ALLEGHENY COUNTY SANITARY AUTHORITY

MARCH 11, 2021

CONTRACT NO. 1735 G, E, H, P

ALCOSAN PARKING GARAGE

ADDENDUM NO. 2

All bidders bidding Contract No. 1735 G, E, H, P shall read and take note of this Addendum No. 2. The Contract Documents for **Contract No. 1735 G, E, H, P – ALCOSAN Parking Garage** are hereby revised and/or clarified as stated below.

Acknowledgement of Contract No. 1735 G, E, H, P; Addendum No. 2
The Acknowledgement attached to Addendum No. 2 is to be signed and returned immediately via email to Kathleen Uniatowski at contract.clerks@alcosan.org and acknowledged with the Bidder's Proposal.

Kimberly Kennedy, P.E.
Director – Engineering and Construction

ACKNOWLEDGEMENT OF

CONTRACT NO. 1735 G, E, H, P – ALCOSAN PARKING GARAGE

ADDENDUM NUMBER 2

FIRM NAME: _____

SIGNATURE: _____

TITLE: _____

DATE: _____

MARCH 11, 2021

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ADDENDUM NO. 2

A. Contract Documents – Volume 1

All Contracts (G, E, H, P): The Bid Opening Date has been changed to Friday, March 19th at 11:00 AM.

Article 1, Section 1-3G: REVISE Unit Price Table to add $45,000 allowance item for Temporary Offsite Parking upgrades.

Article 1, Section 1-3G: REVISE Unit Price Table item 05 to read "Contingent Unsuitable Subgrade Excavation". Item 06 received this change erroneously in Addendum #1 and should be disregarded. Article 1 G is reissued in its entirety as an attachment to this Addendum for use in submitting bids.

B. Contract Specifications – Volume 2

1. Spec Section 000110 Table of Contents – Revised and Reissued for new sections

2. Spec Section 011100 Summary of Work– Revised and Reissued for the following:

    a. Revised paragraph 1.2. A.3. 8)

3. Spec Section 012200 Measurement and Payment – Revised and Reissued for the following:

    a. Revised paragraph 3.1 E to reference 03 30 00
    b. Revised paragraph 3.1 F.
    c. ADD new paragraph 3.1.I:
        "Allowance for upgrades to temporary offsite parking for employee parking displaced by the construction under the Garage Project. As the scope is undefined at the moment, the fee will be negotiated with the low bidder"

4. Spec Section 012001 Unit Prices – Revised and Reissued for the following:
    a. Deleted from Contract Documents

5. Spec Section 015013 Construction Manager Site Office – Revised and Reissued for the following:

    a. Revised paragraph 1.1 A and 1.2 A.3

6. Spec Section 015200 Maintenance of Plant Operations – Revised and Reissued for the following:

    a. Revised paragraph 1.4 B.18

7. Spec Section 01 74 23- Cleaning Revised for the following:

    a. $500/week value for cleaning in Paragraph 3.2.B is eliminated.

8. Spec Section 042000 Unit Masonry – Revised the following paragraph:

    a. REPLACE paragraphs 2.3, A, 4, a and b as follows:

    "Glen Gery Stone Grey K12 – 3009 is to be used at all running bond brick patterns.

    Glen Gery Steel Grey K12 – 3008 is to be used at all stacked bond brick patterns."

9. Spec Section 101400 Signage - Revised and Reissued for the following.

    a. Custom illuminated signage has been added

10. Spec Section 111200 Parking Access Control System – Revised the following paragraphs:
    a. In paragraph 1.2, A, 6 ADD:

       "Parking garage access control system shall be added to the existing access control panel currently in the guard station. Refer to the revised 281000 specification (Addendum 2) for information on the existing access control system."

    b. ADD paragraph 1.2, A, 8:

       "There is no interconnection between the coiling grille and the PACS system. The coiling grille will be operated separately by a pushbutton switch located in the guard station."

    c. REPLACE paragraph 1.3, B, 3 with the following:

       "Conduits and Wiring: As indicated below and as additionally shown on the electrical drawings the Electrical Subcontractor must furnish and install the electrical power conduits and power wiring to the parking control equipment, and only empty conduits for PACS control/data/communication wiring. The PACS contractor shall furnish and install the control/data/communication wiring when installing the equipment.
       Coordinate with the Electrical Subcontractor as required to ensure proper conduit sizes and locations. Should the Electrical Drawings not include all electrical power wiring and all conduits required for the operation of the PACS, they must be supplied and installed by the PACS Contractor at no additional cost to Owner."

    d. REPLACE paragraph 2.1, A, 4, c with the following:

       "Lenel panels in Parking Garage shall connect to Access Control Panel in guard station. Refer to the revised 281000 specification (Addendum 2) for information on the existing access control system."

    e. In paragraph 2.3, C, 1 ADD:

       "Refer to the revised 281000 specification (Addendum 2)"

    f. In paragraph 2.4, A, 3 ADD:

       "Magnetic Automation Corp barriers of the most recent model are acceptable."

g. REPLACE paragraph 2.5, C, 1, a as follows:

"VoIP Intercoms will be located at card readers as indicated in the "System Configuration" list in Part 3 of this section. There is no existing intercom interface panel, the Viking Intercom boxes connect directly to ALCOSAN's network via VOIP. Reference Viking Model E-1600-30-IPEWP.

h. REPLACE paragraph 2.5, D, 1, b as follows:

"Reader: As specified in section 281000"

i. REPLACE paragraph 3.8, B, 1, d with the following:

(4) Detector Loops

j. REPLACE paragraph 3.8, C, 1, e with the following:

(2) detector Loops

11. Spec Section 11 81 23 Tie -Back Anchors for Facade Access Equipment - Revised the following paragraphs:
    a. ADD paragraph 1.2, A, 1, b:
    For bidding purposes assume four tie back anchors at Stair 1/Elevator and two at Stair 2.

C. Contract Specifications – Volume 3

1. Spec Section 2221316 Sanitary Waste and Vent Piping – Section Deleted.

2. Spec Section 221413 Facility Storm Drainage Piping – Add New Section.
3. Spec Section 221319.13 Sanitary Drains – Section Deleted.
4. Spec Section 221319.13 Storm Drains – Add New Section.
5. Spec Section 221463 Storm Water Treatment Device – Add New Section
6. Spec Section 281000 Access Control and Video Surveillance – Revised and Reissued for the following:
    a. Revised paragraph 2.3, B, 2, K: ISC model # revised to Lenel, LNL-2220.
    d. Revised paragraph 2.4, A: Magnetic Door Contacts: Provided by the Electrical Contractor.
    e. Added paragraph 2.4, D.

7. Spec Section 31 63 29 - DRILLED PIERS (CAISSONS)
    a. In paragraph 1.2, A, 4, DELETE "Geotechnical Engineer" and REPLACE with "Testing Agency".

    b. In paragraph 1.5, B, DELETE "Geotechnical Engineer" and REPLACE with "Testing Agency".

    c. In paragraph 1.6, D, 6, DELETE "Geotechnical Engineer" and REPLACE with "Testing Agency".

    d. In paragraph 1.7, G, DELETE "and the Geotechnical Engineer".

    e. In paragraph 1.9, B, DELETE "Geotechnical Engineer" and REPLACE with "Testing Agency".

    f. In paragraph 1.10, C, 2, DELETE "Geotechnical Engineer" and REPLACE with "Testing Agency".

    g. In paragraph 3.2, A, DELETE "or Geotechnical Engineer".

    h. In paragraph 3.2, A, 1, DELETE "or Geotechnical Engineer observing and providing quality control of the caisson operations".

    i. REPLACE paragraph 3.2, B, 1 with the following:

    "If bearing stratum reached based on an elevation indicated in the Contract Documents is deemed not capable of attaining the design bearing capacity, as confirmed in writing by the Owner's Testing Agency, foundation system will be revised as directed by the Architect based on recommendation(s) of the Owner's Geotechnical Engineer of Record. Design time, field time and revisions in the work scope will be paid for in accordance with Contract Conditions relative to changes in work."

j. REPLACE paragraph 3.2, B, 2 with the following:

"At the direction of the Testing Agency, the Contractor will be required to probe the bottoms of any or all caisson excavations to a depth of 10-ft by coring the foundation rock using a NX diamond core barrel or other approved device with suitable drilling fluid to remove cuttings."

k. REPLACE paragraph 3.2, B, 3 with the following:

"Extend drilled shaft tip (base) elevations when the Testing Agency determines that the material encountered during excavation is unsuitable and/or differs from that anticipated in the design of the drilled shaft. See paragraph 3.2, H, 1."

l. In paragraph 3.2, D, DELETE "Geotechnical Engineer" and REPLACE with "Testing Agency".

m. In paragraph 3.2, H, DELETE "Geotechnical Engineer" and REPLACE with "Testing Agency".

n. REPLACE paragraph 3.2 H, 1 with the following:

"Acceptable rock quality (RQ greater than or equal to that defined in the Geotechincal Report) shall be used to consider rock bearing acceptable provided there are no clay seams in the recovered rock. Should there be clay seams or less than acceptable rock quality, the Testing Agency shall require drilling of the caisson hole to be extended below clay seams in such a way that computed recovery based on earlier recovered samples meets the require RQ."

o. ADD paragraph 3.2, H, 2 (relocated from 3.2, H, 1):

"Where changes in indicated depth or dimensions are required, or additional soil borings are required, proceed with such work when directed in writing by the Architect."

p. In paragraph 3.2, I, DELETE "Geotechnical Engineer" and REPLACE with "Testing Agency".

q. In paragraph 3.4, A, DELETE "Geotechnical Engineer" and REPLACE with "Testing Agency".

r. In paragraph 3.5, A, 2, DELETE "Geotechnical Engineer and /or".

s. In paragraph 3.5, A, 4, DELETE "Geotechnical Engineer" and REPLACE with "Testing Agency".

t. In paragraph 3.5, B, 1, a, DELETE “Geotechnical Engineer” and REPLACE with “Testing Agency”.

u. In paragraph 3.5, B, 1, b, DELETE “Geotechnical Engineer” and REPLACE with “Testing Agency”.

v. In paragraph 3.5, B, 1, b, (1), DELETE “Geotechnical Engineer” and REPLACE with “Testing Agency”.

w. In paragraph 3.5, B, 1, b, (2), DELETE “Geotechnical Engineer” and REPLACE with “Testing Agency”.

x. In paragraph 3.8, A, 1, b, DELETE “Geotechnical Engineer” and REPLACE with “Testing Agency”.

y. In paragraph 3.8, A, 3, DELETE “Geotechnical Engineer” and REPLACE with “Testing Agency”.

z. In paragraph 4.2, C, DELETE “Geotechnical Engineer” and REPLACE with “Testing Agency”.

aa. In paragraph 4.2, D, DELETE “Geotechnical Engineer” and REPLACE with “Testing Agency”.

bb. In paragraph 4.2, E, DELETE “Geotechnical Engineer” and REPLACE with “Testing Agency”.

8. Spec Section 31 20 01 Earthwork within Building Footprint – Revise the following:
   f. DELETE paragraph 2.2, C in its entirety.

D. Contract Drawings

1. Drawing 210-G-02 - Sheet Index
    a. REPLACE with the attached drawing 210-G-02
    b. Ten signage drawings and one structural drawing have been added.
    c. Sequence number of each subsequent drawing has been incremented accordingly.
    d. Plumbing sheet titles are revised.

2. Drawing 210-G-06 - Life Safety Plans
    a. REPLACE with the attached drawing 210-G-06
    b. Extent of 2 hour fire rating clarified.

3. Drawing 210-C-11 Phase I Demolition Plan
    a. DELETE this drawing and REPLACE with the attached drawing 210-C-11.
    b. Revised eastern portion of demolition boundary shaded area.
    c. A note added to call out existing concrete sidewalk by the security building to remain.
    d. A note added to callout section of existing 8’ chain link fence in the corner of Preble Avenue and Tracy Street to remain.
    e. A note added to call out existing concrete sidewalk by the corner of Preble Avenue and Tracy Street to remain.
    f. “LIMIT OF FENCE LINE REMOVAL AT MAN GATE N:10535.43 E:6590.51” removed.

4. Drawing 210-C-32 Phase 1 Construction Details
    a. DELETE this drawing and REPLACE with the attached drawing 210-C-32.
    b. Pipe trench temporary gravel pavement replacement detail added.
    c. Pipe trench landscape/lawn replacement detail added.
    d. Concrete Pavement Detail added

5. ADD the following attached drawings:
    a. 210-AG-10 - Ground Level Signage Plan
    b. 210-AG-11 - Level 2 Signage Plan
    c. 210-AG-12 - Level 3 Signage Plan
    d. 210-AG-13 - Level 4 Signage Plan
    e. 210-AG-14 - Level 5 Signage Plan
    f. 210-AG-15 - Level 6 Signage Plan (Roof Level)
    g. 210-AG-20 - Signage Elevations – Type A
    h. 210-AG-21 - Signage Elevations – Type B, C, D
    i. 210-AG-22 - Signage Elevations – Type P and R
    j. 210-AG-30 - Typical Signage Mounting Details

6. Drawing 210-A-10 - Ground Level Plan
    a. REPLACE with the attached drawing 210-A-10.
    b. Call for assistance stations are deleted at columns B/3 and B/9.8.
    c. Railing notes added in room 105.

7. Drawing 210-A-11 - Level 2 Plan
    a. REPLACE with the attached drawing 210-A-11.
    b. Call for assistance stations are deleted at columns B/3 and B/9.8.

8. Drawing 210-A-12 - Level 3 Plan
    a. REPLACE with the attached drawing 210-A-12.
    b. Call for assistance stations are deleted at columns B/3 and B/9.8.

9. Drawing 210-A-13 - Level 4 Plan
    a. REPLACE with the attached drawing 210-A-13.
    b. Call for assistance stations are deleted at columns B/3 and B/9.8.

10. Drawing 210-A-14 - Level 5 Plan
    a. REPLACE with the attached drawing 210-A-14.
    b. Call for assistance stations are deleted at columns B/3 and B/9.8.
    c. Extent of waterproofing at Stair 3 clarified.

11. Drawing 210-A-15 - Level 6 Plan (Roof Level)
    a. REPLACE with the attached drawing 210-A-15.
    b. Call for assistance stations are deleted at column B/3.

12. Drawing 210-A-20 - East Building Elevations
    a. REPLACE with the attached drawing 210-A-20.
    b. In elevation 1, limits of architectural concrete are shown
    c. There is no textured concrete in the garage project.
    d. In elevation 2, reveals at architectural concrete are revised. Signage at entry/exit is revised.

13. Drawing 210-A-23 - South Building Elevations
    a. REPLACE with the attached drawing 210-A-23.
    b. In elevation 1, limits of architectural concrete are shown
    c. There is no textured concrete in the garage project.
    d. In elevation 2, reveals at architectural concrete are revised.

14. Drawing 210-A-30 - Building Sections
    a. REPLACE with the attached drawing 210-A-30.
    b. In section 2, security grille and door are deleted between gridlines 3 and 4.

15. Drawing 210-A-31 - Wall Sections
    a. REPLACE with the attached drawing 210-A-31.
    b. Premolded joint filler, wash and flowline area clarified in sections 4 thru 6.

16. Drawing 210-A-32 - Wall Sections
    a. REPLACE with the attached drawing 210-A-32.
    b. Premolded joint filler, wash, and flowline clarified in section 1.

17. Drawing 210-A-40 - Entry/Exit – Enlarged Plan
    a. REPLACE with the attached drawing 210-A-40.
    b. One card reader deleted from exit lane.
    c. Clarification of island edges, detector loops and architectural concrete.
    d. Description of removable bollard added. Reference to detail for all other bollards (non- removable) at slab on grade added.
    e. Revision to entry plan and reference to enlarged plan 5/210-AD-65 added.

18. Drawing 210-A-41 - STAIR 1 / Elevator - Enlarged Plans
    a. REPLACE with the attached drawing 210-A-41.
    b. In plans 1 and 2, railing keynotes are added.
    c. In plan 2, exterior cmu wall of elevator control room is shifted over top of concrete wall. Metal flashing and partial height vertical expansion joint are deleted,
    d. In plans 1 and 2 expansion joints and gap clarified.
    e. In plans 1 and 2, references to 5/210-AD-71 are added.

19. Drawing 210-A-42 - STAIR 1 / Elevator - Enlarged 3rd and 4th Level Plans
    a. REPLACE with the attached drawing 210-A-42.
    b. In plans 1 and 2, railing keynote C is added.
    c. In plans 1 and 2, references to 5/210-AD-71 are added.

20. Drawing 210-A-43 - STAIR 1 / Elevator - Enlarged 5th Level & Roof Plans
    a. REPLACE with the attached drawing 210-A-43.
    b. In plan 1, railing keynote C is added.
    c. In plan 2, reference to 5/210-AD-71 is added.

21. Drawing 210-A-44 - STAIR 1 / Elevator - Elevations
    a. REPLACE with the attached drawing 210-A-44.
    b. Bar scale is corrected to agree with the elevations.
    c. General note regarding backer rod and sealant added.

22. Drawing 210-A-45 - STAIR 1 / Elevator - Sections
    a. REPLACE with the attached drawing 210-A-45.
    b. Bar scale is corrected to agree with the sections.

23. Drawing 210-A-50 - STAIR 2 - Enlarged Plans
    a. In plans 1, 2, 3, 4 and 5 references to 5/210-AD-71 are added.

24. Drawing 210-A-51 - STAIR 2 – Elevations & Section
    a. REPLACE with the attached drawing 210-A-51.
    b. Bar scale is corrected to agree with the elevations and section.

25. Drawing 210-AS-50 - Room/Door Schedule ad Details
    a. REPLACE with the attached Drawing 210-AS-50.
    b. Clarification of door widths and rating of door 108.
    c. Revision to width of coiling grille doors 113 and 114.

26. Drawing 210-AD-62 - Curtainwall Details-Non Insulating Glazing
    a. REPLACE with the attached drawing 210-AD-62
    b. Detail 10 is revised.

27. Drawing 210-A-65 - Security Grille Details
    a. REPLACE with the attached drawing 210-A-65.
    b. Detail 5 is completely revised to show entire entry plan.

28. Drawing 210-AD-66 - Security Grille Elevations
    a. REPLACE with the attached drawing 210-AD-66.
    b. In elevation 1, entry/exit signage is revised and architectural concrete note shown. Dimension of steel tube framing at doors is revised.
    c. In elevation 2, exterior c.m.u. wall of elevator control room is shifted over top of concrete wall and extent of security grille is reduced accordingly.

29. Drawing 210-AD-69 - Misc. Thermal & moisture Protection Detail
    a. REPLACE with the attached drawing 210-AD-69
    b. In details 2 and 3 all references to EPDM are deleted. See specs for roofing.
    c. Details 6 and 7 are revised to clarify expansion joints.
    d. Detail 9A is added.

30. Drawing 210-AD-71 - Masonry Details
    a. REPLACE with the attached drawing 210-AD-71
    b. In details 1, 2, and 4, the angle and post installed anchors information has been provided.
    c. Detail 5 added.

31. Drawing 210-S-02 - General Notes
    a. REPLACE with the attached drawing 210-S-02.
    b. General Foundation Note 16 is deleted, there is no waterproofing or damp proofing in the garage project.

32. Drawing 210-S-10 - Caisson Plan (Drilled Piers)
    a. REPLACE with the attached drawing 210-S-10.
    b. Added a caisson on grid line 51 to support the elevator control room CMU wall.
    c. Revised the elevation of the C-5 pier.

33. Drawing 210-S-11 - Foundation Plan
    a. REPLACE with the attached drawing 210-S-11.
    b. Added a caisson on grid line 51 to support the elevator control room CMU wall.
    c. Added reference to section 8/210-S-23 to show the grade beam and caisson supporting the elevator control room CMU wall.
    d. Added a section reference showing the slab recess for the storage room ramp between lines 4 and 5.
    e. Extended the grade beams between lines 4 and 6.

34. Drawing 210-S-12 - Ground Level Plan
    a. REPLACE with the attached drawing 210-S-12.
    b. Added a caisson on grid line 51 to support the elevator control room CMU wall.
    c. Added a reference to section 8/210-S-23 to show the grade beam and caisson supporting the elevator control room CMU wall.
    d. Section 3/210-S-24 has been revised to show an angle connection between the PT slab and CIP wall instead of the previous dowel connection.
    e. Extended the grade beams between lines 4 and 6.

35. Drawing 210-S-14 - Level 3 Framing Plan
    a. REPLACE with the attached drawing 210-S-14.
    b. Beam mark is revised on 3 line.

36. Drawing 210-S-15 - Level 3 Framing Plan
    a. REPLACE with the attached drawing 210-S-15.
    b. Beam marks revised.

37. Drawing 210-S-17 - Level 6 Framing Plan
    a. REPLACE with the attached drawing 210-S-17.
    b. Beam marks revised.

38. Drawing 210-S-21 - Foundation Wall Elevations
    a. REPLACE with the attached drawing 210-S-21.
    b. Extended the grade beams between lines 4 and 6 in elevation 1.
    c. Clarified the CMU wall location in elevation 3.

39. Drawing 201-S-22 - Foundation Wall Elevations
    a. REPLACE with the attached drawing 210-S-22.
    b. Sections 6 and 7 are added.

40. Drawing 210-S-23 - Foundation Sections
    a. REPLACE with the attached drawing 210-S-23.
    b. Clarified the joint condition in section 3.
    c. Added section 8.

41. Drawing 210-S-24 - Foundation Sections
    a. REPLACE with the attached drawing 210-S-24.
    b. Section 3/210-S-24 has been revised to show an angle connection between the PT slab and CIP wall instead of the previous dowel connection. The size of the pile cap is also shown.
    c. Section 4/210-S-24 has been clarified.
    d. Section 4A/210-S-24 has been revised to show the CMU wall and brick at stair 2.

42. Drawing 210-S-31 - Stair 1/Elevator – Enlarged Plans
    a. REPLACE with the attached drawing 210-S-31.
    b. Location of section references 7 and 8/210-S-31 have been clarified.

43. Drawing 210-S-32 - Stair 1/Elevator – Enlarged Plans
    a. REPLACE with the attached drawing 210-S-32.
    b. Location of section references 7A and 8A/210-S-32 has been clarified.

44. Drawing 210-S-35 - Stair 1/Elevator Sections
    a. REPLACE with the attached drawing 210-S-35.
    b. Location of sections 7/7A and 8/8A have been clarified.
    c. Section 10 has been revised with added rebar information.

45. Drawing 210-S-40 - Stair 2 Enlarged Plans
    a. REPLACE with the attached drawing 210-S-40.
    b. Added section references 1A, 5, and 6/210-S-41.

46. Drawing 210-S-41 - Stair 2 Sections
    a. REPLACE with the attached drawing 210-S-41.
    b. Revised section 1 to show the CMU wall and beam supporting it. The top stair slab and PT beam connection has been revised.
    c. Added section 1A to show the condition along grid line 0 on level 6.
    d. Added section 5 showing the roof beam reinforcement.
    e. Added section 6 showing the condition along grid line S2 on levels 2, 4, and 6.

47. ADD attached Drawing 210-S-63 - Security Grille Plans and Details
    a. Introduced the enlarged plan showing the steel framing needed for the security grille and 3 new sections.

48. Drawing 210-SS-01- Post-Tensioned Beam Schedule
    a. REPLACE with the attached drawing 210-SS-01.
    b. Schedule revised.

49. Drawing 210-SS-02 - Post-Tensioned Beam Schedule
    a. REPLACE with the attached drawing 210-SS-02.
    b. Schedule revised.

50. Drawing 210-SS-03 - Column Schedule
    a. REPLACE with the attached drawing 210-SS-03.
    b. Schedule revised.

51. Drawing 210-SD-01 - Typical Slab On Grade Details
    a. REPLACE with the attached drawing 210-SD-01.
    b. Added note to detail 1 regarding saw cut control joints.
    c. Clarified detail 9 to show that it is also applicable where there is a wash.

52. Drawing 210-SD-02 - Typical Details
    a. REPLACE with the attached drawing 210-SD-02.
    b. Details 5 and 6 are deleted.
    c. Tie back anchor detail 12 is added.

53. Drawing 210-SD-03 - Typical Foundation Details
    a. REPLACE with the attached drawing 210-SD-03.
    b. In details 5 and 6, reveals are revised, sealant and damp proofing are deleted.

54. Drawing 210-SD-04 - Typical Masonry Details
    a. REPLACE with the attached drawing 210-SD-04.
    b. Notation in detail 1 revised.

55. Drawing 210-SD-05 - Typical Masonry Details
    a. REPLACE with the attached drawing 210-SD-05.
    b. Deleted detail 2 – typical detail at divider beam.

56. Drawing 210-SD-13 - Post-Tensioning Details
    a. REPLACE with the attached drawing 210-SD-13.
    b. Detail 1 notes revised.

57. Drawing 210-SD-16 - Post-Tensioned Barrier Cable Details
    a. REPLACE with the attached drawing 210-SD-16.
    b. Sheet revised with new typical details.

58. Drawing 210-SD-17 - Post-Tensioned Barrier Cable Details
    a. REPLACE with the attached drawing 210-SD-17.
    b. Sheet revised with new typical details.

59. Drawing 210-SD-21 - Concrete Column Details
    a. REPLACE with the attached drawing 210-SD-21.
    b. Rebar pattern revised in detail 6.

60. Drawing 210-E-02
    a. DELETE this drawing and REPLACE with the attached revised drawing 210-E-02.
    b. Revised FA notification device symbols from speaker/strobes to horn/strobes to match what is shown on the floor plans.

61. Drawing 000-ESP-01
    a. DELETE this drawing and REPLACE with the attached revised drawing 000-ESP-01.
    b. Revised keynote #1 to read “Provide (9) 4-IN” instead of (7) 4-IN.
    c. Revised conduit routing direction towards USS025-404 instead of MCC-048 in building 404.

62. Drawing 210-E-10
    a. DELETE this drawing and REPLACE with the attached revised drawing 210-E-10.
    b. Removed the column mounted blue phones. Provide only at the stairs.
    c. Applied keynote #3 to each blue phone outlet location.
    d. Remove the second card reader at the exit lane of the parking garage.
    e. Reconfigured the underground conduit layout of the parking garage gate system.

63. Drawing 210-E-11
    a. DELETE this drawing and REPLACE with the attached revised drawing 210-E-11.
    b. Removed the column mounted blue phones. Provide only at the stairs.
    c. Applied keynote #3 to each blue phone outlet location.

64. Drawing 210-E-12
    a. DELETE this drawing and REPLACE with the attached revised drawing 210-E-12.
    b. Removed the column mounted blue phones. Provide only at the stairs.
    c. Applied keynote #3 to each blue phone outlet location.

65. Drawing 210-E-13
    a. DELETE this drawing and REPLACE with the attached revised drawing 210-E-13.
    b. Removed the column mounted blue phones. Provide only at the stairs.
    c. Applied keynote #3 to each blue phone outlet location.

66. Drawing 210-E-14
    a. DELETE this drawing and REPLACE with the attached revised drawing 210-E-14.
    b. Removed the column mounted blue phones. Provide only at the stairs.
    c. Applied keynote #3 to each blue phone outlet location.

67. Drawing 210-E-15
    a. DELETE this drawing and REPLACE with the attached revised drawing 210-E-15.
    b. Applied keynote #3 to the blue phone outlet location.

68. Drawing 210-E-20
    a. DELETE this drawing and REPLACE with the attached revised drawing 210-E-20.
    b. Added the Intelligent System Controller (ISC) to the electrical room and revised data connection type from ‘8A’ to ‘7A’.

69. Drawing 210-ESL-01
    a. DELETE this drawing and REPLACE with the attached revised drawing 210-ESL-01.
    b. Revised Fire Alarm keynote #4 removing the connection to a fiber optic network.
    c. Revised FA notification device symbols from speaker/strobes to horn/strobes to match what is shown on the floor plans.
    d. Revised Systems riser diagram with the ‘Intelligent System Controller (ISC)’ Panel with the card reader.
    e. Added systems general note #4 regarding the ISC panel connections.

70. Drawing 210-L-101
    a. DELETE this drawing and REPLACE with the attached drawing 210-L-101. The plant list on drawing 210-L-101 has been updated and there are 237 (PV) type plants based on the latest layout.

71. Drawing 210-L-100
    a. DELETE this drawing and REPLACE with the attached drawing 210-L-100. The existing contours on sheet 210-L-100 have been updated to match the latest civil plans and the ALCOSAN local plant datum.

72. Drawing 210-P-01
    a. DELETE this drawing and REPLACE with the attached drawing 210-P-01.
    b. Updated sanitary riser diagram with appropriate cleanouts, stormceptor, and updated pipe sizes.
    c. Updated storm sewer references in abbreviations, titles, and general notes.
    d. Updated sheet title to reflect storm.

73. Drawing 210-P-10
    a. DELETE this drawing and REPLACE with the attached drawing 210-P-10.
    b. Relocated floor cleanout out of Stairwell 102.
    c. Shifted floor drain in electrical room to be centered at door.
    d. Added stormceptor device outside of building on main storm piping.
    e. Updated storm sewer references in general notes.
    f. Updated sheet title to reflect storm.

74. Drawing 210-P-11
    a. DELETE this drawing and REPLACE with the attached drawing 210-P-11.
    b. Updated storm sewer references in general notes.
    c. Updated sheet title to reflect storm.
    d. Updated floor drain branch sizes to 4”.

75. Drawing 210-P-12
    a. DELETE this drawing and REPLACE with the attached drawing 210-P-12.
    b. Updated storm sewer references in general notes.
    c. Updated sheet title to reflect storm.
    d. Updated floor drain branch sizes to 4”.

76. Drawing 210-P-13
    a. DELETE this drawing and REPLACE with the attached drawing 210-P-13.
    b. Updated storm sewer references in general notes.
    c. Updated sheet title to reflect storm.
    d. Updated floor drain branch sizes to 4”.

77. Drawing 210-P-14
    a. DELETE this drawing and REPLACE with the attached drawing 210-P-14.
    b. Updated storm sewer references in general notes.
    c. Updated sheet title to reflect storm.
    d. Added a second FD-2 at column 9.8 for additional rainfall drainage.

78. Drawing 210-P-15
    a. DELETE this drawing and REPLACE with the attached drawing 210-P-15.
    b. Updated storm sewer references in general notes.
    c. Updated sheet title to reflect storm.

79. Drawing 210-P-20
    a. DELETE this drawing and REPLACE with the attached drawing 210-P-20.
    b. Removed water meter from plan.

E. Questions

Q1 : Please provide a site logistics plan. Or, at the minimum, please confirm we get the entire remainder of the union parking lot for our use (as seems to be indicated on C-40) for our staging, laydown, trailers, offices, etc.

A1: The entire union parking lot will be available for the Contractor's use.

Q2: Please identify limits of temporary construction fencing, and please confirm the existing perimeter fencing may be considered as construction fencing.

A2: Existing perimeter fencing may be used as construction fencing. Contractor will be responsible for any damage to this fence and will need to make sure temporary fencing is put in place anywhere the existing perimeter fence is removed for construction.

Q3: Spec 015000, article 1.15 has significant requirements in terms of the types of protection required in relation to structure height, and is open to interpretation of where staff would really be walking, etc. Please provide a sketch indicating where barriers are required, and of what type, if more than typical specified fencing. Shane to respond.

A3: Expect that staff will utilize all existing to remain sidewalks and protect those as specified. A drawing will not be provided.

Q4: The included wage rates have both 'building' and 'heavy' rates. Please confirm this entire project falls under 'building' since it is vertical construction.

A4: It is the contractor's responsibility to comply with PA Prevailing wage laws. Any questions pertaining to Labor Classification should be directed to the PA Department of Labor.

Q5: The existing contours on L-100 are in different locations than those on the civil drawings. Please confirm the civil drawings should be used for all earthwork calculations.

A5: The contours on the Civil drawings are correct. An updated landscaping plan with the contours corrected to match is provided in this Addendum.

Q6: Please clarify the “Alternative Compliance” dollar values indicated on Landscape Plan L-101. Are we to include this $16,200 in our bid?

A6: This fee is paid by ALCOSAN and should not be included in the bid.

Q7: Drawing C-12 does not show, or note, any pavements or repairs on the west side of the garage. Is nothing to be done?

A7: No pavement repair is required on west side of the garage. No new pavement is going to be installed until after the Environmental Compliance Facility is constructed. A temp pavement repair detail is added in this Addendum for utility trenching area that will be paved over during facility construction phase.

Q8: Drawing C-12 shows the west pedestrian ramp and sidewalk ending about 75’ down from the northwest corner. C-14 utility plan and L-101 landscape plan show what appears to be a curb line, and Floor Plan A-10 shows a curb line, sidewalk and possibly planting bed along the entire west side. Please clarify all required work.

A8: The C12 plan is correct. ALCOSAN did not want to install the curb or sidewalk past the ADA ramp.

Q9: The apron from Tracy Street at the southwest garage corner will be lost due to its proximity to the garage. C-12 calls for new curbs but does not address the apron. What is to done here, concrete? asphalt?

A9: No repair is necessary at this point of the project. This access will be used for construction entrance for the facility construction and therefore should be left as a stone construction entrance for the next phase.

Q10: We have not found any asphalt pavement section details. Please provide.

A10: No asphalt paving will be performed during garage construction phase. A temp pavement repair detail is Added by this Addendum for utility trenching.

Q11: Please provide a plan indicating the extents of the required underslab geofoam. We understand it occurs at the ramp on the west side, and the northern end of the building, but is it required all the way to the beginning of the ramp on the east side to somewhere between column line 7 and 8?

A11: Clarification is shown in Addendum 1 on drawing 210-S-12. Geofoam begins at gridline 8 in east bay and extends up to gridline 5 in west bay, as well as north end of building

Q12: Spec 087000 is duplicated. It would appear the first spec is correct. Please confirm.

A12: This items was previously addressed as follows: Use the one with 7 hardware sets, other section will be deleted per Addendum 1.

Q13: Please provide a signage schedule as no signage of any kind is indicated on the drawings.

A13: Signage drawings have been added to drawing set per this Addendum.

Q14: Are we to include the aluminum ‘enter’ and ‘exit’ letters at the east elevation? If so, please provide a spec as they are not included in 101400. Are there to be similar letters at the west elevation? None are shown.

A14: Signage drawings have been added to drawing set per this Addendum.

Q15: Headache bars are called out in spec 101400 but are not shown. Is one required at each entry?

A15: Signage drawings have been added to drawing set per this Addendum.

Q16: Where do the tie-back anchors in spec 118123 occur? We have not found them on either the A or S drawings.

A16: Functional design and engineering of the ties back system shall be by the contractor. For bidding purposes assume four tie back anchors at Stair 1/Elevator and two at Stair 2. See detail 12/210-SD-02 this addendum for assumed reinforcing.

Q17: Detail 5/S-34 notes waterproofing at the elevator pit and refers to the architecturals, but we have found no reference to waterproofing and there is no spec. Is it required? If so, please provide a spec and define limits (pit walls only, pit slab also, etc.)

A17: Waterproofing is not required. Note is deleted in Addendum 1.

Q18: Detail 5/S-34 also notes a foundation drain and refers to the architecturals, but we have found no drains indicated. Please confirm there is no foundation drainage on this project.

A18: Waterproofing is not required. Note is deleted in Addendum 1.

Q19: Detail 10/AD-62, what are the limits of the composite metal panels? Are they on the backside of the parapet, or does the TPO roofing come up that side? Are the composite panels on the horizontal top surface or does the TPO come across to a ‘gravel stop’ edge of some type?

A19: TPO roofing is on backside of parapet up to and under metal coping on top of parapet. Metal panels are on exterior front sides.

Q20: Section 2/A-30 shows what looks like a security grille and door between lines 3 and 4 on the ground level, but elevation 2/A-22 and section 4/A-33 show nothing. Plan on A-10 shows something (light line weight) but notes nothing, and there is no door in the schedule. Please clarify if something is here.

A20: The security grille is deleted between grid A/3 and A/4 because there is no longer a coiling grille between grid A/2 and A/3.

Q21: In 2/A-41, please confirm the rail on the angled wall that bypasses column A-11 is a type ‘F’.

A21: That railing is Type C: 42” H guard railing mounted to sleeve in top of concrete wall. See 2/A22

Q22: Please define the foundation and wall for the ramp in room 105.

A22: Drawing 210-S-11 has been updated in this Addendum to reflect this.

Q23: Please define the railing at this ramp in room 105.

A23: The railing is Type A: 42” H guard railing with handrail mounted to sleeve in top of concrete wall.

Q24: Are the large, heavy dark arrows on the plans actually to be painted, or are they simply directional arrows on the plans? They are not noted like the striped lines are. Same question for the symbols at the electric vehicle spaces.

A24: Signage drawings have been added per this Addendum.

Q25: On Drawing, 210-C-14 (Sheet 13 of 158) Phase 1 Utility Plan, there are two water lines being shown entering the new garage (6” Proposed Fire Line and 2” Domestic Line) . Our question is, where is the 6” line being run to?

A25: The 6" proposed fire line was removed in the last submission. The parking garage does not have a connected fire service line. There will be an exterior FDC connection for pumper truck hookup.

Q26: In Specification Section 221316 - Sanitary Waste and Vent Piping, 3.11 Piping Schedule, the following questions arise:

A. What type of pipe should we be using for the underground sanitary?

B. The spec is calling for service weight hub and spigot for the above ground sanitary, can we use No-Hub Cast Iron pipe for the above ground sanitary piping instead?

A26: Underground sanitary piping shall be hub-and-spigot with compression type fittings. No-hub cast iron pipe is acceptable for above ground sanitary piping. Specification section 221316 - Sanitary Waste and Vent Piping.

Q27: The spec is calling for service weight hub and spigot for the above ground sanitary, can we use No-Hub Cast Iron pipe for the above ground sanitary piping instead?

A27: Yes, no-hub cast iron is acceptable for above ground sanitary piping.

Q28: What are the specification requirements for the clean-outs within the sanitary system piping?

A28: Cleanout specifications are included in this addendum under specification section 221316 - Sanitary Waste and Vent Piping. In general, vertical cleanout fittings will be installed at the top and bottom of each sanitary riser. In-line pipe cleanouts will be installed on piping runs to avoid having traffic rated floor cleanouts in the drive aisles. Garage floor drains can also act as floor cleanouts.

Q29: Is the water meter being installed by the PC supplied by the owner or by the PC? If by the PC, what are the specifications?

A29: The water meter is removed from drawings as it is not required.

Q30: Is there an option to provide pre-cast concrete stairs and landing in lieu of CIP concrete stairs for Stairs #1, #2, and #3?

A30: The contractor may submit a voluntary alternate to provide all three stairs in precast concrete, and also to provide the entire Stair 1/ Elevator tower in precast concrete. This work would be a delegated design and the contractor would be responsible for design, coordination and engineering of the precast.

Q31: Is it your intent to provide Geofoam fill under the SOG ramps and slabs above elevation 0',0" per typical section 2/SD-01? Would it be acceptable to provide compacted fill in lieu of the Geofoam? There will be a large volume and there is a large cost delta between foam and compacted fill.

A31: See paragraph 3.5.2 of the geotechnical report regarding Type B floors slabs (areas higher than elevation 0.00'). Due to the variability of existing fill conditions on site, a net zero increase in soil pressure is required to minimize settlement. Lightweight geofoam fill is required. Compacted granular fill would add soil pressure and cause settlement.

Q32: Stair 2 section 1/S-41 calls out a Upturn PT beam at the intermediate stair landing and directs us to the framing plan for the size. The framing plan does not call out this beam.

A32: This is the upturned beam running along 1 line between gridlines A and B at each level. See framing plans for beam marks. The beam is widened locally at the stair to provide an architectural projection. Reinforcing detail of the widening is shown in 210-S-41 updated per this Addendum.

Q33: A Contractors Qualification Statement is being requested to be submitted with our bids. Along with this statement you are requesting a Financial Statement. Due to the sensitivity of the Financial Statement, can this requirement be modified to the apparent low bidder needs to provide upon request by the owner? Some public owners respond that financial statements won't be opened if not the apparent low bidder.

A33: A financial statement is required. Failure to provide it will result in the bid being considered non-responsive.

Q34: Please clarify what if any pavement (concrete or asphalt) is required at the curb cuts (one along Preble Ave and two along Tracy St.) and the limits of the pavement.

A34: Along Tracy the curb cut access points will be used for construction entrance for the facility construction and therefore should be left as a stone construction entrance for the next phase. The eastern entrance to the garage will be concrete. A concrete detail is added to the Civil detail sheets.

Q35: There was a slide at the pre-bid showing the exterior finishes of the parking garage. This slide called out Vertical Textured Accent Concrete Panel. Please indicate where this is required. Drawing AD-67 calls out all exposed concrete to view to have smooth form finish.

A35: There are no vertical textured concrete accent panels at the garage. See Section 03 30 00, paragraph 3.6 for finish of formed surfaces.

Q36: Please define location if any of Architectural Concrete per spec section 031000-2.1C.

A36: Architectural concrete is limited to the cast in place concrete walls that run from ground to 2nd level on the east elevation from gridline 1 to 7 and on the south elevation from gridline C to B.4 line. Architectural concrete is called out in updated drawings per this Addendum.

Q37: Please verify the owner is responsible for the payment of $16,200 to the Treasurer City of Pittsburgh per the table shown on drawing L-101.

A37: This fee is paid by ALCOSAN and should not be included in the bid.

Q38: Reference Drawing A-44 elevation referencing the locations adjacent to the Glass Curtain wall that are noted “Design and Engineered by the Contractor”; Question: In lieu of all General Contractors engaging an Engineer and incurring additional bidding costs, can this Design be completed by the Owner and/or an allowance be provided so all General Contractors are bidding the same scope of work and/or carrying the same allowance value?

A38: This work is a delegated design-build element. See section 05 40 00 Cold -Formed Metal Framing. The manufacturers listed will bid this part of the work, including engineering.

Q39: Reference drawing 210-A-44, A-45, A-51. Question: Drawing Page Scale says ¼”=1’ however all the details on the referenced drawing reference scale 3/16”=1’. Please clarify drawing page scale?

A39: All three drawings are changed per this Addendum for the bar scale to be 3/16" = 1'-0" to agree with the details.

Q40: Reference detail 1/A-41. The note 1 reference to “skim coat of plaster and paint this wall”. Please clarify if the shared elevator shaft wall exposed & facing the adjacent stair tower is to receive the same note 1 treatment, please clarify extents of the plaster & painting? I think this question was previously submitted by another contractor.

A40: The shared stair/elevator shaft wall (exposed and facing into stair) does not receive plaster and paint. See Addendum 1 for extents.

Q41: Reference spec 01 74 23 Cleaning / 3.2B. “Contractor shall assign a value of $500 per week for housekeeping inside and outside of the work area(s) to the satisfaction of the CM”. Please consider including this on bid form as an allowance to be carried by all contractors and billed against accordingly on schedule of values? I don’t understand designating $500 per week for this work. What does it mean? How do we verify that $500 per week was indeed included in the bid? How is it paid out? Over one year, this is a $26,000 number!

A41: The $500/week cleaning value is struck from 01 74 23 per this Addendum.

Q42:

Question 1: Please clarify if General Contractor is to Rent referenced office trailer or purchase office trailer?

Question 2: If rent please clarify “… and will turnover this site office to the Owner.”, The Owner will take over rental agreement if applicable at final completion of 1735G contract duration, correct?

Question 3: The size of Modular Office Trailer listed 24’ x 44’. Is this the minimum & maximum size permitted? I reviewed the Willscot website and this modular trailer size is not listed, guessing would be custom size to meet this requirement, (common size listed is 24’x60’), please clarify?

Question 4: Please clarify location for CM site office / driveway?

Question 5: Please clarify if CM Site Office / Driveway / Parking Area is required to be paved or is rock entry similar to construction entrances required?

Question 6: reference spec 01 50 13/1.2.A.3. Maintenance: Provide weekly or as needed janitorial services for the Office; furnish, replace and replenish light bulbs, wastebasket liners, copier paper, toner, and maintenance, first aid kit, fluorescent tubes, toilet paper, paper towels, soap, seat covers for dispenser, and bottled water. Wash the office floors and washroom facilities at least once each week. Sweep office floors, empty trash and dust furnishings weekly. Wash office windows at the request of the CM. Please clarify if the cleaning value of $500 per week referenced in spec 01 74 23, is to cover this referenced Maintenance, if not could an allowance be provided in bid for this CM Trailer maintenance associated cost?

A42:

1. GC may choose to rent or purchase.

2. GC shall remove trailer from site at final completion.

3. 24'x44' is minimum size. GC has option for larger, but must be coordinated with site logistics and not hinder contractors’ use of site.

4. CM site office shall be located in the staging and laydown area. CM personnel vehicles will access trailer through curb cut to be made along the plant access road to the north of the site.

5. A paved drive path is not required. Rock entry similar to construction entrance is adequate.

6. 01 75 23 covers cleaning in “existing facility operations”, which would not include the field office. Spec 01 50 13 states that the general contractor is responsible for the purchase and upkeep of the field office, which includes janitorial services. Both the field office and upkeep shall be included in the lump sum bid.

01 50 13 spec is reissued per this Addendum.

Q43: Section 111200 Parking access control system; states contractor responsible to integration new equipment into the Owner’s existing access control system. Request to please provide current system, company or contact info?

A43: Existing parking control provided by Magnetic Automation Corp (swing gates), Viking (intercom) and Lenel (card reader panel/access control). Contractor is responsible for initiating contact with local representatives of these companies.

Q44: Reference to damproofing and waterproofing are found in General Foundation Note #16 on 210-S-02 and details 5&6 on 210-SD-03. Neither a damproofing nor a waterproofing specification are provided in the bid documents. Please clarify the assumption this work is not required. If incorrect, please provide specifications as well as update the architectural drawings to indicate the required locations (currently no locations are provided).

A44: Dampproofing and waterproofing are not required in this project.

Q45: Spec 033000, 1.5.D.1.a calls for a mock-up of Architectural Finished Concrete. Spec 033000, 3.6.B requires an as-cast finish on exposed to view surfaces. Spec 033000, 3.6.C.1 requires a smooth rubbed finish for surfaces designated on the drawings as architectural cast in place concrete. The drawings do not clearly define any locations requiring architectural cast in place concrete. As such, please confirm the assumption that a mock up is not required and all exposed to view surfaces would receive an as cast finish per Spec 033000, 3.6B. Please also confirm the assumption that no form liners are required as a slide inthe pre-bid meeting indicated a textured finish on a concrete wall. If incorrect, clearly define the required finishes on cast in place wall concrete exposed to view.

A45: Architectural concrete is limited to the the cast in place concrete walls that run from ground to 2nd level on the east elevation from gridline 1 to 7 and on the south elevation from gridline C to B.4 line. A mock-up will be required for this finish. Form liners and textured finishes are not required in the garage project.

Q46: Section 4A/S-24 occurs between Column line 0 and Column line 2 on A line. This section shows a cast in place concrete wall. 1/S-40 shows a masonry wall as well as details on 1/A-50 and 3/A-51. Please clarify the assumption that masonry wall backup and brick veneer is to be constructed in this location.

A46: Correct. The wall is to be constructed of cmu backup and face brick veneer at this location.

Q47: 1) Section 8.2 of the Bid Form for Contract 1735 G – General, the language bottom of the Unit Price Matrix states "(Sum of Extended Total Amount for 01 thru 04)" Please confirm if this is correct, or if it should read "(Sum of Extended Total Amount for 01 thru 07)"

A47: Contract 1735 1-3G has been updated to correct numbering, and revised form to be used for bidding is included as an attachment to this Addendum.

Q48: Spec. Section 078400 - Fire Stopping - Please advise if the MEP trades are responsible for fire caulking/or providing sleeves their penetrations through fire rated systems.

A48: Yes, MEP Trades are responsible for fire caulking and providing sleeves thru fire rated penetrations.

Q49: Spec. Section 072726 3.3 B indicates "The MAB system must be installed to form a continuous air barrier with all joints and penetrations made airtight. Connections shall be made between the following building Systems:"… Please provide detail(s) for the MAB system, especially as they tie into the existing systems.

A49: This only applies to the sheathing behind the metal panel system at the Stair 1 /elevator tower.

Q50: Electrical Plan Keynote 7 on E-10 indicates illuminated garage entry sign. Is this note referring to entry and exit sign on 2/A-20? If so, please provide updated specification 10 14 000 - Signage to reflect the illuminated signs.

A50: Yes, however backlit channel letters are deleted on east elevation and replaced with LED illuminated signbox. LED Illuminated signbox is added on west elevation entry/exit . See signage drawings and updated specification issued in this Addendum.

Q51: Please provide locations of Tieback Anchors associated with specification 11 81 23 - Tieback Anchors for Façade Access Equipment.

A51: Functional design and engineering of the ties back system shall be by the contractor. For bidding purposes assume four tie back anchors at Stair 1/Elevator and two at Stair 2. See detail 12/210-SD-02 this addendum for assumed reinforcing

Q52: Please confirm that the Level 5 to level 6 Stairwell is to receive the same traffic coating applied to Level 6, Drawing(s) A-14 and A-15.

A52: Stair 1 traffic coating is limited to level 5 elevator lobby and level 5 stair landing. Stair 2 traffic coating is limited to level 6 main landing. Stair 3 (level 5 to 6) receives traffic coating over all risers, treads and intermediate landing.

Q53: Please provide more information on the "Bike Parking and Water Service Entry" labeled on A-10. Specifically the handrail that would be at the ramp.

A53: A structural section thru the south edge of that ramp is provided in this addendum. That concrete wall terminates 6" above ramp slab and has railing type A (42" H guard railing with handrail, mounted to sleeve in concrete) . North side of ramp has will mounted handrail as shown in 1, 2 (sim) and 5/210-AD-64.

Q54: Please provide a section detail for the Security Grille Door on 1/AD-66. More information is need for the tube steel framing.

A54: Drawing 210-AD-65 has been updated per this Addendum to include a section detail of the security grille.

Q55: Please provide a section detail for the 4x8 HSS by the coiling grille door on 2/A-32.

A55: Grille detail added to 210-AD-65 per this Addendum.

Q56: Please provide a signage schedule.

A56: Signage drawings added per this Addendum.

Q57: According to Specification 10 44 13 - Fire Extinguishers and Cabinets, section 2.3B, fire extinguishers are to be provided by owner. Please confirm this.

A57: Confirmed.

Q58: Please confirm wall type for the Bike Parking and Water Service Entry along column line 4 and column line B. A-10 does not show hatch for wall type. A-40 indicated wall along column line B is shown to be CMU.

A58: 8" CMU unrated.

Q59: Detail 5/S-23 indicates a 1'-8" wide grade beam while elevation 4/S21 indicates 1'-6" wide grade beam. Please advise. Additionally, are the pile caps along CL C, south of CL 7, the typical 4' x 4' dimensions or is the E-W dimension bigger due to the grade beam / wall offset of pile cap center line? S-20 Series reference a grade beam and pile cap schedule but it does not appear to be in the documents.

A59: 5/S23, 1'-6" wide. Outside of wall and grade beam will flush. Pile cap to extend to wall edge (4'-0"x4'-4") and pier to be centered along column line.

Q60: Please confirm there are not grade beams between CL 2 and 3 along CL A (S-11), partially between CL 4 and 5 along CL C (S-11), and between CL 10 and 11 along CL A (S-30).

A60: Confirmed.

Q61: Please confirm there is not a pile at CL B/0. If not, it appears that the bottom of the 1'6" wide grade beam along CL 0 is 1'-0" higher that the CL B/0 Caisson and 2'8" wide grade beam along CL B. Please advise.

A61: No pile cap,grade beam intersection is ok.

Q62: Please provide a footing and wall size for the ramp wall between CL 4 and 5, east of CL A.

A62: Section 7 has been added to 210-S-11 per this Addendum.

Q63: Please advise if the North Foundation Wall (2/S-21) along CL 12 is an 8" or 12" wall. If it is a 12" wall, please advise if the reinforcing is the same as section 3/S-23.

A63: 8" wall with reinforcement similar to section 5/S-23

Q64: 2/SD-01 and 1/S-23 indicates tiered Geofoam at the ramp all the way down to the elevator, shown on 1/S3-34. Please provide plan limits of this geofoam as it relates to the sloping slab on grade throughout the ground level plan.

A64: See 210-S-12 from Addendum 1

Q65: Along the perimeter of the ground floor (along CL 0, C, 12, and A) where there are foundation walls and columns, please confirm that all joints between walls and columns are to follow detail 2/SD-03. Additionally, should the walls/pilasters containing the ramp (CL A/B and 5/8) be a monolithic pour without the 2" gap identified on 2/SD-03? Similarly, the walls along CL 12 and partially along CL C are retaining ~3' to 5' of soil/subbase, Should the wall / column joints @ CL A.2, B, C, 10, 9 and 8 follow detail 2/SD-03?

A65: Yes all confirmed per detail 2/SD-03.

Q66: Please confirm there is a foundation wall along CL A, between CL 1 and 2 per detail 4A/S-24 and not open as shown on elevation 3/S21.

A66: This area has cmu infill as shown in achitectural.

Q67: Please advise if any concrete is considered 'Architectural Cast-in-Place Concrete' per specification 033000 1.2 B.1, 3.6 C and 3.12 B.1.a.2, as the drawings do not indicate any Architectural Cast-in-Place concrete.

A67: There is no textured concrete finish in the garage project. See spec for description of smooth formed surfaces. Architectural concrete is limited to the the cast in place concrete walls that run from ground to 2nd level on the east elevation from gridline 1 to 7 and on the south elevation from gridline C to B.4 line.

Q68: Detail 3 / Drawing S-23, please confirm the space between the slab on grade and exterior wall at B Line, approximately 4" is to be a wash joint. If so, please provide detail of wash joint.

A68: Drawing 210-S-23 updated per this Addendum to clarify this detail.

Q69: Please confirm that only one (1) copy of the bid forms are required to be submitted.

A69: Only one copy of the bid form is to be submitted.

Q70: 5/AD-67 shows an alternate location for masonry support angle. Please clarify if this is saying two outside angles are to be base bid, and the one interior alternate location is to be an alternate line item.

A70: Two angles on the outside are for where slab above is continuous on both sides of wall. The alternate location at center of wall is for where face of wall is flush with edge of slab or beam (vertical line shown) and outside angle cannot be mounted

Q71: 4/A-51 and 5/A-51 indicates that the back wall is to be CMU. A-50 is the drawing for the enlarged plans of stair 2, each detail indicating 4/A-51 as the elevation view. The only enlarged plan that indicates CMU to be that back wall is 5/A-50 along column line 0. Please provide clarification if that wall on all levels is to be CMU.

A71: The back wall is both CMU and concrete upturned PT beam as shown in section 5/A-51. The plans are cut thru the concrete PT beam

Q72: Stair 2 CL S2 / 1-2: Section 4A/S-24 (along CL S2) cut on 1/S-40 indicates a CIP wall from top of footing to underside of level 2 while plan view (1/S-40) indicates CMU hatching at this location (Similar to 1/A-50). The CMU hatching remains consistent on all S-40 and A-50 enlarged plans, although section 1/AD-71 from elevations 1 and 2 on A-51, indicate a CIP structure substrate. Please advise if the Stair 2 Wall along CL S2 between CL 1 and 2 is CIP concrete or masonry. Please provide size and reinforcing for either scenario.

A72: Drawing 210-S-24 has been revised per this Addendum.

Q73: Stair 2 CL 0 / A-A1: Enlarged plans on S-40 and A-50 vary in hatching indicated for the wall along CL 0 between A-A.1 (both masonry and CIP concrete). Section 5/A-51 indicates a masonry half wall along CL 0 with a suspected CIP Colum in the background although elevation 2/A-51 doesn't indicated a half wall or wall openings on that wall face (also 1/AD-71 is on this elevation as well; see above). Also, elevation 4/A-51 indicated concrete hatching for the wall along CL 0. Please advise if the Stair 2 Wall or portion of wall along CL 0 between CL A and A.1 is CIP concrete or masonry. Please provide size and reinforcing for either scenario.

A73: A50 and A51 are correct. There are no openings in the south elevation. See plans and section 5/A51. There is a column at grid S2/0. It supports a widened upturned PT beam running along 1 line, which supports the stair intermediate landings. There is double cmu wall infill up to the next floor beam. There is face brick veneer on the south wall exterior.

Q74: Stair 2 CL 0 / A-A.1: Section 1/S-41 indicates an 'upturn beam' (although below the slab) along 0 and refers to 'see framing plan'. The framing plans do not indicate a beam at this location. Please provide sizing, reinforcing and elevation of the beams required along CL 0.

A74: Drawing 210-S-41 has been updated in this Addendum to show this detail.

Q75: Section 7/7A/S-35 indicates a beam with ledge along the expansion joint. S-31 and S-32 enlarged plans do not indicate a beam type nor does 7/7A/S-35 fully indicate the reinforcing required. Please provide a beam size for all floors at this location (assuming the B6R is only for the roof level shown on 2/S-32)

A75: 7/7A is applicable at all typical level. Roof lvl is B6R

Q76: Please provide reinforcing required for the 5" bump out detail 10/S-35.

A76: Drawing 210-S-35 has been updated per this Addendum.

Q77: The Plant List on Drawing 210-L-101 calls for 105 (PV) Shenandoah Switchgrass around the parking garage. However, looking at the landscape plan view on that drawing, it calls for 162 of these. Please confirm that 162 shall be supplied.

A77: The plant list on drawing 210-L-101 has been updated and there are 237 (PV) based on the latest layout. 210-L-101 is updated per this Addendum.

Q78: Please provide a cut section detail for the asphalt pavement patching on this project.

A78: Drawing 210-C-32 has been updated to include this detail.

Q79: Drawing 210-C-12 shows the extents of new concrete sidewalk. However, Drawing 210-A-10 shows the concrete sidewalk on the West Side of the Parking Garage continuing down to the man door entrance and the car entrance. Please provide details on if this concrete sidewalk is to be added as well as any landscaping required on the West side of the garage.

A79: The sidewalk should stop at the end of the ramp. The remainder of the sidewalk will be constructed with the Environmental Compliance Facility. Our C12 is current and not showing any sidewalk past the ramp.

Q80: Drawing 210-S-12 shows the ground level slab layout for the parking garage. However, based on the side elevations, this slab slopes to various elevations. Can the engineer provide elevation callouts and low point lines on this drawing to help determine the overall backfill needs beneath the slab?

A80: See drawings 210-A-10 and 210-S-11 for top of slab on grade elevations.

Q81: Roof details on AD-69 call out EPDM roofing, spec 075423 is TPO. Please confirm TPO.

A81: TPO is correct. All references to EPDM are deleted from 2 and 3/210-AD-69

Q82: Plans 1/A-41 thru 2/A-43 at column BB-50 and at northeast corner of elevator shaft. Please confirm this end of wall masonry joint remains open as there is no detail indicating expansion joint assemblies or even caulking. (The only vertical wall expansion joints shown are at the elevator equipment room in 2/A-41.)

A82: Return ends of face brick veneer 4 1/2" to concrete wall/column. Fill 1/2"vertical gap between face brick and concrete with continuous backer rod and sealant.

Q83: Please clarify if elevator equipment room 108 is rated. The door is rated, but the walls are not indicated as such on the life safety plan. If rated, do the wall and 2nd floor expansion joint assemblies need to be fire rated?

A83: The elevator control room must have the same 2 hour rated enclosure as the elevator shaft walls. Elevator Control Room door will be changed to 90 minutes rating. Add fire rated expansion joint materal at the segment of horizontal expansion joint over the elevataor control room at level 2 and at detail 7/AD-69. Basis of Design: “WABO FIRESHIELD FSV” (See specs)

Q84: Similar to #2 above, plans on A-50 show no expansion joint covers or caulking at the ends of masonry walls at column A-2 or the southeast corner or stair 2. Please confirm these remain open.

A84: Return end of face brick veneer 4 1/2" to concrete wall/column. Fill 1/2"vertical gap between face brick and concrete with continuous backer rod and sealant.

Q85: Please further define the 12x12 grid of drilled holes through the 6 mil polyethylene slip sheet you mentioned in your unofficial answers the other day.

A85: The 12" x 12" grid of holes drilled thru the slip sheet is to allow any concrete bleed water to drain during curing. The slip sheet is to mitigate shrinkage cracking during curing by allowing the slab to shrink horiziontally over the granular base.

Q86: At stair 2, please provide a detailed structural section cut with dimensions for perimeter beams located between columns A and A.1, and between columns 1 and 2, at each floor. On column line 0 the structurals call out a typical upturned beam but the architecturals show a much larger concrete section. On column line A nothing is shown.

A86: Section cuts have been added to 210-S-40 per this Addendum.

Q87: At stair 1 roof level, 2/S-32 shows beams B6R and B1 meeting at DD-50. There is no column at this location. Is this correct, the beams cantilever that far?

A87: Column BB/50 extends up to stair roof slab (See 1/210-S-32). From that column, roof beam B1 cantilevers to the coner. Roof beam B6R cantilevers from elevator wall to corner.

Q88: At same location, Sections 2 and 3/A-45 graphically show masonry walls sitting on these beams B6R, B1 and B2 up to the parapet, but details 1 and 2/AD-69 call these out as concrete walls. These walls are not shown at all on the structurals.

A88: Those parapet walls are cmu as shown in 2 and 3/210-A-45. See drawing 210-SD-04 for anchorage and reinforcing of those cmu parapets. 1 and 2/210-AD-69 are intended to show roofing and coping info. The wall substrate can be either concrete or cmu.

Q89: Spec 033000 and general note 3 on AD-67 call out all exposed concrete to be smooth form finish. However, in the prebid meeting presentation, one of the slides showed a textured finish of some type. Please clarify no textured surfaces on this project.

A89: There is no textured concrete finish in the garage project. See spec for description of smooth formed surfaces. Architectural concrete is limited to the the cast in place concrete walls that run from ground to 2nd level on the east elevation from gridline 1 to 7 and on the south elevation from gridline C to B.4 line.

Q90: Being that the minority information required with the bid will be lengthy, could/should it be a separately bound document submitted with the bid, similar to the qualification statement?

A90: MBE/WBE information is to be provided in the Article 1 Bid Forms where it is asked for and without interruptions to pagination to the greatest practical extent. A separate document for supplemental information on MBE/WBE contractors is acceptable as long as it is accurately referenced in the bid form.

Q91: Please define information desired from potential elevator contractors prior to the bid and when it is needed. And then please define how the acceptable contractors will be indicated to the GC's.

A91: See B.10 from addendum #1.

Q92: Reference Drawing SD-02 details 4 & 5 / SD-02 showing two (2) types of elevated slab pipe bollards (Non-Removable & Removable). I find no identifying designations on the drawings or within specs to identify the differentiation between the two (2) types, please clarify / identify where the Removable vs. Non-Removable Bollards are located and / or quantify how many of each type are required to be included?

A92: Delete detail 5/210-SD-02. All bollards on supported slab are non-removable. The only removable bollard in the project is at slab on grade and is shown on enlarged plan 1/210-A-40 at door 116.

Q93: Reference detail 6/SD-01 “Slip sheet or vapor barrier as appl., see dwg. 210-S12 for extent”, Do not find any reference to extent of vapor barrier on S12, please clarify extent of where slip sheet / vapor barrier is required?

A93: See section E Q13/A13 in addendum #1.

Q94: Reference details 5&6/SD-03 & detail 3/S-24. The 1" Vertical joints identified to be filled with Sealant please clarify if this is to be installed only on the exterior facade side & top of wall and stop or is it also to extend down wall(s) / column(s) on the interior side of the facade exterior walls down to the topside of c.i.p. deck?

A94: Sealant is not required on any sides of these joints and will be deleted from those details. Damproofing is not required in the project and is deleted from those details.

Q95: Please provide clarification to the parking garage entrance in the sketch below. CPS requests direction to the extents of line striping vs. concrete curb vs. concrete islands at this area.

A95: Drawing 210-A-40 is updated per this Addendum to clarify the island outlines.

Q96: Page 111200-1 – Item 1.2.6 – “PACS contractor shall be responsible for programming all new Access Control System elements…into the Owner’s existing Access Control System.” (a) Please verify that this requirement means that the new garage card access system shall be tied into the Lenel system located in the guard shack, specifically, and (b) provide the existing Access Control System specifications.

A96: (a) Parking vehicle gate control system shall be added to the existing access control panel currently in Guard Shack. (b) Refer to the revised 281000 specification for information on the existing access control system.

Q97: Page 111200-1&2 – Items 1.3.B.1, 1.3.B.2. 1.3.B.3 – Electrical, Power Supply & Communications Systems – Please confirm that Electrical Contractor (not PACS Contractor) will be providing and installing all required Power Supply & Communications systems conduit and wiring.

A97: Electrical Subcontractor must furnish and install the electrical conduits and power wiring to the parking control equipment, and only empty conduits for PACS control/data/communication wiring. The PACS contractor will furnish and install the control/data/communication wiring when they install the equipment. See 210-E-10 this addendum for conduit and power requirements.

Q98: Page 111200-2, Item 1.3.B.3 specifies that Electrical Contractor must provide power & communications conduit and power wiring to the parking lanes. Please verify that PACS Contractor is responsible for providing and pulling data/communications wiring to the parking lanes.

A98: Electrical Subcontractor must furnish and install the electrical conduits and power wiring to the parking control equipment, and only empty conduits for PACS control/data/communication wiring. The PACS contractor will furnish and install the control/data/communication wiring when they install the equipment. See 210-E-10 this addendum for conduit and power requirements.

Q99: Page 111200-8, Item 2.1.A.4.c. – "Readers must connect and work with the Lenel Panel." Please specify which Lenel Panel and provide relevant technical information.

A99: Vehicle Gate Lenel panels in Parking Garage shall connect to Access Control Panel in Guard Shack. Other card reader Lenel panels shall connect to a separate control panel in the Parking Garage Electrical room. Refer to the revised 281000 specification for information on the existing access control system.

Q100: Page 111200-9, Item 2.3.C.1. – "The Owner's Facility Management System must be used." Please provide specifications/ relevant technical information.

A100: Refer to the revised 281000 specification.

Q101: Page 111200-9, Item 2.4.A.3. – Requirement to match existing equipment elsewhere on campus. Two older types of Magnetic parking barrier gates were noted on campus. Please confirm it is acceptable to propose newer models as the older existing models may no longer be available.

A101: Magnetic Automation Corp barriers of the most recent model are acceptable.

Q102: Page 111200-12, Item 2.5.C.1.a. – Please specify make/model number of existing master intercom station located in the Security Office.

A102: There is no intercom interface panel, the Viking Intercom boxes connect directly to ALCOSAN's network via VOIP. See link for specification of existing intercoms: https://www.vikingelectronics.com/products/e-1600-30-ipewp/#applications

Q103: Page 111200-13, Item D.1.b. – "Reader: As specified Division 13 Section 'Security System'". Division 13 was not included in specification.

A103: Applicable Spec Section is 28-10-00

Q104: Page 281000-7, Item 2.4.B – Please confirm that the desired card reader for the parking lanes is the HID 5375 specified.

A104: Refer to the revised 281000 specification.

Q105: Page 281000-7, Item 2.4.F:

a) Please specify which contractor is required to supply new prox cards, and/or whether they are to be provided and if so, the number of cards to be provided.
b) Our understanding is that existing prox cards will be used – please confirm cards currently in use will continue to be used.
c) Please provide desired format of IsoProx II proximity cards specified and model # of those in use now.

A105: a), b) & c). Existing ALCOSAN cards will be used, there is no need for the contractor to provide these.

Q106: Dwg 210-A-40 – Please confirm that two (2) card readers (CR) are required in Exit Lane

A106: Drawing 210-A-40 is updated per this Addendum to remove one card reader in the exit lane.

Q107: During the pre-bid meeting, it was discussed that the contractors would have to pay for the balance of the permitting costs. Do you have any information that you could give me to help quantify these costs?

A107: See Section E Q28/A28 in addendum #1

Q108: CPS BRFI #13: Reference Addendum #1 pages 76 & 77, the orange circle #1 references Concrete Panel with Vertical Texture Accent.

1. Please clarify if Vertical Texture Accent is required at all exterior facade exposed to view concrete at South & East Elevation (i.e. crash walls, columns, retaining walls, edge of PT Slabs, etc.) and no texture accent is required at North or South Elevations?
2. If Architectural Finish (Vertical Texture Accent) is required please provide details of B.O.D. for formliner, etc. to achieve the desired finish?
3. Please clarify if any colored concrete is required and if so please provide requirements and locations required?

A108: Architectural concrete is limited to the the cast in place concrete walls that run from ground to 2nd level on the east elevation from gridline 1 to 7 and on the south elevation from gridline C to B.4 line. A mock-up will be required for this finish. Form liners and textured finishes are not required in the garage project.

Q109: 1. Detail 1/210-SD-13 has notes 1, 2 and 3 above it which indicate the concrete bumper wall shall not be poured monolithically with the floor slab. Are these notes typical to 2/210-SD-13(which is a plan of the cut from 7/210-SD-12 for the taller crash walls) and not detail 1?? If the short walls (curbs) are not to be poured monolithically, where is the joint to be placed as no joint is shown on the detail?

A109: There is no bumper wall along "B" line, only a curb. The notes on 210-SD-13 are revised per this Addendum.

Q110: Please clarify what roadway surface is to be provided at the east entrance to the garage to the tie-in from the demolition saw cut line.

A110: The eastern entrance to the garage will be concrete. A concrete detail is added to the Civil drawings per this Addendum.

Q111: Please clarify what level of restoration is required along the bulk of the west side of the garage from the tie-in to the demolition saw cut line.

A111: Pavement repair details are added to the Civil drawings per this Addendum.

Q112: Please clarify what level of restoration is required along the path of the electrical underground work in the existing parking lot.

A112: Pavement repair details are added to the Civil drawings per this Addendum.

Q113: Please clarify what level of restoration is required along the path of the water line work in the existing parking lot.

A113: Pavement repair details are added to the Civil drawings per this Addendum.

Q114: Please clarify what level of restoration is required along the path of the sanitary run along Tracy St.

A114: Refer to demolition plan for areas of concrete pavement removal. Those saw cuts areas will be restored accroding to Pipe Trench Concrete Pavement Replacement detail on 210-C34. The section from the garage to the edge of the landscape area will be restored according to temp pavement repair detail provided in this Addendum. Remainder area will be lawn restoration.

Q115: What is the duration on the project Start/Finish

A115: See Volume 1 Article 4 Electrial Contract Pg 4-2 E Para 2: Duration from NTP to Substantial Completion is 372 days and to Final Completion is 403 days. See Addendum 1 Pre-bid meeting minutes para 3.b.: Anticipate a NTP to be issued by the first week of May, 2021.

Q116: Drawing 144 of 158 Electrical demolition plan indicate pole mounted fixtures to be relocated, Where are they to be relocated to.

A116: Drawing 000-ESP-01 shows the relocated poles. Refer to corresponding civil drawings as well. #13 and #72 are pushed back to avoid new walkway. #102 is relocated and rotated to light the new parking garage entry.

Q117: Pole light GL3 located on Roof, What is the length of the Pole and size of the pole base

A117: The fixture mounting height is to be 20ft AFF to the bottom of the fixture. The pole are to be mounted on the columns of the parking structure. Refer to the architectural and structural drawings to determine the pole height.

Q118: There is a conduit to the right of numbered note 1 with no description to it on drawing 145 of 158 please advise

A118: Keynote #1 will speak to both set of conduits shown. The words "PROVIDE (7) 4” PVC COATED RGS…" will be replaced by "PROVIDE (9) 4” PVC COATED RGS…"

Q119: There are two underground conduits for future Electrical and Comm Duct Bank indicated on drawing 145 of 158 going to the ECF Bldg. please indicate where the ECF building is located or distance from Duct bank.

A119: The conduits are shown approximately terminating at the entrance of the future ECF building. Please note that these conduits/ductbanks (from the manhole to the future ECF building) are not part of the parking garage construction.

Q120: On drawing 145 of 158 there is a pole that indicates LP-102 existing relocated, where is it being relocated from

A120: Drawing 000-ESP-01 shows the relocated poles. Refer to corresponding civil drawings as well. #13 and #72 are pushed back to avoid new walkway. #102 is relocated and rotated to light the new parking garage entry.

Q121: Pole light GL3 located on Roof, What is the length of the Pole and size of the pole base

A121: The fixture mounting height is to be 20ft AFF to the bottom of the fixture. The pole are to be mounted on the columns of the parking structure. Refer to the architectural and structural drawings to determine the pole height.

Q122: There is a conduit to the right of numbered note 1 with no description to it on drawing 145 of 158 please advise

A122: Keynote #1 will speak to both set of conduits shown. The words "PROVIDE (7) 4” PVC COATED RGS…" will be replaced by "PROVIDE (9) 4” PVC COATED RGS…"

Q123: There are two underground conduits for future Electrical and Comm Duct Bank indicated on drawing 145 of 158 going to the ECF Bldg. please indicate where the ECF building is located or distance from Duct bank

A123: The conduits are shown approximately terminating at the entrance of the future ECF building. Please note that these conduits/ductbanks (from the manhole to the future ECF building) are not part of the parking garage construction.

Q124: On drawing 145 of 158 there is a pole that indicates LP-102 existing relocated, where is it being relocated from

A124: Drawing 000-ESP-01 shows the relocated poles. Refer to corresponding civil drawings as well. #13 and #72 are pushed back to avoid new walkway. #102 is relocated and rotated to light the new parking garage entry.

Q125: Drawing 147 of 158. Please provide more information on underground conduits for Parking Gate operator

A125: Drawing 210-E-10 updated per this Addendum to detail parking gate conduit.

Q126: Who provides Vehicle Chargers

A126: The Electrical Contractor.

Q127: Who provides EMCOM 6000 Phone w/blue light

A127: The Electrical Contractor.

Q128: On drawing 151 of 158 there are symbols shown as R10, R11, R12 please indicate what these symbols are

A128: These are lighting control zone relays corresponding to the lighting control panel schedule. Refer to description provided on drawing 210-E-10, above column line B, between columns 6 and 7.

Q129: On drawing 154 of 158 Fire alarm riser diagram indicates to intercept copper or fiber optic fire alarm network and extend to fire alarm communicator. Please indicate where we are to intercept this.

A129: Drawing 154 (210-ESL-01) is modified per this Addendum. The fire alarm system only uses copper POTS lines and does not connect into the fiber optic network. Make the following change to the Fire Alarm Keynotes on Drawing 210-ESL-01: Delete the words "or fibre optic" from note 4.

Q130: Specification 101400 lists painted parking (traffic) signs/informational signs, clearance bar signs and integrally colored tactile/braille signs in the summary for the project. None of these items can be found on the drawings. Please provide an allowance for the contractor to carry to cover this scope of work.

A130: Signage drawings added per this Addendum.

Q131: East Building Elevation on Drawing 210-A-20 shows 2’ high reverse channel signage at the entry/exit. No specification appears to be provided for this work. Please provide an allowance for the contractor to carry to cover this scope of work.

A131: Signage drawings provided per this Addendum.

Q132: On the Parking Garage East and South Elevations & Materials Pages contained in Addendum #1 (dated 2-24-21) photo 1, notes Concrete Panel “Vertical Texture Accent”.
Question A: Is the “Vertical Texture Accent” a type of form liner? If so can you please provide the specific form manufacturer?
Question B: In addition the grade level CIP walls. Please verify if the crash walls are to receive the “Vertical Texture Accent” finish?

A132: No Textured Concrete is on the project. The drawings and specifictions should be followed for the concrete finish.The slide presented during the pre-bid meeting inadvertantly misrepresented the drawings issued for bid.

Q133: Please outline the specific fees included in the cost that the contractor will be responsible for when working outside the normal working hours (7am to 5pm) as noted section 3.74, Article 3 of the General Contract Conditions.

A133: The contractor is required to obtain permission to work outside of ALCOSAN's normal working hours. Any fees will be determined at the time the contractor requests a deviation in working hours with 48 hours notice. In general, no fees are assessed when the contractor performs work during daylight hours. Work performed on ALCOSAN holidays will at minimum require the contractor to reimburse the CM staff. The contractor is required to abide by all City of Pittsburgh Noise Ordinances pertaining to construction work.

Q134: The specifications contain section 101400 Signage however there is no signage plan showing location or quantities. Can you please provide?

A134: Signage drawings provided per this Addendum.

Q135: Please confirm that no waterproofing or damproofing is required at below grade foundation walls, since none is indicated and no specification have been provided.

A135: Confirmed. There is no waterproofing or damp proofing required at foundation walls in the garage project.

Q136: Please provide information on Color No. 1 and Color No.2 for the face brick. This is listed in specification 042000 - Unit Masonry, section 2.3A.

A136: Spec Section 04200 updated per this Addendum to include brick colors.

Q137: Detail 4/SD-02 shows non-removable bollards. Detail 5/SD-02 shows removable bollards. The architectural drawings do not specify which bollards are to be removable or non-removable. Please provide clarification locations of removable and non-removable bollards.

A137: There is only one removavble bollard. See 210-A-40 at door 116.

Q138: Please confirm that any electrified hardware is to be provided and installed by the Electrical Contractor, including but not limited to electric strikes, electric hinges, mag locks as needed for complete operation.

A138: See Addendum 1 for revised door hardware specification. Electric strikes need to be provided by the door hardware manufacturer in order to work with their exit devices. Electric strikes are shown in the electrical drawings because they will be wired by the electrical contractor. Section 28 10 00 Access Control and Video Surveillance, specifies door contacts and card readers.

Q139: Please confirm that door 502 and 603 on Door Schedule on AS-50 are to have hardware HS001. Same hardware as door 102.

A139: Doors 502 and 603 do not require cylinders for locking. See Section 084113 Glazed aluminum assemblies for aluminum door mfr's standard hardware required for those two doors.

Q140: Please confirm that only exterior arrows and stop bar on C-12 are to be thermoplastic, per specification 321723 - Pavement Markings. While all interior arrows and lines are to be regular paint, per specification 099100 - Painting.

A140: Confirmed.

Q141: 2/SD-05 is a detail for a divider beam. Please clarify the location of this detail, as there shouldn’t be a divider beam for the single cab elevator.

A141: 210-SD-05 detail 2 deleted per this Addendum.

Q142: Please provide clarification if pipe guards shown on 1/AD-67 are to be in general trades package or plumbing package.
Per 3&4/SD-04 the CMU opening for the elevator door is to have a steel lintel. Please provide detail on the type of lintel, steel or masonry, is to be at the following:

a) Door opening for Electrical Room 107
b) Door opening for Closet 106.
c) Door 105 opening to TBD - Bike Parking 105.
d) Door opening for the Elevator Control Room 108.

A142: Pipe guards are miscellaneous metals provided by general trades contractor, but coordinated with pipe trades for placement and measurements.
Per lintel note 4 on SD-04: "C.M.U. OPENINGS MAY BE SPANNED WITH EITHER A STEEL LINTEL OR MASONRY LINTEL BLOCK, AT THE CONTRACTOR'S OPTION." See lintel schedule for both design types based on span over opening. We recommend using reinforced cmu bond beams (masonry lintel blocks). There is no steel lintel at elevator door head. Use reinforced cmu bond beam. See 5/210-AS-50 for head detail.

Q143: Specification 092400 - Portland Cement Plastering has both Metal lath and Gypsum lath listed. Please clarify with is to be used.

A143: Metal Lath. There is no gypsum wallboard at plastering areas.

Q144: Please provide clarification with Specification 092400 - Portland Cement Plastering, the specification states that the plaster is to be only at the masonry for the elevator door. Drawings A-41 and A-42 state that the plaster is to be at the masonry around the elevator door and on the exterior of the concrete elevator shaft. Which documentation is to be followed?

A144: Follow drawings and Addendum 1.

Q145: Detail #3 on drawing 21-ED-02 indicates that pvc conduit may be used in the floor slab. Note 9 on the electrical plan general notes states that all conduit installed inside the garage shall be exposed galvanized rigid steel. Please clarify if pvc conduit is acceptable in the slab of the garage floors or if rigid conduit is required exposed throughout the garage.

A145: Conduits shall not be embedded in floor slabs or walls. Conduits below floor labs, below grade, are to be RNC. Elbows before rising above floor are to be PVC coated GRS conduits per detail #3 on 210-ED-02. All other above grade installations shall be GRS mounted externally to the slab per note #9. Any stub ups shall penetrate perpendicularly through slab without running longitudinally inside slab. Coordinate penetration locations with the General contractor.

Q146: Who is furnishing the wireless access points for the project? If they are furnished by the E.C. provide a manufacture and catalog #.

A146: Wireless access points shall be provided by ALCOSAN.

Q147: Provide a manufacture and catalog no. along with a wiring diagram for the new door alarm system as mentioned on drawing 210-E-10 note #9 under electrical plan key notes.

A147: The alarm system is part of the access control system via the door contacts. Provide compatible devices per the existing manufacturer 'Lenel'. Wiring diagram shall be per the manufacturer shop drawings.

Q148: Provide a wiring diagram for the parking gate controls.

A148: Wiring requirements and diagram shall be per the approved manufacturer shop drawings. Refer to addendum #2 drawing 210-E-10 for clarifications on conduit routing.

Q149: Per dwg 210-SD-16, details 2 & 3, please advise as to where, which columns and levels this condition occurs

A149: The details in question have been deleted. Please refer to the revised sheet 210-SD-16 from addendum #2 for revised details.

Q150: Per dwg 210-A-10 and Elevation 2 on dwg 210-A-30, please provide details for the ramp wall foundation, wall and slab.

A150: Refer to Addendum #2 drawings. Detail is similar to 7/SD-01 with no curb.

Q151: In reference to revised drawing 210-P-01, the sanitary riser diagram appears to not meet Allegheny County plumbing code. This is in reference to the venting of floor drains. Please advise on how to proceed.

A151: Sanitary system is updated in this Addendum on riser and floor plan to be properly vented meeting the Allegheny County plumbing code.

Q152: Drawings 210-P-11 to 210-P-15 shows 6” to floor drains and 8” stacks going down and it does not correspond with the riser diagram provided on drawing 210-P-01. Please advise on the correct sizes to the floor drain and stacks going down.

A152: Riser diagram and floor plan will be updated to match. Sanitary stacks will be 4" leading to a 4" main.

Q153: Reference Spec 11 81 23 Tie-Back Anchors. The Basis-of-Design Manufacturer Tractel LTD distributor sales representative requests the following information: Question: Please provide a drawing with layout or preliminary design requirements for the Tie-Back Anchors system and we canquote the materials and installation?

A153: Functional design and engineering of the ties back system shall be by the contractor. For bidding purposes assume four tie back anchors at Stair 1/Elevator and two at Stair 2. See detail 12/210-SD-02 this addendum for assumed reinforcing.

Q154: Please explain at what times of the day the entry/exit coiling grille noted on page 111200-3 will be used during daily normal operation.

A154: The grille will be down from 10:00 pm to 5:00 am. However there is no interconnection between the coiling grilles and the PACS system. The coiling grilles will be operated separately by a pushbutton switch located in the guard station.

Q155: Please confirm whether any connections are necessary between the coiling grilles and the PACs as specified. If so, please (a) specify required function and connections if any and (b) whether PACS contractor is responsible for providing required conduit and wiring.

A155: There is no interconnection between the coiling grilles and the PACS system. The coiling grilles will be operated separately by a pushbutton switch located in the guard station.

Q157: Sections 3.8.B.1.d. and 3.8.C.1.e. on pages 111200-16 and -17 specify the equivalent of three (3) detector loops in each drive lane. Please specify the intended purpose of the third required loop in each lane.

A157: Delete one detector loop per lane and reference updated drawing for entry gates in Addendum 2.

Q158: Several modifications were made to the "Bid Form" with the issuance of Addendum #1. Please confirm if we should make these modifications to the current Bid Form or if a new Bid Form will be provided in a future Addendum.

A158: Bid Form 1-3G reissued as an attachment to this Addendum.

Q159: Please confirm that a Letter of Assent is not required to be submitted with the Bid.

A159: Letter of Assent does not have to be submitted with bid, but it must be submitted prior to award.

Q160: An envelope was provided us by ALCOSAN for the bid submission. Due to the amount of information that is being requested to be submitted with the bid, this envelope is not large enough. Please confirm that it is acceptable for us to utilize our own envelope for this submission.

A160: Bid envelope to contain all Article 1 bid forms at minimum. Supplemental information can be provided in a separate envelope.

Q161: The following RFI's Refer to Drawings 210-C-11 and 210-L-101 (Addendum #1).

A) Please confirm that all areas shaded gray on 210-C-11 are to be demolished. This includes existing landscaped areas.

B) Please confirm that everywhere shaded gray on 210-L-101 is to receive 6"" topsoil and seeding.

A161:

A) A revised Civil demolition plan will be provided better represent the areas of demolition and to ensure the 3 main trees are protected and with and added note to reference the landscape plans.

B) The shaded gray areas on 210-L-101 is lawn area and to receive 6" topsoil. Any other areas are to receive specific soil mixes as indicated.

Q162: Please advise if a new Chain link fence is to be provided at the corner of Preble Ave and Tracy St. The demolition drawings are showing the removal of this fence.

A162: See Civil Drawings updated per this Addendum for limits of fence demolition.

Q163: Reference the existing sidewalk, adjacent to the guardshack, along the new garage. Is it practical to leave the sidewalk in place and not sustain any construction damage ? Or, do you want us to figure replacing the sidewalk ?

A163: Protection of sidewalks to remain will be contractors responsibility. If existing sidewalks to remain are deamaged from construction, it is the contractors responsibility to repair them.

Q164: Reference the Summary of Work specification and the site demoiltion drawings : Which contract is responsible for the removal of overhead electrical lines, light poles, and light pole bases ?

A164: EC is responsible for electrical demolition required per 000-EDM-01.

Q165: Reference the required demolition and replacement work along Tracy street related to the installation of the new sanitary line : Please confirm that the Electrical contract is responsible for removal and replacement of light poles (and bases) and overhead lines. Please confirm that the General contract is responsible for removal and replacement of asphalt paving, concrete curb, chain-link fence, landscape, and the guard booth. Please confirm that the General contract is responsible for any required shoring and underpinning at the existing steel columns adjacent to the new sanitary line.

A165: See response to Q166 for EC demolition responsibilities. For work along Tracy street the lightpoles are shown outside of the area of demolition for the new sanitary line and not called to be demolished. GC is to avoid these poles and if demoltion of them or other elements is deemed necesary by the GC then the demolition and replacement of those specific items is the responsibility of the GC.

Q166: Reference concrete specification : Since SF-3.0 does not appear to be referenced on the drawings, are we to assume that all exposed formed concrete surfaces, including the underside of the elevated slabs, receive a SF-2.0 ?

A166: Confirmed.

Q167: Please advise if a new Chain link fence is to be provided at the corner of Preble Ave and Tracy St. The demolition drawings are showing the removal of this fence.

A167: No. Existing fence to be maintained in this area. Updated limits of demolition are shown in Civil Drawings updated per this Addendum.

Q168: Reference drawing 210-L-100 (sheet 26) : Please confirm that we are to include monitoring of existing landscape by an arborist for the duration of the project.

A168: Tree protection shall be in place prior to any work done on site, including demolition. It is the responsibility of the contract to perform a site tree inventory by a certified arborist prior to any work. Such inventory shall record location, size, and health of each tree. This includes all trees, whether to be removed or preserved. Such inventory shall also record proposed tree removals and proposed tree pruning. Contractor to submit the site inventory to the city for approval prior to any work. The City will control what lengths the arborist is required on site, however at this time there is no requirement for the arborist to be on site during all construction activites for the project.

Q169: Reference drawings 210-A-22, 210-A-30, 210-A-33 : A security screen & grille (on the half-wall and as a door) is shown on A-30 between column lines 3 & 4 but is not shown on the other two drawings referenced here. Is it required there?

A169: In drawing 210-A-30, section 2, security grille and door shall be deleted between gridlines 3 and 4.

Q170: Reference specification 09 91 00 Painting and Room Finish Schedule (210-AS-50) : The only painting referenced on the schedule is on the concrete elevator shaft wall that faces inside the Stair 1. We cannot find any reference to paint any of the concrete structure. We cannot find any reference to floor level markings on columns and-or-beams. Please confirm that none of the concrete structure is to be painted.

A170: Confirmed. Except for elevator shaft wall faces as described and for parking striping, arrows and lines, none of the other concrete structure is to be painted. There is no painted signage.

Q171: Please confirm that all exposed concrete masonry units (CMU) are to be painted.

A171: No, the only cmu to be painted is at the elevator door infills afer receiving portland cement plastering.

Q172: Reference Addendum, 1 page 4 of 18, A. Contract Documents - Volume 1 : Should the second item regarding Section 1-3G read "item 05" and not "item 06" to correspond with the change to spec section 01 22 00 3.1.F ?

A172: This is correct. The “Contingent Unsuitable Subgrade Excavation” term replaces “Contingent Unclassified Excavation. Also, replace the words "Unclassified Excavation" in para. 01 22 00 3.1.F.3 with "Contingent Unsuitable Subgrade Excavation".

Q173: Reference specification section 31 63 29 Drilled Piers : In the Caisson specs. section 1.5 A it states that "the minimum specified pier diameter must be obtained throughout the full length of the pier". Due to the soil conditions at the site, temporary pipe will need to be put in place down to top of rock. Can "inside tools" then be used to drill out the rock? These tools will cut about 1.5" smaller diameter than specified in the plans.

A173: Exact methods of soil and rock removal are at the discretion of the construction team unless specifically directed by the technical specifications. Diameter of caisson shall not be less than the dimension indicated on the drawings.

Q174: Reference specification section 11 81 23 Tie-Back Anchors for Facade Access Equipment : We cannot find them indicated on the drawings. Where are they required ? Only at the top of the curtainwall ? If so, how many ? Please clarify.

A174: Functional design and engineering of the ties back system shall be by the contractor. For bidding purposes assume four tie back anchors at Stair 1/Elevator and two at Stair 2. See detail 12/210-SD-02 this addendum for assumed reinforcing.

Q175: Other than the "Enter" & "Exit" letter signs, what else is required for signage ? We cannot find a schedule in the specification or on the drawings.

A175: Signage drawings provided per this Addendum.

Q176: Can you give us a list of the plumbing contractors that are bidding the Plumbing package so we can call them and ask them to bid the site plumbing that is in our General package ?

A176: Bidder's list provided as an attachment to this Addendum.

Q177: In reference to the 10" & 6" Waterline shown on sheet 210-C-14 PHASE I UTILITY PLAN, please provide the pressure class or thickness class for the ductile iron pipe.

A177: The pipe thickness for the 10" pipe is .35" and .31" for the 6" pipe. (Thickness class 52).

Q178: In reference the groundwater that will be encountered during construction of the caissons, Is it permitted/possible to tremie pour the concrete into the caissons in order to displace the groundwater as opposed to trying to lower the entire water table below the bottom of the caissons.

A178: Tremied concrete in caisson is acceptable.

Q180: Spec section 31 00 00 Earthwork part 1.1.B states that all excavation for this project shall be considered residual waste. Specification 31 21 00 Earthwork, Excavation, Trenching and Backfill section 2.1.D states that "No soil or other material excavated from the site, including Excavated Clean Fill, shall be used as fill onsite. However, Specification 31 21 00 [sic] Earthwork within Building Footprint Section 2.2.C states that On-site excavation material, which is not visually contaminated and conforms to the requirements of suitable soil may be stockpiled and reused as fill material. Is the excavated material from this project to be removed from site or can we utilize for backfill?

A180: Spec Section 31 20 01 2.2C shall be struck from the specification. Classification, management and handling of fill material shall be per Specification 31 23 00.

Q181: Is it possible to get a Elevation drawing of the Sludge Building along with the conduit routing for Power and Fiber

A181: An elevation drawing of the Sludge Building is provided as an attachment to this Addendum.

Q182: What is the R-Value insulation requirement for the roof insulation? (minimum thickness / R-value?)

A182: See Section 075423, paragraph 2.4,B, 1: Long Term Thermal Resistivity (LTTR): Minimum 11.4 for 2-inch-thick insulation board in accordance with ASTM C1289-13e1.

Q183: Spec section 071800 traffic coating systems: Please confirm that no mock-ups are necessary for the traffic coating application.

A183: Confirmed. The spec does not require a mockup

Q184: Spec section 071800 traffic coating systems: Testing of the membrane system is only mentioned in passing in 2.1.D.1.d. ".....verified by wet mil thickness testing (minimum one test per 500 square feet)." We assume that this is a third party testing. Whose responsibility is this?

A184: Testing shall be performed per manufacturer’s requirements.

Q185: Spec section 071911 clear penetrating concrete sealer: please clarify the surface preparation prior to product installation. Currently it calls for "....sweeping and cleaning with compressed air, water cleaning under pressure or shotblasting." These methods are very different, both in time consumption and price.

A185: Surface preparation must be done per the manufacturers recommendations depending on the condition of the concrete substrate.

Q186: Barrier cable details: Details 6/AD-67 and 6/SD-16 show the barrier cables running through the columns along column line B on both sides. Details 2/SD-16, 3/SD-16, and 2/SD-17 have the cables running through galvanized steel angles on the side of the columns. Please clarify where the latter details apply.

A186: Details on drawings SD-16 and SD-1 7 have been revised per addendum #2.

Q187: Please confirm the General Contractor (GC) is responsible for all excavation and concrete encasement for underground utilities inclusive of the electrical duct banks.

A187:

- GC is responsible for excavation, compacted gravel base, and backfill of concrete encased ductbanks

  • GC is responsible for excavation, compacted gravel base, and backfill of electrical and telecom manholes

  • GC is responsible to cut and patch existing pavement in the path of underground ducts and utility structures according to Division 01 Section "Cutting and Patching." (strike 26 05 43 3.2 B from Div 26)

  • EC is responsible to form (as necessary), reinforce, and pour concrete ductbanks.

  • EC is responsible to furnish and install electrical and telecom manholes.

  • EC is responsible to excavate, form (as necessary), reinforce, and pour light pole foundations.

  • EC is responsible for excavation and backfill of direct burial conduit and handholes.

Q188: Please verify who is responsible for providing and installing the Light Pole foundations.

A188: 01 11 00 1.2 A 2a (2), (7) cover the light pole foundations are by the EC. Providing and installing the light pole foundations are by the EC.

Q189: In regards to the Fire Alarm system, Drawing 210-E-02 shows a symbol for Speaker / Strobes, however drawings 210-E-10 thru 15 have a symbol that appears to be a Horn / Strobe. Please confirm if these symbols are to be Speaker / Strobes or Horn / Strobes.

A189: The fire alarm notification devices are to be Horn/Strobes.

Q190: Refer to drawing 210-S-40. Detail 4A-S-24 taken between column lines 1&2 along column line A shows a CIP wall from TOF to underside of L2. Elevation 3 on drawing 210-S-21 appears to show a crash wall with TOW = +0.67. Please indicate if a full height CIP wall with brickledge is required at this location.

A190: Detail 4A/S-24 will be revised in addendum #2. There is a concrete ledge up to elevation +0.67 and a CMU wall sitting on this ledge up to the underside of L2.

Q191: Refer to drawing 210-S-40. There are no cut sections taken between column lines 1&2 along column line A above Level 2. Based upon the architectural and structural drawings, it is not clear if the wall supporting the exterior brick is CMU or concrete. Please provide a cut section detailing the wall section above Level 2.

A191: Detail 6/S-41 has been added to show what happened between column lines 1 and 2. Essentially, there is a beam on levels 2, 4, and 6 that supports the CMU and brick above. To be addressed in addendum #2.

Q192: Refer to drawing 210-S-40. Cut section 1-S-41 taken between column lines A and A.1 does not indicate if the wall infill on top of the intermediate stair landing is CMU or concrete. Please provide detail indicating wall system at this location.

A192: The wall is CMU. Detail 1/S-41 will be revised in addendum #2.

Q193: Refer to drawing 210-S-111. A cut section for the ramp wall and footing into the bike parking area is not provided. Please indicate footing and wall details at this location.

A193: A detail will be added in addendum #2.

Q194: Refer to drawings 210-S-13 through 210-S-17. North of column line 11, is it acceptable to reverse the stressing direction of the PT cables so that they dead end at the core rather than stress into the core?

A194: Stressing of those temperature tendons may be reversed at contractor's option. However, because of the angle of the building along gridline 12, the contractor must provide angled grommets at the stressing ends along 12 line as well as additional reinforcing in the slab at stressing end.

Q195: Refer to drawing 210-S-24 Detail 3.

a. Is it acceptable to leave the rebar dowel between the PT slab and CIP permanently exposed within the 1” joint?

b. Since the PT slab does not bear on the 12” foundation wall, can the slip joint that is shown in this detail be eliminated?

c. Can the wall pour shown above the slip joint that supports the exterior skin be poured immediately after the PT slab or is there a required duration until the PT slab can be locked into the CIP wall?

A195: This detail is revised in addendum #2. The dowel has been removed and replaced with a steel angle and anchors connection.

Q196: Refer to drawing 210-SD-01 Detail 1. Please confirm it is acceptable to use early-entry saw cut control joints in lieu of tooled control joints.

A196: Saw cut control joint are permitted, but must be installed within 6 hour of initial concrete set.

Q197: Refer to specification section 033000-1.5-D Mock-Ups

a. For this project, please confirm that mock-up items 1a, 1b, 1c, and 1d are not required

b. If required, indicate if permanent in-place mock-ups that are incorporated into the project are acceptable due to limited site availability. Alternatively, indicate if pictures or tours of similar projects using the same construction methods are acceptable.

A197: Mockups are required onsite. Permanent in-place mockups are not acceptale.

Q198: Will the contractor be responsible for additional costs for CM and Owners staff for hours worked outside of time frame as listed in article 3.74 and section 01 11 20,3.1?

A198: Yes. Any additional costs to contractor will be assessed when contractor gives 48 hours notice requesting to work outside of normal hours.

F. Clarifications

Attachments:

Contract Documents:

Updated Article 1 G

Specifications:

00-01-10: Table of Contents

01-11-00: Summary of Work

01-22-00: Measurement and Payment

01-50-13: Construction Manager Site Office

01-52-00: Maintenance of Plant Operations

01-74-23: Cleaning

10-14-00: Signage

22-13-19.13: Storm Drains

22-14-13: Facility Storm Drainage Piping

22-14-63: Storm Water Drainage Piping

28-10-00: Access Control and Video Surveillance

Drawings:

210-G-02: Sheet Index
210-G-06: Life Safety Plan

210-C-11: Phase 1 Demolition Plan
210-C-14: Phase 1 Utility Plan
210-C-32: Phase 1 Construction Details

210-L-100: Landscape Demolition Plan
210-L-101: Landscape Plan and Plantings

210-A-10: Ground Level Plan
210-A-11: Level 2 Plan
210-A-12: Level 3 Plan
210-A-13: Level 4 Plan
210-A-14: Level 5 Plan
210-A-15: Level 6 Plan (Roof Level)
210-A-20: East Building Elevations
210-A-21: North Building Elevations
210-A-23: South Building Elevations
210-A-30: Building Sections
210-A-31: Wall Sections
210-A-32: Wall Sections
210-A-40 Entry/Exit Enlarged Plan
210-A-41: Stair1/Elevator-Enlarged Plans
210-A-42: Stair1/Elevator – Enlarged 3rd & 4th Level Plans
210-A-43: Stair1/Elevator- Enlarged 5th Level & Roof Plans
210-A-44: Stair1/Elevator-Elevations
210-A-45: Stair1/Elevator- Sections
210-A-50: Stair2- Enlarged Plans
210-A-51: Stair2- Elevations & Section

210-A-50: Room/Door Schedules and Details

210-AD-32: Curtainwall Details- Non Insulating Glazing

210-AD-65: Security Grille Details

210-AD-66: Security Grille Elevations

210-AD-69: Misc. Thermal and Moisture Protection Detail

210-AD-21: Masonry Details

210-AG-10: Ground Level Signage Plan

210-AG-11: Level 2 Signage Plan

210-AG-12: Level 3 Signage Plan

210-AG-13: Level 4 Signage Plan

210-AG-14: Level 5 Signage Plan

210-AG-15: Level 6 Signage Plan (Roof Level)

210-AG-20: Signage Elevations- Type A

210-AG-21: Signage Elevations- Type B,C,D

210-AG-22: Signage Elevations- Type P and R

210-AG-30: Typical Signage Mounting Details

210-S-02: General Notes

210-S-10: Caisson Plan (Drilled Piers)

210-S-11: Foundation Plan

210-S-12: Ground Level Plan

210-S-14: Level 3 Framing Plan

210-S-15: Level 4 Framing Plan

210-S-17: Level 6 Framing Plan

210-S-21: Foundation Wall Elevations

210-S-23: Foundation Sections

210-S-24: Foundation Sections

210-S-31: Stair1/Elevator- Enlarged Plans

210-S-32: Stair1/Elevator- Enlarged Plans

210-S-35: Stair1/Elevator Sections

210-S-40: Stair2- Enlarged Plans

210-S-41: Stair2 Sections

210-S-63: Security Grille Plans and Details

210-SS-01: Post-Tensioned Beam Schedule

210-SS-03: Column Schedule

210-SD-01: Typical Slab on Grade Details

210-SD-02: Typical Details

210-SD-03: Typical Foundation Details

210-SD-04: Typical Masonry Details

210-SD-05: Typical Masonry Details

210-SD-13: Typical Post Tensioning Details

210-SD-16: Post-Tensioning Barrier Cable Details

210-SD-17: Post-Tensioning Barrier Cable Details

210-SD-21: Concrete Column Details

Other Attachments:

Contract 1735 Bidder's List

Building 404 Elevation Drawing

*** * * * END OF ADDENDUM NO. 2 * * * ***

BIDDING DOCUMENTS

ARTICLE 1

CONTRACT 1735 G

BIDDING DOCUMENTS
ARTICLE 1

CONTRACT 1735-G: ALCOSAN PARKING GARAGE

Page

NOTE TO BIDDER: Use typewriter or BLACK ink for completing this Bid Form.

BID FORM

To: Allegheny County Sanitary Authority

Address: 3300 Preble Avenue, Pittsburgh, PA 15233

Project Identification: ALCOSAN PARKING GARAGE

Contract No.: 1735 G – General

1. BIDDER'S DECLARATION AND UNDERSTANDING.

1.1 This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm, or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

1.2 In submitting this Bid, Bidder certifies Bidder is qualified to do business in the Commonwealth of Pennsylvania as required by laws, rules, and regulations or, if allowed by statute, covenants to obtain such qualification prior to contract award.

2. CONTRACT EXECUTION AND BONDS.

2.1 The undersigned Bidder agrees, if this Bid is accepted, to enter into an Agreement with Owner on the form included in the Bidding Documents to perform and furnish Work as specified or indicated in the Bidding Documents for the Contract Price derived from the Bid and within the Contract Times indicated in the Agreement and in accordance with the other terms and conditions of the Bidding Documents.

2.2 Bidder accepts the terms and conditions of the Bidding Documents.

3. INSURANCE.

3.1 Bidder further agrees that the Bid amount(s) stated herein includes specific consideration for the specified insurance coverages.

4. CONTRACT TIMES.

4.1 Bidder agrees to accept Contract Times set forth in Article 4, Contract Agreement.

5. LIQUIDATED DAMAGES.

5.1 Bidder accepts the provisions in Article 4, Contract Agreement as to liquidated damages.

6. ADDENDA.

6.1 Bidder hereby acknowledges that it has received Addenda Numbers: _____ _____, _____, _____, _____, _____,(Bidder shall insert number of each Addendum received) and agrees that Addenda issued are hereby made part of the Bidding Documents, and Bidder further agrees that this Bid includes impacts resulting from said Addenda.

7. SUBCONTRACTORS.

7.1 Bidder agrees to submit within FIVE (5) days of Owner's request, a listing of subcontracting firms or businesses that will be awarded subcontracts for portions of Work as described in the Instructions to Bidders.

8. BASE BID.

8.1 Lump Sum Work: Bidder further agrees to accept as full payment for the Lump Sum Work proposed within the Bidding Documents based upon the undersigned's own estimate of quantities and costs and including sales, consumer, use, and other taxes, except as provided below, and overhead and profit, for **CONTRACT 1735-G** the following lump sum of:

_____ Dollars
(Words)

and _____ Cents $_____
(Words) (Figures)

8.2 Unit Price Work: Bidder further proposes to accept as full payment for the Unit Price Work proposed herein the amounts computed under the provisions of the Bidding Documents and based on the following unit price amounts, it being expressly understood that the unit prices are independent of the exact quantities involved. Bidder agrees that the unit prices represent a true measure of the labor, materials, and services required to furnish and install the item, including all allowances for overhead and profit for each type and unit of Work called for in these Bidding Documents.

Item	Description	Quantity	Unit	Unit Price	Extended Total Amount
01	DRILL PILOT HOLES TO DETECT UNDERGROUND OBSTRUCTIONS	800	VLF		
02	REMOVE BURIED UNKNOWN CONCRETE & MASONRY STRUCTURES	75	CY		
03A	CAISSON MARK C2.5	630	VLF		
03B	CAISSON MARK C3	1250	VLF		
03C	CAISSON MARK C4	290	VLF		
03D	CAISSON MARK C4.5	45	VLF		
04	ROUTING AND SEALING OF CONCRETE CRACKS AS DIRECTED BY THE CONSTRUCTION MANAGER	500	LF		
05	CONTINGENT UNSUITABLE SUBGRADE EXCAVATION	1380	CY		
06	CONTINGENT PLACEMENT OF BACKFILL MATERIAL	1380	CY		
07	ALLOWANCE FOR OTHER CONTAMINATED WASTE	100,000	USD	N/A	$100,000.00
08	ALLOWANCE FOR PARKING LOT WORK REQUESTED AT OWNER'S DISCRETION	45,000	USD	N/A	$45,000.00
	TOTAL OF EXTENDED ITEM AMOUNTS FOR UNIT PRICE WORK LISTED ABOVE (Sum of Extended Total Amount for 01 thru 08)				$

	See below for definition of Differing Site Condition Types. **Concrete and Masonry Structural Removal:** Contractors performing excavations may uncover unknown quantities of concrete and masonry structures below grade. Removal of the unknown concrete and masonry structures will be considered to be part of the Contract Requirements if they can be removed with the use of excavating equipment including but not limited to backhoes, bulldozers, clamshells, or scrapers. Should removal require demolition of the concrete and masonry structures by the use of jackhammers, or pavement breakers, then the Contractor shall be reimbursed by the Contract Unit Price per Cubic Yard for "REMOVAL OF UNKNOWN CONCRETE AND MASONRY STRUCTURES". Removal of buried concrete and masonry structures specifically identified in the Contract Documents are to be included in the lump sum bid item 8.1 and will NOT be considered unit price work.

8.3 Base Bid Summary:

8.3.1 Lump Sum Work (8.1) $_____

8.3.2 Total of Extended Amount for Unit Price Work (8.2) $ _____

TOTAL BASE BID (Sum of lines 8.3.1 and 8.3.2):

_____ Dollars
(Words)

and _____Cents. $_____
(Words) (Figures)

9. SURETY.

9.1 If Bidder is awarded a construction contract from this Bid, the surety who provides the Performance and Payment Bond(s) shall be:

_____ whose address is

_____

Street City State Zip

9.2 The Bidder further certifies that the surety listed as providing the Performance Bond and the Payment Bond is listed on the Treasury Department's most current list (Circular 570 as amended) and is authorized to transact business in the Commonwealth of Pennsylvania.

10. BIDDER.

An Individual _____

By _____
(Individual's name and signature)

A Partnership

By _____
(Partnership name)

_____
(Name and signature of general partner)

_____
(Title)

A Corporation

By _____
(Corporation name)

_____
(State of incorporation)

By _____
(Name and signature of person authorized to sign)

_____
(Title)

(Corporate Seal)

A Joint Venture

By _____
(Business name)

_____
(Name and signature of person authorized to sign)

By _____
(Business name)

_____
(Name and signature of person authorized to sign)

(Each joint venturer must sign. The manner of signing each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

= =

CONTRACTOR CONTACT INFORMATION

Name, Address, and Phone Number for receipt of official communications and for additional information on this Bid:

_____
(NAME OF CONTACT PERSON)

_____
(ADDRESS)

_____
(CITY, STATE, ZIP) (PHONE)

SUBMITTED ON _____ , 20___

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____ _____, as Principal, and _____, a corporation duly organized under the laws of the State of _____, as Surety, are held and firmly bound unto the Allegheny County Sanitary Authority, herein called the "Authority", its attorneys, successors or assigns in the sum of _____ Dollars ($_____) lawful money of the United States of America, for payment of which sum well and truly to be made, we bind ourselves, our heirs, legal representatives, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted the accompanying Bid for **CONTRACT NO. 1735 G – ALCOSAN PARKING GARAGE**

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that (1) if the Principal shall not withdraw said Bid within the period specified in the Information for Bidders, and shall within the period therein specified therefore [or, if no time is specified, within TEN (10) calendar days (not including Sundays or Legal Holidays) after the prescribed forms are presented to it for execution] enter into a written Contract with the Authority in accordance with the Bid as required, for the faithful performance of such Contract and for the payment of labor and materials and execute and deliver to the Authority all bonds and other instruments required to be executed and delivered by the Principal in accordance with the Contract Documents, or (2) in the event of the unauthorized withdrawal of said Bid, or the failure to enter into such Contract and give such bonds within the time specified and execute and deliver to the Authority all bonds and other instruments required to be executed and delivered by the Principal in accordance with the Contract Documents, if the Principal shall pay the Authority the difference between the amount specified in said Bid and the amount for which the Authority may procure the required work or supplies or both, if the latter amount be in excess of former together with all other loss, damage or expense suffered by the Authority thereby, then, in either such case, the above obligation shall become void and of no effect; otherwise it shall remain in full force and effect.

Said Surety, for value received, hereby stipulates and agrees that the obligation of said Surety under this Bond shall in no way be impaired or affected by an extension of the time within which said Bid may be accepted and said Surety does hereby waive notice of any such extension.

Said Surety agrees that its liability hereunder shall be absolute regardless of any liability of the Principal hereunder whether by reason of any irregular or unauthorized execution of or failure to execute this Bond or otherwise.

This Bond is entered into, under and pursuant to the laws of the Commonwealth of Pennsylvania and shall in all respects be construed in accordance with the laws of said Commonwealth.

IN WITNESS WHEREOF, the above parties have executed this instrument under their several seals this _____ day of _____, 20__ the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

SURETY COMPLETE THIS PAGE

_____
(Corporate Surety)

_____
(Street Address)

_____
(City, State and Zip Code)

ATTEST: By: _____*
(Signature)

_____ _____
(Title)

Date: _____, 20__

(AFFIX CORPORATE SEAL)

* The Surety should attach to the Bid Bond a currently certified Power of Attorney which should be dated, sealed and executed by a live (not facsimile) signature showing that the person signing the Bid Bond for the Surety has the current authority to do so.

CORPORATION COMPLETE THIS PAGE

_____is a corporation organized and existing under the laws of _____ with principal place of business at _____

(Street Address) (City, State and Zip Code)

and, if a non-Pennsylvania corporation [has] / [has not] been granted a certificate of authority to do business in Pennsylvania, as required by the Pennsylvania Business Corporation Law of 1988, approved December 21, 1988, P.L. 1444, as amended, 15 Pa. C.S.A. §§ 4101 et seq.

ATTEST: _____
(Name of Corporation)

_____ _____
(Signature of Certifying Officer) (Signature of Authorized Officer)

Date: _____, 20__ _____
(Typed name of Authorized Officer)

(AFFIX CORPORATE SEAL)

(The corporation shall make certain that the secretary or assistant secretary certifies the official character and authority of the person or persons executing this Bid Bond for the Principal according to the form attached hereto. In lieu of such certificate, attach to the Bid Bond copies of the records of the corporation that show the official character and authority of the officer signing. The records shall be duly certified to be true copies by the secretary or assistant secretary under corporate seal.)

CORPORATION COMPLETE THIS PAGE
CERTIFICATE AS TO CORPORATE OFFICER

I, _____, certify that I am [secretary]/[assistant secretary] of the corporation executing the within Bid Bond; that _____ ___who signed the said Bid Bond; on behalf of the corporation was then _____ of said corporation; that I know his signature and his signature thereto is genuine; and that said Bid Bond was duly signed, sealed and attested for and in behalf of said corporation by authority of its governing body.

Dated: _____, 20__

_____
Signature of secretary (or assistant secretary)

(AFFIX CORPORATE SEAL)

PARTNERSHIP COMPLETE THIS PAGE

_____ is a partnership trading under a fictitious or assumed name and [has] / [has not] registered under the Fictitious Names Act of Pennsylvania, namely, the Act of December 16, 1982, P.L. 1309, as amended, 54 Pa. C.S.A. §§ 301 et seq.

_____
(Fictitious or assumed name)

WITNESS:

_____*(SEAL)
(Partner trading as above)

_____ _____*(SEAL)
(Partner trading as above)

Date: _____, 20__ _____
(Street Address)

_____
(City, State and Zip Code)

* If the executing party is a partnership, the document must be signed in the name of the partnership by at least two general partners, and the names and addresses of all the partners must be listed on the attached Certificate. Principal must also attach Certificate of registration under the provisions of the Fictitious Names Act.

PARTNERSHIP COMPLETE THIS PAGE
CERTIFICATE AS TO PARTNERSHIP

I, a partner of _____, the partnership named as Contractor in the within Bid Bond, certify that the following are the names and addresses of all the partners of said partnership:

_____ (Name)	_____ (Name)
_____ (Address)	_____ (Address)
_____ (City, State and Zip Code)	_____ (City, State and Zip Code)
_____ (Name)	_____ (Name)
_____ (Address)	_____ (Address)
_____ (City, State and Zip Code)	_____ (City, State and Zip Code)

Date: _____, 20__

_____
(Signature of Certifying Partner)

INDIVIDUAL COMPLETE THIS PAGE
(WHEN THE PRINCIPAL IS AN INDIVIDUAL DOING BUSINESS UNDER A FIRM NAME)

_____ is an individual trading under a fictitious or assumed name and [has] / [has not] registered under the Fictitious Names Act of Pennsylvania, namely, the Act of December 16, 1982, P.L. 1309, as amended, 54 Pa. C.S.A §§ 301 et seq.

_____
(Fictitious or assumed name)

WITNESS:

By: _____(SEAL)
(Individual doing business as above)

_____
(Street Address)

Date: _____, 20__ _____
(City, State and Zip Code)

(WHEN THE PARTY IS AN INDIVIDUAL DOING BUSINESS IN HIS/HER INDIVIDUAL NAME)

_____
(Individual Name)

WITNESS:

By: _____(SEAL)
(Individual)

_____ _____
(Street Address)

Date: _____, 20__ _____
(City, State and Zip Code)

CERTIFICATE OF MINORITY AND WOMEN'S BUSINESS ENTERPRISE PARTICIPATION

CONTRACT 1735-G: ALCOSAN PARKING GARAGE

The undersigned Bidder certifies that they have read and understand the Information for Bidders Section entitled "Minority and Women's Business Enterprise and Labor Surplus Area Policy," and further understand and agree to the minority participation goal applicable to this Contract, and shall strive to expend from TEN to TWENTY-FIVE PERCENT (10-25%) of the total cost of the Contract for minority and women's business enterprise participation.

The Bidder further certifies that they understand that they are required to submit, as part of their Bid, a specific proposal indicating the manner in which it will attempt to comply with this requirement.

Failure of the Bidder to attempt to comply with these conditions or failure to submit with the Bid the proposal described above, or failure to sign and submit this Certificate with the Bid may disqualify the Bid as being nonresponsive.

Name of Bidder _____

Signed _____

Title _____

Date _____

ALLEGHENY COUNTY SANITARY AUTHORITY

Failure to complete this form and submit it with bid will be sufficient cause for rejection of bid.

Note: Each sheet must be returned.

SOLICITATION AND COMMITMENT STATEMENT
MINORITY (MBE) AND FEMALE (WBE) OWNED BUSINESS ENTERPRISES

CONTRACT NO. 1735-G	NAME OF BIDDER	ADDRESS	PHONE

List below all MBE/WBE's that were solicited - whether or not a commitment was obtained - - Copy this form as necessary

☐ MBE ☐ WBE	TYPE OF SUBCONTRACT WORK OR MATERIALS	DATE SOLICITED BY PHONE	BY MAIL	COMMITMENT MADE YES (IF YES, GIVE DATE)	NO	GIVE REASON(S) IF NO COMMITMENT MADE
COMPANY NAME						
ADDRESS		QUOTE RECEIVED YES	NO	AMOUNT COMMITTED DOLLAR AMOUNT $		
CONTACT PERSON PHONE				PERCENT OF TOTAL BID %		
☐ MBE ☐ WBE	TYPE OF SUBCONTRACT WORK OR MATERIALS	DATE SOLICITED BY PHONE	BY MAIL	COMMITMENT MADE YES (IF YES, GIVE DATE)	NO	GIVE REASON(S) IF NO COMMITMENT MADE
COMPANY NAME						
ADDRESS		QUOTE RECEIVED YES	NO	AMOUNT COMMITTED DOLLAR AMOUNT $		
CONTACT PERSON PHONE				PERCENT OF TOTAL BID %		
☐ MBE ☐ WBE	TYPE OF SUBCONTRACT WORK OR MATERIALS	DATE SOLICITED BY PHONE	BY MAIL	COMMITMENT MADE YES (IF YES, GIVE DATE)	NO	GIVE REASON(S) IF NO COMMITMENT MADE
COMPANY NAME						
ADDRESS		QUOTE RECEIVED YES	NO	AMOUNT COMMITTED DOLLAR AMOUNT $		
CONTACT PERSON PHONE				PERCENT OF TOTAL BID %		

Prepared by: _____ Title: _____ Phone: _____

NOTE: It is recommended that Certification and letters of intent for each MBE/WBE commitment accompany this Solicitation and Commitment Statement.

MBE/WBE SOLICITATION AND COMMITMENT STATEMENT

BIDDER'S FIRM: _____

ADDRESS: _____

TELEPHONE: _____

CONTACT PERSON: _____

PROPOSAL AND BID FOR: _____

LIST BELOW ALL CONTRACTS WITH THE ALLEGHENY COUNTY SANITARY AUTHORITY DURING THE PAST THREE YEARS AND THE MBE AND WBE PARTICIPATION OBTAINED					
CONTRACT TITLE	**CONTRACT DATE**	**AMOUNT**	**% PARTICIPATION**		**COMMENTS**
			MBE	**WBE**	

Prepared by: _____ Title: _____

MBE/WBE SOLICITATION AND COMMITMENT STATEMENT

Additional Information

The bidder presents the following as additional and supplemental information to its MBE/WBE Solicitation and Commitment Statement

Prepared by: _____ Title: _____ Phone: _____

Websites that provide certified MBE/WBE companies:

www.paucp.com

Ray Meyer
ALCOSAN DBE Coordinator

(412) 734-8737

NON-COLLUSION AFFIDAVIT

State of _____:

S.S.

County of _____:

I state that I am _____ of
(Title)

_____ and that I am
(Name of Firm)

authorized to make this Affidavit on behalf of my firm and its owners, directors and officers. I am the person responsible for the price(s) and the amount of this Bid.

I further state that:

(1) The price(s) and amount of this Bid have been arrived at independently and without consultation, communication or agreement with any other contractor, bidder or potential bidder.

(2) Neither the price(s) nor the amount of this Bid, and neither the approximate price(s) nor approximate amount of this Bid, have been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be disclosed before the bid opening.

(3) No attempt has been made or will be made to induce any firm or person to refrain from bidding on this contract, or to submit a bid higher than this Bid, or to submit any intentionally high or noncompetitive bid or other form of complementary bid.

(4) The Bid is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive bid.

(5) The above-named firm, its affiliates, subsidiaries, officers, directors and employees are not currently under investigation by any governmental agency and have not in the last four years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect to bidding on any public contract, except as follows (Either provide an explanation or check box provided if there are no exceptions):

❑ No Exceptions

Explanation: _____

_____

I state that the above-named firm understands and acknowledges that the above representations are material and important, and will be relied on by:

THE ALLEGHENY COUNTY SANITARY AUTHORITY

in awarding the Contract(s) for which this Bid is submitted. I understand and my firm understands that any misstatement in this Affidavit is and shall be treated as fraudulent concealment from:

THE ALLEGHENY COUNTY SANITARY AUTHORITY

of the true facts relating to the submission of bids for this contract.

_____
(Name and Company Position)

SWORN TO AND SUBSCRIBED BEFORE ME

THIS _____DAY OF _____, 20__

_____
(Notary Public) (My Commission Expires)

CERTIFICATE OF COMPLIANCE WITH THE PENNSYLVANIA STEEL PRODUCTS PROCUREMENT ACT

This Certificate is supplied by _____ ("Contractor") to the Allegheny County Sanitary Authority ("ALCOSAN") this _____ Day of _____, 20__.

W I T N E S S E T H:

WHEREAS, Contractor wishes to contract with ALCOSAN relative to CONTRACT 1735-G: ALCOSAN PARKING GARAGE (the "Contract"); and

WHEREAS, The Pennsylvania Steel Products Procurement Act, 72 P.S. § 1881 et. seq. ("Steel Procurement Act") requires that if a product contains foreign and United States steel, such product shall be determined to be a United States steel product only if at least SEVENTY-FIVE PERCENT (75%) of the cost of the articles, materials, and supplies have been mined, produced or manufactured, as the case may be, in the United States; and

WHEREAS, Contractor has represented to ALCOSAN that any and all products Contractor will supply to ALCOSAN pursuant to the Contract will be United States steel products as defined in Steel Procurement Act and Contractor does and will in all fashion and manner comply with the Steel Procurement Act and the Contract in performance of the Contract.

NOW, THEREFORE, INTENDING TO BE LEGALLY BOUND HEREBY, Contractor does represent and promise to ALCOSAN as follows:

1. The above recitals are binding between the parties and are legally enforceable as if set forth in their entirety herein.

2. Contractor will, pursuant to the Contract, meet the definition of United States steel products as set forth in the Steel Procurement Act and will in all manner and fashion otherwise comply with the Steel Procurement Act and the Contract.

3. Contractor acknowledges that its representations and promises are a material consideration to ALCOSAN with regard to considering Contractor for and possibly awarding the Contract to Contractor.

4. Contractor does hereby promise to indemnify and save harmless the Authority, its officers, agents, servants, and employees from and against any and all suits, actions, legal proceedings, claims, demands, damages, costs, expenses and attorney's fees resulting from the breach of any representation, covenant or promise contained in this Certificate.

Intending to be legally bound hereby Contractor does hereby supply this Certificate the _____ day of _____, 20__.

ATTEST: (_____)

_____ By: _____

Title: _____

Date: _____

CONTRACTOR'S QUALIFICATIONS STATEMENT

Submitted by: _____ (A Corporation) (A Co-partnership) (An Individual)

Principal Office: _____

The signatory of this Qualifications Statement guarantees the truth and accuracy of all statements and of all answers to interrogatories hereinafter made.

1. How many years has your organization been in business under your present business name?

   _____

2. How many years experience does your organization have in this type of business?

   _____

3. On a separate sheet, attached to this document, list the categories of work, by CSI Division Number and Title that your organization will perform on this contract.

4. On a separate sheet, attached to this document, list the categories of work, by CSI Division Number and Title that your organization will sub-contract out on this contract.

5. On a separate sheet, attached to this document, list major construction projects similar in nature to this project that your organization has in progress giving the name of project, owner, architect/engineer, contract amount, percent complete, scheduled completion date, and the percentage of the total cost of the work that your organization is performing.

6. On a separate sheet, attached to this document, list major construction projects similar in nature to this project that your organization has completed in the past FIVE (5) years, giving the name of project, owner, architect/engineer, contract amount, percent complete, scheduled completion date, and the percentage of the total cost of the work that your organization is performing.

7. On a separate sheet, attached to this document, list the construction experience and current commitments of the key individuals of your organization.

8. If the answer is "yes" to any of the following three questions, please attach details.

   a. Has your organization ever failed to complete any work awarded to it? _____

   b. Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers? _____

   c. Has your organization filed any law suits or requested arbitration with regard to construction contracts within the last FIVE (5) years? _____

9. Attach a financial statement, preferably audited, including your organization's latest balance sheet and income statement showing the following items:

   - Current Assets (e.g. cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses)
   - Net Fixed Assets
   - Other Assets
   - Current liabilities (e.g. accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries, and accrued payroll taxes)
   - Other liabilities (e.g. capital, capital stock, authorized and outstanding shares par values, earned surplus, and retained earnings)
   - Name and address of firm preparing attached financial statement and date thereof.

10. Is the attached financial statement for the identical organization named on page one? _____. If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g. parent-subsidiary)

Dated: _____

Name of Organization: _____

By: _____

Title: _____

_____ being duly sworn deposes and says that the information herein is true and sufficiently complete so as not to be misleading.

Subscribed and sworn before me this date: _____

Notary Public: _____

My Commission Expires: _____

CERTIFICATION OF SAFETY PROCEDURES COMPLIANCE

I, _____, as _____ of
(Typed Name) (Title or Office)
_____, a _____,
(Name of Corporation/Partnership) (Type of Entity)

hereby certify that I have read and understand the Safety Procedure as enumerated in the Contract Provisions Section entitled "Compliance with Health, Safety and Environmental Laws" of Contract Number 1735-G and that all Work will be conducted in accordance with OSHA standards and other applicable safety precautions.

Date: _____, 20__ By:_____

TABLE OF CONTENTS - VOLUME 2

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SECTION 01 11 00

SUMMARY OF WORK

PART 1 - GENERAL

1.1 GENERAL

A. General:
1. It is the intent of the Contract Documents to describe a functionally complete project.
2. The work included in this project is at the Allegheny County Sanitary Authority (OWNER) Woods Run Wastewater Treatment Plant in Pittsburgh, Pennsylvania and described in detail in the rest of this Section.
3. Furnish all labor, materials, tools, equipment and services as indicated in accordance with provisions of Contract Documents.
4. Furnish and install all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and functional installation of the Work.
5. In addition to this individual project, there may be construction activities underway at the plant site during part or all of the construction period for this project.

B. Contract No. 1735 will be executed by four Prime Contractors according to the requirements of the Contract Documents. The following parties may be present at the Job Site and have the responsibilities described generally in Article 3, Contract Provisions:
1) ALCOSAN (Owner)
2) Construction Manager (CM)
3) Engineer – AE Works
4) Architect – Desman Design Management
5) Prime Contractor(s)
6) Fabricators & Supplier(s)
7) Testing Agencies
8) Commissioning firms
9) Other Project Stakeholders

C. Owner (OWNER)

1) The Owner may be identified as the responsible entity for certain actions in the sections of Divisions 2 through 48. The Owner may elect to delegate certain of these respective duties and responsibilities to the aforementioned parties.

2) All contact between the Contractor(s) and the remaining aforementioned parties shall be through the Construction Manager.

D. Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.

1.2 WORK COVERED BY CONTRACT

A. The Work includes, but is not necessarily limited to, the following. However, this description is in no way meant to limit or restrict the work required under the Contract. Refer to the contract drawings and the remainder of the Specifications for additional detail on the Scope of the Work.

1. General Construction, Contract No. 1735 G
   a. General Construction work, including but not limited to:
      1) Temporary Facilities: Contractor's field office, temporary security, storage yard, and storage building plans, water, including gravel surfaced area, storage area, staging area, plan for waste materials.
      2) Temporary utilities. Refer to Section 015000 Construction Facilities Temporary

Controls. Refer to Section 015013 for Construction Manager Site Office.
Furnish, install and maintain field office for the exclusive use of the CM.

3) Excavation for structures, offsite disposal, imported fill, compaction, utility trenches, pipelines, duct banks, and other facilities.
4) Project Coordination between trades. Refer to Section 013115.
5) Pile foundations and testing.
6) Excavation support and dewatering systems.
7) Site grading, landscaping, erosion and sediment control provisions, sanitary lines and storm water collection systems.
8) Foundation Waterproofing.
9) Other similar site work and site improvements.
10) Cast-in- place concrete and post-tensioned concrete.
11) Exterior and Interior Material/Finishes: Precast and high-performance concrete panels, concrete slabs, post-tensioned concrete, masonry, metal fabrications, stairs and railings, TPO roofing, metal panels, translucent panels, curtainwall, glass, doors and frames, joint sealants and concrete sealers, firestopping, painting and traffic coatings, fence and gates, motorized roll-up grilles, fire cabinets and extinguishers, and metal fabrications.
12) Parking Control System.
13) Elevator.
14) Garage signage.
15) Landscaping.
16) Clean-up for General Work.
17) Stormwater piping, sanitary lines, water utility, and piping for this contract to be provided (within 5-foot of parking structure) to connection utility mains**, unless otherwise indicated.**
18) Testing and disposal of regulated residual waste.
19) Refer to Drawings and Specification Divisions 01-14 and Divisions 31, 32, and 33.

2. Electrical, Contract No. 1735 E
   a. Electrical Work, including but not limited to:

1) Furnishing and installing electrical distribution and control equipment.
2) Furnishing and installing other associated site, fixtures, lighting controls, duct banks, emergency lighting, electrical, instrumentation, and miscellaneous support work and systems.
3) Temporary power and lighting. Refer to Section 015000.
4) Grounding and bonding,
5) Temporary storage, and security for their use.
6) Provide conduit, power, and wiring for parking control system, security, fire protection, elevator, and motorized rolling grille.
7) Communication and camera equipment , electrical ductbanks, light poles, and pole bases.
8) Electrical work clean up.
9) Refer to Drawings and Specification Divisions 01, 26, 27, and 28.

3. Plumbing, Contract No. 1735 P
   a. Plumbing Work, including but not limited to:

1) Furnishing and installing other associated site, plumbing, and miscellaneous support work and systems.
2) Temporary storage, and security for their use.
3) Fire sprinkler dry system.
3) Dry stem standpipe systems
4) Plumbing lines, including leaders from roof of elevator and stairwells.
5) Wash down systems, supplied at each end of the garage on each floor.

6) Heavy-duty floor drains and area drains.
7) Stormwater piping, sanitary lines, water utility, utility piping for this contract to be provided in Parking Garage and (5-foot outside parking structure).
8) **Isolation valve connecting the 6" water line to the 12" water line and for the sanitary pipe to the first manhole.**
9) Plumbing work clean up.
10) Refer to Drawings and Specification Divisions 01, 21, 22, 31, and 33.

4. Heating, Ventilating and Air Conditioning, Contract No. 1735 H
   a. HVAC Work, including but not limited to:

1) Furnishing and installing other associated site, HVAC, and miscellaneous support work and systems.
2) Piping for this contract to be provided in Parking Garage and (5-foot outside parking structure)
3) Thermostatically controlled HVAC system for elevator machine electrical room, and utility rooms.
3) Temporary storage, and security for their use.
4) HVAC work clean up.
5) Refer to Drawings and Specification Divisions 01 and 23.

B. The Contractor will complete all tasks necessary to provide the Owner with a fully functioning flow metering system.
C. The Contractor will submit recommendations for 'or-equals' or 'alternates' to the Owner for approval prior to purchasing and/or installing same.

1.3 WORK SEQUENCE

A. Organize and plan the construction activities to assure the safety and reliability of and to minimize the interruption to the Plant operations and performance.
B. The proposed Work sequence shall be submitted to the CM in accordance with Section 01 32 10.

1.4 WORK BY OWNER

A. OWNER's Responsibilities
   1. Opening and closing of exiting valves, if required.

1.5 OWNER OCCUPANCY

A. Owner will occupy the premises during the entire period of construction for the conduct of his normal operations. Coordinate with Owner in all construction operations to minimize conflicts and to facilitate Owner usage.
B. Execute Certificate of Substantial Completion for each area listed above prior to Owner's occupancy.
   1. After Owner occupancy, allow:
      a. Access for Owner's personnel.
      b. Access for the public.
      c. Operation of area process, HVAC, plumbing and electrical systems.
   2. After occupancy, Owner will provide:
      a. Contractor access to finish punch list items.
      b. Access to area process, HVAC, plumbing and electrical systems for contractors to perform warranty work.

1.6 OUTAGES

A. Organize and plan the construction activities so that the number and length of any required outages shall be minimized.

B. An outage to any customer shall require specific approval of the Owner. The Owner reserves the right to reject any request for an outage.

C. In some cases, it may be necessary, at Contractor's expense, to either install temporary facilities for service or schedule the Work during a period when the outage would have minimal impact on the customer.

D. Provide the Owner at least **14 days** notice in advance of any requested outage so that the Owner may advise and coordinate the outage with the customers.

1.7 CONTRACTOR-FURNISHED PRODUCTS

A. Components required to be supplied in quantity within a specification section shall all be the same and shall be interchangeable.

