16/2020
Job No. 19059

Sheet Title
MECHANICAL NOTES, SCHEDULES, & LEGEND

Sheet No.
M-0.01

RELEASED FOR CONSTRUCTION

7/16/2020 9:45:52 AM
C:\Users\Mark\Documents\19059 DG FOCO JUV_MECH_RVT19_jburtonVJ6KP.rvt

PLAN NORTH

2 E-0.02 ELECTRICAL SITE PLAN - PHASE ONE

1" = 30'-0"

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 BUILDINGS 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).

6

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07/16/20

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FORSYTH COUNTY JUVENILE COURT BUILDING

FORSYTH COUNTY BOARD OF COMMISSIONERS

LANIER PARKWAY
CUMMING, GA 30040

PRINT RECORD

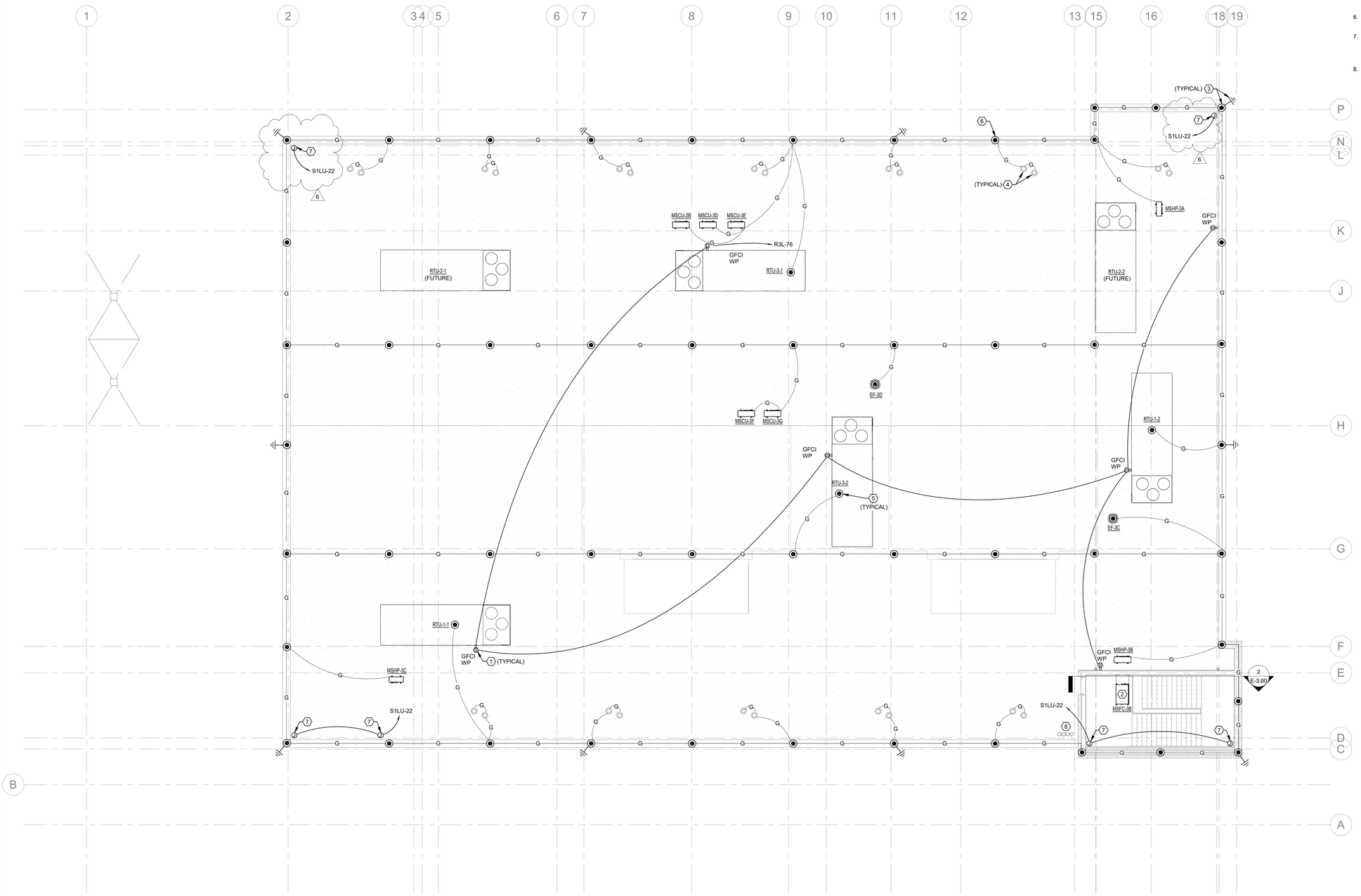
No.	DATE	DESCRIPTION
	03/16/2020	Release for Bid and Permit
	05/08/2020	Release for Bid
3	06/29/2020	ADDENDUM #3
6	07/16/2020	ADDENDUM #6

