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ADDENDUM 3

DATE: August 12, 2022

REFERENCE: City of Rockville
Invitation for Bid: **IFB 08-22**
City Of Rockville Operations Facility:
6 Taft Court Building Renovations

Scheduled Submittal Deadline: **Thursday, August 25, 2022, at 3:00 P.M. (Eastern)**

Please note the following additions, revisions, clarifications, corrections and/or deletions have been made to the above referenced Invitation for Bid (IFB):

Revision 1:

The Bid Proposal Pricing Form Sheets on pages 1145 through 1149 of the IFB shall be removed and replaced with those contained in **Attachment A** to this Addendum.

Revision 2 – Set Of Revisions To Drawings (See Updated Drawings In Attachment B):

1. Sheet S-104:
    a. Delete Note 1.
2. Sheet S-501:
    a. Detail note has been added as follows "DETAIL NOTE: ALL OF THE INFORMATION ON THIS DETAIL APPLIES TO ALTERNATE #2". The information on the details below will only apply if Alternate # 2 is selected.
        - Detail 5/S-501
        - Detail 6/S-501

3. Sheet AD-101:
    a. "Alternate #2" has been added to the following sheets notes. These notes will only apply if Alternate # 2 is selected.
        - Note R1
        - Note R5
        - Note R6
        - Note R15
        - Note R22
        - Note R24

4. Sheet AD-102:
    a. "Alternate #2" has been added to the following sheet notes. This note will only apply if Alternate # 2 is selected.
        - Note R1

5. Sheet AD-103:
    a. "Alternate #2" has been added to the following sheets notes. This note will only apply if Alternate # 2 is selected.
        - Note R1

6. Sheet AD-201:
    a. “Alternate #2” has been added to the following sheets notes. These notes will only apply if Alternate # 2 is selected.
        - Note R1
        - Note R5

7. Sheet A-101:
    a. Note has been added clarifying that if Alternate #2 is not selected the position of the wall room 121 “SMALL CONFERENCE” shall be dictated by the 10’-3 ½” partition location dimension and not the window mullion location.

8. Sheet A-102:
    a. Note has been added clarifying that if Alternate #2 is not selected the position of the wall rooms 242 “IT SATELLITE” and 221 “HR SATELLITE” shall be dictated by the 11’-8” partition location dimension and not the window mullion location.

9. Sheet A-104:
    a. Detail 1, Roof Plan:
        - Slopes have been revised to allow drainage around roof curbs
        - Roof drain sumps have been added
    b. Detail 4: Parapet wall construction has been clarified.
    c. Detail 6: The height of the curb above the roof has been changed to 2’-0”
    d. Detail 6: The height of the skylight flashing above the roof has been changed to 2’-0”
    e. Delete key note 11.

10. Sheet A-201:
    a. “Alternate #2” has been added to the following sheets notes. These notes will only apply if Alternate # 2 is selected.
        - Note 1
        - Note 10
        - Note 15

11. Sheet A-501:
    a. “Alternate #2” has been added to the following details, to clarify that the replacement of the existing exterior windows represented in these details will only apply if Alternate # 2 is selected.
        - Detail 1/A-501
        - Detail 3/A-501
        - Detail 4/A-501
        - Detail 6/A-501
        - Detail 7/A-501
    b. On detail 7/A-501, a dimension of 6 ½” has been clarified as the basis of design standard depth for all new windows.

12. Sheet A-502:
    a. “Alternate #2” has been added to the following details, to clarify that the replacement of the existing exterior windows represented in these details will only apply if Alternate # 2 is selected.
        - Detail 1/A-502
        - Detail 2/A-502
        - Detail 3/A-502
        - Detail 4/A-502
    b. On detail 4/A-502, a cant strip has been added to the typical intersection between the roof and the parapet.

13. Sheet A-503:
    a. Whole sheet note has been added as follows “SHEET NOTE: ALL OF THE INFORMATION ON THIS SHEET APPLIES TO ALTERNATE #2”. The information on this sheet will only apply if Alternate # 2 is selected.

14. Sheet A-504:
    a. Whole sheet note has been added as follows “SHEET NOTE: ALL OF THE INFORMATION ON THIS SHEET APPLIES TO ALTERNATE #2”. The information on this sheet will only apply if Alternate # 2 is selected.

15. Sheet A-505:
    a. Whole sheet note has been added as follows “SHEET NOTE: ALL OF THE INFORMATION ON THIS SHEET APPLIES TO ALTERNATE #2”. The information on this sheet will only apply if Alternate # 2 is selected.

16. Sheet A-506:
    a. Detail note has been added as follows “DETAIL NOTE: ALL OF THE INFORMATION ON THIS DETAIL APPLIES TO ALTERNATE #2”. The information on the details below will only apply if Alternate # 2 is selected.
        - Detail 1/A-506
        - Detail 2/A-506
        - Detail 3/A-506
        - Detail 4/A-506
        - Detail 5/A-506

17. Sheet A-603:
    a. Whole sheet note has been added as follows “SHEET NOTE: ALL OF THE INFORMATION ON THIS SHEET APPLIES TO ALTERNATE #2”. The information on this sheet will only apply if Alternate # 2 is selected.

18. Sheet A-604:
    a. Whole sheet note has been added as follows “SHEET NOTE: ALL OF THE INFORMATION ON THIS SHEET APPLIES TO ALTERNATE #2”. The information on this sheet will only apply if Alternate # 2 is selected.

19. Sheet A-605:
    a. Whole sheet note has been added as follows “SHEET NOTE: ALL OF THE INFORMATION ON THIS SHEET APPLIES TO ALTERNATE #2”. The information on this sheet will only apply if Alternate # 2 is selected.

20. Sheet A-606:
    a. Whole sheet note has been added as follows “SHEET NOTE: ALL OF THE INFORMATION ON THIS SHEET APPLIES TO ALTERNATE #2”. The information on this sheet will only apply if Alternate # 2 is selected.

21. Sheet A-607:
    a. Whole sheet note has been added as follows “SHEET NOTE: ALL OF THE INFORMATION ON THIS SHEET APPLIES TO ALTERNATE #2”. The information on this sheet will only apply if Alternate # 2 is selected.

Revision 3 – Set Of Revisions To Specifications (See Updated Specifications in Attachment C):

1. Section 012100 ALLOWANCES
    a. Add paragraph 3.3-C providing the allowance for miscellaneous brick repointing.

2. Section 012300 ALTERNATES
    a. Add paragraph 3.1-B, describing Alternate #2, for the replacement of the exterior windows in the north wing and atrium.
    b. Add paragraph 3.1-C, coordinating the Landscape Improvement construction documents as Alternate 3.1
    c. Add paragraph 3.1-C, coordinating the Landscape Improvement construction documents ALT 1, a new exterior deck, as Alternate 3.2.

3. Section 013100 PROJECT MANAGEMENT AND COORDINATION
    a. In paragraph 1.8-A, revise language from “may” to “shall” to make Web-Based Project Management Software a requirement of the project.

4. Section 013200 CONSTRUCTION PROGRESS DOCUMENTATION
    a. Remove paragraph 1.10-D-5, for Cost and Resource Loading of CPM Schedule.

5. Section 03000 CAST IN PLACE CONCRETE
    a. This specification has been added to the contract documents.

6. Section 072100 Thermal Insulation
    a. Revised paragraphs 1.2-A, 1.3 A, and 2.1-A to indicate polyisocyanurate foam-plastic board insulation.

7. Section 075552 MODIFIED BITUMINOUS PROTECTED MEMBRANE ROOFING
    a. Add paragraph 2.5, clarifying vapor barrier material.
    b. Revise paragraph 2.6-C to remove Type III roofing asphalt
    c. Strike out paragraph 2.6-D
    d. Revise paragraph 3.B-2&3 to clarify deck type “B” and hot applied mopped adhering method.
    e. Revise paragraph 3.4-A-1 to clarify mechanical fastening in addition to hot mopped asphalt.
    f. Revise paragraph 3.6-A-2 to clarify hot asphalt application
    g. Add paragraph 3.8-A, to clarify that base sheet of insulation shall be mechanically fastened.

8. Section 084413 GLAZED ALUMINUM CURTAINWALL
    a. Remove paragraph 2.1-K

9. Section 087100 DOOR HARDWARE
    a. Revise paragraph 3.9-Q to include acoustic jamb seals and thresholds at Training Room Door

10. Section 096519 RESILIENT TILE FLOORING
    a. Added paragraph 1.2-A-2 and 2.3 to clarify requirements for VCT-3.

11. Section 105126 PHENOLIC LOCKERS
    a. This section has been added to the specifications.

Additionally, we have received the following questions/comments concerning this Invitation for Bid. Responses to these questions are also provided, where additions, revisions, clarifications, corrections and/or deletions found within the City's responses are incorporated into this Addendum:

1. STC / Fire Rated Partition. Partition "7" & "8" – STC50. Example Doors 120, 123, 141 thru 144 do not call for STC on door schedule – please advise and STC manufacture for products shown on door schedule.

   Response:

   STC rated doors are not required. Refer to hardware schedule for doors that are to receive acoustic jamb seals and thresholds.

2. A-507 noted an exterior metal panel at the generator enclosure. Please provide specifications.

   Response:

   Basis of design for the metal wall panels is MBCI model FW-120, 20 gage.

3. A-101, A-401 - there are lockers shown in the Locker Room. Please confirm if lockers are by the Owner and are not part of the bid.

   Response:

   Lockers shall be by the contractor. Specification section 105126 PHENOLIC LOCKERS has been added under Addendum 3.

4. Signage - please confirm if signage are part of the bid. They are not mentioned in the itemized descriptions of the Bid Proposal Form.

   Response:

   Signage shall be by the contractor, per sheets A-701 and A-702.

5. There are 240 calendar days available. The storefronts procurement is a significant portion of that time. Removing and replacing the entire exterior system would leave the finishes exposed to the elements. Would the City of Rockville consider not mobilizing and revising the completion date to accommodate procurement of windows/storefront? This would enhance quality control.

   Response:

   Refer to IFB Document pdf, page 26 as follows CONTRACT TERM This contract will begin 10 working days from the date of issuance of a notice to proceed. All work associated with this project must be completed within 240 calendar days after the notice to proceed has been issued. It is possible that the City may issue a Limited Notice to Proceed (LNTP) to allow for mobilization, coordination, field measuring, shop drawing review/approval, submission of work plan and *ordering long lead time components*." This language is intended to permit adjustments to the contract duration for long lead items such as he curtainwall.

6. Plumbing plan page P-100 says there's an existing 8" fire service, at the site visit I verified the existing 6" turning up in the sprinkler room. Please advise?

   Response:

   The incoming fire service is 8" outside the building but reduces to 6" either just outside the building or below the slab.

7. Plumbing plan P-100 noted that there's an existing 8" fire service. At the site visit, verified the existing 6" turning up in the sprinkler room. Please advise?

   Response:

   See response to comment #6.

8. Spec section 015000 Temporary Facilities - dust control. Will this be required as the building is not occupied?

   Response:

   Dust control will not be required, as this is an unoccupied facility, except for the language associated with preventing dust infiltration into the mechanical systems.

9. Can you please provide a diffuser schedule?

   Response:

   The diffusers types are indicated in specification "23 37 13 Air Outlets & Inlets" paragraph 2.4

10. Can you provide weights for existing and new roof top units?

    Response:

    We do not have the weights of the existing RTU's. The weights for the basis of design units are as follow: RTU-1: 4237 lbs, RTU-2: 5362 lbs, RTU-3: 1030 lbs, RTU-4: 2487 lbs.

11. Do you have a sound attenuator schedule that shows the sizes?

    Response:

    There are no sound attenuators on this project.

12. Do you have the outlet sizes of the Air Terminal Units?

    Response:

    The outlet size is based on the unit selected. Transition duct to the duct size indicated on the plans.

13. What control contractor is being used for this project?

    Response:

    See spec section 230923. The City's Facilities Division has contracts with firms to provide maintenance and upgrades on existing buildings. EAI Security provides support on fire alarm and security systems, and the building maintenance contractor, which includes HVAC Systems is Complete Building Services (CBS). Additionally, Facilities staff utilize Johnson Controls for HVAC controls.

14. Spec section 075552/3.3/G states for the use of SEBS modified roofing asphalt. Is this a requirement for this project? We typically use standard type 3 asphalt, please confirm if SEBS asphalt is a requirement on this project.

    Response:

    Confirmed, SEBS modified roofing asphalt is the requirement for this project.

15. Spec section 075552/3.3/B. lists out the new roof system make up. This is a little confusing as it appears they are looking for a base sheet over the concrete deck, followed by one base ply and two modified sheets. To my knowledge this is not a recognized nor acceptable roofing system.

    Response:

    Roof deck is Type B metal deck (nailable). See updated specification section 075552 issued with Addendum #3.

16. Please advise exactly what we should be figuring on this project as the specifications are a bit confusing.

    Response:

    Roofing system is as follows:

    - **Type B metal deck**
    - **Vapor Barrier**
    - **Polyisocyanurate foam-plastic board insulation**
    - **Coverboard**
    - **Mechanically fastened base sheet.**
    - **Glass-Fiber Base-Ply Sheet.**
    - **(2) Modified Asphalt Sheets.**

17. Spec section 075552/2.7/B references the installation of new extruded polystyrene insulation. This is not typical for the system specified and is typically used on IRMA roof systems. Additionally, this insulation is not able to be adhered in hot asphalt. Please confirm XPS is actually desired for this project.

    Response:

    XPS is incorrect, Polyisocyanurate foam-plastic board is to be used, see updated specification section 072100 and 075552.

18. Specifications mention the adhering method to be cold applied, but asphalt heating is also mentioned. Please advise if the use of hot asphalt is acceptable, Or if cold applied is required.

    Response:

    Confirmed, hot asphalt is the acceptable installation method.

19. No coverboard is mentioned in the specifications but is shown on the plan details. If adhering everything in hot asphalt is acceptable, a coverboard will in fact be needed.

    Response:

    A coverboard is required, see updated specification section 075552.

20. Specification 122413 2.2C calls for a Chain -and-Clutch operating system.
    Specification 122413 2.2D calls for a Crank-and-Gear operating system.
    The chain is the standard type, cranks are rarely if ever used for these types of shades.
    Can I get a clarification of the operating system needed?

    Response:

    Operating system shall be Chain-and-Clutch

21. Specification 122413 2.2I1 Fascia
    Specification 122413 2.2I2 Headbox
    Specification 122413 2.2I4 Recessed pocket
    Specification 122413 2.2I5 Closure panels
    These are four types of top treatments for window shades.
    A shade can only have one.
    Which model is being requested?

    Response:

    Please provide a Headbox for the roller shades

22. Specification 122413 2.2I6 Side channels
Specification 122413 2.2I7 Sill channel
Specification 122413 2.3B shade fabric light filtering 5%
Light filtering shades do not normally get side / sill channels.
Please clarify whether or not these are required.

    Response:

    Side and sill channels are not required

23. Section IV, Page 51, item 1.6 Owner-Furnished/Contractor-Installed (OFCI) Products bullet C. 3. notes Appliances as OFCI but spec 102800 includes details for ranges and drawing A-401 shows ice machine and refrigerators as owner furnished Owner Installed, and doesn't note anything for the ranges or the washer/dryer. Please confirm as to which items need to be furnished and/or installed by the contractor; if a washer and dryer is needed please provide specs.

    Response:

    The ranges in the 1st floor break room, as shown on detail 3/A-401, are contractor furnished and installed. The refrigerators, ice machine and washer dryer are all owner furnished and installed. The contractor shall coordinate with the owner for the installation of these items.

24. IFB Pg. 29 – please provide the status of the Washington Gas and Comcast Fiber design and construction

    Response:

    - **Comcast Fiber – Comcast has completed construction work and run fiber to and inside the building. The fiber loop wiring is currently coiled up in the ceiling within the North Wing on the second floor.**
    - **Washington Gas (WGL) – WGL has submitted the natural gas extension plan and submitted a Utility Permit (UTL) application to the Department of Public Works (DPW). The UTL plan has been approved and permit issued. WGL has informed the City that work is scheduled to start within the next two to three weeks. The approved plan is Attachment D.**

25. IFB Pg. 34 – please provide an acceptable location for staging and storage

    Response:

    Staging and storage will be permitted in the parking area north and east of the north building wing and on the third floor of the north wing and the 1st floor of the south wing. The contractor is responsible for securing and restoration of the staging and storage areas.

26. 012300 – Alternates – please update specification section to include Add Alternate #1 on the Landscape Drawings

    Response:

    Landscape Improvements Package Alternatives have been added to specification 012300. Note that this alternate applies only to the Landscape Improvements portion of the bid.

27. The restroom elevations are calling for 78" tall partitions, 6"AFF. None of the manufacturers specified offer this size partition in a ceiling hung phenolic option, please advise how we should proceed

    Response:

    12" A.F.F. will be permitted with a 72" high partition.

28. 084413-2.1.K is calling for Windborne-Debris Impact Resistance, however the specified glass does not meet the requirements (laminated, etc.) Please clarify how we are to proceed.

    Response:

    Specification paragraph 084413-2.1.K may be removed from the performance requirements.

29. 084413 – would a comparable storefront framing system in lieu of curtainwall be acceptable for frames under 12'H? Anything above 12'H would remain curtainwall.

    Response:

    Comparable storefront framing systems may be provided in lieu of curtainwall for frames under 12'H, noting that the storefront will need to maintain the face of frame set back from the exterior masonry, provide comparable brick sill, locate the system's thermal break so as to protect against thermal bridging, etc.

30. 088000-3.8.A – would Vitro or Guardian be an acceptable alternate manufacturer provided their products meet the requirements of this specification?

    Response:

    Both Vitro or Guardian would be considered acceptable provided their products meet the requirements of this specification.

31. A-601 – Partition types 7 and 8 are listed as STC-50, however the doors and frames in these partitions are not listed as STC rated in the door schedule or 081113 / 081416.

    Response:

    Refer to response to Question #1.

32. Room #152 calls out VCT-3 on the rooms schedule. VCT 3 is not on the material list. Please clarify.

    Response:

    VCT-3 Shall be statice dissipative tile, Armstrong Excelon SDT or approved equal, Color 51951 "Armor Gray"

33. Room #240 calls out VCT-3 on the rooms schedule. VCT 3 is not on the material list. Please clarify.

    Response:

    Refer to response to Question #32.

34. Per 11/A-403 – Confirm CT-3 is on the floors and walls.

    Response:

    We believe this question means to reference drawing A-402, not A-403. Per the elevations on this sheet and the finish schedule on sheet A-602, the walls are to be CT-2, CT-3, and CT-4 as shown. The floors are to be CT-1, per the finish schedule on sheet A-602.

35. Per 11/A-403 – Confirm the middle CT-2 accent tile area is 6" not 4" as the elevation shows.

    Response:

    The accent tile is to be 4" as the elevation shows.

36. 013200-1.10.D.5 – please advise if cost and resource loading requirements for the schedule can be waived for this project.

    Response:

    Cost and resource loading requirements for the schedule can be waived for this project.

37. Pg. 34 of the IFB states that the contractor is responsible for all temporary electricity charges, while 015000-1.3.D states that the Owner will pay for temporary electric use charges. Please clarify who is responsible

    Response:

    Specification 015000-1.3 shall govern

38. Spec section 075552/3.3/G states for the use of SEBS modified roofing asphalt. Is this a requirement for this project? We typically use standard type 3 asphalt, please confirm if SEBS asphalt is a requirement on this project.

    Response:

    Refer to response to Question #14.

39. Spec section 075552/3.3/B. lists out the new roof system make up. This is a little confusing as it appears they are looking for a base sheet over the concrete deck, followed by one base ply and two modified sheets. To my knowledge this is not a recognized nor acceptable roofing system. Please advise exactly what we should be figuring on this project as the specifications are a bit confusing.

    Response:

    Refer to response to Question #15.

40. Spec section 075552/2.7/B references the installation of new extruded polystyrene insulation. This is not typical for the system specified and is typically used on IRMA roof systems. Additionally, this insulation is not able to be adhered in hot asphalt. Please confirm XPS is actually desired for this project.

    Response:

    Refer to response to Question #17.

41. Specifications mention the adhering method to be cold applied, but asphalt heating is also mentioned. Please advise if the use of hot asphalt is acceptable, or if cold applied is required.

    Response:

    Refer to response to Question #18.

42. No coverboard is mentioned in the specifications but is shown on the plan details. If adhering everything in hot asphalt is acceptable, a coverboard will in fact be needed.

    Response:

    Refer to response to Question #19.

43. 040120.63-3.7.A – please confirm areas of masonry patching are identified on the drawings or provide an allowance for a quantity of brick to be patched so all bidders are including the same scope.

    Response:

    Masonry patching is to occur in the atrium interior where the removal of the existing planters exposes concrete masonry units to vie with the finished work. The concrete masonry units are to be removed and replaced with matching brick veneer salvaged from the removal of the planter walls in the atrium. Brick

repair will also be required where the new window system is being installed at the rear entrance to the atrium. Refer to notes 15, 16 and 17 on sheet A-201, details 3&5 sheet A-503, and detail 1 sheet A-506.

44. 040120.64-3.4.A – please confirm areas of masonry repointing are identified on the drawings or provide an allowance for a quantity of brick to be repointed so all bidders are including the same scope'

    Response:

    An allowance for miscellaneous brick repointing has been added to specification section 012100 ALLOWANCES so that all bidders will carry the same value for this item.

45. 061600-3.3.F – please confirm if Air Barrier/Water-Resistant Glass-Mat sheathing is required on this project, and if so, please clarify locations

    Response:

    Air Barrier/Water-Resistant Glass-Mat sheathing is required on this project, at all locations where sheathing may be exposed to the elements, such as the repair of parapet sheathing shown on detail 4/A-502 and the sheathing for the skylight parapet and knee walls shown on details 4&5/A-104

46. E301-E303 have notes about Owner provided IT wiring – please clarify Contractor responsibility for Division 27 and 28

    Response:

    Telecommunications work will be by others and that GC is only responsible for rough-ins

47. 075552-3.9.A – please confirm contractor is to engage testing agency for this section

    Response:

    Confirmed, the testing agency will be retained by the contractor

48. 084413-2.12.A.2 – please confirm if we are to provide a 3-coat Fluoropolymer finish from manufacturer's full range, or bronze per this spec?

    Response:

    Confirmed, the testing agency will be retained by the contractor

49. 3.3.A – please provide a location for the installation of the Mold-Resistant Gypsum Board

    Response:

    Mold resistant gypsum board shall be used anywhere gypsum board is required withing restrooms or rooms with showers.

50. 095113-2.2.A – please confirm delegated design for seismic restraint is required on this project

    Response:

    Paragraph 2.2.A may be removed from the contract requirements

51. S-104, note 1 states that final reconfiguration requirements will be determined later, and to carry an allowance for framing and re-roofing comparable to work associated with AHU-2, however AHU-2 does not appear in the documents. Are we to ignore this note and price the plans as drawn? If not, please clarify what we are to follow

    Response:

    Note 1 may be disregarded, please price the plans as drawn.

52. A-104, keynote 11 says to provide an allowance, however, none is provided – assume this corresponds to the question above

    Response:

    Keynote 11 may be disregarded, please price the plans as drawn.

53. AD-101 – keynote R34 is blank, but is utilized on the plan – please provide what this is indicating

    Response:

    Keynote R34 should read as follows "SAW CUT AND REMOVE SLAB TO THE EXTENT INDICATED TO FACILITATE INSTALLATION OF NEW SANITARY PIPING FOR SHOWER ROOM AND GENDER NEUTRAL RESTROOMS. COORDINATE ADDITIONAL SLAB REMOVAL REQUIREMENTS WITH PLUMBING DEMOLITION PLAN SHEET PD 101"

54. A-101, keynote 14 – please provide a specification for the lockers

    Response:

    Refer to response to Question #3.

55. 1/A-507 – please confirm that the posts are to be set in concrete

    Response:

    Confirmed, the posts are to be set in concrete piers.

56. A-112 shows a ceiling mounted projector screen – is this to be provided under this contract? If so, please provide a specification

    Response:

    Projector screen will be specified under a separate AV contract.

57. 4,6/A-507 – please provide a specification for the metal wall panels

    Response:

    Refer to response to Question #2.

58. Drawing AD-101 Note D34 does not have a description. Please provide

    Response:

    Refer to response to Question #53.

59. The project new work roof drawing sheet A-104 has a red dashed line around all of the roof top HVAC units. Further, sheet A-201 appear to indicate structures or screens, also by red dashed lines. Is the intent that these red dashed lines are equipment screens and if so, please provide additional information so that we can price these assemblies.

    Response:

    Screens are not required; the red dashed lines indicate maintenance clearances.

60. The project documents do not include a specification for the cast-in-place concrete slab replacements shown on detail 5 on sheet S-501. Please provide.

    Response:

    Specification 033000 has been added under Addendum #3

61. The project documents do not include a specification for the ADA lockers shown on A-401. Please provide.

    Response:

    Refer to response to Question #3

62. Is Generac an acceptable manufacturer for the generator equipment?

    Response:

    Generac is not an acceptable manufacturer. The City of Rockville already maintains products from the three listed manufacturers.

63. Spec section 075552/3.3/G states for the use of SEBS modified roofing asphalt. Is this a requirement for this project? We typically use standard type 3 asphalt, please confirm if SEBS asphalt is a requirement on this project.

    Response:

    Refer to response to Question #14

64. Spec section 075552/3.3/B. lists out the new roof system make up. This is a little confusing as it appears the owner is looking for a base sheet over the concrete deck, followed by one base ply and two modified sheets. To my knowledge this is not a recognized nor acceptable roofing system. Please advise exactly what we should be figuring on this project .

    Response:

    Refer to response to Question #15

65. Spec section 075552/2.7/B references the installation of new extruded polystyrene insulation. This is not typical for the system specified and is typically used on IRMA roof systems. Additionally, this insulation is not able to be adhered in hot asphalt. Please confirm XPS is actually desired for this project.

    Response:

    Refer to response to Question #17

66. The roofing specifications mention the adhering method to be cold applied, but asphalt heating is also mentioned. Please advise if the use of hot asphalt is acceptable, Or if cold applied is required.

    Response:

    Refer to response to Question #18

67. No coverboard is mentioned in the roofing specifications but is shown on the plan details. If adhering everything in hot asphalt is acceptable, a coverboard will in fact be needed. Please advise.

    Response:

    Refer to response to Question #18

68. VCT 3 is not shown on the materials schedule. Please provide information for VCT 3.

    Response:

    Refer to response to Question #32

69. Per Detail 11/A-403 - Please confirm CT-3 is to be installed on floors and walls.

    Response:

    Refer to response to Question #34

70. Per detail 11/A-403 - Please confirm the middle CT-2 accent tile area is 6", not 4" as the elevation shows.

    Response:

    Refer to response to Question #35

71. Drawings 12/A-401 & 4/A-402 showing to be lockers. No specifications provided. Please provide specifications or advise material (metal, plastic, plastic laminate, phenolic core) needed for lockers?

    Response:

    Refer to response to Question #3

72. The exhaust air CFM is higher than what the supply air CFM is on the schedule for the RTUs. Is the design intent to provide more exhaust air than supply air? Is there a Makeup Air Unit that is currently existing to make up the difference in air being supplied?

    Response:

    See the airflow schedule on the control sequence on M-702. The actual exhaust air will be less than what is scheduled. A higher exhaust was scheduled because the RTU manufacturer only had a few fan sizes available. However, the fan is on a VFD and will operate per the airflow schedule on M-702. The building will be positively pressurized.

73. Can you provide the Basis of Design. Model information for the proposed RTU's?

    Response:

    The basis of design models are included in Attachment E (RTU Information).

74. Please provide Electrical data on the BOD units to ensure we are complying with what the electrical contractor is expecting/bidding.

    Response:

    Electrical data on the BOD units can be found in the electrical drawings, specifically drawing E802.

75. Are weld joints on the new gas main to be X rayed?

    Response:

    The gas lines to the generator and into the building are less than 4" and therefore per the specs shall be threaded joints.

76. Who is the current control contractor for the building?

    Response:

    See response to comment #13

77. Is the mechanical commissioning cost to be carried in the mechanical contractor pricing?

    Response:

    Mechanical commissioning cost are to be carried in the mechanical contractor pricing.

78. VCT is called for the S101/102 Stairs in the finish schedule, however, according to the spec file, tread/riser and landings should be rubber products. Please advise which information is correct?

    Response:

    The landings shall be VCT, the stairs and risers shall be rubber per the specifications

79. The IT Closet 152 and IT Server 240 are indicated as VCT-3 on the room finish schedule, but VCT-3 is not defined on the finish legend. Since these rooms are intended for IT, are we to use Armstrong SDT?

    Response:

    Refer to response to Question #32

80. Do they want a single-ply roof per the drawings, or do they want a new SBS system? Specs call for SBS patching and prep for re-roofing while the drawings show single ply?

    Response:

    The roofing is not to be single ply. Refer to response to questions 14, 15 16, 17, 18, and 19 as well as the updated specification 075552 issued with Addendum #3

81. Please confirm that telecommunications work will be by others and that GC is only responsible for rough-ins.
    Response:

    Confirmed.

82. The drawings issued are 8.5x11. Could you reissue/resend the plans in the correct scale please?

    Response:

    30X42 Architecture E1 sized drawings have been uploaded to our Portal for download.

83. Can you please provide a list of plan holders that are bidding this project as a general or Prime contractor?

    Response:

    Lists of firms that have expressed interest in this project, attended the walk-throughs, and registered for the pre-bid meeting are posted to the Solicitation page in the Collaboration Portal.

84. May we have access to the jobsite to review with our subcontractors?

    Response:

    A date and time for a walk-through is included in Section I of the Invitation for Bid. Additionally, a date and time for a second walk-through is included in Addendum 1.

85. The file "IFB 08-22 Section 7" is on 8x11. To ensure it is to scale can it be saved on here to scale?

    Response:

    30X42 Architecture E1 sized drawings have been uploaded to our Portal for download.

Please sign below to acknowledge receipt of addendum and return with your bid.

Sincerely,

Jonathan Pierson, CPSM, C.P.M.
Assistant Director

Company Name

Authorized Signature

Date

JWP/jwp

CITY OF ROCKVILLE
ROCKVILLE, MARYLAND

INVITATION FOR BID # 08-22
CITY OF ROCKVILLE OPERATIONS FACILITY: 6 TAFT COURT BUILDING RENOVATIONS

BID PROPOSAL FORM

THIS FORM MUST BE COMPLETED, SIGNED AND RETURNED

IN ACCORDANCE WITH ALL TERMS, SPECIFICATIONS AND REQUIREMENTS, WE PROPOSE TO FURNISH ALL LABOR, EQUIPMENT, MATERIALS AND SERVICES AND THE PERFORMANCE OF ALL WORK NECESSARY TO CONSTRUCT THE 6 TAFT COURT BUILDING RENOVATION PROJECT. PROVIDE PRICING BELOW TO INCLUDE OVERHEAD, PROFIT, TAXES, INSURANCE AND OTHER APPLICABLE FEES AND COSTS.

ITEM NO.	DESCRIPTION	UNIT	EST QTY	UNIT PRICE	TOTAL
1001	General Conditions	LS	1		
1002	Demolition	LS	1		
1003	Sitework	LS	1		
1004	Concrete	LS	1		
1005	Precast Concrete (generator enclosure)	LS	1		
1006	Metals (Structural steel and misc. metals)	LS	1		
1007	Casework & Breakroom Equipment	LS	1		
1008	Insulation & Roofing	LS	1		
1009	Doors, frames & interior glazing	LS	1		
1010	Skylight	LS	1		
1011	Finishes	LS	1		

ITEM NO.	DESCRIPTION	UNIT	EST QTY	UNIT PRICE	TOTAL
1012	Fire suppression systems	LS	1		
1013	Plumbing systems	LS	1		
1014	Mechanical systems	LS	1		
1015	Electrical systems	LS	1		
1016	Allowance #1 – Steel Beam Penetrations	LS	1		
1017	Allowance #2 – New elevator finishes	LS	1	$25,000.00	$25,000.00
1018	Allowance #3 – Miscellaneous Brick Repointing	LS	1	$5,000.00	$5,000.00
				A. BASE BID TOTAL	
2001	Alternate No. 1 – Purchase and installation of emergency generator	LS	1		
				B. BID ALTERNATIVE NO. 1 - TOTAL	
3001	Alternate No. 2 – Aluminum frame windows	LS	1		
				C. BID ALTERNATIVE NO. 2 - TOTAL	
4001.1	Alternate No. 3.1 – Landscaping Improvements	LS	1		
				D. BID ALTERNATIVE NO. 3.1 - TOTAL	
4001.2	Alternate No. 3.2 – Exterior Deck	LS	1		
				E. BID ALTERNATIVE NO. 3.2 - TOTAL	

TOTAL BID PRICE:

A. Base Bid – Total	
B. Bid Alternative No. 1 – Total	
C. Bid Alternative No. 2 – Total	
D. Bid Alternative No. 3.1 – Total	
E. Bid Alternative No. 3.2 – Total	
Total BID (Sum A + B + C + D + E)	

Write the Total Bid Price for the IFB **08-22 City of Rockville Operations Facility: 6 Taft Court Building Renovations** in words:

_____

The City reserves the right to not use the bid alternatives (Emergency Generator Alternate No. 1, Aluminum Frame Windows Alternate 2 and/or Landscaping Alternatives No. 3.1 and 3.2) in the determining the low bid value. If the City decides to award any of the bid alternatives, those bid items would be used in determining the low bid value.

Pay Item Descriptions:

ITEM NO.	Item	Description
1001	General Conditions	Administrative project costs, equipment fees, facilities and project management.
1002	Demolition	Removal and disposal of all equipment and building materials as described in the contract documents
1003	Sitework	Site improvements for the new emergency generator enclosure as well as exterior pavement removal and reinstallation associated with the installation of new aluminum windows at the building atrium, exclusive of the work required for landscape improvements under item 3001.
1004	Concrete	Infill slab in the building atrium, replacement first floor slab for the first floor shower and restrooms, miscellaneous concrete repair.
1005	Precast Concrete	Delegated design, fabrication and installation of the emergency generator enclosure.
1006	Metals	Structural steel, guardrails and handrails, gate for generator enclosure, miscellaneous metals
1007	Casework & Equipment	Breakroom base and wall cabinets, counters, and equipment (ovens and ice machine)

ITEM NO.	Item	Description
1008	Insulation & Roofing	Low expanding spray foam insulation for exterior walls, tapered roof insulation and complete roofing system.
1009	Doors, frames & glazing	Interior doors, door frames, side lites, transoms, interior windows and associated glazing.
1010	Skylight	New skylight above atrium
1011	Finishes	Interior partitions, new interior framing at finishes for the exterior walls, ceramic tiling, floor finishes, ceiling finishes, window sills, toilet and shower partitions and accessories, painting and window treatments
1012	Fire suppression systems	Modifications to existing sprinkler systems and standpipes
1013	Plumbing systems	Improvements for main building water service, domestic water and sanitary distribution systems, fixtures and equipment, pumps, water heaters, and gas distribution systems and equipment.
1014	Mechanical systems	Air handing units, packaged units, unit heaters, distribution systems and terminal units.
1015	Electrical systems	Main electrical room improvements, transfer switches, power systems and distribution, lighting, switching, fire alarm systems, smoke evacuation system improvements, and data/communications infrastructure.
1016	Allowance #1- Steel Beam Penetrations	Refer to specification section 012100
1017	Allowance #2- New elevator finishes	Refer to specification section 012100
2001	Alternate No. 1 – Purchase and installation of emergency generator	Refer to specification section 012300
3001	Alternate No. 2 – Aluminum frame windows	Refer to specification section 012300
4001.1	Alternate No. 3.1 – Landscaping Improvements	Improvements described under the “City of Rockville 6 Taft Court Exterior Landscape improvements” documents

ITEM NO.	Item	Description
4001.2	Alternate No. 3.2 – Exterior Loading Dock Deck	The Loading Dock Deck (Add Alternative #1) under the "City of Rockville 6 Taft Court Exterior Landscape improvements" documents

By submitting this offer I acknowledge receipt of and incorporation into this offer of the following Addenda (check each applicable box):

Addendum #1 ☐ , Addendum #2 ☐, Addendum #3 ☐, Addendum #4 ☐ , Addendum #5 ☐, Addendum #6 ☐

CONTRACT DURATION

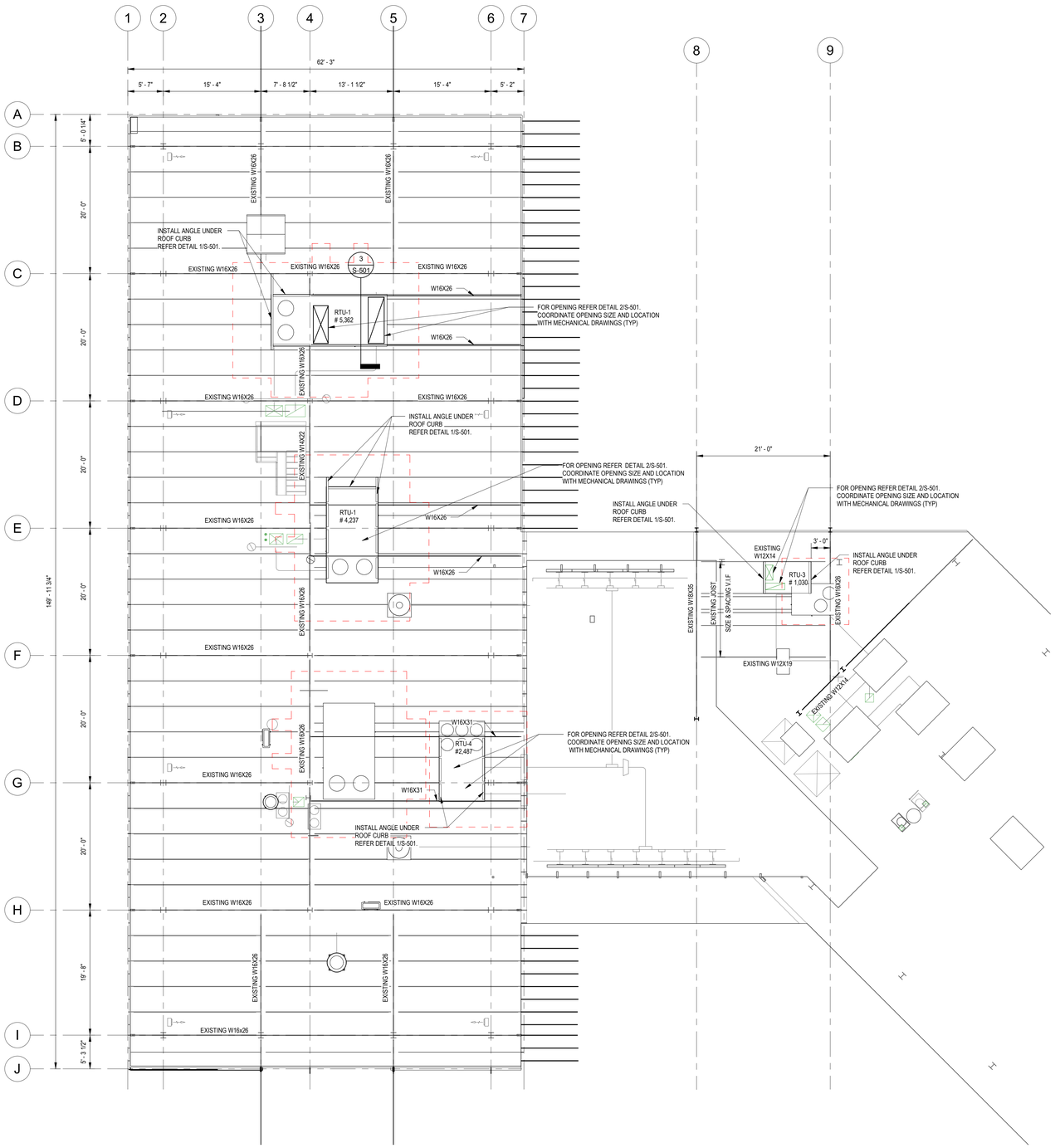
This project is tentatively scheduled for Mayor and Council award in August/September 2022 and the City plans on issuing the purchase order and notice to proceed no later than December 31, 2022. This contract will begin 10 working days from the date of issuance of a notice to proceed. All work associated with this project must be completed within 240 calendar days after the notice to proceed has been issued. It is possible that the City may issue a Limited Notice to Proceed (LNTP) to allow for mobilization, coordination, field measuring, shop drawing review/approval, submission of work plan and ordering long lead time components. Time is of the essence.

Confirm your ability to meet the above schedule. _____ YES _____ NO

This bid and its Firm Fixed Prices shall remain valid through December 31, 2022 for acceptance by the City.

The City of Rockville reserves the right to reject any or all bids, offer or proposals, to waive informalities, and to accept all or any part of any bid, offer proposal as they may deem to be in the best interest of the City of Rockville.

I hereby certify that I have read and understand the requirements of this Invitation for Bid No. 08-22 and, that I, as the Bidder, will comply with all requirements, and that I am duly authorized to execute this proposal/offer document and any contract(s) and/or other transactions required by award of this Invitation For Bid.



1 ROOF PLAN
S-104 SCALE: 1/8" = 1'-0"

NOTES

1. EXISTING ROOF FRAMING AND FINAL RECONFIGURATION REQUIREMENTS TO BE DETERMINED WITH STRUCTURAL ENGINEER OF RECORD FOLLOWING REMOVAL OF FINISHED CEILING IN THIS AREA PER SHEET AD-103. CONTRACTOR SHALL CARRY AN ALLOWANCE FOR NEW STEEL FRAMING AND RE-ROOFING COMPARABLE TO THE WORK ASSOCIATED WITH AHU-2.
2. EXISTING BEAMS SHOWN ARE ONLY INCLUDED DUE TO THE ABSENCE OF AS-BUILT DRAWINGS AND INSUFFICIENT FIELD DATA. ADDITIONAL INFORMATION OF ROOF FRAMING MAY BE REQUIRED DURING CONSTRUCTION.
3. SINCE ACCESS TO BEAMS AT ROOF PERIMETER WAS NOT AVAILABLE DURING DESIGN, BEAM DESIGNATIONS ARE UNKNOWN. CONTRACTOR TO PROVIDE BEAM DEPTH, FLANGE WIDTH, AND FLANGE THICKNESS TO EOR ONCE ACCESS IS OBTAINED.
4. THE CONTRACTOR NEEDS TO VERIFY SIZES AND SPACING OF EXISTING FRAMING. DESIGN MAY BE CHANGED AFTER FIELD VERIFICATION.
5. THE EXISTING BEAM AT GRID 4 BETWEEN GRID D AND E IS ASSUMED TO BE A W14X22. DURING CONSTRUCTION, DOCUMENT THE SIZE OF THIS BEAM AND PROVIDE TO THE EOR FOR REVIEW. REVIEW MAY DETERMINE THAT THIS BEAM MAY NEED TO BE REINFORCED.

DESIGN LOADS:
TOTAL DEAD LOAD (DL)= 25 PSF
ROOF LIVE LOAD (LL)= 20 PSF
SNOW LOAD = 20 PSF

NORTH

0' 2' 4' 8' 16'
SCALE: 1/8" = 1'-0"

Key Plan

No.	Revision	Date
2	ADDENDUM # 3	2022-08-09

Project Name
CITY OF ROCKVILLE
6 TAFT COURT RENOVATION
PHASE 1
ROCKVILLE MARYLAND

DELTA
ENGINEERS, ARCHITECTS, & SURVEYORS
8401 Connecticut Avenue, Suite 350
Chevy Chase, MD 20815
Tel: 301.718.0080
Fax: 301.718.9520
Email: mail@delta-eas.com
www.delta-eas.com

Seal

Phase
90% SUBMISSION

Project No.
2019.331.004

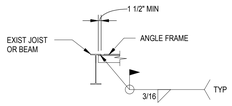
PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER _____, EXPIRATION DATE _____

Date
12/23/21

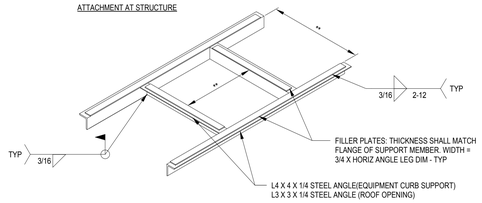
Drawing Title
ROOF PLAN

Drawing No.
S-104

8/9/2022 1:07:28 PM



ATTACHMENT AT STRUCTURE



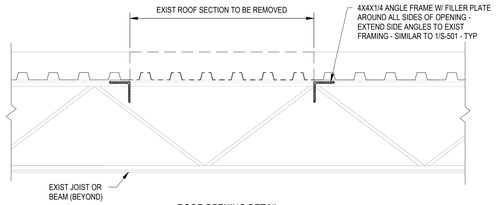
ROOF OPENING FRAME AND/OR EQUIPMENT CURB SUPPORT FRAME (ISOMETRIC)

NOTES:

1. COORDINATE ROOF OPENING AND EQUIPMENT CURB DIMENSIONS WITH EQUIPMENT MANUFACTURER (DENOTED W/ **) AND 'M' CONTRACTOR.
2. ROOF OPENINGS LARGER THAN 1'- 0" SQUARE REQUIRE A ROOF OPENING FRAME TO SUPPORT THE DECK.
3. EQUIPMENT THAT IS SUPPORTED BY AN EQUIPMENT CURB WILL REQUIRE AN EQUIPMENT CURB SUPPORT FRAME DIRECTLY UNDER THE CURB TO SUPPORT THE CURB AND DECK. OPENINGS THAT OCCUR WITHIN THE FOOTPRINT OF THE EQUIPMENT CURB (IE- DUCTWORK OPENINGS, ETC) WILL REQUIRE A STEEL ANGLE FRAME AROUND EACH OPENING TO SUPPORT THE DECK.

1 S-501 EQUIP CURB & ROOF OPENING FRAME

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



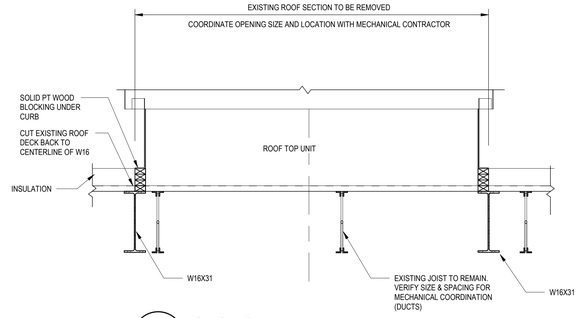
ROOF OPENING DETAIL

NOTES:

1. FRAMING AT ROOF OPENING SHALL BE INSTALLED PRIOR TO ROOF REMOVAL.
2. AT LOCATIONS WHERE OPENINGS HAVE SUPPORT FRAMING ALREADY IN PLACE, NOTIFY EOR TO DETERMINE IF EXIST FRAMING IS REUSABLE.
3. DETAIL IS APPLICABLE FOR EXISTING FLOOR BEAM/JOIST SPACING UP TO 6' - 0" (MAX).
4. COORDINATE WITH EXISTING ROOF MANUFACTURER PRIOR TO ANY ROOF WORK SO AS TO NOT VOID THE EXISTING ROOF WARRANTY.