B. Unless otherwise indicated in the Contract Documents, provide materials and equipment that:
1. is produced by reputable manufacturers having adequate experience in the manufacture of these items;
2. Is designed for the service intended;
3. have not been previously been incorporated into another project or facility;
4. have not changed ownership since their initial production or fabrication and shipment from the manufacturer's factory or facility;
5. if stored since their manufacture or fabrication, have, while in storage, been properly maintained and serviced in accordance with the manufacturer's recommendations for long- term storage; submit documentation under the relevant technical section that such maintenance and service has been performed;
6. have not been subject to degradation or deterioration since manufacture; and,
7. are the current model(s) or type(s) furnished by the Supplier and only modified as necessary to comply with the design

1.8 UNDERGROUND UTILITIES

A. Notify Call-before-you Dig at 800-242-1776 before excavation.

B. Consult Mr. Steve Miller of ALCSOAN Engineering Department at 412-34-6213 for access to underground utility as-built drawings.

C. Utilities known to the Engineer who have underground facilities in the vicinity of the Work, Refer to Drawing C105 for Utilities.

1.9 PERMITS AND LICENSES

A. The Owner has applied for and obtained, at Owner's expense, the following permits and approvals for the Work:

1. The Record of Zoning Approval (ROZA will be issued after the garage has passed the Zoning Board of Adjustment and Planning Commission.

Obtain all other permits and licenses necessary for the construction of the Work in accordance with Paragraph 7.08. of the General Conditions Section 00 72 13.

1.10 ACCESS BY GOVERNMENT OFFICIALS

A. Authorized representatives of governmental agencies shall at all times have access to the Work.

1.11 FENCES

A. All fences affected by the Work shall be maintained by the Contractor until completion of the Work. Fences disturbed by the construction shall be restored immediately by the Contractor to their original or better condition and to their original location unless otherwise indicated or directed.

1.12 CONTAMINATED MATERIALS

A. Lead Paint may be present at the site and are within the scope of the Work for which CONTRACTOR shall be responsible. Lead paint removal must be performed within compliance with EPA regulations. Should lead pain be discovered, stop work in the area of possible contamination and notify construction manager.

B. Neither asbestos nor soil containing hazardous substances is expected in the Work area. Should either be discovered, stop work in the area of possible contamination and notify construction manager.

1.13 DESCRIPTION OF PROJECT PERSONNEL AND THEIR RESPONSIBILITIES

A. CONTRACTOR'S PERSONNEL: As described in these Contract Documents and as follows:

1. Project Manager or Site Superintendent must be on site at all times when Work in individual contract area is proceeding. The Owner reserves the right to approve the Contractor's proposed Project Manager and Site Superintendent. If at any time during the execution of the Contract the Owner determines that the Contractor's Project Manager or Site Superintendent is not executing the work in conformance with the Contract Documents, the Owner may request in writing that he/she be replaced. Contractor will not replace the Project Manager or Site Superintendent without written notice to Construction Manager except under extraordinary circumstances. The Project Manager or Site Superintendent will be Contractor's representative at the site and shall have the authority to act on behalf of Contractor. All communications to the Project Manager or Site Superintendent shall be as binding as if given to Contractor. If at any time during the Project the Project Manager or Site Superintendent must leave the Project site while Work is in progress, the Construction Manager shall be notified and provided with the name of the Contractor's representative having responsible charge.

2. Quality Control Representative will be responsible for Contractor's quality control program while Work is in progress. Notify the Construction Manager of any change in quality control assignment.

3. Safety and Protection Representative:

   a. Contractor shall designate a qualified and experienced Safety Representative at the site whose duties and responsibilities shall be to prevent accidents and to maintain and supervise the implementation of the Contractor's safety plan. The Safety Representative shall be trained in First Aid and CPR. The Safety Representative's qualifications shall be submitted to the Construction Manager prior to beginning work on site.

   b. Initiate, maintain, and supervise the safety plan in connection with the Work. Take all necessary precautions for safety and provide for the necessary protection to prevent damage, injury, or loss to:
      1) All persons on the work site or who may be affected by the Work;
      2) All the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and
      3) Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

   c. Comply with all applicable Laws and Regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss.

   d. Before any work at the site is started, the Contractor shall prepare a written

project-site specific Safety Plan and submit to the Construction Manager for record.

e. The Safety Representative shall revise the Safety Plan at appropriate times to reflect changes in construction conditions, the Work, Contractor's means, methods, techniques, sequences and procedures of construction. The Safety Representative will submit the revised Safety Plan to the Construction Manager for record.

f. Contractor's personnel are obligated to act, without direction or authorization from Owner or Construction Manager, to prevent any potential injury or property loss when confronted with any emergency situation affecting the safety or protection of persons or the Work or property at the site or adjacent thereto.

g. Contractor shall give Construction Manager prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by any unforeseen emergency situation. If Construction Manager determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, Construction Manager will proceed in accordance with Article 3, Contract Provisions.

h. In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, each Contractor, without special instruction or authorization from Owner or Construction Manager, is obligated to act to prevent threatened damage, injury or loss. Contractor shall give Construction Manager prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If Construction Manager determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, Construction Manager will proceed in accordance with Article 3, General Contract Conditions.

i. Contractor shall take precautions to prevent any materials related to the Work from falling into active process tanks such as the aeration basins, secondary clarifiers, primary sedimentation basins, etc. It will be the Contractor's responsibility to retrieve any such debris at his own expense with assistance from ALCOSAN. Contractor may be back-charged ALCOSAN's costs for assistance in retrieving Contractor debris from process tanks.

B. OWNER (OWNER): As described in these Contract Documents and as follows:
   1. Can enter into legal contract with Contractor for completion of the Work.
   2. Can approve contract amendments, progress payments, and make final acceptance of the Work.
   3. Can participate in coordination of site construction activities.
   4. Can participate in training, testing and startup activities.

C. Construction Manager (CM): As described in these Contract Documents and as follows:
   1. Contractor shall provide all required assistance for the Construction Manager's inspection of the work.
   2. Assist Contractor in obtaining access to all work sites through within the plant.
   3. Provide on-site representative and construction inspection services
   4. Coordinate training, testing and startup activities.

D. Engineer As described in these Contract Documents and as follows:
   1. Performs weekly site inspections.
   2. Provides engineering support services incl. RFI responses
   3. Reviews technical submittals and shop drawings.

4. Prepares drawing revisions and cost estimates.
5. Provides drawing and submittal control.
6. Provides technical supervision of startup activities
7. Assists in training, testing and startup activities.

E. Supplier (material & equipment): As described in these Contract Documents and as follows:
   1. Will provide submittals, and Operation and Maintenance Manuals for equipment and material as specified.
   2. Will perform on-site training
   3. Will provide commissioning and start up services
   4. Will provide engineering support services during commissioning

1.14 SCHEDULE OF DRAWINGS

A. These specifications are accompanied by Contract Drawings, herein referred to as "the Drawings". The Work shall conform to the Drawings titled with drawing numbers and descriptions as follows:

DRAWING NUMBER	SHEET NUMBER	TITLE	DATE LAST REV.
1	000-SU-01	SITE UTILIZATION PLAN	
2	210-G-01	COVER SHEET	
3	210-G-02	SHEET INDEX	
4	210-G-03	GENERAL LEGEND	
5	210-G-04	STANDARD ABBREVIATIONS	
6	210-G-05	CODE SUMMARY	
7	210-G-06	LIFE SAFETY PLANS	
CIVIL SHEETS			
8	210-C-01	SITE ABBREVIATIONS & LEGEND PLAN	
9	210-C-10	PHASE I OVERALL DIMENSION PLAN	
10	210-C-11	PHASE I DEMOLITION PLAN	
11	210-C-12	PHASE I DIMENSION PLAN	
12	210-C-13	PHASE I GRADING PLAN	
13	210-C-14	PHASE I UTILITY PLAN	
14	210-C-20	PHASE 1 UTILITY PROFILE	
15	210-C-21	PHASE 1 UTILITY PROFILE	
16	210-C-30	PHASE I CONSTRUCTION DETAILS	
17	210-C-31	PHASE I CONSTRUCTION DETAILS	
18	210-C-32	PHASE I CONSTRUCTION DETAILS	
19	210-C-33	PHASE I CONSTRUCTION DETAILS	
20	210-C-34	PHASE I CONSTRUCTION DETAILS	
21	210-C-35	PHASE I CONSTRUCTION DETAILS	
22	210-C-40	PHASE I EROSION AND SEDIMENT CONTROL PLAN	
23	210-C-50	PHASE I EROSION AND SEDIMENT CONTROL NOTES & DETAILS	
24	210-C-51	PHASE I EROSION AND SEDIMENT CONTROL NOTES & DETAILS	
25	210-C-52	PHASE I EROSION AND SEDIMENT CONTROL NOTES & DETAILS	

LANDSCAPE SHEETS			
26	210-L-100	LANDSCAPE DEMOLITION PLAN	
27	210-L-101	LANDSCAPE PLAN AND PLANTINGS	
28	210-L-102	LANDSCAPE DETAILS	
29	210-L-103	LANDSCAPE DETAILS	
30	210-L-104	LANDSCAPE DETAILS	
31	210-L-105	LANDSCAPE DETAILS	
32	210-L-106	LANDSCAPE DETAILS	
ARCHITECTURAL SHEETS			
33	210-A-10	GROUND LEVEL PLAN	
34	210-A-11	LEVEL 2 PLAN	
35	210-A-12	LEVEL 3 PLAN	
36	210-A-13	LEVEL 4 PLAN	
37	210-A-14	LEVEL 5 PLAN	
38	210-A-15	LEVEL 6 PLAN (ROOF LEVEL)	
39	210-A-20	EAST BUILDING ELEVATIONS	
40	210-A-21	NORTH BUILDING ELEVATIONS	
41	210-A-22	WEST BUILDING ELEVATIONS	
42	210-A-23	SOUTH BUILDING ELEVATIONS	
43	210-A-30	BUILDING SECTIONS	
44	210-A-31	WALL SECTIONS	
45	210-A-32	WALL SECTIONS	
46	210-A-33	WALL SECTIONS	
47	210-A-40	ENTRY/EXIT - ENLARGED PLAN	
48	210-A-41	STAIR 1/ELEVATOR - ENLARGED PLANS	
49	210-A-42	STAIR 1 / ELEVATOR - ENLARGED 3RD & 4TH LEVEL PLANS	
50	210-A-43	STAIR 1/ELEVATOR - ENLARGED 5TH LEVEL & ROOF PLANS	
51	210-A-44	STAIR 1/ELEVATOR - ELEVATIONS	
52	210-A-45	STAIR 1/ELEVATOR - SECTIONS	
53	210-A-50	STAIR 2 - ENLARGED PLANS	
54	210-A-51	STAIR 2 - ELEVATIONS & SECTION	
55	210-A-60	STAIR 3 ENLARGED PLANS AND SECTION	
56	210-AS-50	ROOM / DOOR SCHEDULES AND DETAILS	
57	210-AD-60	STOREFRONT DETAILS - NON-INSULATING GLAZING (4.5")	
58	210-AD-61	STOREFRONT DETAILS - NON-INSULATING GLAZING (4.5")	
59	210-AD-62	CURTAINWALL DETAILS - NON INSULATING GLAZING	
60	210-AD-63	TYPICAL STAIR AND RAILING DETAILS - SLEEVE MOUNT	
61	210-AD-64	TYPICAL STAIR AND RAILING DETAILS	
62	210-AD-65	SECURITY GRILLE DETAILS	
63	210-AD-66	SECURITY GRILLE ELEVATIONS	
64	210-AD-67	TYPICAL DETAILS	
65	210-AD-68	TYPICAL DETAILS	
66	210-AD-69	MISC. THERMAL & MOISTURE PROTECTION DETAIL	
67	210-AD-70	MISC. THERMAL & MOISTURE PROTECTION DETAIL	
68	210-AD-71	MASONRY DETAILS	

STRUCTURAL SHEETS

DRAWING NUMBER	SHEET NUMBER	TITLE
69	210-S-01	DESIGN CRITERIA AND DESIGN LOAD DIAGRAMS
70	210-S-02	GENERAL NOTES
71	210-S-03	GENERAL NOTES
72	210-S-04	GENERAL NOTES
73	210-S-05	GENERAL NOTES
74	210-S-10	CAISSON PLAN (DRILLED PIERS)
75	210-S-11	FOUNDATION PLAN
76	210-S-12	GROUND LEVEL PLAN
77	210-S-13	LEVEL 2 FRAMING PLAN
78	210-S-14	LEVEL 3 FRAMING PLAN
79	210-S-15	LEVEL 4 FRAMING PLAN
80	210-S-16	LEVEL 5 FRAMING PLAN
81	210-S-17	LEVEL 6 FRAMING PLAN
82	210-S-20	CAISSON DETAILS
83	210-S-21	FOUNDATION WALL ELEVATIONS
84	210-S-22	FOUNDATION WALL ELEVATIONS
85	210-S-23	FOUNDATION SECTIONS
86	210-S-24	FOUNDATION SECTIONS
87	210-S-30	STAIR 1 / ELEVATOR FOUNDATION PLAN
88	210-S-31	STAIR 1/ELEVATOR - ENLARGED PLANS
89	210-S-32	STAIR 1/ELEVATOR - ENLARGED PLANS
90	210-S-33	STAIR 1/ ELEVATOR FOUNDATION SECTIONS
91	210-S-34	STAIR 1/ ELEVATOR FOUNDATION SECTIONS 2
92	210-S-35	STAIR 1/ ELEVATOR SECTIONS
93	210-S-40	STAIR 2 - ENLARGED PLANS
94	210-S-41	STAIR 2 SECTIONS
95	210-S-50	STAIR 3 ENLARGED PLANS AND SECTIONS
96	210-S-60	BUILDING ELEVATIONS
97	210-S-61	TYPICAL PERFORATED SCREEN FRAMING ELEVATIONS
98	210-S-62	METAL PANELS FRAMING SECTIONS
99	210-SS-01	POST-TENSIONED BEAM SCHEDULE
100	210-SS-02	POST-TENSIONED BEAM SCHEDULE
101	210-SS-03	COLUMN SCHEDULE
102	210-SD-01	TYPICAL SLAB ON GRADE DETAILS
103	210-SD-02	TYPICAL DETAILS
104	210-SD-03	TYPICAL FOUNDATION DETAILS
105	210-SD-04	TYPICAL MASONRY DETAILS
106	210-SD-05	TYPICAL MASONRY DETAILS
107	210-SD-10	TYPICAL POST-TENSIONING DETAILS
108	210-SD-11	TYPICAL POST-TENSIONING DETAILS
109	210-SD-12	TYPICAL POST-TENSIONING DETAILS
110	210-SD-13	TYPICAL POST-TENSIONING DETAILS
111	210-SD-14	TYPICAL POST-TENSIONING DETAILS
112	210-SD-15	TYPICAL POST-TENSIONING DETAILS
113	210-SD-16	POST - TENSIONING BARRIER CABLE DETAILS
114	210-SD-17	POST - TENSIONING BARRIER CABLE DETAILS
115	210-SD-20	CONCRETE COLUMN DETAILS
116	210-SD-21	CONCRETE COLUMN DETAILS

MECHANICAL SHEETS

DRAWING NUMBER	SHEET NUMBER	TITLE
117	210-H-01	HVAC SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES
118	210-H-10	GROUND LEVEL PARKING GARAGE HVAC PLAN
119	210-H-11	LEVEL 6 PARKING GARAGE HVAC PLAN
120	210-HD-01	HVAC DETAILS
121	210-HS-01	HVAC SCHEDULES AND CONTROL DIAGRAMS

PLUMBING SHEETS

122	210-P-01	PLUMBING SYMBOLS, ABBREVIATIONS AND GENERAL NOTES
123	210-P-10	GROUND LEVEL SANITARY PLUMBING PLAN
124	210-P-11	LEVEL 2 SANITARY PLUMBING PLAN
125	210-P-12	LEVEL 3 SANITARY PLUMBING PLAN
126	210-P-13	LEVEL 4 SANITARY PLUMBING PLAN
127	210-P-14	LEVEL 5 SANITARY PLUMBING PLAN
128	210-P-15	LEVEL 6 SANITARY PLUMBING PLAN
129	210-P-20	GROUND LEVEL DOMESTIC PLUMBING PLAN
130	210-P-21	LEVEL 2 DOMESTIC PLUMBING
131	210-P-22	LEVEL 3 DOMESTIC PLUMBING
132	210-P-23	LEVEL 4 DOMESTIC PLUMBING
133	210-P-24	LEVEL 5 DOMESTIC PLUMBING
134	210-P-25	LEVEL 6 DOMESTIC PLUMBING

FIRE PROTECTION SHEETS

135	210-F-01	FIRE PROTECTION COVER SHEET
136	210-F-10	GROUND LEVEL FIRE PROTECTION PLAN
137	210-F-11	LEVEL 2 FIRE PROTECTION PLAN
138	210-F-12	LEVEL 3 FIRE PROTECTION PLAN
139	210-F-13	LEVEL 4 FIRE PROTECTION PLAN
140	210-F-14	LEVEL 5 FIRE PROTECTION PLAN
141	210-F-15	LEVEL 6 FIRE PROTECTION PLAN

ELECTRICAL SHEETS

142	210-E-01	ELECTRICAL GENERAL NOTES
143	210-E-02	ELECTRICAL ABREVIATIONS & LEGEND
144	000-EDM-01	ELECTRICAL SITE DEMOLITION PLAN
145	000-ESP-01	ELECTRICAL SITE PLAN - PARKING GARAGE
146	000-ESP-02	ELECTRICAL SITE PLAN - IT SYSTEMS
147	210-E-10	GROUND LEVEL PARKING GARAGE ELECTRICAL PLAN
148	210-E-11	LEVEL 2 PARKING GARAGE ELECTRICAL PLAN
149	210-E-12	LEVEL 3 PARKING GARAGE ELECTRICAL PLAN
150	210-E-13	LEVEL 4 PARKING GARAGE ELECTRICAL PLAN
151	210-E-14	LEVEL 5 PARKING GARAGE ELECTRICAL PLAN
152	210-E-15	LEVEL 6 PARKING GARAGE ELECTRICAL PLAN
153	210-E-20	ENLARGED ELECTRICAL PLANS
154	210-ESL-01	ELECTRICAL ONE-LINE AND RISER DIAGRAMS
155	210-ED-01	ELECTRICAL DETAILS
156	210-ED-02	ELECTRICAL DETAILS
157	210-ED-03	ELECTRICAL DETAILS
158	210-ES-01	ELECTRICAL SCHEDULES

PART 2 - PRODUCTS - (NOT USED) PART 3 -

EXECUTION - (NOT USED)

END OF SECTION

SECTION 01 22 00

MEASUREMENT AND PAYMENT (LUMP SUM AND UNIT PRICES)

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Defines how work items are measured and paid for on Lump Sum and Unit Price Contracts. These items include unit price, lump sum price, and allowance payment items.
   2. In the case of conflict between this Section and the measurement methods specified in the individual Technical Specification Sections, the measurement methods in Technical Specification Sections shall govern.
   3. Receive payment for work after it is installed. Payment for material on hand can only be paid for if allowed by the Agreement, the General and/or Special Conditions.
   4. Partial payment may be requested for items partially installed when agreed to by the Owner.

B. Related Specification Sections include but are not necessarily limited to:
   1. Division 00 - Procurement and Contracting Requirements.
   2. Division 01 - General Requirements.
   3. Applications for Payment requirements are included in this Specification Section.

C. Provisions of this Section apply to the Work of each Prime Contractor.

1.2 UNIT PRICE ITEMS

A. Quantity and measurement estimates stated in the Bid Form are estimates for bidding purposes only. Actual payments shall be based on actual quantities installed, in-place, as measured and/or verified by the Engineer.

B. Unless otherwise stated in the Contract Documents, the bid unit prices shall be in effect throughout the contract duration. When the variance between the estimated quantities and the actual installed quantities is more than 25 %, the Contractor or the Owner may negotiate a change to the Unit Price. That change will be made in accordance with the Change Order process as defined in the Contract Documents.

C. Except as defined above, make no claim, nor receive any compensation, for anticipated profits, loss of profit, damages, or any extra payment due to any difference between the amounts of work actually completed, or materials or equipment furnished, and the estimated quantities.

D. If the added quantities will result in payments that exceed the Contract Quantity, a Change Order will need to be executed before payment can be made for the added quantities.

E. Assist Engineer by providing necessary equipment, workers, and survey personnel as required to measure quantities.

F. Unless stated in the Contract Documents, measured quantities shall be rounded to the nearest whole integer.

G. Measurement:
   1. Measurement for progress payment shall be made by, or approved by, the

Engineer based on the actual quantities installed. The actual quantities installed can be adjusted for corrections to previous calculations, incomplete elements or components if agreed to in advance and in writing by the Engineer.

2. Unless otherwise provided for in the Contract Documents, unit price items are all inclusive of all related work, direct and indirect costs, to provide a complete and functional item.
3. The final measurement shall be based on actual installed quantities, jointly measured and agreed to by the Contractor and the Engineer. Quantities can be adjusted (increased or decreased) based on a final calculation of quantities by the Engineer and Contractor.

H. Payment:
1. Progress payments shall be in accordance with the Contract Documents based on estimated quantities installed paid at the bid unit price.
2. The final payment shall be based on actual quantities, fully installed, tested and placed into service, paid at the bid unit price.

1.3 LUMP SUM ITEMS – GENERAL

A. Payment for the work completed under this Contract will be made at the lump sum bid. The lump sum shall include the furnishing of all labor, tools, equipment and materials and the performance of all work required to complete the Contract as indicated and specified in accordance with all requirements of the Contract Documents and to the satisfaction of the Engineer. Should there be discrepancies among Contract Documents, it shall be assumed that the more costly and higher quality design, as solely judged by the Engineer, was the basis of the bid; no additional payment shall be required from the Owner.

B. Before the first Application for Payment, the Contractor shall submit to the Construction Manager a Schedule of Values allocated to the various portions of the Work, as set forth in this section and supported by such data to substantiate its accuracy as the Owner may require. This schedule, when approved by the Owner shall be used as the basis for the Contractor's Applications for Payment and only for this purpose.

C. No progress payments will be made by the Owner until the Progress Schedule, including the Schedule of Values, has been submitted to and approved by the Owner.

D. The total bid amount shall include all lump sum bid items for General and Electrical Contractors.

E. The Contractor agrees that it will make no claim for damages, anticipated profits, or otherwise on account of any difference between the amounts of work actually performed and materials actually furnished and the estimated quantities.

1.4 ALLOWANCES

A. Allowances if indicated in the Bid Schedule are defined in the Contract Documents. No work may be performed under an allowance item without prior written approval of the Owner.

B. Allowance is for exclusive use of Owner for changes as a result of changed conditions, design refinements, and unanticipated design issues. Not for use by Contractor as Contractor's construction contingency.

C. Owner approval of adjustment required prior to authorization of progress payments from Contingency Allowance. Adjustments will include either:
1. Contractor's lump sum or unit price measured quantity amount.
2. Contractor's related costs, and reasonable overhead and profit as stipulated in Contract Documents when Work is performed on the Cost of the Work

basis.

D. Any unused balance of the allowances shall revert to the Owner upon completion of the project. Prior to final payment, the original amount provided for allowances shall be adjusted to actual costs by deductive Change Order, adjusting the contract price, accordingly.

E. Make no claim, nor receive any compensation, for anticipated profits, loss of profit, damages, or any extra payment due to any unexpended portion of the allowances.

F. The Contractor is to include time for allowance work in the construction schedule. No adjustment of Contract Time shall be allowed for any work performed under allowance items.

G. The measurable and allowable costs for work performed under an allowance item(s) shall be limited to the actual costs associated with that allowance item unless otherwise stated in the specific measurement and payment provisions under allowance items.

H. Allowance work shall be paid for on a time and materials basis.
   1. Time and materials sheets shall be signed daily by the Engineer or its representative to confirm labor hours worked, equipment hours worked, and materials incorporated into the Work.
   2. Labor hours worked shall be recorded daily for each person. The labor will be classified by craft. Actual labor rates will be supported by certified payroll or another payroll documentation agreed to by the Engineer.
   3. Equipment hours worked shall be recorded daily for each piece of equipment used to perform the work. Equipment rates shall be as defined in the General or Supplemental Conditions.
   4. Material shall be identified with the costs supported by invoice.
   5. Profit and overhead shall be compensated for in accordance with the Contractor's Fee as defined in the General Conditions.
   6. Labor and equipment rates used in pricing out the work shall be as defined in the General Conditions.

1.5 SCHEDULE OF VALUES

A. The Schedule of Values is a statement furnished by the Contractor to the Construction Manager. It shall be submitted five (5) or more working days prior to the Preconstruction Conference and shall reflect the portions of the contract price allocated to various portions of the Work.

B. Once accepted by the Construction Manager, the Schedule of Values shall be the basis for reviewing Payment Applications by the Contractor in accordance with the Schedule of Payments in the Contract Provisions.

C. This Schedule will contain all of the major components making up the Work, shall be coordinated with the Schedule of Payments, and shall contain, as a minimum, the following information:
   1. Organization of Work Items by Specification; Section; Reference.
   2. For all major Work Items/Components
      a. Listing of Labor Value
      b. Listing of Material/Equipment/Deliverable Value
      c. Reflect all activities shown on the Project Schedule.
   3. Show all Subtotals and Totals as directed by the Construction Manager to support the Payment Application Form.

D. The Contractor shall include a line item in the Schedule of Values for the submission of approved Operation & Maintenance Manuals in the amount of .025%, of the

Contract Value or $2,500.00, whichever is greater

E. The Contractor shall include a line item in the Schedule of Values for the submission of approved As-built Drawings with an associated value of **.05% percent** of the Contract Value **or $5,000** dollars, whichever is greater.

1.6 APPLICATION FOR PAYMENT

A. General: Progress payments applications will be made monthly on the date established at the preconstruction meeting.

B. Pay Applications shall be submitted in e-Builder.

C. Payment for all Work shown or specified in the Contract Documents is included in the Contract Price. No measurement or payment will be made for individual items.

D. General
   1. The lump sum bid price for this work will consist of work identified in the Specifications and on the Contract Drawings associated with construction of the ALCOSAN Parking Garage. The work shall consist of furnishing all labor, materials, tools, equipment, and incidentals as necessary for demolition and new work. Work includes, but is not limited to, excavation, site work, utility relocation, stormwater piping and sanitary lines 5' outside of the building footprint, cast in place concrete, landscaping, elevator installation, rolling grille installation and associated engineering requirements to successfully accomplish the design as shown on the Contract Drawings and indicated in the Specifications.
   2. Measurement for this item will not be made for payment. Payment for this work item will be made at the lump sum bid price.

E. Electrical
   1. The lump sum bid price for this work will consist of work identified in the Specifications and on the Contract Drawings associated with Electrical systems for the Parking Garage. The work shall consist of furnishing all labor, materials, tools, equipment, and incidentals as necessary for new work. Work includes, but is not limited to, electrical cabling and conduits, underground electrical ductbanks, site lighting, the parking control system, interior lighting, security cameras, network infrastructure, fire alarm systems, access control, and associated engineering requirements to successfully accomplish the design as shown on the Contract Drawings and indicated in the Specifications.
   2. Measurement for this item will not be made for payment. Payment for this work item will be made at the lump sum bid price.

F. HVAC
   1. The lump sum bid price for this work will consist of work identified in the Specifications and on the Contract Drawings associated with HVAC systems for the Parking Garage. The work shall consist of furnishing all labor, materials, tools, equipment and incidentals as necessary for new work. Work includes, but is not limited to, split system HVAC systems, unit heaters, ventilation fans, control systems associated with these items and associated engineering requirements to successfully accomplish the design as shown on the Contract Drawings and indicated in the Specifications.
   2. Measurement for this item will not be made for payment. Payment for this work item will be made a the lump sum bid price.

G. Plumbing
   1. The lump sum bid price for this work will consist of work identified in the Specifications and on the Contract Drawings associated with plumbing and fire protection systems for the Parking Garage. The work shall consist of furnishing all labor, materials, tools, equipment and incidentals as necessary for new work. Work includes, but is not limited to, all water lines and sanitary drain piping 5'

within the building footprint, the dry standpipe fire protection system, all appurtenances associated with these items, and associated engineering requirements to successfully accomplish the design as shown on the Contract Drawings and indicated in the Specifications.

1.7 NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS

A. Payment will not be made for following:
   1. Loading, hauling, and disposing of rejected material.
   2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.
   3. Rejected loads of material, including material rejected after it has been placed by reason of failure of Contractor to conform to provisions of Contract Documents.
   4. Material not unloaded from transporting vehicle.
   5. Defective Work not accepted by Owner.
   6. Material remaining on hand after completion of Work.

1.8 PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT

A. Partial Payment: No partial payments will be made for materials and equipment delivered or stored unless Shop Drawings or preliminary operation and maintenance manuals are acceptable to ENGINEER .

B. Final Payment: Final payment shall not be made for material and equipment incorporated in Work unless all deliverables required in Section 01 75 00 through 01 78 39 and Article 3.

1.9 PARTIAL PAYMENT FOR UNDELIVERED, PROJECT-SPECIFIC MANUFACTURED OR FABRICATED EQUIPMENT

A. Notwithstanding the above provisions, partial payments for undelivered (not yet delivered to site or not stored in the vicinity of site) products specifically manufactured for this Project, excluding off the shelf or catalog items, may be made for products listed below when all following conditions exist:
   1. Partial payment request is supported by written acknowledgment from Supplier(s) that invoice requirements have been met.
   2. Equipment is adequately insured, maintained, stored at a location acceptable to the Owner, protected by appropriate security measures, and verification of same is provided to the Owner.
   3. Each equipment item is clearly marked and segregated from other items to permit inventory and accountability.
   4. Authorization has been provided for access to storage site for Construction Manager and Owner. All costs related to inspections shall be at the Contractor’s expense.
   5. Equipment meets applicable Specifications of these Contract Documents.

B. Payment of 15 percent of manufacturer's quoted price for undelivered, Project specific manufactured equipment will be made following Shop Drawing approval. Thereafter, monthly payments will be made based on progress of fabrication as determined by Construction Manager, but in no case will total of payments prior to delivery exceed 75 percent of Manufacturer's quoted price. This amount shall be identified in the Schedule of Values.

C. Failure of Contractor to continue compliance with above requirements shall give cause for Owner to withhold payments made for such equipment from future partial payments.

D. Failure of Contractor to supply Operation and Maintenance (O&M) Manuals will cause the Owner to withhold payment in the amount of **0.25%** or $2000, whichever is greater. Failure of Contractor to supply As-Built Drawings will cause the Owner to withhold payment in the amount of 0.005% or $2500, whichever is greater. This amount shall be identified in the Schedule of Values.

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION

3.1 GENERAL CONSTRUCTION CONTRACT- PAY ITEMS

A. LUMP SUM
1. This pay item will not be measured for payment.
2. Payment for this pay item will be made at the lump sum bid price, which price and payment will include all labor, materials, equipment, tools, testing, fees, and incidentals needed to complete the work specified, except as otherwise itemized as Unit Price Work.
3. All 1735G Contract Work is considered part of this Lump Sum bid price, except as otherwise itemized in the Unit Price Work.

B. PAY ITEM 01- DRILL PILOT HOLES TO DETECT UNDERGROUND OBSTRUCTIONS
1. This pay item will be measured in VLF.
2. Payment for this pay item will be made at a unit price, which bid price and payment will include all costs for furnishing all labor, materials, equipment and accessories required to complete the pilot holes.
3. Adjustment to the bid price for the final quantity of pilot holes in VLF will be made in accordance with unit prices in the bid proposal. No price adjustment will be made for individual pilot holes, but for the total lineal footage of pilot holes installed.
4. Payment will be made for pilot holes that are abandoned due to hitting underground obstructions and for additional pilot holes at locations of relocated drilled piers or added drilled piers.
5. No payment will be made for pilot holes not approved by the Construction Manager.

C. PAY ITEM 02- REMOVE BURIED UNKNOWN CONCRETE AND MASONRY STRUCTURES
1. This pay item will be measured per CY.
2. Payment for this pay item, as described in Paragraph 3.4 of Section 31 21 00 of this Specification, will be made at a unit price, which bid price and payment will include all costs for furnishing all labor, materials, equipment, and accessories for excavation, handling, and disposal of unknown natural or manmade obstructions found within or beyond the foundations described and delineated in the referenced documents, and as directed by the Engineer.

D. PAY ITEM 03a, 03b, 03c, & 03d- DRILLED PIER CAISSONS

1. These pay items will be measured in VLF for the following types of drilled pier caissons.
    a. Pay Item 03a: Caisson Mark C2.5 of 2’-6” shaft diameter
    b. Pay Item 03b: Caisson Mark C3 of 3’-0” shaft diameter
    c. Pay Item 03c: Caisson Mark C4 of 4’-0” shaft diameter
    d. Pay Item 03d: Caisson Mark C4.5 of 4’-6” shaft diameter
2. Payment for these pay items will be made at a unit price, which bid price and payment will include all costs for furnishing all labor, materials, equipment, and accessories required for complete caisson installation as indicated in the Contract Documents.
3. Adjustment to the bid price for caisson length to be made in accordance to unit prices in the bid proposal.
4. No price adjustment will be made for individual caissons but will be made for the

total lineal footage of caisson length installed.

5. Payment will be made for caissons that are discontinued due to hitting obstructions and for additional caissons and foundation construction required at the locations of discontinued caissons. Discontinued caissons must be pressure grouted.
6. No payment will be made for the following:
    a. Damaged or rejected caissons or for the installation of caissons and additional foundation construction resulting from the damaged or rejected caissons.
    b. Caissons installed beyond specified tolerance limits and caissons and foundation construction required due to caissons installed beyond the tolerance limits.
    c. Caisson lengths extending above cut-off elevations.

E. PAY ITEM 04- ROUTING AND SEALING OF CONCRETE CRACKS AS DIRECTED BY THE CONSTRUCTION MANAGER

1. ~~Refer to Section 03 01 30 for measurement and payment of this item~~. **Refer to Section 03 30 00 Cast-in-Place Concrete, paragraph 3.13, B, 3, c, (1) for description of this item."**

F. PAY ITEM 05- **CONTINGENT UNSUITABLE SUBGRADE EXCAVATION**

1. This item of work shall consist of **contingent unsuitable subgrade excavation**, as described in Paragraph 3.4 of Section 31 21 00 of this Specification, of all unsuitable material below subgrade, or of all material in addition to that shown on the Drawings, specified, or included in other Bid Items, and in accordance with the written direction of the Engineer.
2. Measurement under this item will be made on the basis of the actual volume of material excavated, in cubic yards measured in place, as directed by the Engineer.
3. Payment for work completed under this term will be made at the unit price bid per cubic yard for **contingent unsuitable subgrade excavation** which price shall include and cover furnishing all labor, materials, equipment, tools and incidentals required to perform the **contingent unsuitable subgrade excavation**, and includes excavation support, hauling, disposal and all related work required to satisfactorily complete the work as shown, specified or directed.

G. PAY ITEM 06- CONTINGENT PLACEMENT OF BACKFILL MATERIAL

1. This item of work shall consist of placing complete, suitable backfill material, as described in Section 31 21 00 of this Specification, to be used below subgrade or in addition to that shown in the Drawings, specified or included in other Bid Items, and in accordance with the written direction of the Engineer.
2. Measurement of this item will be made of the actual in-place cubic yard volume of material satisfactorily placed and compacted as directed by the Engineer.
3. Payment under this item will be made at the unit price bid per cubic yard, which shall include and cover furnishing all labor, materials, and equipment necessary to complete the work as shown, as specified or as directed by the Engineer.

H. PAY ITEM 07- ALLOWANCE FOR OTHER CONTAMINATED WASTE

1. Allowance for potential force account work, as identified in 31 23 00, sections

1.5.C.1.b, 3.4.B.3, 3.5.C and 3.6A. Measurement and payment of this pay item will be as described in Section 1.4 of this Specification section.

3.2 ELECTRICAL CONSTRUCTION CONTRACT- PAY ITEMS

A. LUMP SUM
   1. This pay item will not be measured for payment.
   2. Payment for this pay item will be made at the lump sum bid price, which price and payment will include all labor, materials, equipment, tools, testing, fees, and incidentals needed to complete the work specified.
   3. All 1735E Contract Work is considered part of this Lump Sum bid price.

3.3 HVAC CONSTRUCTION CONTRACT- PAY ITEMS

A. LUMP SUM
   1. This pay item will not be measured for payment.
   2. Payment for this pay item will be made at the lump sum bid price, which price and payment will include all labor, materials, equipment, tools, testing, fees, and incidentals needed to complete the work specified.
   3. All 1735H Contract Work is considered part of this Lump Sum bid price.

3.3 PLUMBING CONSTRUCTION CONTRACT- PAY ITEMS

A. LUMP SUM
   1. This pay item will not be measured for payment.
   2. Payment for this pay item will be made at the lump sum bid price, which price and payment will include all labor, materials, equipment, tools, testing, fees, and incidentals needed to complete the work specified.
   3. All 1735P Contract Work is considered part of this Lump Sum bid price.

3.4 INITIAL APPLICATION FOR PAYMENT

A. Administrative actions and submittals that must precede the first Application for Payment include the following:
   2. Contractor's Mobilization Schedule (First 90 Days) and Baseline Construction Schedules information
   3. Contractor's Schedule of Values
   4. Contractor's Submittal Schedule
   5. List of Subcontractors (if required)
   6. List of Principal Suppliers and Fabricators (if required)
   7. List of Contractor's staff assignments (if required)
   8. Copies of Building Permits (if applicable)
   9. Copies of licenses and authorizations from governing authorities for performance of the Work (if applicable)
   10. Certificates of Insurance
   11. Required Bonds
   12. Safety Program reviewed by the Construction Manager and recorded as reviewed without comments.
   13. WBE/MBE submittal accepted
   14. Preconstruction photograph and video session completed and three (3) copies provided to the Construction Manager

3.5 MONTHLY APPLICATION FOR PAYMENT

A. Administrative actions and submittals that must precede each monthly Application for Payment include the following:

1. Contractor's Project Schedule w/ Narrative (Updated)
2. Contractor's Submittal Schedule (Updated)
3. Certified Payrolls
4. Certificates of Insurance (Updated)
5. Required backup/approved shop drawings for Materials Stored on Site
6. Maintenance of on-site as-built drawings
7. Resolution of all Site Safety Notices
8. Disposition of all Non-Conformance Notices by the Construction Manager
9. WBE/MBE compliance update
10. Weekly safety meeting minutes

3.6 **FINAL APPLICATION FOR PAYMENT**

A. Administrative actions and submittals that must precede the Final Application for Payment are outlined in Article 3, General Contract Conditions, Article 3.51 entitled "Final Acceptance".

END OF SECTION

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SECTION 01 50 13

CONSTRUCTION MANAGER SITE OFFICE

PART 1 - GENERAL

1.1 SUMMARY

A. The General Contractor shall provide a site office as specified throughout this Section for use by the Construction Manager at the site of the Work until the project final completion. ~~On that date the CM site office and all its furnishings, electrical, HVAC, and plumbing utilities and appurtenances shall be left in place for continued use by the CM on future projects. After final completion of the 1735 contract the1735 G contractor will no longer be responsible for CM site office maintenance, and upkeep, and will turnover this site office to the Owner~~. **After final completion of the 1735 Contract, the 1735G Contractor will remove the field office from the worksite.**

B. The General Contractor is solely responsible for the provision, installation, maintenance, upkeep, and ~~turn-over~~ **removal** of this Office.

C. The General Contractor shall include in his Bid the costs associated with the general requirements of paragraph 1.1A & B and any fees and other expenses related to Contractor responsibilities for the Office specified throughout this specification.

D. The ~~Construction Manager and Owner~~ **General Contractor** shall provide ~~its own wireless telephone service and all~~ internet connectivity, wiring, and hardware. ~~for the CM interface with Owner eBuilder.~~

1.2 CONSTRUCTION MANAGER SITE OFFICE

A. The General Construction Contractor shall provide the following CM Site Office facility.
   1. Structure: Provide a field office for the exclusive use of the CM and their authorized representatives, in a location approved by the CM or as shown on the Site Utilization Plan.
      a. Have the field office equipped and ready for use within thirty days after the date of the Notice to Proceed.
      b. The office shall be a modular office as approved by the CM.
      c. Equip the office with an adequate heating and cooling system which is automatically and thermostatically controlled to maintain a minimum inside temperature of 70 DEGF during cold weather, and a maximum of 75 DEGF in hot weather.
      d. Provide two entrance doors with dead-bolt locks and two keys per lock. Stairs and landing shall be provided at both doors.
      e. The office shall conform to the Occupational Safety and Health Act of 1970 (PL 91- 596).
   2. Lighting and Electric Power: Provide adequate intensity fluorescent ceiling lighting and electric wall receptacles for entire floor space.
   3. Maintenance: Provide weekly or as needed janitorial services for the Office; furnish, replace and replenish light bulbs, wastebasket liners, copier paper, toner and maintenance, first aid kit, fluorescent tubes, ~~toilet paper~~, paper towels, ~~soap~~, ~~seat covers for dispenser~~, and bottled water. Wash the office floors and sanitize doorknobs and touch surfaces daily. ~~washroom facilities~~ ~~at least once each week~~. Sweep office floors, empty trash and dust furnishings weekly. Wash office windows at the request of the CM.
   4. Furnishings: Provide the following furnishings (which shall remain the property of the Contractor) in clean, neat and operating condition:
      a. One - Copy Machine; HP Color Jet Pro M283fdw or equal
      b. Four - Desks; 2.5 feet x 5 feet w/drawers

c. Two – Corner Desks w/ drawers
d. Five - Desk type swivel armchairs
e. Four - Padded folding chairs
f. Four - Four drawer, filing cabinets with lock and key
g. Three – 3'x 4' metal erasable white board w/ supplies
h. Eight - Metal Wastebaskets.
i. One - Plan Rack, sized to hold minimum of 5 sets of full-sized plans.
j. One – Lockable supply cabinet, double door
k. Two - Wall mounted fire extinguishers.
l. One – Wall mounted First Aid Kit.
m. One – Standard 14.3 cubic foot refrigerator.
n. One – 3'x4' Corkboard
o. Four - Laminated 2'6"x6' folding tables (one not shown on drawing)
p. Two – Exterior heavy duty boot scrappers
q. One – ADA entry ramp to Office (field constructed by Contractor if required by CM)
~~r. One – Integral sink/counter/cabinet at location shown~~
s. Two – Awnings over entrance doors
t. General layout of CM Office to be provided (below). Not all items listed throughout this specification are shown. The CM shall approve the floor plan and furnishings for this field office prior to its shipment to the site.
u. Access to Internet: High speed internet connection shall be provided. Service shall be unlimited access and the cost of the internet service paid by the General Contractor. Internet connection shall be a minimum of 50 mbps download and 10 mbps upload. Internet connection shall be provided with a WIFI interface of 802.11 or better.
v. Conference Telephone: The General Contractor shall not be responsible for long distance telephone charges. Telephone to be separate from answering machine and have a minimum 15 foot cord.
w. One answering machine.
x. SEE ATTACHMENT DRAWING A1 AT THE END OF SECTION

B. CM's Parking Area: Provide adequate parking space, adjacent to the office for 4 cars for CM staff only. Provide an acceptable driveway to the parking area. Provide "CM Parking Only" signage.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Site office:
1. Willscot 24' x 44' Modular Office Trailer.
2. Or Approved Equal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General Contractor to deliver and install site office; trailer shall be securely installed, level and plumb. Responsible for trailer, HVAC and furnishings' maintenance.

~~B. Plumbing contractor to install potable water and sanitary pipe and make connection as shown on drawings. Responsible for all plumbing and sanitary maintenance.~~

B. Electrical Contractor to provide power. Responsible for all electrical

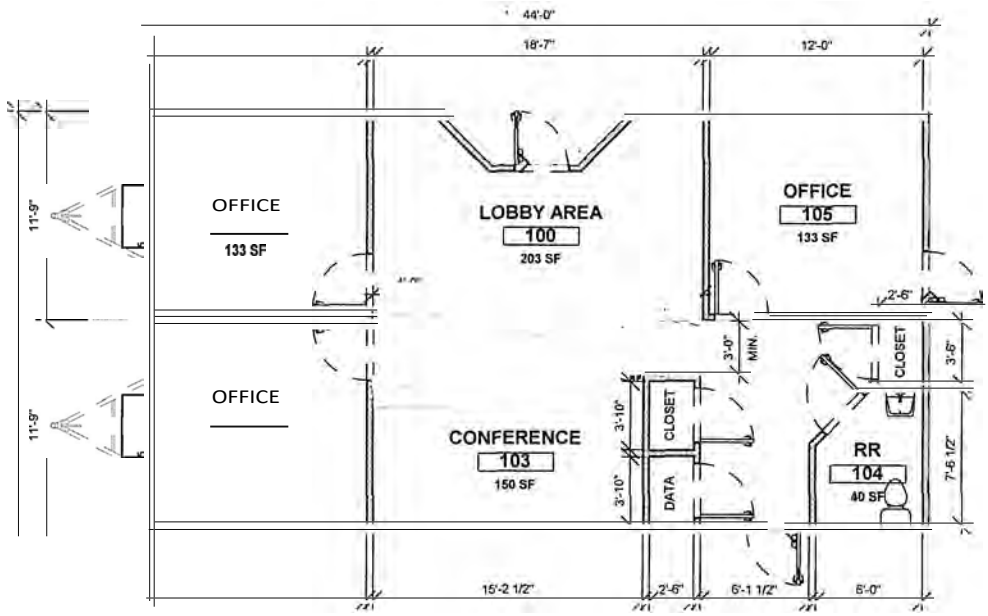
C. ALCOSAN/CM responsible for all IT maintenance.

END OF SECTION

WILLSCOT 800.782.1500
WWW.WILLSCOT.COM

NOTE:

- FINAL DIMENSIONS MAY VARY



Approved by: _____
Company: _____
Date: _____
As Is: _____ ☐
As Noted: _____ ☐
Revise/Resubmit: _____ ☐

DWG #	CAD FILE:	REV#	SCALE:	REP:
A1	WS2020-1078			

SERIAL#:

SO4824

SECTION 01 52 00

MAINTENANCE OF PLANT OPERATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. The intent of this Specification is to have the Contractor schedule and perform the Work in a manner such that the Owner can keep the existing treatment plant facilities in continuous dependable operation and in compliance with all regulatory requirements. The Contractor shall adhere to the constraints listed in this Section and elsewhere in the Contract Documents.

B. The Contractor shall:
   1. Perform all construction necessary to complete connections, tie-ins, bypasses and shutdowns to existing facilities.
   2. Keep existing facilities in operation unless otherwise specifically permitted in these Specifications or approved by the Owner.
   3. Perform all construction activities so as to avoid interference with operations of the facility and the work of others.
   4. Start-up the new facilities in a controlled, systematic order as outlined in the Contract Documents.

C. Related Sections include, but are not necessarily limited to:
   1. Section 01 75 00 - Facility Start-Up
   2. Section 01 50 00 – Temporary Facilities

1.2 GENERAL CONSTRAINTS

A. Any temporary work, facilities, roads, walks, protection of existing structures, piping, blind flanges, valves, equipment, bypass pumping, line-stopping, temporary generators, temporary power, temporary equipment, temporary lighting, temporary barriers, etc. that may be required within the Contractor's work limits to maintain continuous and dependable plant operation shall be furnished by the Contractor at no extra cost to the Owner.

B. The Contractor shall schedule the Work in such a manner so that the plant is maintained in continuous operation. All shutdowns shall be coordinated with the Construction Manager and approved by the Owner. If, in the opinion of the Owner, a shutdown is not required for the Contractor to perform the Work, the Contractor shall use alternate methods to accomplish the Work. All shutdowns shall be coordinated with and scheduled at times suitable to the Owner. Unless noted otherwise, the Contractor shall provide a minimum of 30 days' notice of any shutdown.

C. Shutdowns shall not begin until all required materials are on-hand and ready for installation and the written shutdown plan has been approved by the Owner. At a time approved by the Owner, the shutdown period shall commence, and the Contractor shall proceed with the Work continuously, start to finish, until the Work is completed, and the system is tested and ready for operation. If the Contractor completes all required Work before the specified shutdown period has ended, the Owner may immediately place the system back in service.

D. The Owner shall have the authority to order the Work to be performed during a scheduled shutdown stopped or prohibit Work which would, in his opinion, unreasonably result in stopping the necessary functions of the plant operations. The Owner reserves the right to cancel scheduled shutdowns if conditions warrant.

E. Safety procedures, equipment and provisions shall be provided by the Contractor as required to complete the Work. Work will be required in active areas of the wastewater

treatment plant. High hydrogen sulfide levels (100 ppm or greater) can be present in certain areas of the plant. Contractor shall provide temporary means for access to and working in these areas.

F. Operations of existing equipment shall be done by the Owner. Operation of valves and gates required for the Work shall be completed by the Contractor, but only after written request and permission of the ALCOSAN Head of Operations. The Head of Operations will assign an operator to witness the valve or gate operation. No gate or valve shall be operated without Head of Operations approval and ALCOSAN personnel being present. Owner does not guarantee that valves, stop logs, gates, etc., are or will be water or gas tight. Contractor shall provide temporary bulkheads, caps, plugs, dewatering, pumping and other measures required to perform the Work.

G. Unless otherwise specifically noted below, the Owner will partially drain process tanks which are required access to by the Contractor. Not all tanks can be completely drained, and the Contractor shall expect two to three feet of water to remain in bottom of the tanks. The water may include wastewater treatment plant solids and grit. The Contractor shall provide temporary means approved by ALCOSAN to remove the remaining water, solids and grit, and for tank cleaning to the extent required to complete the Work. Water-tight tanks are not guaranteed, and Contractor shall provide measures required for an environment suitable for the Contractor to perform the Work. After the initial tank draining, Contractor will be responsible for temporary measures required to keep the tanks suitable for Contractor's use.

H. Insofar as possible, all equipment shall be tested and in operating condition before the final tie- ins are made to connect new equipment to the existing facility.

I. Contractor shall provide temporary lighting if shutdowns occur at night.

J. Owner will require continuous access to all plant operational areas. Gates, roads and pathways required for vehicle and personnel access shall be maintained such that they are serviceable. If construction activities require interruption of normal access to any area, Contractor shall provide temporary means for Owner access. Contractor shall coordinate access interruptions with the plant and provide at least 30 days' notice of such interruptions. If vehicle support will be required in an area that is blocked by construction activity, Contractor shall provide such access to Owner upon request.

K. Construct Work in stages to allow for the Owner's continuous occupancy and for uninterrupted operation and maintenance during construction. Unless specifically indicated otherwise, new systems or subsystems as appropriate shall be substantially complete before existing systems are taken out of service and made available to the Contractor.

L. All exterior temporary electrical feeders shall be mining-grade cable.

1.3 SUBMITTALS

A. Submit A Maintenance of Plant Operations (NOPO) Plan containing detailed information for each shutdown described herein and all others required to complete the Work. Submittal shall include detailed description of shutdown, shutdown time-line, detailed breakdown of work to be completed prior to and during shutdown, materials required and availability, proposed manpower, proposed method of protecting existing equipment, list of valves, gates and equipment that will require operation by the Owner and any other details to adequately describe the proposed shutdown.

B. MOPO submittal must be approved by the Owner before shutdown can begin. Submit MOPO at least 30 days prior to start of proposed shutdown.

1.4 WORK AREAS

A. The shutdowns in this Section are a general list of tie-in work which require bypasses,

shutdowns and major coordination with plant operation. The shutdowns are grouped by work areas and also include an Electrical component to suit existing conditions that are encountered to complete the Work. It shall be used by the Contractor as a guide to prepare the Project Schedule, the Shutdown Schedule and Master Facility and System Start-up Schedule required in Section 01 75 00. Shutdowns are not necessarily listed in the order they must be performed. Contractor is solely responsible for scheduling the shutdowns in conjunction with the required construction sequence.

B. General Shutdown Requirements:

1. Two Pre-Shutdown Meetings shall be held prior to any shutdown. The meetings shall be conducted at least one week prior to the schedule shutdown and the day before the shutdown. The plan shall include at a minimum

1. Start time of the system interconnection work.
2. Planned duration of the interconnection work.
3. Valves, breakers, and circuits that need to be secured in order to isolate the point of the interconnection, and any respective timing or sequencing associated with the valves, breakers, and circuits.
4. Contractor personnel required to effectively complete the specific task, including those personnel in supervisory positions, and those with the authority for decision-making.
5. Materials to be on hand prior to securing any valves in the existing system.
6. Tools to be on hand during the interconnection, including quantities.
7. Equipment to be on hand during the interconnection, including quantities.
8. A detailed sequence of work activities to effectively monitor, control, and complete the specific interconnection work.
9. Any preparatory work that could/should/must be accomplished prior to initiating the interconnection work.
10. Or other items pertinent to the interconnection that the Contractor, Owner, or Construction Manager deem necessary or appropriate to incorporate into the plan.

2. Shutdown periods are indicated in 24-hour calendar days, months or number of hours.

3. Simultaneous shutdowns of more than one facility, except as specifically indicated or allowed by the Owner, will not be permitted.

4. Insofar as possible, equipment to be incorporated into existing facilities shall be ready for installation before the existing facilities are shutdown.

5. All materials needed to effectively complete the interconnection shall be procured and on site prior to initiating the interconnection activity. Construction Manager shall review and confirm with the Contractor that all needed materials are staged at the specific work site no less than 24 hours prior to initiating the interconnection work. Failure to have all materials properly staged will constitute failure by the Contractor to be prepared to effectively complete the interconnection work, and the work will be canceled and rescheduled via the process described herein.

6. All tools needed to effectively complete the interconnection shall be procured and on site prior to initiating the interconnection activity. Construction Manager shall review and confirm with the Contractor that all needed tools are staged at the specific work site no less than 24 hours prior to initiating the interconnection work. Failure to have all tools properly staged will constitute failure by the Contractor to be prepared to effectively complete the interconnection work, and the work will be canceled and rescheduled via the process described herein

7. If the work during the shutdown periods is not done satisfactorily, or as planned, or within the time required or approved by the Engineer, the Owner may require the Contractor to work a 24-hour, 7-day week work schedule with a full crew, or Owner may require the Contractor to place the facility back in service and reschedule the

shutdown or, Owner may order the work required to place the facility back in service done with other forces. If the work is completed by other forces, the Owner's costs will be deducted from the amounts due to the Contractor. In no case shall the Owner be required to make additional payment for overtime work or redoing the work caused by the Contractor's failure to complete the work in the allotted time.

8. During electrical interconnection activities, all existing breakers and circuits to be opened shall be locked, and any new breakers associated with the interconnection are to be installed in the open position.
9. Any utility lines installed to interconnect points with other contracts shall be capped, plugged, or otherwise properly protected at the interconnect point to preserve the end conditions and prevent soil and/or water from entering the line when backfilled. Upon backfilling, the interconnect point shall be properly identified for future work.
10. Existing level of site lighting must be maintained over the course of construction. Demolition of existing site lighting as a requirement to conduct construction operations must result in provision of temporary lighting to allow maintenance of plant site lighting levels. This applies to both indoor and outdoor systems. Temporary site lighting must be maintained until that point when the Contractor is complete with the work and demobilized off the site, or the permanent site lighting has been installed, whichever occurs first.
11. Access to the plant must be maintained at all times during construction. Planned deliveries or construction activities that will result in a temporary road blockage shall be coordinated with the Owner. In any case of a temporary road blockage, proper signage shall be placed at entrances to the affected road to clearly communicate that passage along that particular route is no longer available, and what other routes are available. This signage shall be provided by the General Contractor.
    Valves, breakers, or circuits shall be opened and closed only by the Owner or, at the option of the Owner, by the Contractors personnel with the Owner present.
12. The scope of work required to be performed during and prior to the specific shutdown period described in this Section may not be complete, the Contractor shall schedule work required to be completed during a shutdown of a specific facility during the scheduled shutdown period.
13. Sediment control features, water disposal permits and other similar requirements shall be in place prior to starting any shutdown work.
14. If alternative shutdown procedures or methods to those indicated herein are proposed by the Contractor, they shall be submitted for approval. Supporting data, calculations and other information requested by the Engineer or the Owner shall be provided with the submittal.
15. If bypass pumping is necessary, the Contractor shall provide 100 percent back-up pump capacity available on-site.
16. Contractor shall be responsible for cleanup resulting from spills.
17. Any shutdowns for potable water connections shall incorporate meeting the requirements of the Allegheny County Health Department into the outage schedule.
18. **Plumbing (Contract 1735P) Work on the isolation valve connecting the 6” water line to the 12” water line and for the sanitary pipe to the first manhole. The 12” line is under high-pressure, there will likely have to be a second outage and proper measures will need to be taken to restrain the 6” isolation valve prior to tie-in.**

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END OF SECTION

SECTION 01 74 23
CLEANING

PART 1 - GENERAL

1.1 FIRE PROTECTION

A. Store volatile waste in listed disposal containers.

B. Maintain site and building so no condition provides a fire hazard.

C. Remove combustible debris from building at end of each shift and from site daily.

D. Sources of ignition and smoking are prohibited in flammable and combustible storage areas.

E. Do not burn on-site.

1.2 POLLUTION CONTROL

A. Conduct cleanup and disposal operations to comply with codes, rules, regulations, ordinances, and anti-pollution laws.

B. Do not burn or dispose of combustible debris, rubbish and waste material on site.

C. Do not discharge volatile, harmful, or dangerous materials into storm or sanitary drains or sewer systems.

D. Prevent accumulation of wastes that create hazardous conditions.

PART 2 - PRODUCTS

2.1 CLEANING MATERIALS

A. Use materials recommended by manufacturers of surfaces to be cleaned.

B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

C. Use only those cleaning materials which will not create hazards to health or property and will not damage surfaces.

2.2 CLEANING MATERIALS

A. Use only those cleaning materials which will not create hazards to health or property, are non- toxic to both humans and aquatic life, and will not damage surfaces, and comply with the following:

PART 3 - EXECUTION

3.1 GENERAL

A. Clean items installed under this Contract.
   1. Leave free of stains, dirt, dust, damage, or defects.
   2. Include washing, sweeping, polishing of wall surfaces, floors, windows, hardware, mirrors, lighting fixtures, equipment, etc.

3.2 DURING CONSTRUCTION

A. Provide on-site listed disposal containers for collection of waste materials, debris, and rubbish.
   1. Dispose of off-site once a week at an approved solid waste disposal site.
   2. Cover container to prevent blowing by wind.

B. Keep work areas clean so as not to hinder health, safety or convenience of personnel in existing facility operations. ~~Contractor shall assign a value of $500 per week for housekeeping inside and outside of the work area(s) to the satisfaction of the CM~~.

C. Interior cleaning:
   1. Clean and vacuum interior space prior to start of painting and continue cleaning daily until substantial completion.
   2. Schedule cleaning operations so contaminants do not fall on wet painted surfaces.
   3. Clean and protect Work in progress and adjoining materials in place, during handling and installation.
   4. Clean lunch/break area after each use.

D. Exterior cleaning:
   1. Wet down dusty materials and rubbish to prevent blowing dust during entire construction period.
   2. If use of water is prohibited by law, seek an alternate method to prevent blowing dust.
   3. Perform cleaning operations as required during construction to prevent accumulations of dust, soil, and debris.
   4. Keep weeds and other vegetation trimmed to 3 IN maximum height.
   5. Remove snow and ice from access to buildings.

3.3 FINAL CLEANING

A. At Substantial Completion, perform final cleaning of Work and existing areas wherever any area are left less than clean by construction operations.
   1. Complete cleaning operations before requesting review for Substantial Completion.

B. Use experienced professional cleaners for final cleaning.

C. Repair and touch-up marred areas.

D. Broom clean and remove stains from paved surfaces; rake clean other surfaces of grounds.

E. Ventilation systems:
   1. Clean permanent filters and replace disposable filters if units were operated during construction.
   2. Clean ducts, blowers, and coils in air conditioning units operated during construction.

F. Remove grease, dust, dirt, stains, labels, fingerprints, mastic, adhesive, and foreign materials from interior and exterior surfaces, and fixtures, hardware, and equipment.

G. Wash and shine glazing, mirrors, stainless steel, etc., including existing windows in area of construction.

H. Wipe all lighting fixture reflectors, lenses, lamps and trims clean.
   1. Replace all burned out lamps.

I. Polish glossy surfaces to a clear shine.

J. Remove temporary protection and facilities installed for protection of the Work during construction.

3.4 FIELD QUALITY CONTROL

A. Prior to Owner occupancy, Contractor and Owner shall conduct an inspection of interior and exterior surfaces and Work areas to verify Project is clean to Owner's satisfaction.

END OF SECTION

SECTION 101400 – SIGNAGE

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. The extent of work included in this Section is shown on the Drawings and is specified as follows:

1. Painted directional parking (traffic) signs and informational (graphic) signs and with reflective die-cut vinyl graphics, including but not limited to, fields, symbols, letters, and numbers.
2. Clearance bar signs with painted finish and reflective die-cut vinyl fields symbols, letters and numbers.
3. Integrally-colored tactile/braille signs.
4. Sign supports to complete sign installations for all signage indicated in the Contract Documents.
5. Custom illuminated signage consisting of single-faced, wall mounted internally illuminated sign boxes.

B. RELATED WORK:

1. As indicated below and as may additionally shown on the Drawings, Contractor shall furnish and install electrical conduits and power wiring to the all illuminated signage provided this Contract
2. Typical Conduit Points
   a. 1 Conduit from nearest electrical junction box (with sufficient electrical load capacity) to each Custom Illuminated Sign box.
3. Conduit Sizes
   a. Minimum conduit size shall be minimum ¾” U.N.O

1.3 SUBMITTALS

A. General: All Submittals are Action Submittals unless noted otherwise.

B. Product Data: Manufacturer's data, specifications, recommendations, installation instructions, and standard details for all items specified in this Section including anchorage details, accessories and other components of the Work. Include material descriptions, dimensions of individual components and profiles, and finishes for each type of sign.

C. Shop Drawings: Drawings showing details of fabrication and installation, plan views, elevations, sections, details of components and attachments to other work.

1. Distinguish between shop and field-assembled work.
2. Indicate dimensions and layout of signs and graphics.
3. Show anchorage and accessory items.

D. Samples

1. Samples for Initial Selection: For products involving selection of color, texture, or design.
2. Submit three (3) samples of all materials.
   a. For each finish product specified, provide samples representing actual product, color, and patterns.
      1) 12 x 12 inch panel samples.
      2) 6 inch long trim samples.

E. Operation and Maintenance Instructions

1. Maintenance Manuals: Submit three (3) bound maintenance manuals. Include the following:
   a. 11”x17” reductions of approved shop drawings, maintenance information, information on special tools required for maintenance and instructions for ordering replacement signs or parts. Sign Contractor to coordinate with General Contractor to establish method of ordering replacement signs from maintenance manuals.
   b. Care instructions for each exposed finish product. Include precautions against any known materials and methods which may be detrimental to finishes and/or performance.
2. See Division 1 for additional requirements.

1.4 QUALITY ASSURANCE

A. Correlation of Performance Requirements: The Work of this Section is subject to the performance requirements indicated in the Contract Documents and as follows:

1. Requirements of Regulatory Agencies: The Work is subject to all applicable provisions of the Codes and Standards required by the authorities having jurisdiction.
2. Reference Standards: Standards referenced in this Section are commonplace in the industry (unless noted otherwise) and are referred to by basic designation only. Standards form a part of this Specification to the extent referenced.
3. Correlation and Intent of the Contract Documents: In the event of conflicts or discrepancies between the Contract Documents, the requirements of regulatory agencies, and the indicated Reference Standards, the most stringent requirements govern.

1.5 DELIVERY, STORAGE AND HANDLING

A. Wrap all materials for shipment and storage. Deliver materials to the jobsite in manufacturer's original packaging, and stored in a clean, dry area in accordance with manufacturer's instructions.

1.6 JOB CONDITIONS

A. Examine premises and site to determine conditions affecting this work. No representation is made that all conditions are indicated on the drawings. Take field measurements where necessary to assure proper fit of components.

B. Check locations of signs with actual field conditions to assure that signs are visible for the purpose they are intended to serve and are not obstructed from view by structural or other elements. Advise Architect of any difficulties prior to installation.

1.7 WARRANTY

A. All illuminated signage is to be covered by a manufacturer's warranty covering all parts and labor for a five year period, excluding misuse or vandalism.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Painted Signs

1. Sign Blanks and Aluminum Sheet: Alloy and temper recommended by aluminum producer or finisher for type of use and finish indicated, and with not less than the strength and durability properties specified in ASTM B-209 for 5005-H15.
   a. Minimum thickness: 0.125 inches thick for directional parking signs, 0.080 inches thick for informational/graphic signs.
2. Aluminum Extrusions: Alloy and temper recommended by aluminum producer or finisher for type of use and finish indicated, and with not less than the strength and durability properties specified in ASTM B-221 for 6063-T5.
3. Reflective and Non-reflective Sheeting and Letters: Cast vinyl pressure-sensitive reflective sheeting. 2 mil minimum thickness (not including adhesive). Exterior-grade adhesive to provide minimum 5 pounds/inch tensile strength for permanent bond. Colors as indicated on the drawings are generic in nature; Final colors to be selected by the Architect from the manufacturer’s range of colors.
4. Paint Finish: Acrylic polyurethane paint system suitable for outdoor application must be per manufacturer's recommendation for substrate compatibility. Colors to be selected by the Architect from the manufacturer’s range of colors.

B. Tactile/Braille Signs

1. Tactile/Braille Signs must consist of laminated thermosetting Type MP plastic (three-ply melamine plastic laminate with phenolic core). Signs assembled from acrylic components will not be allowed. Tactile/Braille Signs and must conform to the following.
   a. All tactile/braille signs must conform to applicable city, state and ADA accessibility standards.
   b. Units must be frameless. Corners of signs must be rounded to ½-inch radius.
   c. Mounting holes must be factory drilled for mounting by mechanical fasteners.
   d. Signs graphics must graphic-blast raised copy: Background must be sandblasted to a uniform depth of 1/32-inch leaving raised pictograms, text and braille. The exposed phenolic core must be painted a contrasting color after the sandblasting process.

e. Provide products from one of the following manufacturers (or an approved equivalent):
   1) ASE Inc. (www.asesigns.com)
   2) Best Sign Systems Inc. (www.bestsigns.com)
   3) Tactile Signs Inc. (www.tactilesigns.com)

2. At the Contractor's option and subject to Architect approval, coated aluminum signs that is embossed 1/32-inch may be used.

3. Submit full size sample sign of pictogram/tactile/braille-type including method of attachment. Sample must be representative of the colors scheduled for this project.

C. Anchors and Fasteners

1. General:
   a. Unless adhesive mounting is specifically required by this Specification or otherwise noted in the Drawings, all signs must be for attachment via mechanical means.
   b. Provide aluminum, non-magnetic stainless steel or other non-corrosive metal fasteners which are compatible with the items being fastened. Use concealed fasteners wherever possible, and tamper-proof fasteners on exposed surfaces with finish to match the item fastened.
   c. Do not use anchors or fasteners on glass or aluminum substrates.
2. Concrete inserts: Threaded or wedge type, galvanized ferrous castings, either malleable iron ASTM A47-77 or cast steel ASTM A27-77. Provide bolts, washers, and shims as required; hot-dip galvanized, ASTM A153-54.

D. Adhesive Mounting

1. General:
   a. Unless specifically noted otherwise, adhesive mounting shall only be used on substrates consisting of glass or aluminum assemblies.
2. Double-Sided Foam Tape: Where indicated on the drawings, provide adhesive sign mounting consisting of acrylic foam tape (double-sided adhesive). Acrylic foam tape must be suitable for outdoor application and adhesive must be per manufacturer's recommendation for both sign and substrate compatibility.
3. Silicone Adhesive: Where use of acrylic foam tape is impracticable, provide manufacturer's recommended silicone adhesive mounting system compatible with substrate.

E. Typeface Standards: The standard typefaces for use throughout the signs system, unless otherwise specified in the Drawings or specifically approved by the Architect, must be Helvetica Medium.

F. Custom illuminated Signs: Sign Box Fabricate to configuration shown on drawings. Provide internal structural reinforcing for dead and live loads (wind and other) as required for indicated span. Provide access panels on back or front of sign box for access to lighting.

1. General
   a. Interior lighting by means of LED lighting modules.
   b. Electrical Components: All electrical components incorporated in sign construction shall be approved and listed by the Underwriter' Laboratories, Inc.

1) All internal wiring shall be insulated, stranded copper, appliance wire, not lighter than No. 16 A.W.G. The insulation shall be thermoplastic of such thickness and composition to provide satisfactory performance under a continuous maximum temperature of 90 degrees C.

2. Cabinet sheet to be .090" min. aluminum. All-welded construction.
3. Aluminum returns, trim and rear panel shall be painted to match sign face field color.
4. Letters shall be cut out from the aluminum panel and filled with translucent white fiberglass which is securely bonded to the reverse side of the sign box.
5. Designed for exterior condition.
6. Structural Steel frame for attachment back to concrete building frame.

2.2 FABRICATION

A. General: Signs must be free from sharp edges, burrs and other defects. Sawed edges must be smooth and properly finished.

B. Aluminum Signs: The fabrication of aluminum sign blanks including cutting to size and shape and the punching of mounting holes must be completed prior to metal degreasing and the application of reflective sheeting or painting. Aluminum sign blanks must be free of buckles, warps, dents, cockles, burrs and defects resulting from fabrication.

1. Sign Frames: Where indicated in the Drawings, each panel section must be provided with an internal perimeter frame. All perimeter framing must be aluminum alloy 6063-T6 with a minimum thickness of .080 inches. The perimeter frame must have mitered corners, reinforced, welded and ground smooth. Intermediate supports must be included as required.
2. Finishing: Prepare aluminum surfaces by removing all grease and dirt and applying a phosphate activated metal pretreatment. Apply one coat of an epoxy primer and two coats of the acrylic polyurethane top coat in accordance with the paint manufacturer's instructions. Clear coat as required by manufacturer.

C. Application of Graphics/Copy: All die-cut vinyl work must be applied in a manner as specified by the vinyl sheet manufacturer. Apply die-cut pressure sensitive letters to well cured paint surface. Properly align letters and furbish to avoid air bubbles and peeling.

D. Headache Bars: Suspended PVC pipe of size shown on drawings, with PVC end caps. Suspension cables, links and fittings to be No. 4 satin finish stainless steel unless noted otherwise.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to receive signs and conditions under which this work of this Section is to be performed before installation, with Installer present, for defects or conditions adversely affecting quality and execution of the installation.

B. Report all deviations from the Contract Documents and/or conditions detrimental to performance of the Work to the Architect in writing.

C. Proceed with installation only after unsatisfactory conditions have been corrected. Starting work within a particular area will be construed as acceptance of surface conditions.

3.2 INSTALLATION

A. Provide anchorage devices and fasteners where necessary for securing signs; including threaded fasteners for concrete and masonry inserts, through-bolts, lag bolts, and other connectors as required.

B. Locate sign units and accessories where shown or scheduled, using mounting methods of type described and in compliance with manufacturer's instructions, unless otherwise indicated.

C. Install sign units level, plumb and at height indicated, with sign surfaces free from distortion or other defects of appearance.

D. All metal signs and supports mounted on concrete must have faying surfaces coated to prevent corrosion due to cathodic action or suitable gasket/gasket washers must be provided.

E. Exposed sign and graphic surfaces must be free of glue, fingerprints, dirt, grease or any other imperfections upon completion of installation.

F. Touch up of finish surfaces damaged during installation must be done with materials furnished by manufacturer and used according to direction from manufacturer.

3.3 REPAIRS, CLEANING AND PROTECTION

A. Repair minor damage to eliminate all evidence of repair. Clean exposed surfaces using materials and methods recommended by manufacturer of material or product being cleaned. Remove excess adhesives immediately. Remove and replace work that cannot be successfully repaired or cleaned to the satisfaction of the Architect.

B. Provide temporary protection and maintain conditions, in a manner acceptable to Manufacturer and Installer to ensure work being without damage or deterioration at time of final acceptance. Remove protections and re-clean as necessary immediately before final acceptance.

END OF SECTION 101400

SECTION 221319.13 - STORM DRAINS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Floor drains.

1.2 DEFINITIONS

A. ABS: Acrylonitrile-butadiene styrene.

B. FRP: Fiberglass-reinforced plastic.

C. HDPE: High-density polyethylene.

D. PE: Polyethylene.

E. PP: Polypropylene.

F. PVC: Polyvinyl chloride.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 DRAIN ASSEMBLIES

A. Storm drains shall bear label, stamp, or other markings of specified testing agency.

2.2 FLOOR DRAINS

A. Cast-Iron Floor Drains FD-1:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Commercial Enameling Company.
b. Jay R. Smith Mfg Co; a division of Morris Group International.
c. Josam Company.
d. MIFAB, Inc.
e. Prier Products, Inc.
f. Sioux Chief Manufacturing Company, Inc.
g. Wade; a subsidiary of McWane Inc.
h. WATTS.
i. Zurn Industries, LLC.

2. Standard: ASME A112.6.3.
3. Pattern: Floor drain.
4. Body Material: Gray iron.
5. Seepage Flange: Required.
6. Anchor Flange: Required.
7. Clamping Device: Required.
8. Outlet: Side.
9. Coating on Interior and Exposed Exterior Surfaces: Not required.
10. Top of Body and Strainer Finish: Cast Iron.
11. Top Shape: Round.
12. Dimensions of Top or Strainer: 7” with 12-1/16” body.
13. Top Loading Classification: Medium Duty.
14. Trap Pattern: None.

B. Cast-Iron Floor Drain FD-2:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

   a. Commercial Enameling Company.
   b. Jay R. Smith Mfg Co; a division of Morris Group International.
   c. Josam Company.
   d. MIFAB, Inc.
   e. Prier Products, Inc.
   f. Sioux Chief Manufacturing Company, Inc.
   g. Wade; a subsidiary of McWane Inc.
   h. WATTS.
   i. Zurn Industries, LLC.

2. Standard: ASME A112.6.3.
3. Pattern: Floor drain.
4. Body Material: Gray iron.
5. Seepage Flange: Required.
6. Anchor Flange: Required.
7. Clamping Device: Required.
8. Outlet: Side.
9. Coating on Interior and Exposed Exterior Surfaces: Not required.
10. Sediment Bucket: Not required.
11. Top Shape: Square.
12. Dimensions of Top or Strainer: 9” with 16-1/2” body.
13. Top Loading Classification: Heavy Duty.
14. Trap Material: Cast iron.
15. Trap Pattern: None.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install floor drains at low points of surface areas to be drained. Set grates of drains flush with finished floor, unless otherwise indicated.

1. Position floor drains for easy access and maintenance.

2. Set floor drains below elevation of surrounding finished floor to allow floor drainage.

3. Coordinate first subparagraph below with Drawings.

4. Install floor-drain flashing collar or flange, so no leakage occurs between drain and adjoining flooring.

    a. Maintain integrity of waterproof membranes where penetrated.

3.2 CONNECTIONS

A. Comply with requirements in Section 221413 "Facility Storm Drainage Piping" for piping installation requirements. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to equipment to allow service and maintenance.

3.3 LABELING AND IDENTIFYING

A. Distinguish among multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations, in addition to identifying unit. Nameplates and signs are specified in Section 220553 "Identification for Plumbing Piping and Equipment."

3.4 PROTECTION

A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.

B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION 221319.13

SECTION 221413 - FACILITY STORM DRAINAGE PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Hub-and-spigot/compression type cast-iron soil pipe and fittings.
2. Hubless/no-hub, cast-iron soil pipe and fittings.
3. Solid wall schedule 40 PVC pipe and fittings.
4. Cellular core PVC piping of any type is not acceptable.
5. Specialty pipe and fittings.
6. This section also piping cleanouts for floor and wall cleanouts.
7. Piping within building up to and including 5’ from building unless indicated otherwise on drawings.

B. Related Requirements:

1. This specification is for storm drainage piping within building up to and including 5’ beyond building or as indicated on drawing.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Detail storm drainage piping. Show support locations, type of support, weight on each support, required clearances, and other details, drawn to scale, and coordinated with each other, using input from installers of the items involved.

B. Field quality-control reports.

1.4 QUALITY ASSURANCE

A. Piping materials shall bear label, stamp, or other markings of specified testing agency.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Components and installation shall be capable of withstanding the following minimum working pressure unless otherwise indicated:

1. Storm Drainage Piping: 10-foot head of water (30 kPa)..

2.2 HUB-AND-SPIGOT/COMPRESSION JOINT TYPE CAST-IRON SOIL PIPE AND FITTINGS

A. Pipe and Fittings:

1. Marked with CISPI collective trademark and NSF certification mark.
2. Class: ASTM A 74, Service class.

B. Gaskets: ASTM C 564, rubber.

2.3 HUBLESS/NO-HUB CAST-IRON SOIL PIPE AND FITTINGS

A. Pipe and Fittings:

1. Marked with CISPI collective trademark and NSF certification mark.
2. Standard: ASTM A 888 or CISPI 301.

B. CISPI, Hubless-Piping Couplings:
1. Couplings shall bear CISPI collective trademark and NSF certification mark.
2. Standards: ASTM C 1277 and CISPI 310. Description: Stainless-steel corrugated shield with stainless-steel bands and tightening devices; and ASTM C 564, rubber sleeve with integral, center pipe stop.

C. Heavy-Duty, Hubless/No-Hub Piping Couplings:
1. Standard: ASTM C 1540. Description: Stainless-steel shield with stainless-steel bands and tightening devices; and ASTM C 564, rubber sleeve with integral, center pipe stop.

D. Cast-Iron, Hubless/No-Hub Piping Couplings:
1. Standard: ASTM C 1277. Description: Two-piece ASTM A 48/A 48M, cast-iron housing; stainless-steel bolts and nuts; and ASTM C 564, rubber sleeve with integral, center pipe stop.

2.4 PVC PIPE AND FITTINGS

A. NSF Marking: Comply with NSF 14, "Plastics Piping Systems Components and Related Materials," for plastic piping components. Include marking with "NSF-drain" for plastic storm drain and "NSF-sewer" for plastic storm sewer piping.

B. Solid-Wall PVC Pipe: ASTM D 2665; drain, waste, and vent.

C. PVC Socket Fittings: ASTM D 2665, made to ASTM D 3311, drain, waste, and vent patterns and to fit Schedule 40 pipe.

2.5 SPECIALTY PIPE FITTINGS

A. Transition Couplings:

1. General Requirements: Fitting or device for joining piping with small differences in ODs or of different materials. Include end connections same size as and compatible with pipes to be joined.
2. Fitting-Type Transition Couplings: Manufactured piping coupling or specified-piping-system fitting.
3. Unshielded, Non-pressure Transition Couplings:
a. Standard: ASTM C 1173.
b. Description: Elastomeric sleeve, reducing or transition pattern. Include shear ring and corrosion-resistant-metal tension band and tightening mechanism on each end.
c. Sleeve Materials:

1) For Cast-Iron Soil Pipes: ASTM C 564, rubber.
2) For Plastic Pipes: ASTM F 477, elastomeric seal or ASTM D 5926, PVC.
3) For Dissimilar Pipes: ASTM D 5926, PVC or other material compatible with pipe materials being joined.

4. Shielded, Non-pressure Transition Couplings:
a. Standard: ASTM C 1460.
b. Description: Elastomeric or rubber sleeve with full-length, corrosion-resistant outer shield and corrosion-resistant-metal tension band and tightening mechanism on each end.
c. End Connections: Same size as and compatible with pipes to be joined.

PART 3 - EXECUTION

3.1 EARTH MOVING

A. Comply with requirements for excavating, trenching, and backfilling specified in Section 312000 "Earth Moving."

3.2 PIPING INSTALLATION

A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems.

1. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations.
2. Install piping as indicated unless deviations from layout are approved on coordination drawings.

B. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.

C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.

D. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.

E. Install piping to permit access to cleanouts.

F. Install piping at indicated slopes.

G. Install piping free of sags and bends.

H. Install fittings for changes in direction and branch connections.

I. Install piping to allow application of insulation.

J. Make changes in direction for piping using appropriate branches, bends, and long-sweep bends.

1. Do not change direction of flow more than 90 degrees.
2. Use proper size of standard increasers and reducers if pipes of different sizes are connected.

a. Reducing size of drainage piping in direction of flow is prohibited.

K. Lay buried building piping beginning at low point of each system.

1. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream.
2. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.
3. Maintain swab in piping and pull past each joint as completed.

L. Install piping at the following minimum slopes unless otherwise indicated:

1. All Storm Drainage including secondary roof drainage piping at 1 percent downward unless noted otherwise on drawings.

M. Install cast-iron soil piping according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings."

N. Install above ground PVC piping according to ASTM D 2665.

O. Install underground PVC piping according to ASTM D 2321.

P. Cleanouts:

1. Install cleanouts as shown on drawings and extend to where building storm drains connect to building storm sewers in storm drainage gravity-flow piping.

A. Floor Cleanouts (FCO):
1. Manufacturers: Jay R. Smith, Watts and Zurn.
2. Model Number: Jay R. Smith Figure Number 4031 Series.

3. Standard: ASME A112.36.2M.
4. Size: Same as connected branch, in-line or lateral piping unless noted otherwise on drawings.
5. Type: Adjustable housing.
6. Body or Ferrule: Cast iron.
7. Clamping Device: Required.
8. Outlet Connection: Inside caulk.
9. Closure: Plug Type.
10. Adjustable Housing Material: Cast iron.
11. Frame, Cover Material and Finish: Nickel-bronze, scoriated type with lettering “C.O.”
12. Frame and Cover Shape: Round.
13. Top Loading Classification: Heavy Duty.
14. Riser: ASTM A74, Service class.

B. Lateral or in-line cleanouts on horizontal piping and on vertical risers (WCO):

1. Size: match piping unless noted otherwise.
2. Material: Same as connected piping.
3. Enclosure: Countersunk type.
4. Closure Plug Size: same as piping.
5. Install cleanouts in aboveground piping and building drain piping in accordance with the following instructions and shown on drawings unless otherwise indicated:

a. Use cleanouts the same size as drainage piping up to NPS 4 (DN 100). Use NPS 4 (DN 100) for larger drainage piping unless larger cleanout is indicated.

b. Locate cleanouts at each change in direction of piping greater than 45 degrees.
c. Locate cleanouts at minimum intervals of 50 feet (15 m) for piping NPS 4 (DN 100) and smaller and 100 feet (30 m) for larger piping.
5. Locate cleanouts at base of each vertical storm piping conductor.
6. Floor Cleanout for piping below floors, install to ensure cleanout cover plate is flush with top of finished floor.
7. Cleanouts located in concealed piping, install cleanout wall mounted access panels in accordance with this specification.
8. Install test tees in vertical conductors and near floor.
9. Install through-penetration firestop assemblies for penetrations of fire- and smoke-rated assemblies.
10. Comply with requirements for appropriate specification "Penetration Firestopping".

5.

Q. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.

R. Install sleeves for piping penetrations of walls, ceilings, and floors.

1. Comply with requirements for sleeves specified in Section 220517 "Sleeves and Sleeve Seals for Plumbing Piping."

S. Install sleeve seals for piping penetrations of concrete walls and slabs.

1. Comply with requirements for sleeve seals specified in Section 220517 "Sleeves and Sleeve Seals for Plumbing Piping."

T. Install escutcheons for piping penetrations of walls, ceilings, and floors.

1. Comply with requirements for escutcheons specified in Section 220518 "Escutcheons for Plumbing Piping."

3.3 JOINT CONSTRUCTION

A. Hub-and-Spigot/Compression Joints , Cast-Iron Soil Piping Gasketed Joints: Join according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for compression joints.

B. Hubless/No-Hub, Cast-Iron Soil Piping Coupled Joints:

1. Join according to CISPI 310 and CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for hubless-piping coupling joints.

C. PVC, Non-pressure-Piping, Solvent-Cemented Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:

1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
2. PVC Piping: Join according to ASTM D 2855 and ASTM D 2665 appendices.

D. Joint Restraints and Sway Bracing:

1. Provide joint restraints and sway bracing for storm drainage piping joints to comply with the following conditions:

a. Provide axial restraint for pipe and fittings 5 inches (125 mm) and larger, upstream and downstream of all changes in direction, branches, and changes in diameter greater than two pipe sizes.
b. Provide rigid sway bracing for pipe and fittings 4 inches (100 mm and larger, upstream and downstream of all changes in direction 45 degrees and greater.
c. Provide rigid sway bracing for pipe and fittings 5 inches (125 mm) and larger, upstream and downstream of all changes in direction and branch openings.

3.4 SPECIALTY PIPE FITTING INSTALLATION

A. Transition Couplings:

1. Install transition couplings at joints of piping with small differences in ODs.
2. In Drainage Piping: Unshielded or Shielded, non pressure transition couplings.

INSTALLATION OF HANGERS AND SUPPORTS

B. Comply with requirements for hangers, supports, and anchor devices specified in Section 220529 "Hangers and Supports for Plumbing Piping and Equipment."

1. CONNECTIONS

C. Drawings indicate general arrangement of piping, fittings, and specialties.

D. Connect interior storm drainage piping to exterior storm drainage piping. Use transition fitting to join dissimilar piping materials.

E. Connect storm drainage piping to both primary and secondary roof drains and all associated storm drainage specialties.

1. Install test tees (wall cleanouts) in conductors near floor, and floor cleanouts with cover flush with floor, see drawings. Also, see drawings for cleanouts on horizontal laterals.

F. Where installing piping adjacent to equipment, allow space for service and maintenance.

G. Make connections according to the following unless otherwise indicated:

1. Install unions, in piping NPS 2 (DN 50) and smaller, adjacent to each valve and at final connection to each piece of equipment.
2. Install flanges, in piping NPS 2-1/2 (DN 65) and larger, adjacent to flanged valves and at final connection to each piece of equipment.

3.5 IDENTIFICATION

A. Identify exposed primary and secondary storm drainage piping.

B. Comply with requirements for identification specified in Section 220553 "Identification for Plumbing Piping and Equipment."

3.6 FIELD QUALITY CONTROL

A. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction.

1. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in.
2. Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.

B. Test storm drainage piping according to procedures of authorities having jurisdiction or, in absence of published procedures, as follows:

1. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired.

a. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.

2. Leave uncovered and unconcealed new, altered, extended, or replaced storm drainage piping until it has been tested and approved.

a. Expose work that was covered or concealed before it was tested.

3. Test Procedure:

a. Test storm drainage piping except outside leaders, on completion of roughing-in.
b. Close openings in piping system and fill with water to point of overflow, but not less than 10-foot head of water (30 kPa). From 15 minutes before inspection starts until completion of inspection, water level must not drop. Inspect joints for leaks.

4. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.
5. Prepare reports for tests and required corrective action.

C. Piping will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

3.7 CLEANING AND PROTECTION

A. Clean interior of piping. Remove dirt and debris as work progresses.

B. Protect drains during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.

C. Place plugs in ends of uncompleted piping at end of day and when work stops.

3.8 PIPING SCHEDULE

A. Flanges and unions may be used on aboveground pressure piping unless otherwise indicated.

B. Aboveground storm drainage piping NPS 8 and smaller shall be any of the following:

1. Hub and Spigot/Compression joint type service class, cast-iron soil pipe and fittings; gaskets; and gasketed joints.
2. Hubless/no-hub cast-iron soil pipe and fittings; CISPI hubless-piping couplings; and coupled joints as required..
3. Solid-wall schedule 40 PVC pipe, PVC socket fittings, and solvent-cemented joints.
4. Dissimilar Pipe-Material Couplings: Unshielded or Shielded, non-pressure transition couplings.

C. Underground storm drainage piping NPS 8 and smaller: shall be any of the following:

1. Hub and Spigot/Compression joint service class, cast-iron soil pipe and fittings; gaskets; and gasketed joints.
2. Solid-wall PVC schedule 40 pipe, PVC socket fittings, and solvent-cemented joints.
3. Dissimilar Pipe-Material Couplings: Unshielded or Shielded, non pressure transition couplings.

END OF SECTION 221413

SECTION 221463 - STORM WATER TREATMENT DEVICE

PART 1 - GENERAL

1.0 SUMMARY

1.1 This item shall govern the furnishing and installation of the Stormceptor® by Contech Engineered Solutions LLC, complete and operable as shown and as specified herein, in accordance with the requirements of the plans and contract documents.

1.2 The Contractor shall furnish all labor, equipment and materials necessary to install the storm water treatment device(s) (SWTD) and appurtenances specified in the Drawings and these specifications.

1.3 The manufacturer of the SWTD shall be one that is regularly engaged in the engineering design and production of systems deployed for the treatment of storm water runoff for at least five (5) years and which have a history of successful production, acceptable to the Engineer. In accordance with the Drawings, the SWTD(s) shall be a Stormceptor® device manufactured by:

Contech Engineered Solutions LLC
9025 Centre Pointe Drive
West Chester, OH, 45069
Tel: 1 800 338 1122

1.4 Related Sections

1.4.1 Section 02240: Dewatering
1.4.2 Section 02260: Excavation Support and Protection
1.4.3 Section 02315: Excavation and Fill
1.4.4 Section 02340: Soil Stabilization

1.5 All components shall be subject to inspection by the engineer at the place of manufacture and/or installation. All components are subject to being rejected or identified for repair if the quality of materials and manufacturing do not comply with the requirements of this specification. Components which have been identified as defective may be subject for repair where final acceptance of the component is contingent on the discretion of the Engineer.

1.6 The manufacturer shall guarantee the SWTD components against all manufacturer originated defects in materials or workmanship for a period of twelve (12) months from the date the components are delivered to the owner for installation. The manufacturer shall upon its determination repair, correct or replace any manufacturer originated defects advised in writing to the manufacturer within the referenced warranty period. The use of SWTD components shall be limited to the application for which it was specifically designed.

1.7 The SWTD manufacturer shall submit to the Engineer of Record a “Manufacturer’s Performance Certification” certifying that each SWTD is capable of achieving the specified removal efficiencies listed in these specifications.

1.8 No product substitutions shall be accepted unless submitted 10 days prior to project bid date, or as directed by the Engineer of Record. Submissions for substitutions require review and

approval by the Engineer of Record, for hydraulic performance, impact to project designs, equivalent treatment performance, and any required project plan and report (hydrology/hydraulic, water quality, stormwater pollution) modifications that would be required by the approving jurisdictions/agencies. Contractor to coordinate with the Engineer of Record any applicable modifications to the project estimates of cost, bonding amount determinations, plan check fees for changes to approved documents, and/or any other regulatory requirements resulting from the product substitution.

PART 2 - PRODUCTS

2.0 MATERIALS

2.1 Housing unit of stormwater treatment device shall be constructed of pre-cast or cast-in-place concrete, no exceptions. Precast concrete components shall conform to applicable sections of ASTM C 478, ASTM C 857 and ASTM C 858 and the following:
- 2.1.1 Concrete shall achieve a minimum 28-day compressive strength of 4,000 pounds per square-inch (psi);
- 2.1.2 Unless otherwise noted, the precast concrete sections shall be designed to withstand lateral earth and AASHTO H-20 traffic loads;
- 2.1.3 Cement shall be Type III Portland Cement conforming to ASTM C 150;
- 2.1.4 Aggregates shall conform to ASTM C 33;
- 2.1.5 Reinforcing steel shall be deformed billet-steel bars, welded steel wire or deformed welded steel wire conforming to ASTM A 615, A 185, or A 497.
- 2.1.6 Joints shall be sealed with preformed joint sealing compound conforming to ASTM C 990.
- 2.1.7 Shipping of components shall not be initiated until a minimum compressive strength of 4,000 psi is attained or five (5) calendar days after fabrication has expired, whichever occurs first.

2.2 Internal Components and appurtenances shall conform to the following:
- 2.2.1 Hardware shall be manufactured of Type 316 stainless steel conforming to ASTM A 320;
- 2.2.2 Fiberglass components shall conform to applicable sections of ASTM D-4097
- 2.2.3 Access system(s) conform to the following:
- 2.2.4 Manhole castings shall be designed to withstand AASHTO H-20 loadings and manufactured of cast-iron conforming to ASTM A 48 Class 30.
- 2.2.5 Ladder rungs to be provided upon request
- 2.2.6 An aluminum safety grate shall be installed within the chamber of the unit

3.0 PERFORMANCE

3.1 The HDS device shall remove oil and sediment from stormwater during frequent wet weather events and retain these pollutants within the device for later removal.

3.2 The HDS device shall be engineered, designed and sized to treat a minimum of 90 percent of the annual runoff volume using a widely accepted continuous simulation runoff model which uses rainfall data records which includes antecedent conditions as well as rainfall periods. Rainfall records should be comprised of 15-years of rainfall data or a longer continuous period if available for a given location, but in all cases at least a minimum of 5-years continuous rainfall.

3.3 The HDS device shall be capable of removing the Engineer-specified total suspended solids (TSS) load, without scouring previously captured pollutants.

3.4 The HDS device shall be sized to remove the Engineer-specified total suspended sediment

(TSS) load using the particle size distribution (PSD) in Table 3.5, in addition to adhering to sections 3.2 & 3.4 of this specification. No alternative PSDs or deviations from Table 3.5 shall be accepted.

Table 3.5 – Particle Size Distribution		
Particle Size Distribution to be used to size HDS		
Particle Diameter (Micron)	% by Mass of All Particles	Specific Gravity
1000	**5%**	**2.65**
500	**5%**	**2.65**
250	**15%**	**2.65**
150	**15%**	**2.65**
100	**10%**	**2.65**
75	**5%**	**2.65**
50	**10%**	**2.65**
20	**15%**	**2.65**
8	**10%**	**2.65**
5	**5%**	**2.65**
2	**5%**	**2.65**

4.0 EXECUTION

4.1 The contractor shall exercise care in the storage and handling of the SWTD components prior to and during installation. Any repair or replacement costs associated with events occurring after delivery is accepted and unloading has commenced shall be borne by the contractor.

4.2 The SWTD shall be installed in accordance with the manufacturer's recommendations and related sections of the contract documents. The manufacturer shall provide the contractor installation instructions and offer on-site guidance during the important stages of the installation as identified by the manufacturer at no additional expense. A minimum of 72 hours' notice shall be provided to the manufacturer prior to their performance of the services included under this subsection.

4.3 The contractor shall fill all voids associated with lifting provisions provided by the manufacturer. These voids shall be filled with non-shrinking grout providing a finished surface consistent with adjacent surfaces. The contractor shall trim all protruding lifting provisions flush with the adjacent concrete surface in a manner, which leaves no sharp points or edges.

4.4 The contractor shall removal all loose material and pooling water from the SWTD prior to the transfer of operational responsibility to the Owner.

TABLE 1: Storm Water Treatment Device Storage Capacities

STC Model	Hydrocarbon Storage Capacity (gal)	Sediment Capacity (ft3)	EOS Model	Hydrocarbon Storage Capacity (gal)
450	86	46	4-175	175

**Consist of two chamber structures in series*

END OF SECTION

SECTION 281000 - ACCESS CONTROL AND VIDEO SURVEILLANCE

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. Provide a complete and operational access control and closed-circuit television (CCTV) video surveillance system that is fully integrated with the existing systems. These integrated systems shall be an expansion of the existing main plant Lenel access control system and Schneider-Pelco CCTV system. Contractor shall furnish and install all equipment necessary to provide a working access control and CCTV system that is connected to and compatible with the existing system.

B. The work to be performed under these specifications and the accompanying Drawings include the furnishing of all labor, system design, materials, equipment, tools, supervision and services as required for the proper completion of all work. The work shall include, but is not limited to the following:
   1. The Contractor shall refer to the general conditions, instructions to bidders, and all Contract Documents regarding approval of manufacturers.
   2. Specific building doors and vehicular gates shall have card access capabilities. See Drawings for locations.
   3. Building entrances, including card access entrances, shall be monitored with magnetic door contacts. See Drawings for locations.
   4. Various areas of the site shall be equipped with surveillance cameras in environmental and protective housings. See Drawings for locations. Cameras shall view as much area as possible.
   5. All surveillance camera locations and camera views shall be approved by the Owner, the Allegheny County Sanitary Authority (ALCOSAN), and Engineer. Exact lens selection shall be determined on site.
   6. The access control system shall be connected via the local area network (LAN) to the existing access control server/workstation at the main plant. The CCTV surveillance system equipment shall be connected to the existing digital video head end equipment at the main plant. Contractor shall provide additional access control equipment and digital video equipment that are compatible to existing if existing equipment capacity is full.
   7. Provide all raceways, fittings, boxes, wiring, etc. as required for the new, fully operational access control and CCTV video surveillance system.

1.3 QUALITY ASSURANCE

A. Contractor Qualifications:

   1. The Contractor shall have completed at least three (3) similar projects within a fifty-mile radius of the City of Pittsburgh.

2. The system integrator/installation/service company must have a minimum of five (5) years' experience and provided at least five (5) similar systems.
3. Submit three (3) references of similar projects completed indicating:
   a. Brief description and location of project.
   b. Amount of contract.
   c. Name, telephone number, address of responsible person that can be contacted to ascertain validity of information.
4. The system integrator/installation/service company must be able to provide the services of a UL listed central monitoring and service station. The UL listing is indicative of a quality company.
5. Contractor shall have twenty-four (24) hour/seven (7) days per week technical assistance available via a toll free or local phone number.
6. Contractor shall provide for twenty-four (24) hour service, with less than (8) hour response time per call.
7. Contractor shall employ Microsoft Certified technicians. Contractor shall submit employee's certification.

B. Supplier (System Integrator): Before commencing work, submit data showing that the supplier is an authorized representative of the aforementioned criteria and products.

C. Basis of design for the CCTV portion of this project is by Schneider Electric Buildings Americas, 115 Gibraltar Road, Horsham, PA 19044. All related CCTV material and the installation of the CCTV material, cabling and cabling infrastructure are to be provided by the Electrical Contractor.

1.4 SUBMITTALS

A. Product Data: Submit manufacturers cut sheets for all components of the system(s).

B. Shop Drawings: In addition to product literature and catalogue cuts, shop drawings shall include, rack elevations, schematic diagrams, equipment schedules, details, detail wiring, and riser diagrams showing all cable runs and all components of the system on "D" size format sheets (24" x 36").

C. Submit product data of the following equipment (if applicable) and obtain approval before ordering:

1. Access Control System Controllers.
2. Access Control Interface Cards.
3. Access Control Readers.
4. Electric Locking Devices.
5. Door Contacts.
6. Motion Sensors.
7. Cameras.
8. Media Converters, Multiplexers, and Transmitter/Receivers.
9. Power Supplies, for locks, cameras, etc.
10. Surge arresting device.
11. Wires, Cables, and Fiber Optics.

D. Field quality control reports.

E. Operations and maintenance manual include the following:

1. Hard copies of manufacturer's specification sheets, operating specifications, design guides, user's guides for software and hardware, and PDF files on CD-ROM of the hard-copy submittal.
2. System installation and setup guides with data forms to plan and record options and setup decisions.

F. Submit sample manufacturer warranty, no less than 5 years.

1.5 GUARANTEE

A. The contractor and their surety shall guarantee both labor and material in writing for a period of one (1) year from the date of final acceptance that all materials, equipment and labor furnished by them are free from defects.

B. The contractor shall further guarantee that if any piece of material or equipment is found to be defective within the guarantee period because of faulty manufacture or faulty installation, in the opinion of the owner, he will replace and install such material or equipment without pro-rating the repairs and without any further expense to the Owner.

C. The contractor shall provide twenty-four (24) hour technical support. Twenty-four (24) hour technician dispatch shall be available. All service calls shall be responded to on-site within 8 hours by a qualified technician.

1.6 PROJECT CONDITIONS

A. Environmental Conditions: System shall be capable of withstanding the following environmental conditions without mechanical or electrical damage or degradation of operating capability:

1. Control Station: Rated for continuous operation in ambient conditions of 60 to 85 deg F (16 to 30 deg C) and a relative humidity of 20 to 80 percent, noncondensing.
2. Indoor, Controlled Environment: NEMA 250, Type 1 enclosure. System components, except the central-station control unit, installed in air-conditioned indoor environments shall be rated for continuous operation in ambient conditions of 36 to 122 deg F (2 to 50 deg C) dry bulb and 20 to 90 percent relative humidity, noncondensing.
3. Indoor, Uncontrolled Environment: NEMA 250, Type 3R enclosures. System components installed in non-temperature-controlled indoor environments shall be rated for continuous operation in ambient conditions of 0 to 122 deg F (minus 18 to plus 50 deg C) dry bulb and 20 to 90 percent relative humidity, noncondensing.
4. Outdoor Environment: NEMA 250, NEMA 250, Type 3R enclosures. System components installed in locations exposed to weather shall be rated for continuous operation in ambient conditions of minus 30 to plus 122 deg F (minus 34 to plus 50 deg C) dry bulb and 20 to 90 percent relative humidity, condensing. Rate for continuous operation where exposed to rain as specified in NEMA 250, winds up to 85 mph (137 km/h) and snow cover up to 24 inches (610 mm) thick.
5. Corrosive Environment: For system components subjected to corrosive fumes, vapors, and wind-driven salt spray in coastal zones, provide NEMA 250, Type 4X enclosures.

PART 2 - PRODUCTS

2.1 MATERIAL STANDARDS

A. The specifications listed for products represent the main components that will be in the system(s). The Contractor is responsible for supplying all necessary accessories and materials in quantities necessary for completing the project installation as per industry standards and these Contract Documents.

B. All materials and equipment in the work shall be new and of first quality, produced by manufacturers of recognized reputation for each line of material and equipment. The fact that equipment or materials offered are recently developed and untried may be sufficient justification for their rejection.

C. All materials must be vandal resistant in areas that are accessed by the public.

D. Each item of equipment shall bear a permanent, visible identification number typed or factory printed in format and size approved by the Owner. Method of applying the ID number is subject to approval by the Engineer and Owner. Furnish three (3) copies of printed lists of equipment numbers in numerical order to Owner. List shall include, at a minimum, ID number, type of equipment, and location of item. Riser drawings shall include ID number and equipment locations at appropriate equipment.

2.2 CCTV ETHERNET ELECTRICAL TO OPTICAL MEDIA CONVERTERS

A. The FMCI-PoE Series Ethernet optical fiber media converter shall provide the ability to transmit and receive 10/100 Mbps data or 10/100/1000 Mbps data over optical fiber through user-selectable small form-factor pluggable (FSFP) options.

B. The FMCI-PoE Series Ethernet optical fiber media converter shall be environmentally hardened to operate in extreme temperatures and have LED indicators provided for rapidly ascertaining equipment operating status and monitoring critical operating parameters.

C. The IP fiber media converter shall be compliant with IEEE 802.3 at Class 1-4 Power over Ethernet (Poe) 30 W at 48 VDC.

D. The IP fiber media converter shall be designed to meet NEMA TS 1/TS2 and Caltrans traffic signal control equipment environmental standards.

E. The IP fiber media converter shall meet or exceed the following design and performance specifications.
   1. Electrical Specifications
      a. Power Input 48 VDC
      b. Power Consumption
         1) FMCI-PF1PoE 60 W
         2) FMCI-PG1PoE 50 W
      c. MTBF >100,000 hours
      d. LED Indicators Optical link, data activity
   2. Data Specifications
      a. Data Interface Ethernet
      b. Data Rate
         1) FMCI-PF1PoE 10/100 Mbps

2) FMCI-PG1PoE 10/100/1000 Mbps
c. Operating Mode Electrical port, full-duplex or half- duplex; Optical port,full-duplex
3. Optical Specifications
a. Data Rate
1) FMCI-PF1PoE 100 Mbps
2) FMCI-PG1PoE 1000 Mbps
b. Wavelength FSFP dependent*
c. Number of Fibers FSFP dependent*
4. Mechanical Specifications
a. Connectors
1) Optical FSFP dependent*
2) Power Terminal block
3) Electrical RJ-45
5. Environmental/Physical Specifications
a. Operating Temperature –40deg to 75degC (–40deg to 167degF)
b. Relative Humidity 0% to 95%, noncondensing
c. Dimensions
1) FMCI-PF1PoE 10.36 x 9.51 x 2.8 cm (4.1” D x 3.7” W x 1.1” H)
2) FMCI-PG1PoE 8.4 x 6.4 x 2.8 cm (3.3” D x 2.5” W x 1.1” H)
d. Unit Weight <0.45 kg (1.00 lb)
6. Certifications
a. CE, Class E
b. FCC, Part 15
c. UL Listed
d. C-Tick
e. IEEE 802.3
f. Designed to meet NEMA TS 1/TS 2 and Caltrans traffic signal control equipment environmental standards

F. Warranty
1. 60 months, parts and labor

G. Pelco Part Numbers
1. FMCI-PF1PoE IP media converter, requires FSFP modules, 10/100 Mbps, single-channel, miniature size,Power over Ethernet
2. FMCI-PG1PoE IP media converter, requires FSFP modules, 10/100/1000 Mbps, single-channel, miniature size, Power over Ethernet

H. Requires selection of interchangeable FSFP modules (must be ordered separately) for specific fiber type, distance, and connector. Refer to FSFP Series Transceivers specification sheet for model number and description of FSFP modules. Multimode fiber must meet or exceed fiber standard ITU-T G.651. Single-mode fiber must meet or exceed fiber standard ITU-T G.652.

I. Contractor is responsible for providing any additional material and labor necessary to complete tie-in to have a fully functional CCTV system.

2.3 ACCESS CONTROL PANELS

A. Provide access control panels and components as manufactured by Lenel Systems International.

B. Intelligent System Controller (ISC):

1. The intelligent system controller (ISC) shall link the integrated access control software to all other field hardware components (card readers and input control modules, including elevator controls). The ISC shall provide full distributed processing of access control & alarm monitoring operations. Access levels, hardware configurations, and programmed alarm outputs assigned at the Administration Workstation shall be downloaded to the ISC, which shall store this information and function using its high speed, local 32-bit microprocessor. All access granted/denied decisions must be made at the ISC to provide fast responses to card reader transactions. A fully configured ISC shall require less than one-half (0.5) seconds to grant access to an authorized cardholder or deny access to an unauthorized cardholders.
2. The ISC must contain the following features:
    a. Support for host communications speed of 38.4 Kbps.
    b. Support for direct connect or local area network connection (via Category-6 cable, twisted pair, and/or fiber as required).
    c. Flash memory for real time program updates and overall host communications.
    d. Memory storage of up to 3,000 cardholders/60,000 events.
    e. Support up to 8 different card formats.
    f. Lithium battery back-up.
    g. Up to 255 access levels
    h. 512 KB on-board memory.
    i. Two dedicated inputs for tamper and power failure status.
    j. UL294 recognized & CE approve.
    k. Lenel, LNL-2220 (or compatible upgrade of the same manufacturer)

C. Dual Reader Interface Module:
1. 12/24VDC power supply.
2. Two form-C relay outputs.
3. Multi-color status LED support beeper control.
4. Support for offline reader access mode.
5. UL294 recognized & CE approve.
6. Supply interface cards as required.
7. Lenel, LNL-1320 (or compatible upgrade of the same manufacturer)

D. Input Control Module:
1. Grade B, A, and AA line supervision.
2. 12/24VDC power supply.
3. RS-485 Communications, multi-dropped (2-wire or 4-wire RS-485).
4. 16 programmable supervised or non-supervised input contacts.
5. Two form-C, 5 amp., 30VDC contacts for load switching.
6. Two dedicated inputs for tamper and power failure status.
7. Status LED for host communication and heartbeat.
8. UL294 recognized & CE approve.
9. Supply input control modules as required.
10. Lenel, LNL-1100 (or compatible upgrade of the same manufacturer)

E. Output Control Module:
1. 16 form-C, 5 amp., 30VDC contacts for load switching.
2. 12/24VDC power supply.
3. Two dedicated inputs for tamper and power failure status.
4. RS-485 communications, multi-dropped (2-wire or 4-wire RS-485).
5. Support up to 16 output panels per ISC.
6. UL294 recognized & CE approve.
7. Lenel, LNL-1200 (or compatible upgrade of the same manufacturer)

F. ISC Power Supply:

1. 12VDC and/or 24VDC fused output, switch selectable, 120VAC input, continuous supply current with enclosure, lock and open frame transformer. Power supply current rating shall be sized at 125% of the maximum load.
2. Supply cabinet to accommodate all required modules.

2.4 FIELD CONTROL DEVICES

A. Magnetic Door Contacts: Provided by the Electrical Contractor.

B. Card Reader: HID #5365 (building) HID 5375 (vehicle) or approved equivalent.

C. CCTV Camera:
1. Fixed digital color, day/night CCD camera: Pelco IME3122-IEP/IME119-IEP dome- type camclosure camera system (or equivalent). Cameras to include environmental enclosures, heaters, mounts, and pole adapters as necessary.
2. Provide outdoor rated cameras for outdoor applications.

D. CCTV Camera Power Supplies: Altronix ALTV24xx-ULCBX or approved equivalent. Provide supplies with required number of protected outputs for cameras being provided plus a minimum of (4) spare points.
1. UL listed for access control power supply, UL 1481, UL 294.
2. CSFM approved
3. MEA approved.
4. NFPA 72 compliant.
5. Class 2 outputs.
6. Field selectable 12 VDCN AC or 24 VDCN AC non power limited output.
7. Input 115V AC/60Hz.
8. Maximum charge current 1.25 amp.
9. Filtered and regulated output.
10. AC fail supervision.
11. Thermal overload protection.
12. Short circuit protection. Unit is complete with power supply, enclosure, cam lock and open frame transformers.
13. Includes battery back-up.

E. Request to Exit Device: Motion detector, Bosch DS160

F. Door Hardware: Provided by door supplier. Power supplies for electrified door hardware to be provided under this specification. Coordinate voltage and loading with door supplier.

G. Access cards will be IsoProx II proximity cards as manufactured by HID Corporation with the following features: passive proximity technology, permanent ink jet or laser engraved identification number printed onto each card, and cards shall be capable of having a photo or image printed directly onto the surface of the card with a direct print printer. Contractor shall coordinate with the Owner on exact model of cards to be provided.

H. Spare Parts - Furnish the following spare components:
1. One (1) fixed camera of each type (without enclosures).
2. One (1) proximity card reader of each type.

I. Alarmed doors – A valid card access activation shall disable the alarm for 15-seconds. An invalid card access activation or the opening of the doors without initially validating a card access shall trigger the alarm. The alarm shall sound at the security desk in the security building 200.

2.5 SURGE PROTECTION

A. Protect components from voltage surges originating external to equipment housing and entering through power, communication, signal, control, or sensing leads. Include surge protection for external wiring of each conductor-entry connection to components.
   1. Minimum Protection for Power Connections 120 V and More: Auxiliary panel suppressors complying with requirements in Division 26.
   2. Minimum Protection for Communication, Signal, Control, and Low-Voltage Power Connections: Comply with requirements in Division 26 and as recommended by manufacturer for type of line being protected.
   3. Approved manufacturers for CCTV coaxial surge protection include Ditek and Northern Technologies.

2.6 MISCELLANEOUS

A. Cabling: Refer to Specification Section Division 27.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with recommendations in SIA CP-01.

B. Comply with TIA 606-B, "Administration Standard for Commercial Telecommunications Infrastructure."

C. Product Schedules: Obtain detailed product schedules from manufacturer of access-control system or develop product schedules to suit Project. Fill in all data available from Project plans and specifications and publish as Product Schedules for review and approval.

D. In meetings with Architect and Owner, present Product Schedules and review, adjust, and prepare final setup documents. Use approved, final Product Schedules to set up system software.

3.2 SYSTEM WIRING

A. Furnish and install all wiring, conduit, and outlet boxes required for a complete system as described herein and as indicated on the drawings, all in accordance with the manufacturer’s instructions.

B. Install all wiring in conduit to meet the requirements of all national, state and local electrical codes. Size the different wires as specified by the manufacturer. Use a color code for wires throughout and tag all wires at all junction points. Wires shall test free from grounds or crosses between conductors.

C. The approximate wiring arrangement is shown on the schematic riser diagram for the access control and CCTV video surveillance systems. The exact wiring arrangement shall be in accordance with the equipment manufacturer’s requirements.

D. The equipment manufacturer shall furnish the services of a Factory Trained Technical Representative to supervise the installation of the system. The equipment manufacturer shall furnish installation drawings and technical assistance to the installing contractor. Make the final connections between equipment and the wiring system under the direct supervision of the manufacturer's representative.

E. Actual locations of all equipment, junction boxes, conduit runs etc., shall be determined at the site. Review locations of all equipment with authorized agent of ALCOSAN prior to commencing the installation. Install all items to meet the various conditions in the building and make deviations necessary without additional cost. All new wiring shall be in conduit.

3.3 CABLE APPLICATION

A. Comply with TIA 569-D, "Commercial Building Standard for Telecommunications Pathways and Spaces."

B. Cable application requirements are minimum requirements and shall be exceeded if recommended or required by manufacturer of system hardware.

C. TIA 232-F Cabling: Install at a maximum distance of 50 ft. (15 m) between terminations.

D. TIA 485-A Cabling: Install at a maximum distance of 4000 ft. (1220 m) between terminations.

E. Card Readers and Keypads:

1. Install number of conductor pairs recommended by manufacturer for the functions specified.
2. Unless manufacturer recommends larger conductors, install No. 22 AWG wire if maximum distance from controller to the reader is 250 ft. (75 m), and install No. 20 AWG wire if maximum distance is 500 ft. (150 m).
3. For greater distances, install "extender" or "repeater" modules recommended by manufacturer of the controller.
4. Install minimum No. 18 AWG shielded cable to readers and keypads that draw 50 mA or more.

F. Install minimum No. 16 AWG cable from controller to electrically powered locks. Do not exceed 250 ft. (75 m) between terminations.

G. Install minimum No. 18 AWG ac power wire from transformer to controller, with a maximum distance of 25 ft. (8 m) between terminations.

3.4 GROUNDING

A. Comply with Section 260526.

B. Comply with IEEE 1100, "Recommended Practice for Power and Grounding Electronic Equipment."

C. Ground cable shields, drain conductors, and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.

D. Bond shields and drain conductors to ground at only one point in each circuit.

E. Signal Ground:

1. Terminal: Locate in each equipment room and wiring closet; isolate from power system and equipment grounding.
2. Bus: Mount on wall of main equipment room with standoff insulators.
3. Backbone Cable: Extend from signal ground bus to signal ground terminal in each equipment room and wiring closet.

3.5 IDENTIFICATION

A. In addition to requirements in this article, comply with applicable requirements in Section 260553 and with TIA 606-B.

3.6 SYSTEM SOFTWARE AND HARDWARE

A. Develop, install, and test software and hardware, and perform database tests for the complete and proper operation of systems involved. Assign software license to Owner. Include the cost of next tier license.

3.7 FIELD QUALITY CONTROL

A. Perform tests and inspections.

1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

B. Tests and Inspections:

1. LAN Cable Procedures: Inspect for physical damage and test each conductor signal path for continuity and shorts. Use tester approved for type and kind of installed cable. Test for faulty connectors, splices, and terminations. Test according to TIA 568-C.1, "Commercial Building Telecommunications Cabling Standards - Part 1: General Requirements." Link performance for balanced twisted-pair cables must comply with minimum criteria in TIA 568-C.1.
2. Test each circuit and component of each system. Tests shall include, but are not limited to, measurements of power-supply output under maximum load, signal loop resistance, and leakage to ground where applicable. System components with battery backup shall be operated on battery power for a period of not less than 10 percent of the calculated battery operating time. Provide special equipment and software if testing requires special or dedicated equipment.
3. Operational Test: After installation of cables and connectors, demonstrate product capability and compliance with requirements. Test each signal path for end-to-end performance from each end of all pairs installed. Remove temporary connections when tests have been satisfactorily completed.

C. Devices and circuits will be considered defective if they do not pass tests and inspections.

D. Prepare test and inspection reports.

3.8 STARTUP SERVICE

A. Engage a factory-authorized service representative to supervise and assist with startup service.

1. Complete installation and startup checks according to approved procedures that were developed in "Preparation" Article and with manufacturer's written instructions.
2. Enroll and prepare badges and access cards for Owner's operators, management, and security personnel.

END OF SECTION 281500

GENERAL SHEETS

DRAWING NUMBER	SHEET NUMBER	TITLE	DATE LAST REV.
1	210-G-01	COVER SHEET	
2	210-G-02	SHEET INDEX	
3	000-SU-01	SITE UTILIZATION PLAN	
4	210-G-03	GENERAL LEGEND	
5	210-G-04	STANDARD ABBREVIATIONS	
6	210-G-05	CODE SUMMARY	
7	210-G-06	LIFE SAFETY PLANS	

CIVIL SHEETS

8	210-C-01	SITE ABBREVIATIONS & LEGEND PLAN	
9	210-C-10	PHASE I OVERALL DIMENSION PLAN	
10	210-C-11	PHASE I DEMOLITION PLAN	
11	210-C-12	PHASE I DIMENSION PLAN	
12	210-C-13	PHASE I GRADING PLAN	
13	210-C-14	PHASE I UTILITY PLAN	
14	210-C-20	PHASE 1 UTILITY PROFILE	
15	210-C-21	PHASE 1 UTILITY PROFILE	
16	210-C-30	PHASE I CONSTRUCTION DETAILS	
17	210-C-31	PHASE I CONSTRUCTION DETAILS	
18	210-C-32	PHASE I CONSTRUCTION DETAILS	
19	210-C-33	PHASE I CONSTRUCTION DETAILS	
20	210-C-34	PHASE I CONSTRUCTION DETAILS	
21	210-C-35	PHASE I CONSTRUCTION DETAILS	
22	210-C-40	PHASE I EROSION AND SEDIMENT CONTROL PLAN	
23	210-C-50	PHASE I EROSION AND SEDIMENT CONTROL NOTES & DETAILS	
24	210-C-51	PHASE I EROSION AND SEDIMENT CONTROL NOTES & DETAILS	
25	210-C-52	PHASE I EROSION AND SEDIMENT CONTROL NOTES & DETAILS	

LANDSCAPE SHEETS

26	210-L-100	LANDSCAPE DEMOLITION PLAN	
27	210-L-101	LANDSCAPE PLAN AND PLANTINGS	
28	210-L-102	LANDSCAPE DETAILS	
29	210-L-103	LANDSCAPE DETAILS	
30	210-L-104	LANDSCAPE DETAILS	
31	210-L-105	LANDSCAPE DETAILS	
32	210-L-106	LANDSCAPE DETAILS	

ARCHITECTURAL SHEETS

33	210-A-10	GROUND LEVEL PLAN	
34	210-A-11	LEVEL 2 PLAN	
35	210-A-12	LEVEL 3 PLAN	
36	210-A-13	LEVEL 4 PLAN	
37	210-A-14	LEVEL 5 PLAN	
38	210-A-15	LEVEL 6 PLAN (ROOF LEVEL)	
39	210-A-20	EAST BUILDING ELEVATIONS	
40	210-A-21	NORTH BUILDING ELEVATIONS	
41	210-A-22	WEST BUILDING ELEVATIONS	
42	210-A-23	SOUTH BUILDING ELEVATIONS	
43	210-A-30	BUILDING SECTIONS	
44	210-A-31	WALL SECTIONS	
45	210-A-32	WALL SECTIONS	
46	210-A-33	WALL SECTIONS	
47	210-A-40	ENTRY/EXIT - ENLARGED PLAN	
48	210-A-41	STAIR 1/ELEVATOR - ENLARGED PLANS	
49	210-A-42	STAIR 1 / ELEVATOR - ENLARGED 3RD & 4TH LEVEL PLANS	
50	210-A-43	STAIR 1/ELEVATOR - ENLARGED 5TH LEVEL & ROOF PLANS	
51	210-A-44	STAIR 1/ELEVATOR - ELEVATIONS	
52	210-A-45	STAIR 1/ELEVATOR - SECTIONS	
53	210-A-50	STAIR 2 - ENLARGED PLANS	
54	210-A-51	STAIR 2 - ELEVATIONS & SECTION	
55	210-A-60	STAIR 3 ENLARGED PLANS AND SECTION	
56	210-AS-50	ROOM / DOOR SCHEDULES AND DETAILS	
57	210-AD-60	STOREFRONT DETAILS - NON-INSULATING GLAZING (4.5")	
58	210-AD-61	STOREFRONT DETAILS - NON-INSULATING GLAZING (4.5")	
59	210-AD-62	CURTAINWALL DETAILS - NON INSULATING GLAZING	
60	210-AD-63	TYPICAL STAIR AND RAILING DETAILS - SLEEVE MOUNT	
61	210-AD-64	TYPICAL STAIR AND RAILING DETAILS	
62	210-AD-65	SECURITY GRILLE DETAILS	
63	210-AD-66	SECURITY GRILLE ELEVATIONS	
64	210-AD-67	TYPICAL DETAILS	
65	210-AD-68	TYPICAL DETAILS	
66	210-AD-69	MISC. THERMAL & MOISTURE PROTECTION DETAIL	
67	210-AD-70	MISC. THERMAL & MOISTURE PROTECTION DETAIL	
68	210-AD-71	MASONRY DETAILS	

ARCHITECTURAL SHEETS (CONT.)

DRAWING NUMBER	SHEET NUMBER	TITLE	DATE LAST REV.
69	210-AG-10	GROUND LEVEL SIGNAGE PLAN	
70	210-AG-11	LEVEL 2 SIGNAGE PLAN	
71	210-AG-12	LEVEL 3 SIGNAGE PLAN	
72	210-AG-13	LEVEL 4 SIGNAGE PLAN	
73	210-AG-14	LEVEL 5 SIGNAGE PLAN	
74	210-AG-15	LEVEL 6 SIGNAGE PLAN (ROOF LEVEL)	
75	210-AG-20	SIGNAGE ELEVATIONS - TYPE A	
76	210-AG-21	SIGNAGE ELEVATIONS - TYPE B, C, D	
77	210-AG-22	SIGNAGE ELEVATIONS - TYPE P AND R	
78	210-AG-30	TYPICAL SIGNAGE MOUNTING DETAILS	

STRUCTURAL SHEETS

79	210-S-01	DESIGN CRITERIA AND DESIGN LOAD DIAGRAMS	
80	210-S-02	GENERAL NOTES	
81	210-S-03	GENERAL NOTES	
82	210-S-04	GENERAL NOTES	
83	210-S-05	GENERAL NOTES	
84	210-S-10	CAISSON PLAN (DRILLED PIERS)	
85	210-S-11	FOUNDATION PLAN	
86	210-S-12	GROUND LEVEL PLAN	
87	210-S-13	LEVEL 2 FRAMING PLAN	
88	210-S-14	LEVEL 3 FRAMING PLAN	
89	210-S-15	LEVEL 4 FRAMING PLAN	
90	210-S-16	LEVEL 5 FRAMING PLAN	
91	210-S-17	LEVEL 6 FRAMING PLAN	
92	210-S-20	CAISSON DETAILS	
93	210-S-21	FOUNDATION WALL ELEVATIONS	
94	210-S-22	FOUNDATION WALL ELEVATIONS	
95	210-S-23	FOUNDATION SECTIONS	
96	210-S-24	FOUNDATION SECTIONS	
97	210-S-30	STAIR 1 / ELEVATOR FOUNDATION PLAN	
98	210-S-31	STAIR 1/ELEVATOR - ENLARGED PLANS	
99	210-S-32	STAIR 1/ELEVATOR - ENLARGED PLANS	
100	210-S-33	STAIR 1/ ELEVATOR FOUNDATION SECTIONS	
101	210-S-34	STAIR 1/ ELEVATOR FOUNDATION SECTIONS 2	
102	210-S-35	STAIR 1/ ELEVATOR SECTIONS	
103	210-S-40	STAIR 2 - ENLARGED PLANS	
104	210-S-41	STAIR 2 SECTIONS	
105	210-S-50	STAIR 3 ENLARGED PLANS AND SECTIONS	
106	210-S-60	BUILDING ELEVATIONS	
107	210-S-61	TYPICAL PERFORATED SCREEN FRAMING ELEVATIONS	
108	210-S-62	METAL PANELS FRAMING SECTIONS	
109	210-S-63	SECURITY GRILLE PLANS AND DETAILS	
110	210-SS-01	POST-TENSIONED BEAM SCHEDULE	
111	210-SS-02	POST-TENSIONED BEAM SCHEDULE	
112	210-SS-03	COLUMN SCHEDULE	
113	210-SD-01	TYPICAL SLAB ON GRADE DETAILS	
114	210-SD-02	TYPICAL DETAILS	
115	210-SD-03	TYPICAL FOUNDATION DETAILS	
116	210-SD-04	TYPICAL MASONRY DETAILS	
117	210-SD-05	TYPICAL MASONRY DETAILS	
118	210-SD-10	TYPICAL POST-TENSIONING DETAILS	
119	210-SD-11	TYPICAL POST-TENSIONING DETAILS	
120	210-SD-12	TYPICAL POST-TENSIONING DETAILS	
121	210-SD-13	TYPICAL POST-TENSIONING DETAILS	
122	210-SD-14	TYPICAL POST-TENSIONING DETAILS	
123	210-SD-15	TYPICAL POST-TENSIONING DETAILS	
124	210-SD-16	POST - TENSIONING BARRIER CABLE DETAILS	
125	210-SD-17	POST - TENSIONING BARRIER CABLE DETAILS	
126	210-SD-20	CONCRETE COLUMN DETAILS	
127	210-SD-21	CONCRETE COLUMN DETAILS	

MECHANICAL SHEETS

DRAWING NUMBER	SHEET NUMBER	TITLE	DATE LAST REV.
128	210-H-01	HVAC SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES	
129	210-H-10	GROUND LEVEL PARKING GARAGE HVAC PLAN	
130	210-H-11	LEVEL 6 PARKING GARAGE HVAC PLAN	
131	210-HD-01	HVAC DETAILS	
132	210-HS-01	HVAC SCHEDULES AND CONTROL DIAGRAMS	

PLUMBING SHEETS

133	210-P-01	PLUMBING SYMBOLS, ABBREVIATIONS AND GENERAL NOTES	
134	210-P-10	GROUND LEVEL STORM PLUMBING PLAN	
135	210-P-11	LEVEL 2 STORM PLUMBING PLAN	
136	210-P-12	LEVEL 3 STORM PLUMBING PLAN	
137	210-P-13	LEVEL 4 STORM PLUMBING PLAN	
138	210-P-14	LEVEL 5 STORM PLUMBING PLAN	
139	210-P-15	LEVEL 6 STORM PLUMBING PLAN	
140	210-P-20	GROUND LEVEL DOMESTIC PLUMBING PLAN	
141	210-P-21	LEVEL 2 DOMESTIC PLUMBING	
142	210-P-22	LEVEL 3 DOMESTIC PLUMBING	
143	210-P-23	LEVEL 4 DOMESTIC PLUMBING	
144	210-P-24	LEVEL 5 DOMESTIC PLUMBING	
145	210-P-25	LEVEL 6 DOMESTIC PLUMBING	

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146	210-F-01	FIRE PROTECTION COVER SHEET	
147	210-F-10	GROUND LEVEL FIRE PROTECTION PLAN	
148	210-F-11	LEVEL 2 FIRE PROTECTION PLAN	
149	210-F-12	LEVEL 3 FIRE PROTECTION PLAN	
150	210-F-13	LEVEL 4 FIRE PROTECTION PLAN	
151	210-F-14	LEVEL 5 FIRE PROTECTION PLAN	
152	210-F-15	LEVEL 6 FIRE PROTECTION PLAN	

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153	210-E-01	ELECTRICAL GENERAL NOTES	
154	210-E-02	ELECTRICAL ABREVIATIONS & LEGEND	
155	000-EDM-01	ELECTRICAL SITE DEMOLITION PLAN	
156	000-ESP-01	ELECTRICAL SITE PLAN - PARKING GARAGE	
157	000-ESP-02	ELECTRICAL SITE PLAN - IT SYSTEMS	
158	210-E-10	GROUND LEVEL PARKING GARAGE ELECTRICAL PLAN	
159	210-E-11	LEVEL 2 PARKING GARAGE ELECTRICAL PLAN	
160	210-E-12	LEVEL 3 PARKING GARAGE ELECTRICAL PLAN	
161	210-E-13	LEVEL 4 PARKING GARAGE ELECTRICAL PLAN	
162	210-E-14	LEVEL 5 PARKING GARAGE ELECTRICAL PLAN	
163	210-E-15	LEVEL 6 PARKING GARAGE ELECTRICAL PLAN	
164	210-E-20	ENLARGED ELECTRICAL PLANS	
165	210-ESL-01	ELECTRICAL ONE-LINE AND RISER DIAGRAMS	
166	210-ED-01	ELECTRICAL DETAILS	
167	210-ED-02	ELECTRICAL DETAILS	
168	210-ED-03	ELECTRICAL DETAILS	
169	210-ES-01	ELECTRICAL SCHEDULES	

DRAWING NOMENCLATURE

SHEET NUMBER — DESCRIPTION

xxx-xxx-xx

- SEQUENTIAL NUMBER (2 DIGITS)
- ABBREVIATION FOR TYPE OF DRAWING (3 DIGITS MAX)
- LOCATION/FACILITY (3 DIGITS)

Designed by: G ABDALLAH
Drawn by: G ABDALLAH
Checked by: G ABDALLAH

REVISION

REV No.	DATE	DESCRIPTION	APPV
2	3/11/21	ADDENDUM 2	

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210-G-02
SHEET INDEX

Contract: 1735
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Date: 01 / 13 / 2021
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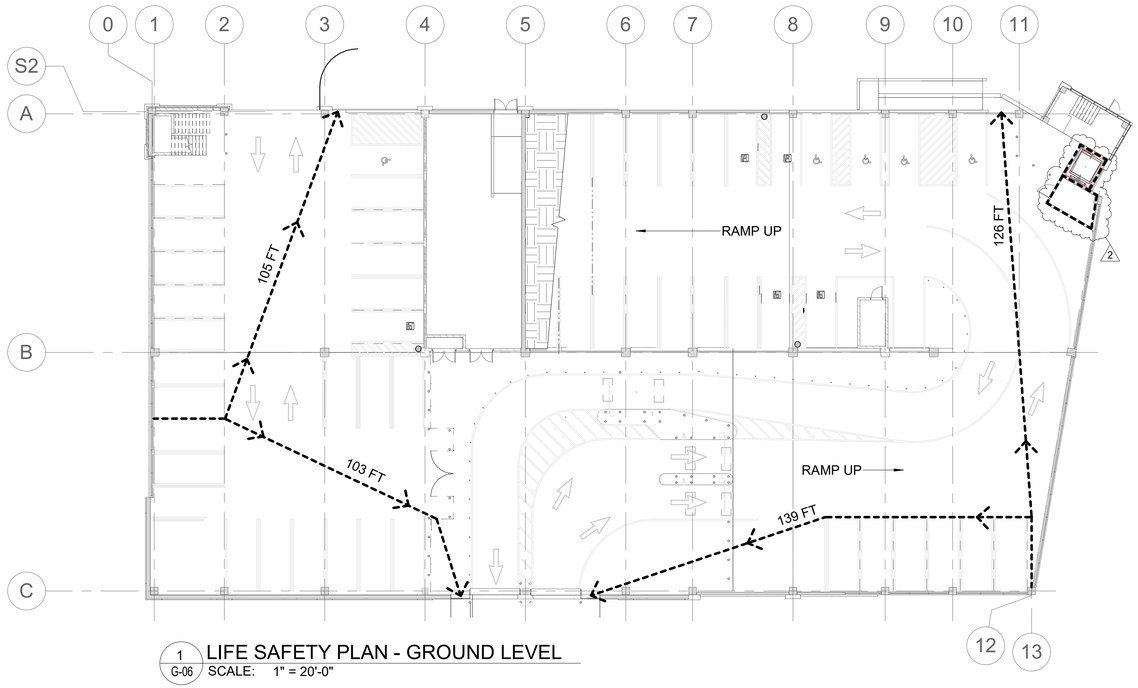
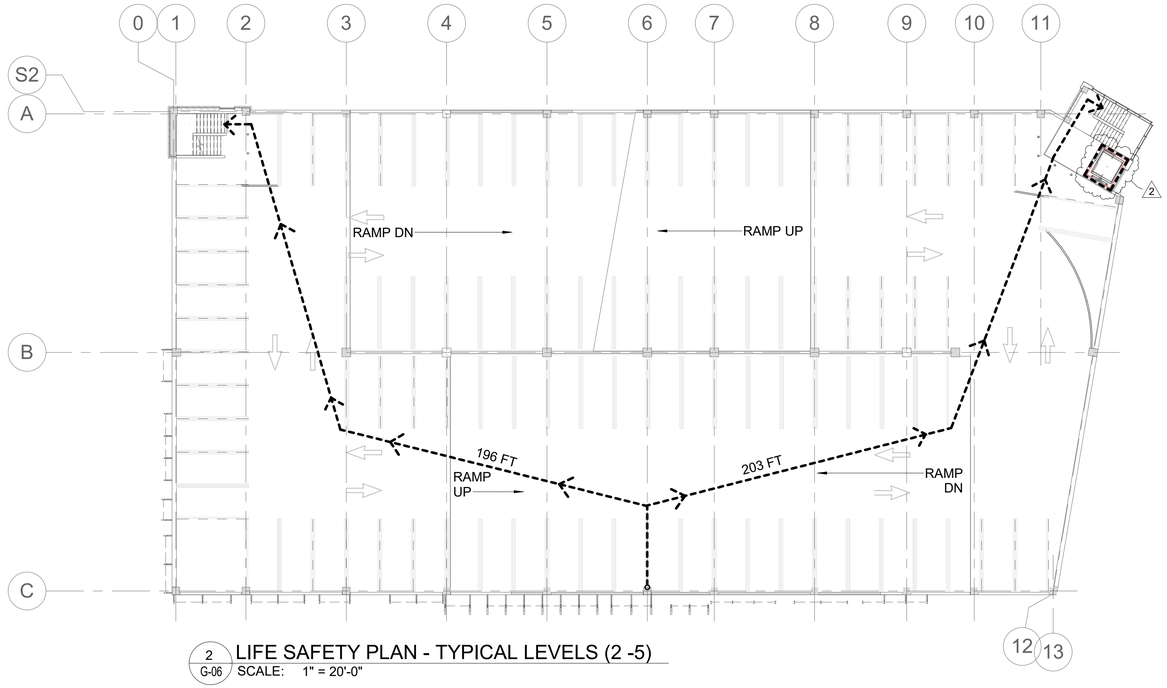
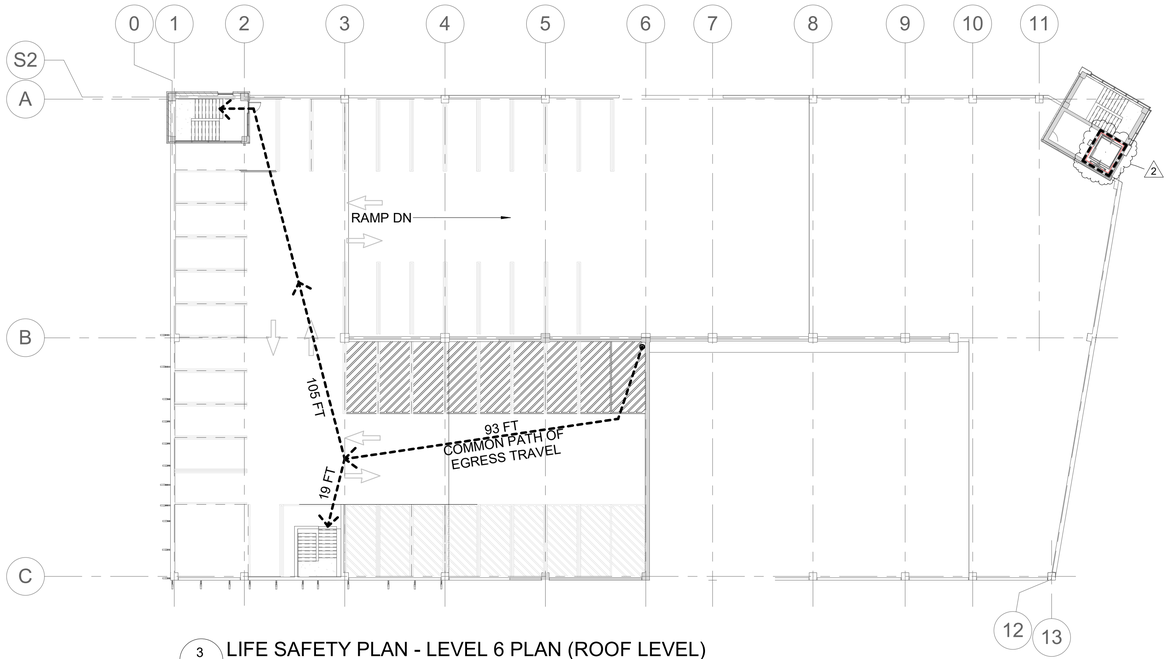


1 G-06 LIFE SAFETY PLAN - GROUND LEVEL
SCALE: 1" = 20'-0"



2 G-06 LIFE SAFETY PLAN - TYPICAL LEVELS (2 -5)
SCALE: 1" = 20'-0"

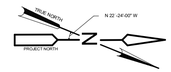


3 G-06 LIFE SAFETY PLAN - LEVEL 6 PLAN (ROOF LEVEL)
SCALE: 1" = 20'-0"

LIFE SAFETY PLAN LEGEND

260 FT — USER, TRAVEL DISTANCE (T.D) AND PATH

2HR (2) — FIRE RATING OF ELEVATOR SHAFT WALLS & ELEVATOR CONTROL ROOM (2)



SCALE: 1" = 20'

20' 0' 10' 20' 40' 80'

Designed by: Designer	REVISION		
	REV No.	DATE	DESCRIPTION	APPV
Drawn by: Author	2	3/11/21	ADDENDUM 2	
Checked by: Checker				

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210-G-06
LIFE SAFETY PLANS

Contract:	1735
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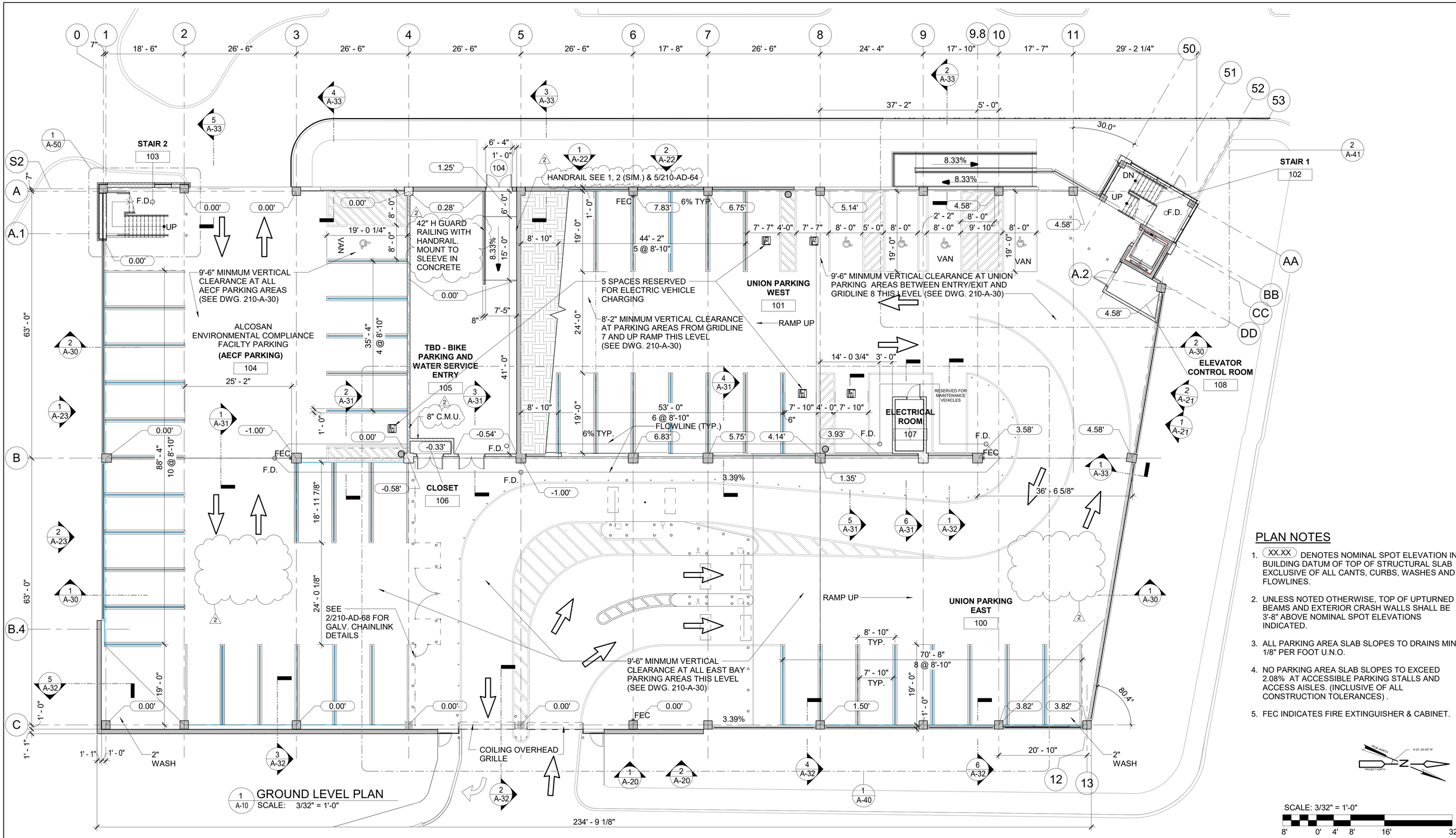

GROUND LEVEL PLAN

1 A-10 SCALE: 3/32" = 1'-0"

PLAN NOTES

1. XX.XX DENOTES NOMINAL SPOT ELEVATION IN BUILDING DATUM OF TOP OF STRUCTURAL SLAB EXCLUSIVE OF ALL CANTS, CURBS, WASHES AND FLOWLINES.
2. UNLESS NOTED OTHERWISE, TOP OF UPTURNED BEAMS AND EXTERIOR CRASH WALLS SHALL BE 3'-8" ABOVE NOMINAL SPOT ELEVATIONS INDICATED.
3. ALL PARKING AREA SLAB SLOPES TO DRAINS MIN. 1/8" PER FOOT U.N.O.
4. NO PARKING AREA SLAB SLOPES TO EXCEED 2.08% AT ACCESSIBLE PARKING STALLS AND ACCESS AISLES. (INCLUSIVE OF ALL CONSTRUCTION TOLERANCES) .
5. FEC INDICATES FIRE EXTINGUISHER & CABINET.