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

RELEASED FOR CONSTRUCTION



PLAN NORTH

1 E-2.04 ROOF LEVEL FLOOR PLAN - POWER

1/8" = 1'-0"

0 5 10 25 FT

GENERAL NOTES:

1. REFER TO SHEET E-6.04 FOR MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
2. CONTRACTOR TO FOLLOW NFPA 780 REQUIREMENTS FOR ALL LIGHTNING PROTECTION INSTALLATIONS.

KEY NOTES:

1. MOUNT RECEPTACLE ON UNIT AS REQUIRED.
2. FAN COIL UNIT POWERED FROM ASSOCIATED HEAT PUMP/CONDENSING UNIT. PROVIDE CONDUIT/CONDUCTORS AS REQUIRED PER MANUFACTURERS RECOMMENDATIONS.
3. ROUTE LIGHTNING PROTECTION DOWN CONDUCTOR INSIDE BUILDING UTILIZING PVC CONDUIT DOWN TO DRIVEN GROUND ROD BELOW. SEE DETAIL 1/E-7.01 AND 2/E-7.01 FOR FURTHER REQUIREMENTS.
4. BOND LIGHTNING PROTECTION CONDUCTOR TO DRAIN CAPS, AS REQUIRED.
5. MOUNT LIGHTNING PROTECTION AERIAL ON TOP OF MECHANICAL EQUIPMENT, AS REQUIRED. SEE DETAIL 9/E-7.00 FOR FURTHER REQUIREMENTS.
6. MOUNT AERIEL ON PARAPET. SEE DETAIL 8/E-7.00 FOR FURTHER REQUIREMENTS.
7. PROVIDE 120V/1PH CONNECTION FOR EXTERIOR CCTV CAMERAS. REFER TO LOW VOLTAGE DRAWINGS FOR FURTHER REQUIREMENTS AND EXACT LOCATIONS.
8. PROVIDE AND INSTALL (4) 2" EMPTY CONDUITS WITH PULL STRING FROM ELECTRICAL ROOM 162 ON 1ST FLOOR TO ROOF FOR FUTURE SOLAR PANEL INSTALLATION. CAP AND SEAL CONDUIT TO PREVENT WATER INTRUSION. COORDINATE EXACT ROUTING AND STUB-UP LOCATION IN FIELD.

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Sheet Title
ROOF LEVEL FLOOR PLAN - POWER

Sheet No.
E-2.04

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7/16/2020 10:13:13 AM
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Switchboard: MSB-1

Location: ELEC 129 | **Supply From:** Utility | **Mounting:** Floor | **Enclosure:** 1
Volts: 480/277 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 65,000 | **Mains Type:** MCB (WITH SHUNT) | **Mains Rating:** 2500 A | **MCB Rating:** 2500 A

CKT	Circuit Description	# of Poles	Frame Size	Trip Rating	Load	Remarks
1	PANEL L3H	3	250 A	125 A	9.40 kVA	
2	PANEL M3H	3	250 A	250 A	126.47 kVA	
3	TRANSFORMER TR3	3	250 A	250 A	96.38 kVA	
4	PANEL L2H	3	250 A	125 A	1.08 kVA	
5	PANEL M2H	3	250 A	250 A	150.00 kVA	
6	TRANSFORMER TR2	3	250 A	250 A	0.18 kVA	
7	SPARE	1	--	100 A	0.00 kVA	
8	SPARE	1	--	100 A	0.00 kVA	
9	PANEL L1H	3	250 A	125 A	11.68 kVA	
10	PANEL M1H	3	250 A	250 A	123.22 kVA	
11	TRANSFORMER TR1	3	250 A	250 A	90.27 kVA	
12	PANEL S1H	3	250 A	125 A	74.74 kVA	
13	PANEL E1H	3	100 A	100 A	10.25 kVA	
14	SPACE	--	--	--	0.00 kVA	--
15	SPACE	--	--	--	0.00 kVA	--
16	SPACE	--	--	--	0.00 kVA	--
17	SPACE	--	--	--	0.00 kVA	--
18	SPACE	--	--	--	0.00 kVA	--
19	SPACE	--	--	--	0.00 kVA	--
20	MSB SECTION 2 FEED-THRU	3	0 A	0 A	505.88 kVA	
				Total Conn. Load:	1199.32 kVA	
				Total Amps:	1443 A	