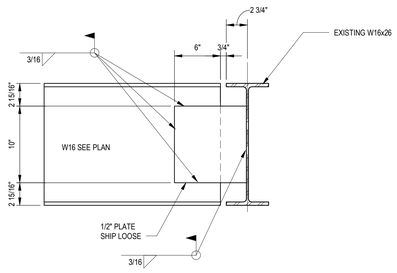
2 S-501 TYP OPENING SUPPORT DETAIL

SCALE: 1" = 1'-0"



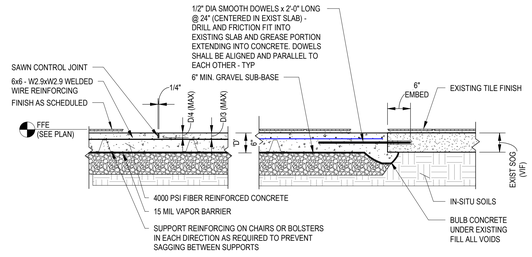
3 S-501 SECTION 1

SCALE: 3/4" = 1'-0"



4 S-501 STEEL BEAM TO BEAM DETAIL

SCALE: 1 1/2" = 1'-0"

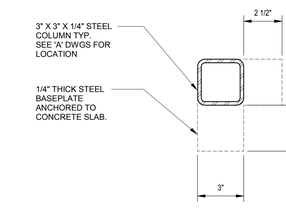


NOTES:

1. SAWCUT CONTROL JOINTS WITHIN 12 HOURS OF PLACING SLAB.
2. JOINTS TO BE SPACED AT 15'-0" (MAX) OR AS NOTED ON PLAN.
3. VAPOR BARRIER TO BE CONTINUOUS AND OVERLAPPED NOT LESS THAN 12" AT ALL SEAMS. TAPE ALL SEAMS AND PENETRATIONS WITH MANUFACTURER'S APPROVED TAPE.
4. COMPRESSIVE-STRENGTH TESTS: ASTM C39/C39M, TEST ONE SET OF TWO FIELD-CURED SPECIMENS AT SEVEN DAYS AND ONE SET OF TWO SPECIMENS AT 28 DAYS.

5 S-501 SECTION AT SLAB

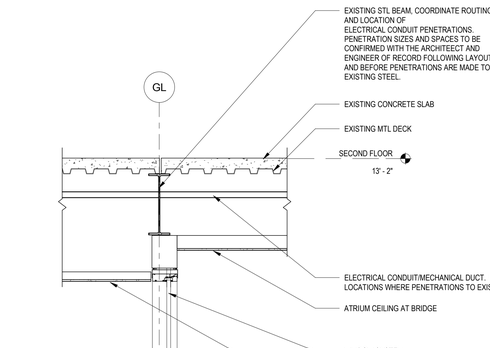
SCALE: 3/4" = 1'-0"



6 S-501 PLAN DETAIL- ENTRY VESTIBULE STL COLUMN

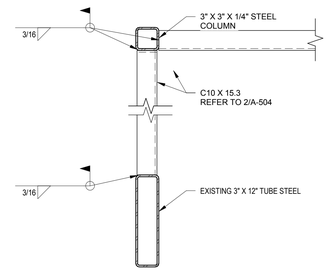
SCALE: 3" = 1'-0"

DETAIL NOTE: ALL OF THE INFORMATION ON THIS DETAIL APPLIES TO ALTERNATE #2



7 S-501 EXISTING STL BEAM PENETRATION

SCALE: 3/4" = 1'-0"



8 S-501 PLAN DETAIL- ENTRY VESTIBULE STL WELDING DETAIL

SCALE: 1 1/2" = 1'-0"

DETAIL NOTE: ALL OF THE INFORMATION ON THIS DETAIL APPLIES TO ALTERNATE #2

Key Plan

No.	Revision	Date
2	ADDENDUM # 3	2022-08-09

Project Name

CITY OF ROCKVILLE

6 TAFT COURT RENOVATION PHASE 1

ROCKVILLE MARYLAND

DELTA ENGINEERS, ARCHITECTS, & SURVEYORS
8401 Connecticut Avenue, Suite 350
Chevy Chase, MD 20815
Tel: 301.718.0080
Fax: 301.718.9520
Email: mail@delta-eas.com
www.delta-eas.com

Seal

Phase: 90% SUBMISSION

Project No.: 2019.331.004

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER: _____ EXPIRATION DATE: _____

Date: 12/23/21

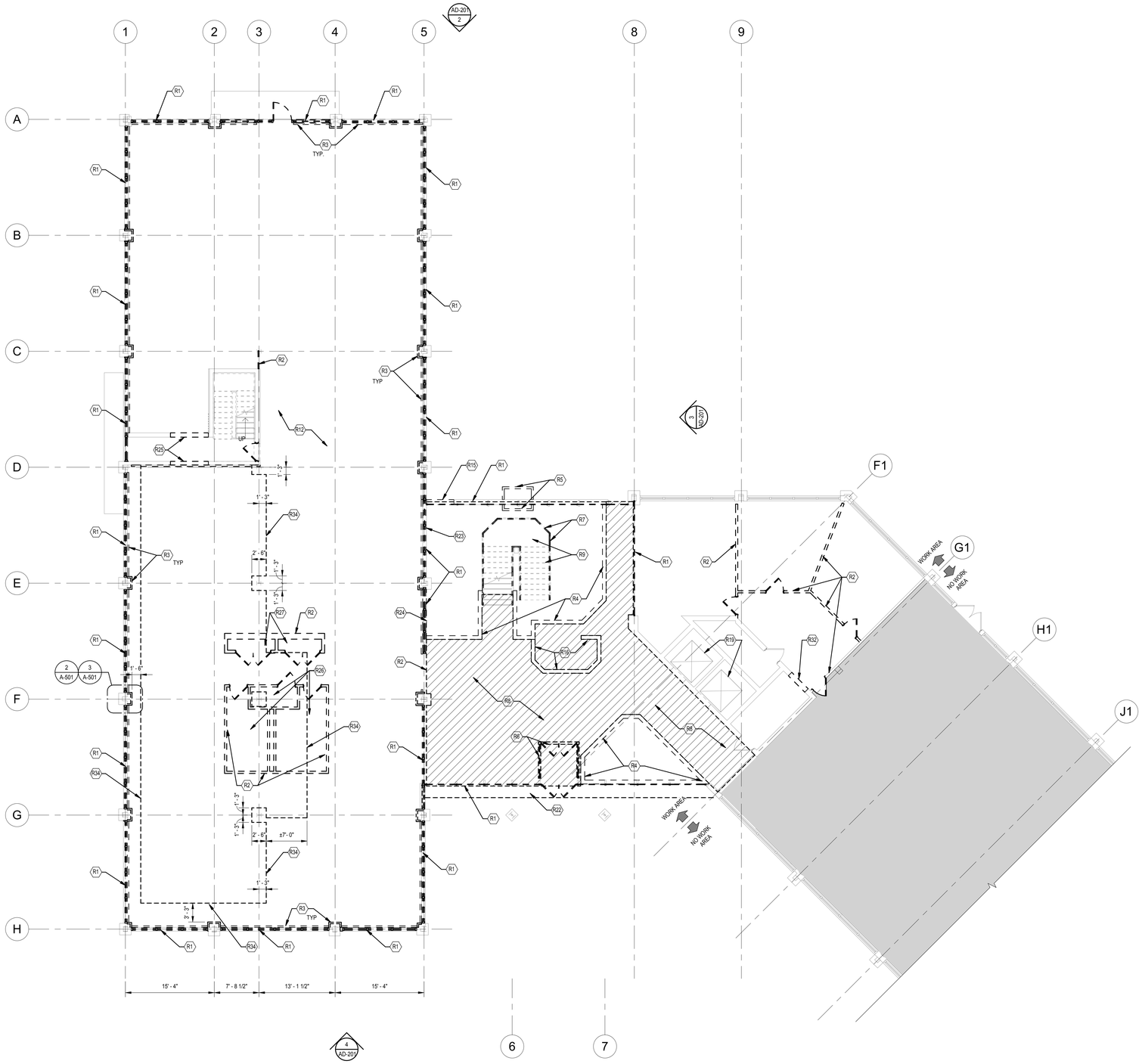
Drawing Title

SECTIONS & DETAILS

Drawing No.

S-501

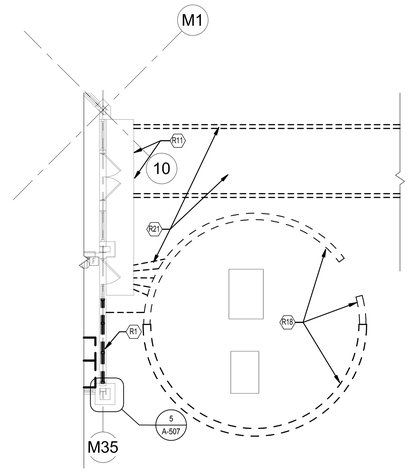
8/9/2022 1:07:32 PM



1 AD-101 **FIRST FLOOR REMOVALS PLAN**
SCALE: 1/8" = 1'-0"

R#	AD-101 REMOVAL KEY NOTES
R1	ALTERNATE #2: REMOVE WINDOW SYSTEM IN IT'S ENTIRETY. REFER TO A-501, A-502 & A-507 FOR ADDITIONAL INFORMATION.
R2	REMOVE PARTITIONS, DOORS AND FIXTURES AS INDICATED.
R3	REMOVE GYP WALLBOARD FUR-OUT IN IT'S ENTIRETY. REFER TO A-501 & A-502 FOR ADDITIONAL INFORMATION.
R4	REMOVE EXISTING BRICK KNEEWALL PLANTER & SOIL AS REQUIRED FOR THE INSTALLATION OF FINISHED SLAB FLUSH WITH EXISTING FIRST FLOOR SLAB IN ATRIUM. SALVAGE AND CLEAN BRICK AS REQUIRED FOR REUSE WHERE PATCHING WITH EXISTING BRICK IS REQUIRED.
R5	ALTERNATE #4: REMOVE AREAWAY WALLS
R6	ALTERNATE #2: REMOVE VESTIBULE STRUCTURE IN IT'S ENTIRETY
R7	REMOVE RAILINGS AND SUPPORTS FOR STAIR AND BALCONIES AT ALL FLOORS IN ATRIUM.
R8	REMOVE TILE FLOORING DOWN TO SUBSTRATE IN ATRIUM AREA
R9	REMOVE FINISHES FROM STAIR TREADS, RISERS, STRINGERS & LANDINGS.
R11	REMOVE LOADING DOCK BUMPER PADS
R12	REMOVE ALL EXISTING FLOORING. PREPARE FLOOR FOR NEW FINISH.
R15	ALTERNATE #2: REMOVE PORTION OF BRICK WALL FOR CURTAIN WALL DOOR.
R16	REMOVE RECEPTION DESK PARTITIONS. SALVAGE AND CLEAN BRICK FOR RE-USE WHERE PATCHING WITH EXISTING BRICK IS REQUIRED.
R18	REMOVE MASONRY WALLS. SALVAGE AND CLEAN BRICK FOR RE-USE. SALVAGE EXISTING FOUNDATION AS REQUIRED FOR NEW GENERATOR ENCLOSURE.
R19	REMOVE FLOORING DOWN TO SUBSTRATE IN ELEVATORS
R21	REMOVE ASPHALT, CURBS, CONCRETE STAIRS AND EVACUATE AS REQUIRED FOR GENERATOR ENCLOSURE.
R22	ALTERNATE #2: REMOVE EXTERIOR SIDEWALK AS REQUIRED FOR INSTALLATION OF CURTAIN WALL. REFER TO A-503.
R23	REMOVE CMU EXPOSED BY REMOVAL OF PLANTER AS REQUIRED FOR INSTALLATION OF RE-USED BRICK VENEER IN SAME PLANE.
R24	ALTERNATE #2: REMOVE MASONRY WALL BELOW WINDOW.
R25	REMOVE EXIST CORRIDOR WALLS AS REQUIRED FOR ENTRIES TO BREAK ROOM (131) AND LOCKER ROOM (170).
R26	REMOVE PLUMBING FIXTURES, ACCESSORIES, AND FINISHES.
R27	REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL EQUIPMENT REMOVALS.
R32	PROVIDE SHORING AND REMOVE 4'-0" WIDE X 4'-0" TALL PORTION OF EXISTING CMU PARTITION, CENTERED IN EXISTING ROOM
R34	SAW CUT & REMOVE SLAB TO THE EXTENT INDICATED TO FACILITATE INSTALLATION OF NEW SANITARY PIPING FOR SHOWER ROOM & GENDER NEUTRAL RESTROOMS. COORDINATE ADDITIONAL SLAB REMOVAL REQUIRED WITH PLUMBING DEMOLITION PLAN SHEET PD-101.

GENERAL NOTE:
REFER TO MECHANICAL, ELECTRICAL, PLUMBING & LIFE SAFETY DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION.



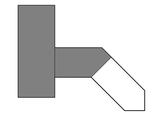
2 AD-101 **SITE REMOVALS**
SCALE: 1/8" = 1'-0"

REMOVAL LINE TYPE LEGEND

- EXISTING ITEM(S) / EQUIPMENT TO REMAIN
- EXISTING ITEM(S) / EQUIPMENT TO BE REMOVED
- EXISTING ITEM(S) / EQUIPMENT TO BE REMOVED

NORTH
0' 2' 4' 8' 16'
SCALE: 1/8" = 1'-0"

Key Plan



TRUE NORTH
SCALE: 1" = 100'-0"

No.	Revision	Date
2	ADDENDUM #3	2022-08-09

Project Name
CITY OF ROCKVILLE
6 TAFT COURT RENOVATION
PHASE 1
ROCKVILLE MARYLAND

DELTA
ENGINEERS, ARCHITECTS, & SURVEYORS
8401 Connecticut Avenue, Suite 350
Chevy Chase, MD 20815
Tel: 301.718.0080
Fax: 301.718.9520
Email: mail@delta-eas.com
www.delta-eas.com

Seal

Phase
IFB #08-22

Project No.
2019.331.004

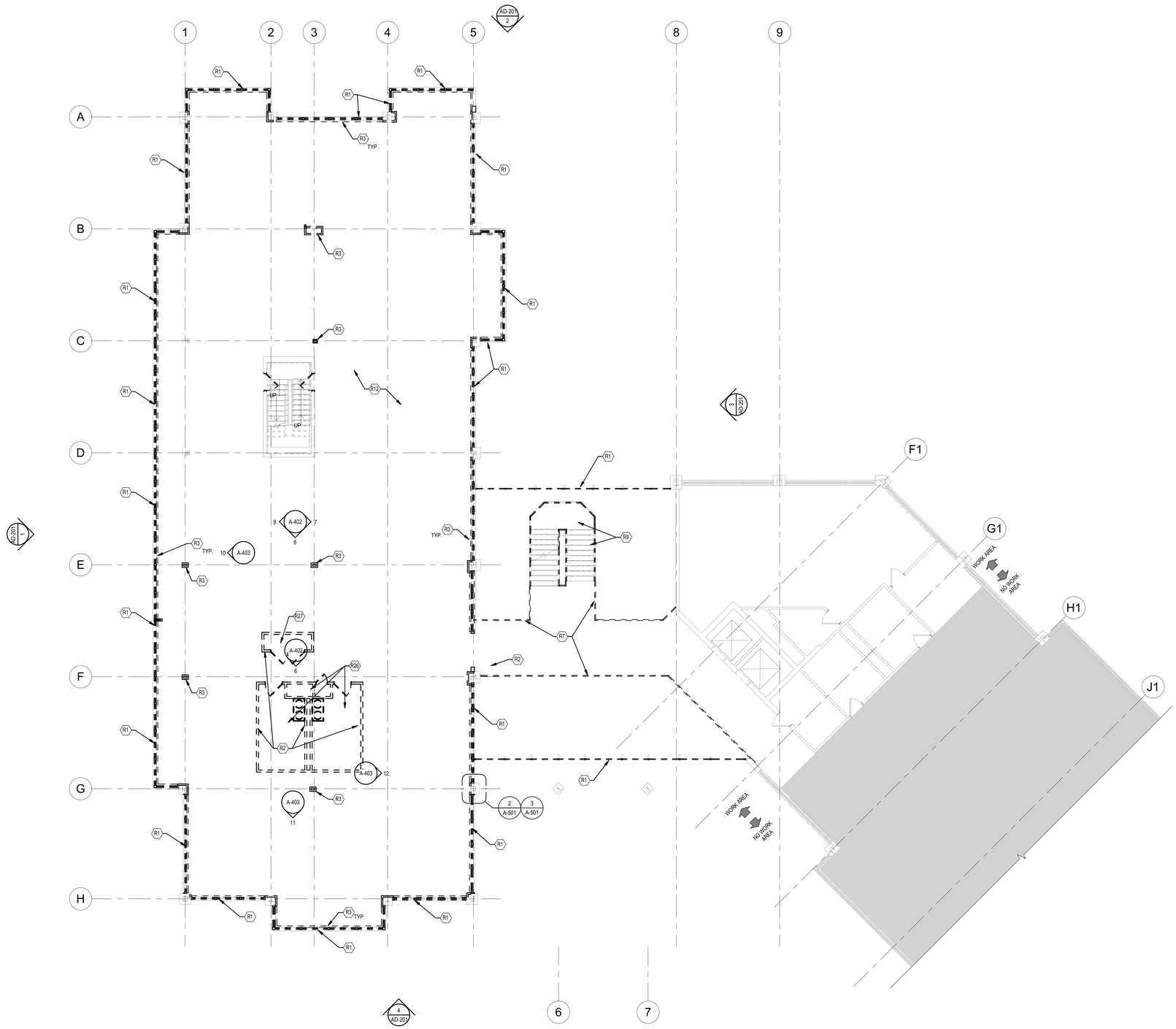
PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER: _____
EXPIRATION DATE: _____

Date
12/23/2021 (PERMIT REVISIONS 04/01/2022)

Drawing Title
FIRST FLOOR REMOVALS PLAN

Drawing No.
AD-101

8/9/2022 12:54:08 PM



R#	AD-102 REMOVAL KEY NOTES
R1	ALTERNATE #2: REMOVE WINDOW SYSTEM IN IT'S ENTIRETY. REFER TO A-501, A-502 & A-507 FOR ADDITIONAL INFORMATION.
R2	REMOVE PARTITIONS, DOORS AND FIXTURES AS INDICATED.
R3	REMOVE GYP WALLBOARD FUR-OUT IN IT'S ENTIRETY. REFER TO A-501 & A-502 FOR ADDITIONAL INFORMATION.
R7	REMOVE RAILINGS AND SUPPORTS FOR STAIR AND BALCONIES AT ALL FLOORS IN ATRIUM.
R9	REMOVE FINISHES FROM STAIR TREADS, RISERS, STRINGERS & LANDINGS.
R12	REMOVE ALL EXISTING FLOORING. PREPARE FLOOR FOR NEW FINISH.
R26	REMOVE PLUMBING FIXTURES, ACCESSORIES, AND FINISHES.
R27	REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL EQUIPMENT REMOVALS.

GENERAL NOTE:
REFER TO MECHANICAL, ELECTRICAL, PLUMBING & LIFE SAFETY DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION.

REMOVAL LINE TYPE LEGEND	
	EXISTING ITEM(S) / EQUIPMENT TO REMAIN
	EXISTING ITEM(S) / EQUIPMENT TO BE REMOVED
	EXISTING ITEM(S) / EQUIPMENT TO BE REMOVED

NORTH
0' 2' 4' 8' 16'
SCALE: 1/8" = 1'-0"

1 AD-102 **SECOND FLOOR REMOVALS PLAN**
SCALE: 1/8" = 1'-0"

Key Plan

TRUE NORTH
SCALE: 1" = 100'-0"

No.	Revision	Date
2	ADDENDUM #3	2022-08-09

Project Name
CITY OF ROCKVILLE
6 TAFT COURT RENOVATION
PHASE 1
ROCKVILLE MARYLAND

DELTA
ENGINEERS, ARCHITECTS, & SURVEYORS
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Email: mail@delta-eas.com
www.delta-eas.com

Seal

Phase
IFB #08-22

Project No.
2019.331.004

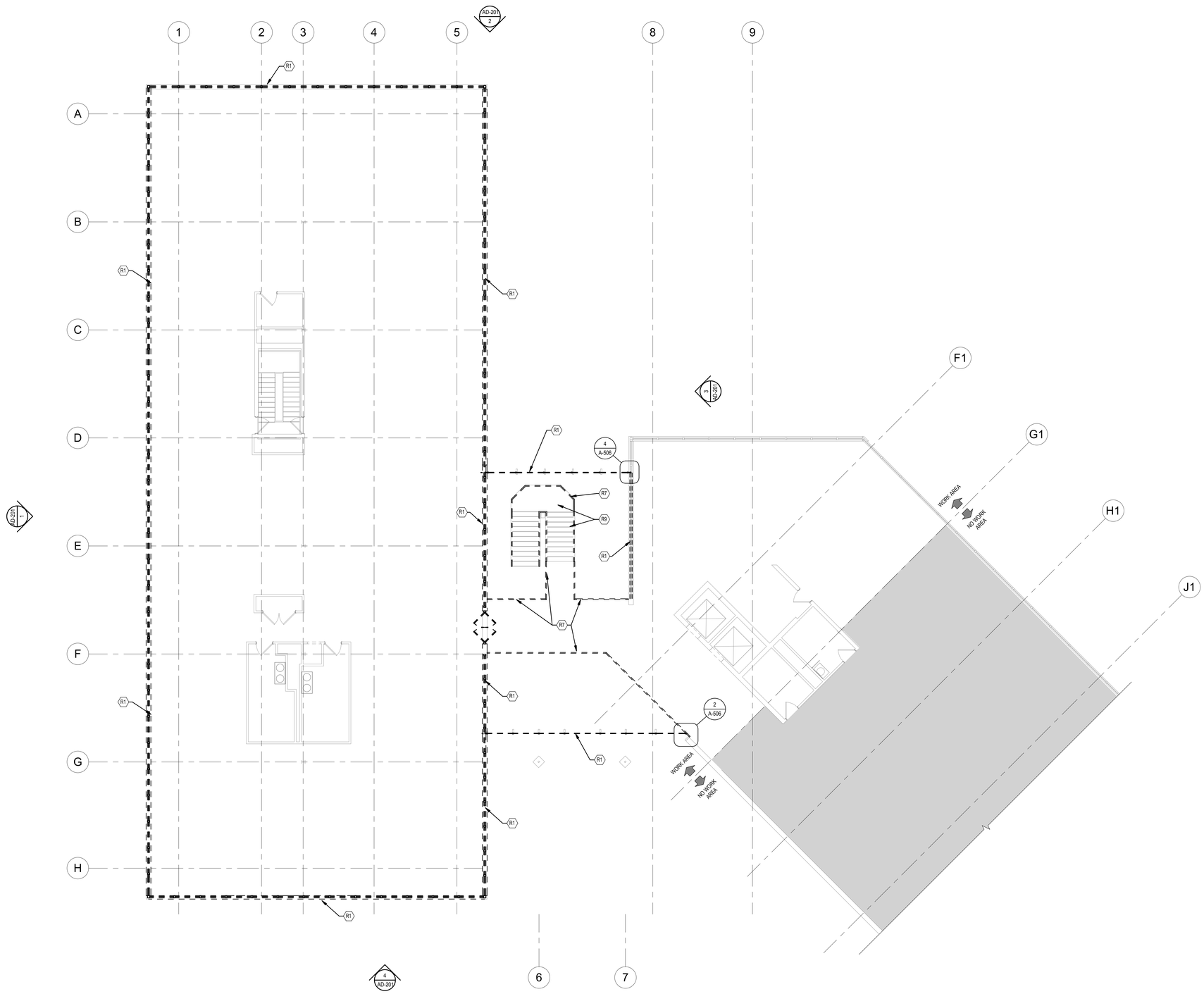
PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER: _____, EXPIRATION DATE: _____

Date
12/23/2021 (PERMIT
~~REVISIONS~~
04/01/2022)

Drawing Title
SECOND FLOOR REMOVALS PLAN

Drawing No.
AD-102

8/9/2022 12:54:15 PM



AD-103 REMOVAL KEY NOTES

R#	
R1	ALTERNATE #2: REMOVE WINDOW SYSTEM IN IT'S ENTIRETY. REFER TO A-501, A-502 & A-507 FOR ADDITIONAL INFORMATION.
R7	REMOVE RAILINGS AND SUPPORTS FOR STAIR AND BALCONIES AT ALL FLOORS IN ATRIUM.
R9	REMOVE FINISHES FROM STAIR TREADS, RISERS, STRINGERS & LANDINGS.

GENERAL NOTE:
REFER TO MECHANICAL, ELECTRICAL, PLUMBING & LIFE SAFETY DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION.

REMOVAL LINE TYPE LEGEND

- EXISTING ITEM(S) / EQUIPMENT TO REMAIN
- EXISTING ITEM(S) / EQUIPMENT TO BE REMOVED
- EXISTING ITEM(S) / EQUIPMENT TO BE REMOVED

NORTH

0' 2' 4' 8' 16'

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

1 AD-103 **THIRD FLOOR REMOVALS PLANS**

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

Key Plan

TRUE NORTH

SCALE: 1" = 100'-0"

No.	Revision	Date
2	ADDENDUM #3	2022-08-09

Project Name

CITY OF ROCKVILLE
6 TAFT COURT RENOVATION
PHASE 1

ROCKVILLE MARYLAND

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EXPIRATION DATE: _____

Date
12/23/2021 (PERMIT REVISIONS 04/01/2022)

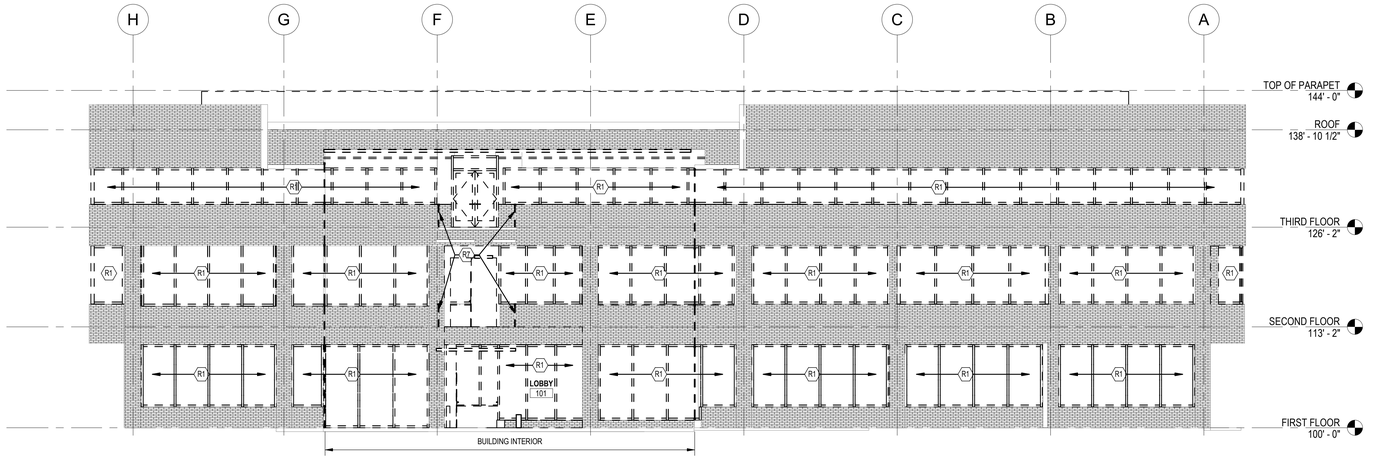
Drawing Title

THIRD FLOOR REMOVALS PLAN

Drawing No.

AD-103

8/9/2022 12:54:22 PM

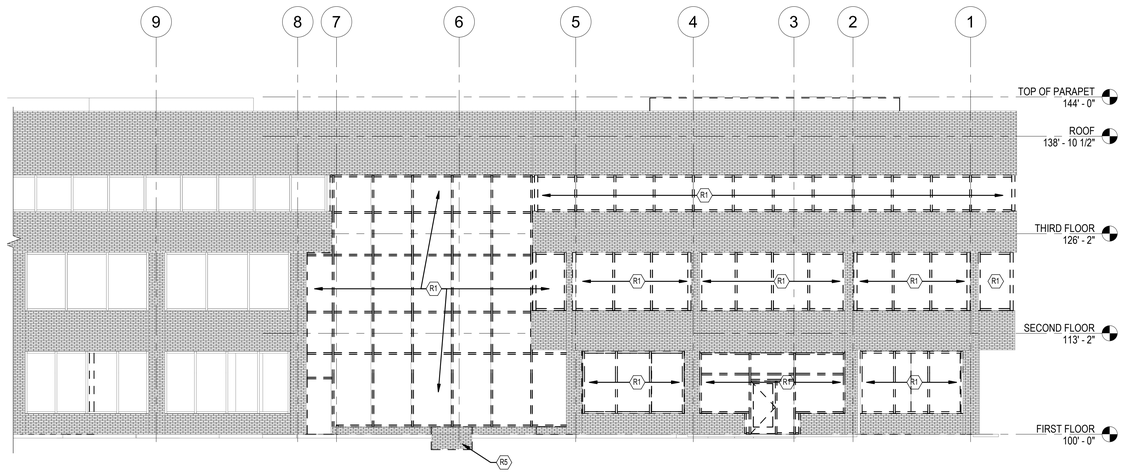


3 AD-201

SOUTH ELEVATION REMOVALS

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

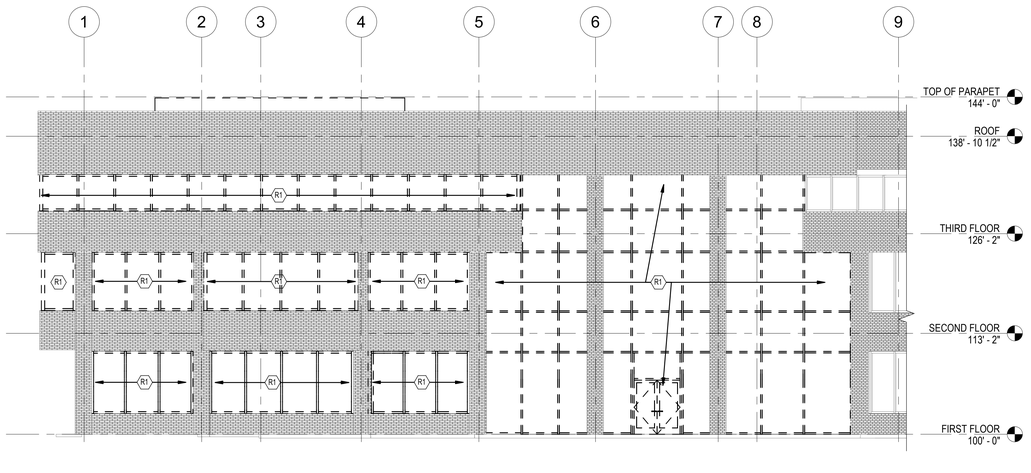
R#	AD-201 REMOVAL KEY NOTES
R1	ALTERNATE #2: REMOVE WINDOW SYSTEM IN IT'S ENTIRETY. REFER TO A-501, DETAIL 4 & 5 FOR ADDITIONAL INFORMATION.
R5	ALTERNATE #2: REMOVE AREAWAY WALLS
R7	REMOVE RAILINGS AND SUPPORTS FOR STAIR AND BALCONIES AT ALL FLOORS IN ATRIUM.



2 AD-201

EAST ELEVATION REMOVALS

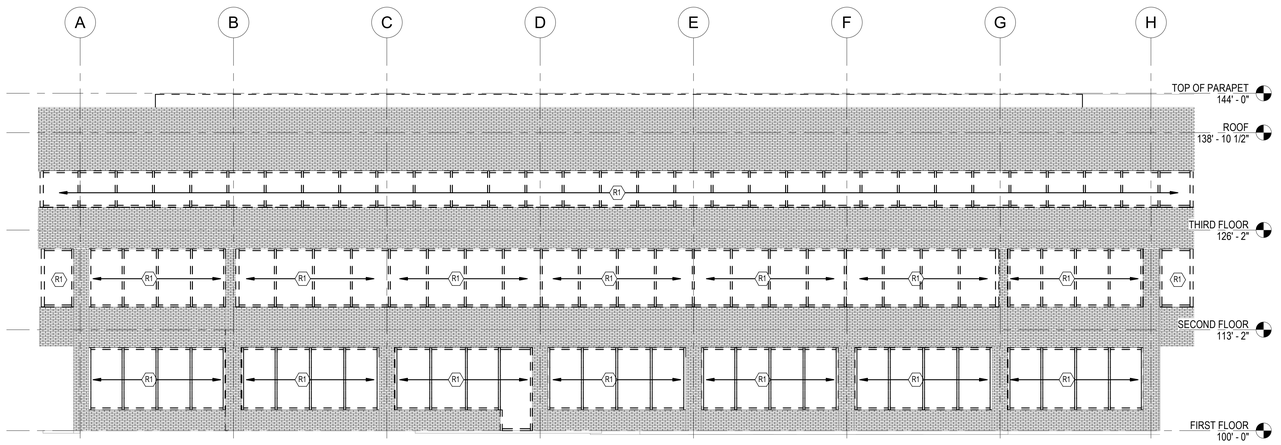
SCALE: 1/8" = 1'-0"



4 AD-201

WEST ELEVATION REMOVALS

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



1 AD-201

NORTH ELEVATION REMOVALS

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

Key Plan

No.	Revision	Date
2	ADDENDUM #3	2022-08-09

Project Name

CITY OF ROCKVILLE
6 TAFT COURT RENOVATION
PHASE 1

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Phase: IFB #08-22

Project No.: 2019.331.004

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Date: 12/23/2021 (PERMIT REVISIONS 04/01/2022)

Drawing Title

EXTERIOR ELEVATIONS REMOVALS

Drawing No.

AD-201

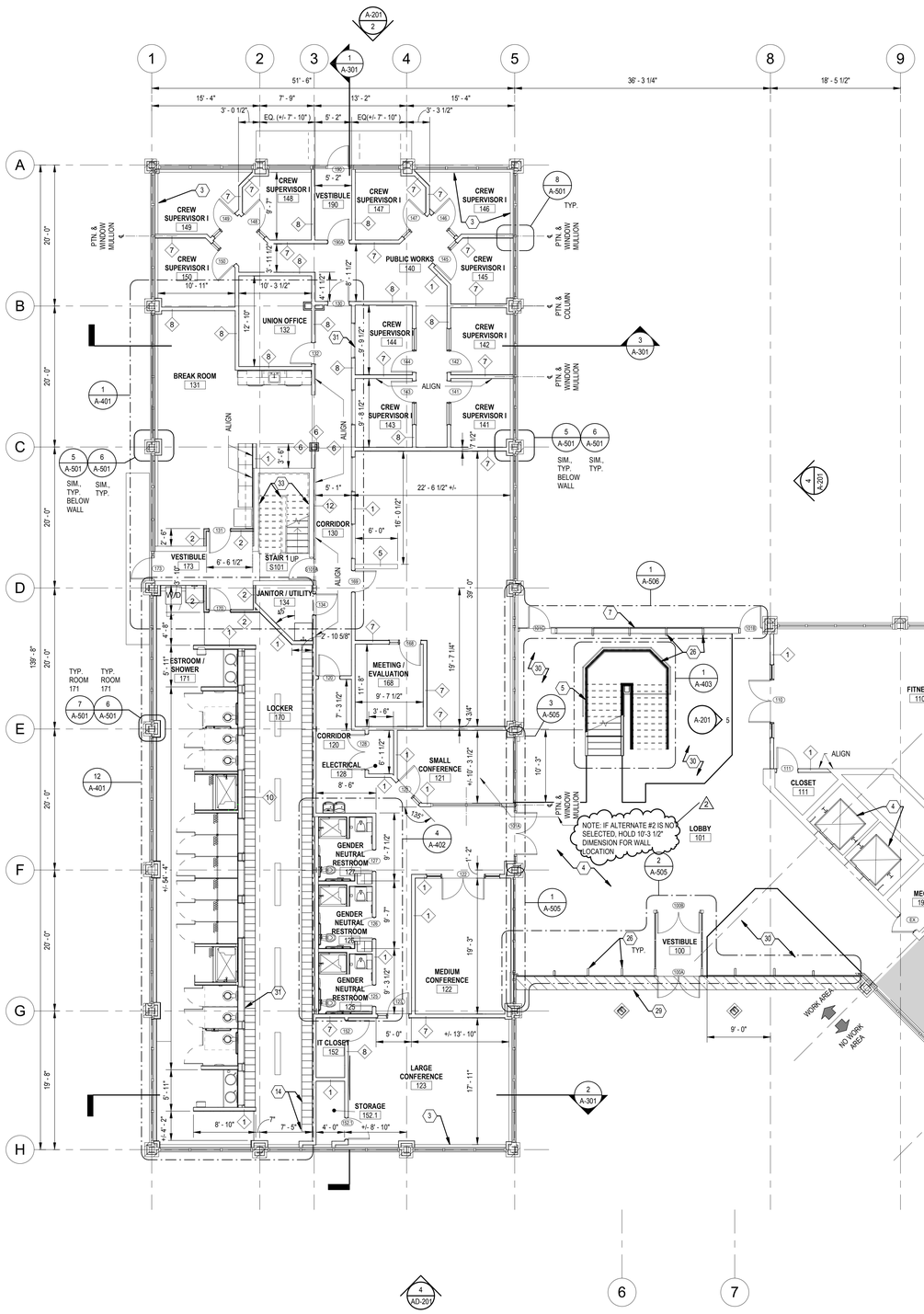
8/9/2022 12:54:58 PM

RENOVATION LINE TYPE LEGEND

———	EXISTING ITEM(S) / EQUIPMENT TO REMAIN
———	ITEM(S) / EQUIPMENT TO BE PROVIDED

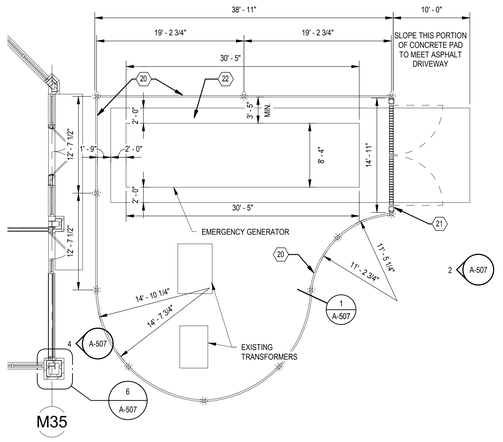
A-101 RENOVATION KEY NOTES

#	
3	PROVIDE PARTIAL GWB SYSTEM AT ALL EXTERIOR WALLS. REFER TO DETAILS ON A-501 & A-502.
4	PROVIDE TILE FLOORING SYSTEM
5	PROVIDE GLASS RAILING SYSTEM
7	INFILL AREA WAY, COORDINATE WITH CURTAIN WALL SYSTEM
14	PROVIDE (6) ADA LOCKERS
20	PROVIDE ARCHITECTURAL PRECAST PANELS AND PRECAST CONCRETE CAPS (DELEGATED DESIGN)
21	PROVIDE COMMERCIAL GATE AND TUBE STL SUPPORTS (DELEGATED DESIGN)
22	PROVIDE CONCRETE PAD FOR GENERATOR
26	CLEAN, PRIME AND PAINT ALL EXPOSED STEEL IN ATRIUM
29	PATCH/REPAIR SIDEWALK. REFER TO A-503
30	INFILL PLANTER AREA WITH CONCRETE SLAB FLUSH WITH EXISTING.
31	TRANSOM WINDOW ABOVE. REFER TO SHEET A-401
33	PROVIDE GUARDRAIL AND HANDRAIL EXTENSIONS AND PICKET INFILL AT EXISTING EGRESS STAIRS. REFER TO DETAIL 9/A-4.03



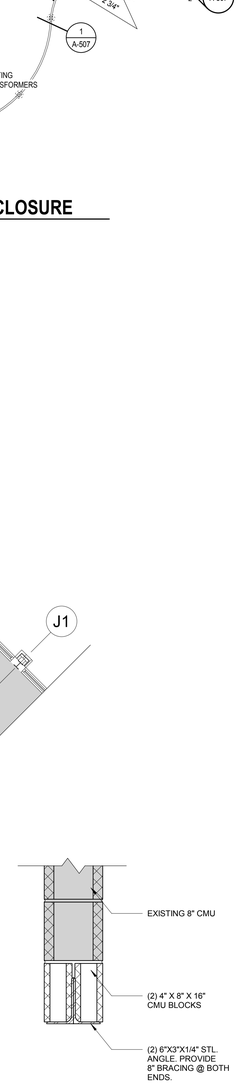
2 A-101 FIRST FLOOR RENOVATION PLAN

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



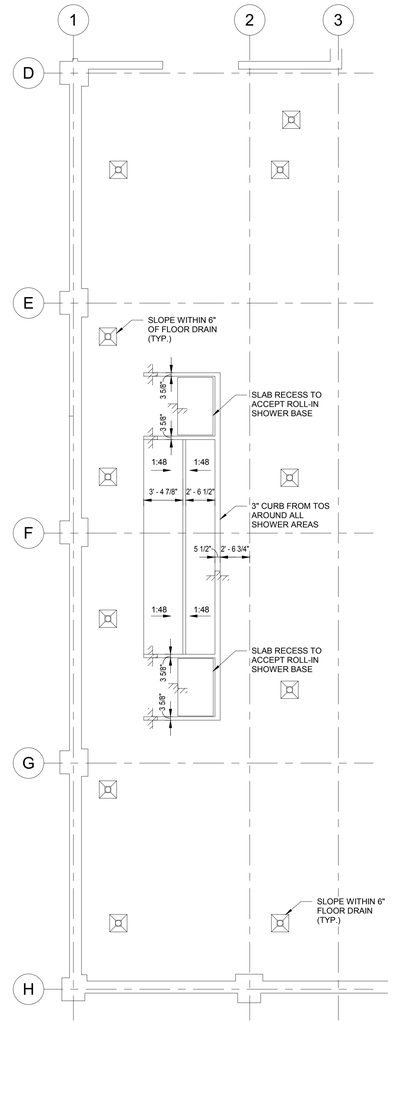
1 A-101 GENERATOR ENCLOSURE

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



3 A-101 SECTION DETAILS LINTEL

SCALE: 1 1/2" = 1'-0"



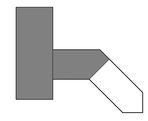
4 A-101 LOCKER ROOM SLAB PLAN

SCALE: 3/16" = 1'-0"

NORTH

SCALE: 1/8" = 1'-0" | SCALE: 1-1/2" = 1'-0" | SCALE: 3/16" = 1'-0"

Key Plan



TRUE NORTH

SCALE: 1" = 100'-0"

No.	Revision	Date
2	ADDENDUM #3	2022-08-09

Project Name

CITY OF ROCKVILLE

6 TAFT COURT RENOVATION PHASE 1

ROCKVILLE MARYLAND

DELTA ENGINEERS, ARCHITECTS, & SURVEYORS
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Phase IFB #08-22

Project No. 2019.331.004

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Date 12/23/2021 (PERMIT REVISIONS 04/01/2022)

Drawing Title

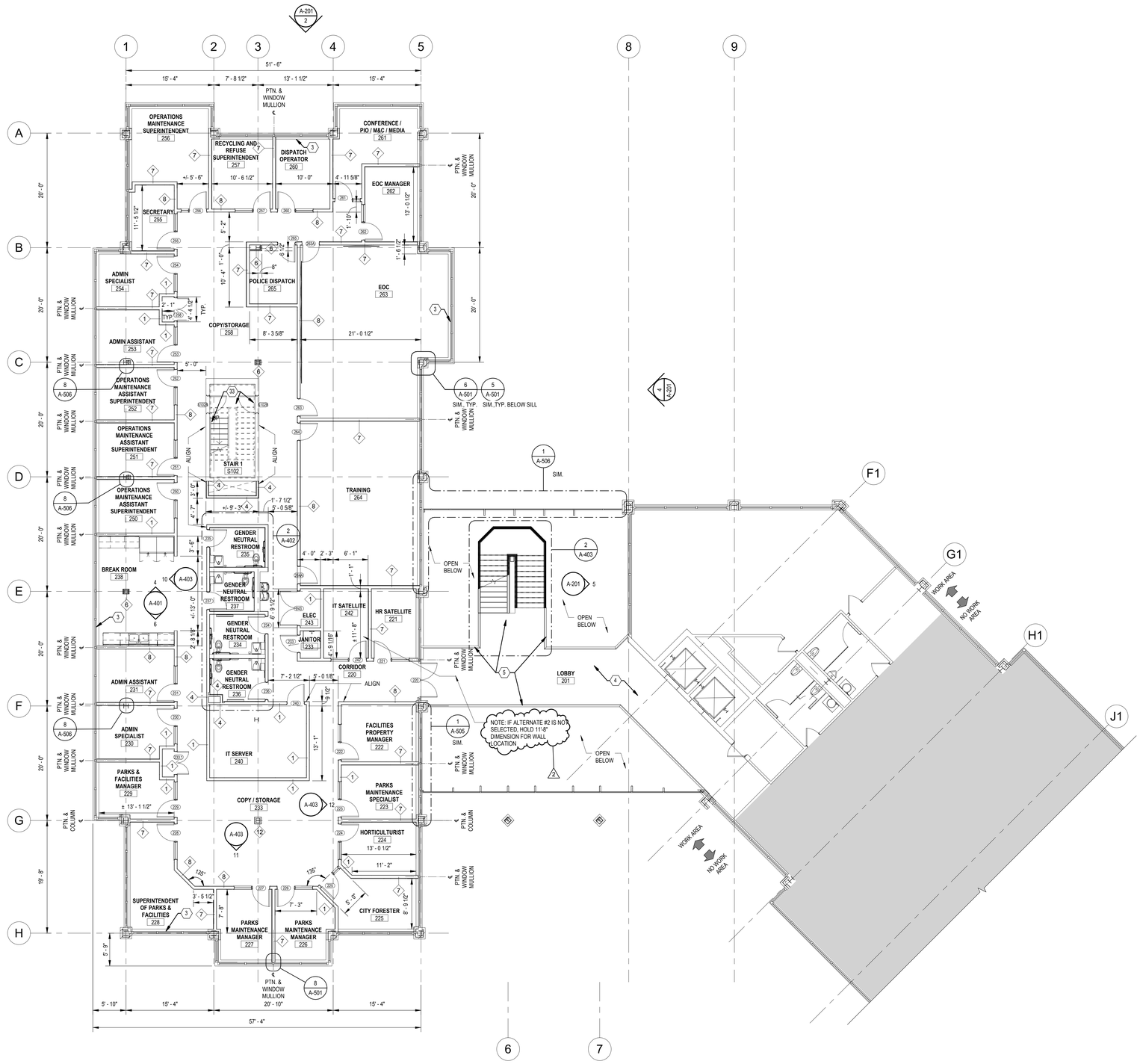
FIRST FLOOR RENOVATION PLAN

Drawing No.