SCALE: 3/32" = 1'-0"

8' 0' 4' 8' 16' 32'

Designed by:	REVISION			
R LUTZ	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	2	3/11/21	ADDENDUM 2	
R MANZO				
Checked by:				
P HUTCHISON				

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210-A-10
GROUND LEVEL PLAN

Contract:	1735
CAD File Name:	210A10.DWG
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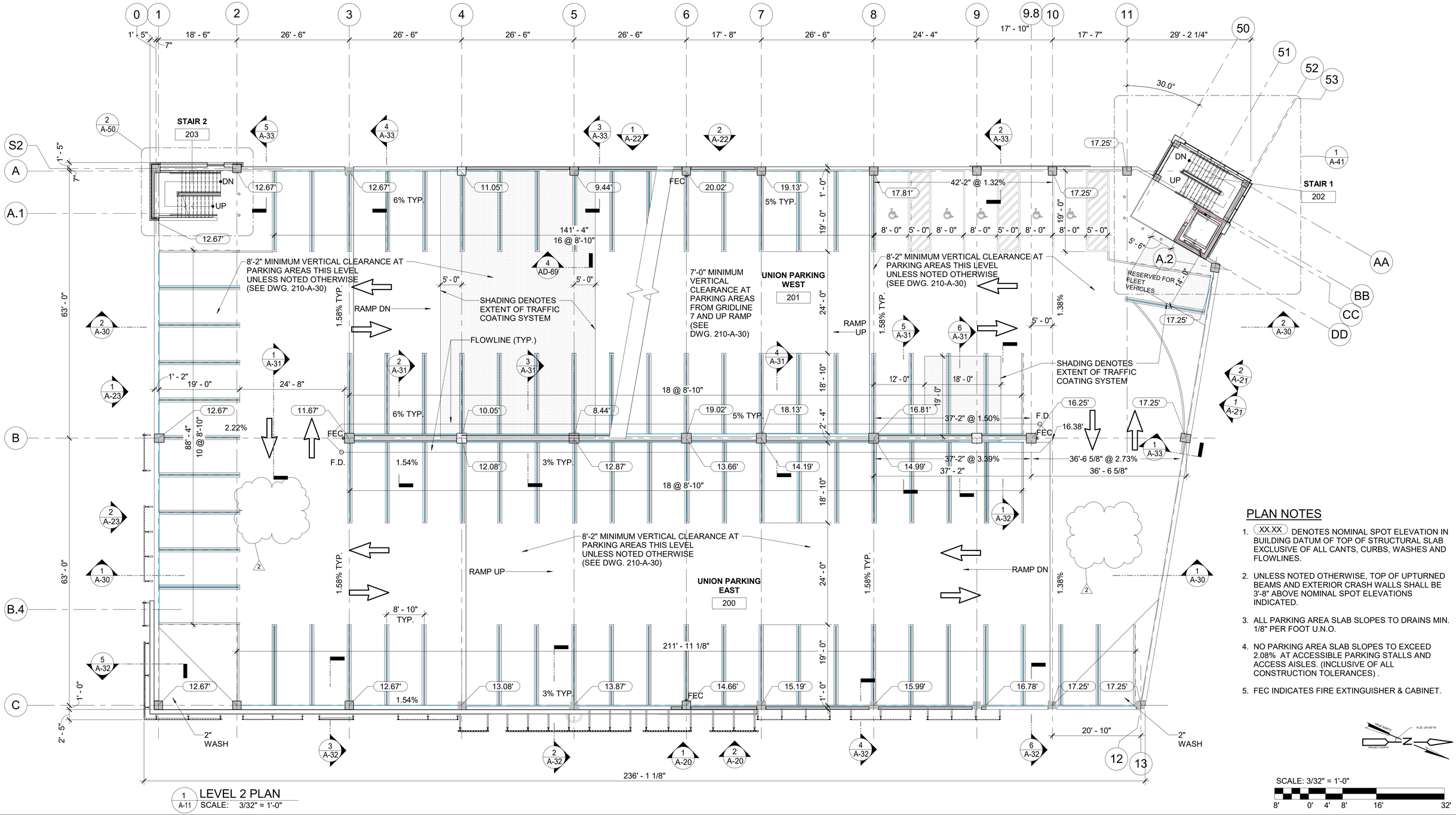

1 A-11 LEVEL 2 PLAN
SCALE: 3/32" = 1'-0"

PLAN NOTES

1. (XX.XX) DENOTES NOMINAL SPOT ELEVATION IN BUILDING DATUM OF TOP OF STRUCTURAL SLAB EXCLUSIVE OF ALL CANTS, CURBS, WASHES AND FLOWLINES.
2. UNLESS NOTED OTHERWISE, TOP OF UPTURNED BEAMS AND EXTERIOR CRASH WALLS SHALL BE 3'-8" ABOVE NOMINAL SPOT ELEVATIONS INDICATED.
3. ALL PARKING AREA SLAB SLOPES TO DRAINS MIN. 1/8" PER FOOT U.N.O.
4. NO PARKING AREA SLAB SLOPES TO EXCEED 2.08% AT ACCESSIBLE PARKING STALLS AND ACCESS AISLES. (INCLUSIVE OF ALL CONSTRUCTION TOLERANCES) .
5. FEC INDICATES FIRE EXTINGUISHER & CABINET.

TRUE NORTH
N 22° 24' 00" W
PROJECT NORTH

SCALE: 3/32" = 1'-0"
8' 0' 4' 8' 16' 32'

Designed by: R LUTZ	REVISION			
	REV No.	DATE	DESCRIPTION	APPV
Drawn by: R MANZO	2	3/11/21	ADDENDUM 2	
Checked by: P HUTCHISON				

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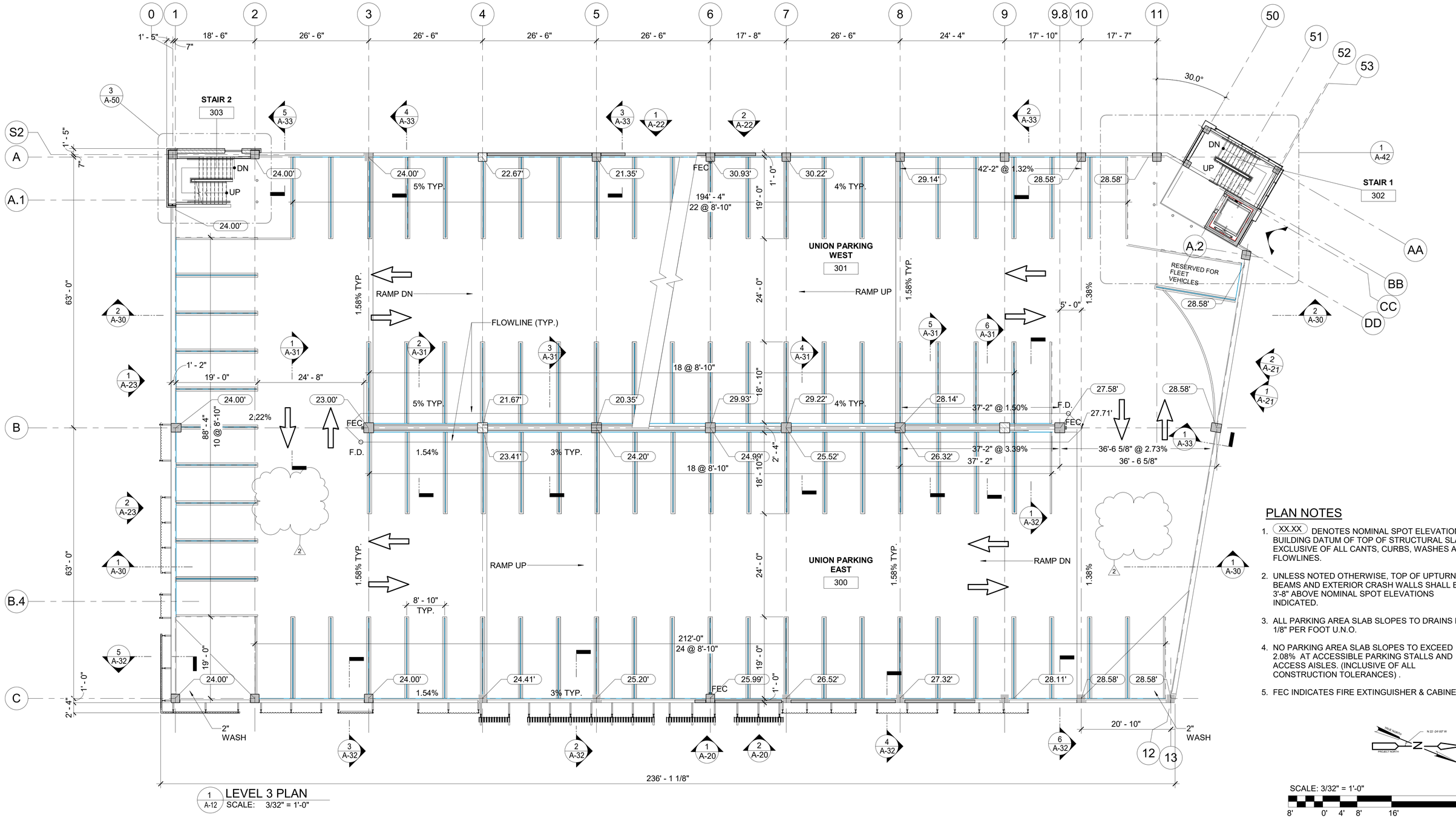
ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-A-11
LEVEL 2 PLAN

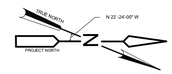
Contract: 1735
CAD File Name: 210A11.DWG
Date: 01 / 13 / 2021



1 A-12 LEVEL 3 PLAN
SCALE: 3/32" = 1'-0"

PLAN NOTES

1. XX.XX DENOTES NOMINAL SPOT ELEVATION IN BUILDING DATUM OF TOP OF STRUCTURAL SLAB EXCLUSIVE OF ALL CANTS, CURBS, WASHES AND FLOWLINES.
2. UNLESS NOTED OTHERWISE, TOP OF UPTURNED BEAMS AND EXTERIOR CRASH WALLS SHALL BE 3'-8" ABOVE NOMINAL SPOT ELEVATIONS INDICATED.
3. ALL PARKING AREA SLAB SLOPES TO DRAINS MIN. 1/8" PER FOOT U.N.O.
4. NO PARKING AREA SLAB SLOPES TO EXCEED 2.08% AT ACCESSIBLE PARKING STALLS AND ACCESS AISLES. (INCLUSIVE OF ALL CONSTRUCTION TOLERANCES) .
5. FEC INDICATES FIRE EXTINGUISHER & CABINET.



SCALE: 3/32" = 1'-0"
8' 0' 4' 8' 16' 32'

Designed by:	REVISION			
R LUTZ	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	2	3/11/21	ADDENDUM 2	
R MANZO				
Checked by:				
P HUTCHISON				

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REGISTERED ARCHITECT COMMONWEALTH OF PENNSYLVANIA

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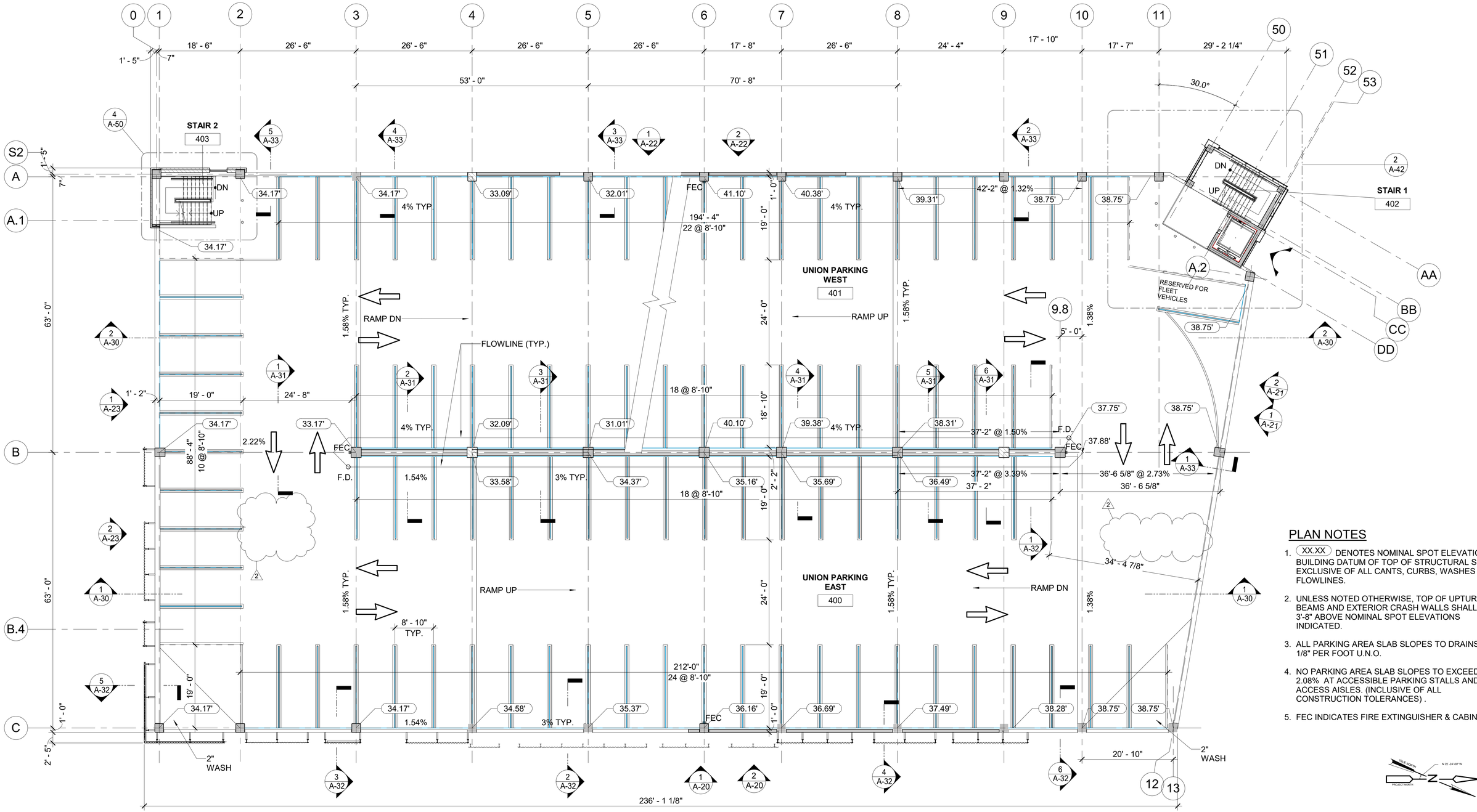
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-A-12
LEVEL 3 PLAN

Contract: 1735
CAD File Name: 210A12.DWG
Date: 01 / 13 / 2021
Sheet: 35 of 169



1 A-13 LEVEL 4 PLAN
SCALE: 3/32" = 1'-0"

PLAN NOTES

1. XX.XX DENOTES NOMINAL SPOT ELEVATION IN BUILDING DATUM OF TOP OF STRUCTURAL SLAB EXCLUSIVE OF ALL CANTS, CURBS, WASHES AND FLOWLINES.
2. UNLESS NOTED OTHERWISE, TOP OF UPTURNED BEAMS AND EXTERIOR CRASH WALLS SHALL BE 3'-8" ABOVE NOMINAL SPOT ELEVATIONS INDICATED.
3. ALL PARKING AREA SLAB SLOPES TO DRAINS MIN. 1/8" PER FOOT U.N.O.
4. NO PARKING AREA SLAB SLOPES TO EXCEED 2.08% AT ACCESSIBLE PARKING STALLS AND ACCESS AISLES. (INCLUSIVE OF ALL CONSTRUCTION TOLERANCES) .
5. FEC INDICATES FIRE EXTINGUISHER & CABINET.

TRUE NORTH
N 22° 24' 00" W
PROJECT NORTH

SCALE: 3/32" = 1'-0"
8' 0' 4' 8' 16' 32'

Designed by:	REVISION			
R LUTZ	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	2	3/11/21	ADDENDUM 2	
R MANZO				
Checked by:				
P HUTCHISON				

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ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-A-13
LEVEL 4 PLAN

Contract:	1735
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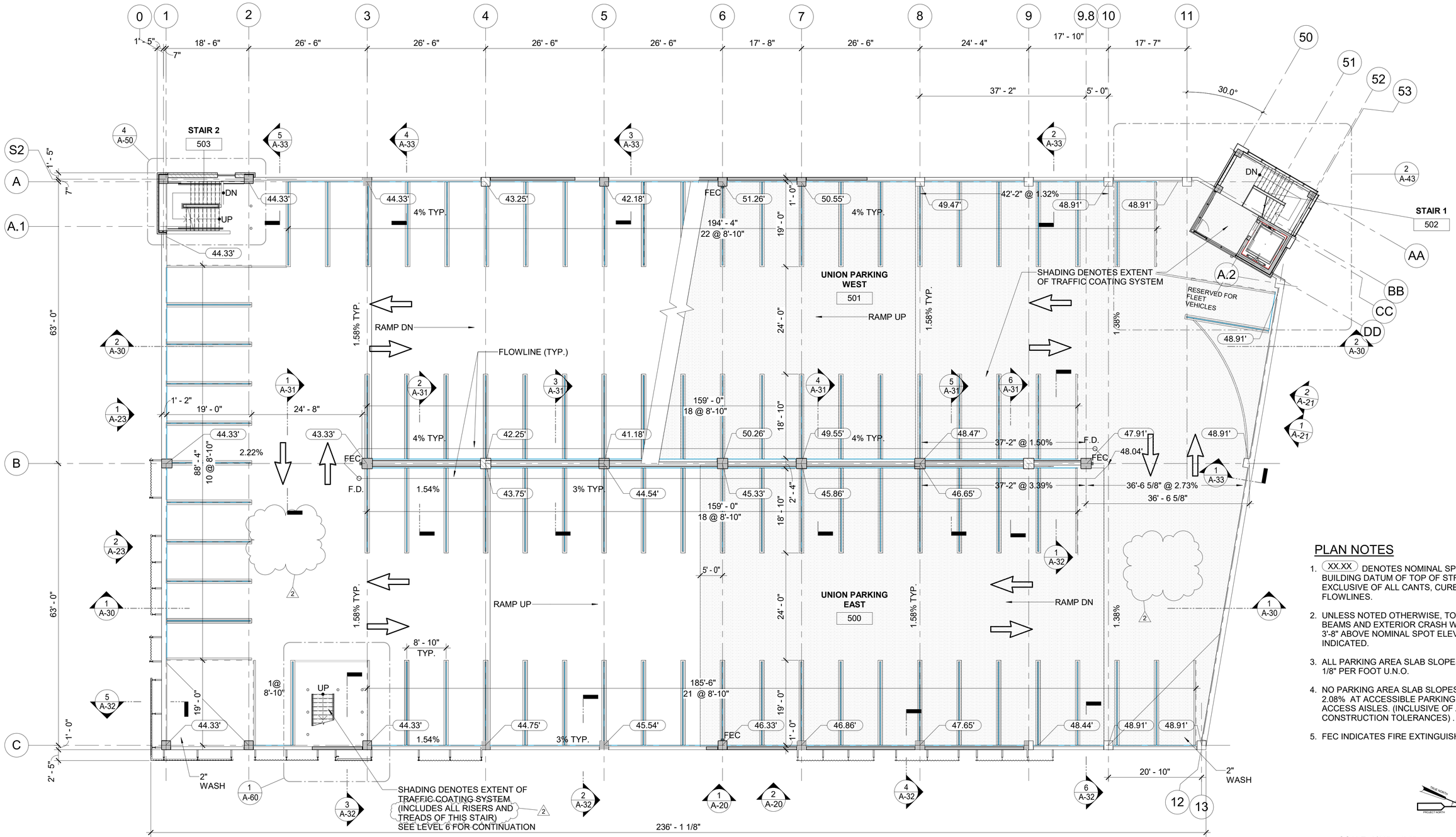
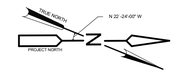


1 A-14 LEVEL 5 PLAN
SCALE: 3/32" = 1'-0"

PLAN NOTES

1. (XX.XX) DENOTES NOMINAL SPOT ELEVATION IN BUILDING DATUM OF TOP OF STRUCTURAL SLAB EXCLUSIVE OF ALL CANTS, CURBS, WASHES AND FLOWLINES.
2. UNLESS NOTED OTHERWISE, TOP OF UPTURNED BEAMS AND EXTERIOR CRASH WALLS SHALL BE 3'-8" ABOVE NOMINAL SPOT ELEVATIONS INDICATED.
3. ALL PARKING AREA SLAB SLOPES TO DRAINS MIN. 1/8" PER FOOT U.N.O.
4. NO PARKING AREA SLAB SLOPES TO EXCEED 2.08% AT ACCESSIBLE PARKING STALLS AND ACCESS AISLES. (INCLUSIVE OF ALL CONSTRUCTION TOLERANCES) .
5. FEC INDICATES FIRE EXTINGUISHER & CABINET.



SCALE: 3/32" = 1'-0"
8' 0' 4' 8' 16' 32'

Designed by:	REVISION			
R LUTZ	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	2	3/11/21	ADDENDUM 2	
R MANZO				
Checked by:				
P HUTCHISON				

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ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-A-14
LEVEL 5 PLAN

Contract:	1735
CAD File Name:	210A14.DWG
Date:	01 / 13 / 2021
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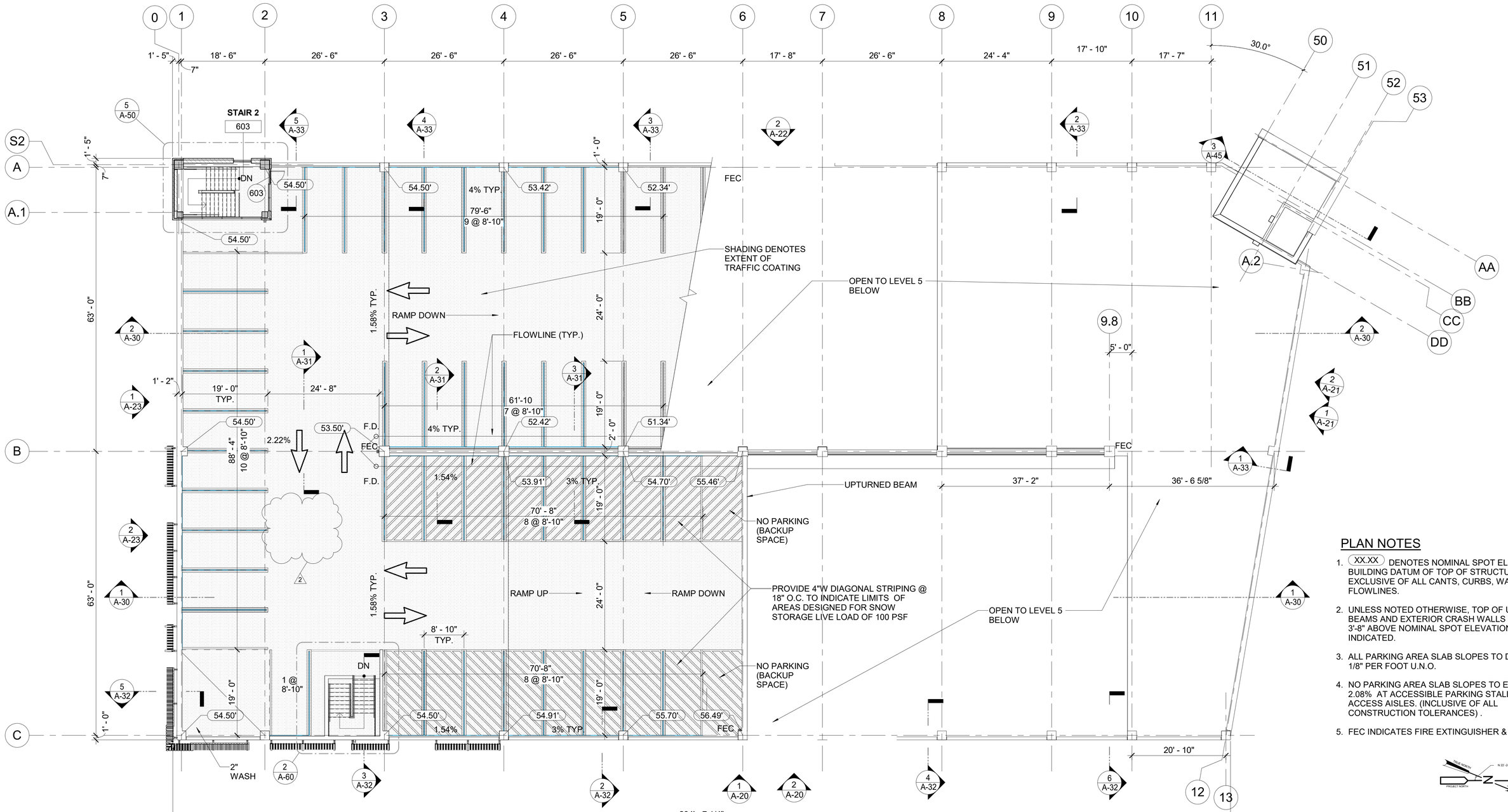

PLAN NOTES

1. (XX.XX) DENOTES NOMINAL SPOT ELEVATION IN BUILDING DATUM OF TOP OF STRUCTURAL SLAB EXCLUSIVE OF ALL CANTS, CURBS, WASHES AND FLOWLINES.
2. UNLESS NOTED OTHERWISE, TOP OF UPTURNED BEAMS AND EXTERIOR CRASH WALLS SHALL BE 3'-8" ABOVE NOMINAL SPOT ELEVATIONS INDICATED.
3. ALL PARKING AREA SLAB SLOPES TO DRAINS MIN. 1/8" PER FOOT U.N.O.
4. NO PARKING AREA SLAB SLOPES TO EXCEED 2.08% AT ACCESSIBLE PARKING STALLS AND ACCESS AISLES. (INCLUSIVE OF ALL CONSTRUCTION TOLERANCES) .
5. FEC INDICATES FIRE EXTINGUISHER & CABINET.

SCALE: 3/32" = 1'-0"

8' 0' 4' 8' 16' 32'

1 A-15 LEVEL 6 PLAN (ROOF LEVEL)
SCALE: 3/32" = 1'-0"

Designed by:	REVISION			
R LUTZ	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	2	3/11/21	ADDENDUM 2	
R MANZO				
Checked by:				
P HUTCHISON				

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210-A-15
LEVEL 6 PLAN (ROOF LEVEL)

Contract:	1735
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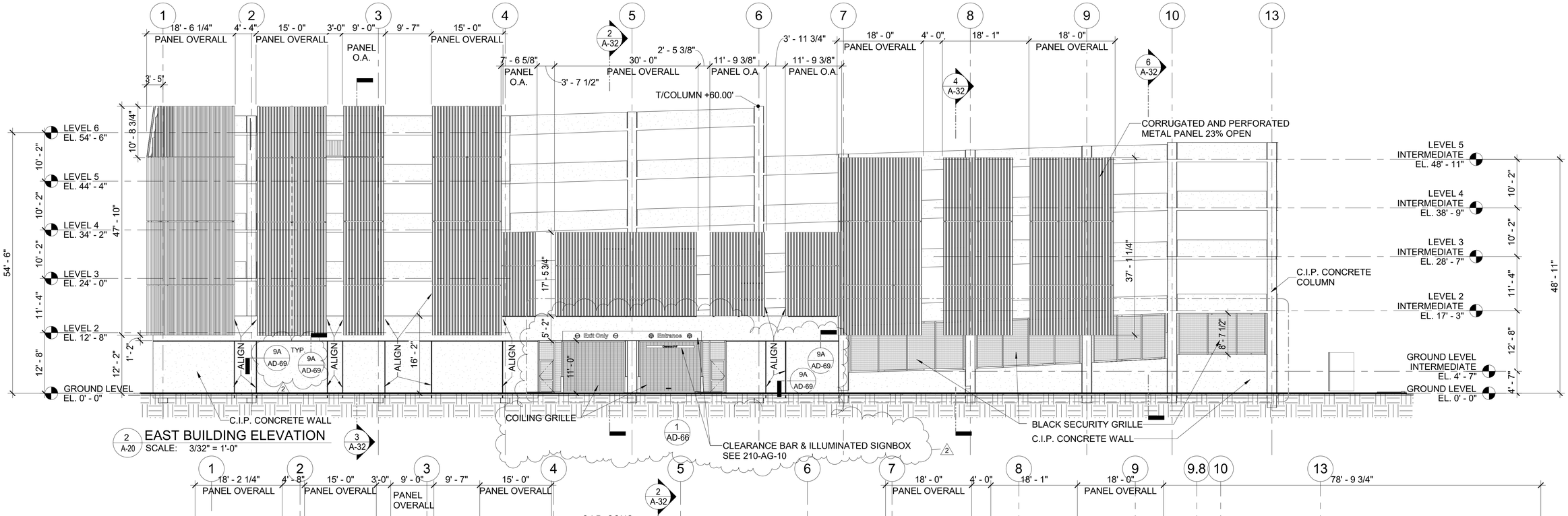

Designed by: R LUTZ	REVISION			
Drawn by: R MANZO	REV No.	DATE	DESCRIPTION	APPV
Checked by: P HUTCHISON	2	3/11/21	ADDENDUM 2	

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210-A-20
EAST BUILDING ELEVATIONS

Contract:	1735
CAD File Name:	210A20.DWG
Date:	01 / 13 / 2021
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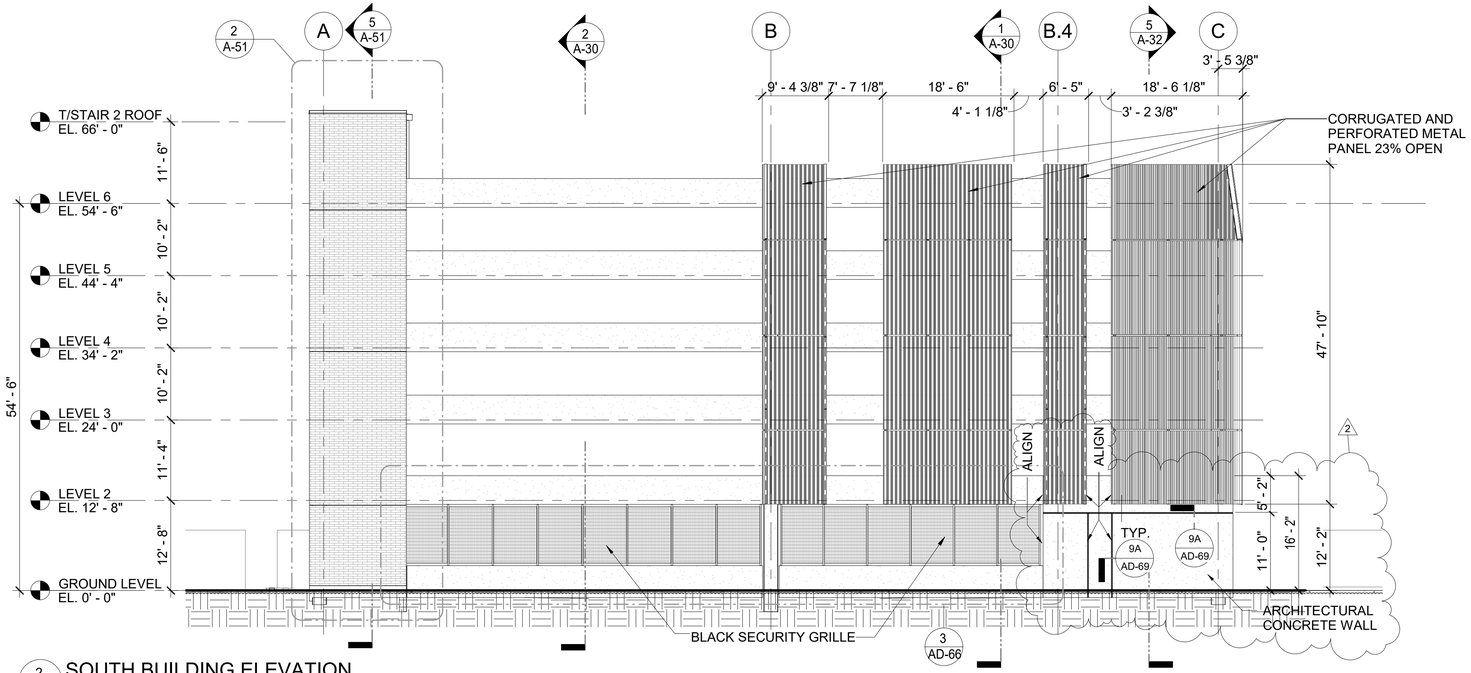
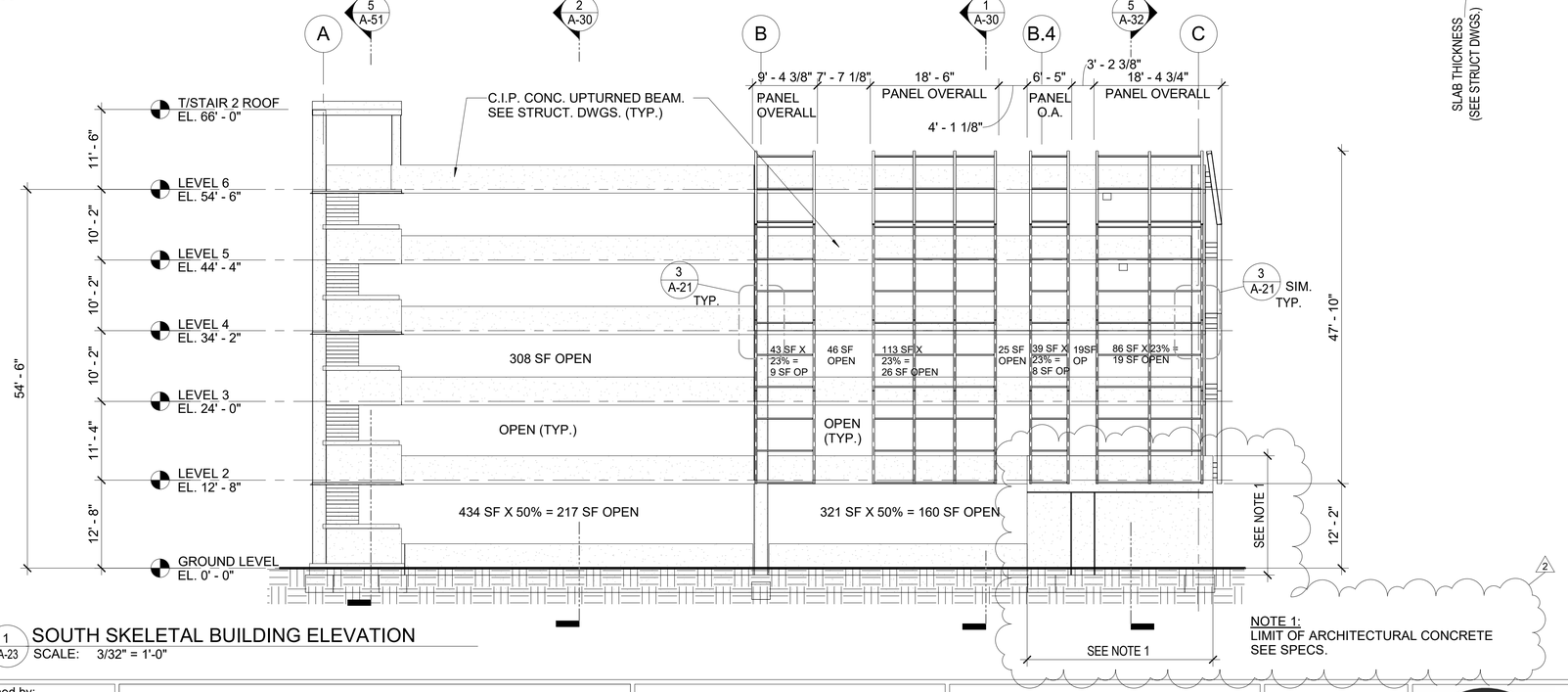


2 A-23 SCALE: 3/32" = 1'-0"

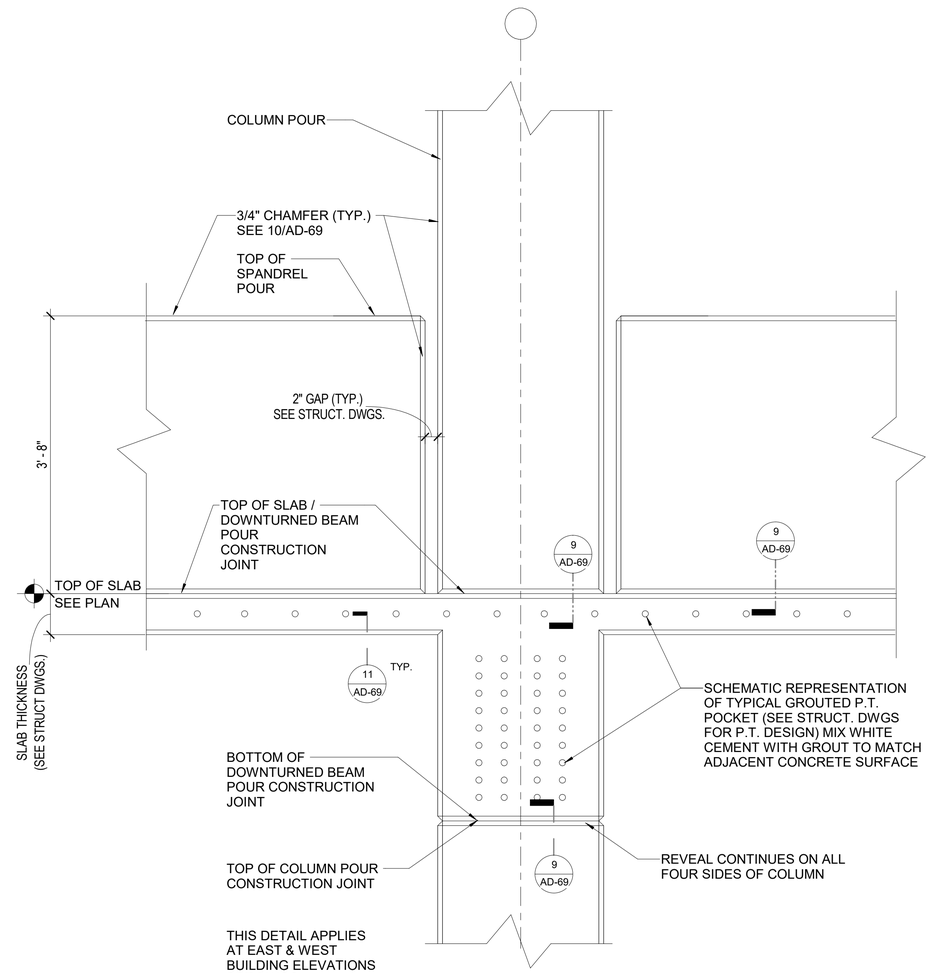
SOUTH BUILDING ELEVATION



1 A-23 SCALE: 3/32" = 1'-0"

SOUTH SKELETAL BUILDING ELEVATION

NOTE 1:
LIMIT OF ARCHITECTURAL CONCRETE SEE SPECS.



3 A-23 SCALE: 1" = 1'-0"

TYP REVEAL DETAIL AT SPANDREL/COLUMN INTERSECTION

SCALE: 3/32" = 1'-0"
8' 0' 4' 8' 16' 32'

Designed by:	REVISION			
R LUTZ	REV No.	DATE	DESCRIPTION	APPV
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Checked by:				
P HUTCHISON				

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WASTEWATER TREATMENT PLANT
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210-A-23
SOUTH BUILDING ELEVATIONS

Contract:	1735
CAD File Name:	210A23.DWG
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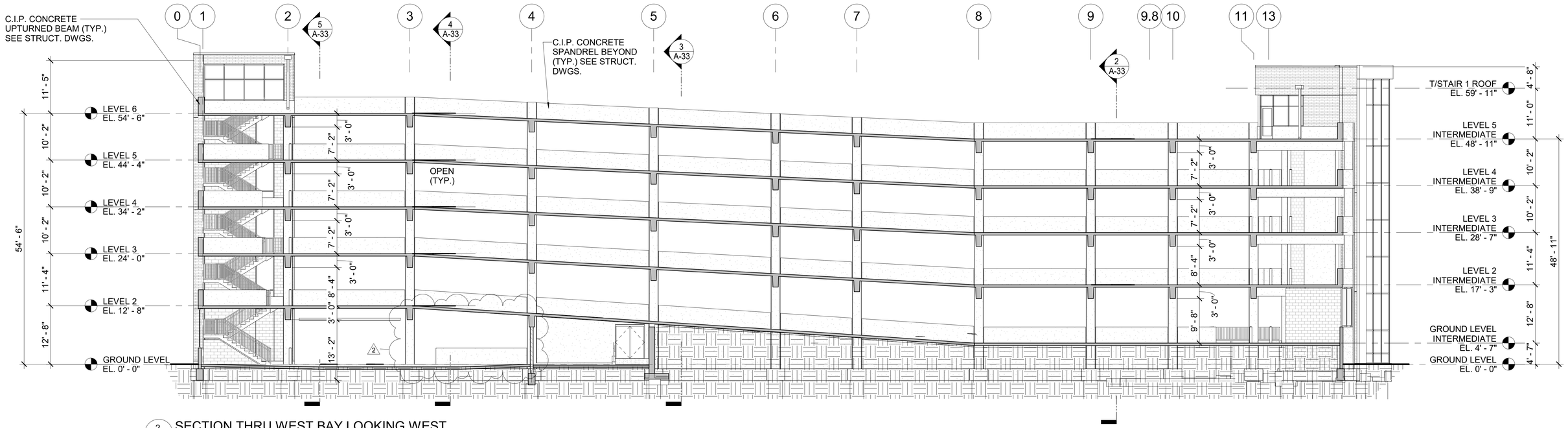
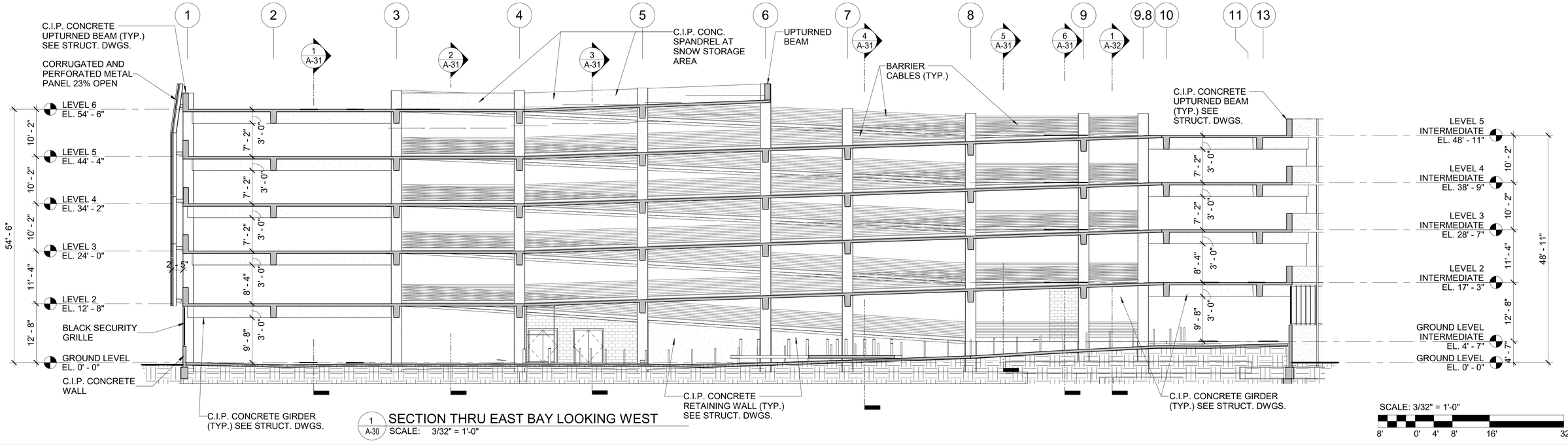


2 / A-30 SECTION THRU WEST BAY LOOKING WEST
SCALE: 3/32" = 1'-0"



1 / A-30 SECTION THRU EAST BAY LOOKING WEST
SCALE: 3/32" = 1'-0"

Designed by:	REVISION			
R LUTZ	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	2	3/11/21	ADDENDUM 2	
R MANZO				
Checked by:				
P HUTCHISON				

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ALCOSAN PARKING GARAGE

210-A-30
BUILDING SECTIONS

Contract:	1735
CAD File Name:	210A30.DWG
Date:	01 / 13 / 2021
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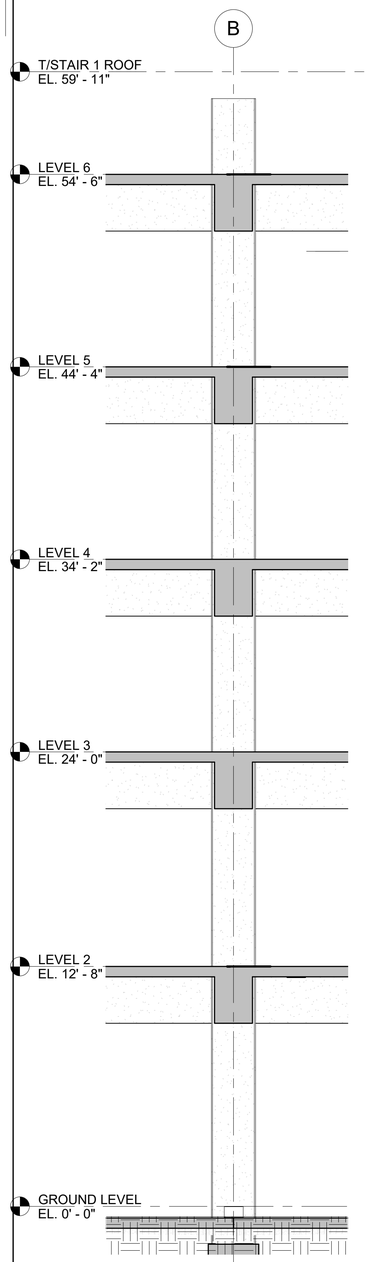
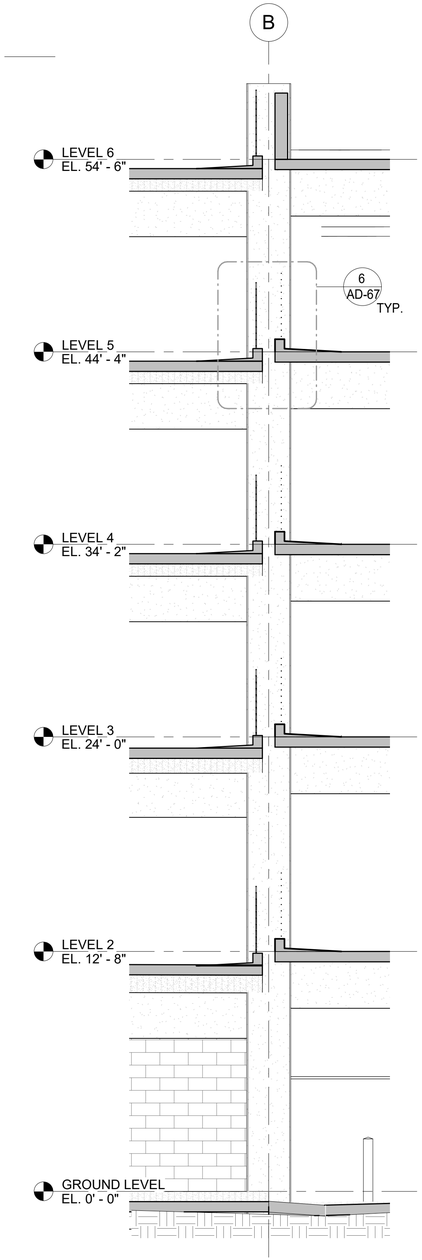
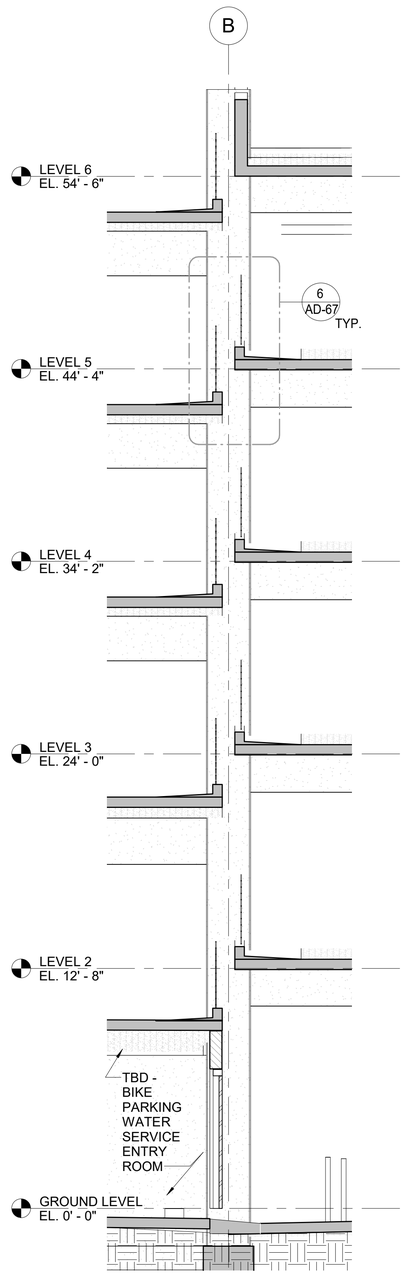


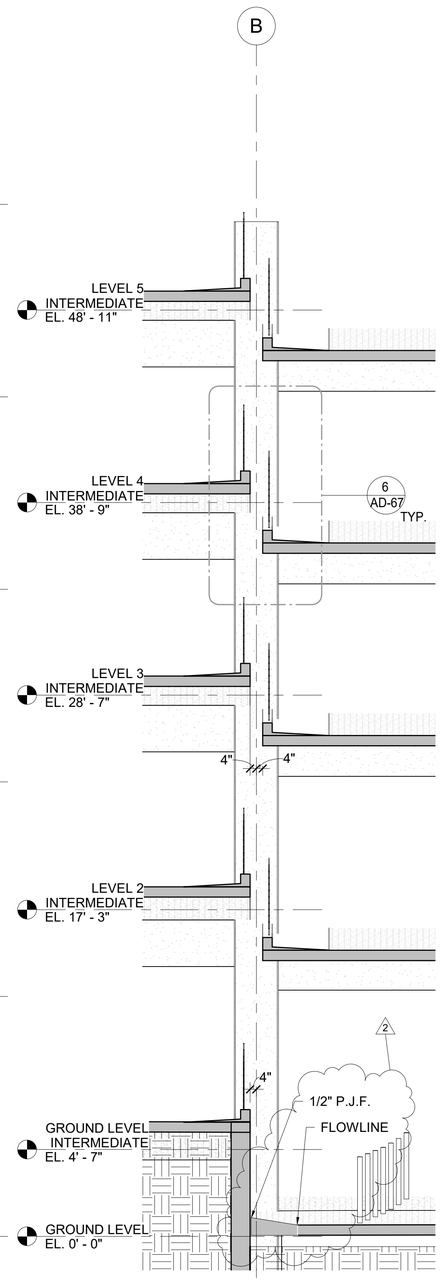
SECTION 1 AT B LINE
LOOKING EAST
1 / A-31 SCALE: 1/4" = 1'-0"



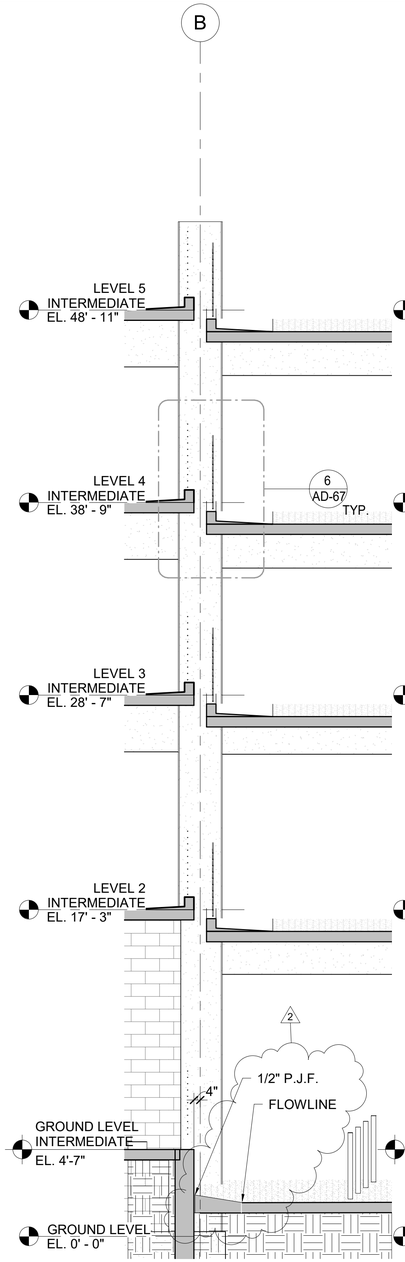
SECTION 2 AT B LINE
LOOKING EAST
2 / A-31 SCALE: 1/4" = 1'-0"



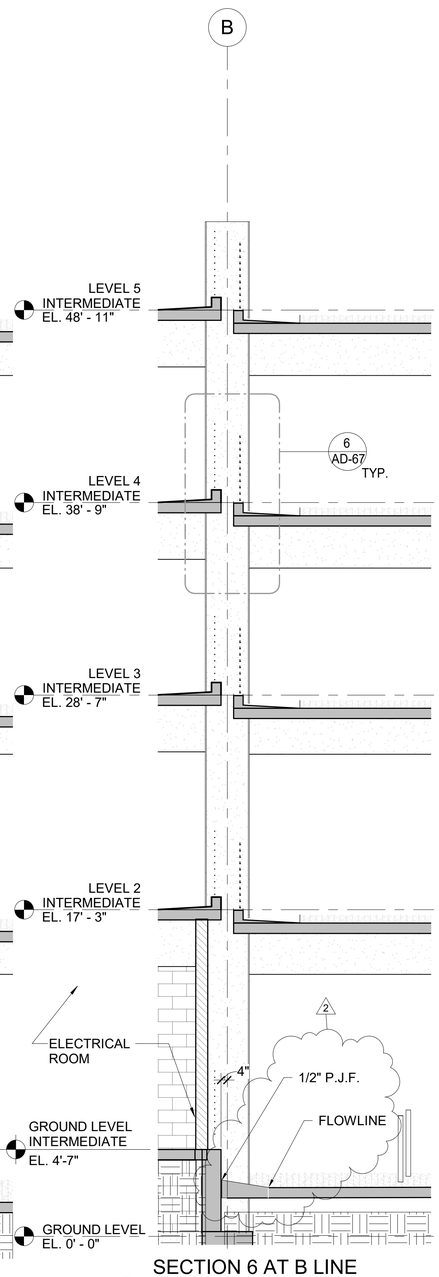
SECTION 3 AT B LINE
LOOKING EAST
3 / A-31 SCALE: 1/4" = 1'-0"



SECTION 4 AT B LINE
LOOKING EAST
4 / A-31 SCALE: 1/4" = 1'-0"



SECTION 5 AT B LINE
LOOKING EAST
5 / A-31 SCALE: 1/4" = 1'-0"



SECTION 6 AT B LINE
LOOKING EAST
6 / A-31 SCALE: 1/4" = 1'-0"

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

Designed by:	REVISION			
R LUTZ	REV No.	DATE	DESCRIPTION	APPV
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210-A-31
WALL SECTIONS

Contract:	1735
CAD File Name:	210A31.DWG
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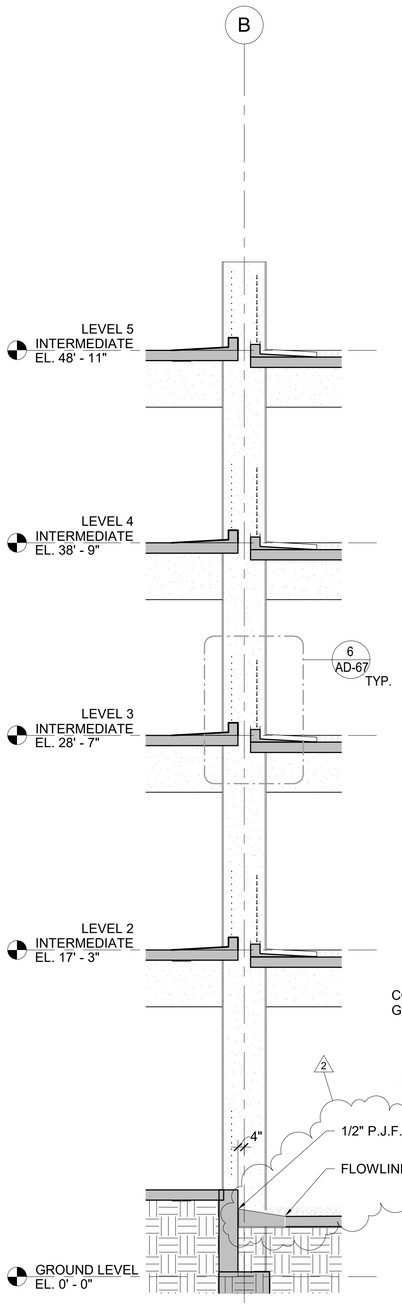
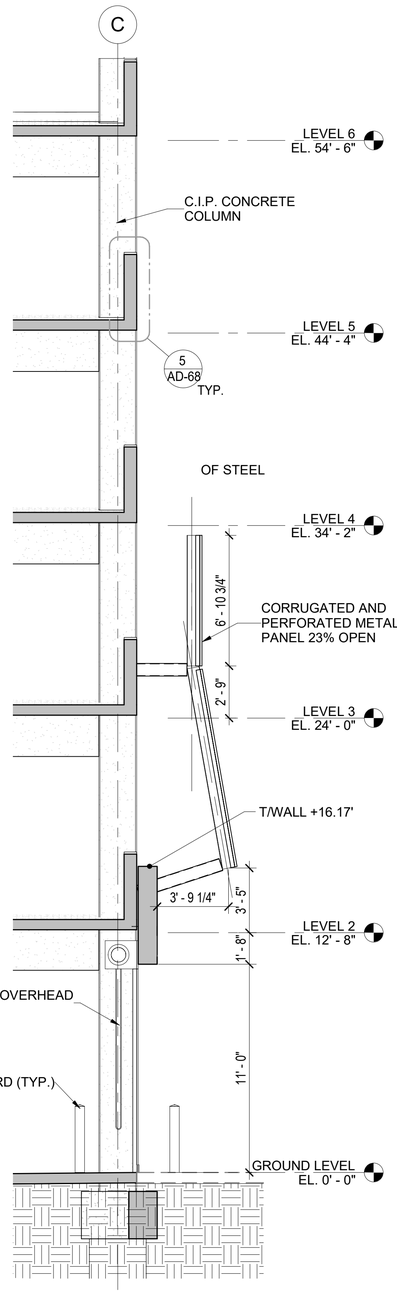
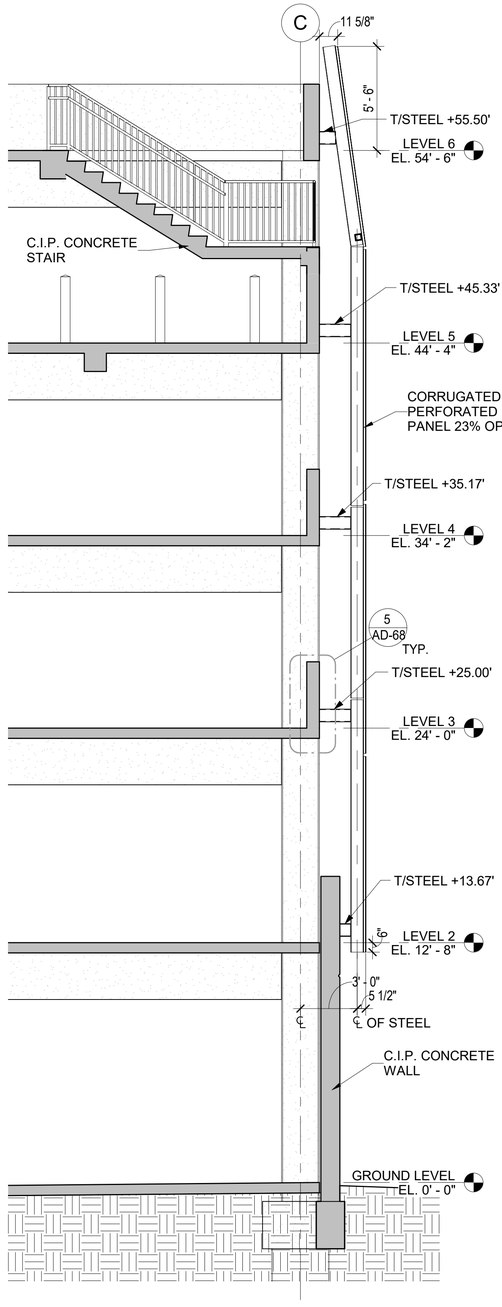


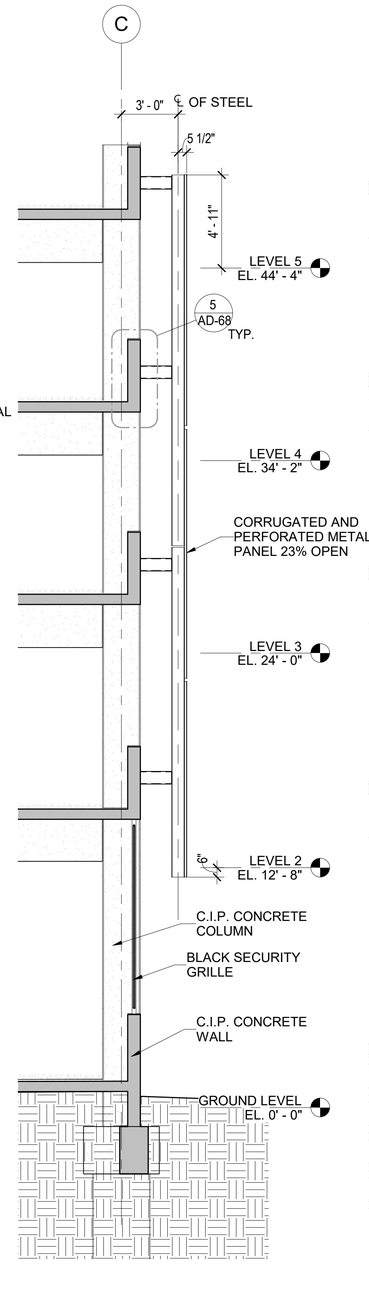
1 A-32 SECTION 7 AT B LINE LOOKING EAST
SCALE: 1/4" = 1'-0"



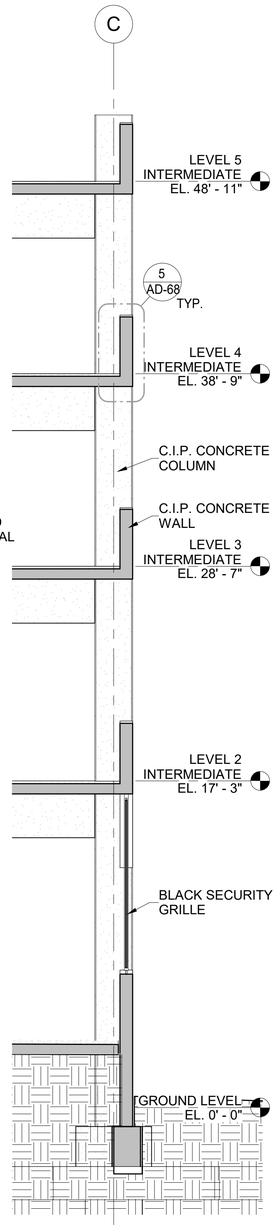
2 A-32 SECTION AT C LINE LOOKING NORTH - 1
SCALE: 1/4" = 1'-0"



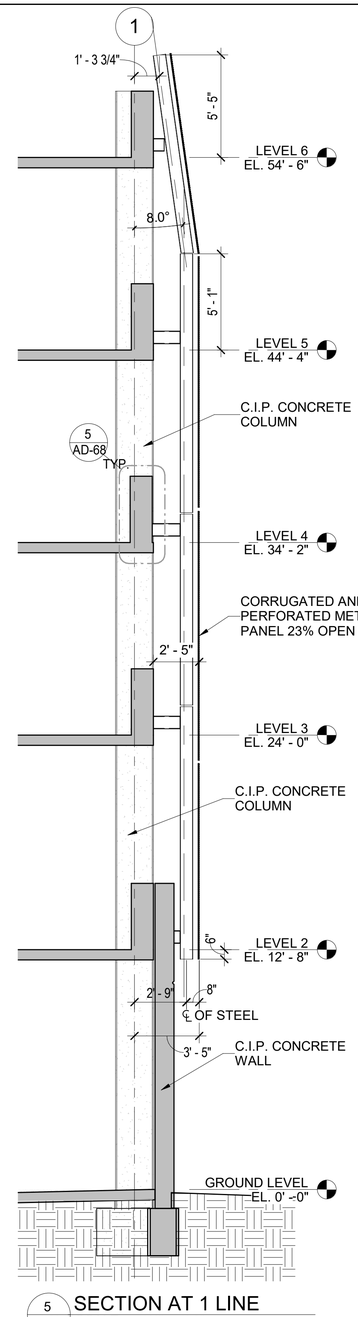
3 A-32 SECTION AT C LINE LOOKING NORTH - 2
SCALE: 1/4" = 1'-0"



4 A-32 SECTION AT C LINE LOOKING NORTH - 3
SCALE: 1/4" = 1'-0"



6 A-32 SECTION AT C LINE LOOKING NORTH - 4
SCALE: 1/4" = 1'-0"



5 A-32 SECTION AT 1 LINE
SCALE: 1/4" = 1'-0"

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

Designed by:	REVISION			
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REGISTERED ARCHITECT COMMONWEALTH OF PENNSYLVANIA COLLEEN M. REBORA

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210-A-32
WALL SECTIONS

Contract:	1735
CAD File Name:	210A32.DWG
Date:	01 / 13 / 2021
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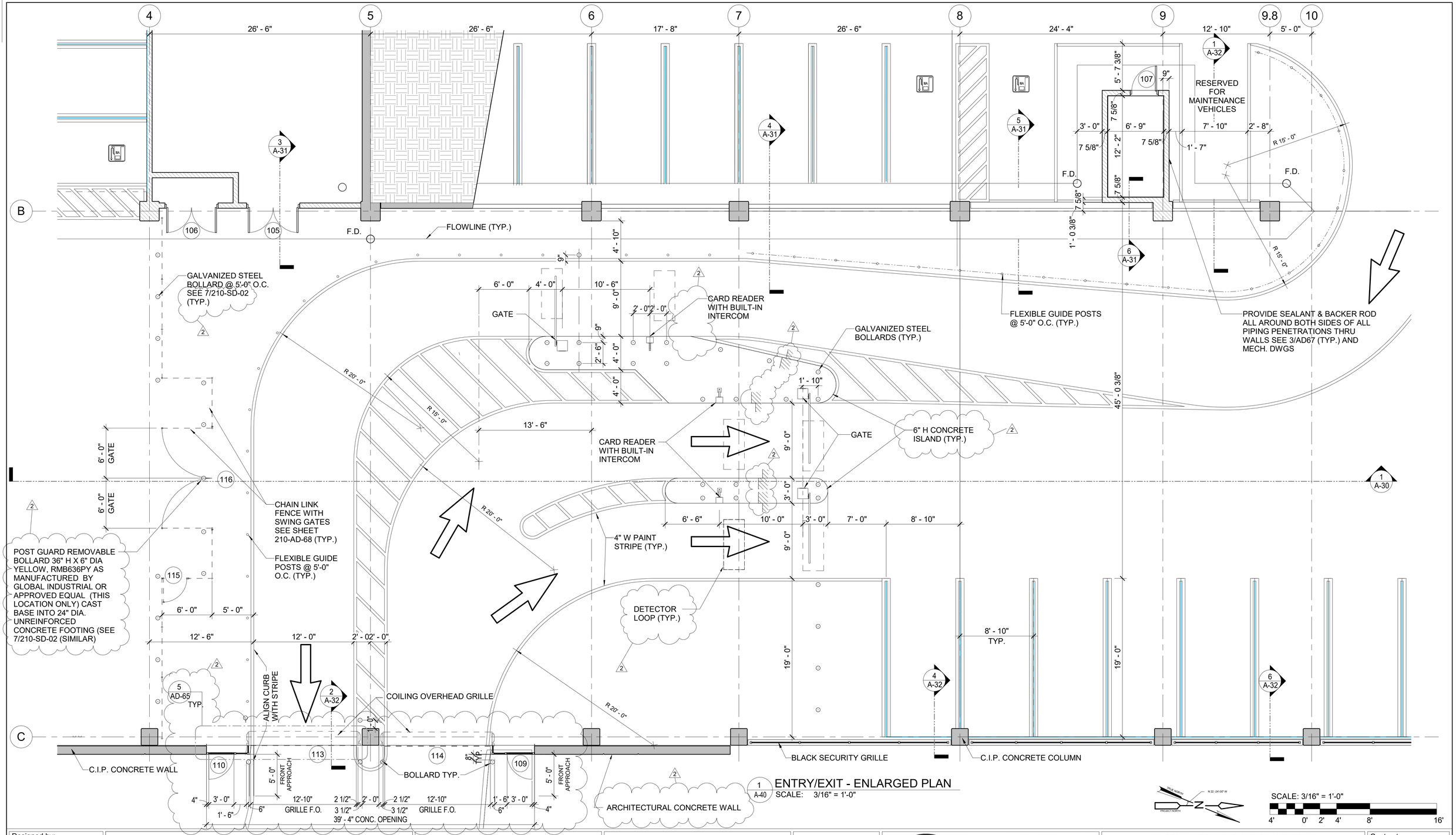

1 ENTRY/EXIT - ENLARGED PLAN
A-40 SCALE: 3/16" = 1'-0"

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

4' 0' 2' 4' 8' 16'

Designed by:	REVISION			
R LUTZ	REV No.	DATE	DESCRIPTION	APPV
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WASTEWATER TREATMENT PLANT
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210-A-40
ENTRY/EXIT - ENLARGED PLAN

Contract:	1735
CAD File Name:	210A40.DWG
Date:	01 / 13 / 2021
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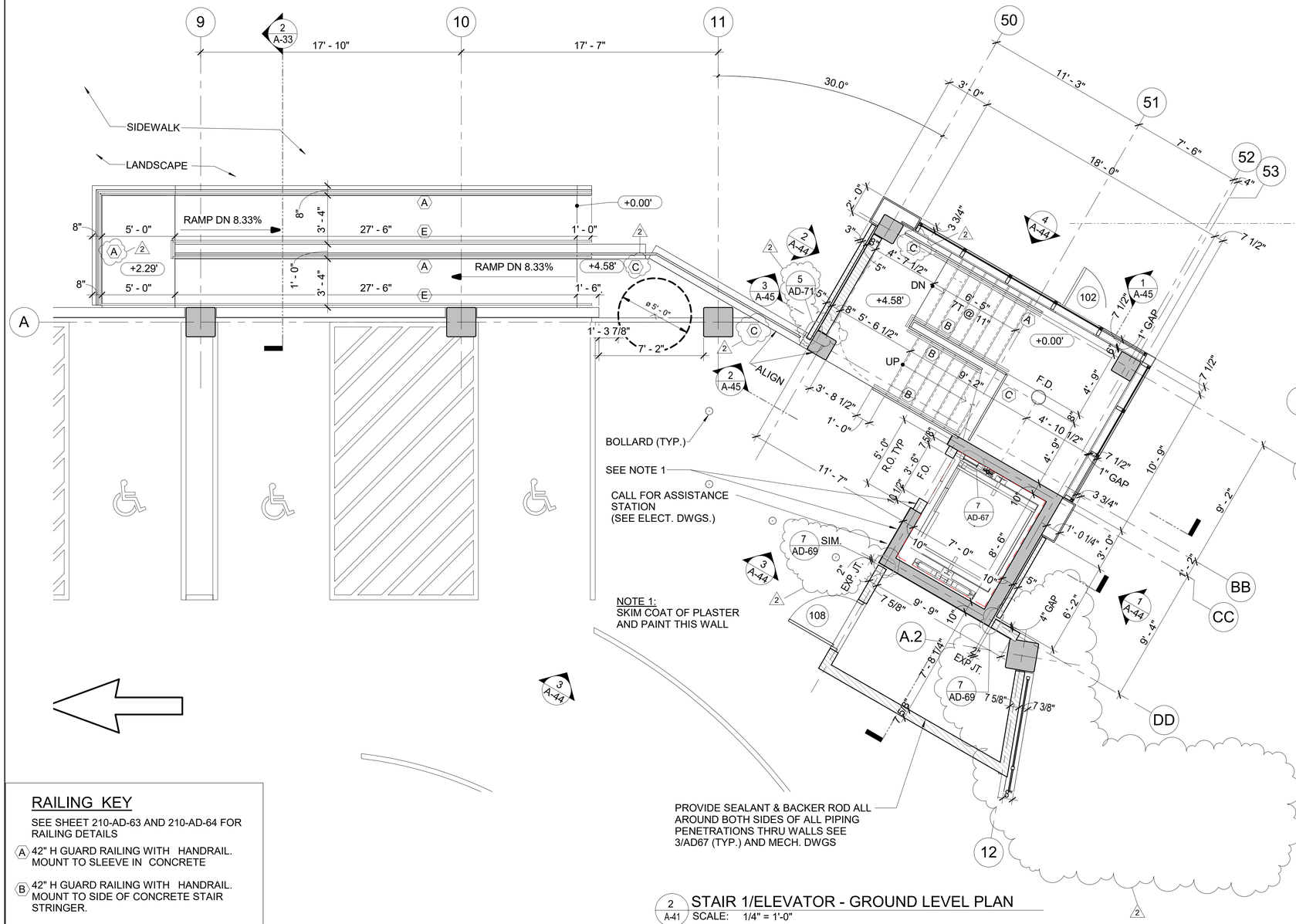

RAILING KEY

SEE SHEET 210-AD-63 AND 210-AD-64 FOR RAILING DETAILS

- (A) 42" H GUARD RAILING WITH HANDRAIL. MOUNT TO SLEEVE IN CONCRETE
- (B) 42" H GUARD RAILING WITH HANDRAIL. MOUNT TO SIDE OF CONCRETE STAIR STRINGER.
- (C) 42" H GUARD RAILING. MOUNT TO SLEEVE IN CONCRETE.
- (D) 42" H GUARD RAILING. MOUNT TO TO SIDE OF CONCRETE SLAB.
- (E) HANDRAIL. MOUNT TO WALL WITH BRACKETS.
- (F) GUARD RAILING. MOUNT TO SLEEVE ON TOP OF CONCRETE BUMPER WALL.

2 / A-41 STAIR 1/ELEVATOR - GROUND LEVEL PLAN
SCALE: 1/4" = 1'-0"

1 / A-41 STAIR 1/ELEVATOR - LEVEL 2 PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTE:
LIMITS OF PLASTER AND PAINT ARE THE FOLLOWING ELEVATOR CORE WALLS, FROM FLOOR UP TO SLAB SOFFIT (EXCLUDING AREA OF ELEVATOR DOORS AND FRAMES):
LEVEL 1: 10'-2" WIDTH OF SOUTH WALL ONLY
LEVEL 2: 10'-2" WIDTH OF SOUTH WALL + 8'-8" WIDTH OF EAST WALL + 1' RETURN ON NORTH WALL TO FACE BRICK.

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

Designed by:	REVISION			
R LUTZ	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	1	2/19/21	ADDENDUM 1	
R MANZO	2	3/11/21	ADDENDUM 2	
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WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-A-41
STAIR 1/ELEVATOR - ENLARGED PLANS

Contract:	1735
CAD File Name:	210A41.DWG
Date:	01 / 13 / 2021
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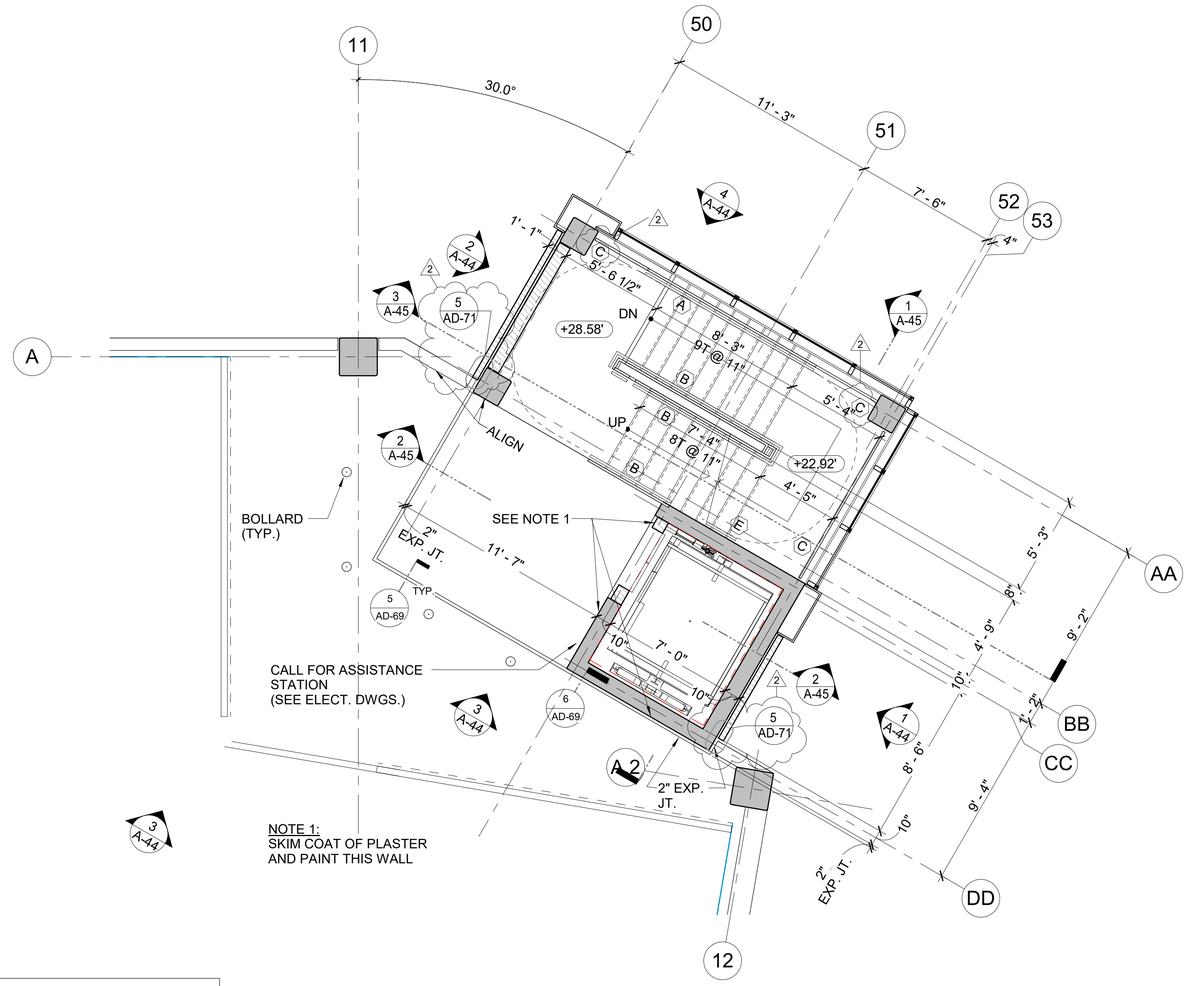

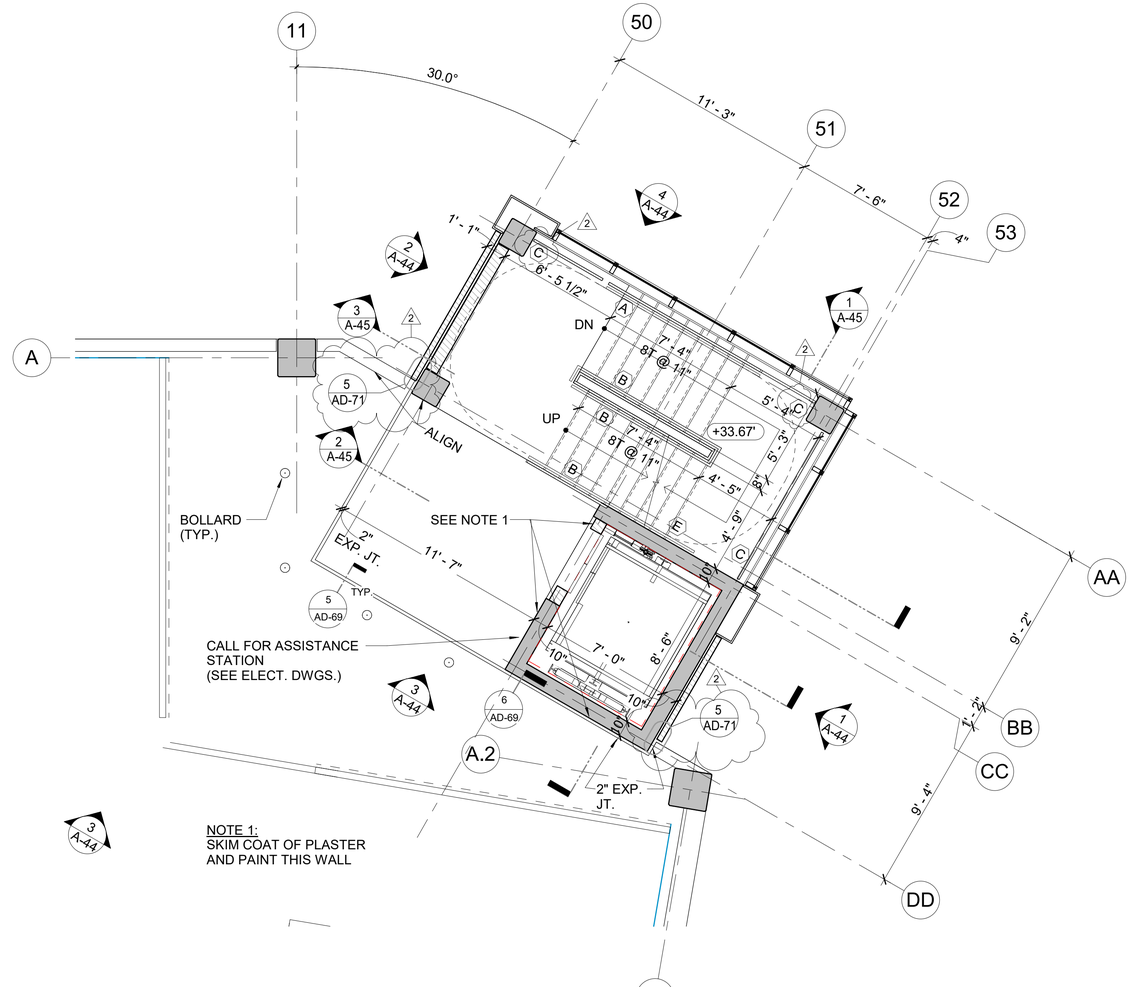

RAILING KEY

SEE SHEET 210-AD-63 AND 210-AD-64 FOR RAILING DETAILS

- (A) 42" H GUARD RAILING WITH HANDRAIL. MOUNT TO SLEEVE IN CONCRETE
- (B) 42" H GUARD RAILING WITH HANDRAIL. MOUNT TO SIDE OF CONCRETE STAIR STRINGER.
- (C) 42" H GUARD RAILING. MOUNT TO SLEEVE IN CONCRETE.
- (D) 42" H GUARD RAILING. MOUNT TO TO SIDE OF CONCRETE SLAB.
- (E) HANDRAIL. MOUNT TO WALL WITH BRACKETS.
- (F) GUARD RAILING. MOUNT TO SLEEVE ON TOP OF CONCRETE BUMPER WALL.

1 / A-42 STAIR 1/ELEVATOR - LEVEL 3 PLAN
SCALE: 1/4" = 1'-0"

2 / A-42 STAIR 1/ELEVATOR - LEVEL 4 PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTE:
LIMITS OF PLASTER AND PAINT ARE THE FOLLOWING ELEVATOR CORE WALLS, FROM FLOOR UP TO SLAB SOFFIT (EXCLUDING AREA OF ELEVATOR DOORS AND FRAMES):
LEVELS 3 & 4: 10'-2" WIDTH OF SOUTH WALL + 8'-8" WIDTH OF EAST WALL + 1' RETURN ON NORTH WALL TO FACE BRICK.

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

Designed by:	REVISION			
Designer	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	1	2/19/21	ADDENDUM 1	
Author	2	3/11/21	ADDENDUM 2	
Checked by:				
Checker				

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WASTEWATER TREATMENT PLANT
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210-A-42
STAIR 1 / ELEVATOR - ENLARGED 3RD & 4TH LEVEL PLANS

Contract: 1735
CAD File Name: 210A42.DWG
Date: 01 / 13 / 2021
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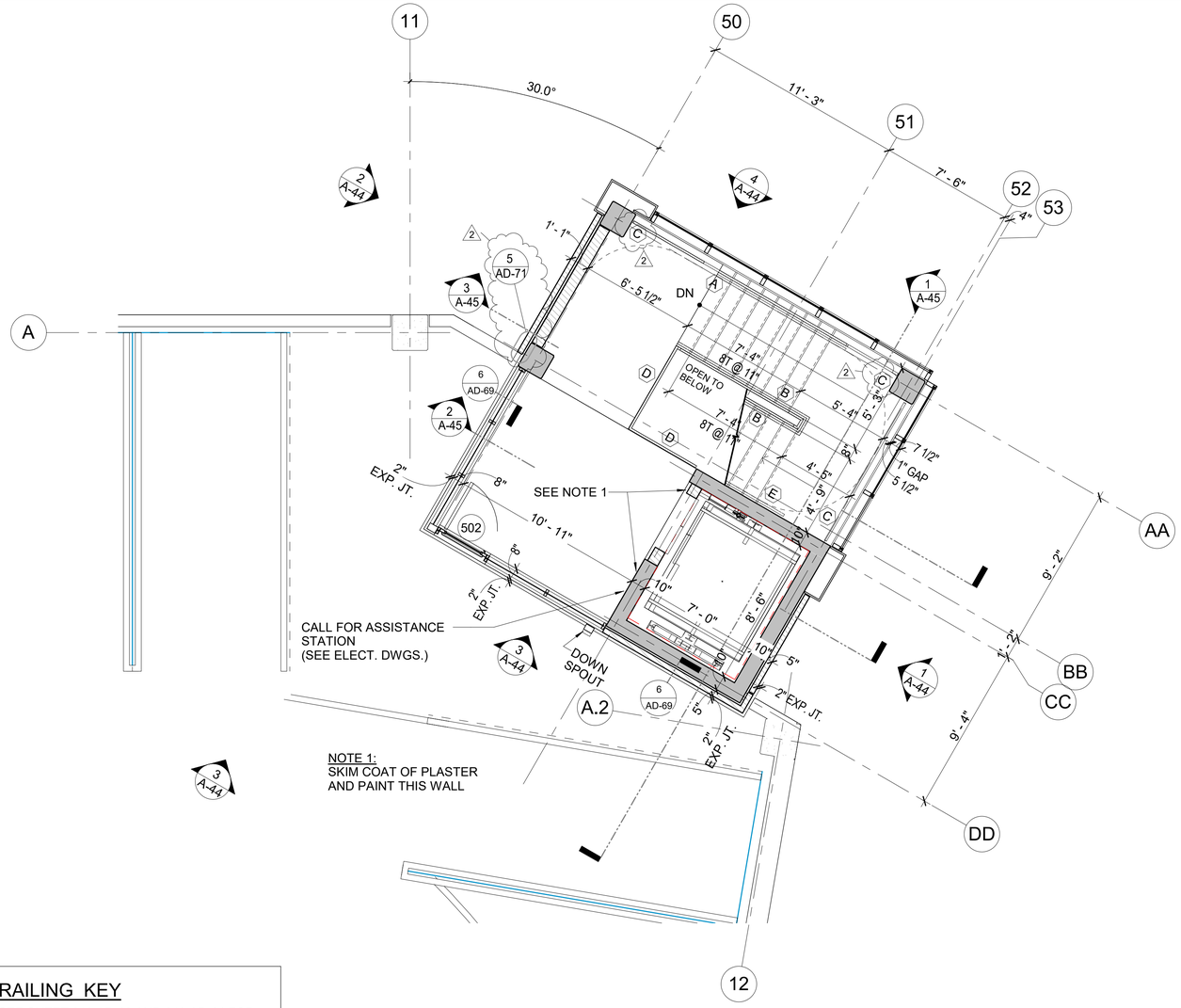
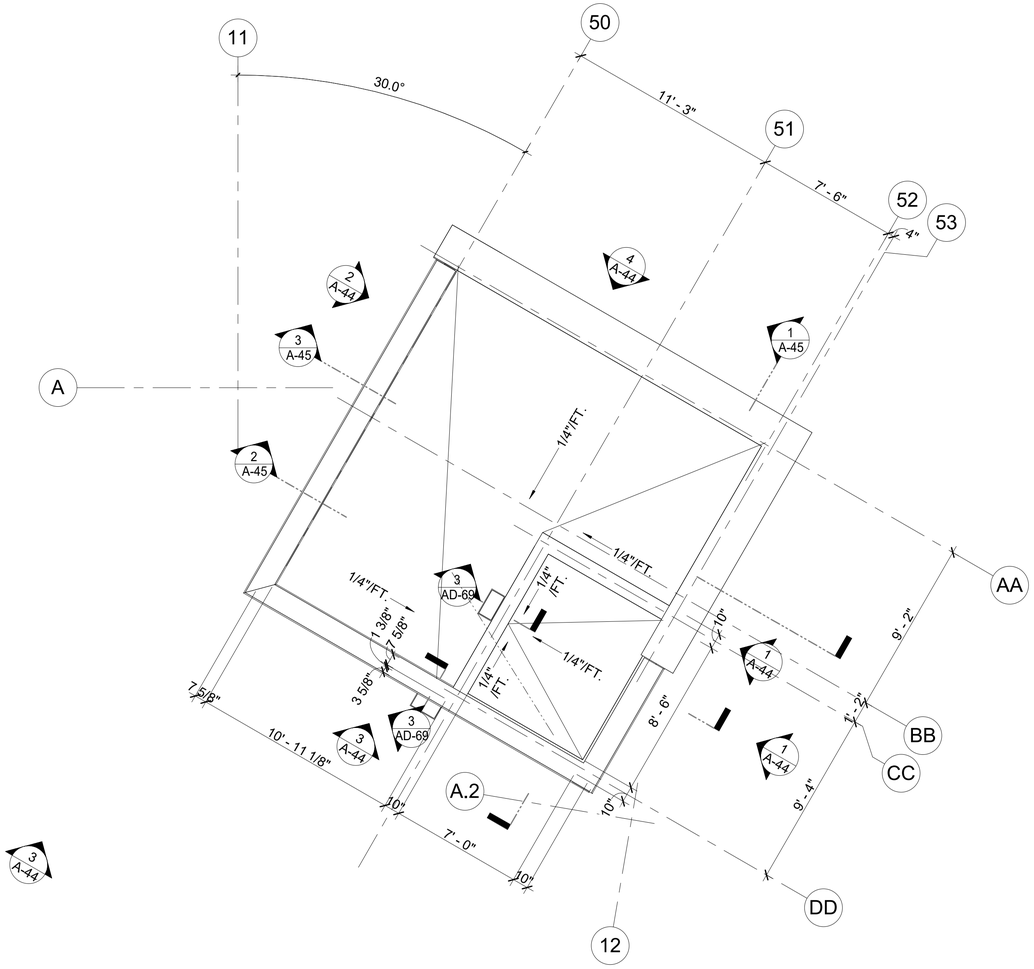


NOTE 1:
SKIM COAT OF PLASTER AND PAINT THIS WALL

2 A-43 STAIR 1/ELEVATOR - LEVEL 5 PLAN
SCALE: 1/4" = 1'-0"



3 A-43 STAIR 1/ELEVATOR - ROOF PLAN
SCALE: 1/4" = 1'-0"

RAILING KEY

SEE SHEET 210-AD-63 AND 210-AD-64 FOR RAILING DETAILS

- (A) 42" H GUARD RAILING WITH HANDRAIL. MOUNT TO SLEEVE IN CONCRETE
- (B) 42" H GUARD RAILING WITH HANDRAIL. MOUNT TO SIDE OF CONCRETE STAIR STRINGER.
- (C) 42" H GUARD RAILING. MOUNT TO SLEEVE IN CONCRETE.
- (D) 42" H GUARD RAILING. MOUNT TO TO SIDE OF CONCRETE SLAB.
- (E) HANDRAIL. MOUNT TO WALL WITH BRACKETS.
- (F) GUARD RAILING. MOUNT TO SLEEVE ON TOP OF CONCRETE BUMPER WALL.

GENERAL NOTE:
LIMITS OF PLASTER AND PAINT ARE THE FOLLOWING ELEVATOR CORE WALLS, FROM FLOOR UP TO SLAB SOFFIT (EXCLUDING AREA OF ELEVATOR DOORS AND FRAMES):
LEVEL 5: 10'-2" WIDTH OF SOUTH WALL ONLY

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

Designed by:	REVISION			
R LUTZ	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	1	2/19/21	ADDENDUM 1	
R MANZO	2	3/11/21	ADDENDUM 2	
Checked by:				
P HUTCHISON				

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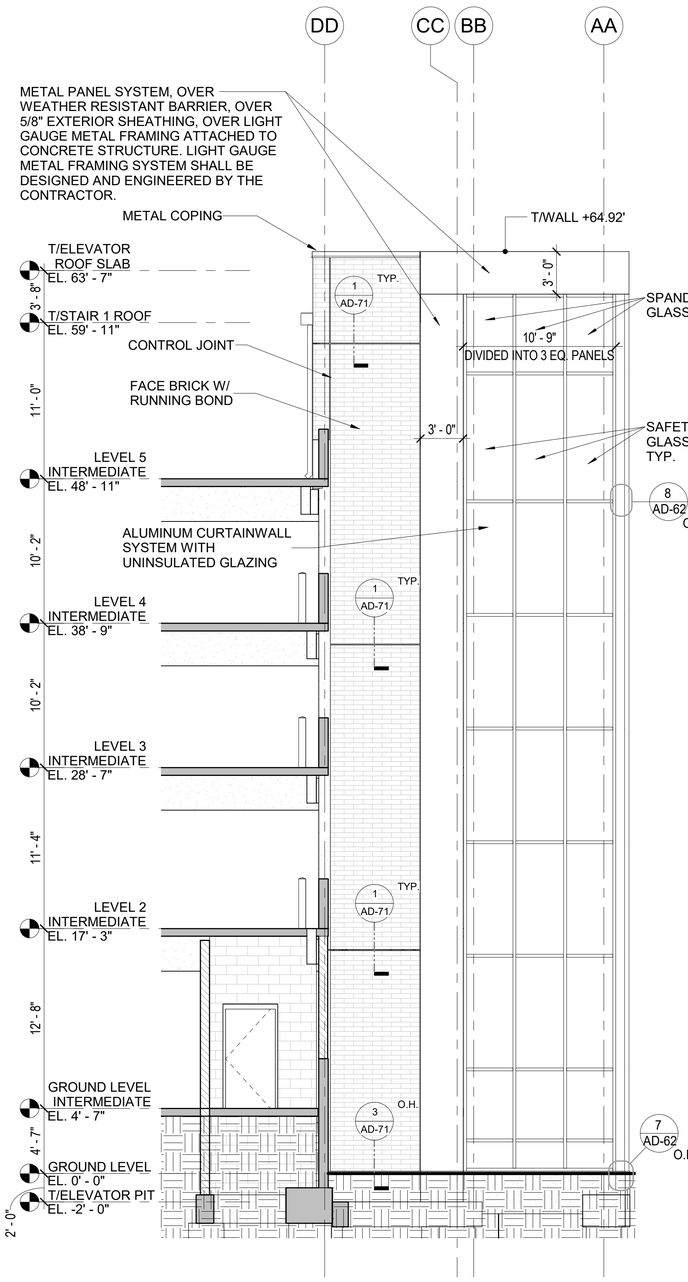
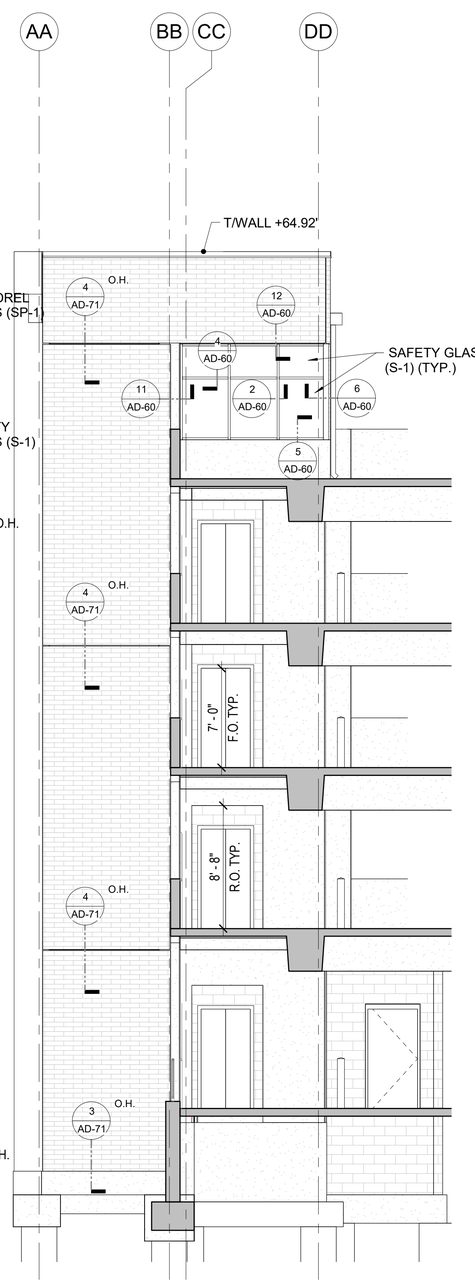
ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-A-43
STAIR 1/ELEVATOR - ENLARGED 5TH LEVEL & ROOF PLANS

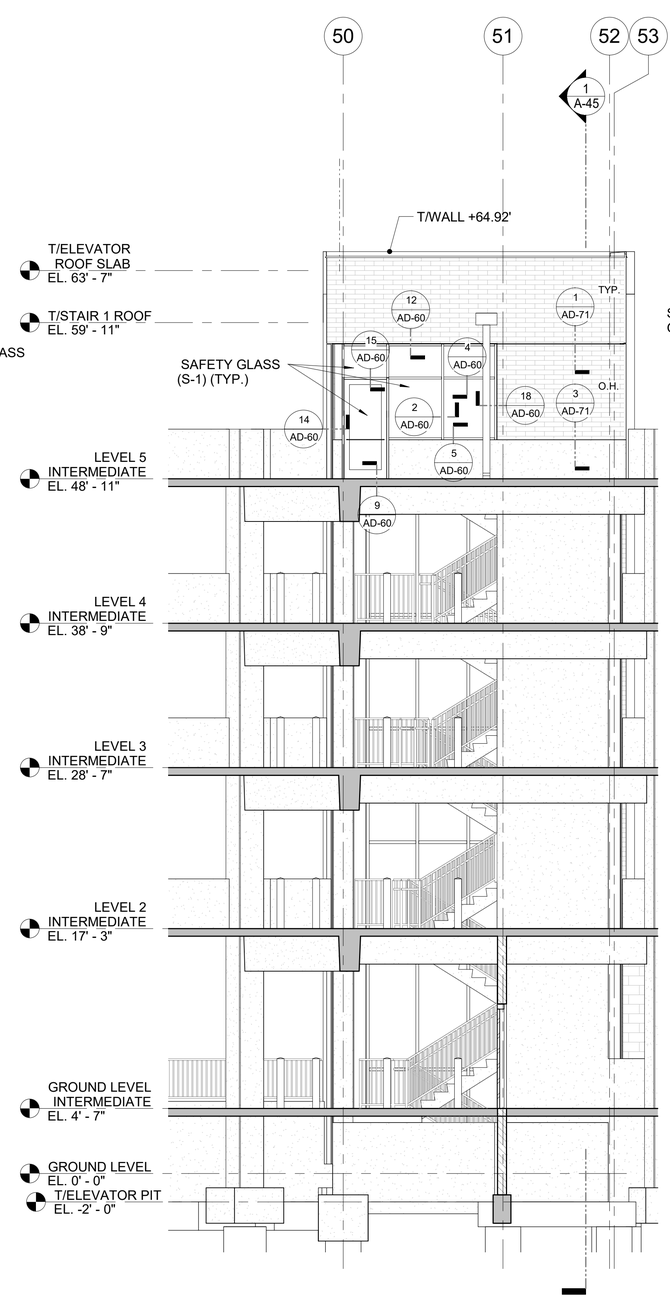
Contract: 1735
CAD File Name: 210A43.DWG
Date: 01 / 13 / 2021
Sheet: 50 of 169



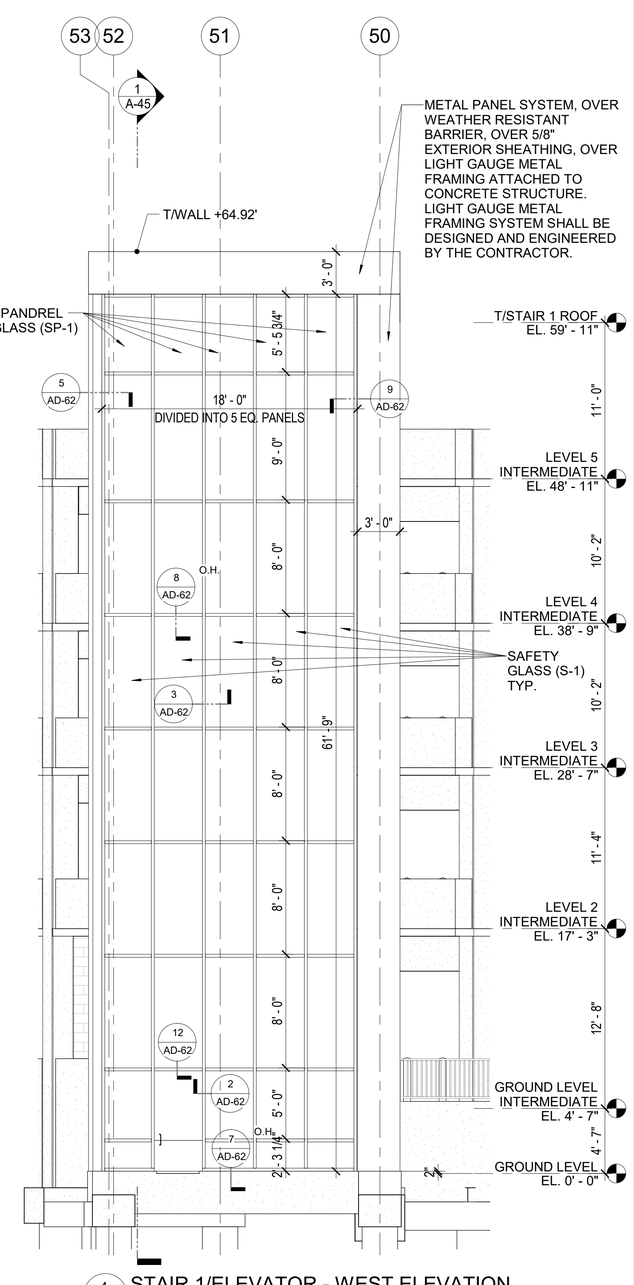
1 A-44 STAIR 1/ELEVATOR - NORTH ELEVATION
SCALE: 3/16" = 1'-0"



2 A-44 STAIR 1/ELEVATOR - SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



3 A-44 STAIR 1/ELEVATOR - EAST ELEVATION
SCALE: 3/16" = 1'-0"



4 A-44 STAIR 1/ELEVATOR - WEST ELEVATION
SCALE: 3/16" = 1'-0"

GENERAL NOTE:
PROVIDE CONTINUOUS 1/2" BACKER ROD AND SEALANT ALONG ENTIRE PERIMETER OF ALUM. PANEL SYSTEM (PANEL TO CONCRETE JOINTS, PANEL TO BRICK JOINTS, AND PANEL TO CURTAINWALL JOINTS

SCALE: 3/16" = 1'-0"
4' 0' 2' 4' 8' 16'

Designed by: R LUTZ
Drawn by: R MANZO
Checked by: P HUTCHISON

REVISION

REV No.	DATE	DESCRIPTION	APPV
2	3/11/21	ADDENDUM 2	

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20 North Clark St
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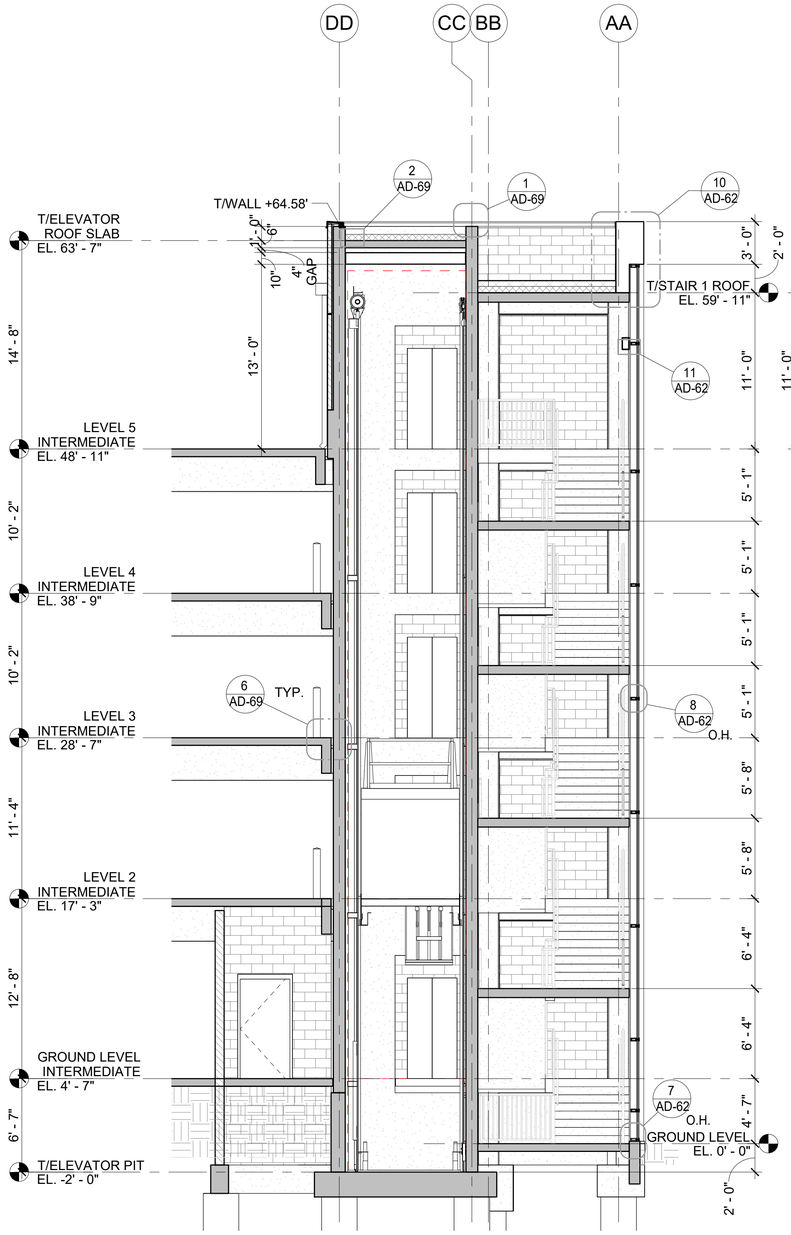
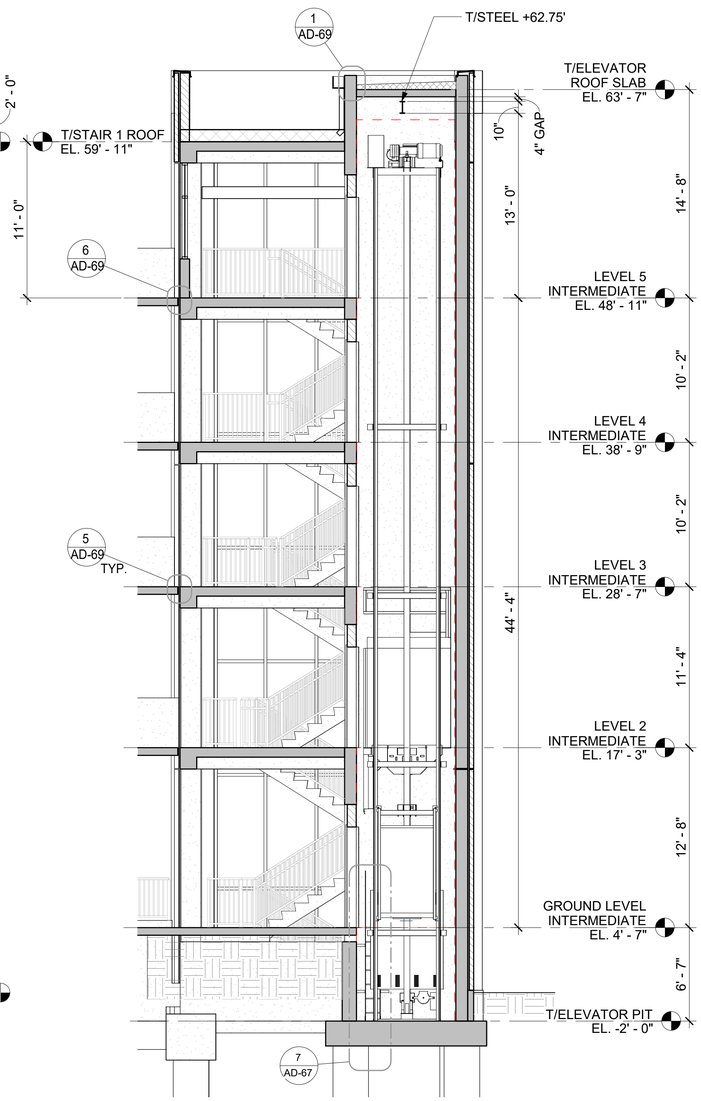
ALCOSAN PARKING GARAGE

210-A-44
STAIR 1/ELEVATOR - ELEVATIONS

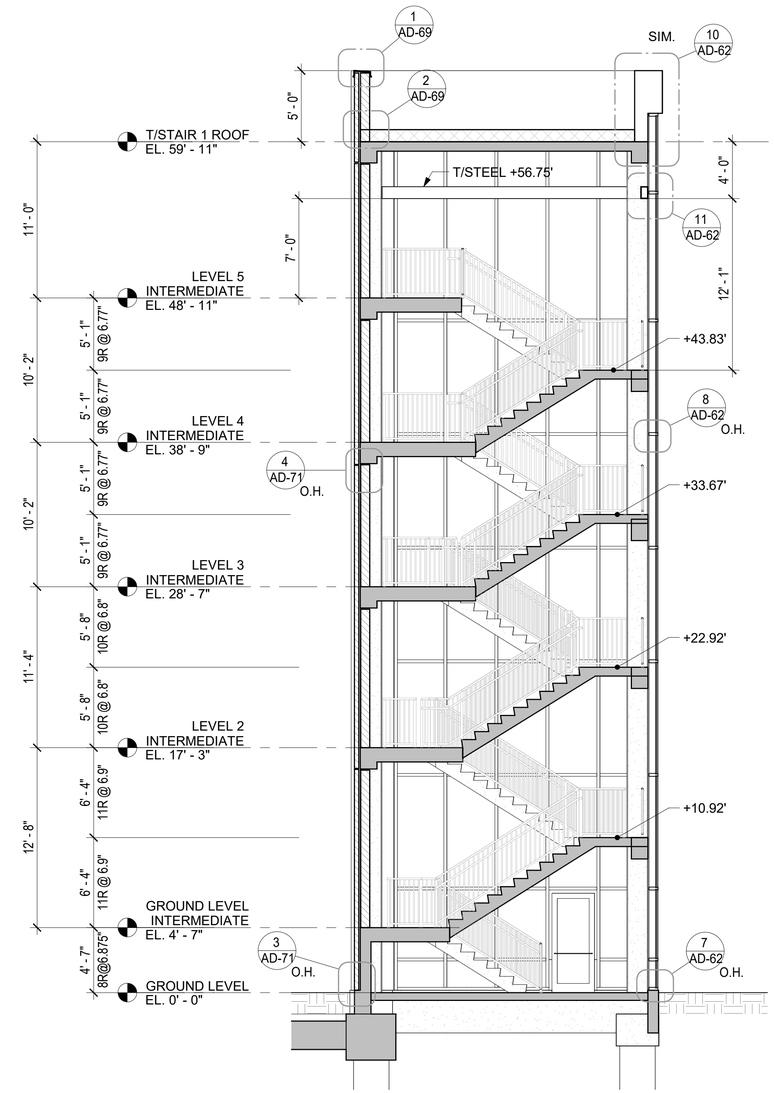
Contract: 1735
CAD File Name: 210A44.DWG
Date: 01 / 13 / 2021
Sheet: 51 of 169



1 A-45 STAIR 1/ELEVATOR SECTION LOOKING SOUTH
SCALE: 3/16" = 1'-0"



2 A-45 ELEVATOR SECTION LOOKING WEST
SCALE: 3/16" = 1'-0"



3 A-45 STAIR 1 SECTION LOOKING WEST
SCALE: 3/16" = 1'-0"

2 SCALE: 3/16" = 1'-0"
4' 0' 2' 4' 8' 16'

Designed by:	REVISION			
R LUTZ	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	2	3/11/21	ADDENDUM 2	
R MANZO				
Checked by:				
P HUTCHISON				

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REGISTERED ARCHITECT COMMONWEALTH OF PENNSYLVANIA

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WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-A-45
STAIR 1/ELEVATOR - SECTIONS

Contract:	1735
CAD File Name:	210A45.DWG
Date:	01 / 13 / 2021
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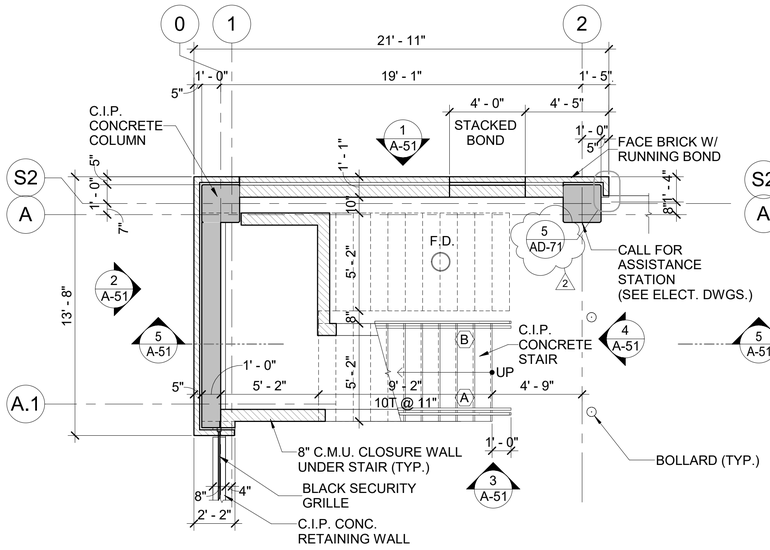
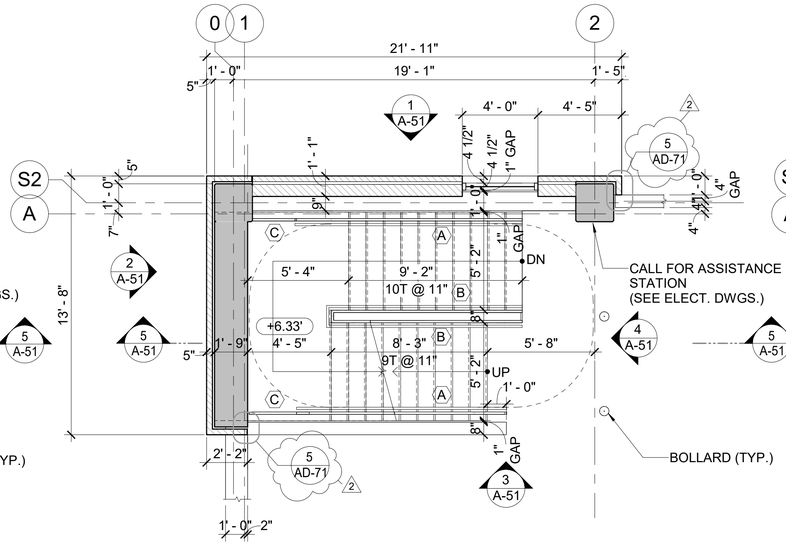
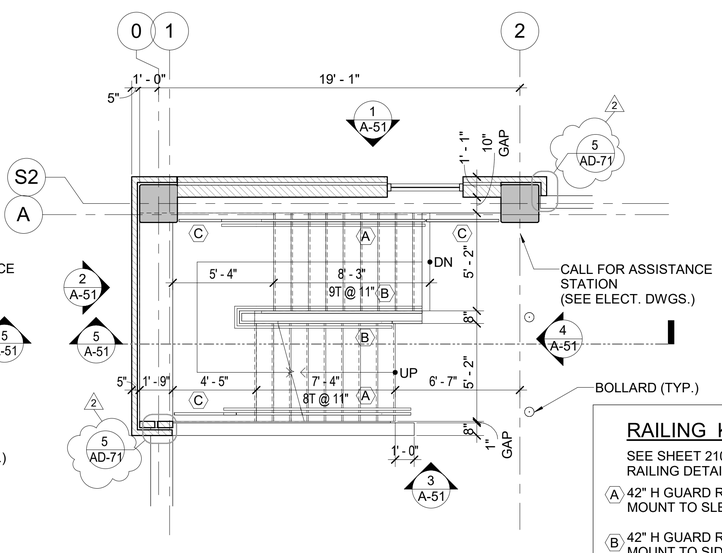


1 A-50 STAIR 2 - GROUND LEVEL PLAN
SCALE: 1/4" = 1'-0"



2 A-50 STAIR 2 - LEVEL 2 PLAN
SCALE: 1/4" = 1'-0"



3 A-50 STAIR 2 - LEVEL 3 PLAN
SCALE: 1/4" = 1'-0"

4 A-50 STAIR 2 - LEVEL 4 & 5 PLAN
SCALE: 1/4" = 1'-0"

5 A-50 STAIR 2 - LEVEL 6 PLAN
SCALE: 1/4" = 1'-0"

6 A-50 STAIR 2 - ROOF PLAN
SCALE: 1/4" = 1'-0"

RAILING KEY

SEE SHEET 210-AD-63 AND 210-AD-64 FOR RAILING DETAILS

- (A) 42" H GUARD RAILING WITH HANDRAIL. MOUNT TO SLEEVE IN CONCRETE
- (B) 42" H GUARD RAILING WITH HANDRAIL. MOUNT TO SIDE OF CONCRETE STAIR STRINGER.
- (C) 42" H GUARD RAILING. MOUNT TO SLEEVE IN CONCRETE.
- (D) 42" H GUARD RAILING. MOUNT TO TO SIDE OF CONCRETE SLAB.
- (E) HANDRAIL. MOUNT TO WALL WITH BRACKETS.
- (F) GUARD RAILING. MOUNT TO SLEEVE ON TOP OF CONCRETE BUMPER WALL.