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Elevator	145.16 kVA	72.00%	104.52 kVA	**Total Conn. Load:** 1199.32 kVA
HVAC	741.09 kVA	100.00%	741.09 kVA	**Total Est. Demand:** 1099.62 kVA
Motor	18.78 kVA	103.33%	19.41 kVA	**Total Conn.:** 1443 A
Other	0.00 kVA	0.00%	0.00 kVA	**Total Est. Demand:** 1323 A
Receptacle	144.28 kVA	53.47%	77.14 kVA	
Power	120.17 kVA	100.00%	120.17 kVA	
Lighting	30.04 kVA	125.00%	37.54 kVA	

Notes:
1) PROVIDE GROUND FAULT PROTECTION.
2) PROVIDE MAIN BREAKER SHUNT TRIP.

Switchboard: MSB-2

Location: ELEC 129 | **Supply From:** MSB-1 | **Mounting:** Floor | **Enclosure:** 1
Volts: 480/277 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 65,000 | **Mains Type:** MCB (WITH SHUNT) | **Mains Rating:** 2500 A | **MCB Rating:** 2500 A

CKT	Circuit Description	# of Poles	Frame Size	Trip Rating	Load	Remarks
1	RTU-1.1	3	250 A	90 A	50.82 kVA	6
2	RTU-1.2	3	250 A	110 A	57.22 kVA	
3	RTU-2.1 (FUTURE)	3	250 A	110 A	57.22 kVA	
4	RTU-2.2 (FUTURE)	3	250 A	110 A	57.22 kVA	
5	RTU-3.1	3	250 A	110 A	57.22 kVA	
6	RTU-3.2	3	250 A	110 A	57.22 kVA	
7	ELEVATOR EL-A	3	100 A	60 A	33.24 kVA	
8	ELEVATOR EL-B	3	100 A	60 A	33.24 kVA	
9	ELEVATOR EL-C	3	100 A	60 A	33.24 kVA	
10	ELEVATOR EL-D	3	100 A	60 A	33.24 kVA	
11	EV CHARGER PANEL	2	100 A	100 A	36.00 kVA	
12	SPACE	--	--	--	0.00 kVA	--
13	SPACE	--	--	--	0.00 kVA	--
14	SPACE	--	--	--	0.00 kVA	--
15	SPACE	--	--	--	0.00 kVA	--
16	SPACE	--	--	--	0.00 kVA	--
17	SPACE	--	--	--	0.00 kVA	--
18	SPACE	--	--	--	0.00 kVA	--
19	SPACE	--	--	--	0.00 kVA	--
20	SPACE	--	--	--	0.00 kVA	--
				Total Conn. Load:	505.88 kVA	
				Total Amps:	608 A	

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Elevator	132.96 kVA	85.00%	113.02 kVA	**Total Conn. Load:** 505.88 kVA
HVAC	336.92 kVA	100.00%	336.92 kVA	**Total Est. Demand:** 485.94 kVA
Power	36.00 kVA	100.00%	36.00 kVA	**Total Conn.:** 608 A
				Total Est. Demand: 584 A

Notes:

Branch Panel: E1H

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:** 100 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	STAIR ST-3-EMERGENCY LIGHTING	20 A	1	0.12 kVA	0.25 kVA		1	20 A	STAIR ST-2-EMERGENCY LIGHTING	2
3	STAIR ST-1-EMERGENCY LIGHTING	20 A	1		0.12 kVA	0.53 kVA	1	20 A	1ST FLOOR-EMERGENCY NIGHT LIGHTING	4
5	1ST FLOOR-EMERGENCY LIGHTING W/BODINE GTD	20 A	1			0.45 kVA 1.11 kVA	1	20 A	1ST FLOOR SECURE AREA-EMERGENCY LGT VIA RP1	6
7	1ST FLOOR SECURE AREA-EMERGENCY LIGHTING	20 A	1	0.32 kVA	0.32 kVA		1	20 A	1ST FLOOR HOLDING CELLS-EMERGENCY LGT VIA...	8
9	1ST FLOOR HOLDING CELLS-EMERGENCY LGT VIA...	20 A	1		0.40 kVA	0.12 kVA	1	20 A	CONTROL ROOM 141-EMERGENCY LIGHTING VIA RP1	10
11	INTERVIEW 151/EXAM 154-EMERGENCY LGT VIA RP1	20 A	1			0.08 kVA 0.96 kVA	1	20 A	SALLY PORT153-EMERGENCY LIGHTING VIA RP1	12
13	PARKING GARAGE-EMERGENCY NIGHT LIGHTING	20 A	1	1.71 kVA	0.08 kVA		1	20 A	1ST FLOOR HOLDING CELLS-EMERGENCY NIGHT LGT	14
15					0.21 kVA	0.55 kVA				16
17	PANEL E2H	30 A	3			0.00 kVA 0.60 kVA	3	30 A	PANEL E3H	18
19				0.00 kVA	1.20 kVA					20
21	SECURITY ELEC 136-FACP VIA 2KVA TRANSFORMER	20 A	1		1.20 kVA	0.41 kVA	1	20 A	EXTERIOR PERIMETER LIGHTING VIA RP1	22
23	SPARE	20 A	1			0.00 kVA 0.00 kVA	1	20 A	SPARE	24
25	SPARE	20 A	1	0.00 kVA	0.00 kVA		1	20 A	SPARE	26
27	SPARE	20 A	1		0.00 kVA	0.00 kVA	1	20 A	SPARE	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:	4.00 kVA	3.49 kVA	2.79 kVA				
			Total Amps:	14.82 A	13.00 A	10.07 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Power	2.40 kVA	100.00%	2.40 kVA	**Total Conn. Load:** 10.25 kVA
Lighting	7.87 kVA	125.00%	9.84 kVA	**Total Est. Demand:** 12.22 kVA
				Total Conn.: 12.33 A
				Total Est. Demand: 14.70 A

Notes:

Branch Panel: S1H

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				7.33 kVA	4.78 kVA					2
3	TRANSFORMER TS1L	50 A	3			8.33 kVA	6.76 kVA	3	50 A	TRANSFORMER TS3L	4
5							7.11 kVA	6.76 kVA			6
7				11.58...	0.00 kVA			--	--	SPACE	8
9	TRANSFORMER TS1U	150 A	3			11.00...	0.00 kVA	--	--	SPACE	10
11							11.10...	0.00 kVA	--	--	SPACE	12
13	SPACE	--	--	0.00 kVA	0.00 kVA				--	--	SPACE	14
15	SPACE	--	--			0.00 kVA	0.00 kVA		--	--	SPACE	16
17	SPACE	--	--					0.00 kVA	0.00 kVA	--	--	SPACE	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
			Total Load:	23.69 kVA	26.09 kVA	24.97 kVA				
			Total Amps:	85.51 A	94.89 A	90.84 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
HVAC	10.48 kVA	100.00%	10.48 kVA	**Total Conn. Load:** 74.74 kVA
Motor	12.50 kVA	105.00%	13.13 kVA	**Total Est. Demand:** 75.37 kVA
Receptacle	8.98 kVA	100.00%	8.98 kVA	**Total Conn.:** 89.90 A
Power	42.78 kVA	100.00%	42.78 kVA	**Total Est. Demand:** 90.65 A

Notes:

Branch Panel: S1L

Location: ELEC 129 | **Supply From:** TS1L | **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				0.83 kVA	0.83 kVA					2
3	BASEMENT LEVEL GARAGE DOOR	20 A	3		0.83 kVA	0.83 kVA	3	20 A	SALLY PORT GARAGE DOOR	4
5						0.83 kVA 0.83 kVA				6
7				0.83 kVA	0.83 kVA					8
9	SALLY PORT GARAGE DOOR	20 A	3		0.83 kVA	0.83 kVA	3	20 A	SALLY PORT GARAGE DOOR	10
11						0.83 kVA 0.83 kVA				12
13				0.83 kVA	2.08 kVA					14
15	SALLY PORT GARAGE DOOR	20 A	3		0.83 kVA	2.08 kVA	2	30 A	MSCU-1C	16
17						0.83 kVA 0.00 kVA	1	20 A	SPARE	18
19	SPARE	20 A	1	0.00 kVA	0.00 kVA		1	20 A	SPARE	20
21	BASEMENT GARAGE DOOR LOOP DETECTOR PANEL	20 A	1		0.50 kVA	0.50 kVA	1	20 A	BASEMENT DURESS REPEATER	22
23	CONTROL 141-REFRIG	20 A	1			0.50 kVA 1.00 kVA	1	20 A	CONTROL 141-MICROWAVE	24
25	CONTROL 141-RECEPTS	20 A	1	0.54 kVA	0.54 kVA		1	20 A	CONTROL 141-RECEPTS	26
27	CONTROL 141-RECEPTS	20 A	1		0.54 kVA	0.54 kVA	1	20 A	CONTROL 141-RECEPTS	28
29	CONTROL 141-RECEPTS	20 A	1			0.72 kVA 0.72 kVA	1	20 A	CONTROL 141-RECEPTS	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:	7.33 kVA	8.33 kVA	7.11 kVA				
			Total Amps:	61.34 A	69.67 A	59.22 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
HVAC	4.16 kVA	100.00%	4.16 kVA	**Total Conn. Load:** 22.76 kVA
Motor	12.50 kVA	105.00%	13.13 kVA	**Total Est. Demand:** 23.39 kVA
Receptacle	5.10 kVA	100.00%	5.10 kVA	**Total Conn.:** 63.18 A
Power	1.00 kVA	100.00%	1.00 kVA	**Total Est. Demand:** 64.91 A

Notes:

Branch Panel: S1LU

Location: SECURITY ELEC. B116 | **Supply From:** TS1U | **Mounting:** Surface | **Enclosure:** Type 1
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 22,000 | **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	MDF ROOM 168-A/V EQUIP	20 A	1	1.80 kVA	1.80 kVA		1	20 A	MDF ROOM 168-A/V EQUIP	2
3	MDF ROOM 168-A/V EQUIP	20 A	1		1.80 kVA	1.80 kVA	1	20 A	MDF ROOM 168-IT SWITCH RACK	4
5	MDF ROOM 168-VOIP RACK	20 A	1				1.80 kVA	1.80 kVA	1	20 A	MDF ROOM 168-VOIP RACK	6
7	MDF ROOM 168-RECEPTACLES	20 A	1	0.72 kVA	0.36 kVA				1	20 A	MDF ROOM 168-RECEPTACLES	8
9	MDF ROOM 168-RECEPTACLES	20 A	1		1.08 kVA	1.60 kVA			1	20 A	SECURITY ELEC 136-ACCESS CONTROL	10
11	SECURITY ELEC 136-PAGING RACK	20 A	1				1.80 kVA	1.80 kVA	1	20 A	SECURITY ELEC 136-PAGING RACK	12
13	SECURITY ELEC 136-PAGING RACK	20 A	1	1.80 kVA	1.80 kVA				1	20 A	SECURITY ELEC 136-IP CCTV/PLC RACK	14
15	SECURITY ELEC 136-IP CCTV/PLC RACK	20 A	1		1.80 kVA	1.80 kVA			1	20 A	SECURITY ELEC 136-IP CCTV/PLC RACK	16
17	SECURITY ELEC 136-IP CCTV/PLC RACK	20 A	1				1.80 kVA	1.80 kVA	1	20 A	SECURITY ELEC 136-IP CCTV/PLC RACK	18
19	SECURITY ELEC 136-IP CCTV/PLC RACK	20 A	1	1.80 kVA	0.50 kVA				1	20 A	SECURITY ELEC 136-DURESS DISPATCH	20
21	SECURITY ELEC 136-RECEPTS	20 A	1		0.72 kVA	0.40 kVA			1	20 A	EXTERIOR CAMERAS	22
23	EXTERIOR CAMERAS	20 A	1				0.30 kVA	0.00 kVA	1	20 A	SPARE	24
25	SCREENING AREA 101-THERMAL CAMERA	20 A	1	0.50 kVA	0.50 kVA				1	20 A	SALLY PORT 153-THERMAL CAMERA	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:	11.58 kVA	11.00 kVA	11.10 kVA				
			Total Amps:	96.63 A	91.67 A	92.63 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Receptacle	3.88 kVA	100.00%	3.88 kVA	**Total Conn. Load:** 33.68 kVA
Power	29.80 kVA	100.00%	29.80 kVA	**Total Est. Demand:** 33.68 kVA
				Total Conn.: 93.49 A
				Total Est. Demand: 93.49 A