A-101

8/9/2022 12:55:10 PM

(#)	A-102 RENOVATION KEY NOTES
3	PROVIDE PARTIAL GWB SYSTEM AT ALL EXTERIOR WALLS. REFER TO DETAILS ON A-501 & A-502.
4	PROVIDE TILE FLOORING SYSTEM
5	PROVIDE GLASS RAILING SYSTEM
33	PROVIDE GUARDRAIL AND HANDRAIL EXTENSIONS AND PICKET INFILL AT EXSTING EGRESS STAIRS. REFER TO DETAIL 9/A-4.03



1 A-102 SECOND FLOOR RENOVATION PLAN

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

RENOVATION LINE TYPE LEGEND

- EXISTING ITEM(S) / EQUIPMENT TO REMAIN
- ITEM(S) / EQUIPMENT TO BE PROVIDED

NORTH

0' 2' 4' 8' 16'

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

Key Plan

TRUE NORTH

SCALE: 1" = 100'-0"

No.	Revision	Date
2	ADDENDUM #3	2022-08-09

Project Name

CITY OF ROCKVILLE

6 TAFT COURT RENOVATION PHASE 1

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Date 12/23/2021 (PERMIT REVISIONS 04/01/2022)

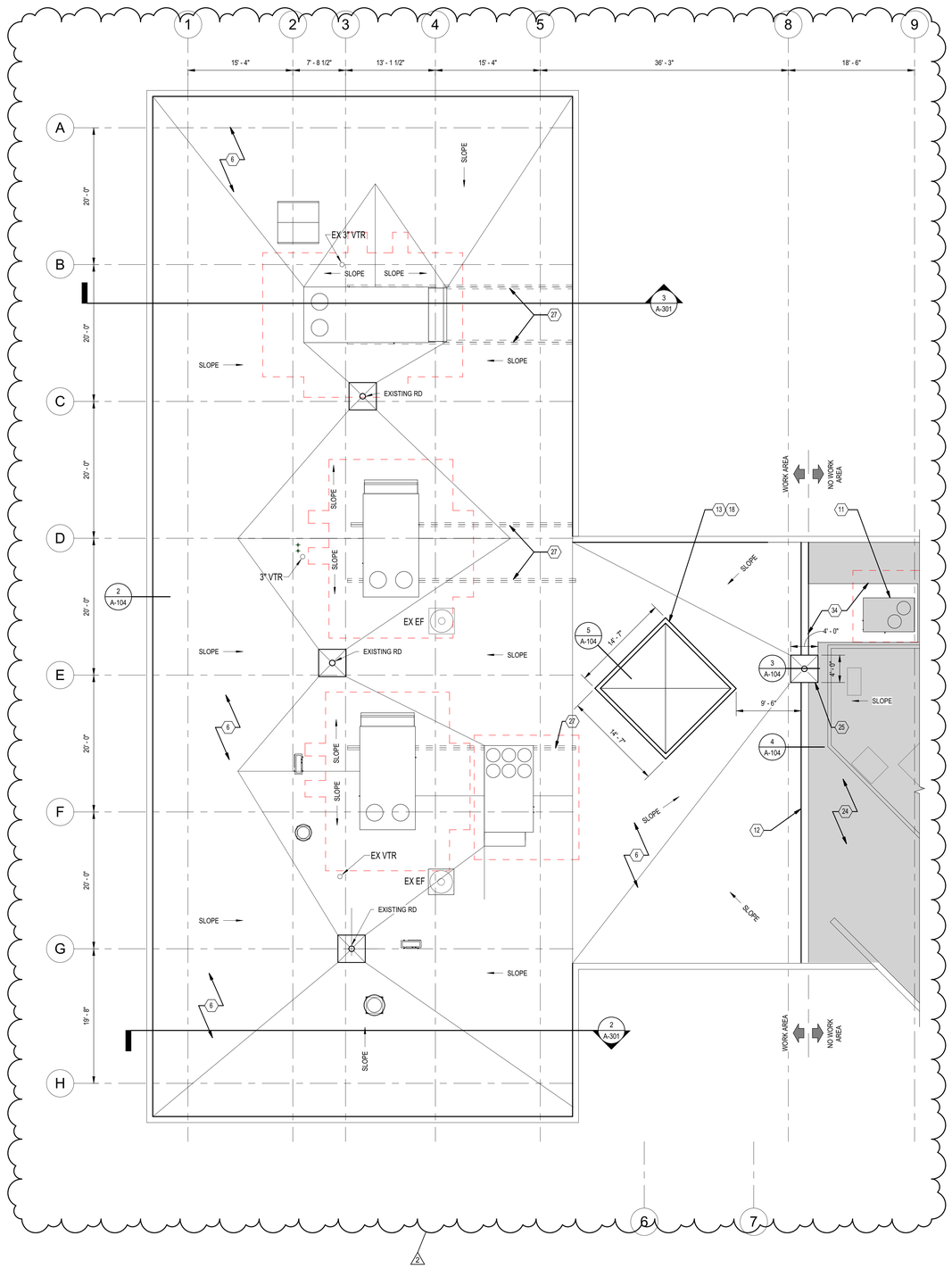
Drawing Title

SECOND FLOOR RENOVATION PLAN

Drawing No.

A-102

8/9/2022 12:55:20 PM

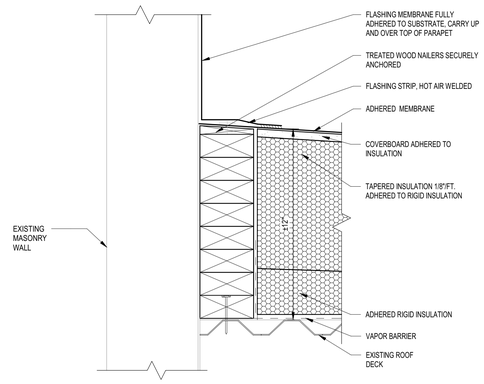


1 A-104 ROOF RENOVATION PLAN

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

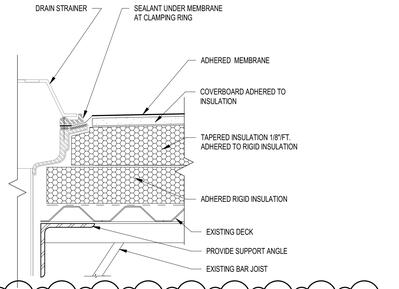
LINE TYPE LEGEND - ROOF

- EXISTING TO REMAIN
- ROOF SYSTEM, FLASHING, EQUIPMENT, ITEMS TO BE PROVIDED



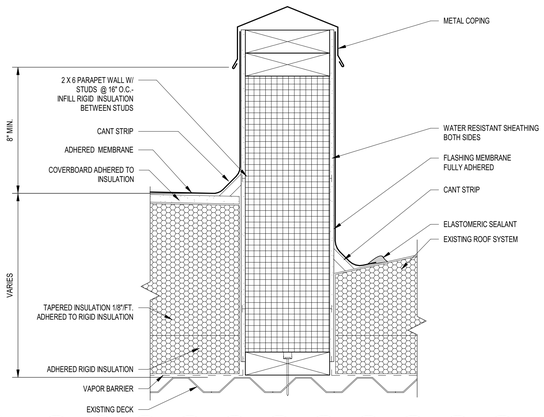
2 A-104 TYPICAL TERMINATION AT PARAPET

SCALE: 3" = 1'-0"



3 A-104 TYPICAL ROOF DRAIN TERMINATION

SCALE: 3" = 1'-0"



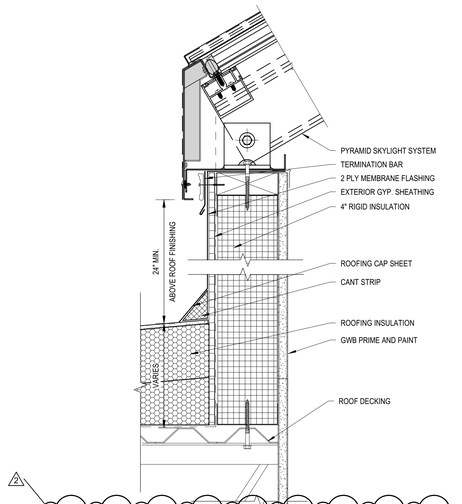
4 A-104 TERMINATION AT SADDLE

SCALE: 3" = 1'-0"

#	A-104 RENOVATION KEY NOTES
6	INSTALL NEW MODIFIED BITUMEN ROOFING SYSTEM
11	CARRY ALLOWANCE FOR SUPPLEMENTAL STEEL SUPPORT FOR RTU
12	INSTALL 4" ROOF CURB AS TRANSITION BETWEEN NEW ROOF AND EXISTING ROOF.
13	REBUILD SKYLIGHT ROOF CURB TO ACCOMMODATE NEW ROOF SYSTEM.
18	PROVIDE SKYLIGHT SYSTEM ON NEW ROOF CURB
24	MAINTAIN EXISTING ROOF DRAINAGE PATTERN AT SOUTH WING
25	BREAK CURB AT EXISTING ROOF DRAIN
27	PROVIDE ADDITIONAL STEEL FRAMING TO SUPPORT MECHANICAL EQUIPMENT.
34	PATCH/REPAIR MODIFIED BITUMEN ROOFING SYSTEM AROUND NEW MECH UNIT.

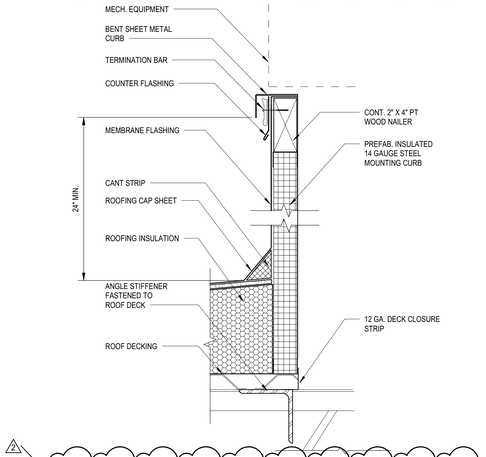
GENERAL ROOF NOTES

A. PRIOR TO COMMENCEMENT OF WORK FIELD VERIFY EXISTING DIMENSIONS, CONDITIONS AND QUANTITIES OF ROOF PENETRATIONS, EQUIPMENT, ANTENNAE, ETC.
B. COORDINATE WITH OWNER FOR SCHEDULE AND REQUIREMENTS OF FUTURE/CONCURRENT PROJECTS.
C. COORDINATE SHUTDOWN OF INTAKE FANS AND OTHER VENTILATION EQUIPMENT WITH OWNER.
D. PROVIDE 1/2" PER FOOT SLOPE CANT AT ROOF PERIMETER, 1'-8" IN TO ROOF FIELD FROM ROOF EDGE (TYP. U.O.N.).
E. RAISE ANTENNAE AND PIPE SKIRTS/COLLARS TO ACCOMMODATE INSULATION THICKNESS. CLEARANCES ABOVE ROOF FIELD TO MATCH EXISTING UNLESS NOTED OTHERWISE.
F. PROVIDE ADDITIONAL WOOD BLOCKING AS REQUIRED TO RAISE EQUIPMENT CURBS AND ROOF HATCH TO 18" MIN. ABOVE ROOF FIELD.
G. PROVIDE COVERBOARD AND MEMBRANE ONLY WITH NO INSULATION FOR AREAS NOTED.
H. PROVIDE OSHA APPROVED SAFETY GUARD RAILS AROUND ENTIRE PERIMETER OF WORK AREA FOR DURATION OF THE WORK.



5 SKYLIGHT CURB SECTION

SCALE: 3" = 1'-0"



6 MECH. EQUIPMENT CURB SECTION

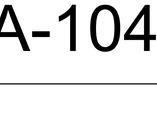
SCALE: 3" = 1'-0"

NORTH

SCALE: 1/8" = 1'-0" (0' 2' 4' 8' 16')

SCALE: 3" = 1'-0" (0' 2' 4' 8')

Key Plan



TRUE NORTH

SCALE: 1" = 100'-0"

No.	Revision	Date
2	ADDENDUM #3	2022-08-09

Project Name

CITY OF ROCKVILLE
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Date
12/23/2021
(ADDENDUM # 3
08/09/2022)

Drawing Title

ROOF RENOVATION PLAN

Drawing No.

A-104

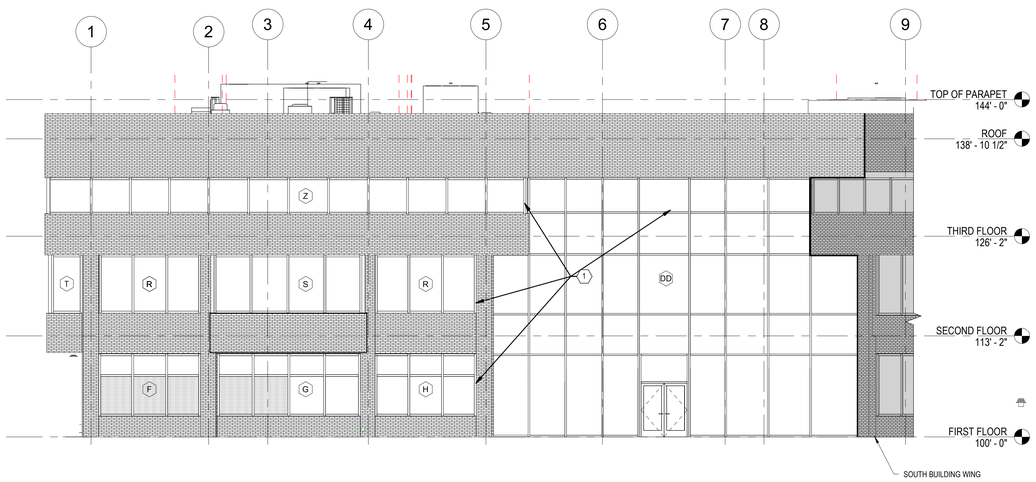
8/9/2022 3:53:20 PM

GLAZING LEGEND

- VISION GLAZING
- TRANSLUCENT GLAZING
- SPANDREL GLAZING

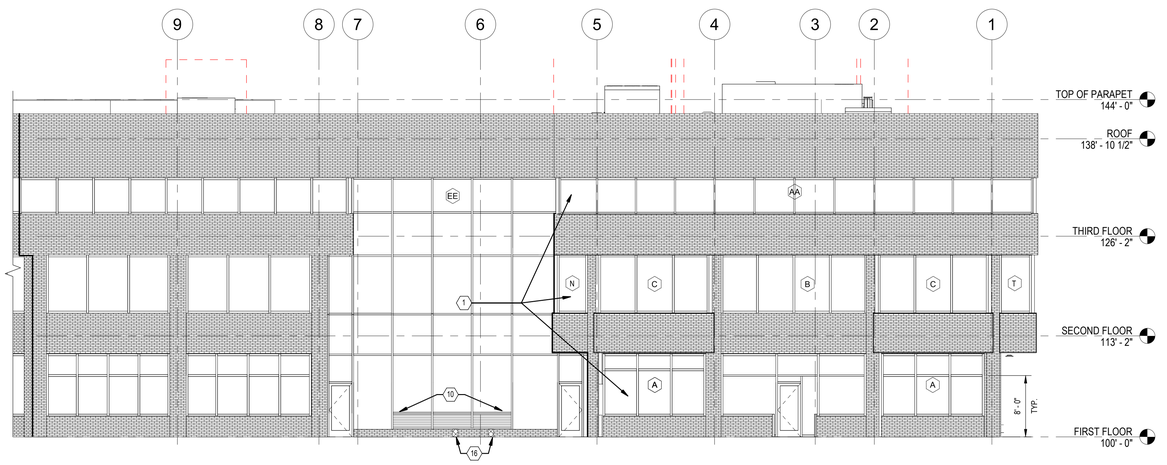
A-201 RENOVATION KEY NOTES

#	
1	ALTERNATE #2: PROVIDE WINDOW SYSTEM
5	REMOVE BRICK VENEER
10	ALTERNATE #4: DURABLE LOUVERS FOR SMOKE EVAC SYSTEM
15	ALTERNATE #5: INFILL WALLS USING BRICK FROM LOBBY SALVAGE
16	PATCHRES AT MASONRY WHERE AREAWAY WALLS WERE REMOVED
17	PATCH & REPAIR AREA WHERE PLANTER WALL REMOVED



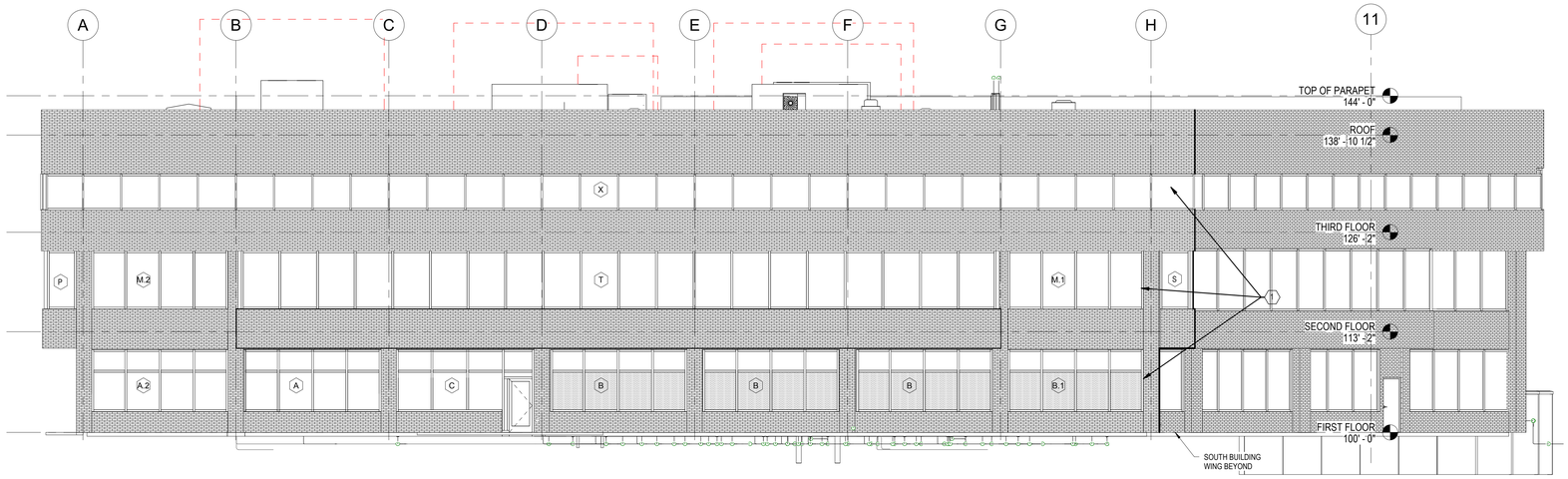
1 A-201 **WEST ELEVATION**

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



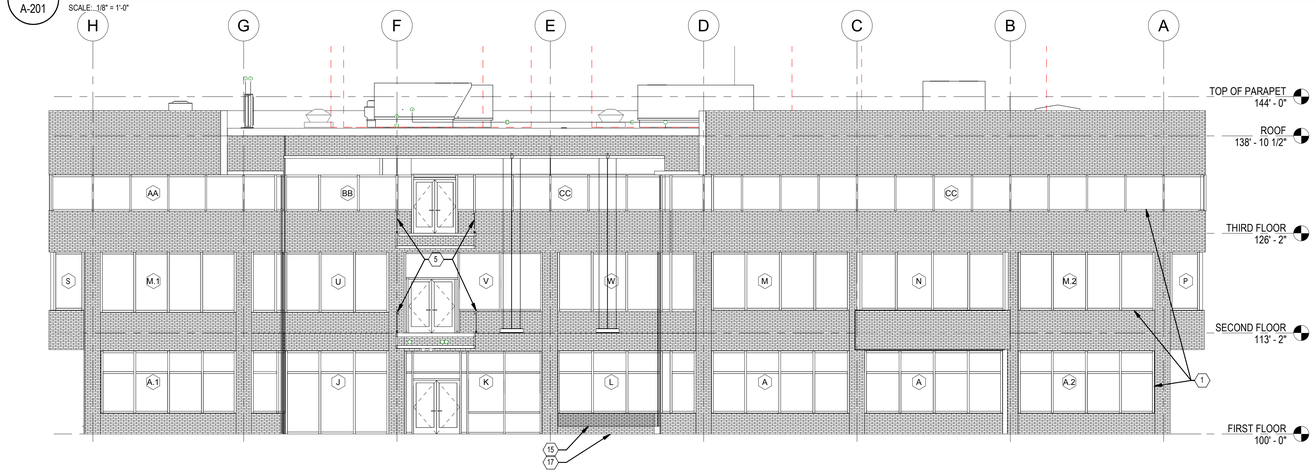
2 A-201 **EAST ELEVATION**

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



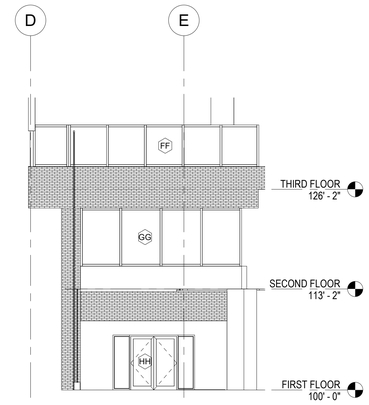
3 A-201 **NORTH ELEVATION**

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



4 A-201 **SOUTH ELEVATION**

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



5 A-201 **NORTH ELEVATION - LOBBY INTERIOR**

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

Key Plan

No.	Revision	Date
2	ADDENDUM #3	2022-08-09

Project Name

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Date
12/23/2021 (PERMIT REVISIONS 04/01/2022)

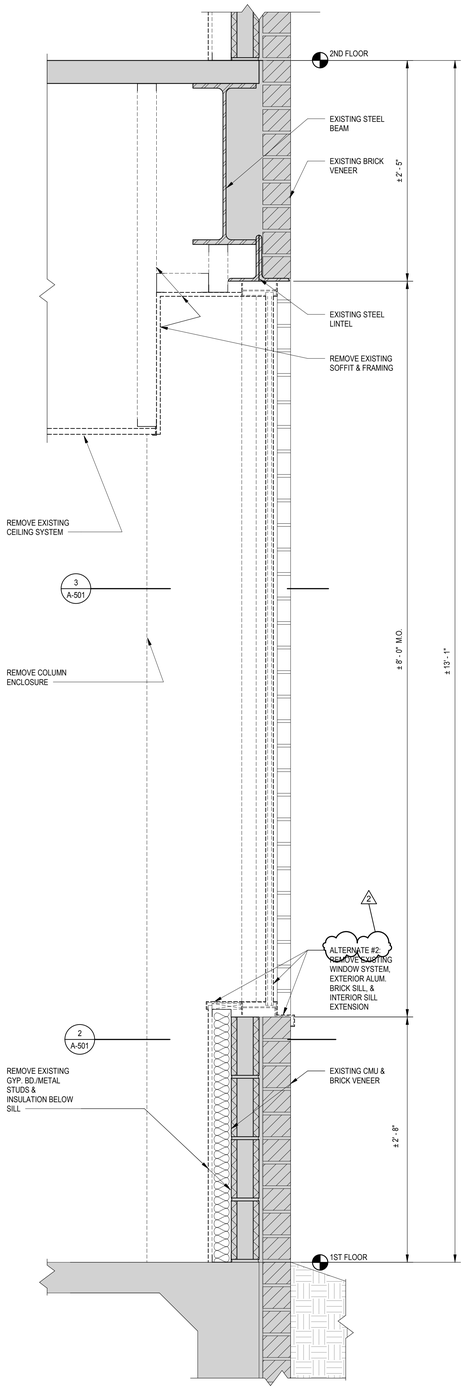
Drawing Title

EXTERIOR ELEVATIONS

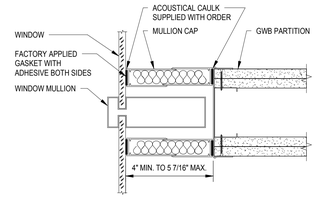
Drawing No.

A-201

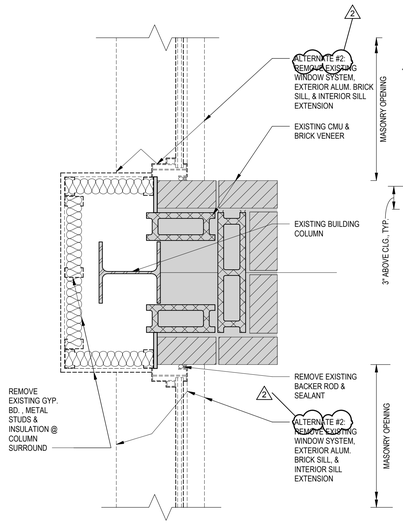
8/9/2022 12:56:17 PM



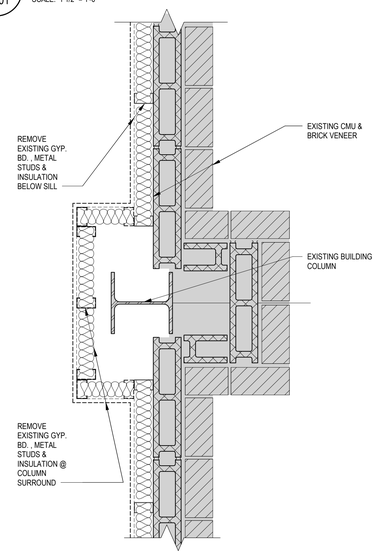
1 A-501 **SECTION DETAIL 1ST FLOOR WINDOW & EXT WALL DEMO**
SCALE: 1 1/2" = 1'-0"



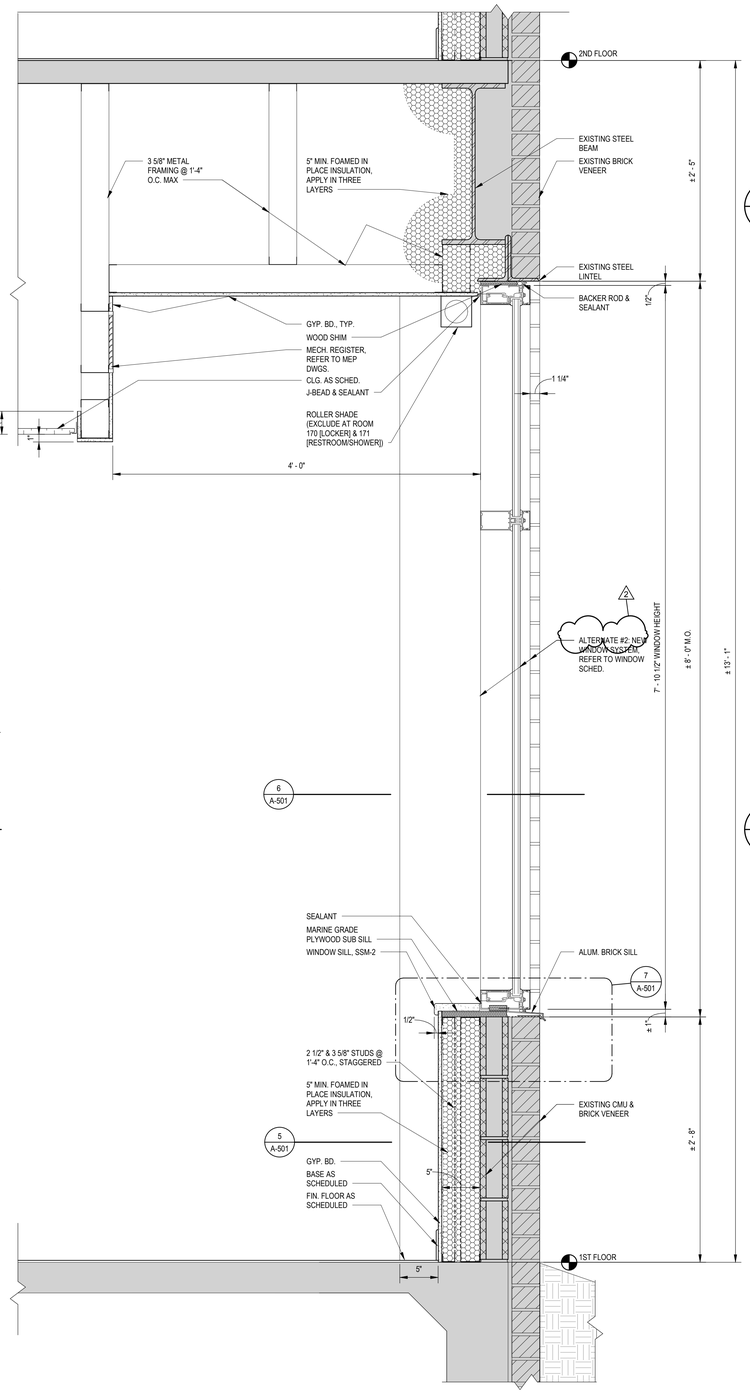
8 A-501 **MULLION CAP DETAIL**
SCALE: 3" = 1'-0"



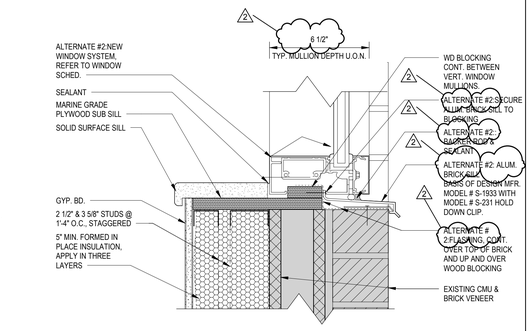
3 A-501 **PLAN DETAIL WINDOW DEMOLITION**
SCALE: 1 1/2" = 1'-0"



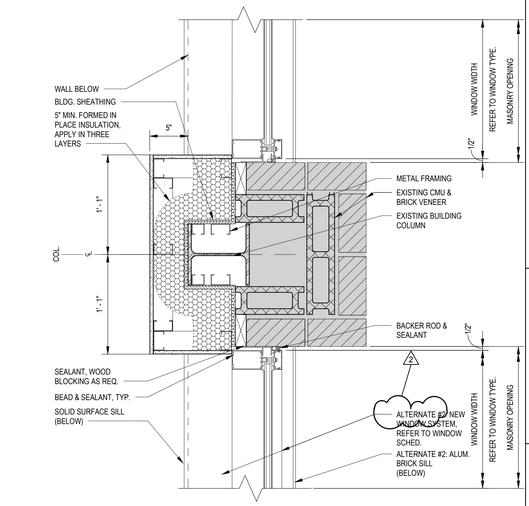
2 A-501 **PLAN DETAIL INTERIOR DEMO @ EXT WALL**
SCALE: 1 1/2" = 1'-0"



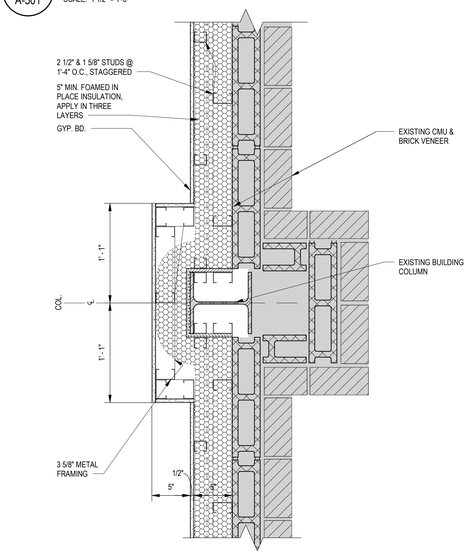
4 A-501 **SECTION DETAIL 1ST FLOOR WINDOW & EXT WALL NEW WORK**
SCALE: 1 1/2" = 1'-0"



7 A-501 **SECTION DETAIL EXT WINDOW SILL**
SCALE: 3" = 1'-0"



6 A-501 **PLAN DETAILS WINDOW & EXTERIOR WALL NEW WORK**
SCALE: 1 1/2" = 1'-0"



5 A-501 **PLAN DETAILS WINDOW & EXTERIOR WALL NEW WORK**
SCALE: 1 1/2" = 1'-0"

Key Plan

No.	Revision	Date
2	ADDENDUM #3	2022-08-09

Project Name
CITY OF ROCKVILLE
6 TAFT COURT RENOVATION
PHASE 1
ROCKVILLE MARYLAND

DELTA
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www.delta-eas.com

Seal

Phase
IFB #08-22

Project No.
2019.331.004

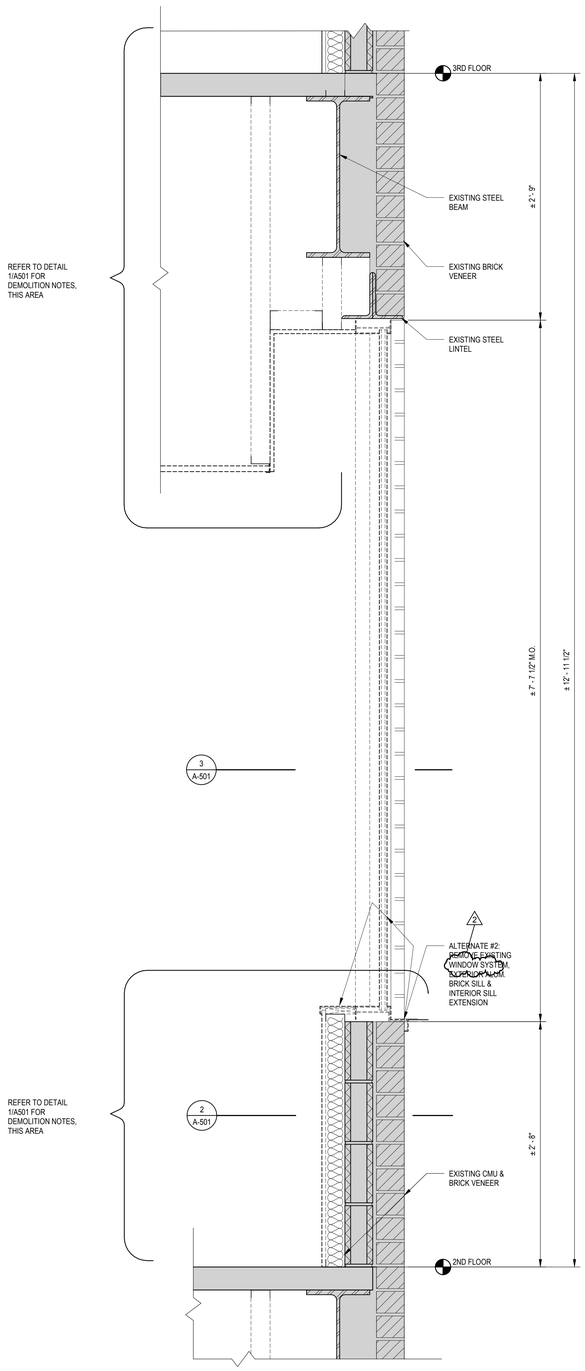
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER: _____ EXPIRATION DATE: _____

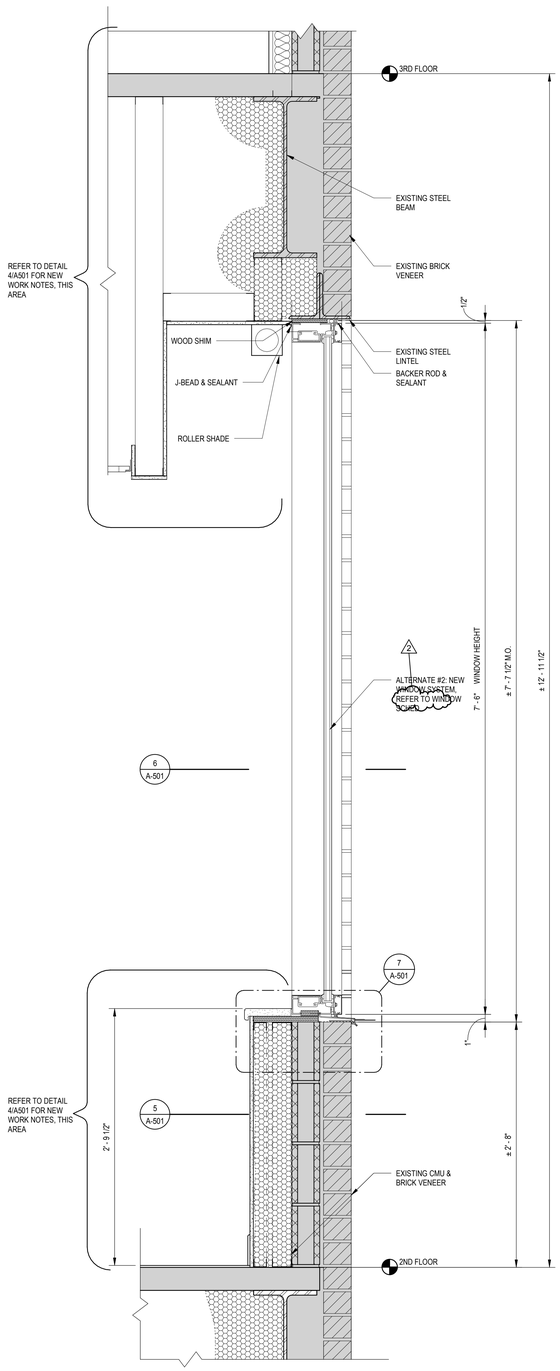
Date
12/23/2021 (PERMIT REVISIONS 04/01/2022)

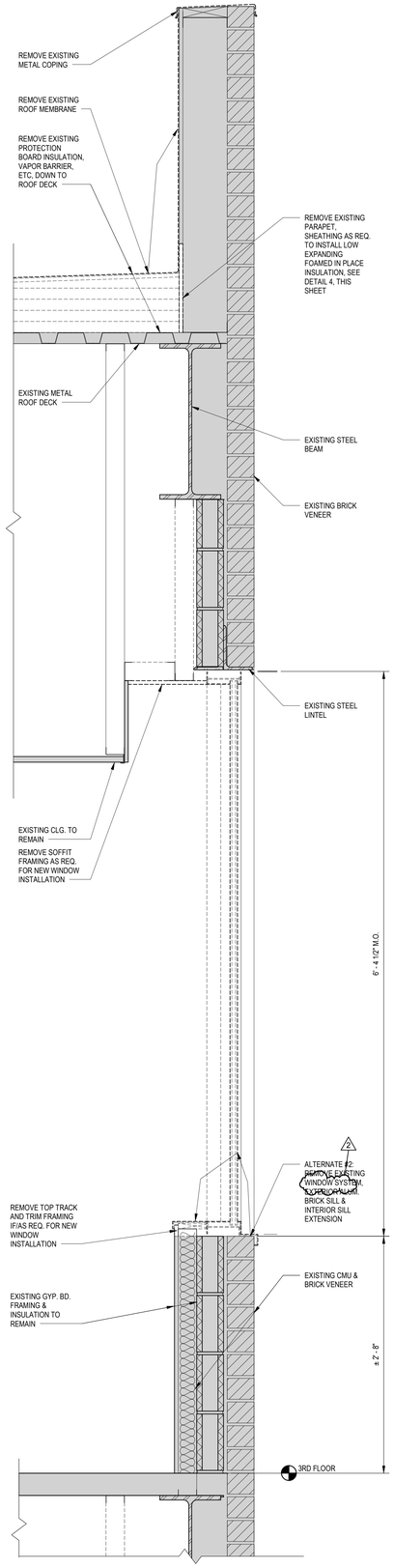
Drawing Title
WINDOW & EXT WALL DETAILS

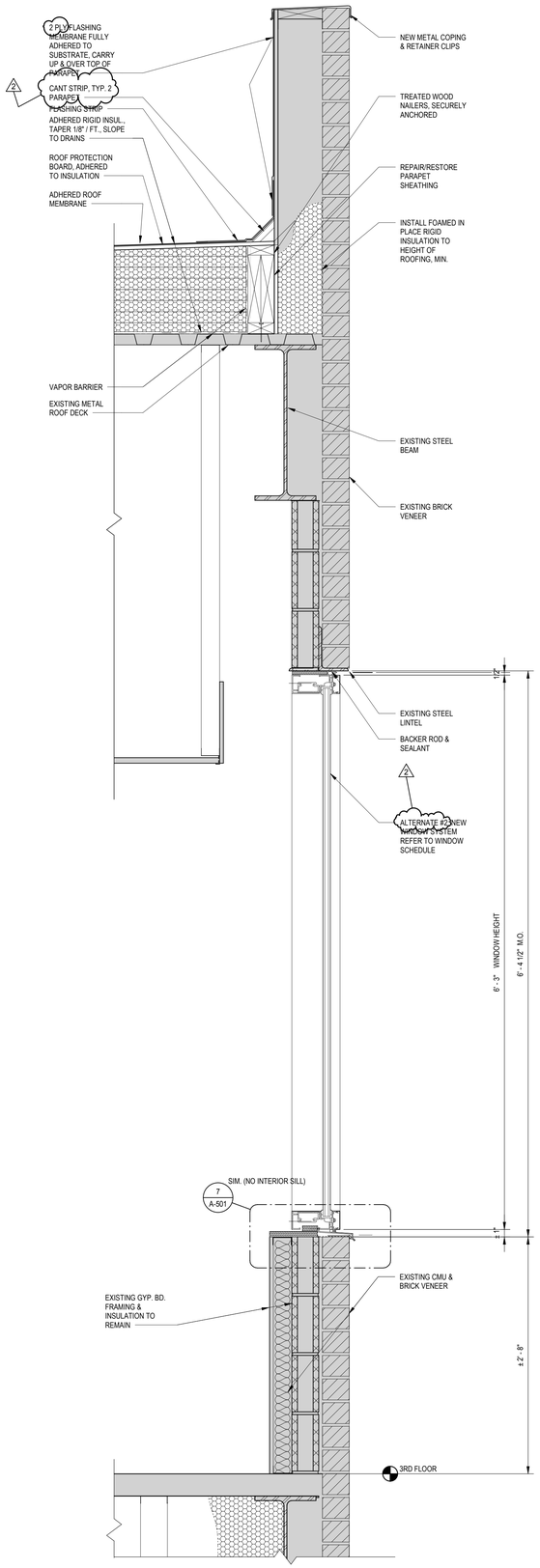
Drawing No.
A-501

8/9/2022 12:57:00 PM









1 A-502 **SECTION DETAIL 2ND FL. WINDOW & EXT WALL DEMO**
SCALE: 1 1/2" = 1'-0"

2 A-502 **SECTION DETAILS WIN. & EXT WALL/ROOF NEW WORK 2ND FL.**
SCALE: 1 1/2" = 1'-0"

3 A-502 **SECTION DETAIL 3RD FL. WINDOW & EXT WALL DEMO**
SCALE: 1 1/2" = 1'-0"

4 A-502 **SECTION DETAILS WIN. & EXT WALL/ROOF NEW WORK 3RD FL.**
SCALE: 1 1/2" = 1'-0"

Key Plan

No.	Revision	Date
2	ADDENDUM #3	2022-08-09
1	Permit Revisions	2022-04-01

Project Name
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Seal

Phase
IFB #08-22

Project No.
2019.331.004

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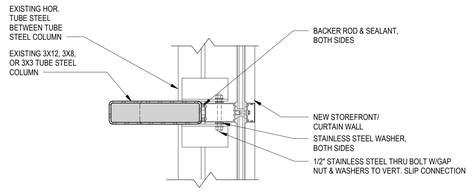
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER ____
EXPIRATION DATE ____

Date
12/23/2021 (PERMIT REVISIONS 04/01/2022)

Drawing Title
WINDOW & EXT WALL SECTIONS

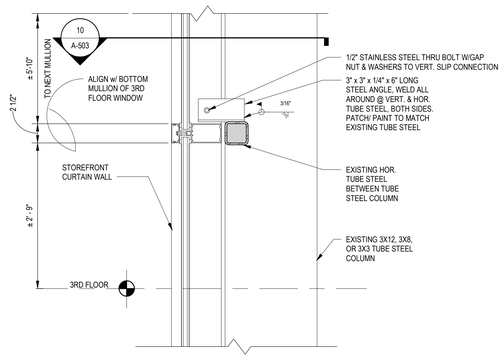
Drawing No.
A-502

8/9/2022 12:57:06 PM

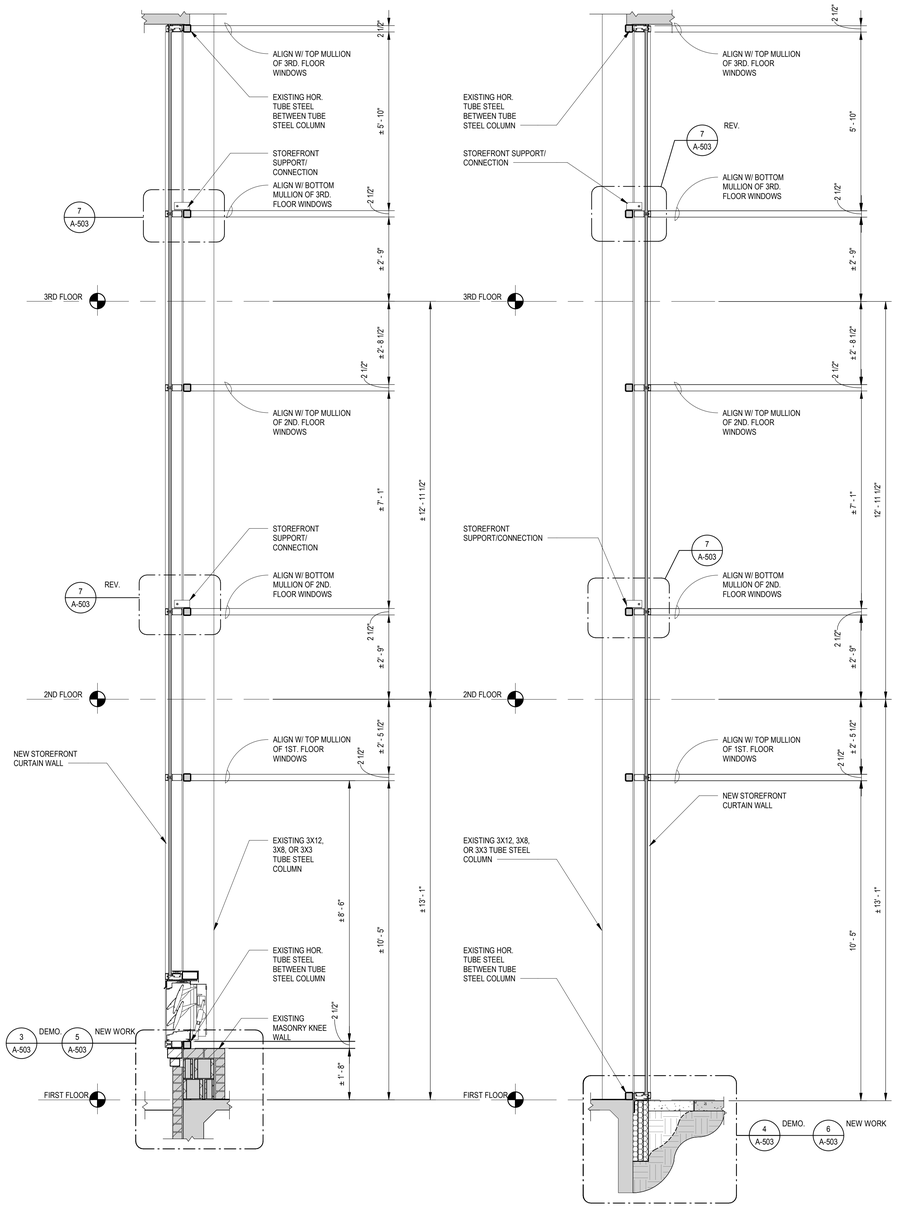


10 / A-503 PLAN DETAIL CONNECTION - 3RD FL. LEVEL

SCALE: 1 1/2" = 1'-0"