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

Designed by: R LUTZ	REVISION		
	REV No.	DATE	DESCRIPTION / APPV
Drawn by: R MANZO	2	3/11/21	ADDENDUM 2
Checked by: P HUTCHISON			

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ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-A-50
STAIR 2 - ENLARGED PLANS

Contract: 1735
CAD File Name: 210A50.DWG
Date: 01 / 13 / 2021
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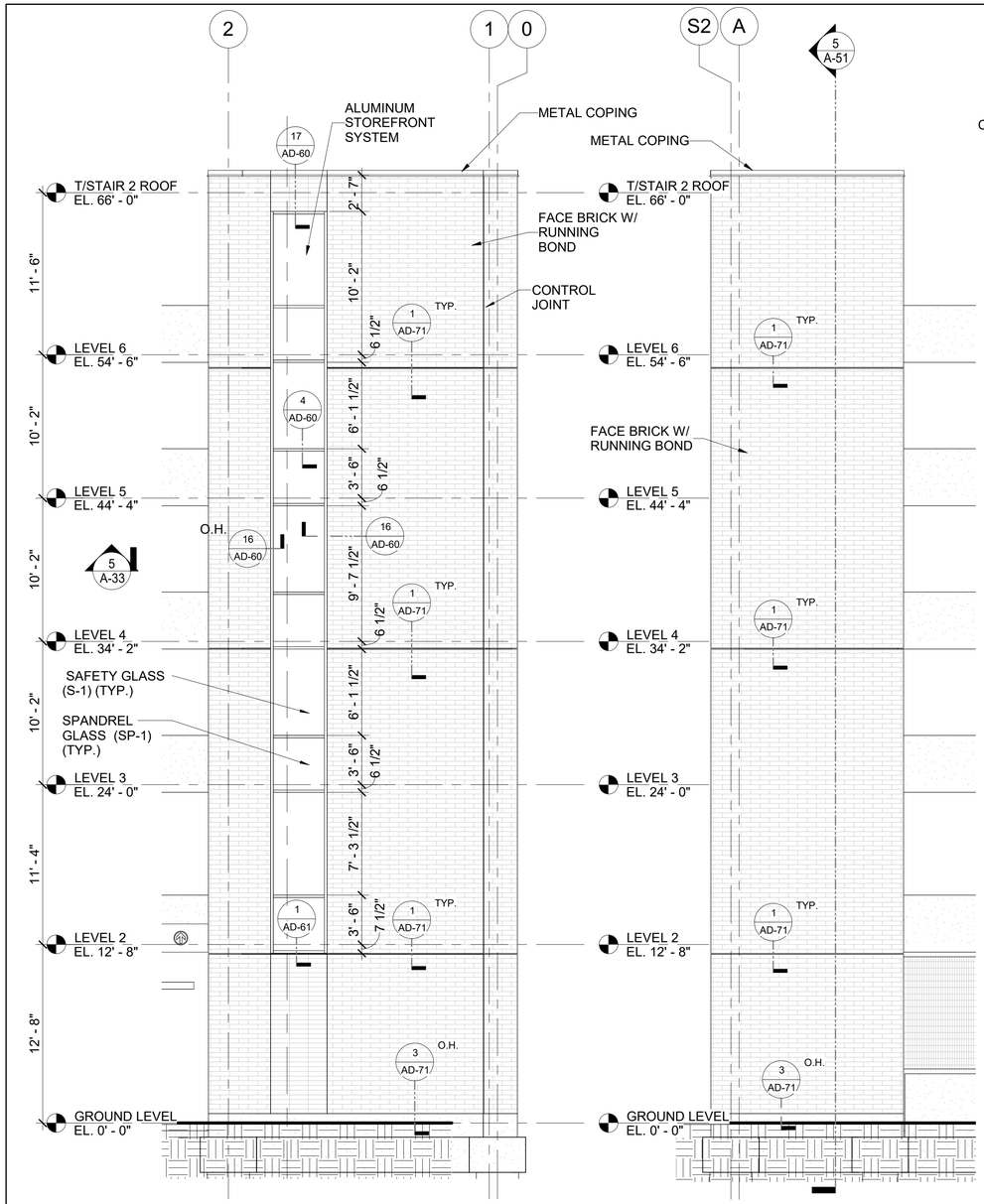
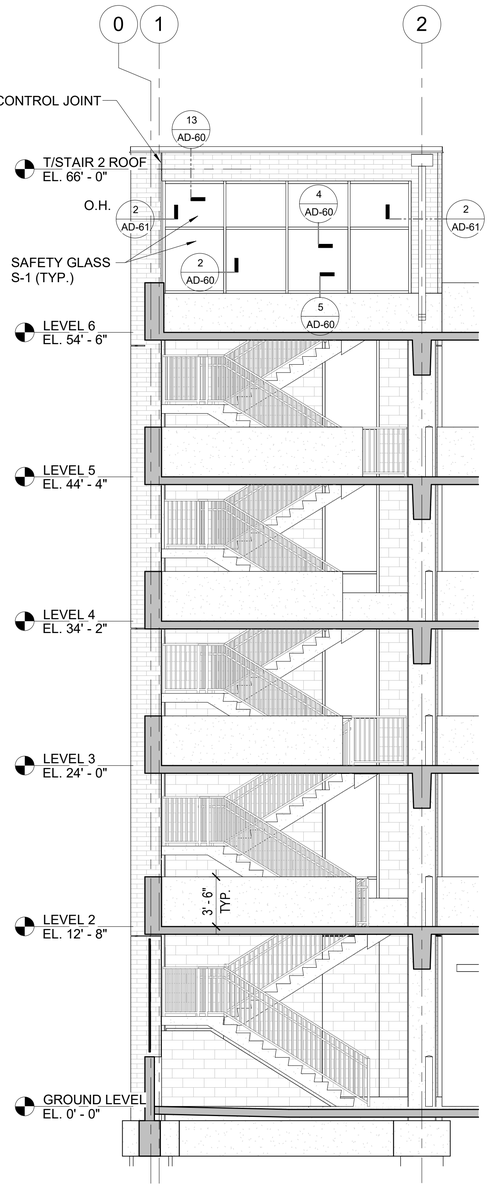
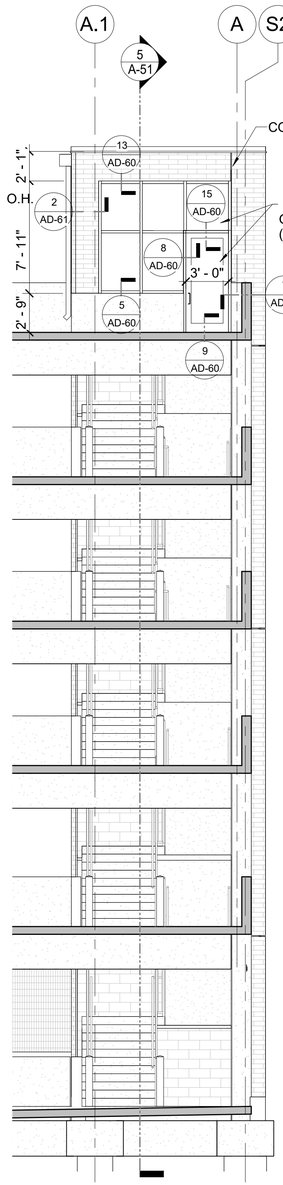


1 A-51 STAIR 2 - WEST ELEVATION
SCALE: 3/16" = 1'-0"

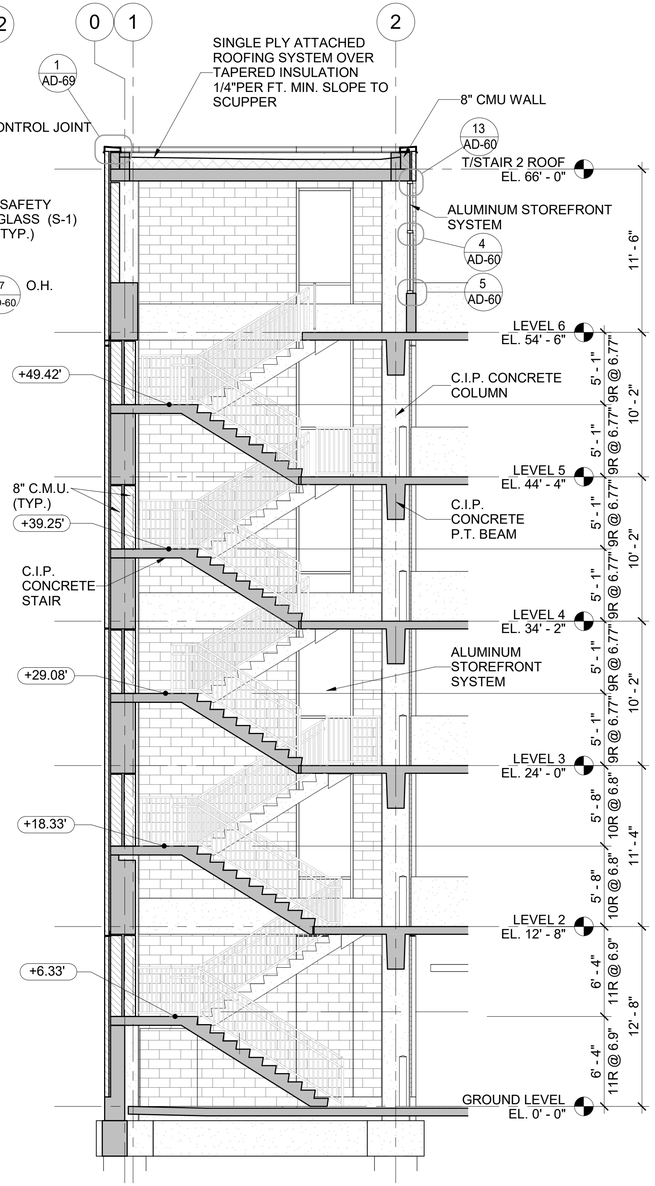
2 A-51 STAIR 2 - SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



3 A-51 STAIR 2 - EAST ELEVATION
SCALE: 3/16" = 1'-0"



4 A-51 STAIR 2 - NORTH ELEVATION
SCALE: 3/16" = 1'-0"



5 A-51 STAIR 2 - SECTION LOOKING WEST
SCALE: 3/16" = 1'-0"

2 SCALE: 3/16" = 1'-0"
4' 0' 2' 4' 8' 16'

Designed by:	REVISION			
R LUTZ	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	2	3/11/21	ADDENDUM 2	
R MANZO				
Checked by:				
P HUTCHISON				

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WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-A-51
STAIR 2 - ELEVATIONS & SECTION

Contract:	1735
CAD File Name:	210A51.DWG
Date:	01 / 13 / 2021
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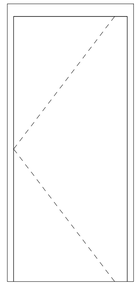
DOOR SCHEDULE

MARK	LOCATION ROOM NUMBER	LOCATION ROOM NAME	DOOR WIDTH	DOOR HEIGHT	DOOR THICK-NESS	DOOR TYPE	DOOR MATERIAL	DOOR RATING (MINUTES)	FRAME TYPE	FRAME MATERIAL	FRAME DETAIL SECTION MARKS HEAD	FRAME JAMB	FRAME SILL	HARD-WARE SET	COMMENTS
102	102	STAIR 1	3' - 4"	7' - 0"	0' - 0"	E	AL	-	F1	AL	15/A611	8/A611	3/A601	HS001	
104	105	TBD - BIKE PARKING AND WATER SERVICE ENTRY	(2) 3'-0"	7' - 0"	0' - 2"	D	STL	1 Hour	F1	HM	1/A601	2/A601	3/A601	HSFR102	
105	105	TBD - BIKE PARKING AND WATER SERVICE ENTRY	(2) 3'-0"	7' - 0"	0' - 2"	D	STL	1 Hour	F1	HM	1/A601	2/A601	3/A601	HSFR102	
106	106	CLOSET	(2) 3'-0"	7' - 0"	0' - 2"	D	STL	-	F1	HM	1/A601	2/A601	3/A601	HS101	
107	107	ELECTRICAL ROOM	3' - 0"	7' - 0"	0' - 1 3/4"	A	STL	1 Hour	F1	HM	1/A601	2/A601	3/A601	HSFR101	
108	108	ELEVATOR CONTROL ROOM	3' - 6"	7' - 0"	0' - 1 3/4"	A	STL	2 90 minutes	F1	HM	1/A601	2/A601	3/A601	HSFR101	
109	100	UNION PARKING EAST	3' - 0"	7' - 0"	0' - 2 1/2"	H	STL	-		STL				HS102	SECURITY GRILLE DOOR
110	100	UNION PARKING EAST	3' - 0"	7' - 0"	0' - 2 1/2"	H	STL	-		STL				HS102	SECURITY GRILLE DOOR
502	502	STAIR 1	3' - 0"	7' - 0"	0' - 0"	E	AL	-	F1	AL	15/A611	8/A611	3/A601	-	
603	603	STAIR 2	3' - 0"	7' - 0"	0' - 0"	E	AL	-	F1	AL	15/A611	8/A611	3/A601	-	
112		NOT USED						-							
113	100	UNION PARKING EAST	12' - 10"	11' - 0"		G								-	OVERHEAD COILING GRILLE
114	100	UNION PARKING EAST	12' - 10"	11' - 0"		G								-	OVERHEAD COILING GRILLE
115	100	UNION /LAB PARKING	3'-0"	7'-0"		F								HS103	CHAIN LINK SWING DOOR
116	100	UNION /LAB PARKING	(2) 6'-0"	12'-0"		F								HS104	CHAIN LINK SWING GATE

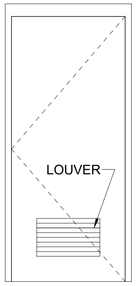
NOTE: REFER TO SPECIFICATIONS FOR FURTHER INFORMATION ON HARDWARE.

DOOR TYPES

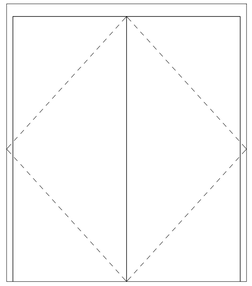
DOOR TYPE B IS NOT USED



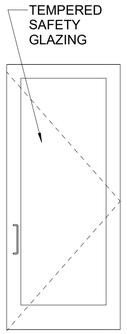
TYPE A



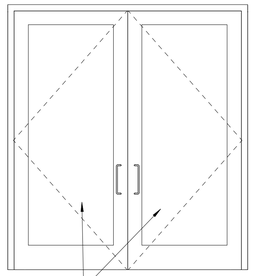
TYPE C



TYPE D



TYPE E



TYPE F

CHAIN LINK DOOR OR GATE

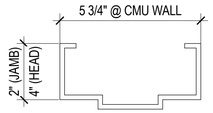
TYPE F

COILING GRILLE

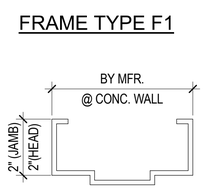
TYPE G

SECURITY GRILLE DOOR SEE 1/210-AD-66

TYPE H



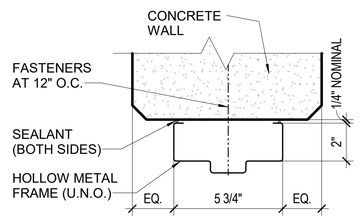
FRAME TYPE F1



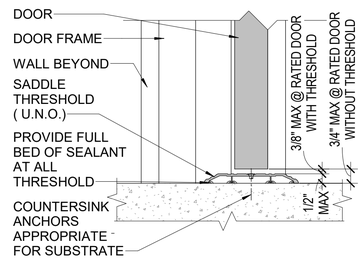
FRAME TYPE F2

LEGEND

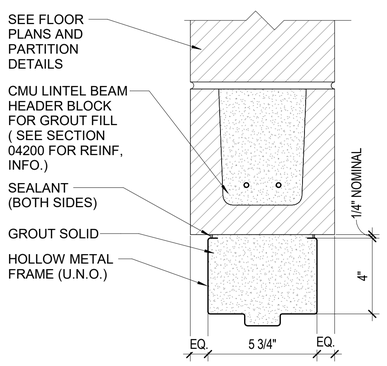
ALUM	ALUMINUM ASSEMBLIES
AL/GL	ALUM & GLASS
ANOD	ANODIZED
C.I.P.	CAST-IN-PLACE CONCRETE
CMU	CONCRETE MASONRY UNIT
CO/CM	PARTIAL CONC AND CMU
CO/PC	PARTIAL CONC AND PCC
GB	FIBERGLASS REINFORCED GYP.BD.
GL/CM	PARTIAL AL/GL AND CMU
GL/CO	PARTIAL AL/GL AND CONC
GL/PC	PARTIAL AL/GL AND PCC
HM	HALLOW METAL
PCC	PRECAST CONCRETE
PC/CM	PARTAIL PCC AND CMU
PT	PAINTED
SEA	SEALED
SOG	SLAB ON GRADE
T	TEMPERED



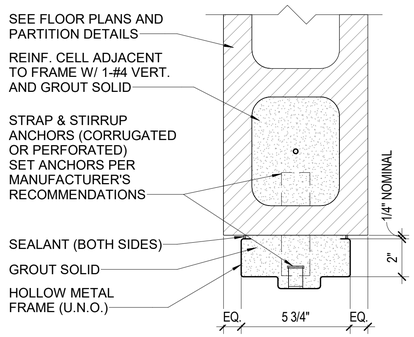
4 AS-50 DOOR HEAD DETAIL AT CONCRETE WALL
SCALE: 3" = 1'-0"



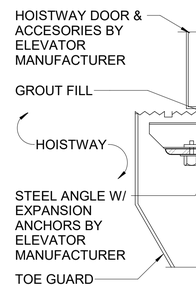
3 AS-50 DOOR SILL DETAIL
SCALE: 3" = 1'-0"



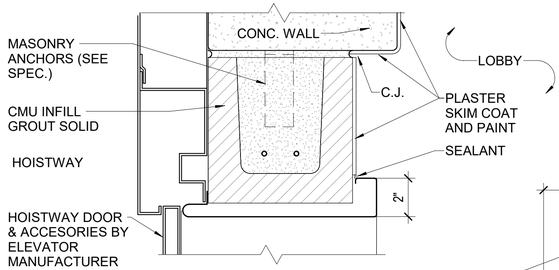
1 AS-50 H.M. DOOR HEAD DETAIL AT CMU WALL
SCALE: 3" = 1'-0"



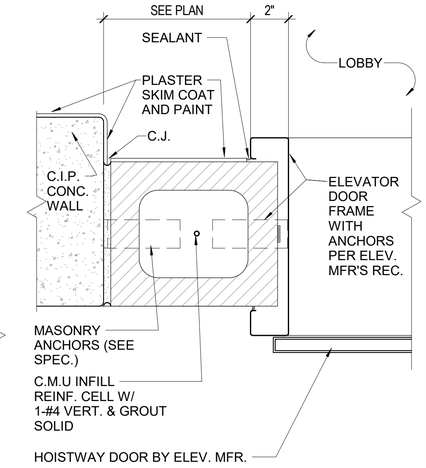
2 AS-50 H.M. DOOR JAMB DETAIL AT CMU WALL
SCALE: 3" = 1'-0"



6 AS-50 TYP. ELEV. DOOR SILL DETAIL
SCALE: 3" = 1'-0"



5 AS-50 TYP. ELEV. DOOR HEAD DETAIL
SCALE: 3" = 1'-0"



7 AS-50 TYP. ELEV. DOOR JAMB DETAIL
SCALE: 3" = 1'-0"

ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR FINISH	BASE FINISH	WALL FINISH	CEILING FINISH	COMMENTS
100	UNION PARKING EAST	SOG	SEALED	CIP	CIP	
101	UNION PARKING WEST	SOG	SEALED	CIP	CIP	
102	STAIR 1	SOG	SEALED	GL/CM	CIP	INTERIOR FACING ELEV. SHAFT WALL TO BE PAINTED ONLY
103	STAIR 2	SOG	SEALED	CO/CM	CIP	
104	(AECF PARKING)	SOG	SEALED	CIP	CIP	
105	TBD - BIKE PARKING AND WATER SERVICE ENTRY	SOG	SEALED	CO/CM	CIP	
106	CLOSET	SOG	SEALED	CMU	CIP	
107	ELECTRICAL ROOM	SOG	SEALED	CMU	CIP	
108	ELEVATOR CONTROL ROOM	SOG	SEALED	CMU	CIP	
200	UNION PARKING EAST	CIP	SEALED	CIP	CIP	
201	UNION PARKING WEST	CIP	SEALED	CIP	CIP	
202	STAIR 1	CIP	SEALED	GL/CM	CIP	INTERIOR FACING ELEV. SHAFT WALL TO BE PAINTED ONLY
203	STAIR 2	CIP	SEALED	GL/CM	CIP	
300	UNION PARKING EAST	CIP	SEALED	CIP	CIP	
301	UNION PARKING WEST	CIP	SEALED	CIP	CIP	
302	STAIR 1	CIP	SEALED	GL/CM	CIP	INTERIOR FACING ELEV. SHAFT WALL TO BE PAINTED ONLY
303	STAIR 2	CIP	SEALED	GL/CM	CIP	
400	UNION PARKING EAST	CIP	SEALED	CIP	CIP	
401	UNION PARKING WEST	CIP	SEALED	CIP	CIP	
402	STAIR 1	CIP	SEALED	GL/CM	CIP	INTERIOR FACING ELEV. SHAFT WALL TO BE PAINTED ONLY
403	STAIR 2	CIP	SEALED	GL/CM	CIP	
500	UNION PARKING EAST	CIP	SEALED	CIP	CIP	
501	UNION PARKING WEST	CIP	SEALED	CIP	CIP	
502	STAIR 1	CIP	SEALED	GL/CM	CIP	
503	STAIR 2	CIP	SEALED	GL/CM	CIP	
600	UNION PARKING EAST	CIP	SEALED	CIP	CIP	
601	UNION PARKING WEST	CIP	SEALED	CIP	CIP	
602	STAIR 1	CIP	SEALED	GL/CM	CIP	
603	STAIR 2	CIP	SEALED	GL/CM	CIP	

Designed by:	REVISION			
Designer	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	1	2/19/21	ADDENDUM 1	
Author	2	3/11/21	ADDENDUM 2	
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Checker				

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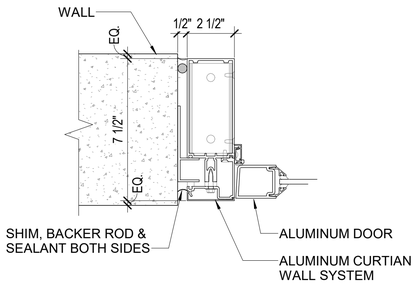
ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

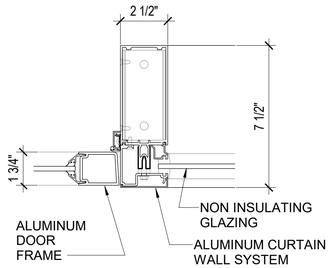
210-AS-50

ROOM / DOOR SCHEDULES AND DETAILS

Contract: 1735
CAD File Name: 210AS50.DWG
Date: 01 / 13 / 2021



1 AD-62 DOOR JAMB DETAIL
SCALE: 3" = 1'-0"



2 AD-62 DOOR JAMB DETAIL
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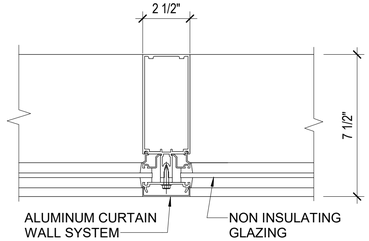

3 AD-62 VERTICAL MULLION DETAIL
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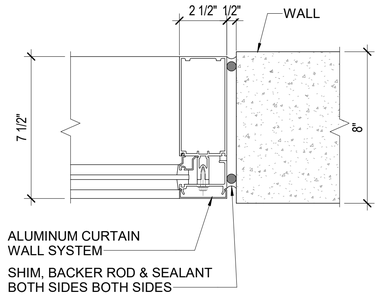

4 AD-62 JAMB DETAIL
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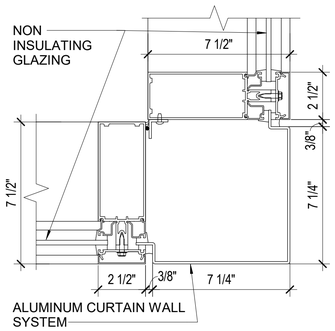
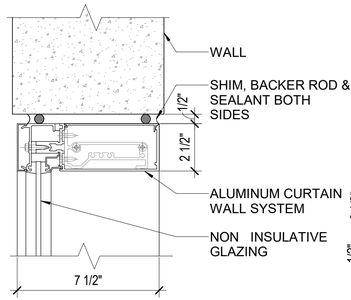
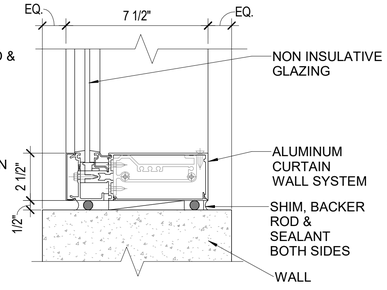


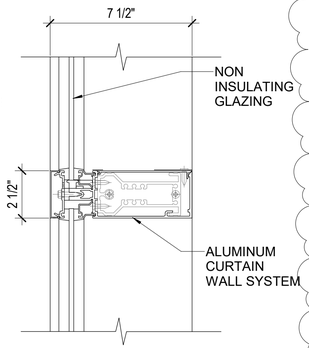
5 AD-62 OUTSIDE CORNER DETAIL
SCALE: 3" = 1'-0"



6 AD-62 HEAD DETAIL
SCALE: 3" = 1'-0"



7 AD-62 SILL DETAIL
SCALE: 3" = 1'-0"



8 AD-62 HORIZ. MULLION DETAIL
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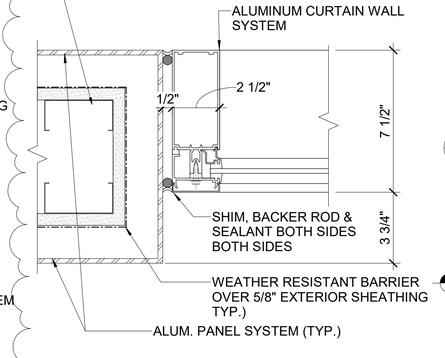

9 AD-62 METAL PANEL JAMB DETAIL
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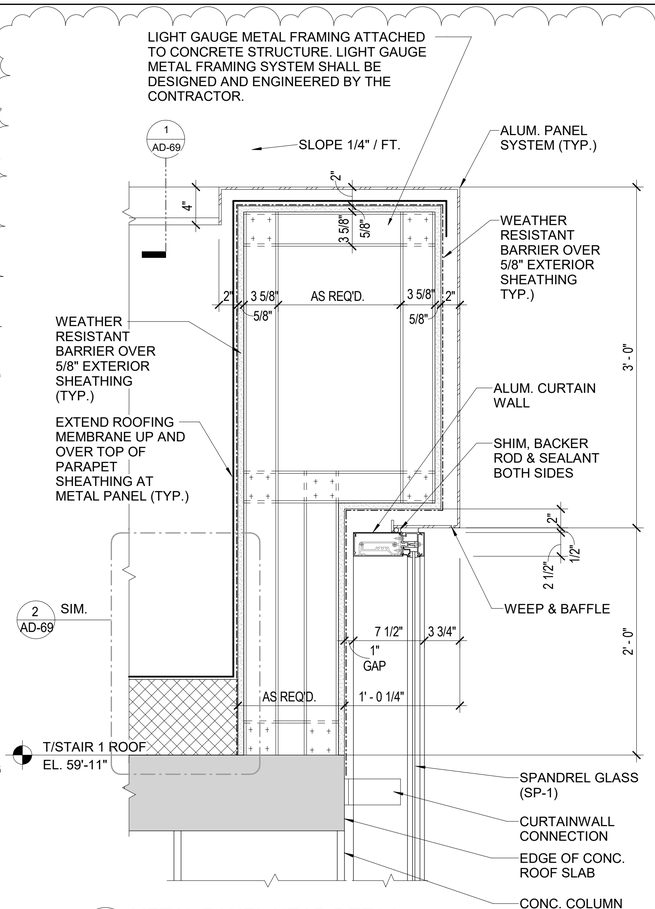

10 AD-62 METAL PANEL HEAD DETAIL
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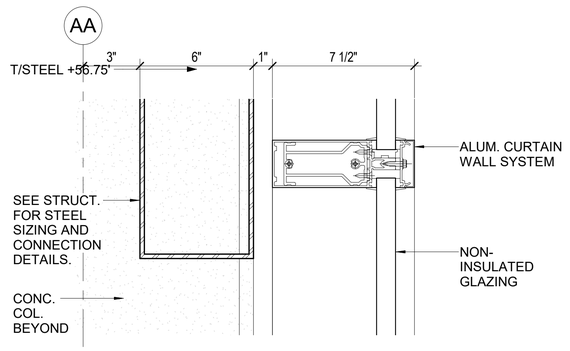
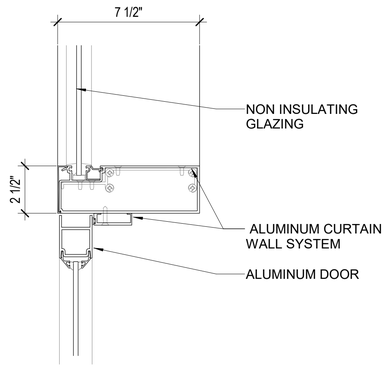


11 AD-62 STAIR 1/ELEVATOR CURTAIN WALL SECTION
SCALE: 3" = 1'-0"



12 AD-62 DOOR HEAD DETAIL
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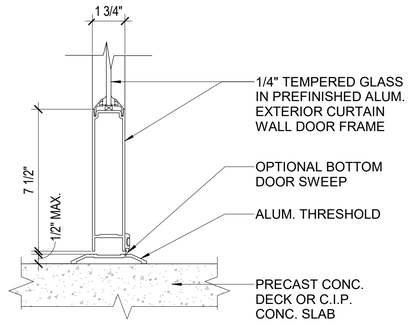

13 AD-62 DOOR SILL DETAIL
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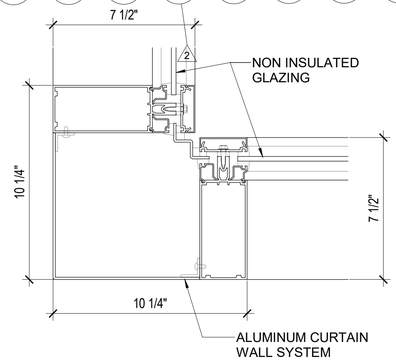

14 AD-62 INSIDE CORNER DETAIL
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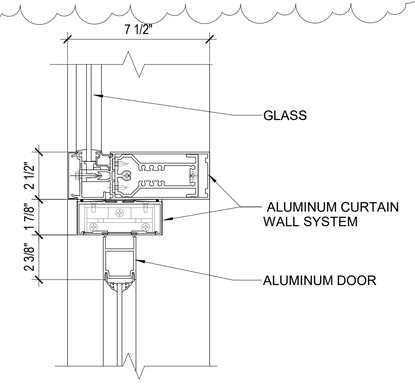

15 AD-62 DOOR HEAD DETAIL
SCALE: 3" = 1'-0"

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REGISTERED ARCHITECT COMMONWEALTH OF PENNSYLVANIA

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210-AD-62
CURTAINWALL DETAILS - NON INSULATING GLAZING

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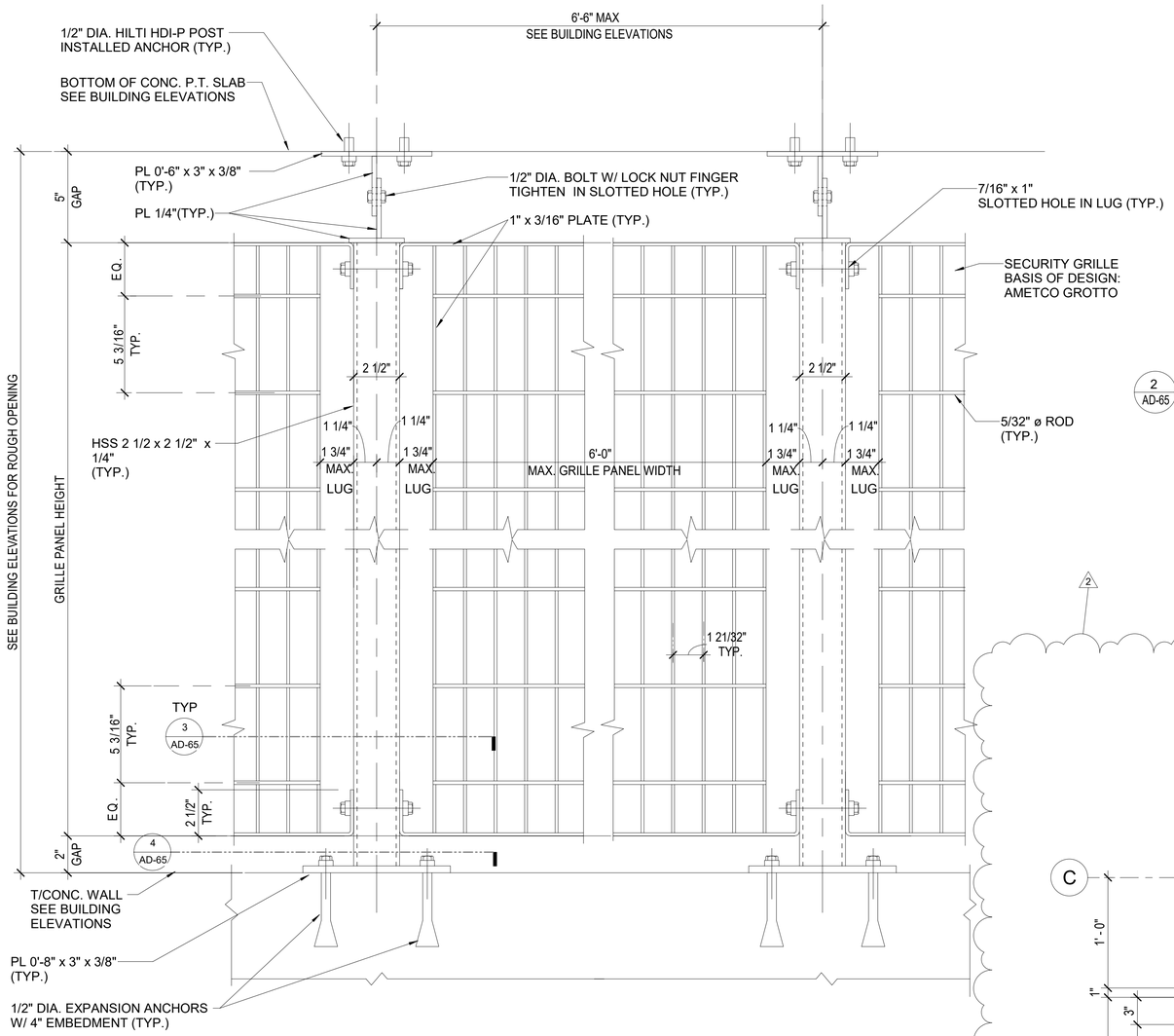
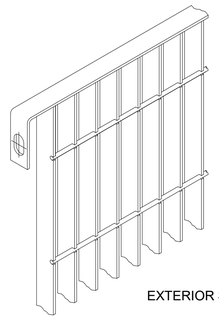


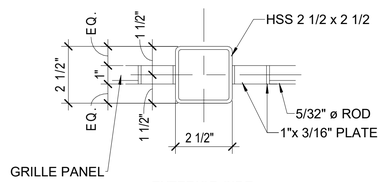
TYPICAL SECURITYGRILLE PANEL & SUPPORT POST ELEVATION - ALL AREAS

1 / AD-65 SCALE: 3" = 1'-0"



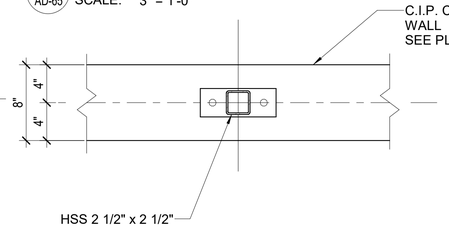
TYPICAL GRILLE PANEL PROFILE DETAIL

2 / AD-65 SCALE: 1/64" = 1'-0"



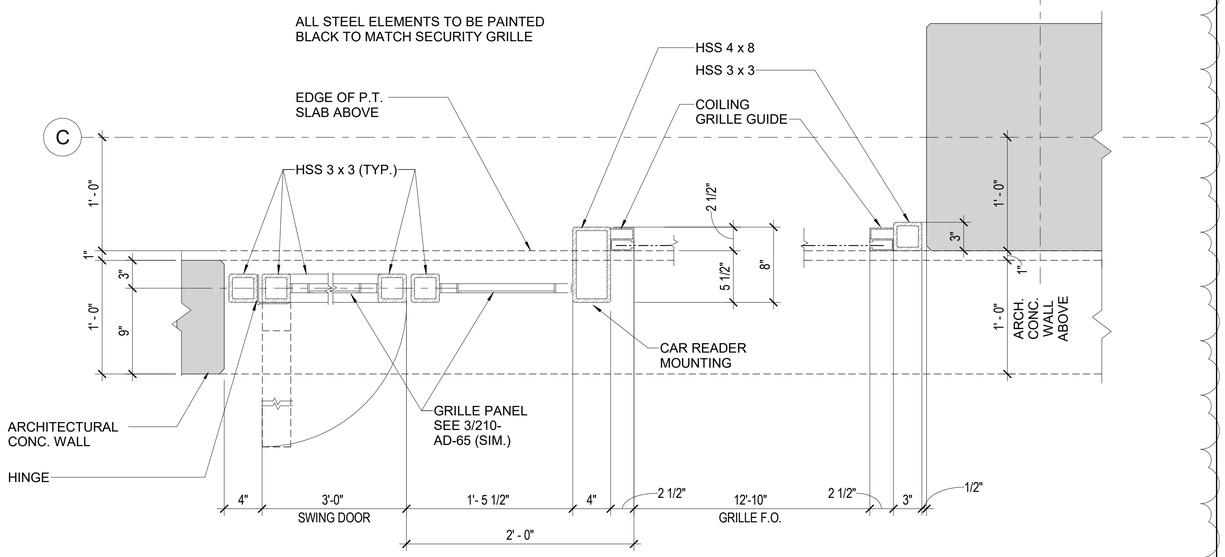
TYPICAL GRILLE SUPPORT POST PLAN AT GARAGE

3 / AD-65 SCALE: 3" = 1'-0"



TYPICAL GRILLE SUPPORT POST PLAN

4 / AD-65 SCALE: 1 1/2" = 1'-0"



SECURITY GRILLE ENTRY PLAN

5 / AD-65 SCALE: 1 1/2" = 1'-0"

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210-AD-65
SECURITY GRILLE DETAILS

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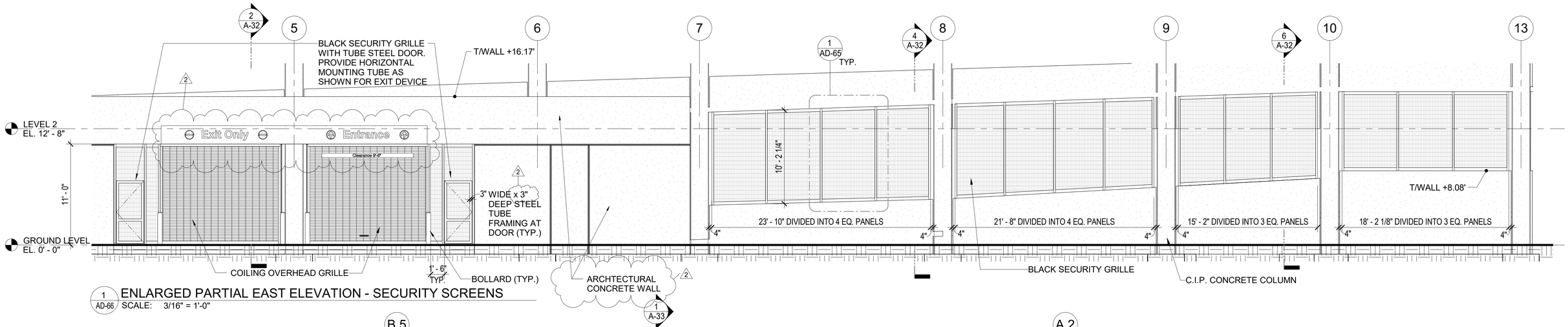
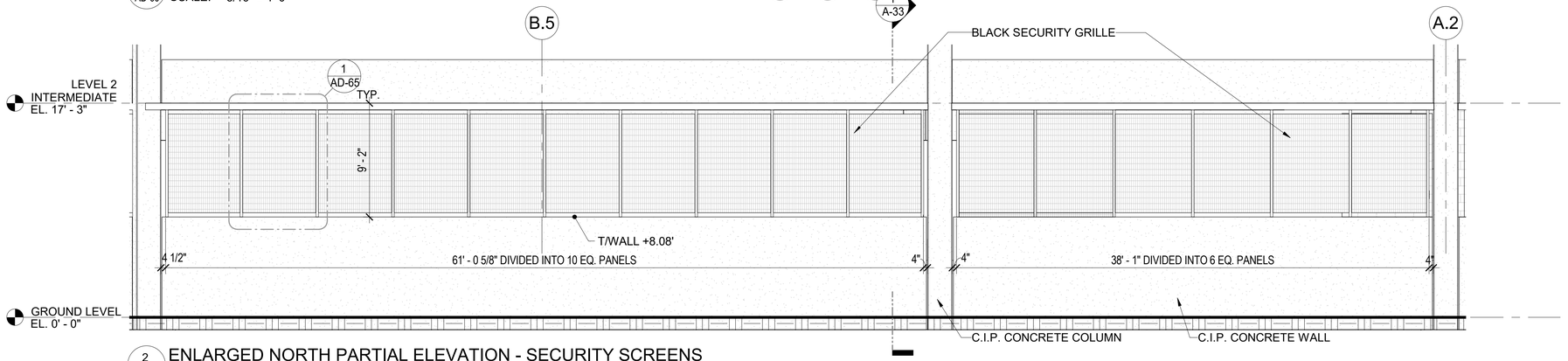
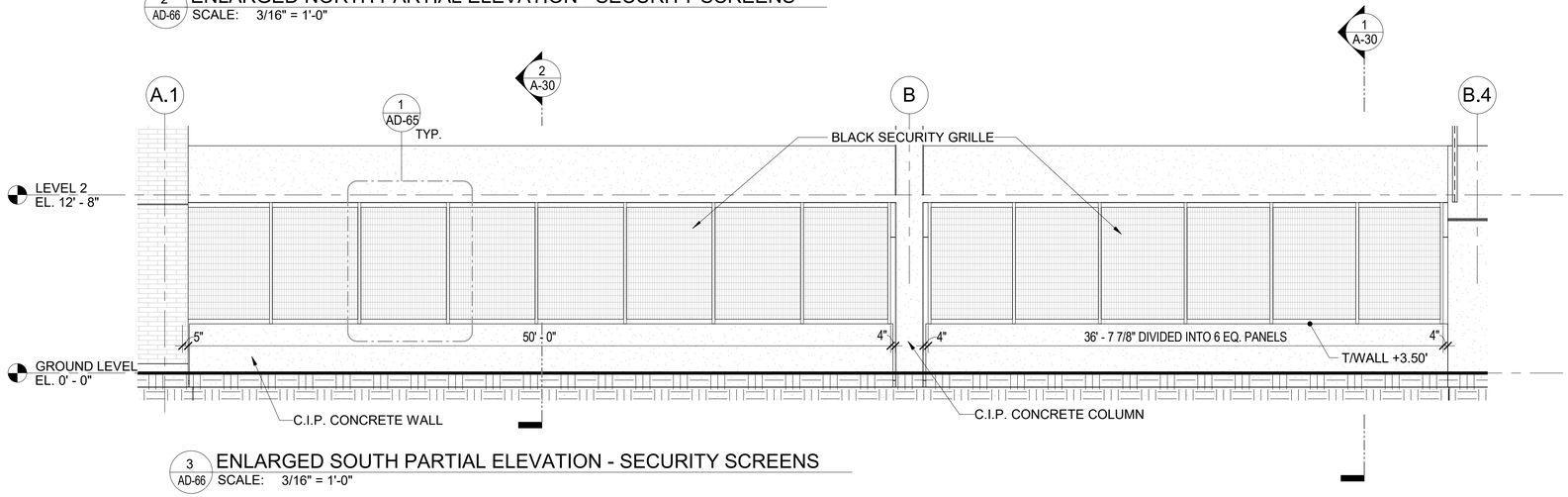


1 AD-66 ENLARGED PARTIAL EAST ELEVATION - SECURITY SCREENS
SCALE: 3/16" = 1'-0"



2 AD-66 ENLARGED NORTH PARTIAL ELEVATION - SECURITY SCREENS
SCALE: 3/16" = 1'-0"



3 AD-66 ENLARGED SOUTH PARTIAL ELEVATION - SECURITY SCREENS
SCALE: 3/16" = 1'-0"

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210-AD-66
SECURITY GRILLE ELEVATIONS

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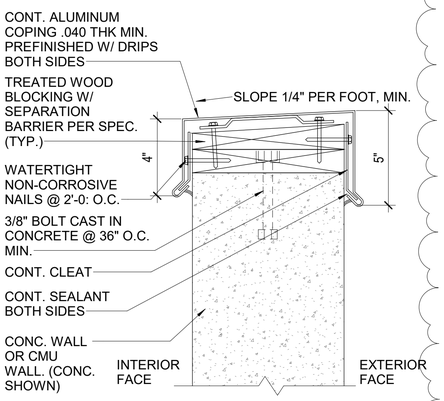
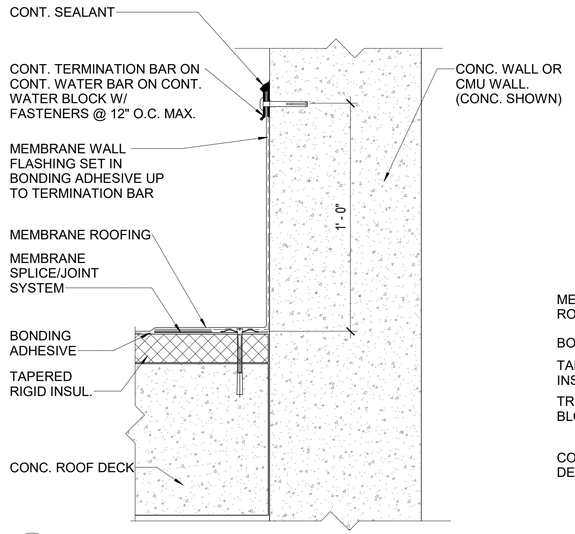


1 AD-69 TYPICAL COPING DETAIL
SCALE: 3" = 1'-0"



2 AD-69 TYPICAL ROOFTING TERMINATION DETAIL
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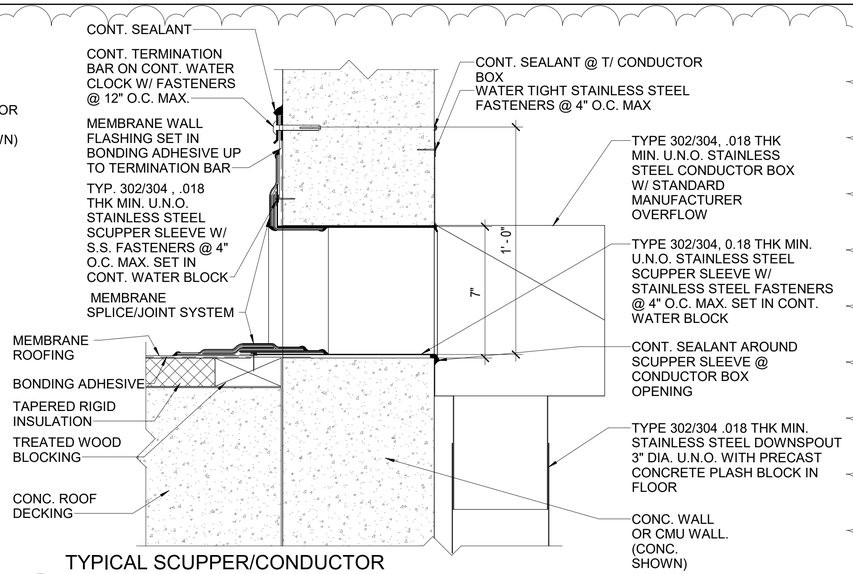

3 AD-69 TYPICAL SCUPPER/CONDUCTOR BOX DETAIL
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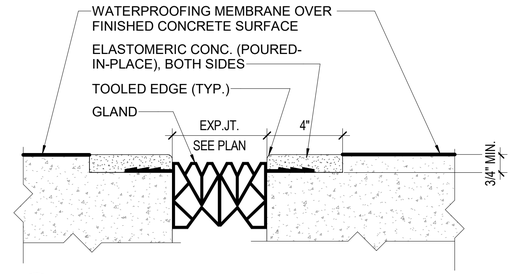
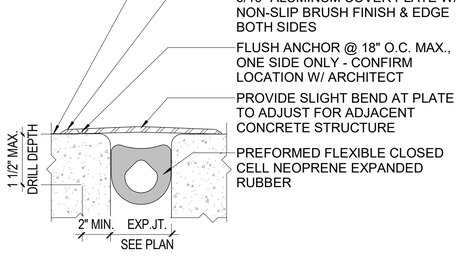


4 AD-69 TYPICAL EXPANSION JOINT
SCALE: 3" = 1'-0"



5 AD-69 EXPANSION JOINT TYPICAL HORIZONTAL
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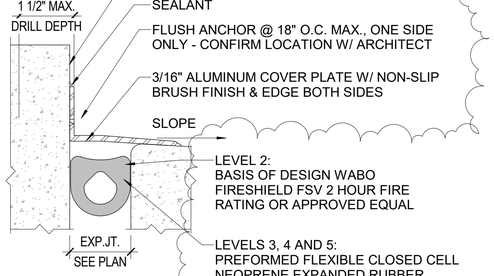

6 AD-69 TYPICAL EXPANSION JOINT 2
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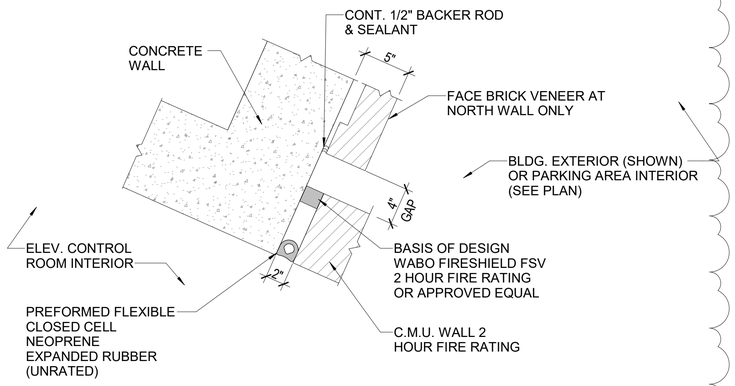
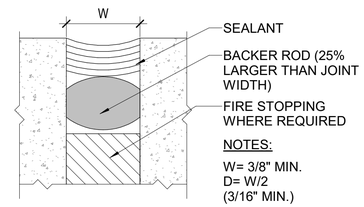


7 AD-69 VERTICAL EXPANSION JOINT AT ELEVATOR CONTROL ROOM
SCALE: 1 1/2" = 1'-0"



8 AD-69 TYPICAL SEALANT DETAIL
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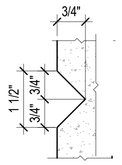
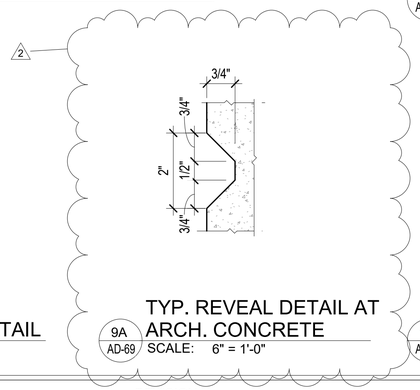
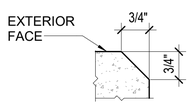


9 AD-69 TYP. REVEAL DETAIL
SCALE: 6" = 1'-0"

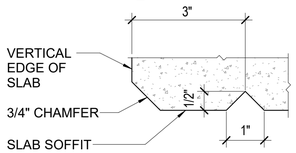


9A AD-69 TYP. REVEAL DETAIL AT ARCH. CONCRETE
SCALE: 6" = 1'-0"



NOTE: PROVIDE CHAMFER THUS @ ALL EXTERIOR CORNERS, TYP. , U.N.O.

10 AD-69 TYPICAL CHAMFER DETAIL
SCALE: 6" = 1'-0"



NOTE:
PROVIDE DRIP THUS @ ALL SLAB EDGES, U.N.O.

11 AD-69 TYPICAL DRIP DETAIL 2
SCALE: 6" = 1'-0"

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210-AD-69
MISC. THERMAL & MOISTURE PROTECTION DETAIL

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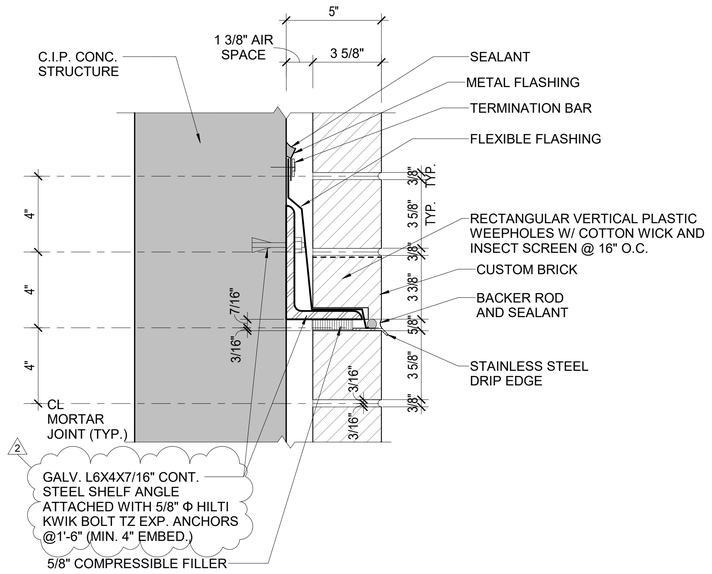
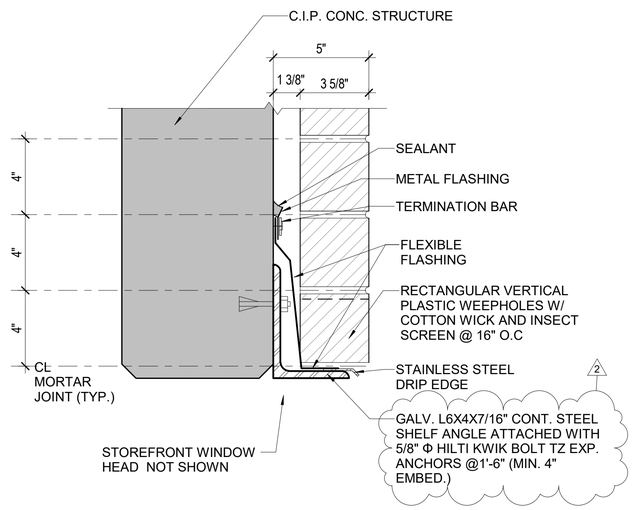


1 AD-71 TYP. DETAIL AT BRICK SHELF ANGLE
SCALE: 3" = 1'-0"



2 AD-71 TYP. DETAIL AT BRICK SHELF ANGLE AT WDO HEAD
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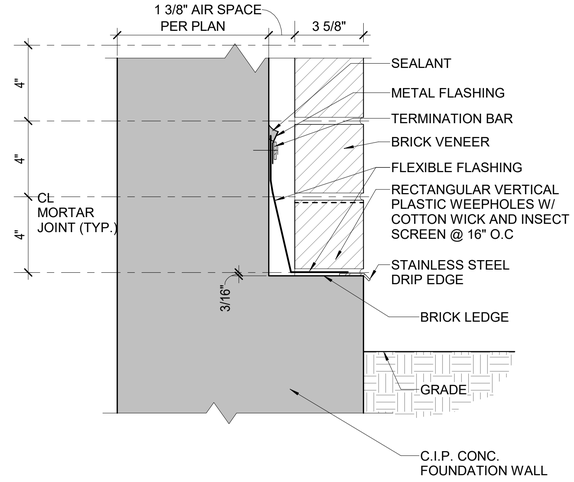
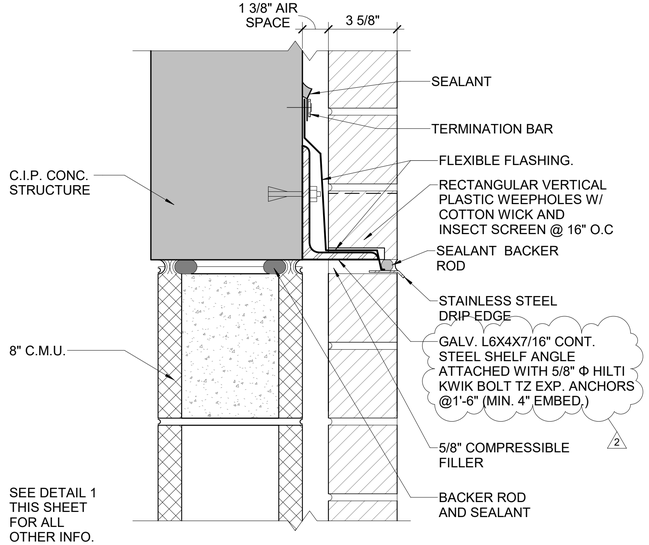
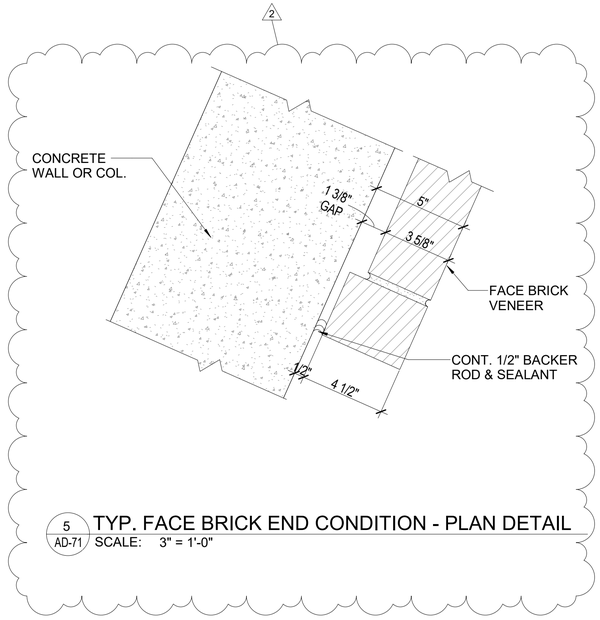


3 AD-71 TYP. DETAIL AT BRICK LEDGE
SCALE: 3" = 1'-0"



4 AD-71 TYP. DETAIL AT CMU W/ BRICK
SCALE: 3" = 1'-0"



5 AD-71 TYP. FACE BRICK END CONDITION - PLAN DETAIL
SCALE: 3" = 1'-0"

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WASTEWATER TREATMENT PLANT
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210-AD-71
MASONRY DETAILS

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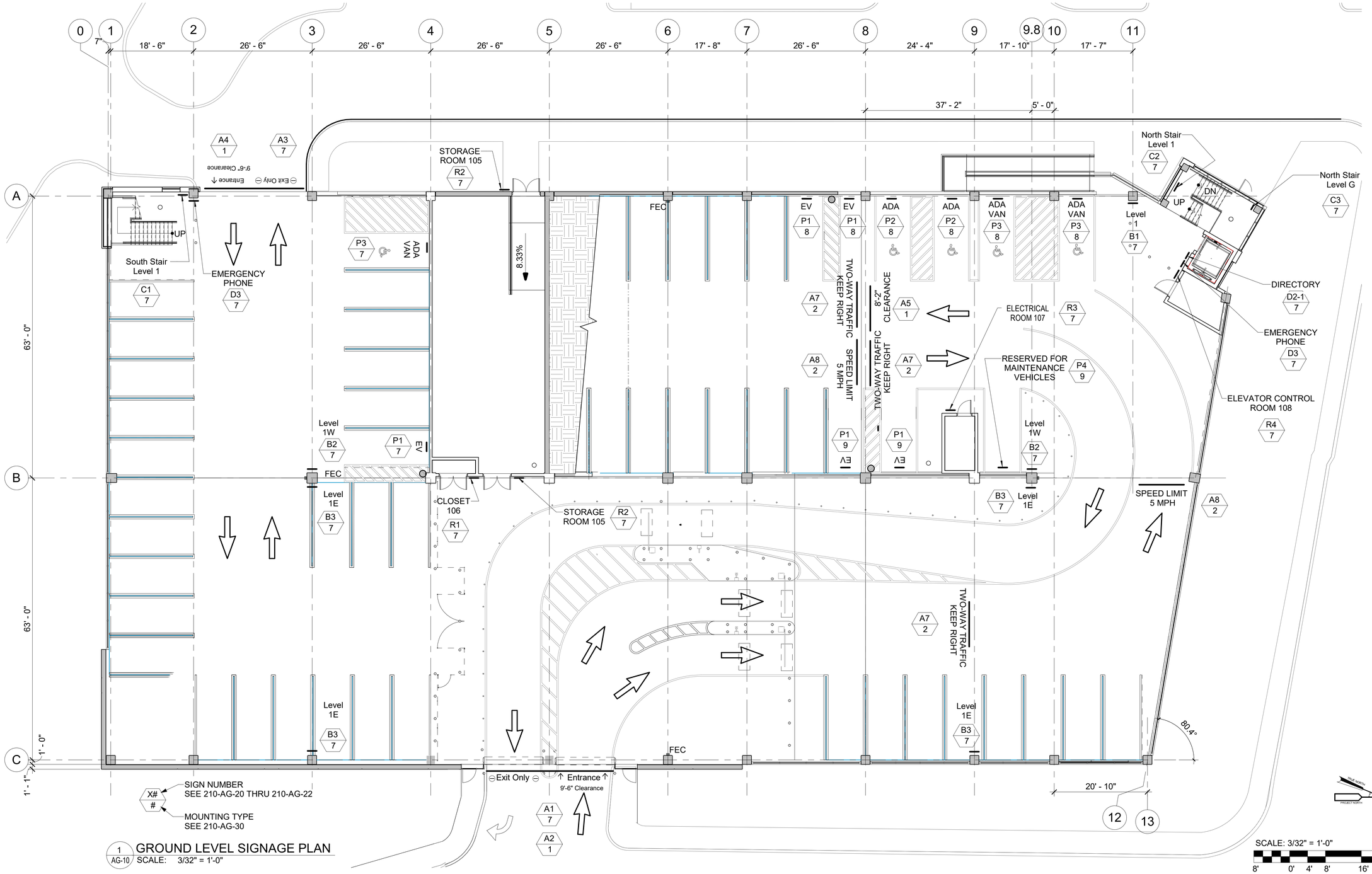
Sheet: 68 of 169



1 AG-10 GROUND LEVEL SIGNAGE PLAN
SCALE: 3/32" = 1'-0"

Designed by: Designer	REVISION			
	REV No.	DATE	DESCRIPTION	APPV
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ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-AG-10
GROUND LEVEL SIGNAGE PLAN

Contract:	1735
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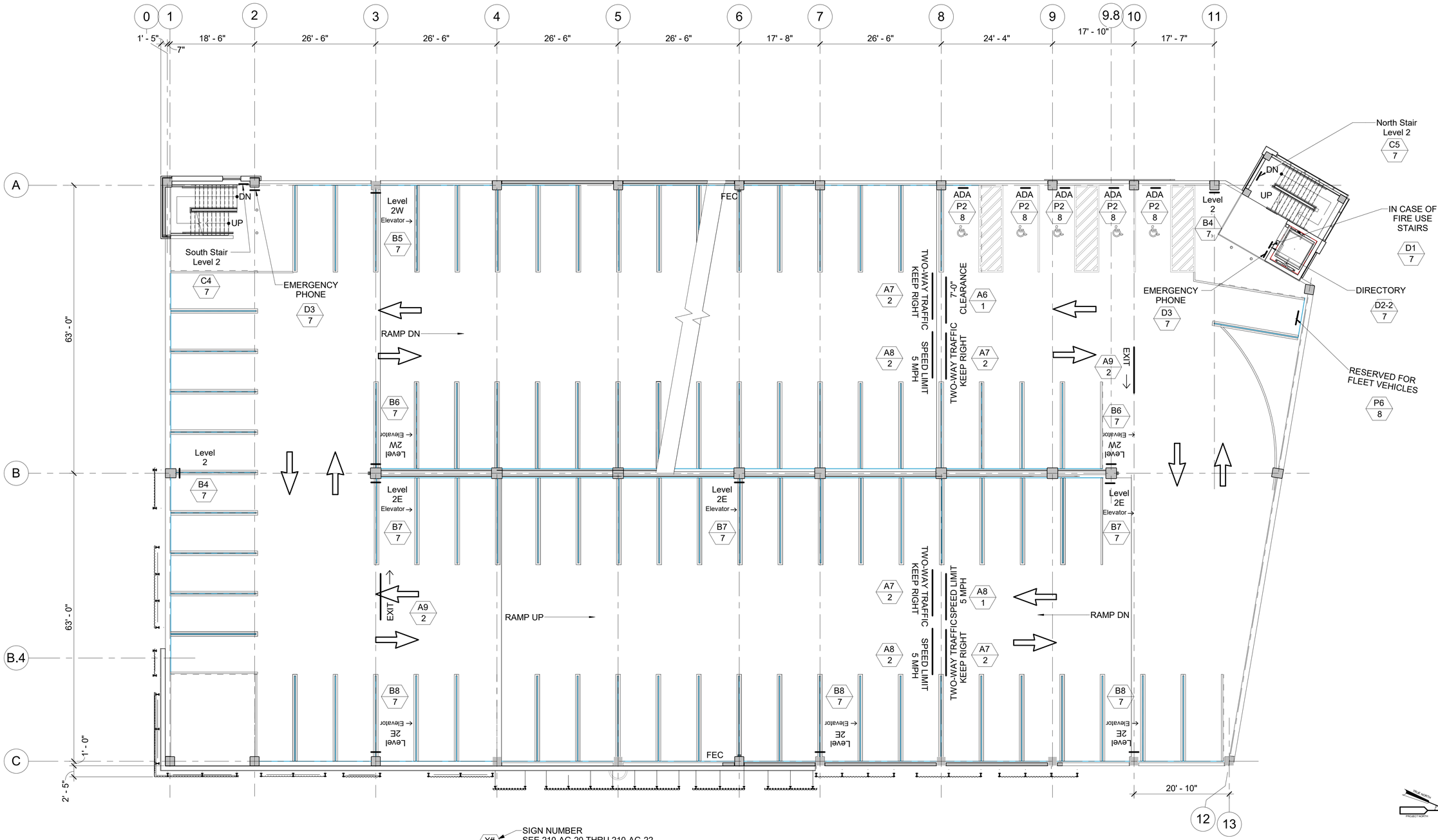
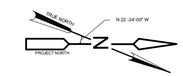


X#
#

SIGN NUMBER
SEE 210-AG-20 THRU 210-AG-22

MOUNTING TYPE
SEE 210-AG-30

1 / AG-11 LEVEL 2 SIGNAGE PLAN
SCALE: 3/32" = 1'-0"



SCALE: 3/32" = 1'-0"
8' 0' 4' 8' 16' 32'

Designed by: Designer	REVISION			
	REV No.	DATE	DESCRIPTION	APPV
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ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-AG-11
LEVEL 2 SIGNAGE PLAN

Contract:	1735
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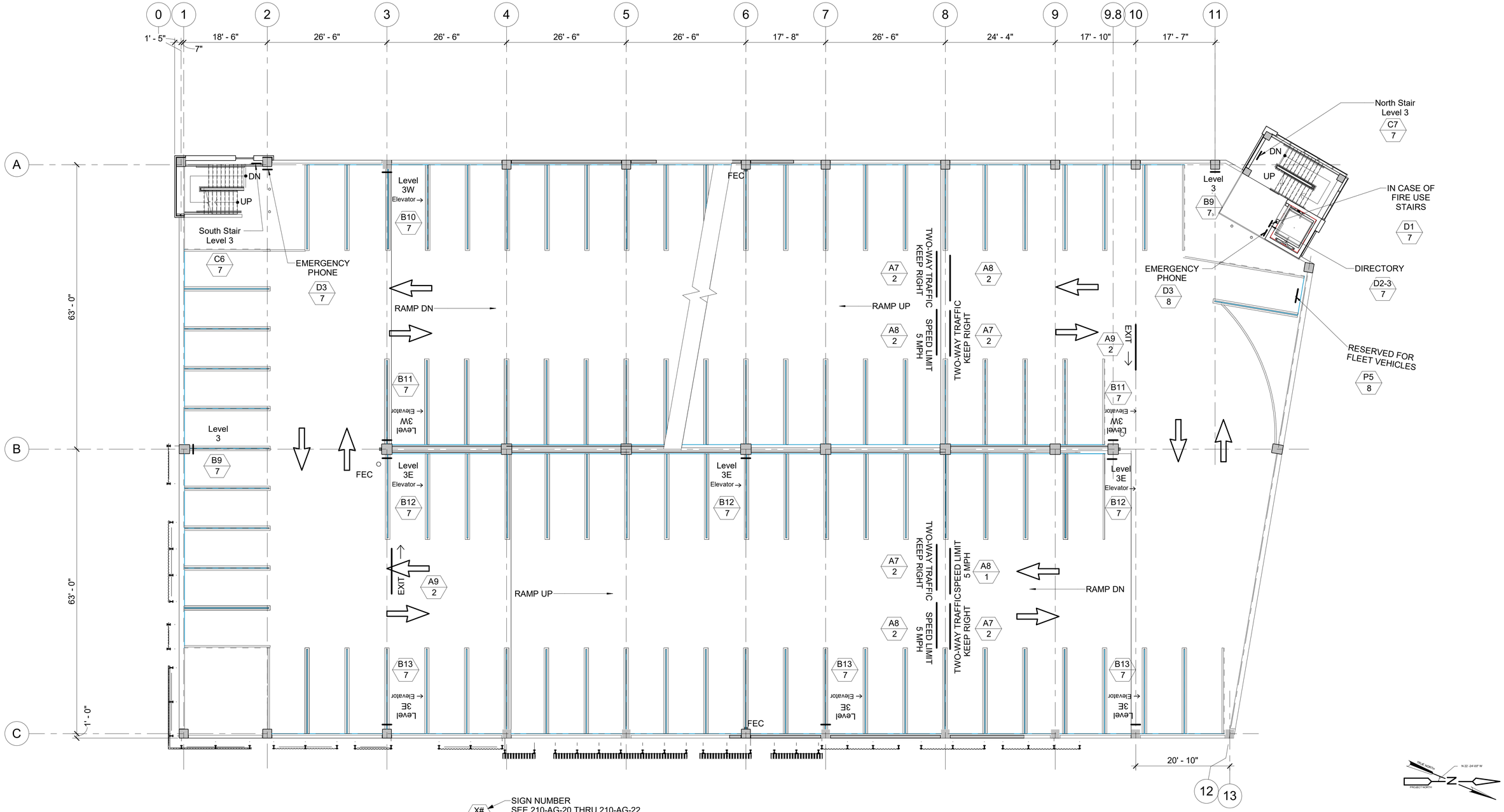

1 AG-12 LEVEL 3 SIGNAGE PLAN
SCALE: 3/32" = 1'-0"

X# / # — SIGN NUMBER SEE 210-AG-20 THRU 210-AG-22; MOUNTING TYPE SEE 210-AG-30

SCALE: 3/32" = 1'-0"
8' 0' 4' 8' 16' 32'

Designed by:	REVISION			
Designer	REV No.	DATE	DESCRIPTION	APPV
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WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-AG-12
LEVEL 3 SIGNAGE PLAN

Contract:	1735
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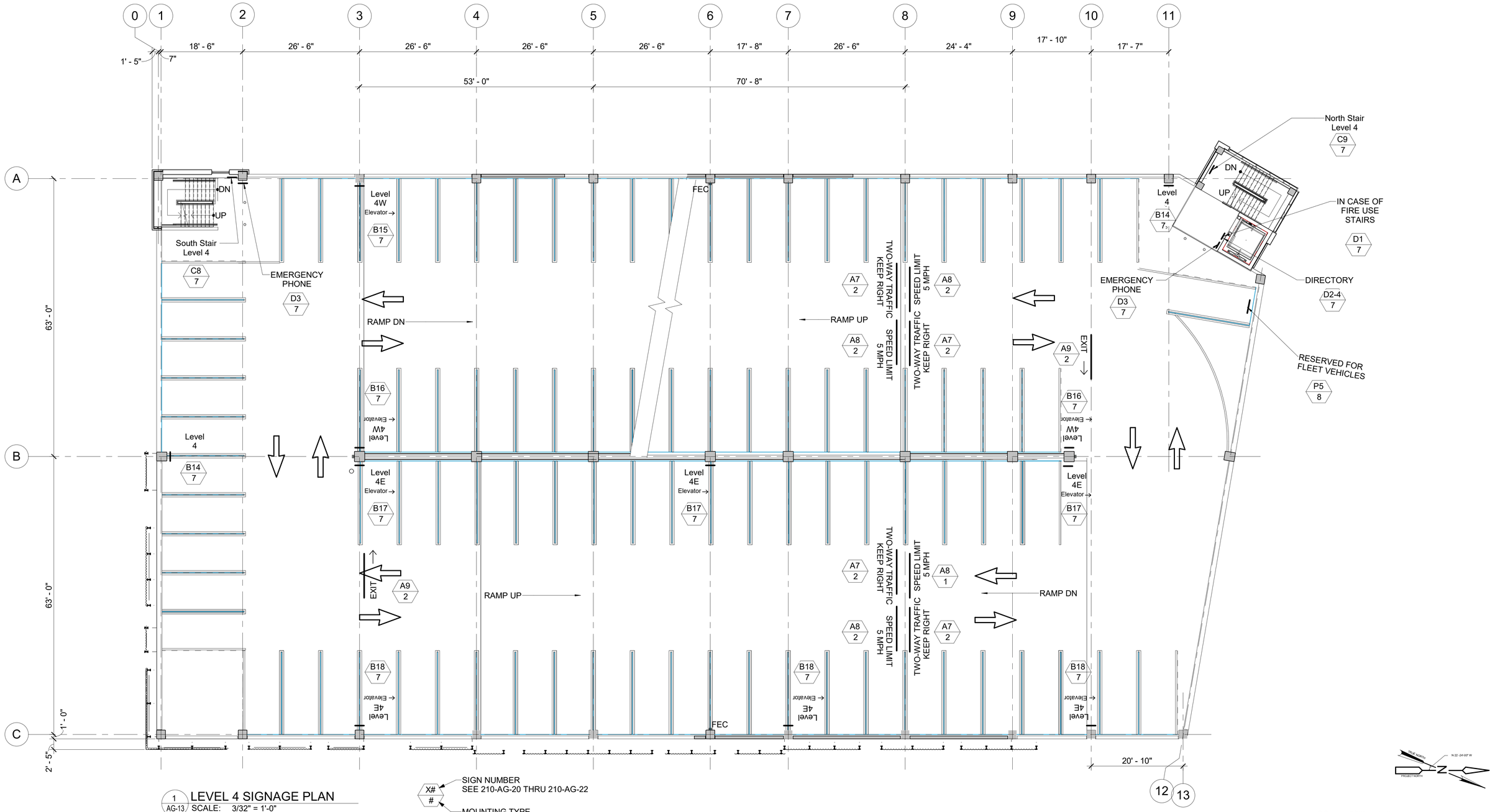

1 / AG-13 LEVEL 4 SIGNAGE PLAN
SCALE: 3/32" = 1'-0"

X# / # SIGN NUMBER
SEE 210-AG-20 THRU 210-AG-22
MOUNTING TYPE
SEE 210-AG-30

SCALE: 3/32" = 1'-0"
8' 0' 4' 8' 16' 32'

Designed by:	REVISION			
Designer	REV No.	DATE	DESCRIPTION	APPV
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WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-AG-13
LEVEL 4 SIGNAGE PLAN

Contract:	1735
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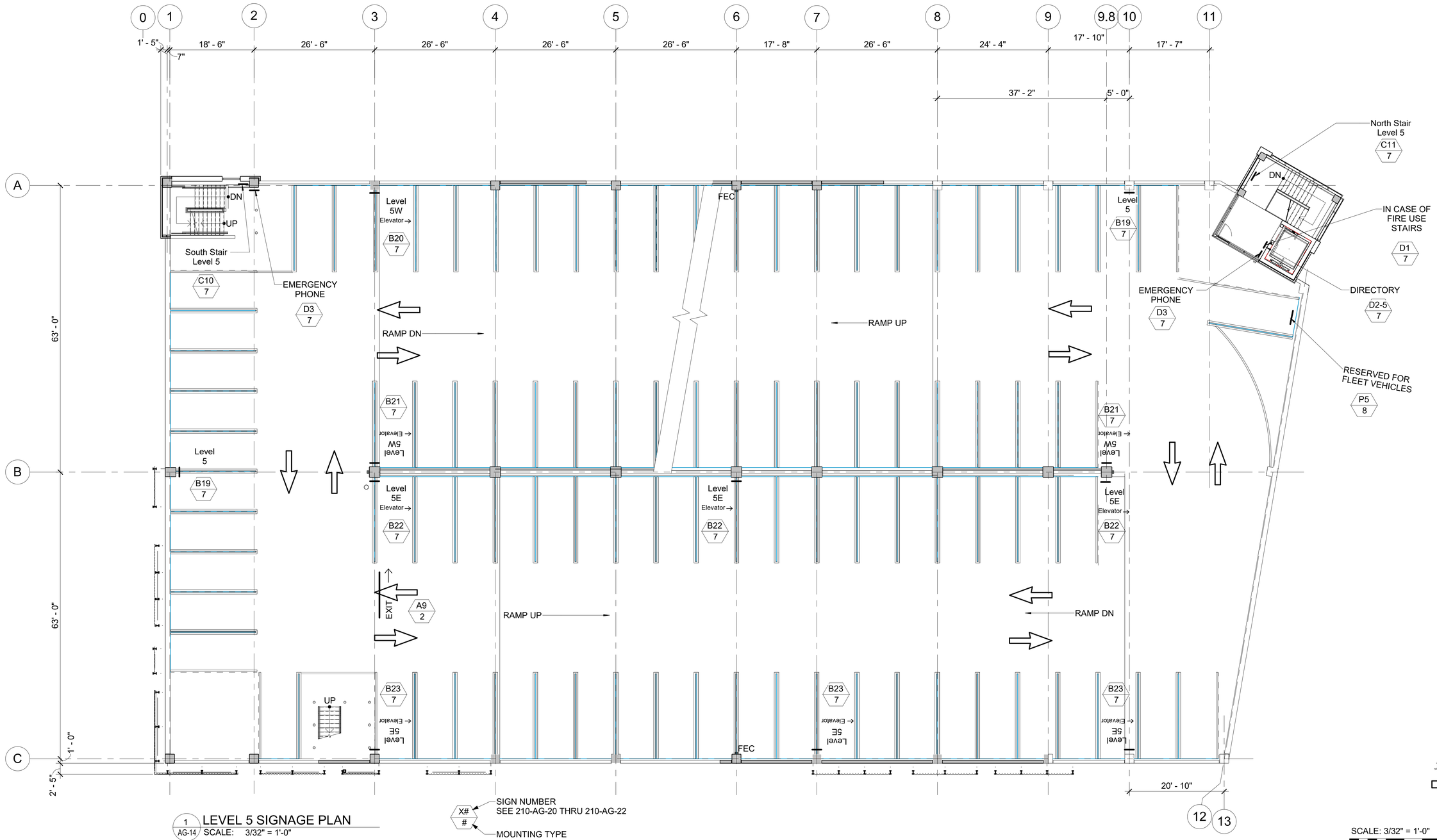

1 / AG-14 LEVEL 5 SIGNAGE PLAN
SCALE: 3/32" = 1'-0"

X# / # SIGN NUMBER SEE 210-AG-20 THRU 210-AG-22; MOUNTING TYPE SEE 210-AG-30

TRUE NORTH N 22° 24' 00" W PROJECT NORTH

SCALE: 3/32" = 1'-0"
8' 0' 4' 8' 16' 32'

Designed by: Designer	REVISION			
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WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-AG-14
LEVEL 5 SIGNAGE PLAN

Contract:	1735
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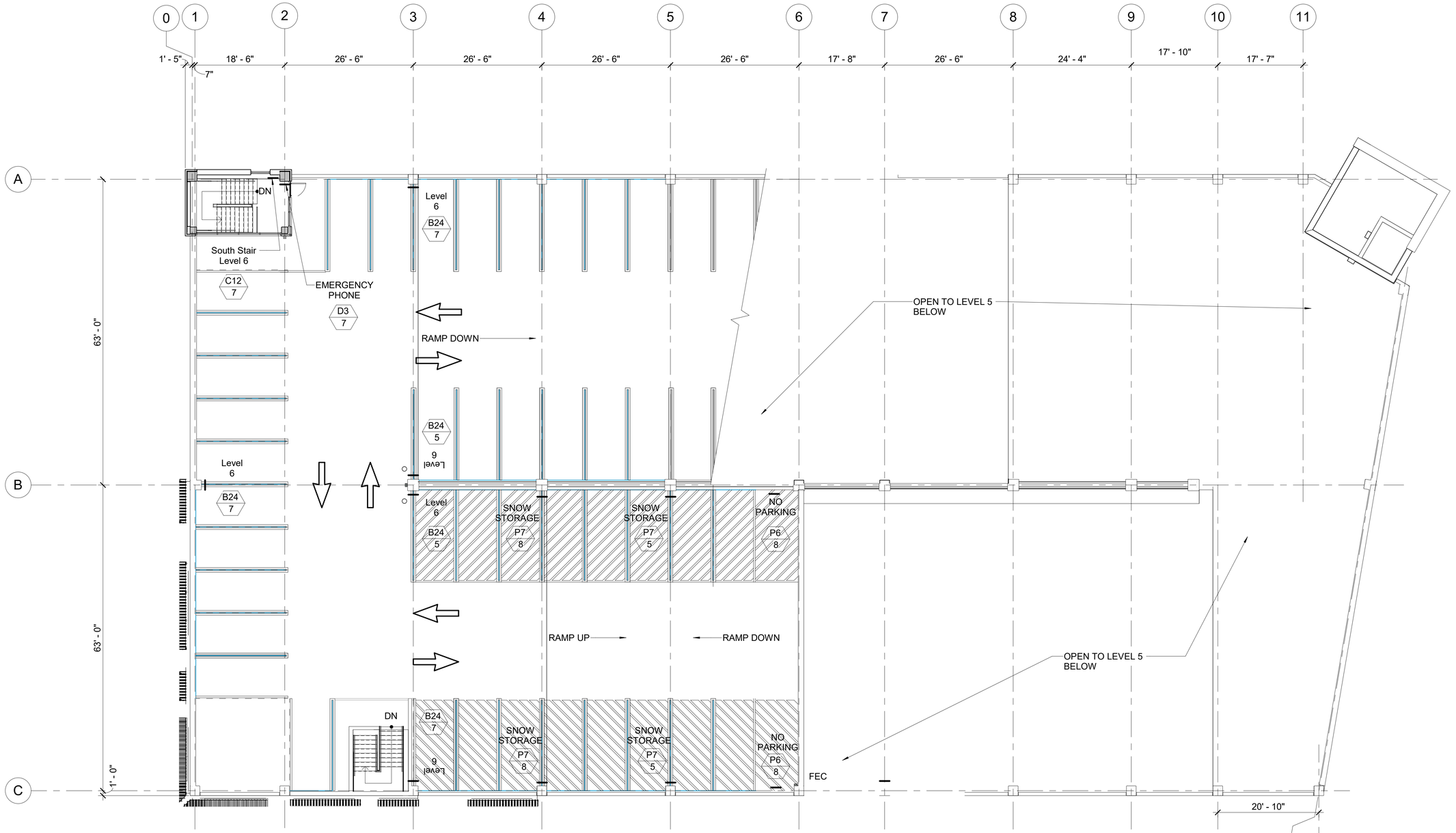

1 / AG-15 LEVEL 6 SIGNAGE PLAN (ROOF LEVEL)
SCALE: 3/32" = 1'-0"

X# / # SIGN NUMBER
SEE 210-AG-20 THRU 210-AG-22

MOUNTING TYPE
SEE 210-AG-30

TRUE NORTH
N 22° 24' 00" W
PROJECT NORTH

SCALE: 3/32" = 1'-0"
8' 0' 4' 8' 16' 32'

Designed by:	REVISION			
Designer	REV No.	DATE	DESCRIPTION	APPV
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WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-AG-15
LEVEL 6 SIGNAGE PLAN (ROOF LEVEL)

Contract: 1735
CAD File Name: 210AG06.DWG
Date: 01 / 13 / 2021
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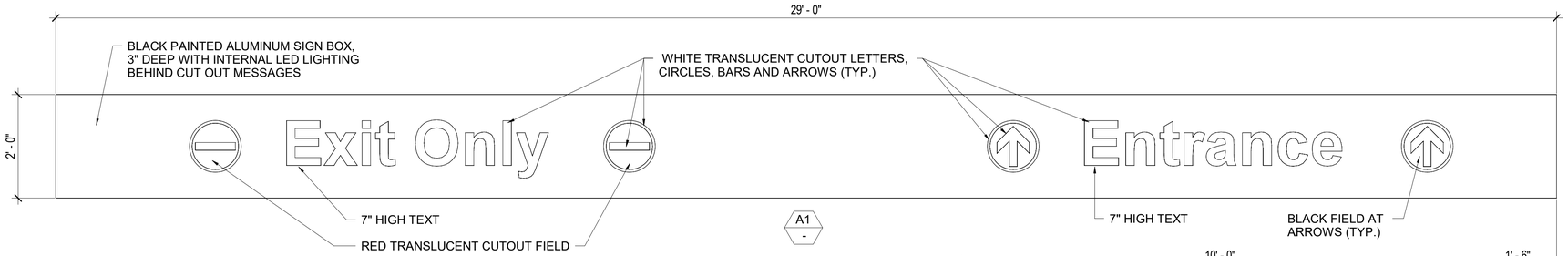
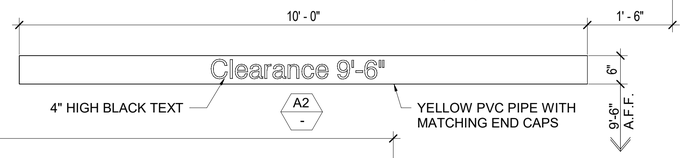


A1
-



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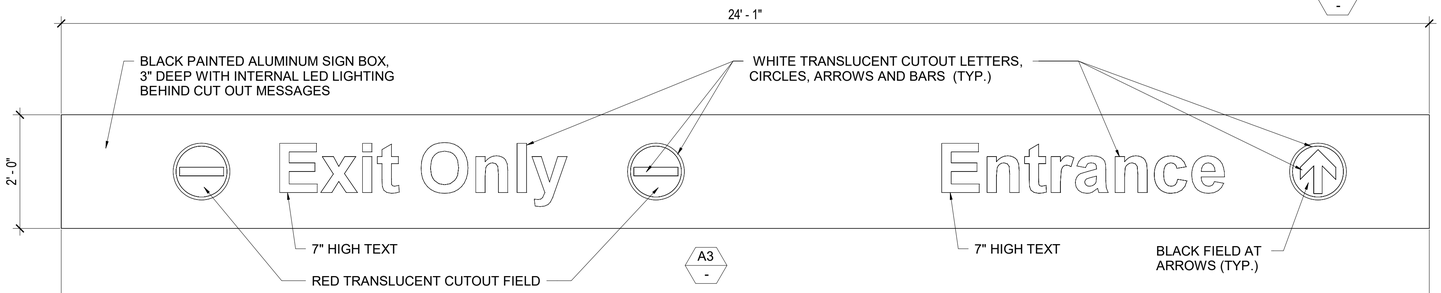

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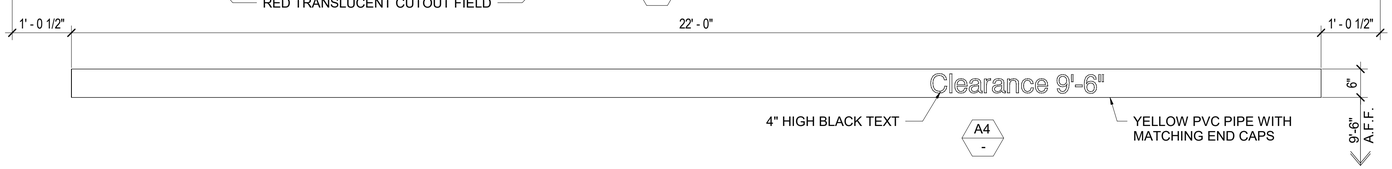

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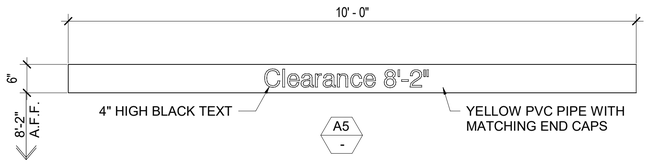

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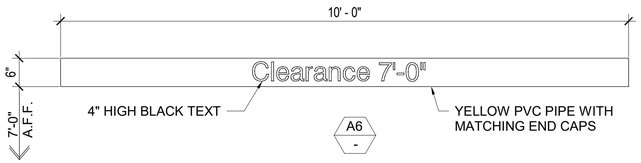

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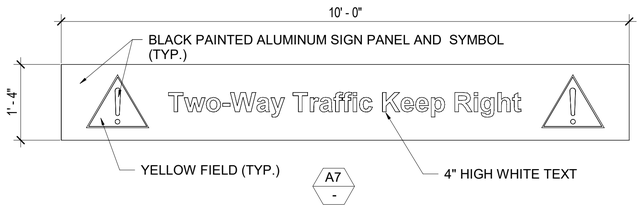
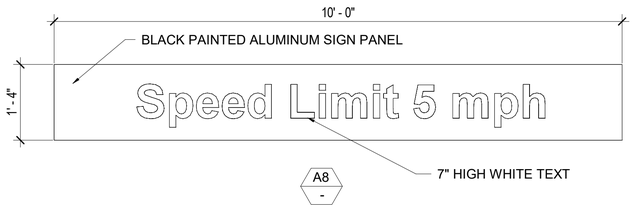


A7
-



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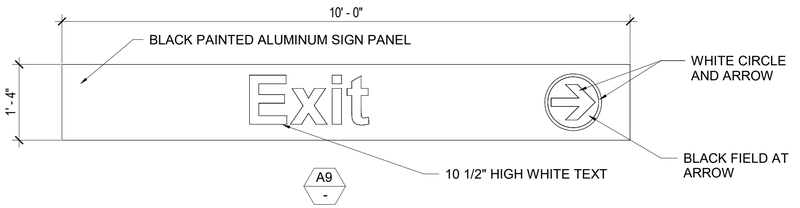

A9
-

SIGNAGE ELEVATIONS - TYPE A

3/4" = 1'-0"

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WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-AG-20
SIGNAGE ELEVATIONS - TYPE A

Contract:	1735
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Level 6 — B24 -

Level 5 — B19 -

Level 5W Elevator ⇨ — B20 -

Level 5W ⇦ Elevator — B21 -

Level 5E Elevator ⇨ — B22 -

Level 5E ⇦ Elevator — B23 -

Level 4 — B14 -

Level 4W Elevator ⇨ — B15 -

Level 4W ⇦ Elevator — B16 -

Level 4E Elevator ⇨ — B17 -

Level 4E ⇦ Elevator — B18 -

Level 3 — B9 -

Level 3W Elevator ⇨ — B10 -

Level 3W ⇦ Elevator — B11 -

Level 3E Elevator ⇨ — B12 -

Level 3E ⇦ Elevator — B13 -

Level 2 — B4 -

Level 2W Elevator ⇨ — B5 -

Level 2W ⇦ Elevator — B6 -

Level 2E Elevator ⇨ — B7 -

Level 2E ⇦ Elevator — B8 -

SEE LEVEL ID COLOR LEGEND FOR BACKGROUND COLOR (TYP.)

1" RADIUS (TYP.)

4" 2 1/4" 8" 2 1/2" 2" 3" 2 1/4" 2' - 0" TYP.

1' - 10" TYP.

WHITE LETTERS & NUMBER & SYMBOL (TYP.)

Level 1 — B1 -

Level 1W — B2 -

Level 1E — B3 -

LEVEL IDENTIFICATION COLOR LEGEND:

LEVEL	COLOR
6	PURPLE
5	ORANGE
4	CYAN
3	RED
2	BLUE
1	GREEN

South Stair Level 6 — EXIT DOWN TO LEVEL 1 ACCESS LEVELS 1 THRU 6 — C12 -

South Stair Level 5 — EXIT DOWN TO LEVEL 1 ACCESS LEVELS 1 THRU 6 — C10 -

North Stair Level 5 — EXIT DOWN TO LEVEL G ACCESS LEVELS G THRU 5 — C11 -

South Stair Level 4 — EXIT DOWN TO LEVEL 1 ACCESS LEVELS 1 THRU 6 — C8 -

North Stair Level 4 — EXIT DOWN TO LEVEL G ACCESS LEVELS G THRU 5 — C9 -

South Stair Level 3 — EXIT DOWN TO LEVEL 1 ACCESS LEVELS 1 THRU 6 — C6 -

North Stair Level 3 — EXIT DOWN TO LEVEL G ACCESS LEVELS G THRU 5 — C7 -

South Stair Level 2 — EXIT DOWN TO LEVEL 1 ACCESS LEVELS 1 THRU 6 — C4 -

1" RADIUS (TYP.)

BRAILLE (TYP.)

1' - 8"

North Stair Level 2 — EXIT DOWN TO LEVEL G ACCESS LEVELS G THRU 5 — C5 -

WHITE LETTERS & NUMBER RAISED 1/32" (TYP. AT ALL STAIR SIGNS)

2" 2" 6" 2" 1 1/4" 1 1/2" 2 1/4" 1' - 6" 1"

SEE LEVEL ID COLOR LEGEND FOR BACKGROUND COLOR (TYP.)

South Stair Level 1 — EXIT DISCHARGE LEVEL ACCESS LEVELS 1 THRU 6 — C1 -

North Stair Level 1 — EXIT DOWN TO LEVEL G ACCESS LEVELS G THRU 5 — C2 -

North Stair Level G — EXIT DISCHARGE LEVEL ACCESS LEVELS G THRU 5 — C3 -

5'-0" ABOVE FLOOR TO HIGHEST BRAILLE

DIRECTORY: 5 Level, 4, 3, 2, 1 — D2-5 -

1" H WHITE TEXT RAISED 1/32"

BLACK BACKGROUND

1' - 0"

EMERGENCY PHONE

FOR ASSISTANCE PUSH BUTTON

1' - 0"

3/4" H WHITE TEXT RAISED 1/32"

BRAILLE

WHITE ARROW RAISED 1/32"

D3 -

DIRECTORY: 5, 4, Level 3, 2, 1 — D2-3 -

DIRECTORY: 5, Level 4, 3, 2, 1 — D2-4 -

ALL ELEMENTS RAISED 1/32" (TYP.)

1' - 0"

BLACK BACKGROUND (TYP.)

1/4" BORDER (TYP.)

1 3/4" H WHITE NUMBERS (TYP.)

SEE LEVEL ID COLOR LEGEND FOR BACKGROUND COLOR (TYP.)

1 3/4" H WHITE TEXT (TYP.)

BRAILLE

DIRECTORY: 5, 4, 3, Level 2, Level 1 — D2-1 -

2 1/8" 3" 1 3/4" 2' - 5 3/4" 1 3/4" 3" 1 3/4" 2 1/8"

DIRECTORY: 5, 4, 3, Level 2, 1 — D2-2 -

RED FIRE SYMBOL RAISED 1/32"

1' - 0"

1" RADIUS

WHITE SYMBOLS AND 1" HIGH WHITE LETTERS RAISED 1/32"

1' - 0" 3"

IN FIRE EMERGENCY DO NOT USE ELEVATORS USE EXIT STAIRS

BRAILLE

BLACK BACKGROUND

D1 -

1 AG-21 SIGNAGE ELEVATIONS -TYPE B, C, D

SCALE: 1" = 1'-0"

Designed by: Designer
Drawn by: Author
Checked by: Checker

REVISION

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WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE
210-AG-21
SIGNAGE ELEVATIONS - TYPE B, C, D

Contract: 1735
CAD File Name: 210AG11.DWG
Date: 01 / 13 / 2021
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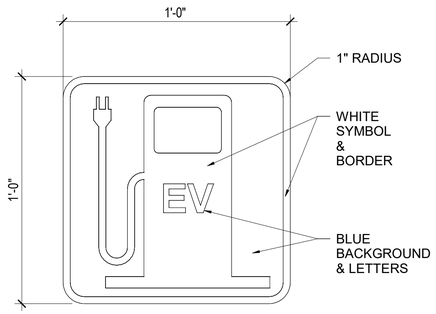
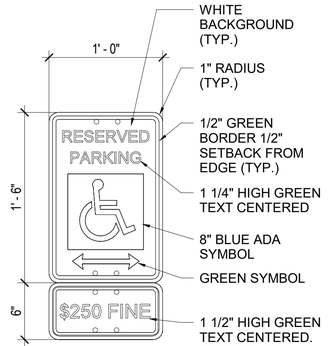


P1
-

NOT TO SCALE



P2
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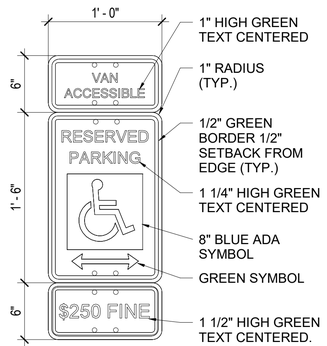

P3
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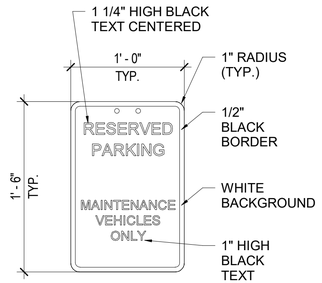

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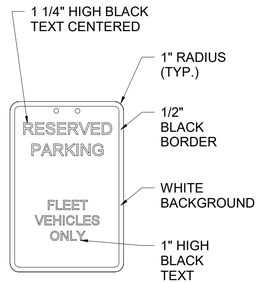

P5
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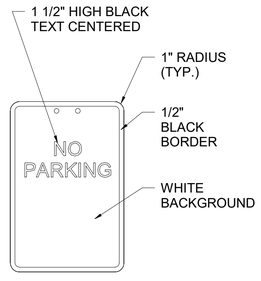

P6
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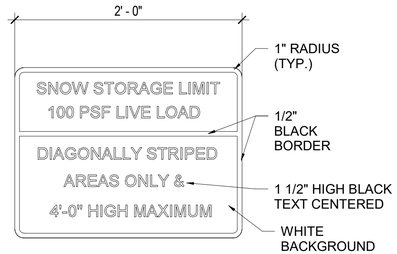
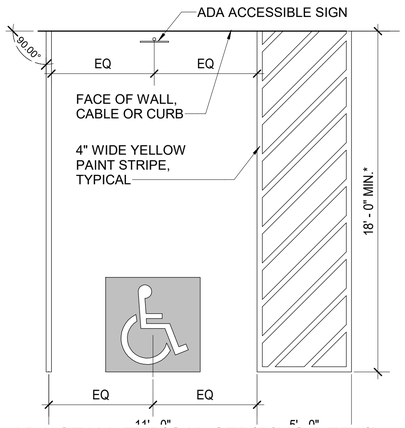


P7
-

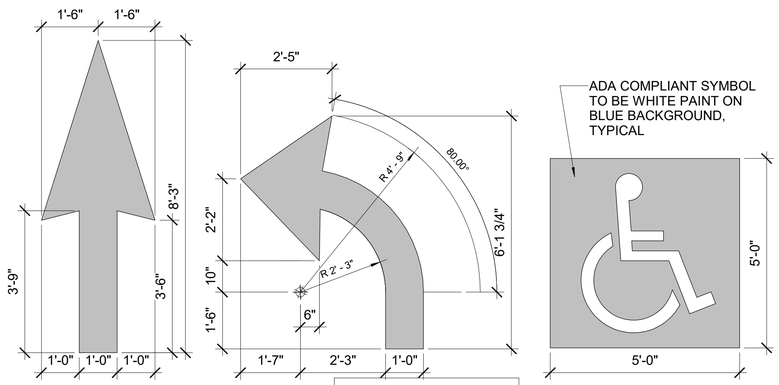
SIGNAGE ELEVATIONS - TYPE P

1 1/2" = 1'-0"



2 AG-22 ADA STALL TYPICAL STRIPING DETAIL

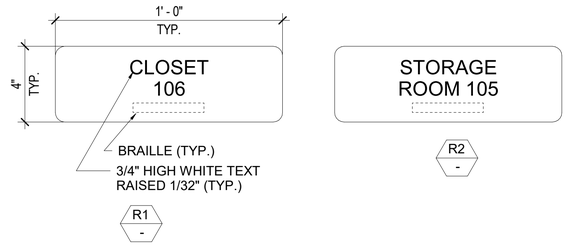
SCALE: 1/4" = 1'-0"



NOTE: ALL STRIPES FOR YELLOW PAINT U.N.O.

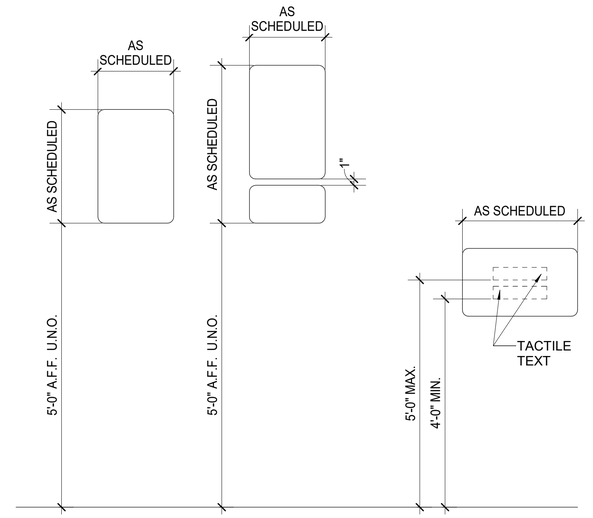
3 AG-22 TYPICAL STRIPING DETAILS

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



1 AG-22 SIGNAGE ELEVATIONS -TYPE R

SCALE: 3" = 1'-0"



TYPE1: VISUAL SIGNAGE

TYPE2: TACTILE SIGNAGE

SIGNAGE MOUNTING HEIGHTS

1" = 1'-0"

Designed by: Designer	REVISION			
	REV No.	DATE	DESCRIPTION	APPV
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ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
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210-AG-22
SIGNAGE ELEVATIONS - TYPE P AND R

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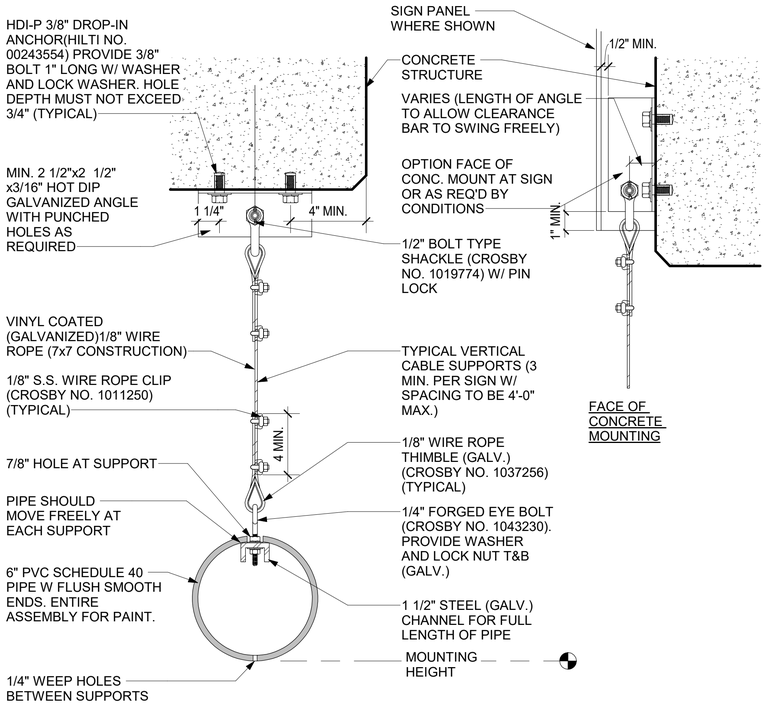
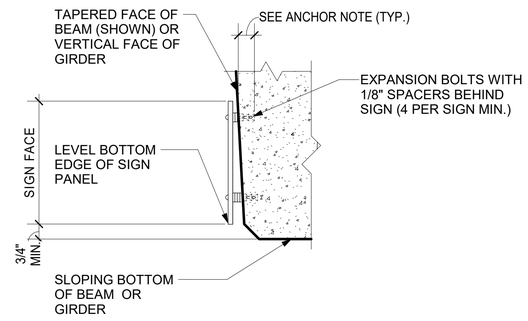


BOTTOM OF CONCRETE MOUNTING

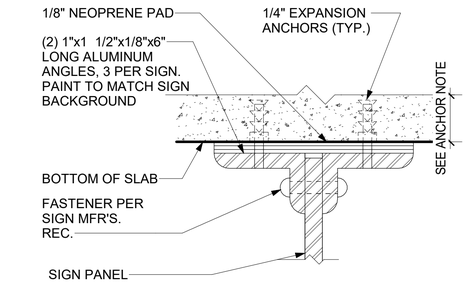
TYPICAL CLEARANCE BAR AND MOUNTING DETAIL

1 SCALE: 3" = 1'-0"



TYPICAL FACE OF BEAM MOUNTING DETAIL

2 SCALE: 3" = 1'-0"



NOTE: ADD ONE INCH OF SIGN HEIGHT AT TOP SIGN MARGIN TO ALLOW FOR THIS MOUNTING TYPE.

TYPICAL BOTTOM OF SLAB MOUNTING DETAIL

3 SCALE: 3" = 1'-0"

SIGNAGE GENERAL NOTES

1.REFERENCE SYMBOL FOR SIGNAGE (AS SHOWN ON THE PLANS):

SIGN AND MOUNTING 1/A — 1: SIGN NUMBER (SEE SIGNAGE ELEVATIONS); A: MOUNTING TYPE (SEE THIS SHEET)

2. SIGN CLEARANCES: MINIMUM VERTICAL CLEARANCE BELOW ALL SUSPENDED SIGNAGE SHALL COMPLY WITH GARAGE CLEARANCE(S) AS REQUIRED BY THE ARCHITECTURAL AND/OR STRUCTURAL GENERAL NOTES. CONTRACTOR TO COORDINATE WITH THE WORK OF OTHER TRADES AND NOTIFY THE ARCHITECT OF ANY CONFLICTS PRIOR TO SIGN INSTALLATION.

3. SIGN MOUNTING NOTES:

a. ALL SIGNS ARE TO BE MOUNTED LEVEL AND PLUMB U.N.O.

b. SIGNAGE SCHEDULE SHEETS MAY CONTAIN ADDITIONAL MOUNTING DETAILS.

c. ALTERNATE MOUNTING DETAILS MAY BE ACCEPTABLE SUBJECT TO ARCHITECT'S REVIEW AND APPROVAL.

d. CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY CONFLICTS BETWEEN THE MANUFACTURER'S RECOMMENDED MOUNTING DETAILS AND THE INFORMATION PROVIDED THIS SHEET.

e. ALL MOUNTING TYPES SHALL COMPLY WITH THE ANCHOR NOTE BELOW.

f. SEE SPECIFICATIONS FOR ADDITIONAL SIGNAGE MOUNTING AND INSTALLATION INFORMATION.

4. ANCHOR NOTE: MAXIMUM ANCHOR PENETRATION INTO POST-TENSIONED CONCRETE STRUCTURE SHALL BE 3/4" AT SLABS AND 1" AT BEAMS AND GIRDERS, UNLESS TENDONS ARE LOCATED IN THE FIELD PRIOR TO SIGN INSTALLATION AND ANCHORS ARE LOCATED TO AVOID TENDONS.

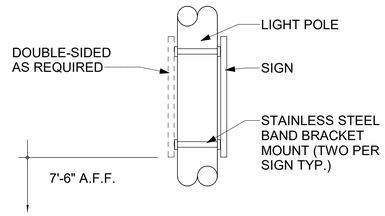
5. ALL HARDWARE, BOLTS, ETC. FOR HOT DIP GALVANIZED UNLESS NOTED OTHERWISE.

6. WHERE MANUFACTURER'S PRODUCTS ARE INDICATED, PROVIDE ITEMS LISTED OR AN ARCHITECT APPROVED EQUIVALENT.

7. CONTRACTOR TO COORDINATE INSTALLATION OF LIGHT FIXTURES, DUCTWORK, FIRE SYSTEM PIPEWORK. ETC. TO PROVIDE AN UNOBSTRUCTED VIEW OF INFORMATIONAL PARKING SIGNS AS MUCH AS PRACTICABLE. NOTIFY THE ARCHITECT OF ANY CONFLICTS PRIOR TO INSTALLATION.

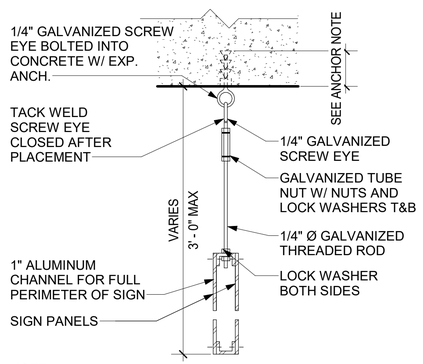
8. SEE ARCHITECTURAL GENERAL NOTES ON SHEET 210-G-03 FOR ADDITIONAL INFORMATION.

MOUNTING TYPE 4 IS NOT USED



TYPICAL LIGHT POLE MOUNTING DETAIL

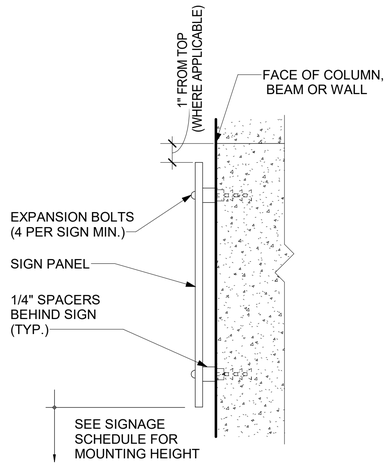
5 SCALE: 3" = 1'-0"



NOTE:
1) PROVIDE QUANTITY AS REQUIRED TO SUPPORT SIGN (MINIMUM OF THREE REQ'D.)
2) SLABS SLOPE TO DRAIN. PROVIDE LONGER RODS AS REQ'D. TO MAINTAIN LEVEL SIGN INSTALLATION.

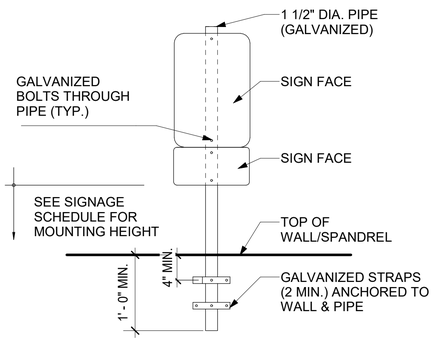
TYPICAL SUSPENDED MOUTING DETAIL

6 SCALE: 3" = 1'-0"



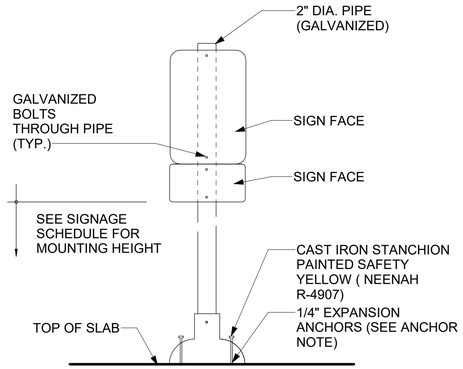
FACE OF CONCRETE/MASONRY MOUNTING DETAIL

7 SCALE: 3" = 1'-0"



TYPICAL LOW WALL/SPANDREL FACE MOUNTING DETAIL

8 SCALE: 3" = 1'-0"



TYPICAL FLOOR MOUNTED DETAIL

9 SCALE: 3" = 1'-0"

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	REV No.	DATE	DESCRIPTION	APPV
Drawn by: Author	2	3/11/21	ADDENDUM 2	
Checked by: Checker				

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210-AG-30
TYPICAL SIGNAGE MOUNTING DETAILS

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GENERAL FOUNDATION NOTES:

1. THE FOUNDATION DESIGN IS BASED ON THE SUBSURFACE EXPLORATION REPORT DATED OCTOBER 19, 2020 PREPARED BY SCI-TEK CONSULTANTS, INC. REPORT #20-951 WITH AMENDMENTS DATED OCTOBER 27, 2020. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW THE SOILS INFORMATION PRIOR TO BIDDING. ALL WORK SHALL BE DONE PER THE RECOMMENDATIONS GIVEN IN THE REFERENCED GEOTECHNICAL DOCUMENTS.

2. ALL SOIL SUPPORTED FOOTINGS AND SLABS SHALL BE FOUNDED UPON UNDISTURBED NATURAL SUBGRADE. WHERE UNCONTROLLED FILL IS ENCOUNTERED WITH PRESENCE OF ORGANICS OR OTHER DELETERIOUS SUBSTANCES, IT MUST BE REMOVED FOR A DEPTH OF A MINIMUM OF TWO (2) FEET BELOW THE BOTTOM OF THE PROPOSED SLAB-ON-GRADE OR A FOOTING, OR AS OTHERWISE ACCEPTABLE TO THE OWNER'S TESTING GEOTECHNICAL ENGINEER, AND REPLACED WITH ENGINEERED FILL.

3. WHERE IT IS REQUIRED FOR EXISTING FILLS TO BE REMOVED AND REPLACED, SUCH REPLACEMENT MATERIAL SHALL BE CRUSHED STONE OR SIMILAR INERT GRANULAR MATERIAL ACCEPTABLE TO THE OWNER'S TESTING GEOTECHNICAL ENGINEER. UNDERCUTS SHOULD EXTEND LATERALLY ON A MAXIMUM SLOPE OF 1.5(H): 1(V) A MINIMUM OF 8 INCHES AWAY FROM THE EDGE OF A FOOTING OR FOUNDATION ELEMENT. UNSUITABLE SOIL MATERIALS REMOVED FROM EXCAVATION, SHALL BE LAWFULLY DISPOSED OF IN A WORKMANLIKE MANNER.

4. THE NATURAL SUBGRADE UNDER ALL FOOTINGS AND SLABS SHALL BE PREPARED AS INDICATED IN THE PROJECT SPECIFICATIONS. THIS PREPARATION SHALL BE OBSERVED AND APPROVED BY THE OWNER'S TESTING GEOTECHNICAL ENGINEER TO DETECT ZONES OF SOFT, LOOSE, EXCESSIVELY YIELDING OR OTHERWISE POOR MATERIAL. THE BOTTOM OF GENERAL EXCAVATION SHALL BE COMPACTED BY SEVERAL PASSES OF A HEAVY VIBRATORY ROLLER WITH 20 TON MINIMUM STATIC WEIGHT, OR TANDEM OR TRI-AXLE DUMP TRUCK, FULLY LOADED. PATTERN OF PASSES SHALL CONSIST OF SEVERAL MOVEMENTS ACROSS THE SITE IN EACH OF TWO ORTHOGONAL DIRECTIONS.

5. THE SOIL SUBGRADE FOR ALL MATS, PADS, FOOTINGS, AND SLABS SHALL BE INSPECTED AND APPROVED BY THE OWNER'S TESTING GEOTECHNICAL ENGINEER PRIOR TO PLACING FOUNDATION CONCRETE OR CONCRETE SLABS.

6. ALL ACCEPTABLE GRANULAR MATERIAL OR ON-SITE AVAILABLE MATERIAL FOR FILLS DEEMED ACCEPTABLE BY THE OWNER'S TESTING GEOTECHNICAL ENGINEER, SHALL BE PLACED IN LIFTS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS, AND COMPACTED TO A MINIMUM OF 95 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST (ASTM D1557). SAME COMPACTION REQUIREMENTS APPLY TO ALL SLAB SUBGRADES INCLUDING PIT SLABS, AND ALL BACKFILL AROUND AND ABOVE ALL FOUNDATION ELEMENTS (FOOTINGS, CAPS, MATS, PITS, ETC.)

7. NO FOOTINGS, MATS OR SLABS SHALL BE PLACED INTO OR AGAINST SUBGRADE CONTAINING FREE WATER, FROST OR ICE. SHOULD WATER OR FROST ENTER A FOOTING EXCAVATION AFTER SUBGRADE APPROVAL, THE SUBGRADE SHALL BE RE-INSPECTED BY THE OWNER'S TESTING GEOTECHNICAL ENGINEER AFTER REMOVAL OF WATER OR FROST.

8. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT ANY FROST OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUBGRADE BEFORE AND AFTER PLACING OF CONCRETE AND UNTIL SUCH SUBGRADES ARE FULLY PROTECTED BY THE PERMANENT BUILDING STRUCTURE.

9. THE CONTRACTOR SHALL LOCATE CONSTRUCTION AND CONTROL JOINTS IN WALLS AS SHOWN ON THE DRAWINGS. SEE NOTE 16 UNDER "CONCRETE NOTES". WALL CONCRETE PLACEMENT SEQUENCE SHALL BE SUBMITTED TO AND REVIEWED BY THE ARCHITECT PRIOR TO FORMING OF WALLS.

10. THE CONTRACTOR SHALL LOCATE CONSTRUCTION JOINTS IN THE CONTINUOUS STRIP FOOTINGS OR MATS, SUCH THAT THE MAXIMUM LENGTH OF THE CONCRETE PLACEMENT DOES NOT EXCEED 60 FEET. THE CONTRACTOR SHALL UTILIZE A CONSTRUCTION SEQUENCE/PATTERN SUCH THAT THE EFFECT OF SHRINKAGE IS MINIMIZED. THE CONTRACTOR SHALL SUBMIT A PROPOSED SEQUENCE TO THE ARCHITECT/ENGINEER FOR REVIEW.

11. THE CONCRETE FOR EACH ISOLATED FOOTING OR GRADE BEAM, AS APPLICABLE, SHALL BE PLACED IN ONE (1) CONTINUOUS PLACEMENT.

12. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR LOCATING, PROTECTING AND MAINTAINING IN SERVICE ALL EXISTING UTILITIES. ANY DAMAGE TO THE EXISTING UTILITIES CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION AND AT NO COST TO THE OWNER.

13. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN THE EVENT ANY EXISTING UTILITIES, UTILITY STRUCTURES OR ANY OBSTRUCTION INTERFERES WITH THE PROPER INSTALLATION OF THE FOUNDATION WORK.

14. ALL FOOTINGS FOR WALLS AT LEAST ONE SIDE OF WHICH IS SUBJECT TO FREEZE-THAW CYCLES, SHALL BEAR A MINIMUM OF 3'-0" BELOW FINISHED GRADES.

GENERAL FOUNDATION NOTES: (CONTINUED)

15. SEE PLUMBING DRAWINGS FOR DRAINAGE SYSTEM AND SPECIAL GRANULAR FILL MATERIALS.

16. NOT USED.

SEE CIVIL DRAWINGS FOR PROJECT DATUM.

17. THE CONTRACTOR SHALL EXERCISE DUE CARE AND CAUTION WORKING
18. IN THE AREAS ADJOINING EXISTING CONSTRUCTION TO REMAIN. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR PROVIDING AND MAINTAINING MEASURES PROTECTING EXISTING CONSTRUCTION. ANY AND ALL DAMAGE TO THE EXISTING CONSTRUCTION CAUSED BY THE CONTRACTOR'S MEANS AND METHODS AND/OR CONTRACTOR'S FAILURE TO PROVIDE PROTECTION SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION AND AT NO COST TO THE OWNER.

SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

19.

CAISSON FOUNDATION NOTES:

1. SEE NOTE 1 UNDER "GENERAL FOUNDATION NOTES" FOR GEOTECHNICAL EXPLORATION REFERENCE INFORMATION. THE CAISSON FOUNDATION SUBCONTRACTOR TOGETHER WITH THE CONTRACTOR, SHALL BE RESPONSIBLE FOR REVIEW OF GEOTECHNICAL INFORMATION PRIOR TO BIDDING FOR THE WORK. ALL REQUIREMENTS AND RECOMMENDATIONS PROVIDED IN GEOTECHNICAL EXPLORATION MATERIALS SHALL BE FOLLOWED WITHOUT EXCEPTION, UNLESS EXPRESSLY REVISED IN WRITING BY THE GEOTECHNICAL ENGINEER OF RECORD.

2. THE OWNER'S TESTING GEOTECHNICAL ENGINEER SHALL CONFIRM THAT BOTTOMS OF CAISSON EXCAVATIONS ARE FOUNDED UPON ROCK STRATUM AS PER GEOTECHNICAL REPORT. SHAFTS SHALL BE EXCAVATED TO MINIMUM DIMENSIONS SHOWN ON THE DRAWINGS.

3. CAISSON LENGTHS CALCULATED FROM ELEVATIONS SHOWN ON THE DRAWINGS SHOULD BE TREATED AS ESTIMATES BASED ON THE GEOTECHNICAL EXPLORATION MATERIALS. ALTERATIONS TO EXCAVATION DEPTH, METHODS TO STOP WATER SEEPAGE AND DRILLED SHAFT SIZES MAY BE REQUIRED BASED UPON ACTUAL CONDITIONS ENCOUNTERED.

4. ALL CAISSONS SHALL BE INSTALLED USING TEMPORARY STEEL CASING WHEN EXTENDING THROUGH UPPER FILL AND SAND SOILS, OR WHEN DEEPER SAND AND SILT LAYERS ARE ENCOUNTERED WITHIN CLAY SOILS. TEMPORARY CASING MUST BE ADVANCED THROUGH THE SILTY AND/OR SANDY SOILS AND INTO UNDERLYING STIFF CLAY SEVERAL FEET BEFORE REMOVING THE SOIL FROM STIFF CLAY OR WITHIN THE CASING. THE CONTRACTOR SHALL PROVIDE CASING THICKNESS REQUIRED TO WITHSTAND STRESSES DUE TO ALL NECESSARY CONDITIONS INCLUDING DRIVING STRESSES, HYDRAULIC WATER STRESSES, SOIL STRESSES AND HYDRAULIC CONCRETE STRESSES.

5. IN INSTANCES WHERE SANDY AND SILTY LAYERS WILL BE PRESENT WITHIN THE CAISSON BELL, A "GROUT BELL" PROCEDURE SIMILAR TO SLURRY DISPLACEMENT METHOD SHOULD BE USED. ALTERNATIVELY, A FULL LENGTH PERMANENT STEEL LINER MAY BE USED TO SEAL SAND LAYERS. IN THIS INSTANCE, WHEN SAND LAYERS ARE LOCATED CLOSE TO THE BEARING ELEVATION, CAISSON WOULD HAVE TO BE EXTENDED AT LEAST 2/3 OF THE BELL DIAMETER INTO THE HARD CLAY SOIL IN ORDER TO FORM THE BELL. THE ANNULAR SPACE AROUND THE PERMANENT STEEL LINER SHALL BE FULLY CEMENT GROUTED WITH MATERIAL PER ACI 336.1 PARAGRAPH 2.5.

6. STEEL FOR ALL PERMANENT LINERS SHALL CONFORM TO ASTM A36 WITH CONTINUOUSLY WELDED SEAMS, OR CORRUGATED STEEL ASTM A929 AS SHOWN. ALL PERMANENT STEEL LINERS SHALL BE GALVANIZED. STEEL FOR TEMPORARY CASING SHALL CONFORM TO ASTM A36.

7. CAISSON CONCRETE SHALL BE PLACED FULL LENGTH IN ONE CONTINUOUS PLACEMENT WITHOUT CONSTRUCTION JOINTS.

8. WHEN TEMPORARY CASINGS ARE USED, THEY MAY BE WITHDRAWN AFTER CONCRETE IS PLACED, PROVIDED THIS OPERATION IS CAREFULLY MONITORED TO VERIFY THAT NO LIFTING OR SEPARATION OF THE CONCRETE HAS OCCURRED. UNDER HIGH GROUND WATER LEVELS, SPECIAL CARE IS REQUIRED TO ASCERTAIN THAT AT LEAST THREE FEET OF HYDRAULIC HEAD OF THE CAISSON CONCRETE IS MAINTAINED ABOVE THE GROUND WATER LEVEL TO ELIMINATE A POTENTIAL INFLUX OF WATER INTO THE SHAFT FOLLOWING THE TEMPORARY CASING WITHDRAWAL.

CAISSON FOUNDATION NOTES: (CONTINUED)

9. THE CONTRACTOR SHALL PREPARE THE DESCRIPTION OF ALL CONSTRUCTION PROCEDURES AND SEQUENCES AND SUBMIT THEM FOR ARCHITECT'S INFORMATION AND THE OWNER'S TESTING GEOTECHNICAL ENGINEER'S REVIEW PRIOR TO THE START OF CAISSON CONSTRUCTION.

10. THE CONTRACTOR SHALL SUBMIT, FOR REVIEW, CHECKED SHOP DRAWINGS FOR ALL STEEL LINERS AND REINFORCING MATERIALS.

11. THE BOTTOM OF EACH CAISSON EXCAVATION SHALL BE THOROUGHLY CLEANED OF ALL LOOSE MATERIALS PRIOR TO CONCRETE PLACEMENT.

12. ALL HOLES SHALL BE CHECKED FOR GAS, VENTED IF NECESSARY, AND OTHER NECESSARY PRECAUTIONS TAKEN TO PROTECT LABORERS AND INSPECTORS ENTERING CAISSON EXCAVATIONS. SAFETY MEASURES SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS, GUIDELINES AND STANDARDS BY AUTHORITIES HAVING JURISDICTION.

13. NO DRILLED SHAFT EXCAVATION SHALL BE LEFT UNSUPPORTED OR NOT FILLED WITH CONCRETE FOR MORE THAN EIGHT (8) HOURS.

14. NO CONCRETE SHALL BE PLACED INTO A CAISSON EXCAVATION CONTAINING FREE WATER WITHOUT THE ARCHITECT'S REVIEW OF TECHNIQUES AND REVISIONS TO THE CONCRETE MIX DESIGN. SPECIAL TREMIE MIX DESIGN SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW AND APPROVAL PER PROJECT SPECIFICATIONS. SEE NOTE 21 BELOW.

15. THE CAISSON CONCRETE SHALL BE PLACED USING HOPPER AND CHUTE PIPE AT THE TOP OF THE DRILLED SHAFT EXCAVATION. CONCRETE SHALL BE CONSOLIDATED BY VIBRATION IN TOP 5'-0" OF CONCRETE WHEN SLUMP IS LESS THAN 6 INCHES.

16. ALL CAISSON CONCRETE SHALL BE REGULAR WEIGHT CONCRETE (150 PCF) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI.

17. ALL CAISSON CONCRETE SHALL CONTAIN A MIN. OF 75 LBS. OF FLY ASH PER CUBIC YARD AND AN APPROVED WATER-REDUCING, PLASTICIZING ADMIXTURE.

18. ALL CAISSON REINFORCEMENT SHALL BE ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.

19. UNDESIRABLE SPOIL FROM CAISSON EXCAVATIONS SHOULD NOT BE USED AS FILL OR BACKFILL AND SHOULD BE REMOVED FROM THE SITE AS QUICKLY AS POSSIBLE TO PREVENT CONTAMINATION OF THE SUBGRADE SOILS.

20. ALL LAITANCE MATERIALS SHALL BE REMOVED FROM THE TOP OF EACH CAISSON PRIOR TO FURTHER CONSTRUCTION.

21. THE CAISSON CONTRACTOR SHALL PROVIDE ALTERNATE CONCRETE DESIGN MIXES FOR "TREMIE" CONCRETE PLACEMENT IN ACCORDANCE WITH RECOMMENDATIONS OF ACI 304R, CHAPTER 8.

22. THE CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR REVIEW AND RECORD THE ACTUAL CAISSON LOCATION PLAN PREPARED BY A SURVEYOR REGISTERED IN THE STATE WHERE WORK IS PERFORMED. THE SURVEY SHALL INDICATE EACH CAISSON CENTERLINE DEVIATION FROM THE DESIGN LOCATION AND OUT-OF-PLUMBNESS. THE CONTRACTOR SHALL ALSO SUBMIT FULL DETAILS OF CORRECTIVE MEASURES, IF ANY, COMPLETED FOR CAISSONS WITH CENTERLINE DEVIATION FROM THE DESIGN LOCATION OR OUT-OF-PLUMB MAGNITUDE IN EXCESS OF THE SPECIFIED TOLERANCES.

23. DEWATERING OF CAISSON EXCAVATIONS SHALL BE INCLUDED IN THE CAISSON WORK AS REQUIRED, AND SHALL BE SUPERVISED BY THE OWNER'S TESTING GEOTECHNICAL ENGINEER.

24. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 318 & ACI 301. THESE DOCUMENTS SHALL BE AVAILABLE IN THE FIELD OFFICE.

2. EXCEPT WHERE OTHERWISE INDICATED, CONCRETE TYPES AND MINIMUM 28-DAY COMPRESSIVE STRENGTHS SHALL BE AS FOLLOWS:

A	CAISSONS	4,000 PSI REGULAR WEIGHT
B	GRADE BEAMS, WALL FOOTINGS, ELEVATOR PIT MATS, CAISSON CAPS	4,000 PSI REGULAR WEIGHT
C	RETAINING WALLS , FOUNDATION WALLS, EXCEPT AS NOTED BELOW	4,000 PSI REGULAR WEIGHT
D	COLUMNS, PER COLUMN SCHEDULE	5,000 PSI REGULAR WEIGHT
E	ELEVATED FLOOR FRAMING: SLABS, BEAMS,GIRDERS, STAIR SLABS, ELEVATOR SHAFT WALLS, CRASH WALLS	5,000 PSI REGULAR WEIGHT
F	ELEVATED POUR STRIPS, IF REQUIRED	5,000 PSI REGULAR WEIGHT
G	ALL OTHER, INCLUDING SLAB ON GRADE	4,000 PSI REGULAR WEIGHT

3. ALL CONCRETE EXPOSED TO MOISTURE AND/OR FREEZE-THAW CYCLES IN SERVICE SHALL BE AIR ENTRAINED WITH 5-7.5% AIR CONTENT. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

4. CEMENT SHALL CONFORM TO ASTM C150 TYPE I. ASTM C150 TYPE III PORTLAND CEMENT MAY BE USED WHEN SPECIFICALLY APPROVED BY THE ARCHITECT. USE ONLY ONE BRAND OF CEMENT FOR ALL EXPOSED TO VIEW CONCRETE. AGGREGATES SHALL CONFORM TO ASTM C33 (REGULAR WEIGHT). ALL CONCRETE SHALL CONTAIN AN APPROVED WATER REDUCING ADMIXTURE. NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

5. ALL REINFORCEMENT SHALL BE DETAILED AND INSTALLED WITH A MINIMUM CLEAR CONCRETE COVER IN ACCORDANCE WITH ACI 318 SECTION 7.7 OR PER THE SCHEDULE UNDER ITEM (21) HEREIN BELOW, WHICHEVER IS MORE STRINGENT. VERIFY PROPER REINFORCEMENT SPACING PER ACI 318 SECTION 7.6 BASED ON DESIGN DATA. NOTIFY ARCHITECT IF BASED ON THE CONTRACT DRAWINGS, CODE SPACING LIMITS ARE VIOLATED. IN THIS INSTANCE ARCHITECT WILL ISSUE SUPPLEMENTAL INSTRUCTIONS.

6. ALL REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60. WHERE WELDING OF REINFORCEMENT BARS IS REQUIRED, USE REBAR CONFORMING TO ASTM A706 GRADE 60, UNLESS NOTED OTHERWISE. ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. SEE NOTE 38 HEREIN BELOW UNDER CONTINUATION OF THESE NOTES FOR EPOXY COATED REINFORCEMENT.

7. ALL REINFORCEMENT BARS SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED AND SPACED IN FORMS AND SECURED IN PLACE IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OUTLINED IN THE LATEST EDITION OF THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315. BAR SUPPORTS IN CONTACT WITH EXPOSED SURFACES SHALL BE PLASTIC TIPPED.

8. ALL 135° HOOKS SHALL BE MINIMUM 6d, WHERE "d" IS BAR DIAMETER. ALL OTHER HOOKS SHALL BE STANDARD ACI 90° OR 180° HOOKS.

9. FOR COLUMN REBAR AND DOWEL EXTENSION AND SPLICES SEE TYPICAL DETAILS. ALL REINFORCING LAP SPLICES SHALL CONFORM TO THE REQUIREMENTS OF ACI 318, EDITION PER THE DESIGN CRITERIA ON DWG S001. SEE REBAR TENSION LAP SPLICE SCHEDULE UNDER CONCRETE NOTE 22 BELOW. MECHANICAL SPLICES SHALL CONFORM TO ACI 318 ARTICLE 12.14.3. DOWELS SHALL MATCH SIZE, NUMBER AND SPACING OF THE MAIN REINFORCEMENT, U.N.O.

10. ADDITIONAL REINFORCING BARS SHALL BE PROVIDED AROUND ALL FLOOR AND WALL OPENINGS IN ACCORDANCE WITH TYPICAL DETAILS.

11. THERE SHALL BE NO FIELD CUTTING OF ANY REINFORCEMENT WITHOUT AN EXPRESSED WRITTEN CONSENT OF THE ARCHITECT. FIELD MODIFICATIONS TO APPROVED SHOP DRAWINGS SHALL NOT BE DONE WITHOUT ARCHITECT'S WRITTEN APPROVAL. ALL FIELD BENDING OF REINFORCEMENT SHALL BE APPROVED IN WRITING BY THE ARCHITECT, UNLESS EXPRESSLY PERMITTED ON THE CONTRACT DRAWINGS. ALL FIELD BENDING OF REINFORCEMENT SHALL BE DONE COLD. HEATING OF BARS WILL NOT BE PERMITTED. FIELD BENDING OF REINFORCEMENT LARGER THAN #5 IS NOT PERMITTED, UNLESS SPECIFICALLY APPROVED IN WRITING BY THE ARCHITECT.