Notes:

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Drawn By RER | **Checked By** RER
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Sheet Title
ELECTRICAL PANEL SCHEDULES

Sheet No.
E-6.00

RELEASED FOR CONSTRUCTION

7/15/2020 4:33:25 PM
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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-NDM-UNV	277V	0.01 kVA	-
FE	SAME AS TYPE 'F', BUT ON EMERGENCY GENERATOR BACKUP	HUBBELL LIGHTING LITECONTROL OR EQUIVALENT	#4L-DW-D-04-SOF-C1-40K-NDM-UNV	277V	0.01 kVA	PROVIDE BODINE GTD GENERATOR TRANSFER DEVICE
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

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

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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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ROBBIE E. RAHN
07/16/20

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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
6	07/16/2020	ADDENDUM #6

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

Sheet Title
FIXTURE SCHEDULES

Sheet No.
E-6.04

RELEASED FOR CONSTRUCTION

7/15/2020 4:33:25 PM
C:\Users\RRahn\Documents\19059 DG FOCO JUV_ELEC_RVT19_rrahnQGZSQ.rvt

DISPLAY - MONITOR - TV SCHEDULE

LOCATION	LEVEL	QTY	RESOLUTION	SIZE	ORIENTATION	SET BY	MOUNT BY	MOUNT HGT	MOUNT TYPE	PURPOSE
PUBLIC LOBBY @ ELEVATORS	100	2	1080P	32"	VERTICAL	OFCI	CFCI	66" AFF	LOW PROFILE	DIGITAL SIGNAGE (DOCKET)
PUBLIC LOBBY @ ENTRY	100	3	1080P	32"	HORIZONTAL	OFCI	CFCI	66" AFF	LOW PROFILE	DIGITAL SIGNAGE, INFO, WAYFINDING
WAITING 106	100	1	1080P	32"	HORIZONTAL	OFCI	CFCI	60" AFF	TILTING	TELEVISION, DIGITAL SIGNAGE
SHARED CONF ROOM 117 W	100	1	1080P	65"	HORIZONTAL	OFCI	CFCI	60" AFF	TILTING	MONITOR, TELEVISION
SHARED CONF ROOM 117 E	100	1	1080P	42"	HORIZONTAL	OFCI	CFCI	60" AFF	TILTING	MONITOR, TELEVISION
TRAINING CONF 104 N	100	1	4K	85"	HORIZONTAL	OFCI	CFCI	60" AFF	TILTING	MONITOR, TELEVISION
TRAINING CONF 104 S	100	1	4K	55"	HORIZONTAL	OFCI	CFCI	60" AFF	TILTING	MONITOR, TELEVISION
MUSTER ROOM 130	100	1	1080P	55"	HORIZONTAL	OFCI	CFCI	60" AFF	TILTING	MONITOR, TELEVISION
ADA WAITING 169 CONF AREA	100	1	1080p	42"	HORIZONTAL	OFCI	CFCI	60" AFF	TILTING	MONITOR, TELEVISION
KIDS AREA 302	300	1	1080P	55"	HORIZONTAL	OFCI	CFCI	60" AFF	TILTING	TELEVISION, DIGITAL SIGNAGE
CORRIDOR 300.C1 2 ELEVATORS	300	2	1080P	32"	VERTICAL	OFCI	CFCI	66" AFF	LOW PROFILE	DIGITAL SIGNAGE (DOCKET)
JUDICIAL CONF 317	300	1	4K	65"	HORIZONTAL	OFCI	CFCI	60" AFF	TILTING	MONTOR, TELEVISION
JUDICIAL CONF 329	300	1	1080P	42"	HORIZONTAL	OFCI	CFCI	60" AFF	TILTING	MONTOR, TELEVISION
JUDICIAL CONF 335	300	1	1080P	42"	HORIZONTAL	OFCI	CFCI	60" AFF	TILTING	MONITOR, TELEVISION
COURTROOM 362 - JUDGES BENCH	300	1	1080P	19"-22"	HORIZONTAL	CFCI	CFCI	ON STAND	STAND	ANNOTATION MONITOR
COURTROOM 362 - ADMIN DESK	300	1	1080P	19"-22"	HORIZONTAL	CFCI	CFCI	ON STAND	STAND	ANNOTATION MONITOR
COURTROOM 362 - WITNESS STAND	300	1	1080P	19"-22"	HORIZONTAL	CFCI	CFCI	6" BELOW RAIL	TILTING	ANNOTATION MONITOR
COURTROOM 362 - MAIN MONITOR	300	1	4K	98"	HORIZONTAL	OFCI	CFCI	84" AFF	LOW PROFILE	MONITOR, TELEVISION
COURTROOM 362 - LECTERN	300	1	1080P	19"-22"	HORIZONTAL	CFCI	CFCI	WORK SURFACE MT	ARTICULATING	ANNOTATION MONITOR
COURTROOM 362 - ATTY TABLES	300	5	1080p	19"-22"	HORIZONTAL	CFCI	CFCI	WORK SURFACE MT	ARTICULATING	ANNOTATION MONITOR
COURTROOM 349 - JUDGES BENCH	300	1	1080P	19"-22"	HORIZONTAL	CFCI	CFCI	ON STAND	STAND	ANNOTATION MONITOR
COURTROOM 349 - ADMIN DESK	300	1	1080P	19"-22"	HORIZONTAL	CFCI	CFCI	ON STAND	STAND	ANNOTATION MONITOR
COURTROOM 349 - WITNESS STAND	300	1	1080P	19"-22"	HORIZONTAL	CFCI	CFCI	6" BELOW RAIL	TILTING	ANNOTATION MONITOR
COURTROOM 349 - MAIN MONITOR	300	1	4K	98"	HORIZONTAL	OFCI	CFCI	84" AFF	LOW PROFILE	MONITOR, TELEVISION
COURTROOM 349 - LECTERN	300	1	1080P	19"-22"	HORIZONTAL	CFCI	CFCI	WORK SURFACE MT	ARTICULATING	ANNOTATION MONITOR
COURTROOM 349 - ATTY TABLES	300	5	1080p	19"-22"	HORIZONTAL	CFCI	CFCI	WORK SURFACE MT	ARTICULATING	ANNOTATION MONITOR
STAFF BREAK ROOM 318	300	1	1080P	65"	HORIZONTAL	OFCI	CFCI	60" AFF	TILTING	MONITOR, TELEVISION
SHARED COLLABORATION 304	300	1	1080p	42"	HORIZONTAL	OFCI	CFCI	60" AFF	TILTING	MONITOR
SHARED COLLABORATION 305	300	1	1080p	42"	HORIZONTAL	OFCI	CFCI	60" AFF	TILTING	MONITOR
SHARED COLLABORATION 306	300	1	1080p	42"	HORIZONTAL	OFCI	CFCI	60" AFF	TILTING	MONITOR