SHEET NOTE: ALL OF THE INFORMATION ON THIS SHEET APPLIES TO ALTERNATE#2 (2)



1 / A-503 SECTION AT ATRIUM STOREFRONT-EAST WALL

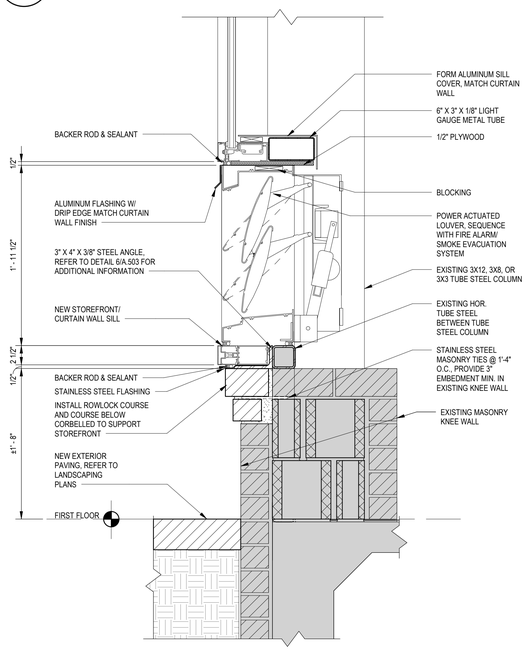
SCALE: 1/2" = 1'-0"

2 / A-503 SECTION AT ATRIUM STOREFRONT-WEST WALL

SCALE: 1/2" = 1'-0"

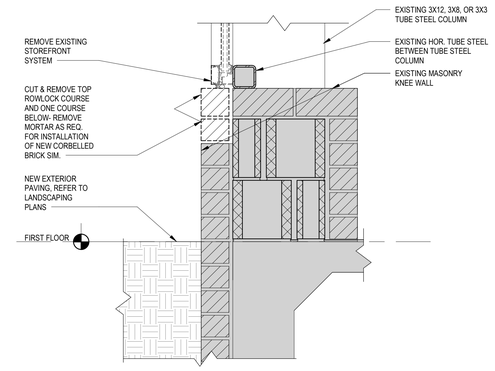
7 / A-503 SECTION DETAIL-ATRIUM STOREFRONT CONNECTION- 3ND FL. LEVEL

SCALE: 1 1/2" = 1'-0"



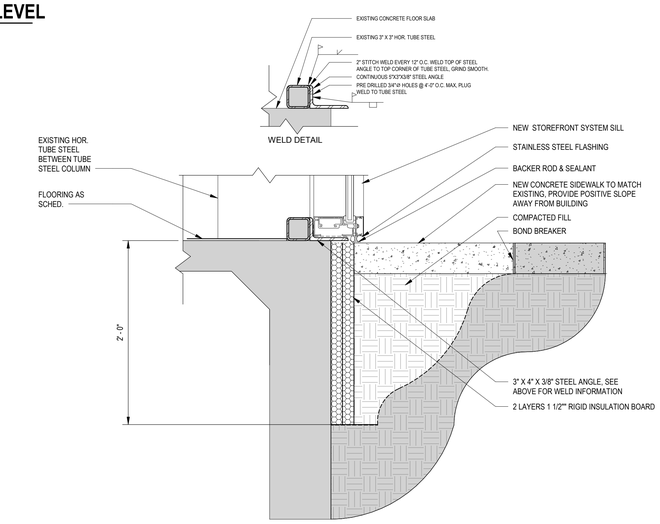
5 / A-503 SECTION DETAIL-ATRIUM STOREFRONT EAST WALL NEW WORK/SILL

SCALE: 1 1/2" = 1'-0"



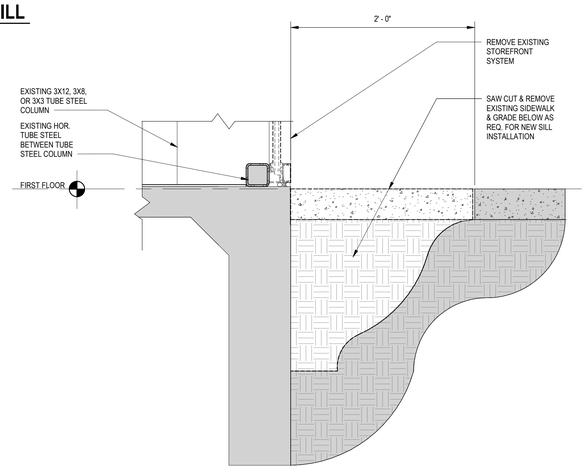
3 / A-503 SECTION DETAIL-ATRIUM STOREFRONT EAST WALL DEMO/SILL

SCALE: 1 1/2" = 1'-0"



6 / A-503 SECTION DETAIL-ATRIUM STOREFRONT WEST WALL NEW WORK/SILL

SCALE: 1 1/2" = 1'-0"



4 / A-503 SECTION DETAIL-ATRIUM STOREFRONT WEST WALL DEMO/SILL

SCALE: 1 1/2" = 1'-0"

Key Plan

No.	Revision	Date
2	ADDENDUM #3	2022-08-09

Project Name

CITY OF ROCKVILLE
6 TAFT COURT RENOVATION
PHASE 1

ROCKVILLE MARYLAND

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Seal

Phase: IFB #08-22

Project No.: 2019.331.004

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER: _____ EXPIRATION DATE: _____

Date: 12/23/2021 (PERMIT REVISIONS 04/01/2022)

Drawing Title

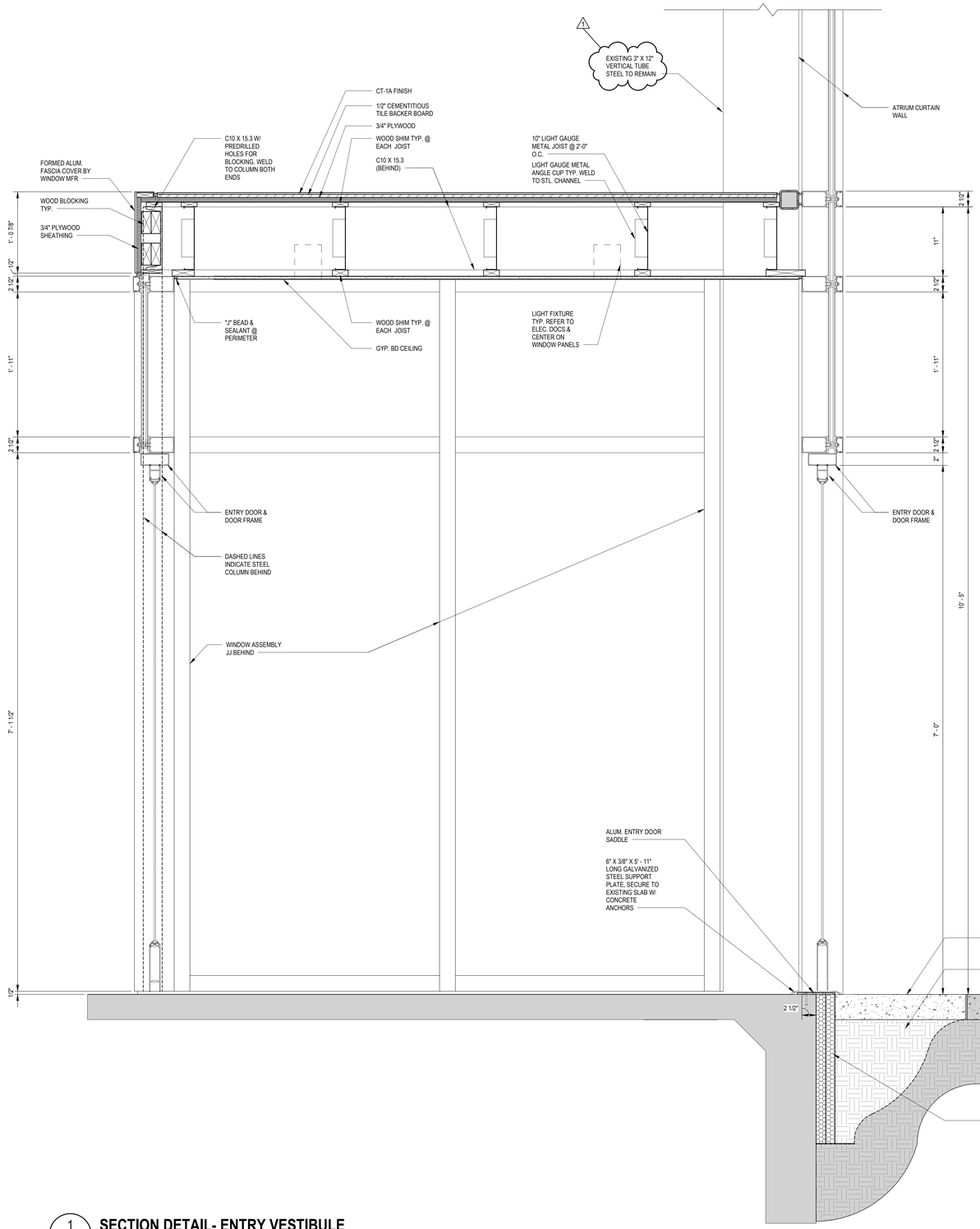
ATRIUM CURTAINWALL DETAILS

Drawing No.

A-503

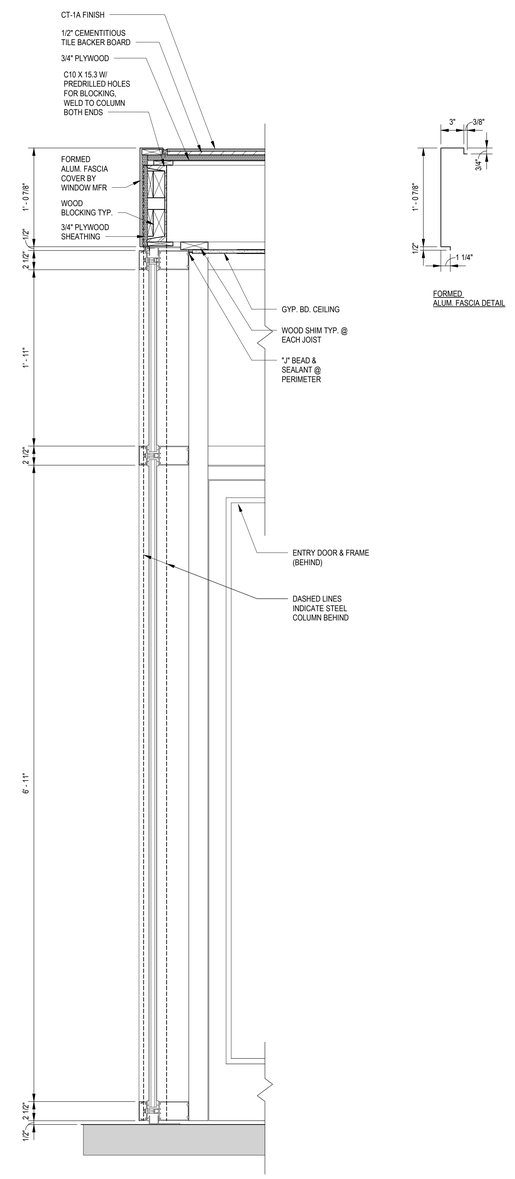
8/9/2022 12:57:12 PM

SHEET NOTE: ALL OF THE INFORMATION ON THIS SHEET APPLIES TO ALTERNATE#2



1 A-504 **SECTION DETAIL- ENTRY VESTIBULE**

SCALE: 1 1/2" = 1'-0"



2 A-504 **SECTION DETAIL- ENTRY VESTIBULE B**

SCALE: 1 1/2" = 1'-0"

Key Plan

No.	Revision	Date
2	ADDENDUM #3	2022-08-09
1	Permit Revisions	2022-04-01

Project Name

CITY OF ROCKVILLE

6 TAFT COURT RENOVATION PHASE 1

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Phase IFB #08-22

Project No. 2019.331.004

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Date 12/23/2021 (PERMIT REVISIONS 04/01/2022)

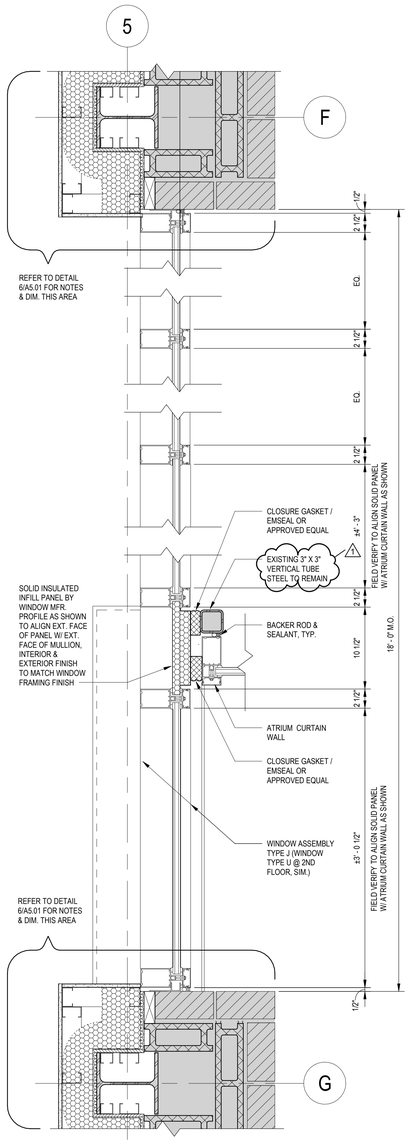
Drawing Title

ENTRY VESTIBULE & ATRIUM SECTION DETAILS

Drawing No.

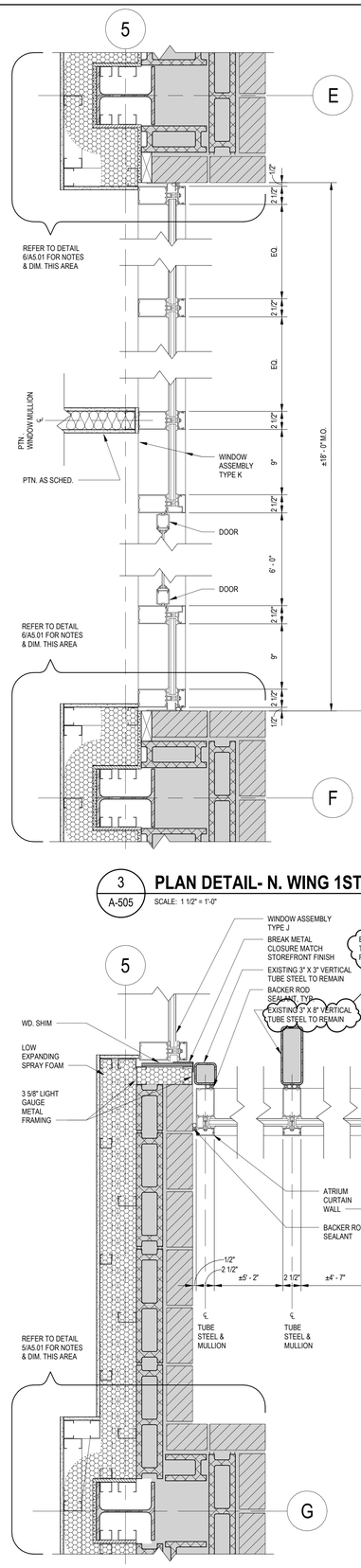
A-504

8/9/2022 12:57:17 PM



1 A-505 **PLAN DETAIL- ENTRY CURTAINWALL @ N. WING WINDOWS**

SCALE: 1 1/2" = 1'-0"

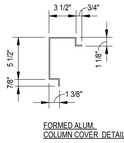


3 A-505 **PLAN DETAIL- N. WING 1ST FLOOR SUITE ENTRY**

SCALE: 1 1/2" = 1'-0"

2 A-505 **PLAN DETAIL- ENTRY VESTIBULE & CURTAIN WALL**

SCALE: 1 1/2" = 1'-0"



FORMED ALUM.
COLUMN COVER DETAIL PLAN

SHEET NOTE: ALL OF THE INFORMATION ON THIS SHEET APPLIES TO ALTERNATE#2

2

Key Plan

No.	Revision	Date
2	ADDENDUM #3	2022-08-09
1	Permit Revisions	2022-04-01

Project Name

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Phase IFB #08-22

Project No. 2019.331.004

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Date 12/23/2021 (PERMIT REVISIONS 04/01/2022)

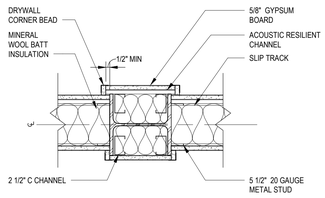
Drawing Title

ENTRY VESTIBULE & ATRIUM PLAN DETAILS

Drawing No.

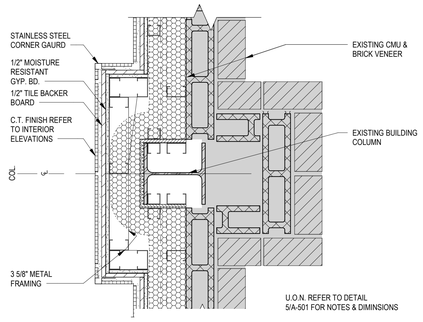
A-505

8/9/2022 12:57:23 PM



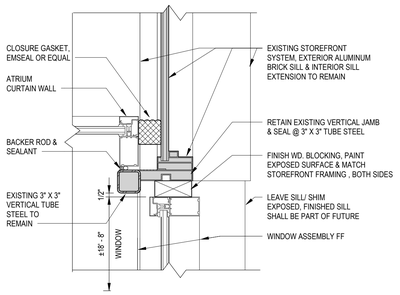
8 / A-506 **PLAN DETAIL- PARTITION WALL @ COLUMN INTERSECTION**

SCALE: 1 1/2" = 1'-0"



7 / A-506 **PLN. DTL REST./ SHOWER & EXTERIOR WALL NEW WORK**

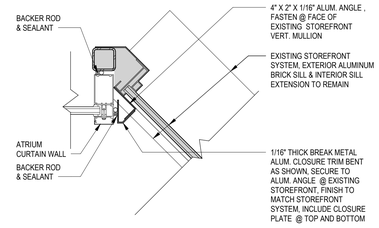
SCALE: 1 1/2" = 1'-0"



5 / A-506 **PLAN DETAIL- PLAZA CURTAINWALL/ WINDOW 3RD FL**

SCALE: 1 1/2" = 1'-0"

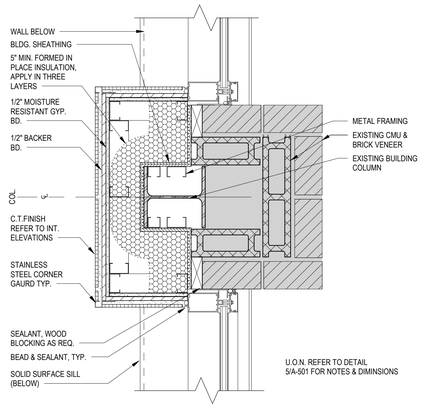
DETAIL NOTE: ALL OF THE INFORMATION ON THIS DETAIL APPLIES TO ALTERNATE#2 (2)



3 / A-506 **PLAN DETAIL-ENTRY CURTAINWALL 3RD FL**

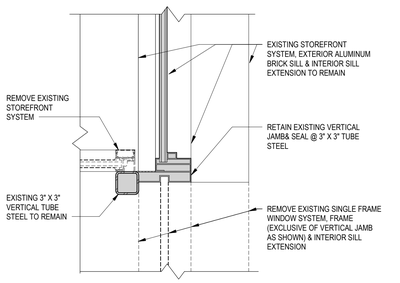
SCALE: 1 1/2" = 1'-0"

DETAIL NOTE: ALL OF THE INFORMATION ON THIS DETAIL APPLIES TO ALTERNATE#2 (2)



6 / A-506 **PLN. DTL. REST./ SHOWER WINDOW & EXTERIOR WALL NEW WORK**

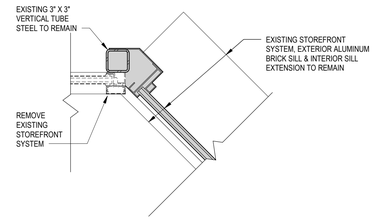
SCALE: 1 1/2" = 1'-0"



4 / A-506 **PLAN DETAIL-PLAZA CURTAINWALL DEMO 3RD FL**

SCALE: 1 1/2" = 1'-0"

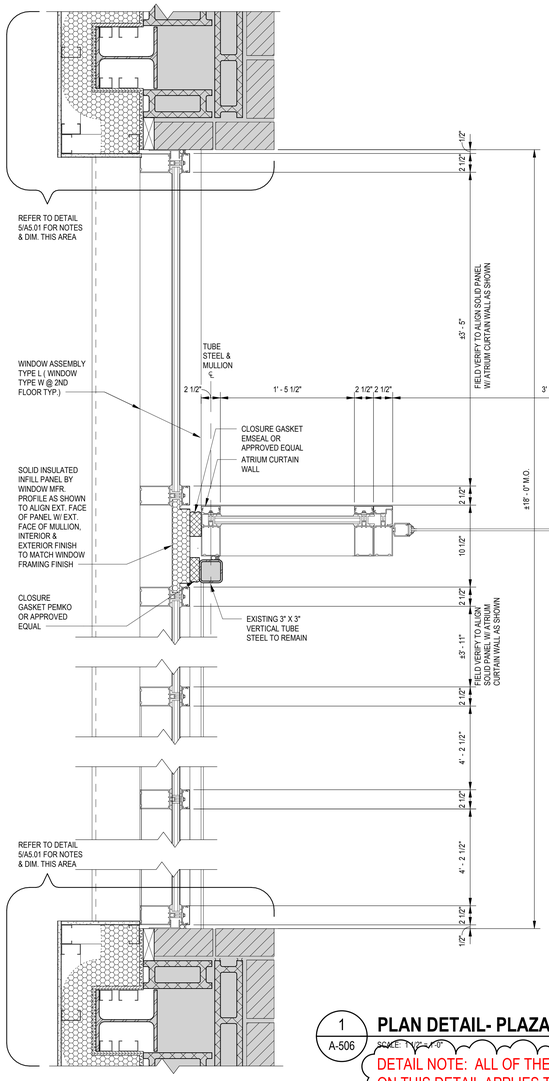
DETAIL NOTE: ALL OF THE INFORMATION ON THIS DETAIL APPLIES TO ALTERNATE#2 (2)



2 / A-506 **PLAN DETAIL- ENTRY CURTAINWALL DEMO 3RD FL**

SCALE: 1 1/2" = 1'-0"

DETAIL NOTE: ALL OF THE INFORMATION ON THIS DETAIL APPLIES TO ALTERNATE#2 (2)



1 / A-506 **PLAN DETAIL- PLAZA CURTAINWALL**

SCALE: 1 1/2" = 1'-0"

DETAIL NOTE: ALL OF THE INFORMATION ON THIS DETAIL APPLIES TO ALTERNATE#2 (2)

Key Plan

No.	Revision	Date
2	ADDENDUM #3	2022-08-09

Project Name

CITY OF ROCKVILLE

6 TAFT COURT RENOVATION PHASE 1

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Phase
IFB #08-22

Project No.
2019.331.004

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Date
12/23/2021 (PERMIT REVISIONS 04/01/2022)

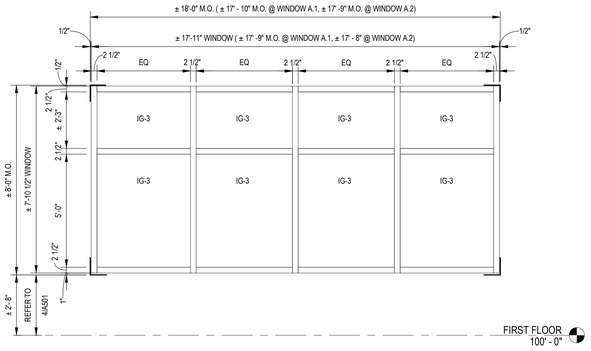
Drawing Title

ATRIUM PLAN DETAILS/ MISC. DETAILS

Drawing No.

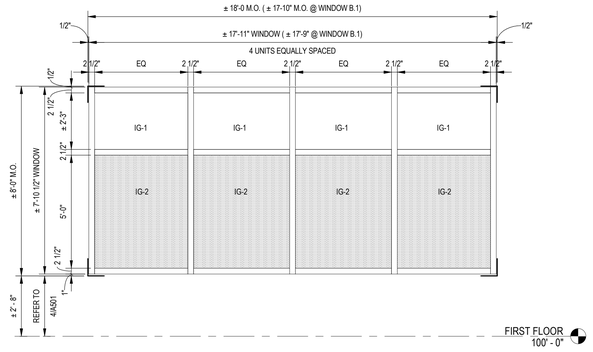
A-506

8/9/2022 12:57:30 PM



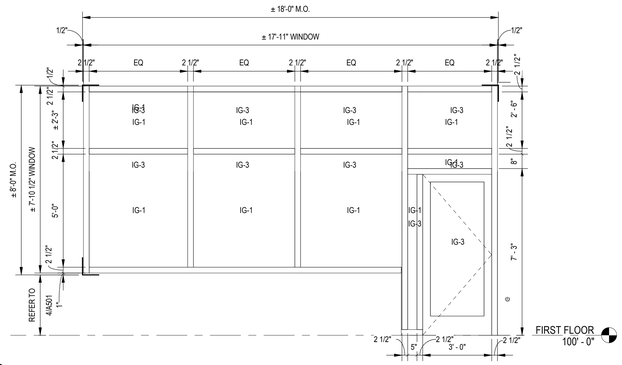
1 A-603 WINDOW A, A.1, A.2

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



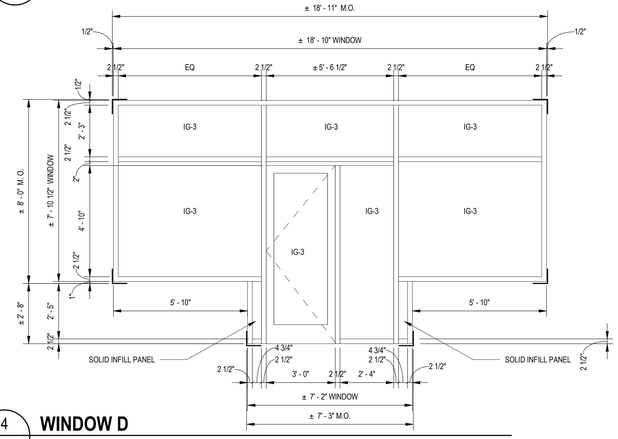
2 A-603 WINDOW B & B.1

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



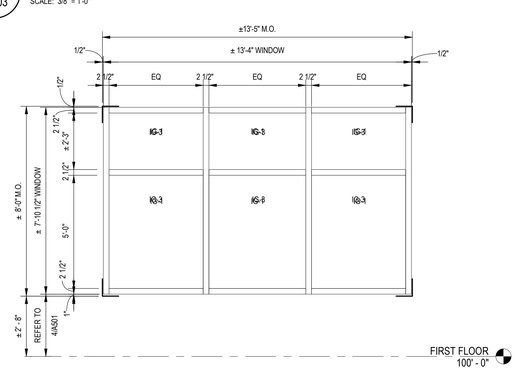
3 A-603 WINDOW C

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



4 A-603 WINDOW D

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



5 A-603 WINDOW E

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

SHEET NOTE: ALL OF THE INFORMATION ON THIS SHEET APPLIES TO ALTERNATE#2

2

GLAZING TYPES

IG-1: INSULATED CLEAR GLASS UNIT (EXTERIOR)
IG-2: INSULATED FROSTED GLASS UNIT(EXTERIOR)
IG-3: INSULATED CLEAR GLASS UNIT FOR USE BELOW 30" AND ADJACENT TO DOORS (EXTERIOR)
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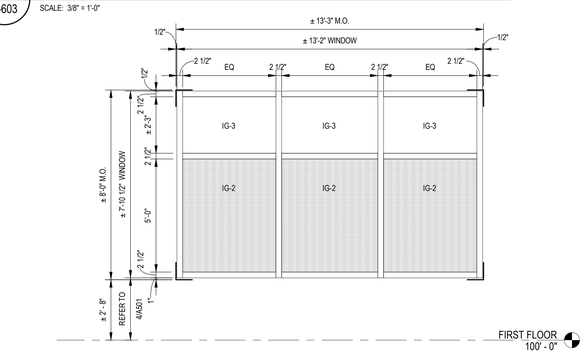
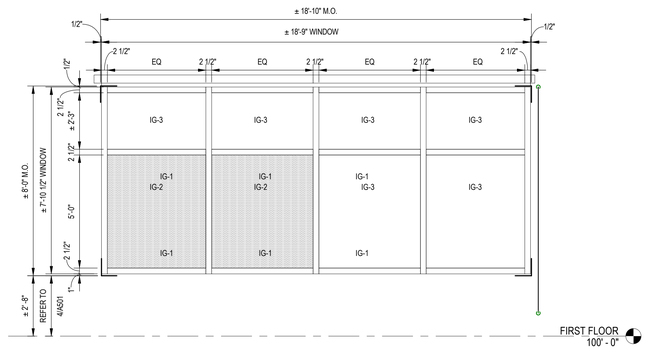
GL-4: LAMINATED GLASS UNIT FOR WOOD DOORS AND INTERIOR TRANSOM WINDOWS(INTERIOR)

REFER TO SPECIFICATION 08800 "GLAZING" FOR ADDITIONAL INFORMATION



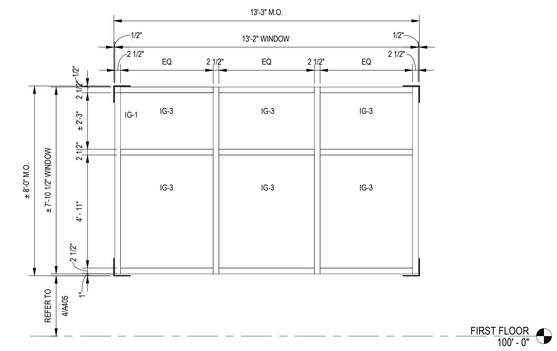
6 A-603 WINDOW F

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



7 A-603 WINDOW G

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



8 A-603 WINDOW H

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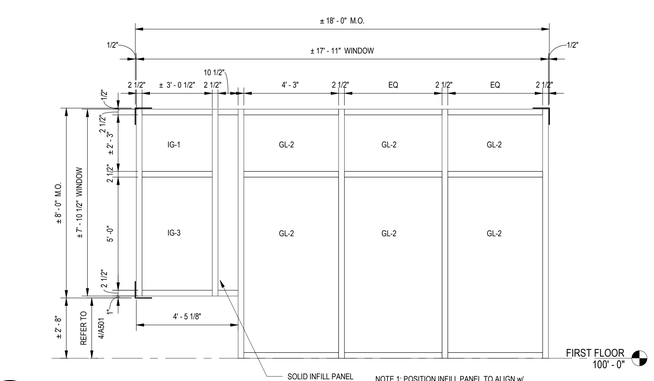
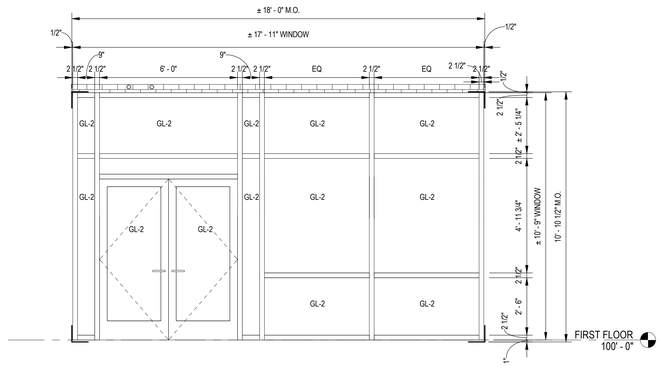


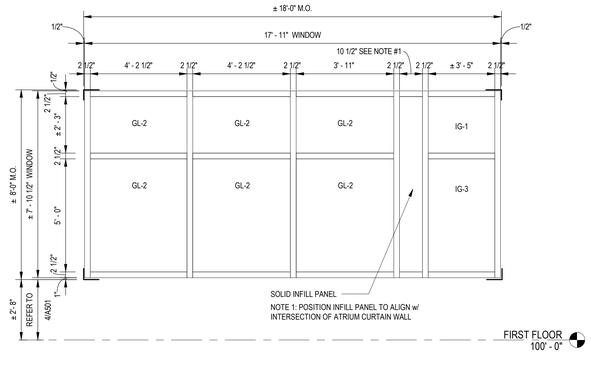
9 A-603 WINDOW J

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



10 A-603 WINDOW K

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



11 A-603 WINDOW L

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

No.	Revision	Date
2	ADDENDUM #3	2022-08-09

Key Plan

Project Name

CITY OF ROCKVILLE
6 TAFT COURT RENOVATION
PHASE 1
ROCKVILLE MARYLAND

DELTA
ENGINEERS, ARCHITECTS, & SURVEYORS
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www.delta-eas.com

Seal

Phase
IFB #08-22

Project No.
2019.331.004

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER: _____ EXPIRATION DATE: _____

Date
12/23/2021 (PERMIT REVISIONS 04/01/2022)

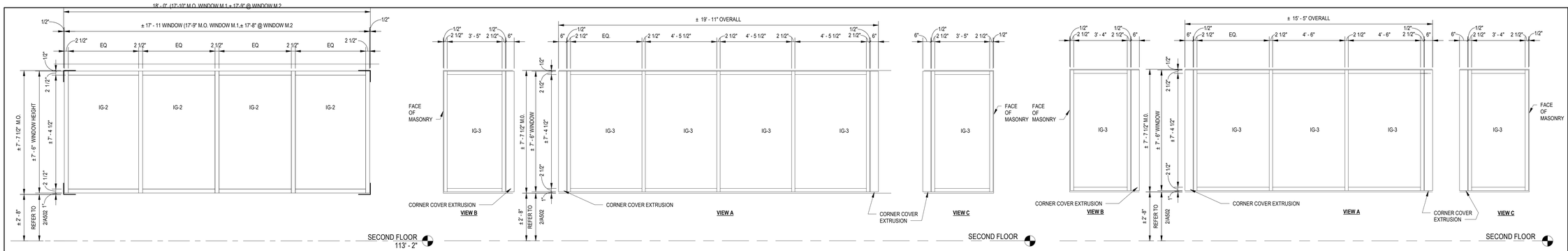
Drawing Title

ALUMINIUM WINDOWS FIRST FLOOR

Drawing No.

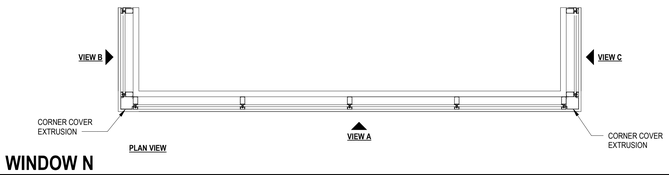
A-603

8/9/2022 12:58:02 PM



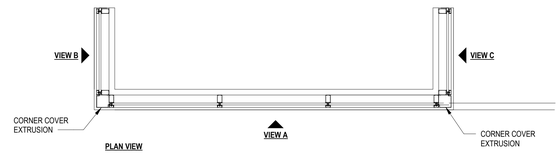
1 WINDOW M, M.1, M.2

A-604 — SCALE: 3/8" = 1'-0"



2 WINDOW N

A-604 — SCALE: 3/8" = 1'-0"



3 WINDOW P

A-604 — SCALE: 3/8" = 1'-0"

5 WINDOW Q

A-604 — SCALE: 3/8" = 1'-0"

4 WINDOW R

A-604 — SCALE: 3/8" = 1'-0"

6 WINDOW S

A-604 — SCALE: 3/8" = 1'-0"

GLAZING TYPES
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REFER TO SPECIFICATION 08800 "GLAZING" FOR ADDITIONAL INFORMATION

SHEET NOTE: ALL OF THE INFORMATION ON THIS SHEET APPLIES TO ALTERNATE#2

2

Key Plan

No.	Revision	Date
2	ADDENDUM #3	2022-08-09

Project Name

CITY OF ROCKVILLE
6 TAFT COURT RENOVATION
PHASE 1
ROCKVILLE MARYLAND

DELTA
ENGINEERS, ARCHITECTS, & SURVEYORS
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www.delta-eas.com

Seal

Phase: IFB #08-22

Project No.: 2019.331.004

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I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER: ____ EXPIRATION DATE: ____

Date: 12/23/2021 (PERMIT REVISIONS 04/01/2022)

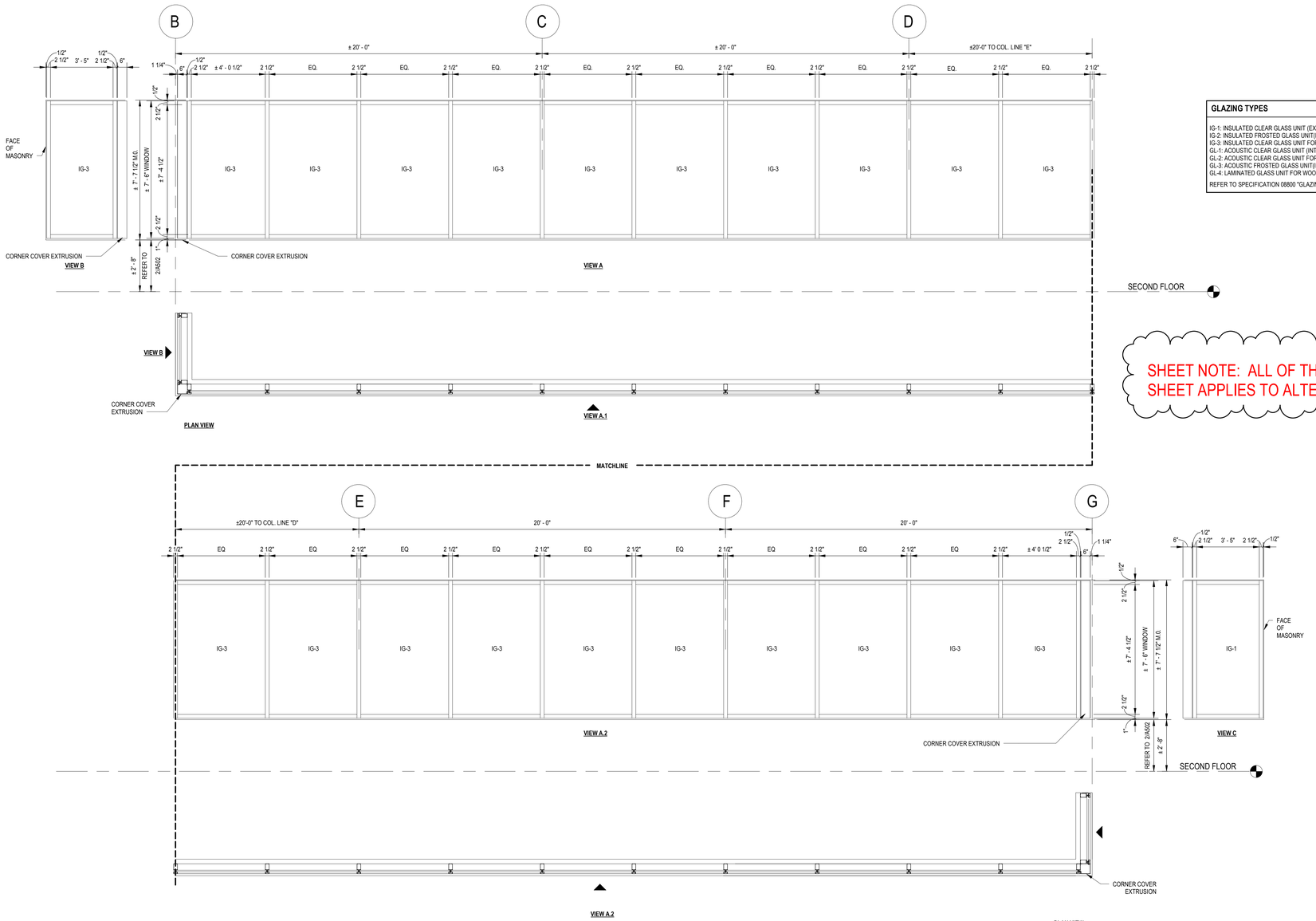
Drawing Title

ALUMINIUM WINDOWS
SECOND FLOOR

Drawing No.

A-604

8/9/2022 12:58:09 PM



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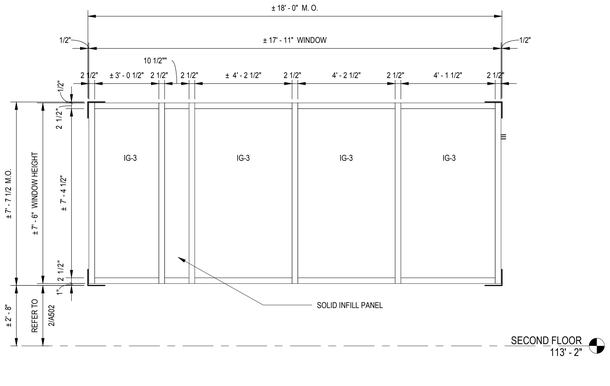
SHEET NOTE: ALL OF THE INFORMATION ON THIS SHEET APPLIES TO ALTERNATE#2

2

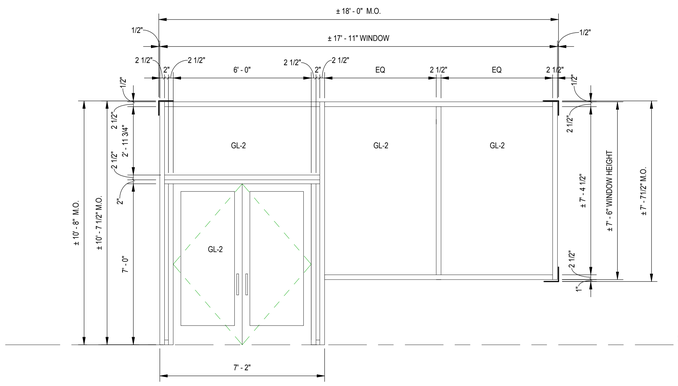
1 A-605 WINDOW T

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



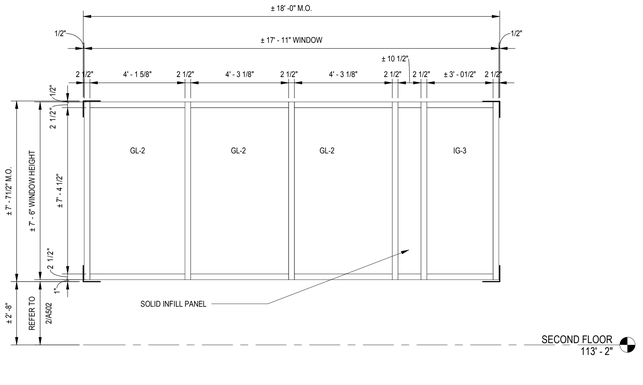
3 A-605 WINDOW U

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



2 A-605 WINDOW V

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



5 A-605 WINDOW W

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

Key Plan

No.	Revision	Date
2	ADDENDUM #3	2022-08-09

Project Name

CITY OF ROCKVILLE

6 TAFT COURT RENOVATION PHASE 1

ROCKVILLE MARYLAND

DELTA ENGINEERS, ARCHITECTS, & SURVEYORS
8401 Connecticut Avenue, Suite 350
Chevy Chase, MD 20815
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Seal

Phase IFB #08-22

Project No. 2019.331.004

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Date 12/23/2021 (PERMIT REVISIONS 04/01/2022)

Drawing Title

ALUMINIUM WINDOWS SECOND FLOOR

Drawing No.