Designed by: G. ABDALLAH
Drawn by: G. ABDALLAH
Checked by: G. ABDALLAH

REVISION

REV No.	DATE	DESCRIPTION	APPV
2	3/11/21	ADDENDUM 2	

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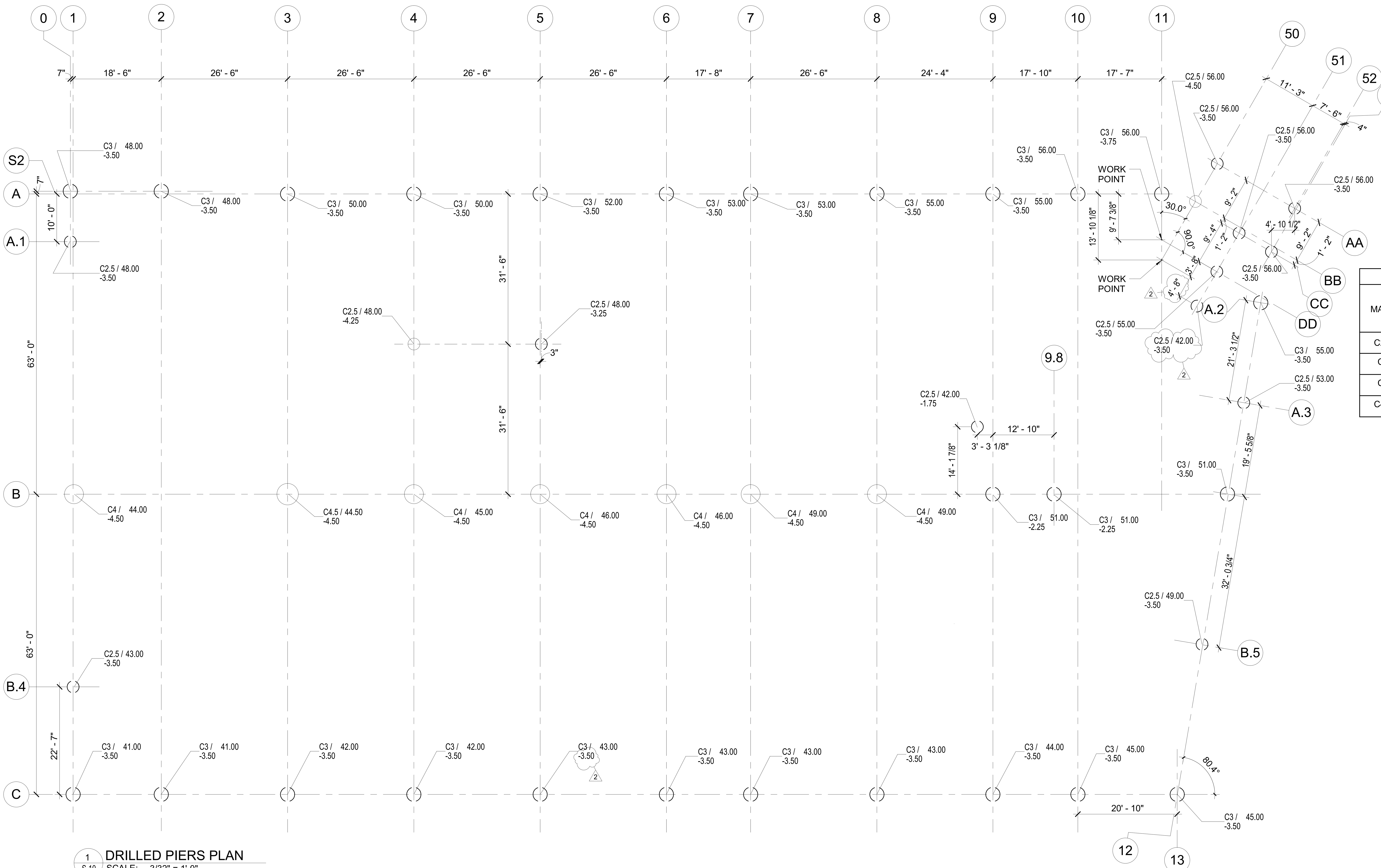
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-S-02
GENERAL NOTES

Contract: 1735
CAD File Name: 210S02.DWG
Date: 01 / 13 / 2021



1 S-10 DRILLED PIERS PLAN
SCALE: 3/32" = 1'-0"

LEGEND

C3.5/51.00 -2.25'
- CAISSON MARK SEE SCHEDULE
- LENGTH IN FT. MEASURED FROM TOP OF CAISSON
- T/CAISSON ELEVATION (WHERE APP'L)

CAISSON

CAISSON SCHEDULE					
MARK	SHAFT DIAMETER, FT	REINFORCEMENT			
		VERT.	MIN. EMBED.	TIES	
				SIZE	SPACING
C2.5	2' - 6"	6 #7	FULL LENGTH	#3	1@2", 4@3", REM@12"
C3	3' - 0"	7 #8	FULL LENGTH	#3	1@2", 4@3", REM@15"
C4	4' - 0"	7 #10	FULL LENGTH	#4	1@2", 4@3", REM@18"
C4.5	4' - 6"	9 #10	FULL LENGTH	#4	1@2", 4@3", REM@18"

GENERAL NOTE

1. BOTTOM OF CAISSON ELEVATIONS SHOWN ARE AN ESTIMATION BASED ON FOUR, WIDELY SPACED TEST BORINGS. THE ESTIMATED BOTTOM OF CASSION ELEVATIONS ARE PROVIDED AS A BASIS FOR BIDDING.
2. DUE TO THE NATURE OF THE ROCK AND GEOLOGIC SETTING, THE ACTUAL DEPTHS TO SUITABLE BEARING WILL VARY FROM THIS DRAWING AND WILL NEED TO BE DETERMINED DURING CAISSON DRILLING.
3. BIDDERS SHALL INCLUDE AN ADD/DEDUCT UNIT COST PER FOOT OF CAISSON INSTALLATION FOR FINAL LENGTHS THAT DEVIATE FROM THE ESTIMATED LENGTHS USED FOR DESIGN AND BIDDING.
4. ALL CAISSONS ARE CENTERED ON COLUMN GRID LINESUNLESS OTHERWISE NOTED.
5. AS BOTTOM OF CAISSON ELEVATIONS ARE ESTIMATED, THE ACTUAL LENGTH OF VERTICAL REBAR AND QUANTITIES OF TIES SHALL BE DETERMINED IN THE FIELD.

SCALE: 3/32" = 1'-0"
8' 0' 4' 8' 16' 32'

Designed by: G. ABDALLAH
Drawn by: G. ABDALLAH
Checked by: G. ABDALLAH

REVISION			
REV No.	DATE	DESCRIPTION	APPV
1	2/19/21	ADDENDUM 1	
2	3/11/21	ADDENDUM 2	

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210-S-10
CAISSON PLAN (DRILLED PIERS)

Contract: 1735
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LEGEND

PC# OR GB# - PIER CAP OR GRADE BEAM MARK
XX.XX' - TOP OF PIER CAP OR GRADE BEAM ELEVATION

PIER CAP /GRADE BEAM

EXISTING UTILITIES NOTE:
THE EXISTING UTILITIES AND LOCATIONS SHOWN ARE BASED ON THE INFORMATION AVAILABLE AT THE TIME OF DESIGN.

PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY IN FIELD THE LOCATIONS AND EXTENTS OF EXISTING UTILITIES AND THE APPROXIMATE CLEARANCES SHOWN TO NEW CONSTRUCTION. IF THERE ARE ANY CONFLICTS AFFECTING CONSTRUCTABILTY OF THE NEW FOUNDATIONS, NOTIFY ARCHITECT/ENGINEER IMMEDIATELY.

GENERAL NOTES

1. ALL COLUMNS, DRILLED PIERS, AND PILE CAPS SHALL BE CENTERED ON GRIDLINES U.N.O.
2. ALL GRADE BEAMS REINFORCEMENT ARE CONTINUOUS. aLL END BARS SHALL BE ANCHORED WITH ACI 318 STD. 90° HOOK AT SUPPORTS. ALL SPLICE ARE CLASS B TENSION SPLICE.
3. ALL VERTICAL REINF. OF PIERS WITH CAP OR GRADE BEAM SHALL FULLY DEVELOP INTO CAP OR GRADE BEAM WITH ACI 318 STD 90° HOOK. REFER TO DWG 210-S-20 FOR CAISSON DETAILS AND REINFORCEMENT.
4. FOR CAISSON CAP DETAILS, SEE DRAWING 210-S-20.

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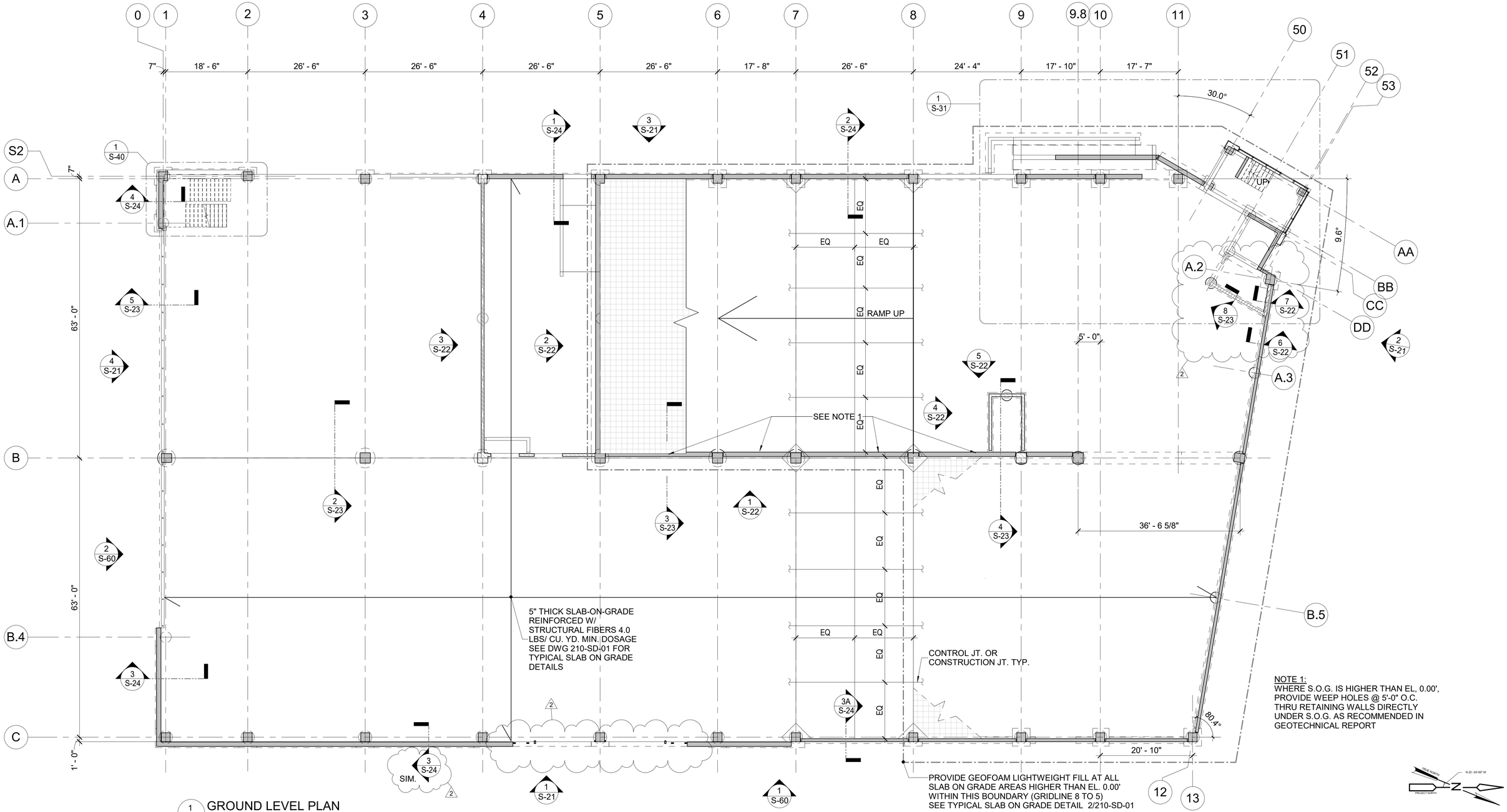
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-S-11
FOUNDATION PLAN

Contract: 1735
CAD File Name: 210S11.DWG
Date: 01 / 13 / 2021
Sheet: 85 of 169



1 S-12 GROUND LEVEL PLAN
SCALE: 3/32" = 1'-0"

NOTE 1:
WHERE S.O.G. IS HIGHER THAN EL, 0.00', PROVIDE WEEP HOLES @ 5'-0" O.C. THRU RETAINING WALLS DIRECTLY UNDER S.O.G. AS RECOMMENDED IN GEOTECHNICAL REPORT

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WASTEWATER TREATMENT PLANT
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210-S-12
GROUND LEVEL PLAN

Contract:	1735
CAD File Name:	210S12.DWG
Date:	01 / 13 / 2021
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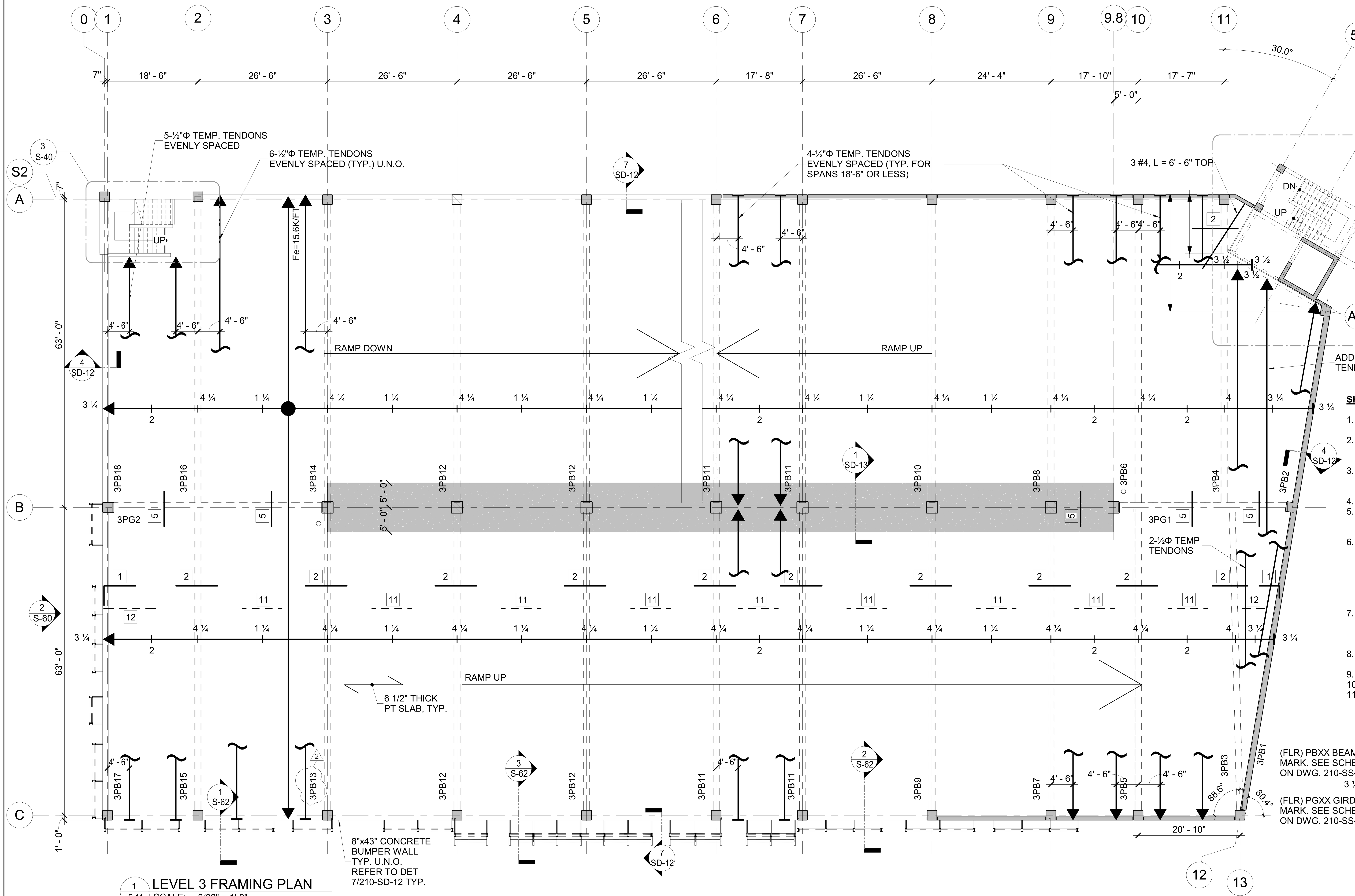


1 S-14 LEVEL 3 FRAMING PLAN
SCALE: 3/32" = 1'-0"

SLAB REINFORCING SCHEDULE:
(OVER ENTIRE BAY)

TOP REBAR

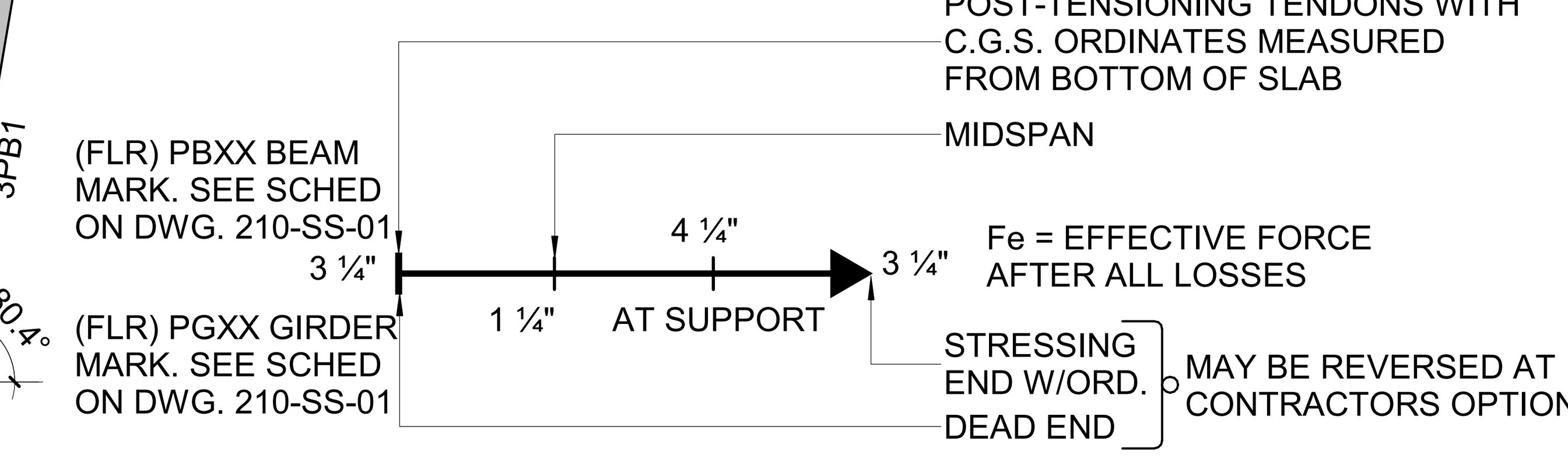
1	#4 @12" HOOKED. L = 4' - 6"
2	#4 @1' -2"
3	#4 @12"
4	#4 @9", HOOKED, L = 9' - 0"
5	#5 @12" TOP. L = 20' - 0"

BOTTOM REBAR

11	#4 @1' - 2"
12	#4 @ 12"

SHEET NOTES:

1. ALL POST TENSIONED PARKING STRUCTURE ELEVATED SLAB SHALL BE 6 ½" THICK, U.N.O.
2. MINIMUM (2) SLAB TENDONS SHALL PASS THROUGH COLUMNS ALONG GRIDS A&C. MINIMUM (1) SLAB MAIN TENDON SHALL PASS THROUGH COLUMN ON EACH SIDE OF COLUMN ALONG GRID B.
3. ALL HOOKS SHOWN ON PLANS, SECTIONS, AND DETAILS SHALL BE STANDARD HOOKS IN ACCORDANCE WITH ACI318. LENGTH OF HOOKED BARS SHOWN ON THIS DRAWING DO NOT INCLUDE HOOKS.
4. ALL COLUMNS CENTERED ON GRID LINE U.N.O.
5. BEAM MARKS SHOWN ON THE DRAWING INDICATE THE LEFT HAND SIDE OF THE BEAM AND SHOULD BE READ FROM THE STARTING POSITION OF THE BEAM MARK.
6. WITHIN THE SHADED AREAS ALONG GRID LINE B, PROVIDE CONTINUOUS TOP & BOTTOM MILD REINFORCEMENT IN LIEU OF SHORT BAR ARRANGEMENT PER DETAILS 9&10 ON 210-SD-13. SPLICE TOP BARS AT MID SPAN AND BOTTOM BARS AT BEAM CENTERLINE WITH CLASS "B" TENSION LAP SPLICE. IN ADDITION, PROVIDE 1-#5 TOP AND 1-#5 BOTTOM CONTINUOUS BARS ALONG EDGE OF SLAB EACH SIDE OF COLUMN ALONG GRIDS A, B, & C.
7. AT "RAMP DOWN" BEND CONTINUOUS SHORT TOP BARS TO FOLLOW RAMP SLOPE PER DETAIL 1A/210-SD-11. AT "RAMP UP" PLACE CONTINUOUS TOP BARS PER DETAIL 1C/210-SD-11 AND PLACE SHORT TOP BARS PER DETAIL 4B/210-SD-11.
8. FOR COLUMN SCHEDULE & DETAILS REFER TO 210-SS-03, 210-SD-20, 210-SD-21.
9. FOR SLAB & BEAM DETAILS, SEE DWG 210-SD-10 THRU 210-SD-17.
10. FOR BEAM SCHEDULESEE DWGS. 210-SS-01 AND 210-SS-02.
11. FOR ENLARGED STAIR PLANS & DETAILS, SEE 210-S-30 THRU 210-S-50.



PT SLAB LEGEND

SCALE: 3/32" = 1'-0"

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210-S-14
LEVEL 3 FRAMING PLAN

Contract: 1735
CAD File Name: 210S14.DWG
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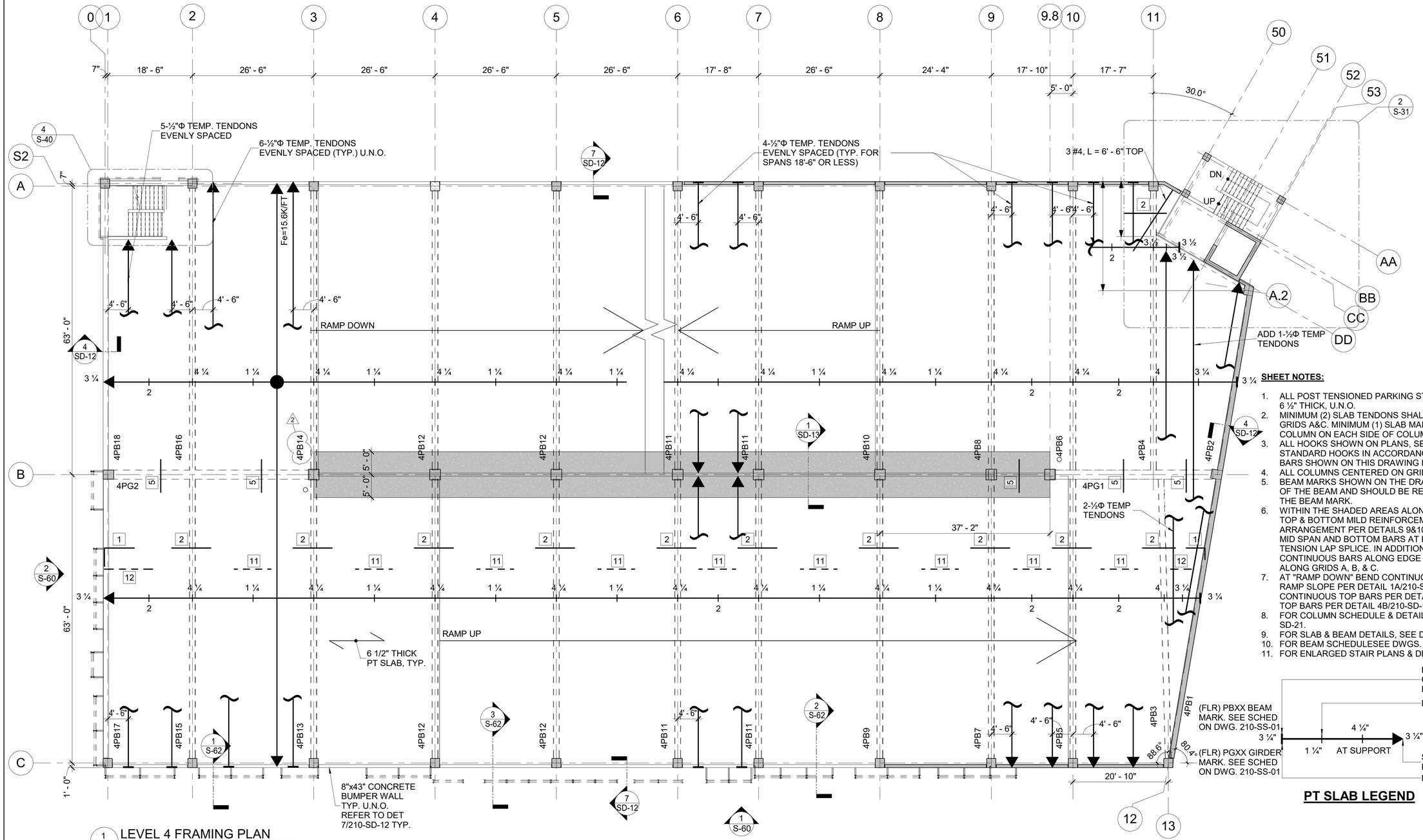


SLAB REINFORCING SCHEDULE:
(OVER ENTIRE BAY)

TOP REBAR

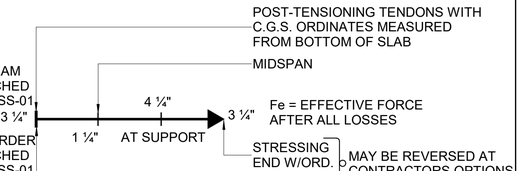
1. #4 @12" HOOKED. L = 4' - 6"
2. #4 @1' -2"
3. #4 @12"
4. #4 @9", HOOKED, L = 9' - 0"
5. #5 @12" TOP. L = 20' - 0"

BOTTOM REBAR

11. #4 @1' - 2"
12. #4 @ 12"

SHEET NOTES:

1. ALL POST TENSIONED PARKING STRUCTURE ELEVATED SLAB SHALL BE 6 ½" THICK, U.N.O.
2. MINIMUM (2) SLAB TENDONS SHALL PASS THROUGH COLUMNS ALONG GRIDS A&C. MINIMUM (1) SLAB MAIN TENDON SHALL PASS THROUGH COLUMN ON EACH SIDE OF COLUMN ALONG GRID B.
3. ALL HOOKS SHOWN ON PLANS, SECTIONS, AND DETAILS SHALL BE STANDARD HOOKS IN ACCORDANCE WITH ACI318. LENGTH OF HOOKED BARS SHOWN ON THIS DRAWING DO NOT INCLUDE HOOKS.
4. ALL COLUMNS CENTERED ON GRID LINE U.N.O.
5. BEAM MARKS SHOWN ON THE DRAWING INDICATE THE LEFT HAND SIDE OF THE BEAM AND SHOULD BE READ FROM THE STARTING POSITION OF THE BEAM MARK.
6. WITHIN THE SHADED AREAS ALONG GRID LINE B, PROVIDE CONTINUOUS TOP & BOTTOM MILD REINFORCEMENT IN LIEU OF SHORT BAR ARRANGEMENT PER DETAILS 9&10 ON 210-SD-13. SPLICE TOP BARS AT MID SPAN AND BOTTOM BARS AT BEAM CENTERLINE WITH CLASS "B" TENSION LAP SPLICE. IN ADDITION, PROVIDE 1-#5 TOP AND 1-#5 BOTTOM CONTINUOUS BARS ALONG EDGE OF SLAB EACH SIDE OF COLUMN ALONG GRIDS A, B, & C.
7. AT "RAMP DOWN" BEND CONTINUOUS SHORT TOP BARS TO FOLLOW RAMP SLOPE PER DETAIL 1A/210-SD-11. AT "RAMP UP" PLACE CONTINUOUS TOP BARS PER DETAIL 1C/210-SD-11 AND PLACE SHORT TOP BARS PER DETAIL 4B/210-SD-11.
8. FOR COLUMN SCHEDULE & DETAILS REFER TO 210-SS-03, 210-SD-20, 210-SD-21.
9. FOR SLAB & BEAM DETAILS, SEE DWG 210-SD-10 THRU 210-SD-17.
10. FOR BEAM SCHEDULESEE DWGS. 210-SS-01 AND 210-SS-02.
11. FOR ENLARGED STAIR PLANS & DETAILS, SEE 210-S-30 THRU 210-S-50.



PT SLAB LEGEND

SCALE: 3/32" = 1'-0"

8' 0' 4' 8' 16' 32'

Designed by:	REVISION			
G. ABDALLAH	REV No.	DATE	DESCRIPTION	APPV
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WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-S-15
LEVEL 4 FRAMING PLAN

Contract:	1735
CAD File Name:	210S15.DWG
Date:	01 / 13 / 2021
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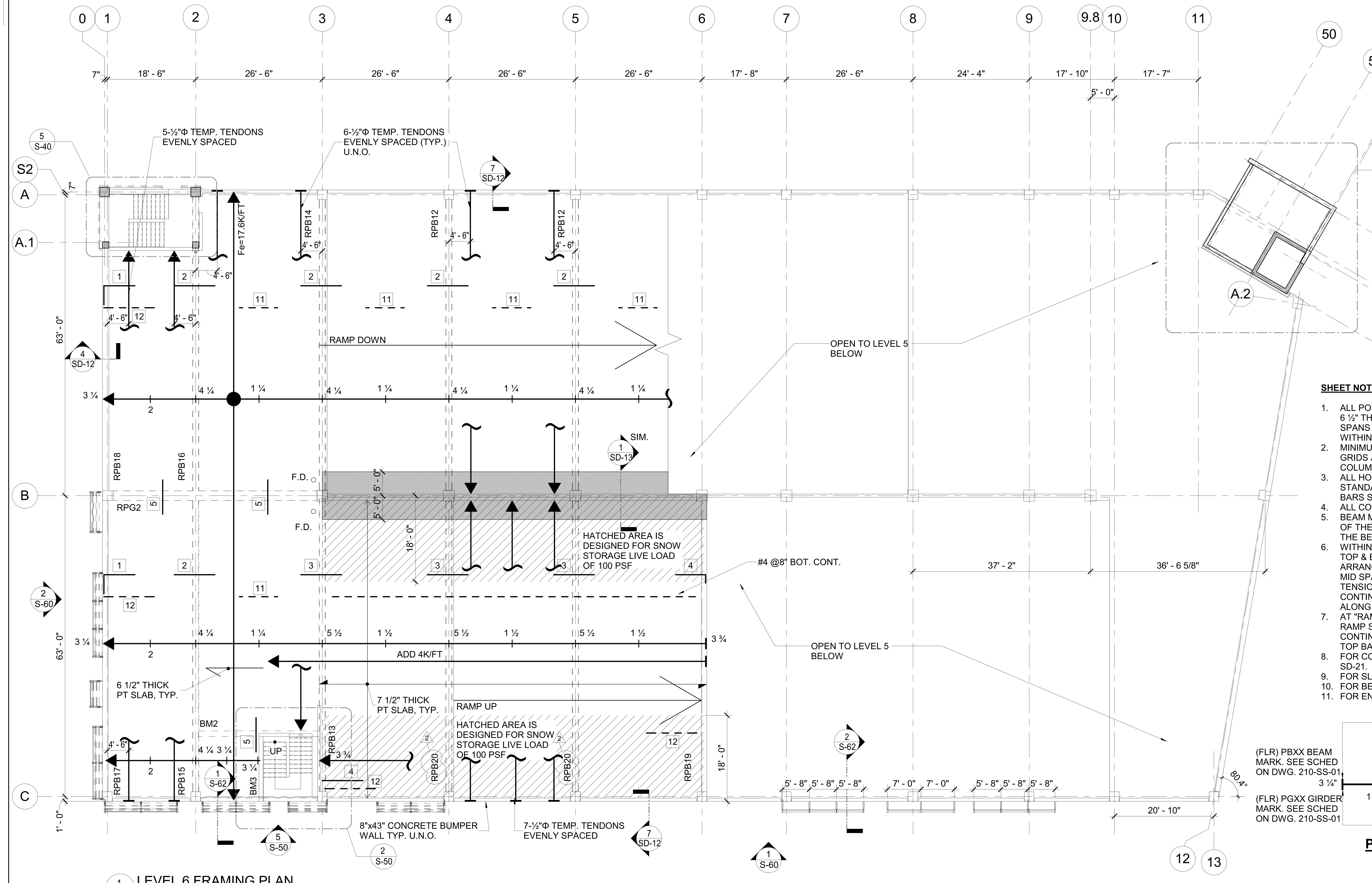

1 (S-17) LEVEL 6 FRAMING PLAN
SCALE: 3/32" = 1'-0"

SLAB REINFORCING SCHEDULE:
(OVER ENTIRE BAY)

TOP REBAR

1	#4 @12" HOOKED. L = 4' - 6"
2	#4 @1' -2"
3	#4 @12"
4	#4 @9", HOOKED, L = 9' - 0"
5	#5 @12" TOP. L = 20' - 0"

BOTTOM REBAR

11	#4 @1' - 2"
12	#4 @ 12"

SHEET NOTES:

1. ALL POST TENSIONED PARKING STRUCTURE ELEVATED SLAB SHALL BE 6 ½" THICK, U.N.O. SLAB SHADED W/ SHALL BE 7 ½" THICK. SLAB SPANS ADJACENT TO 7 ½" SLABS SHALL TAPER FROM 7 ½" TO 6 ½" WITHIN THE ADJACENT SPAN BETWEEN BEAMS.
2. MINIMUM (2) SLAB TENDONS SHALL PASS THROUGH COLUMNS ALONG GRIDS A&C. MINIMUM (1) SLAB MAIN TENDON SHALL PASS THROUGH COLUMN ON EACH SIDE OF COLUMN ALONG GRID B.
3. ALL HOOKS SHOWN ON PLANS, SECTIONS, AND DETAILS SHALL BE STANDARD HOOKS IN ACCORDANCE WITH ACI318. LENGTH OF HOOKED BARS SHOWN ON THIS DRAWING DO NOT INCLUDE HOOKS.
4. ALL COLUMNS CENTERED ON GRID LINE U.N.O.
5. BEAM MARKS SHOWN ON THE DRAWING INDICATE THE LEFT HAND SIDE OF THE BEAM AND SHOULD BE READ FROM THE STARTING POSITION OF THE BEAM MARK.
6. WITHIN THE SHADED AREAS ALONG GRID LINE B, PROVIDE CONTINUOUS TOP & BOTTOM MILD REINFORCEMENT IN LIEU OF SHORT BAR ARRANGEMENT PER DETAILS 9&10 ON 210-SD-13. SPLICE TOP BARS AT MID SPAN AND BOTTOM BARS AT BEAM CENTERLINE WITH CLASS "B" TENSION LAP SPLICE. IN ADDITION, PROVIDE 1-#5 TOP AND 1-#5 BOTTOM CONTINUOUS BARS ALONG EDGE OF SLAB EACH SIDE OF COLUMN ALONG GRIDS A, B, & C.
7. AT "RAMP DOWN" BEND CONTINUOUS SHORT TOP BARS TO FOLLOW RAMP SLOPE PER DETAIL 1A/210-SD-11. AT "RAMP UP" PLACE CONTINUOUS TOP BARS PER DETAIL 1C/210-SD-11 AND PLACE SHORT TOP BARS PER DETAIL 4B/210-SD-11.
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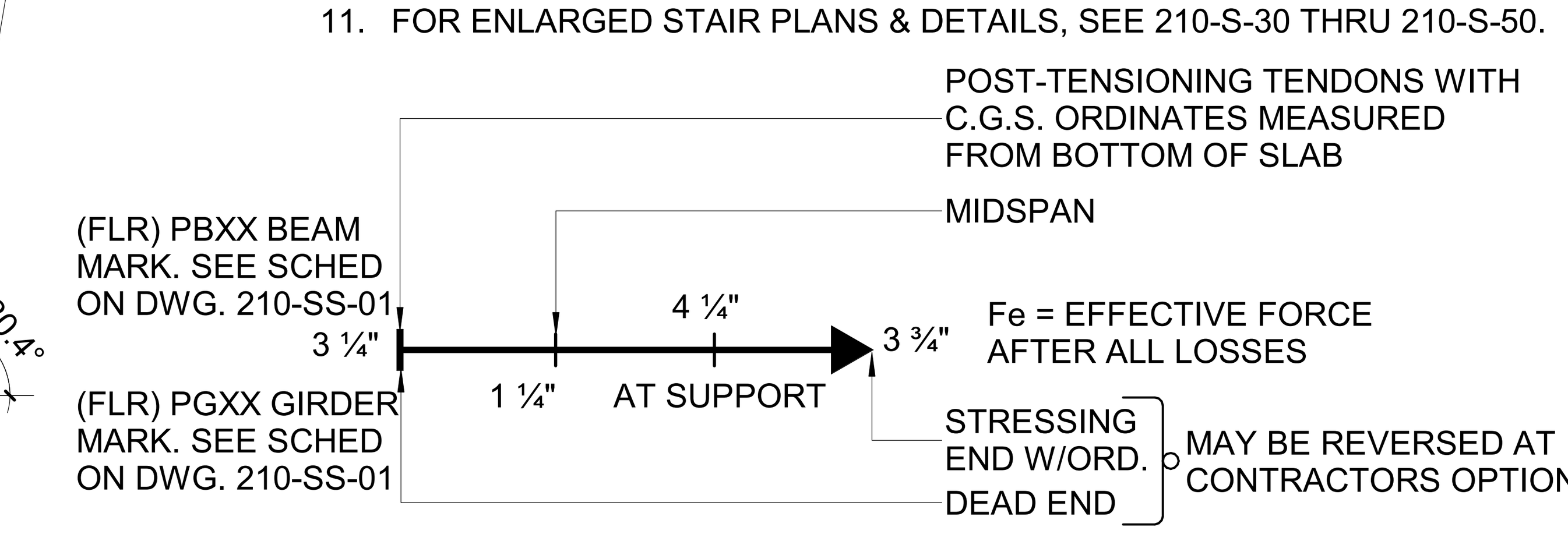

PT SLAB LEGEND

SCALE: 3/32" = 1'-0"
8' 0' 4' 8' 16' 32'

Designed by:	REVISION				
G. ABDALLAH	REV No.	DATE	DESCRIPTION	APPV	
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Checked by:					
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210-S-17
LEVEL 6 FRAMING PLAN

Contract: 1735
CAD File Name: 210S17.DWG
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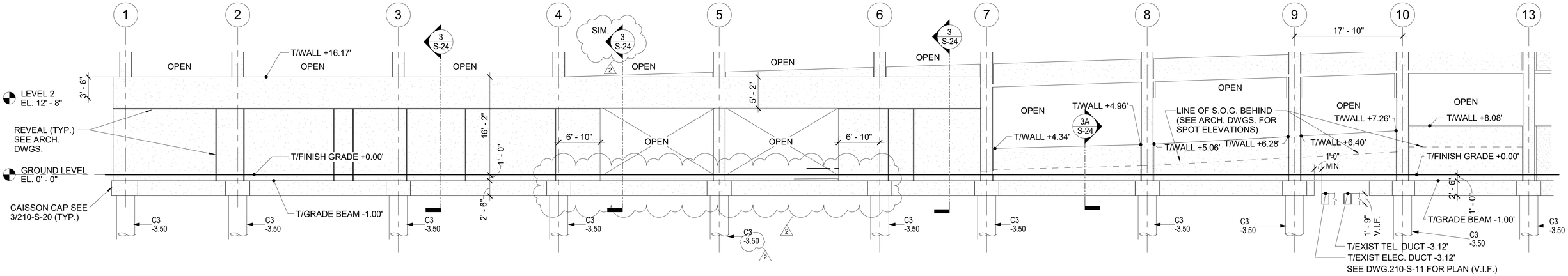
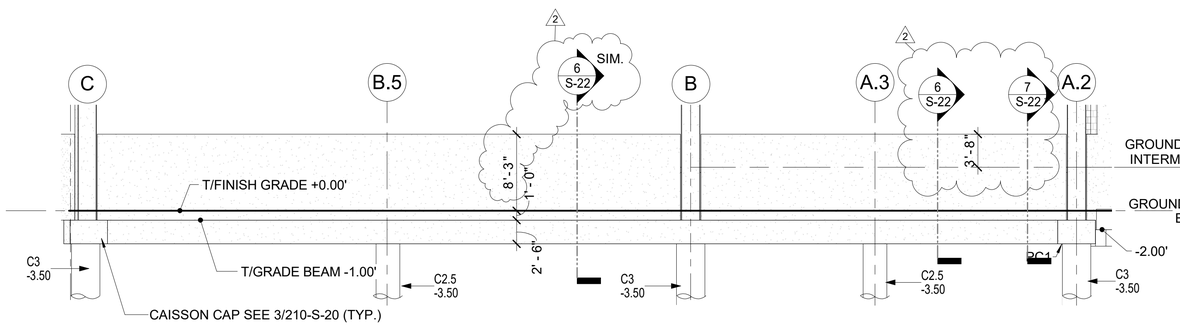


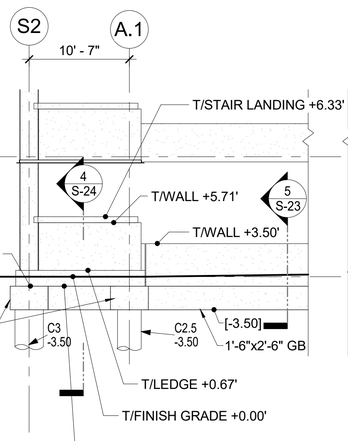
1 S-21 EAST FOUNDATION WALL ELEVATION

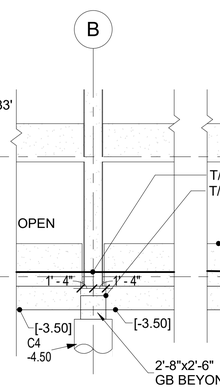
SCALE: 1/8" = 1'-0"

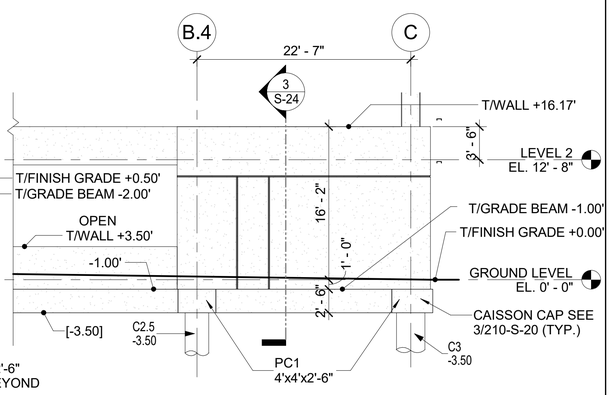


2 S-21 NORTH FOUNDATION WALL ELEVATION

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

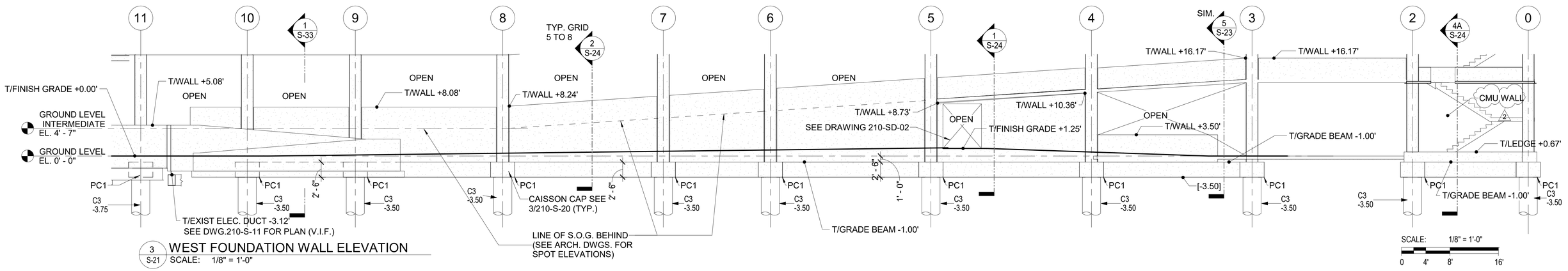






4 S-21 SOUTH FOUNDATION WALL ELEVATION

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



3 S-21 WEST FOUNDATION WALL ELEVATION

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

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G. ABDALLAH				

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WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-S-21
FOUNDATION WALL ELEVATIONS

Contract:	1735
CAD File Name:	210S21.DWG
Date:	01 / 13 / 2021
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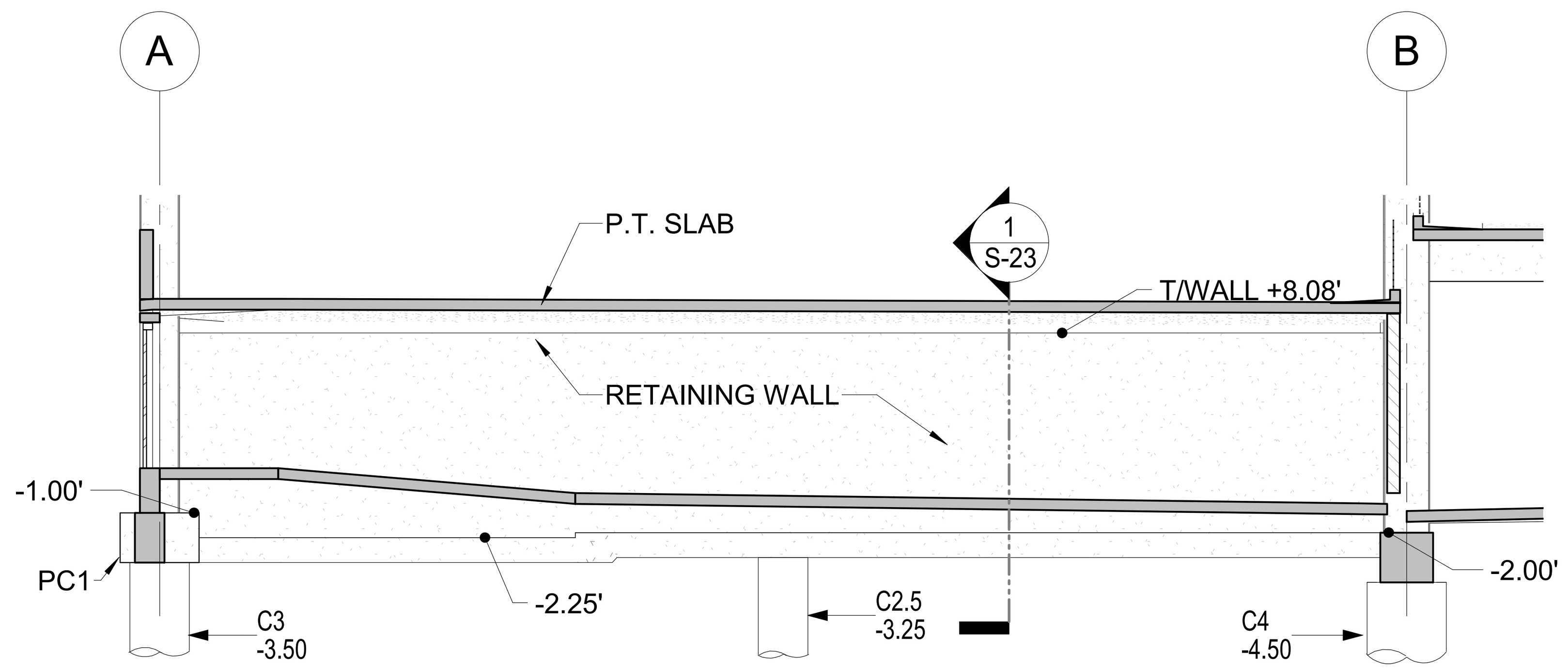
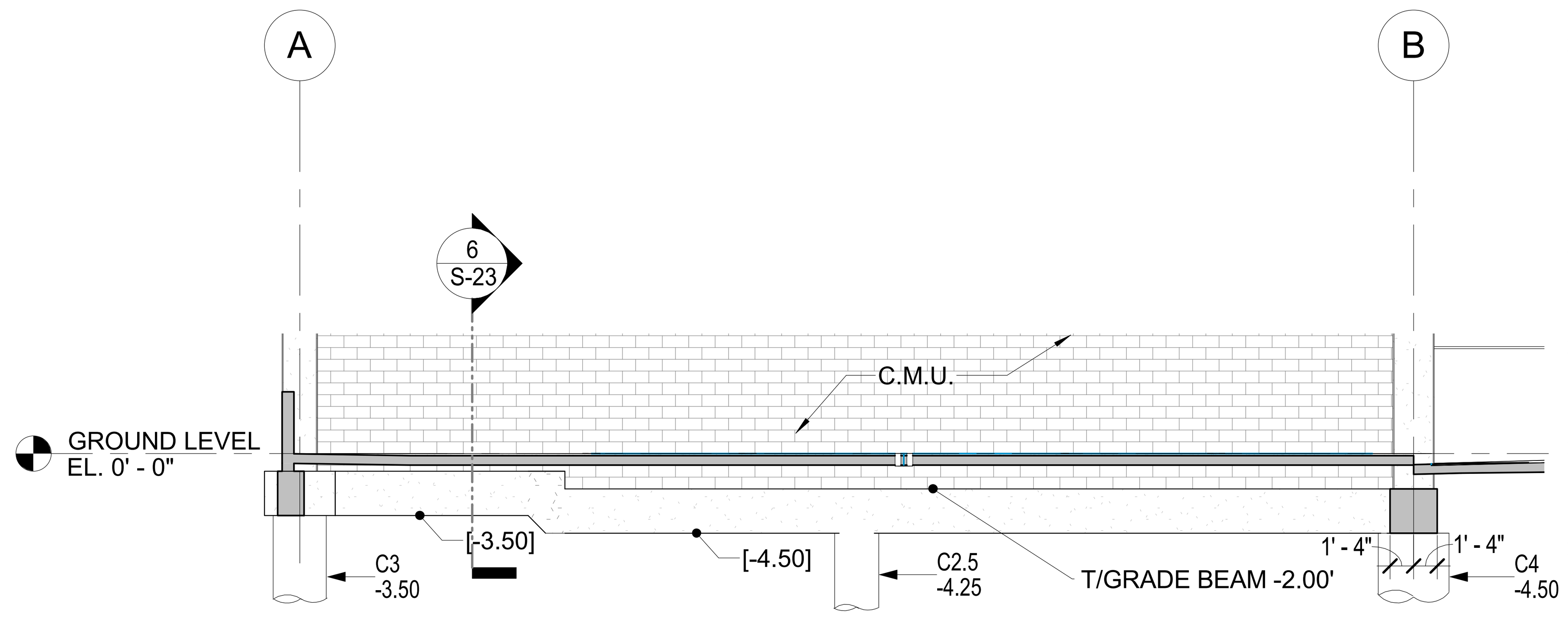
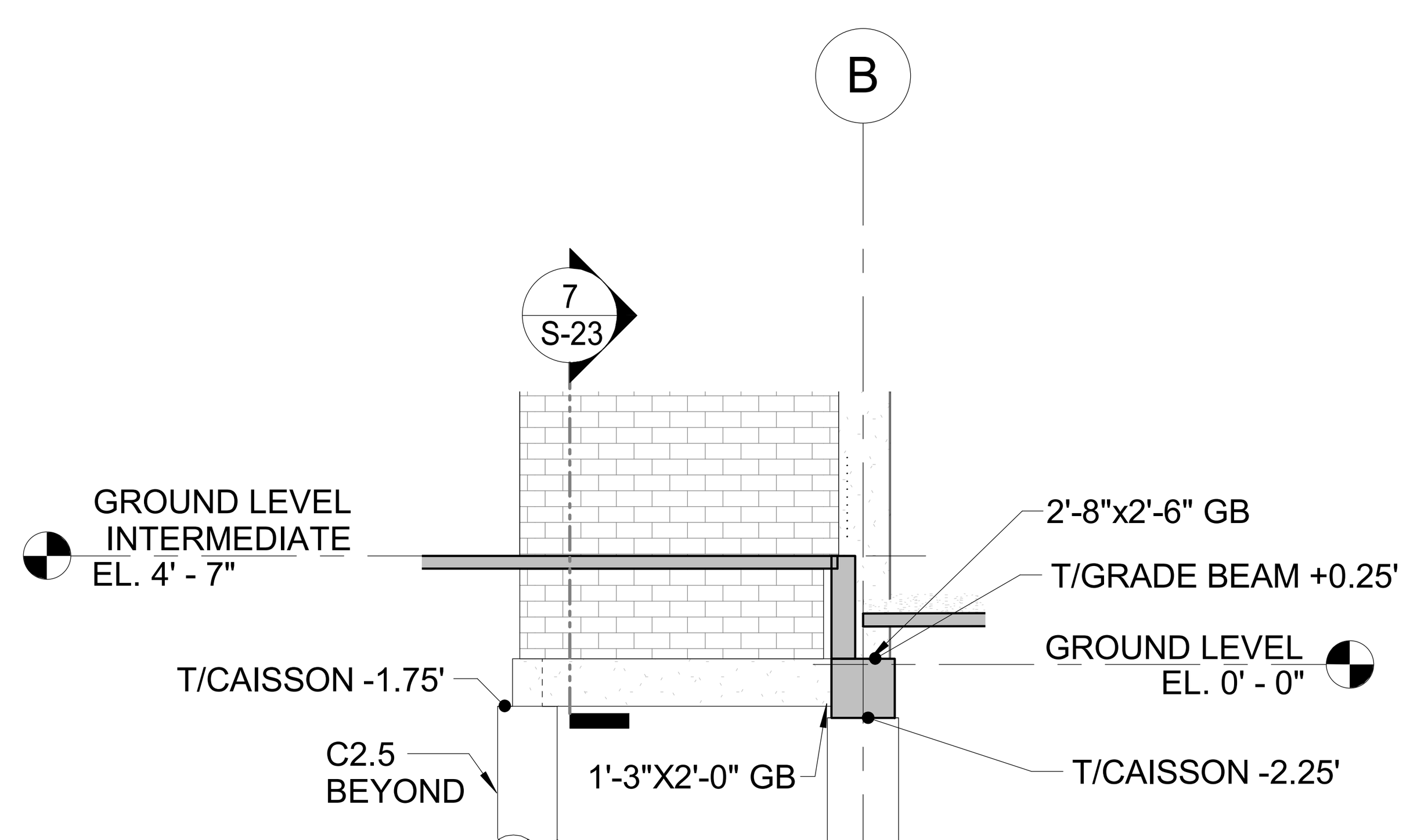
1 S-22 EAST FOUNDATION WALL ELEVATION ALONG B LINE
SCALE: 1/8" = 1'-0"



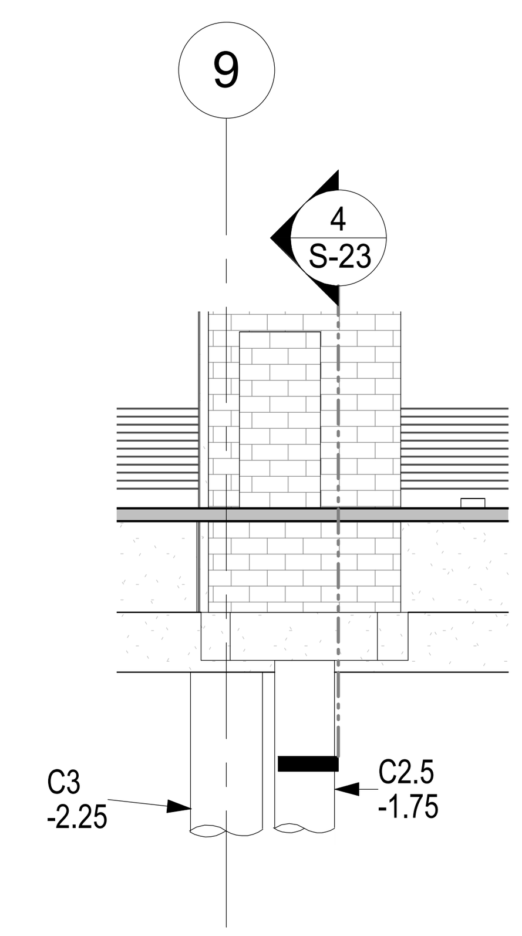
2 S-22 SOUTH FOUNDATION WALL ELEVATION ALONG 5 LINE
SCALE: 1/8" = 1'-0"



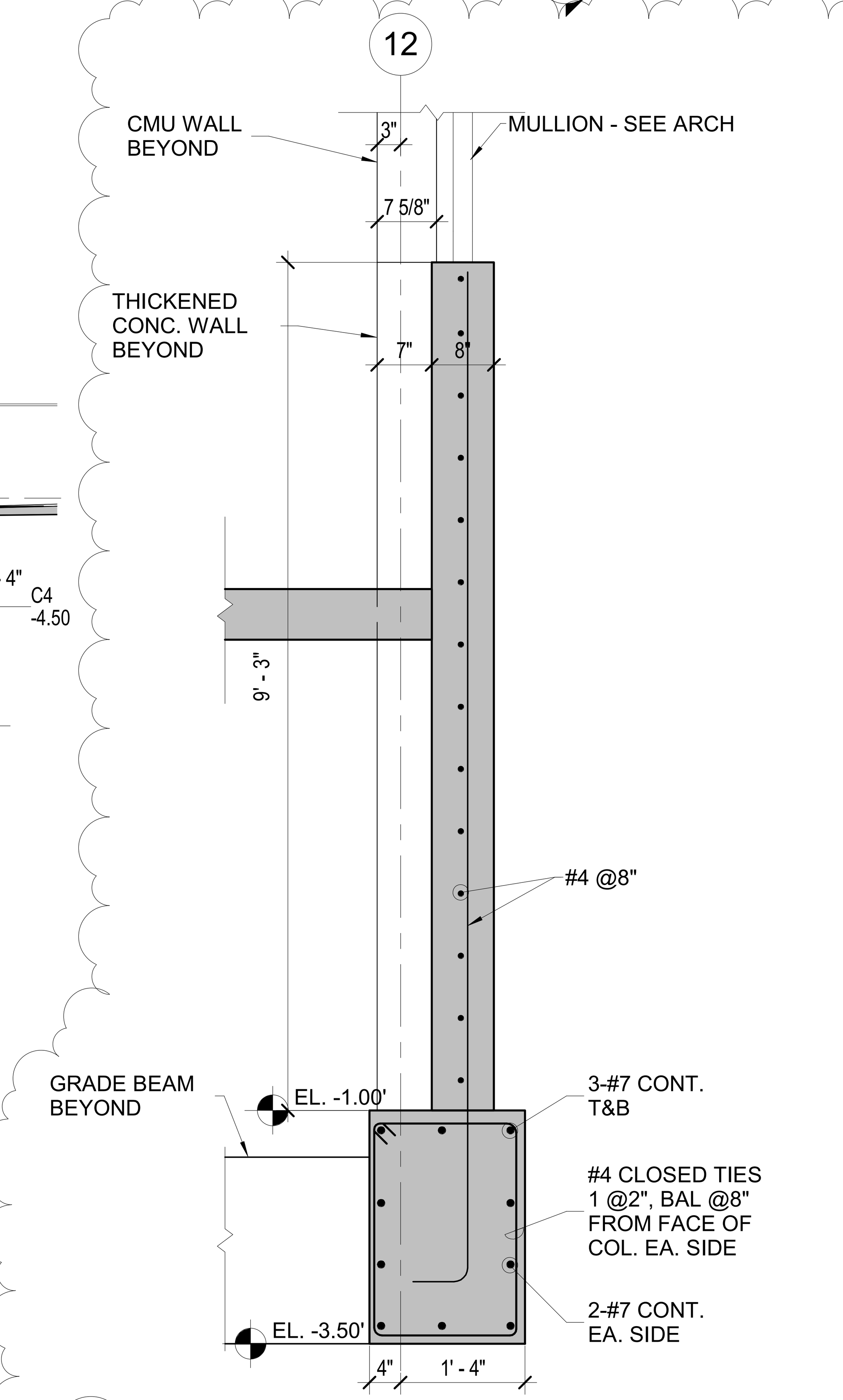
3 S-22 SOUTH FOUNDATION WALL ELEVATION ALONG 4 LINE
SCALE: 1/8" = 1'-0"



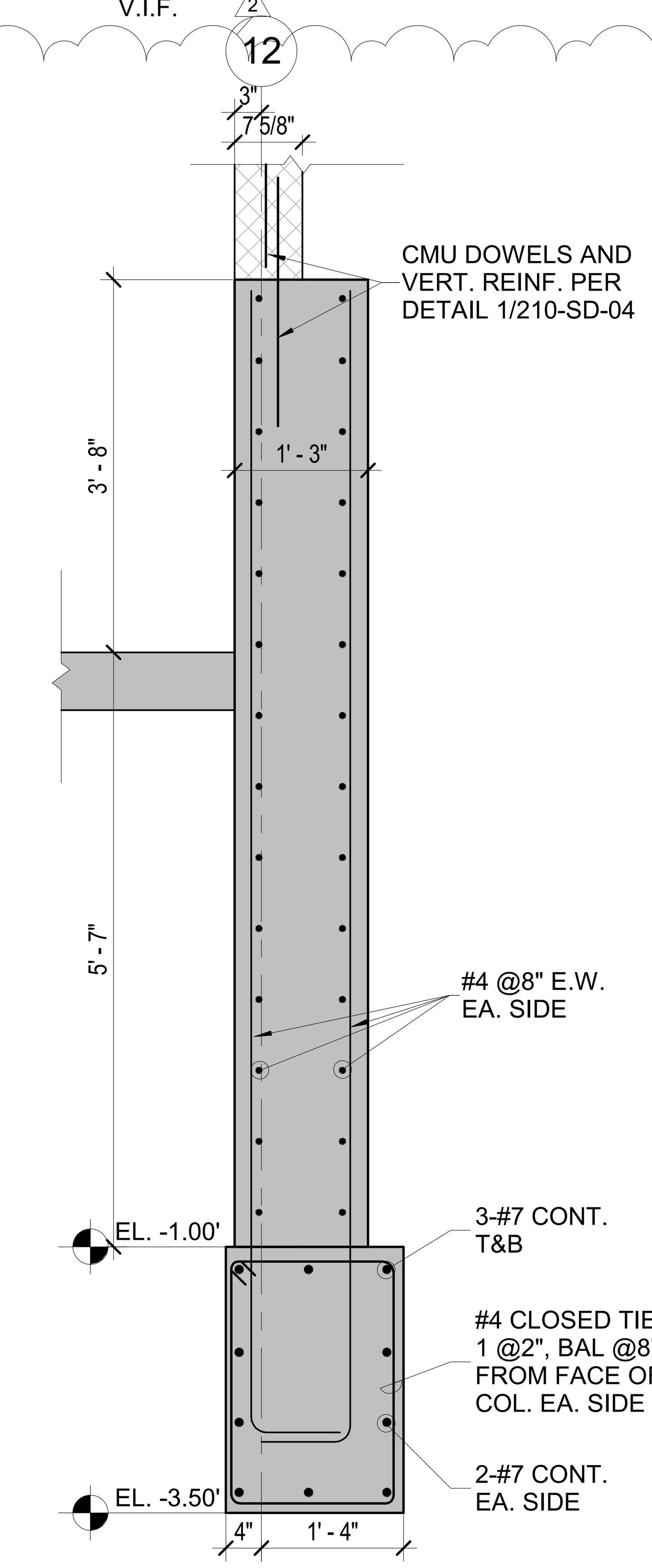
4 S-22 SOUTH FOUNDATION WALL ELEVATION AT ELECTRICAL ROOM
SCALE: 1/8" = 1'-0"



5 S-22 WEST FOUNDATION WALL ELEVATION AT ELECTRICAL ROOM
SCALE: 1/8" = 1'-0"



6 S-22 SECTION ALONG NORTH FOUNDATION WALL
SCALE: 3/4" = 1'-0"



7 S-22 SECTION ALONG NORTH FOUNDATION WALL
SCALE: 3/4" = 1'-0"

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

Designed by:	REV No.	DATE	DESCRIPTION	APPV
G. ABDALLAH	1	2/19/21	ADDENDUM 1	
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210-S-22
FOUNDATION WALL ELEVATIONS

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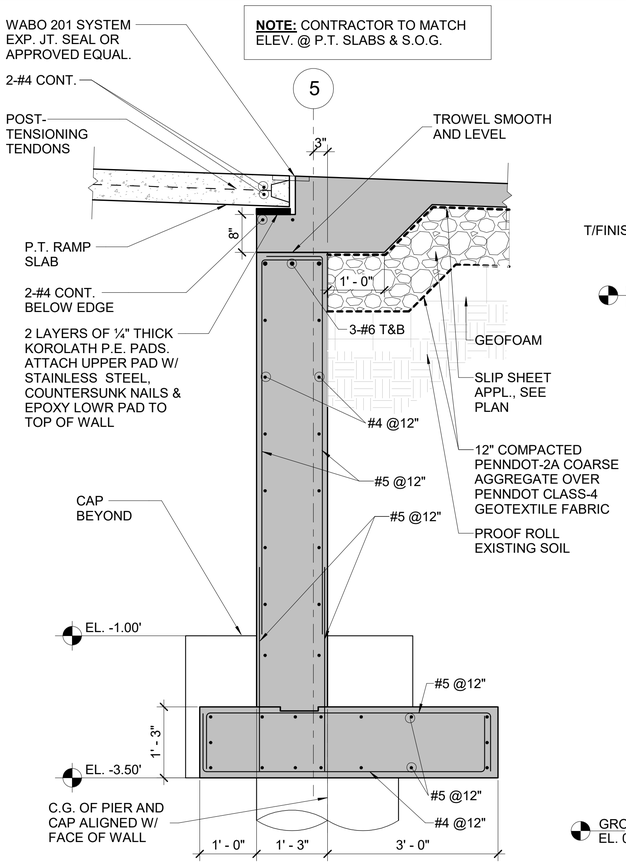
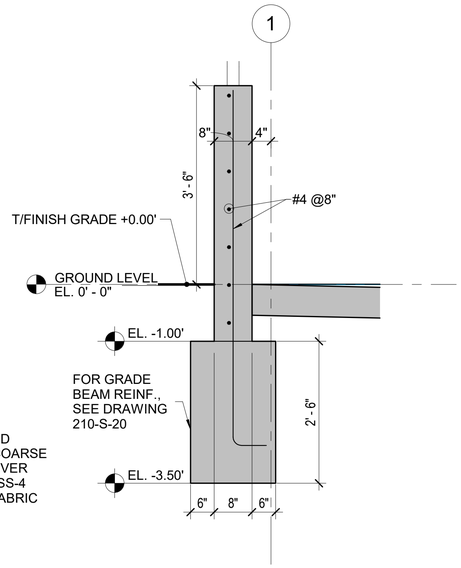
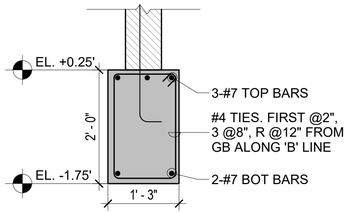


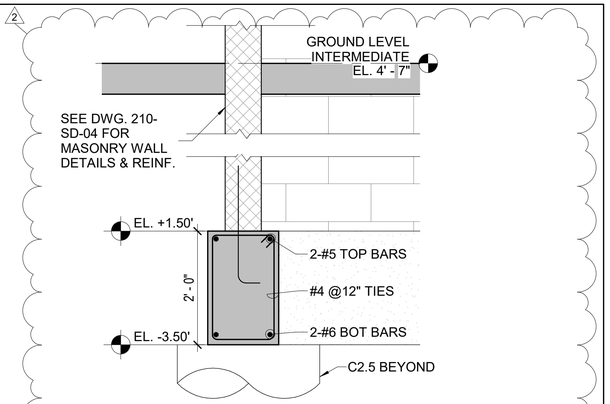
1 S-23 SLAB-ON-GRADE TO PT SLAB DETAIL
SCALE: 3/4" = 1'-0"



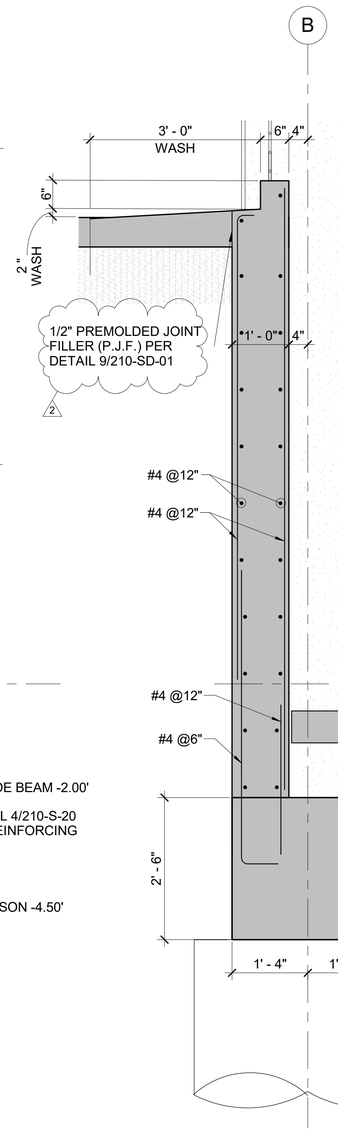
5 S-23 SHALLOW FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



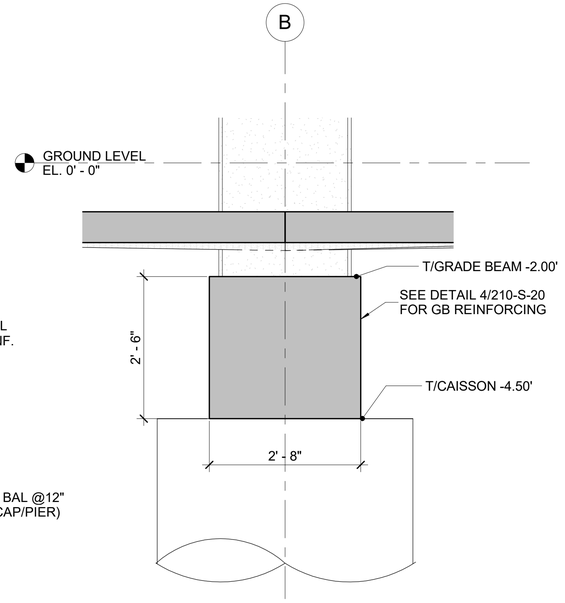
7 S-23 ELECTRICAL ROOM FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



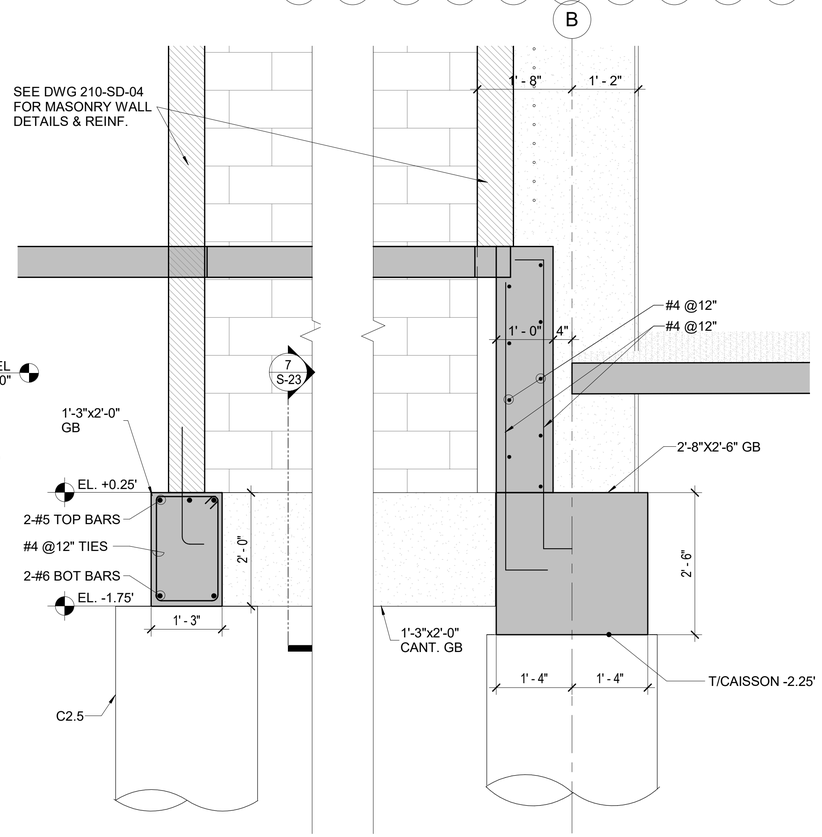
8 S-23 ELEVATOR CONTROL ROOM FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



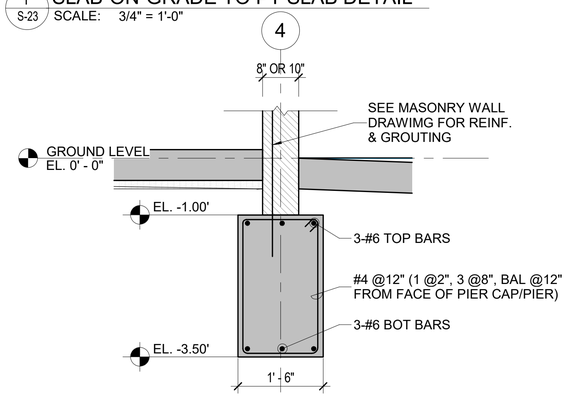
3 S-23 FOUNDATION SECTION ALONG B LINE
SCALE: 3/4" = 1'-0"



2 S-23 GRADE BEAM SECTION ALONG B LINE
SCALE: 3/4" = 1'-0"



4 S-23 FOUNDATION SECTION ALONG B LINE AT ELEC. RM.
SCALE: 3/4" = 1'-0"



6 S-23 FOUNDATION SECTION ALONG 4 LINE
SCALE: 3/4" = 1'-0"

SCALE: 3/4" = 1'-0"
0 1' 2' 3'

Designed by:	REVISION			
G. ABDALLAH	REV No.	DATE	DESCRIPTION	APPV
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G. ABDALLAH	2	3/11/21	ADDENDUM 2	
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G. ABDALLAH				

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210-S-23
FOUNDATION SECTIONS

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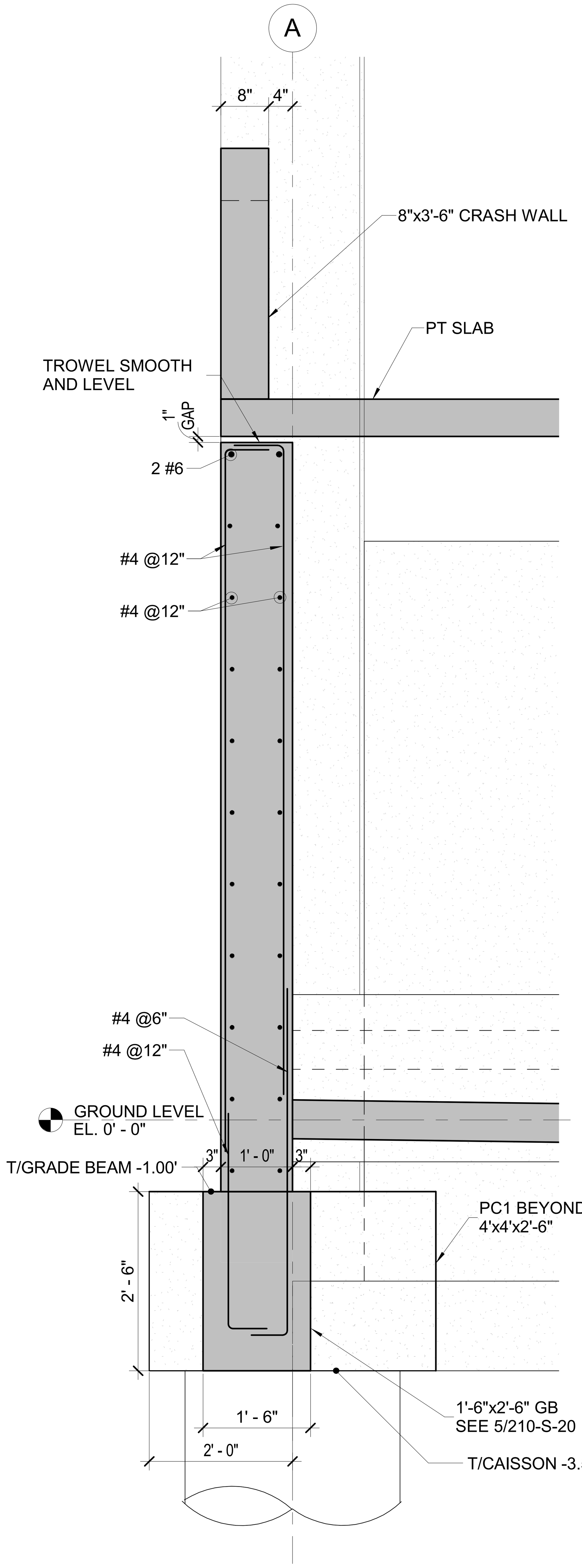
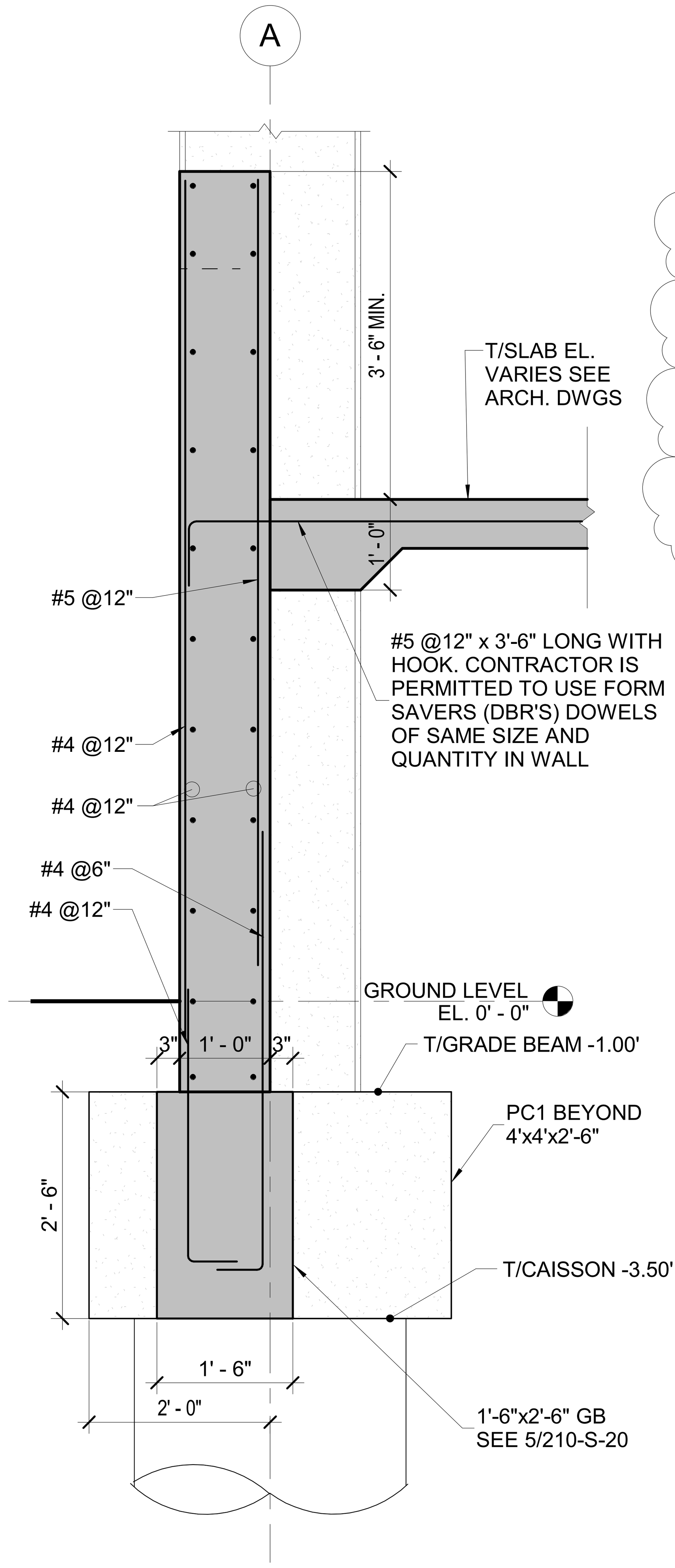


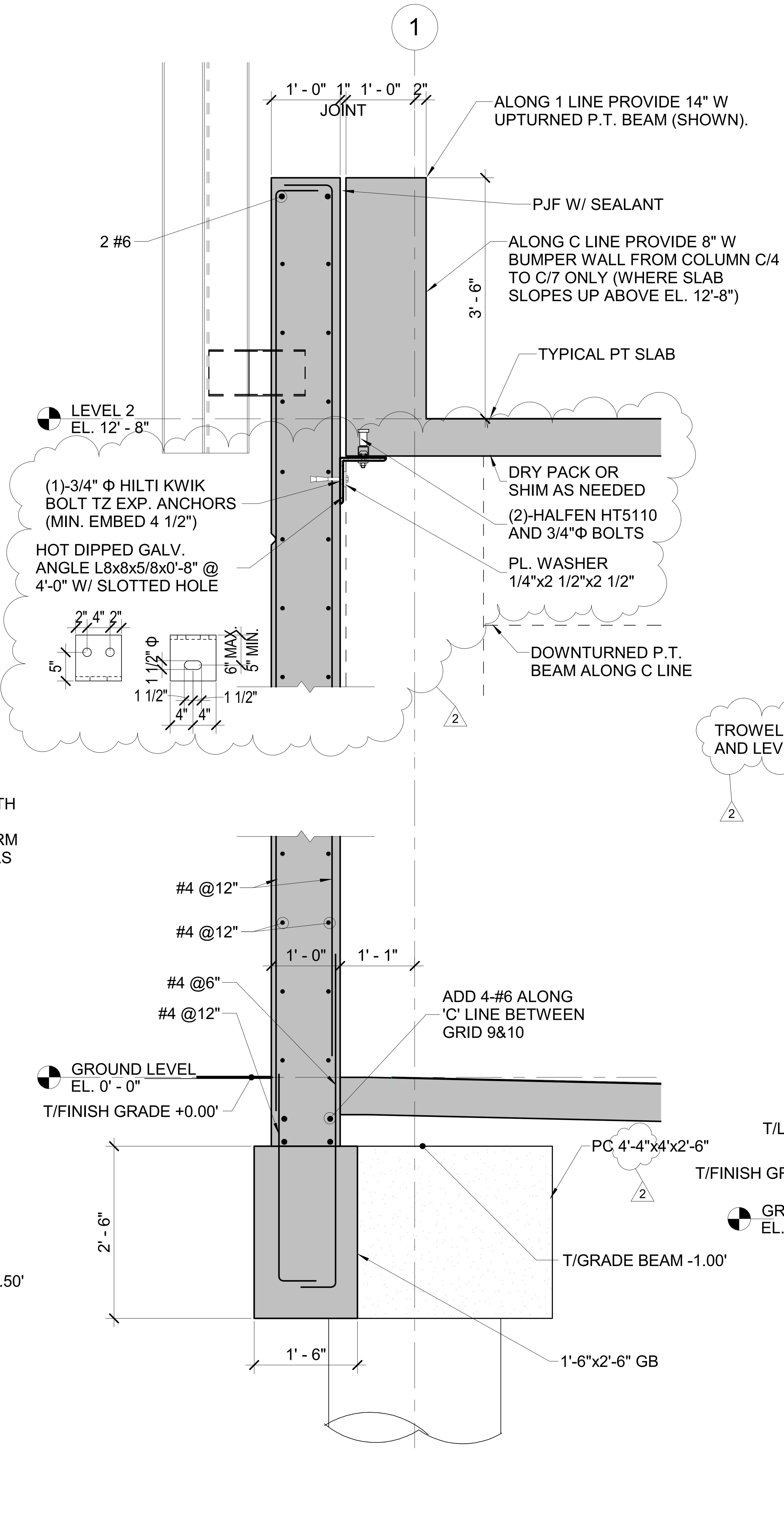
1 S-24 FOUNDATION SECTION ALONG A LINE @ STOR. RM.

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



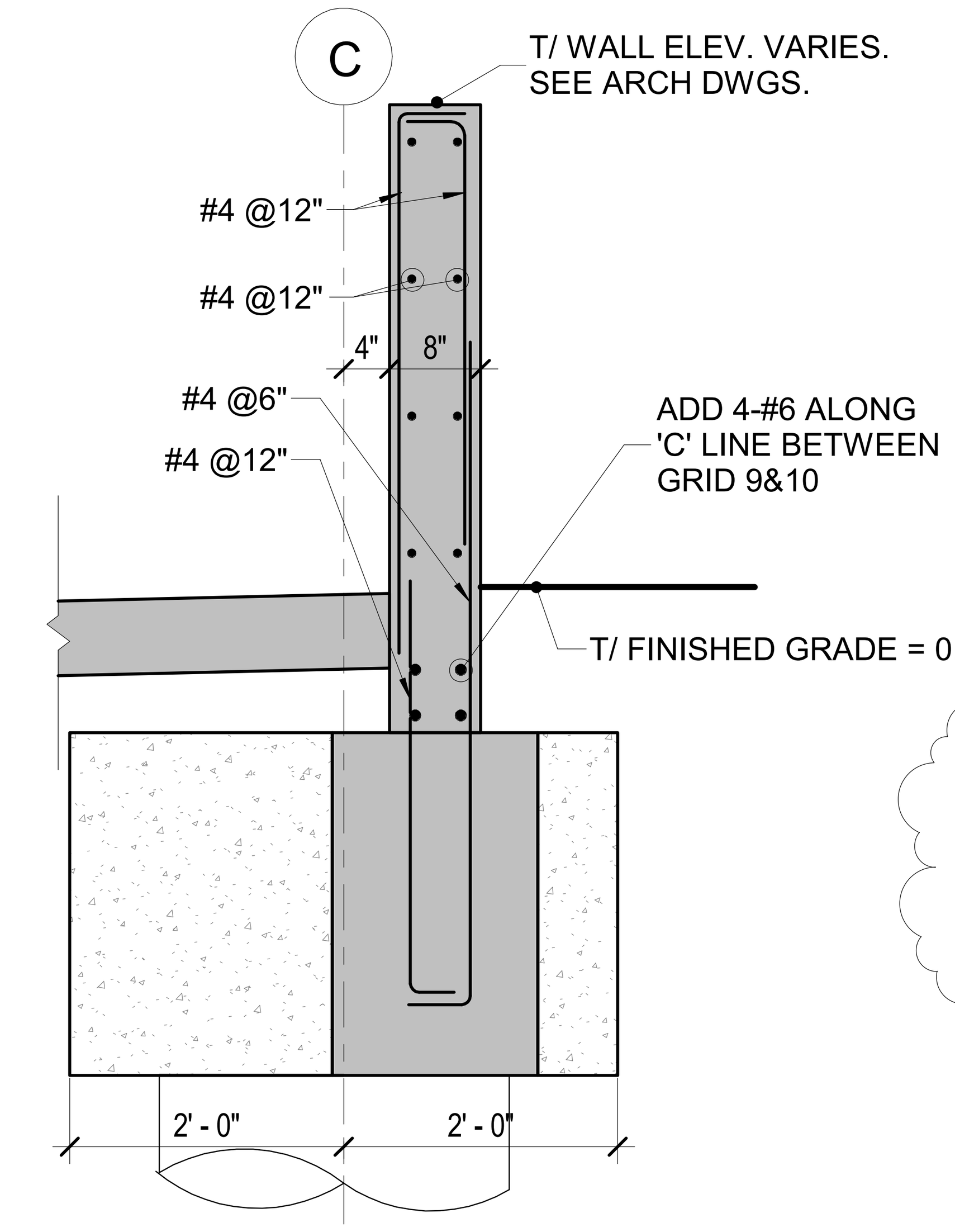
2 S-24 FOUNDATION SECTION ALONG A LINE AT RAMP

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



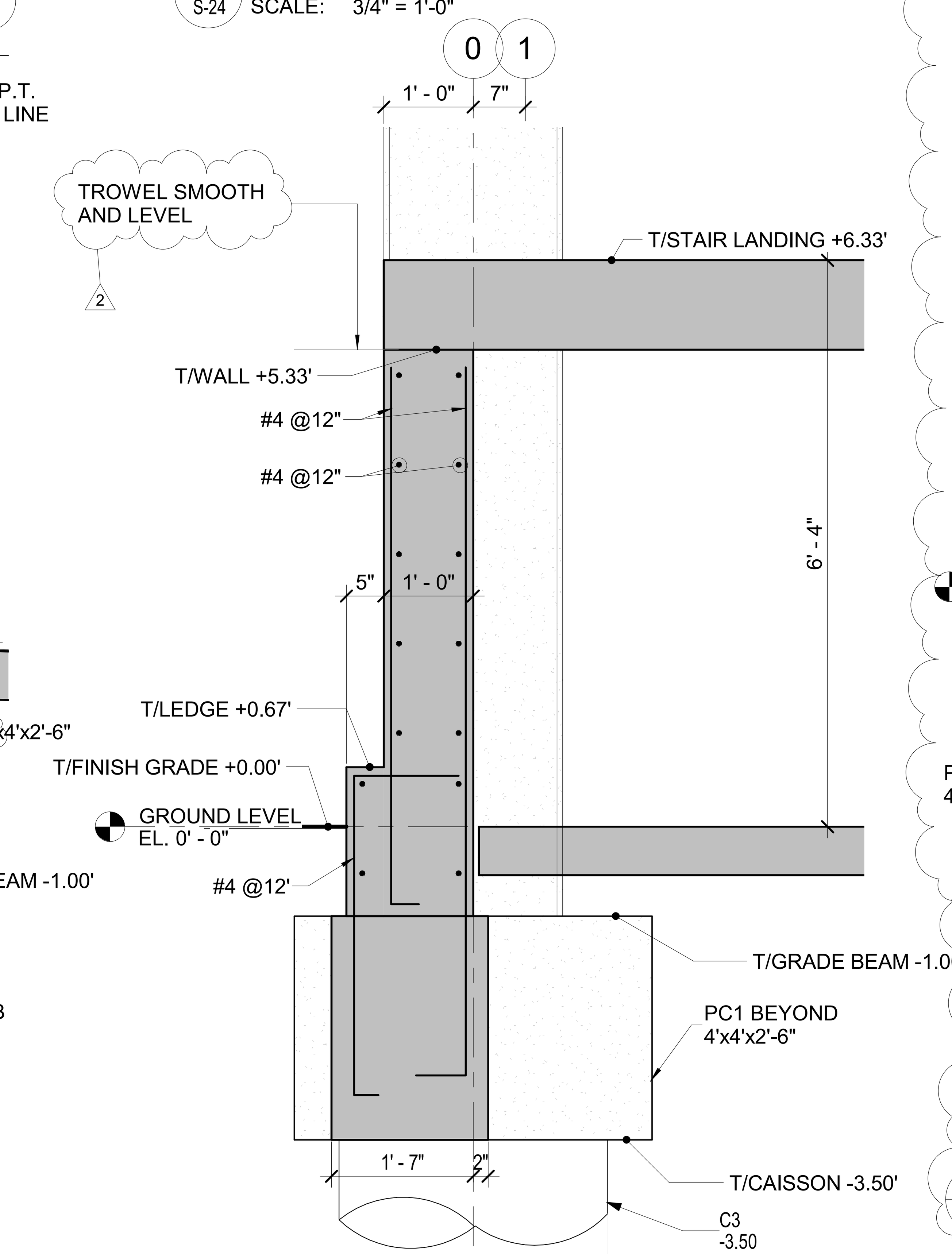
3 S-24 FOUNDATION SECTION ALONG 1 LINE AND C LINE

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



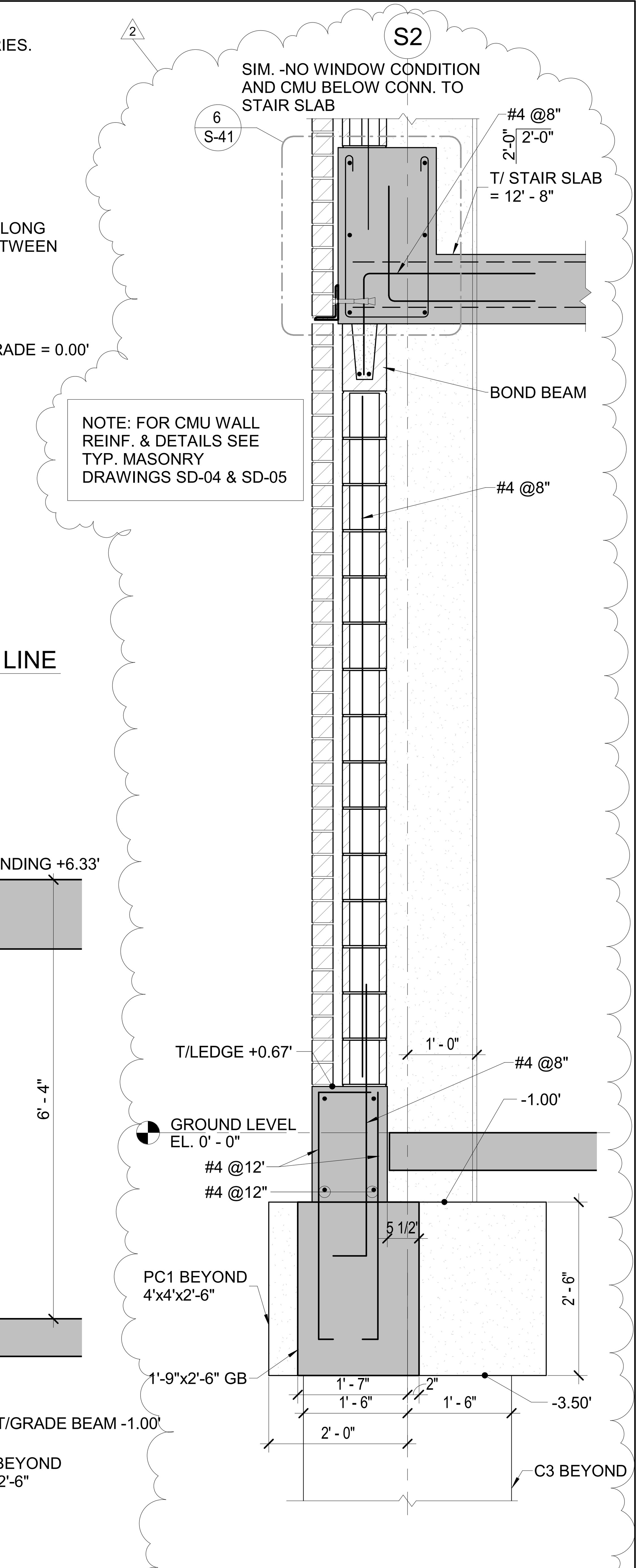
3A S-24 FOUNDATION SECTION ALONG C LINE

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



4 S-24 FOUNDATION SECTION AT STAIR 2

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



4A S-24 FOUNDATION SECTION AT STAIR 2

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

SCALE: 3/4" = 1'-0" — 0, 1', 2', 3'

Designed by: G. ABDALLAH
Drawn by: G. ABDALLAH
Checked by: G. ABDALLAH

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210-S-24
FOUNDATION SECTIONS

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1 S-30 STAIR 1/ELEVATOR - FOUNDATION PLAN
SCALE: 3/8" = 1'-0"

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210-S-30
STAIR 1 / ELEVATOR FOUNDATION PLAN

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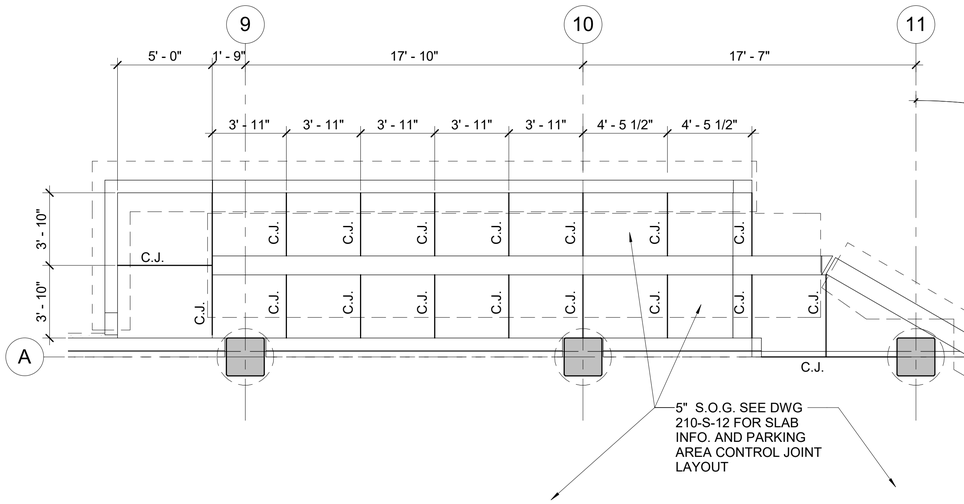
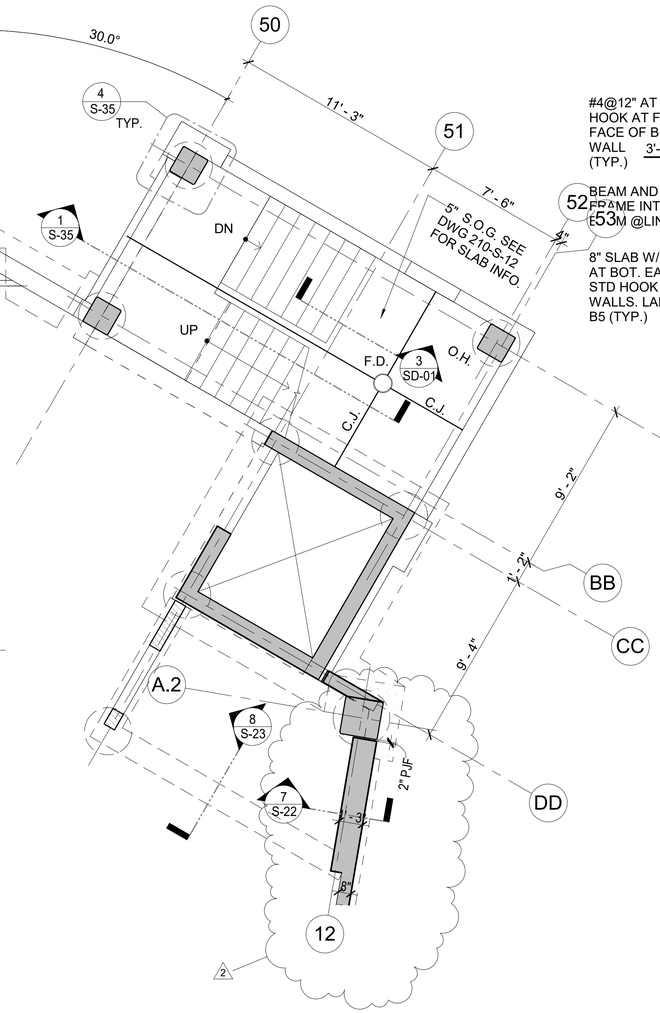
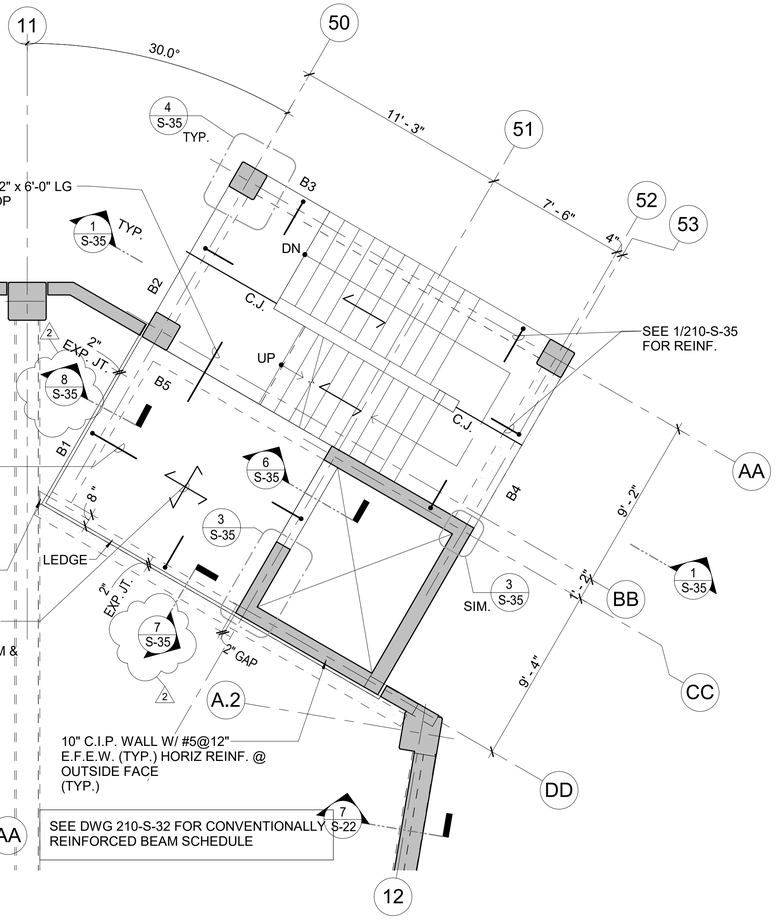


1 S-31 STAIR 1/ELEVATOR - GROUND LEVEL PLAN
SCALE: 1/4" = 1'-0"





2 S-31 STAIR 1/ELEVATOR - LEVEL 2, 3 & 4 FRAMING PLAN
SCALE: 1/4" = 1'-0"

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

Designed by:	REVISION			
G. ABDALLAH	REV No.	DATE	DESCRIPTION	APPV
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G. ABDALLAH				
Checked by:				
G. ABDALLAH				

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08.31.21

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210-S-31
STAIR 1/ELEVATOR - ENLARGED PLANS

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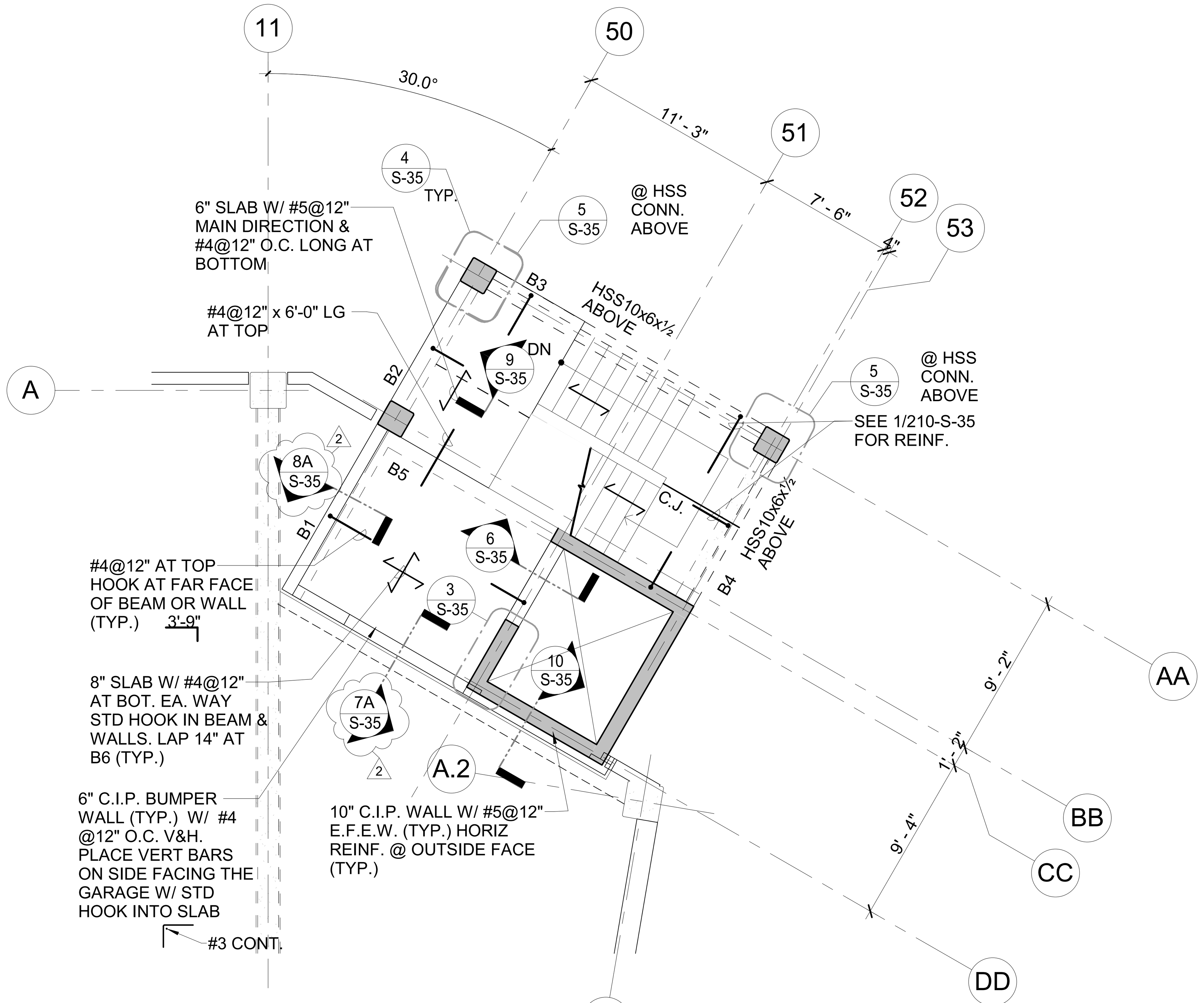
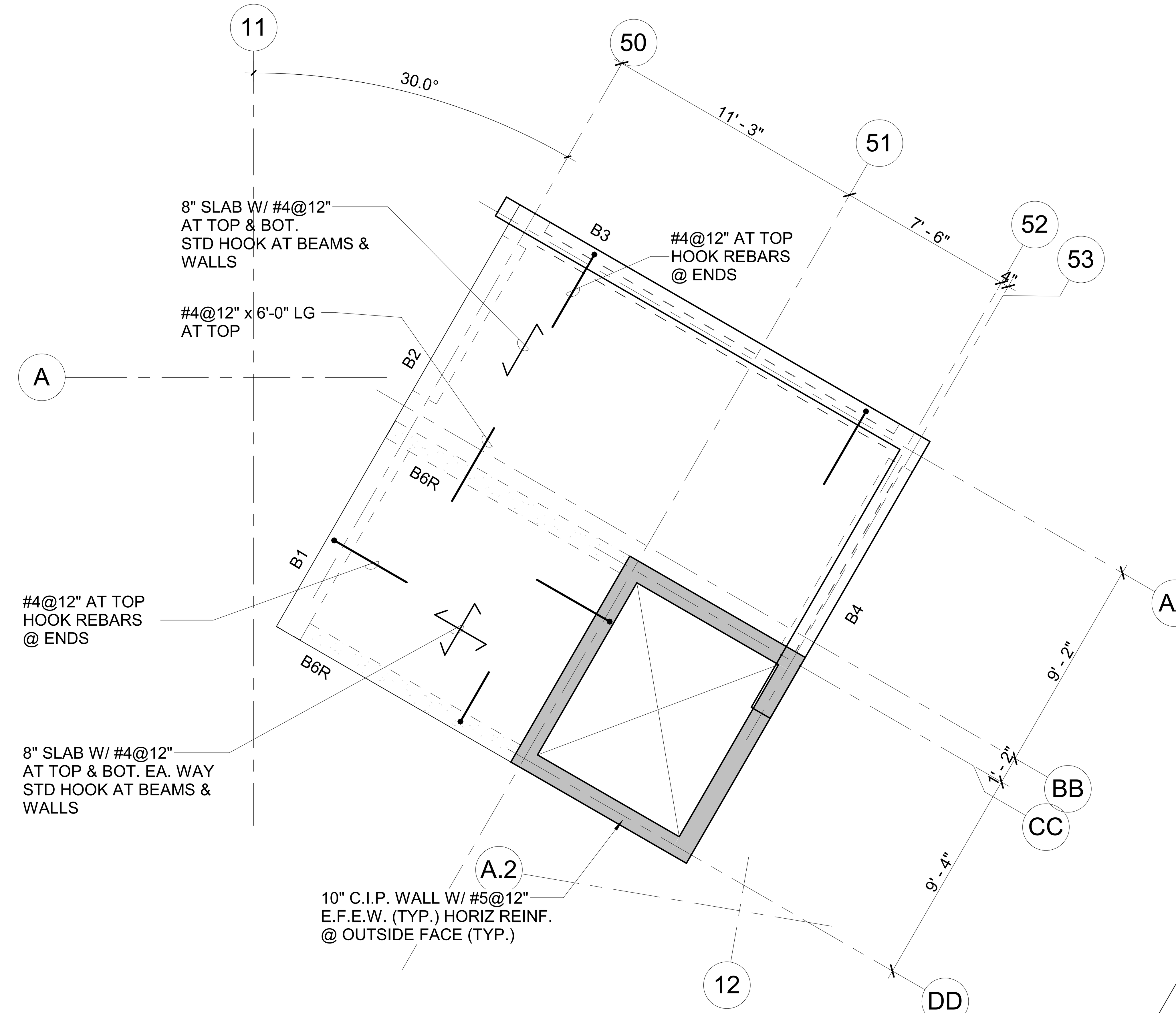
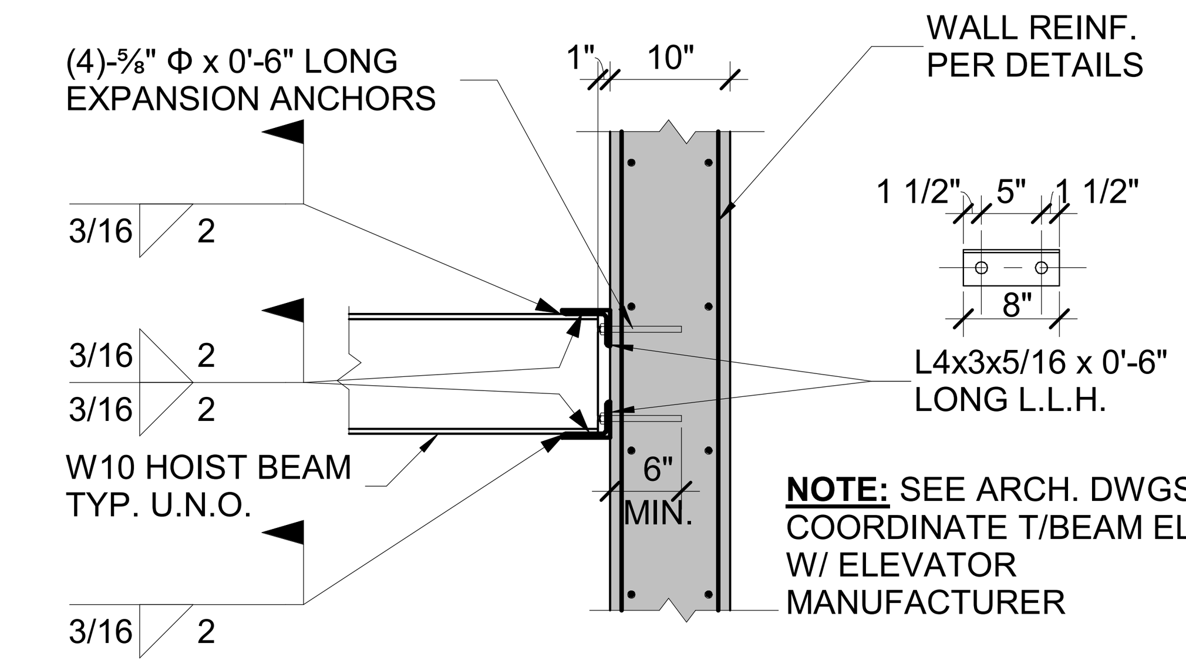


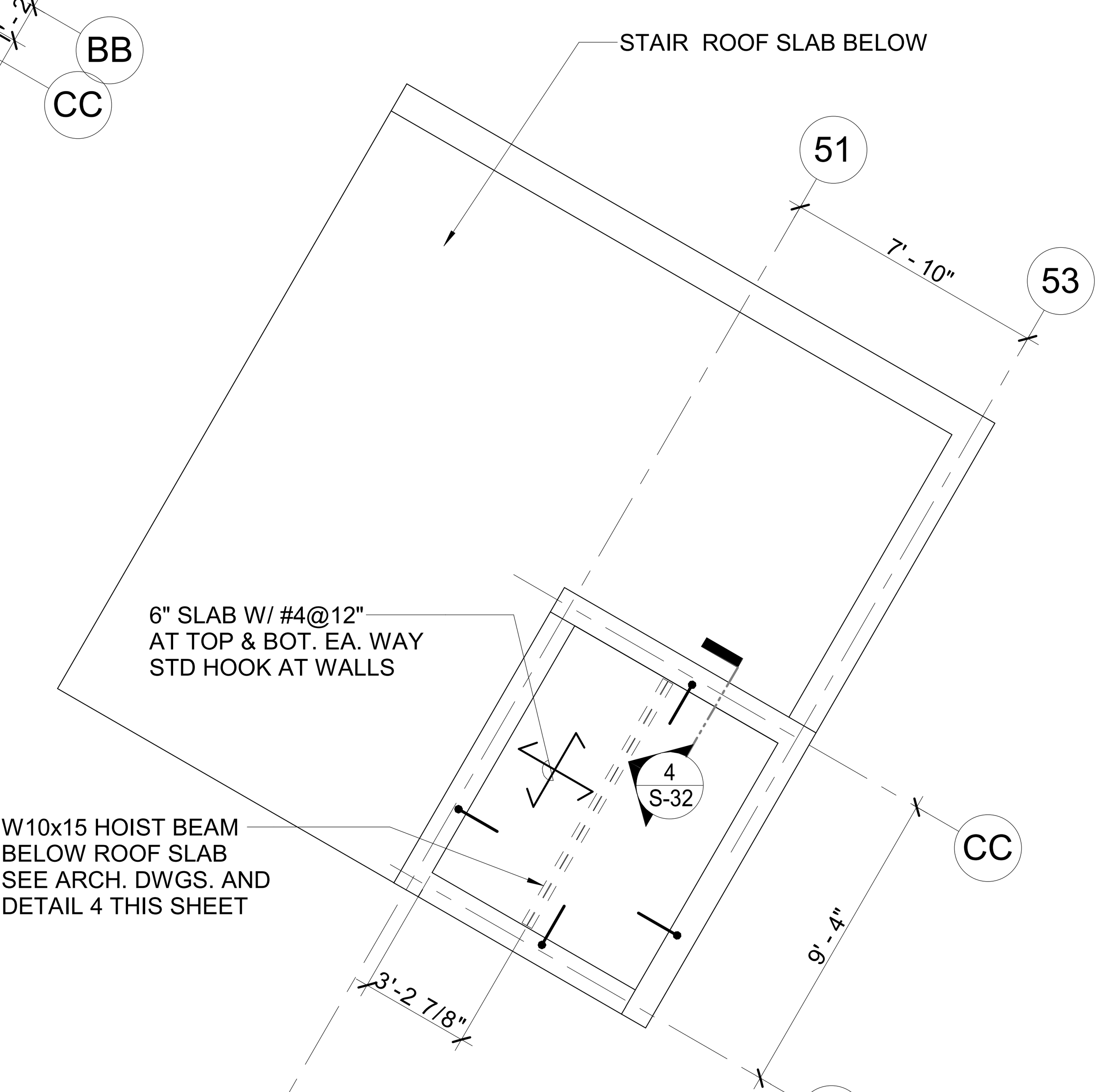
1 S-32 STAIR 1/ELEVATOR - LEVEL 5 FRAMING PLAN
SCALE: 3/16" = 1'-0"



2 S-32 STAIR 1/ELEVATOR -STAIR ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"



4 S-32 TYP. HOIST BEAM DETAIL AT C.I.P. CONCRETE WALL
SCALE: 3/4" = 1'-0"



3 S-32 STAIR 1/ELEVATOR - ELEVATOR ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"

CONVENTIONALLY REINFORCED CONCRETE BEAM SCHEDULE

MARK	SHAPE	DIMENSIONS		REINFORCING		SHEAR REINFORCING	REMARKS
		WIDTH W INCHES	WIDTH D INCHES	TOP (2)	BOTTOM		
B1		14	18	3-#7 (CONT.)(2)	3-#7 (CONT.)	#4 @ 8" O.C. ALT HOOK	ADD 2#6 CONT. (H) AT MID-HEIGHT
B2		14	18	3-#7 (H)	3-#7	#4 @ 8" O.C. ALT HOOK	ADD 2#6 CONT. (H) AT MID-HEIGHT
B3		14	18	3-#7 (H)	3-#7	#4 @ 8" O.C. ALT HOOK	ADD 2#6 CONT. (H) AT MID-HEIGHT
B4		14	18	3-#7 (H)	3-#7 (H) @WALL	#4 @ 8" O.C. ALT HOOK	
B5		14	18	2-#6 (H)	2-#6 (H) @WALL	#4 @ 8" O.C. ALT HOOK	
B6R		14	18	2-#7 (H)	2-#7 (H) @WALL	#4 @ 8" O.C. ALT HOOK	

(H) = HOOKED BAR @ COLUMN/WALL

NOTES:

1. ALL LONGITUDINAL REINFORCEMENT SHALL BE CONTINUOUS THRU COLUMN FOR BEAMS WITH MULTIPLE SPANS. REINFORCEMENT SHALL BE TERMINATED W/ A STANDARD HOOK IN COLUMNS AT DISCONTINUOUS END. REINFORCEMENT SHALL EXTEND INTO WALLS FOR A DISTANCE = Ld OR TERMINATED WITH A STANDARD HOOK IN WALLS WHERE Ld IS NOT AVAILABLE. REINFORCEMENT SHALL EXTEND TO FAR FACE OF WALLS / COLUMNS FOR STANDARD HOOK.
2. STANDARD HOOK (2)-#7 @TOP AT TIP OF CANTILEVER AT ROOF.
3. START STIRRUPS @ 2" CLEAR FROM FACE OF COLUMN OR WALL. PROVIDE 2 ADDITIONAL STIRRUPS @ 2" O.C. AT EACH END OF BEAM. REINFORCEMENT SHALL BE CONTINUOUS THRU BEAM / COLUMN JOINT.
4. REINFORCEMENT IN BEAMS B1 & B2 SHALL BE PLACED OUTERMOST LAYERS AT INTERSECTION OF BEAMS & COLUMNS.