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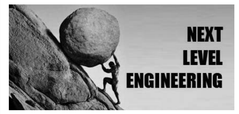
NOTE: MOUNTING HEIGHT INDICATES TO CENTERLINE OF SIGNAL BACK BOX
WORK SURFACE MOUNT INDICATES ARTICULATING ARM MOUNTED TO WORK SURFACE
LOW PROFILE "WALL HUGGING" MOUNTS WILL MAINTAIN NO GREATER THAN 4" PROTRUSION OF MONITOR YET ALLOW SPACE FOR CODEC/AV MODULE
TILTING WALL MOUNTS WILL ALLOW VERTICAL TILTING OF MONITOR BUT WILL NOT ALLOW HORIZONTAL TURNING OF MONITOR
ARTICULATING WALL MOUNTS WILL ALLOW VERTICAL TILTING TO 15 DEGRESS UP OR DOWN AND HORIZONTAL TURNING UP TO 170 DEGREES RIGHT AND LEFT
STAND MOUNTS WILL BE DESK TOP STANDARD MOUNT OF THE MONITOR MANUFACTURER WITH LIMITED TILTING CAPABILITY

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
	03/16/2020	Released for Bid and Permit
6	05/08/2020	Released for Bid
	07/16/2020	Addendum #6

Drawn By L LATIMER
Checked By F KEELS
Date 3/16/2020
Job No. 19059
Sheet Title
MONITOR SCHEDULE
Sheet No.
T-8.02
RELEASED FOR CONSTRUCTION