A-605

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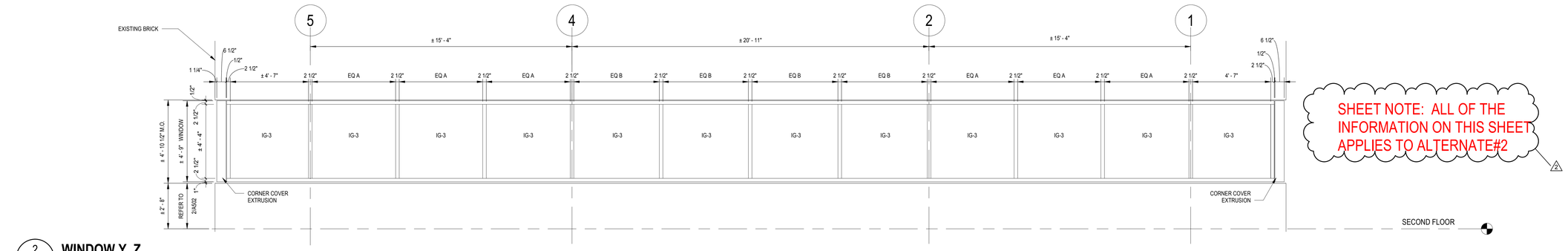
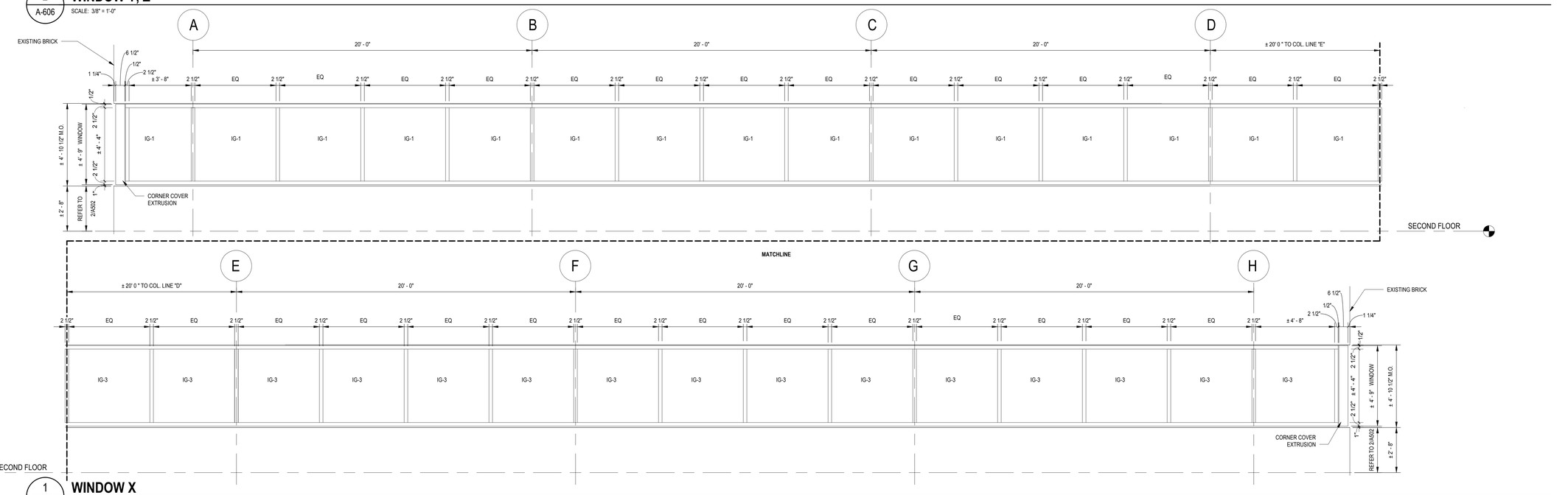


SHEET NOTE: ALL OF THE INFORMATION ON THIS SHEET APPLIES TO ALTERNATE#2 (2)

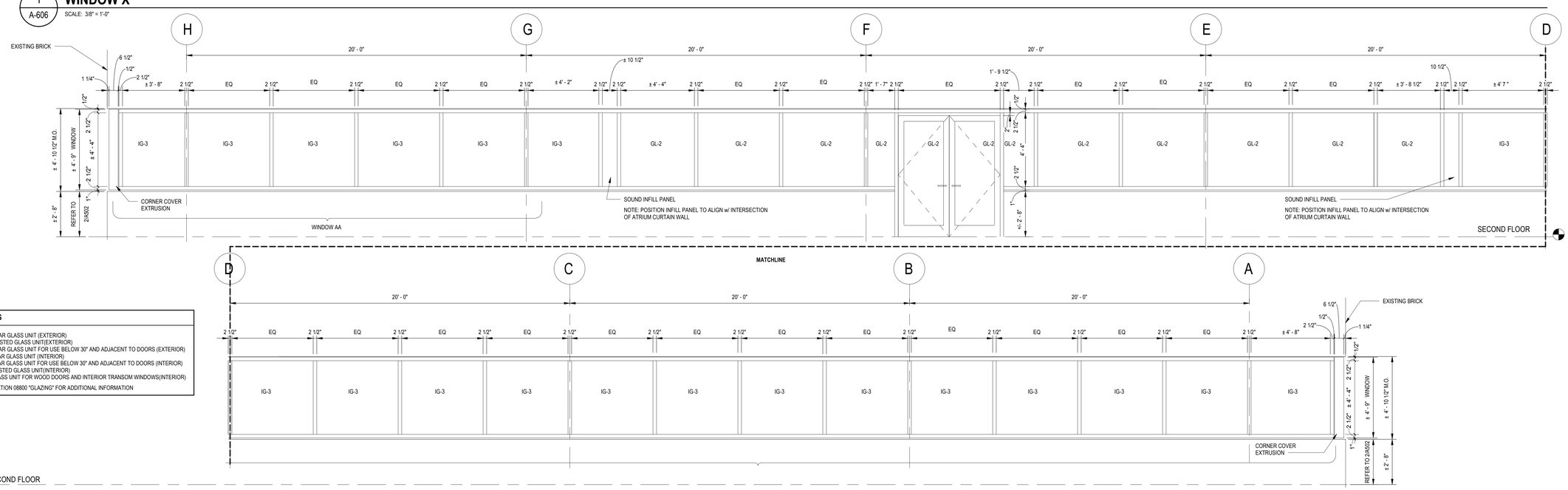
2 A-606 **WINDOW Y, Z**

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



1 A-606 **WINDOW X**

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



GLAZING TYPES

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GL-4: LAMINATED GLASS UNIT FOR WOOD DOORS AND INTERIOR TRANSOM WINDOWS(INTERIOR)

REFER TO SPECIFICATION 08800 "GLAZING" FOR ADDITIONAL INFORMATION

3 A-606 **WINDOW AA,BB CC**

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

WINDOW CC (CONTINUES)

Key Plan

No.	Revision	Date
2	ADDENDUM #3	2022-08-09

Project Name

CITY OF ROCKVILLE
6 TAFT COURT RENOVATION
PHASE 1

ROCKVILLE MARYLAND

DELTA
ENGINEERS, ARCHITECTS, & SURVEYORS
8401 Connecticut Avenue, Suite 350
Chevy Chase, MD 20815
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Fax: 301.718.9520
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Seal

Phase: IFB #08-22

Project No.: 2019.331.004

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Date: 12/23/2021 (PERMIT REVISIONS 04/01/2022)

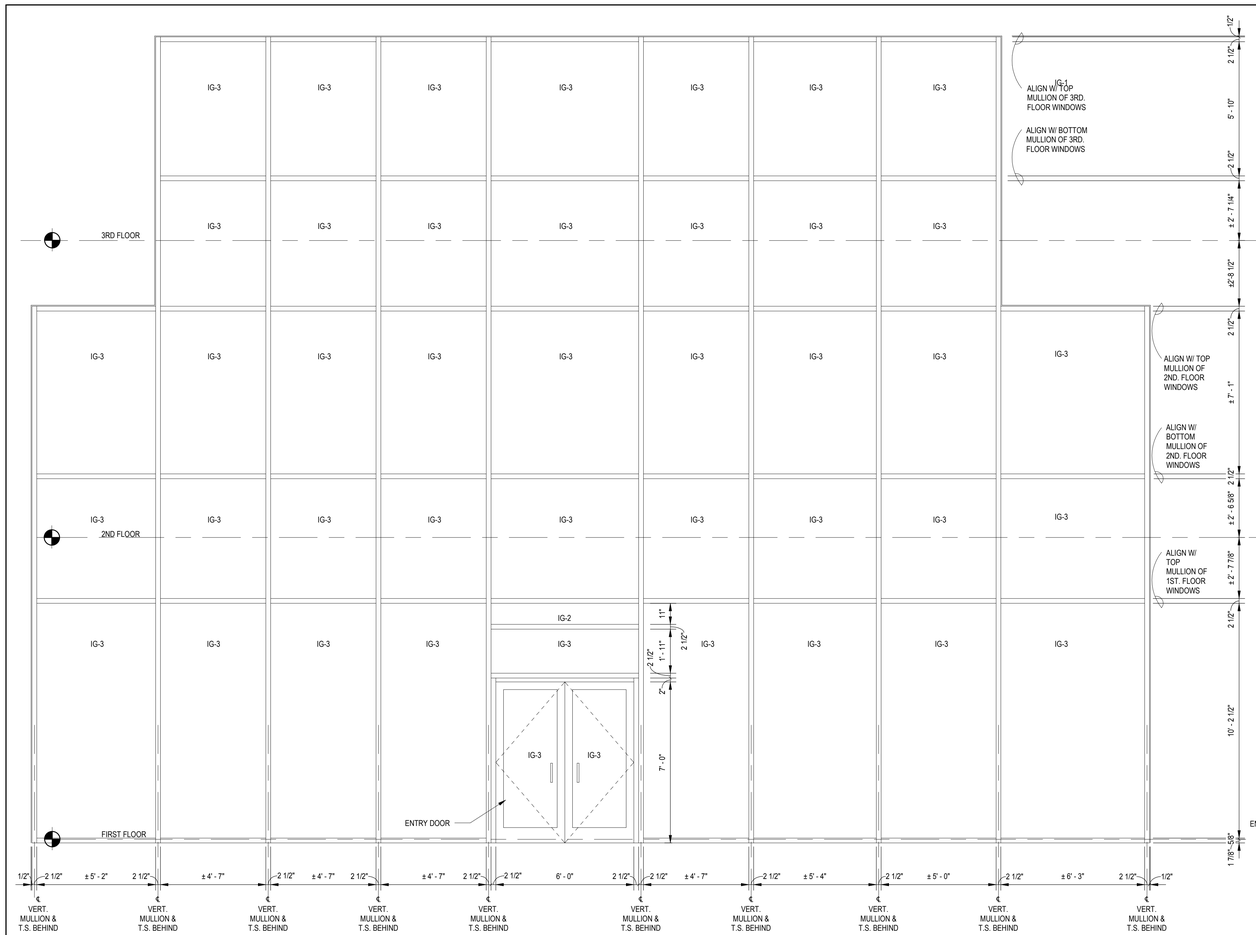
Drawing Title

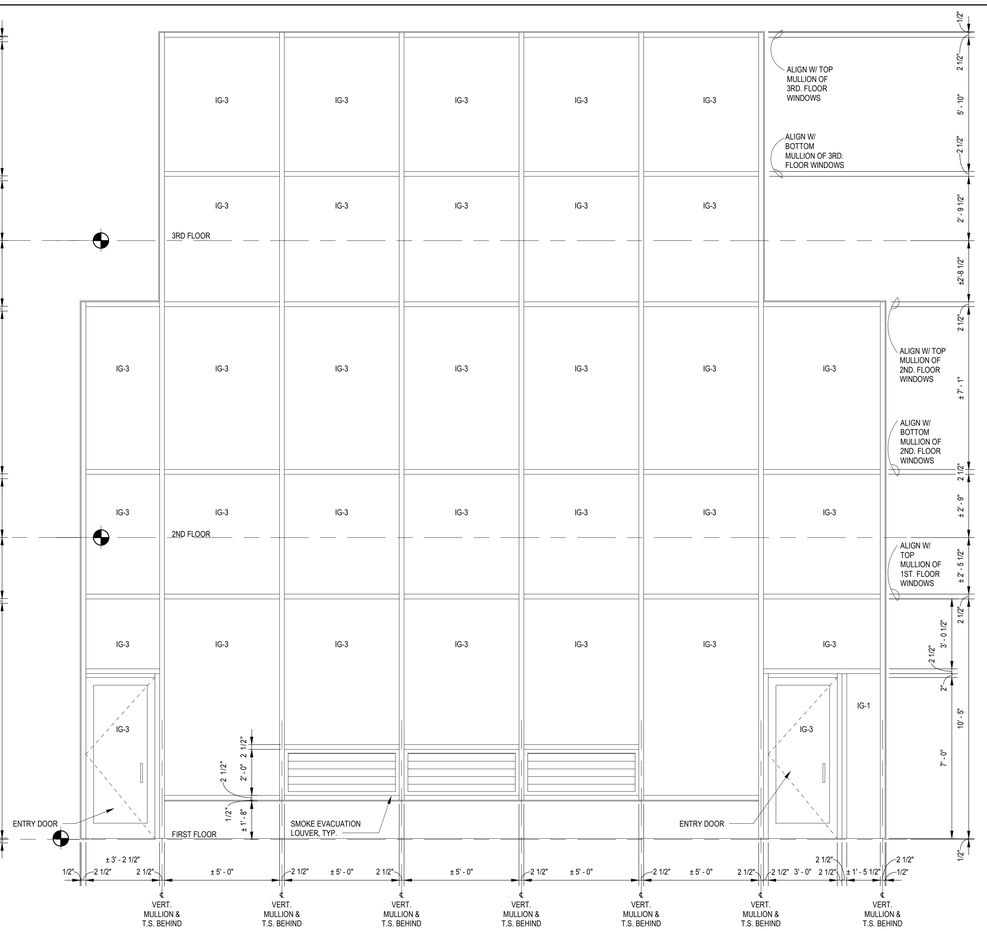
ALUMINIUM WINDOWS THIRD FLOOR

Drawing No.

A-606

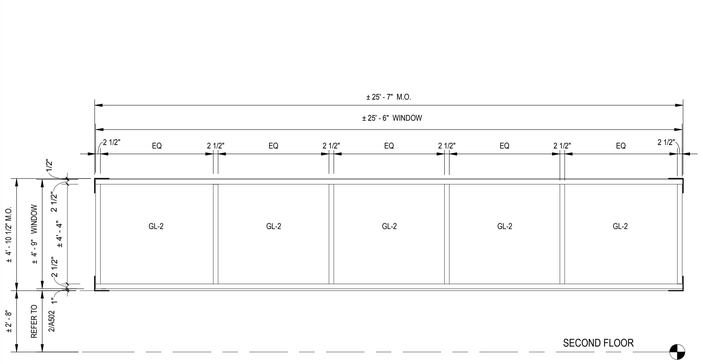
8/9/2022 12:58:20 PM





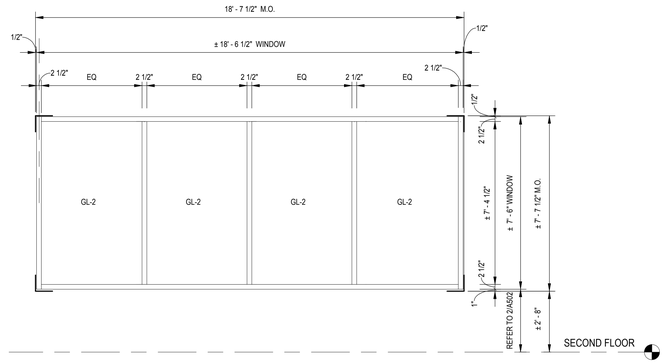
1 WINDOW DD

A-607 SCALE: 3/8" = 1'-0"



2 WINDOW EE

A-607 SCALE: 3/8" = 1'-0"

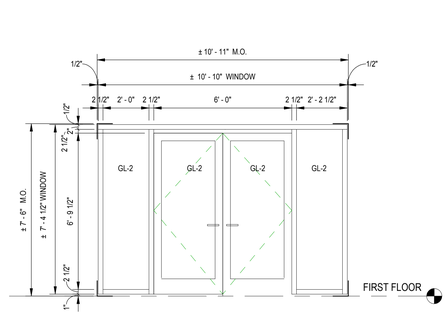


4 WINDOW FF

A-607 SCALE: 3/8" = 1'-0"

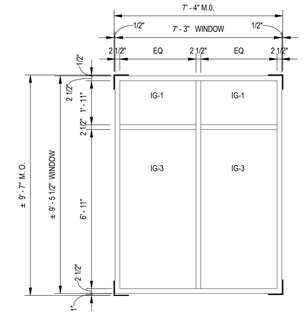
5 WINDOW GG

A-607 SCALE: 3/8" = 1'-0"



6 WINDOW HH

A-607 SCALE: 3/8" = 1'-0"



3 WINDOW JJ

A-607 SCALE: 3/8" = 1'-0"

GLAZING TYPES

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REFER TO SPECIFICATION 08800 "GLAZING" FOR ADDITIONAL INFORMATION

SHEET NOTE: ALL OF THE INFORMATION ON THIS SHEET APPLIES TO ALTERNATE#2

2

Key Plan

No.	Revision	Date
2	ADDENDUM #3	2022-08-09

Project Name

CITY OF ROCKVILLE
6 TAFT COURT RENOVATION
PHASE 1

ROCKVILLE MARYLAND

DELTA
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Seal

Phase
IFB #08-22

Project No.
2019.331.004

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Date
12/23/2021 (PERMIT REVISIONS 04/01/2022)

Drawing Title

ALUMINUM CURTAINWALL WINDOWS ATRIUM

Drawing No.

A-607

8/9/2022 12:58:25 PM

SECTION 012100 - ALLOWANCES (UPDATED FOR ADDENDUM 3)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

B. Types of allowances include the following:

1. Lump-sum allowances.

C. Related Requirements:
1. Section 012600 "Contract Modification Procedures"
2. Section 014000 "Quality Requirements"

1.3 DEFINITIONS

A. Allowance: A quantity of work or dollar amount included in the Contract, established in lieu of additional requirements, used to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

1.4 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection, or purchase and delivery, of each product or system described by an allowance must be completed by the Owner to avoid delaying the Work.

B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Architect from the designated supplier.

1.5 ACTION SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances in the form specified for Change Orders.

1.6 INFORMATIONAL SUBMITTALS

A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.

C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.7 LUMP-SUM ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.

B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.

C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.8 ADJUSTMENT OF ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, required maintenance materials, and similar margins.

1. Include installation costs in purchase amount only where indicated as part of the allowance.
2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other markups.
3. Submit substantiation of a change in scope of Work, if any, claimed in Change Orders related to unit-cost allowances.
4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs due to a change in the scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of Work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. Allowance No. 1: Existing Steel Beam Penetrations: Contractor shall carry an allowance for making penetrations to existing steel beams for the passage of new electrical conduits and small diameter ductwork associated with the work. Following award and selective demolition the Contractor will coordinate with the Architect determine the locations for penetrations and the structural modifications necessary, if any. For the purposes of the bid the contractor shall carry an allowance for up to 15 penetrations in existing steel beam, including cutting the beams in place and providing up to twelve ¼" thick steel stiffener plates fully fillet welded to existing steel beam webs and flanges.

1. This allowance includes material cost receiving, handling, and installation and Contractor overhead and profit.

B. Allowance No. 2: Elevator cab renovation: Contractor shall carry an allowance for the design and construction of renovations to the existing building elevator finishes, to include new interior finish wall panels and rails, ceilings and lights for both building elevator cabs, as well as a new stainless steel finished wall header panel, to match the existing elevator frame finish, and cover the granite finish wall panel above the elevator exterior entries, six locations total.

Allowance: Include the sum of Twenty Five Thousand Dollars and Zero Cents ($25,000.00) total for both elevators.

1. This allowance includes material cost receiving, handling, and installation and Contractor overhead and profit.

C. (Added with Addendum 3) Allowance No. 3: Miscellaneous brick repointing: Contractor shall carry an allowance for the repointing brick if, in the course of the construction, exterior brick that is scheduled to remain is discovered to require mortar repair or replacement.

Allowance: Include the sum of Five Thousand Dollars and Zero Cents ($5,000.00) total for miscellaneous brick repointing.

1. This allowance includes material cost receiving, handling, and installation and Contractor overhead and profit.

END OF SECTION 012100

SECTION 012300 – ALTERNATES (UPDATED FOR ADDENDUM 3)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include, as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation, whether or not indicated as part of alternate.

B. Execute accepted alternates under the same conditions as other Work of the Contract.

C. Schedule: A Part 3 "Schedule of Alternates" Article is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No. 1: Emergency generator purchase and installation.

1. Base Bid: Provide the infrastructure necessary for the installation of the new emergency generator shown in the documents, including but not limited to upgrades to the main electrical room, ATS switches, through wall/under slab and exterior conduits, shut off valves and switches and exterior conduits, site improvements, the exterior generator enclosure and concrete pad. Include coordination with the City of Rockville for the installation of the emergency generator by others. The purchase of the generator, its delivery to the site, installation, testing and commissioning are not included in the base bid.
2. Alternate No. 1: Include the purchase of the generator, its delivery to the site, installation, testing and commissioning.

B. Alternate No. 2 (Added with Addendum 1): Exterior window replacement

1. Base Bid: Retain existing exterior windows and entrances in the north wing and atrium
2. Alternate No. 2: Replace existing exterior windows and entrances in the north wing and atrium, including the installation of new mechanical louvers in support of the existing smoke evacuation system in the atrium.

C. Alternate No. 3.1: Landscape Drawings Package

1. Base Bid: Exclude the work associated with the Landscape Improvements Construction Documents for 6 Taft Court.

2. Landscape Drawings Package: Include the work associated with the Landscape Improvements Construction Documents for 6 Taft Court, exclusive of the new deck shown on sheet L-502,and identified as ALT 1 in those documents.

D. Alternate No. 3.2: Landscape Drawings Package, ALT 1, New Deck

1. Base Bid: Provide the work associated with the Landscape Improvements Construction Documents for 6 Taft Court, exclusive of the new deck shown on sheet L-502.
2. Landscape Drawings Package Alternate No. 1: Include the new deck as shown on Landscape Improvements Construction Documents for 6 Taft Court sheet L-502. Note that this alternate will only be included if Alternate No. 3.1 is accepted.

END OF SECTION 012300

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION (UPDATED FOR ADDENDUM 3)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project, including, but not limited to, the following:

1. General coordination procedures.
2. Coordination drawings.
3. RFIs.
4. Digital project management procedures.
5. Web-based Project management software package.
6. Project meetings.

B. Related Requirements:

1. Section 013200 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
2. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
3. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.
4. Section 019113 "General Commissioning Requirements" for coordinating the Work with Owner's Commissioning Authority.

1.3 DEFINITIONS

A. BIM: Building Information Modeling.

B. RFI: Request for Information. Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses, cellular telephone numbers, and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office, in web-based Project software directory, and in prominent location in built facility. Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results, where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

1.6 COORDINATION DRAWINGS

A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:

a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
b. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
c. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
d. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
e. Indicate required installation sequences.
f. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Drawing Organization: Organize coordination drawings as follows:

1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within plenums to accommodate layout of light fixtures and other components indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
3. Mechanical Rooms: Provide coordination drawings for mechanical rooms, showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
6. Mechanical and Plumbing Work: Show the following:

    a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
    b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
    c. Fire-rated enclosures around ductwork.

7. Electrical Work: Show the following:

    a. Runs of vertical and horizontal conduit 1-1/4 inches (32 mm) in diameter and larger.
    b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
    c. Panel board, switchboard, switchgear, transformer, busway, generator, and motor-control center locations.
    d. Location of pull boxes and junction boxes, dimensioned from column center lines.

8. Fire-Protection System: Show the following:

    a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.

9. Review: Architect will review coordination drawings to confirm that, in general, the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Architect determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Architect will so inform Contractor, who shall make suitable modifications and resubmit.
10. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Section 013300 "Submittal Procedures."
11. BIM File Incorporation: Develop and incorporate coordination drawing files into BIM established for Project.

    a. Perform three-dimensional component conflict analysis as part of preparation of coordination drawings. Resolve component conflicts prior to submittal. Indicate where conflict resolution requires modification of design requirements by Architect.

12. Architect will furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files.

    a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
    b. Digital Data Software Program: Drawings are available in Autodesk Revit 2021.
    c. Contractor shall execute a data licensing agreement in the form of AIA Document C106.

1.7 REQUEST FOR INFORMATION (RFI)

A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
2. Coordinate and submit RFIs in a prompt manner to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Owner name.
3. Owner's Project number.
4. Name of Architect.
5. Architect's Project number.
6. Date.
7. Name of Contractor.

8. RFI number, numbered sequentially.
9. RFI subject.
10. Specification Section number and title and related paragraphs, as appropriate.
11. Drawing number and detail references, as appropriate.
12. Field dimensions and conditions, as appropriate.
13. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
14. Contractor's signature.
15. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms: AIA Document G716.

1. Attachments shall be electronic files in PDF format.

D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow 7 for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.

1. The following Contractor-generated RFIs will be returned without action:

    a. Requests for approval of submittals.
    b. Requests for approval of substitutions.
    c. Requests for approval of Contractor's means and methods.
    d. Requests for coordination information already indicated in the Contract Documents.
    e. Requests for adjustments in the Contract Time or the Contract Sum.
    f. Requests for interpretation of Architect's actions on submittals.
    g. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."

    a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 5 days of receipt of the RFI response.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:

1. Project name.
2. Name and address of Contractor.
3. Name and address of Architect.

4. RFI number, including RFIs that were returned without action or withdrawn.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.
8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within 3 days if Contractor disagrees with response.

1.8 DIGITAL PROJECT MANAGEMENT PROCEDURES

A. Web-Based Project Management Software Package: The contractor ~~may~~ shall (language revised per Addendum 3) provide, administer, and use web-based Project management software package for purposes of hosting and managing Project communication and documentation until Final Completion.

1. Web-based Project management software includes, at a minimum, the following features:

   a. Compilation of Project data, including Contractor, subcontractors, Architect, Architect's consultants, Owner, and other entities involved in Project. Include names of individuals and contact information.
   b. Access control for each entity for each workflow process, to determine entity's digital rights to create, modify, view, and print documents.
   c. Document workflow planning, allowing customization of workflow between project entities.
   d. Creation, logging, tracking, and notification for Project communications required in other Specification Sections, including, but not limited to, RFIs, submittals, Minor Changes in the Work, Construction Change Directives, and Change Orders.
   e. Track status of each Project communication in real time, and log time and date when responses are provided.
   f. Procedures for handling PDFs or similar file formats, allowing markups by each entity. Provide security features to lock markups against changes once submitted.
   g. Processing and tracking of payment applications.
   h. Processing and tracking of contract modifications.
   i. Creating and distributing meeting minutes.
   j. Document management for Drawings, Specifications, and coordination drawings, including revision control.
   k. Management of construction progress photographs.
   l. Mobile device compatibility, including smartphones and tablets.

2. Provide up to seven Project management software user licenses for use of Owner, Architect, and Architect's consultants. Provide eight hours of software training at Architect's office for web-based Project software users.
3. At completion of Project, provide digital archive in format that is readable by common desktop software applications in format acceptable to Architect. Provide data in locked format to prevent further changes.

B. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:

1. Assemble complete submittal package into a single indexed file, incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.9 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of 7 days prior to meeting.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within 3 days of the meeting.

B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:

a. Responsibilities and personnel assignments.
b. Tentative construction schedule.
c. Phasing.
d. Critical work sequencing and long lead items.
e. Designation of key personnel and their duties.
f. Lines of communications.
g. Use of web-based Project software.
h. Procedures for processing field decisions and Change Orders.
i. Procedures for RFIs.
j. Procedures for testing and inspecting.
k. Procedures for processing Applications for Payment.
l. Distribution of the Contract Documents.
m. Submittal procedures.
n. Preparation of Record Documents.
o. Use of the premises and existing building.
p. Work restrictions.
q. Working hours.

r. Owner's occupancy requirements.
s. Responsibility for temporary facilities and controls.
t. Procedures for moisture and mold control.
u. Procedures for disruptions and shutdowns.
v. Construction waste management and recycling.
w. Parking availability.
x. Office, work, and storage areas.
y. Equipment deliveries and priorities.
z. First aid.
aa. Security.
bb. Progress cleaning.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other Sections and when required for coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

a. Contract Documents.
b. Options.
c. Related RFIs.
d. Related Change Orders.
e. Purchases.
f. Deliveries.
g. Submittals.
h. Review of mockups.
i. Possible conflicts.
j. Compatibility requirements.
k. Time schedules.
l. Weather limitations.
m. Manufacturer's written instructions.
n. Warranty requirements.
o. Compatibility of materials.
p. Acceptability of substrates.
q. Temporary facilities and controls.
r. Space and access limitations.
s. Regulations of authorities having jurisdiction.
t. Testing and inspecting requirements.
u. Installation procedures.
v. Coordination with other work.
w. Required performance results.
x. Protection of adjacent work.
y. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than 90 days prior to the scheduled date of Substantial Completion.

1. Conduct the conference to review requirements and responsibilities related to Project closeout.
2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:

    a. Preparation of Record Documents.
    b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
    c. Procedures for completing and archiving web-based Project software site data files.
    d. Submittal of written warranties.
    e. Requirements for preparing operations and maintenance data.
    f. Requirements for delivery of material samples, attic stock, and spare parts.
    g. Requirements for demonstration and training.
    h. Preparation of Contractor's punch list.
    i. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
    j. Submittal procedures.
    k. Owner's partial occupancy requirements.
    l. Installation of Owner's furniture, fixtures, and equipment.
    m. Responsibility for removing temporary facilities and controls.

4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

E. Progress Meetings: Conduct progress meetings at biweekly intervals.

1. Coordinate dates of meetings with preparation of payment requests.
2. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

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

1) Review schedule for next period.

b. Review present and future needs of each entity present, including the following:

1) Interface requirements.
2) Sequence of operations.
3) Resolution of BIM component conflicts.
4) Status of submittals.
5) Deliveries.
6) Off-site fabrication.
7) Access.
8) Site use.
9) Temporary facilities and controls.
10) Progress cleaning.
11) Quality and work standards.
12) Status of correction of deficient items.
13) Field observations.
14) Status of RFIs.
15) Status of Proposal Requests.
16) Pending changes.
17) Status of Change Orders.
18) Pending claims and disputes.
19) Documentation of information for payment requests.

4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting, where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

F. Coordination Meetings: Conduct Project coordination meetings at biweekly intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.

1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
b. Schedule Updating: Revise combined Contractor's construction schedule after each coordination meeting, where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
c. Review present and future needs of each contractor present, including the following:

1) Interface requirements.
2) Sequence of operations.
3) Resolution of BIM component conflicts.
4) Status of submittals.
5) Deliveries.
6) Off-site fabrication.
7) Access.
8) Site use.
9) Temporary facilities and controls.
10) Work hours.
11) Hazards and risks.
12) Progress cleaning.
13) Quality and work standards.
14) Status of RFIs.
15) Proposal Requests.
16) Change Orders.
17) Pending changes.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION (UPDATED FOR ADDENDUM 3)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Startup construction schedule.
2. Contractor's Construction Schedule.
3. Construction schedule updating reports.
4. Daily construction reports.
5. Material location reports.
6. Site condition reports.
7. Unusual event reports.

B. Related Requirements:

1. Section 014000 "Quality Requirements"
2. Section 012900 "Payment Procedures"

1.3 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.

1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

B. Cost Loading: The allocation of the schedule of values for completing an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum.

C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine the critical path of Project and when activities can be performed.

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

E. Event: The starting or ending point of an activity.

F. Float: The measure of leeway in starting and completing an activity.

1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

G. Resource Loading: The allocation of manpower and equipment necessary for completing an activity as scheduled.

1.4 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. Working electronic copy of schedule file.
2. PDF file.

B. Startup construction schedule.

1. Submittal of cost-loaded startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.

C. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.

D. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

1. Submit a working digital copy of schedule, using software indicated, and labeled to comply with requirements for submittals.

E. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.

1. Activity Report: List of activities sorted by activity number and then early start date, or actual start date if known.
2. Logic Report: List of preceding and succeeding activities for each activity, sorted in ascending order by activity number and then by early start date, or actual start date if known.
3. Total Float Report: List of activities sorted in ascending order of total float.

4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.

F. Construction Schedule Updating Reports: Submit with Applications for Payment.

G. Daily Construction Reports: Submit at monthly intervals.

H. Material Location Reports: Submit at monthly intervals.

I. Site Condition Reports: Submit at time of discovery of differing conditions.

J. Unusual Event Reports: Submit at time of unusual event.

K. Qualification Data: For scheduling consultant.

1.5 QUALITY ASSURANCE

A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Architect's request.

B. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's Construction Schedule, including, but not limited to, the following:

1. Review software limitations and content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss constraints, including phasing work stages area separations interim milestones and partial Owner occupancy.
4. Review delivery dates for Owner-furnished products.
5. Review schedule for work of Owner's separate contracts.
6. Review submittal requirements and procedures.
7. Review time required for review of submittals and resubmittals.
8. Review requirements for tests and inspections by independent testing and inspecting agencies.
9. Review time required for Project closeout and Owner startup procedures, including commissioning activities.
10. Review and finalize list of construction activities to be included in schedule.
11. Review procedures for updating schedule.

1.6 COORDINATION

A. Coordinate Contractor's Construction Schedule with the schedule of values, submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.

2. Coordinate each construction activity in the network with other activities, and schedule them in proper sequence.

1.7 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

1. Use Microsoft Project or Primavera Meridian Prolog for current Windows operating system.

B. Scheduling Consultant: Engage a consultant to provide planning, evaluation, and reporting, using CPM scheduling.

1. In-House Option: Owner may waive requirement to retain a consultant if Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques. Submit qualifications.
2. Meetings: Scheduling consultant shall attend all meetings related to Project progress, alleged delays, and time impact.

C. Time Frame: Extend schedule from date established for the Notice of Award to date of Substantial Completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

D. Activities: Treat each floor or separate area as a separate numbered activity for each main element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 60 days, unless specifically allowed by Architect.
2. Temporary Facilities: Indicate start and completion dates for the following as applicable:

   a. Securing of approvals and permits required for performance of the Work.
   b. Temporary facilities.
   c. Construction of mock-ups, prototypes and samples.
   d. Owner interfaces and furnishing of items.
   e. Interfaces with Separate Contracts.
   f. Regulatory agency approvals.
   g. Punch list.

3. Procurement Activities: Include procurement process activities for the following long lead-time items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

4. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with submittal schedule.
5. Startup and Testing Time: Include no fewer than 15 days for startup and testing.

6. Commissioning Time: Include no fewer than 15 days for commissioning.
7. Substantial Completion: Indicate completion in advance of date established for Substantial Completion and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
8. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and Final Completion.

E. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.
2. Work under More Than One Contract: Include a separate activity for each contract.
3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
6. Work Restrictions: Show the effect of the following items on the schedule:

    a. Coordination with existing construction.
    b. Limitations of continued occupancies.
    c. Uninterruptible services.
    d. Partial occupancy before Substantial Completion.
    e. Use-of-premises restrictions.
    f. Provisions for future construction.
    g. Seasonal variations.
    h. Environmental control.

7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

    a. Subcontract awards.
    b. Submittals.
    c. Purchases.
    d. Mockups.
    e. Fabrication.
    f. Sample testing.
    g. Deliveries.
    h. Installation.
    i. Tests and inspections.
    j. Adjusting.
    k. Curing.
    l. Building flush-out.
    m. Startup and placement into final use and operation.
    n. Commissioning.

8. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:

    a. Structural completion.
    b. Temporary enclosure and space conditioning.
    c. Permanent space enclosure.
    d. Completion of mechanical installation.
    e. Completion of electrical installation.
    f. Substantial Completion.

F. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.

1. Temporary enclosure and space conditioning.

G. Cost Correlation: Superimpose a cost correlation timeline, indicating planned and actual costs. On the line, show planned and actual dollar volume of the Work performed as of planned and actual dates used for preparation of payment requests.

1. See Section 012900 "Payment Procedures" for cost reporting and payment procedures.

H. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.
2. Unanswered Requests for Information.
3. Rejected or unreturned submittals.
4. Notations on returned submittals.
5. Pending modifications affecting the Work and the Contract Time.

I. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate Final Completion percentage for each activity.

J. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

K. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

1.8 STARTUP CONSTRUCTION SCHEDULE

A. Gantt-Chart Schedule: Submit startup, horizontal, Gantt-chart-type construction schedule within 7 days of date established for the Notice to Proceed.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

1.9 GANTT-CHART SCHEDULE REQUIREMENTS

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's Construction Schedule within 30 days of date established for the Notice to Proceed.

1. Base schedule on the startup construction schedule and additional information received since the start of Project.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

1.10 CPM SCHEDULE REQUIREMENTS

A. Prepare network diagrams using AON (activity-on-node) format.

B. Startup Network Diagram: Submit diagram within 14 days of date established for the Notice to Proceed. Outline significant construction activities for the first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

C. CPM Schedule: Prepare Contractor's Construction Schedule using a time-scaled CPM network analysis diagram for the Work.

1. Develop network diagram in sufficient time to submit CPM schedule, so it can be accepted for use no later than 60 days after date established for the Notice to Proceed.

a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates.

2. Conduct educational workshops to train and inform key Project personnel, including subcontractors' personnel, in proper methods of providing data and using CPM schedule information.
3. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
4. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule to coordinate with the Contract Time.

D. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup network diagram, prepare a skeleton network to identify probable critical paths.

1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:

    a. Preparation and processing of submittals.
    b. Mobilization and demobilization.
    c. Purchase of materials.
    d. Delivery.
    e. Fabrication.
    f. Utility interruptions.
    g. Installation.
    h. Work by Owner that may affect or be affected by Contractor's activities.
    i. Testing and inspection.
    j. Commissioning.
    k. Punch list and Final Completion.
    l. Activities occurring following Final Completion.

2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.

    a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.

~~5. Cost- and Resource-Loading of CPM Schedule: Assign cost to construction activities on the CPM schedule. Do not assign costs to submittal activities. Obtain Architect's approval prior to assigning costs to fabrication and delivery activities. Assign costs under main subcontracts for testing and commissioning activities, operation and maintenance manuals, punch list activities, Project record documents, and demonstration and training (if applicable), in the amount of 5 percent of the Contract Sum.~~

~~a. Each activity cost shall reflect an appropriate value subject to approval by Architect.~~
~~b. Total cost assigned to activities shall equal the total Contract Sum.~~
(Removed as part of Addendum #3)

E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall Project schedule.

F. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:

1. Contractor or subcontractor and the Work or activity.
2. Description of activity.
3. Main events of activity.
4. Immediate preceding and succeeding activities.
5. Early and late start dates.
6. Early and late finish dates.
7. Activity duration in workdays.
8. Total float or slack time.
9. Average size of workforce.
10. Dollar value of activity (coordinated with the schedule of values).

G. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:

1. Identification of activities that have changed.
2. Changes in early and late start dates.
3. Changes in early and late finish dates.
4. Changes in activity durations in workdays.
5. Changes in the critical path.
6. Changes in total float or slack time.
7. Changes in the Contract Time.

H. Value Summaries: Prepare two cumulative value lists, sorted by finish dates.

1. In first list, tabulate activity number, early finish date, dollar value, and cumulative dollar value.
2. In second list, tabulate activity number, late finish date, dollar value, and cumulative dollar value.
3. In subsequent issues of both lists, substitute actual finish dates for activities completed as of list date.
4. Prepare list for ease of comparison with payment requests; coordinate timing with progress meetings.

    a. In both value summary lists, tabulate "actual percent complete" and "cumulative value completed" with total at bottom.
    b. Submit value summary printouts one week before each regularly scheduled progress meeting.

1.11 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. List of separate contractors at Project site.
3. Approximate count of personnel at Project site.
4. Equipment at Project site.
5. Material deliveries.
6. High and low temperatures and general weather conditions, including presence of rain or snow.
7. Testing and inspection.
8. Accidents.
9. Meetings and significant decisions.
10. Unusual events.
11. Stoppages, delays, shortages, and losses.
12. Meter readings and similar recordings.
13. Emergency procedures.
14. Orders and requests of authorities having jurisdiction.
15. Change Orders received and implemented.
16. Construction Change Directives received and implemented.
17. Services connected and disconnected.
18. Equipment or system tests and startups.
19. Partial completions and occupancies.
20. Substantial Completions authorized.

B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:

1. Material stored prior to previous report and remaining in storage.
2. Material stored prior to previous report and since removed from storage and installed.
3. Material stored following previous report and remaining in storage.

C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

D. Unusual Event Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, responses by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

1. Submit unusual event reports directly to Owner within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013200

SECTION 033000 - CAST-IN-PLACE CONCRETE (ADDED WITH ADDENDUM #3)

1.1 SUMMARY

A. Section Includes:

1. Cast-in-place concrete, including concrete materials, mixture design, placement procedures, and finishes.

1.2 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.

B. Water/Cement Ratio (w/cm): The ratio by weight of water to cementitious materials.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:

a. Contractor's superintendent.
b. Concrete Subcontractor.

2. Review the following:
a. Concrete finishes and finishing.
b. Curing procedures.
c. Concrete repair procedures.
d. Concrete protection.

1.4 ACTION SUBMITTALS

A. Product Data: For each of the following.

1. Portland cement.
2. Aggregates.
3. Admixtures:

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For the following:

1. Installer: Include copies of applicable ACI certificates.

B. Preconstruction Test Reports: For each mix design.

C. Field quality-control reports.

1.6 QUALITY ASSURANCE

A. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.

1. Manufacturer certified in accordance with NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

B. Laboratory Testing Agency Qualifications: A testing agency qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated and employing an ACI-certified Concrete Quality Control Technical Manager.

1. Personnel performing laboratory tests to be an ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor to be an ACI-certified Concrete Laboratory Testing Technician, Grade II.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Comply with ASTM C94/C94M and ACI 301 (ACI 301M).

1.8 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 301 (ACI 301M) and ACI 306.1 and as follows.

1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
2. When average high and low temperature is expected to fall below 40 deg F (4.4 deg C) for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301 (ACI 301M).
3. Do not use frozen materials or materials containing ice or snow.
4. Do not place concrete in contact with surfaces less than 35 deg F (1.7 deg C), other than reinforcing steel.
5. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

B. Hot-Weather Placement: Comply with ACI 301 (ACI 301M) and ACI 305.1 (ACI 305.1M), and as follows:

1. Maintain concrete temperature at time of discharge to not exceed 95 deg F (35 deg C).
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

1.9 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to furnish replacement sheet vapor retarder/termite barrier material and accessories for sheet vapor retarder/ termite barrier and accessories that do not comply with requirements or that fail to resist penetration by termites within specified warranty period.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301 (ACI 301M) unless modified by requirements in the Contract Documents.

2.2 CONCRETE MATERIALS

A. Source Limitations:

1. Obtain all concrete mixtures from a single ready-mixed concrete manufacturer for entire Project.
2. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant.
3. Obtain aggregate from single source.
4. Obtain each type of admixture from single source from single manufacturer.

B. Cementitious Materials:

1. Portland Cement: ASTM C150/C150M, Type II, gray.
2. Fly Ash: ASTM C618, Class C or F.
3. Slag Cement: ASTM C989/C989M, Grade 100 or 120.
4. Blended Hydraulic Cement: ASTM C595/C595M, Type IS, portland blast-furnace slag cement.
5. Silica Fume: ASTM C1240 amorphous silica.
6. Performance-Based Hydraulic Cement: ASTM C1157/C1157M: Type HE, high early strength.

C. Normal-Weight Aggregates: ASTM C33/C33M, Class 3M coarse aggregate or better, graded. Provide aggregates from a single source.

1. Alkali-Silica Reaction: Comply with one of the following:

a. Expansion Result of Aggregate: Not more than 0.04 percent at one-year when tested in accordance with ASTM C1293.
b. Alkali Content in Concrete: Not more than 4 lb./cu. yd. (2.37 kg/cu. m) for moderately reactive aggregate or 3 lb./cu. yd. (1.78 kg/cu. m) for highly reactive aggregate, when tested in accordance with ASTM C1293 and categorized in

accordance with ASTM C1778, based on alkali content being calculated in accordance with ACI 301 (ACI 301M).

2. Maximum Coarse-Aggregate Size: 1 inch (25 mm) nominal.
3. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

D. Water and Water Used to Make Ice: ASTM C94/C94M, potable

2.3 FIBER REINFORCEMENT

A. Carbon-Steel-Wire Fiber: ASTM A820/A820M, Type 1, cold-drawn wire, deformed, minimum of 2.4 inches (60 mm) long, with an aspect ratio of 60 to 65.

2.4 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.

B. Moisture-Retaining Cover: ASTM C171, polyethylene film burlap-polyethylene sheet.

C. Water: Potable or complying with ASTM C1602/C1602M.

2.5 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch (3 mm) and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C150/C150M portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3 to 6 mm) or coarse sand, as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 4100 psi (29 MPa) at 28 days when tested in accordance with ASTM C109/C109M.

B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch (6 mm) and that can be filled in over a scarified surface to match adjacent floor elevations.

1. Cement Binder: ASTM C150/C150M portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by topping manufacturer.

4. Compressive Strength: Not less than 5000 psi (34.5 MPa) at 28 days when tested in accordance with ASTM C109/C109M.

2.6 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, in accordance with ACI 301 (ACI 301M).

1. Use a qualified testing agency for preparing and reporting proposed mixture designs, based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

1. Fly Ash or Other Pozzolans: 25 percent by mass.
2. Slag Cement: 50 percent by mass.
3. Silica Fume: 10 percent by mass.
4. Total of Fly Ash or Other Pozzolans, Slag Cement, and Silica Fume: 50 percent by mass, with fly ash or pozzolans not exceeding 25 percent by mass and silica fume not exceeding 10 percent by mass.
5. Total of Fly Ash or Other Pozzolans and Silica Fume: 35 percent by mass with fly ash or pozzolans not exceeding 25 percent by mass and silica fume not exceeding 10 percent by mass.

2.7 CONCRETE MIXTURES

A. Class A: Normal-weight concrete used for exterior mechanical pads.

1. Exposure Class: ACI 318 (ACI 318M) F3 W1.
2. Minimum Compressive Strength: 4000 psi (27.6 MPa) at 28 days.
3. Maximum w/cm: 0.50.
4. Slump Limit: 5 inches (125 mm), plus or minus 1 inch (25 mm).
5. Slump Flow Limit: 22 inches (550 mm), plus or minus 1.5 inches (40 mm).
6. Air Content:
   a. Exposure Classes F3: 6 percent, plus or minus 1.5 percent at point of delivery for concrete containing 1-inch (25-mm) nominal maximum aggregate size.

7. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement.

CONCRETE MIXING

B. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94/C94M and ASTM C1116/C1116M, and furnish batch ticket information.

C. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete in accordance with ASTM C94/C94M. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For mixer capacity of 1 cu. yd. (0.76 cu. m) or smaller, continue mixing at least 1-1/2 minutes, but not more than five minutes after ingredients are in mixer, before any part of batch is released.
2. For mixer capacity larger than 1 cu. yd. (0.76 cu. m), increase mixing time by 15 seconds for each additional 1 cu. yd. (0.76 cu. m).
3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions:

1. Before placing concrete, verify that installation of concrete forms, accessories, and reinforcement, and embedded items is complete and that required inspections have been performed.
2. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Provide reasonable auxiliary services to accommodate field testing and inspections, acceptable to testing agency, including the following:

1. Daily access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Secure space for storage, initial curing, and field curing of test samples, including source of water and continuous electrical power at Project site during site curing period for test samples.
4. Security and protection for test samples and for testing and inspection equipment at Project site.

3.3 INSTALLATION OF EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining Work that is attached to or supported by cast-in-place concrete.

1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of ANSI/AISC 303.
3. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.

3.4 INSTALLATION OF VAPOR RETARDER

A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder in accordance with ASTM E1643 and manufacturer's written instructions.