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

Designed by: G. ABDALLAH
Drawn by: G. ABDALLAH
Checked by: G. ABDALLAH

REVISION			
REV No.	DATE	DESCRIPTION	APPV
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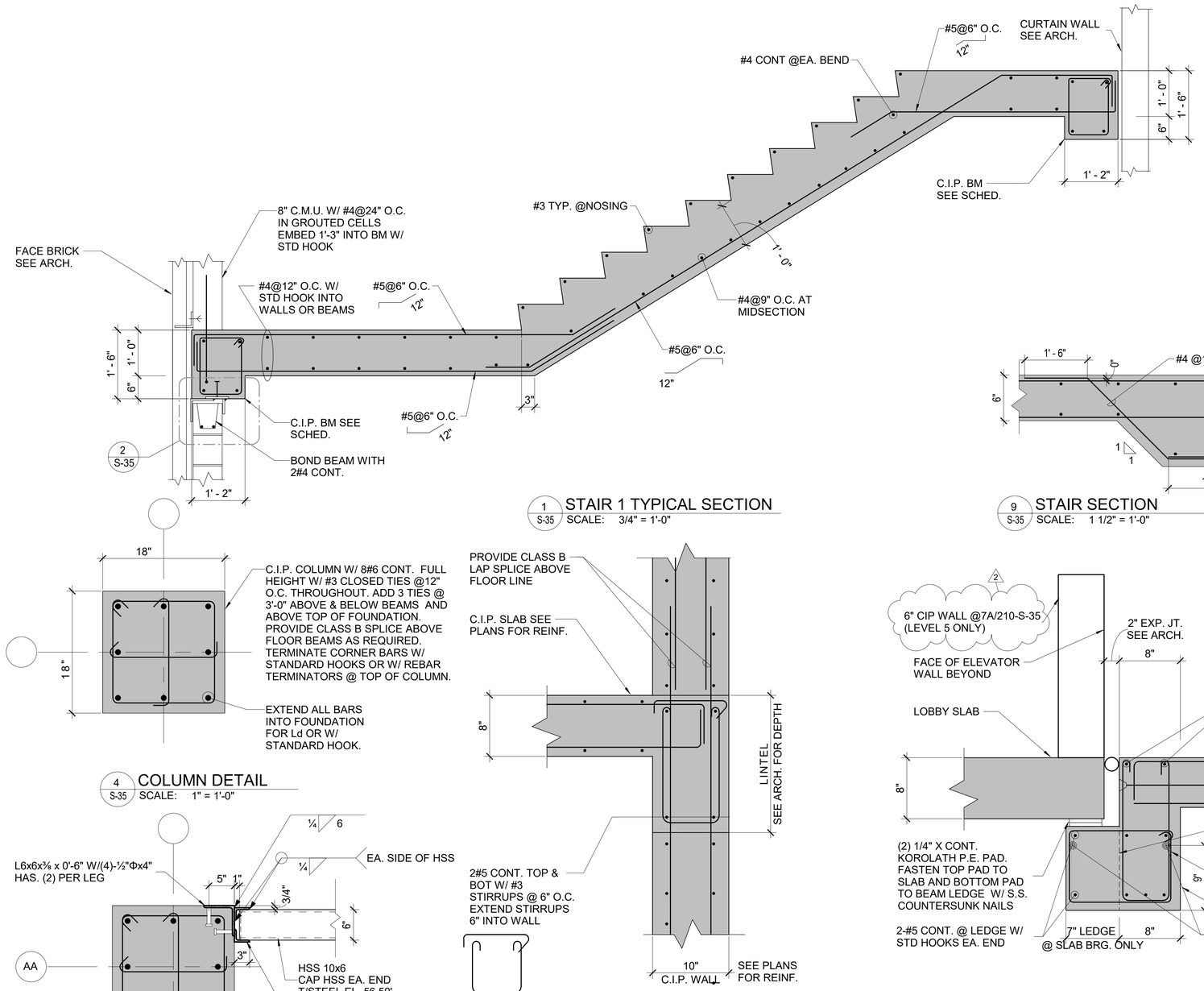
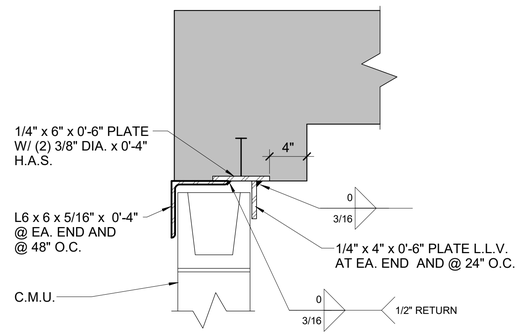
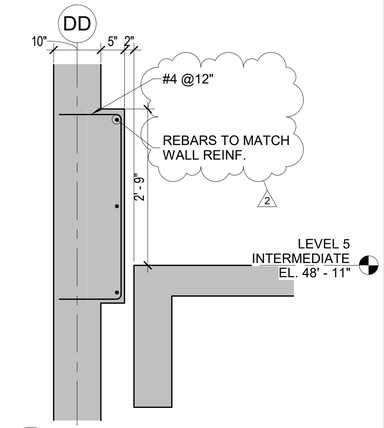


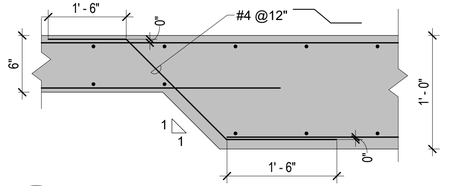
1 S-35 STAIR 1 TYPICAL SECTION
SCALE: 3/4" = 1'-0"



2 S-35 TYP CMU HEAD BRACING DETAIL
SCALE: 1 1/2" = 1'-0"

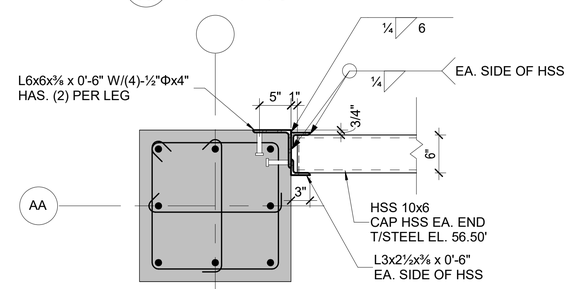


10 S-35 SECTION
SCALE: 3/4" = 1'-0"



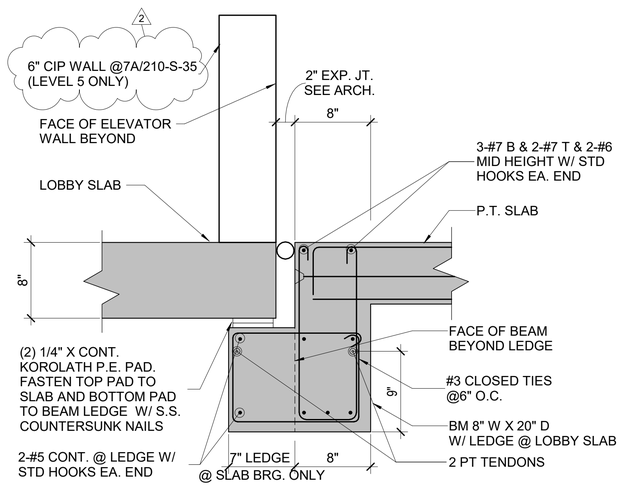
9 S-35 STAIR SECTION
SCALE: 1 1/2" = 1'-0"

4 S-35 COLUMN DETAIL
SCALE: 1" = 1'-0"

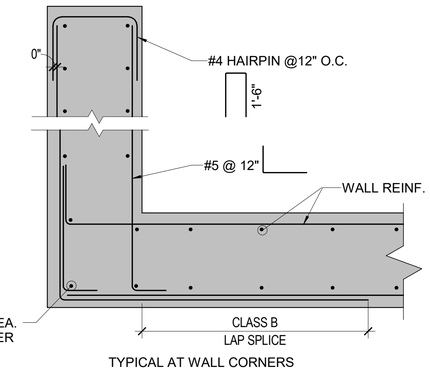


5 S-35 HSS-CONCRETE COLUMN CONNECTION DETAIL
SCALE: 1" = 1'-0"

6 S-35 LINTEL / WALL DETAIL
SCALE: 1 1/2" = 1'-0"

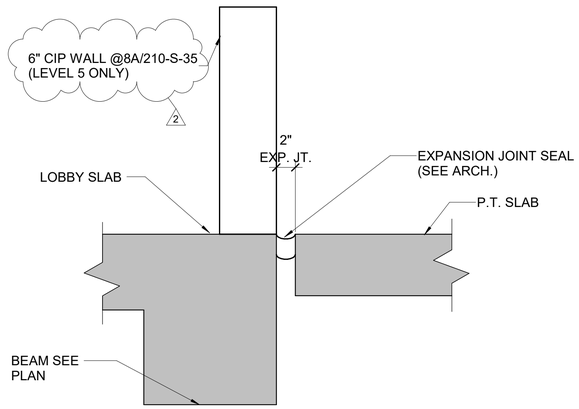


7/7A S-35 EXPANSION JOINT DETAIL AT ELEVATOR LOBBY SLAB
SCALE: 1 1/2" = 1'-0"



TYPICAL AT WALL CORNERS

3 S-35 WALL JAMB REINFORCING DETAIL
SCALE: 1 1/2" = 1'-0"



8/8A S-35 EXPANSION JOINT DETAIL 2 AT ELEVATOR LOBBY SLAB
SCALE: 1 1/2" = 1'-0"

Designed by: G. ABDALLAH	REVISION			
	REV No.	DATE	DESCRIPTION	APPV
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210-S-35
STAIR 1/ ELEVATOR SECTIONS

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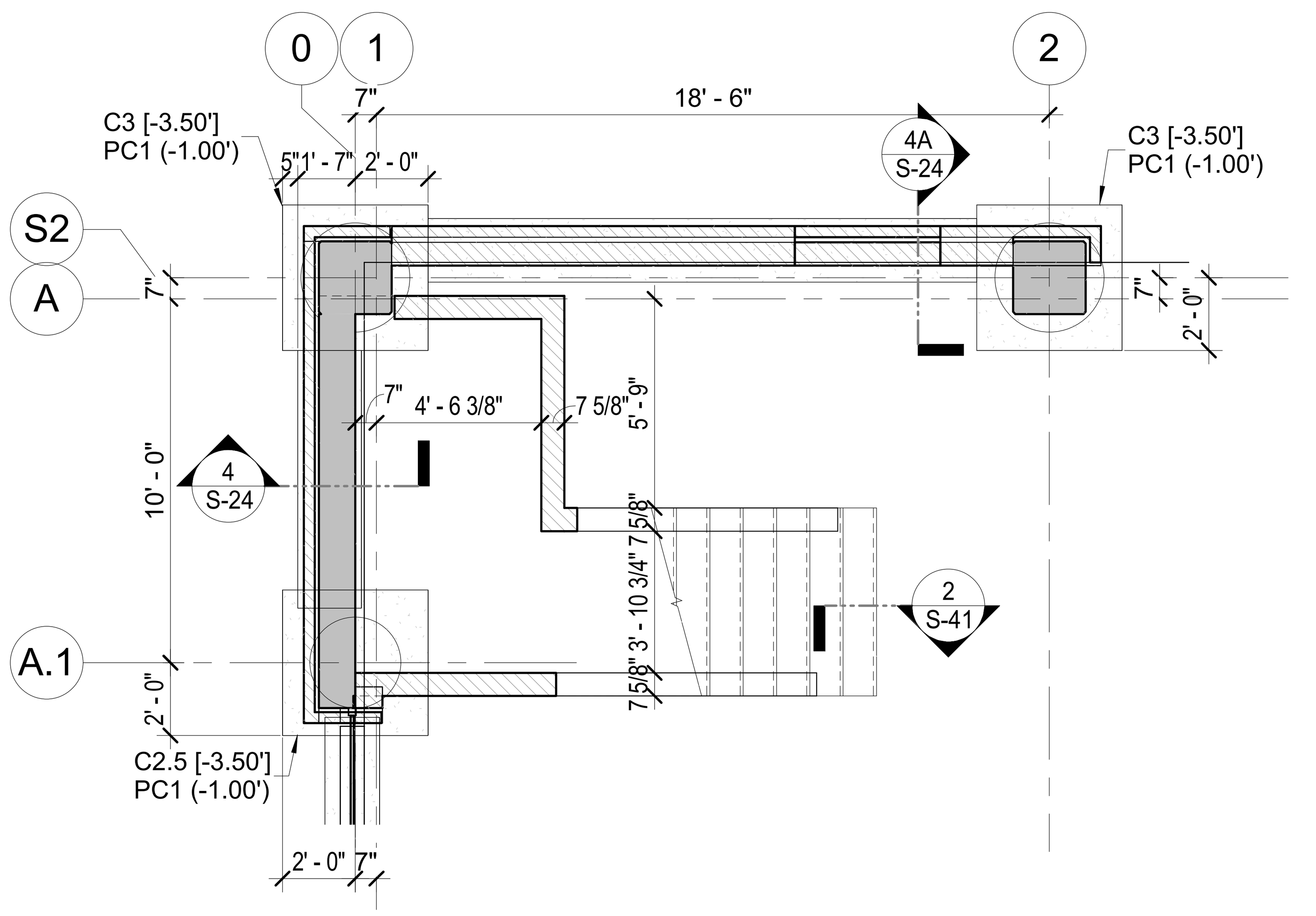
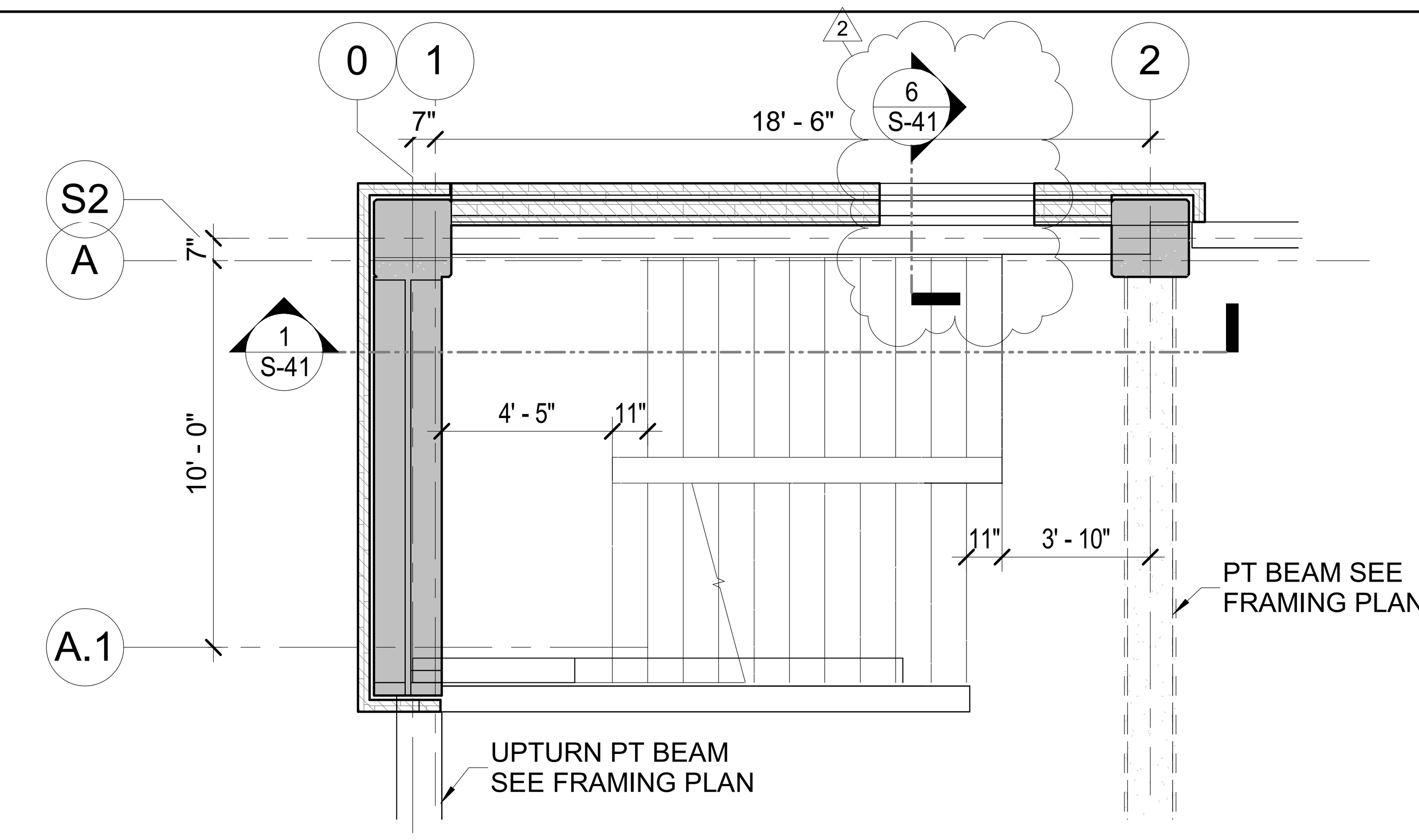
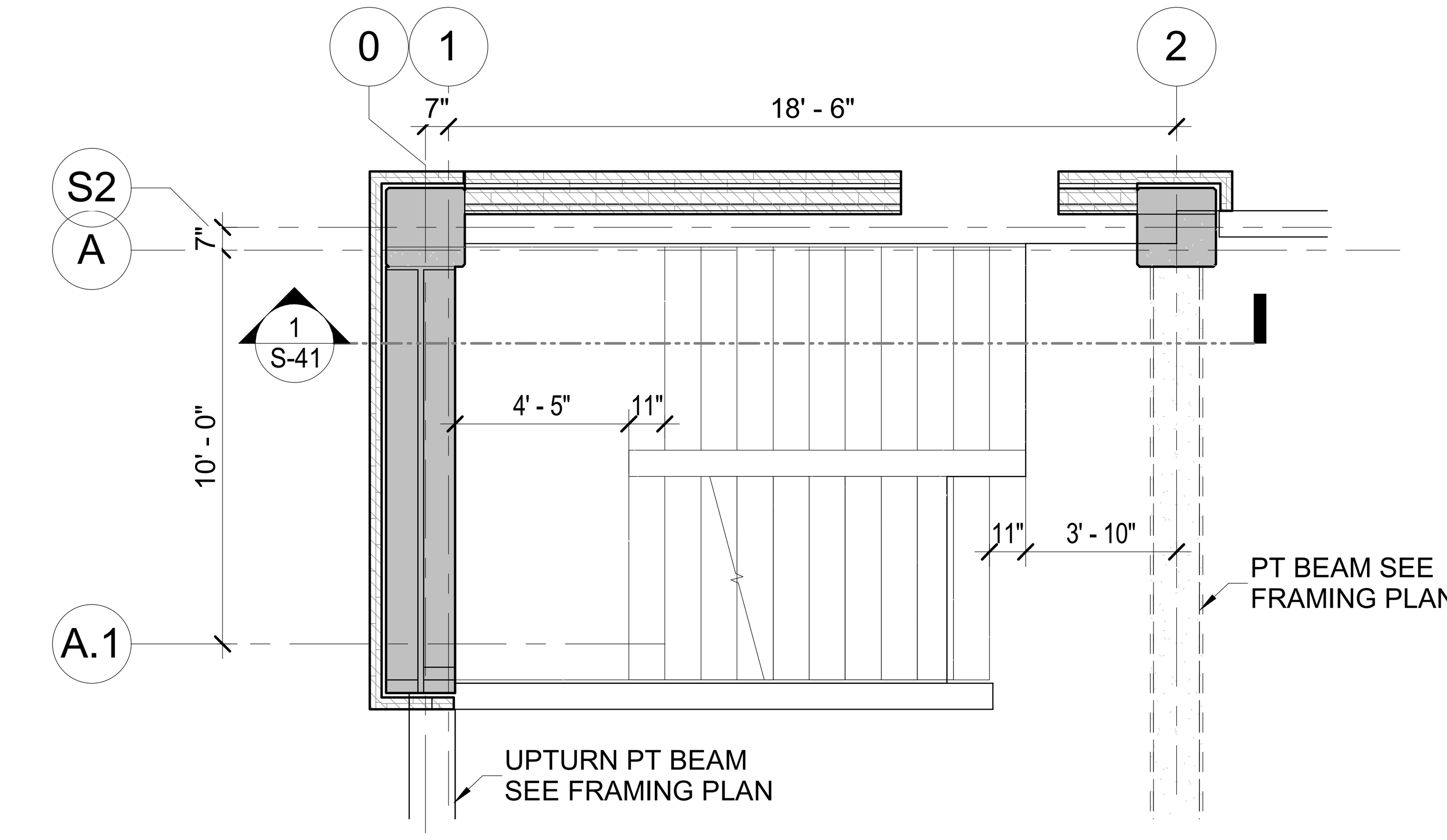


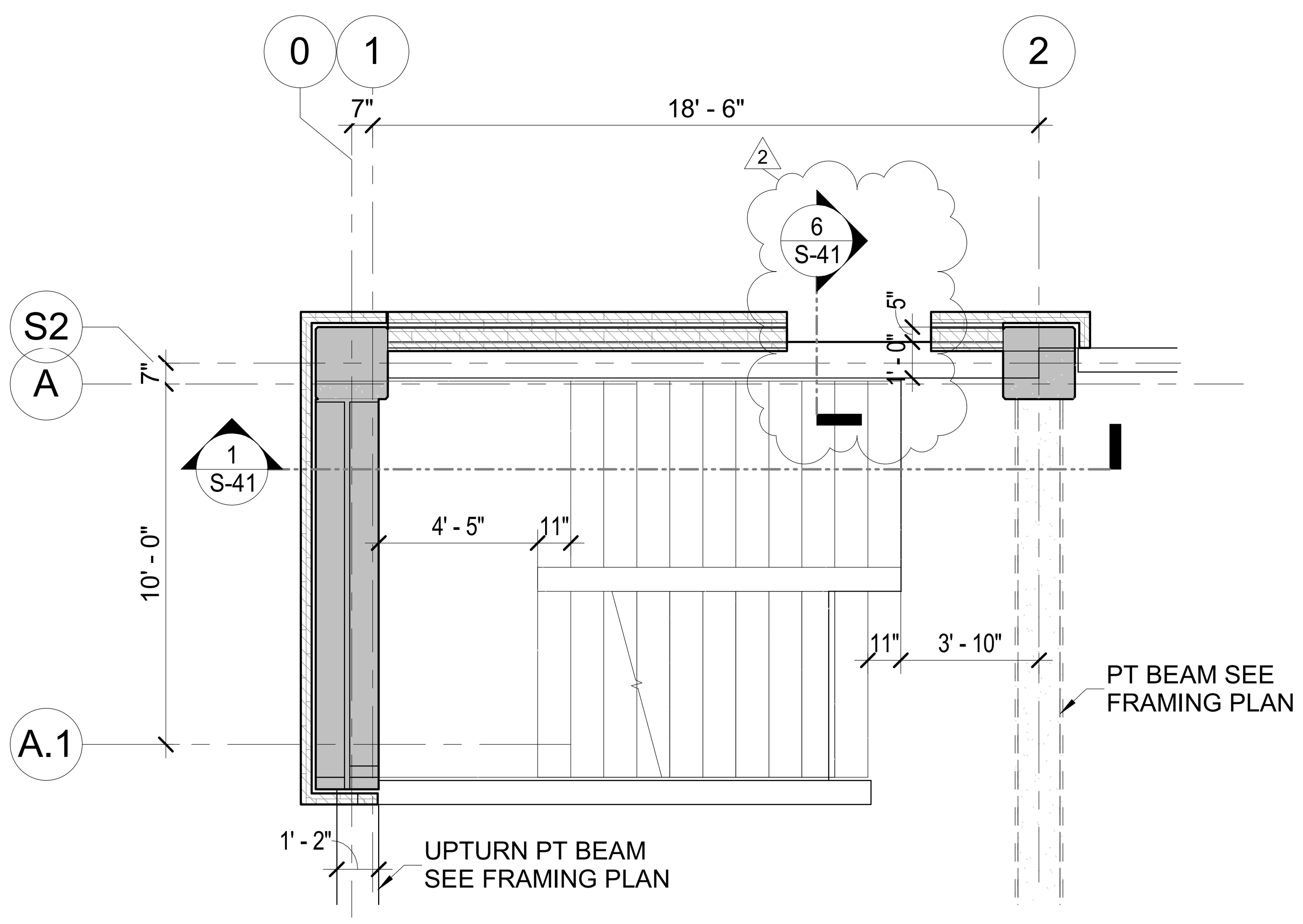
1 S-40 **STAIR 2 - FOUNDATION LEVEL PLAN**
SCALE: 1/4" = 1'-0"



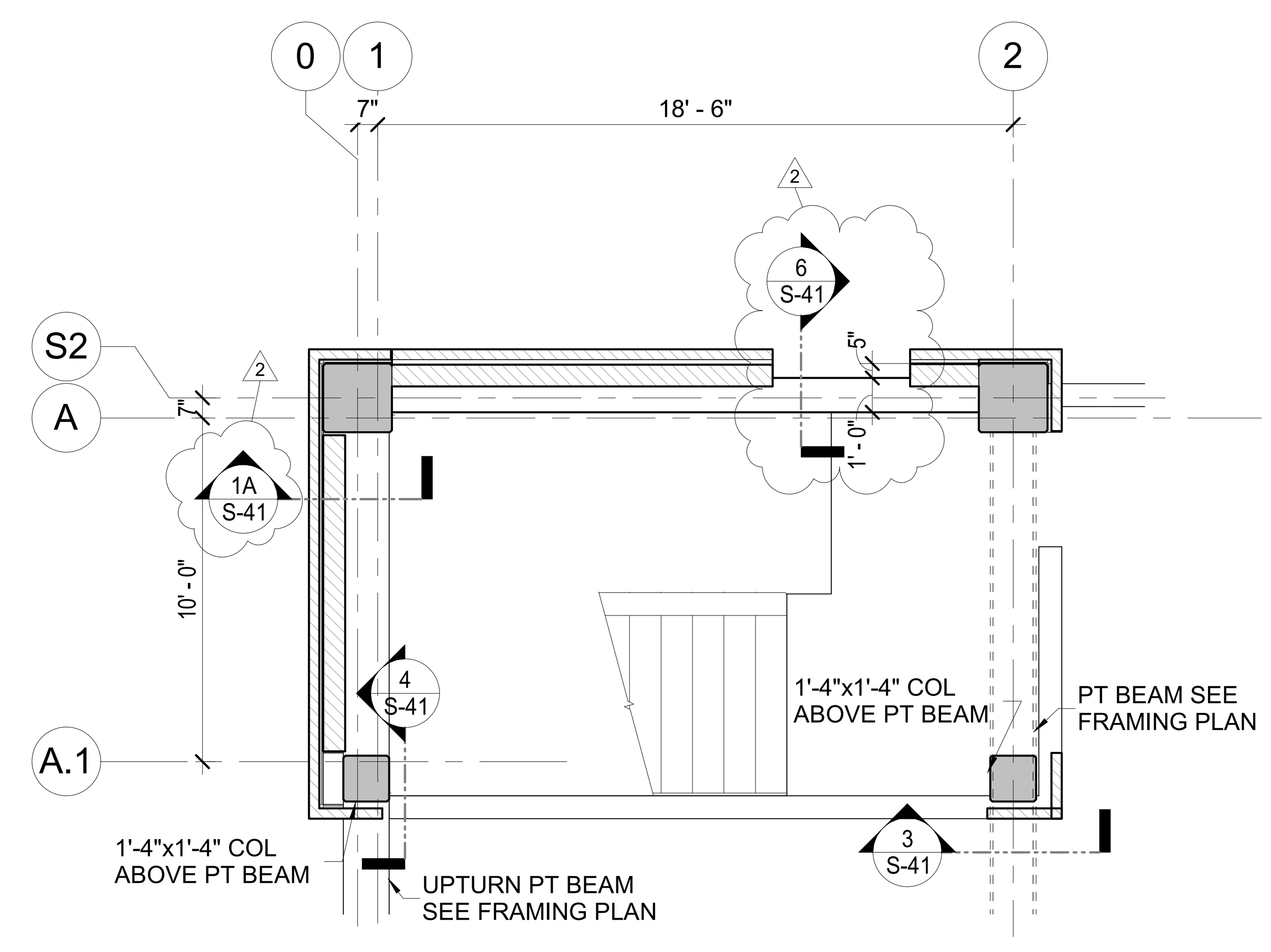
2 S-40 **STAIR 2 - LEVEL 2 FRAMING PLAN**
SCALE: 1/4" = 1'-0"



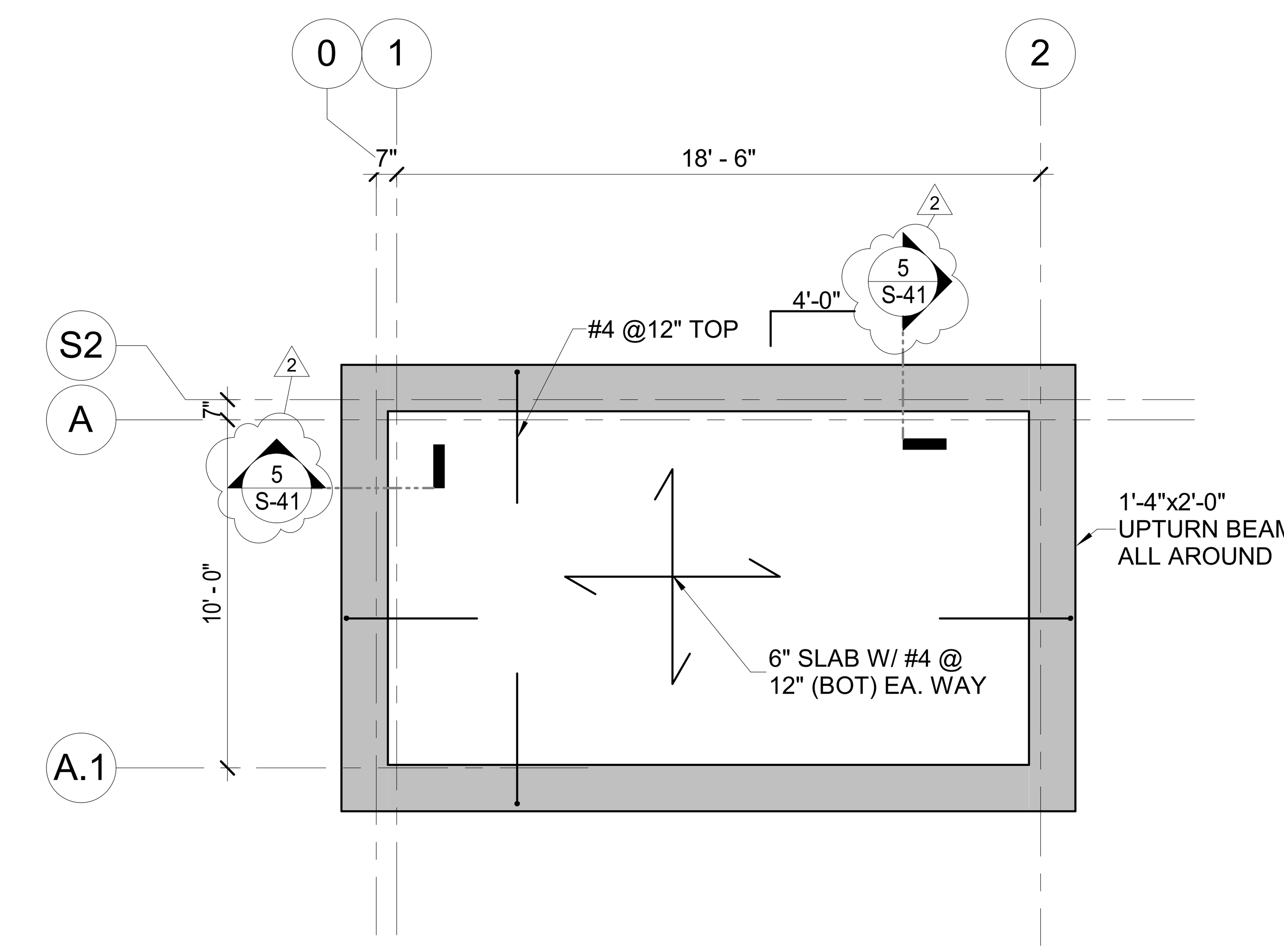
3 S-40 **STAIR 2 - LEVEL 3 FRAMING PLAN**
SCALE: 1/4" = 1'-0"



4 S-40 **STAIR 2 - LEVEL 4 & 5 FRAMING PLAN**
SCALE: 1/4" = 1'-0"



5 S-40 **STAIR 2 - LEVEL 6 FRAMING PLAN**
SCALE: 1/4" = 1'-0"



6 S-40 **STAIR 2 - ROOF LEVEL FRAMING PLAN**
SCALE: 1/4" = 1'-0"

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

Designed by:	REVISION			
G. ABDALLAH	REV No.	DATE	DESCRIPTION	APPV
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210-S-40
STAIR 2 - ENLARGED PLANS

Contract: 1735
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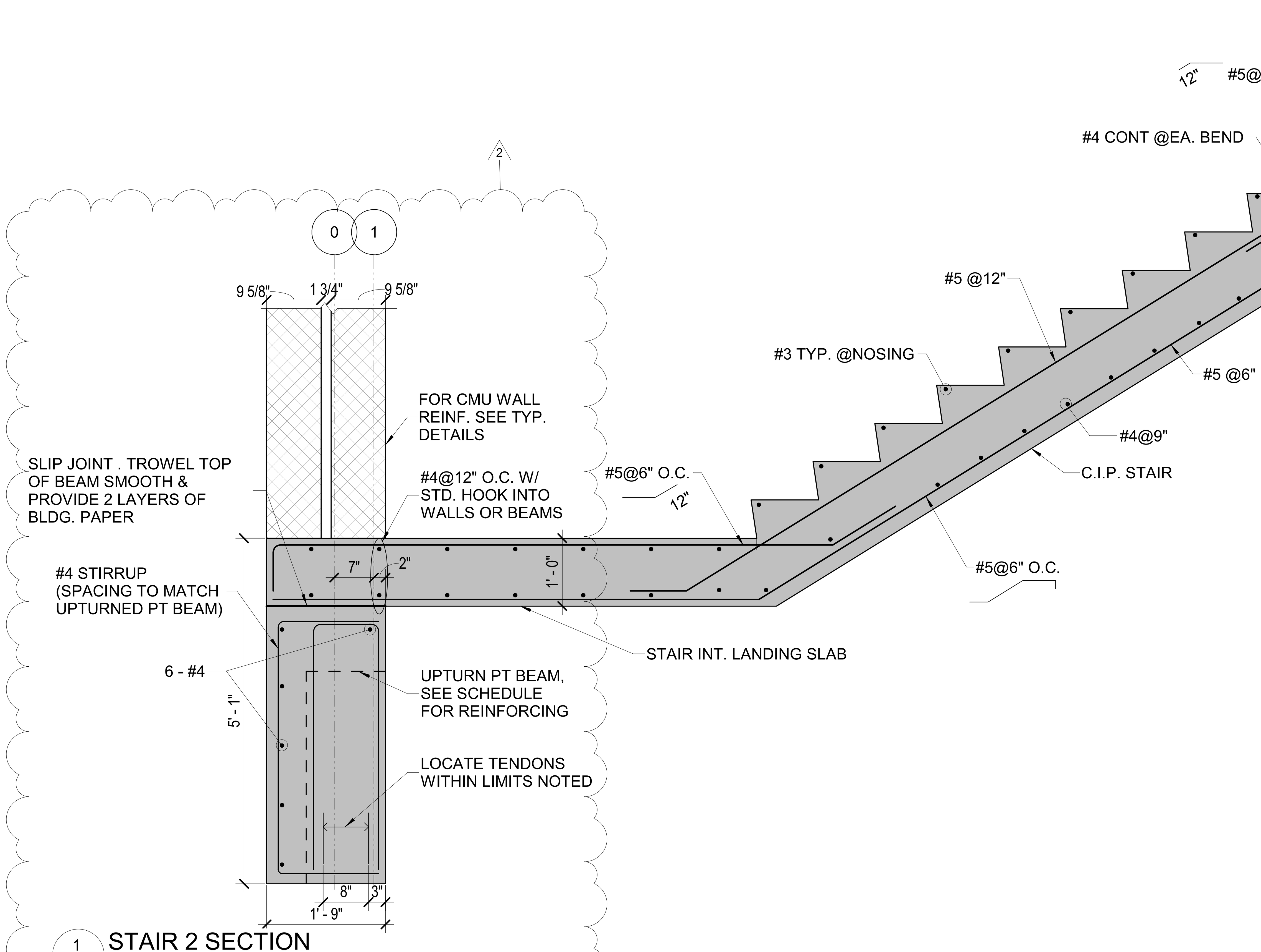
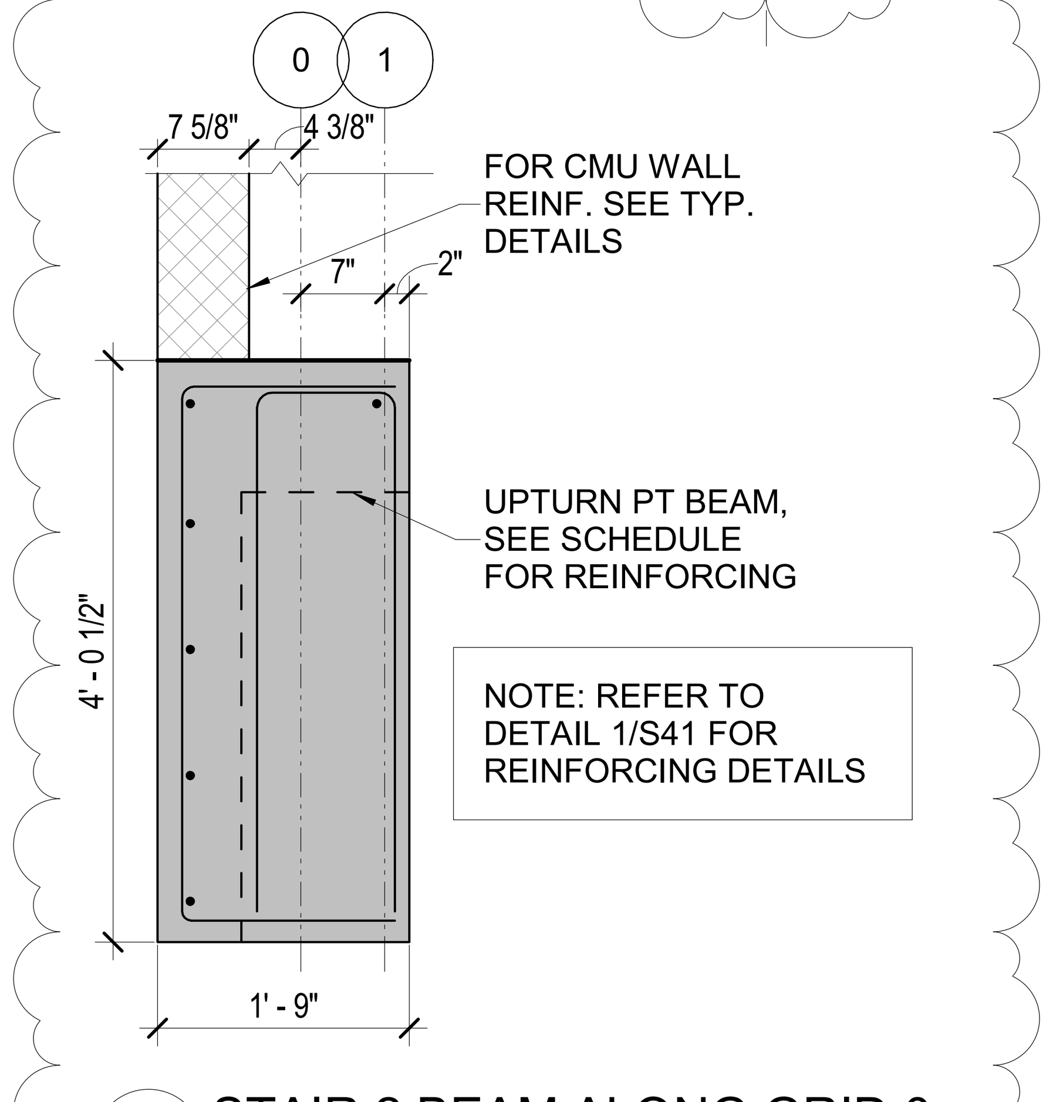
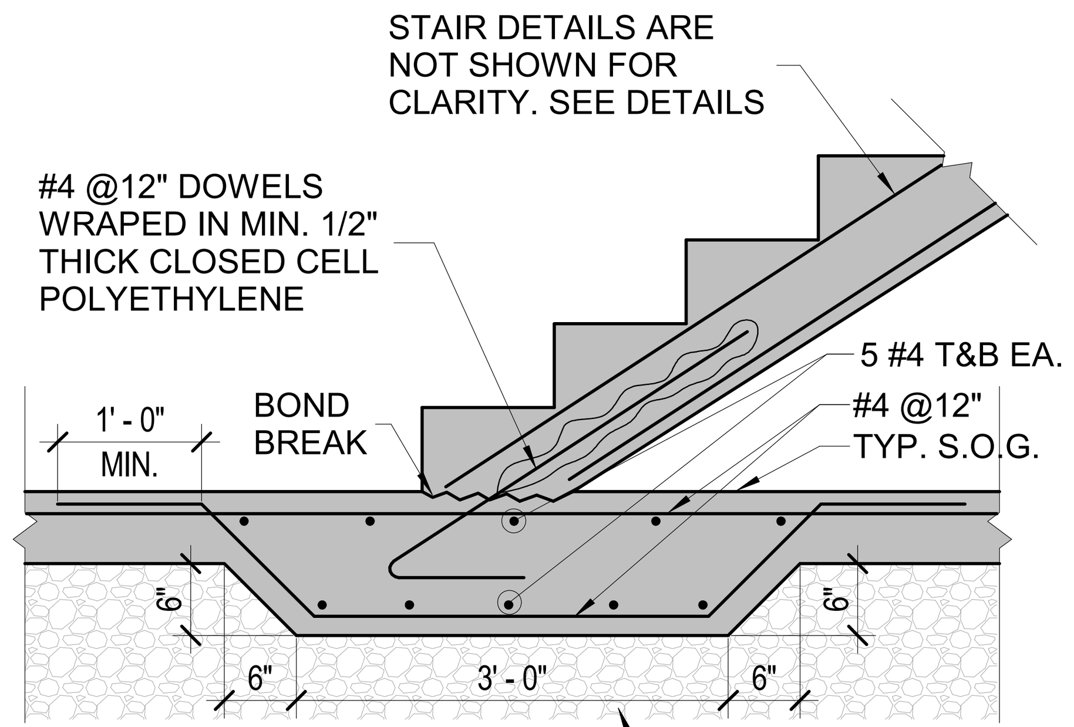


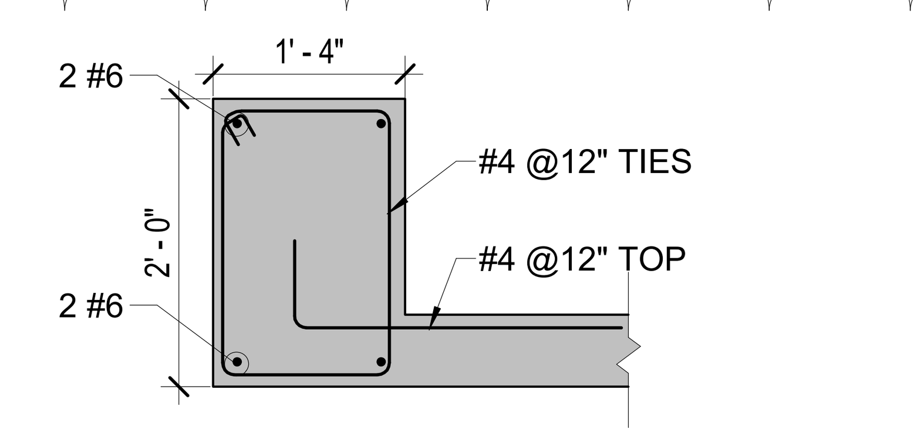
1 S-41 STAIR 2 SECTION
SCALE: 3/4" = 1'-0"



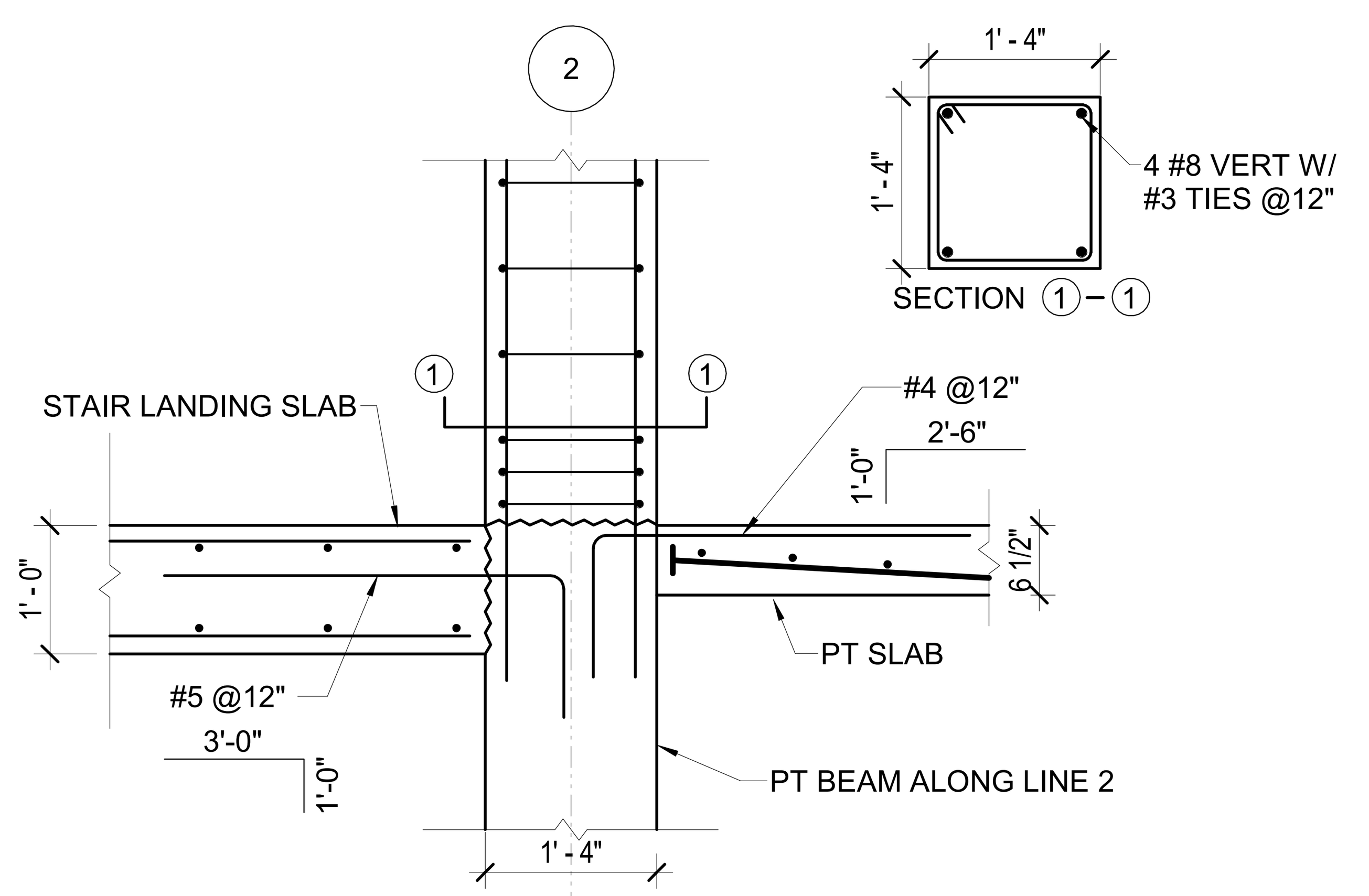
1A S-41 STAIR 2 BEAM ALONG GRID 0
SCALE: 3/4" = 1'-0"



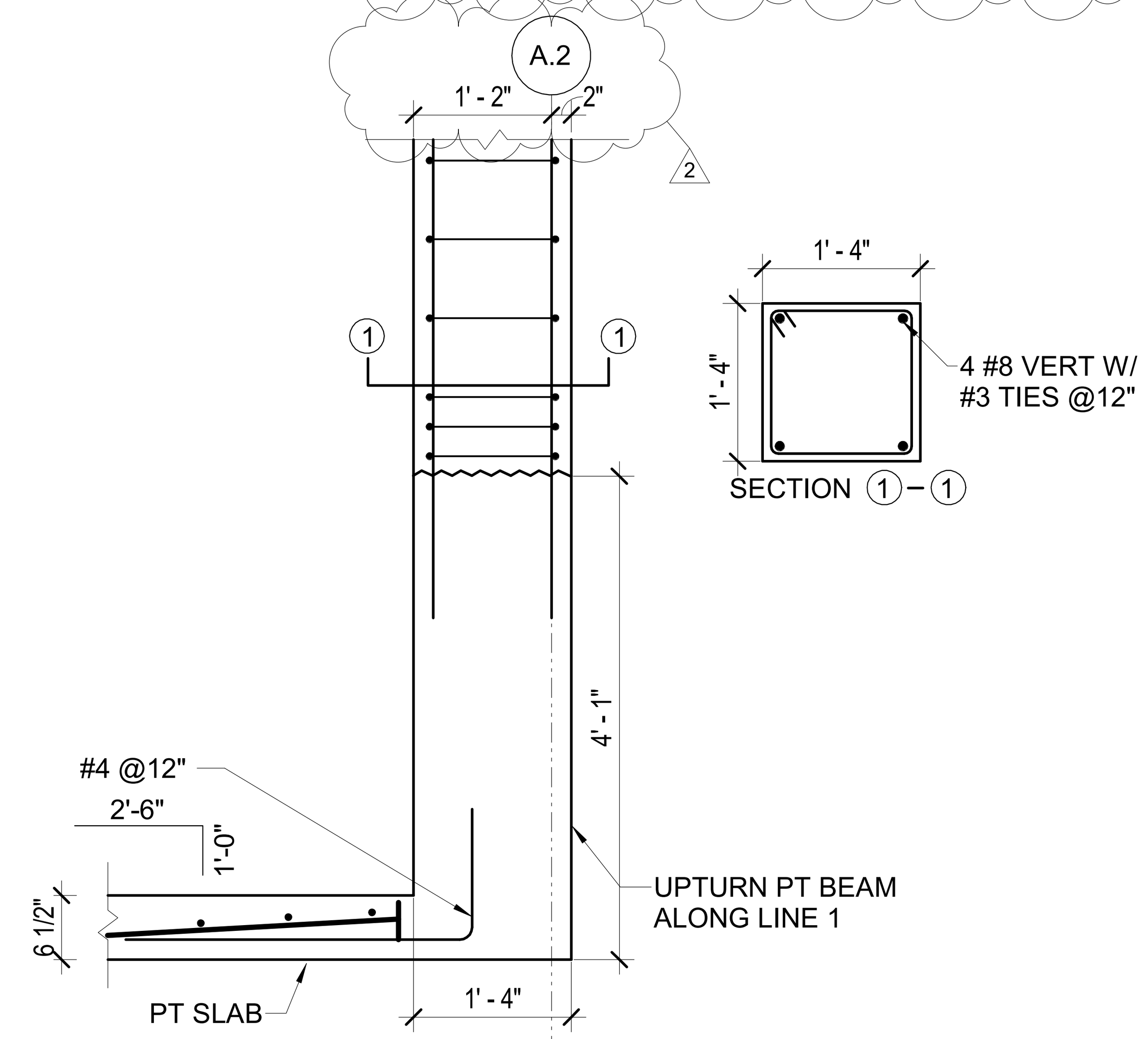
2 S-41 TYPICAL STAIR SUPPORT AT GRADE
SCALE: 3/4" = 1'-0"



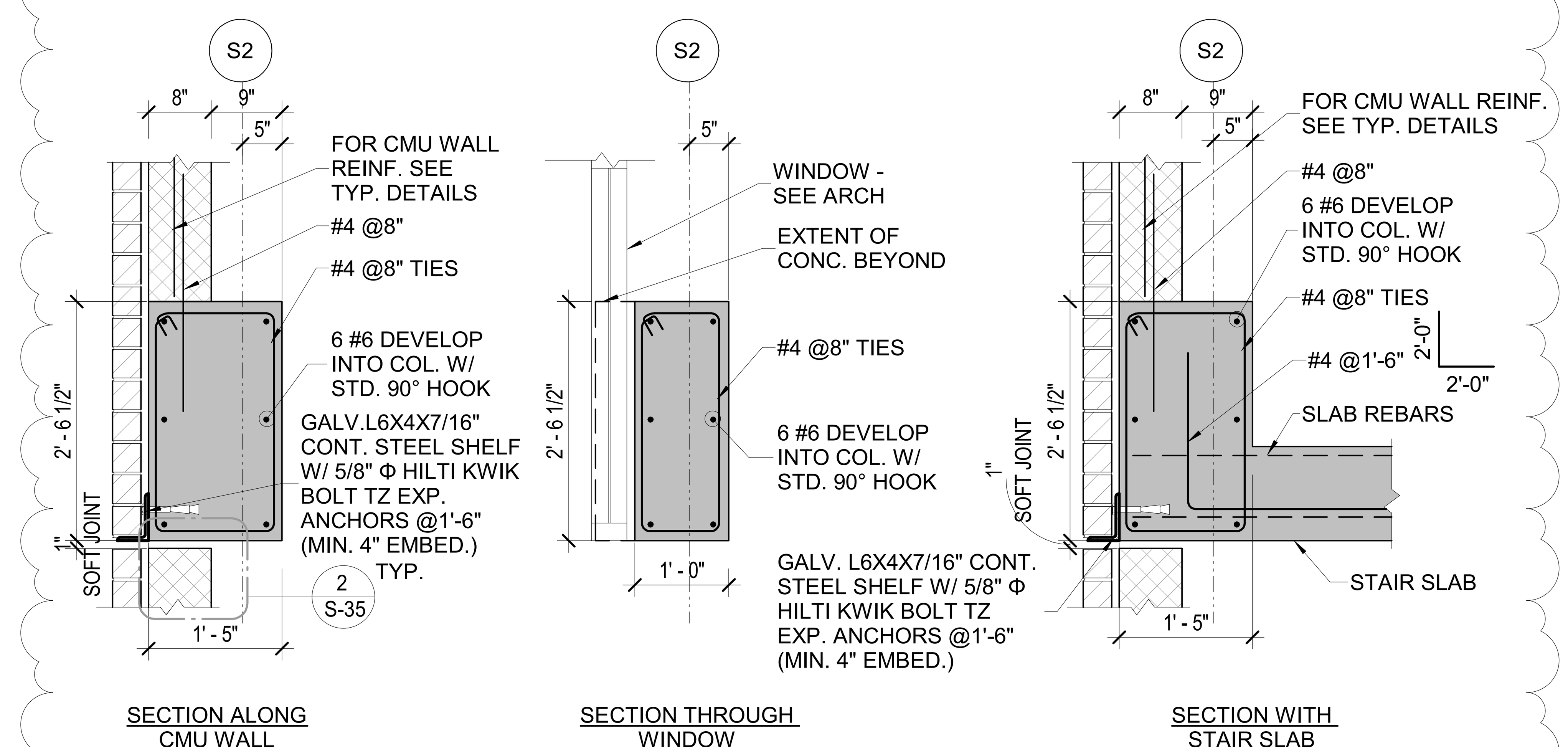
5 S-41 STAIR 2 ROOF BEAM SECTION
SCALE: 3/4" = 1'-0"



3 S-41 STAIR 2 SECTION
SCALE: 3/4" = 1'-0"



4 S-41 STAIR 2 SECTION
SCALE: 3/4" = 1'-0"



6 S-41 STAIR 2 BEAM SECTION ALONG LINE S2 (LEVELS 2, 4, 6)
SCALE: 3/4" = 1'-0"

Designed by:	REVISION			
G. ABDALLAH	REV No.	DATE	DESCRIPTION	APPV
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210-S-41
STAIR 2 SECTIONS

Contract: 1735
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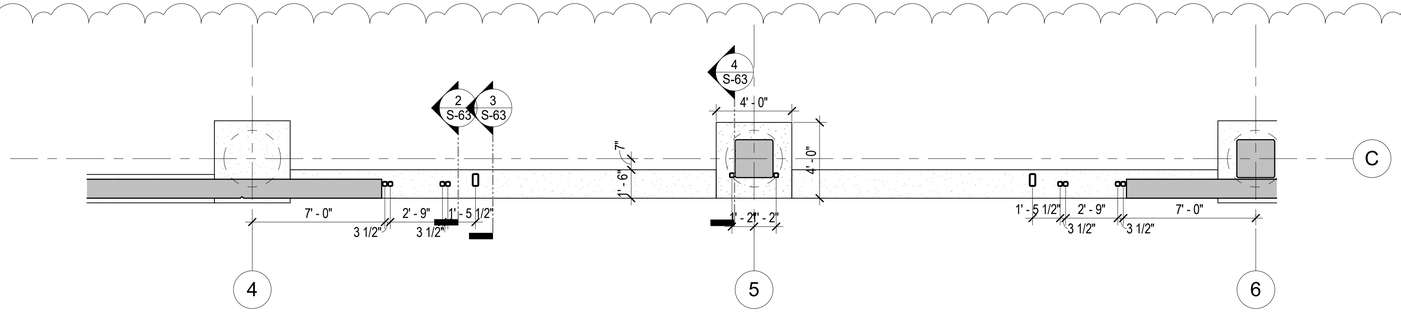
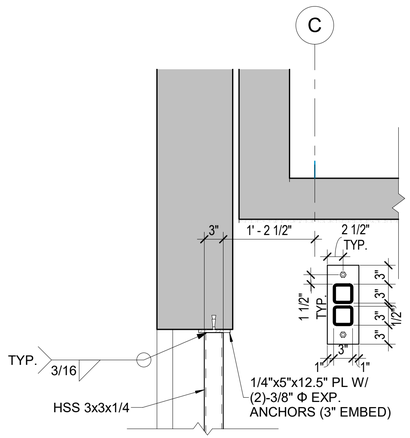


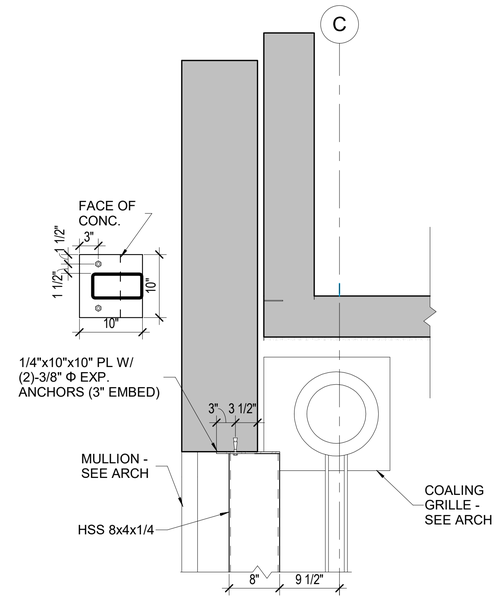
1 S-63 SCALE: 1/4" = 1'-0"

SECURITY GRILLE ENTRY PLAN



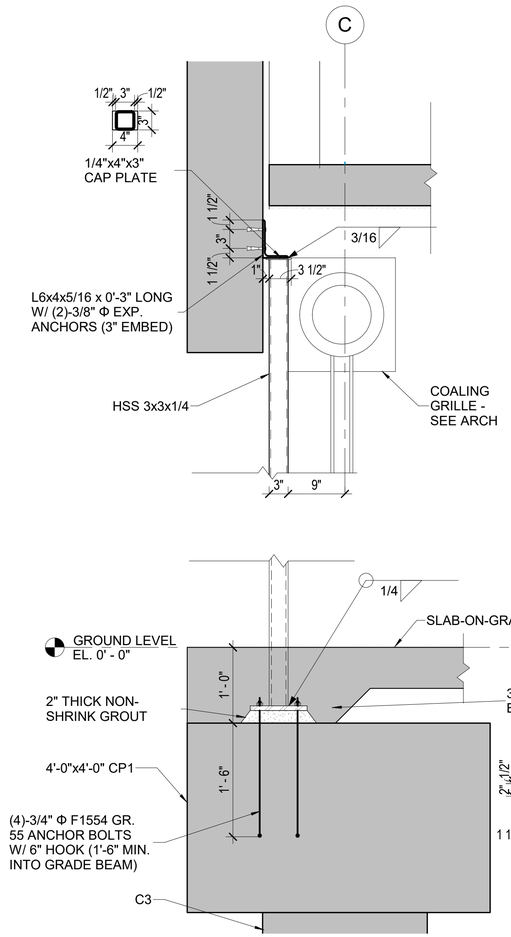
2 S-63 SCALE: 1" = 1'-0"

SECTION ALONG 2 HSS3x3



3 S-63 SCALE: 1" = 1'-0"

SECTION ALONG HSS8x4



4 S-63 SCALE: 1" = 1'-0"

SECTION ALONG HSS3x3

Designed by:	REVISION			
Designer	REV No.	DATE	DESCRIPTION	APPV
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Author				
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Checker				

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WASTEWATER TREATMENT PLANT
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210-S-63
SECURITY GRILLE PLANS AND DETAILS

Contract:	1735
CAD File Name:	210S63.DWG
Date:	01 / 13 / 2021
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POST-TENSIONED CONCRETE BEAM SCHEDULE

MARK	BEAM				TENDONS				MILD STEEL REINFORCEMENT (Grade 60)										HORIZONTAL MILD REBAR DIAGRAM	REMARKS
	SIZE (Inches)			SHAPE OF CROSS SECTION	No. OF TENDONS Fe(26.5k) EFFECTIVE FORCE PER TENDON	TENDONS PROFILE(Inches)			TOP BARS			BOTTOM BARS			SIDE BARS EA. FA	STIRRUPS				
	WIDTH (B)	WIDTH (B1)	DEPTH (D)			A	B	C	T_L	T_M	T_R	B_L	B_M	B_R		SIZE	SHAPE	SPACING, EACH END		
PB1	14	14	49		7	19	8	45	3-#7	2-#5	3-#7	3-#7	2-#9	3-#7	3-#5	#4		1 @2", 12 @6", BAL @16"		-
PB2	14	14	49		7	45	17	19	3-#7	2-#5	3-#7	3-#7	2-#9	3-#7	3-#5	#4		1 @2", 12 @6", BAL @16"		-
PB3	18	20	36		12	25	3	25	3-#9 1-#8	2-#5	2-#8	2-#9	2-#9	2-#9	-	#4		1 @2", 4 @8", BAL @ 24"		BOT. REBAR CONT.
PB4	18	20	36		15	25	3	25	2-#8	2-#5	3-#9 1-#8	2-#9	2-#9	2-#9	-	#4		1 @2", 4 @8", BAL @ 24"		BOT. REBAR CONT.
PB5	18	20	36		10	26	3	33	3-#9 1-#8	2-#5	3-#9 2-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		-
PB6	18	20	36		10	33	3	26	3-#9 2-#8	2-#5	3-#9 1-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		-
PB7	18	20	36		11	25	3	33	3-#9 1-#8	2-#5	3-#9 2-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		12 TENDONS @ 2ND LEVEL
PB8	18	20	36		11	33	3	25	3-#9 2-#8	2-#5	3-#9 1-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		12 TENDONS @ 2ND LEVEL
PB9	18	20	36		12	25	3	33	3-#9 1-#8	2-#5	3-#9 2-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		14 TENDONS @ 2ND LEVEL
PB10	18	20	36		12	33	3	25	3-#9 2-#8	2-#5	3-#9 1-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		14 TENDONS @ 2ND LEVEL
PB11	18	20	36		13	25	3	25	3-#9 1-#8	2-#5	3-#9 1-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		14 TENDONS @ 2ND LEVEL
PB12	18	20	36		17	25	3	25	3-#9 1-#8	2-#5	3-#9 1-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		18 TENDONS @ 2ND LEVEL ADD 2 #8 BOT. REBARS 'B' LINE
PB13	18	20	36		17	25	3	33	3-#9 1-#8	2-#5	3-#9 1-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		-
PB14	18	20	36		17	33	3	25	3-#9 1-#8	2-#5	3-#9 1-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		-
PB15	18	20	36		13	25	3	33	3-#9 1-#8	2-#5	3-#9 2-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		-
PB16	18	20	36		13	33	3	25	3-#9 2-#8	2-#5	3-#9 1-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		-
PB17	14	14	49		8	19	8	45	3-#7	2-#5	3-#7	3-#7	2-#9	3-#7	3-#5	#4		1 @2", 12 @6", BAL @16"		-
PB18	14	14	49		8	45	8	19	3-#7	2-#5	3-#7	3-#7	2-#9	3-#7	3-#5	#4		1 @2", 12 @6", BAL @16"		-
PG1	30	30	36		32	24	3	24	3-#9 2-#8	3-#6	3-#9 2-#8	2-#9	5-#9	2-#9	-	#4		1 @2", 4 @8", BAL @ 12"		F'c GIRDER = 5 ksi FOR ADDITIONAL STIRRUPS, SEE DET 3/210-SD-12
PG2	30	30	36		32	24	3	24	3-#9 2-#8	3-#6	3-#9 2-#8	2-#9	5-#9	2-#9	-	#4		1 @2", 4 @8", BAL @ 12"		F'c GIRDER = 5 ksi FOR ADDITIONAL STIRRUPS, SEE DET 3/210-SD-12

PT BEAM SCHEDULE NOTES:

1. BEAM MARKS IN PLANS ARE SHOWN AS #PBxx WHERE # IS THE CORRESPONDING LEVEL OF THE BEAM AND xx IS THE BEAM MARK NUMBER. THE BEAM SCHEDULE ONLY SHOWS PBxx SINCE THE BEAMS ARE REPETITIVE FOR ALL LEVELS.
2. FOR BEAMS AND GIRDERS, WHEN NUMBER OF PT TENDONS EXCEEDS THAT IN ADJACENT INTERIOR SPAN, ADDITIONAL TENDONS SHALL BE EXTENDED INTO ADJACENT INTERIOR SPAN BY A DISTANCE L/4 BEYOND SUPPORT.
3. WHERE END REBAR MATCHES MIDDLE REBAR (i.e., $T_L=T_M$, $T_R=T_M$, $B_L=B_M$, OR $B_L=B_M$), PROVIDE REBARS IN CONTINUOUS LENGTHS (WHENEVER POSSIBLE), RATHER THAN LAP SPLICING TWO SEPARATE LENGTHS.
4. USE 45 (65 FOR EPOXY COATED) BAR DIAMETER FOR BOT. BARS AND 48 (65 FOR EPOXY COATED) BAR DIAMETER FOR TOP BARS AS A MINIMUM SPLICE LENGTH.
5. SPLICE SIDE BARS AT MID SPAN.
6. WHERE GIRDER SUPPORTS BEAM, PROVIDE HANGER STIRRUPS PER TYPICAL DETAIL.
7. CONTRACTOR MAY USE DRAFTED FORMS FOR EASY REMOVAL. HOWEVER, BEAM/GIRDER WIDTH SHOWN SHALL BE MINIMUM. ALL DOWN-TURNED BEAM STEMS WIDTH IS 18" AT BOTTOM & 20" AT TOP U.N.O.
8. SEE TYPICAL POST-TENSIONING DETAILS FOR BEAM SCHEDULE INFO SUCH AS BEAM TYPES, PT AND REBAR INTERPRETATIONS.

Designed by: G. ABDALLAH
Drawn by: G. ABDALLAH
Checked by: G. ABDALLAH

REVISION			
REV No.	DATE	DESCRIPTION	APPV
1	2/19/21	ADDENDUM 1	
2	3/11/21	ADDENDUM 2	

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210-SS-01
POST-TENSIONED BEAM SCHEDULE

Contract: 1735
CAD File Name: 210SS01.DWG
Date: 01 / 13 / 2021
Sheet: 110 of 169

POST-TENSIONED CONCRETE BEAM SCHEDULE - ROOF LEVEL

BEAM					TENDONS				MILD STEEL REINFORCEMENT (Grade 60)										HORIZONTAL MILD REBAR DIAGRAM	REMARKS
MARK	SIZE (Inches)			SHAPE OF CROSS SECTION	No. OF TENDONS Fe(26.5k) EFFECTIVE FORCE PER TENDON	TENDONS PROFILE(Inches)			TOP BARS			BOTTOM BARS			SIDE BARS EA. FA	STIRRUPS				
	WIDTH (B)	WIDTH (B1)	DEPTH (D)			A	B	C	T_L	T_M	T_R	B_L	B_M	B_R		SIZE	SHAPE	SPACING, EACH END		
RPB1	14	14	49		7	19	9	45	3-#7	2-#5	3-#7	3-#7	2-#9	3-#7	3-#5	#4		1 @2", 12 @6", BAL @16"		-
RPB2	14	14	49		7	45	17	19	3-#7	2-#5	3-#7	3-#7	2-#9	3-#7	3-#5	#4		1 @2", 12 @6", BAL @16"		-
RPB3	18	20	36		13	25	3	25	3-#9 1-#8	2-#5	2-#8	2-#9	2-#9	2-#9	-	#4		1 @2", 4 @8", BAL @ 24"		BOT. CONT.
RPB4	18	20	36		15	25	3	25	2-#8	2-#5	3-#9 1-#8	2-#9	2-#9	2-#9	-	#4		1 @2", 4 @8", BAL @ 24"		BOT. CONT.
RPB5	18	20	36		11	25	3	33	3-#9 1-#8	2-#5	3-#9 2-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		-
RPB6	18	20	36		11	33	3	25	3-#9 2-#8	2-#5	3-#9 1-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		-
RPB7	18	20	36		13	25	3	33	3-#9 1-#8	2-#5	3-#9 2-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		-
RPB8	18	20	36		13	33	3	25	3-#9 2-#8	2-#5	3-#9 1-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		-
RPB9	18	20	36		15	25	3	33	3-#9 1-#8	2-#5	3-#9 2-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		-
RPB10	18	20	36		15	33	3	25	3-#9 2-#8	2-#5	3-#9 1-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		-
RPB11	18	20	36		16	25.50	3	25.50	3-#9 1-#8	2-#5	3-#9 1-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		-
RPB12	18	20	36		19	25.50	3	25.50	3-#9 1-#8	2-#5	3-#9 1-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		PROVIDE 22 TENDONS BETWEEN 'B' & 'C'
RPB13	18	20	36		21	26	3	33	3-#9 1-#8	2-#5	3-#9 2-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 6 @12", BAL @ 24"		PROVIDE ADDITIONAL TIES AT STAIR #3 BEAM, #4 @3" BOTH SIDE OF BEAM
RPB14	18	20	36		19	33	3	25.50	3-#9 2-#8	2-#5	3-#9 1-#8	2-#8	2-#9	2-#6	-	#4		1 @2", 6 @12", BAL @ 24"		-
RPB15	18	20	36		15	25	4	33	3-#9 1-#8	2-#5	3-#9 2-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		-
RPB16	18	20	36		15	33	4	25	3-#9 2-#8	2-#5	3-#9 2-#8	2-#6	2-#9	2-#6	-	#4		1 @2", 4 @8", BAL @ 24"		PROVIDE ADDITIONAL TIES AT STAIRS COL, #4 @ 3" BOTH SIDE OF COL
RPB17	16	16	49		9	19	8	45	3-#7	2-#5	3-#7	3-#7	2-#9	3-#7	3-#5	#4		1 @2", 12 @6", BAL @16"		-
RPB18	16	16	49		9	45	8	19	3-#7	2-#5	3-#7	3-#7	2-#9	3-#7	3-#5	#4		1 @2", 12 @6", BAL @16"		PROVIDE ADDITIONAL TIES AT STAIRS COL, #4 @ 3" BOTH SIDE OF COL
RPB19	12	12	49		18	17	8	17	3-#7	2-#5	3-#7	3-#7	2-#9 1-#5	3-#7	3-#5	#4		1 @2", 12 @6", BAL @16"		-
RPB20	18	20	36		22	26	3	26	3-#9 2-#8	2-#5	3-#9 2-#8	2-#9	2-#9	3-#9	-	#4		1 @2", 14 @9", BAL @ 24"		-
RPG1	30	30	36		34	24.5	3	24.5	3-#9 2-#8	3-#6	3-#9 2-#8	2-#9	5-#9	2-#9		#4		1 @2", 4 @8", BAL @ 12"		F'c GIRDER = 5 ksi FOR ADDITIONAL STIRRUPS, SEE DET 3/210-SD-12
RPG2	30	30	36		34	24.5	3	24.5	3-#9 2-#8	3-#6	3-#9 2-#8	2-#9	5-#9	2-#9		#4		1 @2", 4 @8", BAL @ 12"		F'c GIRDER = 5 ksi FOR ADDITIONAL STIRRUPS, SEE DET 3/210-SD-12

PT BEAM SCHEDULE NOTES:

1. BEAM MARKS IN PLANS ARE SHOWN AS #PBxx WHERE # IS THE CORRESPONDING LEVEL OF THE BEAM AND xx IS THE BEAM MARK NUMBER. THE BEAM SCHEDULE ONLY SHOWS PBxx SINCE THE BEAMS ARE REPETITIVE FOR ALL LEVELS.
2. FOR BEAMS AND GIRDERS, WHEN NUMBER OF PT TENDONS EXCEEDS THAT IN ADJACENT INTERIOR SPAN, ADDITIONAL TENDONS SHALL BE EXTENDED INTO ADJACENT INTERIOR SPAN BY A DISTANCE L/4 BEYOND SUPPORT.
3. WHERE END REBAR MATCHES MIDDLE REBAR (i.e., $T_L=T_M$, $T_R=T_M$, $B_L=B_M$, OR $B_L=B_M$), PROVIDE REBARS IN CONTINUOUS LENGTHS (WHENEVER POSSIBLE), RATHER THAN LAP SPLICING TWO SEPARATE LENGTHS.
4. USE 45 (65 FOR EPOXY COATED) BAR DIAMETER FOR BOT. BARS AND 48 (65 FOR EPOXY COATED) BAR DIAMETER FOR TOP BARS AS A MINIMUM SPLICE LENGTH.
5. SPLICE SIDE BARS AT MID SPAN.
6. WHERE GIRDER SUPPORTS BEAM, PROVIDE HANGER STIRRUPS PER TYPICAL DETAIL.
7. CONTRACTOR MAY USE DRAFTED FORMS FOR EASY REMOVAL. HOWEVER, BEAM/GIRDER WIDTH SHOWN SHALL BE MINIMUM. ALL DOWN-TURNED BEAM STEMS WIDTH IS 18" AT BOTTOM & 20" AT TOP U.N.O.
8. SEE TYPICAL POST-TENSIONING DETAILS FOR BEAM SCHEDULE INFO SUCH AS BEAM TYPES, PT AND REBAR INTERPRETATIONS.

Designed by: G. ABDALLAH
Drawn by: G. ABDALLAH
Checked by: G. ABDALLAH

REVISION

REV No.	DATE	DESCRIPTION	APPV
1	2/19/21	ADDENDUM 1	
2	3/11/21	ADDENDUM 2	

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ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
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210-SS-02
POST-TENSIONED BEAM SCHEDULE

Contract: 1735
CAD File Name: 210SS02.DWG
Date: 01 / 13 / 2021

PARKING STRUCTURE COLUMN SCHEDULE

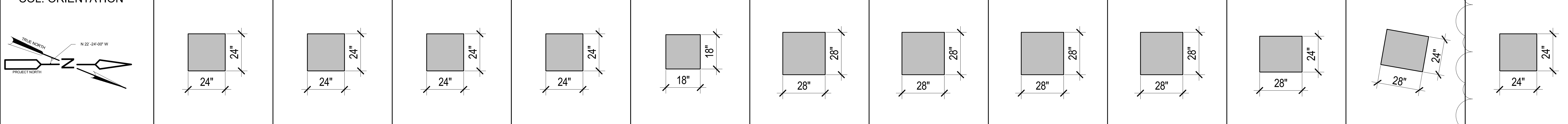
LOCATION / ELEVATION	A-2, A-3, A-4,A-5, C-2, C-3, C-6: COL. SIZE (IN.)	CONC. STRENGTH	PATTERN	VERTICAL REINF.	TIES	A-6, A-7, A-8, A-9, A-10, C-7. C-8, C-9, C-10: COL. SIZE (IN.)	CONC. STRENGTH	PATTERN	VERTICAL REINF.	TIES	A-0, C-0: COL. SIZE (IN.)	CONC. STRENGTH	PATTERN	VERTICAL REINF.	TIES
Above LEVEL 6	24X24	5000	C5	12-#11 (2)	#4 @9"						24X24	5000	C3	8-#10	#4 @9"
LEVEL 5 – LEVEL 6	24X24	5000	C3	8-#10	#4 @9"	24X24	5000	C5	12-#11 (2)	#4 @9"	24X24	5000	C2	6-#10	#4 @9"
LEVEL 4 – LEVEL 5	24X24	5000	C3	8-#10	#4 @9"	24X24	5000	C3	8-#10	#4 @9"	24X24	5000	C2	6-#10	#4 @9"
LEVEL 3 – LEVEL 4	24X24	5000	C3	8-#10	#4 @9"	24X24	5000	C3	8-#10	#4 @9"	24X24	5000	C2	6-#10	#4 @9"
LEVEL 2 – LEVEL 3	24X24	5000	C3	8-#10	#4 @9"	24X24	5000	C3	8-#10	#4 @9"	24X24	5000	C2	6-#10	#4 @9"
LEVEL 1 – LEVEL 2	24X24	5000	C4	10-#10	#4 @9"	24X24	5000	C4	10-#10	#4 @9"	24X24	5000	C3	8-#10	#4 @9"
T/FTG. EL. SEE PLAN															
DOWELS	4-#9					4-#9					4-#9				

LOCATION / ELEVATION	C-13 ALL A.2: COL. SIZE (IN.)	CONC. STRENGTH	PATTERN	VERTICAL REINF.	TIES	STAIR #1 COLS TYP.: COL. SIZE (IN.)	CONC. STRENGTH	PATTERN	VERTICAL REINF.	TIES	B-7, B-8, B-9: COL. SIZE (IN.)	CONC. STRENGTH	PATTERN	VERTICAL REINF.	TIES
Above LEVEL 6						18X18	5000	C1	4-#9	#4 @9"					
LEVEL 5 – LEVEL 6	24X24	5000	C2	6-#10	#4 @9"	18X18	5000	C1	4-#9	#4 @9"	28X28	5000	C5	12-#11 (2)	#4 @9"
LEVEL 4 – LEVEL 5	24X24	5000	C2	6-#10	#4 @9"	18X18	5000	C1	4-#9	#4 @9"	28X28	5000	C3	8-#10	#4 @9"
LEVEL 3 – LEVEL 4	24X24	5000	C2	6-#10	#4 @9"	18X18	5000	C1	4-#9	#4 @9"	28X28	5000	C3	8-#10	#4 @9"
LEVEL 2 – LEVEL 3	24X24	5000	C2	6-#10	#4 @9"	18X18	5000	C1	4-#9	#4 @9"	28X28	5000	C3	8-#10	#4 @9"
LEVEL 1 – LEVEL 2	24X24	5000	C2	6-#10	#4 @9"	18X18	5000	C1	4-#9	#4 @9"	28X28	5000	C5	12-#10	#4 @9"
T/FTG. EL. SEE PLAN															
DOWELS	4-#9					4-#9					4-#10				

LOCATION / ELEVATION	B-4, B-5, B-6: COL. SIZE (IN.)	CONC. STRENGTH	PATTERN	VERTICAL REINF.	TIES	B-3: COL. SIZE (IN.)	CONC. STRENGTH	PATTERN	VERTICAL REINF.	TIES	B-9.8: COL. SIZE (IN.)	CONC. STRENGTH	PATTERN	VERTICAL REINF.	TIES
Above LEVEL 6															
LEVEL 5 – LEVEL 6	28X28	5000	C6	14-#11 (2)	#4 @9"	28X28	5000	C6	14-#11 (2)	#4 @9"					
LEVEL 4 – LEVEL 5	28X28	5000	C3	8-#10	#4 @9"	28X28	5000	C5	12-#10	#4 @9"	28X28	5000	C6	14-#10	#4 @9"
LEVEL 3 – LEVEL 4	28X28	5000	C3	8-#10	#4 @9"	28X28	5000	C5	12-#10	#4 @9"	28X28	5000	C5	12-#10	#4 @9"
LEVEL 2 – LEVEL 3	28X28	5000	C3	8-#10	#4 @9"	28X28	5000	C5	12-#10	#4 @9"	28X28	5000	C5	12-#10	#4 @9"
LEVEL 1 – LEVEL 2	28X28	5000	C5	12-#10	#4 @9"	28X28	5000	C6	14-#10	#4 @9"	28X28	5000	C6	14-#10	#4 @9"
T/FTG. EL. SEE PLAN															
DOWELS	4-#10					4-#10					4-#10				

LOCATION / ELEVATION	B-13: COL. SIZE (IN.)	CONC. STRENGTH	PATTERN	VERTICAL REINF.	TIES	B-0: COL. SIZE (IN.)	CONC. STRENGTH	PATTERN	VERTICAL REINF.	TIES	C-4, C-5: COL. SIZE (IN.)	CONC. STRENGTH	PATTERN	VERTICAL REINF.	TIES
Above LEVEL 6											24X24	5000	C6	14-#11	#4 @9"
LEVEL 5 – LEVEL 6						28X24	5000	C5	12-#11 (2)	#4 @9"	24X24	5000	C3	8-#10	#4 @9"
LEVEL 4 – LEVEL 5	28X24	5000	C5	12-#11 (2)	#4 @9"	28X24	5000	C5	12-#10	#4 @9"	24X24	5000	C3	8-#10	#4 @9"
LEVEL 3 – LEVEL 4	28X24	5000	C5	12-#10	#4 @9"	28X24	5000	C5	12-#10	#4 @9"	24X24	5000	C3	8-#10	#4 @9"
LEVEL 2 – LEVEL 3	28X24	5000	C5	12-#10	#4 @9"	28X24	5000	C5	12-#10	#4 @9"	24X24	5000	C3	8-#10	#4 @9"
LEVEL 1 – LEVEL 2	28X24	5000	C5	12-#10	#4 @9"	28X24	5000	C5	12-#10	#4 @9"	24X24	5000	C4	10-#10	#4 @9"
T/FTG. EL. SEE PLAN															
DOWELS	4-#10					4-#10					4-#9				

COL. ORIENTATION



LEGEND:

E = TYP. EXTENSION
F = EXTENSION FOR FUTURE VERTICAL EXPANSION

(#) = EXTEND TO TOP OF COLUMN ALL INFORMATION NOTED BELOW

COLUMN SCHEDULE NOTES:

1. REFER TO THE FOLLOWING TABLE FOR REFERENCE SHEETS:

ITEMS	SHEET NUMBER
COLUMNS DETAILS	210-SD-20, 210-SD-21
COLUMN SCHEDULE	210-SS-03
FOUNDATION PLAN	210-S-11
GENERAL NOTES	210-S-01 THRU 210-S-05
TYPICAL DETAILS	210-SD-01 THRU 210-SD-05

2. ALL COLUMNS ARE CENTERED ON COLUMN GRID LINES UNLESS OTHERWISE NOTED.
3. FOR COLUMN ORIENTATION SEE PLAN AND COLUMN SCHEDULE.
4. WORK THE COLUMN SCHEDULES WITH RESPECTIVE FLOOR PLANS AND COLUMN DETAILS.
5. ALL COLUMN TIES SHALL BE PER ACI 318 WITH STANDARD HOOKS OF 135 DEGREES OR 90 DEGREES AS SHOWN, UNLESS OTHERWISE NOTED.
6. CLEAR COVER TO COLUMN TIES, EXPOSED TO WEATHER, FOR PARKING STRUCTURE SHALL BE 2 INCHES UNLESS OTHERWISE NOTED.
7. ALL COLUMN VERTICAL REBAR SHALL BE MECHANICALLY SPLICED PER ACI 301-16 PAR. 3.2.1.10. NO DEVIATION FROM THIS REQUIREMENT IS PERMITTED EXCEPT AS NOTED UNDER (10) BELOW.
8. SEE ARCHITECTURAL DRAWINGS FOR LIGHT POLE SUPPORT COLUMNS AND DETAILS. COORDINATE ANCHOR BOLT LOCATIONS FOR THE LIGHT POLES WITH THE ELECTRICAL CONTRACTOR.
9. IN ALL INSTANCES, VERTICAL REINFORCEMENT FROM COLUMN SEGMENT BELOW JOINT SHALL EXTEND THROUGH THAT JOINT. FOR ADJACENT TIER BAR PATTERNS, WHEN PART OF THE LOWER TIER VERTICAL REINFORCEMENT TERMINATES AT A JOINT PER SCHEDULE, EXTEND TERMINATING BARS A MINIMUM OF 45 DIAMETERS VERTICALLY UP INTO THE JOINT.
10. WHEN COLUMN CROSS SECTIONS OF ADJACENT TIERS MATCH BUT THE NUMBER OF VERTICAL BARS IN UPPER TIER INDICATED IN THE COLUMN SCHEDULE IS LARGER THAN THAT OF THE LOWER TIER AT ANY BEAM-COLUMN JOINT, ADD MATCHING SIZE DOWELS FOR THOSE BARS OF THE UPPER TIER THAT DO NOT EXTEND FROM THE TIER IMMEDIATELY BELOW, UNLESS NOTED OTHERWISE. LAP SPLICING OF SUCH DOWELS WITH VERTICAL BARS OF THE SAME SIZE IS PERMITTED, AND SPLICE LENGTH SHALL NOT BE LESS THAN 55 BAR DIAMETERS. DOWELS MUST EXTEND A MINIMUM OF 45 BAR DIAMETERS INTO THE LOWER COLUMN TIER FROM THE TOP OF BEAM-COLUMN JOINT.
11. WHEN CROSS SECTIONS AND/OR PATTERNS OF ADJACENT TIERS AT ANY JOINT DO NOT MATCH, PROVIDE MATCHING SIZE DOWELS INSTALLED IN SUCH A WAY THAT THEY WOULD LAP SPLICE (AT 55 BAR DIAMETERS) OR MECHANICALLY COUPLED, WITH VERTICAL BARS OF THE UPPER TIER AND ARE FULLY DEVELOPED IN TENSION INTO THE LOWER TIER OR RESPECTIVE STRUCTURE (45 BAR DIAMETERS MINIMUM). ACI STANDARD HOOKS MAY BE USED IF REQUIRED, UNLESS NOTED OTHERWISE. SEE DETAILS FOR ADDITIONAL INFORMATION.
12. FOR BEAM-COLUMN JOINTS OF THE PARKING STRUCTURE FRAME, PROVIDE JOINT REINFORCEMENT IN A FORM OF SCHEDULED COLUMN TIES, BUT IN NO CASE LESS THAN 3-#4 LEGS IN EACH DIRECTION, AS SHOWN IN DETAIL 8/210-SD10. WHEN NO VERTICAL BAR EXISTS WITHIN A PATTERN, TO ANCHOR CENTER LEG OF A TIE SET, PROVIDE A #4 DOWEL (MAXIMUM OF 4 WOULD BE REQUIRED FOR A 4-BAR COLUMN BAR PATTERN) EXTENDING A MINIMUM OF 1'-0" INTO COLUMN SEGMENTS ABOVE AND BELOW JOINT. ALTERNATIVELY, WITHIN BEAM-COLUMN JOINT, PROVIDE SETS OF OVERLAPPING #5 U-TIES. PLACE CLASS "B" TENSION LAP SPLICE PERPENDICULAR TO THE DIRECTION OF BEAM SPAN FRAMING INTO JOINT. ALTERNATE PLACEMENT OF TIE SETS WITH ROWS OF POST-TENSIONING ANCHORS PER TYPICAL POST-TENSIONING DETAILS, SUCH THAT TIE SPACING WITHIN JOINT AT ANCHOR CLUSTER DOES NOT EXCEED 7 INCHES. IN ADDITION, PROVIDE 2 SCHEDULED COLUMN TIES ABOVE ANCHOR CLUSTER AND SCHEDULED COLUMN TIES BELOW ANCHORAGE ZONE SPACED AT 4 INCHES ON-CENTER.
13. FOR BEAM-COLUMN OR SLAB-COLUMN JOINTS WITHOUT POST-TENSIONING ANCHORS, PROVIDE SCHEDULED TIES SPACED AT 4 INCHES ON-CENTER.

Designed by: G. ABDALLAH	REVISION			
Drawn by: G. ABDALLAH	REV No.	DATE	DESCRIPTION	APPV
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	2	3/11/21	ADDENDUM 2	

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WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-SS-03
COLUMN SCHEDULE

Contract: 1735
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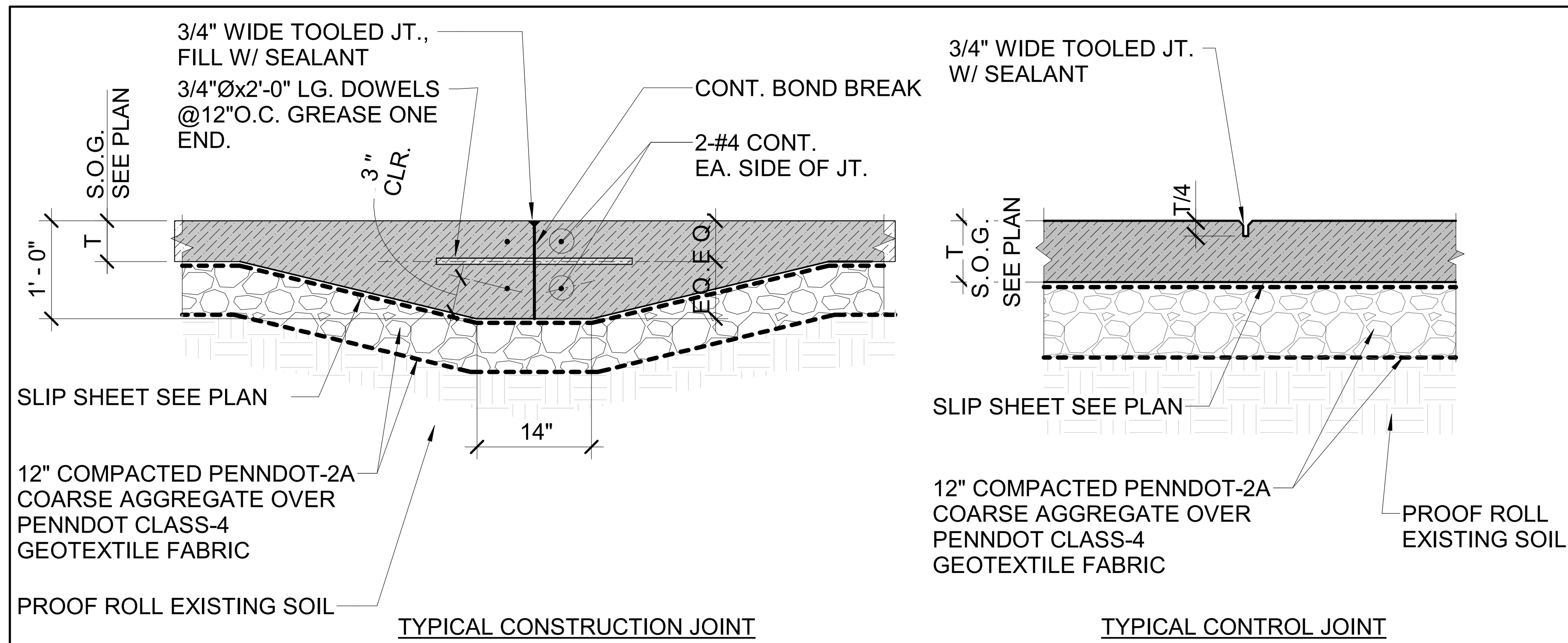
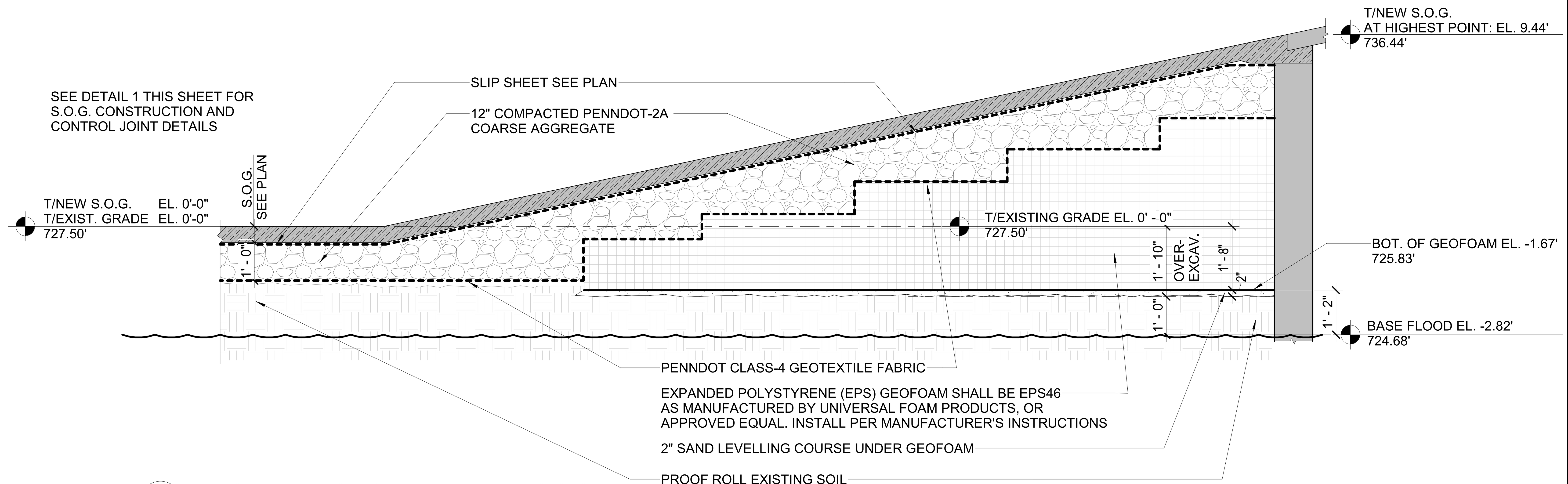
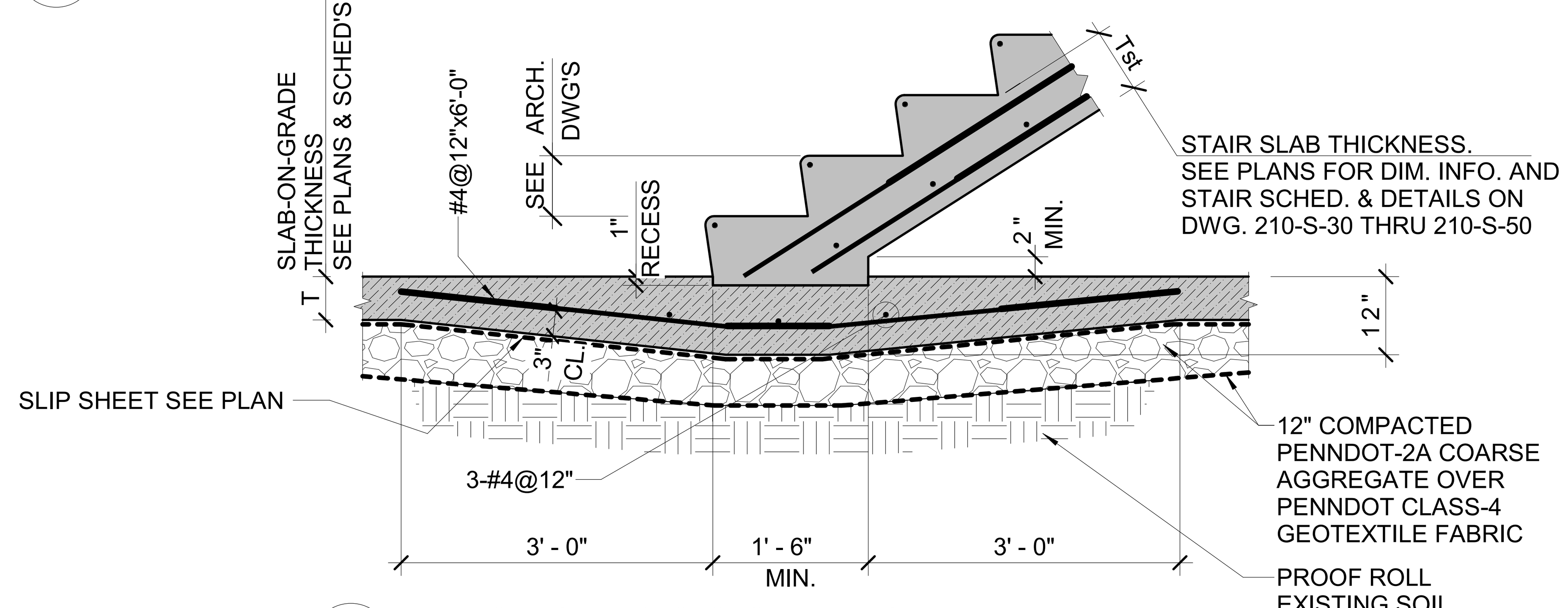


NOTES:
CONSTRUCTION AND CONTROL JOINTS ARE INTERCHANGEABLE AT CONTRACTOR'S OPTION. JOINTS LOCATED AT COLUMN CENTERLINES ARE CONSIDERED OPTIMUM. SEE DRAWINGS FOR JOINT LOCATIONS. DO NOT LOCATE CONSTRUCTION AND/OR CONTROL JOINTS BELOW MASONRY WALLS.
SAW CUT CONTROL JOINTS ARE PERMITTED IN LIEU OF TOOLED CONTROL JOINTS, BUT MUST BE INSTALLED WITHIN 6 HOURS OF INITIAL CONCRETE SET.

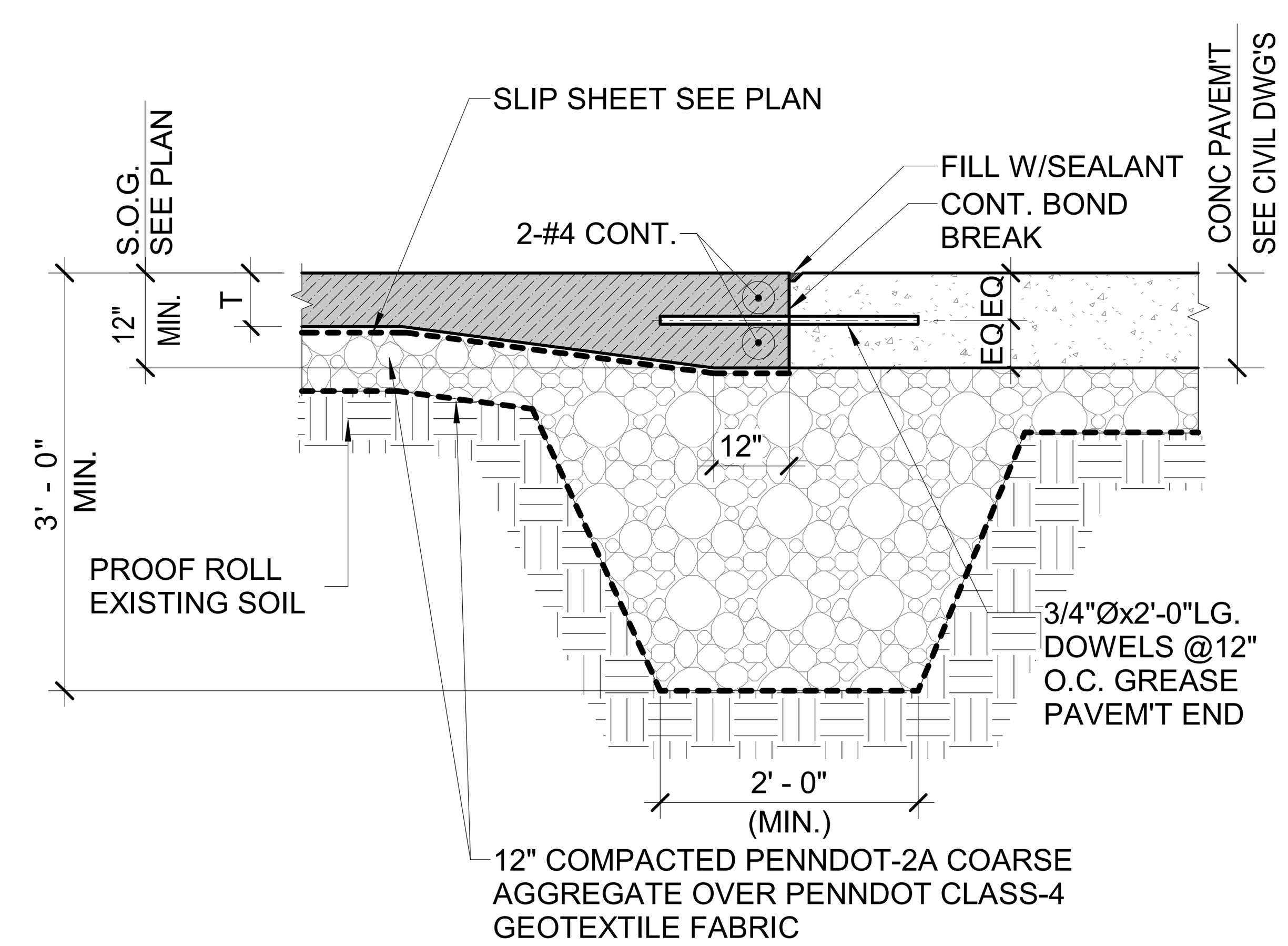
1 SD-01 TYP. SLAB-ON-GRADE CONSTRUCTION AND CONTROL JOINT DETAILS
SCALE: N.T.S.



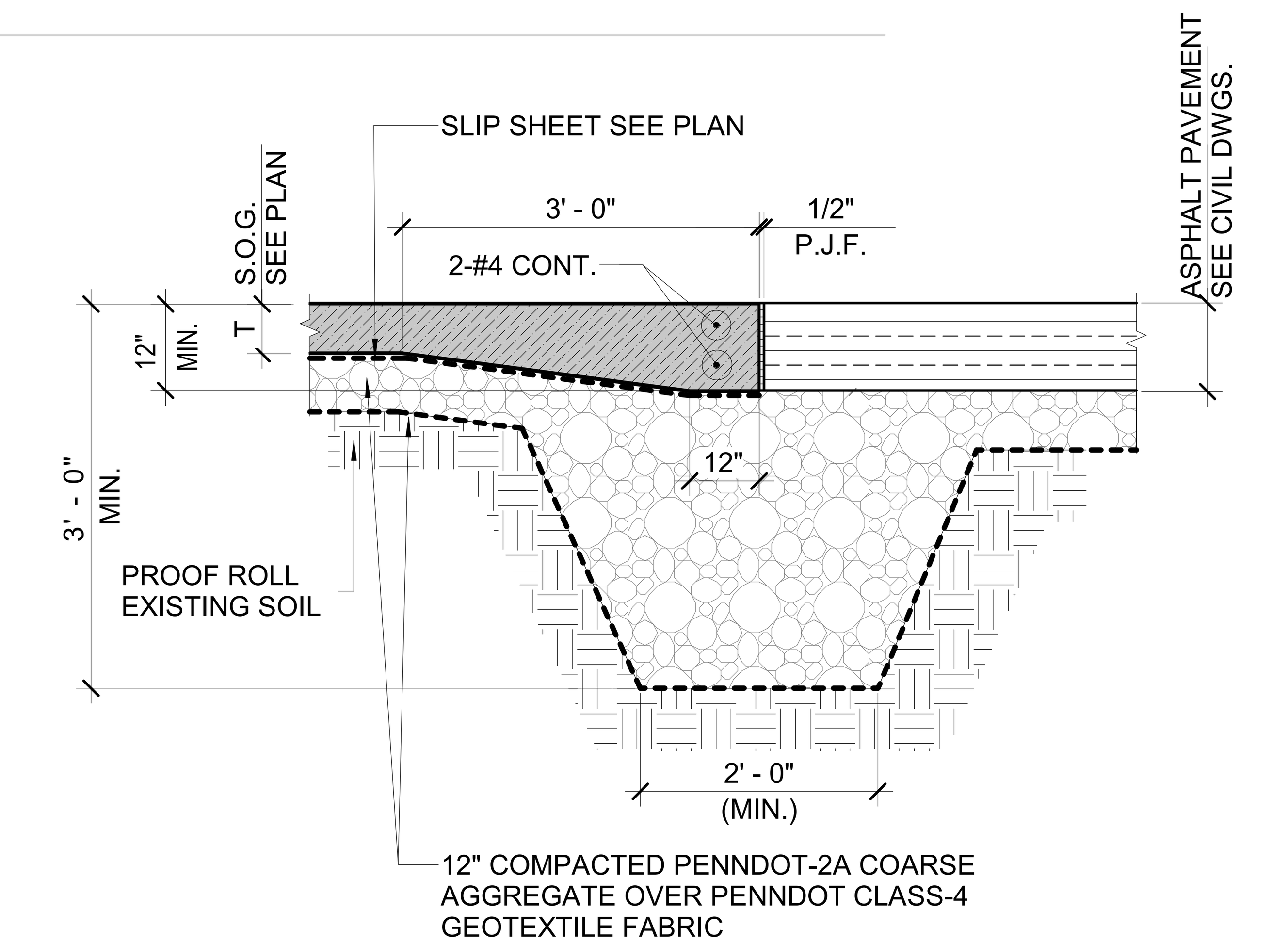
2 SD-01 TYPICAL SLAB-ON-GRADE DETAIL (S.O.G.)
SCALE: N.T.S.



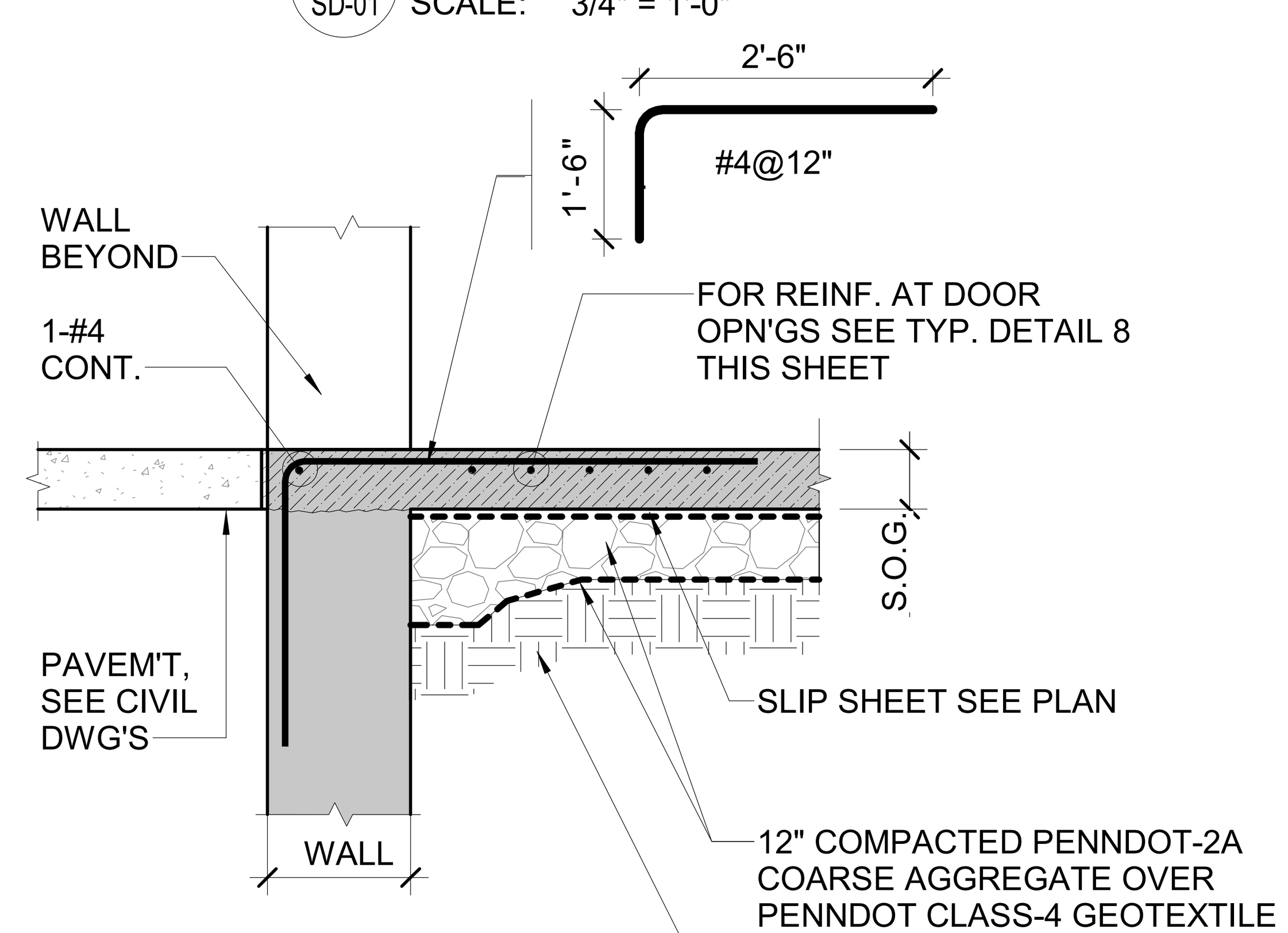
3 SD-01 TYP. STAIR-TO-S.O.G. DETAIL
SCALE: 3/4" = 1'-0"



4 SD-01 SLAB-ON-GRADE TO CONCRETE PAVEM'T INTERFACE DETAIL
SCALE: N.T.S.

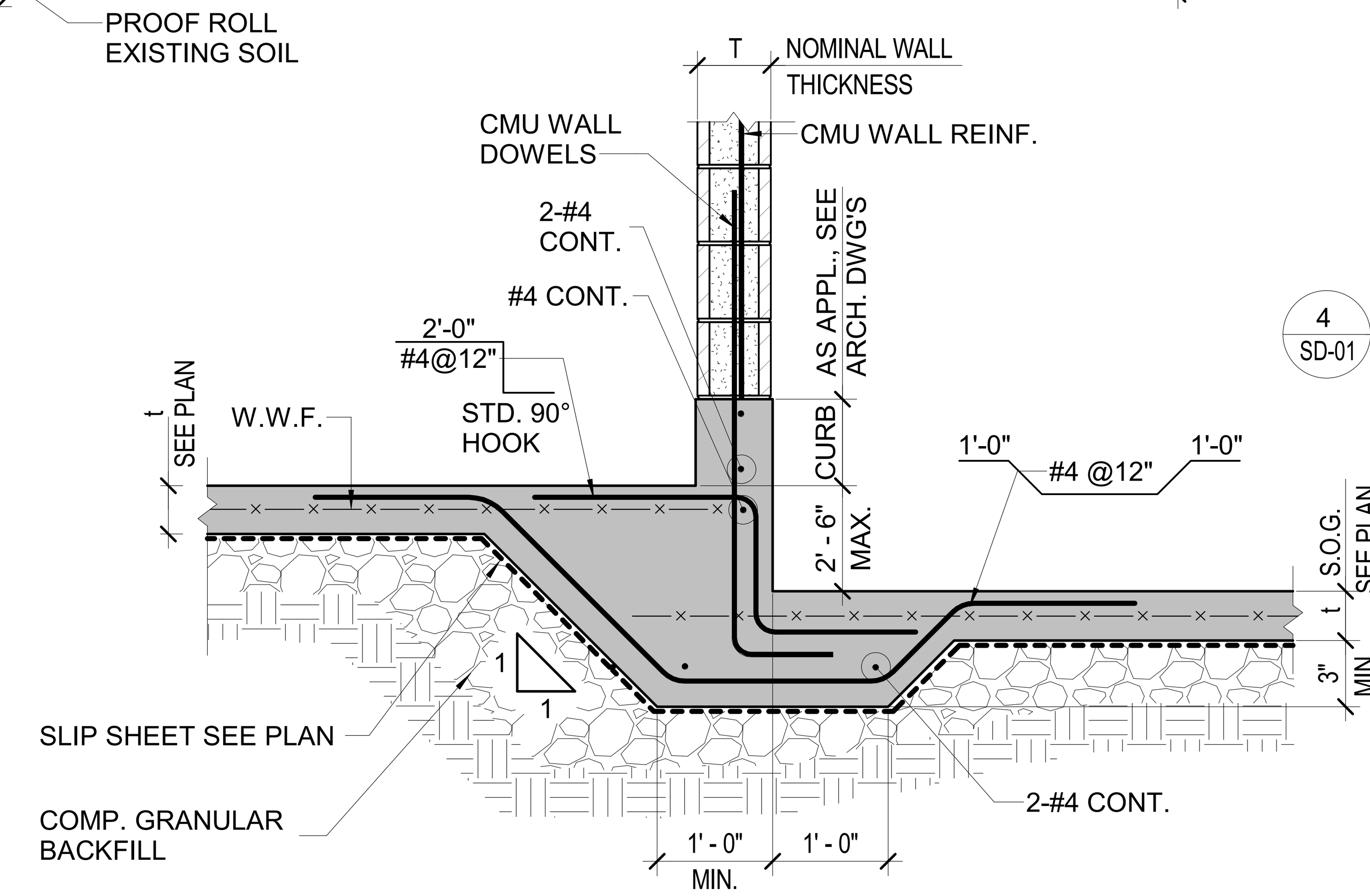


5 SD-01 SLAB-ON-GRADE TO ASPHALT PAVEM'T INTERFACE DETAIL
SCALE: N.T.S.

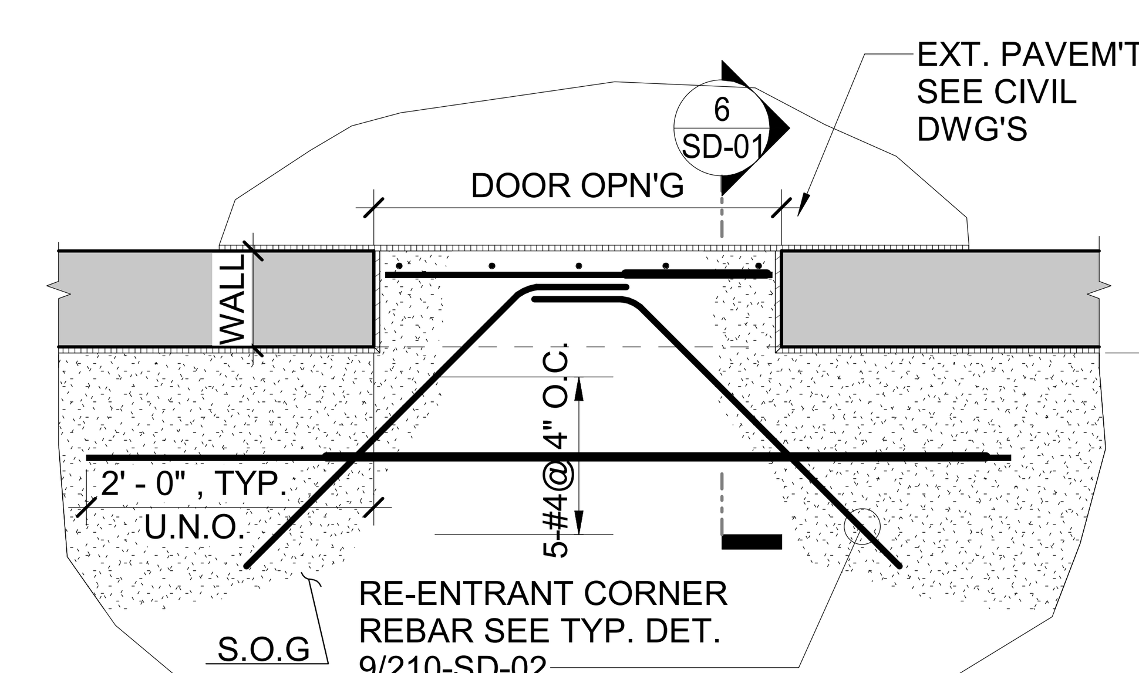


NOTE:
PROVIDE CONTINUOUS SEALANT ALONG ALL SLAB TO WALL JOINTS.

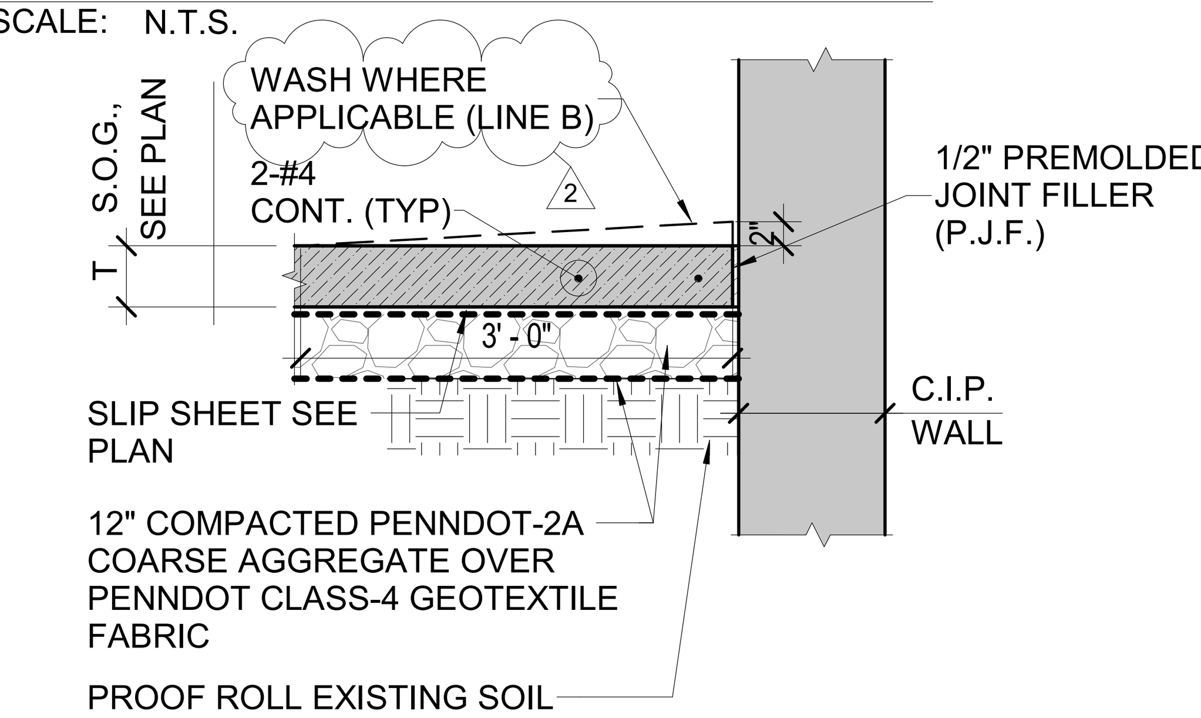
6 SD-01 TYP. SECTION -SLAB-ON-GRADE AT FOUNDATION RETAINING WALL AT DOOR OPENING
SCALE: NONE



7 SD-01 TYP. RECESS IN SLAB-ON-GRADE DETAIL
SCALE: NONE



8 SD-01 TYP. SLAB-ON-GRADE-FOUNDATION-WALL INTERFACE DETAIL AT DOOR OPENING
SCALE: 3/4" = 1'-0"



NOTE:
PROVIDE CONTINUOUS SEALANT ALONG ALL SLAB TO WALL JOINTS.

9 SD-01 TYP. SECTION SLAB-ON-GRADE AT FOUNDATION OR RETAINING WALL
SCALE: 3/4" = 1'-0"

Designed by: G. ABDALLAH
Drawn by: G. ABDALLAH
Checked by: G. ABDALLAH

REVISION

REV No.	DATE	DESCRIPTION	APPV
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210-SD-01
TYPICAL SLAB ON GRADE DETAILS

Contract: 1735
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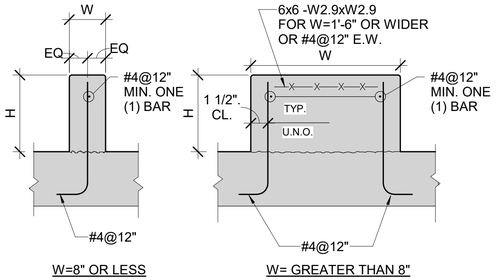
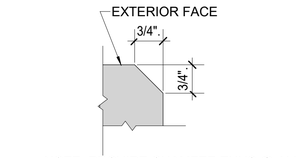
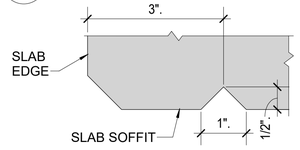


NOTES:
1. PROVIDE CONTINUOUS SEALANT ALONG ALL SLAB TO CURB JOINTS.
2. FOR CURB W AND H DIMENSIONS, SEE ARCH. DWGS.

1 SD-02 CONCRETE CURB DETAIL
SCALE: N.T.S.

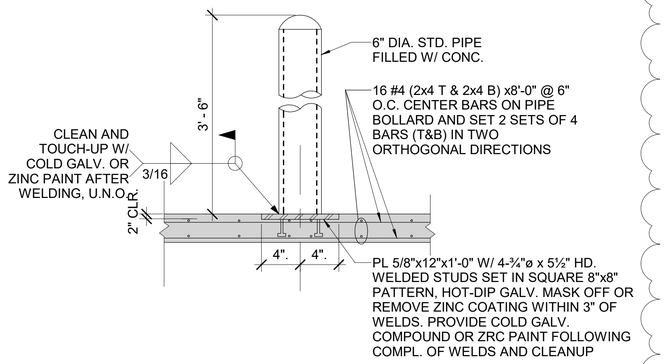


2 SD-02 TYP. CHAMFER DETAIL
SCALE: N.T.S.

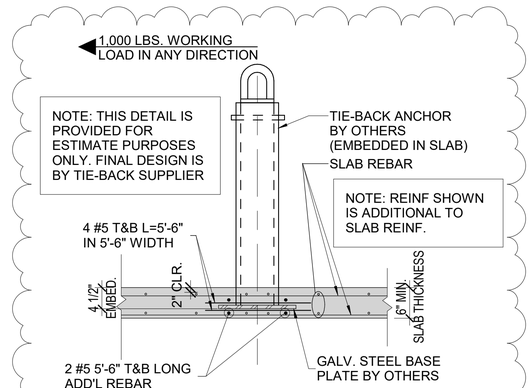


NOTE:
PROVIDE DRIP THUS @ ALL SUPPORTED SLAB EDGES, U.N.O.

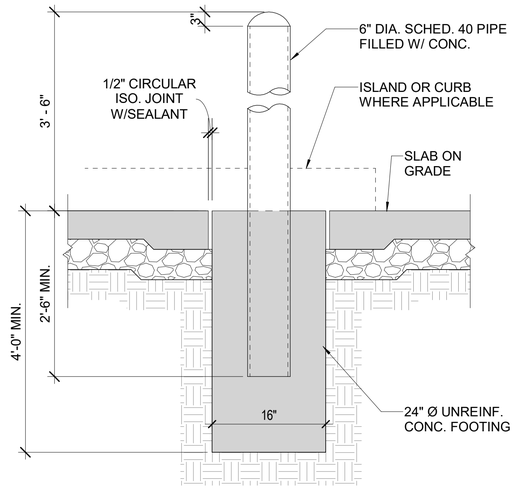
3 SD-02 TYP. "DRIP" DETAIL
SCALE: N.T.S.



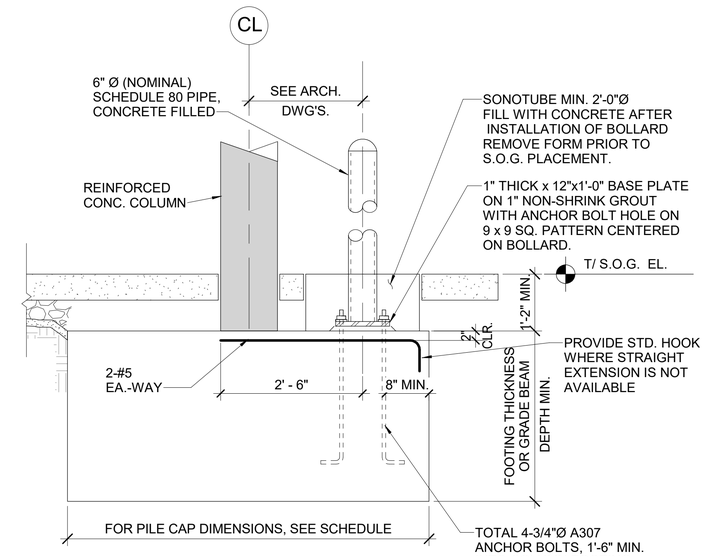
4 SD-02 NON-REMOVABLE PIPE-BOLLARD ON ELEVATED SLAB DETAIL
SCALE: N.T.S.



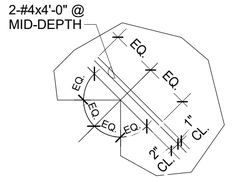
12 SD-02 TIE BACK ANCHOR DETAIL
SCALE: N.T.S.



7 SD-02 SLAB BOLLARD DETAIL IN SLAB-ON-GRADE OR PAVEMENT
SCALE: N.T.S.

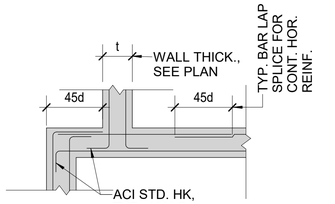


8 SD-02 PIPE BOLLARD AT FOUNDATION DETAIL
SCALE: N.T.S.

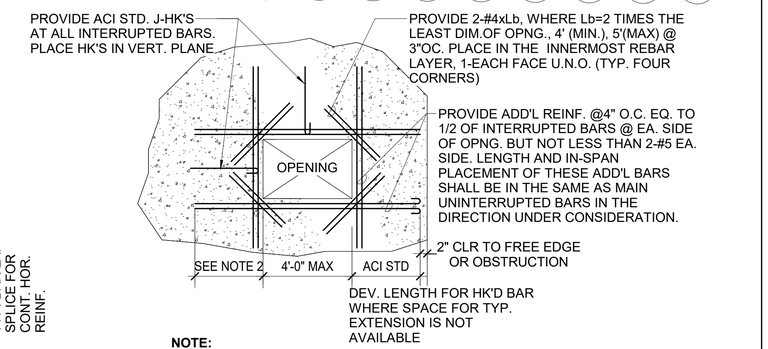


RE-ENTRANT CORNER BARS TYP. DETAIL

9 SD-02 SCALE: N.T.S.



10 SD-02 CORNER INTERSECTING WALL DETAIL
SCALE: N.T.S.



NOTE:
1. THIS DETAIL APPLIES TO SLAB AND WALL OPNG'S, REINFORCEMENT FOR WHICH HAS NOT BEEN SPECIFICALLY DETAILED WHEN SUCH DETAILS ARE PROVIDED ON THE STRUCTURAL DWG'S. REINF. SHOWN MUST BE SUPPLEMENTED WITH DIAGONAL CORNER REINF. SHOWN IN DETAIL
2. FOR BARS EXTENDING IN A DIRECTION PERPENDICULAR TO MAIN REINFORCEMENT, A CLASS B TENSION LAP SPLICE MAY BE USED PER SCHEDULE ON DWG. 210-S-03 IN LIEU OF FULL LENGTH CONT. REINF. MIN. LAP LENGTH SHALL NOT BE LESS THAN 24".

11 SD-02 MIN. REINFORCEMENT AT SLAB OR WALL OPENINGS
SCALE: N.T.S.

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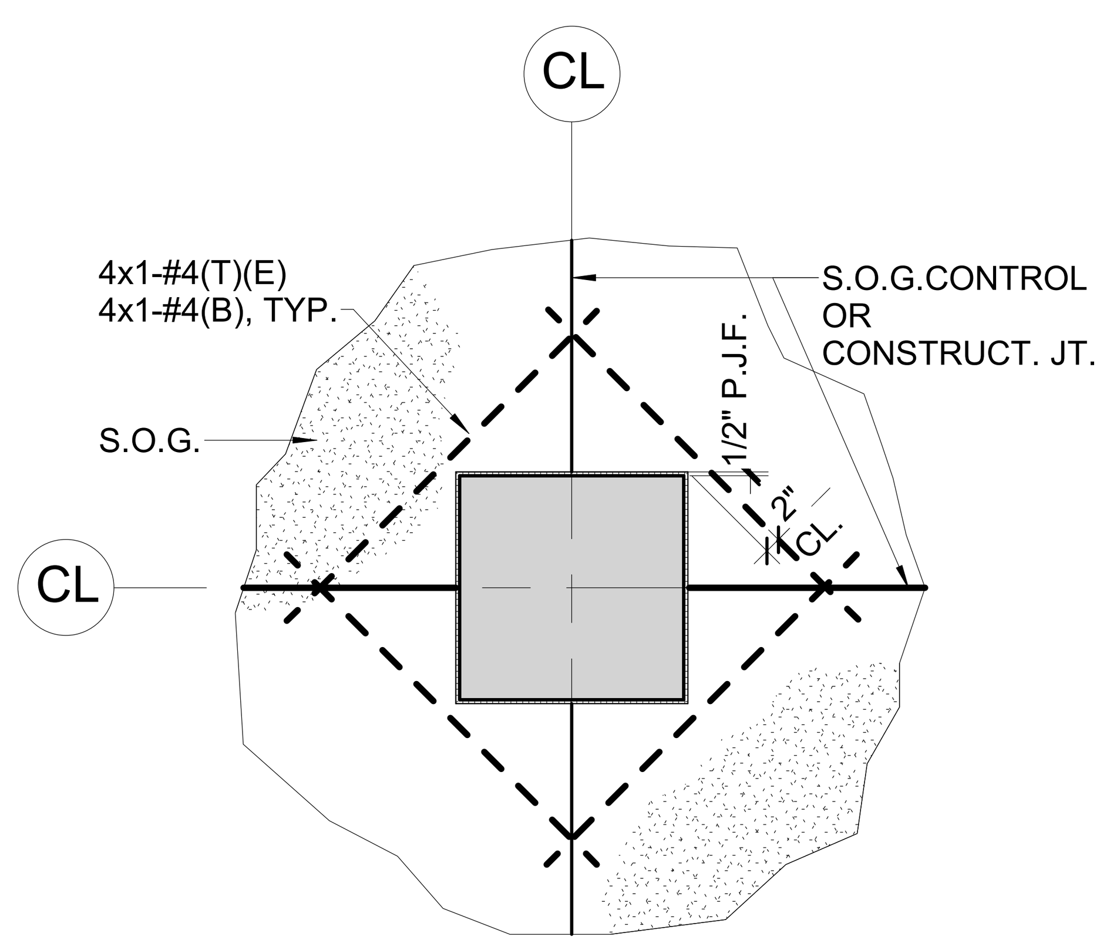
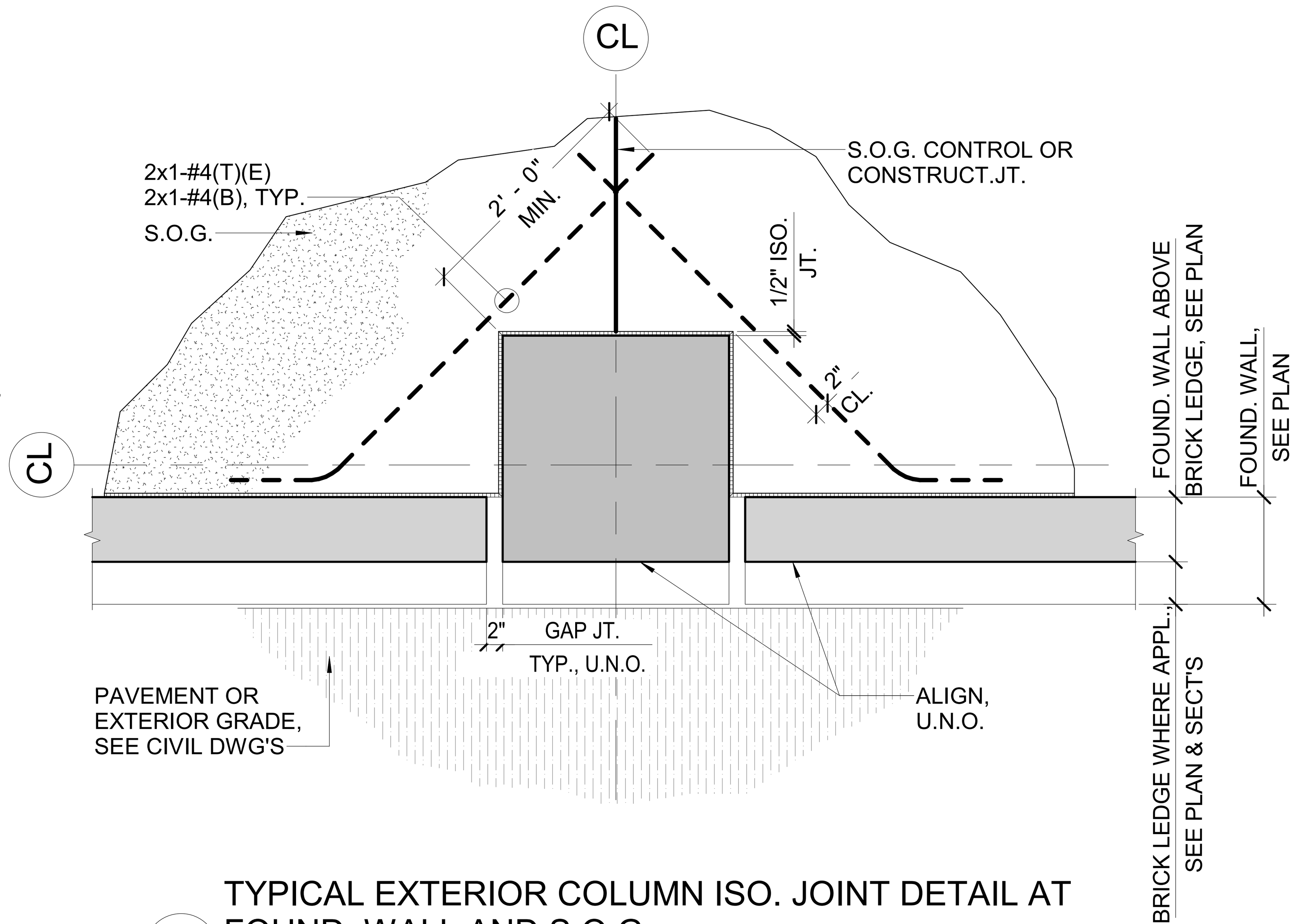
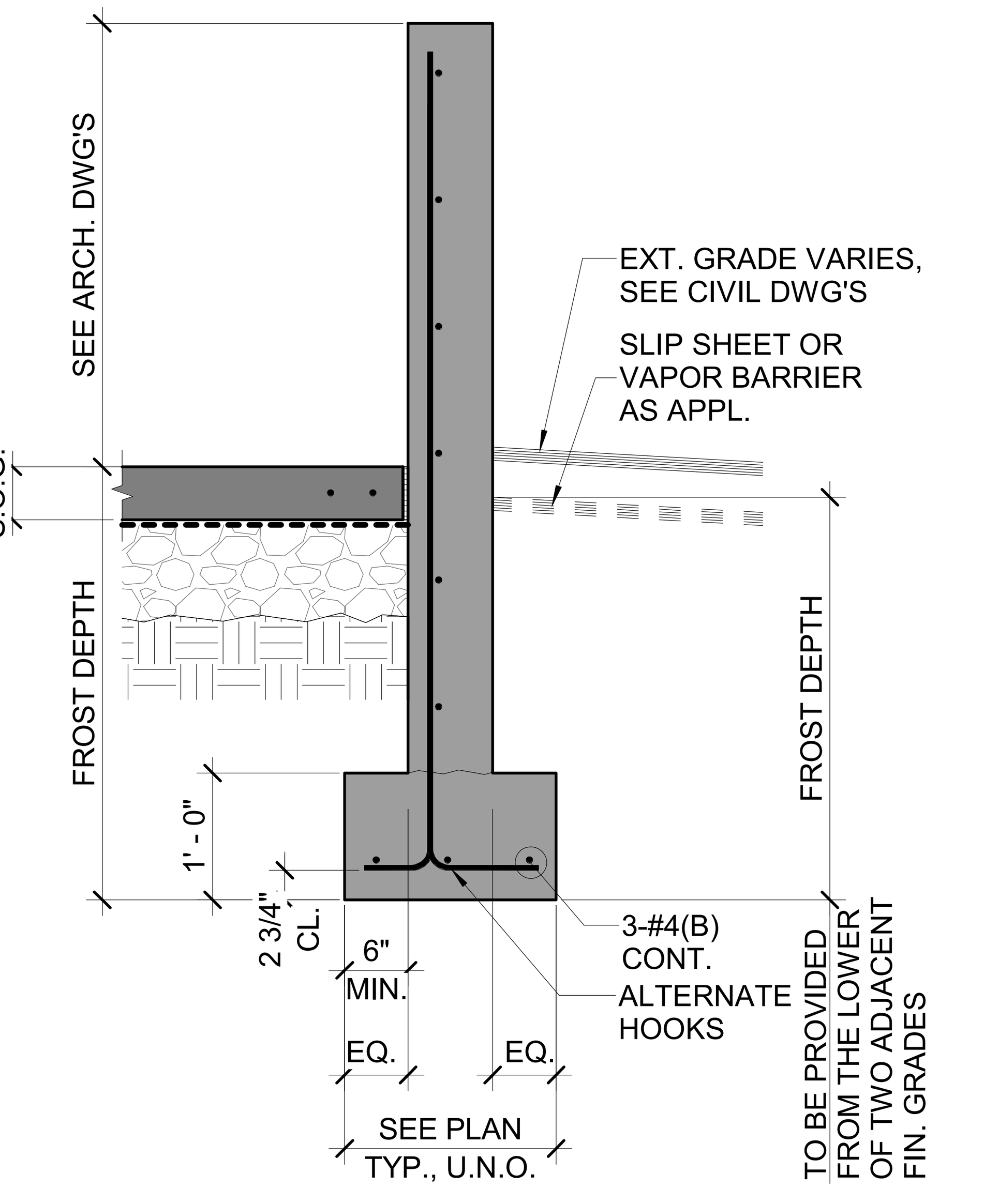


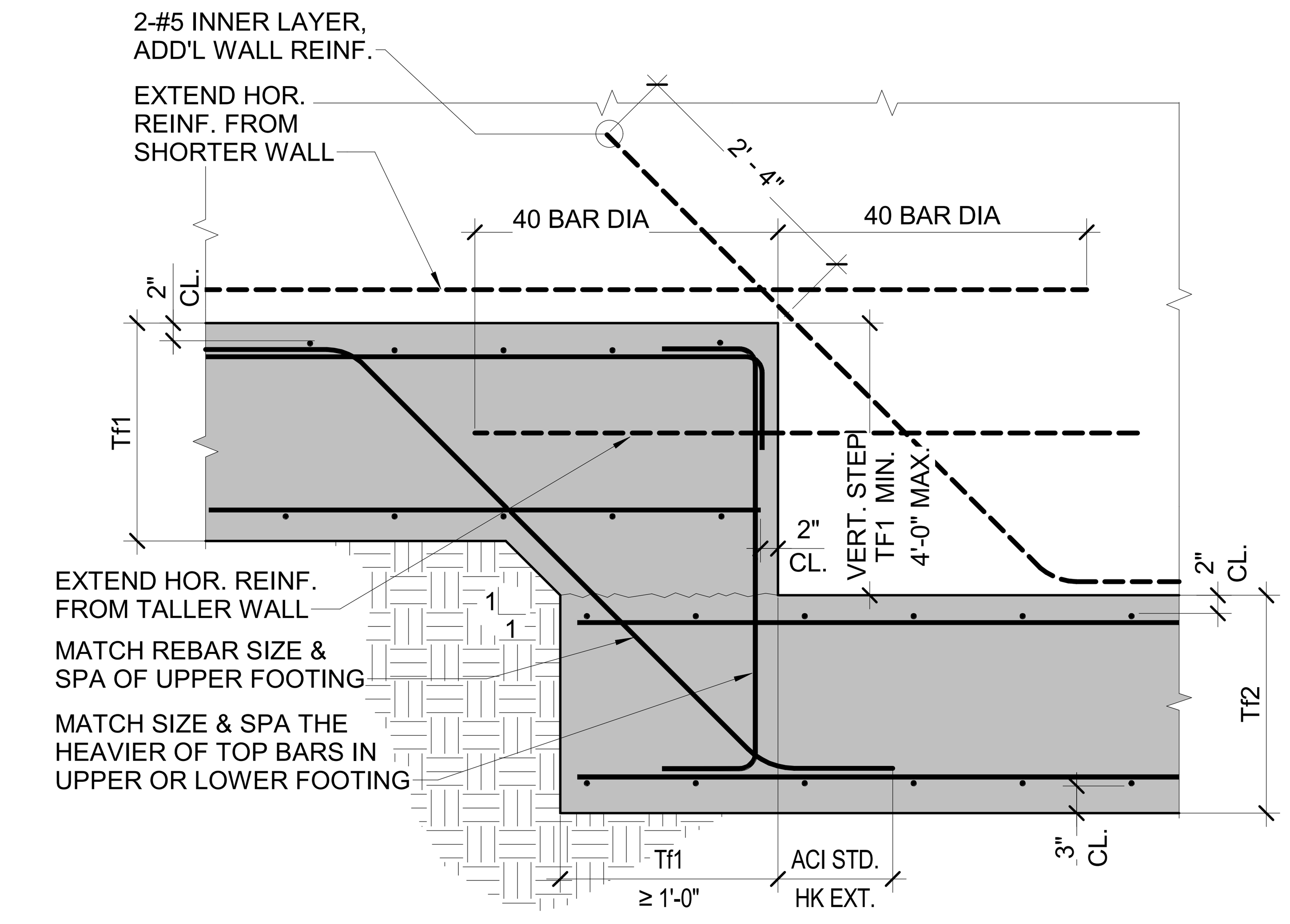
1 SD-03 TYPICAL INTERIOR COLUMN ISOLATION JOINT DETAIL AT S.O.G.
SCALE: 1/2" = 1'-0"



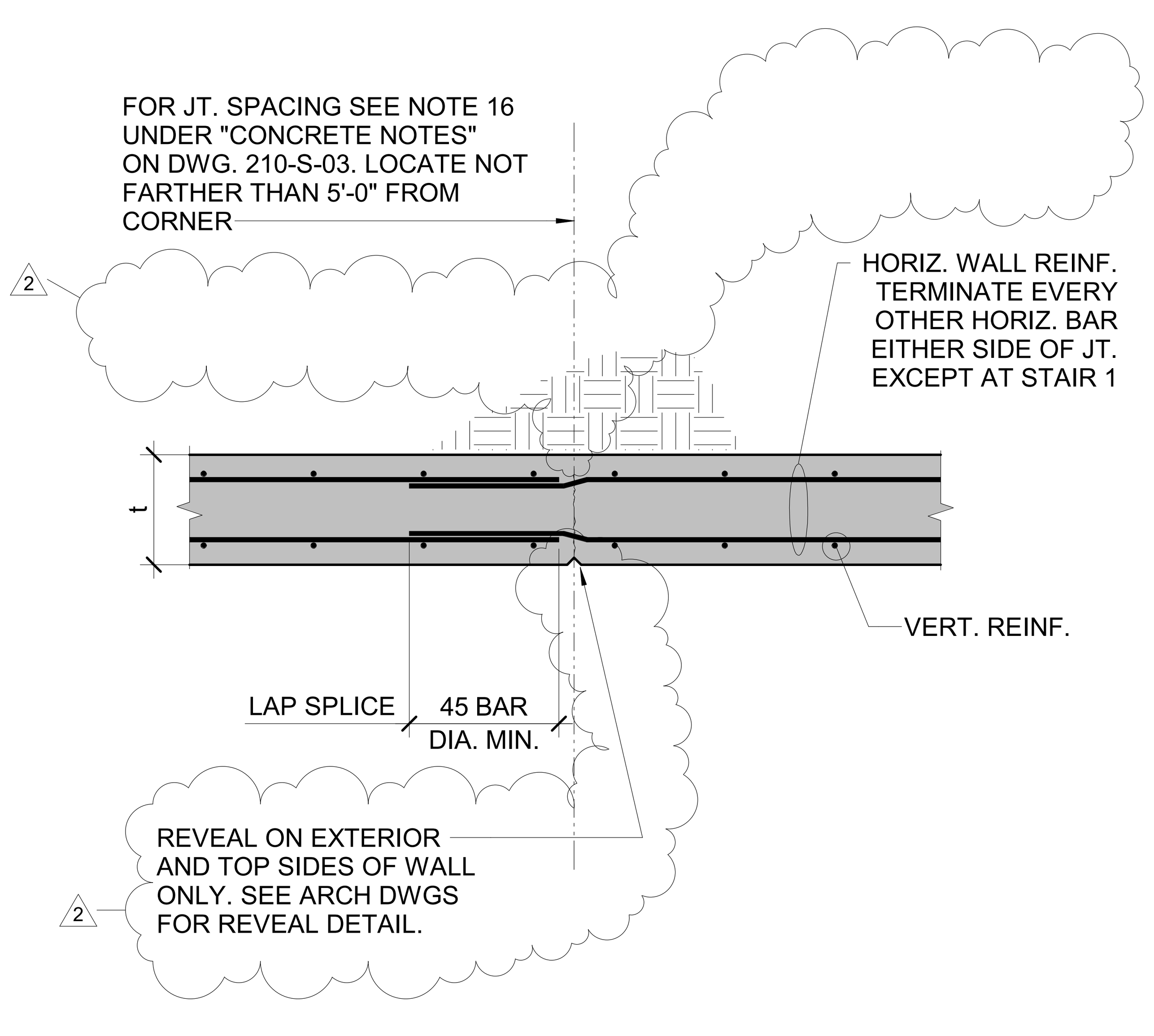
2 SD-03 TYPICAL EXTERIOR COLUMN ISO. JOINT DETAIL AT FOUND, WALL AND S.O.G.
SCALE: 3/4" = 1'-0"



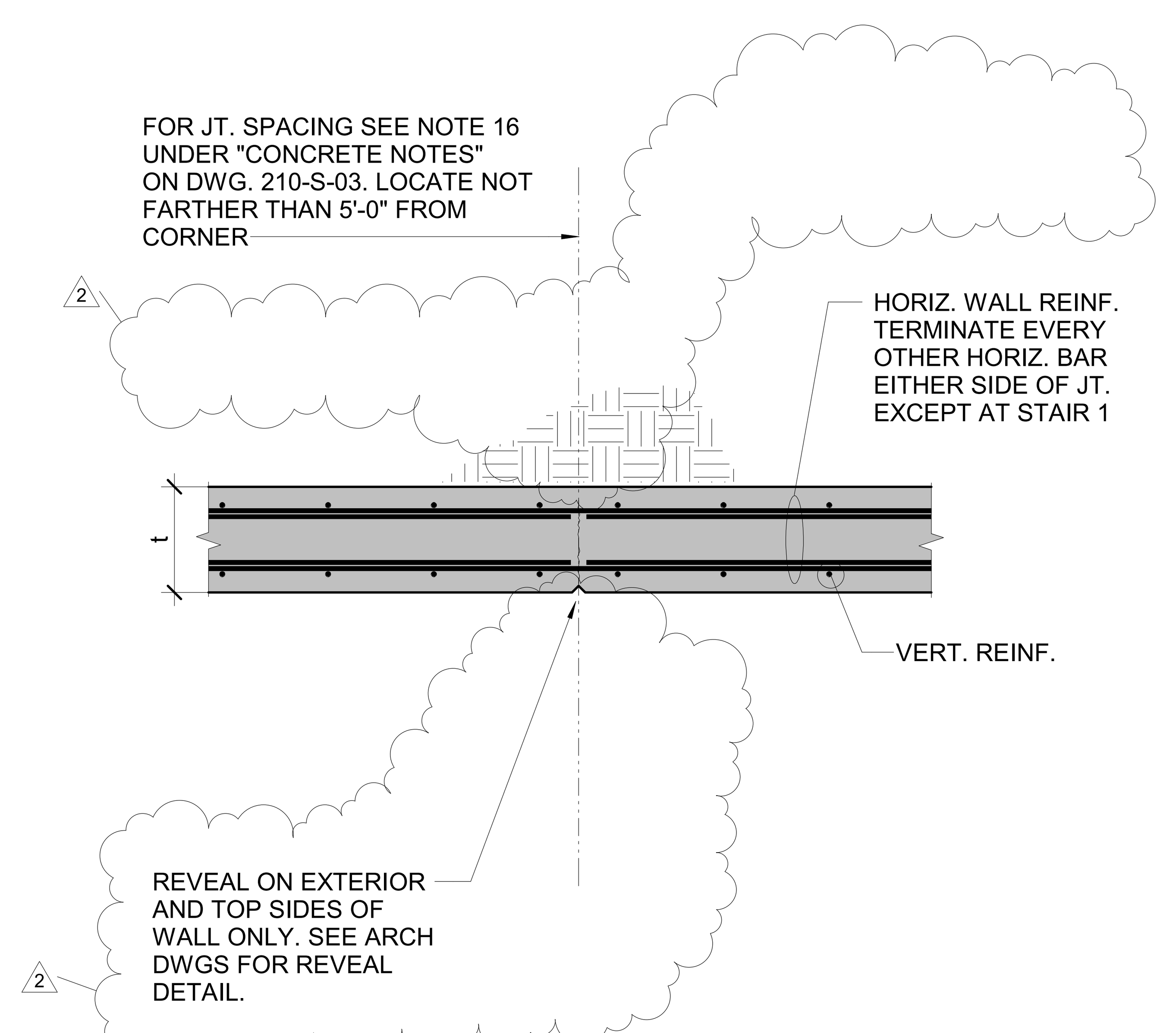
3 SD-03 TYP. EXTERIOR FOUND.WALL CROSS SECTION
SCALE: 3/4" = 1'-0"



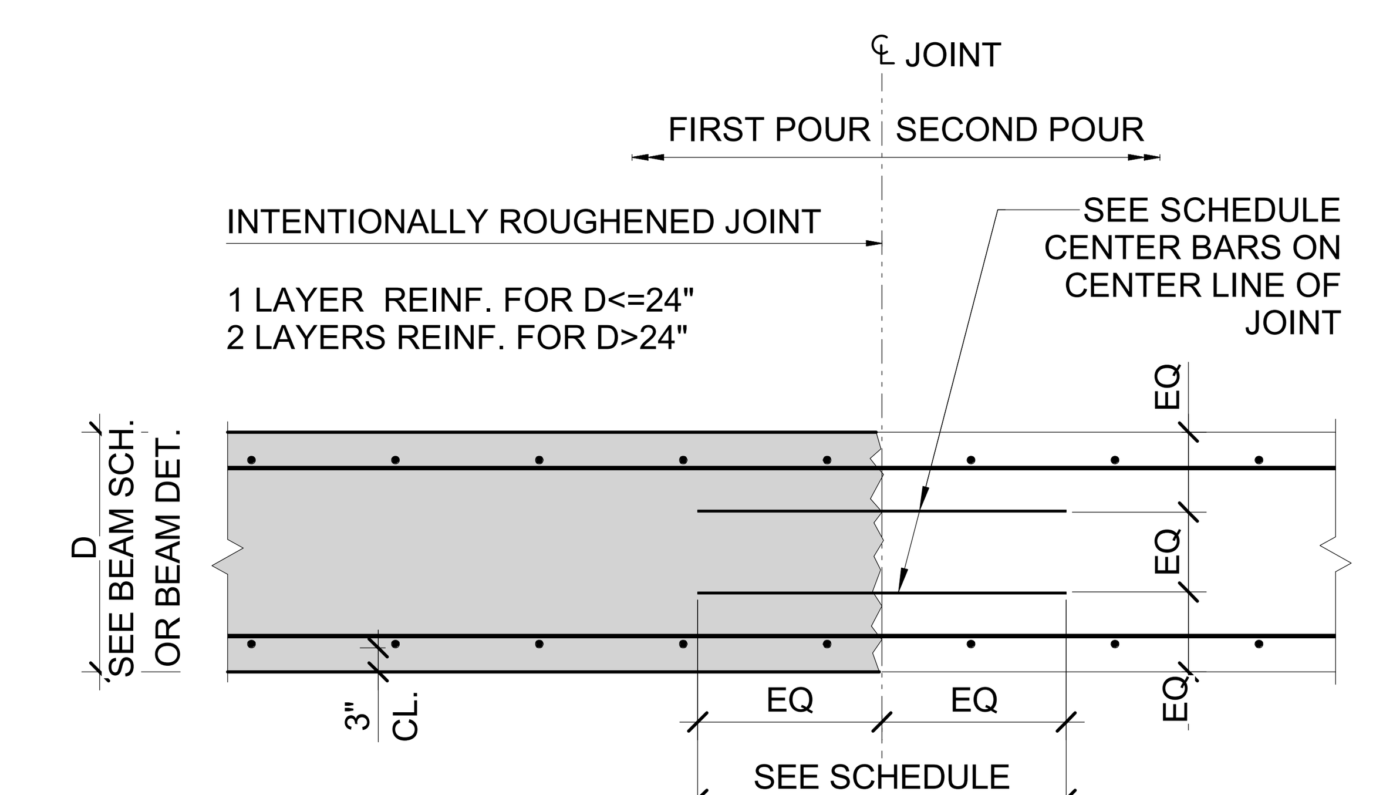
4 SD-03 STEPPED FTG. DETAIL
SCALE: N.T.S.



5 SD-03 TYP WALL CONSTRUCTION JOINT DETAIL
SCALE: N.T.S.



6 SD-03 TYP WALL CONTROL JOINT DETAIL
SCALE: N.T.S.



FOOTING CONSTRUCTION JOINT REBAR SCHEDULE	
FTG WIDTH W, INCHES, MAX.	JOINT REBAR SIZE, LENGTH, AND NUMBER PER LAYER
0" TO 14"	4 - #4 x 3'-0"
15" TO 24"	6 - #5 x 3'-6"
25" TO 34"	8 - #5 x 3'-6"
35" TO 48"	9 - #6 x 4'-0"
49" TO 60"	12 - #7 x 4'-6"
61" TO 72"	16 - #7 x 4'-6"
73" TO 90"	16 - #8 x 5'-0"

CONSTRUCTION JOINT NOTES:

1. CONSTRUCTION JOINTS SHALL BE DONE IN ACCORDANCE WITH ACI 318 SECTION 6.4.
2. LOCATION OF CONSTRUCTION JOINTS SHALL BE APPROVED BY THE ARCHITECT AND ENGINEER.
3. JOINT REINFORCEMENT SHOWN TABULATED HEREIN, WAS DESIGNED IN ACCORDANCE WITH ACI 318 SECTION 11.7.
4. FOR FOOTING DIMENSIONS SEE PLANS, SECTIONS AND DETAILS.
5. FOR JOINTS IN FOOTINGS WITH THICKNESSES BEYOND THE TABULATED RANGE PROVIDE JOINT LOCATIONS TO THE ARCHITECT FOR SEPARATE DESIGN OF REQUIRED REINFORCEMENT.

7 SD-03 TYP. GRADE BEAM / FOOTING CONSTR. JOINT DETAIL
SCALE: 1/2" = 1'-0"

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Drawn by: G. ABDALLAH
Checked by: G. ABDALLAH

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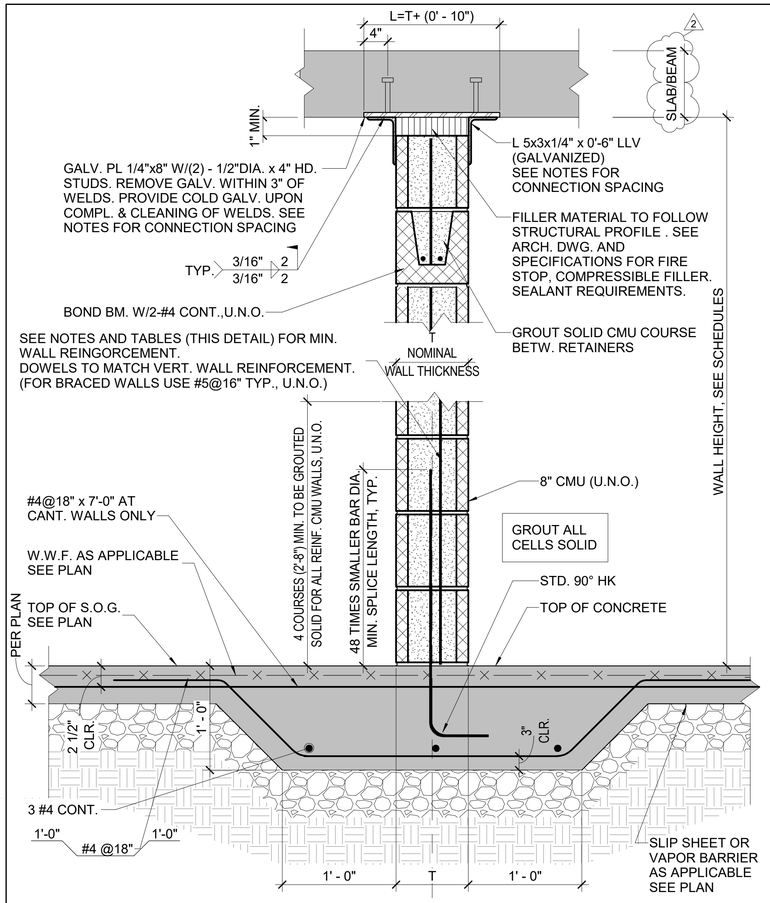


1 SD-04 TYPICAL DETAIL NON-LOAD BEARING CMU WALL
SCALE: NONE

NOTES

1. THIS DETAIL NEED NOT BE USED WHEN THE SUBJECT WALL IS PLACED BETWEEN INTEGRALLY BUILT INTERSECTING SIMILAR WALLS AND THE RESULTING HORIZONTAL SPAN DOES NOT EXCEED 36*T, WHERE T IS THE NOMINAL WALL THICKNESS.

2. THE FOLLOWING INFORMATION SHALL BE USED WITH THIS DETAIL FOR INTERIOR PARTITIONS WITH THE MAXIMUM WIND PRESSURE OF 5 PSF AND NOT SUBJECT TO VEHICULAR (PASSENGER CAR) IMPACT.

MAXIMUM CONNECTION SPACING						
NOMINAL WALL THICKNESS	WALL HEIGHT (FEET)					
	9	12	15	18	21	24
4"	4'-0"	3'-6"	–	–	–	–
6"	5'-6"	4'-6"	4'-0"	3'-6"	–	–
8"	7'-0"	6'-6"	5'-6"	5'-0"	4'-6"	4'-0"

REINFORCE WITH #4 @48" VERTICAL REBAR

3. EXTERIOR MASONRY WALLS SUBJECT TO VEHICULAR IMPACT AND WIND LOADS IN EXCESS OF 5 PSF SHALL BE REINFORCED. TOPS OF SUCH WALLS MAY NOT BE BRACED FOR WALL HEIGHTS NOT EXCEEDING RESPECTIVE LIMITS FOR CANTILEVER WALLS IN SCHEDULES BELOW. WHEN BRACED AT TOP AND BOTTOM IN ACCORDANCE WITH DETAIL, SUCH WALLS SHALL NOT EXCEED THE HEIGHTS IN THE FOLLOWING SCHEDULES.

4. THE FOLLOWING REINFORCEMENT INFORMATION SHALL APPLY TO EXTERIOR CMU WALLS SUBJECT TO WIND OR VEHICULAR (PASSENGER CAR) IMPACT AS APPLICABLE. THE MOST STRINGENT OF THE APPLICABLE CONDITIONS SHALL APPLY. LATERAL LOADS USED ARE AT STRENGTH LEVEL.

VEHICULAR IMPACT 10,000 lbs – WALL HEIGHT, MAX (FT)						
NOMINAL WALL THICKNESS, T	CANTILEVER			BRACED		
	9	10	11	20	22	24
8"	#4@8"	–	–	#4@8"	–	–
10"	#5@24"	#5@24"	–	#5@24"	#5@24"	–
12"	#5@32"	#5@32"	#5@32"	#5@32"	#5@32"	#5@32"

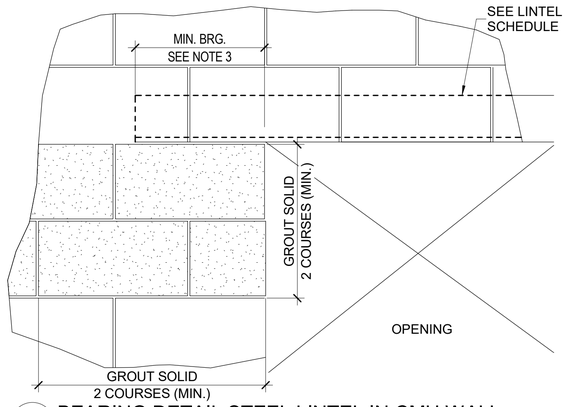
WIND LOAD 20 PSF – WALL HEIGHT, MAX (FT)						
NOMINAL WALL THICKNESS, T	CANTILEVER			BRACED		
	9	10	11	20	22	24
8"	#4@24"	–	–	#5@32"	–	–
10"	#4@32"	#4@24"	–	#5@40"	#5@32"	–
12"	#4@40"	#4@32"	#4@24"	#4@32"	#5@40"	#5@32"

5. TOP OF WALL BRACING CONNECTIONS FOR EXTERIOR MASONRY WALLS SUBJECT TO VEHICULAR IMPACT AND WIND LOADS, WHEN REQUIRED, SHALL NOT BE SPACED FURTHER APART THAN 5' - 0"

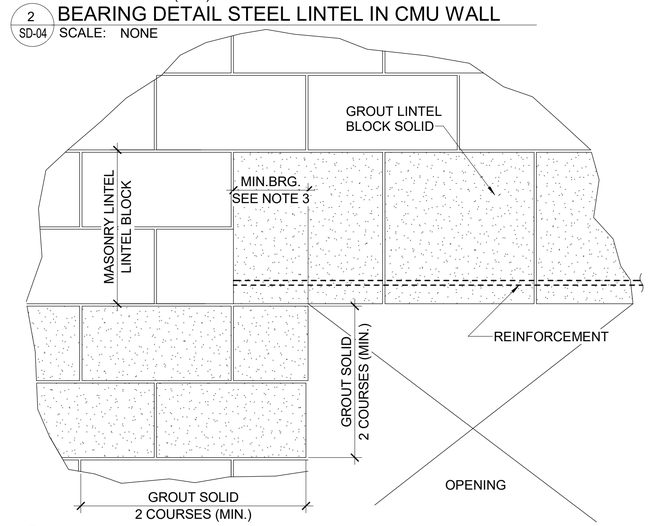
6. ALL EXTERIOR MASONRY WALLS SUBJECT TO VEHICULAR IMPACT AT PARKING AREAS OR DRIVE ISLES, SHALL BE FULLY GROUTED FROM THE BEARING UP TO A HEIGHT OF 2' - 8" (±) ABOVE FINISHED FLOOR.

7. USE 1" GAP WITH SEALANT ADJACENT TO CONCRETE WALLS, COLUMNS, AND BEAMS.

8. 8" MIN. U.N.O.; 2'-0" MIN. FOR CONDITION W/O C.M.U. WALL ABOVE, SEE NOTE '4' FOR REINF.



2 SD-04 BEARING DETAIL STEEL LINTEL IN CMU WALL
SCALE: NONE



3 SD-04 BEARING DETAIL MASONRY LINTEL IN CMU WALL
SCALE: NONE

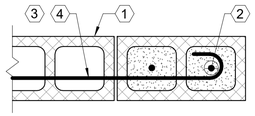
LINTEL NOTES AND SCHEDULE

1. MASONRY LINTELS LISTED FOR THE RANGE OF ROUGH MASONRY OPENING IN THE SCHEDULE BELOW APPLY TO NON-LOAD BEARING WALLS ONLY.
2. LINTELS IN MASONRY WALLS SHALL BE PROVIDED FOR ALL OPENINGS AS INDICATED ON THE STRUCTURAL AND ARCHITECTURAL DRAWINGS. IN ADDITION, LINTELS ARE REQUIRED FOR ANY MECHANICAL, ELECTRICAL, OR PLUMBING OPENING IN A MASONRY WALL WITH A WIDTH GREATER THAN 12 INCHES.
3. LINTELS SHALL HAVE A MINIMUM BEARING OF 8" FOR SPANS UP TO 8'-0", AND 16" FOR SPANS GREATER THAN 8'-0". UNLESS NOTED, THEY SHALL BE OF THE SIZES LISTED BELOW.
4. C.M.U. OPENINGS MAY BE SPANNED WITH EITHER A STEEL LINTEL OR MASONRY LINTEL BLOCK, AT THE CONTRACTOR'S OPTION.
5. ALL LINTEL MEMBERS EXCEPT SINGLE ANGLES AND UNLESS NOTED OTHERWISE, SHALL BE CENTERED IN PLAN ON SUPPORTED MASONRY TO MINIMIZE EFFECT OF TORSION.
6. PLATE IN STEEL LINTEL SHALL BE WELDED AT BOTTOM OF RESPECTIVE STEEL SHAPE WITH 1/4" INTERMITTENT FILLET WELDS @ 12" O.C. PROVIDE CONTINUOUS 1/4"X2'-0" WELD ALONG COVER PLATE AT EITHER END ON EACH SIDE OF STEEL LINTEL.
7. PLATE WIDTH SHALL BE 1" LESS THAN THE ACTUAL WIDTH OF MASONRY.

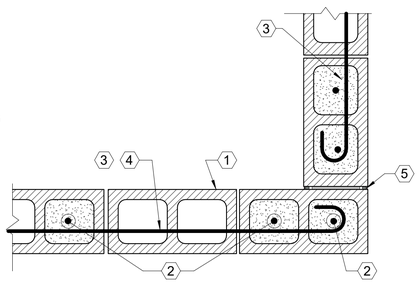
CMU	SPAN	STEEL LINTEL	MASONRY LINTEL
4" WALL	4'	L 3 1/2x3 1/2x5/16	
	4' - 6'	L 5x3 1/2x3/8 L.L.V.	
	6' - 8'	L 6x4x3/8 L.L.V.	
6" WALL	4'	WT4x9	8" LINTEL BLOCK w/1–#4
	4' - 6'	WT5x15	8" LINTEL BLOCK w/2–#5
	6' - 8'	WT7x11	16" LINTEL BLOCK w/2–#5
8" WALL	4'	2–L 3 1/2x3 1/2x5/16	8" LINTEL BLOCK w/2–#4
	4' - 6'	2–L 5x3 1/2x3/8 L.L.V.	16" LINTEL BLOCK w/2–#4
	6' - 8'	2 – L 6x3 1/2x3/8 L.L.V.	16" LINTEL BLOCK w/2–#5
	8' - 12'	WT8x18 + 3/8" PL	
10" WALL	4'	2 – L 3 1/2x3 1/2x5/16	8" LINTEL BLOCK w/2–#4
	4' - 6'	2 – L 4x3x3/8 L.L.H. + L 5x5x3/8	16" LINTEL BLOCK w/2–#4
	6' - 8'	WT8x18 + 3/8" PL	16" LINTEL BLOCK w/2–#5
	8' - 12'	WT8x24 + 3/8" PL	8"+16" LINTEL BLOCK w/2–#5 EA.
12" WALL	4'	3 – L 3 1/2x3 1/2x5/16	8" LINTEL BLOCK w/2–#4
	4' - 6'	3 – L 5x3 1/2x3/8 L.L.V.	16" LINTEL BLOCK w/2–#4
	6' - 8'	WT8x24 + 3/8" PL	16" LINTEL BLOCK w/2–#5
	8' - 12'	WT12x26 + 3/8" PL	8"+16" LINTEL BLOCK w/2–#5 EA.
CAVITY WALL	8'	WT8x24 + 3/8" PL	
	8' - 12'	WT12x26 + 3/8" PL	

KEY NOTES FOR DETAILS 4 THRU 7:

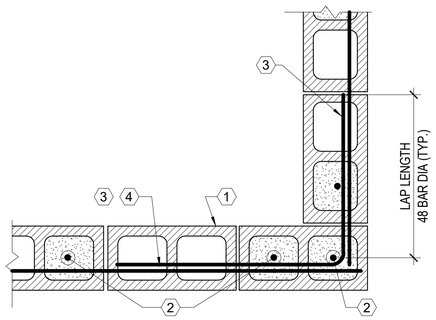
1. STRUCTURAL C.M.U.
2. VERTICAL REBAR SCHED., DISCONT., END AND CORNER END. SHALL HAVE MIN. OF TWO VERT. BARS.
3. HORIZ. REBAR.
4. HORIZ. REBAR IN BOND BEAMS. GROUT WHERE REQ'D.
5. EXP. JT. STRIP, ADHERE TO ONE SIDE; EXP. JT. SPACING SHALL NOT EXCEED 36'-0" IN STRAIGHT RUN OF WALL



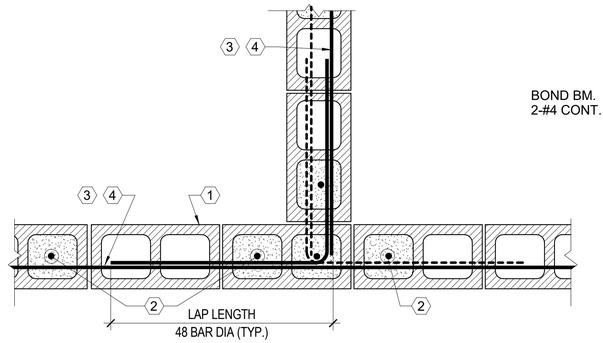
4 SD-04 TYP. DETAIL. DISCONT. END OF CMU WALL
SCALE: NONE



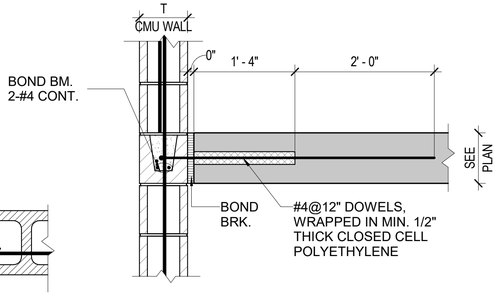
5 SD-04 DISCONT. WALLS TYP. DETAIL CMU WALL CORNER
SCALE: NONE



6 SD-04 CONT. WALLS CMU WALL CORNER
SCALE: NONE



7 SD-04 TYPICAL DETAIL CMU WALL INTERSECTION
SCALE: NONE



8 SD-04 TYP. CMU WALL STABILITY CONN. DETAIL AT C.I.P. CONC. SLAB
SCALE: NONE

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210-SD-04
TYPICAL MASONRY DETAILS

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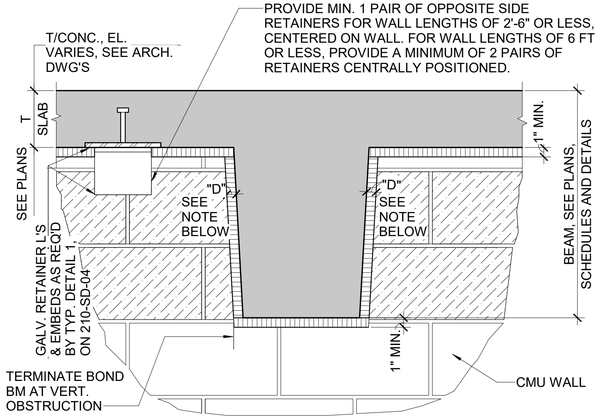
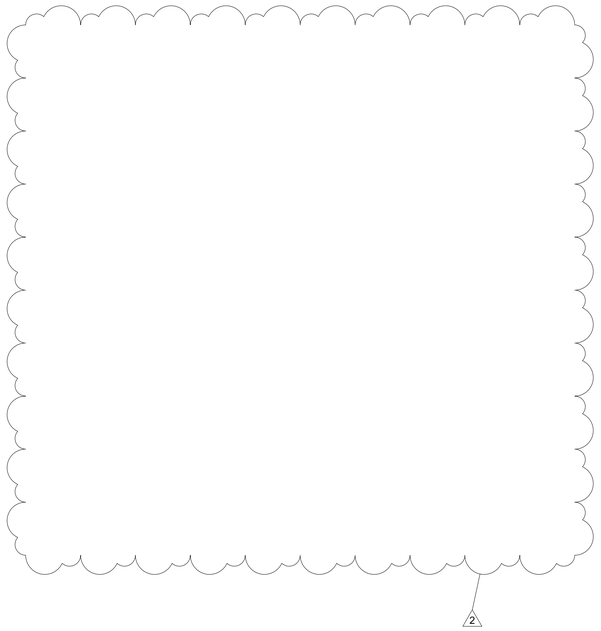
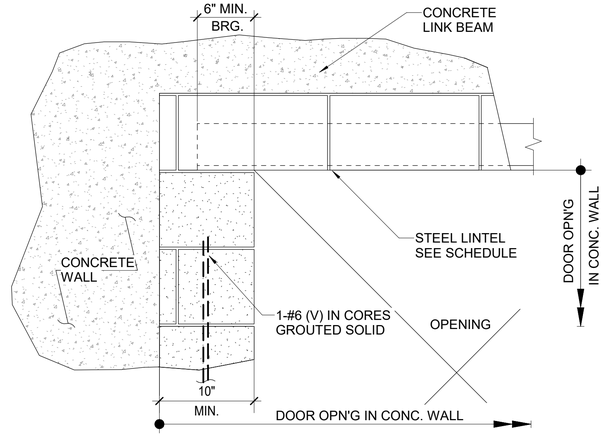


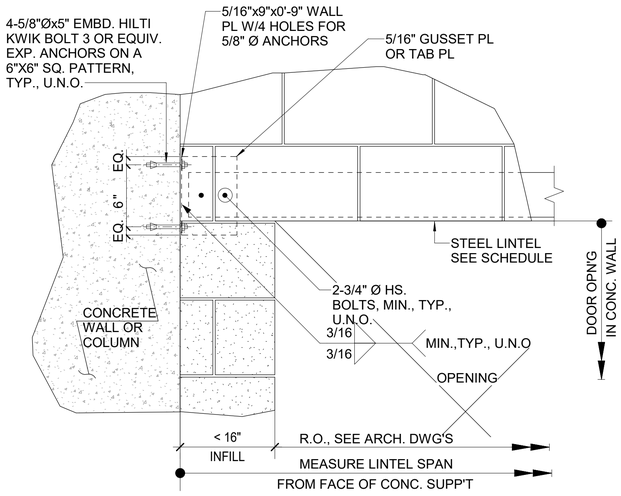
NOTE:
DIMENSION "D" SHALL NOT BE LESS THAN THE AMOUNT OF THE LIFETIME STRUCTURE MOVEMENT RELATIVE TO THE WALL PLUS MINIMUM THICKNESS OF FULLY COMPRESSED FILLER MATERIAL PLUS 1/4", NOR 1". CONSULT WITH ARCHITECT FOR SPECIFIC LOCATION.

1 SD-05 PARTIAL WALL ELEVATION AT VERTICAL OBSTRUCTION
SCALE: 1 1/2" = 1'-0"





3 SD-05 BEARING DETAIL AT ELEVATOR STEEL DOOR LINTEL WITH CMU INFILL
SCALE: 1 1/2" = 1'-0"



4 SD-05 BEARING DETAIL AT ELEVATOR STEEL DOOR LINTEL WITH CMU INFILL
SCALE: 1 1/2" = 1'-0"

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Drawn by: G. ABDALLAH
Checked by: G. ABDALLAH

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210-SD-05
TYPICAL MASONRY DETAILS

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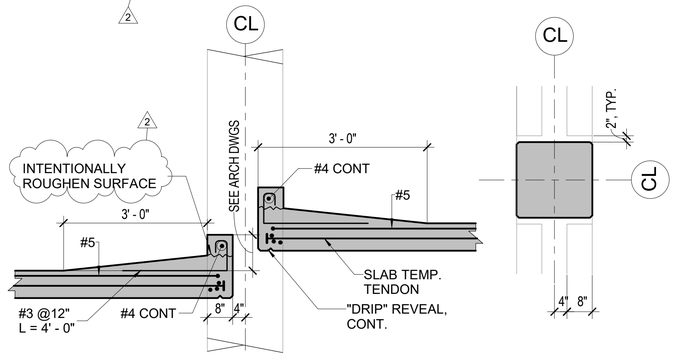
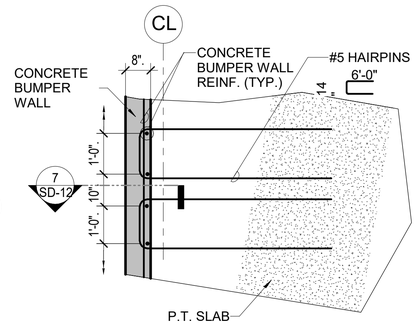
NOTES:
1. CURB CAN BE POURED MONOLITHICALLY WITH SLAB AT CONTRACTOR'S OPTION



1 SD-13 TYPICAL CONCRETE BUMPER WALL REINFORCEMENT AT RAMP
SCALE: N.T.S.



2 SD-13 REINFORCEMENT IN SLAB FOR CONCRETE BUMPER WALL
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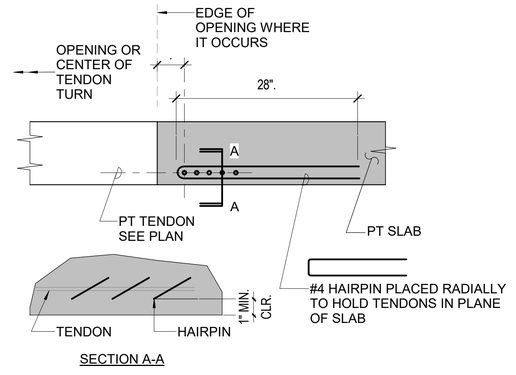
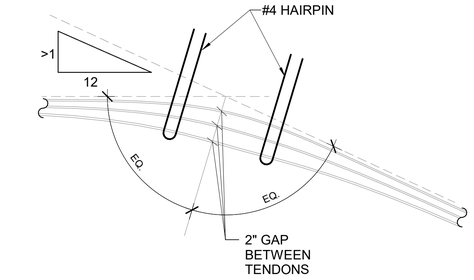


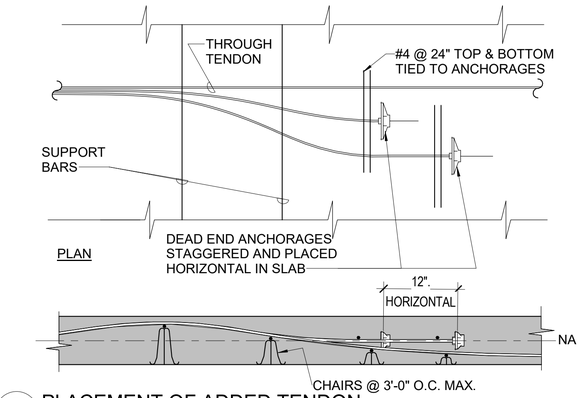
SECTION A-A

3 SD-13 SECTION AT TYPICAL HAIRPIN AT TENDON TURNS
SCALE: N.T.S.

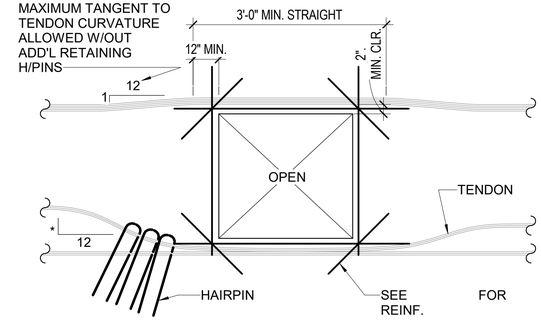


NOTE:
AT TENDON GROUP IN-PLAN TURNS FROM THE MAIN SPAN DIRECTION SUCH THAT A TANGENT TO THIS DIRECTION IS GREATER THE 1:12, MAINTAIN A MINIMUM REQUIRED CLEAR GAP AT A LINE BI-SECTING THE OBTUSE ANGLE FORMED BY THAT TANGENT

4 SD-13 TENDON PLACEMENT FOR TURNS GREATER THAN 1 TO 12
SCALE: N.T.S.

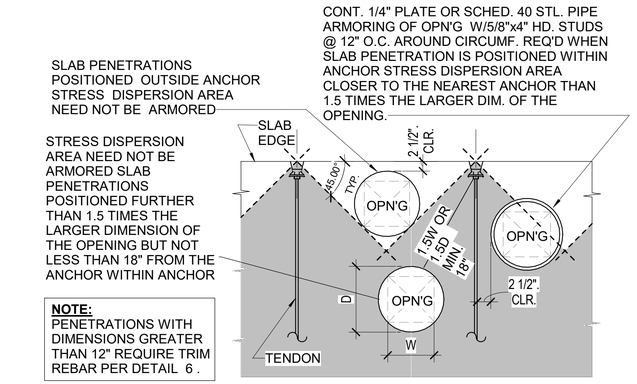


5 SD-13 PLACEMENT OF ADDED TENDON
SCALE: N.T.S.



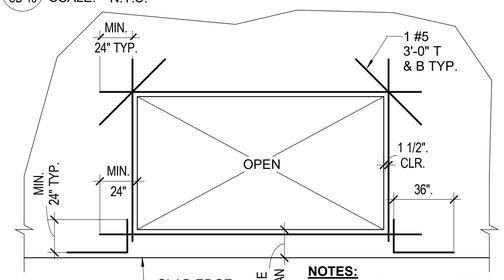
* =TANGENT (IN 12") TO TENDON CURVATURE IN EXCESS OF 1" BUT NOT MORE THAN MAXIMUM PERMITTED BY THE POST-TENSIONING SYSTEM MANUFACTURER.

6 SD-13 PLAN AT TYPICAL HAIRPIN AT TENDON TURNS
SCALE: N.T.S.



NOTE:
PENETRATIONS WITH DIMENSIONS GREATER THAN 12" REQUIRE TRIM REBAR PER DETAIL 6 .

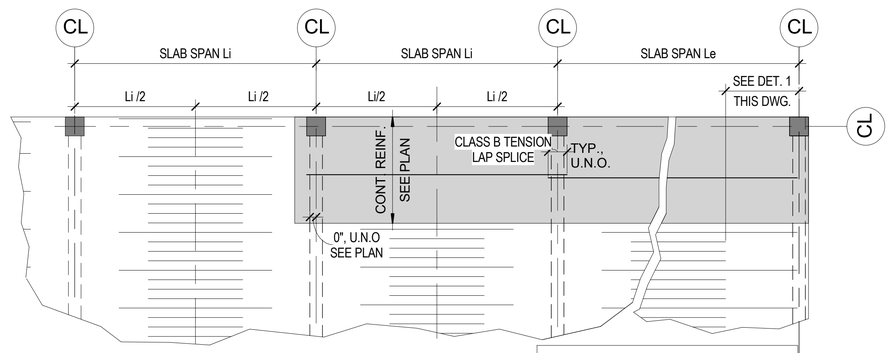
7 SD-13 OPENINGS AT P.T. ANCHORAGE
SCALE: N.T.S.



MAX. DIMENSION	REINFORCING
12" TO 18"	1 #5 EA. SIDE
18" TO 2'-6"	1 #5 T & B, EA. SIDE
2'-6" & LARGER	2 #5 T & B, EA. SIDE

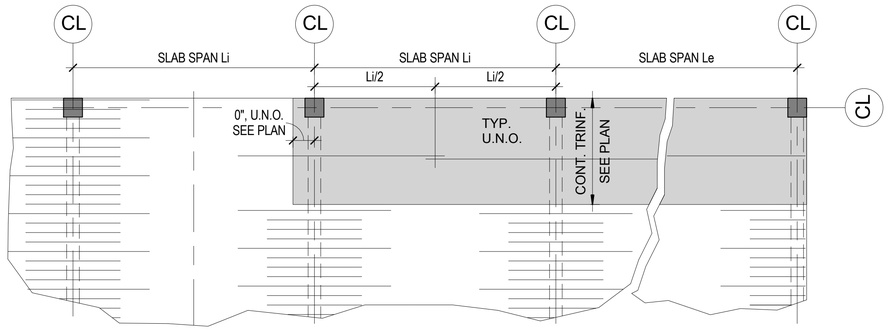
NOTES:
1. ALL OPENINGS LARGER THAN 12" SHALL BE TRIMMED AS SHOWN
2. THESE BARS ARE IN ADDITION TO REBAR SHOWN ON PLANS
3. THESE REQ'S. ARE MINIMUM UNLESS SHOWN OTHERWISE ELSEWHERE IN THESE DOCUMENTS

8 SD-13 TRIM BARS FOR OPENINGS AT SLAB EDGE
SCALE: N.T.S.



NOTE:
SHADED AREAS SHOWN ON PLANS IDENTIFY LOCATIONS REQUIRING CONTINUOUS REINFORCEMENT.

9 SD-13 TYP. SLAB BOTTOM BAR ARRANGEMENT PLAN VIEW
SCALE: 1/8" = 1'-0"



NOTE:
SHADED AREAS SHOWN ON PLANS IDENTIFY LOCATIONS REQUIRING CONTINUOUS REINFORCEMENT.

10 SD-13 TYP. SLAB TOP BAR ARRANGEMENT PLAN VIEW
SCALE: 1/8" = 1'-0"

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210-SD-13
TYPICAL POST-TENSIONING DETAILS

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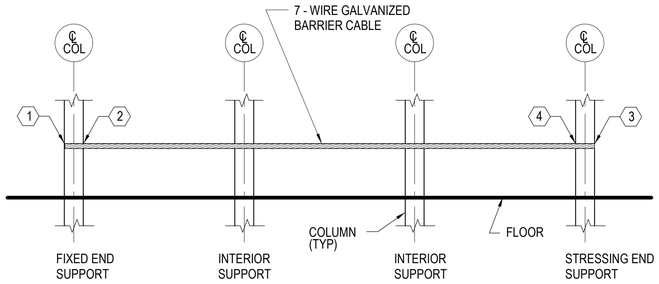


INSTALLATION NOTES:

1 INSTALL BARRIER CABLES ONLY AFTER ALL LEVELS OF DECK CONSTRUCTION IS COMPLETE.

2 SIZE, TYPE, SPACING & NUMBER OF BARRIER CABLES SHOWN HERE ARE FOR CONCEPT & REFERENCE ONLY. ALWAYS REFER TO ARCHITECTURAL DRAWINGS FOR PROJECT SPECIFIC REQUIREMENTS.

3 ALL BARRIER CABLES SHOWN HERE ARE PRE-FORMED, FIXED END & STRESSING END ANCHORS CAST IN THE COLUMNS/SUPPORTS. FOR POST-INSTALLED OR OTHER UNIQUE CONDTIONS OR INACCESSIBLE AREAS REQUIRING SPECIAL CONSIDERATIONS, SEEK ADVISE FROM BARRIER CABLES SPECIALTY CONTRACTOR OR POST-TENSIONING SYSTEM MANUFACTURER AND EOR.

4 AFTER INSTALLATION OF BARRIER CABLES IS COMPLETE:
- 4.1 APPLY A COAT OF COLD GALVANZING OVER BARRIER CABLES AT GRIPPER MARKS/LOCATIONS FOR CORROSION PROTECTION.
- 4.2 TRIM BARRIER CABLE TAILS AT FIELD SEATED FIXED END & STRESSING END LOCATIONS.
- 4.3 INSTALL & LOCK INTO ANCHORS, CORROSION INHIBITIVE (PT GREASE) PREFILLED CAPS OVER TRIMMED BARRIER CABLES
- 4.4 USING NON-SHRINK & NON-METALLIC 5000 PSI GROUT ANCHOR POCKETS TO MATCH THE SURROUNDING CONCRETE.

KEY NOTES:
STRESSING SEQUENCE

(1) SEAT BARRIER CABLE USING THREE (3) PIECE WEDGES AND HAND SEATING TOOL.

(2) STRESS CABLE TO 25,000 POUND FORCE. USE SLOTTED STEEL PLATE & REQUIRED GAUGE PRESSURE PROVIDED BY POST-TENSIONING SYSTEM MANUFACTURER TO DISTRIBUTE THE BEARING STRESS.

(3) INSERT THREE (3) PIECE WEDGES & STRESS BARRIER CABLE TO 5,000 POUNDS FORCE. REQUIRED GAUGE PRESSURE TO BE PROVIDED BY POST-TENSIOING SYSTEM MANUFACTURER AFTER CONSIDERING AN ESTIMATED SEATING LOSS OF 3/8".

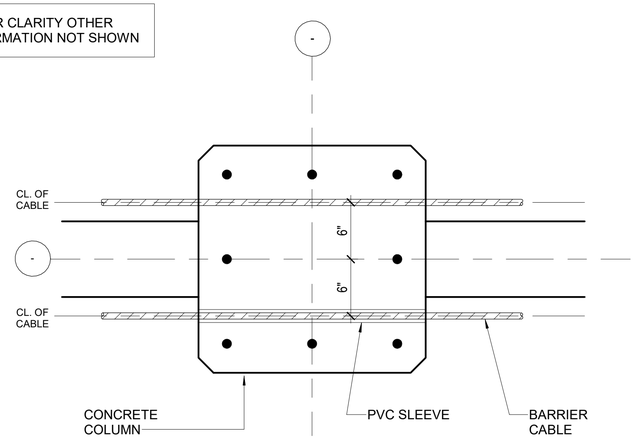
(4) STRESS CABLE TO 25,000 POUND FORCE. USE SLOTTED STEEL PLATE PROVIDED BY POST-TENSIONING SYSTEM MANUFACTURER TO DISTRIBUTE THE BEARING STRESS.

MANDATORY BARRIER CABLE INSPECTION "REQUIREMENTS"

THE BARRIER CABLE SYSTEM SHALL BE INSPECTED BT A PTI LEVEL-2 UNBONDED INSPECTOR PER PTI TECHNICAL NOTE-2D, "MANDATORY BARRIER CABLE INSPECTION "REQUIREMENTS", DATED DECEMBER 2015. REPORT SHALL BE SUBMITTED TO ARCHITECT AND ENGINEER OF RECORD.

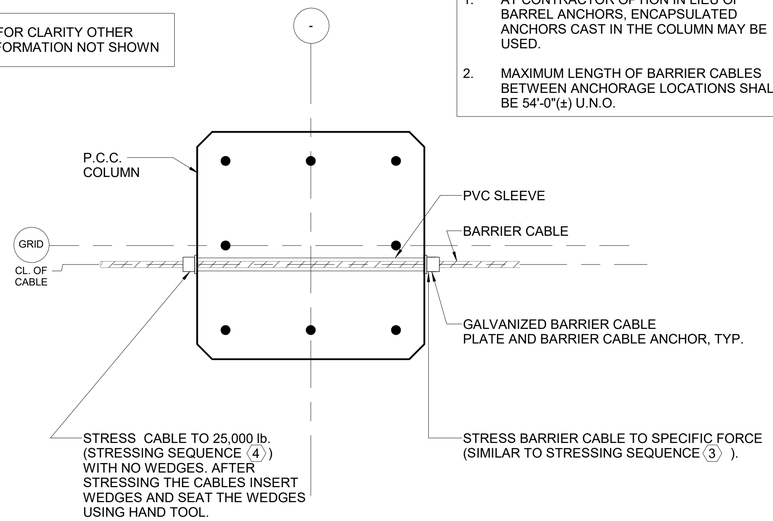
1 SD-16 TYPICAL BARRIER CABLES INSTALLATION PROCEDURE DIAGRAM
SCALE: N.T.S.

FOR CLARITY OTHER INFORMATION NOT SHOWN



2 SD-16 BARRIER CABLE AT INTERMEDIATE INTERIOR COLUMN
SCALE: N.T.S.

FOR CLARITY OTHER INFORMATION NOT SHOWN

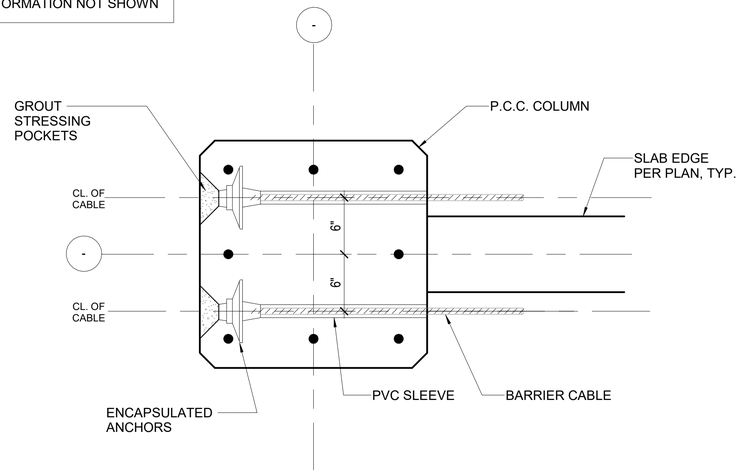


4 SD-16 BARRIER CABLE AT INTERMEDIATE COLUMN STRESSING DETAIL
SCALE: N.T.S.

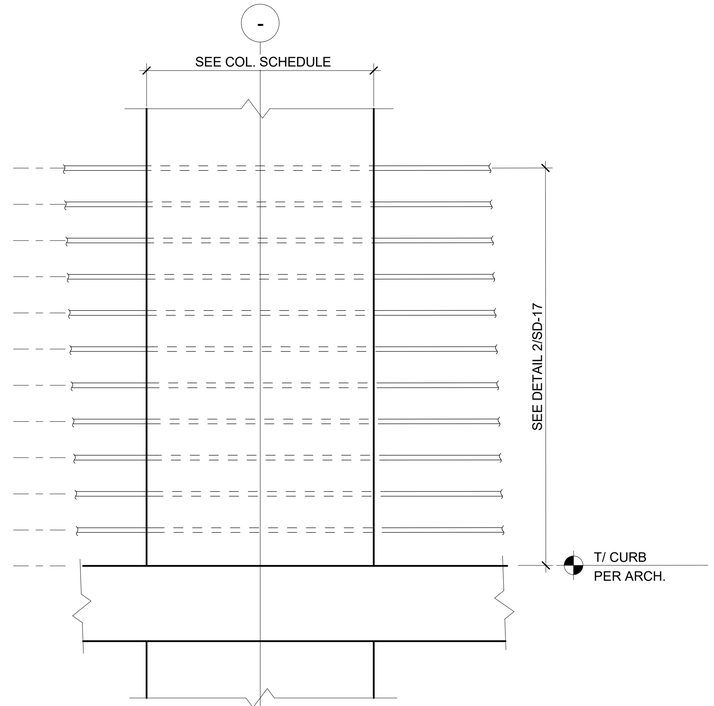
NOTE:

1. AT CONTRACTOR OPTION IN LIEU OF BARREL ANCHORS, ENCAPSULATED ANCHORS CAST IN THE COLUMN MAY BE USED.
2. MAXIMUM LENGTH OF BARRIER CABLES BETWEEN ANCHORAGE LOCATIONS SHALL BE 54'-0"(±) U.N.O.

FOR CLARITY OTHER INFORMATION NOT SHOWN



3 SD-16 BARRIER CABLE END ANCHORAGE TYPICAL INTERIOR COLUMN
SCALE: N.T.S.



5 SD-16 SECTION - ELEVATION BARRIER CABLE AT INTERMEDIATE COLUMN
SCALE: N.T.S.

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210-SD-16
POST - TENSIONING BARRIER CABLE DETAILS

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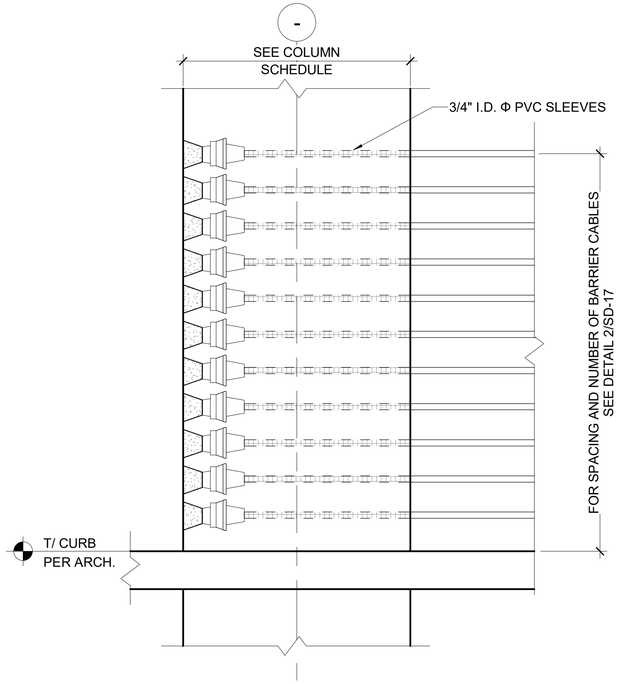
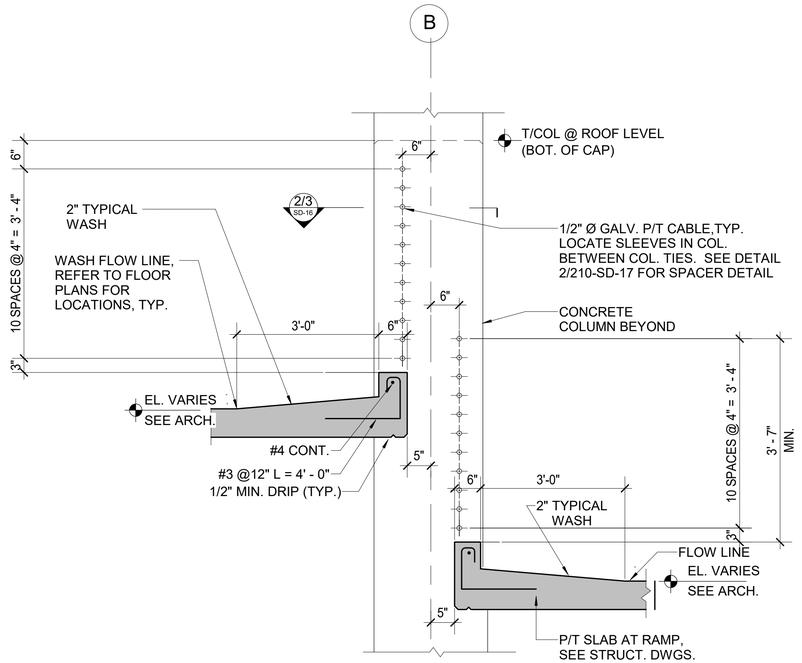
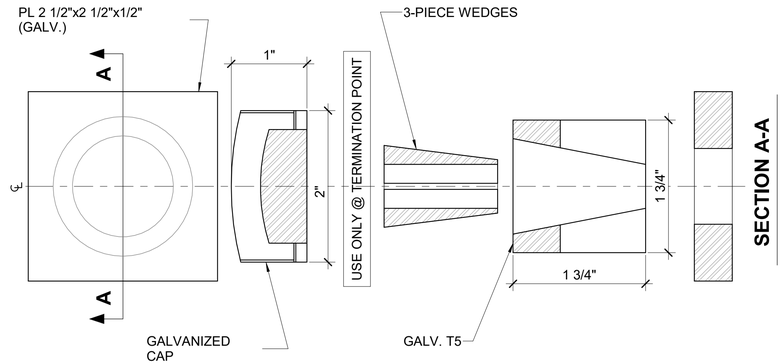


1 SD-17 SECTION - ELEVATION
SCALE: N.T.S.



2 SD-17 BARRIER CABLE SECTION AT SUPPORTED LEVELS
SCALE: N.T.S.



3 SD-17 BARREL ANCHOR DETAIL
SCALE: 12" = 1'-0"

2

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210-SD-17
POST - TENSIONING BARRIER CABLE DETAILS

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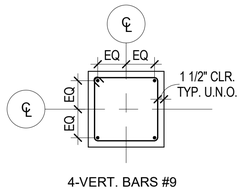
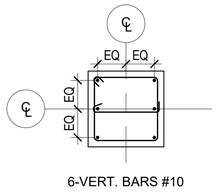


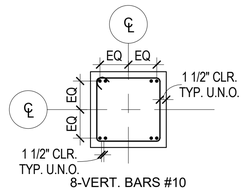
4-VERT. BARS #9

1 REBAR PATTERN C-1
SD-21 SCALE: NONE



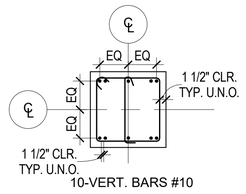
6-VERT. BARS #10

2 REBAR PATTERN C-2
SD-21 SCALE: NONE



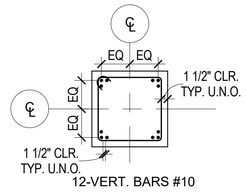
8-VERT. BARS #10

3 REBAR PATTERN C-3
SD-21 SCALE: NONE



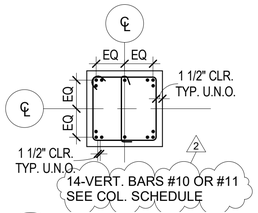
10-VERT. BARS #10

4 REBAR PATTERN C-4
SD-21 SCALE: NONE



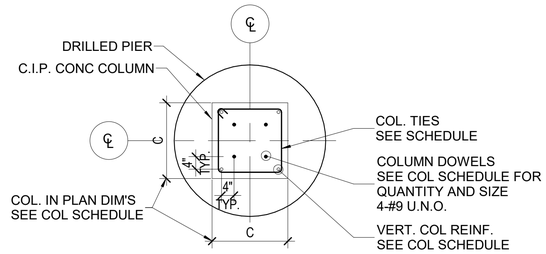
12-VERT. BARS #10

5 REBAR PATTERN C-5
SD-21 SCALE: NONE

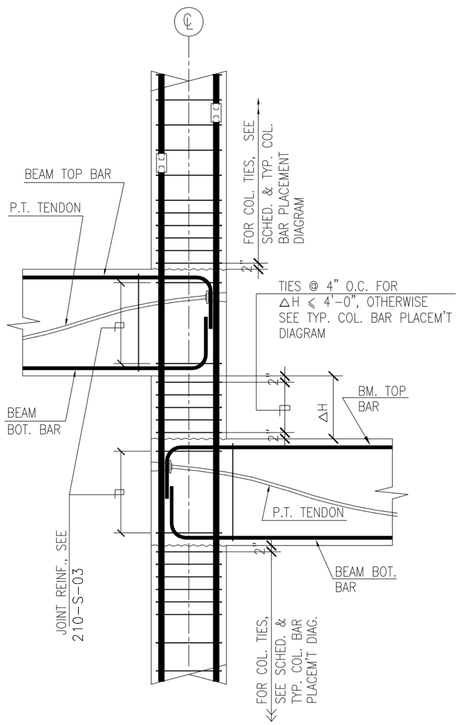


14-VERT. BARS #10 OR #11
SEE COL. SCHEDULE

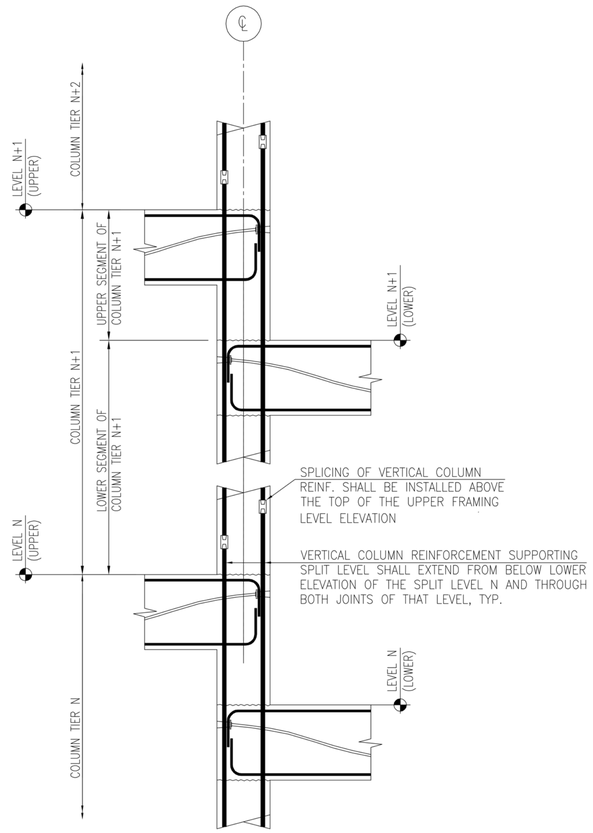
6 REBAR PATTERN C-6
SD-21 SCALE: NONE



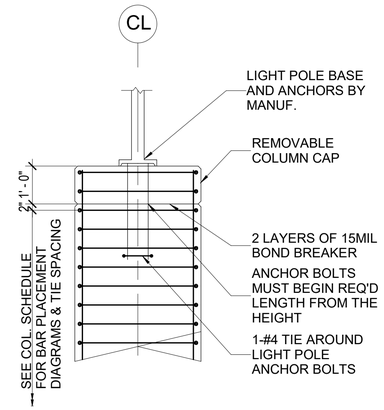
7 TYPICAL COLUMN DOWEL PLACEMENT IN DRILLED PIER
SD-21 SCALE: 1/2" = 1'-0"



8 TYP. INTERIOR BEAM-COLUMN JOINT DETAIL
SD-21 SCALE: 1 1/2" = 1'-0"
WITH BM-SLAB STRUCTURE AT DIFF. ELEVATIONS WITHOUT OVERLAP



9 TYP. INTERIOR COLUMN AT SPLIT LEVEL
SD-21 SCALE: 1 1/2" = 1'-0"
VERTICAL REBAR PLACEMENT DIAGRAM



10 COLUMN DETAIL AT LIGHT POLE BASE
SD-21 SCALE: NONE

COLUMN NOTE:

1. CONTRACTOR HAS THE OPTION OF LAP SPLICING COL. REINF. IN LIEU OF MACHANICAL COUPLER.
2. ADDED REINF. IN UPPER COLUMN SHALL EXTEND Ld BELOW TOP OF BEAM @ LEVEL BELOW. ADDED REINF IN LOWER COLUMN SHALL EXTEND Ld ABOVE TO TOP OF UPPER BEAM.
3. ALL BEAM COLUMN JOINTS SHALL BE ROUGHENED TO 1/4" AMPLITUDE.

Designed by: G. ABDALLAH
Drawn by: G. ABDALLAH
Checked by: G. ABDALLAH

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210-SD-21
CONCRETE COLUMN DETAILS

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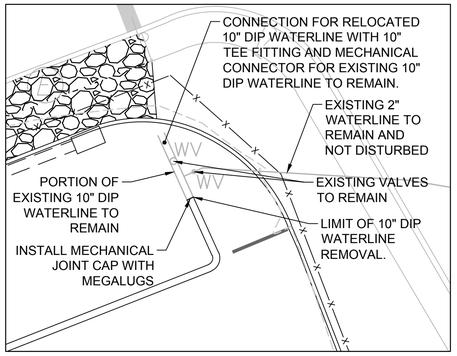
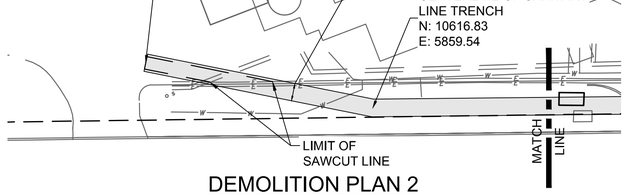
DEMOLITION NOTES:

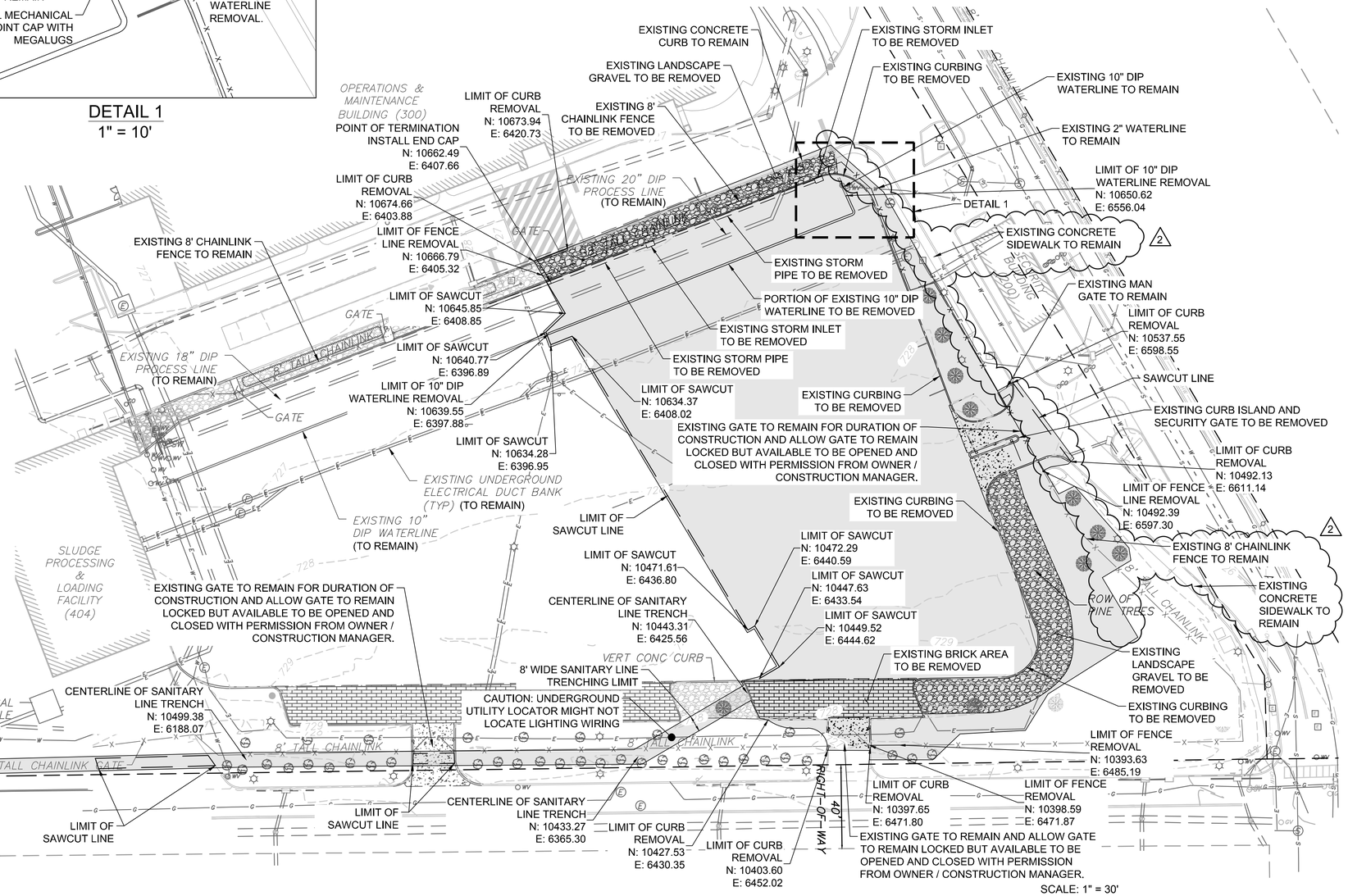
1. ALL DEMOLITION ACTIVITIES ARE TO BE PERFORMED IN STRICT ADHERENCE TO ALL FEDERAL, STATE, AND LOCAL REGULATIONS.
2. CONDUCT DEMOLITION SERVICES IN SUCH A MANNER TO INSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS AND OTHER ADJACENT FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS OR OTHER OCCUPIED FACILITIES WITHOUT PRIOR WRITTEN PERMISSION OF OWNER AND ANY APPLICABLE GOVERNMENTAL AUTHORITIES. PROVIDE ALTERNATE ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC WAYS, IF REQUIRED BY APPLICABLE GOVERNMENTAL REGULATIONS.
3. USE WATERING, TEMPORARY ENCLOSURES AND OTHER SUITABLE METHODS, AS NECESSARY TO LIMIT THE AMOUNT OF DUST AND DIRT RISING AND SCATTERING IN THE AIR. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. RETURN ALL ADJACENT AREAS TO THE CONDITIONS EXISTING PRIOR TO THE START OF WORK.
4. ACCOMPLISH AND PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE UNAUTHORIZED ENTRY OF PERSONS AT ANY TIME.
5. COMPLETELY FILL BELOW GRADE AREAS AND VOIDS RESULTING FROM THE DEMOLITION OF STRUCTURES AND FOUNDATIONS WITH SOIL MATERIALS CONSISTING OF STONE, GRAVEL AND SAND, FREE FROM DEBRIS, TRASH, FROZEN MATERIALS, ROOTS AND OTHER ORGANIC MATTER. STONES USED WILL NOT BE LARGER THAN 6 INCHES IN DIMENSION. MATERIAL FROM DEMOLITION MAY NOT BE USED AS FILL. PRIOR TO PLACEMENT OF FILL MATERIALS, UNDERTAKE ALL NECESSARY ACTION IN ORDER TO INSURE THAT AREAS TO BE FILLED ARE FREE OF STANDING WATER, FROST, FROZEN MATERIAL, TRASH, DEBRIS. PLACE FILL MATERIALS IN HORIZONTAL LAYERS NOT EXCEEDING 6 INCHES IN LOOSE DEPTH AND COMPACT EACH LAYER AT PLACEMENT TO 95% OPTIMUM DENSITY. GRADE THE SURFACE TO MEET ADJACENT CONTOURS AND TO PROVIDE SURFACE DRAINAGE.
6. REMOVE FROM THE DESIGNATED SITE, AT THE EARLIEST POSSIBLE TIME, ALL DEBRIS, RUBBISH, SALVAGEABLE ITEMS, HAZARDOUS AND COMBUSTIBLE SERVICES. REMOVED MATERIALS MAY NOT BE STORED, SOLD OR BURNED ON THE SITE. REMOVAL OF HAZARDOUS AND COMBUSTIBLE MATERIALS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE PROCEDURES AS AUTHORIZED BY THE FIRE DEPARTMENT OR OTHER APPROPRIATE REGULATORY AGENCIES AND AUTHORITIES.
7. BEFORE THE COMMENCEMENT OF THE DESIGNATED DEMOLITION, MARK FOR POSITION ALL UTILITIES AND PROTECT ALL ACTIVE LINES. CLEARLY IDENTIFY BEFORE THE COMMENCEMENT OF DEMOLITION SERVICES THE REQUIRED INTERRUPTION OF ACTIVE SYSTEMS THAT MAY AFFECT OTHER PARTIES, AND NOTIFY ALL APPLICABLE UTILITY COMPANIES TO INSURE THE CONTINUATION OF SERVICE.
8. THIS DEMOLITION PLAN IS INTENDED TO IDENTIFY THOSE EXISTING CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE DIRECTION OTHER THAN THAT ALL PROCEDURES ARE TO BE IN ACCORDANCE WITH STATE, FEDERAL, LOCAL AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS NECESSARY.
9. REFER TO 210-L-100 LANDSCAPE DEMOLITION PLAN AND 000-E-01 ELECTRICAL SITE DEMOLITION PLAN FOR RESPECTIVE DEMOLITION INFORMATION.



DETAIL 1
1" = 10'



DEMOLITION PLAN 2



DEMOLITION PLAN 1

Designed by:	REVISION			
J TAI	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	2	3/11/21	ADDENDUM 2	
J TAI				
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J THORNTON				

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JUSTIN RYAN THORNTON
No. PE083279

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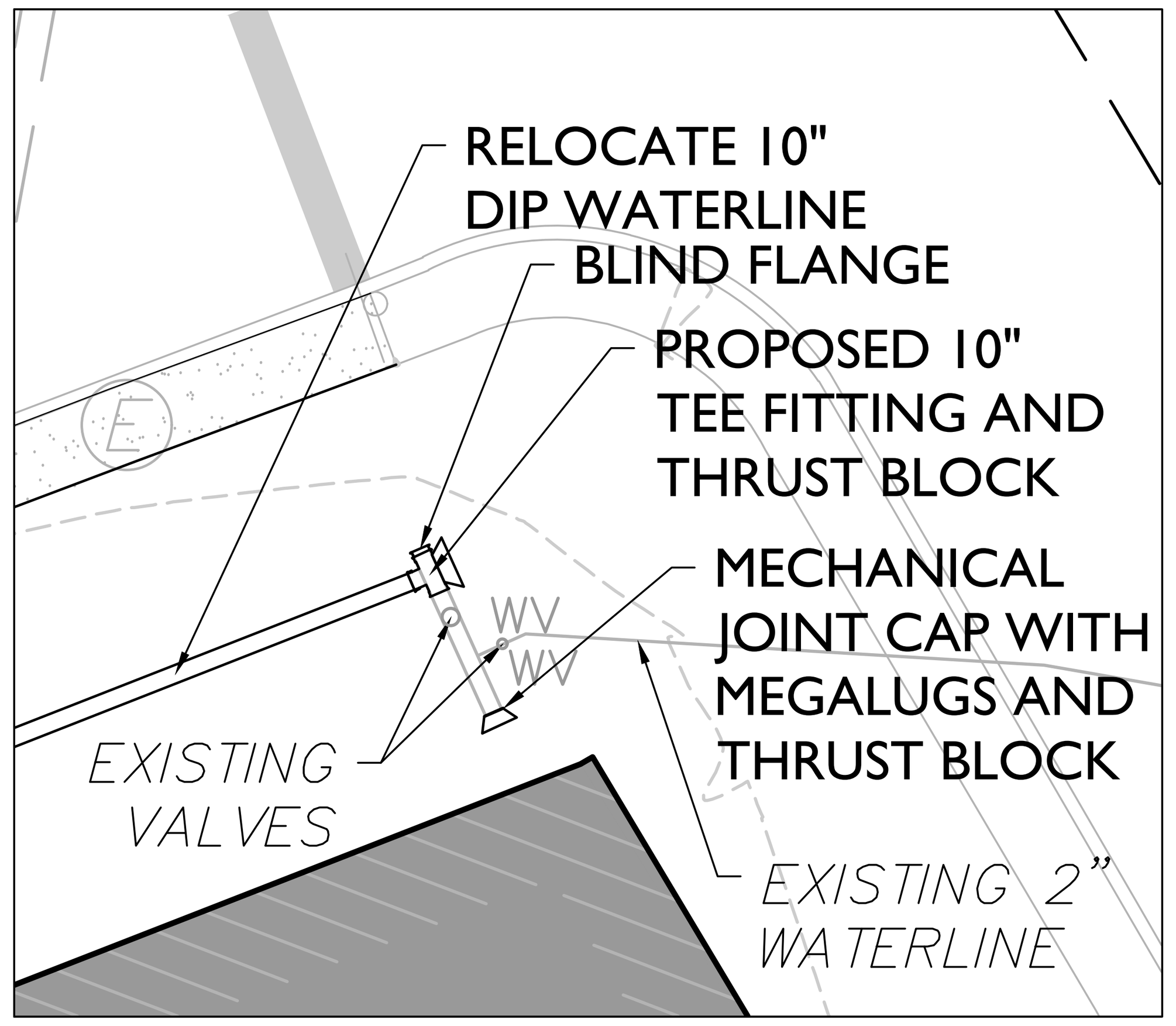
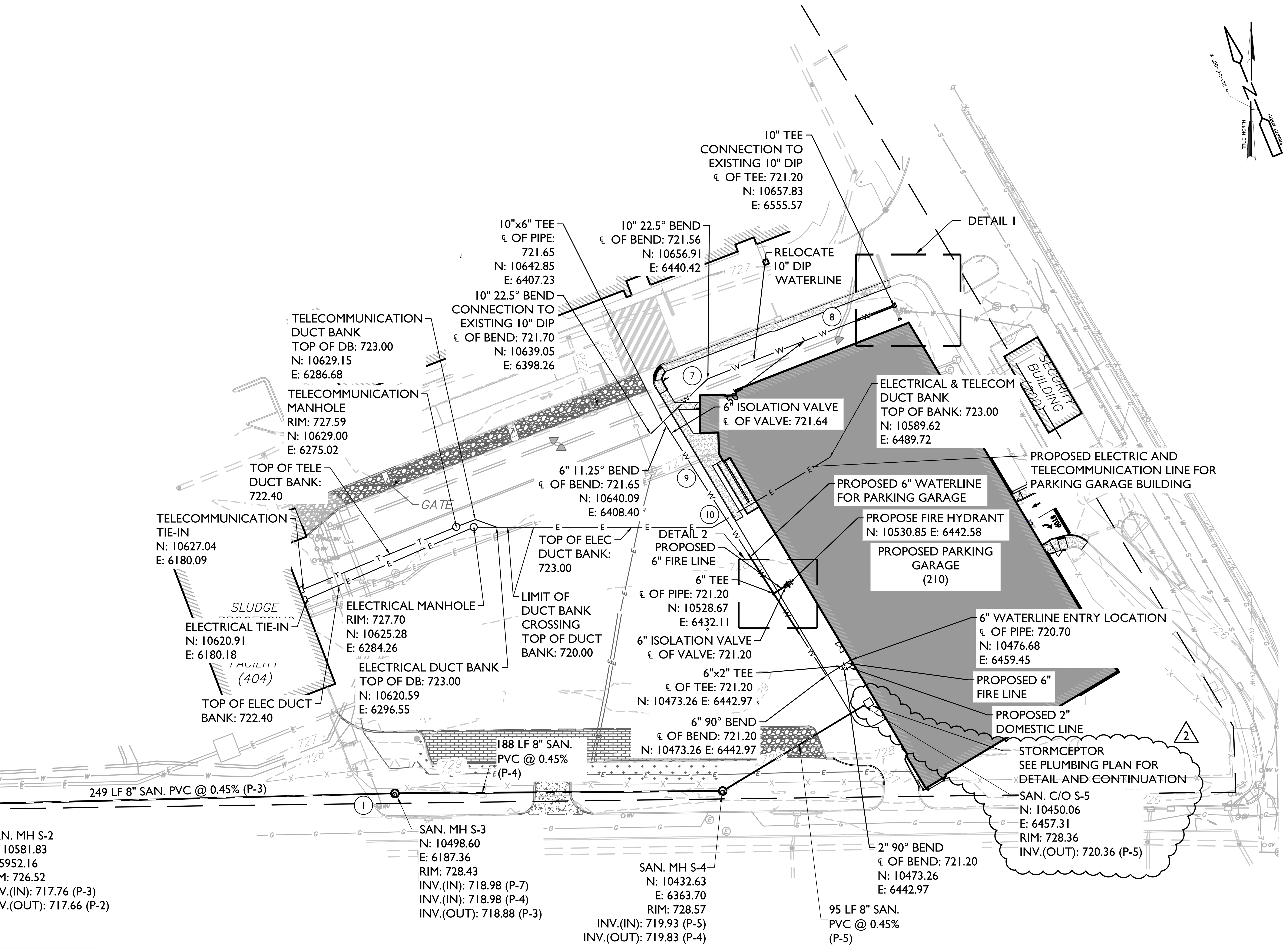
ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-C-11
PHASE I DEMOLITION PLAN

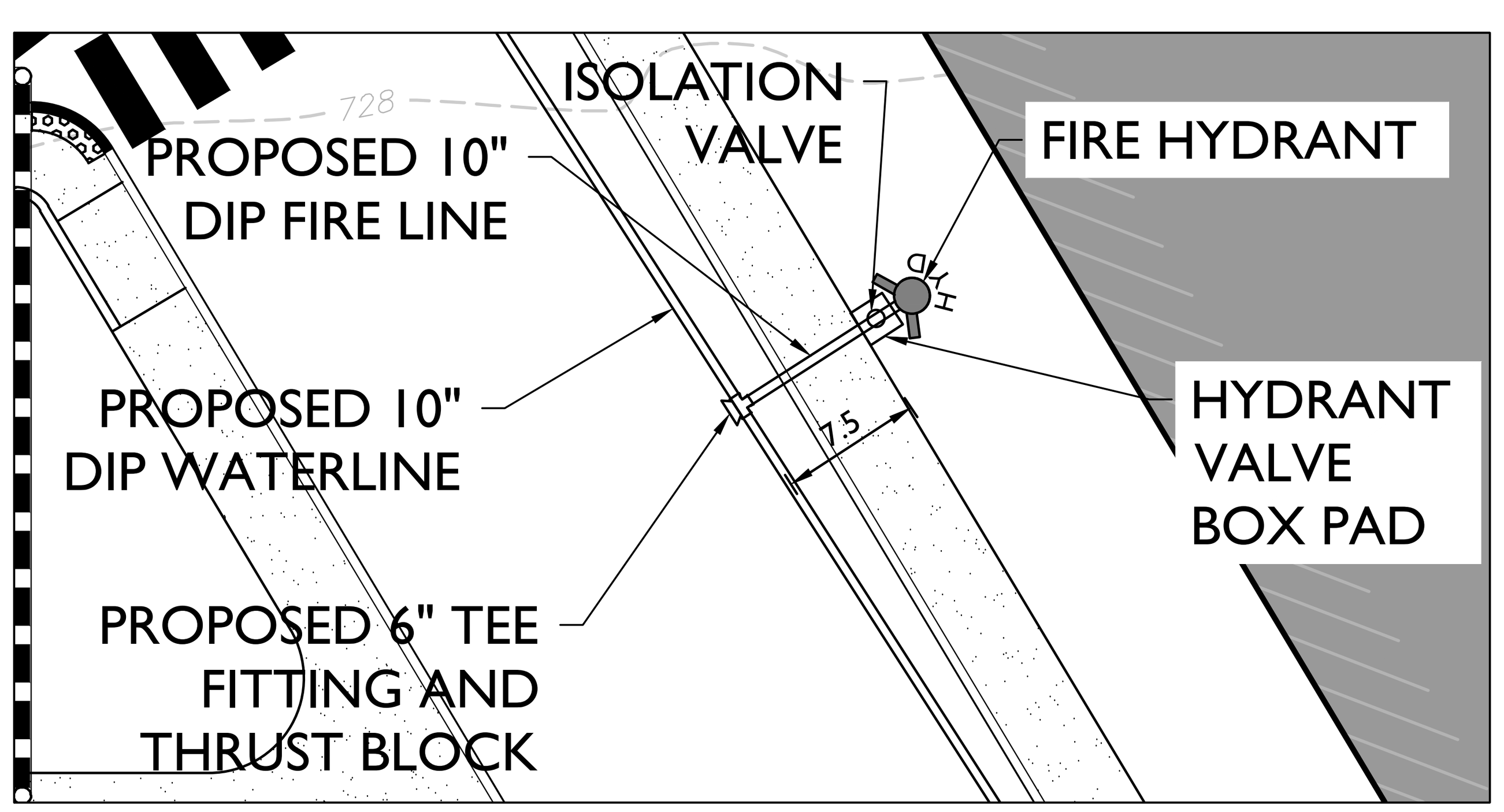
Contract:	1735
CAD File Name:	210C11.DWG
Date:	01 / 13 / 2021
Sheet:	10 of 158



DETAIL 1
1" = 10'



UTILITY PLAN



DETAIL 2
1" = 10'

SANITARY CROSSING TABLE

PROPOSED SANITARY PIPE			EXISTING UTILITY CROSSING			SEPARATION
CROSSING #	TOP OF PIPE	BOTTOM OF PIPE	UTILITY TYPE	TOP OF PIPE	BOTTOM OF PIPE	(FT)
1	719.55	718.82	12" CDI WATER	721.40	720.28	0.73
2	717.74	717.01	6" CIP WATER	722.96	722.42	4.68
3	717.53	716.80	18" CIP EFW	721.00	719.38	1.85
4	717.49	716.76	ELECTRIC	723.00	722.00	4.51
5	717.49	716.76	6" PVC SCD	713.42	712.86	3.34
6	718.26	717.53	CON. VAULT	723.00	-	-

WATER LINE CROSSING TABLE

PROPOSED WATER PIPE			EXISTING UTILITY CROSSING			SEPARATION
CROSSING #	TOP OF PIPE	BOTTOM OF PIPE	UTILITY TYPE	TOP OF PIPE	BOTTOM OF PIPE	(FT)
7	722.05	721.13	18" CIP EFW	719.06	717.44	2.07
8	721.76	720.84	18" CIP EFW	719.31	717.69	1.53
9	721.84	721.29	ELECTRIC	723.50	722.50	0.66
10	721.70	721.15	PROPOSED ELECTRIC	720.00	719.00	1.15

UTILITY NOTES

1. EXISTING UTILITY INFORMATION SHOWN HEREON HAS BEEN COLLECTED FROM VARIOUS SOURCES AND CANNOT BE GUARANTEED AS TO ACCURACY OR COMPLETENESS. WHERE EXISTING UTILITIES ARE TO BE CROSSED BY PROPOSED CONSTRUCTION, TEST PITS SHALL BE DUG BY THE CONTRACTOR PRIOR TO CONSTRUCTION TO ASCERTAIN EXISTING INVERTS, MATERIALS AND SIZES, TEST PIT INFORMATION SHALL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION TO PERMIT ADJUSTMENT AS REQUIRED TO AVOID CONFLICTS.
2. THE EXISTING INLETS AND STORM PIPES ARE TO BE CLEANED AND INSPECTED AS NECESSARY, IF ANY STRUCTURE IS FOUND TO BE DAMAGED, IT SHALL BE REPLACED ACCORDINGLY AND THE ENGINEER IS TO BE NOTIFIED.
3. CONTRACTOR IS TO COORDINATE WITH THE UTILITY COMPANIES AS TO THE LOCATION AND SCHEDULING OF SERVICE CONNECTIONS TO THE UTILITY SUPPLY FACILITIES.
4. THE CONTRACTOR SHALL ADJUST ALL UTILITY FRAMES, COVERS, MANHOLES, VALVE BOXES AND OTHER UTILITY FACILITY STRUCTURES TO BE FLUSH WITH FINISH SURFACE GRADE ELEVATIONS.
5. ALL SANITARY LINES TO BE SDR-26 PVC.
6. ALL HDPE PIPE SHALL BE ADS-N-12 SMOOTH INTERIOR WITH GASKETED JOINT.
7. ALL TRENCH EXCAVATION OVER 5 FT IN DEPTH, HYDRAULIC SHORING SHALL BE UTILIZED.

SCALE: 1" = 40'

40' 0' 20' 40' 80' 160'

Designed by: J TAI	REV No.	DATE	DESCRIPTION	APPV
Drawn by: J TAI	2	3/11/21	ADDENDUM 2	
Checked by: J THORNTON				

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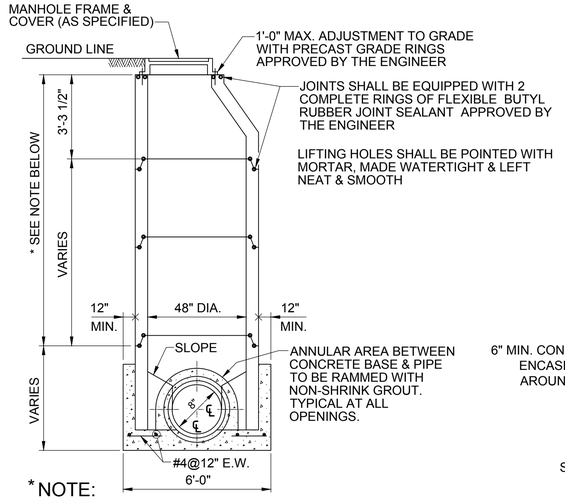
ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

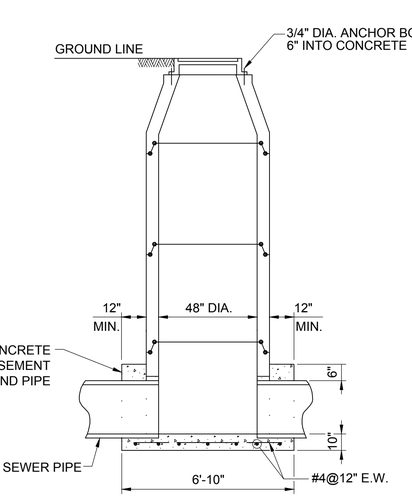
210-C-14
PHASE I UTILITY PLAN

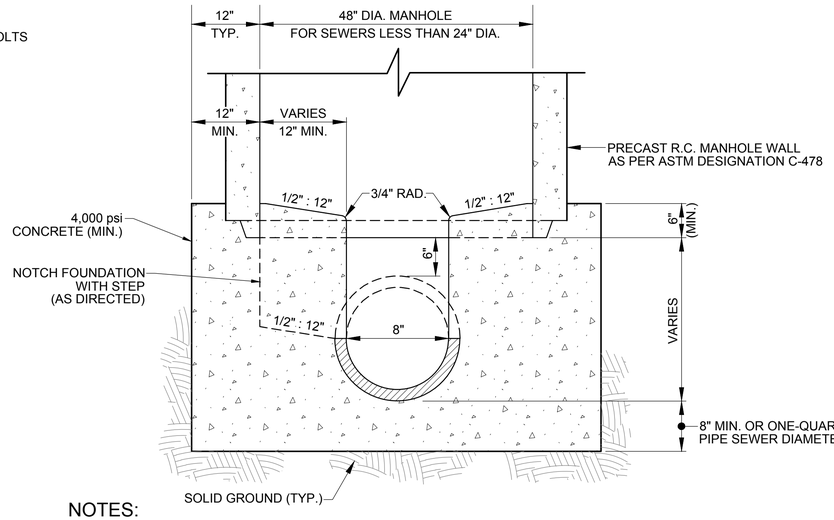
Contract: 1735
CAD File Name: 210C14.DWG
Date: 01 / 13 / 2021



*NOTE:

IF THIS DIMENSION IS LESS THAN 3'-3" USE A PRECAST CONCRETE SLAB TOP AS SHOWN BELOW





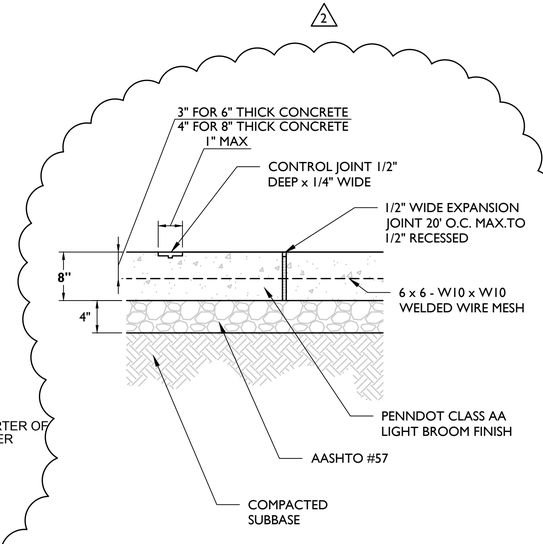
NOTES:

1. REINFORCED CEMENT CONCRETE BOX MANHOLE MAY BE ORDERED FOR MULTIPLE CONNECTIONS OR SPECIAL CONDITIONS (AS DIRECTED).
2. ALL PLASTIC PIPE SEWERS OR CONNECTIONS MUST HAVE APPROVED WATERSTOPS OR FLEXIBLE BOOT-TYPE CONNECTIONS (AS DIRECTED).

MANHOLE INVERT DETAIL

(N . T . S .)

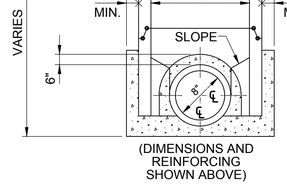
2
18



CONCRETE PAVEMENT DETAIL

(N . T . S .)

5
18



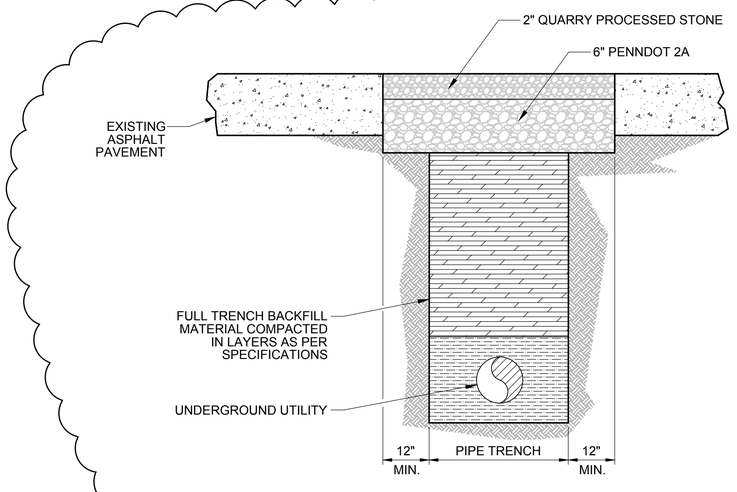
CONCRETE MANHOLE FOR SEWERS 8" DIA. WITH CAST-IN-PLACE BASE SECTION

(N . T . S .)

1
18

NOTES:

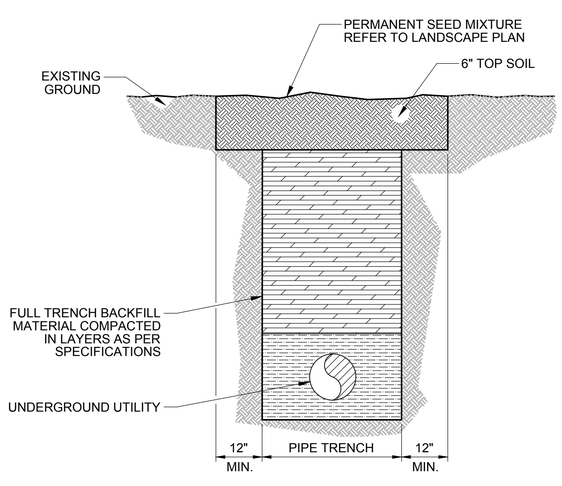
1. PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ASTM-C-748, LATEST REVISION.
2. FULL PIPE DEPTH CHANNEL THROUGH MANHOLE. SLOPE BENCH AREA AT 1/2" INCH PER FT.
3. ALL EXTERIOR SURFACES OF PRECAST SECTIONS SHALL HAVE AN ENGINEER-APPROVED, MANUFACTURER-APPLIED, WATER-PROOF COATING.
4. FOR PVC PIPE OR SIMILAR SMOOTH-WALLED PIPE, PROVIDE ENGINEER-APPROVED WATERSTOP OR SLEEVE, TYPICAL AT ALL PIPE OPENINGS.
5. ALL CONCRETE SHALL BE 4000 psi (MIN.) AIR ENTRAINED CONCRETE.



UNDERGROUND UTILITY TRENCH TEMPORARY GRAVEL PAVEMENT REPLACEMENT

(N . T . S .)

3
18



UNDERGROUND UTILITY LANDSCAPE/ LAWN REPLACEMENT

(N . T . S .)

4
18

Designed by:	REVISION			
J TAI	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	2	3/11/21	ADDENDUM 2	
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J THORNTON				

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WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-C-32
PHASE I CONSTRUCTION DETAILS

Contract:	1735
CAD File Name:	210C32.DWG
Date:	01 / 13 / 2021
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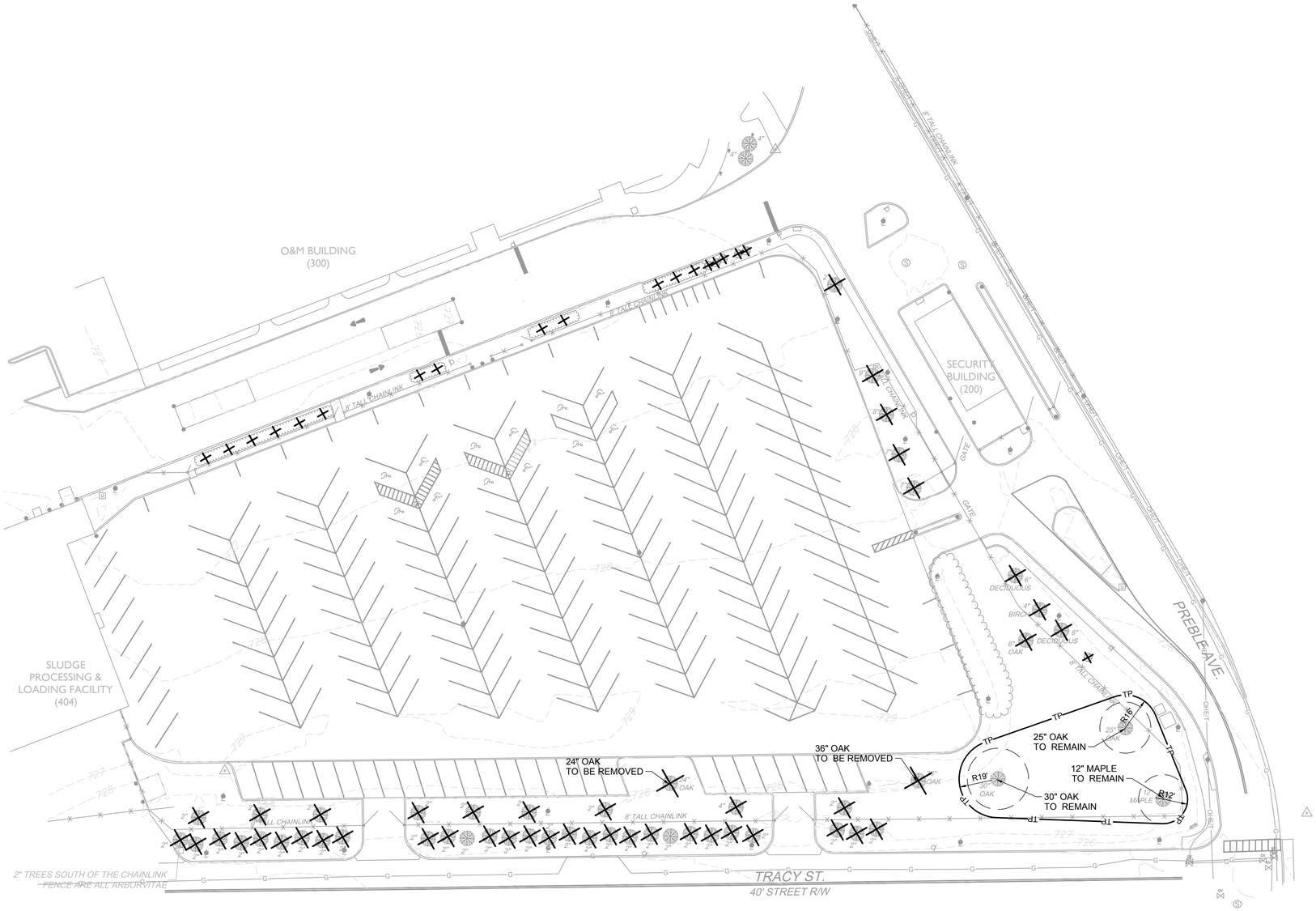

LANDSCAPE DEMOLITION NOTES

1. PRIOR TO DEMOLITION AND EXCAVATION VERIFY LOCATIONS AND ELEVATIONS OF EXISTING CONDITIONS INCLUDING, BUT NOT LIMITED TO: UTILITIES, UTILITY BOXES, POLES, FIRE HYDRANTS, VAULTS AND SIMILAR STRUCTURES. NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY OF ANY DISCREPANCIES. FAILURE TO NOTIFY OWNER'S REPRESENTATIVE OF DISCREPANCIES BETWEEN PLANS AND ACTUAL SITE CONDITIONS CONSTITUTES CONTRACTORS ACCEPTANCE OF EXISTING CONDITIONS.
2. CONTRACTOR IS REQUIRED BY PA STATE LAW TO NOTIFY ALL UTILITY COMPANIES NOT LESS THAN THREE (3) WORKING DAYS PRIOR TO BEGINNING EXCAVATION OR DEMOLITION.
3. DEMOLISHED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE IMMEDIATELY AND DISPOSED OF LEGALLY.
4. THE DEMOLITION INFORMATION PROVIDED MAY NOT REPRESENT ALL DEMOLITION NECESSARY FOR CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE FULL EXTENT OF THE PROJECT DEMOLITION, BOTH ABOVE AND BELOW GROUND.
5. CONTRACTOR TO OBTAIN NECESSARY PERMITS FOR DEMOLITION AND CONSTRUCTION.
6. REMOVE VEGETATION WITHIN THE AREA TO BE DEMOLISHED UNLESS OTHERWISE NOTED. DO NOT DISTURB OR REMOVE EXISTING TREES/VEGETATION OUTSIDE THE LIMIT OF WORK DESIGNATED TO BE PROTECTED.
7. PROTECT PAVEMENT AND CURBS UNLESS OTHERWISE NOTED ON DEMOLITION PLAN. ANY PAVEMENTS OR CURBS INADVERTENTLY DAMAGED OR DISTURBED SHALL BE REPLACED IN KIND.
8. PROTECT UTILITIES AND APPURTENENCES (ABOVE AND BELOW GROUND) UNLESS OTHERWISE NOTED. CONTRACTOR TO BE RESPONSIBLE FOR COORDINATION AND RELOCATION OF EXISTING UTILITIES THAT NEED TO BE RELOCATED DUE TO PROPOSED CONSTRUCTION.
9. CONTRACTOR IS RESPONSIBLE FOR KEEPING PUBLIC AND PRIVATE ROADS CLEAR OF MUD, DIRT AND DEBRIS ORIGINATED BY CONSTRUCTION OPERATIONS. THESE ROADS SHALL BE CLEANED DAILY BY THE CONTRACTOR, IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.
10. RESTORE TO GRADE, COMPACT AND SEED ALL DEMOLISHED AREAS IN ACCORDANCE WITH SPECIFICATIONS.

TREE PROTECTION

CITY OF PITTSBURGH FORESTY DIVISION
TREE PROTECTION ZONE (TPZ)

TREE PROTECTION SHALL BE IN PLACE PRIOR TO ANY WORK DONE ON SITE, INCLUDING DEMOLITION.

IT IS THE RESPONSIBILITY OF THE CONTRACT TO PERFORM A SITE TREE INVENTORY BY A CERTIFIED ARBORIST PRIOR TO ANY WORK. SUCH INVENTORY SHALL RECORD LOCATION, SIZE, AND HEALTH OF EACH TREE. THIS INCLUDES ALL TREES, WHETHER TO BE REMOVED OR PRESERVED. SUCH INVENTORY SHALL ALSO RECORD PROPOSED TREE REMOVALS AND PROPOSED TREE PRUNING. CONTRACTOR TO SUBMIT THE SITE INVENTORY TO THE CITY FOR APPROVAL PRIOR TO ANY WORK.

ALL TREES TO BE PRESERVED SHALL BE PROTECTED (TREE PROTECTION ZONE), ESPECIALLY WITHIN THE LIMIT OF DISTURBANCE (LOD) AND 15' FROM THE LOD (EVEN IF THEY ARE ON ADJACENT PROPERTIES).

CONTRACTOR SHALL PROVIDE ALL CONTRACTORS AND SUB-CONTRACTORS ON SITE WITH A COPY OF TREE PROTECTION ZONE REQUIREMENTS.

REFER TO TREE PROTECTION ZONE DETAIL AND TREE PROTECTION ZONE SIGN REQUIREMENTS ON DETAIL SHEETS.

EXISTING TREE SIZE / SPECIES	PROTECT	DEMOLITION
30" OAK	X	
36" OAK		X
12" MAPLE	X	
24" OAK		X
25" OAK	X	

LANDSCAPE LEGEND

——TP——	TREE PROTECTION
◌	APPROXIMATE TREE CANOPY TO BE PROTECTED
✕	TREE/SHRUB TO BE REMOVED

SCALE: 1" = 30'
30' 0' 15' 30' 60' 120'

FILE: C:\Users\ben\mooredesignassociates.com\mdaprojects - Documents\Alcosan Lab\CAD\Garage Plans\210L100.dwg DATE: 3/4/2021 10:24:03 AM

Designed by:
M. Gelzhiser
Drawn by:
B. Bleicher
Checked by:
S. Moore

REVISION

REV No.	DATE	DESCRIPTION	APPV
1	2/19/21	ADDENDUM 1	
2	3/11/21	ADDENDUM 2	

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SARA W. MOORE

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210-L-100
LANDSCAPE DEMOLITION PLAN

Contract:
1735
CAD File Name:
210L100.DWG
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02/26/2021
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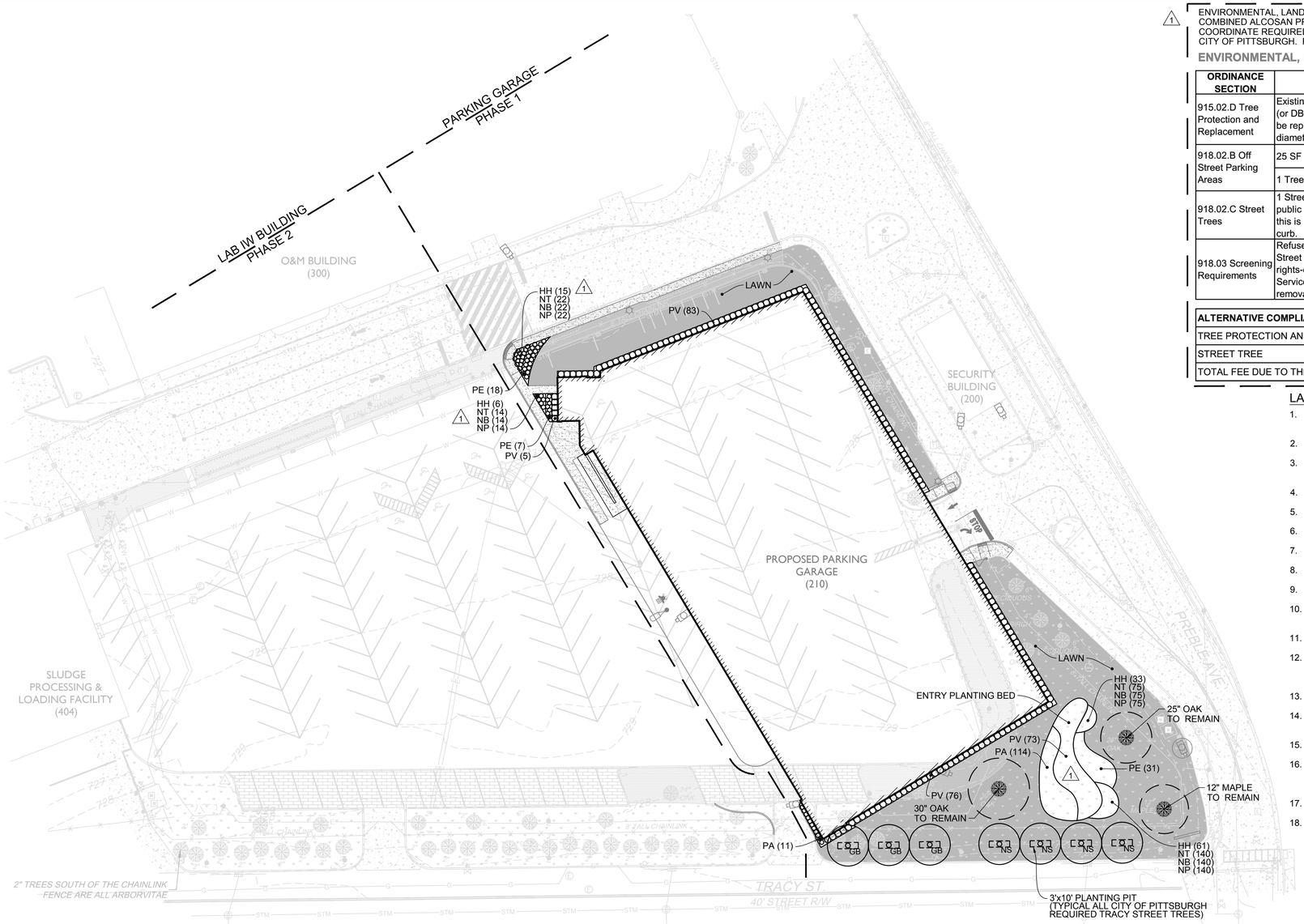

LANDSCAPE LEGEND

EXISTING TREE TO REMAIN

PROPOSED TREE

LAWN

SCALE: 1" = 30'

30' 0' 15' 30' 60' 120'

1 ENVIRONMENTAL, LANDSCAPING AND SCREENING ZONING ORDINANCE REQUIREMENTS ARE A REQUIREMENT OF THE CITY OF PITTSBURGH APPROVAL FOR THE COMBINED ALCOSAN PROJECTS: THE PARKING GARAGE AND THE ENVIRONMENTAL COMPLIANCE FACILITY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE REQUIRED SPECIAL INSTRUCTIONS FOR LANDSCAPING, INSTALLATION OF PLANTS AND PAYMENT IN LIEU OF INSTALLATION FEE DUE TO THE TREASURER CITY OF PITTSBURGH. FEE DUE TO THE CITY OF PITTSBURGH TO BE PAID BY ALCOSAN.

ENVIRONMENTAL, LANDSCAPING AND SCREENING ZONING ORDINANCE REQUIREMENTS

ORDINANCE SECTION	REQUIREMENT	BASIS OF CALCULATIO	REQUIRED	PROPOSAL TO MEET REQUIREMENTS
915.02.D Tree Protection and Replacement	Existing Trees with a diameter of 12" measured 4' above grade (or DBH) removed during site preparation or development shall be replaced, at a minimum, equal to the combined total diameter of removed trees.	24" oak and a 36" oak	New Trees with a total 60" Caliper	(6 Canopy Trees at 2.5" Caliper = 15" Caliper) + (4 Ornamental Trees at 2" Caliper = 8" of Caliper) = 23" Caliper
918.02.B Off Street Parking Areas	25 SF of landscaping for each parking space.	28 surface spaces	700 SF	5,000 SF+ of landscaping is provided adjacent to the parking areas.
	1 Tree with a 2" Caliper / 5 Parking Spaces.	28 surface spaces	6 Trees	6 Canopy Trees at 2.5" Caliper = 15" Caliper
918.02.C Street Trees	1 Street Tree with a 2" Caliper / 30 LF of property adjoining a public street planted between the sidewalk and the curb. If this is not possible, Street Trees shall be installed within 20' of curb.	508 LF of frontage on Tracy Street	17 Trees	11 CanopyTrees at 2.5" Caliper = 27.5" of Caliper
918.03 Screening Requirements	Refuse, Storage, Open Structures, Service Yards, and Off Street Parking shall be screened from adjacent property and rights-of-way with a visual barrier. Refuse, Storage and Service Yards that face a residential zone must have a removable screen.	Visual screen	Visual Screen	Visual Screening of the dumpster area and off-street parking is provided by evergreen shrubs 42" height at installation.

ALTERNATIVE COMPLIANCE	REQUIRED	PROPOSED	PAYMENT IN LIEU OF
TREE PROTECTION AND REPLACEMENT	60" Caliper	37" Caliper	18.5 Trees x $600 = $11,100
STREET TREE	17 Trees	11 Trees	6 Trees x $600 = $3,600
TOTAL FEE DUE TO THE TREASURER CITY OF PITTSBURGH			$14,700

LANDSCAPE NOTES

1. ALL PLANT MATERIAL SHALL BE OF NURSERY STOCK QUALITY AS DEFINED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION AND GUARANTEED PER THE SPECIFICATIONS.
2. PROVIDE 6" MIN. TOPSOIL FOR ALL PLANTING AND SEEDED AREAS.
3. PLANTING MIXTURE BACKFILL AT BUILDING: REMOVE SOIL TO A MINIMUM DEPTH OF 12 INCHES BETWEEN THE BUILDING WALL AND SIDEWALK WHERE PLANTING AND LAWN IS TO BE INSTALLED. BACKFILL THIS AREA TO THE ENTIRE DEPTH WITH PLANTING MIXTURE.
4. ALL DISTURBED AREAS SHALL BE SEEDED AND PLANTED WITHIN 30 DAYS OF CONSTRUCTION COMPLETION.
5. FINISHED GRADE OF TOPSOIL SHALL BE ½ TO ¾ INCH BELOW TOP OF WALKS AND CURBS TO PROVIDE POSITIVE DRAINAGE OFF OF WALKS.
6. ALL NON-BIODEGRADABLE ROOT WRAPPING TO BE REMOVED COMPLETELY BEFORE PLANTING.
7. ALL DISTURBED AREAS TO BE GRADED SMOOTH AND RESTORED TOPSOIL AND LAWN SEEDING UNLESS NOTED WITH PLANTING BEDS.
8. REFER TO CIVIL PLANS FOR TEMPORARY EROSION CONTROL.
9. PROVIDE 3" DOUBLE SHREDDED NATURAL HARDWOOD MULCH FOR ALL PLANTING BEDS.
10. UNDERGROUND UTILITIES HAVE BEEN SHOWN ON THESE PLANS FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO USE CARE AND NOT DISRUPT ANY EXISTING UTILITY, ABOVE OR BELOW GROUND.
11. PROVIDE PLANTING MIXTURE 3:1 RATIO OF TOPSOIL / PEAT HUMUS IN ALL NEW PLANTING BEDS AND PLANTING PITS.
12. PROVIDE PROPER DRAINAGE AND INFILTRATION RATES TO ENSURE VIGOROUS PLANT HEALTH IN PLANTING BEDS. REMOVE FROM THE SITE ALL SOIL THAT DOES NOT PROVIDE ADEQUATE DRAINAGE. RESTORE INFILTRATION CAPACITY OF THE SOIL BY SPADING TO A DEPTH OF 16" DEPTH FOR DISTURBED AREAS.
13. PLACE THE ROOT BALLS OF THE PLANTS IN THE HOLE SO IT IS NO DEEPER THAN IT ORIGINALLY GREW IN THE NURSERY.
14. SHOULD DISCREPANCY ARISE BETWEEN THE LANDSCAPE PLAN AND PLANT SCHEDULE, THE PLAN SHALL GOVERN AS TO THE QUANTITY OF PLANT MATERIAL.
15. EDGE ALL PLANTING BEDS.
16. HAND WATER TO ESTABLISH PLANTINGS. NO PERMANENT IRRIGATION IS REQUIRED. WATER WELL AFTER PLANTING, SOAKING THE ENTIRE AREA. NEW PLANTS WILL REQUIRE AN INCH OF WATER PER WEEK. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THE HEALTH OF THE PLANTS.
17. TRIM AND PRUNE EXISTING PLANTS TO REMAIN ACCORDING THE STANDARDS SET BY THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1.
18. ALL AREAS ARE TO BE SEEDED UNLESS OTHERWISE SHOWN ON PLAN.

PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	QUAN	SIZE	SPACING
CANOPY TREES					
NS	NYSSA SYLVATICA	BLACK GUM	4	2.5" CAL; B&B	AS SHOWN
GB	GINKO BILOBA 'PRINCTON SENTRY' (MALE ONLY)	PRINCETON SENTRY GINKO (MALE ONLY)	3	2.5" CAL; B&B	AS SHOWN
PERENNIALS					
HH	HEMEROCALLIS 'HAPPY RETURNS'	LITTLE BUSINESS DAYLILY	59	# 1 CONT.; FULL	18" OC
	HEMEROCALLIS 'LITTLE BUSINESS'	HAPPY RETURNS DAYLILY	59	# 1 CONT.; FULL	18" OC
PE	PEROVSKIA ATRIPLICIFOLIA	RUSSIAN SAGE	56	# 2 CONT.; FULL	36" OC
ORNAMENTAL GRASSES					
PA	PENNISETUM ALOPECUROIDES 'HAMELN'	HAMELN FOUNTAIN GRASS	125	# 2 CONT.; FULL	24" OC. 12" SETBACK TO BUILDING
PV	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCHGRASS	2 237	# 2 CONT.; FULL	36" OC. 18" SETBACK TO BUILDING
BULBS					
NT	CYCLAMINEUS NARCISSUS 'TETE-A-TETE'	EARLY BLOOMING DAFFODIL	251	TOP SIZE	RANDOMLY MIX DAFFODILS IN BETWEEN DAYLILLIES
NB	SMALL CUPPED NARCISSUS 'BARRETT BROWNING'	MID BLOOMING DAFFODIL	251	TOP SIZE	
NP	DOUBLE NARCISSUS 'YELLOW CHEERFULNESS'	LATE BLOOMING DAFFODIL	251	TOP SIZE	
SEED MIXES					
	LAWN - PENNDOT FORMULA B			APPLICATION RATE PER PENNDOT PUBLICATION 408	

REVISION			
REV No.	DATE	DESCRIPTION	APPV
1	2/19/21	ADDENDUM 1	
2	3/11/21	ADDENDUM 2	

Designed by: M. Gelzhiser
Drawn by: B. Bleicher
Checked by: S. Moore

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PENNSYLVANIA SCOTT W. MOORE REGISTERED LANDSCAPE ARCHITECT

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WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-L-101
LANDSCAPE PLAN AND PLANTINGS

Contract: 1735
CAD File Name: 210L101.DWG
Date: 02/26/2021
Sheet: 27 of 158

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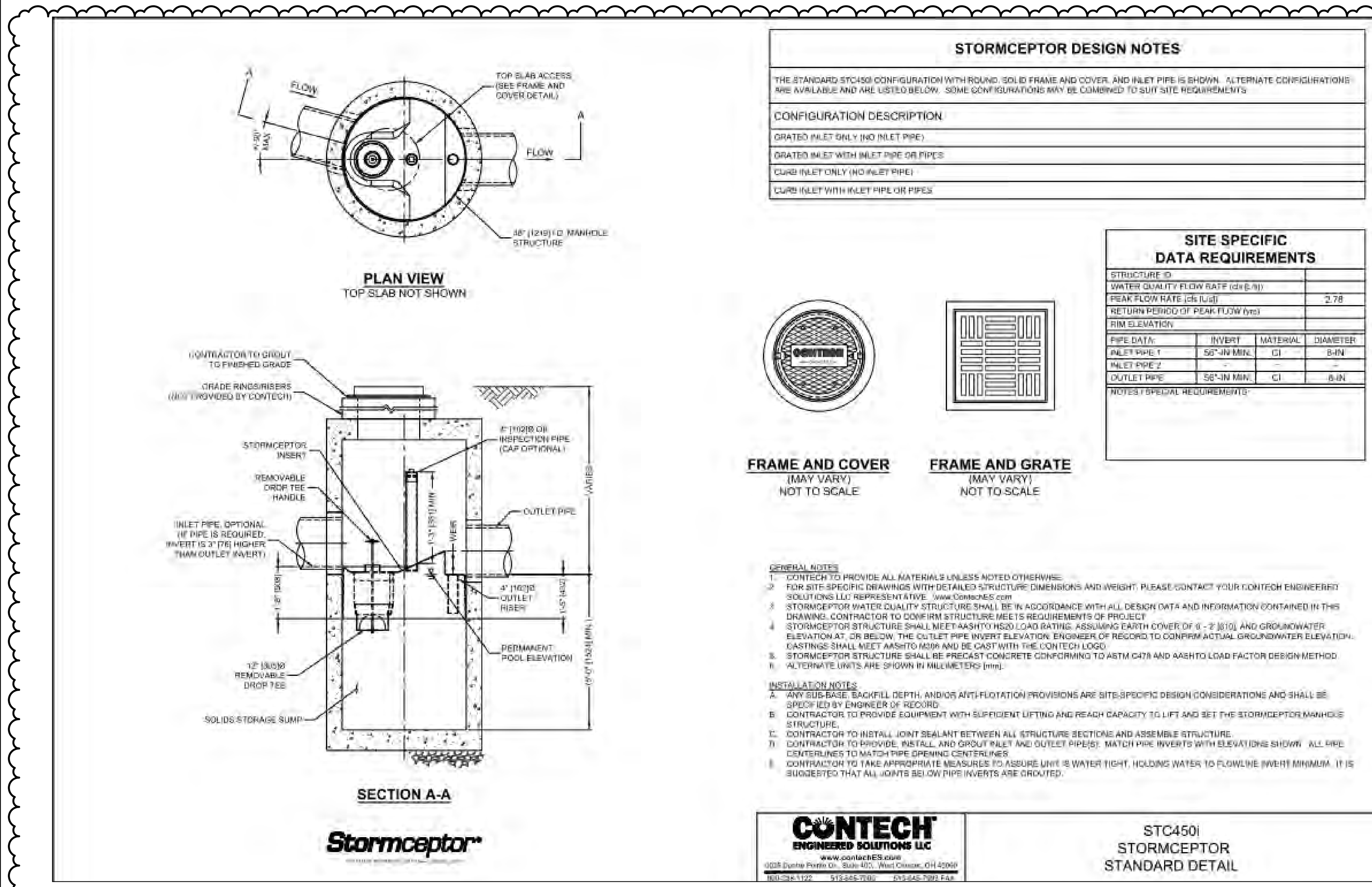
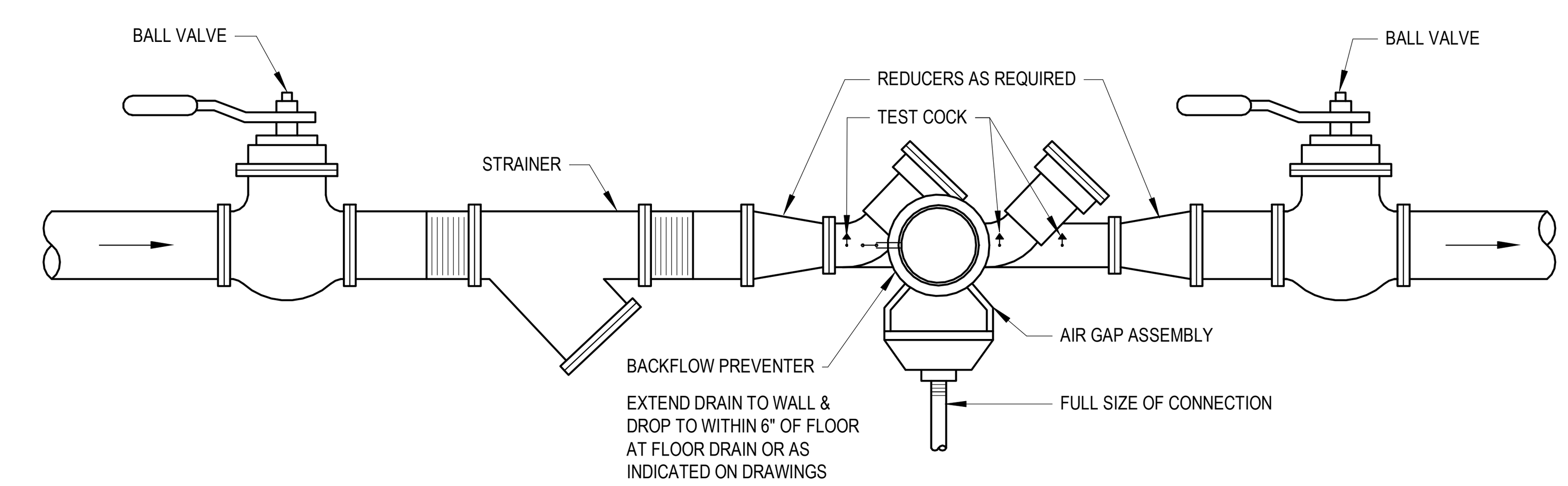


4 **STORMCEPTOR DETAIL**
6" = 1'-0"



3 **BACKFLOW PREVENTER DETAIL**
NOT TO SCALE

PLUMBING GENERAL NOTES

* FIELD VERIFY ALL NEW WATER, STORM SEWER, AND VENT PIPING CONNECTIONS AND PROVIDE NEW CONNECTIONS AS REQUIRED FOR PROPERLY OPERATING SYSTEMS.
* FIELD VERIFY LOCATION AND INVERTS OF SITE UTILITIES PRIOR TO INSTALLATION.
* ROUTE POTABLE CITY WATER, FIRE PROTECTION, AND STORM SEWER SERVICES TO SITE UTILITIES 5-FT, 0-IN FROM BUILDING UNLESS NOTED OTHERWISE. REFER TO CIVIL PLANS.
* STORM SEWER AND VENT PIPING BELOW FLOOR AND THROUGH FLOOR SHALL BE 2-IN MINIMUM.
* PROVIDE RISER CLEANOUT IN ACCESSIBLE LOCATION AT THE BASE AND TOP OF ALL PLUMBING RISERS.

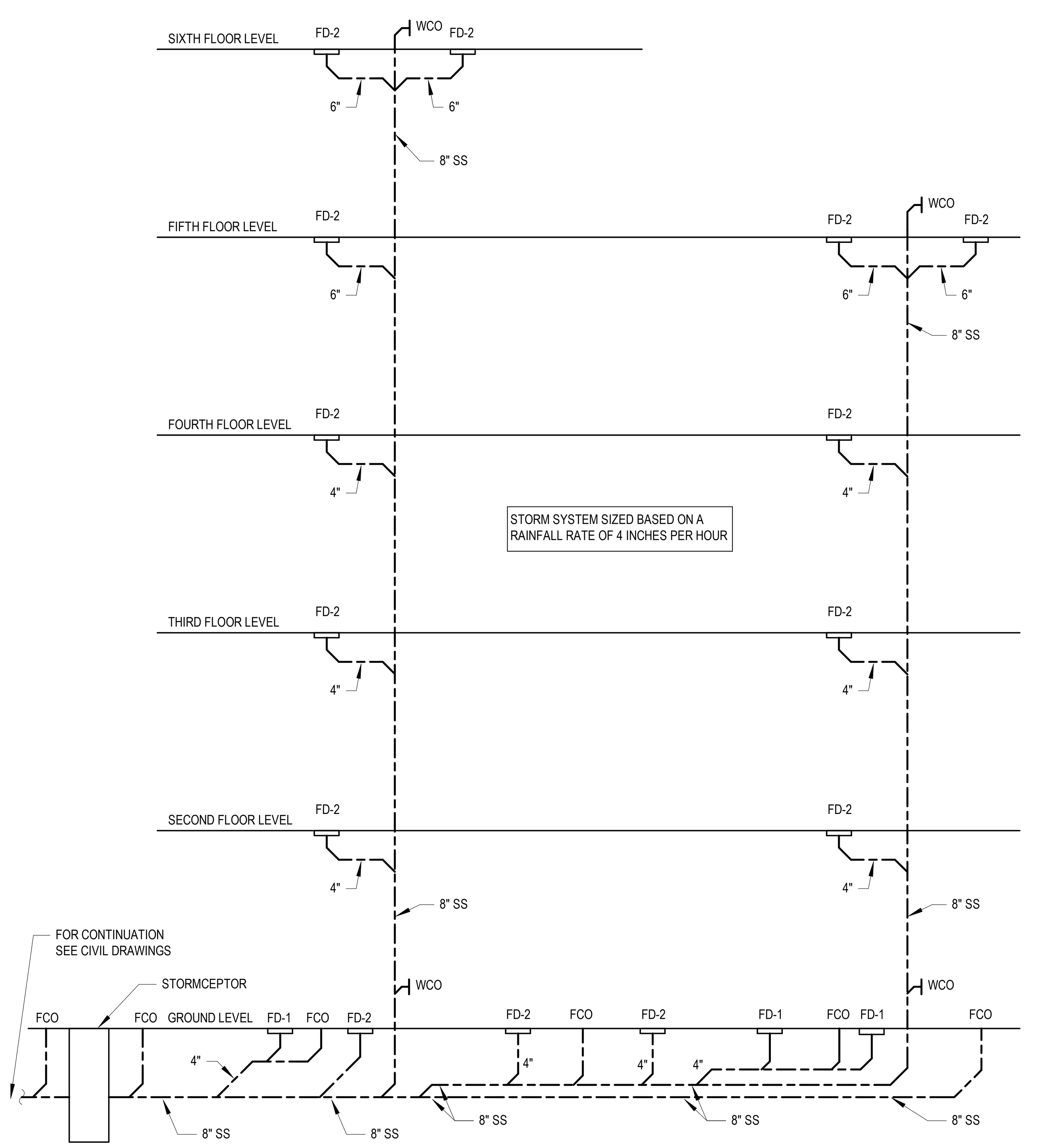
PLUMBING FIXTURE SCHEDULE

SEE SPECIFICATIONS FOR FIXTURE TYPE DESCRIPTION

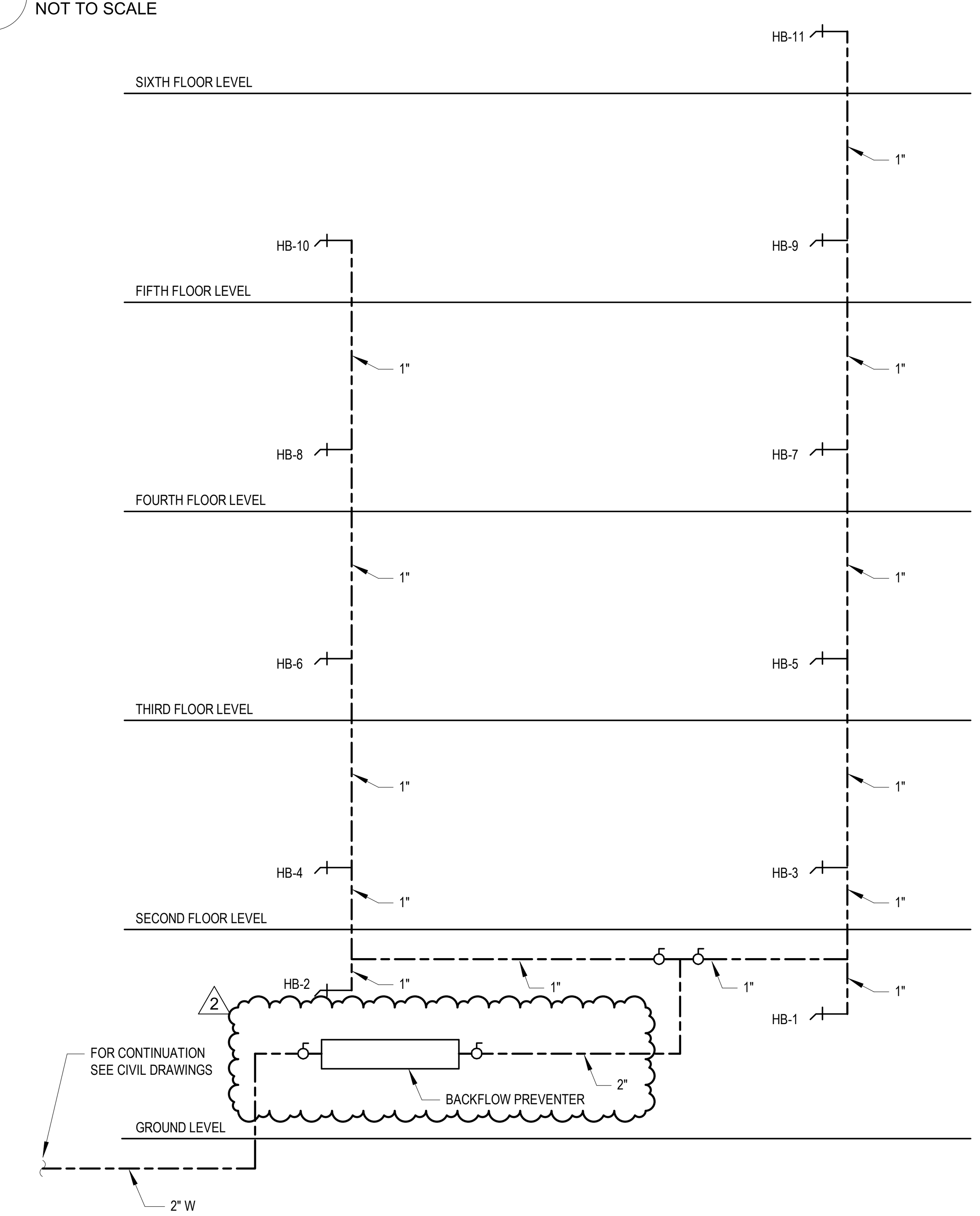
TAG	DESCRIPTION	MODEL	WASTE CONN	COLD WATER	REMARKS
FD-1	FLOOR DRAIN	ZURN Z507	4"	-	MEDIUM DUTY, FLOOR DRAIN
FD-2	FLOOR DRAIN	ZURN Z533	4", 6" (SEE PLANS)	-	HEAVY DUTY, PARKING DECK DRAIN
HB	HOSE BIB	WATTS SC8	-	3/4"	

PLUMBING SYMBOLS LEGEND

- BALL VALVE
- SHOCK ARRESTOR - SIZE AS MARKED
- BACKFLOW PREVENTER
- WCO — CLEANOUT AT RISER OR WALL
- FCO — CLEANOUT AT FLOOR
- STRAINER
- DRAIN WITH P-TRAP
- UNION
- CHECK VALVE
- PCW — POTABLE CITY WATER PIPING
- SS — STORM SEWER PIPING
- DROP
- RISE
- CAP
- F-1, F-2, ETC. — PLUMBING FIXTURE TYPE- SEE SPECIFICATION
- WCO — WALL CLEANOUT



2 **STORM RISER DIAGRAM**
NOT TO SCALE



1 **COLD WATER RISER DIAGRAM**
NOT TO SCALE

Designed by: Z, Edinger
Drawn by: Z, Edinger
Checked by: Z, Solarczyk

REVISION			
REV No.	DATE	DESCRIPTION	APPV
1	2/19/21	ADDENDUM 1	
2	3/11/21	ADDENDUM 2	

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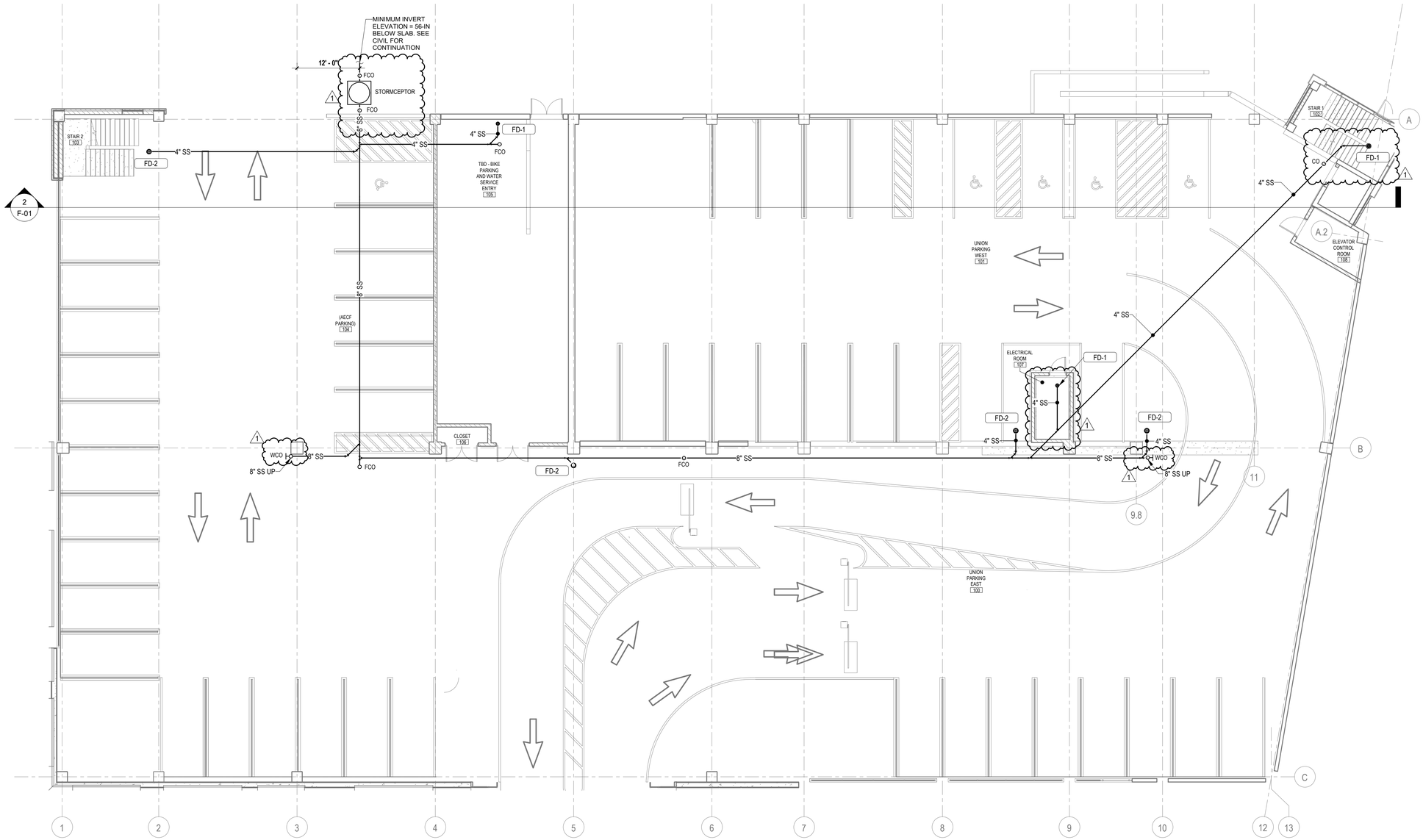
210-P-01
PLUMBING SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES

Contract: 1735
CAD File Name: 210P01.DWG
Date: 02 / 26 / 2021
Sheet: 122 of 158

PLUMBING GENERAL NOTES

* FIELD VERIFY ALL NEW WATER, STORM SEWER, AND VENT PIPING CONNECTIONS AND PROVIDE NEW CONNECTIONS AS REQUIRED FOR PROPERLY OPERATING SYSTEMS.
* FIELD VERIFY LOCATION AND INVERTS OF SITE UTILITIES PRIOR TO INSTALLATION.
* ROUTE POTABLE CITY WATER, FIRE PROTECTION, AND STORM SEWER SERVICES TO SITE UTILITIES 5-FT, 0-IN FROM BUILDING UNLESS NOTED OTHERWISE. REFER TO CIVIL PLANS.
* STORM SEWER AND VENT PIPING BELOW FLOOR AND THROUGH FLOOR SHALL BE 2-IN MINIMUM.
* PROVIDE RISER CLEANOUT IN ACCESSIBLE LOCATION AT THE BASE AND TOP OF ALL PLUMBING RISERS.