1. Install vapor retarder with longest dimension parallel with direction of concrete pour.
2. Face laps away from exposed direction of concrete pour.
3. Lap vapor retarder over footings and grade beams not less than 6 inches (150 mm), sealing vapor retarder to concrete.
4. Lap joints 6 inches (150 mm) and seal with manufacturer's recommended tape.
5. Terminate vapor retarder at the top of floor slabs, grade beams, and pile caps, sealing entire perimeter to floor slabs, grade beams, foundation walls, or pile caps.
6. Seal penetrations in accordance with vapor retarder manufacturer's instructions.
7. Protect vapor retarder during placement of reinforcement and concrete.

a. Repair damaged areas by patching with vapor retarder material, overlapping damages area by 6 inches (150 mm) on all sides, and sealing to vapor retarder.

B. Bituminous Vapor Retarders: Place, protect, and repair bituminous vapor retarder in accordance with manufacturer's written instructions.

3.5 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed.

1. Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas.
2. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses.

B. Notify Architect and testing and inspection agencies 24 hours prior to commencement of concrete placement.

C. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect in writing, but not to exceed the amount indicated on the concrete delivery ticket.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

D. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301 (ACI 301M), but not to exceed the amount indicated on the concrete delivery ticket.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

E. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness.

1. If a section cannot be placed continuously, provide construction joints as indicated.
2. Deposit concrete to avoid segregation.
3. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
4. Consolidate placed concrete with mechanical vibrating equipment in accordance with ACI 301 (ACI 301M).

    a. Do not use vibrators to transport concrete inside forms.
    b. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer.
    c. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.
    d. At each insertion, limit duration of vibration to time necessary to consolidate concrete, and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

F. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Do not place concrete floors and slabs in a checkerboard sequence.
2. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
3. Maintain reinforcement in position on chairs during concrete placement.
4. Screed slab surfaces with a straightedge and strike off to correct elevations.
5. Level concrete, cut high areas, and fill low areas.
6. Slope surfaces uniformly to drains where required.
7. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface.
8. Do not further disturb slab surfaces before starting finishing operations.

3.6 FINISHING EQUIPMENT PADS

A. Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and locations indicated on Drawings.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route.
2. Coordinate required final finish with Architect before application.

3.7 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

A. Filling In:

1. Fill in holes and openings left in concrete structures after Work of other trades is in place unless otherwise indicated.
2. Mix, place, and cure concrete, as specified, to blend with in-place construction.

3. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations:

1. Coordinate sizes and locations of concrete bases with actual equipment provided.
2. Construct concrete bases 4 inches (100 mm) high unless otherwise indicated on Drawings, and extend base not less than 6 inches (150 mm) in each direction beyond the maximum dimensions of supported equipment unless otherwise indicated on Drawings, or unless required for seismic anchor support.
3. Minimum Compressive Strength: 4000 psi (27.6 MPa) at 28 days.
4. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch (450-mm) centers around the full perimeter of concrete base.
5. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete substrate.
6. Prior to pouring concrete, place and secure anchorage devices.

    a. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
    b. Cast anchor-bolt insert into bases.
    c. Install anchor bolts to elevations required for proper attachment to supported equipment.

D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items.

1. Cast-in inserts and accessories, as shown on Drawings.
2. Screed, tamp, and trowel finish concrete surfaces.

3.8 CONCRETE CURING

A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

1. Comply with ACI 301 (ACI 301M) and ACI 306.1 for cold weather protection during curing.
2. Comply with ACI 301 (ACI 301M) and ACI 305.1 (ACI 305.1M) for hot-weather protection during curing.
3. Maintain moisture loss no more than 0.2 lb/sq. ft. x h (1 kg/sq. m x h), calculated in accordance with ACI 305.1, before and during finishing operations.

3.9 TOLERANCES

A. Conform to ACI 117 (ACI 117M).

3.10 CONCRETE SURFACE REPAIRS

A. Defective Concrete:

1. Repair and patch defective areas when approved by Architect.
2. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13 mm) in any dimension to solid concrete.

a. Limit cut depth to 3/4 inch (19 mm).
b. Make edges of cuts perpendicular to concrete surface.
c. Clean, dampen with water, and brush-coat holes and voids with bonding agent.
d. Fill and compact with patching mortar before bonding agent has dried.
e. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement, so that, when dry, patching mortar matches surrounding color.

a. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching.
b. Compact mortar in place and strike off slightly higher than surrounding surface.

3. Repair defects on concealed formed surfaces that will affect concrete's durability and structural performance as determined by Architect.

D. Repairing Unformed Surfaces:

1. Test unformed surfaces, such as floors and slabs, for finish, and verify surface tolerances specified for each surface.

a. Correct low and high areas.
b. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

2. Repair finished surfaces containing surface defects, including spalls, popouts, honeycombs, rock pockets, crazing, and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
3. After concrete has cured at least 14 days, correct high areas by grinding.
4. Correct localized low areas during, or immediately after, completing surface-finishing operations by cutting out low areas and replacing with patching mortar.

a. Finish repaired areas to blend into adjacent concrete.

5. Correct other low areas scheduled to receive floor coverings with a repair underlayment.

a. Prepare, mix, and apply repair underlayment and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
b. Feather edges to match adjacent floor elevations.

6. Correct other low areas scheduled to remain exposed with repair topping.

a. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch (6 mm) to match adjacent floor elevations.
b. Prepare, mix, and apply repair topping and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.

7. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete.

a. Remove defective areas with clean, square cuts, and expose steel reinforcement with at least a 3/4-inch (19-mm) clearance all around.
b. Dampen concrete surfaces in contact with patching concrete and apply bonding agent.
c. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate.
d. Place, compact, and finish to blend with adjacent finished concrete.
e. Cure in same manner as adjacent concrete.

8. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar.

a. Groove top of cracks and cut out holes to sound concrete, and clean off dust, dirt, and loose particles.
b. Dampen cleaned concrete surfaces and apply bonding agent.
c. Place patching mortar before bonding agent has dried.
d. Compact patching mortar and finish to match adjacent concrete.
e. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.11 PROTECTION

A. Protect concrete surfaces as follows:

1. Protect from petroleum stains.

2. Diaper hydraulic equipment used over concrete surfaces.
3. Prohibit vehicles from interior concrete slabs.
4. Prohibit use of pipe-cutting machinery over concrete surfaces.
5. Prohibit placement of steel items on concrete surfaces.
6. Prohibit use of acids or acidic detergents over concrete surfaces.
7. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.
8. Protect concrete surfaces scheduled to receive surface hardener or polished concrete finish using Floor Slab Protective Covering.

END OF SECTION 033000

SECTION 072100 - THERMAL INSULATION (REVISED FOR ADDENDUM 3)

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. (Revised for Addendum 3) Polyisocyanurate foam-plastic board insulation.
2. Mineral-wool blanket insulation.

B. Related Requirements:

1. Section 072119 "Foamed-in-Place Insulation" for spray-applied polyurethane foam insulation.
2. Section 075552 "Styrene-Butadiene-Styrene (SBS) Modified Bituminous Protected Membrane Roofing for insulation specified as part of roofing construction.

1.3 ACTION SUBMITTALS

A. Product Data: For the following:

1. (Revised for Addendum 3) Polyisocyanurate foam-plastic board insulation.
2. Mineral-wool blanket insulation.

1.4 INFORMATIONAL SUBMITTALS

A. Installer's Certification: Listing type, manufacturer, and R-value of insulation installed in each element of the building thermal envelope.

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

C. Research Reports: For foam-plastic insulation, from ICC-ES.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

B. Protect foam-plastic board insulation as follows:

1. Do not expose to sunlight except to necessary extent for period of installation and concealment.
2. Protect against ignition at all times. Do not deliver foam-plastic board materials to Project site until just before installation time.
3. Quickly complete installation and concealment of foam-plastic board insulation in each area of construction.

PART 2 - PRODUCTS

2.1 POLYISOCYANURATE FOAM-PLASTIC BOARD INSULATION (Revised for Addendum 3)

A. Polyisocyanurate Board Insulation, Glass-Fiber-Mat Faced: ASTM C1289, glass-fiber-mat faced, Type II, Class 2.
   1. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.
   2. Labeling: Provide identification of mark indicating R-value of each piece of insulation 12 inches (305 mm) and wider in width.

2.2 MINERAL-WOOL BLANKET INSULATION

A. Mineral-Wool Blanket Insulation, Unfaced: ASTM C665, Type I (blankets without membrane facing); consisting of fibers; passing ASTM E136 for combustion characteristics.

   1. Flame-Spread Index: Not more than 25 when tested in accordance with ASTM E84.
   2. Smoke-Developed Index: Not more than 50 when tested in accordance with ASTM E84.
   3. Labeling: Provide identification of mark indicating R-value of each piece of insulation 12 inches (305 mm) and wider in width.

2.3 INSULATION FASTENERS

A. Adhesively Attached, Spindle-Type Anchors: Plate welded to projecting spindle; capable of holding insulation of specified thickness securely in position with self-locking washer in place.

   1. Plate: Perforated, galvanized carbon-steel sheet, 0.030 inch (0.762 mm) thick by 2 inches (50 mm) square.
   2. Spindle: Copper-coated, low-carbon steel; fully annealed; 0.105 inch (2.67 mm) in diameter; length to suit depth of insulation.

2.4 ACCESSORIES

A. Insulation for Miscellaneous Voids:

   1. Spray Polyurethane Foam Insulation: ASTM C1029, Type II, closed cell, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E84.

B. Adhesive for Bonding Insulation: Product compatible with insulation and air and water barrier materials, and with demonstrated capability to bond insulation securely to substrates without damaging insulation and substrates.

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean substrates of substances that are harmful to insulation, including removing projections capable of puncturing insulation or vapor retarders, or that interfere with insulation attachment.

3.2 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and applications.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

C. Install insulation with manufacturer's R-value label exposed after insulation is installed.

D. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

E. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

3.3 PROTECTION

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

B. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 072100

SECTION 075552 - MODIFIED BITUMINOUS PROTECTED MEMBRANE ROOFING (UPDATED FOR ADDENDUM 3)

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 styrene-butadiene-styrene (SBS)-modified bituminous protected membrane roofing.

B. Related Requirements:

1. Section 061053 "Miscellaneous Rough Carpentry for wood nailers, curbs, and blocking.
2. Section 072100 "Thermal Insulation" for insulation beneath the roof deck.
3. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

1.3 DEFINITIONS

A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

1.4 PREINSTALLATION MEETINGS

A. Preliminary Roofing Conference: Before starting roof deck construction, conduct conference at Project site.

1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review deck substrate requirements for conditions and finishes, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.

7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing during and after installation.
9. Review roof observation and repair procedures after roofing installation.

B. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing during and after installation.
9. Review roof observation and repair procedures after roofing installation.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work, including:

1. Base flashings and membrane terminations.
2. Tapered insulation, including slopes.
3. Crickets, saddles, and tapered edge strips, including slopes.

C. Samples for Verification: For the following products:

1. Cap sheet, of color required.
2. Flashing sheet, of color required.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

1. Submit evidence of compliance with performance requirements.

C. Product Test Reports: For components of roofing system, for tests performed by manufacturer and witnessed by a qualified testing agency.

D. Research/Evaluation Reports: For components of roofing system, from ICC-ES.

E. Sample Warranties: For manufacturer's special warranties.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing system to include in maintenance manuals.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is UL listed for roofing system identical to that used for this Project.

B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.11 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.

1. Special warranty includes membrane roofing, base flashings, roof insulation, fasteners, cover boards, roofing accessories, roof pavers, and other components of roofing system.
2. Warranty Period: 25 years from date of Substantial Completion.

B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of roofing system such as membrane roofing, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, roof pavers, and walkway products, for the following warranty period:

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. SBS-Modified Bituminous Roofing:

1. Firestone Building Products
2. Johns Manville
3. Soprema

B. Source Limitations: Obtain components including roof insulation and fasteners for roofing system from same manufacturer as roofing or manufacturer approved by roofing manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and base flashings shall remain watertight.

1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D 4272.

B. Material Compatibility: Roofing materials shall be compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

C. FM Global Listing: Roofing, base flashings, and component materials shall comply with requirements in FM Global 4450 or FM Global 4470 as part of a built-up roofing system, and

shall be listed in FM Global's "RoofNav" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Global markings.

1. Fire/Windstorm Classification: Class 1A-120.
2. Hail-Resistance Rating: MH.

D. Energy Star Listing: Roofing system shall be listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.

E. Energy Performance: Roofing system shall have an initial solar reflectance of not less than 0.70 and an emissivity of not less than 0.75 when tested according to CRRC-1.

F. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

G. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.3 ROOFING SHEET MATERIALS

A. Base Sheet: (Modified per Addendum 3) Roofing Membrane Base Ply: ASTM D 6164, Grade S, Type I or II, polyester-reinforced, SBS-modified asphalt sheet; smooth surfaced.

B. SBS-Modified Asphalt Granule-Surface Roofing Cap Sheet: ASTM D 6164/D 6164M, Grade G, Type I or II, SBS-modified asphalt sheet (reinforced with polyester fabric); granule surfaced; suitable for application method specified.

2.4 BASE FLASHING SHEET MATERIALS

A. SBS-Modified Asphalt Backer Sheet: ASTM D 6164/D 6164M, Grade S, Type I or II, SBS-modified asphalt sheet (reinforced with polyester fabric); smooth surfaced; suitable for application method specified.

B. (Added per Addendum 3) Flashing Top Ply: ASTM D 6164/D 6164M, Grade G, Type I or II, SBS-modified asphalt sheet (reinforced with polyester fabric); granule surfaced; suitable for application method specified.

2.5 VAPOR BARRIER MATERIALS (Added per Addendum 3)

A. Self adhered 5A high temperature modified bituminous membrane per ASTM D5147.

2.6 AUXILIARY ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing manufacturer for intended use and compatible with roofing.

1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

B. Asphalt Primer: ASTM D 41/D 41M.

C. Roofing Asphalt: ASTM D 312, Type ~~III or~~ (Revised for Addendum 3) IV as recommended by roofing manufacturer for application.

~~D. Roofing Asphalt: ASTM D 6152, SEBS modified.~~ (Revised for Addendum 3)

E. Adhesive: Roofing manufacturer's standard asphalt-based, asbestos-free, adhesive specially formulated for compatibility and use with roofing and base flashings.

F. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required by roofing system manufacturer for application.

G. Mastic Sealant: Polyisobutylene, plain or modified bitumen; nonhardening, nonmigrating, nonskinning, and nondrying.

H. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening roofing components to substrate; tested by manufacturer for required pullout strength, and acceptable to roofing system manufacturer.

I. Insulation Cant Strips: ASTM C 728, perlite insulation board.

J. Insulation Cant Strips: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board.

K. Metal Flashing Sheet: As specified in Section 076200 "Sheet Metal Flashing and Trim."

L. Roofing Granules: Ceramic-coated roofing granules, No. 11 screen size with 100 percent passing No. 8 (2.36-mm) sieve and 98 percent of mass retained on No. 40 (0.425-mm) sieve, color to match roofing.

M. Separator Sheet: Polyethylene sheet, 4 mils (0.1 mm) thick, minimum.

N. Miscellaneous Accessories: Provide accessories recommended by roofing system manufacturer.

2.7 COATING MATERIALS

A. Roof Coating: ASTM D 1227, Type II, Class 1, mineral-colloid-emulsified, fibered asphalt emulsion, asbestos free.

2.8 ROOF INSULATION

A. General: Preformed roof insulation boards manufactured **or approved** by roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated.

2.9 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with roofing.

B. Cover Board: Fiberglass Mat Faced Gypsum Roof Board
1. Acceptable Product: GP Gypsum, DensDeck Roof Boards.
2. Thickness: 1/2 inch.
3. Width: 4 feet.
4. Length: 8 feet.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work:

1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
2. Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations.

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

3.2 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

3.3 ROOFING INSTALLATION, GENERAL

A. Install roofing system according to roofing system manufacturer's written instructions and applicable recommendations in ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing."

1. Install roofing system according to roof assembly identification matrix and roof assembly layout illustrations in NRCA's "The NRCA Roofing and Waterproofing Manual" and Section requirements.

B. Install roofing system according to roofing system manufacturer's written instructions and applicable recommendations in ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing" and as follows:

1. Membrane: MBS (SBS).
2. Deck Type: (Revised for Addendum 3)B (nailable).
3. Adhering Method: (Revised for Addendum 3) M (hot-applied mopped).
4. Base Sheet: One.
5. Number of Glass-Fiber Base-Ply Sheets: One.
6. Number of Modified Asphalt Sheets: Two.

C. Start installation of roofing in presence of manufacturer's technical personnel.

D. Where roof slope exceeds 1/2 inch per 12 inches (1:24), install roofing sheets parallel with slope.

E. Coordinate installation of roofing system so insulation and other components of the roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.

1. Provide tie-offs at end of each day's work to cover exposed roofing sheets with a course of coated felt set in roofing cement or hot roofing asphalt, with joints and edges sealed.
2. Complete terminations and base flashings, and provide temporary seals to prevent water from entering completed sections of roofing system.
3. Remove and discard temporary seals before beginning work on adjoining roofing.

F. Asphalt Heating: Heat asphalt to its equiviscous temperature, measured at the mop cart or mechanical spreader immediately before application. Circulate asphalt during heating. Do not raise roofing asphalt temperature above equiviscous temperature range more than one hour before time of application. Do not exceed roofing asphalt manufacturer's recommended temperature limits during roofing asphalt heating. Do not heat roofing asphalt within 25 deg F (14 deg C) of flash point. Discard roofing asphalt maintained at a temperature exceeding finished blowing temperature for more than four hours.

1. Apply hot roofing asphalt within plus or minus 25 deg F (14 deg C) of equiviscous temperature.

G. Asphalt Heating: Heat and apply SEBS-modified roofing asphalt according to roofing system manufacturer's written instructions.

H. Substrate-Joint Penetrations: Prevent roofing asphalt from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.

3.4 BASE-SHEET INSTALLATION

A. Install lapped base-sheet course, extending sheet over and terminating beyond cants. Attach base sheet as follows:

1. (Revised for Addendum 3) Mechanically fasten and spot or strip mop to substrate with hot roofing asphalt.

3.5 MODIFIED BITUMINOUS MEMBRANE INSTALLATION

A. Install modified bituminous roofing sheet and cap sheet according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing sheets over and terminate beyond cants.

1. Unroll roofing sheets and allow them to relax for minimum time period required by manufacturer.

B. Laps: Accurately align roofing sheets, without stretching, and maintain uniform side and end laps. Stagger end laps. Completely bond and seal laps, leaving no voids.

1. Repair tears and voids in laps and lapped seams not completely sealed.
2. Apply roofing granules to cover exuded bead at laps while bead is hot.

C. Install roofing sheets so side and end laps shed water.

3.6 FLASHING AND STRIPPING INSTALLATION

A. Install base flashing over cant strips and other sloping and vertical surfaces, at roof edges, and at penetrations through roof, and secure to substrates according to roofing system manufacturer's written instructions and as follows:

1. Prime substrates with asphalt primer if required by roofing system manufacturer.
2. (Revised for Addendum 3) Backer-Sheet Application: Mechanically fasten backer sheet to walls or parapets. Adhere backer sheet over roofing at cants by applying hot roofing asphalt.
3. Flashing-Sheet Application: Adhere flashing sheet to substrate in a solid mopping of hot roofing asphalt applied at not less than 425 deg F (218 deg C). Apply hot roofing asphalt to back of flashing sheet if recommended by roofing system manufacturer.

B. Extend base flashing up walls or parapets a minimum of 8 inches (200 mm) above roofing and 4 inches (100 mm) onto field of roofing.

C. Mechanically fasten top of base flashing securely at terminations and perimeter of roofing.

D. Install roofing cap-sheet stripping where metal flanges and edgings are set on roofing according to roofing system manufacturer's written instructions.

E. Roof Drains: Set 30-by-30-inch (760-by-760-mm) metal flashing in bed of asphaltic adhesive on roofing. Cover metal flashing with roofing cap-sheet stripping, and extend a minimum of 4 inches (100 mm) beyond edge of metal flashing onto field of roofing. Clamp roofing, metal flashing, and stripping into roof-drain clamping ring.

1. Install stripping according to roofing system manufacturer's written instructions.

3.7 COATING INSTALLATION

A. Apply coating to base flashings according to manufacturer's written instructions, by spray, roller, or other suitable application method.

3.8 INSULATION INSTALLATION

A. (Added per Addendum 3) Mechanically fasten base layer of insulation.

B. Loosely lay separator sheet over cooled roofing membrane, with minimum 2-inch (50-mm) side laps and 4-inch (150-mm) end laps.

C. Loosely lay board insulation units over roofing, with long joints of insulation in continuous straight lines and with end joints staggered between rows. Abut edges and ends between units.

D. Install one or more layers of insulation to achieve required thickness over roofing. Cut and fit to within 3/4 inch (19 mm) of projections and penetrations.

1. Where overall insulation thickness is 2 inches (50 mm) or more, install required thickness in two or more layers, with joints of each succeeding layer staggered over joints of previous layer a minimum of 6 inches (150 mm) in each direction.

E. (Added per Addendum 3) Install base sheet over insulation, overlapping edges and ends at least 12 inches (300 mm). Do not lap ends of sheets within 72 inches (1800 mm) of roof perimeter. Do not cover drains or restrict water flow to drains.

3.9 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to inspect substrate conditions, surface preparation, membrane application, flashings, protection, and drainage components, and to furnish reports to Architect.

B. Flood Testing: Flood test each roofing area for leaks, according to recommendations in ASTM D 5957, after completing roofing and flashing but before overlying construction is placed. Install temporary containment assemblies, plug or dam drains, and flood with potable water.

1. Flood to an average depth of 2-1/2 inches (65 mm) with a minimum depth of 1 inch (25 mm) and not exceeding a depth of 4 inches (100 mm). Maintain 2 inches (50 mm) of clearance from top of base flashing.
2. Flood each area for 24 hours.
3. After flood testing, repair leaks, repeat flood tests, and make further repairs until roofing and flashing installations are watertight.

C. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.

1. Notify Architect and Owner 48 hours in advance of date and time of inspection.

D. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.

E. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.10 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.11 ROOFING INSTALLER'S WARRANTY

A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:

1. Owner: City of Rockville, MD
2. Address: 6 Taft Court.
3. Building Name/Type: 6 Taft Court.
4. Address: 6 Taft Court.
5. Area of Work: North Wing & Atrium.
6. Acceptance Date: _____.
7. Warranty Period:
8. Expiration Date: _____.

B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:

a. lightning;

b. peak gust wind speed exceeding 125 mph;
c. fire;
d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
f. vapor condensation on bottom of roofing; and
g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.

2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____, _____.

1. Authorized Signature: _____.
2. Name: _____.
3. Title: _____.

END OF SECTION 075552

SECTION 084413 - GLAZED ALUMINUM CURTAIN WALLS AND WINDOWS (UPDATED FOR ADDENDUM 3)

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. Glazed aluminum curtain wall systems.

    a. Conventionally glazed.
    b. Two-sided, structural-sealant-glazed.

2. Aluminum Framed Entrance Sytems

B. Related Requirements:
1. Section 079200 "Joint Sealants"
2. Section 088000 "Glazing"

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project Site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: For glazed aluminum curtain walls. Include plans, elevations, sections, full-size details, and attachments to other work.

1. Include details of provisions for assembly expansion and contraction and for draining moisture occurring within the assembly to the exterior.
2. Include full-size isometric details of each type of vertical-to-horizontal intersection of glazed aluminum curtain walls, showing the following:

    a. Joinery, including concealed welds.
    b. Anchorage.

c. Expansion provisions.
d. Glazing.
e. Flashing and drainage.

3. Show connection to and continuity with adjacent thermal, weather, air, and vapor barriers.

C. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.

D. Fabrication Sample: Of each vertical-to-horizontal intersection of assemblies, made from 12-inch (300-mm) lengths of full-size components and showing details of the following:

1. Joinery, including concealed welds.
2. Anchorage.
3. Glazing.

E. Delegated-Design Submittal: For glazed aluminum curtain walls, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

A. Preconstruction Laboratory Mockup Testing Submittals:

1. Testing Program: Developed specifically for Project.
2. Test Reports: Prepared by a qualified preconstruction testing agency for each mockup test.
3. Record Drawings: As-built drawings of preconstruction laboratory mockups showing changes made during preconstruction laboratory mockup testing.

B. Qualification Data:

1. For Installer.
2. For professional engineer's experience with providing delegated-design engineering services of the kind indicated, including documentation that engineer is licensed in the jurisdiction in which Project is located.

C. Energy Performance Certificates: For glazed aluminum curtain walls, accessories, and components from manufacturer.

1. Basis for Certification: NFRC-certified energy performance values for each glazed aluminum curtain wall.

D. Product Test Reports: For glazed aluminum curtain walls, for tests performed by a qualified testing agency.

E. Quality-Control Program: Developed specifically for Project, including fabrication and installation, in accordance with recommendations in ASTM C1401. Include periodic quality-control reports.

F. Source quality-control reports.

G. Field quality-control reports.

H. Sample Warranties: For special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For glazed aluminum curtain walls to include in maintenance manuals.

B. Maintenance Data for Structural Sealant: For structural-sealant-glazed curtain walls to include in maintenance manuals. Include ASTM C1401 recommendations for post-installation-phase quality-control program.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

B. Laboratory Mockup Testing Agency Qualifications: Qualified in accordance with ASTM E699 for testing indicated.

C. Testing Agency Qualifications: Qualified in accordance with ASTM E699 for testing indicated and acceptable to Owner and Architect.

D. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.

1. Do not change intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If changes are proposed, submit comprehensive explanatory data to Architect for review.

E. Structural-Sealant Glazing: Comply with ASTM C1401 for design and installation of structural-sealant-glazed curtain wall assemblies.

1.8 WARRANTY

A. Special Assembly Warranty: **Installer** agrees to repair or replace components of glazed aluminum curtain wall that do not comply with requirements or that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including, but not limited to, excessive deflection.
b. Noise or vibration created by wind and thermal and structural movements.
c. Deterioration of metals**, metal finishes,** and other materials beyond normal weathering.

d. Water penetration through fixed glazing and framing areas.
e. Failure of operating components.

2. Warranty Period: **10** years from date of Substantial Completion.

B. Special Finish Warranty, Factory-Applied Finishes: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of baked enamel, powder coat, or organic finishes within specified warranty period.

1. Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Delta E units when tested in accordance with ASTM D2244.
b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Warranty Period: **10** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design glazed aluminum curtain walls.

B. General Performance: Comply with performance requirements specified, as determined by testing of glazed aluminum curtain walls representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.

1. Glazed aluminum curtain walls shall withstand movements of supporting structure, including, but not limited to, story drift, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
2. Failure also includes the following:

a. Thermal stresses transferring to building structure.
b. Glass breakage.
c. Noise or vibration created by wind and thermal and structural movements.
d. Loosening or weakening of fasteners, attachments, and other components.
e. Failure of operating units.

C. Structural Loads:

1. Wind Loads:
a. Basic wind speed (3 second gust) 90 mph
b. Wind load importance factor (Is): 1.0
c. Wind exposure category: II
d. Wind internal pressure coefficients (GCpi): +/-0.0
e. Interior wind pressure: 5 PSF

D. Deflection of Framing Members: At design wind pressure, as follows:

1. Deflection Normal to Wall Plane: Limited to edge of glass in a direction perpendicular to glass plane not exceeding 1/175 of the glass edge length for each individual glazing lite, or an amount that restricts edge deflection of individual glazing lites to 3/4 inch (19.1 mm), whichever is less.
2. Deflection Parallel to Glazing Plane: Limited to 1/360 of clear span or 1/8 inch (3.2 mm), whichever is smaller.

3. Cantilever Deflection: Where framing members overhang an anchor point, as follows:

a. Perpendicular to Plane of Wall: No greater than 1/240 of clear span plus 1/4-inch (6.35-mm) for spans of greater than 11 feet 8-1/4 inches (3.6 m) or 1/175 times span, for spans of less than 11 feet 8-1/4 inches (3.6 m).

E. Structural: Test in accordance with ASTM E330/E330M as follows:

1. When tested at positive and negative wind-load design pressures, assemblies do not evidence deflection exceeding specified limits.
2. Test Durations: As required by design wind velocity, but not less than 10 seconds.

F. Water Penetration under Static Pressure: Test in accordance with ASTM E331 as follows:

1. No evidence of water penetration through fixed glazing and framing areas when tested in accordance with a minimum static-air-pressure differential of 20 percent of positive wind-load design pressure, but not less than **10 lbf/sq. ft. (480 Pa)** .

G. Water Penetration under Dynamic Pressure: Test in accordance with AAMA 501.1 as follows:

1. No evidence of water penetration through fixed glazing and framing areas when tested at dynamic pressure equal to 20 percent of positive wind-load design pressure, but not less than **10 lbf/sq. ft. (480 Pa)**.
2. Maximum Water Leakage: In accordance with AAMA 501.1, nuncontrolled water penetrating assemblies or water appearing on assemblies' normally exposed interior surfaces from sources other than condensation. Water leakage does not include water controlled by flashing and gutters or water that is drained to exterior.

H. Seismic Performance: Glazed aluminum curtain walls shall withstand the effects of earthquake motions determined in accordance with ASCE/SEI 7.

1. Seismic Drift Causing Glass Fallout: Complying with criteria for passing based on building occupancy type when tested in accordance with AAMA 501.6 at design displacement.
2. Vertical Interstory Movement: Complying with criteria for passing based on building occupancy type when tested in accordance with AAMA 501.7 at design displacement.

I. Energy Performance: Certified and labelled by manufacturer for energy performance as follows:

1. Thermal Transmittance (U-factor):

a. Fixed Glazing and Framing Areas: U-factor for the system of not more than 0.29 Btu/sq. ft. x h x deg F (1.65 W/sq. m x K) as determined in accordance with NFRC 100.

2. Solar Heat Gain Coefficient (SHGC):

a. Fixed Glazing and Framing Areas: SHGC for the system of not more than 0.22 as determined in accordance with NFRC 200.

3. Air Leakage:

a. Fixed Glazing and Framing Areas: Air leakage for the system of not more than 0.06 cfm/sq. ft. (0.30 L/s per sq. m) at a static-air-pressure differential of 6.24 lbf/sq. ft. (300 Pa) when tested in accordance with ASTM E283.

4. Condensation Resistance Factor (CRF):

a. Fixed Glazing and Framing Areas: CRF for the system of not less than 29 as determined in accordance with AAMA 1503.

J. Noise Reduction: Test in accordance with ASTM E90, with ratings determined by ASTM E1332, as follows:

1. Outdoor-Indoor Transmission Class: Minimum 34.
2. Sound Transmission Class: Minimum 40.

~~K. Windborne-Debris-Impact Resistance: Pass ASTM E1886 missile-impact and cyclic-pressure tests in accordance with ASTM E1996 for Wind Zone 2 for basic protection.~~

~~1. Large-Missile Test: For glazing located within 30 feet (9.1 m) of grade.~~
~~2. Small-Missile Test: For glazing located between 30 feet (9.1 m) and 60 feet (18.2 m) above grade.~~ (Revised per Addendum 3)

L. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes:

1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
2. Thermal Cycling: No buckling; stress on glass; sealant failure; excess stress on framing, anchors, and fasteners; or reduction of performance when tested in accordance with AAMA 501.5.

a. High Exterior Ambient-Air Temperature: That which produces an exterior metal-surface temperature of 180 deg F (82 deg C).
b. Low Exterior Ambient-Air Temperature: 0 deg F (minus 18 deg C).

M. Structural-Sealant Joints:

1. Designed to carry gravity loads of glazing.

N. Structural Sealant: ASTM C1184. Capable of withstanding tensile and shear stresses imposed by structural-sealant-glazed curtain walls without failing adhesively or cohesively. When tested for preconstruction adhesion and compatibility, cohesive failure of sealant shall occur before adhesive failure.

1. Adhesive failure occurs when sealant pulls away from substrate cleanly, leaving no sealant material behind.
2. Cohesive failure occurs when sealant breaks or tears within itself but does not separate from each substrate, because sealant-to-substrate bond strength exceeds sealant's internal strength.

2.2 SOURCE LIMITATIONS

A. Obtain all components of curtain-wall system, including framing entrances and accessories, from single manufacturer.

2.3 GLAZED ALUMINUM CURTAIN WALL SYSTEMS

A. Basis of Design Manufacturer: The design for glazed aluminum curtain-wall systems and aluminum windows is based on 1600 Wall System Curtain Wall System as manufactured by Kawneer Company, Inc.; Arconic Corporation. 6 ½" mullion depth, typical for all assemblies unless otherwise noted.

B. Alternative manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. EFCO Corporation.
2. Oldcastle Building Envelope (OBE); CRH Americas, Inc.

C. Framing Members: Manufacturer's extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.

1. Construction: Thermally broken.
2. Glazing System: Retained mechanically with gaskets on four sides.
3. Glazing Plane: Front.
4. Finish: Superior-performance organic finish, bronze to match existing building window frame finish.
5. Fabrication Method: Either factory- or field-fabricated system.
6. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
7. Steel Reinforcement: As required by manufacturer.

D. Pressure Caps: Manufacturer's standard aluminum components that mechanically retain glazing.

1. Include snap-on aluminum trim that conceals fasteners.

E. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

F. Insulated Spandrel Panels (Solid Infill Panels):
1. Laminated, metal-faced flat panels with no deviations in plane exceeding 0.8 percent of panel dimension in width or length.

a. Overall Panel Thickness and Profile: As indicated.
b. Exterior Skin: Aluminum.

1) Thickness: Manufacturer's standard for finish and texture to match curtainwall finish.
2) Finish: Match framing system.
3) Texture: Smooth.
4) Backing Sheet: 1/8-inch- (3.2-mm-) thick, tempered hardboard.

c. Interior Skin: Aluminum.

1) Thickness: Manufacturer's standard for finish and texture indicated.
2) Finish: Matching curtain-wall framing.
3) Texture: Smooth.
4) Backing Sheet: 1/2-inch- (12.7-mm-) thick, gypsum board with proprietary fire-resistance-rated core.

d. Thermal Insulation Core: Manufacturer's standard rigid, closed-cell, polyisocyanurate board.
e. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1) Flame-Spread Index: 25 or less.
2) Smoke-Developed Index: 50 or less.

2.4 ALUMINUM-FRAMED ENTRANCE DOOR SYSTEMS

A. Entrance Doors: Manufacturer's standard glazed entrance doors for manual-swing or automatic operation.

1. Door Construction: Manufacturer’s standard thickness, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods.

a. Thermal Construction: High-performance plastic connectors separate aluminum members exposed to the exterior from members exposed to the interior.

2. Door Design: Medium stile; 3-1/2-inch (88.9-mm) nominal width.
3. Glazing Stops and Gaskets: Beveled, snap-on, extruded-aluminum stops and preformed gaskets.

a. Provide nonremovable glazing stops on outside of door.

4. Door Finish: Match curtainwall system.

B. Framing Members: Manufacturer's standard extruded aluminum, minimum 0.125 inch (3.2 mm) thick and reinforced as required to support imposed loads.

C. Backer Plates: Manufacturer's standard, continuous backer plates for framing members, if not integral, where framing abuts adjacent construction.

D. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

E. Materials:

1. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

    a. Sheet and Plate: ASTM B209 (ASTM B209M).
    b. Extruded Bars, Rods, Profiles, and Tubes: ASTM B221 (ASTM B221M).
    c. Structural Profiles: ASTM B308/B308M.

2. Steel Reinforcement:

    a. Structural Shapes, Plates, and Bars: ASTM A36/A36M.
    b. Cold-Rolled Sheet and Strip: ASTM A1008/A1008M.
    c. Hot-Rolled Sheet and Strip: ASTM A1011/A1011M.

3. Steel Reinforcement Primer: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods in accordance with recommendations in SSPC-SP COM, and prepare surfaces in accordance with applicable SSPC standard.

2.5 ENTRANCE DOOR HARDWARE

A. Entrance Door Hardware: Hardware not specified in this Section is specified in Section 087100 "Door Hardware."

B. General: Provide entrance door hardware and entrance door hardware sets indicated in door and frame schedule for each entrance door, to comply with requirements in this Section.

1. Entrance Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and products complying with BHMA standard referenced.
2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.
3. Opening-Force Requirements:

    a. Egress Doors: Not more than 15 lbf (67 N) to release the latch and not more than 30 lbf (133 N) to set the door in motion and not more than 15 lbf (67 N) to open the door to its minimum required width.
    b. Accessible Interior Doors: Not more than 5 lbf (22.2 N) to fully open door.

C. Designations: Requirements for design, grade, function, finish, quantity, size, and other distinctive qualities of each type of entrance door hardware are indicated in "Entrance Door Hardware Sets" Article. Products are identified by using entrance door hardware designations as follows:

1. Named Manufacturers' Products: Manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in "Entrance Door Hardware Sets" Article.
2. References to BHMA Standards: Provide products complying with these standards and requirements for description, quality, and function.

D. Pivot Hinges: BHMA A156.4, Grade 1.

1. Offset-Pivot Hinges: Provide top, bottom, and intermediate offset pivots at each door leaf.

E. Butt Hinges: BHMA A156.1, Grade 1, radius corner.

1. Nonremovable Pins: Provide setscrew in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while entrance door is closed.
2. Exterior Hinges: Stainless steel, with stainless steel pin.
3. Quantities:

a. For doors up to 87 inches (2210 mm) high, provide three hinges per leaf.
b. For doors more than 87 and up to 120 inches (2210 and up to 3048 mm) high, provide four hinges per leaf.

F. Continuous-Gear Hinges: BHMA A156.26.

G. Mortise Auxiliary Locks: BHMA A156.5, Grade 1.

H. Manual Flush Bolts: BHMA A156.16, Grade 1.

I. Automatic and Self-Latching Flush Bolts: BHMA A156.3, Grade 1.

J. Panic Exit Devices: BHMA A156.3, Grade 1, listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for panic protection, based on testing in accordance with UL 305.

K. Cylinders:

1. As specified in Section 087100 "Door Hardware."
2. BHMA A156.5, Grade 1.

a. Keying: Master key system. Permanently inscribe each key with a visual key control number and include notation to be furnished by Owner.

L. Strikes: Provide strike with black-plastic dust box for each latch or lock bolt; fabricated for aluminum framing.

M. Operating Trim: BHMA A156.6.

N. Closers: BHMA A156.4, Grade 1, with accessories required for a complete installation, sized as required by door size, exposure to weather, and anticipated frequency of use; adjustable to comply with field conditions and requirements for opening force.

O. Concealed Overhead Holders and Stops: BHMA A156.8, Grade 1.

P. Door Stops: BHMA A156.16, Grade 1, floor or wall mounted, as appropriate for door location indicated, with integral rubber bumper.

Q. Weather Stripping: Manufacturer's standard replaceable components.

1. Compression Type: Made of ASTM D2000 molded neoprene or ASTM D2287 molded PVC.
2. Sliding Type: AAMA 701/702, made of wool, polypropylene, or nylon woven pile with nylon-fabric or aluminum-strip backing.

R. Weather Sweeps: Manufacturer's standard exterior-door bottom sweep with concealed fasteners on mounting strip.

S. Thresholds: BHMA A156.21 raised thresholds beveled with a slope of not more than 1:2, with maximum height of 1/2 inch (12.7 mm).

T. Finger Guards: Manufacturer's standard collapsible neoprene or PVC gasket anchored to frame hinge-jamb at center-pivoted doors.

2.6 GLAZING

A. Glazing: Comply with Section 088000 "Glazing."

B. Glazing Gaskets: Manufacturer's standard sealed-corner pressure-glazing system of black, resilient elastomeric glazing gaskets, setting blocks, and shims or spacers.

C. Glazing Sealants: As recommended by manufacturer.

2.7 ACCESSORIES

A. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.

1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.
2. Reinforce members as required to receive fastener threads.
3. Use exposed fasteners with countersunk Phillips screw heads, finished to match framing system.

B. Anchors: Three-way adjustable anchors with minimum adjustment of 1 inch (25.4 mm) that accommodate fabrication and installation tolerances in material and finish compatible with adjoining materials and recommended by manufacturer.

1. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A123/A123M or ASTM A153/A153M requirements.

C. Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials.

D. Bituminous Paint: Cold-applied asphalt-mastic paint containing no asbestos, formulated for 30-mil (0.762-mm) thickness per coat.

E. Rigid PVC Filler.

2.8 GLAZING

A. Glazing: Comply with Section 088000 "Glazing."

B. Glazing Gaskets: ASTM C509 or ASTM C864. Manufacturer's standard.

1. Color: Black.

C. Glazing Sealants: As recommended by manufacturer.

D. Structural Glazing Sealants: ASTM C1184, chemically curing silicone formulation that is compatible with system components with which it comes into contact, specifically formulated and tested for use as structural sealant and approved by structural-sealant manufacturer for use in curtain-wall assembly indicated.

1. Color: Black.

E. Weatherseal Sealants: ASTM C920 for Type S; Grade NS; Class 25; Uses NT, G, A, and O; chemically curing silicone formulation that is compatible with structural sealant and other system components with which it comes into contact; recommended by structural-sealant, weatherseal-sealant, and structural-sealant-glazed curtain-wall manufacturers for this use.

1. Color: Match structural sealant.

2.9 MATERIALS

A. Sheet and Plate: ASTM B209 (ASTM B209M).

B. Extruded Bars, Rods, Profiles, and Tubes: ASTM B221 (ASTM B221M).

C. Extruded Structural Pipe and Tubes: ASTM B429/B429M.

D. Structural Profiles: ASTM B308/B308M.

E. Steel Reinforcement:

1. Structural Shapes, Plates, and Bars: ASTM A36/A36M.
2. Cold-Rolled Sheet and Strip: ASTM A1008/A1008M.
3. Hot-Rolled Sheet and Strip: ASTM A1011/A1011M.

F. Steel Reinforcement Primer: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods in accordance with recommendations in SSPC-SP COM, and prepare surfaces in accordance with applicable SSPC standard.

2.10 ACCESSORIES

A. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.

1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.
2. Reinforce members as required to receive fastener threads.
3. Use exposed fasteners with countersunk Phillips screw heads, finished to match framing system.

B. Anchors: Three-way adjustable anchors with minimum adjustment of 1 inch (25.4 mm) that accommodate fabrication and installation tolerances in material and finish compatible with adjoining materials and recommended by manufacturer.

1. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A123/A123M or ASTM A153/A153M requirements.

C. Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials.

D. Bituminous Paint: Cold-applied asphalt-mastic paint containing no asbestos, formulated for 30-mil (0.762-mm) thickness per coat.

E. Closure gaskets: As manufactured by EMSEAL, “Colorseal/Seismic Colorseal DS.
1. Multi-faced, silicone-coated, precompressed, primary seal providing weather tight seal between adjacent curtain wall members.
2. Color: Match curtainwall
3. Comply with AST C661, ASTM C510, ASTM G26-77, ASTM C518-04, ASTM E90-09, ASTM E283-04, ASTM E331-00 and ASTM-E330.

2.11 FABRICATION

A. Form or extrude aluminum shapes before finishing.

B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

C. Fabricate components that, when assembled, have the following characteristics:

1. Profiles that are sharp, straight, and free of defects or deformations.
2. Accurately fitted joints with ends coped or mitered.
3. Physical and thermal isolation of glazing from framing members.

4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
5. Provisions for field replacement of glazing from exterior.
6. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
7. Components curved to indicated radii.

D. Fabricate components to resist water penetration as follows:

1. Internal guttering system or other means to drain water passing joints, condensation occurring within framing members, and moisture migrating within glazed aluminum curtain wall to exterior.
2. Pressure-equalized system or double barrier design with primary air and vapor barrier at interior side of glazed aluminum curtain wall and secondary seal weeped and vented to exterior.

E. Curtain-Wall Framing: Fabricate components for assembly using manufacturer's standard assembly method.

F. Factory-Assembled Frame Units:

1. Rigidly secure nonmovement joints.
2. Prepare surfaces that are in contact with structural sealant in accordance with sealant manufacturer's written instructions, to ensure compatibility and adhesion. Preparation includes, but is not limited to, cleaning and priming surfaces.
3. Seal joints watertight unless otherwise indicated.
4. Install glazing to comply with requirements in Section 088000 "Glazing."
5. Install structural glazing.

    a. Set glazing into framing in accordance with sealant manufacturer and framing manufacturer?s written instructions and standard practice. Use a spacer or backer as recommended by manufacturer.
    b. Set glazing with proper orientation so that coatings face exterior or interior as specified.
    c. Apply structural silicone sealant to completely fill cavity, in accordance with sealant manufacturers written instructions with the framing and glazing in a fully supported position.
    d. Brace or stiffen framing and glazing in such a manner to prevent undue stresses on the glass edge seal and structural joints or movement of the glazing, until sealant is fully cured in accordance with manufacturer?s recommendations.
    e. After structural sealant has completely cured, insert backer rod between lites of glass as recommended by sealant manufacturer.
    f. Install weatherseal sealant to completely fill cavity, in accordance with sealant manufacturer's written instructions, to produce weatherproof joints.
    g. Clean and protect glass as indicated in Section 088000 "Glazing."
    h. Retain bracing or stiffening until erected to prevent racking of units during transportation and erection.

G. After fabrication, clearly mark components to identify their locations in Project in accordance with Shop Drawings.

2.12 ALUMINUM FINISHES

A. Superior-Performance Organic Finish, Three-Coat PVDF: Fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat.

1. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
2. Color and Gloss: As selected by Architect from manufacturer's full range, color and gloss shall be bronze to match existing building window color and gloss.

2.13 SOURCE QUALITY CONTROL

A. Structural Sealant: Perform quality-control procedures complying with ASTM C1401 recommendations, including, but not limited to, assembly material qualification procedures, sealant testing, and assembly fabrication reviews and checks.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

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

3.2 INSTALLATION, GENERAL

A. Comply with manufacturer's written instructions.

B. Do not install damaged components.

C. Fit joints to produce hairline joints free of burrs and distortion.

D. Rigidly secure nonmovement joints.

E. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.

F. Where welding is required, weld components in concealed locations to minimize distortion or discoloration of finish. Protect glazing surfaces from welding.

G. Seal joints watertight unless otherwise indicated.

H. Metal Protection:

1. Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with primer, applying sealant or tape, or installing nonconductive spacers as recommended by manufacturer for this purpose.
2. Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

I. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within glazed aluminum curtain wall to exterior.

J. Install components plumb and true in alignment with established lines and grades.

3.3 INSTALLATION OF OPERABLE UNITS

A. Install operable units level and plumb, securely anchored, and without distortion. Adjust weather-stripping contact and hardware movement to produce proper operation.