1



1 GROUND LEVEL SANITARY PLUMBING PLAN

3/32" = 1'-0"

SCALE: 3/32" = 1'-0"

8' 0' 4' 8' 16' 32'

Designed by:	REVISION			
Z, Edinger	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	1	3/11/21	ADDENDUM 2	
Z, Edinger				
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210-P-10

GROUND LEVEL STORM PLUMBING PLAN

1

Contract:	1735
CAD File Name:	210P20.DWG
Date:	02 / 26 / 2021
Sheet:	123 of 158

PLUMBING GENERAL NOTES

- FIELD VERIFY ALL NEW WATER, STORM SEWER, AND VENT PIPING CONNECTIONS AND PROVIDE NEW CONNECTIONS AS REQUIRED FOR PROPERLY OPERATING SYSTEMS.
- FIELD VERIFY LOCATION AND INVERTS OF SITE UTILITIES PRIOR TO INSTALLATION.
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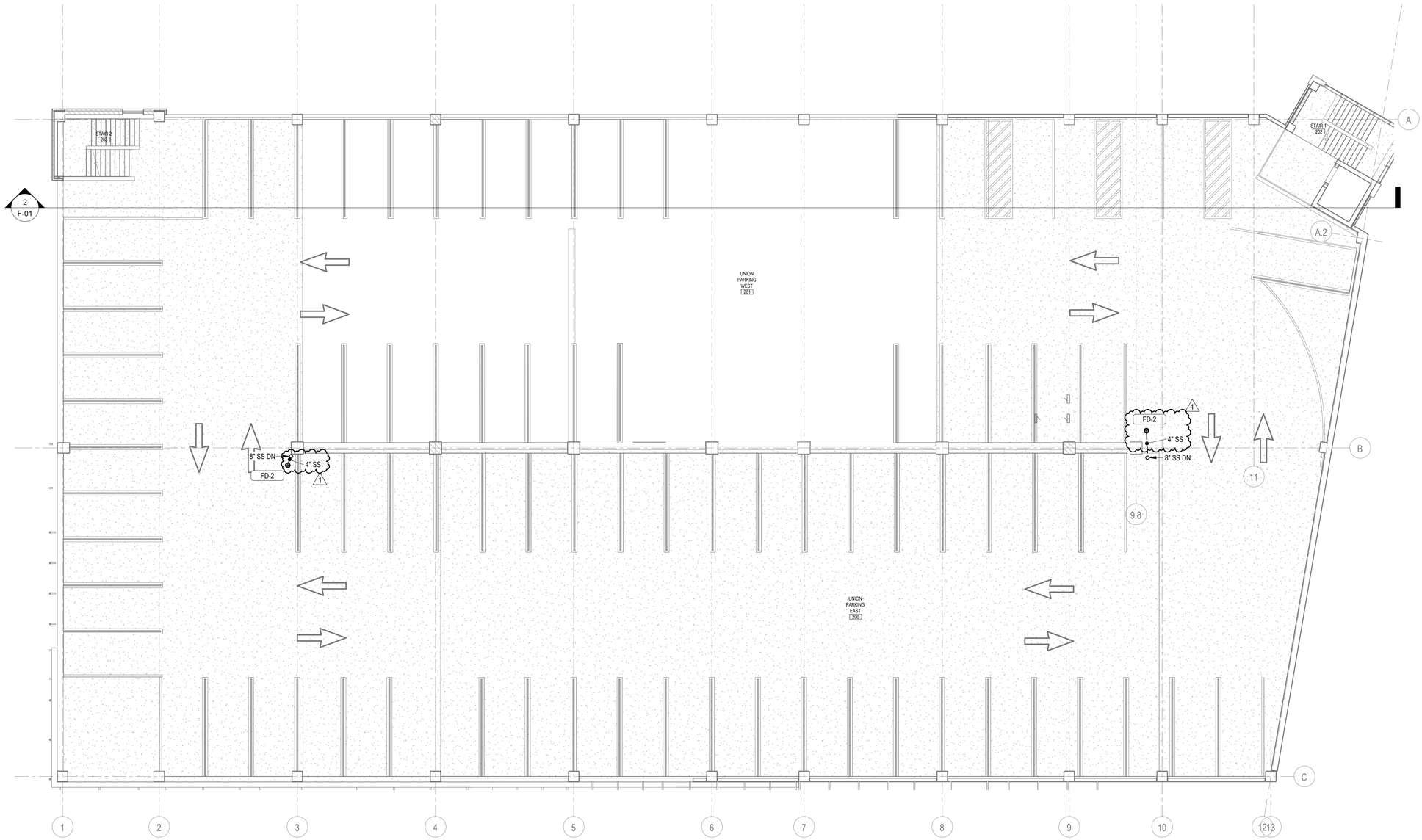
- PROVIDE RISER CLEANOUT IN ACCESSIBLE LOCATION AT THE BASE AND TOP OF ALL PLUMBING RISERS.



1 LEVEL 2 STORM PLUMBING PLAN

3/32" = 1'-0"

SCALE: 3/32" = 1'-0"

8' 0' 4' 8' 16' 32'

Designed by:	REVISION			
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210-P-11
LEVEL 2 STORM PLUMBING PLAN

Contract:	1735
CAD File Name:	210P21.DWG
Date:	02 / 26 / 2021
Sheet:	124 of 158

PLUMBING GENERAL NOTES

- FIELD VERIFY ALL NEW WATER, STORM SEWER, AND VENT PIPING CONNECTIONS AND PROVIDE NEW CONNECTIONS AS REQUIRED FOR PROPERLY OPERATING SYSTEMS.
- FIELD VERIFY LOCATION AND INVERTS OF SITE UTILITIES PRIOR TO INSTALLATION.
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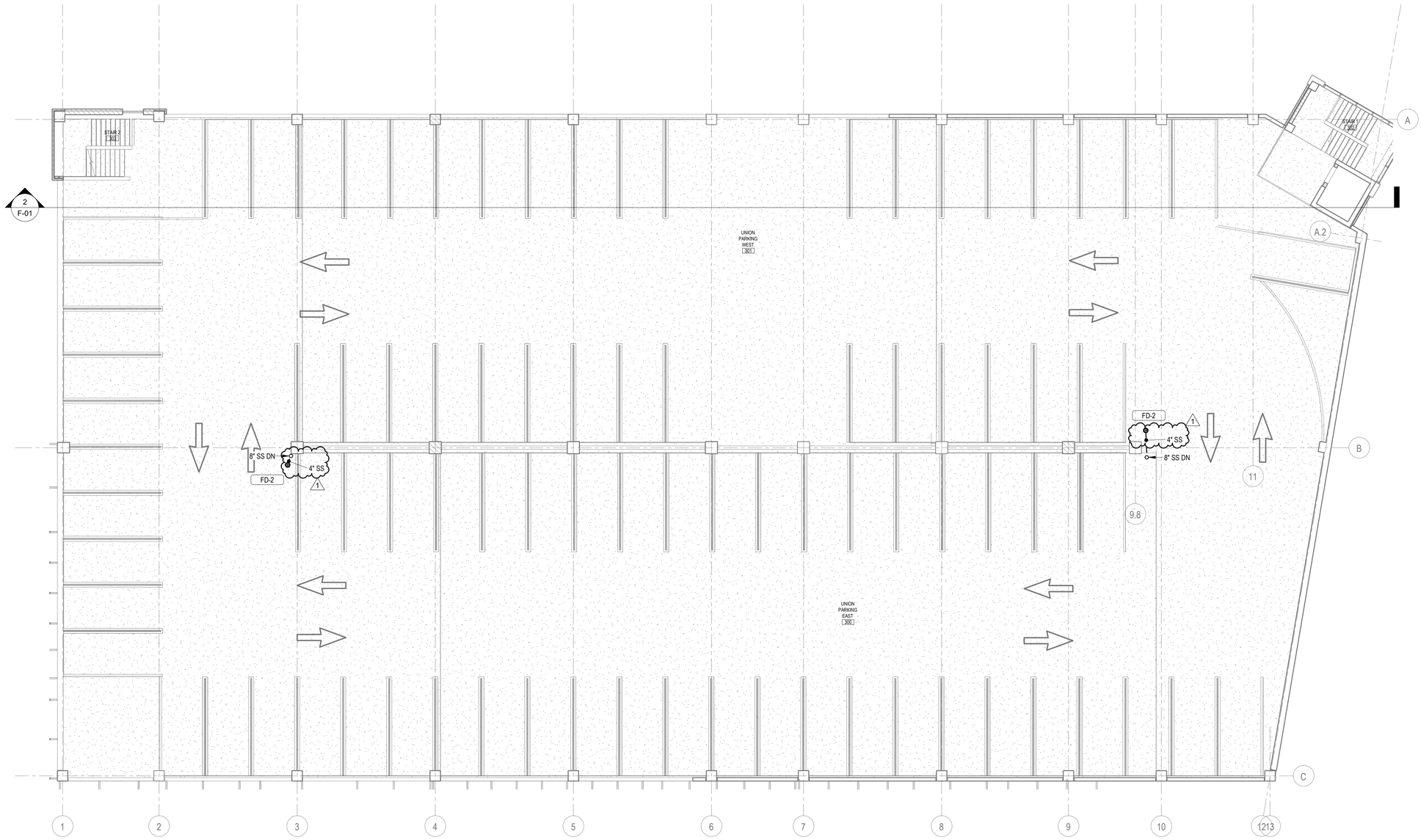

1 LEVEL 3 STORM PLUMBING PLAN
3/32" = 1'-0"

SCALE: 3/32" = 1'-0"

8' 0' 4' 8' 16' 32'

Designed by:	REVISION			
Z, Edinger	REV No.	DATE	DESCRIPTION	APPV
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ENGINEER
No. PE090580
10-MAR-21

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210-P-12
LEVEL 3 STORM PLUMBING PLAN 1

Contract:	1735
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Date:	02 / 26 / 2021
Sheet:	125 of 158

PLUMBING GENERAL NOTES

1

- FIELD VERIFY ALL NEW WATER, STORM SEWER, AND VENT PIPING CONNECTIONS AND PROVIDE NEW CONNECTIONS AS REQUIRED FOR PROPERLY OPERATING SYSTEMS.
- FIELD VERIFY LOCATION AND INVERTS OF SITE UTILITIES PRIOR TO INSTALLATION.
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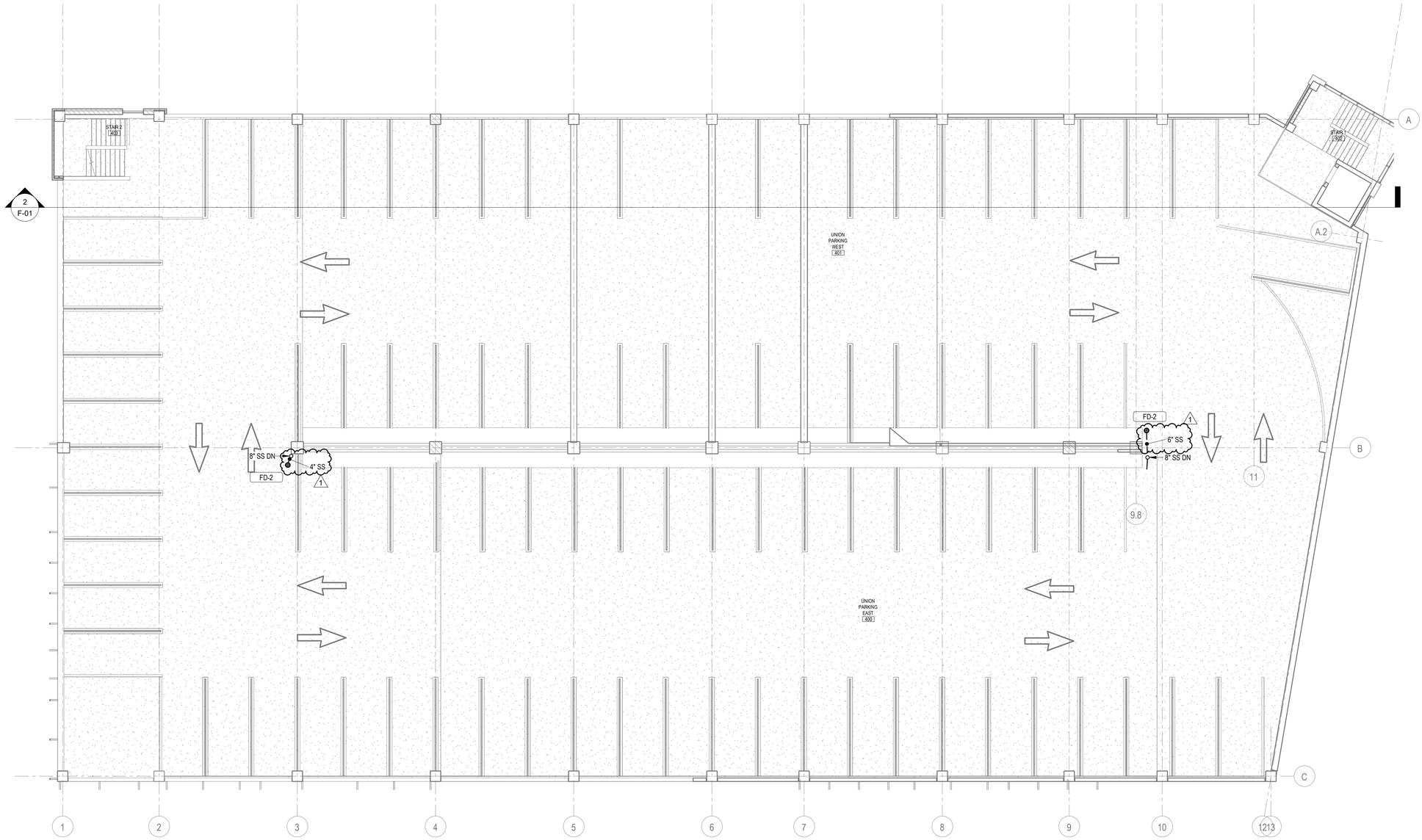

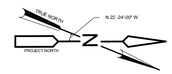

1 LEVEL 4 STORM PLUMBING PLAN

3/32" = 1'-0"

SCALE: 3/32" = 1'-0"

8' 0' 4' 8' 16' 32'

Designed by:	REVISION			
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210-P-13
LEVEL 4 STORM PLUMBING PLAN 1

Contract:	1735
CAD File Name:	210P23.DWG
Date:	02 / 26 / 2021
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PLUMBING GENERAL NOTES

- FIELD VERIFY ALL NEW WATER, STORM SEWER, AND VENT PIPING CONNECTIONS AND PROVIDE NEW CONNECTIONS AS REQUIRED FOR PROPERLY OPERATING SYSTEMS.
- FIELD VERIFY LOCATION AND INVERTS OF SITE UTILITIES PRIOR TO INSTALLATION.
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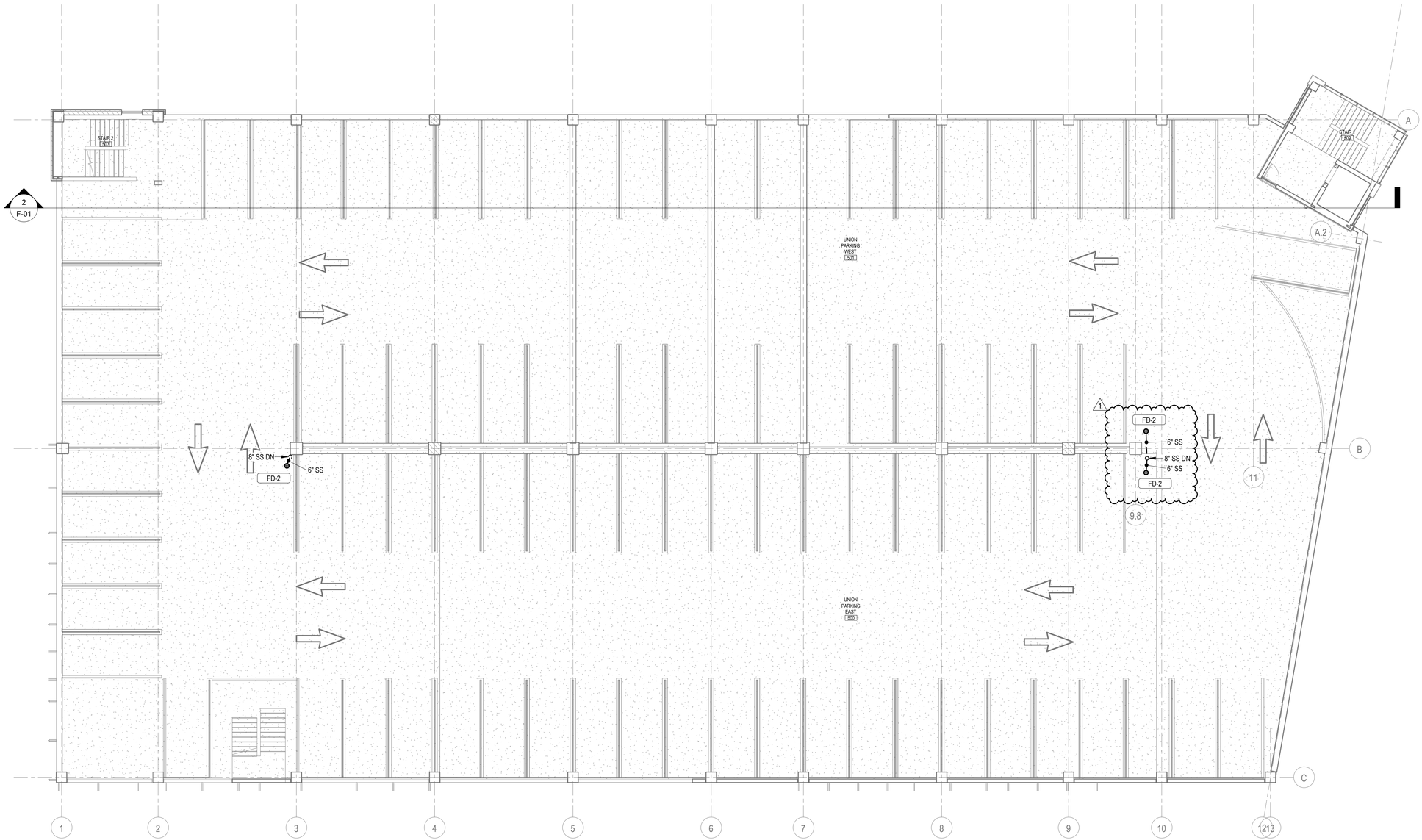

1 LEVEL 5 STORM PLUMBING PLAN

3/32" = 1'-0"

SCALE: 3/32" = 1'-0"

8' 0' 4' 8' 16' 32'

Designed by:	REVISION			
Z, Edinger	REV No.	DATE	DESCRIPTION	APPV
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Checked by:				
Z, Solarczyk				

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210-P-14

LEVEL 5 STORM PLUMBING PLAN

Contract:	1735
CAD File Name:	210P24.DWG
Date:	02 / 26 / 2021
Sheet:	127 of 158

PLUMBING GENERAL NOTES

1

- FIELD VERIFY ALL NEW WATER, STORM SEWER, AND VENT PIPING CONNECTIONS AND PROVIDE NEW CONNECTIONS AS REQUIRED FOR PROPERLY OPERATING SYSTEMS.
- FIELD VERIFY LOCATION AND INVERTS OF SITE UTILITIES PRIOR TO INSTALLATION.
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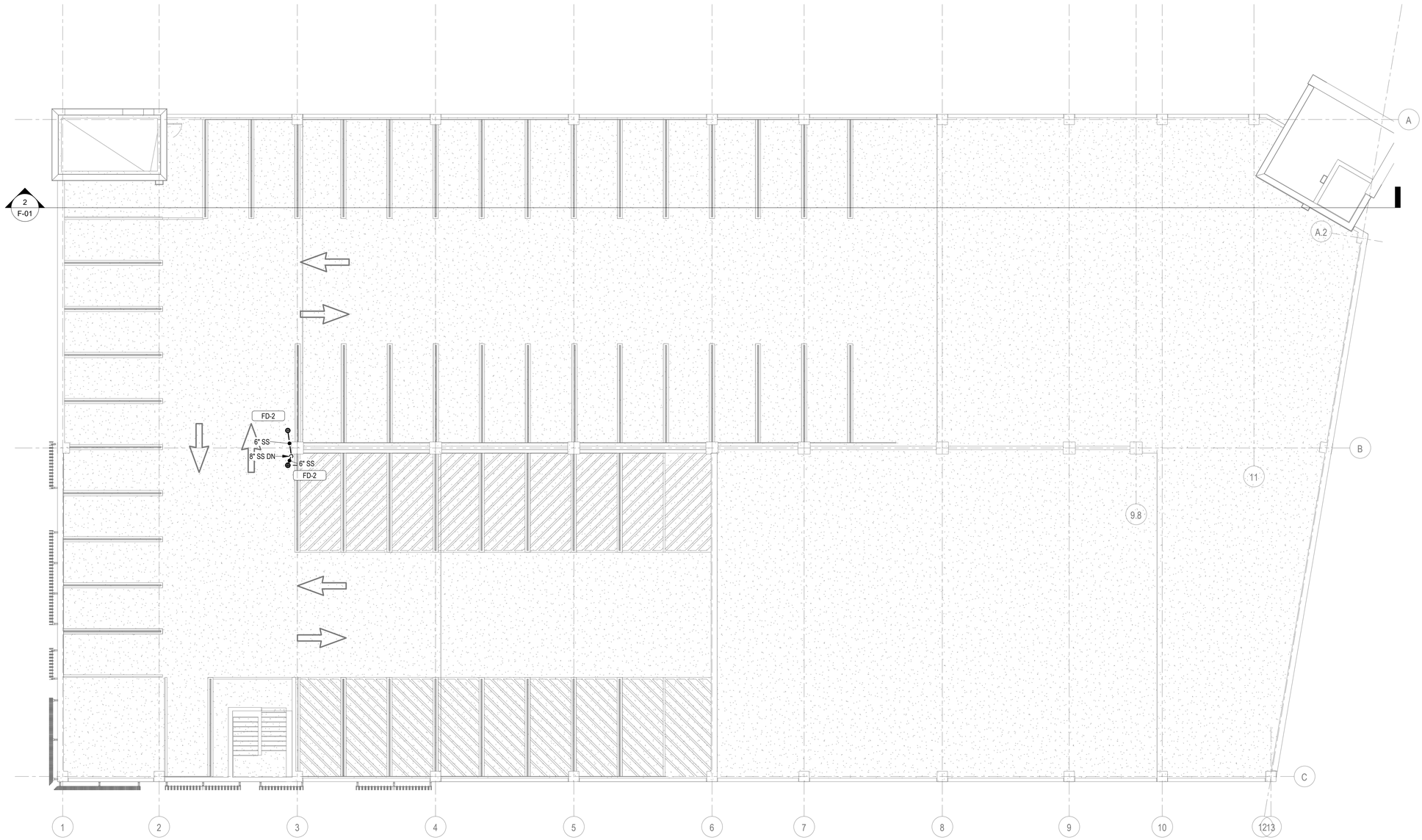
- PROVIDE RISER CLEANOUT IN ACCESSIBLE LOCATION AT THE BASE AND TOP OF ALL PLUMBING RISERS.



1 **LEVEL 6 STORM PLUMBING PLAN** 1
3/32" = 1'-0"

TRUE NORTH
N 22° 24' 00" W
PROJECT NORTH

SCALE: 3/32" = 1'-0"

8' 0' 4' 8' 16' 32'

Designed by:	REVISION			
Z, Edinger	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	1	3/11/21	ADDENDUM 2	
Z, Edinger				
Checked by:				
Z, Solarczyk				

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
MICHAEL J. CARROLL
No. PE059580
10-MAR-21

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210-P-15

LEVEL 6 STORM PLUMBING PLAN 1

Contract:	1735
CAD File Name:	210P25.DWG
Date:	02 / 26 / 2021
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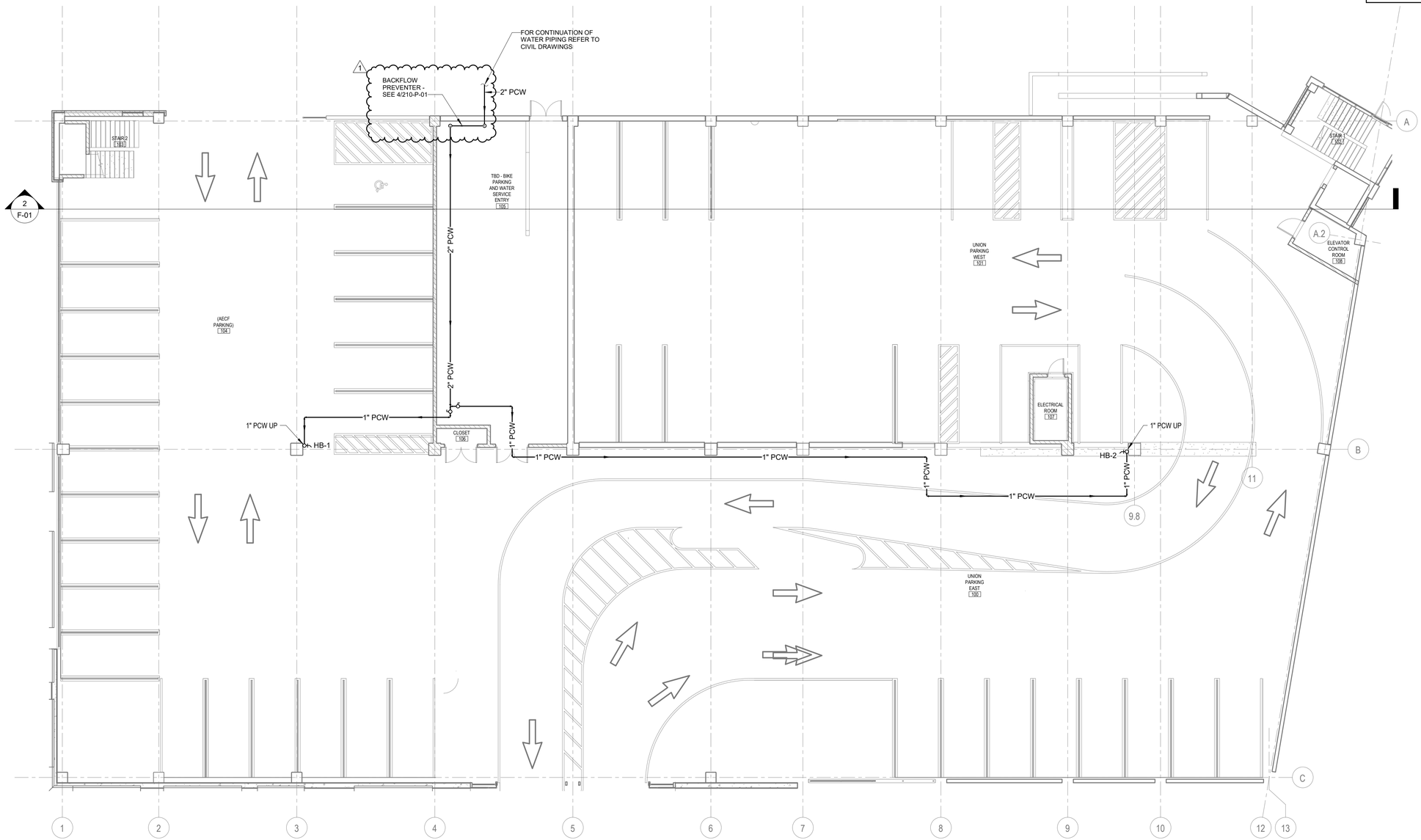
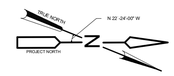
PLUMBING GENERAL NOTES

* FIELD VERIFY ALL NEW WATER CONNECTIONS AND PROVIDE NEW CONNECTIONS AS REQUIRED FOR PROPERLY OPERATING SYSTEMS
* INSTALL ALL HORIZONTAL POTABLE COLD WATER PIPING AT A MINIMUM OF 1/8-IN PER 1-FT SLOPE.
* FIELD VERIFY LOCATION AND INVERTS OF SITE UTILITIES PRIOR TO INSTALLATION.
* ROUTE POTABLE CITY WATER, FIRE PROTECTION, AND STORM SEWER SERVICES TO SITE UTILITIES 5-FT, 0-IN FROM BUILDING UNLESS NOTED OTHERWISE. REFER TO CIVIL PLANS.





1 GROUND LEVEL DOMESTIC PLUMBING PLAN

3/32" = 1'-0"

SCALE: 3/32" = 1'-0"

8' 0' 4' 8' 16' 32'

Designed by:	REVISION			
J, Snyder	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	1	3/11/21	ADDENDUM 2	
J, Snyder				
Checked by:				
Z, Solarczyk				

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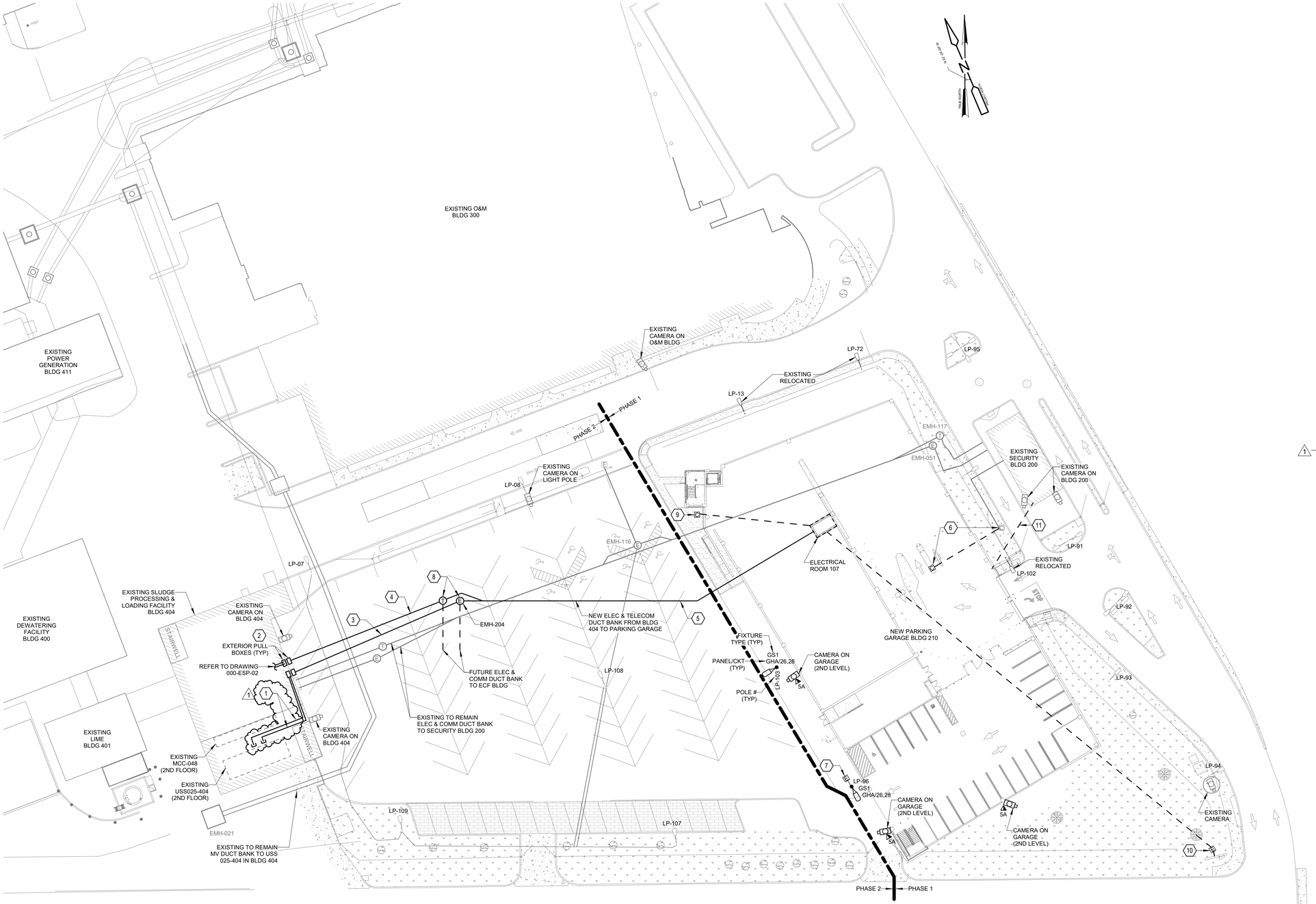
210-P-20
GROUND LEVEL DOMESTIC PLUMBING PLAN

Contract:	1735
CAD File Name:	210P10.DWG
Date:	02 / 26 / 2021
Sheet:	129 of 158



1 ELECTRICAL SITE PLAN - PARKING GARAGE

1" = 30'-0"

SCALE: 1" = 30'

30' 0' 15' 30' 60' 120'

ELECTRICAL SITE GENERAL NOTES

1. PROPOSED CONDUIT ROUTINGS SHOWN ON THIS DRAWING ARE DIAGRAMMATIC AND DO NOT INTEND TO SHOW THE ACTUAL ROUTING CONDITIONS. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS SHOWING ACTUAL PROPOSED ROUTING CONDITIONS PER FIELD CONDITIONS AND COORDINATION WITH ALL OTHER TRADES. PROVIDE PULL BOXES AS REQUIRED PER APPLICABLE CODES. THE CONTRACTOR SHALL COORDINATE EXACT CONDUIT ROUTING WITH CIVIL DRAWINGS AND ALL OTHER TRADES PRIOR TO COMMENCEMENT OF WORK.
2. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL CONTACT ALL OTHER SITE CONTRACTORS TO COORDINATE UNDERGROUND UTILITIES. REFER TO AND COORDINATE WITH CIVIL ENGINEERING DRAWINGS FOR FULL EXTENT OF EXISTING AND NEW UTILITIES AND EASEMENTS.
3. UNDERGROUND DUCT LINES SHALL BE RUN IN PVC CONDUIT SCHEDULE 40 CONFORMING TO NEMA TC-2 AND ANSI/UL 651.
4. ALL DUCT LINES SHALL BE LAID TO A MINIMUM GRADE OF 3" PER 100 FEET. SLOPE MAY BE AWAY FROM THE BUILDING, FROM ONE MANHOLE TO THE NEXT OR BOTH WAYS FROM A HEIGHT POINT BETWEEN MANHOLES, DEPENDING ON THE CONTOUR OF THE FINISHED GRADE. LOW POINTS THAT MAY TRAP WATER ARE UNACCEPTABLE. DUCT LINES SHALL BE INSTALLED SO THAT THE TOP OF CONCRETE ENCASED DUCT LINES IS NOT LESS THAN 36" BELOW FINISHED GRADE OR FINISHED PAVING AT ANY POINT. CHANGES IN DIRECTION OF MORE THAN 20°, EITHER VERTICAL OR HORIZONTAL, SHALL BE ACCOMPLISHED BY LONG SWEEP BENDS HAVING A MINIMUM RADIUS OF CURVATURE OF 25', EXCEPT THAT MANUFACTURED BENDS MAY BE USED AT THE ENDS OF THE RUN. MANUFACTURED BENDS SHALL HAVE A MINIMUM RADIUS OF 36". DUCTS SHALL BE THOROUGHLY CLEANED BEFORE USING OR LAYING. DURING CONSTRUCTION AND AFTER THE DUCT LINE IS COMPLETED, THE ENDS OF THE DUCTS SHALL BE PLUGGED TO PREVENT WATER WASHING MUD OR THE WIND FROM BLOWING SAND INTO THE RACEWAYS OR MANHOLES. PARTICULAR CARE SHALL BE TAKEN TO KEEP THE CONDUITS CLEAN OF CONCRETE, DIRT, AND ANY OTHER SUBSTANCE DURING THE COURSE OF CONSTRUCTION.
5. AFTER CONSTRUCTION OF THE UNDERGROUND CONDUIT SYSTEMS ARE COMPLETED, A STANDARD FLEXIBLE MANDREL NOT LESS THAN 12" LONG AND HAVING A DIAMETER APPROXIMATELY 1/4" LESS THAN THE INSIDE DIAMETER OF THE CONDUIT SHALL BE PULLED THROUGH EACH CONDUIT AFTER WHICH A BRUSH WITH STIFF BRISTLES SHALL BE PULLED THROUGH EACH CONDUIT TO MAKE CERTAIN THAT NO PARTICLES OF SAND, GRAVEL HAVE BEEN LEFT IN THE LINES. THERE SHALL BE A SUITABLE PULL WIRE OR STRING LEFT IN EACH EMPTY CONDUIT.
6. ALL EXTERIOR LIGHTING FIXTURES (INCLUDING BUT NOT LIMITED TO POLE AND WALL MOUNTED) SHALL BE WIRED VIA THE LIGHTING CONTROL PANEL. FIXTURES SHALL BE CONTROLLED BY PHOTOCELL AND PROGRAMMABLE TIMECLOCK WITH OVERRIDE SWITCHES AT THE CONTROL PANEL.
7. REFER TO DETAIL ON ELECTRICAL ONE-LINE AND RISER DIAGRAM SHEET FOR DATA/TELE OUTLET AND CABLING CONFIGURATION LEGEND.

ELECTRICAL SITE KEYNOTES

1. PROVIDE (9) 4" PVC COATED RGS CONDUITS FOR POWER SERVICES TO THE PARKING GARAGE AND THREE FOR BUILDING. ROUTE CONDUITS VIA PULL BOXES UP TO THE SECOND FLOOR ELECTRICAL ROOM.
2. PROVIDE A LOCKABLE NEMA 4X STAINLESS STEEL ABOVE GRADE PULL BOXES SIZED TO ACCOMMODATE THE REQUIRED NUMBER OF CONDUITS. PROVIDE SEPARATE PULL BOXES FOR THE FIBER/PHONE AND POWER SERVICES ON THE OUTSIDE AND INSIDE OF THE BUILDING FOR TRANSITION OF CABLES/WIRES SIMILAR TO THE EXISTING INSTALLATION.
3. PROVIDE A CONCRETE ENCASED DUCT BANK FROM THE EXTERIOR PULL BOXES ON BUILDING 404 TO THE MANHOLE WITH THE FOLLOWING: (9) 4" CONDUITS FOR POWER SERVICES. THE (8) 4" CONDUITS SHALL TERMINATE AT THE MANHOLE FOR FUTURE POWER SERVICE TO THE ECF BUILDING WHILE THE (1) 4" CONDUIT CONTINUES TO THE PARKING GARAGE ELECTRICAL ROOM. REFER TO THE POWER ONE-LINE DIAGRAM FOR CABLE AND CIRCUIT DETAILS. REFER TO DETAILS SHEET FOR DUCTBANK CONSTRUCTION DETAILS.
4. PROVIDE A CONCRETE ENCASED DUCT BANK FROM THE EXTERIOR PULL BOXES ON BUILDING 404 TO THE MANHOLE WITH THE FOLLOWING: (2) 2" CONDUIT FOR FIBEROPTICS CABLE SERVICES, AND (2) 2" CONDUIT FOR POTS ANALOG PHONE LINES. ONE OUT OF THE TWO 2" CONDUIT FOR EACH SERVICE SHALL TERMINATE AT THE MANHOLE FOR FUTURE SERVICES TO THE ECF BUILDING WHILE THE REST CONTINUE TO THE PARKING GARAGE ELECTRICAL ROOM. REFER TO DETAILS SHEET FOR DUCTBANK CONSTRUCTION DETAILS. REFER TO DRAWING ESP02 FOR SERVICE ORIGINATION OF EACH SYSTEM.
5. PROVIDE A CONCRETE ENCASED DUCT BANK FROM THE MANHOLE TO THE PARKING GARAGE ELECTRICAL ROOM WITH THE FOLLOWING: (1) 2" CONDUIT FOR FIBEROPTICS CABLE SERVICES; (1) 2" CONDUIT FOR POTS ANALOG PHONE LINES; (1) 2" CONDUIT SPARE; (1) 4" CONDUIT FOR POWER SERVICE; AND (1) 4" CONDUIT SPARE. REFER TO THE POWER ONE-LINE DIAGRAM FOR CABLE AND CIRCUIT DETAILS. REFER TO DETAILS SHEET FOR DUCTBANK CONSTRUCTION DETAILS. PROVIDE A MINIMUM OF 12" SEPARATION BETWEEN FIBER/PHONE AND POWER CONDUITS.
6. PROVIDE UNDERGROUND (2) 2" CONDUITS FROM THE EXISTING TO THE NEW TELECOM HANDHOLE FOR CONNECTION TO GATE ARM OPERATORS TO THE EXISTING SYSTEM IN THE SECURITY BUILDING 200.
7. PROVIDE A HANDHOLE WITH ACCESS TO THE LIGHT POLE POWER AND CONTROL CIRCUITS FOR CONNECTION TO FUTURE LIGHT POLES IN THE PHASE 2 AREA OF THE SITE.
8. PROVIDE MANHOLES AS SHOWN ON THE DETAILS SHEET. SIZE SHALL BE ADJUSTED TO ACCOMMODATE THE NUMBER OF CONDUIT TERMINATING AND PASSING THROUGH THE MANHOLES. COORDINATE INSTALLATION OF MANHOLES WITH CIVIL ENGINEERING DRAWINGS. ASSURE MANHOLES COVERS ARE LEVEL TO THE FINISHED GRADING OF THE PHASE 2 CONSTRUCTION.
9. PROVIDE A HANDHOLE WITH 2" CONDUIT TO THE ELECTRICAL ROOM FOR NEW CAMERA INSTALLATION UNDER THE PHASE 2 CONSTRUCTION.
10. PROVIDE A HANDHOLE WITH 2" CONDUIT TO THE ELECTRICAL ROOM FOR FUTURE INSTALLATION OF SITE ENTRY SIGN UNDER PHASE 2. PROVIDE A 20A/1P CIRCUIT WITH (2) #10, (1) #10G WIRES FROM PANEL 'GLA'. PROVIDE 10FT OF WIRES COILED INSIDE THE HANDHOLE.
11. PROVIDE A 2" CONDUIT FROM THE SECURITY BUILDING 200 TO THE PARKING GARAGE MOTORIZED DOOR OPERATORS TO ALLOW FOR CONTROL OF DOORS FROM THE SECURITY BUILDING. COORDINATE STUB UP LOCATIONS IN FIELD.

Designed by:	REVISION			
B, Kassahun	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	1	3/11/21	ADDENDUM 2	
B, Kassahun				
Checked by:				
M, Murphy				

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ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

000-ESP-01
ELECTRICAL SITE PLAN - PARKING GARAGE

Contract:	17XX
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ABBREVIATION LEGEND

&	AND
A	AIR (CLINICAL)
AAP	ALARM ANNUNCIATOR PANEL
AAV	AUTOMATIC AIR VENT
AB	ANCHOR BOLT
ABV	ABOVE
ACC DR	ACCESS DOOR
ACFL	ACCESS FLOOR
ACOUS	ACOUSTICAL
ACT	ACOUSTICAL CEILING TILE
AD	AREA DRAIN
ADA	AMERICAN DISABILITIES ACT
ADD	ADDENDUM
ADDL	ADDITIONAL
ADJ	ADJUSTABLE
ADMIN	ADMINISTRATION
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISHED GRADE
AFMD	AIR FLOW MEASURING DEVICE
AHU	AIR HANDLING UNIT
AL	ALIGN
ALT	ALTERNATE
ALUM	ALUMINUM
AMP	AMPERE
AP	ACCESS PANEL
APC	ARCHITECTURAL PRECAST CONCRETE
APPROX	APPROXIMATE
ARAP	ASYMMETRIC
ARCH	ATS REMOTE ANNUNCIATOR PANEL
ATC	AUTOMATIC TEMPERATURE CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AWT	AVERAGE WATER TEMPERATURE
BAT	BATTERY
BC	BALANCING COCK OR BARE COPPER
BDD	BACKDRAFT DAMPER
BFC	BELOW FINISH CEILING
BFE	BOTTOM FOOTING ELEVATION
BFG	BELOW FINISHED GRADE
BG	BUMPER GUARD
BLDG	BUILDING
BLKG	BLOCKING
BLT	BORROWED LIGHT
BLW	BELOW
BM	BEAM
BO	BY OWNER
BOF	BY OWNER FUTURE
BOT	BOTTOM
BR	BRICK
BRG	BEARING
BRKR	BREAKER
BSMT	BASEMENT
BTWN	BETWEEN
BUR	BUILT UP ROOFING
C	CONDUIT
CAB	CABINET
CANTL	CANTILEVER
CAP	CAPACITY
CATV	CABLE TELEVISION
CCT	CUBICLE CURTAIN TRACK
CCTV	CLOSED CIRCUIT TELEVISION
CFH	CUBIC FEET / HOUR
CFM	CUBIC FEET / MINUTE
CH	CHANNEL
CHK V	CHECK VALVE
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWS&R	CHILLED WATER SUPPLY AND RETURN
CJ	CONTROL JOINT
CKT	CIRCUIT
CKT BRKR	CIRCUIT BREAKER
CL	CENTERLINE
CLG	CEILING
CLG MTD	CEILING MOUNTED
CLR	CLR
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
COMM	COMMUNICATION
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUE / CONTINUOUS
CONTR	CONTRACTOR
CONV	CONVECTOR
COORD	COORDINATE
CORR	CORRIDOR
CPT	CARPET OR CONTROL POWER TRANSFORMER

CT	CERAMIC TILE
CTR	CENTER
CU	COPPER
CV	CONTROL VALVE
CW	COLD WATER
D	DEPTH OR DEEP
DB	DRY BULB
dB	DECIBEL
DCW	DOMESTIC COLD WATER
DEMO	DEMOLITION
DEPT	DEPARTMENT
DET	DETAILS
DF	DRINKING FOUNTAIN
DHW	DOMESTIC HOT WATER
DIA	DIAMETER
DIAG	DIAGONAL OR DIAGRAM
DIFF	DIFFUSER
DIM	DIMENSION
DISC	DISCONNECT
DISCH	DISCHARGE
DISP	DISPENSER
DIST	DISTRIBUTION
DIV	DIVISION
DL	DOWN LIGHT
DN	DOWN
DP	DISTRIBUTION PANEL
DPR	DAMPER
DR	DRAIN
DS	DOWNSPOUT
DWG	DRAWING
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
EDB	ENTERING DRY BULB
EF	EXHAUST FAN
EIFS	EXTERIOR INSULATION AND FINISHING SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEC CAB	ELECTRICAL CABINET
ELEV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOSURE
ENTR	ENTRANCE
EO	ELECTRICAL OUTLET
EQ	EQUAL
EQUIP	EQUIPMENT
ETR	EXISTING TO REMAIN
EWB	ENTERING WET BULB
EWC	ELECTRIC WATER COOLER
EWT	ENTERING WATER TEMPERATURE
EX	EXHAUST AIR
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
XP	EXPLOSION PROOF
F/S	FIRE / SMOKE DAMPER
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FAT	FINAL AIR TEMPERATURE
FATP	FIRE ALARM TRANSPONDER PANEL
FB	FIRE BLANKET
FC	FLEXIBLE CONNECTION OR FOOTCANDLE
FD	FLOOR DRAIN OR FIRE DAMPER
FDN	FOUNDATION
FDV	FIRE DEPARTMENT VALVE
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FH	FIRE HOSE
FHC	FIRE HOSE CABINET
FHP	FULL HEIGHT PARTITION
FHV	FIRE HOSE VALVE
FIN	FINISH
FIXT	FIXTURE
FL	FLOW LINE
FLA	FULL LOAD AMPERES
FLASH	FLASHING
FLEX	FLEXIBLE
FLG	FLANGE
FLG C	FLANGE CONNECTION
FLR	FLOOR
FLUOR	FLUORESCENT
FP	FIRE PROOFING
FRMG	FRAMING
FS	FLOOR SINK
FSTOP	FIRESTOPPING
FT	FOOT / FEET
FT HD	FEET OF HEAD
FTC	FOOTCANDLES
FTG	FOOTING

FUR	FURRING
G	GAS OR ELECTRICAL GROUND
GA	GAUGE
GAL	GALLONS
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GENL	GENERAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTOR
GL	GLASS
GLV	GLOBE VALVE
GND	GROUND
GPM	GALLONS PER MINUTE
GR	GRADE
GRAP	GENERATOR REMOTE ANNUNCIATOR PANEL
GRD BM	GRADE BEAM
GV	GATE VALVE
GWB	GYPSUM BOARD
H	HIGH
HB	HOSE BIB
HC	HEATING CONTRACTOR
HDCP	HANDICAP
HDR	HEADER
HDW	HARDWARE
HID	HIGH INTENSITY DISCHARGE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HORSE POWER
HPD	HIGH PRESSURE DRIP
HPF	HIGH POWER FACTOR
HR	HANDRAIL
HSKP	HOUSEKEEPING
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HV	HIGH VELOCITY
HVAC	HEATING, VENTILATING, AIR CONDITIONING
HW	HOT WATER
HWD	HARD WOOD
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HWS&R	HOT WATER SUPPLY AND RETURN
HZ	HERTZ
ID	INSIDE DIAMETER
IER	INVERTED ECCENTRIC REDUCER
IG	ISOLATED GROUND
IME	INSULATED METAL ENCLOSURE
IN	INCH
INCAND	INCANDESCENT
INCL	INCLUDED
INSUL	INSULATION
INT	INTERIOR
INTERL	INTERLOCK
INV	INVERT
ISO	ISOLATION
IVS	ISOLATED VALVE STATION
J-BOX	JUNCTION BOX
JST	JOIST
JT	JOINT
KO	KNOCK OUT
kVA	KILOVOLT AMPERE
kVAR	KILOVAR (REACTANCE)
kW	KILOWATT
kWH	KILOWATT HOUR METER
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LB	POUND
LDB	LEAVING DRY BULB
LED	LIGHT EMITTING DIODE
LF	LINEAR FEET
LIN	LINEAR
LOC	LOCATION OR LOCATE
LPT	LOW POINT
LSDC	LINEAR SUPPLY DIFFUSER CEILING
LT	LIGHT
LTG	LIGHTING
LV	LOW VOLTAGE
LVR	LOUVER
LWB	LEAVING WET BULB
LWC	LINEAR WOOD CEILING
LWT	LEAVING WATER TEMPERATURE
MAN	MANUAL
MAT	MIXED AIR TEMPERATURE
MATL	MATERIAL
MAV	MANUAL AIR VENT
MAX	MAXIMUM

MBH	ONE THOUSAND BTU / HOUR
MC	MECHANICAL CONTRACTOR
MC	METAL CLAD CABLE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MECH	MECHANICAL
MEMB	MEMBRANE
MET	METAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MO	MASONRY OPENING
MOD	MOTOR OPERATED DAMPER
MONO	MONOLITHIC
MTD	MOUNTED
MTG HT	MOUNTING HEIGHT
MTL	METAL
MTLH	METAL HALIDE
MTR	MOTOR
MTS	MANUAL TRANSFER SWITCH
MV	MEDIUM VOLTAGE
N/A	NOT APPLICABLE
NAC	NETWORK APPLIANCE CABINET
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER ASSOCIATION
NL	NIGHT LIGHT
NO	NUMBER OR NORMALLY OPEN
NOM	NOMINAL
NTS	NOT TO SCALE
O	OXYGEN
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPER	OPERATED
OPNG	OPENING
OPP	OPPOSITE
ORD	OVERFLOW ROOF DRAIN
PB	PULL BOX
PC	PLUMBING CONTRACTOR
PD	PUMP DISCHARGE
PG	PRESSURE GAUGE WITH COCK
PL	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLBG	PLUMBING
PNL	PANEL
PR	PAIR
PRD	PRESSURE DIFFERENTIAL VALVE
PRELIM	PRELIMINARY
PRT	PRESSURE TAP
PRV	PRESSURE REDUCING VALVE
PT	PAINT OR POTENTIAL TRANSFORMER
RO	ROUGH OPENING
QT	QUARRY TILE
R	RADIUS
RA	RETURN AIR / RELIEF AIR
RB	RUBBER BASE
RC	REMOVE COMPLETELY
RD	ROOF DRAIN
RE	RELOCATE EXISTING
REC	RECESSED
RECPT	RECEPTACLE
REF	REFERENCE
REFL	REFLECTOR
REG	REGISTER
REINF	REINFORCING
REM	REMOVE
REQD	REQUIRED
RET	RETURN
REV	REVISE
REX	REMOVE EXISTING
RF	RESILIENT FLOOR
RFI	REQUEST FOR INFORMATION
RGS	RIGID GALVANIZED STEEL CONDUIT
RH	ROOF HATCH
RM	ROOM
RN	REMOVE AND REPLACE WITH NEW
RR	REMOVE AND REPLACE
RS	RAPID START
RV	RELIEF VALVE
RWC	RAIN WATER CONDUCTOR
SA	SUPPLY AIR
SAN	SANITARY SEWER ABOVE GROUND
SAN-BXR	SANITARY SEWER - BURIED EXISTING TO REMAIN

SAN-XR	SANITARY SEWER ABOVE GROUND - EXISTING TO REMAIN
SCHED	SCHEDULE
SD	SMOKE DAMPER OR SMOKE DETECTOR
SDISP	SOAP DISPENSER
SF	SQUARE FOOT
SHT	SHEET
SHT MTL	SHEET METAL
SHTG	SHEATHING
SIM	SIMILAR
SM	SURFACE MOUNTED
SNC	SANITARY NAPKIN CABINET
SND	SANITARY NAPKIN DISPOSER
SP	STANDPIPE OR STATIC PRESSURE
SPC	SPECIMEN PASS-THRU CABINET
SPEC	SPECIFICATIONS
SPS	STATIC PRESSURE SENSOR
SR	SERVICE RECEPTOR
SS	SOIL STACK
ST PR	STATIC PRESSURE
ST STL	STAINLESS STEEL
STD	STANDARD
STER	STERILIZER
STL	STEEL
STOR	STORAGE
STR	STRAINER
STRUCT	STRUCTURAL
SUSP	SUSPENDED
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL TOP
T	TOP
TA	THROWAWAY
TAN	TANGENT
TC	TELECOMMUNICATIONS CONTRACTOR
TCV	TEMPERATURE CONTROL VALVE
TDV	TRIPLE DUTY VALVE
TEL	TELEPHONE
TEMP	TEMPERATURE
TER	TERRAZZO
TG	TONGUE & GROOVE
TH	THERMOMETER
THRES	THRESHOLD
TR	TEMPERATURE RISE
TRANS	TRANSITION
TSTAT	THERMOSTAT
TV	TURNING VANES OR TELEVISION
TYP	TYPICAL
XFMR	TRANSFORMER
UC	UNDER CABINET OR UNDER CUT
UFD	UNDER FLOOR DUCT
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITER'S LABORATORIES
UNFIN	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTIL	UTILITY
V	VOLT
VAL	VALVE
VD	VOLUME DAMPER
VENT	VENTILATION
VERT	VERTICAL
VFS	VENTURI FLOW STATION
VIF	VERIFY IN FIELD
VL	VENT LINE
VP	VANDAL PROOF
VR	VAPOR RETARDER
VS	VENT STACK
VTR	VENT THROUGH ROOF
W	WATT
W/	WITH
W/O	WITHOUT
WB	WET BULB
WC	WALL COVERING
WCL	WATER CLOSET
WD	WOOD
WF	WIDE FLANGE
WFMD	WATER FLOW MEASURING DEVICE
WG	WALL GUARD OR WATER GAUGE
WHCH	WHEEL CHAIR
WIN	WINDOW
WMS	WIRE MESH SCREEN
WP	WEATHERPROOF
WPS	WALL PROTECTION SYSTEM
WSCT	WAINSCOT
WT	WINDOW TREATMENT
WTD	WATER TEMPERATURE DROP
WWF	WELDED WIRE FABRIC

ELECTRICAL SYMBOLS LEGEND

	LIGHTING FIXTURES. SOLID HATCHING OR "EM" TAG INDICATES FIXTURES POWERED VIA EMERGENCY POWER/BATTERY AND CONTROLLED VIA UL924 RELAY LISTED DEVICE FOR FULL BRIGHTNESS DURING FIRE ALARM OR NORMAL POWER LOSS.		DASHED SYMBOLS INDICATE ELEMENT TO BE DEMOLISHED		EXIT SIGN, WALL MOUNTED CHEVRONS AS INDICATED ON DRAWINGS
	REFER TO LIGHTING FIXTURE SCHEDULE FOR FIXTURE TYPE SPECIFICATIONS AND DETAILS		GRAY SYMBOLS INDICATE ELEMENT EXISTING TO REMAIN		EXIT SIGN, FLAG MOUNTED FACES AND CHEVRONS AS INDICATED ON DRAWINGS
			JUNCTION BOX (WALL / CEILING)		EXIT SIGN, CEILING MOUNTED FACES, CHEVRONS, AND ORIENTATION AS INDICATED ON DRAWINGS
S_M	MOTOR RATED MANUAL STARTER SWITCH/DISCONNECT		PULL BOX DIMENSIONS AS INDICATED ON DRAWINGS	$	SINGLE POLE SWITCH
3P-30AF/NF	SAFETY DISCONNECT SWITCH (NON-FUSED) NUMBER OF POLES AND FRAME SIZE AS INDICATED OR AS SCHEDULED	3P-30AF/30	SAFETY DISCONNECT SWITCH (FUSED) NUMBER OF POLES, FRAME SIZE, AND FUSE SIZE AS INDICATED OR SCHEDULED	^{2}	TWO POLE, SINGLE POLE SWITCH
	1-PHASE MOTOR EQUIPMENT TAG AS INDICATED		3-PHASE MOTOR EQUIPMENT TAG AS INDICATED	^{3}	3-WAY SWITCH
	DUPLEX WALL RECEPTACLE NEMA 5-20R UNLESS NOTED OTHERWISE		QUADRUPLEX WALL RECEPTACLE NEMA 5-20R UNLESS NOTED OTHERWISE	^{4}	4-WAY SWITCH
S	DUPLEX WALL RECEPTACLE, ALL OUTLETS SWITCHED VIA LOCAL OCCUPANCY SENSING NEMA 5-20R UNLESS NOTED OTHERWISE	S	QUADRUPLEX WALL RECEPTACLE, ALL OUTLETS SWITCHED VIA LOCAL OCCUPANCY SENSING NEMA 5-20R UNLESS NOTED OTHERWISE	$^K	KEYED SWITCH
	DUPLEX WALL RECEPTACLE WITH ISOLATED GROUND NEMA 5-20R UNLESS NOTED OTHERWISE		QUADRUPLEX WALL RECEPTACLE WITH ISOLATED GROUND, NEMA 5-20R UNLESS NOTED OTHERWISE	$^T	TIMER SWITCH
	DUPLEX WALL RECEPTACLE ON EMERGENCY CIRCUIT NEMA 5-20R UNLESS NOTED OTHERWISE		QUADRUPLEX WALL RECEPTACLE ON EMERGENCY CIRCUIT, NEMA 5-20R UNLESS NOTED OTHERWISE	$^D	DIMMER SWITCH
	DUPLEX FLOOR RECEPTACLE NEMA 5-20R UNLESS NOTED OTHERWISE		QUADRUPLEX FLOOR RECEPTACLE NEMA 5-20R UNLESS NOTED OTHERWISE	$^{MC}	MOMENTARY CONTACT SWITCH
S	DUPLEX FLOOR RECEPTACLE, ALL OUTLETS SWITCHED VIA LOCAL OCCUPANCY SENSING NEMA 5-20R UNLESS NOTED OTHERWISE	S	QUADRUPLEX FLOOR RECEPTACLE, ALL OUTLETS SWITCHED VIA LOCAL OCCUPANCY SENSING NEMA 5-20R UNLESS NOTED OTHERWISE	$^{OS}	OCCUPANCY SENSING SWITCH (AUTOMATIC-ON, AUTOMATIC-OFF)
	DUPLEX FLOOR RECEPTACLE WITH ISOLATED GROUND NEMA 5-20R UNLESS NOTED OTHERWISE		QUADRUPLEX FLOOR RECEPTACLE WITH ISOLATED GROUND NEMA 5-20R UNLESS NOTED OTHERWISE	$^{VS}	VACANCY SENSING SWITCH (MANUAL-ON, AUTOMATIC-OFF)
	DUPLEX FLOOR RECEPTACLE ON EMERGENCY CIRCUIT NEMA 5-20R UNLESS NOTED OTHERWISE		QUADRUPLEX FLOOR RECEPTACLE ON EMERGENCY CIRCUIT NEMA 5-20R UNLESS NOTED OTHERWISE	$^{OD}	OCCUPANCY SENSING SWITCH WITH DIMMING CONTROL (AUTOMATIC-ON, AUTOMATIC-OFF)
	NON-TYPICAL NEMA WALL RECEPTACLE CONFIGURATION AS NOTED ON DRAWINGS		SIMPLEX WALL RECEPTACLE NEMA 5-20R UNLESS NOTED OTHERWISE	$^{VD}	VACANCY SENSING SWITCH WITH DIMMING CONTROL (MANUAL-ON, AUTOMATIC-OFF)
	NON-TYPICAL NEMA FLOOR RECEPTACLE CONFIGURATION AS NOTED ON DRAWINGS		SIMPLEX FLOOR RECEPTACLE NEMA 5-20R UNLESS NOTED OTHERWISE	$^V	VACANCY SENSING SWITCH WITH DIMMING CONTROL AND AUTOMATIC DAYLIGHTING (MANUAL-ON, AUTOMATIC-OFF)
	RECEPTACLE ON CORD REEL (DUPLEX SHOWN)		RECEPTACLE ON DROP CORD (DUPLEX SHOWN)	$^{LV}	MULTI-BUTTON LOW VOLTAGE SWITCH WIRED TO A RELAY BASED ROOM CONTROL PANEL OR A ROOM CONTROLLER
	POWER MULTI-OUTLET ASSEMBLY SYMBOLS INDICATE RECEPTACLE LOCATIONS IN ASSEMBLY		DATA MULTI-OUTLET ASSEMBLY SYMBOLS INDICATE RECEPTACLE LOCATIONS IN ASSEMBLY	OS / OS	CORNER OR CEILING MOUNT OCCUPANCY SENSOR (AUTOMATIC-ON, AUTOMATIC-OFF)
				VS / VS	CORNER OR CEILING MOUNT VACANCY SENSOR (MANUAL-ON, AUTOMATIC-OFF)
				LS / LS	CORNER OR CEILING MOUNT LIGHT LEVEL SENSOR OR DAYLIGHT SENSOR
	BRANCH PANELBOARD (GRAY SHADED = 480/277V)		SUB DISTRIBUTION PANELBOARD (GRAY SHADED = 480/277V)	T	TRANSFORMER (SIZE AS INDICATED ON THE RISER/ONE-LINE DIAGRAM)
	AUTOMATIC TRANSFER SWITCH (ATS) (SIZE AS INDICATED ON THE RISER/ONE-LINE DIAGRAM)		SWITCHBOARD (SIZE AS INDICATED ON THE RISER/ONE-LINE DIAGRAM)	1	KEYED NOTE REFER TO KEYNOTE SCHEDULE ON DRAWING
	FACP, FATP, FAAP, NAC OR LCP (AS INDICATED)		FIRE ALARM HORN/STROBE (WALL/CEILING MOUNTED)	F / F	FIRE ALARM STROBE (WALL/CEILING MOUNTED)
F	FIRE ALARM MANUAL PULL STATION	2	FIRE ALARM SMOKE DETECTOR		FIRE ALARM HEAT DETECTOR
	WALL VOICE & DATA OUTLET TYPE AND CONFIGURATION AS NOTED ON DRAWINGS		ANALOG (POTS) LINE PHONE OUTLET		WIRELESS ACCESS POINT (WAP/WIFI)
	SECURITY CAMERA - FIXED	CR	CARD READER WITH PIN KEYPAD - LOW PROFILE	ES	ELECTRIC STRIKE
DC	DOOR CONTACT		ELECTRIC VEHICLE CHARGING STATION		

Designed by: B, Kassahun

Drawn by: B, Kassahun

Checked by: M, Murphy

REVISION

REV No.	DATE	DESCRIPTION	APPV
1	3/11/21	ADDENDUM 2	

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ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-E-02

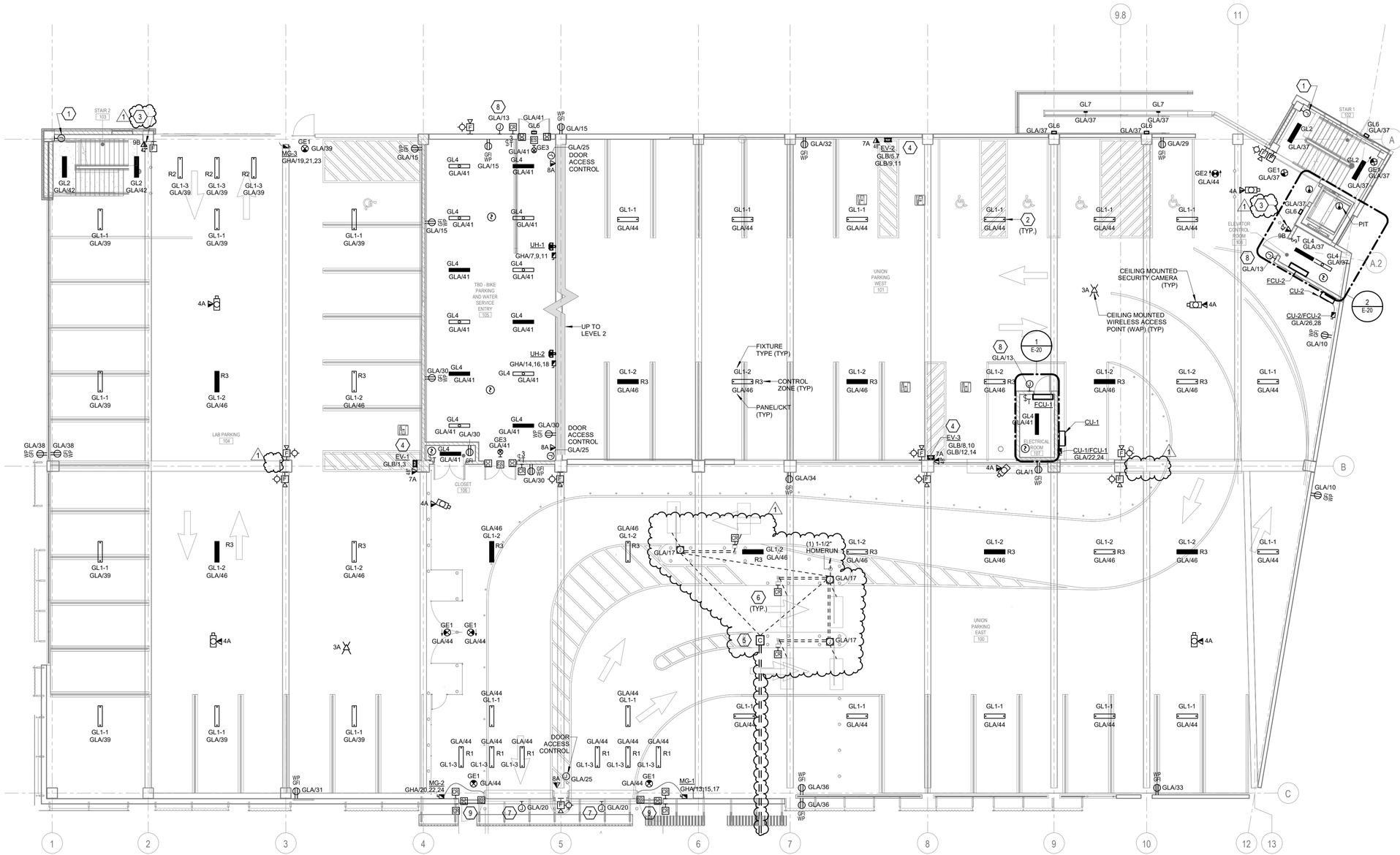
ELECTRICAL ABBREVIATIONS & LEGEND

Contract: 17XX

CAD File Name: 210E02.DWG

Date: 02 / 26 / 2021

Sheet: 143 of 158



1 GROUND LEVEL PARKING GARAGE ELECTRICAL PLAN

3/32" = 1'-0"

SCALE: 3/32" = 1'-0"

8' 0' 4' 8' 16' 32'

ELECTRICAL PLAN GENERAL NOTES

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Checked by:				
M, Murphy				

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ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-E-10
GROUND LEVEL PARKING GARAGE ELECTRICAL PLAN

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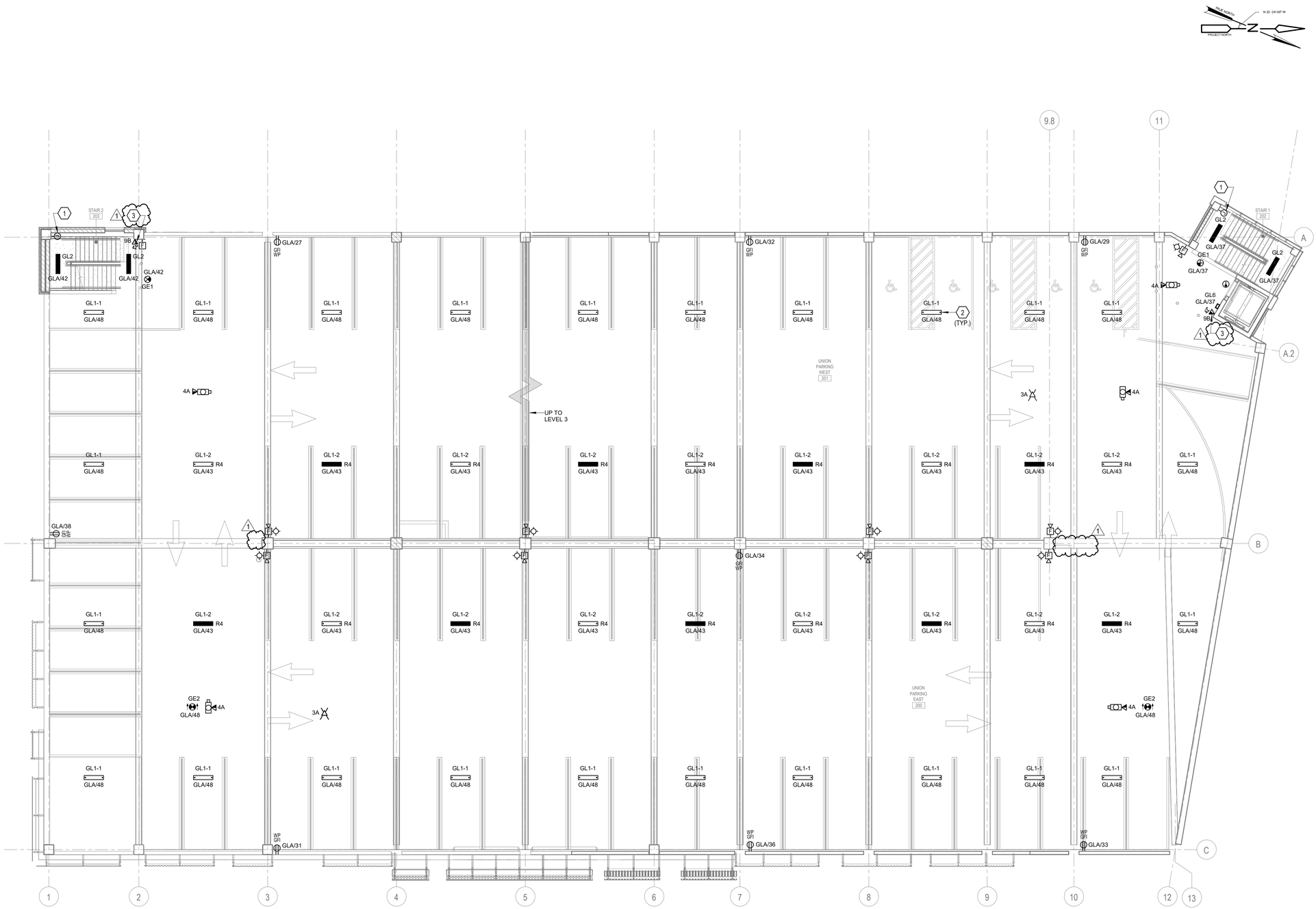

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210-E-11

LEVEL 2 PARKING GARAGE ELECTRICAL PLAN

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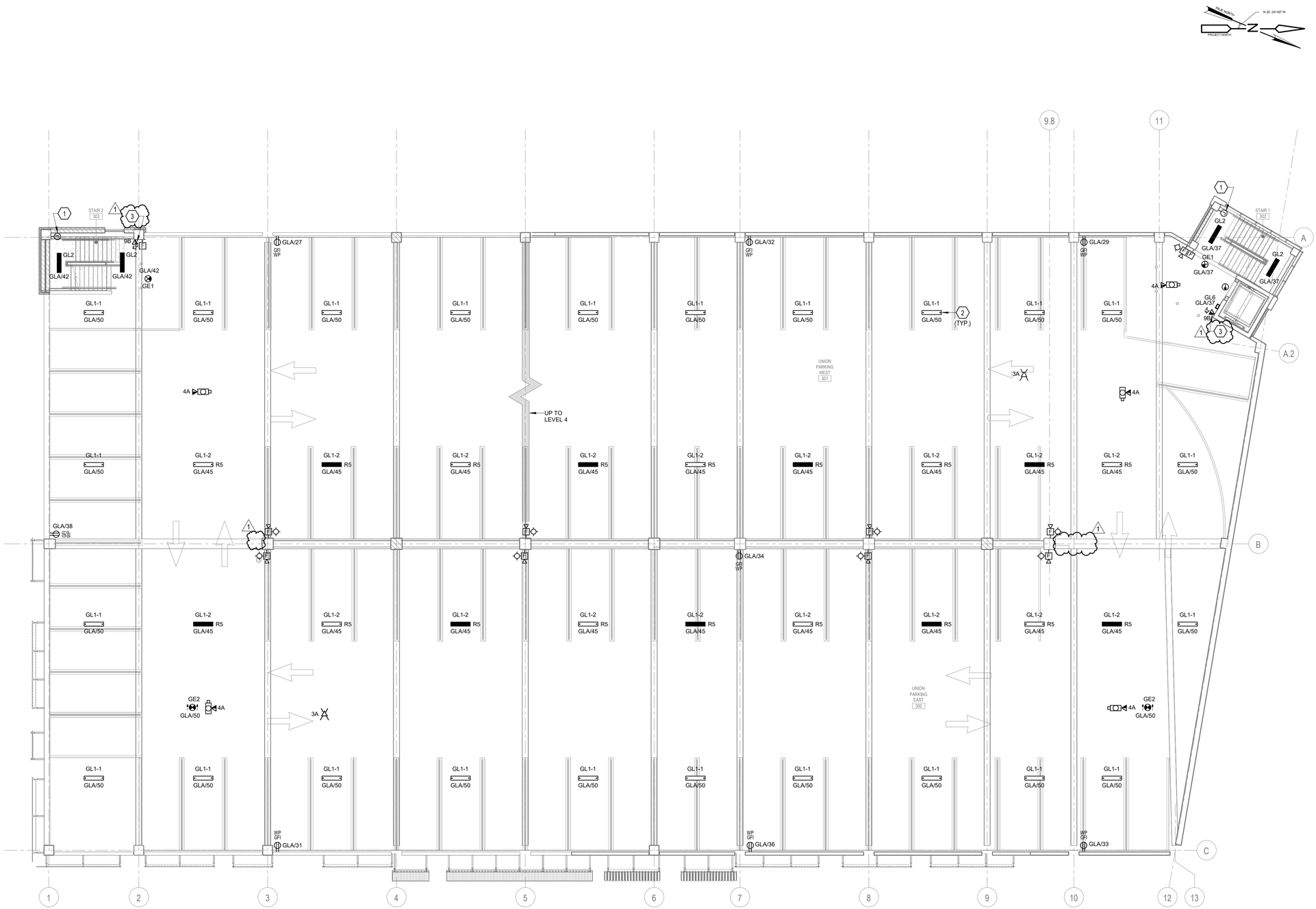

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210-E-12

LEVEL 3 PARKING GARAGE ELECTRICAL PLAN

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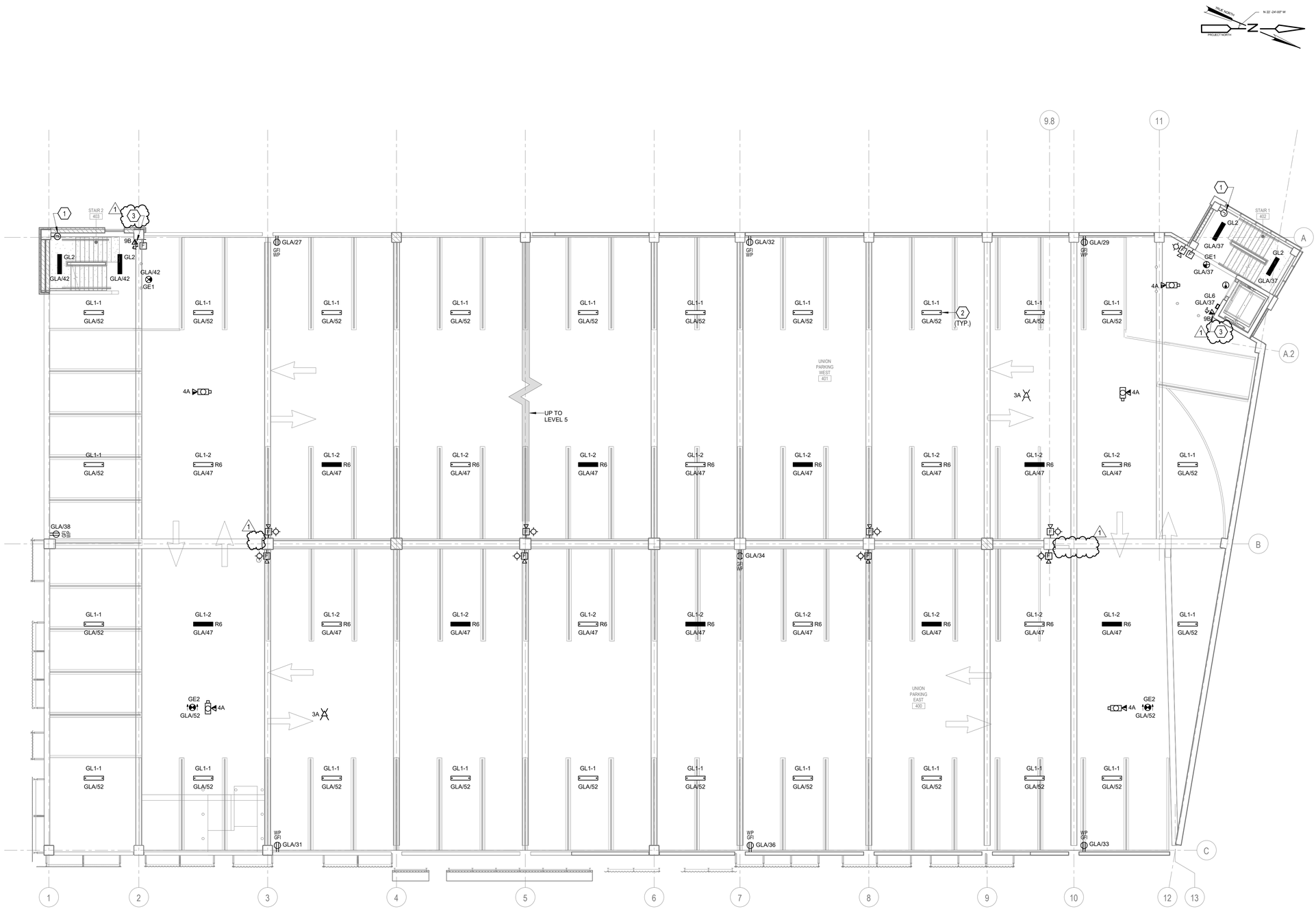

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SCALE: 3/32" = 1'-0"

8' 0' 4' 8' 16' 32'

Designed by: B, Kassahun	REVISION			
Drawn by: B, Kassahun	REV No.	DATE	DESCRIPTION	APPV
Checked by: M, Murphy	1	3/11/21	ADDENDUM 2	

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ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-E-13

LEVEL 4 PARKING GARAGE ELECTRICAL PLAN

Contract: 17XX
CAD File Name: 210E13.DWG
Date: 02 / 26 / 2021
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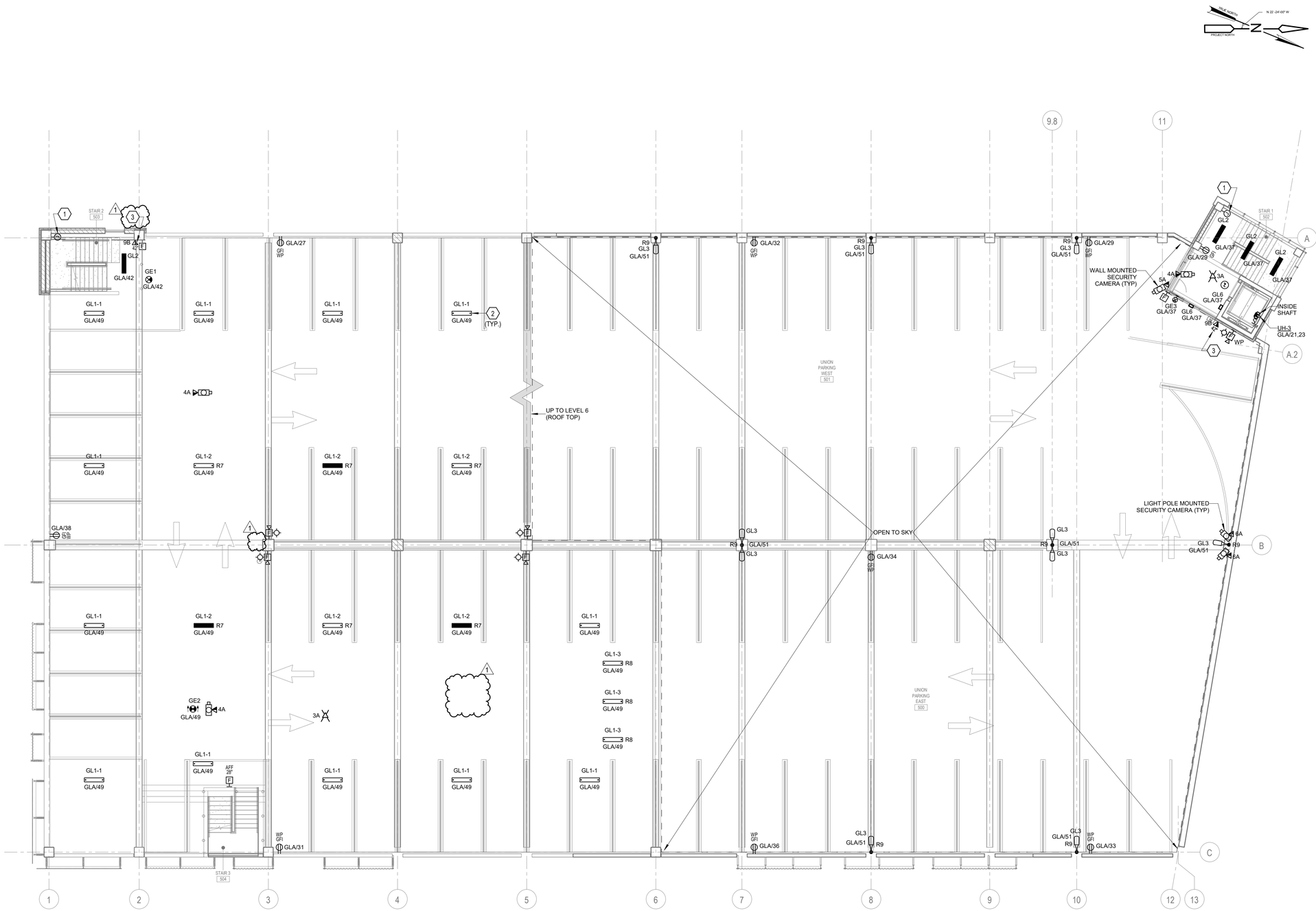

ELECTRICAL PLAN GENERAL NOTES

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1 LEVEL 5 PARKING GARAGE ELECTRICAL PLAN

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ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-E-14

LEVEL 5 PARKING GARAGE
ELECTRICAL PLAN

Contract:	17XX
CAD File Name:	210E14.DWG
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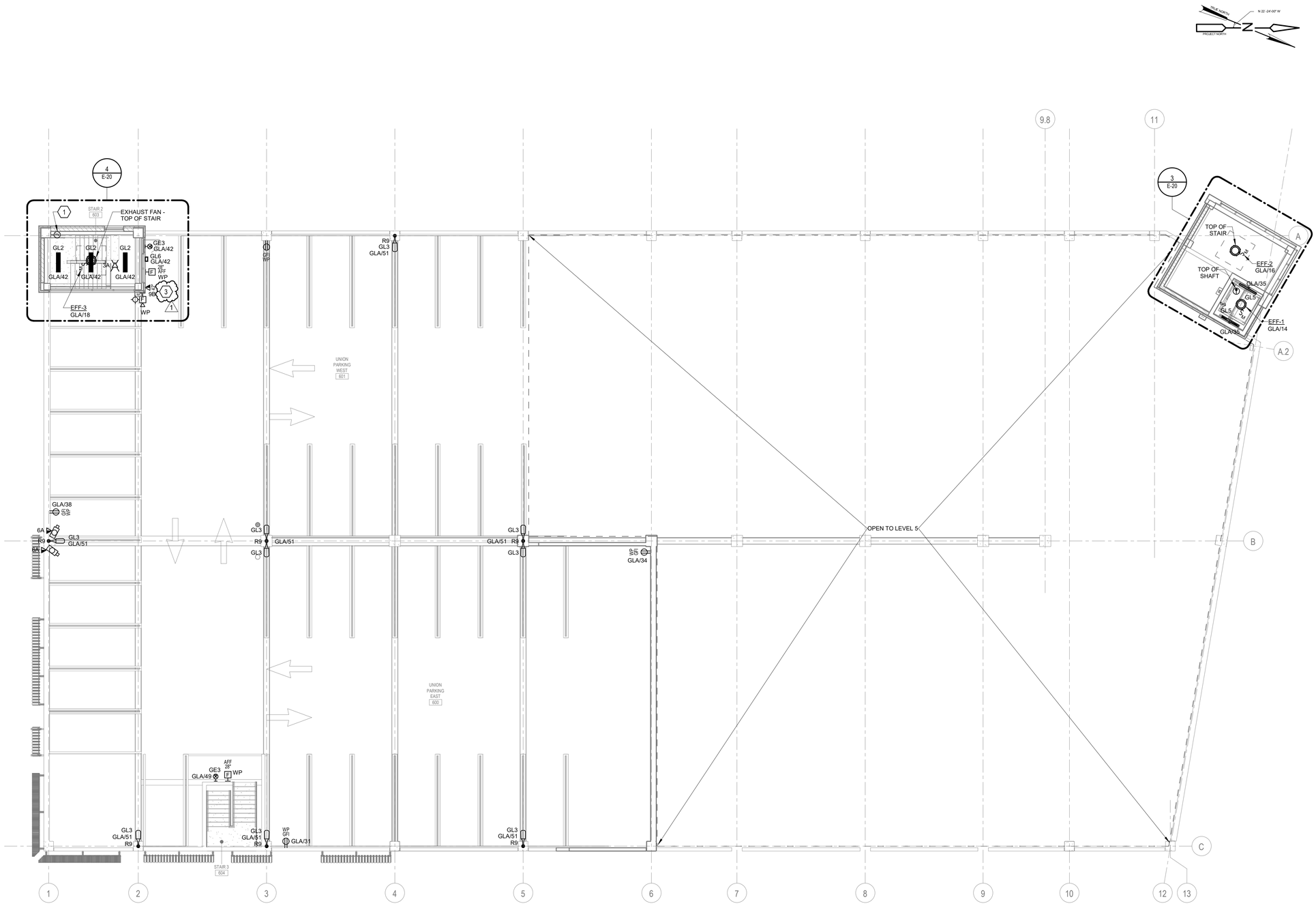

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210-E-15
LEVEL 6 PARKING GARAGE
ELECTRICAL PLAN

Contract: 17XX
CAD File Name: 210E15.DWG
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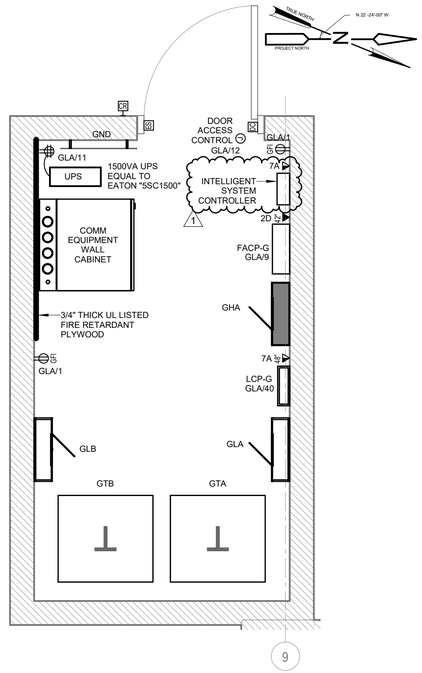
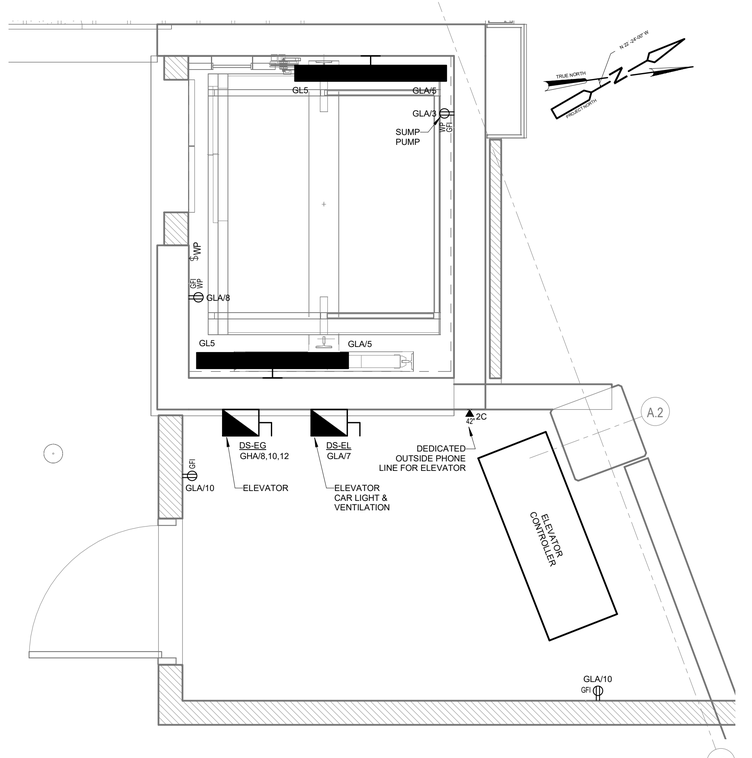


1 PARKING GARAGE MAIN ELECTRICAL ROOM

1/2" = 1'-0"

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

2' 0' 1' 2' 4'



2 PARKING GARAGE ELEVATOR PIT & CONTROL ROOM

1/2" = 1'-0"

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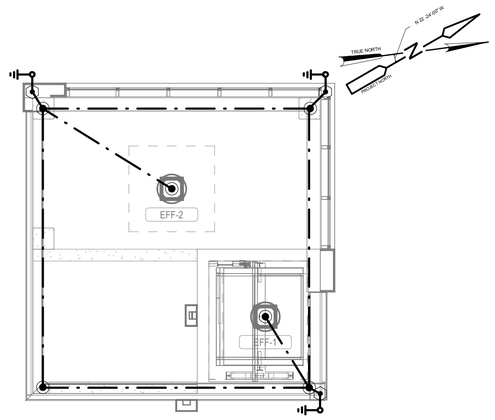
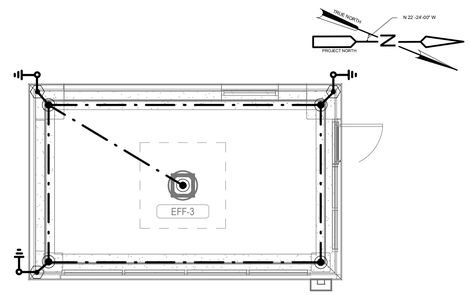


3 LIGHTNING PROTECTION PLAN - STAIR TOWER 1

3/16" = 1'-0"

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

4' 0' 2' 4' 8' 16'



4 LIGHTNING PROTECTION PLAN - STAIR TOWER 2

3/16" = 1'-0"

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

4' 0' 2' 4' 8' 16'

LEGEND

- MAIN / BONDING CONDUCTOR CABLE - 4/0 BARE COPPER
- DOWN CONDUCTOR - 4/0 BARE COPPER
- GROUND TERMINAL - 3/4"X10FT COPPER
- AIR TERMINAL - 18" COPPER
- THRU-ROOF CONDUCTOR - 4/0 BARE COPPER

LIGHTNING PROTECTION GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE LIGHTING PROTECTION SYSTEM. CONTRACTOR TO PROVIDE SIGNED AND SEALED INSTALLATION SHOP DRAWINGS FOR FINAL APPROVAL/SUBMITTAL.
2. CONTRACTOR SHALL PROVIDE SERVICES OF A LIGHTNING PROTECTION INSTALLER TO PREPARE A CLASS 1 SYSTEM PLANS, SIGNED AND SEALED LIGHTNING PROTECTION DRAWINGS AND PRODUCT DATA FOR AHJ REVIEW AND PERMIT.
3. ALL CONDUCTOR ROUTING SHALL BE COORDINATED WITH OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
4. METAL BODIES OF INDUCTANCE LOCATED ABOUT THE ROOF SUCH AS; METAL FLASHING, GRAVEL STOPS, ROOF DRAINS, SOIL PIPE VENTS, INSULATION VENTS, LOUVERS AND DOOR FRAMES SITUATED WITHIN 6'-0" OF A LIGHTNING CONDUCTOR OR BONDED METAL BODY SHALL BE INTERCONNECTED TO THE LIGHTNING CONDUCTOR SYSTEM BY DIRECT OR INDIRECT MEANS.
5. NO BEND OF A CONDUCTOR SHALL FORM A FINAL INCLUDED ANGLE OF LESS THAN 90° NOR SHALL HAVE A RADIUS OF BEND OF LESS THAN 8".
6. CONDUCTORS SHALL INTERCONNECT ALL AIR TERMINALS AND SHALL FORM A TWO-WAY PATH FROM MOST AIR TERMINAL HORIZONTALLY OR DOWNWARD TO CONNECTIONS WITH GROUND TERMINALS.
7. ALL LIGHTNING PROTECTION CONDUCTORS SHALL BE FASTENED NOT MORE THAN 3'-0" MAXIMUM SPACING. EXPOSED CONDUIT 4'-0".
8. GROUND RODS SHALL BE DRIVEN TO A MINIMUM DEPTH OF 10'-0" BELOW GRADE AND 2'-0" AWAY FROM FOUNDATION WALL.
9. ALL DOWNLEAD CONDUCTORS SHALL BE RUN CONCEALED WITHIN THE STRUCTURE. ALL WALL AND ROOF PENETRATIONS SHALL BE COORDINATED WITH THE RESPECTIVE CONTRACTOR. LIGHTNING PROTECTION INSTALLER SHALL OBTAIN THE SERVICES OF THE RESPECTIVE CONTRACTOR TO REPAIR AREAS OF WORK.
10. BOND ALL METALLIC PIPES INCLUDING WATER, FIRE, GAS, SEWER, STORM, ETC. WHICH ENTER THE STRUCTURE TO THE NEAREST DOWNLEAD, GROUND ROD OR GROUND LOOP BY DIRECT OR INDIRECT MEANS.
11. BARE COPPER LIGHTNING PROTECTION MATERIALS SHALL NOT BE INSTALLED ON ALUMINUM OR GALVANIZED ROOFING OR SIDING OR OTHER ALUMINUM OR GALVANIZED SURFACES AND VICE VERSA, ALUMINUM LIGHTNING PROTECTION MATERIALS SHALL NOT BE INSTALLED ON COPPER ROOFING OR SIDING OR OTHER COPPER SURFACES.
12. THE LIGHTNING PROTECTION SYSTEM SHALL BE INSTALLED IN A NEAT AND INCONSPICUOUS MANNER SO THAT ALL COMPONENTS WILL BLEND IN WITH THE APPEARANCE OF THE BUILDING.
13. ACTUAL JOB-SITE CONDITIONS MAY NECESSITATE SLIGHT ALTERATIONS IN AIR TERMINAL AND GROUND ROD LOCATIONS.
14. ALL ADHESIVE TYPE FITTINGS SHALL BE SET IN PLACE WITH AN APPLICATION OF CHEM LINK M-1 STRUCTURAL SEALANT ON NON-BALLASTED ROOFS.
15. SEAL ENDS OF CONDUIT MOISTURE TIGHT WITH CHEM LINK M-1 STRUCTURAL SEALANT.
16. ALL CONDUIT, CONDUIT FASTENERS AND MISCELLANEOUS ACCESSORIES SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
17. ALL REINFORCING, STRUCTURAL, FRAMING AND MISCELLANEOUS STEEL SHALL BE MADE ELECTRICALLY CONTINUOUS THROUGHOUT CONSTRUCTION BY WELDING, CLIPPING, BOLTING OR OTHER APPROVED METHODS BY THE GENERAL CONTRACTOR.
18. THE DESIGN LAYOUT AND INSTALLATION DETAILS SHOWN HEREON SHALL MEET THE REQUIREMENTS OF NATIONAL FIRE PROTECTION ASSOCIATION STANDARD #780, CURRENT EDITION.
19. PROVIDE (1) GROUND WELL AT EACH STRUCTURE. GROUND WELL SHALL BE MARTIN 12"X12" POLYMER WITH BOLT TYPE LID. (OR EQUAL)

Designed by: B, Kassahun
Drawn by: B, Kassahun
Checked by: M, Murphy

REVISION

REV No.	DATE	DESCRIPTION	APPV
1	3/11/21	ADDENDUM 2	

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418 Beaver Street
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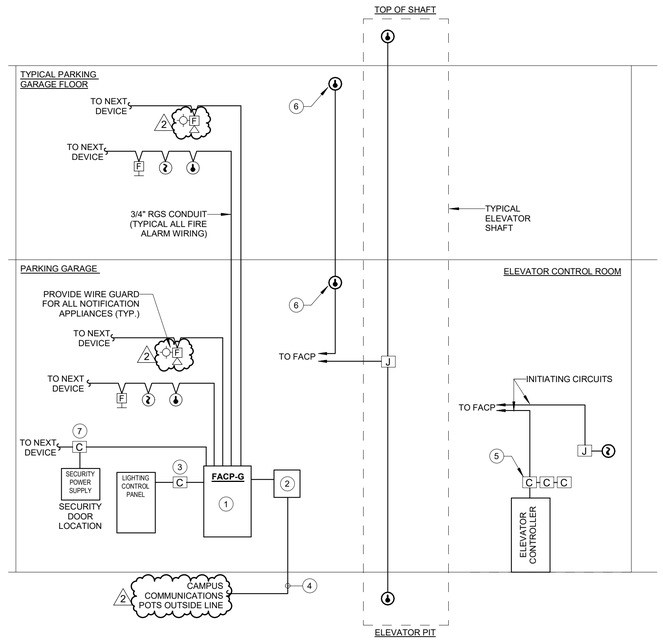
ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-E-20
ENLARGED ELECTRICAL PLANS

Contract: 17XX
CAD File Name: 210E20.DWG
Date: 02 / 26 / 2021
Sheet: 153 of 158

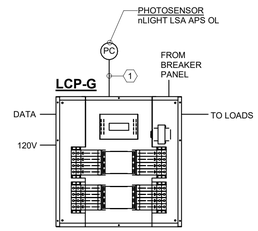


1 TYPICAL RISER DIAGRAM - FIRE ALARM

NOT TO SCALE

FIRE ALARM KEYNOTES

1. ADDRESSABLE FIRE ALARM CONTROL PANEL. PROVIDE A MINIMUM OF 20% SPARE CAPACITY IN ALL PANELS AND POWER SUPPLIES.
2. FIRE ALARM COMMUNICATOR. TIE TO CAMPUS FIRE ALARM LOOP AND OUTSIDE TELEPHONE LINE.
3. PROVIDE A CONTROL MODULE FOR OVERRIDING LIGHTING CONTROLS DURING AN ALARM CONDITION.
4. INTERCEPT COPPER FIRE ALARM NETWORK (POTS LINE) IN BUILDING 404 AND EXTEND TO FIRE ALARM COMMUNICATOR.
5. PROVIDE (3) CONTROL MODULES FOR THE ELEVATOR CONTROLLER, FOR PRIMARY RECALL, SECONDARY RECALL, AND ACTIVATION OF THE FIREMAN HELMET LIGHT.
6. LOBBY HEAT DETECTOR FOR ELEVATOR RECALL.
7. PROVIDE A CONTROL MODULE TO INTERFACE WITH SECURE DOOR CONTROL PANELS. DOORS SHALL FAIL SECURE UPON ACTIVATION OF THE FIRE ALARM.



RELAY PANEL - WITH TIME CLOCK AND PHOTOSENSOR CONTROLS

BASIS OF DESIGN: nLIGHT ARP
ARP INTENC16 NLT 12SRP MVLOT 1VB HLK SM DTC

(1) CAT6A CABLE WITH RJ45 CONNECTORS

LCP GENERAL NOTES

A. ON-SITE SYSTEM COMMISSIONING SHALL BE REQUIRED.

B. ELECTRICAL CONTRACTOR TO PROVIDE CAT-6A DATA CABLE. TEST ALL CABLE LENGTHS AND TERMINATION'S W/CAT-6A TESTER.

C. ALL LOW VOLTAGE COMMUNICATION CABLE & HARDWIRE LOW VOLTAGE CONTROL WIRING TO BE INSTALLED PER NATIONAL ELECTRICAL CODE FOR CLASS-2 LOW VOLTAGE WIRING.

D. CLASS-2 LOW VOLTAGE WIRING SHALL NOT BE MIXED WITH OR RUN IN LINE VOLTAGE RACEWAYS. SEPARATE LOW VOLTAGE RUNS FROM LINE VOLTAGE BY A MINIMUM DISTANCE OF 1-FOOT.

E. CAT-6A DATA CABLE RUNS TO BE INSTALLED IN A DAISY CHAIN FROM ONE PANEL OR DEVICE TO THE NEXT. NO "STAR" OR "T" CONFIGURATIONS ALLOWED WITHOUT POWER SUPPLY REPEATERS.

F. ALL CLASS-2 & CAT-6A DATA CABLE RUNS TO BE PROVIDED AND INSTALLED WITH THE APPROPRIATE JACKET TYPE OR CONDUIT FOR THE INSTALLATION ENVIRONMENT OR CONDITIONS ON SITE.

G. CONTROL PANEL SHALL BE PROVIDED WITH BATTERY BACKUP AND BE ABLE TO RETAIN PROGRAMMING FOR A MINIMUM OF 10HR.

2 TYPICAL CONTROL DIAGRAM - LIGHTING CONTROLS

NOT TO SCALE

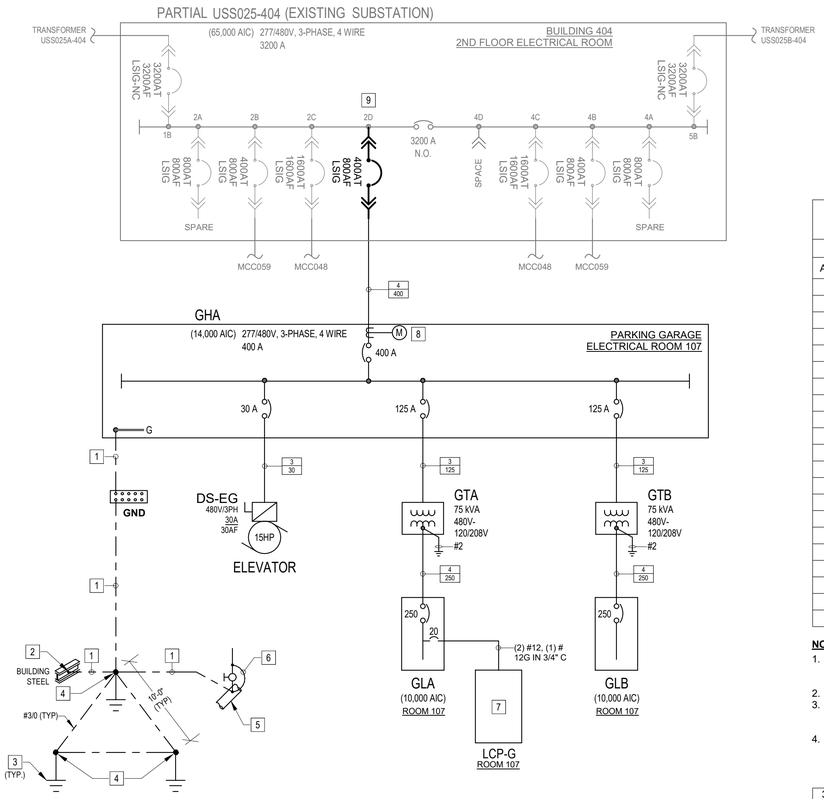
ONE-LINE GENERAL NOTES

1. ALL EXTERIOR MOUNTED EQUIPMENT SHALL BE RATED NEMA 4X.
2. CONTRACTOR / VENDOR TO PROVIDE FULLY RATED / SELECTIVE COORDINATED SYSTEM.
3. REFER TO PANEL SCHEDULES AND EQUIPMENT CONNECTION SCHEDULE FOR ALL CIRCUITING AND SIZES.
4. ALL GROUNDING SHALL BE PROVIDED AND TESTED IN ACCORDANCE WITH NEC 250.56.
5. ELECTRICAL CONTRACTOR SHALL PROVIDE ENGRAVED LABELS TO IDENTIFY ALL ELECTRICAL EQUIPMENT AND ELECTRICAL ROOMS. IN ADDITION, THE ELECTRICAL CONTRACTOR SHALL PROVIDE EACH SERVICE EQUIPMENT LOCATION A PERMANENT PLAQUE SHOWING ALL OTHER ELECTRICAL SERVICES IN THE BUILDING.
6. CONTRACTOR SHALL PROVIDE FAULT CURRENT, COORDINATION AND ARC FLASH POWER SYSTEM STUDIES PER SPECIFICATIONS PRIOR TO PLACING EQUIPMENT ORDERS. THE EQUIPMENT RATINGS SHALL BE ADJUSTED PER THE STUDY RESULTS. CONTRACTOR SHALL PROVIDE ARC FLASH AND SAFETY LABELS AND AFFIX ON EACH EQUIPMENT. CIRCUIT BREAKER TRIP SETTINGS SHALL BE ADJUSTED PER THE STUDY RESULTS.

ONE-LINE KEYED NOTES

1. (1) #3/0 GROUNDING ELECTRODE CONDUCTOR IN 1" SCHEDULE 40 PVC CONDUIT.
2. EXOTHERMIC CONNECTION. ELECTRICALLY CONTINUOUS STEEL REINFORCING BAR (25FT LENGTH) IN BOTTOM OF BUILDING FOUNDATION IN DIRECT CONTACT WITH EARTH.
3. 10 FT. LONG x 3/4" DIAMETER COPPER DRIVEN GROUND ELECTRODE. (TYPICAL)
4. EXOTHERMIC CONNECTION. PROVIDE GROUND TESTING WELL AT EACH LOCATION. (TYPICAL)
5. MAKE CONNECTION TO METALLIC COLD WATER ENTRANCE PIPE BEFORE FIRST VALVE WITH HEAVY DUTY BRONZE GROUND CLAMP.
6. PROVIDE (1) #3/0 BONDING JUMPER AROUND FIRST VALVE.
7. LCP - LIGHTING CONTROL PANEL - BASIS OF DESIGN - ACUITY CONTROLS BLUEBOX LTD GR1416 LTD. REFER TO DIAGRAM ON THIS SHEET AND LCP SCHEDULE ON 210-E-70.
8. PROVIDE WITH AN INTEGRAL DIGITAL METER.
9. INSTALL OWNER PROVIDED 400AT/800AF/3P CIRCUIT BREAKER IN USS025-404 SUBSTATION BUCKET #2D. POWER SHUTDOWN SHALL BE COORDINATED WITH ALCOSAN OPERATIONS. NO ELECTRICAL OUTAGE IN BUILDING 404 (SLUDGE PROCESSING BUILDING) SHALL OCCUR BEFORE NOON. (EXISTING SUBSTATION IS CUTLER-HAMMER G.O # PPG01496).

ALL CONDUCTORS, GROUND WIRES, RODS, BARS AND RELATED EQUIPMENT SHALL BE COPPER.



4 ONE-LINE DIAGRAM - POWER

NOT TO SCALE

ELECTRICAL FEEDER SCHEDULE

3		4	
AMPS	3PH, 3W, & GROUND	AMPS	3PH, 4W, & GROUND
20	(3) #12 & 1#12 G IN 3/4" C	20	(4) #12 & 1#12 G IN 3/4" C
30	(3) #10 & 1#10 G IN 3/4" C	30	(4) #10 & 1#10 G IN 3/4" C
40	(3) #8 & 1#10 G IN 1" C	40	(4) #8 & 1#10 G IN 1" C
50	(3) #6 & 1#10 G IN 1" C	50	(4) #6 & 1#10 G IN 1" C
60	(3) #4 & 1#10 G IN 1" C	60	(4) #4 & 1#10 G IN 1 1/2" C
70	(3) #4 & 1#8 G IN 1 1/2" C	70	(4) #4 & 1#8 G IN 1 1/2" C
80	(3) #3 & 1#8 G IN 1 1/2" C	80	(4) #3 & 1#8 G IN 1 1/2" C
90	(3) #2 & 1#8 G IN 1 1/2" C	90	(4) #2 & 1#8 G IN 1 1/2" C
100	(3) #1 & 1#8 G IN 1 1/2" C	100	(4) #1 & 1#8 G IN 2" C
125	(3) #1 & 1#6 G IN 1 1/2" C	125	(4) #1 & 1#6 G IN 2" C
150	(3) #1/0 & 1#6 G IN 2" C	150	(4) #1/0 & 1#6 G IN 2" C
175	(3) #2/0 & 1#6 G IN 2" C	175	(4) #2/0 & 1#6 G IN 2" C
200	(3) #3/0 & 1#6 G IN 2" C	200	(4) #3/0 & 1#6 G IN 2 1/2" C
225	(3) #4/0 & 1#4 G IN 2 1/2" C	225	(4) #4/0 & 1#4 G IN 2 1/2" C
250	(3) #250 KCMIL & 1#4 G IN 2 1/2" C	250	(4) #250 KCMIL & 1#4 G IN 3" C
400	(3) #500 KCMIL & 1#3 G IN 4" C	400	(4) #500 KCMIL & 1#3 G IN 4" C
600	2 SETS OF (3) #350 KCMIL & 1#1 G IN 3" C	600	2 SETS OF (4) #350 KCMIL & 1#1 G IN 4" C
800	3 SETS OF (3) #300 KCMIL & 1#1/0 G IN 3" C	800	3 SETS OF (4) #300 KCMIL & 1#1/0 G IN 3" C
1000	3 SETS OF (3) #500 KCMIL & 1#2/0 G IN 4" C	1000	3 SETS OF (4) #500 KCMIL & 1#2/0 G IN 4" C
1200	4 SETS OF (3) #350 KCMIL & 1#3/0 G IN 3" C	1200	4 SETS OF (4) #350 KCMIL & 1#3/0 G IN 4" C
1600	5 SETS OF (3) #500 KCMIL & 1#4/0 G IN 4" C	1600	5 SETS OF (4) #500 KCMIL & 1#4/0 G IN 4" C

NOTES:

1. CONDUIT SIZES FOR THHN/THWN COPPER CONDUCTORS ONLY. OTHER CONDUCTOR SIZES MAY REQUIRE INCREASED CONDUIT SIZE. CONTRACTOR TO MAKE ALL THE NECESSARY FIELD ADJUSTMENTS TO COMPENSATE FOR VOLTAGE DROP
2. GROUND CONDUCTORS SPECIFIED IS FOR EQUIPMENT GROUND PER N.E.C. UNLESS NOTED OTHERWISE.
3. ALL 120V, 20A BRANCH CIRCUIT OVER 100'-0" AND 208V, 20A BRANCH CIRCUITS OVER 175' -0" IN LENGTH SHALL BE MINIMUM #10. AWG CU. CONDUCTORS MINIMUM TO ACCOMMODATE VOLTAGE DROP. WHERE A CONFLICT EXISTS BETWEEN THIS REQUIREMENT, CONDUCTOR SIZES SHALL TAKE PRECEDENCE.
4. IN GENERAL, VOLTAGE DROP FOR ANY BRANCH CIRCUIT SHALL NOT EXCEED 3%. VOLTAGE DROP FOR ANY FEEDER SHALL NOT EXCEED 2%. WHERE VOLTAGE DROP EXCEEDS THESE REQUIREMENTS, THE CONTRACTOR SHALL INCREASE THE SIZE OF THE CONDUCTORS AND RACEWAY AS REQUIRED.

3 TOP NUMBER REFERS TO COLUMNS
800 BOTTOM NUMBER REFERS TO ROWS (AMPS)

DATA/TELE OUTLET CONFIGURATION LEGEND

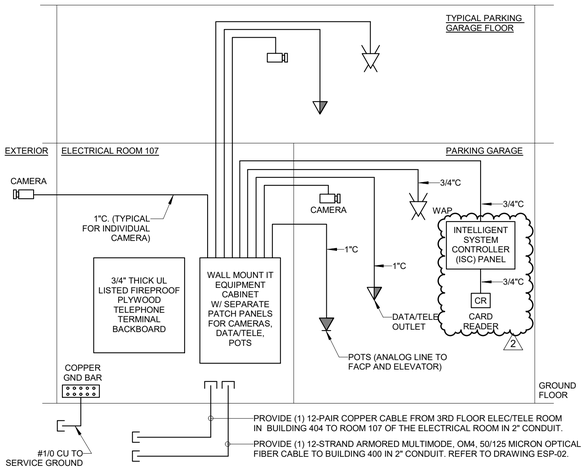
OUTLET CONFIG.	FUNCTION	MOUNTING HEIGHT A.F.F.
1	STANDARD OUTLET	18"
2	WALL PHONE OUTLET	42"
3	CEILING WAP OUTLET	CEILING
4	CEILING CAMERA OUTLET	CEILING
5	WALL CAMERA OUTLET	96"
6	LIGHT POLE CAMERA OUTLET	120"
7	EQUIPMENT OUTLET	48"
8	DOOR ACCESS CONTROL OUTLET	CEILING
9	BLUE (EM) PHONE OUTLET + PHONE (REFER TO KEYNOTE #3 ON FLOOR PLANS)	42"

CABLING CONFIGURATION LEGEND

CABLE CONFIG.	CAT6A QTY	RJ12 QTY	OTHER
A	1	-	-
B	2	-	-
C	-	1	-
D	-	2	-
E	1	1	-

EXAMPLE:

9B — CABLE CONFIGURATION TYPE
OUTLET CONFIGURATION TYPE



SYSTEMS GENERAL NOTES:

1. PROVIDE BONDING BUSHINGS AND #6 SOLID GROUND WIRE ON EACH CONDUIT SLEEVE TO CABINET AND COPPER GROUND BAR IN ROOM.
2. PROVIDE ALL WIRING IN RGS CONDUIT. CONDUIT SIZES SHOWN ARE TYPICAL MINIMUM SIZES FOR EACH SYSTEM IDENTIFIED. CONDUIT SIZE SHALL BE ADJUSTED BASED ON THE NUMBER AND TYPE OF CONDUCTORS BEING RUN ACCORDING TO NEC AND MANUFACTURER STANDARDS.
3. CONTRACTOR TO COORDINATE WITH ALCOSAN IT SYSTEMS MANAGER PRIOR TO INSTALLATION.
4. ELECTRICAL ROOM SHALL HAVE AN INTELLIGENT SYSTEM CONTROLLER (ISC) ASSOCIATED WITH THE CARD READERS IN THE PARKING GARAGE. SWING GATE CARD READERS SHALL CONNECT TO THE EXISTING CONTROL PANEL IN THE GUARD SHACK.

3 TYPICAL RISER DIAGRAM - SYSTEMS

NOT TO SCALE

Designed by:	REVISION			
B, Kassahun	REV No.	DATE	DESCRIPTION	APPV
Drawn by:	1	2/19/21	ADDENDUM 1	
B, Kassahun	2	3/11/21	ADDENDUM 2	
Checked by:				
M, Murphy				

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ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT
ALCOSAN PARKING GARAGE

210-ESL-01
ELECTRICAL ONE-LINE AND RISER DIAGRAMS

Contract: 17XX
CAD File Name: 210ESL01.DWG
Date: 02 / 26 / 2021
Sheet: 154 of 158

BIDDERS / PURCHASE LIST
1735 PARKING GARAGE
PM: CODY EDGELL

Advertise Date: 02/03/2021
Pre-Bid Date: 02/17/2021
Bid Opening Date: 03/17/2021

Company	Contact	Address
Bronder Technical Services	Melissa Wynkoop	422 Road Prospect, PA 16052
Bryan Mechanical	Dan Bradley (Mechanical) Leo Monaghan (Sheet Metal)	3401 Grand Avenue Pittsburgh, PA 15225
Burchick Construction	Joseph W. Scaramuzzo	500 Lowries Run Road, Pittsburgh, PA 15237
Carl Walker Construction	Chris McElhaney	935 Vista Drive Pittsburgh, PA 15205
CPS Construction Group	Phil Gentile	927 Route 910, Suite 200 Cheswick, PA 15024
Dasco, Inc.	Marsha Dasco	3001 Grand Avenue Pittsburgh, PA 15225
De-Cal Inc.	Michael Montgomery	939 Sheraton Drive, Suite 100 Mars, PA 16046
Donley's	John Marchi	5430 Warner Road Cleveland, OH 44125
Emerald Electrical Services LLC	Deborah Morehead	604 Epsilon Dr. Pittsburgh, PA. 15238
Fallon Electric Co.,INC.	Joyce Hooper	875 Sleepy Hollow Road Pittsburgh, PA 15234
First American Industries Inc.	Matthew Wanner	617 California Ave Pittsburgh, PA 15202
G.M. McCrossin, Inc.	Mary Jo Bittner (Est Asst)	2780 Benner Pike Bellefonte, PA 16823
Gunning Inc.	Mike Gunning	200 Rochester Road Pittsburgh, PA 15229
Guy's Mechanical Systems, Inc.	Gary Guy	132 Big Knob Road Rochester, PA 15074
Hranec Corporation	Fred or Warren	763 Route 21 Uniontown, PA 15401
Industrial Furnace	Jacqueline K Liddle	301 Old Washington Pike Carnegie, PA 15106
Kirby Electric, Inc.	Hunter Lund	415 Northgate Drive Warrendale, PA 15086
Kokosing Construction Co., Inc.	Sonja Nichols, Estimating	6235 Westerville Road, Suite 200 Westerville, OH 43081
Lanco-Electric, Inc.	Rob Landowski	300 Canal Street Leechburg, PA 15656
Limbach Holdings, Inc.	Thom Brazel	Drive Warrendale, PA 15086
Mascaro Construction Co. LP	Pete Mastro	1720 Metropolitan St Pittsburgh, PA 15233
Massaro Corporation	Mike Norcutt	120 Delta Drive Pittsburgh, Pa 15238
Mike Coates Construction Co., Inc.	Lisa Spadaford / James Huffman / Sara Pittman	800 Summit Ave. Niles, OH 44446

BIDDERS / PURCHASE LIST
1735 PARKING GARAGE
PM: CODY EDGELL

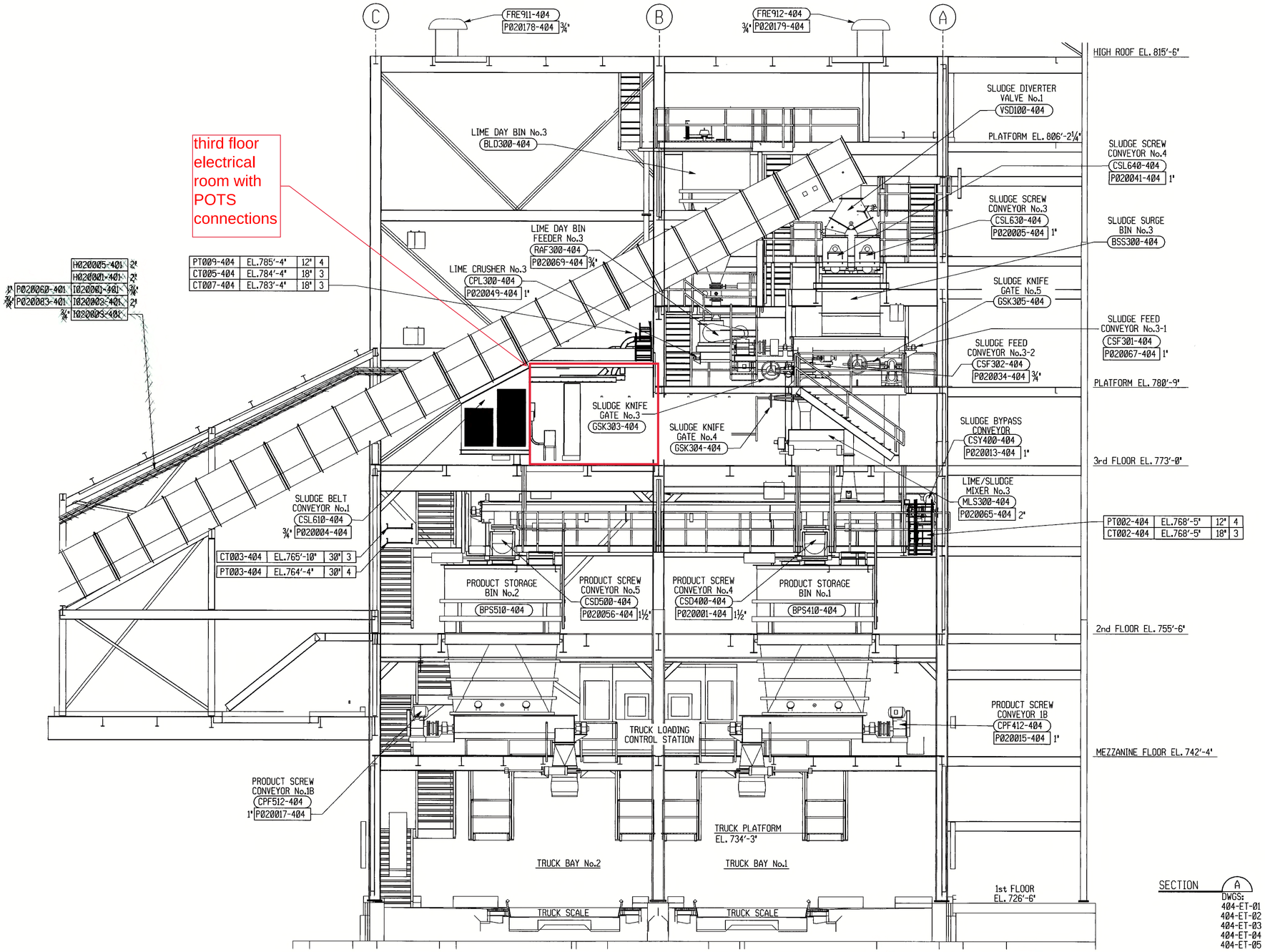
Advertise Date: 02/03/2021
Pre-Bid Date: 02/17/2021
Bid Opening Date: 03/17/2021

Company	Contact	Address
Mosites Construction	Mark Edgar	100 Pittsburgh, PA 15205
Nathan Contracting	Klaus Sailer	3996 Mount Royal Blvd Allison Park, PA 15101
Parkinson Construction Inc	Fareed Chishty	Suite 206 Pittsburgh, PA 15206
PJ Dick	John Robinson	225 North Shore Drive Pittsburgh, PA 15212
Reno Brothers Inc.	LJ Wolfe	792 Duquesne Way Rochester, PA 15074
Rycon Construction, Inc.	Letty Gonzales/Dan Theis	Suite 100 Pittsburgh, PA 15222
Scalise Industries Corp.	Anna Pier	Suite A Lawrence, PA 15055
Shiloh Industrial Contractors, Inc.	Michael Janusey	204 Commerce Blvd. P.O. Box 603 Lawrence, PA 15055
Shook Construction	Jeff Dentzer, CPSM	Road Brecksville, OH 44141
SSM Indutries Inc.	Dan Bradley	3401 Grand Avenue Pittsburgh, PA 15225
Swank	Pete Douglas	632 hunt valley circle New Kenington, PA 15068
The Walsh Group	Chavis Lunceford	4 Penn Center Blvd Suite 100 Pittsburgh, PA 15276
W.G. Tomko & Sons Inc	Bill Tomko	2559 Route 88 Finleyville, PA 15332
Walbridge East LLC	Andrew Rihn	Suite 301 Pittsburgh, PA 15221
Waller Corporation	Ann Sekely	2051 W. Chestnut St. Washington, PA 15301
Wayne Crouse Inc.	Bill E. Lugaila	3370 Stafford Street Pittsburgh, PA 15204
Wellington Power Corp	Andrew M. Krall	177 Thorn Hill Road Warrendale, PA 15086
Wheels Mechanical Contracting & Supplier	Al Chlystek	Box 600 Elrama, PA 15038-0600
Wm. T, Spaeder Co. Inc.	Steve Eastbourn	1602 E. 18 Street Erie, PA 16510
ZRW, LLC	Steve Simpson	PO Box 517 McKees Rocks Pittsburgh, PA 15136

BIDDERS / PURCHASE LIST
1735 PARKING GARAGE
PM: CODY EDGELL

Advertise Date: 02/03/2021
Pre-Bid Date: 02/17/2021
Bid Opening Date: 03/17/2021

Company	Contact	Address
RESOURCE PARTNERS		
African American Chamber of Commerce (Western PA)	Shawn Hicks	436 Seventh Ave. Ste. 2220 Pittsburgh, PA 15219
Allegheny County M/W/DBE Department	Lisa Edmonds	
Eastern Minority Supplier Development Council	Tricina Cash, Meg Markley	611 William Penn Place Pittsburgh, PA 20705
National Association of Women in Construction	Crissy Ingram	327 S. Adams St. Fort Worth, TX 76104
PLAN HOLDERS		
Construct Connect	Aimee Gonzales	30 Technology Parkway South, Suite 100, Norcross, GA
PA Builders Exchange	Karen	1813 N Franklin St. Pittsburgh, PA 15233
The Builders Exchange	Nicole Stewart	9555 Rockside Road, Suite 300, Cleveland, OH 44125



NOTES:
1. SEE NOTES ON SHEET 404-ET-01.

SECTION A

DWGS:
404-ET-01
404-ET-02
404-ET-03
404-ET-04
404-ET-05

CONFORMED DRAWING 8/00
SEE DISCLAIMER ON COVER SHEET

RECORD DRAWING

REV.	DESCRIPTION	DATE	APP.
0	RELEASED FOR BID	6-98	
1			
2			
3			
4			

CIMLINE EPM TEAM ALCOSAN

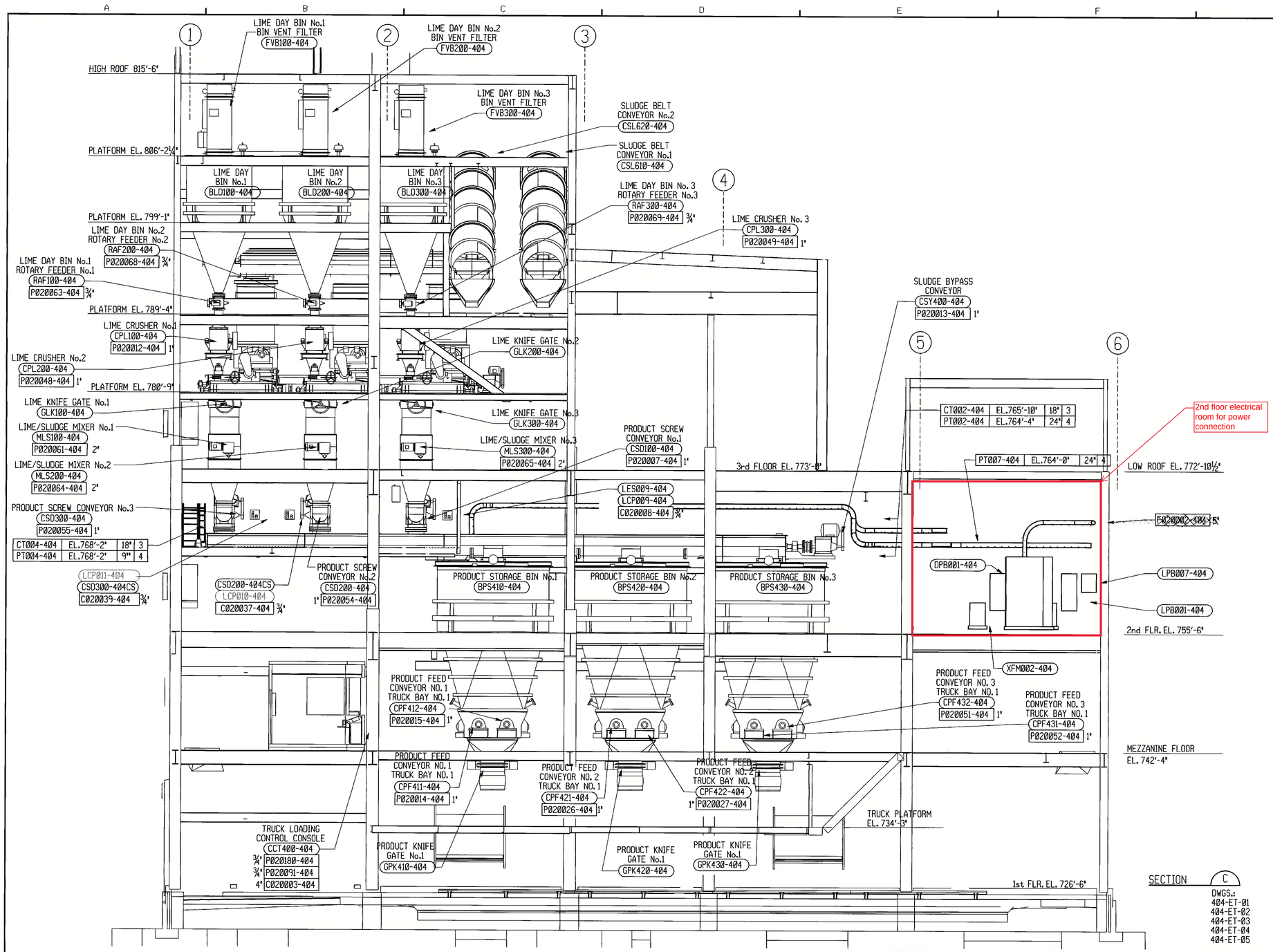
PROJECT 1220-LIME BUILDING EXPANSION

404-ET-07
EXPOSED CONDUIT & TRAY
SECTION A-A

SCALE: 3/16"=1'-0" CONTRACT NO. 1520

FILENAME: 404ET07.EPM
DATE PLOTTED: 08/31/00

DRAWN BY: J. KOZIAN
CHECKED BY: S. TEMPLE
EXAMINED BY: M. KRYMSKI



SECTION C

DWGS.:
404-ET-01
404-ET-02
404-ET-03
404-ET-04
404-ET-05

NOTES:
1. SEE NOTES ON SHEET 404-ET-01

DRAWN BY: H. SHANK
CHECKED BY: S. TEMPLE
EXAMINED BY: M. KRYMSKI

RECORD DRAWING

CONFORMED DRAWING 8/00
SEE DISCLAIMER ON COVER SHEET

REV.	DESCRIPTION	DATE	APP.
0	RELEASED FOR BID	6-98	
1	REVISED PER FI-1520E-020 & PCO-1520E-018	8/9/00	ST
2			
3			
4			

PROJECT 1220-LIME BUILDING EXPANSION

404-ET-09
EXPOSED CONDUIT & TRAY
SECTION C-C

SCALE: 3/16"=1'-0" CONTRACT NO. 1520

FILENAME: 404ET09.EPM
DATE PLOTTED: 08/31/00