3.4 INSTALLATION OF GLAZING

A. Install glazing as specified in Section 088000 "Glazing."

3.5 INSTALLATION OF STRUCTURAL GLAZING

A. Prepare surfaces that will contact structural sealant in accordance with sealant manufacturer's written instructions, to ensure compatibility and adhesion. Preparation includes, but is not limited to, cleaning and priming surfaces.

B. Set glazing into framing in accordance with sealant manufacturer's and framing manufacturer?s written instructions and standard practice. Use a spacer or backer as recommended by manufacturer.

C. Set glazing with proper orientation, so that coatings face exterior or interior as specified.

D. Hold glazing in place using temporary retainers of type and spacing recommended by manufacturer, until structural sealant joint has cured.

E. Apply structural sealant to completely fill cavity, in accordance with sealant manufacturer's and framing manufacturer's written instructions and in compliance with local codes.

F. Apply structural sealant at temperatures indicated by sealant manufacturer for type of sealant.

G. Allow structural sealant to cure in accordance with manufacturer?s recommendations.

H. Clean and protect glass as indicated in Section 088000 "Glazing."

3.6 INSTALLATION OF WEATHERSEAL SEALANT

A. After structural sealant has completely cured, remove temporary retainers and insert backer rod between lites of glass, as recommended by sealant manufacturer.

B. Install weatherseal sealant to completely fill cavity, in accordance with sealant manufacturer's written instructions, to produce weatherproof joints.

3.7 ERECTION TOLERANCES

A. Install glazed aluminum curtain walls to comply with the following maximum tolerances:

1. Plumb: 1/8 inch in 10 feet (3.2 mm in 3 m); 1/4 inch in 40 feet (6.35 mm in 12.2 m).
2. Level: 1/8 inch in 20 feet (3.2 mm in 6 m); 1/4 inch in 40 feet (6.35 mm in 12.2 m).
3. Alignment:

    a. Where surfaces abut in line or are separated by reveal or protruding element up to 1/2 inch (12.7 mm) wide, limit offset from true alignment to 1/16 inch (1.6 mm).
    b. Where surfaces are separated by reveal or protruding element from 1/2 to 1 inch (12.7 to 25.4 mm) wide, limit offset from true alignment to 1/8 inch (3.2 mm).
    c. Where surfaces are separated by reveal or protruding element of 1 inch (25.4 mm) wide or more, limit offset from true alignment to 1/4 inch (6 mm).

4. Location: Limit variation from plane to 1/8 inch in 12 feet (3.2 mm in 3.6 m); 1/2 inch (12.7 mm) over total length.

3.8 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Test Area: Perform tests on one bay at least 30 feet (9.1 m), by one story.

C. Field Quality-Control Testing: Perform the following test on representative areas of glazed aluminum curtain walls.

1. Water-Spray Test: Before installation of interior finishes has begun, areas designated by Architect shall be tested in accordance with AAMA 501.2 and shall not evidence water penetration.

    a. Perform a minimum of two tests in areas as directed by Architect.
    b. Perform tests in each test area as directed by Architect. Perform at least three tests, prior to 10, 35, and 70 percent completion.

2. Air Leakage: ASTM E783 at 1.5 times the rate specified for laboratory testing in "Performance Requirements" Article but not more than 0.09 cfm/sq. ft. (0.45 L/s per sq. m) at a static-air-pressure differential of 1.57 lbf/sq. ft. (75 Pa).

    a. Perform a minimum of two tests in areas as directed by Architect.
    b. Perform tests in each test area as directed by Architect. Perform at least three tests, prior to 10, 35, and 70 percent completion.

3. Water Penetration: ASTM E1105 at a minimum uniform and cyclic static-air-pressure differential of 0.67 times the static-air-pressure differential specified for laboratory

testing in "Performance Requirements" Article, but not less than 6.24 lbf/sq. ft. (300 Pa), and shall not evidence water penetration.

D. Structural-Sealant Adhesion: Test structural sealant in accordance with recommendations in ASTM C1401, Destructive Test Method A, "Hand Pull Tab (Destructive)," Appendix X2.

1. Test a minimum of two areas on each building facade.
2. Repair installation areas damaged by testing.

E. Glazed aluminum curtain walls will be considered defective if they do not pass tests and inspections.

F. Prepare test and inspection reports.

END OF SECTION 084413

6 TAFT COURT – PHASE 1
2019.331.004
CITY OF ROCKVILLE
BID NUMBER IFB#08-22

SECTION 087100 - DOOR HARDWARE (UPDATED FOR ADDENDUM 3)

1.1 SUMMARY

A. Section Includes:

1. Mechanical door hardware for the following:

a. Swinging doors.

2. Cylinders for door hardware specified in other Sections.
3. Electrified door hardware.

B. Related Requirements:
1. Section 081113 "Hollow Metal Doors and Frames"
2. Section 81416 “Flush Wood Doors.”
3. Section 084413 "Glazed Aluminum Curtain Walls and Windows"

1.2 COORDINATION

A. Floor-Recessed Door Hardware: Coordinate layout and installation with floor construction.

1. Cast anchoring inserts into concrete.

B. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

E. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Conference participants shall include Installer's Architectural Hardware Consultant and Owner's security consultant.

B. Keying Conference: Conduct conference at Project site.

1. Conference participants shall include Installer's Architectural Hardware Consultant and Owner's security consultant.
2. Incorporate conference decisions into keying schedule after reviewing door hardware keying system including, but not limited to, the following:

a. Flow of traffic and degree of security required.
b. Preliminary key system schematic diagram.
c. Requirements for key control system.
d. Requirements for access control.
e. Address for delivery of keys.
f. .

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: For electrified door hardware.

1. Include diagrams for power, signal, and control wiring.
2. Include details of interface of electrified door hardware and building safety and security systems.

C. Samples: For each exposed product in each finish specified, in manufacturer's standard size.

1. Tag Samples with full product description to coordinate Samples with door hardware schedule.

D. Samples for Initial Selection: For each type of exposed finish.

E. Samples for Verification: For each type of exposed product, in each finish specified.

1. Sample Size: Full-size units or minimum 2-by-4-inch (51-by-102-mm) Samples for sheet and 4-inch (102-mm) long Samples for other products.

a. Full-size Samples will be returned to Contractor. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated into the Work, within limitations of keying requirements.

2. Tag Samples with full product description to coordinate Samples with door hardware schedule.

F. Door Hardware Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant. Coordinate door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
2. Format: Use same scheduling sequence and format and use same door numbers as in door hardware schedule in the Contract Documents.
3. Content: Include the following information:

a. Identification number, location, hand, fire rating, size, and material of each door and frame.
b. Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
c. Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
d. Description of electrified door hardware sequences of operation and interfaces with other building control systems.
e. Fastenings and other installation information.
f. Explanation of abbreviations, symbols, and designations contained in door hardware schedule.
g. Mounting locations for door hardware.
h. List of related door devices specified in other Sections for each door and frame.

G. Keying Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and Architectural Hardware Consultant.

B. Product Certificates: For each type of electrified door hardware.

1. Certify that door hardware for use on each type and size of labeled fire-rated doors complies with listed fire-rated door assemblies.

C. Product Test Reports: For compliance with accessibility requirements, for tests performed by manufacturer and witnessed by a qualified testing agency, for door hardware on doors located in accessible routes.

D. Field quality-control reports.

E. Sample Warranty: For special warranty.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of door hardware to include in maintenance manuals.

B. Schedules: Final door hardware and keying schedule.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and of an Architectural Hardware Consultant who is available during the course of the Work to consult Contractor, Architect, and Owner about door hardware and keying.

1. Warehousing Facilities: In Project's vicinity.
2. Scheduling Responsibility: Preparation of door hardware and keying schedule.
3. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

B. Architectural Hardware Consultant Qualifications: A person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and who is currently certified by DHI as an Architectural Hardware Consultant (AHC).

1.8 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.

B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.

C. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

D. Deliver keys and permanent cores to Owner by registered mail or overnight package service.

1.9 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including excessive deflection, cracking, or breakage.
b. Faulty operation of doors and door hardware.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period: Five years from date of Substantial Completion unless otherwise indicated below:
   a. Manual Closers: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain each type of door hardware from single manufacturer.

1. Provide electrified door hardware from same manufacturer as mechanical door hardware unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

2.2 PERFORMANCE REQUIREMENTS

A. Fire-Rated Door Assemblies: Where fire-rated doors are indicated, provide door hardware complying with NFPA 80 that is listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure in accordance with NFPA 252 or UL 10C.

B. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that complies with requirements of assemblies tested in accordance with UL 1784 and installed in compliance with NFPA 105.

1. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at the tested pressure differential of 0.3-inch wg (75 Pa) of water.

C. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

D. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.

E. Accessibility Requirements: For door hardware on doors in an accessible route, comply with the USDOJ's "2010 ADA Standards for Accessible Design", and ICC A117.1.

1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
2. Comply with the following maximum opening-force requirements:
   a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
   b. Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch.
   c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
4. Adjust door closer sweep periods so that, from an open position of 90 degrees, the door will take at least 5 seconds to move to a position of 12 degrees from the latch.
5. Adjust spring hinges so that, from an open position of 70 degrees, the door will take at least 1.5 seconds to move to the closed position.

2.3 HINGES

A. Hinges: BHMA A156.1. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Allegion plc.
b. Baldwin; part of the Spectrum Brands Hardware and Home Improvement Group (HHI).
c. Hager Companies.
d. STANLEY; dormakaba USA, Inc.

2.4 SELF-CLOSING HINGES AND PIVOTS

A. Self-Closing Hinges and Pivots: BHMA A156.17.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Allegion plc.
b. Hager Companies.
c. STANLEY; dormakaba USA, Inc.

2.5 CENTER-HUNG AND OFFSET PIVOTS

A. Center-Hung and Offset Pivots: BHMA A156.4.

2.6 CONTINUOUS HINGES

A. Continuous Hinges: BHMA A156.26; minimum 0.120-inch- (3.0-mm-) thick, hinge leaves with minimum overall width of 4 inches (102 mm); fabricated to full height of door and frame and to template screw locations; with components finished after milling and drilling are complete.

B. Continuous, Gear-Type Hinges: Extruded-aluminum, pinless, geared hinge leaves joined by a continuous extruded-aluminum channel cap; with concealed, self-lubricating thrust bearings.

2.7 MECHANICAL LOCKS AND LATCHES

A. Lock Functions: As indicated in door hardware schedule.

B. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:

1. Bored Locks: Minimum 1/2-inch (13-mm) latchbolt throw.
2. Mortise Locks: Minimum 3/4-inch (19-mm) latchbolt throw.
3. Deadbolts: Minimum [**1-inch (25-mm)**] [**1.25-inch (32-mm)**] <**Insert dimension**> bolt throw.

C. Lock Backset: 2-3/4 inches (70 mm) unless otherwise indicated.

D. Lock Trim: As indicated in hardware schedule.

E. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Manufacturer's special strike box fabricated for aluminum framing.
4. Rabbet Front and Strike: Provide on locksets for rabbeted meeting stiles.

F. Bored Locks: BHMA A156.2; Grade 2; Series 4000.

G. Mortise Locks: BHMA A156.13; Security Grade 2; stamped steel case with steel or brass parts; Series 1000.

2.8 ELECTRIC STRIKES

A. Electric Strikes: BHMA A156.31; Grade 2; with faceplate to suit lock and frame.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Allegion plc.
b. Hager Companies.
c. STANLEY; dormakaba USA, Inc.

2.9 ELECTROMAGNETIC LOCKS

A. Electromagnetic Locks: BHMA A156.23; electrically powered; with electromagnet attached to frame and armature plate attached to door; full-exterior or full-interior type, as required by application indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. Allegion plc.
   b. Hager Companies.

B. Delayed-Egress Electromagnetic Locks: BHMA A156.24, electrically powered, with electromagnet attached to frame and armature plate attached to door; depressing push bar for more than three seconds initiates irreversible alarm and adjustable time delay for egress. When integrated with fire alarm, fire alarm voids time delay.

2.10 ELECTROMECHANICAL LOCKS

A. Electromechanical Locks: BHMA A156.25; Grade 2; motor or solenoid driven; with strike that suits frame.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. Allegion plc.
   b. BEST Access Solutions, Inc.; dormakaba USA Inc.
   c. STANLEY; dormakaba USA, Inc.

2. Type: Bored.

2.11 EXIT LOCKS AND EXIT ALARMS

A. Exit Locks and Alarms: BHMA A156.29, Grade 2.

2.12 SURFACE BOLTS

A. Surface Bolts: BHMA A156.16.

2.13 MANUAL FLUSH BOLTS

A. Manual Flush Bolts: BHMA A156.16; minimum 3/4-inch (19-mm) throw; designed for mortising into door edge.

2.14 AUTOMATIC AND SELF-LATCHING FLUSH BOLTS

A. Automatic Flush Bolts: BHMA A156.3, Type 25; minimum 3/4-inch (19-mm) throw; with dust-proof strikes; designed for mortising into door edge. Include wear plates.

B. Self-Latching Flush Bolts: BHMA A156.3, Type 27; minimum 3/4-inch (19-mm) throw; with dust-proof strikes; designed for mortising into door edge. Include wear plates.

2.15 EXIT DEVICES AND AUXILIARY ITEMS

A. Exit Devices and Auxiliary Items: BHMA A156.3.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Allegion plc.
b. Hager Companies.
c. STANLEY; dormakaba USA, Inc.

2.16 LOCK CYLINDERS

A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver. Provide cylinder from same manufacturer of locking devices.

B. Standard Lock Cylinders: BHMA A156.5; Grade 2 permanent cores; face finished to match lockset.

1. Core Type: Interchangeable.

C. High-Security Lock Cylinders: BHMA A156.30; Grade 2 permanent cores that are removable; face finished to match lockset.

1. Type: M, mechanical.

D. Construction Master Keys: Provide cylinders with feature that permits voiding of construction keys without cylinder removal. Provide 10 construction master keys.

E. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys.

2.17 KEYING

A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, appendix. Provide one extra key blank for each lock. Incorporate decisions made in keying conference.

1. No Master Key System: Only change keys operate cylinders.

a. Provide three cylinder change keys.

2. Master Key System: Change keys and a master key operate cylinders.

a. Provide three cylinder change keys and five master keys.

3. Grand Master Key System: Change keys, a master key, and a grand master key operate cylinders.

a. Provide three cylinder change keys and five each of master and grand master keys.

4. Great-Grand Master Key System: Change keys, a master key, a grand master key, and a great-grand master key operate cylinders.

    a. Provide three cylinder change keys and five each of master, grand master, and great-grand master keys.

5. Existing System:

    a. Master key or grand master key locks to Owner's existing system.
    b. Re-key Owner's existing master key system into new keying system.

6. Keyed Alike: Key all cylinders to same change key.

B. Keys: Brass.

1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:

    a. Notation: "DO NOT DUPLICATE."

2.18 OPERATING TRIM

A. Operating Trim: BHMA A156.6; stainless steel unless otherwise indicated.

1.

2.19 ACCESSORIES FOR PAIRS OF DOORS

A. Coordinators: BHMA A156.3; consisting of active-leaf, hold-open lever and inactive-leaf release trigger; fabricated from steel with nylon-coated strike plates; with built-in, adjustable safety release; and with internal override.

B. Carry-Open Bars: BHMA A156.3; prevent the inactive leaf from opening before the active leaf; provide polished brass or bronze carry-open bars with strike plate for inactive leaves of pairs of doors unless automatic or self-latching bolts are used.

C. Astragals: BHMA A156.22.

2.20 SURFACE CLOSERS

A. Surface Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written instructions for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

2.21 CONCEALED CLOSERS

A. Concealed Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves. Comply with manufacturer's written instructions for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

2.22 CLOSER HOLDER RELEASE DEVICES

A. Closer Holder Release Devices: BHMA A156.15; Grade 2; closer connected with separate or integral releasing and fire- or smoke-detecting devices. Door shall become self-closing on interruption of signal to release device. Automatic release is activated by smoke detection system.

2.23 MECHANICAL STOPS AND HOLDERS

A. Wall- and Floor-Mounted Stops: BHMA A156.16.

2.24 ELECTROMAGNETIC STOPS AND HOLDERS

A. Electromagnetic Door Holders: BHMA A156.15, Grade 2; wall-mounted electromagnetic single unit with strike plate attached to swinging door; coordinated with fire detectors and interface with fire-alarm system for labeled fire-rated door assemblies.

2.25 OVERHEAD STOPS AND HOLDERS

A. Overhead Stops and Holders: BHMA A156.8.

2.26 DOOR GASKETING

A. Door Gasketing: BHMA A156.22; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.

B. Maximum Air Leakage: When tested in accordance with ASTM E283 with tested pressure differential of 0.3-inch wg (75 Pa), as follows:

1. Smoke-Rated Gasketing: 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) of door opening.
2. Gasketing on Single Doors: 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) of door opening.
3. Gasketing on Double Doors: 0.50 cfm per ft. (0.000774 cu. m/s per m) of door opening.

2.27 THRESHOLDS

A. Thresholds: BHMA A156.21; fabricated to full width of opening indicated.

2.28 METAL PROTECTIVE TRIM UNITS

A. Metal Protective Trim Units: BHMA A156.6; fabricated from 0.050-inch- (1.3-mm-) thick stainless steel; with manufacturer's standard machine or self-tapping screw fasteners.

2.29 AUXILIARY DOOR HARDWARE

A. Auxiliary Hardware: BHMA A156.16.

2.30 AUXILIARY ELECTRIFIED DOOR HARDWARE

A. Auxiliary Electrified Door Hardware:

2.31 FABRICATION

A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rating labels and as otherwise approved by Architect.

1. Manufacturer's identification is permitted on rim of lock cylinders only.

B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.

C. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware unless otherwise indicated.

1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
2. Fire-Rated Applications:

a. Wood or Machine Screws: For the following:

1) Hinges mortised to doors or frames.
2) Strike plates to frames.
3) Closers to doors and frames.

b. Steel Through Bolts: For the following unless door blocking is provided:

1) Surface hinges to doors.

2) Closers to doors and frames.
3) Surface-mounted exit devices.

3. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
4. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.32 FINISHES

A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance of the Work.

B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

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

3.2 PREPARATION

A. Steel Doors and Frames: For surface-applied door hardware, drill and tap doors and frames in accordance with ANSI/SDI A250.6.

B. Wood Doors: Comply with door and hardware manufacturers' written instructions.

3.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
2. Custom Steel Doors and Frames: HMMA 831.

3. Wood Doors: DHI's "Recommended Locations for Architectural Hardware for Wood Flush Doors."

B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.

1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

C. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

D. Intermediate Offset Pivots: Where offset pivots are indicated, provide intermediate offset pivots in quantities indicated in door hardware schedule, but not fewer than one intermediate offset pivot per door and one additional intermediate offset pivot for every 30 inches (750 mm) of door height greater than 90 inches (2286 mm).

E. Lock Cylinders: Install construction cores to secure building and areas during construction period.

1. Replace construction cores with permanent cores as directed by Owner.
2. Furnish permanent cores to Owner for installation.

F. Key Control System:

1. Key Control Cabinet: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
2. Key Lock Boxes: Install where indicated or approved by Architect to provide controlled access for fire and medical emergency personnel.
3. Key Control System Software: Set up multiple-index system based on final keying schedule.

G. Boxed Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings. Verify location with Architect.

1. Configuration: Provide one power supply for each door opening with electrified door hardware.

H. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant complying with requirements specified in Section 079200 "Joint Sealants."

I. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.

J. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

1. Do not notch perimeter gasketing to install other surface-applied hardware.

K. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

L. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.4 FIELD QUALITY CONTROL

A. Independent Architectural Hardware Consultant: Engage a qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.

1. Independent Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
2. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 70 degrees and so that closing time complies with accessibility requirements of authorities having jurisdiction.
3. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.

B. Occupancy Adjustment: Approximately three months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.6 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.7 MAINTENANCE SERVICE

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

B. Maintenance Service: Beginning at Substantial Completion, maintenance service shall include 12 months' full maintenance by skilled employees of door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door and door hardware operation. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.

3.8 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain door hardware.

3.9 DOOR HARDWARE SCHEDULE

A. Hardware Set 1a: Aluminum Curtainwall Double Doors- Vestibule Entry
   1. Manufacturers Standard Aluminum Storefront Door Hardware for double doors- Locking Hardware with one active leaf and one passive leaf and panic hardware from interior - include magnetic locks coordinated with card reader by others. Include manufacturers standard weatherstripping.

B. Hardware Set 1b: Aluminum Curtainwall Double Doors- Atrium Entry
   1. Manufacturers Standard Aluminum Storefront Door Hardware for double doors- Passage Hardware with two active leaves and panic hardware from interior - include magnetic locks coordinated with card reader by others.

C. Hardware Set 1c: Aluminum Curtainwall Double Doors- Suite Entry
   1. Manufacturers Standard Aluminum Storefront Door Hardware for double doors- Locking Hardware with one active leaf and one passive leaf- include magnetic locks coordinated with card reader by others.

D. Hardware Set 1d: Aluminum Curtainwall Single Door- Atrium Entry
   1. Manufacturers Standard Aluminum Storefront Door Hardware for single door- Locking Hardware with panic hardware from interior- include magnetic locks coordinated with card reader by others. Include manufacturers standard weatherstripping.

E. Hardware Set 1e: Aluminum Curtainwall Double Doors- Fitness Entry
   1. Manufacturers Standard Aluminum Storefront Door Hardware for double doors- Locking Hardware with one active leaf and one passive leaf- include magnetic locks coordinated with card reader by others.

F. Hardware Set 2a: Closet- single door

1.	1 ½ Pair Butt Hinges	FBB179-US26D	Stanley
2.	1 Storeroom Set	7KC-3-7-D-15-D-S3-626	Best
3.	1 Wall Stop	WS401/402-CVX US26D	Ives
4.	3 Door Silencers	SR-64	Ives

G. Hardware Set 2b: Closet- double door

1.	3 Pair Butt Hinges	FBB179-US26D	Stanley
2.	1 Storeroom Set	7KC-3-7-D-15-D-S3-626	Best
3.	1 Single Dummy Set	7KC-3-7-1DT-15-D-S3-626	Best
4.	1 Pair Automatic Flush Bolts	FB-41P-US32D	Ives
5.	2 Door Silencers	SR-64	Ives

H. Hardware Set 3a: Corridor- single door

1.	1 ½ Pair Butt Hinges	FBB179-US26D	Stanley
2.	1 Classroom Set	7KC-3-7-R-15-D-S3-626	Best
3.	1 Wall Stop	WS401/402-CVX US26D	Ives
4.	3 Door Silencers	SR-64	Ives
5.	1 Closer	HD7000	Best

I. Hardware Set 3b: Egress corridor- single door

1.	1 ½ Pair Butt Hinges	FBB179-US26D	Stanley
2.	1 Egress set	610F36AU441F	Yale
3.	1 Wall Stop	WS401/402-CVX US26D	Ives
4.	3 Door Silencers	SR-64	Ives
5.	1 Closer	HD8000	Best
6.	1 Magnetic hold open	SEM 7800	LCN

J. Hardware Set 4a: Conference- single door

1.	1 ½ Pair Butt Hinges	FBB179-US26D	Stanley
2.	1 Classroom Set	7KC-3-7-R-15-D-S3-626	Best
3.	1 Wall Stop	WS401/402-CVX US26D	Ives
4.	3 Door Silencers	SR-64	Ives
5.	1 Coat Hook	582-B26D	Ives

K. Hardware Set 4b: Conference- double door

1.	3 Pair Butt Hinges	FBB179-US26D	Stanley
2.	1 Classroom Set	7KC-3-7-R-15-D-S3-626	Best
3.	1 Single Dummy Set	7KC-3-7-1DT-15-D-S3-626	Best
4.	2 Floor Stops	FS-439-630	Ives
5.	1 Pair Automatic Flush Bolts	FB-41P-US32D	Ives
6.	2 Door Silencers	SR-64	Ives

L. Hardware Set 5a: Restroom door

1.	1 ½ Pair Butt Hinges	FBB179-US26D	Stanley
2.	1 Privacy Set	7KC-3-0-L-15-D-S3-626	Best
3.	1 Wall Stop	WS401/402-CVX US26D	Ives
4.	3 Door Silencers	SR-64	Ives
5.	1 Closer	HD7000	Best

M. Hardware Set 6a: Electrical closet- double door

1.	3 Pair Butt Hinges	FBB179-US26D	Stanley
2.	1 Storeroom Set	7KC-3-7-D-15-D-S3-626	Best
3.	1 Single Dummy Set	7KC-3-7-1DT-15-D-S3-626	Best
4.	1 Floor Stop (first floor only)	FS-439-630	Ives
5.	1 Pair Automatic Flush Bolts	FB-41P-US32D	Ives

6.	2 Door Silencers	SR-64	Ives

N. Hardware Set 7a: Office door

1.	1 ½ Pair Butt Hinges	FBB179-US26D	Stanley
2.	1 Office Set	7KC-3-7-AB-15-D-S3-626	Best
3.	1 Wall Stop	WS401/402-CVX US26D	Ives
4.	3 Door Silencers	SR-64	Ives
5.	1 Coat Hook	582-B26D	Ives

O. Hardware Set 7b: Office door-Dutch door

1.	1 Pair Butt Hinges (top leaf)	FBB179-US26D	Stanley
2.	1 Pair Butt Hinges (bottom leaf)	FBB179-US26D	Stanley
3.	1 Office Set (bottom leaf)	7KC-3-7-AB-15-D-S3-626	Best
4.	1 Single Dummy (top leaf) (located on office side)	7KC-IDT-15-D-S3-626	Best
5.	1 Deadbolt Latch (located in top leaf, throws into bottom leaf)	8T3-S1-626-D5	Best
6.	2 Wall Stops	WS401/402-CVX US26D	Ives
7.	4 Door Silencers	SR-64	Ives
8.	1 Coat Hook	582-B26D	Ives

P. Hardware Set 7c: EOC door-acoustic

1.	1 ½ Pair Butt Hinges	FBB179-US26D	Stanley
2.	1 Classroom set	7KC-3-7-R-15-D-S3-626	Best
3.	1 Electric Strike Coordinate strike function with card reader by others	6 Series	Best
4.	1 Wall Stop	WS401/402-CVX US26D	Ives
5.	3 Door Silencers	SR-64	Ives
6.	1 Closer	HD7000	Best
7.	Acoustic jamb seal	S773/S44	Pemko
8.	Acoustic threshold	STC441APK	Pemko

Q. Hardware Set 7d: Training Room door-acoustic

1.	1 ½ Pair Butt Hinges	FBB179-US26D	Stanley
2.	1 Classroom set	7KC-3-7-R-15-D-S3-626	Best
3.	1 Wall Stop	WS401/402-CVX US26D	Ives
4.	3 Door Silencers	SR-64	Ives
5.	1 Closer	HD7000	Best
6.	Acoustic jamb seal	S773/S44	Pemko
7.	Acoustic threshold (Acoustic seals added for Addendum 3)	STC441APK	Pemko

R. Hardware Set 8a: Janitor Closet

1.	1 ½ Pair Butt Hinges	FBB179-US26D	Stanley
2.	1 Storeroom Set	7KC-3-7-D-15-D-S3-626	Best
3.	1 Floor Stop	FS-439-630	Ives
4.	3 Door Silencers	SR-64	Ives

S. Hardware Set 9a: IT Closet

1.	1 ½ Pair Butt Hinges	FBB179-US26D	Stanley
2.	1 Storeroom set	7KC-3-7-D-15-D-S3-626	Best
3.	1 Electric Strike	6 Series	Best
	Coordinate strike function with card reader by others		
4.	1 Floor Stop	FS-439-630	Ives
5.	3 Door Silencers	SR-64	Ives
6.	1 Closer	HD7000	Best

T. Hardware Set 9b: Card Key Office Access

1.	1 ½ Pair Butt Hinges	FBB179-US26D	Stanley
2.	1 Classroom	7KC-3-7-R-15-D-S3-626	Best
3.	1 Electric Strike	6 Series	Best
	Coordinate strike function with card reader by others		
4.	1 Floor Stop	FS-439-630	Ives
5.	3 Door Silencers	SR-64	Ives

U. Hardware Set 10a: Egress Stair

1.	1 ½ Pair Butt Hinges	FBB179-US26D	Stanley
2.	1 Office set	7KC-3-7-AB-15-D-S3-626	Best
3.	1 Electric Strike	6 Series	Best
	Coordinate strike function with card reader by others		
4.	1 Wall Stop	FS-439-630	Ives
5.	3 Door Silencers	SR-64	Ives

END OF SECTION 087100

SECTION 096519 - RESILIENT TILE FLOORING (UPDATED FOR ADDENDUM 3)

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. Solid vinyl floor tile.

2. Static Dissipative Tile (Added for Addendum #)

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For each type of resilient floor tile.

1. Include floor tile layouts, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.
2. Show details of special patterns.

C. Samples: Full-size units of each color, texture, and pattern of floor tile required.

1. For heat-welding bead, manufacturer's standard-size Samples, but not less than 9 inches (230 mm) long, of each color required.

D. Samples for Initial Selection: For each type of floor tile indicated.

E. Samples for Verification: Full-size units of each color and pattern of floor tile required.

1. For heat-welding bead, manufacturer's standard-size Samples, but not less than 9 inches (230 mm) long, of each color required.

F. Product Schedule: For floor tile.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of floor tile to include in maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Floor Tile: Furnish one box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are competent in techniques required by manufacturer for floor tile installation and seaming method indicated.

1. Engage an installer who employs workers for this Project who are trained or certified by floor tile manufacturer for installation techniques required.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C). Store floor tiles on flat surfaces.

1.9 FIELD CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F (21 deg C) or more than 95 deg F (35 deg C), in spaces to receive floor tile during the following periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F (13 deg C) or more than 95 deg F (35 deg C).

C. Close spaces to traffic during floor tile installation.

D. Close spaces to traffic for 48 hours after floor tile installation.

E. Install floor tile after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For resilient floor tile, as determined by testing identical products according to ASTM E648 or NFPA 253 by a qualified testing agency.

1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

2.2 VINYL COMPOSITION FLOOR TILE

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

1. Armstrong Flooring

B. Tile Standard: ASTM F1066, Class 2, through pattern.

C. Wearing Surface: Smooth.

D. Thickness: 0.125 inch (3.2 mm).

E. Size: 12 by 12 inches (305 by 305 mm).

F. Colors and Patterns:
1. VCT-1: Armstrong – Standard Excelon Imperial Texture- Sandrift White 51858.
2. VCT-2: Armstrong – Standard Excelon Imperial Texture- Dutch Delft 51916.

2.3 STATIC DISSIPATIVE TILE (Added for Addendum #)

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

1. Armstrong Flooring

B. Wearing Surface: Smooth.

C. Thickness: 0.125 inch (3.2 mm).

D. Size: 12 by 12 inches (305 by 305 mm).

E. Colors and Patterns:
1. VCT-3: Armstrong Excelon SDT, Color 51951 “Armor Gray”

2.4 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by floor tile manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.

C. Floor Polish: Provide protective, liquid floor-polish products recommended by floor tile manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.

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

3.2 PREPARATION

A. Prepare substrates according to floor tile manufacturer's written instructions to ensure adhesion of resilient products.

B. Concrete Substrates: Prepare according to ASTM F710.

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by floor tile manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by floor tile manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
4. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft. (18.6 sq. m), and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.

b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

C. Access Flooring Panels: Remove protective film of oil or other coating using method recommended by access flooring manufacturer.

D. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

E. Do not install floor tiles until materials are the same temperature as space where they are to be installed.

1. At least 48 hours in advance of installation, move resilient floor tile and installation materials into spaces where they will be installed.

F. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.

3.3 FLOOR TILE INSTALLATION

A. Comply with manufacturer's written instructions for installing floor tile.

B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.

1. Lay tiles square with room axis.

C. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.

1. Lay tiles with grain running in one direction.

D. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.

E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.

F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent marking device.

G. Install floor tiles on covers for telephone and electrical ducts, building expansion-joint covers, and similar items in installation areas. Maintain overall continuity of color and pattern between pieces of tile installed on covers and adjoining tiles. Tightly adhere tile edges to substrates that abut covers and to cover perimeters.

H. Adhere floor tiles to substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

3.4 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protecting floor tile.

B. Perform the following operations immediately after completing floor tile installation:

1. Remove adhesive and other blemishes from surfaces.
2. Sweep and vacuum surfaces thoroughly.
3. Damp-mop surfaces to remove marks and soil.

C. Protect floor tile from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Floor Polish: Remove soil, adhesive, and blemishes from floor tile surfaces before applying liquid floor polish.

1. Apply two coat(s).

E. Joint Sealant: Apply sealant to resilient terrazzo floor tile perimeter and around columns, at door frames, and at other joints and penetrations.

F. Sealers and Finish Coats: Remove soil, visible adhesive, and surface blemishes from resilient terrazzo floor tile surfaces before applying liquid cleaners, sealers, and finish products.

1. Sealer: Apply two base coats of liquid sealer.
2. Finish: Apply three coats of liquid floor finish.

G. Cover floor tile until Substantial Completion.

END OF SECTION 096519

SECTION 105126 - PHENOLIC LOCKERS (ADDED PER ADDENDUM 3)

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Phenolic lockers.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of locker.

B. Shop Drawings: For phenolic lockers.

1. Include plans, elevations, sections, and attachment details.
2. Show details full size.
3. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
4. Show locations and sizes of cutouts and holes for items installed in lockers.
5. Show locker fillers, trim, base, sloping tops, and accessories.
6. Show locker identification system and numbering sequence.

C. Samples for Initial Selection: For each type of the following:

1. For each type of locker include no less than three standard phenolic panels, hardware, and/or accessories involving material and color selection.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Sample Warranty: For special warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For adjusting, repairing, and replacing locker doors and latching mechanisms to include in maintenance manuals.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Locker doors, complete with specified door hardware. Furnish no fewer than three doors of each type and color installed.
2. Units of the following locker hardware items equal to 5 percent of amount installed for each type and finish installed, but no fewer than 5 units:

a. Hinges.
b. Pulls.
c. Shelf rests.
d. Cylinder locks.
e. Blank identification plates.
f. Hooks.

1.6 QUALITY ASSURANCE

A. All parts and hardware shall be structurally sound and free from defects, in material and workmanship under normal use and service for the full warranty period.

B. Water absorption requirements: When tested in accordance with ASTM D570 locker materials shall have a water absorption rate of less than 0.37%.

C. Graffiti resistance requirements: Locker materials shall have guaranteed surface clean ability in accordance with ASTM D6578 from all chemicals tested for a period of 1 to 10 minutes and shall leave no permanent marks and non-ghosting properties.

D. Scratch resistance requirements: When tested in accordance with ASTM D2197, locker materials shave prove to be scratch resistant when maximum load values in excess of 10 kilograms.

E. Impact resistance requirements: Phenolic locker material shall withstand an Impact Force Value in excess of 45-inch lbs. when tested in accordance with ASTM D1037.

F. Flame spread: When tested in accordance with ASTM E84, lockers materials shall meet or exceed all requirements for class B flame spread rating and smoke developed.
1. Flame spread shall not exceed 75.
2. Smoke developed shall not exceed 450.

G. Screw holding strength: When tested in accordance with ASTM D1037, direct screw withdrawal test, locker materials shall withstand a direct pull force that exceeds 2,500lbs per fastener.

H. Tensile strength: Locker materials shall have a modulus of elasticity of 1.55 million psi.

I. Shear strength: Locker materials shall have a shear strength of 2,000 psi minimum.

J. Compression strength: Locker materials shall have a compression strength of 24,000 psi minimum.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store products in a dry, ventilated area until ready for installation.

B. Protect finishes from moisture, soiling and damage during handling.

C. Do not deliver lockers until painting and similar operations that could damage lockers have been completed in installation areas.

1.8 FIELD CONDITIONS

A. Environmental Limitations: During and after installation maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

B. Field Measurements: Where lockers are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings.

1. Locate concealed framing, blocking, and reinforcements that support lockers by field measurements before being enclosed, and indicate measurements on Shop Drawings.

C. Established Dimensions: Where lockers are indicated to fit to other construction, establish dimensions for areas where lockers are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.9 COORDINATION

A. Coordinate sizes and locations of concealed wood support bases.

1. Requirements are specified in Section 061053 "Miscellaneous Rough Carpentry."

B. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of work specified in other Sections to ensure that lockers can be supported and installed as indicated.

1.10 WARRANTY

A. Provide manufacturer's written limited 20-year warranty against breakage, corrosion, delamination, and defects in workmanship of all phenolic components; to be replaced without charge, excluding labor.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Hollman Inc.; 1825 W. Walnut Hill Lane, Irving, TX 75038, Suite 110 Phone (972) 815-4000, Fax (972) 815-2921, Email: sales@hollman.com.

B. Substitutions: Not permitted.

2.2 MATERIALS

A. Materials shall be solid phenolic, a cured solid material produced by resin-injecting sheets of Kraft paper, with a high-pressure melamine matte finish surface made as an integral part of the core material.

B. Material Thicknesses:
1. Doors, Slope Tops, End Panels, and Toe Kick Plates – Minimum .50” (13mm) Finished Thickness.
2. Locker boxes: Tops, bottoms, sides, and shelves – Minimum .375” (10mm) Finished Thickness. Locker Backs – Minimum .25” (6.35mm) Finished Thickness.
3. Locker Doors: Locker door shall be the full width of the locker box (minus 1/4”) and shall be frameless, allowing access to the entire width of the locker.
4. Locker Body: Locker body shall be white in color and will be mechanically fastened with stainless steel fastener. Hinges will be attached to the locker box with stainless steel theft proof torx-head screws. Lockers will have a 6mm ventilation gap between locker door and box. Lockers shall arrive at construction site fully assembled.
5. Colors:
   a. Color 1: White Sand
   b. Color 2: North Sea
   c. Color 3: Storm

2.3 LOCKER MODELS

A. Single tier, Model A: 72” H x 12” W x 18” D, 2 coat hooks, 1 ceiling hook, 1 hat shelf and 1 shoe shelf.

2.4 HARDWARE

A. Hinges: Standard Option-Frameless Hinge (European Style): Fully Concealed, Nickel Plated Steel.

B. Coat Hooks: Fabricated of 12-gauge type 304 stainless steel with a satin finish. All edges to be polished and smooth.

C. Locks: Keyless Hasp, Satin finish.

D. Number Plates: Provide a number plate for each opening, sequenced as indicated by the end user.

2.5 PERFORMANCE REQUIREMENTS

A. Accessibility Standard: For lockers indicated to be accessible, comply with applicable provisions in the USDOJ's "2010 ADA Standards for Accessible Design", the ABA standards of the Federal agency having jurisdiction and ICC A117.1.

2.6 FABRICATION

A. Provide factory pre-assembled locker units. Fabricate each locker with shelves, an individual door and frame, an individual top, a bottom, and a back, and with common intermediate uprights separating compartments. Knock down units are unacceptable.

B. Fabricate lockers square, rigid, without warp, and with finished faces flat and free of dents, scratches, and chips. Accurately factory machine components for attachments. Make joints tight and true.

C. Trim panels: Provide end panels, filler panels, base trim, valance, and slope top panels as required to complete installation of the lockers.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine walls and floors or support bases, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify that furring is attached to concrete and masonry walls that are to receive lockers.

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

3.2 PREPARATION

A. Condition lockers to average prevailing humidity conditions in installation areas before installation.

B. Before installing lockers, examine factory-fabricated work for completeness and complete work as required, including removal of packing.

C. Clean surfaces thoroughly prior to installation.

D. Prepare surfaces using methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Set and secure lockers level, plumb, and true; use concealed shims.

C. Use concealed joist fasteners to align and secure adjoining locker units.

D. Conceal screw heads with plastic caps on the adjustable feet only to match locker interior.

E. Secure lockers with anchor devices to suit substrate materials. Minimum Pullout Force: 100lb.

F. Install end panels, filler panels, tops, and bases as indicated on the approved shop drawings.

G. Install accessories.

3.4 ADJUSTING

A. Adjust moving or operating parts to function smoothly and correctly.

3.5 CLEANING

A. Clean locker interiors and exterior surfaces.

3.6 PROTECTION

A. Protect lockers from damage, abuse, dust, dirt, stain, or paint. Do not permit use during construction.

B. Touch up marred finishes, or replace lockers that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by locker manufacturer.

END OF SECTION 105126

WASHINGTON GAS LIGHT COMPANY

" 6 Taft Ct "

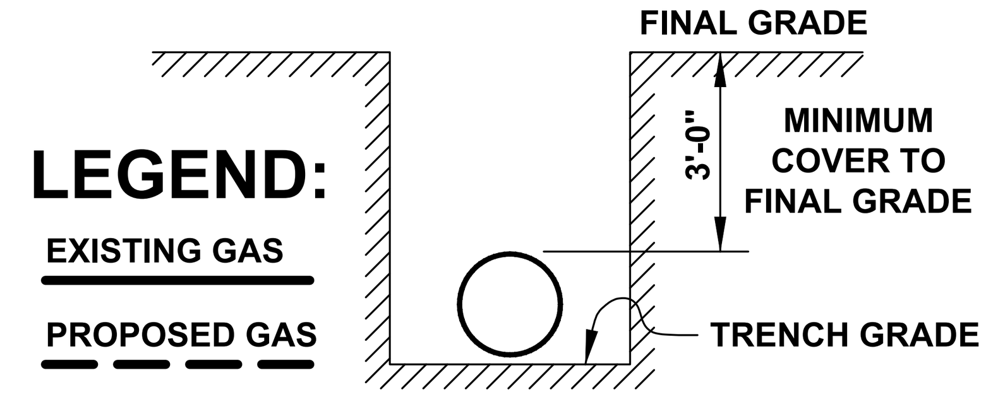
City Of Rockville , MARYLAND

	Main Size (")	FOOTAGE OF MAIN INSTALLED	Material
New Construction On-Site (MNAPL) - Req 08	4	694	PLA
Main To Be Abandon (MNABD) - Req ??	488' OF 2"PLA		
Number Of Service Change Overs	2		
(TOTAL # OF SERVICES TO BE INSTALLED)	1		PLA

NOTES:

1. CONTRACTOR NEEDS TO CONTACT CORROSION CONTROL SUPERVISOR TO HAVE TECHNICIAN INSPECT AND TEST WIRES WHEN INSTALLED. REFERENCE DRAWING: TD-7140-I-002.
   DAVE BROWN: 202-624-6440 (PG CO, NE, SE, & SW DC)
   TREVOR DIEDERICH: 703-750-7744 (VIRGINIA)
   BRIAN AMOS: 202-624-6271 (MO CO & NW DC)
2. INSTALL EXCESS FLOW VALVE(S) PER TABLE IN ACCORDANCE WITH OPERATIONAL & MAINTENANCE MANUAL SECTION 5204. EFV'S ARE NOT INSTALLED ON LOW PRESSURE SERVICES OR LOADS GREATER THAN 10,000SCFH. CURB VALVES MUST BE INSTALLED ON ALL SERVICES NOT HAVING AN EXCESS FLOW VALVE.
3. VERIFY FEEDS WITH ENGINEER AT START OF CONSTRUCTION AND NEED FOR BYPASS(ES) AT TIE-INS. CONTACT ENGINEER FOR CONFIRMATION OF REQUIRED SIZE AND TEMPERATURE RESTRICTIONS.
4. DRAWING CREATED WITH ELECTRONIC FILE EXTRACT FROM WG MAPPING SYSTEM, DUE TO THE SCHEMATIC NATURE OF THE SYSTEM, WASHINGTON GAS DESIGN DOES NOT MAKE ANY GUARANTEE AS TO THE ACCURACY OF INFORMATION CONTAINED THEREIN. REFERENCE SERVICE RECORD CARDS. LOCATION AND DEPTHS OF UTILITIES MUST BE CONFIRMED IN FIELD BY CONTRACTOR PRIOR TO CONSTRUCTION.
5. WHEN WRAPPED STEEL PIPE IS ACCESSED FOR A PERMANENT REPAIR OR NEW INSTALL, A PIPE-TO-SOIL POTENTIAL READING MUST BE TAKEN AND RECORDED ON THE APPROPRIATE FIELD ORDER. PLEASE REFER TO O&M 4084-REPARING STEEL PIPELINES.
6. A SYSTEM PLANNING REVIEW IS REQUIRED IF CONSTRUCTION DOES NOT START WITHIN 6 MONTH FROM THIS DATE (06-02-2020)

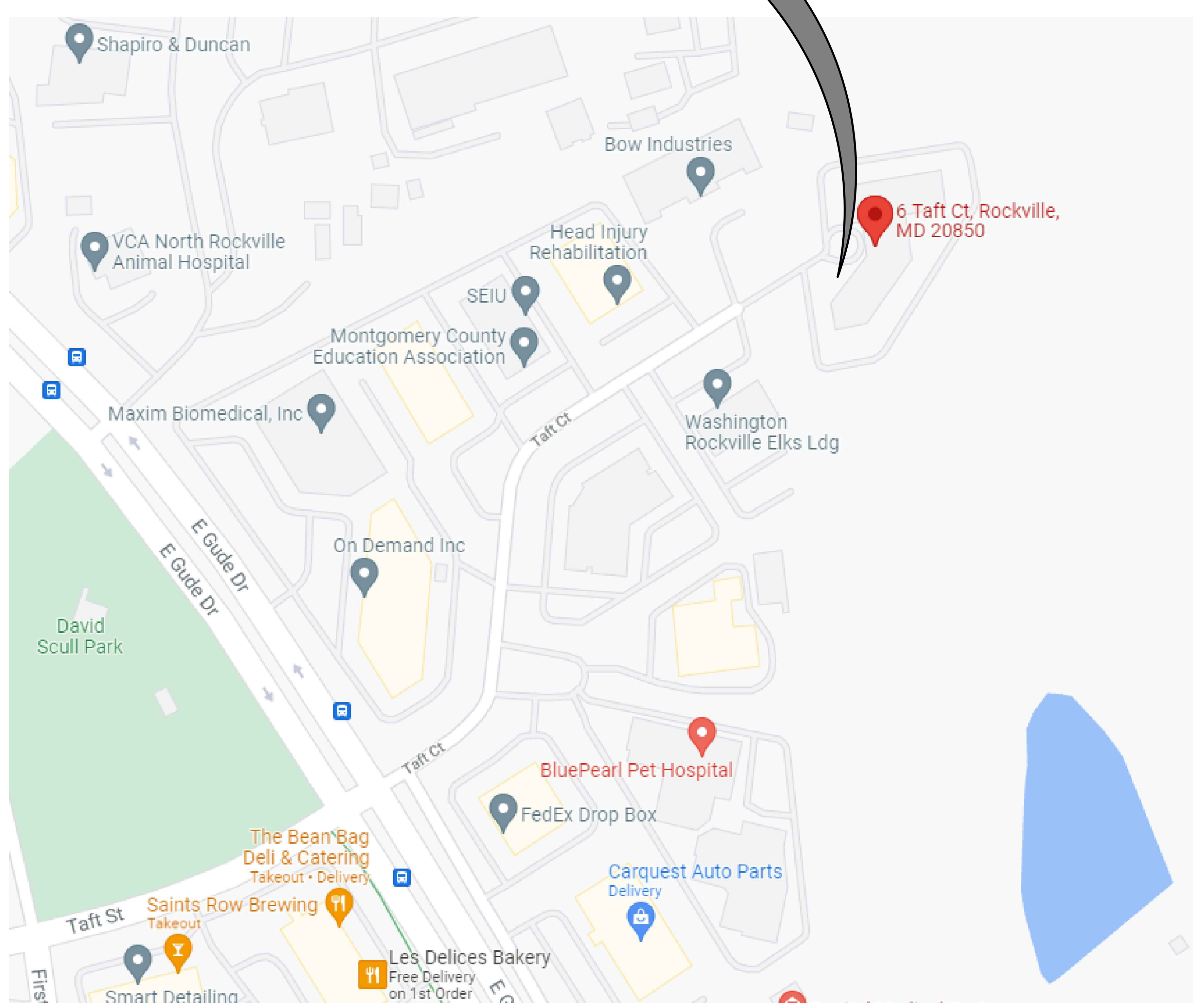
TYPICAL ELEVATION VIEW



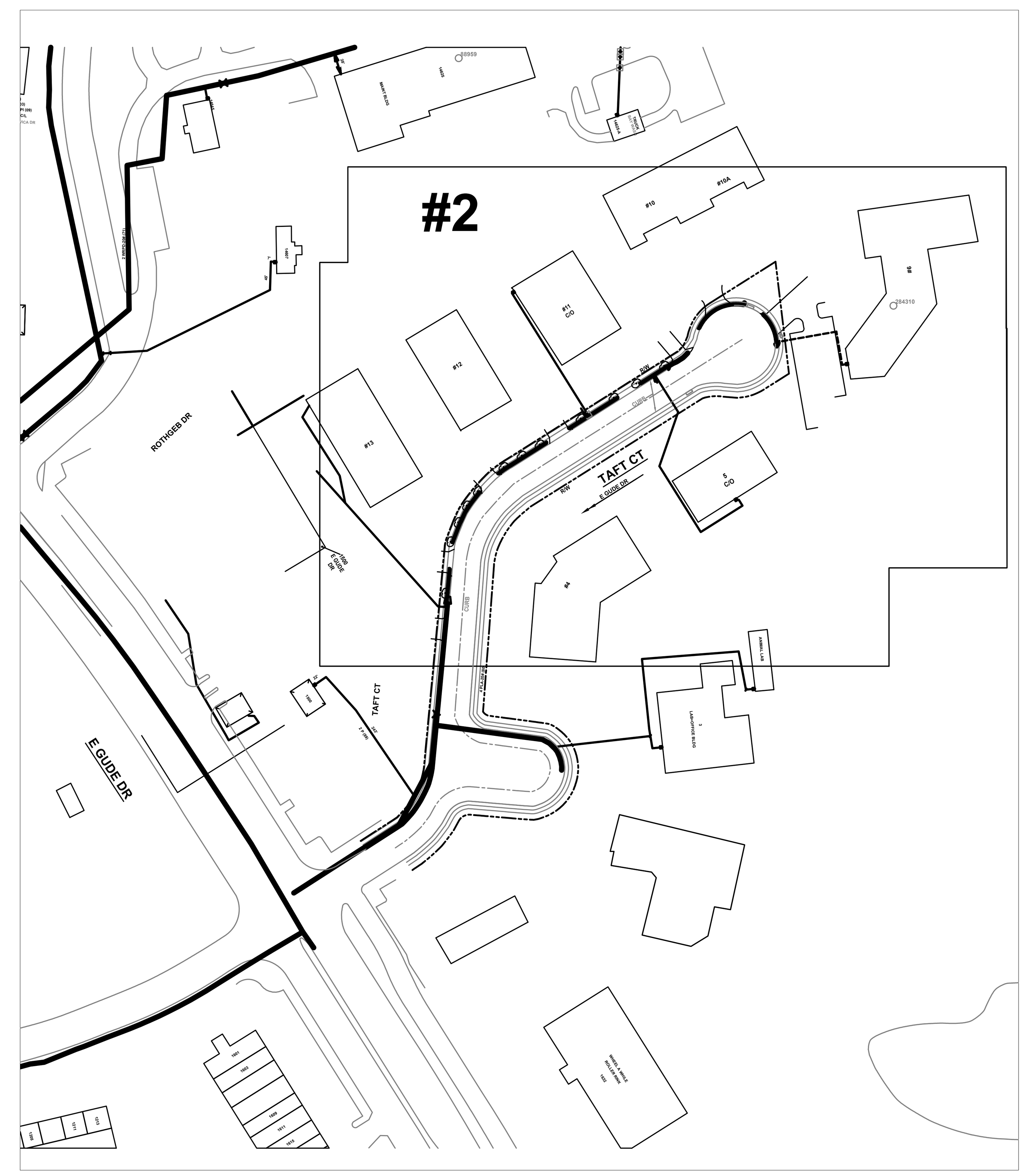
PROPOSED GAS TO MAINTAIN A MINIMUM OF 1'-0" VERTICAL AND 5'-0" HORIZONTAL CLEARANCE FROM WATER AND SEWER FACILITIES UNLESS OTHERWISE SPECIFIED BY JURISDICTION.

NOTE:
1. THE CONTRACTOR SHALL INSTALL A THERMAL SAFETY VALVE (TSV) ACCORDING TO O&M MANUAL SECTION 5205 WHEN THE FOLLOWING CONDITIONS EXIST:
   -INSTALLING NEW SERVICE LINES
   -REPLACING SERVICE LINES
   -THE FITTING CONNECTING TO THE RISER VALVE IS REMOVED DURING METER SET ASSEMBLY.
   TSVS MUST BE ABLE TO ACCOMMODATE CUSTOMER DEMAND OR FLOW. ENSURE THAT THE GAS DEMAND FROM THE CUSTOMER DOES NOT EXCEED THE CAPACITY OF THE TSV(S). REFERENCE TABLE 5205-1 FOR TSV CAPACITIES. TSVS CANNOT BE INSTALLED WHERE CUSTOMER DEMAND EXCEEDS THE CAPACITY OF THE TSV (SEE O&M MANUAL FOR ADDITIONAL INFORMATION).

SITE LOCATION



City Of Rockville , Maryland
VICINITY MAP
NOT TO SCALE



" 6 Taft Ct "
SITE LOCATION MAP
NOT TO SCALE

EXCESS FLOW VALVES MATERIAL ALERT

Effective Date: April 14, 2017 — Alert No. M-2017-1
Reference: O&M Section 5204, "Excess Flow Valves"
Purpose: To emphasize Washington Gas policy regarding the selection of excess flow valves (EFVs) for use on service lines, provide a list of EFVs in the WG inventory, and provide a quick reference for EFV selection. Page 2 of 2

3. EFV Selection. Consult the following table when selecting EFVs for a specific service. These guidelines do not cover all situations. See OM-5204 and OM-5128 for details:

Meter Size	Meter or Meter Bank Count*	EFV Series***
AC250	Less than 3 meters	700
	3-5 meters	1800
	6-15 meters	5500
	15-20 meters	10000
AL425 (20LT)	Single meter	1800
	2-5 meters	5500
	6-9 meters	10000
AL425HC (30LT)	Single meter	1800
	2-5 meters	5500
	6-9 meters	10000
1.5M **	Single meter	1800
2M	Single meter	5500
3M **	Single meter	5500
5M	Single meter	10000
7M	Single meter	10000

*Assuming uniform meter size within meter bank. For multiple meter types, sum individual meter capacities to determine EFV series (See O&M Section 5204 & Table 5128-3, assuming 2 psig delivery pressure)

**EFVs listed are for meters which are located downstream of the regulator. For meters which are upstream of the regulator, see O&M Section 5204 & Table 5128-3 to determine appropriate meter capacity and EFV.

* * *
- Use a series 700 EFV for all service lines containing 1/2" tubing
- Use a series 1800 EFV for 3/4" service lines
- Curb valves are preferred on all low pressure services. Where low pressure services have total meter capacities exceeding 1,000 SCFH, a curb valve is required.
- Any service line 4" or greater will require a curb valve (no EFV)
- 11M & larger meters will require a curb valve (no EFV)

PREPARED BY: ACK SML JWW
PDATE 4 3 2017

AVOID HEAT STRESS - STAY HYDRATED

Washington Gas
A WGL Company
6801 Industrial Road
Springfield, Virginia 22151
Telephone: 703-750-1000

T/I Gassed out Dry
Date: ____

As-built Drawing Pressure Test Data:
WC ID: ____
Span No. ____
Test Press (PSIG): ☐ 90 ☐ 100 ☐ 150 ☐ OTHER ____
Duration (Mins): ____
Medium : ☐ A ☐ N ☐ W
RIP : ☐ Yes ☐ No
Date : ____
Resp. Person : ____ print name
____ signature
Notes: ____

Observation Data:
WC ID: ____
Point No. ____
Pipe Type: ☐ MN ☐ SVC ☐ H/L
Size: ____
Mat'l : ☐ PLA ☐ WRPD ☐ ____ ☐ STL ☐ CI
Pipe Cover : ____ (inches)
External Corrosion : ☐ YES ☐ NO ☐ N/A
Internal Corrosion : ☐ YES ☐ NO ☐ N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : ____(thousandths)
Coating Condition : ____

Abandonment Pipe Purge Data:
Purge out of Service : ☐ Yes ☐ No
Purge from : ____
Purge to : ____
Purging Medium : ☐ Air ☐ Nitrogen
Final Gas Reading : ____
Resp. Person : ____ print name
Notes: ____

Revisions

No.	Date	Reason
1	1-20-22	Changed BCA# from #284310 to #301981.

Safety Sector: 03337	ADC Map: 5164 K 5
Quad Map: R - 031 - NW	Tax Map Page: GR 563
Scale: 1" = 30' / Plane: MD 27	WMIS Permit No. 955069
Drawn by: R W BANKS / Phone: 703-750-4228	Date: 1/20/2022
Checked by: S Harrity	Date: 1/20/2022

WR / WO Number:
3762852 MNAPL
3797829 MNABD

CITY OF ROCKVILLE , MD.
OASIS ADULT DAY CARE CTR TAFT CT N OF E GUDE DR

PATH: H:\BOBBY\BNEW BCAS\MNAPL\BCA-301981-1-3.DWG PLOTTED: 1/20/2022 9:28 AM

Job Status: FOR CONSTRUCTION
Drawing Number: BCA-301981-1
Sheet Number: 1 of 3

N

#10A

#10

#6

284310

#11
C/O
67439

NBR 96877
M-9320-17
B-96877-1

#12

#13

#4

#5
C/O

3'

INSTL 694'-0" OF 4"PLA-20#
WR# 3762852
City Of Rockville Permit
Required

202'

2"P (12)
W FH

WR# 3797828

3'

2"PLA-CAP

R/W

S/W

CURB

2"PLA-20# (93)
2"NN CURB
(B-96877-1)

DRWY

2" P (89)
93'

37'

243'
2" P (89)

1500
E GUDE
DR

2"PLA-20# (93)
2"WW CURB

3'

DRWY

14'

ONE-WAY
FEED

4"X 2"RED.

CURB

4"PLA-20# (89)
DEPOSIT MAIN INVOLVED
2"WW CURB
(46150-1)

DRWY

PROP
"TIE-IN"
4"PLA-CLPG

PROP
4-4"PLA-90°ELLS

5'

5'

5'

DRWY

7'

7'

2'

?"SD

PROP
4"P SERV

SIDE
WLK

10"W

15"SD

8"S

PROP
EFV

2'

49'

69'

58'

SIDE
WLK

PROP
4"PLA-CAP

68'
1"PC (93)
WR# 3797826

TAFT CT

E GUDE DR

R/W

ABAND 488'-0" OF 2"PLA-20#
INSTLN (6-01-2013)
WR# 3797829
City Of Rockville Permit
Required

104'

66'

5'

9'

NBR 96877
M-9320-17
B-96877-1

1.25" PI (83)
227'

ANIMAL LAB

SEWER
STORM DRAIN
WATER

= ORIGINAL SRC NOT FOUND
SERVICE WAS FIELD CHECKED.

2412
= SERVICE
REPLACE
(FULL LENGTH)

2412
C/O
= SERVICE
CHANGE OVER

PROP
EXCESS
FLOW
VAVLE

PROP
GAS
METER

PROP
GAS
MAIN

PROP
GAS
SERV
PIPE

AS BUILT CHECKLIST

___ PIPE LOCATED

___ ENDS: PERMANENT-LOCATED/LABELED
TIE IN & TEMP DE-LABELED

___ FITTINGS VERIFIED/LOCATED
(TEES, BENDS, VALVES, ETC.)

___ DRY OR GASSED OUT INFO

___ FOOTAGE INSTALLED
MATCHES DPR/FIELD ORDER

MAIN INSTALL METHOD

DIRECT BURIAL INSERTED DIRECT DRILL

TOTAL FOOTAGE INSTALLED

2" _____ 4" _____ 6" _____

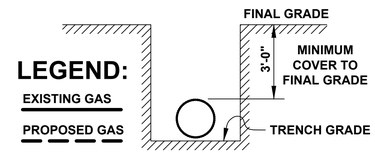
8" _____ 12" _____

OTHER: _____

MATERIAL CHECKLIST

	#INSTL'D	SIZE
COUPLING/S		
TEE/S		
VALVE/S		
END CAPS		
90° ELL		
45° ELL		
OTHER:		

TYPICAL ELEVATION VIEW



LEGEND:
EXISTING GAS
PROPOSED GAS

PROPOSED GAS TO MAINTAIN A MINIMUM OF 1'-0" VERTICAL AND 5'-0" HORIZONTAL CLEARANCE FROM WATER AND SEWER FACILITIES UNLESS OTHERWISE SPECIFIED BY JURISDICTION.

30 0 30 60 90
1 INCH = 30 FEET

AVOID HEAT STRESS - STAY HYDRATED

Washington Gas
A WGL Company
6801 Industrial Road
Springfield, Virginia 22151
Telephone: 703-750-1000

T/I Gassed out Dry

Date: _____

As-built Drawing Pressure Test Data:
WC ID: _____
Span No. _____
Test Press (PSIG):
☐ 90 ☐ 100 ☐ 150 ☐ OTHER ____
Duration (Mins): _____
Medium : ☐A ☐N ☐W
RIP : ☐ Yes ☐ No
Date : _____
Resp. Person : _____ (print name)
_____ (signature)
Notes: _____

Observation Data:
WC ID: _____
Point No. _____
Pipe Type: ☐MN ☐SVC ☐H/L
Size: _____
Matl : ☐PLA ☐WRPD ☐____ ☐STL ☐CI
Pipe Cover : _____ (inches)
External Corrosion : ☐ YES ☐NO ☐N/A
Internal Corrosion : ☐ YES ☐NO ☐N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : _____(thousandths)
Coating Condition : _____

Abandonment Pipe Purge Data:
Purge out of Service : ☐ Yes ☐No
Purge from : _____
Purge to : _____
Purging Medium : ☐ Air ☐ Nitrogen
Final Gas Reading : _____
Resp. Person : _____ (print name)
Notes: _____

Revisions		
No.	Date	Reason
1	1-20-22	Changed BCA# from #284310 to #301981.

Safety Sector: 03337	ADC Map: 5164 K 5
Quad Map: R - 031 - NW	Tax Map Page: GR 563
Scale: 1" = 30'	Plane: MD 27
WMIS Permit No. 955069	
Drawn by: R W BANKS	Phone: 703-750-4228
Date: 1/20/2022	
Checked by: S Harrity	Date: 1/20/2022

WR / WO Number:
3762852 MNAPL
3797829 MNABD

CITY OF ROCKVILLE , MD.

OASIS ADULT DAY
CARE CTR
TAFT CT N OF
E GUDE DR

PATH: K:\BSB\TRANW ECAS\MNAP\BCA-301981-1.DWG PLOTTED: 1/20/2022 9:23 AM

Job Status:
FOR CONSTRUCTION

Drawing Number:
BCA-301981-2

Sheet Number: 2 of 3

N

System Planning Pipe Summary

Project:	6 Taft Ct		
BCA#:	284310	**Revision:**	1
Date:	09/17/21	**Quad#:**	R031NW
Analyst:	Tim Schwarz Ext 7-5538		

Note: A System Planning review is required if construction does not start within 6 months from the above date.

Main

Type of Main	Size	Material	Footage	Load Only Size	Option
New Construction Approach (MNAPL) - Req 08	4"	PLA	506'		
New Construction On-Site (MAOS) - Req 01	4"	PLA	240'		

Meters		Regulators		Services			Comments
Size	Quantity	Size	Quantity	Size	Material	Footage	
5MIDE	1	CL34	1	2"	PLA		Generators to be sized by Corporate Engineering Those meters are not shown here.

Comments

Existing 2" PLA-20# cannot support updated BCA load of 19.7 Mscfh. Replace existing 506' of 2" PLA-20# main along Taft Ct with 4" PLA-20# (Approach). Extend additional 240' 4" PLA-20# to reach customer (On-site).

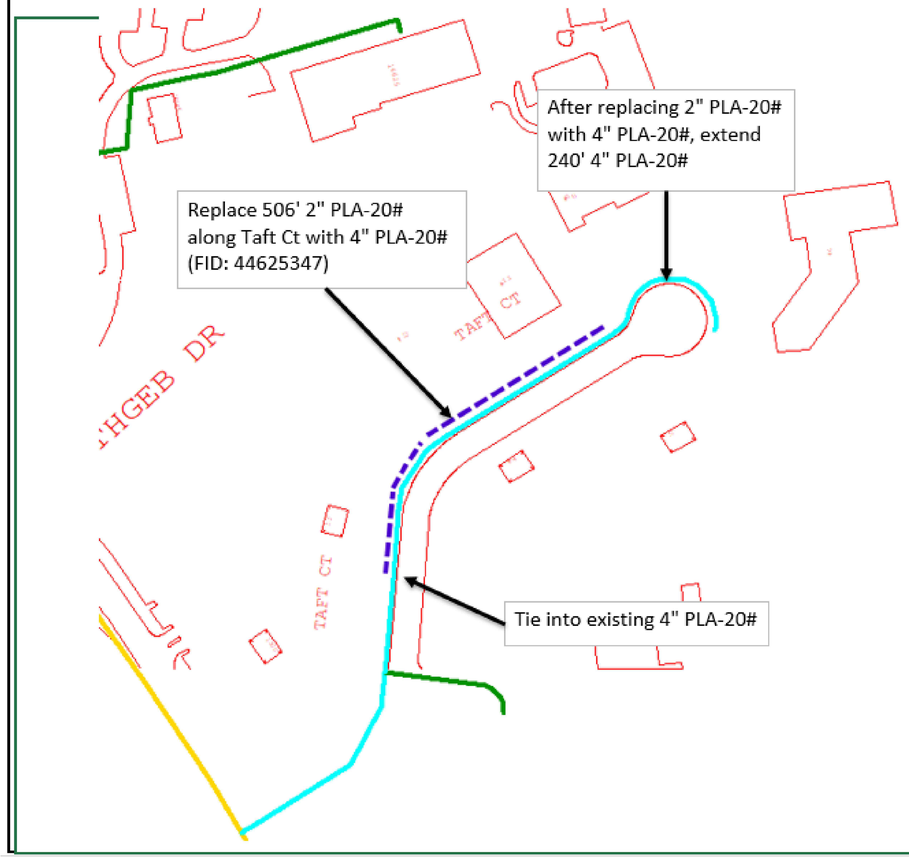
Pressure Tie Requirements

Necessity:	N/A	Timing:	None

A pressure tie is not required.

BCA# 284310 Revision: 1

Project Name: 6 Taft Ct



Legend:

- 2">
- 3"
- 4"
- 6"
- 8"
- 12" PLA
- 12" WRPD
- 16"
- 20" & 22"
- 24"<

Comments:

Existing 2" PLA-20# cannot support updated BCA load of 19.7 Mscfh. Replace existing 506' of 2" PLA-20# main along Taft Ct with 4" PLA-20# (Approach). Extend additional 240' 4" PLA-20# to reach customer (On-site).

Pressure Tie Requirements:

A pressure tie is not required.

AVOID HEAT STRESS - STAY HYDRATED

Washington Gas
A WGL Company
6801 Industrial Road
Springfield, Virginia 22151
Telephone: 703-750-1000

T/I Gassed out Dry

Date: _____

As-built Drawing Pressure Test Data:
WC ID: _____
Span No. _____
Test Press (PSIG):
□ 90 □ 100 □ 150 □ OTHER ____
Duration (Mins): _____
Medium : □A □ N □ W
RIP : □ Yes □ No
Date : _____
Resp. Person : _____ (print name)
_____ (signature)
Notes: _____

Observation Data:
WC ID: _____
Point No. _____
Pipe Type: □MN □ SVC □H/L
Size: _____
Matl : □ PLA □ WRPD □ ____ □STL □ CI
Pipe Cover : _____ (inches)
External Corrosion : □ YES □NO □N/A
Internal Corrosion : □ YES □NO □N/A
Corrosion Type: A B C D E F G H O X
Max Pit Depth : _____(thousandths)
Coating Condition : _____

Abandonment Pipe Purge Data:
Purge out of Service : □ Yes □No
Purge from : _____
Purge to : _____
Purging Medium : □ Air □ Nitrogen
Final Gas Reading : _____
Resp. Person : _____ (print name)
Notes: _____

Revisions

No.	Date	Reason
1	1-20-22	Changed BCA# from #284310 to #301981.

Safety Sector: 03337	ADC Map: 5164 K 5
Quad Map: R - 031 - NW	Tax Map Page: GR 563
Scale: 1" = 30' / Plane: MD 27	WMIS Permit No. 955069
Drawn by: R W BANKS / Phone: 703-750-4228	Date: 1/20/2022
Checked by: S Harrity	Date: 1/20/2022

WR / WO Number:
3762852 MNAPL
3797829 MNABD

CITY OF ROCKVILLE , MD.

OASIS ADULT DAY CARE CTR TAFT CT N OF E GUDE DR

PATH: H:\BSB\PWORK\OAS\MNAPL\BCA-301981-3.DWG PLOTTED: 1/20/2022 9:23 AM

Job Status: FOR CONSTRUCTION

Drawing Number: BCA-301981-3

Sheet Number: 3 of 3

ENGINEERS, ARCHITECTS, & SURVEYORS

8401 Connecticut Avenue
Chavy Chase, Maryland
Tel: 301.718.8800
www.delta-eas.com

Bidder's Questions Attachment E: RTU information

ADELTA

AN ISO 9001:2015 CERTIFIED COMPANY

RTU 1

Job Information	Technical Data
Job Name	Taft Court
Date	10/15/2021
Submitted By	Jeffrey Cox
Software Version	10.70
Unit Tag	RTU-1

Unit Overview

Model Number	Voltage	Design Cooling Capacity	AHRI 360 Standard Efficiency		ASHRAE 90.1
			EER	IEER	
MPS030F	208/60/3	326808 Btu/hr	9.9	12.9	2016 Compliant

Unit

Model Number:	MPS030F
Model Type:	Cooling, Standard Efficiency
Heat Type:	Natural gas heat
Application:	Variable volume, w/ VFD, Duct Pressure Control
Altitude:	0 ft
Approval	cETLus

Physical

Unit Dimensions and Weights

Unit Length	Unit Height	Unit Width	Unit Weight
205.2 in	55.5 in	97.5 in	4237 lb

Unit Construction

Exterior:	Prepainted Galv Steel	**Doors:**	Fan, Filter, Control Panel, and Heat Vestibule sections
Insulation:	R-value of 4.0	**Drain Pan Material**	Stainless Steel
Liners:	Double wall construction		

Unit Electrical Data

Voltage	SCCR	FLA	MCA	MROPD
208/60/3 V	10 kAIC	148.3 A	160.0 A	200 A

Note: Use only copper supply wires with ampacity based on 75° C conductor rating. Connections to terminals must be made with copper lugs and copper wire.

ADELTA

AN ISO 9001:2015 CERTIFIED COMPANY

Return/Outside/Exhaust Air

Outside Air Option

Type	Damper	Damper Pressure Drop	Leakage Rate
0-100% Econ With comparative enthalpy control	Low leak with blade and jamb seals	0.06 inH_2O	1.5 cfm/sq ft @1" differential pressure

Ventilation Control:	None

Draw Through Filters

Efficiency	Quantity/Nominal Size	Face Area ft^2	Face Velocity ft/min	Air Pressure Drop inH_2O
30% MERV 8	8 / 24 in x 24 in x 2 in	32.0	219	0.05

Exhaust Air Option

Fan Airflow	Max Static Pressure	Fan Type	Fan Quantity	Fan Diameter	Capacity Control
9000 CFM	0.50 inH_2O	Prop	2	26"	Power Exhaust - Mod w/ VFD - Building pressure control

Motor Power	Motor Type	Motor Quantity	Full Load Current	Drive Type
1.00	Open Drip Proof	2	4.2 AA	Direct Drive

Cooling Coil

Fins per Inch	Rows	Face Area ft^2	Face Velocity ft/min	Condensate Connection Size	Air Pressure drop inH_2O
12	6	25.4	276	1.0 in. Male NPT	0.33

Cooling Performance

Total Capacity Btu/hr	Sensible Capacity Btu/hr	Entering Air Temperature		Leaving Air Temperature		Ambient Air Temp °F
		Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	
326808	219210	80.7	67.0	52.1	51.3	95.0

Fan Section

Type	Fan Wheel Diameter	Vibration Isolation
AF SWSI	24 in	1 inch spring, seismic

Fan Performance

Air Flow	Total Static Pressure	Fan Speed	Brake Horsepower	Altitude
7000 CFM	3.37 inH_2O	1539 RPM	6.7 HP	0 ft

Motor

Horsepower	Type	Efficiency	Full Load Current
7.5 HP	Open drip proof, Premium efficiency	91.0	23.0 A

Drives

Type	Service Factor
Belt Drive	120%

ADELTA

AN ISO 9001:2015 CERTIFIED COMPANY

Gas Heat Section

Type	Main Gas Pressure	Material	Gas Type
Tubular Heat exchanger with in-shot burner manifold	7-14 inH_2O	Stainless steel	Natural Gas

Ignition	Combustion Blower	Heat Stages	Gas Piping Connection Size
Electric	Induced draft blower	Modulating	3/4 in. Female NPT

Heating Performance

Input Size	Heat Airflow	Total Capacity	Steady State Efficiency	Entering Air Dry Bulb	Leaving Air Dry Bulb
300 MBH Input/240 MBH Output	7000 CFM	240000 Btu/hr	81%	60.0 °F	91.6 °F

Unit Discharge Conditions

AirTemperature

Motor Heat Btu/hr	Moisture Removal lb/h	Unit Leaving Dry Bulb °F	Unit Leaving Wet Bulb °F	Unit Leaving Dewpoint °F
18868	96.2	54.6	52.1	50.3

Condensing Section

Compressor

Type	Quantity	Refrigerant Charge		Total Power	Capacity Control	Refrigerant Type
		Circuit1	Circuit 2			
Variable and Fixed Speed Scroll	3	28.3lbs	13.6 lbs	26.3 kW	Modulating	R410A

Compressor Amps:

Compressor 1	Variable Speed	47.0 A
Compressor 2	Fixed Speed	27.6 A
Compressor 3	Fixed Speed	27.6 A

Condenser Coil

Type	Fins Per Inch	Rows	Fin Material	Refrigerant Valves
Aluminum tube micro channel	18	Micro Channel	Aluminum	None

Low Ambient Control:	Low ambient control to 25 F (-3.88 C)

Condenser Fan Motors

Number of Motors	Full Load Current
3	4.2 A

AHRI 360 Data at AHRI 360 Standard Conditions

Net Capacity	Efficiency		ASHRAE 90.1
324000 Btu/hr	9.9 EER	12.9 IEER	2016 Compliant

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Internal Static Pressure Drop Calculation

External Static Pressure:	2.35
Outside Air Damper:	0.06
Filter:	0.05
Additional Filter Static Pressure:	0.50
Cooling Coil:	0.33
Energy Wheel and Filters:	0.00
Gas Heat:	0.08
Total Static Pressure:	3.37 inH_2O

Sound Power

Inlet							
63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
76	77	87	82	77	73	70	65
Outlet							
63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
81	85	94	91	88	83	78	73
Radiated							
63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
90	95	92	92	89	86	87	84

Options

Electrical	
Field Connection:	Non-Fused Disc Sw, Field powered 115V GFI outlet
Power Options:	Phase Failure Monitor
Controls	
Temperature Controls:	DDC controls, FACTORY installed BACnet/MSTP card

Factory Installed Sensors

Leaving Coil/Entering Fan Temp Sensor
Duct High Limit Switch
Duct Static Pressure Sensor
Building Static Pressure Sensor
Return Air Temperature Sensor
Discharge Air Temperature Sensor
Outside Air Temperature Sensor
Return Air Enthalpy Sensor
Outside Air Enthalpy Sensor
Dirty Filter On/Off Switch
Airflow Proving Switch

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Warranty

Parts Warranty:	Standard one year
Compressor Warranty:	Standard one year
Heat Exchanger Warranty:	Standard one year

AHRI Certification

All equipment is rated and certified in accordance with AHRI 340/360

Notes

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RTU 2

Job Information	Technical Data
Job Name	Taft Court
Date	10/15/2021
Submitted By	Jeffrey Cox
Software Version	10.70
Unit Tag	RTU-1

Unit Overview

Model Number	Voltage	Design Cooling Capacity	AHRI 360 Standard Efficiency		ASHRAE 90.1
			EER	IEER	
MPS030F	208/60/3	326808 Btu/hr	9.9	12.9	2016 Compliant

Unit

Model Number:	MPS030F
Model Type:	Cooling, Standard Efficiency
Heat Type:	Natural gas heat
Application:	Variable volume, w/ VFD, Duct Pressure Control
Altitude:	0 ft
Approval	cETLus

Physical

Unit Dimensions and Weights

Unit Length	Unit Height	Unit Width	Unit Weight
205.2 in	55.5 in	97.5 in	4237 lb

Unit Construction

Exterior:	Prepainted Galv Steel	**Doors:**	Fan, Filter, Control Panel, and Heat Vestibule sections
Insulation:	R-value of 4.0	**Drain Pan Material**	Stainless Steel
Liners:	Double wall construction		

Unit Electrical Data

Voltage	SCCR	FLA	MCA	MROPD
208/60/3 V	10 kAIC	148.3 A	160.0 A	200 A

Note: Use only copper supply wires with ampacity based on 75° C conductor rating. Connections to terminals must be made with copper lugs and copper wire.

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Return/Outside/Exhaust Air

Outside Air Option

Type	Damper	Damper Pressure Drop	Leakage Rate
0-100% Econ With comparative enthalpy control	Low leak with blade and jamb seals	0.06 inH_2O	1.5 cfm/sq ft @1" differential pressure

Ventilation Control:	None

Draw Through Filters

Efficiency	Quantity/Nominal Size	Face Area ft^2	Face Velocity ft/min	Air Pressure Drop inH_2O
30% MERV 8	8 / 24 in x 24 in x 2 in	32.0	219	0.05

Exhaust Air Option

Fan Airflow	Max Static Pressure	Fan Type	Fan Quantity	Fan Diameter	Capacity Control
9000 CFM	0.50 inH_2O	Prop	2	26"	Power Exhaust - Mod w/ VFD - Building pressure control

Motor Power	Motor Type	Motor Quantity	Full Load Current	Drive Type
1.00	Open Drip Proof	2	4.2 AA	Direct Drive

Cooling Coil

Fins per Inch	Rows	Face Area ft^2	Face Velocity ft/min	Condensate Connection Size	Air Pressure drop inH_2O
12	6	25.4	276	1.0 in. Male NPT	0.33

Cooling Performance

Total Capacity Btu/hr	Sensible Capacity Btu/hr	Entering Air Temperature		Leaving Air Temperature		Ambient Air Temp °F
		Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	
326808	219210	80.7	67.0	52.1	51.3	95.0

Fan Section

Type	Fan Wheel Diameter	Vibration Isolation
AF SWSI	24 in	1 inch spring, seismic

Fan Performance

Air Flow	Total Static Pressure	Fan Speed	Brake Horsepower	Altitude
7000 CFM	3.37 inH_2O	1539 RPM	6.7 HP	0 ft

Motor

Horsepower	Type	Efficiency	Full Load Current
7.5 HP	Open drip proof, Premium efficiency	91.0	23.0 A

Drives

Type	Service Factor
Belt Drive	120%

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Gas Heat Section

Type	Main Gas Pressure	Material	Gas Type
Tubular Heat exchanger with in-shot burner manifold	7-14 inH_2O	Stainless steel	Natural Gas

Ignition	Combustion Blower	Heat Stages	Gas Piping Connection Size
Electric	Induced draft blower	Modulating	3/4 in. Female NPT

Heating Performance

Input Size	Heat Airflow	Total Capacity	Steady State Efficiency	Entering Air Dry Bulb	Leaving Air Dry Bulb
300 MBH Input/240 MBH Output	7000 CFM	240000 Btu/hr	81%	60.0 °F	91.6 °F

Unit Discharge Conditions

AirTemperature

Motor Heat Btu/hr	Moisture Removal lb/h	Unit Leaving Dry Bulb °F	Unit Leaving Wet Bulb °F	Unit Leaving Dewpoint °F
18868	96.2	54.6	52.1	50.3

Condensing Section

Compressor

Type	Quantity	Refrigerant Charge		Total Power	Capacity Control	Refrigerant Type
		Circuit1	Circuit 2			
Variable and Fixed Speed Scroll	3	28.3lbs	13.6 lbs	26.3 kW	Modulating	R410A

Compressor Amps:

Compressor 1	Variable Speed	47.0 A
Compressor 2	Fixed Speed	27.6 A
Compressor 3	Fixed Speed	27.6 A

Condenser Coil

Type	Fins Per Inch	Rows	Fin Material	Refrigerant Valves
Aluminum tube micro channel	18	Micro Channel	Aluminum	None

Low Ambient Control:	Low ambient control to 25 F (-3.88 C)

Condenser Fan Motors

Number of Motors	Full Load Current
3	4.2 A

AHRI 360 Data at AHRI 360 Standard Conditions

Net Capacity	Efficiency		ASHRAE 90.1
324000 Btu/hr	9.9 EER	12.9 IEER	2016 Compliant

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Internal Static Pressure Drop Calculation

External Static Pressure:	2.35
Outside Air Damper:	0.06
Filter:	0.05
Additional Filter Static Pressure:	0.50
Cooling Coil:	0.33
Energy Wheel and Filters:	0.00
Gas Heat:	0.08
Total Static Pressure:	3.37 inH_2O

Sound Power

Inlet							
63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
76	77	87	82	77	73	70	65
Outlet							
63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
81	85	94	91	88	83	78	73
Radiated							
63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
90	95	92	92	89	86	87	84

Options

Electrical	
Field Connection:	Non-Fused Disc Sw, Field powered 115V GFI outlet
Power Options:	Phase Failure Monitor
Controls	
Temperature Controls:	DDC controls, FACTORY installed BACnet/MSTP card

Factory Installed Sensors

Leaving Coil/Entering Fan Temp Sensor
Duct High Limit Switch
Duct Static Pressure Sensor
Building Static Pressure Sensor
Return Air Temperature Sensor
Discharge Air Temperature Sensor
Outside Air Temperature Sensor
Return Air Enthalpy Sensor
Outside Air Enthalpy Sensor
Dirty Filter On/Off Switch
Airflow Proving Switch

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Warranty

Parts Warranty:	Standard one year
Compressor Warranty:	Standard one year
Heat Exchanger Warranty:	Standard one year

AHRI Certification

All equipment is rated and certified in accordance with AHRI 340/360

Notes

DELTA

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RTU 3

Job Information	Technical Data
Job Name	Taft Court
Date	10/15/2021
Submitted By	Jeffrey Cox
Software Version	10.70
Unit Tag	RTU-3

Unit Overview

Model Number	Voltage	Design Cooling Capacity	AHRI 360 Standard Efficiency		ASHRAE 90.1
			EER	IEER	
MPSA08D	208/60/3	96783 Btu/hr	11.0	14.6	2016 Compliant

Unit

Model Number:	MPSA08D
Model Type:	Cooling, Standard Efficiency
Heat Type:	Natural gas heat
Application:	2 Speed SAF Control
Altitude:	0 ft
Approval	cULus

Physical

Unit Dimensions and Weights

Unit Length	Unit Height	Unit Width	Unit Weight
89.0 in	50.0 in	57.8 in	1030 lb

Unit Construction

Exterior:	Prepainted Galv Steel	**Doors:**	Hinged Access Doors
Insulation:	3/4" foil face with mechanical fasteners, R value of 3.6	**Drain Pan Material**	Polymer
Liners:	Single wall construction		

Unit Electrical Data

Voltage	SCCR	MCA	MROPD
208/60/3 V	5 kAIC	48.0 A	70.0 A

Return/Outside/Exhaust Air

Outside Air Option

Type:	Factory Installed Econ, vertical return

Draw Through Filters

Type	Quantity/Nominal Size	Face Area ft²	Face Velocity ft/min	Air Pressure Drop
2" Disposable	(4) 2x20x20	11.1	225	Included In Fan Performance

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Exhaust Fan Option					
Fan Airflow	**Max Static Pressure**	**Fan Type**	**Fan Quantity**	**Fan Diameter**	**Capacity Control**
2200 CFM	0.00 inH_2O	Prop	2	15"	1
Motor Power	**Motor Type**	**Motor Quantity**	**Full Load Current**	**Drive Type**	
0.33	Open Drip Proof	2	0.7 A	Direct Drive	

Cooling Coil

Fins per Inch	Rows	Face Area ft^2	Face Velocity ft/min	Condensate Connection Size	Air Pressure drop inH_2O
20	1	13.5	185	0.75 in. Male NPT	Included In Fan Performance

Cooling Performance						
Total Capacity Btu/hr	**Sensible Capacity** Btu/hr	**Entering Air Temperature**		**Leaving Air Temperature**		**Ambient Air Temp** °F
		Dry Bulb °F	**Wet Bulb** °F	**Dry Bulb** °F	**Wet Bulb** °F	
96783	71533	79.8	66.2	53.3	53.3	95.0

Fan Section

Type	Fan Wheel Diameter	Quantity	Vibration Isolation
FC	15 in	1	Rigid

Fan Performance					
Air Flow	**External Static Pressure**	**Design Fan Speed**	**Drive Package Speed**	**Brake Horsepower**	**Altitude**
2500 CFM	1.10 inH_2O	912 RPM	826-1048	1.7 HP	0 ft

Motor			
Horsepower	**Type**	**Efficiency**	**Full Load Current**
3.0 HP	Open drip proof, EPAct	86.0	13.0 A

Drives	
Type	**Service Factor**
Adjustable Sheave	120%

Gas Heat Section

Type	Material	Gas Type
Tubular Heat exchanger with in-shot burner manifold	Aluminized steel	Natural Gas

Ignition	Combustion Blower	Heat Stages	Gas Piping Connection Size
Electric	Induced draft blower	2 Stage	1/2 in. Female NPT

Heating Performance					
Input Size	**Heat Airflow**	**Total Capacity**	**Steady State Efficiency**	**Entering Air Dry Bulb**	**Leaving Air Dry Bulb**
150 MBH	2500 CFM	121500 Btu/hr	81%	60.0 °F	104.8 °F

Unit Discharge Conditions

AirTemperature				
Motor Heat Btu/hr	**Moisture Removal** lb/h	**Unit Leaving Dry Bulb** °F	**Unit Leaving Wet Bulb** °F	**Unit Leaving Dewpoint** °F
5016	22.1	55.2	53.9	53.0

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Condensing Section

Compressor

Type	Quantity	Refrigerant Charge	Total Power	Capacity Control	Refrigerant Type
Scroll	1	7.63 lbs	143.4 kW	2 steps	R410A

Compressor Amps:

Compressor 1	Fixed Speed	28.8 A

Compressor Options:	None

Condenser Coil

Type	Fins Per Inch	Rows	Fin Material	Refrigerant Valves
Aluminum tube micro channel	23	1	Aluminum	None

Low Ambient Control:	None

Condenser Fan Motors

Number of Motors	Full Load Current
2	1.2 A

AHRI 360 Certified Data at AHRI 360 Standard Conditions

Net Capacity	Efficiency		ASHRAE 90.1
86000 Btu/hr	11.0 EER	14.6 IEER	2016 Compliant

Internal Static Pressure Drop Calculation

External Static Pressure:	1.10
Internal Static Pressure:	0.16
Total Static Pressure:	1.26

Options

Electrical

Field Connection:	Disconnect Switch
Power Options:	None

Controls

Temperature Controls:	DDC controls, field installed BACnet card

Warranty

Parts Warranty:	Standard one year
Compressor Warranty:	Standard five year
Heat Exchanger Warranty:	Standard ten year

AHRI Certification

All equipment is rated and certified in accordance with AHRI 340/360

Notes

Accessories

Part Number	Description
Note:	
910108514	Maverick I Rooftop Comm Mod, BACnet IP-MS/TP
RXRX-CDF01C	Power Exhaust

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RTU 4

Job Information	Technical Data
Job Name	Taft Court
Date	10/15/2021
Submitted By	Jeffrey Cox
Software Version	10.70
Unit Tag	RTU-4

Unit Overview

Model Number	Voltage	Design Cooling Capacity	AHRI 360 Standard Efficiency		ASHRAE 90.1
			EER	IEER	
MPSH20B	208/60/3	225649 Btu/hr	12.0	14.6	2016 Compliant

Unit

Model Number:	MPSH20B
Model Type:	Cooling, High Efficiency (3-5 tons or 15-20 tons)
Heat Type:	Natural gas heat
Application:	2 Speed SAF Control
Altitude:	0 ft
Approval	cULus

Physical

Unit Dimensions and Weights

Unit Length	Unit Height	Unit Width	Unit Weight
152.0 in	57.0 in	86.0 in	2487 lb

Unit Construction

Exterior:	Powder Coat Galvanized	**Doors:**	Fan, Filter, Coil, Control Panel, and Economizer section
Insulation:	3/4" foil face with mechanical fasteners, R value of 3.6	**Drain Pan Material**	Polymer
Liners:	Single wall construction		

Unit Electrical Data

Voltage	SCCR	MCA	MROPD
208/60/3 V	5 kAIC	95.0 A	110.0 A

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Return/Outside/Exhaust Air

Outside Air Option	
Type:	Factory Installed Econ, vertical return, DDC Controls

Draw Through Filters

Type	Quantity/Nominal Size	Face Area ft²	Face Velocity ft/min	Air Pressure Drop
2" Disposable	(8) 2x25x20	27.8	248	Included In Fan Performance

Exhaust Fan Option

Fan Airflow	Max Static Pressure	Fan Type	Fan Quantity	Fan Diameter	Capacity Control
5200 CFM	0.30 inH_2O	Prop	2	15"	1

Motor Power	Motor Type	Motor Quantity	Full Load Current	Drive Type
0.75	Open Drip Proof	2	5.0 A	Direct Drive

Cooling Coil

Fins per Inch	Rows	Face Area ft²	Face Velocity ft/min	Condensate Connection Size	Air Pressure drop inH_2O
15	4	26.7	258	1.0 in. Male NPT	Included In Fan Performance

Cooling Performance

Total Capacity Btu/hr	Sensible Capacity Btu/hr	Entering Air Temperature		Leaving Air Temperature		Ambient Air Temp °F
		Dry Bulb °F	Wet Bulb °F	Dry Bulb °F	Wet Bulb °F	
225649	173940	76.2	63.1	53.1	51.6	95.0

Fan Section

Type	Fan Wheel Diameter	Quantity	Vibration Isolation
Twin FC	18 in	2	Rigid

Fan Performance

Air Flow	External Static Pressure	Design Fan Speed	Drive Package Speed	Brake Horsepower	Altitude
6900 CFM	1.00 inH_2O	819 RPM	756	3.6 HP	0 ft

Motor

Horsepower	Type	Efficiency	Full Load Current
5.0 HP	Open drip proof, EPAct	1.0	14.9 A

Drives

Type	Service Factor
Adjustable Sheave	120%

Gas Heat Section

Type	Material	Gas Type
Tubular Heat exchanger with in-shot burner manifold	Aluminized steel	Natural Gas

Ignition	Combustion Blower	Heat Stages	Gas Piping Connection Size
Electric	Induced draft blower	2 Stage	3/4 in. Female NPT

Heating Performance

Input Size	Heat Airflow	Total Capacity	Steady State Efficiency	Entering Air Dry Bulb	Leaving Air Dry Bulb
300 MBH	6900 CFM	243000 Btu/hr	81%	60.0 °F	92.5 °F

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Unit Discharge Conditions

AirTemperature				
Motor Heat Btu/hr	Moisture Removal lb/h	Unit Leaving Dry Bulb °F	Unit Leaving Wet Bulb °F	Unit Leaving Dewpoint °F
10398	46.8	54.5	52.0	50.2

Condensing Section

Compressor

Type	Quantity	Refrigerant Charge	Total Power	Capacity Control	Refrigerant Type
Scroll	2	0.0 lbs	342.0 kW	2 steps	R410A

Compressor Amps:

Compressor 1	Fixed Speed	30.1 A
Compressor 2	Fixed Speed	27.6 A

Compressor Options: LP, HP switch,

Condenser Coil

Type	Fins Per Inch	Fin Material	Refrigerant Valves
Aluminum tube micro channel	23	Aluminum	None

Condenser Coil Options: None

Condenser Fan Motors

Number of Motors	Full Load Current
6	2.4 A

AHRI 360 Certified Data at AHRI 360 Standard Conditions

Net Capacity	Efficiency		ASHRAE 90.1
232000 Btu/hr	12.0 EER	14.6 IEER	2016 Compliant

Internal Static Pressure Drop Calculation

External Static Pressure:	1.00
Internal Static Pressure:	0.25
Total Static Pressure:	1.25

Options

Electrical

Field Connection:	Non-Fused Disc Sw, Field powered 115V GFI outlet
Power Options:	None

Controls

Temperature Controls:	DDC controls, field installed BACnet card

Warranty

Parts Warranty:	Standard one year
Compressor Warranty:	Standard five year
Heat Exchanger Warranty:	Standard ten year

AHRI Certification

All equipment is rated and certified in accordance with AHRI 340/360

Notes

Accessories

Part Number	Description
Note:	
910108514	Maverick I Rooftop Comm Mod, BACnet IP-MS/TP
RXRXBGF05C	Power exhaust, 15-25 ton, 410A, 208-230 Volt